

## FCC TEST REPORT

Test report No.: EMC- FCC- R0192  
FCC ID: WQT- VM1510  
Type of equipment: STB  
Model Name: VM1510  
Applicant: KAONMEDIA CO.,LTD.  
Max.RF Output Power: 26.86 dBm  
FCC Rule Part(s): FCC Part 15 Subpart C 15.247  
Frequency Range: 2 412 MHz ~ 2 462 MHz  
2 422 MHz ~ 2 452 MHz  
Test result: Complied

The above equipment was tested by EMC compliance Testing Laboratory for compliance with the requirements of FCC Rules and Regulations.

The results of testing in this report apply to the product/system which was tested only. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Date of receipt: 2013. 09. 04

Date of test: 2014. 10. 13 ~ 10. 20

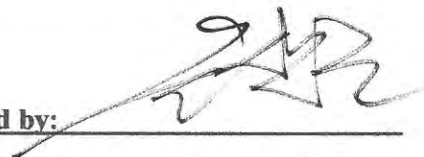
Issued date: 2014. 11. 19

**Tested by:**



AHN, BYUNG WOO

**Approved by:**



YU, SANG HOON

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## 1. Client information

**Applicant:** KAONMEDIA CO.,LTD.  
**Address:** KAONMEDIA Building, 884-3, Seongnam-daero, Bundang-Gu,  
Sungnam-City, Kyonggi-Do, 463-839 Korea  
**Telephone number:** +82-31-724-8666  
**Facsimile number:** +82-31-724-8999  
**Contact person:** Gu, Gyo Jun / peter.gu@kaonmedia.com

**Manufacturer:** KAONMEDIA CO.,LTD.  
**Address:** KAONMEDIA Building, 884-3, Seongnam-daero, Bundang-Gu,  
Sungnam-City, Kyonggi-Do, 463-839 Korea

## 2. Laboratory information

### Address

#### **EMC compliance Ltd.**

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea

Telephone Number: 82-31-336-9919 Facsimile Number: 82-505-299-8311

### Certificate

KOLAS No.: 231

FCC Site Designation No: KR0040

FCC Site Registration No: 687132

VCCI Site Registration No.: R-3327, G-198, C-3706, T-1849

IC Site Registration No.:8035A-2



#### **EMC compliance Ltd.**

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea

82-31-336-9919 (Main) 82-505-299-8311 (Fax)

### 3. Description of E.U.T.

#### 3.1 Basic description

Applicant:	KAONMEDIA CO.,LTD.
Address of Applicant	KAONMEDIA Building, 884-3, Seongnam-daero, Bundang-Gu, Sungnam-City, Kyonggi-Do, 463-839 Korea
Manufacturer#1	KAONMEDIA CO.,LTD.
Address of Manufacturer	KAONMEDIA Building, 884-3, Seongnam-daero, Bundang-Gu, Sungnam-City, Kyonggi-Do, 463-839 Korea
Type of equipment	STB
Basic Model	VM1510
Serial number	N/A

### 3.2 General description

Frequency Range	2 412 MHz ~ 2 462 MHz (802.11b/g/n_HT20)_MIMO 2 422 MHz ~ 2 452 MHz (802.11n_HT40)_MIMO 5 180 MHz ~ 5 240 MHz (802.11a/an_HT20)_Non DFS_MIMO 5 190 MHz ~ 5 230 MHz (802.11an_HT40)_Non DFS_MIMO 5 260 MHz ~ 5 320 MHz (802.11a/an_HT20)_DFS_MIMO 5 270 MHz ~ 5 310 MHz (802.11an_HT40)_DFS_MIMO 5 500 MHz ~ 5 700 MHz (802.11a/an_HT20)_DFS_MIMO 5 510 MHz ~ 5 670 MHz (802.11an_HT40)_DFS_MIMO 5 745 MHz ~ 5 825 MHz (802.11a/an_HT20)_Non DFS_MIMO 5 755 MHz ~ 5 795 MHz (802.11an_HT40)_Non DFS_MIMO
Communication	IEEE 802.11a/b/g/n_HT20, HT40
Type of Modulation	CCK, OFDM
Number of Channels	2.0 GHz: 11 ch (802.11b/g/n_HT20), 9 ch (802.11n_HT40) 5.0 GHz: 4 ch (11a/an_HT20): 5 150 MHz Band 2 ch (802.11an_HT40): 5 150 MHz Band 4 ch (11a/an_HT20): 5 250 MHz Band 2 ch (802.11an_HT40): 5 250 MHz Band 4 ch (11a/an_HT20): 5 470 MHz Band 8 ch (11a/an_HT20): 5 470 MHz Band 5 ch (11a/an_HT20): 5 725 MHz Band 2 ch (802.11an_HT40): 5 725 MHz Band
Type of Antenna	FIPA Antenna
Antenna Gain	2 GHz: 2.93 dBi 5 GHz: 5 150 MHz Band: 2.96 dBi 5 250 MHz Band: 2.99 dBi 5 470 MHz Band: 2.98 dBi 5 725 MHz Band: 2.91 dBi
Transmit Power	26.86 dBm
Power supply	DC 12 V (AC Adaptor: S024WM1200200)

### 3.3 Available channel list and frequency

#### 802.11b/g/n\_HT20

	Frequency
Low frequency	2 412 MHz
Middle frequency	2 437 MHz
High frequency	2 462 MHz

#### 802.11n\_HT40

	Frequency
Low frequency	2 422 MHz
Middle frequency	2 437 MHz
High frequency	2 452 MHz

### 3.4 Test Voltage

mode	Voltage
Norminal voltage	DC 12 V

## 4. Summary of test results

### 4.1 Standards & results

FCC Rule Reference	IC Rule Reference	Parameter	Report Section	Test Result
15.203, 15.247(b)(4)	RSS-GEN, 7.1.2	Antenna Requirement	5.1	C
15.247(b)(3)	RSS-210, A8.4(2)	Maximum Peak Output Power	5.2	C
15.247(e)	-	Peak Power Spectral Density	5.3	C
15.247(a)(2)	RSS-GEN,4.6.2	6 dB Channel Bandwidth	5.4	C
-	RSS-210, A1.1	Occupied Bandwidth	5.4	C
15.247(d), 15.205(a), 15.209(a)	RSS-210, A8.5 RSS-210, A2.9 RSS-GEN, 7.2.3	Spurious Emission, Band Edge, and Restricted bands	5.5	C
15.207(a)	RSS-GEN, 7.2.4	Conducted Emissions	5.6	C

Note: C = complies  
NC = Not complies  
NT = Not tested  
NA = Not Applicable

### 4.2 Uncertainty

Measurement Item	Expanded Uncertainty $U = KUc (K = 2)$	
Conducted RF power	± 1.36 dB	
Conducted Spurious Emissions	± 1.52 dB	
Radiated Spurious Emissions	30 MHz ~ 300 MHz:	+ 4.94 dB, - 5.06 dB
		+ 4.93 dB, - 5.05 dB
	300 MHz ~ 1 000 MHz:	+ 4.97 dB, - 5.08 dB
		+ 4.84 dB, - 4.96 dB
1 GHz ~ 25 GHz:	+ 6.03 dB, - 6.05 dB	
Conducted Emissions	9 kHz ~ 150 kHz:	± 3.75 dB
	150 kHz ~ 30 MHz:	± 3.36 dB



## 5. Test results

### 5.1 Antenna Requirement

#### 5.1.1 Regulation

According to §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

And according to §15.407(a)(1)(2)(3), If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### 5.1.2 Result

##### -Complied

The transmitter has an integral PCB antenna.

The total directional peak gain of the antenna not exceeds 6.0 dBi

	2 412 ~ 2 462 MHz
ANT Gain	2.93 dBi

According to KDB 662911 D01 Multiple Transmitter Output v02r01

- Directional gain =  $G_{ANT}$  + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

$$\text{Array Gain} = 10 \log(N_{ANT}/N_{SS}) \text{ dB.}$$

$$\text{Total gain} = 5.94 \text{ dBi (individual gain(2.93 dBi) + Array gain(3.01 dBi) )}$$

For power measurements on IEEE 802.11 devices

$$\text{Array Gain} = 0 \text{ dB (i.e., no array gain) for } N_{ANT} \leq 2;$$

$$\text{Array Gain} = 0 \text{ dB (i.e., no array gain) for channel widths } \geq 40 \text{ MHz for any } N_{ANT};$$

$$\text{Array Gain} = 5 \log(N_{ANT}/N_{SS}) \text{ dB or } 3 \text{ dB, whichever is less, for } 20\text{-MHz channel widths with } N_{ANT} \geq 5.$$

For power measurements on all other devices:

$$\text{Array Gain} = 10 \log(N_{ANT}/N_{SS}) \text{ dB.}$$

$$\text{Total gain} = 2.93 \text{ dBi (individual gain(2.93 dBi) + Array gain(0 dBi) )}$$

## 5.2 Maximum Peak Output Power

### 5.2.1 Regulation

According to §15.247(b)(3), For systems using digital modulation in the 902-928 MHz, 2 400-2 483.5 MHz, and 5 725-5 850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

According to §15.247(b)(4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### 5.2.2 Measurement Procedure

These test measurement settings are specified in section 9.0 of 558074 D01 DTS Meas Guidance.

#### 5.2.2.1 PKPM1 Peak power meter method

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall utilize a fast-responding diode detector.

### 5.2.3 Test Result

- Complied

**\* 802.11b**

Channel	Frequency (MHz)	Result (dBm)	Limit (dBm)	Margin (dB)
Low	2 412	19.68	30.00	10.32
Middle	2 437	19.24	30.00	10.76
High	2 462	18.99	30.00	11.01

**\* 802.11g**

Channel	Frequency (MHz)	Result (dBm)	Limit (dBm)	Margin (dB)
Low	2 412	24.62	30.00	5.38
Middle	2 437	24.80	30.00	5.20
High	2 462	24.88	30.00	5.12

**\* 802.11n HT20**

Channel	Frequency (MHz)	Result (dBm)	Limit (dBm)	Margin (dB)
Low	2 412	24.17	30.00	5.83
Middle	2 437	24.19	30.00	5.81
High	2 462	23.87	30.00	6.13

**\* 802.11n HT20\_MIMO(ANT 1+2)**

Channel	Frequency (MHz)	Result (dBm)	Limit (dBm)	Margin (dB)
Low	2 412	26.79	30.00	3.21
Middle	2 437	26.86	30.00	3.14
High	2 462	25.73	30.00	4.27

**\* 802.11n HT40**

Channel	Frequency (MHz)	Result (dBm)	Limit (dBm)	Margin (dB)
Low	2 422	24.29	30.00	5.71
Middle	2 437	23.92	30.00	6.08
High	2 452	23.96	30.00	6.04

**\* 802.11n HT40\_MIMO (ANT 1+2)**

Channel	Frequency (MHz)	Result (dBm)	Limit (dBm)	Margin (dB)
Low	2 422	26.66	30.00	3.34
Middle	2 437	26.72	30.00	3.28
High	2 452	26.55	30.00	3.45

-NOTE:

1. Since the directional gain of the FIPA antenna declared by the manufacturer ( $G_{ANT} = 2.93$  dBi), does not exceed 6.0 dBi , there was no need to reduce the Power measurement.
2. We took the insertion loss of the cable loss into consideration within the measuring instrument.

## 5.3 Peak Power Spectral Density

### 5.3.1 Regulation

According to §15.247(e), for digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

### 5.3.2 Measurement Procedure

These test measurement settings are specified in section 10.0 of 558074 D01 DTS Meas Guidance.

#### 5.3.2.1 Method PKPSD (peak PSD)

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance, and is optional if the maximum conducted (average) output power was used to demonstrate compliance.

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

### 5.3.3 Test Result

- Complied

**\* 802.11b**

Channel	Result [dBm]	Limit [dBm]	Margin [dBm]
Low	6.37	8.00	1.63
Middle	6.53	8.00	1.47
High	6.65	8.00	1.35

**\* 802.11g**

Channel	Result [dBm]	Limit [dBm]	Margin [dBm]
Low	3.84	8.00	4.16
Middle	4.10	8.00	3.90
High	4.19	8.00	3.81

**\* 802.11n HT20**

Channel	Result [dBm]	Limit [dBm]	Margin [dBm]
Low	2.53	8.00	5.47
Middle	2.23	8.00	5.77
High	2.51	8.00	5.49

**\* 802.11n HT20\_MIMO (ANT 1+2)**

Channel	Result [dBm]	Limit [dBm]	Margin [dBm]
Low	4.28	8.00	3.72
Middle	4.31	8.00	3.69
High	4.56	8.00	3.44

**\* 802.11n HT40**

Channel	Result [dBm]	Limit [dBm]	Margin [dBm]
Low	-0.70	8.00	8.70
Middle	-0.30	8.00	8.30
High	-0.38	8.00	8.38

**\* 802.11n HT40\_MIMO (ANT 1+2)**

Channel	Result [dBm]	Limit [dBm]	Margin [dBm]
Low	1.63	8.00	6.37
Middle	1.66	8.00	6.34
High	1.90	8.00	6.10

**-NOTE:**

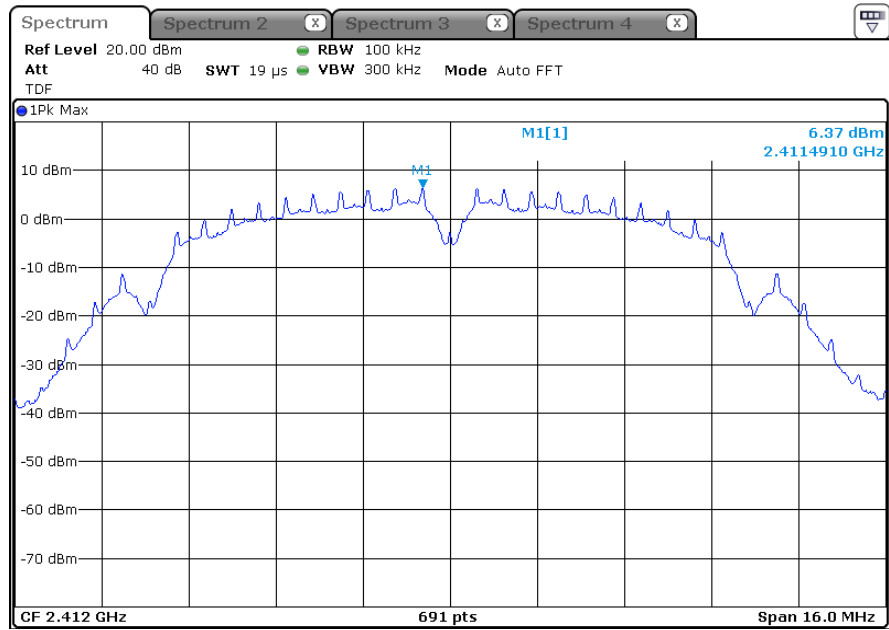
1. Since the directional gain of the FIPA antenna declared by the manufacturer ( $G_{ANT} = 2.93$  dBi), does not exceed 6.0 dBi, here was no need to reduce the power spectral density.
2. In case of MIMO, Since the directional gain of the FIPA antenna declared by the manufacturer ( $G_{ANT} = 2.93$  dBi) + (Array gain = 3.01 dBi) does not exceed 6.0 dBi, there was no need to reduce the power spectral density.
3. We took the insertion loss of the cable loss into consideration within the measuring instrument.

### 5.3.4 Test Plot

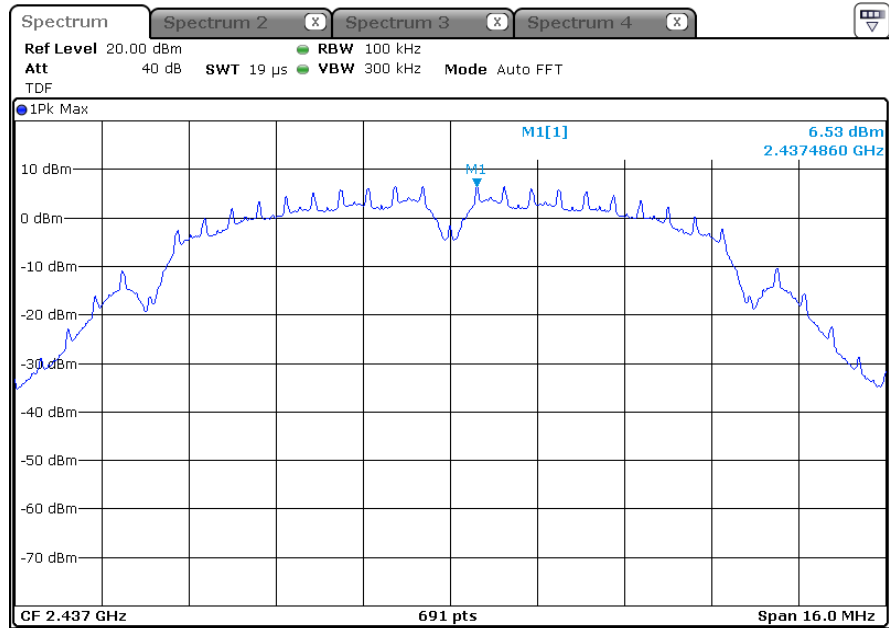
Figure 1. Plot of the Power Density

**\* 802.11b**

Lowest Channel( 2 412 MHz)

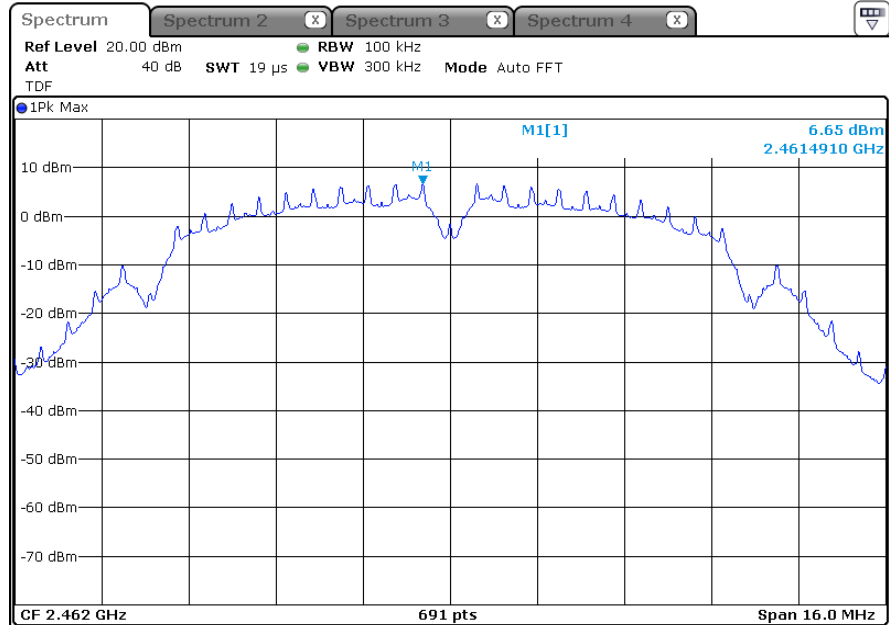


Middle Chnnel (2 437 MHz)



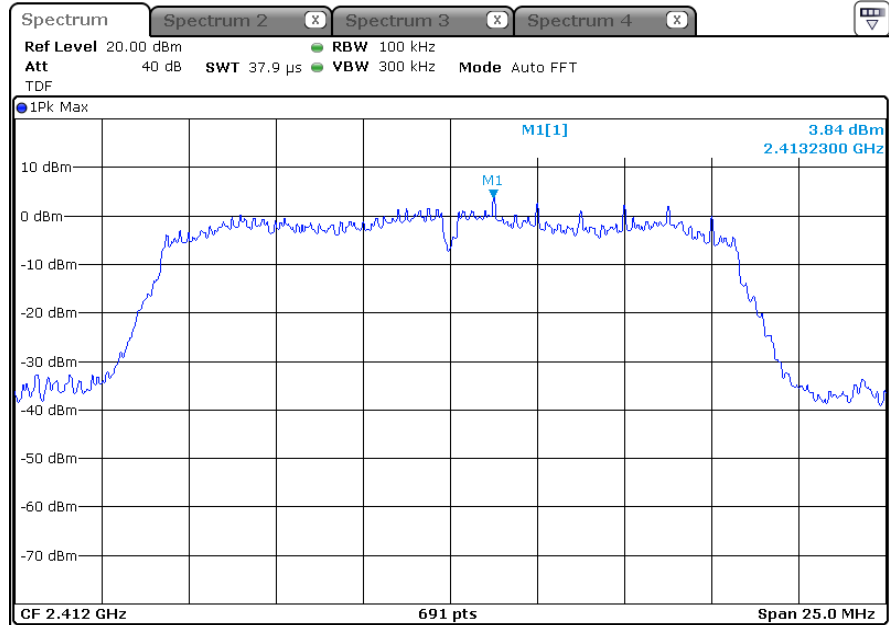


Highest Chnnel (2 462 Mhz)

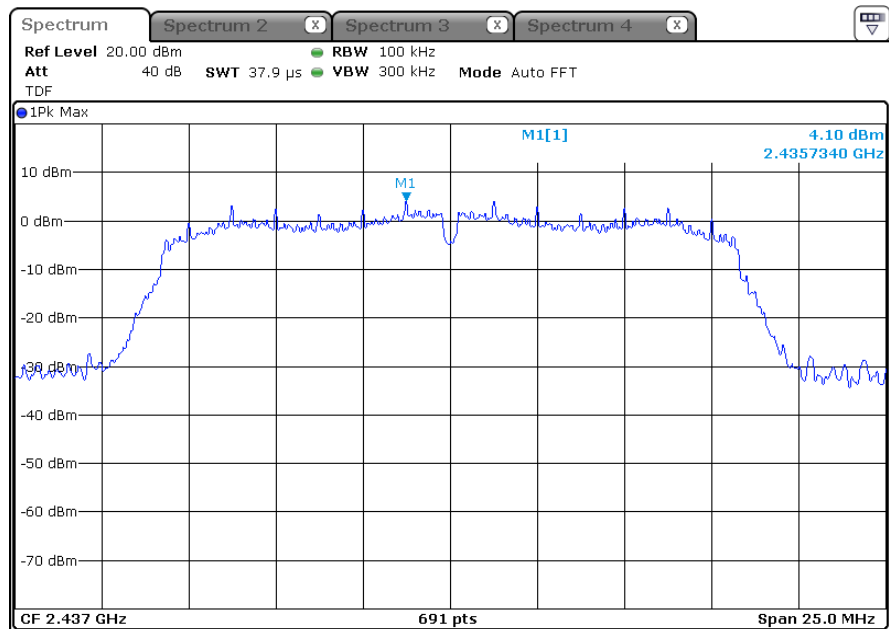


**\* 802.11g**

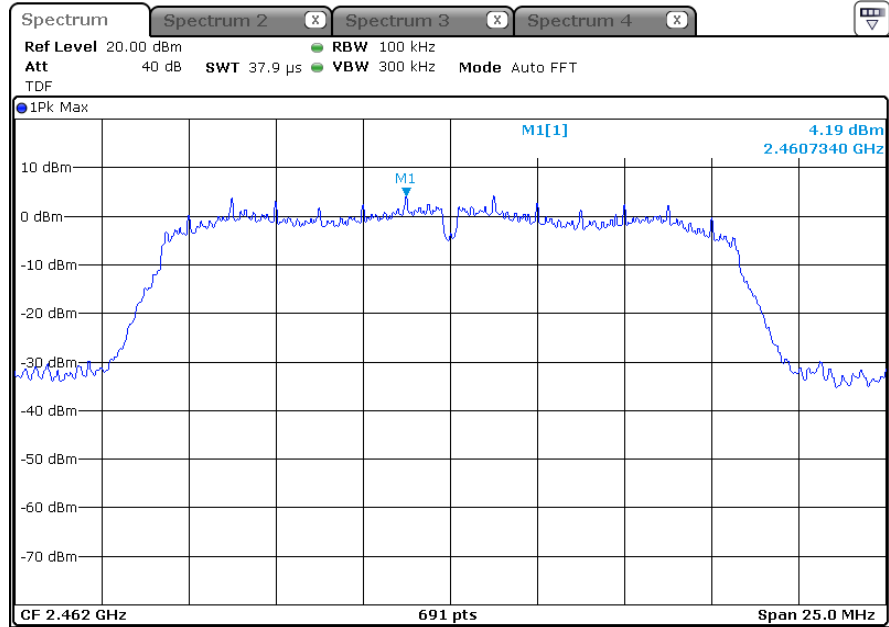
Lowest Channel( 2 412 MHz)



Middle Chnnel (2 437 MHz)

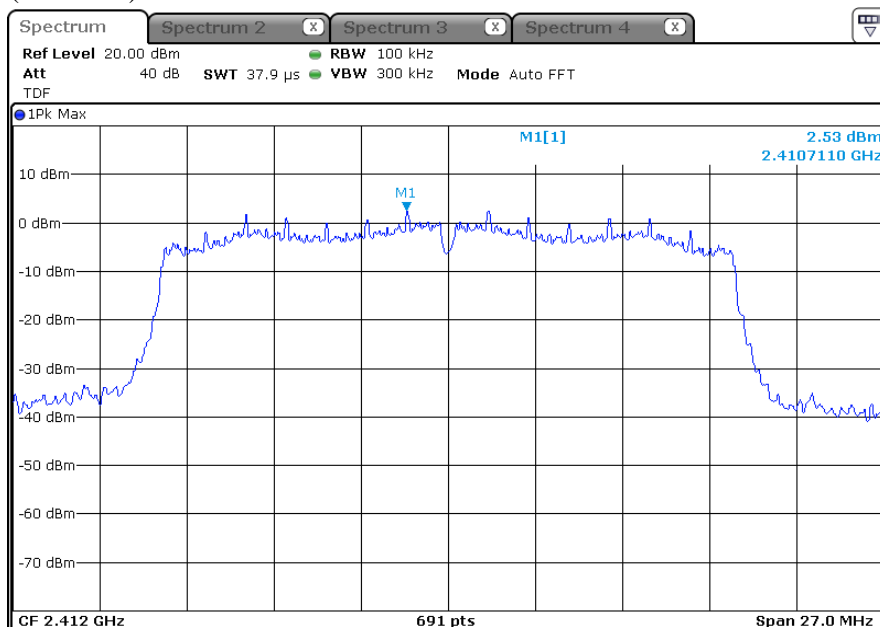


Highest Chnnel (2 462 MHz)

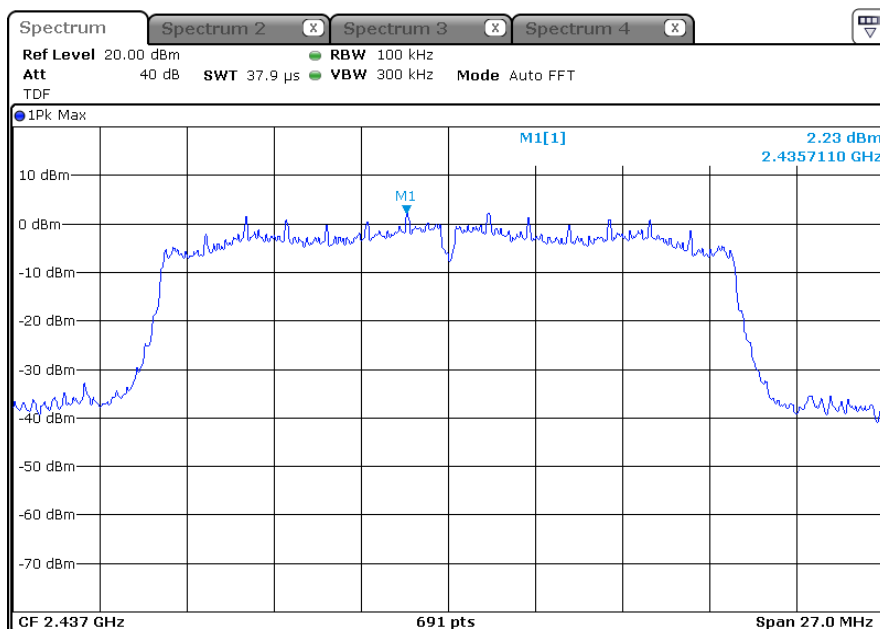


**\* 802.11n HT20**

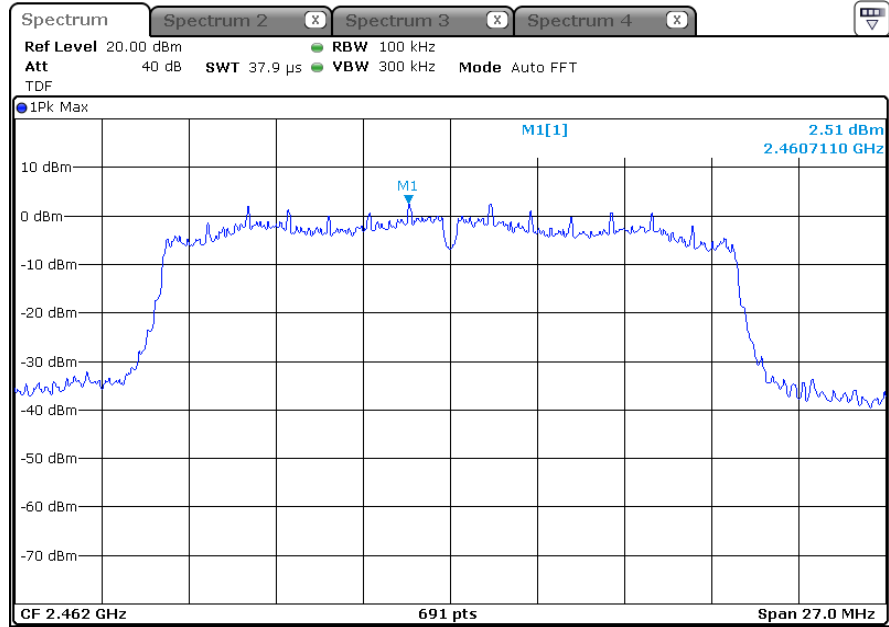
Lowest Channel( 2 412 MHz)



Middle Chnnel (2 437 MHz)

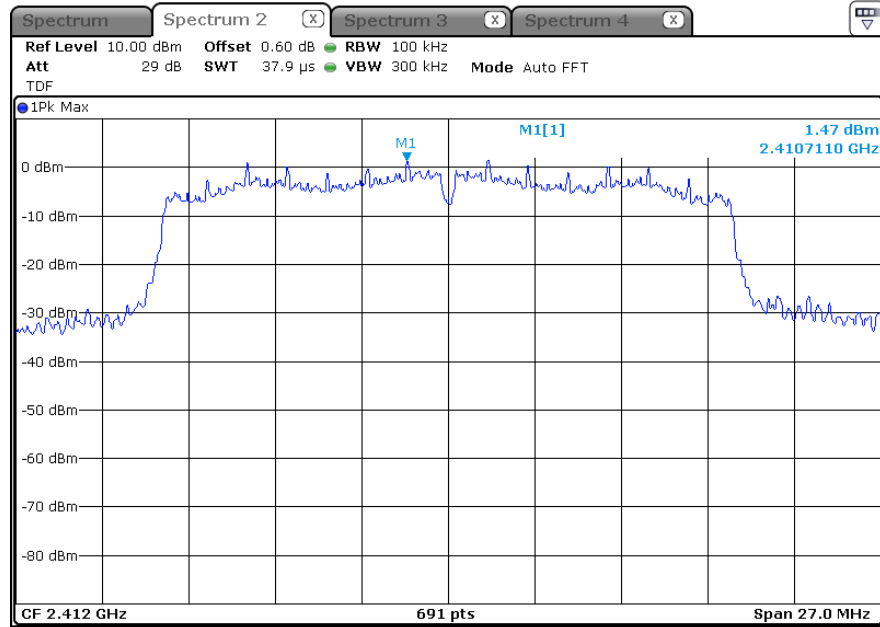


Highest Chnnel (2 462 MHz)

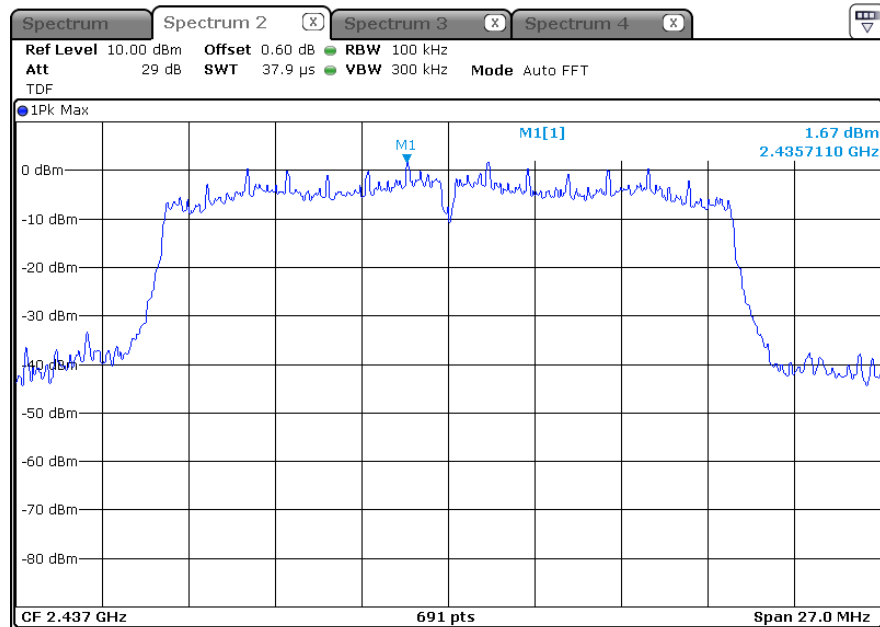


**\* 802.11n HT20\_MIMO (ANT 1)**

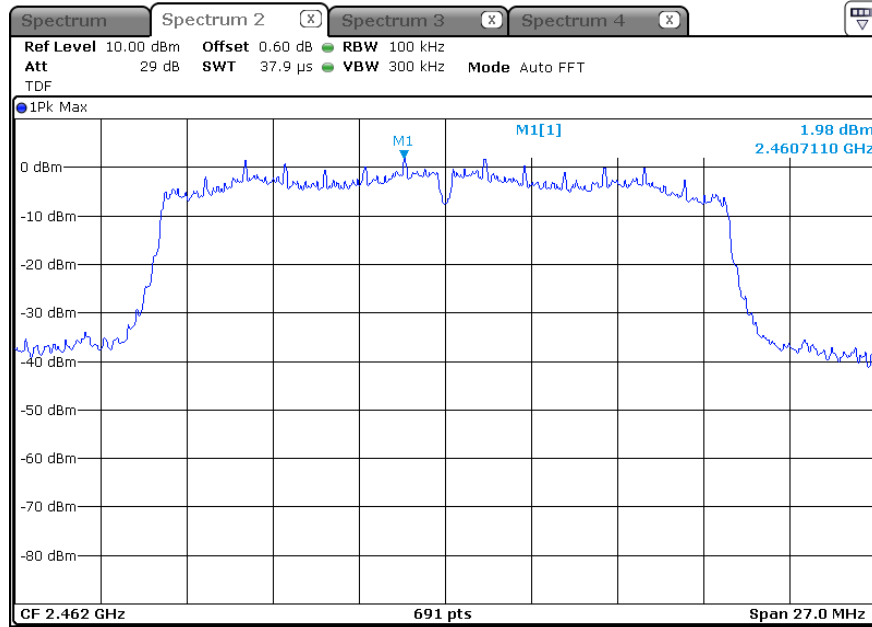
Lowest Channel( 2 412 MHz)



Middle Chnnel (2 437 MHz)

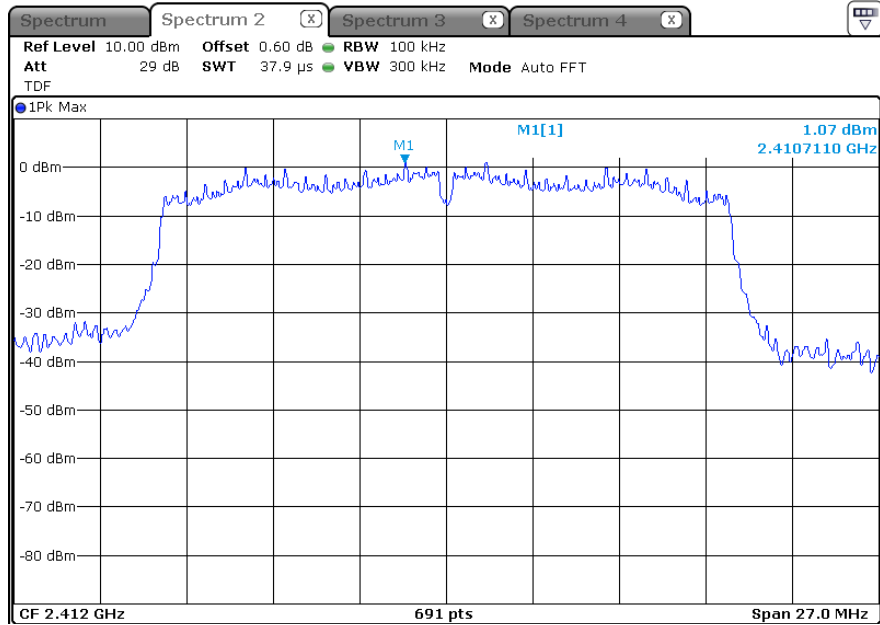


Highest Chnnel (2 462 MHz)

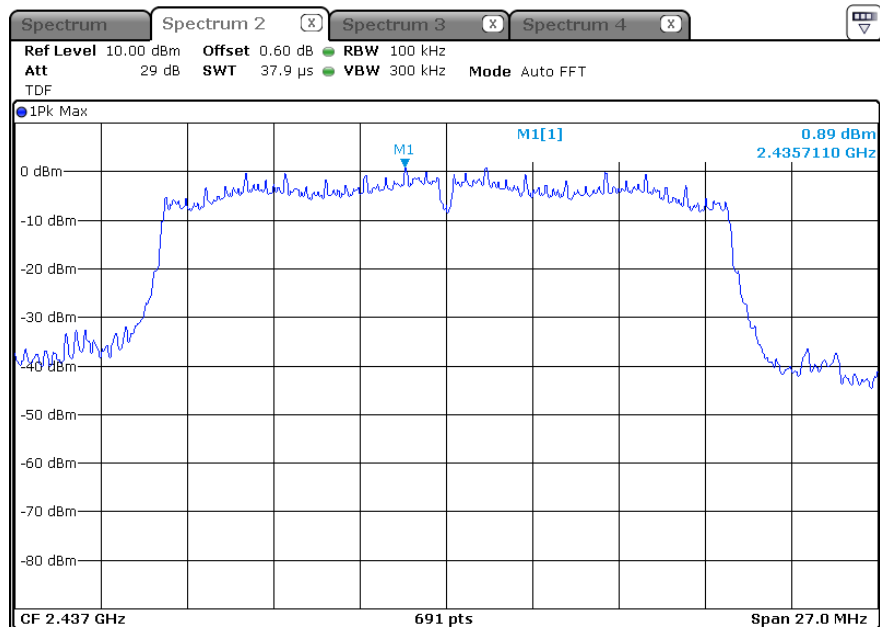


**\* 802.11n HT20\_MIMO (ANT 2)**

Lowest Channel( 2 412 MHz)

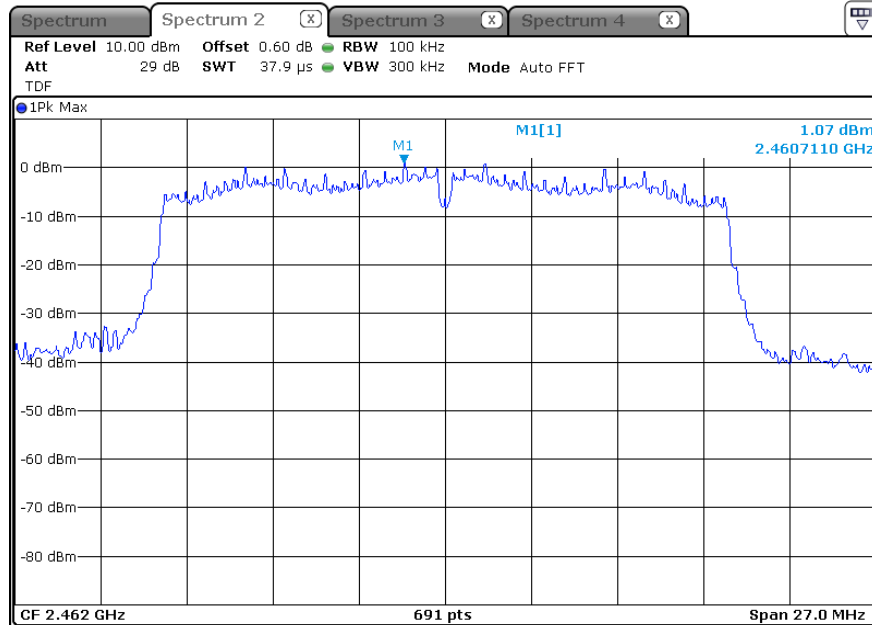


Middle Chnnel (2 437 MHz)



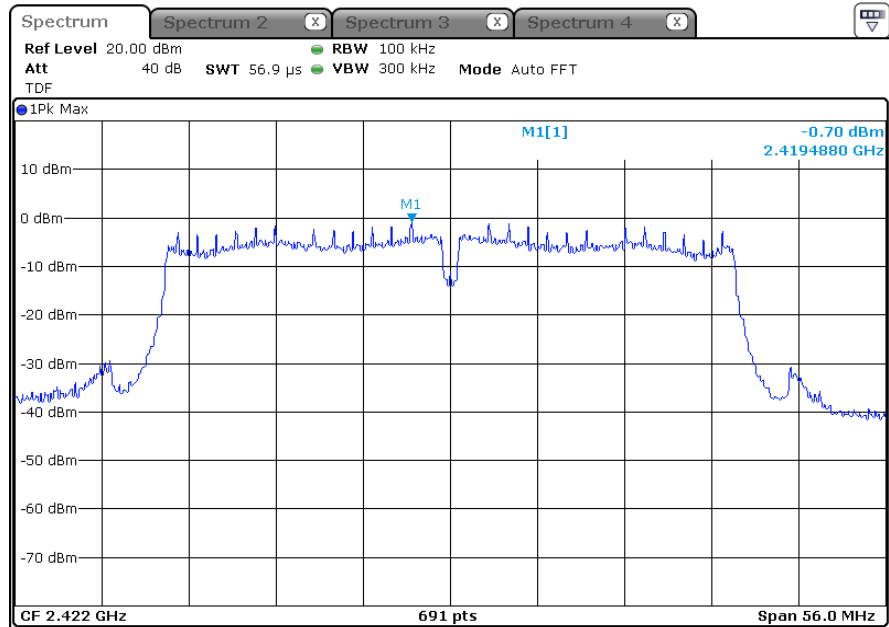


Highest Channel (2 462 MHz)

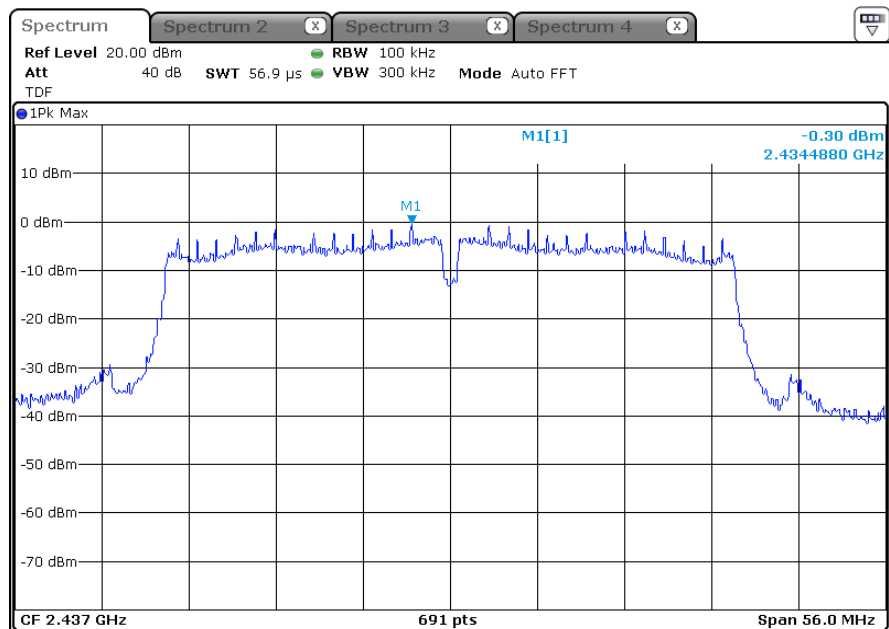


**\* 802.11n HT40**

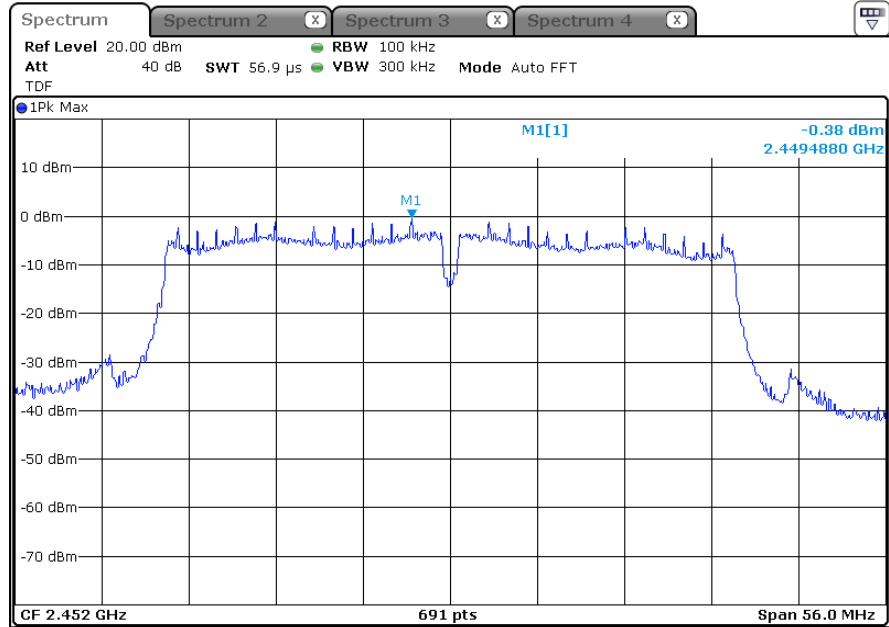
Lowest Channel( 2 422 MHz)



Middle Chnnel (2 437 MHz)

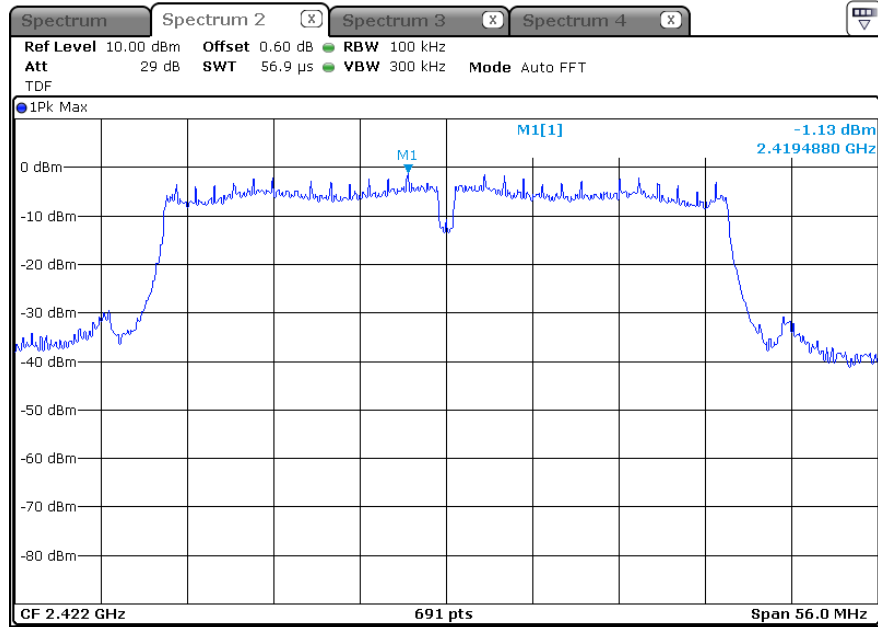


Highest Chnnel (2 452 MHz)

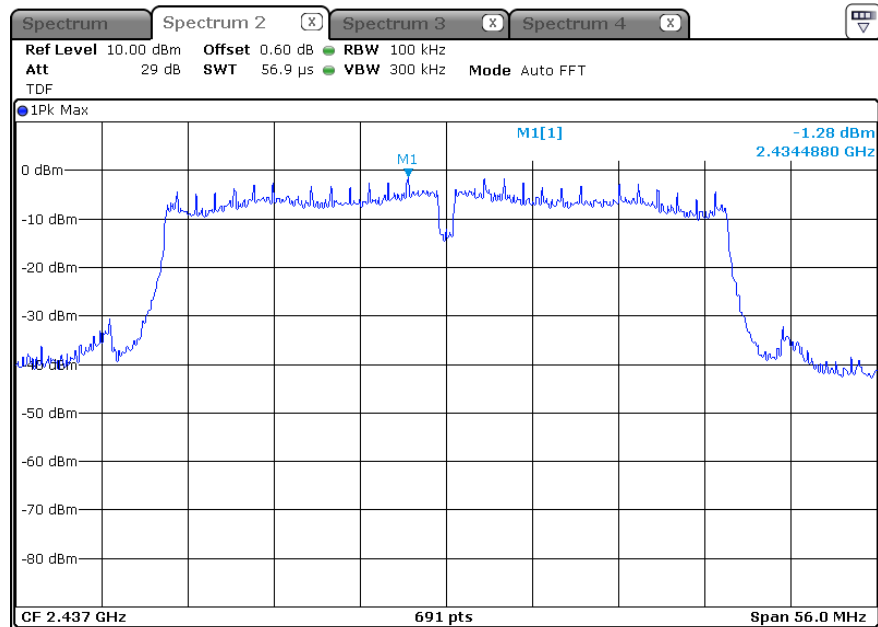


**\* 802.11n HT40\_MIMO (ANT 1)**

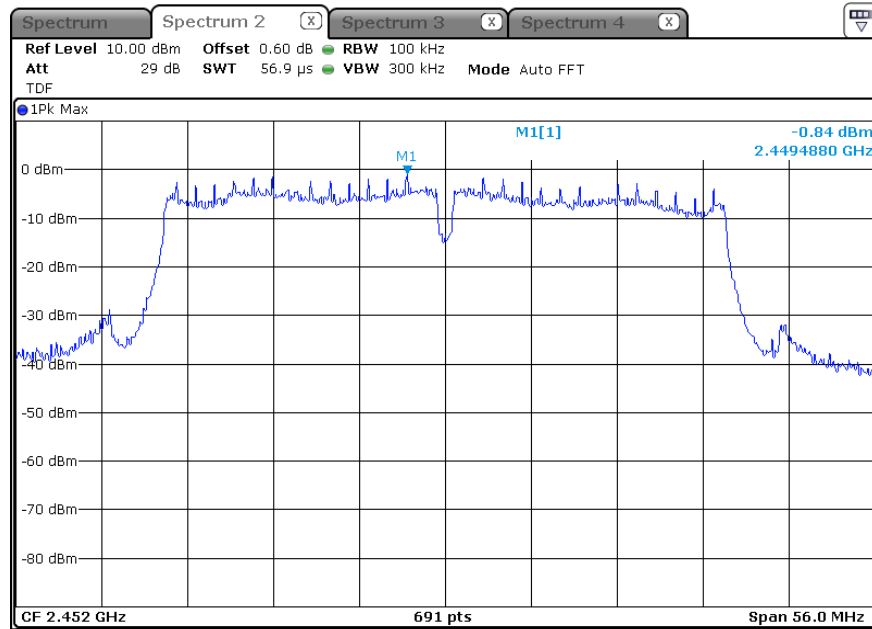
Lowest Channel( 2 422 MHz)



Middle Channel( 2 437 MHz)

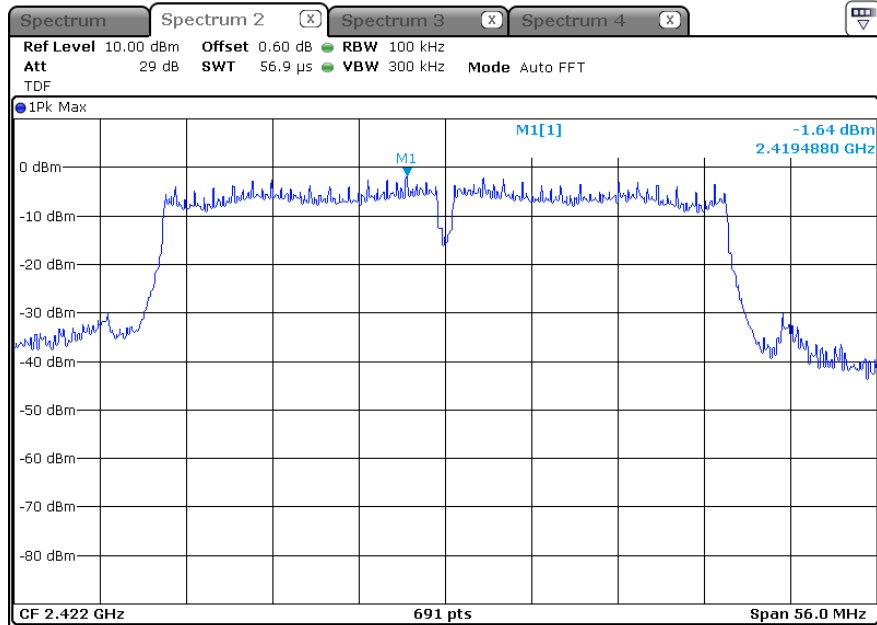


Highest Chnnel (2 452 MHz)

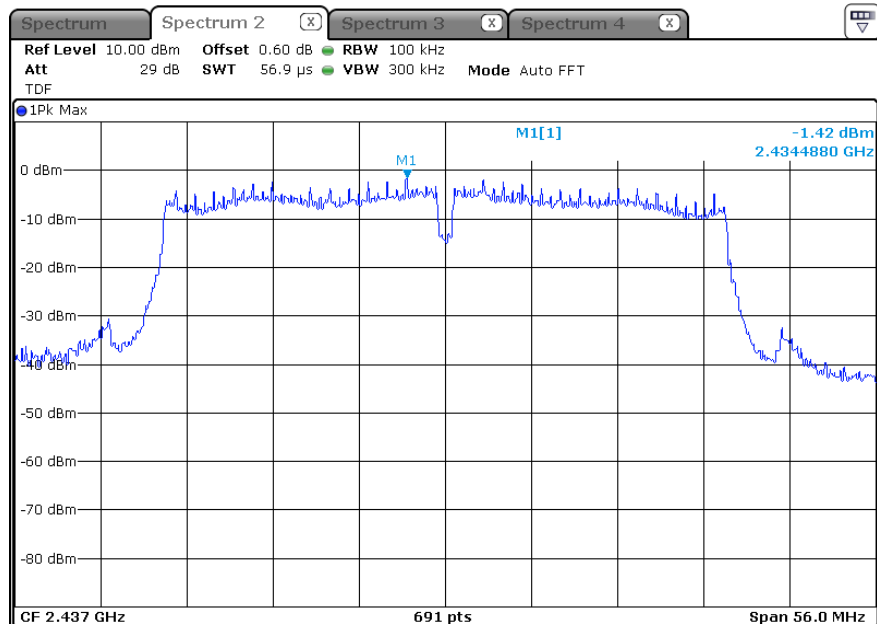


**\* 802.11n HT40\_MIMO (ANT 2)**

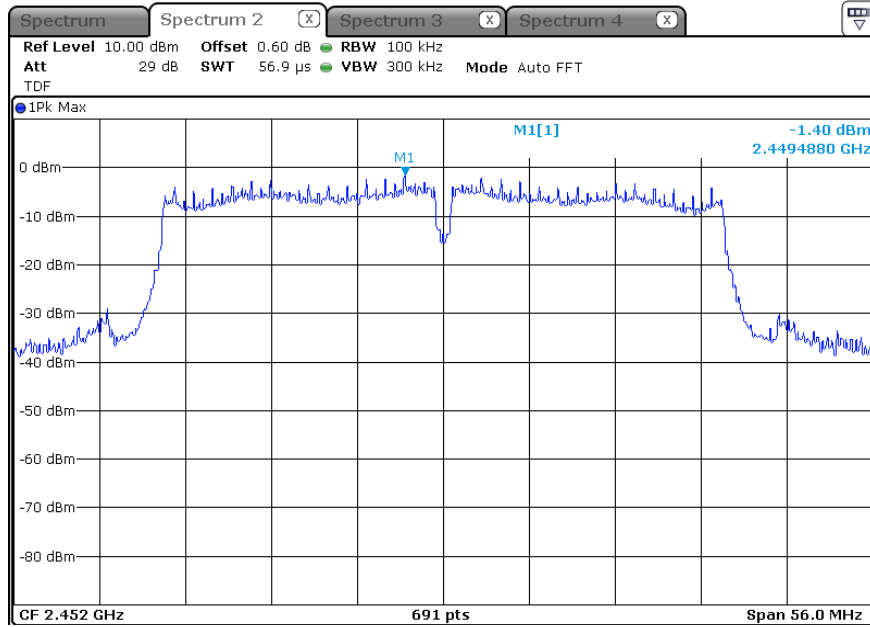
Lowest Channel( 2 422 MHz)



Middle Channel (2 437 MHz)



Highest Channel (2 452 MHz)



## 5.4 6 dB Bandwidth(DTS Channel Bandwidth)

### 5.4.1 Regulation

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 5 725–5 850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

### 5.4.2 Measurement Procedure

These test measurement settings are specified in section 8.0 of 558074 D01 DTS Meas Guidance.

#### 5.4.2.1 DTS Channel Bandwidth-Option 1

- 1) Set RBW = 100 kHz.
- 2) Set the video bandwidth (VBW)  $\geq 3 \times$  RBW.
- 3) Detector = Peak.
- 4) Trace mode = max hold.
- 5) Sweep = auto couple.
- 6) Allow the trace to stabilize.
- 7) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

#### 5.4.2.2 DTS Channel Bandwidth Measurement Procedure-Option 2

The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described above (i.e., RBW = 100 kHz, VBW  $\geq 3 \times$  RBW, peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, 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.



### 5.4.3 Test Result

- Complied

**\* 802.11b**

Channel	Frequency (Mhz)	6 dB Bandwidth (Mhz)	Min. Limit (kHz)	Occupied Bandwidth (99 % BW) (Mhz)
Low	2 412	8.16	500	10.07
Middle	2 437	8.16	500	10.07
High	2 462	8.16	500	10.13

**\* 802.11g**

Channel	Frequency (Mhz)	6 dB Bandwidth (Mhz)	Min. Limit (Mhz)	Occupied Bandwidth (99 % BW) (Mhz)
Low	2 412	15.22	500	16.27
Middle	2 437	15.22	500	16.32
High	2 462	15.22	500	16.32

**\* 802.11n HT20**

Channel	Frequency (Mhz)	6 dB Bandwidth (Mhz)	Min. Limit (Mhz)	Occupied Bandwidth (99 % BW) (Mhz)
Low	2 412	15.22	500	17.42
Middle	2 437	15.22	500	17.42
High	2 462	15.22	500	17.42

**\* 802.11n HT20\_MIMO (ANT 1)**

Channel	Frequency (Mhz)	6 dB Bandwidth (Mhz)	Min. Limit (Mhz)	Occupied Bandwidth (99 % BW) (Mhz)
Low	2 412	15.22	500	17.42
Middle	2 437	15.17	500	17.42
High	2 462	16.15	500	17.42

**\* 802.11n HT20\_MIMO (ANT 2)**

Channel	Frequency (Mhz)	6 dB Bandwidth (Mhz)	Min. Limit (Mhz)	Occupied Bandwidth (99 % BW) (Mhz)
Low	2 412	15.80	500	17.42
Middle	2 437	15.81	500	17.42
High	2 462	16.15	500	17.42

**\* 802.11n HT40**

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Min. Limit (MHz)	Occupied Bandwidth (99 % BW) (MHz)
Low	2 422	36.50	500	36.25
Middle	2 437	36.38	500	36.11
High	2 452	36.04	500	36.18

**\* 802.11n HT40\_MIMO (ANT 1)**

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Min. Limit (MHz)	Occupied Bandwidth (99 % BW) (MHz)
Low	2 422	36.47	500	36.25
Middle	2 437	36.47	500	36.11
High	2 452	36.40	500	36.18

**\* 802.11n HT40\_MIMO (ANT 2)**

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Min. Limit (MHz)	Occupied Bandwidth (99 % BW) (MHz)
Low	2 422	36.47	500	36.18
Middle	2 437	36.38	500	36.18
High	2 452	36.47	500	36.25

**-NOTE:**

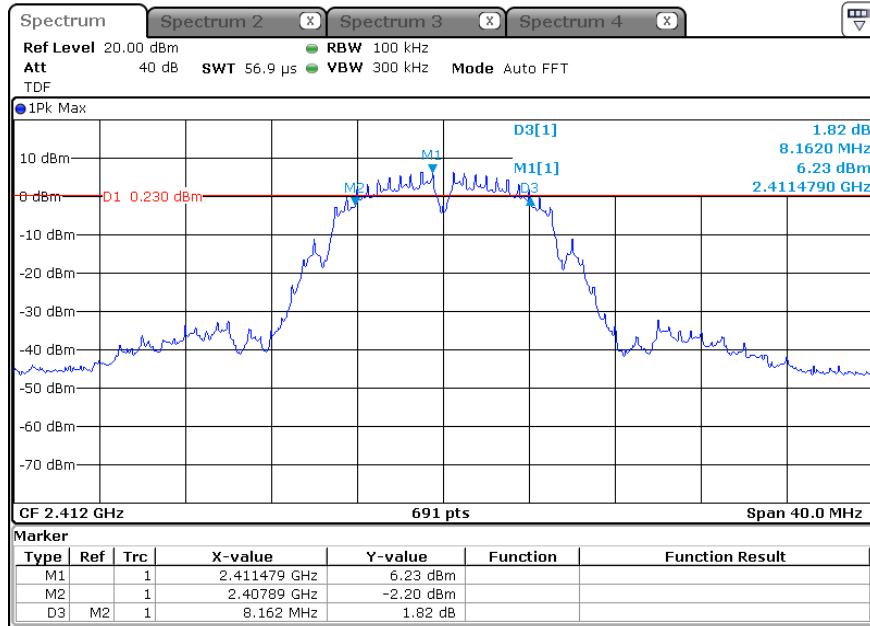
1. We took the insertion loss of the cable loss into consideration within the measuring instrument.

### 5.4.4 Test Plot

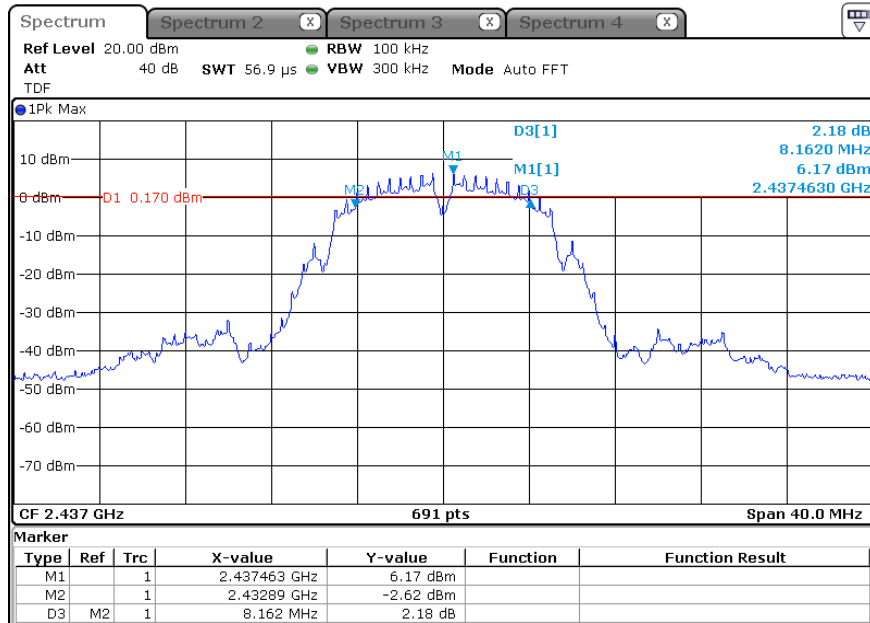
Figure 2. Plot of the 6dB Bandwidth & Occupied Bandwidth

**\* 802.11b (6 dB Bandwidth)**

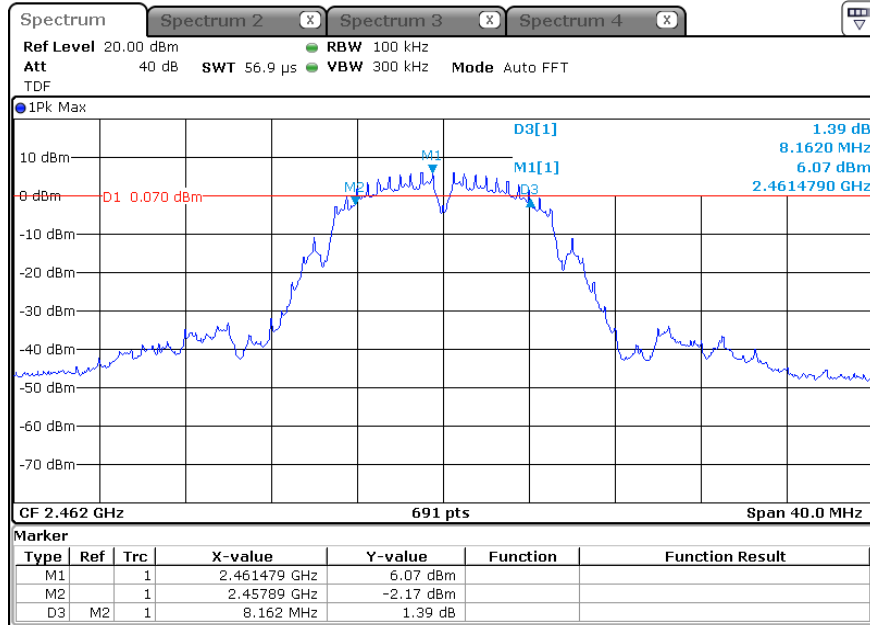
Lowest Channel (2 412 MHz)



Middle Channel (2 437 MHz)

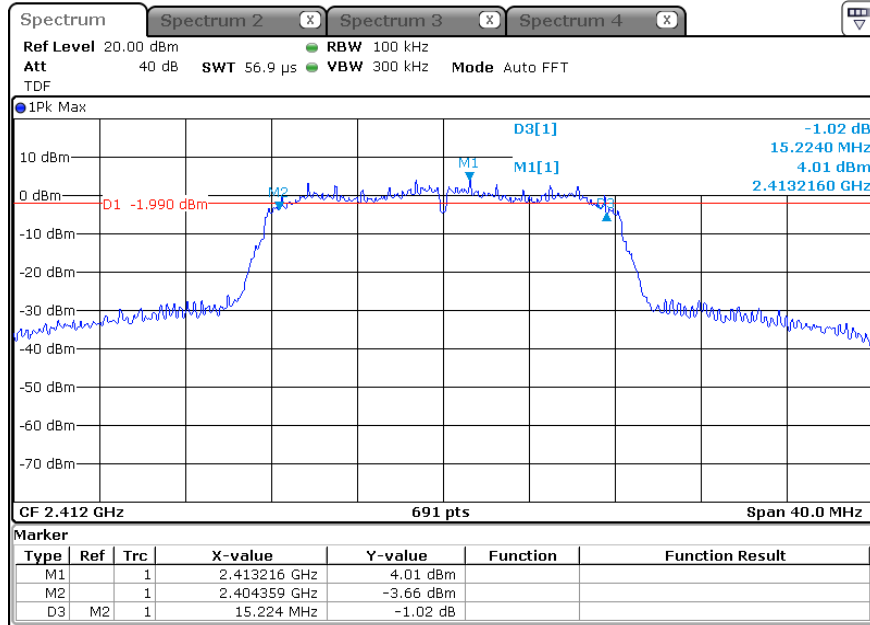


Highest Channel (2 462 MHz)

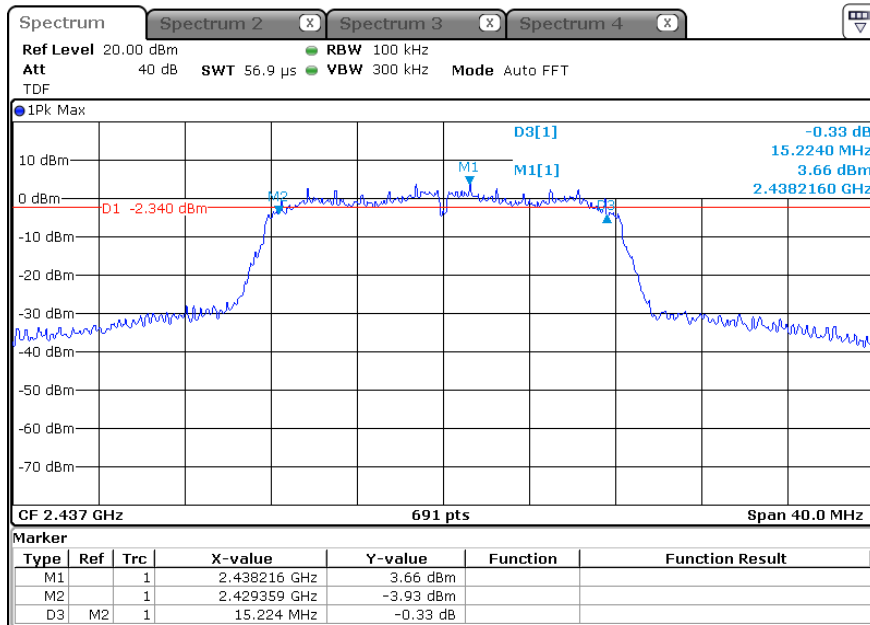


**\* 802.11g (6 dB Bandwidth)**

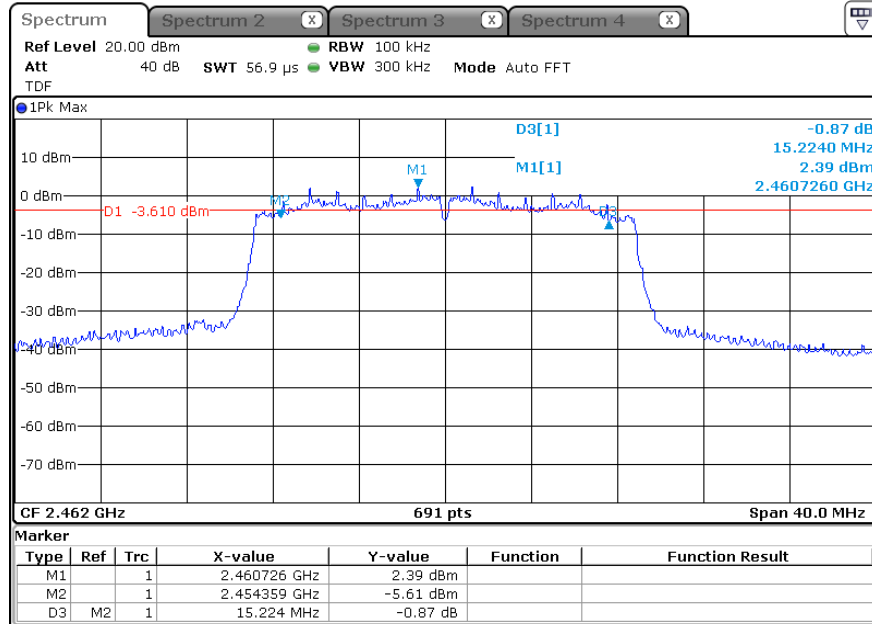
Lowest Channel (2 412 MHz)



Middle Channel (2 437 MHz)

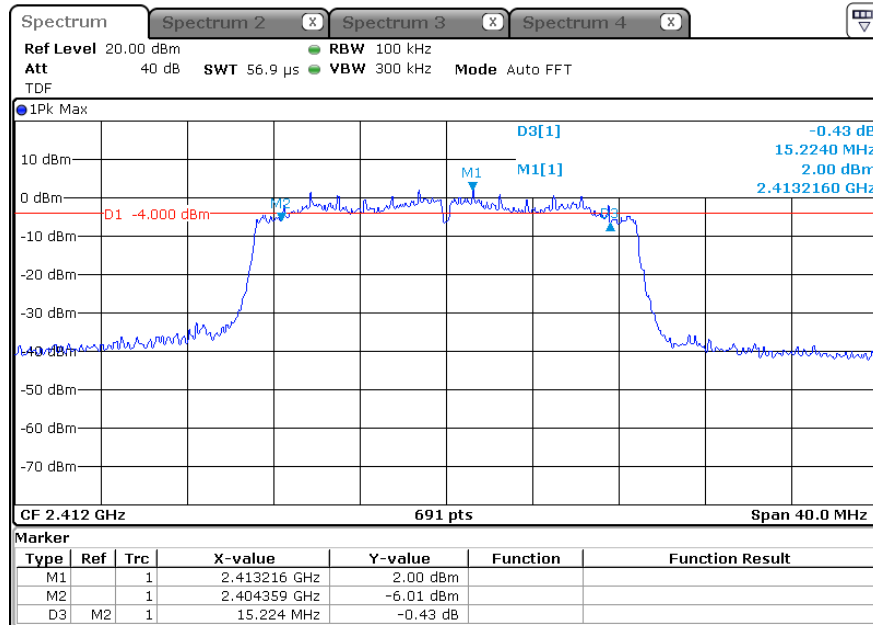


Highest Channel (2 462 MHz)

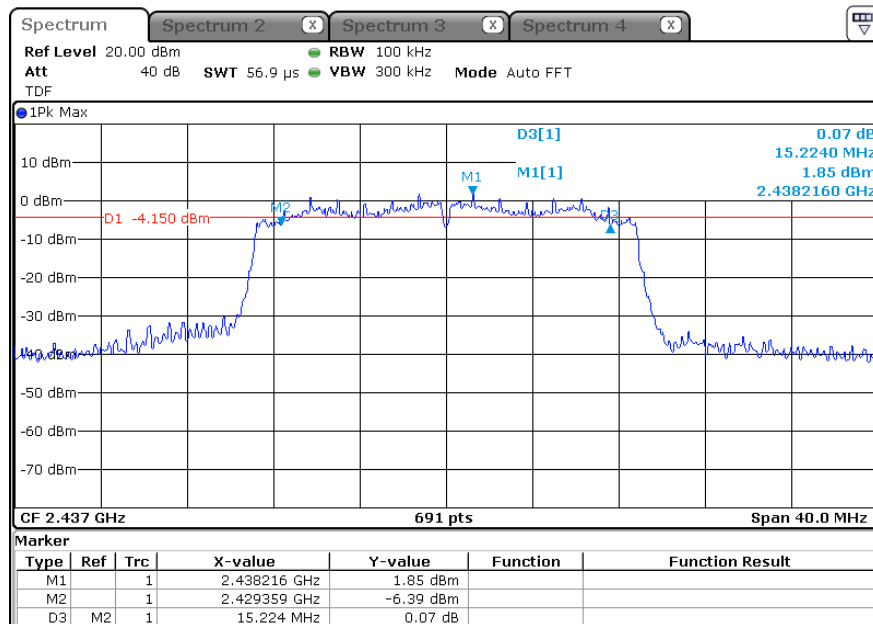


**\* 802.11n HT20 (6 dB Bandwidth)**

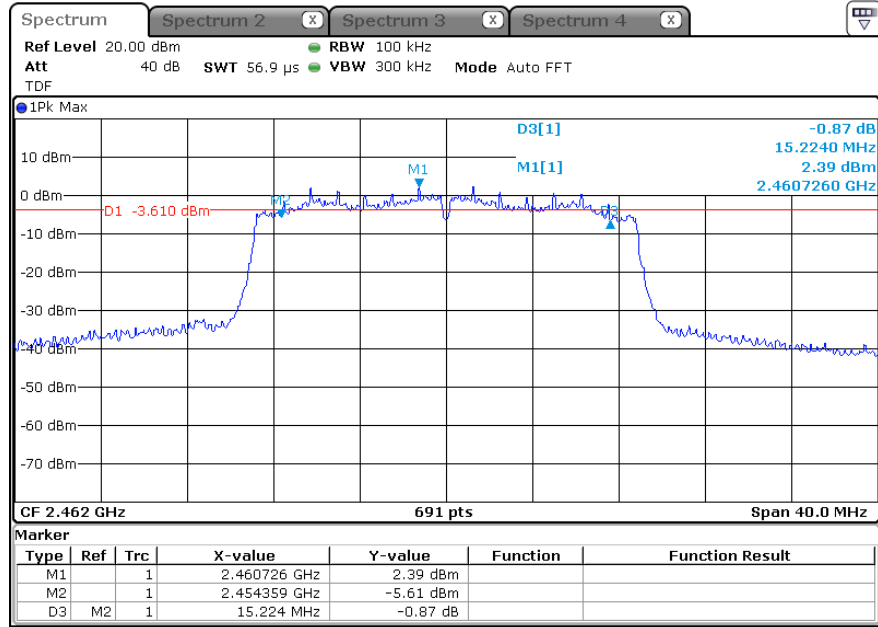
Lowest Channel (2 412 MHz)



Middle Channel (2 437 MHz)



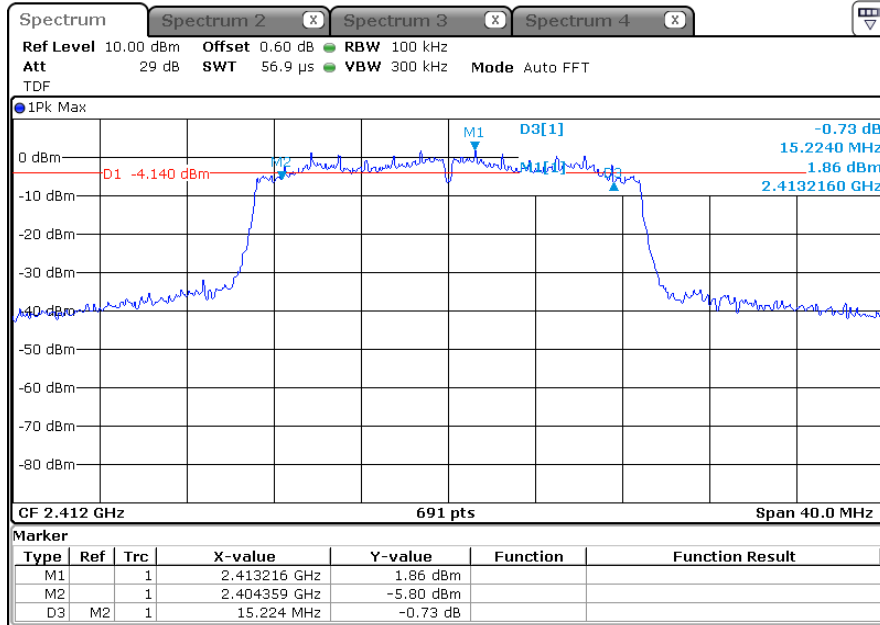
Highest Channel (2 462 MHz)



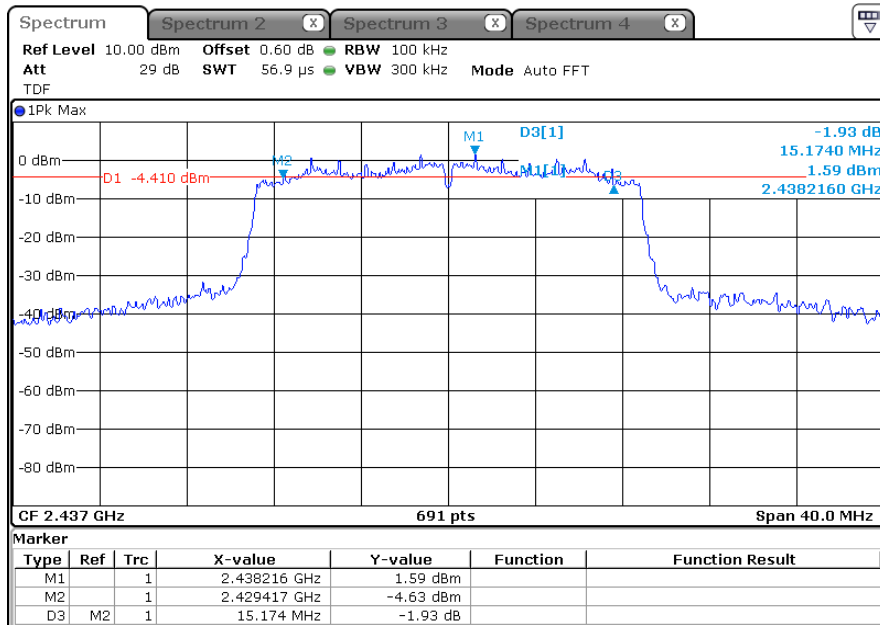


**\* 802.11n HT20\_MIMO (ANT 1) (6 dB Bandwidth)**

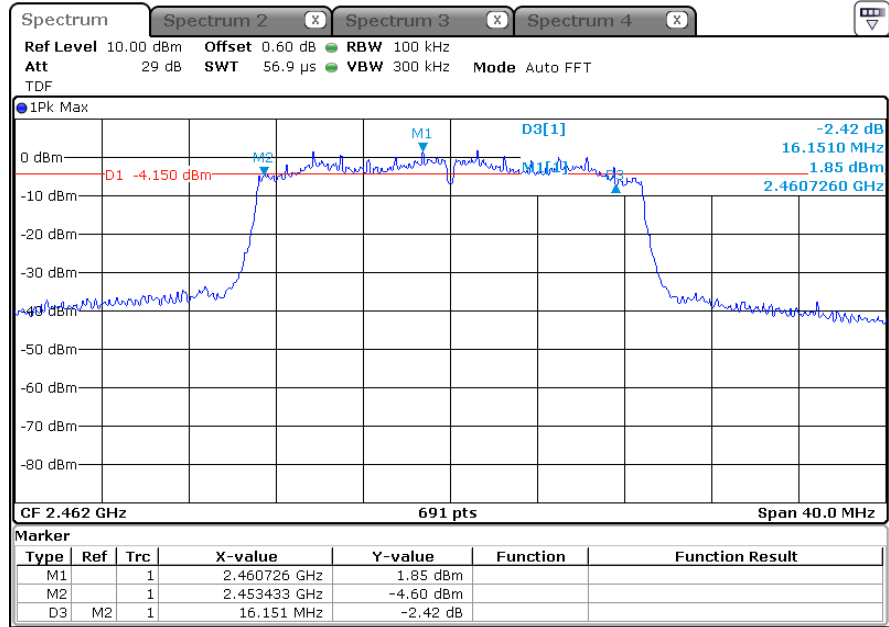
Lowest Channel (2 412 MHz)



Middle Channel (2 437 MHz)

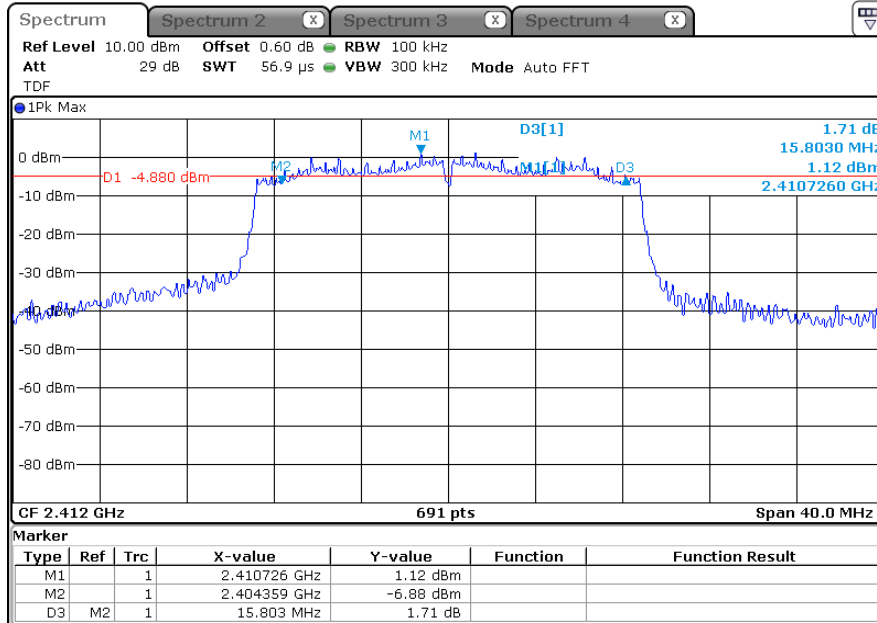


Highest Channel (2 462 MHz)

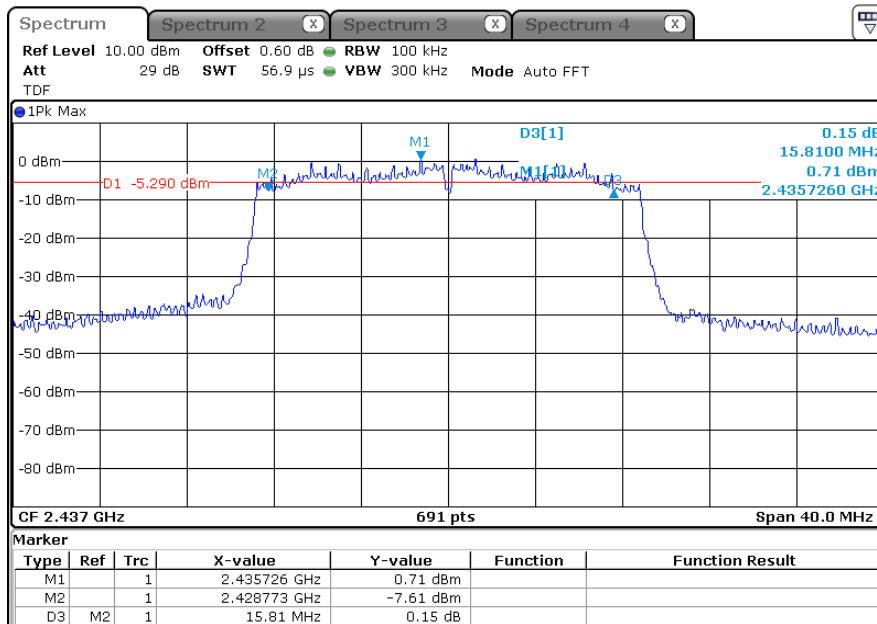


**\* 802.11n HT20\_MIMO (ANT 2) (6 dB Bandwidth)**

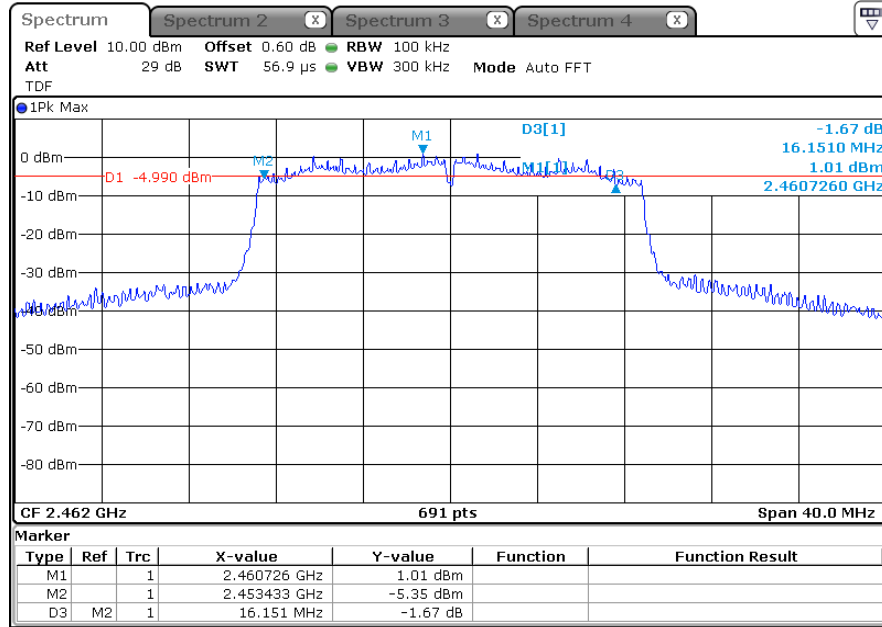
Lowest Channel (2 412 MHz)



Middle Channel (2 437 MHz)

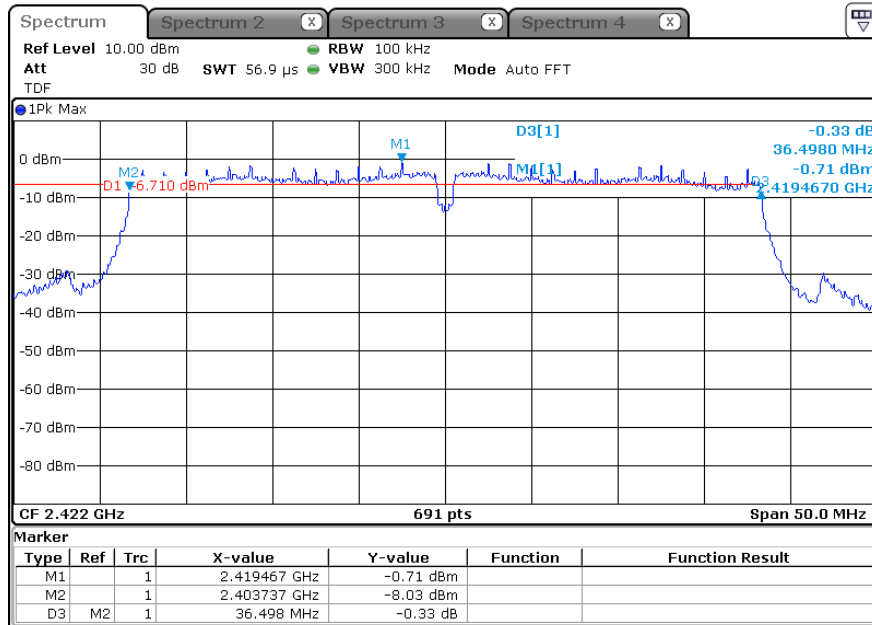


Highest Channel (2 462 MHz)

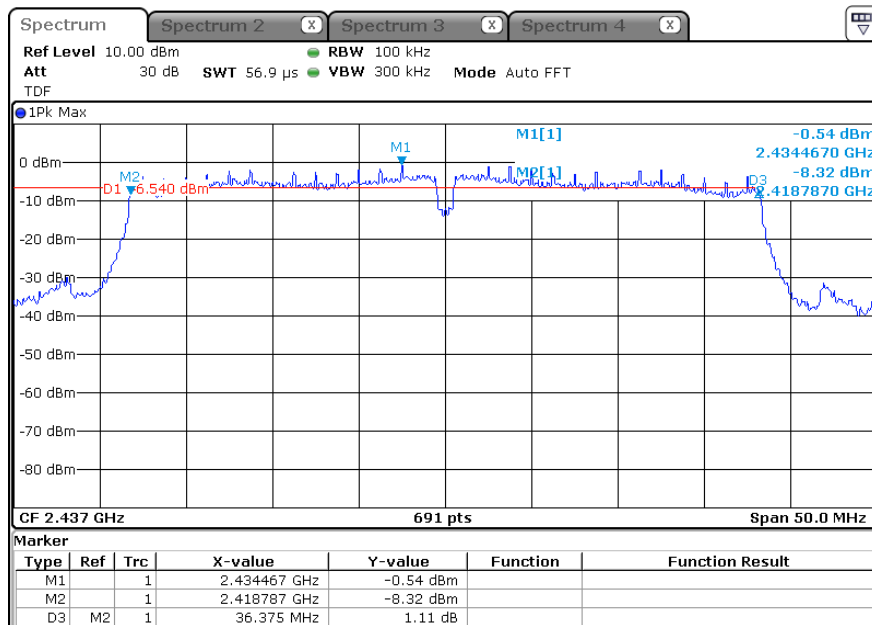


**\* 802.11n HT40 (6 dB Bandwidth)**

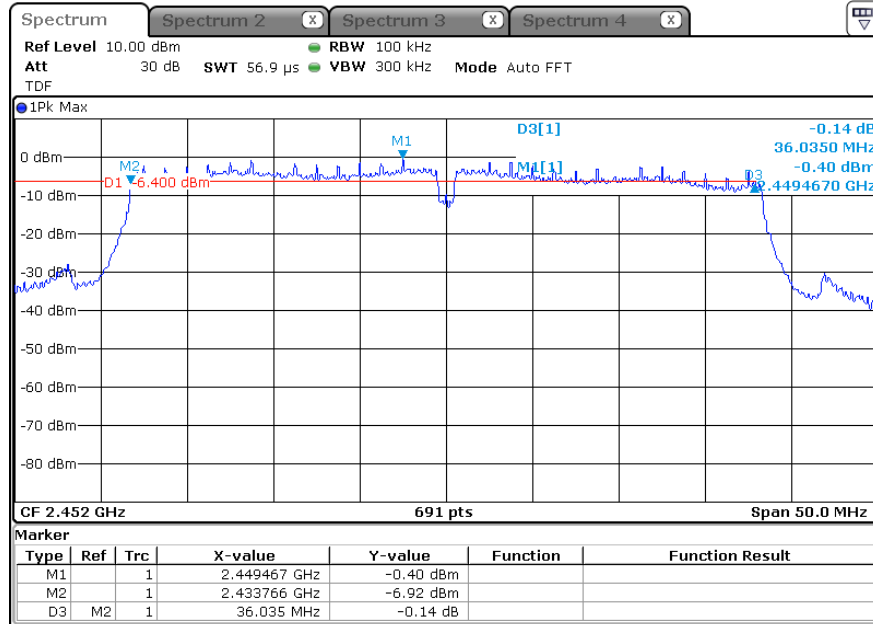
Lowest Channel (2 422 MHz)



Middle Channel (2 437 MHz)

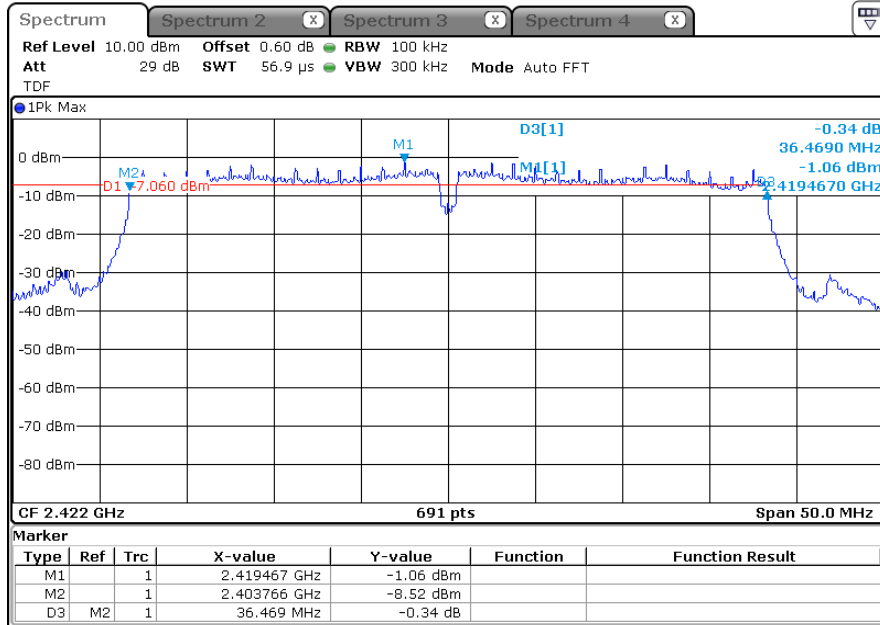


Highest Channel (2 452 MHz)

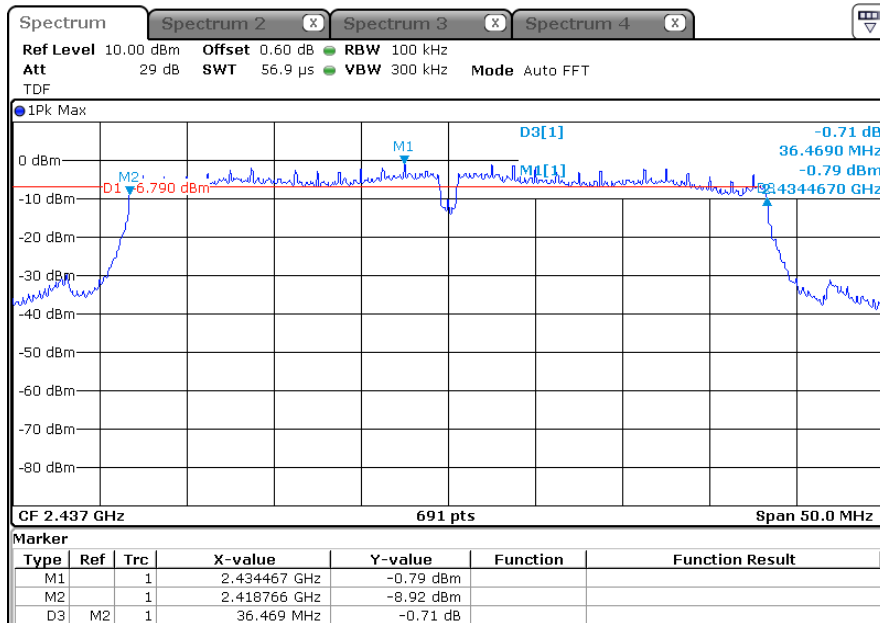


**\* 802.11n HT40\_MIMO (ANT 1) (6 dB Bandwidth)**

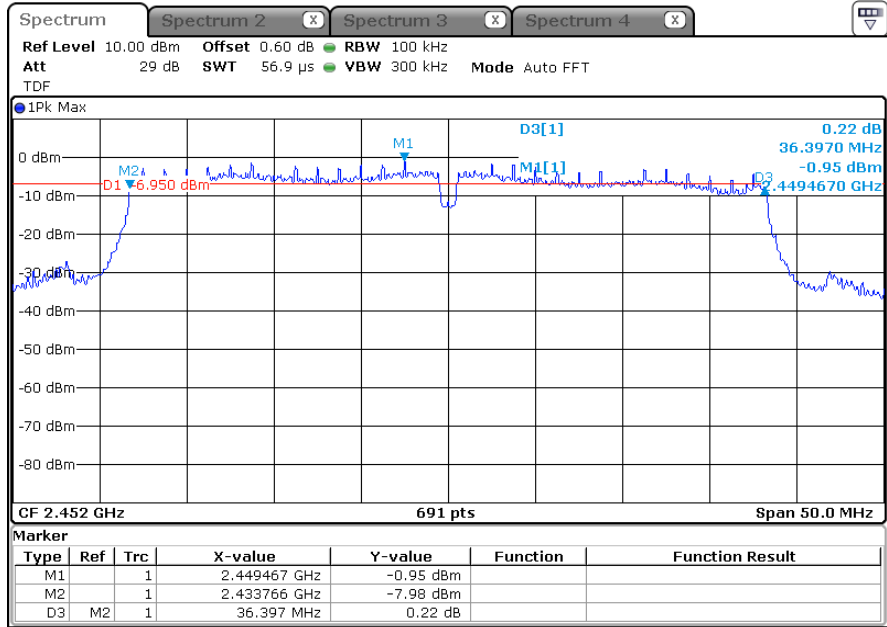
Lowest Channel (2 422 MHz)



Middle Channel (2 437 MHz)



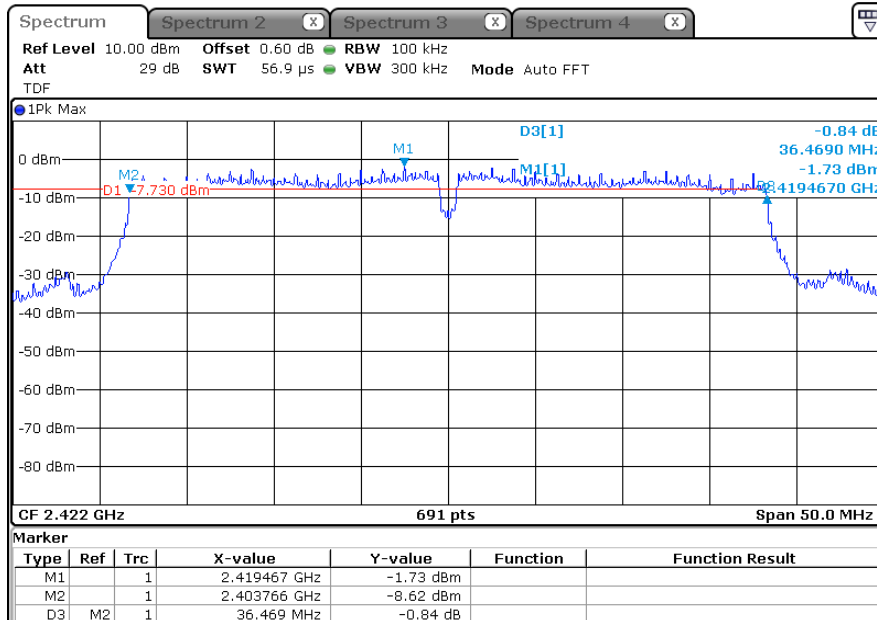
Highest Channel (2 452 MHz)



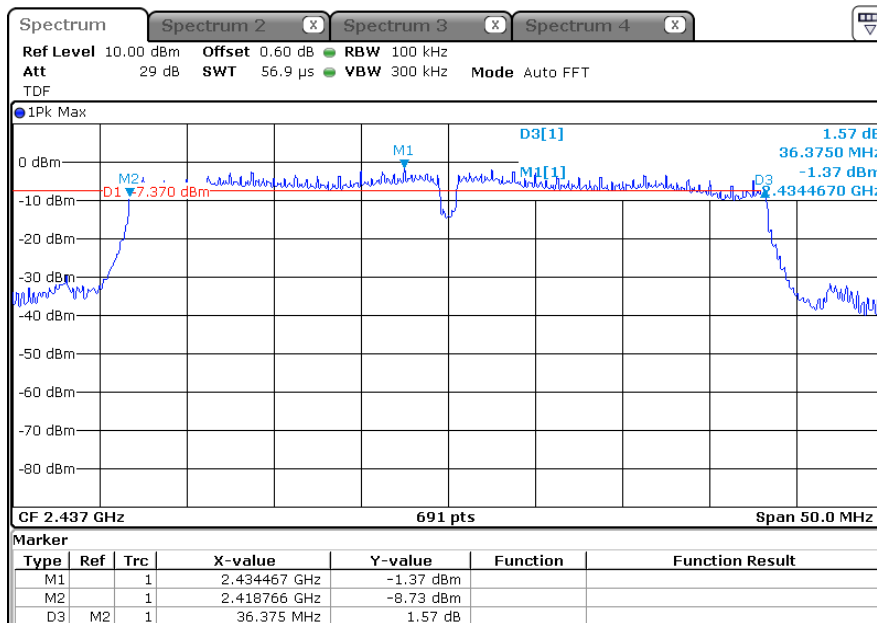


**\* 802.11n HT40\_MIMO (ANT 2) (6 dB Bandwidth)**

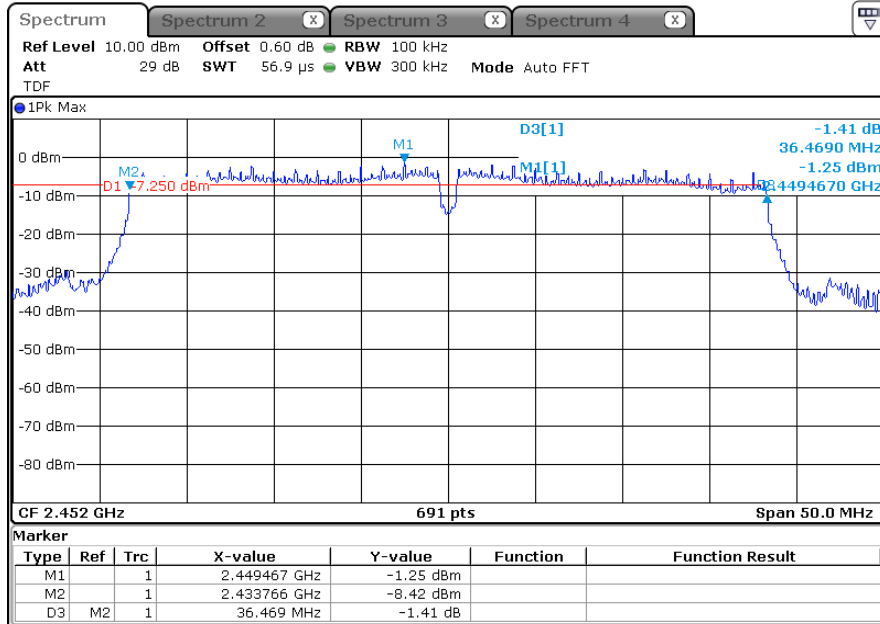
Lowest Channel (2 422 MHz)



Middle Channel (2 437 MHz)

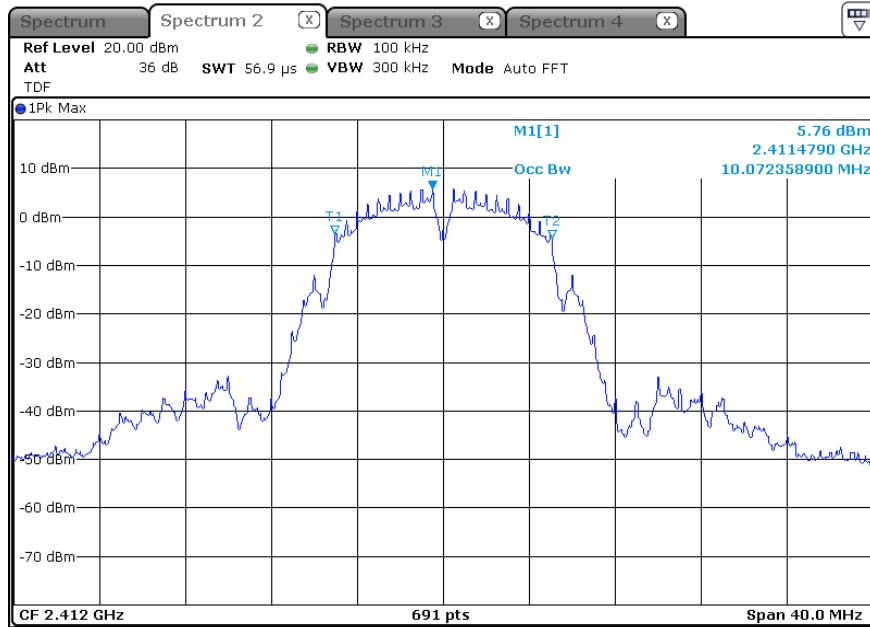


Highest Channel (2 452 MHz)

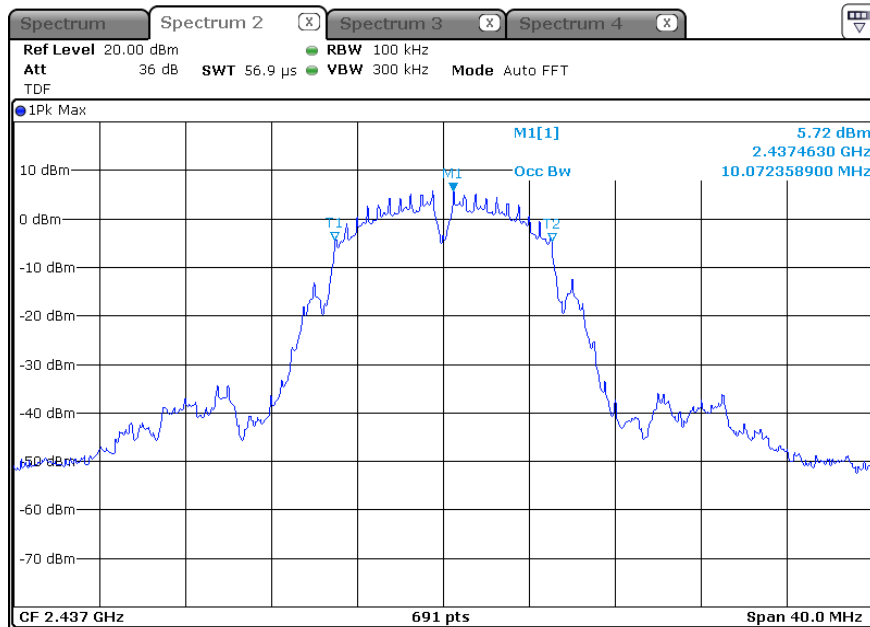


**\* 802.11b (Occupied Bandwidth)**

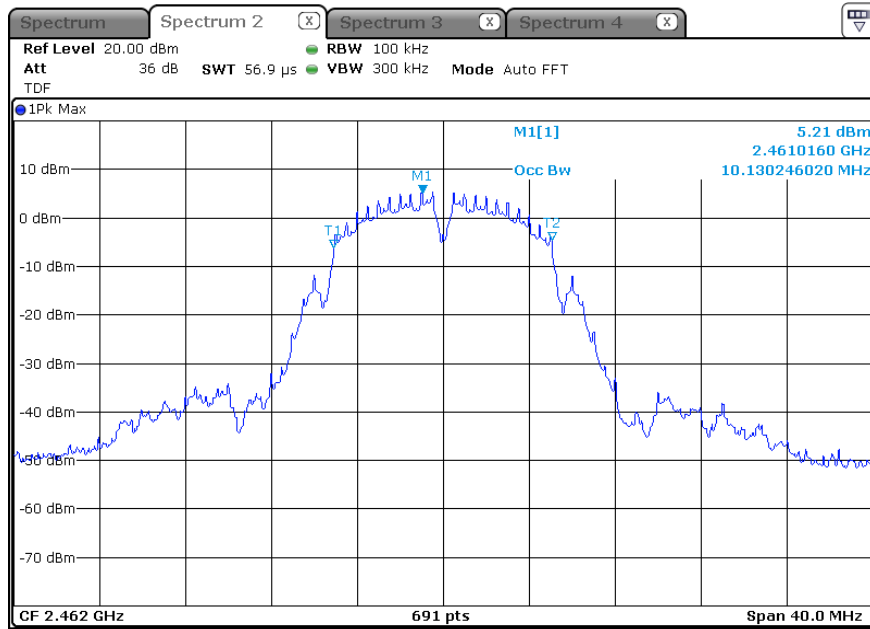
Lowest Channel (2 412 MHz)



Middle Channel (2 437 MHz)

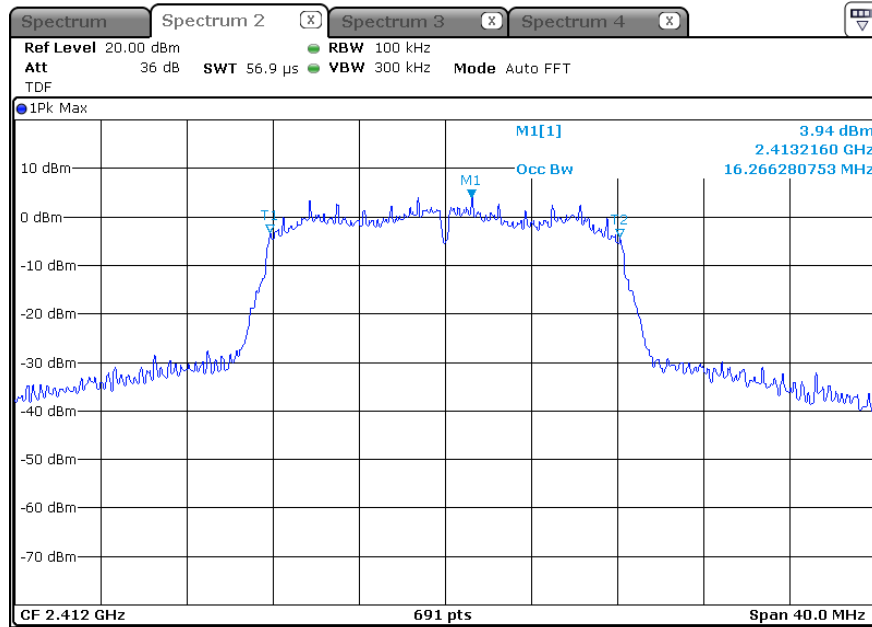


Highest Channel (2 462 MHz)

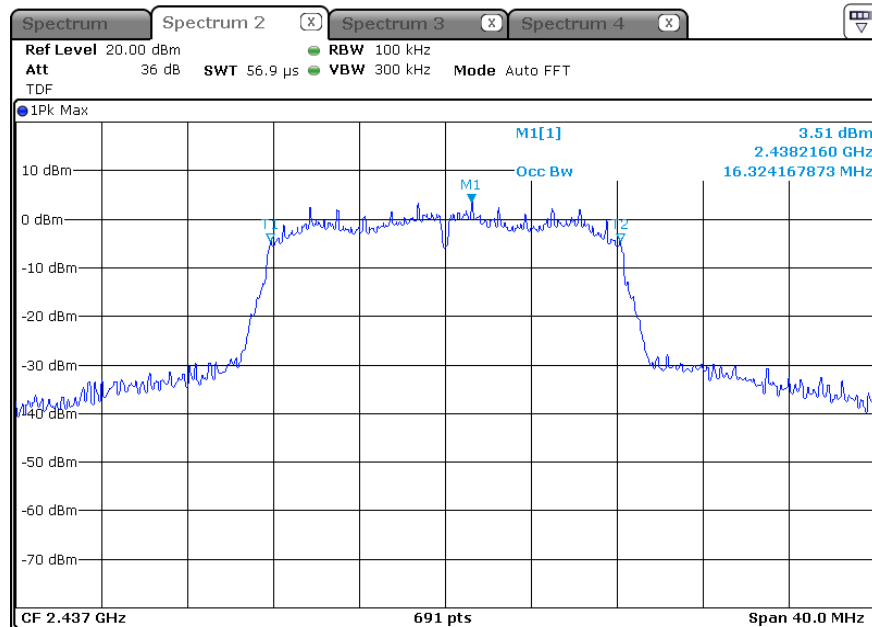


**\* 802.11g (Occupied Bandwidth)**

Lowest Channel (2 412 MHz)



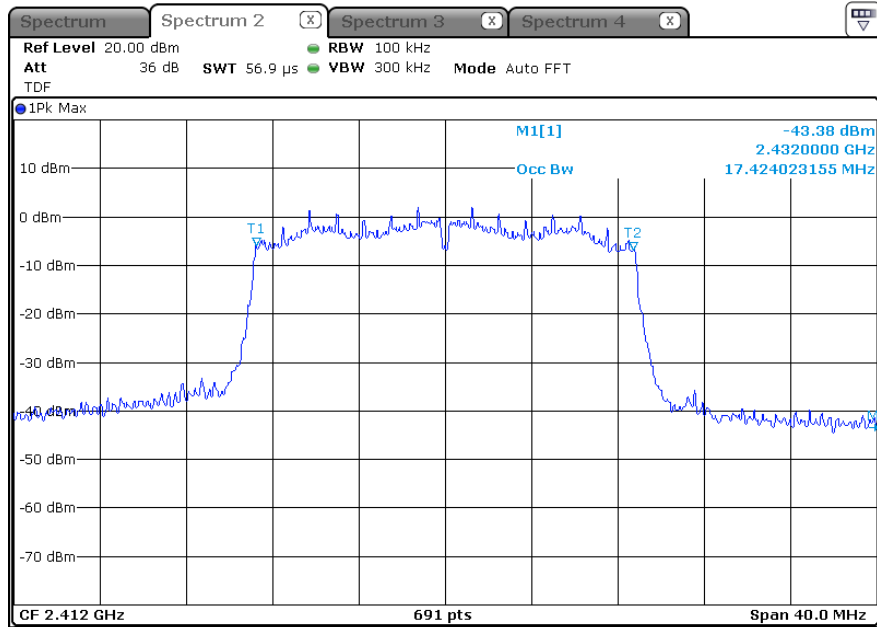
Middle Channel (2 437 MHz)



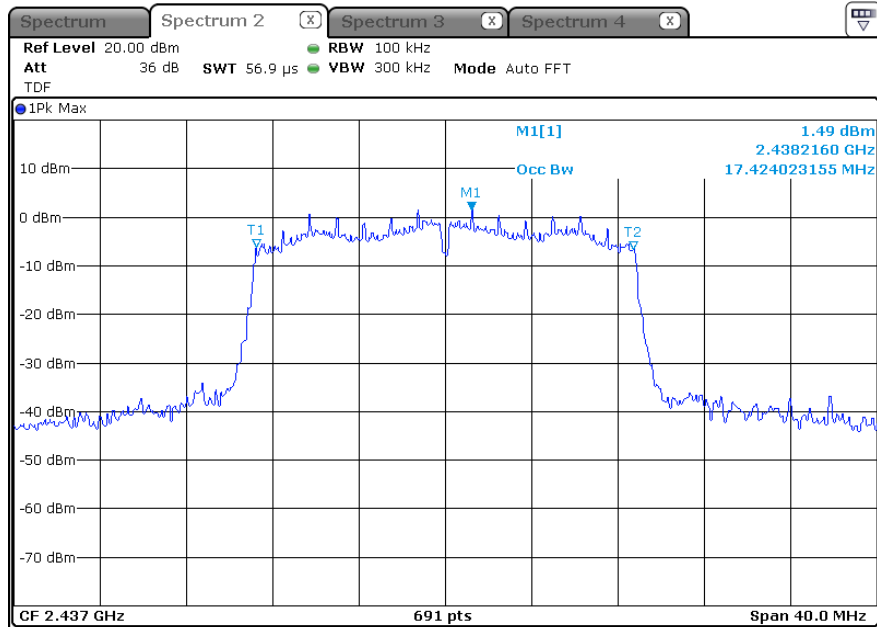


**\* 802.11n HT20 (Occupied Bandwidth)**

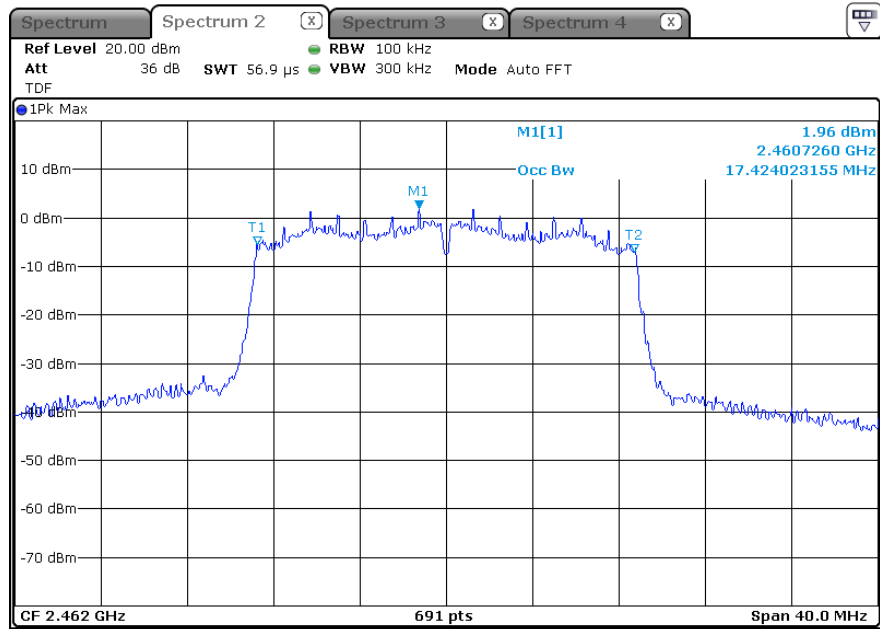
Lowest Channel (2 412 MHz)



Middle Channel (2 437 MHz)



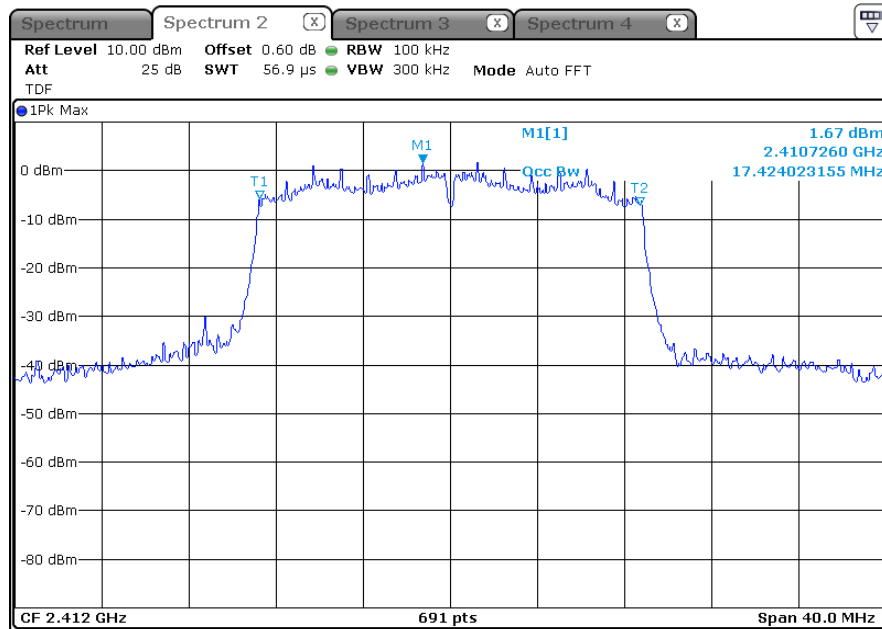
Highest Channel (2 462 MHz)



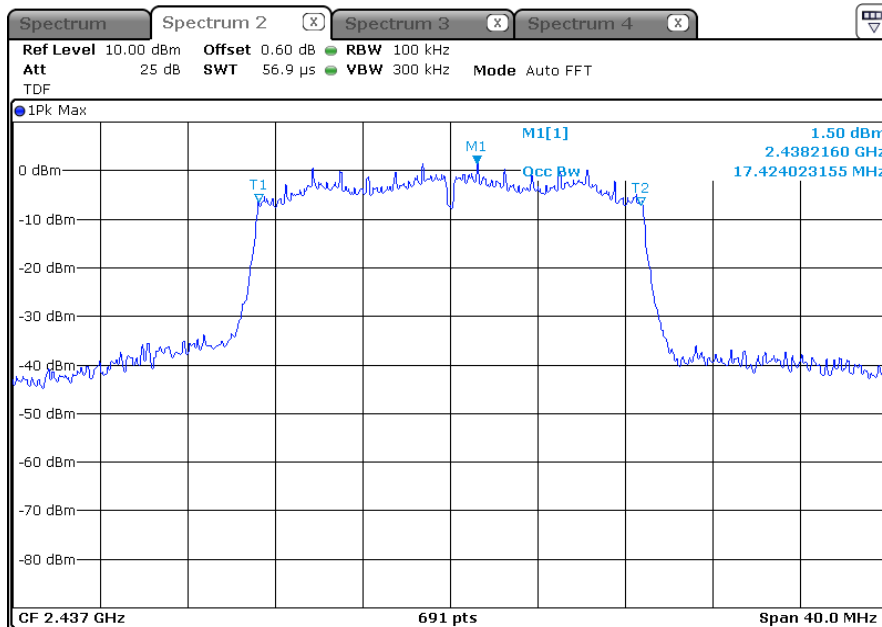


**\* 802.11n HT20\_MIMO (ANT 1) (Occupied Bandwidth)**

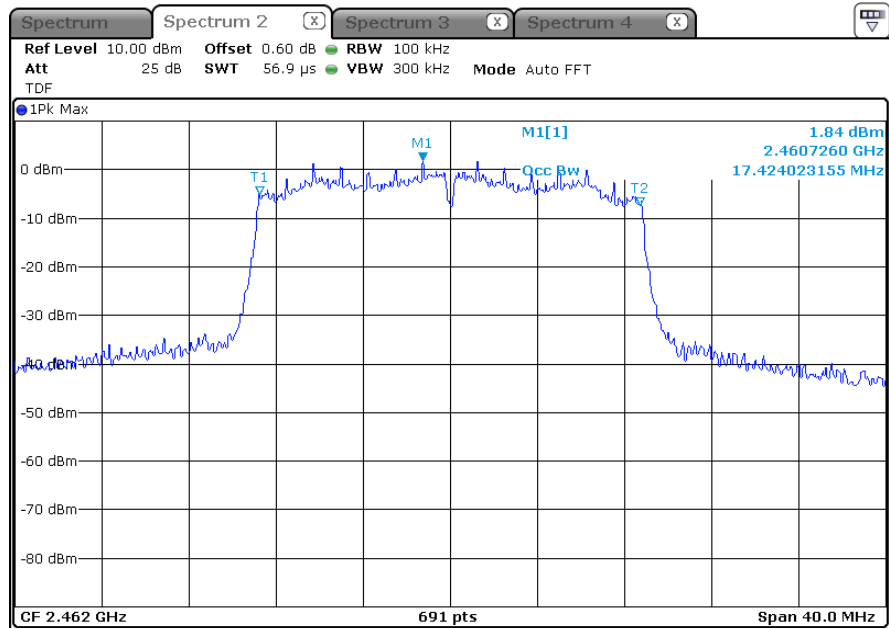
Lowest Channel (2 412 MHz)



Middle Channel (2 437 MHz)

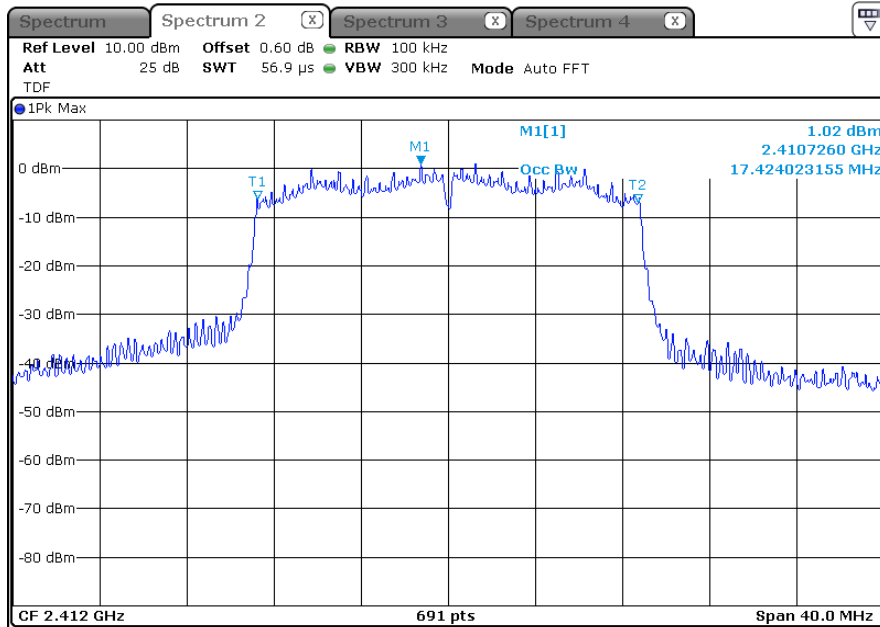


Highest Channel (2 462 MHz)

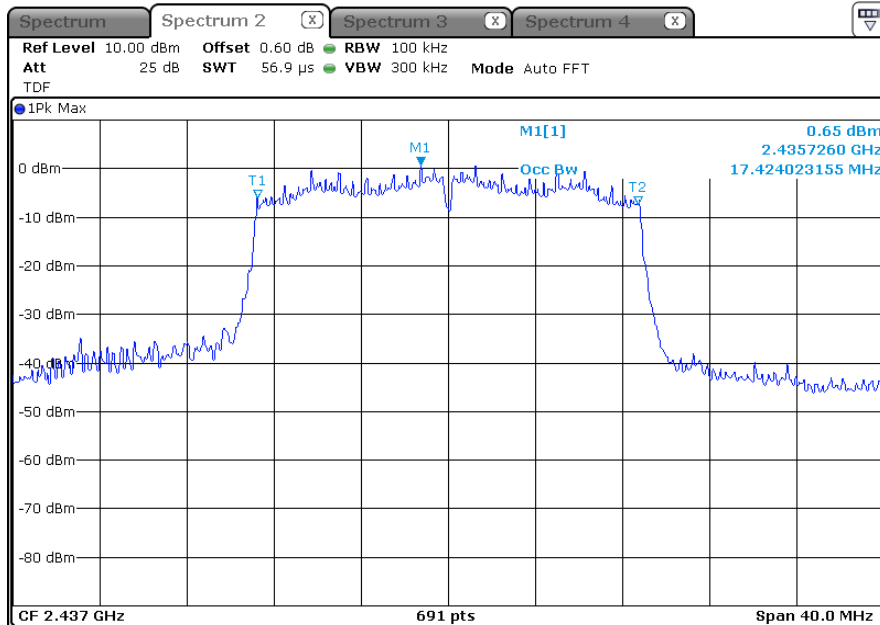


**\* 802.11n HT20\_MIMO (ANT 2) (Occupied Bandwidth)**

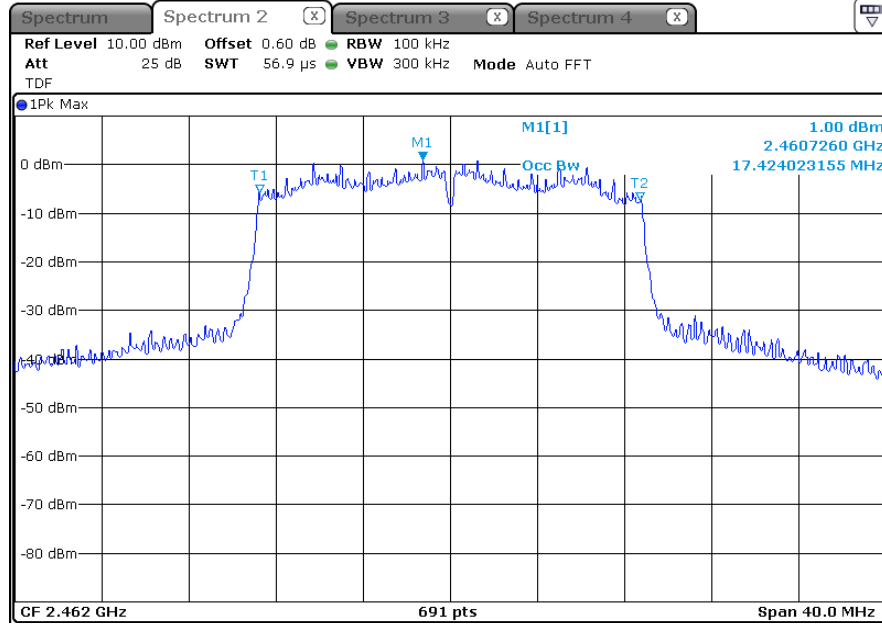
Lowest Channel (2 412 MHz)



Middle Channel (2 437 MHz)

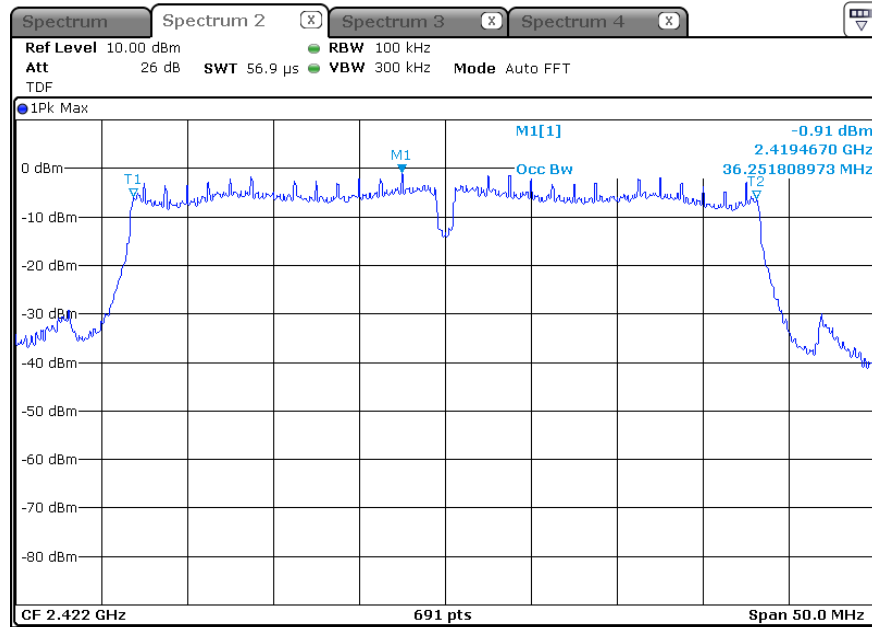


Highest Channel (2 462 MHz)

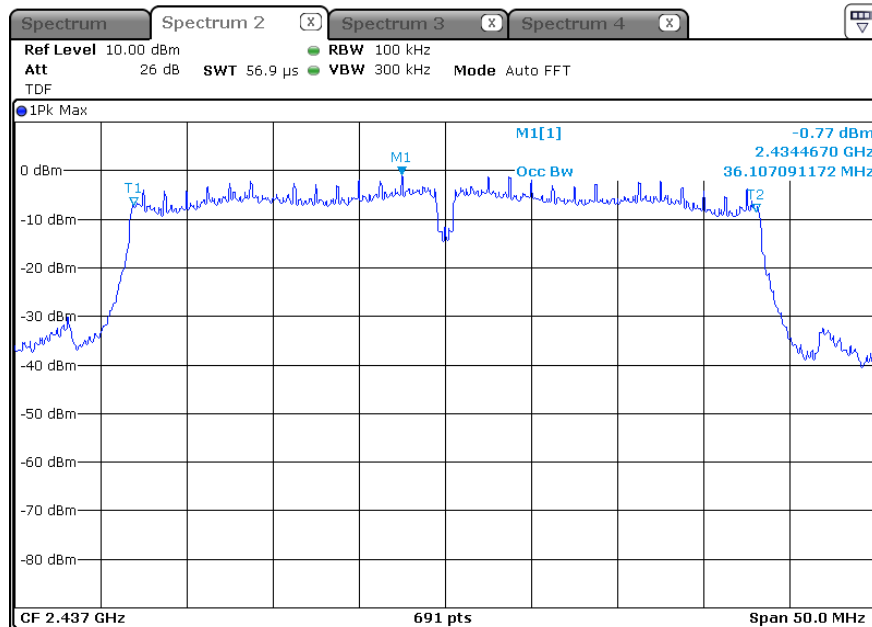


**\* 802.11n HT40 (Occupied Bandwidth)**

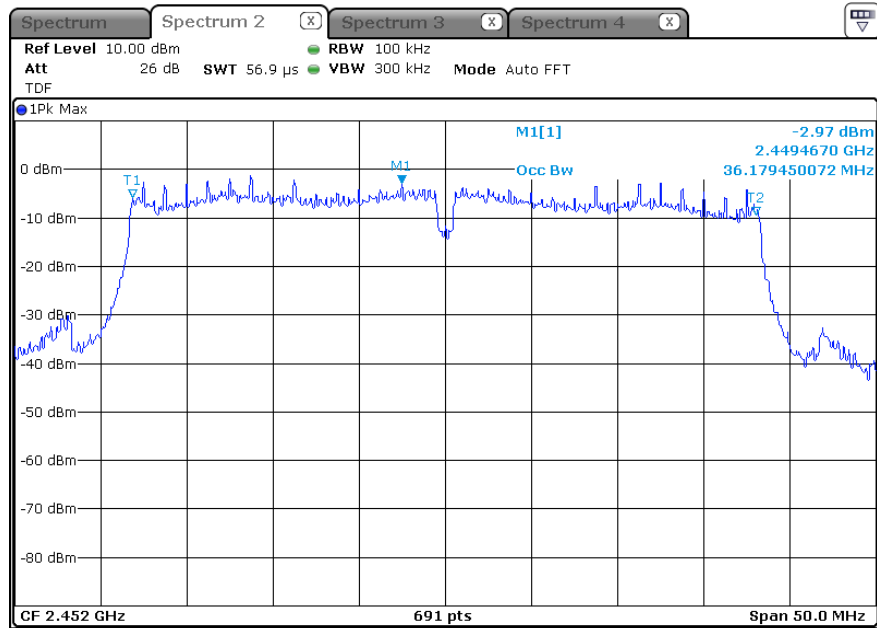
Lowest Channel (2 422 MHz)



Middle Channel (2 437 MHz)

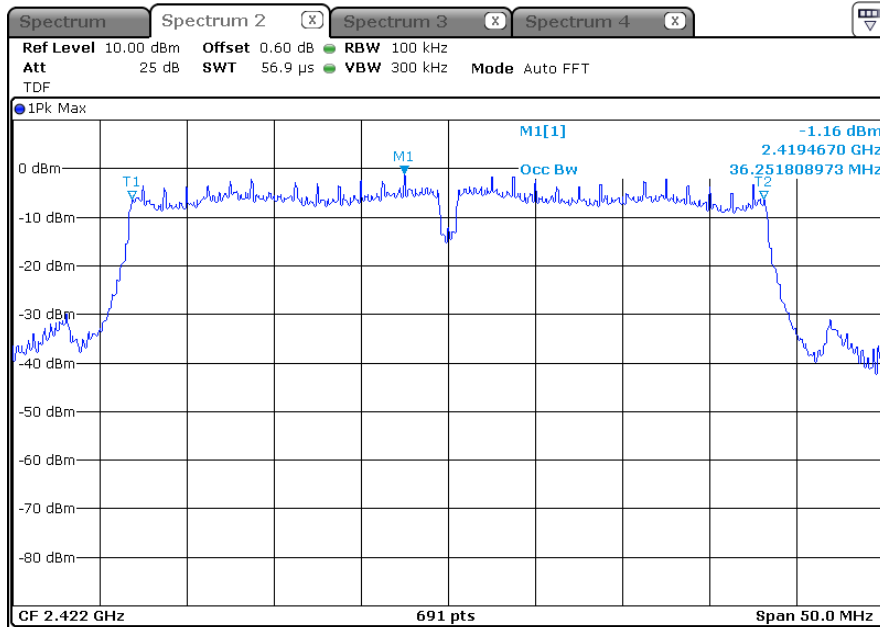


Highest Channel (2 452 MHz)

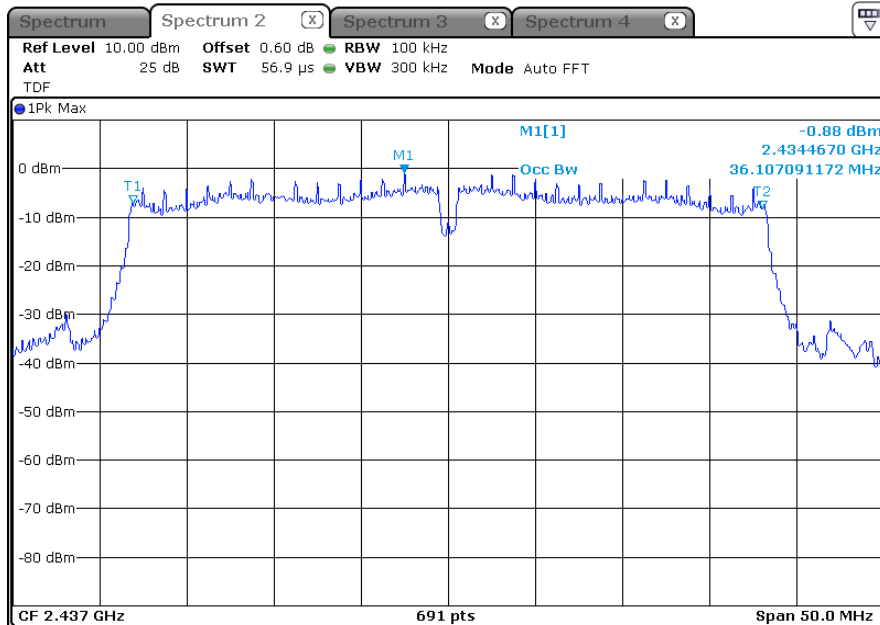


**\* 802.11n HT40\_MIMO (ANT 1) (Occupied Bandwidth)**

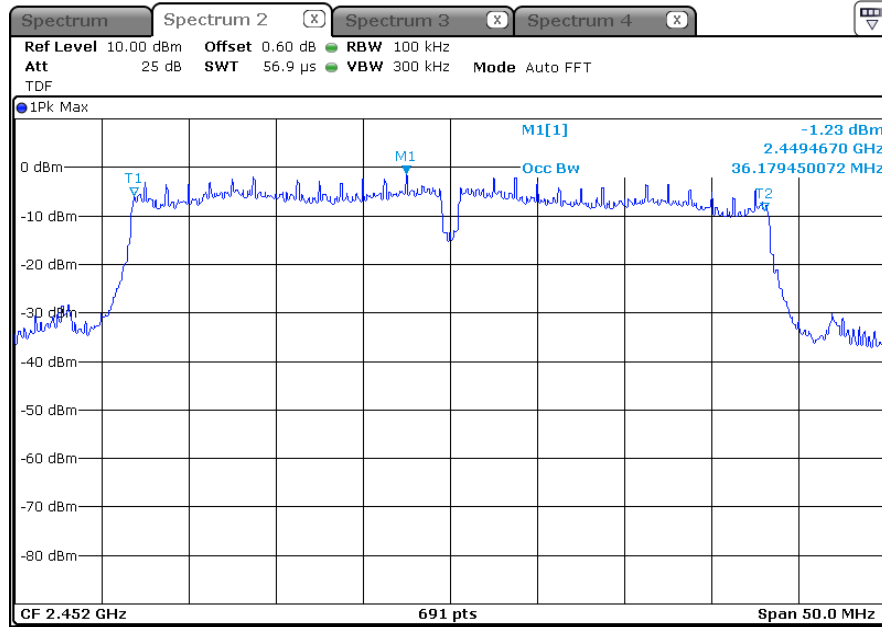
Lowest Channel (2 422 MHz)



Middle Channel (2 437 MHz)



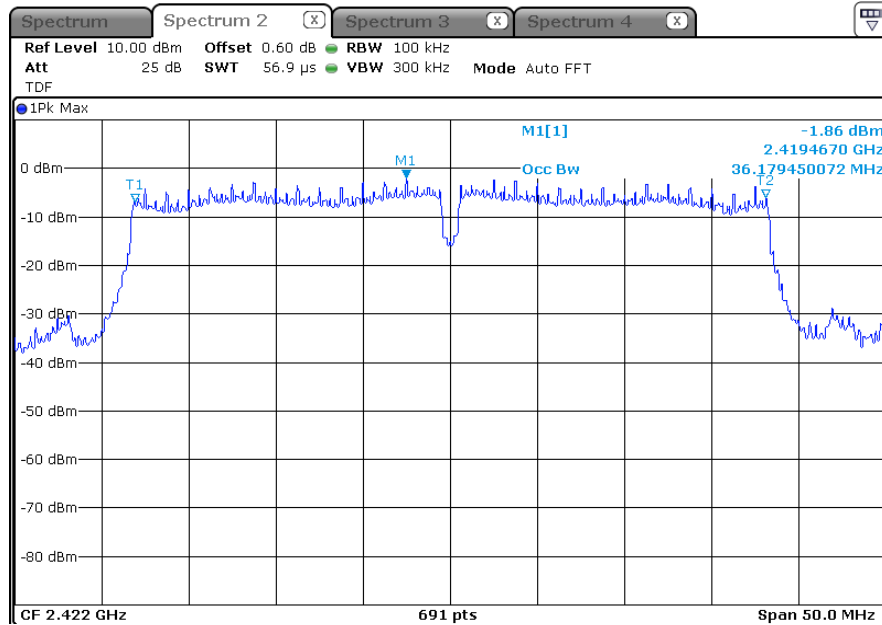
Highest Channel (2 452 MHz)



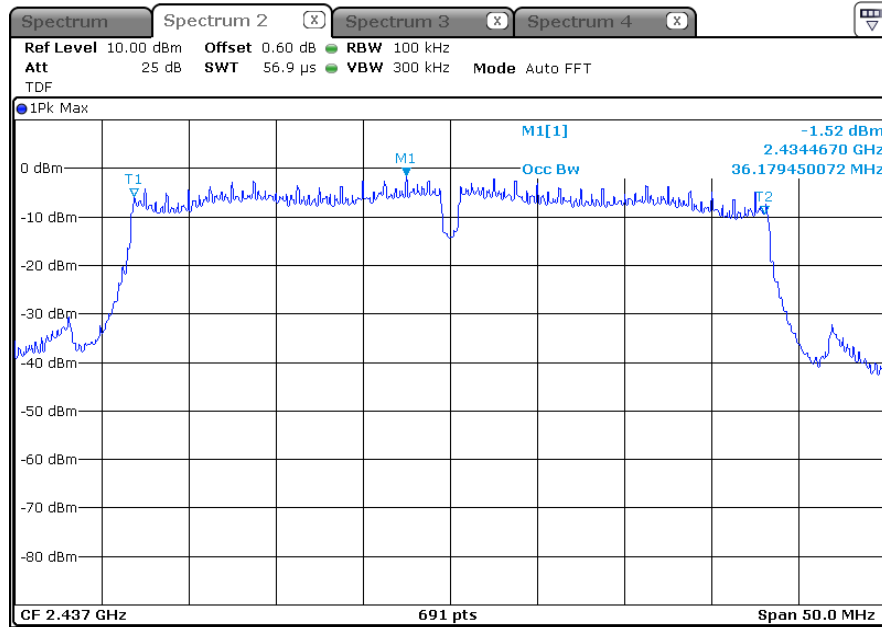


**\* 802.11n HT40\_MIMO (ANT 2) (Occupied Bandwidth)**

Lowest Channel (2 422 MHz)



Middle Channel (2 437 MHz)



Highest Channel (2 452 MHz)

