Prüfbericht-Nr.: *Test report No.:*	**50089764 001**	**Auftrags-Nr.:** *Order No.:*	164093763	Seite 1 von 26 *Page 1 of 26*
Kunden-Referenz-Nr.: *Client reference No.:*	N/A	**Auftragsdatum:** *Order date:*	15.05.2017	
Auftraggeber: *Client:*	**Powervision Robot Inc.** 1st floor, Building NO.33 YUNGU park, No.79 SHUANGYING west road, Technology Park, Changping District, Beijing 102299, P.R. China			
Prüfgegenstand: *Test item:*	Datalink			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	DL01 (Trademark: PowerVision)			
Auftrags-Inhalt: *Order content:*	FCC & IC approval			
Prüfgrundlage: *Test specification:*	CFR47 FCC Part 15: Subpart C Section 15.247 CFR47 FCC Part 15: Subpart C Section 15.209 CFR47 FCC Part 15: Subpart C Section 15.207 CFR47 FCC Part 2: Section 2.1091 CFR47 FCC Part 1: Section 1.1310 FCC KDB publication 447498 D01 v06		RSS-247 Issue 2 February 2017 RSS-Gen Issue 4 November 2014 RSS-102 Issue 5 March 2015	
Wareneingangsdatum: *Date of receipt:*	15.05.2017	Please refer to photo documents		
Prüfmuster-Nr.: *Test sample No.:*	A000527465-001 to 003			
Prüfzeitraum: *Testing period:*	15.05.2017 - 25.09.2017			
Ort der Prüfung: *Place of testing:*	EMTEK(Shenzhen) Co., Ltd.			
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: *Test result*:*	Pass			

geprüft von / *tested by:*			**kontrolliert von / *reviewed by:***		
11.10.2017	Alex Lan / Project Engineer	Alex Lan	11.10.2017	Owen Tian / Technical Certifier	Owen Tian
Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*	**Datum** *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

Sonstiges / *Other:*

FCC ID: 2AJTNDL01
IC: 22057-DL01, HVIN: DL01

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged:*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	1 = very good	2 = good	3 = satisfactory	4 = sufficient	5 = poor
	P(ass) = passed a.m. test specifications(s)		F(ail) = failed a.m. test specifications(s)	N/A = not applicable	N/T = not tested

Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.

This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.

Test Summary

5.1.1 ANTENNA REQUIREMENT
RESULT: Pass

5.1.2 MAXIMUM CONDUCTED OUTPUT POWER
RESULT: Pass

5.1.3 CONDUCTED POWER SPECTRAL DENSITY
RESULT: Pass

5.1.4 6DB BANDWIDTH
RESULT: Pass

5.1.5 99% BANDWIDTH
RESULT: Pass

5.1.6 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHZ BANDWIDTH
RESULT: Pass

5.1.7 RADIATED SPURIOUS EMISSION
RESULT: Pass

5.1.8 CONDUCTED EMISSION
RESULT: Pass

6.1.1 ELECTROMAGNETIC FIELDS
RESULT: Pass

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1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Test Results of Conducted Testing

Appendix B: Test Results of Radiated Testing

2 Test Sites

2.1 Test Facilities

EMTEK(Shenzhen) Co., Ltd.

Bldg. 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China.

FCC Registration No.: 406365

Test site Industry Canada No.: 4088A-2

The tests at the test sites have been conducted under the supervision of a TÜV engineer.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radio Spectrum Test				
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Until**
EMI Test Receiver	Rohde & Schwarz	ESCI	101045	21.05.2018
Vector Signal Generater	Agilent	N5182B	My53050553	20.05.2018
Analog Signal Generator	Agilent	N5171B	My53050878	20.05.2018
Signal Analyzer	Agilent	N9010A	My53470879	21.05.2018
Power Analyzer	Agilent	PS-X10-200	N/A	21.05.2018
Test Accessories	Agilent	PS-X10-100	N/A	20.05.2018
Temp. / Humidity Chamber	Kingson	THS-M1	242	20.05.2018
Spurious Emission				
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Until**
EMI Test Receiver	Rohde & Schwarz	ESU	1302.6005.26	20.05.2018
Pre-Amplifier	HP	8447D	2944A07999	20.05.2018
Bilog Antenna	Schwarzbeck	VULB9163	142	21.05.2018
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170399	21.05.2018
Horn Antenna	Schwarzbeck	BBHA 9120	D143	21.05.2018
Cable	Schwarzbeck	AK9513	ACRX1	21.05.2018
Cable	Rosenberger	N/A	FP2RX2	21.05.2018
Cable	Schwarzbeck	AK9513	CRPX1	21.05.2018
Cable	Schwarzbeck	AK9513	CRRX2	21.05.2018
Pre-Amplifier	LUNAR-EM	LNA30M3G-25	J10100000070	20.05.2018
EMI Test Receiver	Rohde & Schwarz	ESU	1302.6005.26	20.05.2018
Conducted Emission on AC Mains				
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Until**
Test Receiver	Rohde & Schwarz	ESCI	26115-010-0027	19.05.2018
L.I.S.N.	Rohde & Schwarz	ENV216	101161	19.05.2018
50Ω Coaxial Switch	Anritsu	MP59B	6100175589	20.05.2018
Voltage Probe	Rohde & Schwarz	ESH2-Z3	100122	20.05.2018

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basics using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Item		Extended Uncertainty
Conducted Emission		± 2.74 dB
Radiated Emission (30-1000MHz)	Field strength (dBµV/m)	4.27dB
Radiated Emission (above 1000MHz)	Field strength (dBµV/m)	4.46dB
Radio Spectrum		± 1.5 dB

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The Emtek (Shenzhen) Co., Ltd. Test facility located at Bldg. 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China. is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUT is IEEE 802.11 b/g/n 2.4GHz module with two stream MIMO.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

General Information of EUT	Value	
Kind of Equipment	Datalink	
Type Designation	DL01	
Trade Mark	PowerVision	
FCC ID:	2AJTNDL01	
IC:	22057-DL01	
HVIN:	DL01	
Operating Voltage	DC 3.3V and 5V via debug board for module DC 5V via Adapter for debug board	
Testing Voltage	AC 120V, 60Hz	
Technical Specification of Wi-Fi 802.11 b/g/n		
Equiupment Class:	DTS	
Operating Frequency	2412 - 2462 MHz for 802.11b/g/n(HT20)	
Type of Modulation	DSSS(DBPSK/DQPSK/CCK) OFDM(BPSK/QPSK/16QAM/64QAM)	
Data Rate	1/2/5.5/11 Mbps for 802.11b 6/9/12/18/24/36/48/54 Mbps for 802.11g MCS0 ~ MCS15 for 802.11n(HT20)	
Channel Number	11 channels for 802.11b/g/n(HT20)	
Channel Separation	5 MHz	
Antenna Type	Integral Antenna	
Smart Antenna Systems:	Applicable	
Number of Antenna:	4	
Antenna Gain:	0 dBi for each antenna	
Maximum Number of Transmission chains	802.11b/g	1
	802.11n(HT20)	2

Table 3: RF Channel and Frequency of Wi-Fi 802.11 b/g/n

RF Channel and Frequency of Wi-Fi b/g/n(HT20)					
RF Channel	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**
01	**2412**	05	2432	09	2452
02	2417	**06**	**2437**	10	2457
03	2422	07	2442	**11**	**2462**
04	2427	08	2447	/	/

Test frequencies are lowest channel: 2412 MHz, middle channel: 2437 MHz and highest channel: 2462 MHz for 802.11b/g/n(HT20)

3.3 Independent Operation Modes

The basic operation modes are:

A. On, Wi-Fi 802.11 b/g/n wireless transmitting
   1. Low channel
   2. Middle channel
   3. High channel

B. DC power supply via adapter

C. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Application Form
- Block Diagram
- Rating Label
- Operation Description
- Photo Document
- Schematics
- User Manual

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.10: 2013 and ANSI C63.4: 2014.

Table 4: Antenna operation modes

Operating Mode	1Tx/1Rx	2Tx/2Rx
802.11b/g	Ant0; ANT1; ANT2; ANT3	
802.11n(HT20)	Ant0; ANT1; ANT2; ANT3	Ant0+Ant2; ANT0+ANT3; ANT1+ANT2; ANT1+ANT3

Table 5: List of Frequencies under Test, 802.11b/g/n

802.11b/g/n-HT20				
Test Channel	Channel Number	Frequency (MHz)	Power Setting	Remark
Low	1	2412	Default	802.11b_ANT0: 1Mbps 802.11g_ANT0: 6Mbps 802.11n-HT20_ANT0: MCS0 802.11n-HT20_ANT1: MCS0
Middle	6	2437	Default	
High	11	2462	Default	

Note: All operation modes have been pre-scanning test and the above mode is the worst case of test mode.

4.3 Special Accessories and Auxiliary Equipment

Table 6: List of Auxiliary Equipment

Description	Manufacturer	Model	S/N
Notebook	Lenovo	Lenovo ideapad 300S-14ISK	R90J1L2K
Adapter	LANCHEN	PS12A050K2400JD	N/A

Table 7: The EUT was tested with following antenna:

Antenna Type	Antenna Gain
PCB Layout Antenna	2.2 dBi for each antenna

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

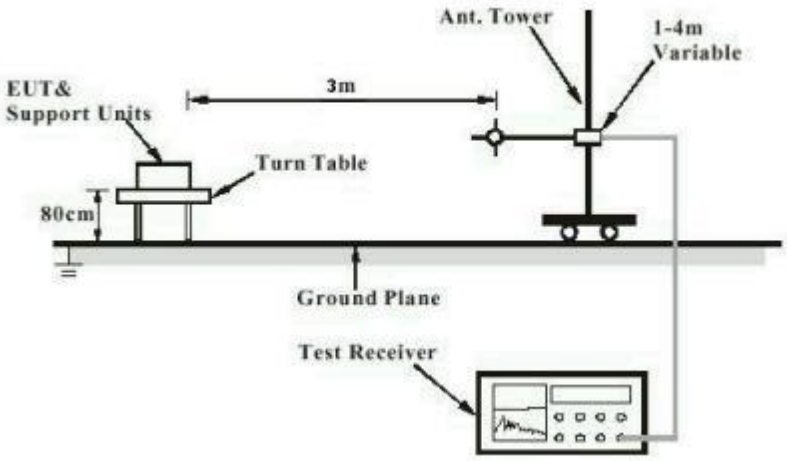


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

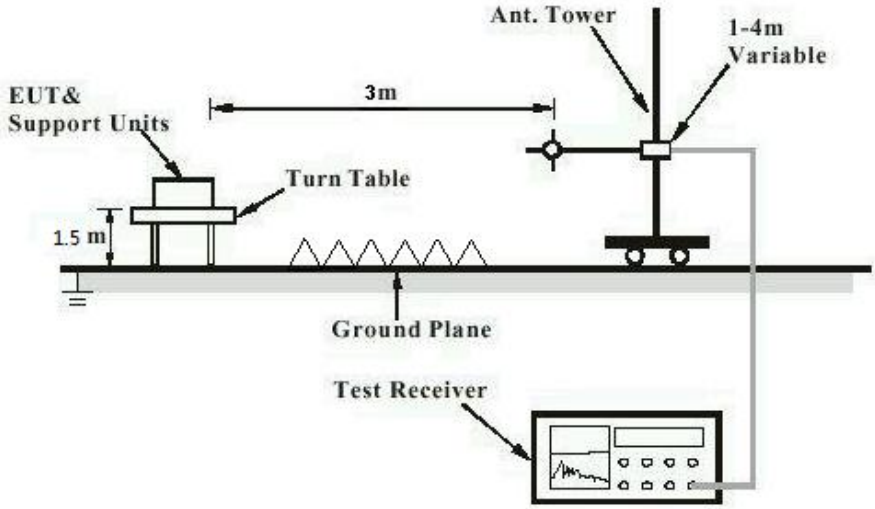


Diagram of Measurement Configuration for Mains Conduction Measurement

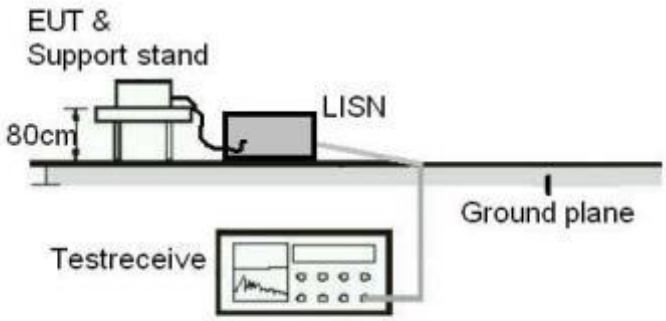
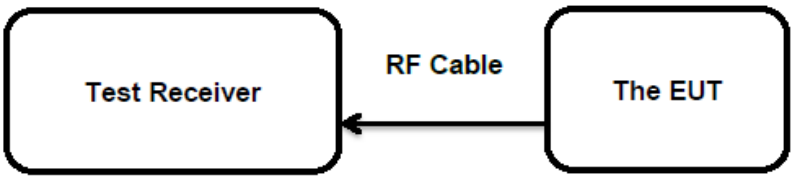


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(b)(4) and Part 15.203
Limit	:	the use of antennas with directional gains that do not exceed 6 dBi

According to the manufacturer declared, the EUT has four antenna connecter, allowed the maximum directional gain of antenna is 2.2dBi for each antenna, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to compliance the provision.

Refer to EUT Photo for further details.

5.1.2 Maximum conducted output power

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(b)(3)
		RSS-247 Clause 5.4(d)
Basic standard	:	ANSI C63.10: 2013
Limits	:	1.0 Watts
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	02.06.2017
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

For details refer to following test result.

Table 8: Maximum conducted (average) output power

Maximum Conducted Output Power_802.11b/g

Channel	Channel Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit(dBm)	Verdict
1 (802.11b)	2412	27.82	30	Pass
6 (802.11b)	2437	27.55	30	Pass
11 (802.11b)	2462	27.49	30	Pass
1 (802.11g)	2412	26.58	30	Pass
6 (802.11g)	2437	26.63	30	Pass
11 (802.11g)	2462	26.50	30	Pass

Maximum Conducted Output Power_802.11n HT20

Channel	Channel Frequency (MHz)	Maximum Conducted Output Power_ANT0 (dBm)	Maximum Conducted Output Power_ANT 2 (dBm)	Maximum Conducted Output Power_Total (dBm)	Limit(dBm)	Verdict
1 (802.11n-HT20)	2412	24.88	24.74	27.82	30	Pass
6 (802.11n-HT20)	2437	24.73	24.80	27.78	30	Pass
11 (802.11n-HT20)	2462	24.78	24.77	27.79	30	Pass

The maximum e.i.r.p. is 33.03dBm less than 4W (36dBm).

5.1.3 Conducted Power Spectral Density

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(e)
		RSS-247 Clause 5.2(b)
Basic standard	:	ANSI C63.10: 2013
Limits	:	8 dBm / 3kHz
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	02.06.2017
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.4 6dB Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(a)(2)
		RSS-247 Clause 5.2(a)
Basic standard	:	ANSI C63.10: 2013
Limits	:	> 500 KHz
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	02.06.2017
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.5 99% Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	RSS-Gen Clause 6.6
Basic standard	:	ANSI C63.10: 2013
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	25.09.2017
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.6 Conducted Spurious Emissions Measured in 100 kHz Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(d) RSS-247 Clause 5.5
Basic standard	:	ANSI C63.10: 2013
Limits	:	30dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	02.06.2017
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.7 Radiated Spurious Emission

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(d) & FCC Part 15.205 RSS-247 Clause 3.3
Basic standard	:	ANSI C63.10: 2013
Limits	:	Refer to 15.209(a) of FCC part 15.247(d) RSS-Gen Issue 4 Table 4
Kind of test site	:	3m Semi-anechoic Chamber

Test Setup

Date of testing	:	08.06.2017
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	23℃
Relative humidity	:	48%
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B.

5.1.8 Conducted Emission

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.207(a) RSS-Gen Clause 8.8
Basic standard	:	ANSI C63.10: 2013
Frequency range	:	0.15 – 30MHz
Limits	:	FCC Part 15.207(a) RSS-Gen Table 3
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	08.06.2017
Input voltage	:	AC 120V, 60Hz
Operation mode	:	B
Earthing	:	Not connected
Ambient temperature	:	23 ℃
Relative humidity	:	48 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B.

6 Safety Human Exposure

6.1 Radio Frequency Exposure Compliance

6.1.1 Electromagnetic Fields

RESULT: **Pass**

Test Specification

Test standard	:	CFR47 FCC Part 2: Section 2.1091 CFR47 FCC Part 1: Section 1.1310 FCC KDB Publication 447498 v06 OET Bulletin 65 (Edition 97-01) RSS-102 Issue 5 March 2015

➢ **FCC requirements**

FCC requirement: Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 20cm normally can be maintained between the user and the device.

MPE Calculation Method according to OET Bulletin 65

Power Density: $S_{(mW/cm^2)} = PG/4\pi R^2$ or $EIRP/4\pi R^2$

Where:

S = power density (mW/cm^2)

P = power input to the antenna (mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna (cm)

The nominal maximum conducted output power specified:

802.11n-HT20: 28.00 dBm

From the peak RF output power, the minimum mobile separation distance, d=20 cm, as well as the antenna gain (Max. and 5.2 dBi 802.11n-HT20), the RF power density can be calculated as below:

For 802.11n-HT20: $\mathbf{S_{(mW/cm^2)} = PG/4\pi R^2 =}$ 0.417 mW/cm^2

The MPE limit is 1.0 mWcm-2 for general population and uncontrolled exposure in the 1,500-100,000MHz frequency range according to FCC Part 1.1310. As the measured power density at 20cm from the transmitter is lower than the MPE limit, the compliance to the MPE limit can be ensured by indicating the minimum 20cm separation between the transmitter's radiating structure and body of the user or nearby persons.

- **IC requirements:** The EUT shall comply with the requirement of RSS-102 section 2.5.2.

Exemption from Routine Evaluation Limits – RF Exposure Evaluation
RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1.31 x 10^{-2} $f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;

- RF exposure evaluation exempted power for 802.11b/g/n: 2.684 W

The nominal maximum conducted output power specified:

Antenna Gain: 5.21 dBi for 802.11n HT20 mode

The Max. e.i.r.p. for 802.11n HT20 mode: 33.21 dBm = 2.094 W

Since e.i.r.p. for the 802.11b/g/n is less than the RF exposure evaluation exempted power. So RF exposure evaluation is not required.

"RF Radiation Exposure Statement Caution: This Transmitter must be installed to provide a separation distance of at least 20 cm from all persons."

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1. 6dB Bandwidth

1.1 Test Datas of 6dB Bandwidth

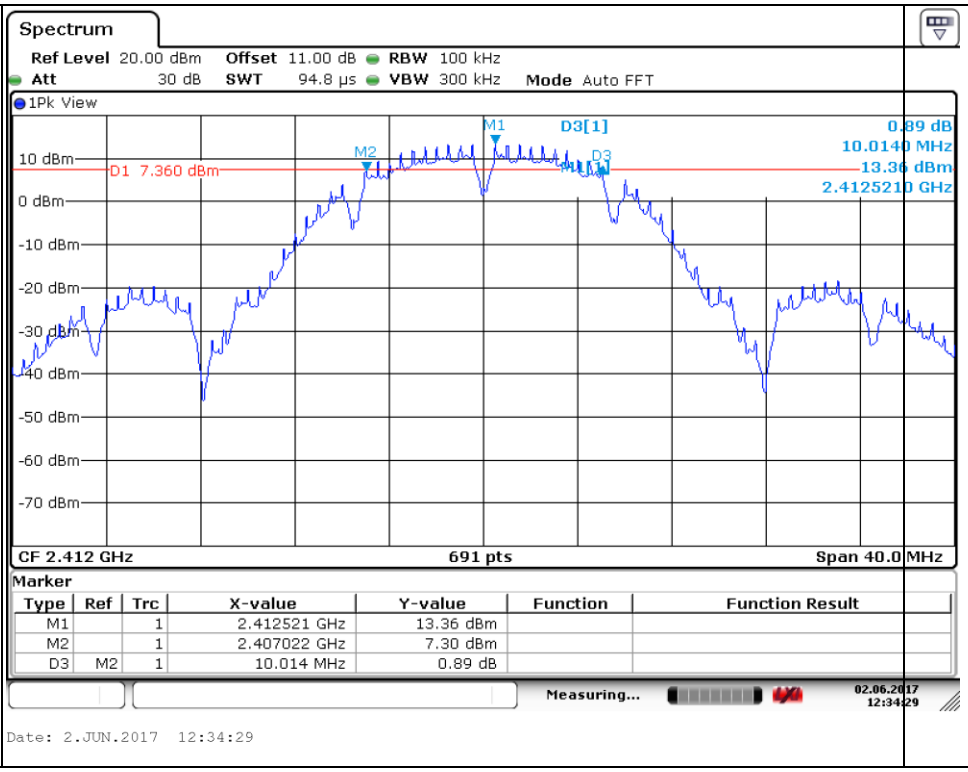
Channel (mode)	Channel Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Result
		Ant0		
1 (802.11b)	2412	10.14	>0.5	Pass
6 (802.11b)	2437	10.07	>0.5	Pass
11 (802.11b)	2462	10.07	>0.5	Pass
1 (802.11g)	2412	14.99	>0.5	Pass
6 (802.11g)	2437	15.11	>0.5	Pass
11 (802.11g)	2462	15.92	>0.5	Pass

Channel (mode)	Channel Frequency (MHz)	6dB Bandwidth (MHz)		Limit (MHz)	Result
		Ant0	Ant2		
1 (802.11n-HT20)	2412	14.24	15.11	>0.5	Pass
6 (802.11n-HT20)	2437	15.11	15.11	>0.5	Pass
11 (802.11n-HT20)	2462	15.17	15.17	>0.5	Pass

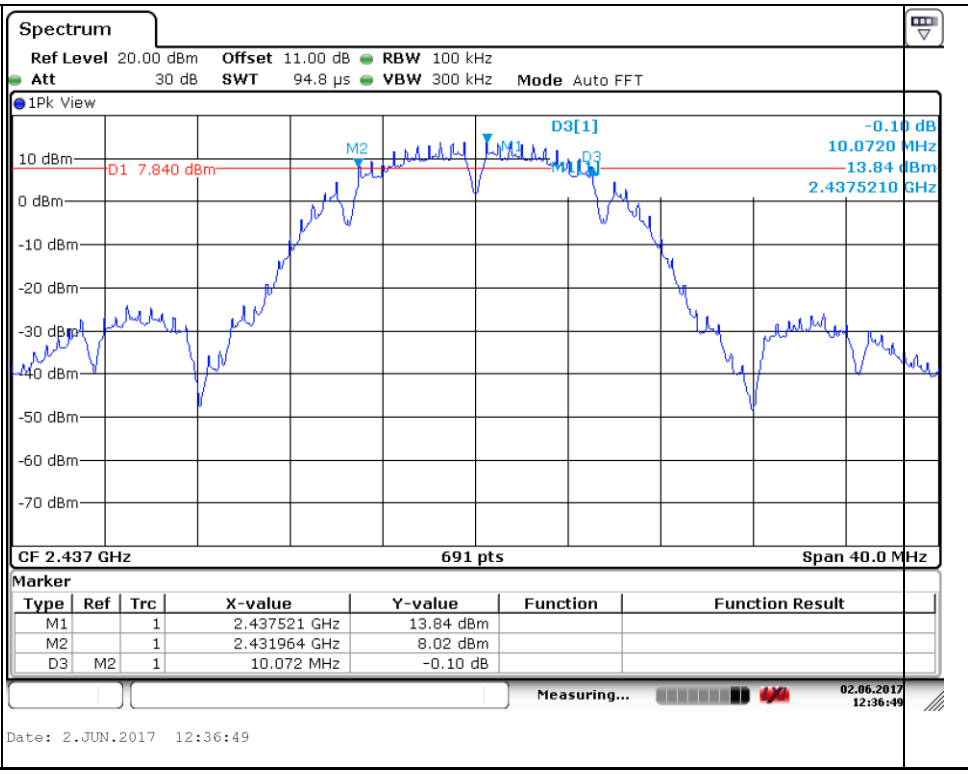
1.2 Test Graphs of 6dB Bandwidth

802.11b, SISO, Ant0

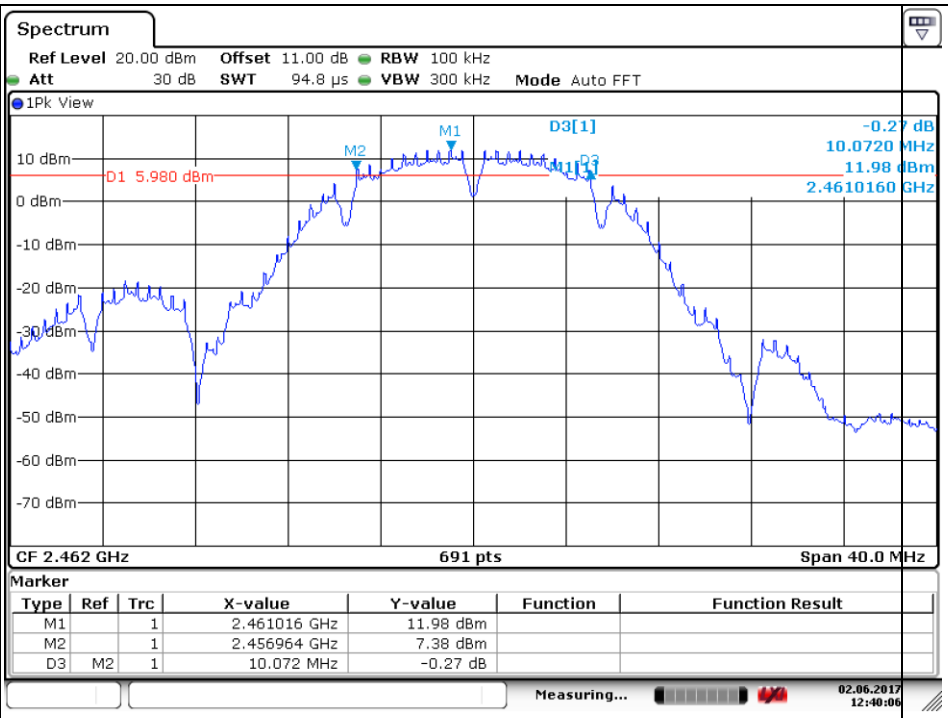
Low Channel 6dB Bandwidth



Middle Channel 6dB Bandwidth

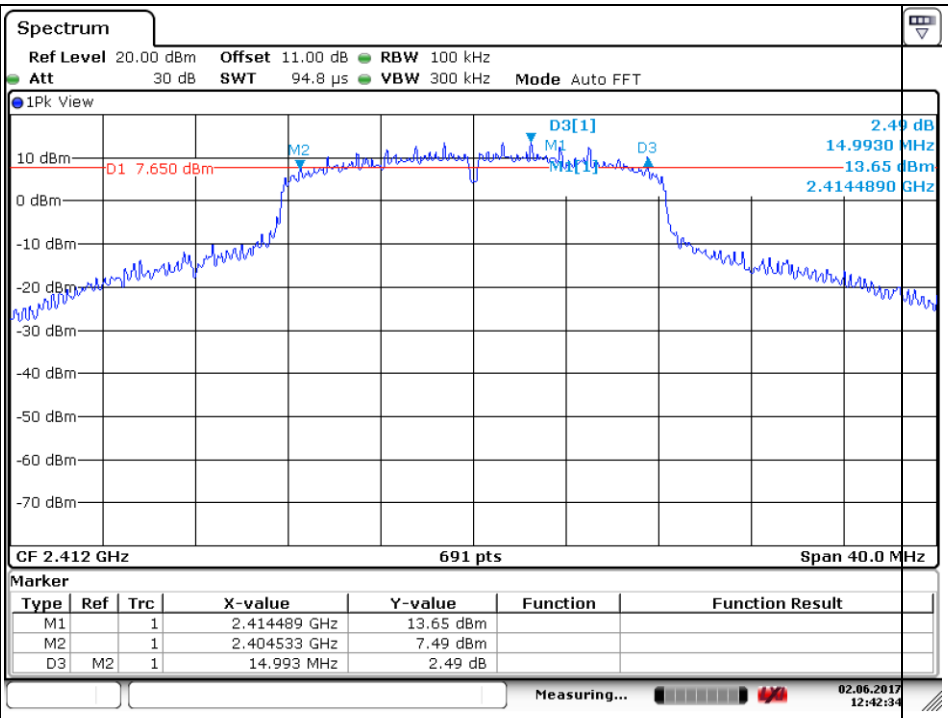


High Channel 6dB Bandwidth

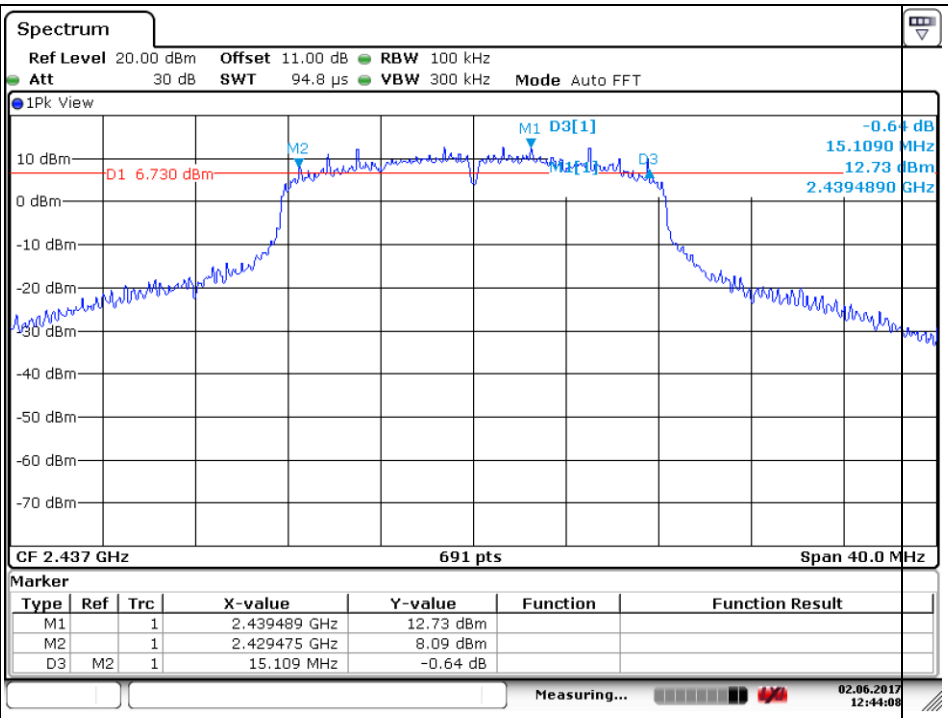


802.11g, SISO, Ant0

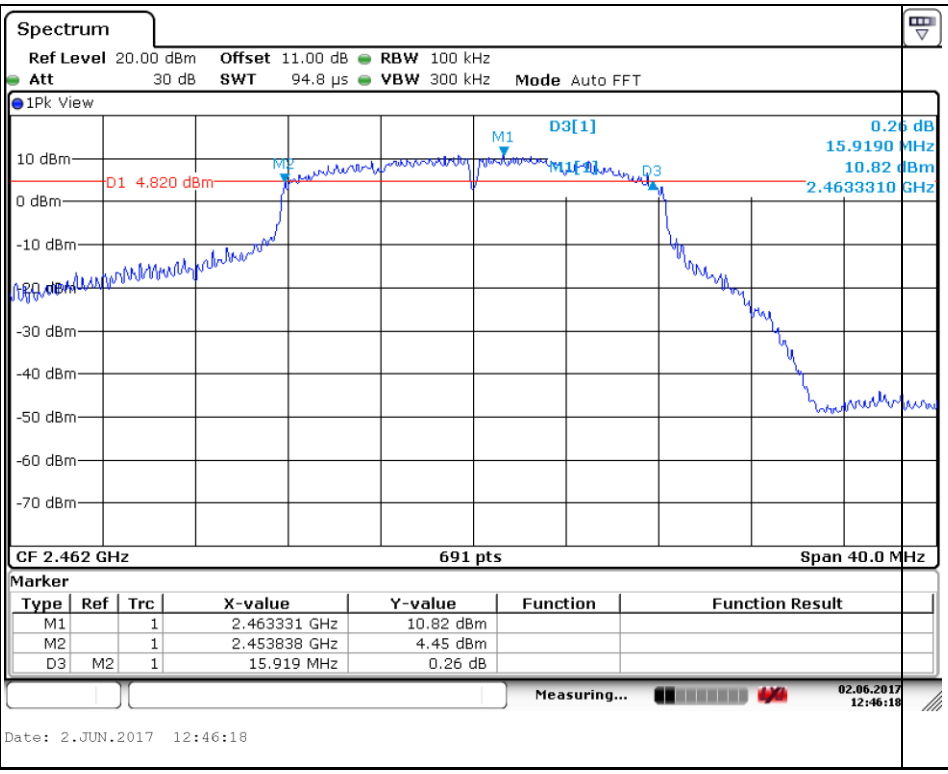
Low Channel 6dB Bandwidth



Middle Channel 6dB Bandwidth

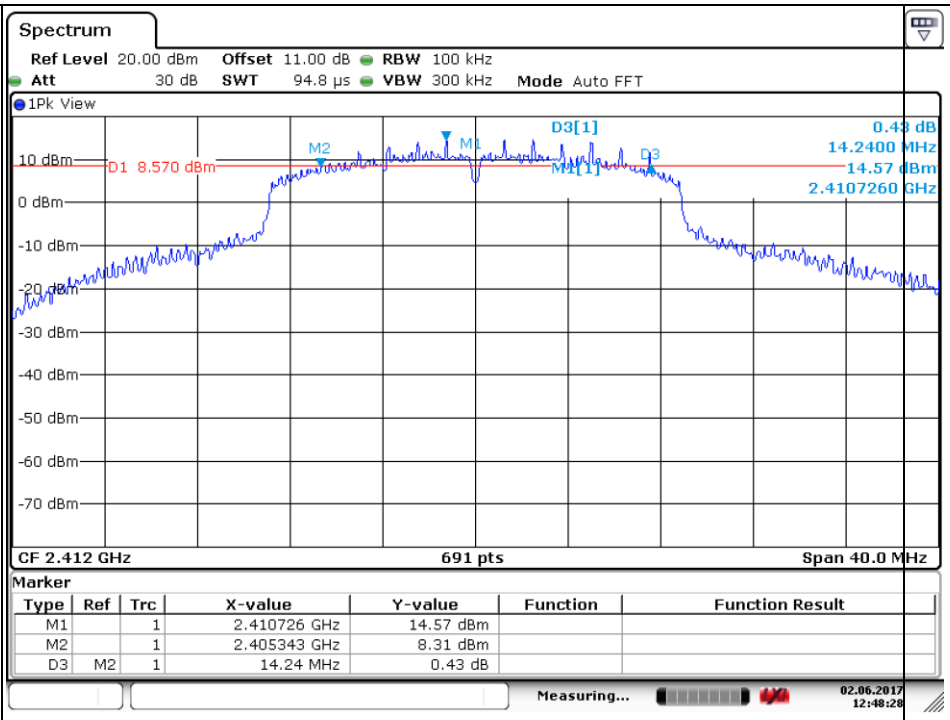


High Channel 6dB Bandwidth

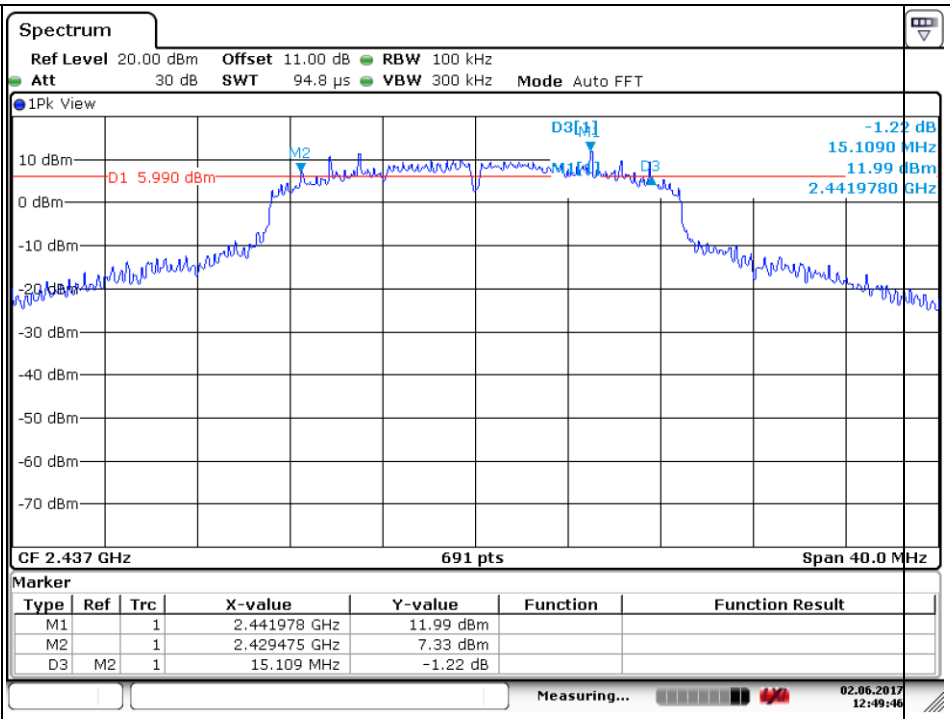


802.11n-HT20, SISO, Ant0

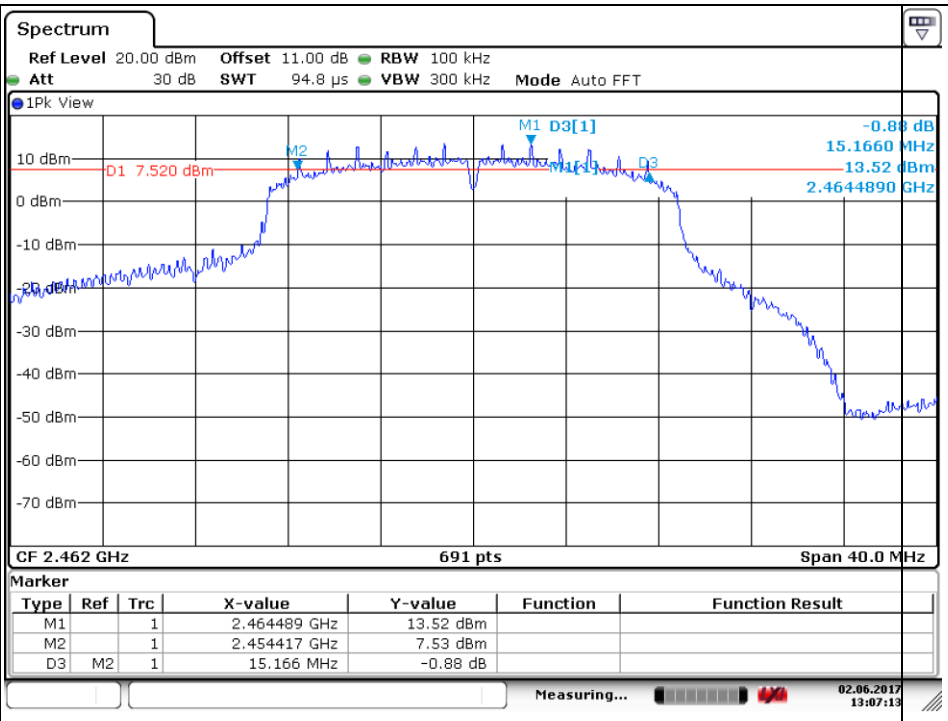
Low Channel 6dB Bandwidth



Middle Channel 6dB Bandwidth

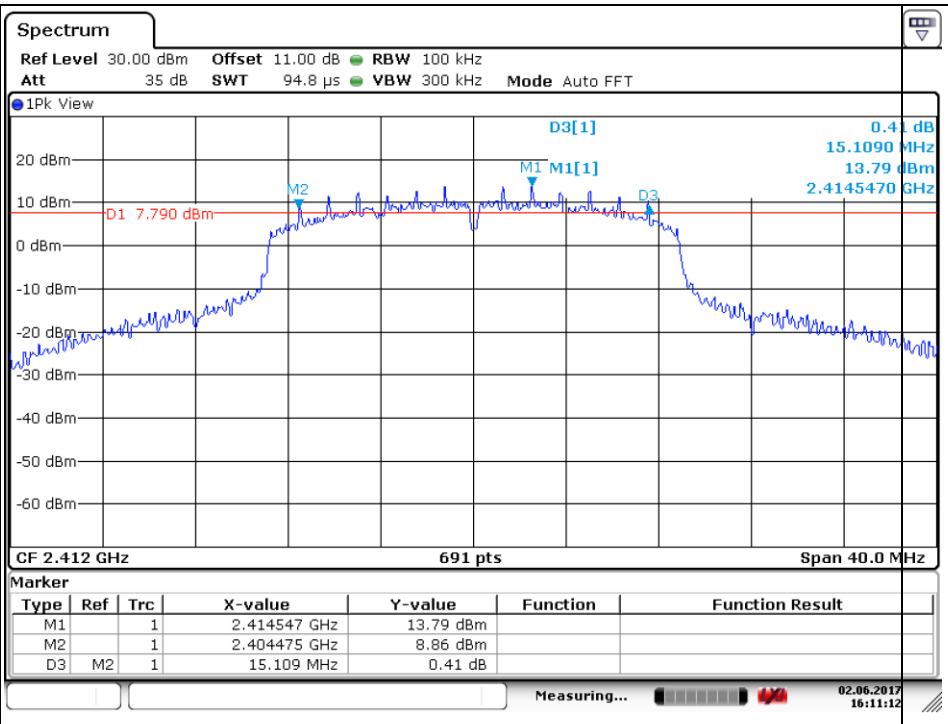


High Channel 6dB Bandwidth

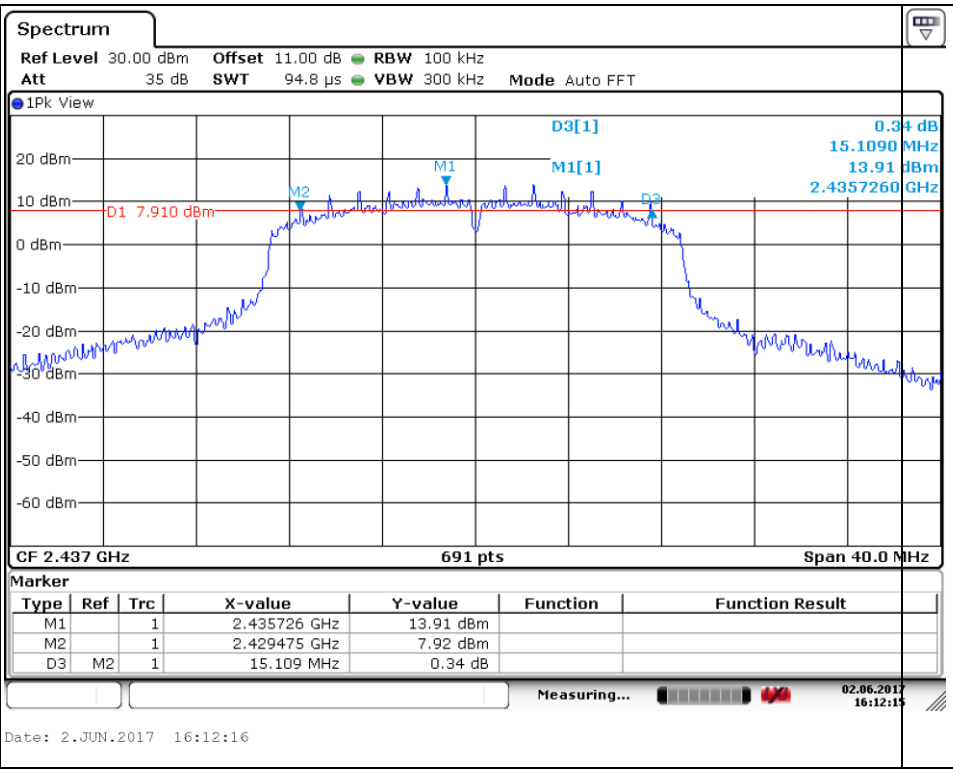


802.11n-HT20, MIMO, Ant2

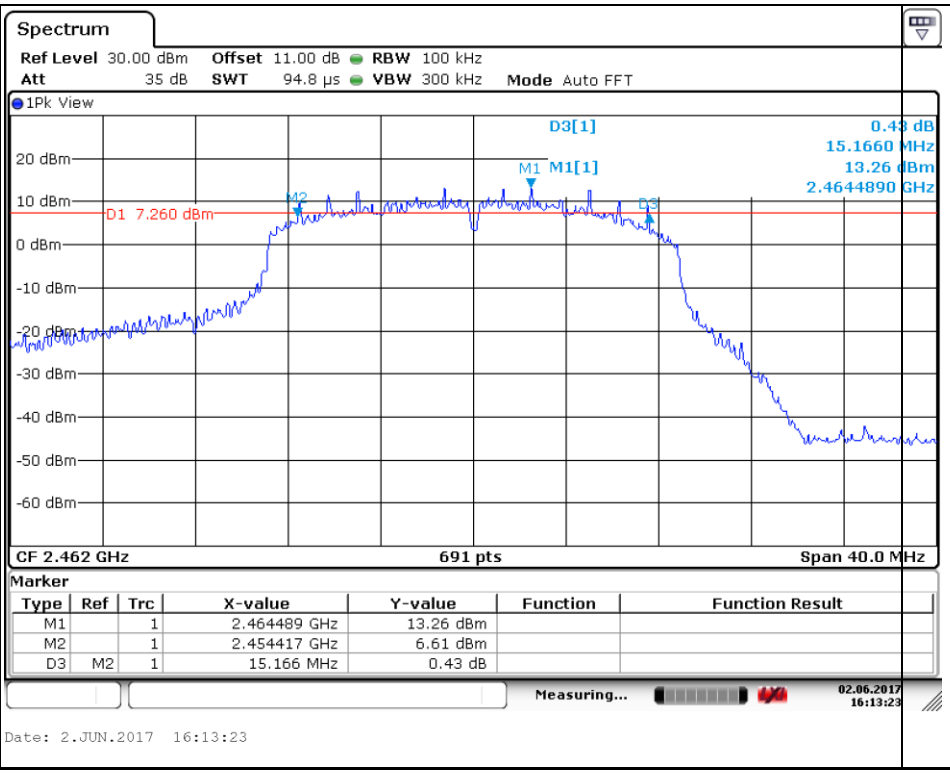
Low Channel 6dB Bandwidth



Middle Channel 6dB Bandwidth



High Channel 6dB Bandwidth



2. 99% Bandwidth

2.1 Test Datas of 99% Bandwidth

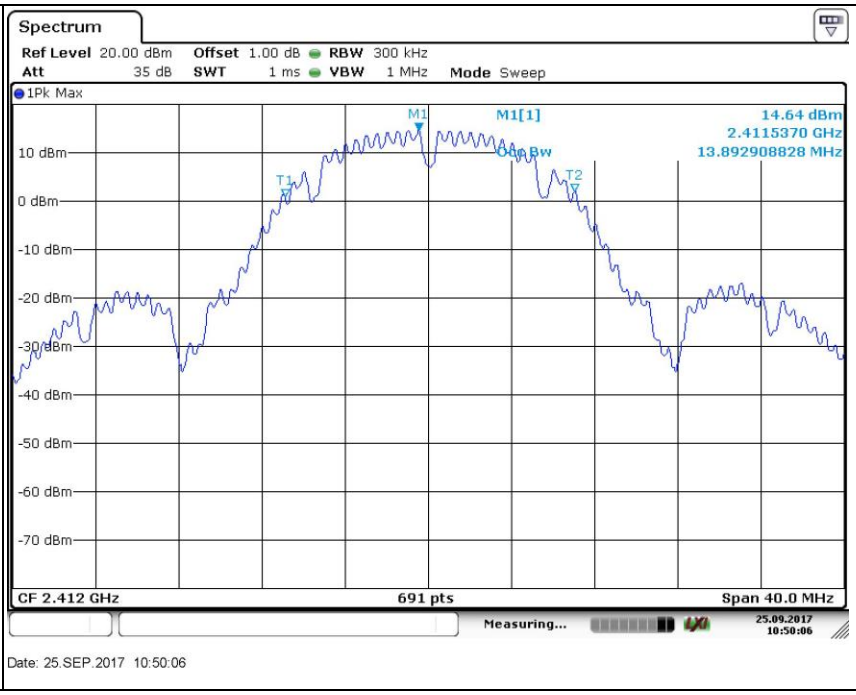
Channel (mode)	Channel Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Result
		Ant0		
1 (802.11b)	2412	13.89	/	Pass
6 (802.11b)	2437	13.37	/	Pass
11 (802.11b)	2462	13.60	/	Pass
1 (802.11g)	2412	16.67	/	Pass
6 (802.11g)	2437	16.32	/	Pass
11 (802.11g)	2462	16.09	/	Pass

Channel (mode)	Channel Frequency (MHz)	6dB Bandwidth (MHz)		Limit (MHz)	Result
		Ant0	Ant2		
1 (802.11n-HT20)	2412	17.59	17.49	/	Pass
6 (802.11n-HT20)	2437	17.30	17.40	/	Pass
11 (802.11n-HT20)	2462	16.87	17.01	/	Pass

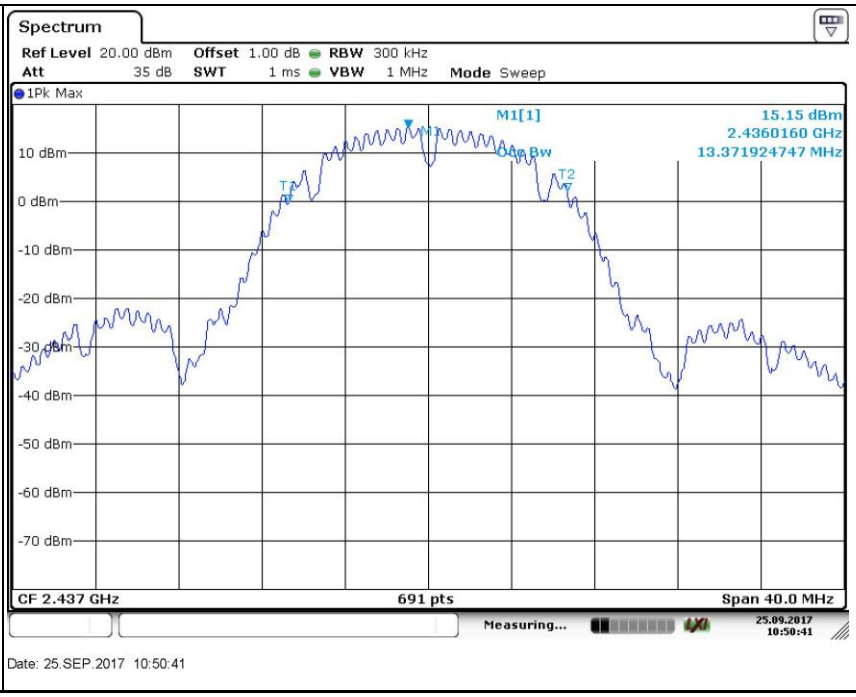
2.2 Test Graphs of 99% Bandwidth

802.11b, SISO, Ant0

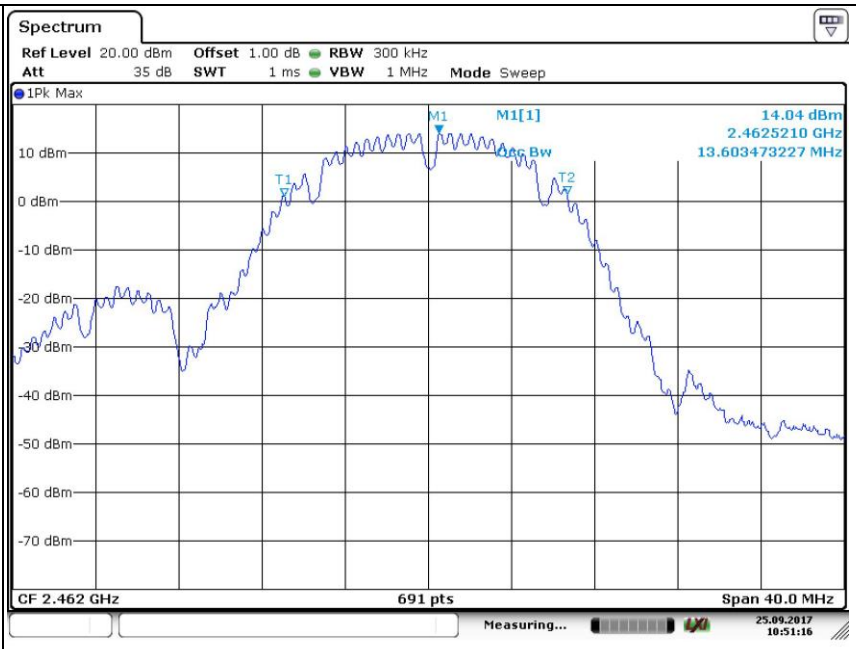
Low Channel 99% Bandwidth



Middle Channel 99% Bandwidth

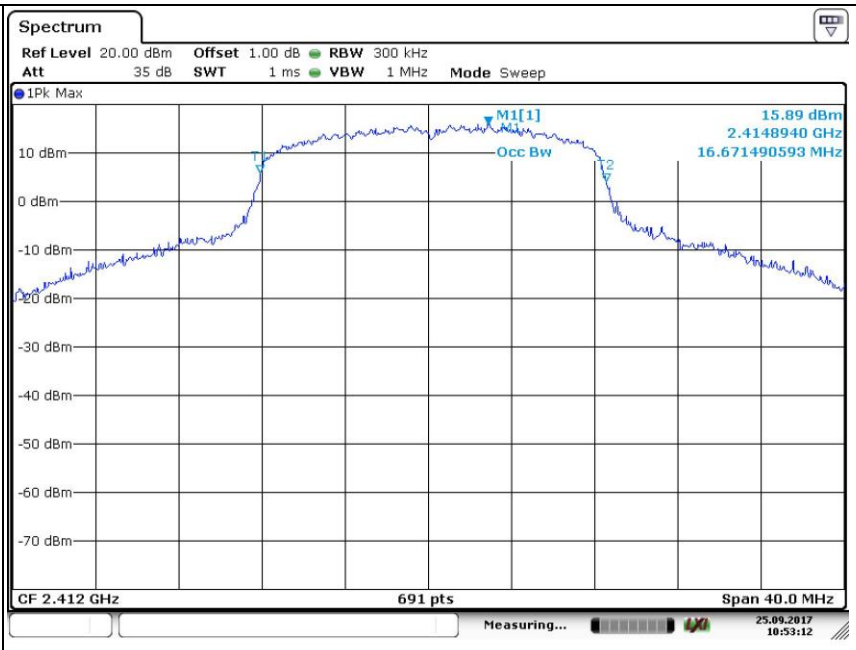


High Channel 99% Bandwidth

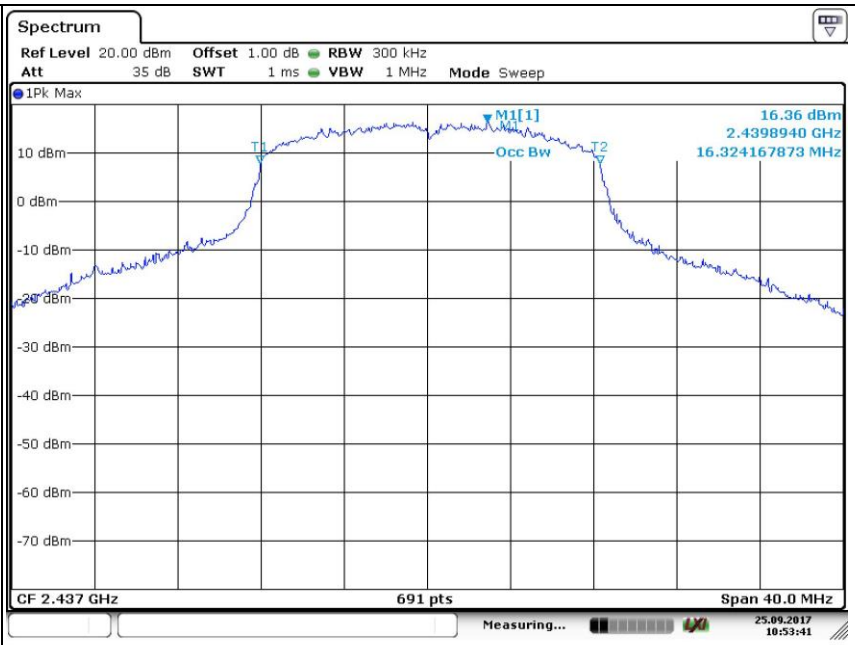


802.11g, SISO, Ant0

Low Channel 99% Bandwidth



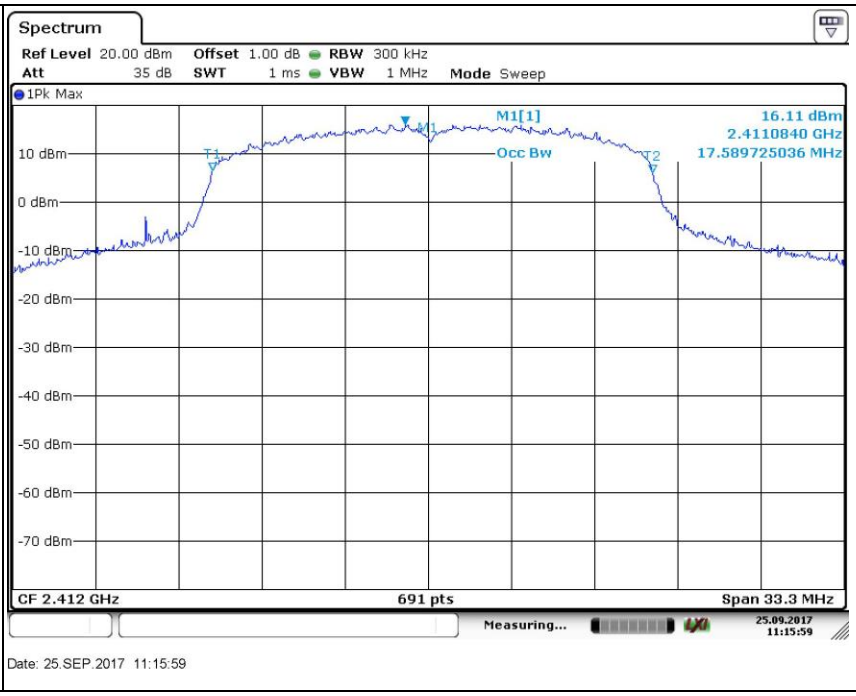
Middle Channel 99% Bandwidth



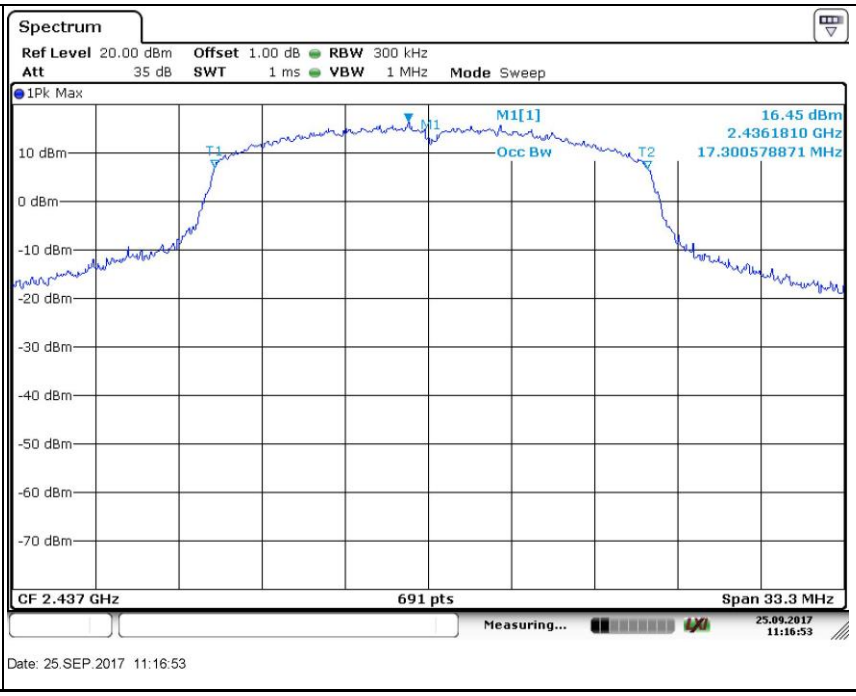
High Channel 99% Bandwidth

802.11n-HT20, SISO, Ant0

Low Channel 99% Bandwidth



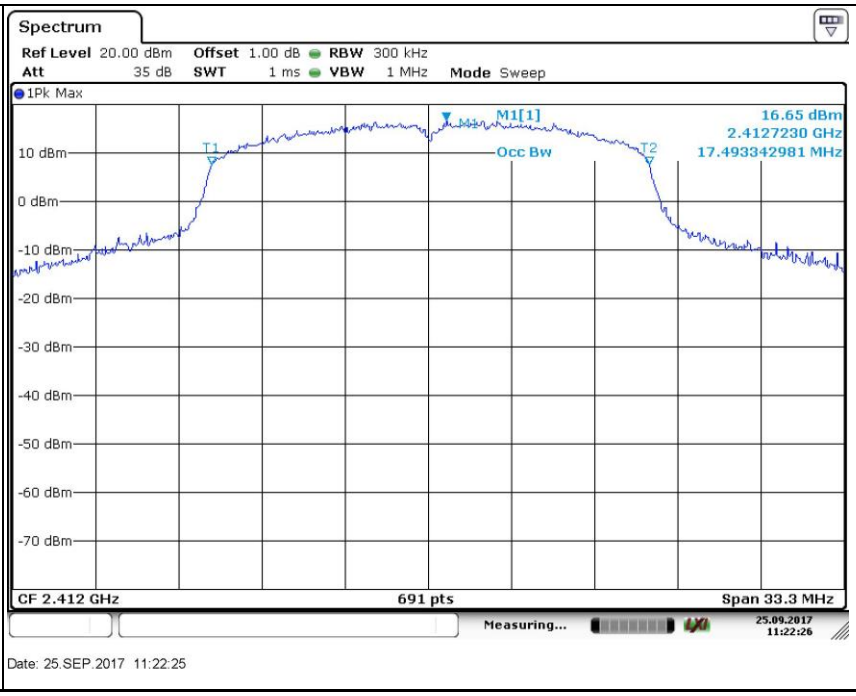
Middle Channel 99% Bandwidth



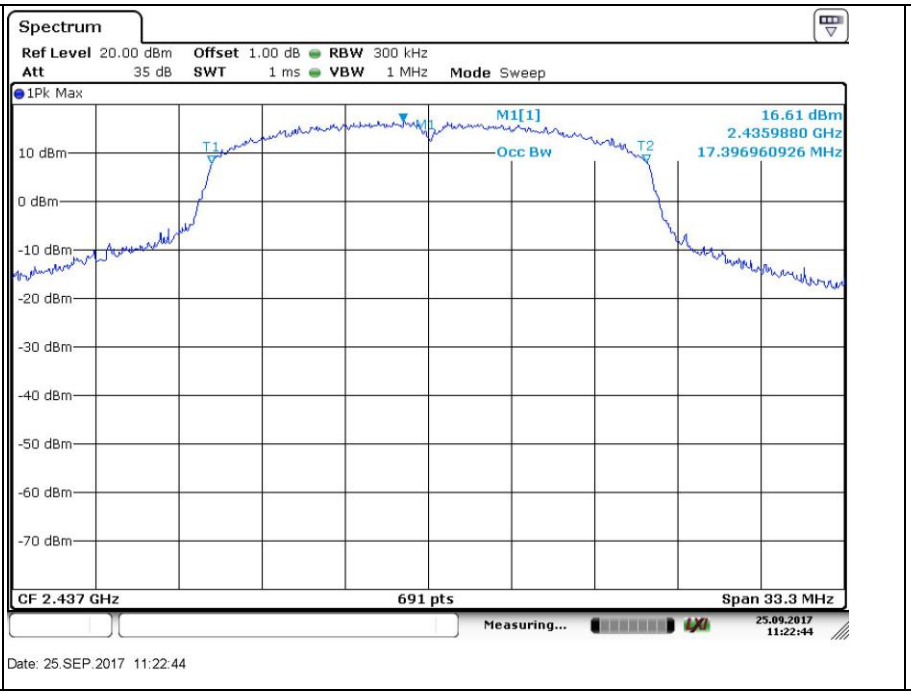
High Channel 99% Bandwidth

802.11n-HT20, MIMO, Ant2

Low Channel 99% Bandwidth



Middle Channel 99% Bandwidth



High Channel 99% Bandwidth

3. Power Spectral Density

3.1 Test Datas of Power Spectral Density

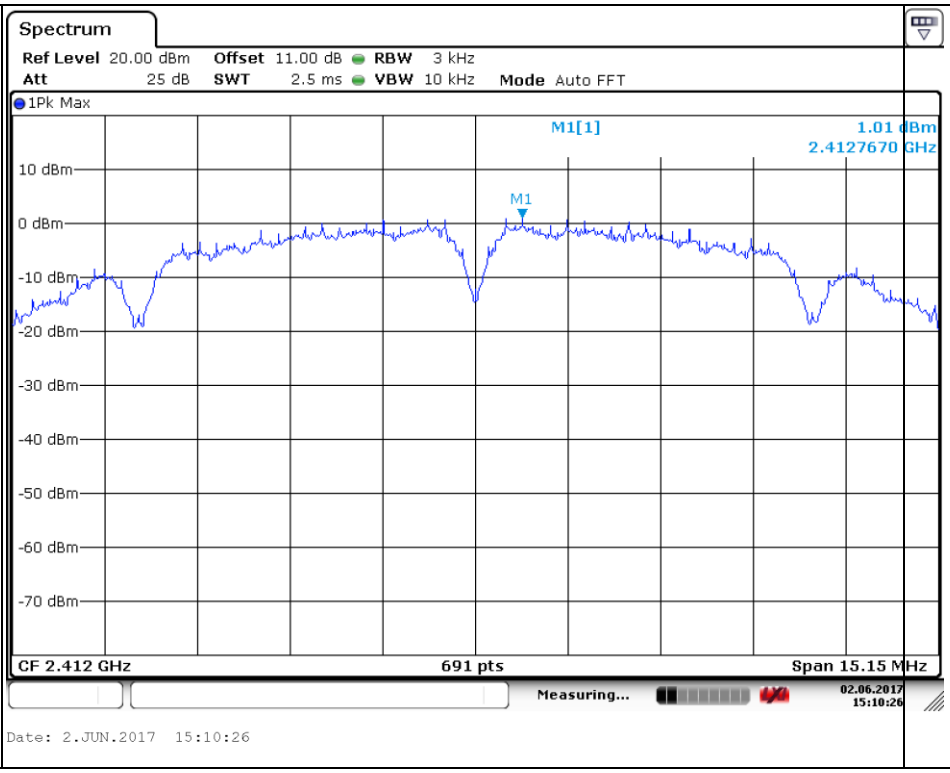
Channel (mode) SISO	Channel Frequency (MHz)	Power Spectral Density (dBm/3KHz)	Limit	Result
		Ant0		
1 (802.11b)	2412	1.01	8dBm/3KHz	Pass
6 (802.11b)	2437	0.83	8dBm/3KHz	Pass
11 (802.11b)	2462	-0.10	8dBm/3KHz	Pass
1 (802.11g)	2412	0.13	8dBm/3KHz	Pass
6 (802.11g)	2437	0.42	8dBm/3KHz	Pass
11 (802.11g)	2462	-0.53	8dBm/3KHz	Pass

Channel (mode) MIMO	Channel Frequency (MHz)	Power Spectral Density (dBm/3KHz)			Limit	Result
		Ant0	Ant2	Total		
1 (802.11n-HT20)	2412	0.22	-7.01	0.97	8dBm/3KHz	Pass
6 (802.11n-HT20)	2437	0.73	-6.93	1.43	8dBm/3KHz	Pass
11 (802.11n-HT20)	2462	-0.94	-7.01	0.02	8dBm/3KHz	Pass

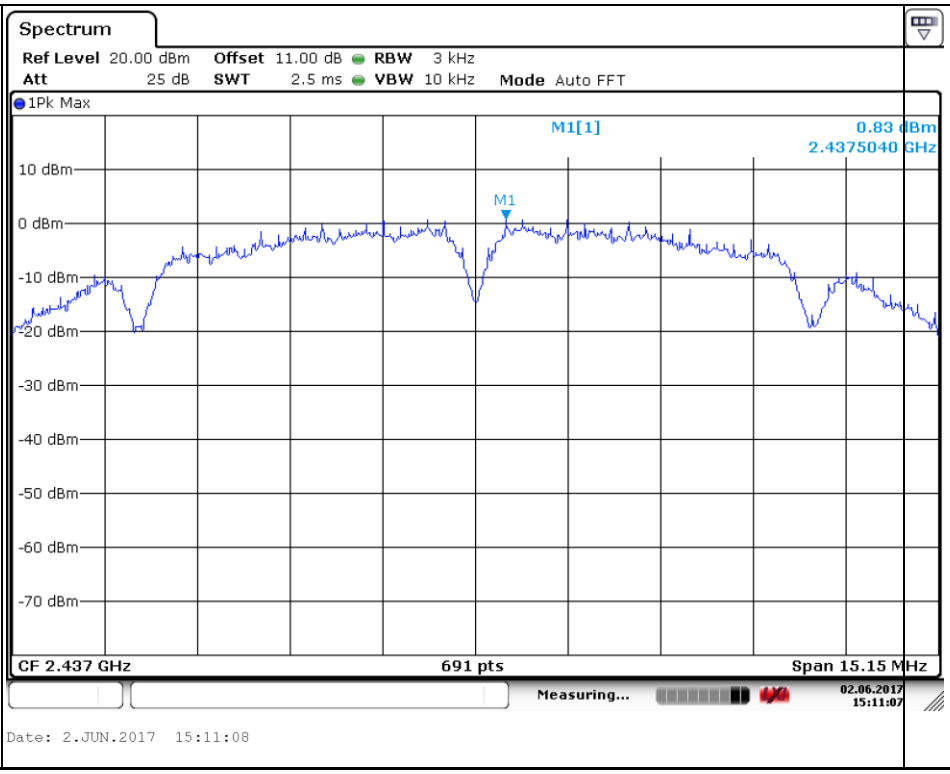
3.2 Test Graphs of Power Spectral Density

802.11b, SISO, Ant0

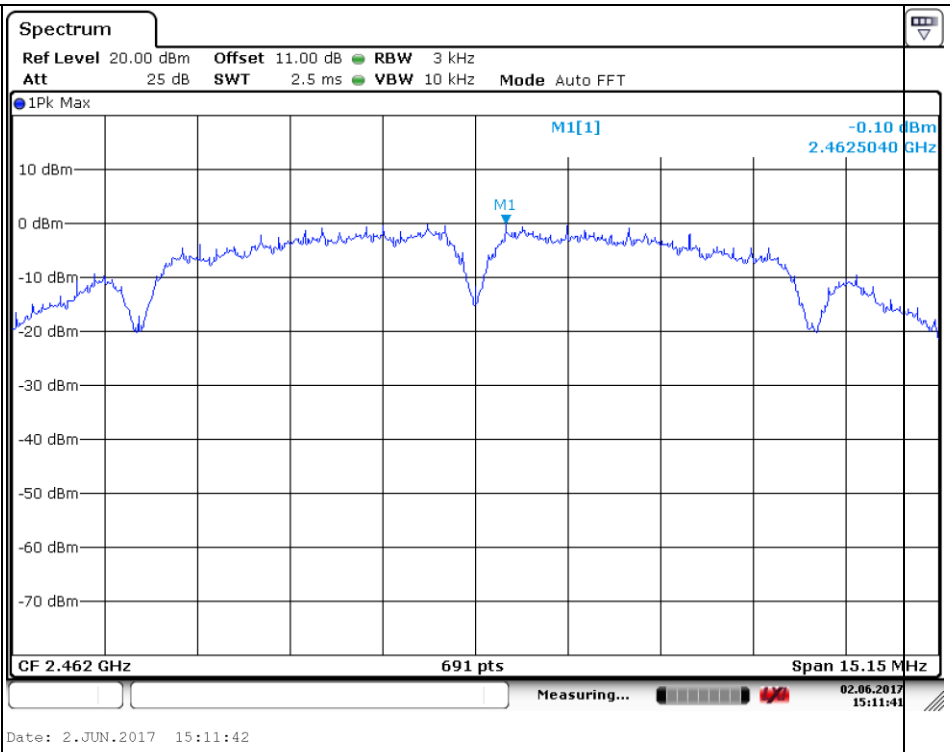
Low Channel



Middle Channel

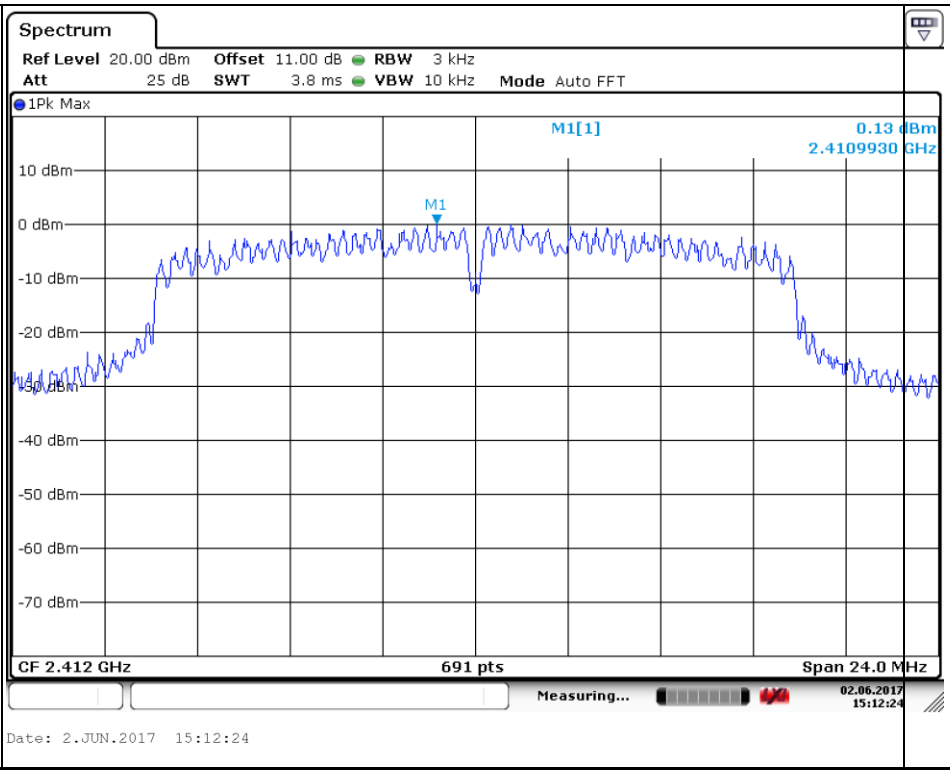


High Channel

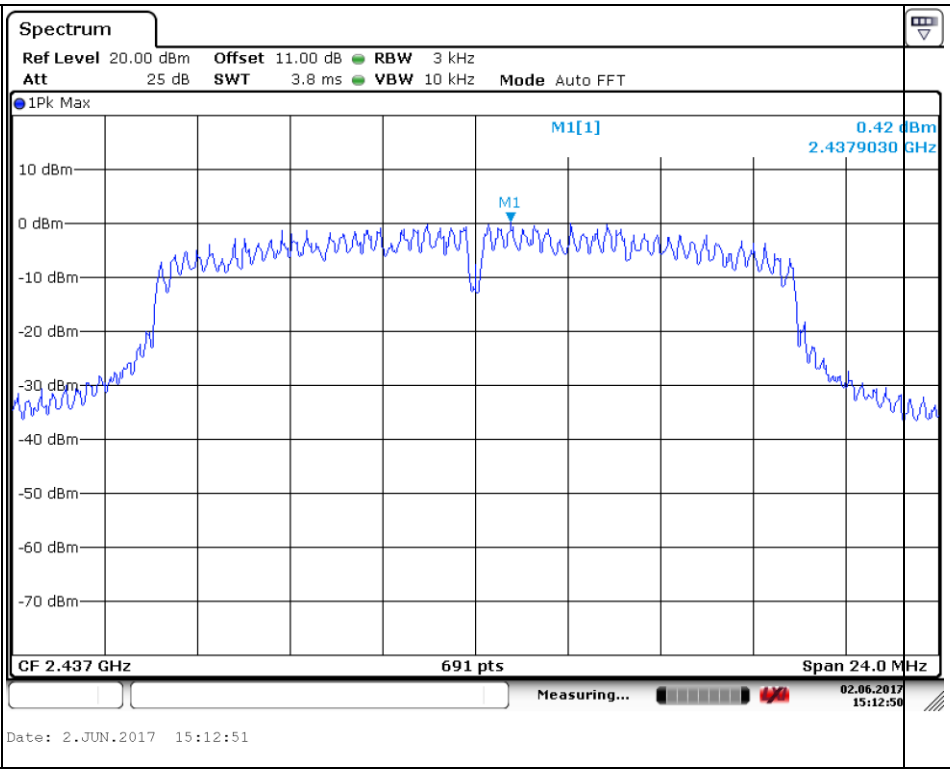


802.11g, SISO, Ant0

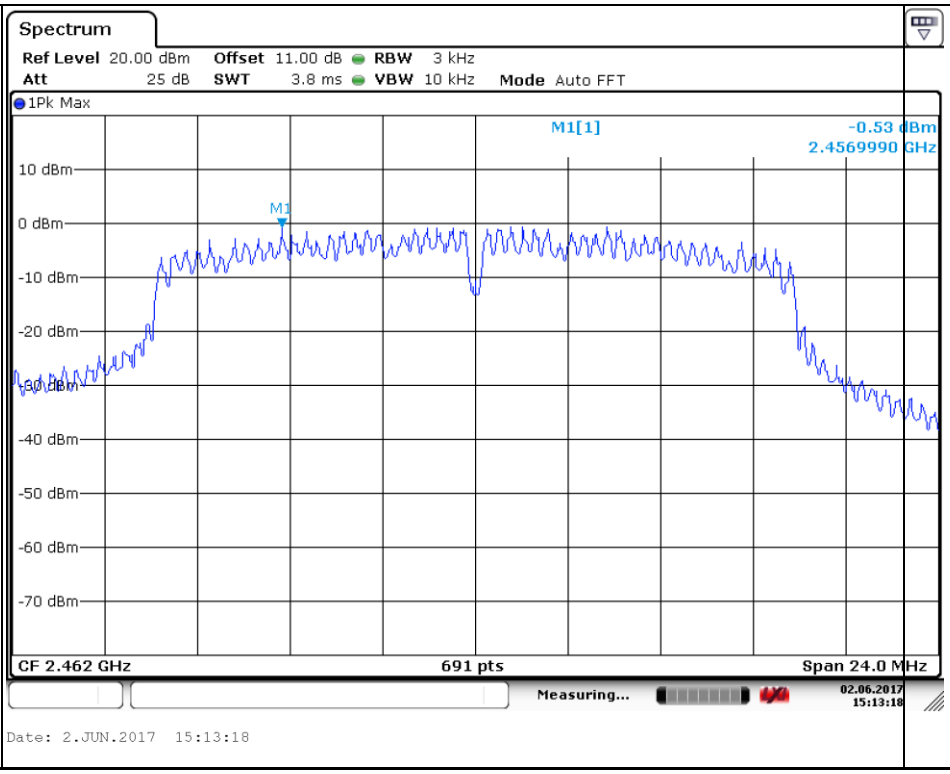
Low Channel



Middle Channel

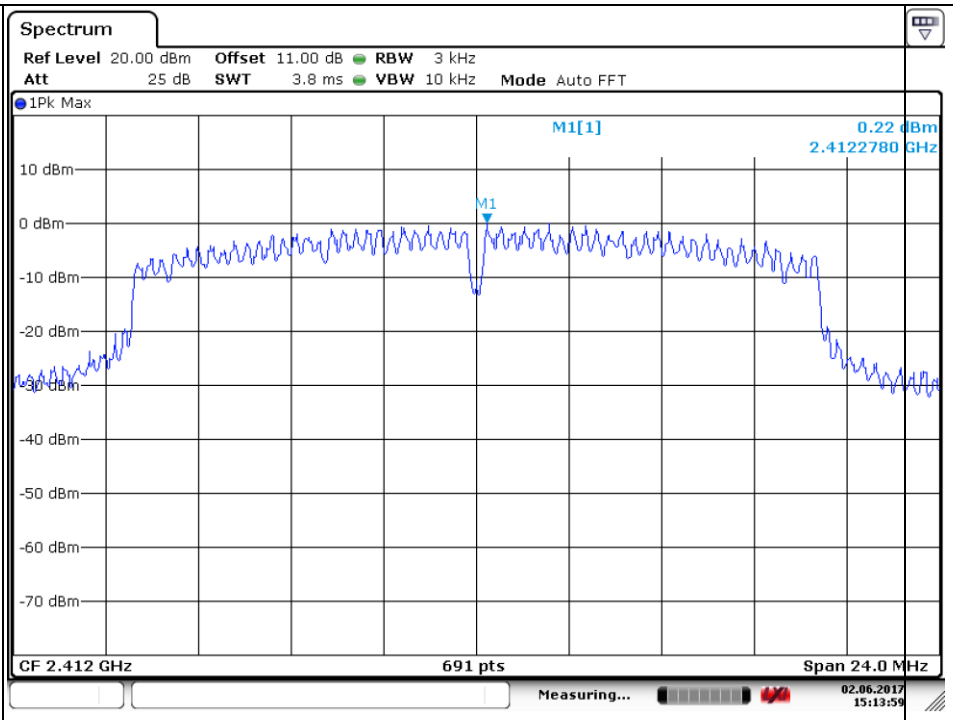


High Channel

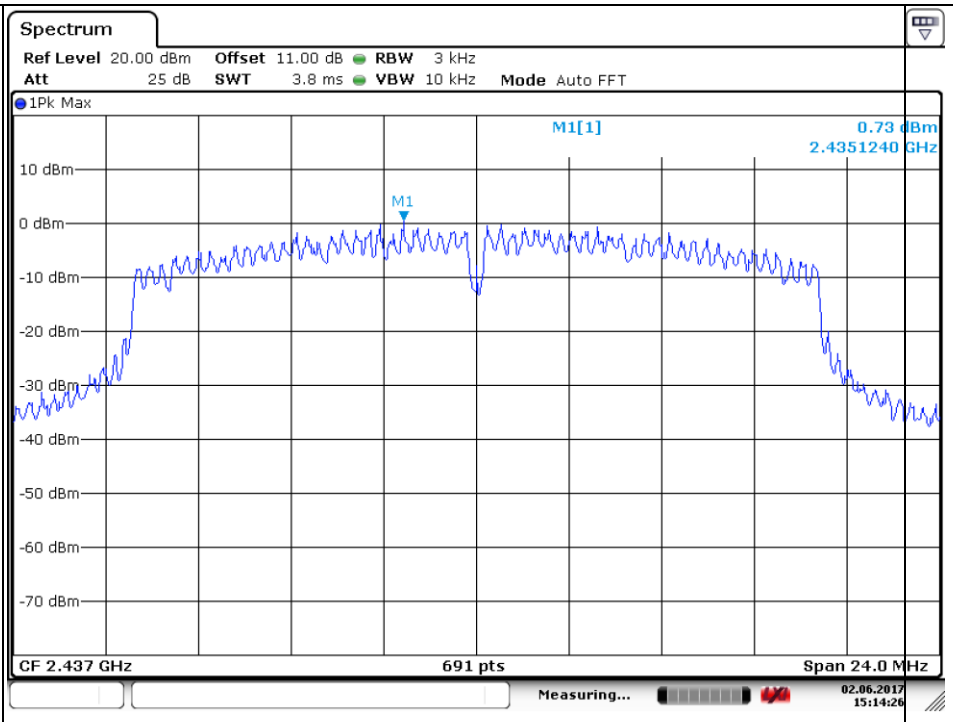


802.11n-HT20, SISO, Ant0

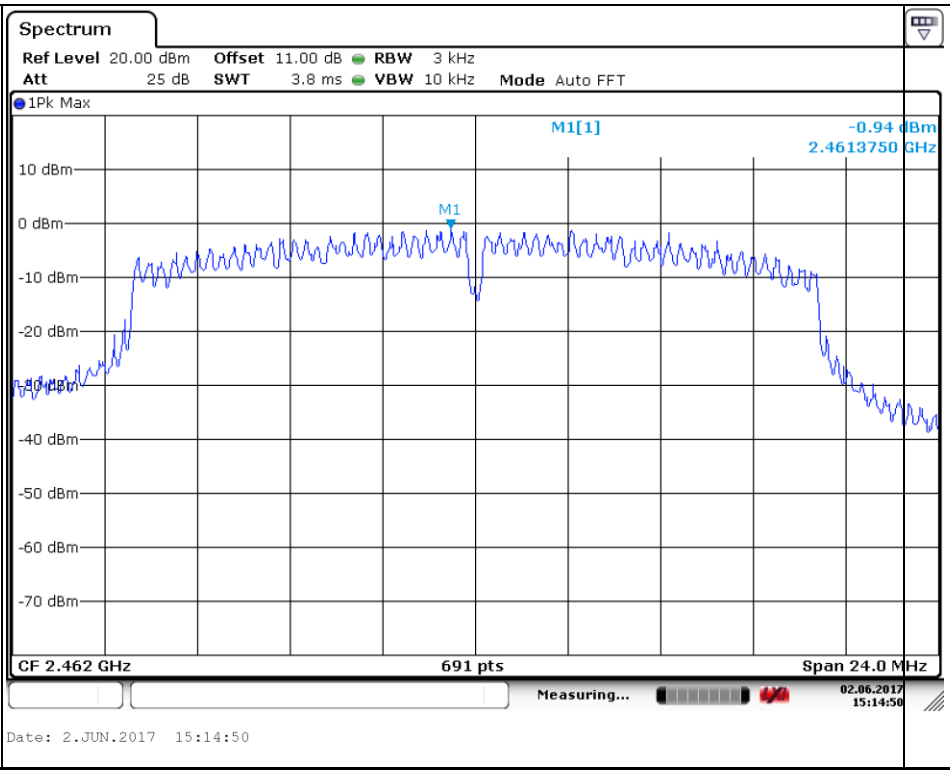
Low Channel



Middle Channel

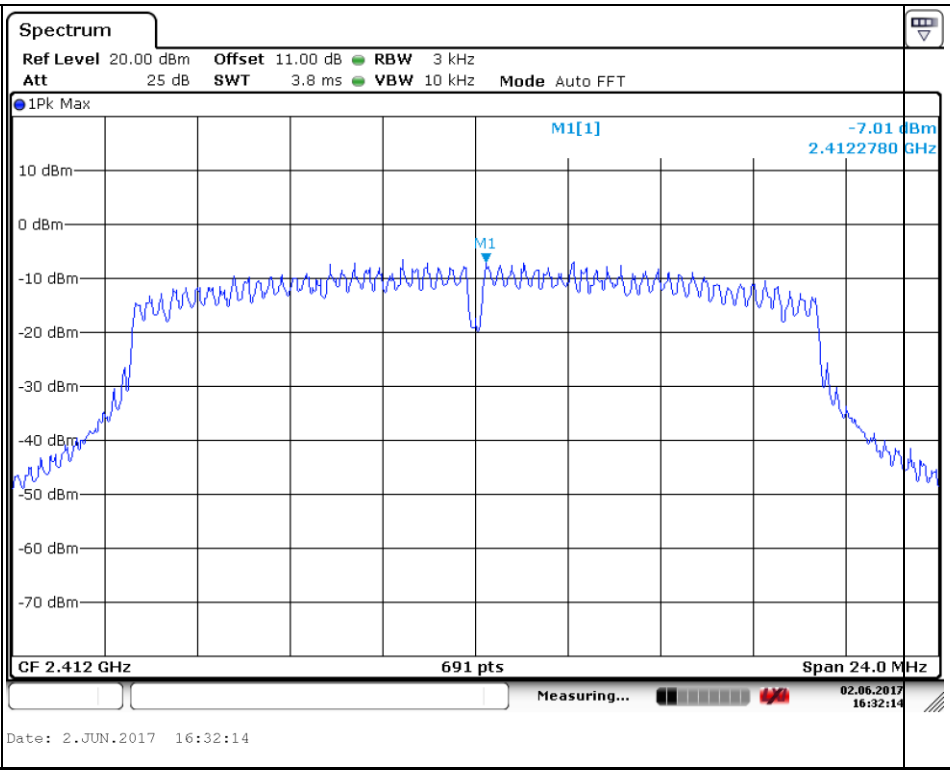


High Channel

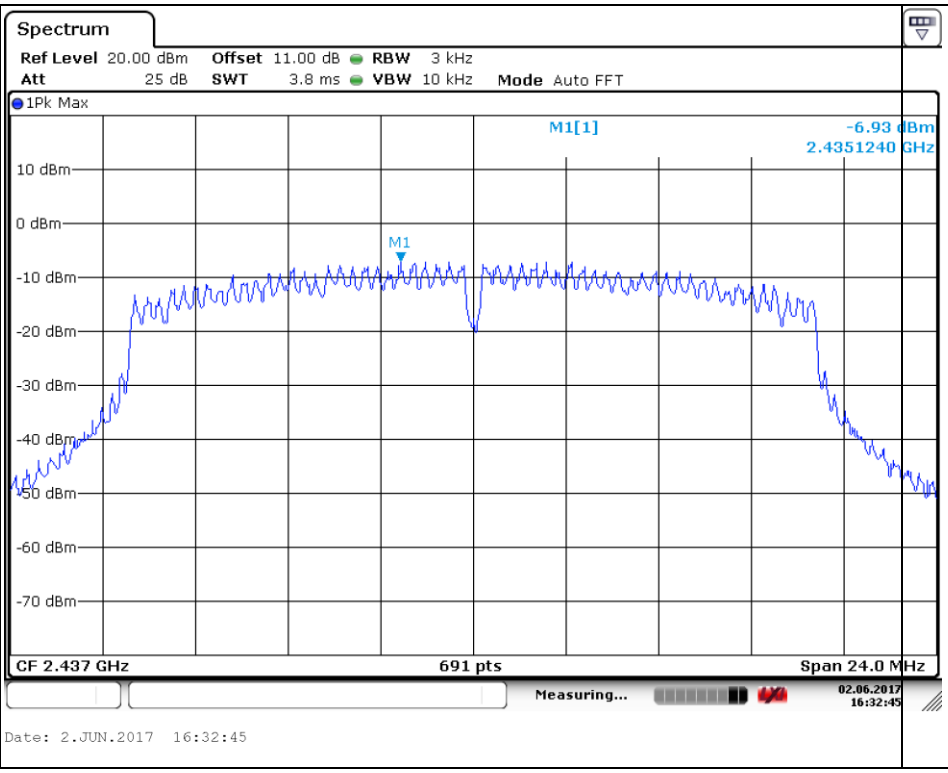


802.11n-HT20, MIMO, Ant2

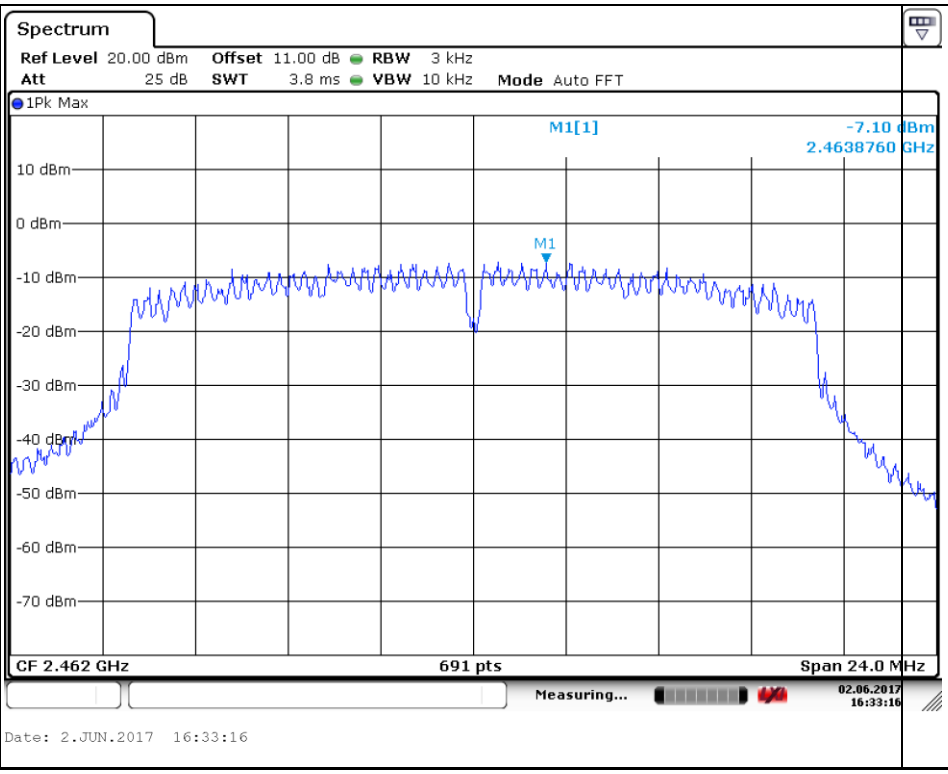
Low Channel



Middle Channel



High Channel

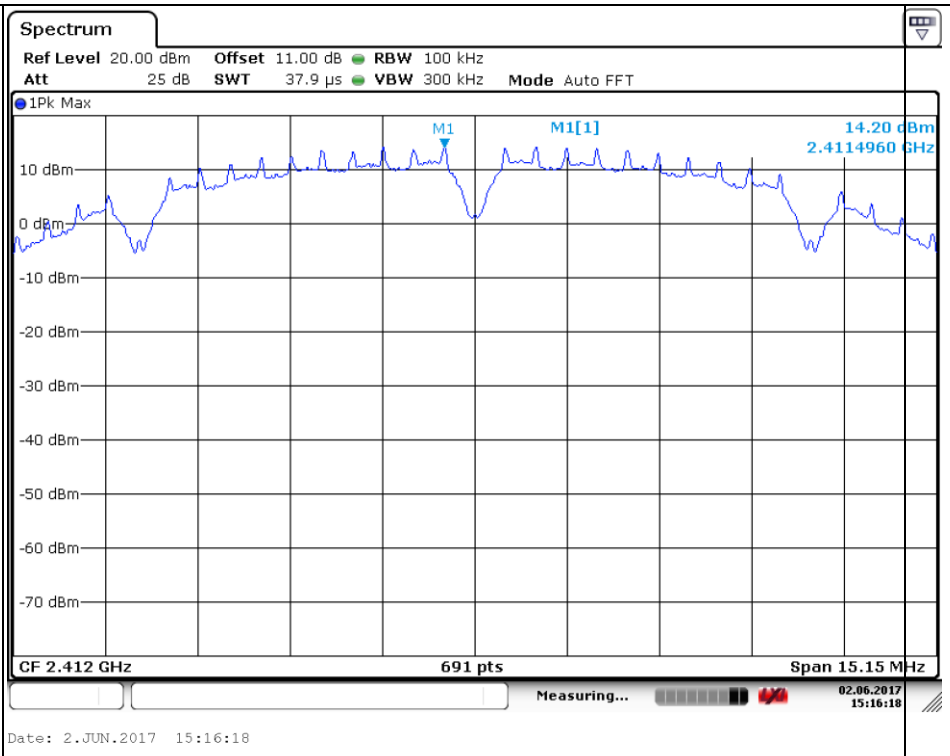


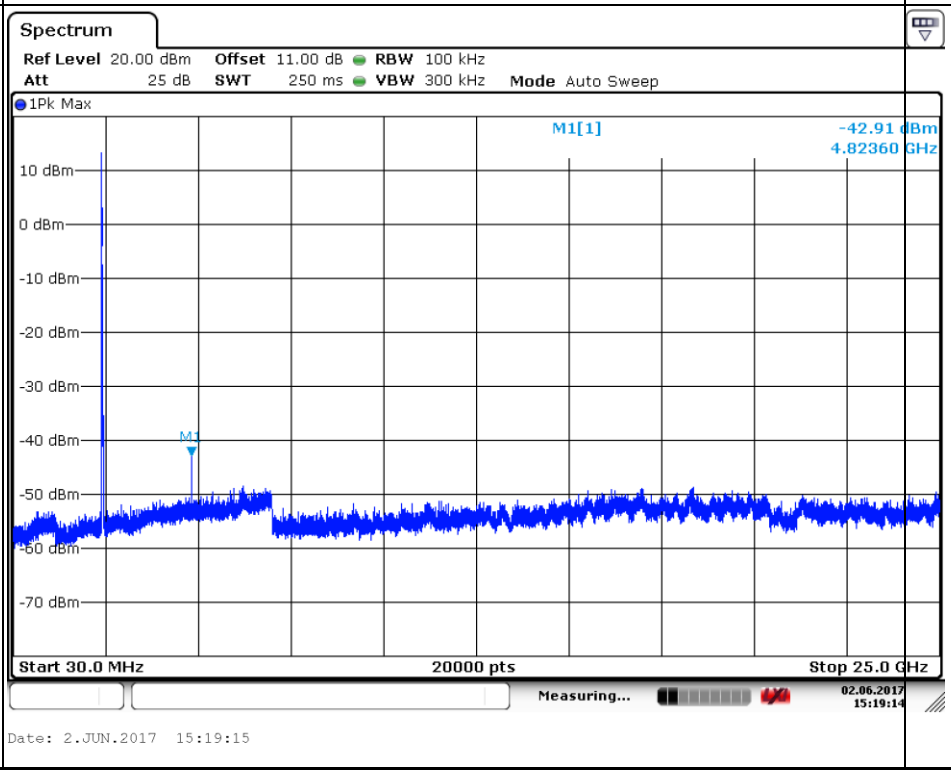
4. Conducted Spurious Emissions

4.1 Test Graphs of Conducted Spurious Emissions

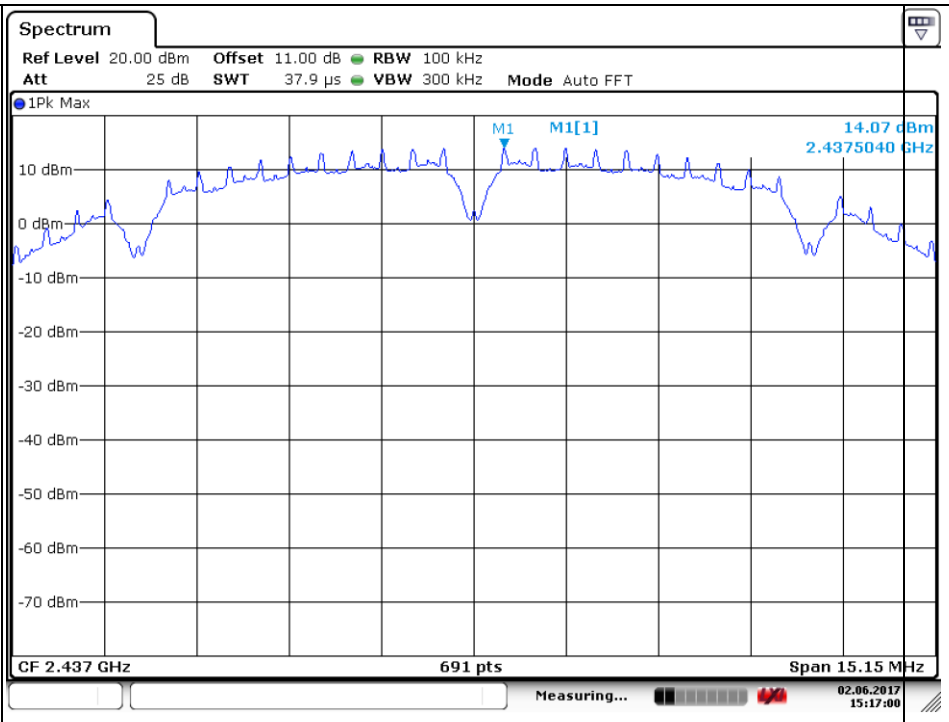
802.11b, SISO, Ant0

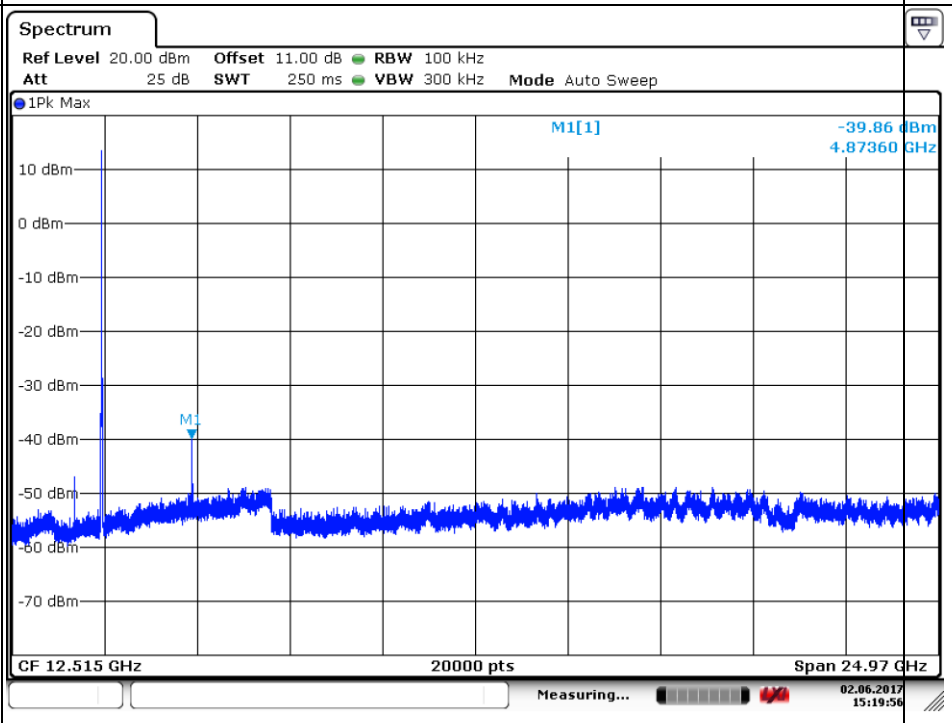
Low Channel



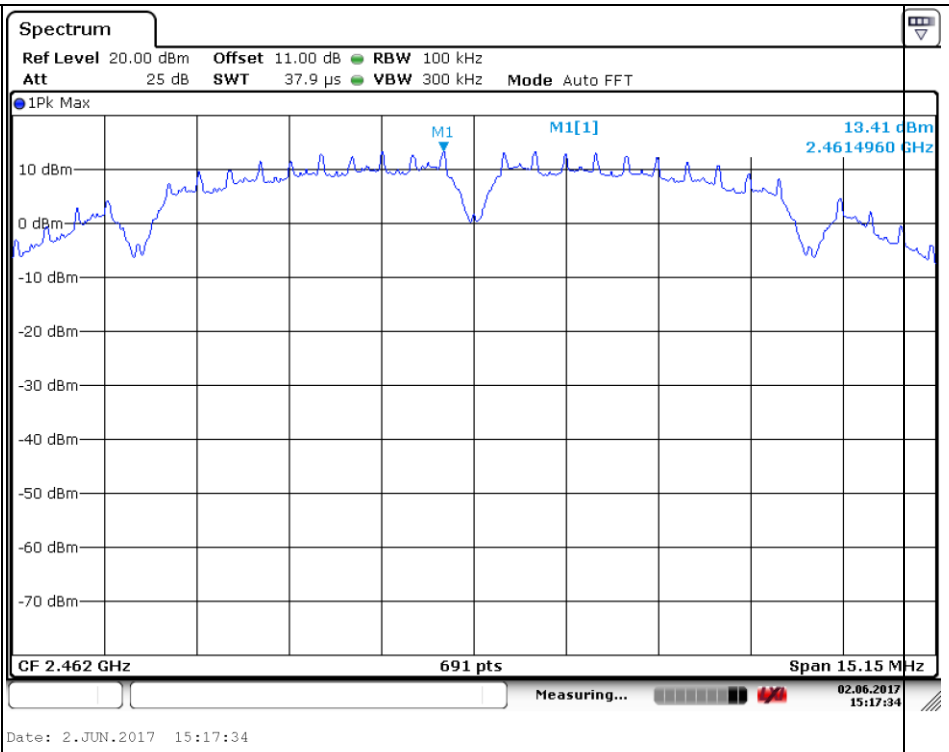


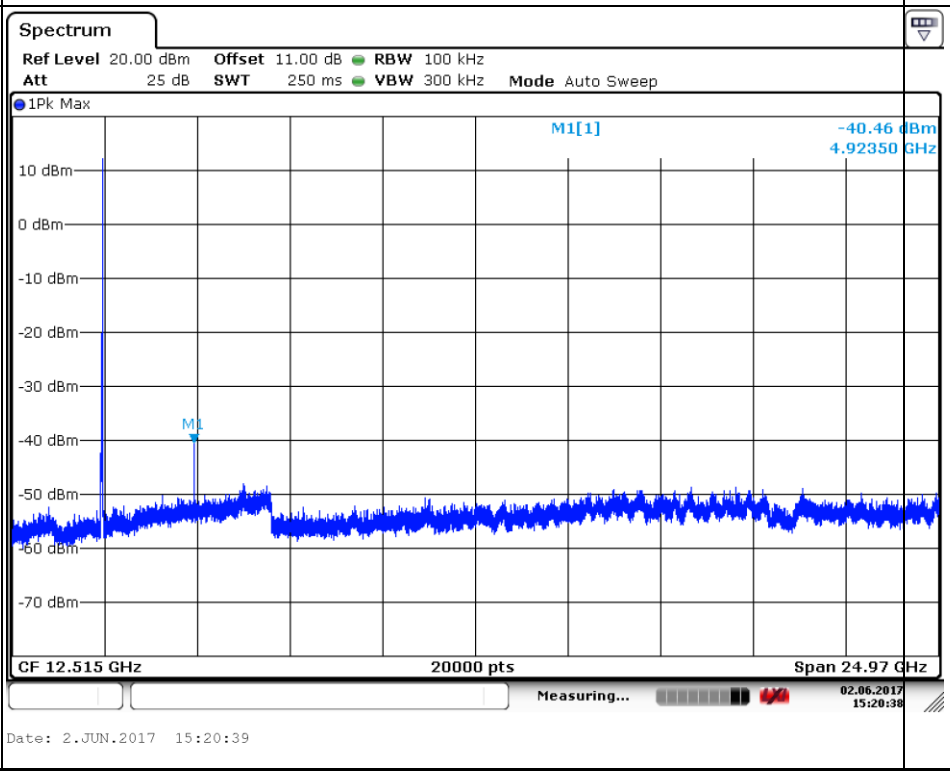
Middle Channel





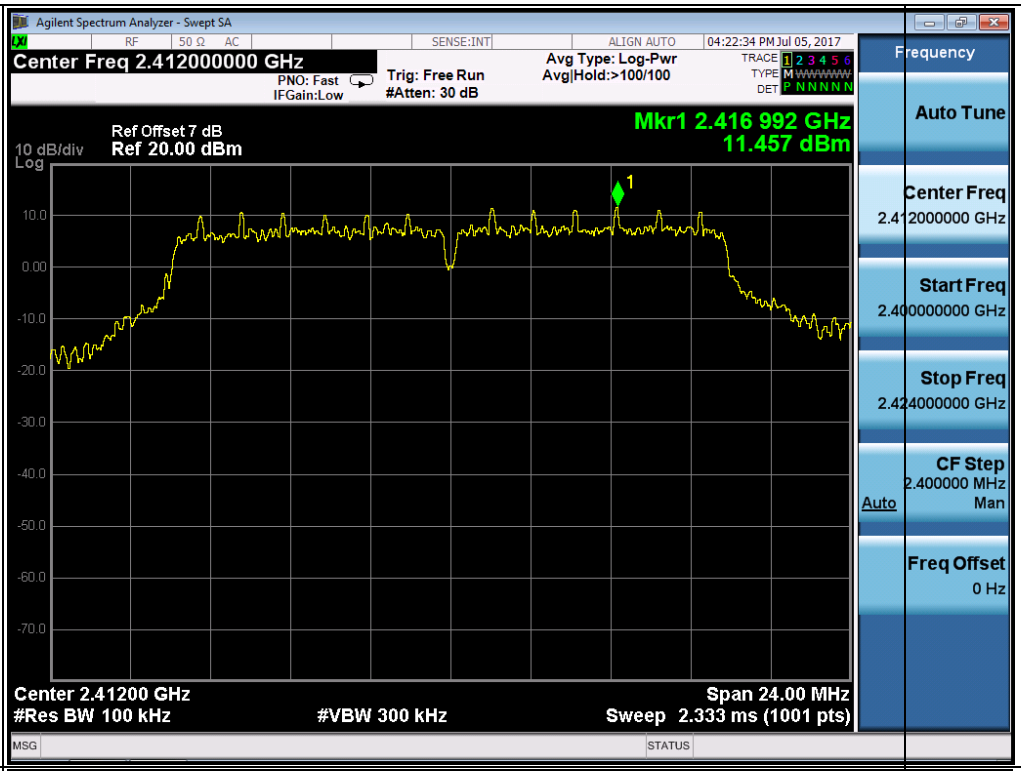
High Channel



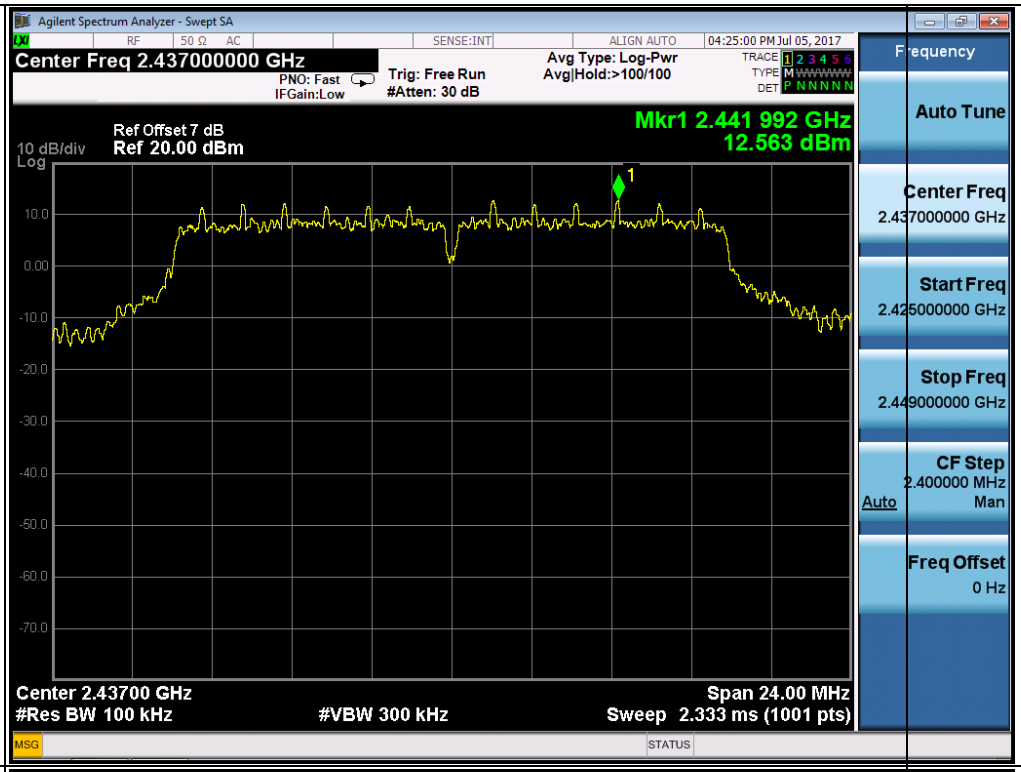


802.11g, SISO, Ant0

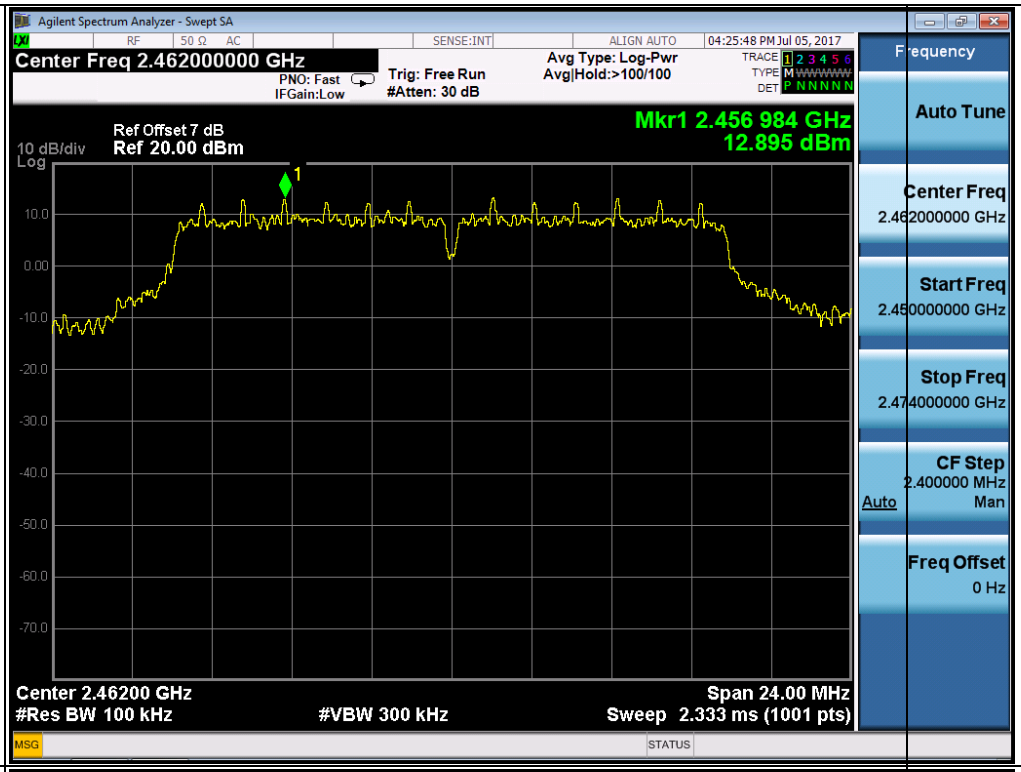
Low Channel



Middle Channel

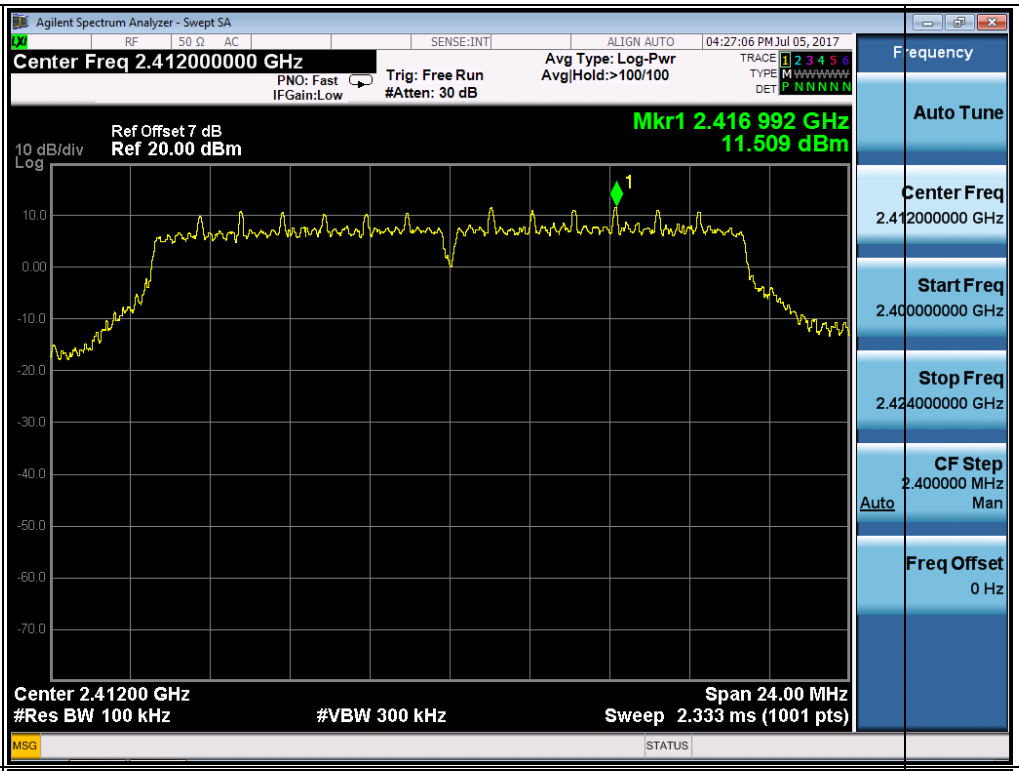


High Channel

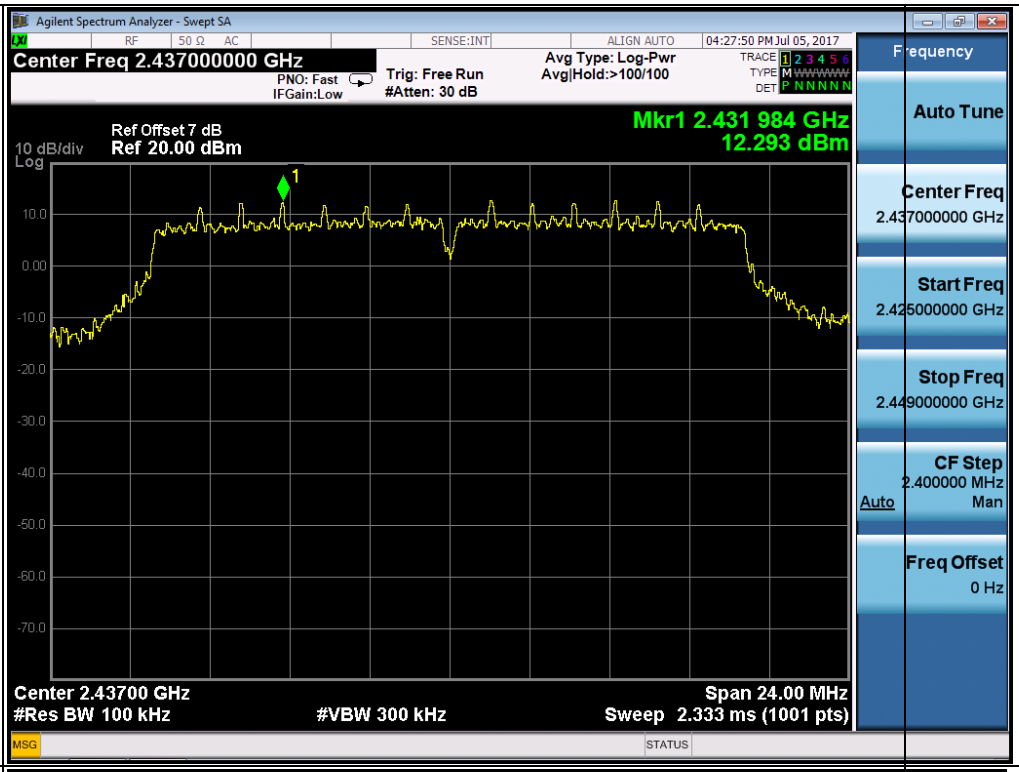


802.11n-HT20, SISO, Ant0

Low Channel



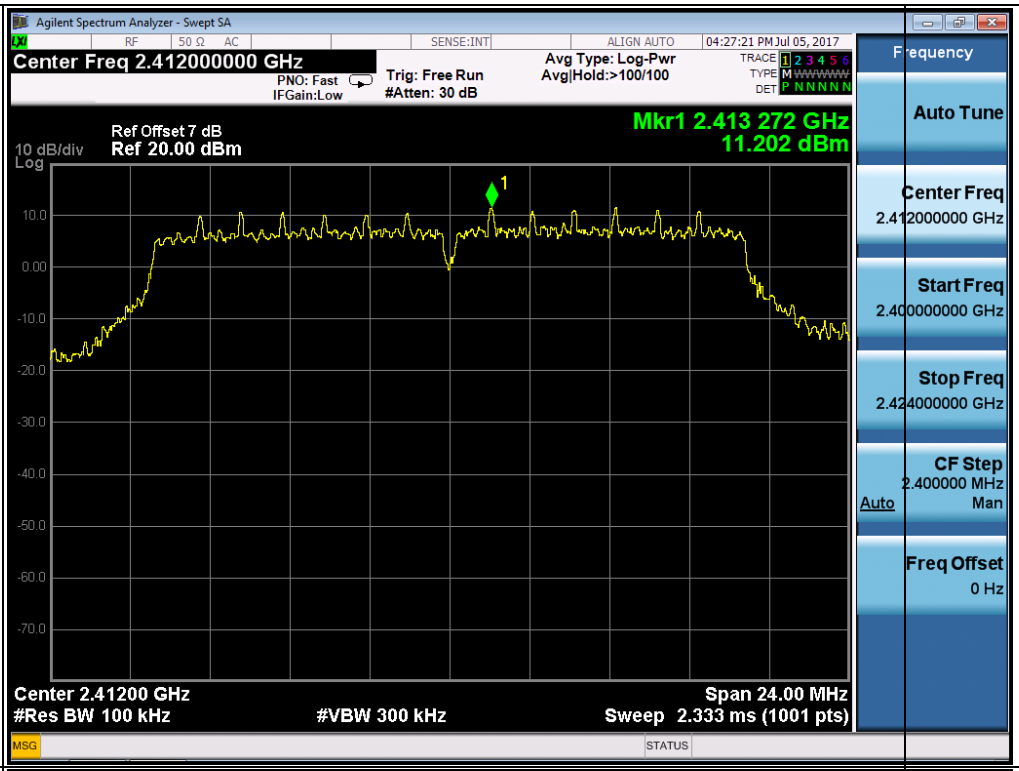
Middle Channel



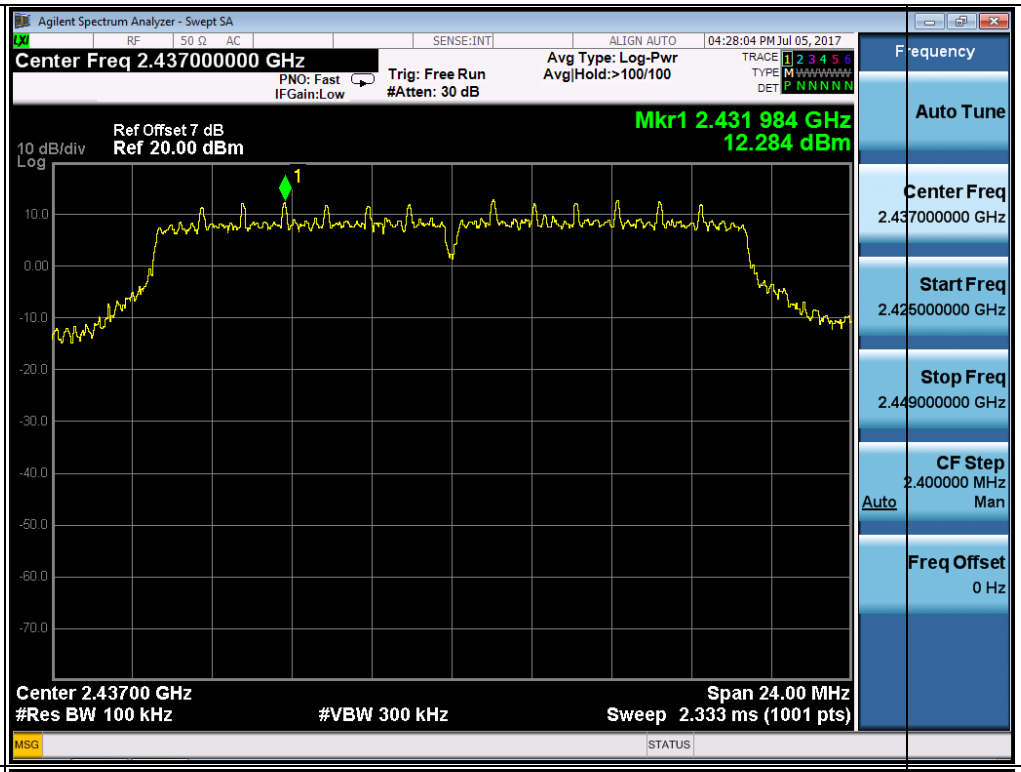
High Channel

802.11n-HT20, MIMO, Ant2

Low Channel



Middle Channel

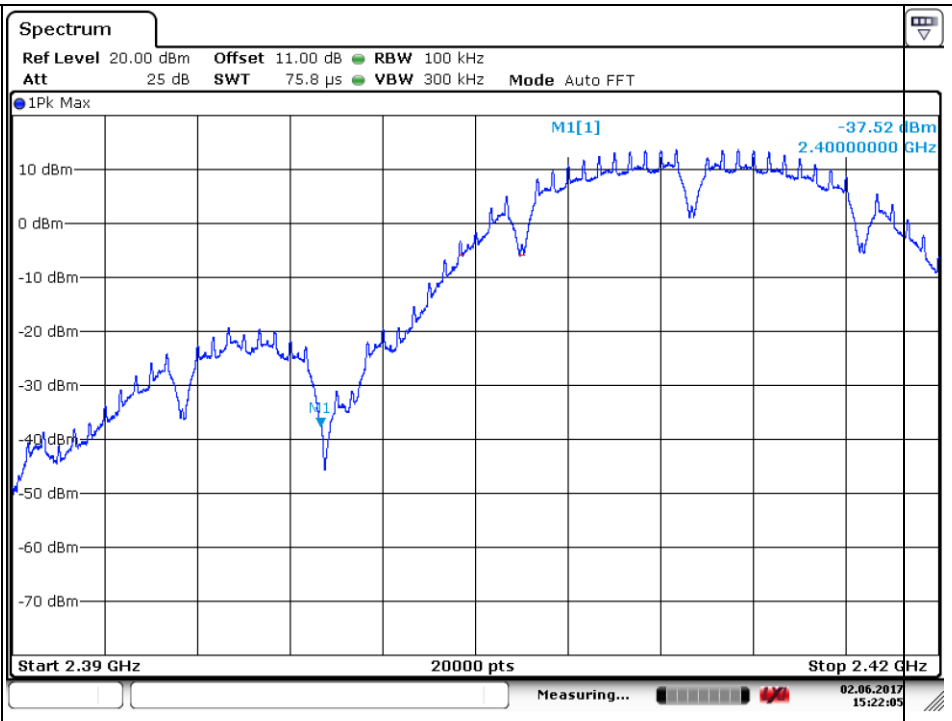


High Channel

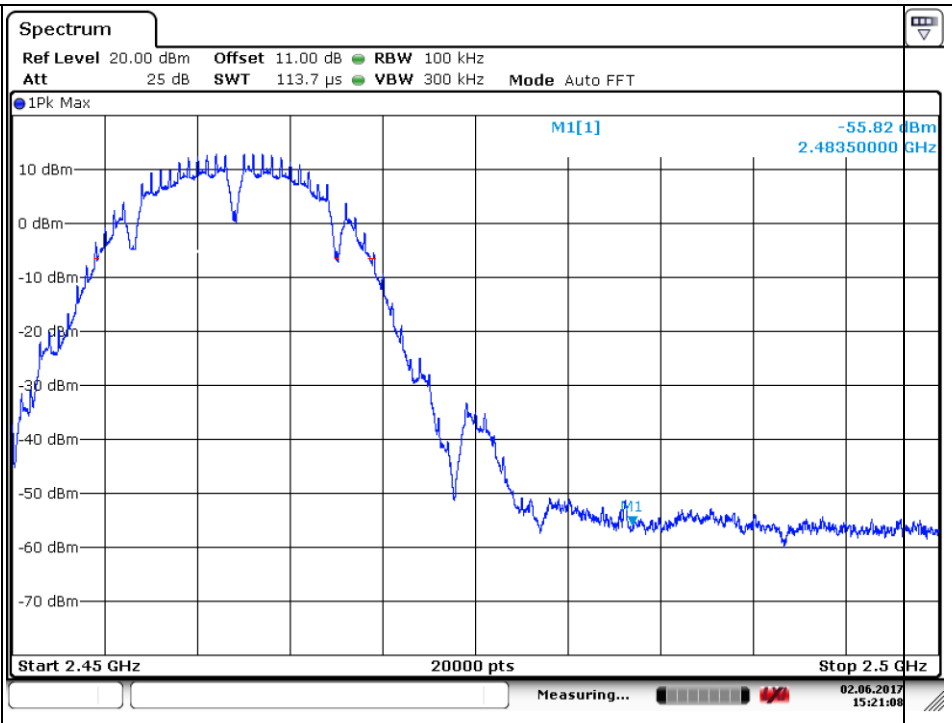
4.2 Test Graphs of Bandedge

802.11b, SISO, Ant0

Low Channel



High Channel



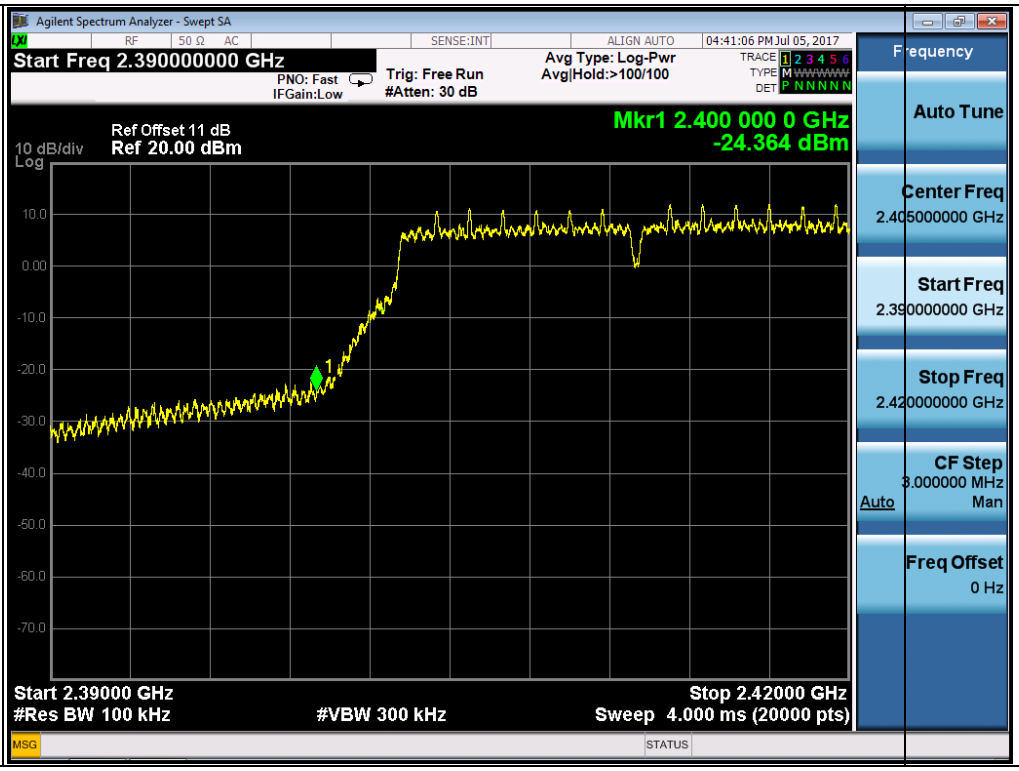
802.11g, SISO, Ant0

Low Channel

High Channel

802.11n-HT20, SISO, Ant0

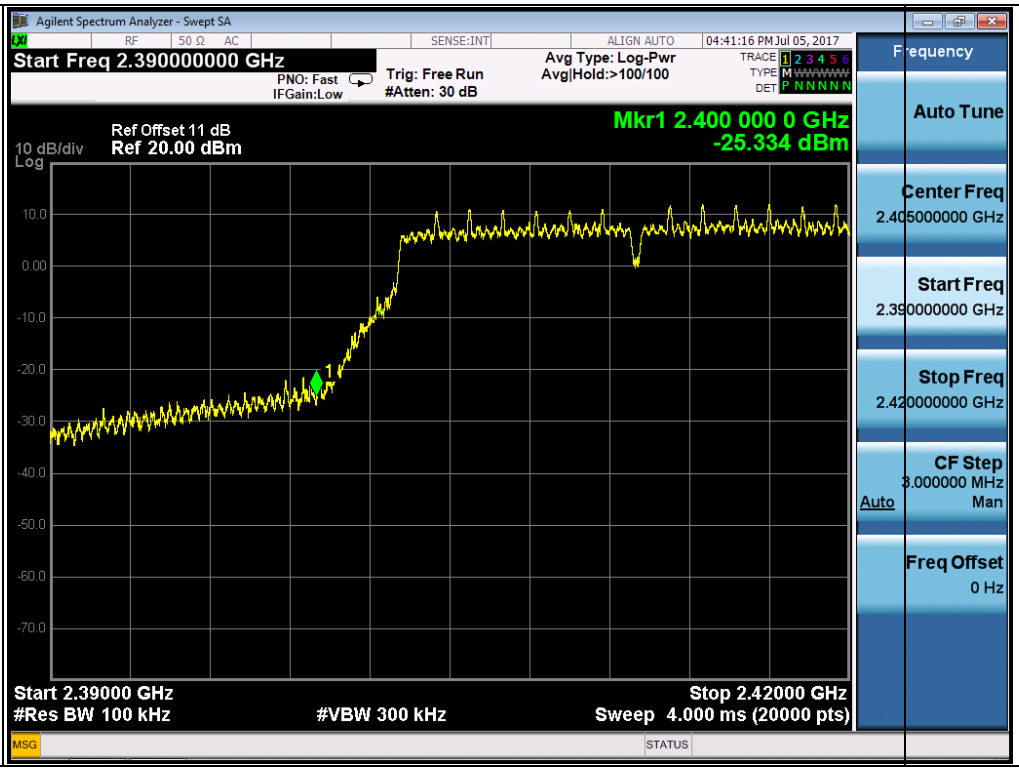
Low Channel



High Channel

802.11n-HT20, MIMO, Ant0

Low Channel



High Channel