



## FCC/IC - TEST REPORT

Report Number : **64.790.15.04302.01** Date of Issue: June 6, 2016

Model : AEH-W4B1

Product Type : WiFi Module

Applicant : Hisense (Guangdong) Air Conditioning Co., Ltd

Address : No.8 Hisense Road, Advanced Manufacturing Jiangsha

Demonstration Park, Jiangmen City, Guangdong

Province, P.R.China

Production Facility : Hisense (Guangdong) Air Conditioning Co., Ltd

Address : No.8 Hisense Road, Advanced Manufacturing Jiangsha

Demonstration Park, Jiangmen City, Guangdong

Province, P.R.China

Test Result :  **Positive  Negative**

Total pages including Appendices : 52

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## 2 Details about the Test Laboratory

### Details about the Test Laboratory

Test Site 1

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch  
Building 12&13, Zhiheng Wisdomland Business Park,  
Nantou Checkpoint Road 2, Nanshan District,  
Shenzhen City, 518052,  
P. R. China

Telephone: 86 755 8828 6998  
Fax: 86 755 8828 5299

FCC registration number: 502708

IC registration number: 10320A



### 3 Description of the Equipment Under Test

Product: WiFi Module

Model no.: AEH-W4B1

FCC ID: 2AGCCAEC-W4B1

IC 20778-AEHW4B1

Options and accessories: Nil

Rating: 5V, 0.5A

RF Transmission Frequency: 2412MHz-2462MHz

No. of Operated Channel: 802.11b/g/n20: 11 channel  
802.11n40: 9 channel

Modulation: 802.11b: CCK DSSS  
802.11g: OFDM  
802.11n20: OFDM  
802.11n40: OFDM

Antenna Type: Internal Printed ANT

Antenna Gain: 2dBi

Description of the EUT: The EUT is a WIFI module.



## 4 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart C 10-1-2014 Edition	PART 15 - RADIO FREQUENCY DEVICES Subpart C - Intentional Radiators
RSS-247 Issue 1 2015	Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSS) and Licence-Exempt Local Area Network (LE-LAN) Devices

All the test methods were according to KDB558074 D01 DTS Meas Guidance issued by April 8, 2016 and ANSI C63.10 (2013).



## 5 Summary of Test Results

Technical Requirements				
<b>FCC Part 15 Subpart C</b>				
Test Condition			Pages	Test Result
§15.207	RSS-GEN 8.8	Conducted emission AC power port	10	Pass
§15.247(b)(1)	RSS-247 Clause 5.4(2)	Conducted peak output power	13	Pass
§15.247(e)	RSS-247 Clause 5.2(2)	Power spectral density*	20	Pass
§15.247(a)(2)	RSS-247 Clause 5.2(1)	6dB bandwidth	21	Pass
§15.247(a)(1)	RSS-247 Clause 5.1(1)	20dB bandwidth and 99% Occupied Bandwidth	--	N/A
§15.247(a)(1)	RSS-247 Clause 5.1(2)	Carrier frequency separation	--	N/A
§15.247(a)(1)(iii)	RSS-247 Clause 5.1(4)	Number of hopping frequencies	--	N/A
§15.247(a)(1)(iii)	RSS-247 Clause 5.1(4)	Dwell Time	--	N/A
§15.247(d)	RSS-247 Clause 5.5	Spurious RF conducted emissions	28	Pass
§15.247(d)	RSS-247 Clause 5.5	Band edge	41	Pass
§15.247(d) & §15.209 &	RSS-247 Clause 5.5 & RSS-GEN 6.13	Spurious radiated emissions for transmitter	46	Pass
§15.203	RSS-GEN 8.3	Antenna requirement	See note 1	Pass

Note 1: N/A=Not Applicable.

Note 2: The EUT uses Internal Printed ANT antenna, which gain is 2dBi. In accordance to §15.203, it is considered sufficiently to comply with the provisions of this section.



## 6 General Remarks

### Remarks

This submittal(s) (test report) is intended for FCC ID: FCC ID:2AGCCAEC-W4B1, IC: 20778-AEHW4B1 complies with Section 15.207, 15.209, 15.247 of the FCC Part 15, Subpart C, RSS-247 and RSS-Gen rules.

### SUMMARY:

All tests according to the regulations cited on page 5 were

- Performed

- Not Performed

The Equipment under Test

- Fulfills the general approval requirements.

- Does not fulfill the general approval requirements.

Sample Received Date: September 29, 2015

Testing Start Date: September 30, 2015

Testing End Date: June 15, 2016

TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch

Reviewed by:

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Phoebe Hu  
EMC Project Manager

Prepared by:

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Felix Li  
EMC Project Engineer

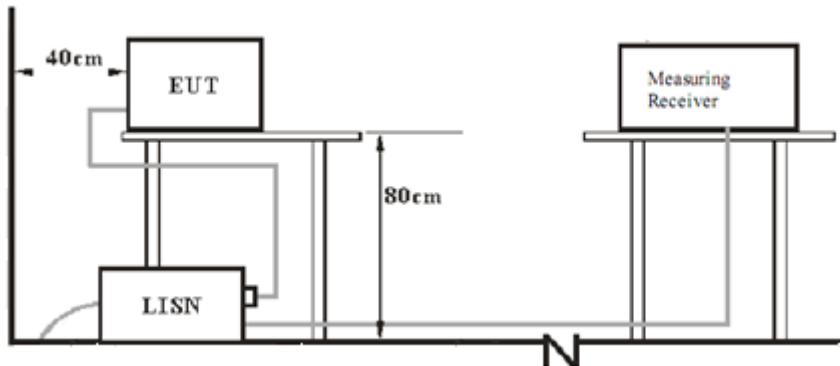
Tested by:

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Leon Zhang  
EMC Test Engineer

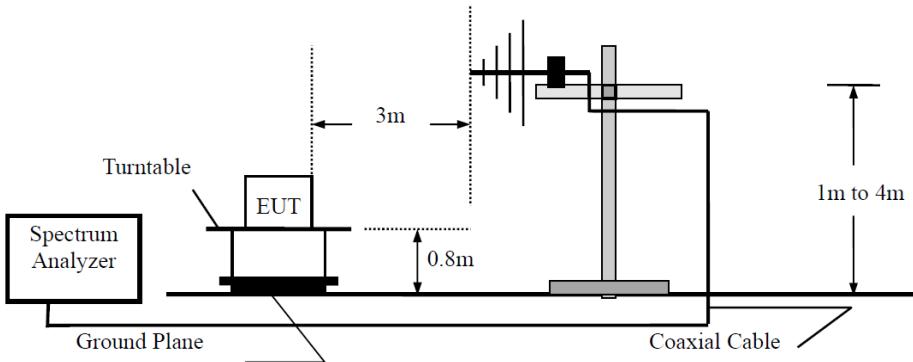
## 7 Test Setups

### 7.1 AC Power Line Conducted Emission test setups

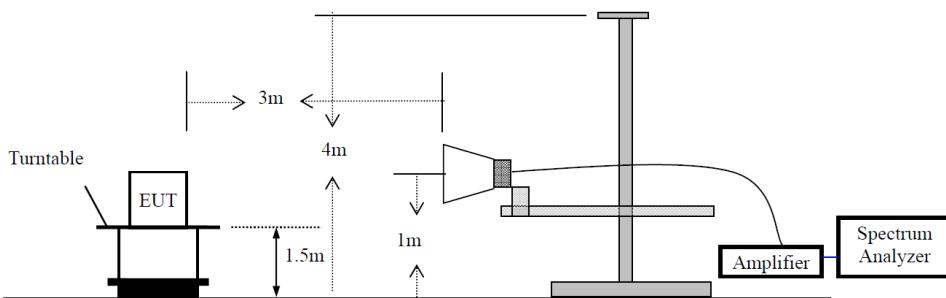


### 7.2 Radiated test setups

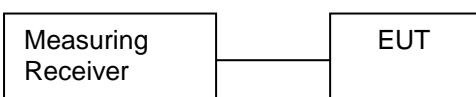
#### Below 1GHz



#### Above 1GHz



### 7.3 Conducted RF test setups





## 8 Systems test configuration

Auxiliary Equipment Used during Test:

DESCRIPTION	MANUFACTURER	MODEL NO.(SHIELD)	S/N(LENGTH)
PC	Lenovo	X240	---

## 9 Technical Requirement

### 9.1 Conducted Emission

#### Test Method

1. The EUT was placed on a table, which is 0.8m above ground plane
2. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.).
3. Maximum procedure was performed to ensure EUT compliance
4. A EMI test receiver is used to test the emissions from both sides of AC line

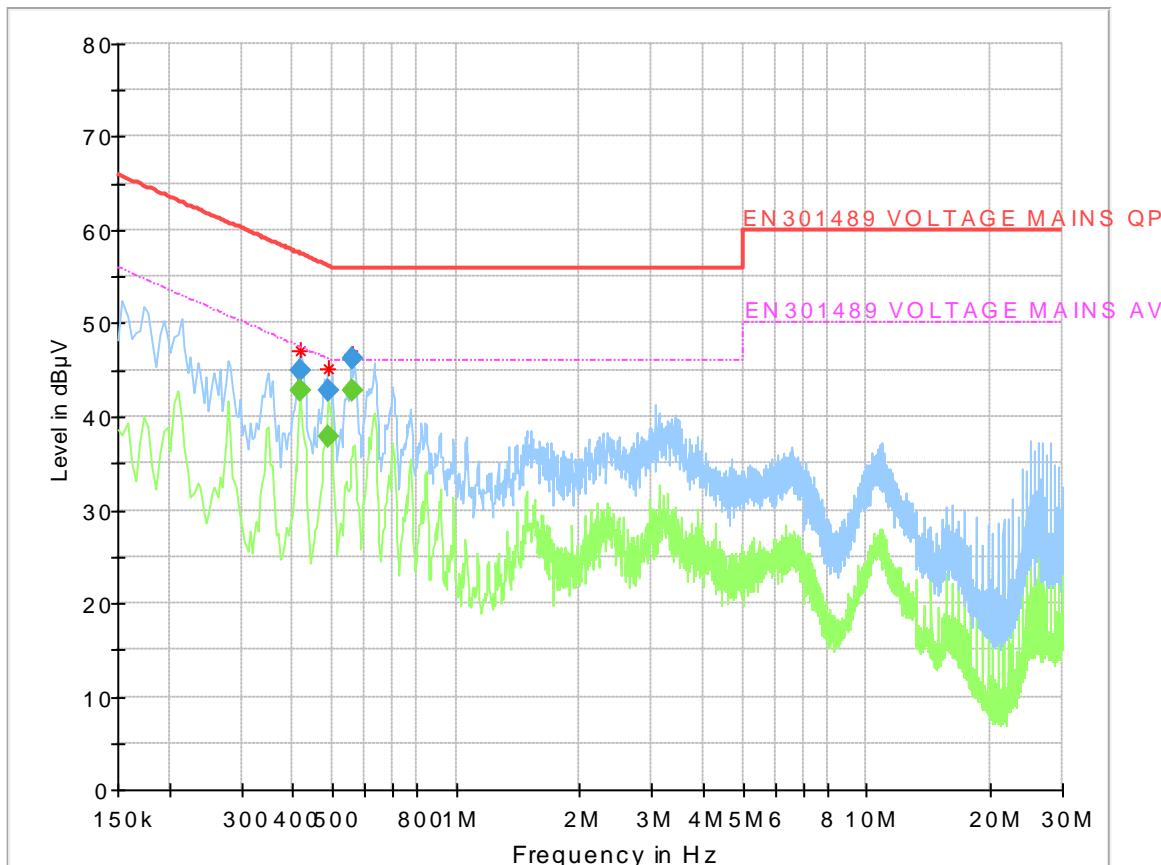
#### Limit

Frequency MHz	QP Limit dB $\mu$ V	AV Limit dB $\mu$ V
0.150-0.500	66-56*	56-46*
0.500-5	56	46
5-30	60	50

Decreasing linearly with logarithm of the frequency

## Conducted Emission

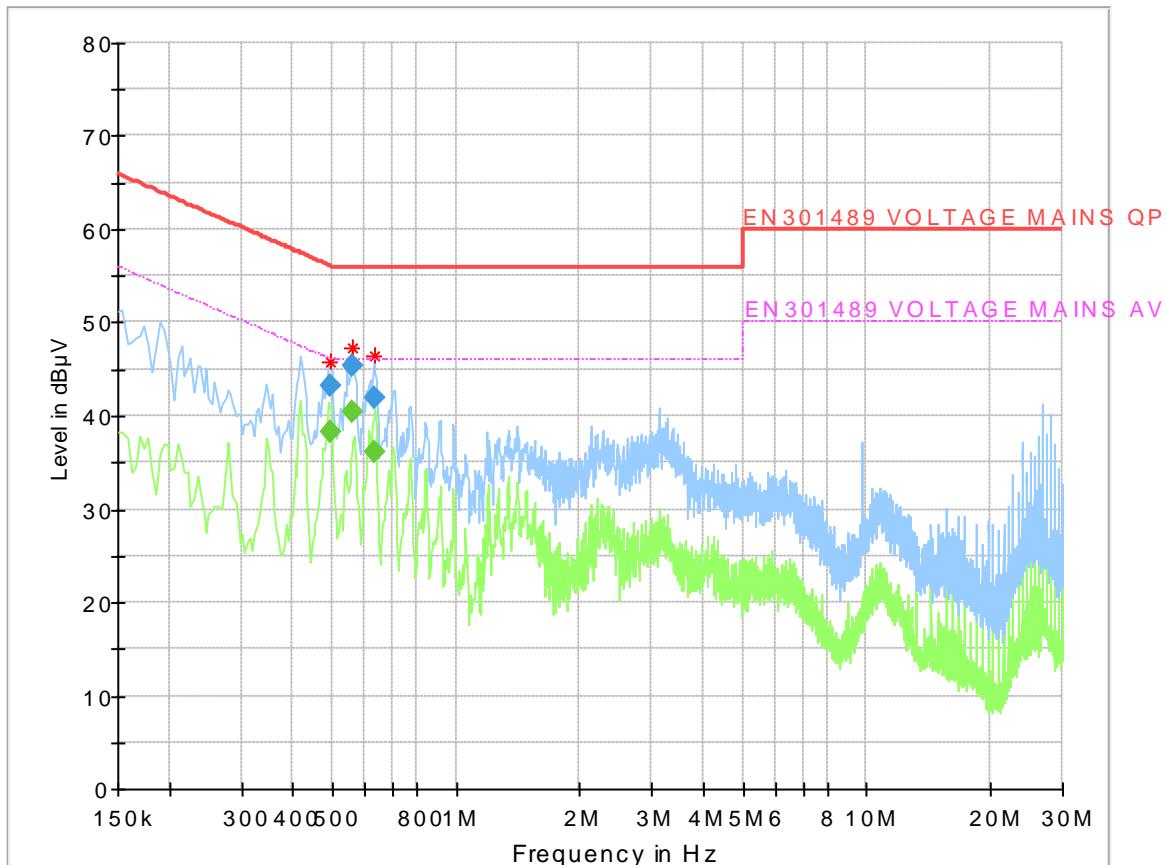
Product Type : WiFi Module  
 M/N : AEH-W4B1  
 Operating Condition : Charging & TX  
 Test Specification : Live  
 Comment : AC 120V/60Hz



Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.417500	---	42.69	47.50	4.81	L1	9.7
0.417500	44.95	---	57.50	12.55	L1	9.7
0.489500	---	37.83	46.18	8.35	L1	9.7
0.489500	42.83	---	56.18	13.35	L1	9.7
0.557500	---	42.77	46.00	3.23	L1	9.7
0.557500	46.15	---	56.00	9.85	L1	9.7

## Conducted Emission

Product Type : WiFi Module  
 M/N : AEH-W4B1  
 Operating Condition : Charging & TX  
 Test Specification : Neutral  
 Comment : AC 120V/60Hz



Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.493500	---	38.36	46.11	7.75	N	9.6
0.493500	43.30	---	56.11	12.81	N	9.6
0.557500	---	40.52	46.00	5.48	N	9.7
0.557500	45.44	---	56.00	10.56	N	9.7
0.629500	---	36.04	46.00	9.96	N	9.7
0.629500	41.92	---	56.00	14.08	N	9.7



## 9.2 Conducted peak output power

### Test Method

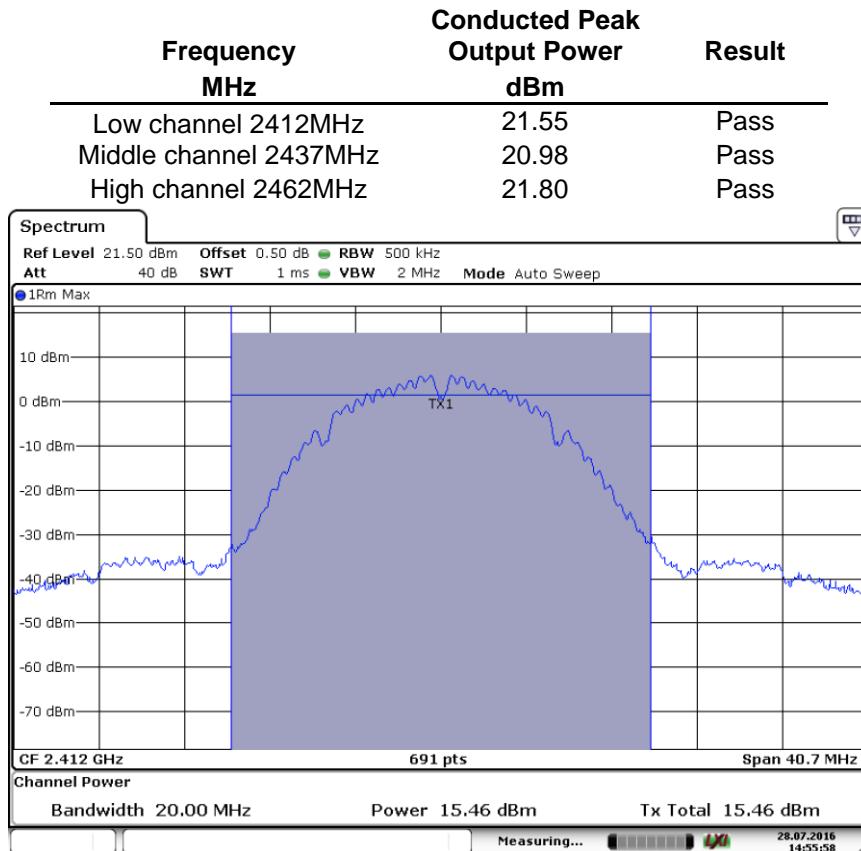
1. Use the following spectrum analyzer settings:  
Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel  
RBW > the 20 dB bandwidth of the emission being measured,  $VBW \geq RBW$ ,  
Sweep = auto, Detector function = peak, Trace = max hold
2. Add a correction factor to the display.
3. Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power

### Limits

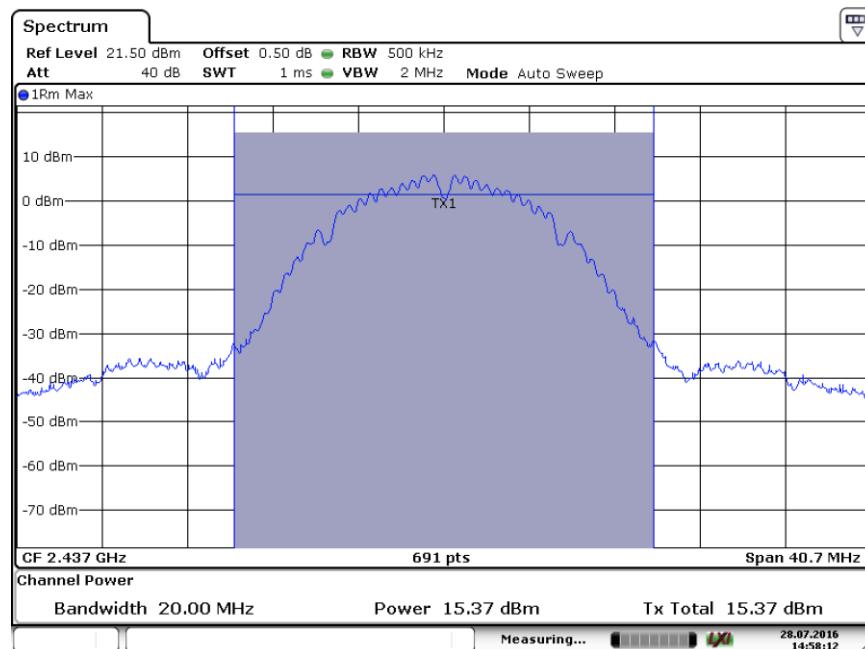
Frequency Range MHz	Limit W	Limit dBm
2400-2483.5	≤1	≤30

## Conducted peak output power

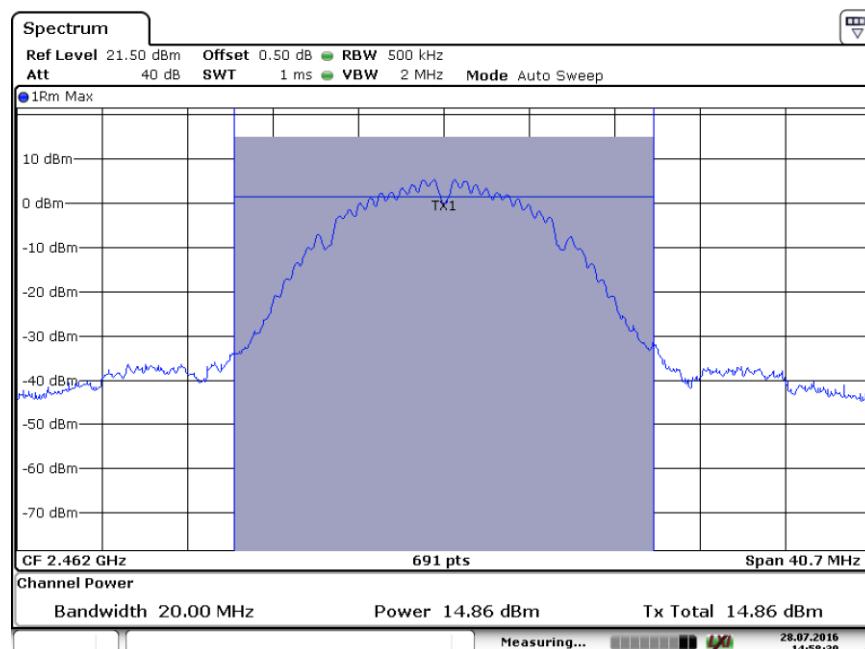
### 802.11b modulation Test Result



Date: 28.JUL.2016 14:55:58



Date: 28.JUL.2016 14:58:12

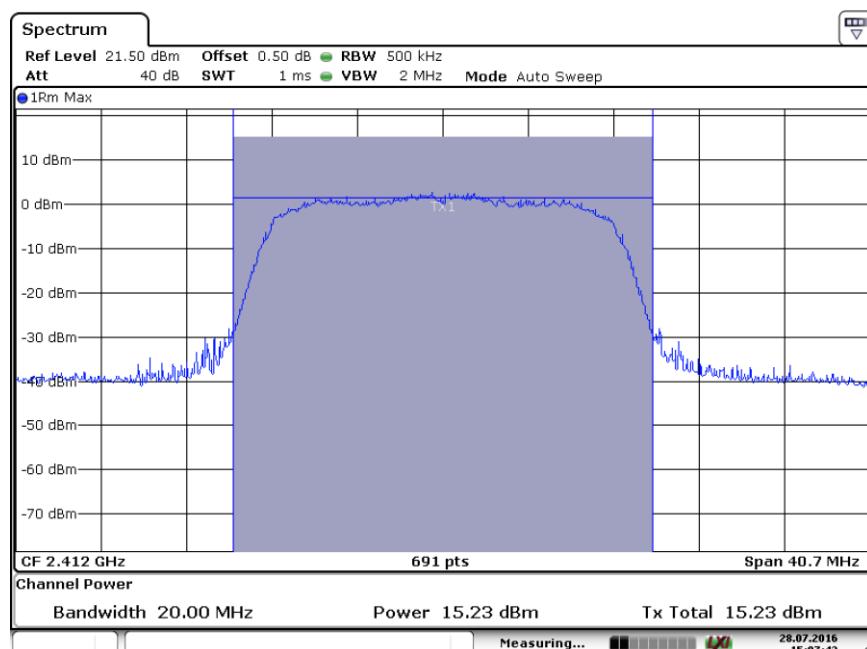


Date: 28.JUL.2016 14:58:39

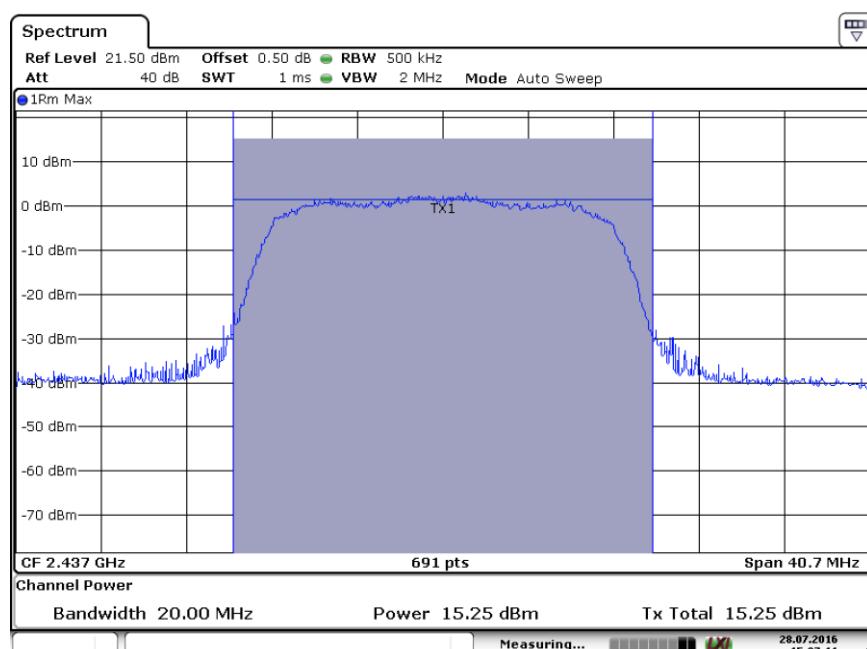


## 802.11g modulation Test Result

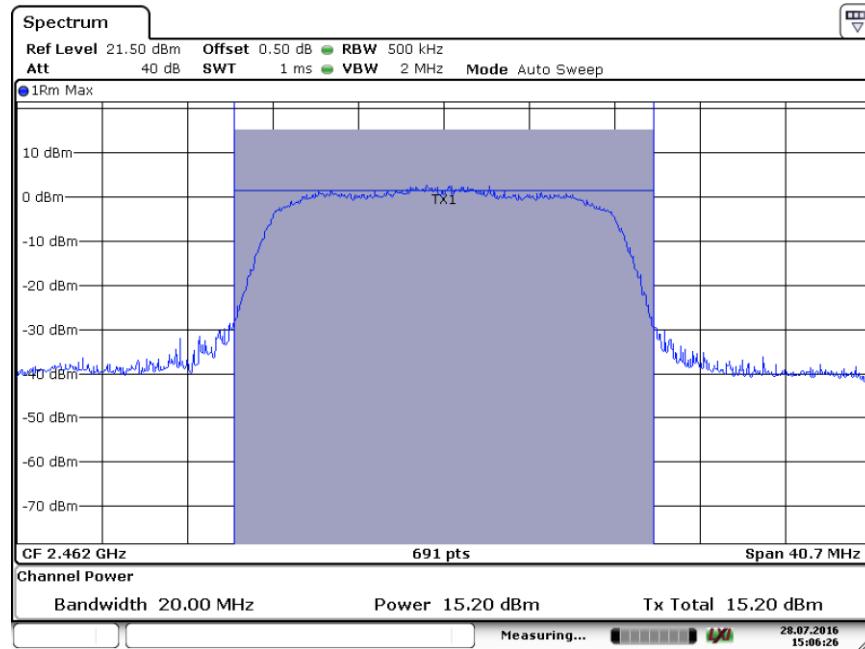
Frequency MHz	Conducted Peak Output Power dBm	Result
Low channel 2412MHz	22.12	Pass
Middle channel 2437MHz	21.58	Pass
High channel 2462MHz	22.33	Pass



Date: 28.JUL.2016 15:07:43



Date: 28.JUL.2016 15:07:11

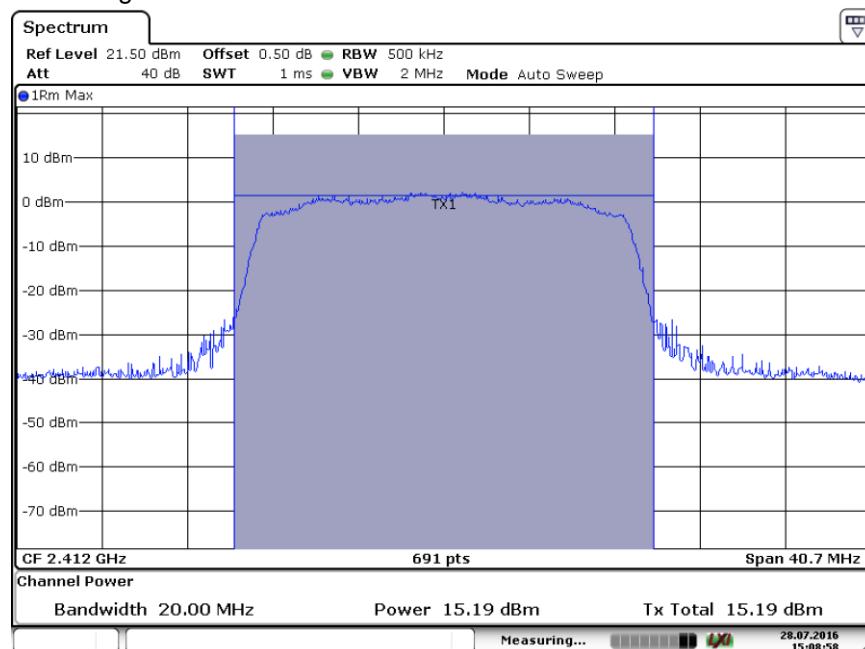


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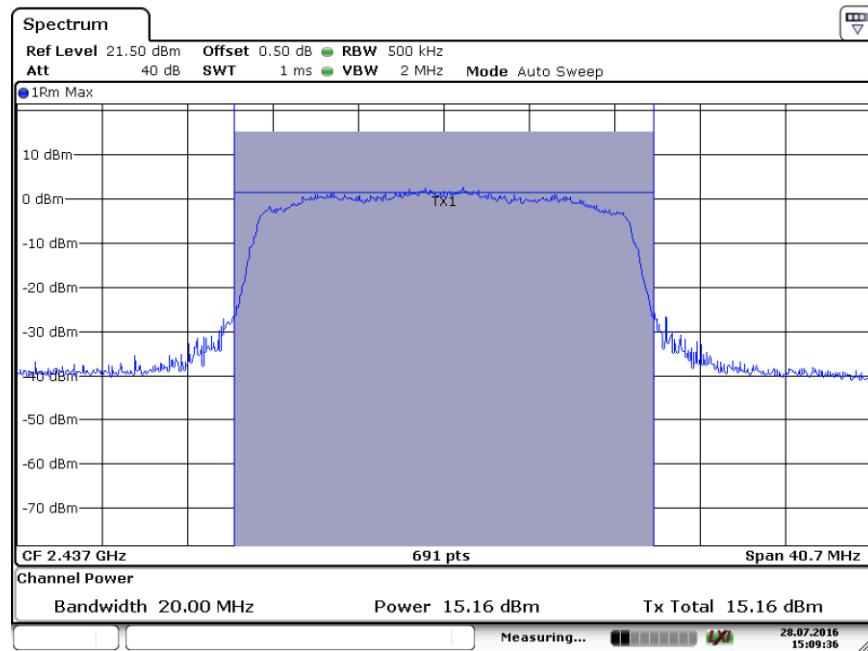
### 802.11n20 modulation Test Result

#### Conducted Peak

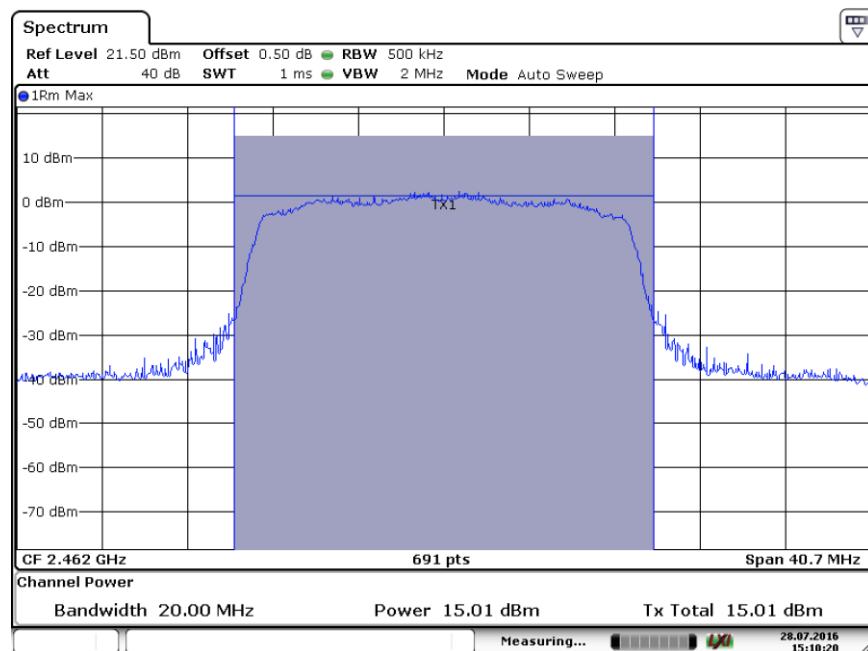
Frequency MHz	Output Power dBm	Result
Low channel 2412MHz	22.05	Pass
Middle channel 2437MHz	21.53	Pass
High channel 2462MHz	22.29	Pass



Date: 28.JUL.2016 15:08:57



Date: 28.JUL.2016 15:09:36

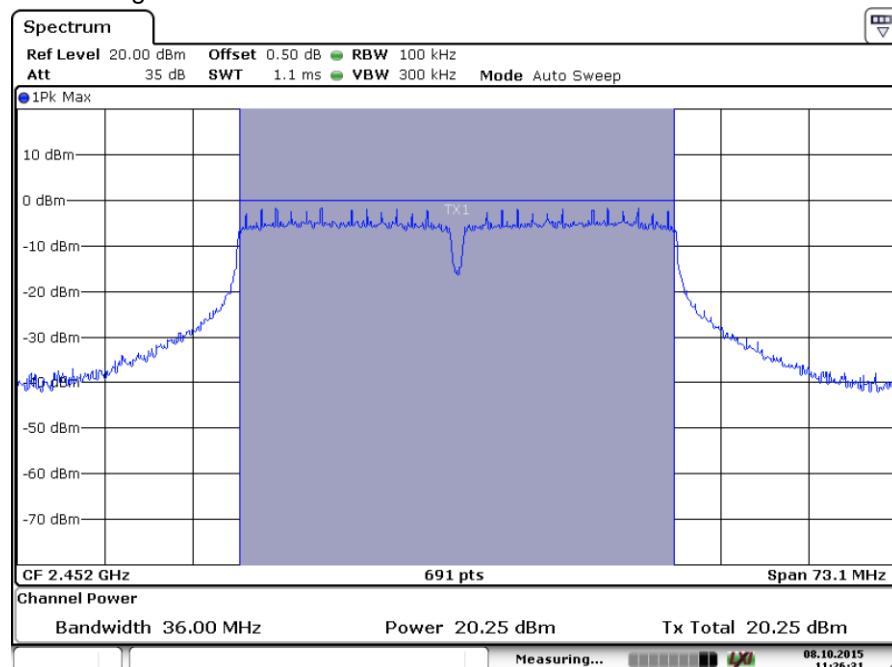


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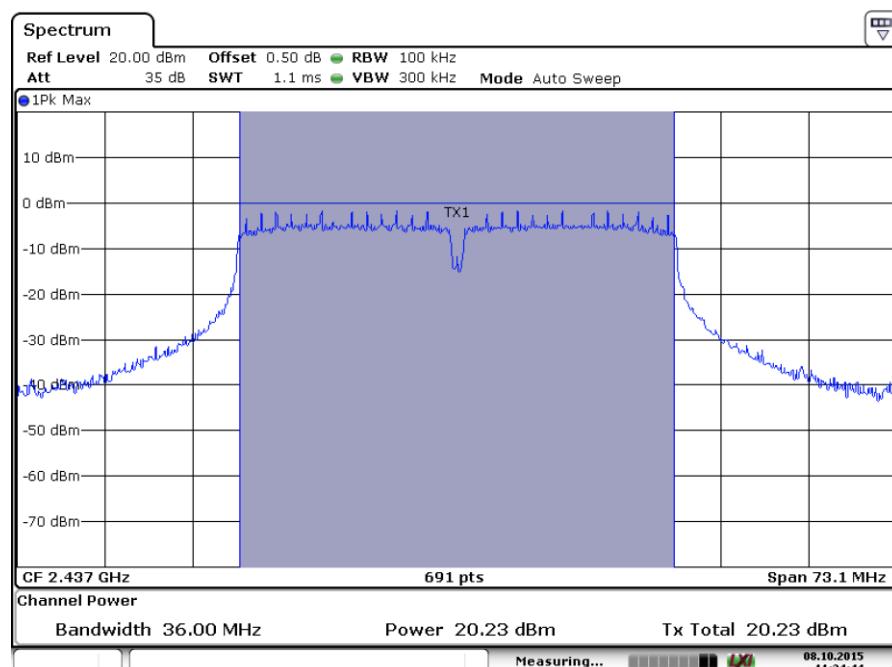


## 802.11n40 modulation Test Result

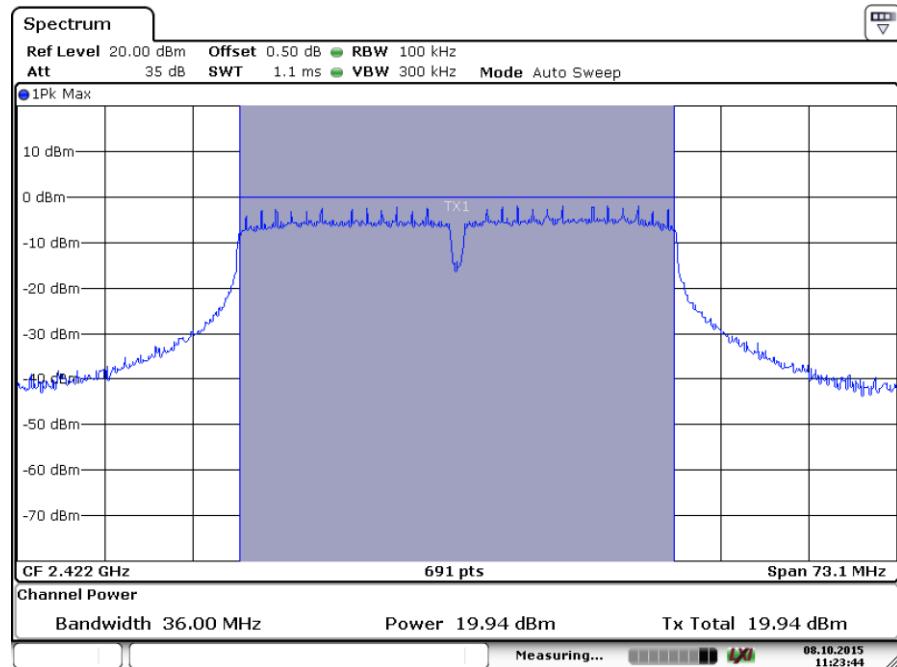
Frequency MHz	Conducted Peak Output Power dBm	Result
Low channel 2422MHz	20.25	Pass
Middle channel 2437MHz	20.23	Pass
High channel 2452MHz	19.94	Pass



Date: 8 OCT. 2015 11:26:31



Date: 8 OCT. 2015 11:24:44



## 9.3 Power spectral density

### Test Method

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance:

1. Set analyzer center frequency to DTS channel center frequency.  
RBW=3kHz,VBW≥3RBW,Span=1.5 times DTS bandwidth, Detector=Peak, Sweep=auto, Trace= max hold
2. Allow trace to fully stabilize, use the peak marker function to determine the maximum amplitude level within the RBW.
3. Repeat above procedures until other frequencies measured were completed

### Limit

**Limit [dBm]**

≤8

#### 802.11b modulation Test Result

Frequency MHz	Power spectral density	Limit dBm	Result
2412	-6.96	8	Pass
2437	-6.75	8	Pass
2462	-7.28	8	Pass

#### 802.11g modulation Test Result

Frequency MHz	Power spectral density	Limit dBm	Result
2412	-14.41	8	Pass
2437	-14.08	8	Pass
2462	-15.68	8	Pass

#### 802.11n20 modulation Test Result

Frequency MHz	Power spectral density	Limit dBm	Result
2412	-14.20	8	Pass
2437	-15.21	8	Pass
2462	-14.07	8	Pass

#### 802.11n40 modulation Test Result

Frequency MHz	Power spectral density	Limit dBm	Result
2412	-14.91	8	Pass
2437	-14.44	8	Pass
2462	-14.82	8	Pass

## 9.4 6 dB Bandwidth

### Test Method

1. Use the following spectrum analyzer settings:  
RBW=100K, VBW≥3RBW, Sweep = auto, Detector function = peak, Trace = max hold
2. Use the automatic bandwidth measurement capability of an instrument, may be employed using the X dB bandwidth mode with X set to 6 dB, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be  $\geq 6$  dB.
3. Allow the trace to stabilize, record the X dB Bandwidth value.

### Limit

**Limit [kHz]**

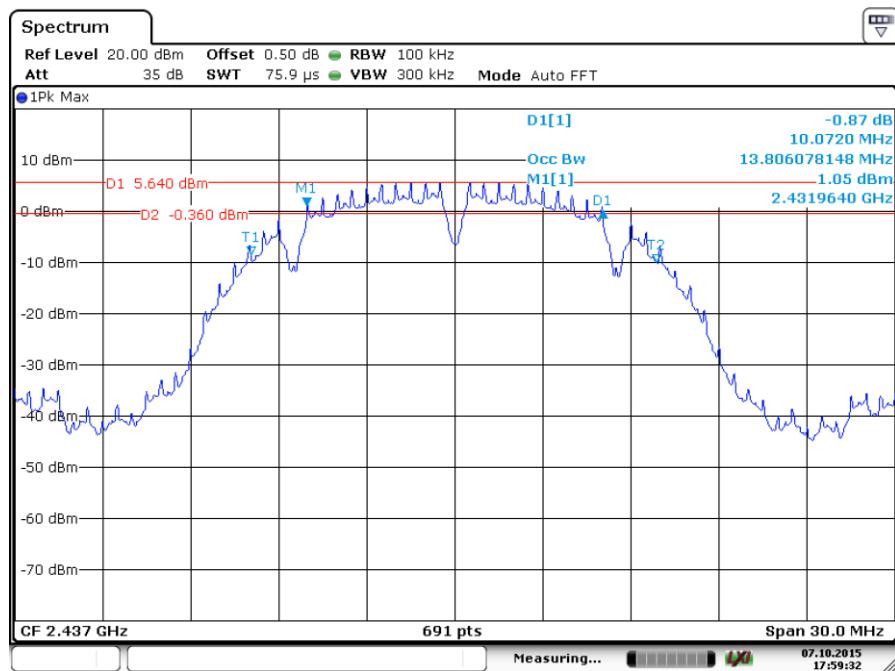
$\geq 500$

### 802.11b modulation Test Result

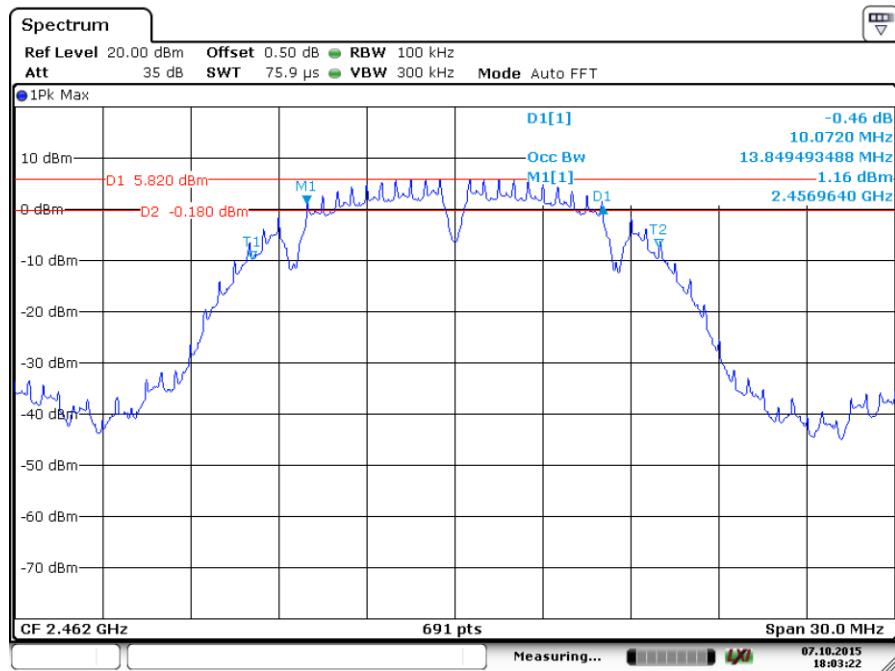
Frequency MHz	6 dB Bandwidth kHz	Limit kHz	Result
2412	13806	500	Pass
2437	13806	500	Pass
2462	13849	500	Pass

**Spectrum**

Date: 7.OCT.2015 17:56:43



Date: 7.OCT.2015 17:59:32

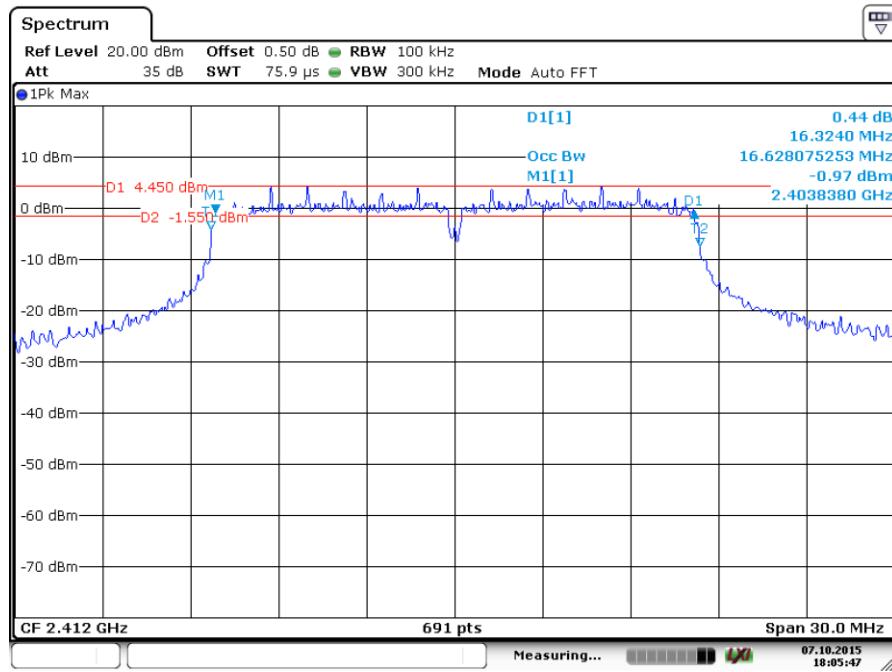


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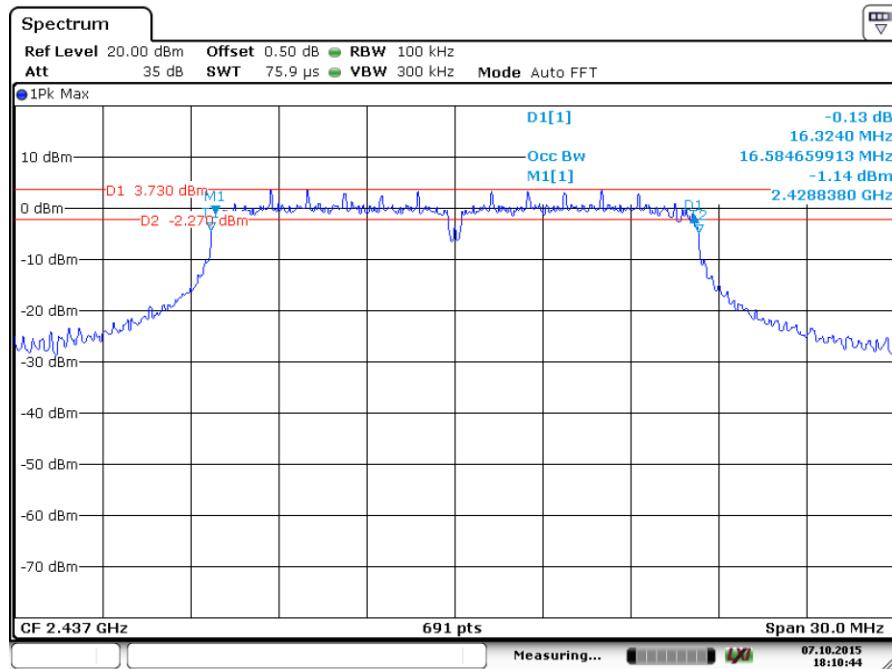


## 802.11g modulation Test Result

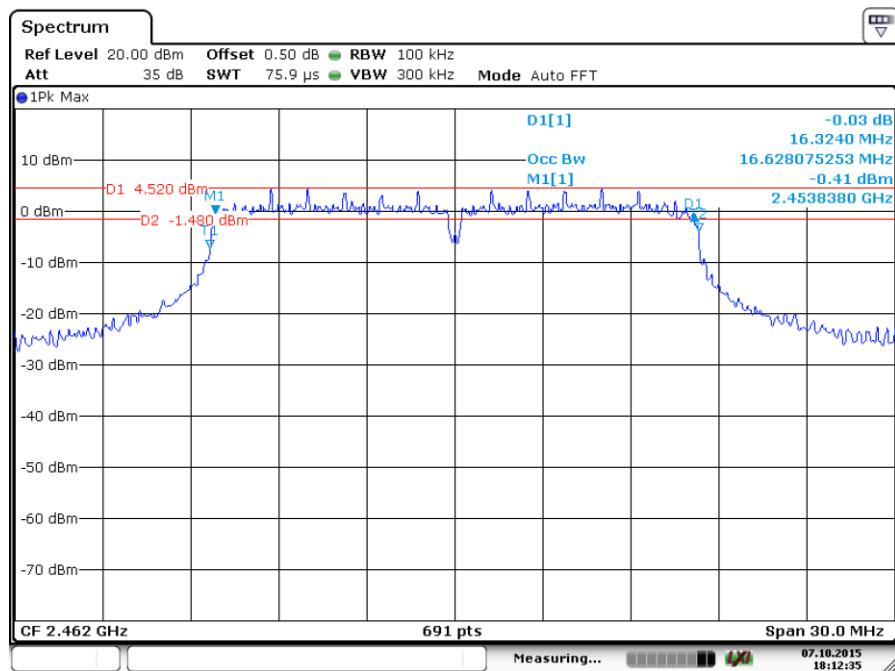
Frequency MHz	6 dB Bandwidth kHz	Limit kHz	Result
2412	16628	500	Pass
2437	16585	500	Pass
2462	16628	500	Pass



Date: 7.OCT.2015 18:05:47



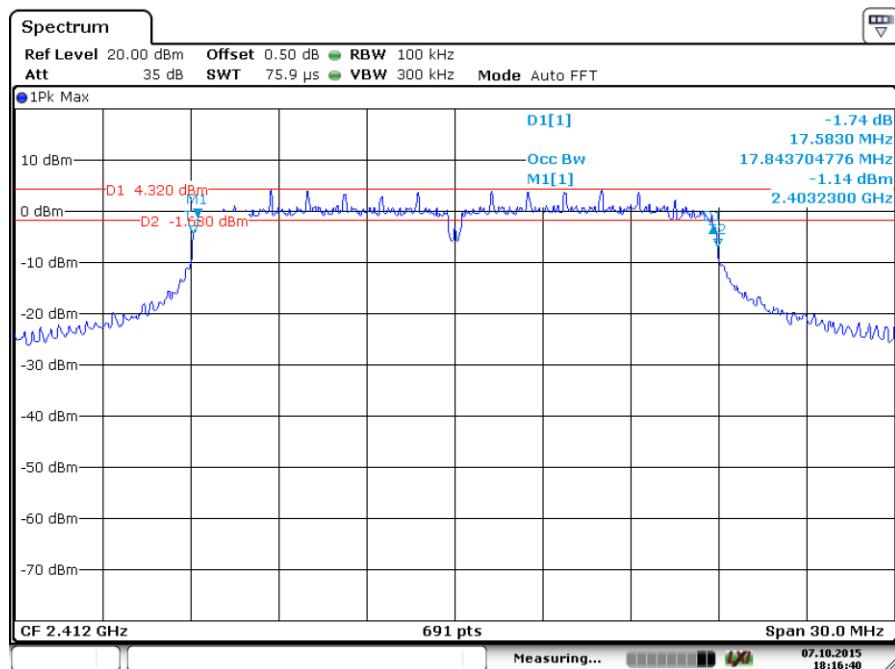
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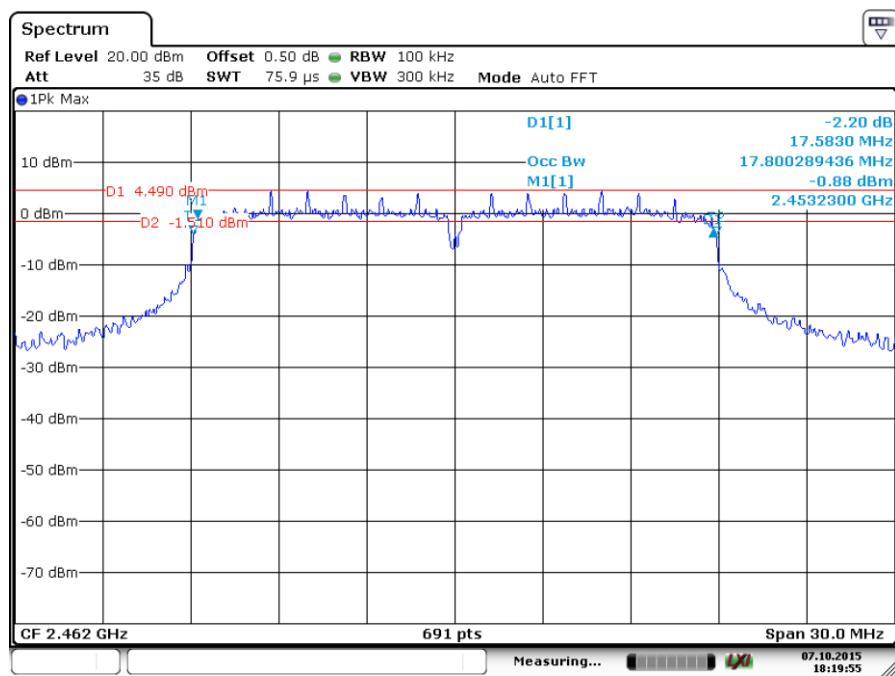
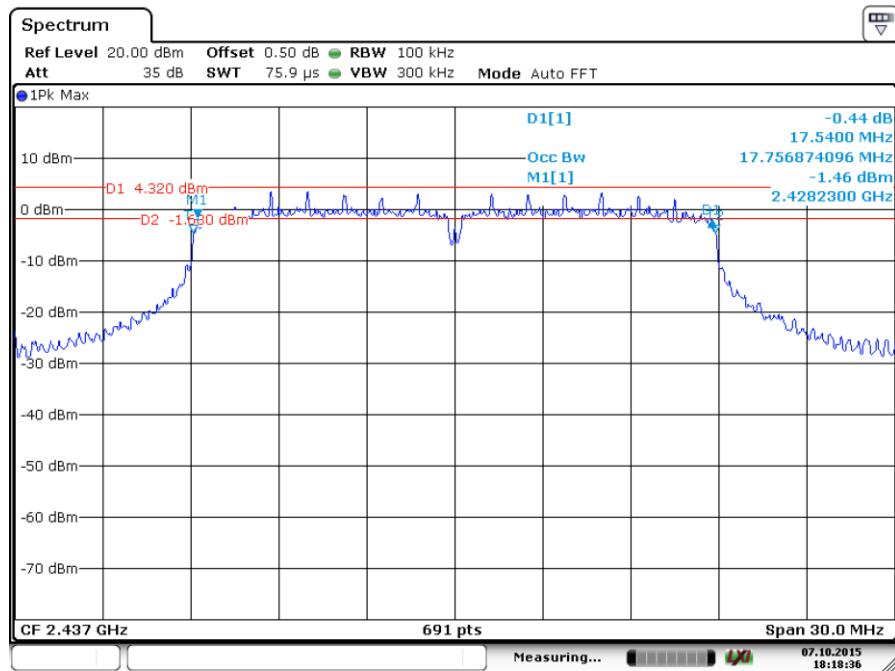
Date: 7.OCT.2015 18:12:35

## 802.11n20 modulation Test Result

Frequency MHz	6 dB Bandwidth kHz	Limit kHz	Result
2412	17844	500	Pass
2437	17757	500	Pass
2462	17800	500	Pass



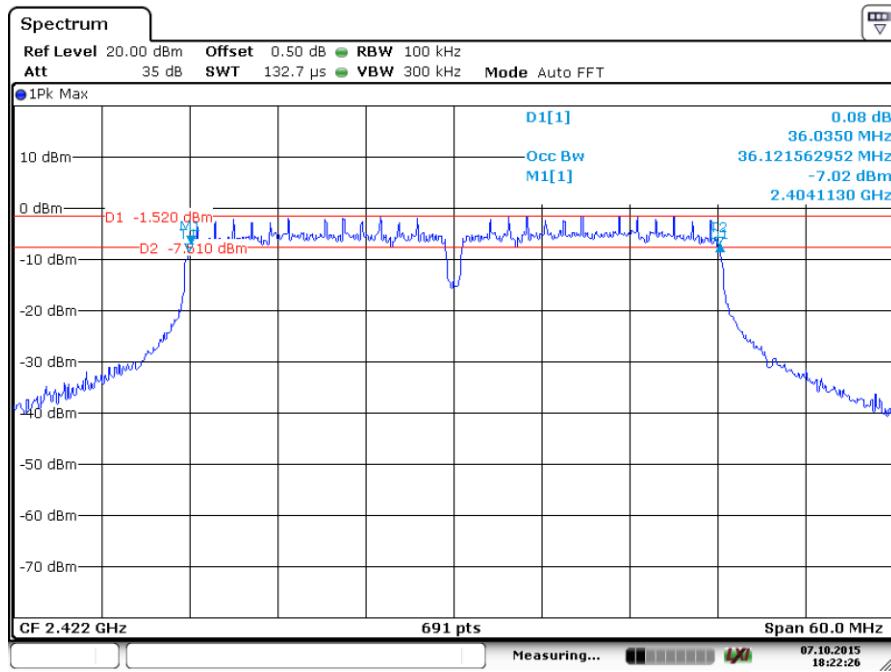
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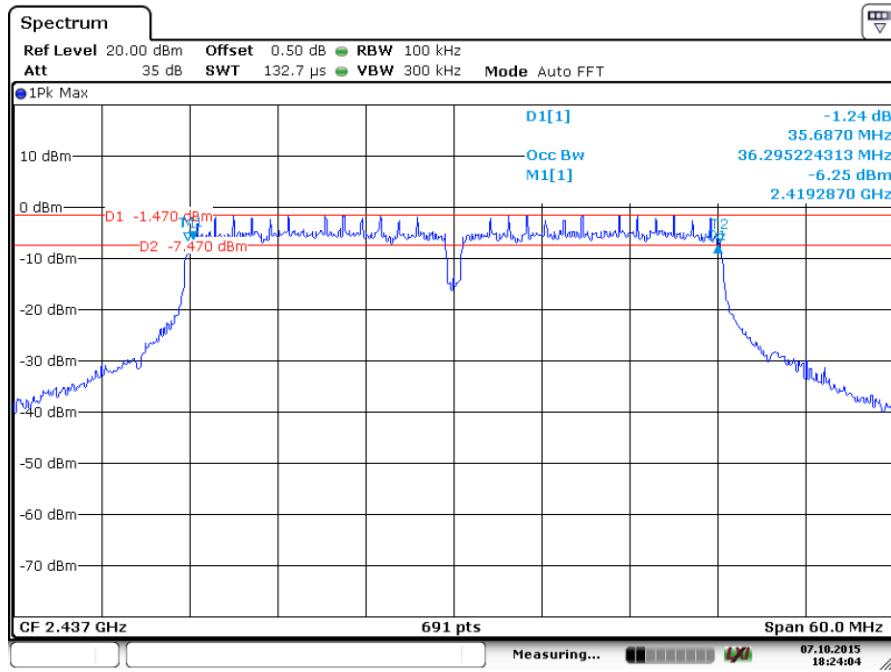


## 802.11n40 modulation Test Result

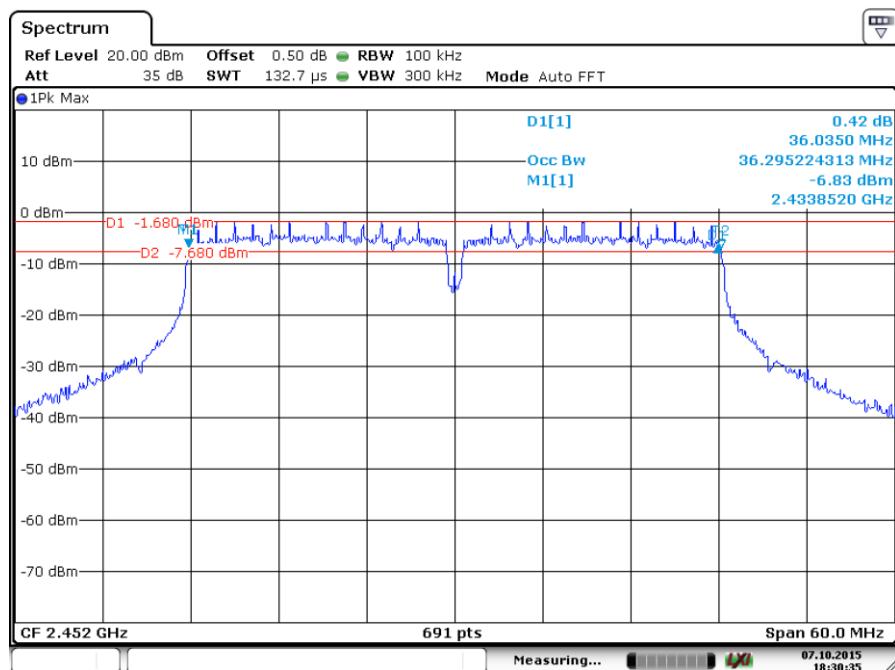
Frequency MHz	6 dB Bandwidth kHz	Limit kHz	Result
2422	36121	500	Pass
2437	36295	500	Pass
2452	36295	500	Pass



Date: 7.OCT.2015 18:22:25



Date: 7.OCT.2015 18:24:04



Date: 7.OCT.2015 18:30:34

## 9.5 Spurious RF conducted emissions

### Test Method

1. Use the following spectrum analyzer settings:  
Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10<sup>th</sup> harmonic. Typically, several plots are required to cover this entire span.  
RBW = 100 kHz, VBW≥RBW, Sweep = auto, Detector function = peak, Trace = max hold
2. Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded.
3. The level displayed must comply with the limit specified in this Section. Submit these plots.
4. Repeat above procedures until all frequencies measured were complete.

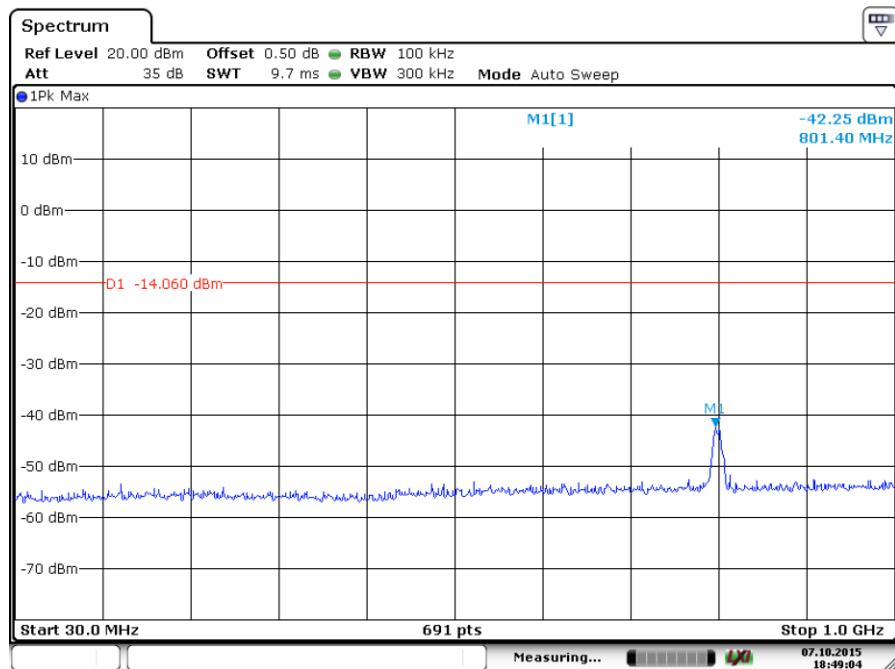
### Limit

Frequency Range MHz	Limit (dBc)
30-25000	-20

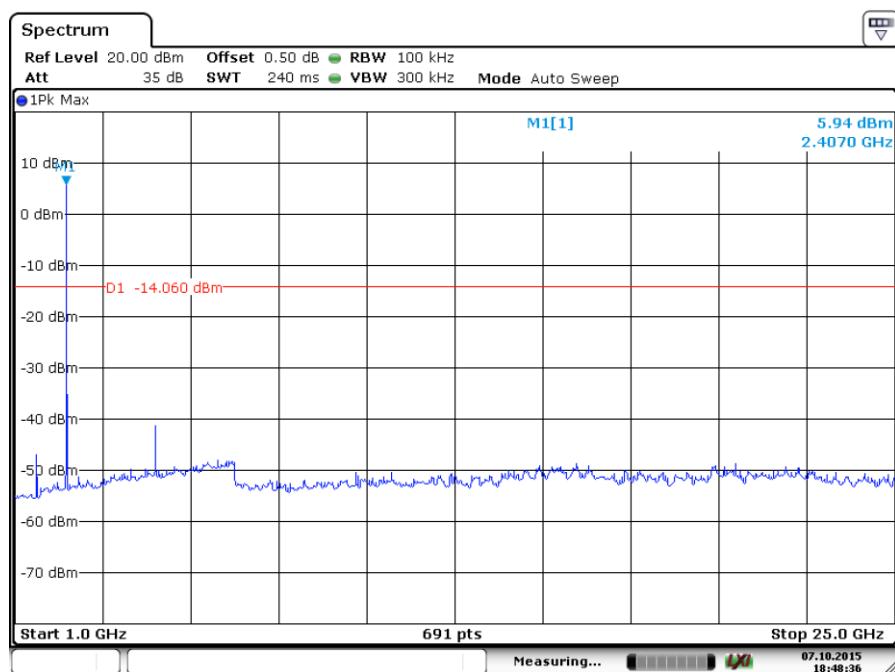


## Spurious RF conducted emissions

802.11b Modulation:  
2412MHz



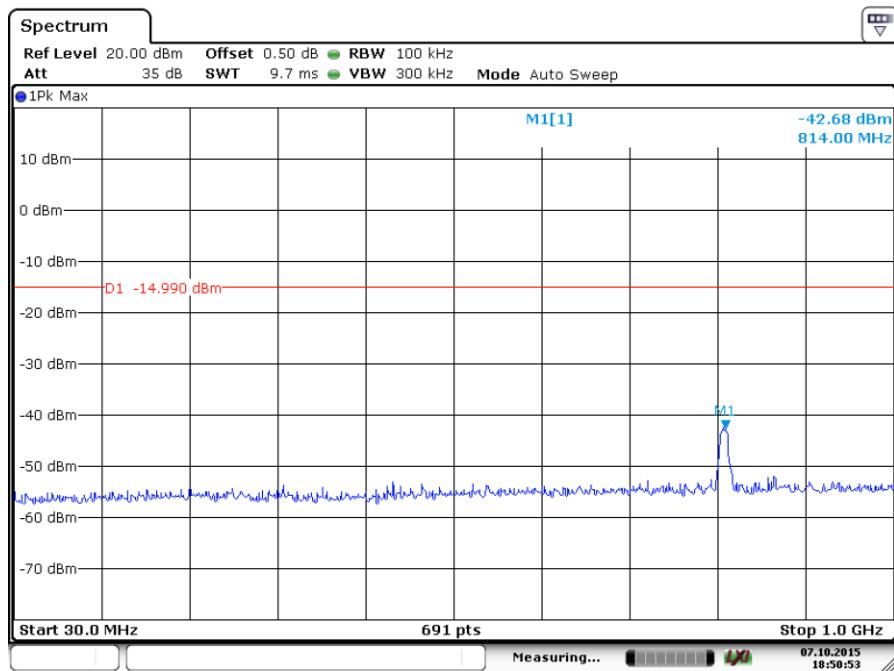
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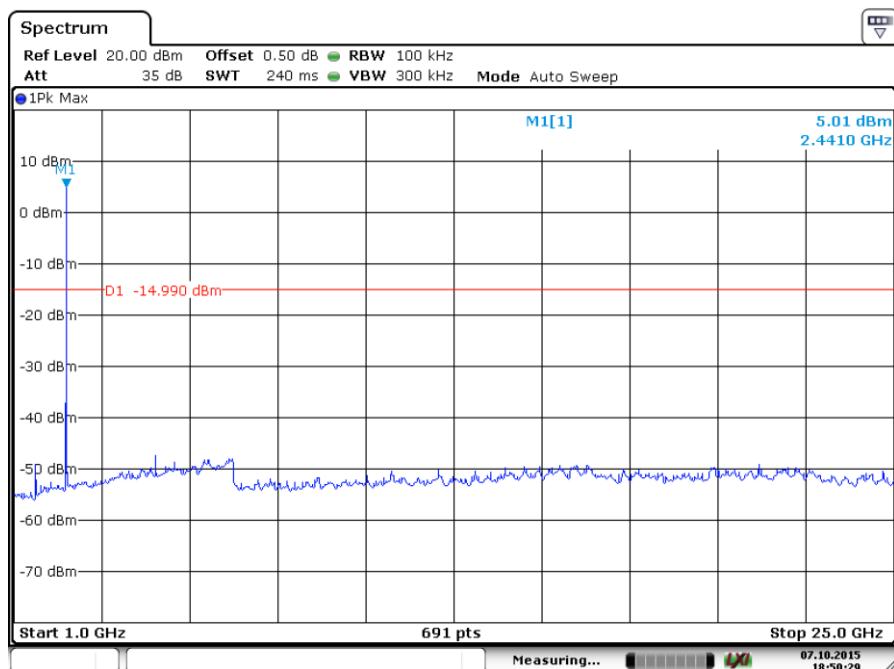
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2437MHz



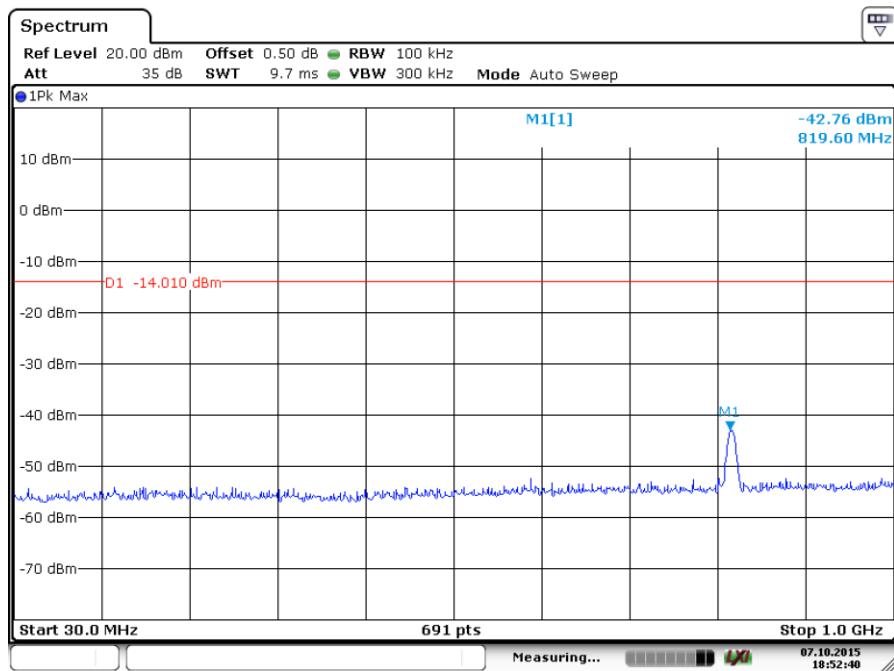
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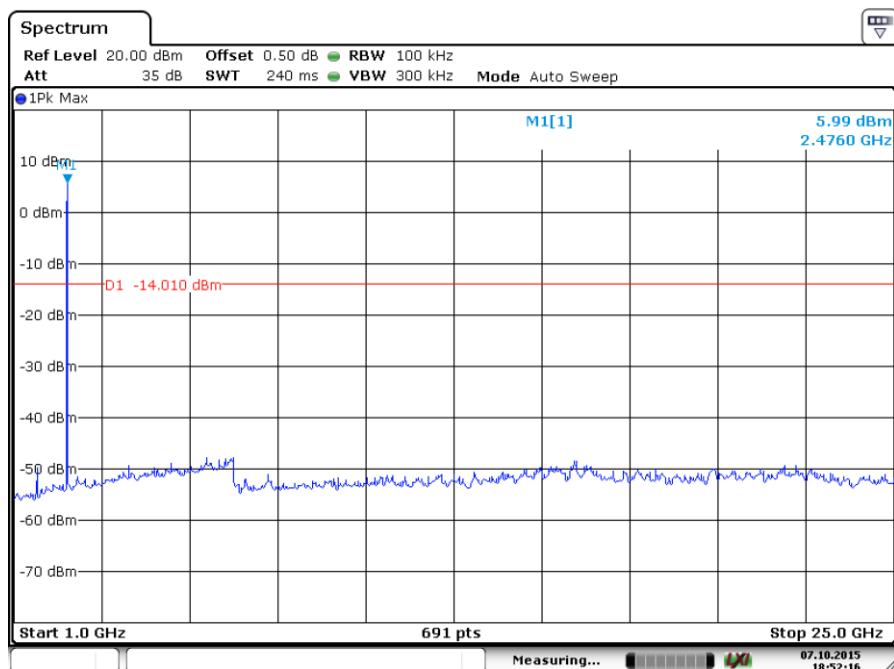
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2480MHz



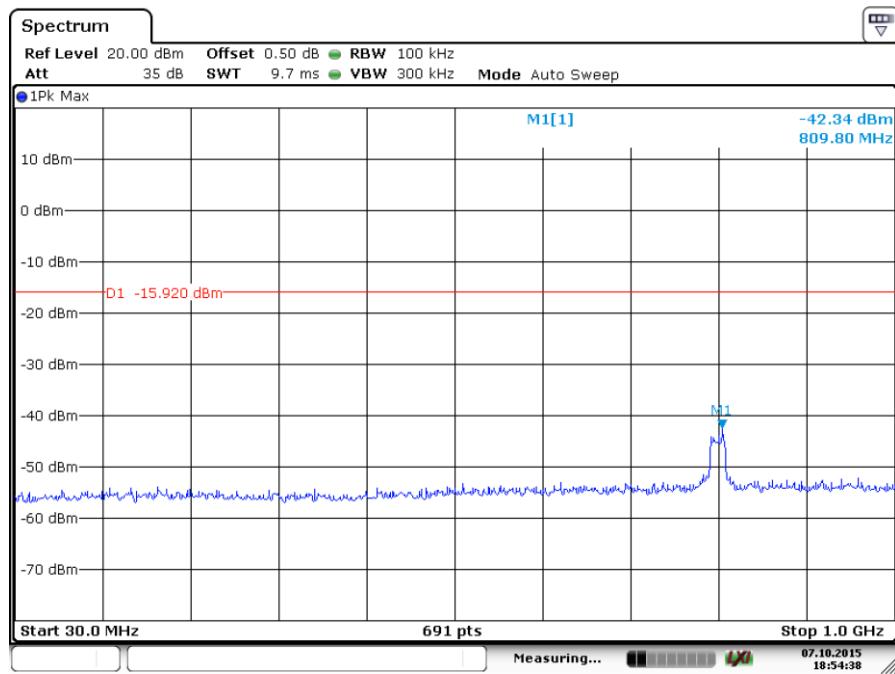
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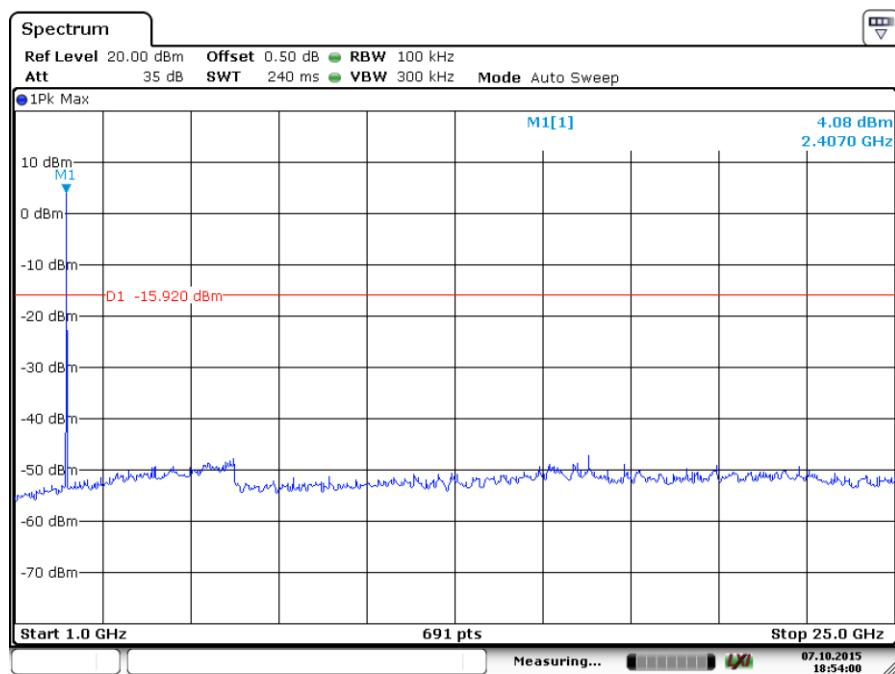
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## 802.11g Modulation: 2412MHz



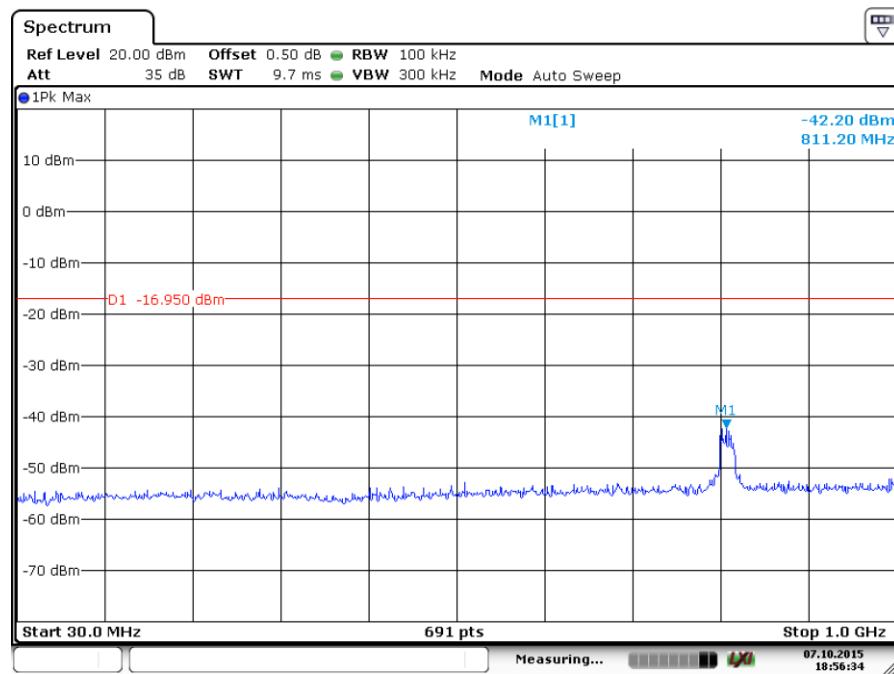
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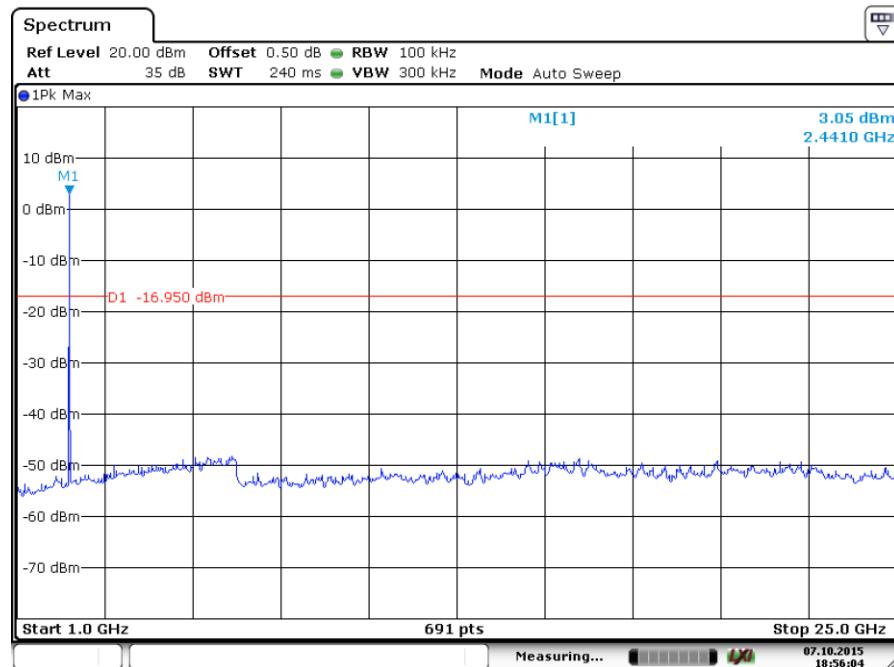
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2437MHz



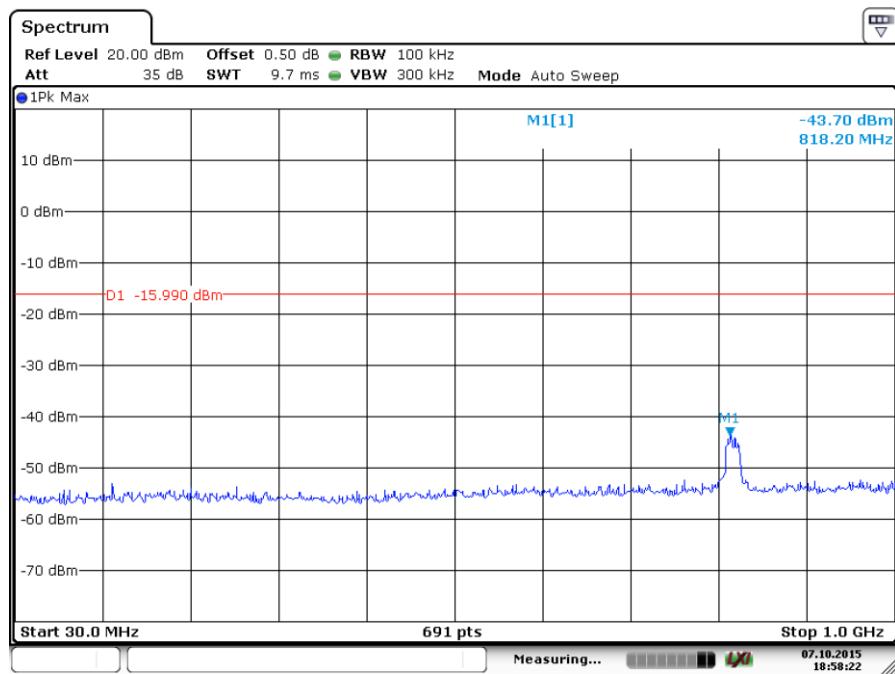
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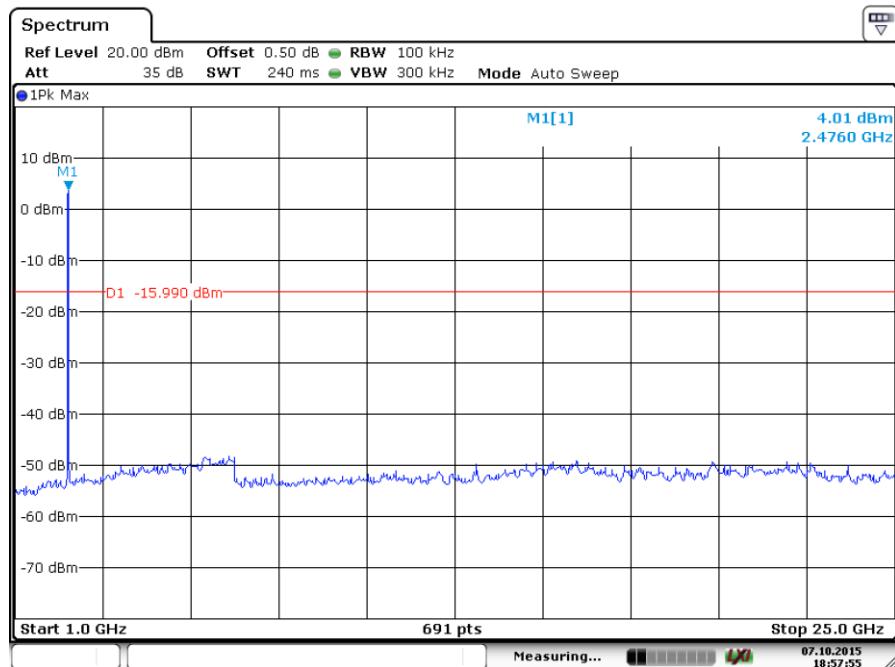
Date: 7.OCT.2015 18:56:04



2462MHz



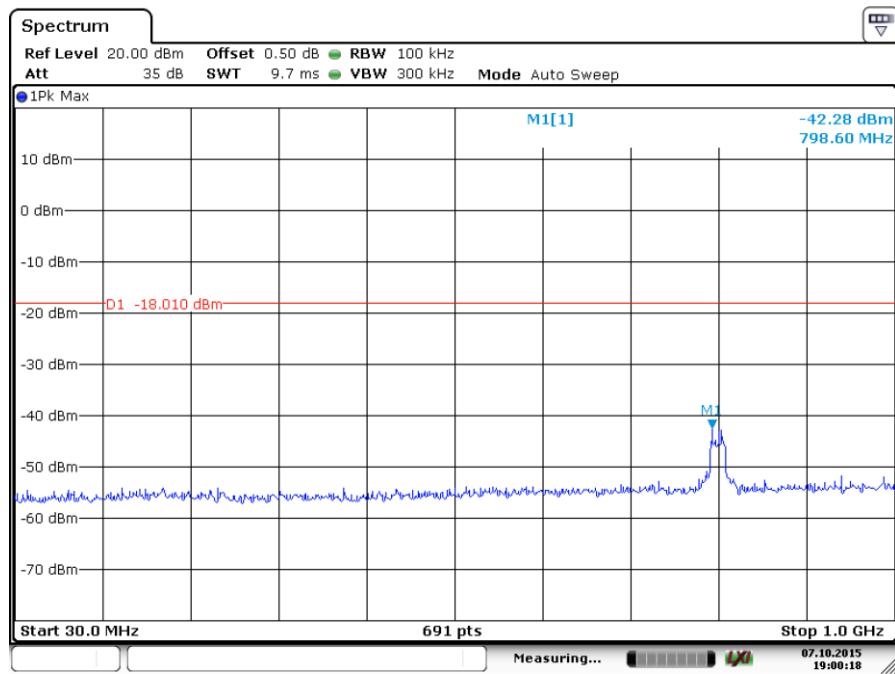
Date: 7.OCT.2015 18:58:21



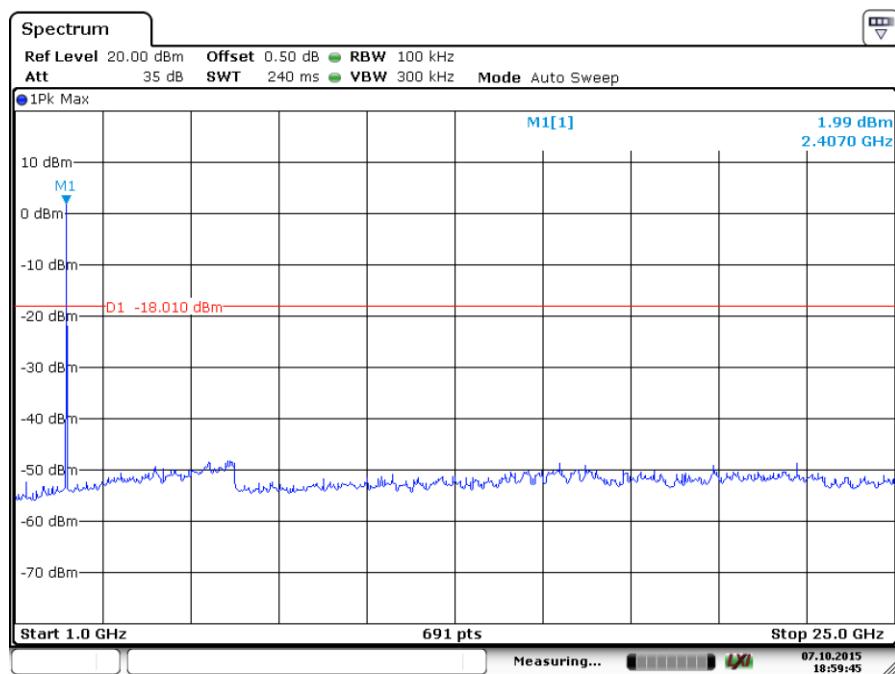
Date: 7.OCT.2015 18:57:55



## 802.11n20 Modulation: 2412MHz



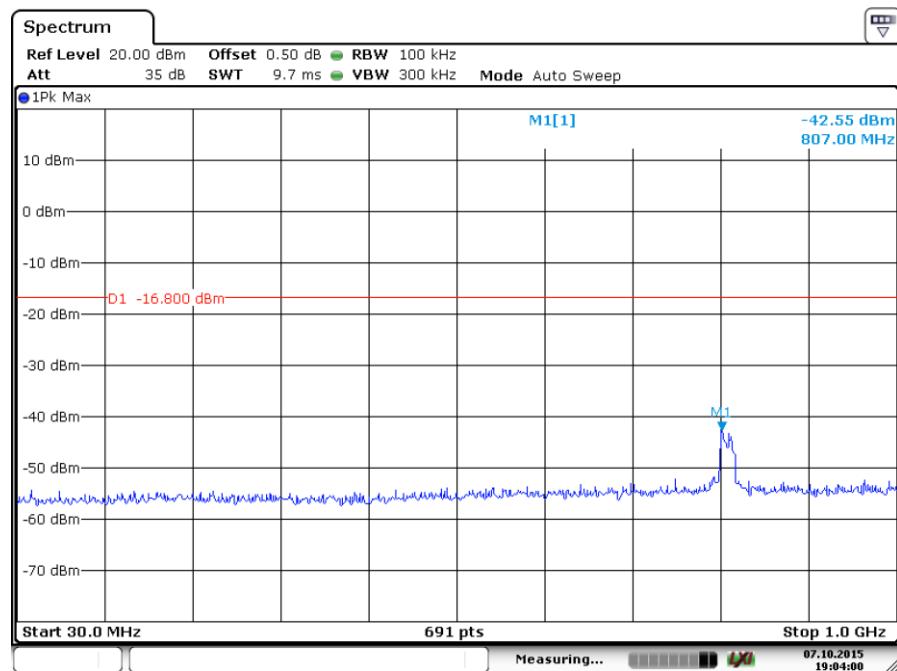
Date: 7.OCT.2015 19:00:18



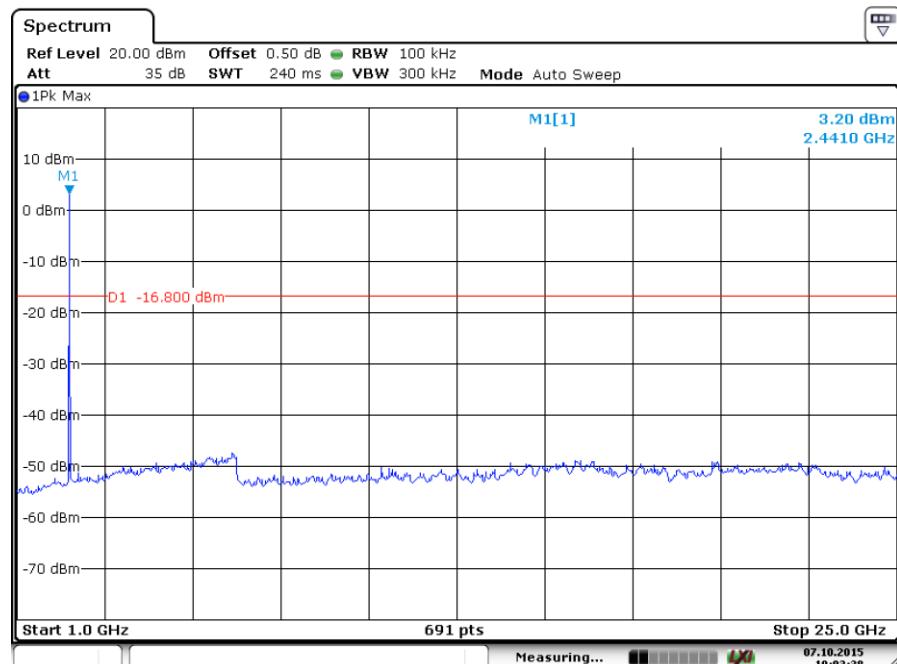
Date: 7.OCT.2015 18:59:45



2437MHz



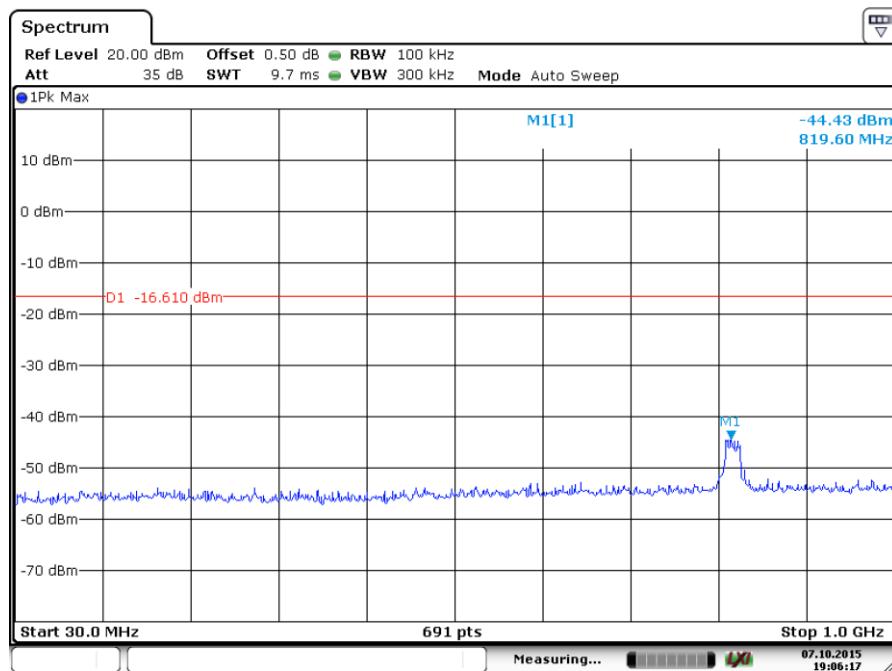
Date: 7.OCT.2015 19:04:01



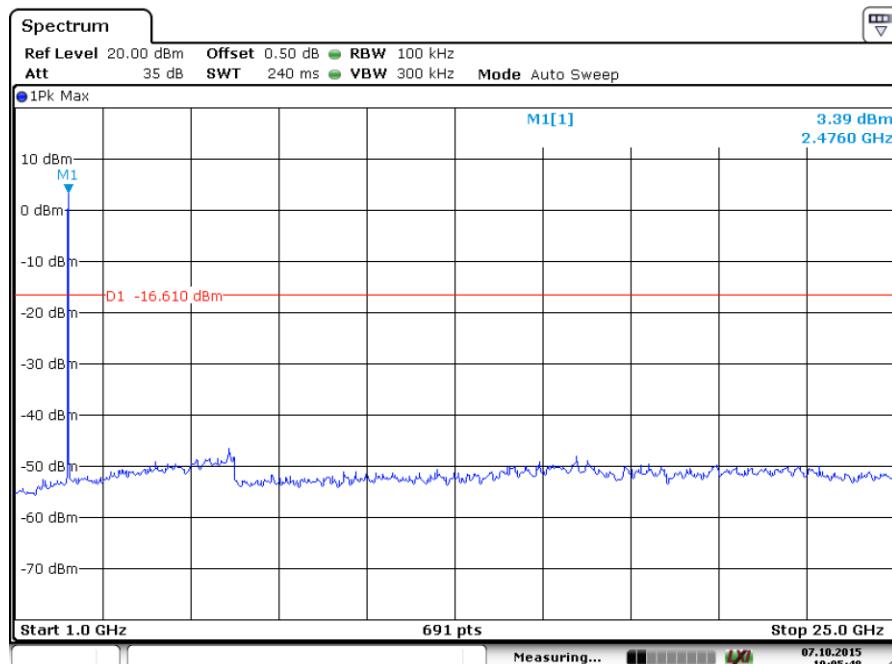
Date: 7.OCT.2015 19:03:39



2462MHz



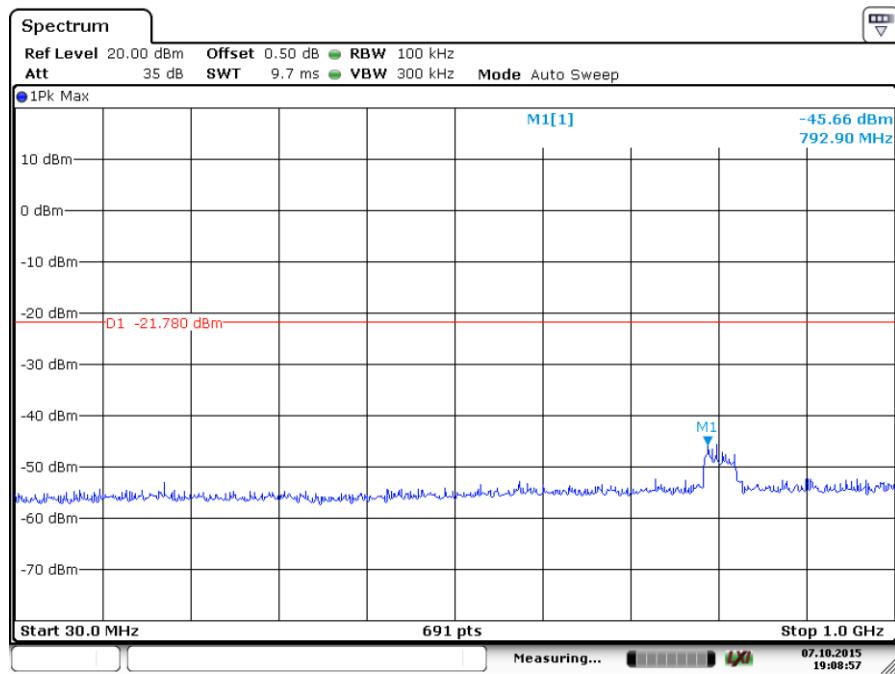
Date: 7.OCT.2015 19:06:17



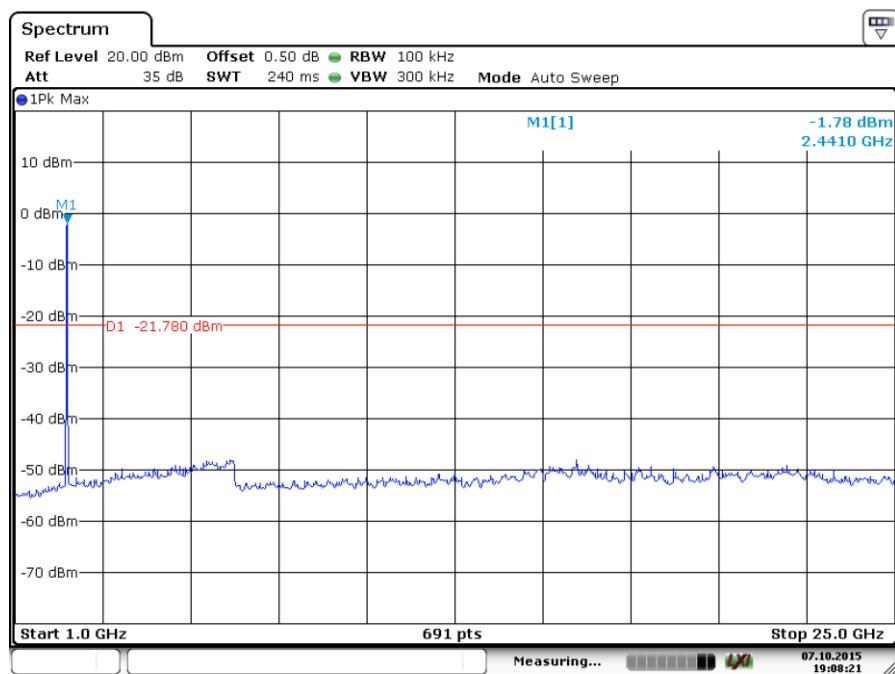
Date: 7.OCT.2015 19:05:48



## 802.11n40 Modulation: 2422MHz



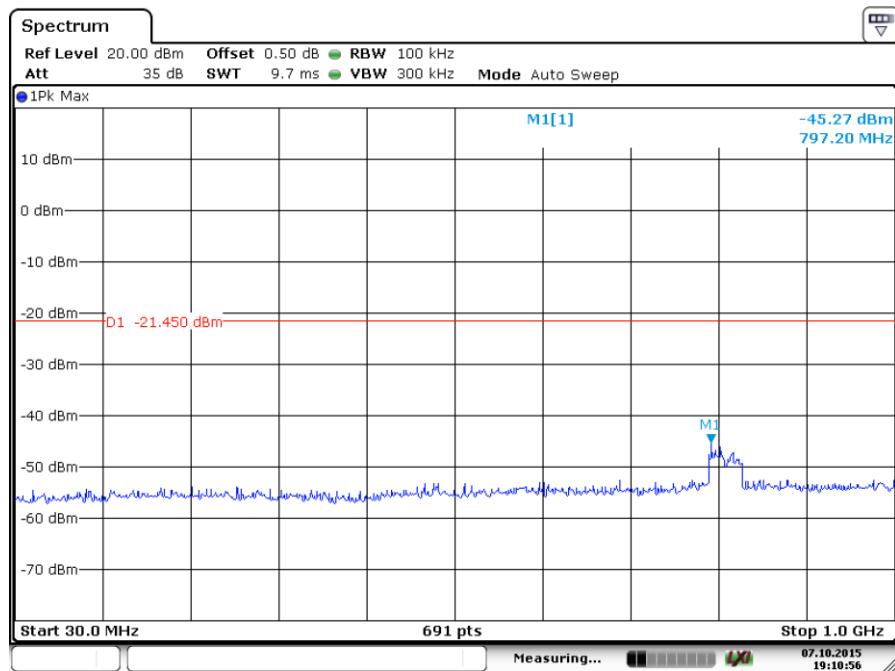
Date: 7.OCT.2015 19:08:57



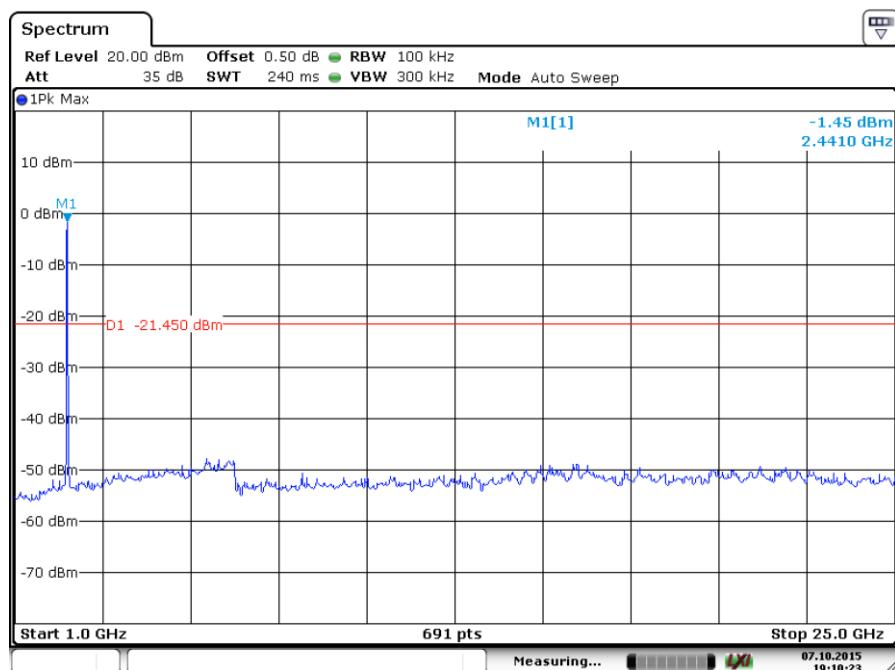
Date: 7.OCT.2015 19:08:21



2437MHz



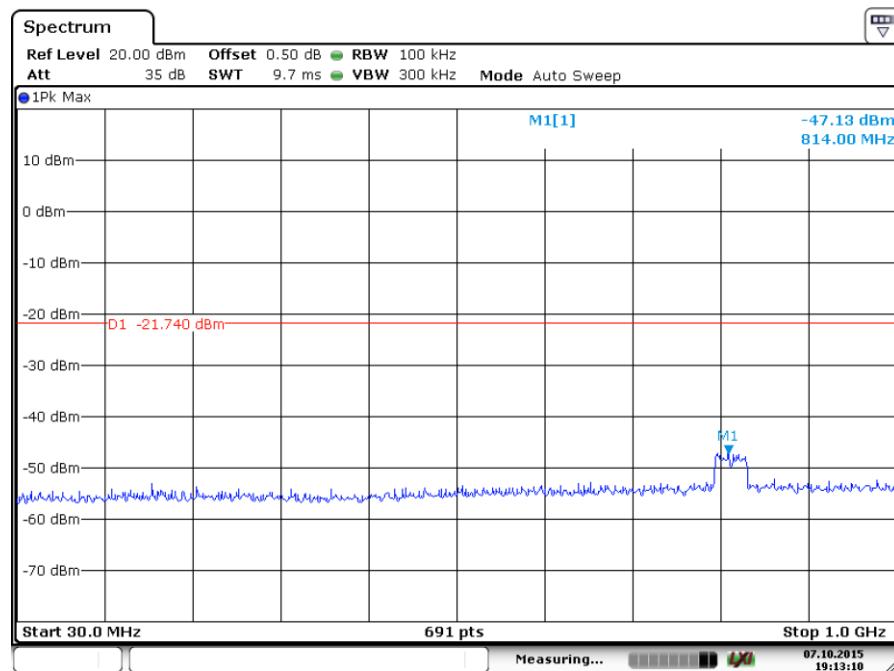
Date: 7.OCT.2015 19:10:56



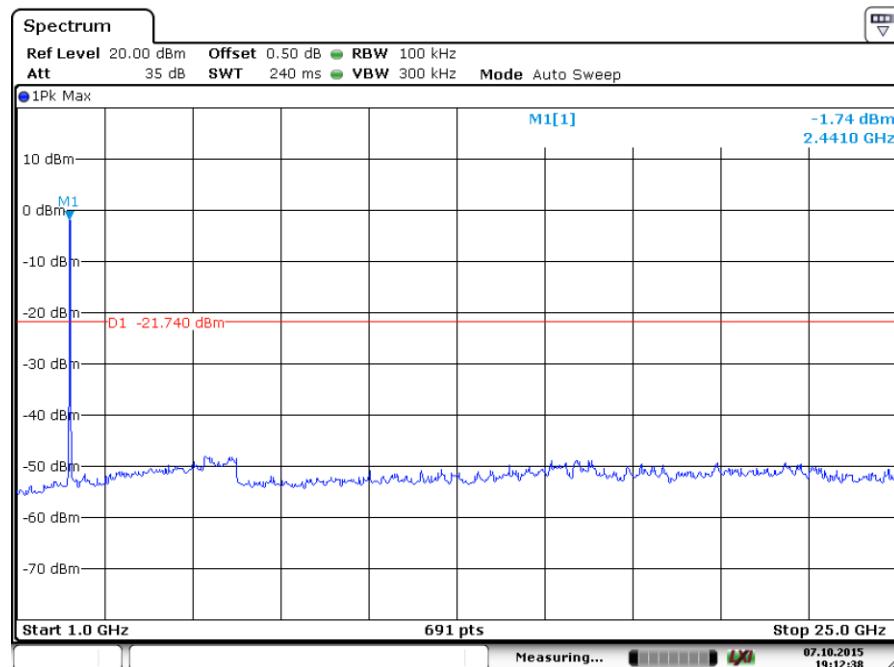
Date: 7.OCT.2015 19:10:23



2452MHz



Date: 7.OCT.2015 19:13:10



Date: 7.OCT.2015 19:12:38



## 9.6 Band edge testing

### Test Method

- 1 Use the following spectrum analyzer settings:  
Span = wide enough to capture the peak level of the in-band emission and all spurious  
RBW = 100 kHz, VBW  $\geq$  RBW, Sweep = auto, Detector function = peak, Trace = max  
hold
- 2 Allow the trace to stabilize, use the peak and delta measurement to record the result.
- 3 The level displayed must comply with the limit specified in this Section. .
- 4 Repeat the test at the hopping off and hopping on mode, submit all the plots.

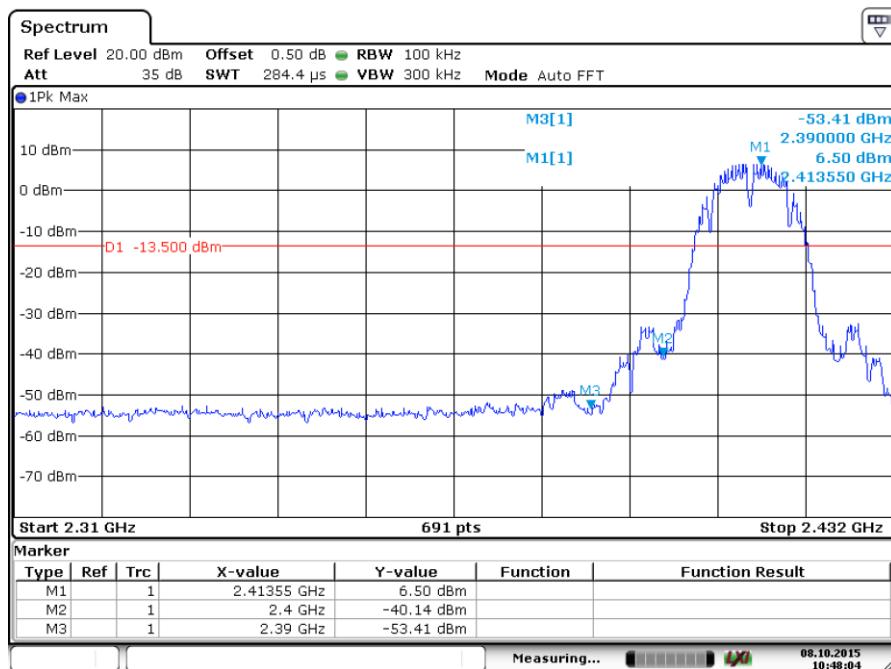
### Limit:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits.



## Band edge testing

### 802.11b Modulation Test Result



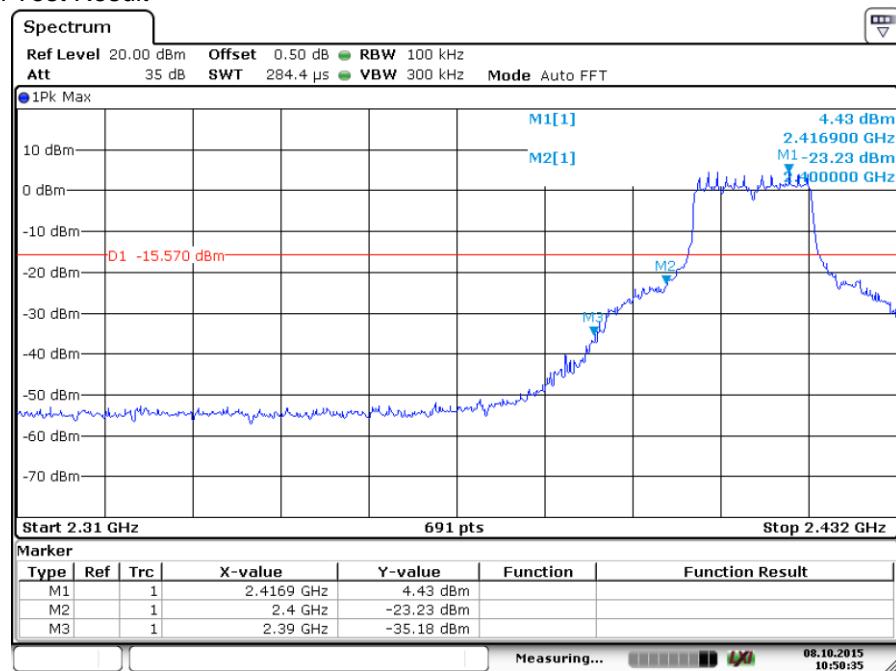
Date: 8.OCT.2015 10:48:04



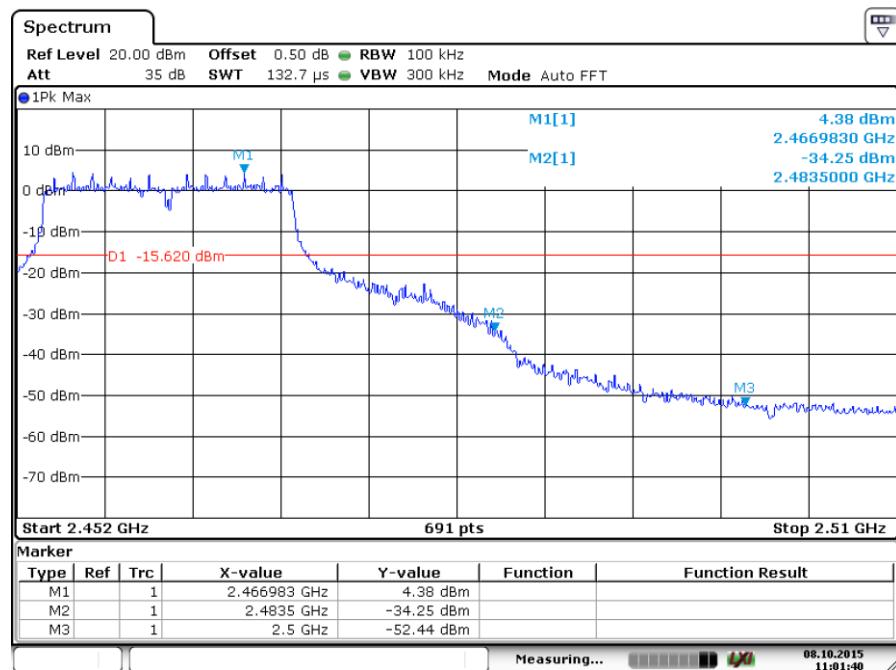
Date: 8.OCT.2015 11:03:10



## 802.11g Modulation Test Result



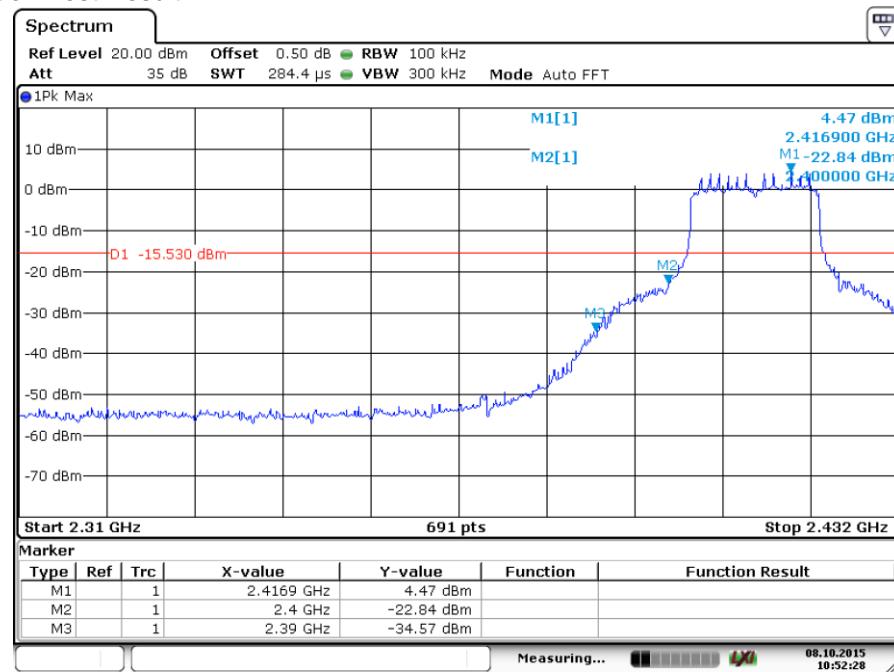
Date: 8.OCT.2015 10:50:35



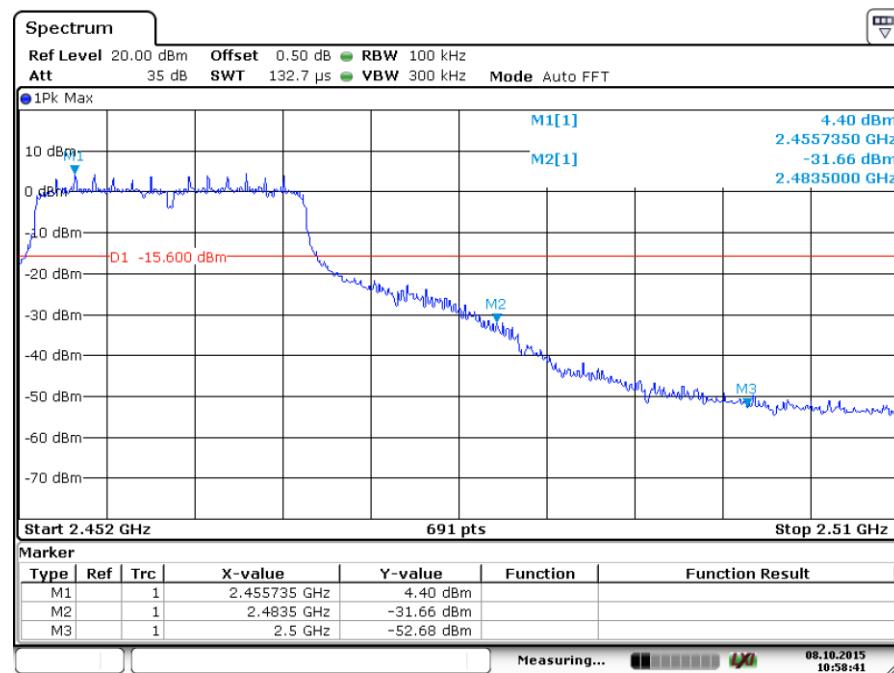
Date: 8.OCT.2015 11:01:40



## 802.11n20 Modulation Test Result



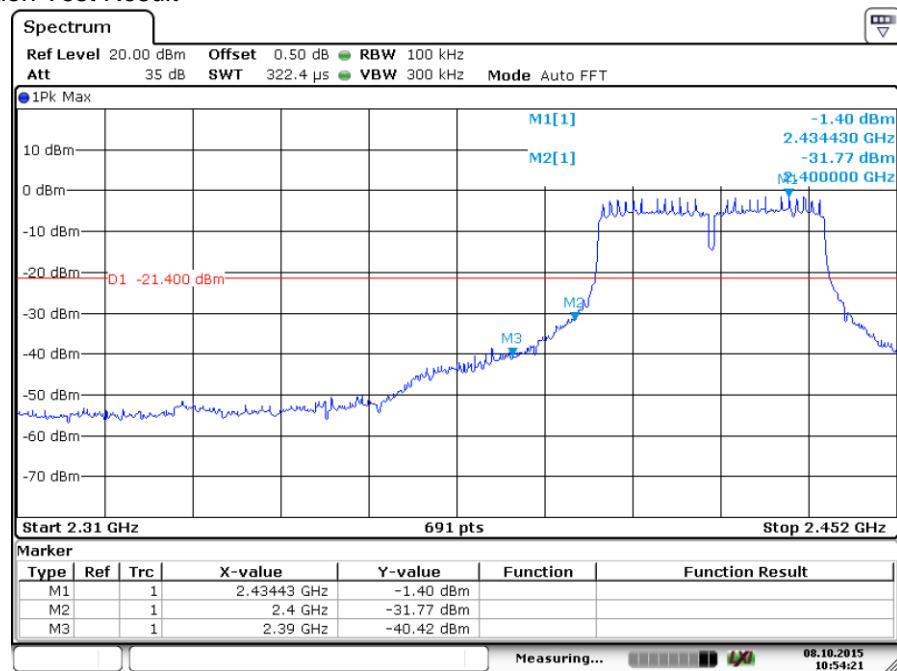
Date: 8.OCT.2015 10:52:28



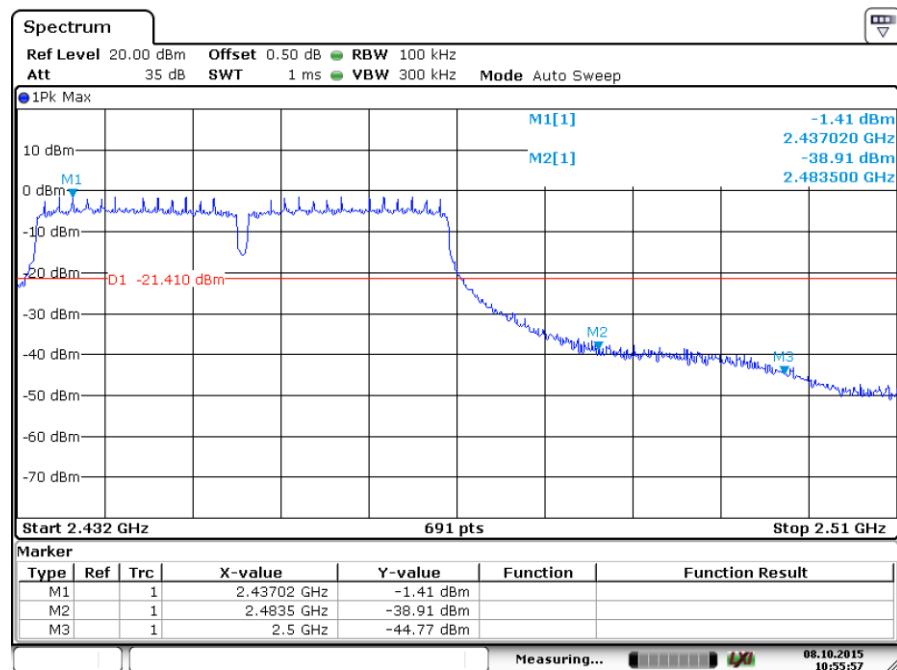
Date: 8.OCT.2015 10:58:42



## 802.11n40 Modulation Test Result



Date: 8.OCT.2015 10:54:21



Date: 8.OCT.2015 10:55:58



## 9.7 Spurious radiated emissions for transmitter

### Test Method

- 1: The EUT was place on a turn table which is 1.5m above ground plane for above 1GHz and 0.8m above ground for below 1GHz at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- 2: The EUT was set 3 meters away from the interference – receiving antenna, which was mounted on the top of a variable – height antenna tower.
- 3: The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- 4: For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- 5: Use the following spectrum analyzer settings According to C63.10:

#### For Above 1GHz

Span = wide enough to capture the peak level of the in-band emission and all spurious  
 RBW = 1MHz, VBW≥RBW for peak measurement and VBW = 10Hz for average  
 measurement, Sweep = auto, Detector function = peak, Trace = max hold.

#### For Below 1GHz

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious  
 RBW = 100 KHz, VBW≥RBW for peak measurement, Sweep = auto, Detector function =  
 peak, Trace = max hold.

### Note:

- 1: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 KHz for Quasi-peak detection (QP) at frequency below 1GHz.
- 2: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for peak detection (PK) at frequency above 1GHz.
- 3: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average ((duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor (20log(1/duty cycle)).
- 4: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.

### Limit

The radio emission outside the operating frequency band shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power. Radiated emissions which fall in the restricted bands, as defined in section 15.205, must comply with the radiated emission limits specified in section 15.209.

Frequency MHz	Field Strength uV/m	Field Strength dB $\mu$ V/m	Detector
30-88	100	40	QP
88-216	150	43.5	QP
216-960	200	46	QP
960-1000	500	54	QP
Above 1000	500	54	AV
Above 1000	5000	74	PK



## Spurious radiated emissions for transmitter

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

### Transmitting spurious emission test result as below:

#### Below 1GHz

Frequency band	Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
	MHz	dB $\mu$ V/m		dB $\mu$ V/m		dB $\mu$ V/m	
30-1000MHz	63.73	27.33	H	40.00	QP	12.67	Pass
	103.67	42.76	H	43.50	QP	0.74	Pass
	139.45	36.10	H	43.50	QP	7.4	Pass
	55.00	31.13	V	40.00	QP	8.87	Pass
	86.69	32.94	V	40.00	QP	7.06	Pass
	99.09	36.11	V	43.50	QP	7.39	Pass

#### Above 1GHz

802.11b Modulation:

2412MHz Test Result

Frequency band	Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
	MHz	dB $\mu$ V/m		dB $\mu$ V/m		dB $\mu$ V/m	
1000-25000MHz	*4824.00	52.31	H	74	PK	21.69	Pass
	*7443.00	39.13	H	74	PK	34.87	Pass
	*4824.00	41.33	V	74	PK	32.67	Pass
	*7472.00	39.93	V	74	PK	34.07	Pass

2437MHz Test Result

Frequency band	Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
	MHz	dB $\mu$ V/m		dB $\mu$ V/m		dB $\mu$ V/m	
1000-25000MHz	*4874.00	48.49	H	74	PK	25.51	Pass
	*7486.50	39.21	H	74	PK	34.79	Pass
	*4874.00	38.90	V	74	PK	35.1	Pass
	--	--	V	74	PK	--	Pass

2462MHz Test Result

Frequency band	Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
	MHz	dB $\mu$ V/m		dB $\mu$ V/m		dB $\mu$ V/m	
1000-25000MHz	*4924.00	47.16	H	74	PK	26.84	Pass
	--	--	H	74	PK	--	Pass
	*4924.00	37.45	V	74	PK	36.55	Pass
	*7477.50	38.88	V	74	PK	35.12	Pass



## 802.11g Modulation: 2412MHz Test Result

Frequency band	Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
	MHz	dBuV/m		dB $\mu$ V/m		dBuV/m	
1000-25000MHz	*4819.00	39.63	H	74	PK	34.37	Pass
	--	--	H	74	PK	--	Pass
	--	--	V	74	PK	--	Pass
	--	--	V	74	PK	--	Pass

## 2437MHz Test Result

Frequency band	Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
	MHz	dBuV/m		dB $\mu$ V/m		dBuV/m	
1000-25000MHz	*4879.50	39.04	H	74	PK	34.96	Pass
	--	--	H	74	PK	--	Pass
	--	--	V	74	PK	--	Pass
	--	--	V	74	PK	--	Pass

## 2462MHz Test Result

Frequency band	Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
	MHz	dBuV/m		dB $\mu$ V/m		dBuV/m	
1000-25000MHz	*4818.50	40.21	H	74	PK	33.79	Pass
	--	--	H	74	PK	--	Pass
	--	--	V	74	PK	--	Pass
	--	--	V	74	PK	--	Pass



802.11n20 Modulation:  
2412MHz Test Result

Frequency band	Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
	MHz	dBuV/m		dB $\mu$ V/m		dBuV/m	
1000-25000MHz	*4818.50	40.21	H	74	PK	33.79	Pass
	--	--	H	74	PK	--	Pass
	--	--	V	74	PK	--	Pass
	--	--	V	74	PK	--	Pass

## 2437MHz Test Result

Frequency band	Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
	MHz	dBuV/m		dB $\mu$ V/m		dBuV/m	
1000-25000MHz	--	--	H	74	PK	--	Pass
	--	--	H	74	PK	--	Pass
	--	--	V	74	PK	--	Pass
	--	--	V	74	PK	--	Pass

## 2462MHz Test Result

Frequency band	Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
	MHz	dBuV/m		dB $\mu$ V/m		dBuV/m	
1000-25000MHz	--	--	H	74	PK		Pass
	--	--	H	74	PK	--	Pass
	--	--	V	74	PK	--	Pass
	--	--	V	74	PK	--	Pass



## 802.11n40 Modulation: 2422MHz Test Result

Frequency band	Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
	MHz	dB $\mu$ V/m		dB $\mu$ V/m		dB $\mu$ V/m	
1000-25000MHz	--	--	H	74	PK	--	Pass
	--	--	H	74	PK	--	Pass
	--	--	V	74	PK	--	Pass
	--	--	V	74	PK	--	Pass

## 2437MHz Test Result

Frequency band	Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
	MHz	dB $\mu$ V/m		dB $\mu$ V/m		dB $\mu$ V/m	
1000-25000MHz	--	--	H	74	PK	--	Pass
	--	--	H	74	PK	--	Pass
	--	--	V	74	PK	--	Pass
	--	--	V	74	PK	--	Pass

## 2452MHz Test Result

Frequency band	Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
	MHz	dB $\mu$ V/m		dB $\mu$ V/m		dB $\mu$ V/m	
1000-25000MHz	--	--	H	74	PK	--	Pass
	--	--	H	74	PK	--	Pass
	--	--	V	74	PK	--	Pass
	--	--	V	74	PK	--	Pass

### Remark:

- (1) “\*” means the emission(s) appear within the restrict bands shall follow the requirement of section 15.205.
- (2) The data of measurement within this frequency range shown “-” in the table above means the reading of emissions are attenuated more than 20db below the permissible limits or the field strength is too small to be measured.



## 10 Test Equipment List

### List of Test Instruments

	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
CE	EMI Test Receiver	Rohde & Schwarz	ESR 3	101782	2016-7-24
	LISN	Rohde & Schwarz	ENV4200	100249	2016-7-24
	LISN	Rohde & Schwarz	ENV216	100326	2016-7-24
	ISN	Rohde & Schwarz	ENY81	100177	2016-7-24
	ISN	Rohde & Schwarz	ENY81-CA6	101664	2016-7-24
	High Voltage Probe	Rohde & Schwarz	TK9420(VT9 420)	9420-58	2016-7-24
	RF Current Probe	Rohde & Schwarz	EZ-17	100816	2016-7-24
	Test software	Rohde & Schwarz	EMC32	Version9.15.0 0	N/A
C	Signal Generator	Rohde & Schwarz	SMB100A	108272	2016-7-24
	Signal Analyzer	Rohde & Schwarz	FSV40	101030	2016-7-24
	Vector Signal Generator	Rohde & Schwarz	SMU 200A	105324	2016-7-24
	RF Switch Module	Rohde & Schwarz	OSP120/OS P-B157	101226/10085 1	2016-7-24
RE	EMI Test Receiver	Rohde & Schwarz	ESR 26	101269	2016-7-24
	Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9163	707	2016-8-14
	Horn Antenna	Rohde & Schwarz	HF907	102294	2016-7-24
	Pre-amplifier	Rohde & Schwarz	SCU 18	102230	2016-7-24
	3m Semi-anechoic chamber	TDK	9X6X6	----	2019-5-29

#### C - Conducted RF tests

- Conducted peak output power
- 6dB bandwidth
- 20dB bandwidth and 99% Occupied Bandwidth
- Carrier frequency separation
- Number of hopping frequencies
- Dwell Time
- Power spectral density
- Spurious RF conducted emissions
- Band edge



## 11 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty	
Test Items	Extended Uncertainty
Uncertainty for Radiated Emission in 3m chamber 30MHz-1000MHz	Horizontal: 4.83dB; Vertical: 4.91dB;
Uncertainty for Radiated Emission in 3m chamber 1000MHz-18000MHz	Horizontal: 4.89dB; Vertical: 4.88dB;
Uncertainty for Conducted Emission 150KHz-30MHz	U=3.5dB(k=2)