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Dates of Tests: Jul 24, 2014 ~ Aug 21, 2014  
 Test Report S/N: LR500111408D  
 Test Site : LTA Co., Ltd.

## CERTIFICATION OF COMPLIANCE

FCC ID.

**YXPCDT-H18188E-V0**

APPLICANT

**INNODIGITAL Co., Ltd.**

Equipment Class	:	Digital Transmission System (DTS)
Manufacturing Description	:	Wifi Module
Manufacturer	:	INNODIGITAL Co., Ltd.
Model name	:	CDT-H18188E-V0
Test Device Serial No.:	:	Identical prototype
Rule Part(s)	:	FCC Part 15.247 Subpart C; ANSI C-63.4-2009
Frequency Range	:	2412MHz ~ 2462MHz for 802.11b/g/n20 2422MHz ~ 2452MHz for 802.11n40
Max. Output Power	:	Max 19.09dBm - Conducted (802.11b) Max 15.89dBm - Conducted (802.11g) Max 15.44dBm - Conducted (802.11n_20MHz) Max 13.86dBm - Conducted (802.11n_40MHz)
Data of issue	:	August 22, 2014

This test report is issued under the authority of:

Jae-Ho Lee, Manager

The test was supervised by:

Young-Jin Lee, Test Engineer

This test result only responds to the tested sample. It is not allowed to copy this report even partly without the allowance of the test laboratory. This report must not be used by the applicant to claim product endorsement by any agency.

NVLAP LAB Code.: 200723-0

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## 1. General information

### 1-1 Test Performed

Company name : LTA Co., Ltd.  
 Address : 243, Jubug-ri, Yangji-Myeon, Youngin-Si, Kyunggi-Do, Korea. 449-822  
 Web site : <http://www.ltalab.com>  
 E-mail : [chahn@ltalab.com](mailto:chahn@ltalab.com)  
 Telephone : +82-31-323-6008  
 Facsimile : +82-31-323-6010

Quality control in the testing laboratory is implemented as per ISO/IEC 17025 which is the “General requirements for the competents of calibration and testing laboratory”.

### 1-2 Accredited agencies

LTA Co., Ltd. is approved to perform EMC testing by the following agencies:

Agency	Country	Accreditation No.	Validity	Reference
NVLAP	U.S.A	200723-0	2014-09-30	ECT accredited Lab.
RRA KOREA		KR0049	2015-03-06	EMC accredited Lab.
FCC U.S.A		610755	2017-04-21	FCC filing
FCC U.S.A		649054	2015-04-17	FCC CAB
VCCI	JAPAN	R2133(10 m), C2307	2017-06-21	VCCI registration
VCCI JAP	AN	T-2009	2016-12-23	VCCI registration
VCCI JAP	AN	G-563	2015-05-28	VCCI registration
IC CANADA		5799A-1	2015-06-21	IC filing
KOLAS	KOREA	NO.551	2017-01-08	KOLAS accredited Lab.

## 2. Information about test item

### 2-1 Client

Company name : INNODIGITAL Co., Ltd.  
 Address : #904 K INS Tower, 25 -1 Jeongja-Dong, Bu ndang-Gu, Seon gnam-Si Gyeonggi-Do, KOREA  
 Tel / Fax TEL No : +82-31-716-2636 / FAX No : +82-31-609-7501

### 2-2 Manufacturer

Company name : CHINA DRAGON TECHNOLOGY LIMITED  
 Address : B4 Bldg.haosan No.1 lndustry Park, Shajing Street, Baoan Dist, ShenZhen, China.

### 2-3 Equipment Under Test (EUT)

Trade name	: INNODIGITAL Co., Ltd.
Model name	: CDT-H18188E-V0
Serial number	: Identical prototype
Date of receipt	: Jul 11, 2014
EUT condition	: Pre-production, not damaged
Antenna type	: PCB Pattern Antenna Max Gain 5.42dBi
Frequency Range	: 2412MHz ~ 2462MHz for 802.11b/g/n20 2422MHz ~ 2452MHz for 802.11n40
RF output power	: Max 19.09dBm Conducted (802.11b) Max 15.89dBm - Conducted (802.11g)
:	: Max 15.44dBm - Conducted(802.11n_20MHz)
Number of channels	: Max 13.86dBm – Conducted (802.11n_40MHz)
Type of Modulation	: 11 for 802.11b & 802.11g & 802.11n_20MHz 7 for 802.11n_40MHz
Transfer Rate	: CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
:	: 11/5.5/2/1Mbps for 802.11b 54/48/36/24/18/12/9/6Mbps for 802.11g MCS0/ MCS 1/ MCS 2/ MCS 3/ MCS 4/ MCS 5/ MCS 6 / MCS 7Mbps for 802.11n_20MHz/n_40MHz
Power Source for Batt.	: DC 3.3V
Firmware :	V1.0.0

**2-3 Tested frequency**

	LOW	MID	HIGH
Frequency (MHz) for 802.11b/g/n20	2412	2437	2462
Frequency (MHz) for 802.11n40	2422	2437	2452

**2-4 Ancillary Equipment**

Equipment	Model No.	Serial No.	Manufacturer
-	-	-	-

**2-5 Description of Test modes**

For 2.4GHz:

**11 channels are provided for 802.11b, 802.11g and 802.11n\_20MHz**

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2412MHz	7	2442MHz
2	2417MHz	8	2447MHz
3	2422MHz	9	2452MHz
4	2427MHz	10	2457MHz
5	2432MHz	11	2462MHz
6	2437MHz		

For 2.4GHz:

**7 channels are provided for 802.11n\_40MHz**

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
3	2422MHz	7	2442MHz
4	2427MHz	8	2447MHz
5	2432MHz	9	2452MHz
6	2437MHz		

### 3. Test Report

#### 3.1 Summary of tests

FCC Part Section(s)	Parameter	Limit	Test Condition	Status (note 1)
15.247(a)	6 dB Bandwidth	> 500kHz	Conducted	C
15.247(b)	Transmitter Peak Output Power	< 1Watt		C
15.247(d)	Transmitter Power Spectral Density	< 8dBm @ 3kHz		C
15.247(d)	Band Edge & Spurious	> 20 dBc		C
15.209	Field Strength of Harmonics	Emission	Radiated	C
15.207	AC Conducted Emissions	Emissions	Conducted	C
15.203 A	Antenna requirement	-	-	C

Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable

Note 2: The data in this test report are traceable to the national or international standards.

→ Antenna Requirement

The **INNODIGITAL Co., Ltd. FCC ID: YXPCDT-H18188E-V0** unit complies with the requirement of §15.203.

The antenna is connected to the EUT. And type is PCB Pattern Antenna

The sample was tested according to the following specification:

\*FCC Parts 15.247; ANSI C-63.4-2009

\*FCC KDB Publication No. 558074 D01 DTS Meas. Guidance V02

\*FCC TCB Workshop 2012, April

### 3.2 Technical Characteristics Test

#### 3.2.1 6 dB Bandwidth

##### Procedure:

\*The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance and TCB Workshop 2012, April.

The bandwidth at 6dB below the highest in-band spectral density was measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate frequencies.

After the trace being stable, Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure 6dB down one side of the emission. Reset the marker-delta function, and move the marker to the other side of the emission, until it is ( as close as possible to ) even with the reference marker level. The marker-delta reading at this point is the 6 dB bandwidth of the emission.

##### The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

RBW = 100 kHz Span = 30 MHz

VBW = 100 kHz (VBW  $\geq$  RBW) Sweep = auto

Trace = max hold Detector function = peak

##### Measurement Data: 2.4GHz Band

Mode	Frequency (MHz)	Channel No.	Test Results	
			Measured Bandwidth (MHz)	Result
802.11b	2412	1	10.03	Complies
	2437	6	9.99	Complies
	2462	11	7.99	Complies
802.11g	2412	1	16.54	Complies
	2437	6	16.54	Complies
	2462	11	16.50	Complies
802.11n 20MHz	2412	1	17.80	Complies
	2437	6	17.67	Complies
	2462	11	17.76	Complies
802.11n 40MHz	2422	3	36.30	Complies
	2437	6	36.26	Complies
	2452	9	36.30	Complies

- See next pages for actual measured spectrum plots.

##### Minimum Standard:

6 dB Bandwidth  $>$  500kHz

### Measurement Setup

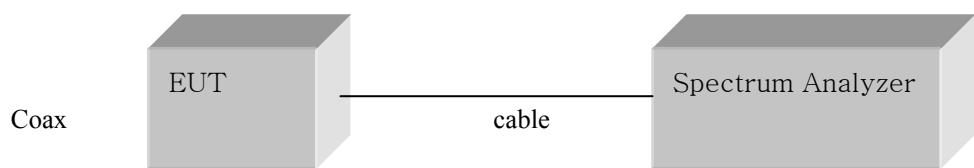
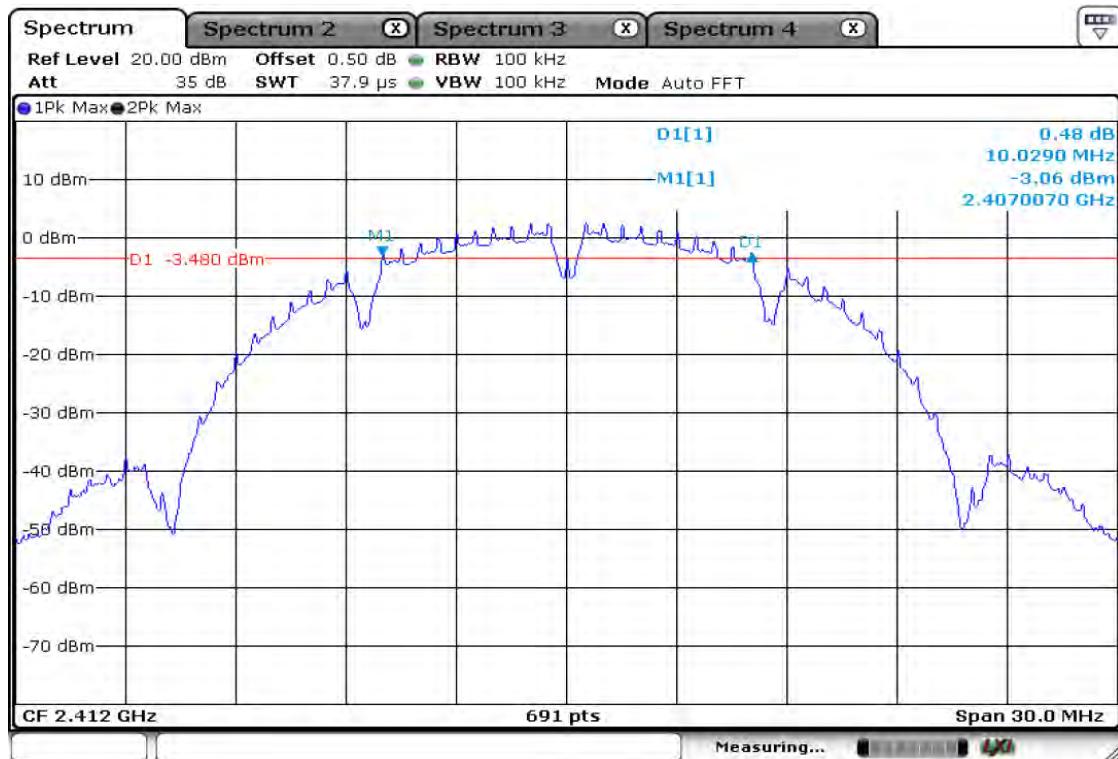


Figure 1: Measurement setup for the carrier frequency separation

## 802.11b

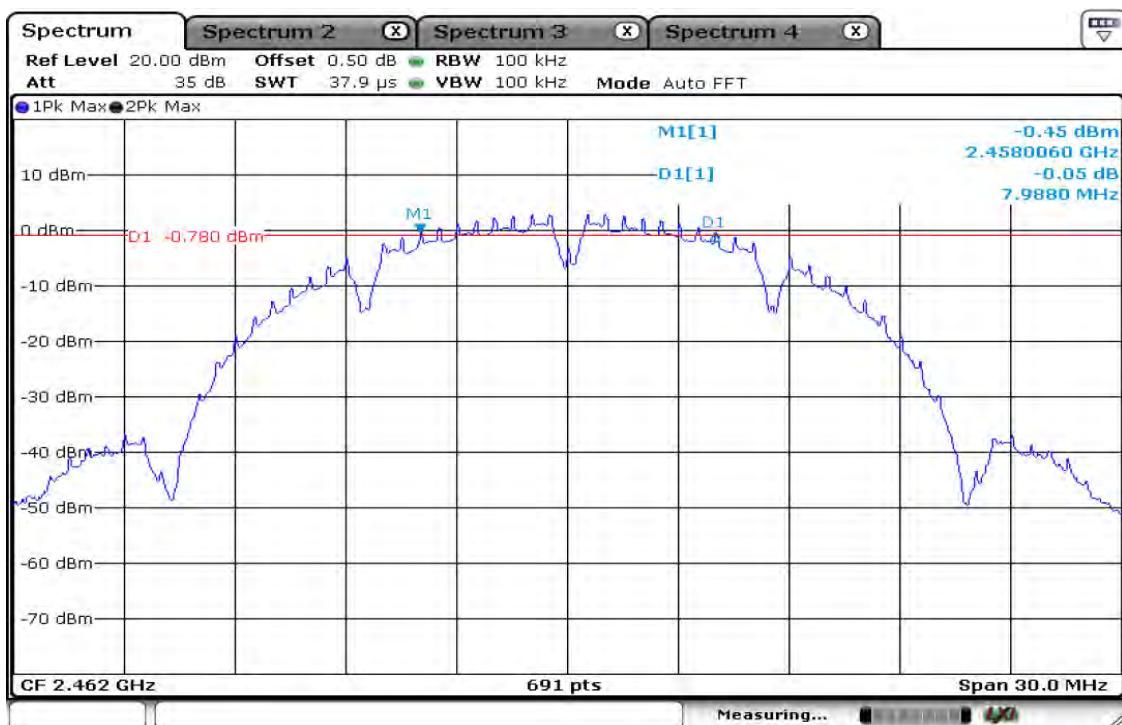
### CH 1



### CH 6

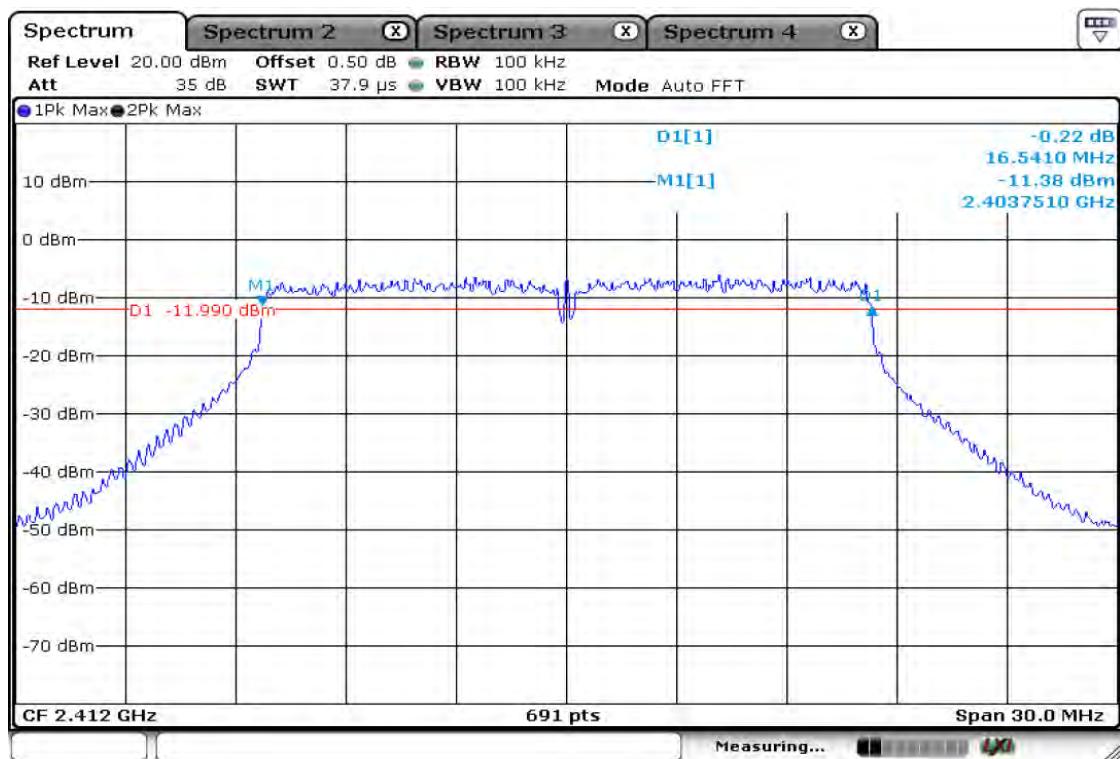


## CH 11

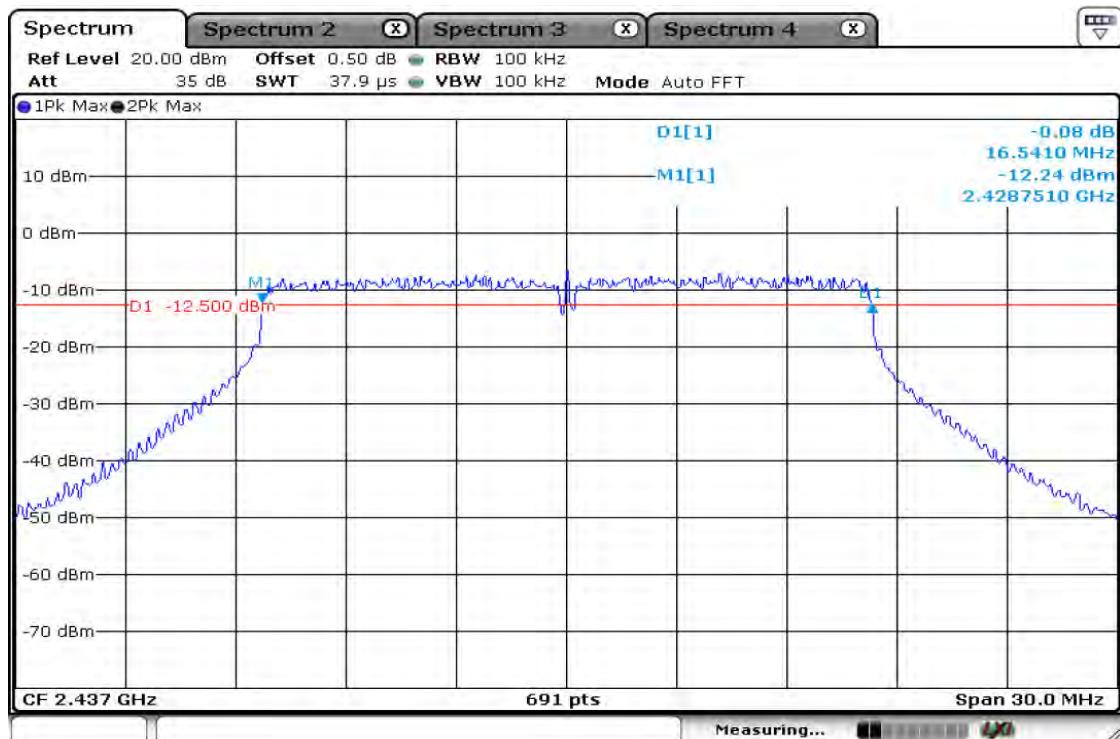


## 802.11g

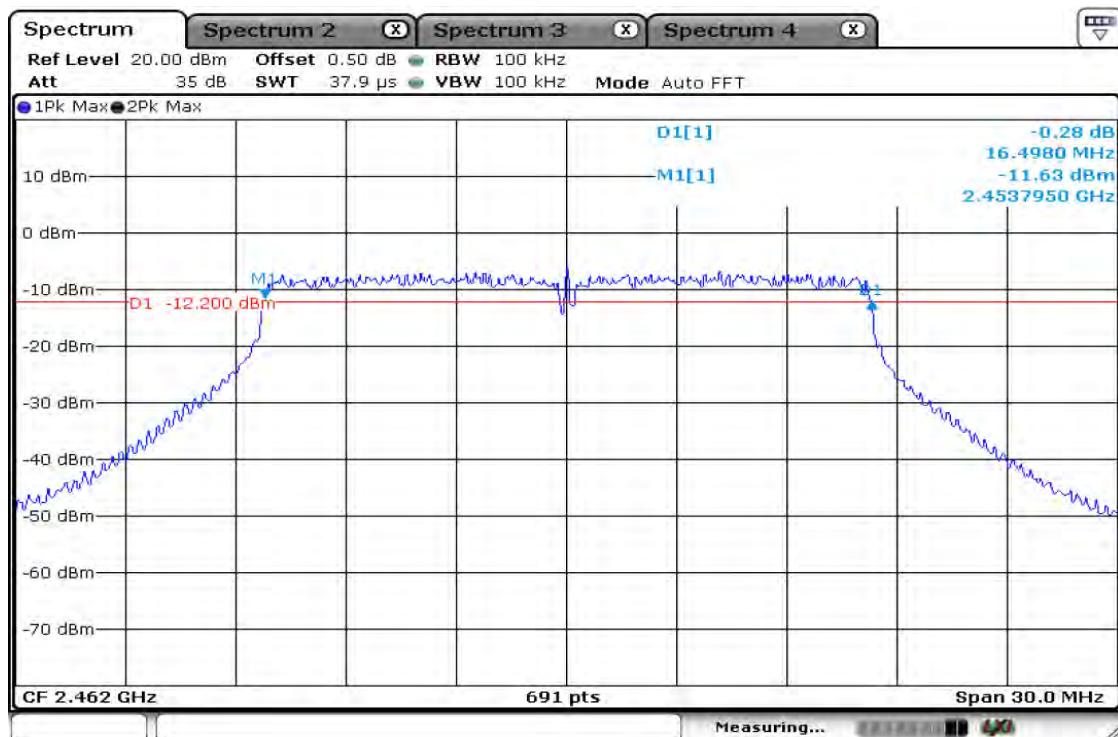
## CH 1



## CH 6

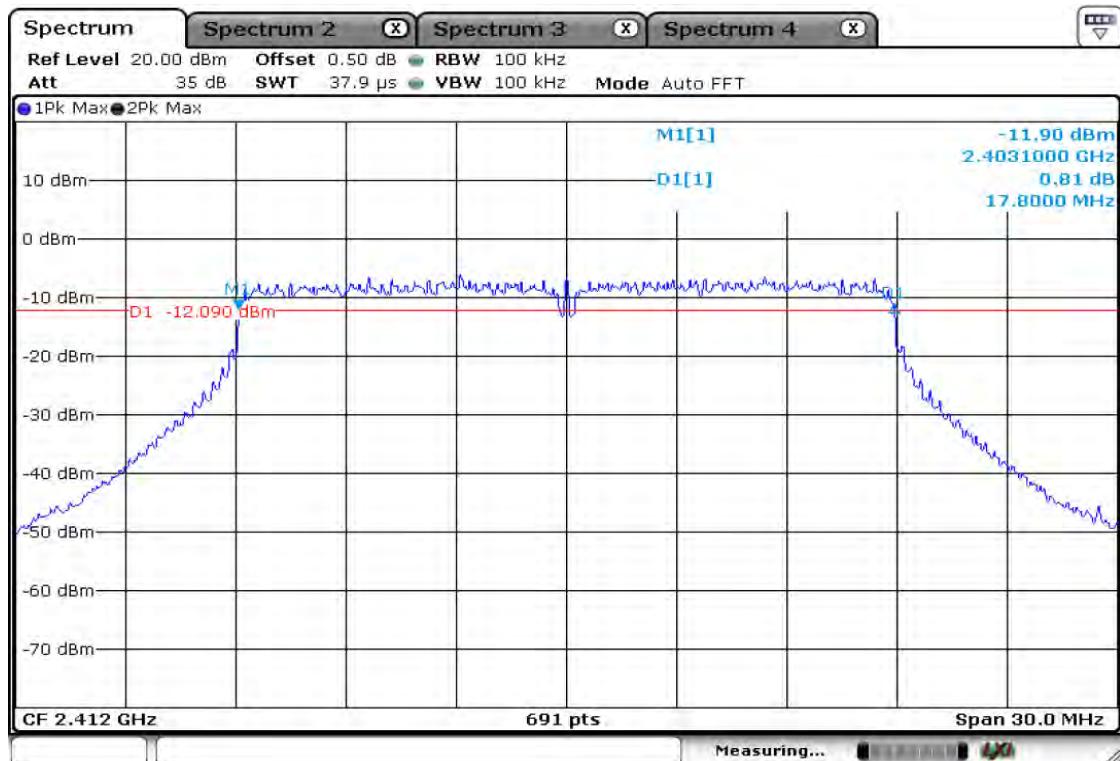


## CH 11

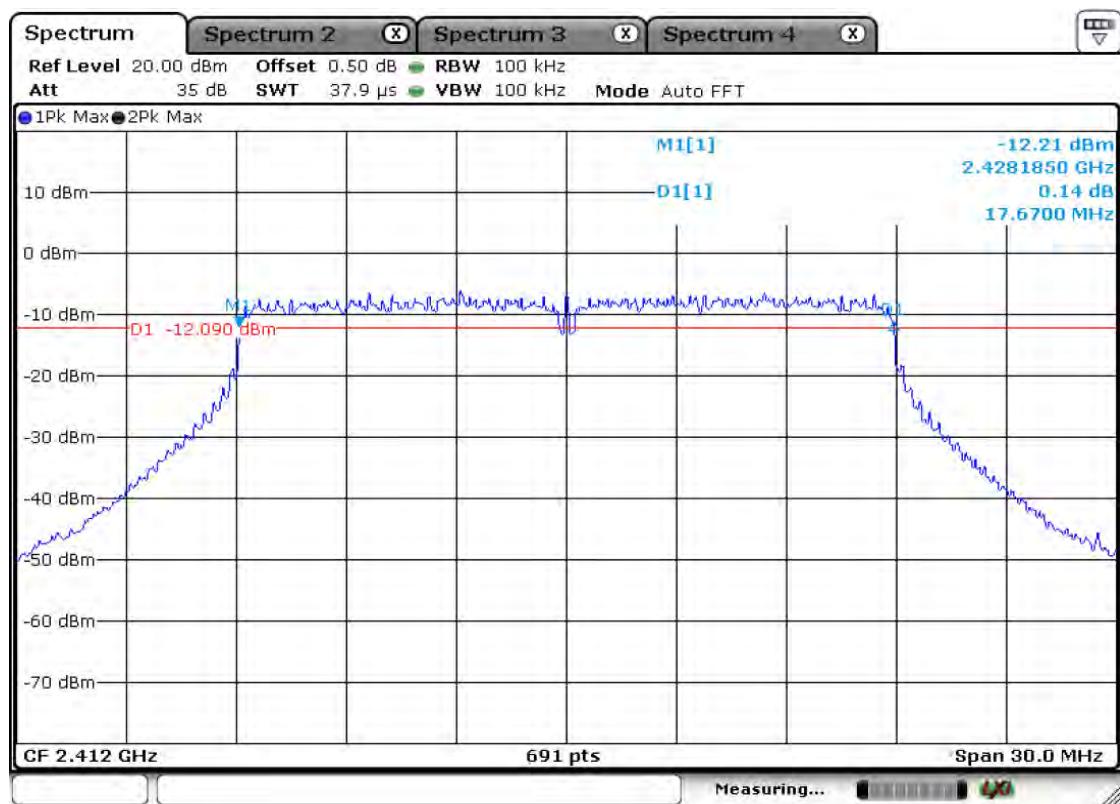


## 802.11n\_20MHz

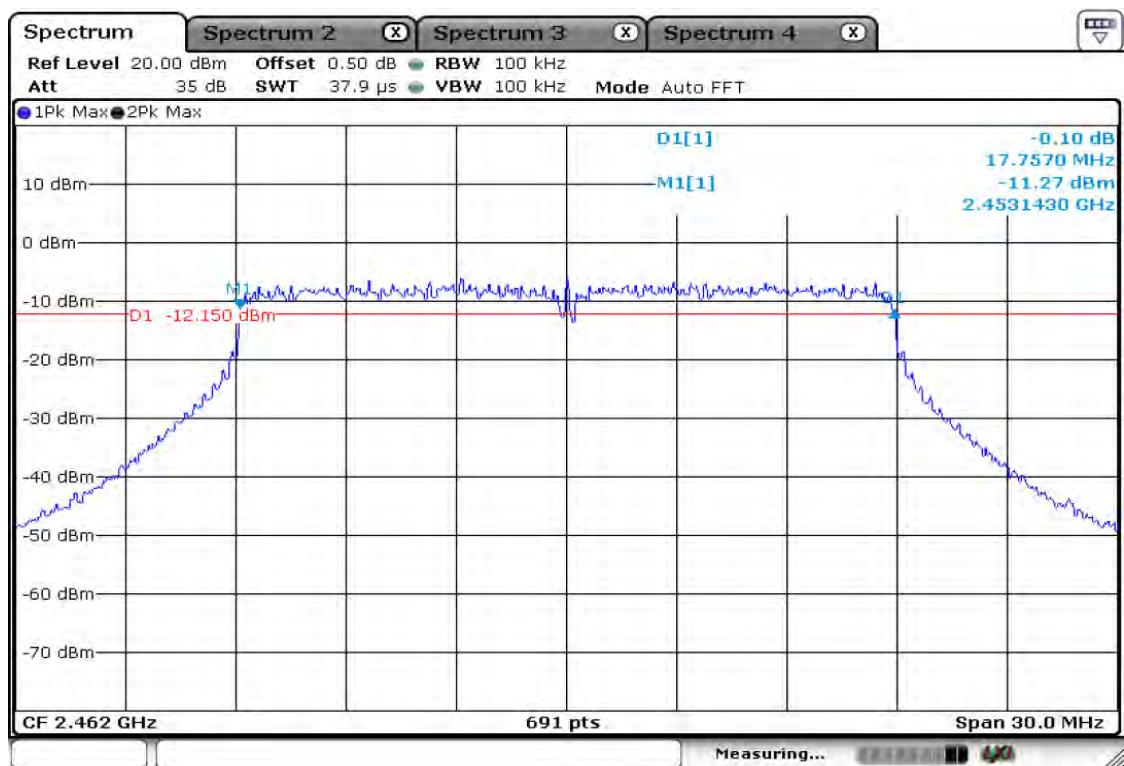
## CH 1



## CH 6

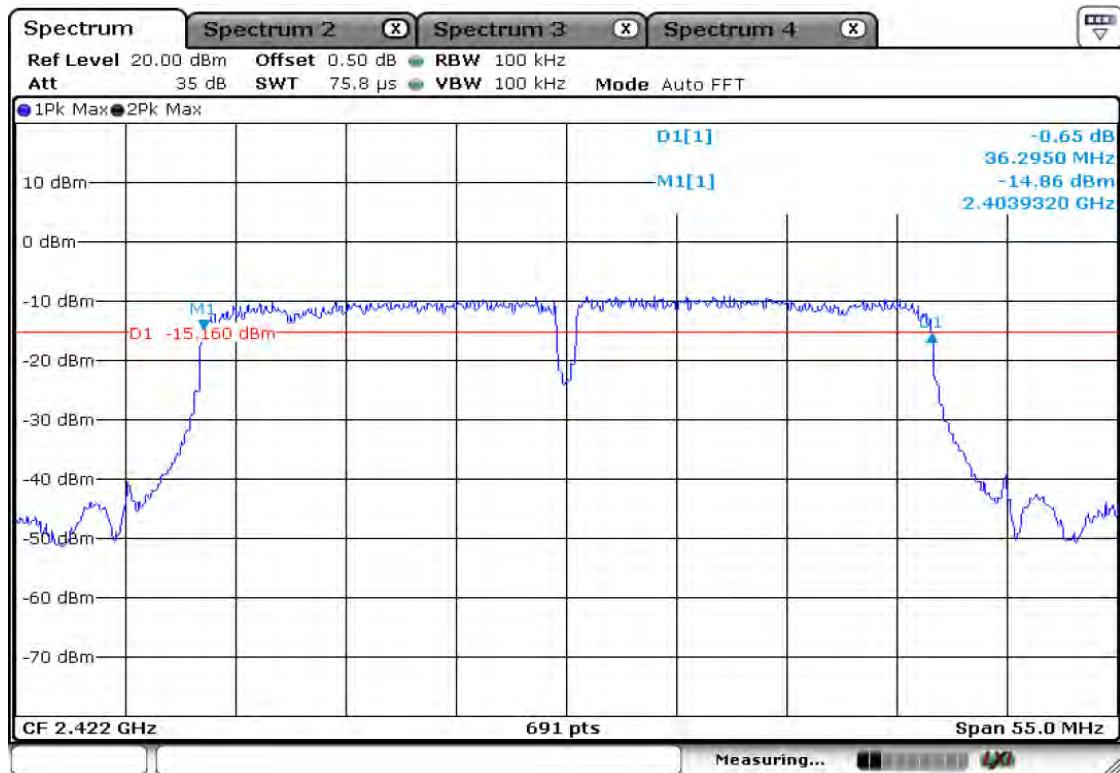


## CH 11

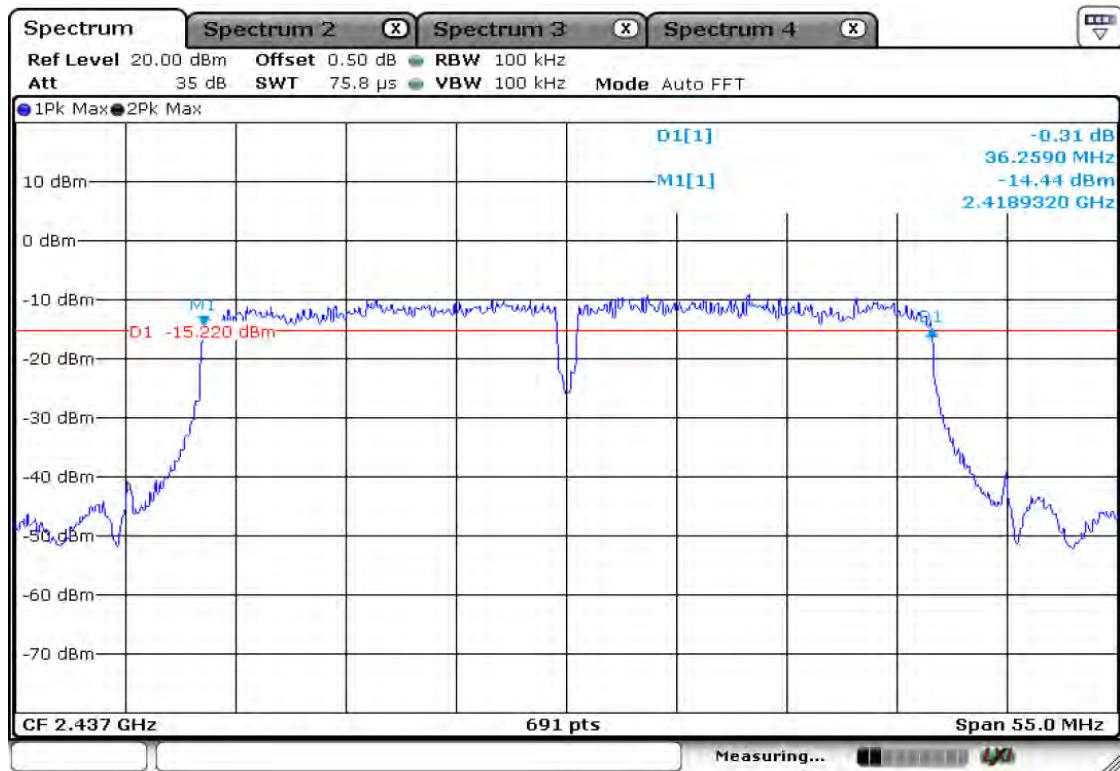


## 802.11n\_40MHz

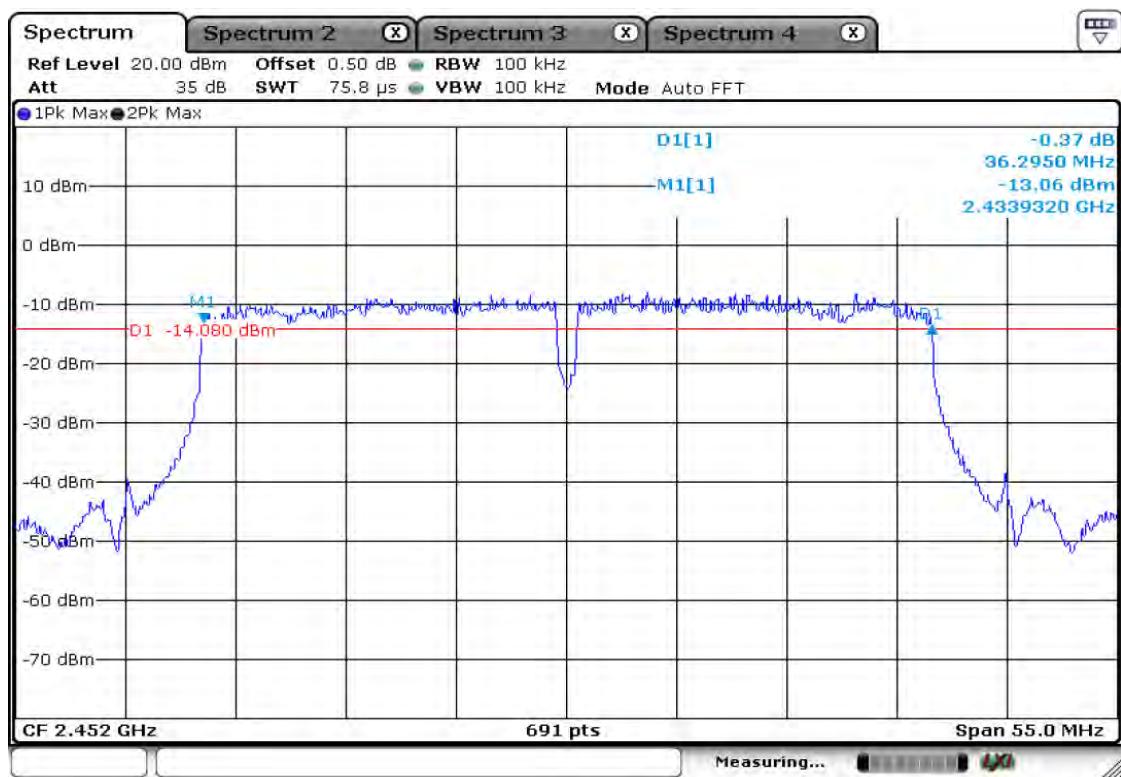
## CH 3



## CH 6



## CH 9



### 3.2.2 Peak Output Power Measurement

#### Procedure:

\*The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance and TCB Workshop 2012, April. The maximum peak output power was measured with the spectrum analyzer connected to the antenna output of the EUT. The spectrum analyzer's internal channel power integration function is used to integrate the power over a bandwidth greater than or equal to the 99% bandwidth. The EUT was operating in transmit mode at the appropriate center frequency.

#### The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

RBW = 1MHz Span = auto

VBW = 1MHz (VBW ≥ RBW) Sweep = auto

Detector function = peak

#### Measurement Data: 2.4GHz Band

Mode	Frequency (MHz)	Channel No.	Test Results	
			Measured Data (dBm)	Result
802.11b	2412	1	19.09	Complies
	2437	6	17.19	Complies
	2462	11	17.75	Complies
802.11g	2412	1	15.34	Complies
	2437	6	15.89	Complies
	2462	11	15.39	Complies
802.11n -20MHz	2412	1	14.39	Complies
	2437	6	15.00	Complies
	2462	11	15.44	Complies
802.11n -40MHz	2422	3	12.67	Complies
	2437	6	13.57	Complies
	2452	9	13.86	Complies

#### Minimum Standard:

Peak output power	< 1W
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### Measurement Setup

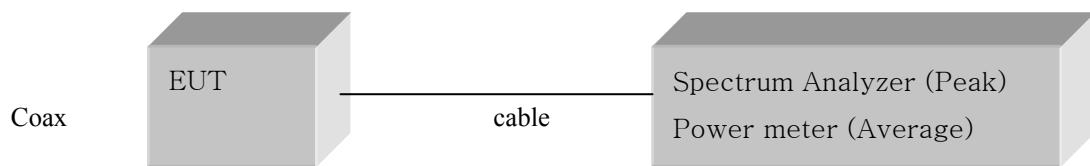
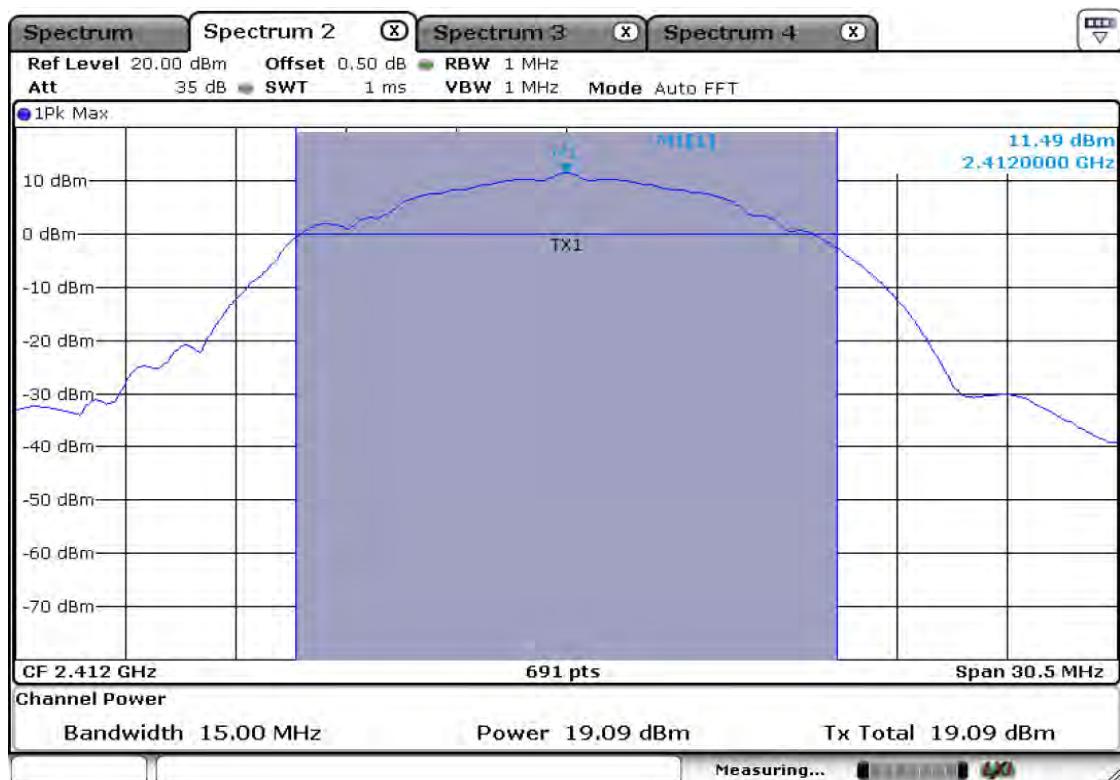


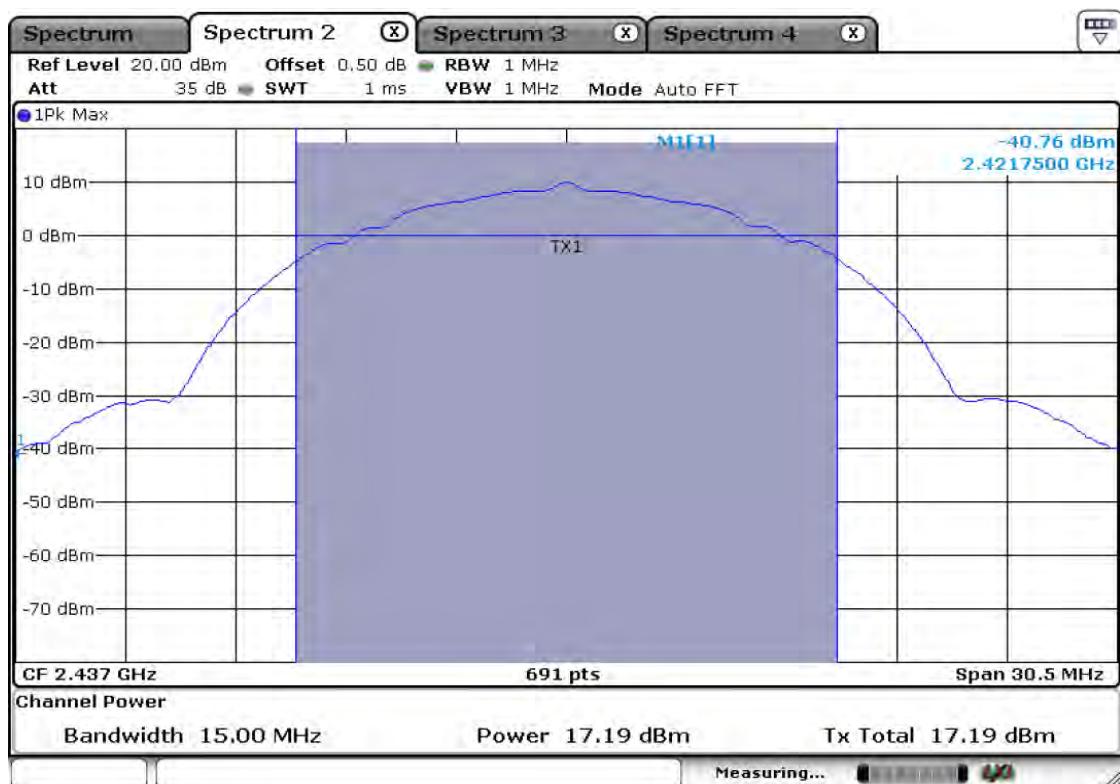
Figure 2: Measurement setup for the carrier frequency separation

## 802.11b

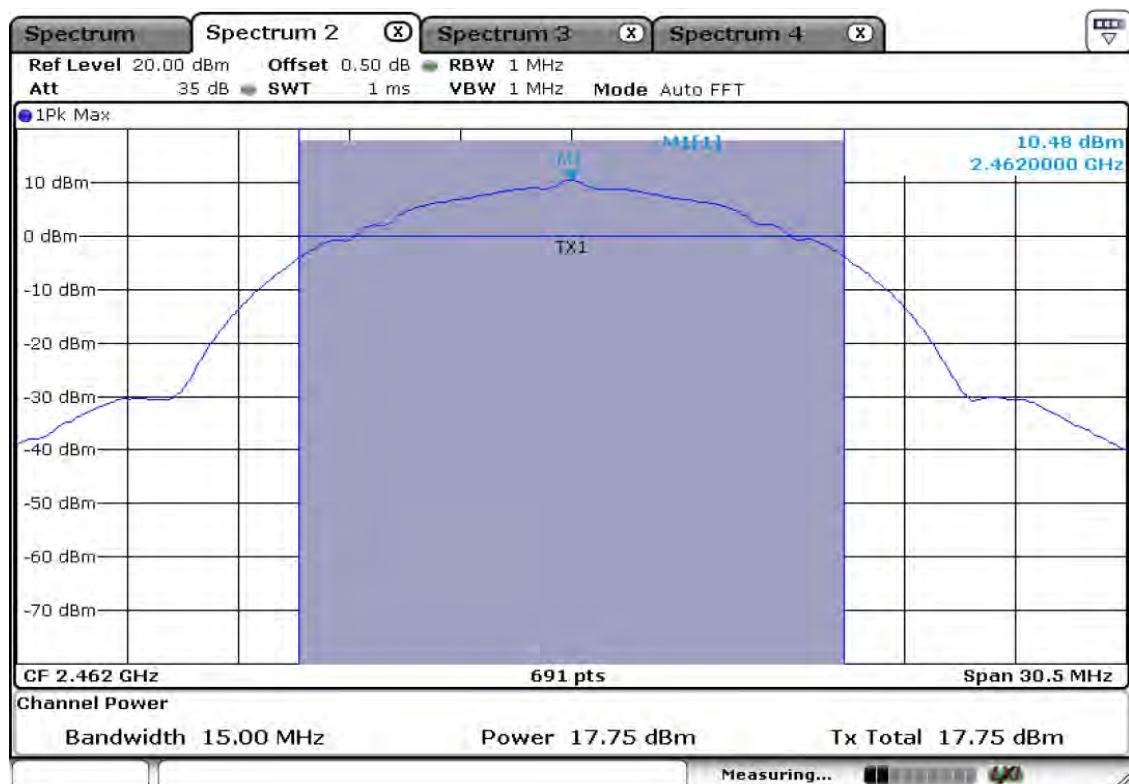
## CH 1



## CH 6

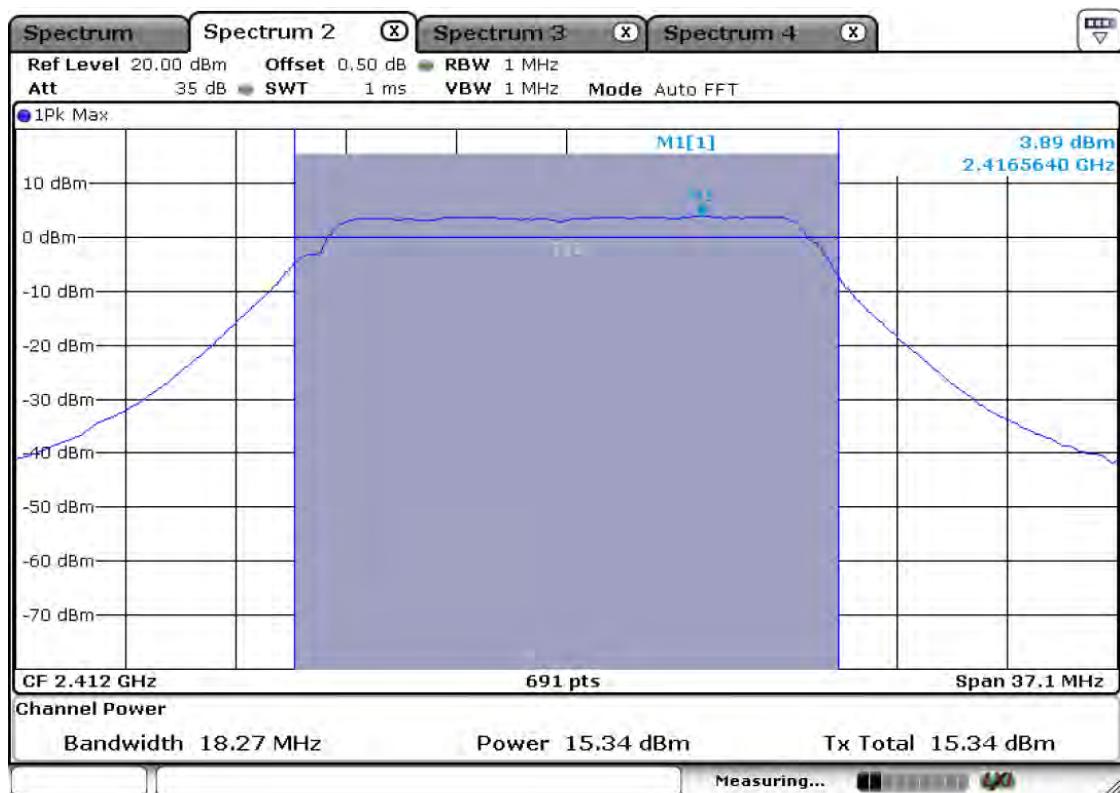


## CH 11

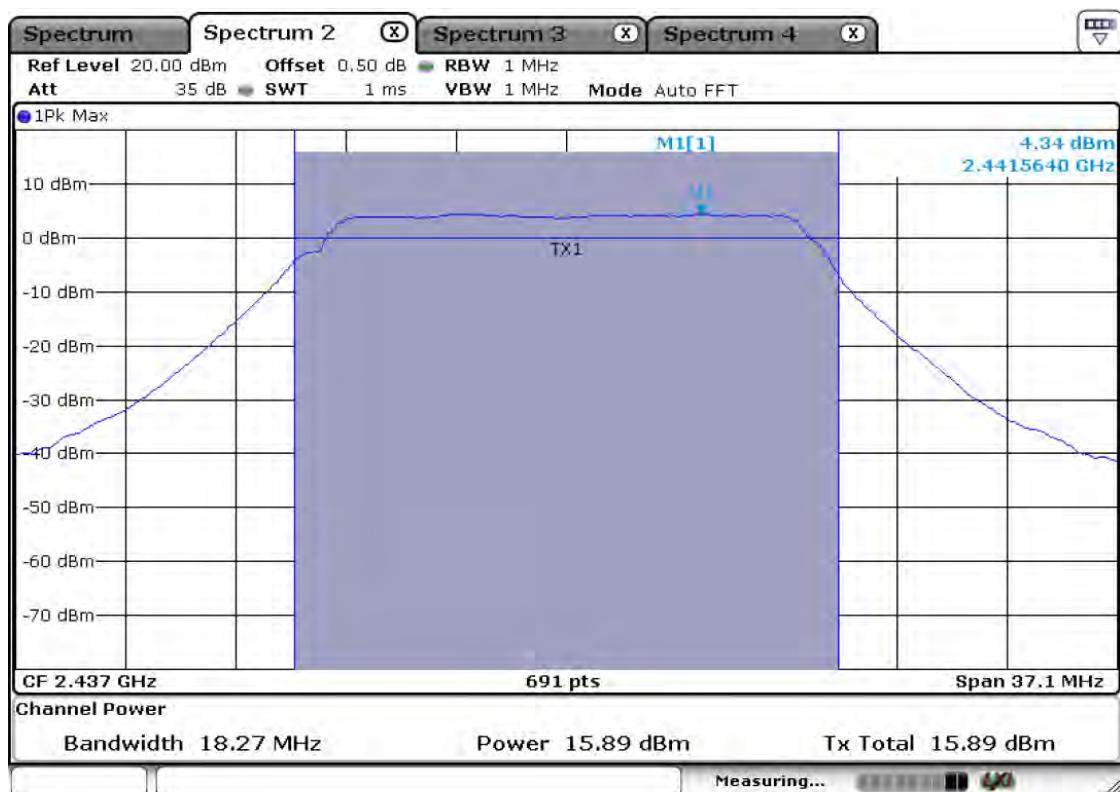


## 802.11g

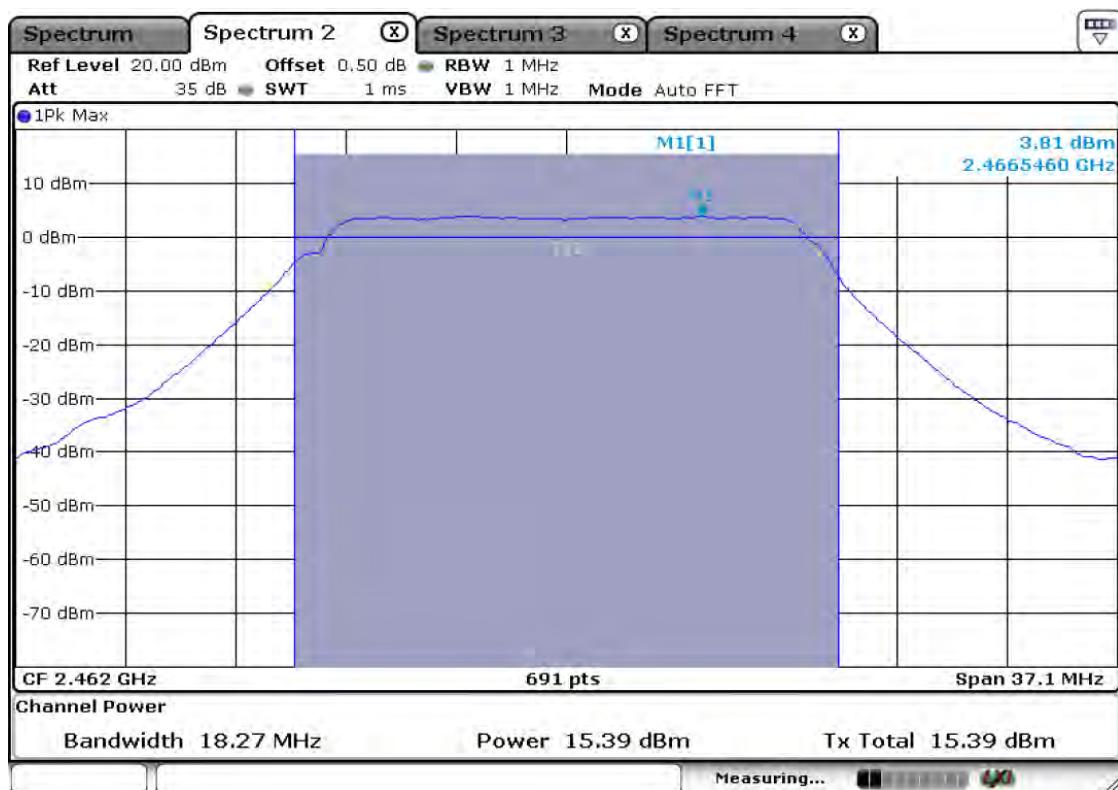
CH 1



CH 6

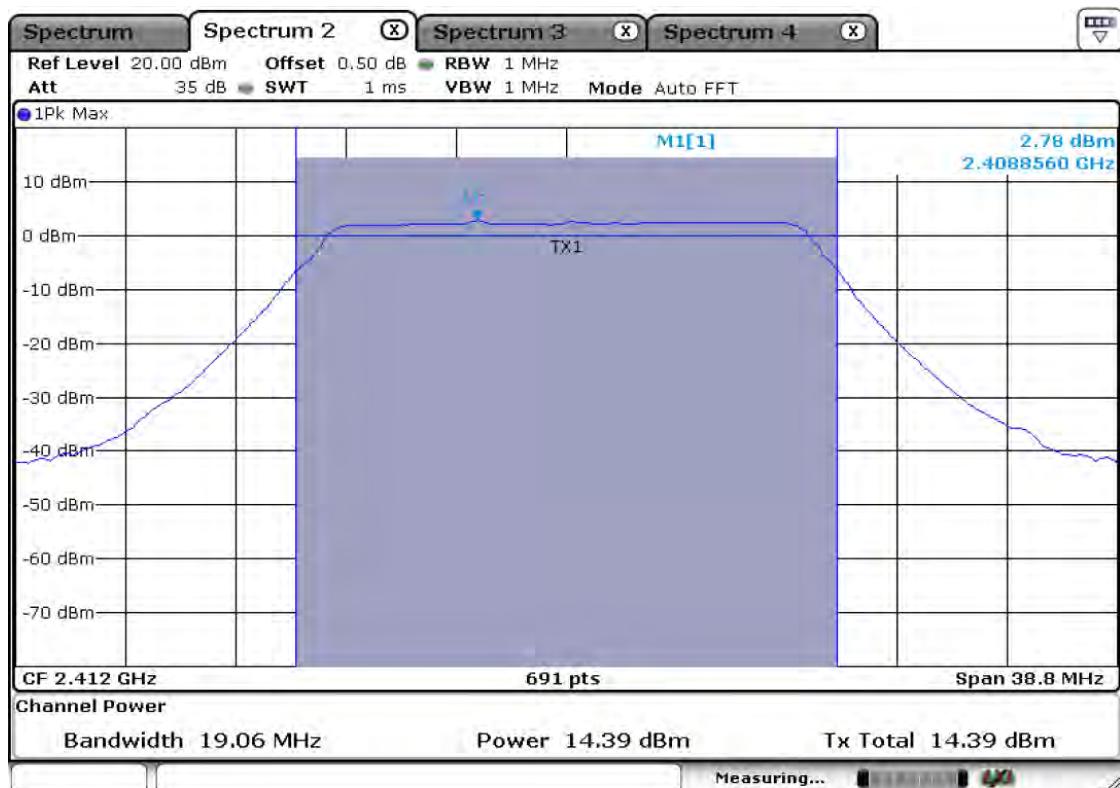


## CH 11

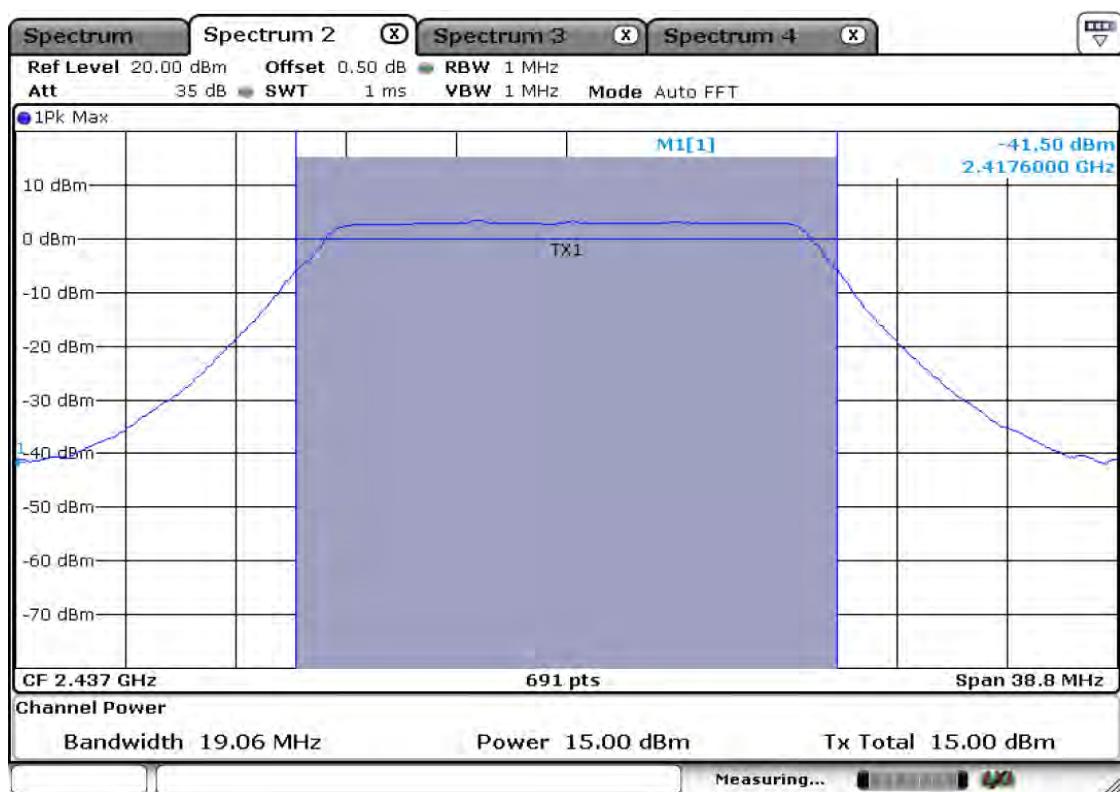


## 802.11n\_20MHz

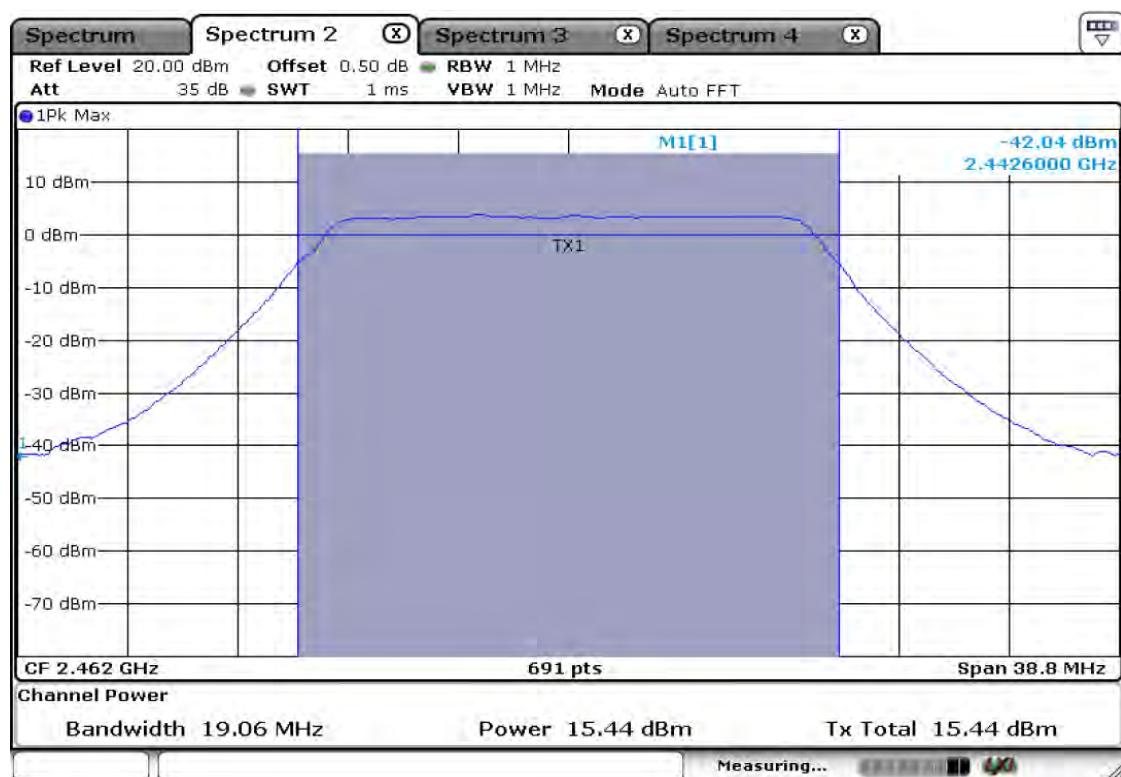
## CH 1



## CH 6

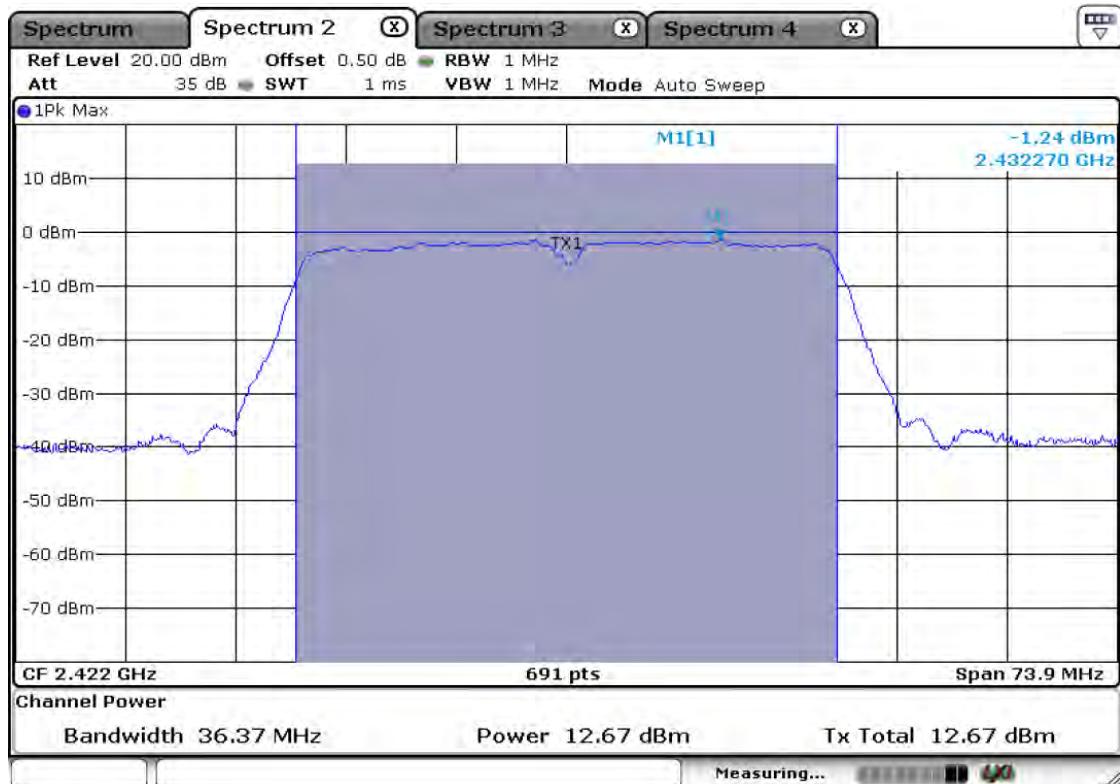


## CH 11

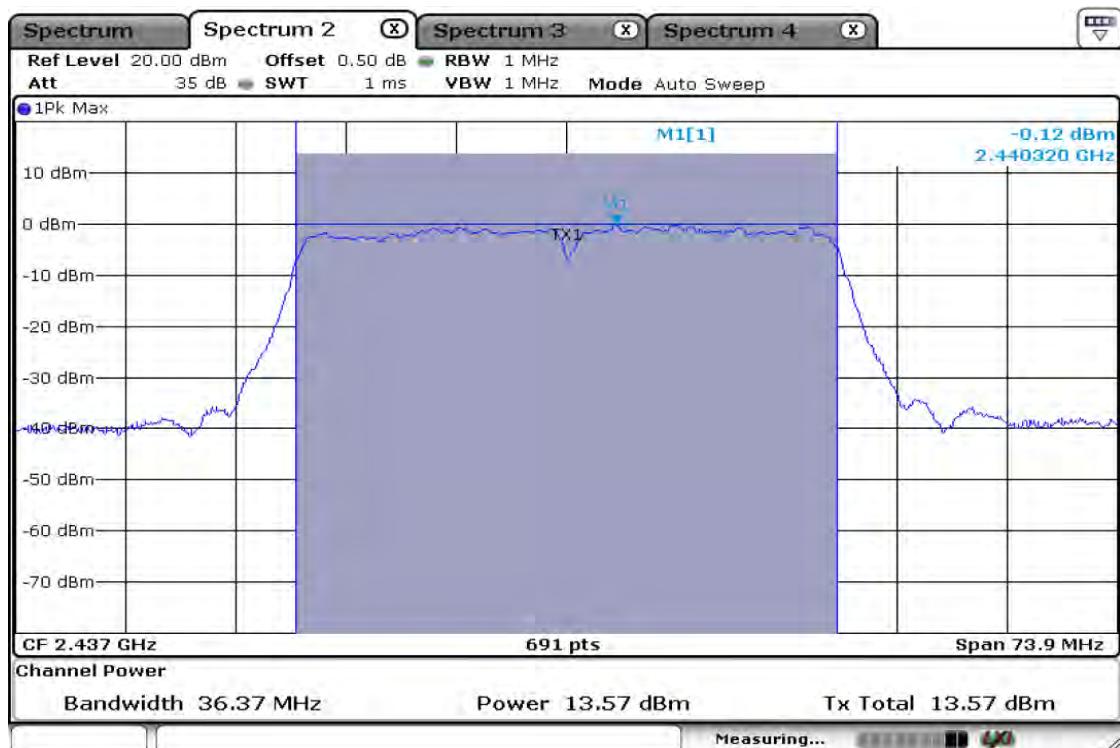


## 802.11n40MHz

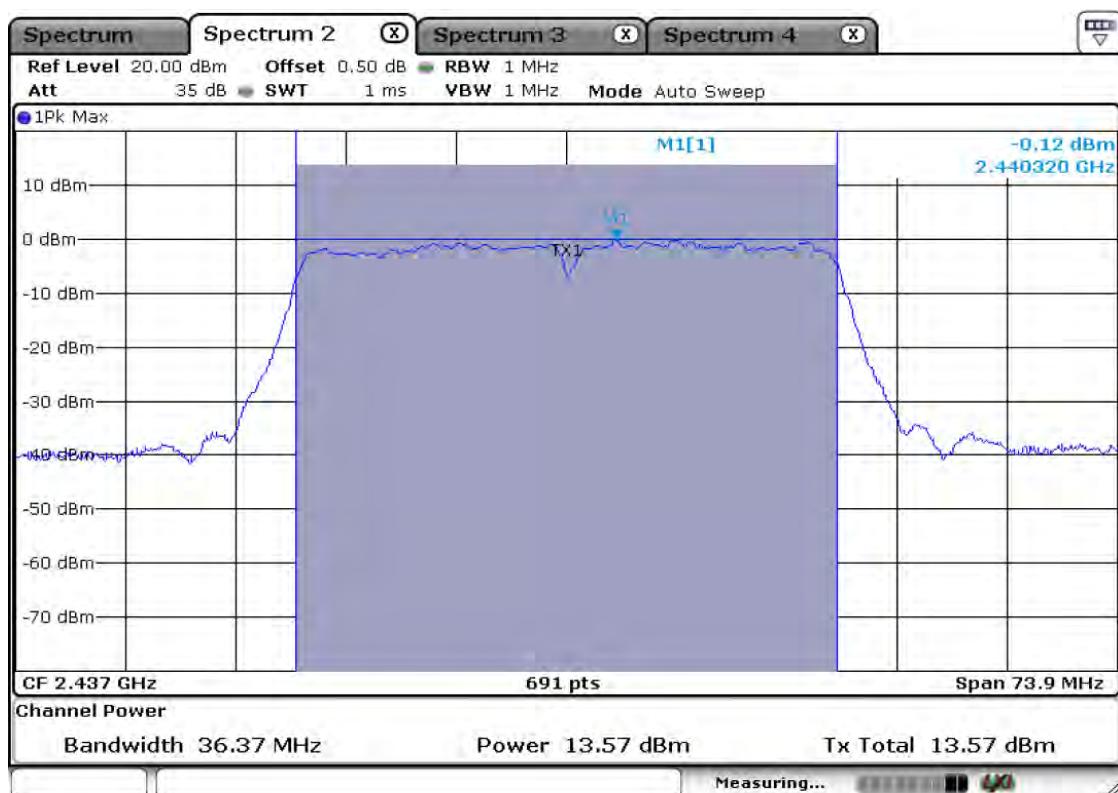
## CH 3



## CH 6



## CH 9



### 3.2.3 Power Spectral Density

#### Procedure:

\*The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance and TCB Workshop 2012, April.

The peak power density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies.

The spectrum analyzer is set to:

RBW = 3 kHz	Span = 300 kHz
VBW = 3 kHz	Sweep = 100 sec
Detector function = peak	Trace = max hold

#### Measurement Data: 2.4GHz Band

Mode	Frequency (MHz)	Channel No.	Test Results	
			dBm	Result
802.11b	2412	1	-19.33	Complies
	2437	6	-19.60	Complies
	2462	11	-18.99	Complies
802.11g	2412	1	-9.52	Complies
	2437	6	-9.25	Complies
	2462	11	-9.60	Complies
802.11n -20MHz	2412	1	-24.06	Complies
	2437	6	-27.59	Complies
	2462	11	-24.07	Complies
802.11n -40MHz	2422	3	-39.69	Complies
	2437	6	-30.66	Complies
	2452	9	-25.82	Complies

- See next pages for actual measured spectrum plots.

#### Minimum Standard:

Power Spectral Density	< 8dBm @ 3kHz BW
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#### Measurement Setup

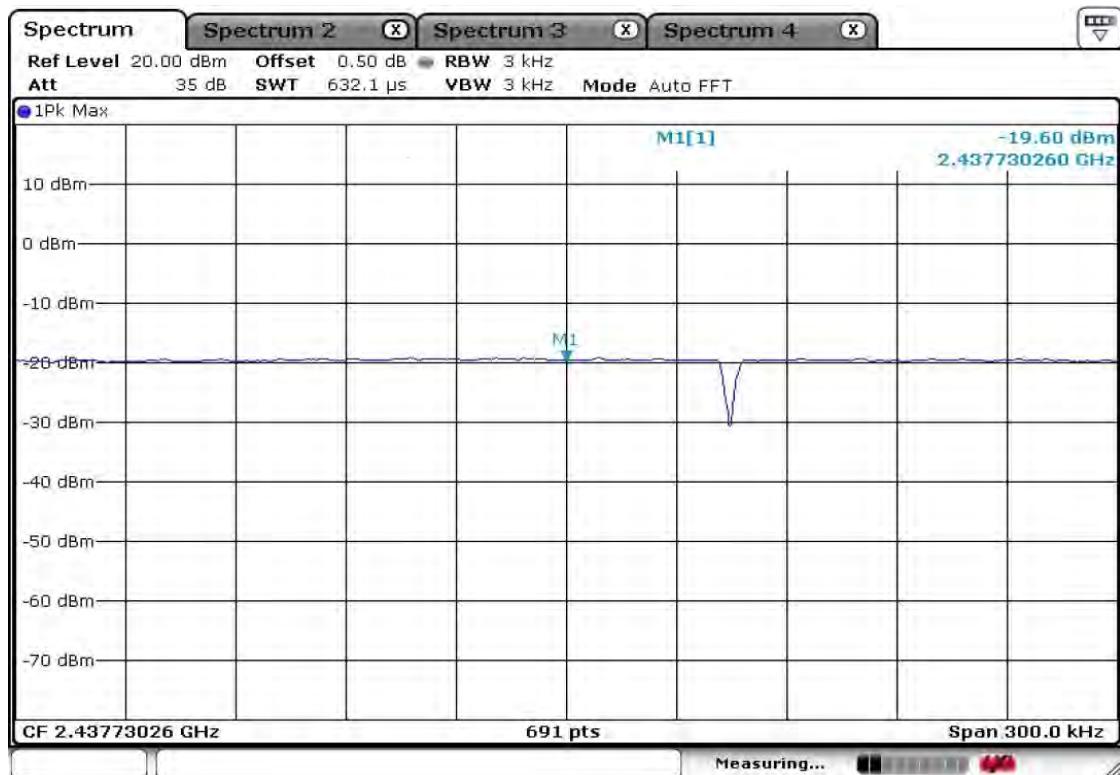
Same as the Chapter 3.2.1 (Figure 1)

## 802.11b Power Density Measurement

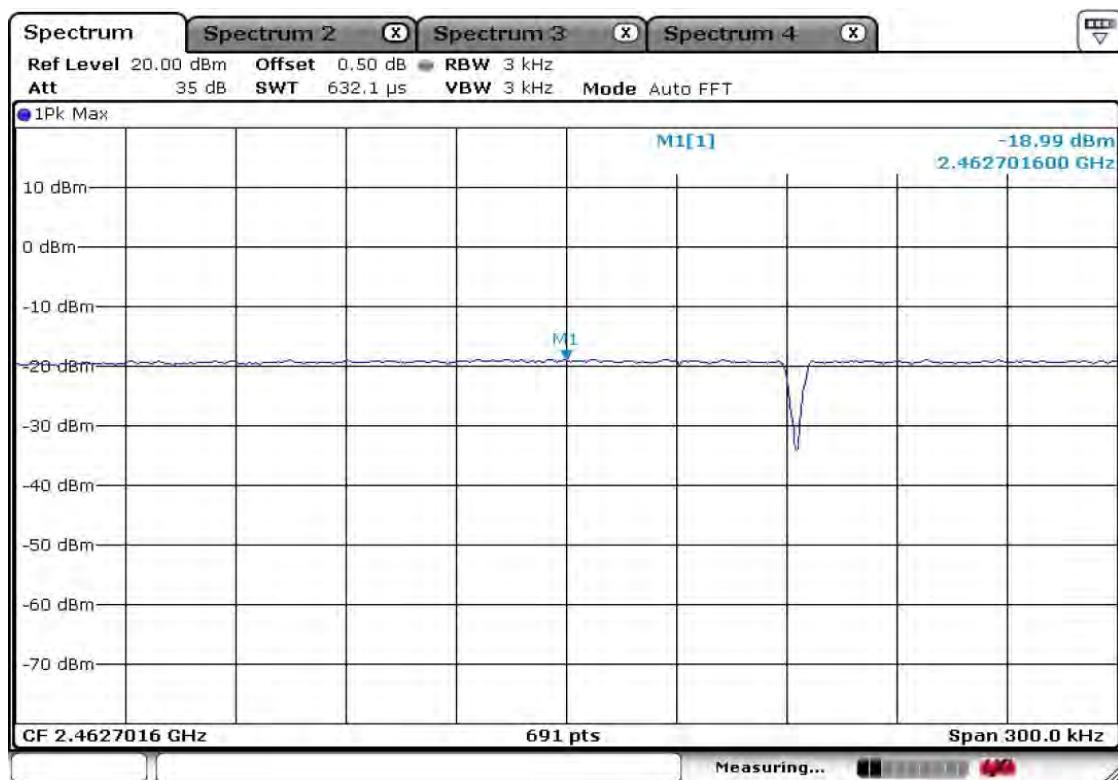
### CH 1



### CH 6

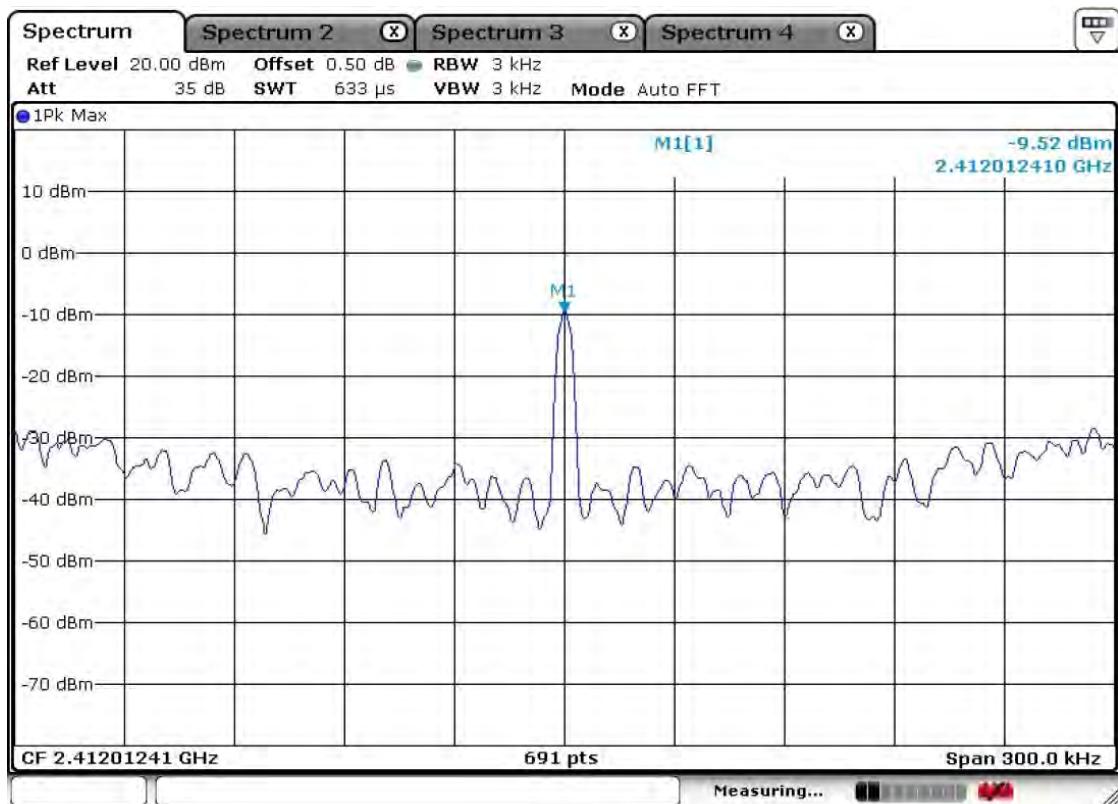


## CH 11

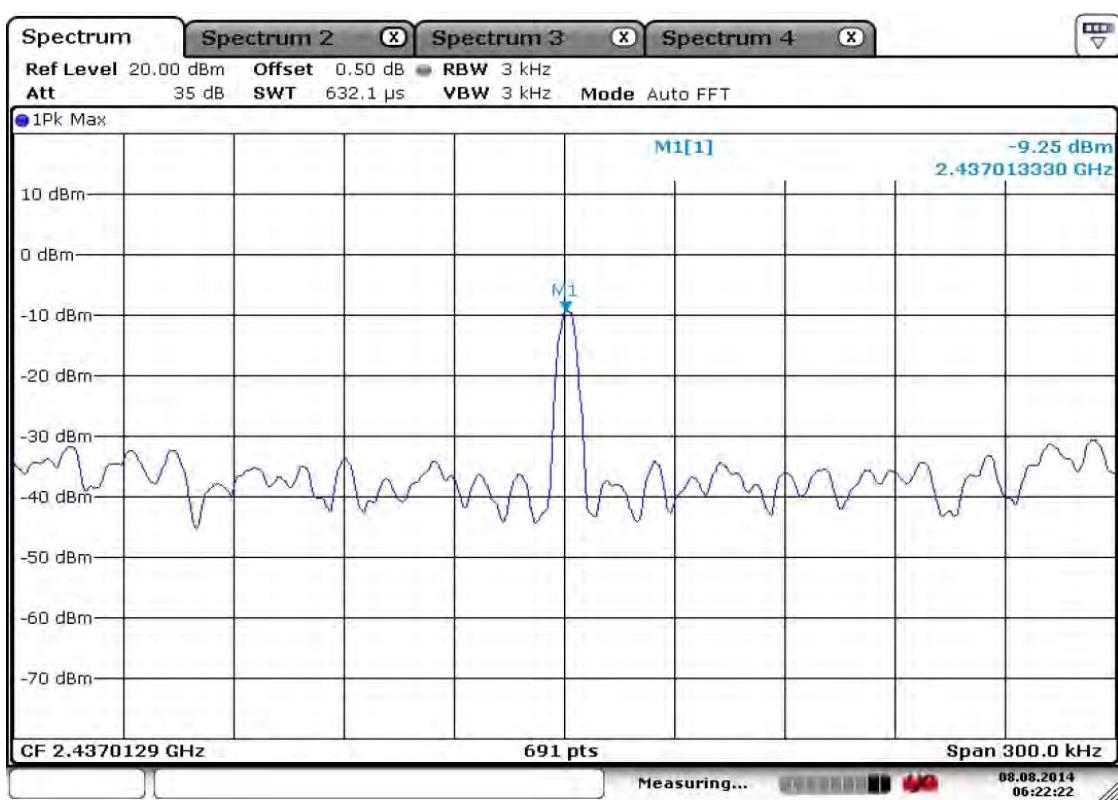


## **802.11g Power Density Measurement**

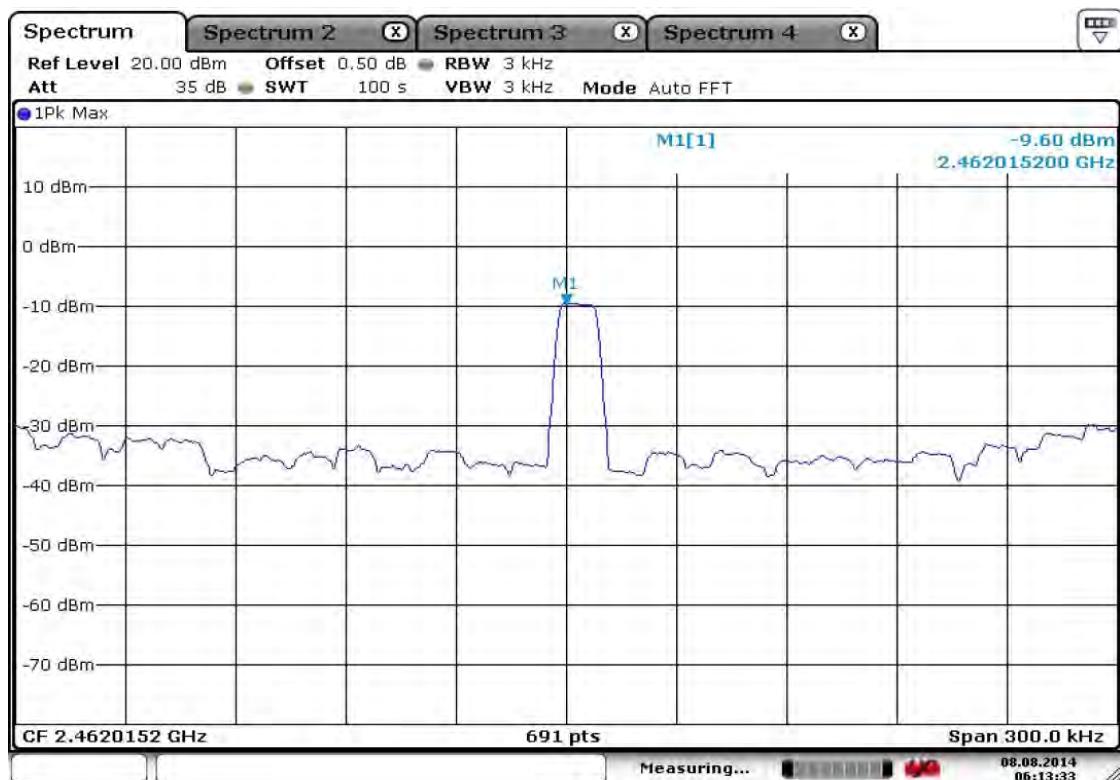
CH 1



CH 6

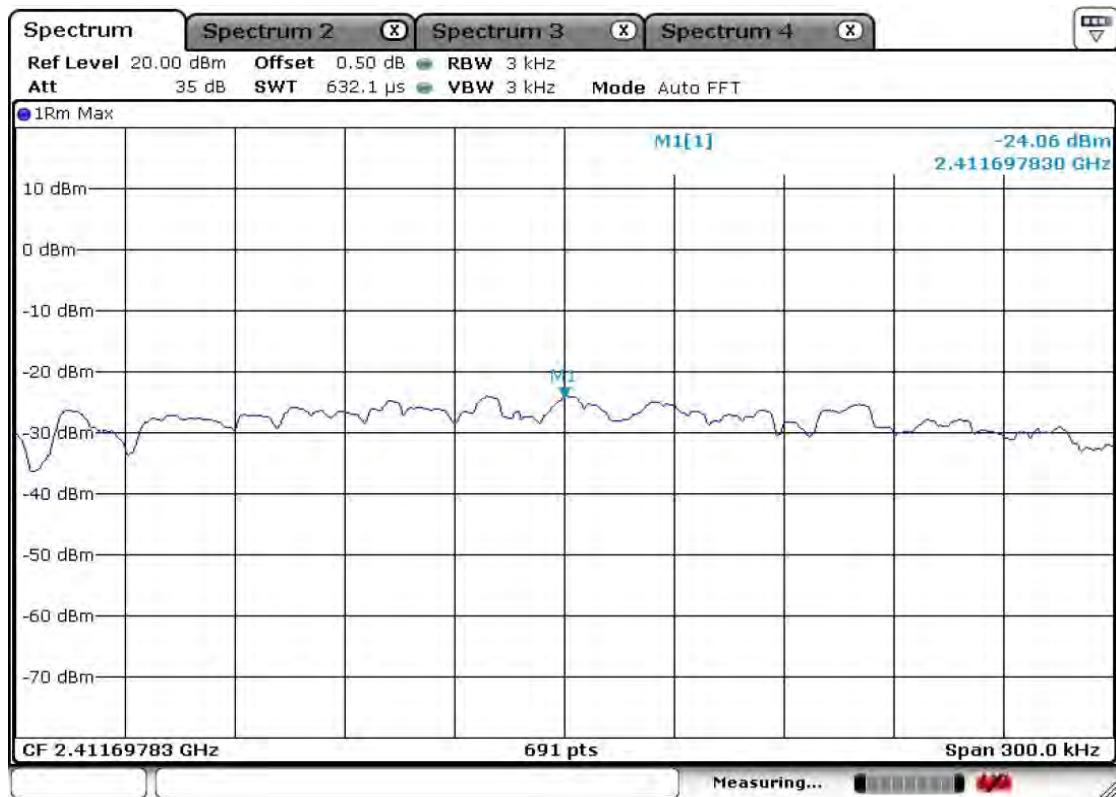


## CH 11

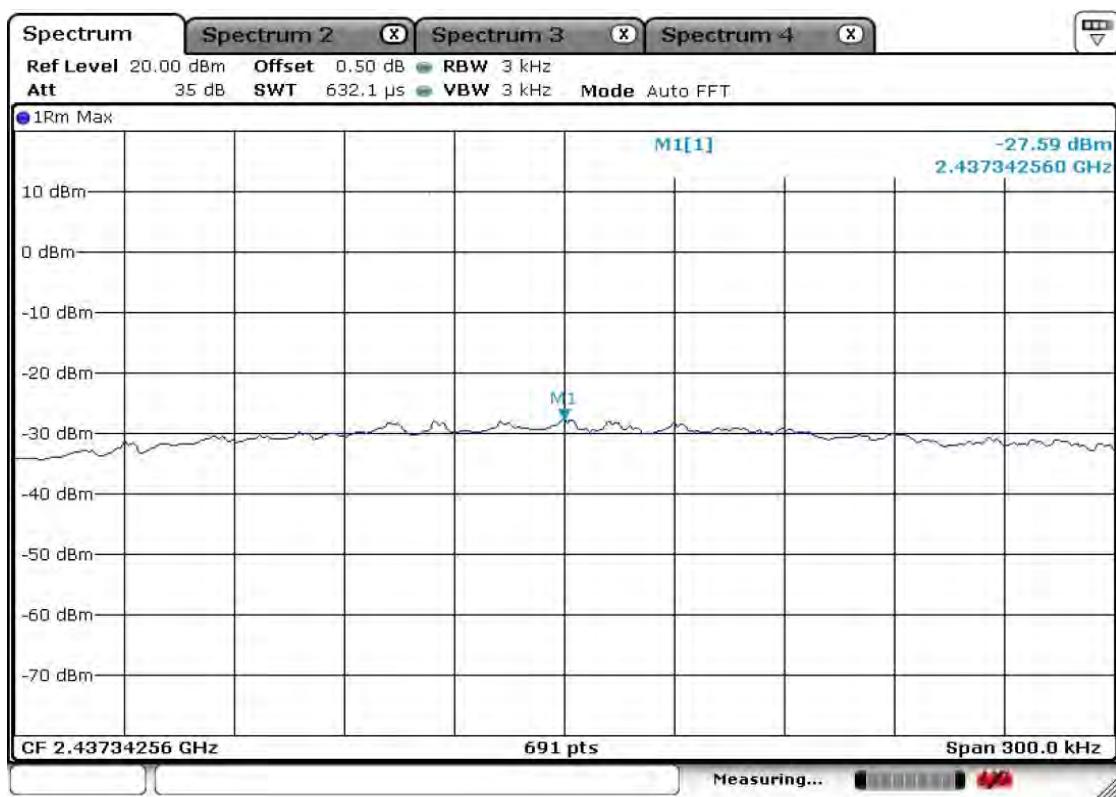


## **802.11n 20MHz Power Density Measurement**

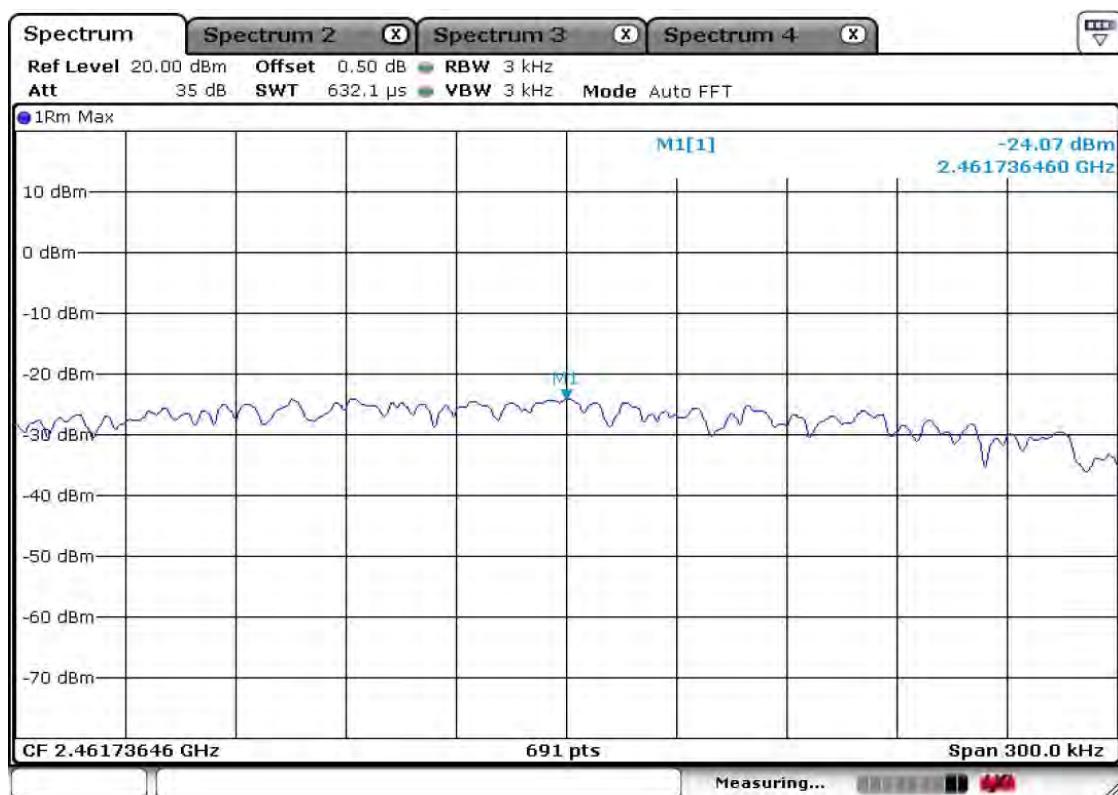
CH 1



## CH 6

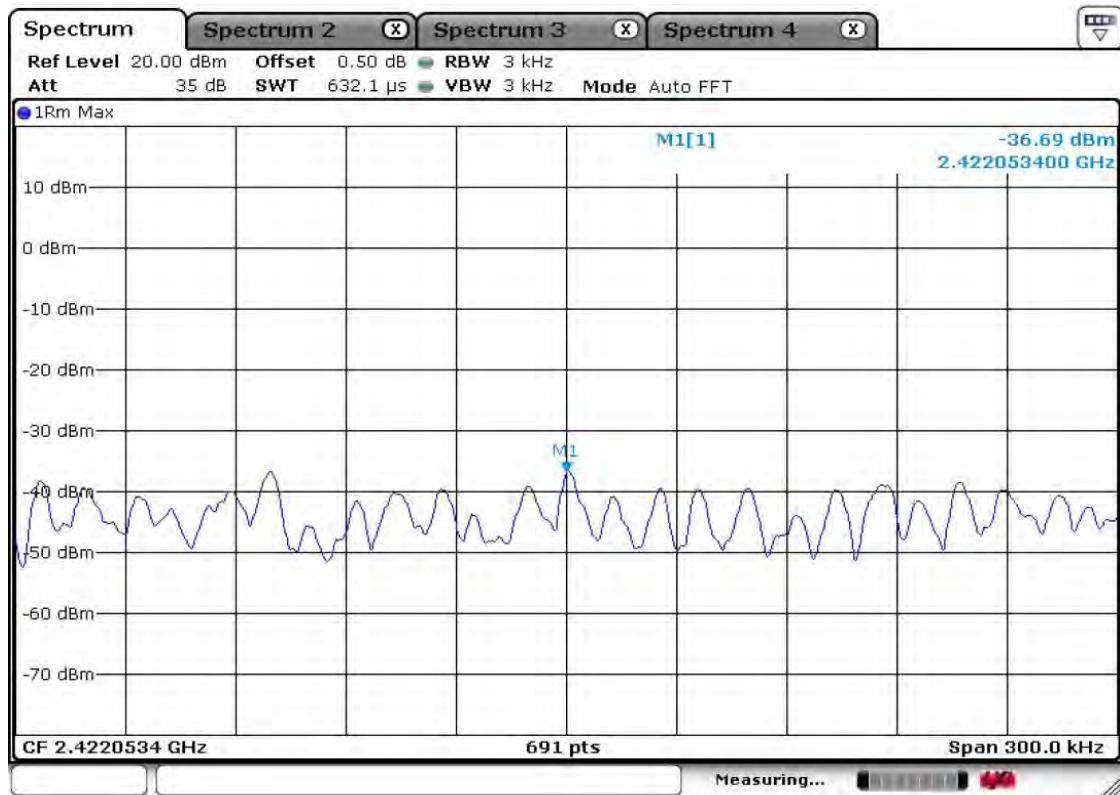


## CH 11

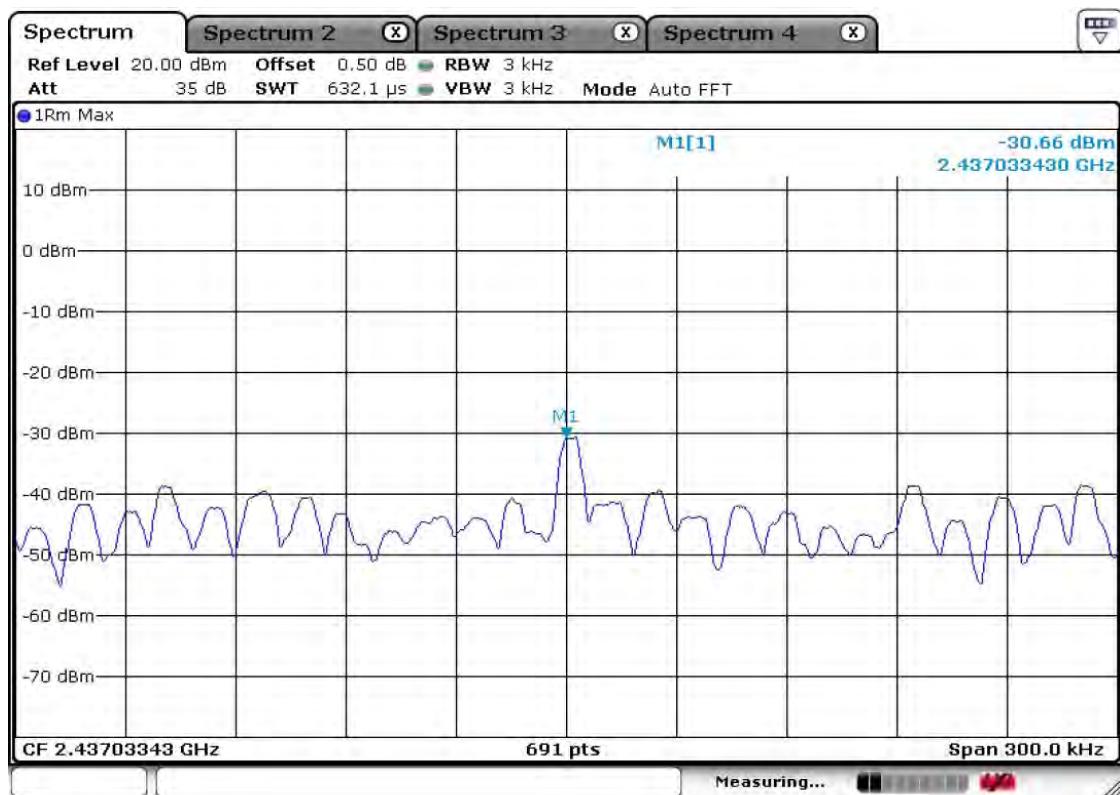


## 802.11n 40MHz Power Density Measurement

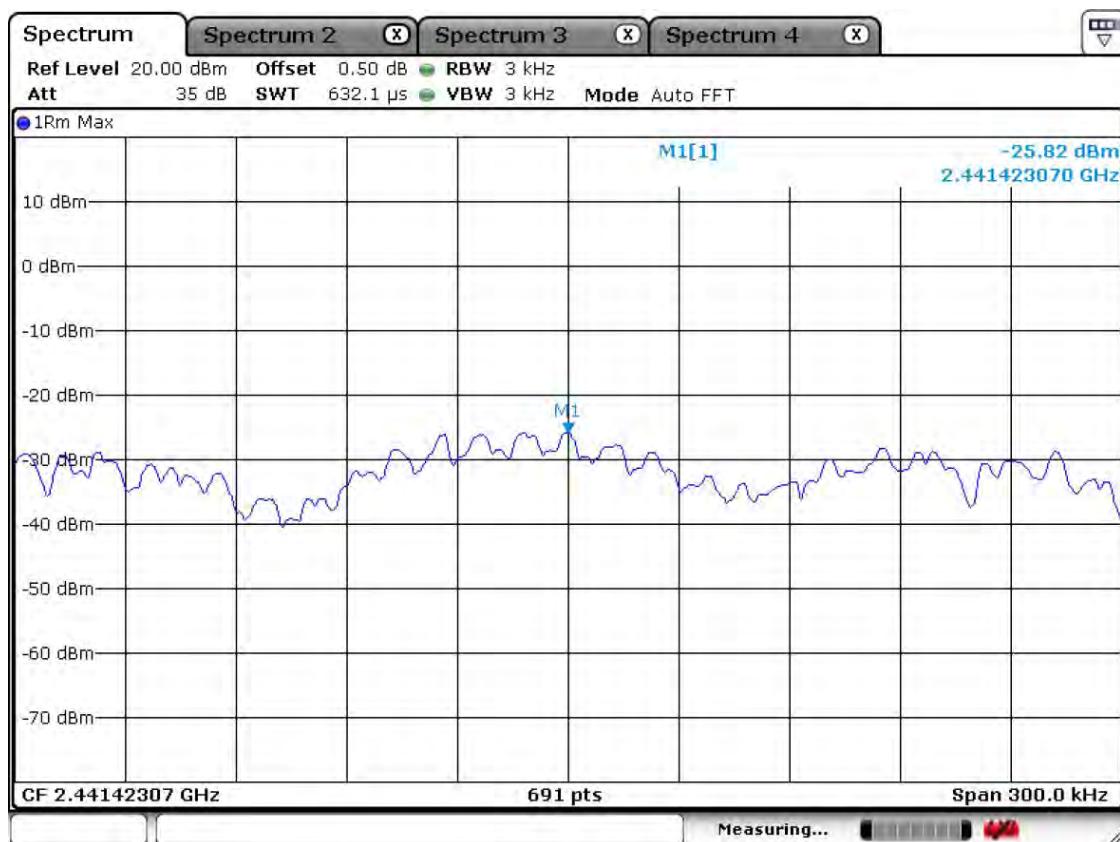
### CH 3



### CH 6



## CH 9



### 3.2.4 Band Edge

### Procedure:

\*The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance and TCB Workshop 2012, April.

The bandwidth at 20dB down from the highest inband spectral density is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate frequencies.

After the trace being stable, Use the marker-to-peak function to measure 20 dB down both sides of the intentional emission.

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

Span = 80 MHz ~160 MHz      Detector function = peak

Trace = max hold      Sweep = auto

**Measurement Data: Complies**

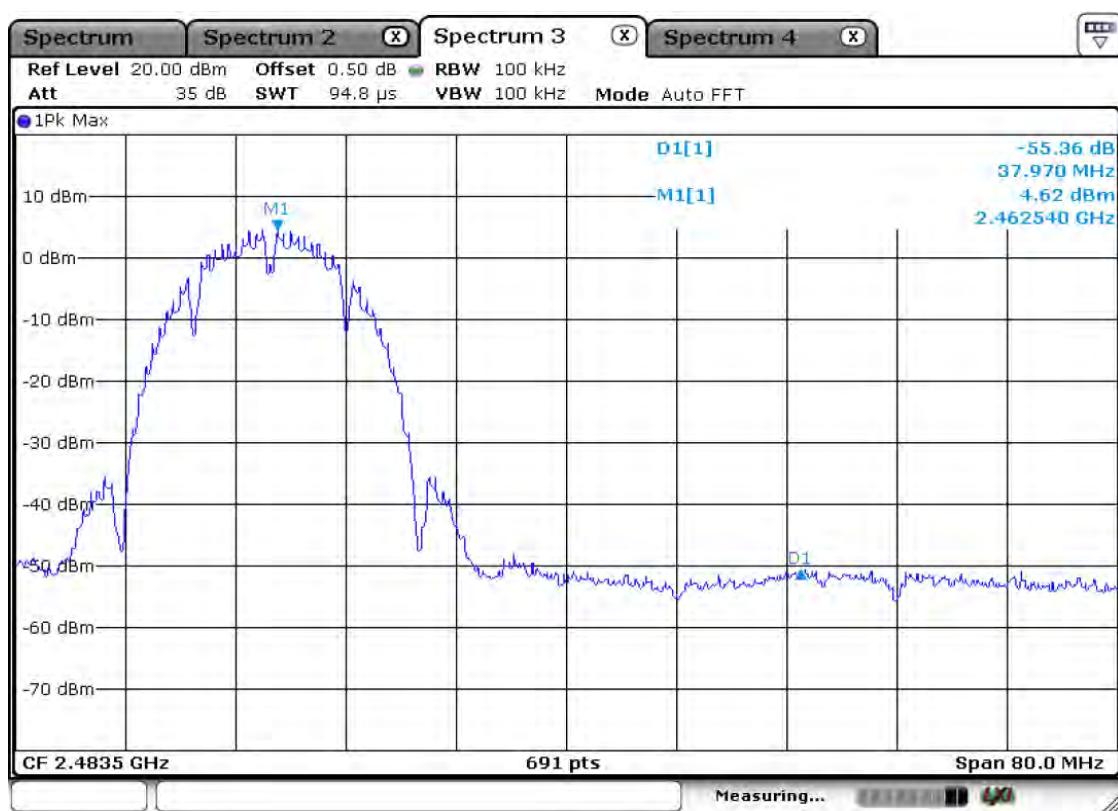
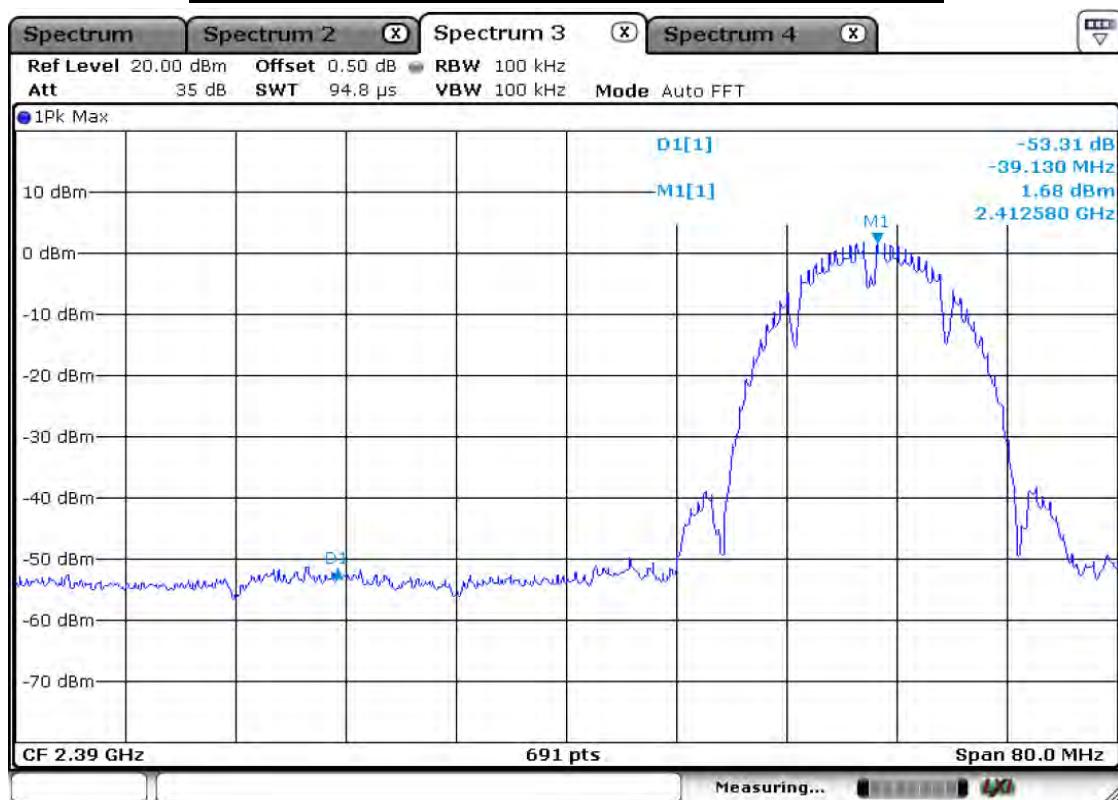
- All conducted emission in any 100kHz bandwidth outside of the spread spectrum band was at least 20dB lower than the highest inband spectral density. Therefore the applying equipment meets the requirement.
- See next pages for actual measured spectrum plots.

<b>Minimum Standard:</b>	> 20 dBc
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## Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

## 802.11b Band Edge : Conducted Measurements





**Radiated Band edges in the restricted band 2310-2390 MHz measurement**

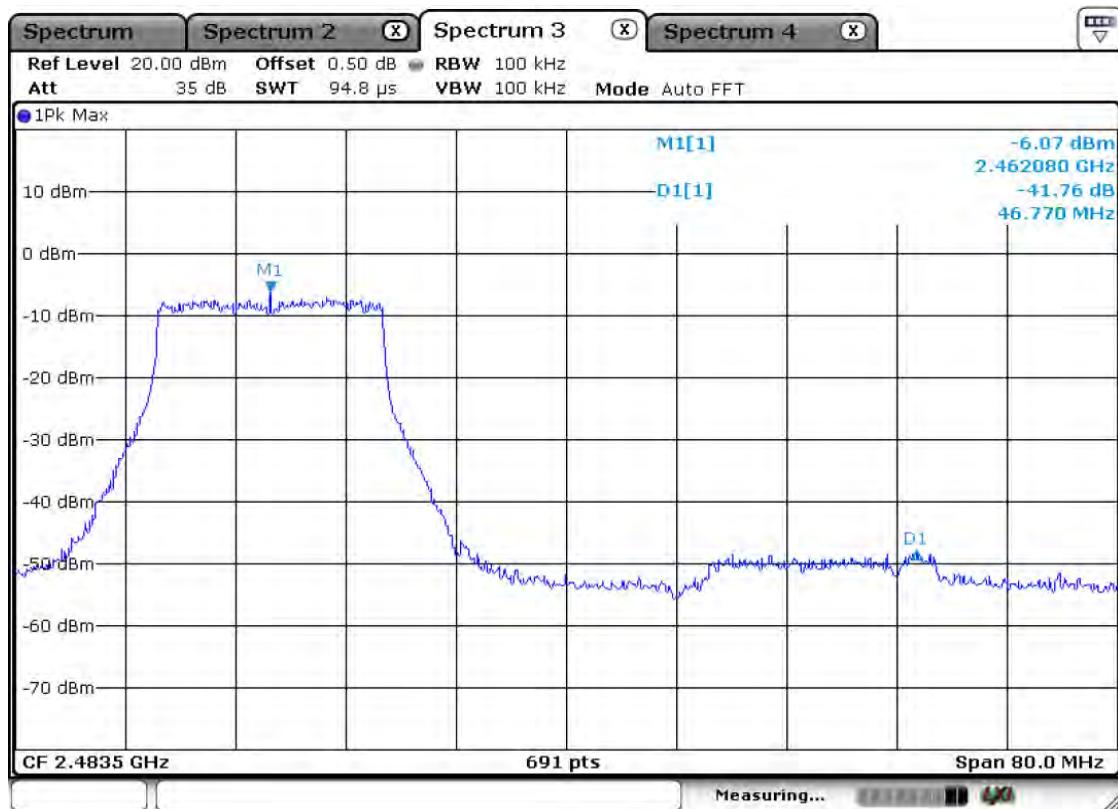
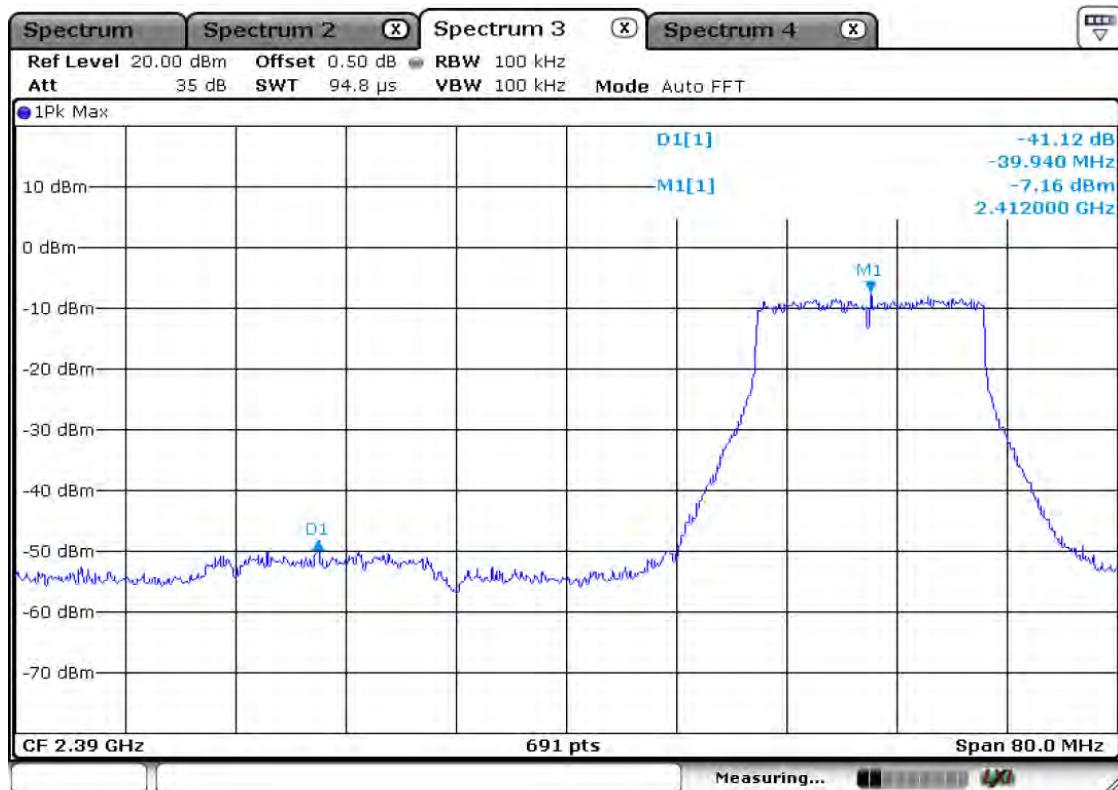
Frequency [MHz]	Reading [dBuV/m] AV / Peak	Pol.	Correction Factor		Limits [dBuV/m] AV / Peak	Result [dBuV/m] AV / Peak		Margin [dB] AV / Peak	
			Antenna	Amp. Gain + Cable Loss		AV / Peak	AV / Peak	AV / Peak	AV / Peak
2372.9	45.3   56.6	H	28.2	26.4	54.0   74.0	47.1   58.4	6.9   15.6		

**Radiated Band-edges in the restricted band 2483.5-2500 MHz measurement**

Frequency [MHz]	Reading [dBuV/m] AV / Peak	Pol.	Correction Factor		Limits [dBuV/m] AV / Peak	Result [dBuV/m] AV / Peak		Margin [dB] AV / Peak	
			Antenna	Amp. Gain + Cable Loss		AV / Peak	AV / Peak	AV / Peak	AV / Peak
2484.8	45.5   57.5	H	28.2	26.4	54.0   74.0	47.3   59.3	6.7   14.7		

**Note : This EUT was tested in 3 orthogonal positions and the worst-case data was presented**

## 802.11g Band Edge : Conducted Measurements



**Radiated Band edges in the restricted band 2310-2390 MHz measurement**

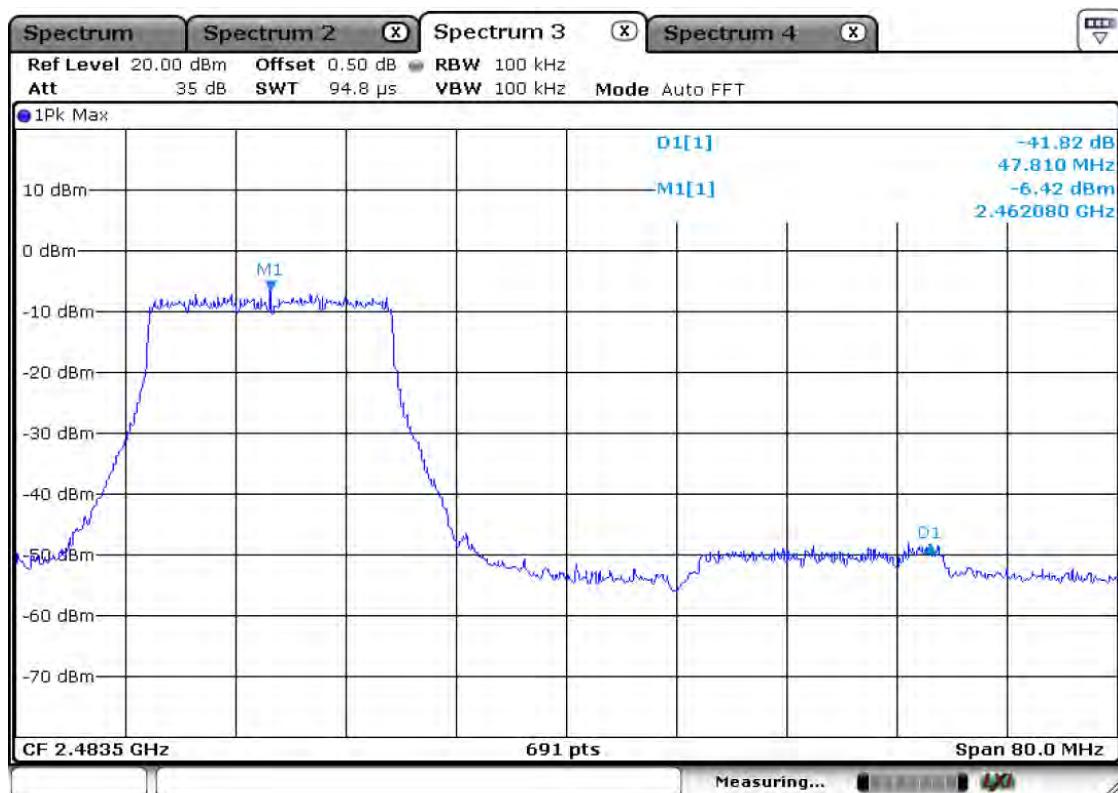
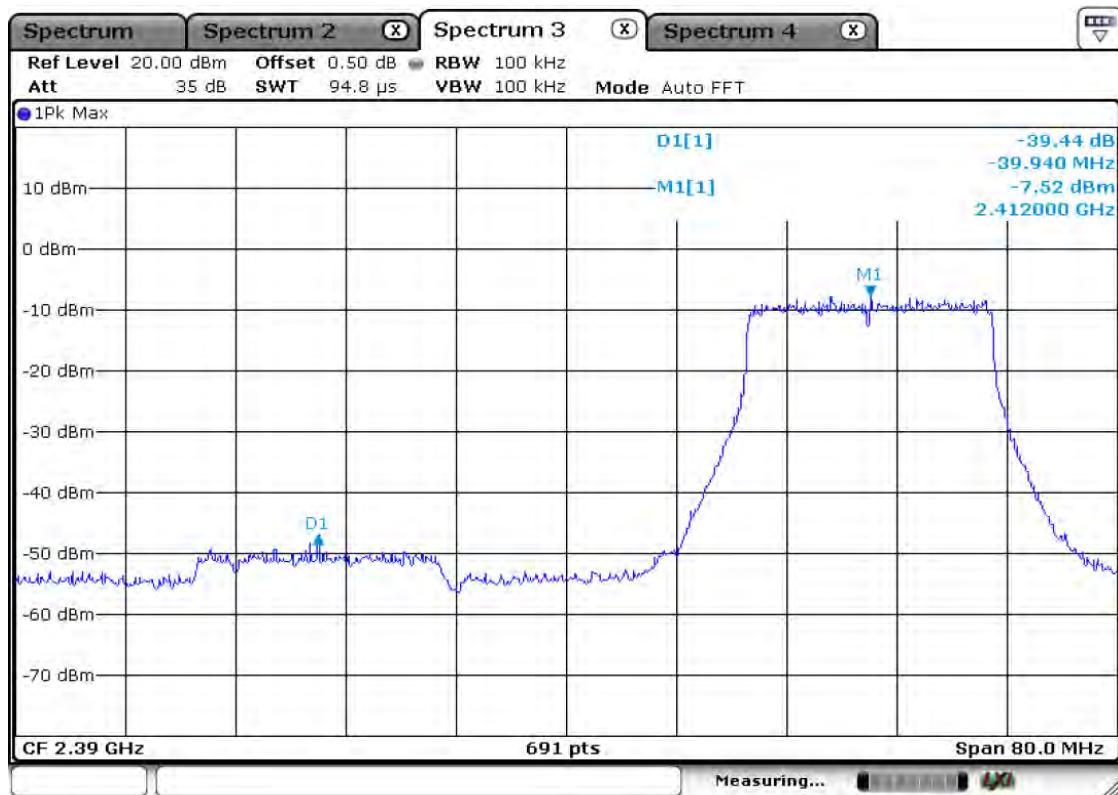
Frequency [MHz]	Reading [dBuV/m] AV / Peak	Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
			Antenna	Amp. Gain + Cable Loss	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak
2336.7	45.5   57.6	H	28.2	26.4	54.0   74.0	47.3   59.4	6.7   14.6			

**Radiated Band edges in the restricted band 2483.5-2500 MHz measurement**

Frequency [MHz]	Reading [dBuV/m] AV / Peak	Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
			Antenna	Amp. Gain + Cable Loss	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak
2486.4	45.2   57.2	H	28.2	26.4	54.0   74.0	47.0   59.0	7.0   15.0			

**Note : This EUT was tested in 3 orthogonal positions and the worst-case data was presented**

## 802.11n 20MHz Band Edge : Conducted Measurements



**Radiated Band edges in the restricted band 2310-2390 MHz measurement**

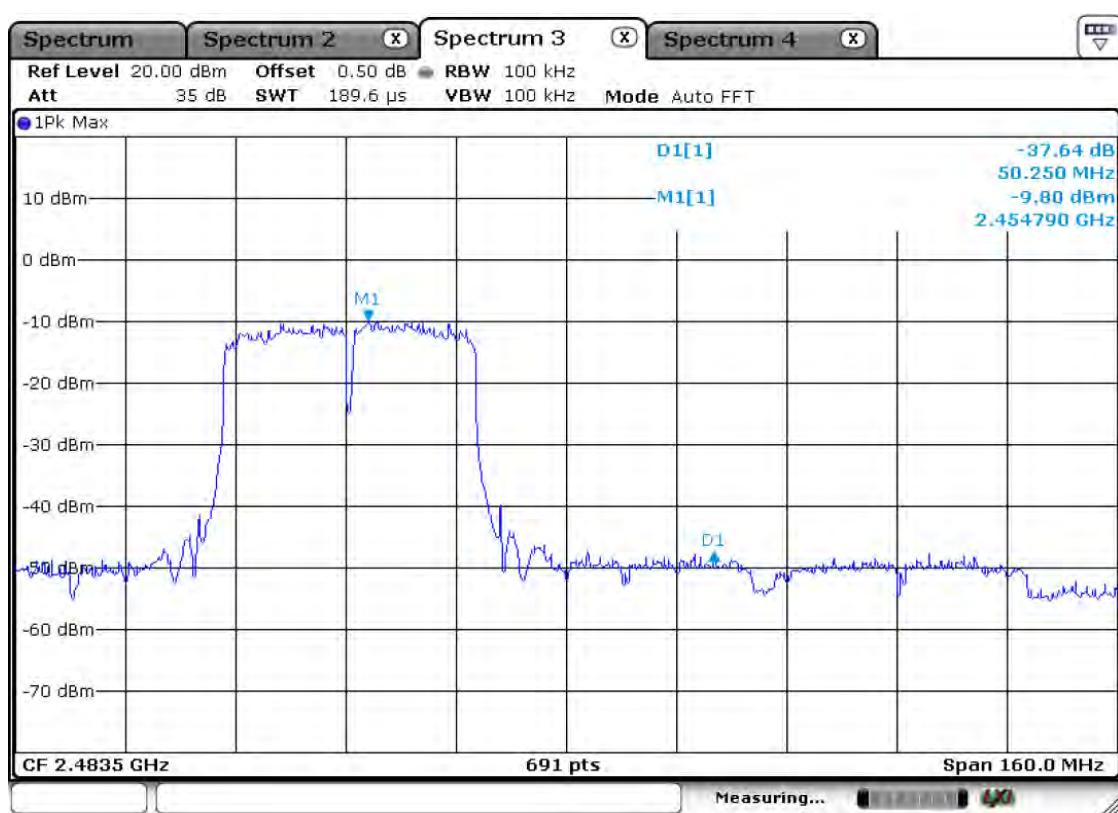
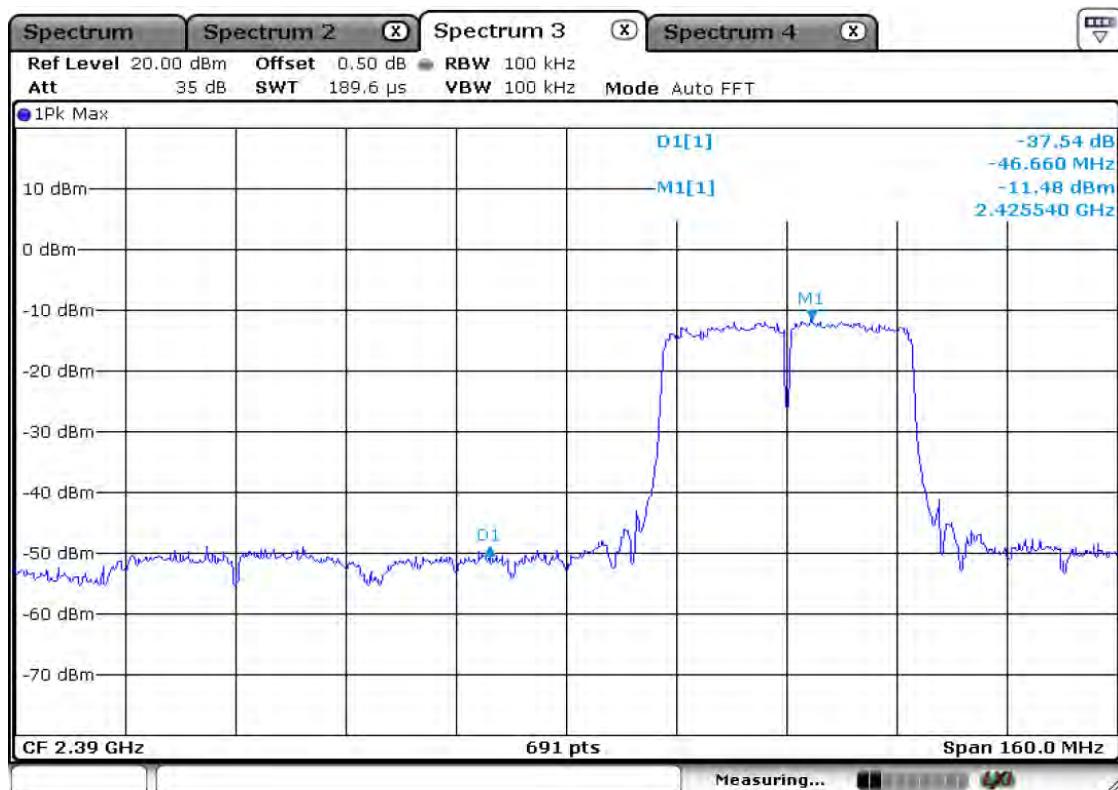
Frequency [MHz]	Reading [dBuV/m] AV / Peak	Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
			Antenna	Amp. Gain + Cable Loss	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak
2336.6	45.3   57.4	H	28.2	26.4	54.0   74.0	47.1   59.2	6.9   14.8			

**Radiated Band edges in the restricted band 2483.5-2500 MHz measurement**

Frequency [MHz]	Reading [dBuV/m] AV / Peak	Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
			Antenna	Amp. Gain + Cable Loss	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak
2372.9	45.2   58.1	H	28.2	26.4	54.0   74.0	47.0   59.9	7.0   14.1			

**Note : This EUT was tested in 3 orthogonal positions and the worst-case data was presented**

## 802.11n 40MHz Band Edge : Conducted Measurements



**Radiated Band edges in the restricted band 2310-2390 MHz measurement**

Frequency [MHz]	Reading [dBuV/m] AV / Peak	Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
			Antenna	Amp. Gain + Cable Loss	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak
2389.2	45.3   57.1	H	28.2	26.4	54.0   74.0	47.1   58.9	7.0   15.1			

**Radiated Band edges in the restricted band 2483.5-2500 MHz measurement**

Frequency [MHz]	Reading [dBuV/m] AV / Peak	Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
			Antenna	Amp. Gain + Cable Loss	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak
2388.7	45.4   57.8	H	28.2	26.4	54.0   74.0	47.2   59.6	6.8   14.4			

**Note : This EUT was tested in 3 orthogonal positions and the worst-case data was presented**

### 3.3.5 Conducted Spurious Emissions

### **Procedure:**

The test follows FCC KDB Publication No. 558074 D01 DTS Meas Guidance. The conducted spurious emissions were measured with a spectrum analyzer connected to the antenna terminal, while EUT had its hopping function disabled at the highest, middle and the lowest available channels..

After the trace being stable, set the marker on the peak of any spurious emission recorded.

The spectrum analyzer is set to:

Span = wide enough to capture the peak level of the in-band emission and all spurious emissions

RBW = 100 kHz Sweep = auto

VBW = 100 kHz      Detector function = peak

Trace = max hold

### **Measurement Data: Complies**

- All conducted emission in any 100kHz bandwidth outside of the spread spectrum band was at least 20dB lower than the highest inband spectral density. Therefore the applying equipment meets the requirement.
- See next pages for actual measured spectrum plots.

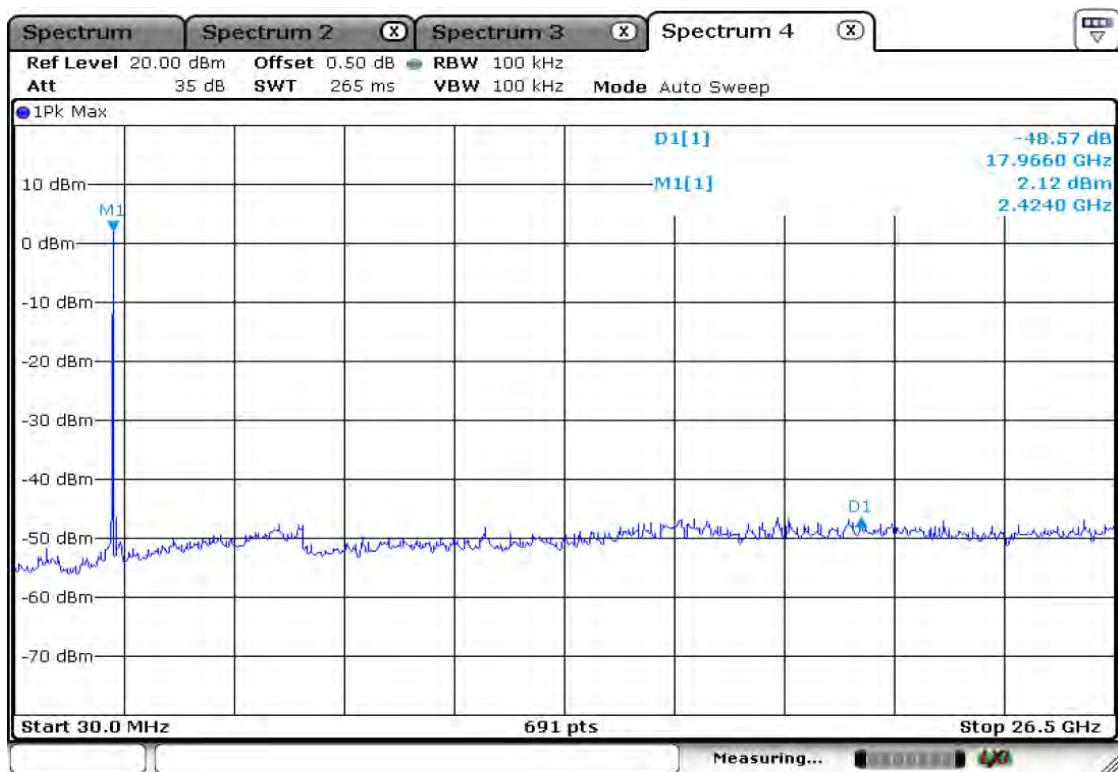
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<b>Minimum Standard:</b>	> 20 dBc
--------------------------	----------

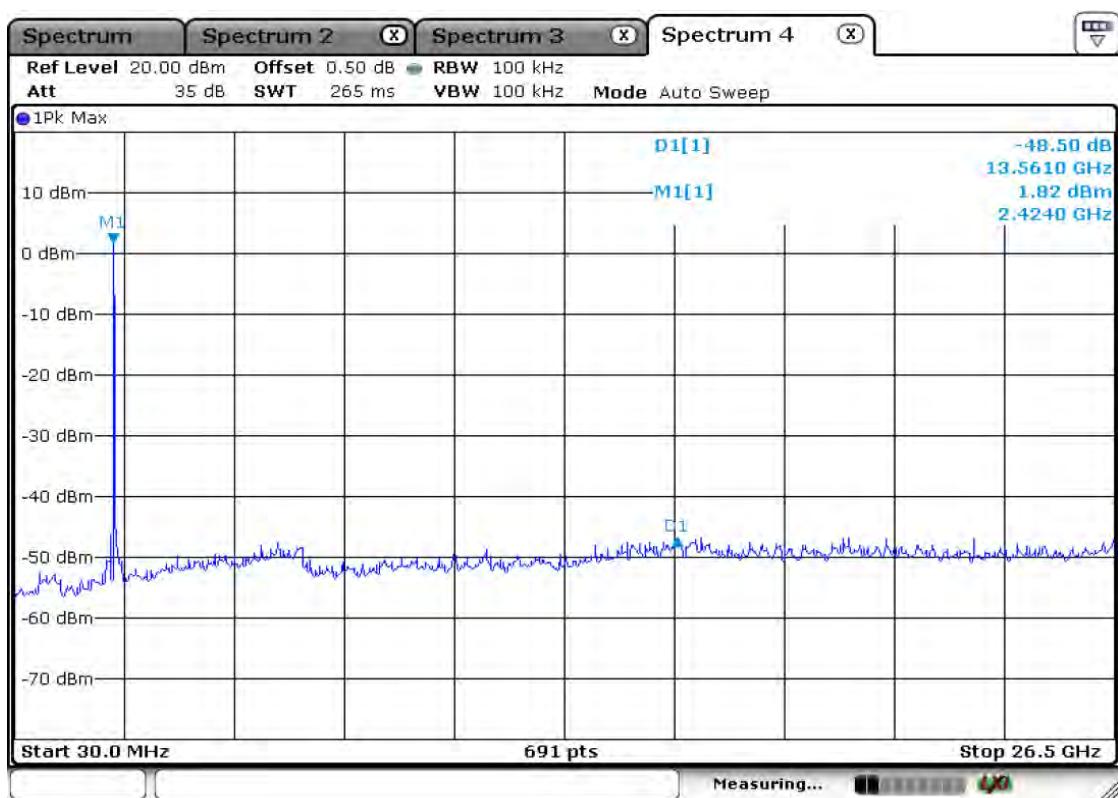
## Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

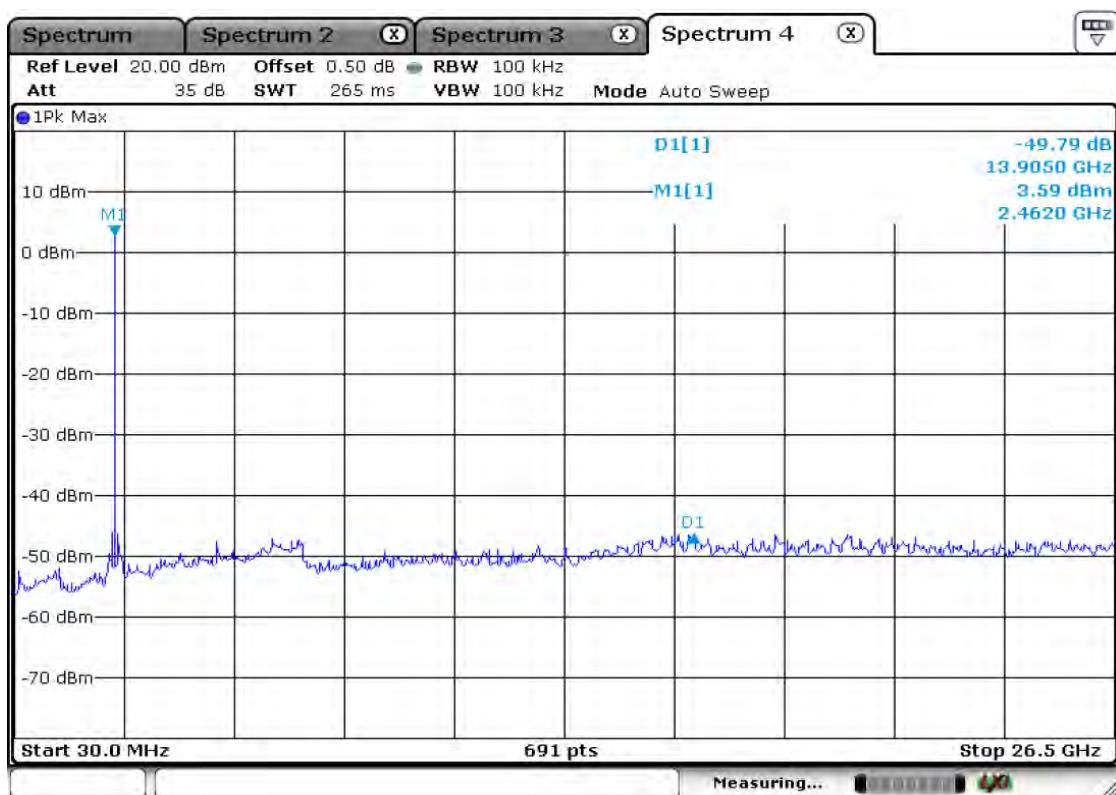
**802.11b – channel 1**  
**Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic.**



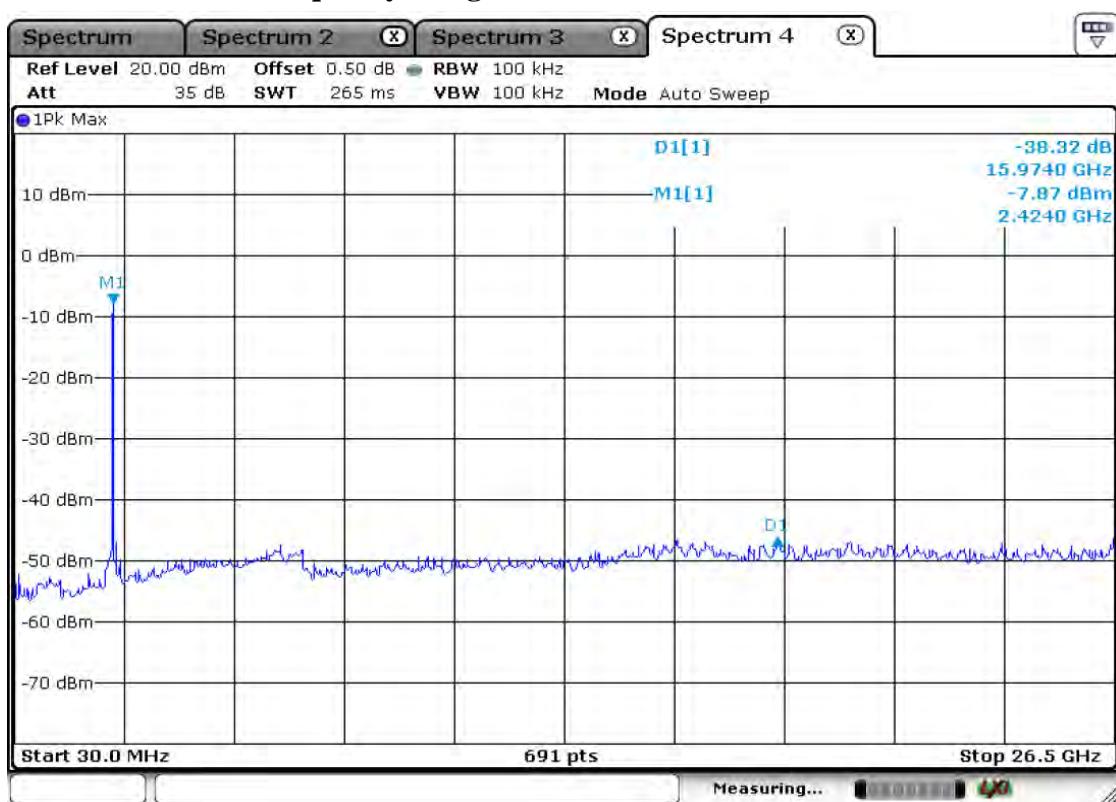
**802.11b – channel 6**  
**Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic.**



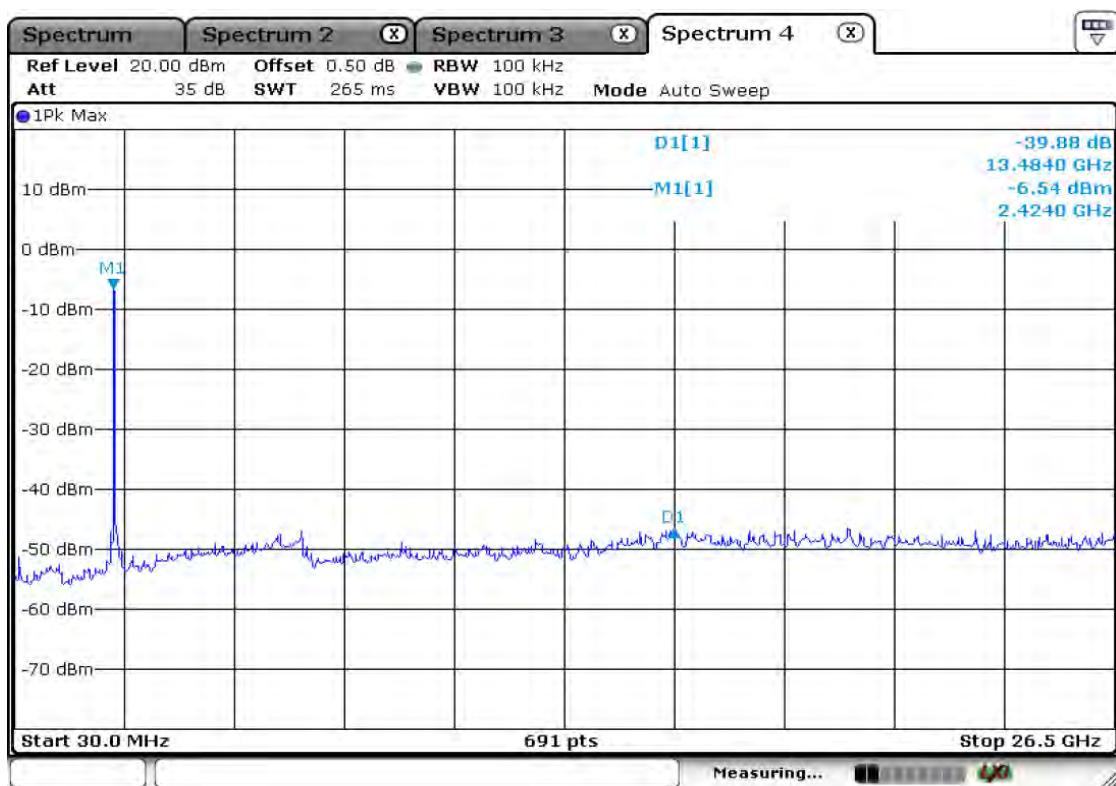
**802.11b –channel 11**  
**Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic.**



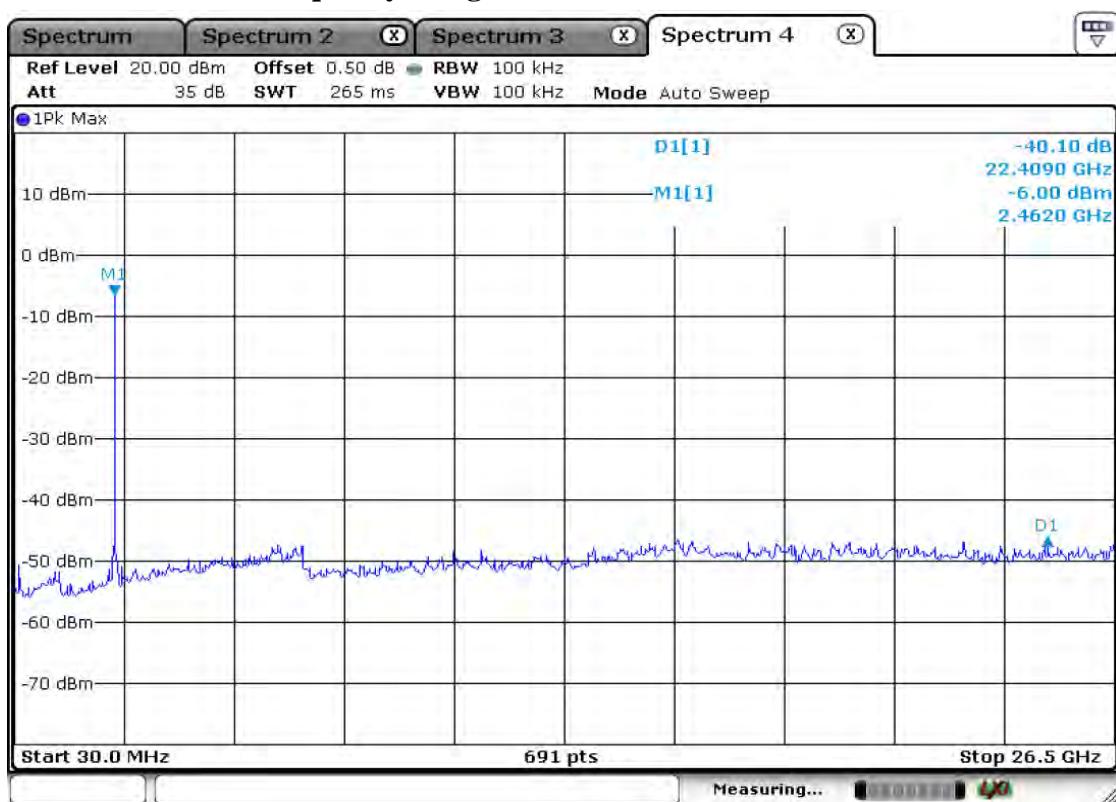
**802.11g – channel 1**  
**Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic.**



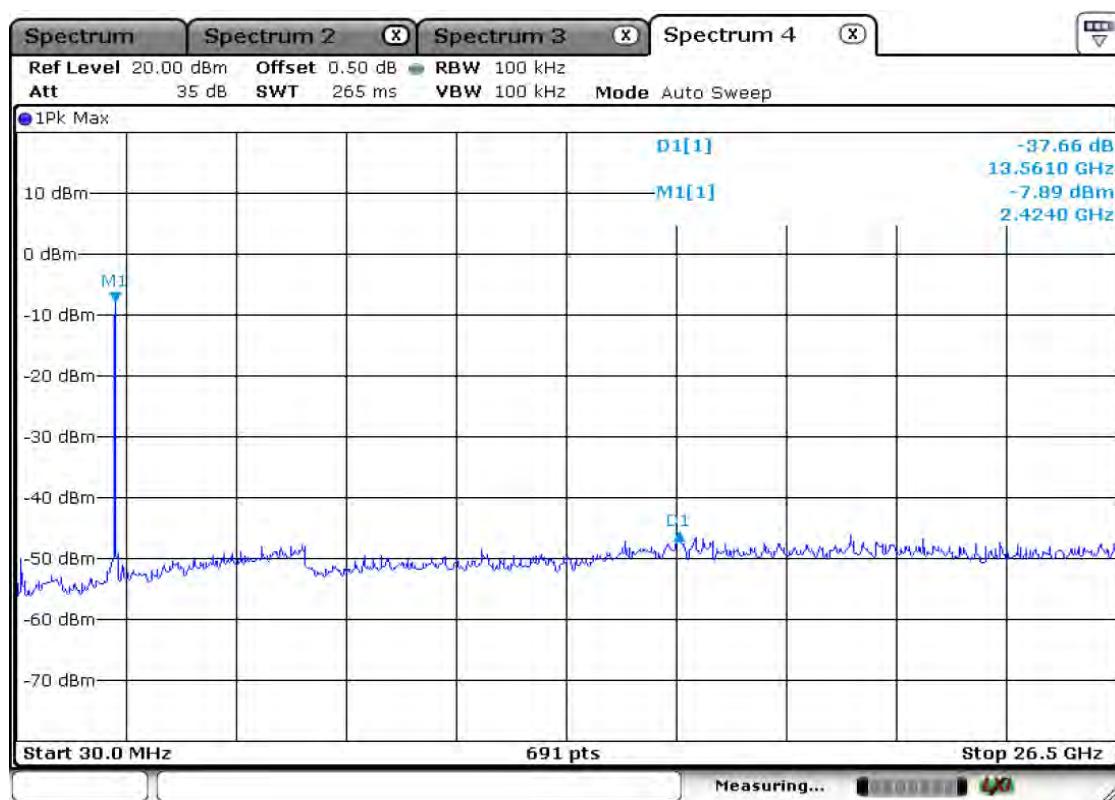
**802.11g – channel 6**  
**Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic.**



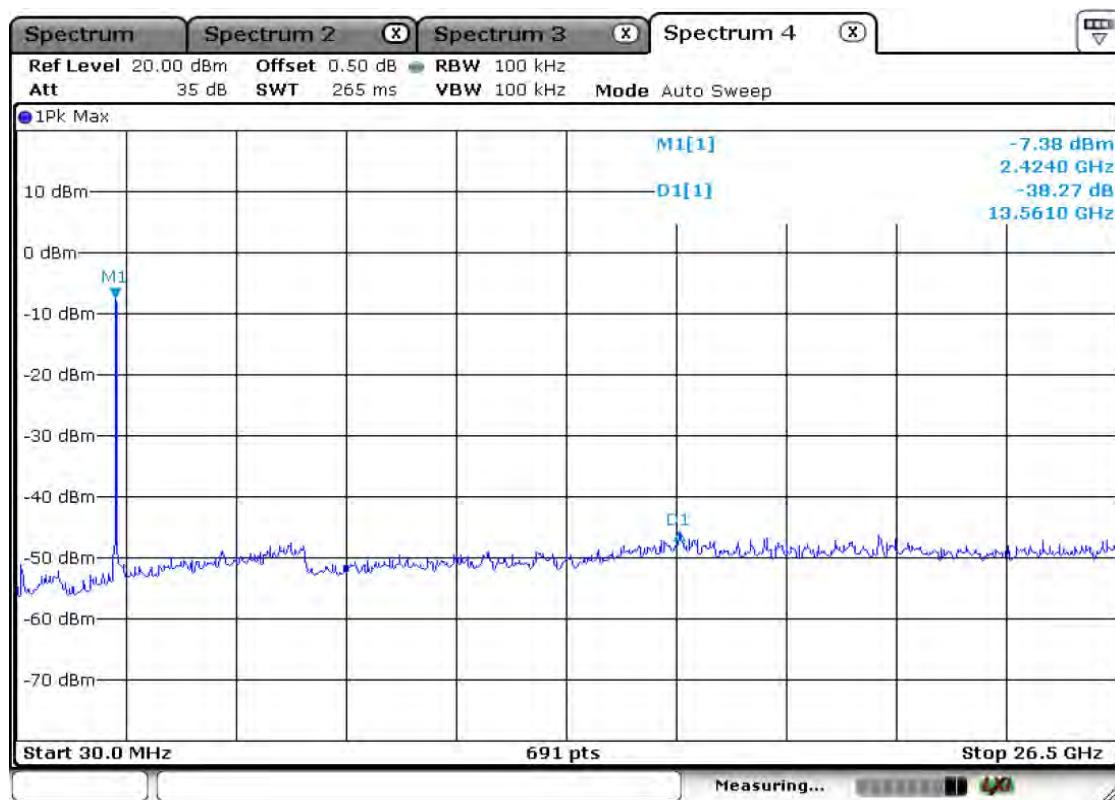
**802.11g -channel 11**  
**Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic.**



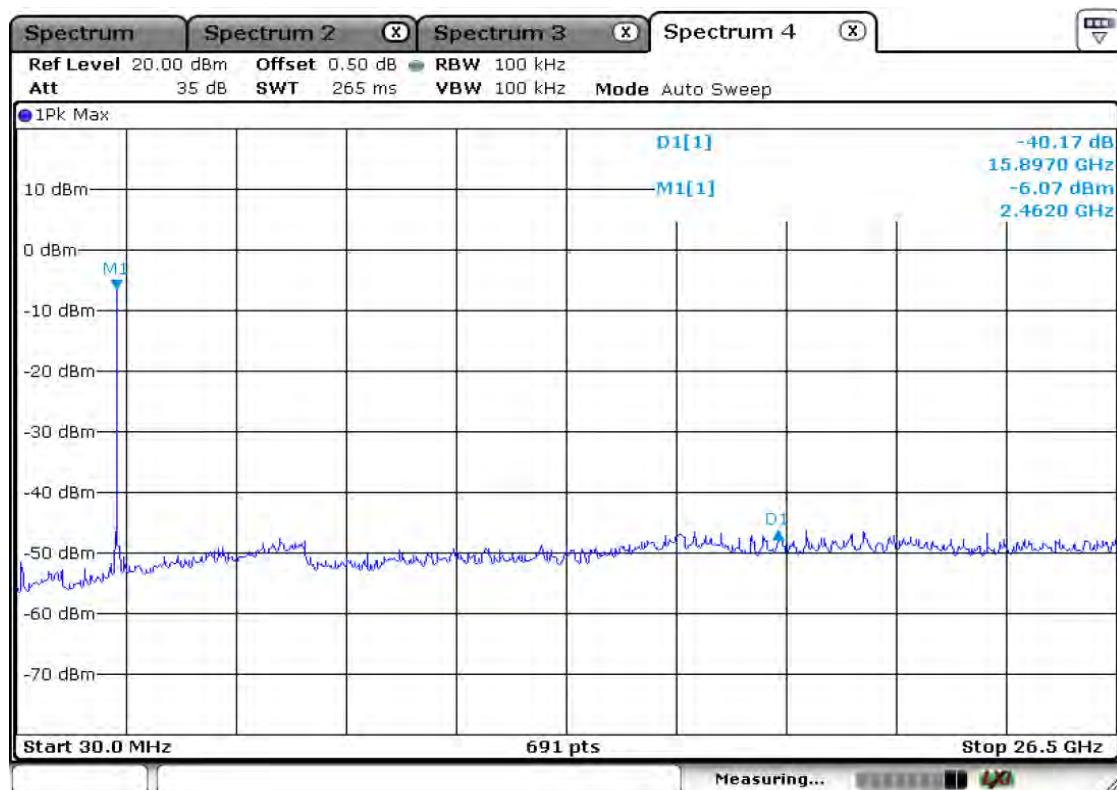
**802.11n\_20MHz – channel 1**  
**Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic.**



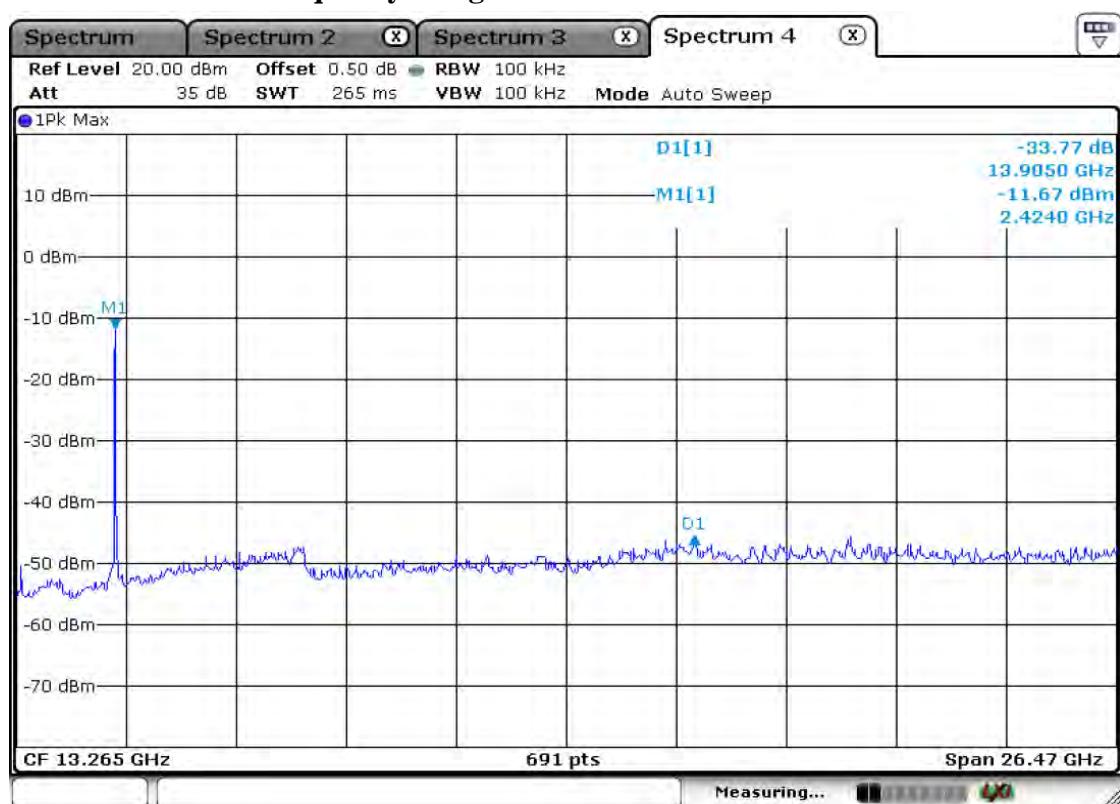
**802.11n\_20MHz – channel 6**  
**Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic.**



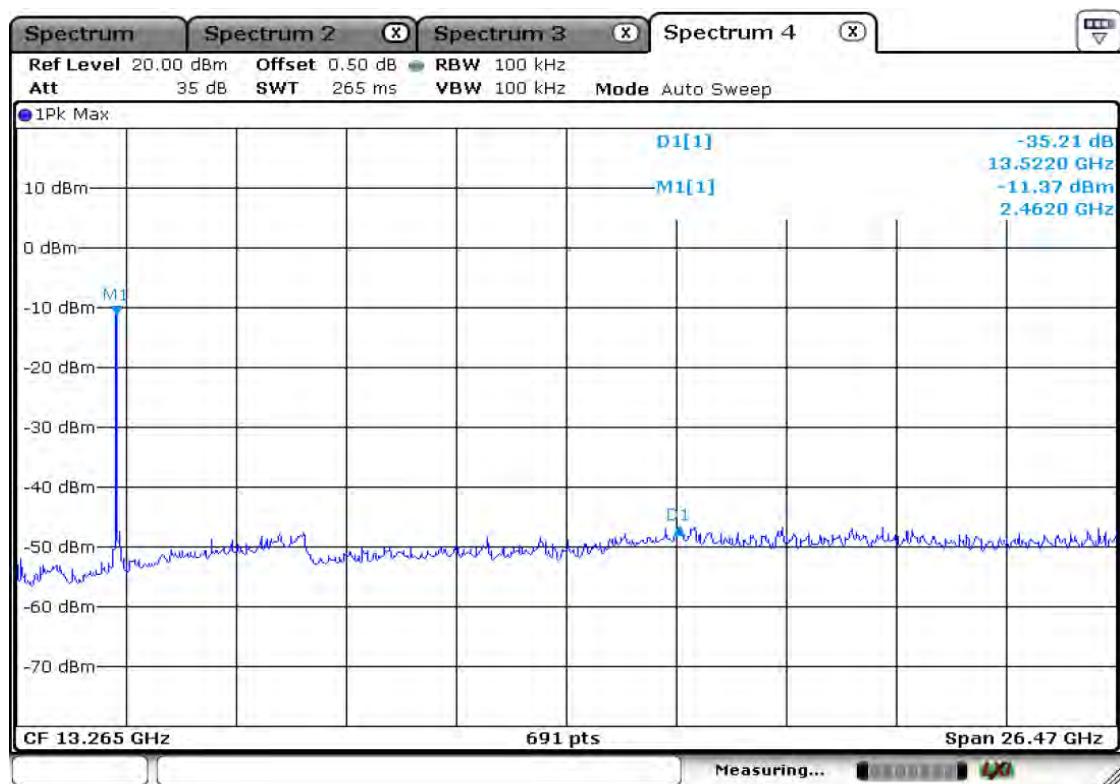
**802.11n\_20MHz -channel 11**  
**Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic.**



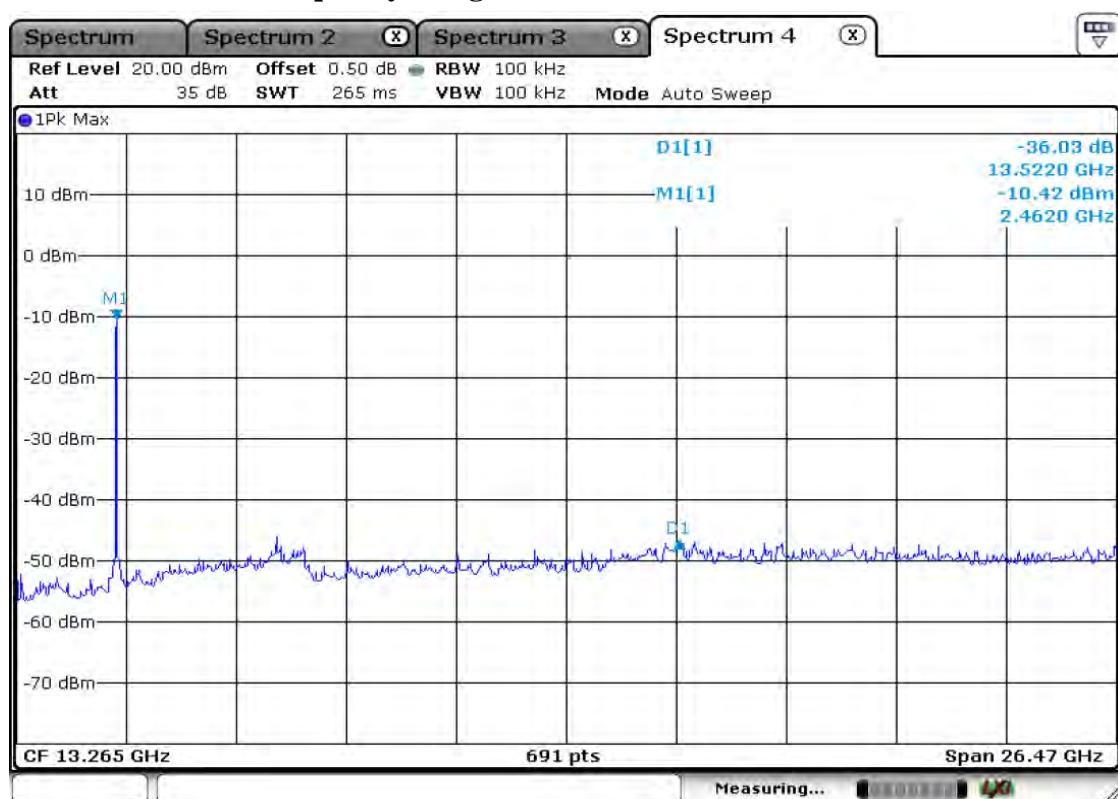
**802.11n\_40MHz –channel 3**  
**Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic.**



**802.11n\_40MHz –channel 6**  
**Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic.**



**802.11n\_40MHz -channel 9**  
**Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic.**



### 3.2.6 Radiated Spurious Emissions

#### Procedure:

\* The testing follows TCB Workshop 2012, April and fulfills ANSI C63.4-2003 and the guidelines in ANSI C63.10-2009 test requirement. The EUT was placed on a 0.8m high wooden table inside a shielded enclosure. An antenna was placed near the EUT and measurements of frequencies and amplitudes of field strengths were recorded for reference during final measurements. For final radiated testing, measurements were performed in OATS. Measurements were performed with the EUT oriented in 3 orthogonal axis and rotated 360 degrees to determine worst-case orientation for maximum emissions.

- In the frequency range of 9kHz to 30 MHz, magnetic field is measured with Loop Test Antenna. The Test Antenna is positioned with its plane vertical at 3m distance from the EUT. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.
- In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is carried from 1m to 4m above the ground to determine the maximum value of the field strength. The emission levels at both horizontal and vertical polarizations should be tested.

The spectrum analyzer is set to:

Center frequency = the worst channel

Frequency Range = 9 KHz ~ 10<sup>th</sup> harmonic.

RBW = 120 kHz ( 9 KHz ~ 1 GHz)

VBW  $\geq$  RBW

= 1 MHz ( 1 GHz ~ 10<sup>th</sup> harmonic )

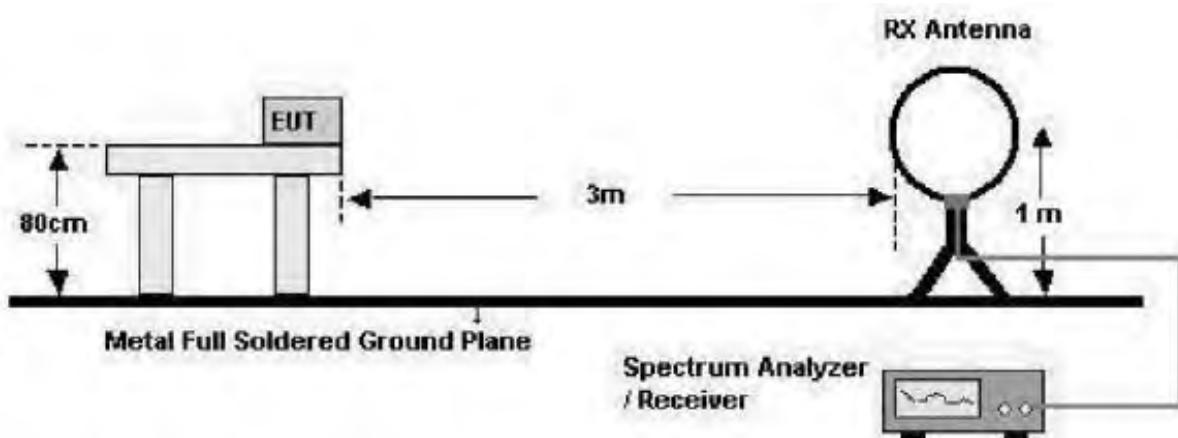
Span = 100 MHz

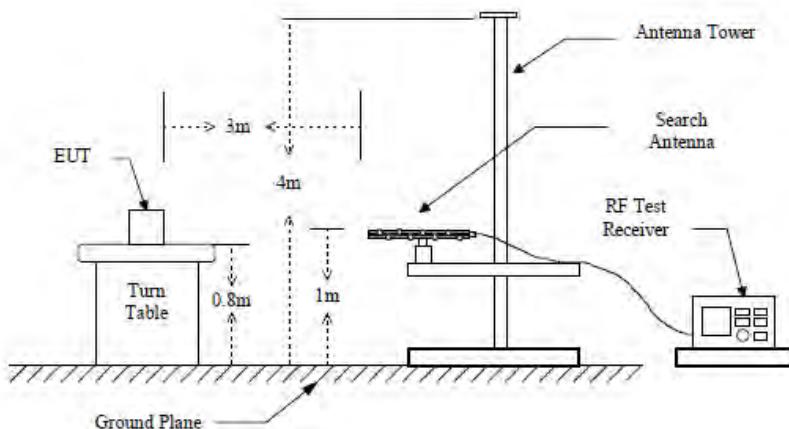
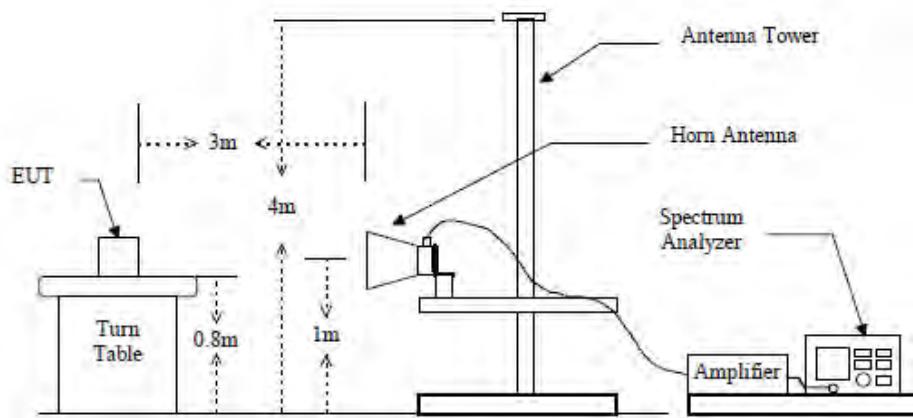
Detector function = peak

Trace = max hold

Sweep = auto

**below 30MHz**



**below 1GHz (30MHz to 1GHz)****above 1GHz****Measurement Data: Complies**

- See next pages for actual measured data.
- No other emissions were detected at a level greater than 20dB below limit include from 9KHz to 30MHz.

**Minimum Standard: FCC Part 15.209(a)**

Frequency (MHz)	Limit (uV/m) @ 3m
0.009 ~ 0.490	2400/F(kHz) (@ 300m)
0.490 ~ 1.705	24000/F(kHz) (@ 30m)
1.705 ~ 30	30(@ 30m)
30 ~ 88	100 **
88 ~ 216	150 **
216 ~ 960	200 **
Above 960	500

\*\* Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76 -88MHz, 174-216MHz or 470 -806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

**802.11b Measurement Data**

Frequency [MHz]	Reading [dBuV/m]		Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
	AV	Peak		Antenna	Amp.Gain+Cable	AV	Peak	AV	Peak	AV	Peak
2552.0	40.5	55.5	H	28.8	26.4	54.0	74.0	42.9	57.9	11.1	15.6
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
Frequency [MHz]	Reading [dBuV/m]		Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
	AV	Peak		Antenna	Amp.Gain+Cable	AV	Peak	AV	Peak	AV	Peak
2057.3	39.4	55.6	H	28.8	26.4	54.0	74.0	41.8	58.0	12.2	16.0
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
Frequency [MHz]	Reading [dBuV/m]		Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
	AV	Peak		Antenna	Amp.Gain+Cable	AV	Peak	AV	Peak	AV	Peak
2552.0	40.3	54.4	H	28.8	26.4	54.0	74.0	42.7	56.8	11.3	17.2
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-

- No other emissions were detected at a level greater than 20dB below limit.

**802.11g Measurement Data**

Frequency [MHz]	Reading [dBuV/m]		Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
	AV	Peak		Antenna	Amp.Gain+Cable	AV	Peak	AV	Peak	AV	Peak
2134.5	41.3	55.7	H	28.8	26.4	54.0	74.0	43.7	58.1	10.3	15.9
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
Frequency [MHz]	Reading [dBuV/m]		Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
	AV	Peak		Antenna	Amp.Gain+Cable	AV	Peak	AV	Peak	AV	Peak
2134.5	41.7	54.5	H	28.8	26.4	54.0	74.0	44.1	56.9	9.9	17.1
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
Frequency [MHz]	Reading [dBuV/m]		Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
	AV	Peak		Antenna	Amp.Gain+Cable	AV	Peak	AV	Peak	AV	Peak
2056.3	40.7	55.3	H	28.8	26.4	54.0	74.0	43.1	57.7	10.9	16.3
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-

- No other emissions were detected at a level greater than 20dB below limit.

**802.11n 20MHz Measurement Data**

Frequency [MHz]	Reading [dBuV/m]		Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
	AV	Peak		Antenna	Amp.Gain+Cable	AV	Peak	AV	Peak	AV	Peak
2011.4	41.5	52.1	H	28.8	26.4	54.0	74.0	43.9	54.5	10.1	19.5
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
Frequency [MHz]	Reading [dBuV/m]		Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
	AV	Peak		Antenna	Amp.Gain+Cable	AV	Peak	AV	Peak	AV	Peak
2013.7	40.9	52.9	H	28.8	26.4	54.0	74.0	43.3	55.3	10.7	18.7
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
Frequency [MHz]	Reading [dBuV/m]		Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
	AV	Peak		Antenna	Amp.Gain+Cable	AV	Peak	AV	Peak	AV	Peak
2010.5	40.9	53.8	H	28.8	26.4	54.0	74.0	43.3	56.2	10.7	17.8
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-

- No other emissions were detected at a level greater than 20dB below limit.

## 802.11n 40MHz Measurement Data

Frequency [MHz]	Reading [dBuV/m]		Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
	AV	Peak		Antenna	Amp.Gain+Cable	AV	Peak	AV	Peak	AV	Peak
2056.3	40.2	52.4	H	28.8	26.4	54.0	74.0	42.6	54.8	11.4	19.2
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
Frequency [MHz]	Reading [dBuV/m]		Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
	AV	Peak		Antenna	Amp.Gain+Cable	AV	Peak	AV	Peak	AV	Peak
2552.0	40.9	51.3	H	28.8	26.4	54.0	74.0	43.3	53.7	10.7	20.3
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
Frequency [MHz]	Reading [dBuV/m]		Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
	AV	Peak		Antenna	Amp.Gain+Cable	AV	Peak	AV	Peak	AV	Peak
2056.3	41.1	52.3	H	28.8	26.4	54.0	74.0	43.5	54.7	10.5	19.3
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-

- No other emissions were detected at a level greater than 20dB below limit.

Radiated Emissions – Wi-Fi 2.4 GHz mode

4, Songnaro 236 Beon-gil, Yangji-myeon,  
Cheoin-gu, Yongin-si, Gyeonggi-do,  
449-822 Korea  
Tel +82-31-3236008,9  
Fax +82-31-3236010

BUT/Model No.: CDT-H18180E-V0

TEST MODE: Wireless mode

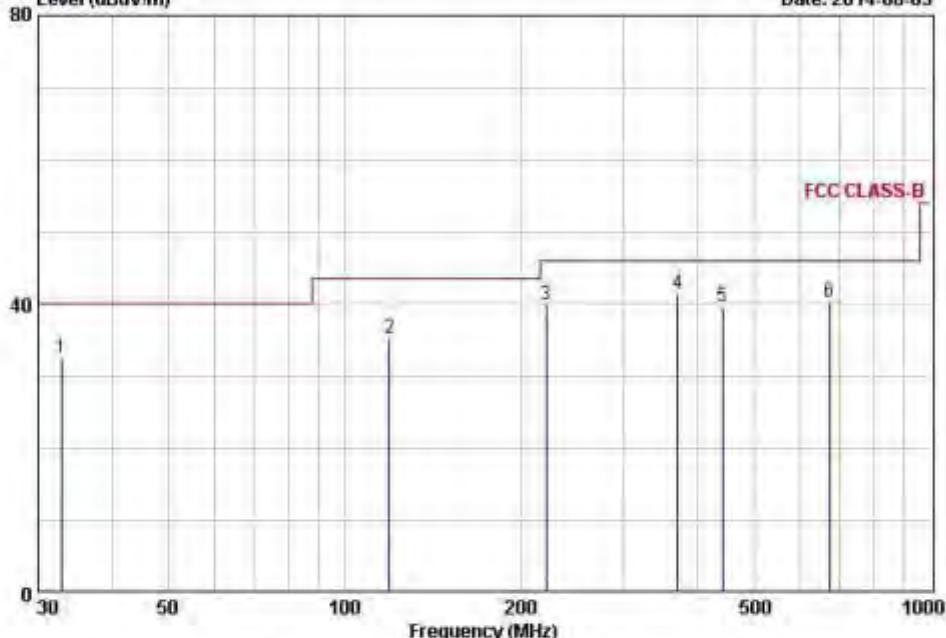
Temp: Humi : 29 / 59

Tested by: SIN S U

Data: 53

Level (dBuV/m)

Date: 2014-08-05



Freq MHz	Reading dBuV/m	C.F dB/u	Result dBuV/m	Limit dBuV/m	Margin dB	Height cm	Angle deg	Polarity	
								QP	
1 32.84	49.50	-16.94	32.56	40.00	7.44	188	121	VERTICAL	
2 119.25	51.80	-16.49	35.31	43.50	8.19	128	134	VERTICAL	
3 220.89	57.00	-17.21	39.79	46.00	6.21	268	266	HORIZONTAL	
4 370.50	52.50	-11.60	41.50	46.00	4.50	215	341	HORIZONTAL	
5 441.98	48.60	-8.92	39.68	46.00	6.32	400	302	HORIZONTAL	
6 671.65	43.70	-3.31	40.39	46.00	5.61	400	52	HORIZONTAL	

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

### 3.2.7 AC Conducted Emissions

#### Procedure:

The conducted emissions are measured in the shielded room with a spectrum analyzer in peak hold. While the measurement, EUT has its hopping function disabled at the middle channels in line with Section 15.31(m). Emissions closest to the limit are measured in the quasi-peak mode (QP) with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation and exerciser operation. The highest emissions relative to the limit are listed.

#### Measurement Data: **Complies**

- Refer to the next page.
- No other emissions were detected at a level greater than 20dB below limit
- It gave the worse case emissions

#### Minimum Standard: FCC Part 15.207(a)/EN 55022

Frequency Range (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15 ~ 0.5	66 to 56 *	56 to 46 *
0.5 ~ 5	56	46
5 ~ 30	60	50

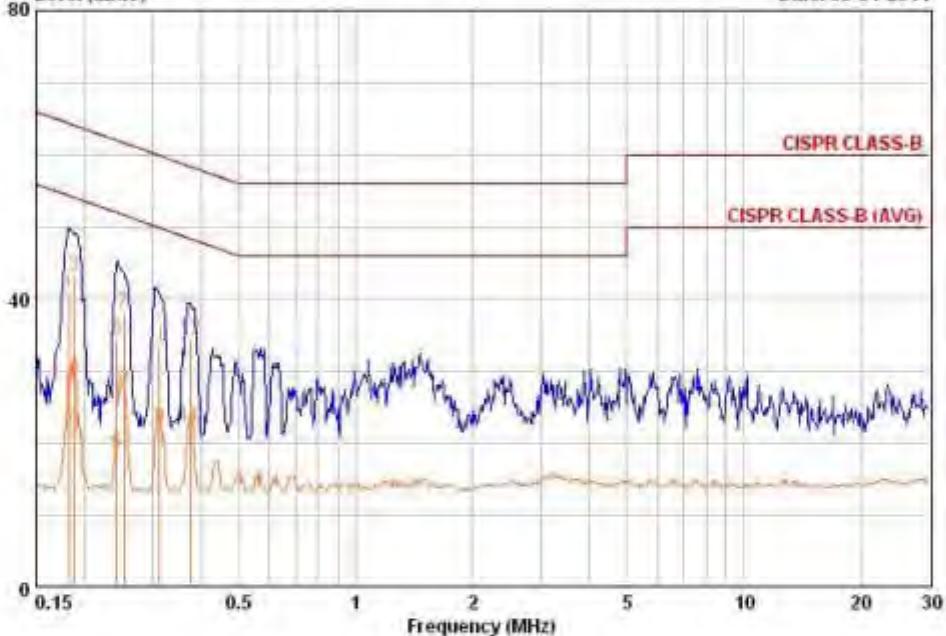
\* Decreases with the logarithm of the frequency

Radiated Emissions – Wi-Fi 2.4 GHz mode - LINE

4, Songju-ro 236 Beon-gil, Yangji-myeon  
Cheoin-gu, Yongin-si, Gyeonggi-do  
449-822 Korea  
Tel: +82-31-3236008, 9  
Fax: +82-31-3236010

BUT / Model No. : CDT-H10180E-VO Phase : LINR  
 Test Mode : Wireless mode Test Power : 120 / 60  
 Temp./Humid. : 22 / 52 Test Engineer : SIN S U

Data: 2 File: C:\Conducted Data\2014\LTA\_Conduction\_1408-1.EMI (299) Date: 08-04-2014



Freq MHz	RD QP		RD AV		C.F dB	Result dBuV	Result QP		Result AV		Limit QP	Limit AV	Margin dB	Margin AV
	dBuV	dBuV	dBuV	dBuV			dBuV	dBuV	dBuV	dBuV				
0.182	31.25	11.95	9.56	40.81	21.51	64.39	54.39	23.58	32.88					
0.188	33.75	19.65	9.58	43.33	29.23	64.12	54.12	20.80	24.90					
0.242	24.75	9.25	9.58	34.33	18.83	62.03	52.03	27.69	33.19					
0.252	28.66	17.96	9.57	38.23	27.53	61.69	51.69	23.46	24.16					
0.312	24.06	12.76	9.55	33.61	22.31	59.92	49.92	26.31	27.61					
0.376	24.85	12.95	9.52	34.37	22.47	58.37	48.37	24.00	25.90					

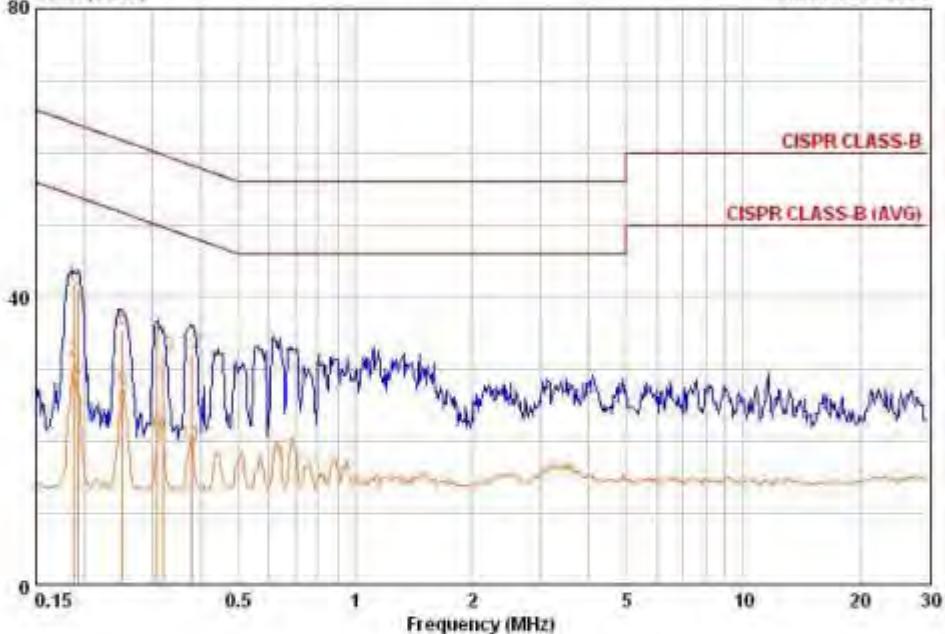
Remarks: C.F (Correction Factor) = Insertion loss + Cable loss

Radiated Emissions – Wi-Fi 2.4 GHz mode - NEUTRAL

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BUT / Model No. : CDT-H16188E-V0 Phase : NEUTRAL  
Test Mode : Wireless mode Test Power : 120 / 60  
Temp. / Humi. : 22 / 52 Test Engineer : SIN S U

Data: 4 File: C:\Conducted Data\2014\LTA\_Conduction\_1408-1.EMI (299) Date: 08-04-2014



Freq MHz	RD OP dBuV		RD AV dB		C.F.		Result QP dBuV	Result AV dBuV	Limit OP dBuV		Limit AV dBuV		Margin OP dB	Margin AV dB	
	OP	AV	OP	AV	QP	AV			OP	AV	OP	AV			
0.187	32.05	21.65	9.57	41.62	31.22	64.17	54.17	22.54	22.94						
0.193	31.55	18.75	9.59	41.14	28.34	63.91	53.91	22.77	25.57						
0.251	25.86	17.46	9.57	35.43	27.03	61.72	51.72	26.30	24.70						
0.309	23.56	11.36	9.55	33.11	20.91	60.00	50.00	26.89	29.09						
0.319	22.26	11.26	9.54	31.80	20.80	59.73	49.73	27.93	28.93						
0.379	22.75	10.15	9.52	32.27	19.67	58.30	48.30	26.03	28.63						

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss

## APPENDIX

### TEST EQUIPMENT USED FOR TESTS

	Description	Model No.	Serial No.	Manufacturer	Interval	Last Cal. Date
1	Signal Analyzer (9kHz~30GHz)	FSV-30	100757	R&S	1 year	2014-01-16
2	Signal Generator (~3.2GHz)	8648C 3	623A02597	HP	1 year	2014-03-25
3	SYNTHESIZED CW GENERATOR	83711B U	S34490456	HP	1 year	2014-03-25
4	Attenuator (3dB)	8491A	37822	HP	2 year	2012-09-22
5	Attenuator (10dB)	8491A	63196	HP	2 year	2012-09-22
6	Test Receiver (~30MHz)	ESHS10	828404/009	R&S	1 year	2014-03-25
7	EMI Test Receiver (~7GHz)	ESCI7	100722	R&S	1 year	2013-09-16
8	RF Amplifier (~1.3GHz)	8447D OPT 010	2944A07684	HP	1 year	2013-09-16
9	RF Amplifier (1~26.5GHz)	8449B	3008A02126	HP	1 year	2014-03-25
10	Horn Antenna (1~18GHz)	3115	00114105	ETS	2 year	2013-05-13
11	DRG Horn (Small)	3116B	81109	ETS-Lindgren	2 year	2014-02-26
12	DRG Horn (Small)	3116B	133350	ETS-Lindgren	2 year	2014-02-26
13	TRI LOG Antenna	VULB 9160	9160-3237	SCHWARZBECK	2 year	2013-05-03
14	Temp.Humidity Data Logger	SK-L200TH II A	00801	SATO	1 year	2014-03-26
15	Spitter (SMA)	ZFSC-2-2500	SF617800326	Mini-Circuits	-	-
16	Power Divider	11636A	06243	HP	2 year	2012-09-22
17	DC Power Supply	6674A	3637A01657	Agilent	-	-
18	Frequency Counter	5342A	2826A12411	HP	1 year	2014-03-25
19	Power Meter	EPM-441A	GB32481702	HP	1 year	2014-03-26
20	Power Sensor	8481A	3318A99464	HP	1 year	2014-01-17
21	Audio Analyzer	8903B	3729A18901	HP	1 year	2013-09-16
22	Modulation Analyzer	8901B	3749A05878	HP	1 year	2013-09-16
23	TEMP & HUMIDITY Chamber	YJ-500 L	TAS06041	JinYoung Tech	1 year	2013-09-16
24	Stop Watch	HS-3	812Q08R	CASIO	2 year	2014-04-03
25	LISN	KNW-407	8-1430-1	Kyoritsu	1 year	2013-09-16
26	Two-Lime V-Network	ESH3-Z5	893045/017	R&S	1 year	2014-03-26
27	UNIVERSAL RADIO COMMUNICATION TESTER	CMU200 1	06243	R&S	1 year	2014-07-11
28	Highpass Filter	WHKX1.5/15G-10SS	74	Wainwright Instruments	-	-
29	Highpass Filter	WHKX3.0/18G-10SS	118	Wainwright Instruments	-	-
30	Active Loop Antenna	FMZB1519	1519-031	SCHWARZBECK	1 year	2014-01-07