



TEST REPORT

No. I21N03262-WLAN

for

Realme Chongqing Mobile Telecommunications Corp., Ltd.

Mobile Phone

Model Name: RMX3393

with

Hardware Version: 11

Software Version: ColorOS 12.1

FCC ID: 2AUYFRMX3393

Issued Date: 2021-11-29

Designation Number: CN1210

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of SAICT.

Test Laboratory:

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1. Summary of Test Report

1.1. Test Items

Product Name	Mobile Phone
Model Name	RMX3393
Applicant's name	Realme Chongqing Mobile Telecommunications Corp., Ltd.
Manufacturer's Name	Realme Chongqing Mobile Telecommunications Corp., Ltd.

1.2. Test Standards

FCC CFR 47, Part 15, Subpart C 2019

1.3. Test Result

Pass

Please refer to "5.2. Test Results"

1.4. Testing Location

Address: Building G, Shenzhen International Innovation Center, No.1006 Shennan Road,
Futian District, Shenzhen, Guangdong, P. R. China

1.5. Project data

Testing Start Date:	2021-10-26
Testing End Date:	2021-11-25

1.6. Signature

Lin Zechuang
(Prepared this test report)

An Ran
(Reviewed this test report)

Zhang Bojun
(Approved this test report)



No. I21N03262-WLAN

2. Client Information

2.1. Applicant Information

Company Name: Realme Chongqing Mobile Telecommunications Corp., Ltd.
Address: No.178 Yulong Avenue, Yufengshan, Yubei District, Chongqing,China.
Contact Person Yang LiangPing
E-Mail ylp@realme.net
Telephone: (86)13798864426
Fax: /

2.2. Manufacturer Information

Company Name: Realme Chongqing Mobile Telecommunications Corp., Ltd.
Address: No.178 Yulong Avenue, Yufengshan, Yubei District, Chongqing,China.
Contact Person Yang LiangPing
E-Mail ylp@realme.net
Telephone: (86)13798864426
Fax: /

**3. Equipment Under Test (EUT) and Ancillary Equipment (AE)****3.1. About EUT**

Product Name	Mobile Phone
Model Name	RMX3393
RF Protocol	IEEE 802.11b/g/n-HT20/n-HT40/ VHT20/ VHT40/ ax-HE20/ax-HE40
Operating Frequency	2412MHz~2462MHz
Number of Channels	11
Antenna Type	PIFA antenna
Antenna Gain	SISO: ANT0: 0.10dBi; ANT1: -4.50dBi; Directional Gain: 0.11dBi (see Note1)
Power Supply	3.87V DC by Battery
FCC ID	2AUYFRMX3393
Condition of EUT as received	No abnormality in appearance

Note1: After confirmation with the customer, the antennas are correlated and Directional gain = $10 \log [(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / NANT] \text{dBi} = 10 \log [(10^{0.1/20} + 10^{-4.5/20})^2 / 2] \text{dBi} = 0.11 \text{dBi}$.

Note2: Components list, please refer to documents of the manufacturer; it is also included in the original test record of Shenzhen Academy of Information and Communications Technology.

3.2. Internal Identification of EUT

EUT ID*	IMEI	HW Version	SW Version	Receive Date
UT03aa	868912050020558	11	ColorOS 12.1	2021-10-21
	868912050020541			
UT04aa	868912050020590	11	ColorOS 12.1	2021-10-25
	868912050020582			
UT20aa	868912050020632	11	ColorOS 12.1	2021-10-25
	868912050020624			

*EUT ID: is used to identify the test sample in the lab internally.

UT03aa is used for conduction test, UT04aa is used for radiation test, and UT20aa is used for AC Power line Conducted Emission test.

3.3. Internal Identification of AE

AE ID*	Description	AE ID*
AE1	Battery	/
AE2	Charger	/
AE3	USB Cable	/
AE4	Headset	/

AE1

Model	BLP837
Manufacturer	Sunwoda Electronic Co., Ltd.



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Capacity	4400mAh
Nominal Voltage	3.87V
AE2	
Model	VCA7JAUH
Manufacturer	Huizhou Golden Lake Industrial Co., Ltd.
Specification	American Standard Charger
AE3	
Model	DL129
Manufacturer	/
AE4	
Model	MH156
Manufacturer	/

*AE ID: is used to identify the test sample in the lab internally.

3.4. General Description

The Equipment under Test (EUT) is a model of Mobile Phone with PIFA antenna and battery. It consists of normal options: Lithium Battery and Charger, USB Cable and Headset. Manual and specifications of the EUT were provided to fulfil the test. Samples undergoing test were selected by the client.



4. Reference Documents

4.1. Documents supplied by applicant

EUT feature information is supplied by the applicant or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part15	FCC CFR 47, Part 15, Subpart C: 15.205 Restricted bands of operation; 15.209 Radiated emission limits, general requirements; 15.247 Operation within the bands 902–928MHz, 2400–2483.5 MHz, and 5725–5850 MHz	2019
ANSI C63.10	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices	2013



5. Test Results

5.1. Testing Environment

Normal Temperature: 15~35°C

Relative Humidity: 20~75%

5.2. Test Results

No	Test cases	Sub-clause of Part 15C	Verdict
0	Antenna Requirement	15.203	P
1	Maximum Output Power	15.247 (b)	P
2	Peak Power Spectral Density	15.247 (e)	P
3	6dB Bandwidth	15.247 (a)	P
4	Band Edges Compliance	15.247 (d)	P
5	Conducted Emission	15.247 (d)	P
6	Radiated Emission	15.247, 15.205, 15.209	P
7	AC Power line Conducted	15.207	P

See **ANNEX A** for details.

5.3. Statements

SAICT has evaluated the test cases requested by the applicant/manufacture as listed in section 5.2 of this report, for the EUT specified in section 3, according to the standards or reference documents listed in section 4.2.

Disclaimer:

A. After confirmation with the customer, the sample information provided by the customer may affect the validity of the measurement results in this report, and the impact and consequences arising therefrom shall be borne by the customer.

B. The samples in this report are provided by the customer, and the test results are only applicable to the samples received.

6. Test Equipments Utilized

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date	Calibration Period
1	Vector Signal Analyzer	FSV40	100903	Rohde & Schwarz	2021-12-30	1 year
2	Power Sensor	U2021XA	MY55430013	Agilent	2022-01-13	1 year
3	Data Acquisition	U2531A	TW55443507	Agilent	/	/
4	RF Control Unit	JS0806-2	21C8060398	Tonscend	2022-05-09	1 year
5	Test Receiver	ESCI	100702	Rohde & Schwarz	2022-01-13	1 year
6	LISN	ENV216	102067	Rohde & Schwarz	2022-07-15	1 year

Radiated test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date	Calibration Period
1	Loop Antenna	HLA6120	35779	TESEQ	2022-04-25	3 years
2	BiLog Antenna	3142E	0224831	ETS-Lindgren	2024-05-27	3 years
3	Horn Antenna	3117	00066577	ETS-Lindgren	2022-04-02	3 years
4	Horn Antenna	QSH-SL-18 -26-S-20	17013	Q-par	2023-01-06	3 years
5	Test Receiver	ESR7	101676	Rohde & Schwarz	2022-11-24	1 year
6	Spectrum Analyser	FSV40	101192	Rohde & Schwarz	2022-01-13	1 year
7	Chamber	FACT3-2.0	1285	ETS-Lindgren	2023-05-29	2 years

Test software

No.	Equipment	Manufacturer	Version
1	JS1120-3	Tonscend	2.6
2	EMC32	Rohde & Schwarz	10.50.40

EUT is engineering software provided by the customer to control the transmitting signal. The EUT was programmed to be in continuously transmitting mode.

Anechoic Chamber

Fully anechoic Chamber by ETS-Lindgren.

7. Laboratory Environment

Semi-anechoic chamber

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz> 60 dB; 1MHz-18000MHz>90 dB
Electrical insulation	> 2MΩ
Ground system resistance	< 4 Ω
Normalised site attenuation (NSA)	<±4 dB, 3 m distance, from 30 to 1000 MHz

Shielded room

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz> 60 dB; 1MHz-1000MHz>90 dB
Electrical insulation	> 2MΩ
Ground system resistance	< 4 Ω

Fully-anechoic chamber

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz> 60 dB; 1MHz-18000MHz>90 dB
Electrical insulation	> 2MΩ
Ground system resistance	< 4 Ω
Voltage Standing Wave Ratio (VSWR)	≤ 6 dB, from 1 to 18 GHz, 3 m distance
Uniformity of field strength	Between 0 and 6 dB, from 80 to 6000 MHz

8. Measurement Uncertainty

Test Name	Uncertainty ($k=2$)	
1. Maximum Peak Output Power	1.32dB	
2. Peak Power Spectral Density	2.32dB	
3. 6dB Bandwidth	66Hz	
4. Band Edges Compliance	1.92dB	
5. Transmitter Spurious Emission - Conducted	30MHz≤f<1GHz	1.41dB
	1GHz≤f<7GHz	1.92dB
	7GHz≤f<13GHz	2.31dB
	13GHz≤f≤26GHz	2.61dB
6. Transmitter Spurious Emission - Radiated	9kHz≤f<30MHz	1.79dB
	30MHz≤f<1GHz	4.86dB
	1GHz≤f<18GHz	4.82dB
	18GHz≤f≤40GHz	2.90dB
7. AC Power line Conducted Emission	150kHz≤f≤30MHz	2.62dB

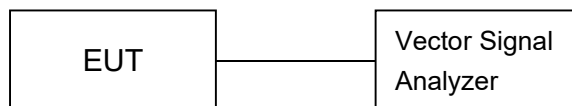
ANNEX A: Detailed Test Results

Test Configuration

The measurement is made according to ANSI C63.10.

1) Conducted Measurements

1. Connect the EUT to the test system correctly.
2. Set the EUT to the required work mode.
3. Set the EUT to the required channel.
4. Set the spectrum analyzer to start measurement.
5. Record the values.

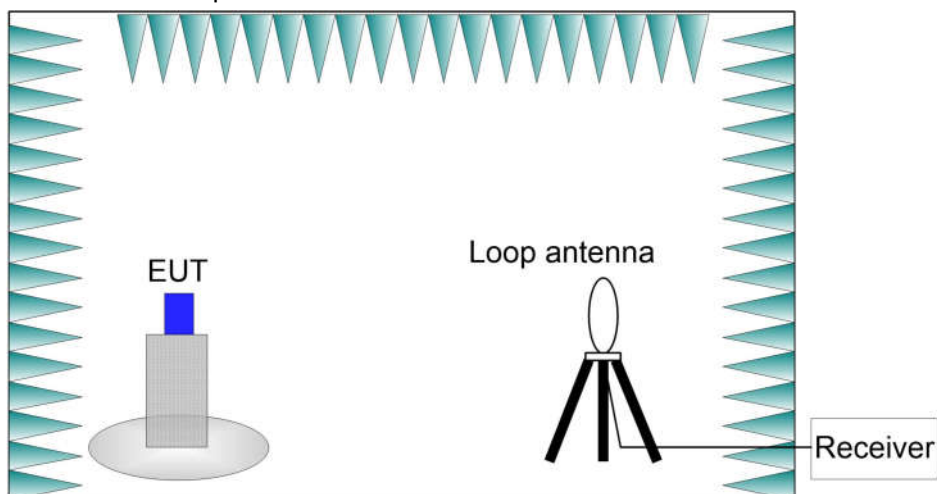


2) Radiated Measurements

Test setup:

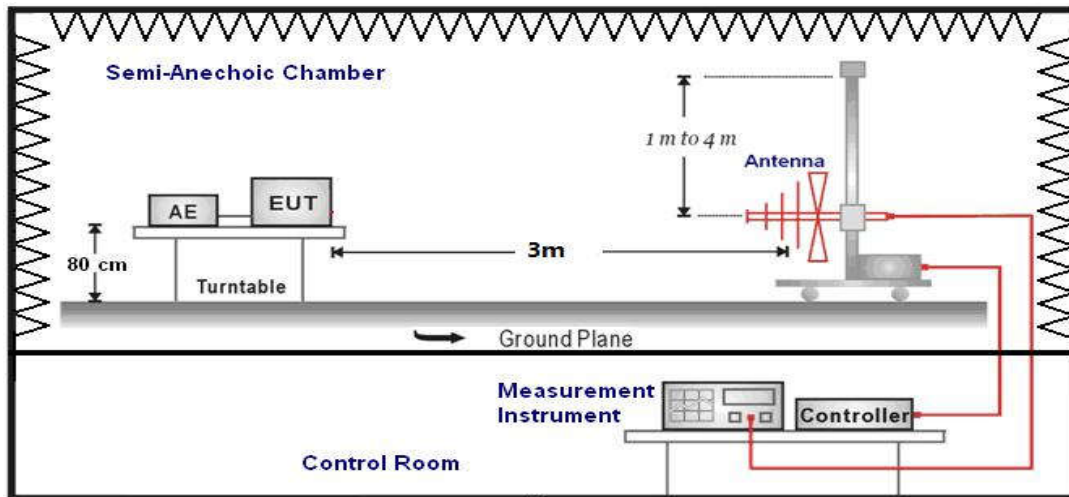
9kHz-30MHz:

The EUT are measured in a semi-anechoic chamber. The EUT is placed on a non-conductive stand of 80cm high, and at a measurement distance of 3m from the receiving antenna. The center of the receiving loop antenna is 1.0 meter above the ground. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT and adjusting the receiver antenna polarization.



30MHz-1GHz:

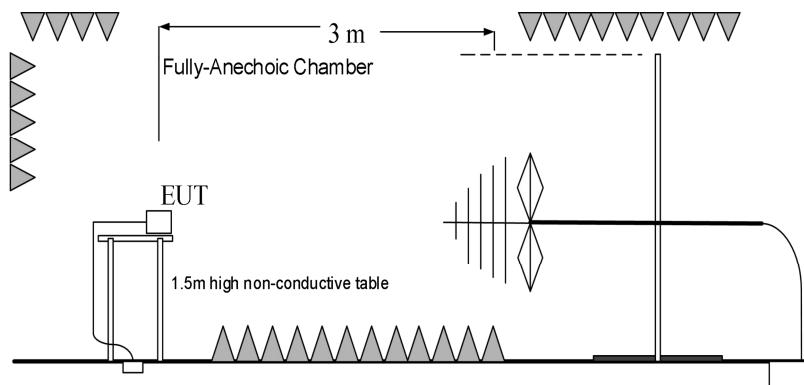
The EUT are measured in a semi-anechoic chamber. The EUT is placed on a non-conductive stand of 80cm high, and at a measurement distance of 3m from the receiving antenna. The center of the receiving antenna is 1.0 meter to 4.0 meter above the ground. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT and adjusting the receiver antenna polarization.

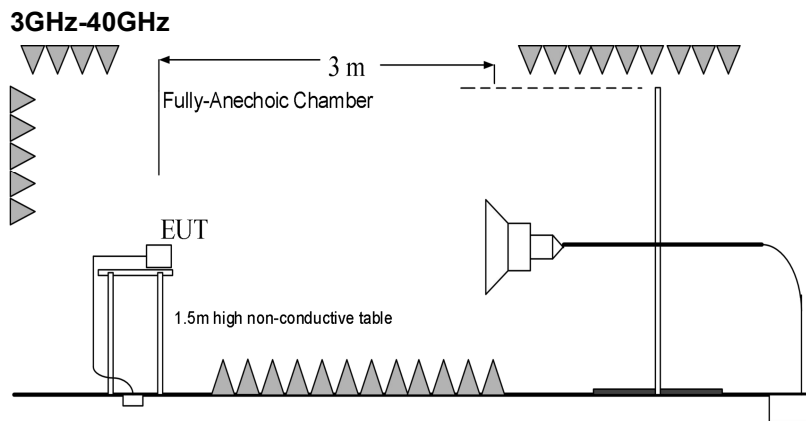


Above 1GHz:

EUT was placed on a 1.5 meter high non-conductive table at a 3 meter test distance from the receive antenna. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT and adjusting the receiving antenna polarization.

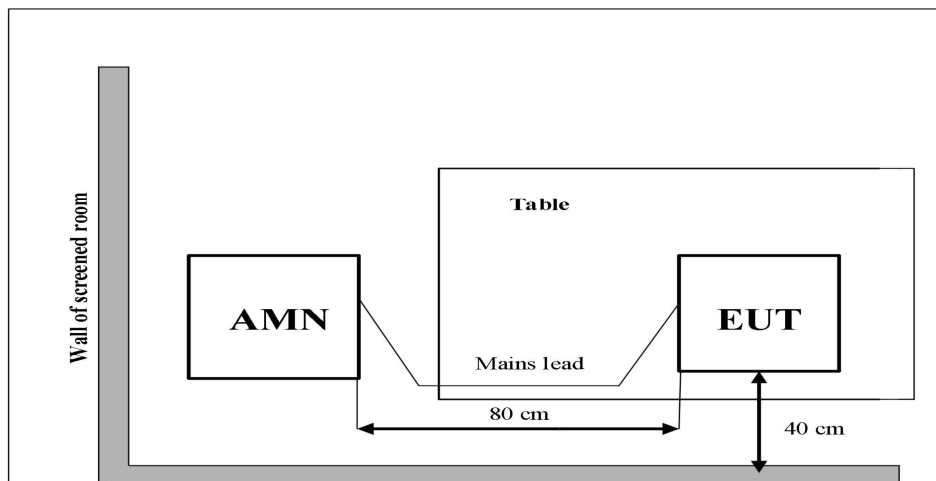
1GHz-3GHz





3) AC Power line Conducted Emission Measurement

For WLAN, the EUT is working under test mode. The EUT is commanded to operate at maximum transmitting power.



**A.0 Antenna requirement****Measurement Limit:**

Standard	Requirement
FCC CRF Part 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

Conclusion: The Directional gains of antenna used for transmitting:

SISO: ANT0: 0.10dBi; ANT1: -4.50dBi;

Directional Gain: 0.11dBi.

The RF transmitter uses an integrate antenna without connector.



A.1 Maximum Output Power

Measurement of method: See ANSI C63.10-2013-Clause 11.9.2.3.2

Method AVGPM-G is a measurement using a gated RF average power meter.

Alternatively, measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Because the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

Measurement Limit:

Standard	Limit (dBm)
FCC CRF Part 15.247(b)	< 30

Measurement Results:

SISO:

Antenna 0:

Mode	RF output power (dBm)		
	2412MHz (Ch1)	2437MHz (Ch6)	2462MHz (Ch11)
802.11b	18.11	18.07	18.49
802.11g	17.32	17.29	10.62
802.11n-HT20	17.29	17.27	10.60
802.11-VHT20	17.30	17.25	10.63
802.11ax-HE20	16.45	16.47	10.78
/	2422MHz (Ch3)	2437MHz (Ch6)	2452MHz (Ch9)
802.11n-HT40	13.21	17.24	13.42
802.11-VHT40	13.16	17.21	13.38
802.11ax-HE40	16.20	16.26	13.46

Antenna 1:

Mode	RF output power (dBm)		
	2412MHz (Ch1)	2437MHz (Ch6)	2462MHz (Ch11)
802.11b	17.91	17.84	17.95
802.11g	17.17	17.13	10.23
802.11n-HT20	17.16	17.11	10.18
802.11-VHT20	17.16	17.12	10.15
802.11ax-HE20	16.20	16.17	10.31
/	2422MHz (Ch3)	2437MHz (Ch6)	2452MHz (Ch9)
802.11n-HT40	13.12	17.08	13.14
802.11-VHT40	13.09	17.06	13.12
802.11ax-HE40	16.14	16.09	13.22

**MIMO:**

Mode	RF output power (dBm)		
	2412MHz (Ch1)	2437MHz (Ch6)	2462MHz (Ch11)
802.11n-HT20	18.41	20.36	13.58
802.11-VHT20	18.36	20.34	13.52
802.11ax-HE20	18.44	19.40	13.69
/	2422MHz (Ch3)	2437MHz (Ch6)	2452MHz (Ch9)
802.11n-HT40	16.27	20.21	16.42
802.11-VHT40	16.21	20.19	16.38
802.11ax-HE40	16.29	19.22	16.44

Note:

The data rate 1Mbps (11b mode), 6Mbps (11g mode), MCS0 (11n mode), MCS0 (11ac mode) and MCS0 (11ax mode (RU 26)) are selected as the Worst-Case. Antenna 0 is selected as the worst condition (SISO). The following cases and test graphs are performed with this condition.

The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.

Conclusion: PASS

A.2 Peak Power Spectral Density

Method of Measurement: See ANSI C63.10-clause 11.10.2

Measurement Limit:

Standard	Limit (dBm/3 kHz)
FCC CRF Part 15.247(e)	< 8 dBm/3 kHz

Measurement Results:

SISO:

Mode	Channel	Frequency (MHz)	Test Results(dBm/10 kHz)		Conclusion
802.11b	CH 1	2412	Fig.1	0.83	P
	CH 6	2437	Fig.2	0.50	P
	CH 11	2462	Fig.3	0.76	P
802.11g	CH 1	2412	Fig.4	-3.11	P
	CH 6	2437	Fig.5	-3.09	P
	CH 11	2462	Fig.6	-9.33	P
802.11n-HT20	CH 1	2412	Fig.7	-2.88	P
	CH 6	2437	Fig.8	-2.85	P
	CH 11	2462	Fig.9	-9.47	P
802.11-VHT20	CH 1	2412	Fig.10	-3.00	P
	CH 6	2437	Fig.11	-3.17	P
	CH 11	2462	Fig.12	-9.66	P
802.11ax-HE20	CH 1	2412	Fig.13	-5.20	P
	CH 6	2437	Fig.14	-4.88	P
	CH 11	2462	Fig.15	-9.85	P
802.11n-HT40	CH 3	2422	Fig.16	-8.67	P
	CH 6	2437	Fig.17	-6.28	P
	CH 9	2452	Fig.18	-9.12	P
802.11-VHT40	CH 3	2422	Fig.19	-9.40	P
	CH 6	2437	Fig.20	-6.03	P
	CH 9	2452	Fig.21	-8.50	P
802.11ax-HE40	CH 3	2422	Fig.22	-7.11	P
	CH 6	2437	Fig.23	-6.51	P
	CH 9	2452	Fig.24	-9.13	P

MIMO:

Mode	Channel	Frequency (MHz)	Test Results (dBm/10 kHz)	Conclusion
802.11n-HT20	CH 1	2412	-1.28	P
	CH 6	2437	-0.35	P
	CH 11	2462	-6.60	P



802.11- VHT20	CH 1	2412	-1.56	P
	CH 6	2437	-0.66	P
	CH 11	2462	-6.28	P
802.11ax- HE20	CH 1	2412	-2.72	P
	CH 6	2437	-2.02	P
	CH 11	2462	-7.31	P
802.11n- HT40	CH 3	2422	-6.49	P
	CH 6	2437	-2.68	P
	CH 9	2452	-5.42	P
802.11- VHT40	CH 3	2422	-5.56	P
	CH 6	2437	-2.94	P
	CH 9	2452	-5.93	P
802.11ax- HE40	CH 3	2422	-5.93	P
	CH 6	2437	-3.42	P
	CH 9	2452	-5.77	P

See below for test graphs.

Conclusion: **PASS**

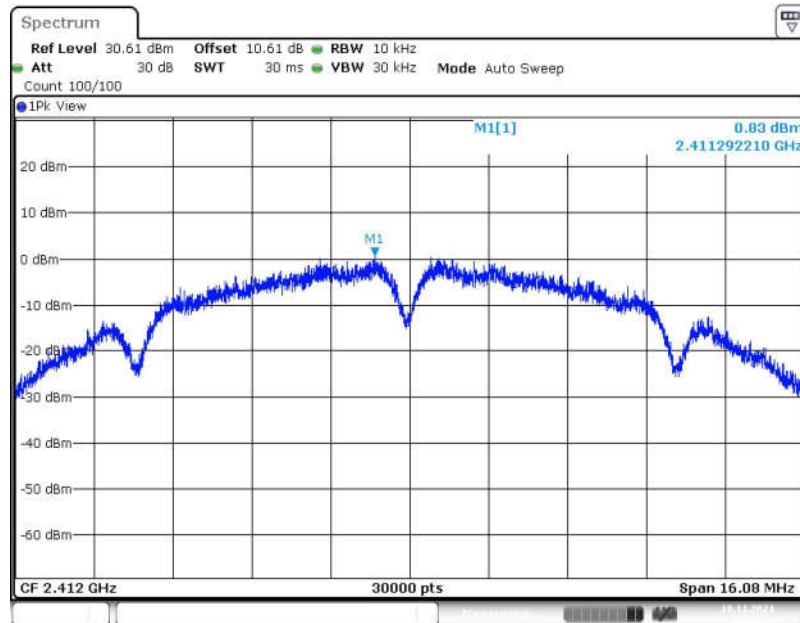


Fig.1 Power Spectral Density (802.11b, CH 1)

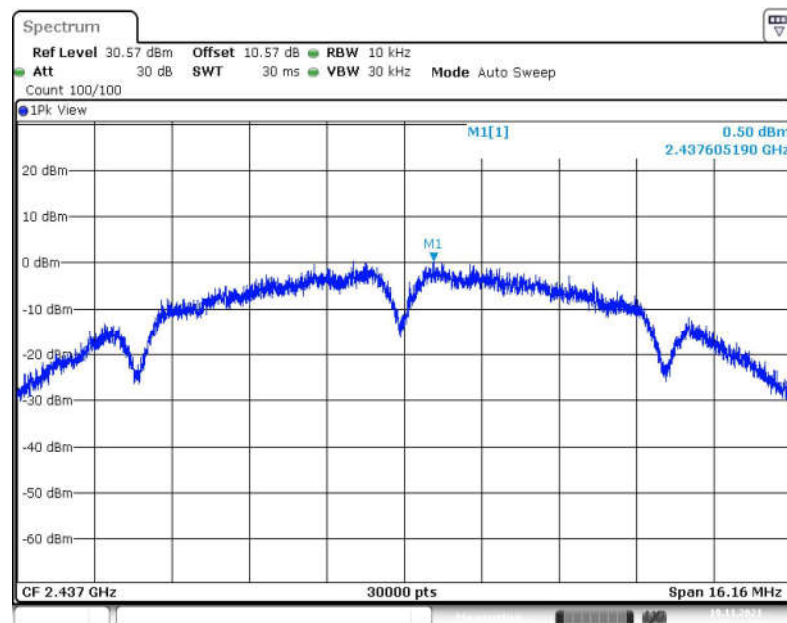


Fig.2 Power Spectral Density (802.11b, CH 6)

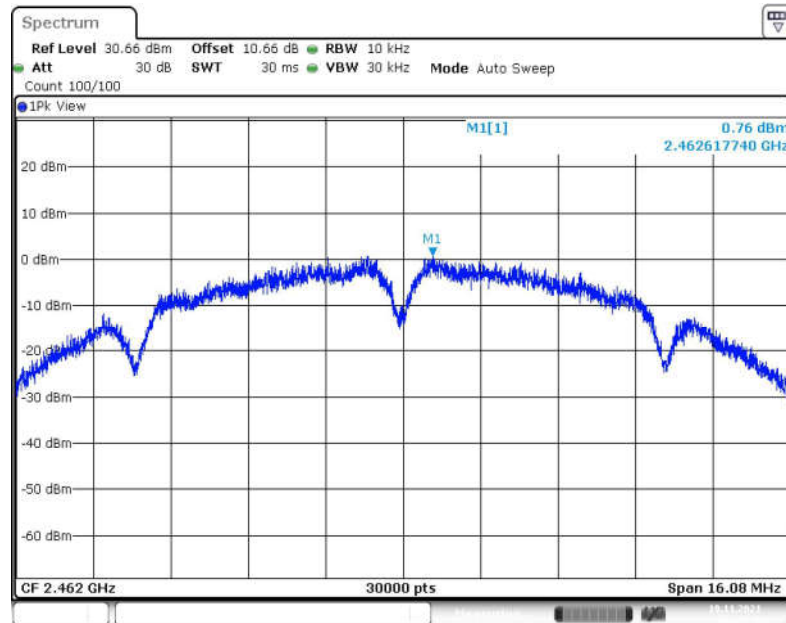


Fig.3 Power Spectral Density (802.11b, CH 11)

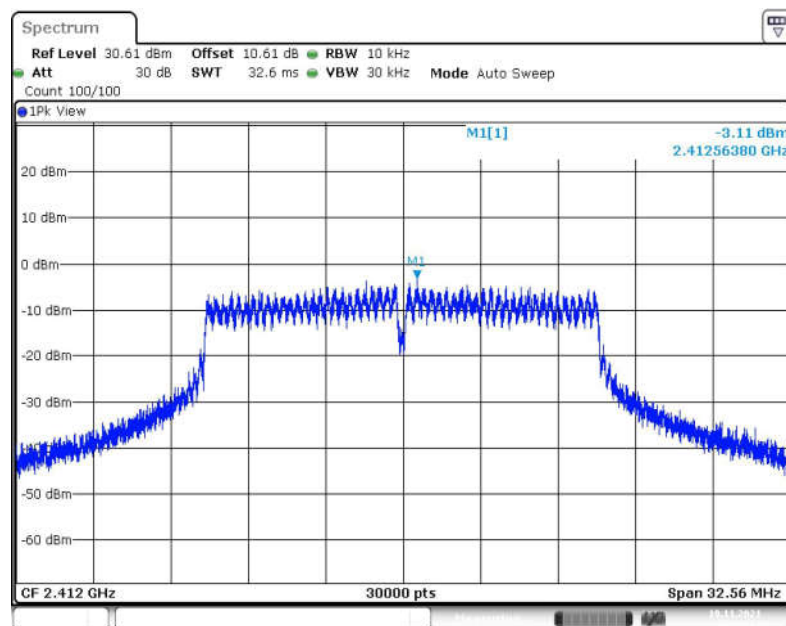


Fig.4 Power Spectral Density (802.11g, CH 1)

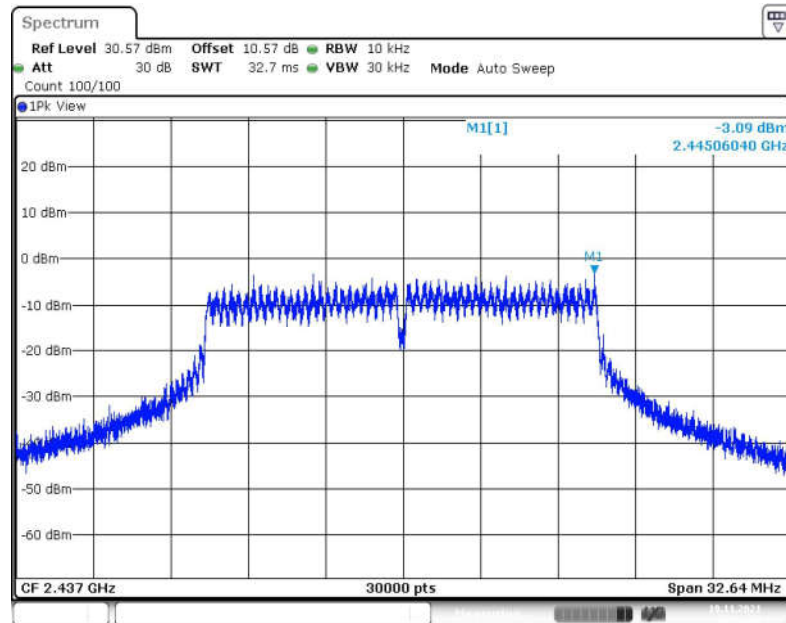


Fig.5 Power Spectral Density (802.11g, CH 6)

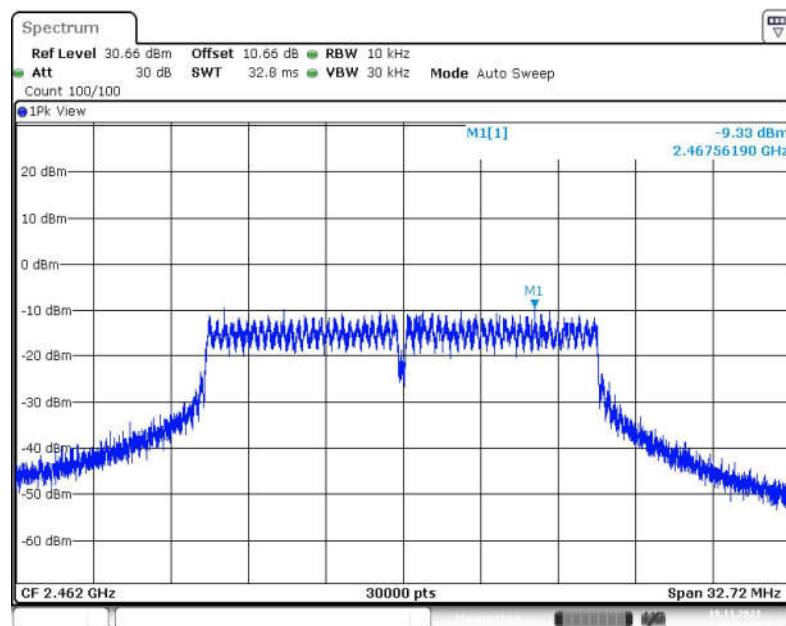


Fig.6 Power Spectral Density (802.11g, CH 11)

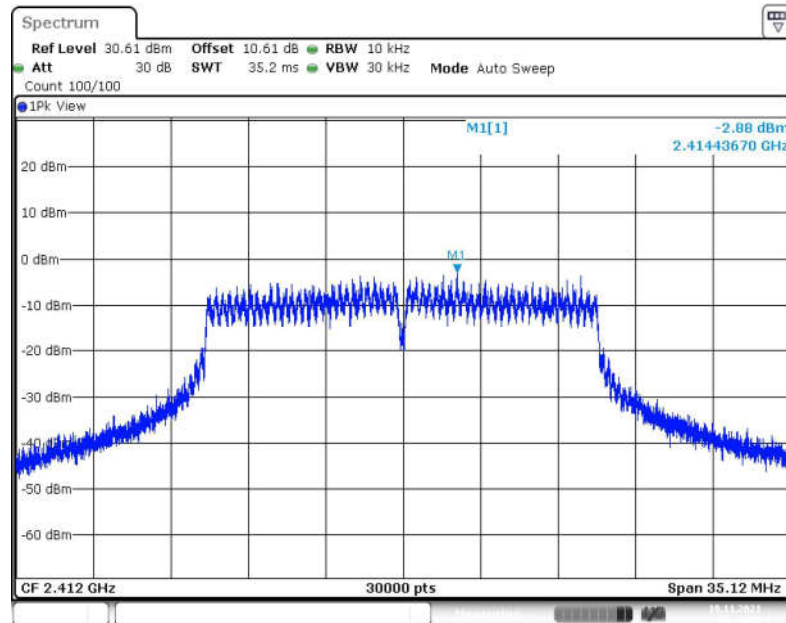


Fig.7 Power Spectral Density (802.11n-HT20, CH 1)

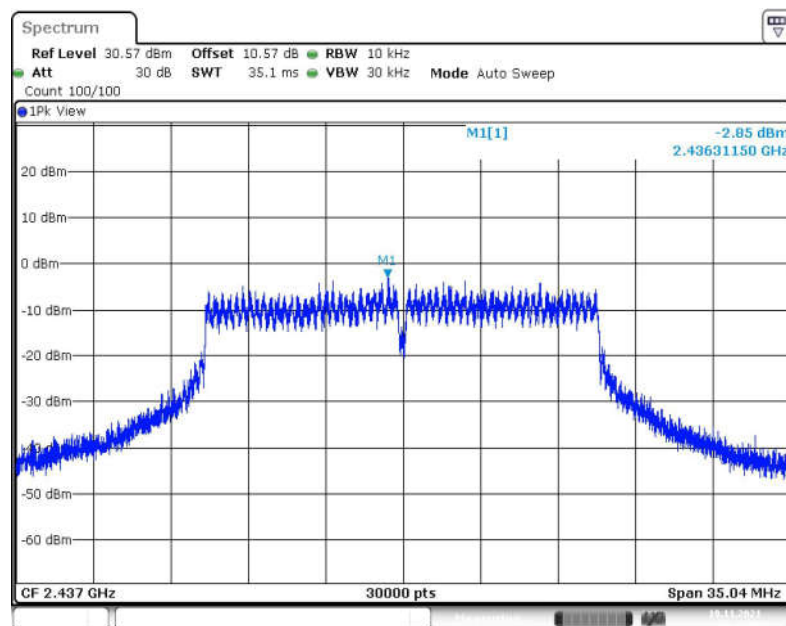


Fig.8 Power Spectral Density (802.11n-HT20, CH 6)

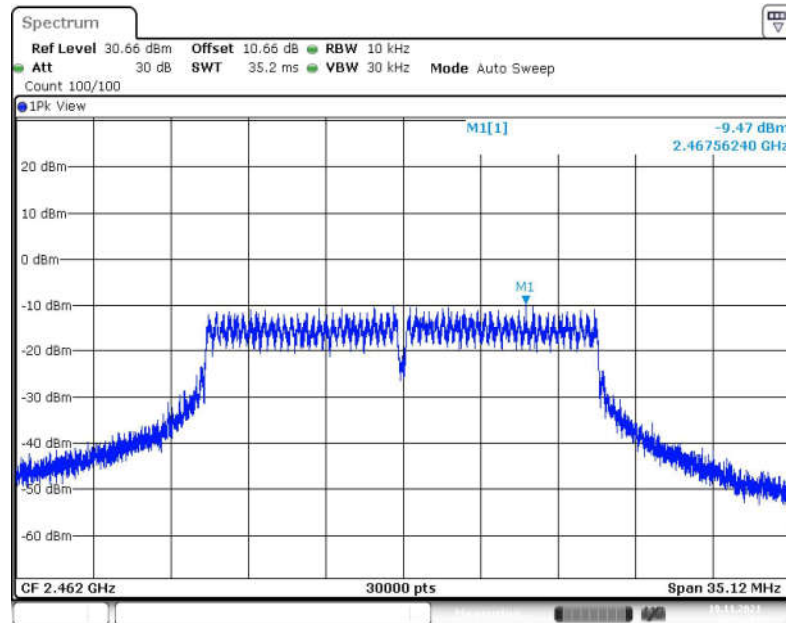


Fig.9 Power Spectral Density (802.11n-HT20, CH 11)

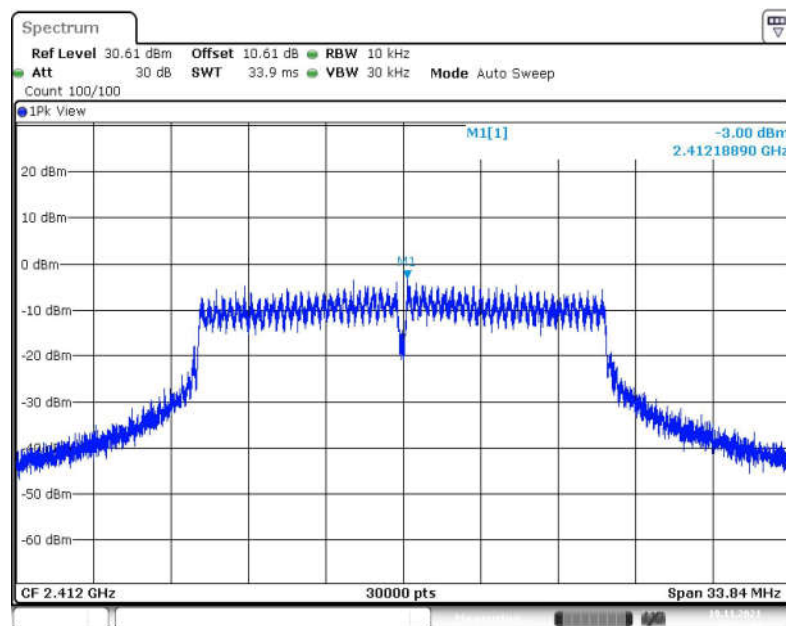


Fig.10 Power Spectral Density (802.11-VHT20, CH 1)

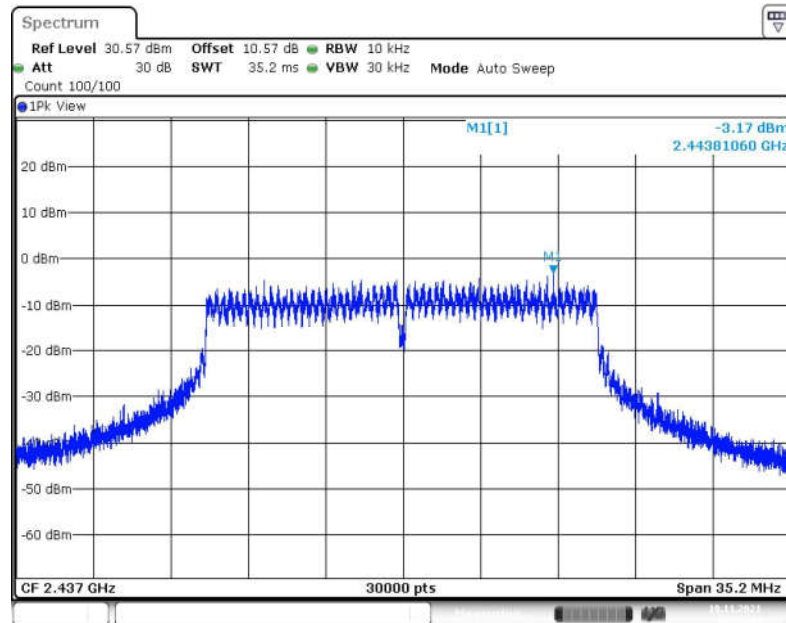


Fig.11 Power Spectral Density (802.11-VHT20, CH 6)

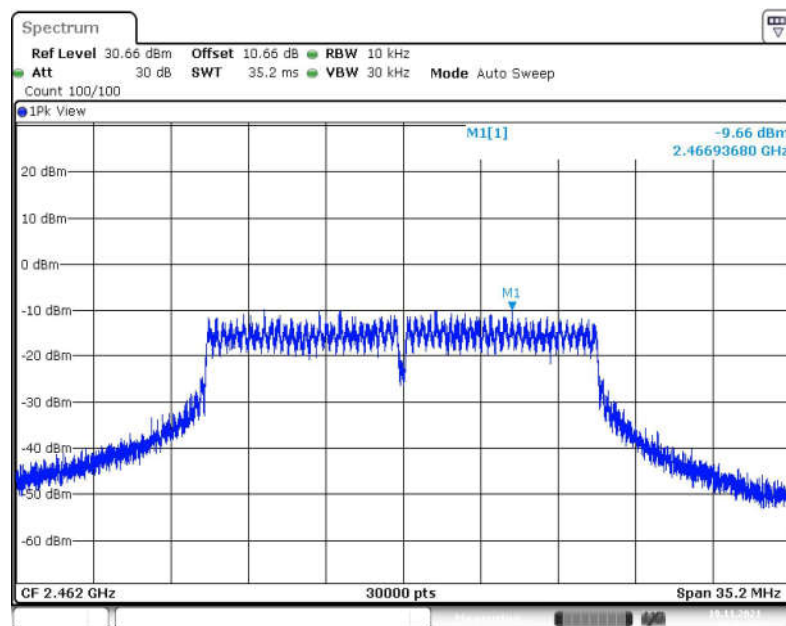


Fig.12 Power Spectral Density (802.11-VHT20, CH 11)

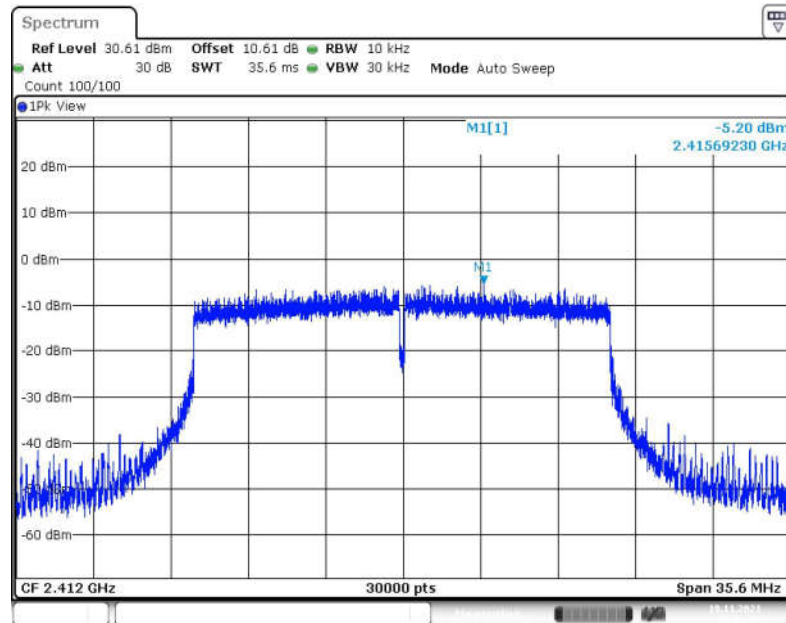


Fig.13 Power Spectral Density (802.11ax-HE20, CH 1)

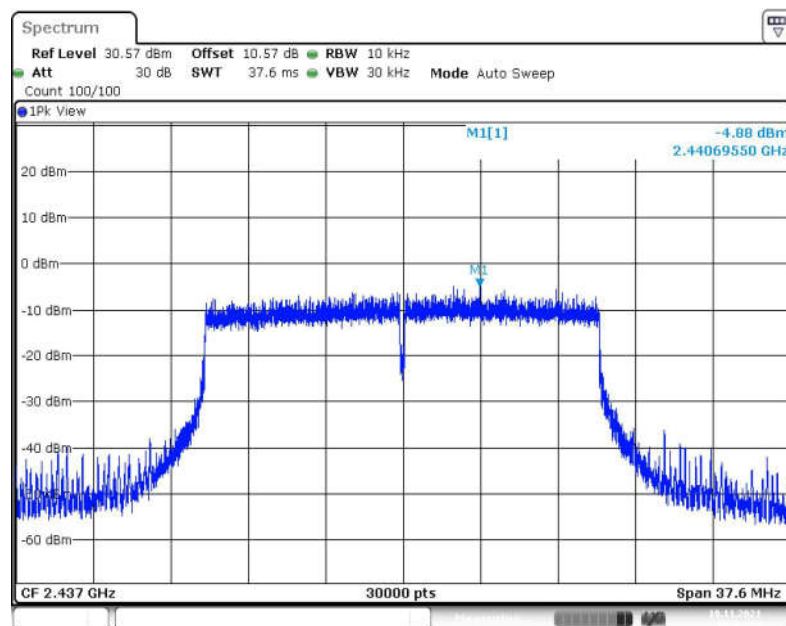


Fig.14 Power Spectral Density (802.11ax-HE20, CH 6)

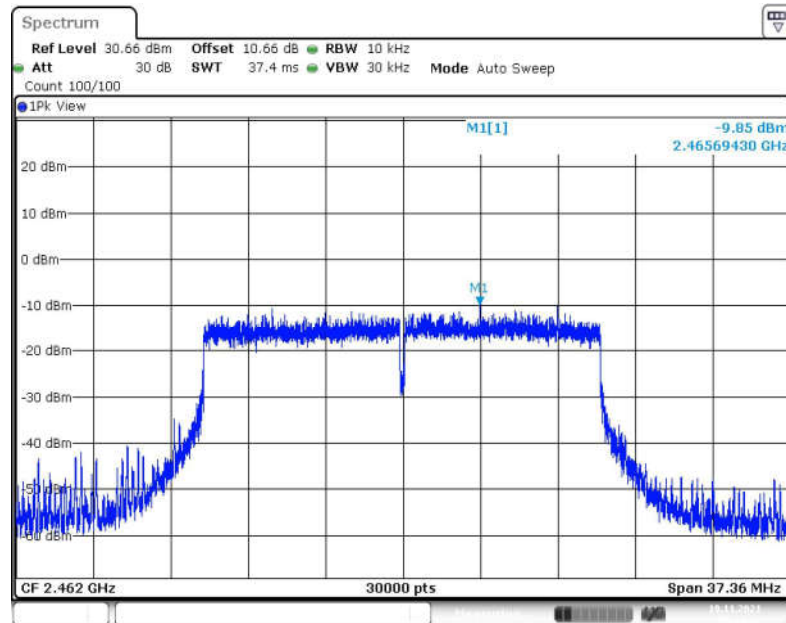


Fig.15 Power Spectral Density (802.11ax-HE20, CH 11)

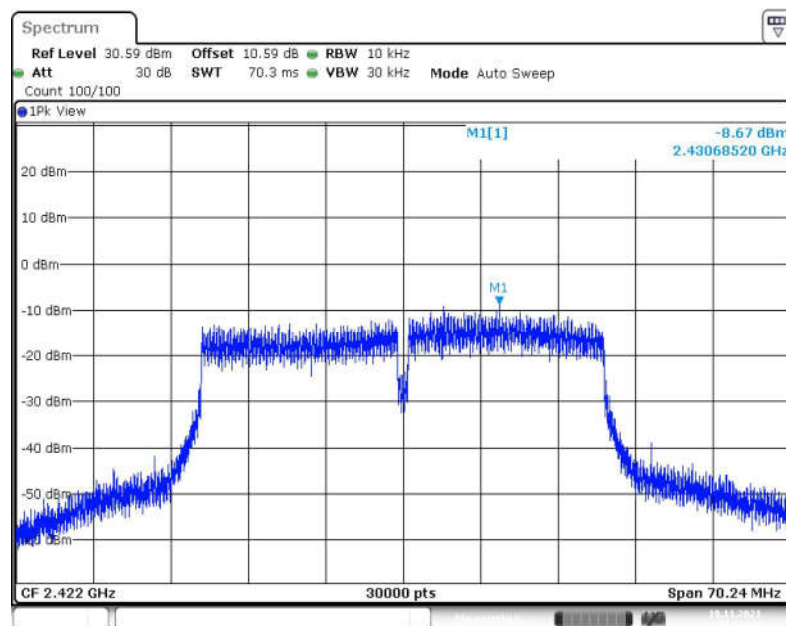


Fig.16 Power Spectral Density (802.11n-HT40, CH 3)

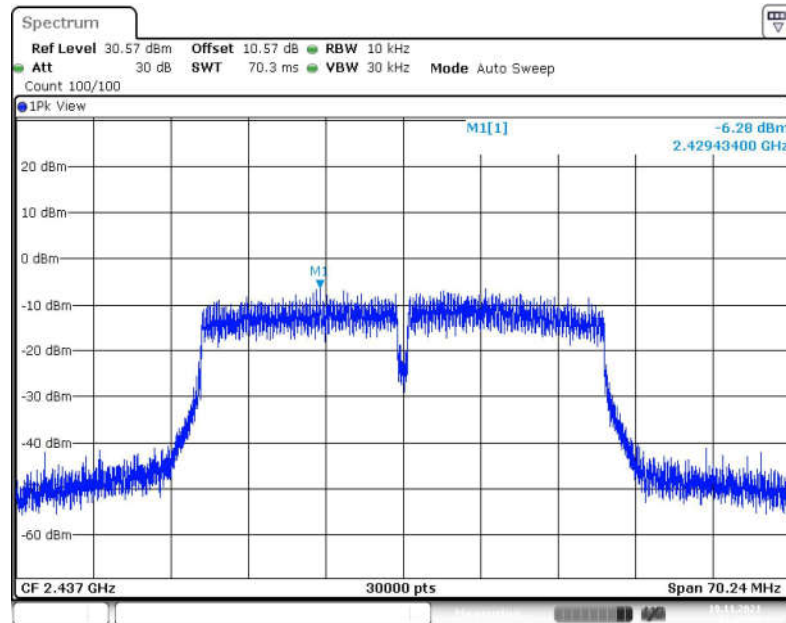


Fig.17 Power Spectral Density (802.11n-HT40, CH 6)

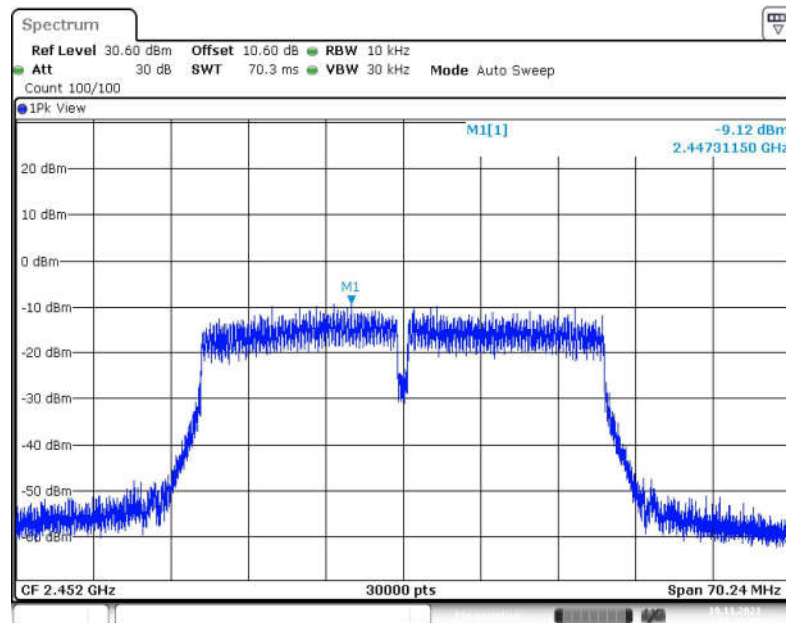


Fig.18 Power Spectral Density (802.11n-HT40, CH 9)

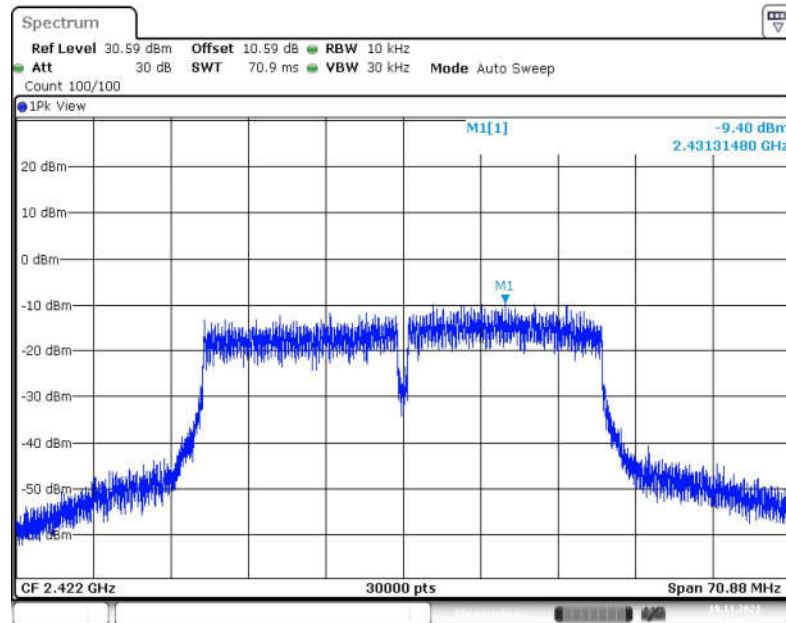


Fig.19 Power Spectral Density (802.11-VHT40, CH 3)

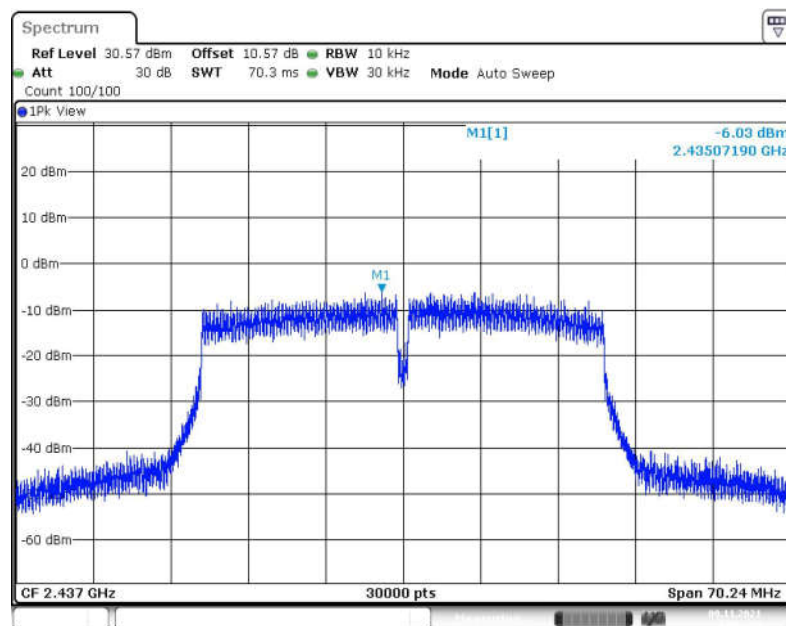


Fig.20 Power Spectral Density (802.11-VHT40, CH 6)

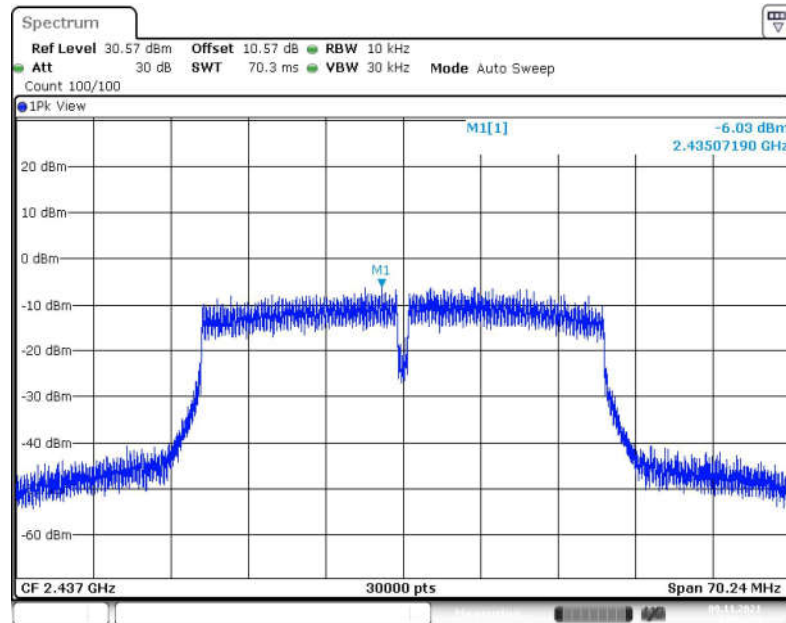


Fig.21 Power Spectral Density (802.11-VHT40, CH 9)

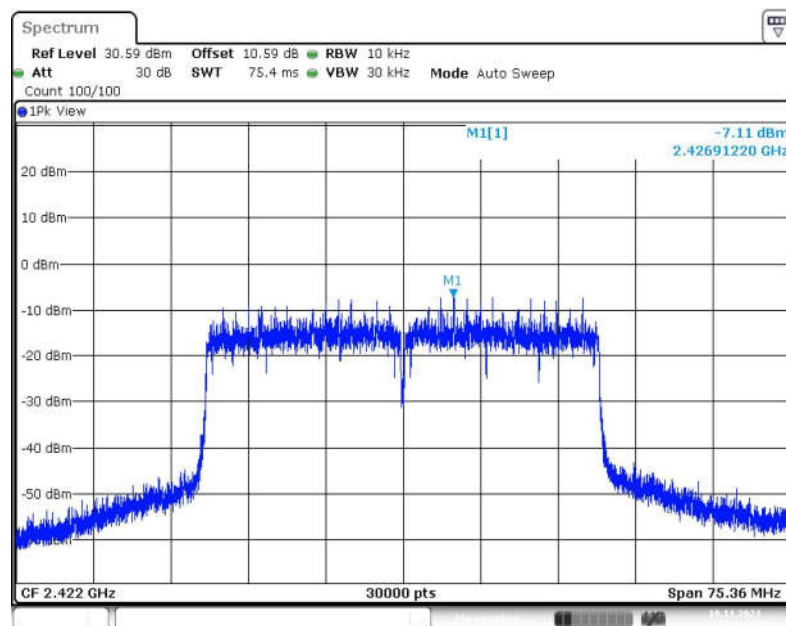


Fig.22 Power Spectral Density (802.11ax-HE40, CH 3)

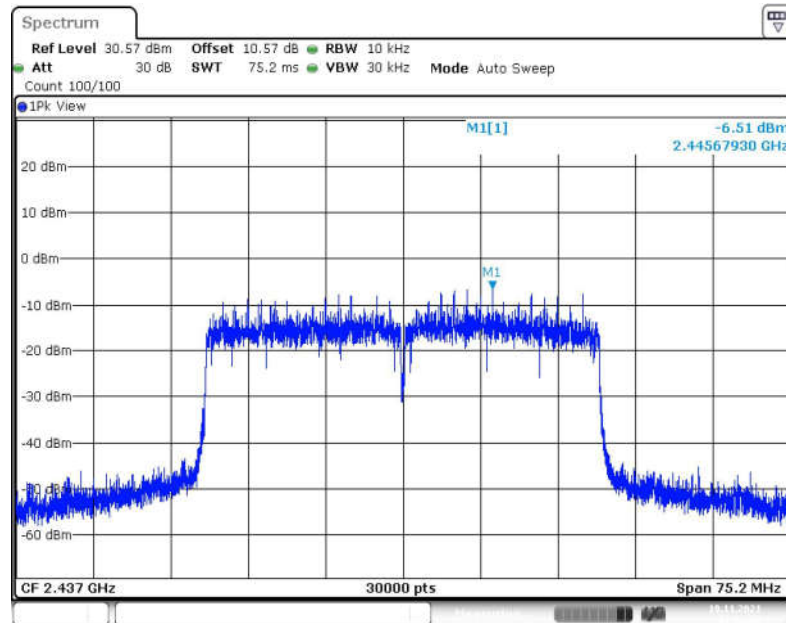


Fig.23 Power Spectral Density (802.11ax-HE40, CH 6)

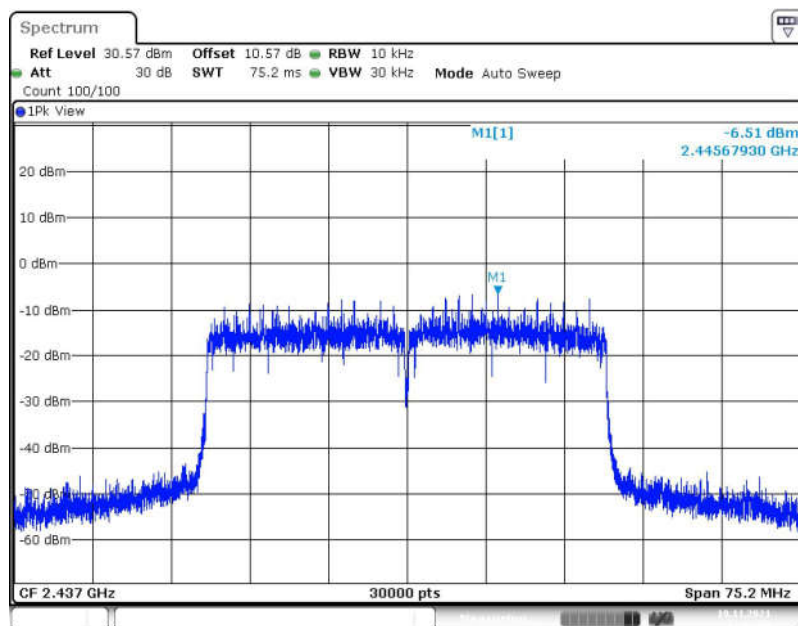


Fig.24 Power Spectral Density (802.11ax-HE40, CH 9)



A.3 6dB Bandwidth

Method of Measurement: See ANSI C63.10-clause 11.8

Measurement Limit:

Standard	Limit (kHz)
FCC 47 CFR Part 15.247 (a)	≥ 500

Measurement Result:

Mode	Channel	Frequency (MHz)	Test Results (MHz)		Conclusion
802.11b	CH 1	2412	Fig.25	8.04	P
	CH 6	2437	Fig.26	8.08	P
	CH 11	2462	Fig.27	8.04	P
802.11g	CH 1	2412	Fig.28	16.28	P
	CH 6	2437	Fig.29	16.32	P
	CH 11	2462	Fig.30	16.36	P
802.11n- HT20	CH 1	2412	Fig.31	17.56	P
	CH 6	2437	Fig.32	17.52	P
	CH 11	2462	Fig.33	17.56	P
802.11- VHT20	CH 1	2412	Fig.34	16.92	P
	CH 6	2437	Fig.35	17.60	P
	CH 11	2462	Fig.36	17.60	P
802.11ax- HE20	CH 1	2412	Fig.37	17.80	P
	CH 6	2437	Fig.38	18.80	P
	CH 11	2462	Fig.39	18.68	P
802.11n- HT40	CH 3	2422	Fig.40	35.12	P
	CH 6	2437	Fig.41	35.12	P
	CH 9	2452	Fig.42	35.12	P
802.11- VHT40	CH 3	2422	Fig.43	35.44	P
	CH 6	2437	Fig.44	35.12	P
	CH 9	2452	Fig.45	35.12	P
802.11ax- HE40	CH 3	2422	Fig.46	37.68	P
	CH 6	2437	Fig.47	37.60	P
	CH 9	2452	Fig.48	37.60	P

See below for test graphs.

Conclusion: **PASS**

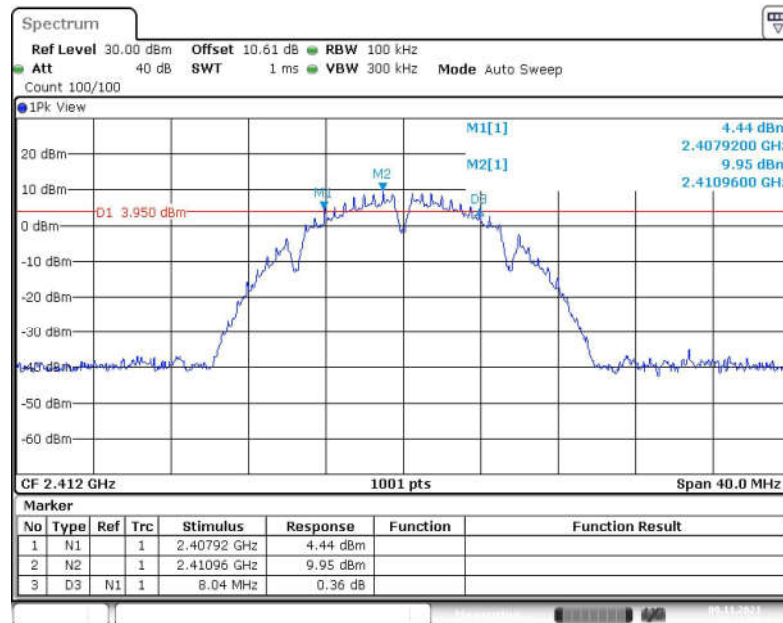


Fig.25 6dB Bandwidth (802.11b, CH 1)

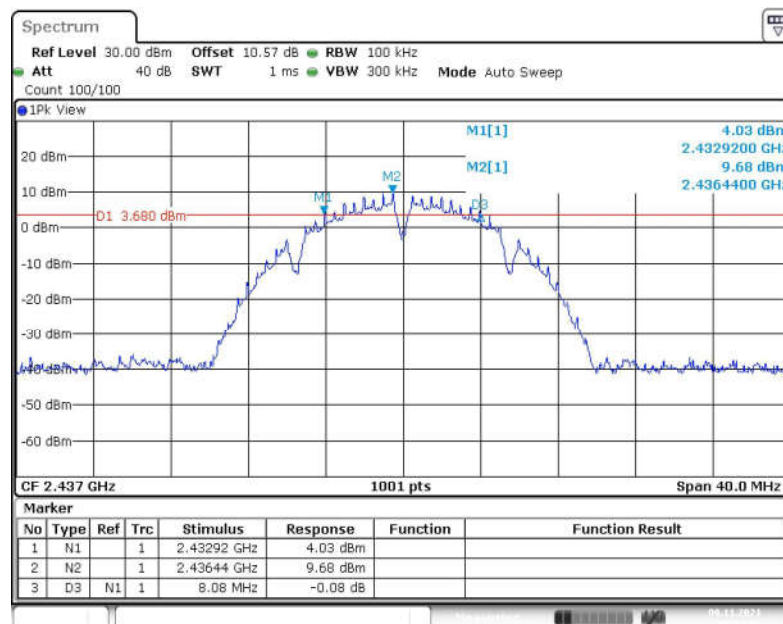


Fig.26 6dB Bandwidth (802.11b, CH 6)

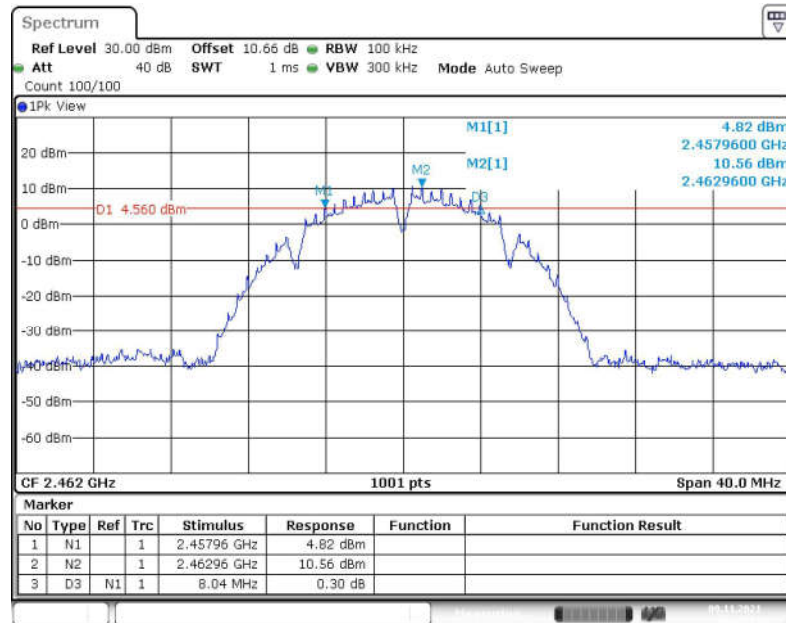


Fig.27 6dB Bandwidth (802.11b, CH 11)

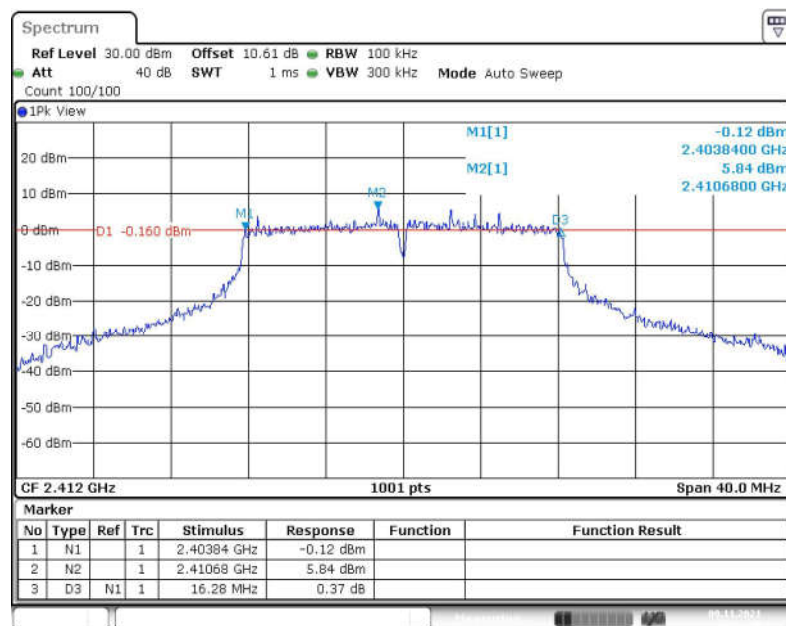


Fig.28 6dB Bandwidth (802.11g, CH 1)

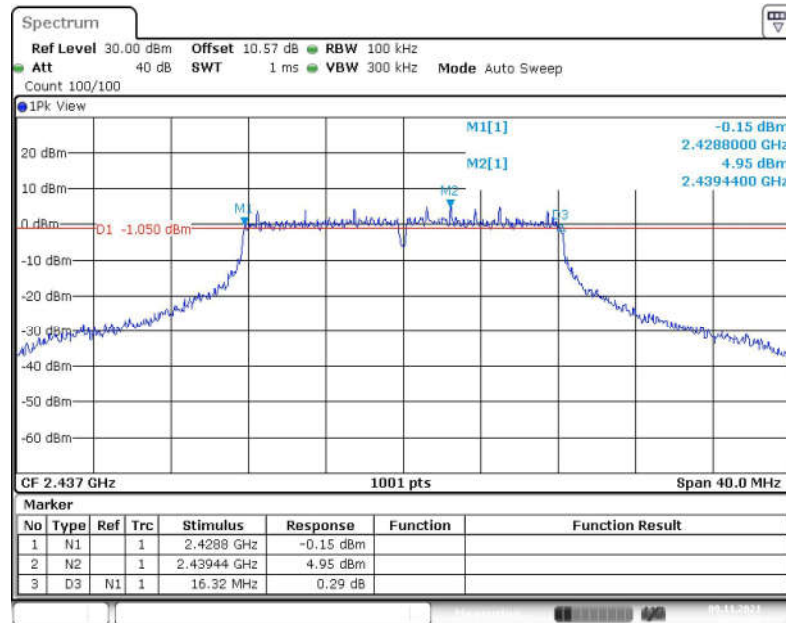


Fig.29 6dB Bandwidth (802.11g, CH 6)

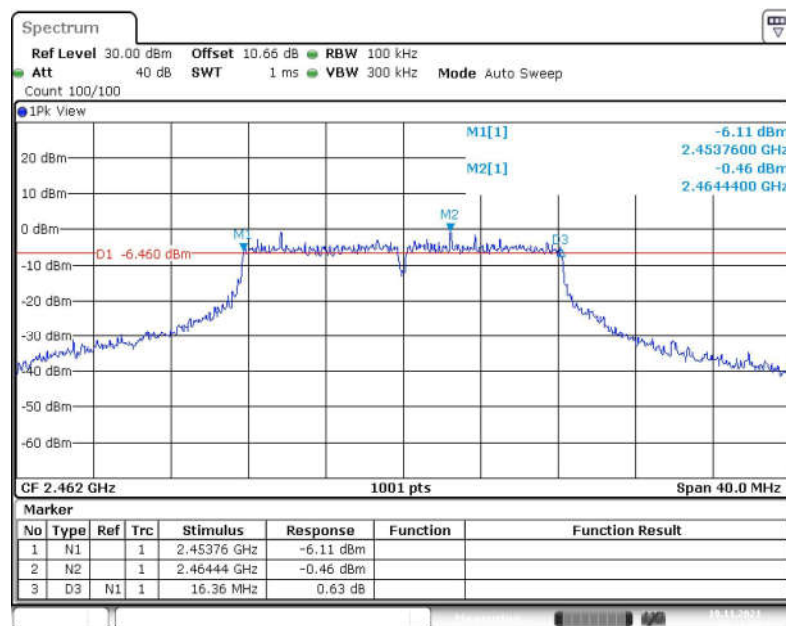


Fig.30 6dB Bandwidth (802.11g, CH 11)

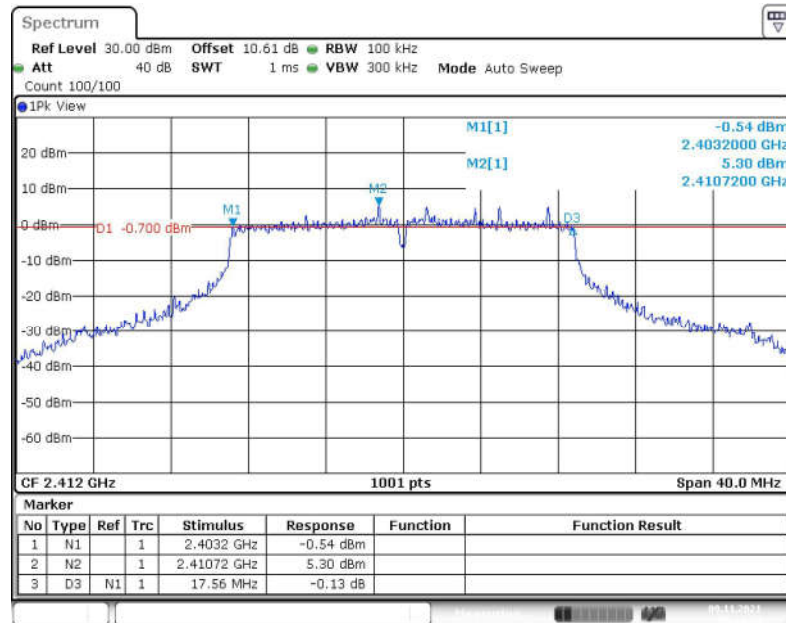


Fig.31 6dB Bandwidth (802.11n-HT20, CH 1)

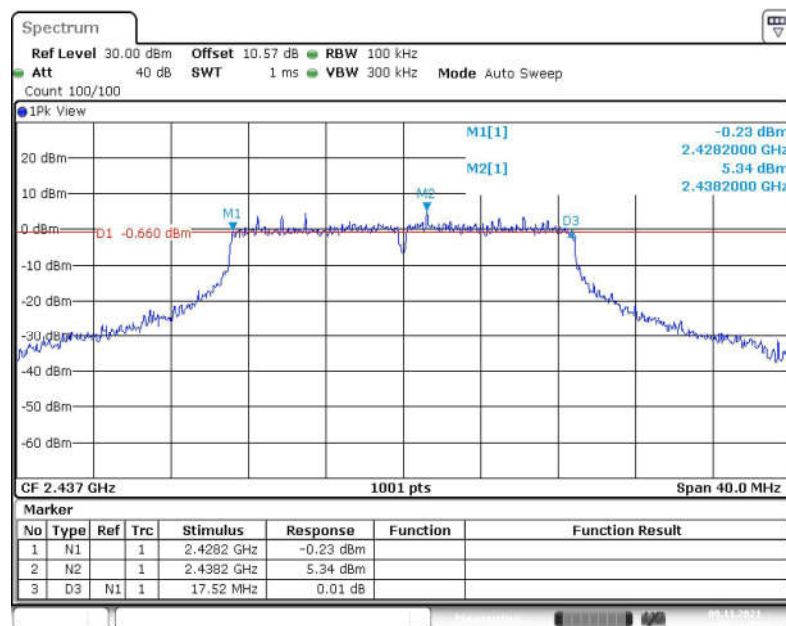


Fig.32 6dB Bandwidth (802.11n-HT20, CH 6)

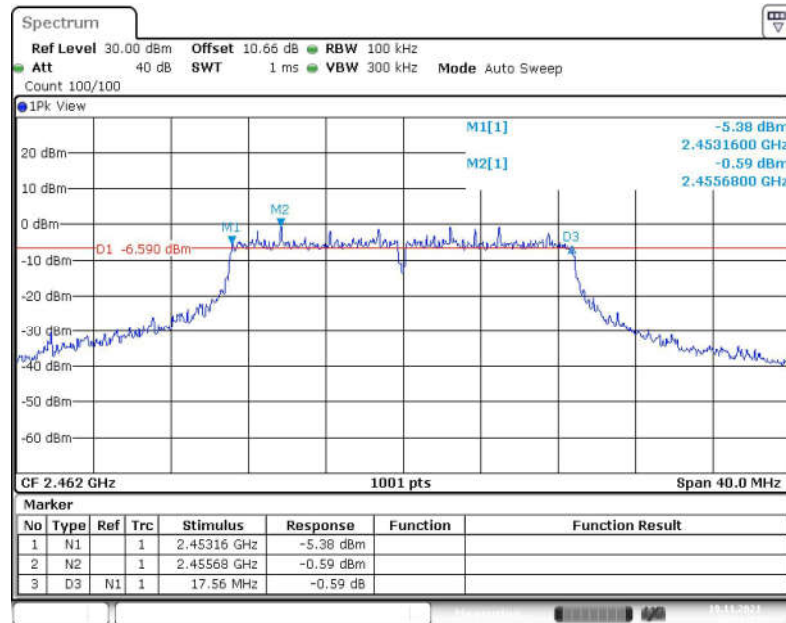


Fig.33 6dB Bandwidth (802.11n-HT20, CH 11)

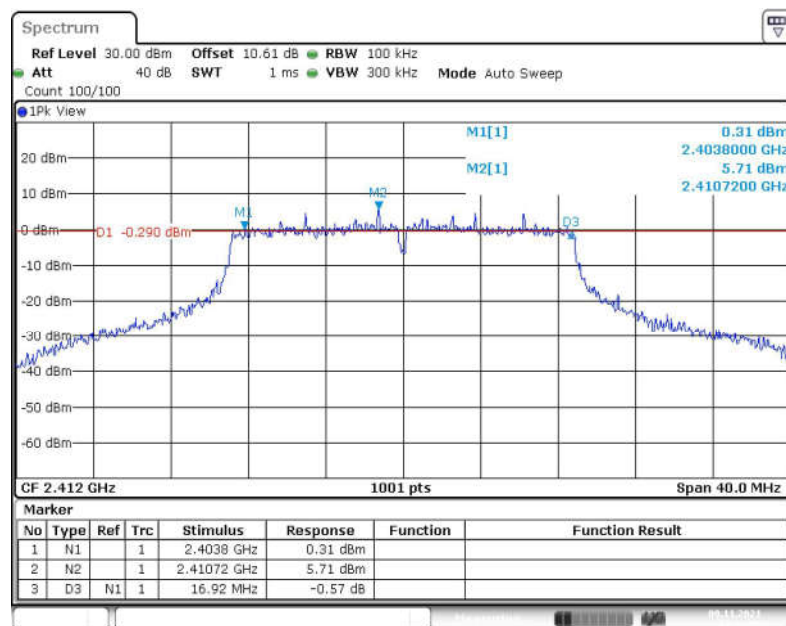


Fig.34 6dB Bandwidth (802.11-VHT20, CH 1)

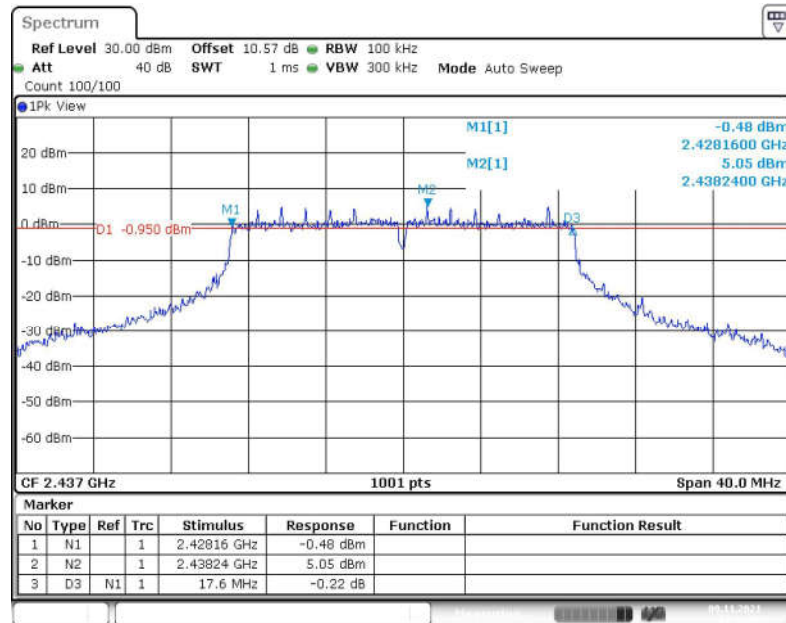


Fig.35 6dB Bandwidth (802.11-VHT20, CH 6)

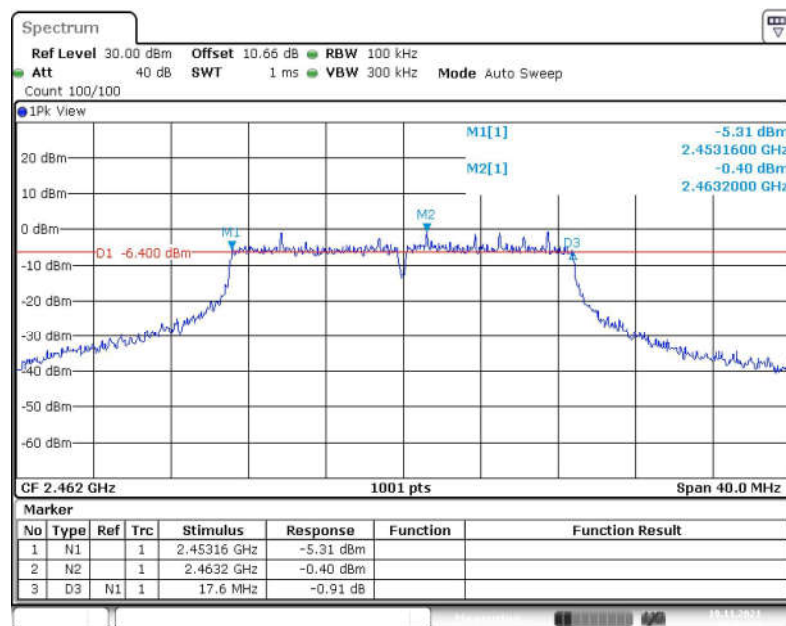


Fig.36 6dB Bandwidth (802.11-VHT20, CH 11)

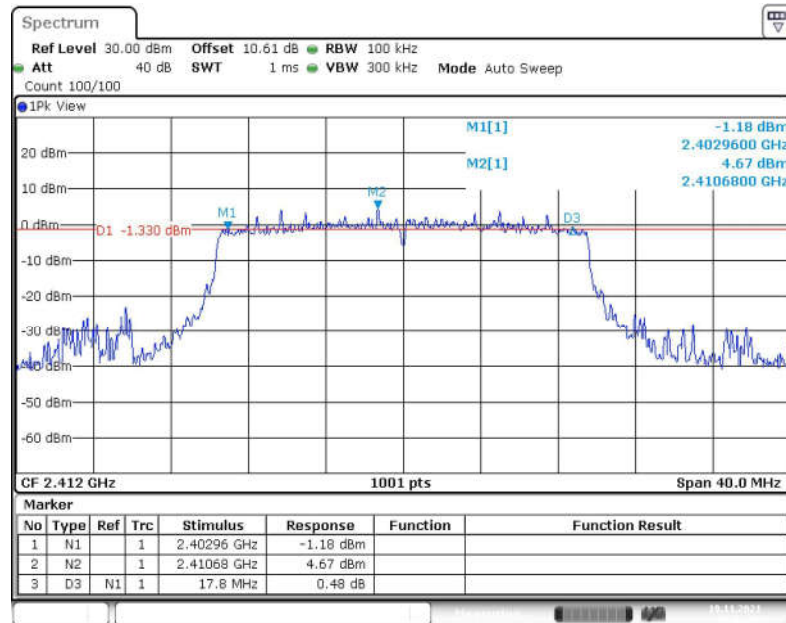


Fig.37 6dB Bandwidth (802.11ax-HE20, CH 1)

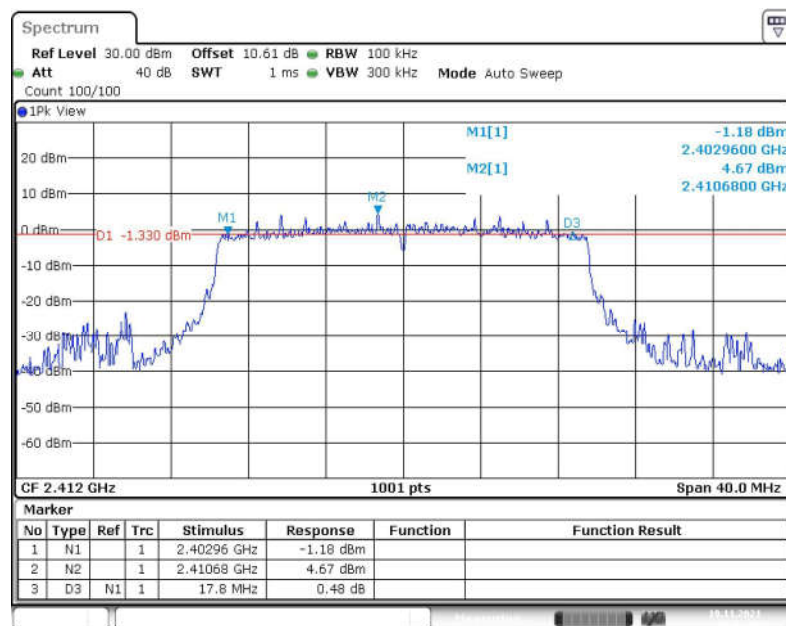


Fig.38 6dB Bandwidth (802.11ax-HE20, CH 6)

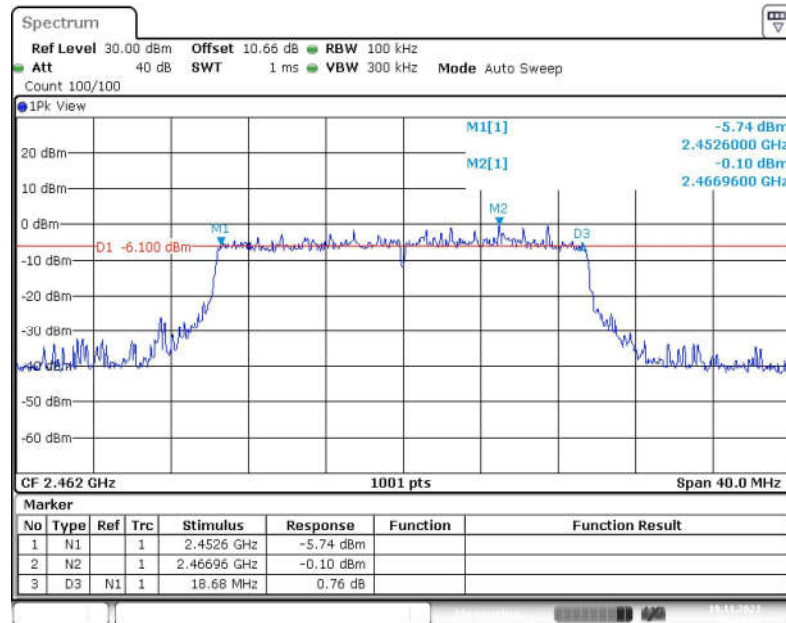


Fig.39 6dB Bandwidth (802.11ax-HE20, CH 11)

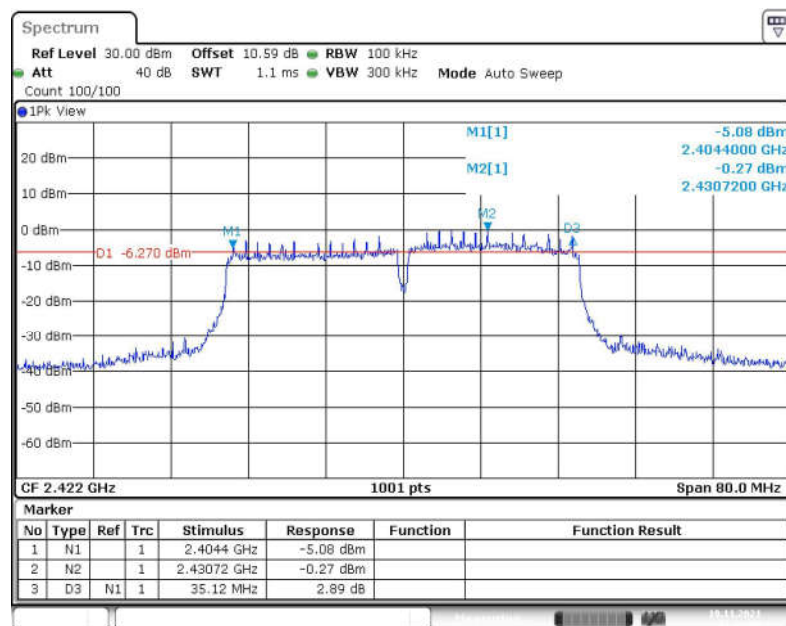


Fig.40 6dB Bandwidth (802.11n-HT40, CH 3)

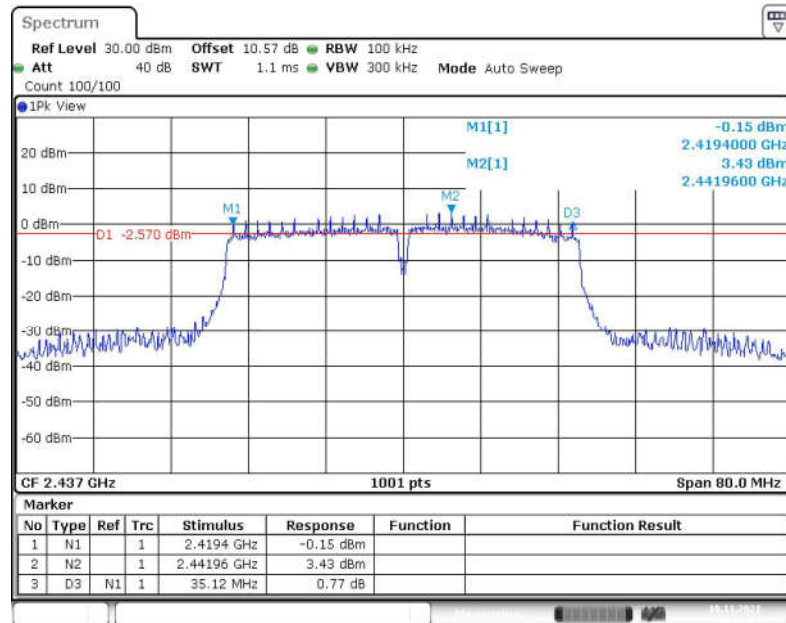


Fig.41 6dB Bandwidth (802.11n-HT40, CH 6)

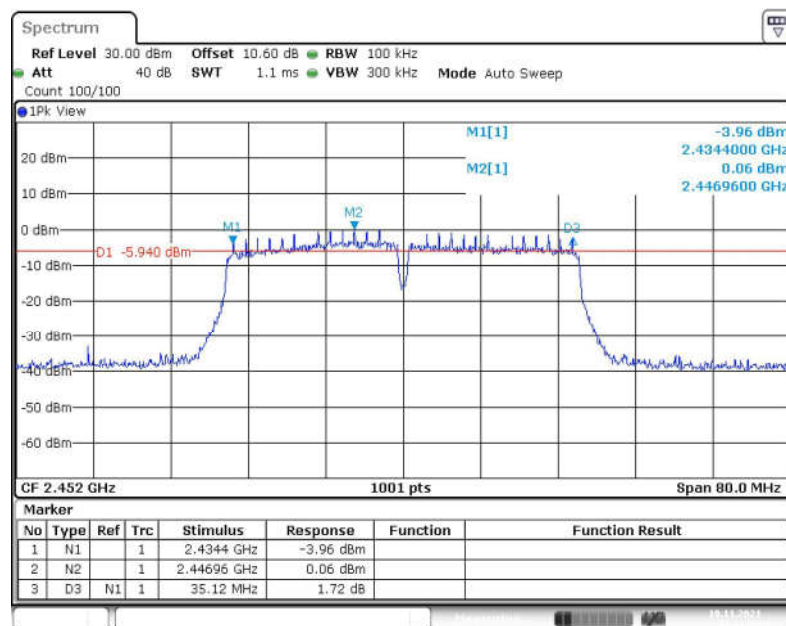


Fig.42 6dB Bandwidth (802.11n-HT40, CH 9)

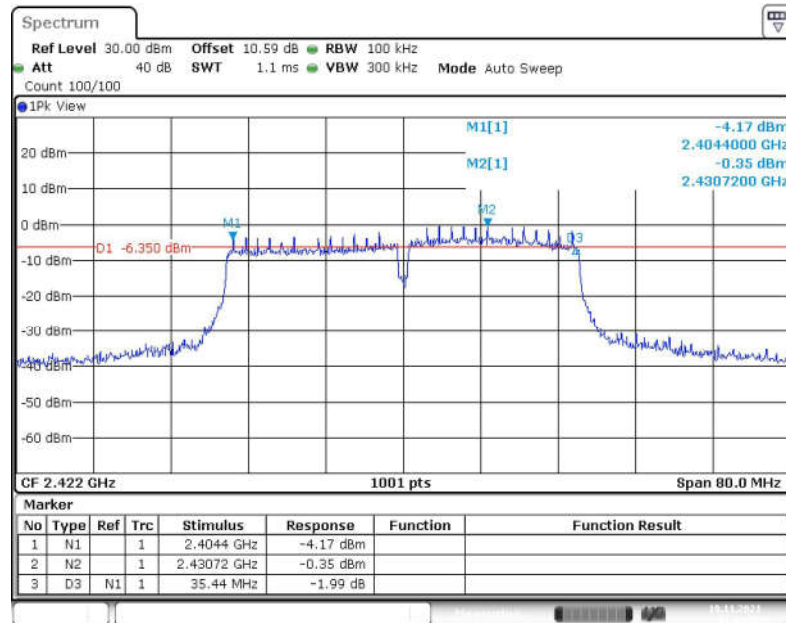


Fig.43 6dB Bandwidth (802.11-VHT40, CH 3)

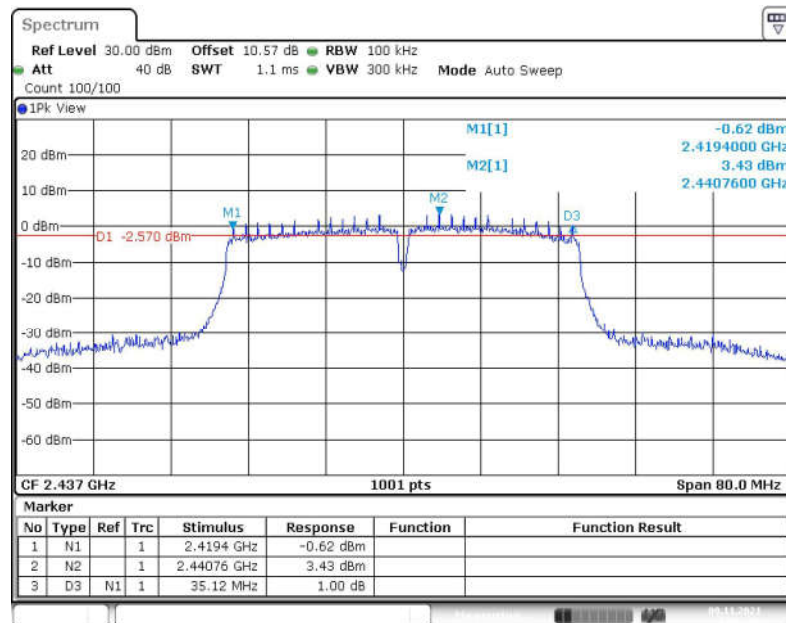


Fig.44 6dB Bandwidth (802.11-VHT40, CH 6)

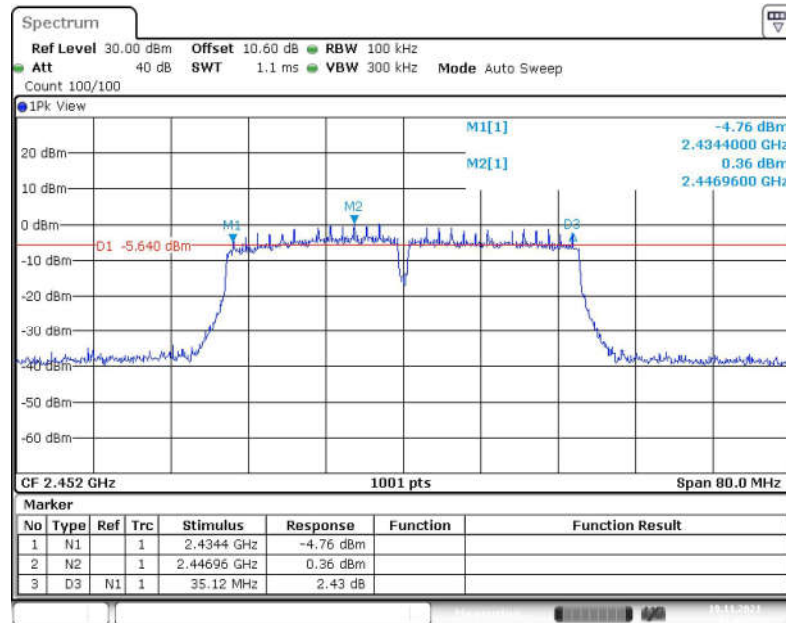


Fig.45 6dB Bandwidth (802.11-VHT40, CH 9)

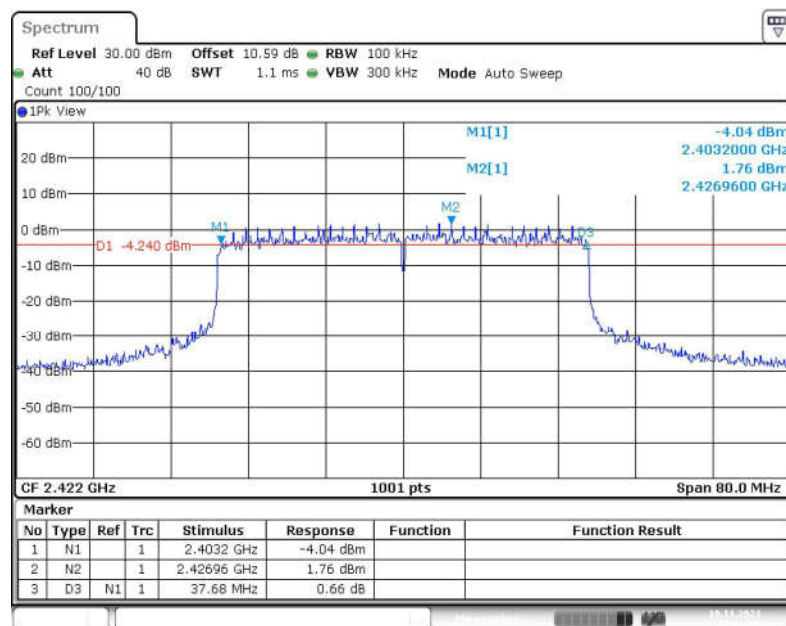


Fig.46 6dB Bandwidth (802.11ax-HE40, CH 3)

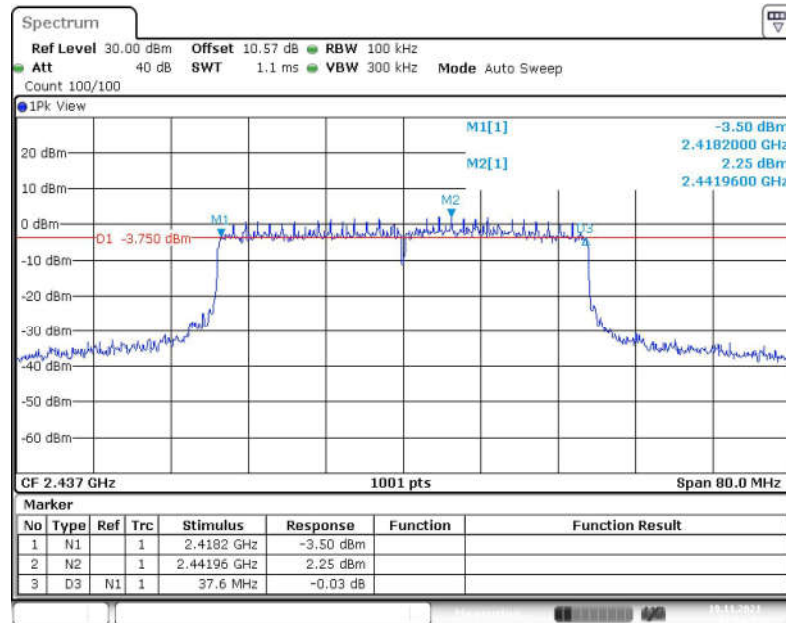


Fig.47 6dB Bandwidth (802.11ax-HE40, CH 6)

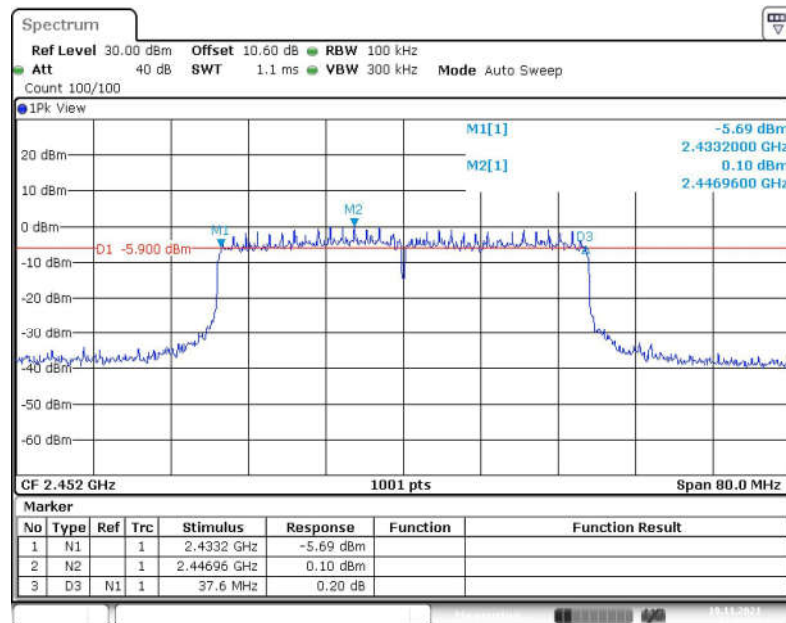


Fig.48 6dB Bandwidth (802.11ax-HE40, CH 9)



A.4 Band Edges Compliance

Method of Measurement: See ANSI C63.10-clause 11.13.3

Measurement Limit:

Standard	Limit (dBm)
FCC 47 CFR Part 15.247 (d)	> 20

Measurement Result:

Mode	Channel	Frequency (MHz)	Test Results (dBm)		Conclusion
802.11b	CH1	2412	Fig.49	48.52	P
	CH11	2462	Fig.50	55.62	P
802.11g	CH1	2412	Fig.51	30.21	P
	CH11	2462	Fig.52	45.34	P
802.11n-HT20	CH1	2412	Fig.53	28.36	P
	CH11	2462	Fig.54	44.84	P
802.11-VHT20	CH1	2412	Fig.55	29.73	P
	CH11	2462	Fig.56	44.38	P
802.11ax-HE20	CH1	2412	Fig.57	27.17	P
	CH11	2462	Fig.58	43.45	P
802.11n-HT40	CH3	2422	Fig.59	31.43	P
	CH9	2452	Fig.60	41.92	P
802.11-VHT40	CH3	2422	Fig.61	32.32	P
	CH9	2452	Fig.62	44.33	P
802.11ax-HE40	CH3	2422	Fig.63	32.18	P
	CH9	2452	Fig.64	41.68	P

See below for test graphs.

Conclusion: **PASS**

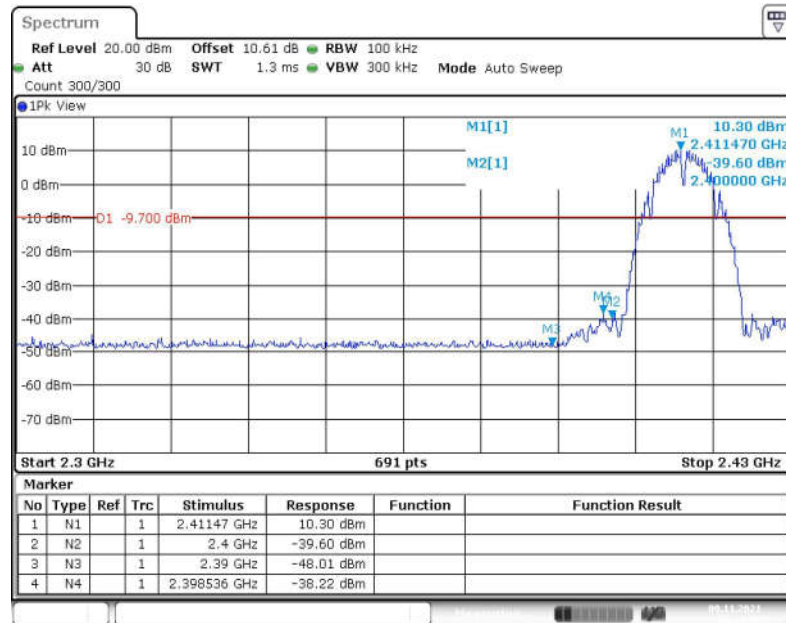


Fig.49 Band Edges (802.11b, CH 1)

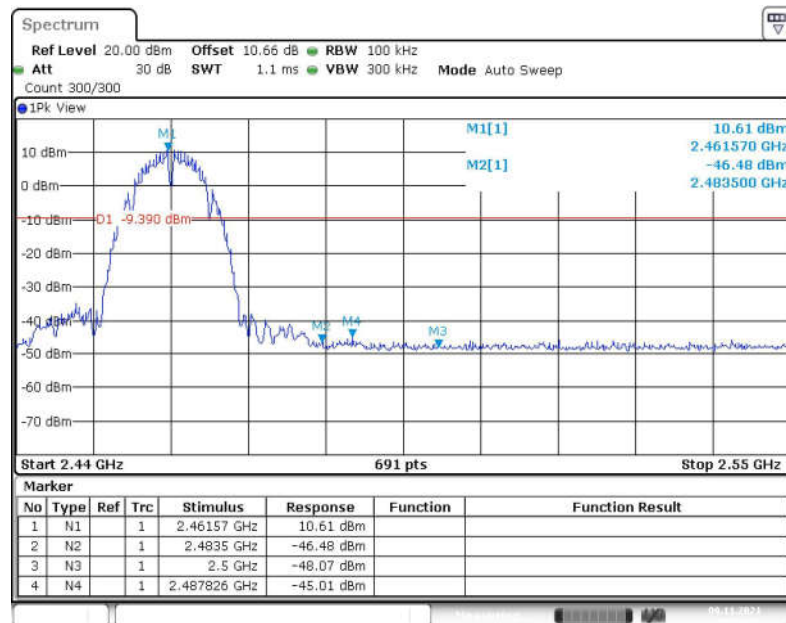


Fig.50 Band Edges (802.11b, CH 11)



Fig.51 Band Edges (802.11g, CH 1)

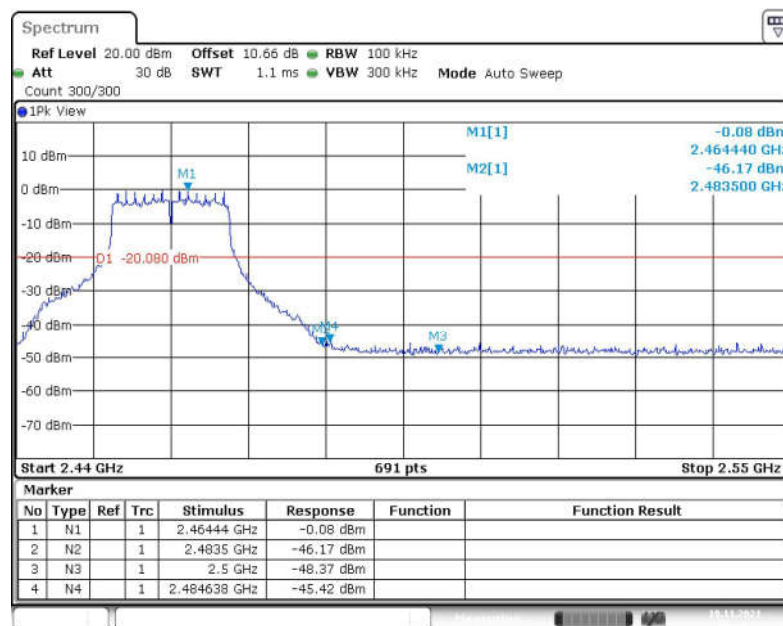


Fig.52 Band Edges (802.11g, CH 11)

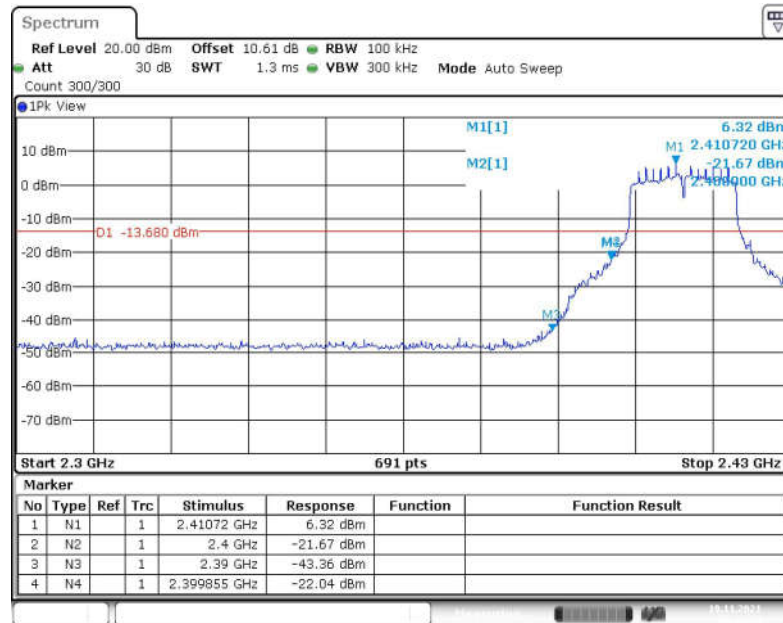


Fig.53 Band Edges (802.11n-HT20, CH 1)

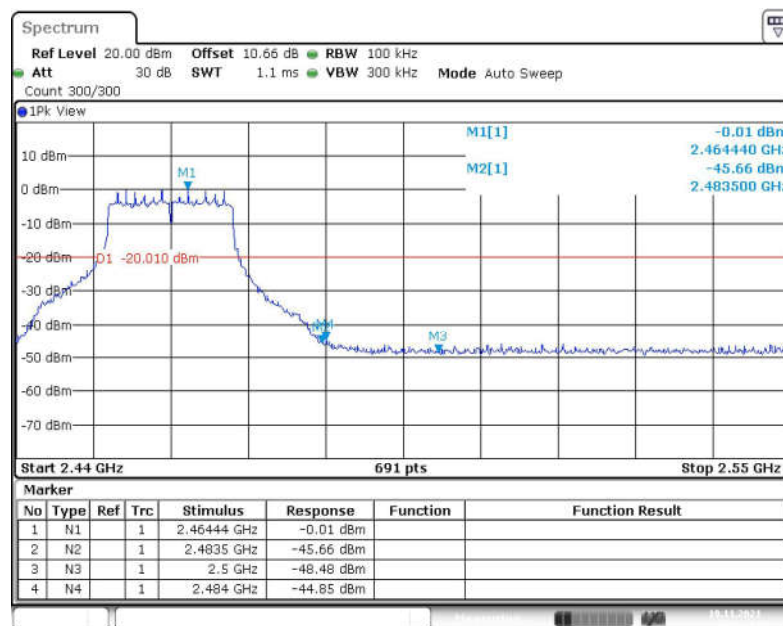


Fig.54 Band Edges (802.11n-HT20, CH 11)



Fig.55 Band Edges (802.11-VHT20, CH 1)

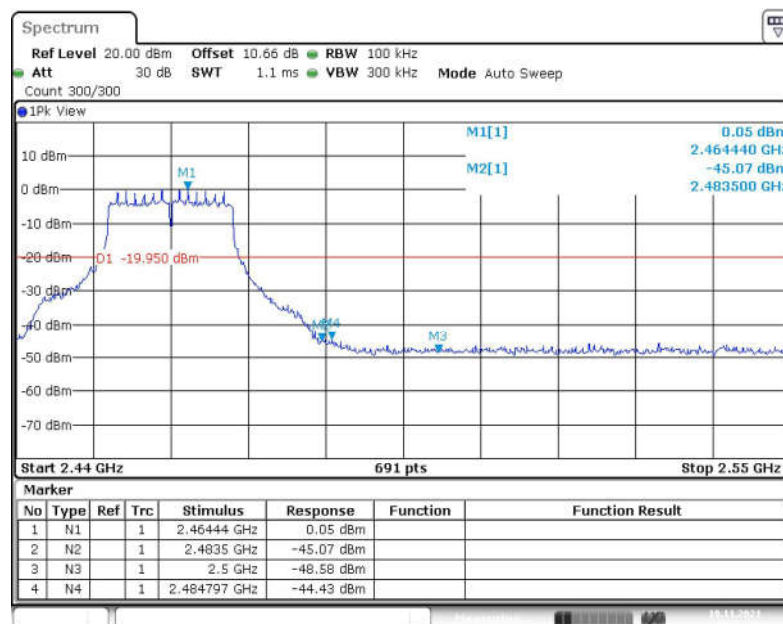


Fig.56 Band Edges (802.11-VHT20, CH 11)

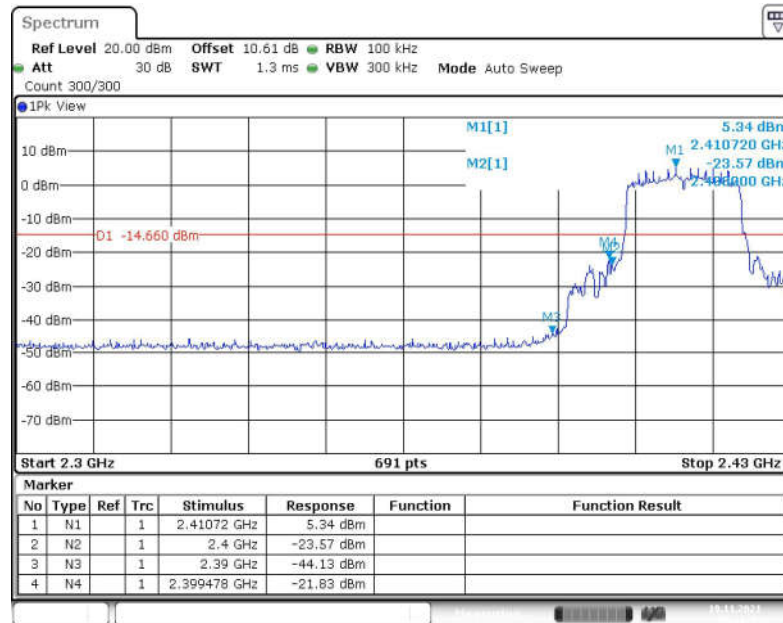


Fig.57 Band Edges (802.11ax-HE20, CH 1)

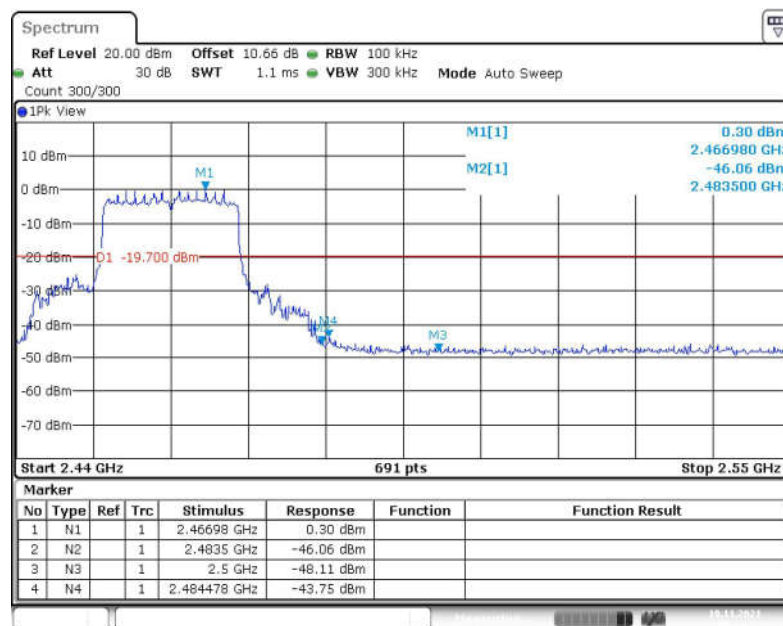


Fig.58 Band Edges (802.11ax-HE20, CH 11)

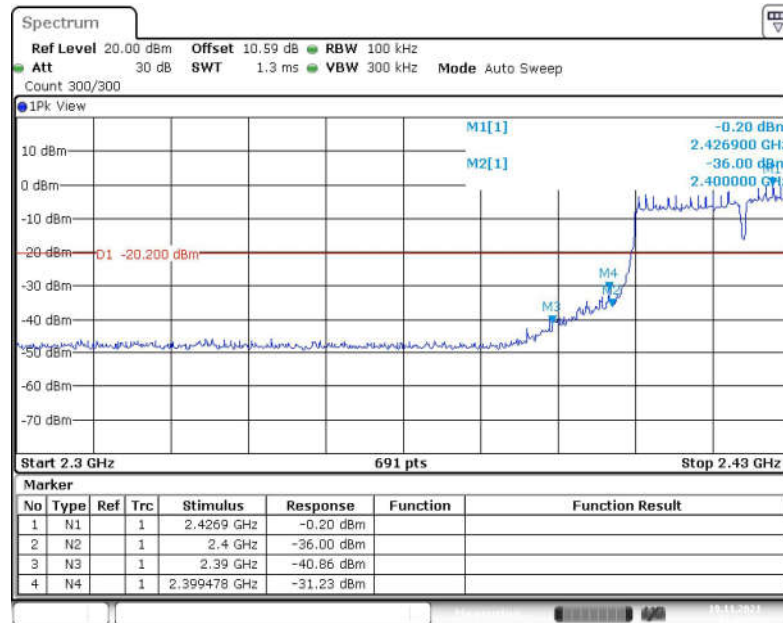


Fig.59 Band Edges (802.11n-HT40, CH 3)

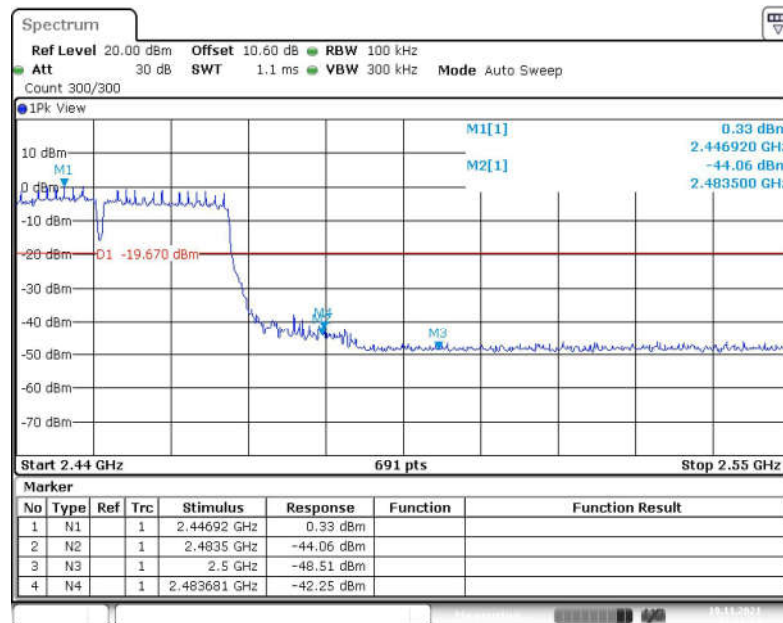


Fig.60 Band Edges (802.11n-HT40, CH 9)

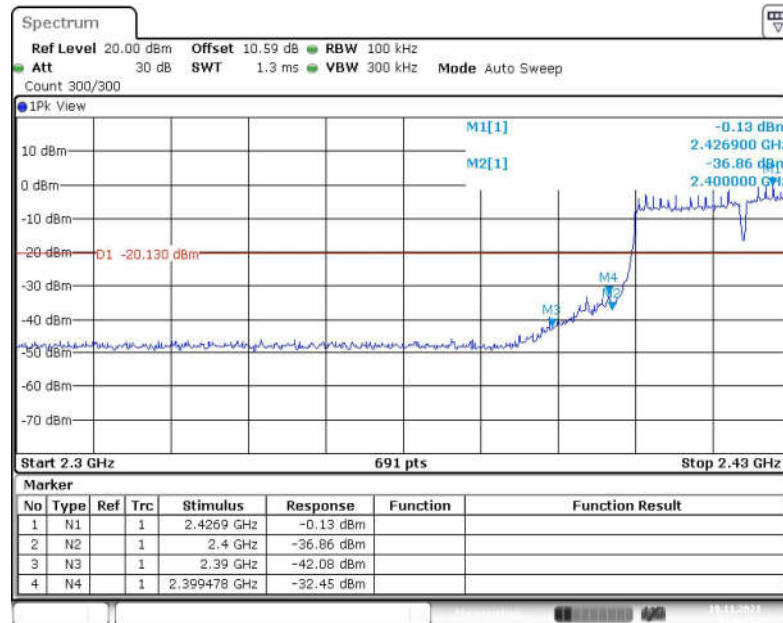


Fig.61 Band Edges (802.11-VHT40, CH 3)

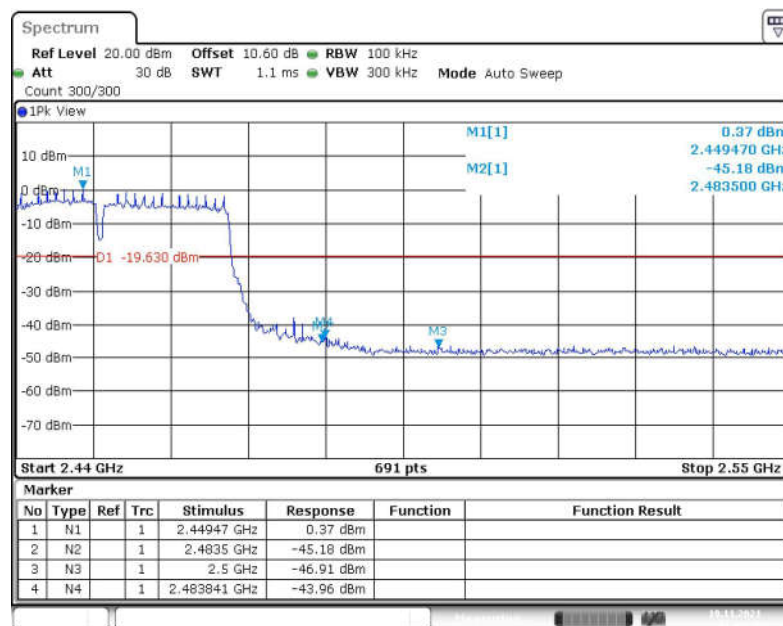


Fig.62 Band Edges (802.11-VHT40, CH 9)

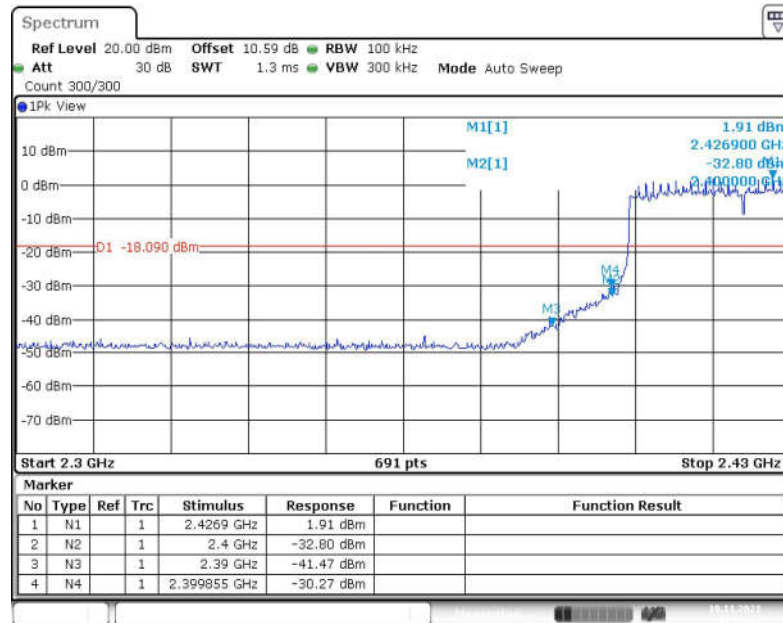


Fig.63 Band Edges (802.11ax-HE40, CH 3)

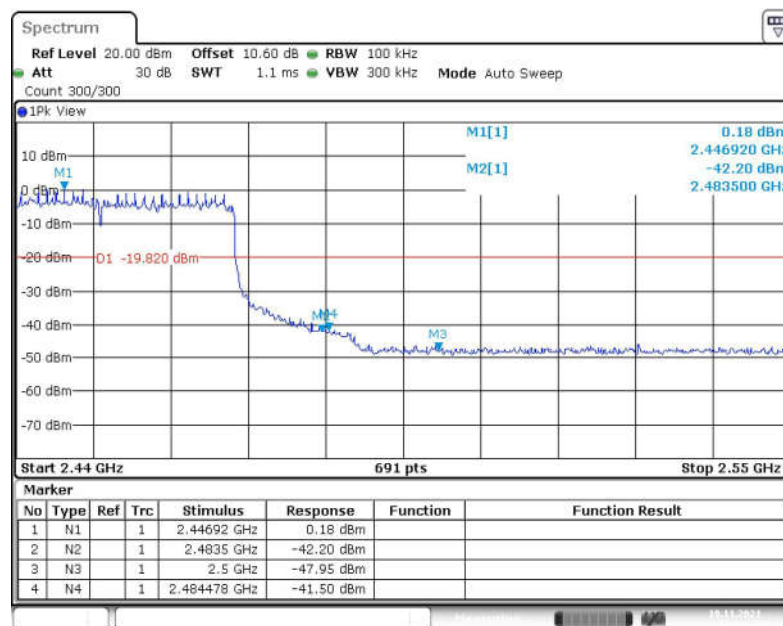


Fig.64 Band Edges (802.11ax-HE40, CH 9)

A.5 Conducted Emission

Method of Measurement: See ANSI C63.10-clause 11.11

Measurement Limit:

Standard	Limit (dBm)
FCC 47 CFR Part 15.247 (d)	30dBm below peak output power in 100kHz bandwidth

Measurement Results:

Mode	Channel	Frequency (MHz)	Frequency Range	Test Results	Conclusion
802.11b	CH 1	2412	2.412 GHz	Fig.65	P
			30MHz -1GHz	Fig.66	P
			1GHz-26.5GHz	Fig.67	P
	CH 6	2437	2.437 GHz	Fig.68	P
			30MHz -1GHz	Fig.69	P
			1GHz-26.5GHz	Fig.70	P
	CH 11	2462	2.462 GHz	Fig.71	P
			30MHz -1GHz	Fig.72	P
			1GHz-26.5GHz	Fig.73	P
802.11g	CH 1	2412	2.412 GHz	Fig.74	P
			30MHz -1GHz	Fig.75	P
			1GHz-26.5GHz	Fig.76	P
	CH 6	2437	2.437 GHz	Fig.77	P
			30MHz -1GHz	Fig.78	P
			1GHz-26.5GHz	Fig.79	P
	CH 11	2462	2.462 GHz	Fig.80	P
			30MHz -1GHz	Fig.81	P
			1GHz-26.5GHz	Fig.82	P
802.11n-HT20	CH 1	2412	2.412 GHz	Fig.83	P
			30MHz -1GHz	Fig.84	P
			1GHz-26.5GHz	Fig.85	P
	CH 6	2437	2.437 GHz	Fig.86	P
			30MHz -1GHz	Fig.87	P
			1GHz-26.5GHz	Fig.88	P
	CH 11	2462	2.462 GHz	Fig.89	P
			30MHz -1GHz	Fig.90	P
			1GHz-26.5GHz	Fig.91	P
802.11-VHT20	CH 1	2412	2.412 GHz	Fig.92	P
			30MHz -1GHz	Fig.93	P
			1GHz-26.5GHz	Fig.94	P
	CH 6	2437	2.437 GHz	Fig.95	P

	CH 11	2462	30MHz -1GHz	Fig.96	P
			1GHz-26.5GHz	Fig.97	P
			2.462 GHz	Fig.98	P
			30MHz -1GHz	Fig.99	P
			1GHz-26.5GHz	Fig.100	P
802.11ax- HE20	CH 1	2412	2.412 GHz	Fig.101	P
			30MHz -1GHz	Fig.102	P
			1GHz-26.5GHz	Fig.103	P
	CH 6	2437	2.437 GHz	Fig.104	P
			30MHz -1GHz	Fig.105	P
			1GHz-26.5GHz	Fig.106	P
	CH 11	2462	2.462 GHz	Fig.107	P
			30MHz -1GHz	Fig.108	P
			1GHz-26.5GHz	Fig.109	P
802.11n- HT40	CH 3	2422	2.422 GHz	Fig.110	P
			30MHz -1GHz	Fig.111	P
			1GHz-26.5GHz	Fig.112	P
	CH 6	2437	2.437 GHz	Fig.113	P
			30MHz -1GHz	Fig.114	P
			1GHz-26.5GHz	Fig.115	P
	CH 9	2452	2.452 GHz	Fig.116	P
			30MHz -1GHz	Fig.117	P
			1GHz-26.5GHz	Fig.118	P
802.11- VHT40	CH 3	2422	2.422 GHz	Fig.119	P
			30MHz -1GHz	Fig.120	P
			1GHz-26.5GHz	Fig.121	P
	CH 6	2437	2.437 GHz	Fig.122	P
			30MHz -1GHz	Fig.123	P
			1GHz-26.5GHz	Fig.124	P
	CH 9	2452	2.452 GHz	Fig.125	P
			30MHz -1GHz	Fig.126	P
			1GHz-26.5GHz	Fig.127	P
802.11ax- HE40	CH 3	2422	2.422 GHz	Fig.128	P
			30MHz -1GHz	Fig.129	P
			1GHz-26.5GHz	Fig.130	P
	CH 6	2437	2.437 GHz	Fig.131	P
			30MHz -1GHz	Fig.132	P
			1GHz-26.5GHz	Fig.133	P
	CH 9	2452	2.452 GHz	Fig.134	P
			30MHz -1GHz	Fig.135	P
			1GHz-26.5GHz	Fig.136	P

See below for test graphs.

Conclusion: PASS

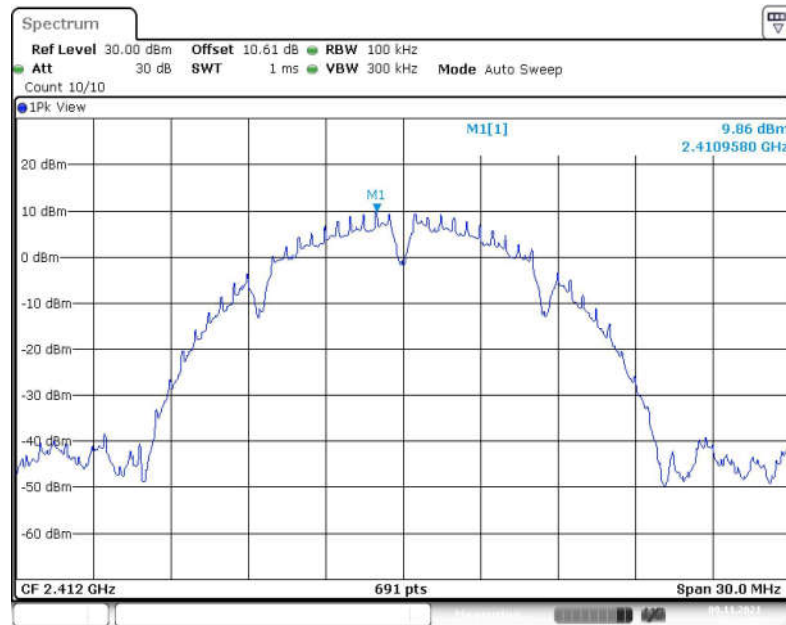


Fig.65 Conducted Spurious Emission (Center Frequency, 802.11b, CH1)

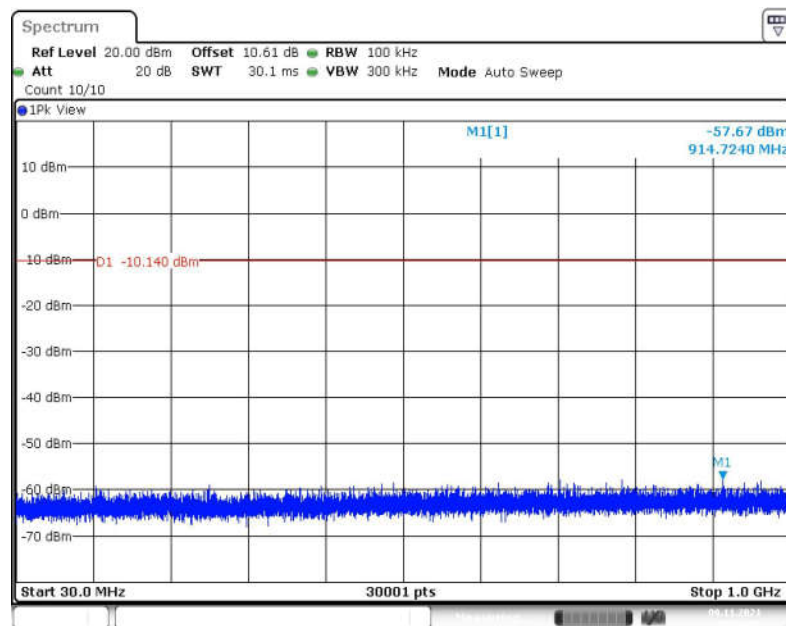


Fig.66 Conducted Spurious Emission (30MHz -1GHz, 802.11b, CH1)

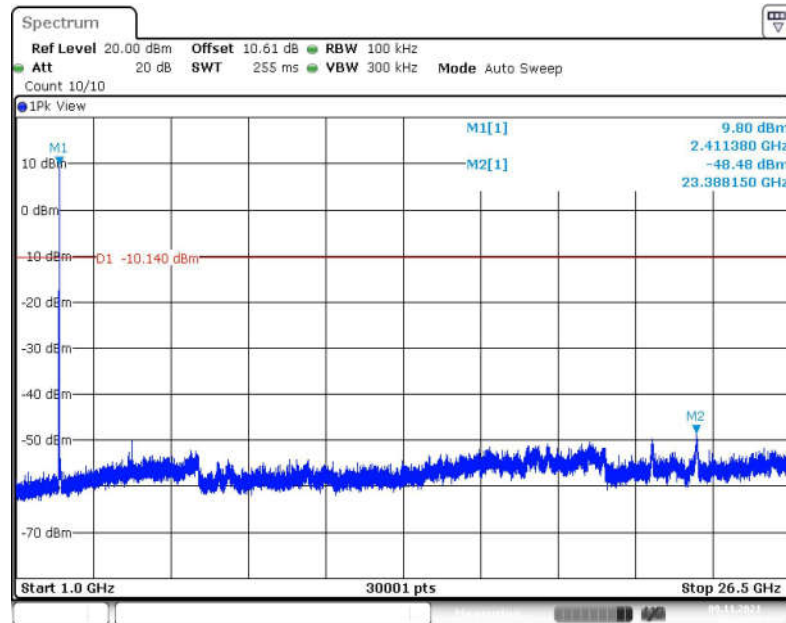


Fig.67 Conducted Spurious Emission (1GHz-26.5GHz, 802.11b, CH1)

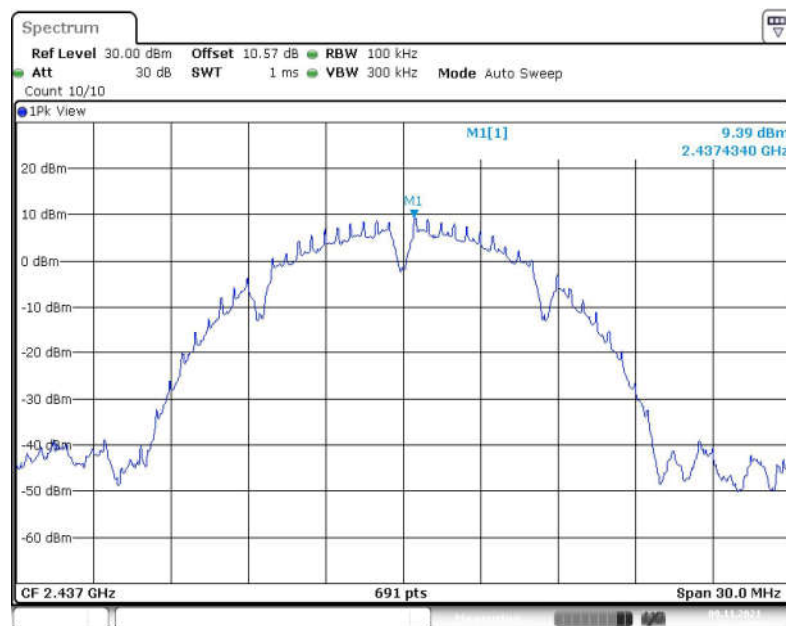


Fig.68 Conducted Spurious Emission (Center Frequency, 802.11b, CH6)

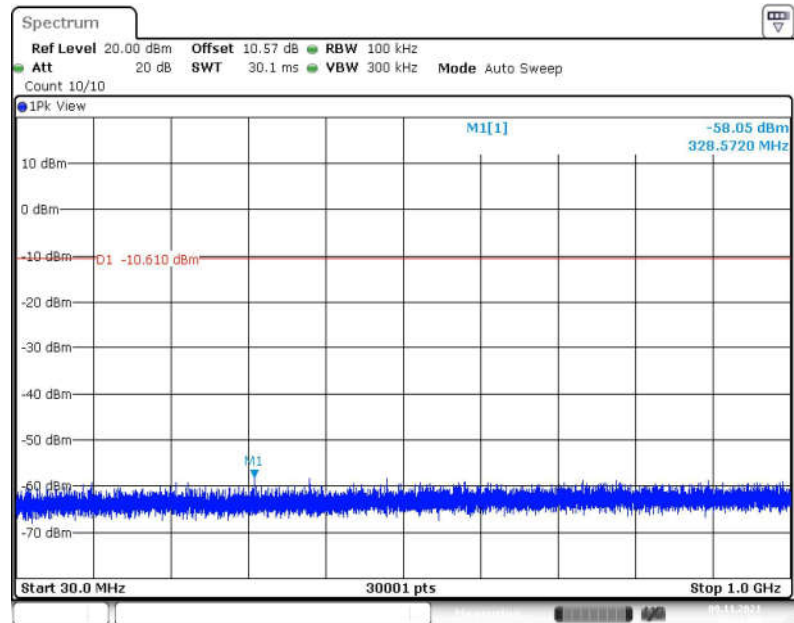


Fig.69 Conducted Spurious Emission (30MHz -1GHz, 802.11b, CH6)

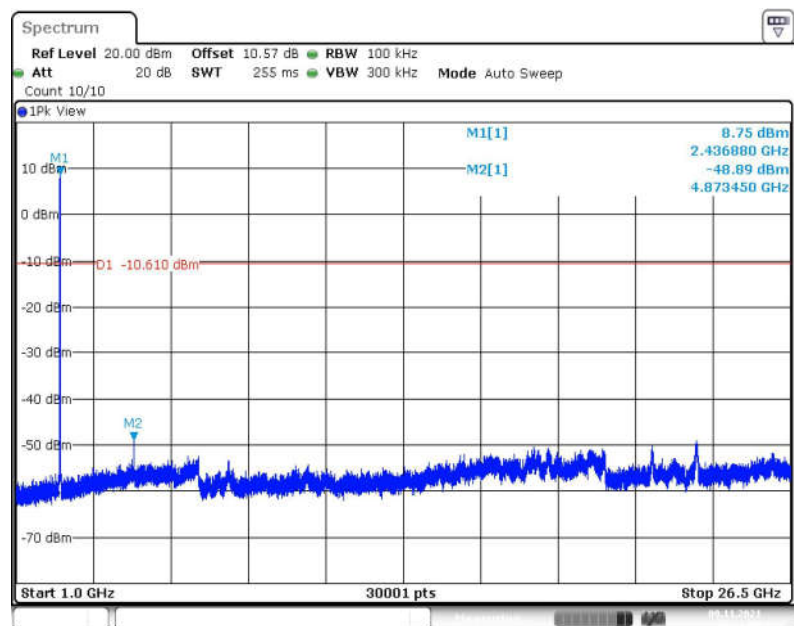


Fig.70 Conducted Spurious Emission (1GHz-26.5GHz, 802.11b, CH6)

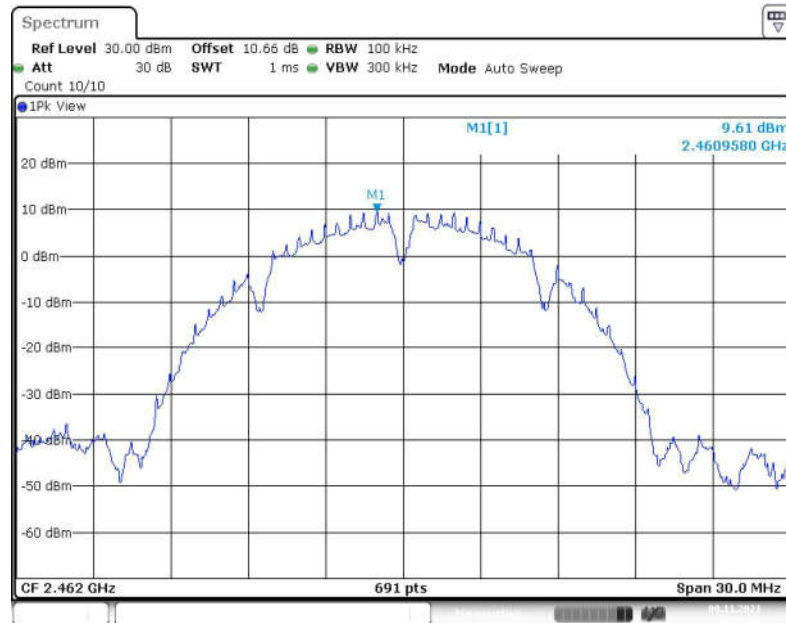


Fig.71 Conducted Spurious Emission (Center Frequency, 802.11b, CH11)

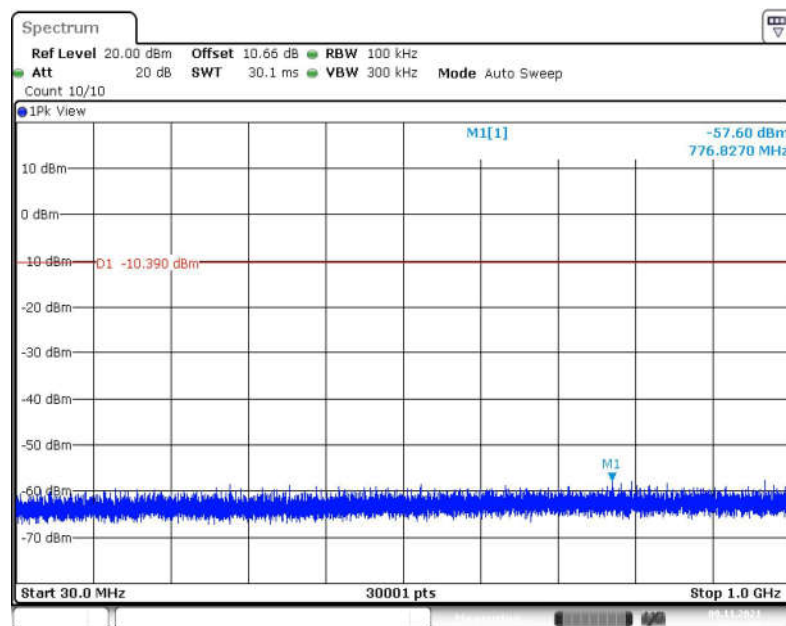


Fig.72 Conducted Spurious Emission (30MHz -1GHz, 802.11b, CH11)

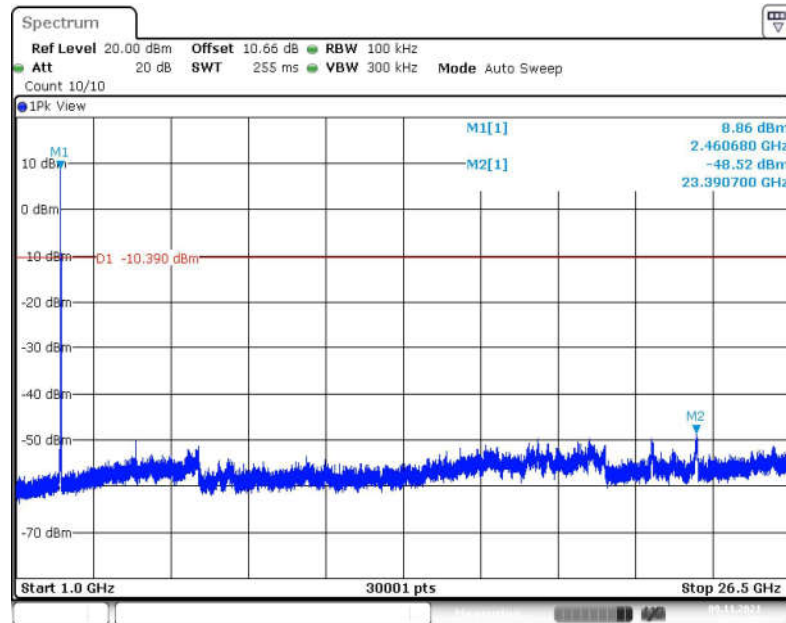


Fig.73 Conducted Spurious Emission (1GHz-26.5GHz, 802.11b, CH11)

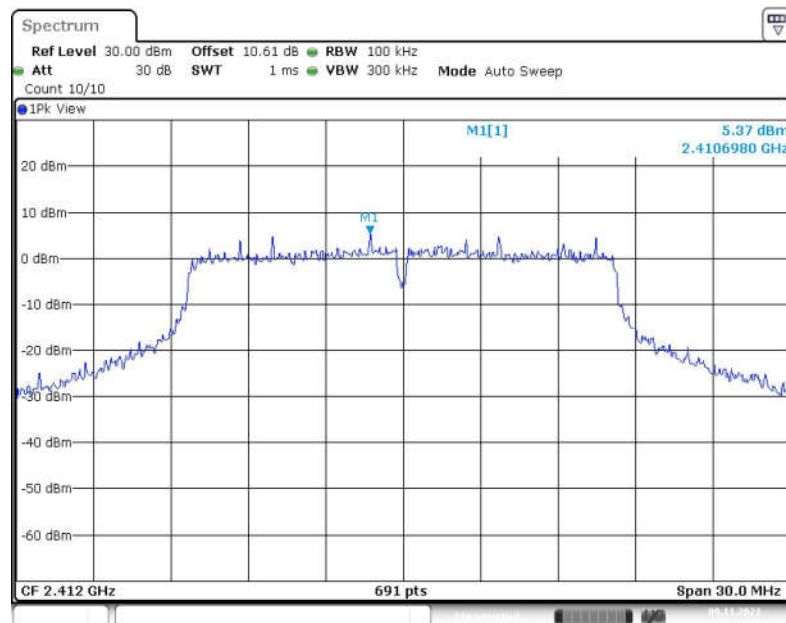


Fig.74 Conducted Spurious Emission (Center Frequency, 802.11g, CH1)

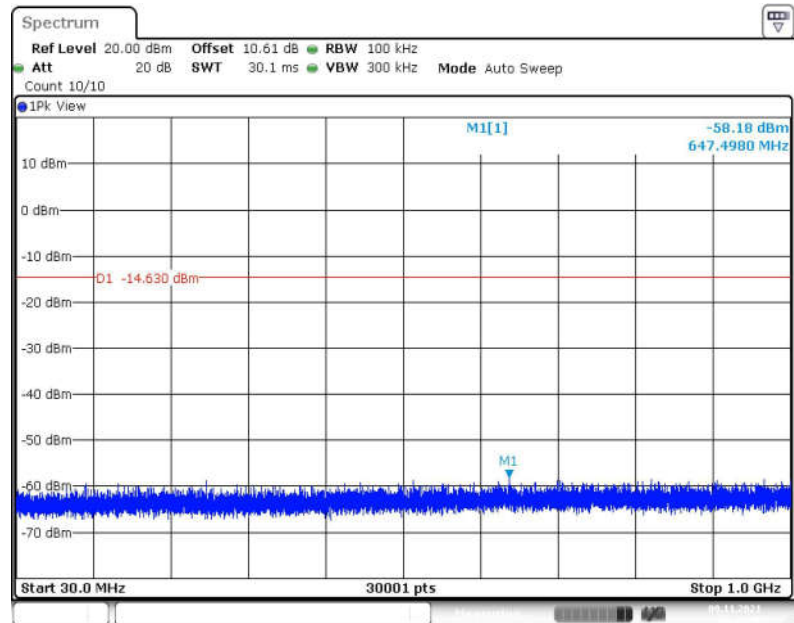


Fig.75 Conducted Spurious Emission (30MHz -1GHz, 802.11g, CH1)

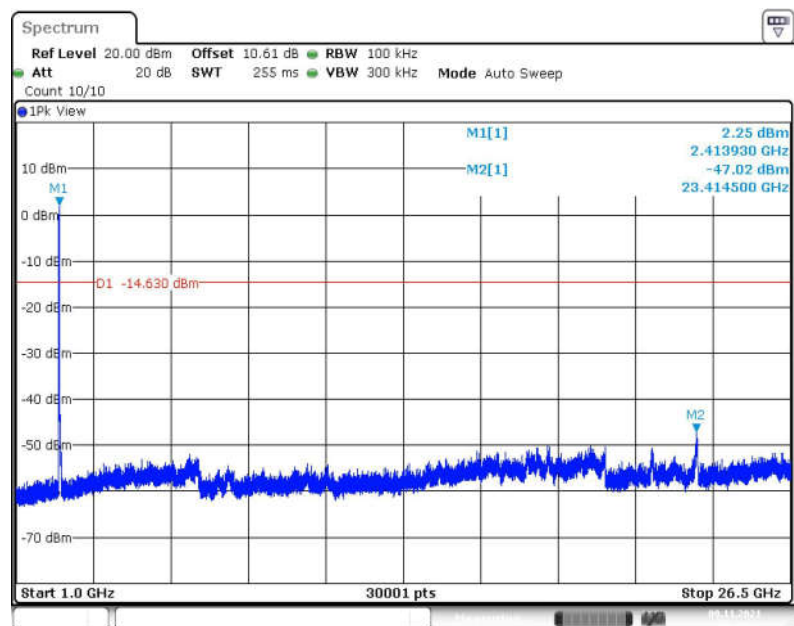


Fig.76 Conducted Spurious Emission (1GHz-26.5GHz, 802.11g, CH1)

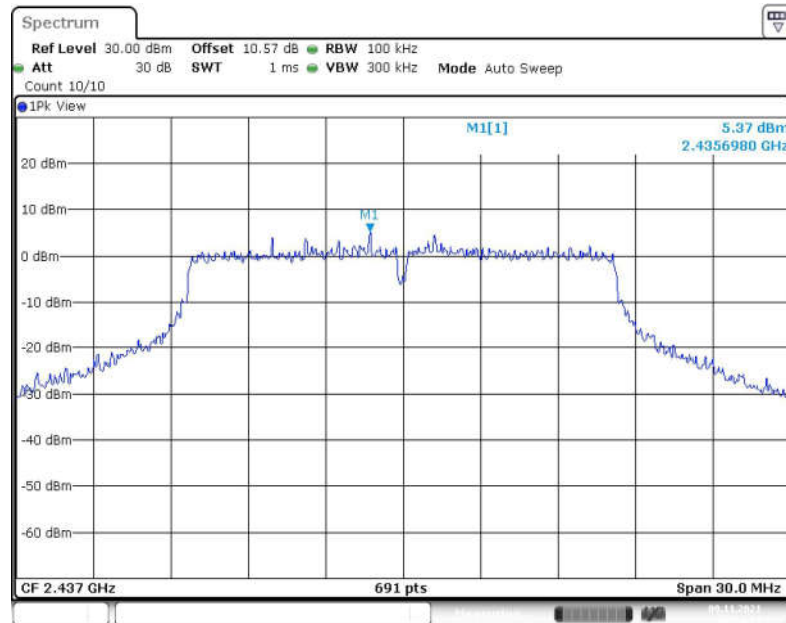


Fig.77 Conducted Spurious Emission (Center Frequency, 802.11g, CH6)

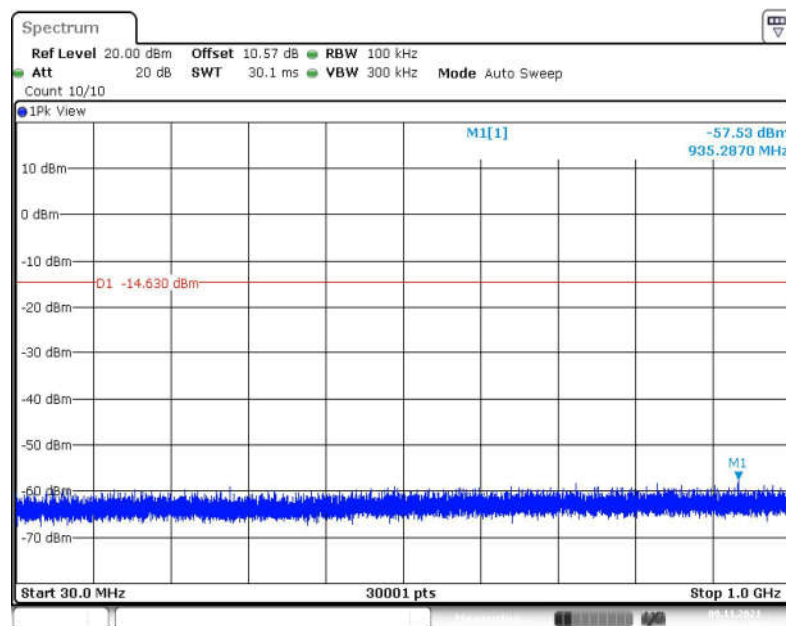


Fig.78 Conducted Spurious Emission (30MHz -1GHz, 802.11g, CH6)

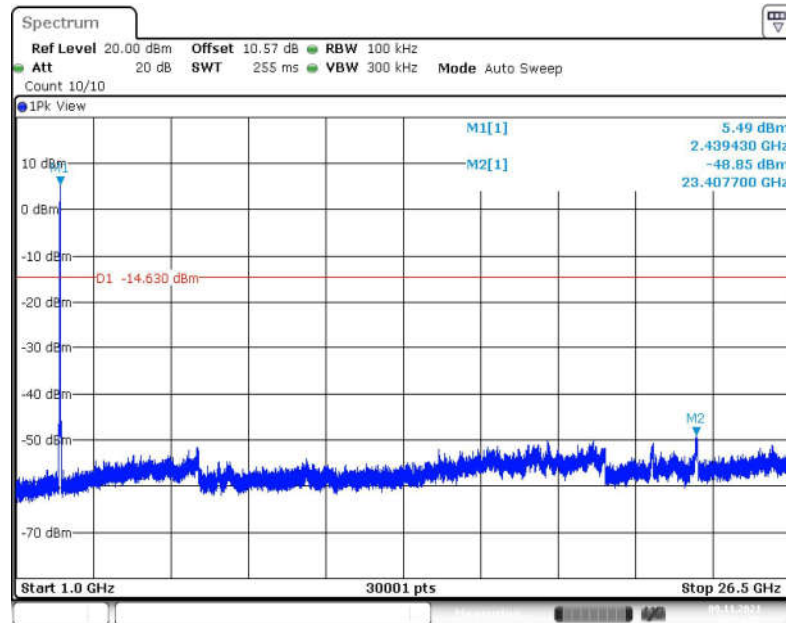


Fig.79 Conducted Spurious Emission (1GHz-26.5GHz, 802.11g, CH6)

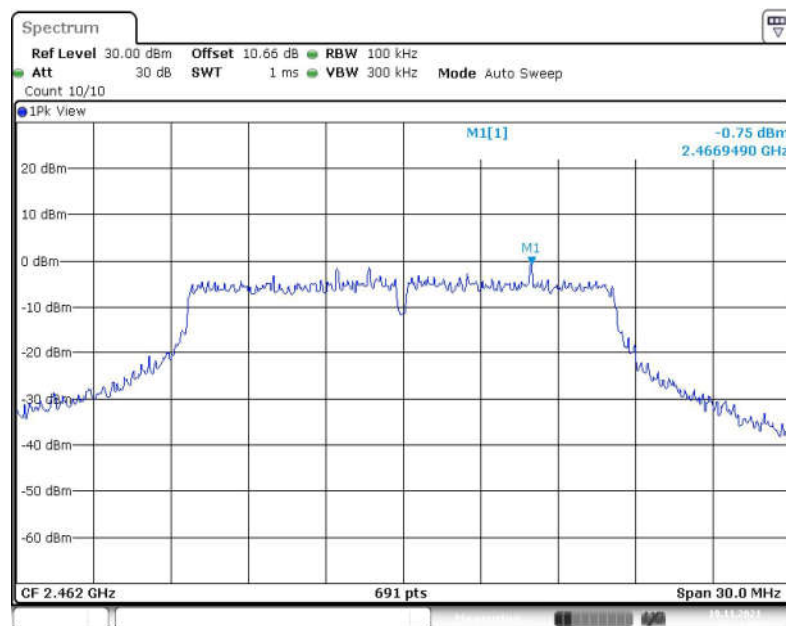


Fig.80 Conducted Spurious Emission (Center Frequency, 802.11g, CH11)

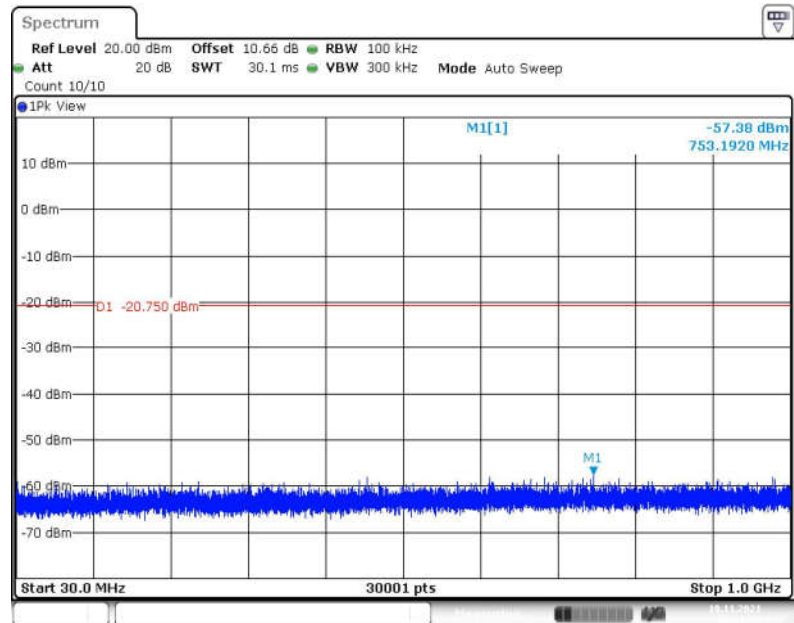


Fig.81 Conducted Spurious Emission (30MHz -1GHz, 802.11g, CH11)

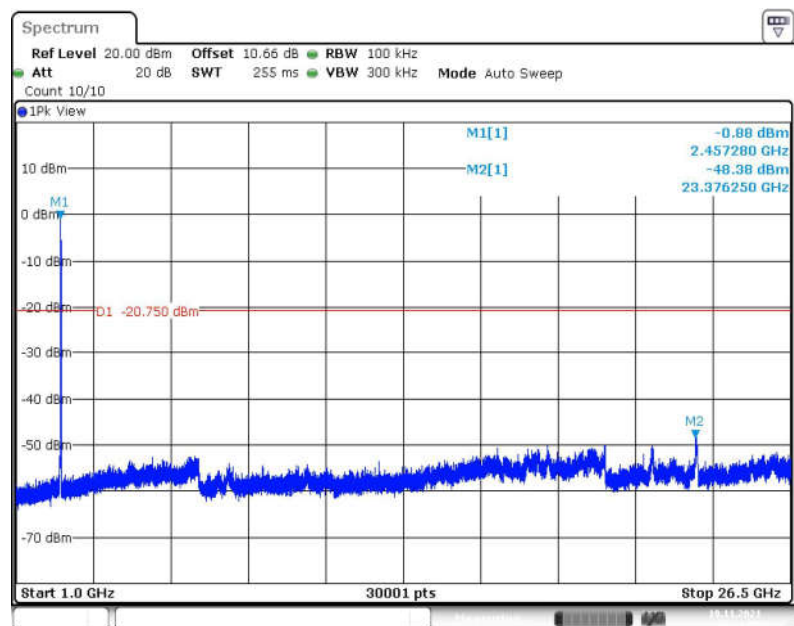


Fig.82 Conducted Spurious Emission (1GHz-26.5GHz, 802.11g, CH11)

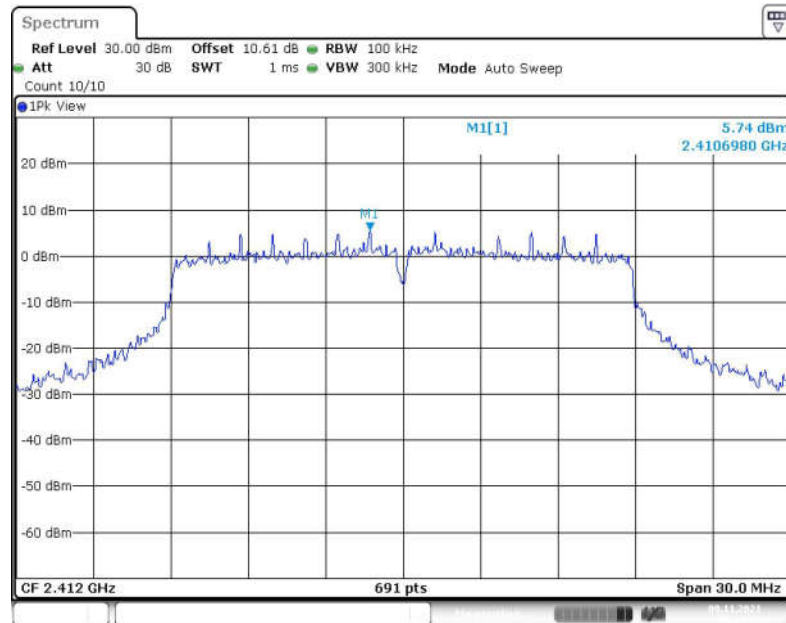


Fig.83 Conducted Spurious Emission (Center Frequency, 802.11n-HT20, CH1)

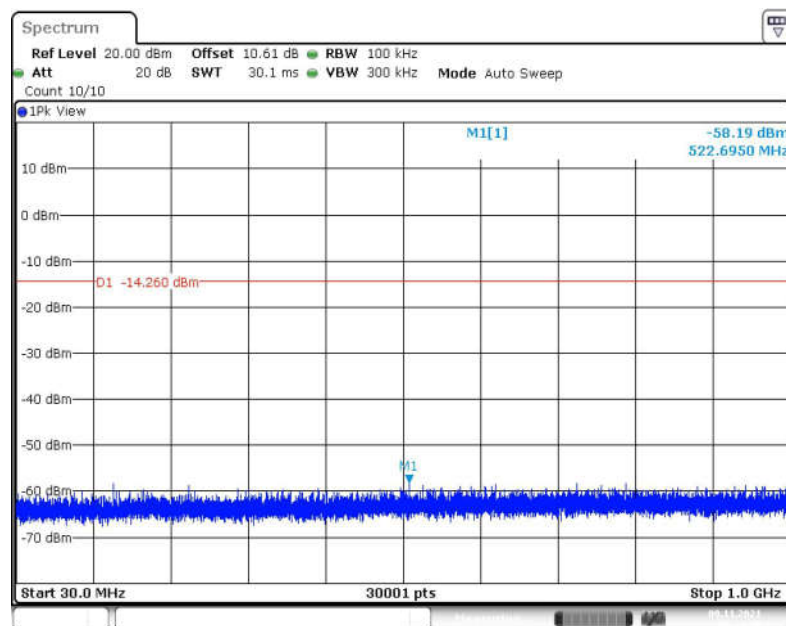


Fig.84 Conducted Spurious Emission (30MHz -1GHz, 802.11n-HT20, CH1)

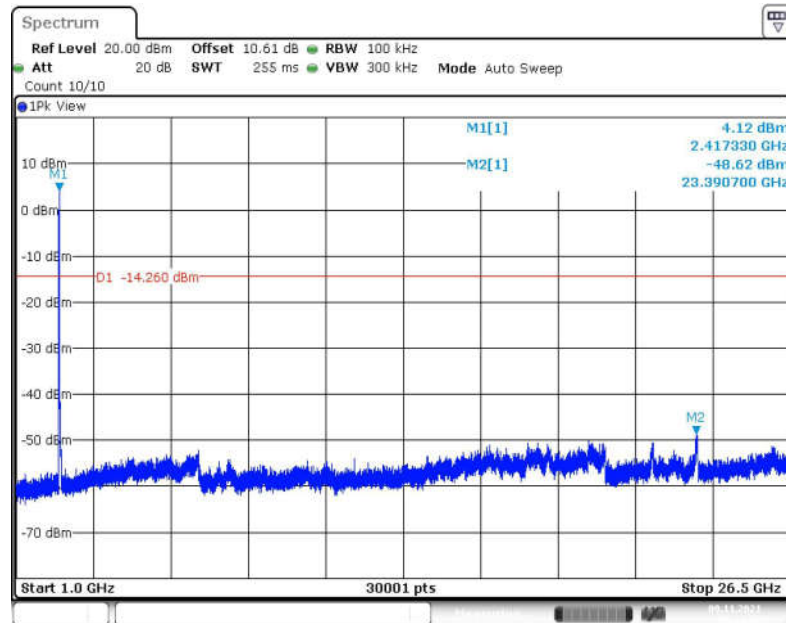


Fig.85 Conducted Spurious Emission (1GHz-26.5GHz, 802.11n-HT20, CH1)

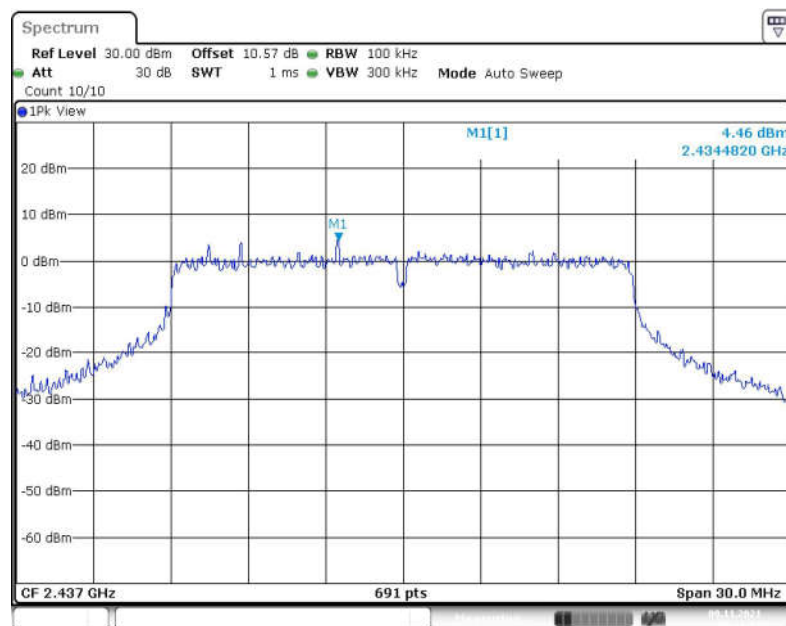


Fig.86 Conducted Spurious Emission (Center Frequency, 802.11n-HT20, CH6)

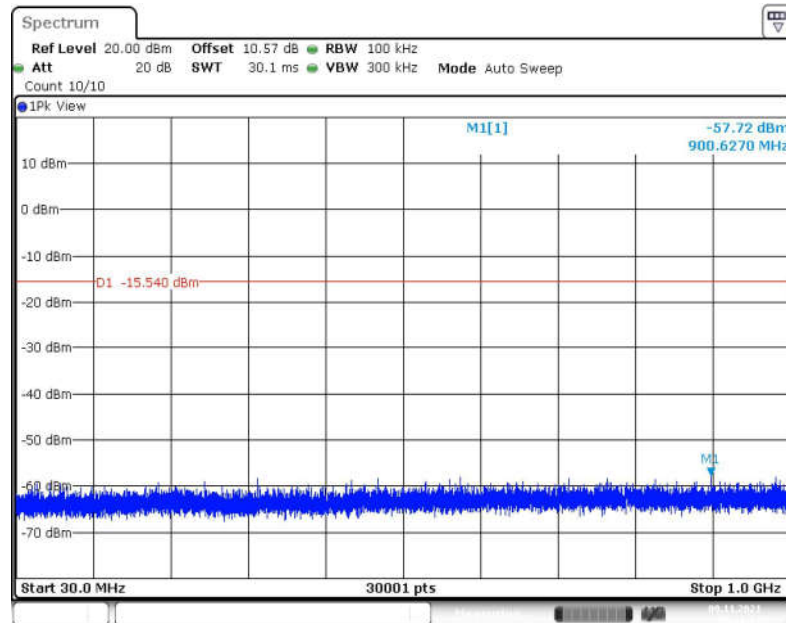


Fig.87 Conducted Spurious Emission (30MHz -1GHz, 802.11n-HT20, CH6)

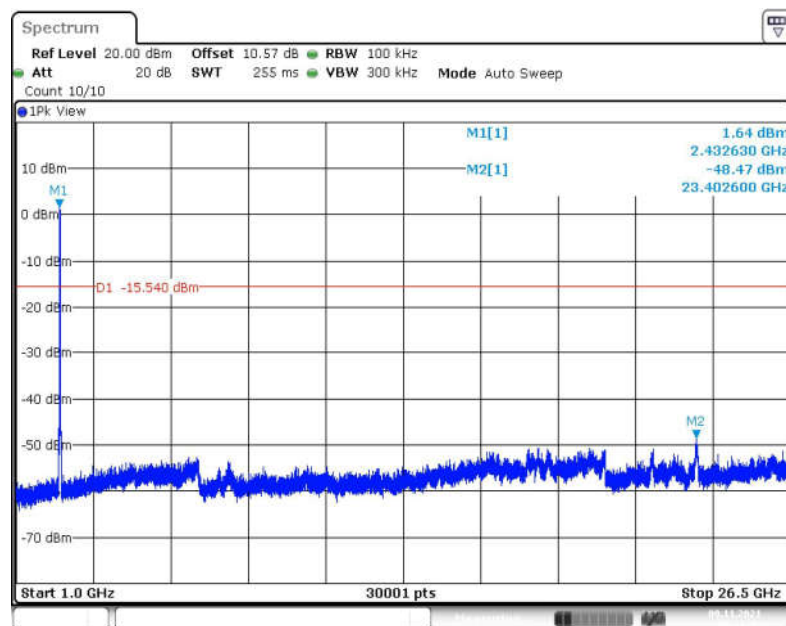


Fig.88 Conducted Spurious Emission (1GHz-26.5GHz, 802.11n-HT20, CH6)

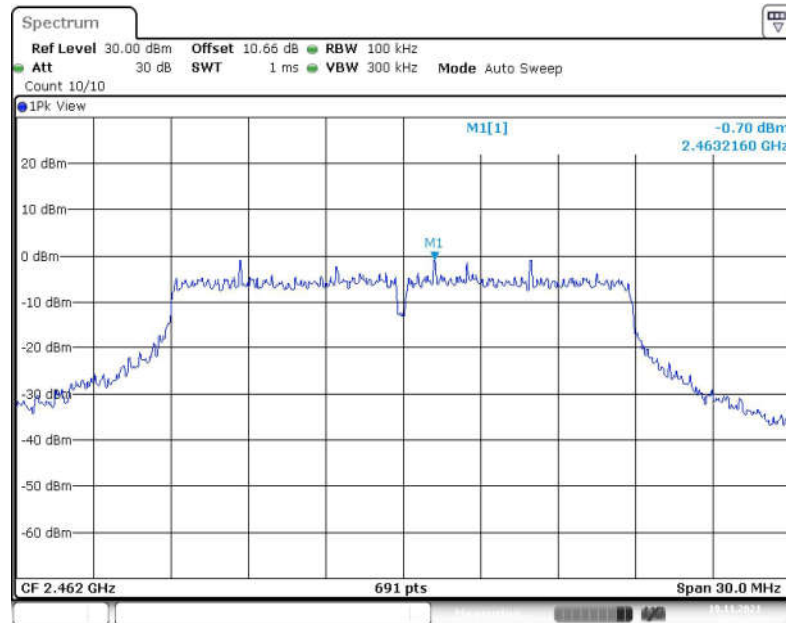


Fig.89 Conducted Spurious Emission (Center Frequency, 802.11n-HT20, CH11)

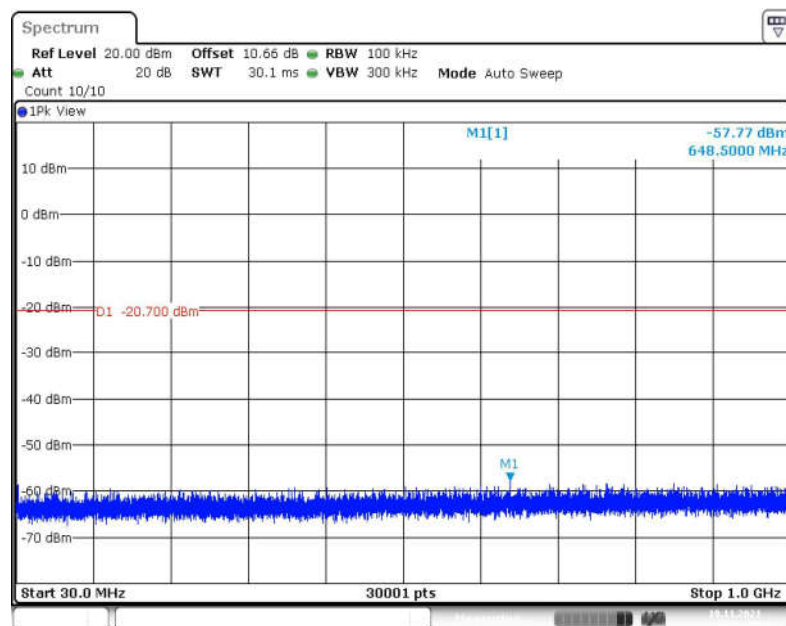


Fig.90 Conducted Spurious Emission (30MHz -1GHz, 802.11n-HT20, CH11)

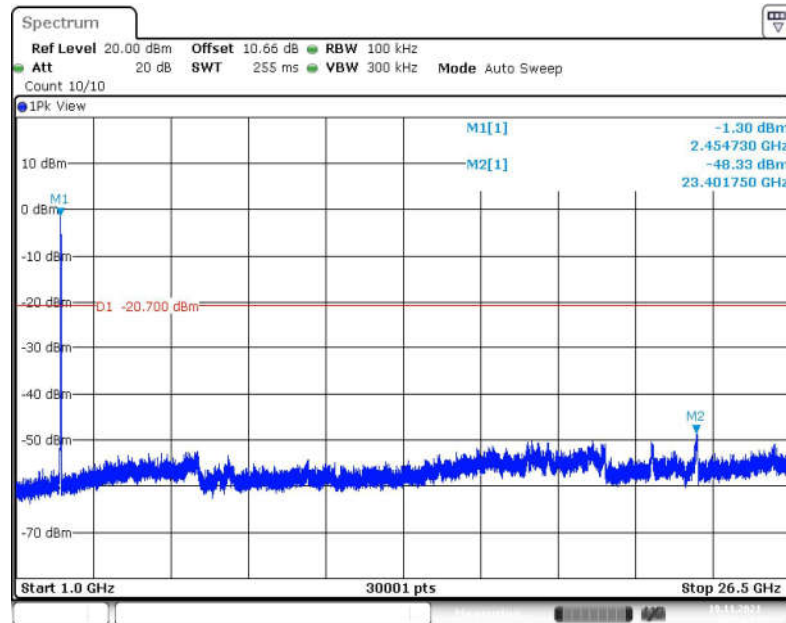


Fig.91 Conducted Spurious Emission (1GHz-26.5GHz, 802.11n-HT20, CH11)

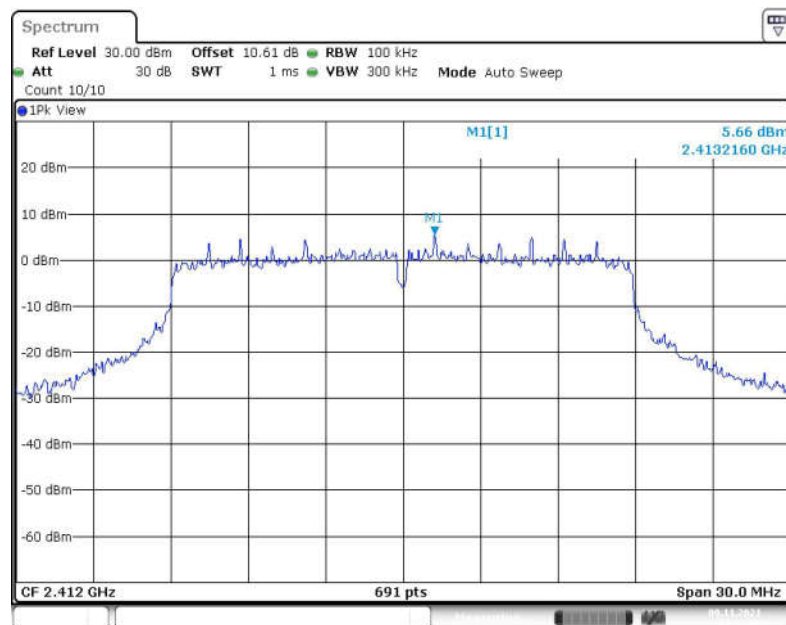


Fig.92 Conducted Spurious Emission (Center Frequency, 802.11-VHT20, CH1)

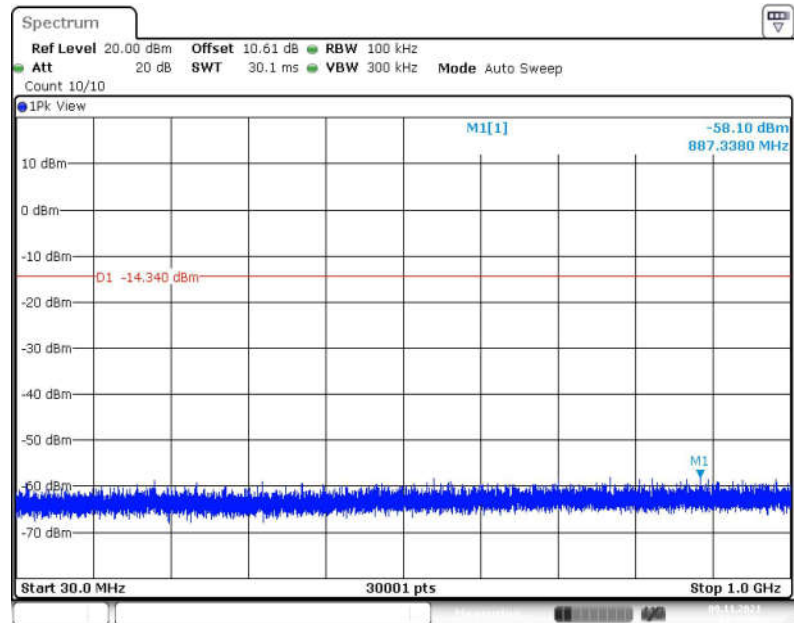


Fig.93 Conducted Spurious Emission (30MHz -1GHz, 802.11-VHT20, CH1)

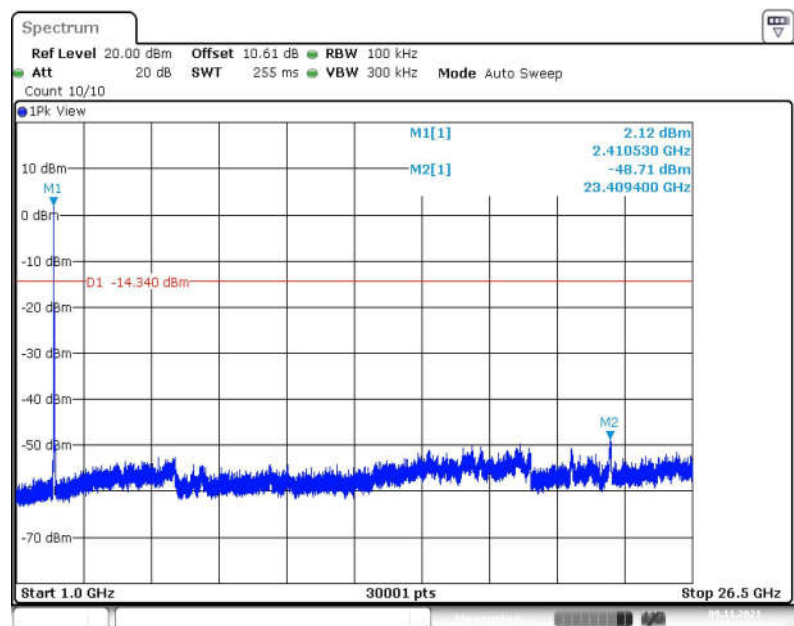


Fig.94 Conducted Spurious Emission (1GHz-26.5GHz, 802.11-VHT20, CH1)

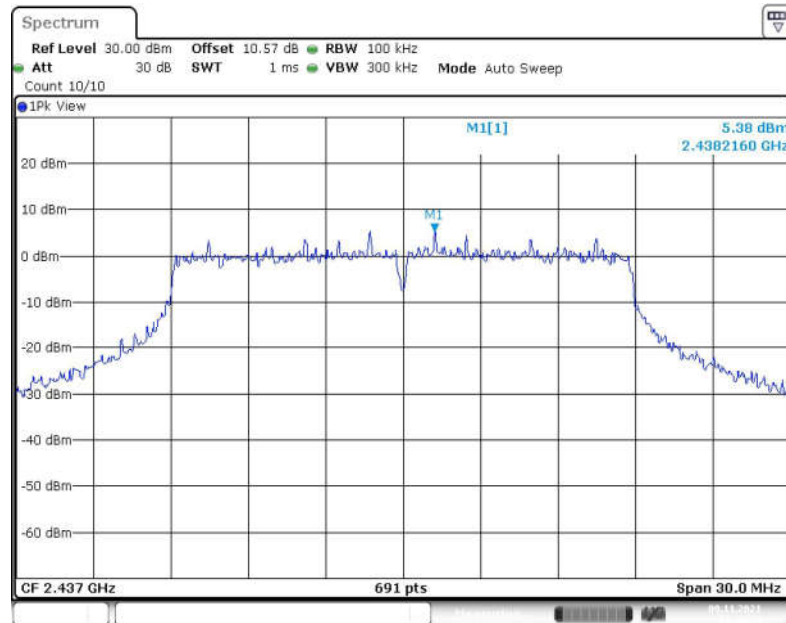


Fig.95 Conducted Spurious Emission (Center Frequency, 802.11-VHT20, CH6)

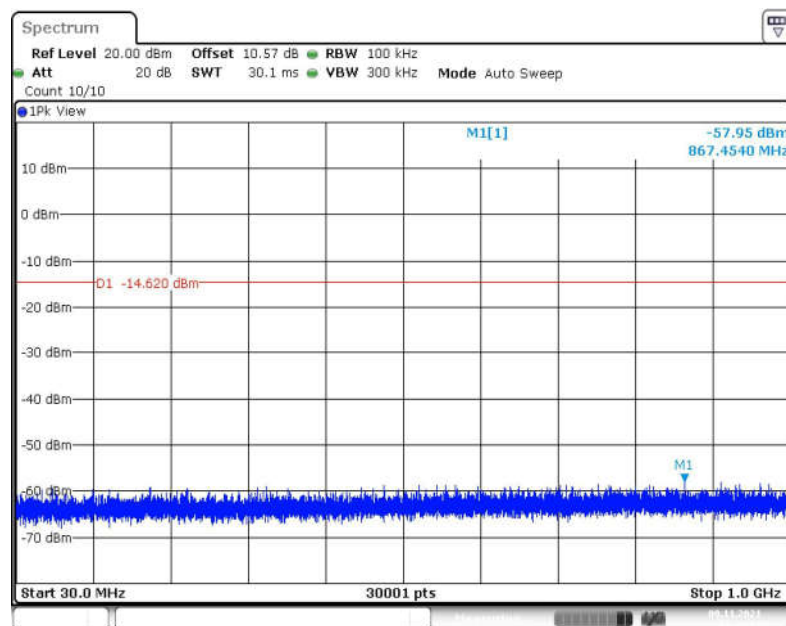


Fig.96 Conducted Spurious Emission (30MHz -1GHz, 802.11-VHT20, CH6)

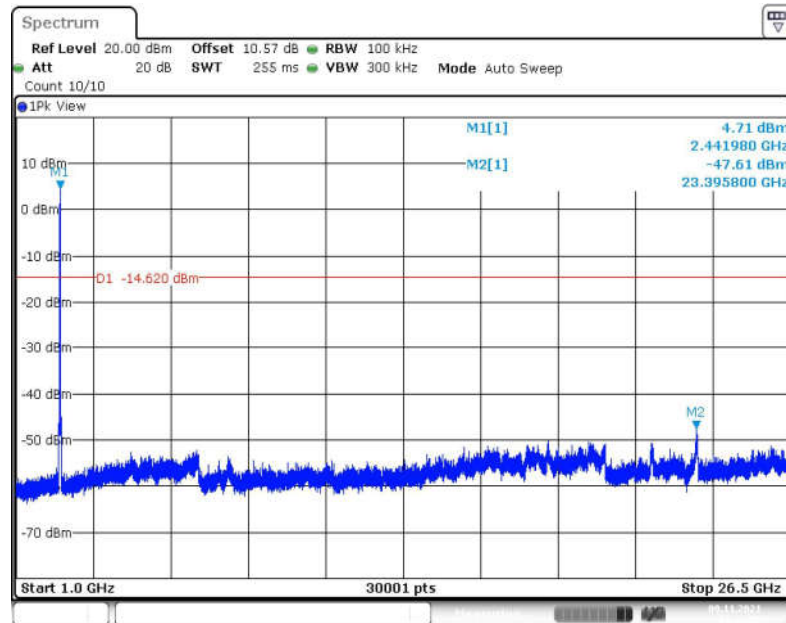


Fig.97 Conducted Spurious Emission (1GHz-26.5GHz, 802.11-VHT20, CH6)

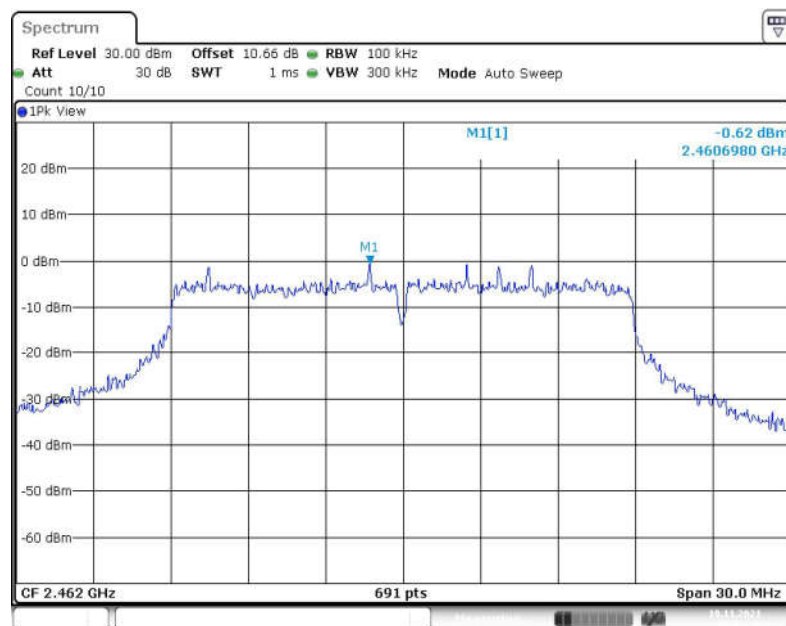


Fig.98 Conducted Spurious Emission (Center Frequency, 802.11-VHT20, CH11)

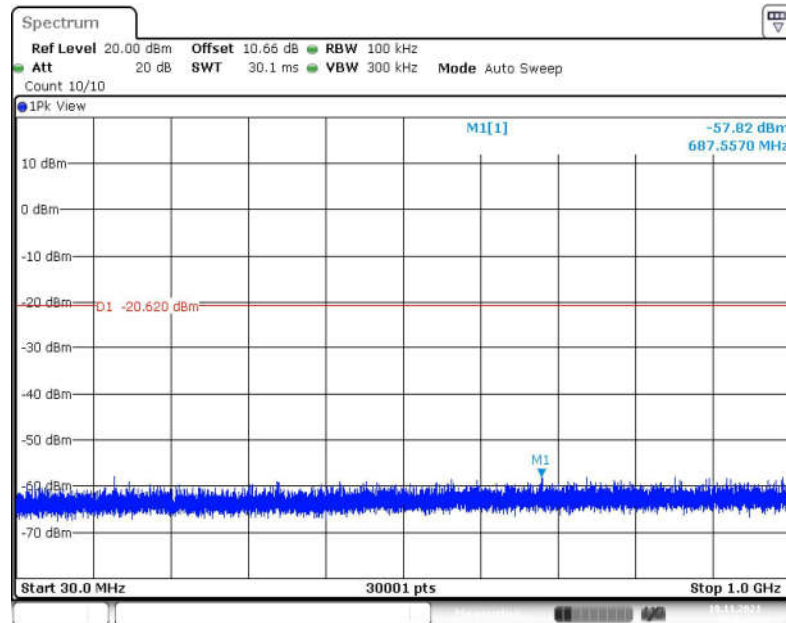


Fig.99 Conducted Spurious Emission (30MHz -1GHz, 802.11-VHT20, CH11)

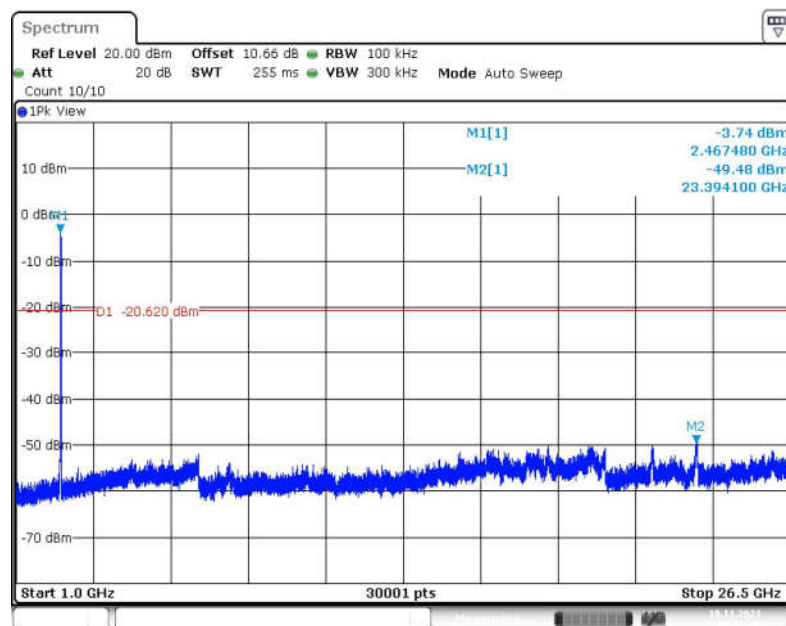


Fig.100 Conducted Spurious Emission (1GHz-26.5GHz, 802.11-VHT20, CH11)