



TEST REPORT

Report Number: 102364477MPK-001

Project Number: G102364477

December 28, 2015

**Testing performed on the
Brain Sentinel GTC Seizure Detection and Warning System**

Model: SPC15

FCC ID: 2AG2I-SPC15

IC: 21039-SPC15

to

**FCC Part 15 Subpart C (15.247)
Industry Canada RSS-247, Issue 1
FCC Part 15, Subpart B
Industry Canada ICES-003**

For

Brain Sentinel, Inc.

Test Performed by:

Intertek

1365 Adams Court

Menlo Park, CA 94025 USA

Test Authorized by:

Brain Sentinel, Inc.

8023 Vantage Drive, Suite 216

San Antonio, TX 78230, USA

Prepared by:


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Date: December 28, 2015

Reviewed by:


Krishna K Vemuri


Date: December 28, 2015

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Report No. 102364477MPK-001

Equipment Under Test:	Brain Sentinel GTC Seizure Detection and Warning System
Trade Name:	Brain Sentinel, Inc.
Model Number:	SPC15
Serial Number:	ENG008
Applicant:	Brain Sentinel, Inc.
Contact:	Eliza Lemons
Address:	Brain Sentinel, Inc. 8023 Vantage Drive, Suite 216 San Antonio, TX 78230
Country	USA
Tel. Number:	(480) 231- 6829
Email:	eliza.lemons@brainsentinel.com
Applicable Regulation:	FCC Part 15 Subpart C (15.247) Industry Canada RSS-247 Issue 1 FCC Part 15, Subpart B Industry Canada ICES-003
Date of Test:	November 18 to December 15, 2015

We attest to the accuracy of this report:



Minh Ly
Project Engineer



Krishna K Vemuri
EMC Senior Staff Engineer

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1.0 Summary of Tests

Test	Reference FCC	Reference Industry Canada	Result
Radiated Emissions	15.109	ICES-003	Complies
AC Line Conducted Emission	15.107	ICES-003	Complies
RF Output Power	15.247(b)(3)	RSS-247, 5.4	Complies
6 dB Bandwidth	15.247(a)(2)	RSS-247, 5.2	Complies
Power Density	15.247(e)	RSS-247, 5.2	Complies
Out of Band Antenna Conducted Emission	15.247(d)	RSS-247, 5.5	Complies
Transmitter Radiated Emissions	15.247(d), 15.209, 15.205	RSS-247, 5.5	Complies
AC Line Conducted Emission	15.207	RSS-GEN	Not Applicable ¹
Antenna Requirement	15.203	RSS-GEN	Complies (Internal Antenna)
RF Exposure	15.247(i), 2.1093(d)	RSS-102	Complies

¹ EUT is battery operated.

EUT receive date: November 16, 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 18, 2015

Test completion date: December 15, 2015

The test results in this report pertain only to the item tested.

2.0 General Information

2.1 Product Description

Brain Sentinel, Inc. supplied the following description of the EUT below.

Body worn (on the bicep) seizure detection system intended for use in a home or hospital environment. For more information, see user's manual provided by the manufacturer.

Information about the WiFi radio is presented below:

The EUT supports a wide range of data rates in the 2.4GHz band:

IEEE 802.11b

IEEE 802.11g

IEEE 802.11n 20MHz

Applicant	Brain Sentinel, Inc.
Model Number	SPC15
FCC Identifier	2AG2I-SPC15
IC Identifier	21039-SPC15
Modulation Technique	DSSS (BPSK, QPSK, CCK), OFDM (BPSK, QPSK, 16QAM, 64QAM)
Rated RF Output	802.11b: 11.53 dBm 802.11g: 10.56 dBm 802.11n 20MHz: 10.61 dBm
Frequency Range	2412 – 2462 MHz
Number of Channel(s)	11
Antenna(s) & Gain	Patch Antenna, 3.0 dBi peak gain
Applicant Name & Address	Brain Sentinel, Inc. 8023 Vantage Drive, Suite 216 San Antonio, TX 78230 USA

2.2 Related Submittal(s) Grants

None.

2.3 Test Methodology

Antenna conducted measurements were performed according to the FCC documents “Guidance for Performing Compliance Measurement on Digital Transmission Systems (DTS) Operating under §15.247” (KDB 558074), and RSS-247, RSS-GEN, and

Radiated emissions and AC mains conducted emissions measurements were performed according to the procedures in ANSI C63.10. Radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "Data Sheet" of this report.

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 – 2.5 GHz	> 2.5 GHz
RF Power and Power Density – antenna conducted	-	0.7 dB	-
Unwanted emissions - antenna conducted	1.1 dB	1.3 dB	1.9 dB
Bandwidth – antenna conducted	-	30 Hz	-
Radiated emissions	4.2 dB	3.4 dB	4.4 dB
AC mains conducted emissions	2.4 dB	-	-

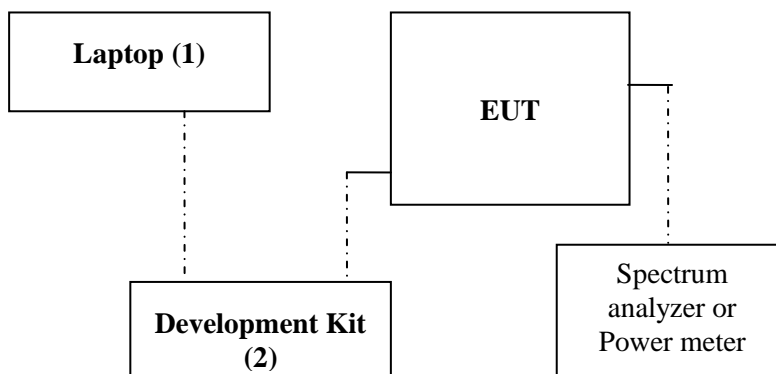
3.0 System Test Configuration

3.1 Support Equipment and description

Item #	Description	Manufacturer	Model No./ Part No.
1	Dell Laptop	Acer	Aspire E11
2	Development Kit	Not Listed	Not Listed

3.2 Block Diagram of Test Setup

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



S = Shielded	F = With Ferrite
U = Unshielded	M = Meter

3.3 Justification

Preliminary testing was performed for all modulation/data rate modes. The worse-case data rate with highest power and widest spectrum were selected for final measurements:

CCK 2 Mbps – for 802.11b
OFDM 18 Mbps – for 802.11g
OFDM MCS0 – for 802.11n 20MHz

For radiated emission measurements the EUT is placed on a non-conductive table. The EUT is programmed to transmit full power at low/mid/high channel.

3.4 Mode of Operation During Test

During transmitter testing, the transmitter was setup to transmit at maximum RF power on low, middle and high frequencies/channels at 100% duty cycle.

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 exclusions from the standard were made.

4.0 Measurement Results

4.1 6dB DTS Bandwidth, 6dB RSS Bandwidth and 99% Occupied Bandwidth FCC Rule: 15.247(a)(2); RSS-247 5.2 and RSS-GEN;

4.1.1 Requirement

The minimum 6-dB bandwidth shall be at least 500 kHz

4.1.2 Procedure

The Procedure described in the FCC Publication 558074 was used.

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. A PEAK output reading was taken, a DISPLAY line was drawn 6 dB lower than PEAK level. The 6-dB bandwidth was determined from where the channel output spectrum intersected the display line.

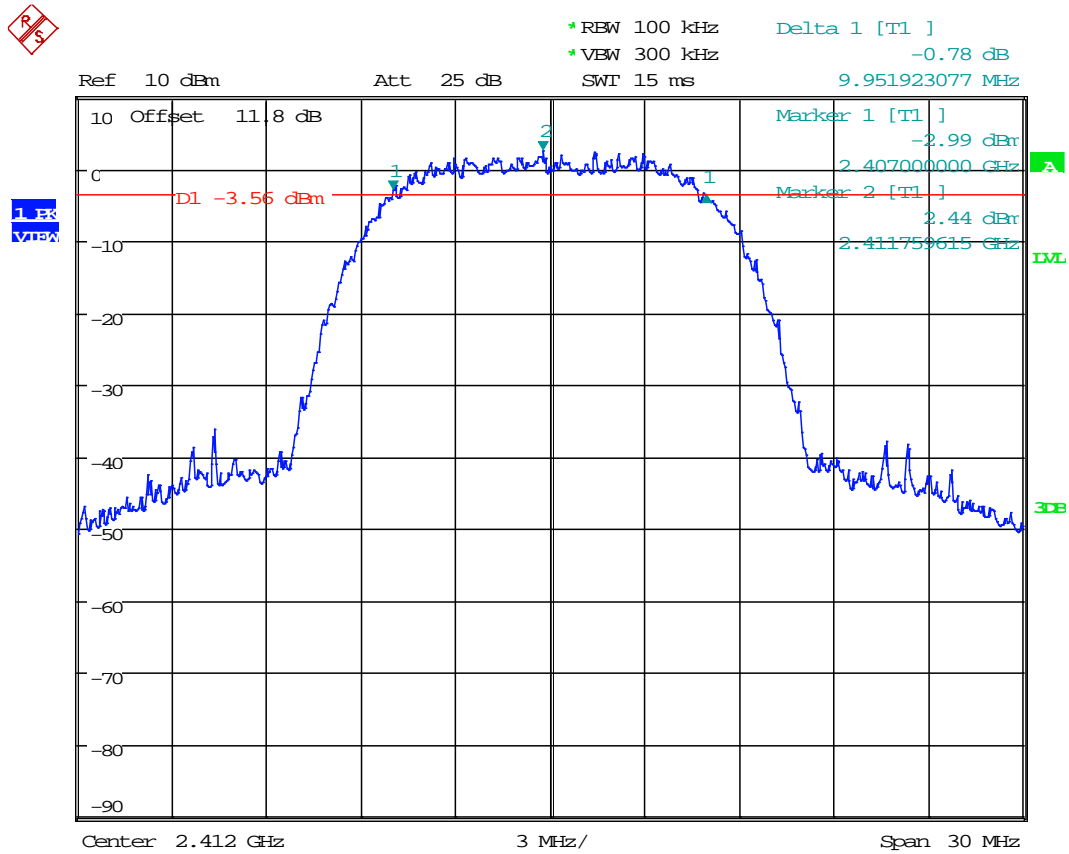
The occupied bandwidth was measured using the built-in spectrum analyzer function for 99% power bandwidth measurement.

4.1.3 Test Result

Date of Test:	November 18, 2015
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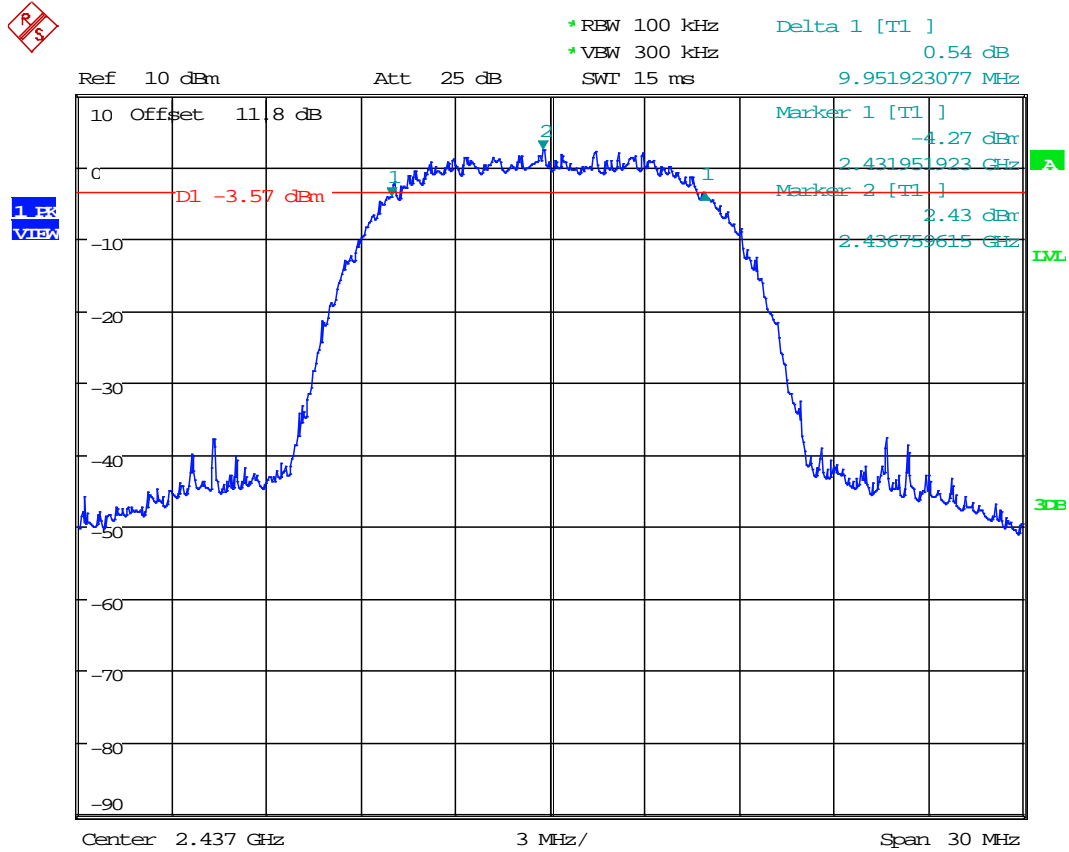
Frequency MHz	Ch.	Frequency MHz	6 dB FCC Bandwidth, MHz	Plot #	99% Bandwidth, MHz	6 dB RSS Bandwidth, MHz	Plot #
802.11b	1	2412	9.951	1.1	11.980	10.250	1.10
	6	2437	9.951	1.2	11.980	10.190	1.11
	11	2462	9.903	1.3	11.980	10.060	1.12
802.11g	1	2412	16.580	1.4	16.920	16.660	1.13
	6	2437	16.580	1.5	16.920	16.600	1.14
	11	2462	16.580	1.6	16.850	16.660	1.15
802.11n 20MHz	1	2412	17.780	1.7	17.880	17.820	1.16
	6	2437	17.780	1.8	17.880	17.880	1.17
	11	2462	17.780	1.9	17.880	17.880	1.18

Plot 1.1 – 6dB Bandwidth (FCC)



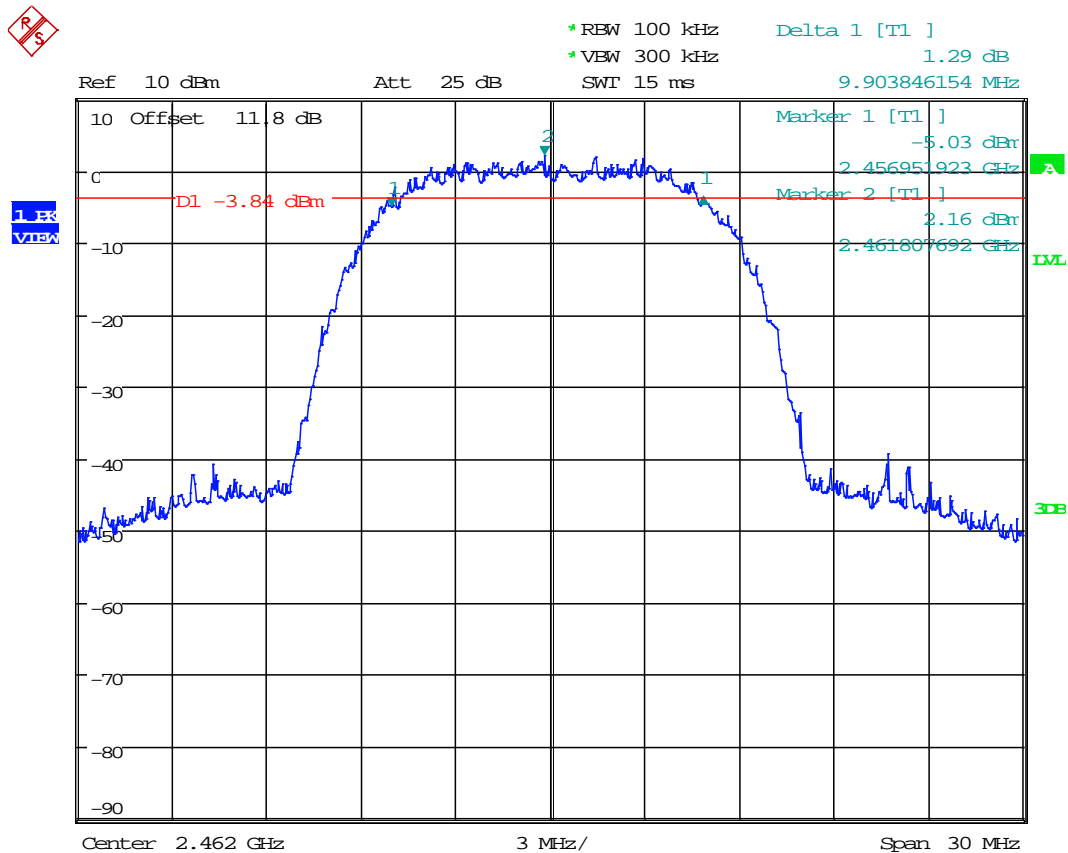
Date: 18.NOV.2015 14:31:26

Plot 1.2 – 6dB Bandwidth (FCC)



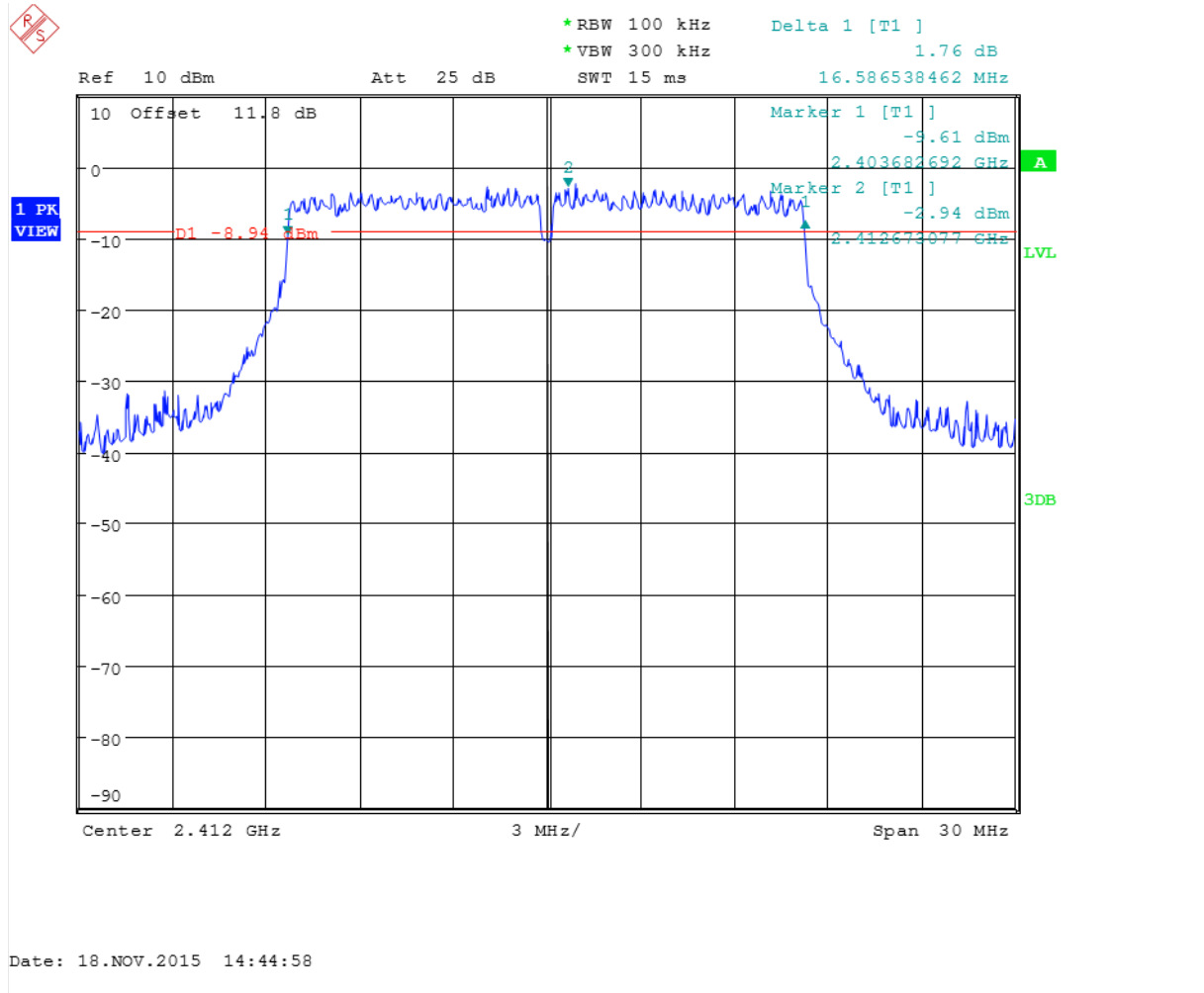
Date: 18.NOV.2015 14:51:29

Plot 1. 3 – 6dB Bandwidth (FCC)

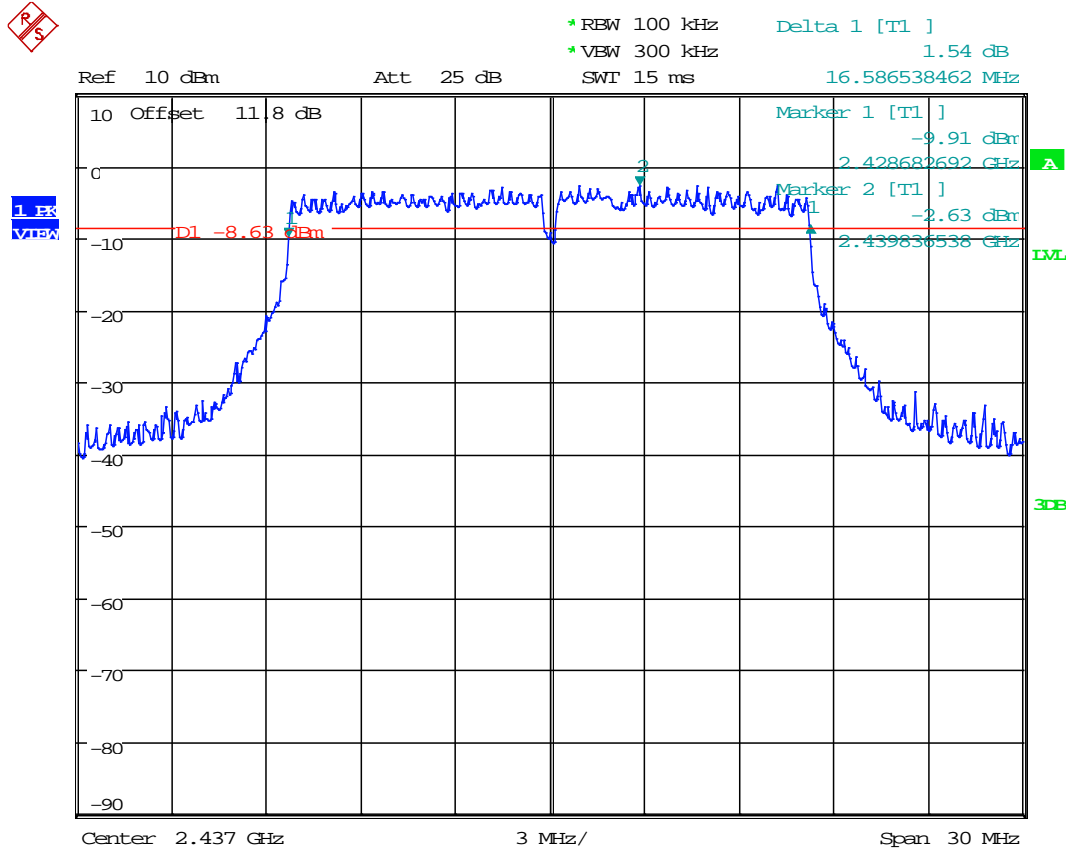


Date: 18.NOV.2015 14:58:46

Plot 1.4 – 6dB Bandwidth (FCC)

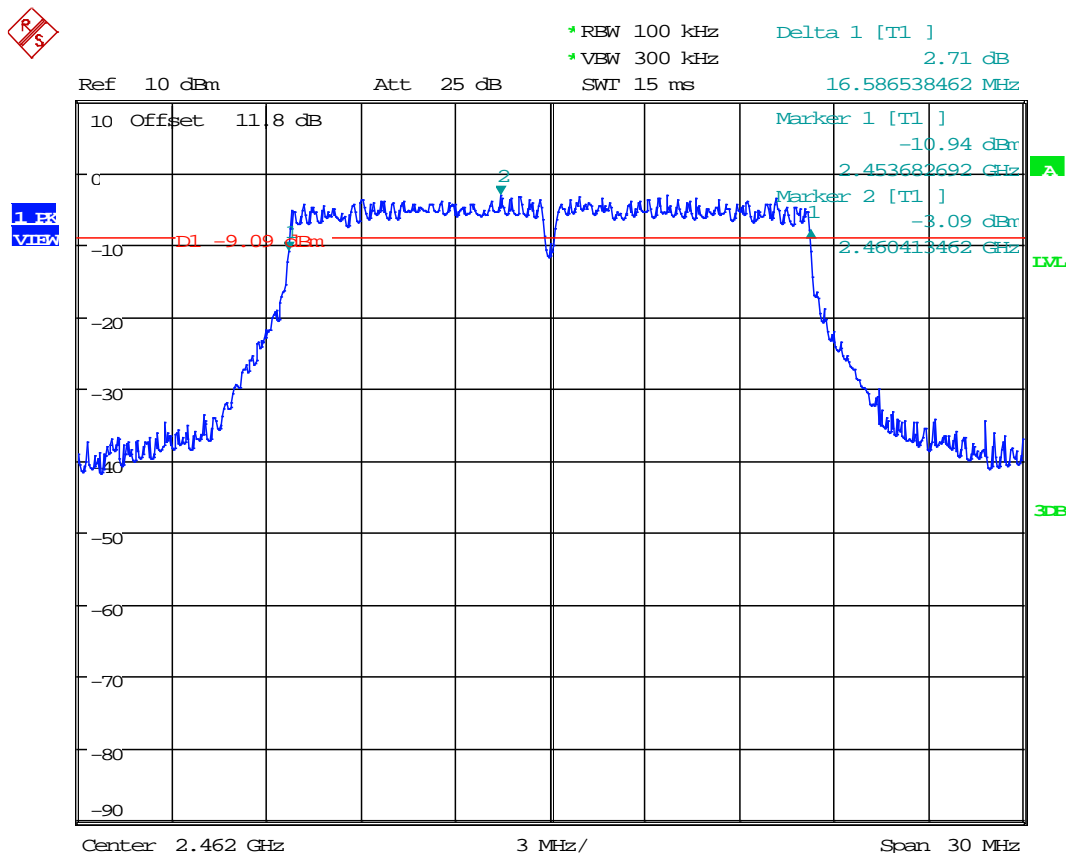


Plot 1.5 – 6dB Bandwidth (FCC)



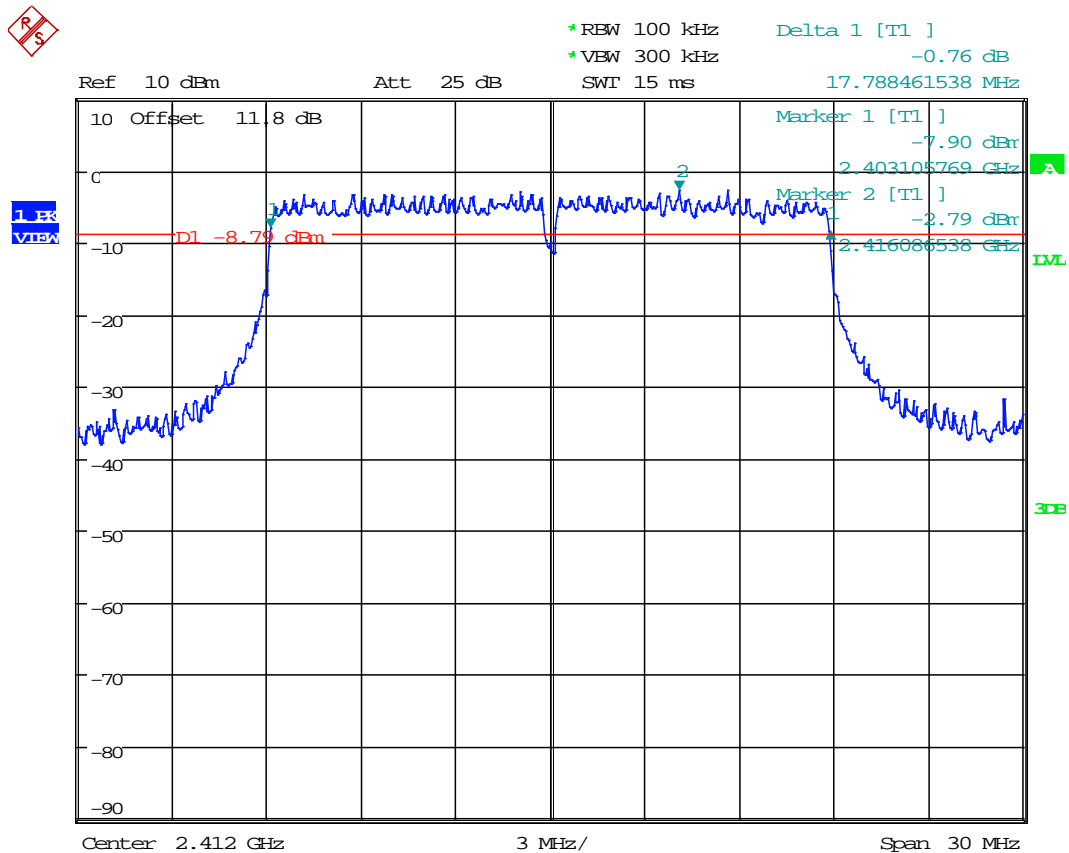
Date: 18.NOV.2015 14:53:57

Plot 1.6 – 6dB Bandwidth (FCC)



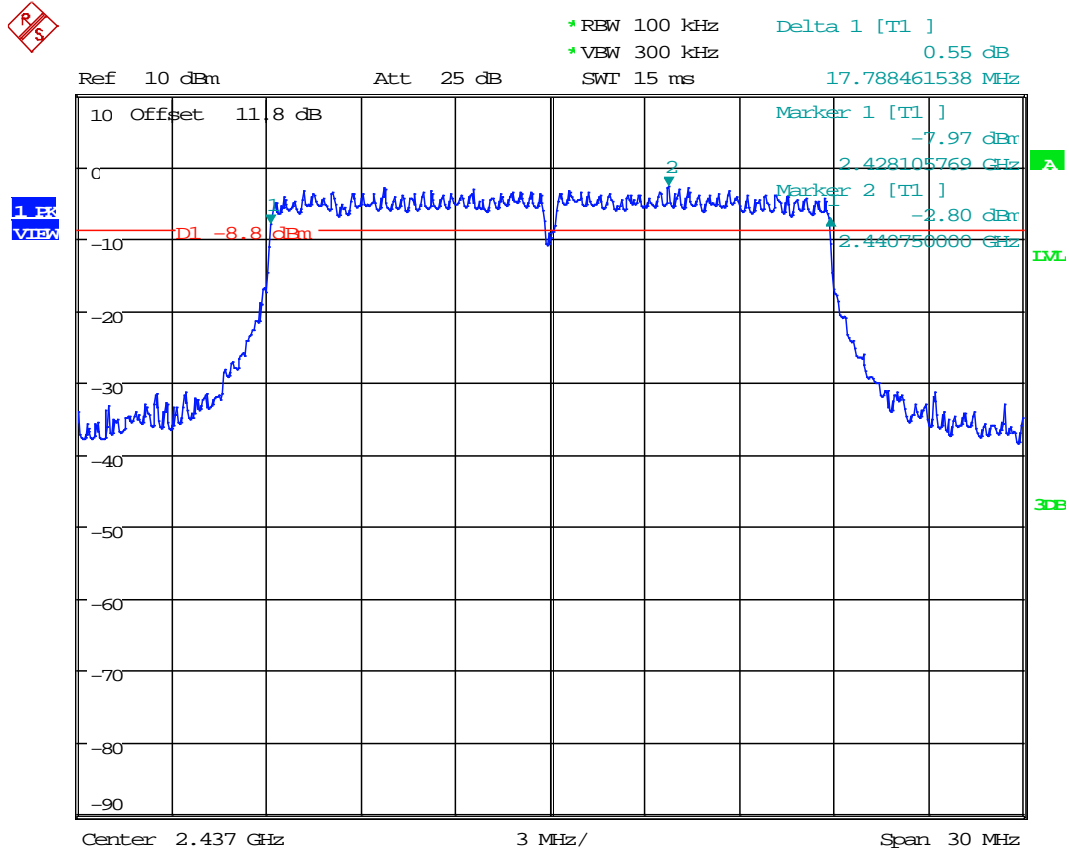
Date: 18.NOV.2015 15:00:50

Plot 1.7 – 6dB Bandwidth (FCC)



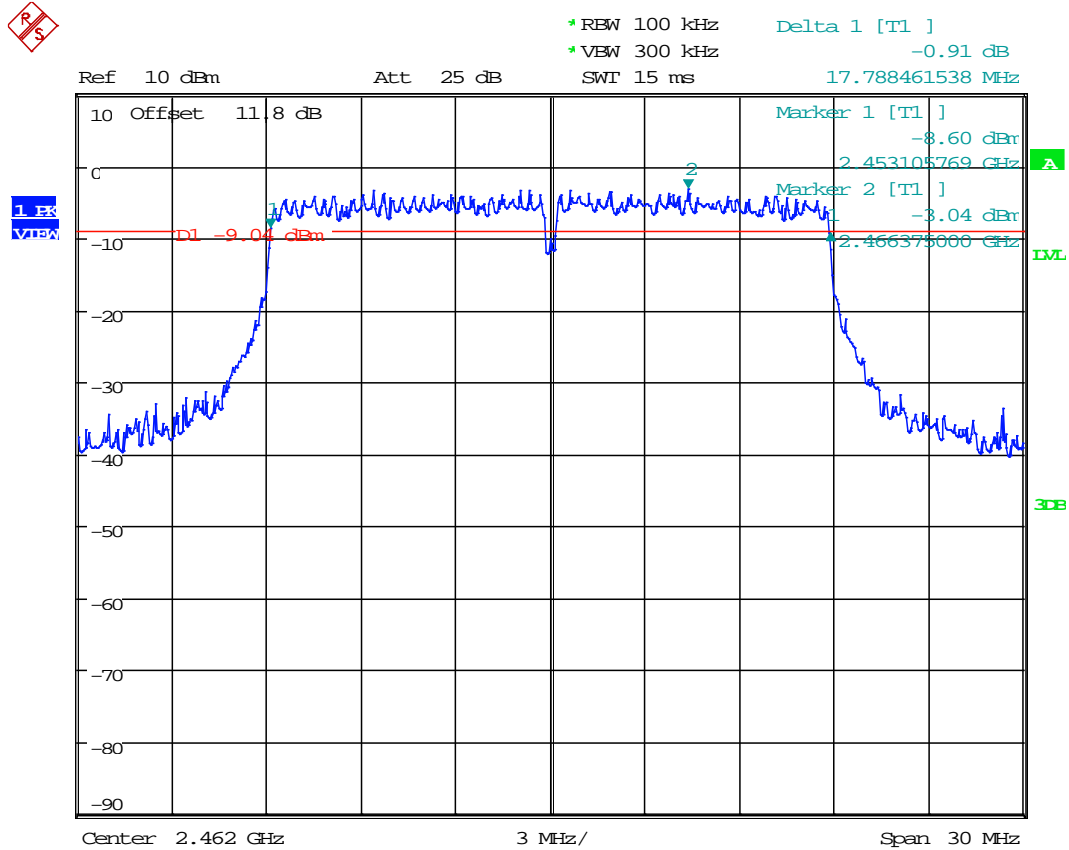
Date: 18.NOV.2015 14:47:03

Plot 1.8 – 6dB Bandwidth (FCC)



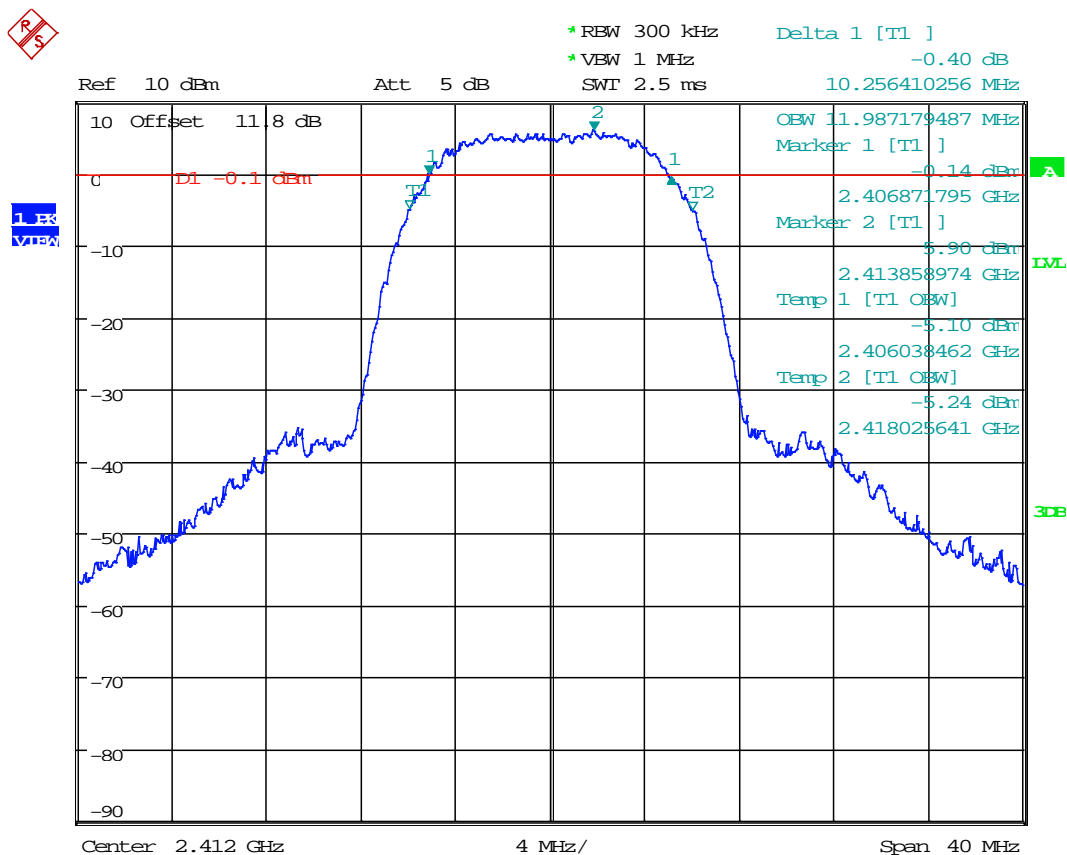
Date: 18.NOV.2015 14:57:09

Plot 1.9 – 6dB Bandwidth (FCC)



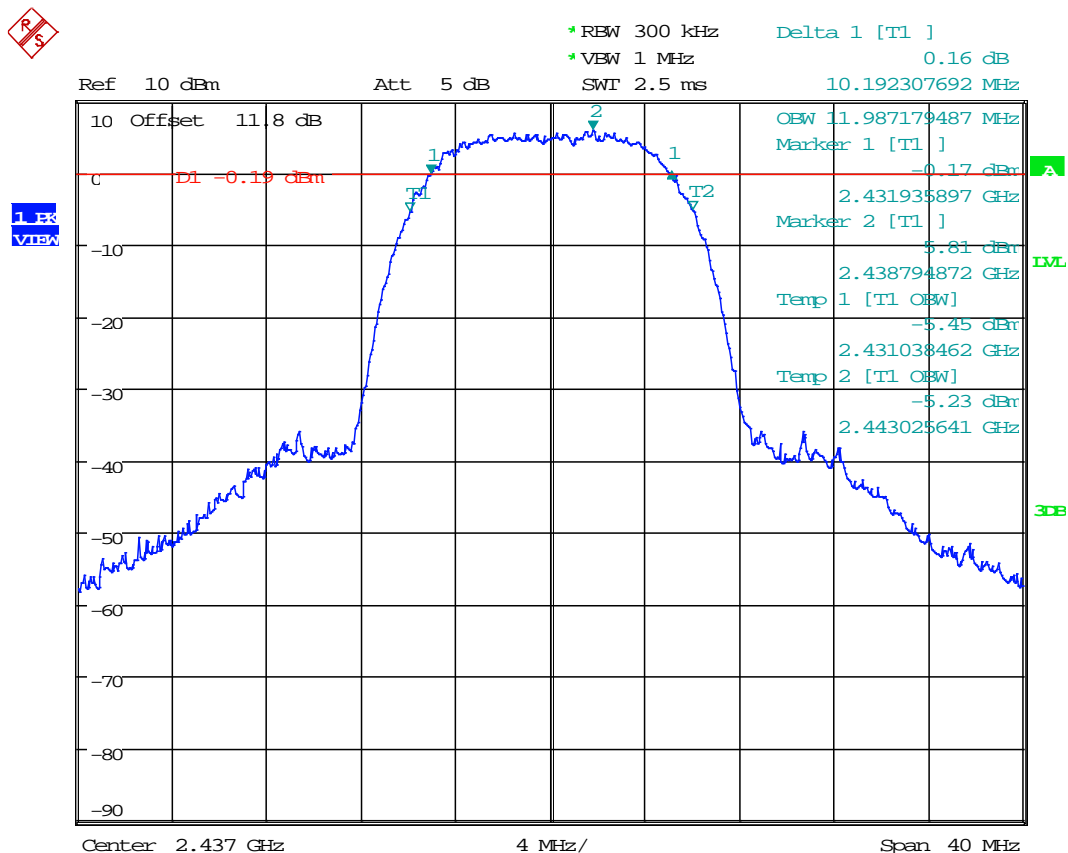
Date: 18.NOV.2015 15:02:30

Plot 1.10 – 99% Bandwidth & 6dB Bandwidth (RSS)



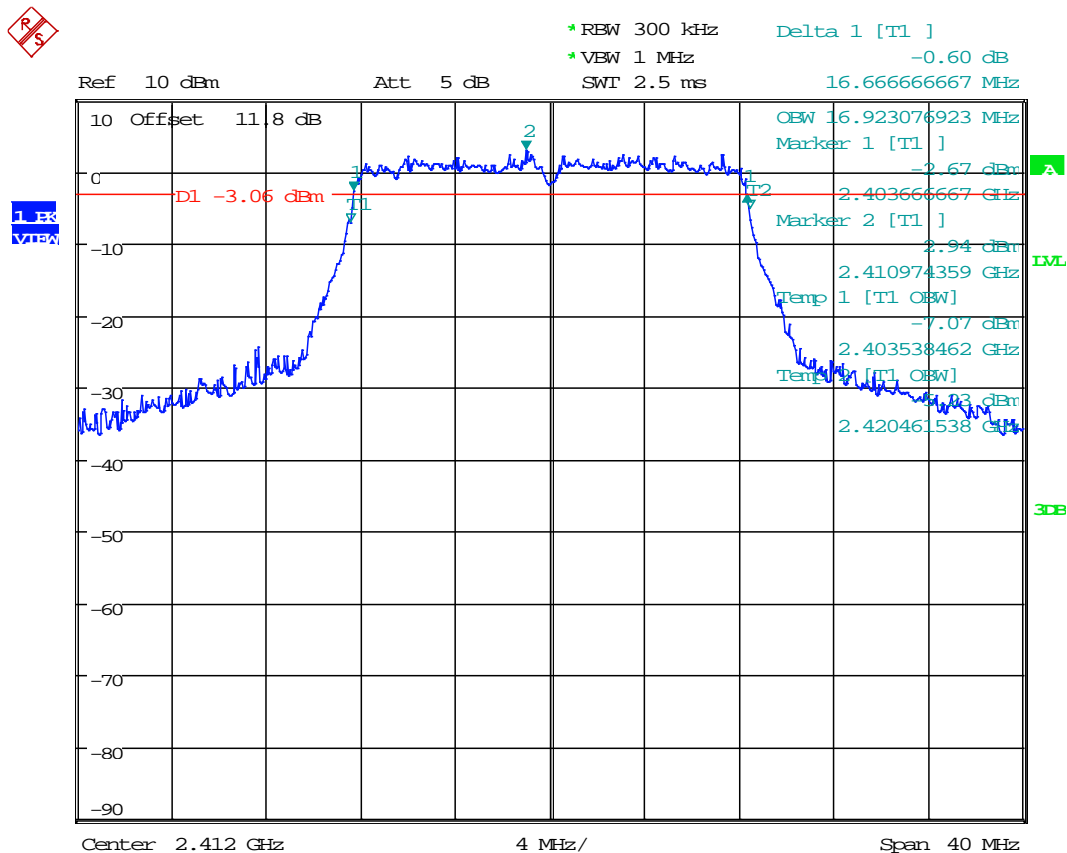
Date: 18.NOV.2015 15:05:51

Plot 1.11 – 99% Bandwidth & 6dB Bandwidth (RSS)



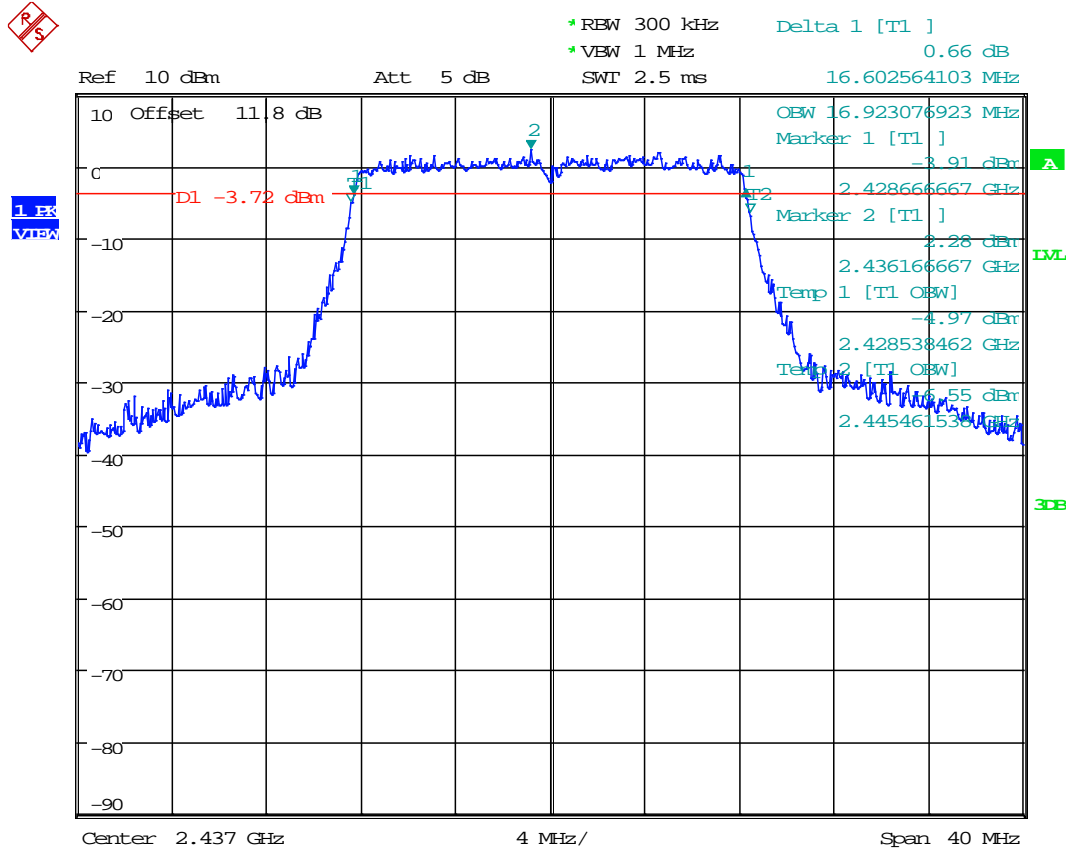
Date: 18.NOV.2015 15:11:26

Plot 1.13 – 99% Bandwidth & 6dB Bandwidth (RSS)



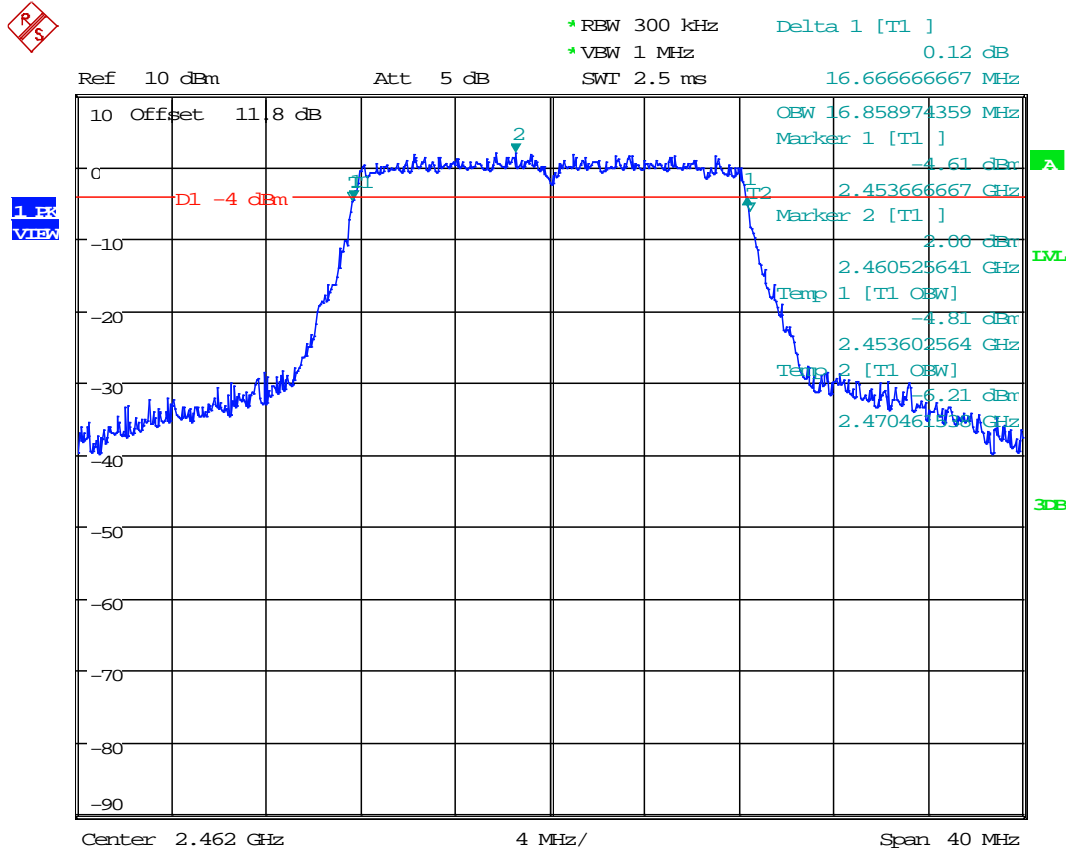
Date: 18.NOV.2015 15:07:33

Plot 1.14 – 99% Bandwidth & 6dB Bandwidth (RSS)



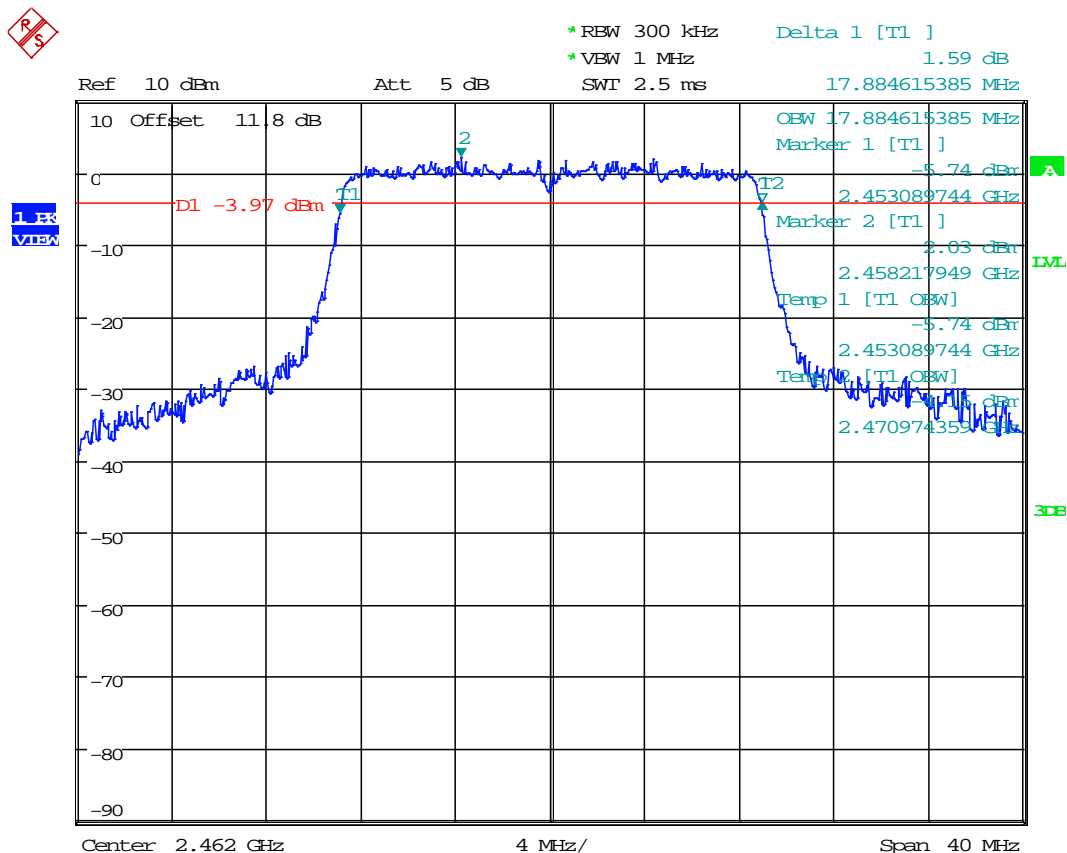
Date: 18.NOV.2015 15:13:04

Plot 1.15 – 99% Bandwidth & 6dB Bandwidth (RSS)



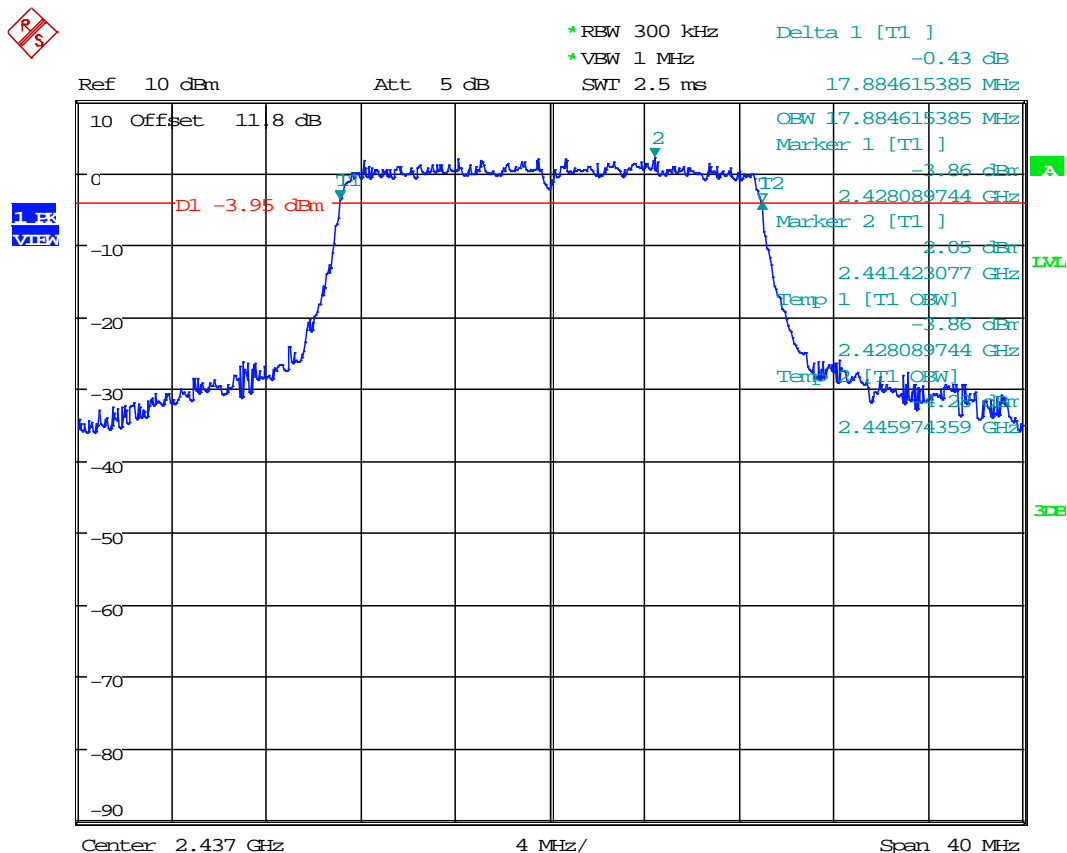
Date: 18.NOV.2015 15:18:29

Plot 1.16 – 99% Bandwidth & 6dB Bandwidth (RSS)



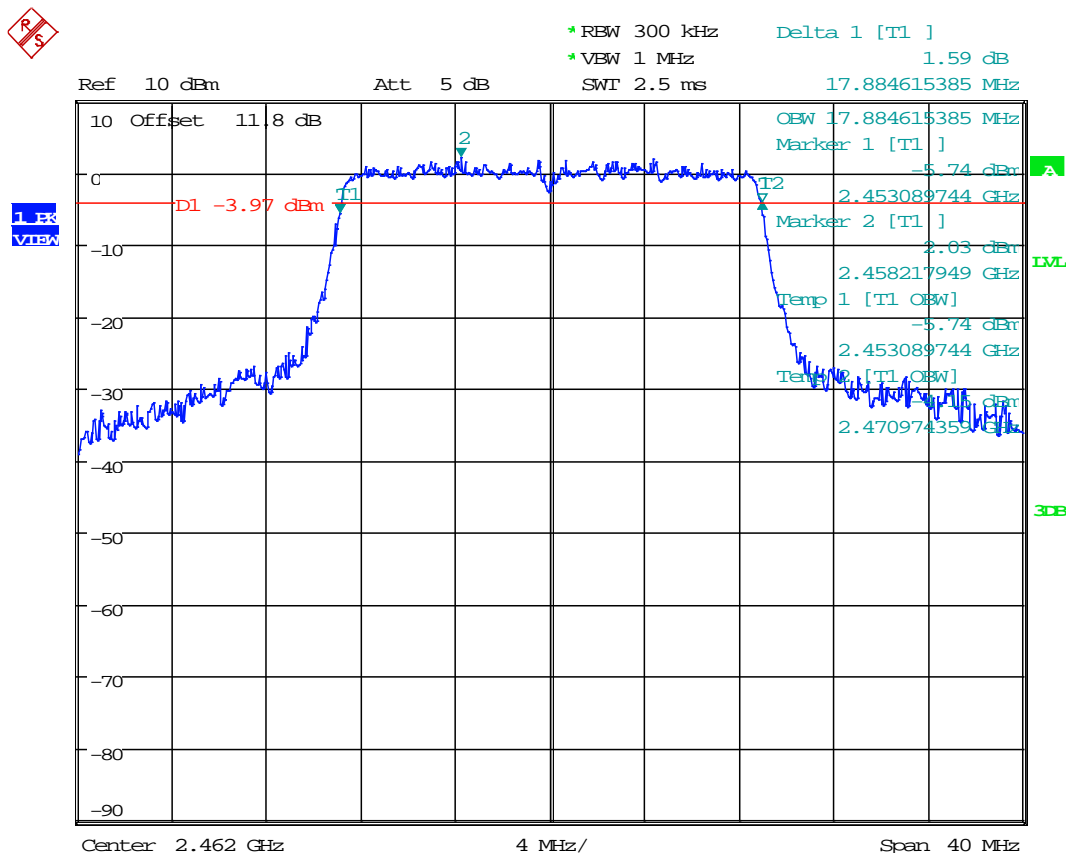
Date: 18.NOV.2015 15:19:48

Plot 1.17 – 99% Bandwidth & 6dB Bandwidth (RSS)



Date: 18.NOV.2015 15:14:16

Plot 1.18 – 99% Bandwidth & 6dB Bandwidth (RSS)



Date: 18.NOV.2015 15:19:48

4.2 Maximum Conducted Output Power at Antenna Terminals FCC Rule 15.247(b)(3)

4.2.1 Requirement

For antennas with gains of 6 dBi or less, maximum allowed transmitter output is 1 watt (+30 dBm).
For antennas with gains greater than 6 dBi, transmitter output level must be decreased appropriately, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

4.2.2 Procedure

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

The procedure described in FCC Publication 558074 D01 DTS Meas Guidance v03r03 June 09, 2015 was used. Specifically, section 9.2.2.2 Method AVGSA-1.

1. Set the RBW = 1-5% of the OBW, not to exceed 1MHz.
2. Set the VBW $\geq 3 \times$ RBW
3. Set the span $\geq 1.5 \times$ OBW.
4. Detector = RMS.
5. Sweep time = auto couple.
6. Trace mode = power averaging (100 traces)
7. Number of points in sweep $\geq 2 \times$ span/RBW.
8. Use the instrument's band/channel power measurement function with the band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels at intervals equal to the RBW extending across the entire OBW of the spectrum.



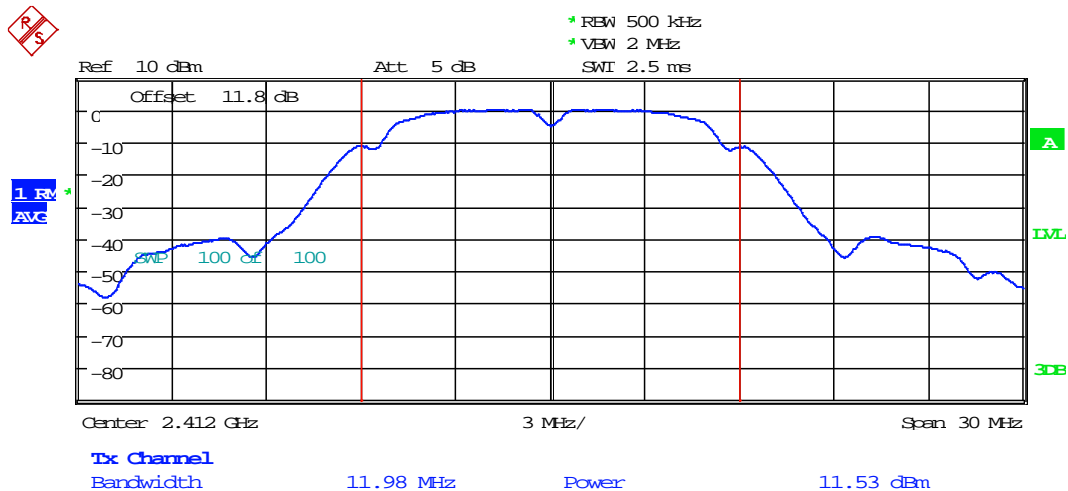
4.3.3 Test Result

Date of Test:	November 18, 2015
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Refer to the following plots for the test result:

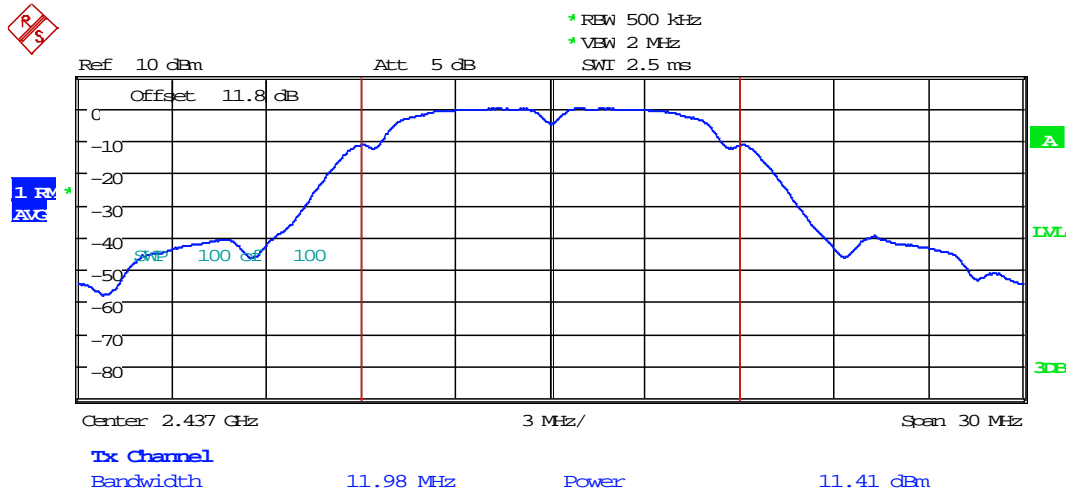
Standard	Data Rate	Channel	Frequency MHz	Conducted Average Power dBm	Conducted Average Power mW	Plot #
802.11b	2 Mbps	1	2412	11.53	14.22	2.1
		6	2437	11.41	13.84	2.2
		11	2462	11.30	13.49	2.3
802.11g	18 Mbps	1	2412	10.56	11.38	2.4
		6	2437	10.26	10.62	2.5
		11	2462	10.17	10.40	2.6
HT20	MCS0	1	2412	10.61	11.51	2.7
		6	2437	10.49	11.20	2.8
		11	2462	10.37	10.89	2.9

Plot 2. 1



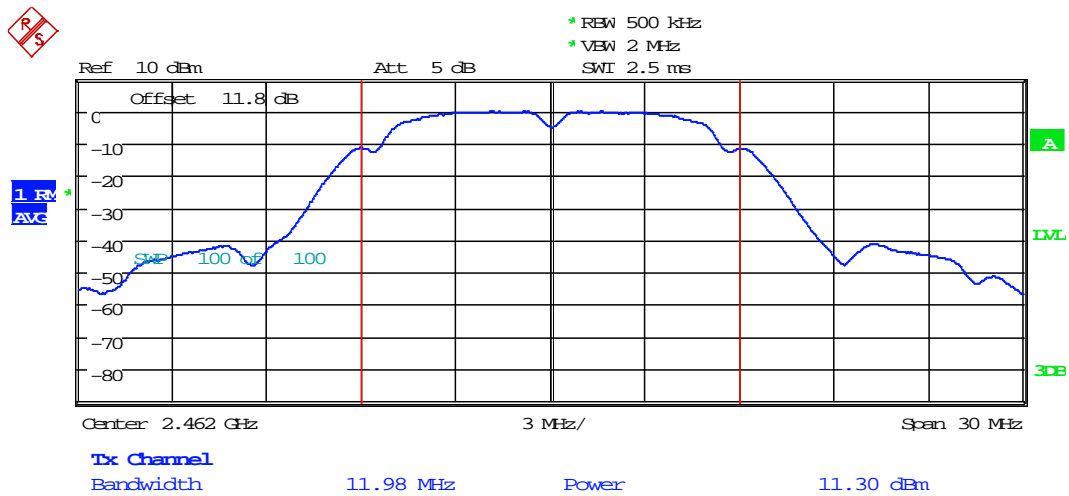
Date: 18.NOV.2015 15:29:50

Plot 2. 2



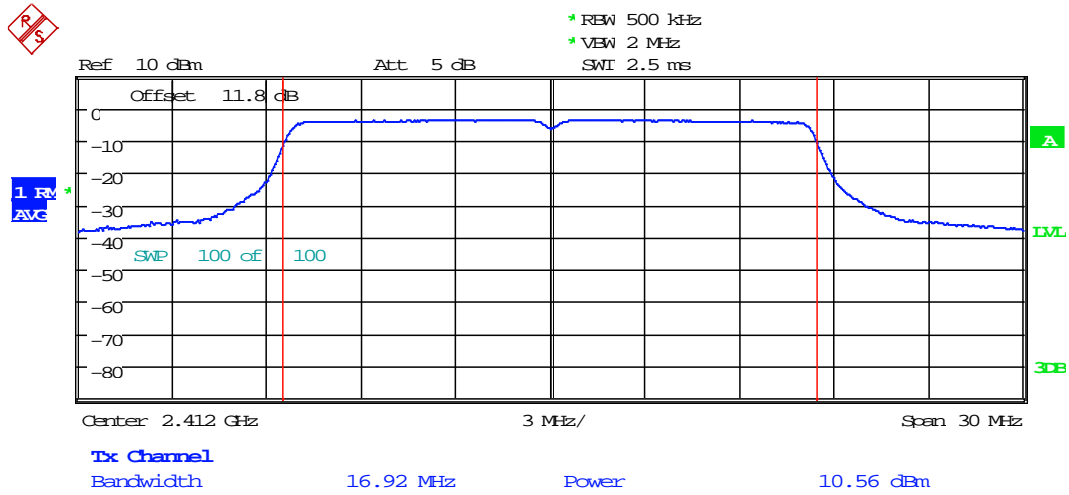
Date: 18.NOV.2015 16:33:27

Plot 2.3



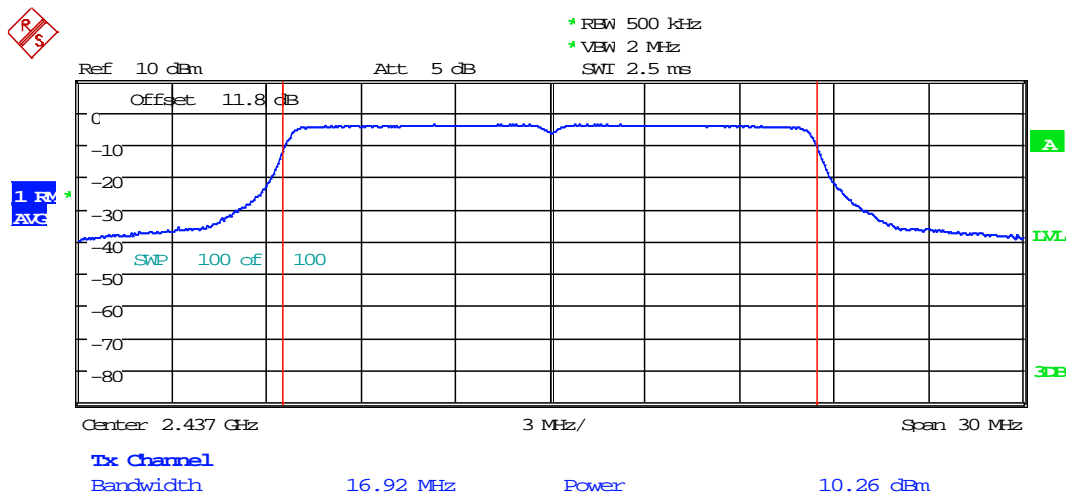
Date: 18.NOV.2015 16:31:50

Plot 2. 4



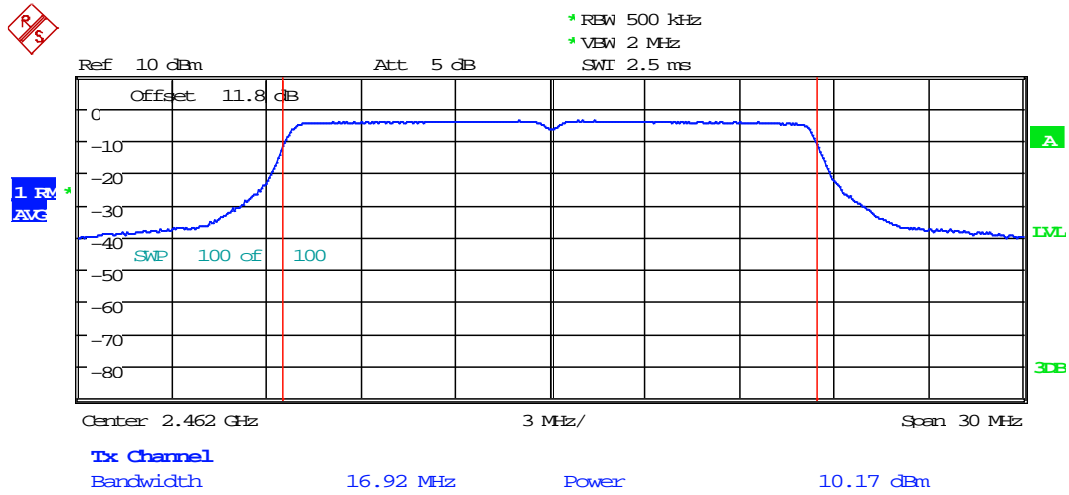
Date: 18.NOV.2015 16:10:36

Plot 2. 5



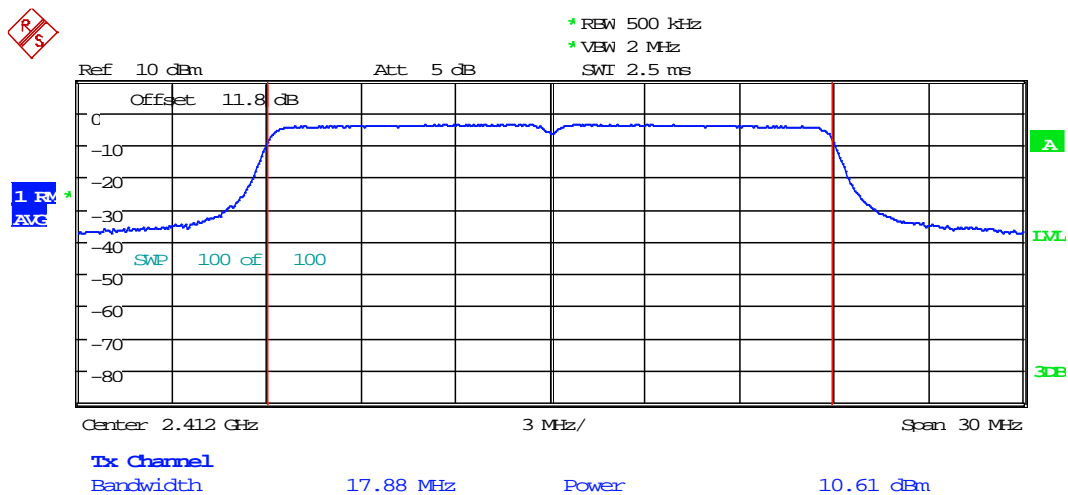
Date: 18.NOV.2015 16:34:21

Plot 2. 6



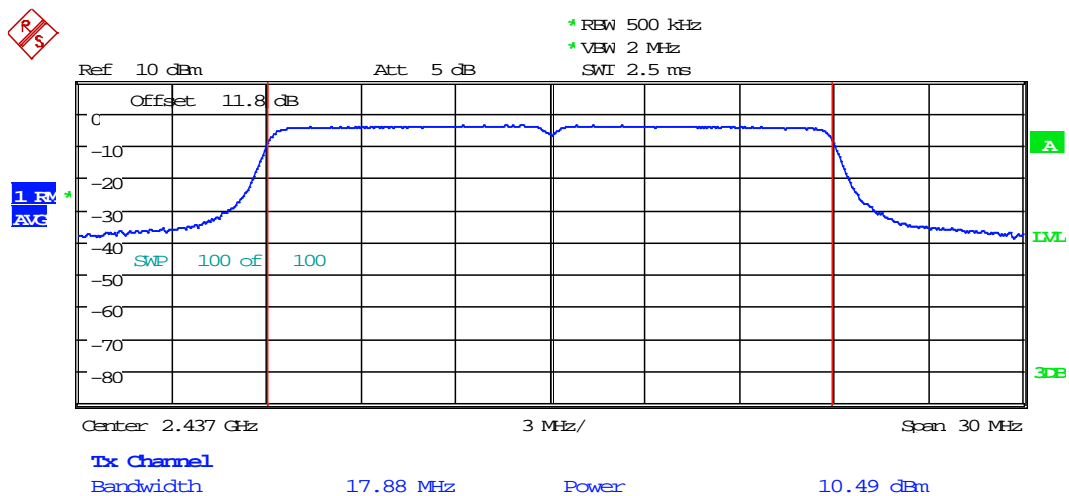
Date: 18.NOV.2015 16:36:03

Plot 2. 7



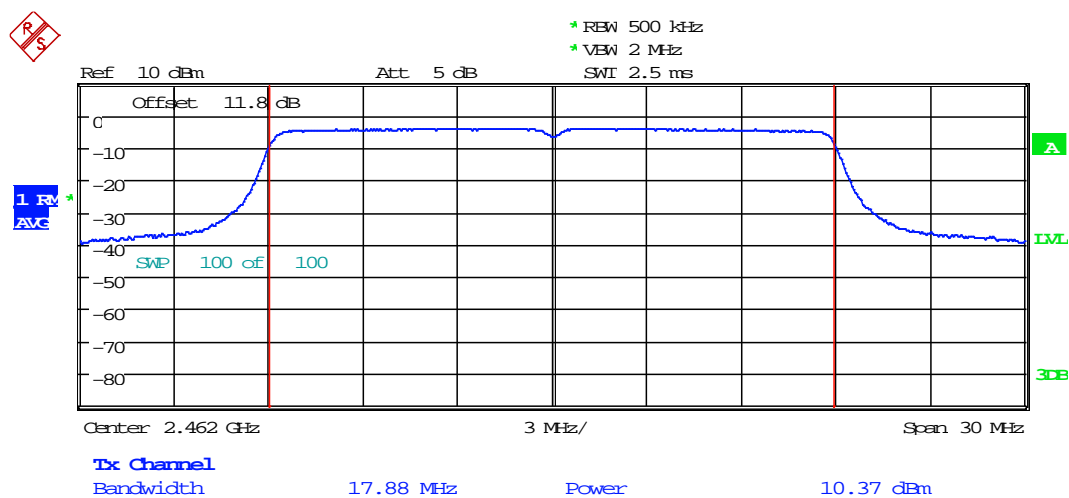
Date: 18.NOV.2015 16:26:13

Plot 2. 8



Date: 18.NOV.2015 16:38:21

Plot 2. 9



Date: 18.NOV.2015 16:37:18

4.3 Power Spectral Density FCC 15.247 (e)

4.3.1 Requirement

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna should not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission.

4.3.2 Procedure

The antenna port of the EUT was connected to the input of a spectrum analyzer to measure the Transmitter Power Density (PSD).

The procedure described in FCC Publication 558074 D01 DTS Meas Guidance v03r03 June 09 2015, specifically section 10.2 Method PKPSD (peak PSD).

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the *DTS bandwidth*.
3. Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
4. Set the VBW $\geq 3 \times \text{RBW}$.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

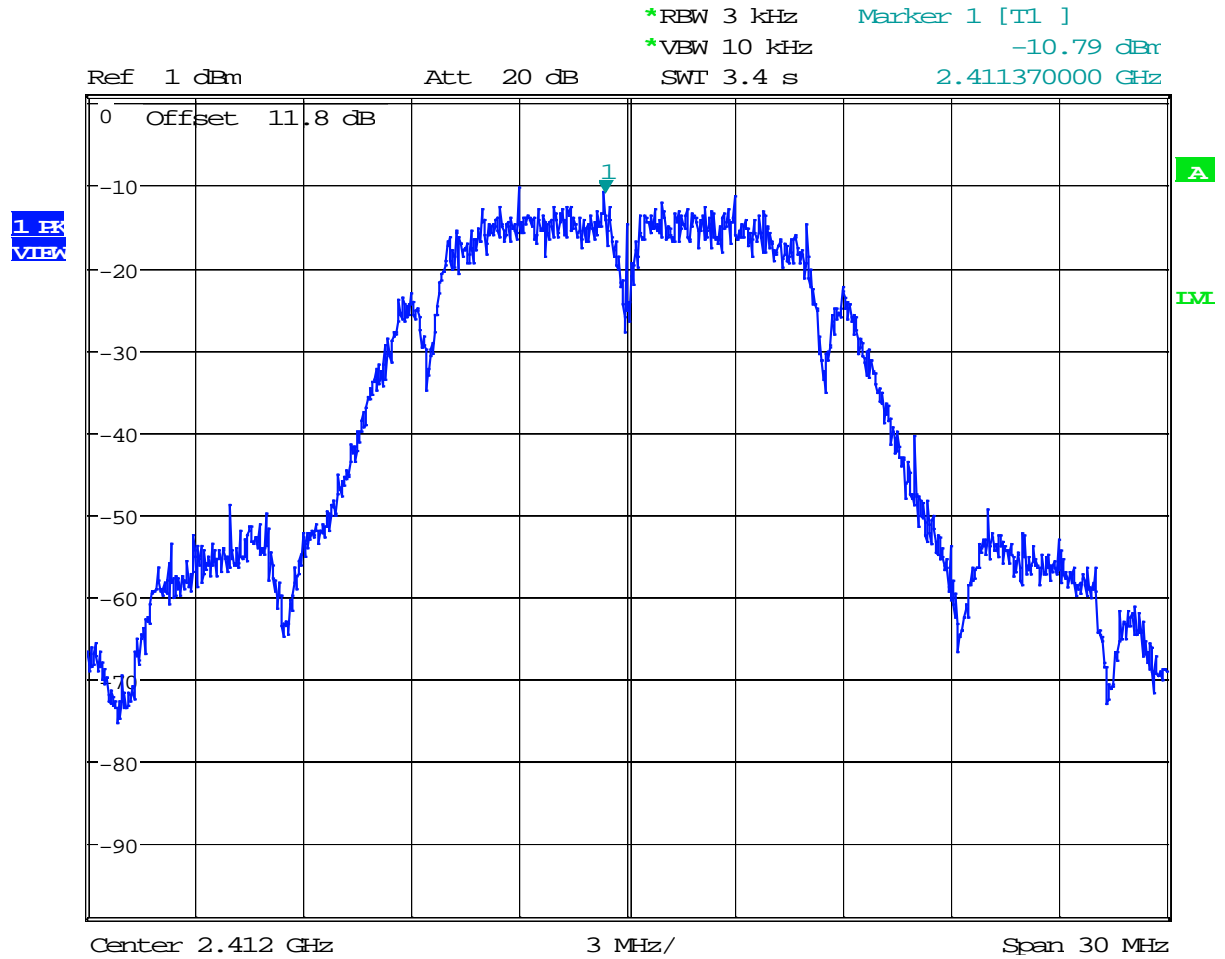
4.3.3 Test Result

Date of Test:	November 19, 2015
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Refer to the following plots for the test result:

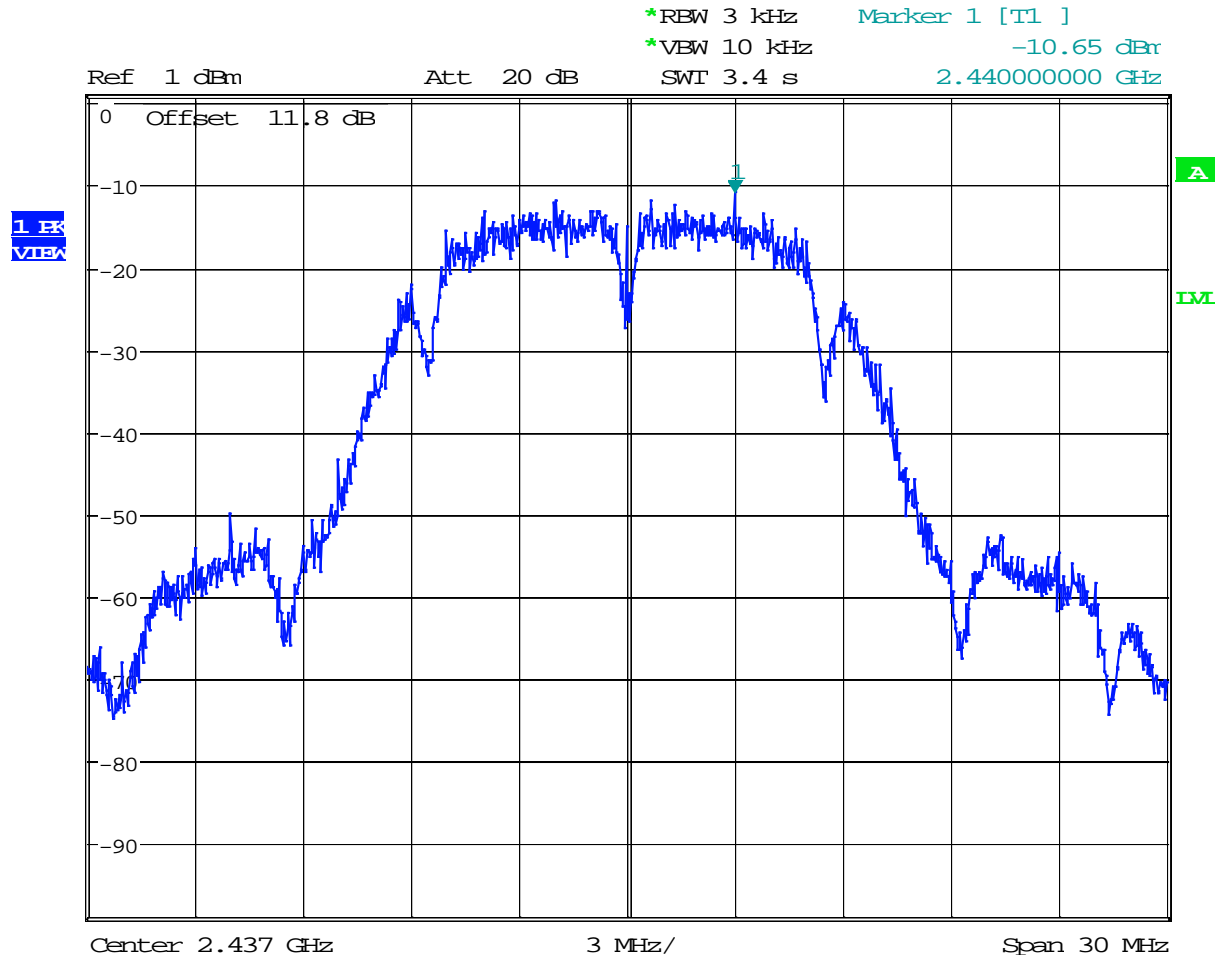
Standard	Channel	Frequency MHz	PSD (Peak) dBm	Margin to 8dBm Limit dB	Plot #
802.11b	1	2412	-10.79	-18.79	3.1
	6	2437	-10.65	-18.65	3.2
	11	2462	-12.05	-20.05	3.3
802.11g	1	2412	-14.16	-22.16	3.4
	6	2437	-14.29	-22.29	3.5
	11	2462	-15.16	-23.16	3.6
802.11n 20MHz	1	2412	-15.08	-23.08	3.7
	6	2437	-15.29	-23.29	3.7
	11	2462	-15.68	-23.68	3.9

Plot 3.1



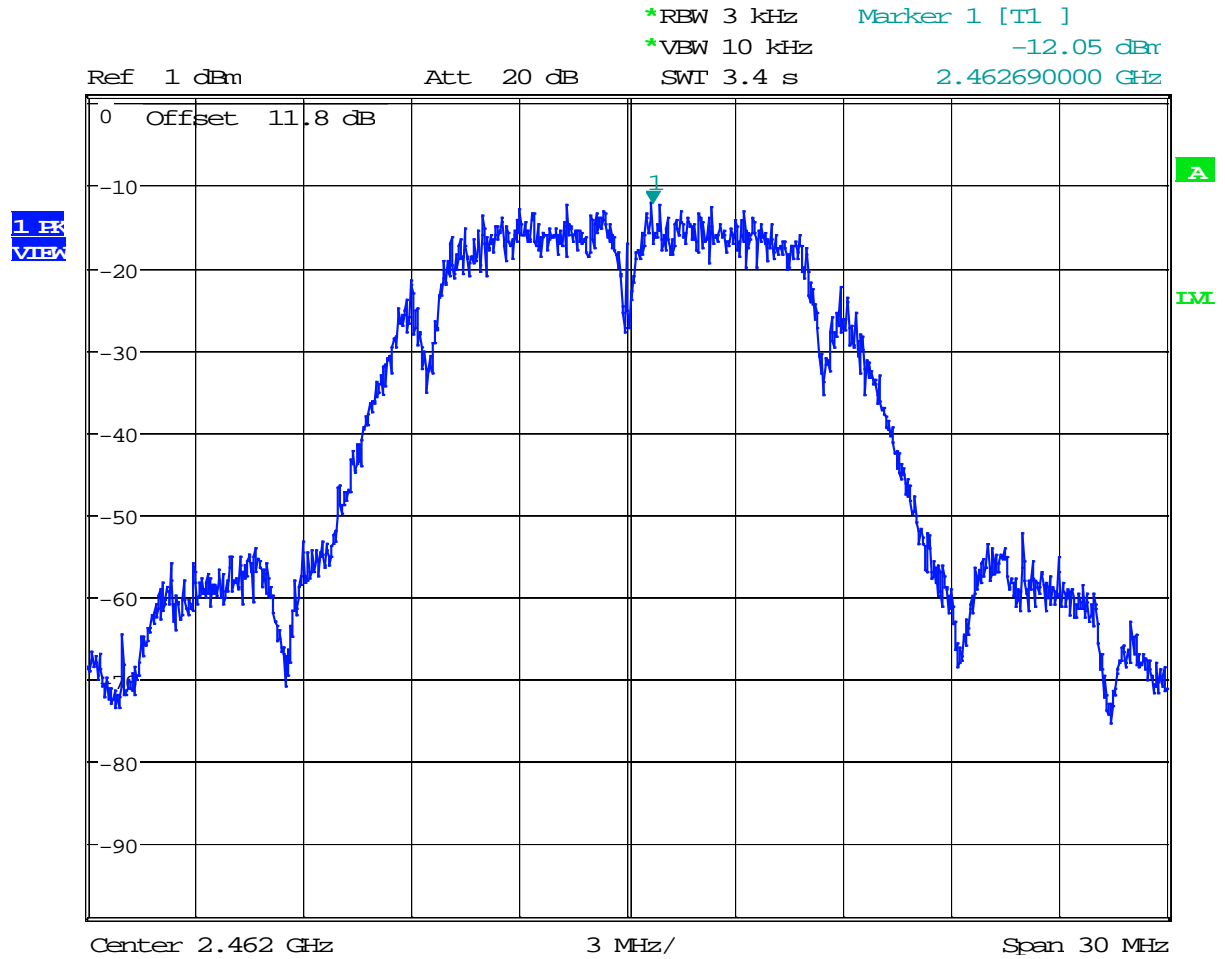
Date: 19.NOV.2015 17:01:07

Plot 3.2



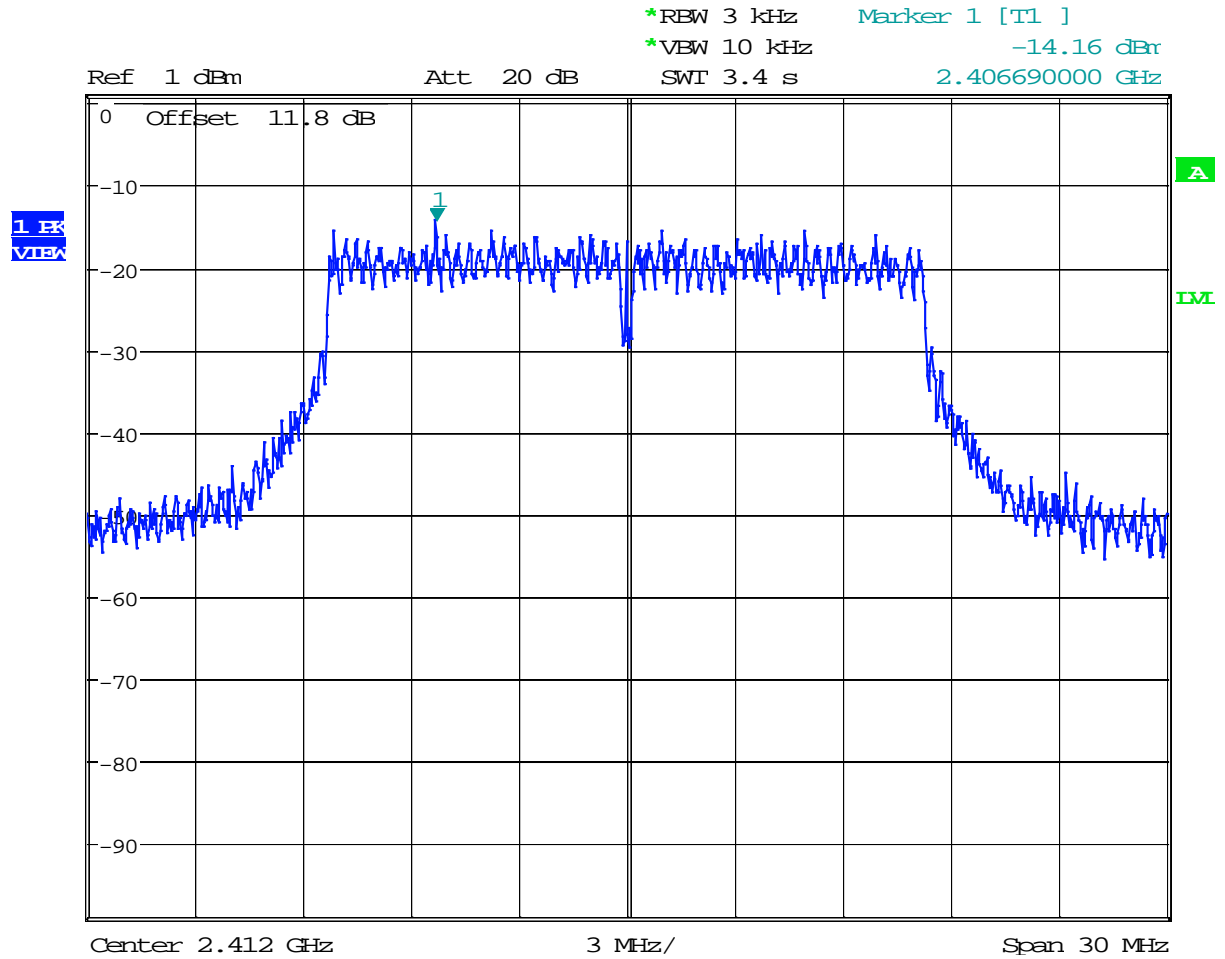
Date: 19.NOV.2015 17:04:25

Plot 3.3



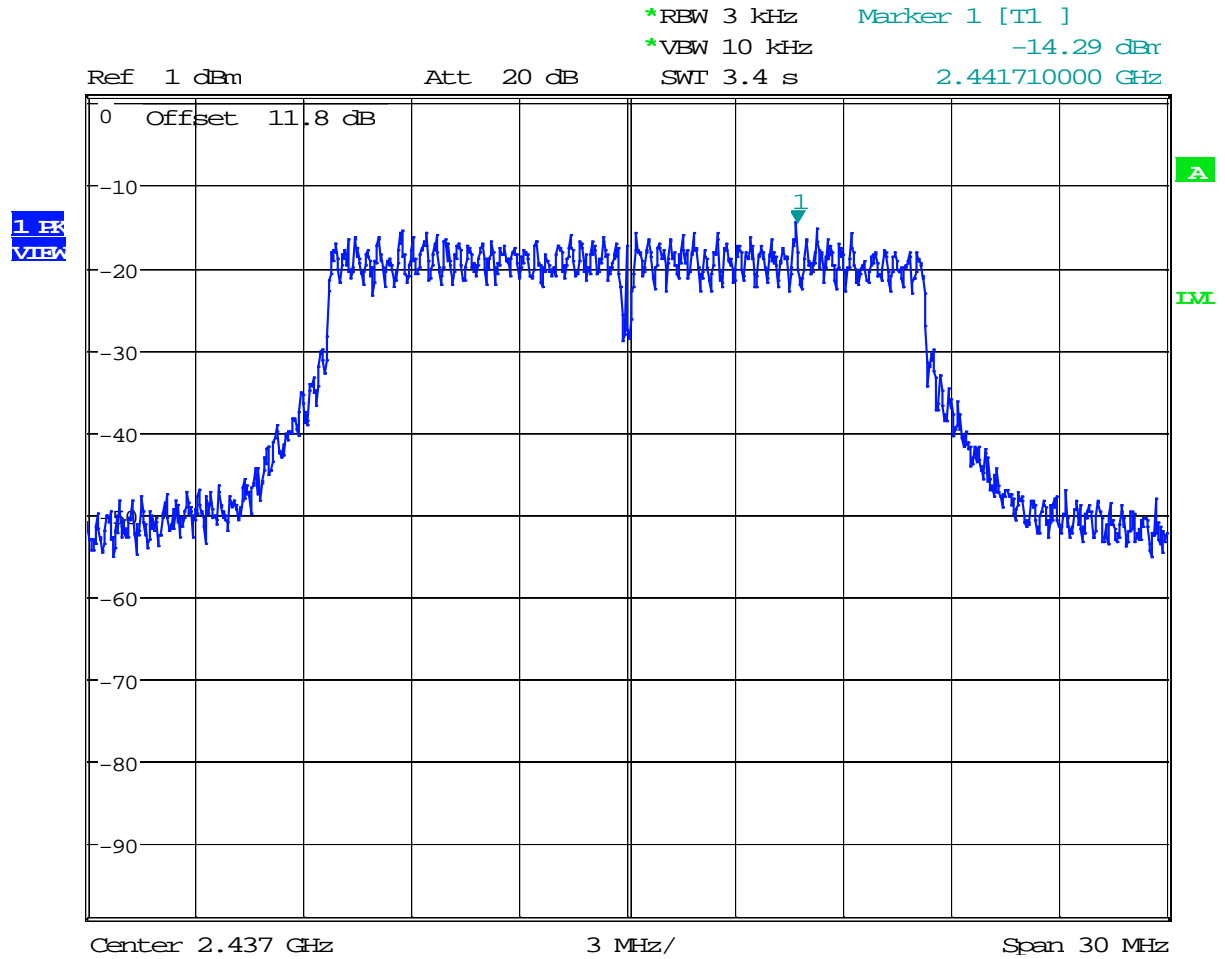
Date: 19.NOV.2015 17:06:54

Plot 3.4



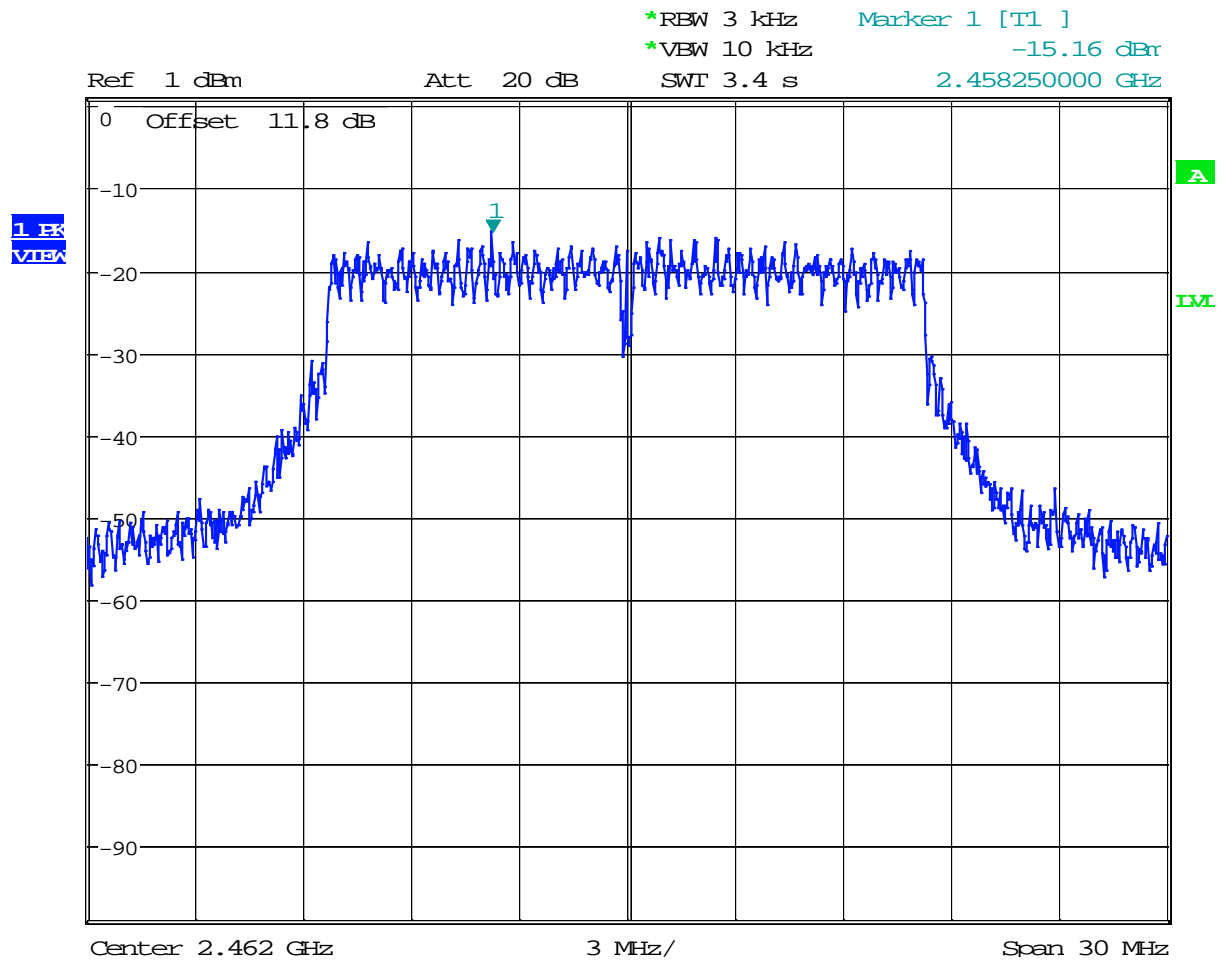
Date: 19.NOV.2015 17:02:01

Plot 3.5



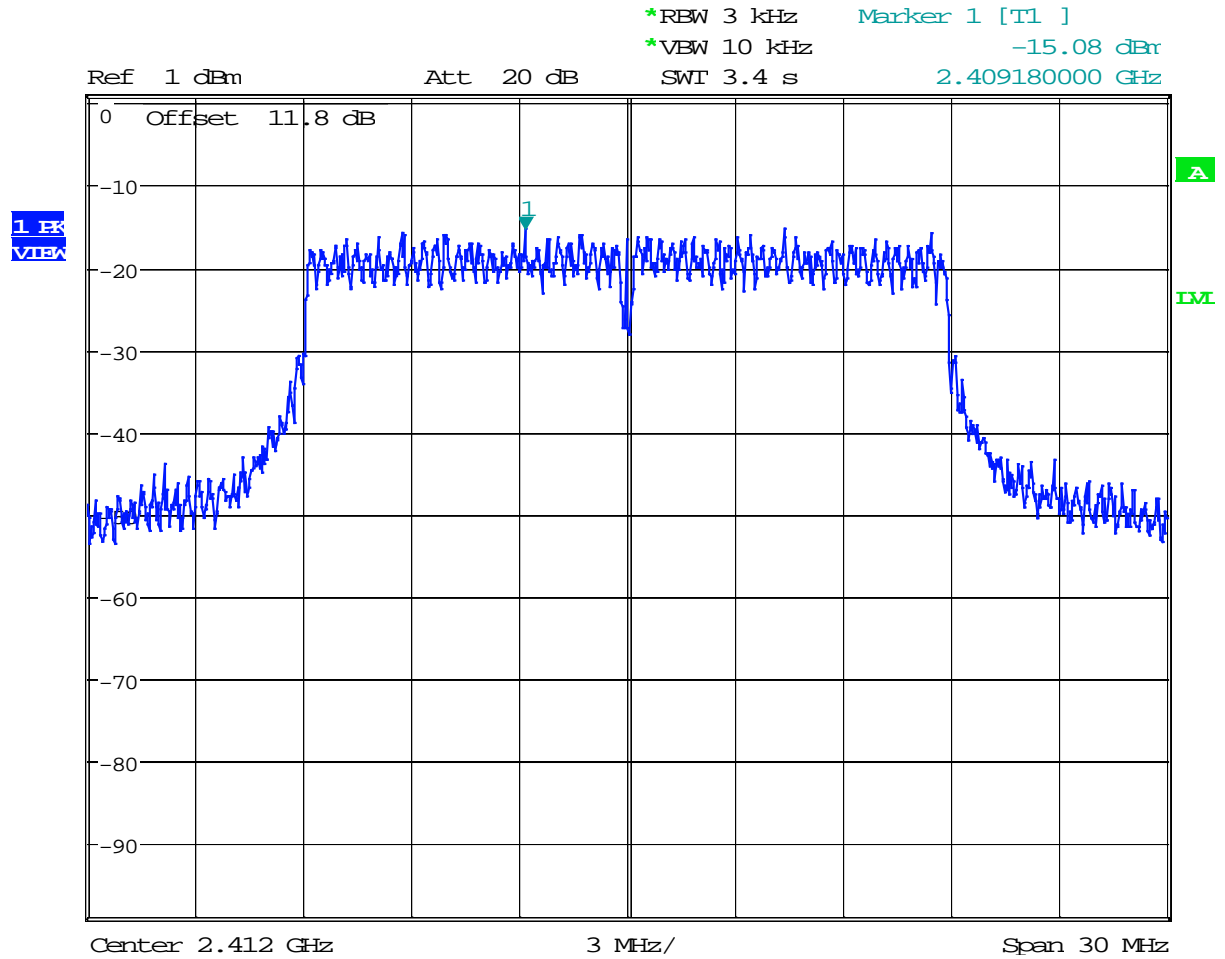
Date: 19.NOV.2015 17:05:11

Plot 3.6



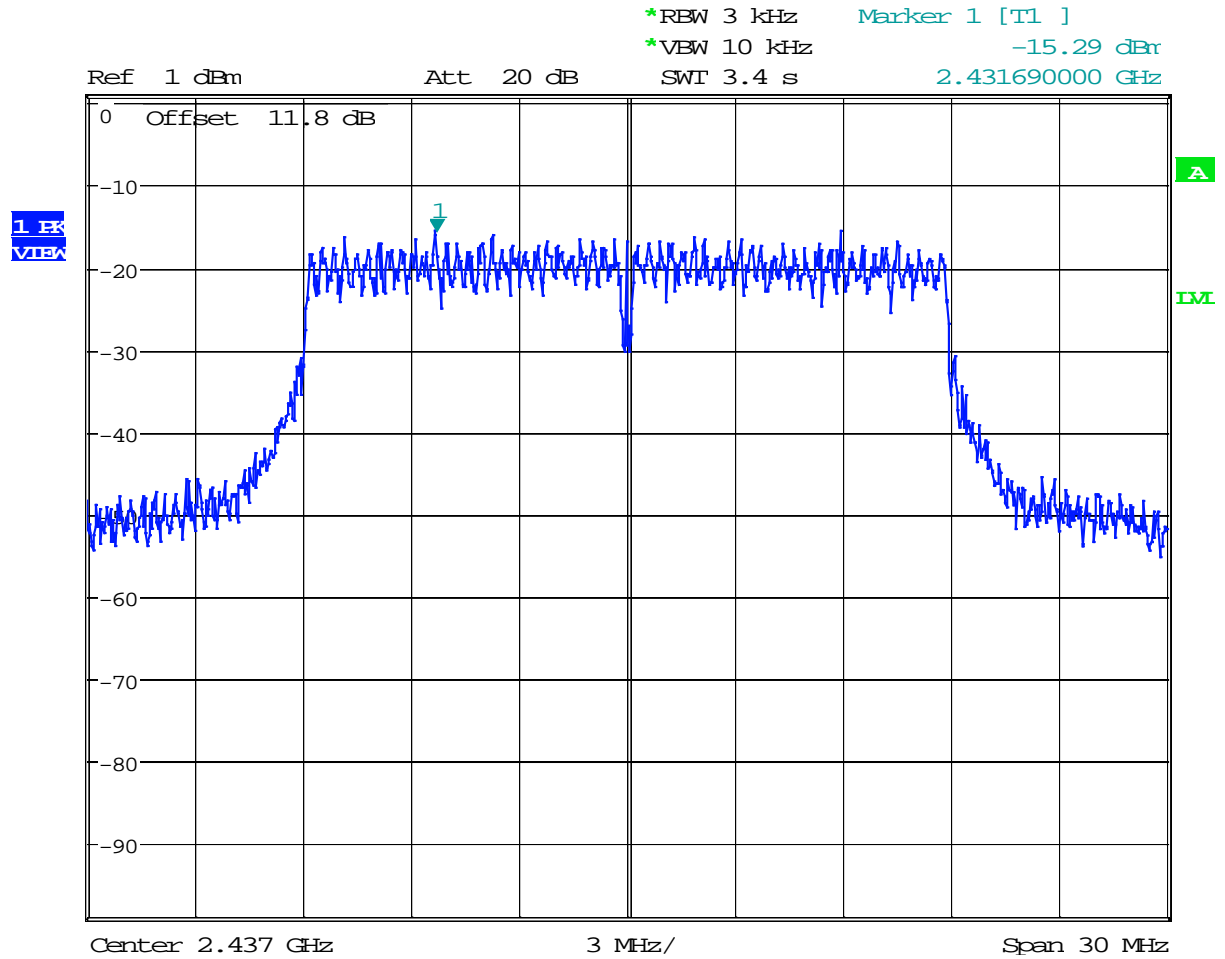
Date: 19.NOV.2015 17:07:38

Plot 3.7



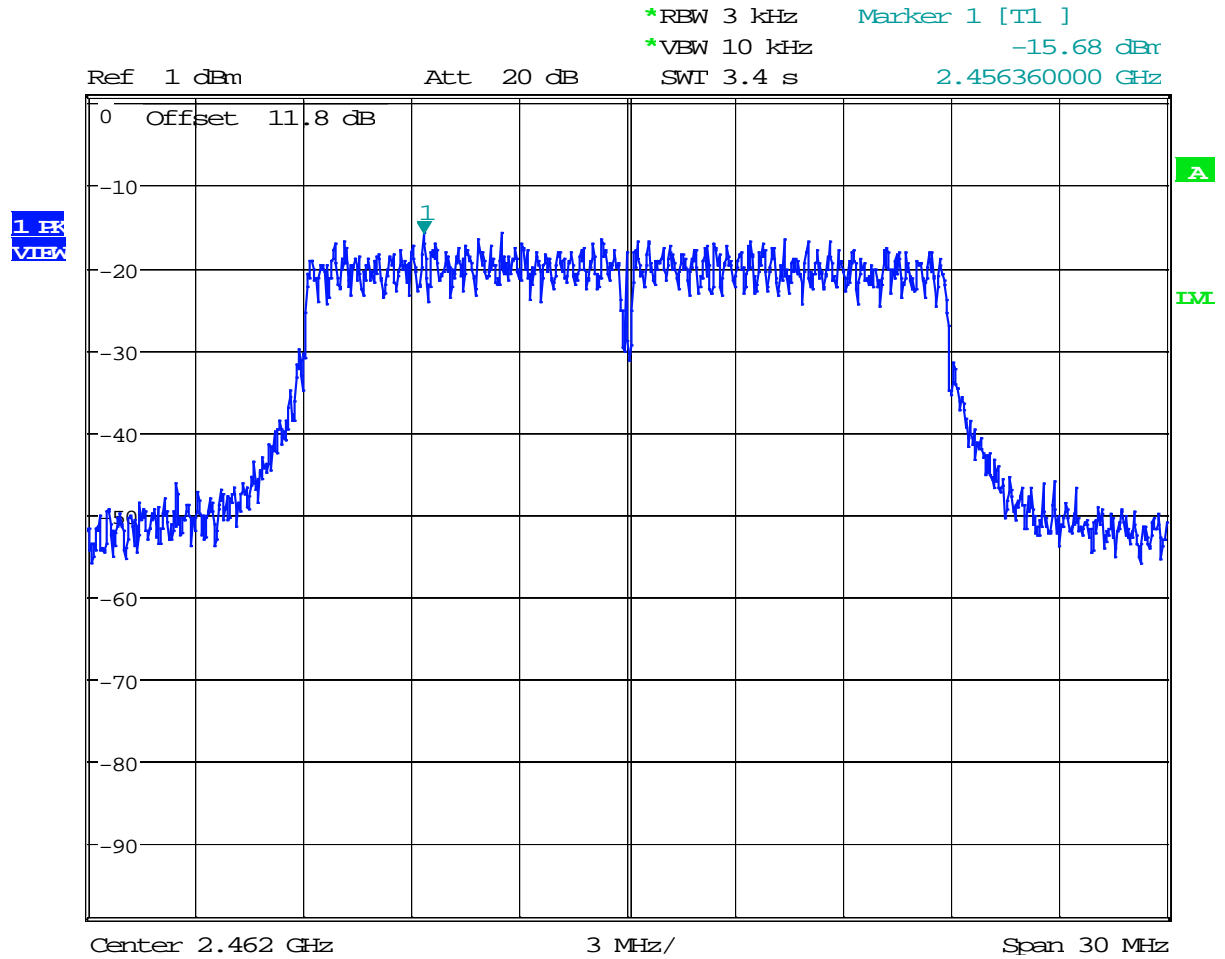
Date: 19.NOV.2015 17:03:01

Plot 3.8



Date: 19.NOV.2015 17:05:51

Plot 3.9



Date: 19.NOV.2015 17:08:49

4.4 Out-of-Band Conducted Emissions FCC 15.247(d)

4.4.1 Requirement

In any 100 kHz bandwidths outside the EUT pass-band, the RF power shall be at least 20dB (peak) or 30 dB (average) below that of the maximum in-band 100 kHz emissions.

4.4.2 Procedure

A spectrum analyzer was connected to the antenna port of the transmitter. Analyzer Resolution Bandwidth was set to 100 kHz. For each channel investigated, the in-band and out-of-band emission measurements were performed. The out-of-band emissions were measured from 30 MHz to 25 GHz.

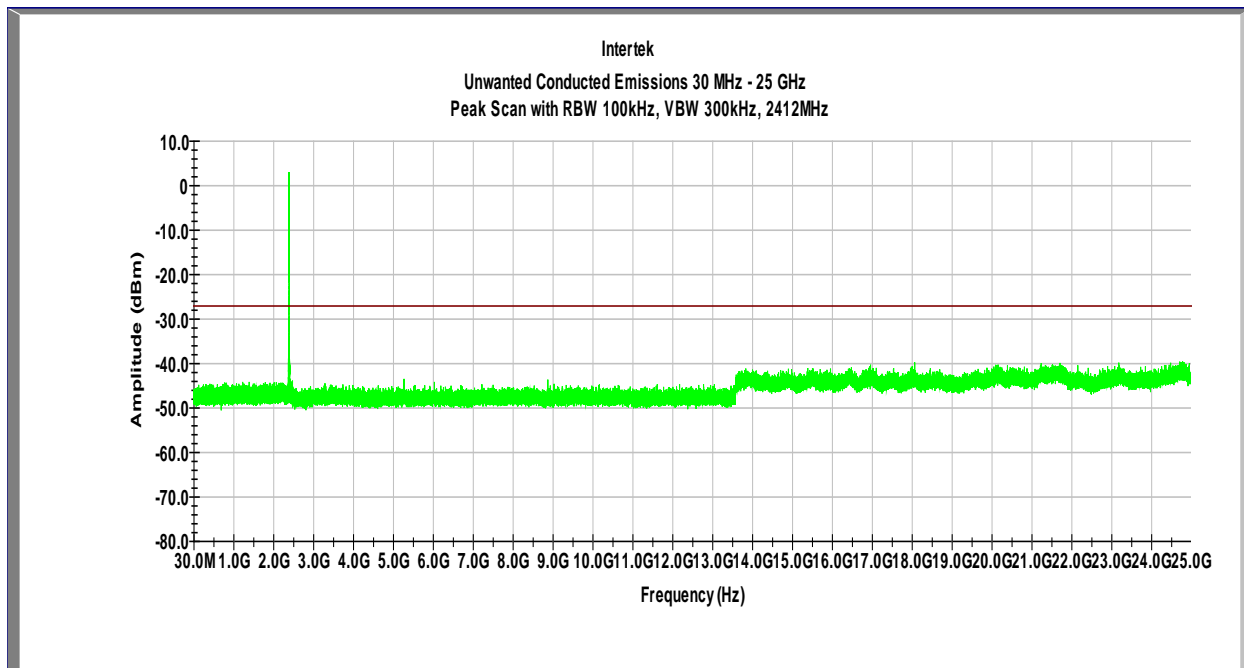
4.4.3 Test Result

Refer to the following plots 4.1 – 4.9 for unwanted conducted emissions. The plot shows -30dB attenuation limit line.

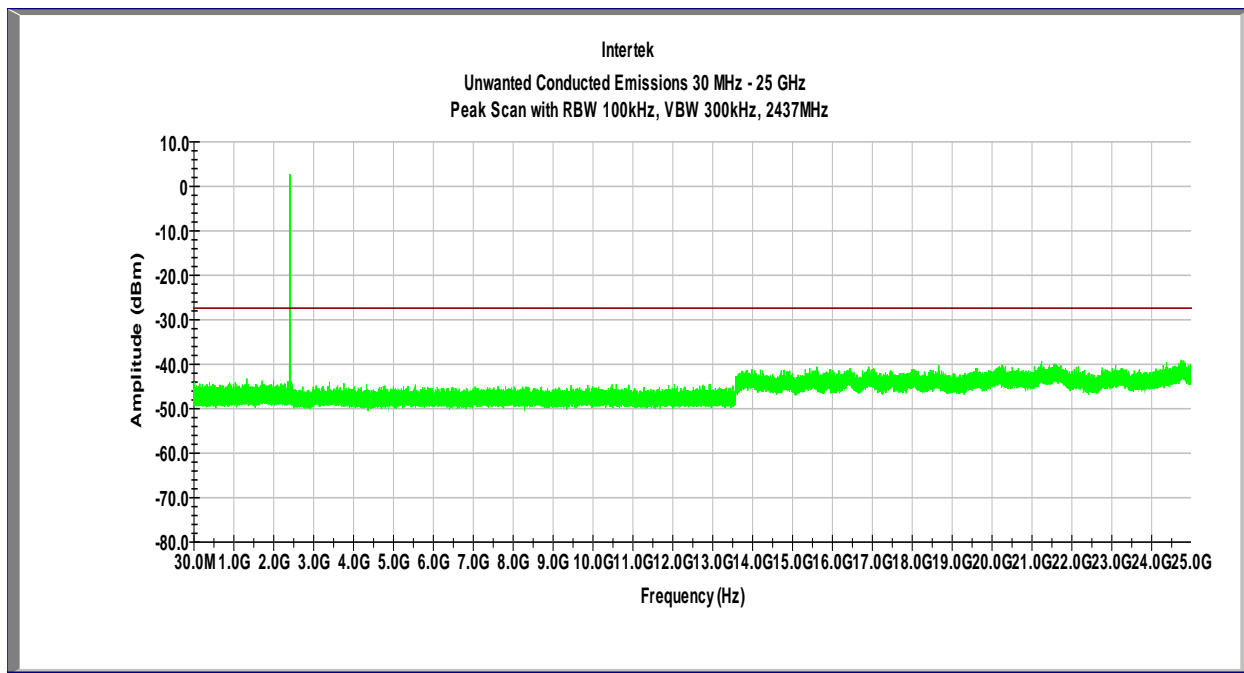
Results	Complies
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Date of Test:	November 23, 2015
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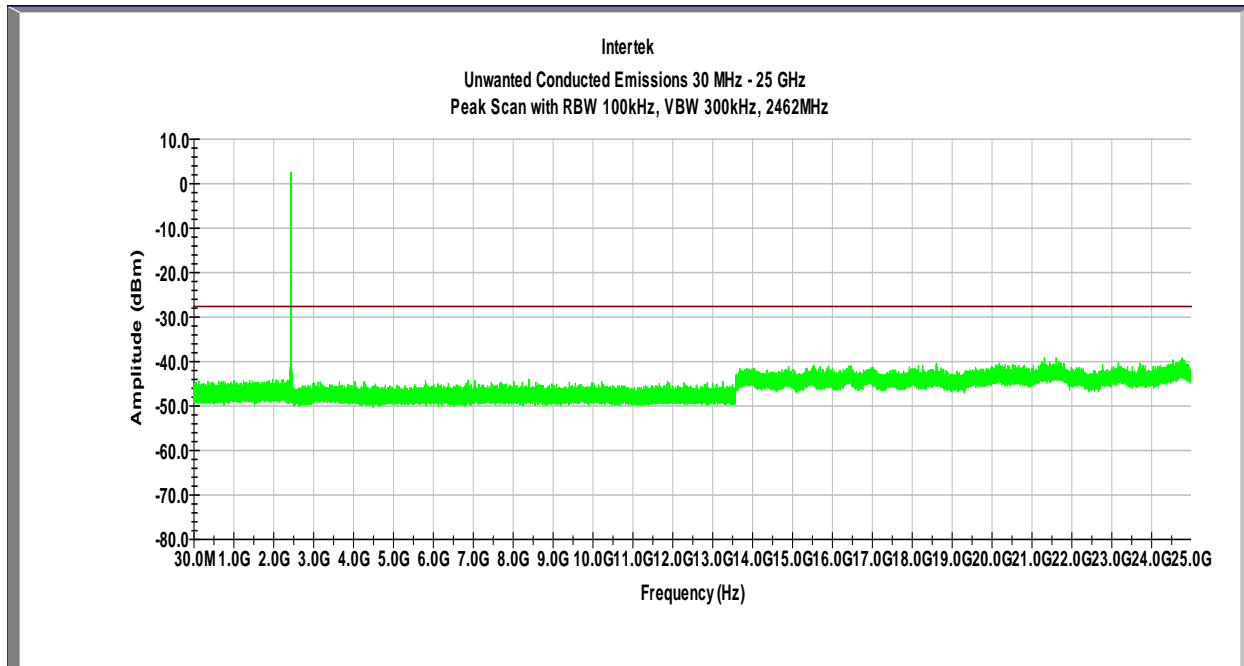
Plot 4.1
Tx @ 2412MHz 802.11b



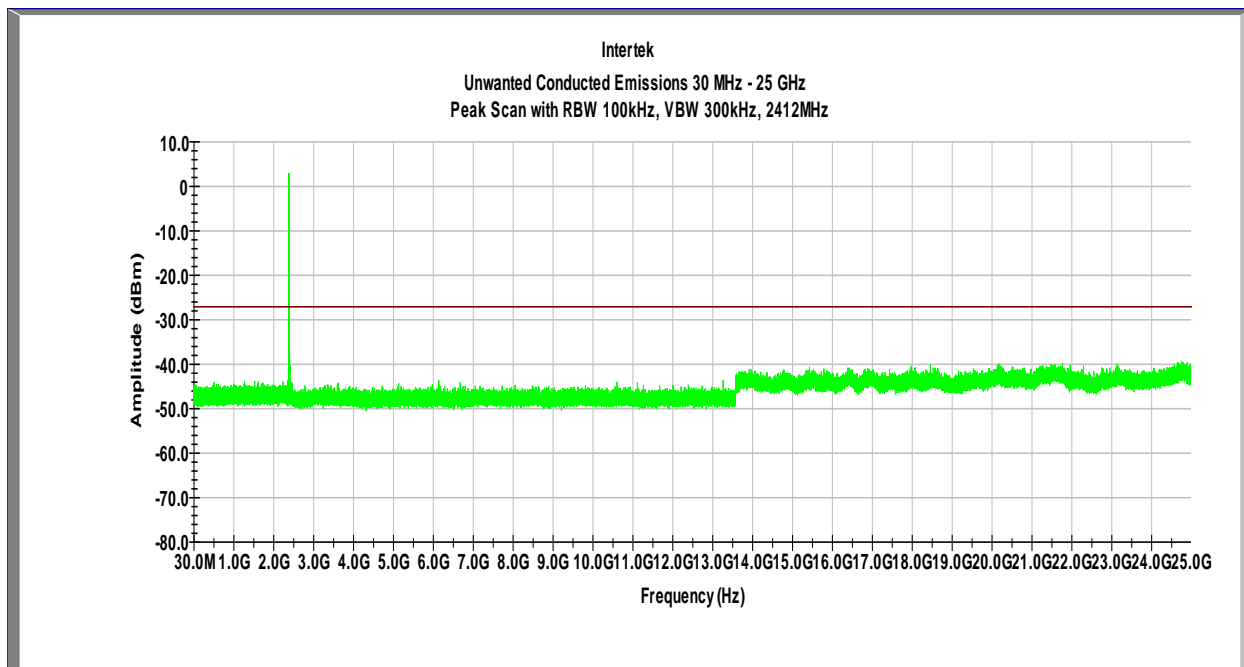
Plot 4.2
Tx @ 2437MHz 802.11b



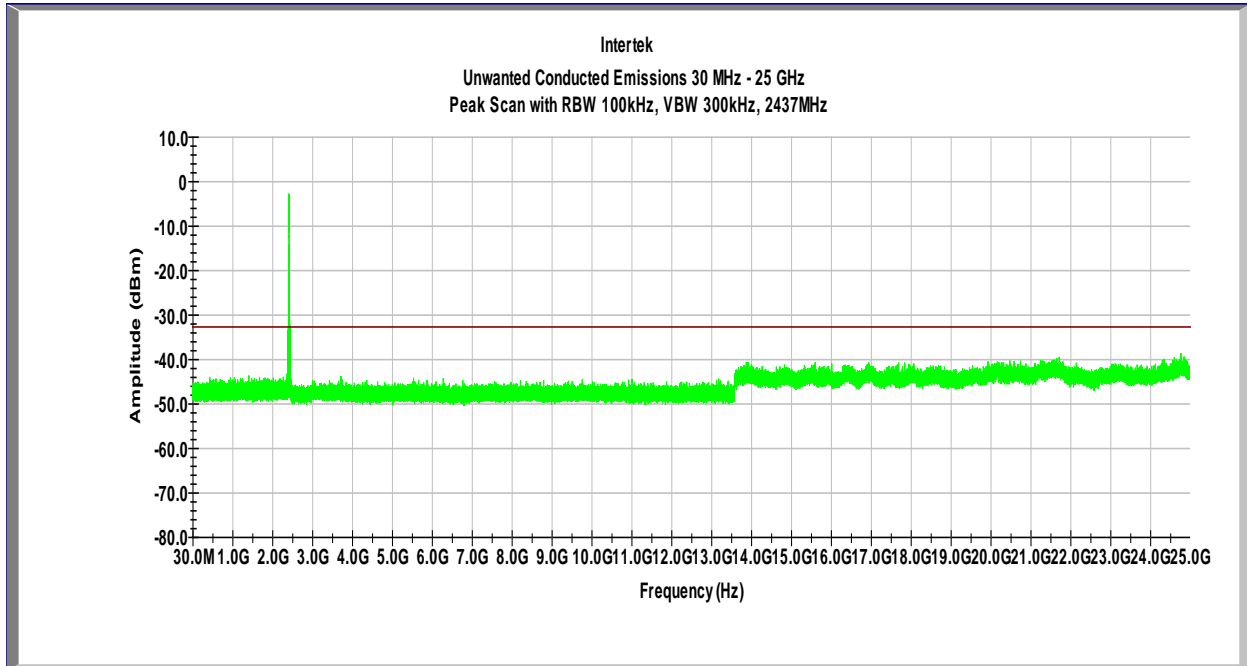
Plot 4.3
Tx @ 2462MHz 802.11b



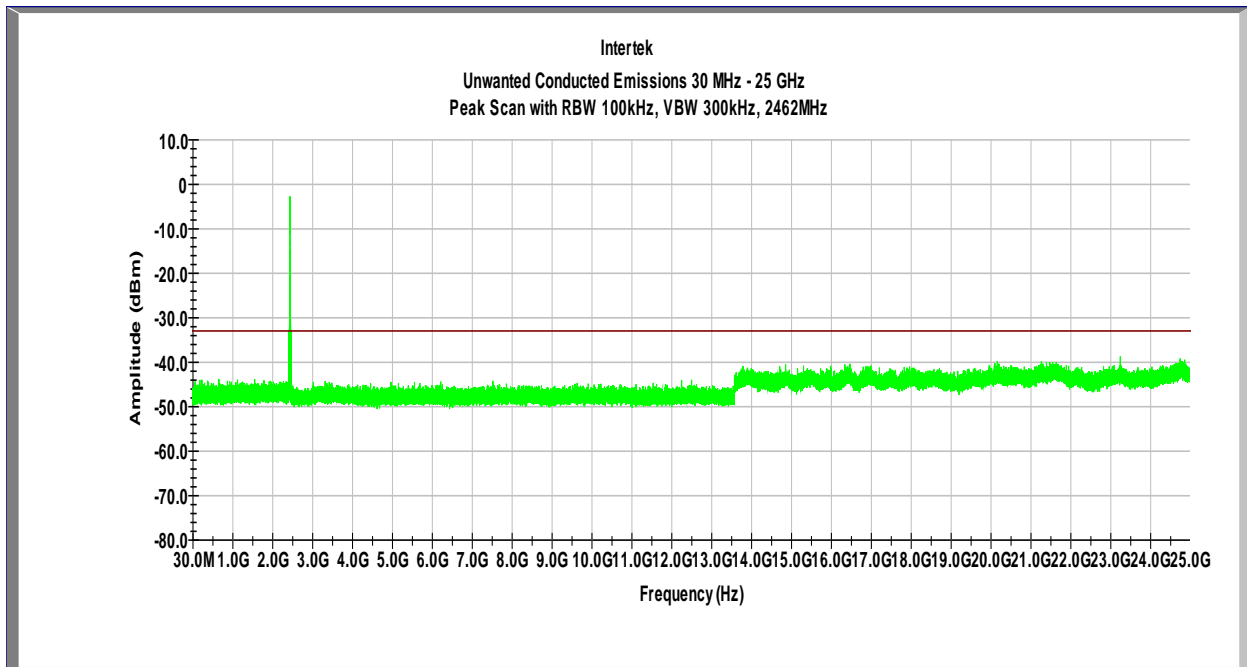
Plot 4.4
Tx @ 2412MHz 802.11g



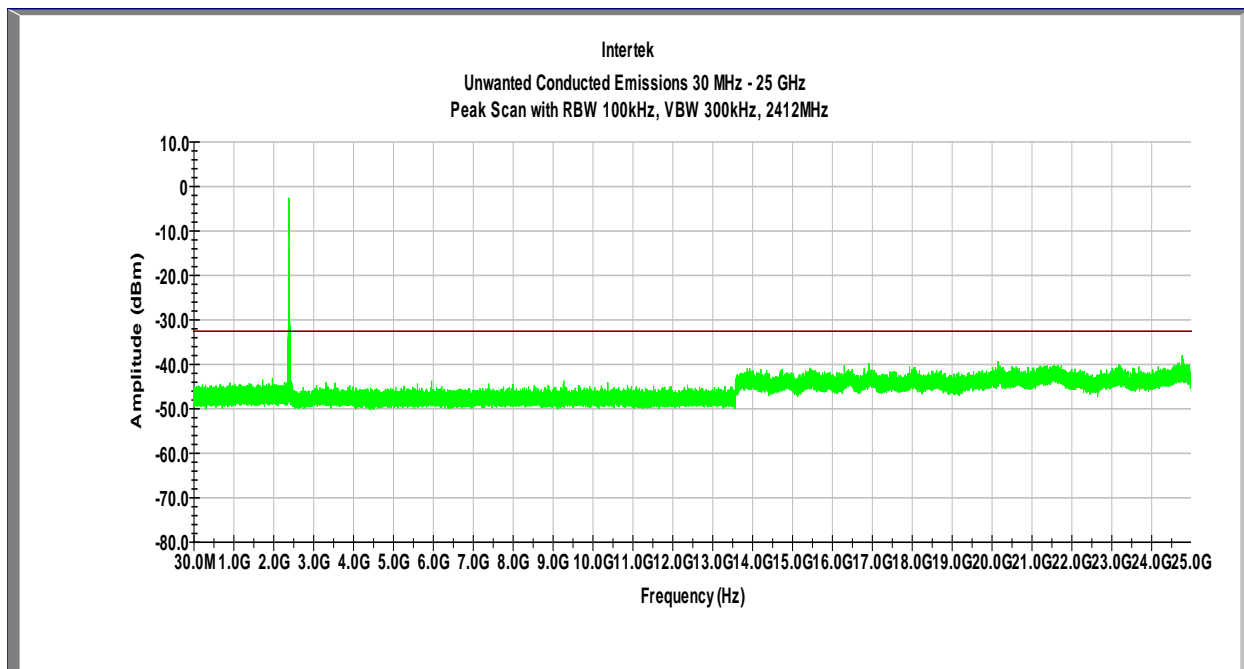
Plot 4.5
Tx @ 2437MHz 802.11g



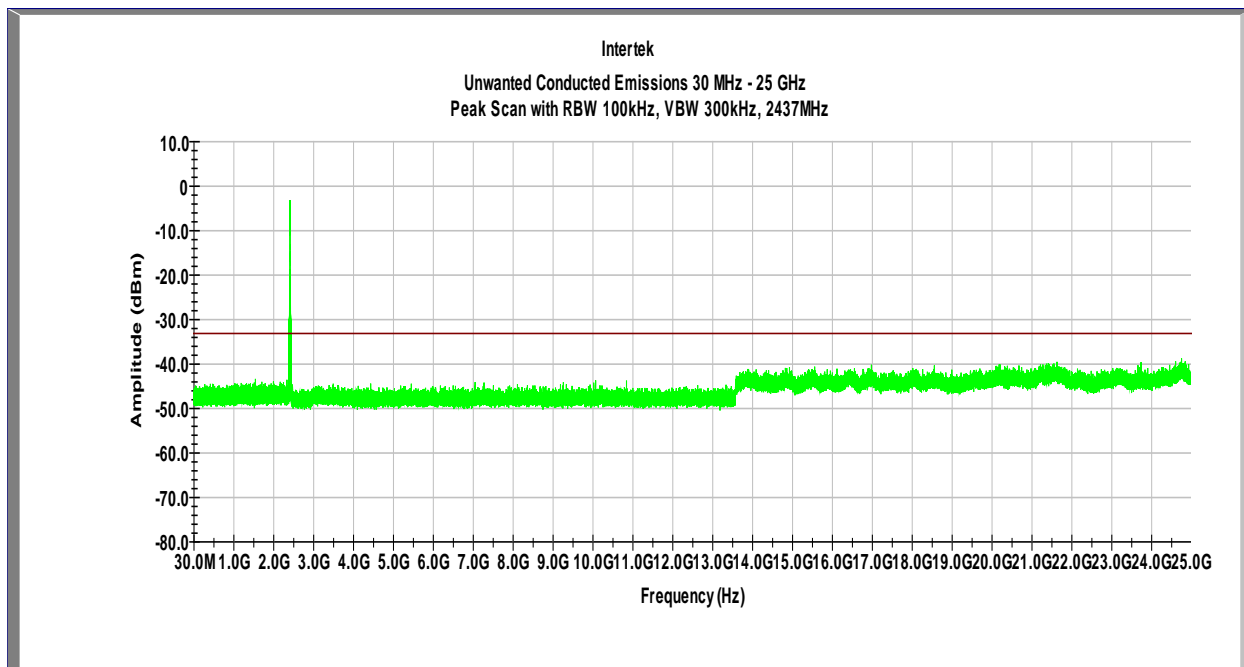
Plot 4.6
Tx @ 2462MHz 802.11g



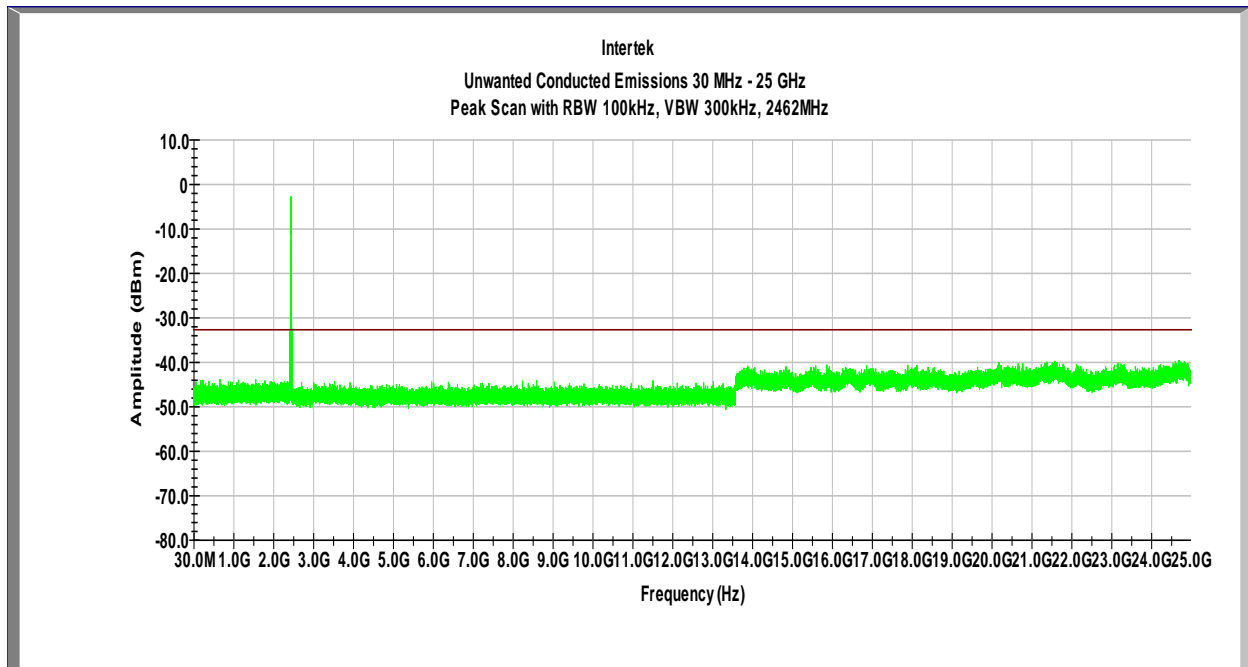
Plot 4.7
Tx @ 2412MHz 802.11n, HT20



Plot 4.8
Tx @ 2437MHz 802.11n, HT20



Plot 4.9
Tx @ 2462MHz 802.11n, 20MHz





4.5 Transmitter Radiated Emissions & Antenna Port Emissions FCC Rule 15.247(d), 15.209, 15.205; RSS-247

4.5.1 Requirement

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) (see §15.205(c)).

For out of band radiated emissions (except for frequencies in restricted bands), in any 100 kHz bandwidths outside the EUT pass-band, the RF power shall be at least 20dB (peak) or 30 dB (average) below that of the maximum in-band 100 kHz emissions.

4.5.2 Procedure – Radiated Emissions

Radiated emission measurements were performed from 30 MHz to 25 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 1 GHz to 18GHz had a 2.4-2.5GHz notch filter in place. A preamp was used from 30MHz to 26GHz.

All measurements were made with a Peak Detector and compared to QP limits for 30MHz – 1GHz and Average limits for 1GHz – 26GHz.

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 $dB(\mu V/m)$

RA = Receiver Amplitude (including preamplifier) in $dB(\mu V)$; AF = Antenna Factor in $dB(1/m)$

CF = Cable Attenuation Factor in dB ; AG = Amplifier Gain in dB

Assume a receiver reading of $52.0\text{ dB}(\mu V)$ is obtained. The antennas factor of $7.4\text{ dB}(1/m)$ and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving field strength of $32\text{ dB}(\mu V/m)$. This value in $dB(\mu V/m)$ was converted to its corresponding level in $\mu V/m$.

$RA = 52.0\text{ dB}(\mu V)$

$AF = 7.4\text{ dB}(1/m)$

$CF = 1.6\text{ dB}$

$AG = 29.0\text{ dB}$

$FS = 52.0 + 7.4 + 1.6 - 29.0 = 32\text{ dB}(\mu V/m)$.

Level in $\mu V/m$ = Common Antilogarithm $[(32\text{ dB}\mu V/m)/20] = 39.8\text{ }\mu V/m$.



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:
$$E = \text{EIRP} - 20\log D + 104.8$$
where:
E = electric field strength in dB μ V/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.

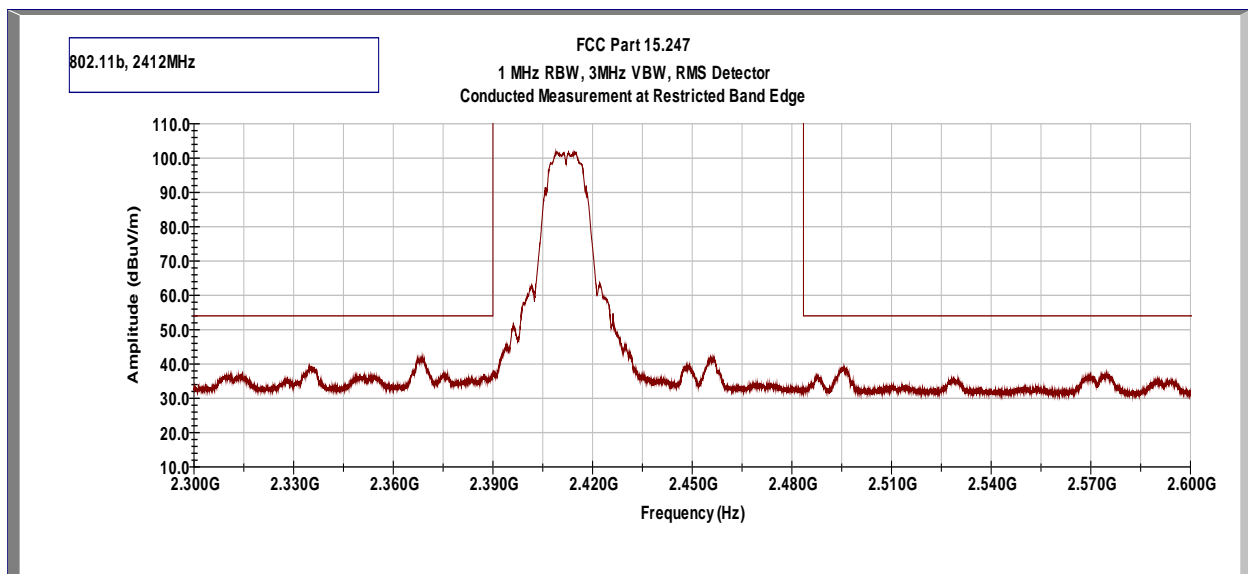
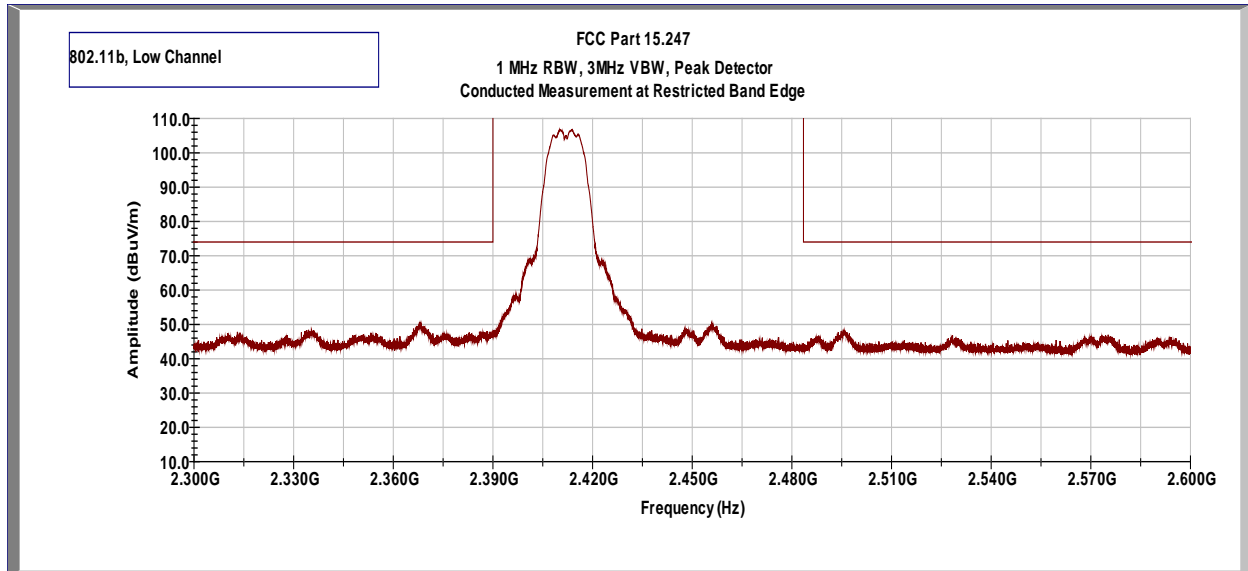
All conducted antenna port plots are corrected with the consideration of a 3.0dBi Antenna Gain.

Radiated emission measurements were performed up to 26GHz. No Emissions were identified when scanned from 18-25 GHz.

Date of Test:	November 25 to December 04, 2015
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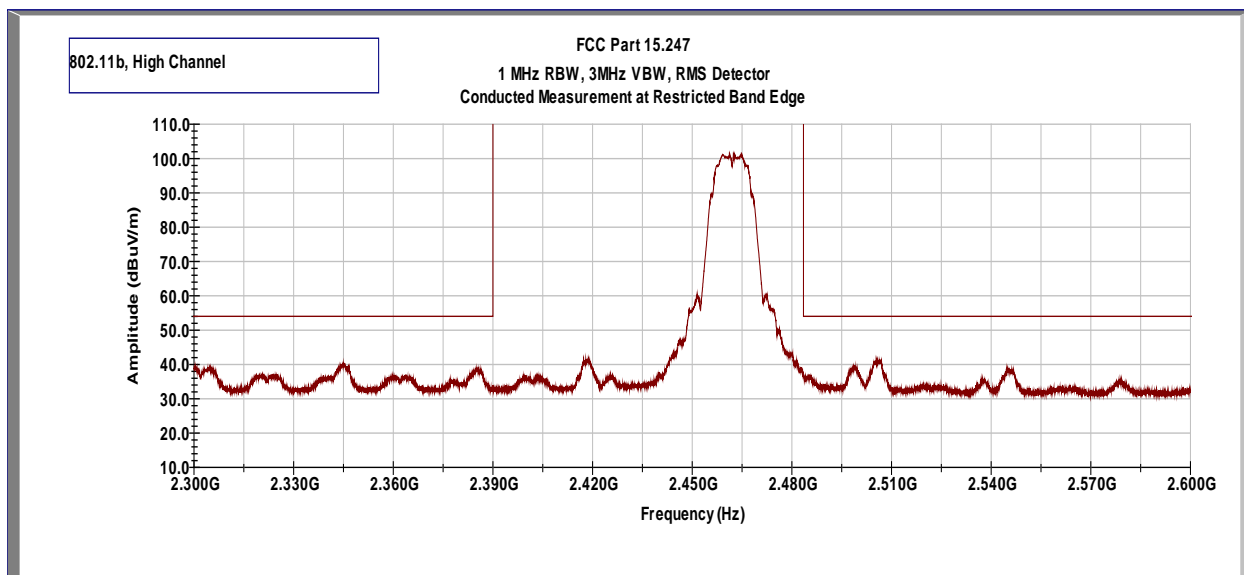
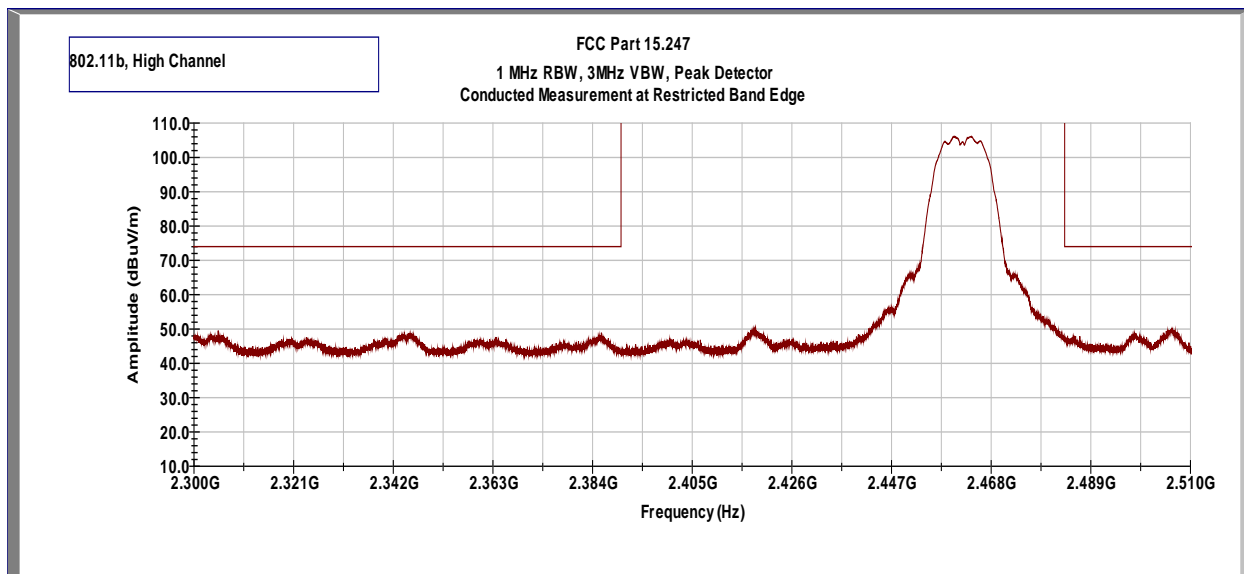
Test Results: 15.209/15.205 Restricted Band Emissions at Antenna Port

Out-of-Band Spurious Emissions at the Band Edge - 802.11b, 2412 MHz



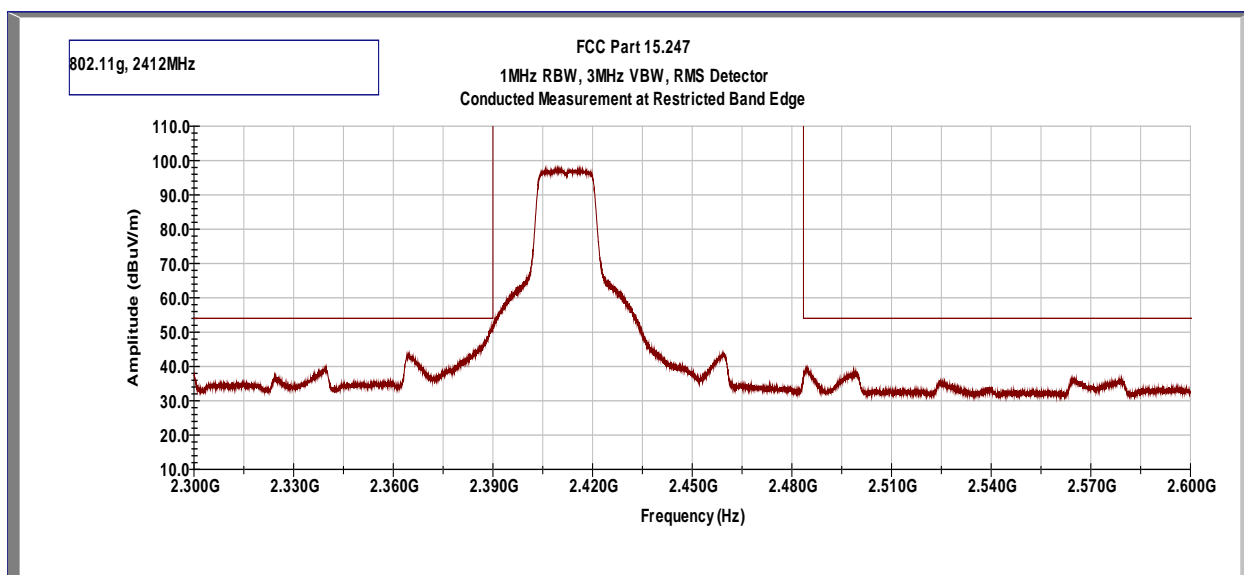
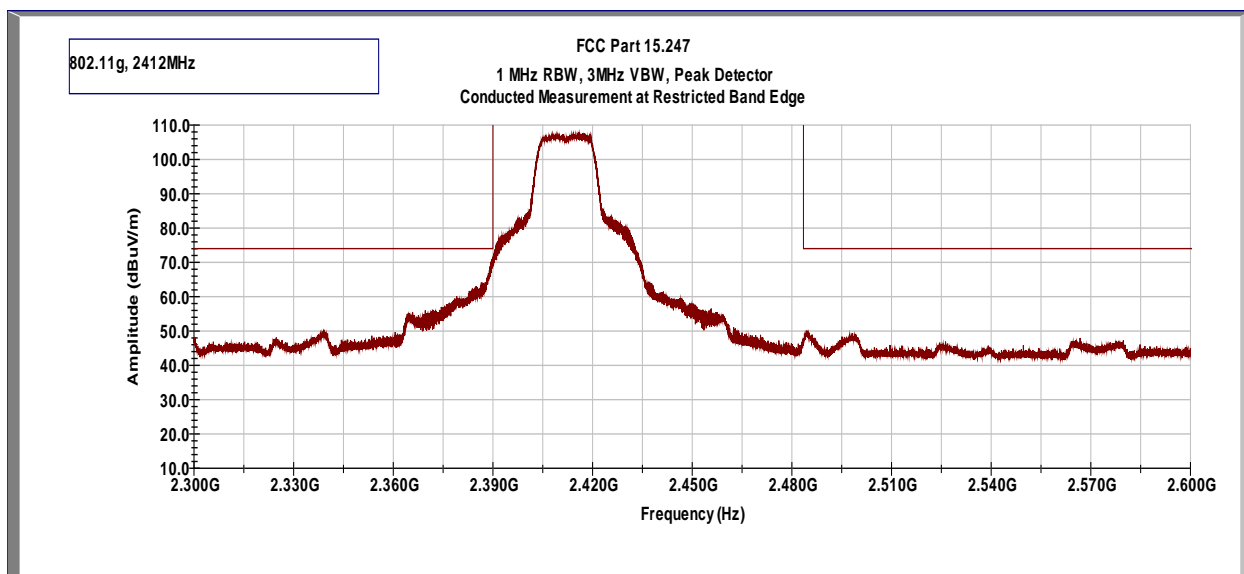
Frequency	Corrected Amplitude	Limit	Margin	Detector	Results
GHz	dBμV/m	dBμV/m	dB		
2.390	49.087	74	-24.913	Pk	Pass
2.390	35.017	54	-18.983	Avg	Pass

Out-of-Band Spurious Emissions at the Band Edge - 802.11b, 2462 MHz



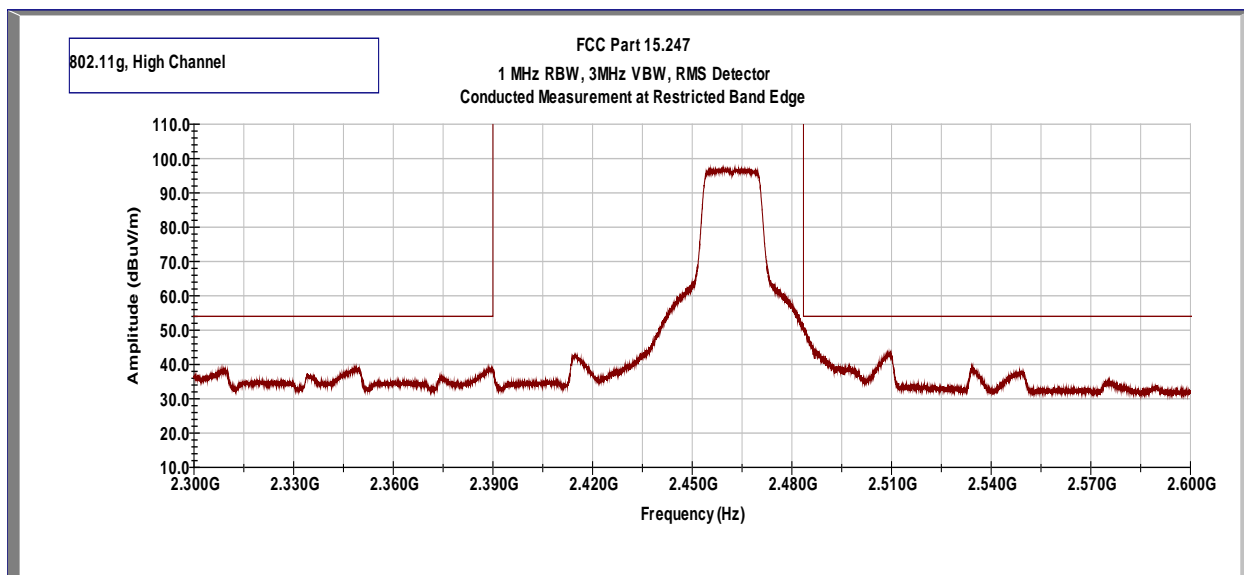
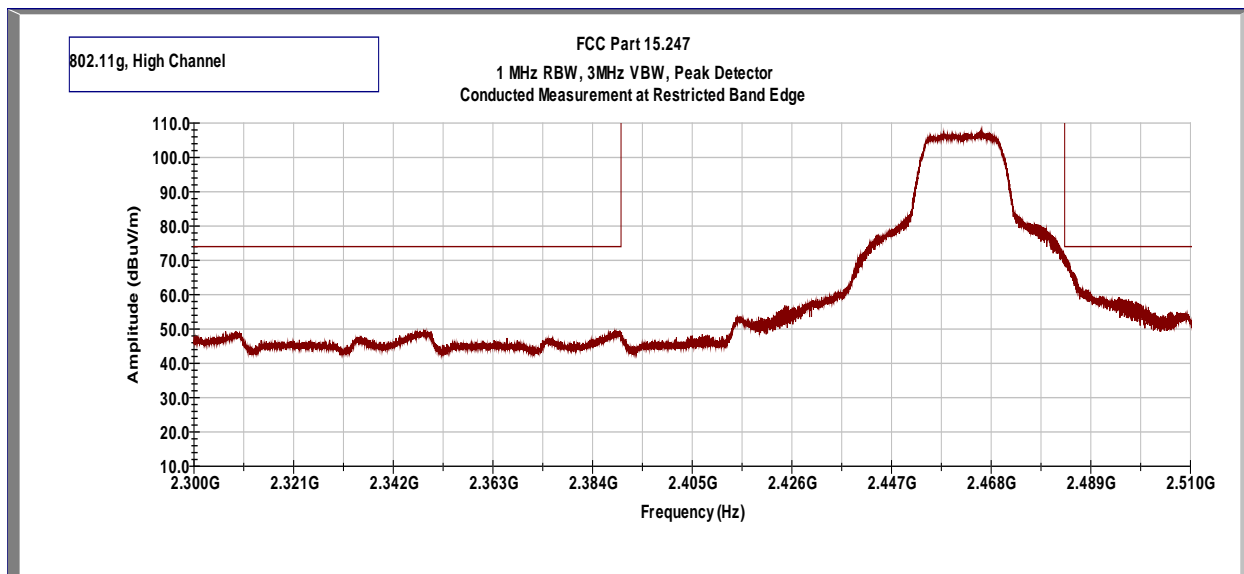
Frequency	Corrected Amplitude	Limit	Margin	Detector	Results
GHz	dBμV/m	dBμV/m	dB		
2.4835	48.957	74	-25.043	Pk	Pass
2.4835	35.947	54	-18.053	Avg	Pass

Out-of-Band Spurious Emissions at the Band Edge - 802.11g, 2412 MHz



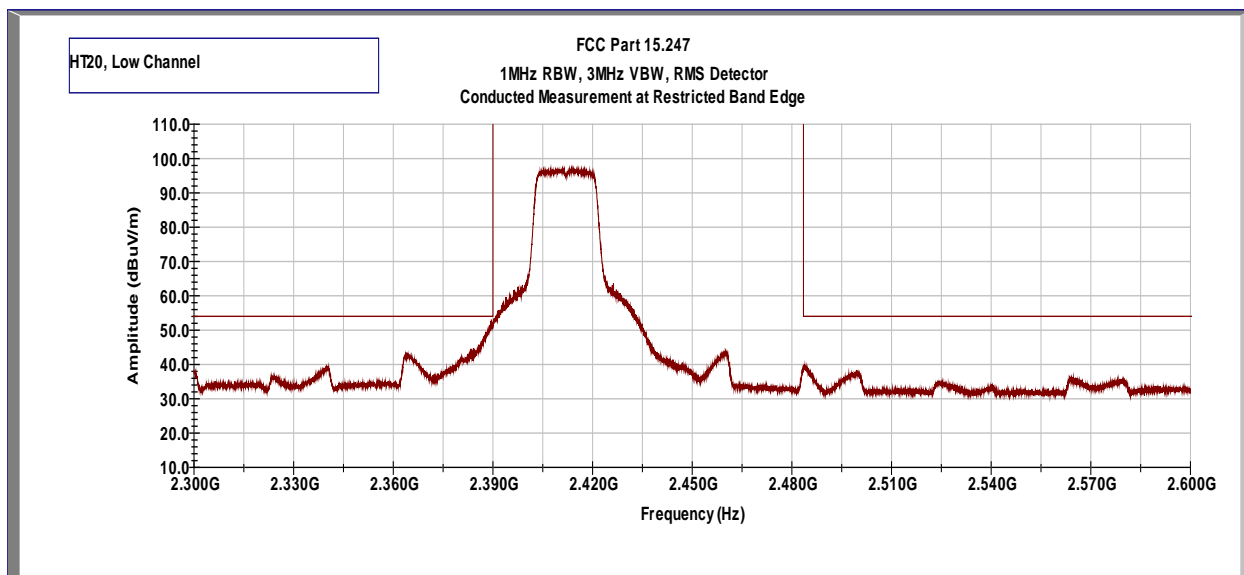
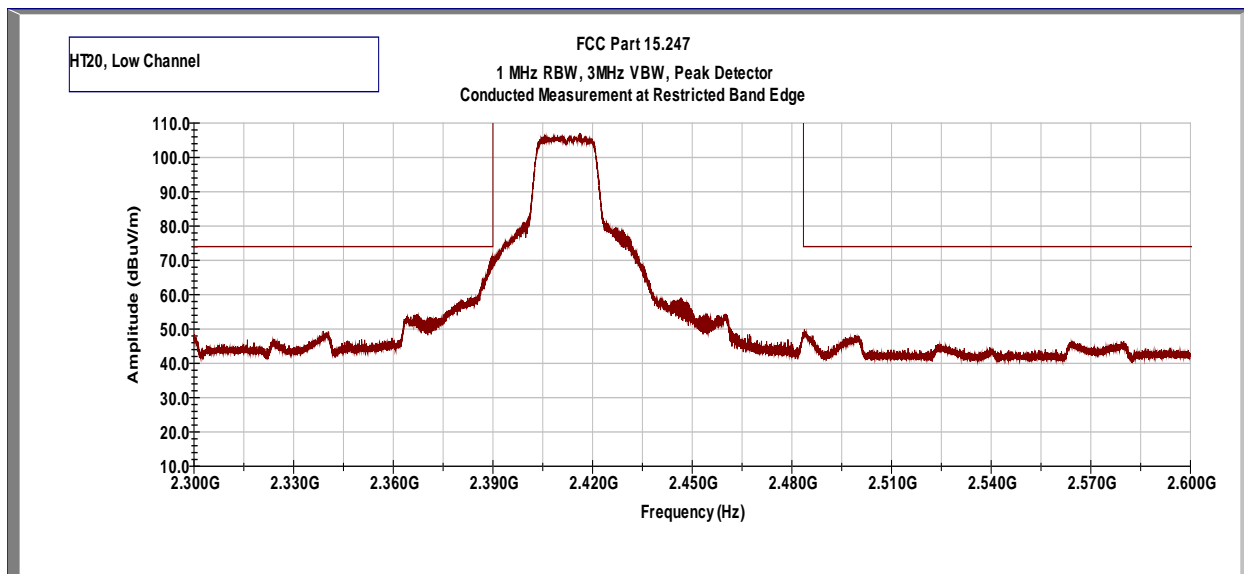
Frequency	Corrected Amplitude	Limit	Margin	Detector	Results
GHz	dBμV/m	dBμV/m	dB		
2.390	71.477	74	-2.523	Pk	Pass
2.390	49.767	54	-4.233	Avg	Pass

Out-of-Band Spurious Emissions at the Band Edge - 802.11g, 2462 MHz



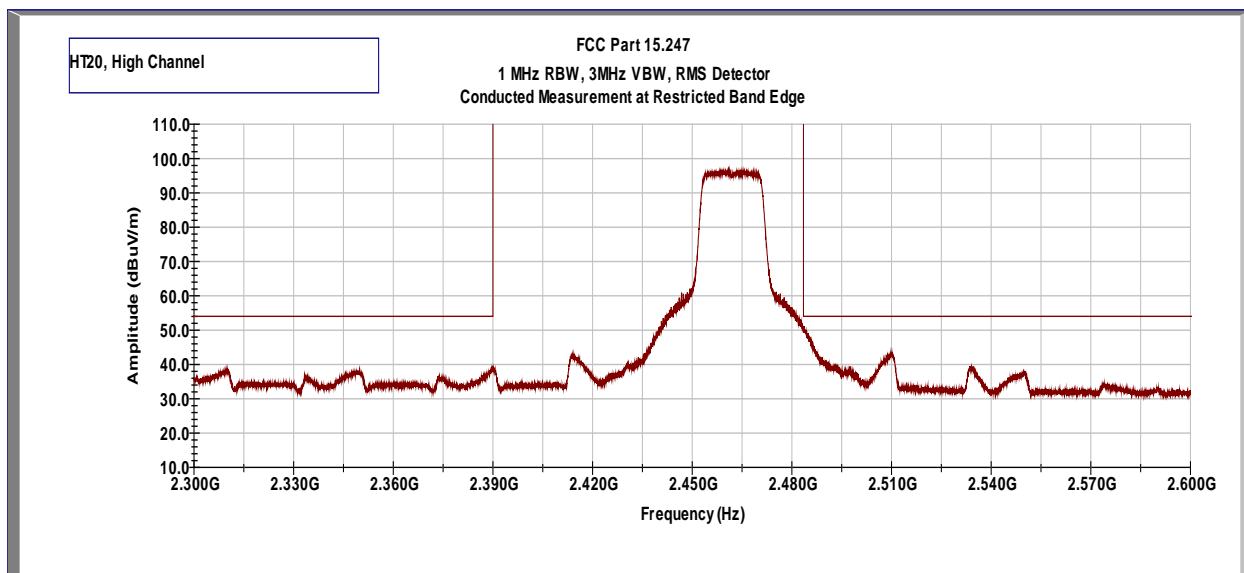
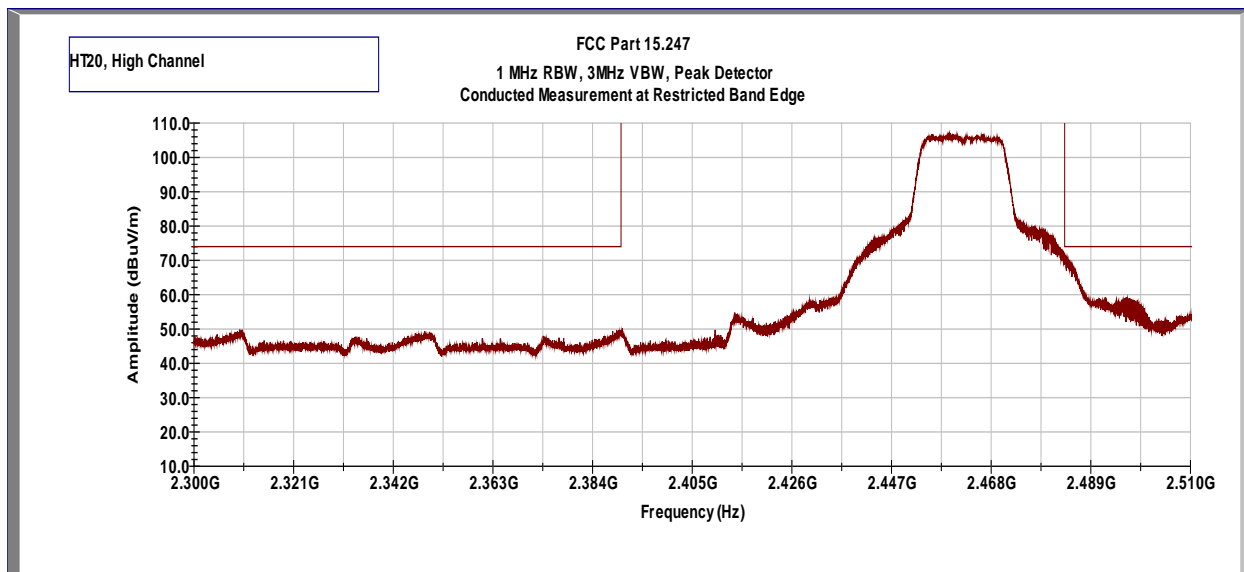
Frequency	Corrected Amplitude	Limit	Margin	Detector	Results
GHz	dBμV/m	dBμV/m	dB		
2.4835	72.087	74	-1.913	Pk	Pass
2.4835	49.007	54	-4.993	Avg	Pass

Out-of-Band Spurious Emissions at the Band Edge - 802.11n HT20, 2412 MHz



Frequency	Corrected Amplitude	Limit	Margin	Detector	Results
GHz	dBμV/m	dBμV/m	dB		
2.390	73.527	74	-0.473	Peak	Pass
2.390	53.757	54	-0.243	Avg	Pass

Out-of-Band Spurious Emissions at the Band Edge - 802.11n 20MHz, 2462 MHz

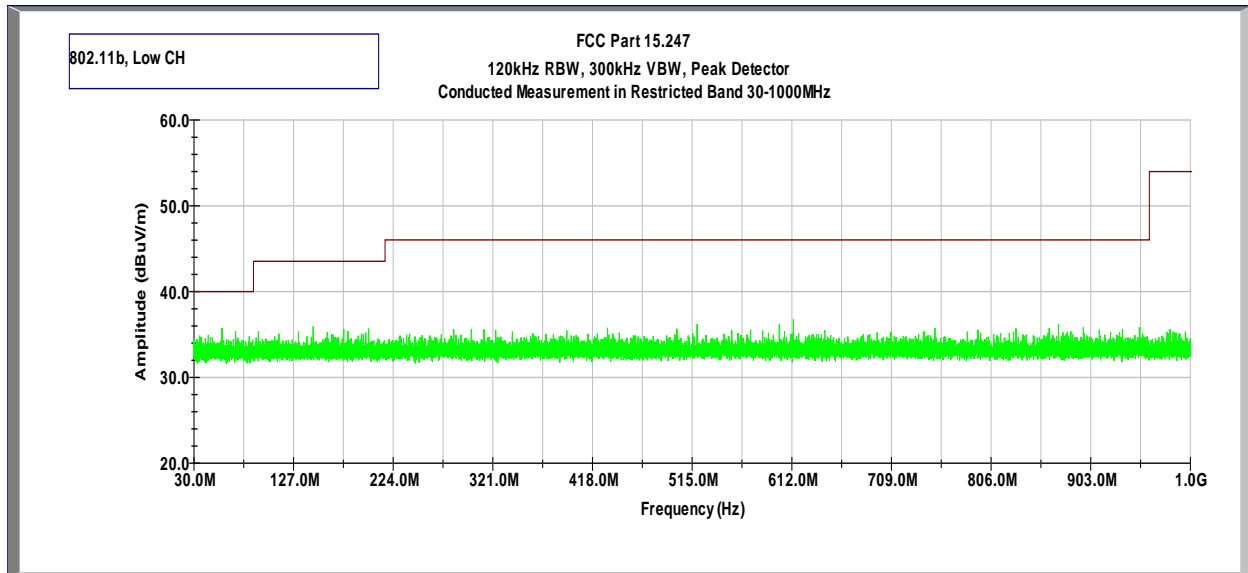


Frequency	Corrected Amplitude	Limit	Margin	Detector	Results
GHz	dBμV/m	dBμV/m	dB		
2.4835	71.177	74	-2.823	Peak	Pass
2.4835	48.357	54	-5.643	Avg	Pass

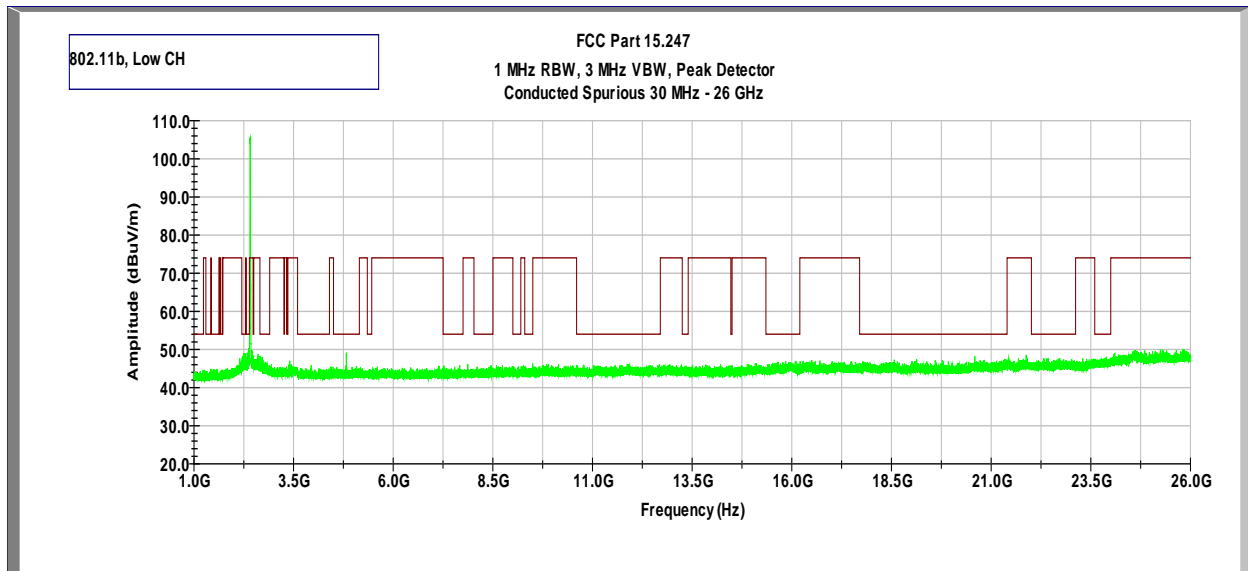
Out-of-Band Conducted Spurious Emissions (at Antenna Port)

Tx @ 2412MHz 802.11b

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

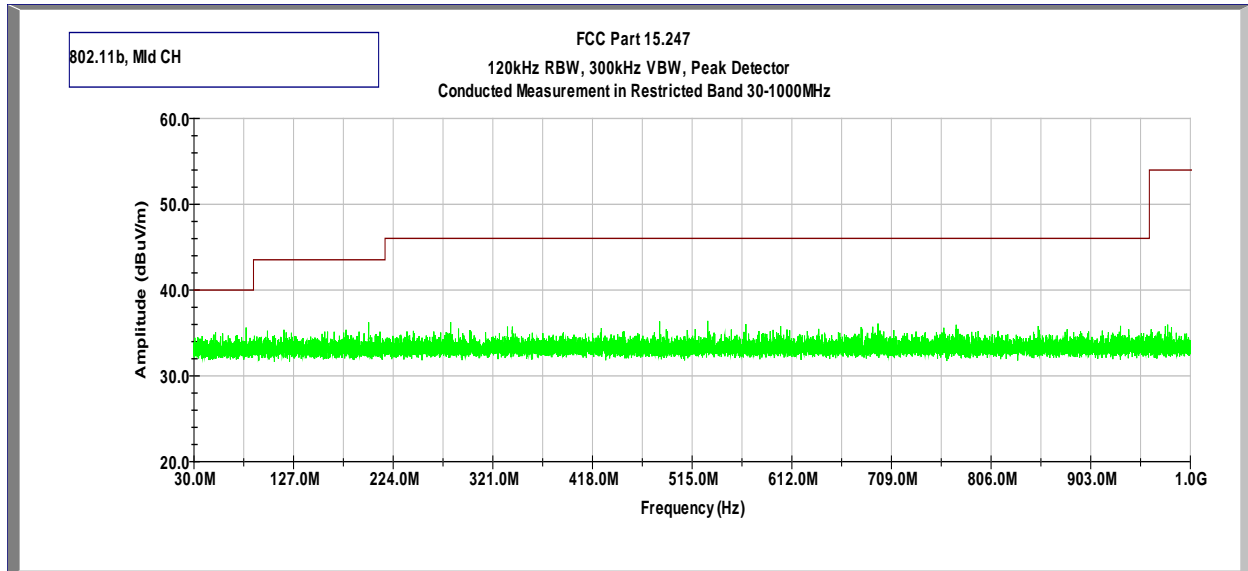


Out-of-Band Spurious Emissions at Antenna Port - 1 GHz to 26 GHz

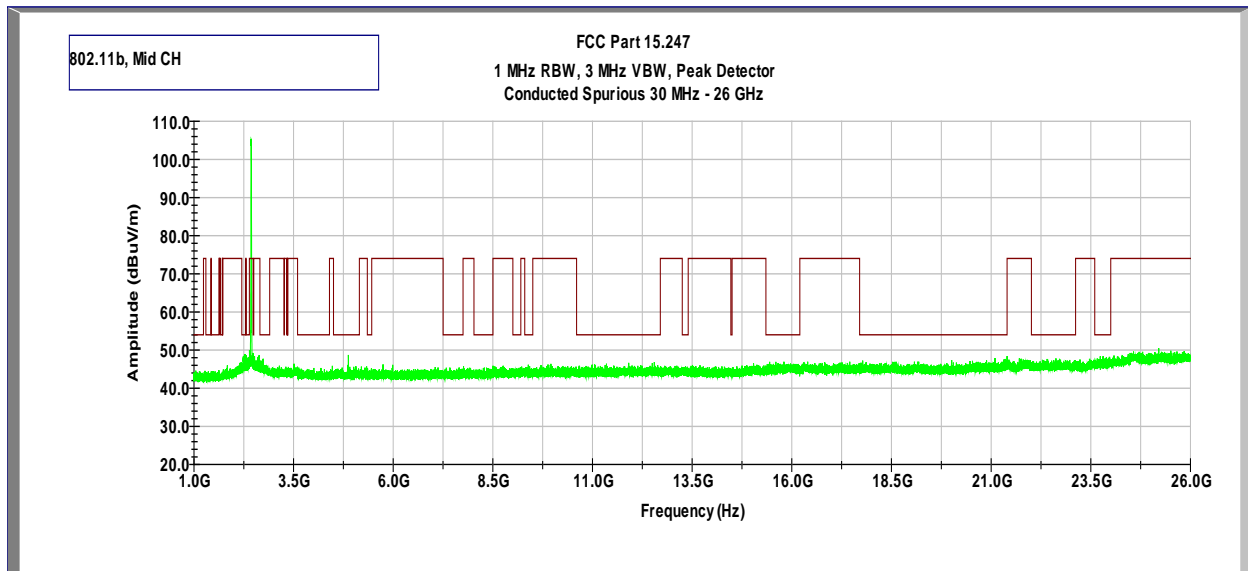


Tx @ 2437MHz 802.11b

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

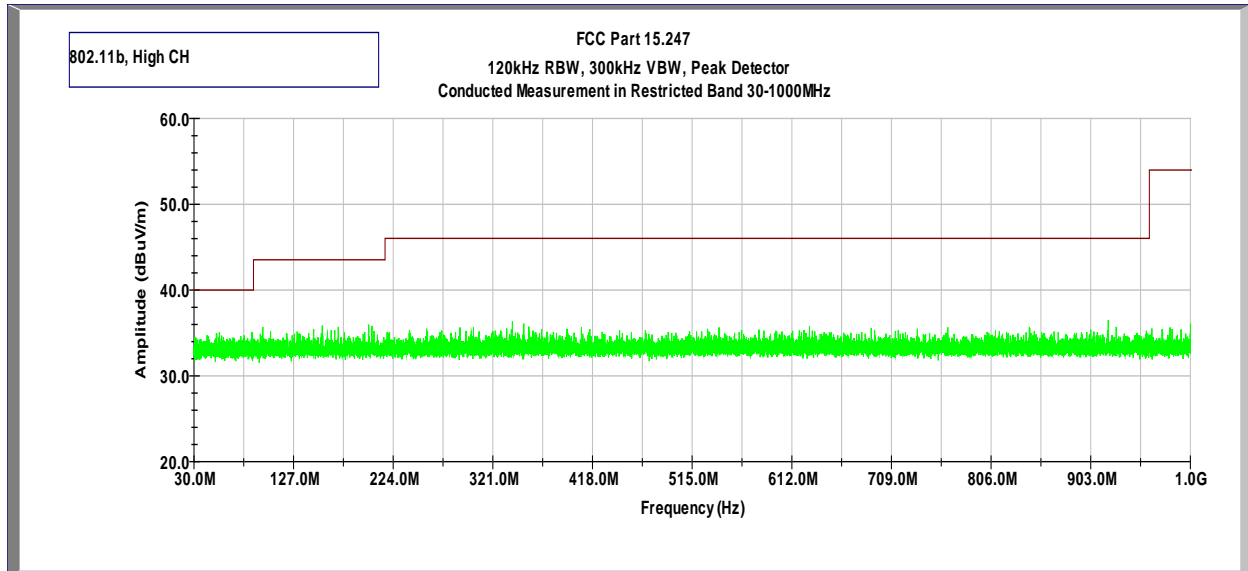


Out-of-Band Spurious Emissions at Antenna Port - 1 GHz to 26 GHz

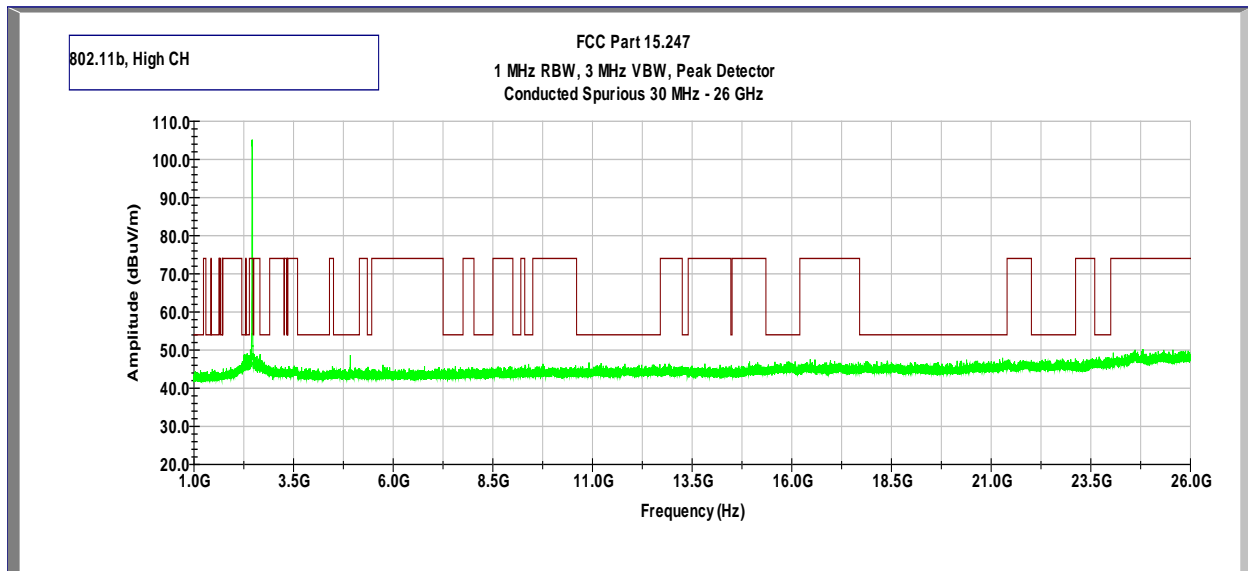


Tx @ 2462MHz 802.11b

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

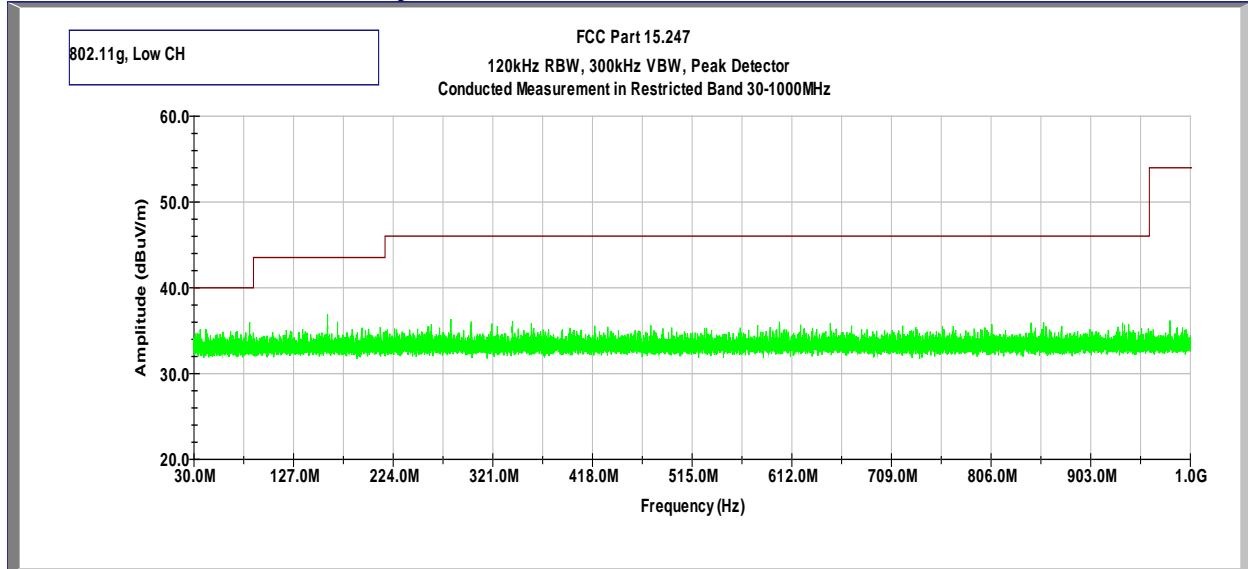


Out-of-Band Spurious Emissions at Antenna Port - 1 GHz to 26 GHz

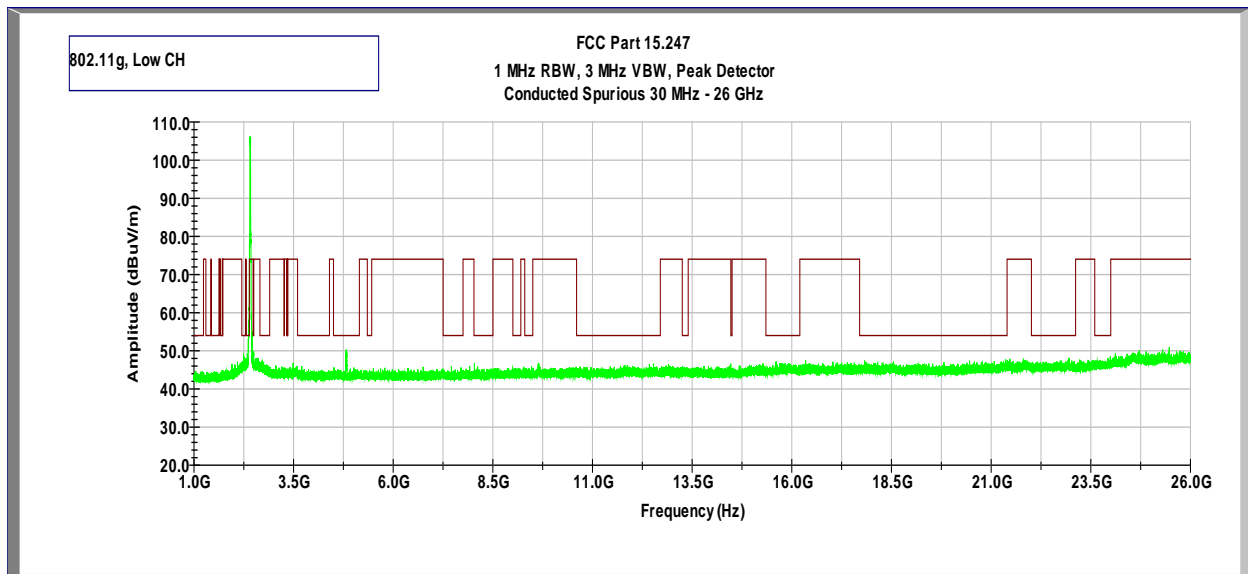


Tx @ 2412MHz 802.11g

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

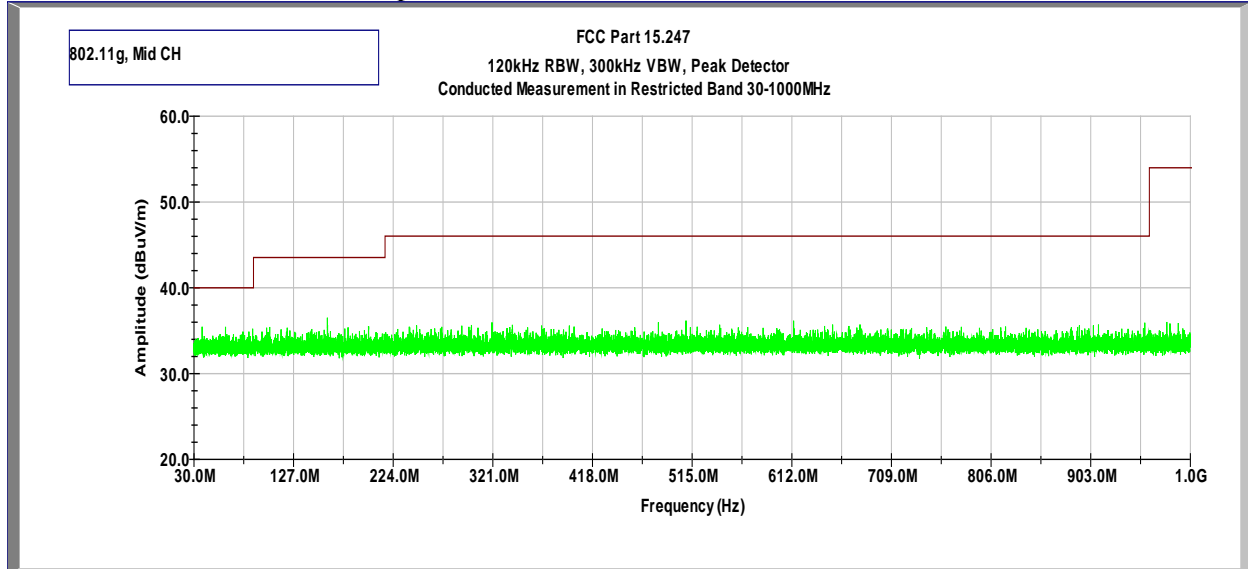


Out-of-Band Spurious Emissions at Antenna Port - 1 GHz to 26 GHz

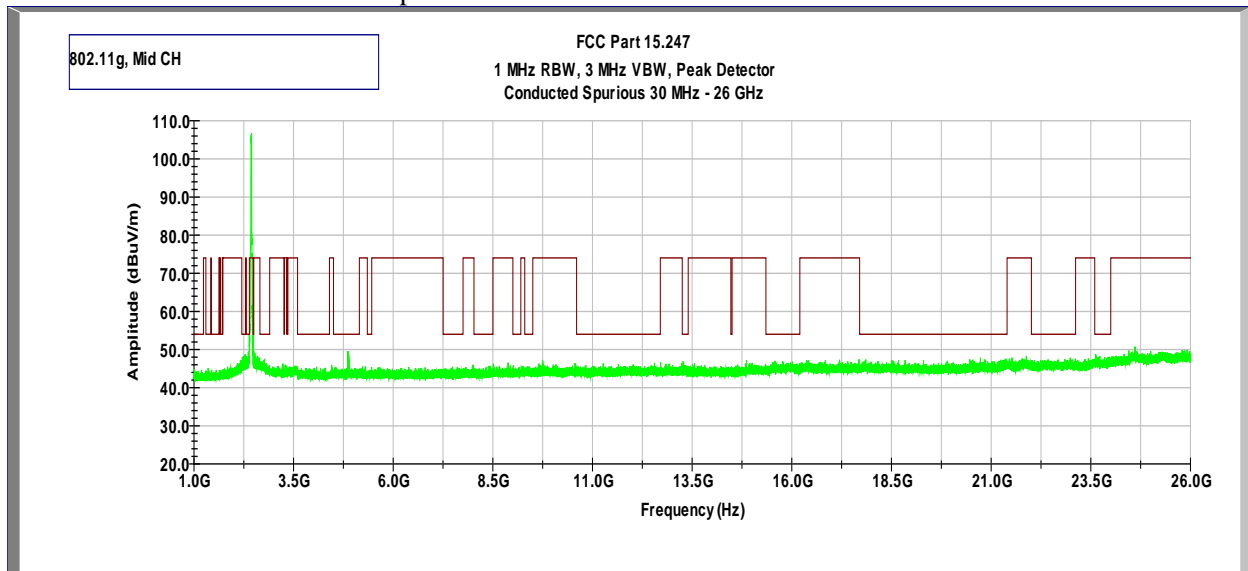


Tx @ 2437MHz 802.11g

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

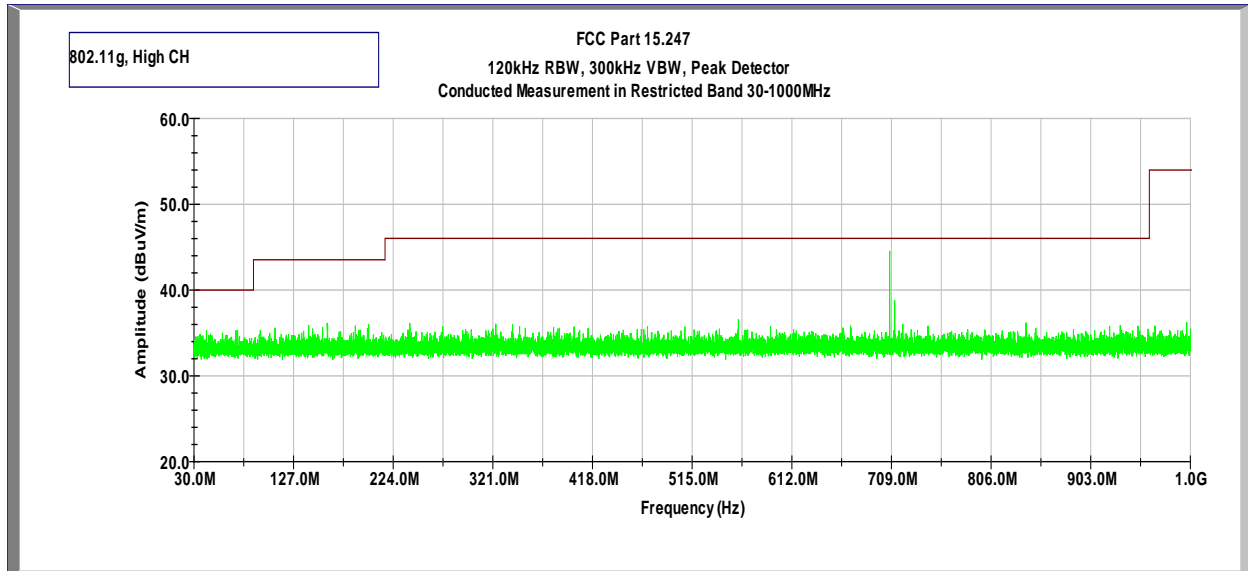


Out-of-Band Spurious Emissions at Antenna Port - 1 GHz to 26 GHz

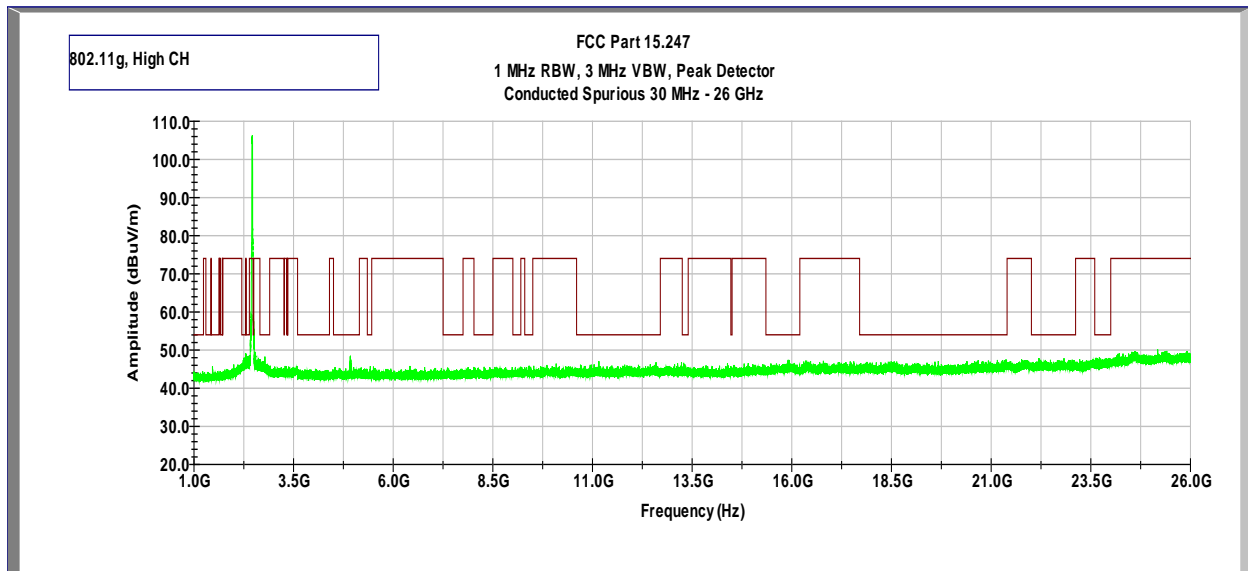


Tx @ 2462MHz 802.11g

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

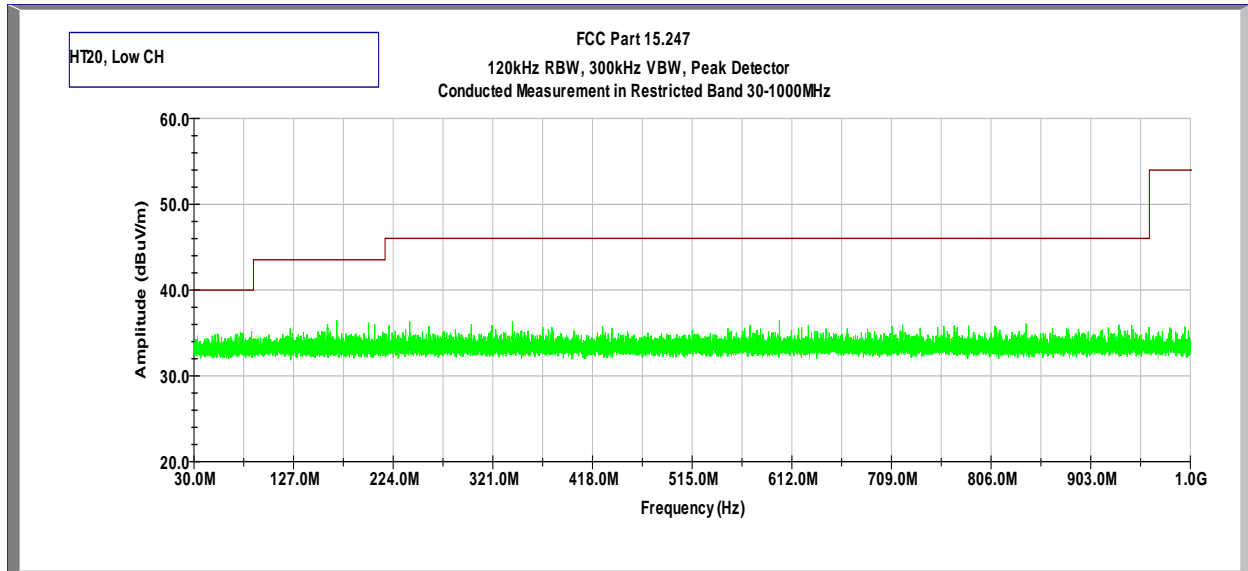


Out-of-Band Spurious Emissions at Antenna Port - 1 GHz to 26 GHz

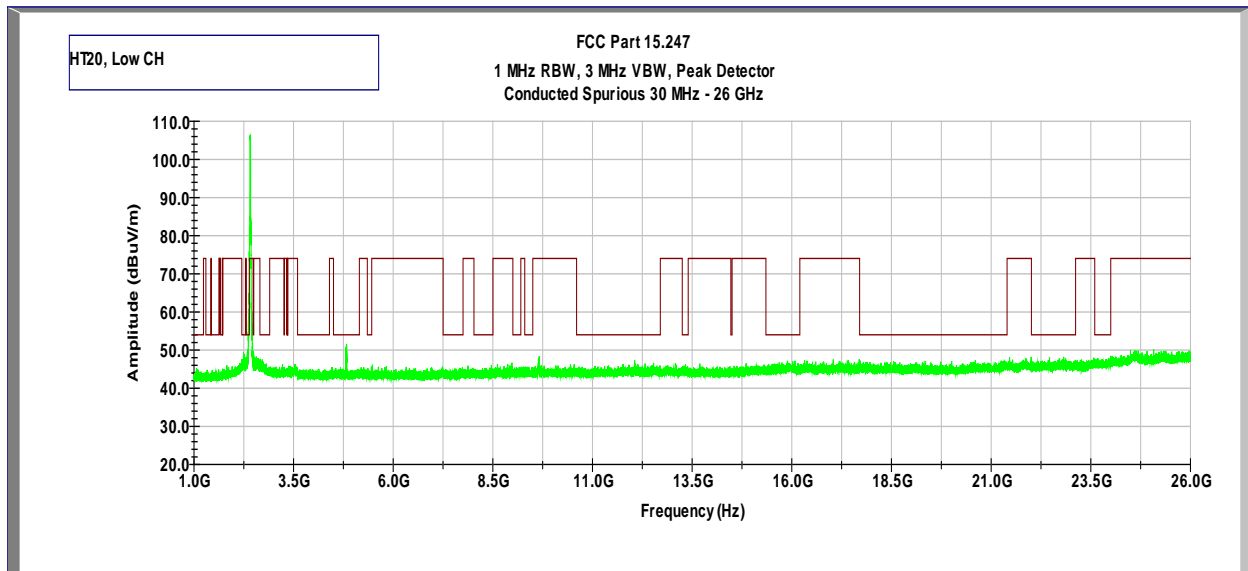


Tx @ 2412MHz 802.11n 20MHz

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

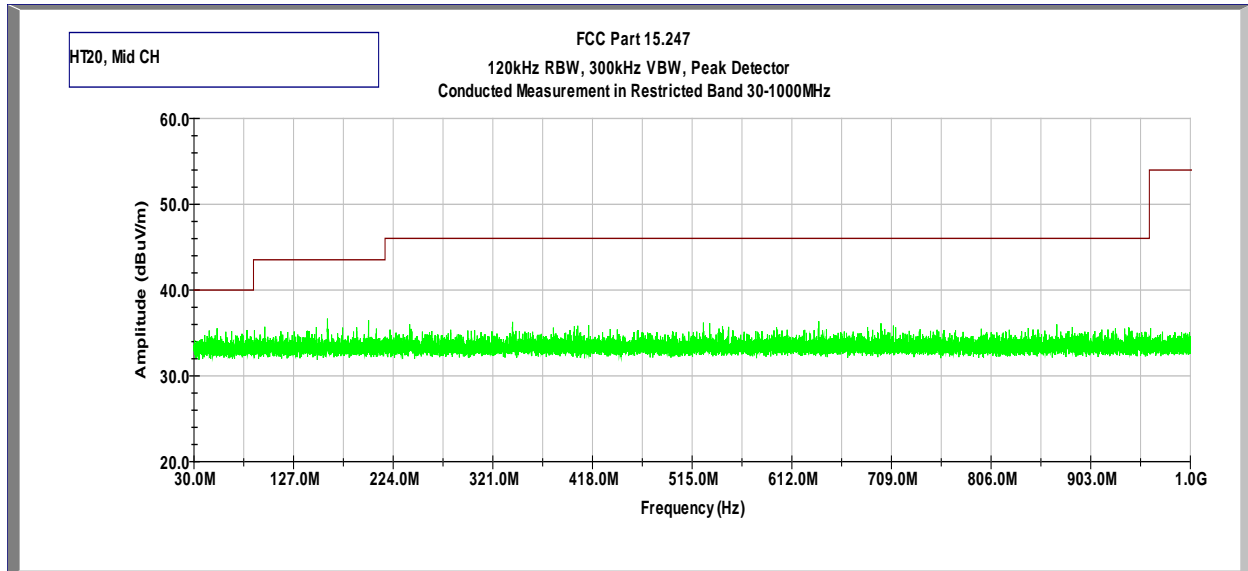


Out-of-Band Spurious Emissions at Antenna Port - 1 GHz to 26 GHz

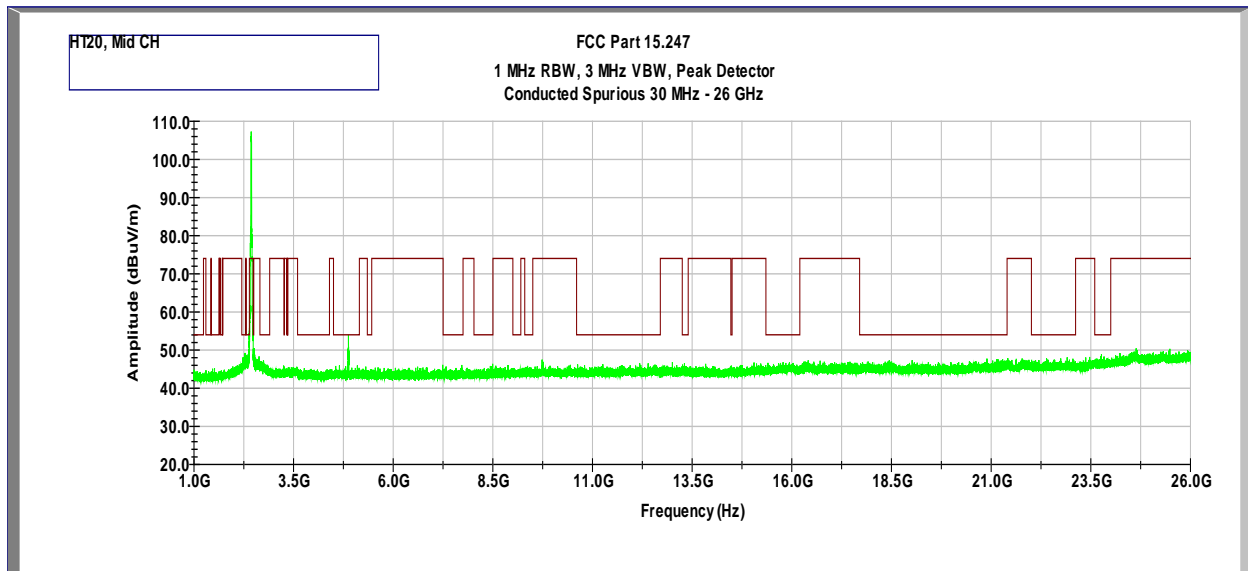


Tx @ 2437MHz 802.11n 20MHz

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



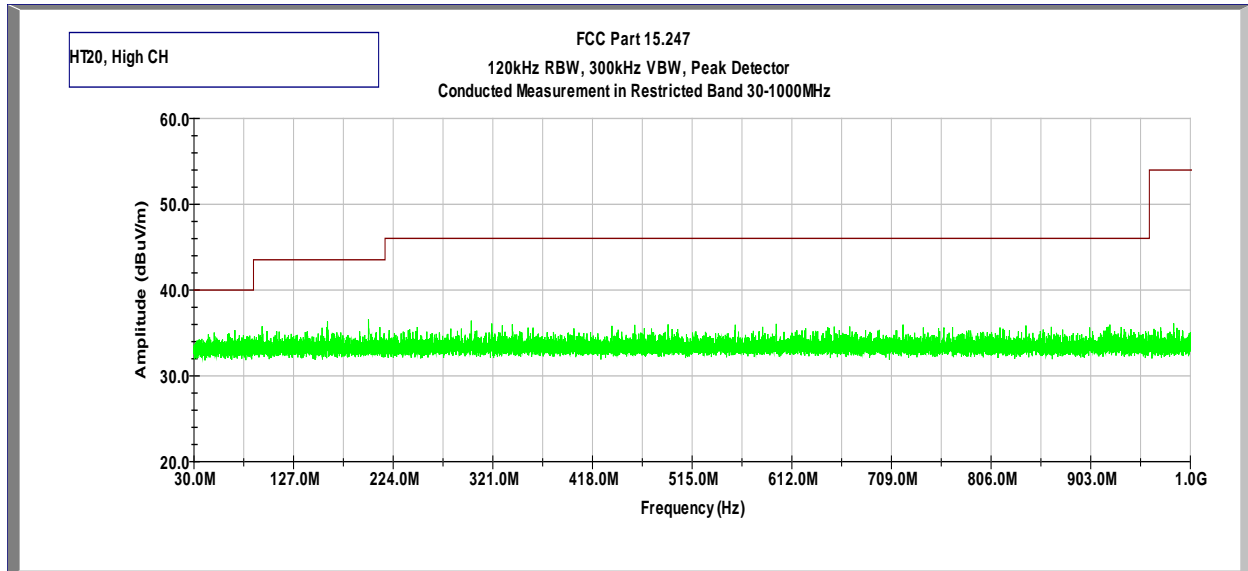
Out-of-Band Spurious Emissions at Antenna Port - 1 GHz to 26 GHz



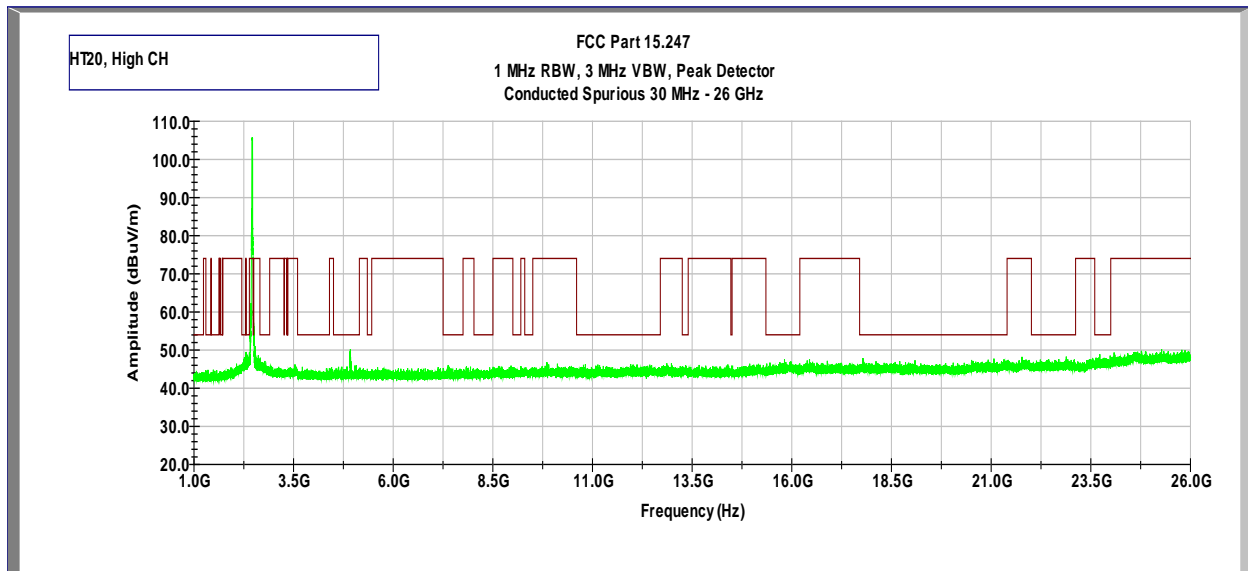
Frequency	Corrected Amplitude	Limit	Margin	Results
GHz	dB μ V/m	dB μ V/m	dB	
4874	51.98	54	-2.02	Pass

Tx @ 2462MHz 802.11n 20MHz

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



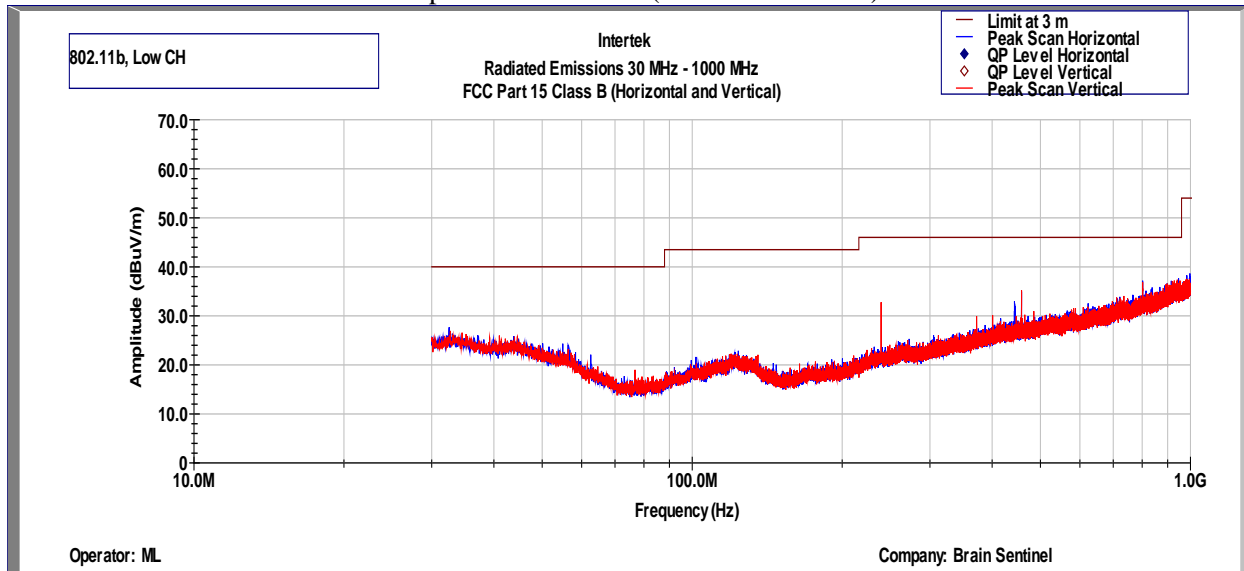
Out-of-Band Spurious Emissions at Antenna Port - 1 GHz to 26 GHz



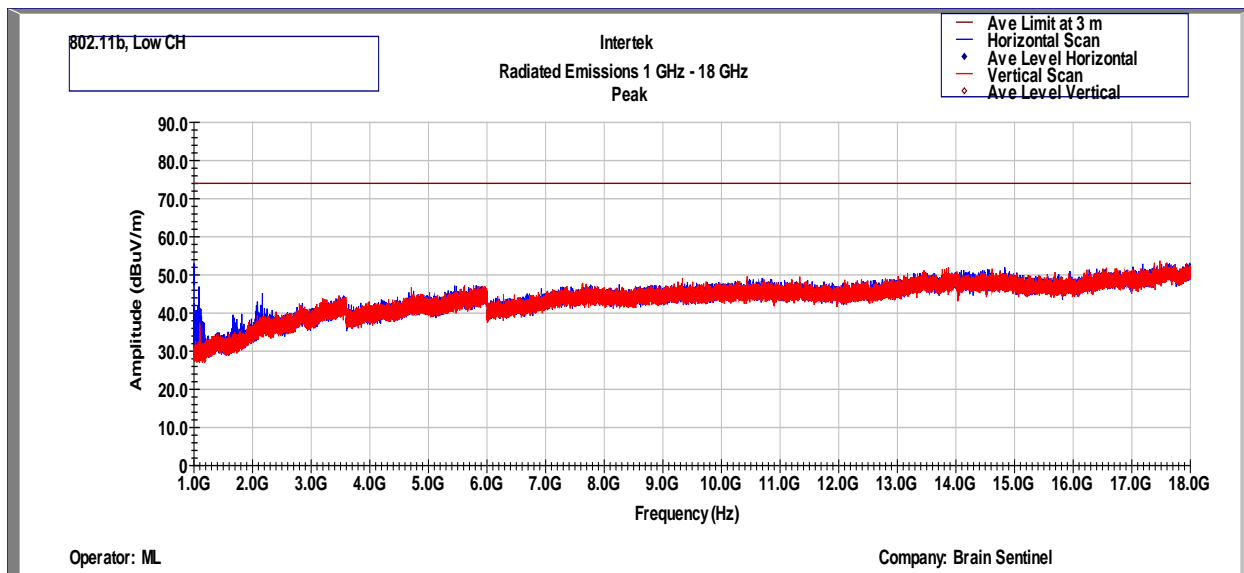
Out-of-Band Radiated Spurious Emissions (Cabinet Radiation)

Tx @ 2412MHz 802.11b

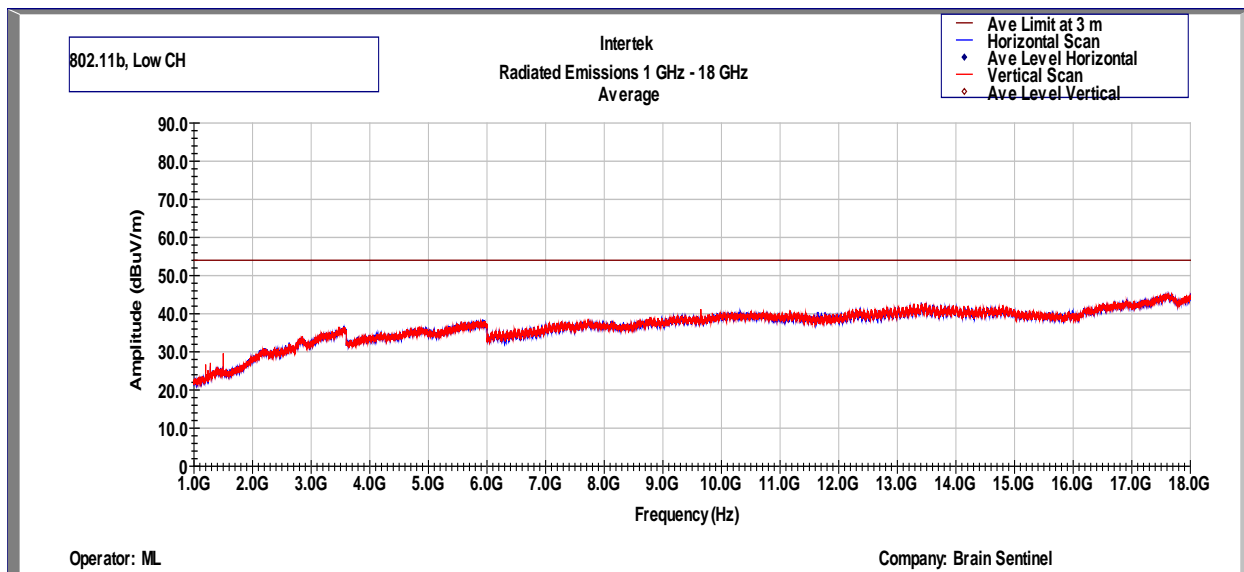
Out-of-Band Radiated Spurious Emissions (Cabinet Radiation) - 30 MHz to 1 GHz



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



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



Note: Radiated emission measurements were performed up to 25GHz. No Emissions were identified when scanned from 18-25 GHz

Tx @ 2437MHz 802.11b

Out-of-Band Radiated Spurious Emissions (Cabinet Radiation) - 30 MHz to 1 GHz

