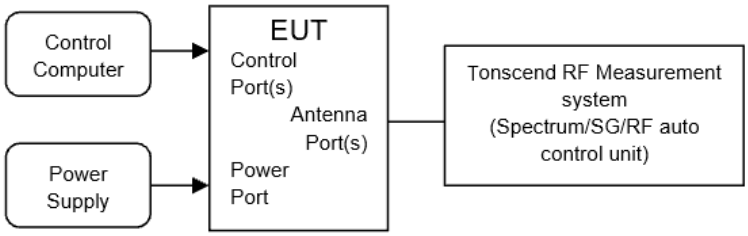
7. Power Spectral Density

7.1. Block diagram of test setup



7.2. Limits

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.

7.3. Test procedure

(1) The test according to ANSI C63.10-2013 clause 11.10.5.
(2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results.
(3) Set the EUT as maximum power setting and enable the EUT transmit continuously.
(4) Use the following spectrum analyzer settings for Power Spectral Density measurement:

Center frequency	DTS Channel center frequency
RBW:	3 kHz ≤ RBW ≤ 100 kHz
VBW:	≥ 3RBW
Span	1.5 times the DTS bandwidth
Detector Mode:	RMS
Sweep time:	auto
Trace mode	max hold
	Employ trace averaging (rms)
Trace	mode over a minimum of 100
	traces.

(5) Add [10 log (1 / D)], where D is the duty cycle measured in step a), to the measured PSD to compute the average PSD during the actual transmission time.
If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

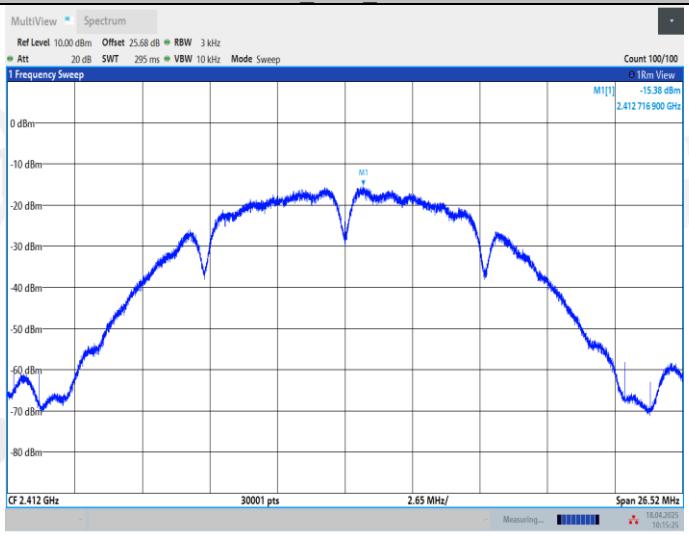
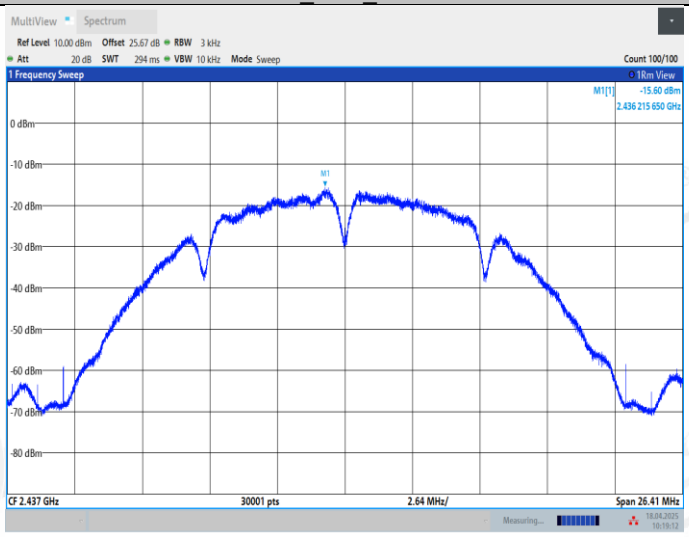
7.4. Test result

Test Engineer:	Haofeng	Test Site:	RF Measurement System 4#
Ambient Condition:	23.9℃,43.1%RH	Test Date:	2025.04.18-2025.04.18
Test Power Supply:	AC 120V/60Hz	Sample Number:	S25030626-003

Test Mode	Antenna	Frequency [MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-15.38	≤8.00	PASS
		2437	-15.60	≤8.00	PASS
		2462	-15.70	≤8.00	PASS
11G	Ant1	2412	-15.93	≤8.00	PASS
		2437	-17.77	≤8.00	PASS
		2462	-15.49	≤8.00	PASS
11N20SISO	Ant1	2412	-19.50	≤8.00	PASS
		2437	-18.66	≤8.00	PASS
		2462	-18.96	≤8.00	PASS
11N40SISO	Ant1	2422	-21.67	≤8.00	PASS
		2437	-20.65	≤8.00	PASS
		2452	-21.80	≤8.00	PASS
11AX20SISO	Ant1	2412	-22.18	≤8.00	PASS
		2437	-19.62	≤8.00	PASS
		2462	-19.49	≤8.00	PASS
11AX40SISO	Ant1	2422	-21.69	≤8.00	PASS
		2437	-21.30	≤8.00	PASS
		2452	-18.96	≤8.00	PASS

Note：The Duty Cycle Factor is compensated in the graph.

7.5. Test graphs

11B_Ant1_2412

11B_Ant1_2437

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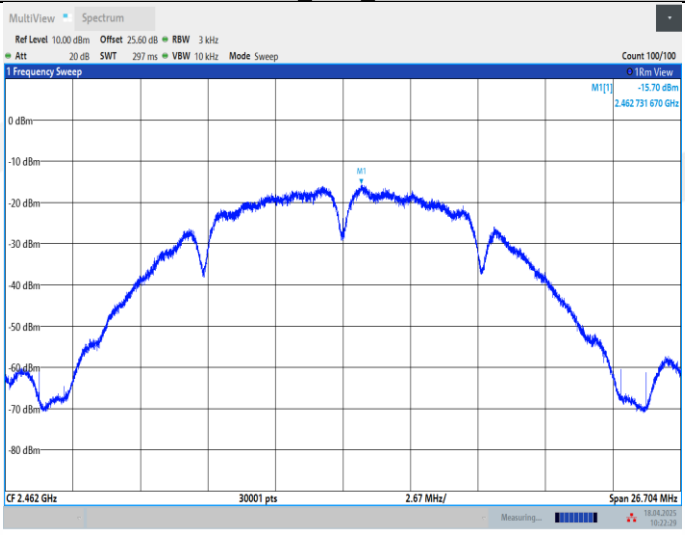
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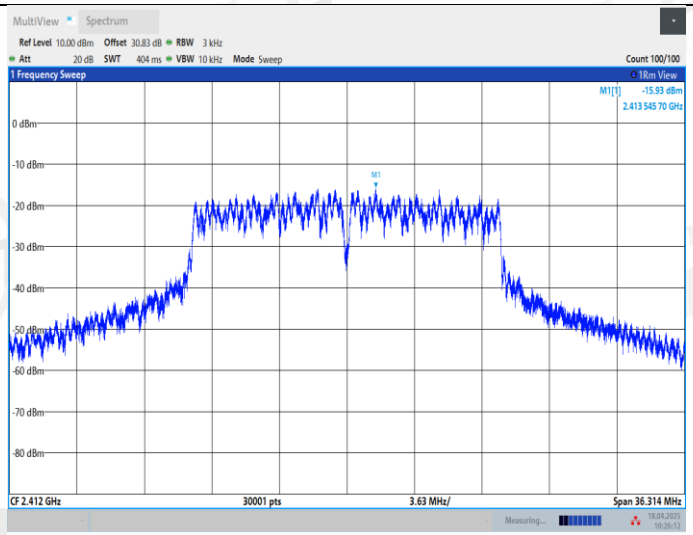

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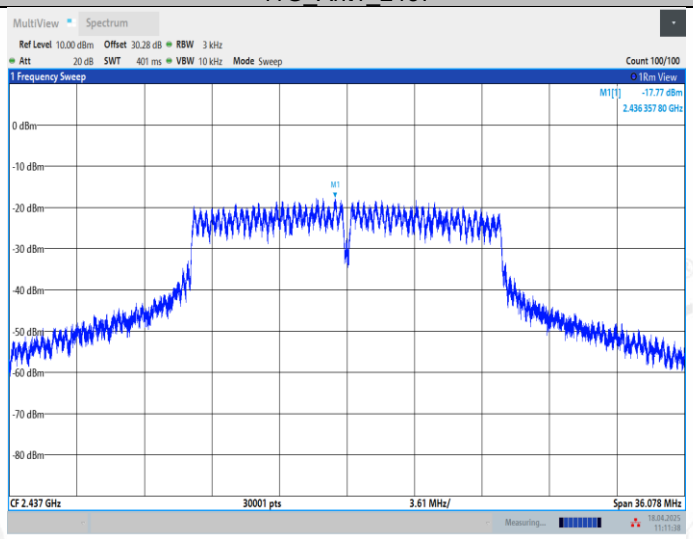

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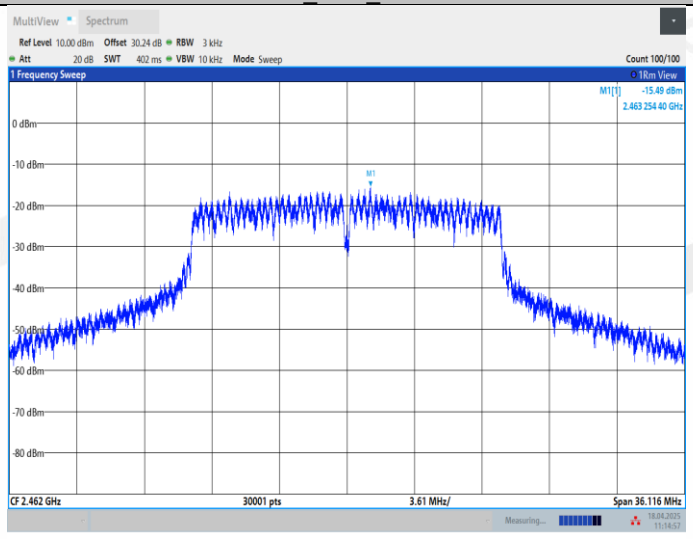

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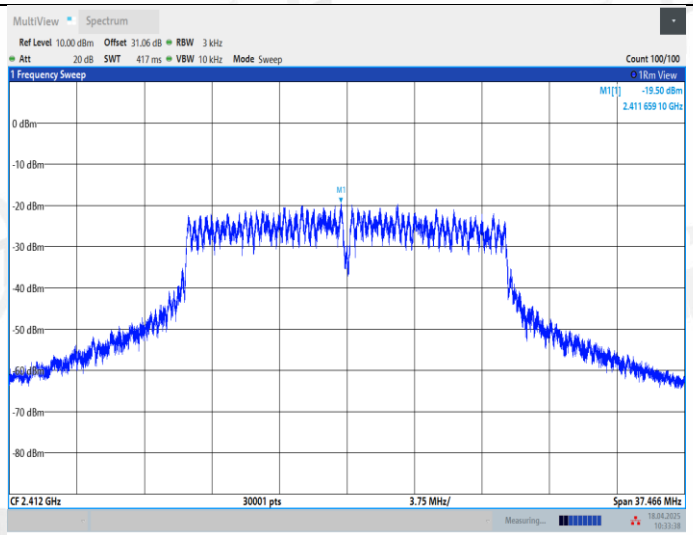

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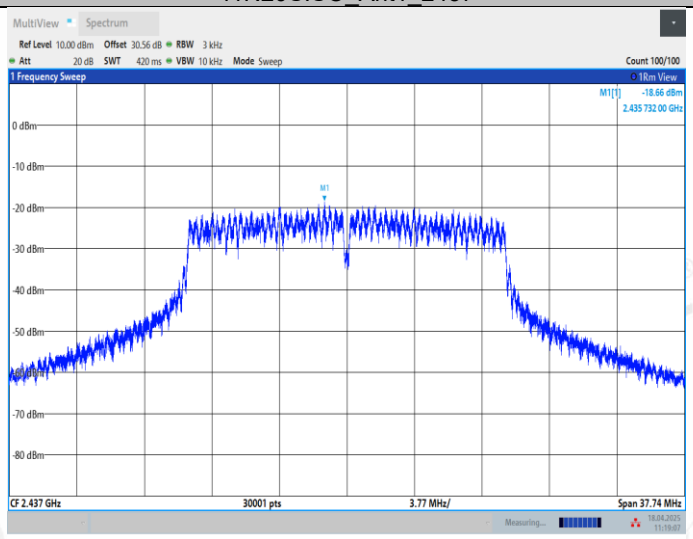

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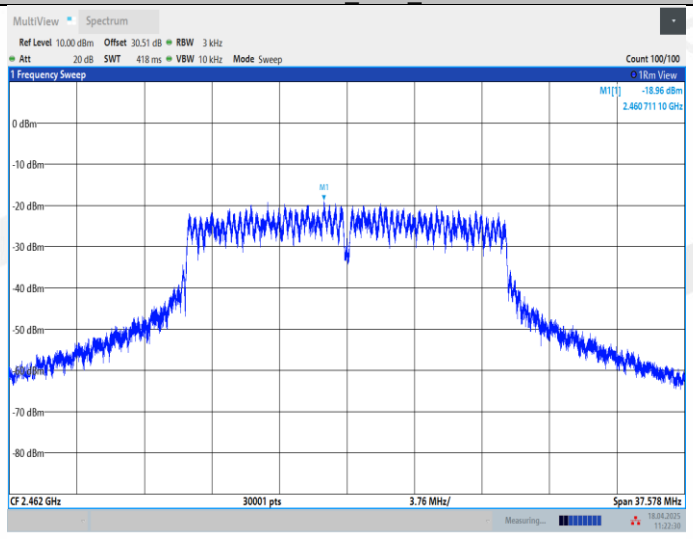

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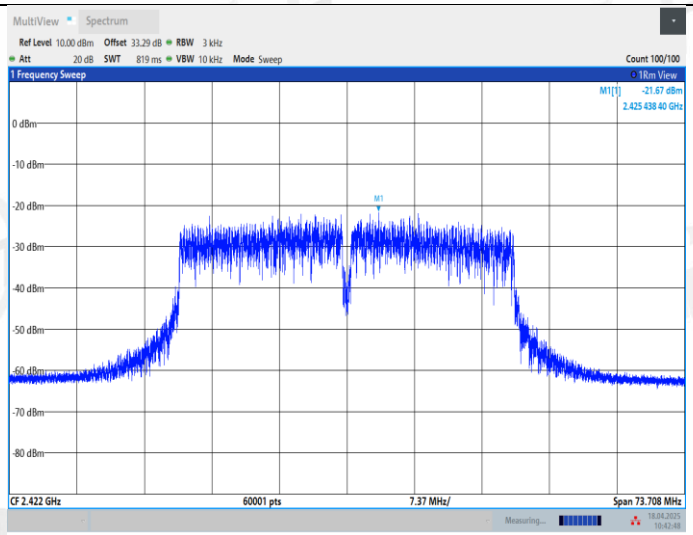

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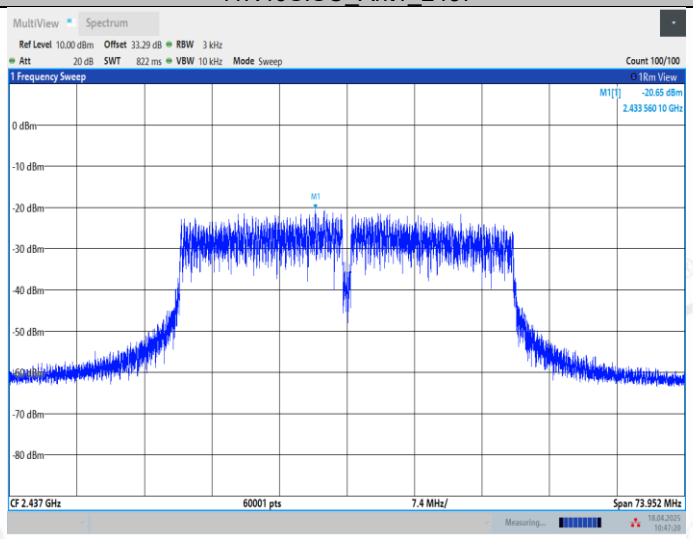

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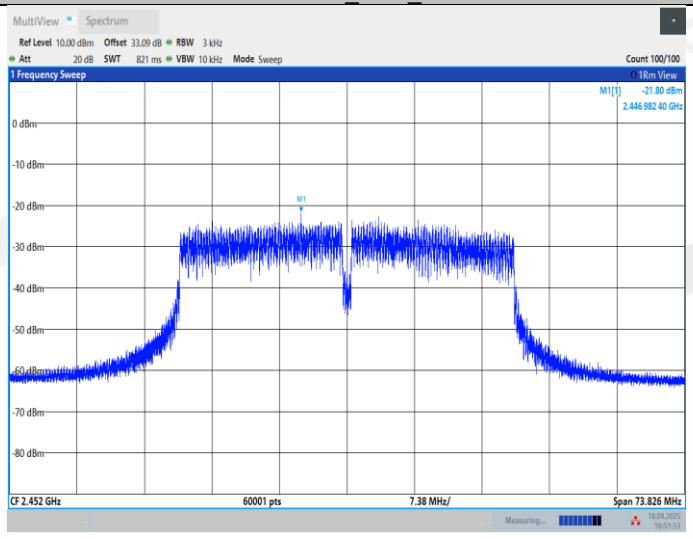
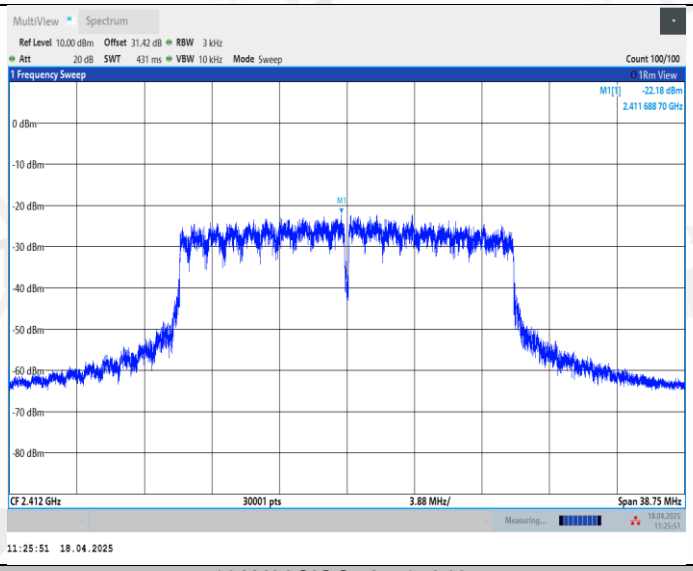


11AX20SISO_Ant1_2412



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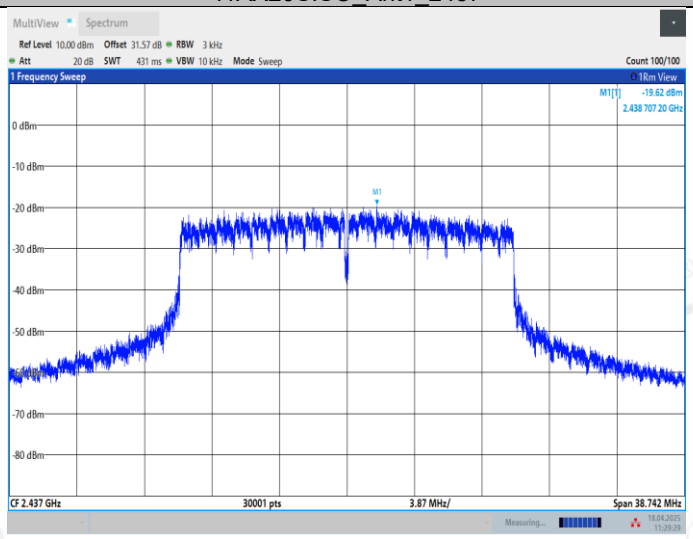

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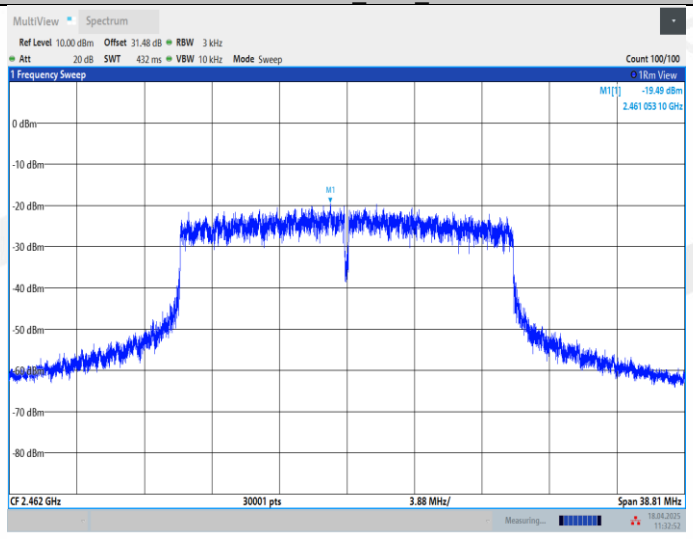

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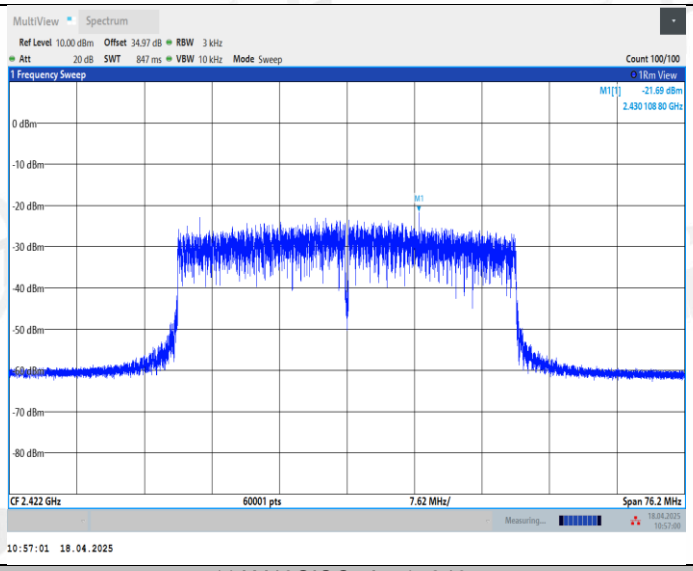

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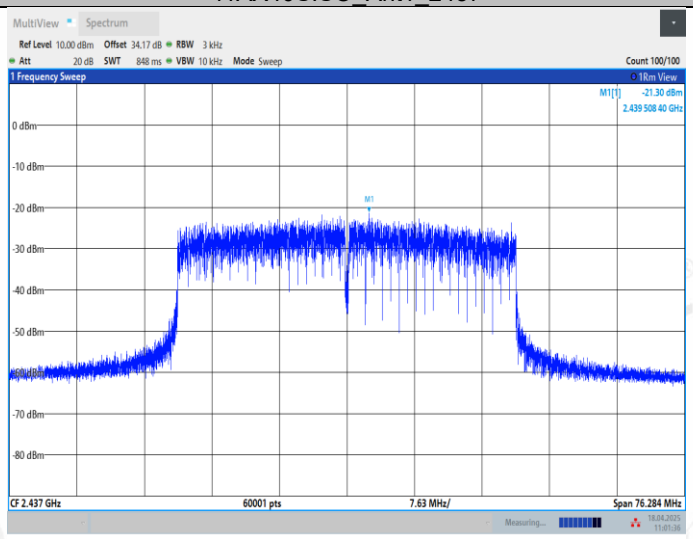

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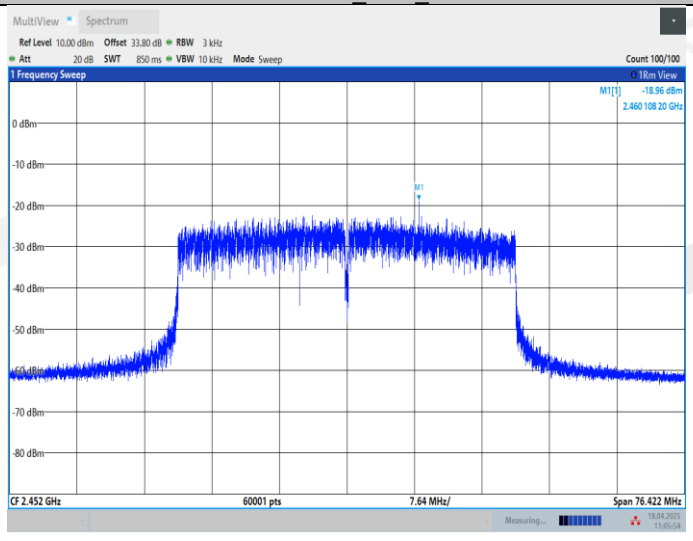
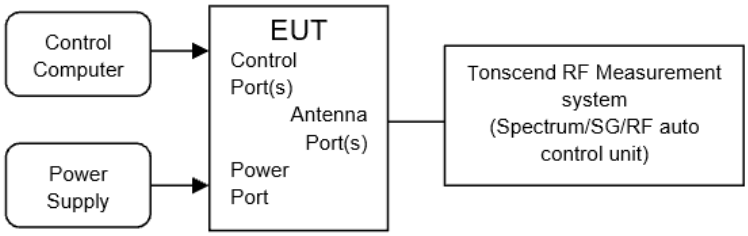


8. Band Edge Compliance (Conducted Method)

8.1. Block diagram of test setup



8.2. Limits

In any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

8.3. Test procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.
(2) Establish a reference level by using the following procedure:

RBW:	100 kHz
VBW:	300 kHz
Span	Encompass frequency range to be measured
Detector Mode:	Peak
Sweep time:	auto
Trace mode	Max hold

(3) Allow the trace to stabilize, use the peak marker function to determine the maximum peak power level to establish the reference level.

Then mark the maximum amplitude of all unwanted emissions outside of the authorized frequency band.

8.4. Test result

Test Engineer:	Haofeng	Test Site:	RF Measurement System 4#
Ambient Condition:	23.9℃,43.1%RH	Test Date:	2025.04.18-2025.04.18
Test Power Supply:	AC 120V/60Hz	Sample Number:	S25030626-003

EUT Set Mode	CH or Frequency	Result(dBm)	EUT Set Mode	CH or Frequency	Result (dBm)
11b	CH1	Pass	11g	CH1	Pass
	CH11	Pass		CH11	Pass
11n HT 20	CH1	Pass	11n HT 40	CH3	Pass
	CH11	Pass		CH9	Pass
11ax HE 20	CH1	Pass	11ax HE 40	CH3	Pass
	CH11	Pass		CH9	Pass

8.5. Test graphs

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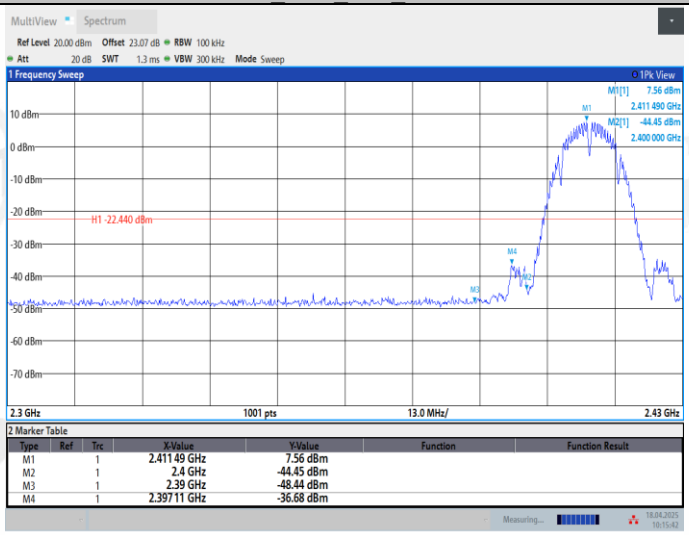
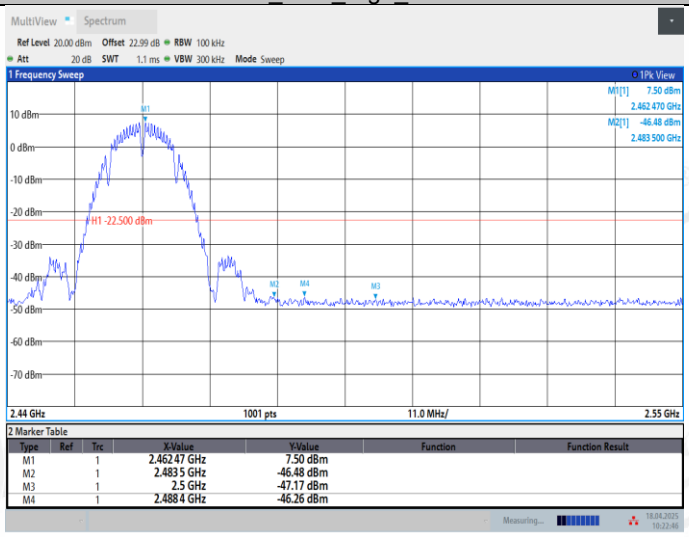
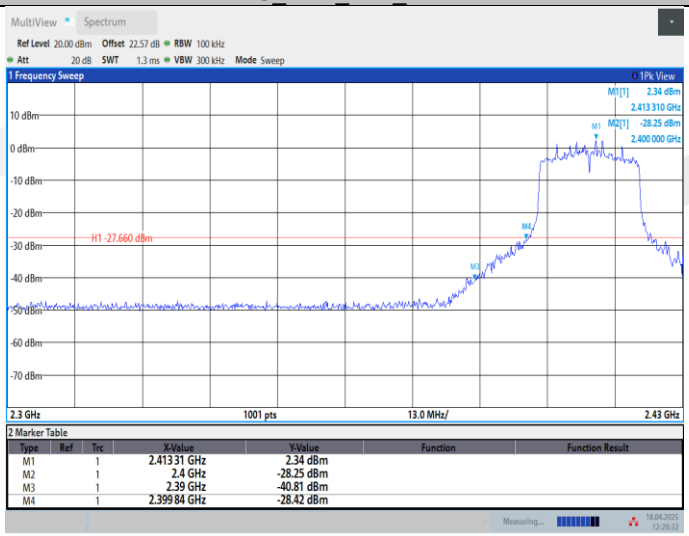
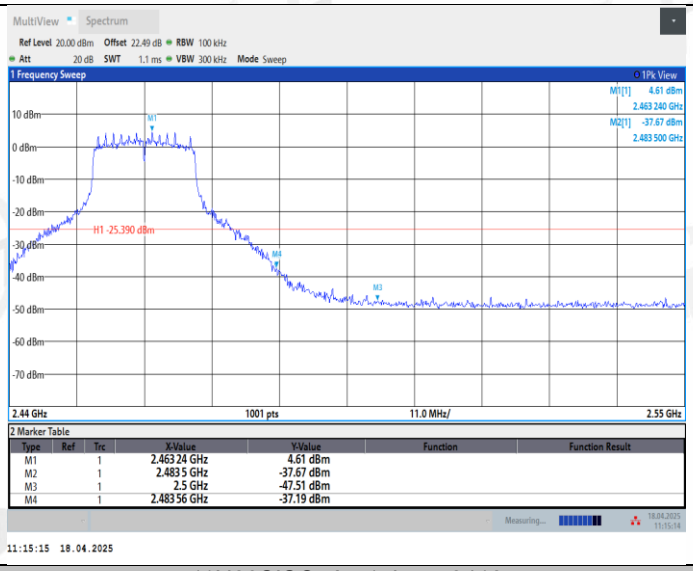
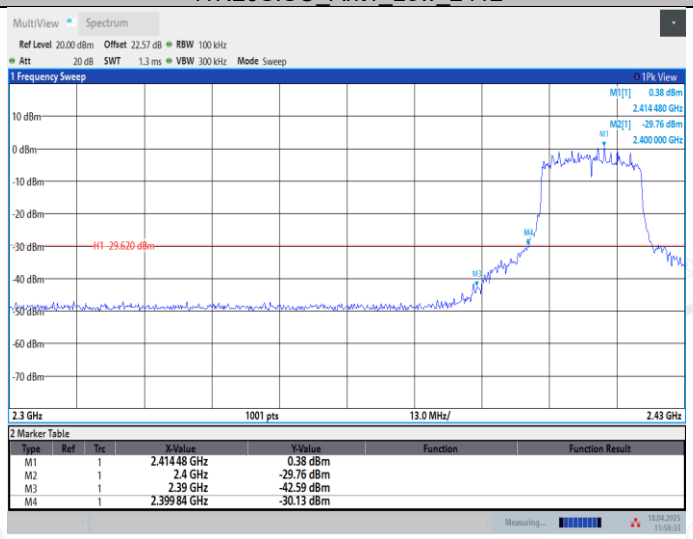

11B_Ant1_High_2462

11G_Ant1_Low_2412

11G_Ant1_High_2462



11N20SISO_Ant1_Low_2412



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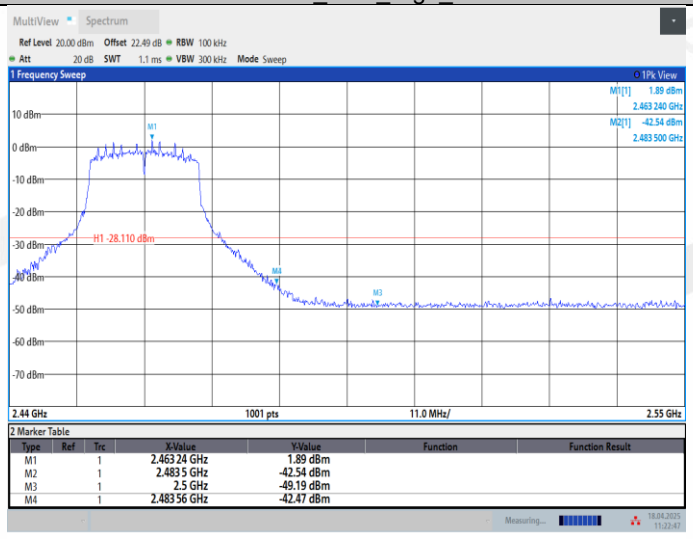
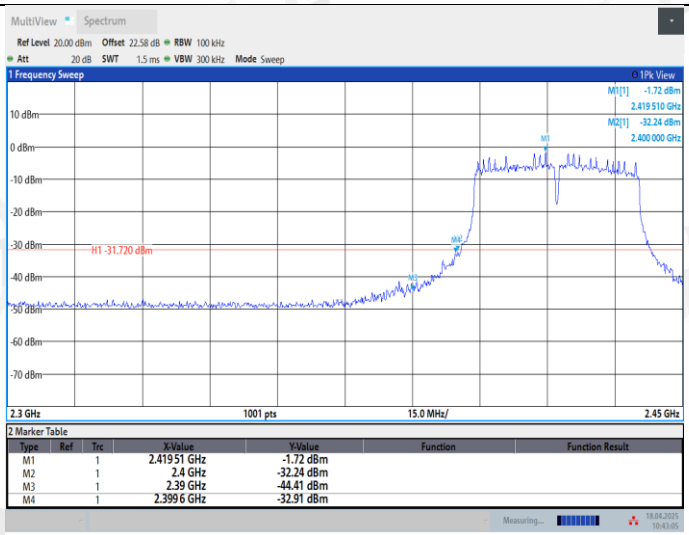


11N40SISO_Ant1_Low_2422



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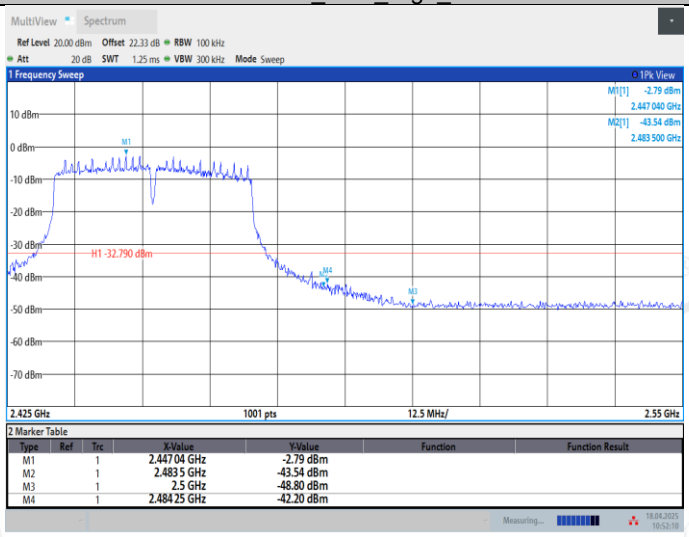

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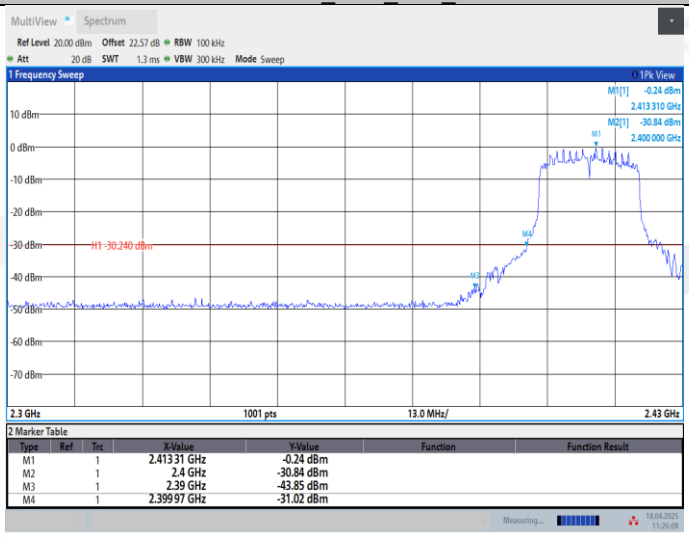

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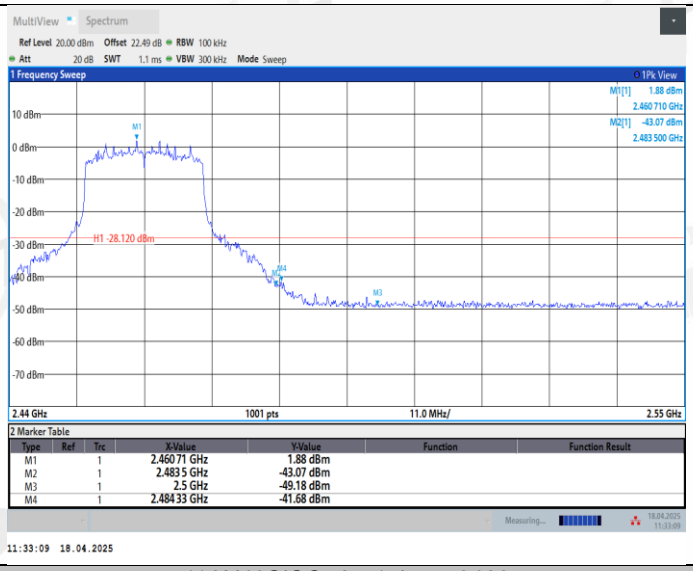
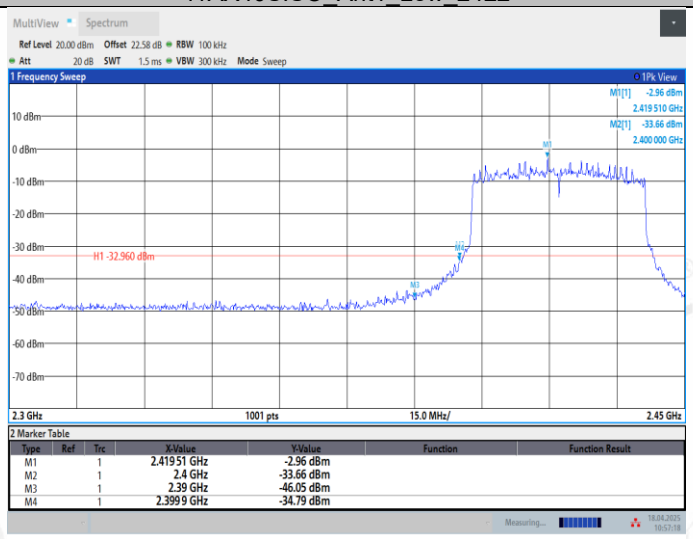
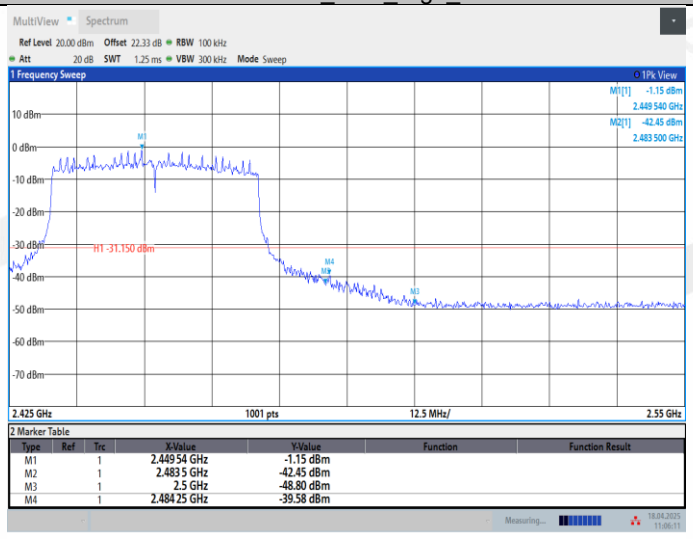


11AX40SISO_Ant1_Low_2422

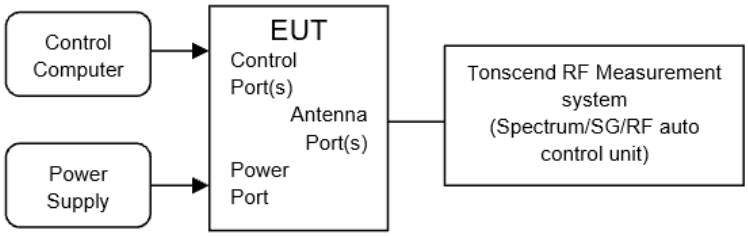


11AX40SISO_Ant1_High_2452



9. RF Conducted Spurious Emissions

9.1. Block diagram of test setup



9.2. Limits

In any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

9.3. Test procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.
(2) Establish a reference level by using the following procedure:

Center frequency	Test frequency
RBW:	100 kHz
VBW:	300 kHz
Span	Wide enough to capture the peak level of the in-band emission
Detector Mode:	Peak
Sweep time:	auto
Trace mode	Max hold

(3) Allow the trace to stabilize, use the peak marker function to determine the maximum peak power level to establish the reference level.
(4) Set the spectrum analyzer as follows:

RBW:	100 kHz
VBW:	300 kHz
Span	Encompass frequency range to be measured
Number of measurement points	≥Span/RBW
Detector Mode:	Peak
Sweep time:	auto
Trace mode	Max hold

(5) Allow the trace to stabilize, use the peak marker function to determine the maximum amplitude of all unwanted emissions outside of the authorized frequency band

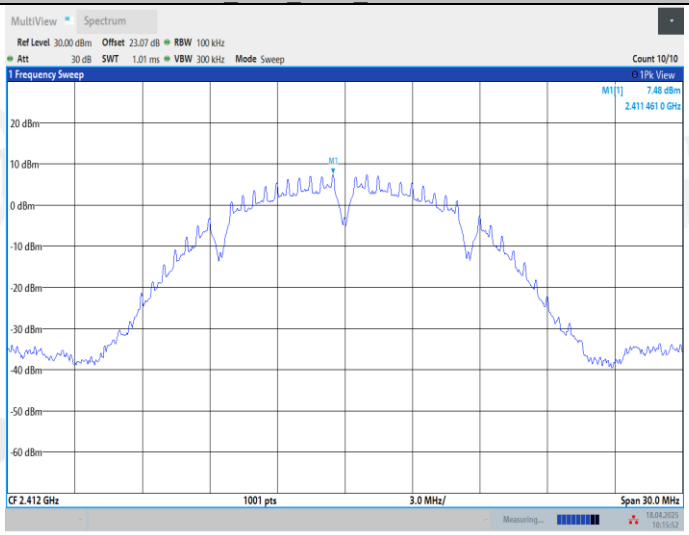
9.4. Test result

Test Engineer:	Haofeng	Test Site:	RF Measurement System 4#
Ambient Condition:	23.9℃,43.1%RH	Test Date:	2025.04.18-2025.04.18
Test Power Supply:	AC 120V/60Hz	Sample Number:	S25030626-003

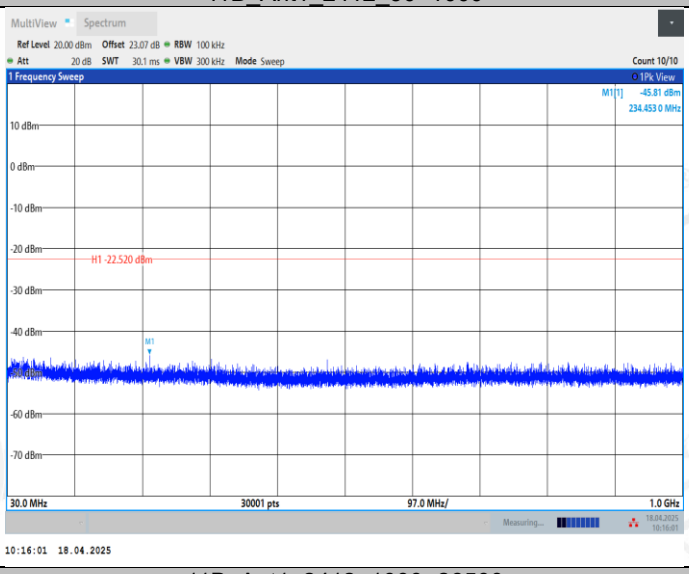
EUT Set Mode	CH or Frequency	Result(dBm)	EUT Set Mode	CH or Frequency	Result (dBm)
11b	CH1	Pass	11g	CH1	Pass
	CH11	Pass		CH11	Pass
11n HT 20	CH1	Pass	11n HT 40	CH3	Pass
	CH11	Pass		CH9	Pass
11ax HE 20	CH1	Pass	11ax HE 40	CH3	Pass
	CH11	Pass		CH9	Pass

9.5. Test graphs

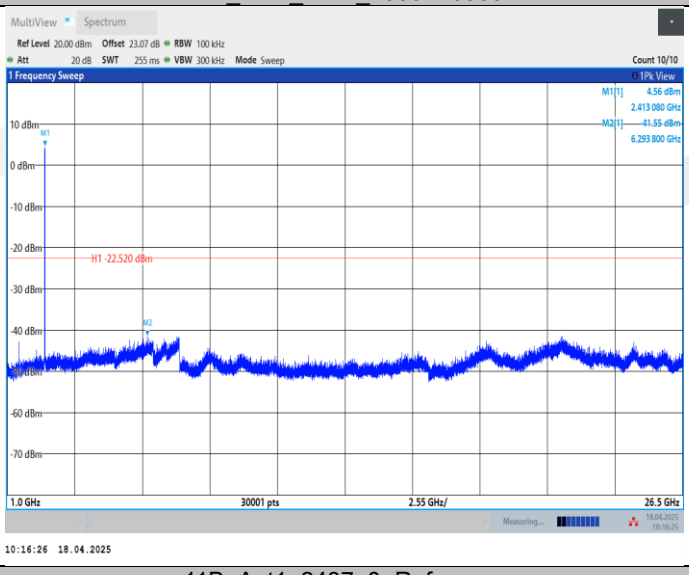
11B_Ant1_2412_0~Reference



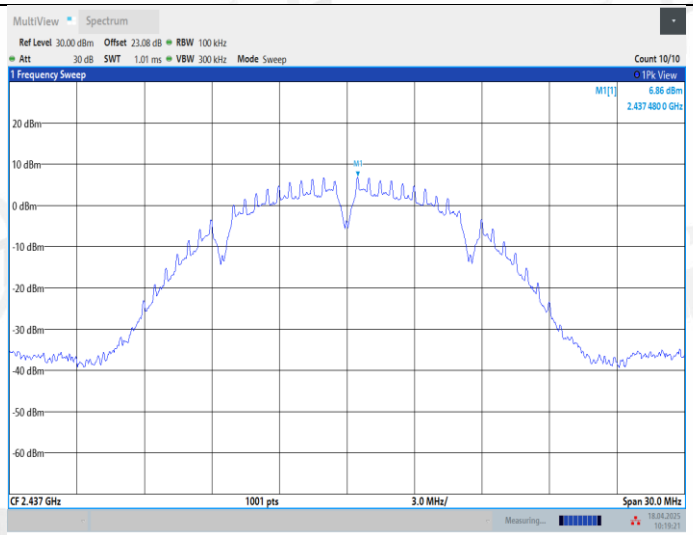
11B_Ant1_2412_30~1000



11B_Ant1_2412_1000~26500



11B_Ant1_2437_0~Reference



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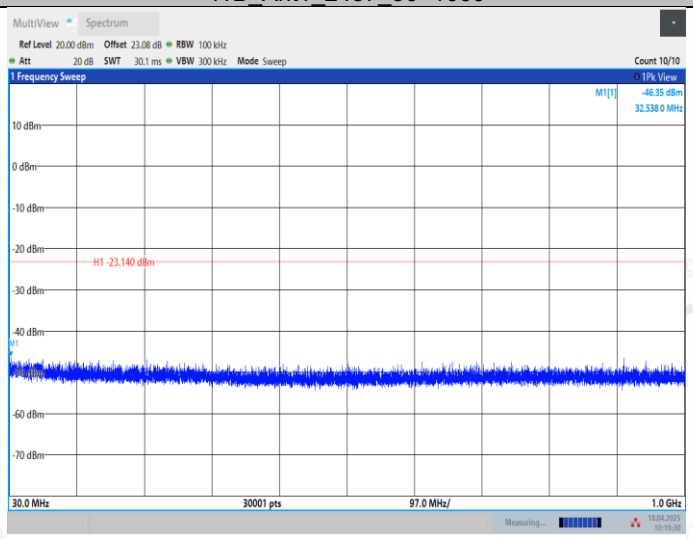
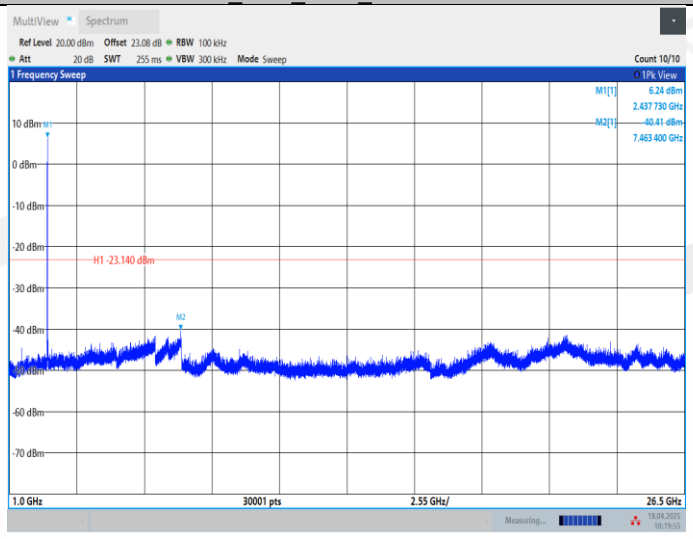


11B_Ant1_2437_1000~26500



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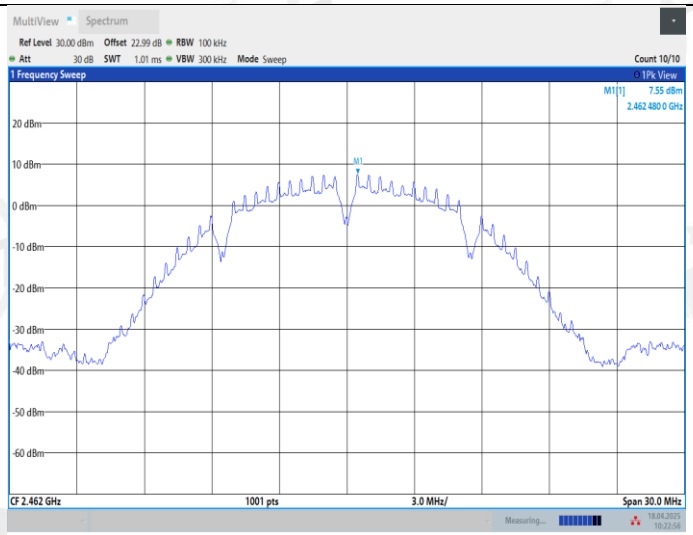
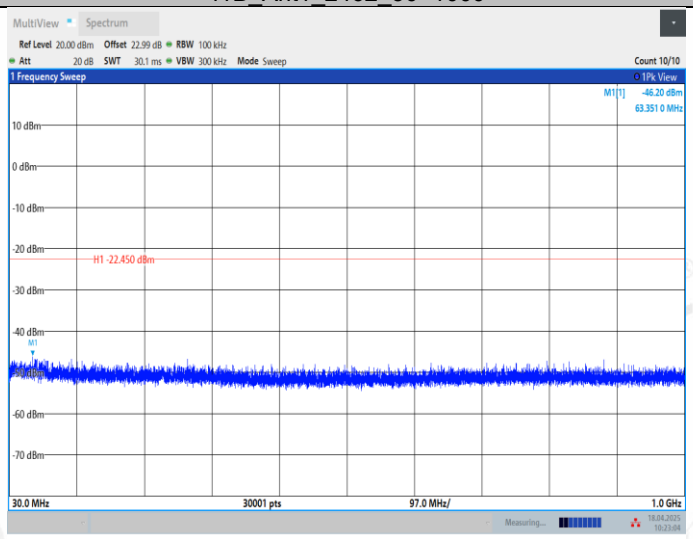
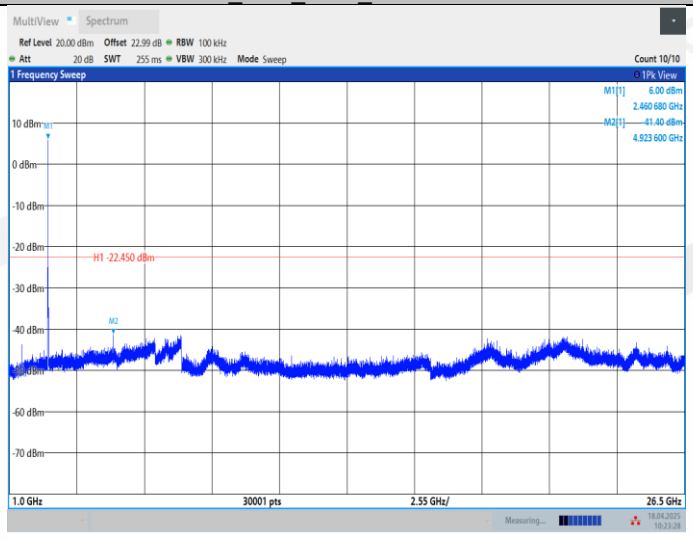


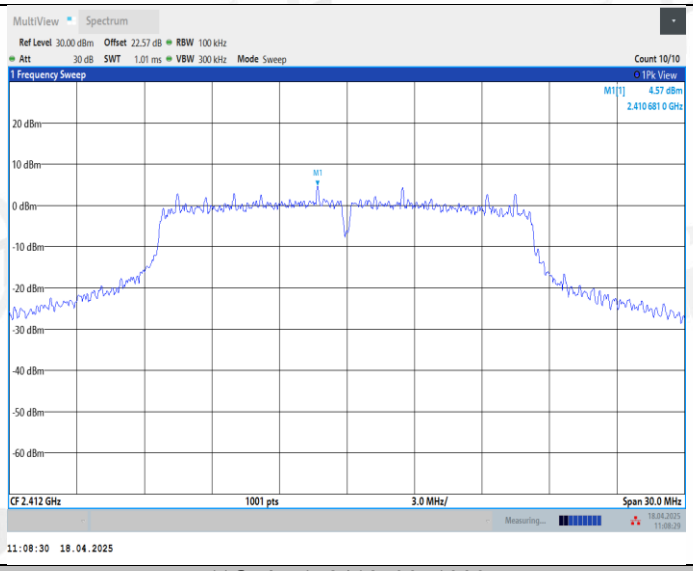
11B_Ant1_2462_30~1000



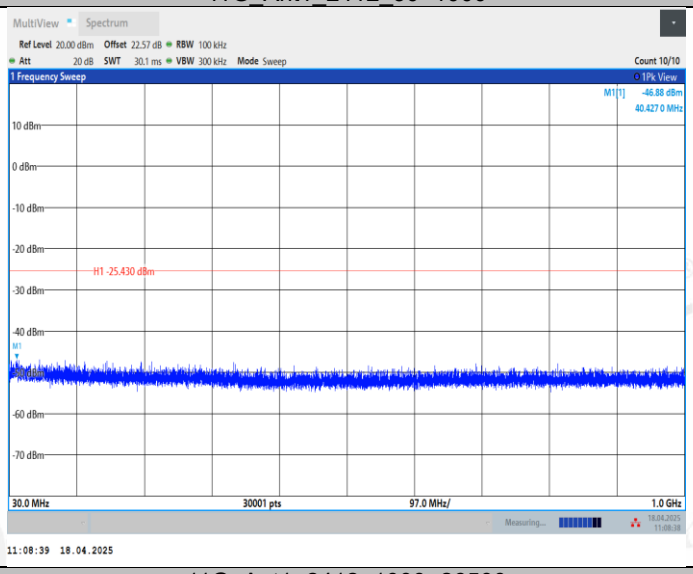
11B_Ant1_2462_1000~26500



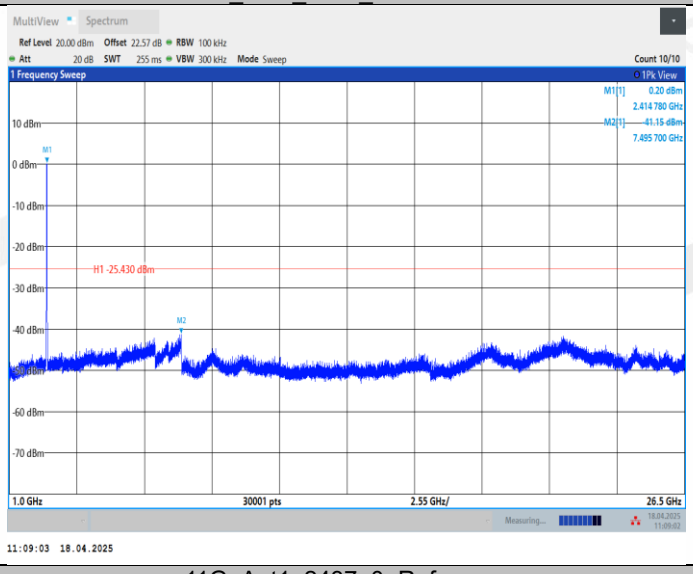
11G_Ant1_2412_0~Reference



11G_Ant1_2412_30~1000



11G_Ant1_2412_1000~26500



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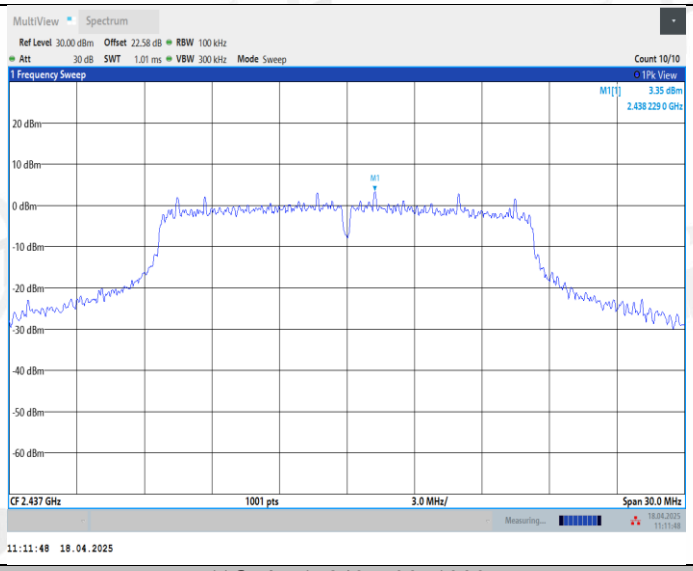

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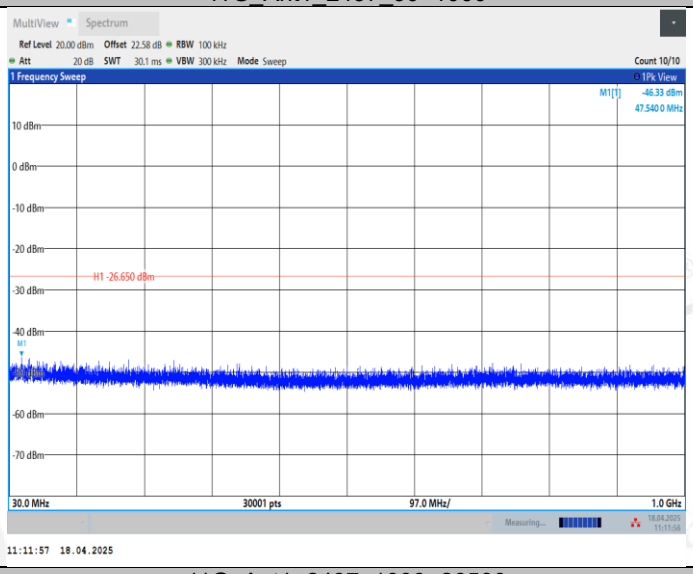

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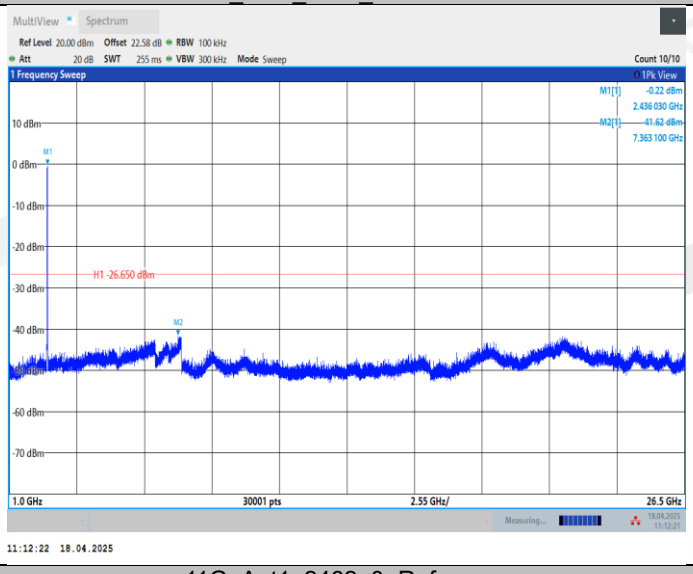

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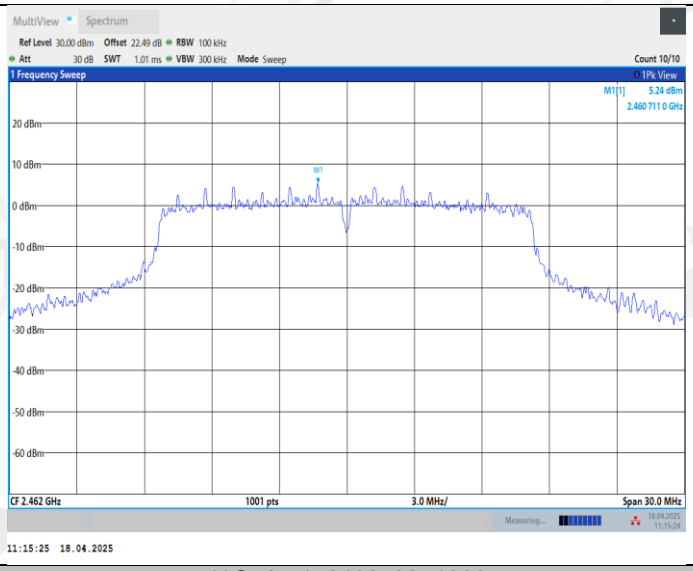

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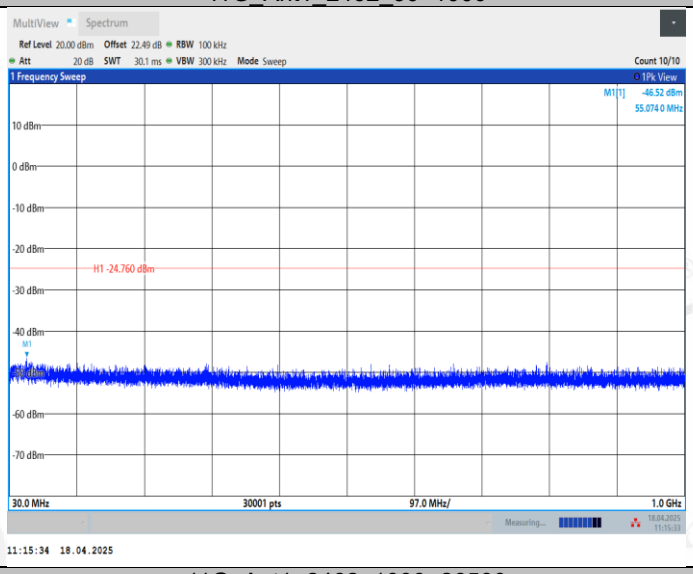

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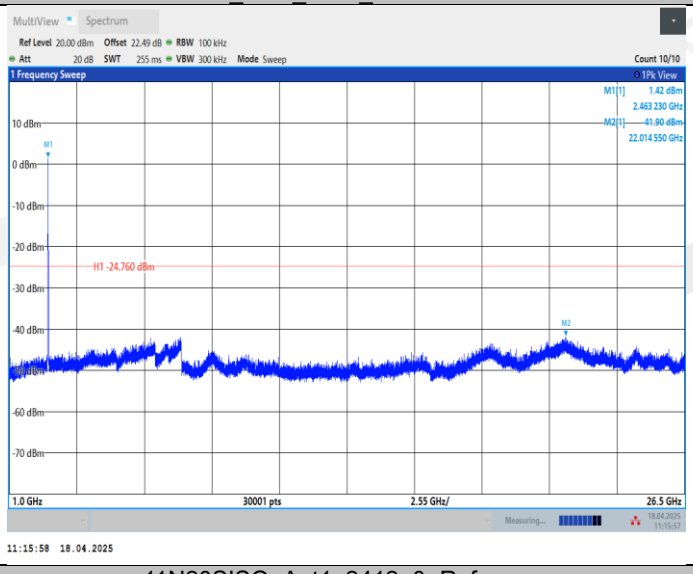
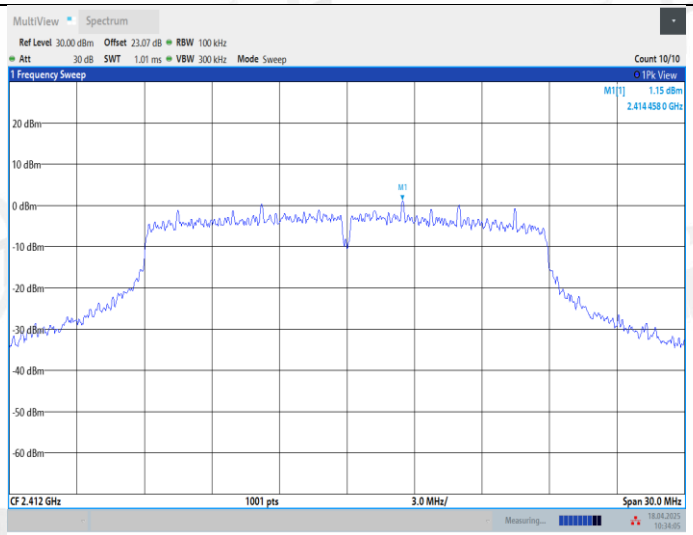


11N20SISO_Ant1_2412_0~Reference



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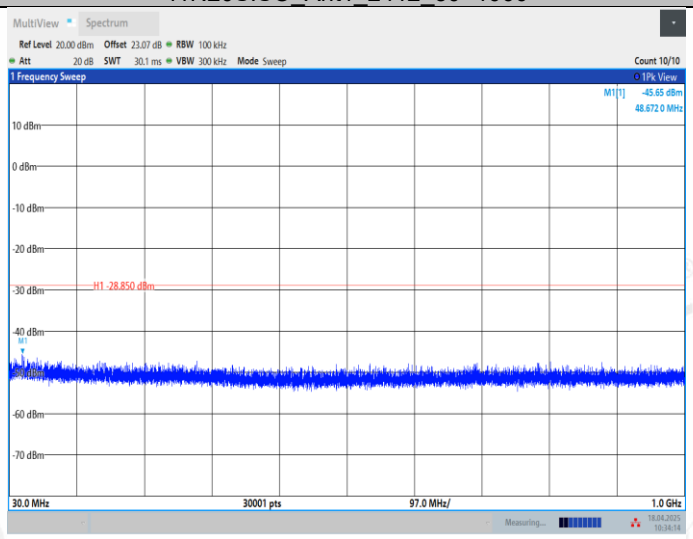

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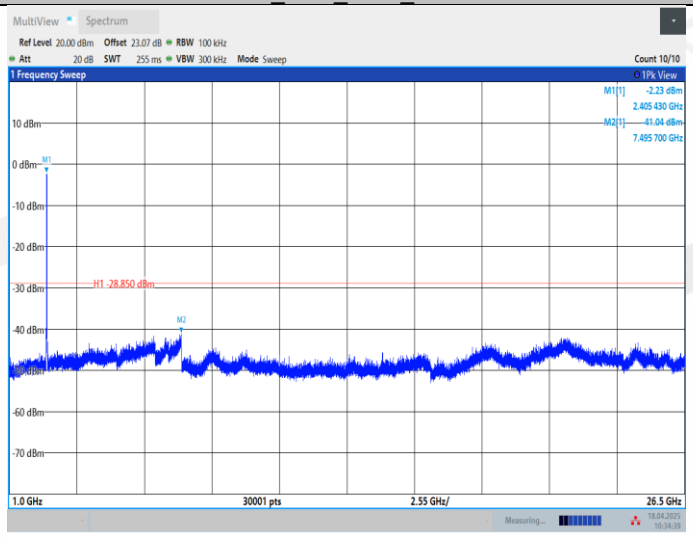

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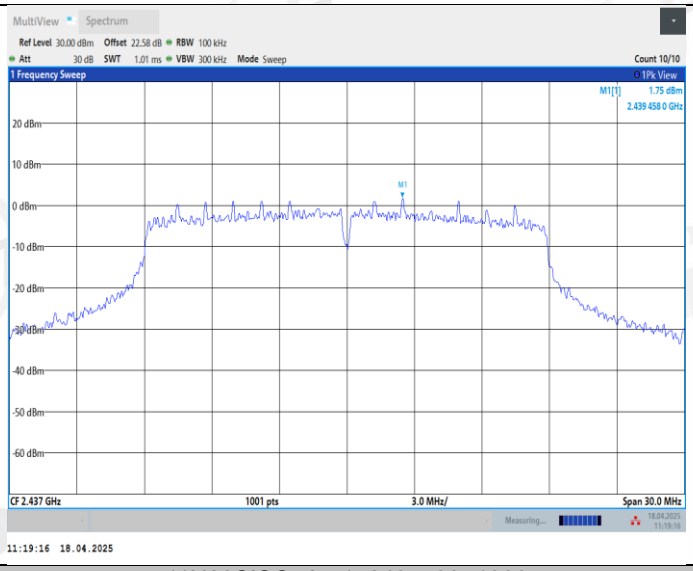

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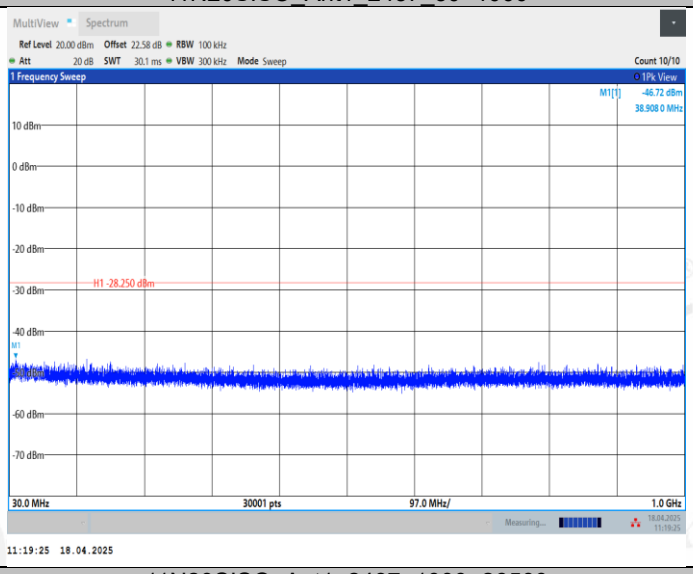

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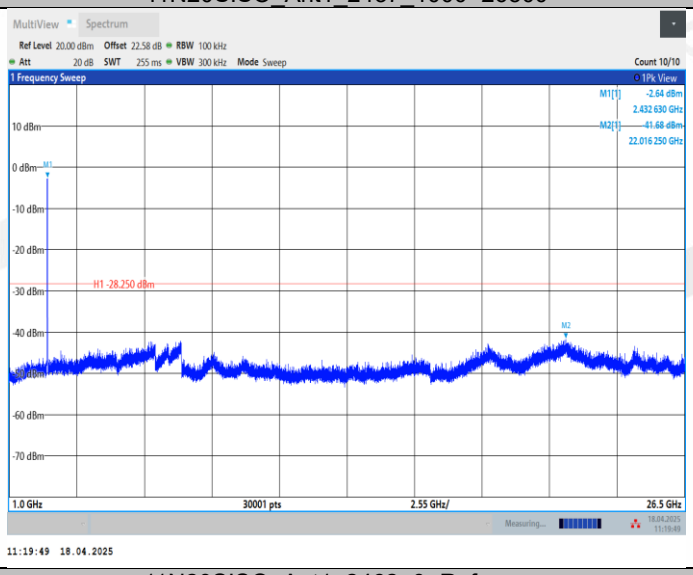

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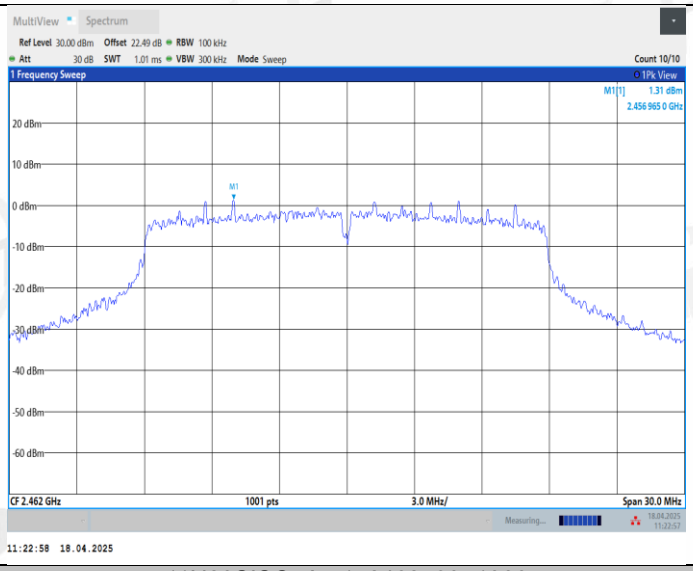

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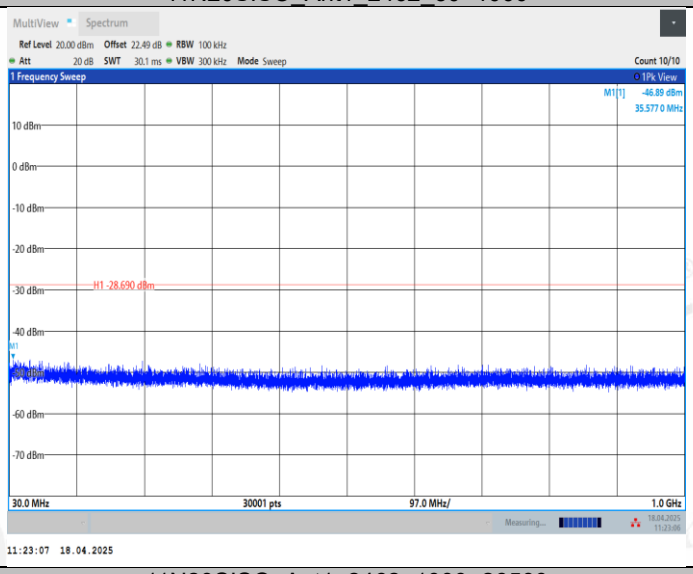

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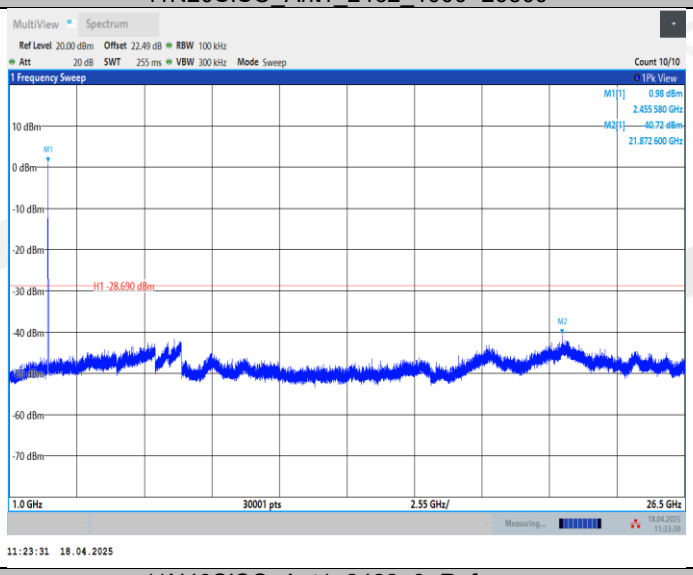

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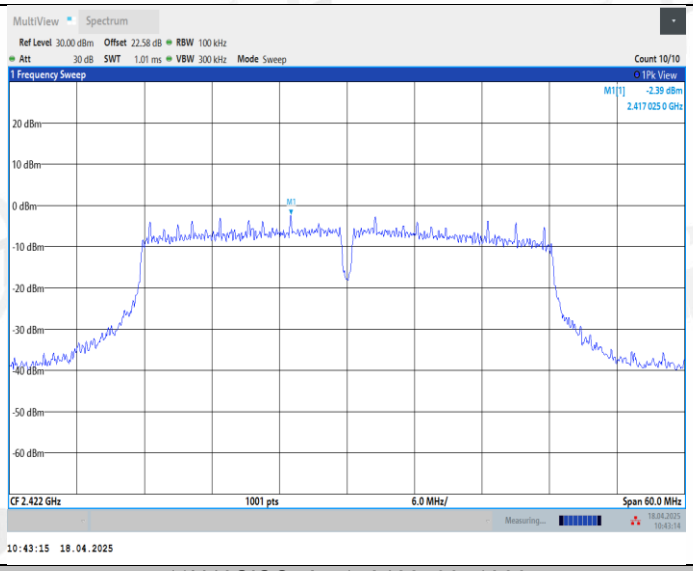

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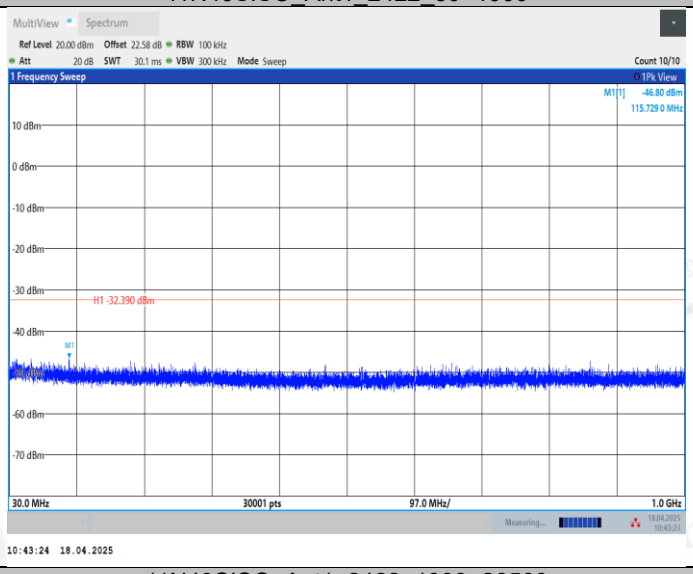

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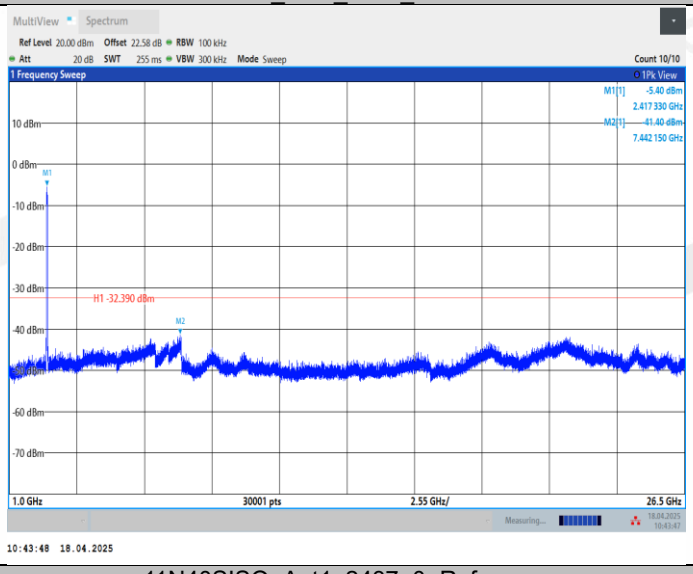

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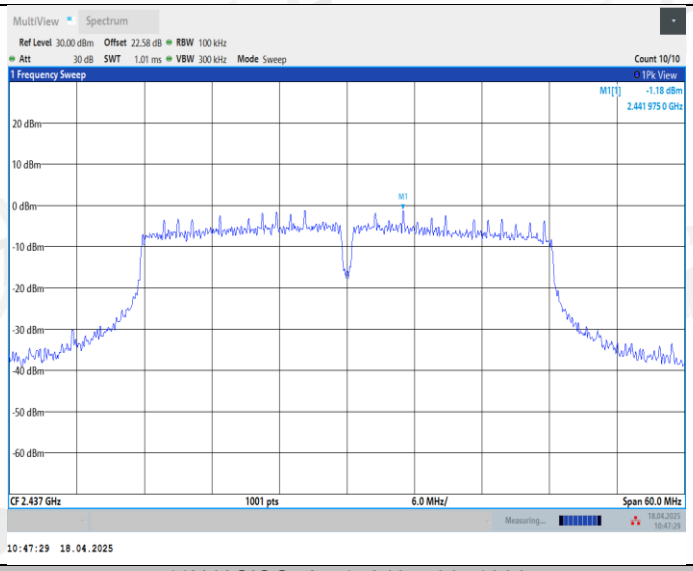

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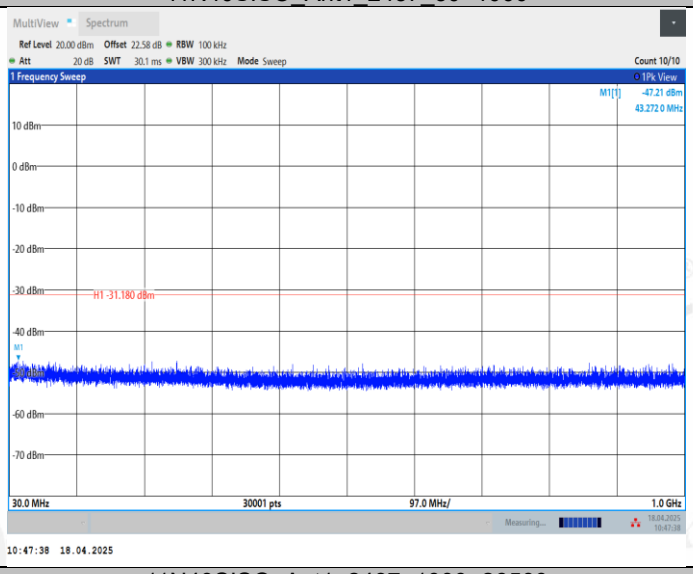

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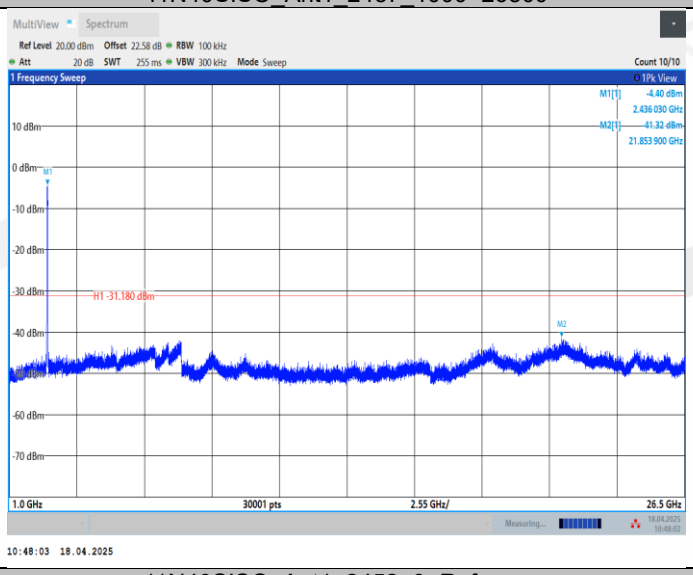

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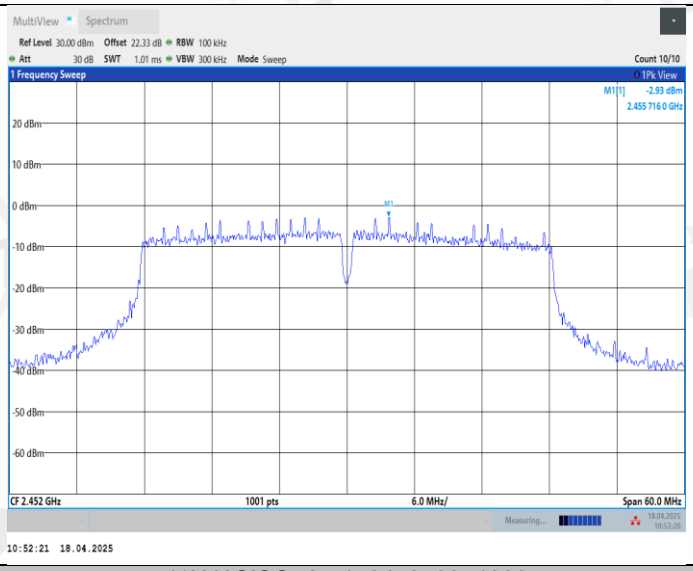

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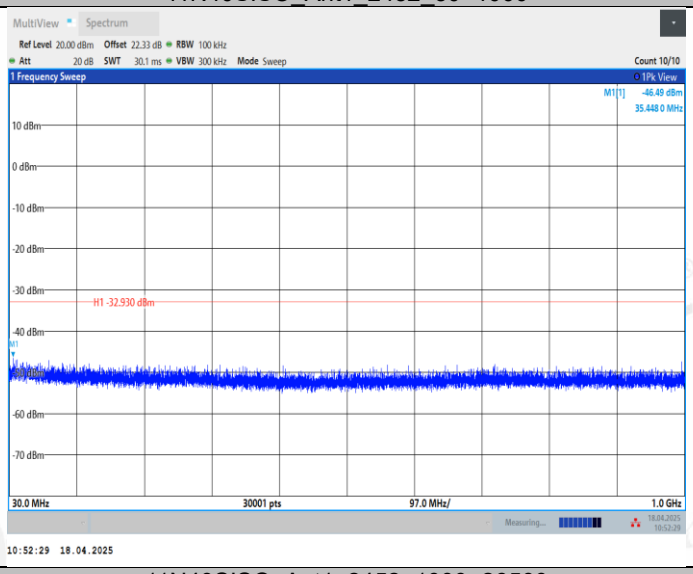

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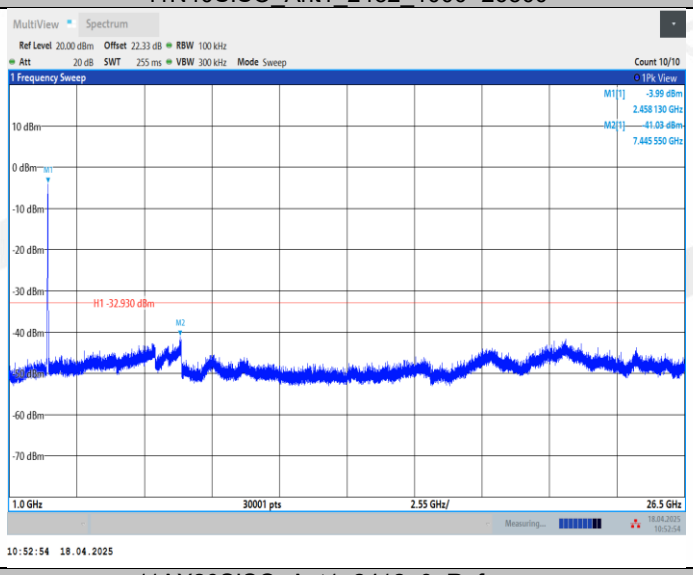

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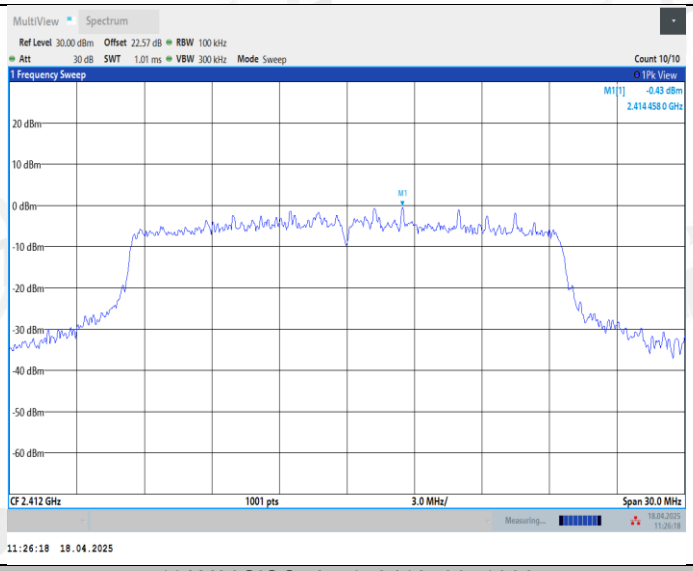

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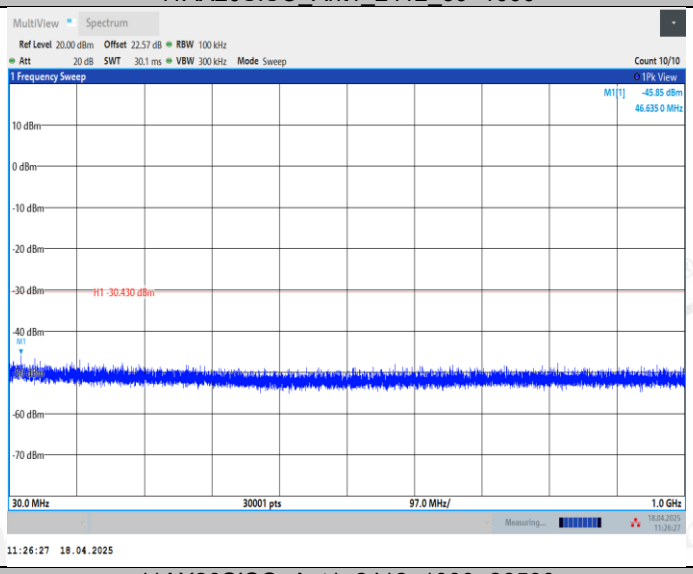

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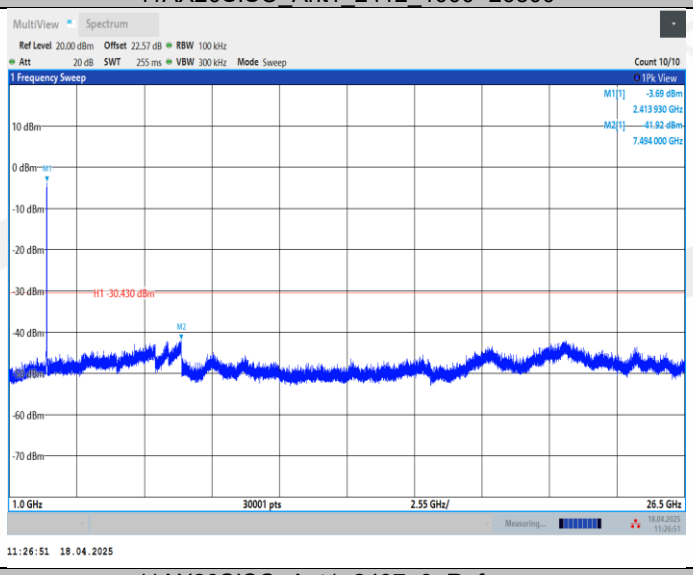

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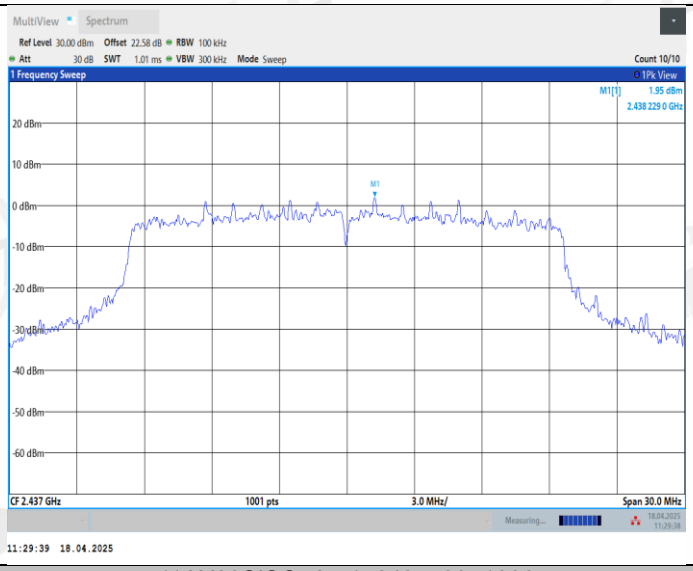

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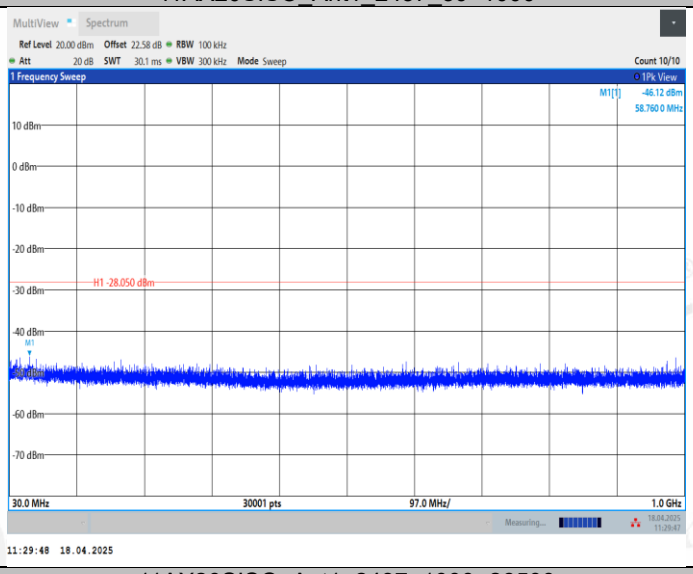

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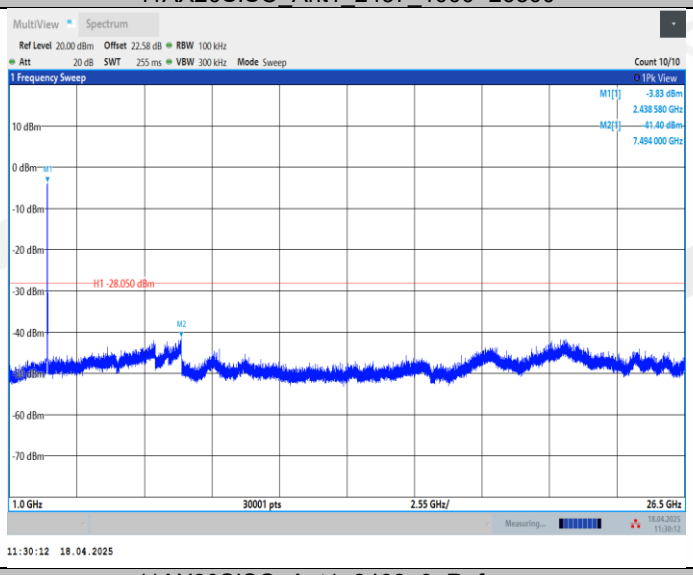

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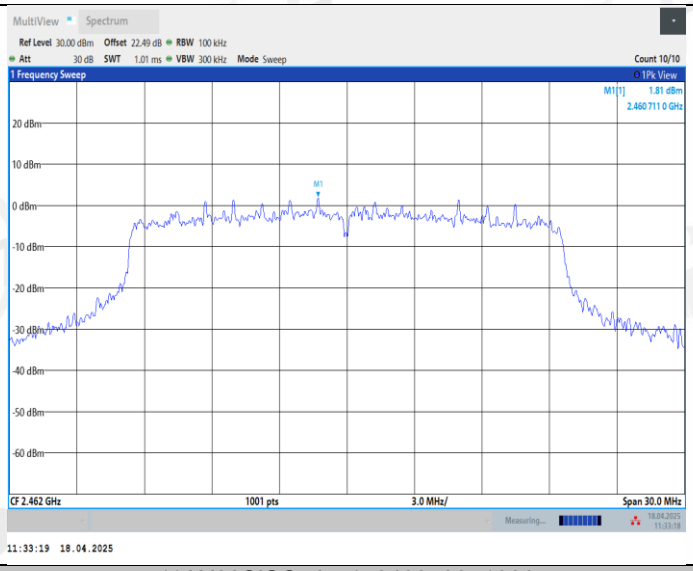

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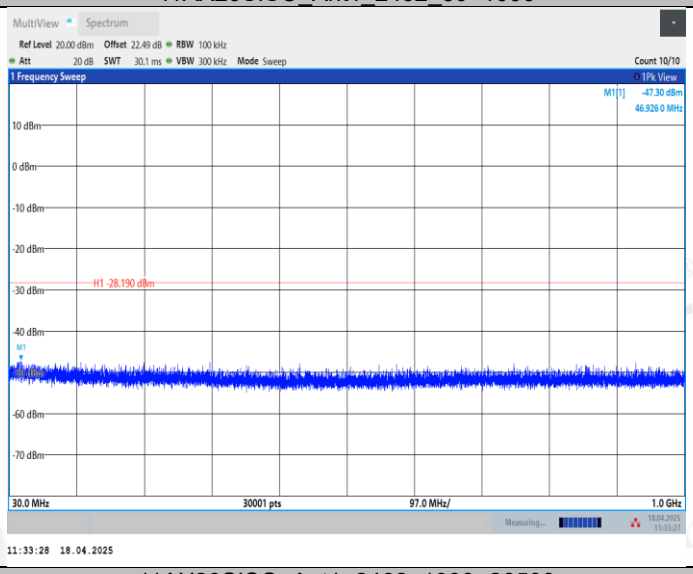

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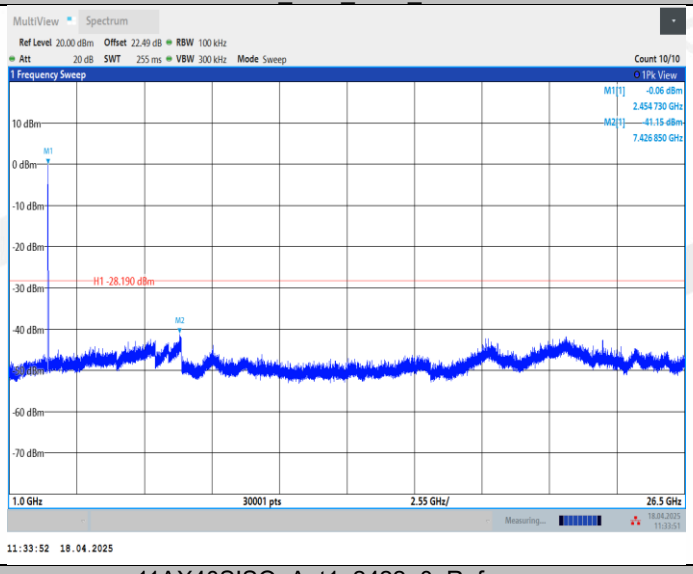

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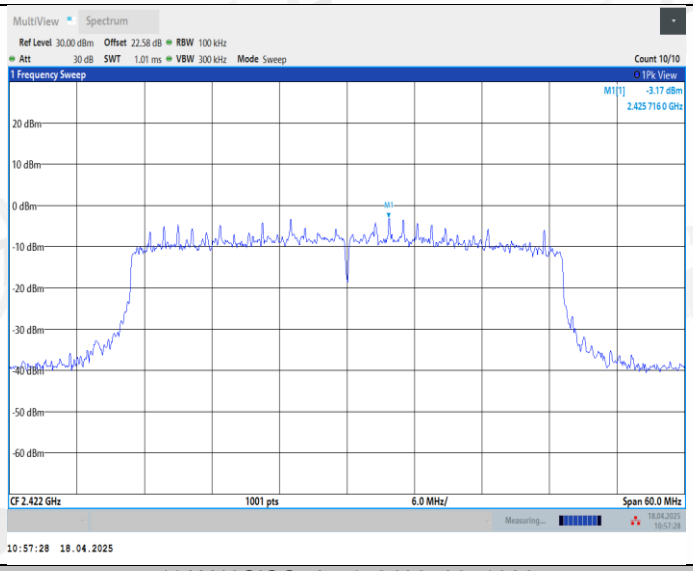

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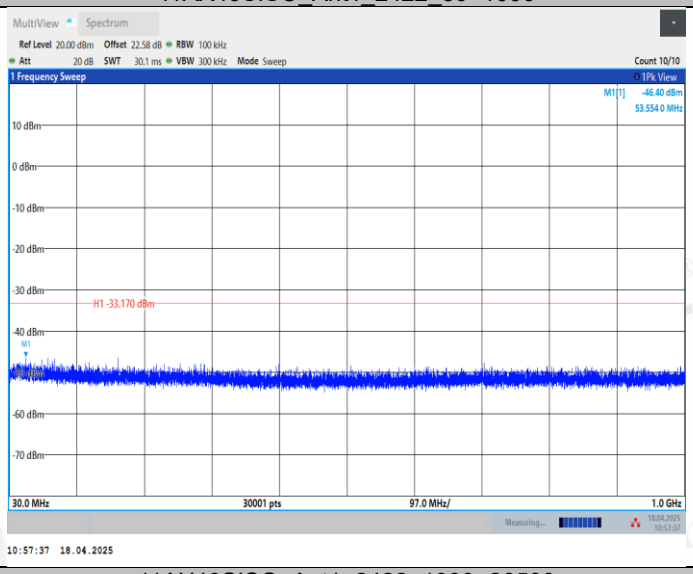

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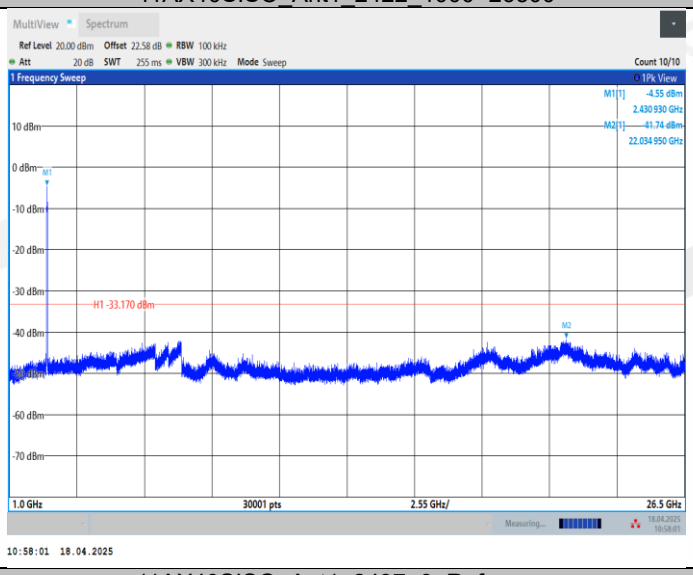

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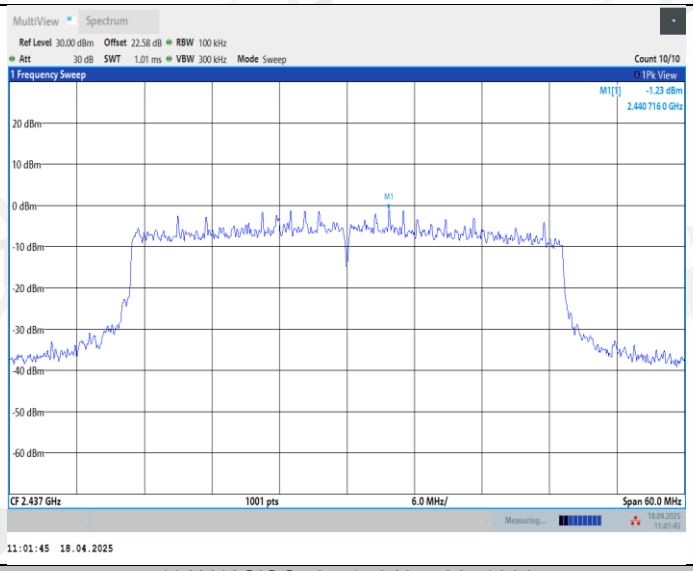

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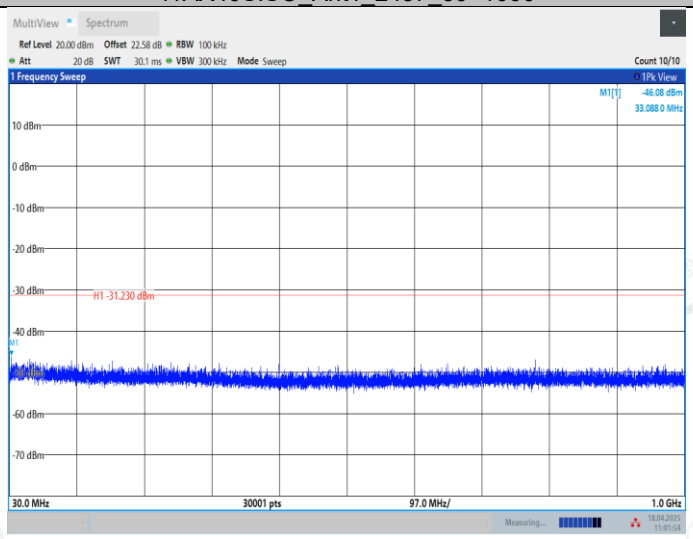

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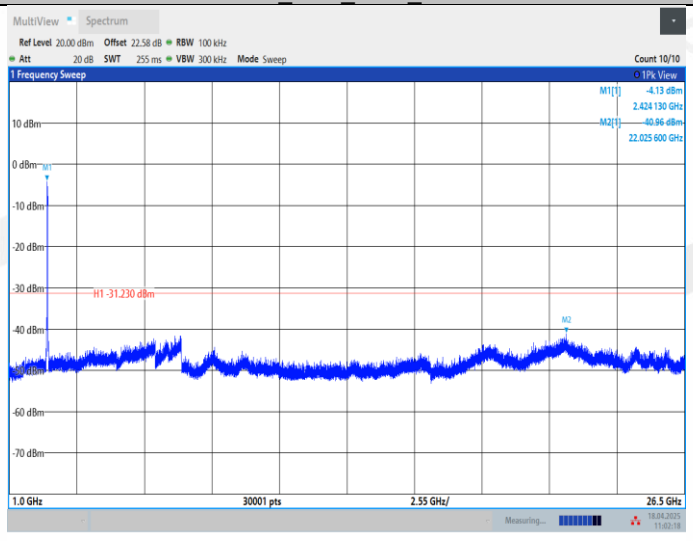

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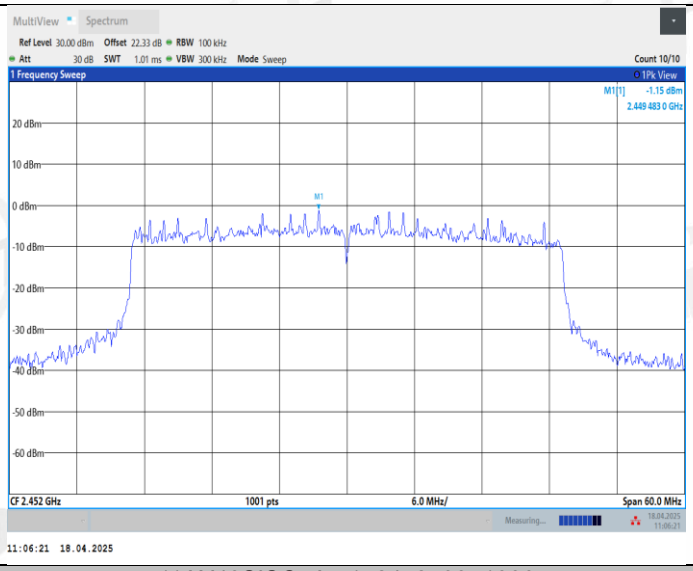

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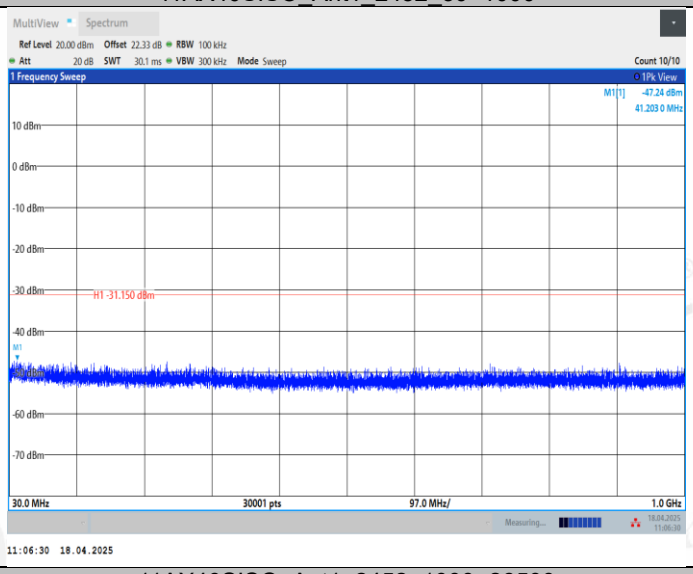

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