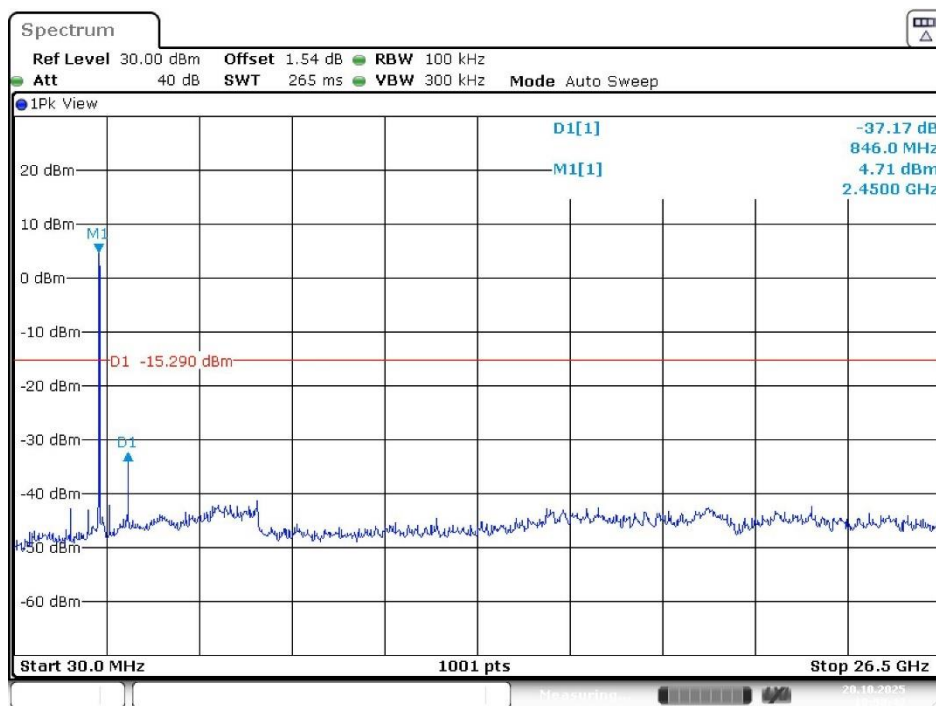
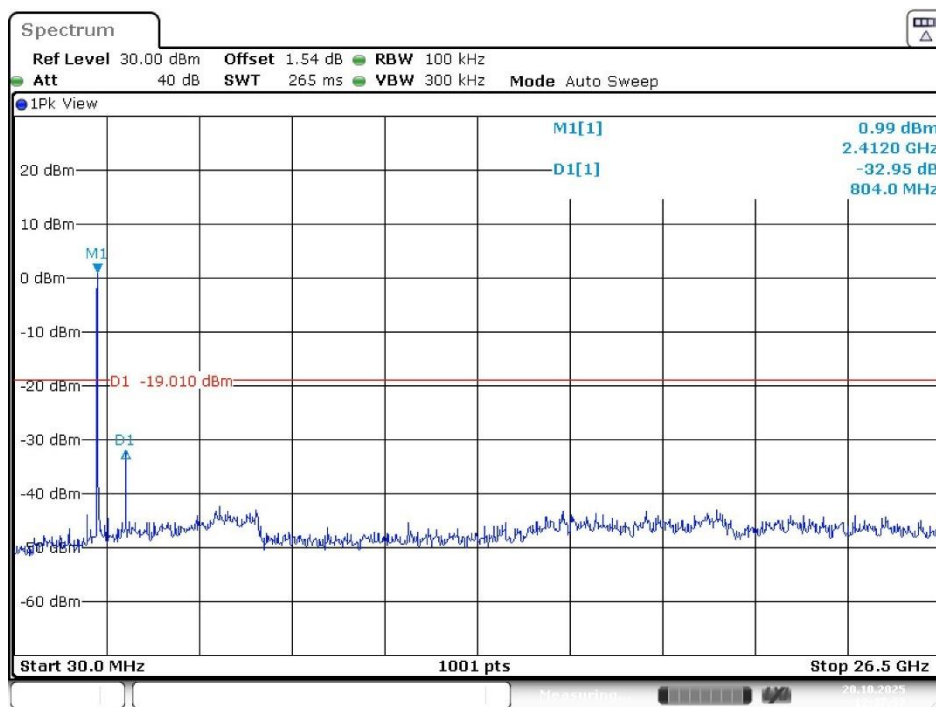


High Channel

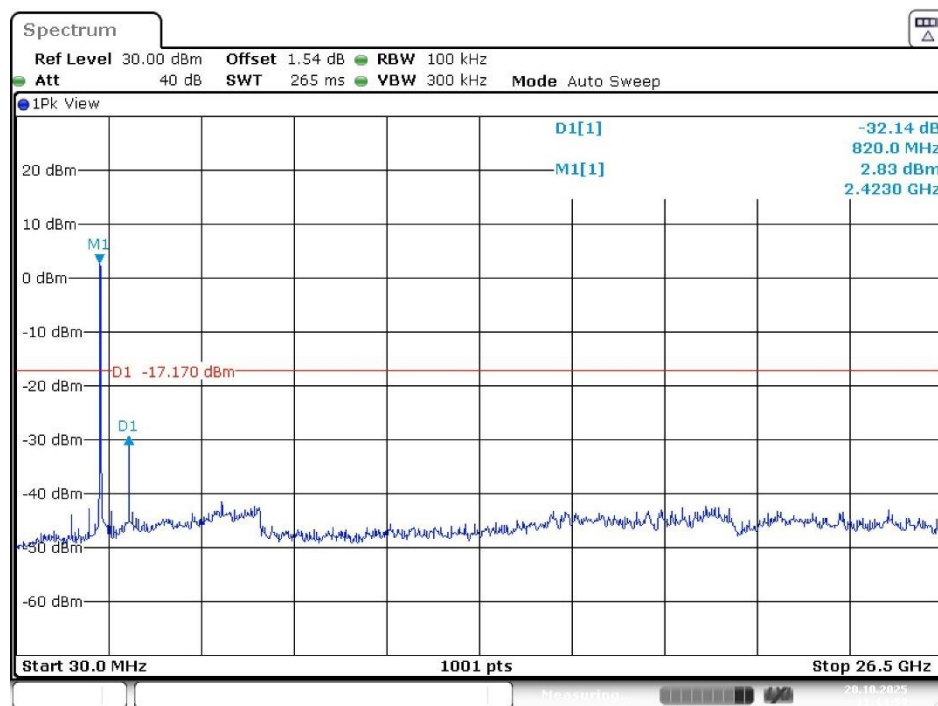


ax20 Mode

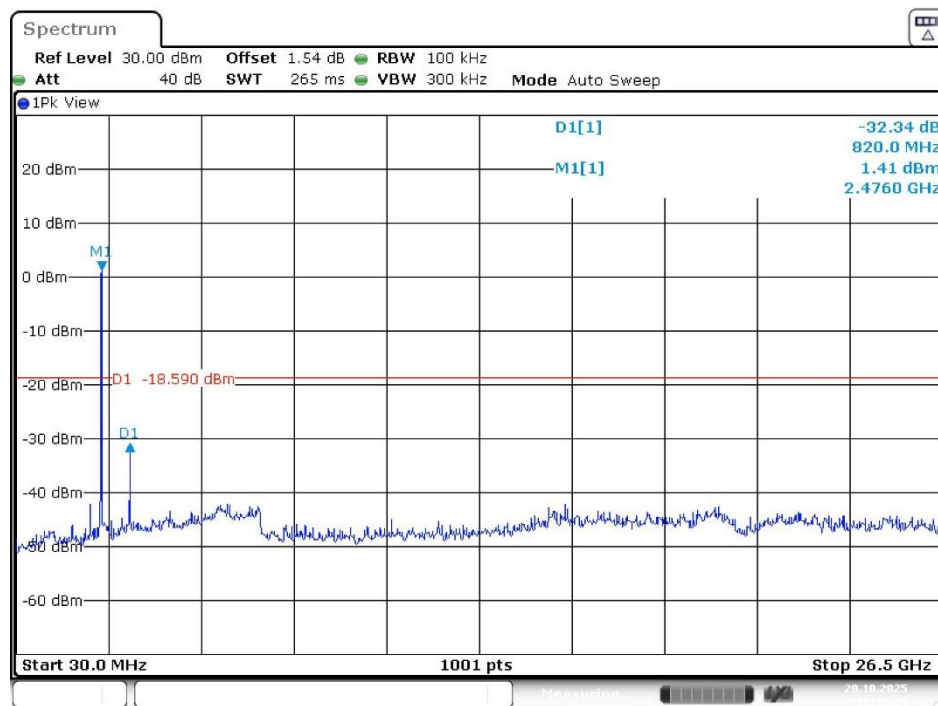
Low Channel



Middle Channel

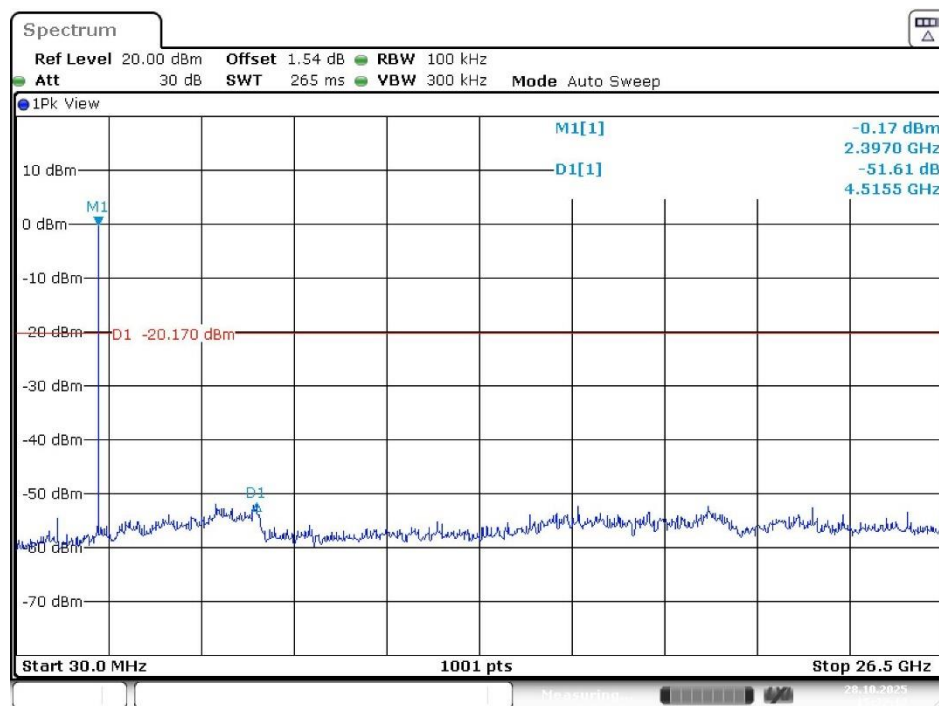


High Channel

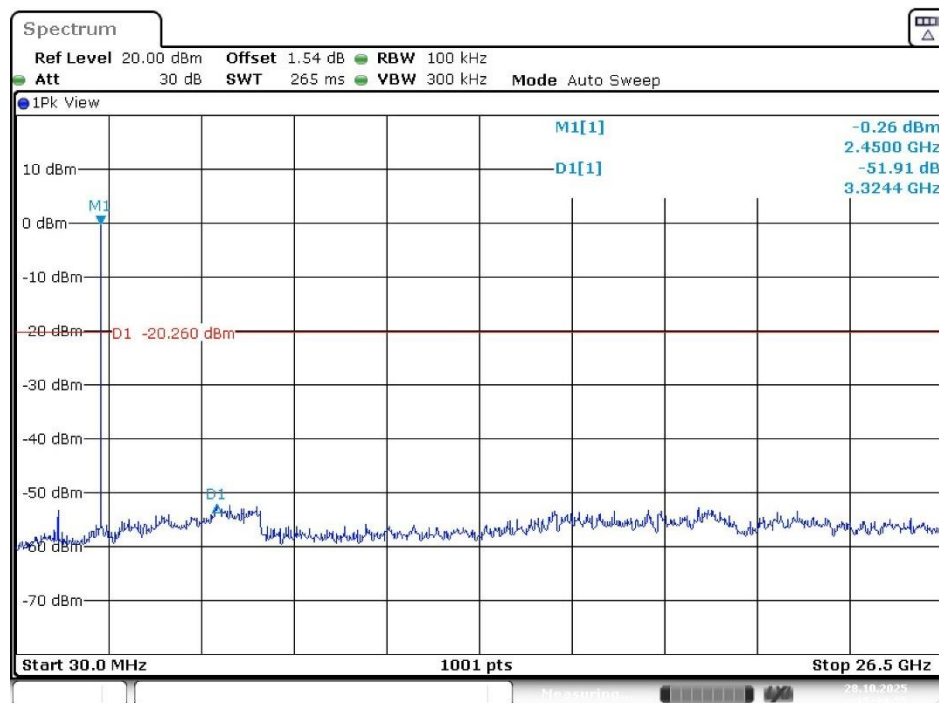


BLE (1M) Mode

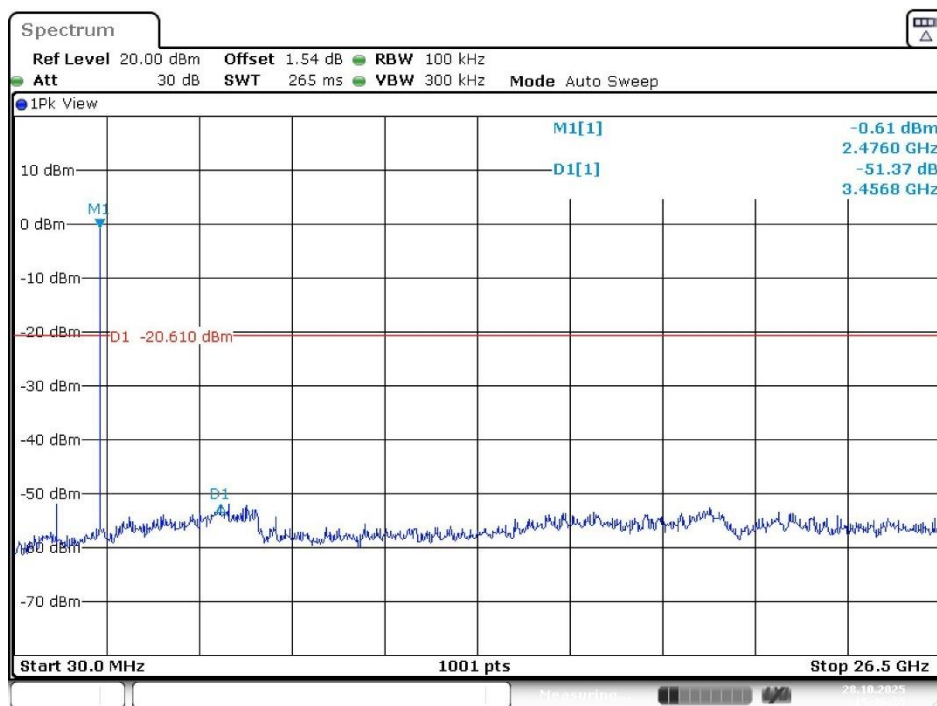
Low Channel



Middle Channel



High Channel



8 FCC §15.247(a)(2) – 6 dB Emission Bandwidth And Occupied Bandwidth

8.1 Applicable Standard

According to FCC §15.247(a)(2).

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

8.2 Test Procedure

For – 6 dB Emission Bandwidth:

According to ANSI C63.10-2020+Cor.1-2023 ,section 11.8

The steps for the first option are as follows:

- a) Set RBW = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz.
- b) Set the VBW $\geq [3 \times \text{RBW}]$.
- c) Detector = peak.
- d) Trace mode = max-hold.
- e) Sweep = No faster than coupled (auto) time.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission by placing two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the “–6 dB down amplitude”. If a marker is below this “–6 dB down amplitude” value, then it shall be as close as possible to this value.

For 99% Occupied Bandwidth

According to ANSI C63.10-2020+Cor.1-2023 ,section 6.9.3

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.

The following procedure shall be used for measuring 99% power bandwidth:

- a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be at least three times the RBW, unless otherwise specified by the applicable requirement.
- c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (\text{OBW}/\text{RBW})]$ below the reference level. Specific guidance is given in 4.1.6.2.
- d) Step a) through step c) might require iteration to adjust within the specified range.

e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max-hold mode (until the trace stabilizes) shall be used.

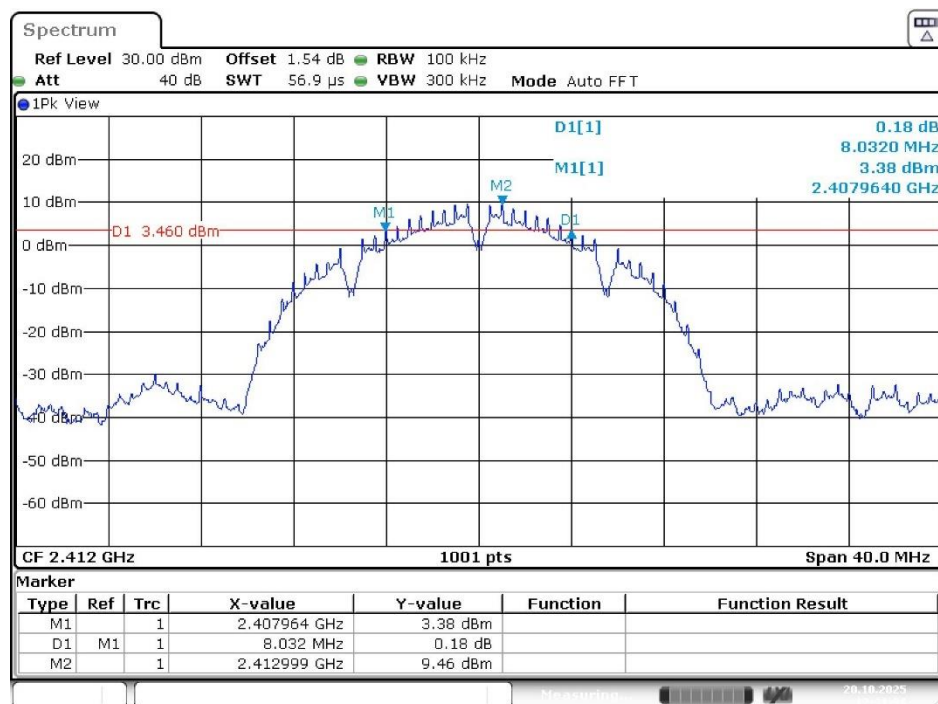
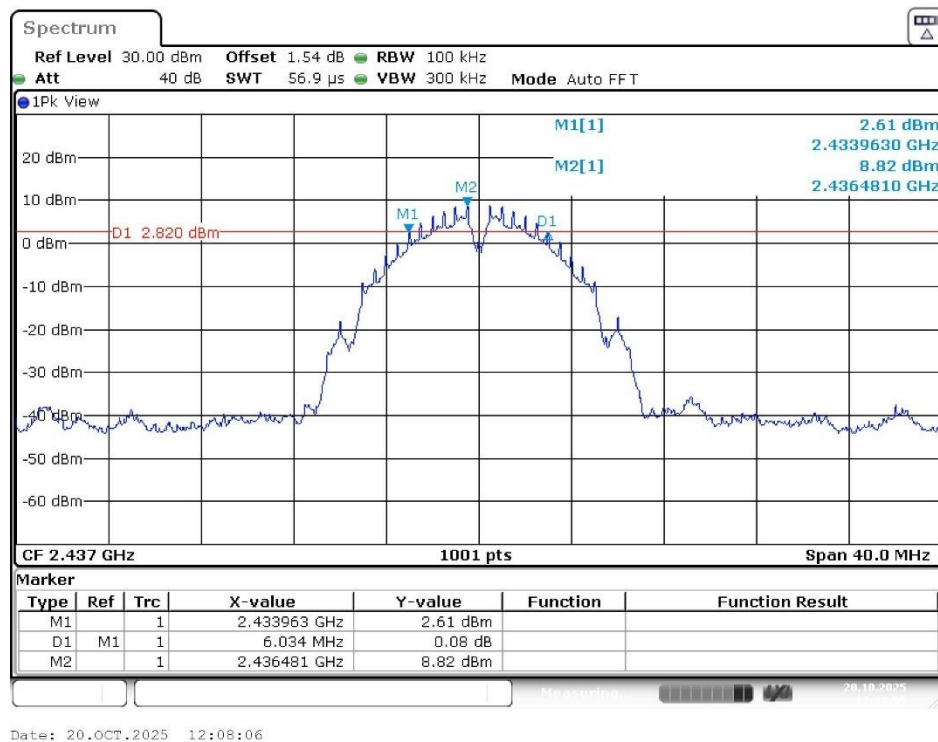
f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.

g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.

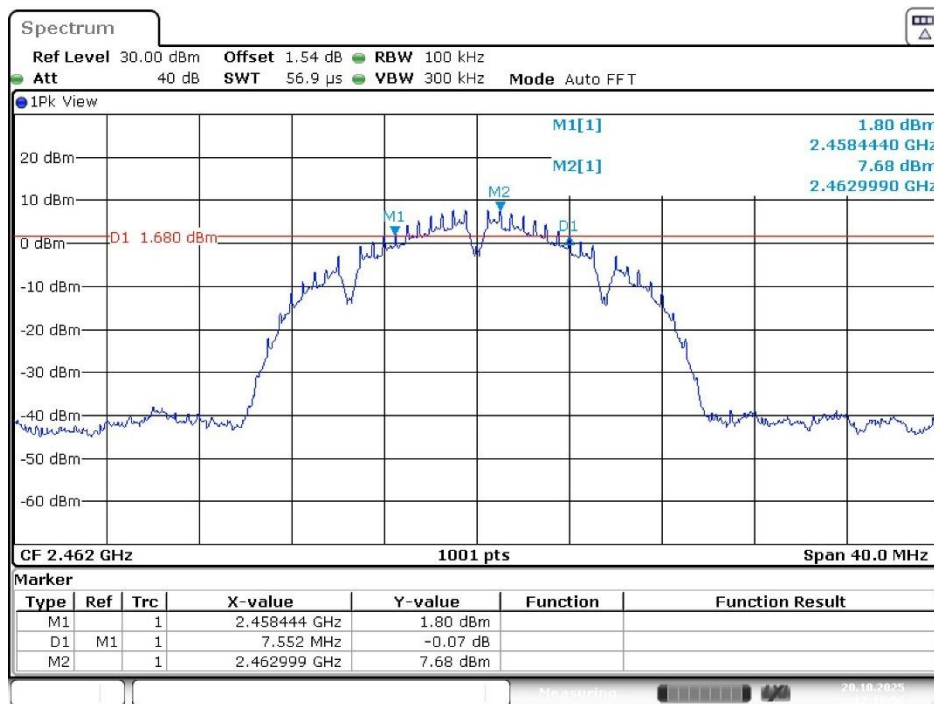
h) The occupied bandwidth shall be reported by providing spectral plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

8.3 Test Results

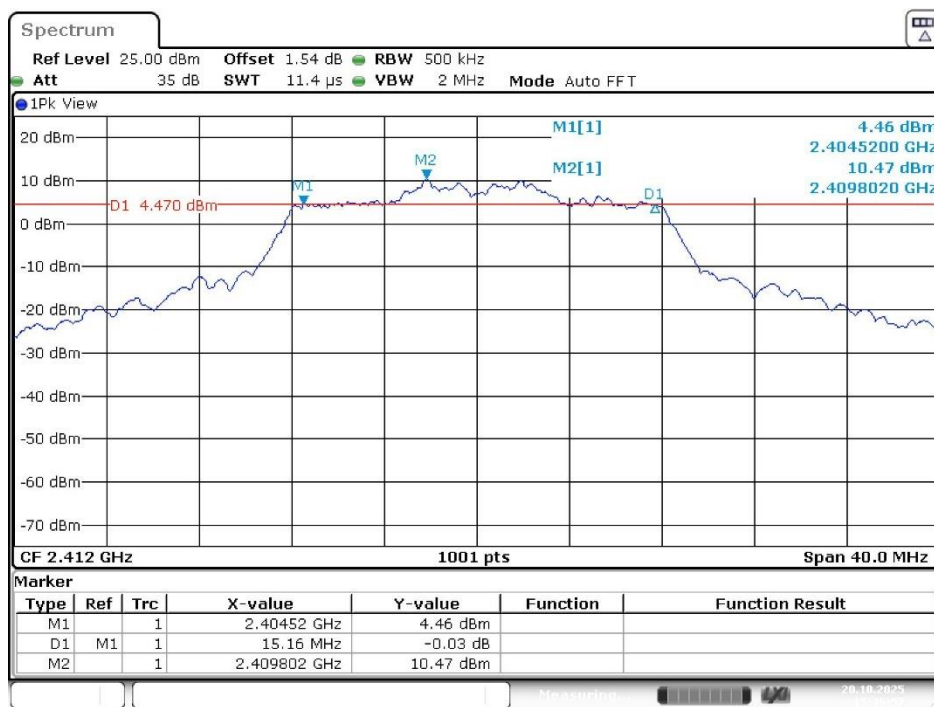
Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit (kHz)	Result
b Mode					
Low	2412	8.032	14.27	> 500	PASS
Middle	2437	6.034	14.19	> 500	PASS
High	2462	7.552	14.07	> 500	PASS
g Mode					
Low	2412	15.16	16.82	> 500	PASS
Middle	2437	15.32	16.90	> 500	PASS
High	2462	16.08	16.70	> 500	PASS
n20 Mode					
Low	2412	17.36	17.70	> 500	PASS
Middle	2437	17.40	17.94	> 500	PASS
High	2462	17.16	17.74	> 500	PASS
ax20 Mode					
Low	2412	18.28	18.86	> 500	PASS
Middle	2437	18.28	18.94	> 500	PASS
High	2462	17.64	18.86	> 500	PASS
BLE(1M) Mode					
Low	2402	0.756	1.073	> 500	PASS
Middle	2440	0.762	1.076	> 500	PASS
High	2480	0.753	1.079	> 500	PASS

-6db Bandwidth:**b Mode
Low Channel****Middle Channel**

High Channel

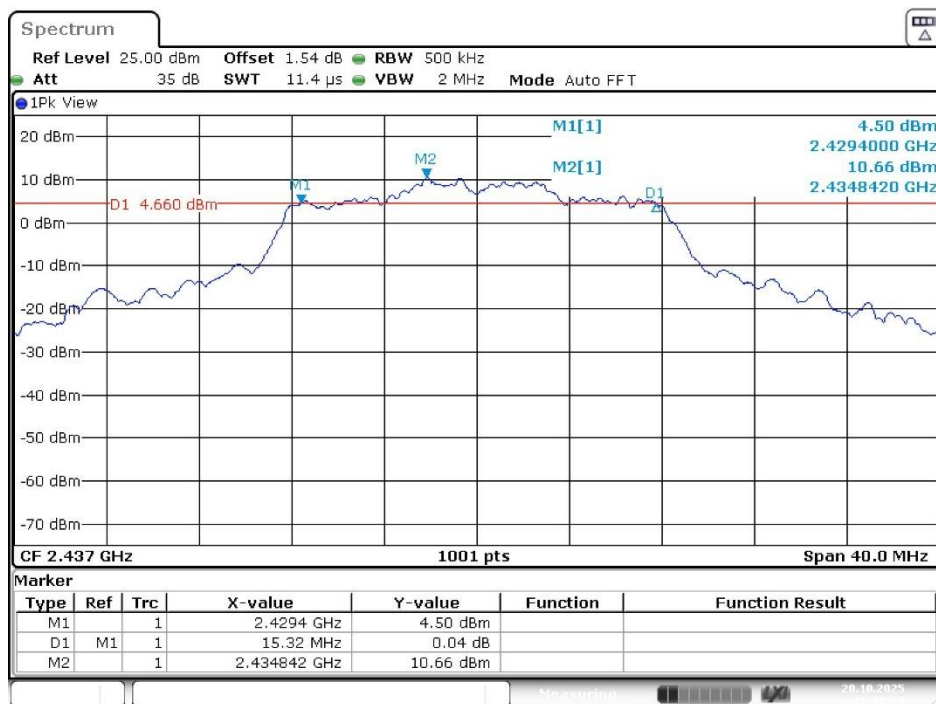


Date: 20.OCT.2025 12:18:58

g Mode
Low Channel

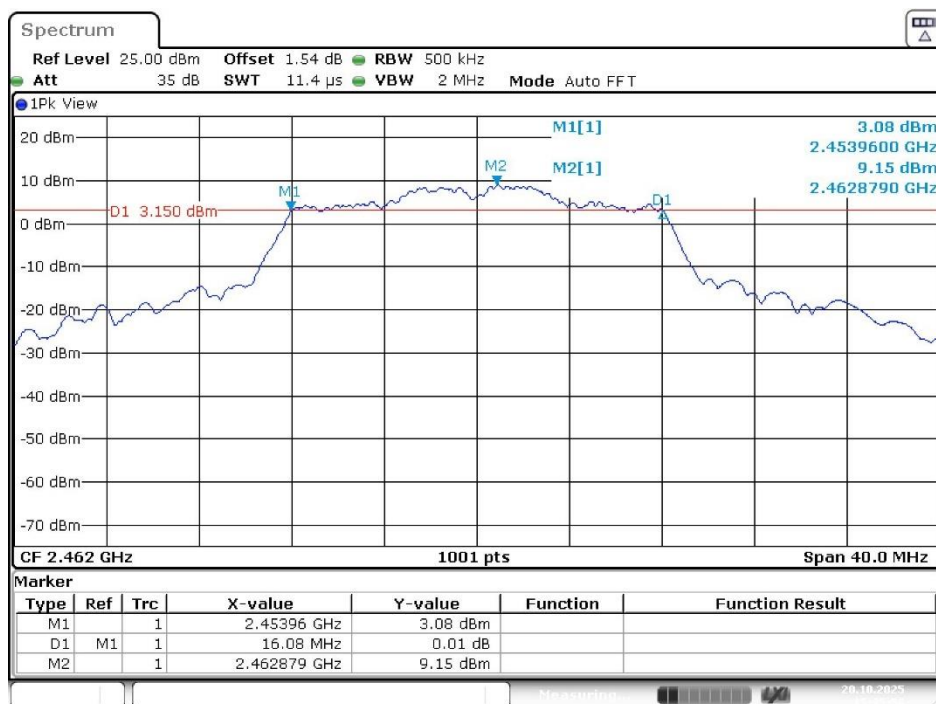
Date: 20.OCT.2025 15:36:58

Middle Channel



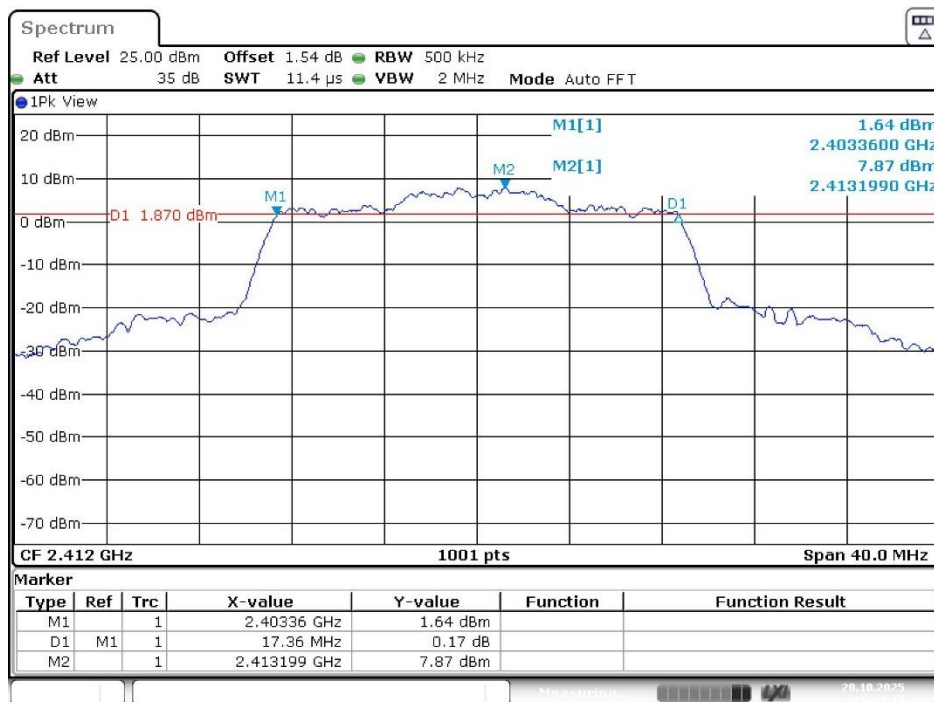
Date: 20.OCT.2025 15:37:59

High Channel



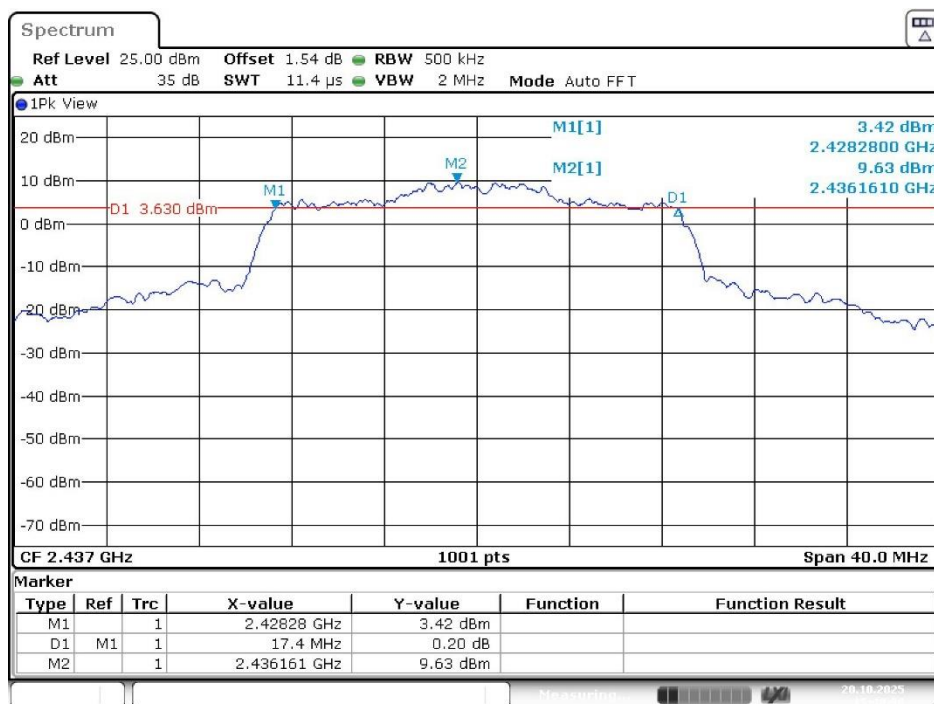
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n20 Mode Low Channel



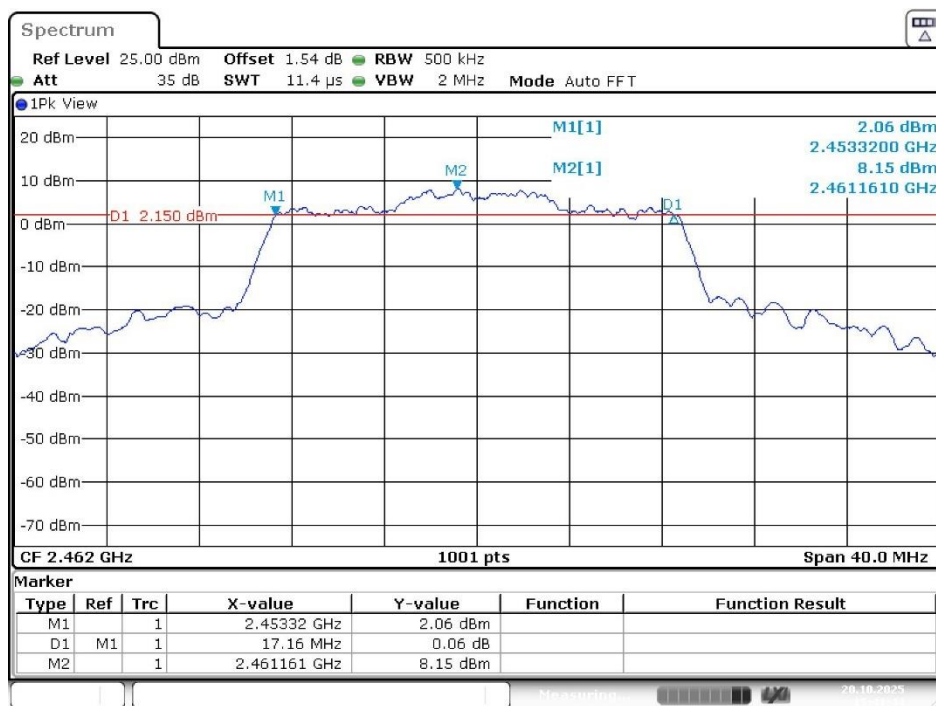
Date: 20.OCT.2025 15:43:17

Middle Channel



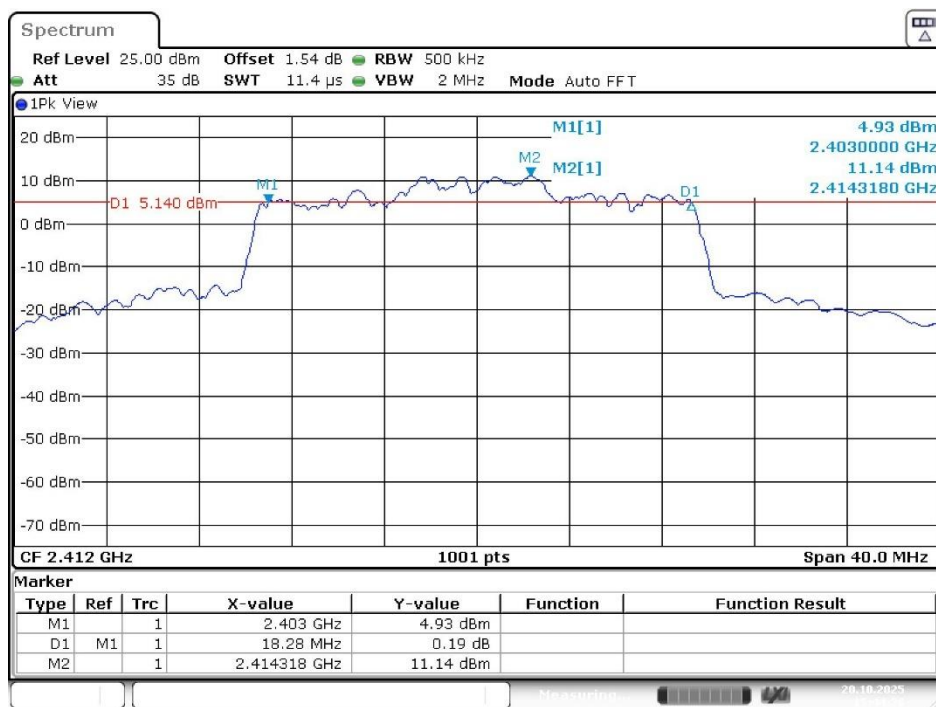
Date: 20.OCT.2025 15:40:30

High Channel

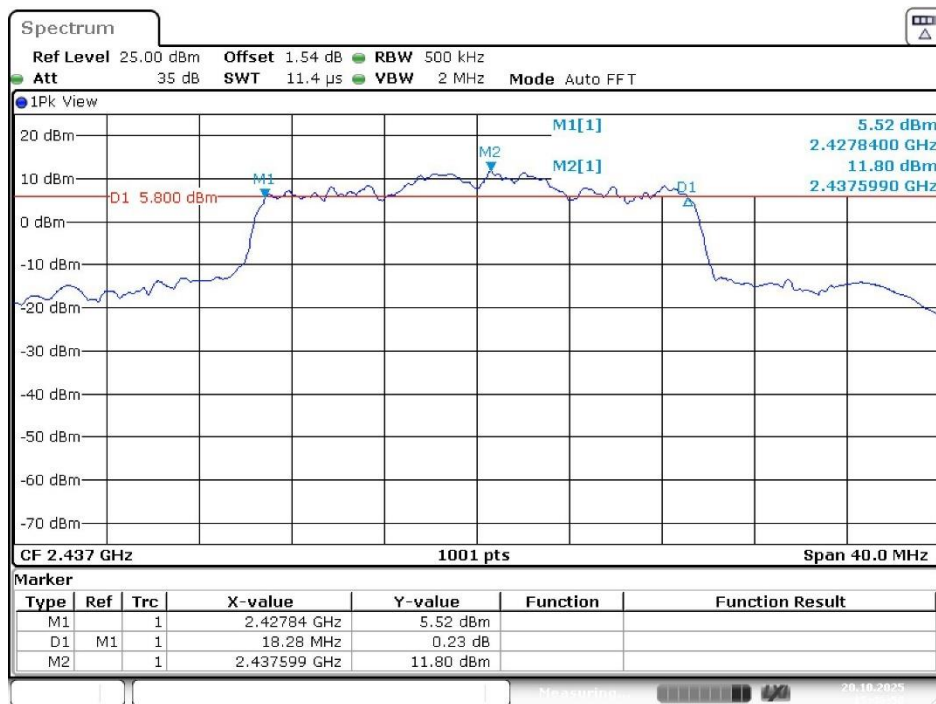


ax20 Mode

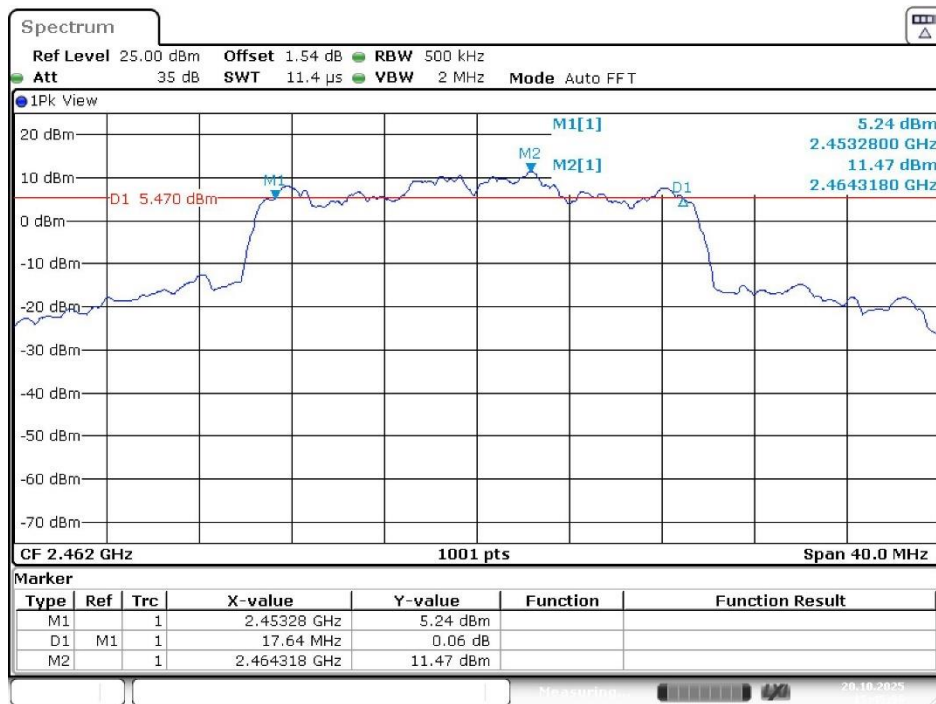
Low Channel



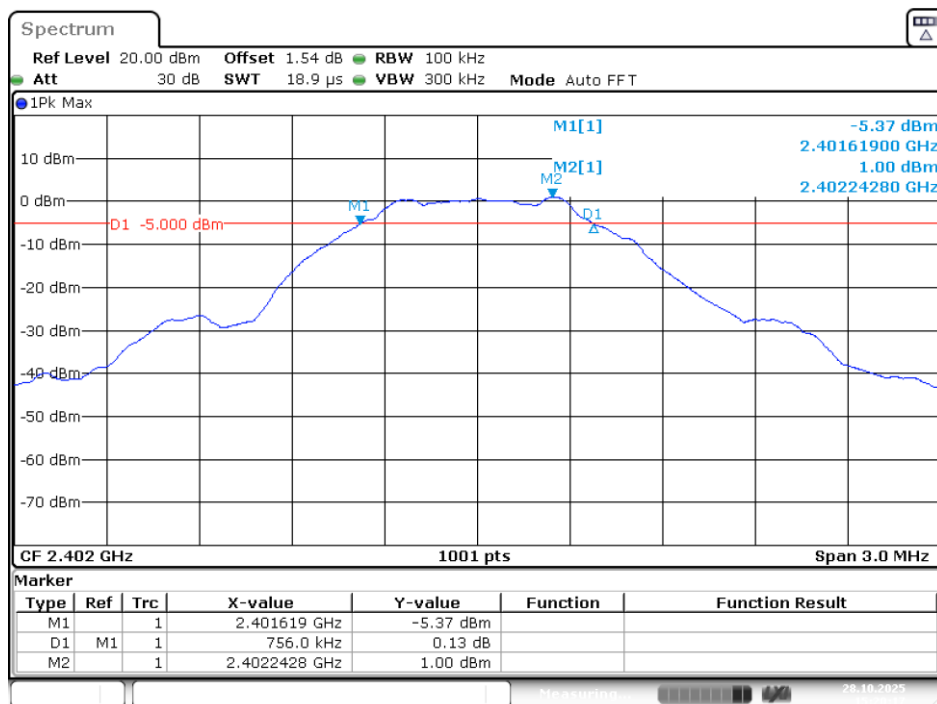
Middle Channel



High Channel

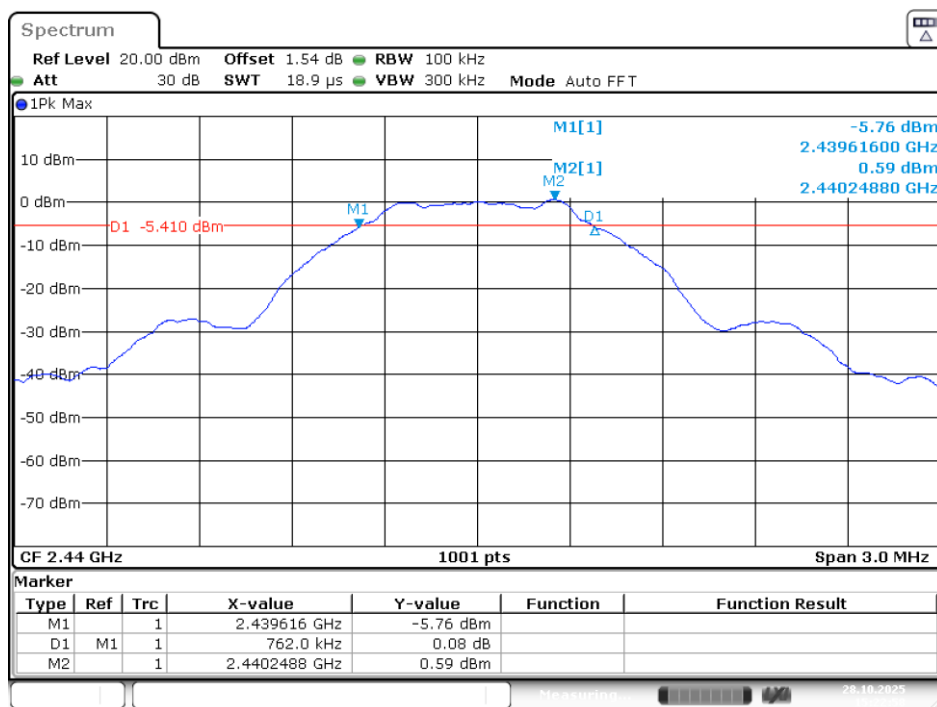


BLE (1M) Mode Low Channel



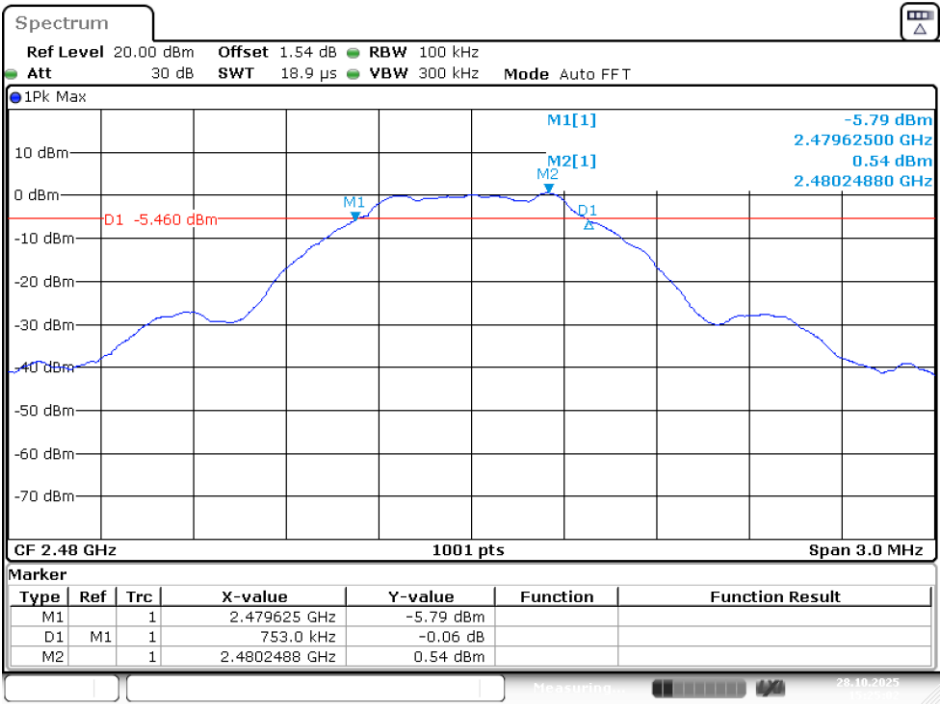
Date: 28.OCT.2025 15:20:18

Middle Channel



Date: 28.OCT.2025 15:22:58

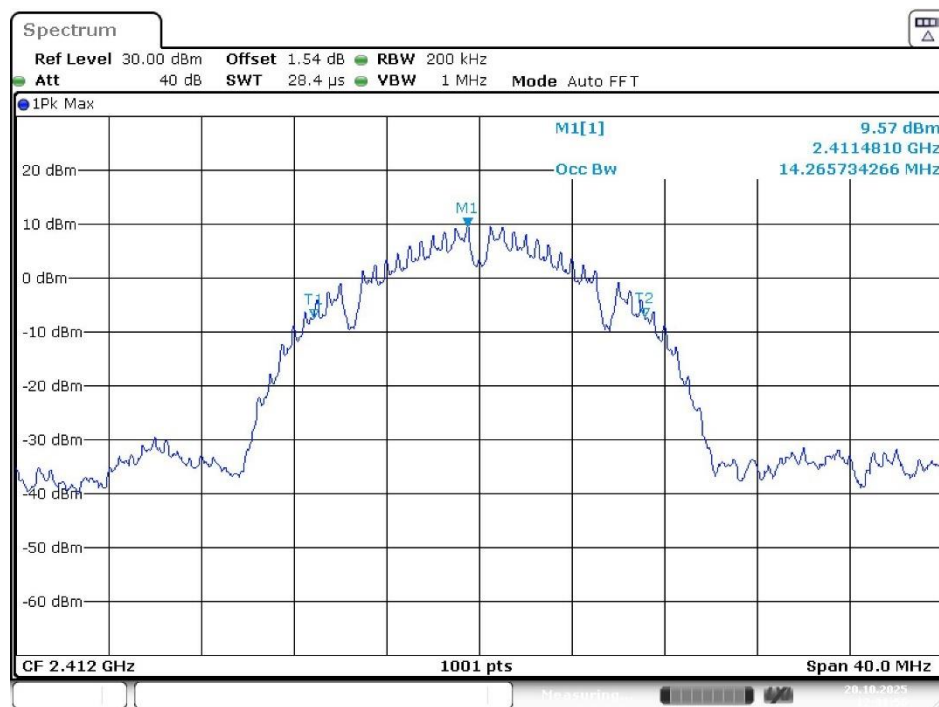
High Channel



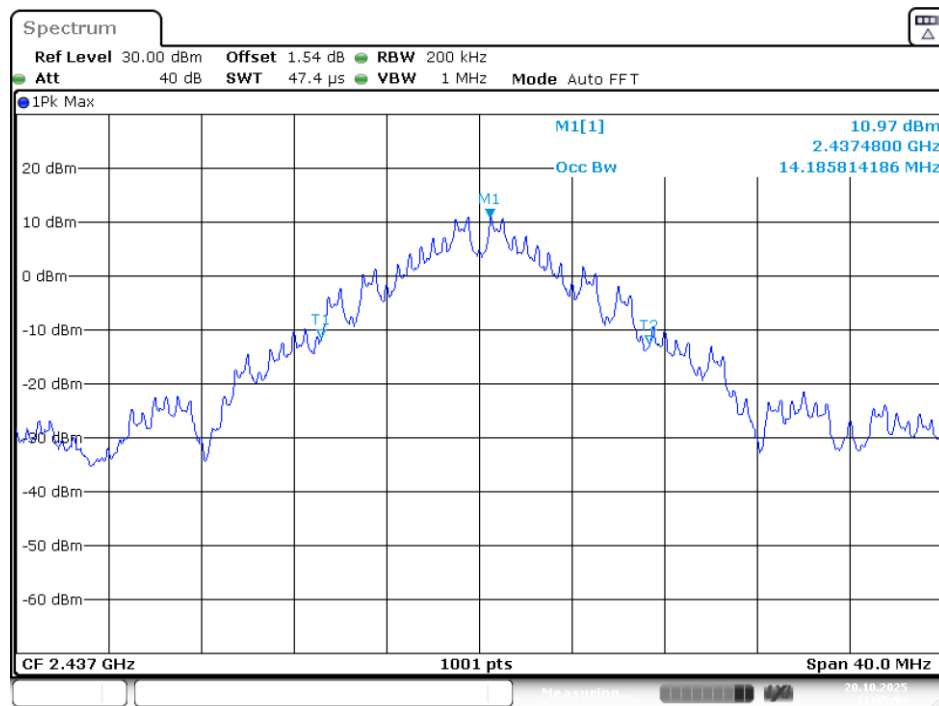
Date: 28.OCT.2025 15:25:03

99% Occupied Bandwidth:

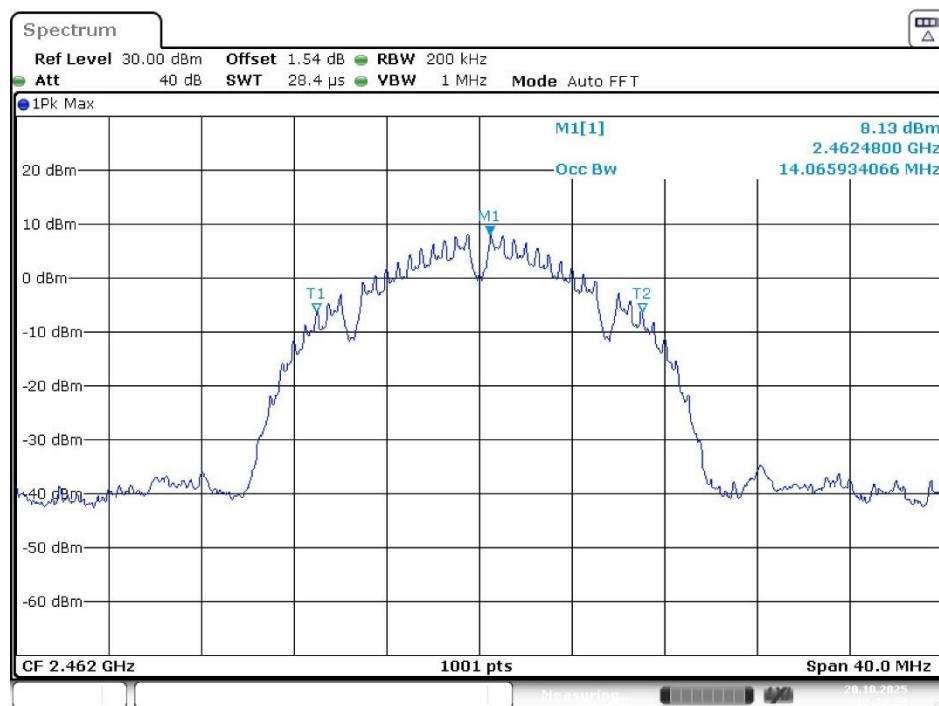
b Mode Low Channel



Middle Channel

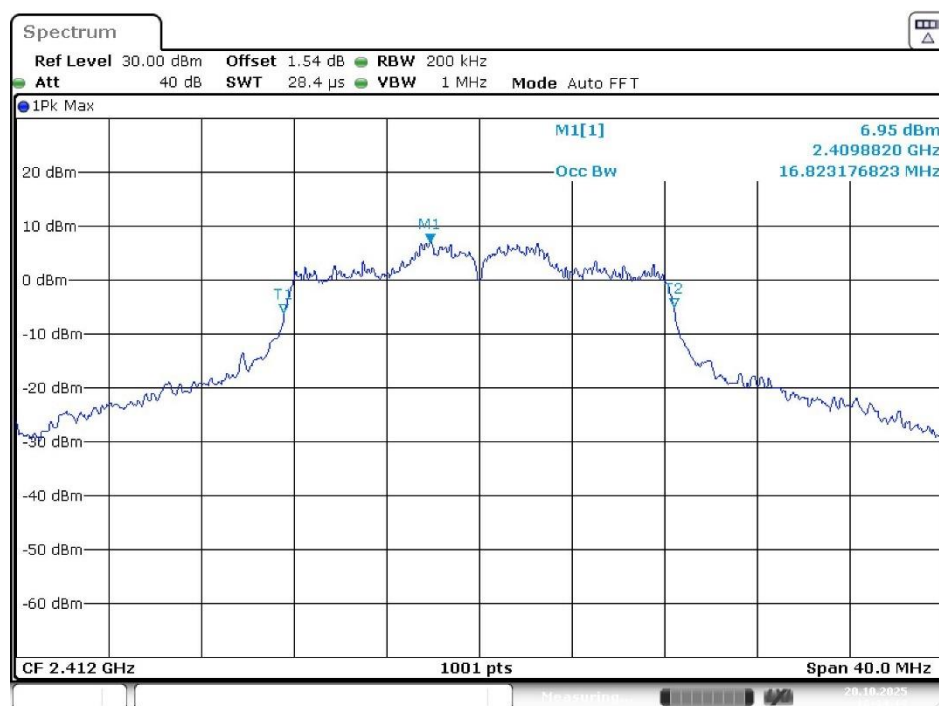


High Channel



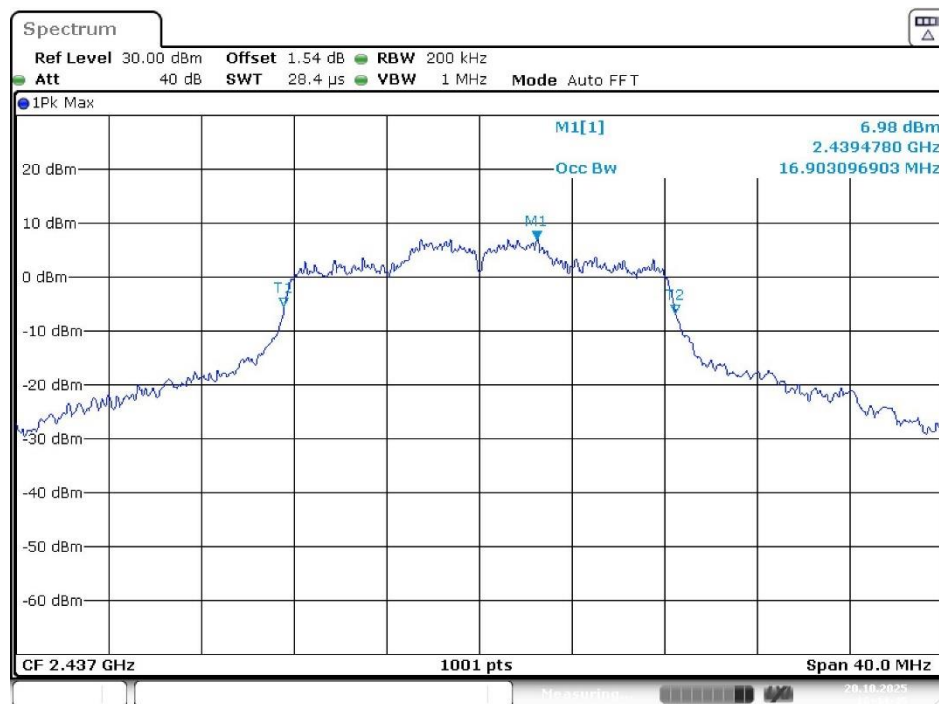
Date: 20.OCT.2025 12:22:29

g Mode Low Channel



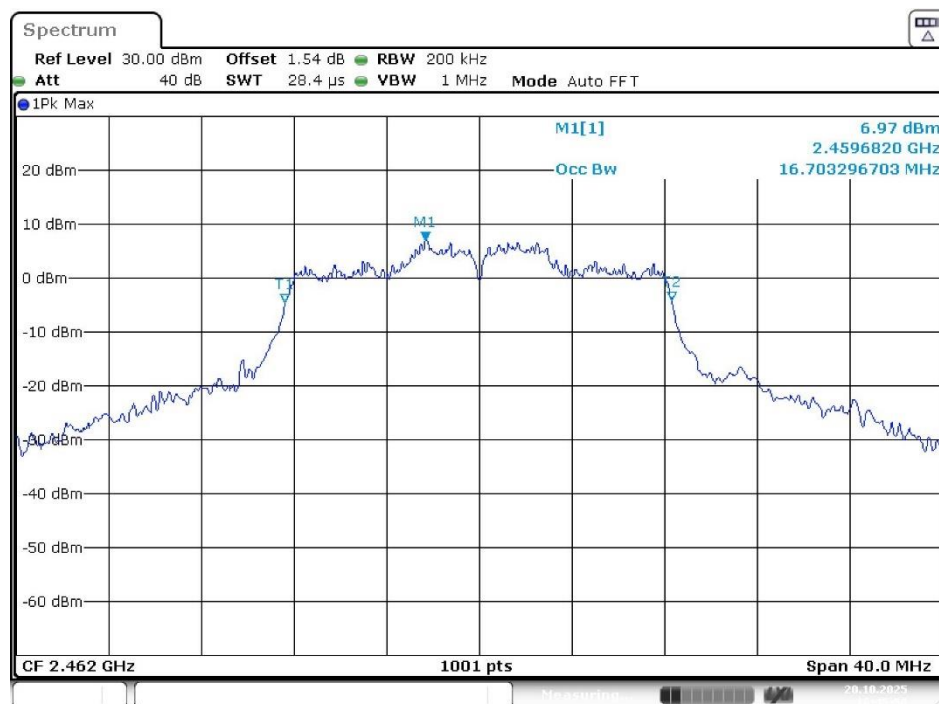
Date: 20.OCT.2025 16:34:13

Middle Channel



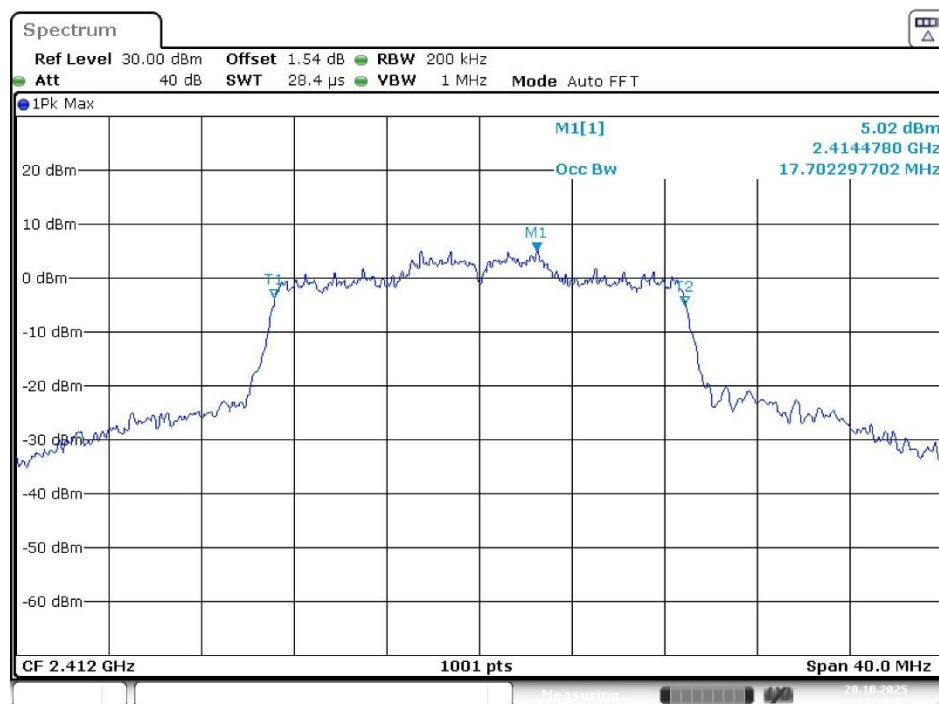
Date: 20.OCT.2025 16:44:45

High Channel



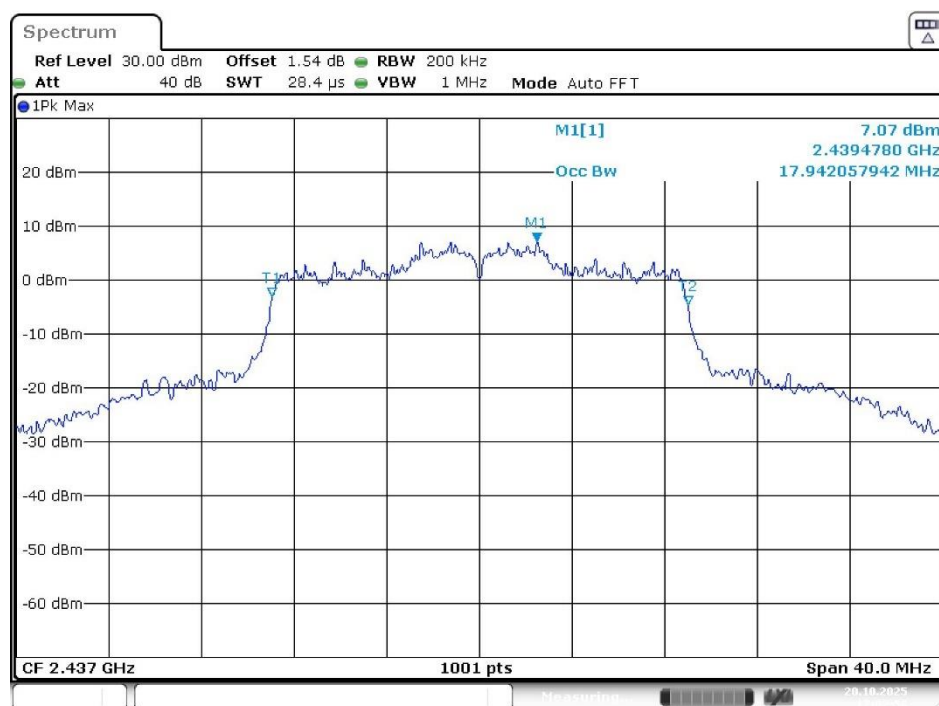
Date: 20.OCT.2025 16:45:50

n20 Mode Low Channel



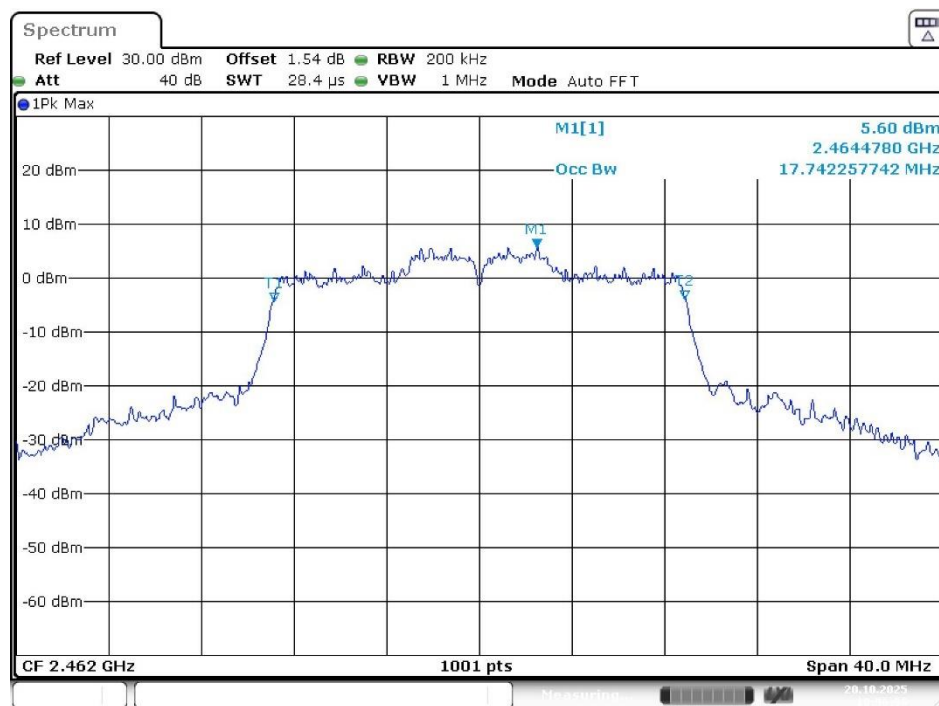
Date: 20.OCT.2025 17:01:44

Middle Channel



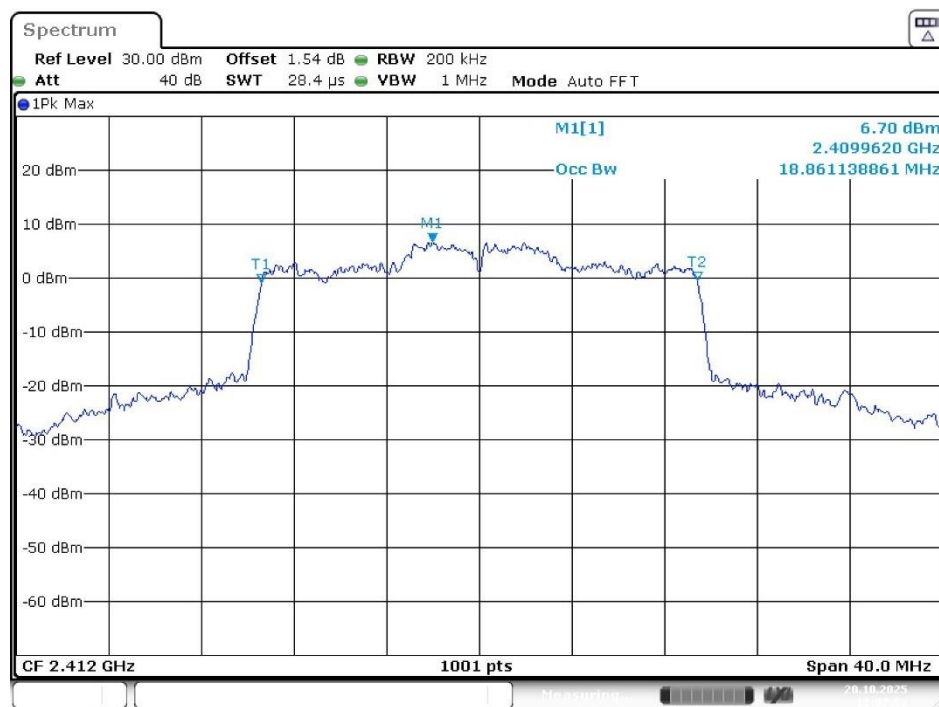
Date: 20.OCT.2025 17:02:58

High Channel

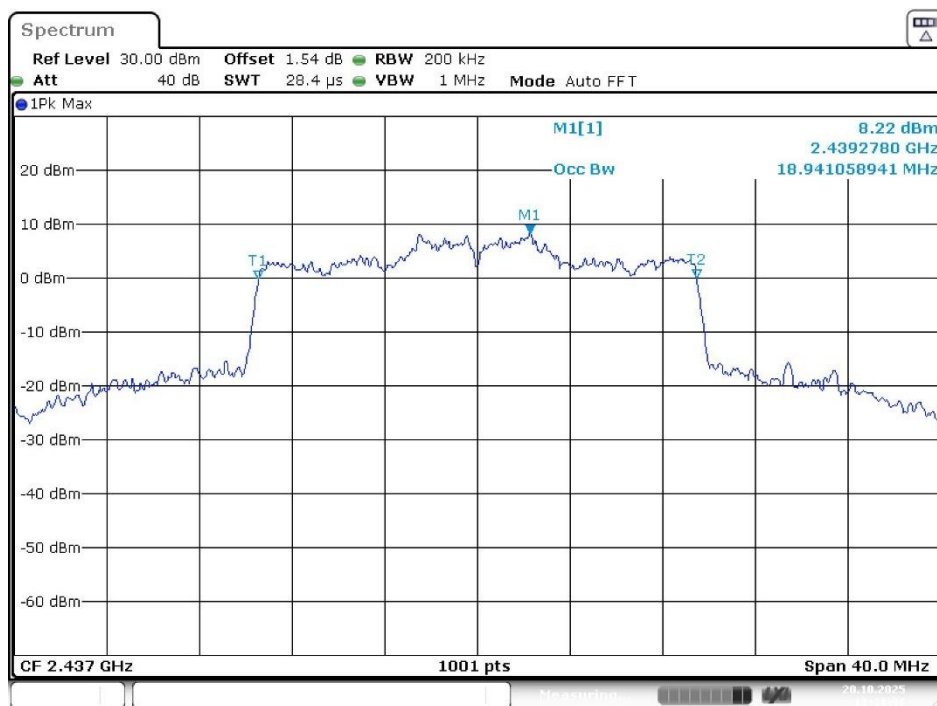


ax20 Mode

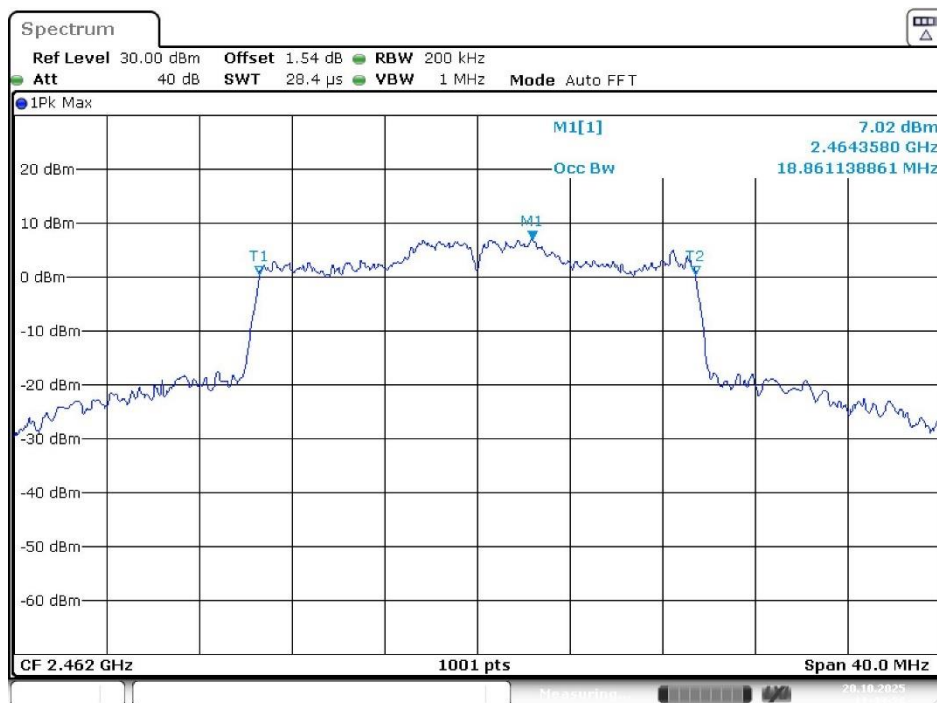
Low Channel



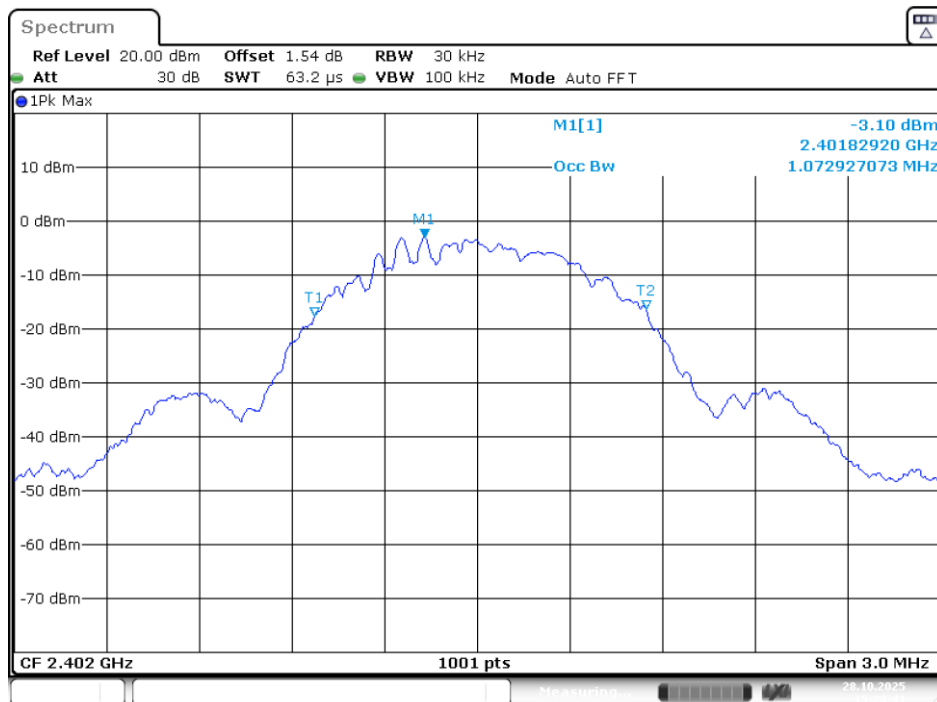
Middle Channel



High Channel

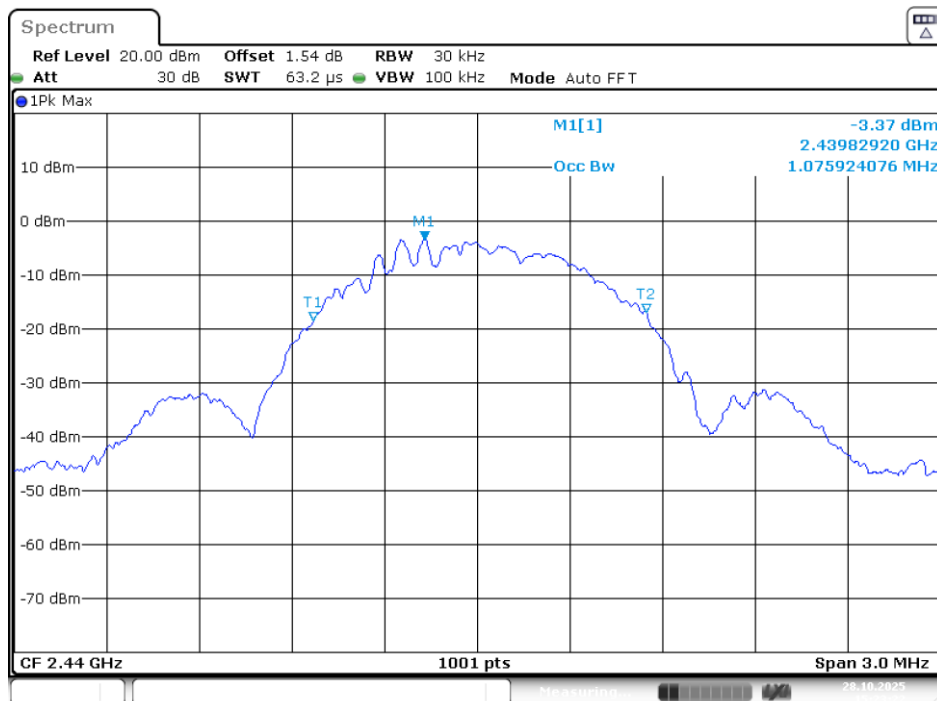


BLE (1M) Mode Low Channel



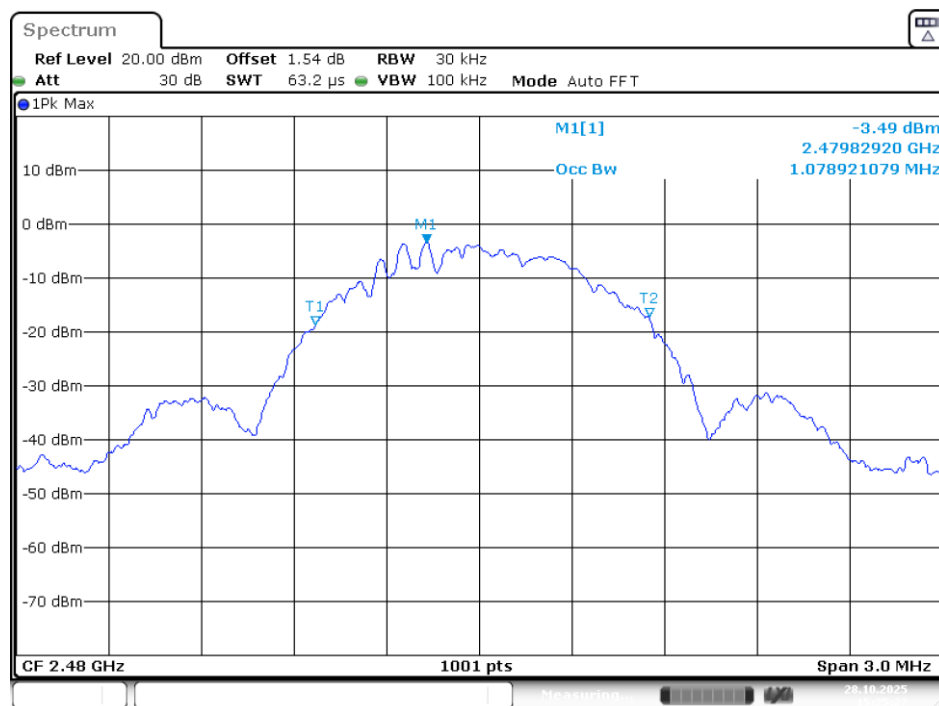
Date: 28.OCT.2025 15:20:42

Middle Channel



Date: 28.OCT.2025 15:23:23

High Channel



Date: 28.OCT.2025 15:25:27

9 FCC §15.247(b) – Maximum Output Power

9.1 Applicable Standard

According to FCC §15.247(b).

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.

Systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

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

9.2 Test Procedure

According to ANSI C63.10-2020+Cor.1-2023 ,section 11.9.1.2

According to ANSI C63.10-2020+Cor.1-2023 ,section 11.9.2.3.1

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to measuring equipment.

9.3 Test Results

Conducted Peak Output Power

Test EUT Mode : RRQ61051-009

Channel	Frequency (MHz)	Average Power (dBm)	Peak Power (dBm)	Power (W)	Limit (W)	Result
b Mode						
Low	2412	16.29	19.59	0.091	1	PASS
Middle	2437	15.38	18.71	0.074	1	PASS
High	2462	14.32	17.64	0.058	1	PASS
g Mode						
Low	2412	14.41	19.45	0.088	1	PASS
Middle	2437	14.93	19.52	0.090	1	PASS
High	2462	14.98	19.62	0.092	1	PASS
n20 Mode						
Low	2412	13.56	19.53	0.090	1	PASS
Middle	2437	14.00	19.54	0.090	1	PASS
High	2462	14.60	19.61	0.091	1	PASS
ax20 Mode						
Low	2412	13.80	19.54	0.090	1	PASS
Middle	2437	14.00	19.64	0.092	1	PASS
High	2462	14.10	19.68	0.093	1	PASS
BLE(1M) Mode						
Low	2402	1.33	1.42	0.0014	1	PASS
Middle	2440	1.05	1.14	0.0013	1	PASS
High	2480	0.84	0.93	0.0012	1	PASS

Test EUT Mode : RRQ61051-010

Channel	Frequency (MHz)	Average Power (dBm)	Peak Power (dBm)	Power (W)	Limit (W)	Result
b Mode						
Low	2412	15.71	18.39	0.06902	1	PASS
Middle	2437	13.47	17.54	0.05675	1	PASS
High	2462	13.6	16.63	0.04603	1	PASS
g Mode						
Low	2412	13.62	18.38	0.06887	1	PASS
Middle	2437	13.80	18.52	0.07112	1	PASS
High	2462	12.99	18.5	0.07079	1	PASS
n20 Mode						
Low	2412	11.90	18.41	0.06934	1	PASS
Middle	2437	13.76	18.54	0.07145	1	PASS
High	2462	12.30	18.72	0.07447	1	PASS
ax20 Mode						
Low	2412	12.59	18.42	0.06950	1	PASS
Middle	2437	13.75	18.56	0.07178	1	PASS
High	2462	13.72	18.6	0.07244	1	PASS
BLE(1M) Mode						
Low	2402	1.32	1.41	0.00138	1	PASS
Middle	2440	1.01	1.12	0.00129	1	PASS
High	2480	0.81	0.9	0.00123	1	PASS

10 FCC§15.247(d) – 100 kHz Bandwidth of Frequency Band Edge

10.1 Applicable Standard

According to FCC §15.247(d).

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30dB instead of 20dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

10.2 Test Procedure

According to ANSI C63.10-2020+Cor.1-2023 ,Section 11.11

a) Set the center frequency and span to encompass frequency range to be measured. Note that the frequency range might need to be divided into multiple frequency ranges to retain frequency resolution.

NOTE—the number of points can also be increased for large spans to retain frequency resolution

b) Set the RBW = 100 kHz.

c) Set the VBW $\geq [3 \times \text{RBW}]$.

d) Detector = peak.

e) Sweep time = No faster than coupled (auto) time.

f) Trace mode = max-hold.

g) Allow trace to fully stabilize.

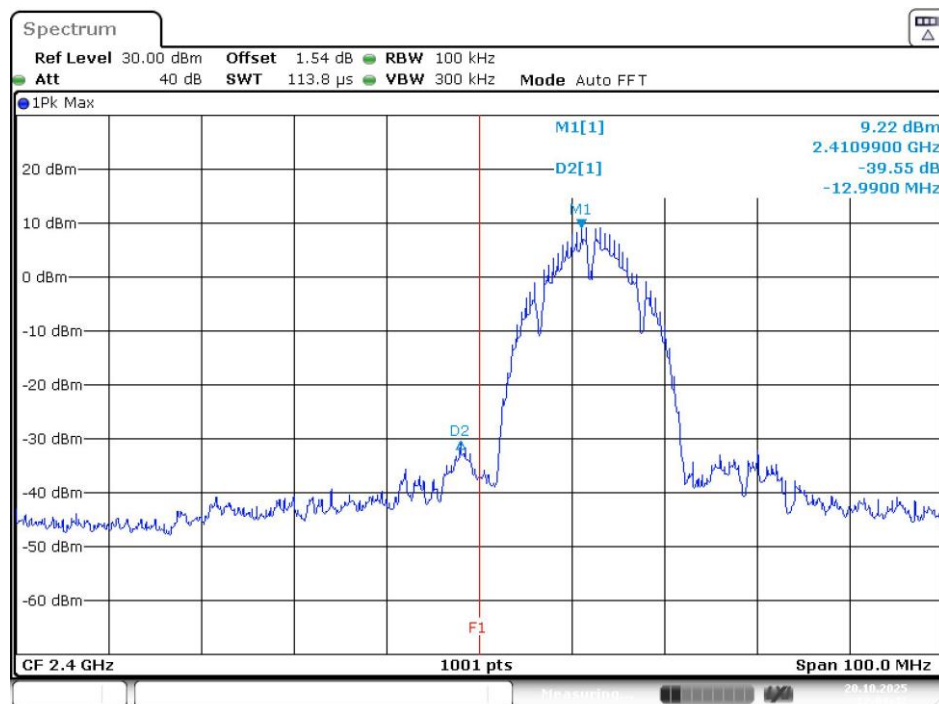
h) Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.

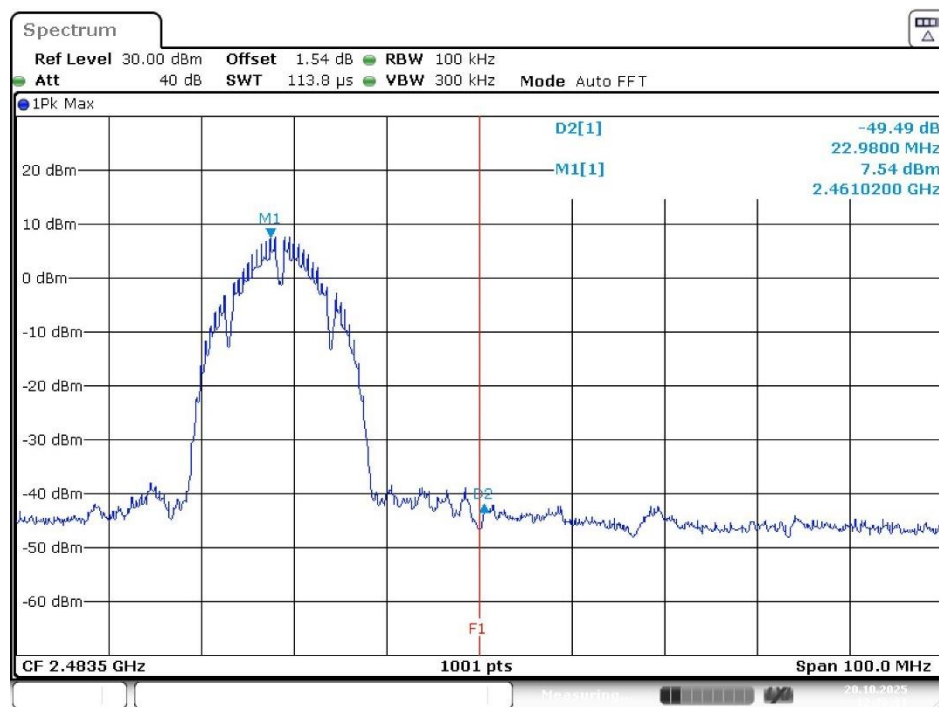
10.3 Test Results**WIFI 2.4G**

Channel	Frequency (MHz)	Delta Peak to Band Emission (dBc)	Limit (dBc)	Result
b Mode				
Low	2412	39.55	≥ 20	PASS
High	2462	49.49	≥ 20	PASS
g Mode				
Low	2412	27.02	≥ 20	PASS
High	2462	40.84	≥ 20	PASS
n20 Mode				
Low	2412	31.86	≥ 20	PASS
High	2462	40.95	≥ 20	PASS
ax20 Mode				
Low	2412	27.32	≥ 20	PASS
High	2462	37.11	≥ 20	PASS
BLE(1M) Mode				
Low	2402	38.88	≥ 20	PASS
High	2480	47.40	≥ 20	PASS

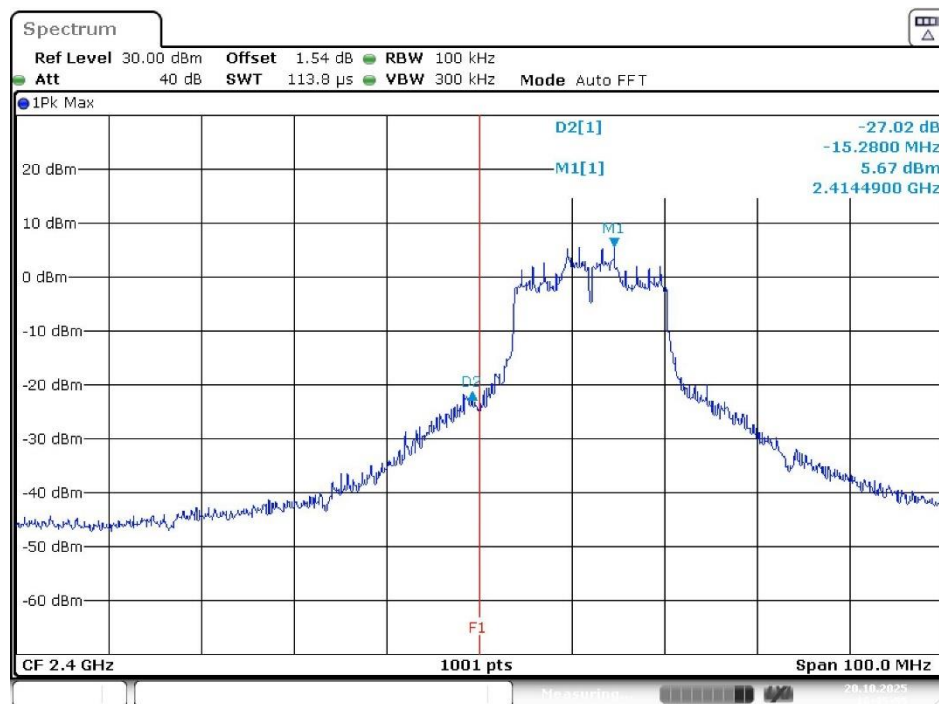
b Mode Band Edge, Left Side



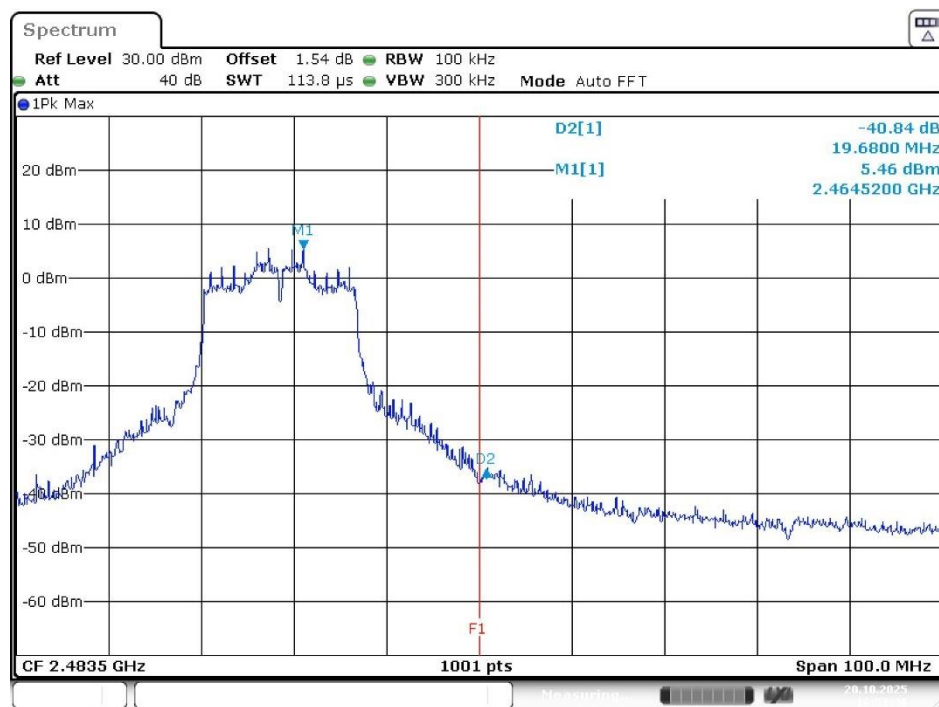
Band Edge, Right Side



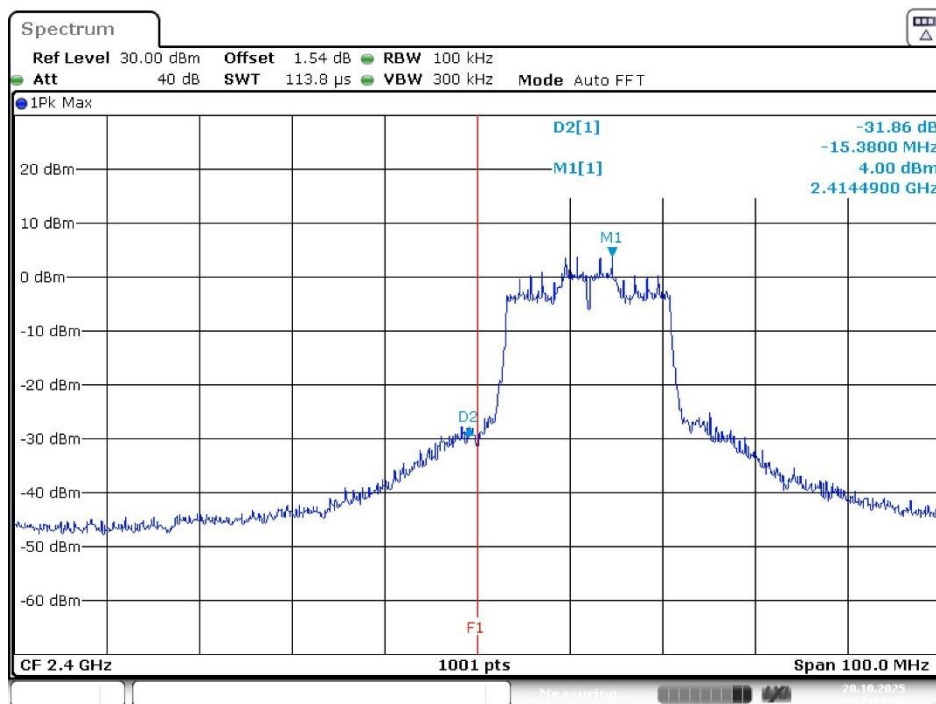
g Mode Band Edge, Left Side



Band Edge, Right Side

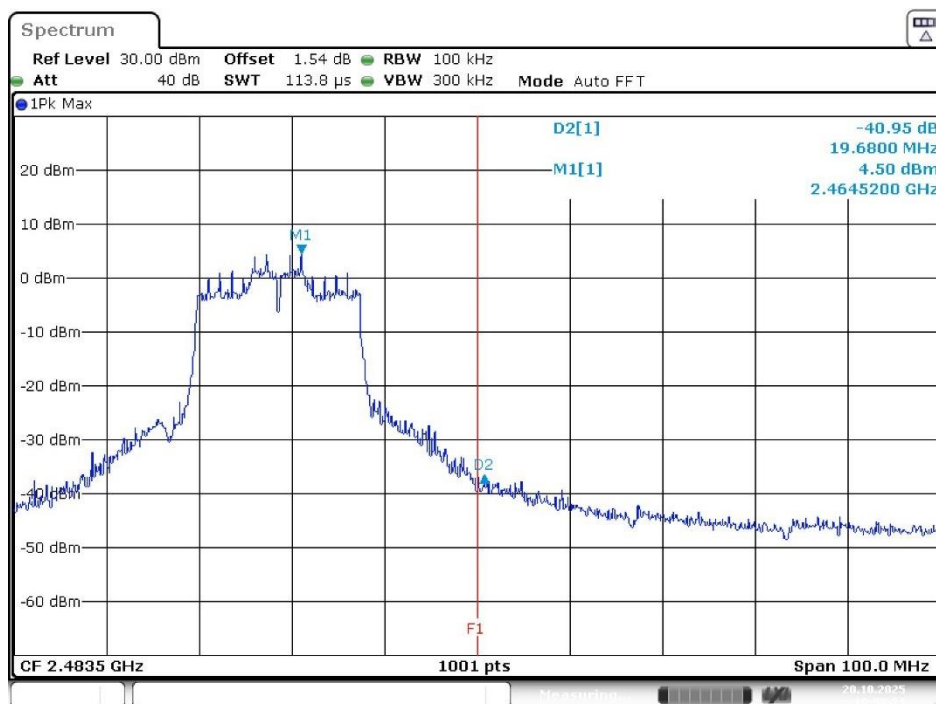


n20 Mode Band Edge, Left Side



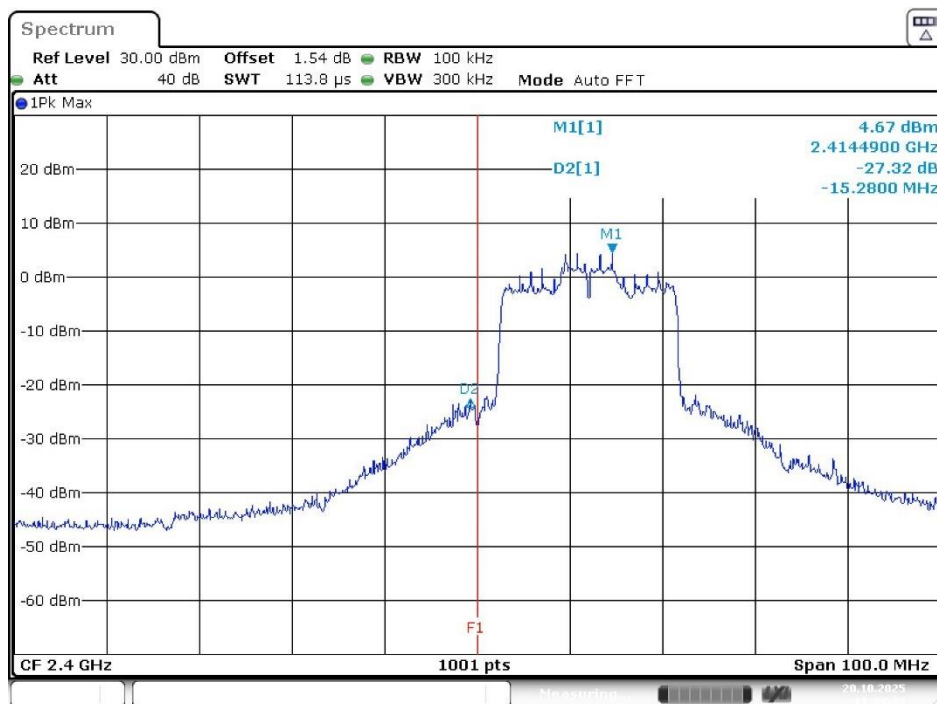
Date: 20.OCT.2025 17:01:05

Band Edge, Right Side

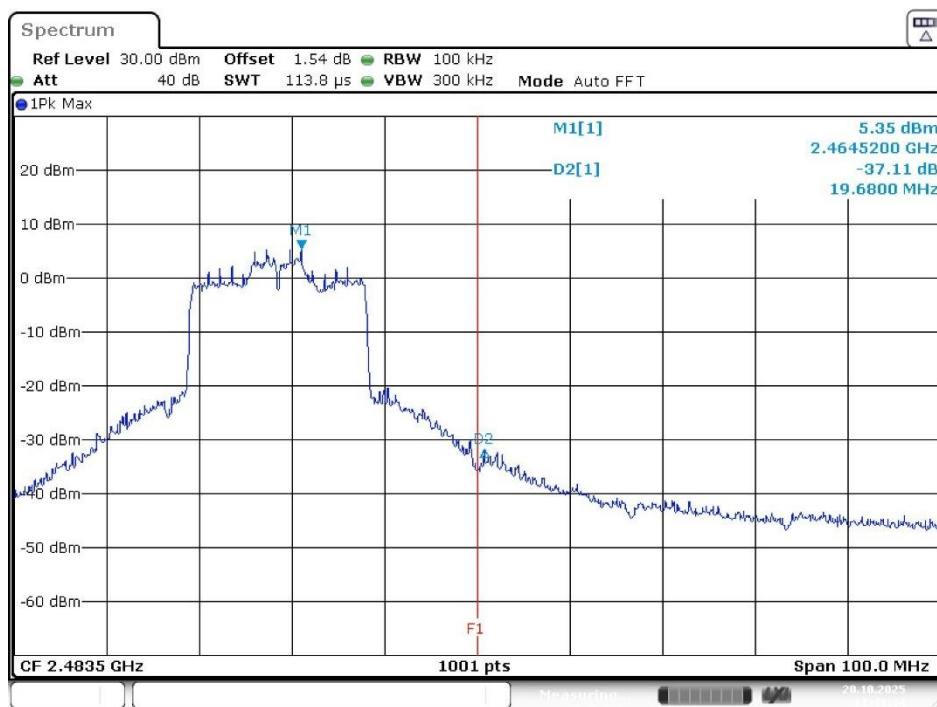


Date: 20.OCT.2025 10:58:21

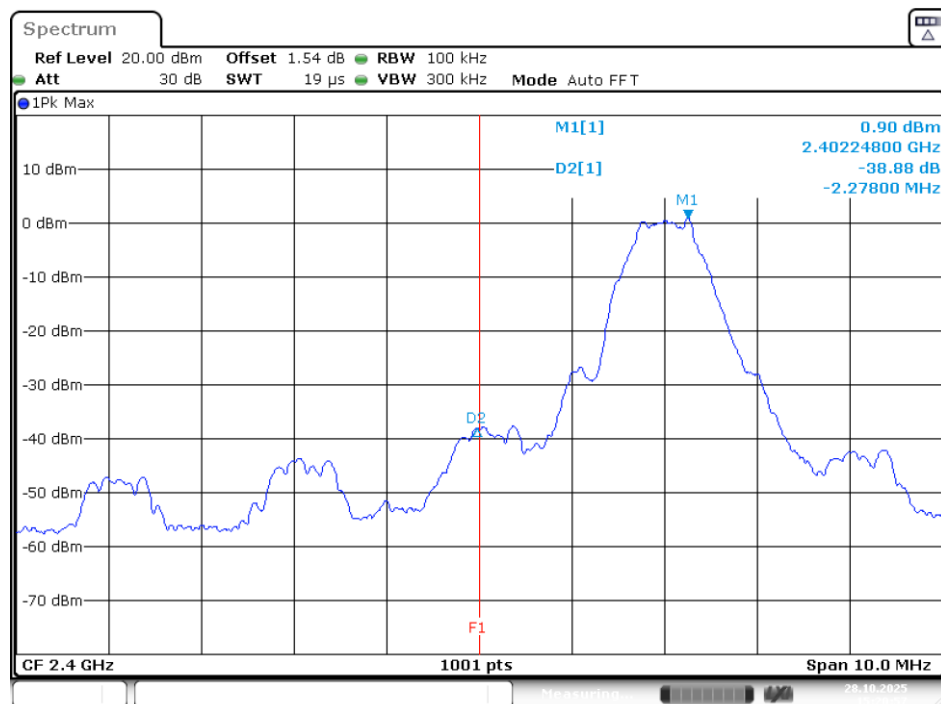
ax20 Mode Band Edge, Left Side



Band Edge, Right Side



BLE (1M) Mode Band Edge, Left Side



Date: 28.OCT.2025 15:20:58

Band Edge, Right Side



Date: 28.OCT.2025 15:25:43

11 FCC §15.247(e) – Power Spectral Density

11.1 Applicable Standard

According to FCC §15.247(e).

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

11.2 Test Procedure

According to ANSI C63.10-2020+Cor.1-2023 , section 11.10.2

- a) Set analyzer center frequency to DTS channel center frequency.
- b) Set the span > 1.5 times the DTS bandwidth.
- c) Set the RBW to $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- d) Set the VBW $\geq [3 \times \text{RBW}]$.
- e) Detector = peak.
- f) Sweep time = auto couple.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
- i) Use the peak marker function to determine the maximum amplitude level within the RBW.
- j) If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat

11.3 Test Results

Channel	Frequency (MHz)	Power Spectral Density (dBm/3 kHz)	Limit (dBm/3 kHz)	Result
b Mode				
Low	2412	0.18	8	PASS
Middle	2437	-3.21	8	PASS
High	2462	-1.27	8	PASS
g Mode				
Low	2412	-7.75	8	PASS
Middle	2437	-6.84	8	PASS
High	2462	-7.73	8	PASS
n20 Mode				
Low	2412	-9.60	8	PASS
Middle	2437	-7.57	8	PASS
High	2462	-9.71	8	PASS
ax20 Mode				
Low	2412	-10.10	8	PASS
Middle	2437	-8.98	8	PASS
High	2462	-9.68	8	PASS
BLE(1M) Mode				
Low	2402	-14.90	8	PASS
Middle	2440	-15.28	8	PASS
High	2480	-15.67	8	PASS