

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

General Description of EUT	
Product Name:	Indoor Full Hotspot US915
Test Model:	ED-IoTHotspot-Pi4-US
Sample ID:	20210928-19-02
Environmental Conditions	
Temperature:	23.8℃
Relative Humidity:	48%
Test Voltage:	AC 120V/60Hz
Test Engineer:	Huang jian ping
Note: For a more detailed features description, please refer to the report TB-FCC184223	

Contents

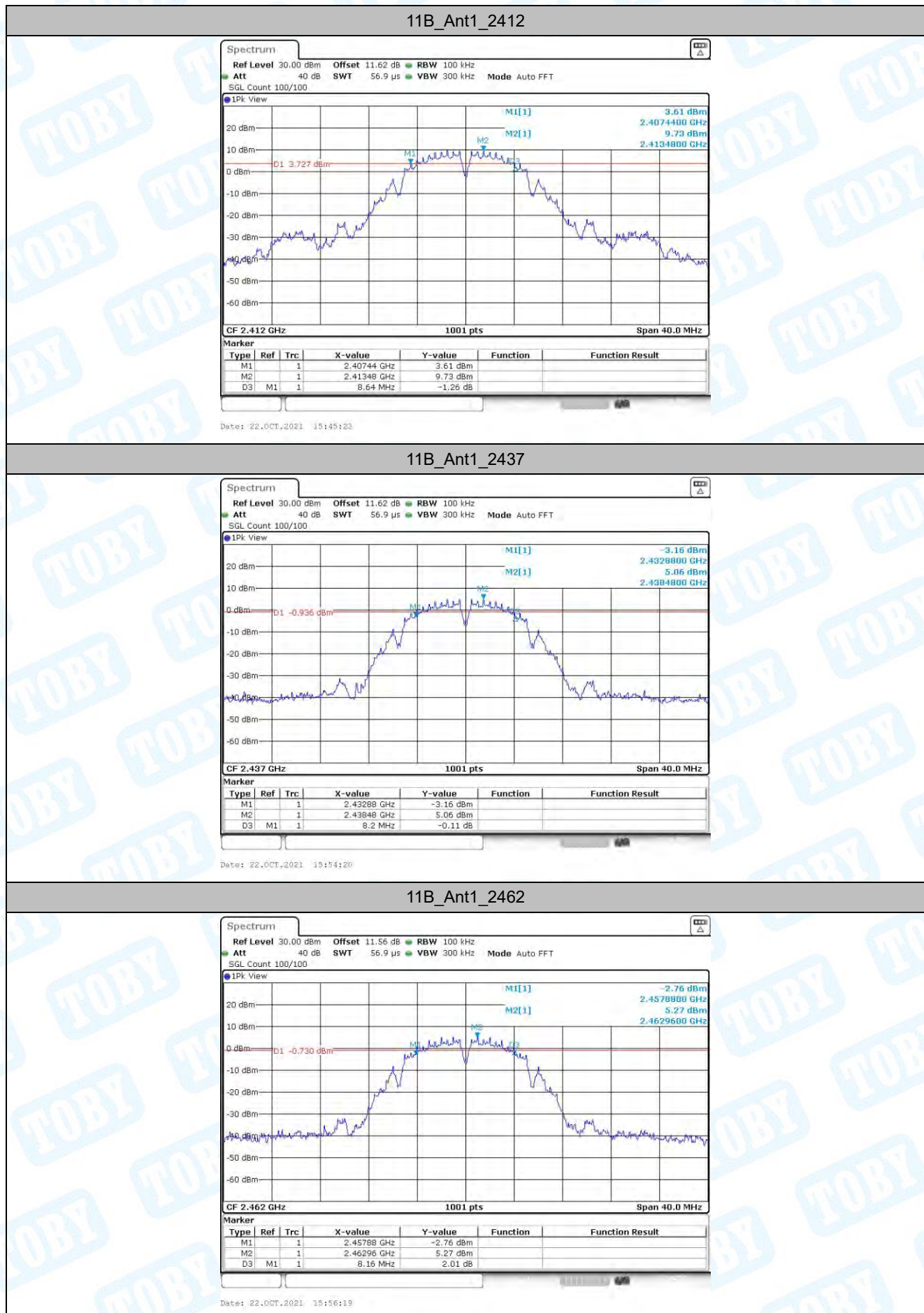
1. DTS Bandwidth.....	3
1.1. Test Result.....	3
1.2. Test Graphs	4
2. Occupied Channel Bandwidth.....	8
2.1. Test Result.....	8
2.2. Test Graphs	9
3. Maximum conducted output power.....	13
3.1. Test Result.....	13
4. Maximum power spectral density	14
4.1. Test Result.....	14
4.2. Test Graphs	15
5. Band 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

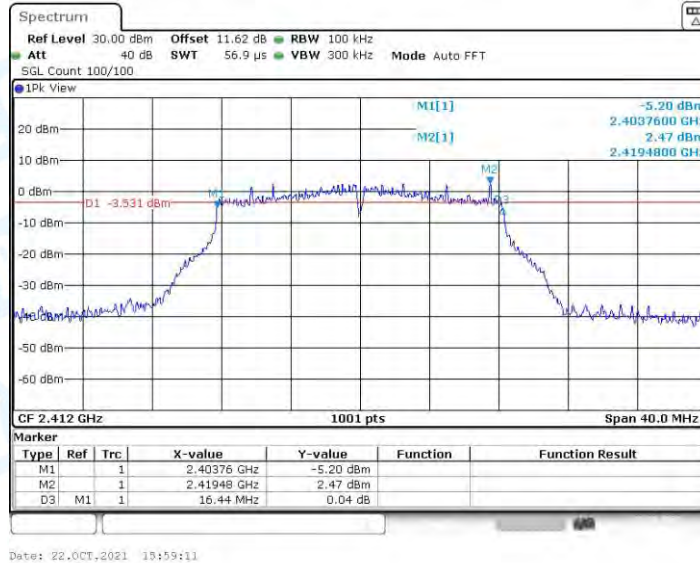
1.1. Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.640	2407.440	2416.080	0.5	PASS
		2437	8.200	2432.880	2441.080	0.5	PASS
		2462	8.160	2457.880	2466.040	0.5	PASS
11G	Ant1	2412	16.440	2403.760	2420.200	0.5	PASS
		2437	16.440	2428.760	2445.200	0.5	PASS
		2462	10.120	2456.680	2466.800	0.5	PASS
11N20SISO	Ant1	2412	16.880	2403.520	2420.400	0.5	PASS
		2437	17.640	2428.160	2445.800	0.5	PASS
		2462	12.720	2455.600	2468.320	0.5	PASS
11N40SISO	Ant1	2422	35.680	2404.000	2439.680	0.5	PASS
		2437	36.080	2418.760	2454.840	0.5	PASS
		2452	35.520	2434.400	2469.920	0.5	PASS

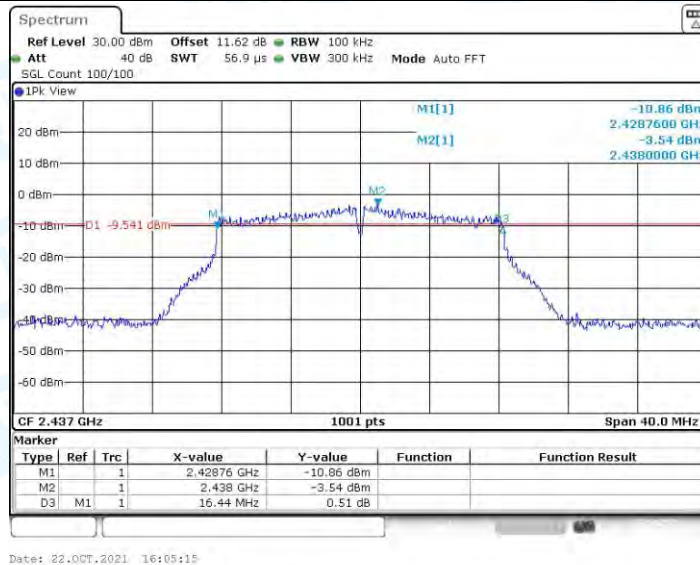
1.2. Test Graphs



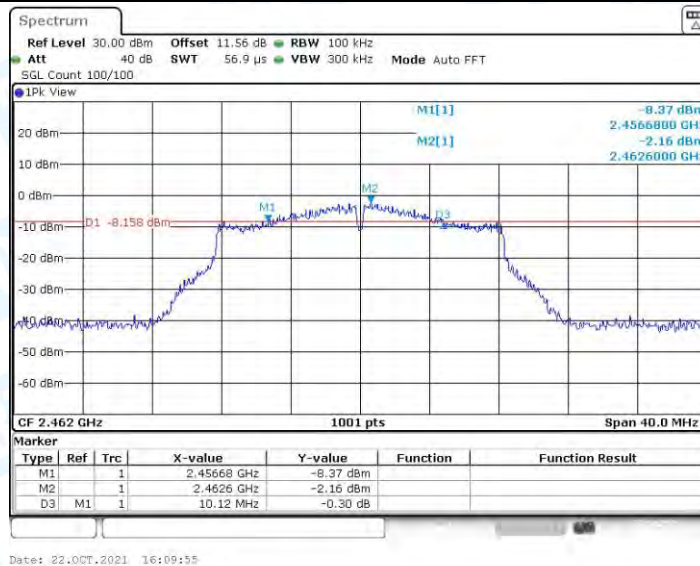
11G_Ant1_2412



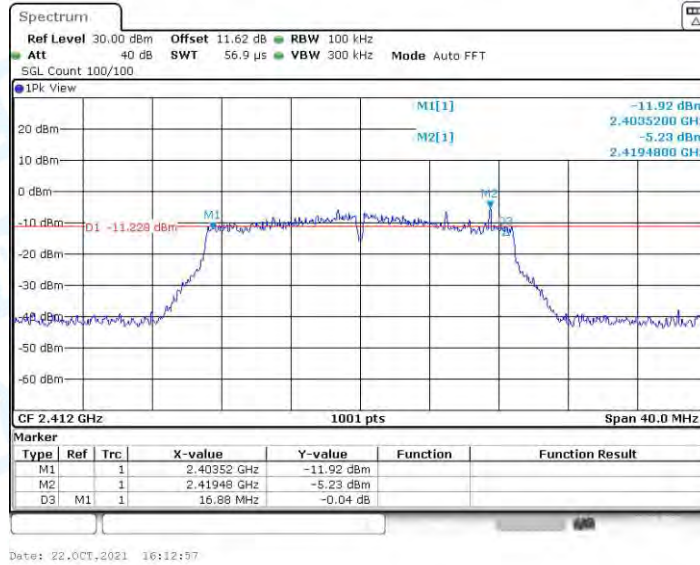
11G_Ant1_2437



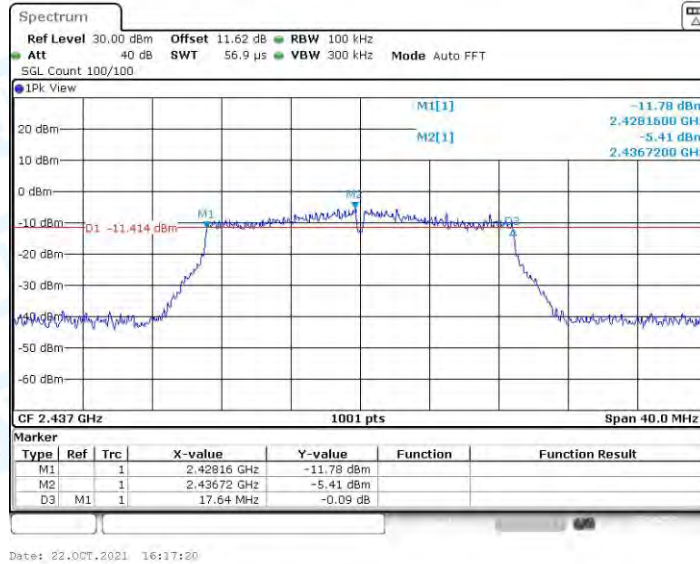
11G_Ant1_2462



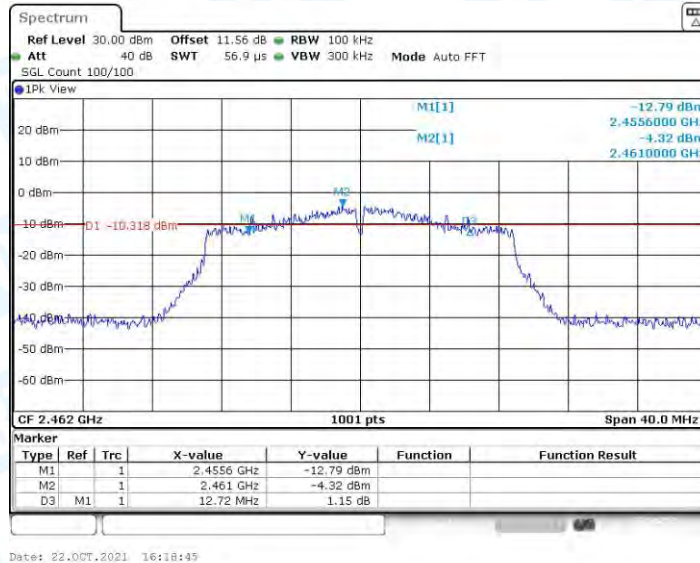
11N20SISO_Ant1_2412



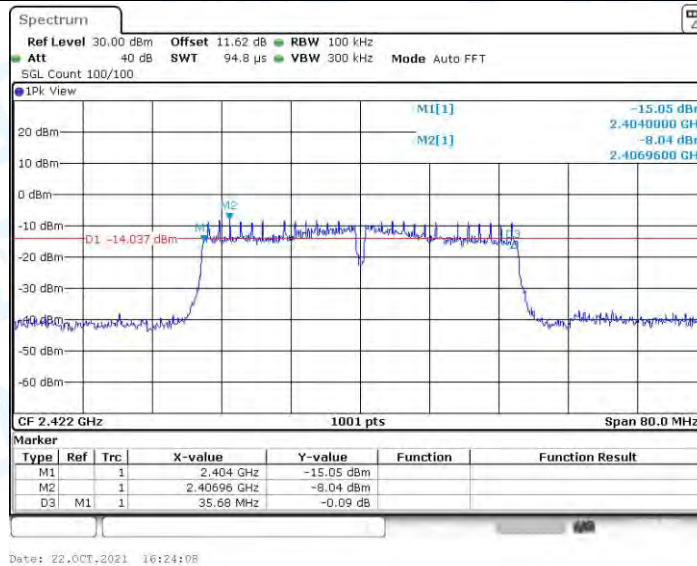
11N20SISO_Ant1_2437



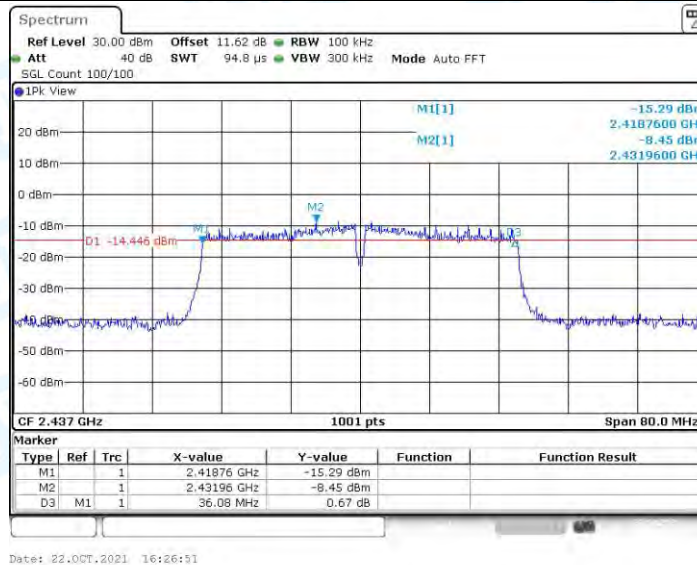
11N20SISO_Ant1_2462



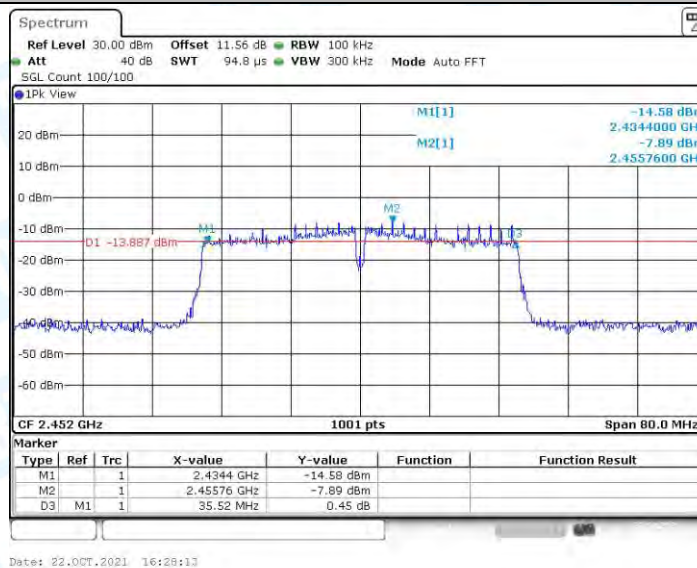
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452

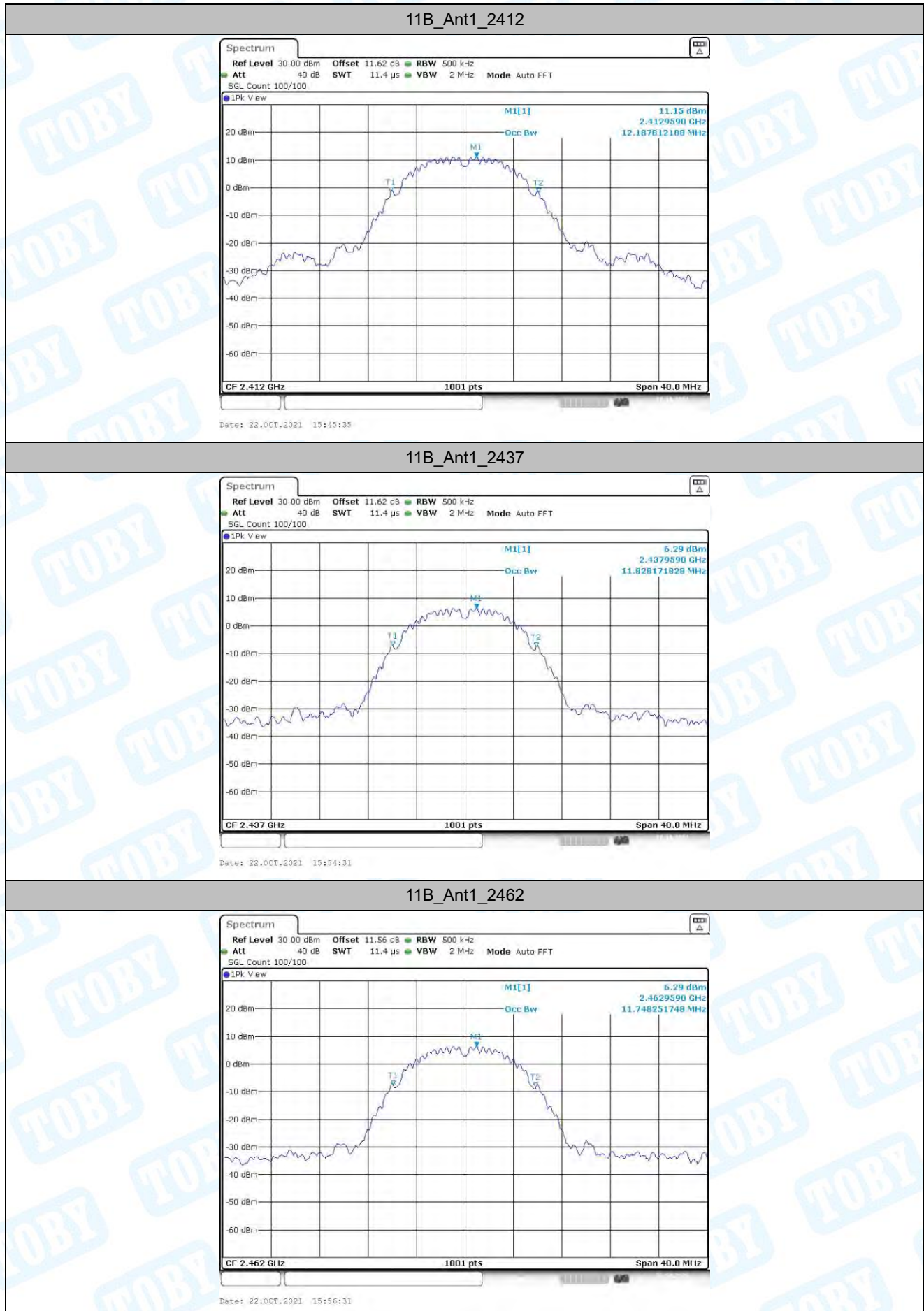


2. Occupied Channel Bandwidth

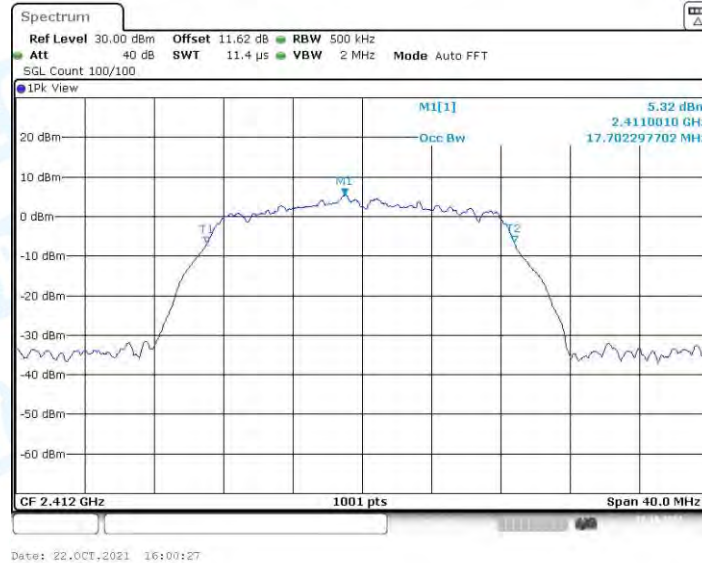
2.1. Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	12.188	2405.886	2418.074	---	PASS
		2437	11.828	2431.046	2442.874	---	PASS
		2462	11.748	2456.086	2467.834	---	PASS
11G	Ant1	2412	17.702	2403.049	2420.751	---	PASS
		2437	17.023	2428.449	2445.472	---	PASS
		2462	16.903	2453.409	2470.312	---	PASS
11N20SISO	Ant1	2412	18.262	2402.809	2421.071	---	PASS
		2437	18.262	2427.809	2446.071	---	PASS
		2462	17.982	2452.929	2470.911	---	PASS
11N40SISO	Ant1	2422	36.364	2403.698	2440.062	---	PASS
		2437	36.603	2418.618	2455.222	---	PASS
		2452	36.444	2433.778	2470.222	---	PASS

2.2. Test Graphs



11G_Ant1_2412



11G_Ant1_2437



11G_Ant1_2462



11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



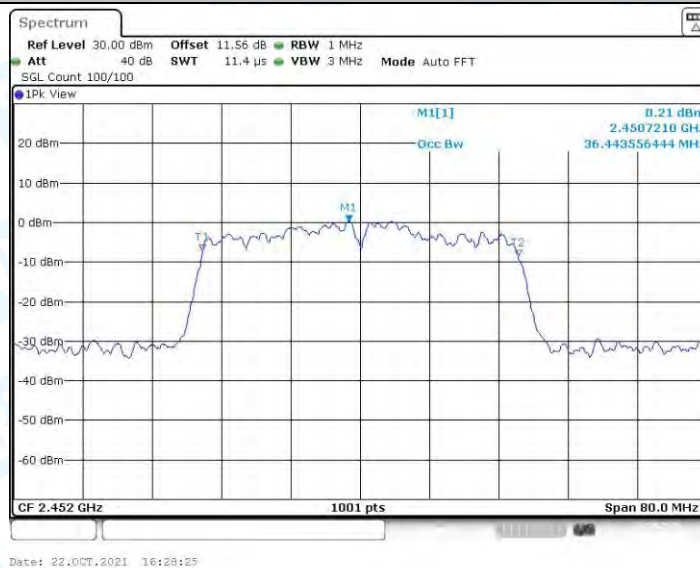
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



3. Maximum conducted output power

3.1. Test Result

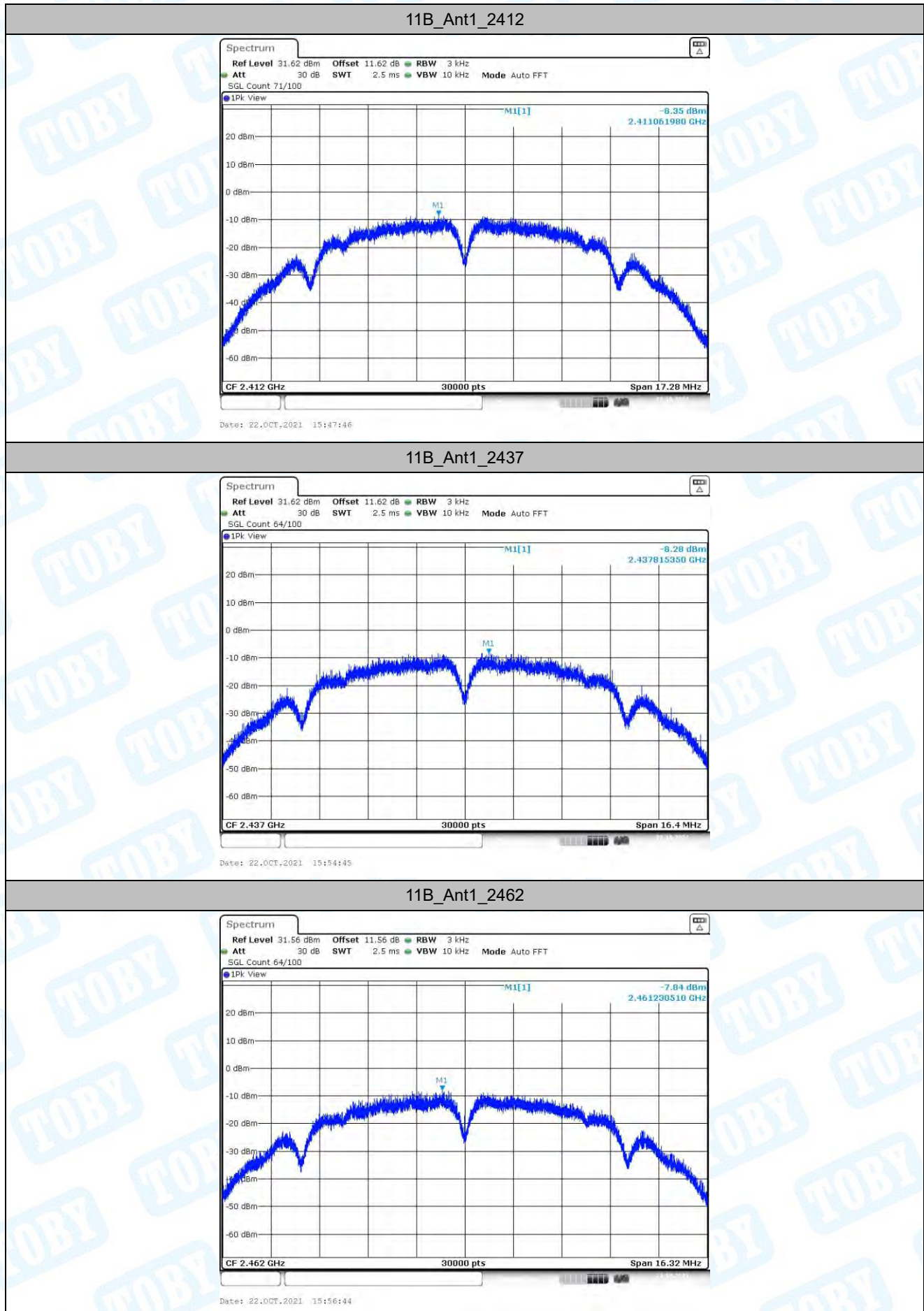
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	17.50	≤30	PASS
		2437	17.36	≤30	PASS
		2462	17.28	≤30	PASS
11G	Ant1	2412	16.62	≤30	PASS
		2437	16.76	≤30	PASS
		2462	16.89	≤30	PASS
11N20SISO	Ant1	2412	14.92	≤30	PASS
		2437	14.90	≤30	PASS
		2462	15.09	≤30	PASS
11N40SISO	Ant1	2422	13.44	≤30	PASS
		2437	13.92	≤30	PASS
		2452	13.48	≤30	PASS

4. Maximum power spectral density

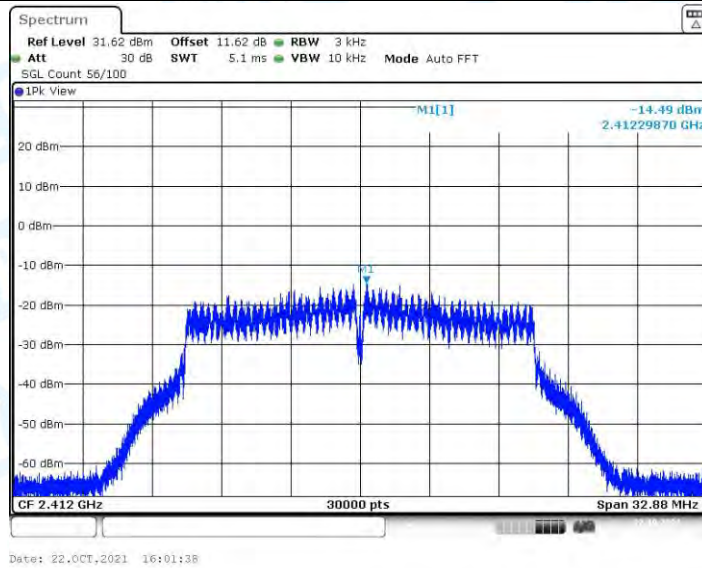
4.1. Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-8.35	≤8	PASS
		2437	-8.28	≤8	PASS
		2462	-7.84	≤8	PASS
11G	Ant1	2412	-14.49	≤8	PASS
		2437	-13.9	≤8	PASS
		2462	-12.8	≤8	PASS
11N20SISO	Ant1	2412	-16.54	≤8	PASS
		2437	-16.55	≤8	PASS
		2462	-15.37	≤8	PASS
11N40SISO	Ant1	2422	-20.51	≤8	PASS
		2437	-20.65	≤8	PASS
		2452	-20.32	≤8	PASS

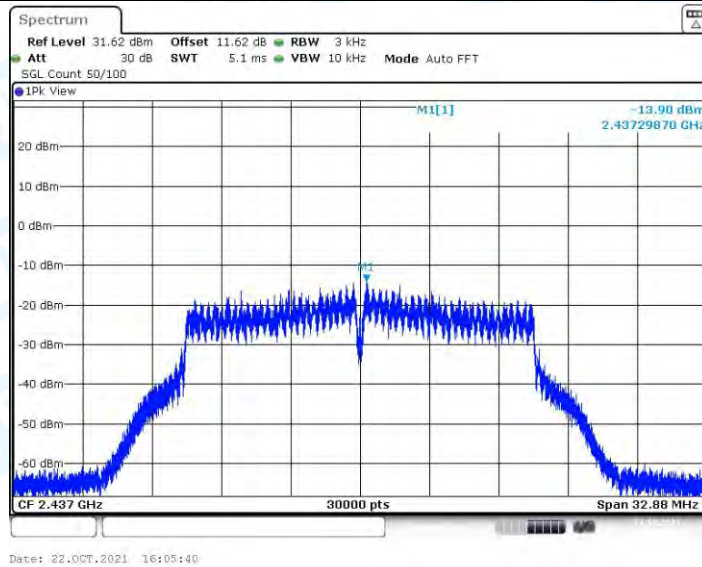
4.2.Test Graphs



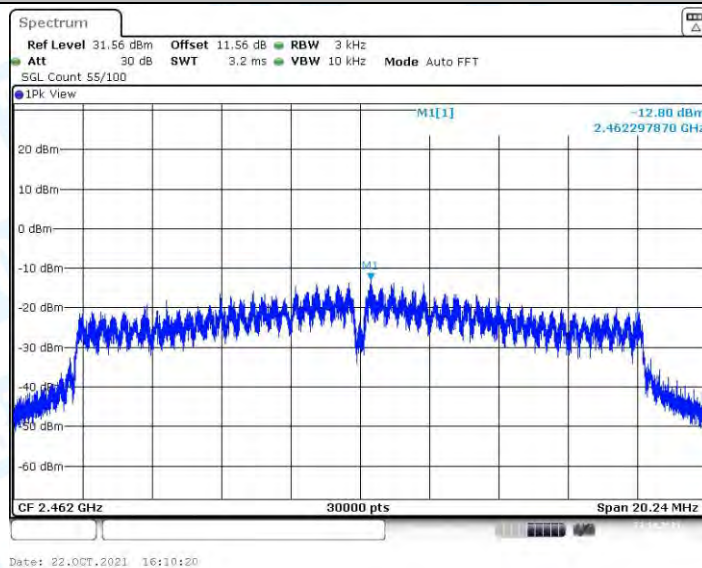
11G_Ant1_2412



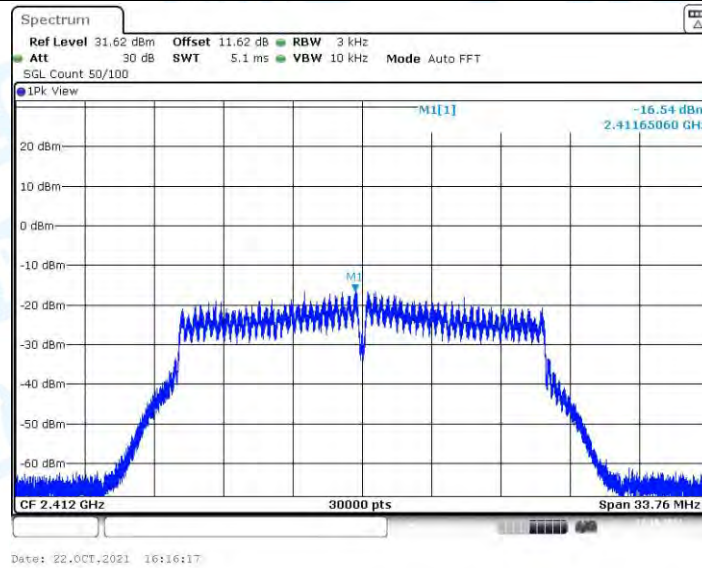
11G_Ant1_2437



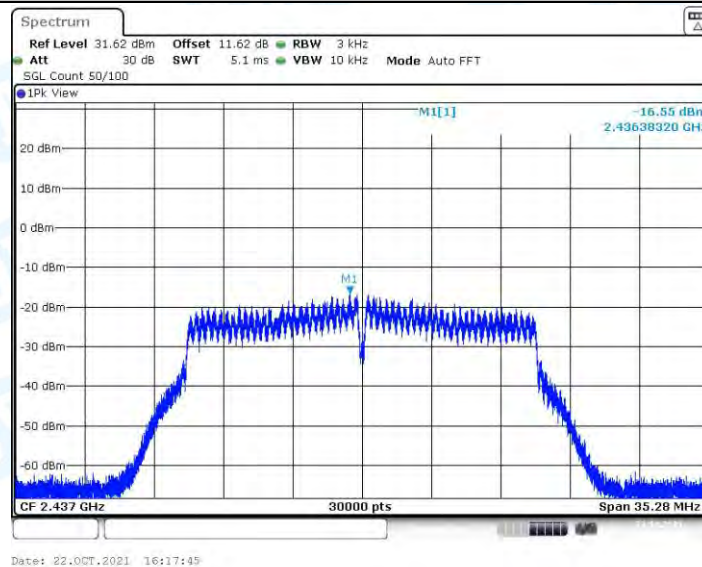
11G_Ant1_2462



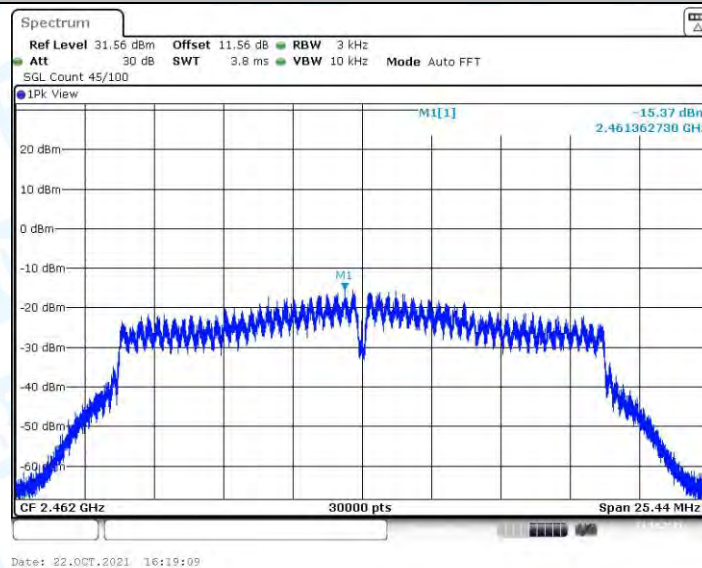
11N20SISO_Ant1_2412



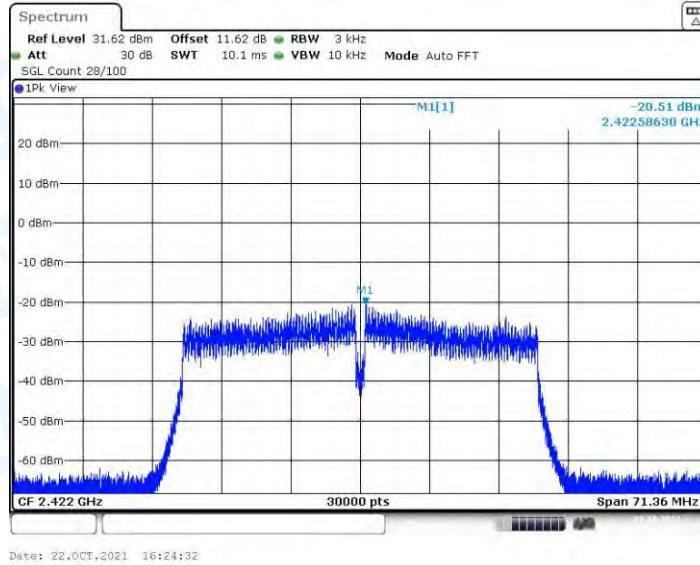
11N20SISO_Ant1_2437



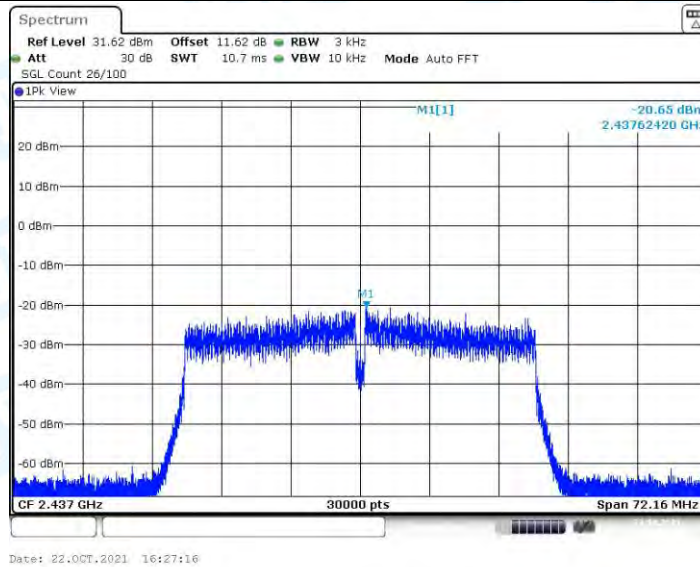
11N20SISO_Ant1_2462



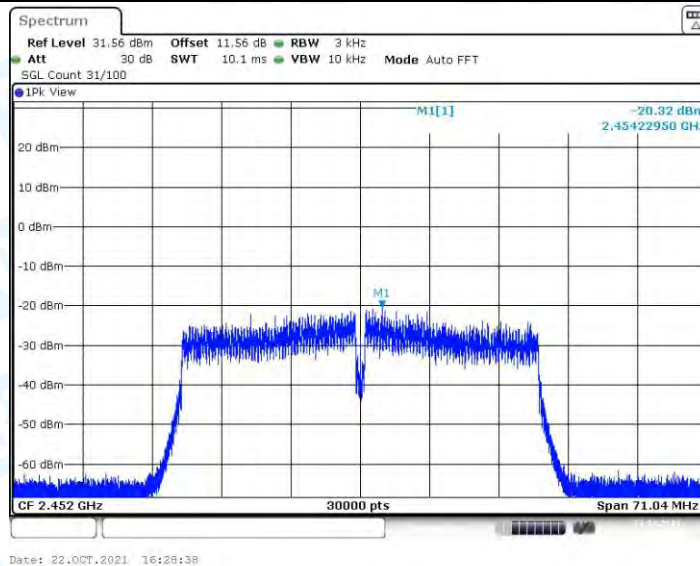
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452

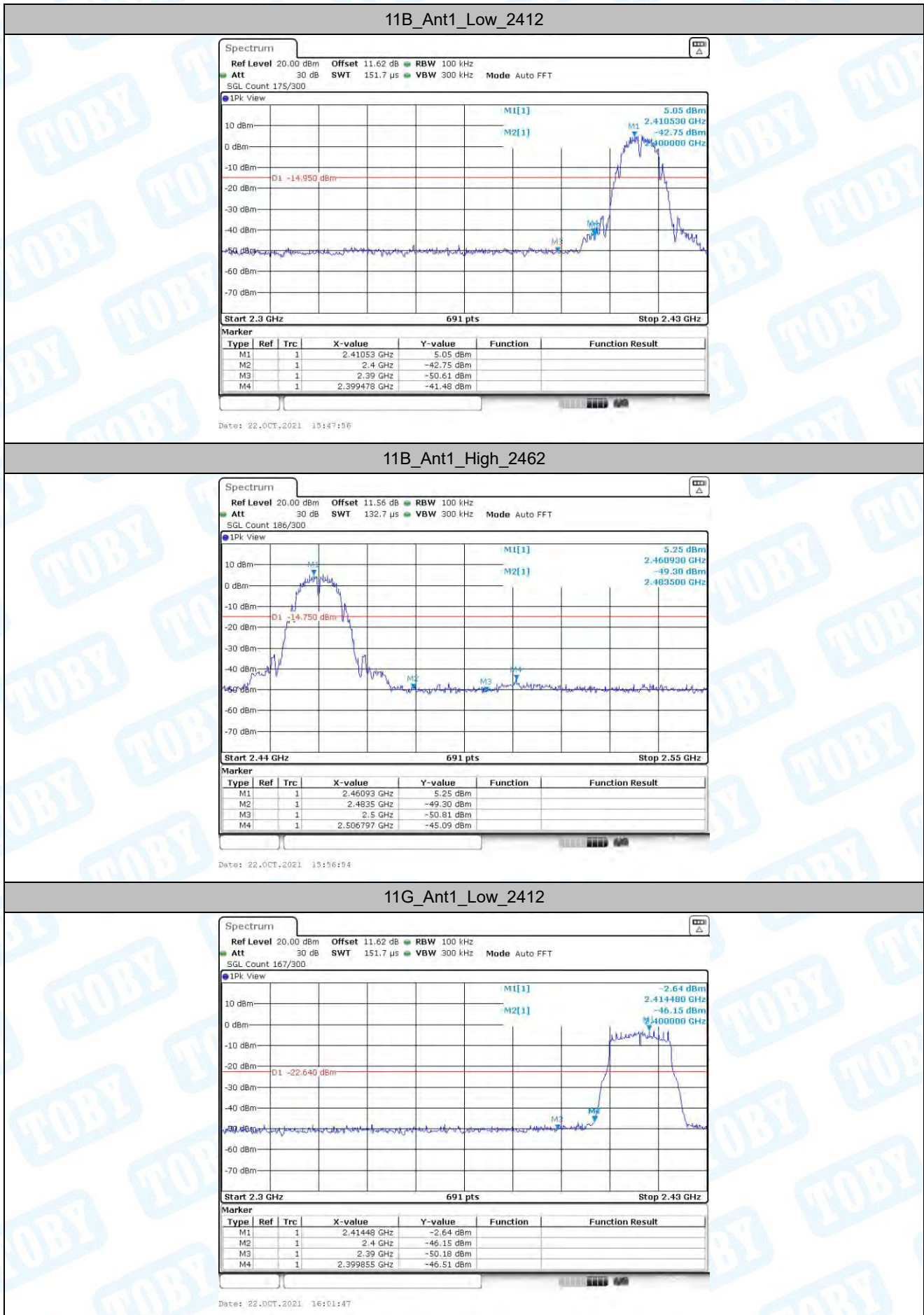


5. Band edge measurements

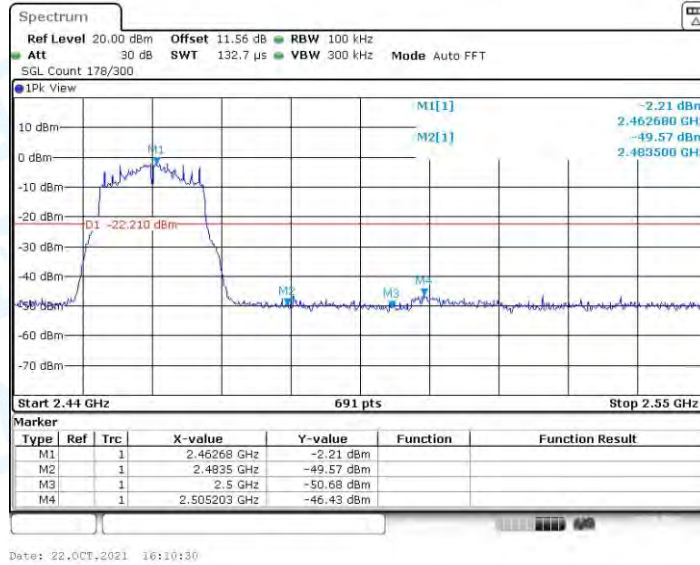
5.1. Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	5.05	-41.48	≤ -14.95	PASS
		High	2462	5.25	-45.09	≤ -14.75	PASS
11G	Ant1	Low	2412	-2.64	-46.51	≤ -22.64	PASS
		High	2462	-2.21	-46.43	≤ -22.21	PASS
11N20SISO	Ant1	Low	2412	-4.89	-47.73	≤ -24.89	PASS
		High	2462	-3.88	-45.55	≤ -23.88	PASS
11N40SISO	Ant1	Low	2422	-8.86	-47.34	≤ -28.86	PASS
		High	2452	-8.67	-46.41	≤ -28.67	PASS

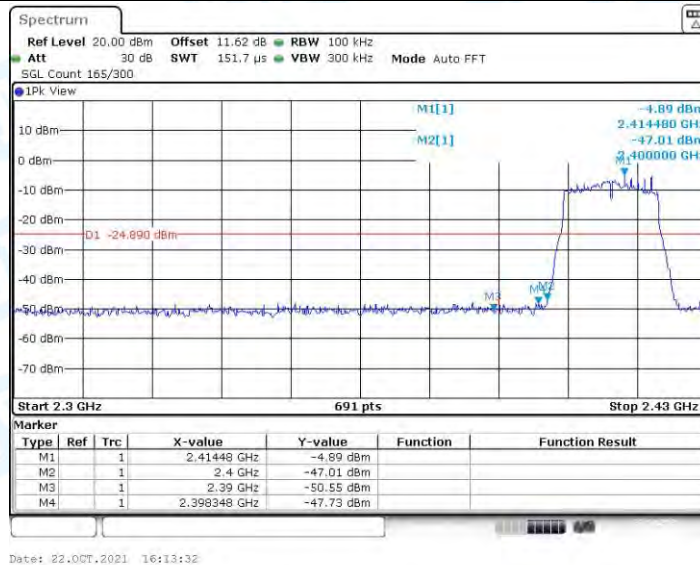
5.2. Test Graphs



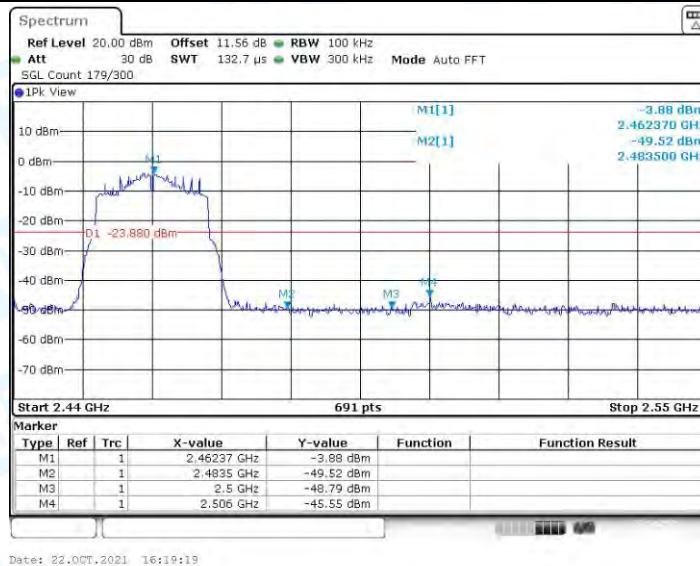
11G_Ant1_High_2462



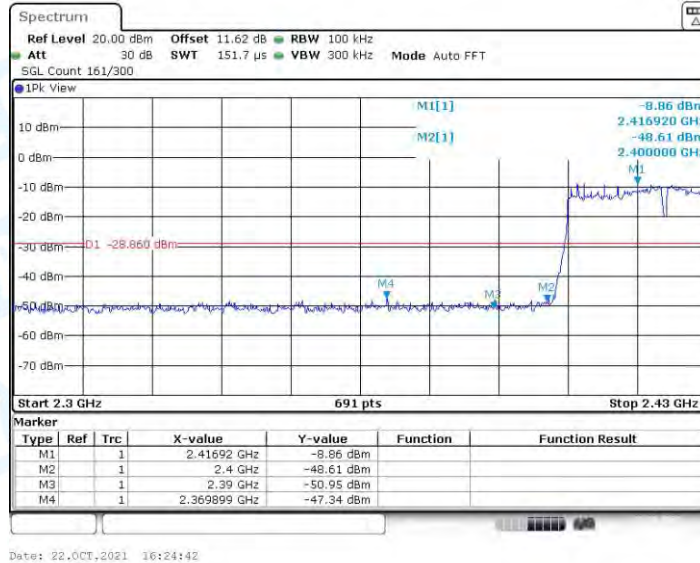
11N20SISO_Ant1_Low_2412



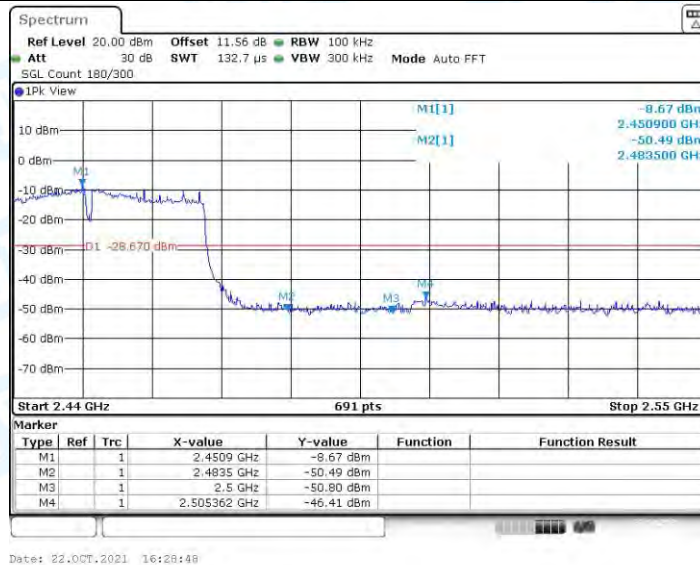
11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



11N40SISO_Ant1_High_2452

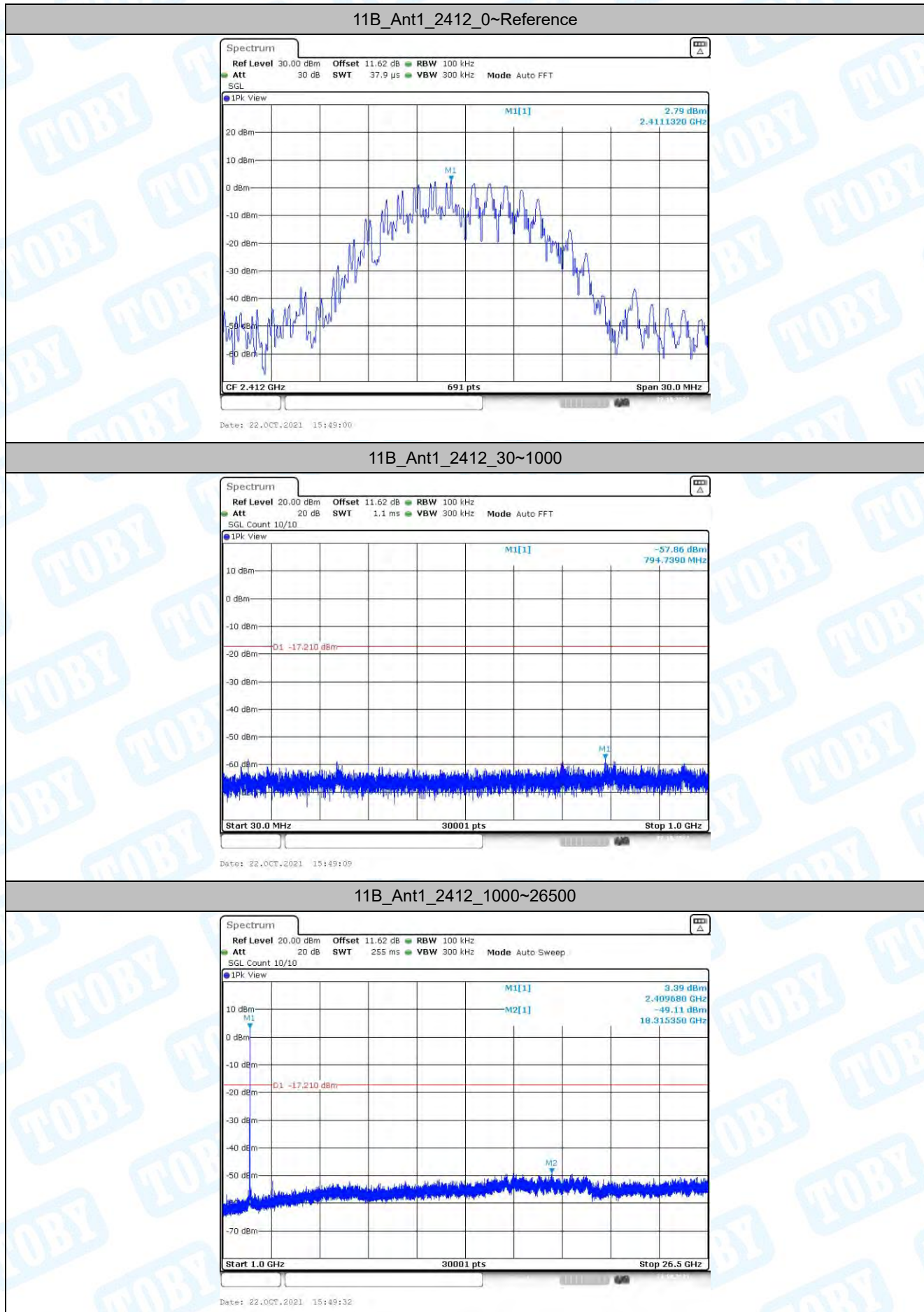


6. Conducted Spurious Emission

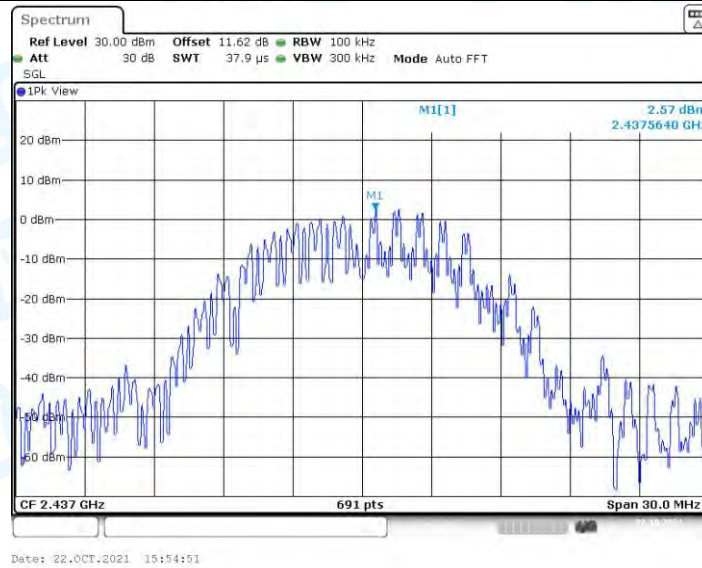
6.1. Test Result

TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	2.79	2.79	---	PASS
			30~1000	2.79	-57.86	≤-17.21	PASS
			1000~26500	2.79	-49.11	≤-17.21	PASS
		2437	Reference	2.57	2.57	---	PASS
			30~1000	2.57	-57.88	≤-17.43	PASS
			1000~26500	2.57	-49.19	≤-17.43	PASS
		2462	Reference	3.01	3.01	---	PASS
			30~1000	3.01	-58.02	≤-16.99	PASS
			1000~26500	3.01	-49.05	≤-16.99	PASS
11G	Ant1	2412	Reference	-4.90	-4.90	---	PASS
			30~1000	-4.90	-58.4	≤-24.9	PASS
			1000~26500	-4.90	-48.43	≤-24.9	PASS
		2437	Reference	-6.46	-6.46	---	PASS
			30~1000	-6.46	-59.59	≤-26.46	PASS
			1000~26500	-6.46	-48.44	≤-26.46	PASS
		2462	Reference	-3.60	-3.60	---	PASS
			30~1000	-3.60	-58.16	≤-23.6	PASS
			1000~26500	-3.60	-49.57	≤-23.6	PASS
11N20SISO	Ant1	2412	Reference	-7.80	-7.80	---	PASS
			30~1000	-7.80	-58.43	≤-27.8	PASS
			1000~26500	-7.80	-49.16	≤-27.8	PASS
		2437	Reference	-6.80	-6.80	---	PASS
			30~1000	-6.80	-59.06	≤-26.8	PASS
			1000~26500	-6.80	-48.82	≤-26.8	PASS
		2462	Reference	-5.20	-5.20	---	PASS
			30~1000	-5.20	-58.17	≤-25.2	PASS
			1000~26500	-5.20	-48.38	≤-25.2	PASS
11N40SISO	Ant1	2422	Reference	-10.77	-10.77	---	PASS
			30~1000	-10.77	-57.63	≤-30.77	PASS
			1000~26500	-10.77	-49.6	≤-30.77	PASS
		2437	Reference	-10.95	-10.95	---	PASS
			30~1000	-10.95	-58.95	≤-30.95	PASS
			1000~26500	-10.95	-47.67	≤-30.95	PASS
		2452	Reference	-10.43	-10.43	---	PASS
			30~1000	-10.43	-58.25	≤-30.43	PASS
			1000~26500	-10.43	-47.75	≤-30.43	PASS

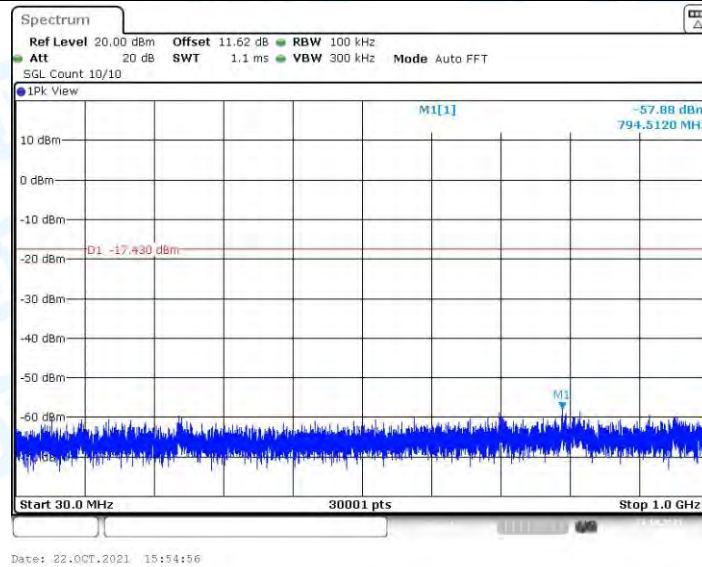
6.2. Test Graphs



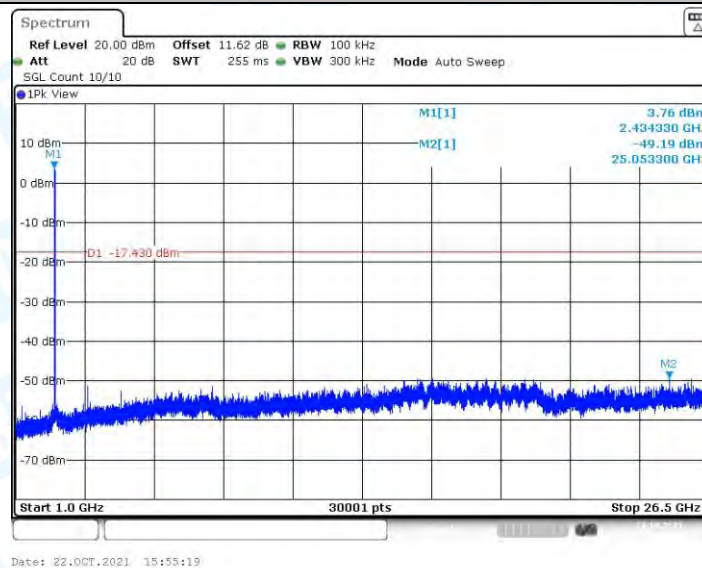
11B_Ant1_2437_0~Reference



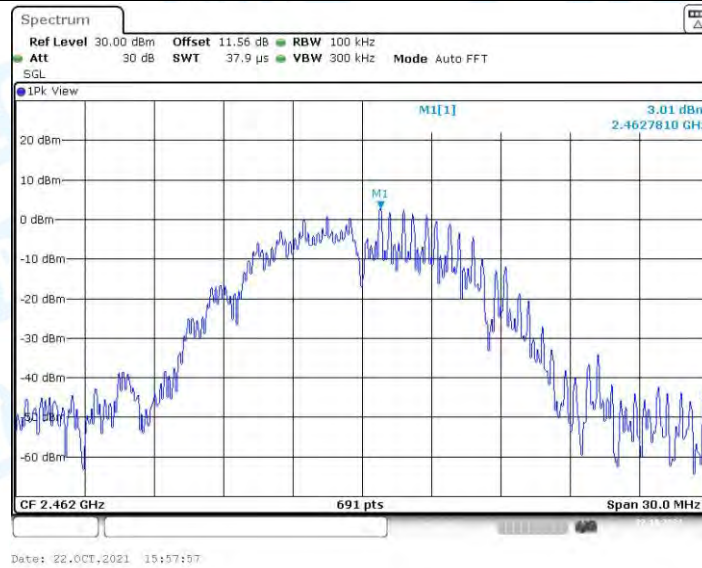
11B_Ant1_2437_30~1000



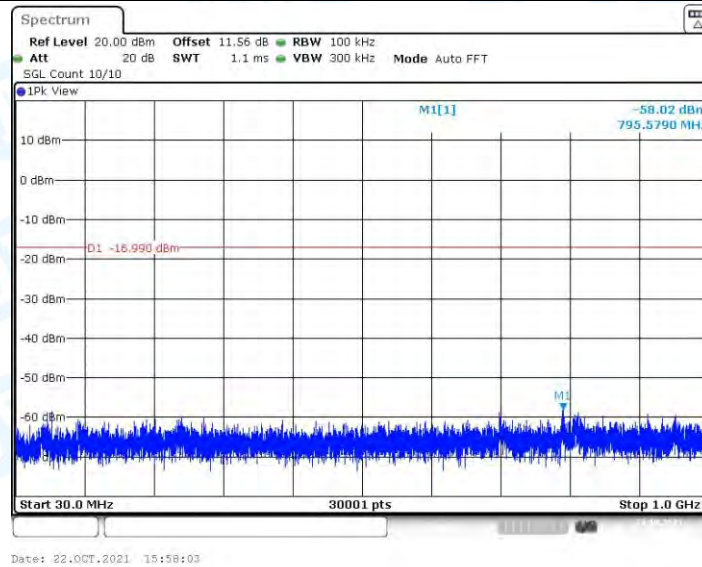
11B_Ant1_2437_1000~26500



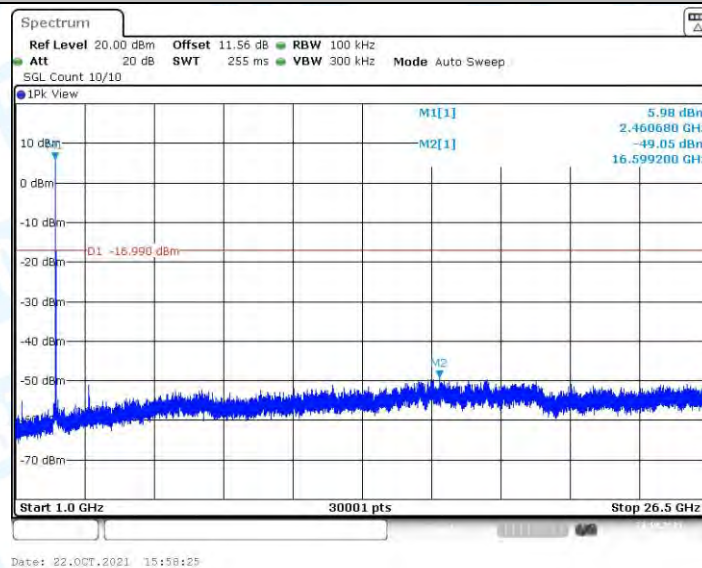
11B_Ant1_2462_0~Reference



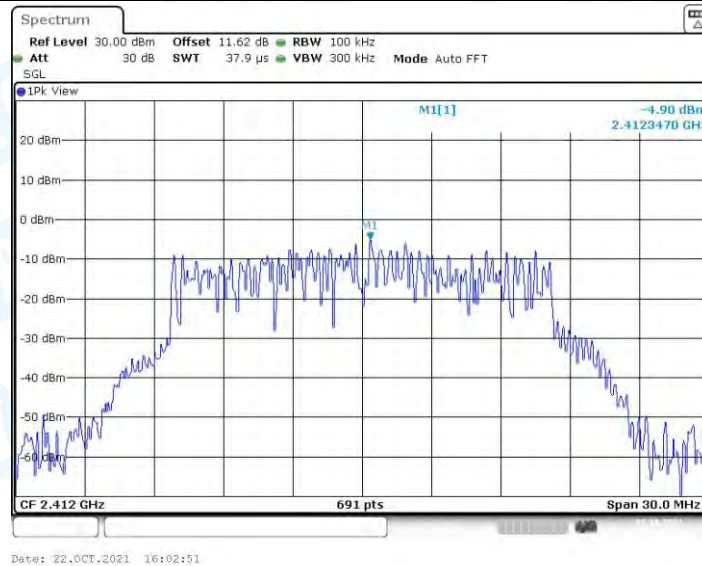
11B_Ant1_2462_30~1000



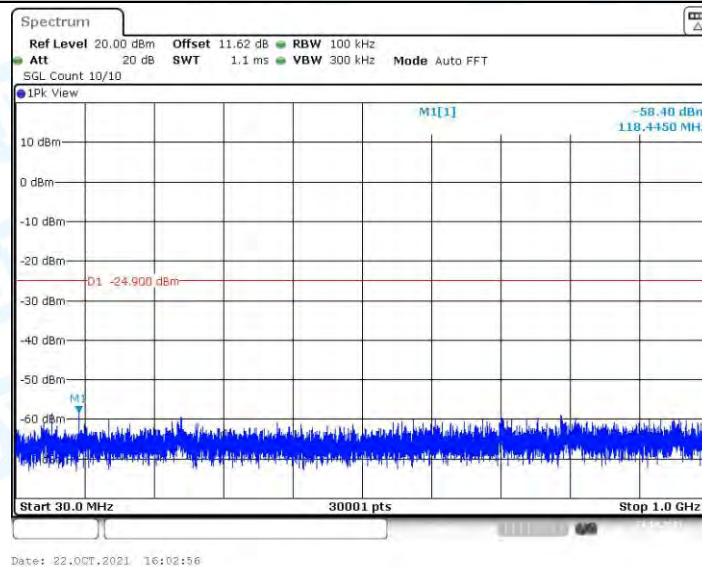
11B_Ant1_2462_1000~26500



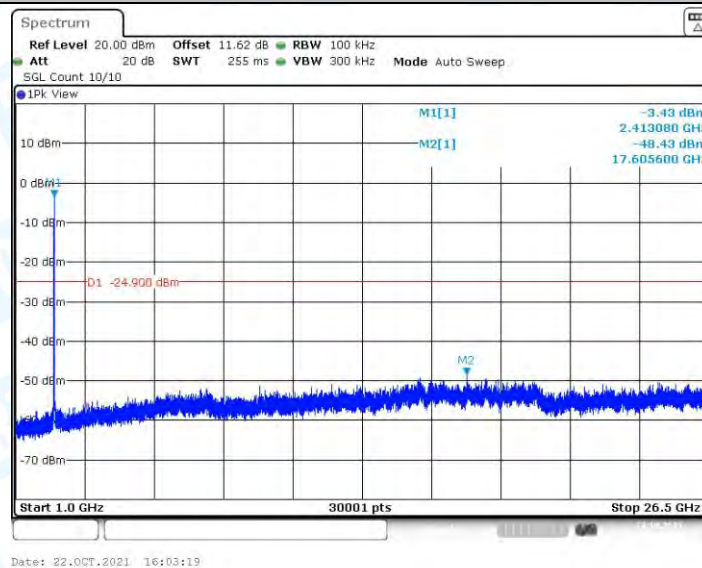
11G_Ant1_2412_0~Reference



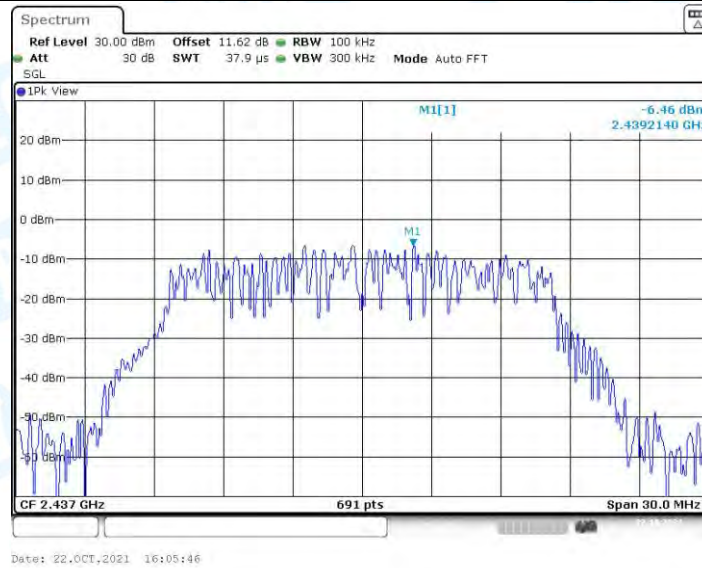
11G_Ant1_2412_30~1000



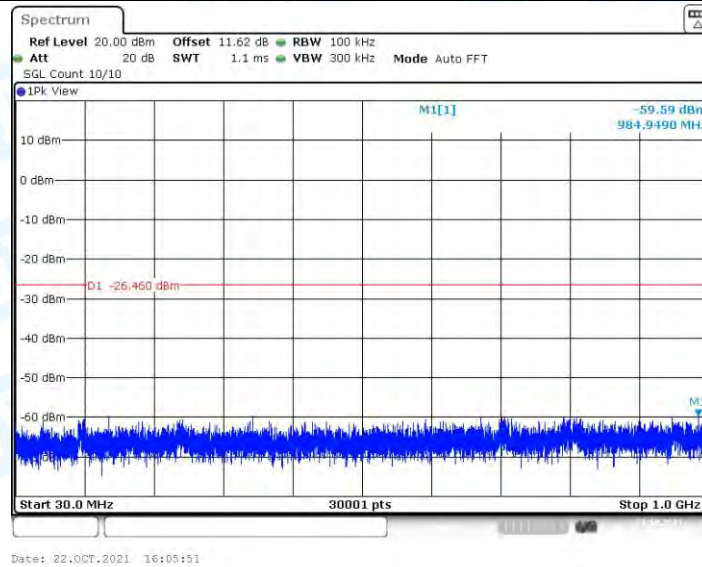
11G_Ant1_2412_1000~26500



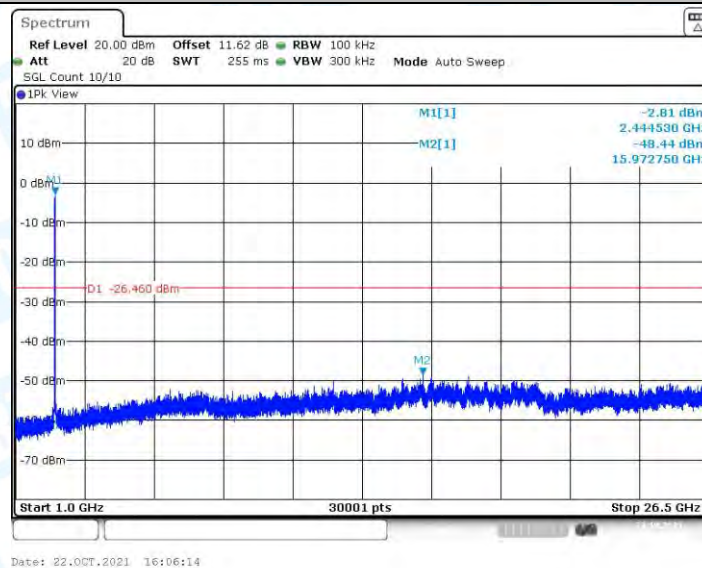
11G_Ant1_2437_0~Reference



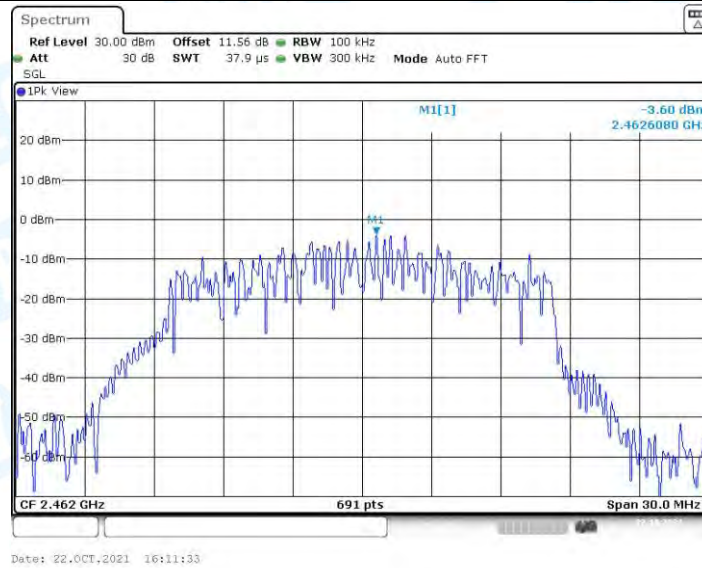
11G_Ant1_2437_30~1000



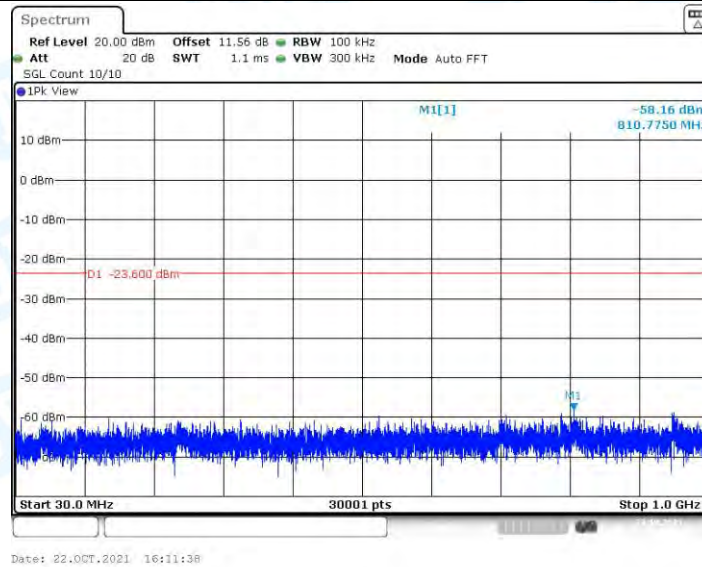
11G_Ant1_2437_1000~26500



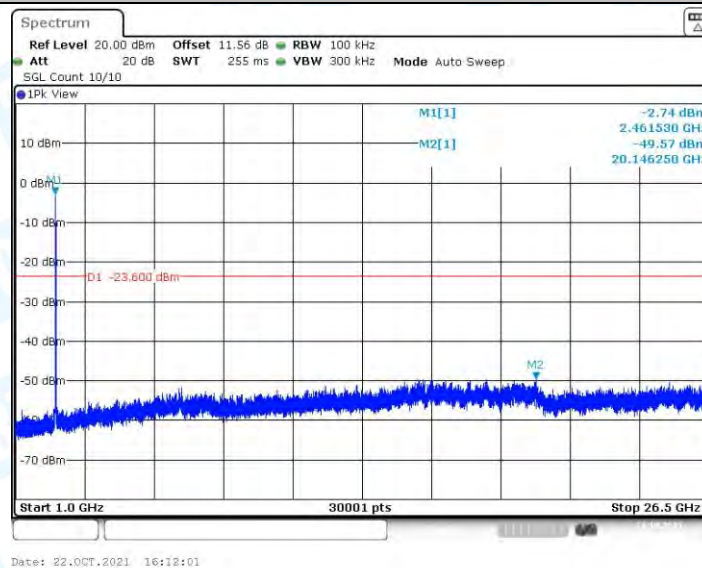
11G_Ant1_2462_0~Reference



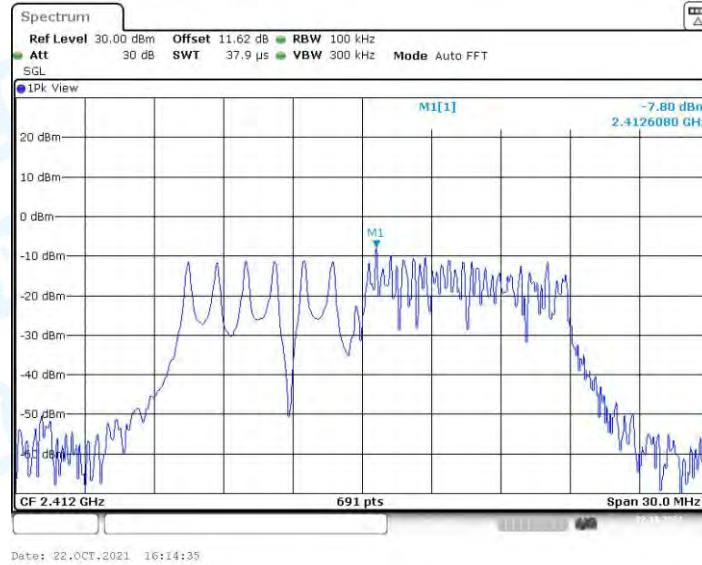
11G_Ant1_2462_30~1000



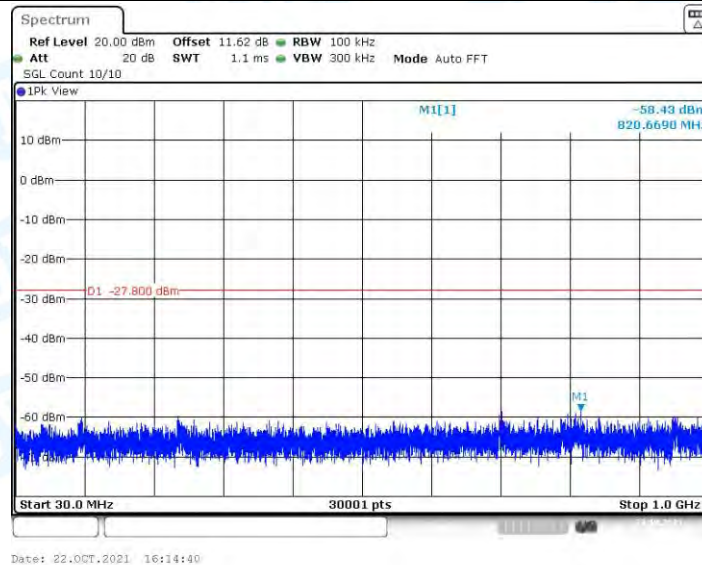
11G_Ant1_2462_1000~26500



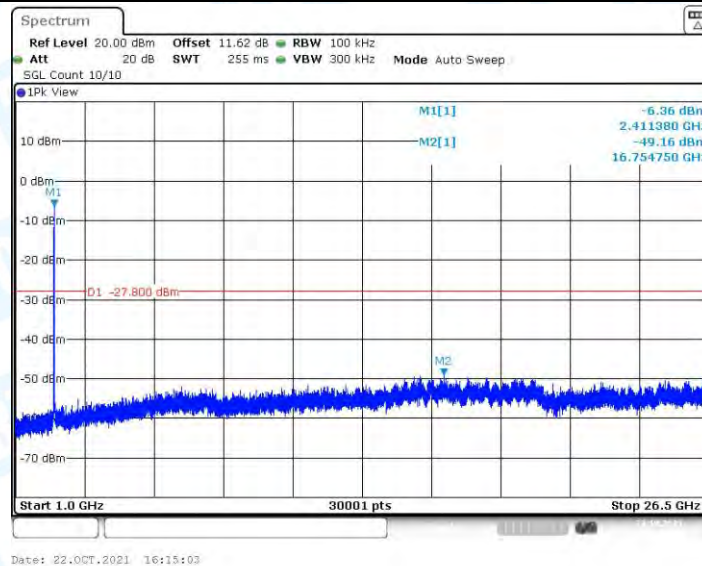
11N20SISO_Ant1_2412_0~Reference



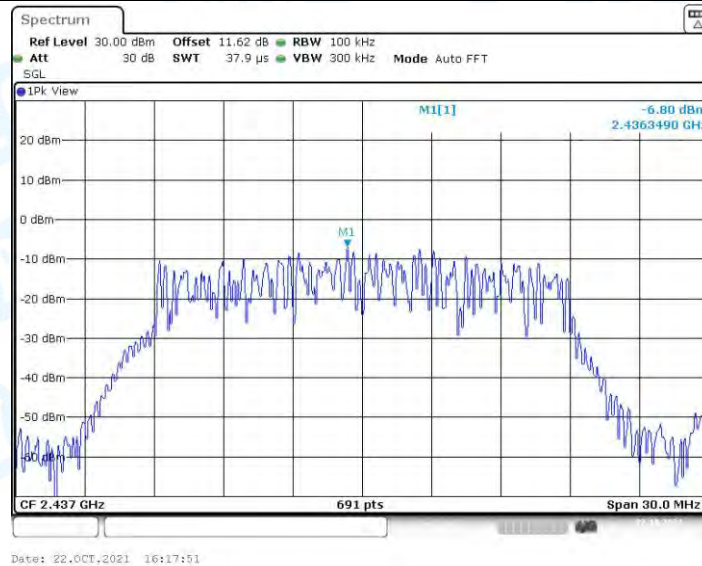
11N20SISO_Ant1_2412_30~1000



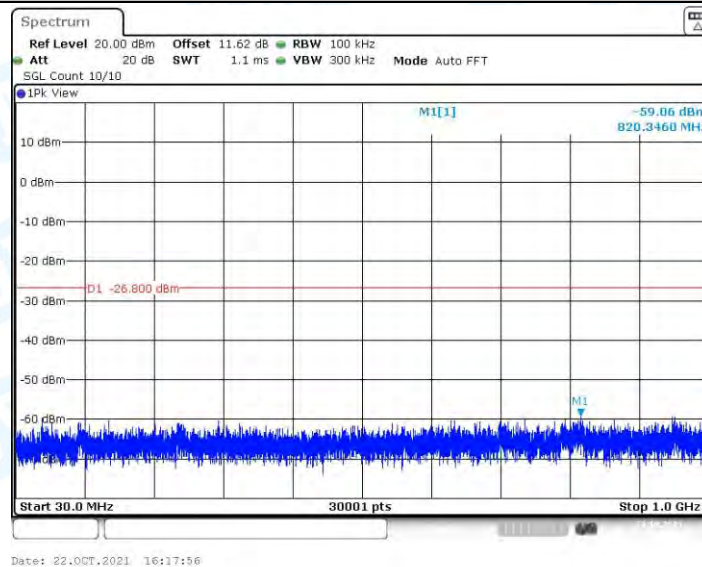
11N20SISO_Ant1_2412_1000~26500



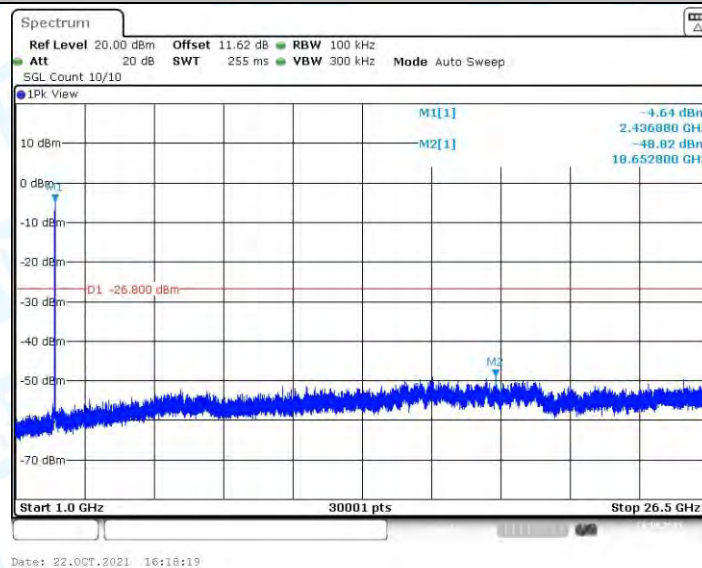
11N20SISO_Ant1_2437_0~Reference



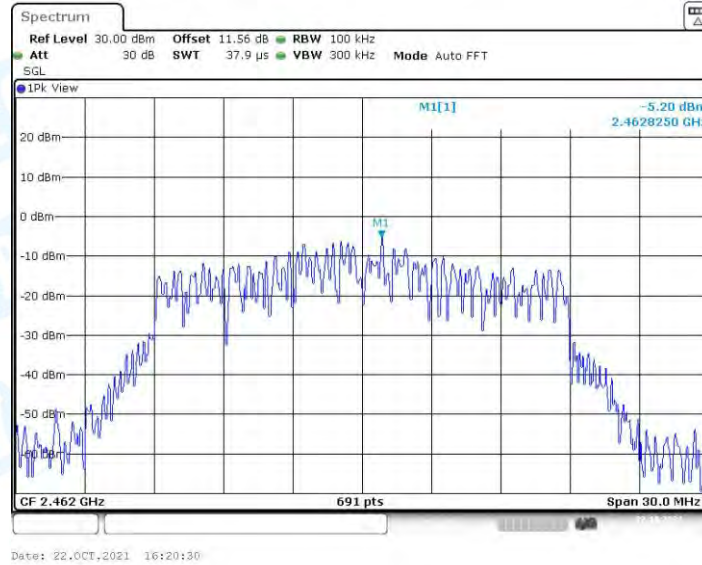
11N20SISO_Ant1_2437_30~1000



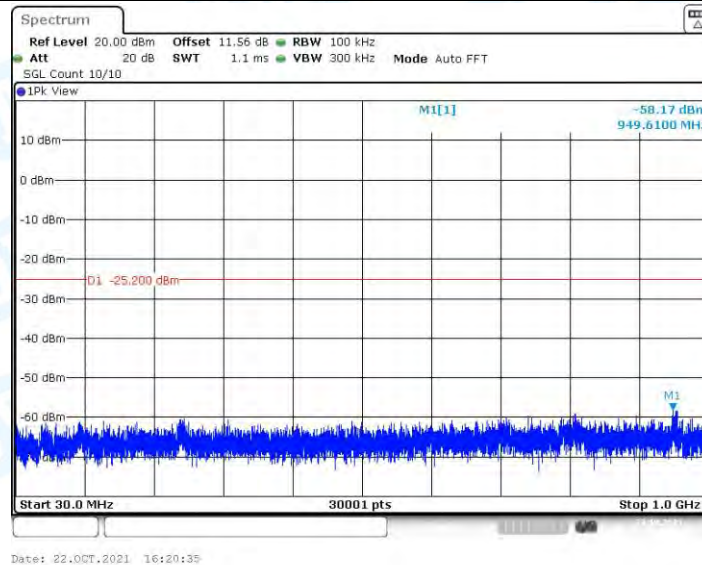
11N20SISO_Ant1_2437_1000~26500



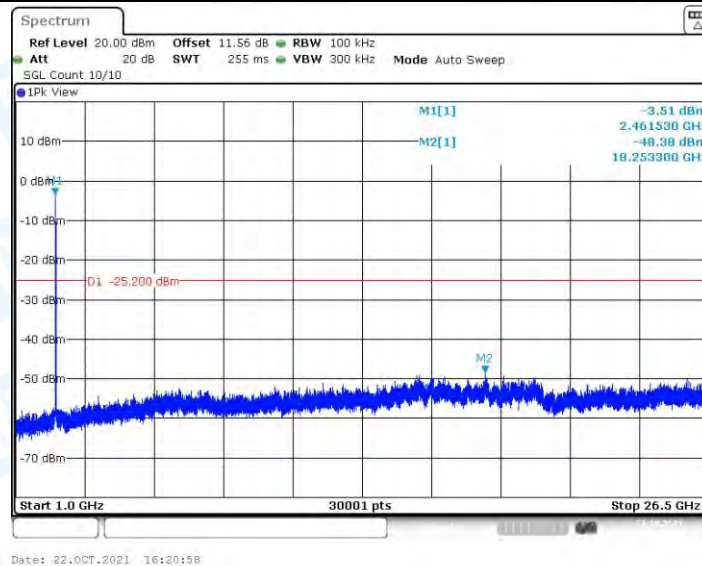
11N20SISO_Ant1_2462_0~Reference



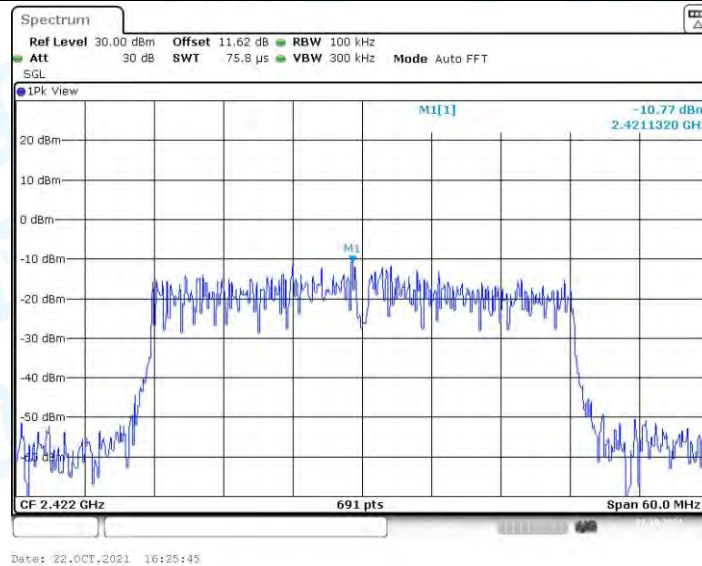
11N20SISO_Ant1_2462_30~1000



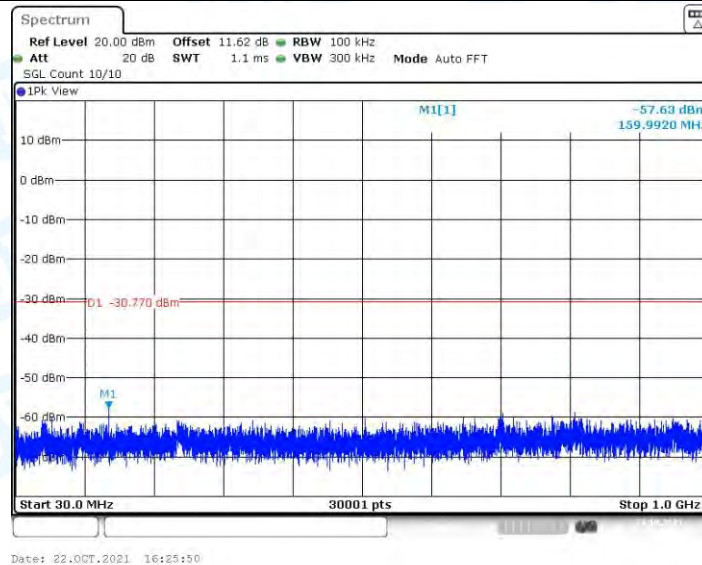
11N20SISO_Ant1_2462_1000~26500



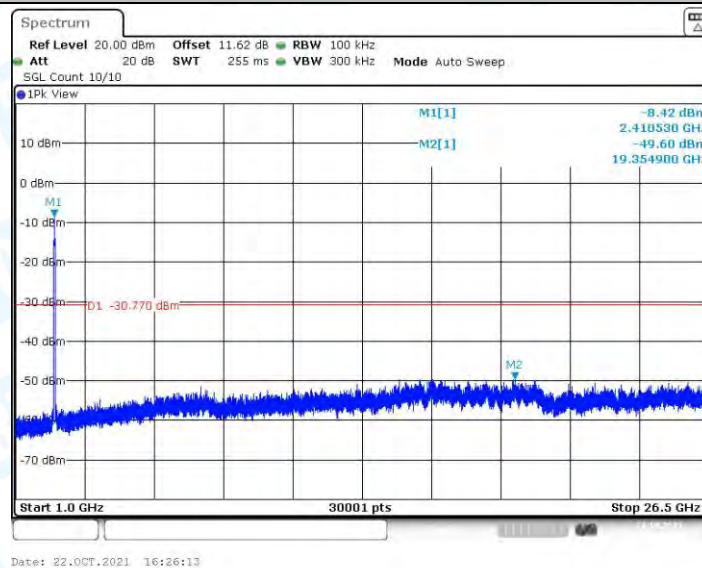
11N40SISO_Ant1_2422_0~Reference



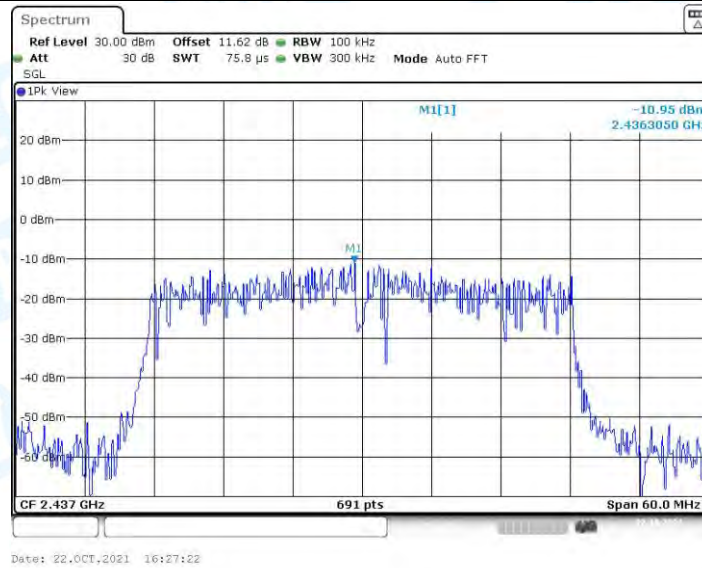
11N40SISO_Ant1_2422_30~1000



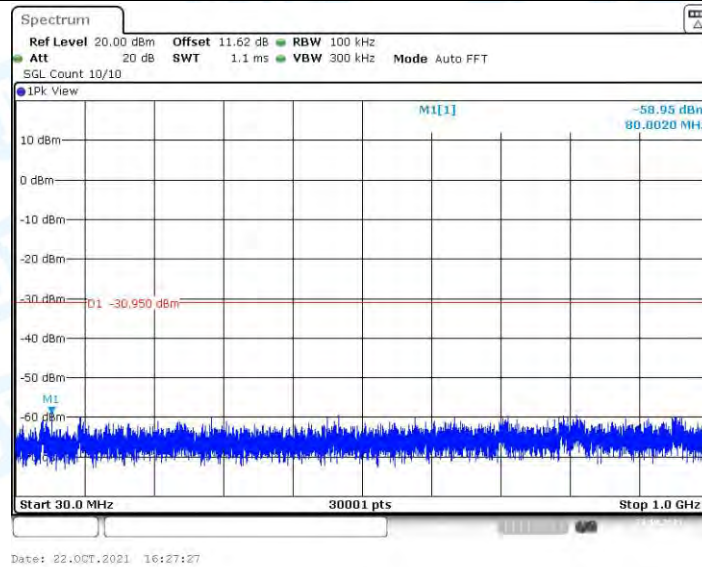
11N40SISO_Ant1_2422_1000~26500



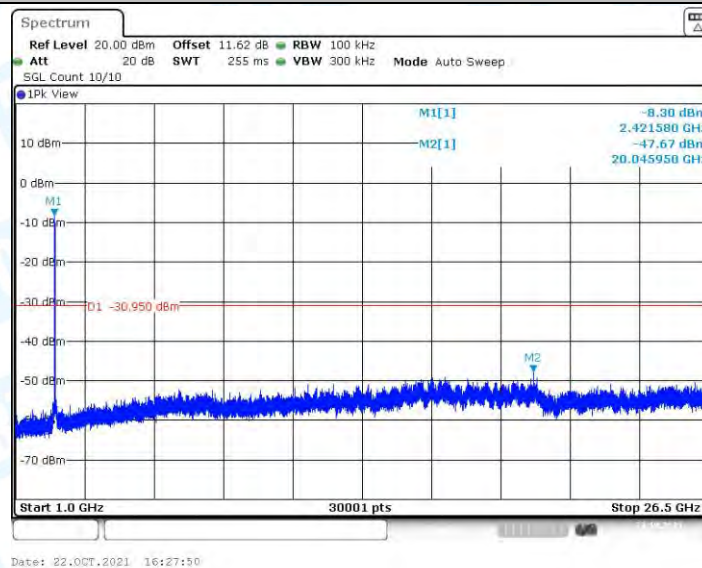
11N40SISO_Ant1_2437_0~Reference



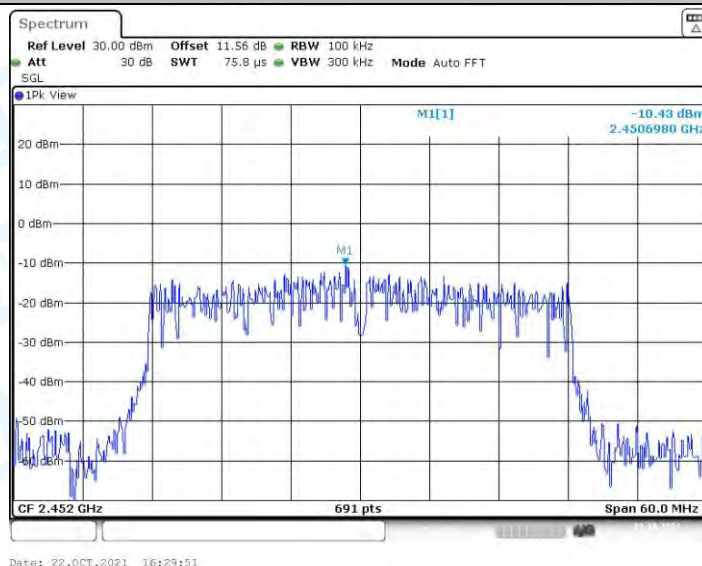
11N40SISO_Ant1_2437_30~1000



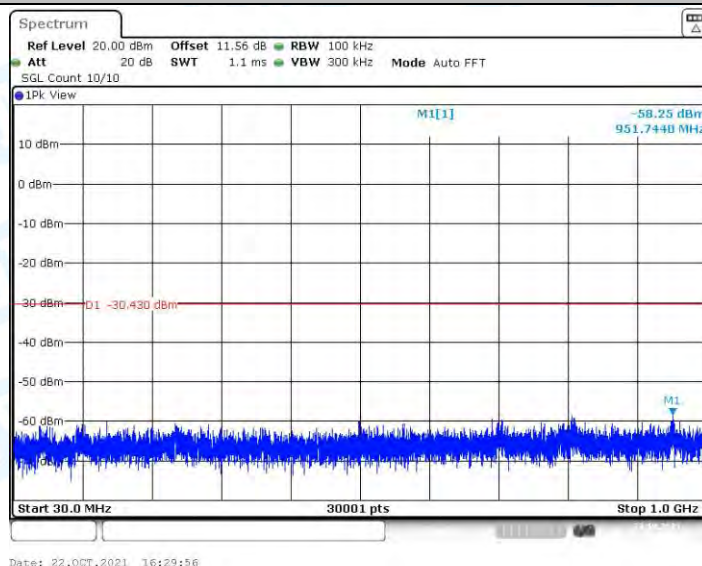
11N40SISO_Ant1_2437_1000~26500



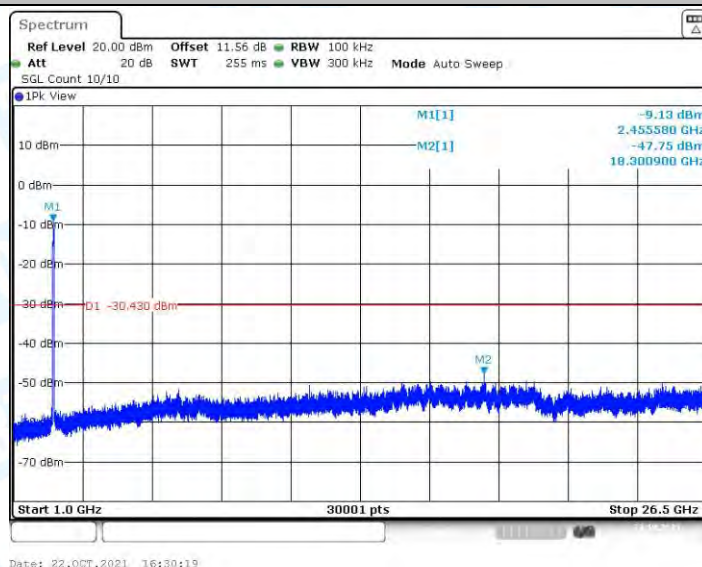
11N40SISO Ant1 2452 0~Reference



11N40SISO Ant1 2452 30~1000



11N40SISO Ant1 2452 1000~26500

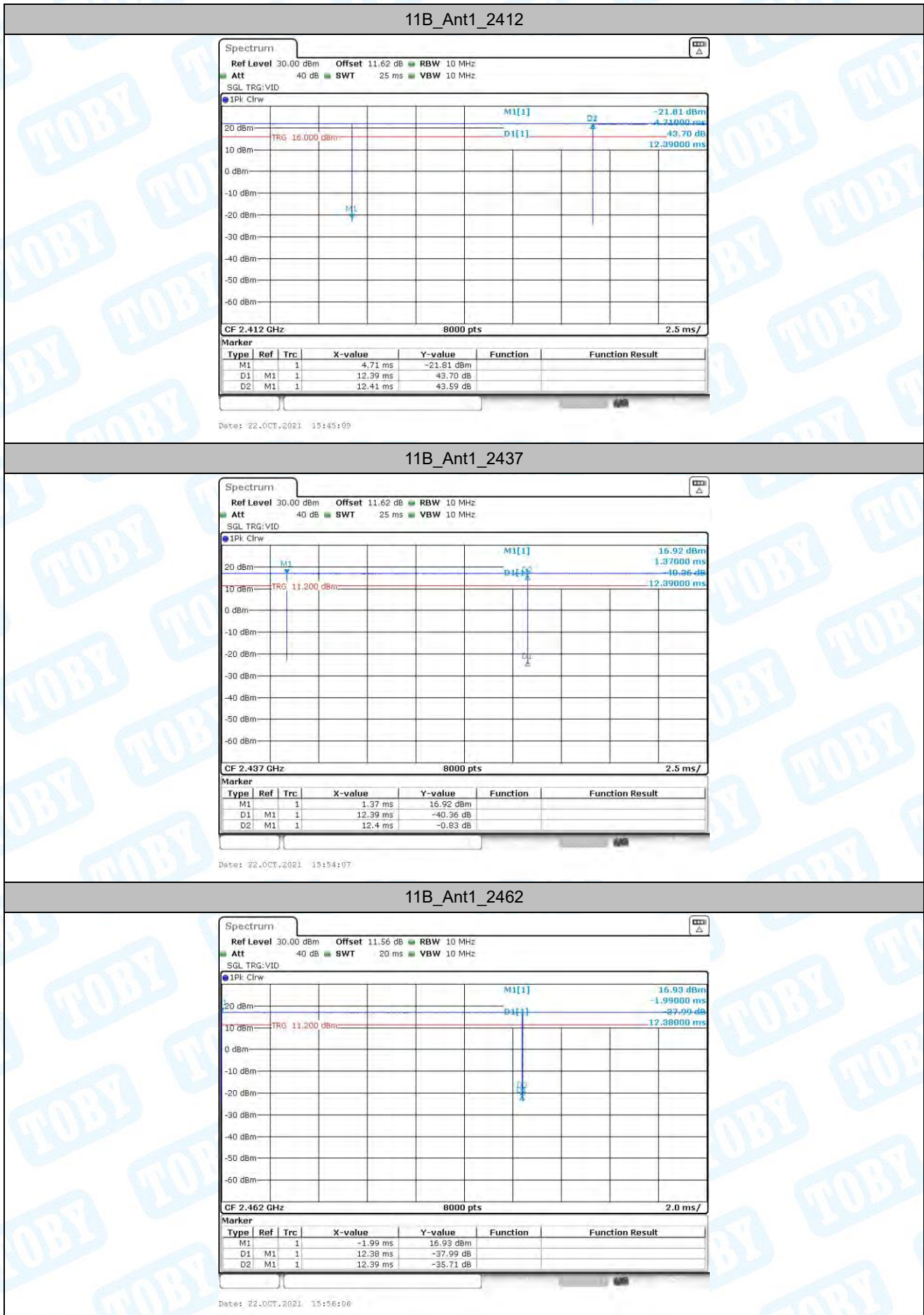


7. Duty Cycle

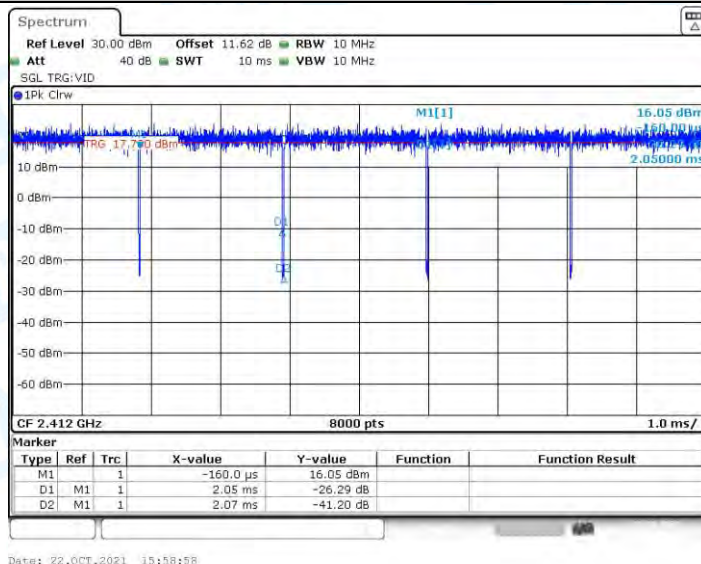
7.1. Test Result

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T [KHz]	Limit	Verdict
11B	Ant1	2412	12.39	12.41	99.84	0.081	---	PASS
		2437	12.39	12.40	99.92	0.081	---	PASS
		2462	12.38	12.39	99.92	0.081	---	PASS
11G	Ant1	2412	2.05	2.07	99.03	0.489	---	PASS
		2437	2.05	2.07	99.03	0.489	---	PASS
		2462	2.05	2.07	99.03	0.489	---	PASS
11N20SISO	Ant1	2412	1.91	1.93	98.96	0.524	---	PASS
		2437	1.91	1.93	98.96	0.524	---	PASS
		2462	1.91	1.93	98.96	0.524	---	PASS
11N40SISO	Ant1	2422	0.00	0.00	100	0	---	PASS
		2437	0.00	0.00	100	0	---	PASS
		2452	0.00	0.00	100	0	---	PASS

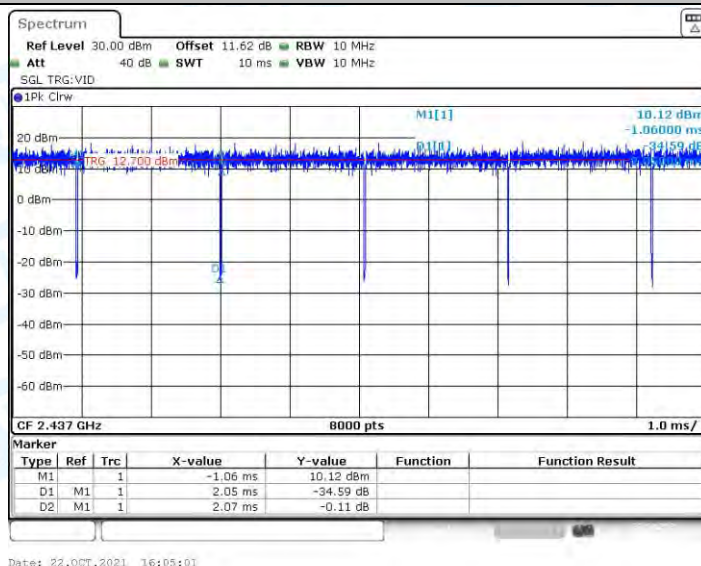
7.2.Test Graphs



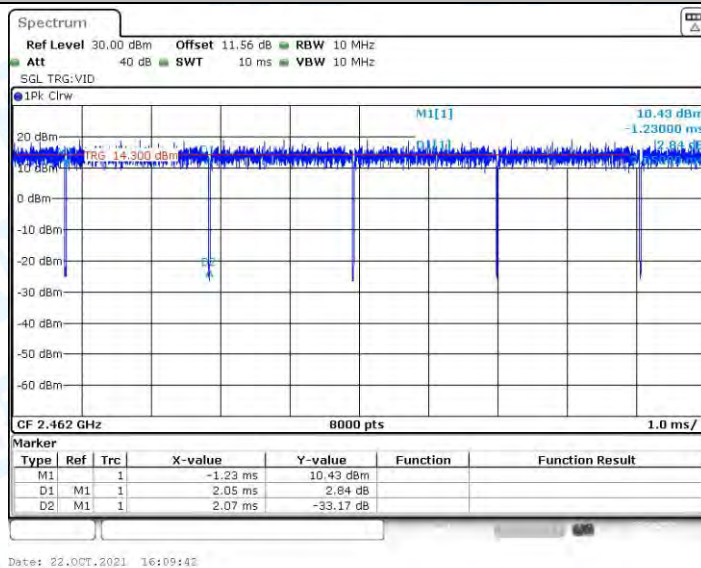
11G_Ant1_2412



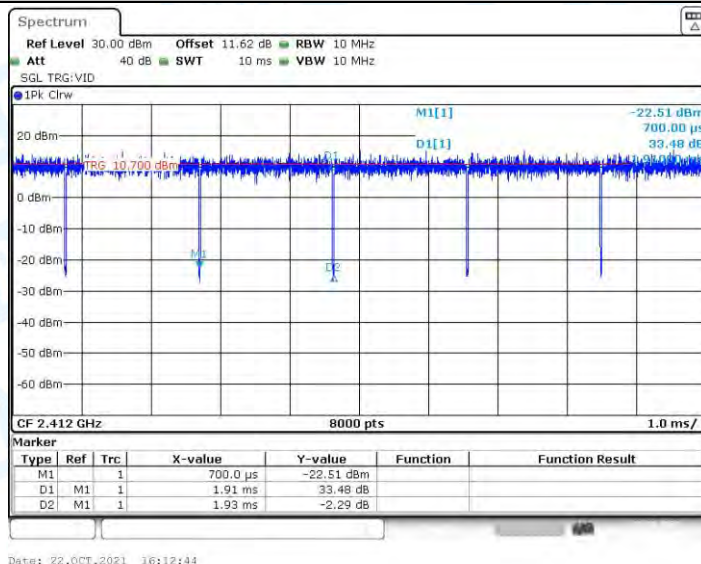
11G_Ant1_2437



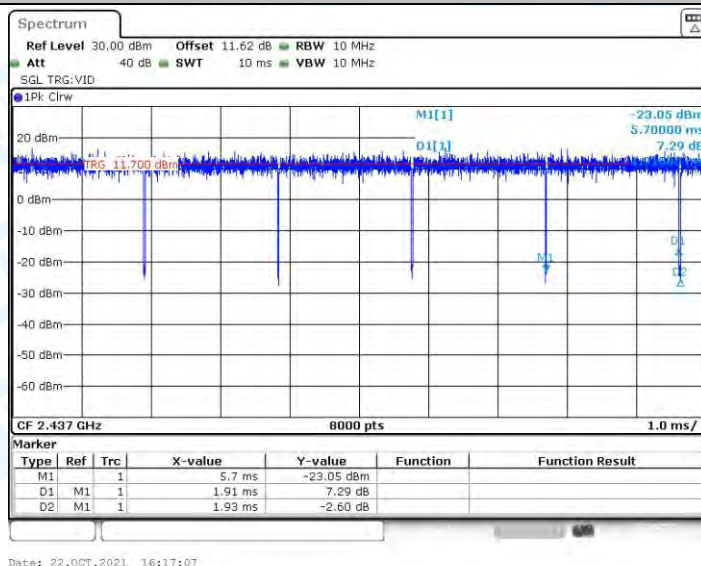
11G_Ant1_2462



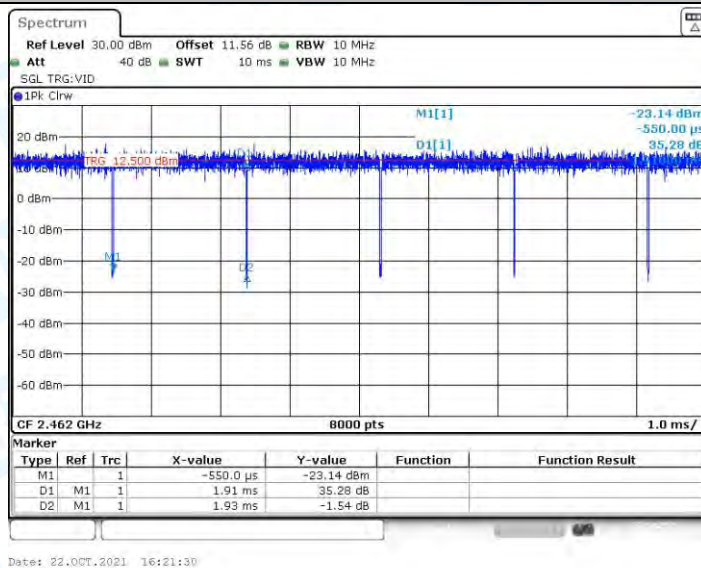
11N20SISO_Ant1_2412



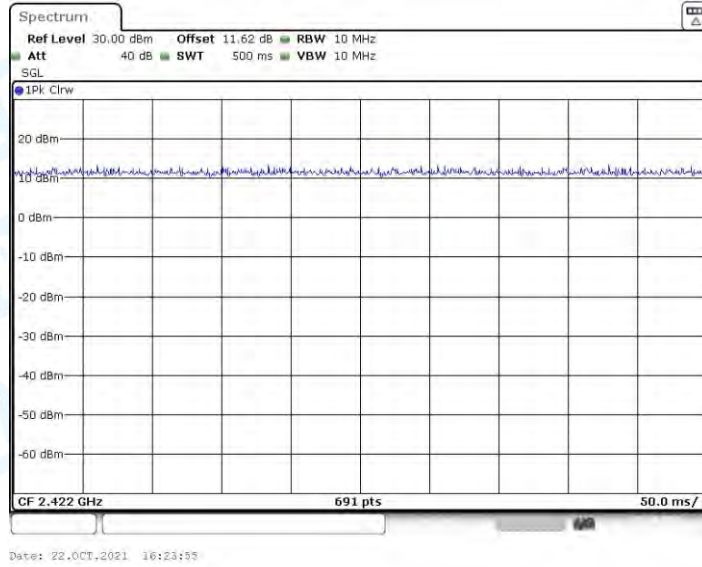
11N20SISO_Ant1_2437



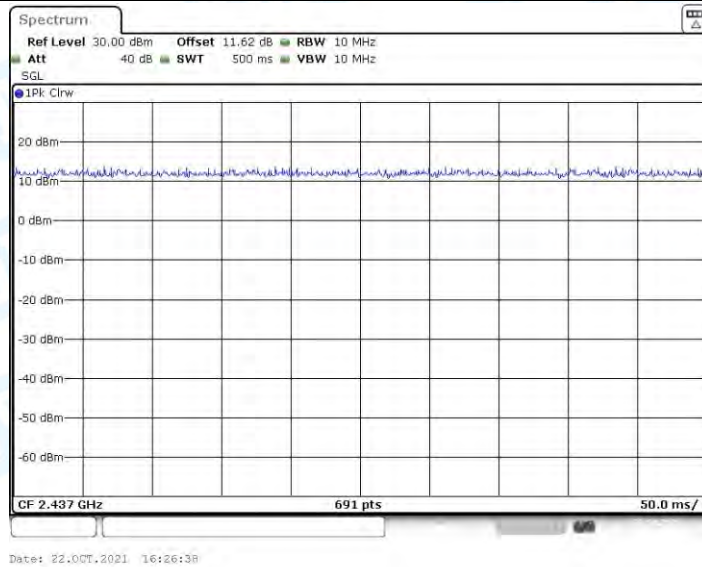
11N20SISO_Ant1_2462



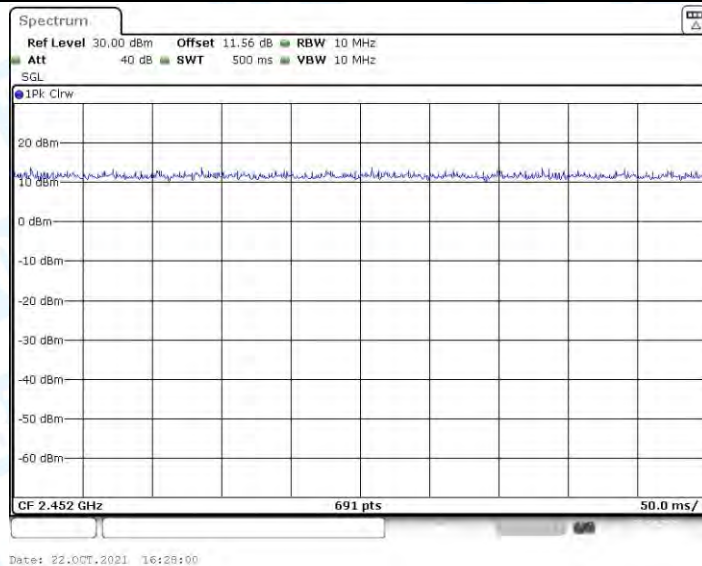
11N40SISO_Ant1_2422



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	-49.05	≤-41.20	PASS
				AV	2340.130	-46.59	≤-41.20	PASS
				AV	2390.000	-48.83	≤-41.20	PASS
				Peak	2310.000	-43	≤-21.20	PASS
				Peak	2363.116	-37.29	≤-21.20	PASS
				Peak	2390.000	-41.79	≤-21.20	PASS
		High	2462	AV	2483.500	-47.78	≤-41.20	PASS
				AV	2495.478	-47.72	≤-41.20	PASS
				AV	2500.000	-48.16	≤-41.20	PASS
				Peak	2483.500	-42.34	≤-21.20	PASS
				Peak	2497.391	-39.47	≤-21.20	PASS
				Peak	2500.000	-42.3	≤-21.20	PASS
11G	Ant1	Low	2412	AV	2310.000	-48.95	≤-41.20	PASS
				AV	2339.754	-46.71	≤-41.20	PASS
				AV	2390.000	-48.4	≤-41.20	PASS
				Peak	2310.000	-42.22	≤-21.20	PASS
				Peak	2385.725	-36.97	≤-21.20	PASS
				Peak	2390.000	-38.85	≤-21.20	PASS
		High	2462	AV	2483.500	-47.42	≤-41.20	PASS
				AV	2483.841	-47.3	≤-41.20	PASS
				AV	2500.000	-48.12	≤-41.20	PASS
				Peak	2483.500	-41.07	≤-21.20	PASS
				Peak	2486.551	-36.68	≤-21.20	PASS
				Peak	2500.000	-40.61	≤-21.20	PASS
11N20SISO	Ant1	Low	2412	AV	2310.000	-49.13	≤-41.20	PASS
				AV	2340.696	-46.42	≤-41.20	PASS
				AV	2390.000	-48.19	≤-41.20	PASS
				Peak	2310.000	-44.01	≤-21.20	PASS
				Peak	2345.406	-35.79	≤-21.20	PASS
				Peak	2390.000	-40.45	≤-21.20	PASS
		High	2462	AV	2483.500	-47.79	≤-41.20	PASS
				AV	2483.522	-47.79	≤-41.20	PASS
				AV	2500.000	-48.49	≤-41.20	PASS
				Peak	2483.500	-41.58	≤-21.20	PASS
				Peak	2495.638	-37.66	≤-21.20	PASS
				Peak	2500.000	-39.02	≤-21.20	PASS
11N40SISO	Ant1	Low	2422	AV	2310.000	-49.33	≤-41.20	PASS
				AV	2340.130	-46.97	≤-41.20	PASS
				AV	2390.000	-48.75	≤-41.20	PASS
				Peak	2310.000	-42.51	≤-21.20	PASS
				Peak	2346.536	-37.74	≤-21.20	PASS

		High	2452	Peak	2390.000	-40.43	≤ -21.20	PASS
				AV	2483.500	-47.75	≤ -41.20	PASS
				AV	2483.522	-47.75	≤ -41.20	PASS
				AV	2500.000	-48.24	≤ -41.20	PASS
				Peak	2483.500	-42.95	≤ -21.20	PASS
				Peak	2494.522	-39	≤ -21.20	PASS
				Peak	2500.000	-43.54	≤ -21.20	PASS

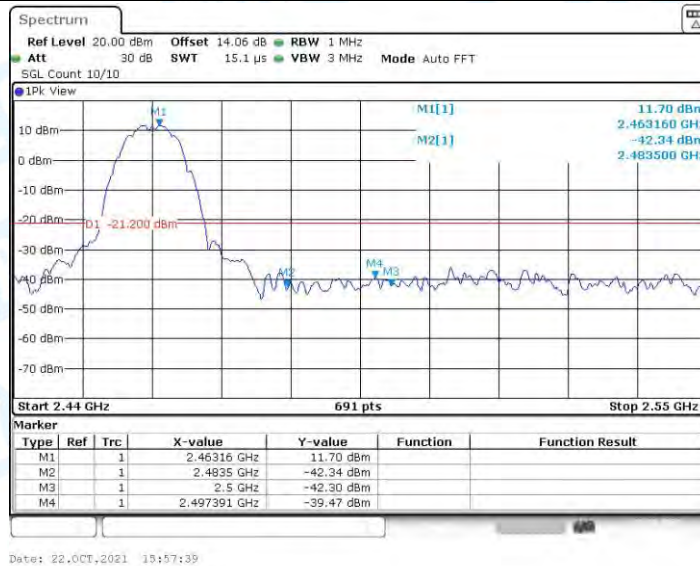
Note:

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.

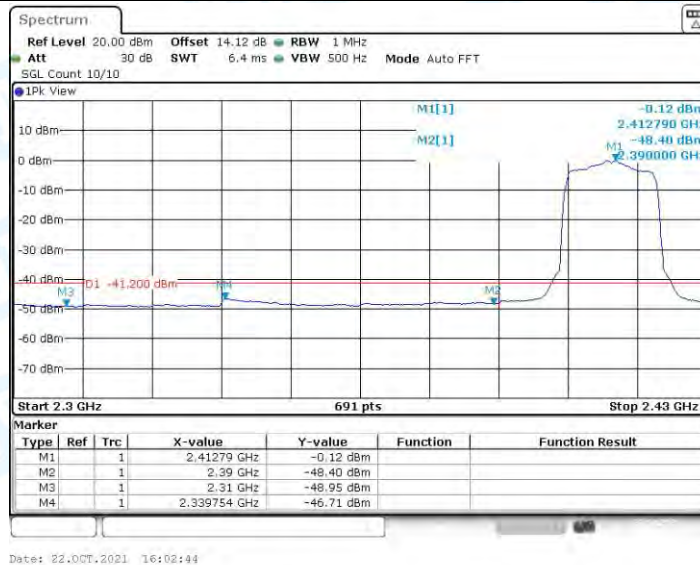
8.2. Test Graphs



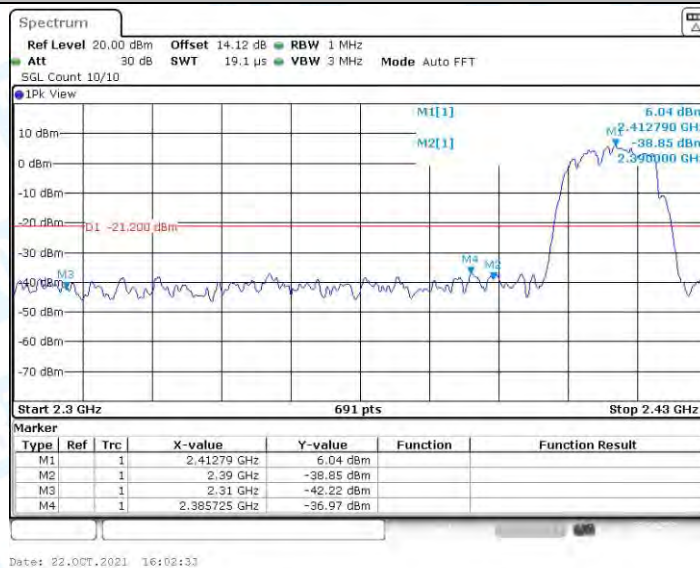
11B_Ant1_High_2462_Peak



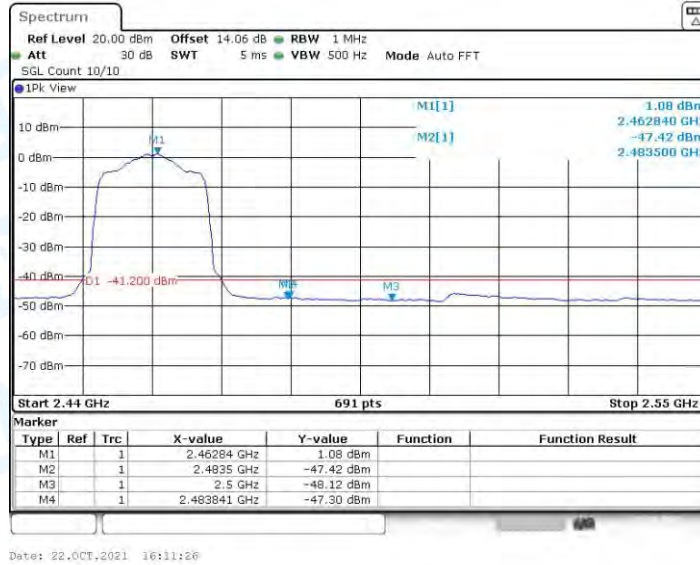
11G_Ant1_Low_2412_AV



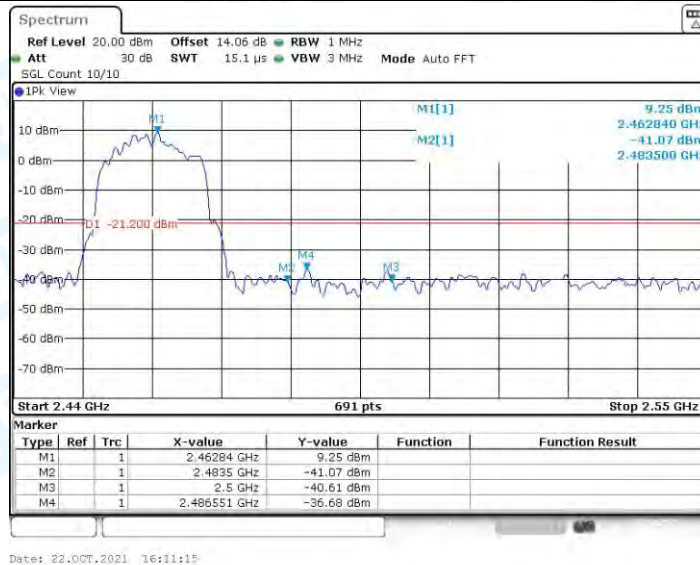
11G_Ant1_Low_2412_Peak



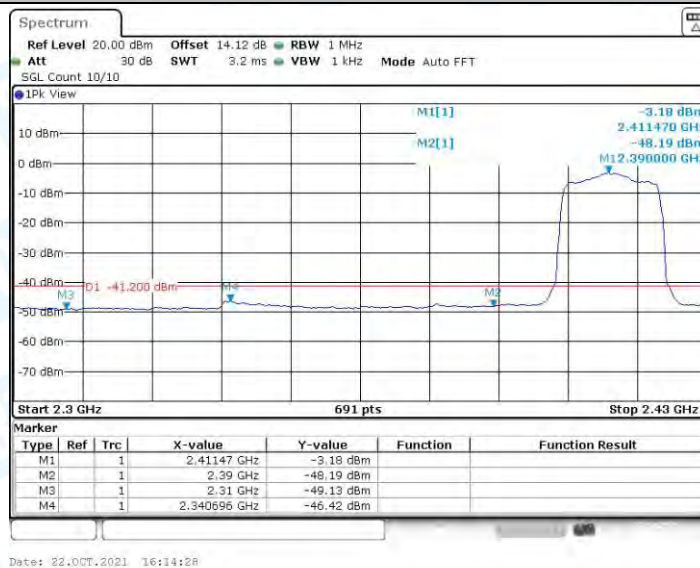
11G_Ant1_High_2462_AV



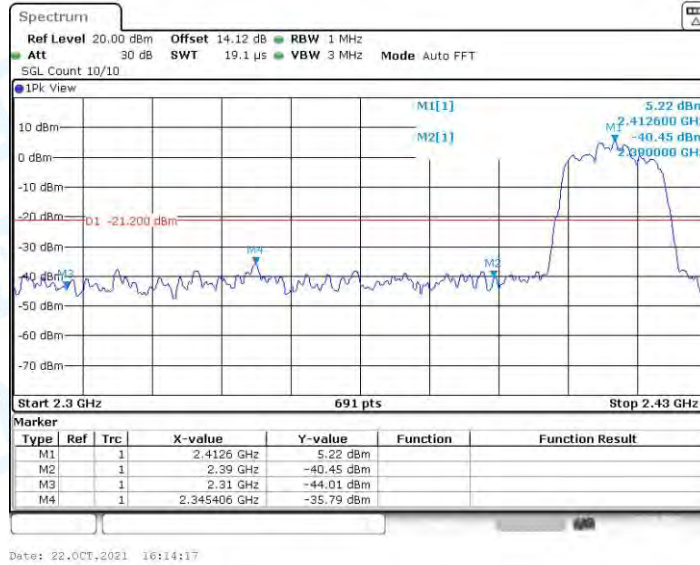
11G_Ant1_High_2462_Peak



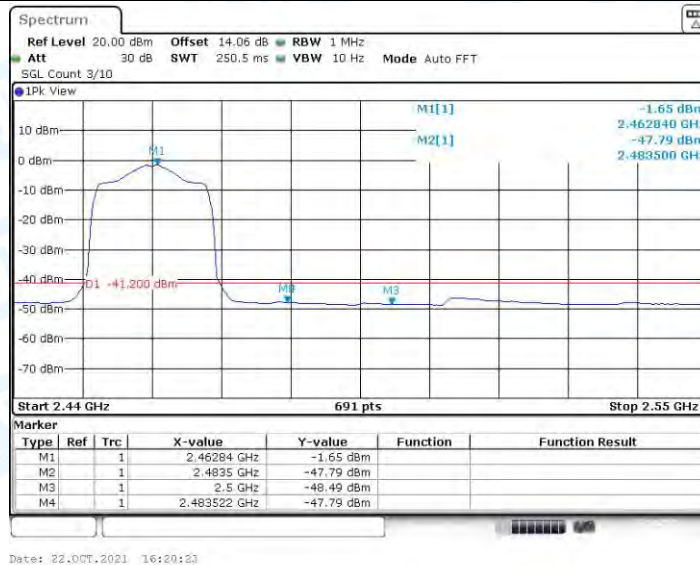
11N20SISO_Ant1_Low_2412_AV



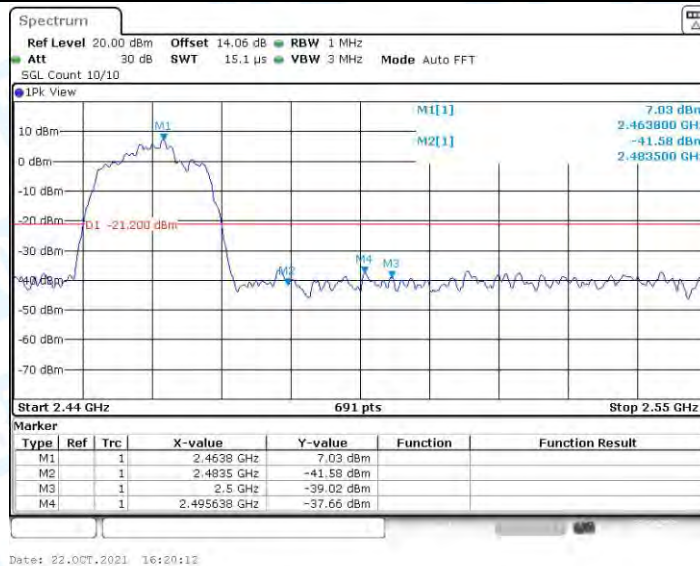
11N20SISO_Ant1_Low_2412_Peak



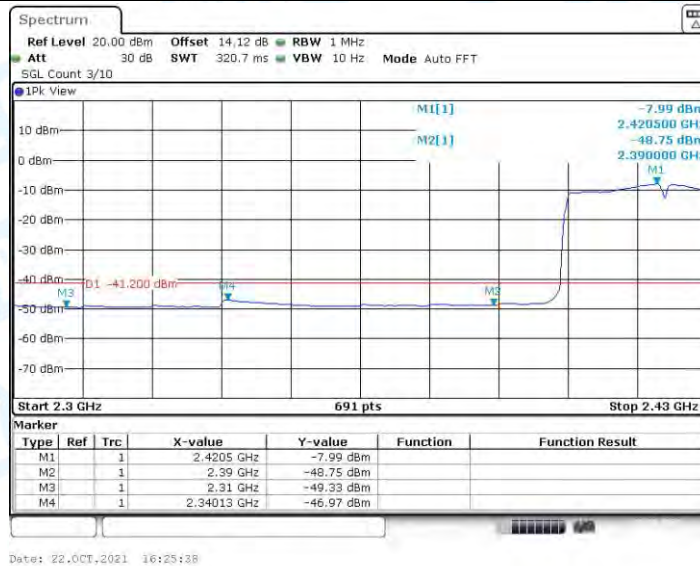
11N20SISO_Ant1_High_2462_AV



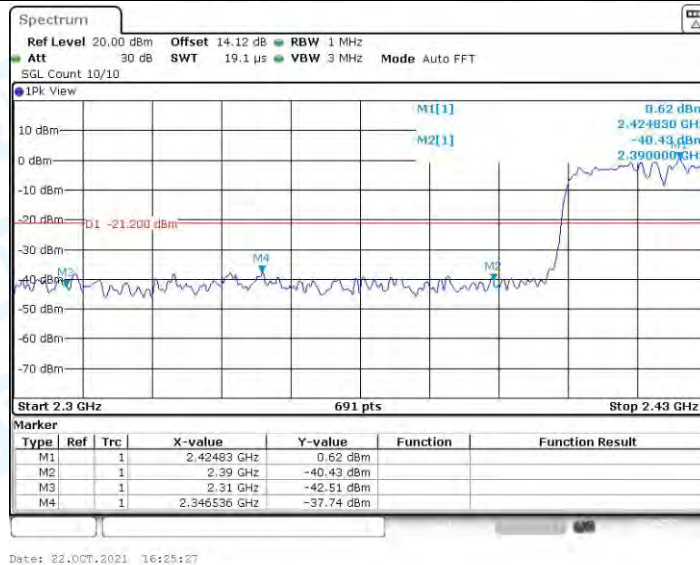
11N20SISO_Ant1_High_2462_Peak



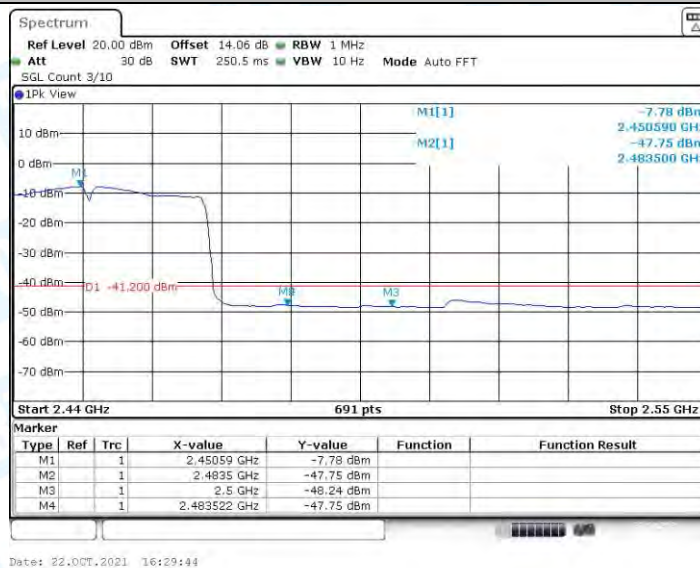
11N40SISO_Ant1_Low_2422_AV

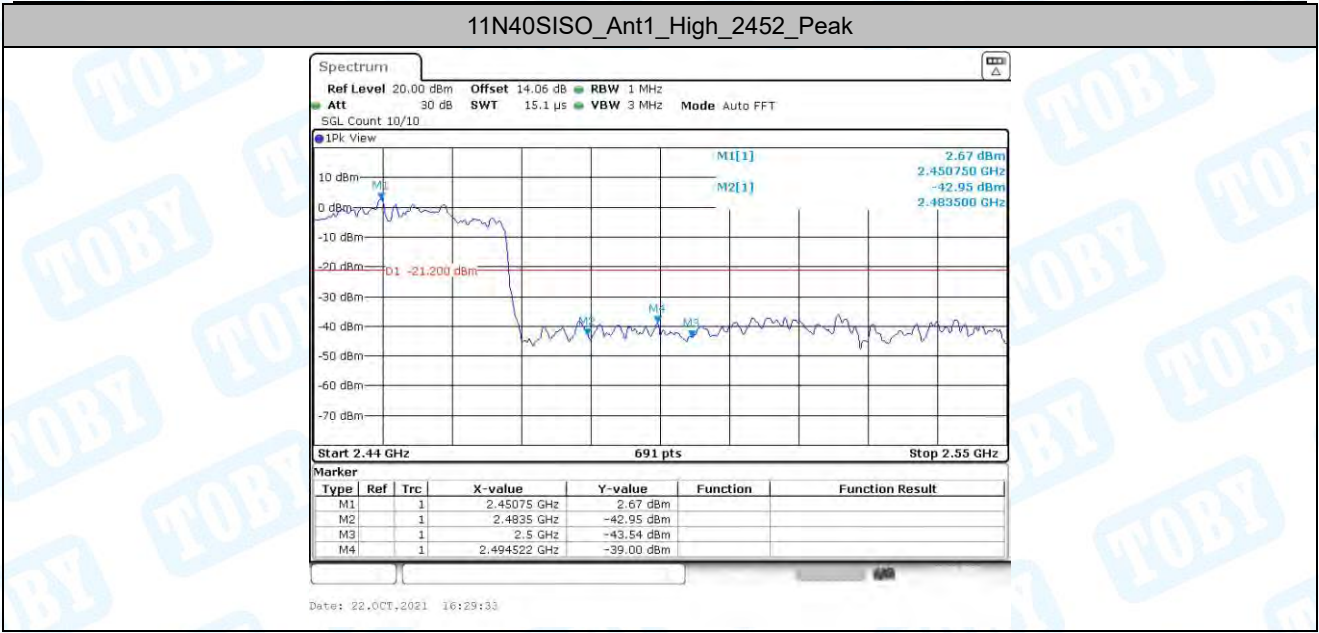


11N40SISO_Ant1_Low_2422_Peak



11N40SISO_Ant1_High_2452_AV





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