

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

General Description of EUT	
Product Name:	Heltec Indoor Hotspot
Test Model:	HT-M2808
Sample ID:	20210603-15-2#
Environmental Conditions	
Temperature:	24.3℃
Relative Humidity:	52%
Test Voltage:	DC 12V
Test Engineer:	Huang jianping
Note: For a more detailed features description, please refer to the report TB-RF183069.	

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

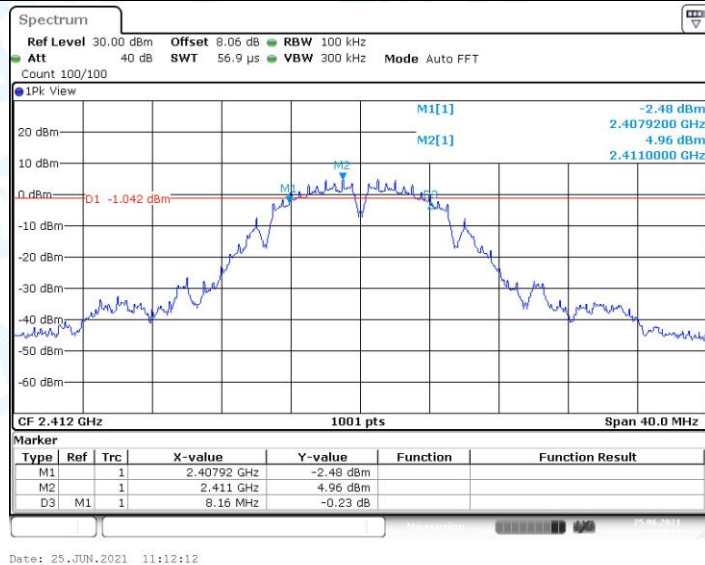
1. DTS Bandwidth

1.1. Test Result

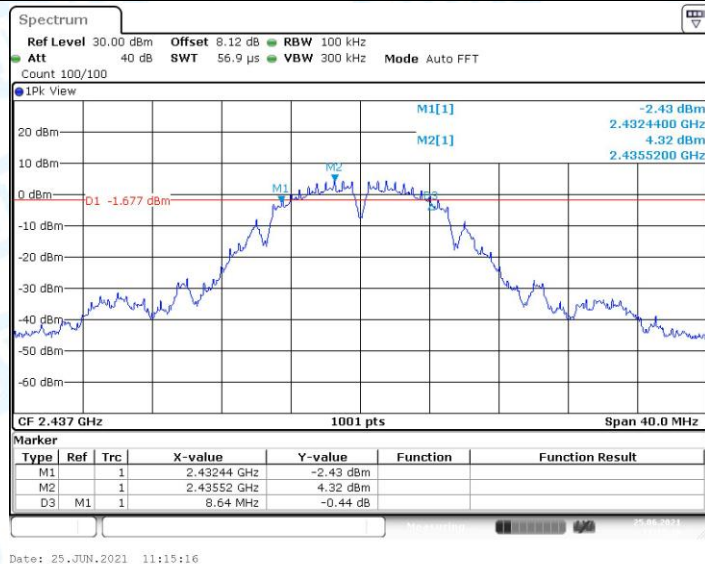
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.160	2407.920	2416.080	0.5	PASS
		2437	8.640	2432.440	2441.080	0.5	PASS
		2462	8.640	2457.440	2466.080	0.5	PASS
11G	Ant1	2412	16.400	2403.800	2420.200	0.5	PASS
		2437	16.400	2428.800	2445.200	0.5	PASS
		2462	16.400	2453.800	2470.200	0.5	PASS
11N20SISO	Ant1	2412	17.640	2403.160	2420.800	0.5	PASS
		2437	17.600	2428.200	2445.800	0.5	PASS
		2462	17.240	2453.200	2470.440	0.5	PASS
11N40SISO	Ant1	2422	35.520	2404.160	2439.680	0.5	PASS
		2437	35.680	2419.000	2454.680	0.5	PASS
		2452	35.600	2434.000	2469.600	0.5	PASS

1.2. Test Graphs

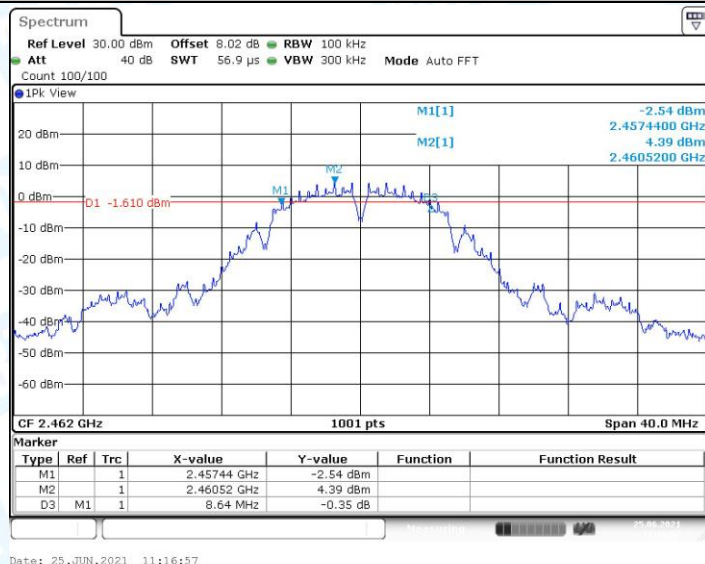
11B_Ant1_2412



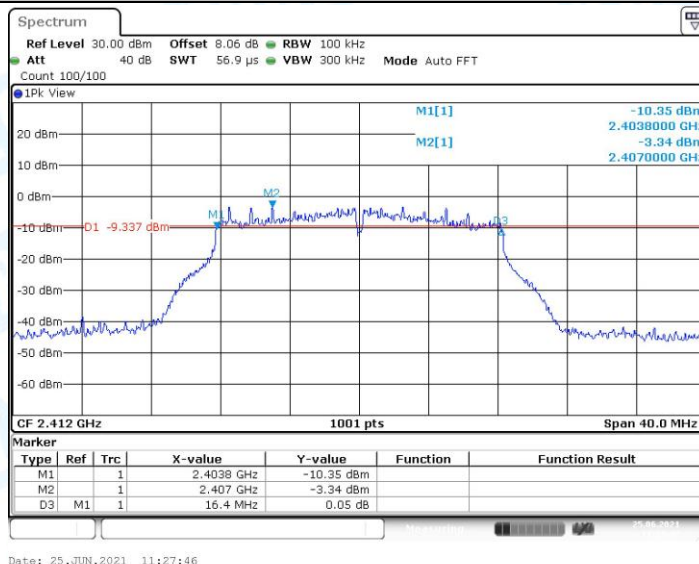
11B_Ant1_2437



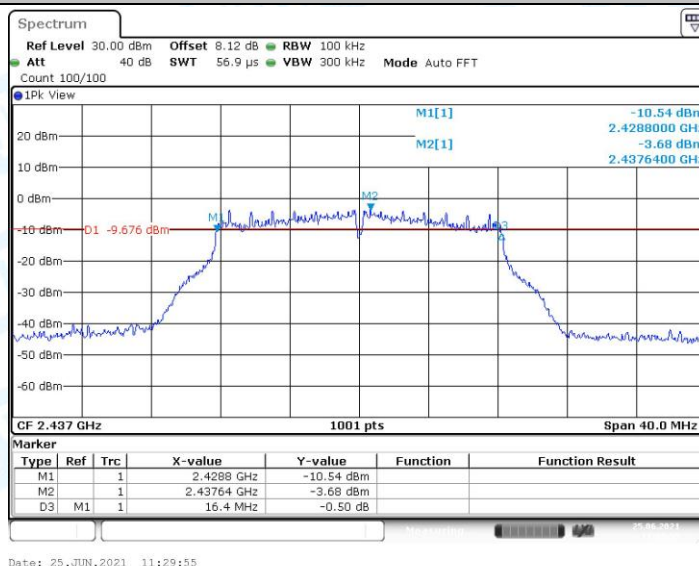
11B_Ant1_2462



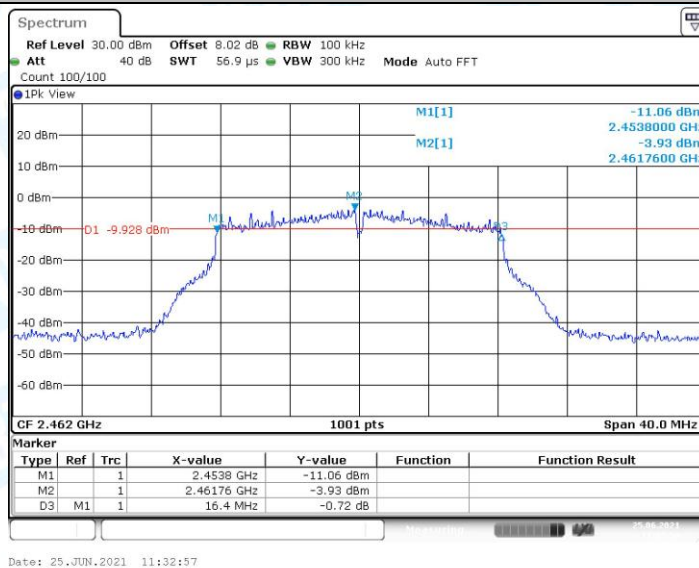
11G_Ant1_2412



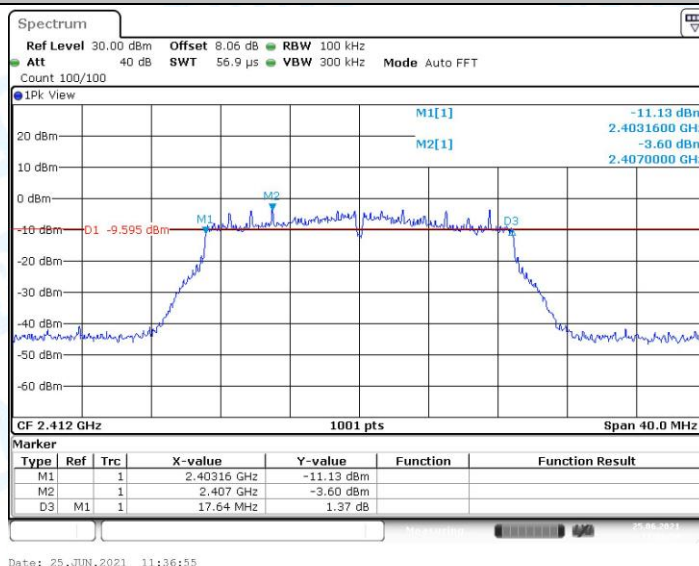
11G_Ant1_2437



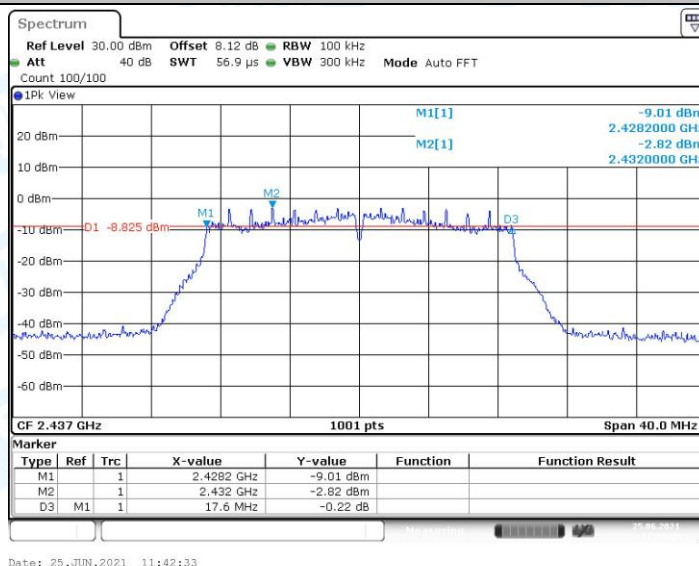
11G_Ant1_2462



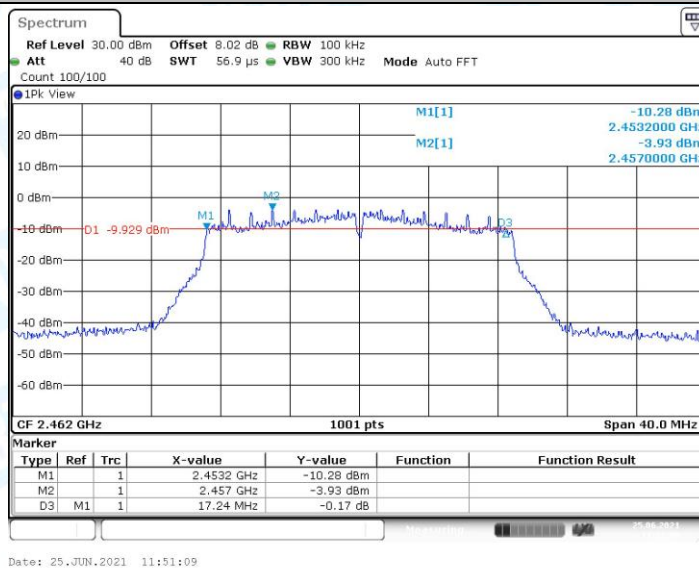
11N20SISO_Ant1_2412



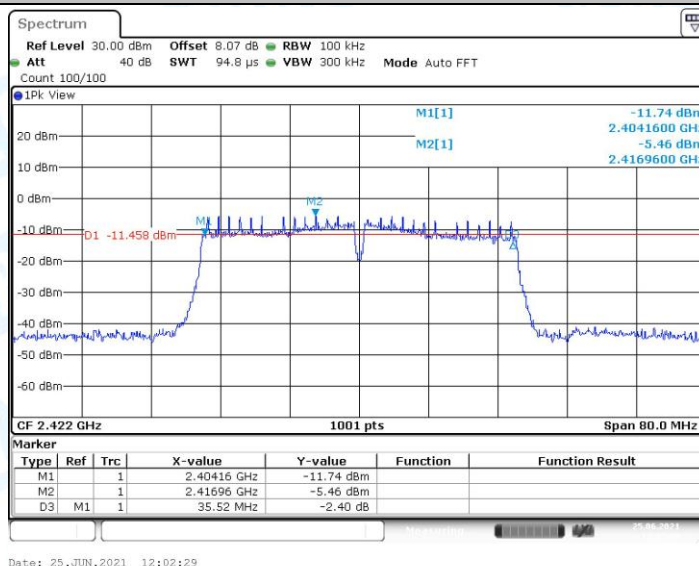
11N20SISO_Ant1_2437



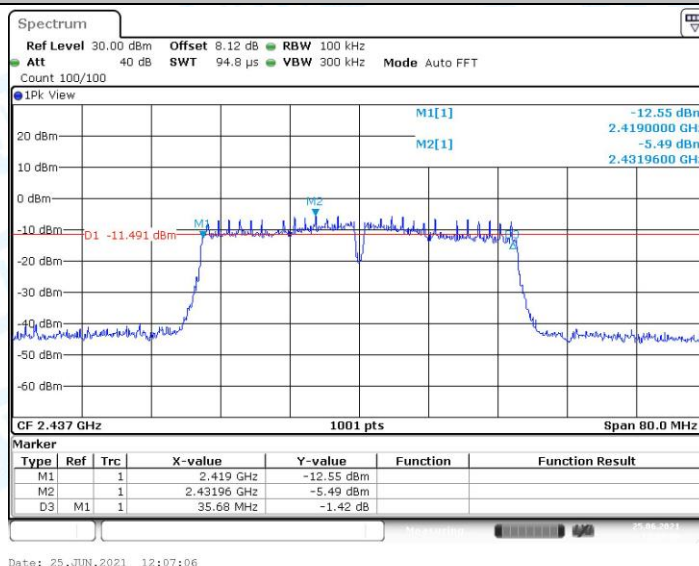
11N20SISO_Ant1_2462



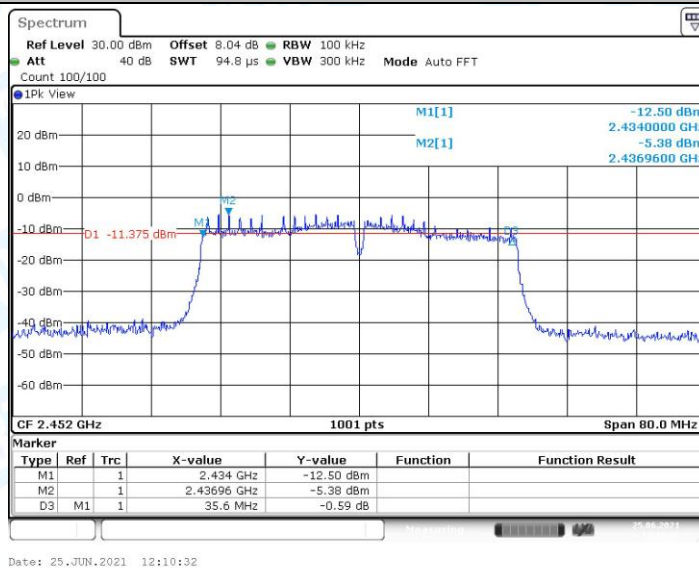
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452

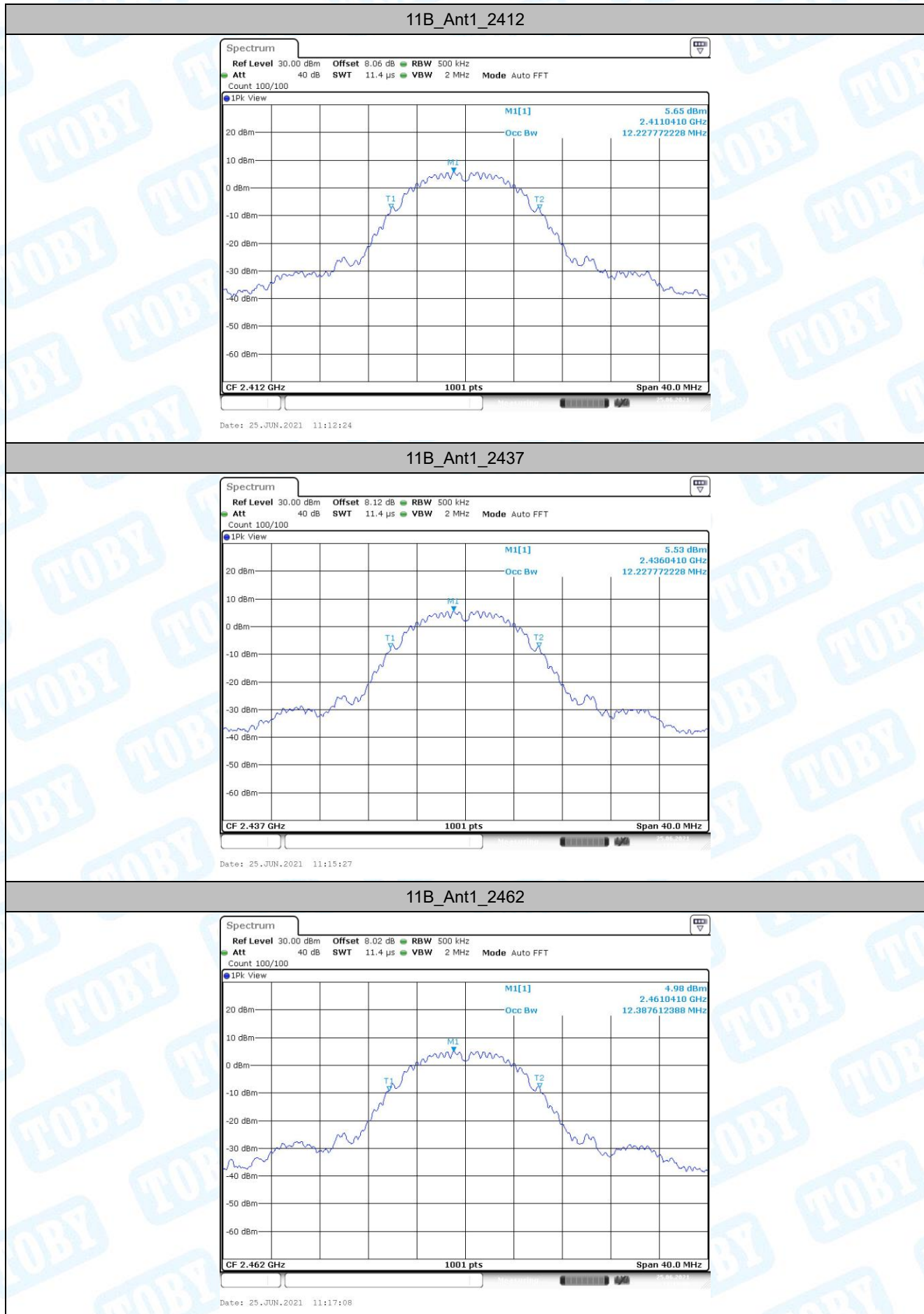


2. Occupied Channel Bandwidth

2.1. Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	12.228	2405.886	2418.114	---	PASS
		2437	12.228	2430.846	2443.074	---	PASS
		2462	12.388	2455.726	2468.114	---	PASS
11G	Ant1	2412	17.263	2403.249	2420.511	---	PASS
		2437	17.542	2428.169	2445.711	---	PASS
		2462	17.263	2453.289	2470.551	---	PASS
11N20SISO	Ant1	2412	18.262	2402.769	2421.031	---	PASS
		2437	18.501	2427.609	2446.111	---	PASS
		2462	18.102	2452.849	2470.951	---	PASS
11N40SISO	Ant1	2422	36.523	2403.538	2440.062	---	PASS
		2437	36.444	2418.459	2454.902	---	PASS
		2452	36.204	2433.778	2469.982	---	PASS

2.2. Test Graphs



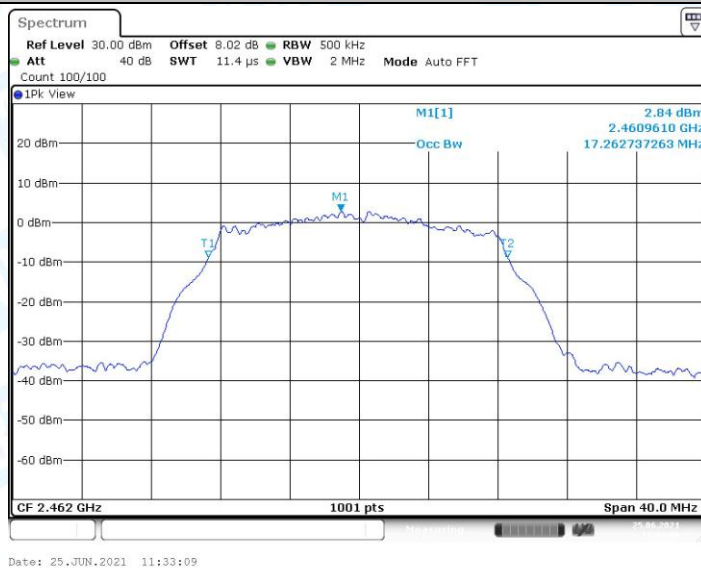
11G_Ant1_2412



11G_Ant1_2437



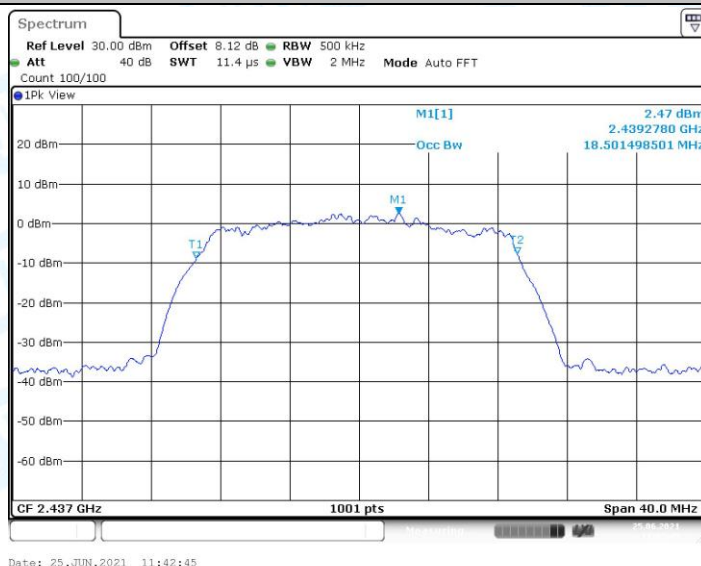
11G_Ant1_2462



11N20SISO_Ant1_2412



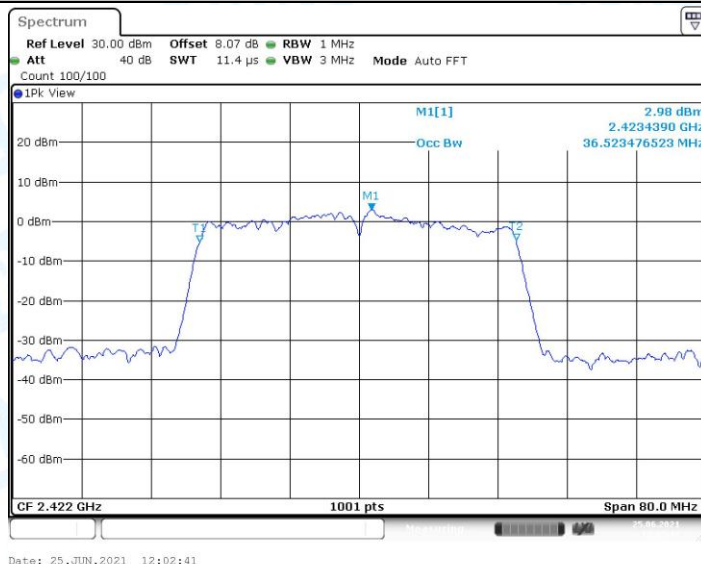
11N20SISO_Ant1_2437



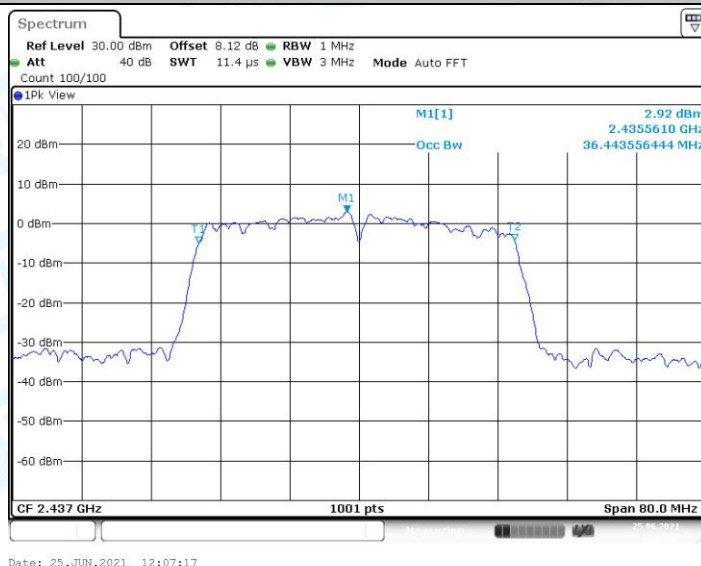
11N20SISO_Ant1_2462



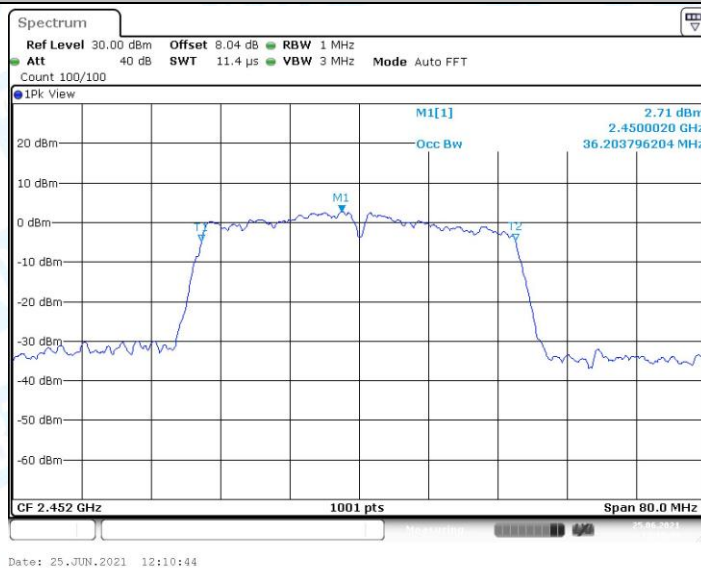
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



3. Maximum conducted output power

3.1. Test Result

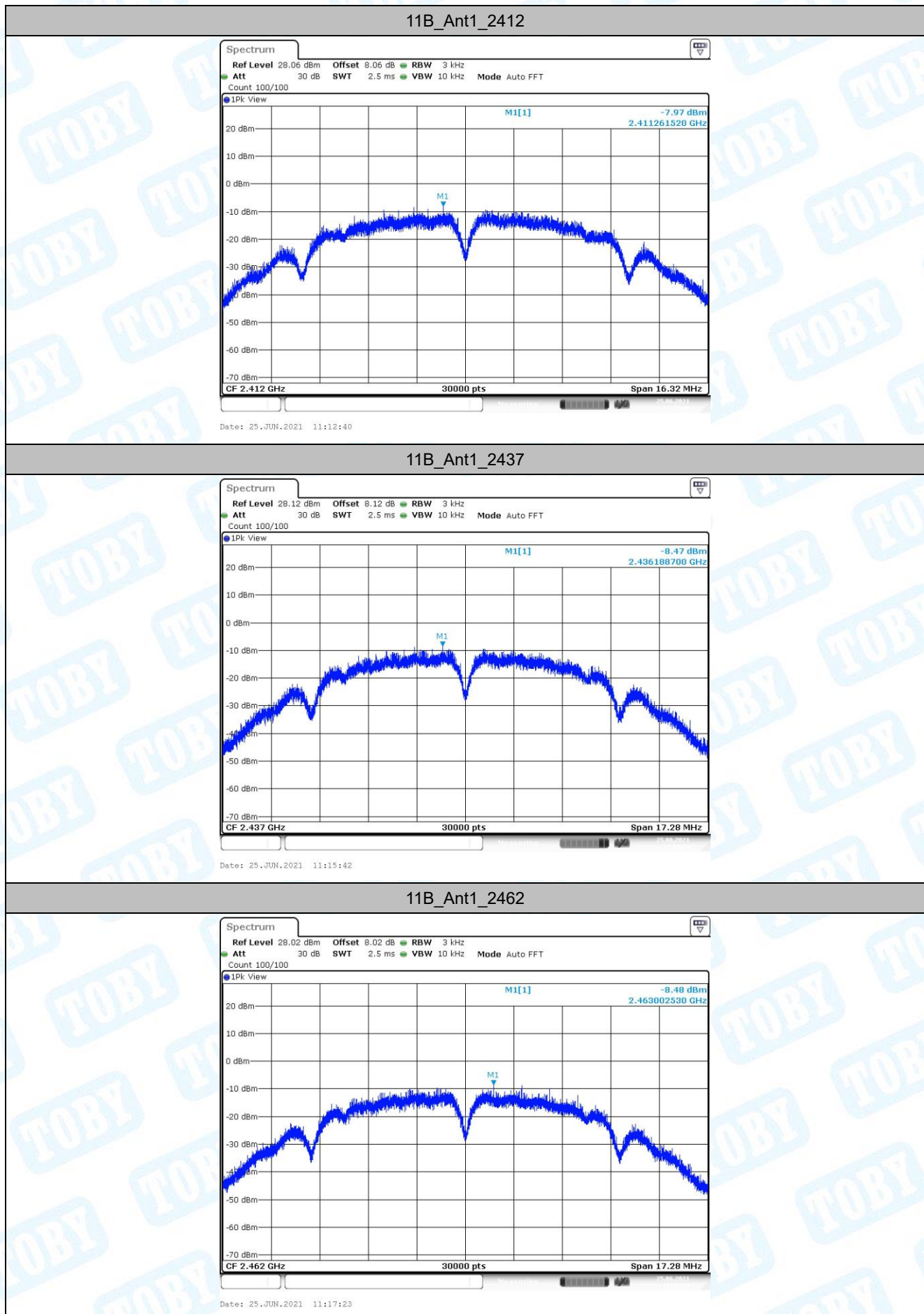
TestMode	Antenna	Channel	Power [dBm]	Limit [dBm]	EIRP [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	16.73	<=30	16.73	<=36	PASS
		2437	16.62	<=30	16.62	<=36	PASS
		2462	16.13	<=30	16.13	<=36	PASS
11G	Ant1	2412	16.06	<=30	16.06	<=36	PASS
		2437	16.01	<=30	16.01	<=36	PASS
		2462	15.73	<=30	15.73	<=36	PASS
11N20SISO	Ant1	2412	15.44	<=30	15.44	<=36	PASS
		2437	15.67	<=30	15.67	<=36	PASS
		2462	15.27	<=30	15.27	<=36	PASS
11N40SISO	Ant1	2422	15.57	<=30	15.57	<=36	PASS
		2437	15.54	<=30	15.54	<=36	PASS
		2452	15.58	<=30	15.58	<=36	PASS

4. Maximum power spectral density

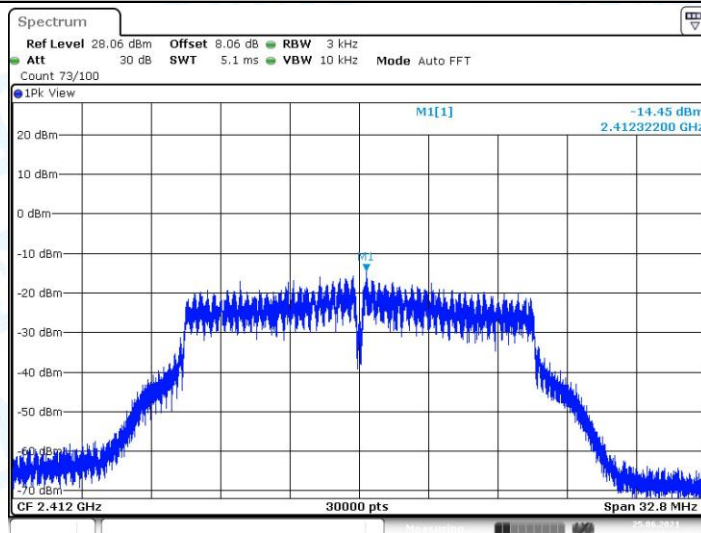
4.1. Test Result

TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-7.97	<=8	PASS
		2437	-8.47	<=8	PASS
		2462	-8.48	<=8	PASS
11G	Ant1	2412	-14.45	<=8	PASS
		2437	-14.98	<=8	PASS
		2462	-15.64	<=8	PASS
11N20SISO	Ant1	2412	-15.9	<=8	PASS
		2437	-15.56	<=8	PASS
		2462	-15.7	<=8	PASS
11N40SISO	Ant1	2422	-17.84	<=8	PASS
		2437	-17.32	<=8	PASS
		2452	-18.58	<=8	PASS

4.2. Test Graphs

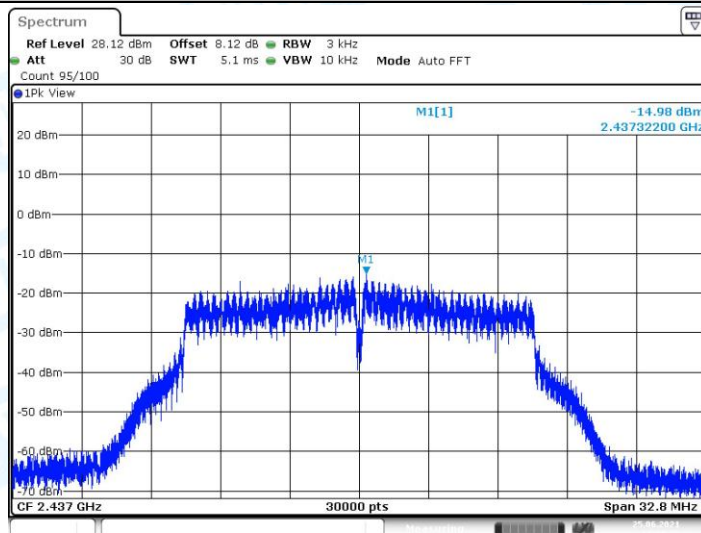


11G_Ant1_2412



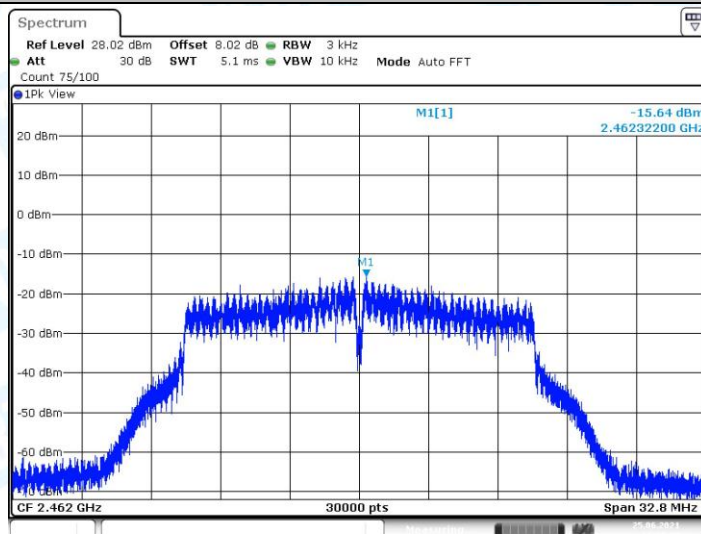
Date: 25 JUN 2021 11:28:13

11G_Ant1_2437



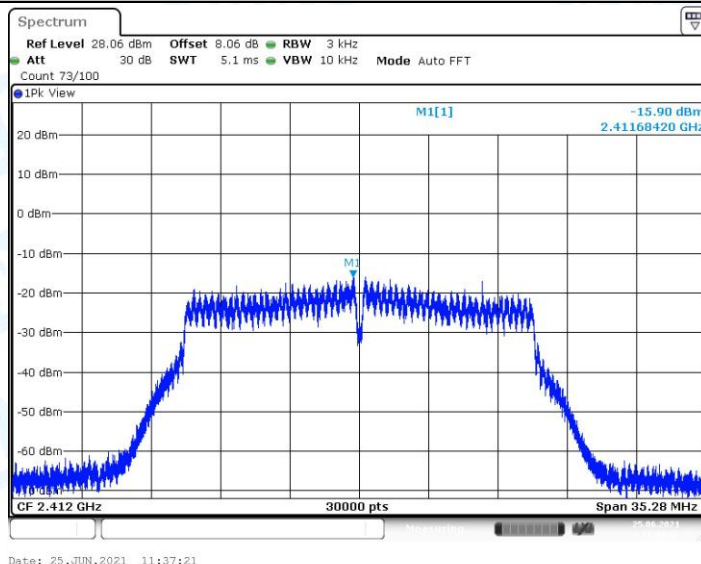
Date: 25 JUN 2021 11:30:21

11G_Ant1_2462

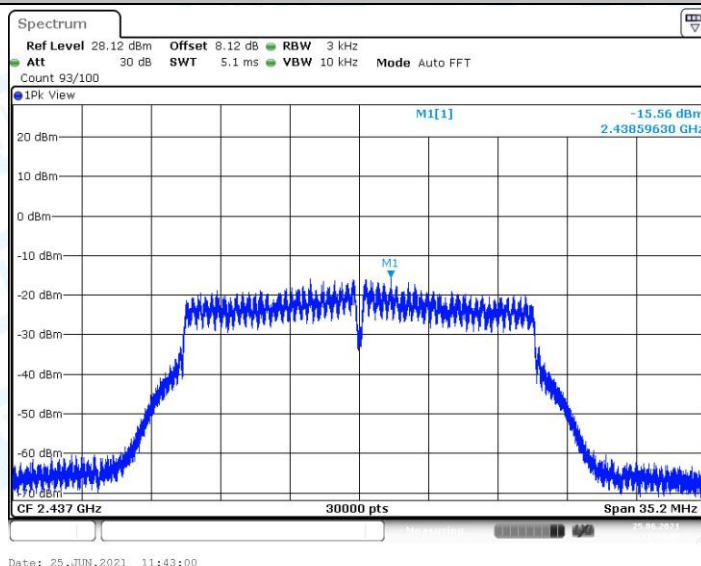


Date: 25 JUN 2021 11:33:24

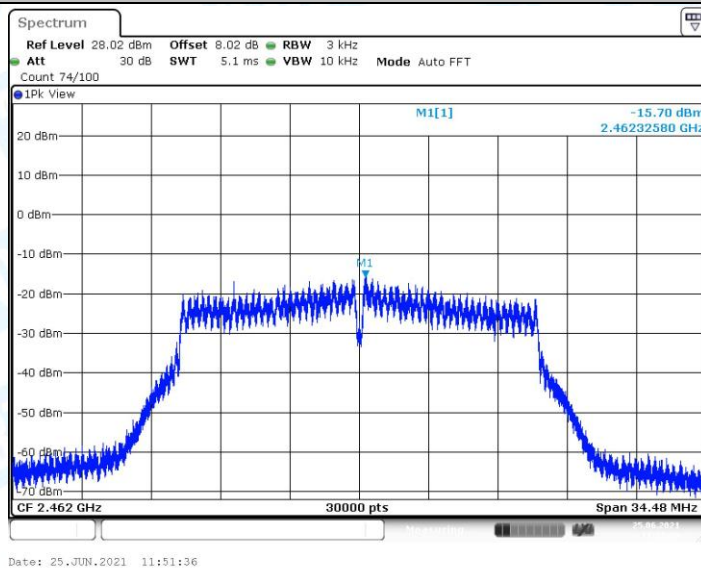
11N20SISO_Ant1_2412



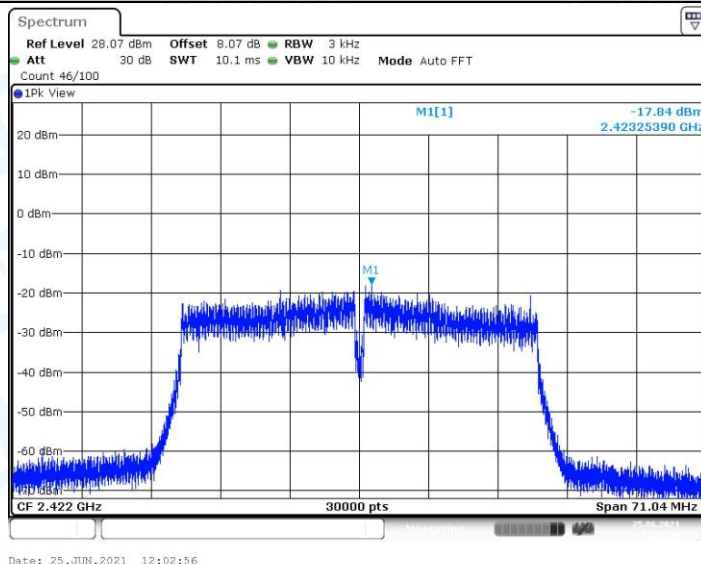
11N20SISO_Ant1_2437



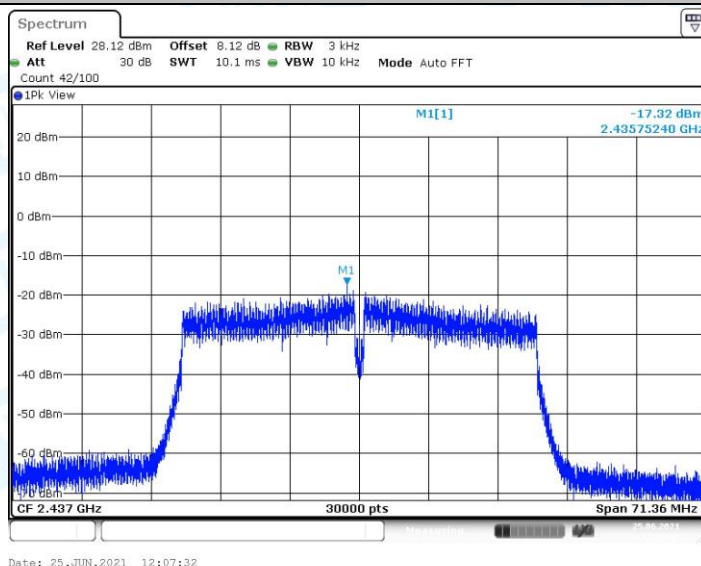
11N20SISO_Ant1_2462



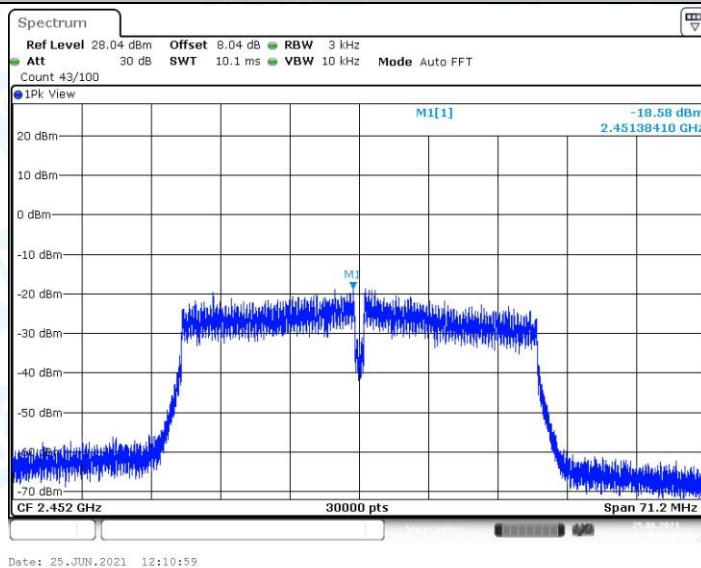
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



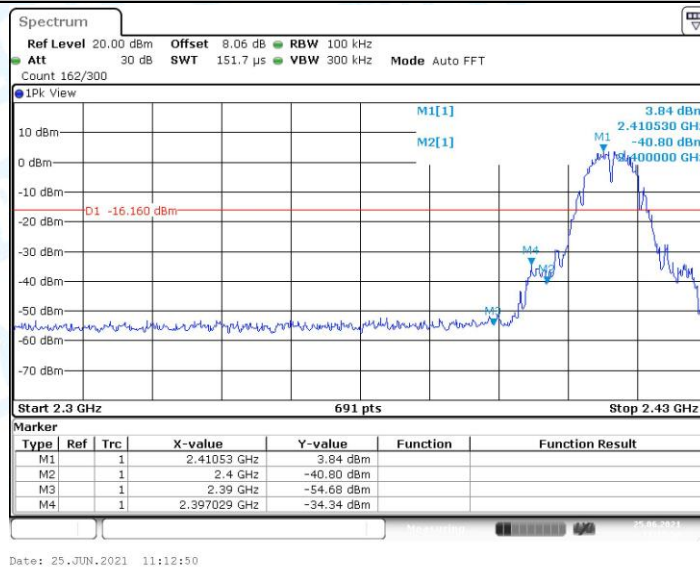
5. Band edge measurements

5.1. Test Result

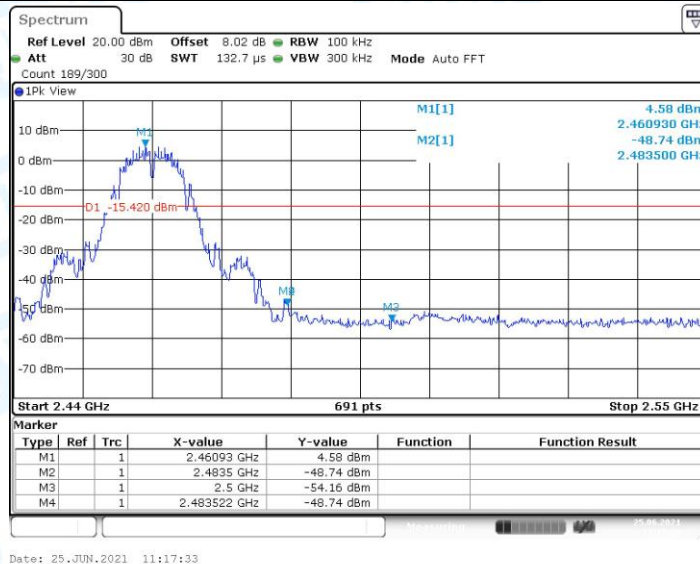
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	3.84	-34.34	<=-16.16	PASS
		High	2462	4.58	-48.74	<=-15.42	PASS
11G	Ant1	Low	2412	-2.78	-41.84	<=-22.78	PASS
		High	2462	-4.01	-50.39	<=-24.01	PASS
11N20SISO	Ant1	Low	2412	-3.50	-45.27	<=-23.5	PASS
		High	2462	-4.53	-50.58	<=-24.53	PASS
11N40SISO	Ant1	Low	2422	-5.42	-42.81	<=-25.42	PASS
		High	2452	-5.44	-44.54	<=-25.44	PASS

5.2. Test Graphs

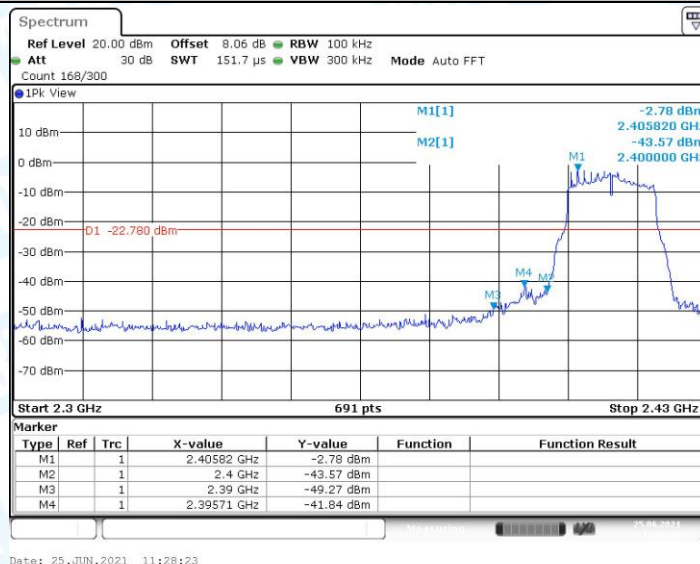
11B_Ant1_Low_2412



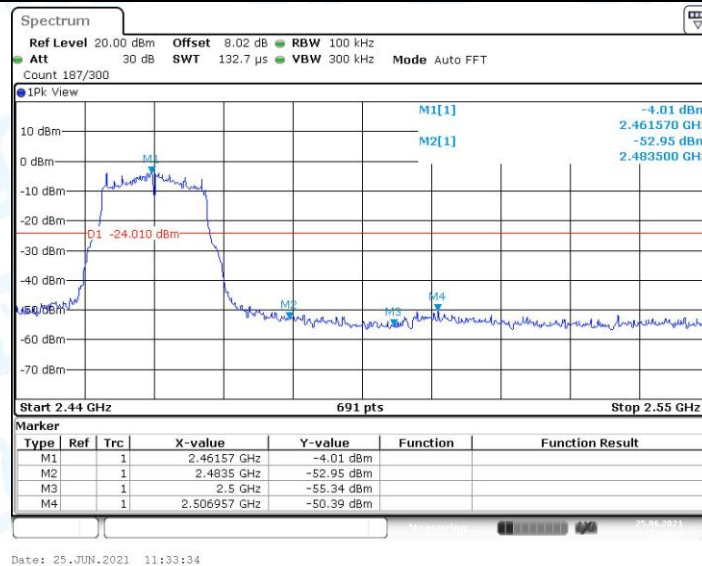
11B_Ant1_High_2462



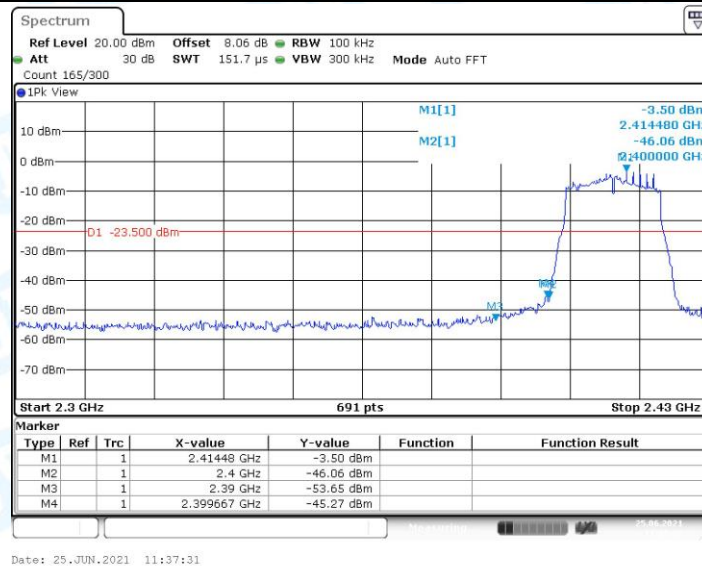
11G_Ant1_Low_2412



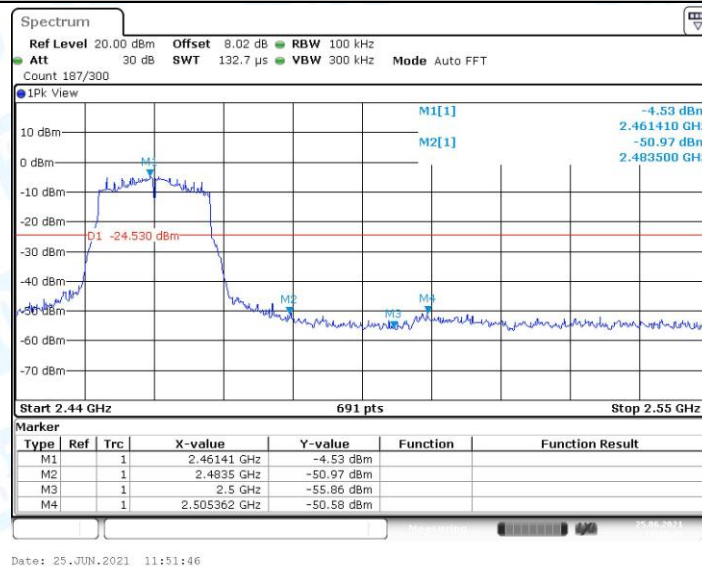
11G_Ant1_High_2462



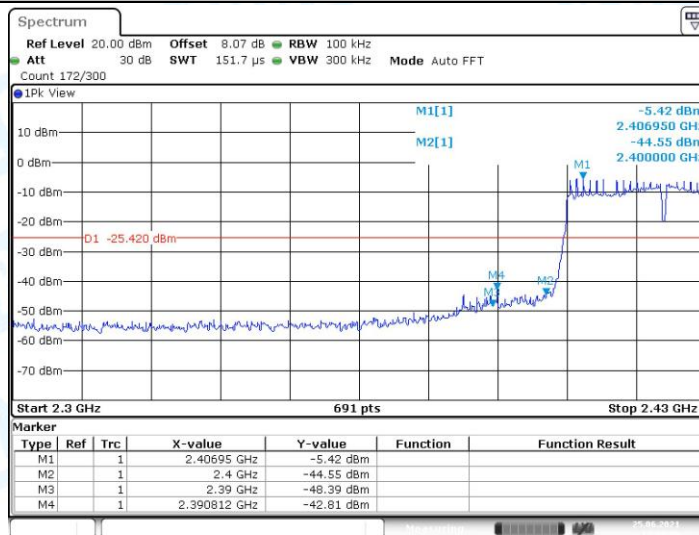
11N20SISO_Ant1_Low_2412



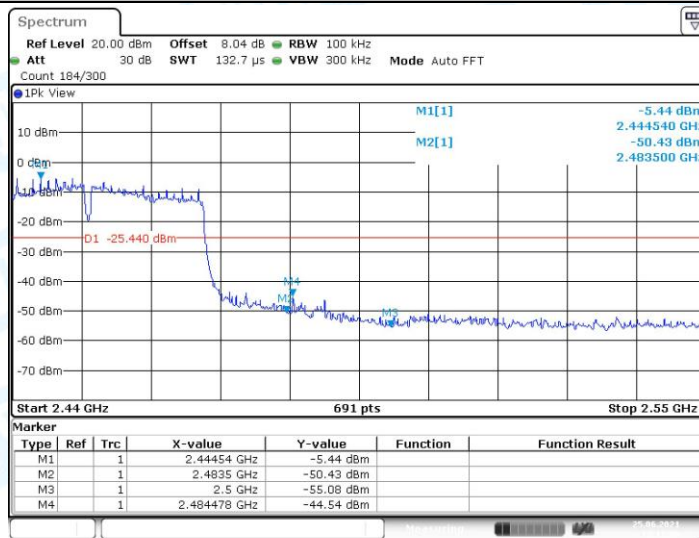
11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



11N40SISO_Ant1_High_2452

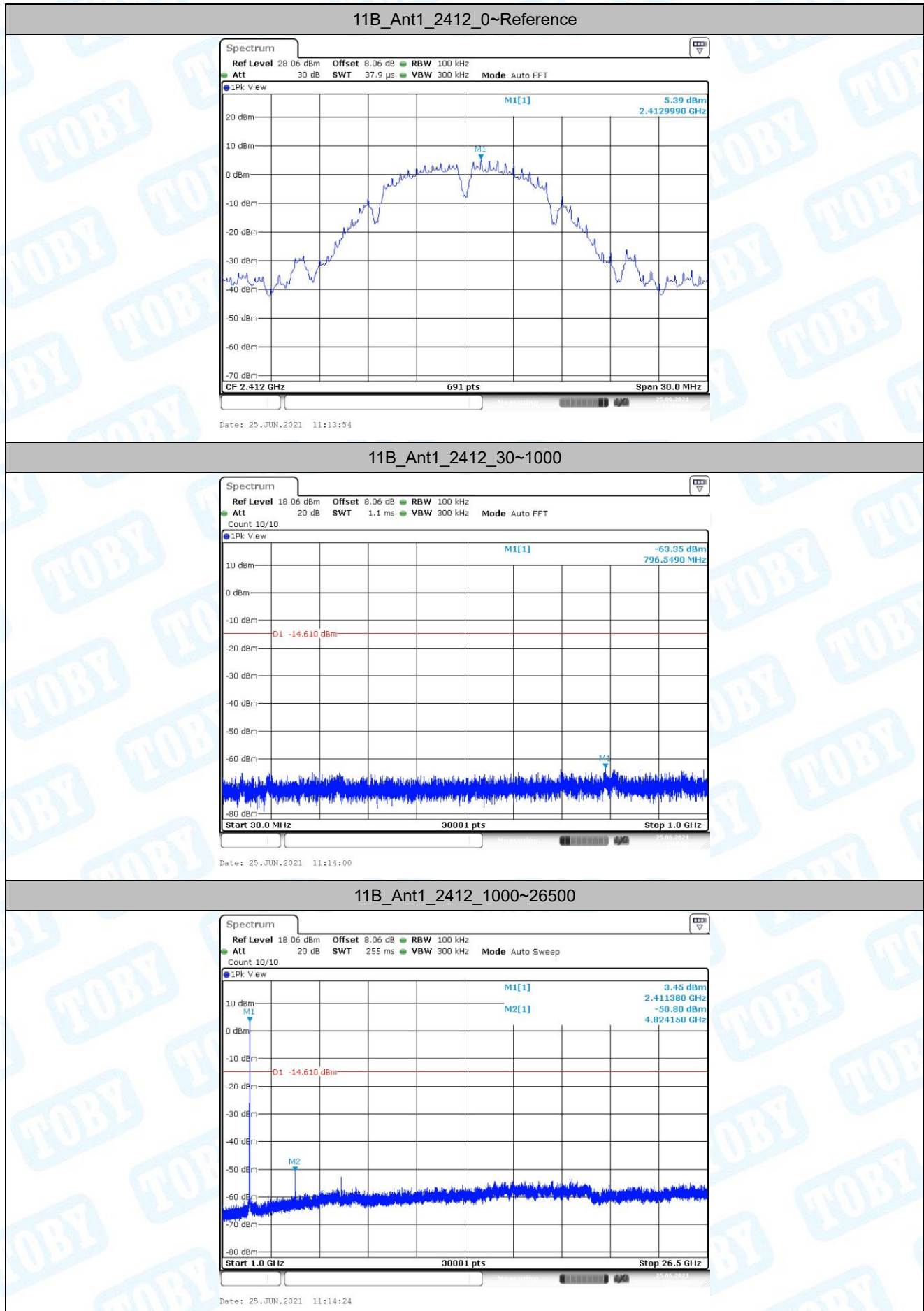


6. Conducted Spurious Emission

6.1. Test Result

TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	5.39	5.39	---	PASS
			30~1000	5.39	-63.35	<=-14.61	PASS
			1000~26500	5.39	-50.8	<=-14.61	PASS
		2437	Reference	4.54	4.54	---	PASS
			30~1000	4.54	-60.53	<=-15.46	PASS
			1000~26500	4.54	-50.65	<=-15.46	PASS
		2462	Reference	4.42	4.42	---	PASS
			30~1000	4.42	-63.41	<=-15.58	PASS
			1000~26500	4.42	-49.44	<=-15.58	PASS
11G	Ant1	2412	Reference	-2.68	-2.68	---	PASS
			30~1000	-2.68	-63.45	<=-22.68	PASS
			1000~26500	-2.68	-53.5	<=-22.68	PASS
		2437	Reference	-3.24	-3.24	---	PASS
			30~1000	-3.24	-63.02	<=-23.24	PASS
			1000~26500	-3.24	-53.25	<=-23.24	PASS
		2462	Reference	-4.08	-4.08	---	PASS
			30~1000	-4.08	-63.72	<=-24.08	PASS
			1000~26500	-4.08	-52.8	<=-24.08	PASS
11N20SISO	Ant1	2412	Reference	-3.06	-3.06	---	PASS
			30~1000	-3.06	-64.02	<=-23.06	PASS
			1000~26500	-3.06	-53.72	<=-23.06	PASS
		2437	Reference	-2.97	-2.97	---	PASS
			30~1000	-2.97	-63.15	<=-22.97	PASS
			1000~26500	-2.97	-53.79	<=-22.97	PASS
		2462	Reference	-3.11	-3.11	---	PASS
			30~1000	-3.11	-63.28	<=-23.11	PASS
			1000~26500	-3.11	-52.08	<=-23.11	PASS
11N40SISO	Ant1	2422	Reference	-5.41	-5.41	---	PASS
			30~1000	-5.41	-63.56	<=-25.41	PASS
			1000~26500	-5.41	-53.48	<=-25.41	PASS
		2437	Reference	-5.60	-5.60	---	PASS
			30~1000	-5.60	-62.16	<=-25.6	PASS
			1000~26500	-5.60	-53.37	<=-25.6	PASS
		2452	Reference	-5.42	-5.42	---	PASS
			30~1000	-5.42	-62.69	<=-25.42	PASS
			1000~26500	-5.42	-53.63	<=-25.42	PASS

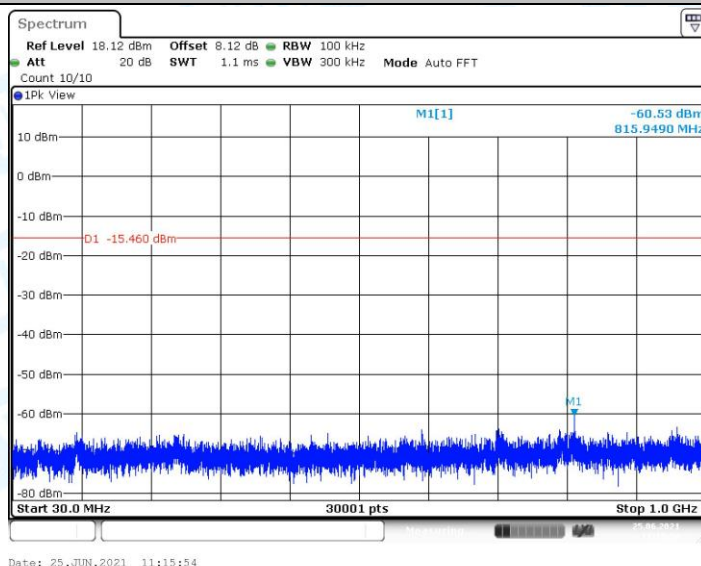
6.2. Test Graphs



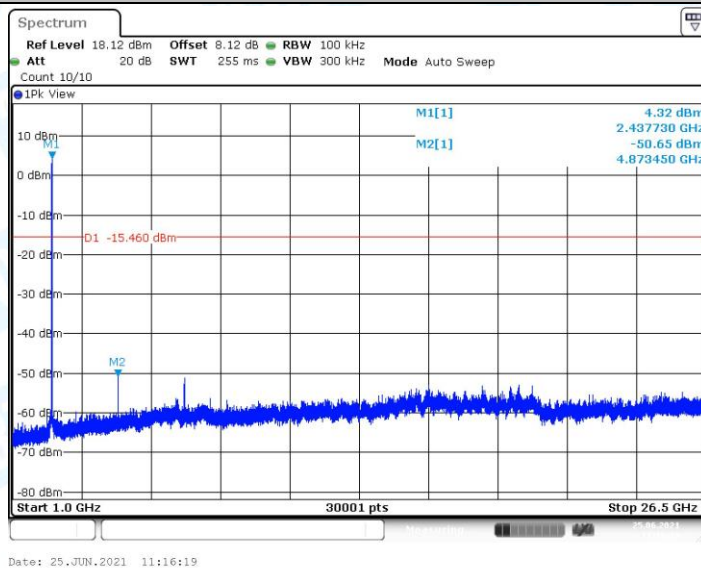
11B_Ant1_2437_0~Reference



11B_Ant1_2437_30~1000



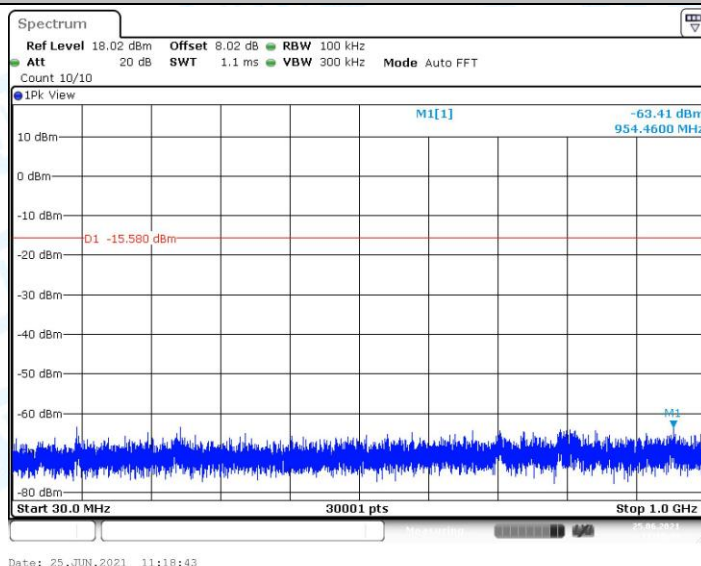
11B_Ant1_2437_1000~26500



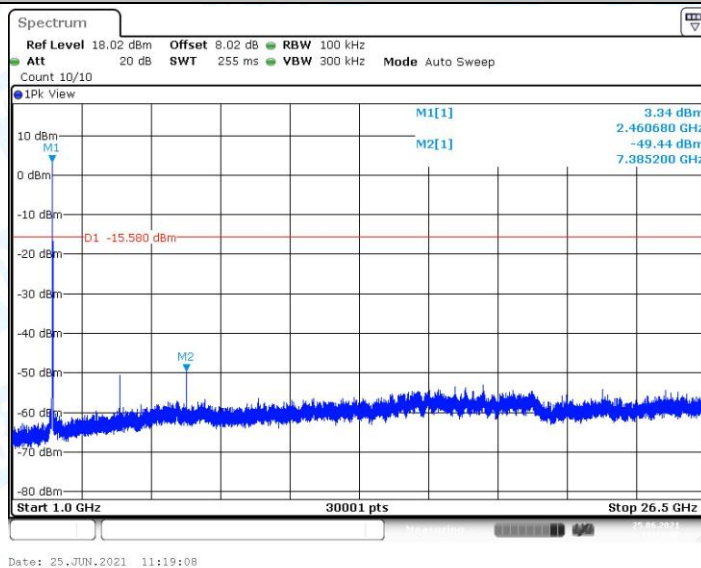
11B_Ant1_2462_0~Reference



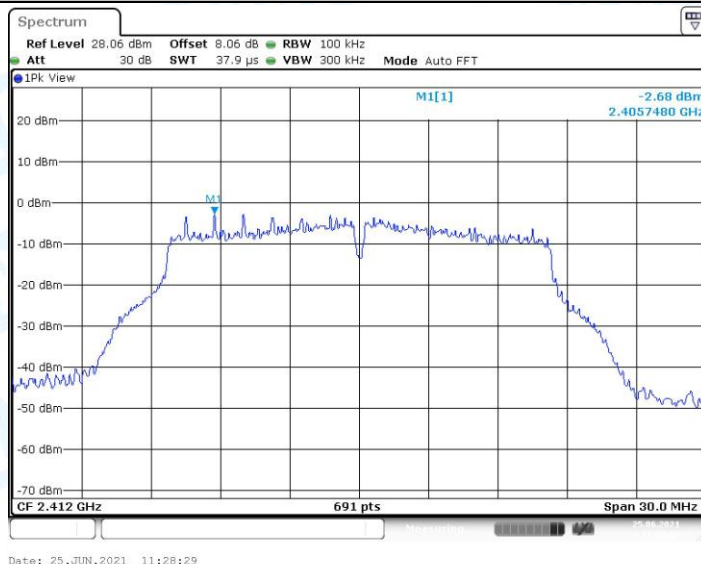
11B_Ant1_2462_30~1000



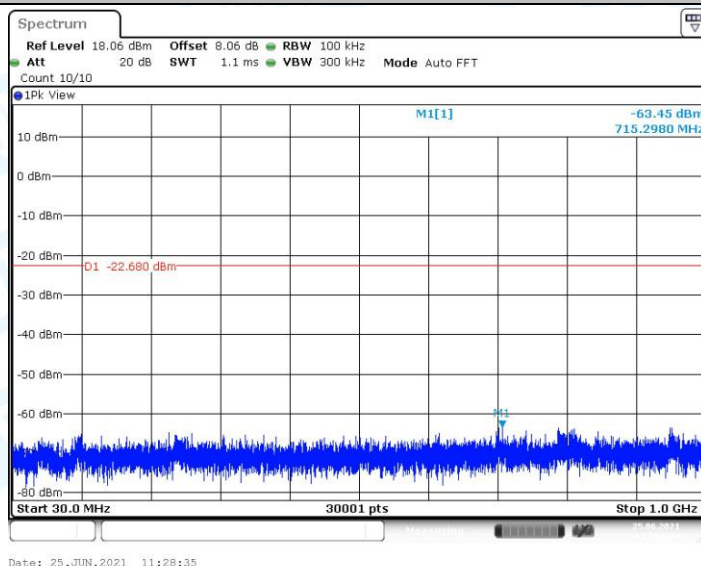
11B_Ant1_2462_1000~26500



11G_Ant1_2412_0~Reference



11G_Ant1_2412_30~1000



11G_Ant1_2412_1000~26500

