

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

General Description of EUT	
Product Name:	Petalk AI II
Test Model:	SM-D30
Sample ID:	RW-C-202202-0042-5-2#
Environmental Conditions	
Temperature:	23.8℃
Relative Humidity:	48%
Test Voltage:	Adapter(BI12T-050200-IU) Input: 100-240V 50/60Hz 0.5A Output: 5V2A 10.0W
Test Engineer:	Huang jian ping
Note: For a more detailed features description, please refer to the report TBR-C-202202-0042-5	

Contents

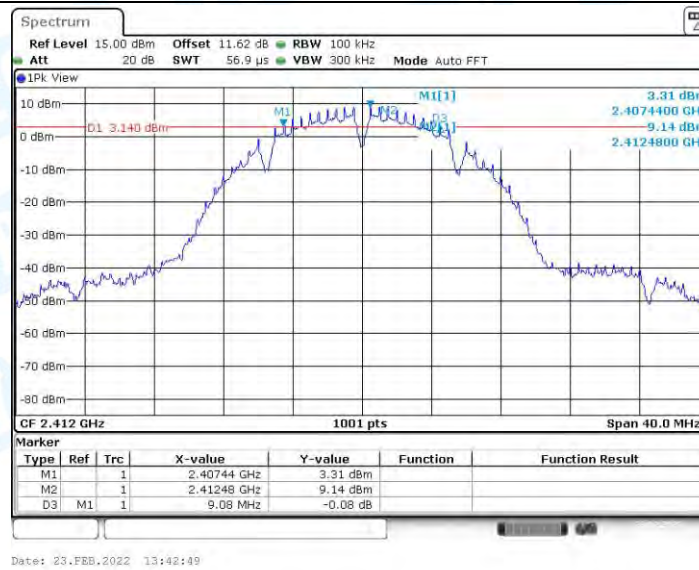
1. DTS Bandwidth.....	3
1.1. Test Result.....	3
1.2. Test Graphs	4
2. Occupied Channel Bandwidth.....	8
2.1. Test Result.....	8
2.2. Test Graphs	9
3. Maximum conducted output power.....	13
3.1. Test Result.....	13
4. Maximum power spectral density	14
4.1. Test Result.....	14
4.2. Test Graphs	15
5. Band edge measurements	19
5.1. Test Result.....	19
5.2. Test Graphs	20
6. Conducted Spurious Emission.....	23
6.1. Test Result.....	23
6.2. Test Graphs	24
7. Duty Cycle	36
7.1. Test Result.....	36
7.2. Test Graphs	37
8. Emissions in Restricted Bands.....	41
8.1. Test Result.....	41
8.2. Test Graphs	43

1. DTS Bandwidth

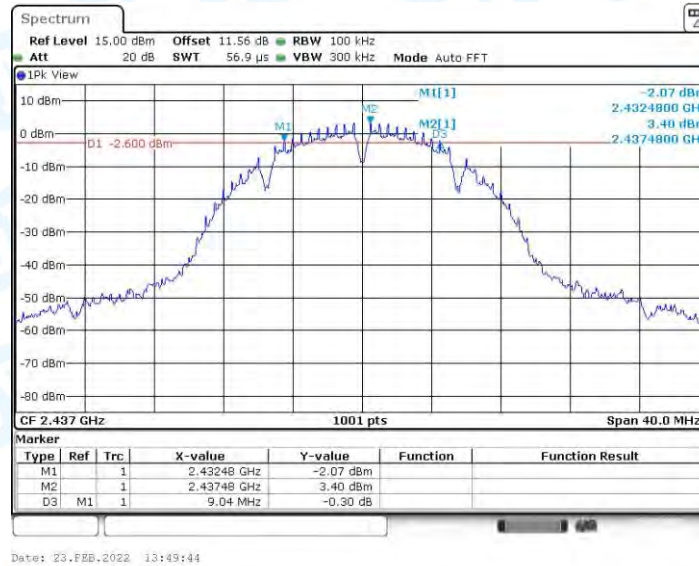
1.1. Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.08	2407.44	2416.52	0.5	PASS
		2437	9.04	2432.48	2441.52	0.5	PASS
		2462	9.08	2457.44	2466.52	0.5	PASS
11G	Ant1	2412	16.32	2403.80	2420.12	0.5	PASS
		2437	16.36	2428.80	2445.16	0.5	PASS
		2462	16.32	2453.84	2470.16	0.5	PASS
11N20SISO	Ant1	2412	17.56	2403.20	2420.76	0.5	PASS
		2437	17.56	2428.20	2445.76	0.5	PASS
		2462	17.56	2453.20	2470.76	0.5	PASS
11N40SISO	Ant1	2422	35.44	2404.16	2439.60	0.5	PASS
		2437	35.52	2419.08	2454.60	0.5	PASS
		2452	35.68	2434.16	2469.84	0.5	PASS

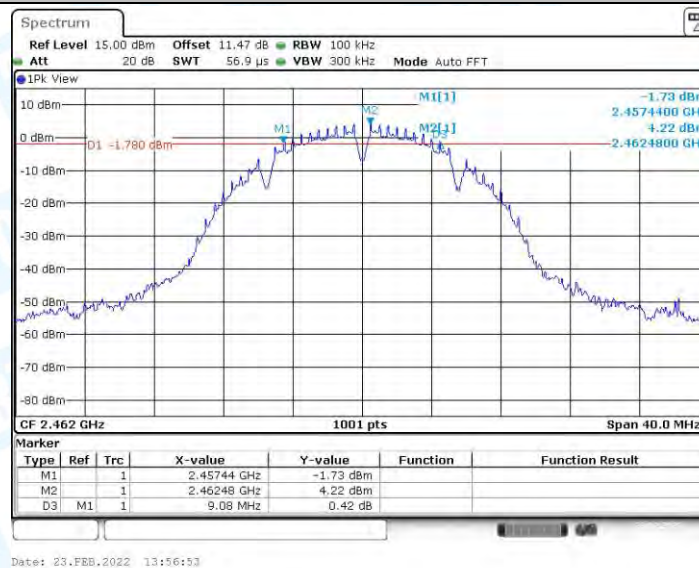
1.2. Test Graphs



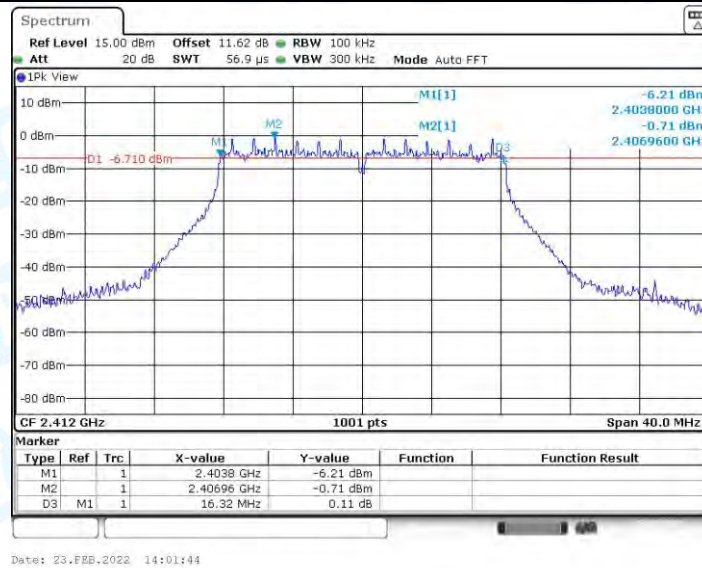
11B_Ant1_2412



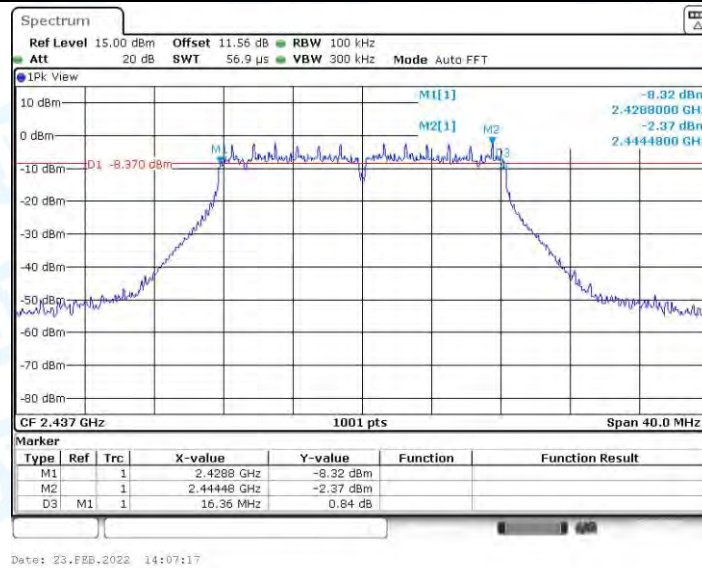
11B_Ant1_2437



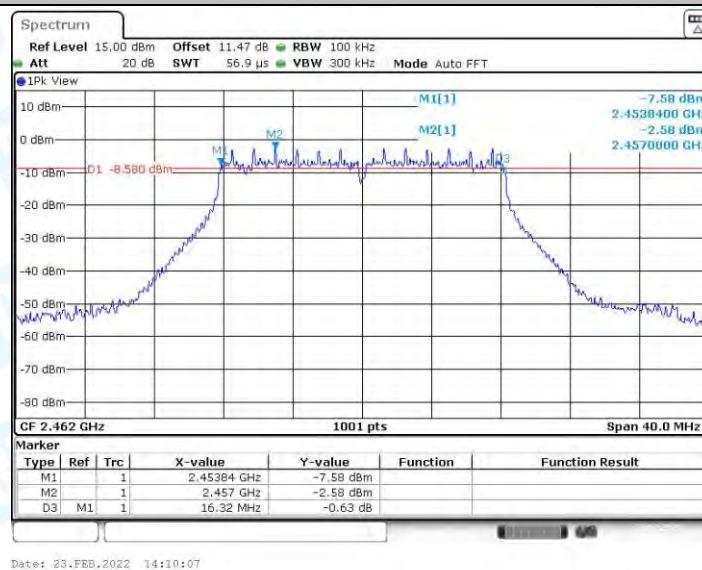
11B_Ant1_2462



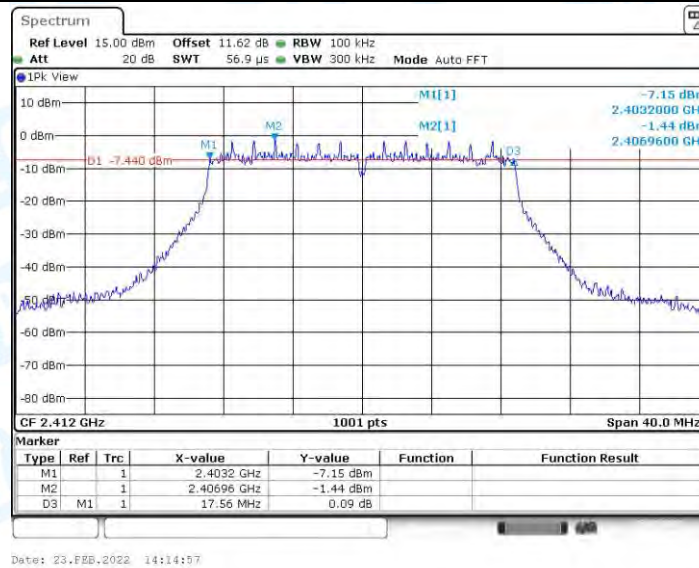
11G_Ant1_2412



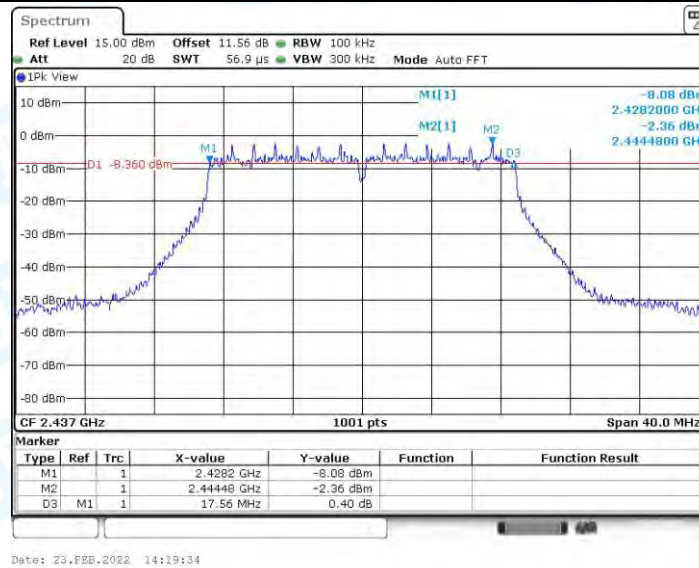
11G_Ant1_2437



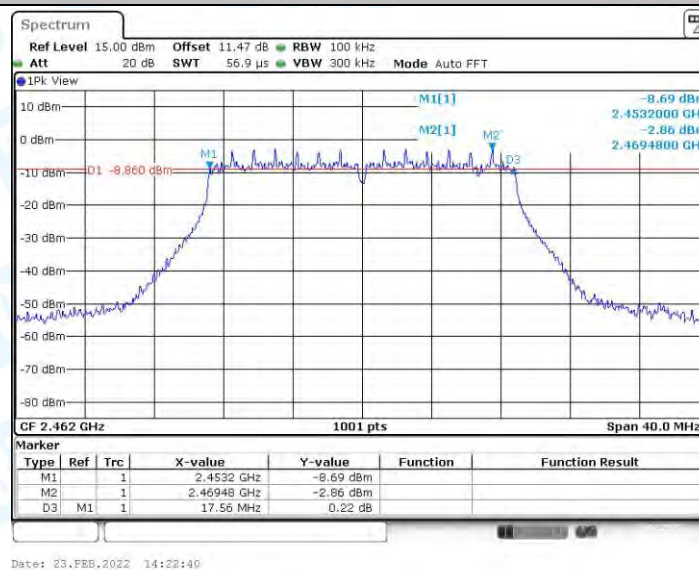
11G_Ant1_2462



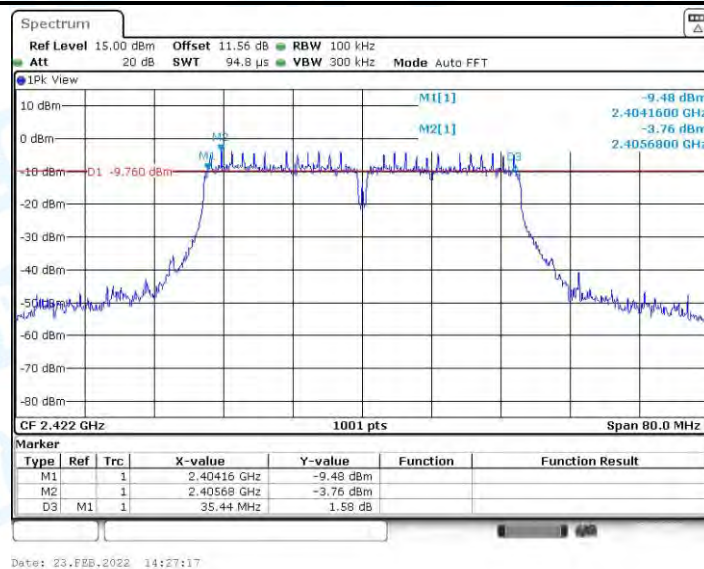
11N20SISO_Ant1_2412



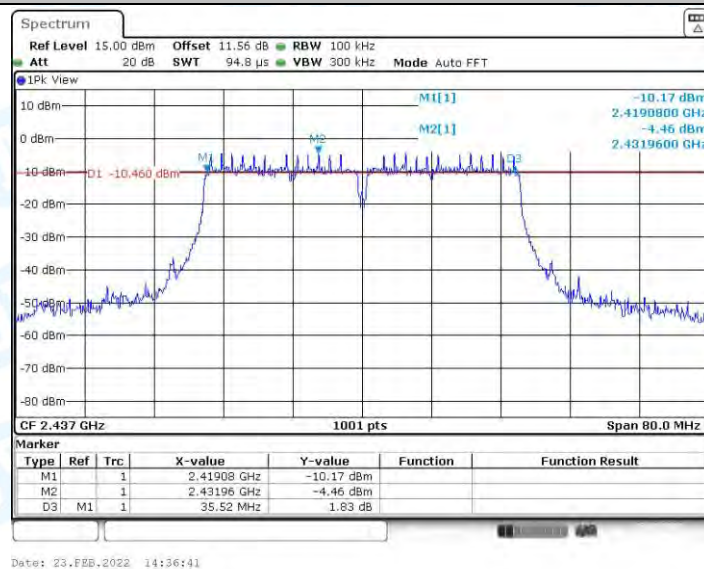
11N20SISO_Ant1_2437



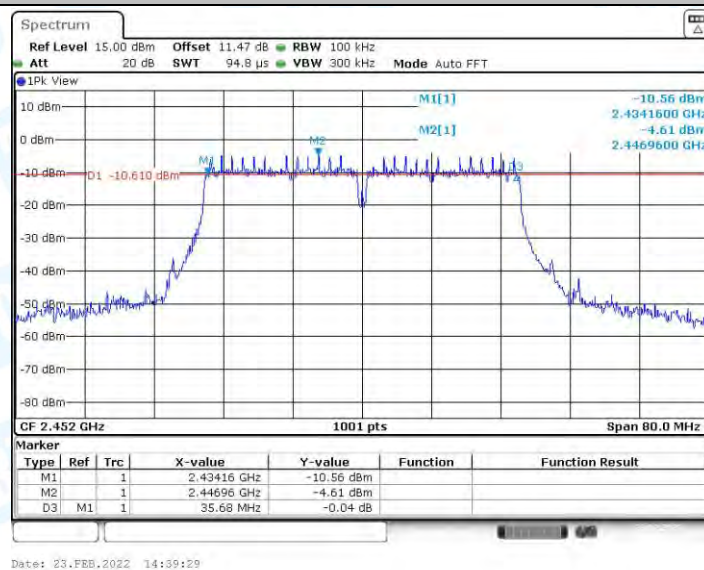
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



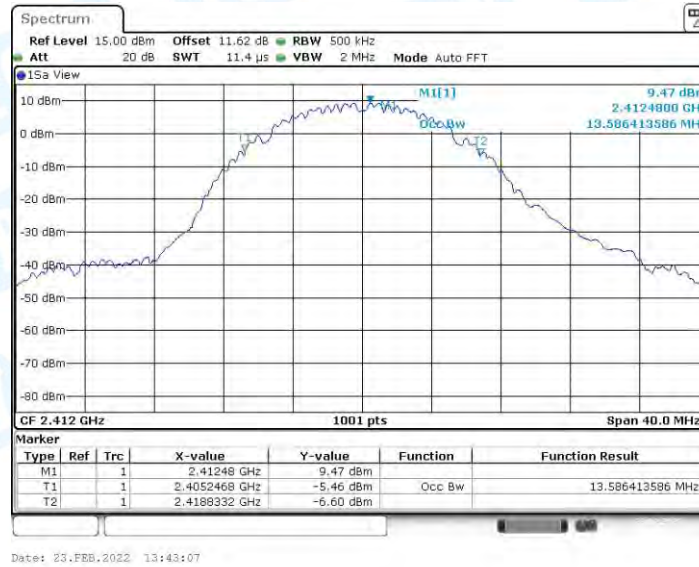
11N40SISO_Ant1_2452

2. Occupied Channel Bandwidth

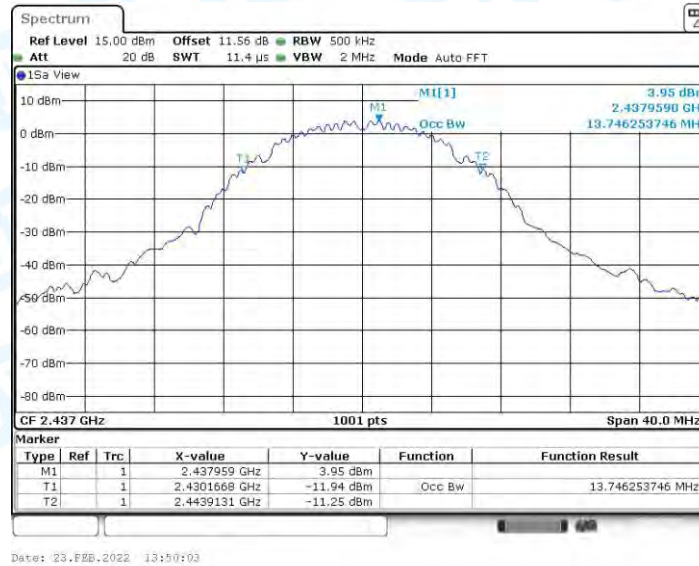
2.1. Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	13.586	2405.247	2418.833	---	---
		2437	13.746	2430.167	2443.913	---	---
		2462	13.586	2455.127	2468.713	---	---
11G	Ant1	2412	17.343	2403.249	2420.591	---	---
		2437	17.223	2428.289	2445.511	---	---
		2462	17.143	2453.329	2470.472	---	---
11N20SISO	Ant1	2412	18.102	2402.809	2420.911	---	---
		2437	18.102	2427.969	2446.071	---	---
		2462	18.102	2452.929	2471.031	---	---
11N40SISO	Ant1	2422	36.523	2403.618	2440.142	---	---
		2437	36.444	2418.698	2455.142	---	---
		2452	36.364	2433.778	2470.142	---	---

2.2. Test Graphs



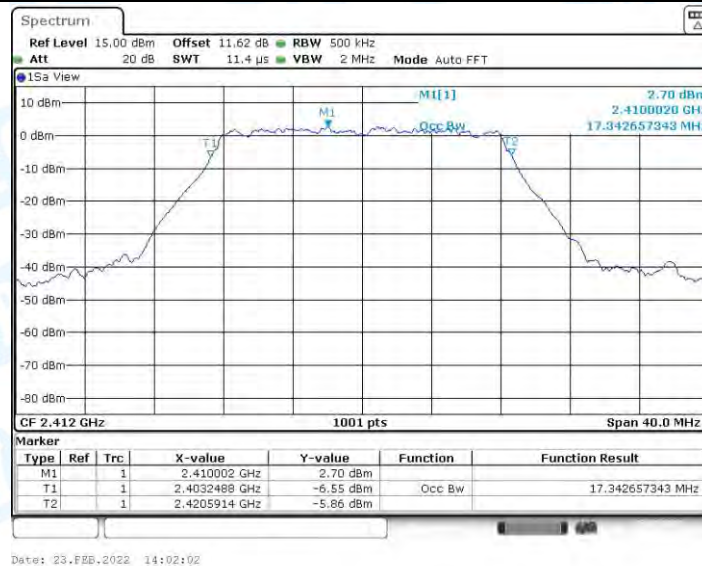
11B_Ant1_2412



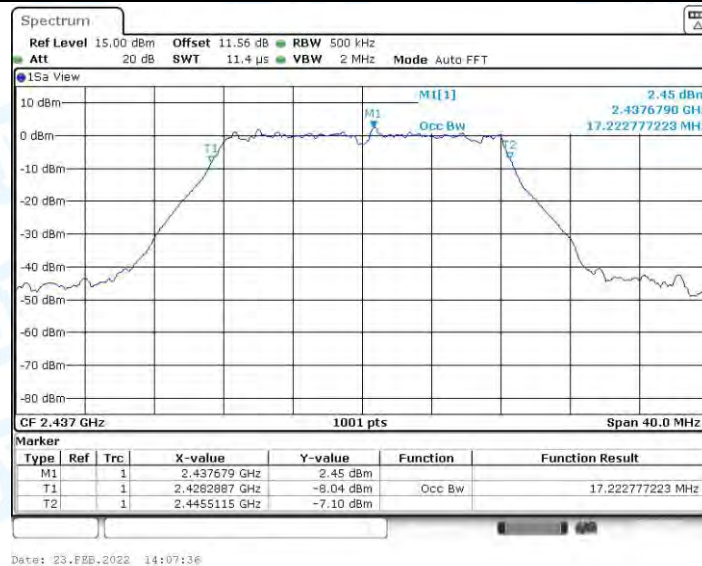
11B_Ant1_2437



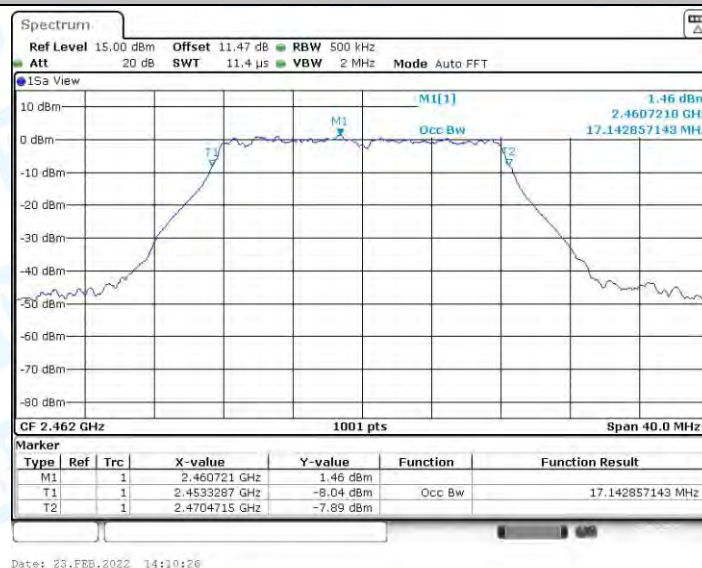
11B_Ant1_2462



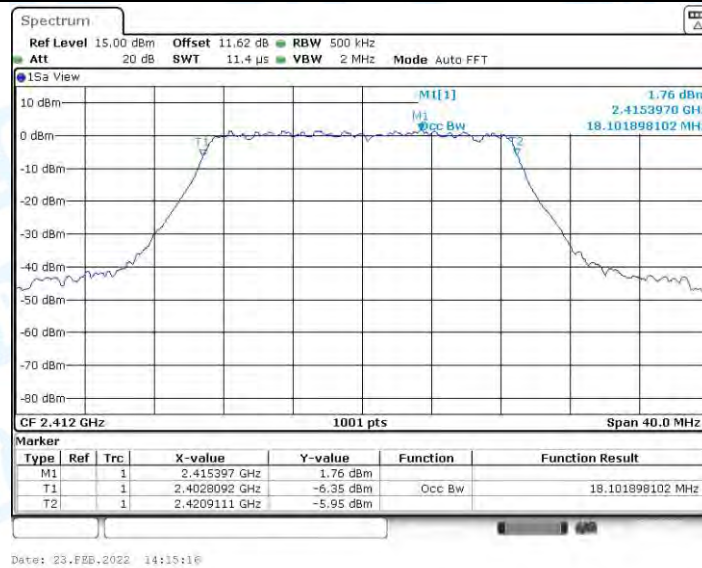
11G_Ant1_2412



11G_Ant1_2437



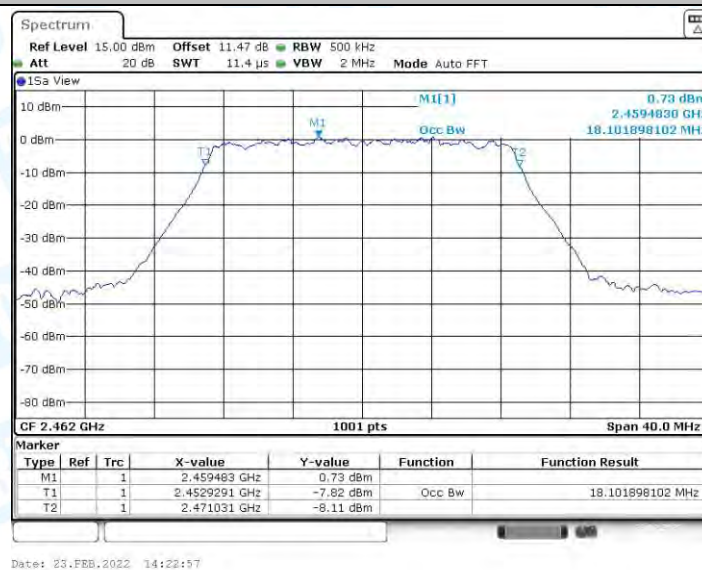
11G_Ant1_2462



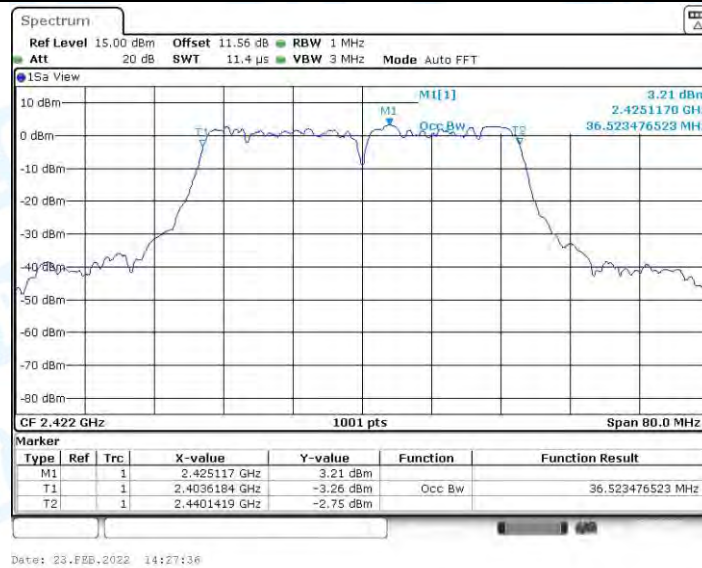
11N20SISO_Ant1_2412



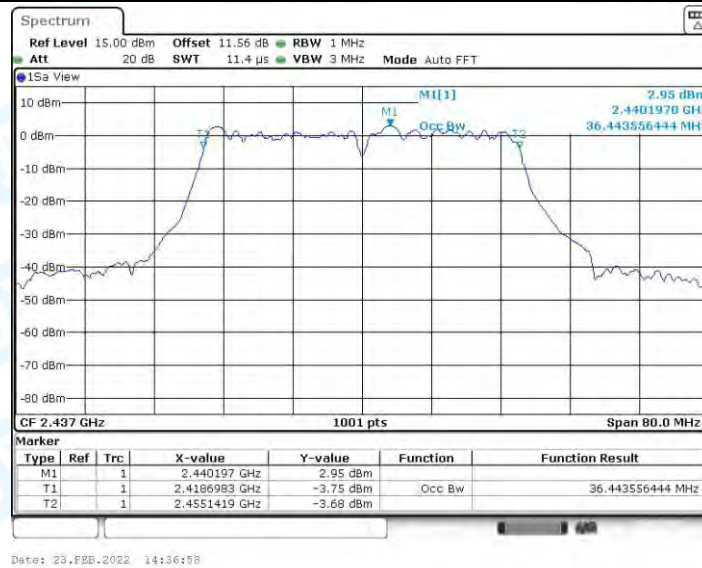
11N20SISO_Ant1_2437



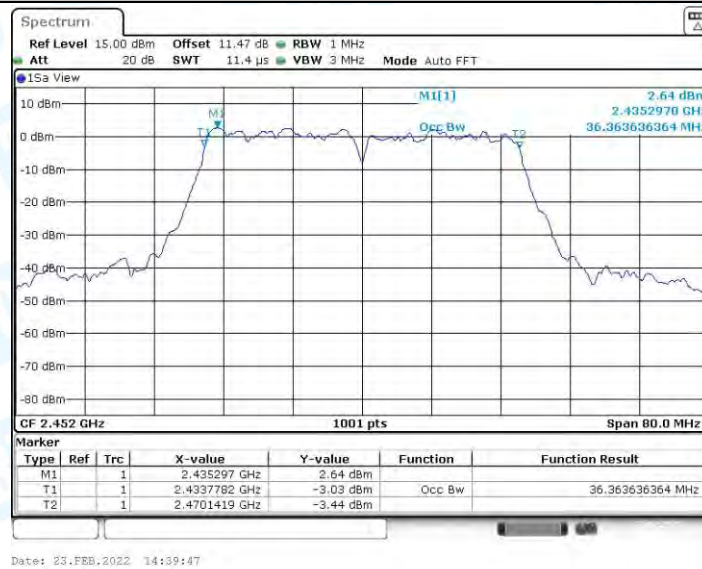
11N20SISO_Ant1_2462



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	16.27	≤30.00	PASS
		2437	16.97	≤30.00	PASS
		2462	16.31	≤30.00	PASS
11G	Ant1	2412	17.39	≤30.00	PASS
		2437	16.80	≤30.00	PASS
		2462	16.48	≤30.00	PASS
11N20SISO	Ant1	2412	17.51	≤30.00	PASS
		2437	16.77	≤30.00	PASS
		2462	16.19	≤30.00	PASS
11N40SISO	Ant1	2422	17.85	≤30.00	PASS
		2437	17.46	≤30.00	PASS
		2452	17.13	≤30.00	PASS

4. Maximum power spectral density

4.1. Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-9.22	≤8.00	PASS
		2437	-9.72	≤8.00	PASS
		2462	-7.85	≤8.00	PASS
11G	Ant1	2412	-12.84	≤8.00	PASS
		2437	-15.12	≤8.00	PASS
		2462	-15.58	≤8.00	PASS
11N20SISO	Ant1	2412	-13.37	≤8.00	PASS
		2437	-13.4	≤8.00	PASS
		2462	-14.2	≤8.00	PASS
11N40SISO	Ant1	2422	-18.36	≤8.00	PASS
		2437	-17.44	≤8.00	PASS
		2452	-18.19	≤8.00	PASS

4.2. Test Graphs



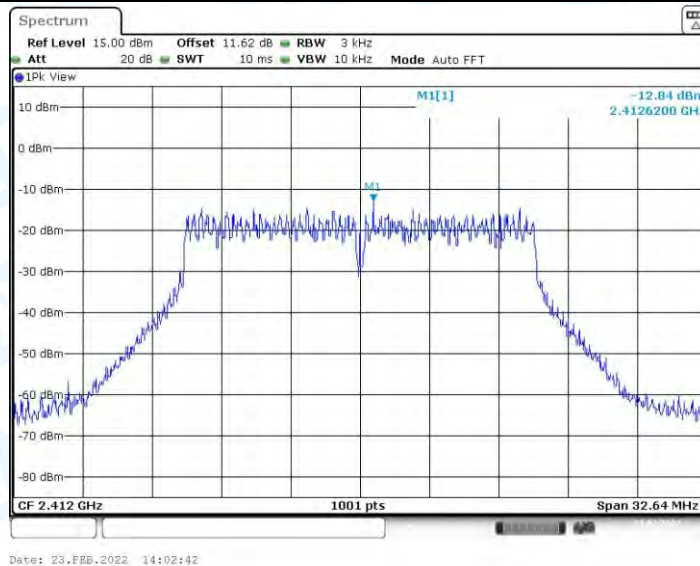
11B_Ant1_2412



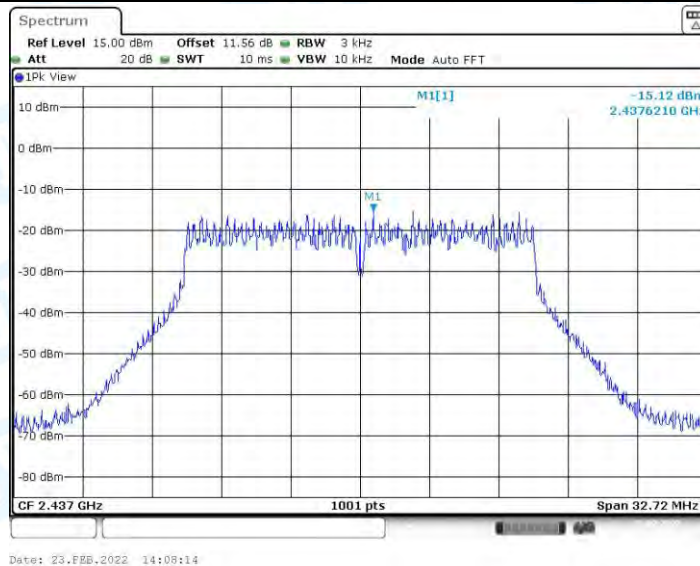
11B_Ant1_2437



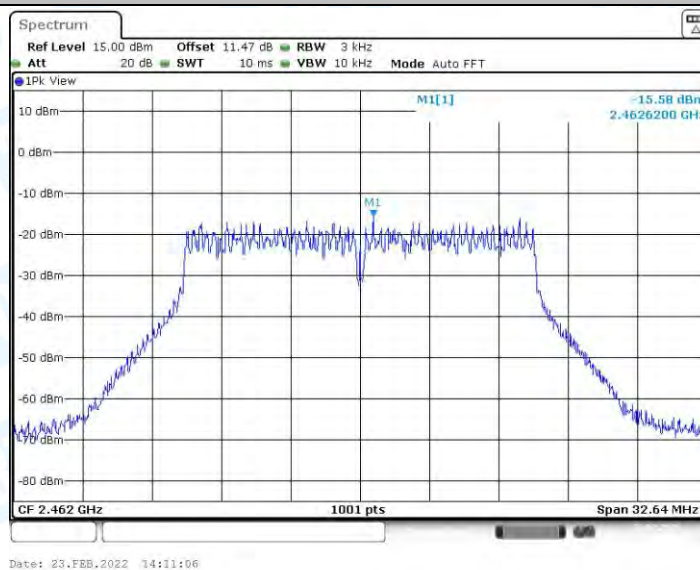
11B_Ant1_2462



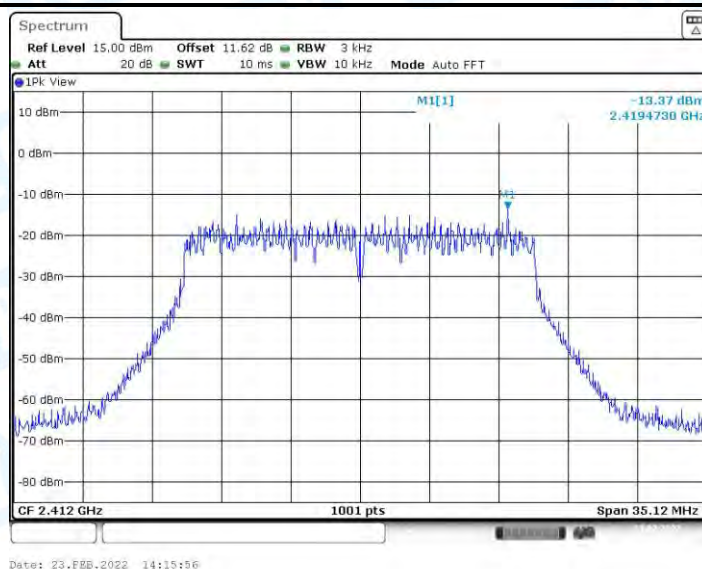
11G_Ant1_2412



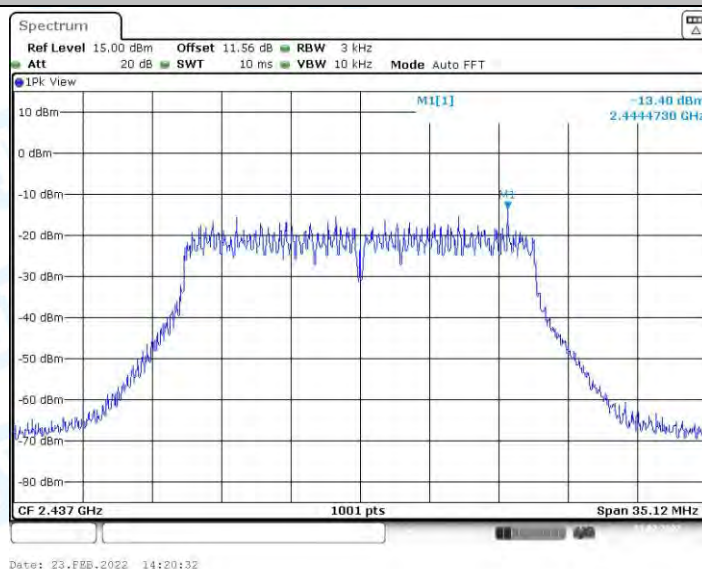
11G_Ant1_2437



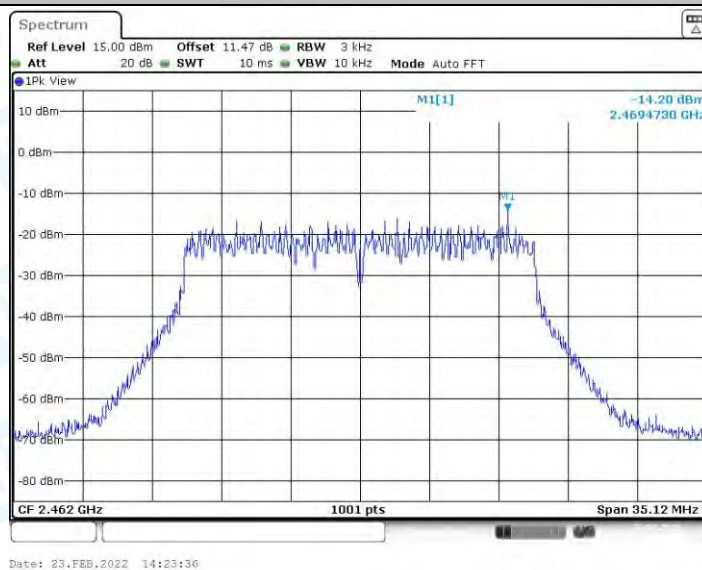
11G_Ant1_2462



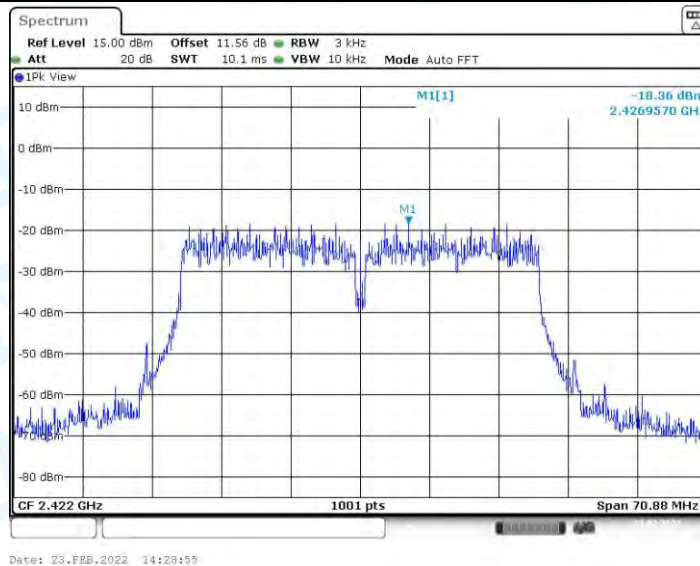
11N20SISO_Ant1_2412



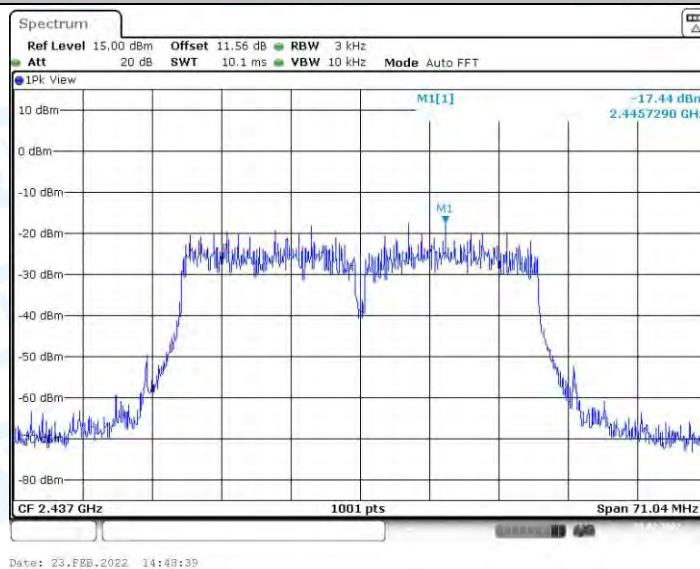
11N20SISO_Ant1_2437



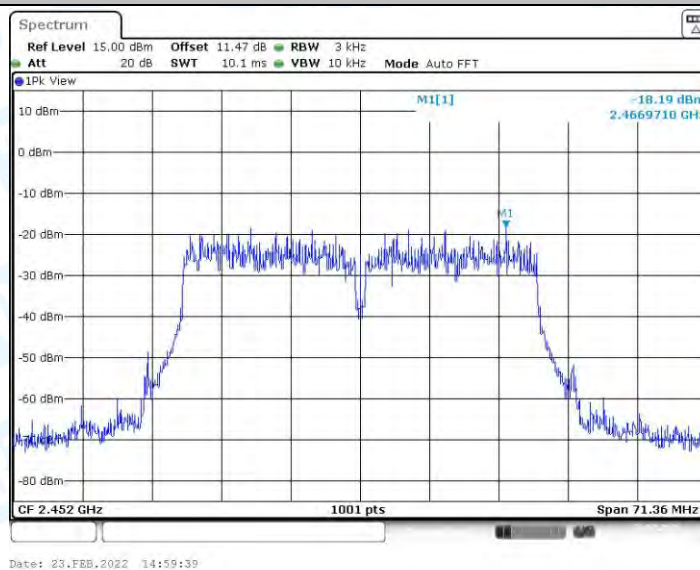
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



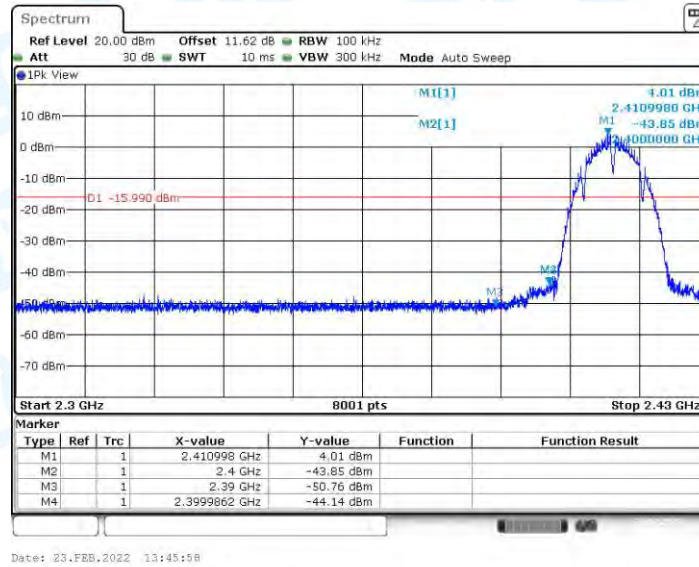
11N40SISO_Ant1_2452

5. Band edge measurements

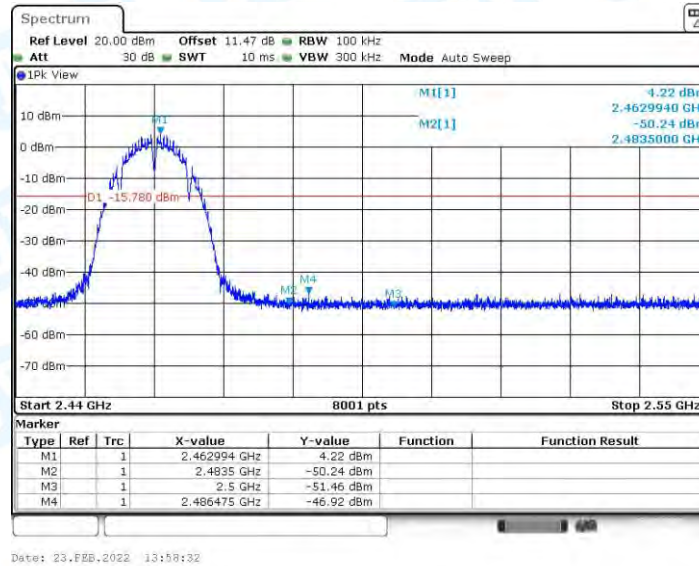
5.1. Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	4.01	-44.14	≤ -15.99	PASS
		High	2462	4.22	-46.92	≤ -15.78	PASS
11G	Ant1	Low	2412	-1.29	-40.16	≤ -21.29	PASS
		High	2462	-2.84	-47.37	≤ -22.84	PASS
11N20SISO	Ant1	Low	2412	-1.37	-39.5	≤ -21.37	PASS
		High	2462	-2.98	-47.2	≤ -22.98	PASS
11N40SISO	Ant1	Low	2422	-3.87	-37.59	≤ -23.87	PASS
		High	2452	-4.89	-45.95	≤ -24.89	PASS

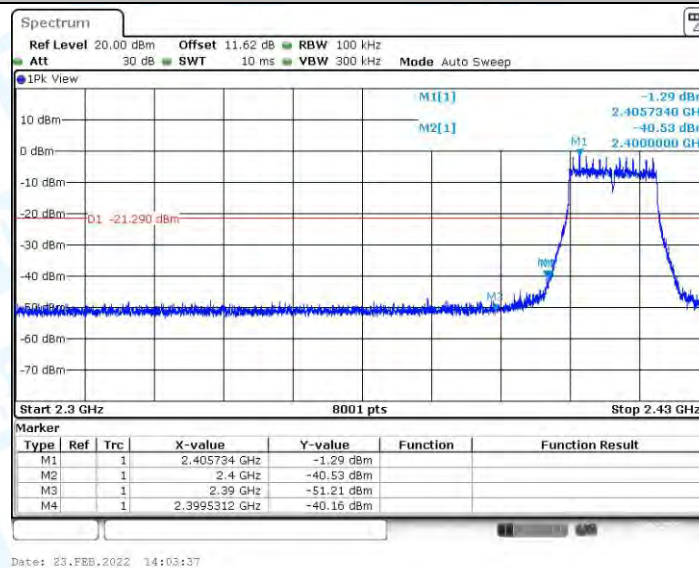
5.2. Test Graphs



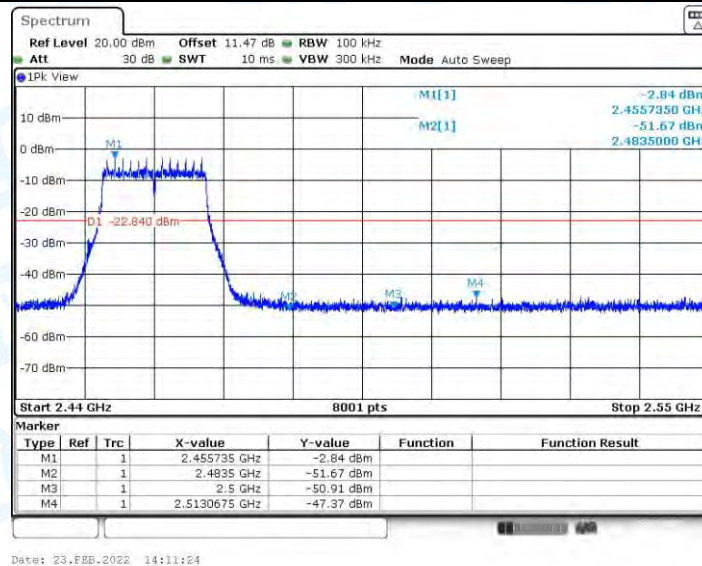
11B_Ant1_Low_2412



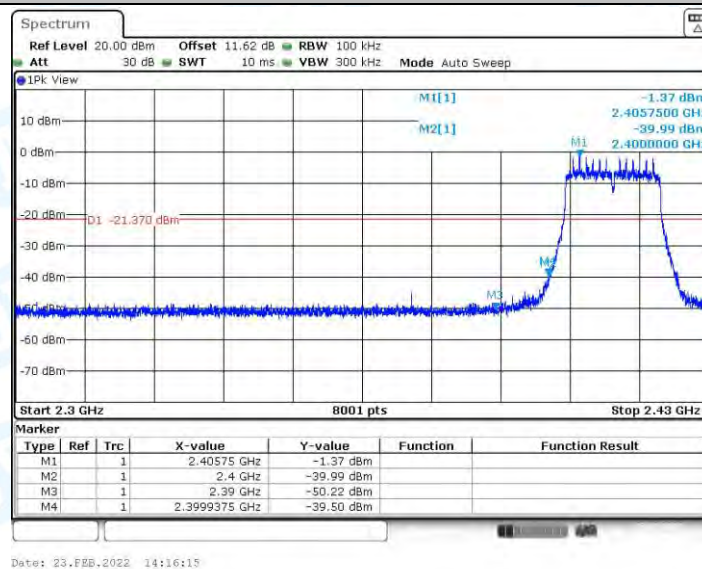
11B_Ant1_High_2462



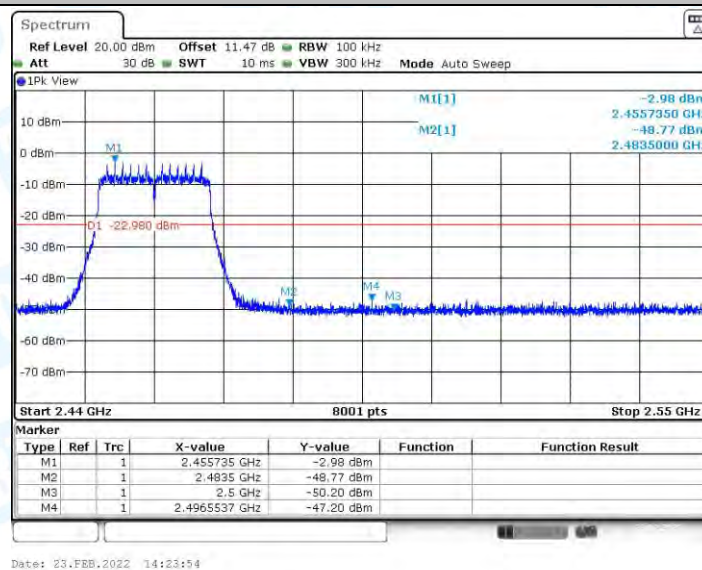
11G_Ant1_Low_2412



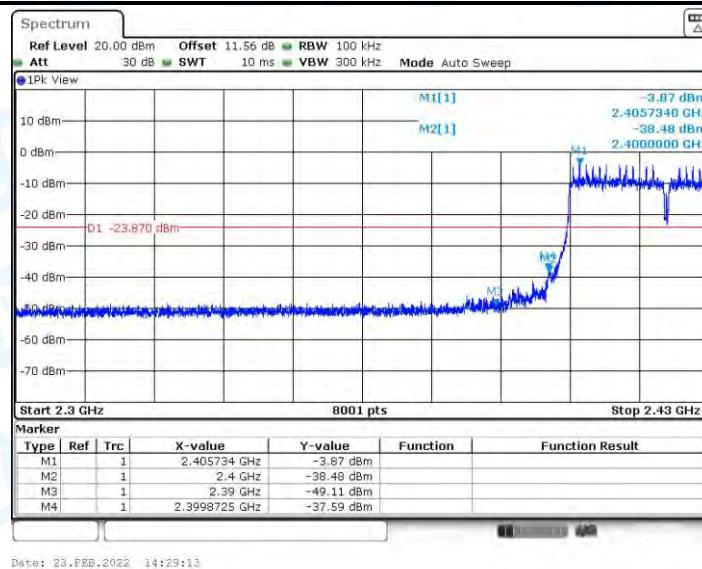
11G_Ant1_High_2462



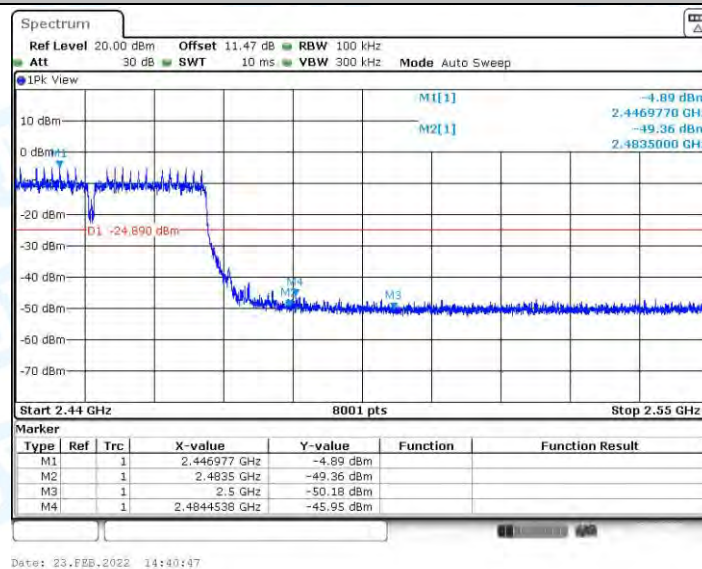
11N20SISO_Ant1_Low_2412



11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



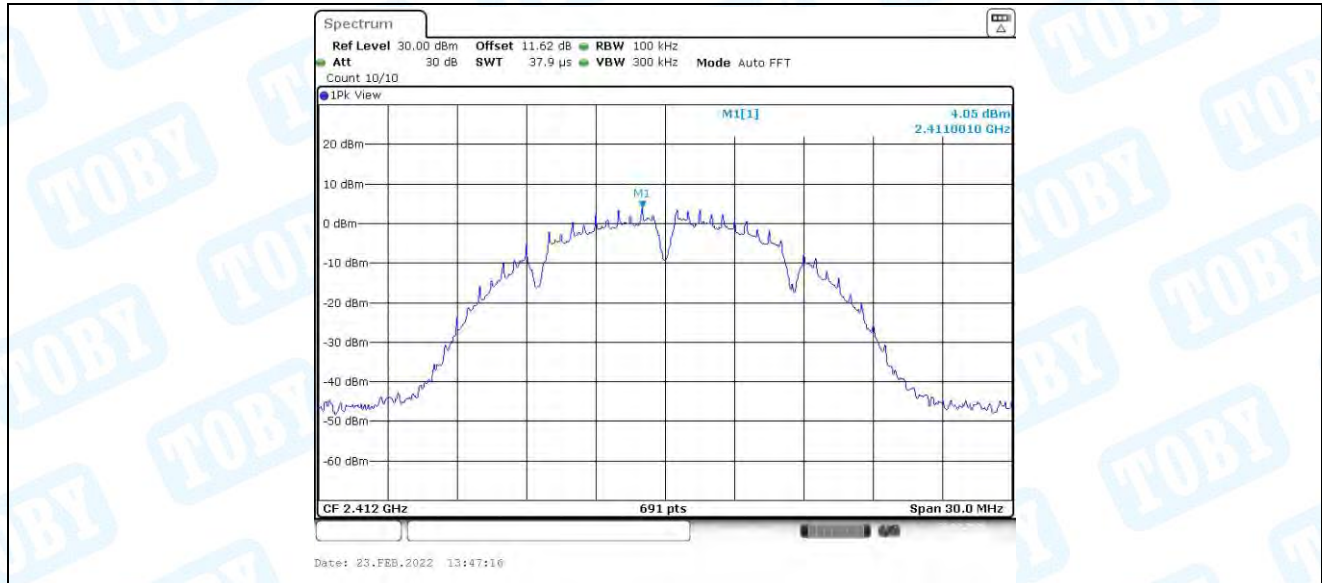
11N40SISO_Ant1_High_2452

6. Conducted Spurious Emission

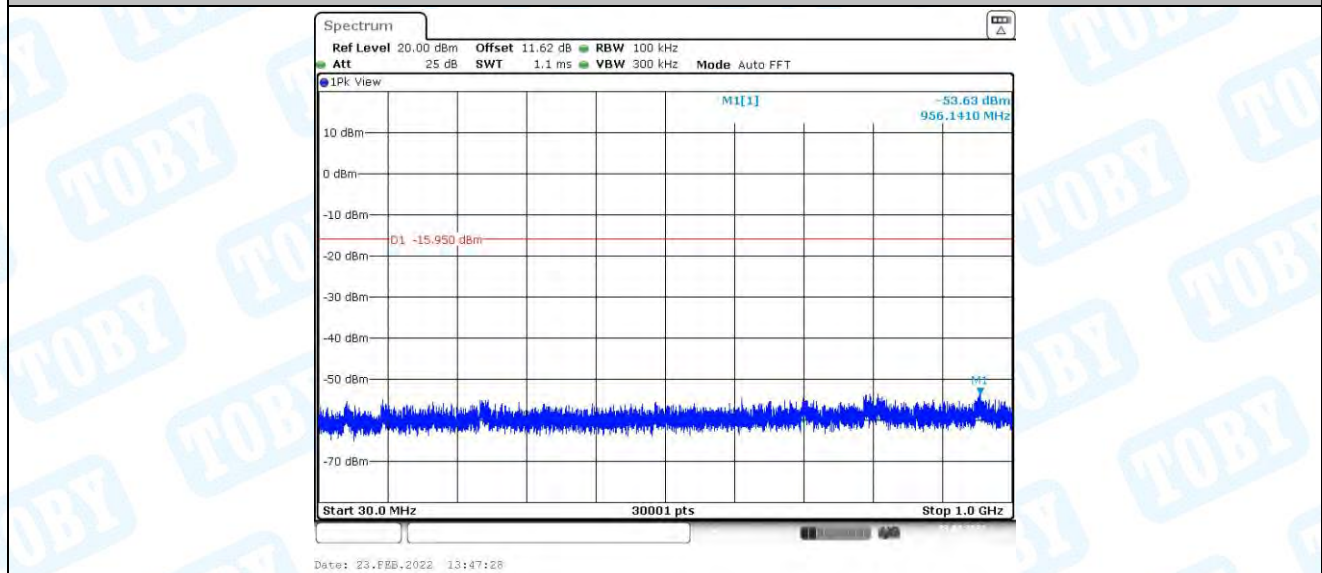
6.1. Test Result

TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	4.05	4.05	---	PASS
			30~1000	4.05	-53.63	≤-15.95	PASS
			1000~26500	4.05	-29.31	≤-15.95	PASS
		2437	Reference	2.45	2.45	---	PASS
			30~1000	2.45	-53.41	≤-17.55	PASS
			1000~26500	2.45	-30.97	≤-17.55	PASS
		2462	Reference	3.54	3.54	---	PASS
			30~1000	3.54	-52.88	≤-16.46	PASS
			1000~26500	3.54	-29.04	≤-16.46	PASS
11G	Ant1	2412	Reference	-1.26	-1.26	---	PASS
			30~1000	-1.26	-52.97	≤-21.26	PASS
			1000~26500	-1.26	-42.33	≤-21.26	PASS
		2437	Reference	-2.23	-2.23	---	PASS
			30~1000	-2.23	-52.34	≤-22.23	PASS
			1000~26500	-2.23	-41.16	≤-22.23	PASS
		2462	Reference	-2.71	-2.71	---	PASS
			30~1000	-2.71	-53.56	≤-22.71	PASS
			1000~26500	-2.71	-44.4	≤-22.71	PASS
11N20SISO	Ant1	2412	Reference	-1.39	-1.39	---	PASS
			30~1000	-1.39	-53.21	≤-21.39	PASS
			1000~26500	-1.39	-41.47	≤-21.39	PASS
		2437	Reference	-2.25	-2.25	---	PASS
			30~1000	-2.25	-52.66	≤-22.25	PASS
			1000~26500	-2.25	-44.55	≤-22.25	PASS
		2462	Reference	-2.77	-2.77	---	PASS
			30~1000	-2.77	-51.49	≤-22.77	PASS
			1000~26500	-2.77	-44.42	≤-22.77	PASS
11N40SISO	Ant1	2422	Reference	-4.08	-4.08	---	PASS
			30~1000	-4.08	-52.69	≤-24.08	PASS
			1000~26500	-4.08	-39.8	≤-24.08	PASS
		2437	Reference	-4.52	-4.52	---	PASS
			30~1000	-4.52	-51.67	≤-24.52	PASS
			1000~26500	-4.52	-42.81	≤-24.52	PASS
		2452	Reference	-4.92	-4.92	---	PASS
			30~1000	-4.92	-52.91	≤-24.92	PASS
			1000~26500	-4.92	-46	≤-24.92	PASS

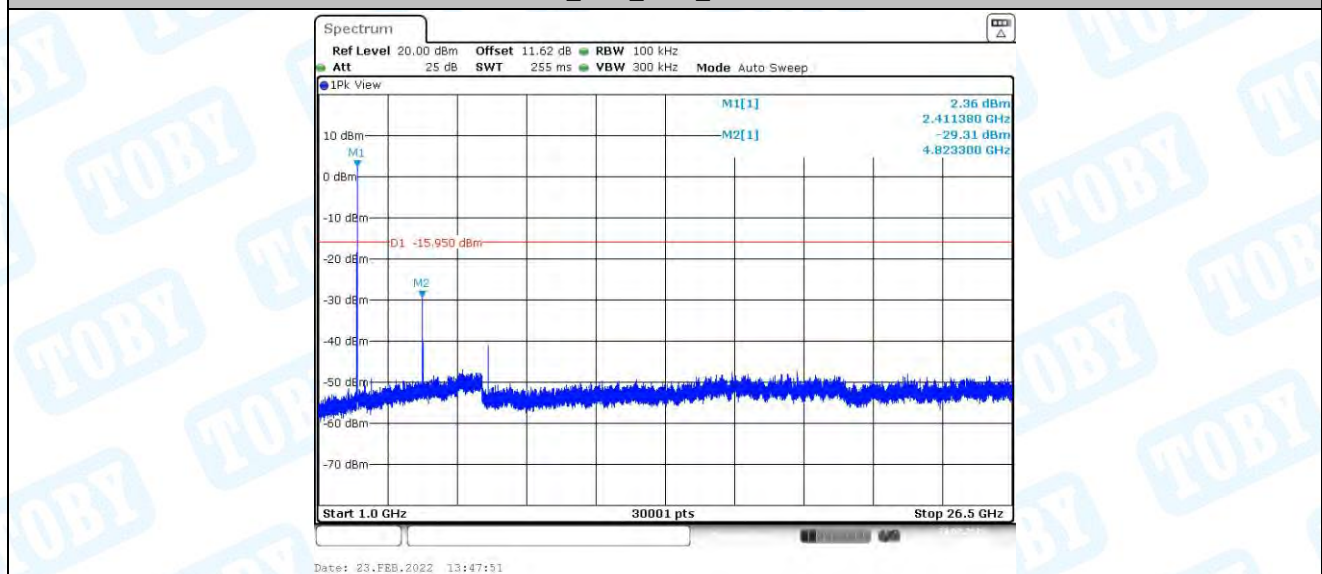
6.2. Test Graphs



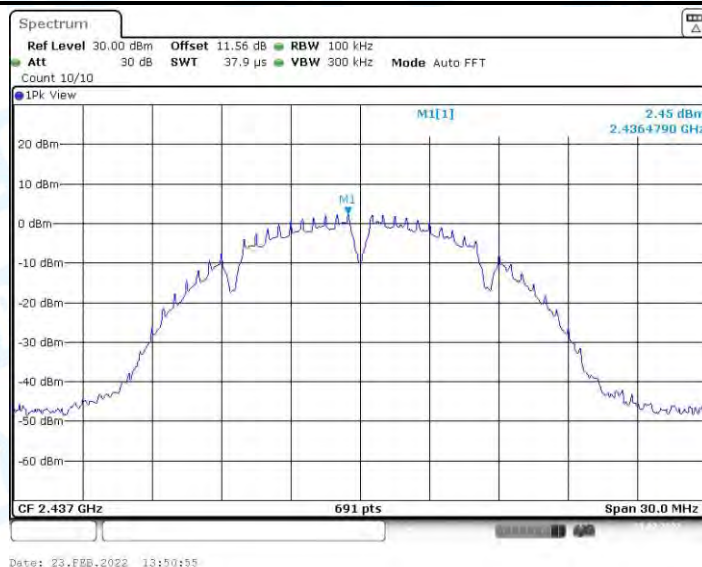
11B_Ant1_2412_0~Reference



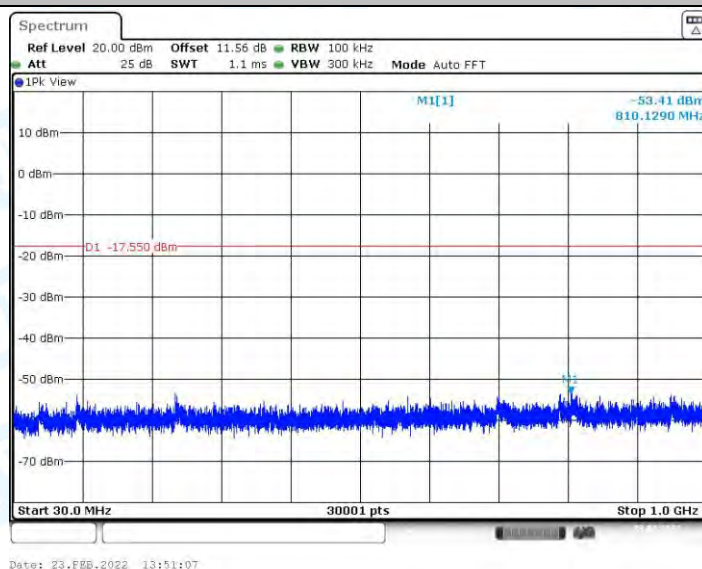
11B_Ant1_2412_30~1000



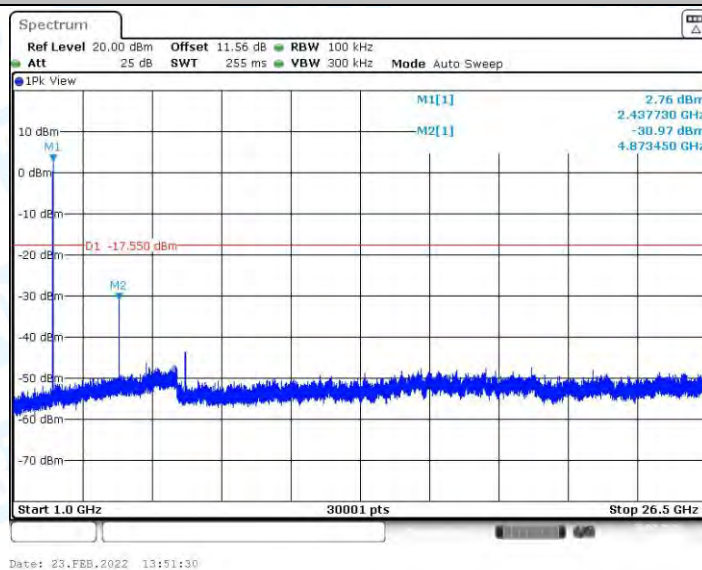
11B_Ant1_2412_1000~26500



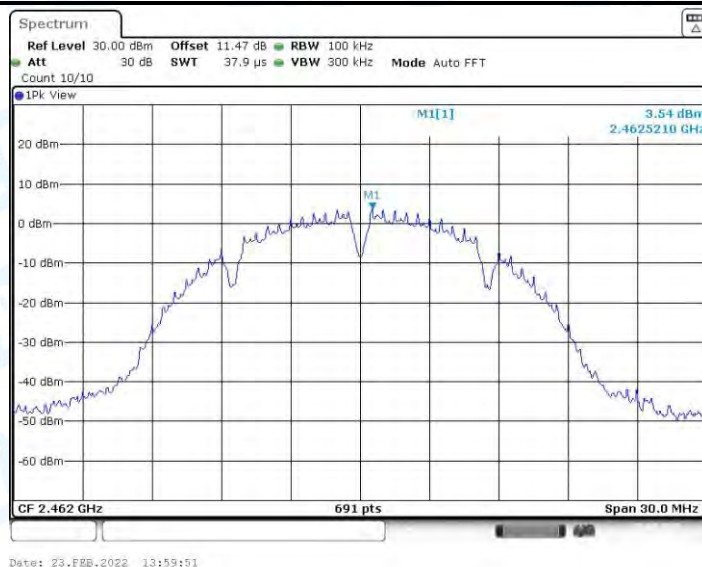
11B_Ant1_2437_0~Reference



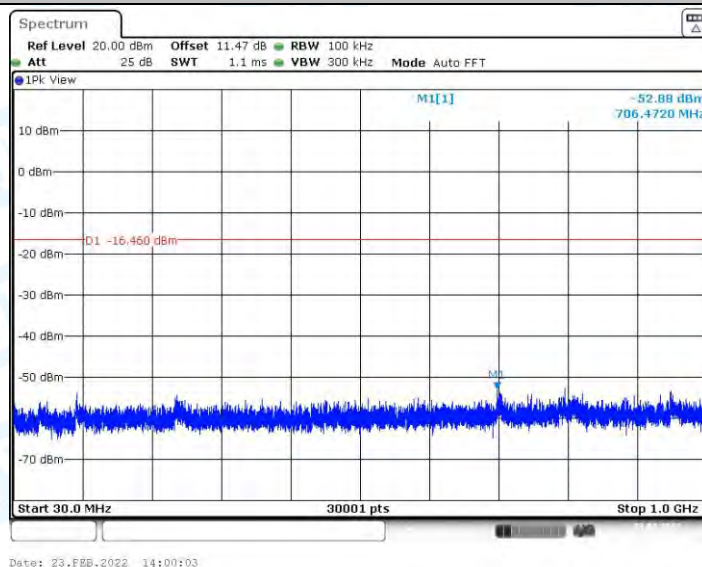
11B_Ant1_2437_30~1000



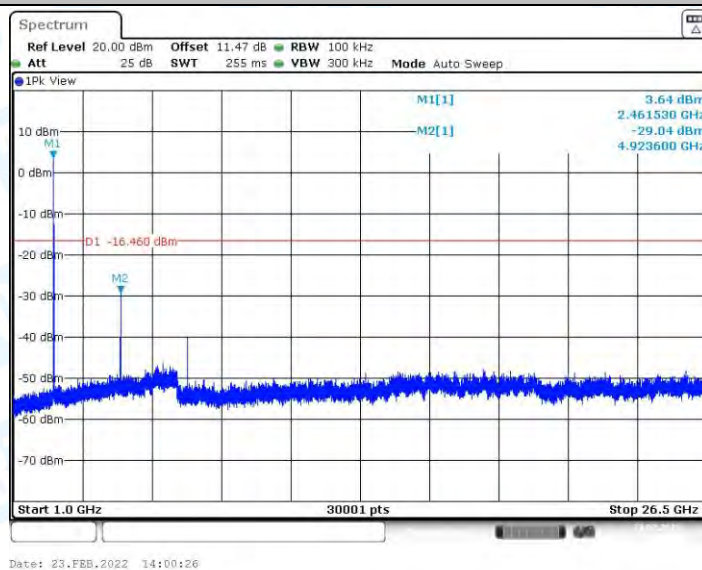
11B_Ant1_2437_1000~26500



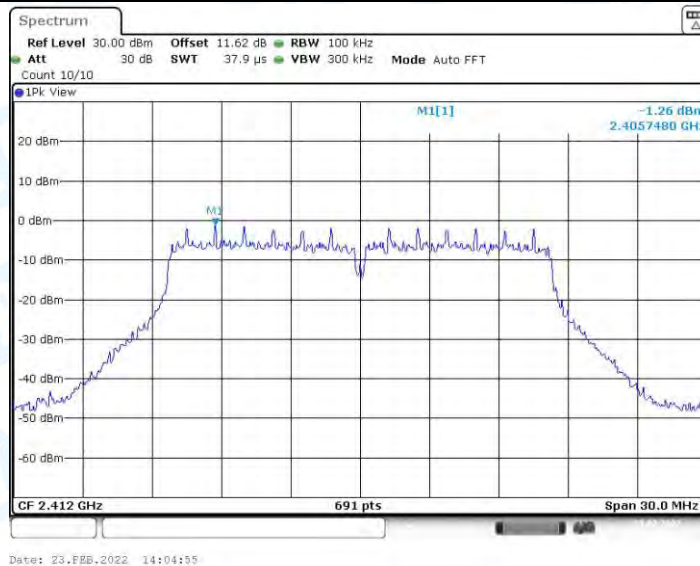
11B_Ant1_2462_0~Reference



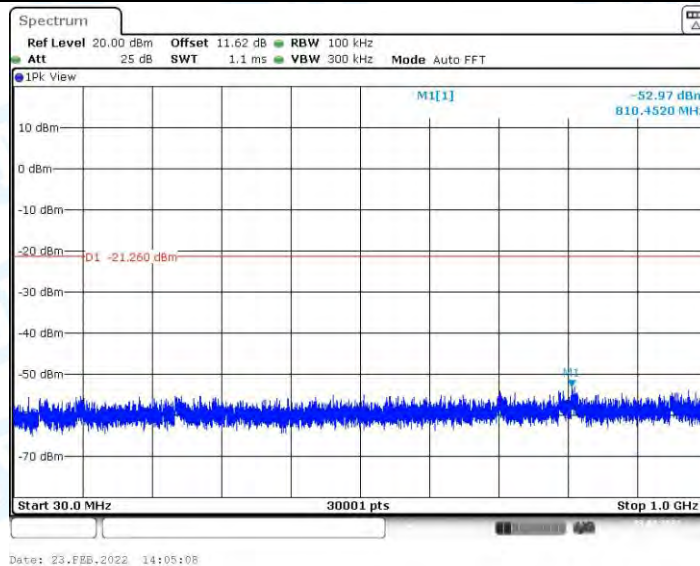
11B_Ant1_2462_30~1000



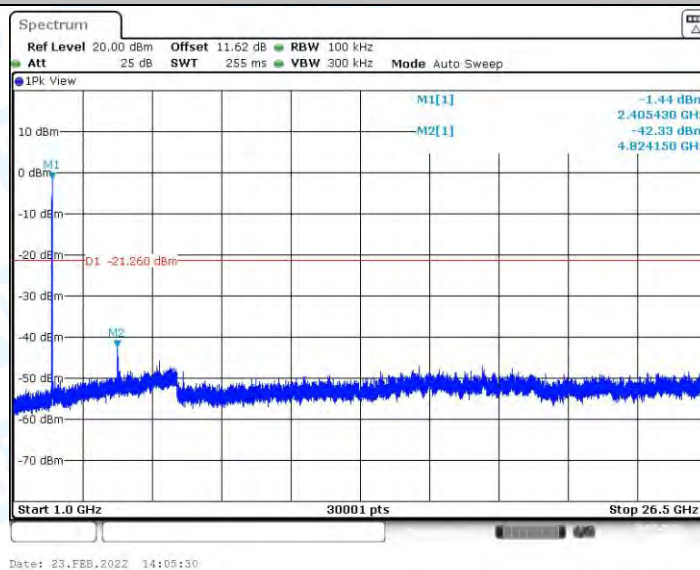
11B_Ant1_2462_1000~26500



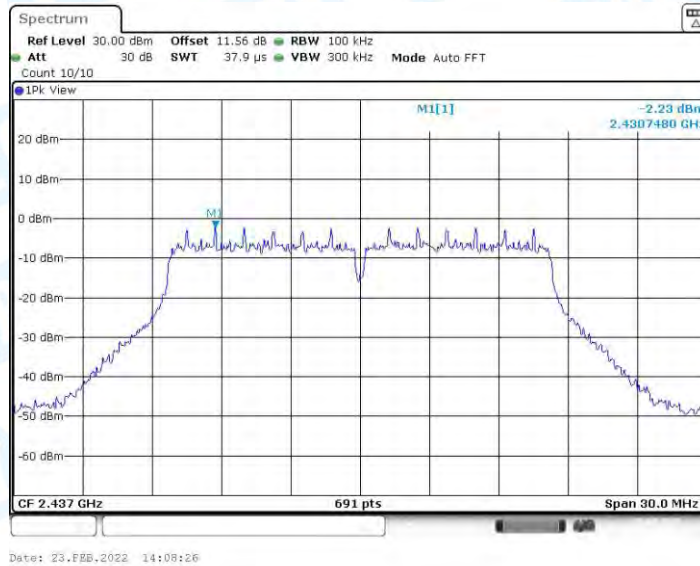
11G_Ant1_2412_0~Reference



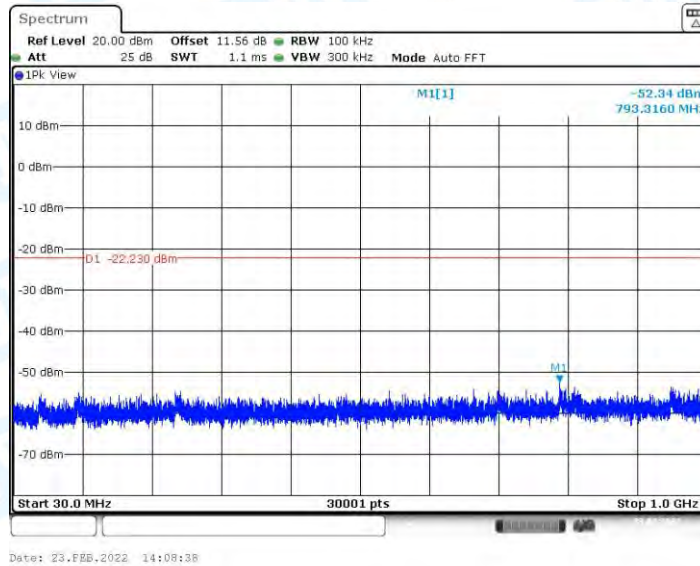
11G_Ant1_2412_30~1000



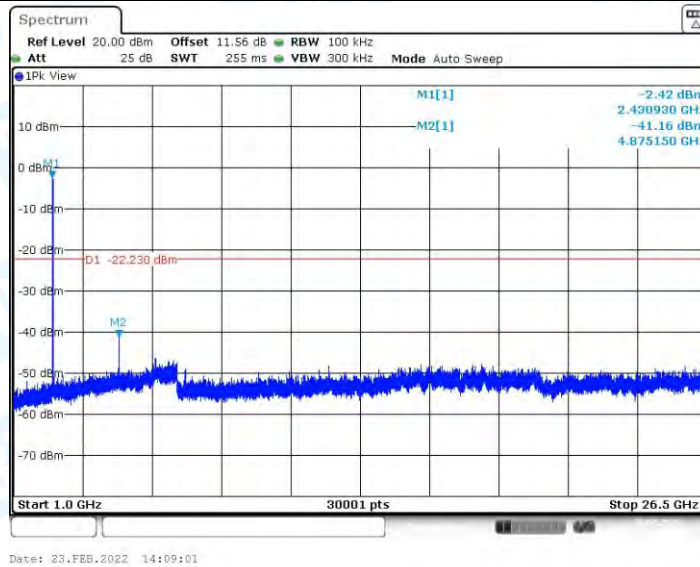
11G_Ant1_2412_1000~26500



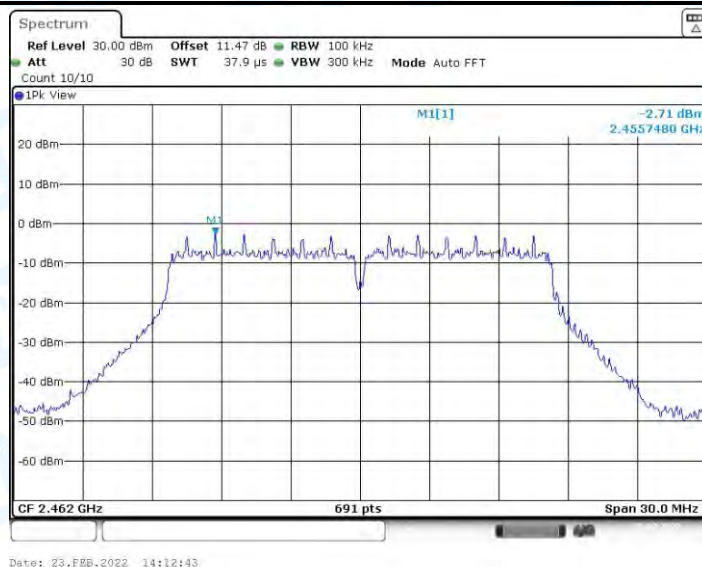
11G_Ant1_2437_0~Reference



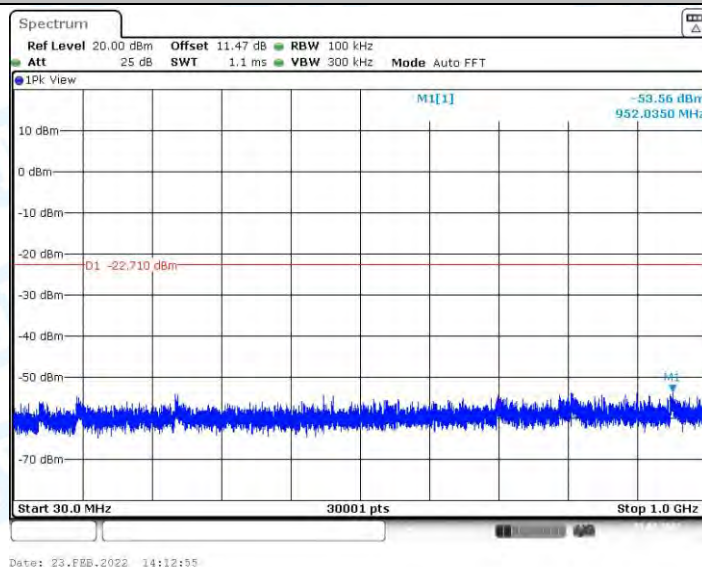
11G_Ant1_2437_30~1000



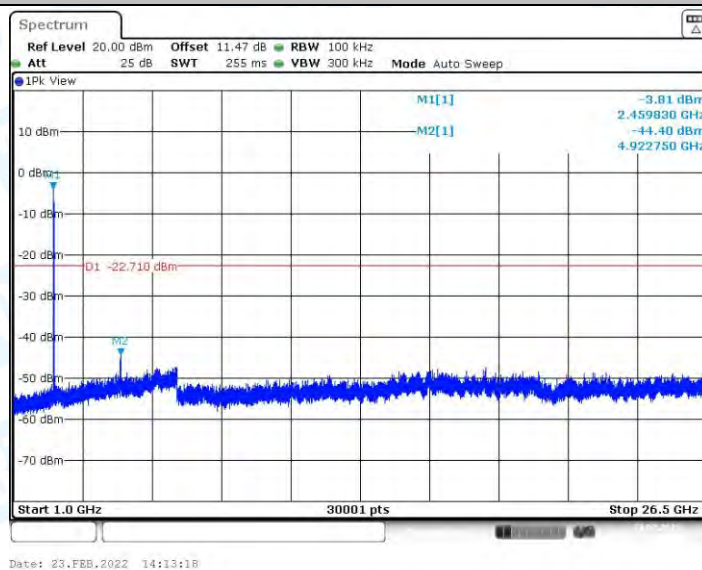
11G_Ant1_2437_1000~26500



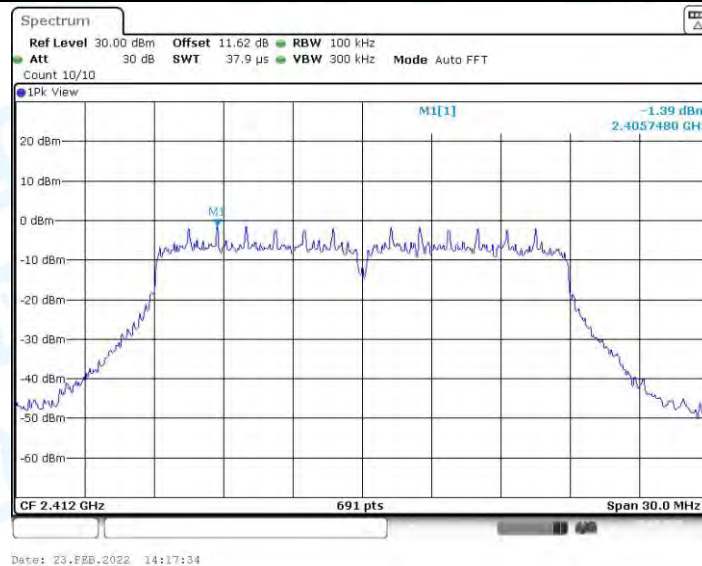
11G_Ant1_2462_0~Reference



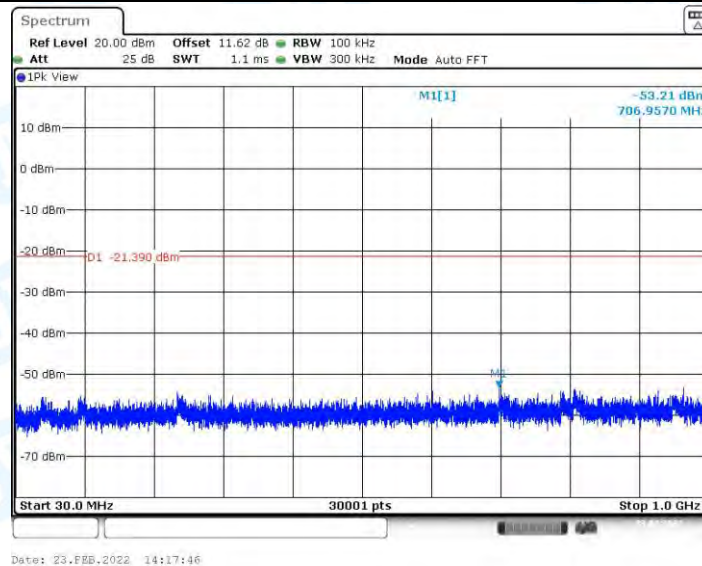
11G_Ant1_2462_30~1000



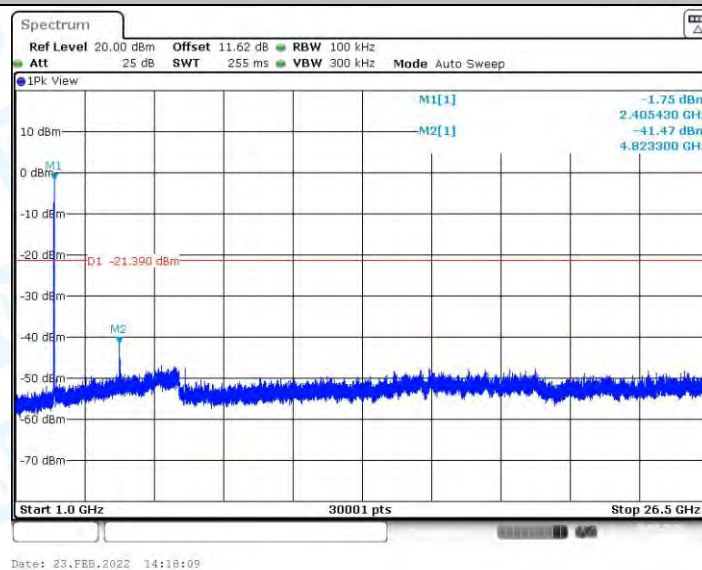
11G_Ant1_2462_1000~26500



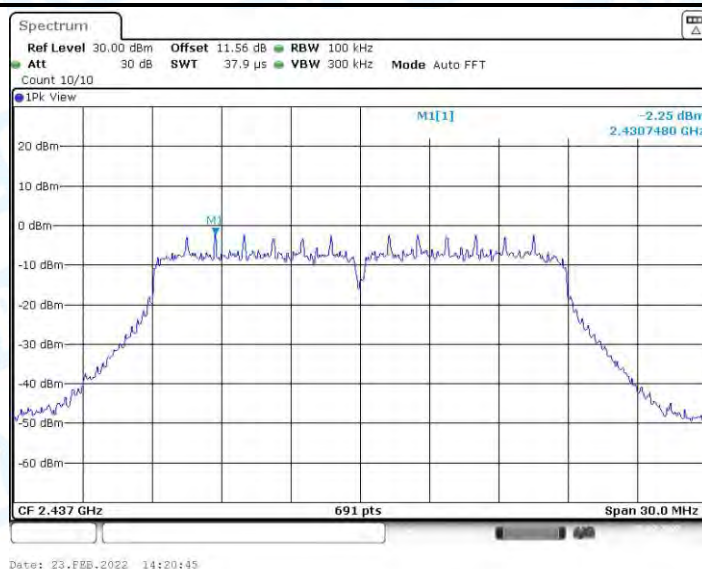
11N20SISO_Ant1_2412_0~Reference



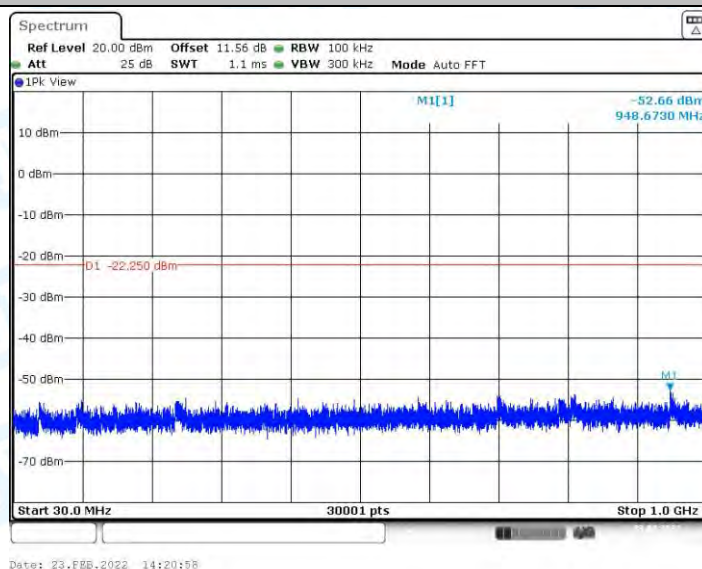
11N20SISO_Ant1_2412_30~1000



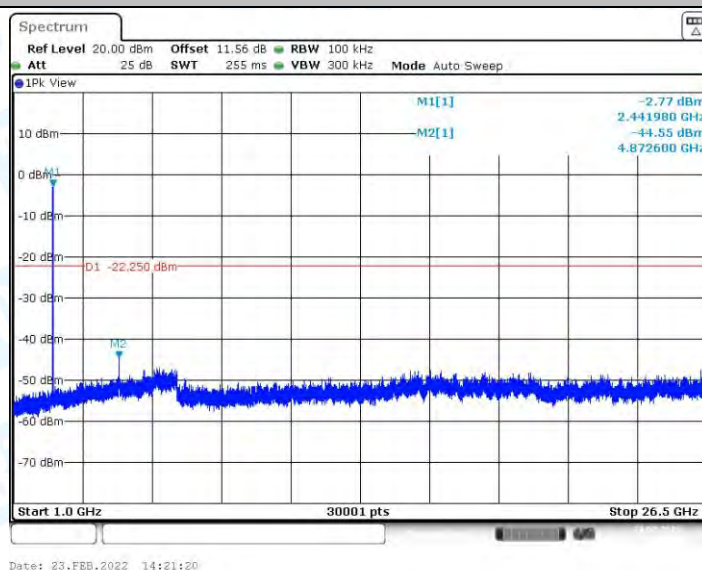
11N20SISO_Ant1_2412_1000~26500



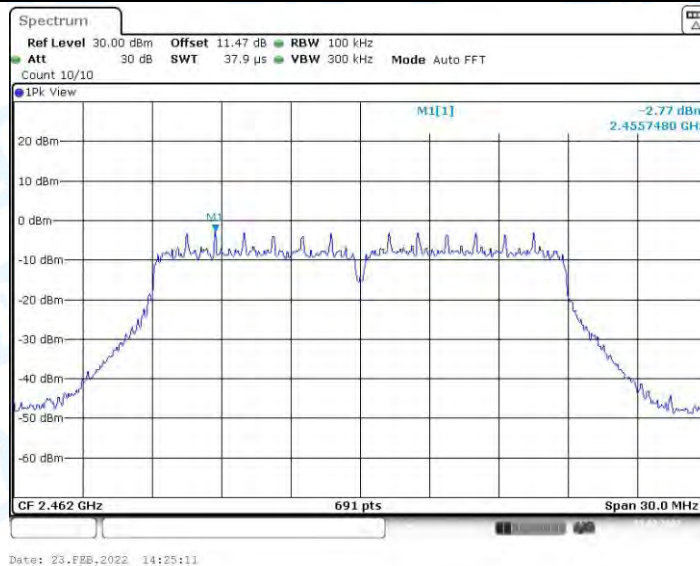
11N20SISO_Ant1_2437_0~Reference



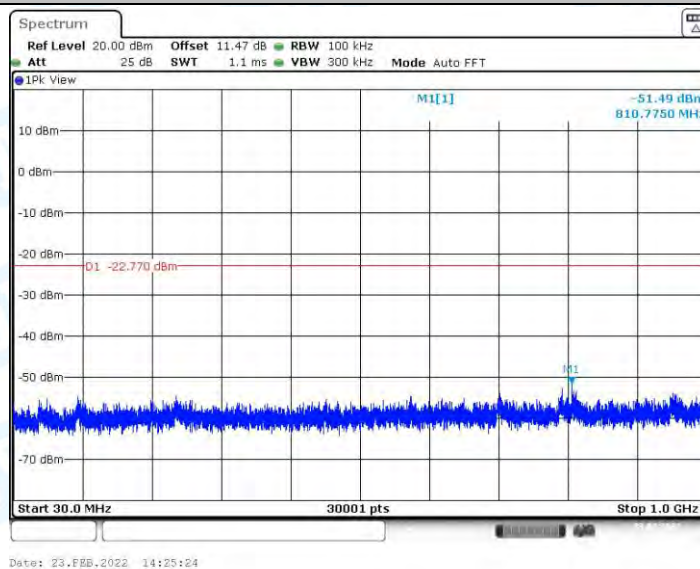
11N20SISO_Ant1_2437_30~1000



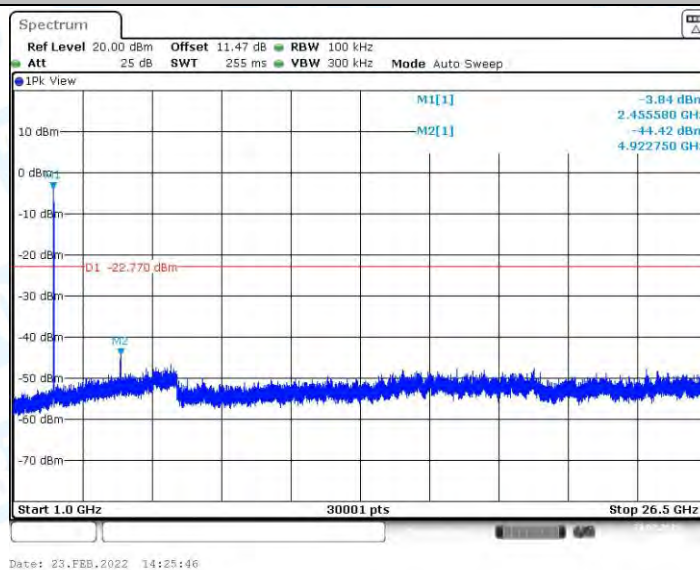
11N20SISO_Ant1_2437_1000~26500



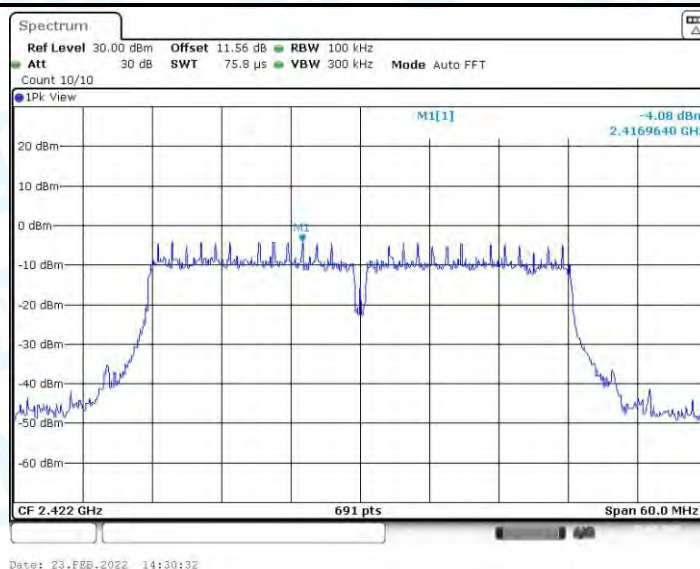
11N20SISO_Ant1_2462_0~Reference



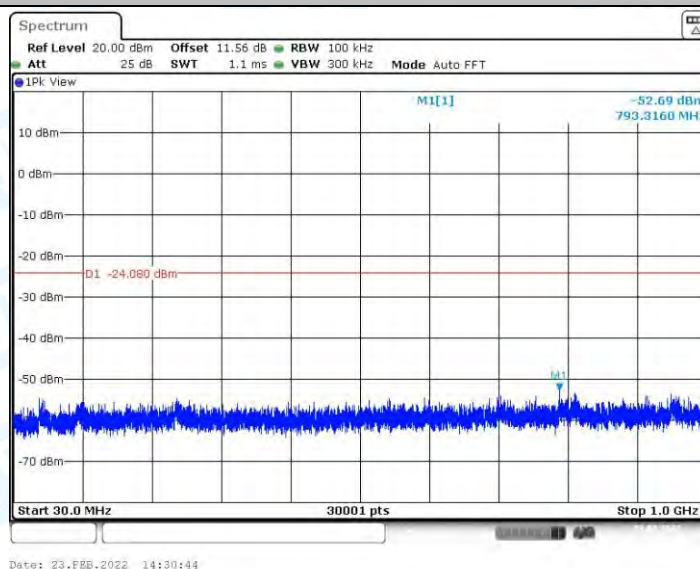
11N20SISO_Ant1_2462_30~1000



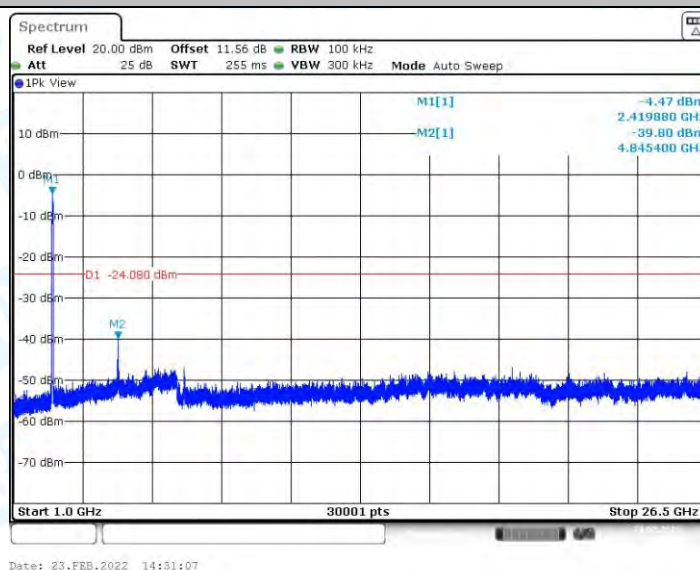
11N20SISO_Ant1_2462_1000~26500



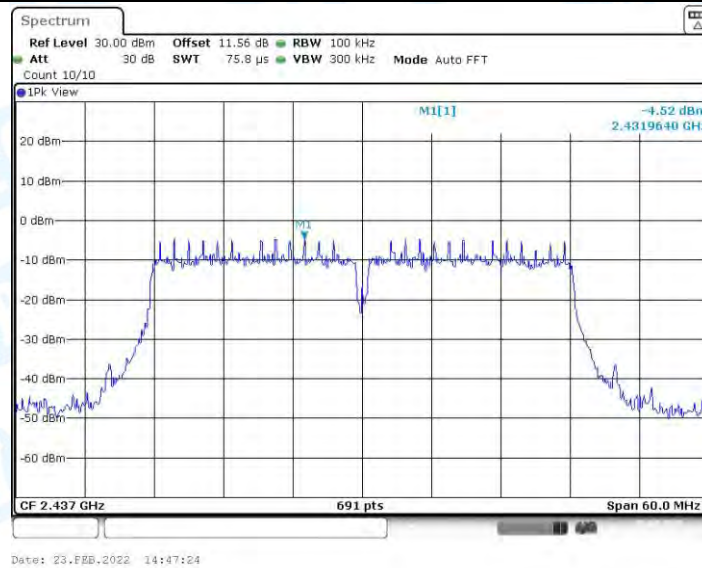
11N40SISO_Ant1_2422_0~Reference



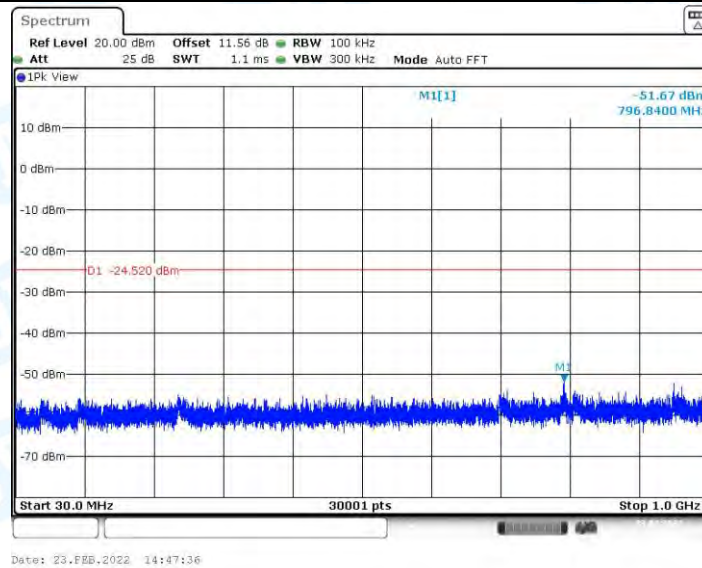
11N40SISO_Ant1_2422_30~1000



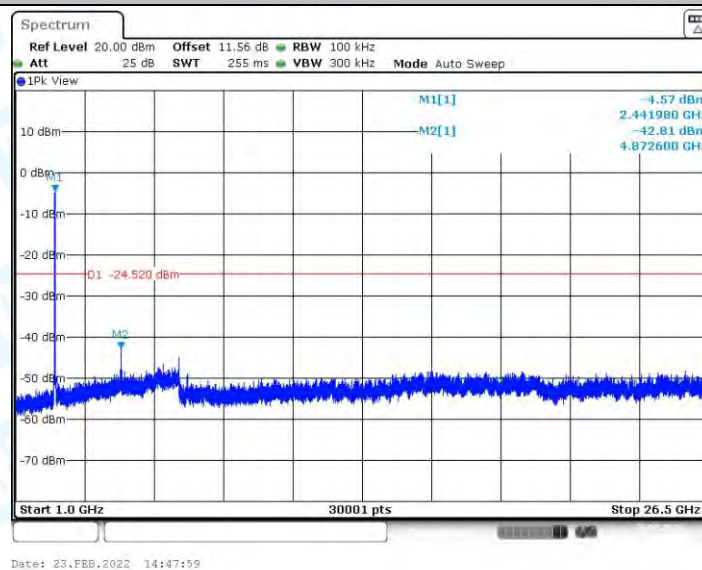
11N40SISO_Ant1_2422_1000~26500



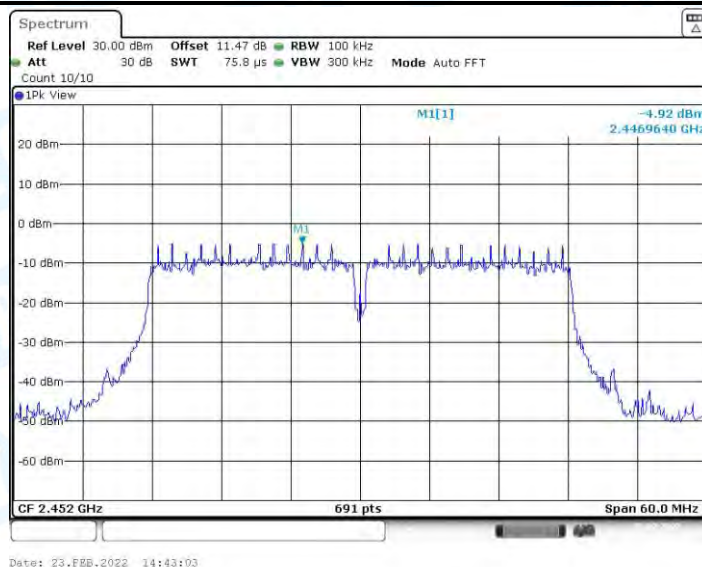
11N40SISO_Ant1_2437_0~Reference



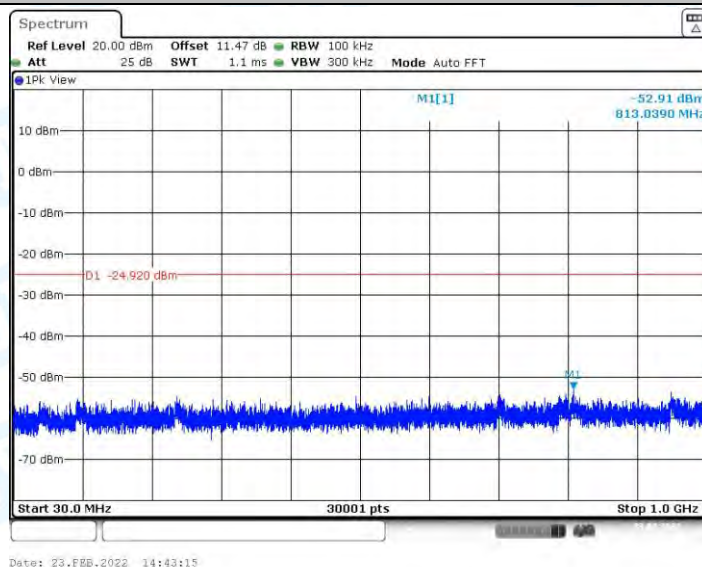
11N40SISO_Ant1_2437_30~1000



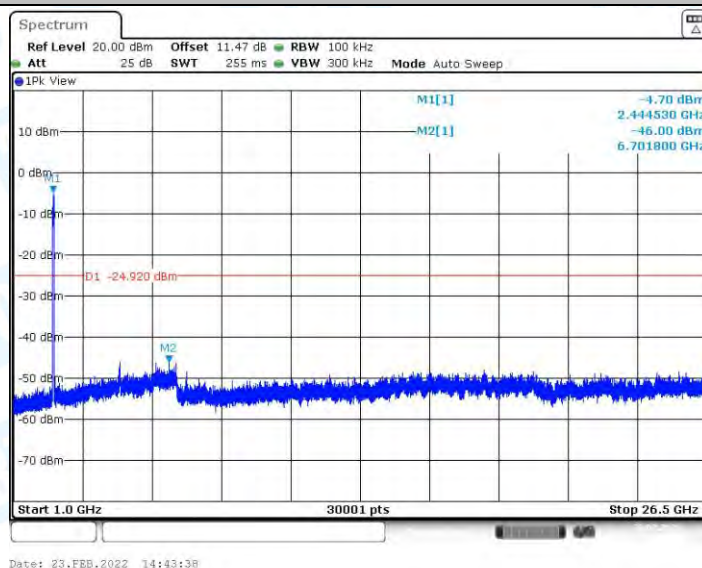
11N40SISO_Ant1_2437_1000~26500



11N40SISO_Ant1_2452_0~Reference



11N40SISO_Ant1_2452_30~1000



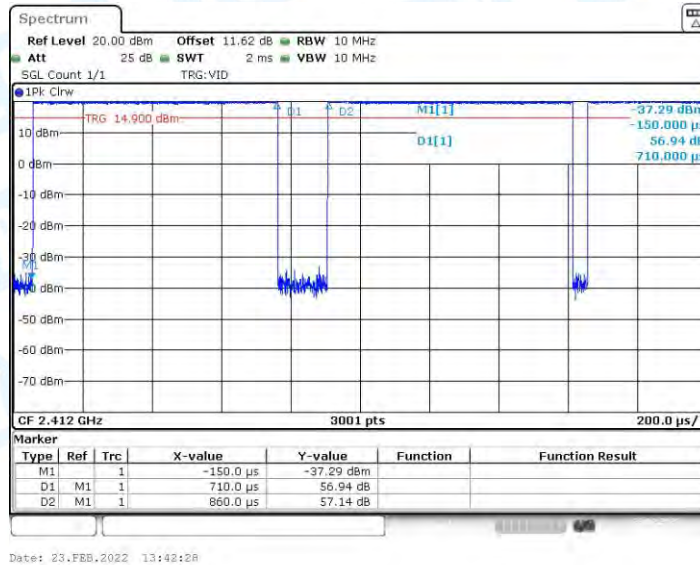
11N40SISO_Ant1_2452_1000~26500

7. Duty Cycle

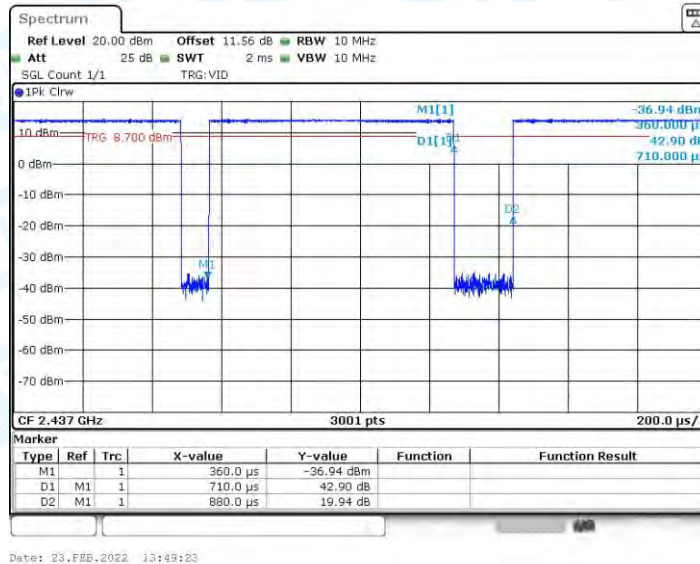
7.1. Test Result

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T [KHz]	Limit	Verdict
11B	Ant1	2412	0.71	0.86	82.56	1.408	---	---
		2437	0.71	0.88	80.68	1.408	---	---
		2462	0.71	0.80	88.75	1.408	---	---
11G	Ant1	2412	0.11	0.27	40.74	9.091	---	---
		2437	0.11	0.26	42.31	9.091	---	---
		2462	0.12	0.28	42.86	8.333	---	---
11N20SISO	Ant1	2412	0.12	0.28	42.86	8.333	---	---
		2437	0.12	0.27	44.44	8.333	---	---
		2462	0.12	0.28	42.86	8.333	---	---
11N40SISO	Ant1	2422	0.08	0.24	33.33	12.5	---	---
		2437	0.08	0.36	22.22	12.5	---	---
		2452	0.15	0.37	40.54	6.667	---	---

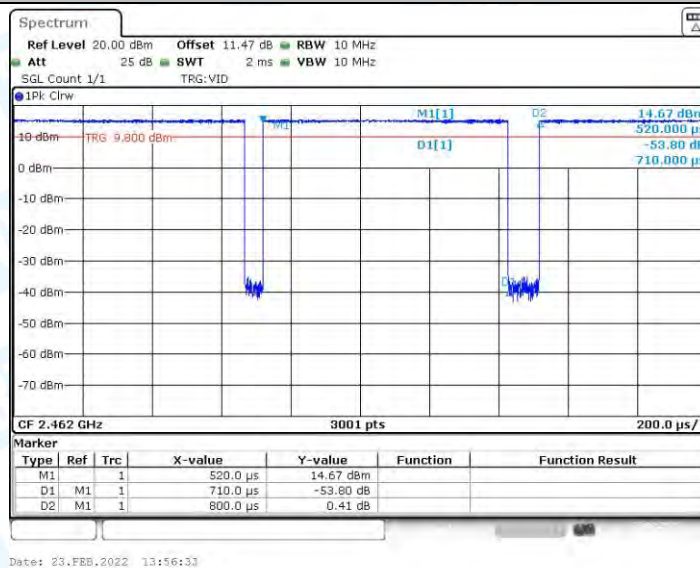
7.2. Test Graphs



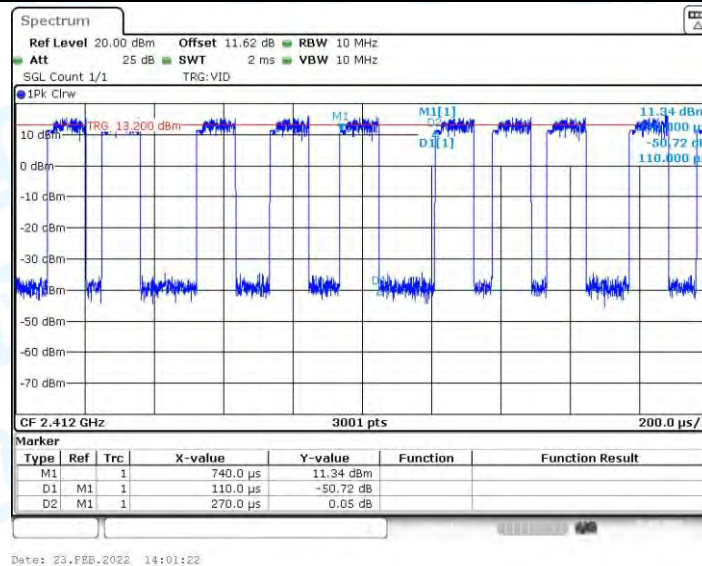
11B_Ant1_2412



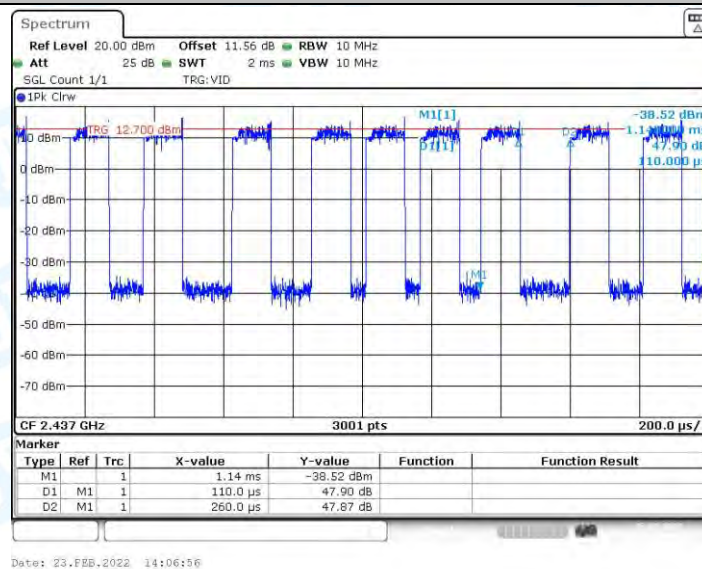
11B_Ant1_2437



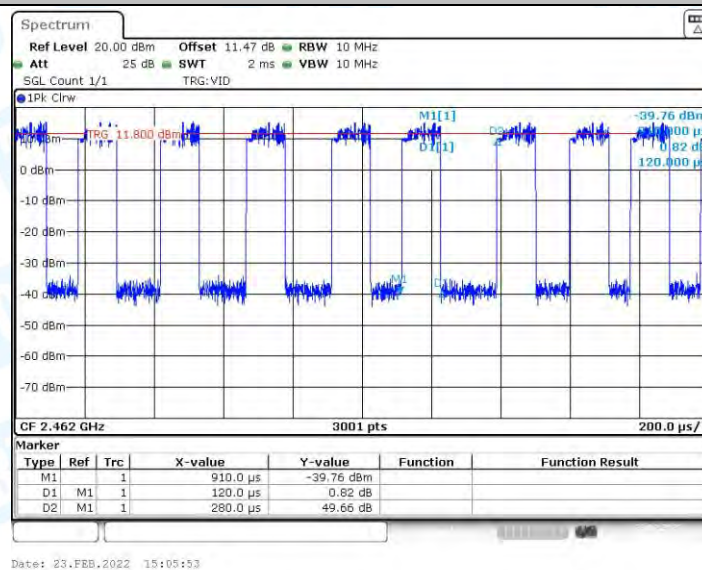
11B_Ant1_2462



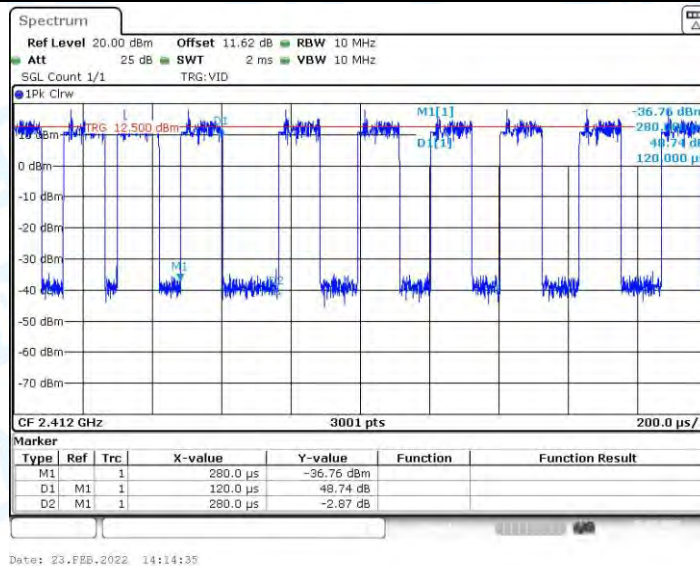
11G_Ant1_2412



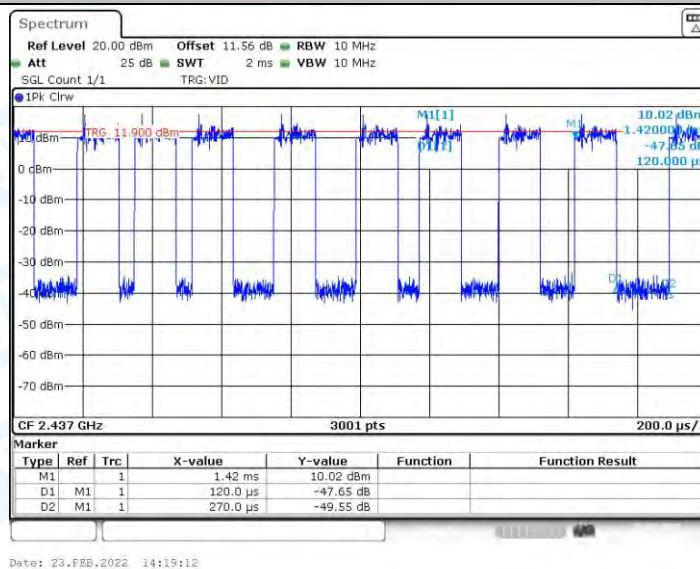
11G_Ant1_2437



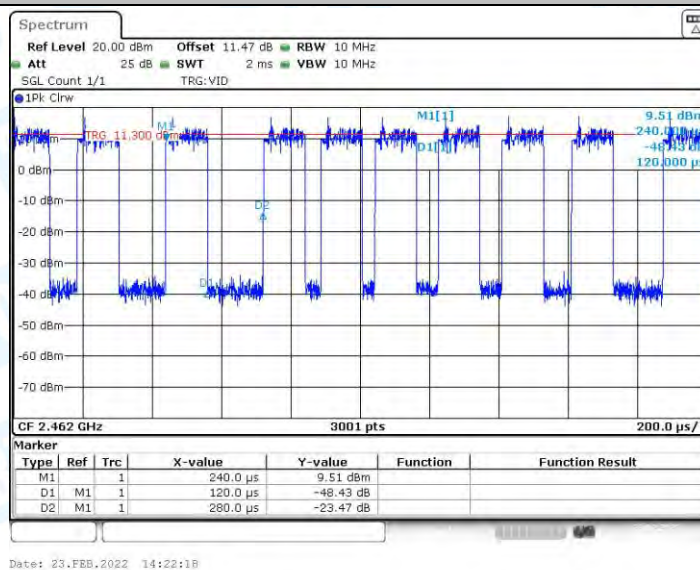
11G_Ant1_2462



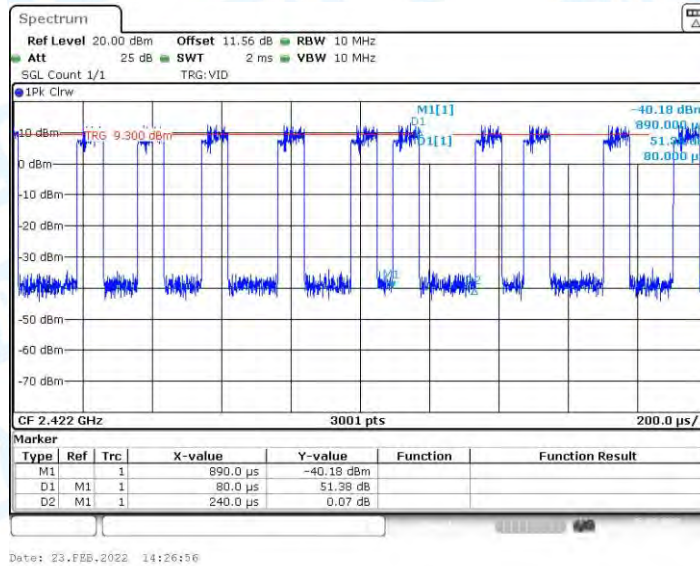
11N20SISO_Ant1_2412



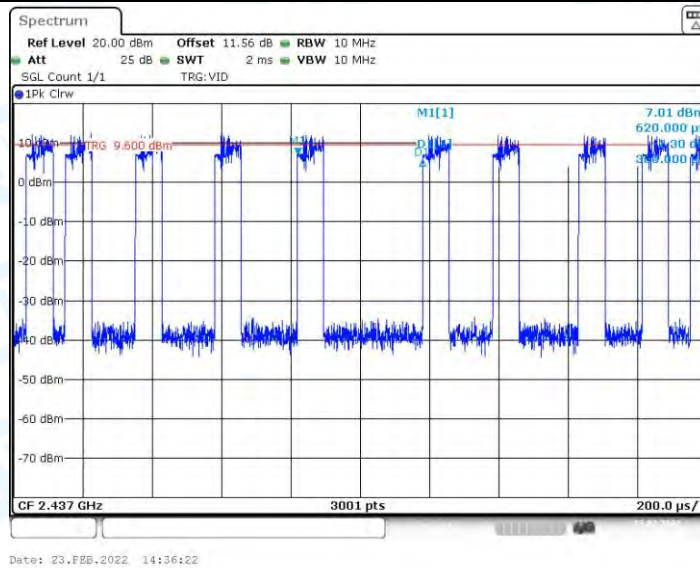
11N20SISO_Ant1_2437



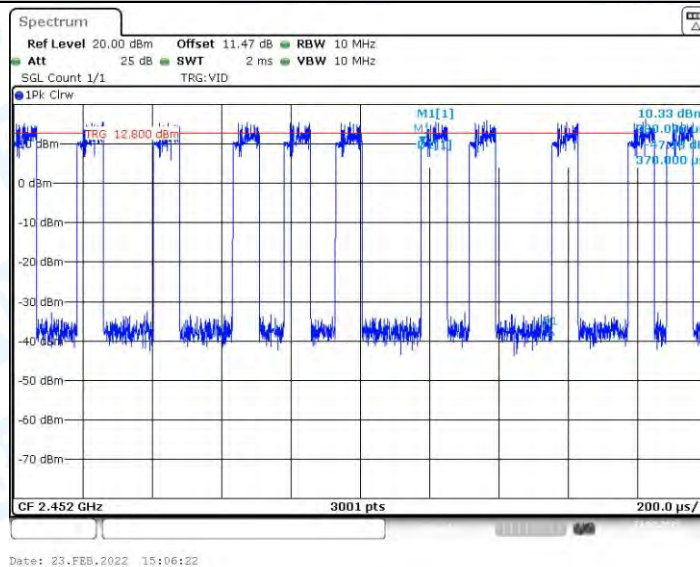
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452

8. Emissions in Restricted Bands

8.1. Test Result

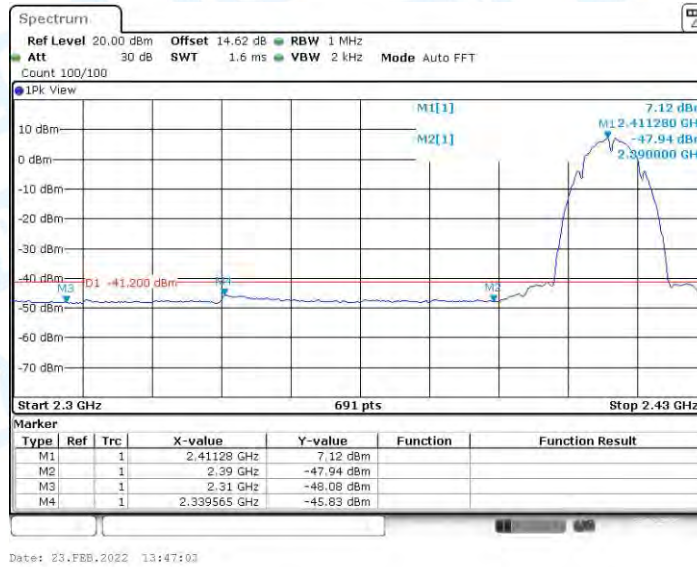
TestMode	Antenna	ChName	Channel	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	Low	2412	AV	2310.000	-48.08	≤-41.20	PASS
				AV	2339.565	-45.83	≤-41.20	PASS
				AV	2390.000	-47.94	≤-41.20	PASS
				Peak	2310.000	-38.97	≤-21.20	PASS
				Peak	2340.130	-35.09	≤-21.20	PASS
				Peak	2390.000	-38.48	≤-21.20	PASS
		High	2462	AV	2483.500	-46.93	≤-41.20	PASS
				AV	2497.551	-46.36	≤-41.20	PASS
				AV	2500.000	-47.37	≤-41.20	PASS
				Peak	2483.500	-37.05	≤-21.20	PASS
				Peak	2489.261	-34.98	≤-21.20	PASS
				Peak	2500.000	-37.84	≤-21.20	PASS
11G	Ant1	Low	2412	AV	2310.000	-46.32	≤-41.20	PASS
				AV	2340.507	-43.9	≤-41.20	PASS
				AV	2390.000	-46.36	≤-41.20	PASS
				Peak	2310.000	-37.49	≤-21.20	PASS
				Peak	2339.754	-34.57	≤-21.20	PASS
				Peak	2390.000	-37.72	≤-21.20	PASS
		High	2462	AV	2483.500	-47.99	≤-41.20	PASS
				AV	2495.638	-47.95	≤-41.20	PASS
				AV	2500.000	-48.51	≤-41.20	PASS
				Peak	2483.500	-37.07	≤-21.20	PASS
				Peak	2495.638	-35.09	≤-21.20	PASS
				Peak	2500.000	-36.95	≤-21.20	PASS
11N20SISO	Ant1	Low	2412	AV	2310.000	-47.07	≤-41.20	PASS
				AV	2339.942	-43.99	≤-41.20	PASS
				AV	2390.000	-45.93	≤-41.20	PASS
				Peak	2310.000	-38.16	≤-21.20	PASS
				Peak	2347.101	-34.73	≤-21.20	PASS
				Peak	2390.000	-36.94	≤-21.20	PASS
		High	2462	AV	2483.500	-45.04	≤-41.20	PASS
				AV	2483.522	-45.04	≤-41.20	PASS
				AV	2500.000	-46.05	≤-41.20	PASS
				Peak	2483.500	-37.07	≤-21.20	PASS
				Peak	2495.478	-35.34	≤-21.20	PASS
				Peak	2500.000	-37.21	≤-21.20	PASS
11N40SISO	Ant1	Low	2422	AV	2310.000	-45.49	≤-41.20	PASS
				AV	2388.362	-42.12	≤-41.20	PASS
				AV	2390.000	-43.54	≤-41.20	PASS
				Peak	2310.000	-37.95	≤-21.20	PASS
				Peak	2387.420	-34.2	≤-21.20	PASS

		High	2452	Peak	2390.000	-35.94	≤ -21.20	PASS
				AV	2483.500	-45.06	≤ -41.20	PASS
				AV	2485.275	-44.92	≤ -41.20	PASS
				AV	2500.000	-46.36	≤ -41.20	PASS
				Peak	2483.500	-34.8	≤ -21.20	PASS
				Peak	2484.000	-33.3	≤ -21.20	PASS
				Peak	2500.000	-36.67	≤ -21.20	PASS

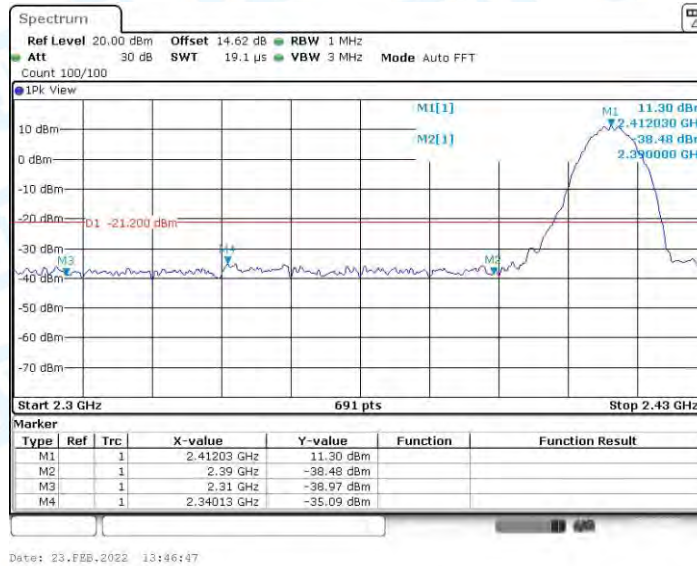
Note:

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.

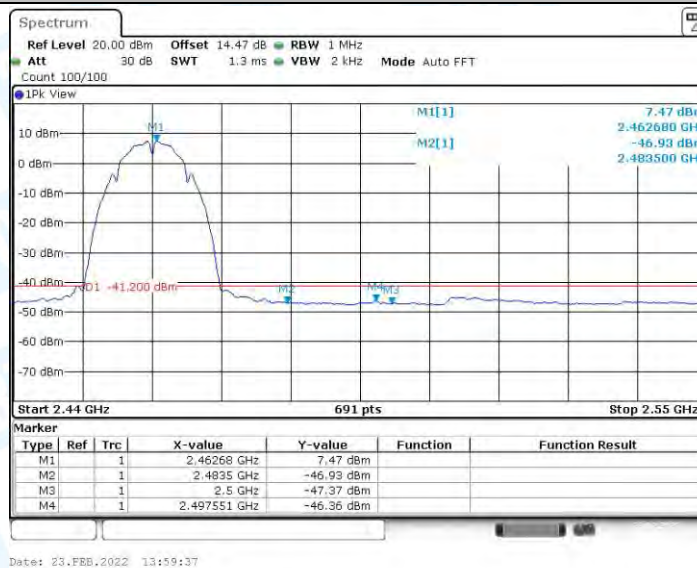
8.2. Test Graphs



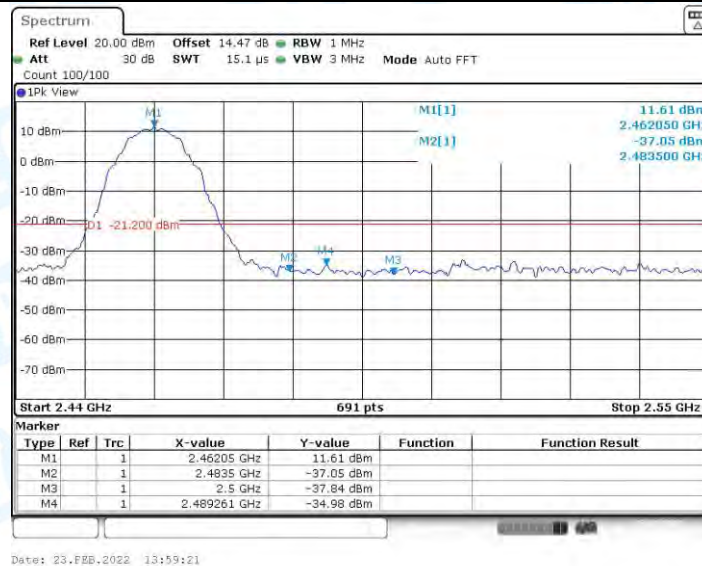
11B_Ant1_Low_2412_AV



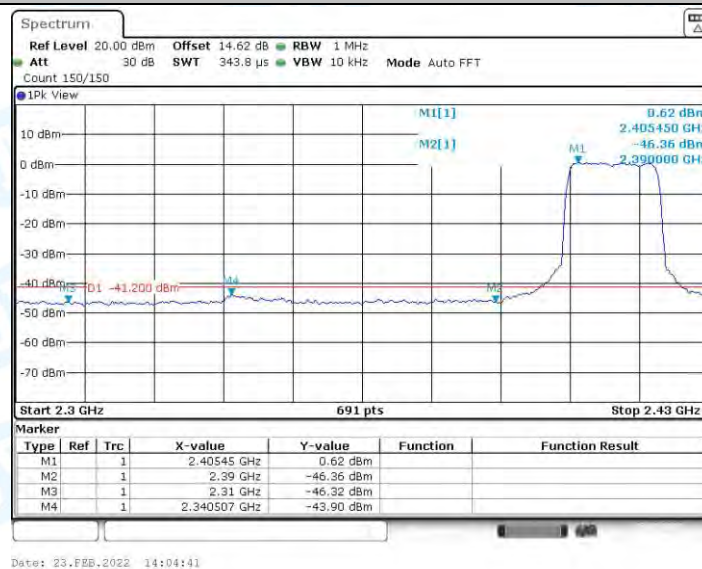
11B_Ant1_Low_2412_Peak



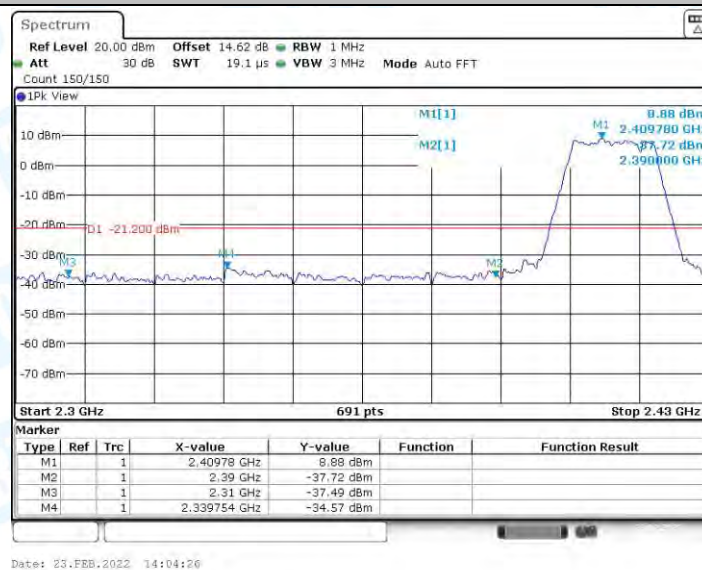
11B_Ant1_High_2462_AV



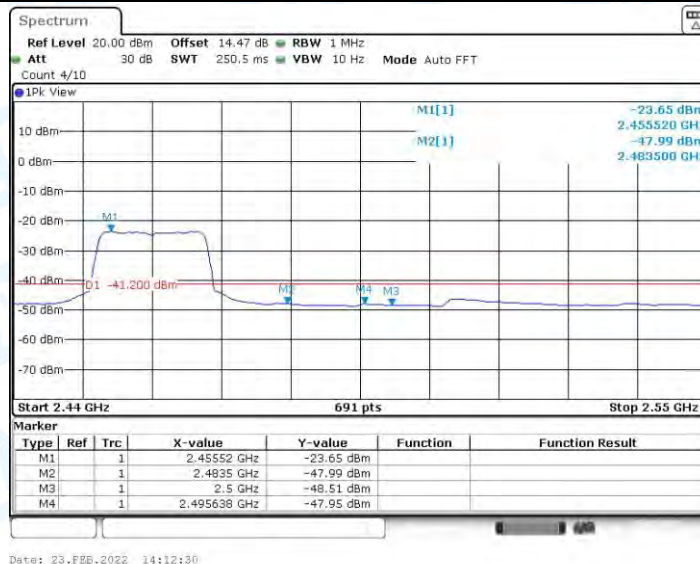
11B_Ant1_High_2462_Peak



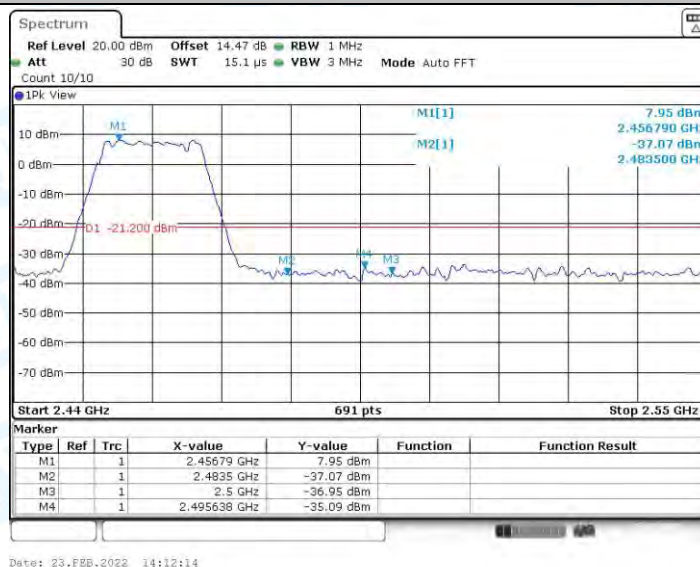
11G_Ant1_Low_2412_AV



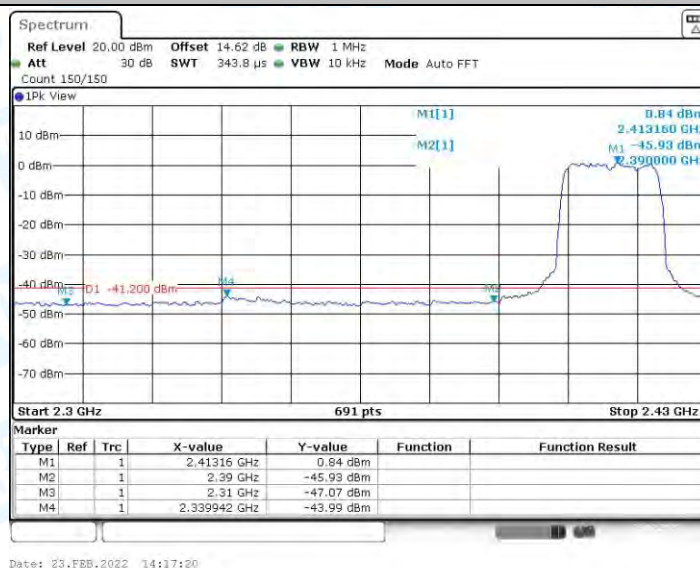
11G_Ant1_Low_2412_Peak



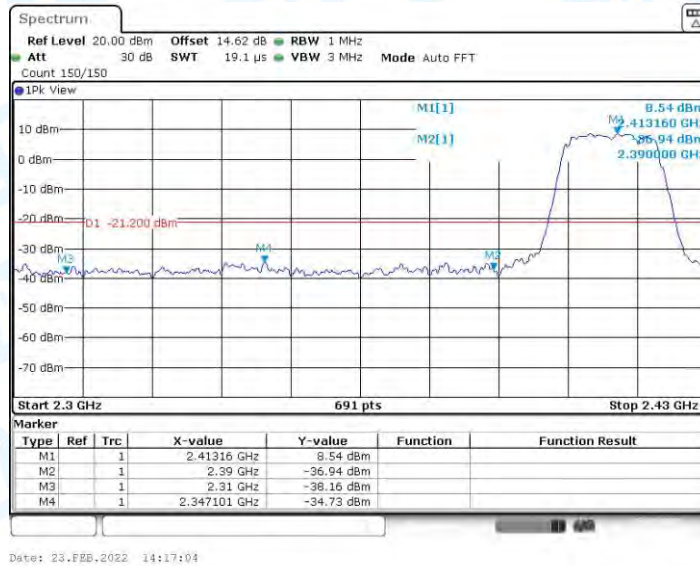
11G_Ant1_High_2462_AV



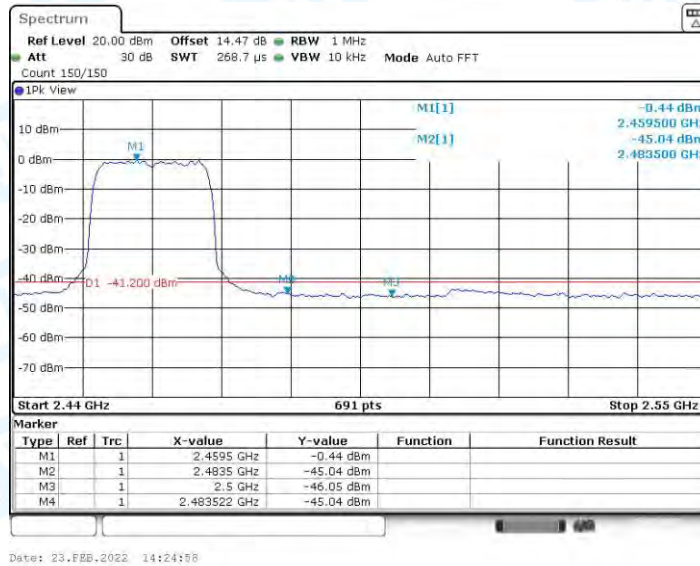
11G_Ant1_High_2462_Peak



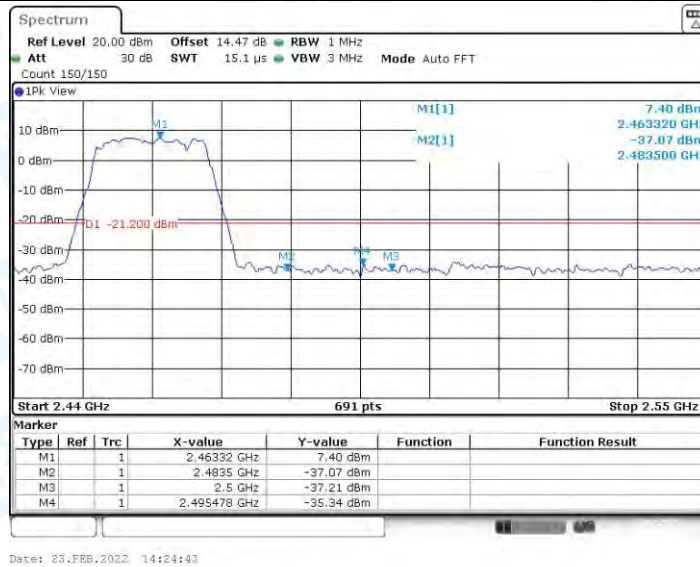
11N20SISO_Ant1_Low_2412_AV



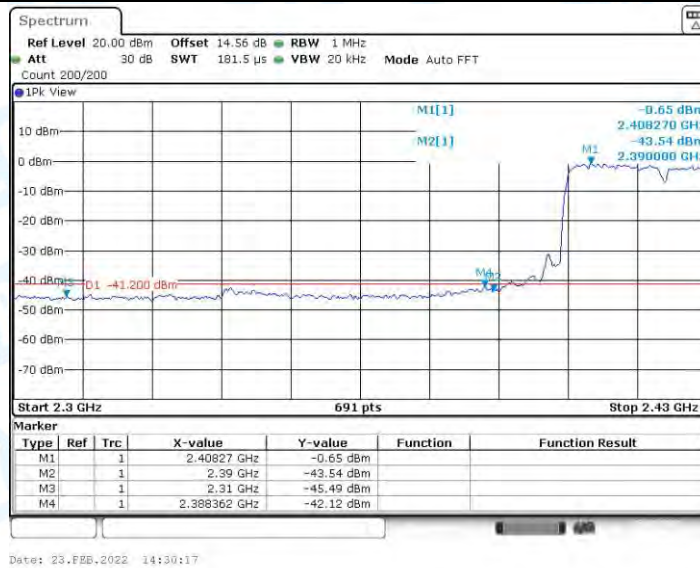
11N20SISO_Ant1_Low_2412_Peak



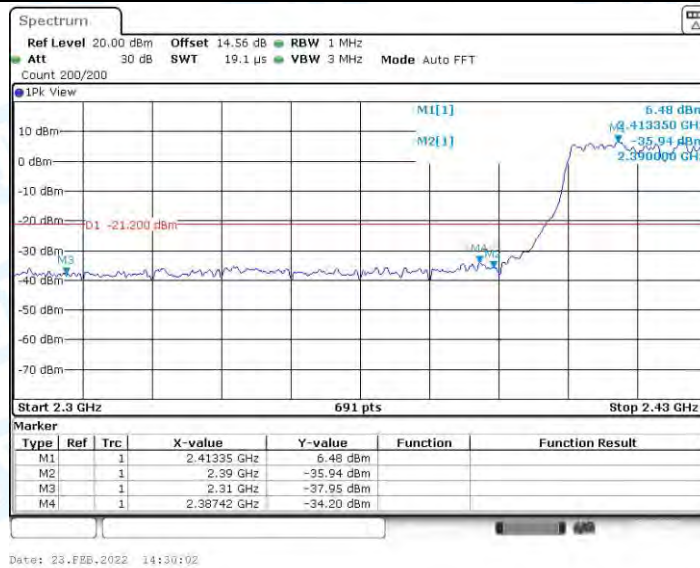
11N20SISO_Ant1_High_2462_AV



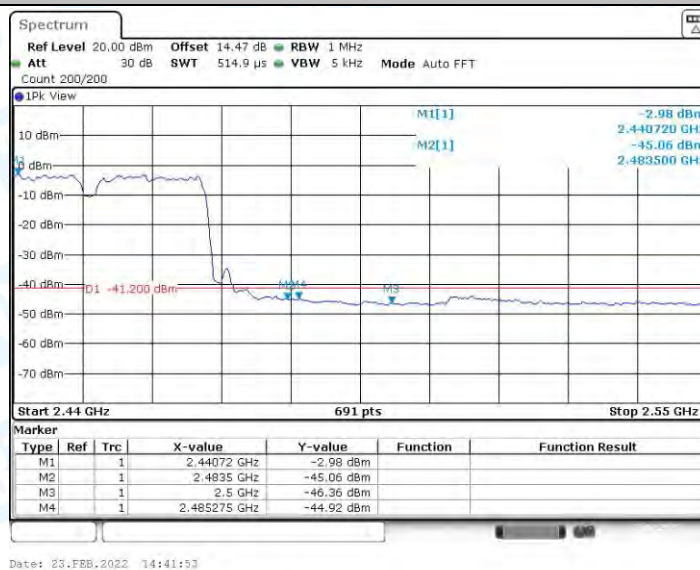
11N20SISO_Ant1_High_2462_Peak



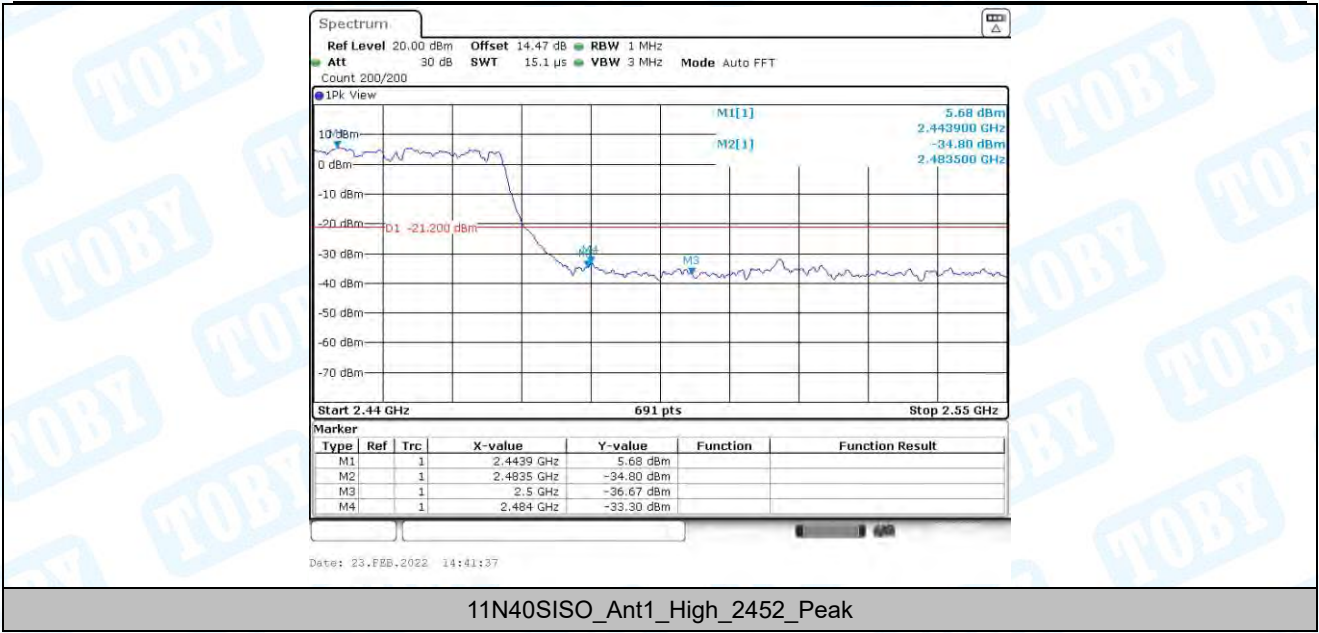
11N40SISO_Ant1_Low_2422_AV



11N40SISO_Ant1_Low_2422_Peak



11N40SISO_Ant1_High_2452_AV



-----End of the report-----