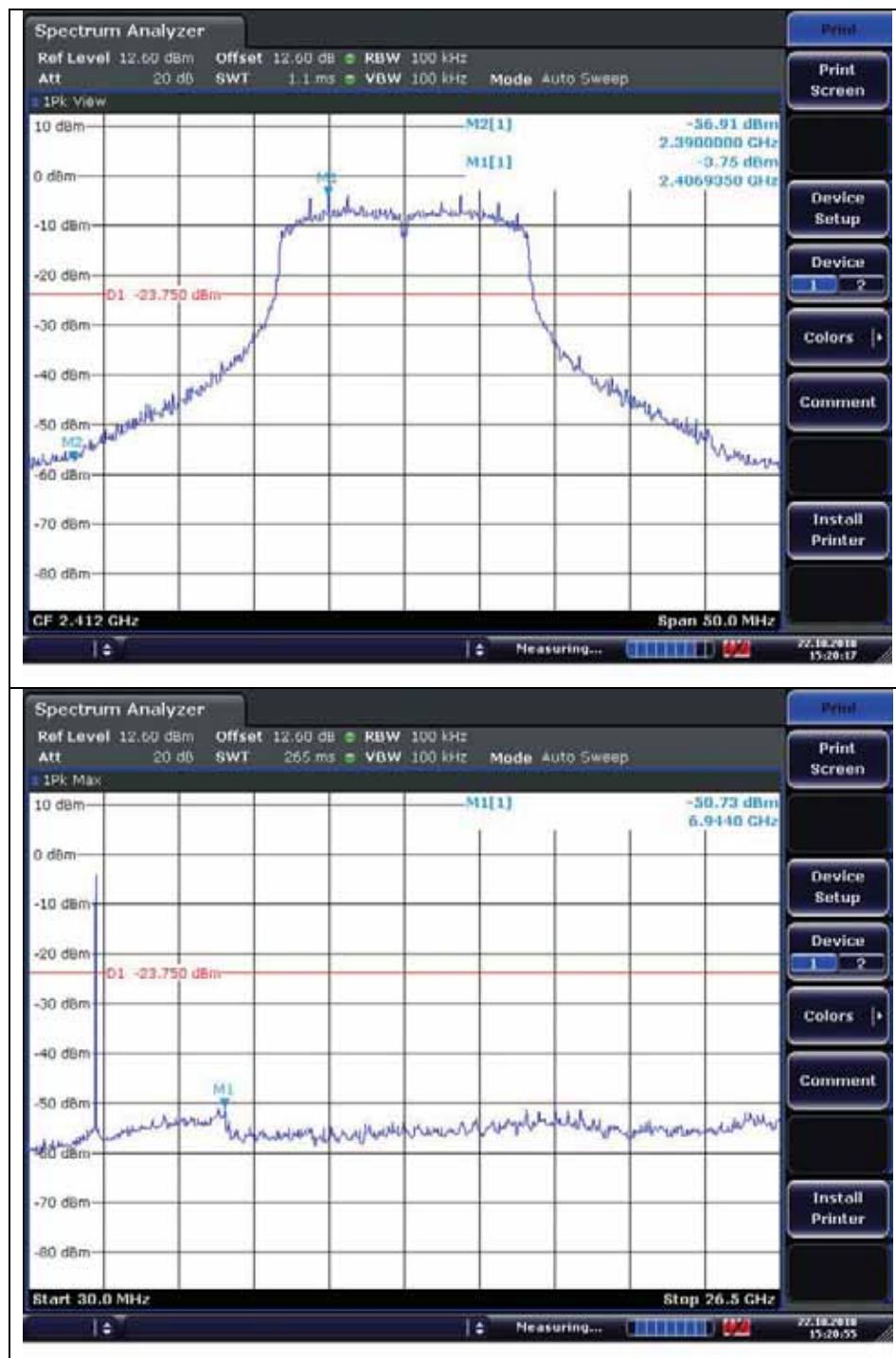


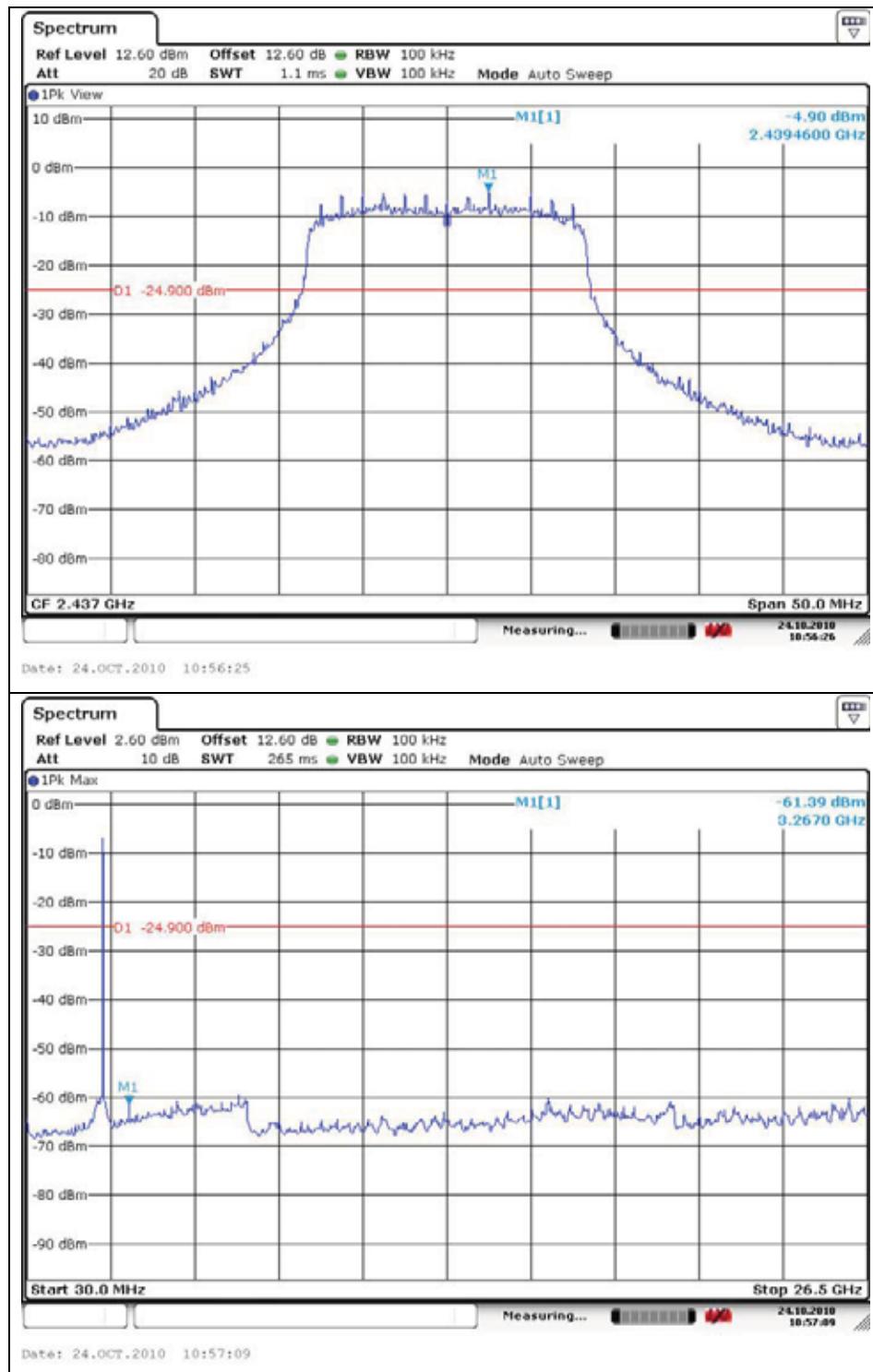
**OFDM : 802.11g\_Ant 2**

Low Channel



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## Middle Channel

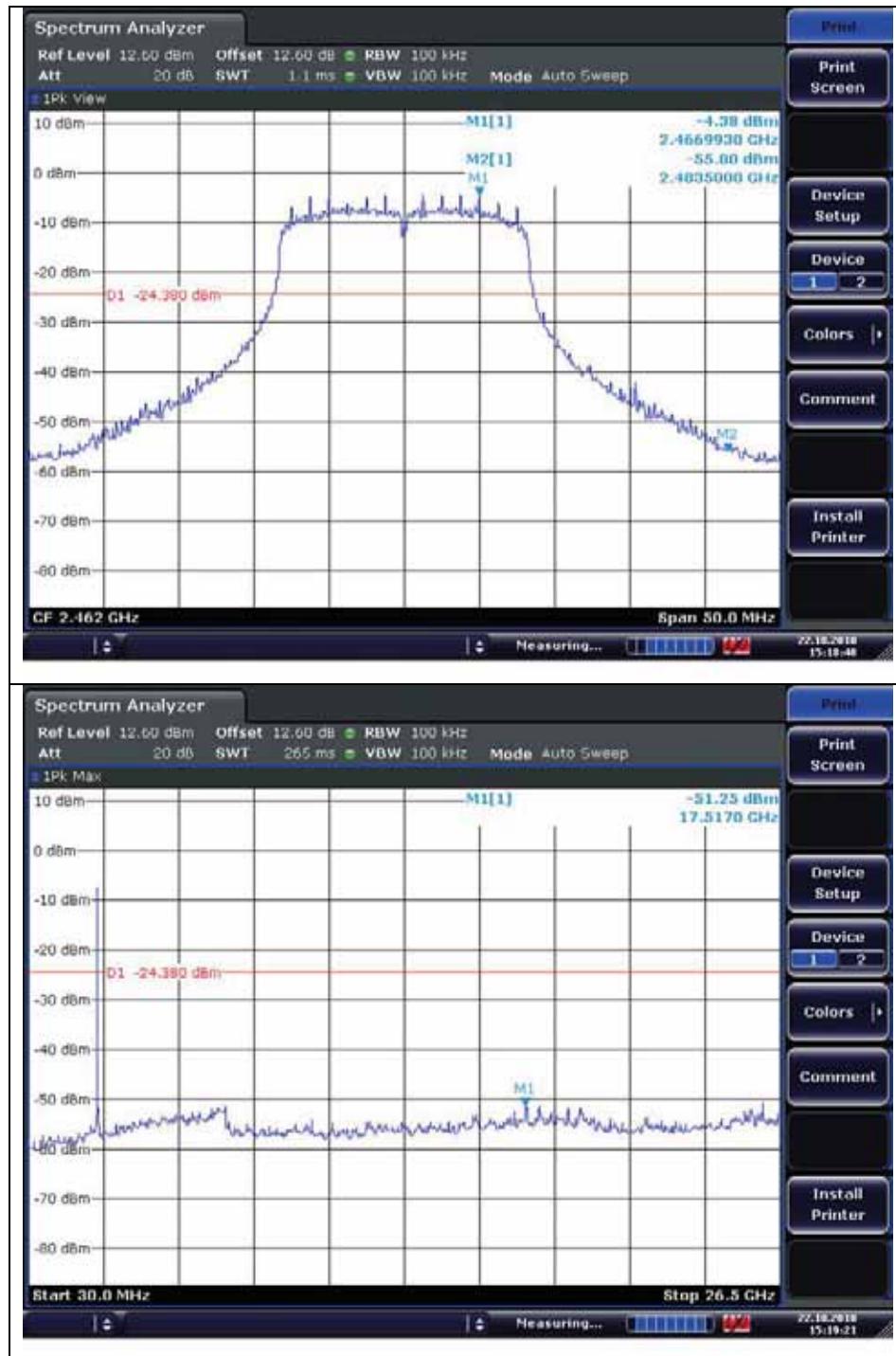


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## High Channel



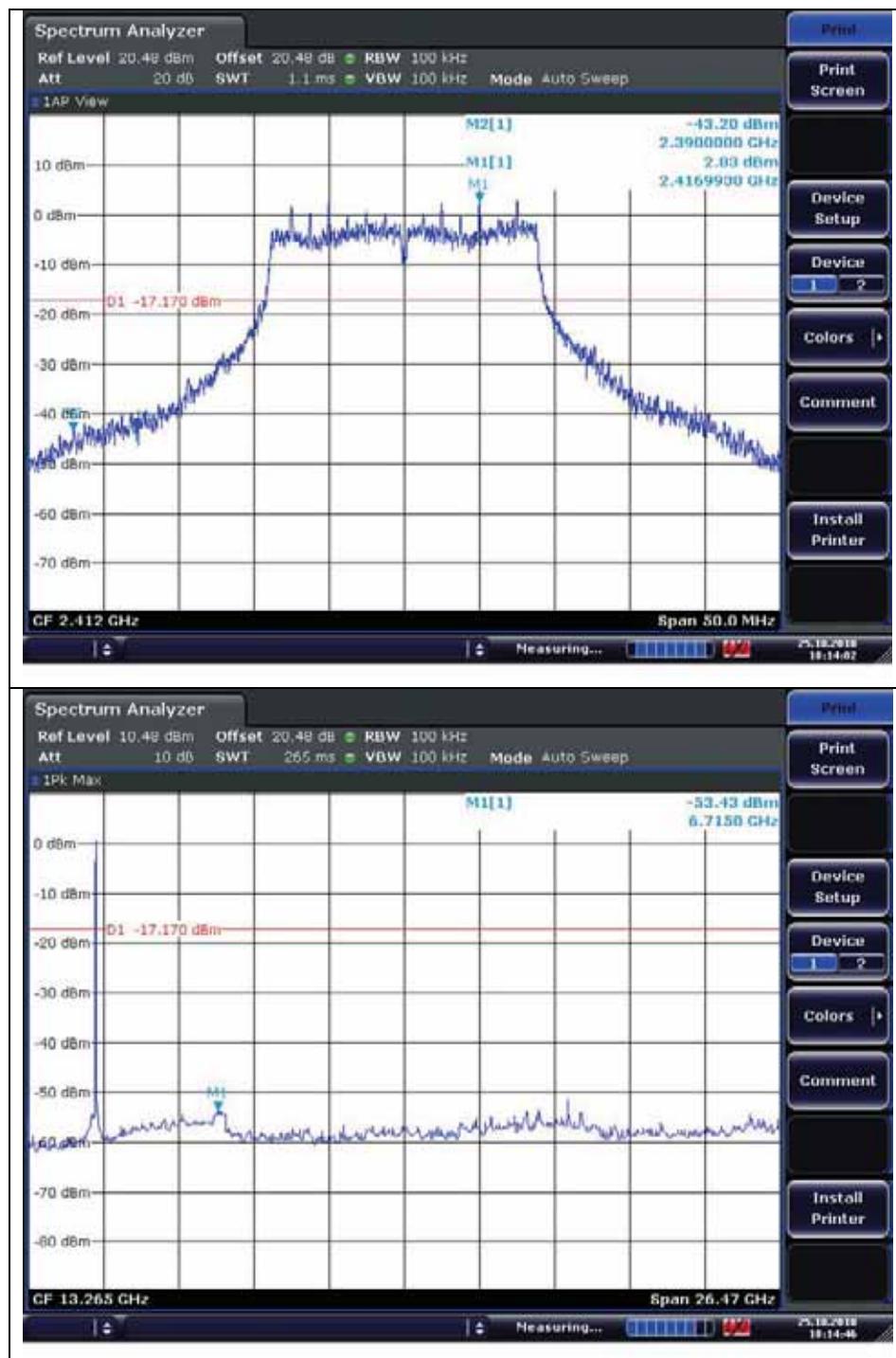
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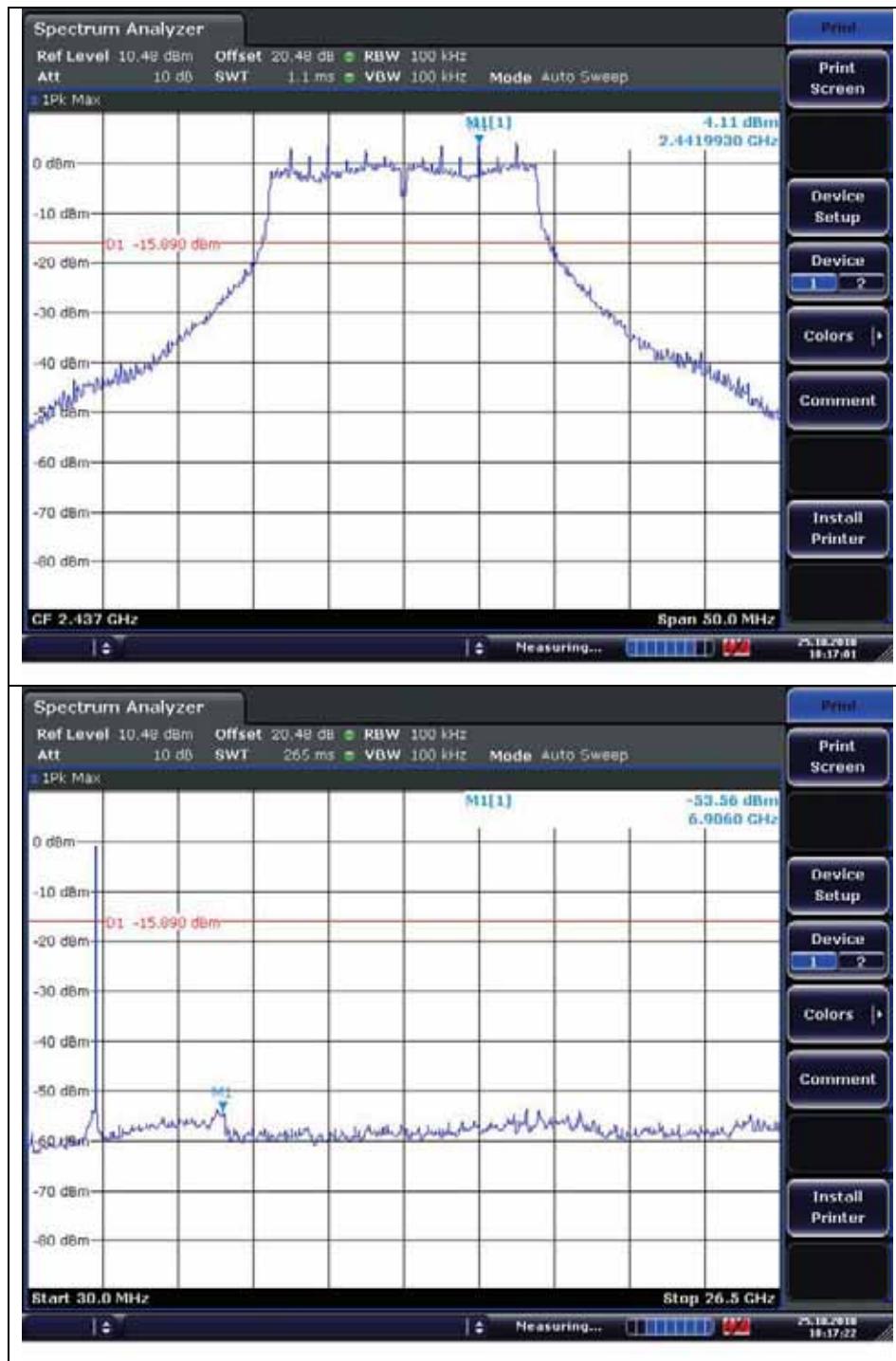
**OFDM : 802.11n HT20 ( Ant1 + Ant2 )**

Low Channel



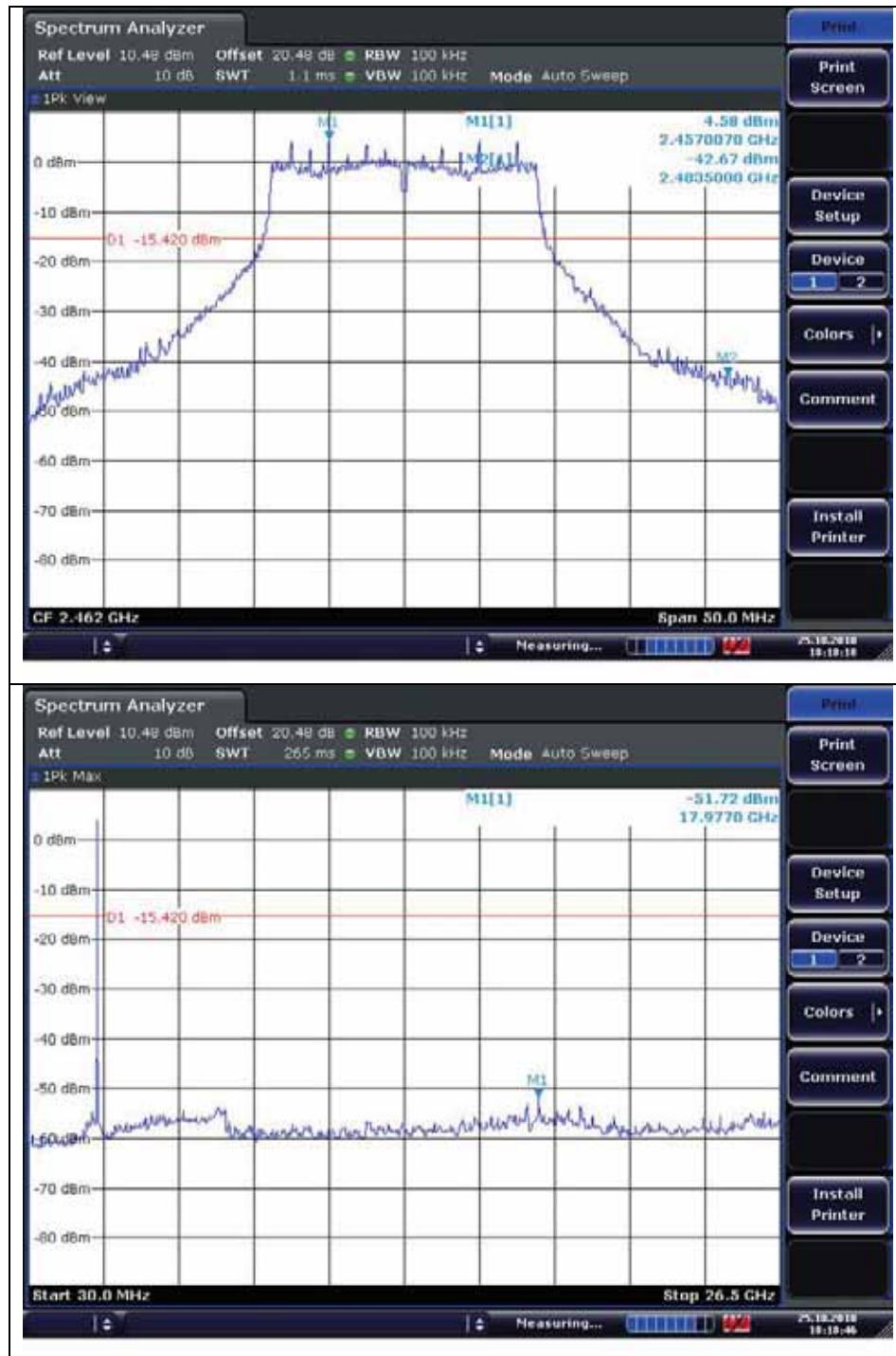
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## Middle Channel



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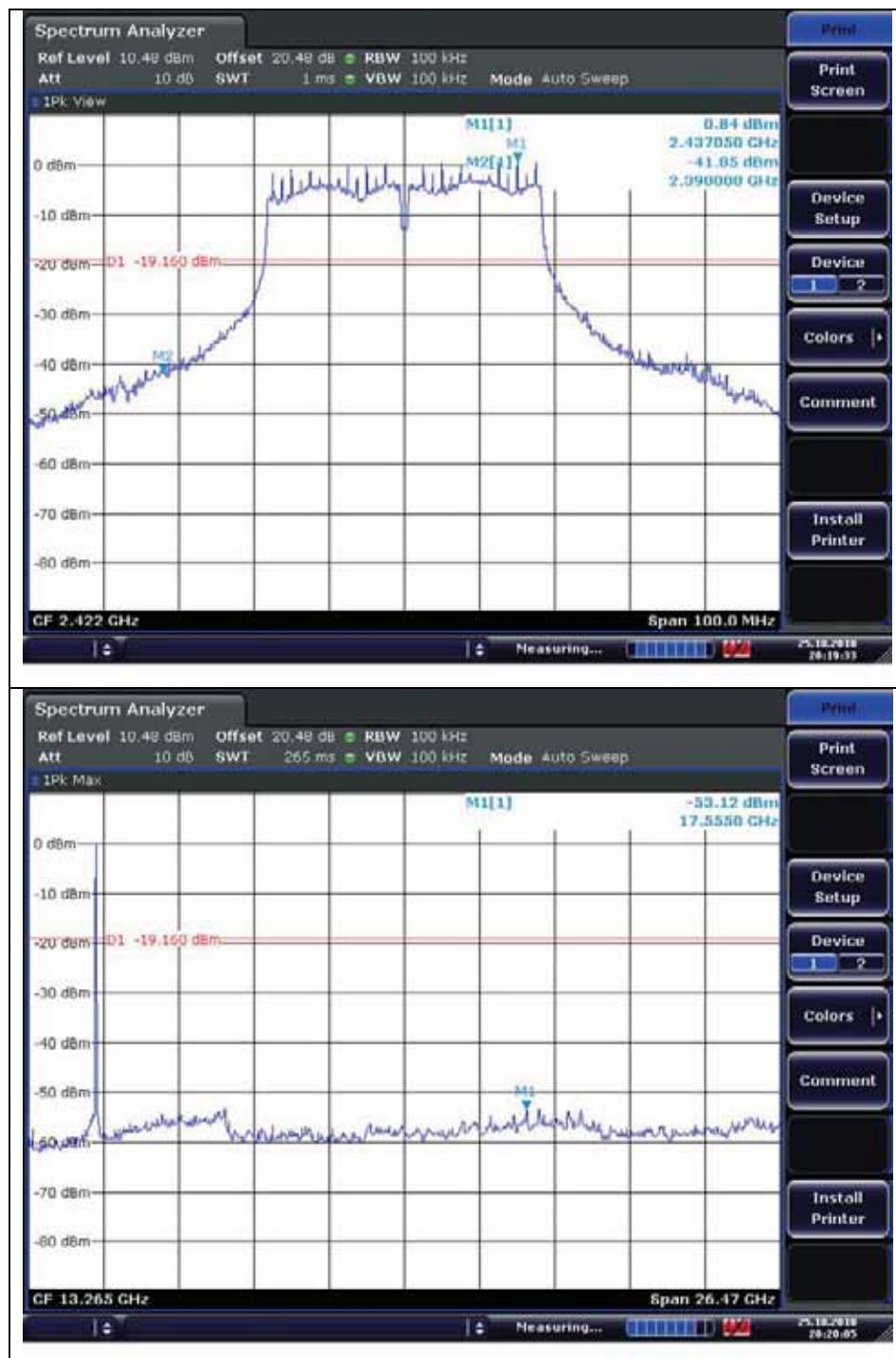
## High Channel



*The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report cannot be reproduced, except in full, without prior written permission of the Company.*

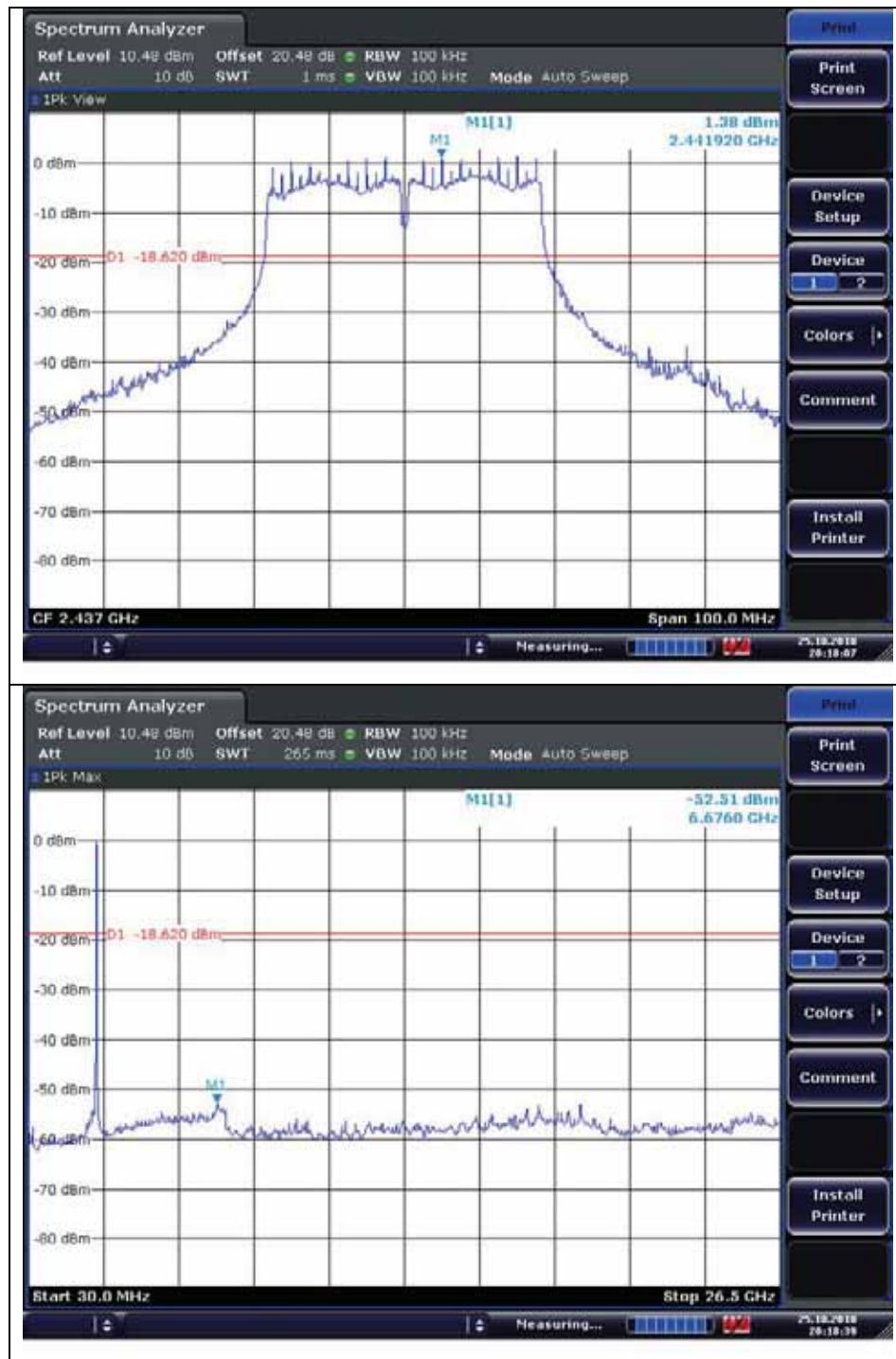
**OFDM : 802.11n HT40( Ant1 + Ant2 )**

Low Channel



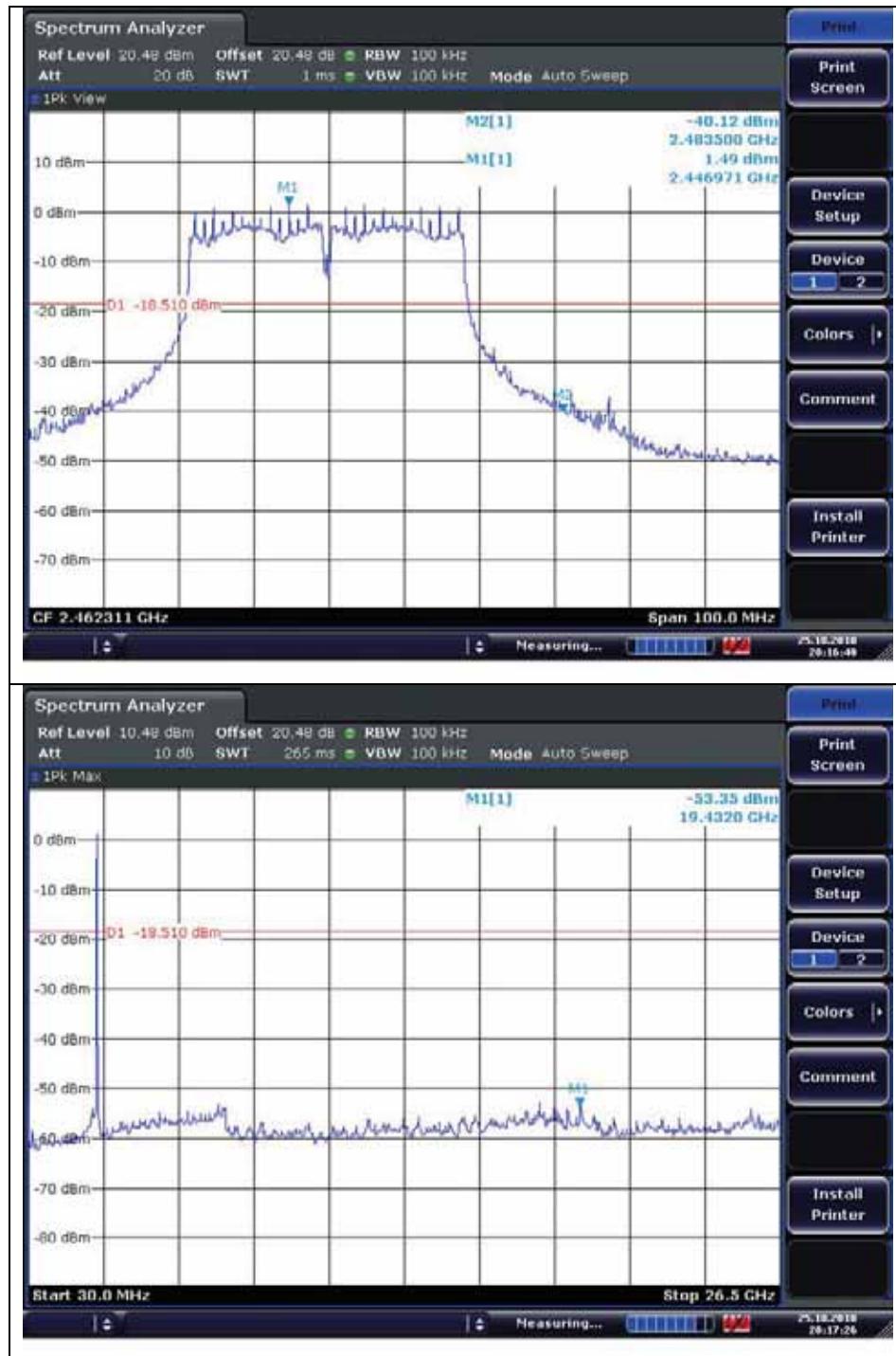
*The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report cannot be reproduced, except in full, without prior written permission of the Company.*

## Middle Channel



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## High Channel



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### 3. Receiver Radiated spurious emissions

#### 3.1. Test setup - Same as clause 2.1.

##### 3.1.1. Receiver Radiated Spurious Emissions - Same as clause 2.1.1.

#### 3.2. Limit

According to §15.109(a), Except for Class A digital devices, the field strength of radiated emission from unintentional radiator at a distance of 3 m shall not exceed the following values:

Frequency (MHz)	Distance (Meters)	Radiated (dB $\mu$ V/m)	Radiated ( $\mu$ V/m)
30 - 88	3	40.0	100
88 – 216	3	43.5	150
216 – 960	3	46.0	200
Above 960	3	54.0	500

#### 3.3. Test Procedures - Same as clause 2.3.

Radiated emissions from the EUT were measured according to the dictates of ANSI C63.4:2003

##### 3.3.1. Test Procedures for Radiated Spurious Emissions- Same as clause 2.3.1.

### 3.4. Test Results

Ambient temperature :  $(24 \pm 2)^\circ\text{C}$   
Relative humidity : 47 % R.H.

#### 3.4.1. Spurious Radiated Emission (Worst case configuration\_ 11n\_HT40 mode)

The frequency spectrum from 30 MHz to 26.5 GHz was investigated. Emission levels are not reported much lower than the limits by over 30 dB. All reading values are peak values.

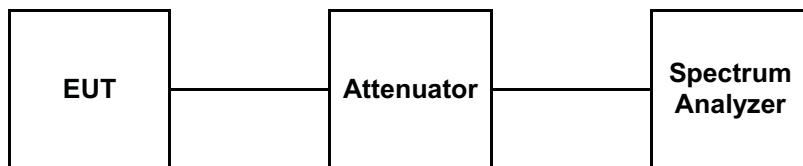
Radiated Emissions			Ant	Correction Factors		Total	FCC Limit	
Frequency (MHz)	Reading (dB $\mu$ V)	Detect Mode	Pol.	AF (dB/m)	AMP + CL (dB)	Actual (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
36.548	49.39	Peak	V	16.24	-27.53	38.10	40.00	1.90
250.028	53.90	Peak	H	9.53	-25.43	38.00	46.00	8.00
321.566	52.52	Peak	H	11.53	-25.25	38.80	46.00	7.20
374.673	52.57	Peak	H	12.84	-25.41	40.00	46.00	6.00
625.055	43.61	Peak	H	17.49	-25.70	35.40	46.00	10.40
875.032	38.58	Peak	H	20.67	-24.65	34.60	46.00	11.40
Above 900.000	Not detected	-	-	-	-	-	-	-

#### Remark:

1. All spurious emission at channels are almost the same from 30 MHz to 26.5 GHz, so that the middle channel was chosen at representative in final test.
2. Actual = Reading + AF + AMP + CL

## 4. 6 dB Bandwidth Measurement and 99% BW

### 4.1. Test Setup



### 4.2. Limit

According to §15.247(a)(2), systems using digital modulation techniques may operate in the 902 ~928 MHz, 2 400 ~ 2 483.5 MHz, and 5 725 ~ 5 825 MHz bands. The minimum of 6 dB Bandwidth shall be at least 500 kHz

### 4.3. Test Procedure

1. The 6 dB band width was measured with a spectrum analyzer connected to RF antenna connector(conducted measurement) while EUT was operating in transmit mode at the appropriate center frequency. The analyzer center frequency was set to the EUT carrier frequency, using the analyzer. Display Line and Marker Delta functions, the 6 dB band width of the emission was determined.
2. The bandwidth of the fundamental frequency was measured with the spectrum analyzer  
6 dB bandwidth: RBW = 100 kHz, VBW = 100 kHz, Span = 50 MHz. Detector mode: Peak  
99% BW : RBW = 30 kHz, VBW = 100 kHz, Span = 50 MHz. Detector mode: Sample

#### 4.4. Test Results

Ambient temperature : ( 24 ± 2 ) °C

Relative humidity : 47 % R.H.

Operation Mode	Channel	Channel Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Bandwidth (MHz)
DSSS (802.11b) Ant 1	Low	2 412	10.13	13.97
	Middle	2 437	10.13	13.97
	High	2 462	10.03	13.97
DSSS (802.11b) Ant 2	Low	2 412	10.06	13.39
	Middle	2 437	10.06	13.31
	High	2 462	10.06	13.39
OFDM (802.11g) Ant 1	Low	2 412	16.43	16.50
	Middle	2 437	16.43	16.50
	High	2 462	16.43	16.50
OFDM (802.11g) Ant 2	Low	2 412	15.63	16.21
	Middle	2 437	15.49	16.21
	High	2 462	15.70	16.28
OFDM (802.11n HT20) Ant1	Low	2 412	17.66	17.73
	Middle	2 437	17.58	17.73
	High	2 462	17.55	17.55
OFDM (802.11n HT20) Ant2	Low	2 412	16.06	17.44
	Middle	2 437	15.56	17.44
	High	2 462	15.92	17.44
OFDM (802.11n HT40) Ant1	Low	2 422	36.37	38.06
	Middle	2 437	36.27	38.06
	High	2 452	36.32	37.92
OFDM (802.11n HT40) Ant2	Low	2 422	35.07	36.03
	Middle	2 437	34.97	35.89
	High	2 452	35.02	35.89

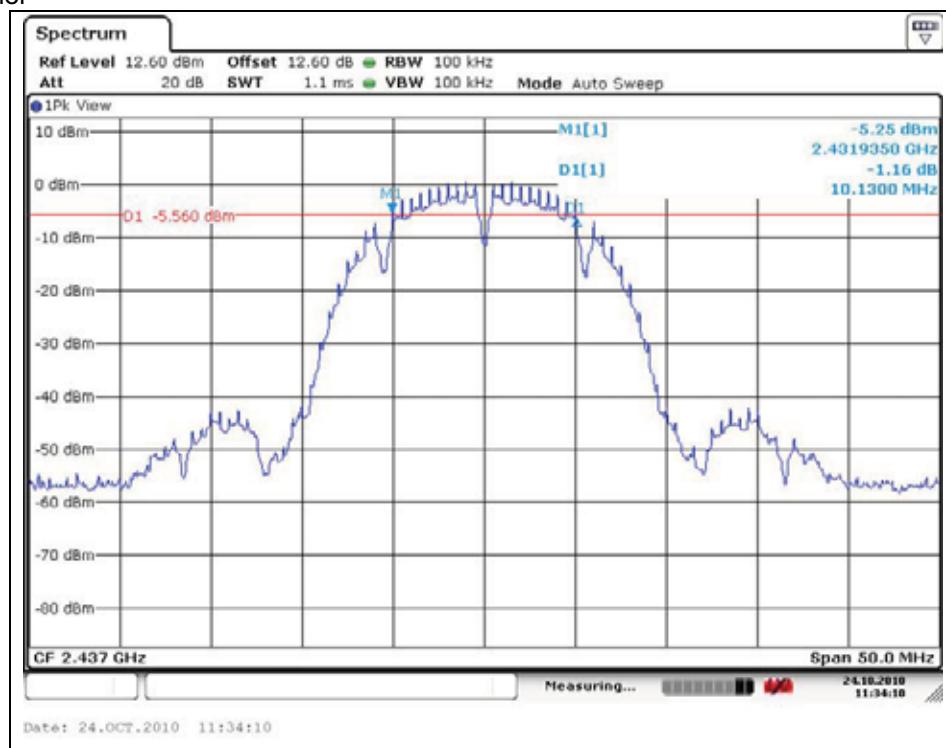
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**6 dB Bandwidth DSSS : 802.11b ANT1**

Low Channel



Middle Channel



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## High Channel



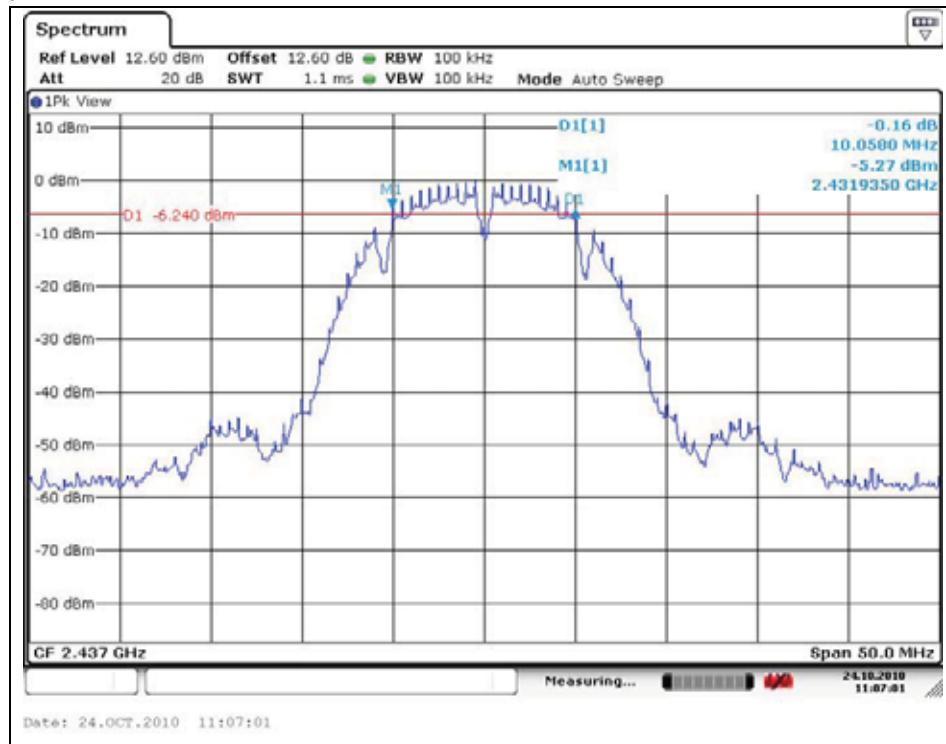
## 6 dB Bandwidth DSSS : 802.11b ANT2

## Low Channel



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## Middle Channel



## High Channel



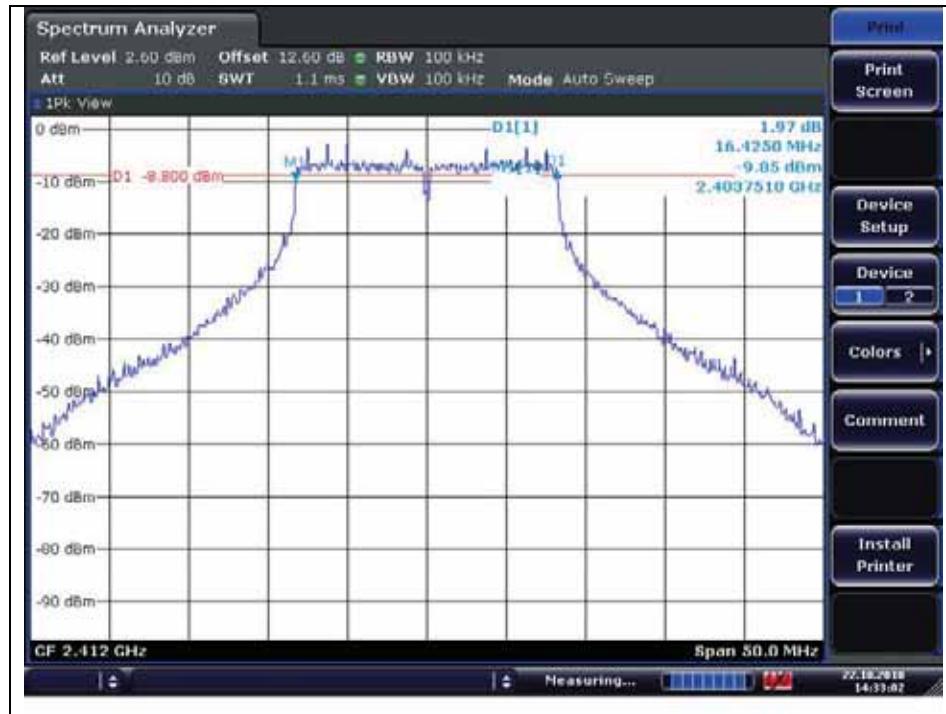
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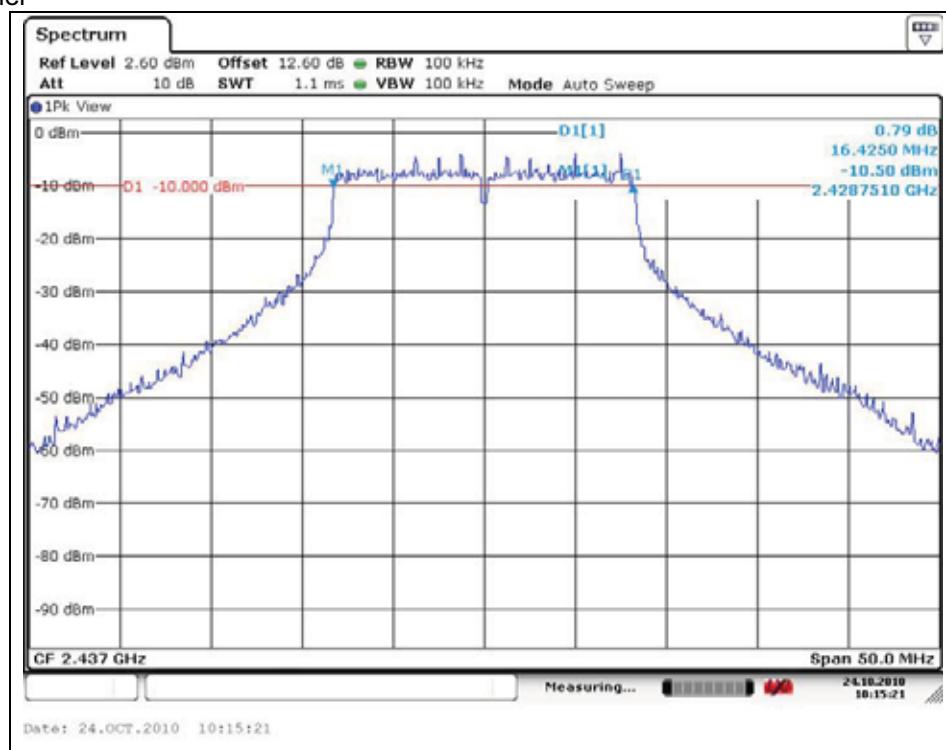
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**6 dB Bandwidth OFDM : 802.11g ANT1**

## Low Channel



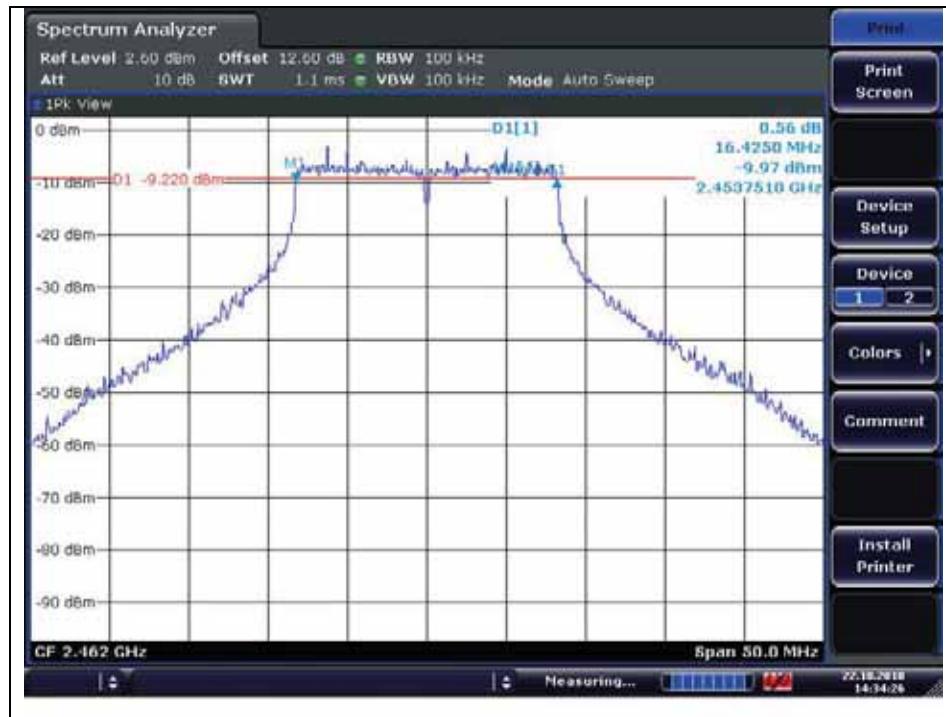
## Middle Channel



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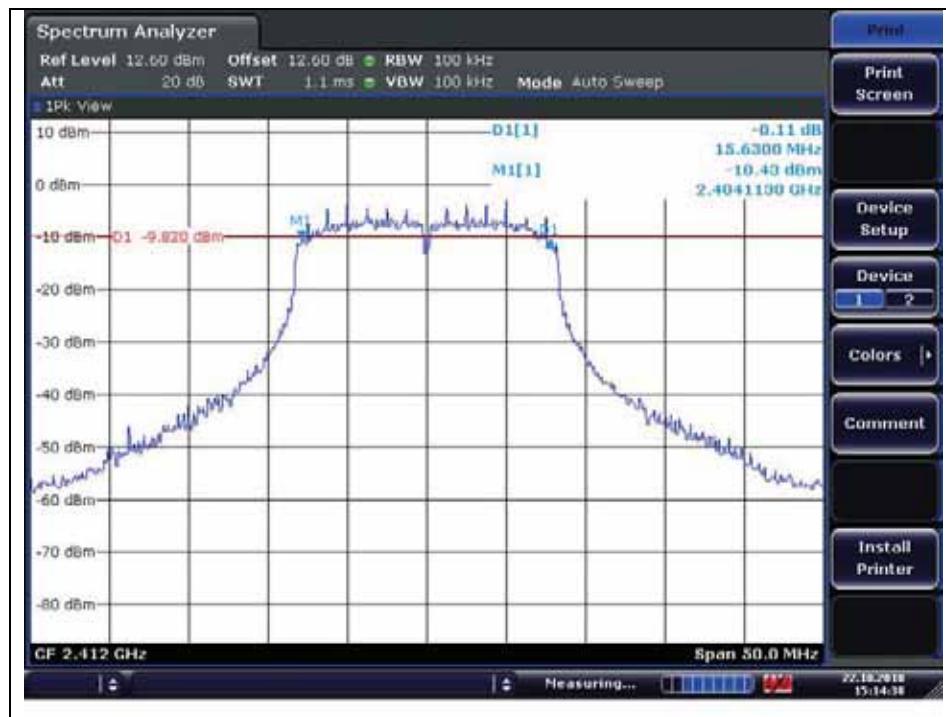
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## High Channel



## 6 dB Bandwidth OFDM : 802.11g ANT2

## Low Channel

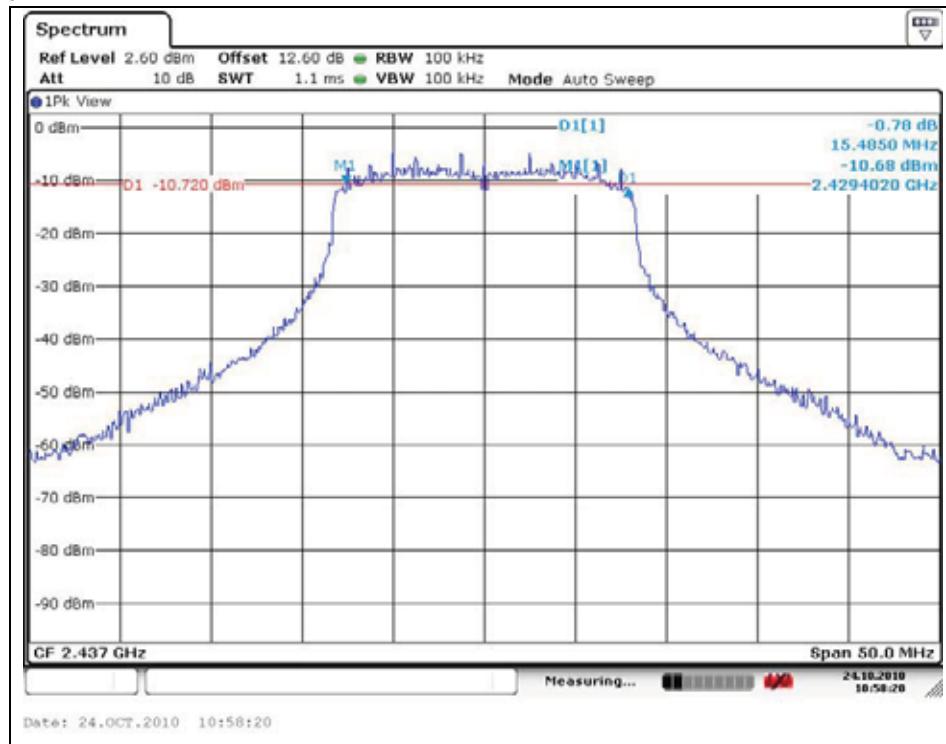


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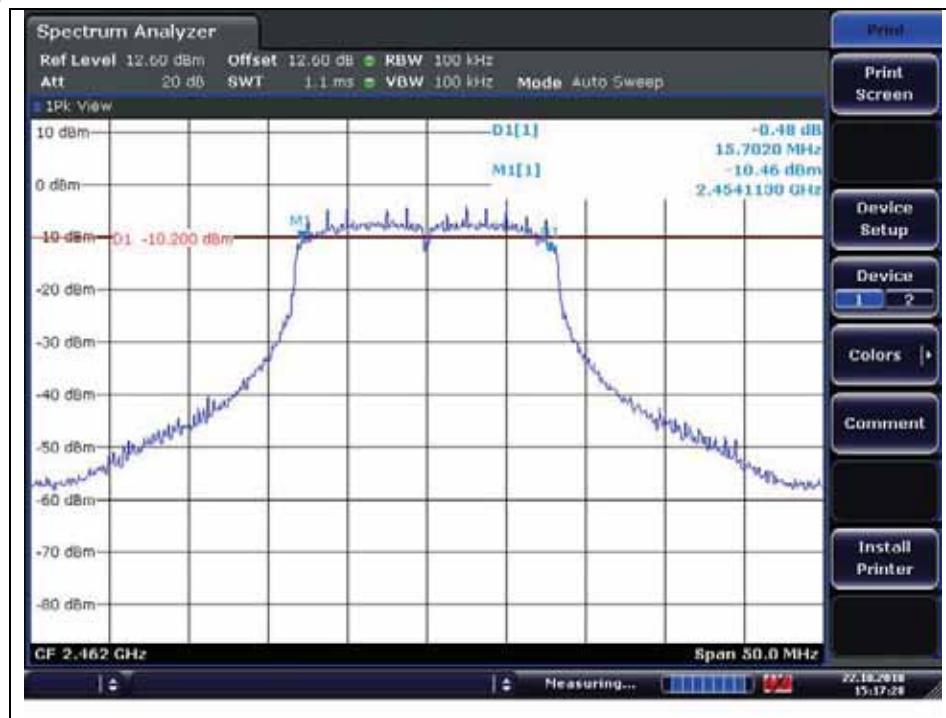
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## Middle Channel



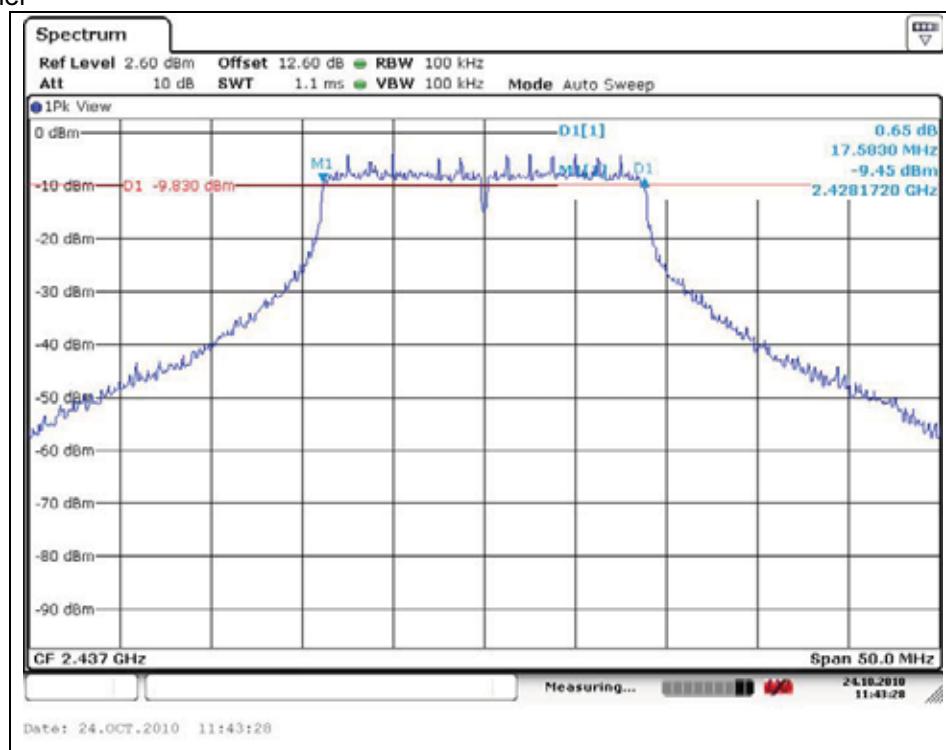
## High Channel



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**6 dB Bandwidth OFDM : 802.11n HT20 ANT1****Low Channel****Middle Channel**

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## High Channel



## 6 dB Bandwidth OFDM : 802.11n HT20 ANT2

## Low Channel

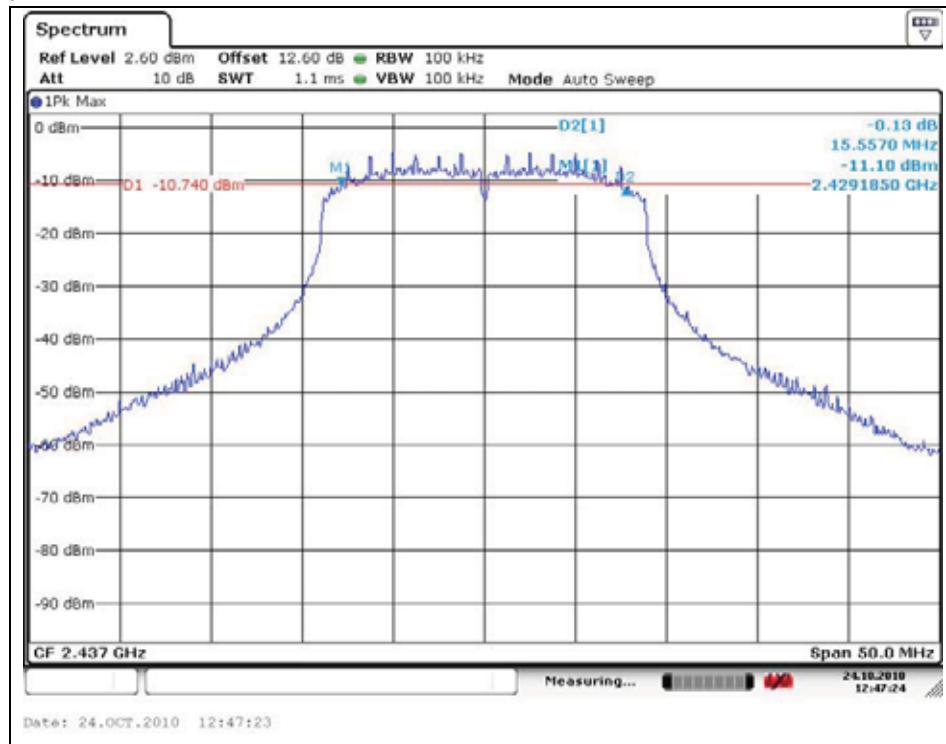


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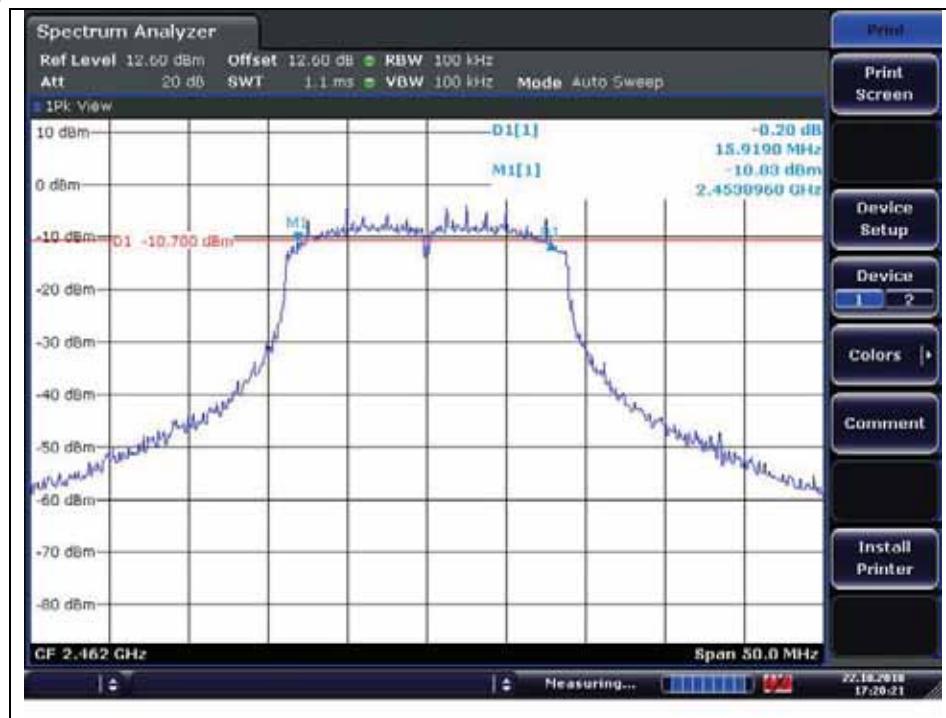
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## Middle Channel



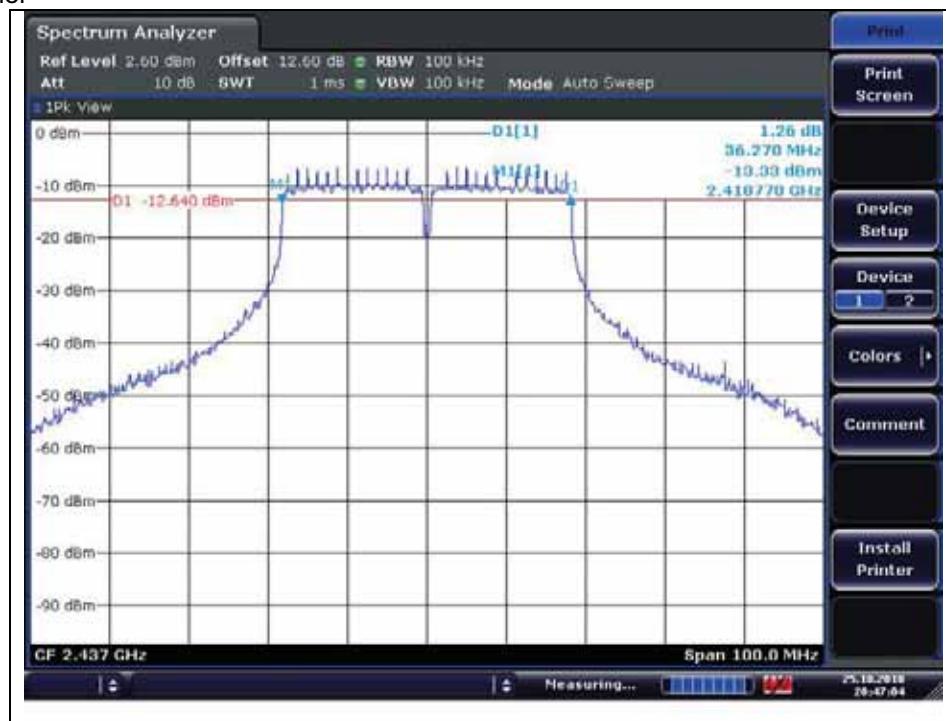
## High Channel



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**6 dB Bandwidth OFDM : 802.11n HT40 ANT1****Low Channel****Middle Channel**

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## High Channel



## 6 dB Bandwidth OFDM : 802.11n HT40 ANT2

## Low Channel

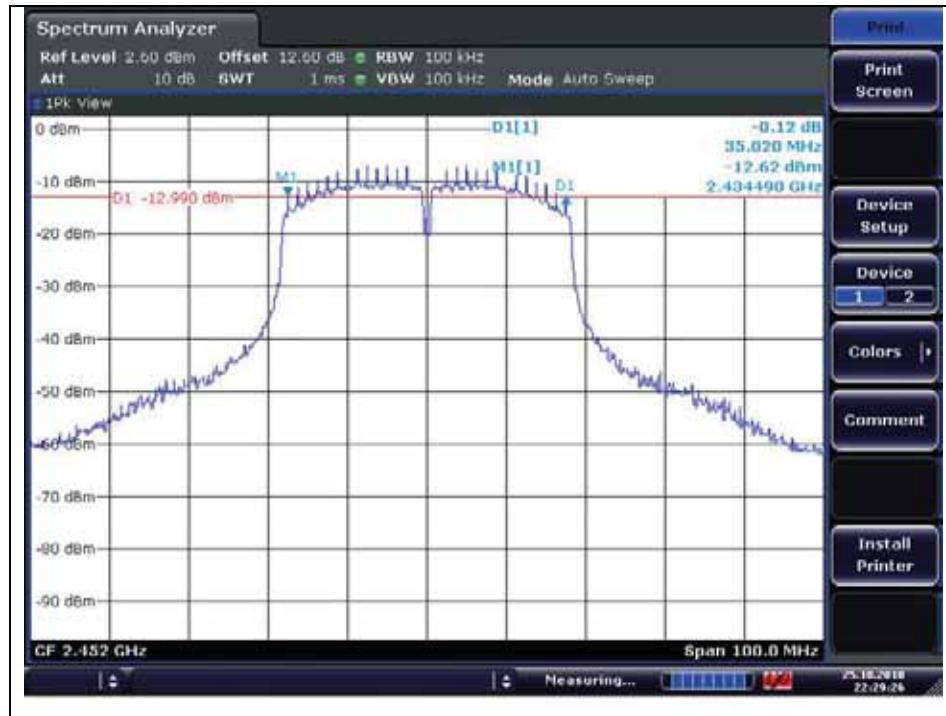


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## Middle Channel



## High Channel



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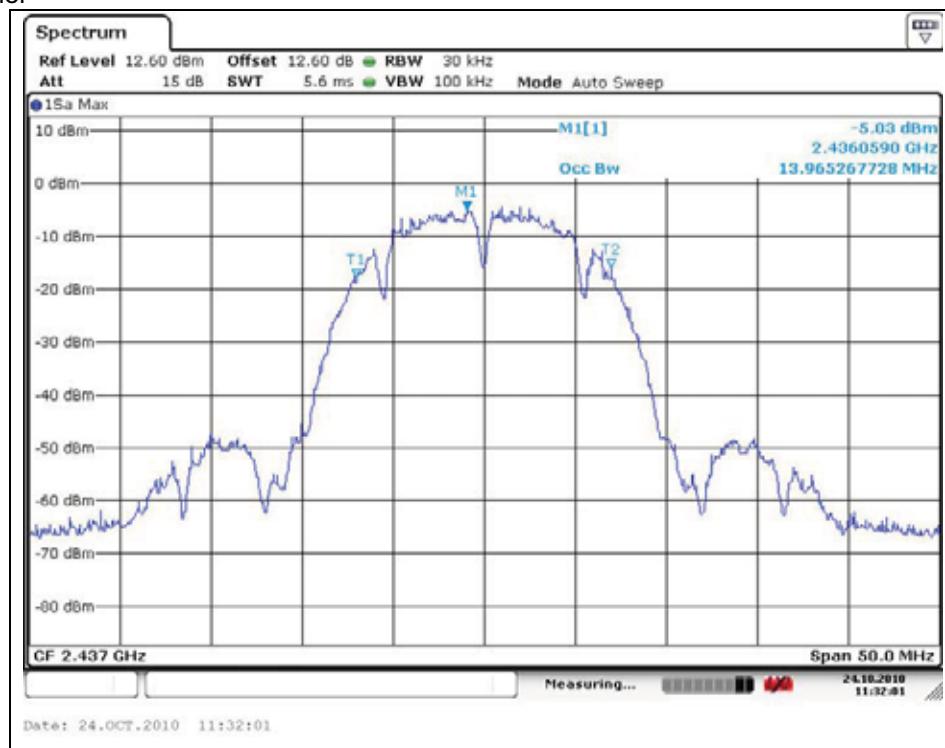
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**99% Bandwidth DSSS : 802.11b ANT 1**

Low Channel



Middle Channel



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## High Channel



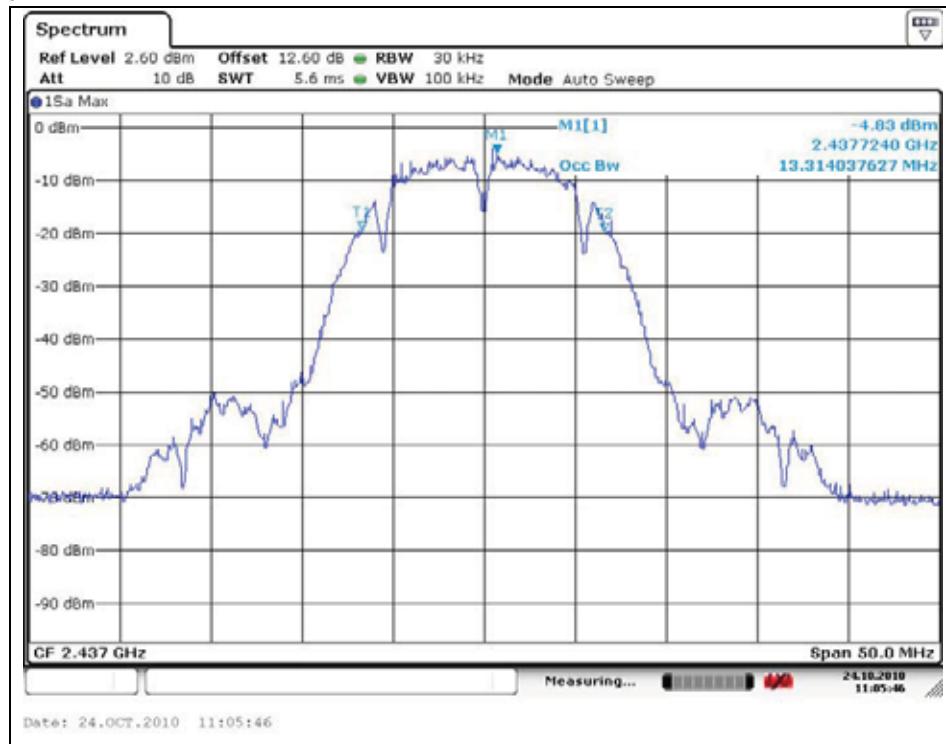
## 99% Bandwidth DSSS : 802.11b ANT 2

## Low Channel



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## Middle Channel



## High Channel



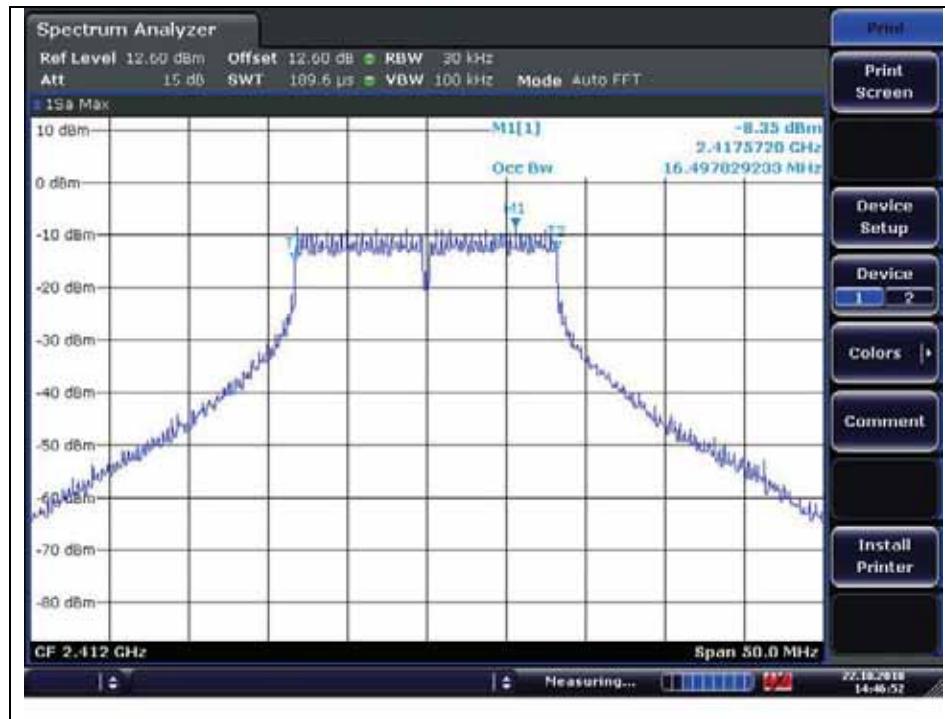
*The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report cannot be reproduced, except in full, without prior written permission of the Company.*

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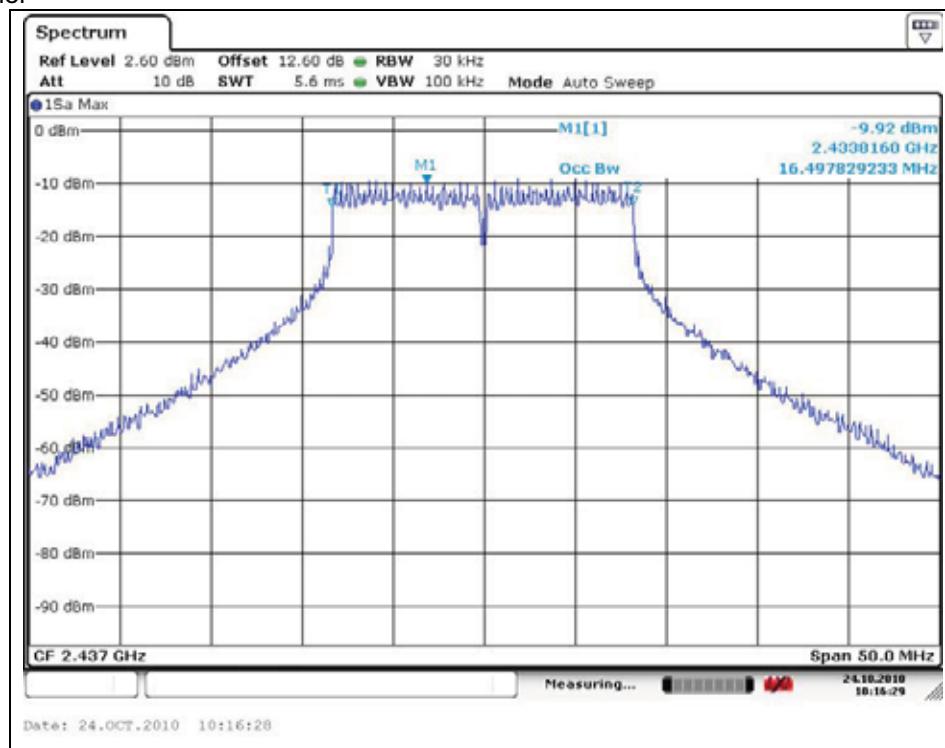
[www.electrolab.kr.sgs.com](http://www.electrolab.kr.sgs.com)

**99% Bandwidth OFDM : 802.11g ANT 1**

Low Channel



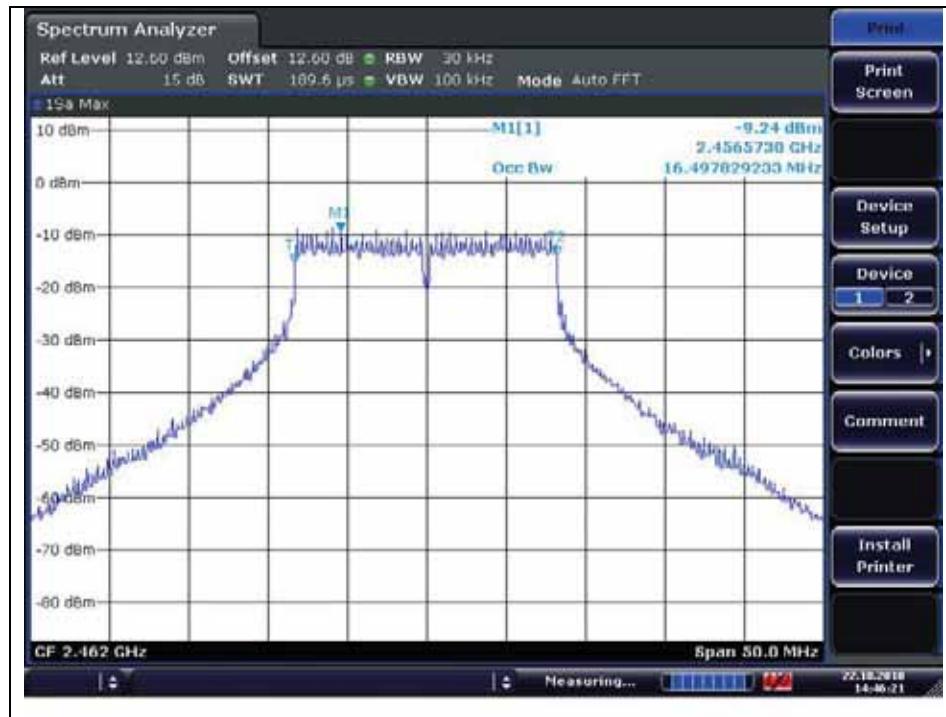
Middle Channel



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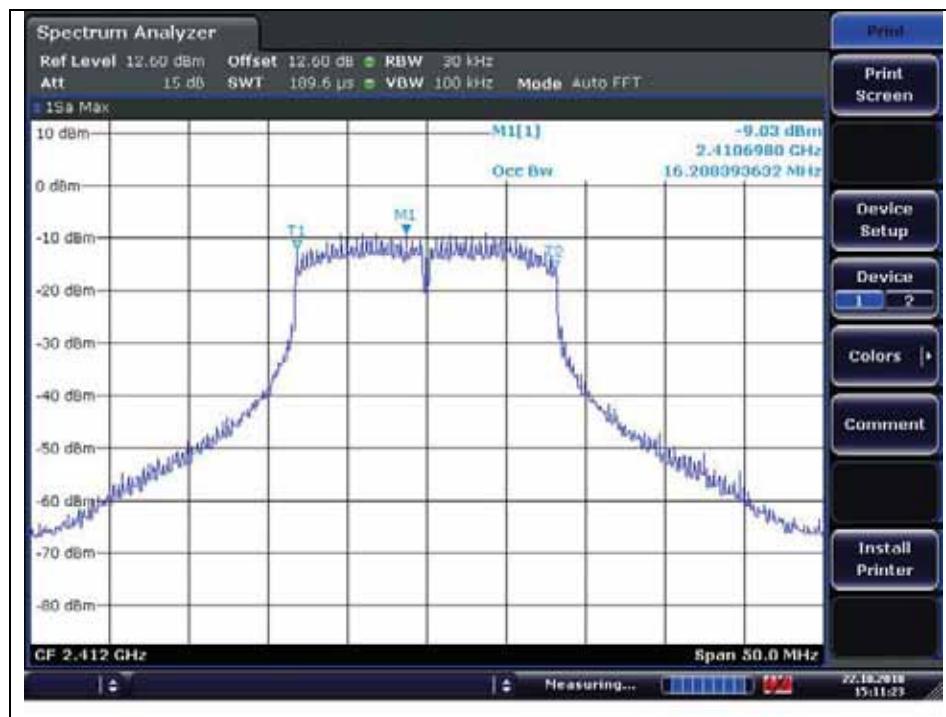
SGS Testing Korea Co., Ltd.

## High Channel



## 99% Bandwidth OFDM : 802.11g ANT 2

## Low Channel

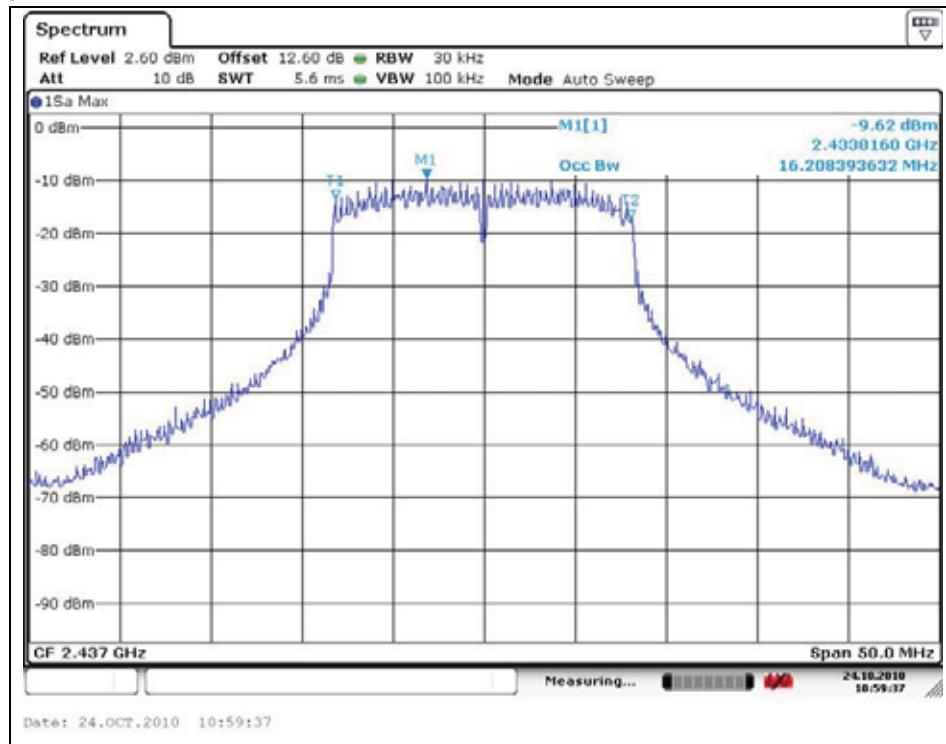


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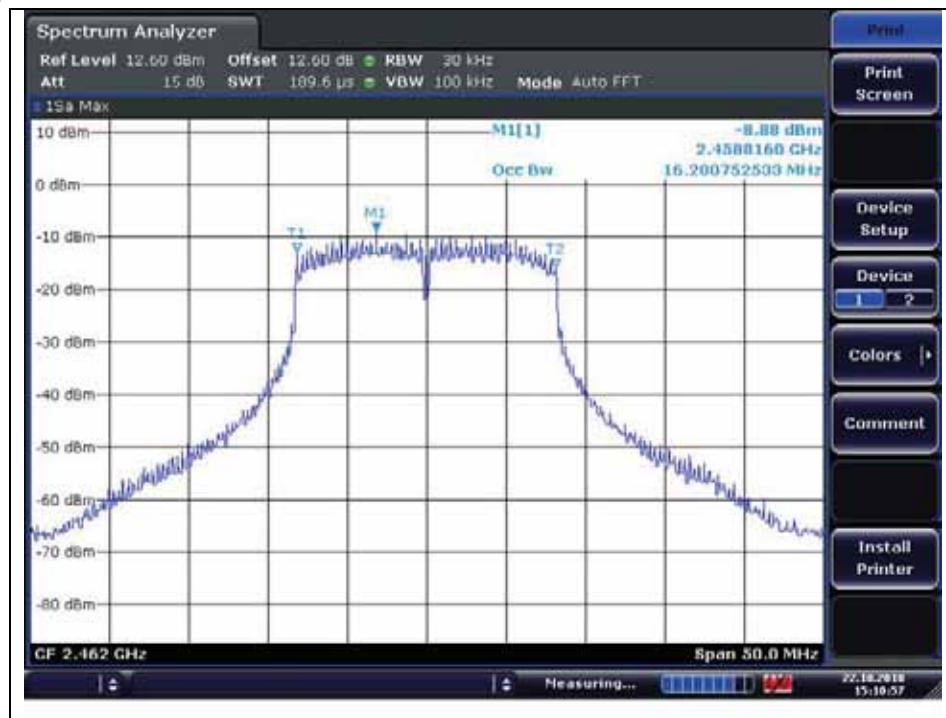
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## Middle Channel



## High Channel



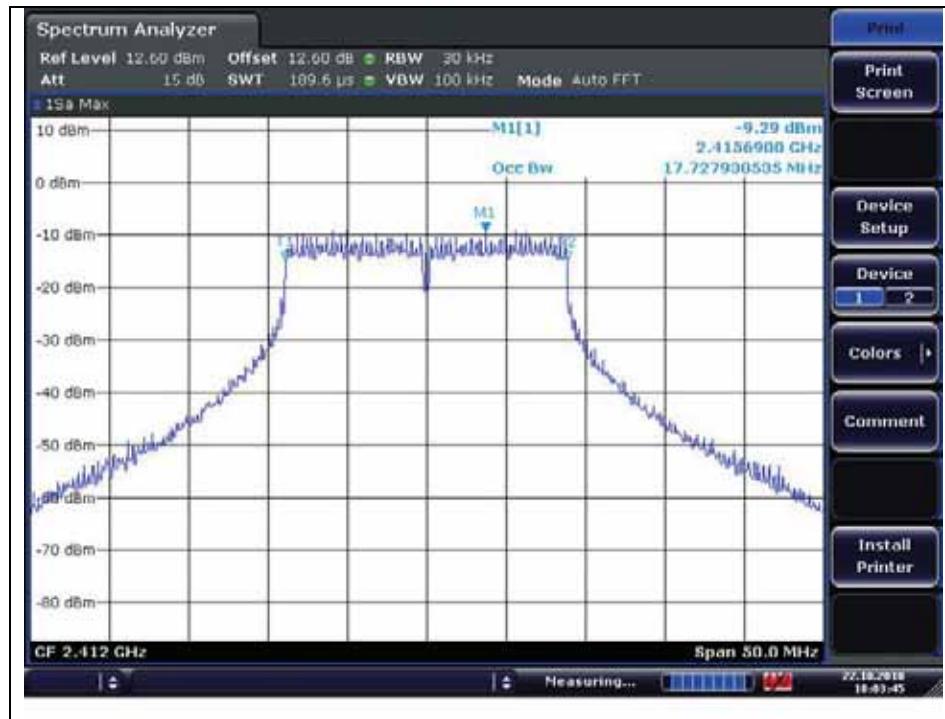
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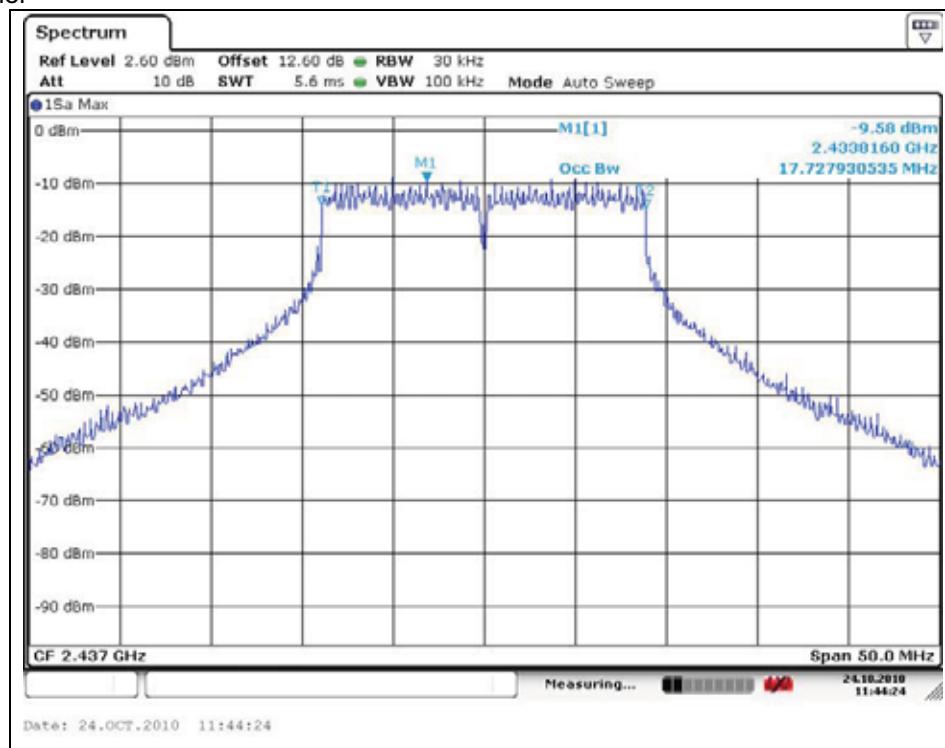
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**99% Bandwidth OFDM : 802.11n HT 20 ANT 1**

Low Channel



Middle Channel



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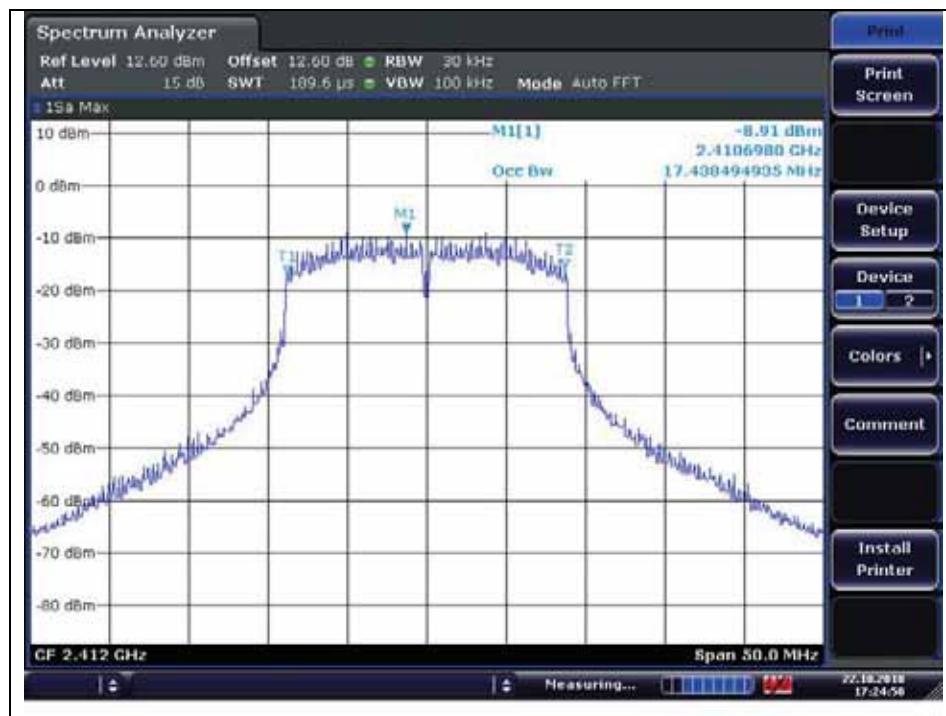
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## High Channel



## 99% Bandwidth OFDM : 802.11n HT20 ANT 2

## Low Channel

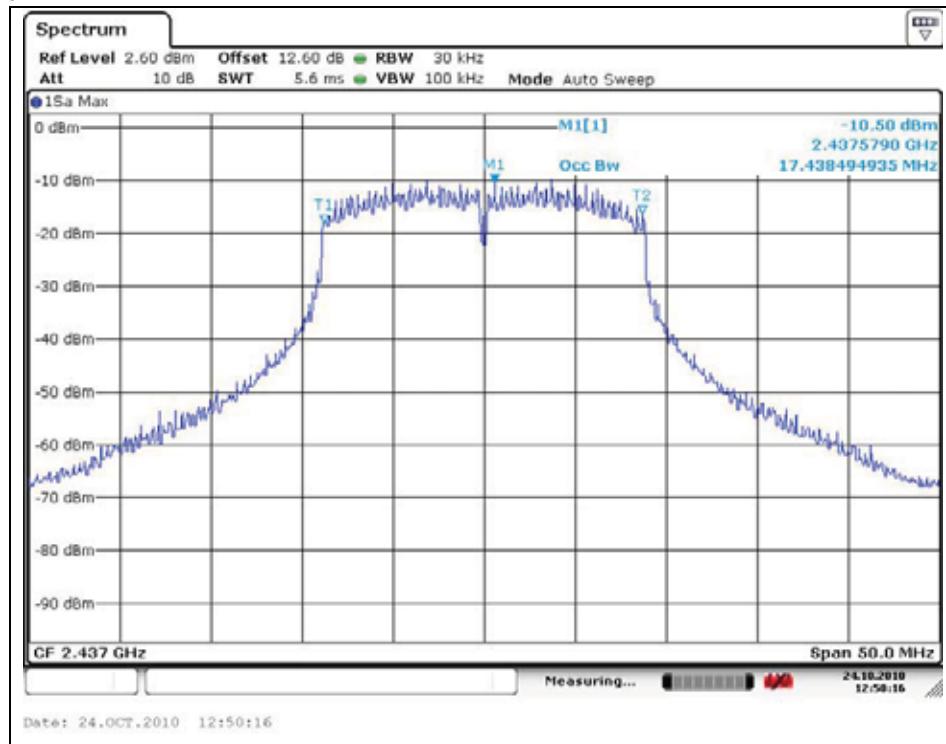


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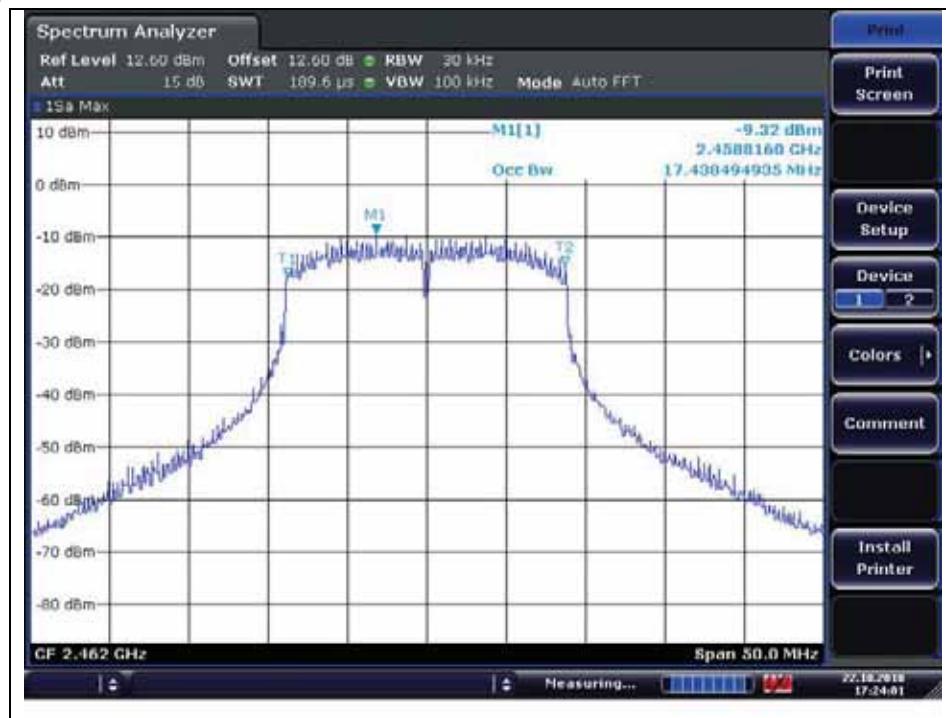
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## Middle Channel



## High Channel

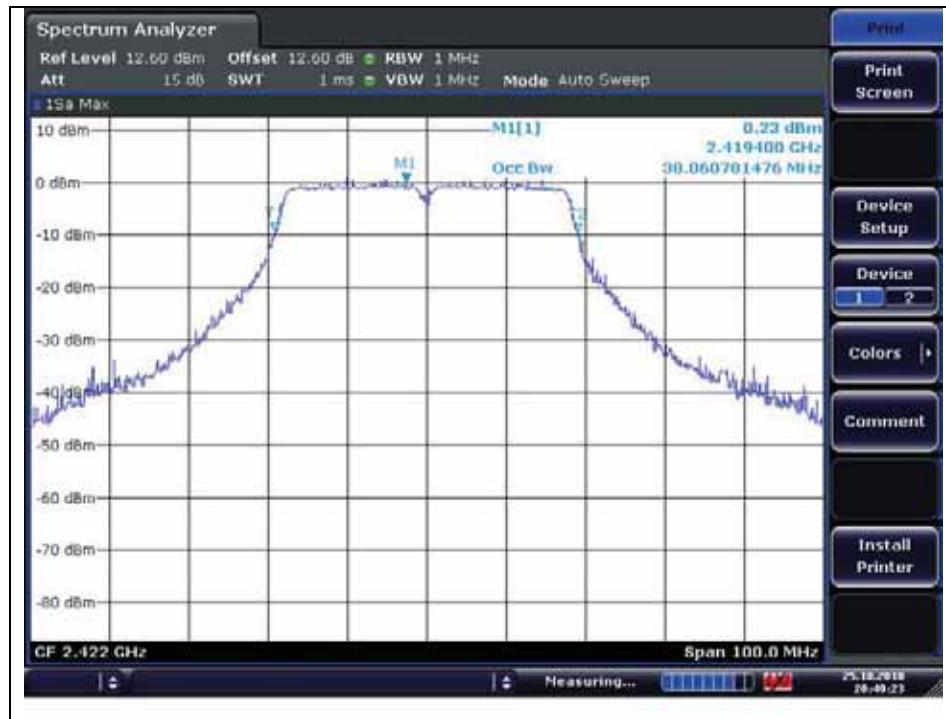


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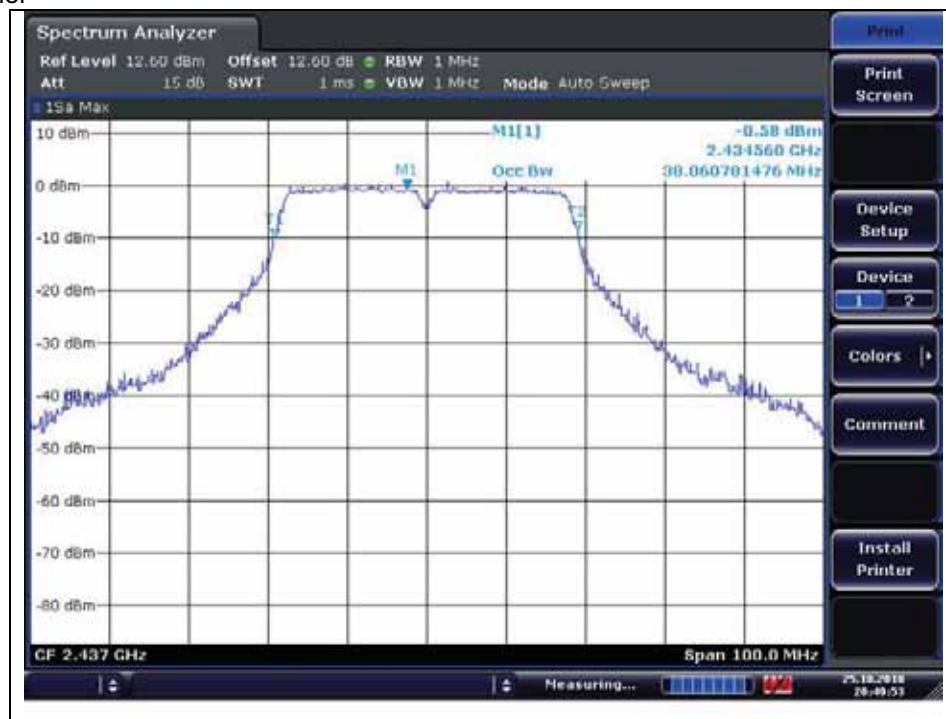
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**99% Bandwidth OFDM : 802.11n HT40 ANT 1**

Low Channel



Middle Channel

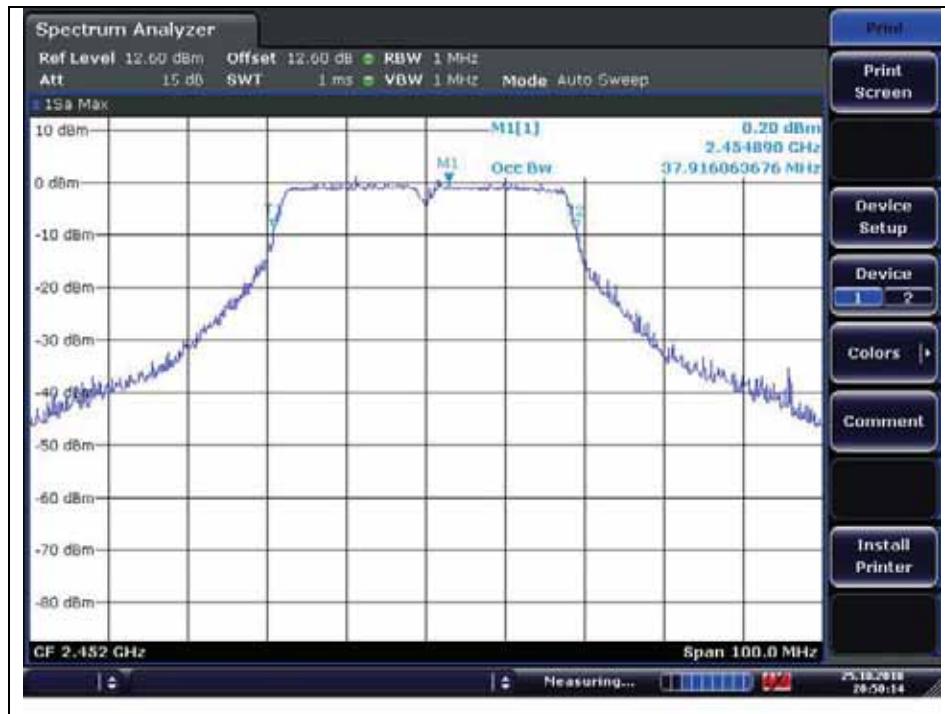


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## High Channel



## 99% Bandwidth OFDM : 802.11N HT40 ANT 2

## Low Channel



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## Middle Channel



## High Channel



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