

Prüfbericht-Nr.: <i>Test report no.:</i>	CN21VGXZ 001	Auftrags-Nr.: <i>Order no.:</i>	168321772	Seite 1 von 23 <i>Page 1 of 23</i>																				
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2021-06-07																					
Auftraggeber: <i>Client:</i>	Dongguan LIFAair Technology Limited 2nd floor in the 6th district plant, No.2 East Industrial Road, Songshan Lake High-Tech Industrial Development Zone, Dongguan ,523808, Guangdong, CHINA																							
Prüfgegenstand: <i>Test item:</i>	Smart Air Purifying Humidifier																							
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	LAH302 (Trademark: LIFAair)																							
Auftrags-Inhalt: <i>Order content:</i>	FCC and IC approval																							
Prüfgrundlage: <i>Test specification:</i>	CFR47 FCC Part 15: Subpart C Section 15.247 RSS-247 Issue 2 February 2017 CFR47 FCC Part 15: Subpart C Section 15.207 RSS-Gen Issue 5 February 2021 CFR47 FCC Part 15: Subpart C Section 15.209 RSS-102 Issue 5 February 2021 CFR47 FCC Part 2: Section 2.1091																							
Wareneingangsdatum: <i>Date of sample receipt:</i>	2021-06-18	Please refer to photo documents																						
Prüfmuster-Nr.: <i>Test sample no.:</i>	A003074788-001, 002																							
Prüfzeitraum: <i>Testing period:</i>	2021-06-29 – 2021-07-05																							
Ort der Prüfung: <i>Place of testing:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.																							
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.																							
Prüfergebnis*: <i>Test result*:</i>	Pass																							
geprüft von: <i>tested by:</i>	genehmigt von: <i>authorized by:</i>																							
Datum: <i>Date:</i> 2021-08-05																								
	Signed by: Alex Lan		Signed by: Winnie Hou																					
Stellung / Position	Senior Project Engineer	Ausstellungsdatum: <i>Issue date:</i> 2021-08-05																						
Sonstiges / Other:																								
FCC ID: 2A2LR-LF01 IC: 27494-LF01 HVIN: LAH302																								
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged:</i>																						
<table border="0"> <tr> <td>* Legende: 1 = sehr gut</td> <td>2 = gut</td> <td>3 = befriedigend</td> <td>4 = ausreichend</td> <td>5 = mangelhaft</td> </tr> <tr> <td>P(ass) = entspricht o.g. Prüfgrundlage(n)</td> <td>F(ail) = entspricht nicht o.g. Prüfgrundlage(n)</td> <td>N/A = nicht anwendbar</td> <td>N/T = nicht getestet</td> <td></td> </tr> <tr> <td>Legend: 1 = very good</td> <td>2 = good</td> <td>3 = satisfactory</td> <td>4 = sufficient</td> <td>5 = poor</td> </tr> <tr> <td>P(ass) = passed a.m. test specifications(s)</td> <td>F(ail) = failed a.m. test specifications(s)</td> <td>N/A = not applicable</td> <td>N/T = not tested</td> <td></td> </tr> </table>					* 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	
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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. <i>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.</i>																								

Test Summary

5.1.1 ANTENNA REQUIREMENT

RESULT: Pass

5.1.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER

RESULT: Pass

5.1.3 CONDUCTED POWER SPECTRAL DENSITY

RESULT: Pass

5.1.4 99%dB BANDWIDTH

RESULT: Pass

5.1.5 6dB 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 ON AC MAINS

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: Photographs of the Test Set-up

Appendix B: Test Results of Conducted Testing

Appendix C: Test Results of Radiated Testing and conducted emission on AC mains

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

No. 362 Huanguan Road Middle, Longhua District, Shenzhen 518110, People's Republic of China

FCC Registration No.: 694916

IC Registration No.: 25069

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Conducted Emissions				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
EMI Test Receiver	R&S	ESR3	102428	2021-08-19
Artificial Mains Network	R&S	ENV216	102333	2021-08-19
Artificial Mains Network	R&S	ENV432	101411	2021-08-19
Current Probe	R&S	EZ-17	101247	2021-08-19
Voltage Probe	R&S	ESH2-Z3	100557	2021-08-19
Attenuator	R&S	ESH2Z31	100300	2021-08-19
EMC32 test software	R&S	EMC32(Ver.10.50.01)	N/A	N/A
Radio Spectrum Testing				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
Wireless Connectivity Tester	Rohde & Schwarz	CMW270	101375	2021-08-30
Signal Analyzer	Rohde & Schwarz	FSV 40	101441	2021-08-30
Vector Signal Generator	Rohde & Schwarz	SMBV100A	263301	2021-08-30
Signal Generator	Rohde & Schwarz	SMB100A	115186	2021-08-30
OSP	Rohde & Schwarz	OSP 150	101017	2021-12-20
Control PC	DELL	OptiPlex 7050	FTJZ9P2	N/A
Test Software	Rohde & Schwarz	WMS32 (V10.40.10)	N/A	N/A
Power Meter	Rohde & Schwarz	NRP2	107105	2021-12-20
Wideband Power Sensor	Rohde & Schwarz	NRP-Z81	105350	2021-12-20
Unwanted Emission Testing				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
Signal Generator	Rohde & Schwarz	SMB100A	180840	2021-08-30
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	165339	2021-08-30
Signal Analyzer	Rohde & Schwarz	FSV 40	101440	2021-08-30
System Controller Interface	Rohde & Schwarz	SCI-100	S10010036	N/A
Filterbank	Rohde & Schwarz	CDMA	100751	2021-08-30
Filterbank	Rohde & Schwarz	GSM	100811	2021-08-30
OSP	Rohde & Schwarz	OSP 120	102041	N/A
OSP	Rohde & Schwarz	OSP 150	101385	N/A
Pre-amplifier	Rohde & Schwarz	SCU08F1	08320030	2021-08-30
Amplifier	Rohde & Schwarz	SCU-18F	180079	2021-08-30
Amplifier	Rohde & Schwarz	SCU40A	100450	2021-09-03
Trilog Broadband Antenna (30 MHz - 1 GHz)	Schwarzbeck	VULB9162	192	2021-09-02

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Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218719	2021-09-02
Wideband Ridged Horn Antenna (12-18 GHz)	Steatite	QMS-00208	18312	2021-09-02
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19066	2021-09-02
Biconical Broadband Antenna (30 MHz - 1 GHz)	Schwarzbeck	VUBA 9117	357	2021-09-02
Double Ridged Broadband Horn Antenna (1 – 18 GHz)	Schwarzbeck	BBHA 9120 D	01760	2021-09-02
Broadband Horn Antenna (15 – 40 GHz)	Schwarzbeck	BBHA 9170	00862	2021-09-02
Test software	Rohde & Schwarz	EMC32 (V10.40.00)	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NW9P2	N/A

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 basis 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 (dB μ V/m)	4.27dB
Radiated Emission (above 1000MHz)	Field strength (dB μ V/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 & C 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 TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at No. 362 Huanguan Road Middle, Longhua District, Shenzhen 518110, People's Republic of 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 a Smart Air Purifying Humidifier which supports 2.4GHz Wi-Fi technology.

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	Smart Air Purifying Humidifier
Type Designation	LAH302
Trade Mark	LIFAair
FCC ID	2A2LR-LF01
IC	27494-LF01
HVIN	LAH302
Operating Voltage	AC 120V, 60Hz
Testing Voltage	AC 120V, 60Hz
Technical Specification of Wi-Fi 802.11 b/g/n	
Operating Frequency	2412 - 2462 MHz for 802.11b/g/n(HT20) 2422 - 2452 MHz for 802.11n(HT40)
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 ~ MCS7 for 802.11n
Channel Number	11 channels for 802.11b/g/n(HT20) 7 channels for 802.11n(HT40)
Channel Separation	5 MHz
Antenna Type	FPC Antenna
Max. Antenna Gain	3.45 dBi

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

RF Channel	802.11 b/g/n(HT20)	802.11 n(HT40)
	Frequency (MHz)	Frequency (MHz)
01	2412	/
02	2417	/
03	2422	2422
04	2427	2427
05	2432	2432
06	2437	2437
07	2442	2442
08	2447	2447
09	2452	2452
10	2457	/
11	2462	/

3.3 Independent Operation Modes

The basic operation modes are:

A. On

1. Wi-Fi transmitting mode

1) Low Channel

2) Middle Channel

3) High Channel

B. On, Wi-Fi connecting mode

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
- FCC/IC Label and Location Info
- 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.

4.3 Special Accessories and Auxiliary Equipment

Table 4: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	S/N
Mobile Phone	HTC	D626w	N/A
Notebook	Lenovo	ThinkPad X260	N/A

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 30MHz)

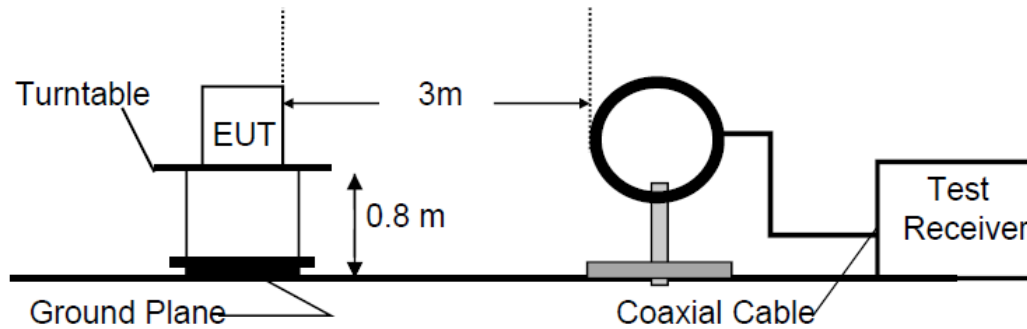


Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

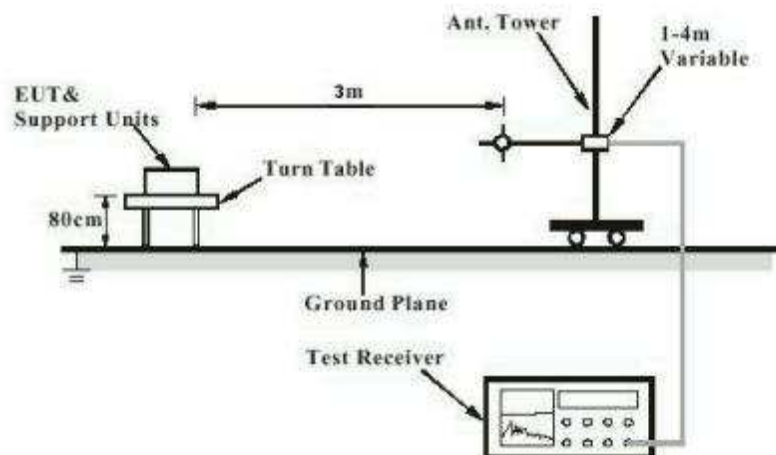


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

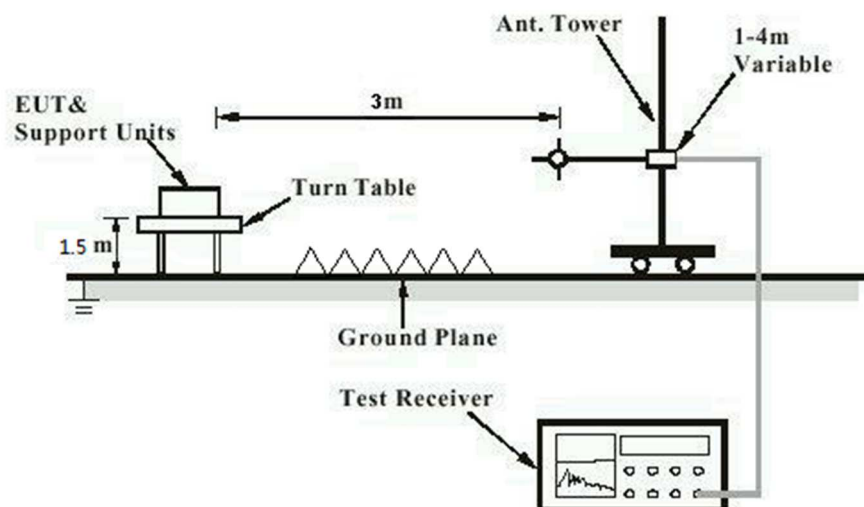


Diagram of Measurement Configuration for Mains Conduction Measurement

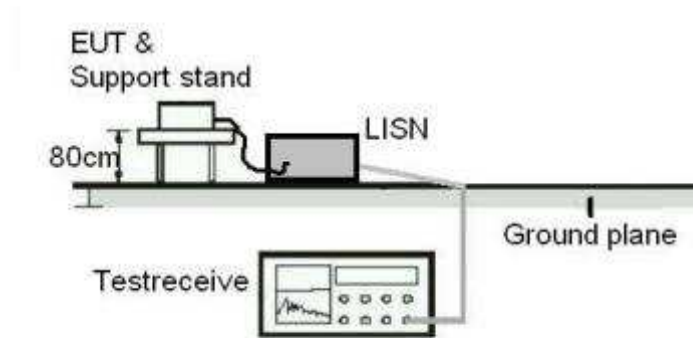
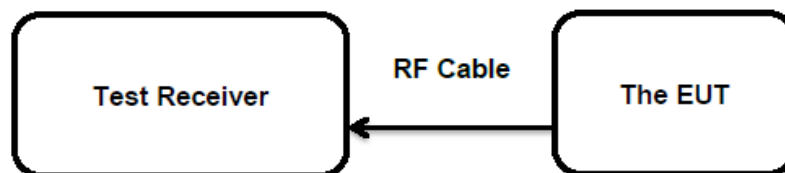


Diagram of Measurement Configuration for Conducted Transmitter Measurement



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 an internal antenna, the directional gain of antenna is 3.45 dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 Maximum Peak Conducted Output Power

RESULT:
Pass
Test Specification

Test standard : FCC Part 15.247(b)(3)
 : RSS-247 Clause 5.4(2)&(4)
 Basic standard : ANSI C63.10: 2013
 Limits : < 1 Watt (Maximum Conducted Peak Power)
 : e.i.r.p. <4W
 Kind of test site : Shielded Room

Test Setup

Date of testing : 2021-06-30
 Input voltage : AC 120V, 60Hz
 Operation mode : A
 Test channel : Low / Middle / High
 Ambient temperature : 25 °C
 Relative humidity : 56 %
 Atmospheric pressure : 101 kPa

For details refer to following test result.

Table 5: Test Result of Maximum Peak Conducted Output Power, Wi-Fi 802.11 b/g/n

Test Mode	Data Rate	Test Channel (MHz)	Measured Peak Power		Limit (W)
			(dBm)	(W)	
802.11b	1 Mbps	2412	17.6	0.0575	< 1.0
		2437	18.1	0.0646	
		2462	18.5	0.0708	
802.11g	6 Mbps	2412	22.6	0.1820	
		2437	22.7	0.1862	
		2462	22.7	0.1862	
802.11n (HT20)	MCS0	2412	22.4	0.1738	
		2437	22.6	0.1820	
		2462	22.5	0.1778	
802.11n (HT40)	MCS0	2422	20.1	0.1023	
		2437	20.3	0.1072	
		2452	20.5	0.1122	
Maximum Measured Value			22.70	0.1862	

Note: The cable loss is taken into account in results and the e.i.r.p. is 26.15 dBm less than 4W (36 dBm).

5.1.3 Conducted Power Spectral Density

RESULT:**Pass****Test Specification**

Test standard : FCC Part 15.247(e)
RSS-247 Clause 5.2(2)
Basic standard : ANSI C63.10: 2013
Limits : 8 dBm / 3kHz
Kind of test site : Shielded Room

Test Setup

Date of testing : 2021-06-30
Input voltage : AC 120V, 60Hz
Operation mode : A
Test channel : Low / Middle / High
Ambient temperature : 25 °C
Relative humidity : 56 %
Atmospheric pressure : 101 kPa

For details refer to following test result.

Table 6: Test Result of Power Spectral Density

Test Mode	Data Rate	Frequency (MHz)	Measured Peak Power Spectral Density (dBm/3KHz)
802.11b	1 Mbps	2412	-7.65
		2437	-7.79
		2462	-5.89
802.11g	6 Mbps	2412	-9.68
		2437	-8.91
		2462	-8.93
802.11n (HT20)	MCS0	2412	-9.65
		2437	-9.92
		2462	-7.35
802.11n (HT40)	MCS0	2422	-12.91
		2437	-12.12
		2452	-11.78
Maximum Measured Value			-5.89

Note: The cable loss is taken into account in results.

For the measurement records, refer to the appendix B.

5.1.4 99%dB Bandwidth

RESULT:

Pass

Test Specification

Test standard : RSS-Gen clause 6.7
Basic standard : ANSI C63.10: 2013
Kind of test site : Shielded Room

Test Setup

Date of testing : 2021-06-30
Input voltage : AC 120V, 60Hz
Operation mode : A
Test channel : Low / Middle / High
Ambient temperature : 25 °C
Relative humidity : 56 %
Atmospheric pressure : 101 kPa

Table 7: Test Result of 99% Bandwidth

Test Mode	Data Rate	Frequency (MHz)	99% Bandwidth (MHz)	Limit (MHz)
802.11b	1 Mbps	2412	13.00	/
		2437	13.00	
		2462	13.00	
802.11g	6 Mbps	2412	16.70	
		2437	16.80	
		2462	16.90	
802.11n (HT20)	MCS0	2412	17.90	
		2437	17.90	
		2462	17.90	
802.11n (HT40)	MCS0	2422	36.25	
		2437	36.25	
		2452	36.50	
Minimum Measured Value			13.00	

For the measurement records, refer to the appendix B.

5.1.5 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 : 2021-06-30
 Input voltage : AC 120V, 60Hz
 Operation mode : A
 Test channel : Low / Middle / High
 Ambient temperature : 25 °C
 Relative humidity : 56 %
 Atmospheric pressure : 101 kPa

For details refer to following test result.

Table 8: Test Result of 6dB Bandwidth

Test Mode	Data Rate	Frequency (MHz)	-6dB Bandwidth (MHz)	Limit (kHz)
802.11b	1 Mbps	2412	10.10	> 500
		2437	10.15	
		2462	10.10	
802.11g	6 Mbps	2412	16.40	
		2437	16.40	
		2462	16.40	
802.11n (HT20)	MCS0	2412	17.60	
		2437	17.65	
		2462	17.40	
802.11n (HT40)	MCS0	2422	35.20	
		2437	35.60	
		2452	35.40	
Minimum Measured Value			10.10	

For the measurement records, refer to the appendix B.

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	: 20dB (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	: 2021-06-30
Input voltage	: AC 120V, 60Hz
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 25 °C
Relative humidity	: 56 %
Atmospheric pressure	: 101 kPa

Test results of 100kHz Bandwidth of Frequency Band Edge by Conducted method refer to test plots, and compliance is achieved as well.

For the measurement records, refer to the appendix B.

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 & 5.5
Basic standard	: ANSI C63.10: 2013
Limits	: Refer to 15.209(a) of FCC part 15.247(d) RSS-Gen Table 4 & Table 5
Kind of test site	: 3m Semi-anechoic Chamber

Test Setup

Date of testing	: 2021-06-29 – 2021-06-30
Input voltage	: AC 120V, 60Hz
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 22°C
Relative humidity	: 50 %
Atmospheric pressure	: 101 kPa

Remark:

Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst case spurious emissions configuration of the each mode were reported.

For the measurement records, refer to the appendix C.

5.1.8 Conducted Emission on AC Mains

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 4
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2021-07-05
Input voltage	: AC 120V, 60Hz
Operation mode	: B
Earthing	: Not connected
Ambient temperature	: 24 °C
Relative humidity	: 53 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix C.

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
RSS-102 Issue 5 February 2021

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 KDB 447498 v06

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

Where:

S = power density (mW/cm²)

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:

Wi-Fi 802.11 b/g/n: 22.70 dBm

From the peak RF output power, the minimum mobile separation distance, d=20 cm, as well as the antenna gain (Max. 3.45 dBi for Wi-Fi 802.11 b/g/n), the RF power density can be calculated as below:

For Wi-Fi 802.11 b/g/n: $S_{(mW/cm^2)} = PG/4\pi R^2 = 0.082 \text{ mW/cm}^2$

Limits for Maximum Permissible Exposure (MPE) according to FCC Part 1.1310:

1.0 mW/cm²

IC requirement:

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 $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;

- RF exposure evaluation exempted power for Wi-Fi 802.11 b/g/n: 2.670 W

The nominal maximum conducted output power specified:

Wi-Fi 802.11 b/g/n: 22.70 dBm

Antenna Gain: 3.45 dBi for Wi-Fi 802.11 b/g/n

The Max. e.i.r.p. for Wi-Fi 802.11 b/g/n: 26.15 dBm = 0.412 W

The e.i.r.p. for Wi-Fi 802.11 b/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.”

7 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix A.

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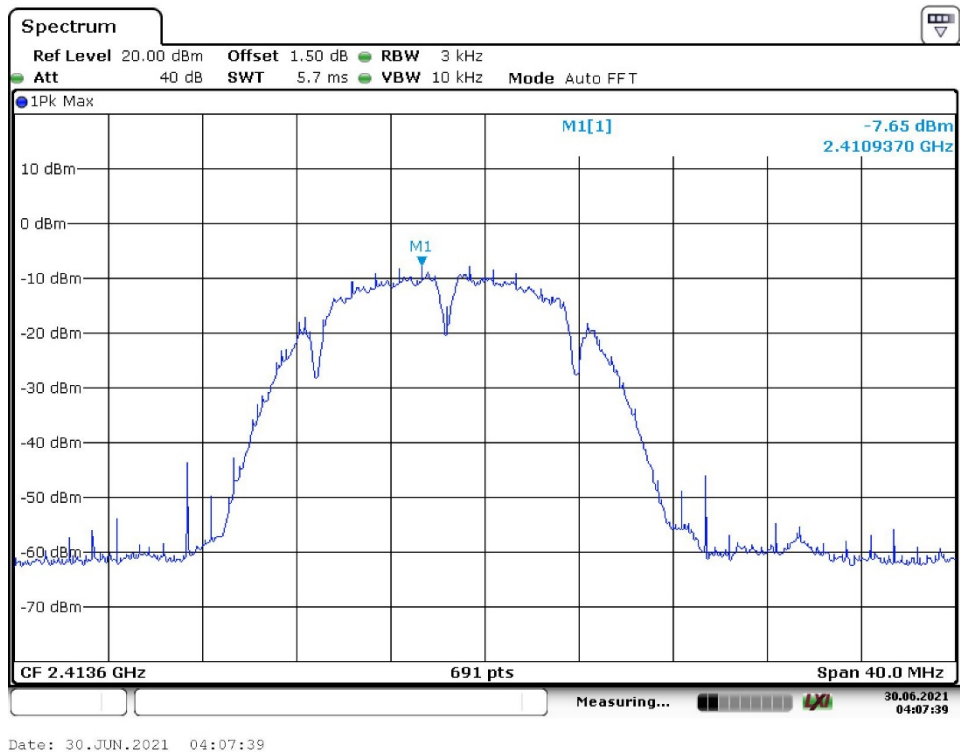
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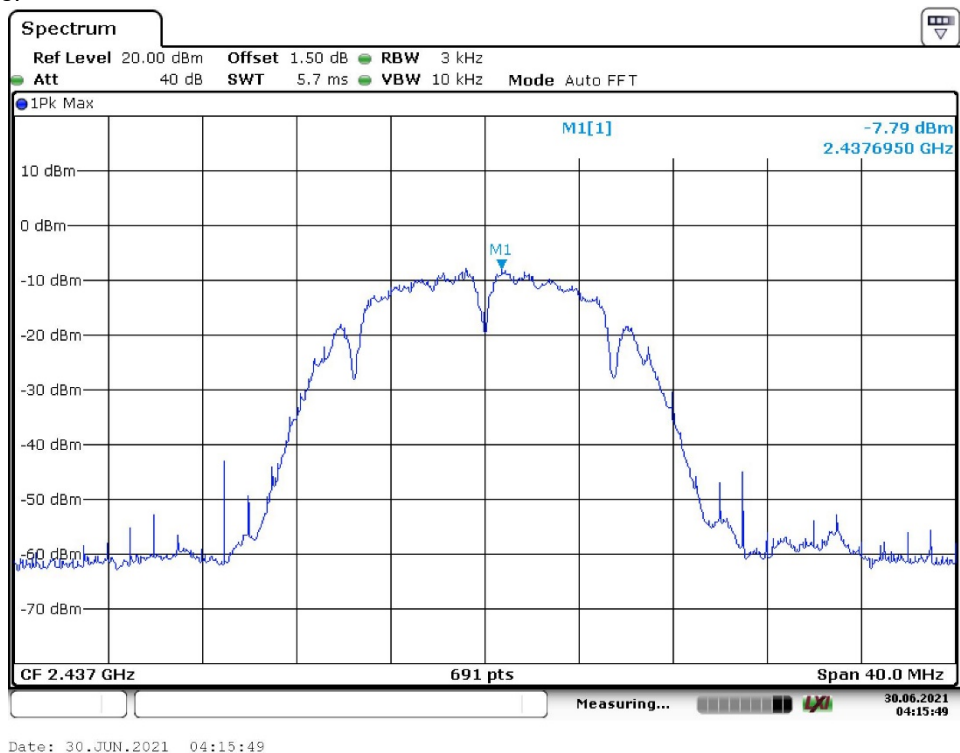
Appendix B.1: Conducted Power Spectral Density

Wi-Fi 802.11 b mode, 1 Mbps

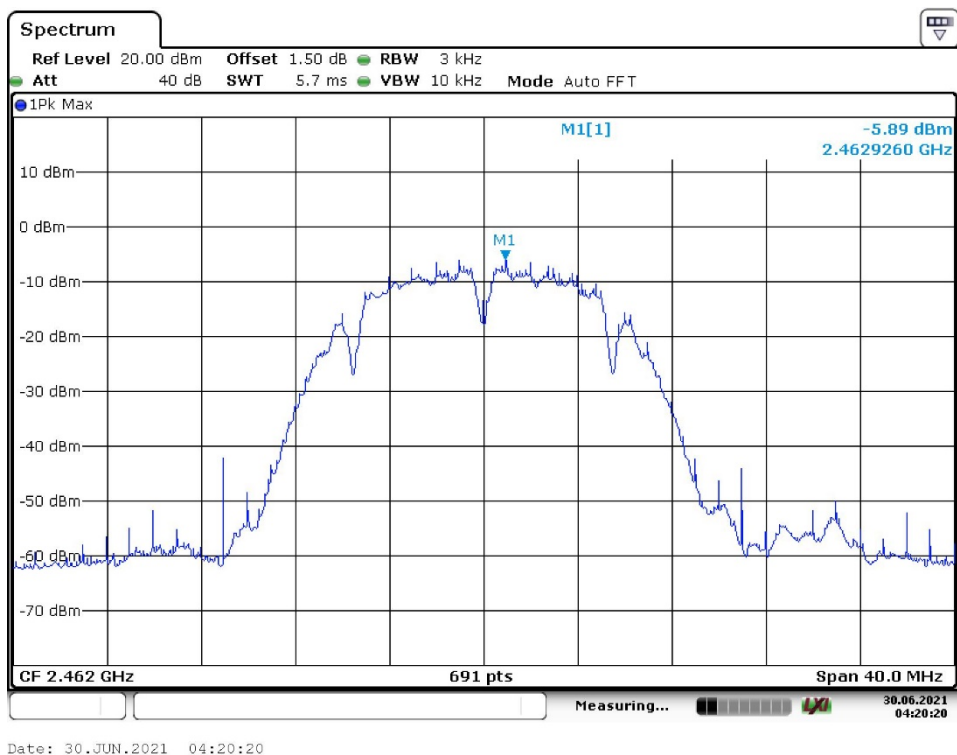
Low Channel



Middle Channel

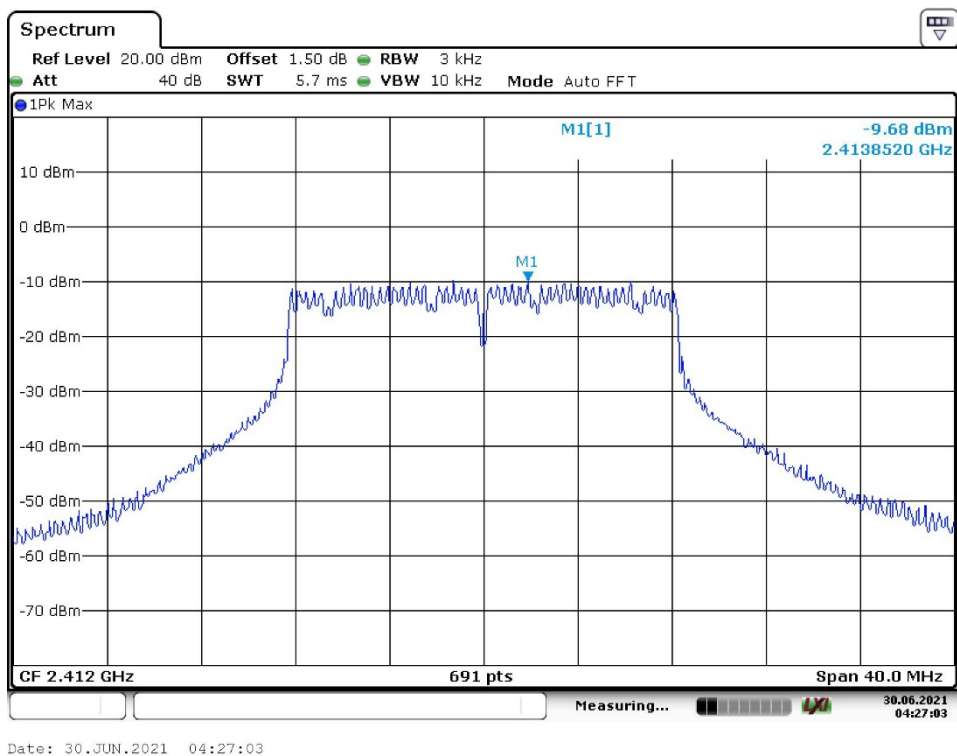


High Channel

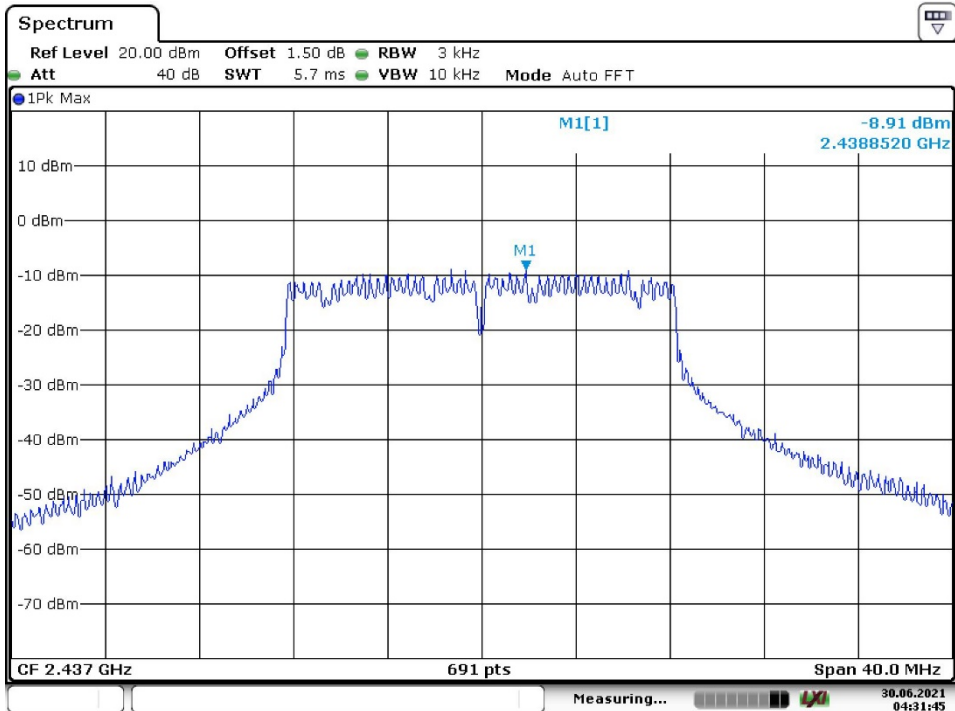


Wi-Fi 802.11 g mode, 6 Mbps

Low Channel

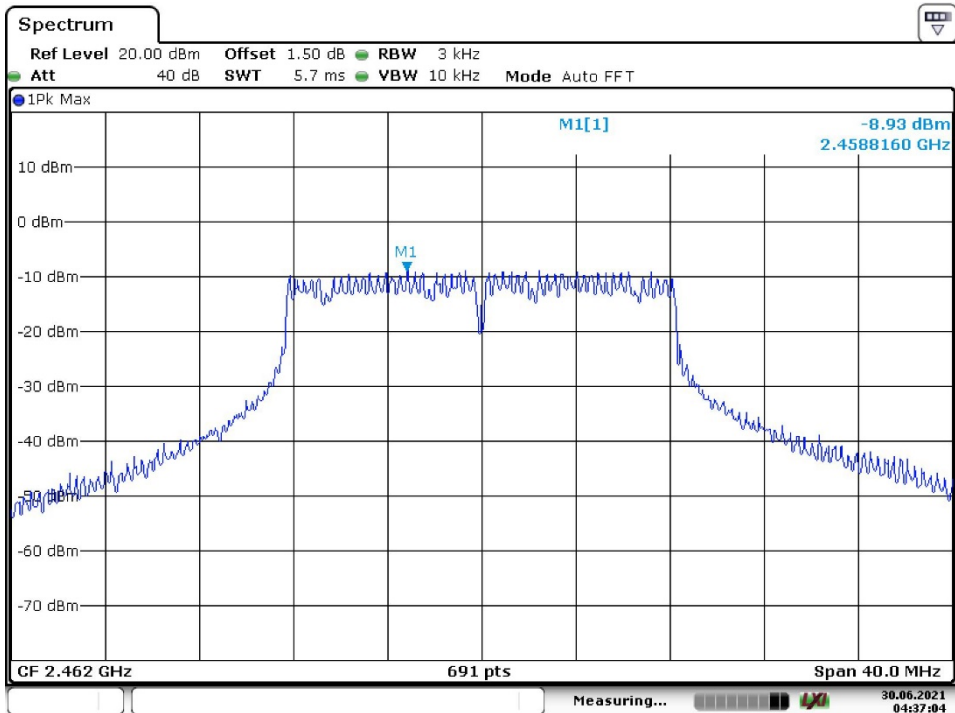


Middle Channel



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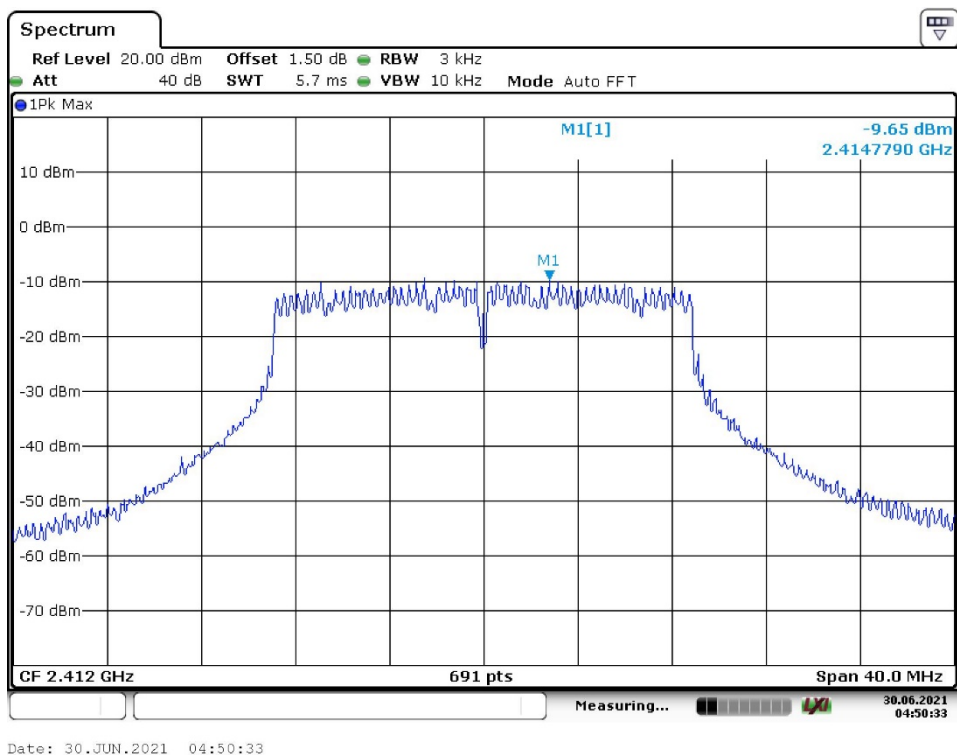
High Channel



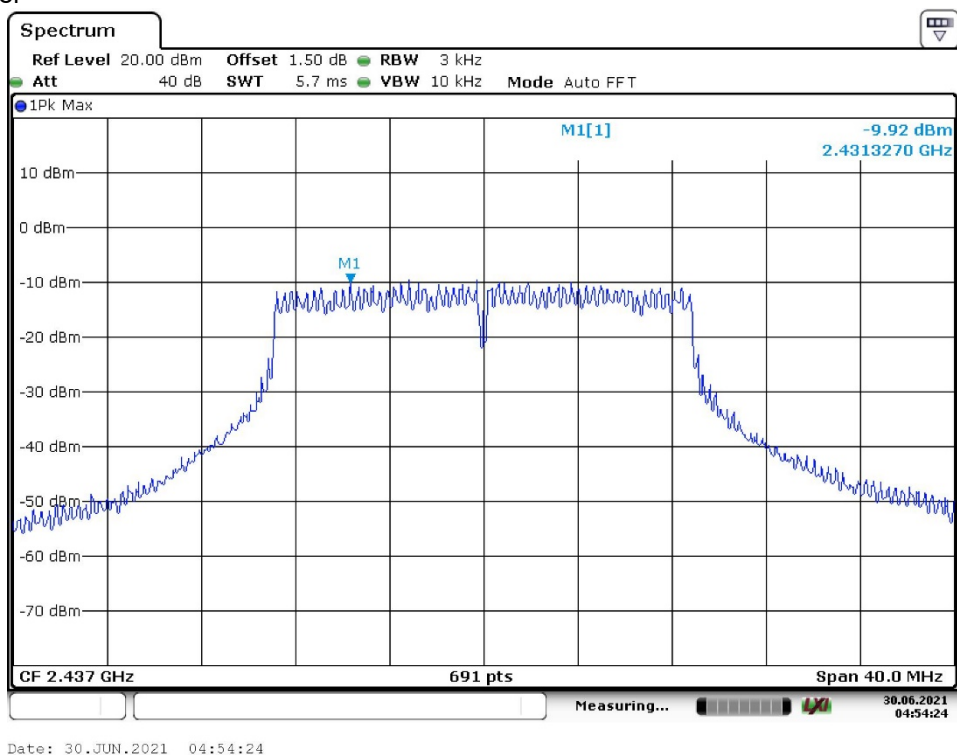
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Wi-Fi 802.11 n(HT20) mode, MCS0

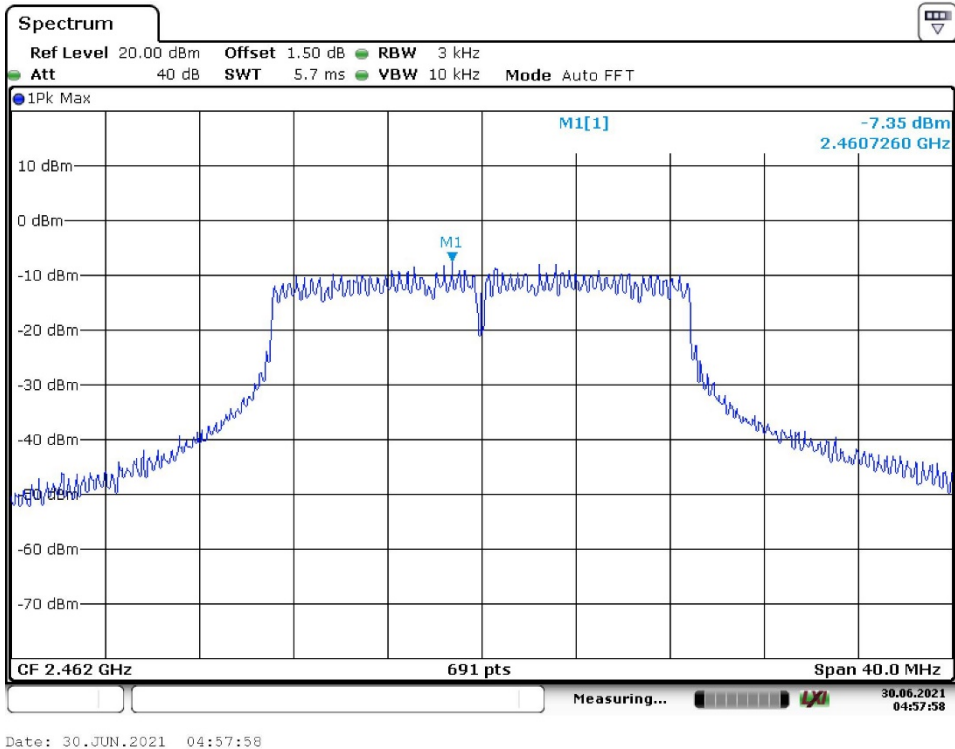
Low Channel



Middle Channel

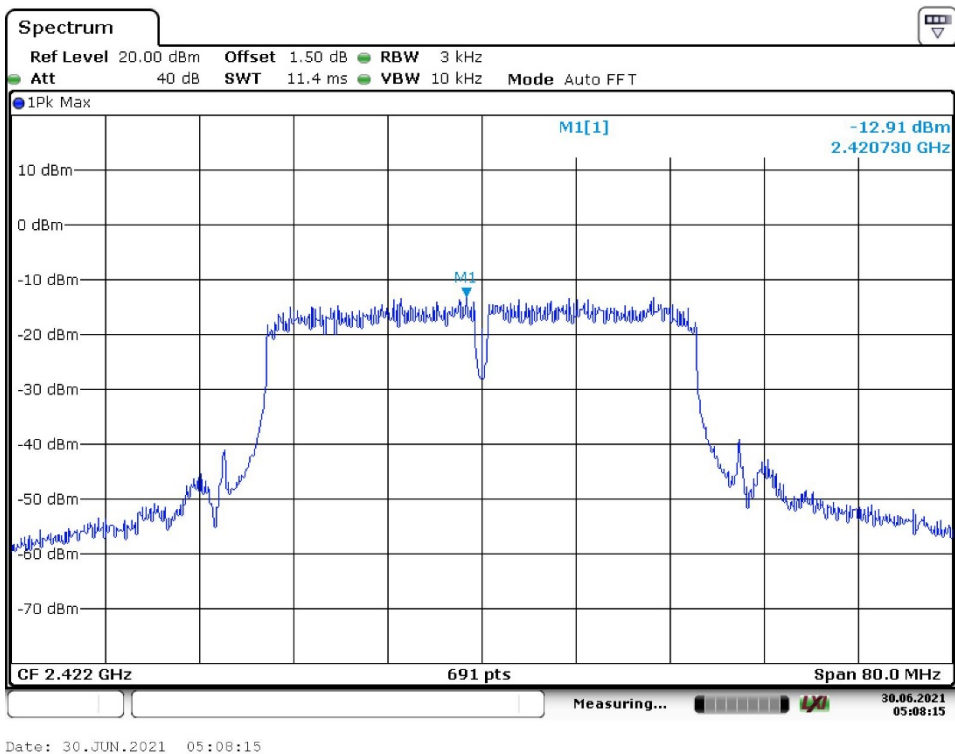


High Channel

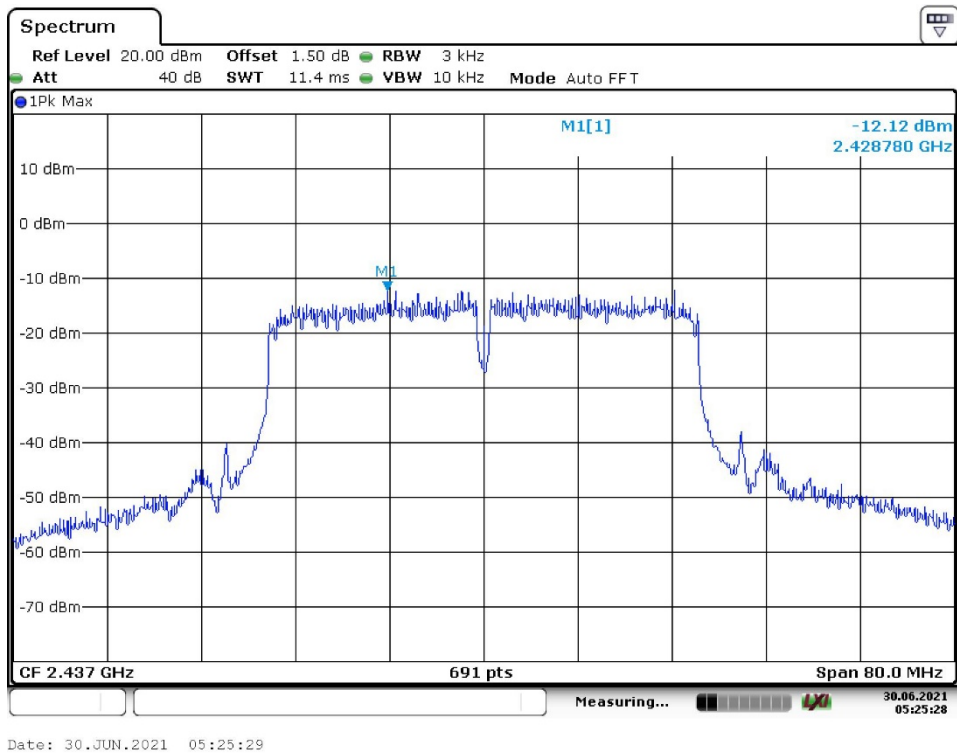


Wi-Fi 802.11 n(HT40) mode, MCS0

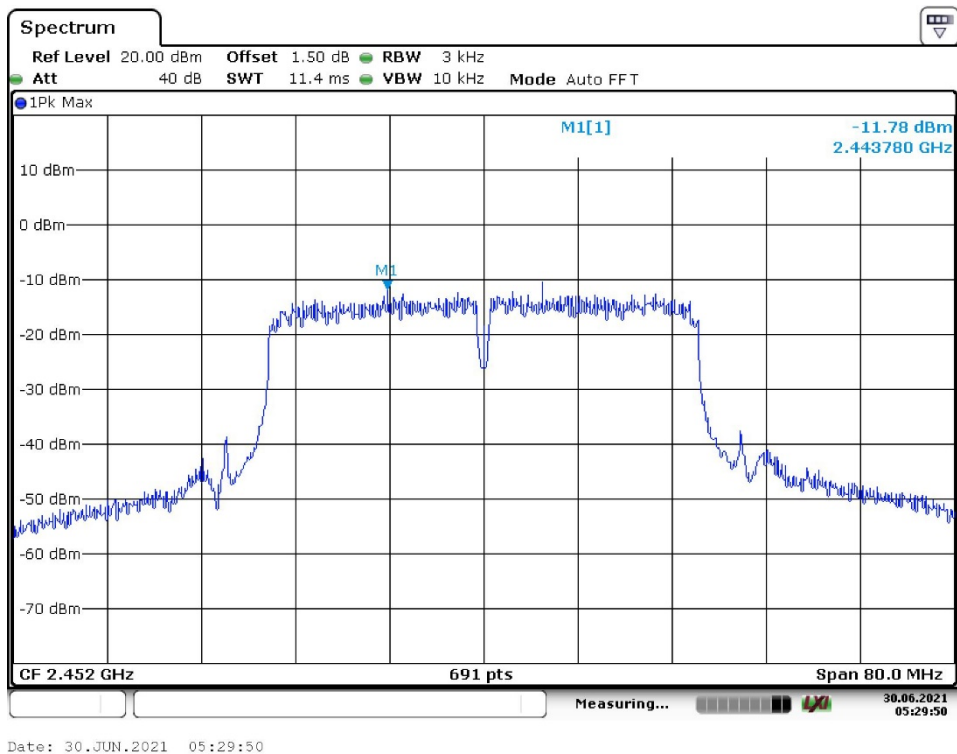
Low Channel



Middle Channel



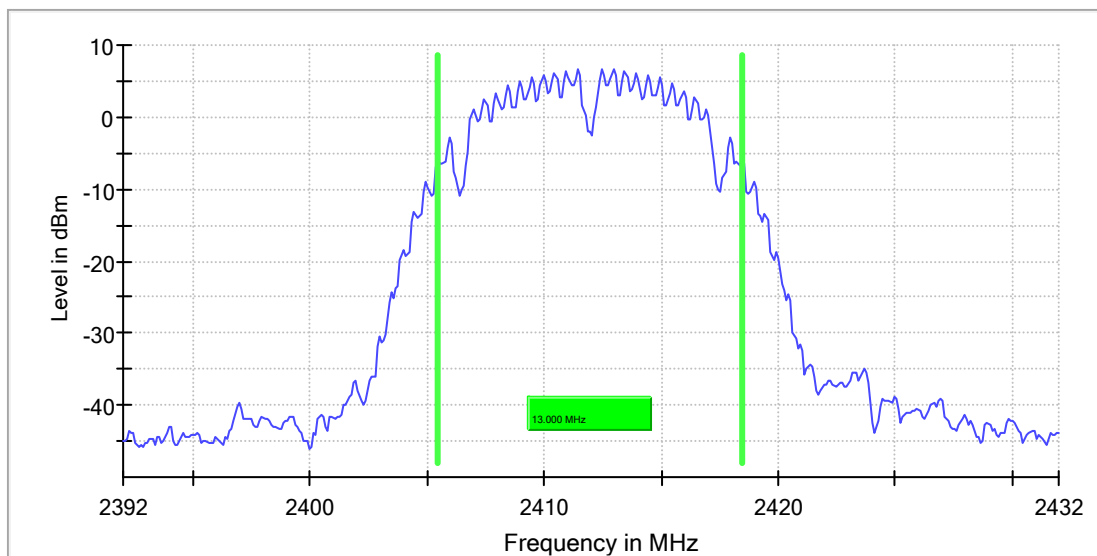
High Channel



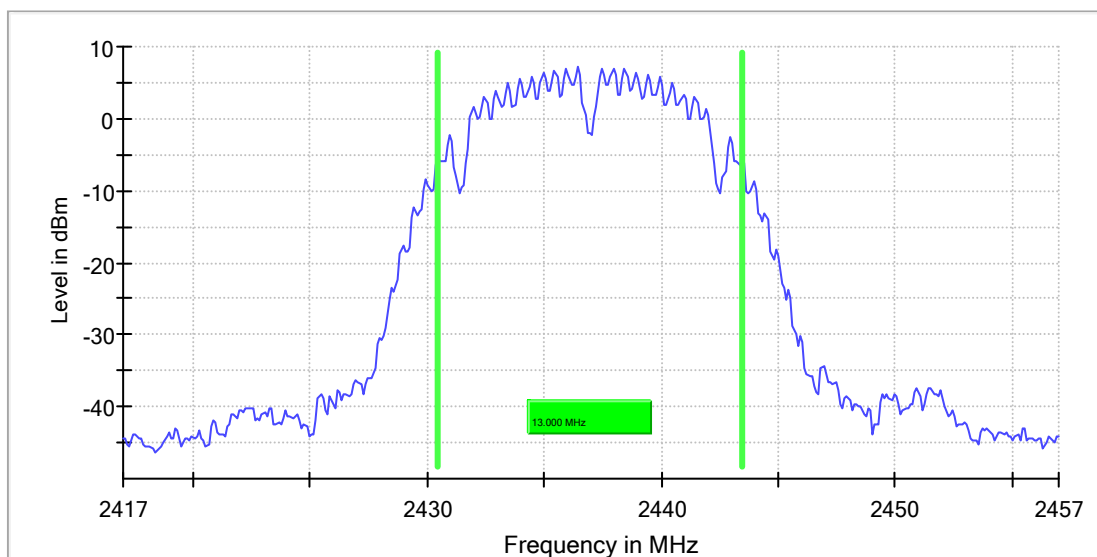
Appendix B.2: 99% Bandwidth

Wi-Fi 802.11 b mode, 1 Mbps

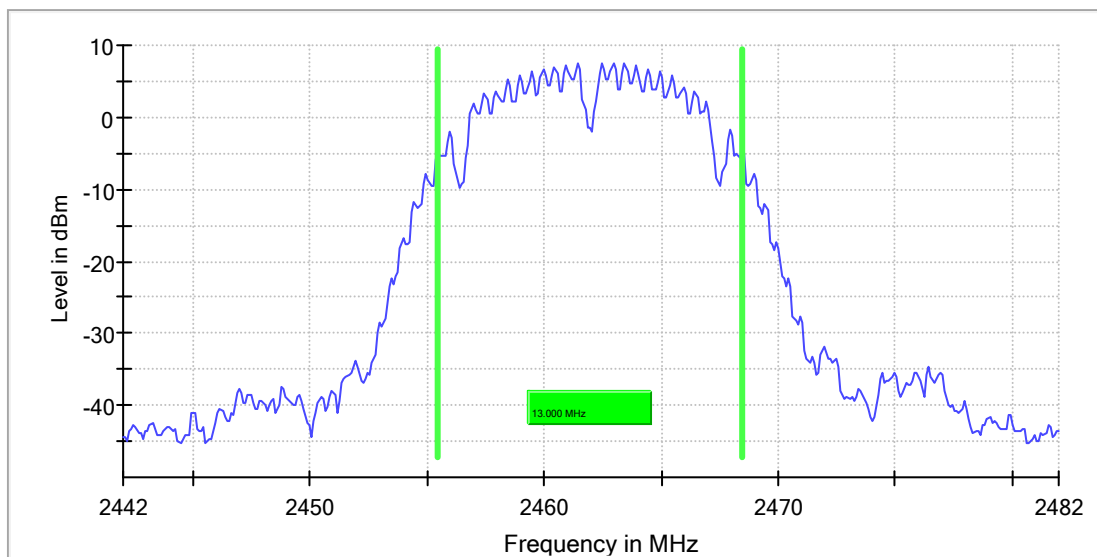
Low Channel
RBW=200KHz, VBW=1MHz



Middle Channel
RBW=200KHz, VBW=1MHz



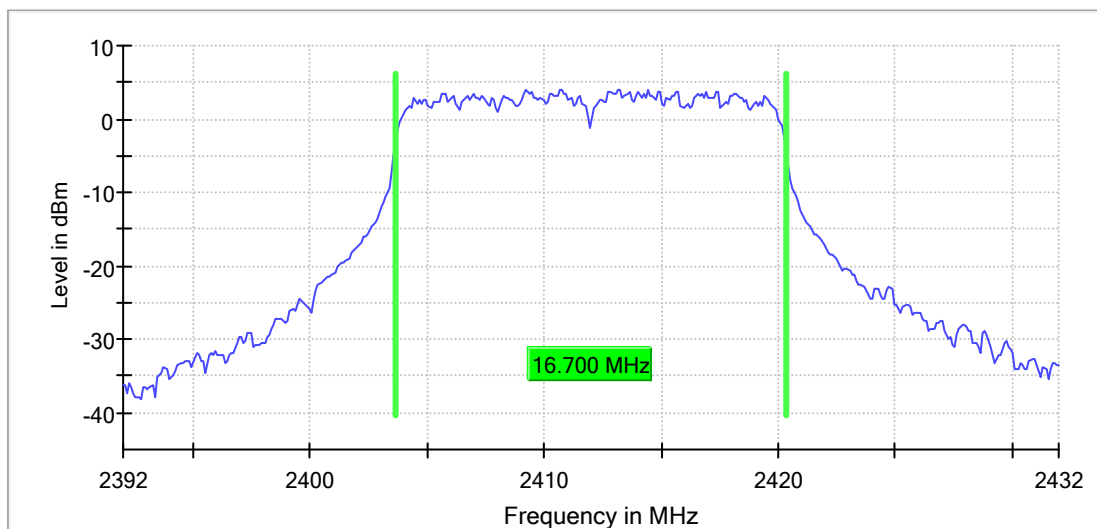
High Channel
RBW=200KHz, VBW=1MHz



Wi-Fi 802.11 g mode, 6 Mbps

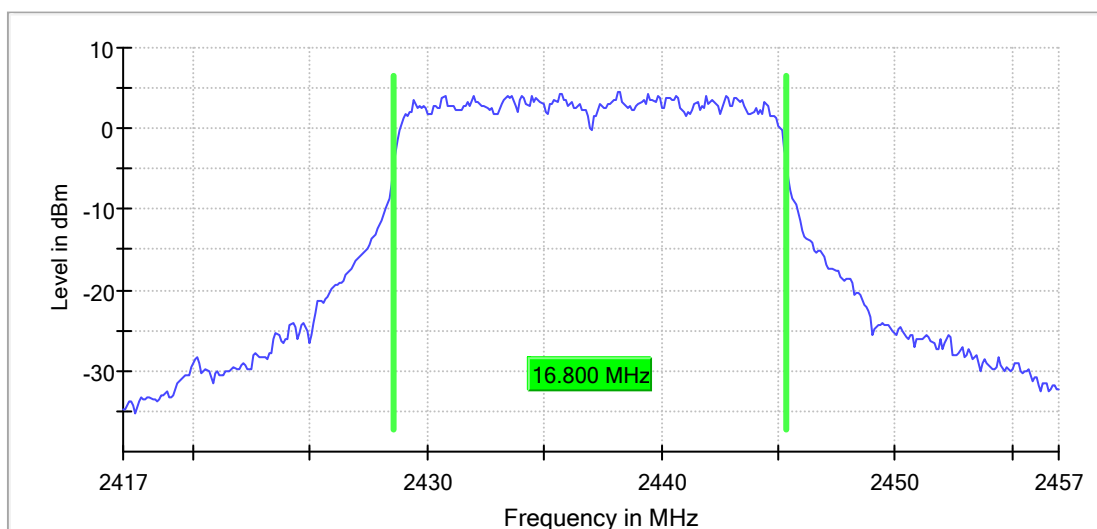
Low Channel
RBW=200KHz, VBW=1MHz

99 % Bandwidth



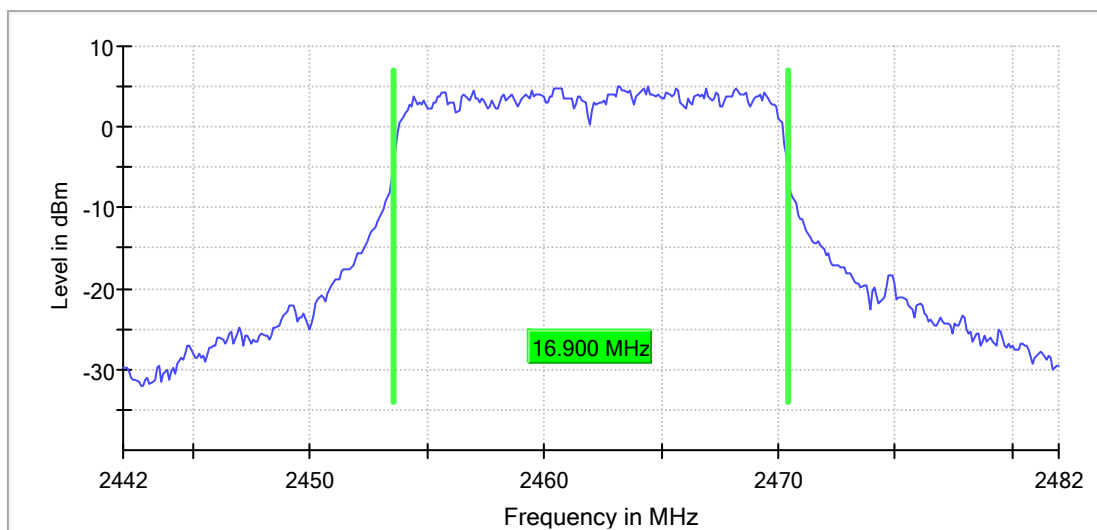
Middle Channel
RBW=200KHz, VBW=1MHz

99 % Bandwidth



High Channel
RBW=200KHz, VBW=1MHz

99 % Bandwidth

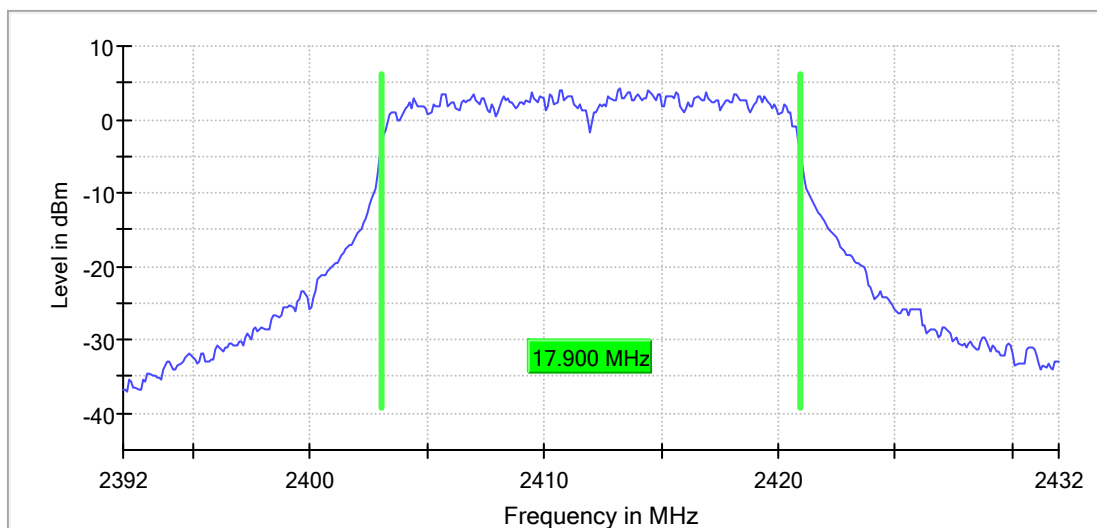


Wi-Fi 802.11 n(HT20) mode, MCS0

Low Channel

RBW=200KHz, VBW=1MHz

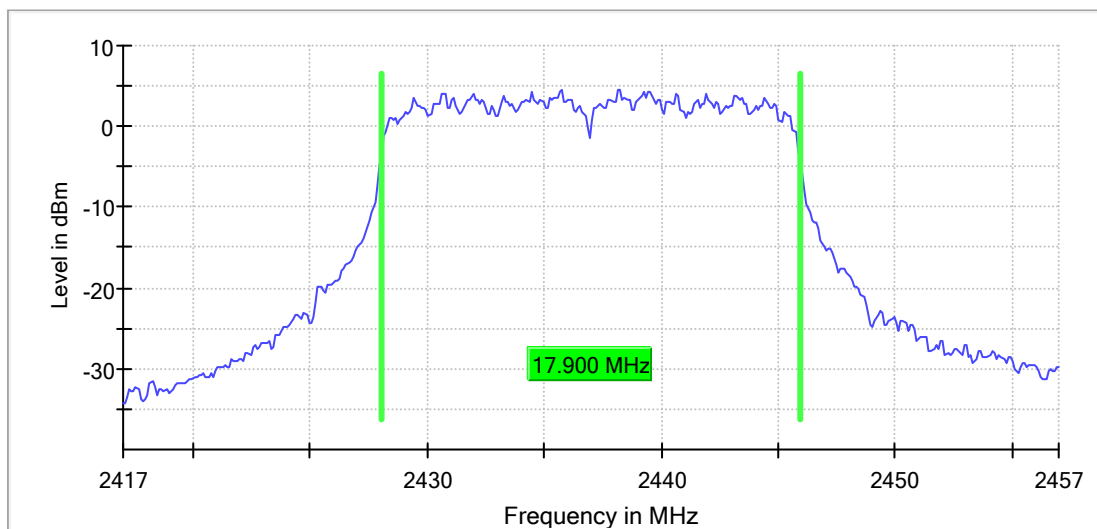
99 % Bandwidth



Middle Channel

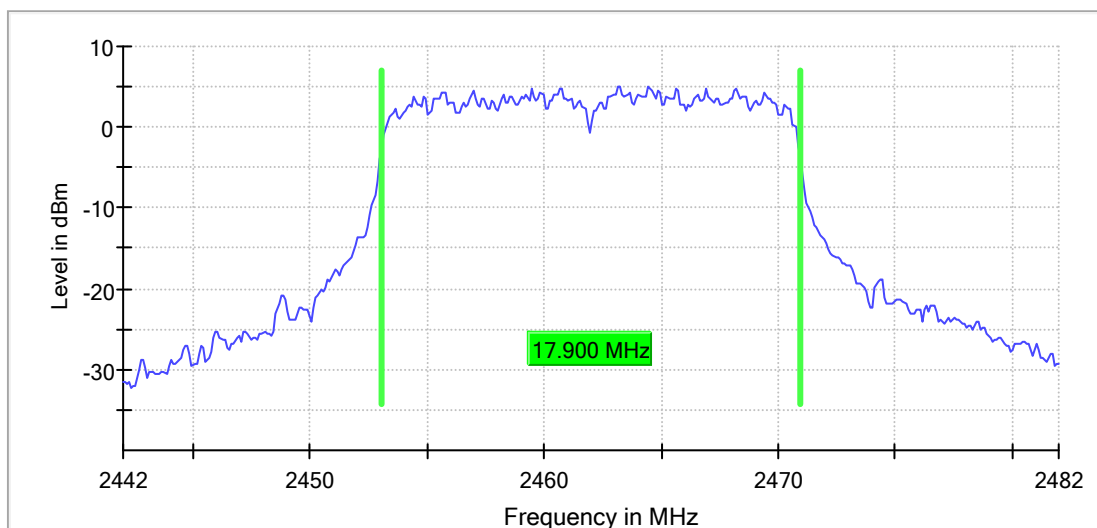
RBW=200KHz, VBW=1MHz

99 % Bandwidth



High Channel
RBW=200KHz, VBW=1MHz

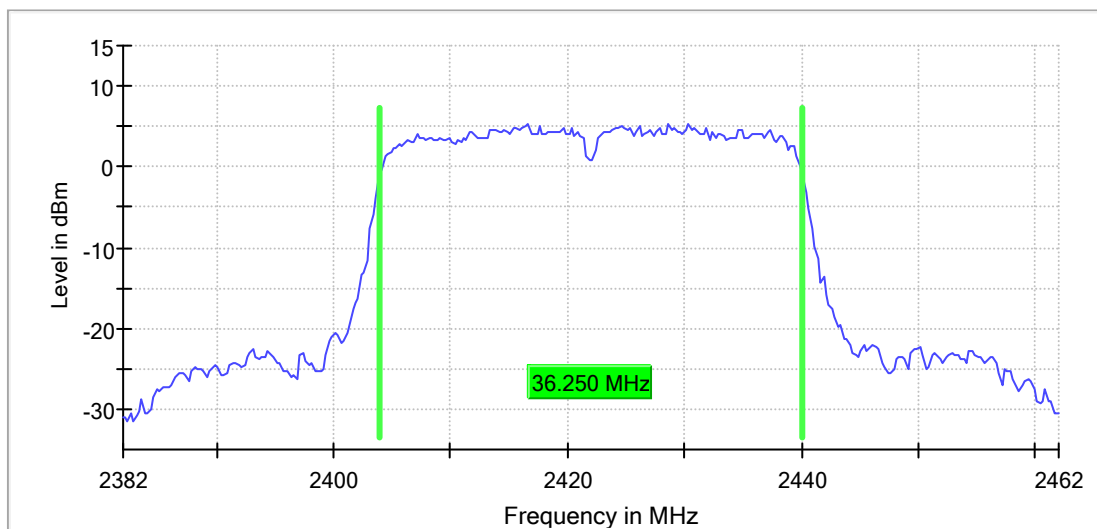
99 % Bandwidth



Wi-Fi 802.11 n(HT40) mode, MCS0

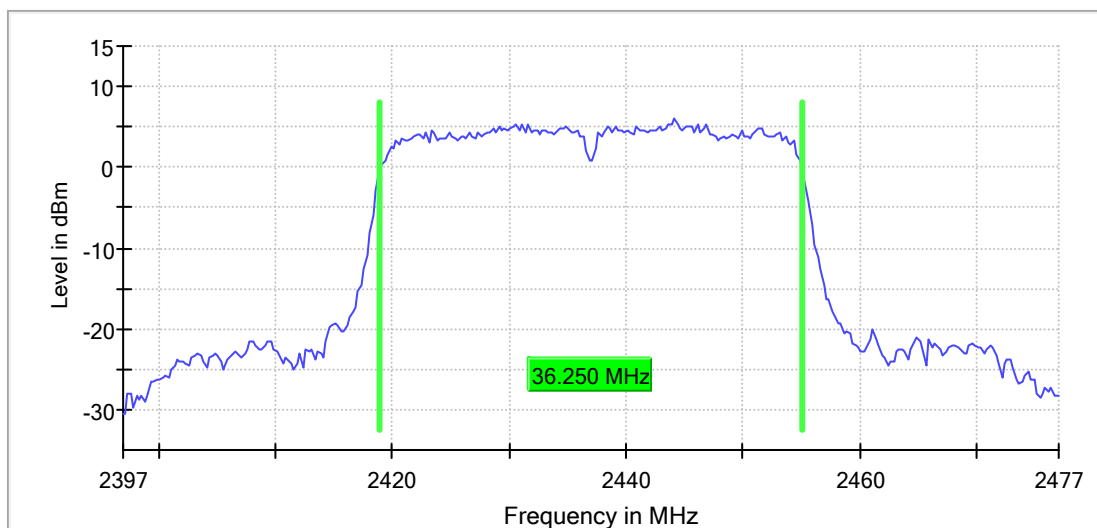
Low Channel
RBW=500KHz, VBW=2MHz

99 % Bandwidth



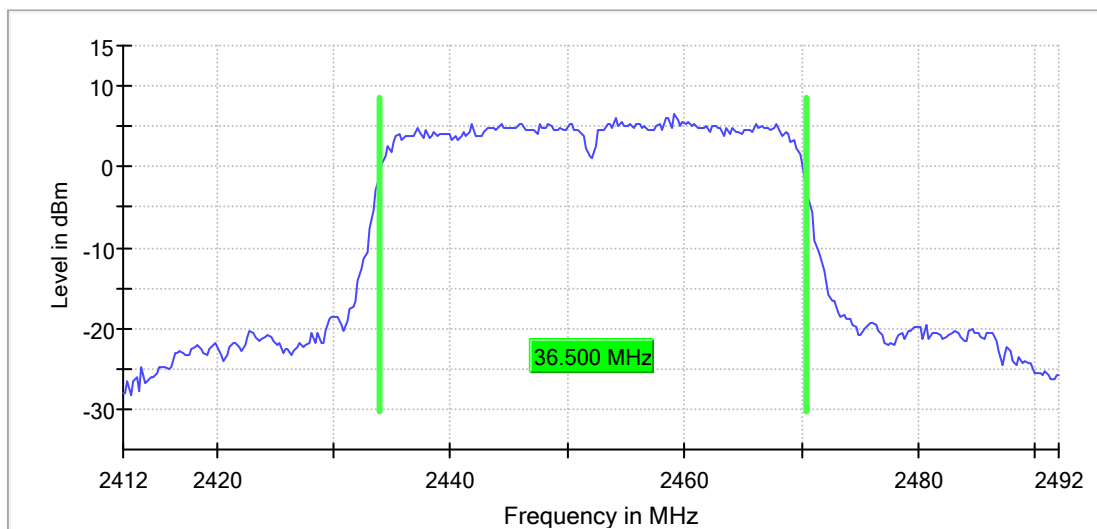
Middle Channel
RBW=500KHz, VBW=2MHz

99 % Bandwidth



High Channel
RBW=500KHz, VBW=2MHz

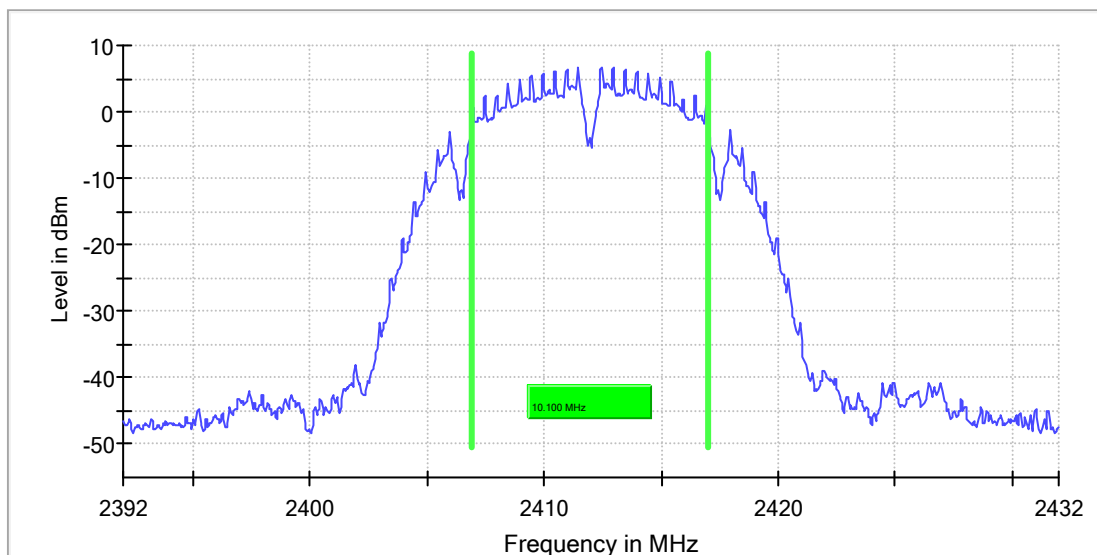
99 % Bandwidth



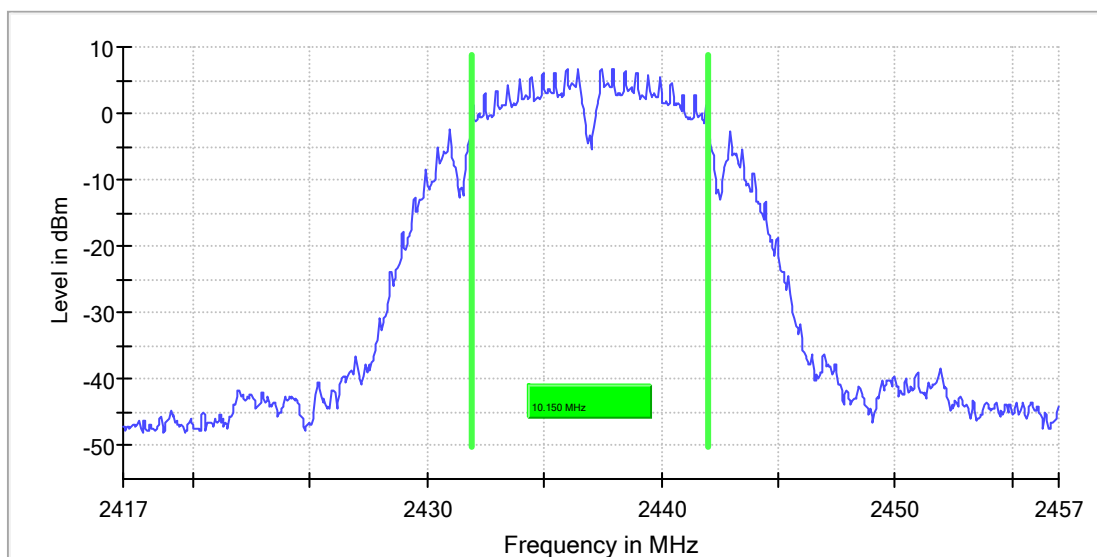
Appendix B.3: 6dB Bandwidth

Wi-Fi 802.11 b mode, 1 Mbps

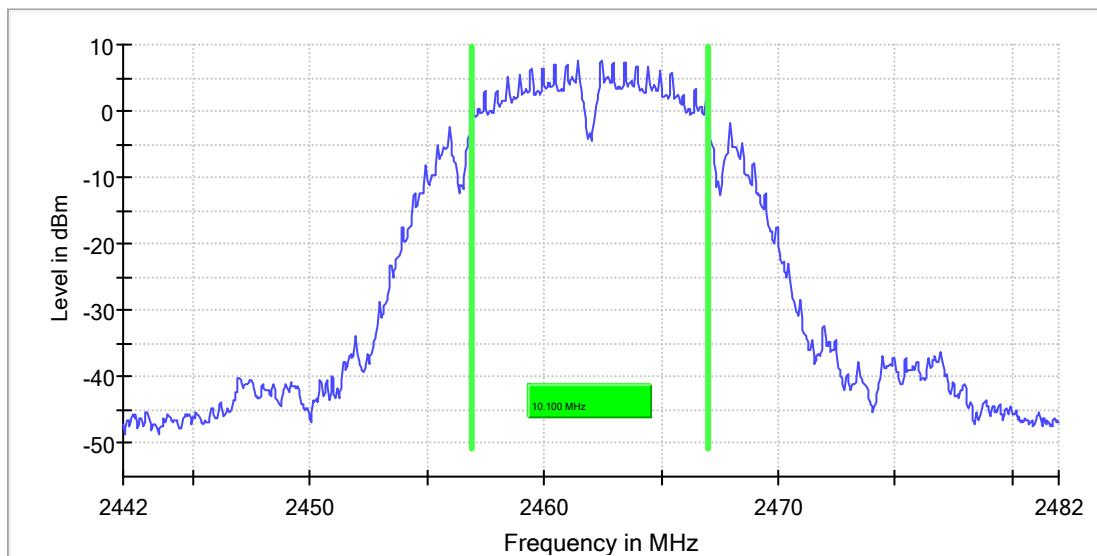
Low Channel
RBW=100KHz, VBW=300KHz



Middle Channel
RBW=100KHz, VBW=300KHz



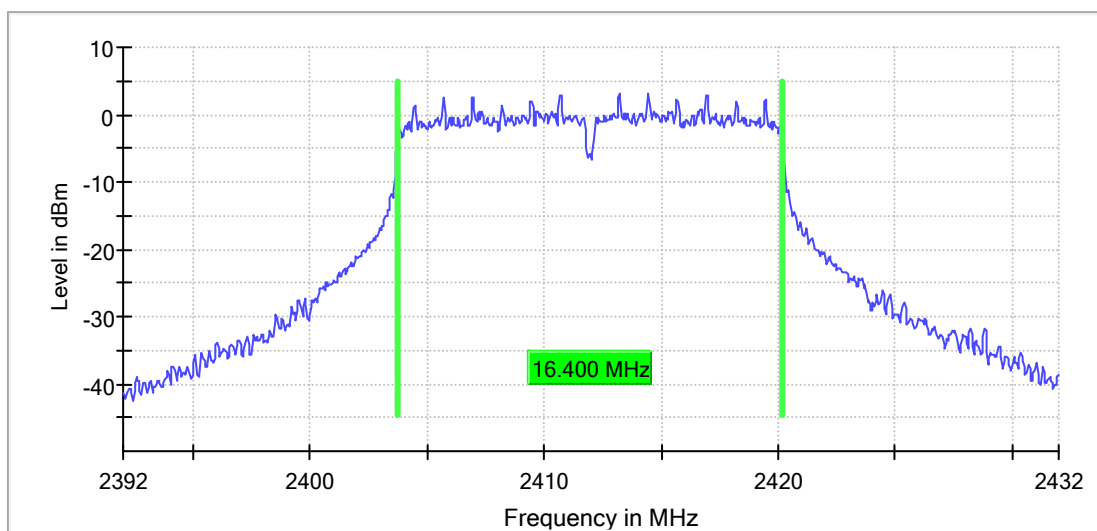
High Channel
RBW=100KHz, VBW=300KHz



Wi-Fi 802.11 g mode, 6 Mbps

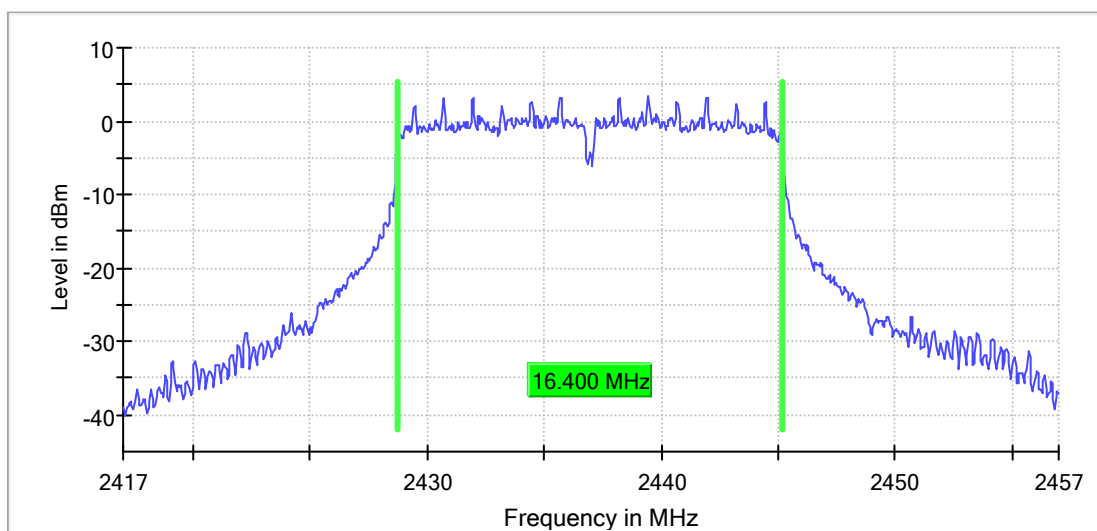
Low Channel
RBW=100KHz, VBW=300KHz

6 dB Bandwidth



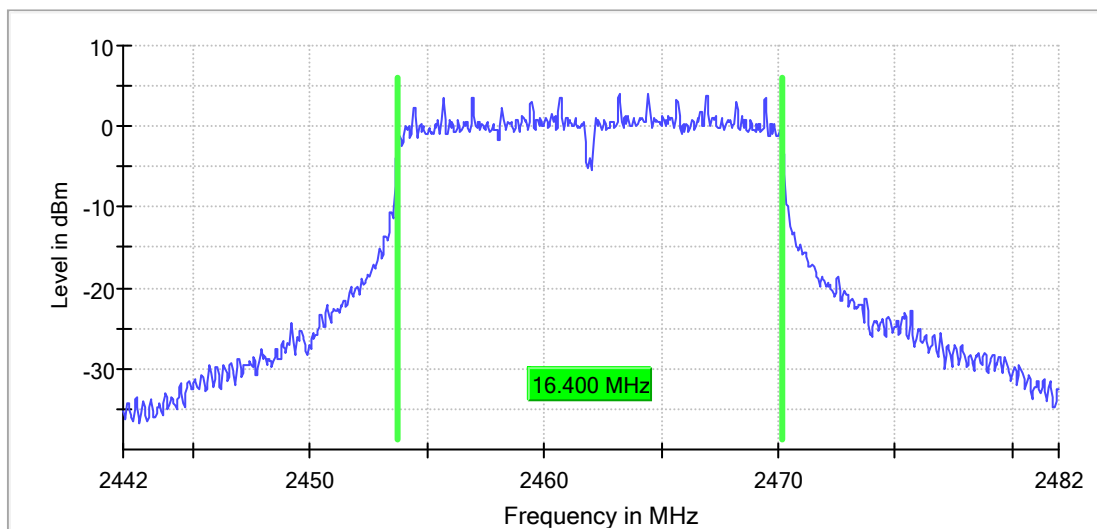
Middle Channel
RBW=100KHz, VBW=300KHz

6 dB Bandwidth



High Channel
RBW=100KHz, VBW=300KHz

6 dB Bandwidth

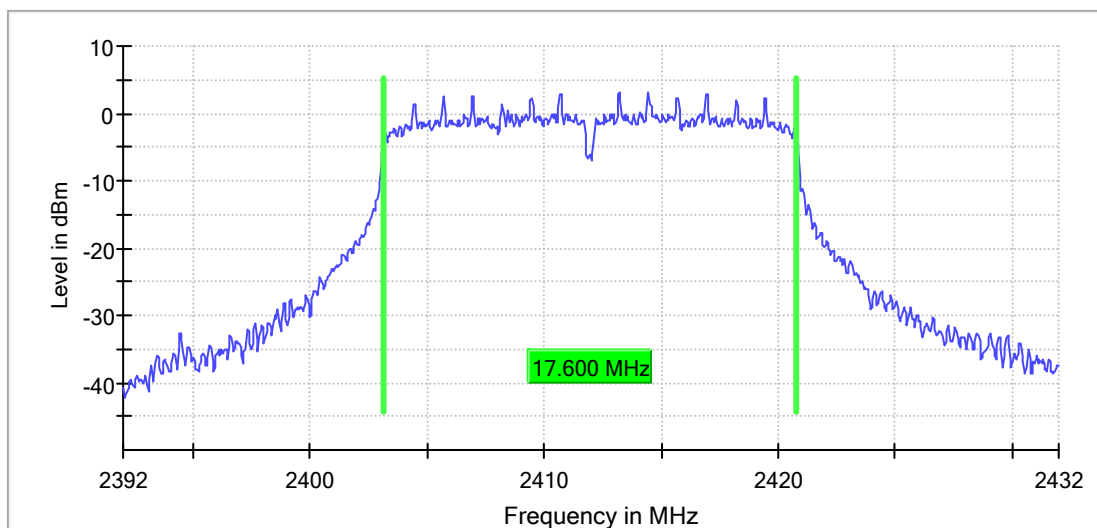


Wi-Fi 802.11 n(HT20) mode, MCS0

Low Channel

RBW=100KHz, VBW=300KHz

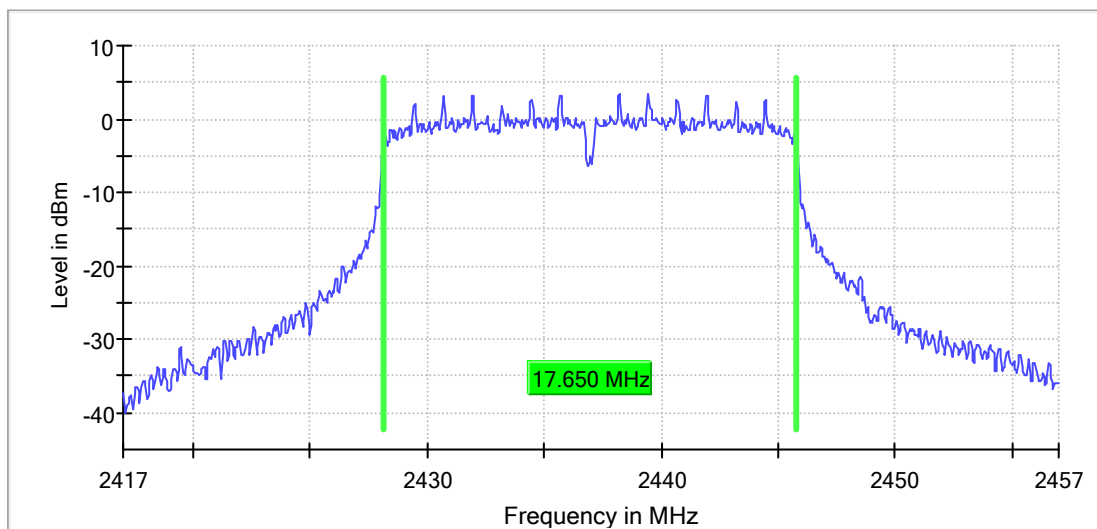
6 dB Bandwidth



Middle Channel

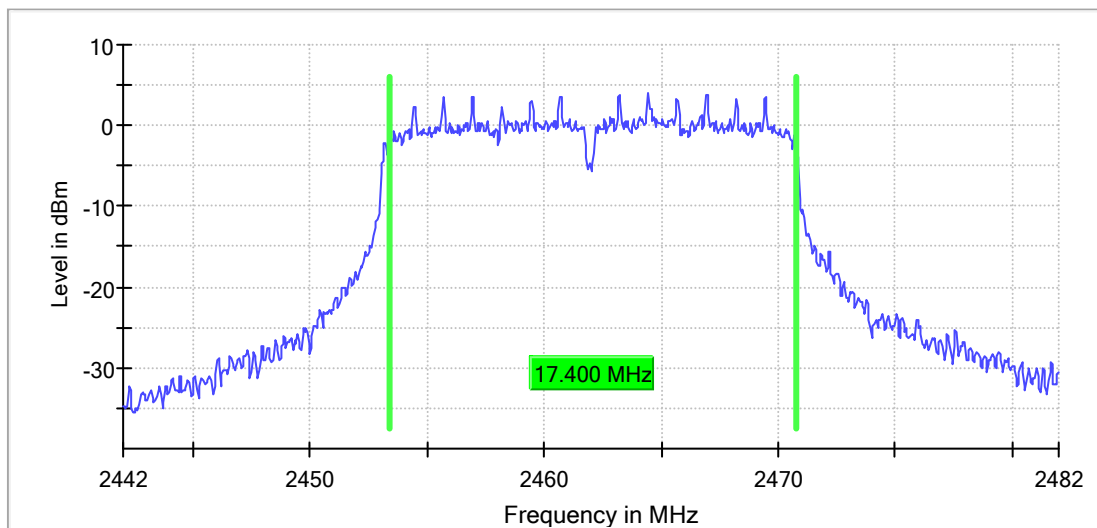
RBW=100KHz, VBW=300KHz

6 dB Bandwidth



High Channel
RBW=100KHz, VBW=300KHz

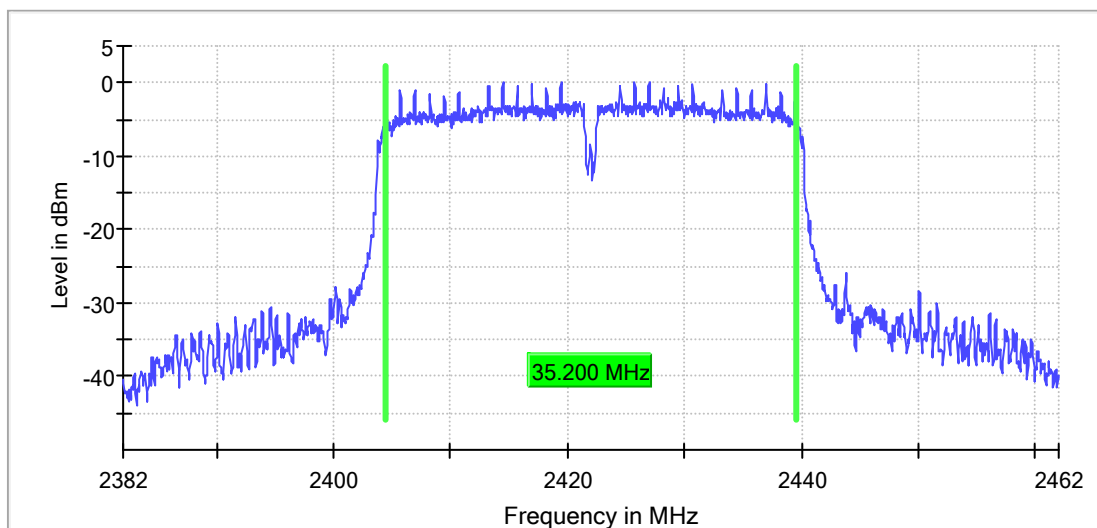
6 dB Bandwidth



Wi-Fi 802.11 n(HT40) mode, MCS0

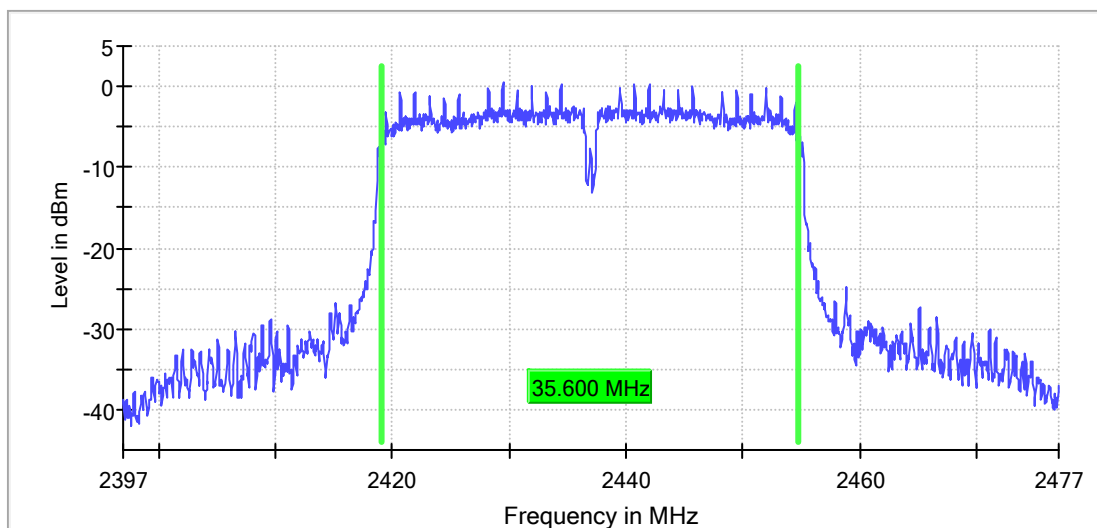
Low Channel
RBW=100KHz, VBW=300KHz

6 dB Bandwidth



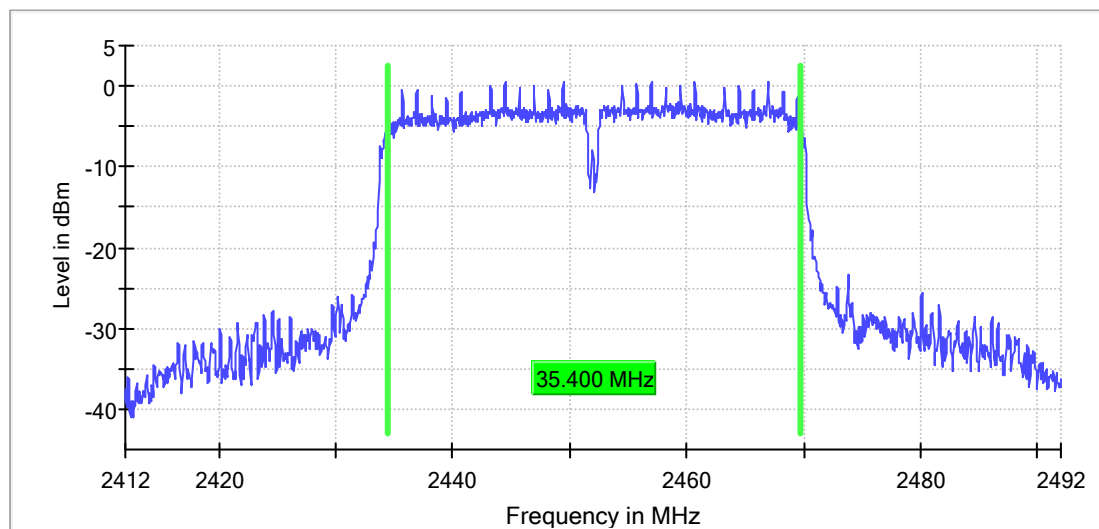
Middle Channel
RBW=100KHz, VBW=300KHz

6 dB Bandwidth



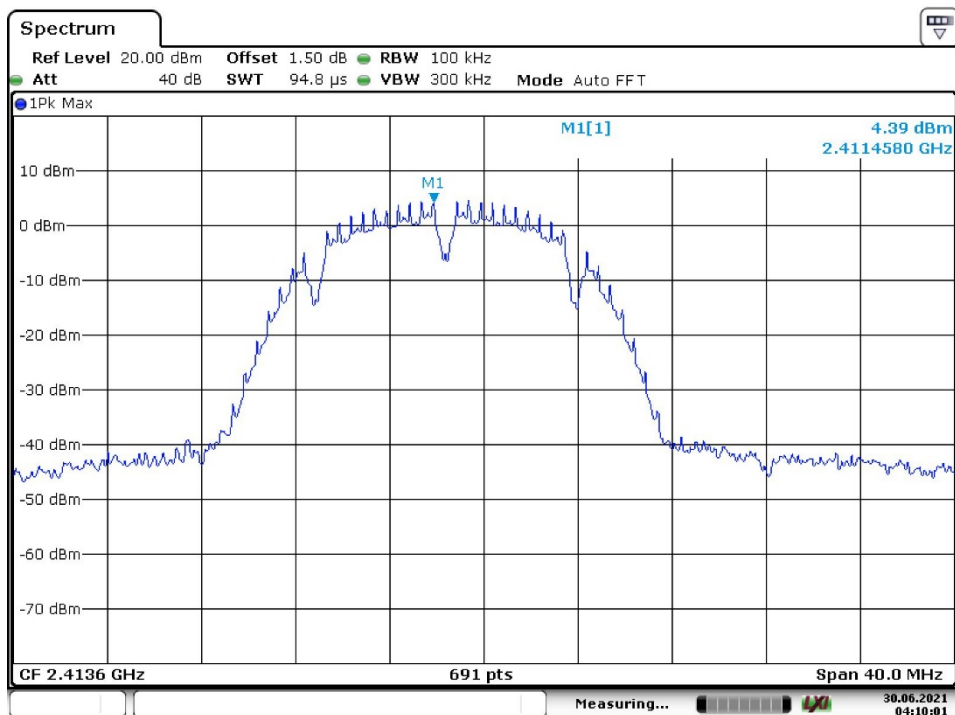
High Channel
RBW=100KHz, VBW=300KHz

6 dB Bandwidth

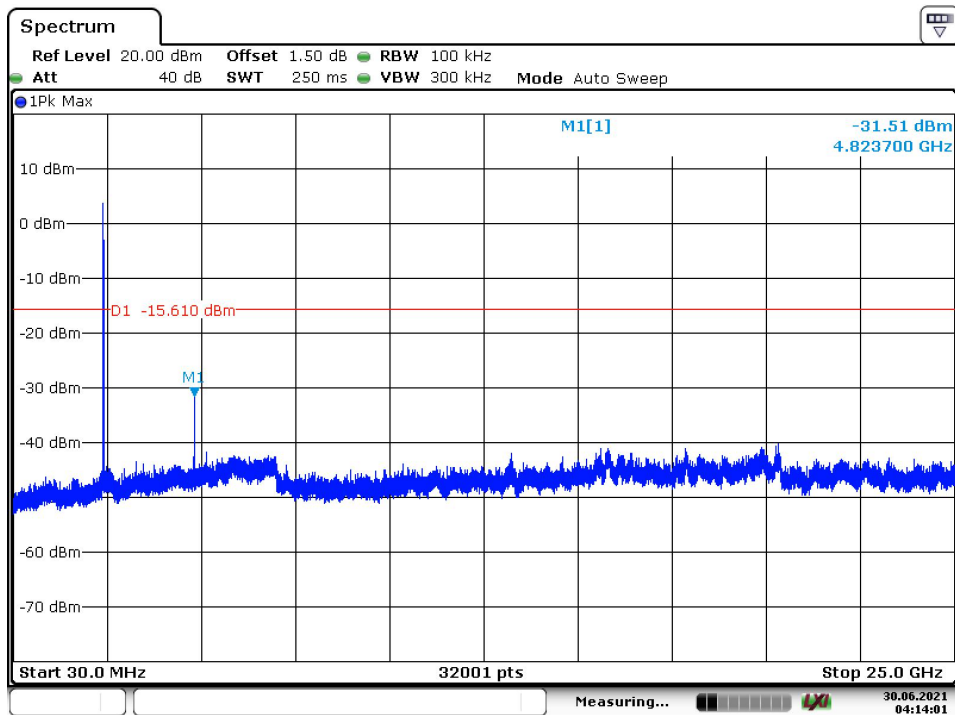


Appendix B.4: Conducted Spurious Emissions Measured in 100 kHz Bandwidth

Wi-Fi 802.11 b mode, 1 Mbps
Low Channel

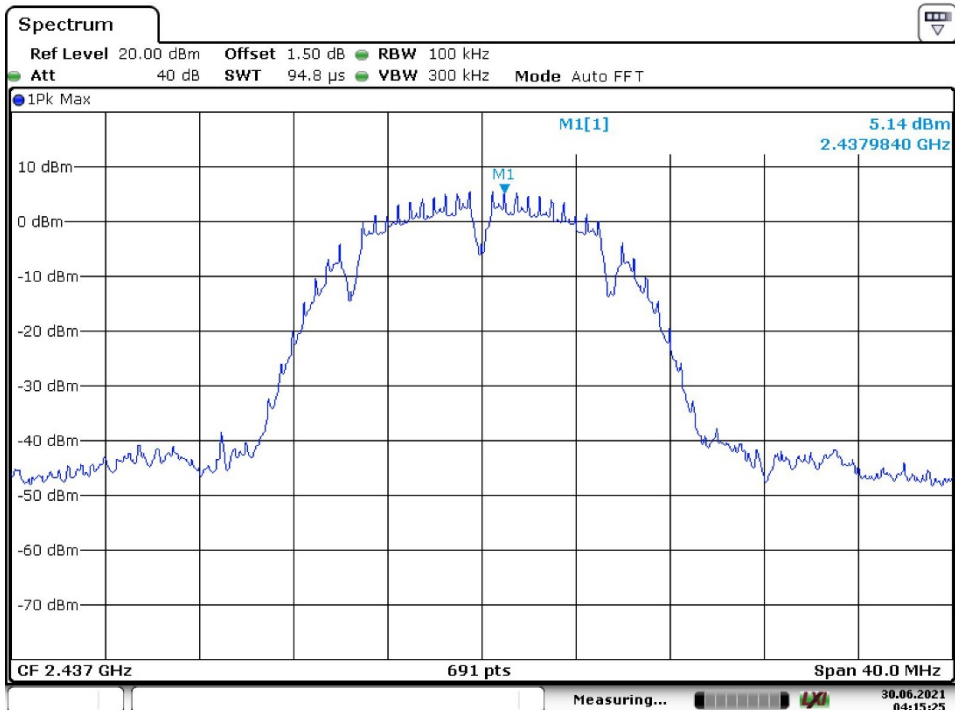


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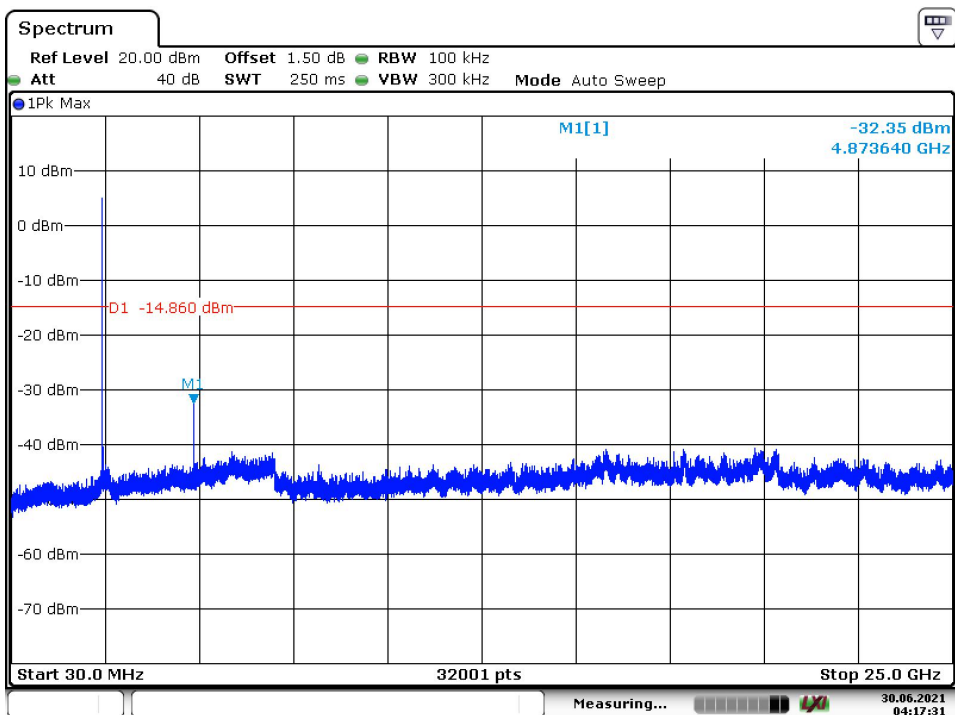


Date: 30.JUN.2021 04:14:01

Middle Channel

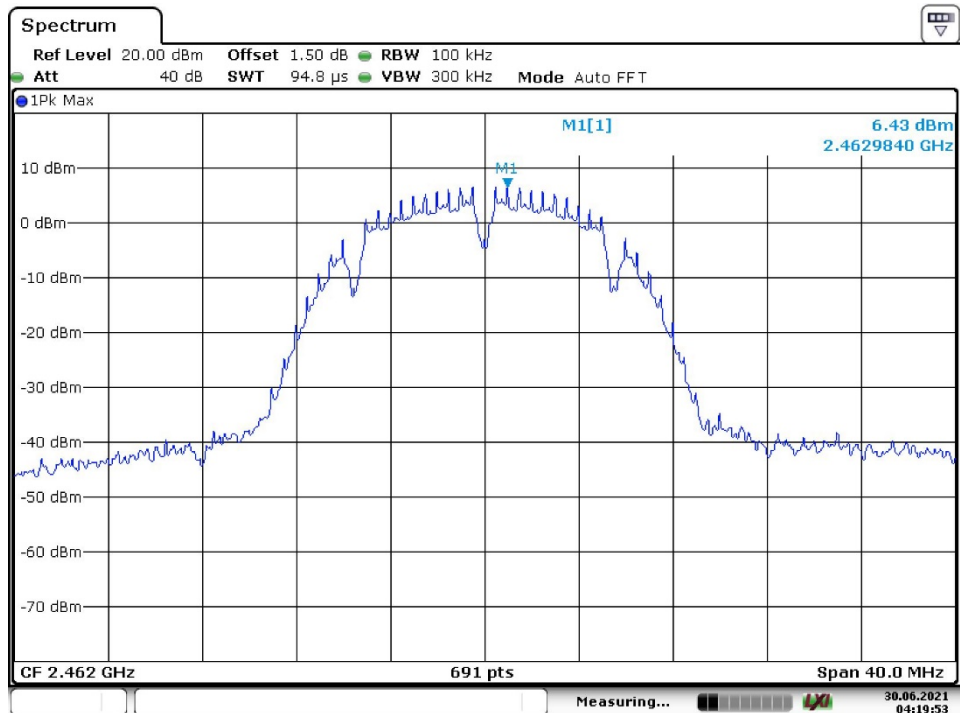


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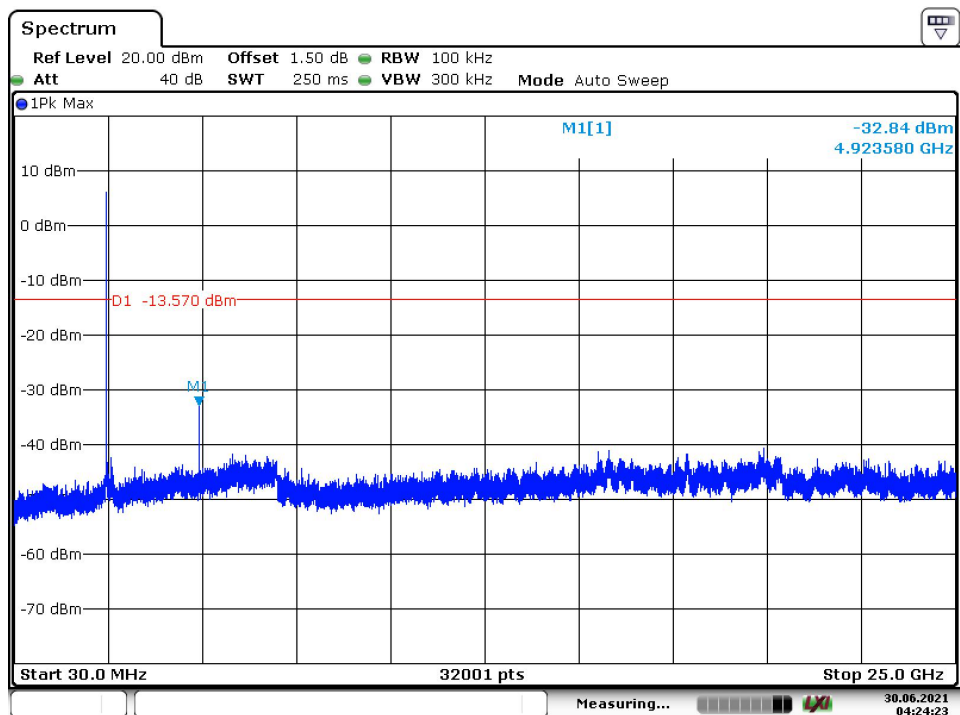


Date: 30.JUN.2021 04:17:31

High Channel

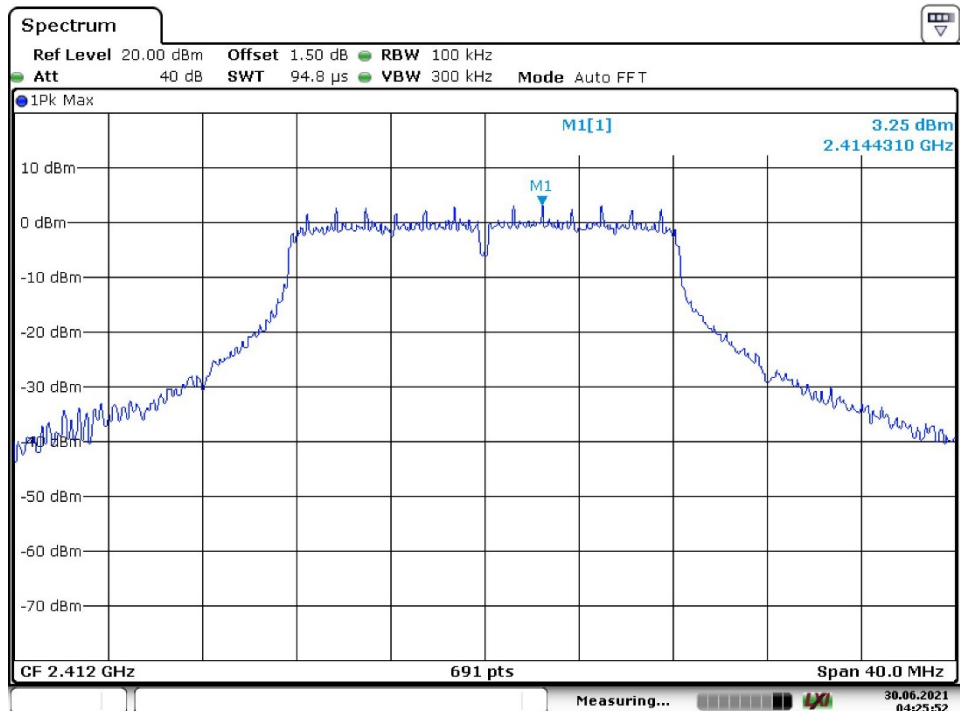


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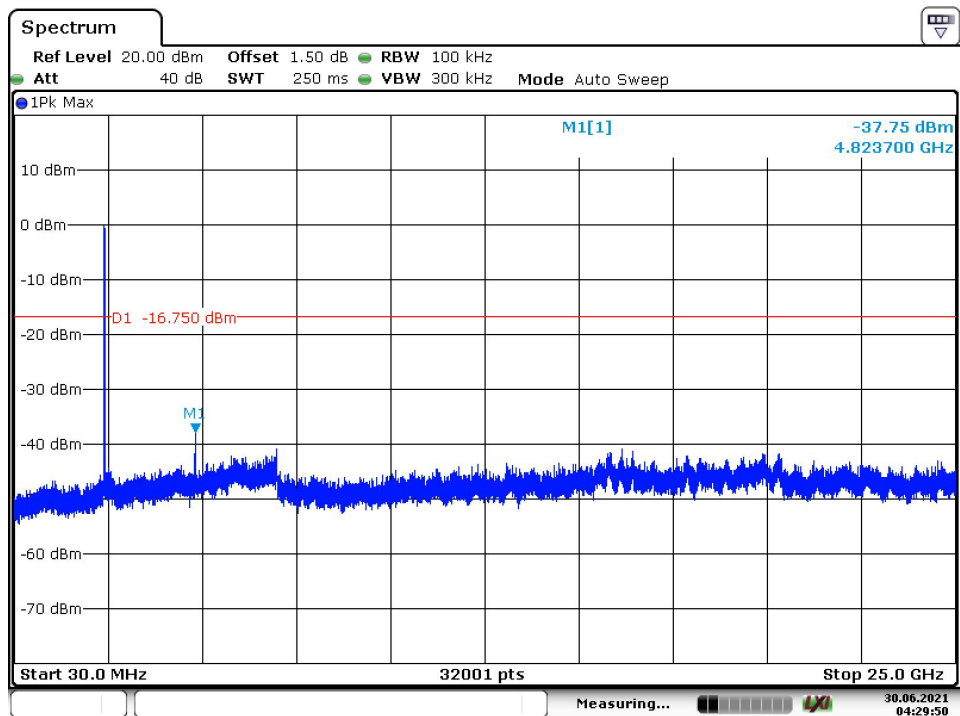


Date: 30.JUN.2021 04:24:23

Wi-Fi 802.11 g mode, 6 Mbps
Low Channel



Date: 30.JUN.2021 04:25:52



Date: 30.JUN.2021 04:29:51