

RF Test Data for 2.4G Wi-Fi (Conducted Measurements)

General Description of EUT	
Product Name:	MDVR
Test Model:	ES-M525
Sample ID:	20210916-12-2#
Environmental Conditions	
Temperature:	23.8℃
Relative Humidity:	48%
Test Voltage:	DC 12V
Test Engineer:	Huang jian ping
Note: For a more detailed features description, please refer to the report TB-FCC185479	

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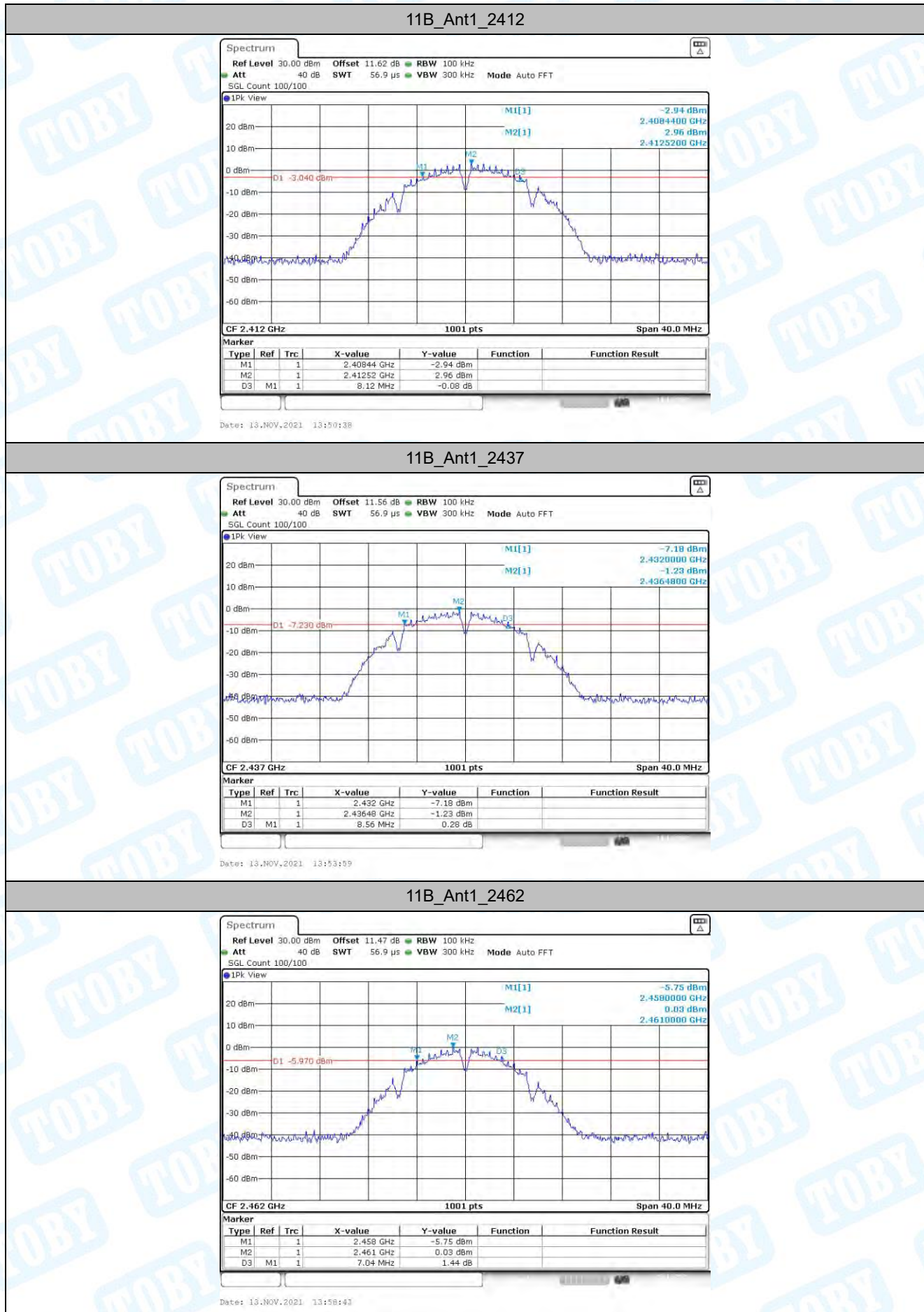
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1. DTS Bandwidth

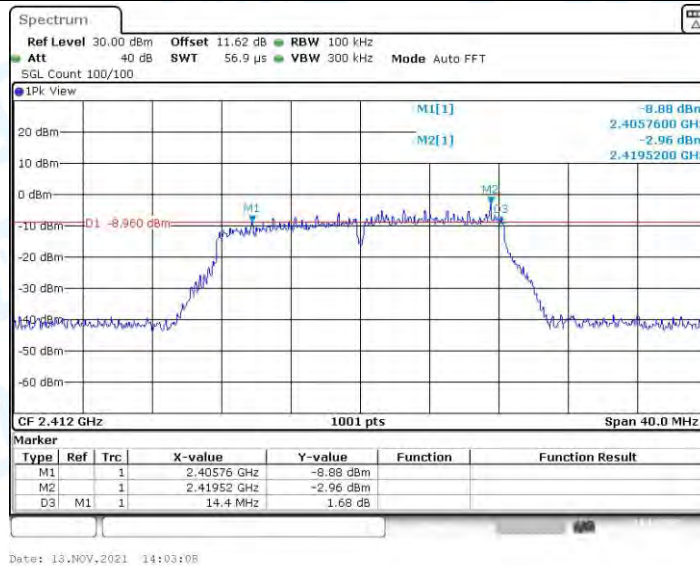
1.1. Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.12	2408.44	2416.56	0.5	PASS
		2437	8.56	2432.00	2440.56	0.5	PASS
		2462	7.04	2458.00	2465.04	0.5	PASS
11G	Ant1	2412	14.40	2405.76	2420.16	0.5	PASS
		2437	13.32	2428.72	2442.04	0.5	PASS
		2462	11.32	2455.72	2467.04	0.5	PASS
11N20SISO	Ant1	2412	15.12	2405.68	2420.80	0.5	PASS
		2437	16.48	2428.08	2444.56	0.5	PASS
		2462	12.52	2454.48	2467.00	0.5	PASS
11N40SISO	Ant1	2422	15.60	2413.28	2428.88	0.5	PASS
		2437	35.04	2419.48	2454.52	0.5	PASS
		2452	20.08	2446.96	2467.04	0.5	PASS

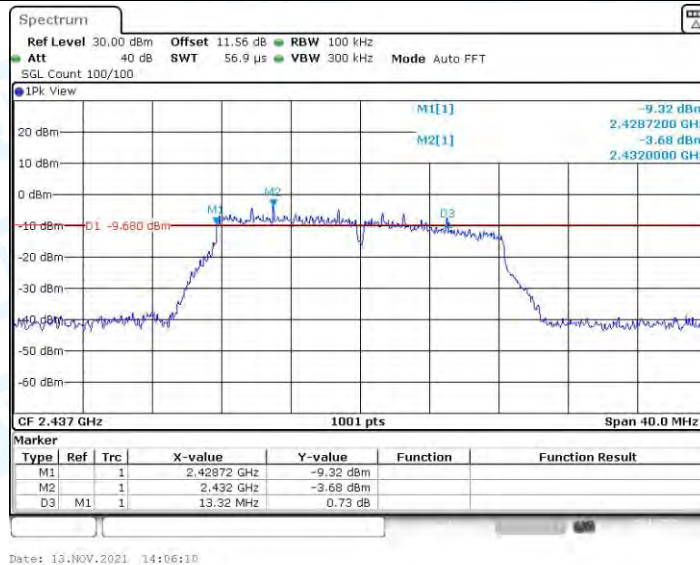
1.2. Test Graphs



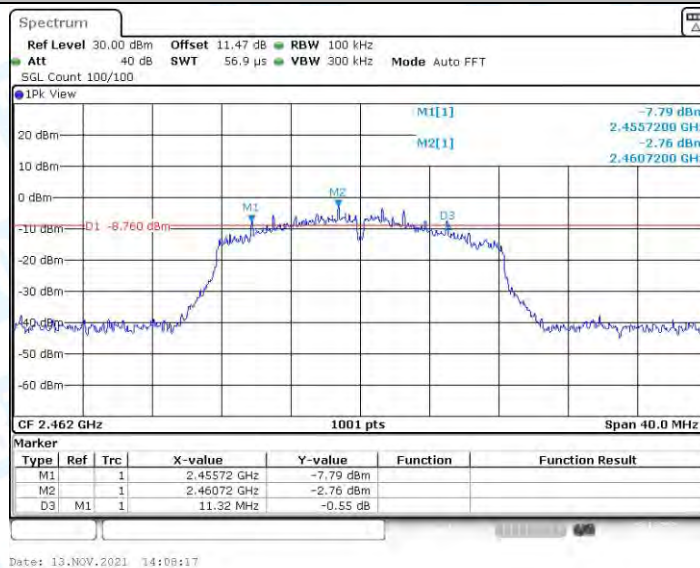
11G_Ant1_2412



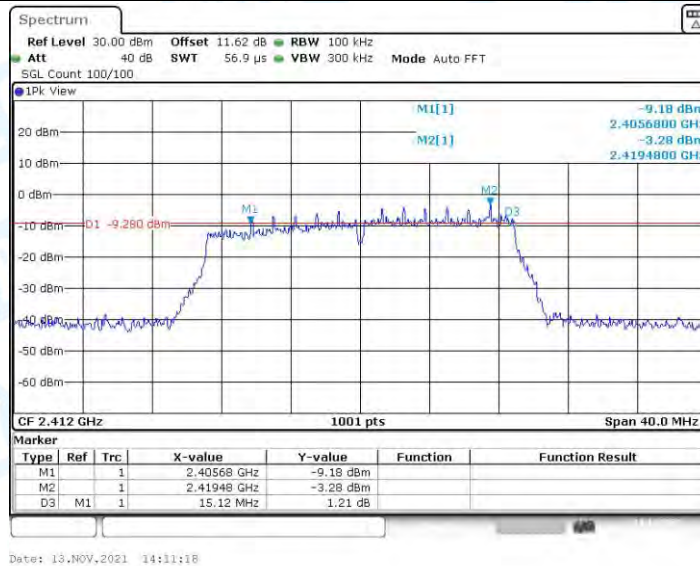
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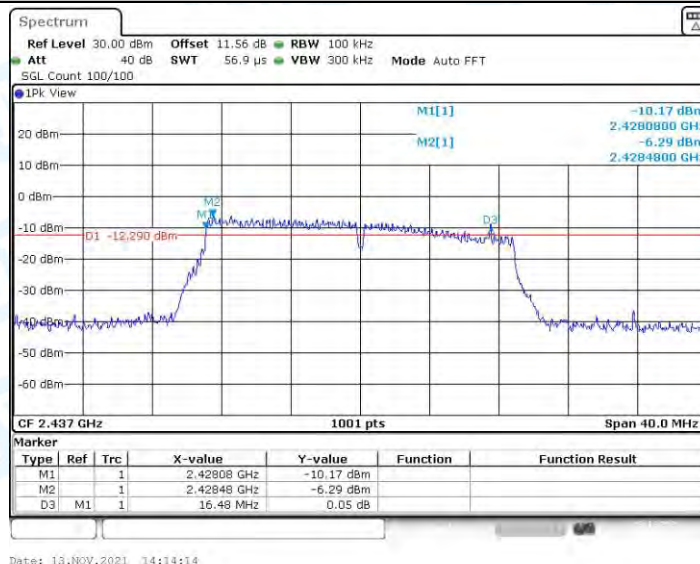
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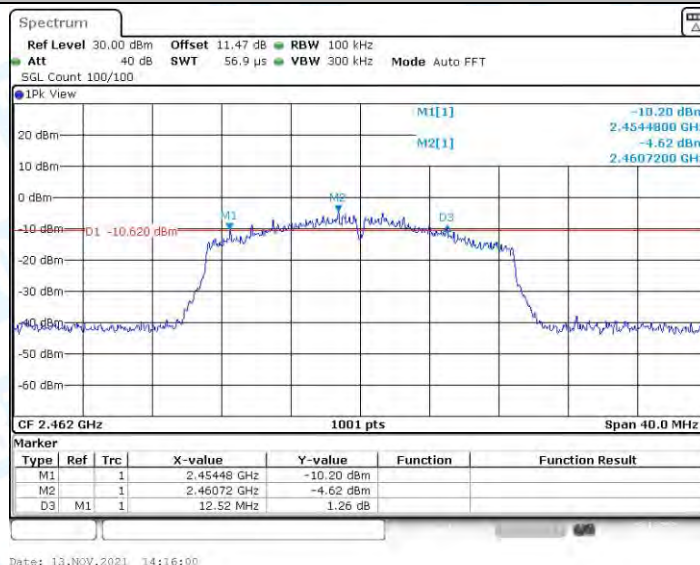
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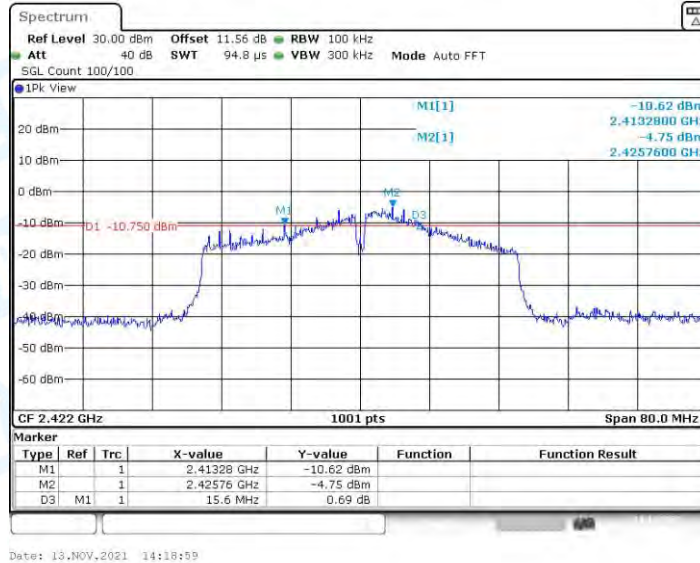
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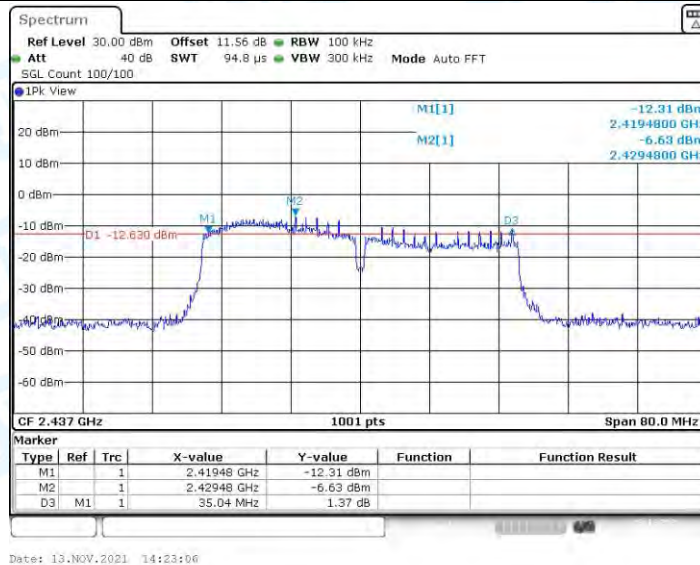
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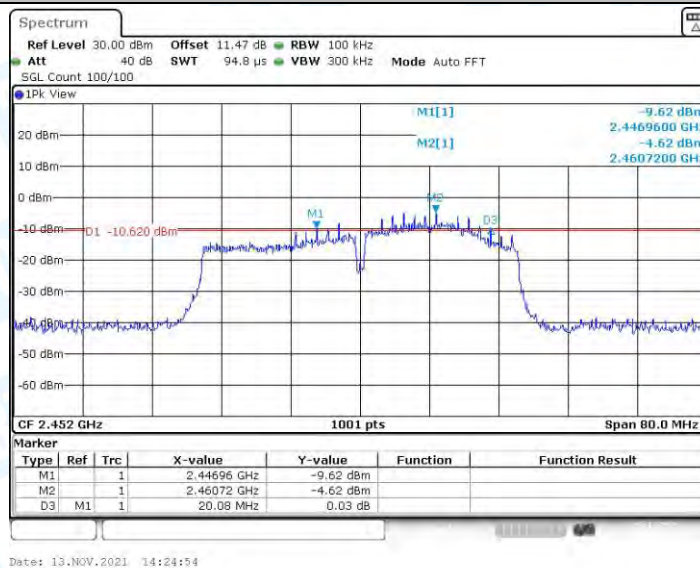
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11N40SISO_Ant1_2437



11N40SISO_Ant1_2452

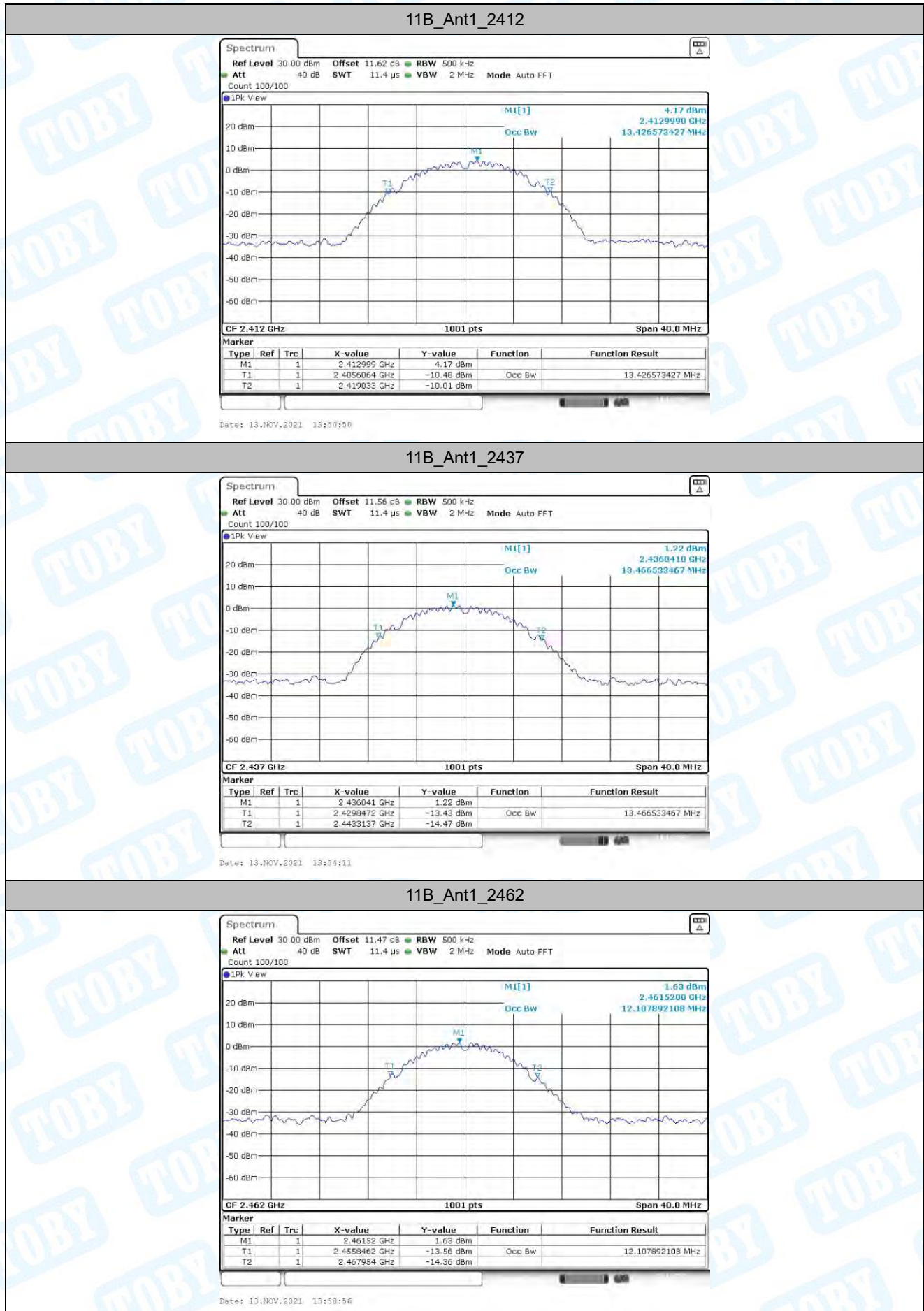


2. Occupied Channel Bandwidth

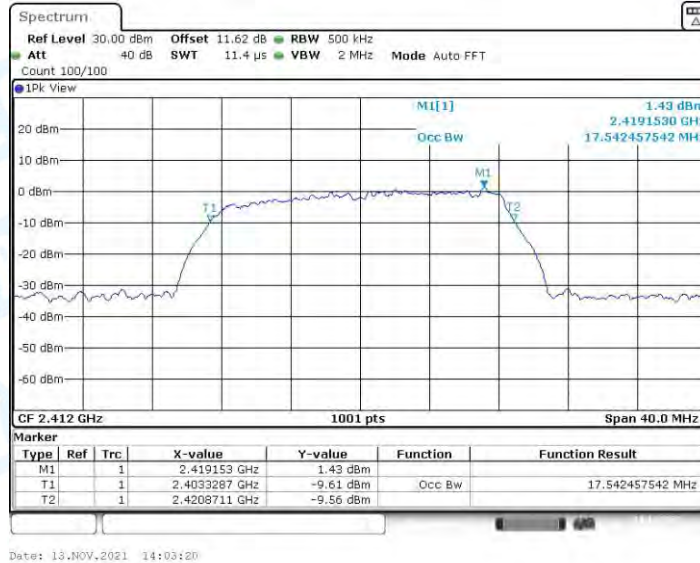
2.1. Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	13.427	2405.606	2419.033	---	PASS
		2437	13.467	2429.847	2443.314	---	PASS
		2462	12.108	2455.846	2467.954	---	PASS
11G	Ant1	2412	17.542	2403.329	2420.871	---	PASS
		2437	17.463	2427.809	2445.272	---	PASS
		2462	16.424	2453.808	2470.232	---	PASS
11N20SISO	Ant1	2412	18.262	2403.129	2421.391	---	PASS
		2437	18.062	2427.689	2445.751	---	PASS
		2462	17.343	2453.249	2470.591	---	PASS
11N40SISO	Ant1	2422	35.005	2404.258	2439.263	---	PASS
		2437	36.523	2418.538	2455.062	---	PASS
		2452	36.124	2433.698	2469.822	---	PASS

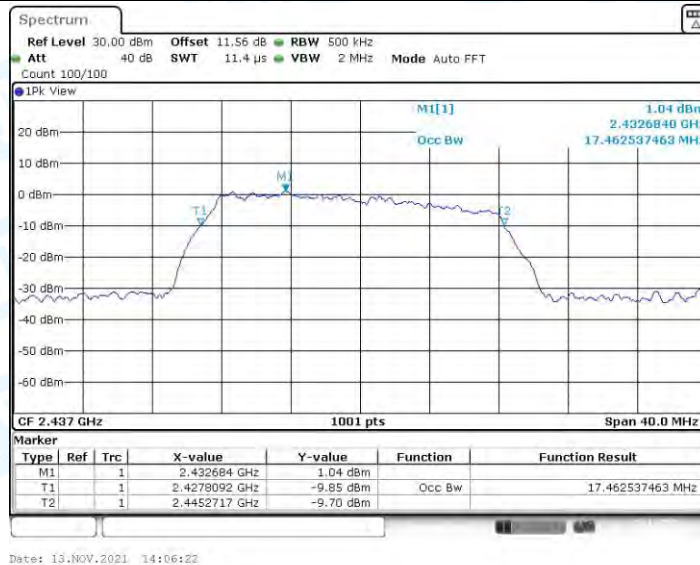
2.2. Test Graphs



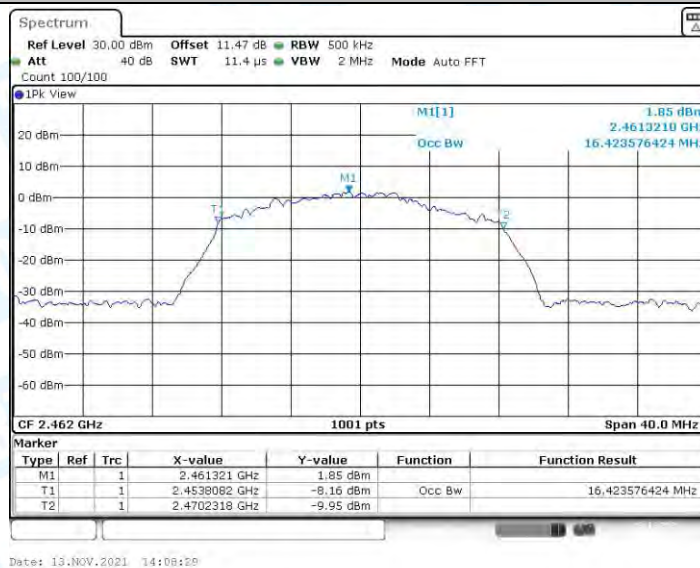
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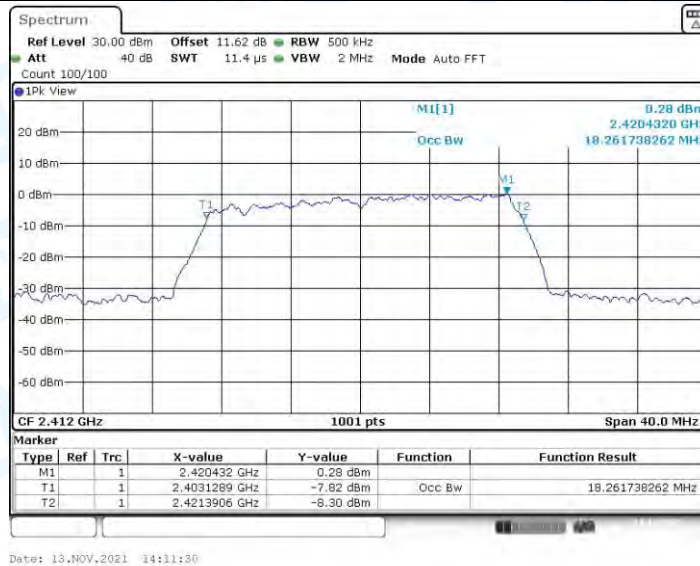
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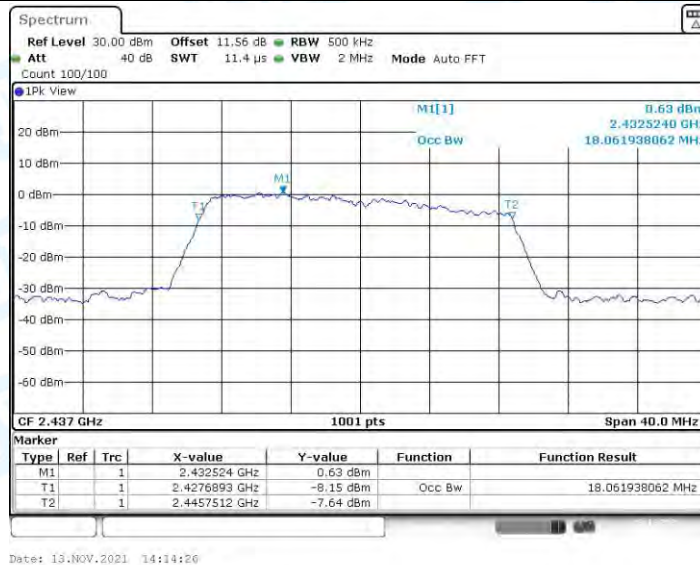
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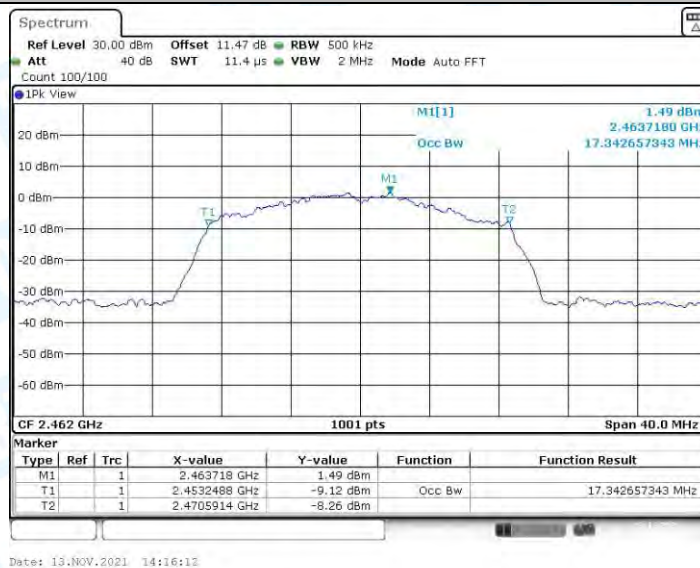
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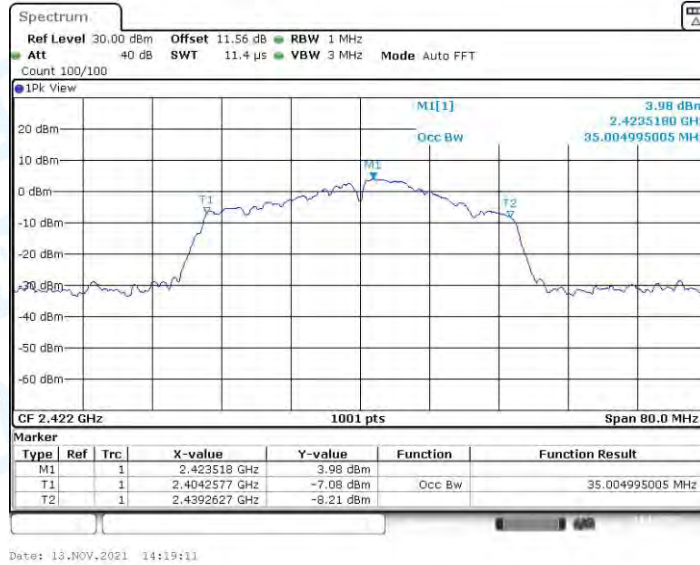
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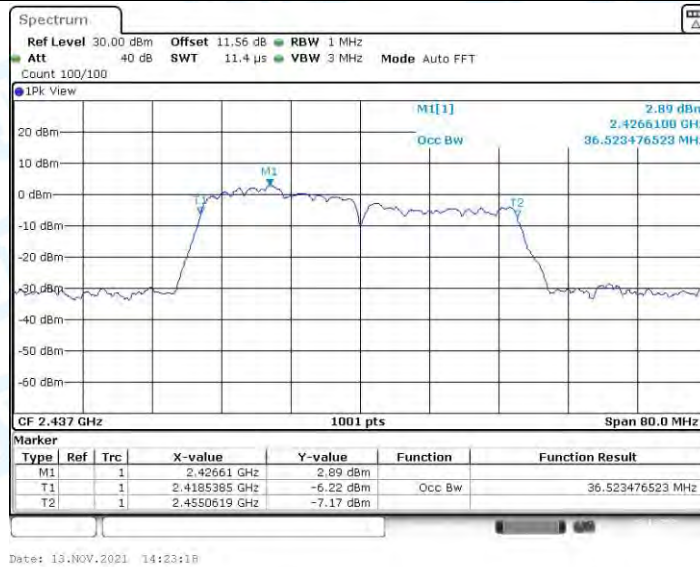
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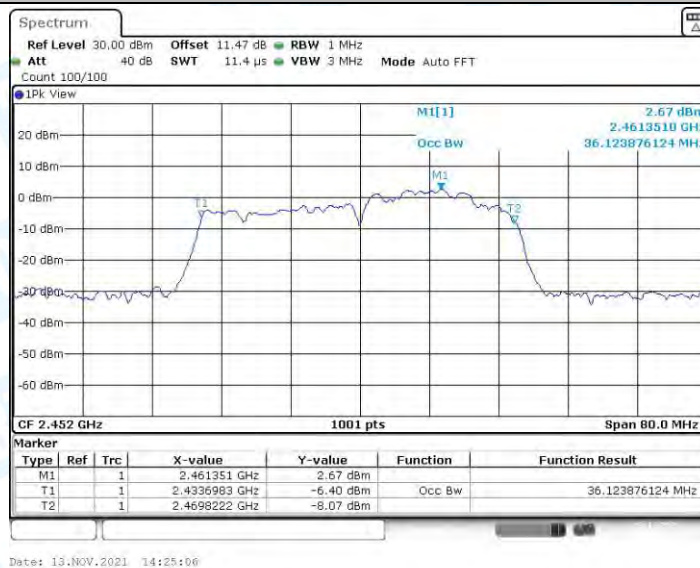
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



3. Maximum conducted output power

3.1. Test Result

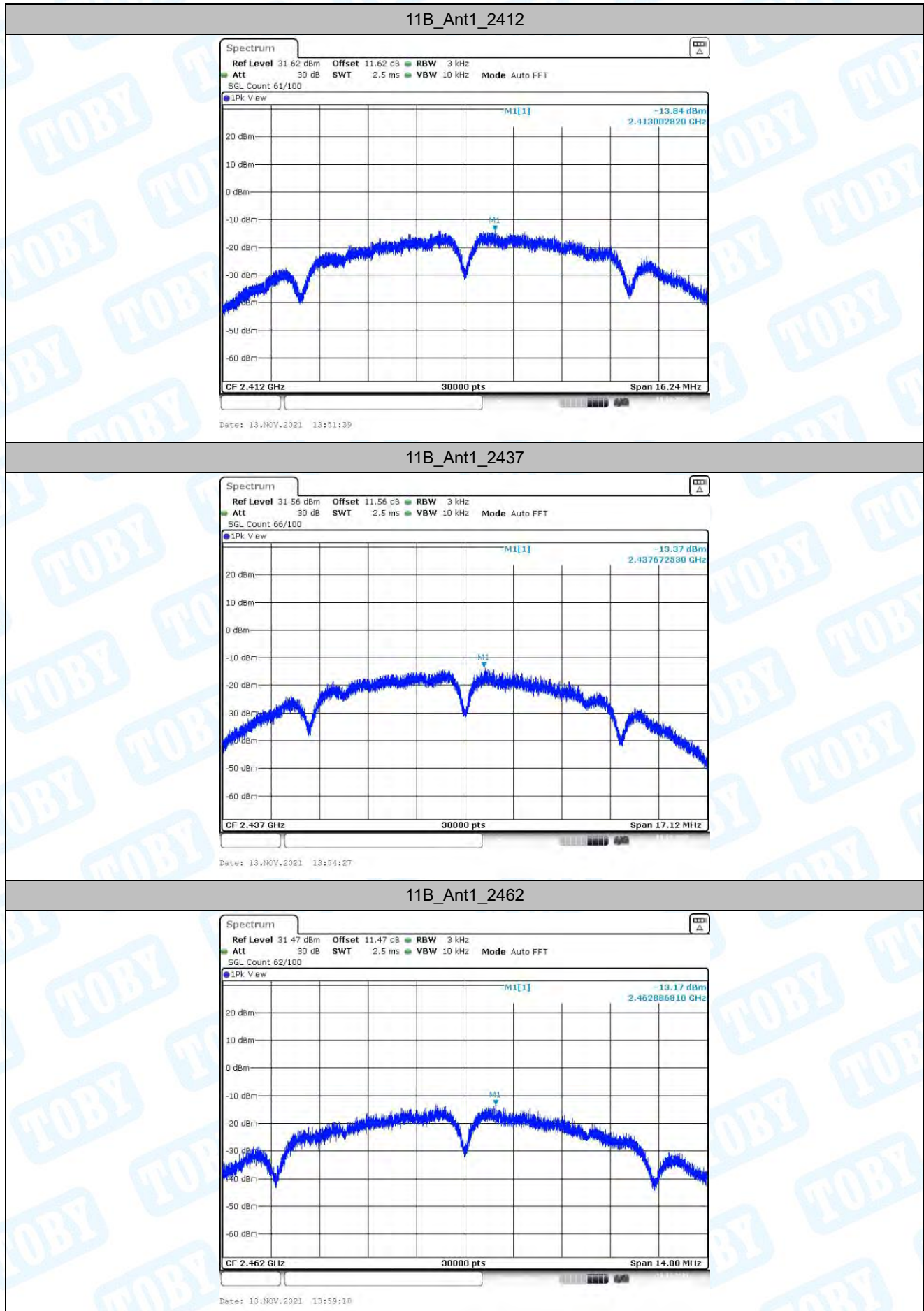
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	12.32	≤30	PASS
		2437	12.06	≤30	PASS
		2462	11.82	≤30	PASS
11G	Ant1	2412	14.52	≤30	PASS
		2437	14.29	≤30	PASS
		2462	14.01	≤30	PASS
11N20SISO	Ant1	2412	14.22	≤30	PASS
		2437	13.93	≤30	PASS
		2462	13.84	≤30	PASS
11N40SISO	Ant1	2422	14.58	≤30	PASS
		2437	13.99	≤30	PASS
		2452	14.08	≤30	PASS

4. Maximum power spectral density

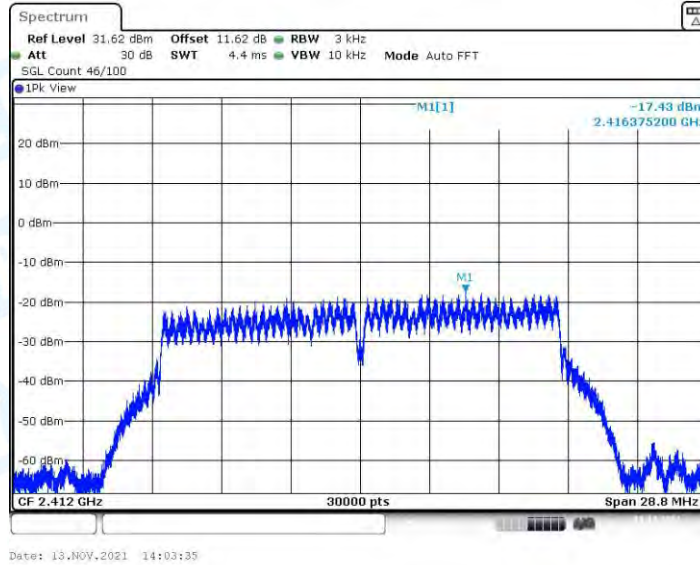
4.1. Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-13.84	≤8	PASS
		2437	-13.37	≤8	PASS
		2462	-13.17	≤8	PASS
11G	Ant1	2412	-17.43	≤8	PASS
		2437	-17.13	≤8	PASS
		2462	-15.98	≤8	PASS
11N20SISO	Ant1	2412	-17.58	≤8	PASS
		2437	-17.42	≤8	PASS
		2462	-16.76	≤8	PASS
11N40SISO	Ant1	2422	-20.11	≤8	PASS
		2437	-22.09	≤8	PASS
		2452	-18.69	≤8	PASS

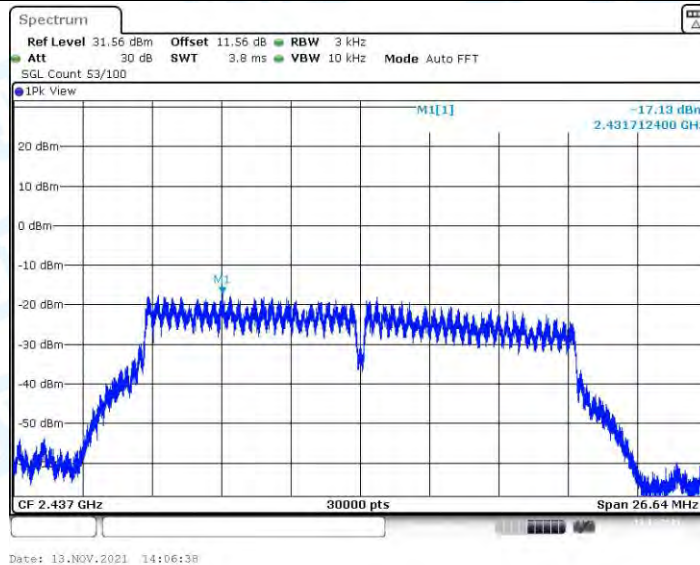
4.2. Test Graphs



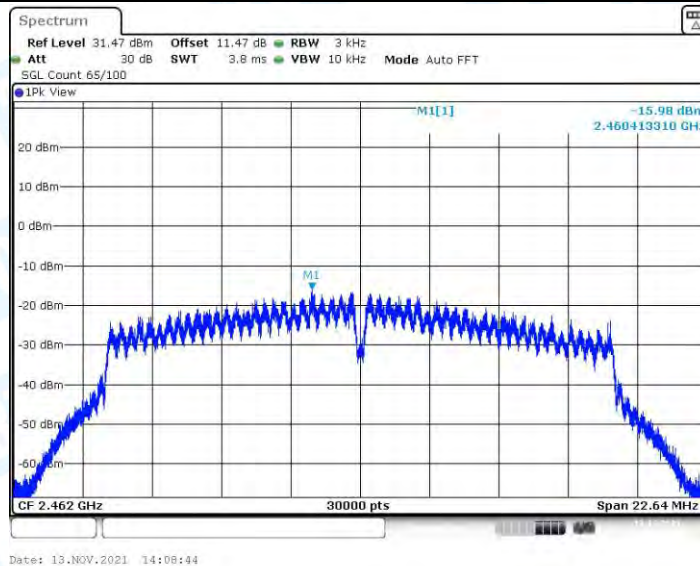
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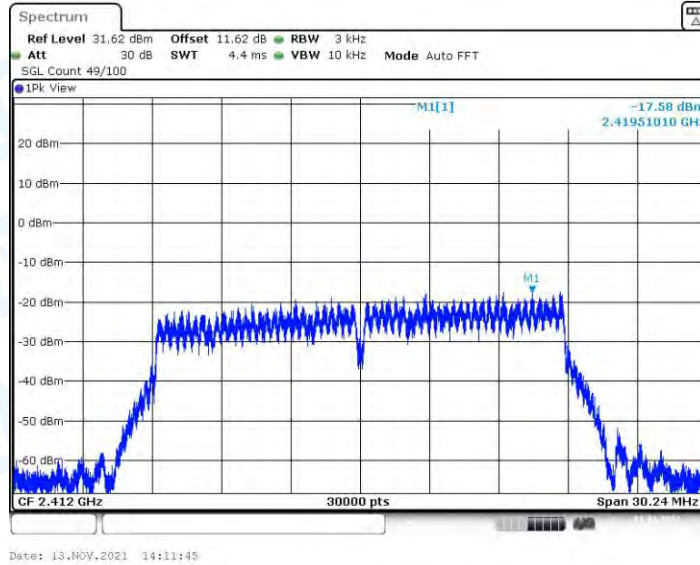
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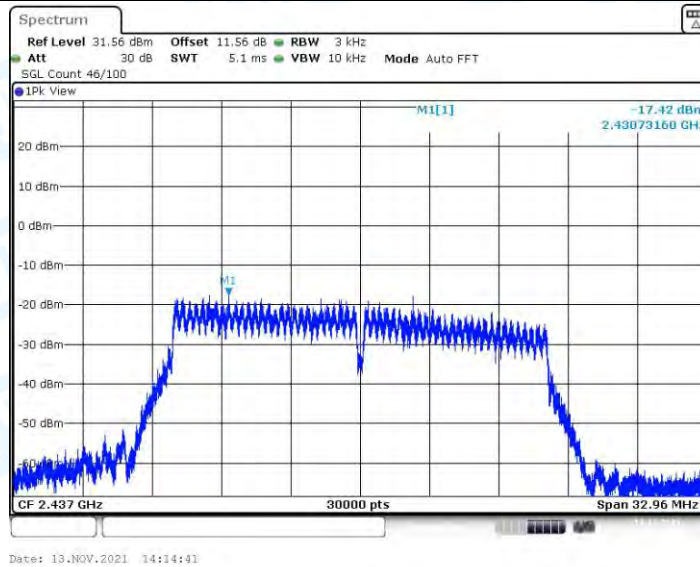
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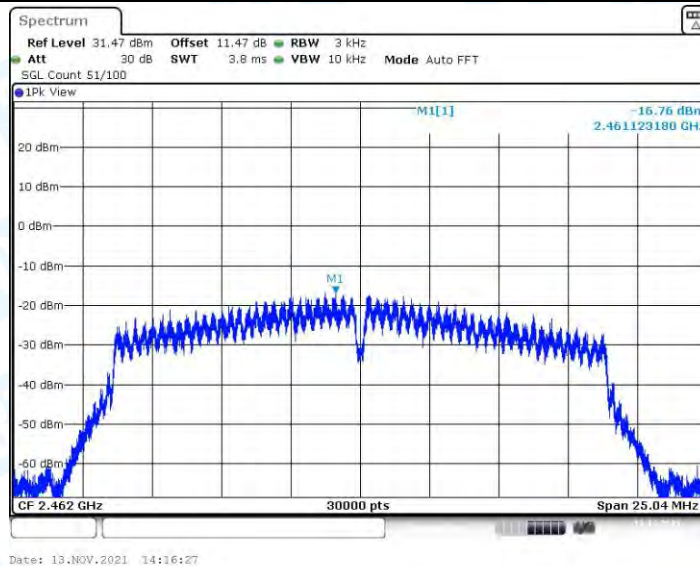
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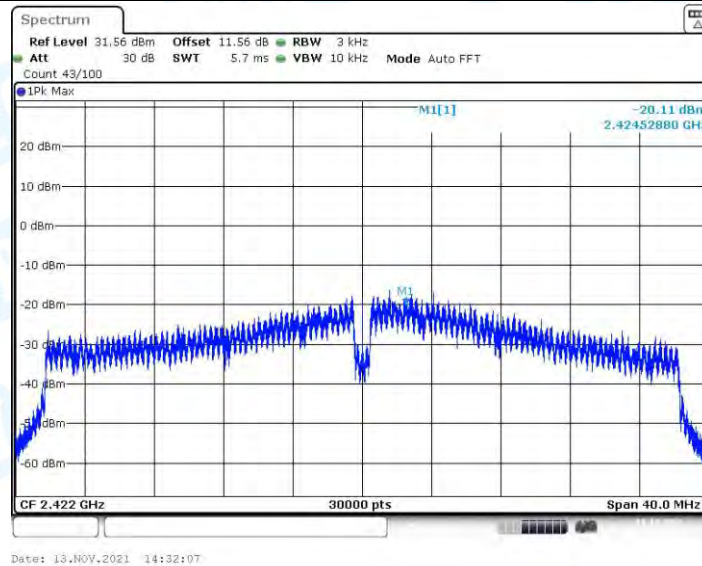
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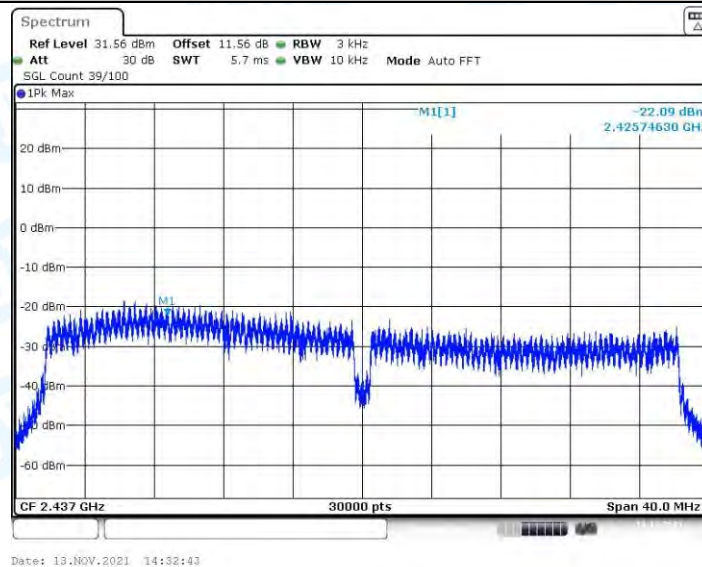
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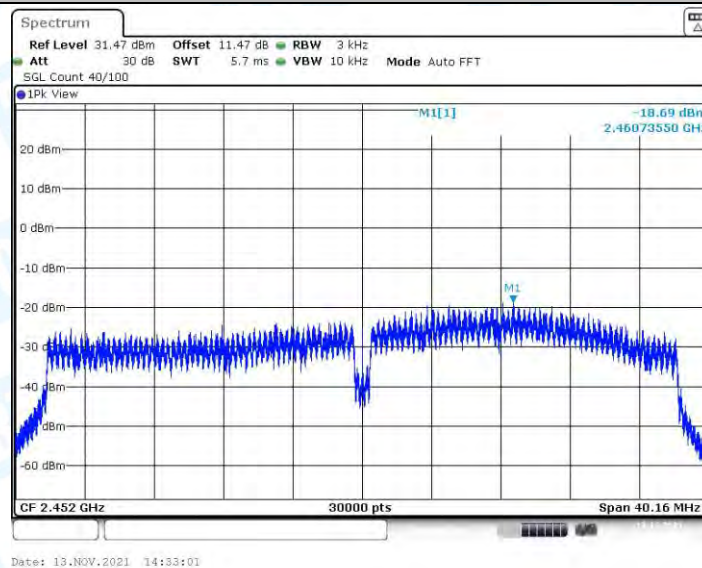
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



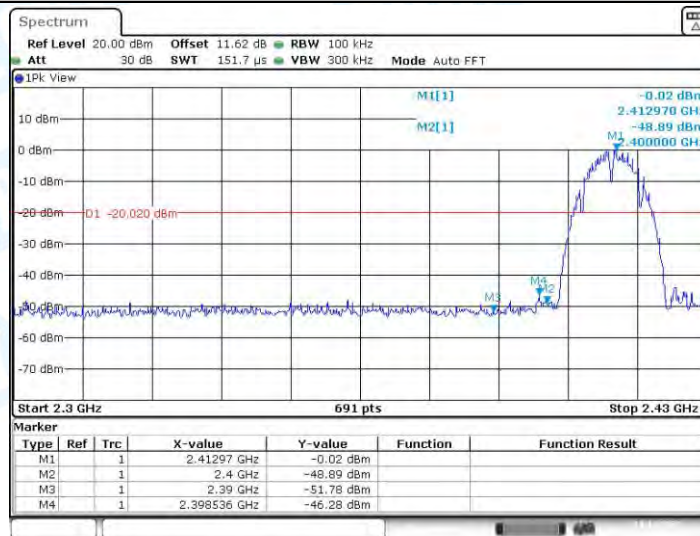
5. Band edge measurements

5.1. Test Result

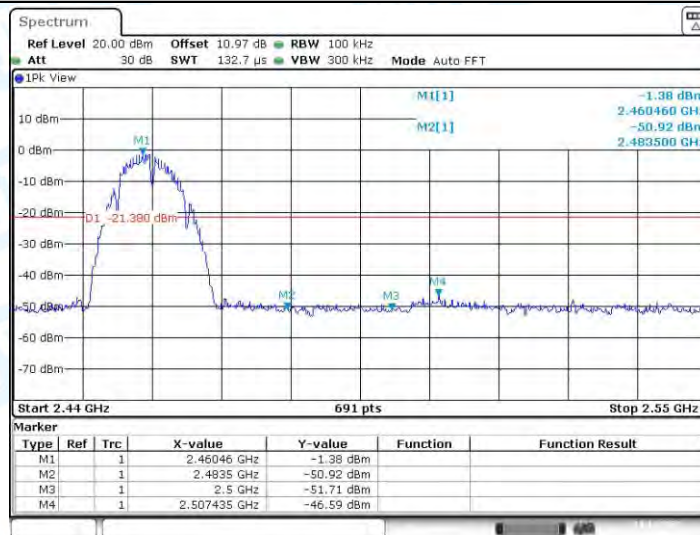
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	-0.02	-46.28	≤ -20.02	PASS
		High	2462	-1.38	-46.59	≤ -21.38	PASS
11G	Ant1	Low	2412	-6.37	-44.61	≤ -26.37	PASS
		High	2462	-6.60	-49.81	≤ -26.6	PASS
11N20SISO	Ant1	Low	2412	-8.39	-50.02	≤ -28.39	PASS
		High	2462	-8.03	-49.01	≤ -28.03	PASS
11N40SISO	Ant1	Low	2422	-5.65	-44.87	≤ -25.65	PASS
		High	2452	-8.30	-48.95	≤ -28.3	PASS

5.2. Test Graphs

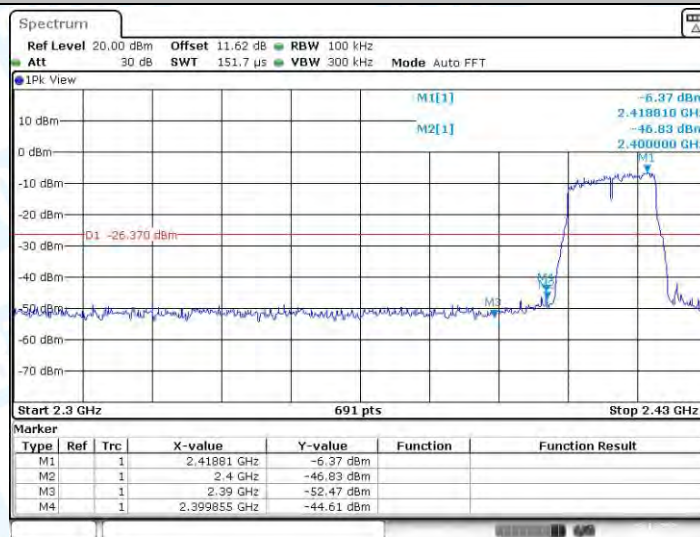
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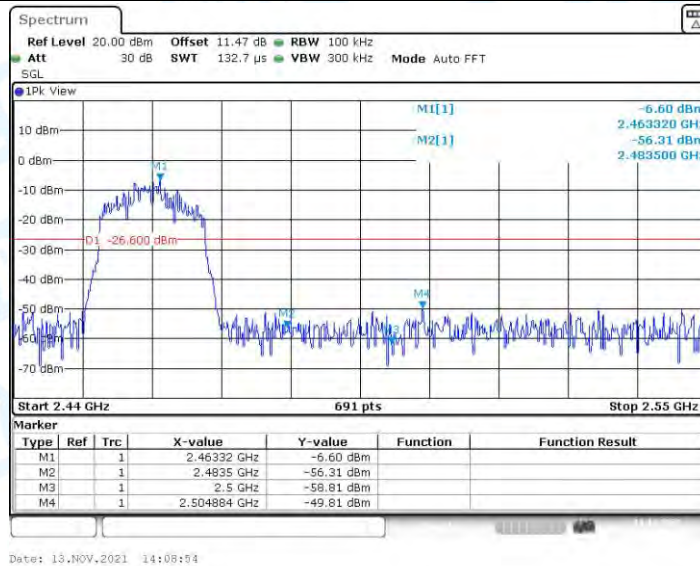
11B_Ant1_High_2462



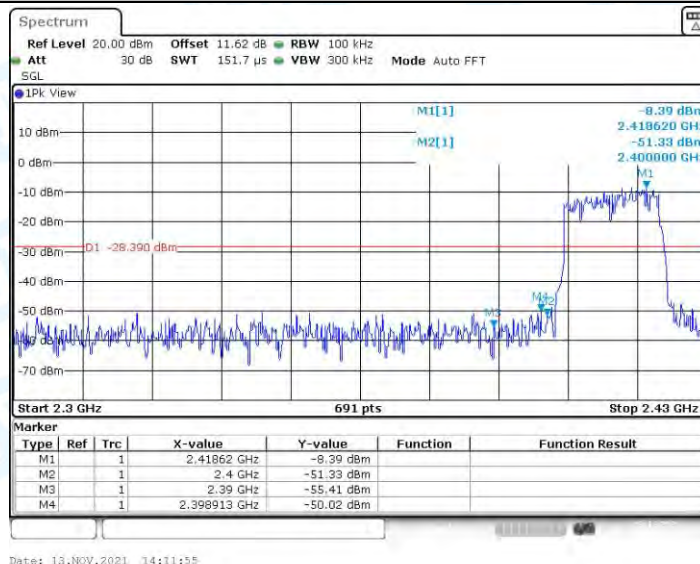
11G_Ant1_Low_2412



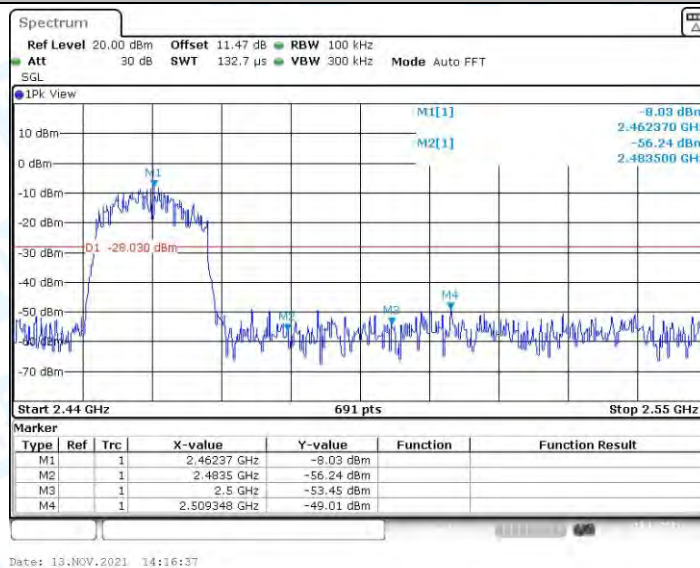
11G_Ant1_High_2462



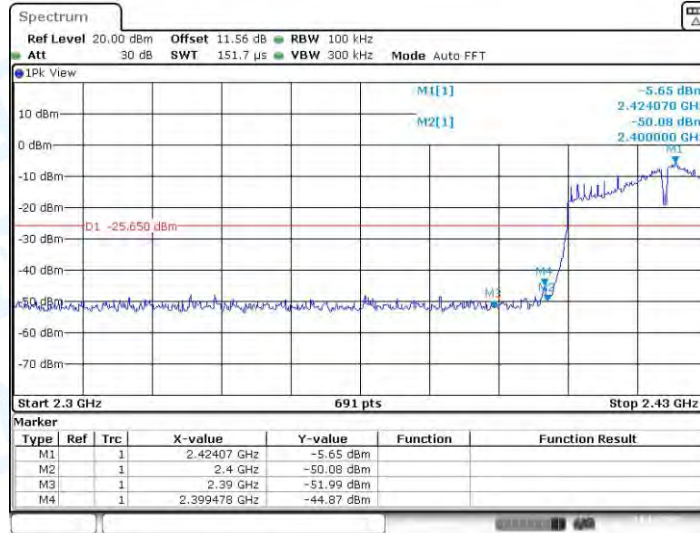
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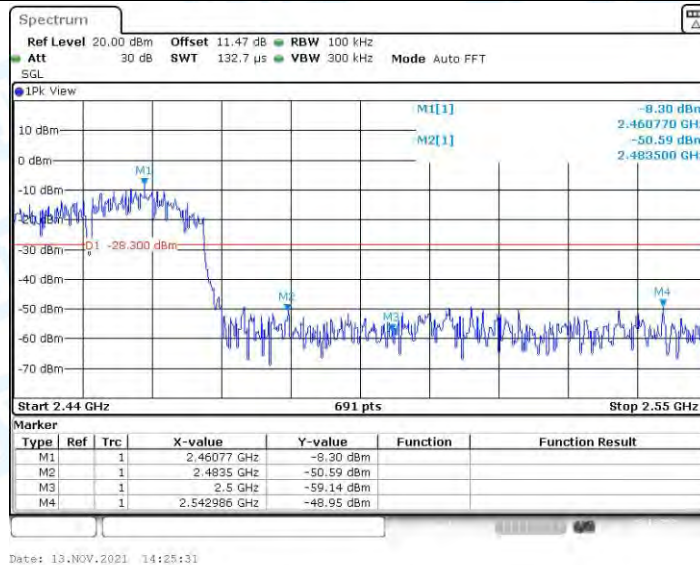
11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



11N40SISO_Ant1_High_2452

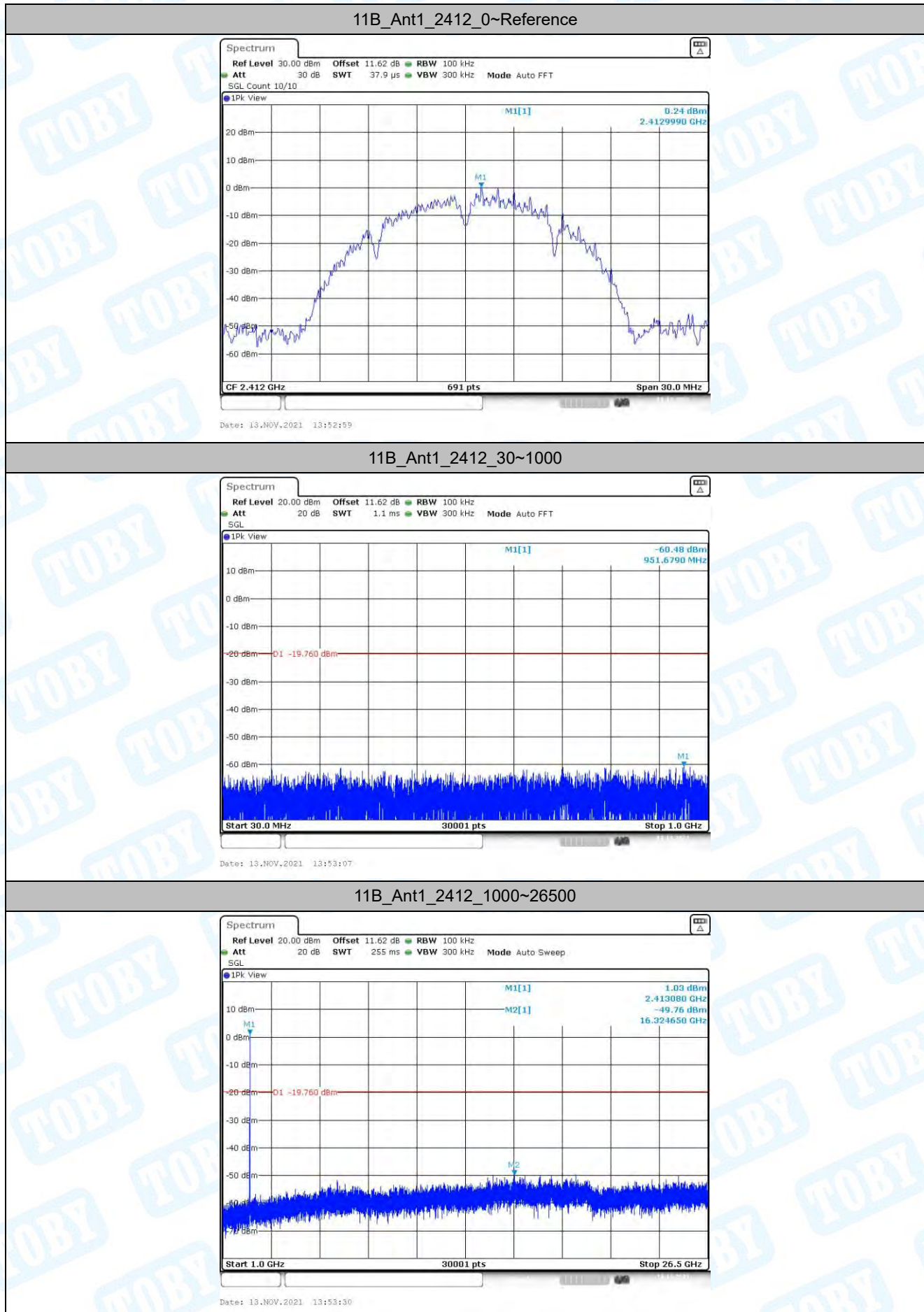


6. Conducted Spurious Emission

6.1. Test Result

TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	0.24	0.24	---	PASS
			30~1000	0.24	-60.48	≤-19.76	PASS
			1000~26500	0.24	-49.76	≤-19.76	PASS
		2437	Reference	-0.79	-0.79	---	PASS
			30~1000	-0.79	-59.84	≤-20.79	PASS
			1000~26500	-0.79	-49.91	≤-20.79	PASS
		2462	Reference	0.58	0.58	---	PASS
			30~1000	0.58	-60.09	≤-19.42	PASS
			1000~26500	0.58	-49.46	≤-19.42	PASS
11G	Ant1	2412	Reference	-6.69	-6.69	---	PASS
			30~1000	-6.69	-59.55	≤-26.69	PASS
			1000~26500	-6.69	-49.46	≤-26.69	PASS
		2437	Reference	-6.64	-6.64	---	PASS
			30~1000	-6.64	-60.05	≤-26.64	PASS
			1000~26500	-6.64	-49.69	≤-26.64	PASS
		2462	Reference	-5.64	-5.64	---	PASS
			30~1000	-5.64	-60.54	≤-25.64	PASS
			1000~26500	-5.64	-50.26	≤-25.64	PASS
11N20SISO	Ant1	2412	Reference	-7.15	-7.15	---	PASS
			30~1000	-7.15	-59.47	≤-27.15	PASS
			1000~26500	-7.15	-50.3	≤-27.15	PASS
		2437	Reference	-7.81	-7.81	---	PASS
			30~1000	-7.81	-60.53	≤-27.81	PASS
			1000~26500	-7.81	-49.54	≤-27.81	PASS
		2462	Reference	-6.58	-6.58	---	PASS
			30~1000	-6.58	-59.53	≤-26.58	PASS
			1000~26500	-6.58	-49.81	≤-26.58	PASS
11N40SISO	Ant1	2422	Reference	-7.18	-7.18	---	PASS
			30~1000	-7.18	-60.56	≤-27.18	PASS
			1000~26500	-7.18	-50.08	≤-27.18	PASS
		2437	Reference	-7.93	-7.93	---	PASS
			30~1000	-7.93	-59.75	≤-27.93	PASS
			1000~26500	-7.93	-49.89	≤-27.93	PASS
		2452	Reference	-8.49	-8.49	---	PASS
			30~1000	-8.49	-59.77	≤-28.49	PASS
			1000~26500	-8.49	-50.2	≤-28.49	PASS

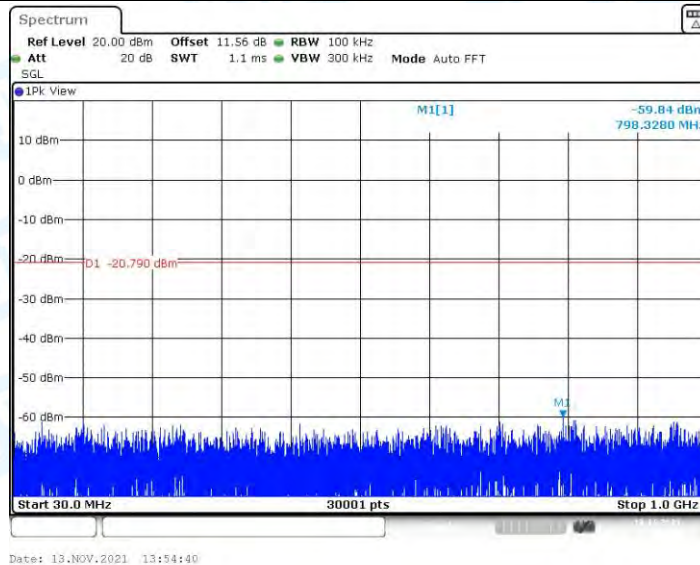
6.2. Test Graphs



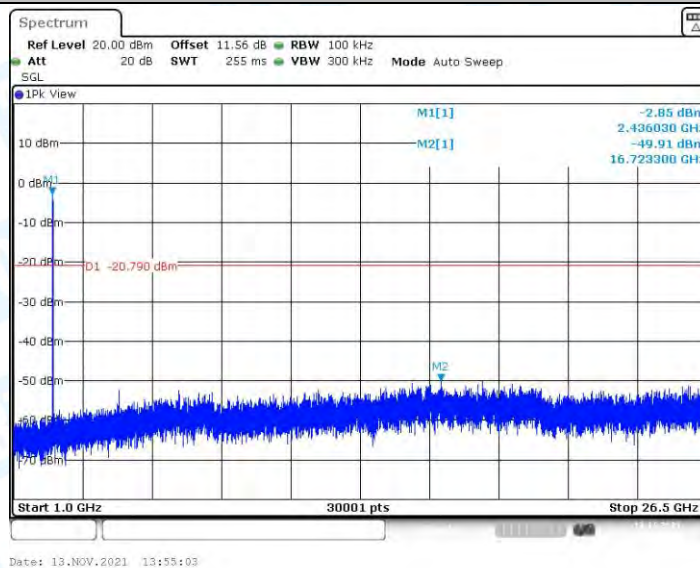
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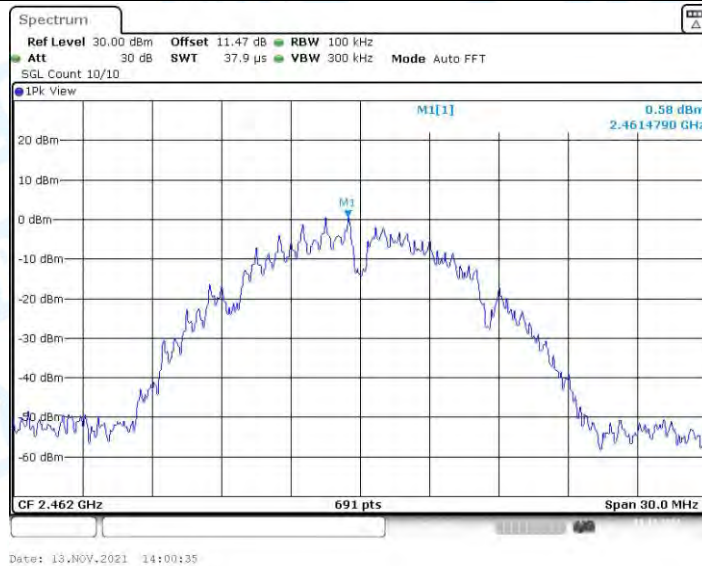
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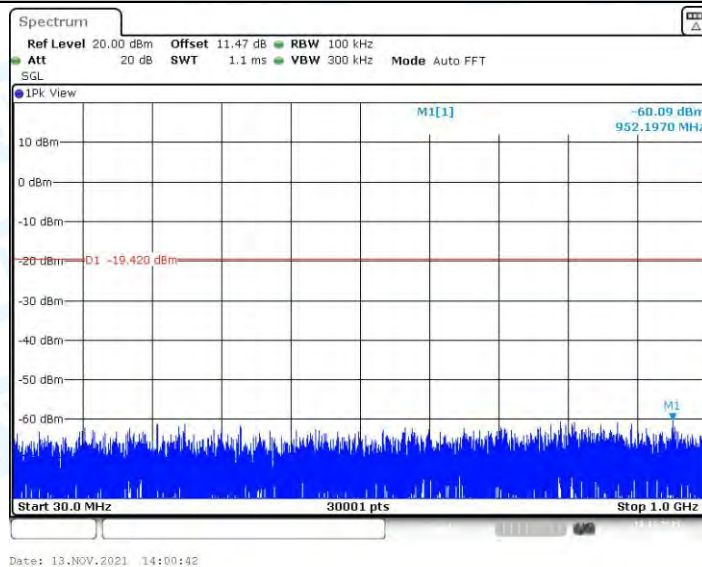
11B_Ant1_2437_1000~26500



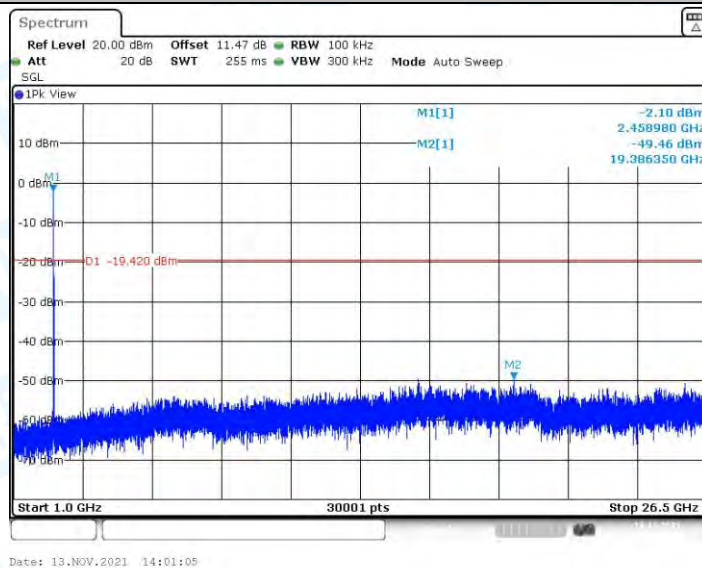
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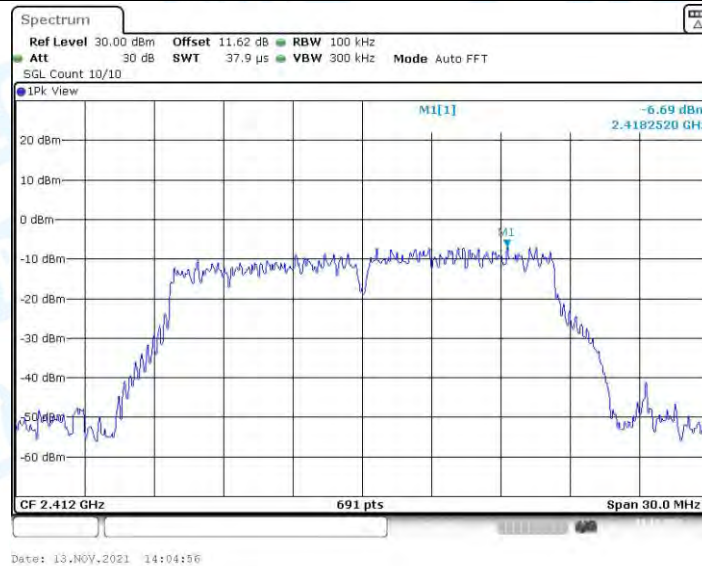
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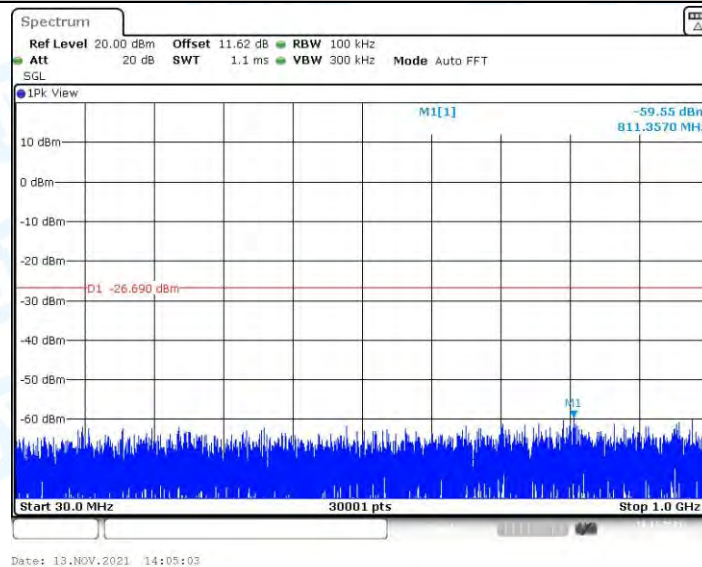
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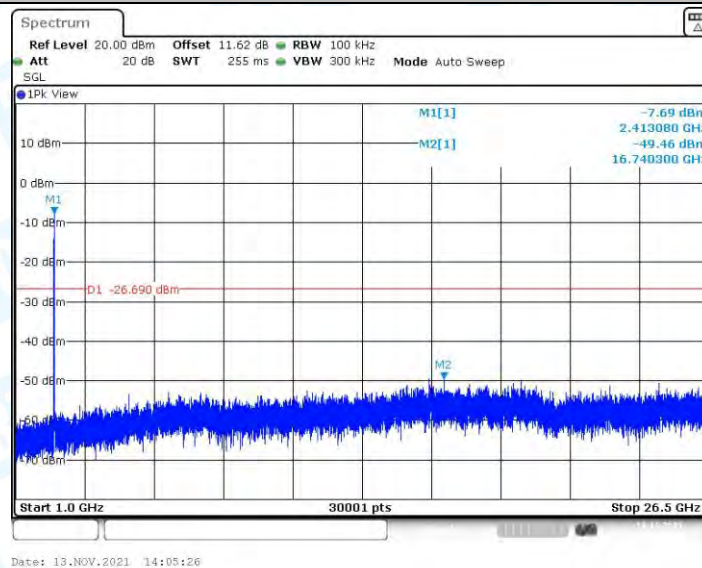
11G_Ant1_2412_0~Reference



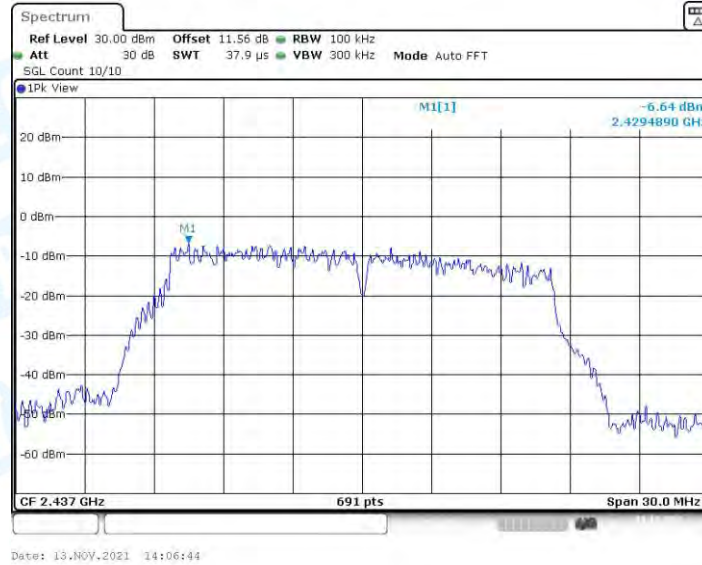
11G_Ant1_2412_30~1000



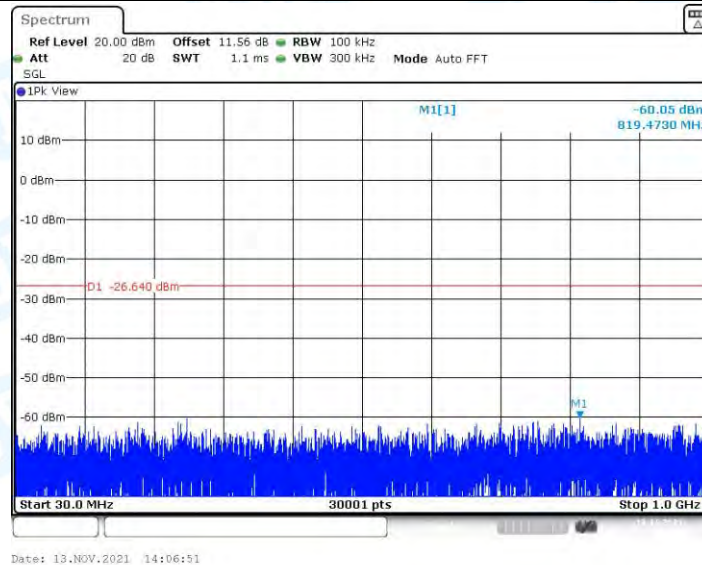
11G_Ant1_2412_1000~26500



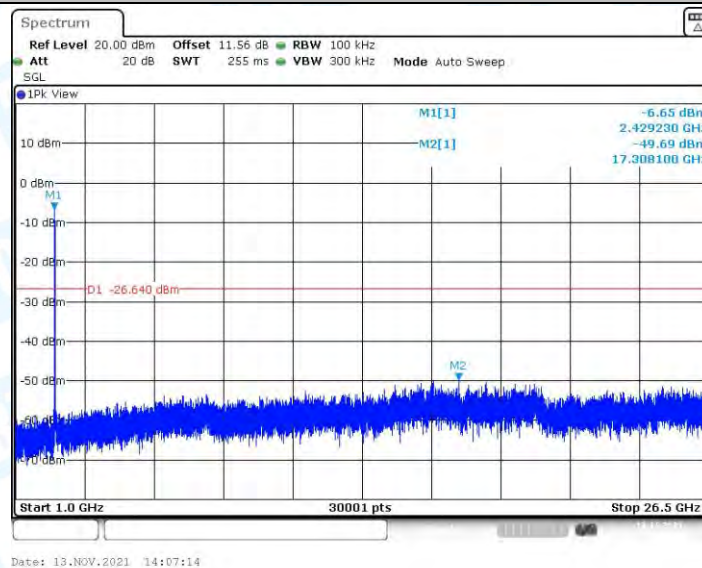
11G_Ant1_2437_0~Reference



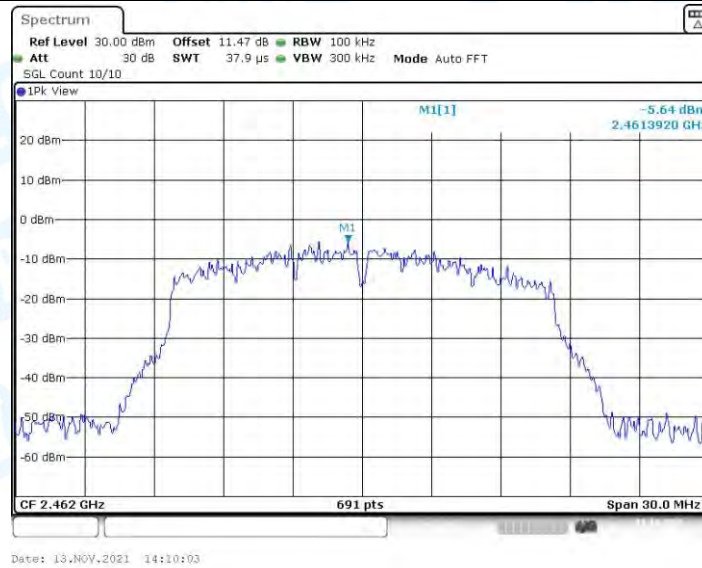
11G_Ant1_2437_30~1000



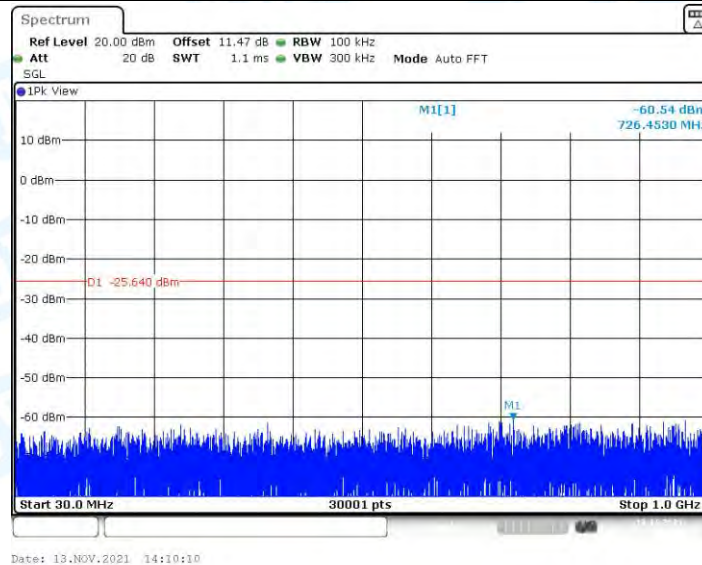
11G_Ant1_2437_1000~26500



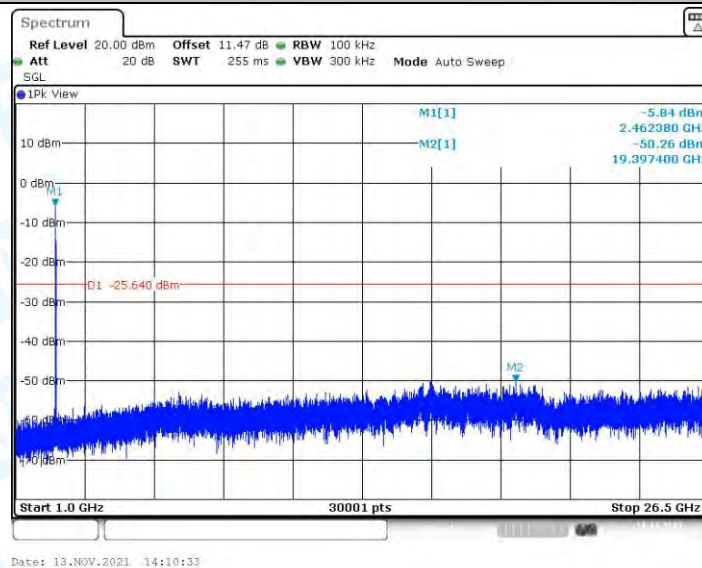
11G_Ant1_2462_0~Reference



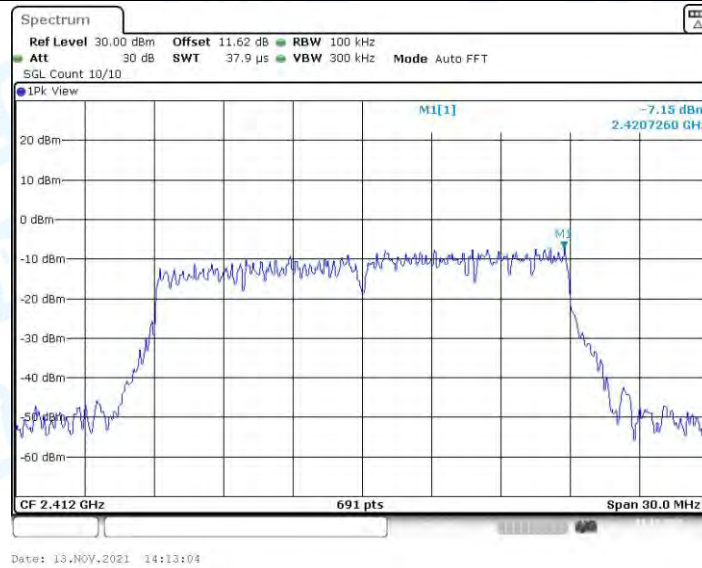
11G_Ant1_2462_30~1000



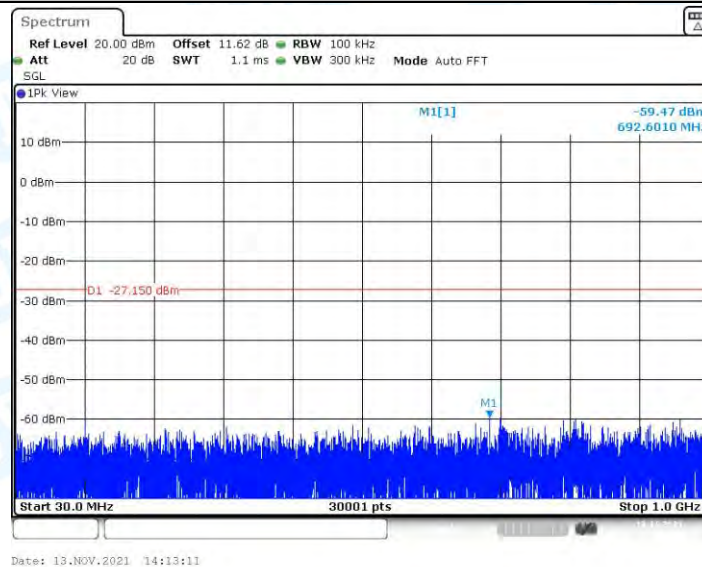
11G_Ant1_2462_1000~26500



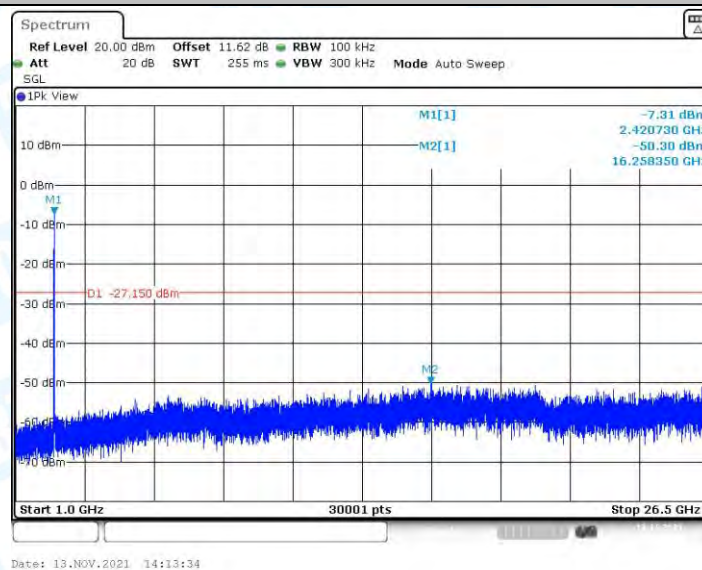
11N20SISO_Ant1_2412_0~Reference



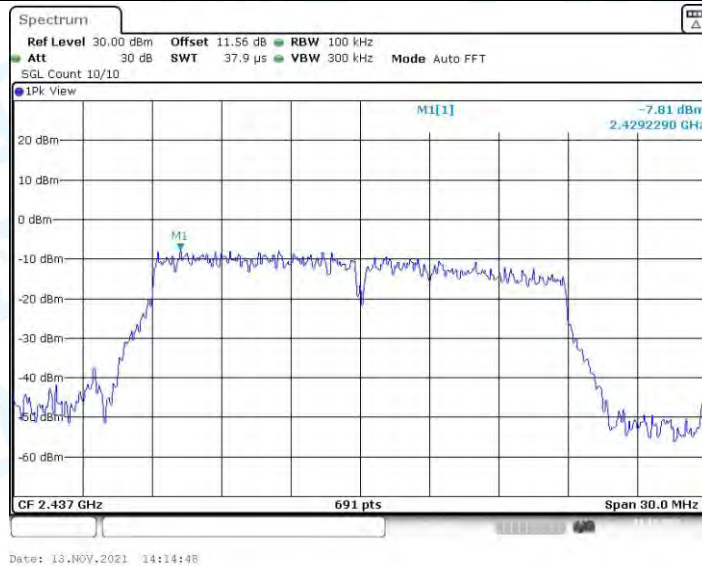
11N20SISO_Ant1_2412_30~1000



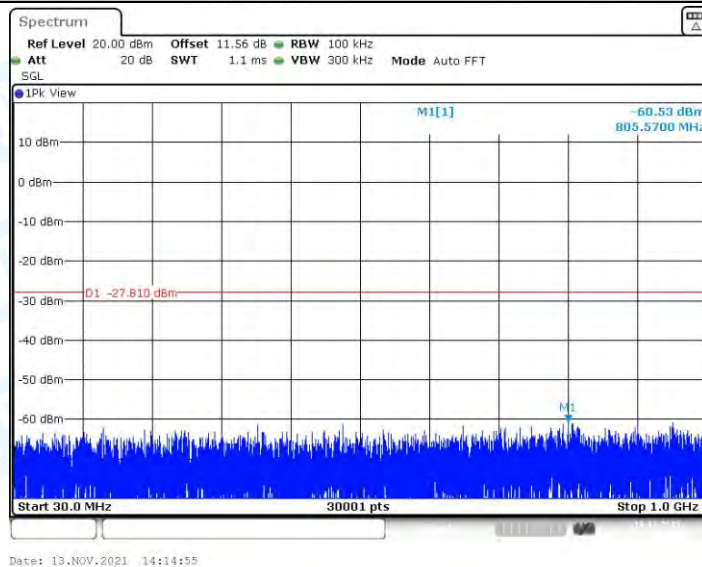
11N20SISO_Ant1_2412_1000~26500



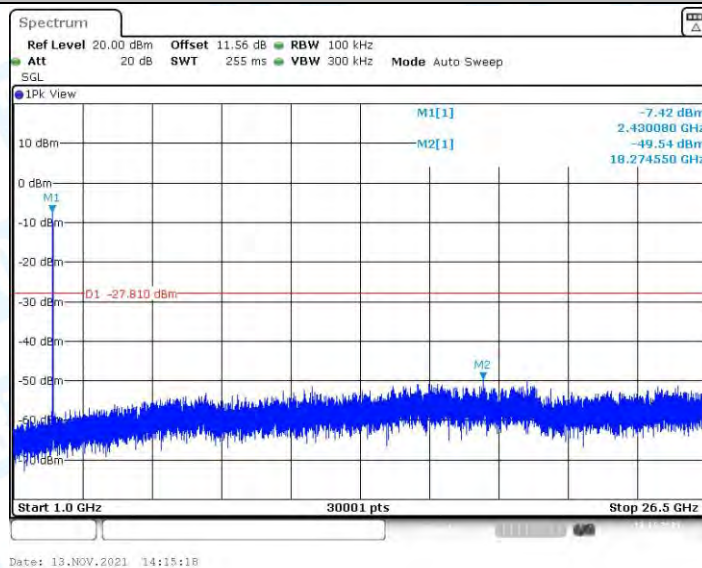
11N20SISO_Ant1_2437_0~Reference



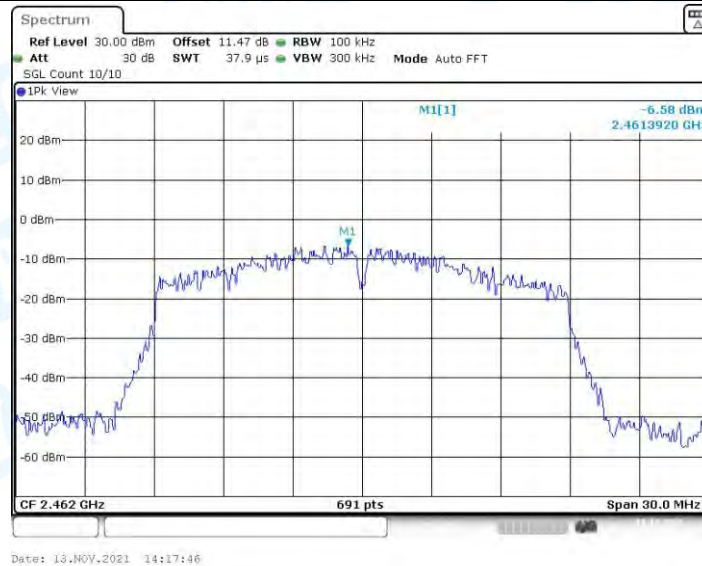
11N20SISO_Ant1_2437_30~1000



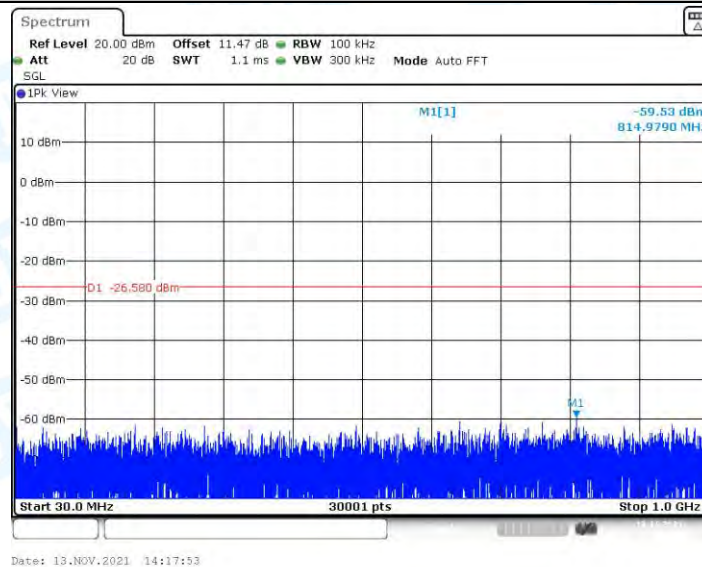
11N20SISO_Ant1_2437_1000~26500



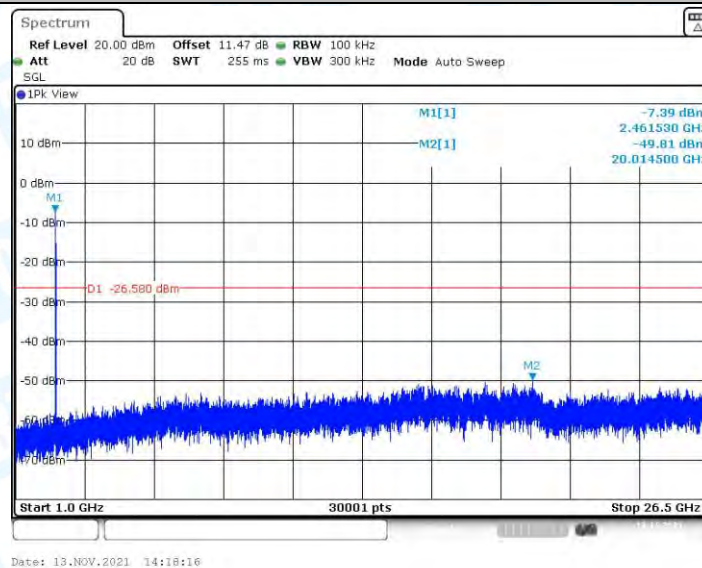
11N20SISO_Ant1_2462_0~Reference



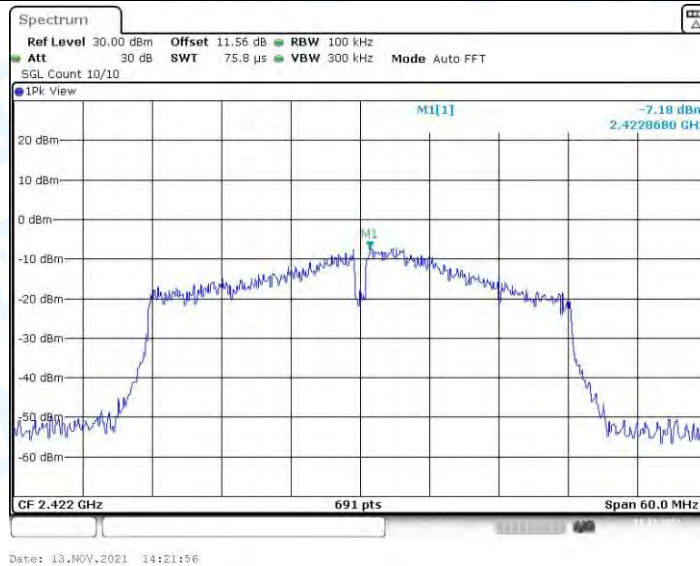
11N20SISO_Ant1_2462_30~1000



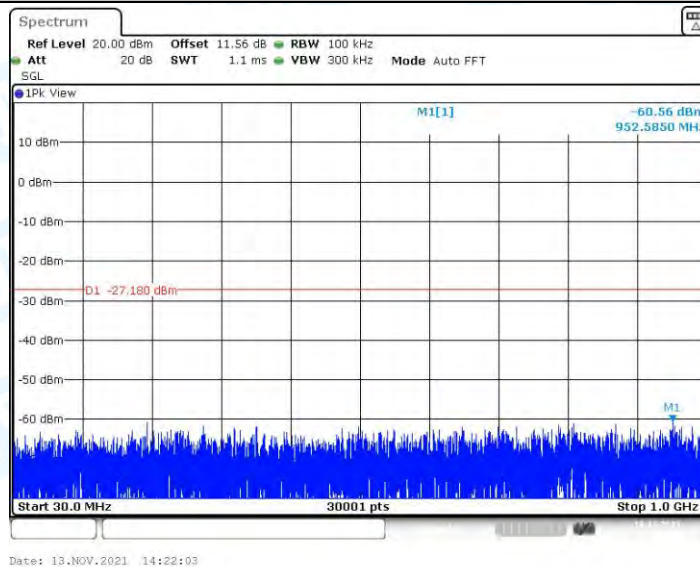
11N20SISO_Ant1_2462_1000~26500



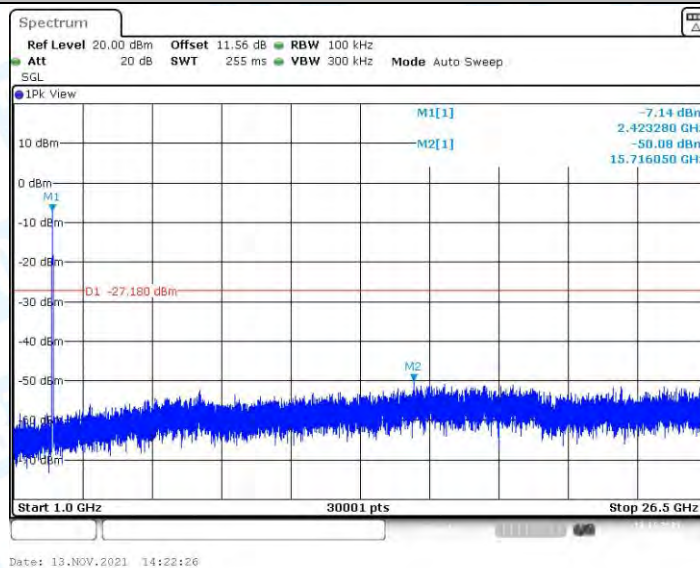
11N40SISO_Ant1_2422_0~Reference



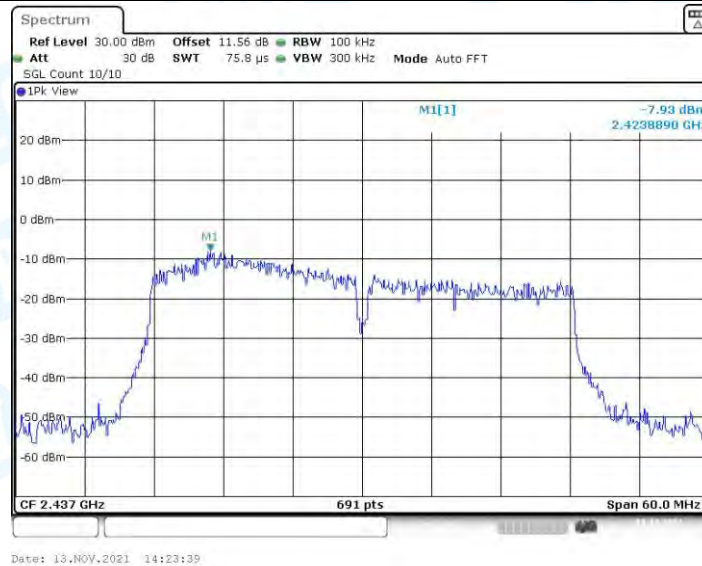
11N40SISO_Ant1_2422_30~1000



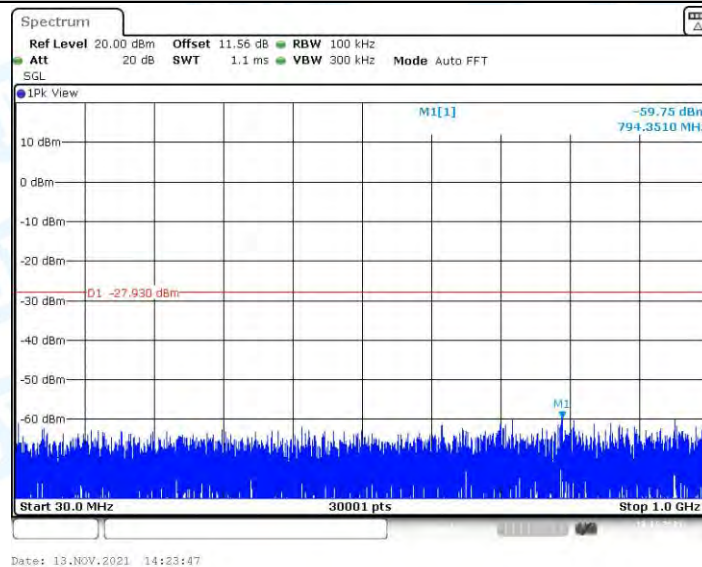
11N40SISO_Ant1_2422_1000~26500



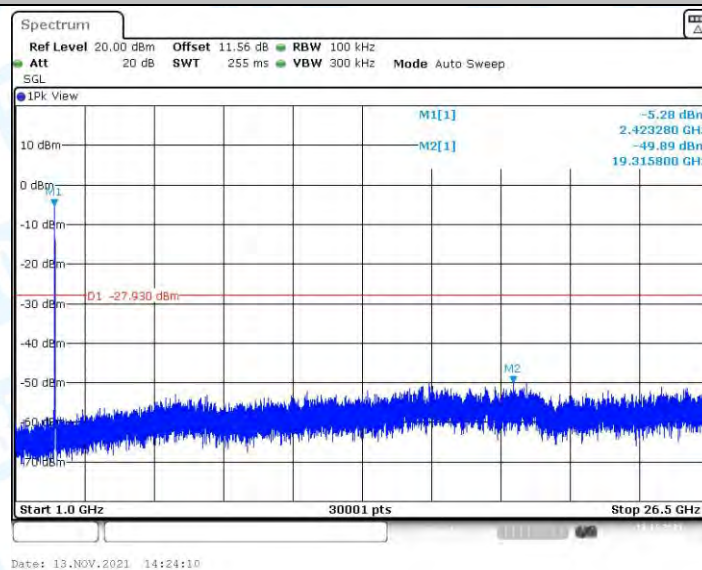
11N40SISO_Ant1_2437_0~Reference



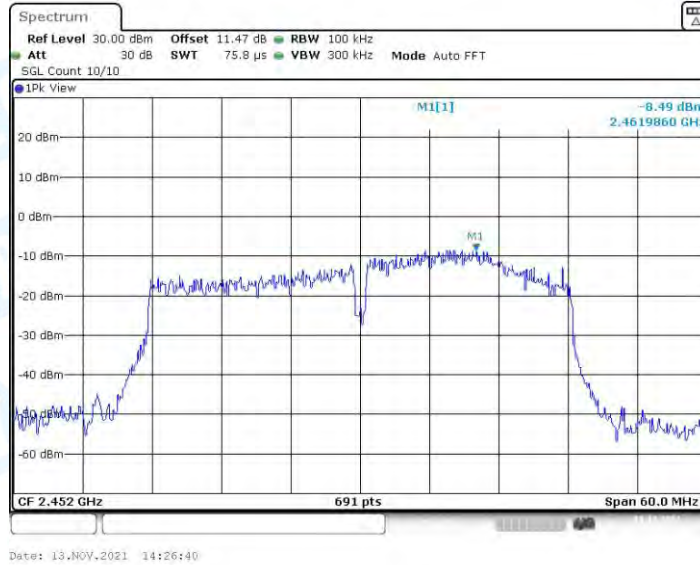
11N40SISO_Ant1_2437_30~1000



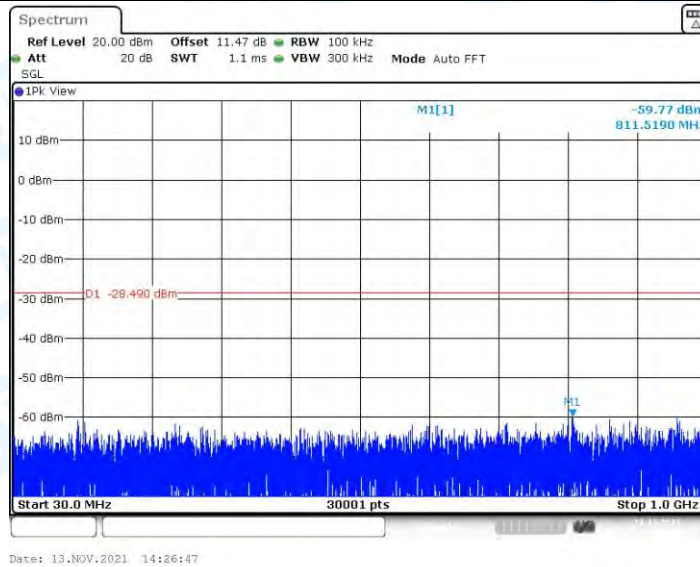
11N40SISO_Ant1_2437_1000~26500



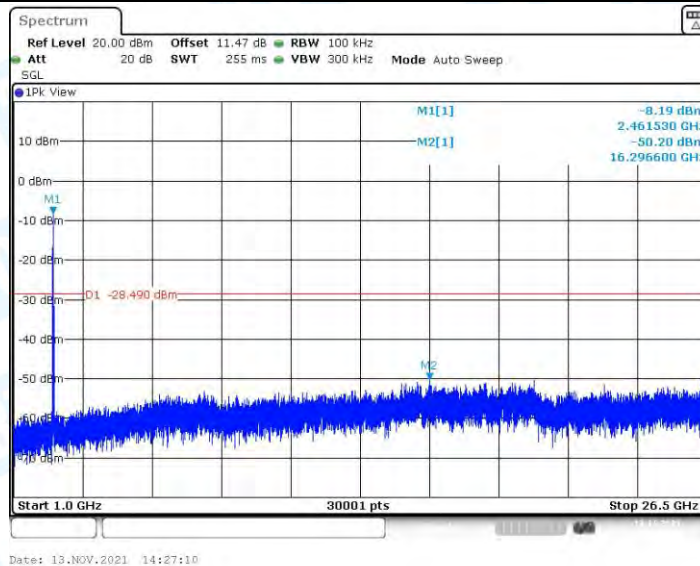
11N40SISO_Ant1_2452_0~Reference



11N40SISO_Ant1_2452_30~1000



11N40SISO_Ant1_2452_1000~26500

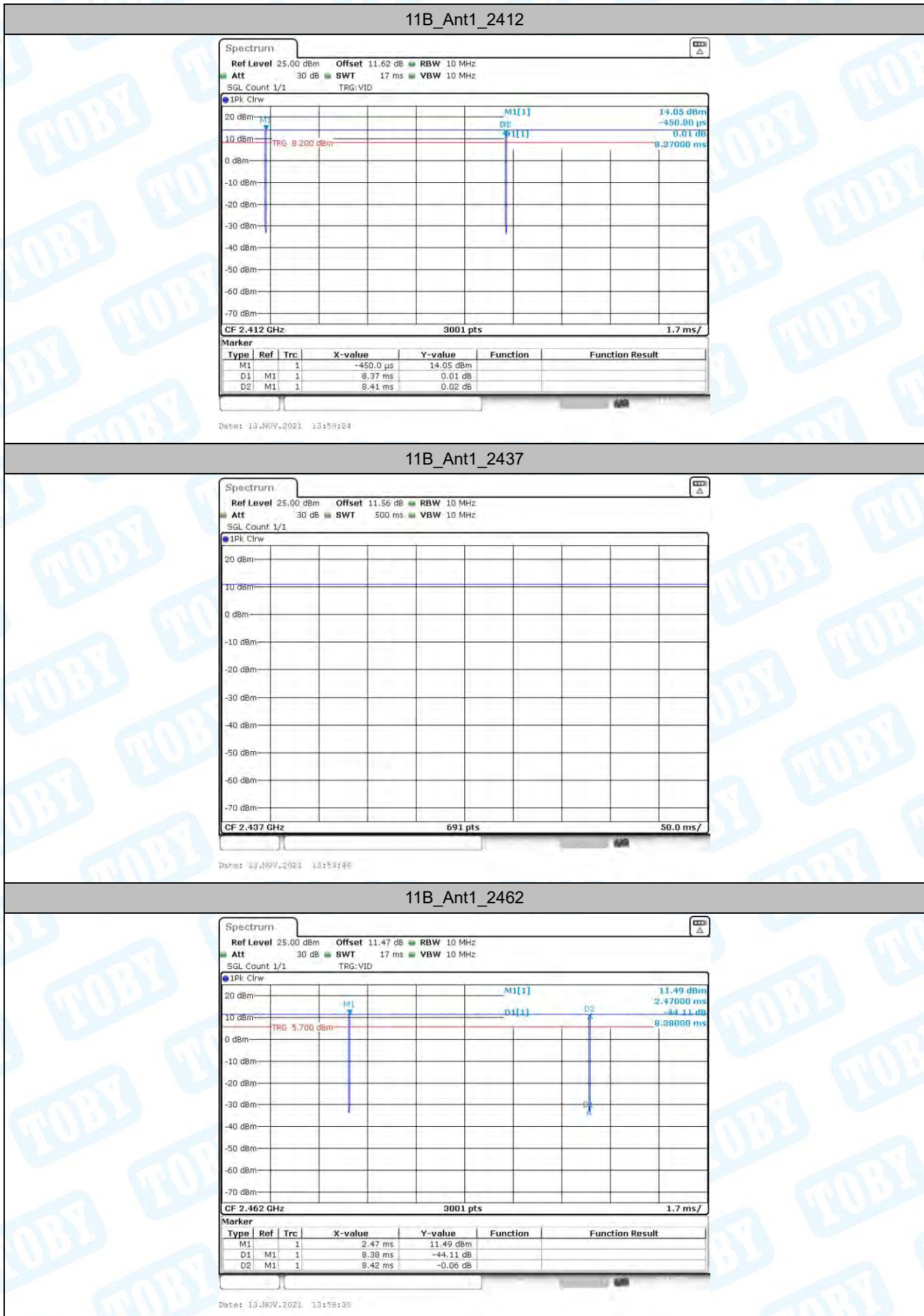


7. Duty Cycle

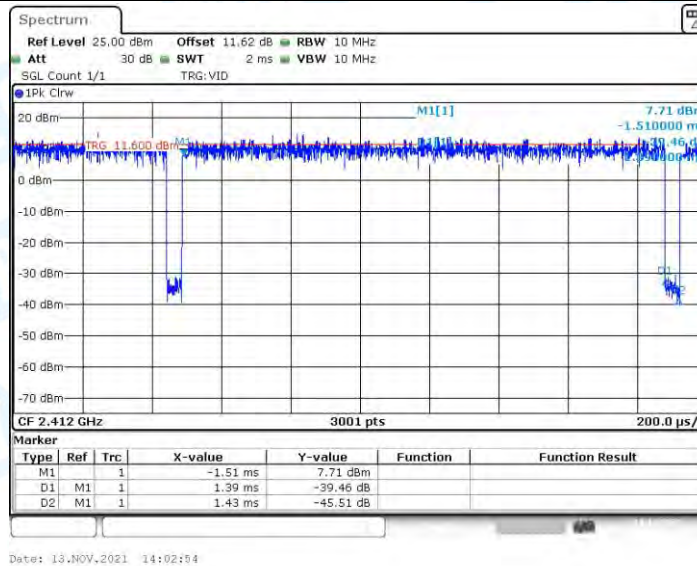
7.1. Test Result

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T [KHz]	Limit	Verdict
11B	Ant1	2412	8.37	8.41	99.52	0.119	---	PASS
		2437	0.00	0.00	100	0	---	PASS
		2462	8.38	8.42	99.52	0.119	---	PASS
11G	Ant1	2412	1.39	1.43	97.20	0.719	---	PASS
		2437	1.40	1.44	97.22	0.714	---	PASS
		2462	1.39	1.44	96.53	0.719	---	PASS
11N20SISO	Ant1	2412	1.29	1.33	96.99	0.775	---	PASS
		2437	1.29	1.34	96.27	0.775	---	PASS
		2462	1.28	1.33	96.24	0.781	---	PASS
11N40SISO	Ant1	2422	0.63	0.68	92.65	1.587	---	PASS
		2437	0.64	0.68	94.12	1.563	---	PASS
		2452	0.63	0.68	92.65	1.587	---	PASS

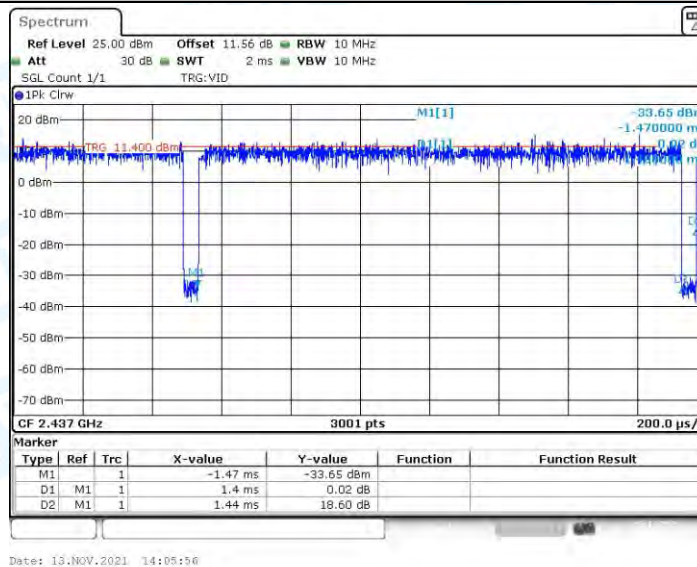
7.2. Test Graphs



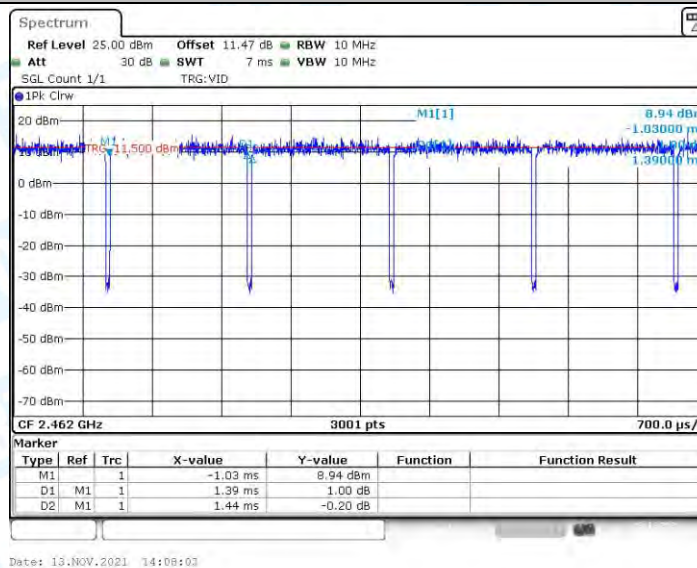
11G_Ant1_2412



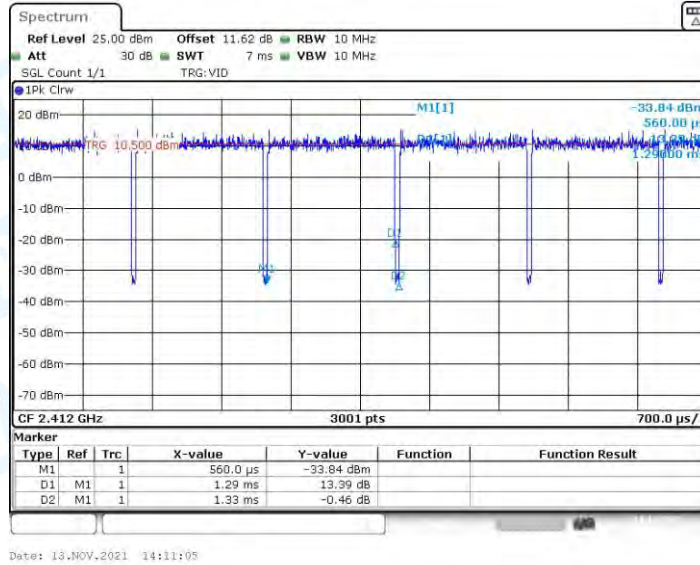
11G_Ant1_2437



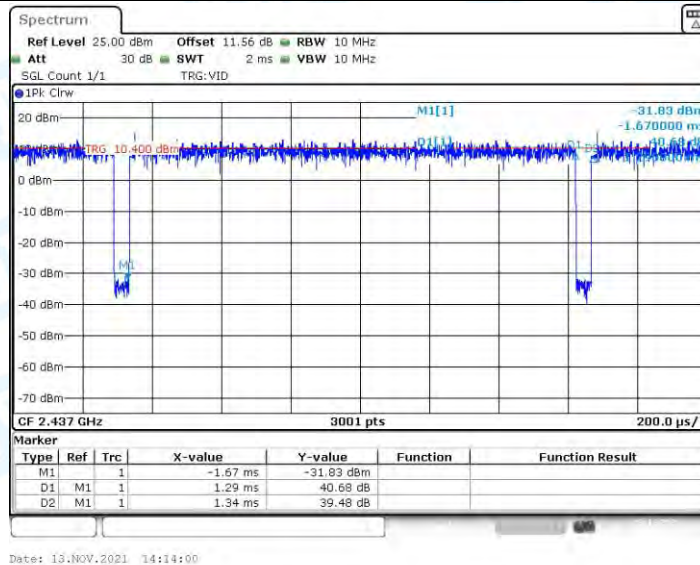
11G_Ant1_2462



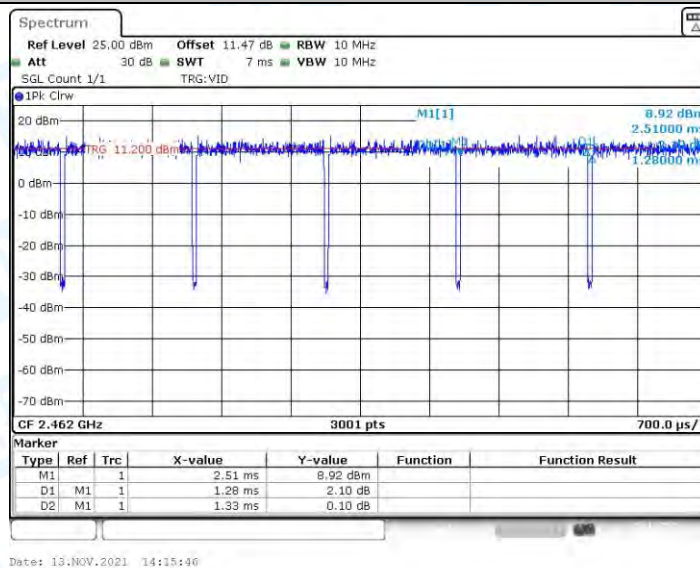
11N20SISO_Ant1_2412



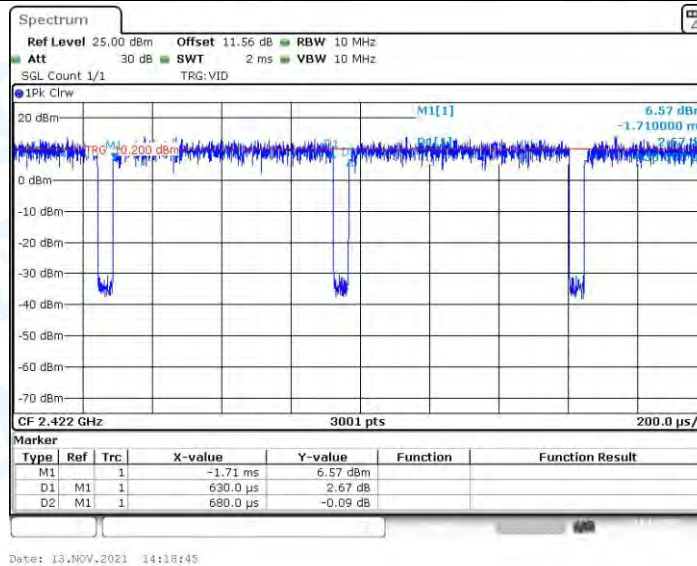
11N20SISO_Ant1_2437



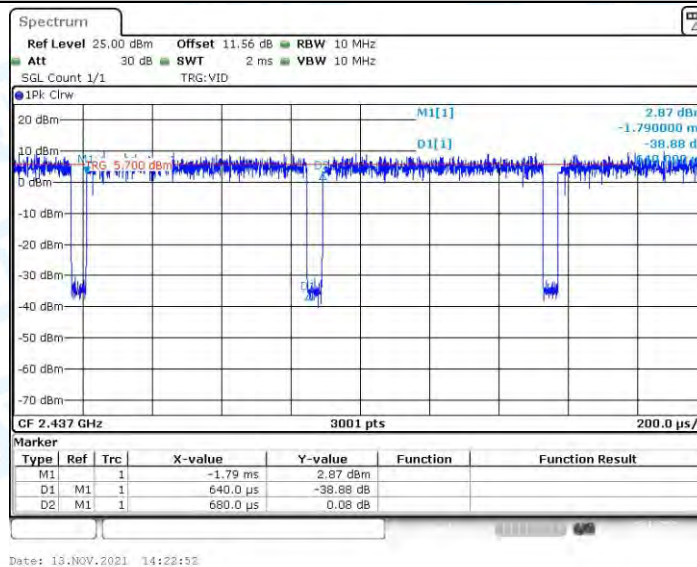
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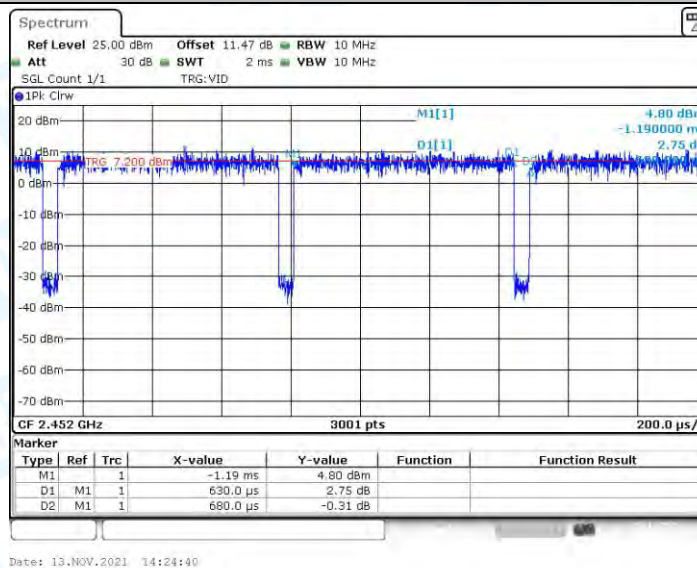
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



8. Emissions in Restricted Bands

8.1. Test Result

TestMode	Antenna	ChName	Channel	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	Low	2412	AV	2310.000	-49.78	≤-41.20	PASS
				AV	2339.565	-47.23	≤-41.20	PASS
				AV	2390.000	-49.75	≤-41.20	PASS
				Peak	2310.000	-40.48	≤-21.20	PASS
				Peak	2343.333	-36.82	≤-21.20	PASS
				Peak	2390.000	-42.26	≤-21.20	PASS
		High	2462	AV	2483.500	-48.76	≤-41.20	PASS
				AV	2495.797	-48.56	≤-41.20	PASS
				AV	2500.000	-48.9	≤-41.20	PASS
				Peak	2483.500	-40.76	≤-21.20	PASS
				Peak	2496.913	-38.13	≤-21.20	PASS
				Peak	2500.000	-40.27	≤-21.20	PASS
11G	Ant1	Low	2412	AV	2310.000	-49.37	≤-41.20	PASS
				AV	2340.319	-46.53	≤-41.20	PASS
				AV	2390.000	-49.05	≤-41.20	PASS
				Peak	2310.000	-41.03	≤-21.20	PASS
				Peak	2340.696	-36.41	≤-21.20	PASS
				Peak	2390.000	-40.28	≤-21.20	PASS
		High	2462	AV	2483.500	-48.05	≤-41.20	PASS
				AV	2495.638	-47.92	≤-41.20	PASS
				AV	2500.000	-48.01	≤-41.20	PASS
				Peak	2483.500	-37.12	≤-21.20	PASS
				Peak	2483.522	-37.12	≤-21.20	PASS
				Peak	2500.000	-40.77	≤-21.20	PASS
11N20SISO	Ant1	Low	2412	AV	2310.000	-49.39	≤-41.20	PASS
				AV	2340.319	-46.83	≤-41.20	PASS
				AV	2390.000	-48.94	≤-41.20	PASS
				Peak	2310.000	-40.18	≤-21.20	PASS
				Peak	2340.884	-37.33	≤-21.20	PASS
				Peak	2390.000	-41.34	≤-21.20	PASS
		High	2462	AV	2483.500	-48.18	≤-41.20	PASS
				AV	2495.797	-47.89	≤-41.20	PASS
				AV	2500.000	-48.67	≤-41.20	PASS
				Peak	2483.500	-39.96	≤-21.20	PASS
				Peak	2499.304	-38.11	≤-21.20	PASS
				Peak	2500.000	-39.11	≤-21.20	PASS
11N40SISO	Ant1	Low	2422	AV	2310.000	-49.15	≤-41.20	PASS
				AV	2339.565	-46.5	≤-41.20	PASS
				AV	2390.000	-48.82	≤-41.20	PASS
				Peak	2310.000	-38.85	≤-21.20	PASS
				Peak	2341.261	-36.98	≤-21.20	PASS

		High	2452	Peak	2390.000	-42.02	≤ -21.20	PASS
				AV	2483.500	-47.54	≤ -41.20	PASS
				AV	2488.623	-47.2	≤ -41.20	PASS
				AV	2500.000	-48.22	≤ -41.20	PASS
				Peak	2483.500	-40.45	≤ -21.20	PASS
				Peak	2491.493	-37.68	≤ -21.20	PASS
				Peak	2500.000	-41.29	≤ -21.20	PASS

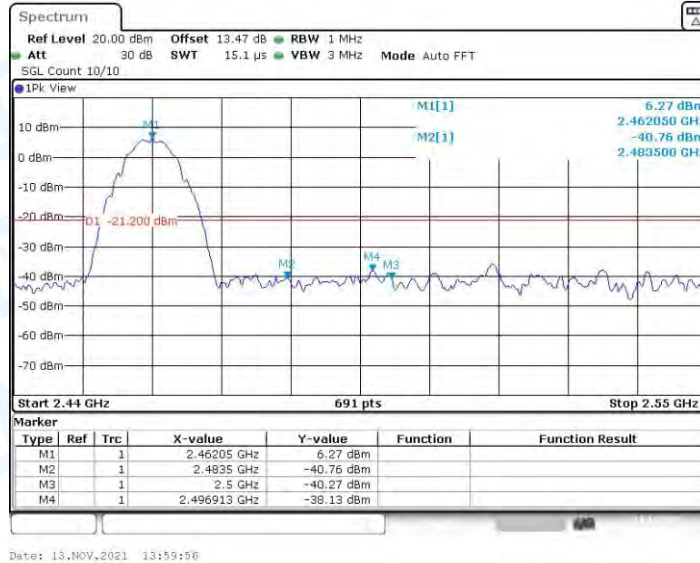
Note:

1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

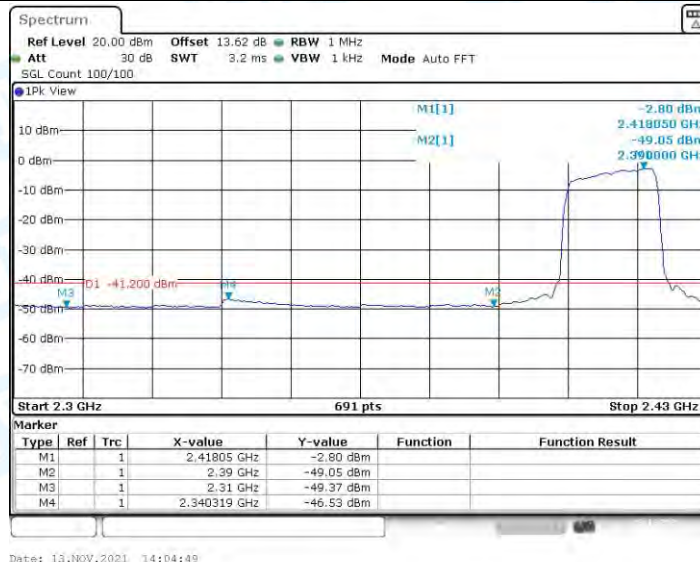
8.2.Test Graphs



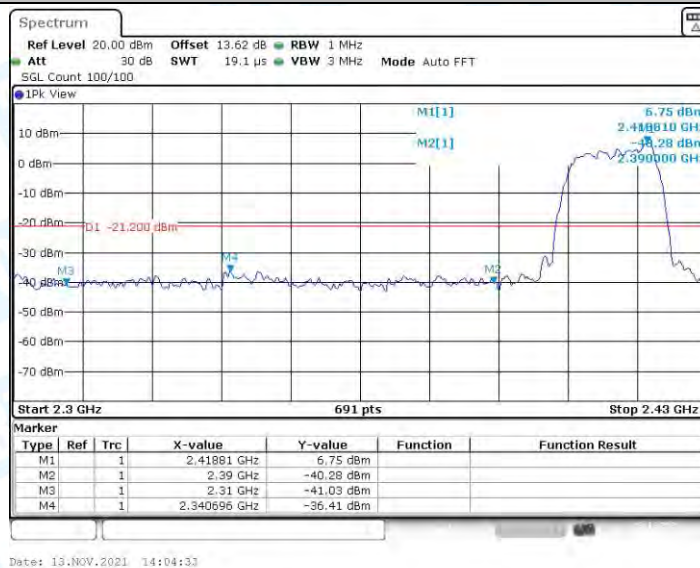
11B_Ant1_High_2462_Peak



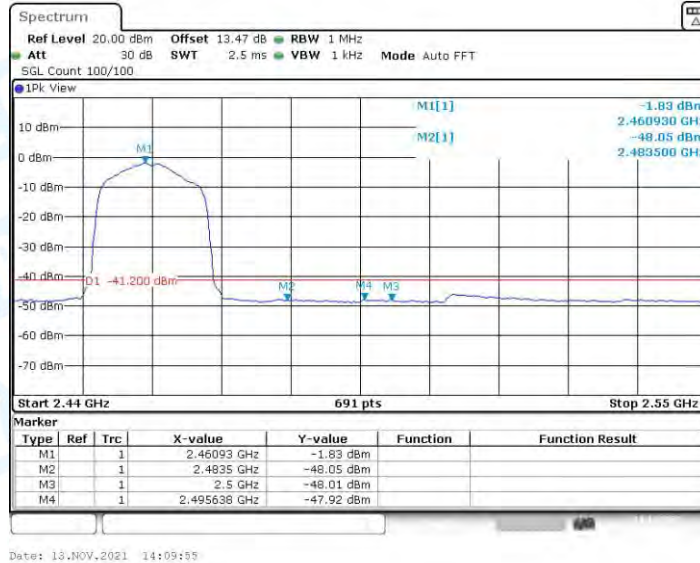
11G_Ant1_Low_2412_AV



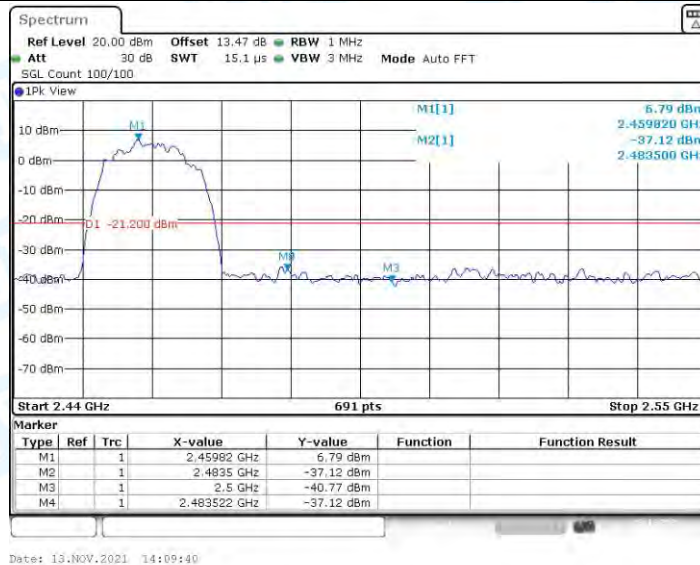
11G_Ant1_Low_2412_Peak



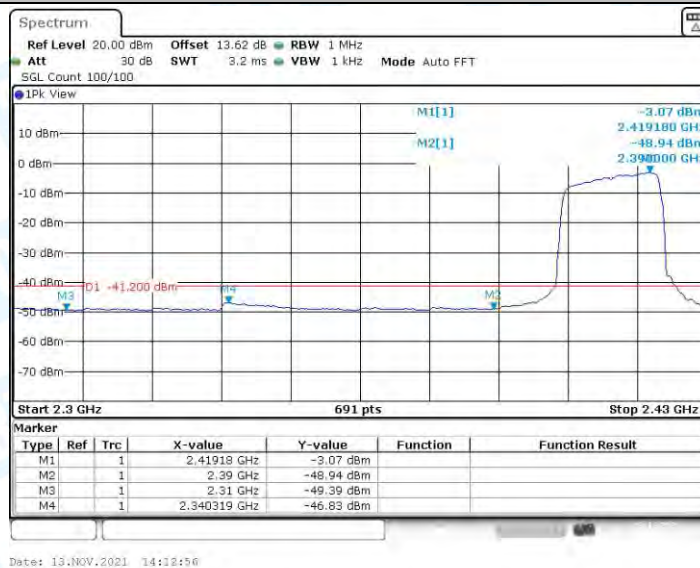
11G_Ant1_High_2462_AV



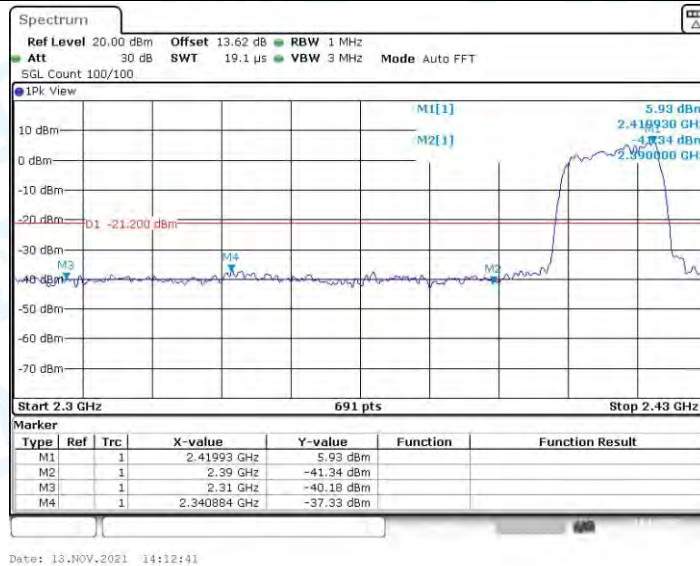
11G_Ant1_High_2462_Peak



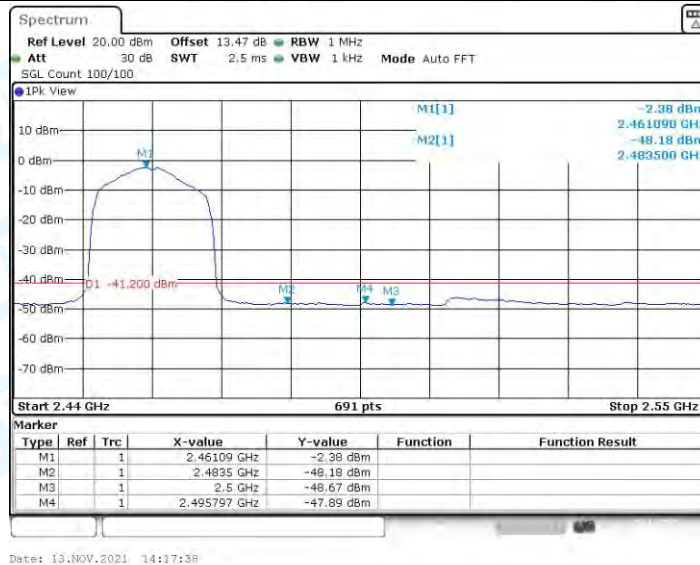
11N20SISO_Ant1_Low_2412_AV



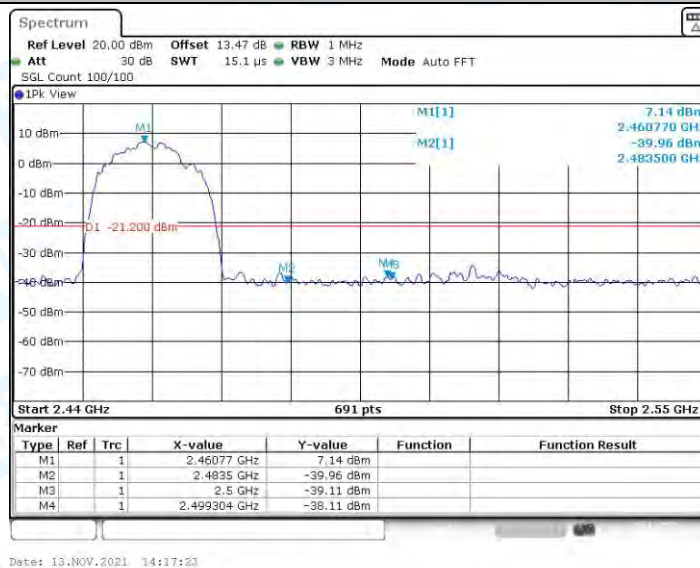
11N20SISO_Ant1_Low_2412_Peak



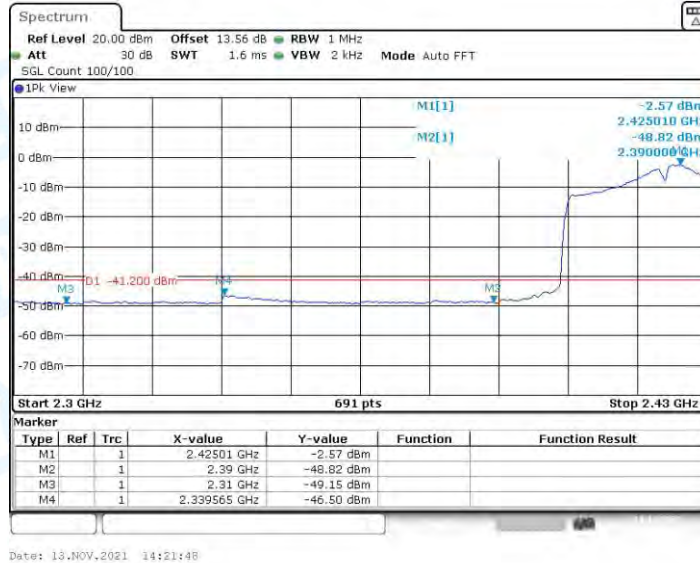
11N20SISO_Ant1_High_2462_AV



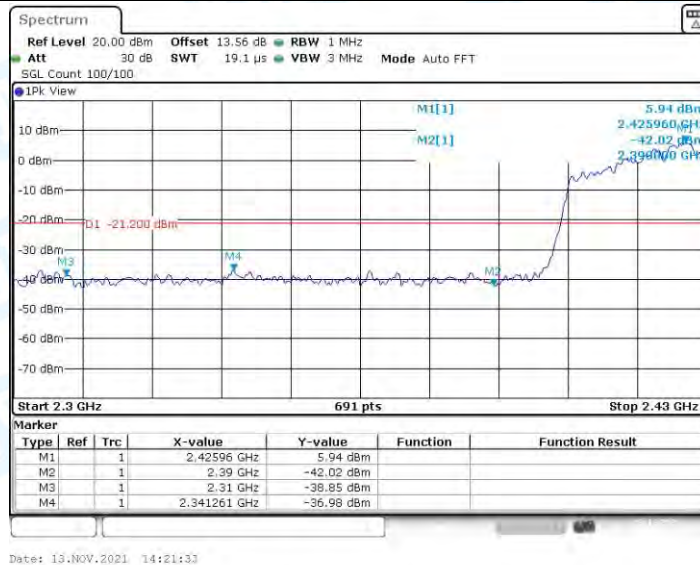
11N20SISO_Ant1_High_2462_Peak



11N40SISO_Ant1_Low_2422_AV



11N40SISO_Ant1_Low_2422_Peak



11N40SISO_Ant1_High_2452_AV

