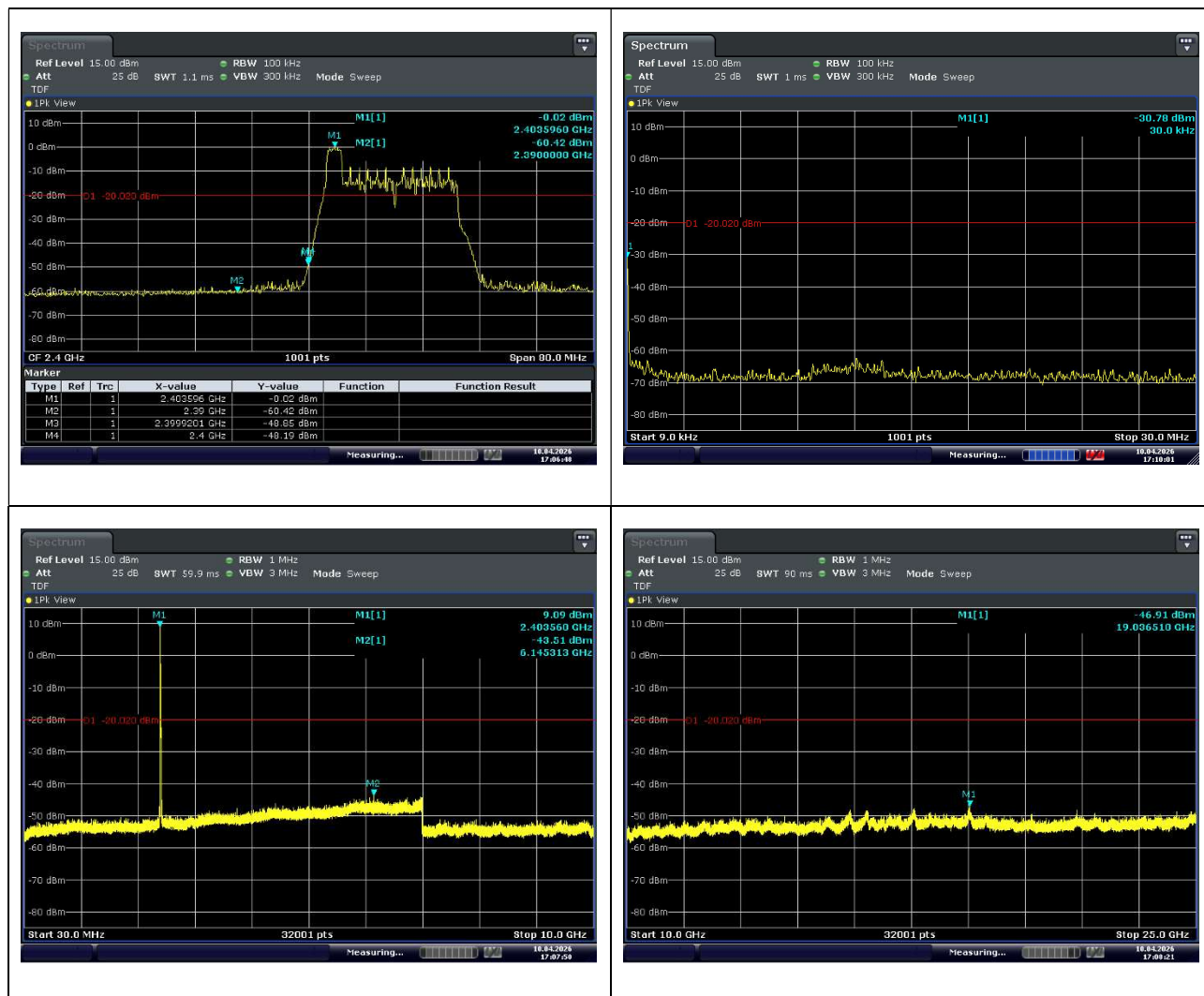
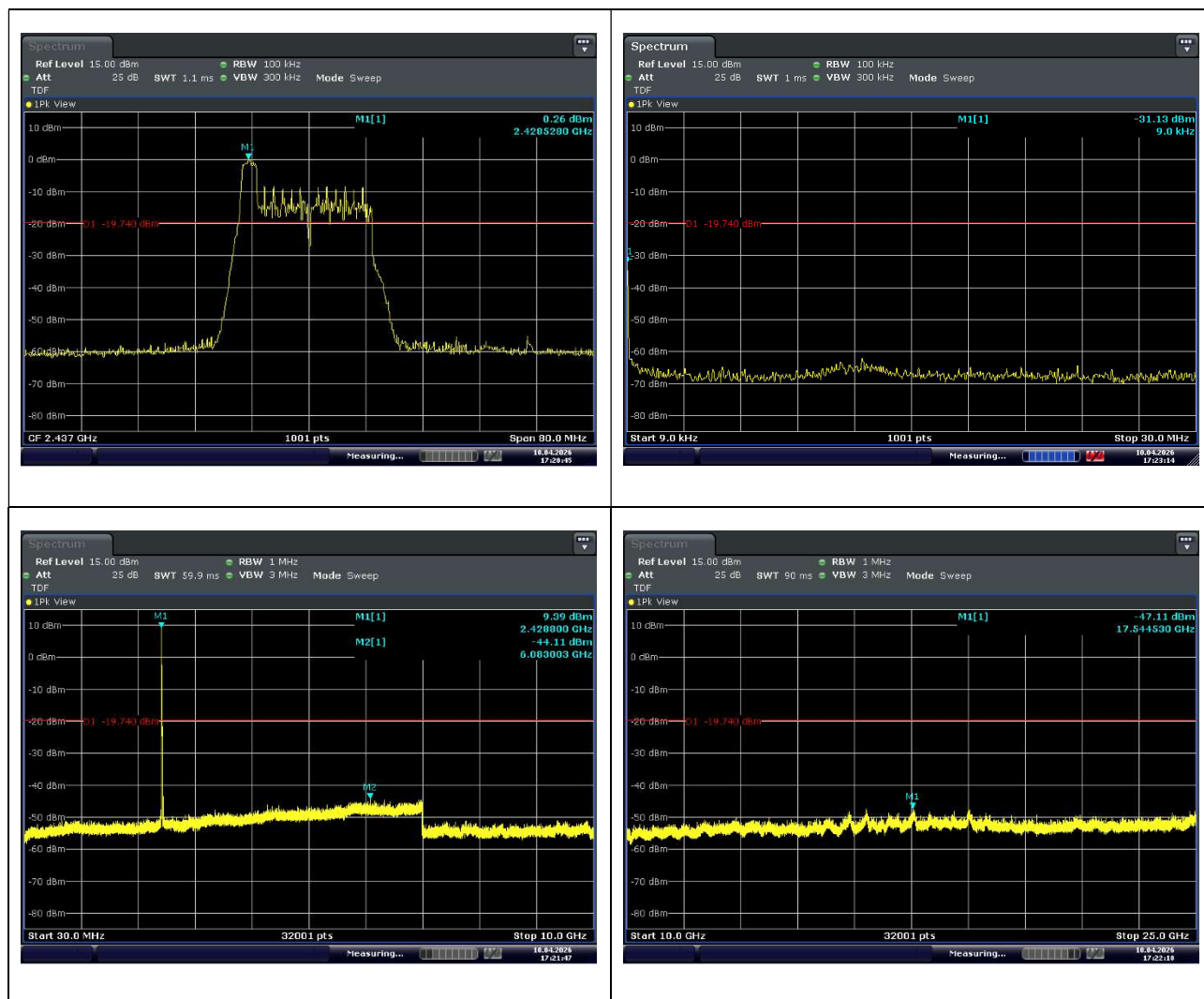


11ax_HE20_26T_0RU

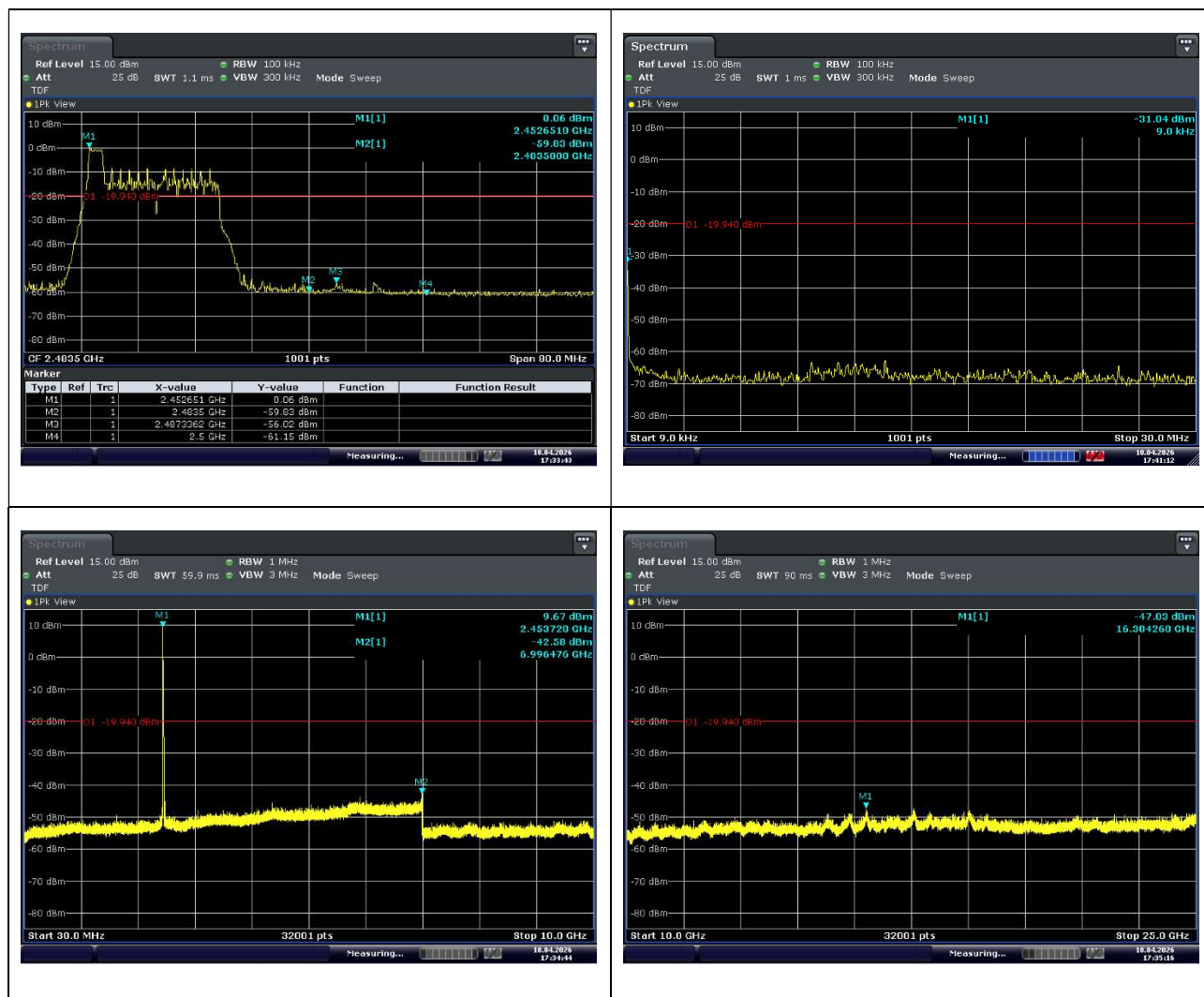
Low Channel



Middle Channel

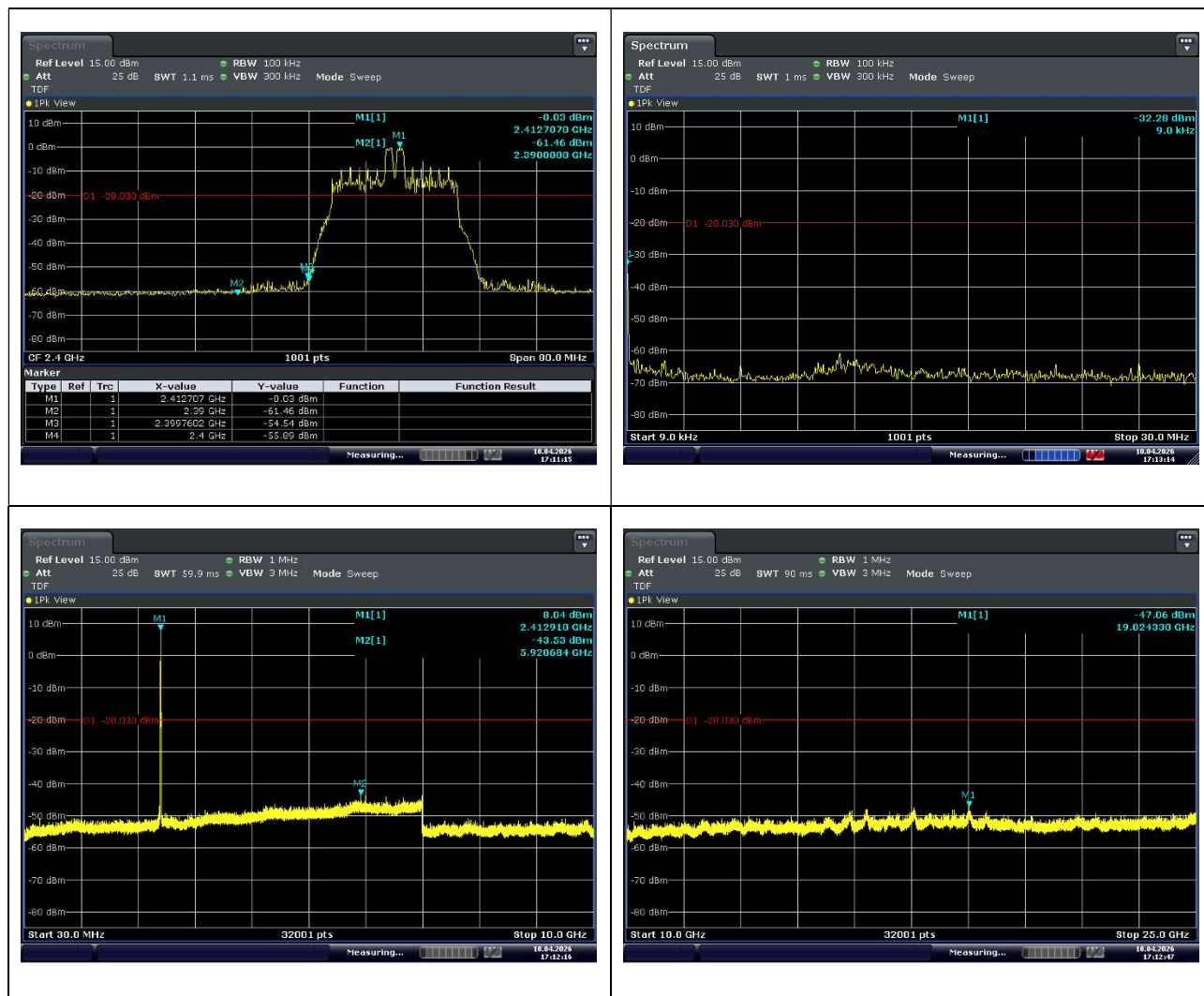


High Channel

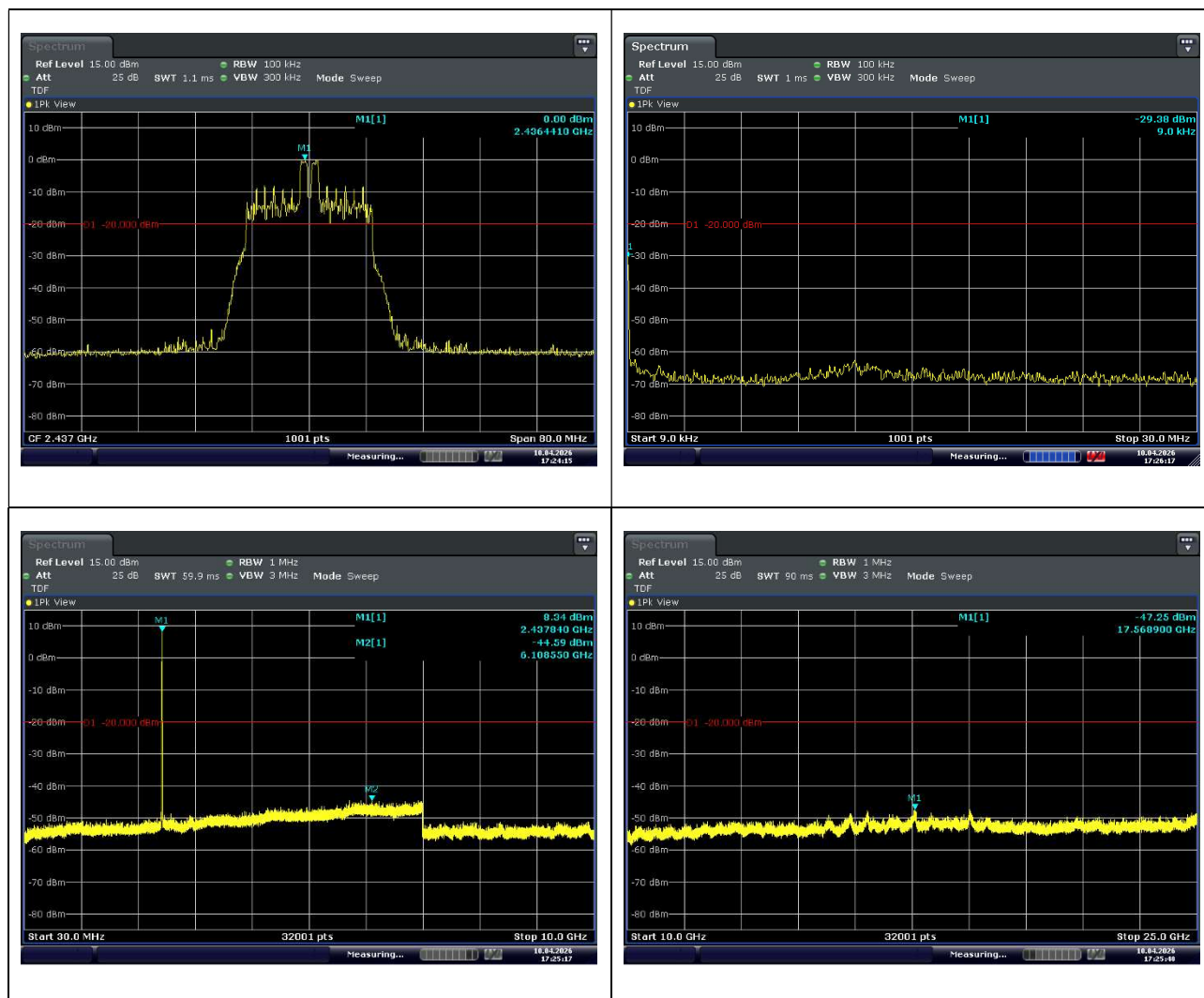


11ax_HE20_26T_4RU

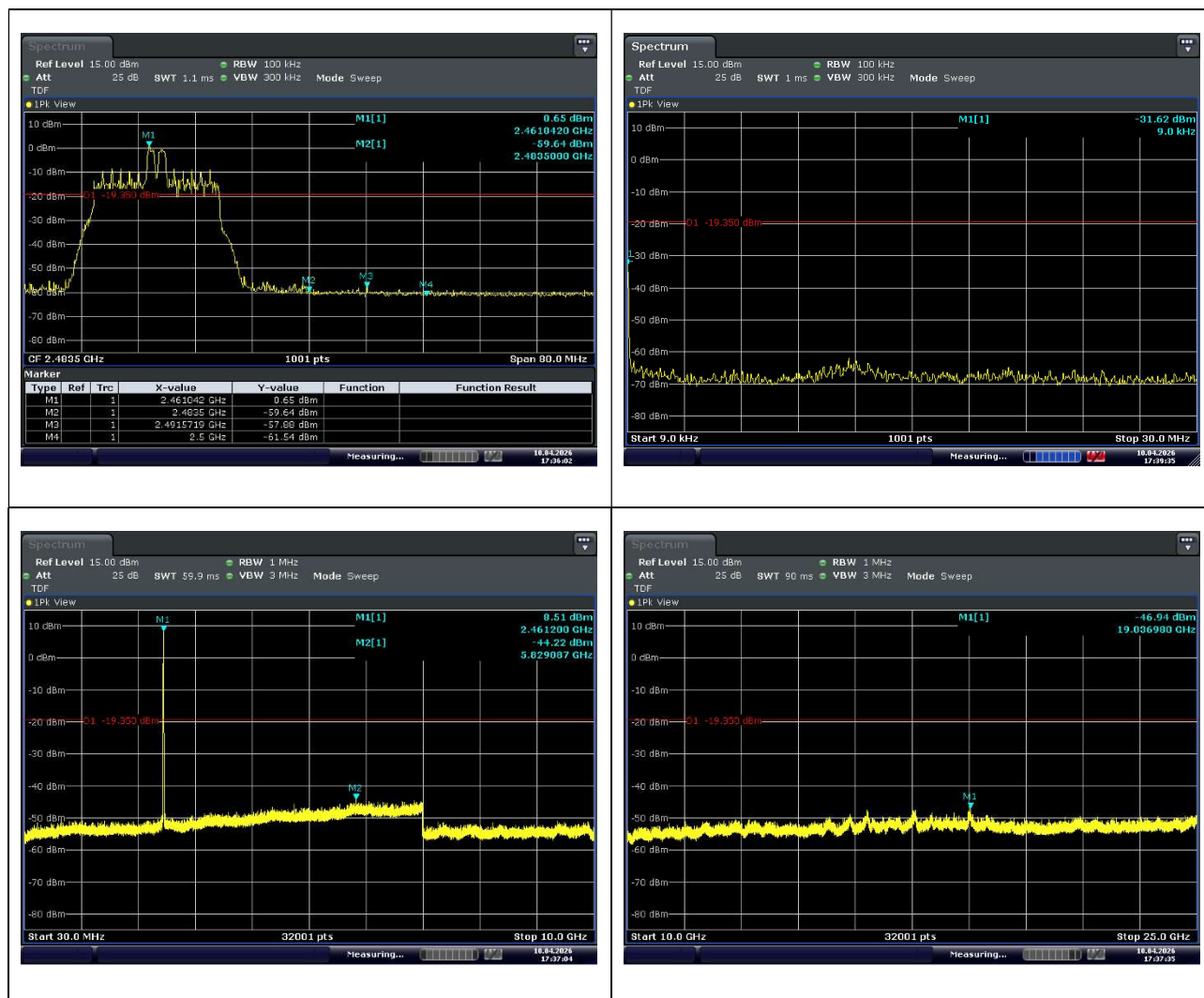
Low Channel



Middle Channel

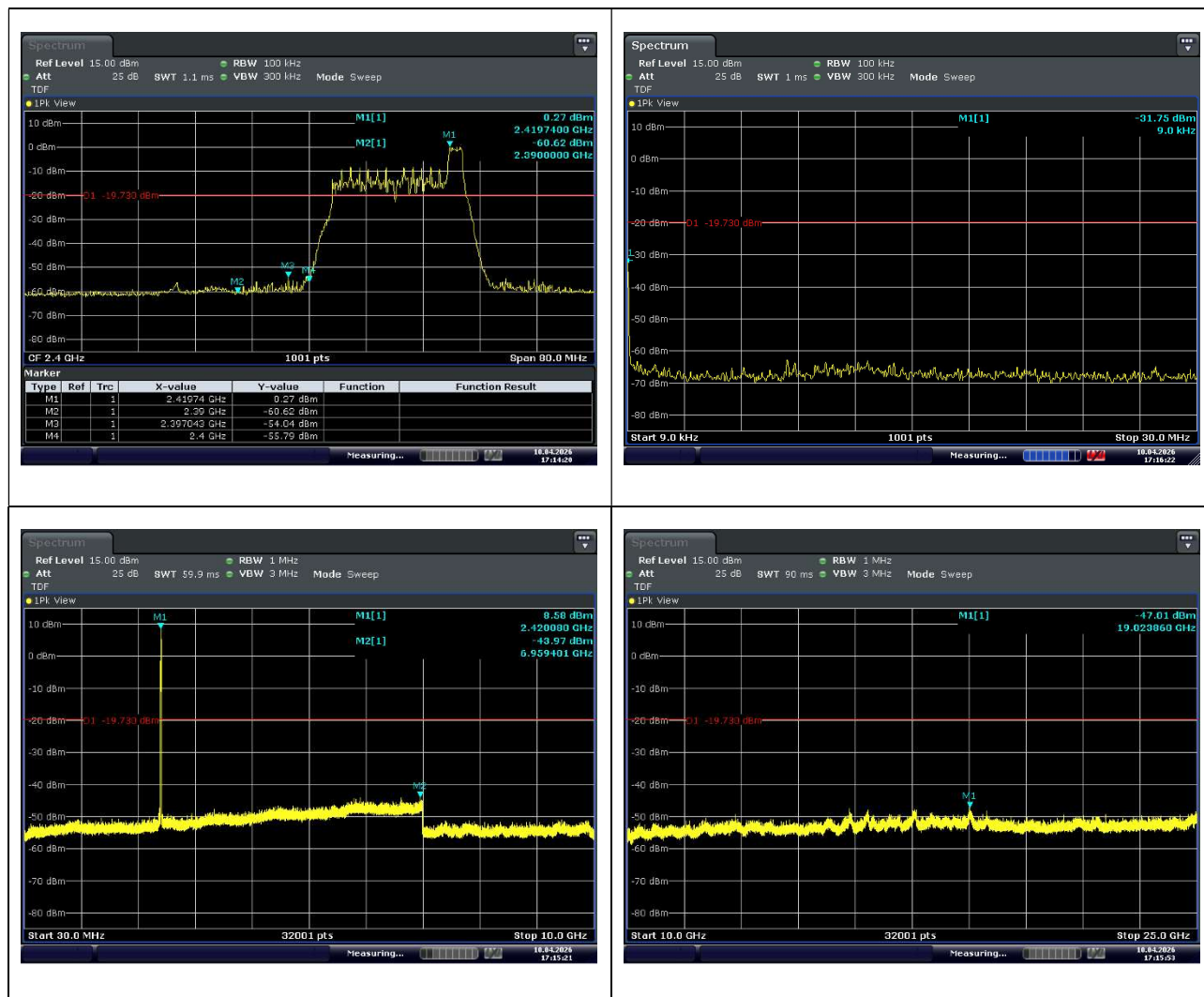


High Channel

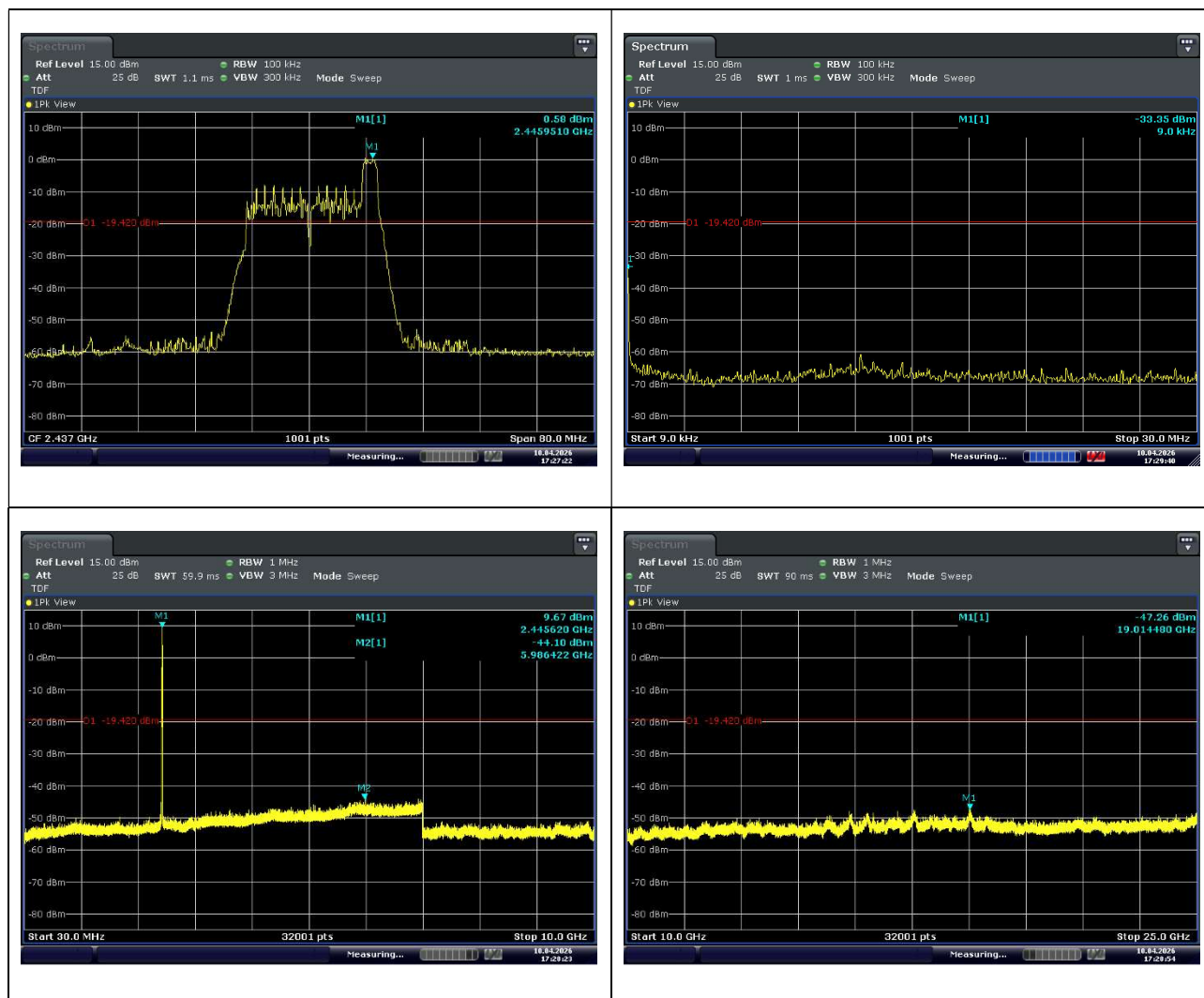


11ax_HE20_26T_8RU

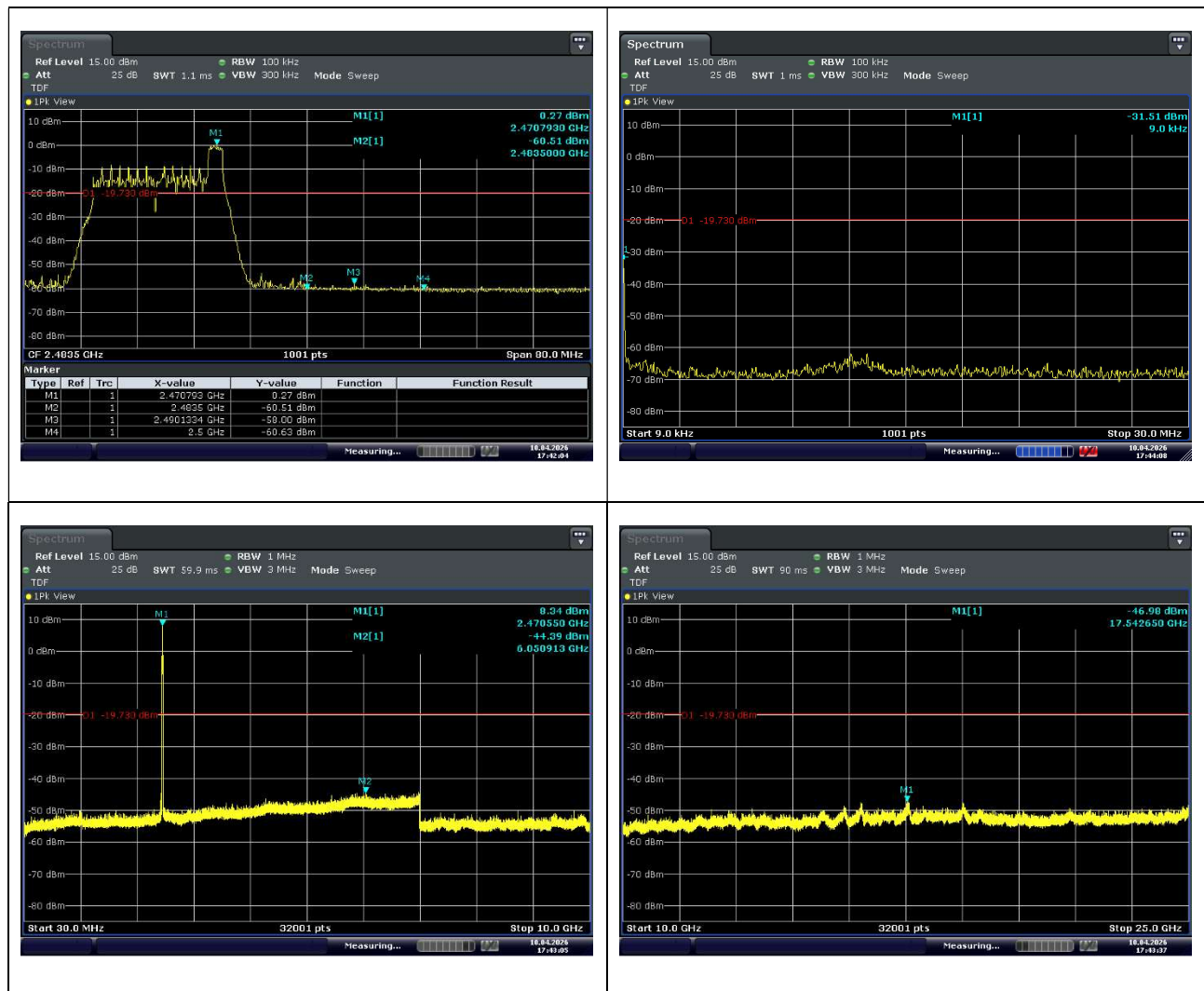
Low Channel



Middle Channel

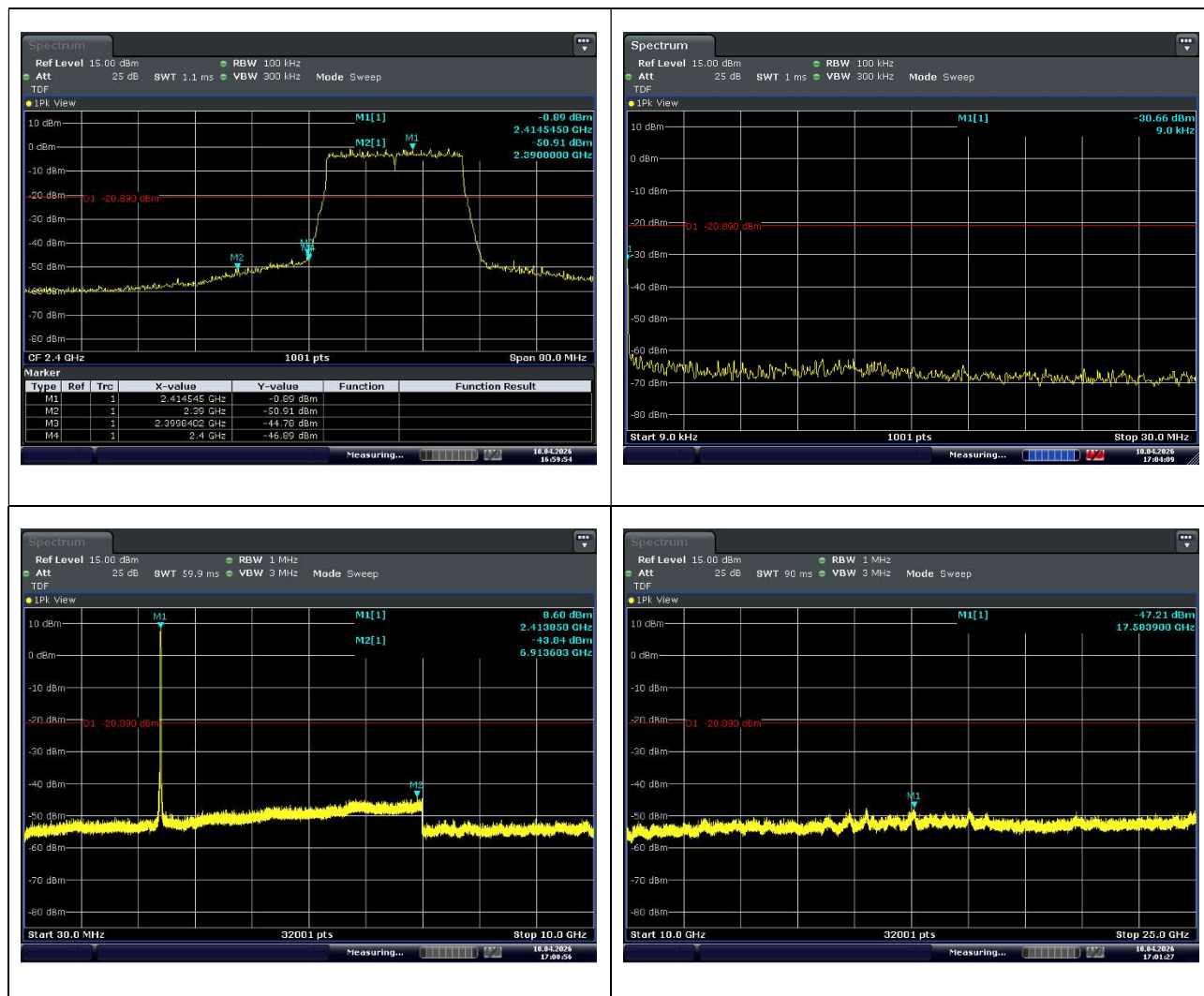


High Channel

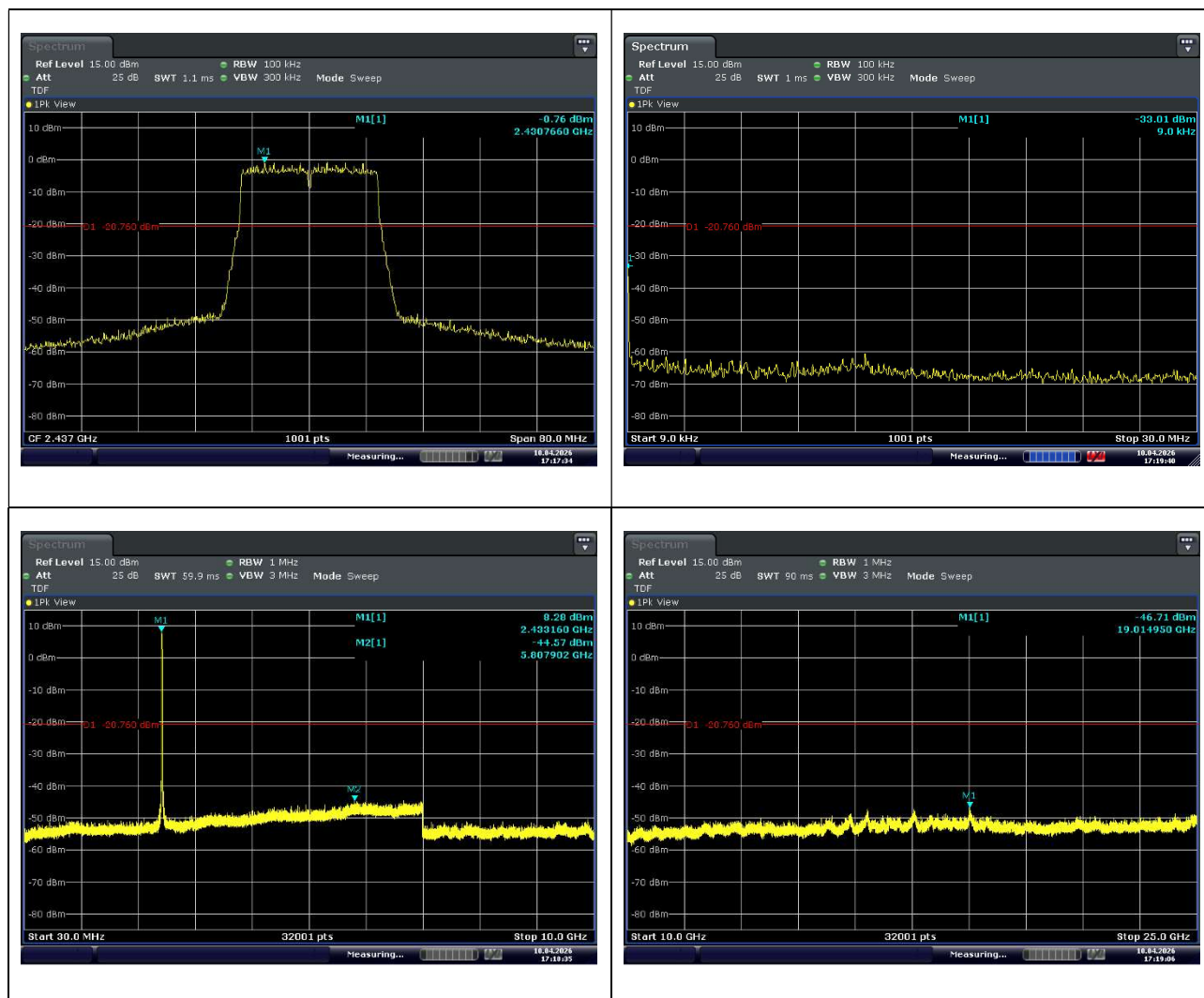


11ax_HE20_SU

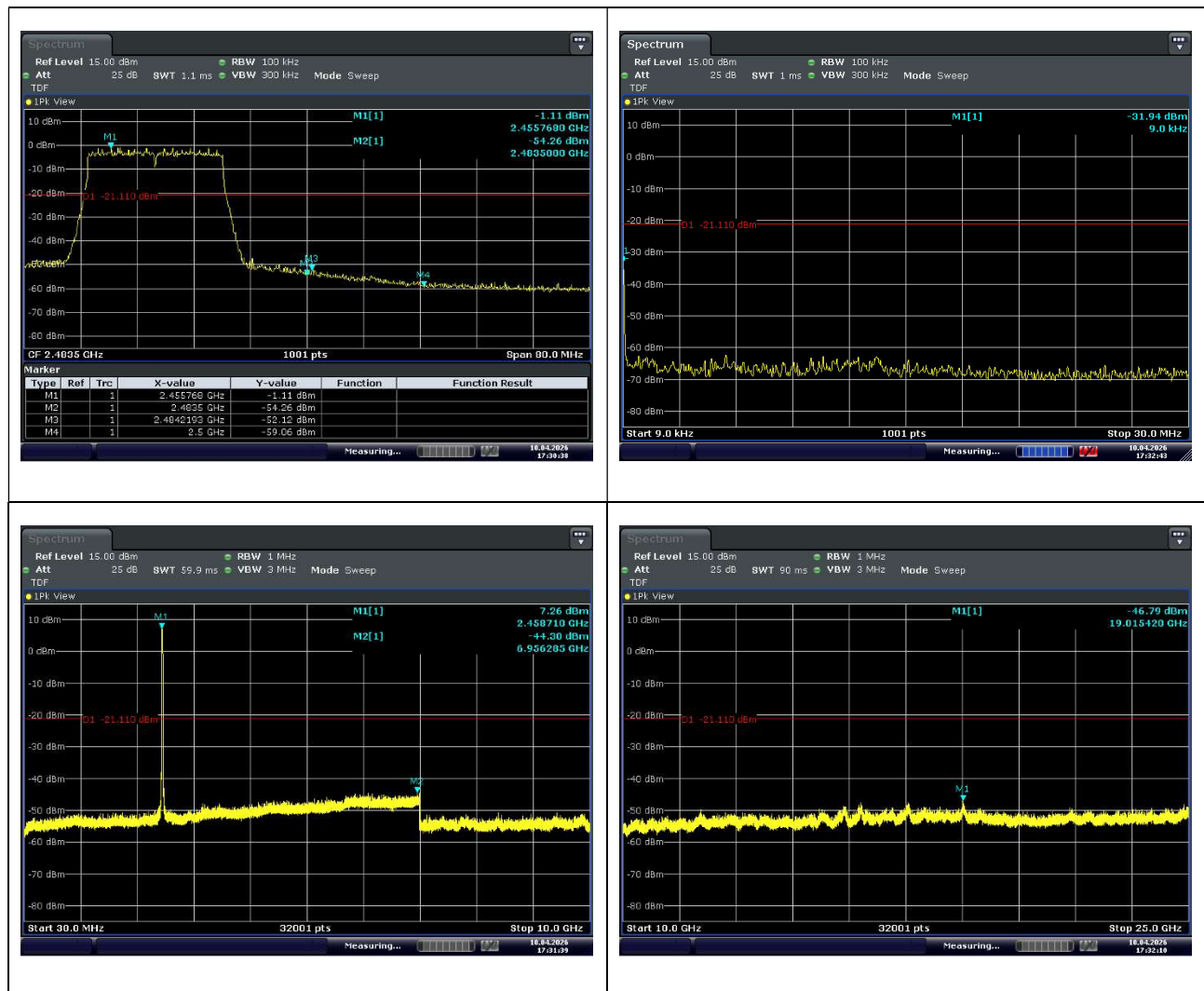
Low Channel



Middle Channel

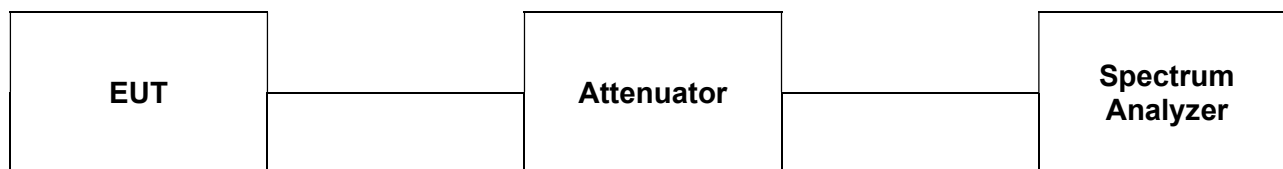


High Channel



3. 6 dB Bandwidth and 99 % Bandwidth

3.1. Test Setup



3.2. Limit

3.2.1. FCC

According to §15.247(a)(2), systems using digital modulation techniques may operate in the 902-928 MHz, 2 400-2 483.5 MHz, and 5 725-5 850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

3.2.2. IC

According to RSS-247 Issue 4, 6.3.1(a), the minimum 6 dB bandwidth shall be 500 kHz

3.3. Test Procedure

3.3.1. 6 dB Bandwidth

The test follows section 11.8 DTS bandwidth of ANSI C63.10-2020 (for FCC) and ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 (for ISED).

Tests performed using section 11.8.1 Option 1.

- Option 1:

1. Set RBW to = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz.
2. Set the VBW $\geq$ [3 x RBW].
3. Detector = peak.
4. Trace mode = max hold.
5. Sweep = No faster than coupled (auto) time.
6. Allow the trace to stabilize.
7. 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.

3.3.2. 99 % Bandwidth

The test follows section 6.9.3 of ANSI C63.10-2020 (for FCC) and ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 (for ISSED).

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.
 - 1) When measuring OBW for UWB, the VBW shall be set to three times the RBW or the maximum available VBW of the measuring instrument.
- 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).

3.4. Test Results

Ambient temperature : (23 ± 1) °C
Relative humidity : 47 %

- Legacy

Operation Mode	Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (kHz)
11	Low	2 412	8.683	500
	Middle	2 437	9.204	
	High	2 462	9.262	
11g	Low	2 412	15.745	
	Middle	2 437	16.729	
	High	2 462	16.672	
11n_HT20	Low	2 412	17.366	
	Middle	2 437	17.366	
	High	2 462	17.308	

- 11ax_HE20

Operation Mode	Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (kHz)
11ax_HE20 26T_0RU	Low	2 412	2.118	500
	Middle	2 437	2.118	
	High	2 462	2.158	
11ax_HE20 26T_4RU	Low	2 412	2.717	
	Middle	2 437	2.652	
	High	2 462	2.666	
11ax_HE20 26T_8RU	Low	2 412	2.093	
	Middle	2 437	2.118	
	High	2 462	2.118	
11ax_HE20 SU	Low	2 412	19.140	
	Middle	2 437	19.181	
	High	2 462	19.141	

- Legacy

Operation Mode	Channel	Frequency (MHz)	99 % Bandwidth (MHz)	Limit (kHz)
11b	Low	2 412	12.214	-
	Middle	2 437	13.082	
	High	2 462	13.256	
11g	Low	2 412	16.845	
	Middle	2 437	17.598	
	High	2 462	17.887	
11n_HT20	Low	2 412	17.598	
	Middle	2 437	18.234	
	High	2 462	18.234	

11ax_HE20

Operation Mode	Channel	Frequency (MHz)	99 % Bandwidth (MHz)	Limit (kHz)
11ax_HE20 26T_0RU	Low	2 412	18.462	-
	Middle	2 437	18.382	
	High	2 462	18.382	
11ax_HE20 26T_4RU	Low	2 412	17.103	
	Middle	2 437	17.103	
	High	2 462	17.103	
11ax_HE20 26T_8RU	Low	2 412	18.581	
	Middle	2 437	18.621	
	High	2 462	18.661	
11ax_HE20 _SU	Low	2 412	19.181	
	Middle	2 437	19.141	
	Low	2 412	19.101	

Test plots

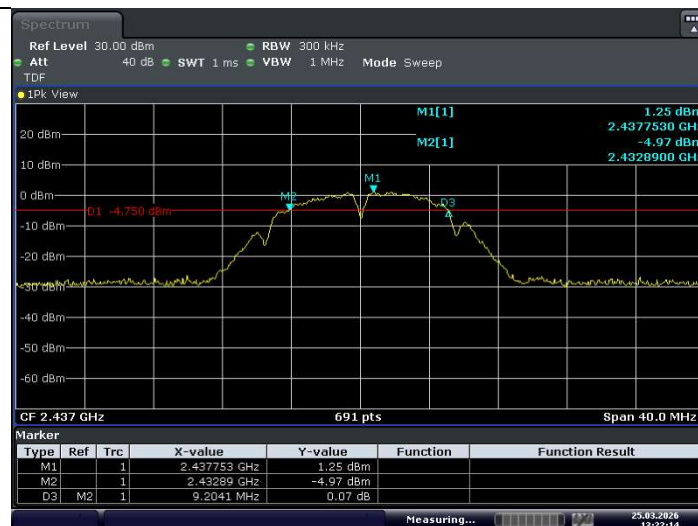
6 dB Bandwidth

11b

Low Channel



Middle Channel

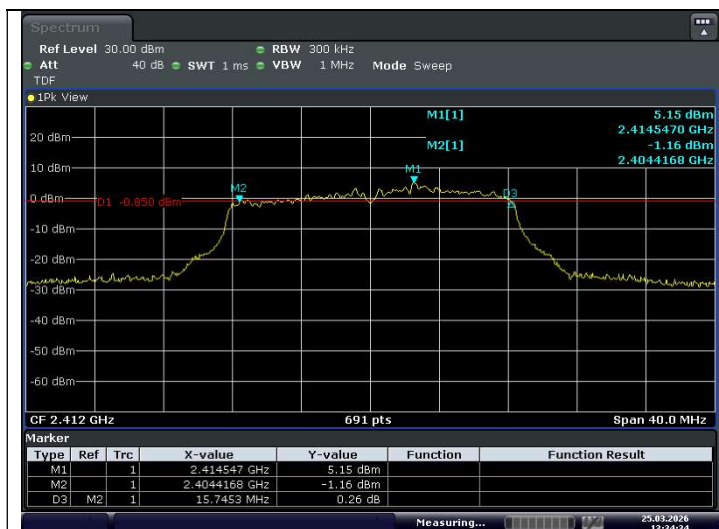


High Channel

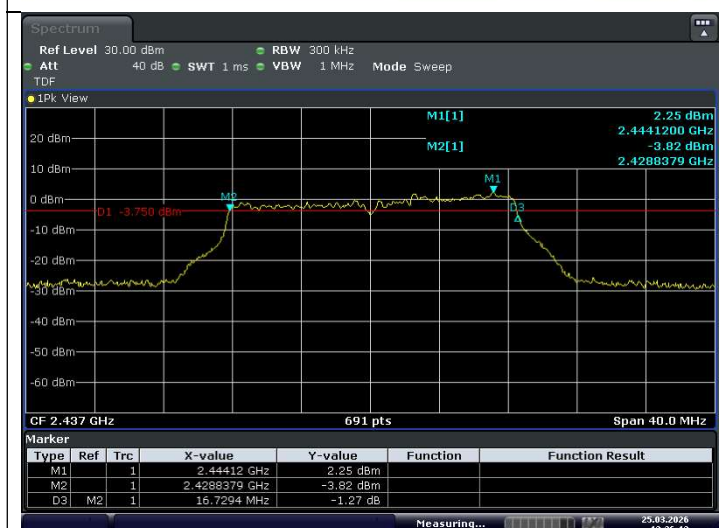


11g

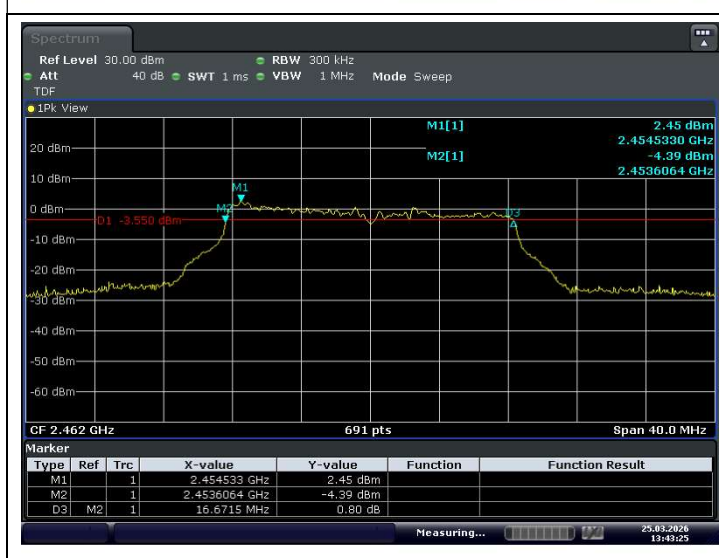
Low Channel



Middle Channel

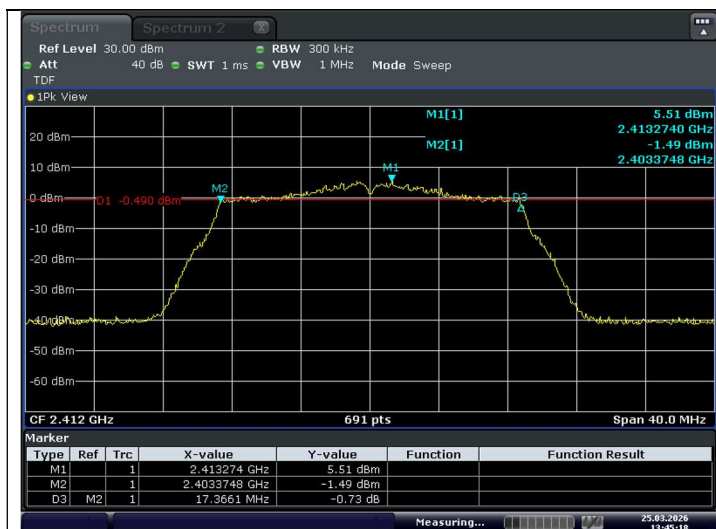


High Channel

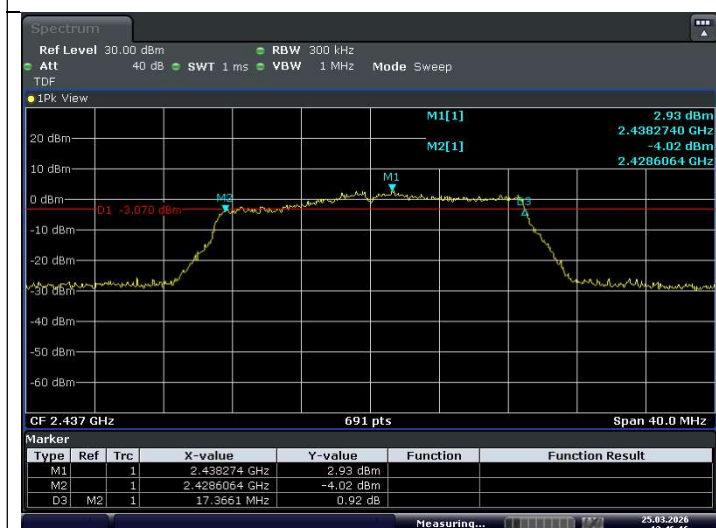


11n_HT20

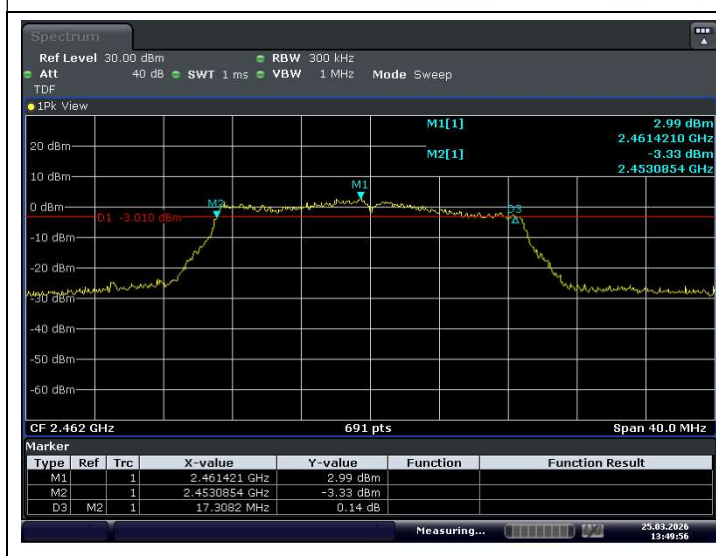
Low Channel



Middle Channel

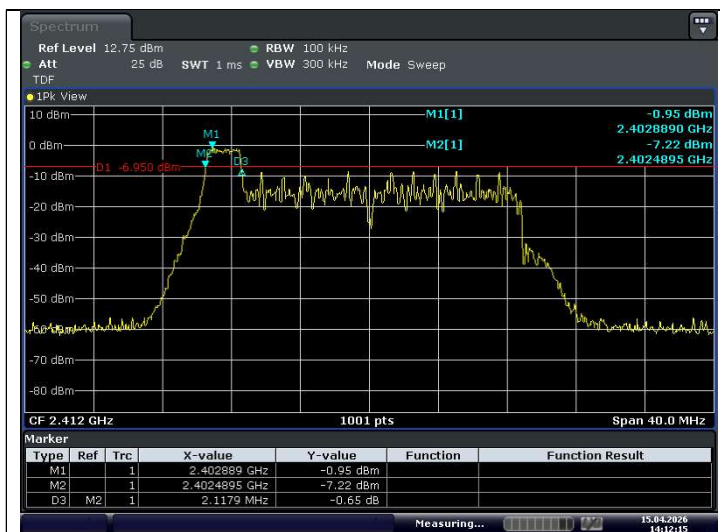


High Channel

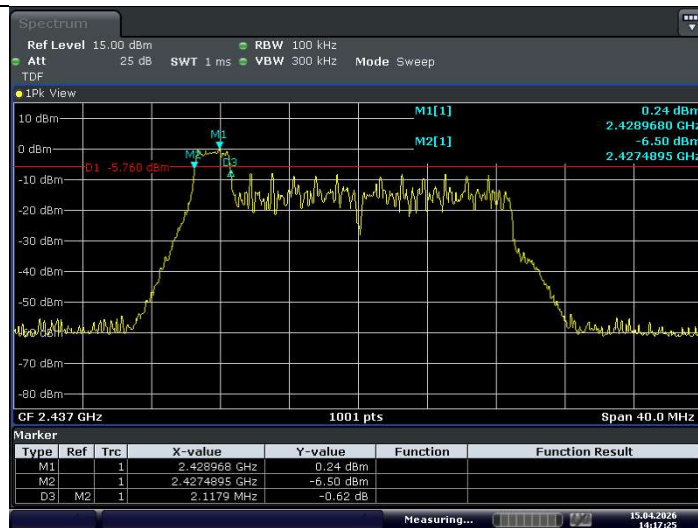


11ax_HE20_26T_ORU

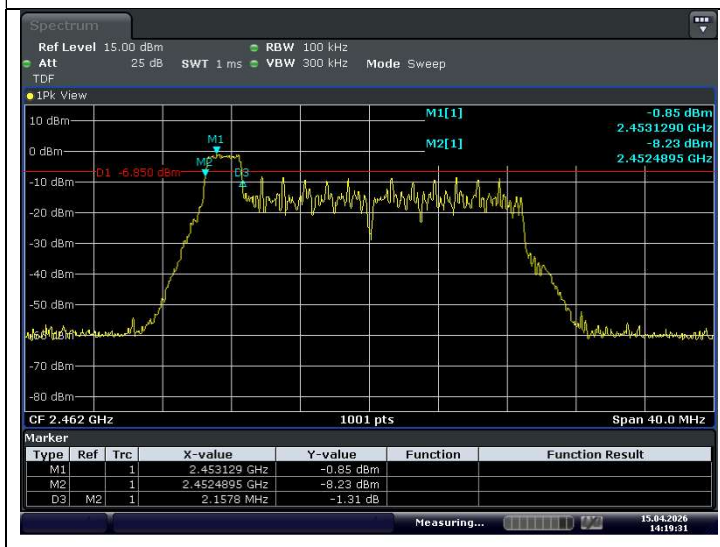
Low Channel



Middle Channel

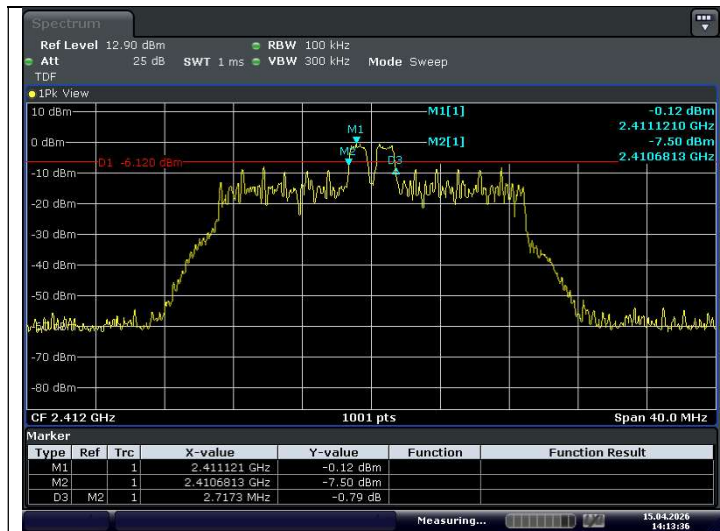


High Channel

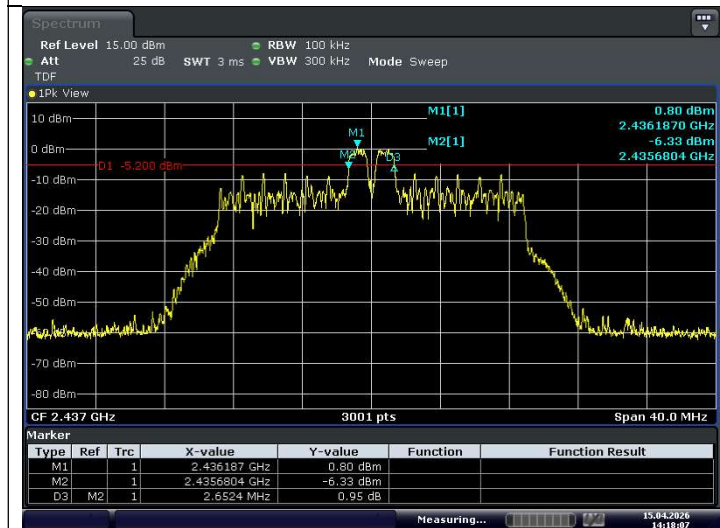


11ax_HE20_26T_4RU

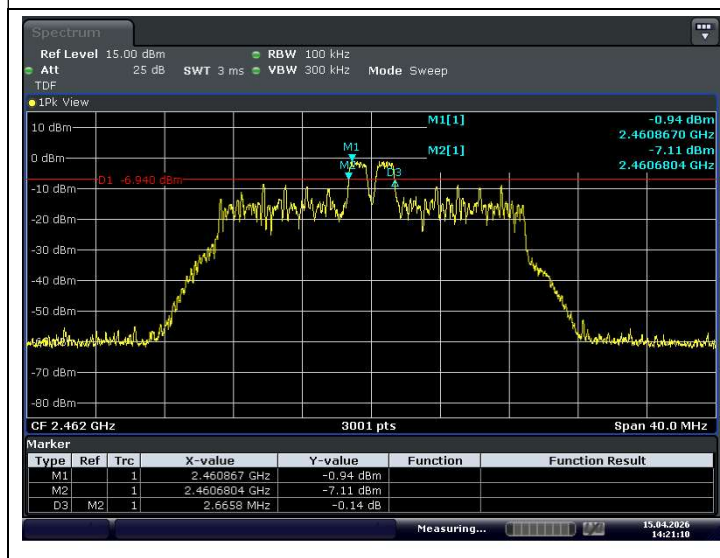
Low Channel



Middle Channel

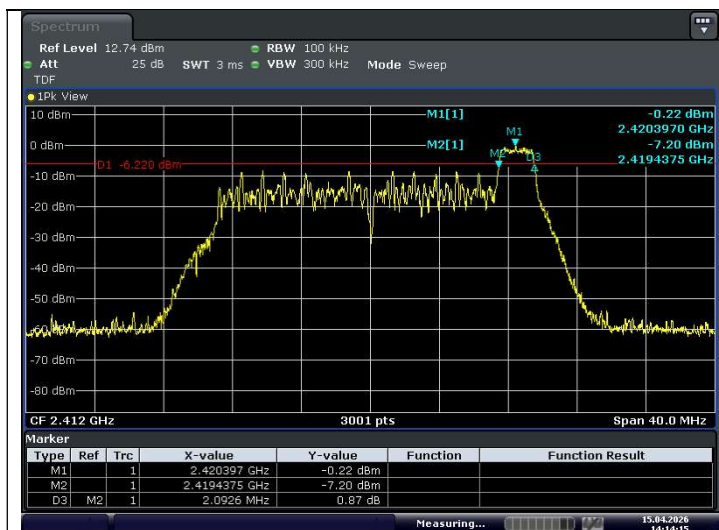


High Channel

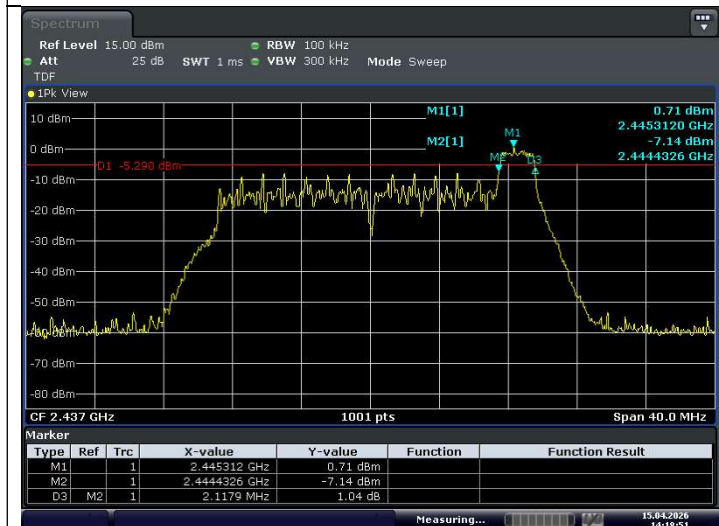


11ax_HE20_26T_8RU

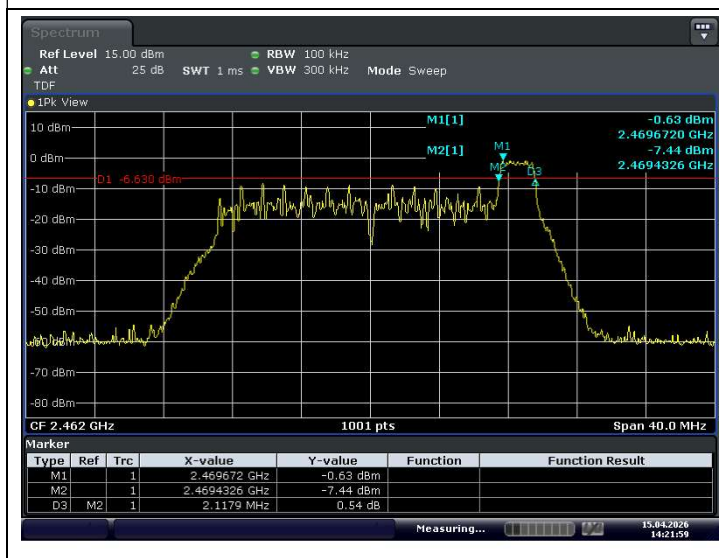
Low Channel



Middle Channel

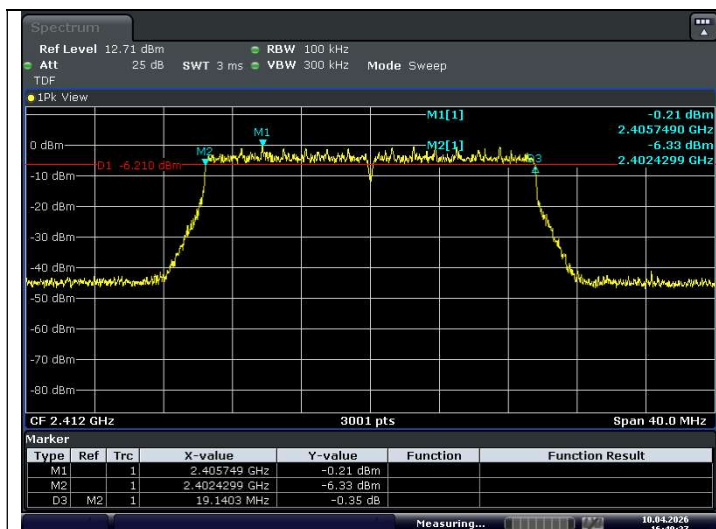


High Channel

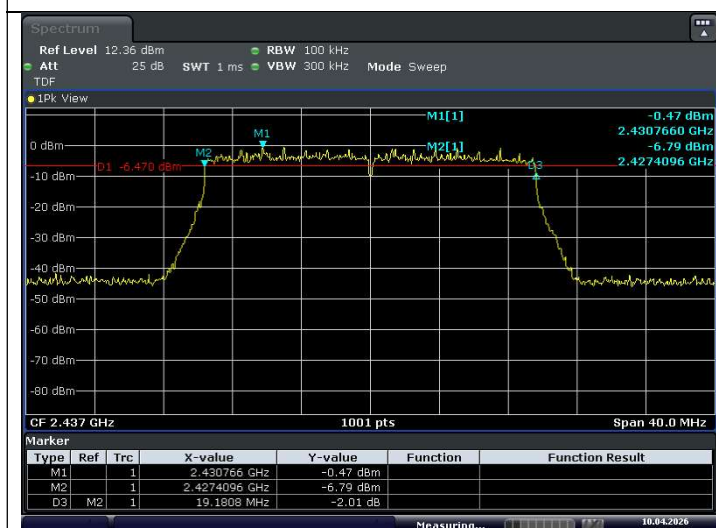


11ax_HE20_SU

Low Channel



Middle Channel



High Channel

