

Appendix for Bluetooth BLE

Model: LGE-NX9

BTL-FCCP-9-2203G019

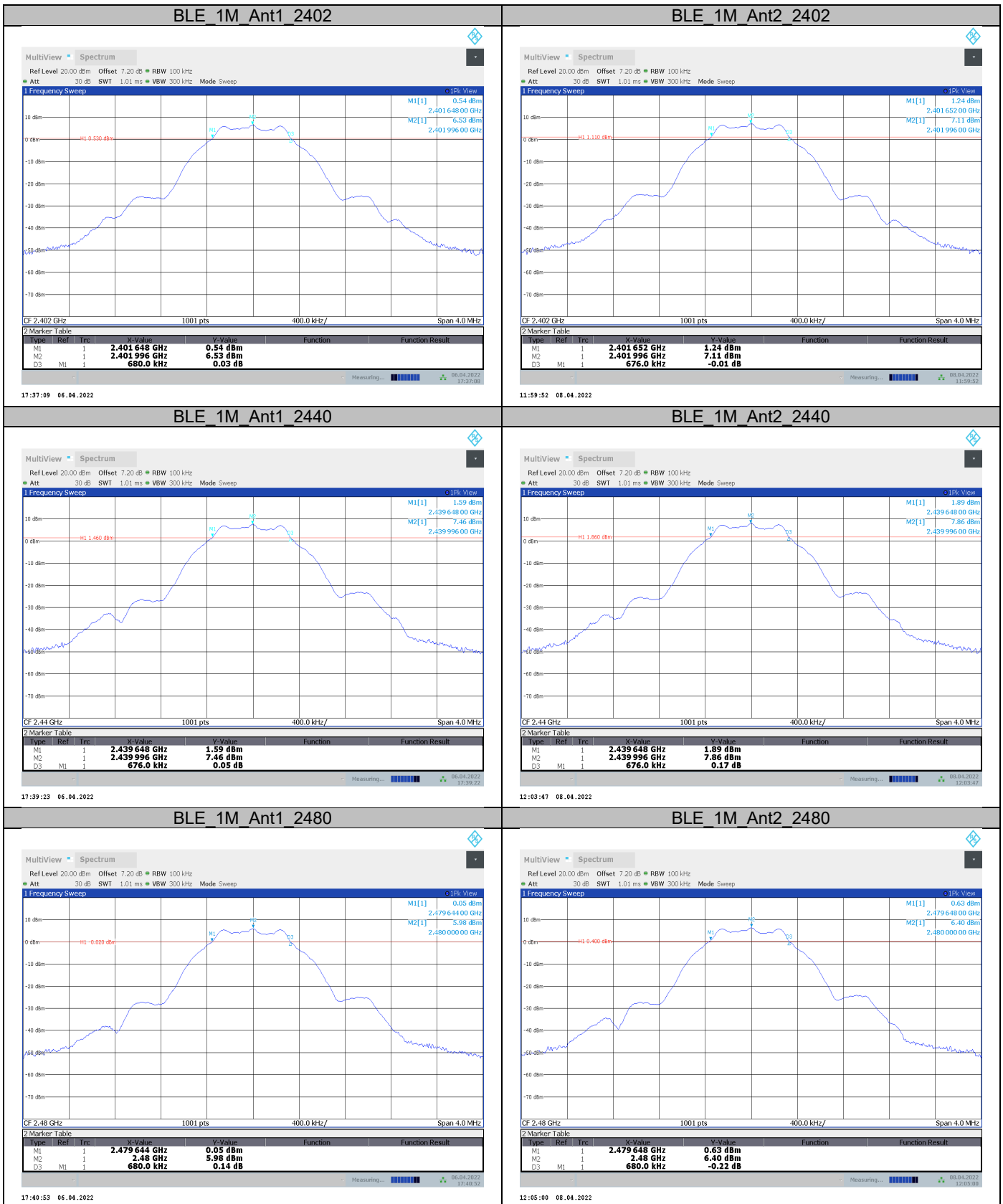
Table of Contents	Page
1 . APPENDIX A: DTS BANDWIDTH	3
1.1 TEST RESULT	3
1.2 TEST GRAPHS	4
2 . APPENDIX B: OCCUPIED CHANNEL BANDWIDTH	6
2.1 TEST RESULT	6
2.2 TEST GRAPHS	7
3 . APPENDIX C: MAXIMUM CONDUCTED OUTPUT POWER	9
3.1 TEST RESULT	9
3.2 TEST GRAPHS	10
4 . APPENDIX D: MAXIMUM POWER SPECTRAL DENSITY	12
4.1 TEST RESULT	12
4.2 TEST GRAPHS	13
5 . APPENDIX E: REFERENCE LEVEL MEASUREMENT	15
5.1 TEST RESULT	15
5.2 TEST GRAPHS	16
6 . APPENDIX F: BAND EDGE MEASUREMENTS	18
6.1 TEST RESULT	18
6.2 TEST GRAPHS	19
7 . APPENDIX G: CONDUCTED SPURIOUS EMISSION	21
7.1 TEST RESULT	21
7.2 TEST GRAPHS	22
8 . APPENDIX H: DUTY CYCLE	28
8.1 TEST RESULT	28
8.2 TEST GRAPHS	29

1. APPENDIX A: DTS BANDWIDTH

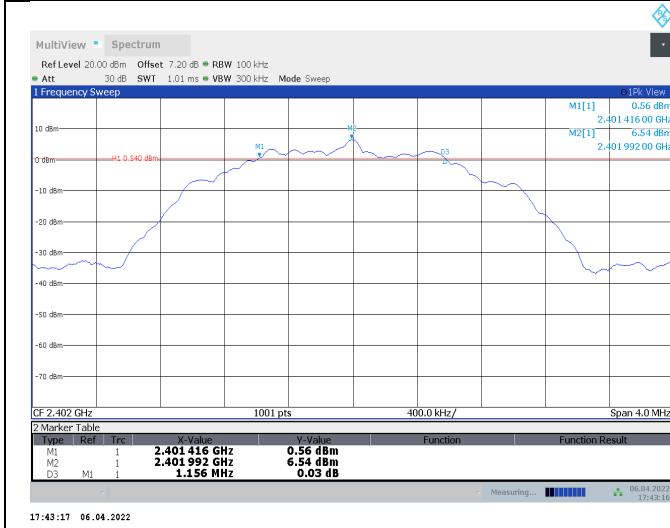
1.1 TEST RESULT

Test Mode	Antenna	Frequency [MHz]	DTS BW [MHz]	Limit [MHz]	Verdict
BLE_1M	Ant1	2402	0.68	0.5	PASS
	Ant2	2402	0.68	0.5	PASS
	Ant1	2440	0.68	0.5	PASS
	Ant2	2440	0.68	0.5	PASS
	Ant1	2480	0.68	0.5	PASS
	Ant2	2480	0.68	0.5	PASS
BLE_2M	Ant1	2402	1.16	0.5	PASS
	Ant2	2402	1.16	0.5	PASS
	Ant1	2440	1.16	0.5	PASS
	Ant2	2440	1.16	0.5	PASS
	Ant1	2480	1.16	0.5	PASS
	Ant2	2480	1.16	0.5	PASS

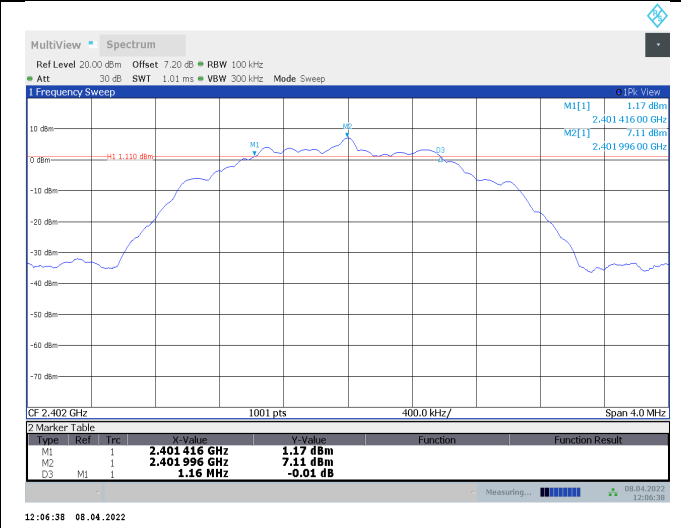
1.2 TEST GRAPHS



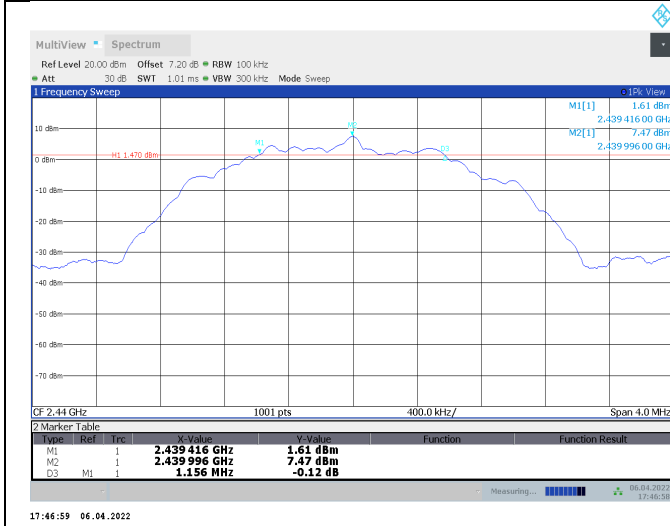
BLE 2M_Ant1_2402



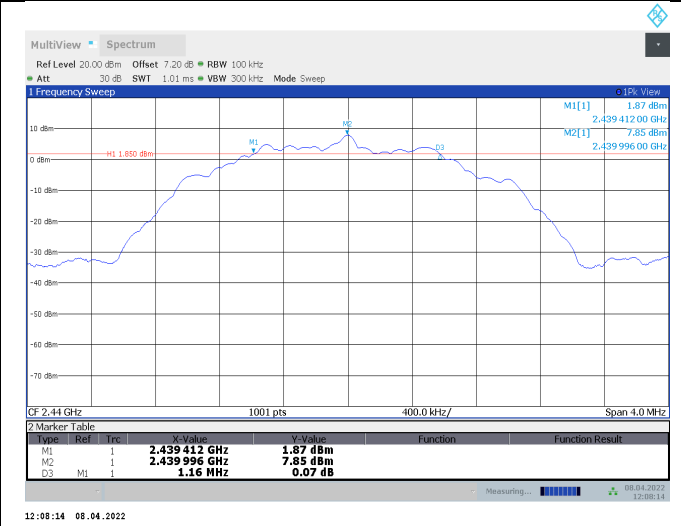
BLE 2M_Ant2_2402



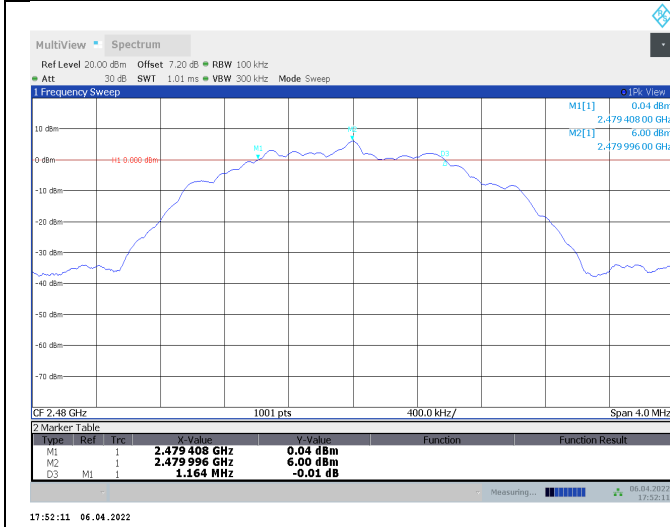
BLE 2M_Ant1_2440



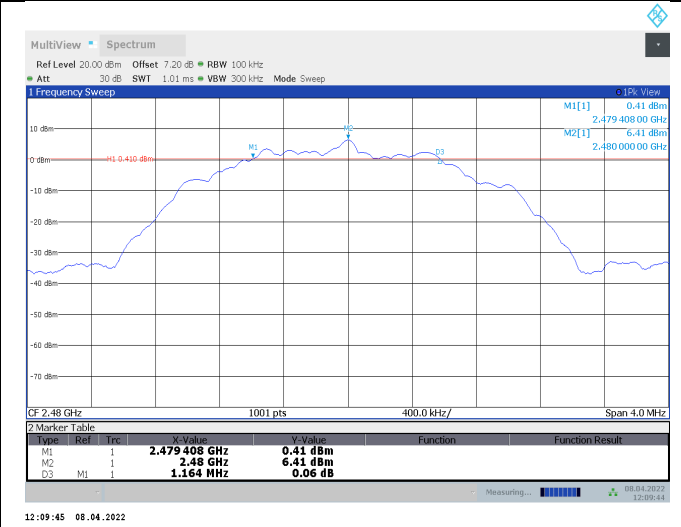
BLE 2M_Ant2_2440



BLE 2M_Ant1_2480



BLE 2M_Ant2_2480

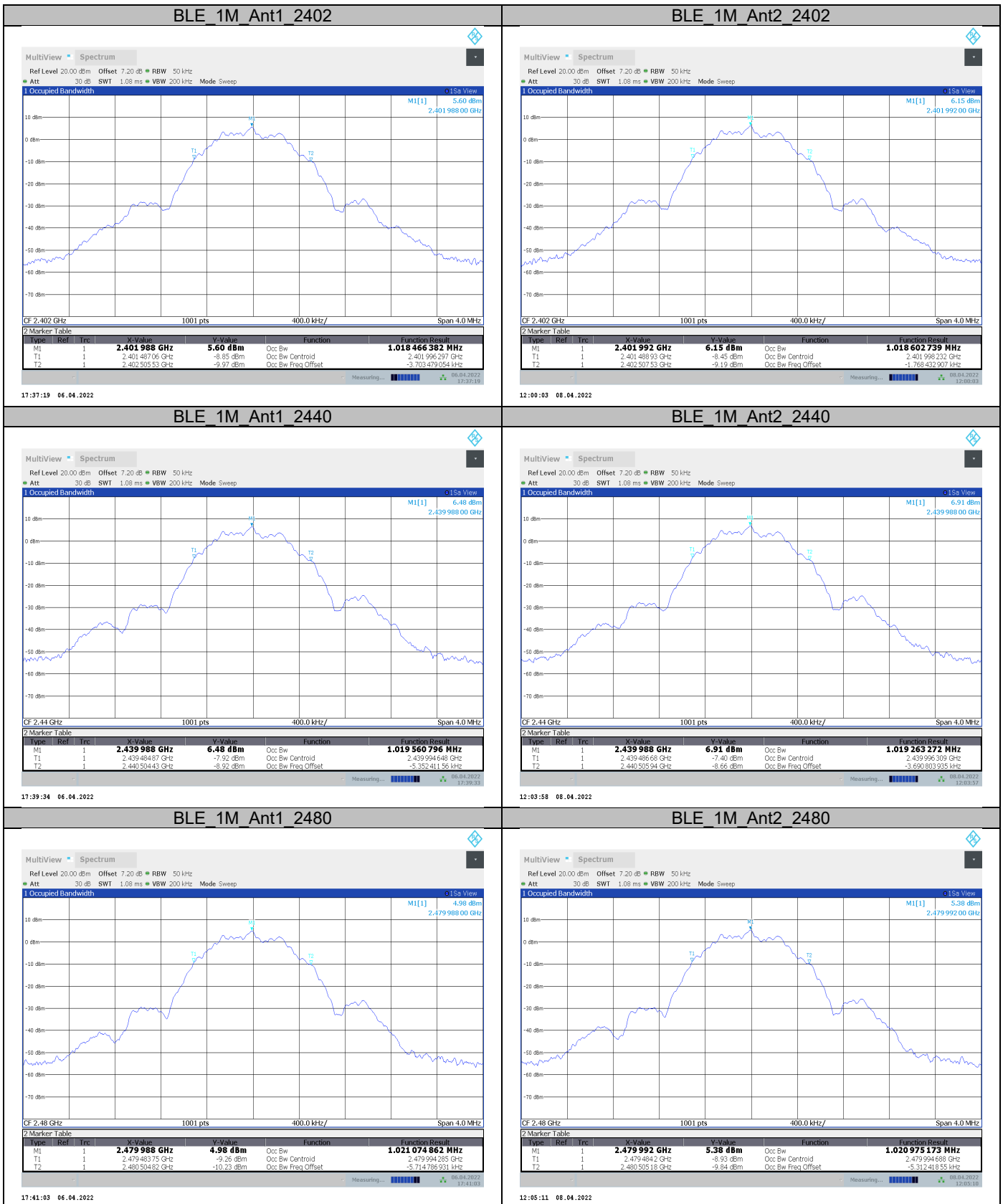


2. APPENDIX B: OCCUPIED CHANNEL BANDWIDTH

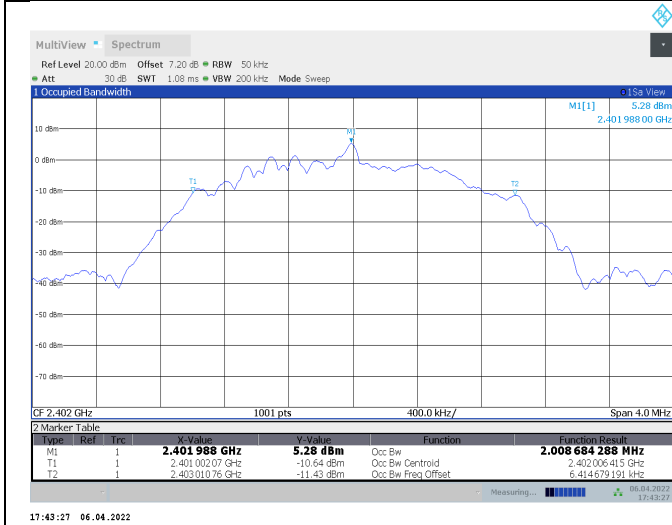
2.1 TEST RESULT

Test Mode	Antenna	Frequency [MHz]	OCB [MHz]	Limit [MHz]	Verdict
BLE_1M	Ant1	2402	1.018	---	PASS
	Ant2	2402	1.019	---	PASS
	Ant1	2440	1.020	---	PASS
	Ant2	2440	1.019	---	PASS
	Ant1	2480	1.021	---	PASS
	Ant2	2480	1.021	---	PASS
BLE_2M	Ant1	2402	2.009	---	PASS
	Ant2	2402	2.009	---	PASS
	Ant1	2440	2.009	---	PASS
	Ant2	2440	2.009	---	PASS
	Ant1	2480	2.009	---	PASS
	Ant2	2480	2.008	---	PASS

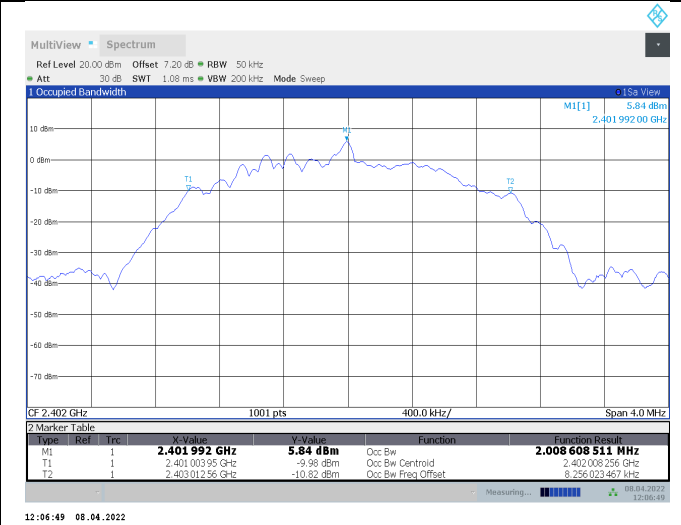
2.2 TEST GRAPHS



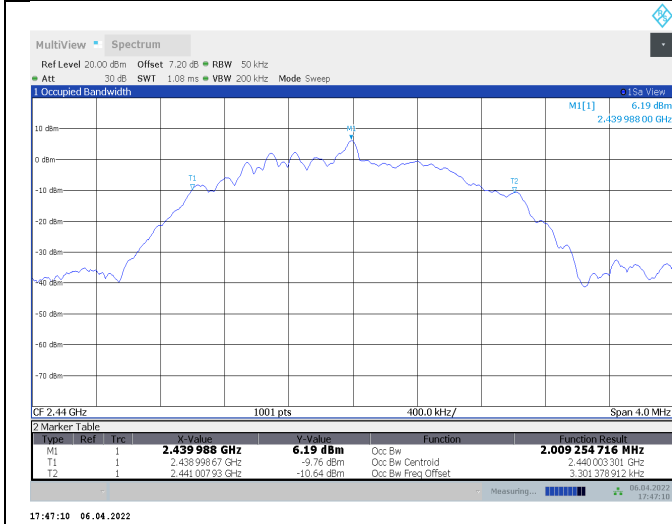
BLE 2M_Ant1_2402



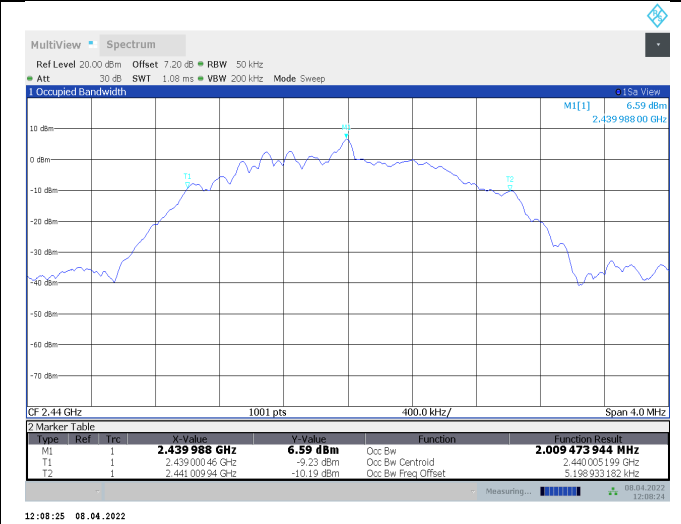
BLE 2M_Ant2_2402



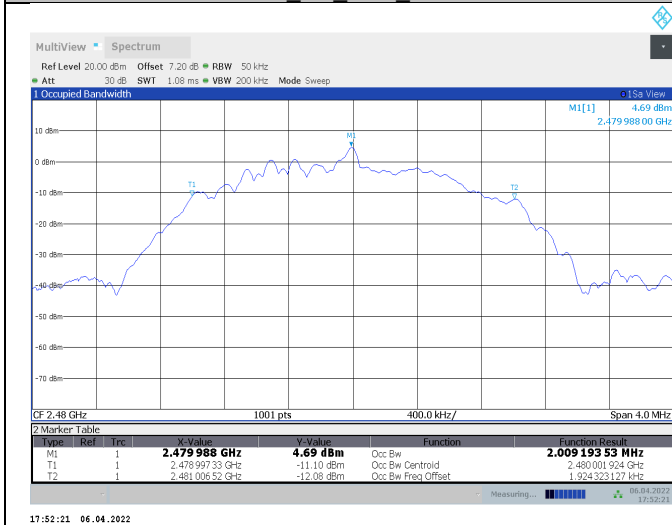
BLE 2M_Ant1_2440



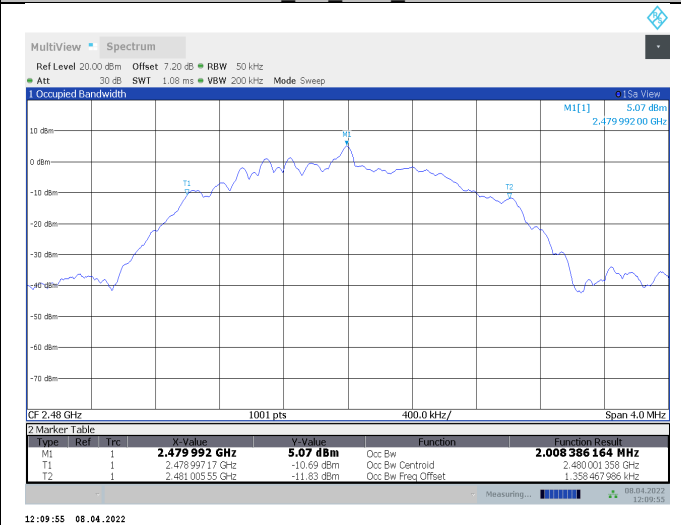
BLE 2M_Ant2_2440



BLE 2M_Ant1_2480



BLE 2M_Ant2_2480

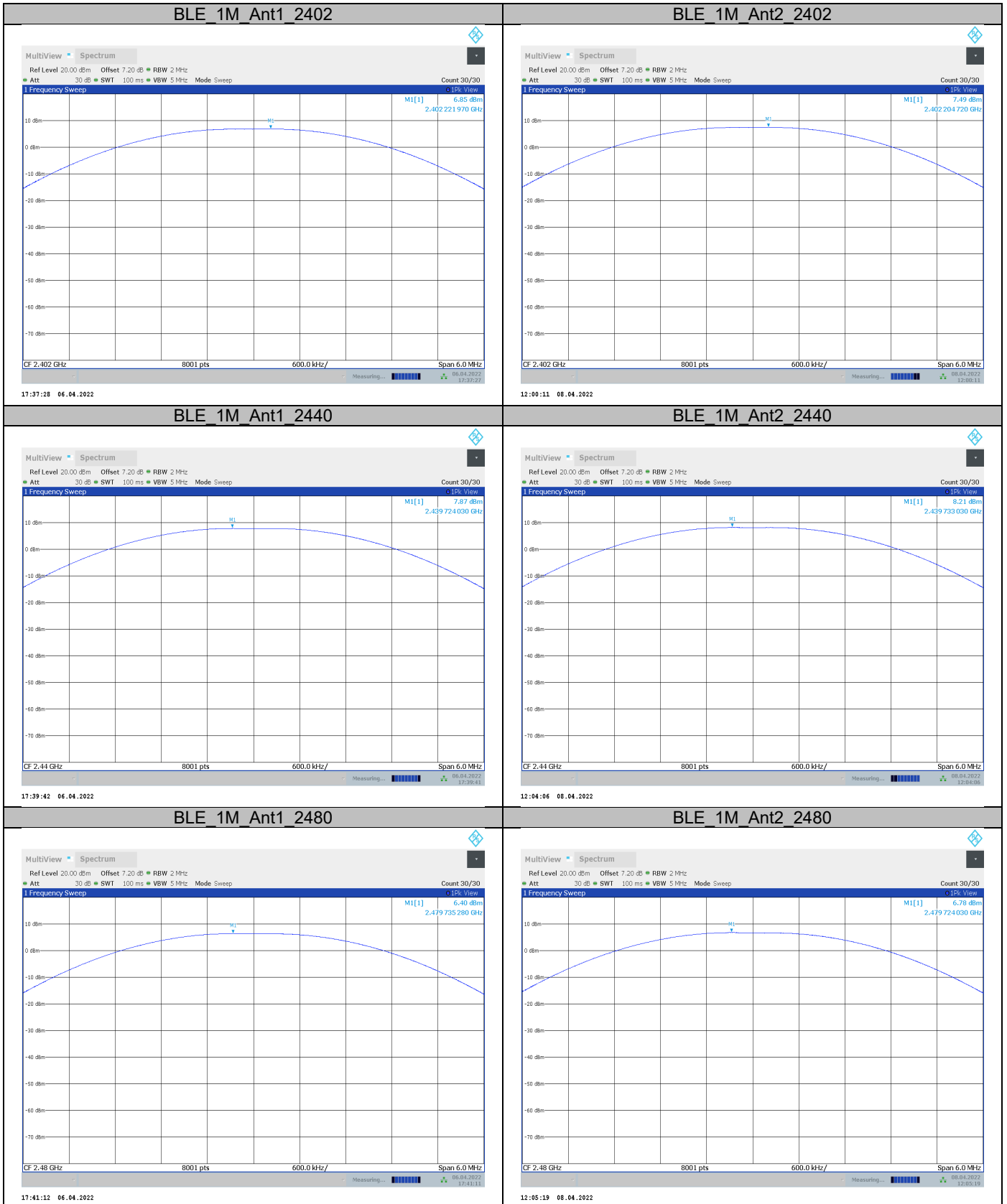


3. APPENDIX C: MAXIMUM CONDUCTED OUTPUT POWER

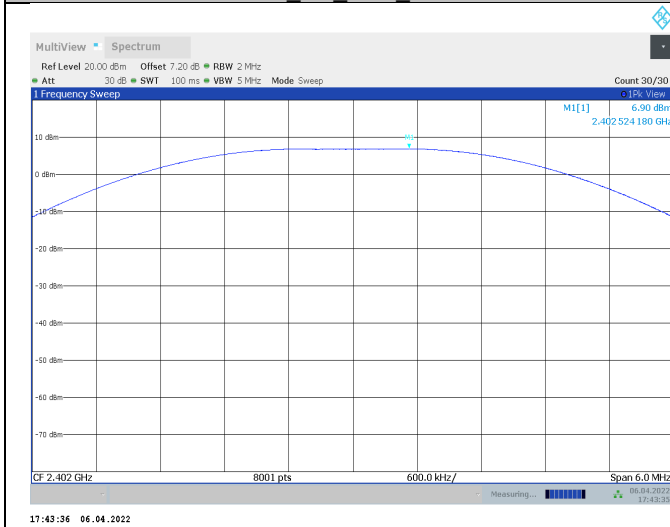
3.1 TEST RESULT

Test Mode	Antenna	Frequency [MHz]	Conducted Peak Power [dBm]	Conducted Limit [dBm]	Verdict
BLE_1M	Ant1	2402	6.85	≤30	PASS
	Ant2	2402	7.49	≤30	PASS
	Ant1	2440	7.87	≤30	PASS
	Ant2	2440	8.21	≤30	PASS
	Ant1	2480	6.40	≤30	PASS
	Ant2	2480	6.78	≤30	PASS
BLE_2M	Ant1	2402	6.90	≤30	PASS
	Ant2	2402	7.55	≤30	PASS
	Ant1	2440	7.92	≤30	PASS
	Ant2	2440	8.25	≤30	PASS
	Ant1	2480	6.48	≤30	PASS
	Ant2	2480	6.87	≤30	PASS

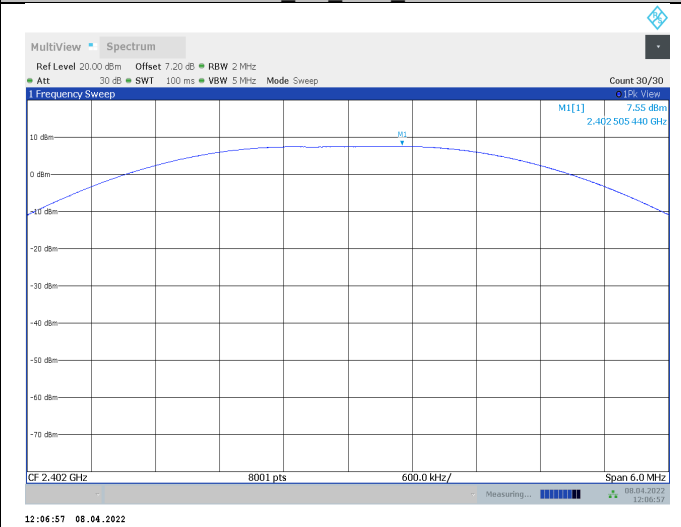
3.2 TEST GRAPHS



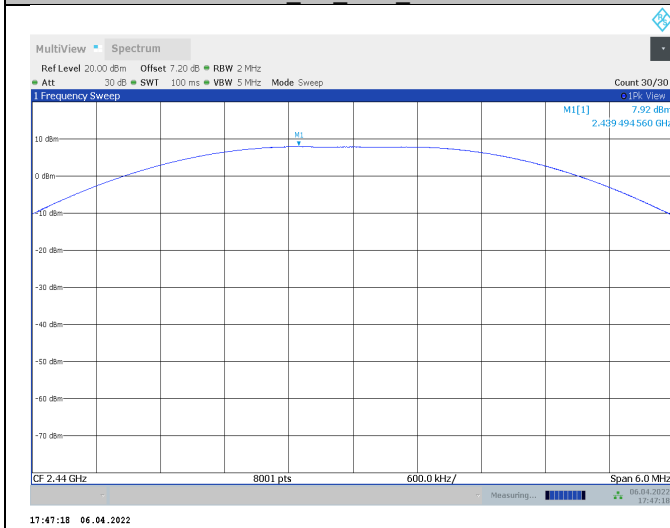
BLE_2M_Ant1_2402



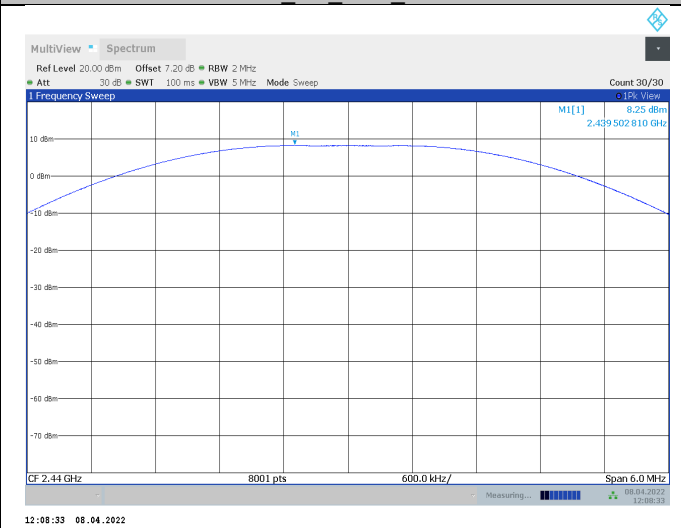
BLE_2M_Ant2_2402



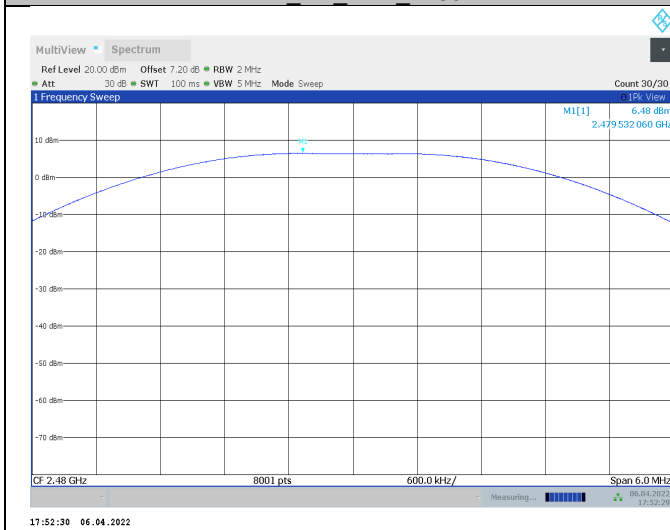
BLE_2M_Ant1_2440



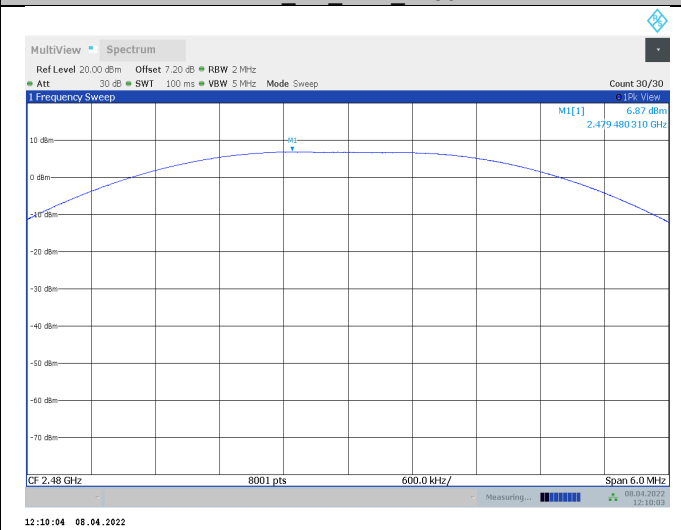
BLE_2M_Ant2_2440



BLE_2M_Ant1_2480



BLE_2M_Ant2_2480

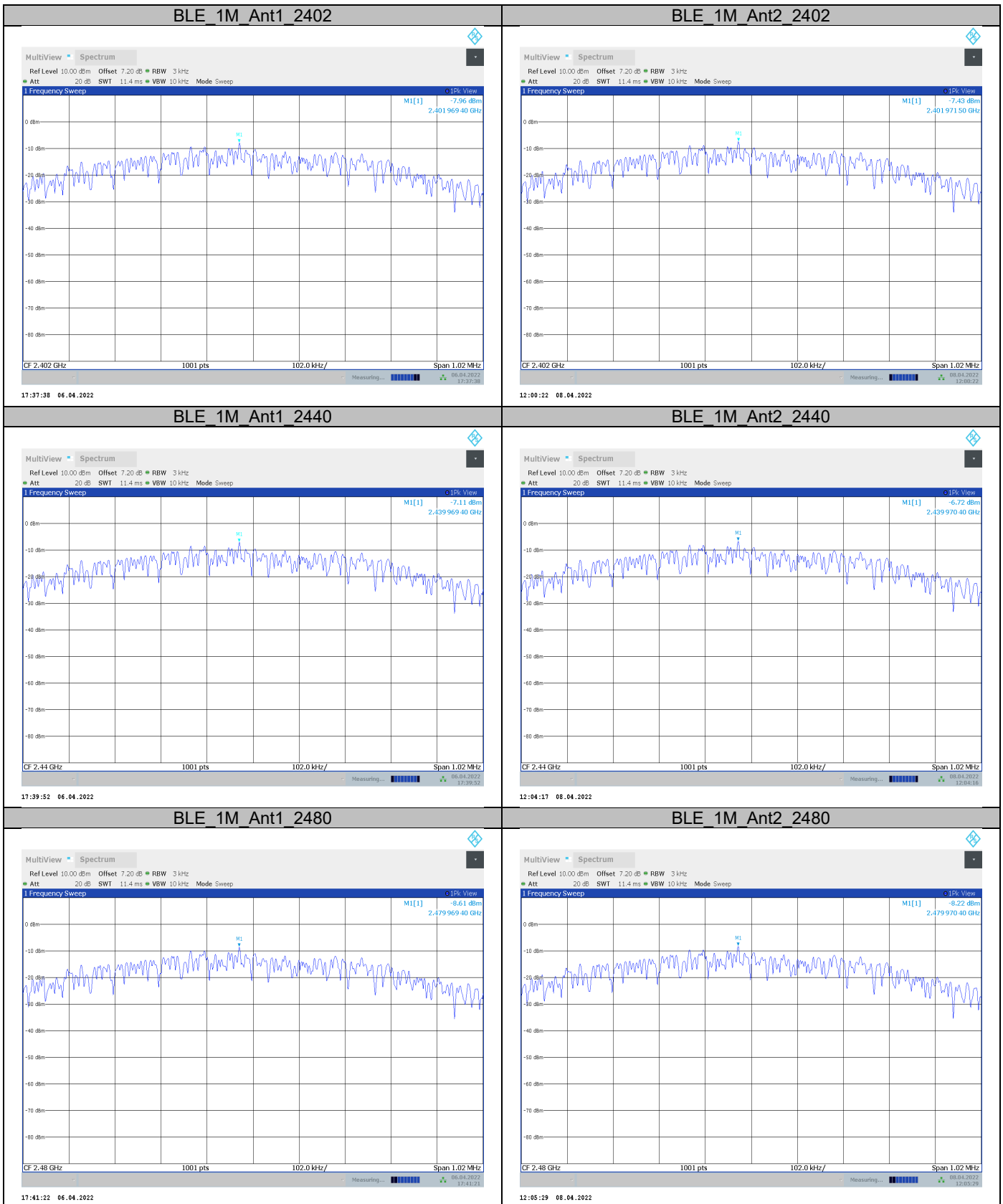


4. APPENDIX D: MAXIMUM POWER SPECTRAL DENSITY

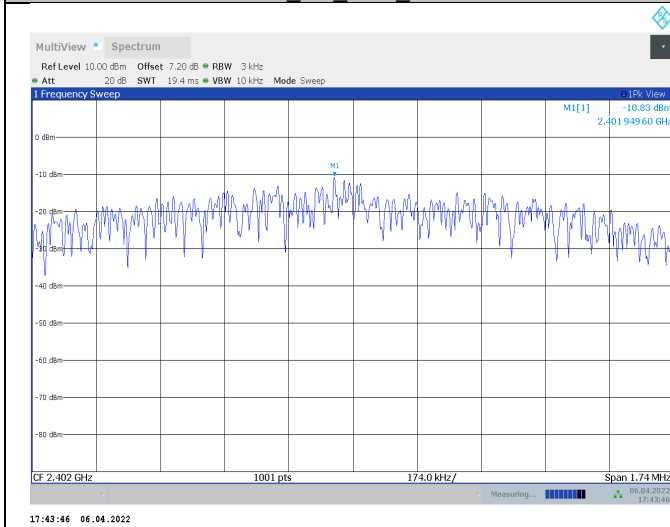
4.1 TEST RESULT

Test Mode	Antenna	Frequency [MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-7.96	≤8.00	PASS
	Ant2	2402	-7.43	≤8.00	PASS
	Ant1	2440	-7.11	≤8.00	PASS
	Ant2	2440	-6.72	≤8.00	PASS
	Ant1	2480	-8.61	≤8.00	PASS
	Ant2	2480	-8.22	≤8.00	PASS
BLE_2M	Ant1	2402	-10.83	≤8.00	PASS
	Ant2	2402	-10.39	≤8.00	PASS
	Ant1	2440	-10.00	≤8.00	PASS
	Ant2	2440	-9.66	≤8.00	PASS
	Ant1	2480	-11.52	≤8.00	PASS
	Ant2	2480	-11.23	≤8.00	PASS

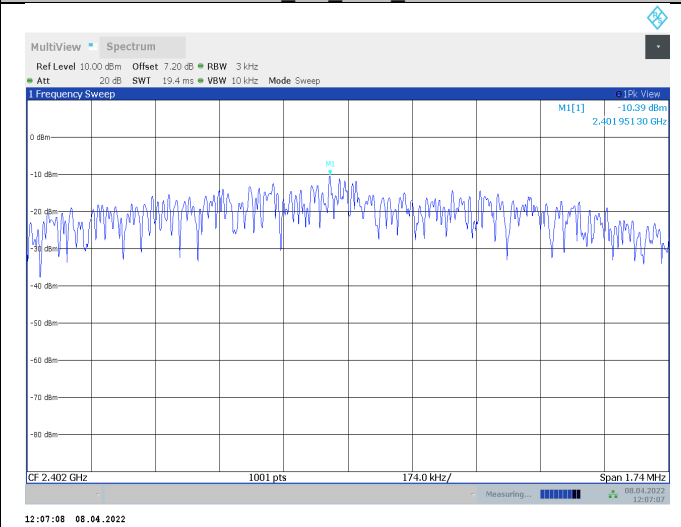
4.2 TEST GRAPHS



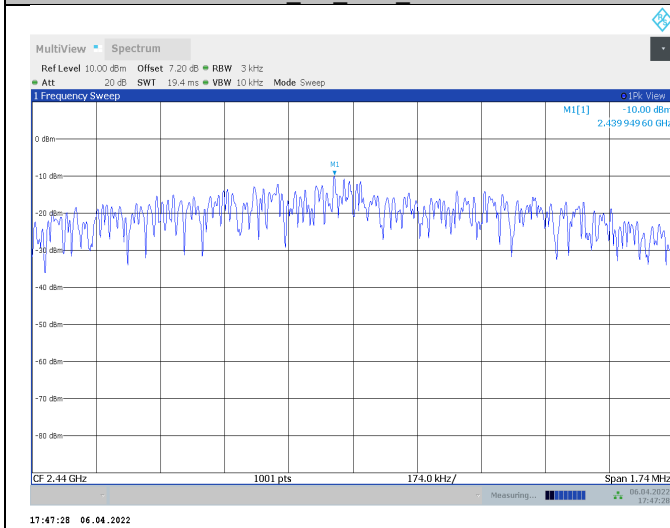
BLE_2M_Ant1_2402



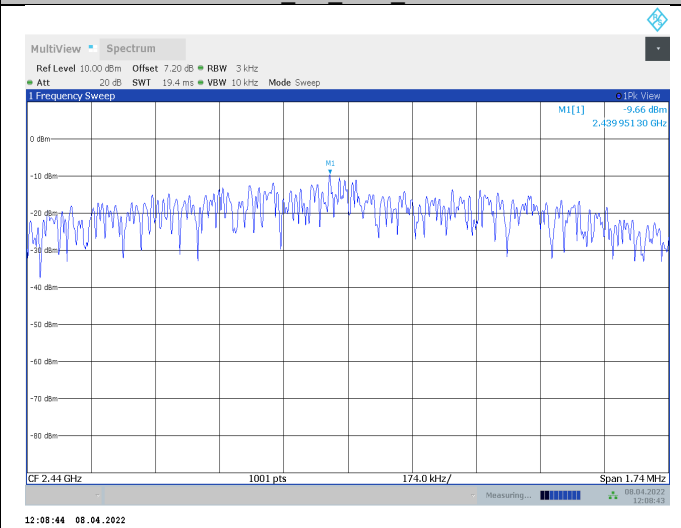
BLE_2M_Ant2_2402



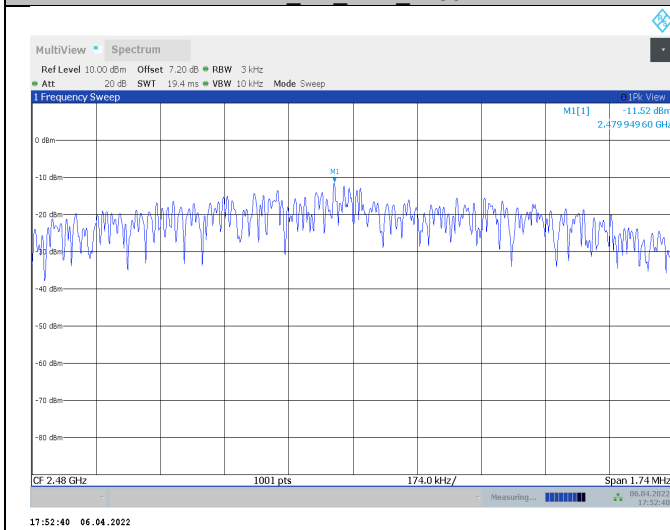
BLE_2M_Ant1_2440



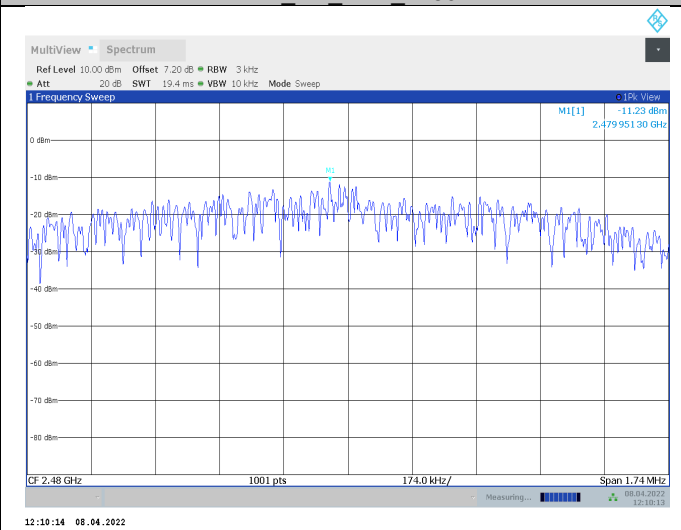
BLE_2M_Ant2_2440



BLE_2M_Ant1_2480



BLE_2M_Ant2_2480

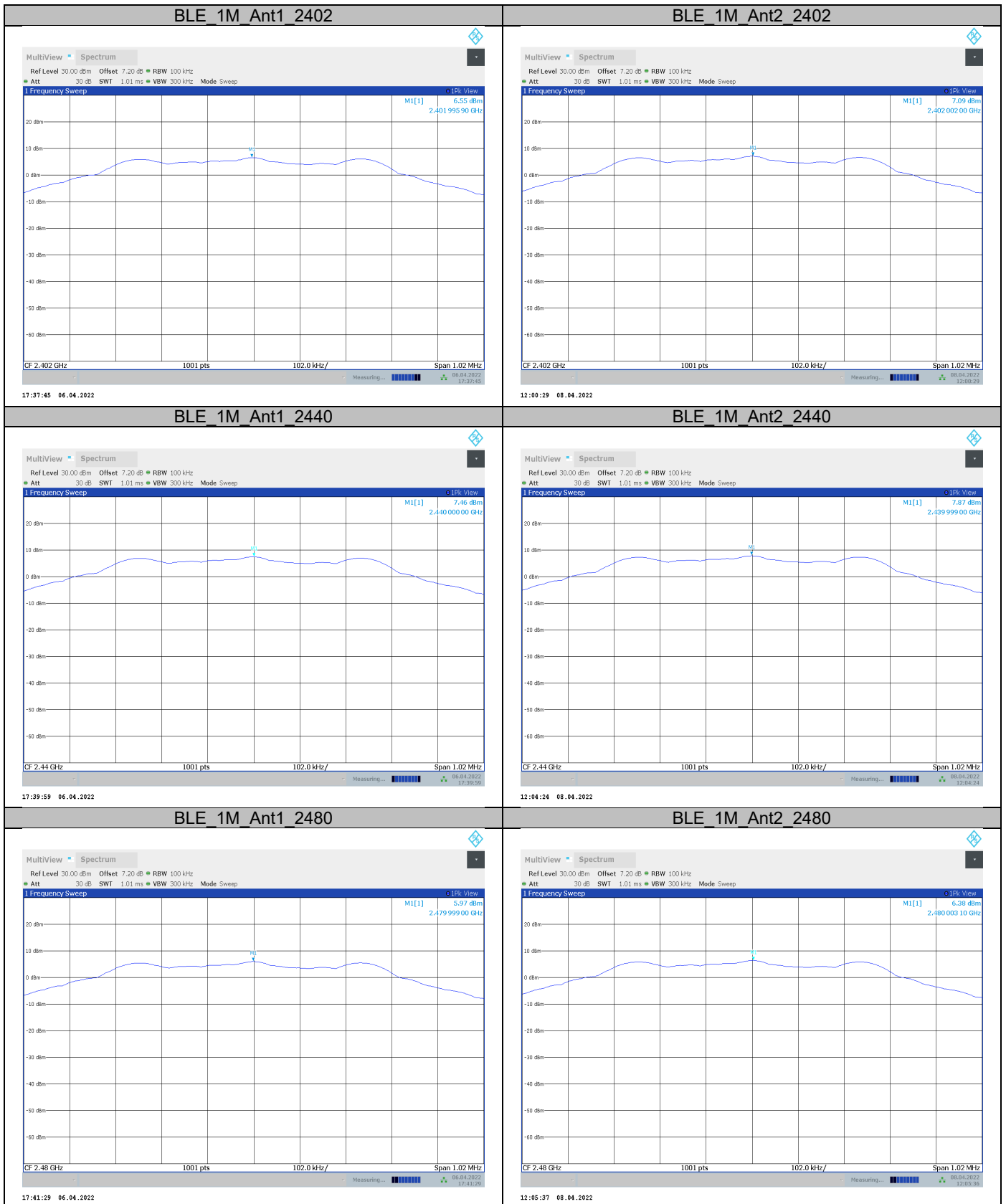


5. APPENDIX E: REFERENCE LEVEL MEASUREMENT

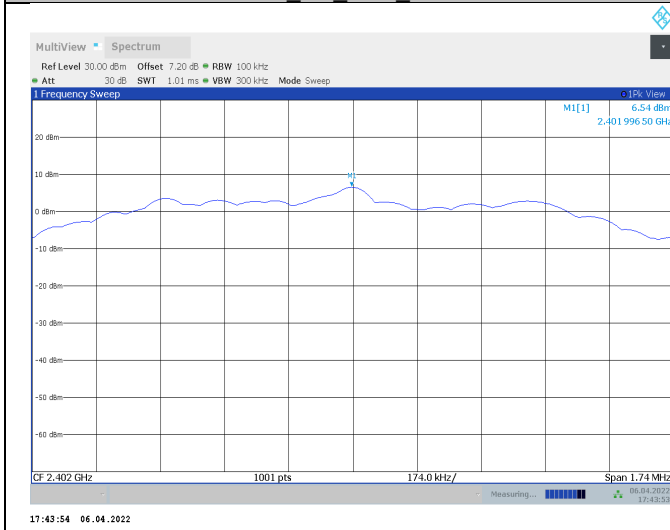
5.1 TEST RESULT

TestMode	Antenna	Frequency [MHz]	Max.Point [MHz]	Result [dBm]
BLE_1M	Ant1	2402	2402.00	6.55
	Ant2	2402	2402.00	7.09
	Ant1	2440	2440.00	7.46
	Ant2	2440	2440.00	7.87
	Ant1	2480	2480.00	5.97
	Ant2	2480	2480.00	6.38
BLE_2M	Ant1	2402	2402.00	6.54
	Ant2	2402	2402.00	7.10
	Ant1	2440	2440.00	7.48
	Ant2	2440	2440.00	7.86
	Ant1	2480	2480.00	6.01
	Ant2	2480	2480.01	6.39

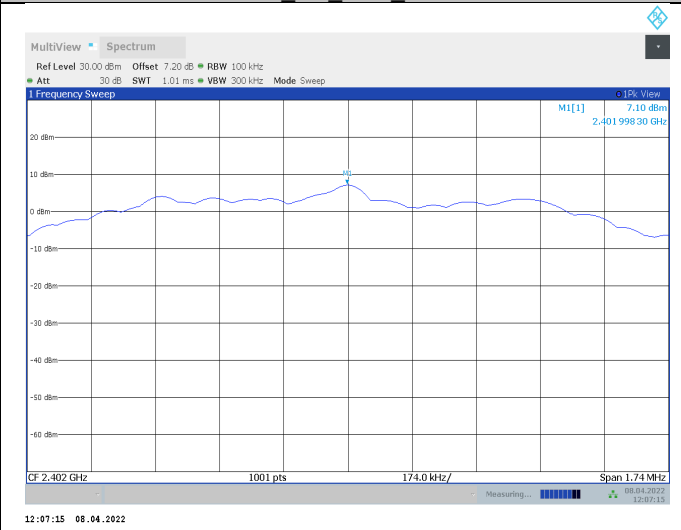
5.2 TEST GRAPHS



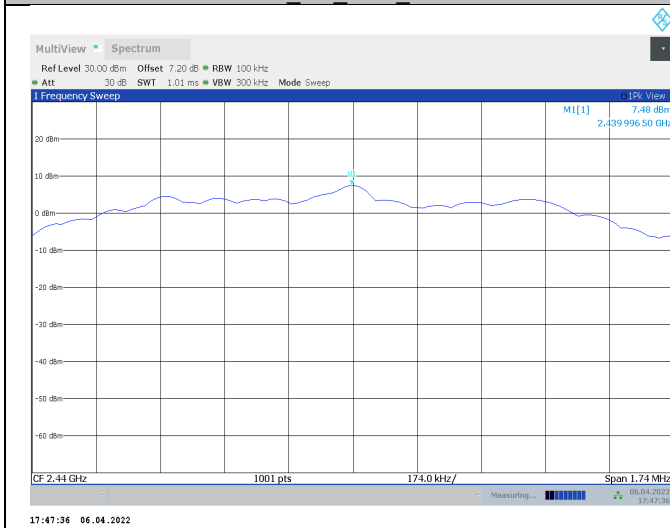
BLE_2M_Ant1_2402



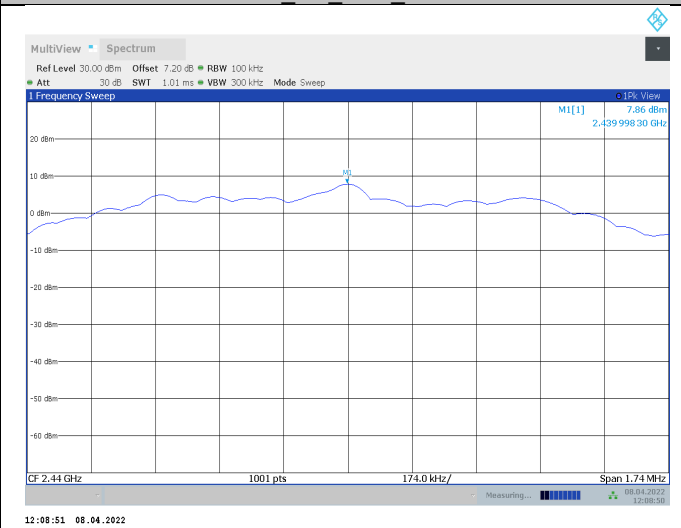
BLE_2M_Ant2_2402



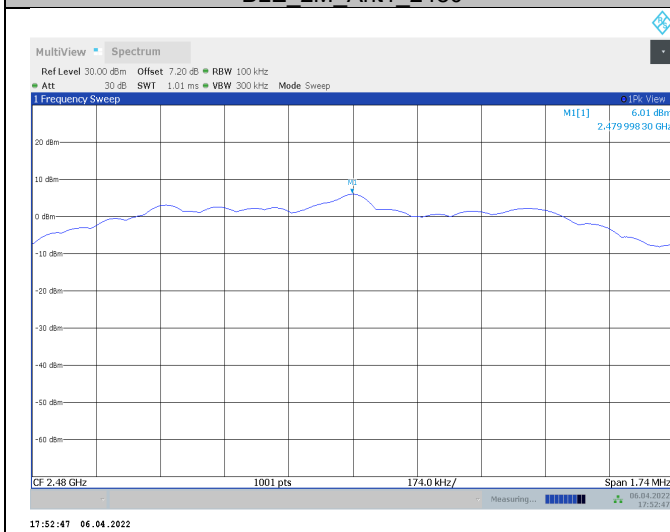
BLE_2M_Ant1_2440



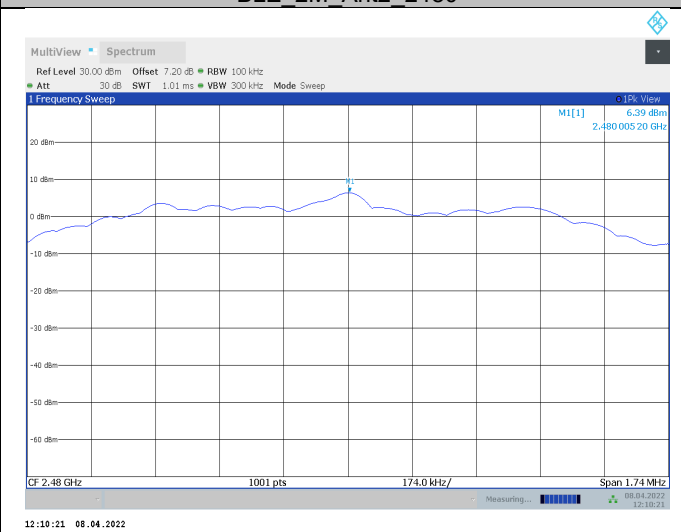
BLE_2M_Ant2_2440



BLE_2M_Ant1_2480



BLE_2M_Ant2_2480

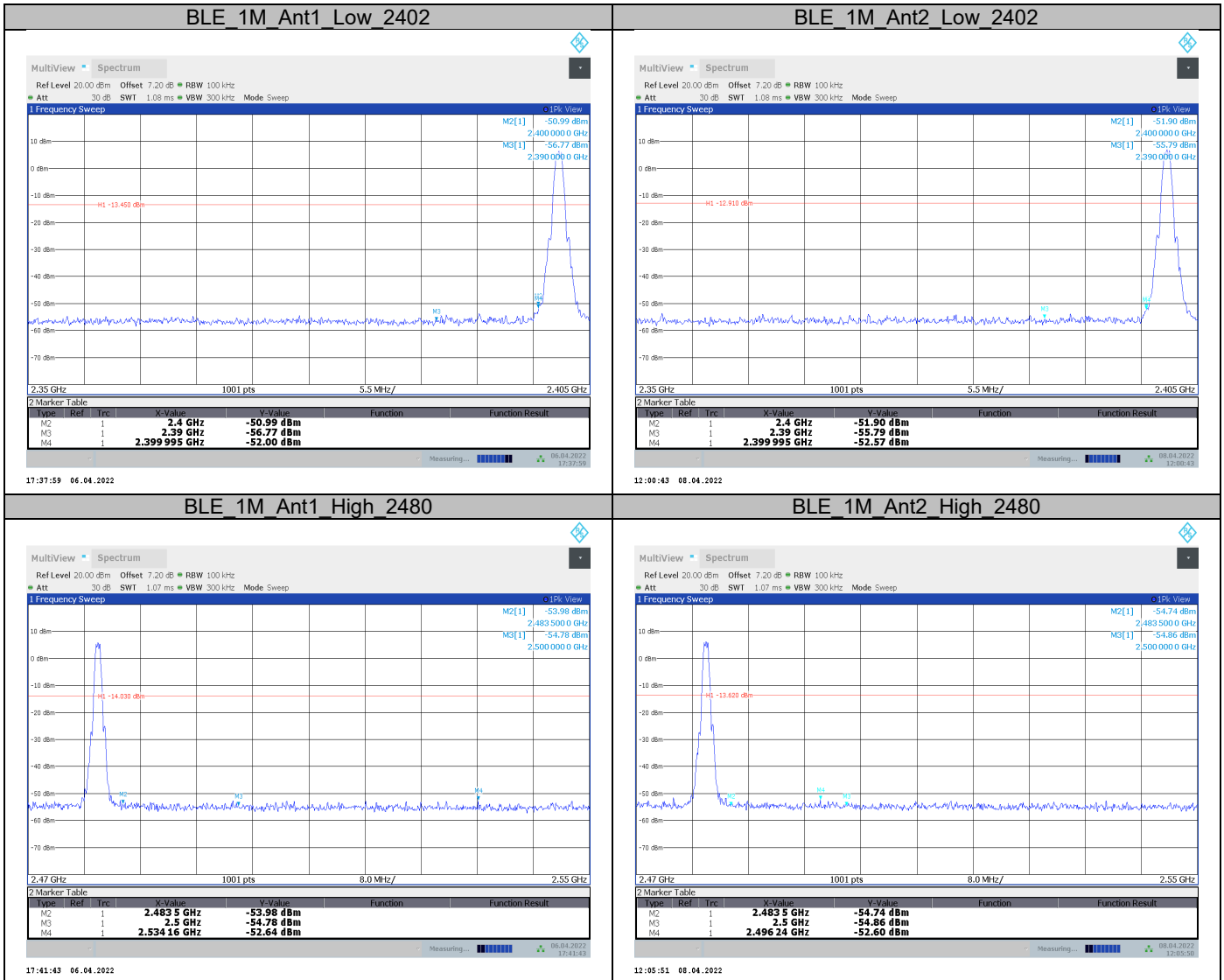


6. APPENDIX F: BAND EDGE MEASUREMENTS

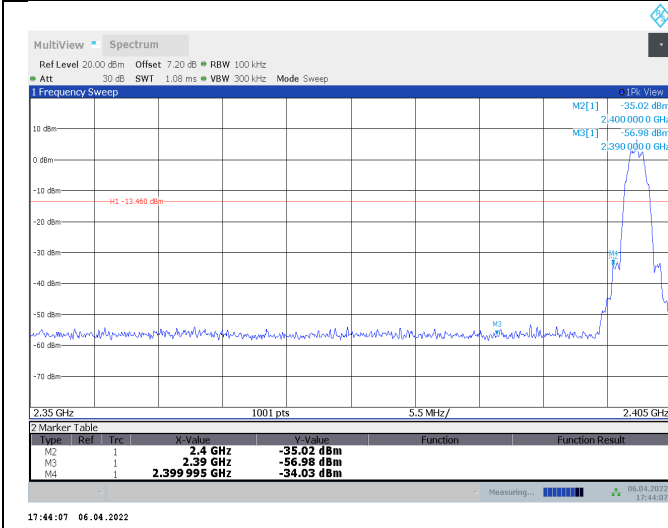
6.1 TEST RESULT

TestMode	Antenna	ChName	Frequency [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	6.55	-52	≤ -13.45	PASS
	Ant2	Low	2402	7.09	-52.57	≤ -12.91	PASS
	Ant1	High	2480	5.97	-52.64	≤ -14.03	PASS
	Ant2	High	2480	6.38	-52.6	≤ -13.62	PASS
BLE_2M	Ant1	Low	2402	6.54	-34.03	≤ -13.46	PASS
	Ant2	Low	2402	7.10	-33.68	≤ -12.9	PASS
	Ant1	High	2480	6.01	-52.33	≤ -13.99	PASS
	Ant2	High	2480	6.39	-52.39	≤ -13.61	PASS

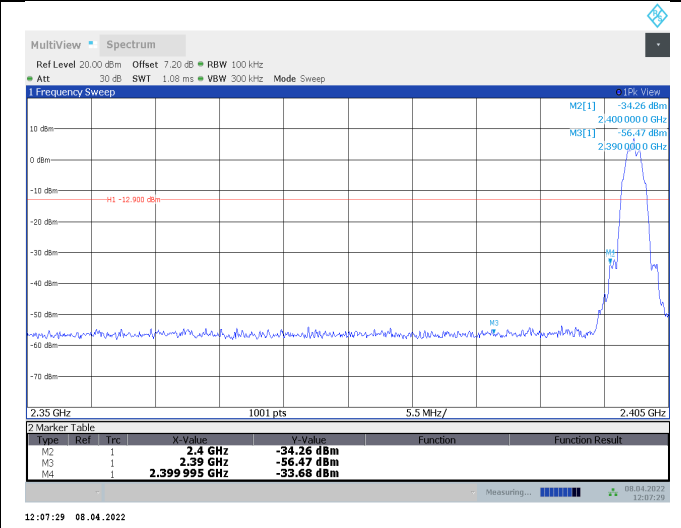
6.2 TEST GRAPHS



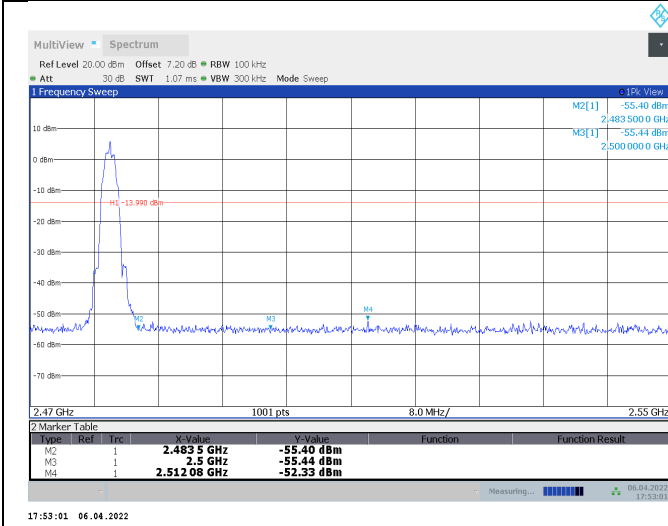
BLE 2M Ant1 Low 2402



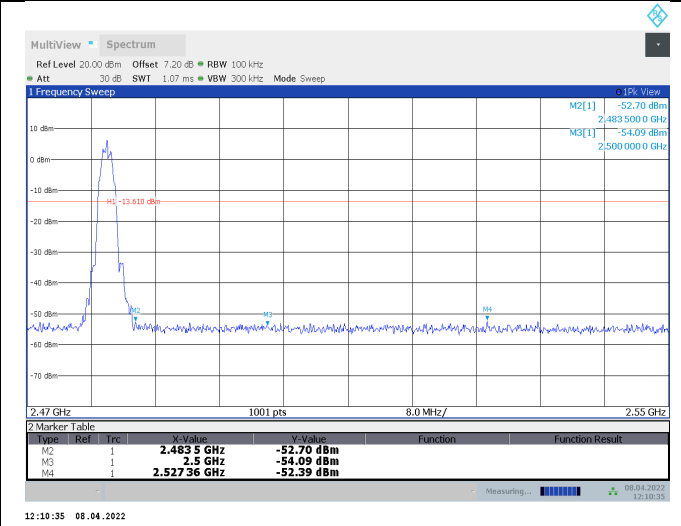
BLE 2M Ant2 Low 2402



BLE 2M Ant1 High 2480



BLE 2M Ant2 High 2480

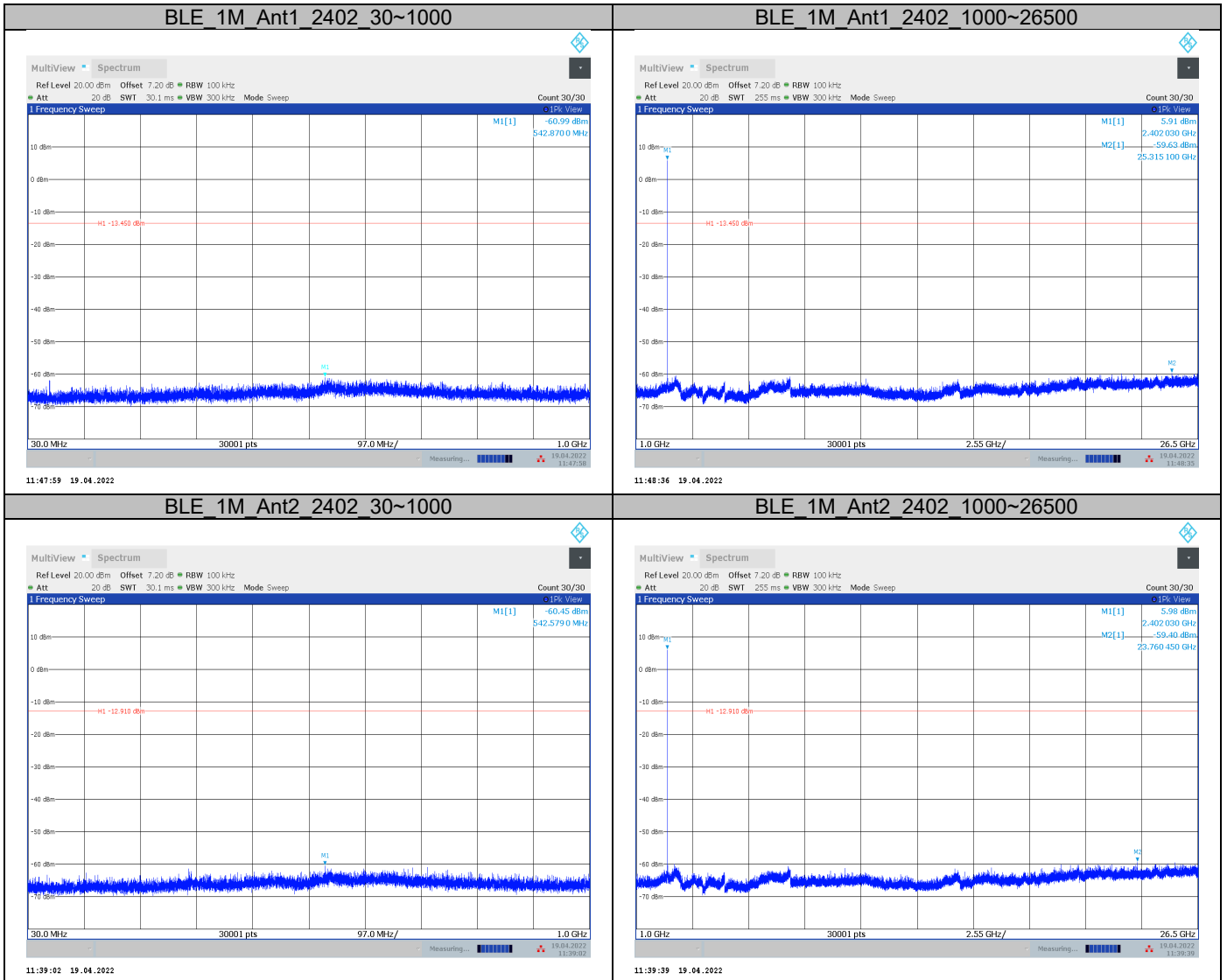


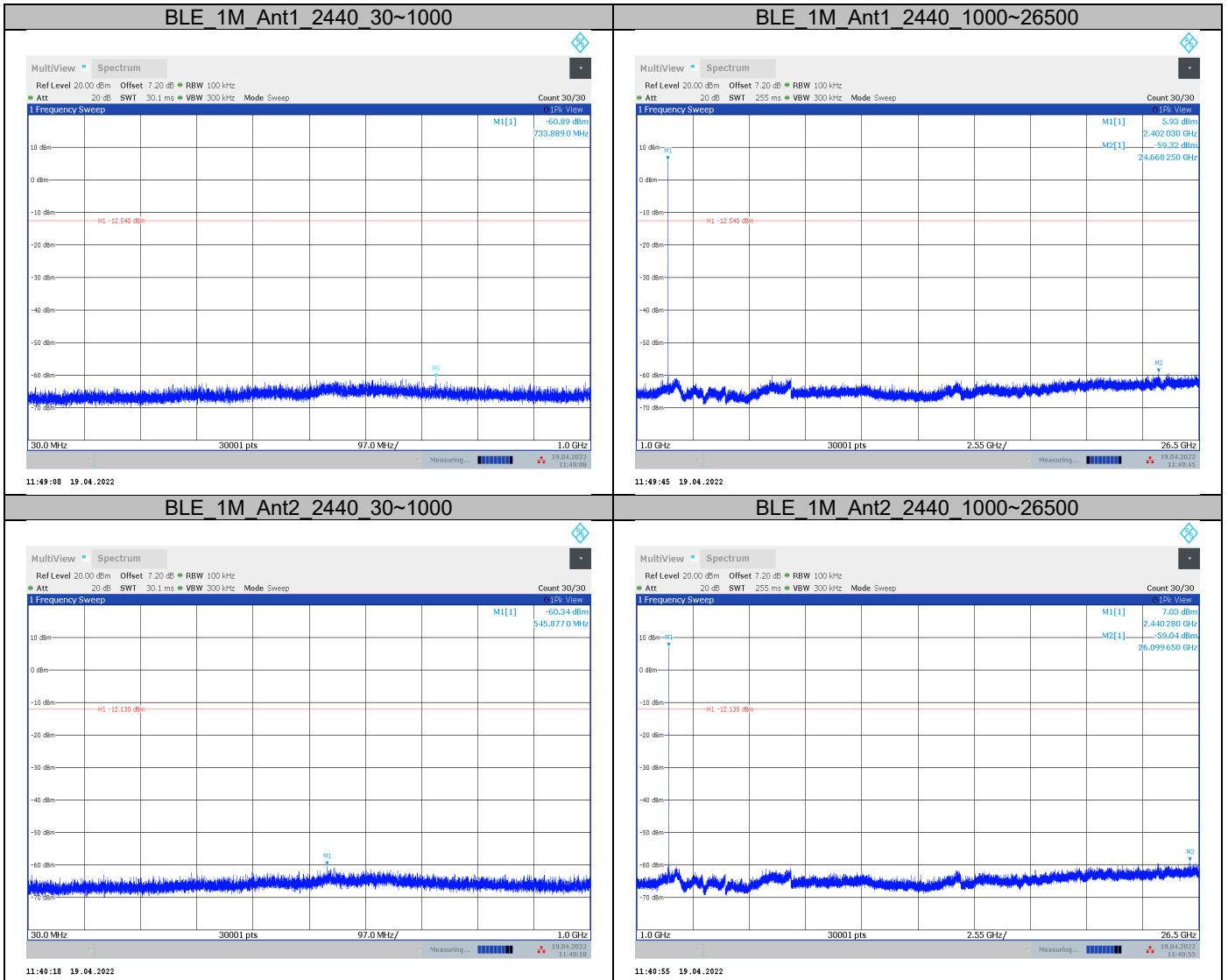
7. APPENDIX G: CONDUCTED SPURIOUS EMISSION

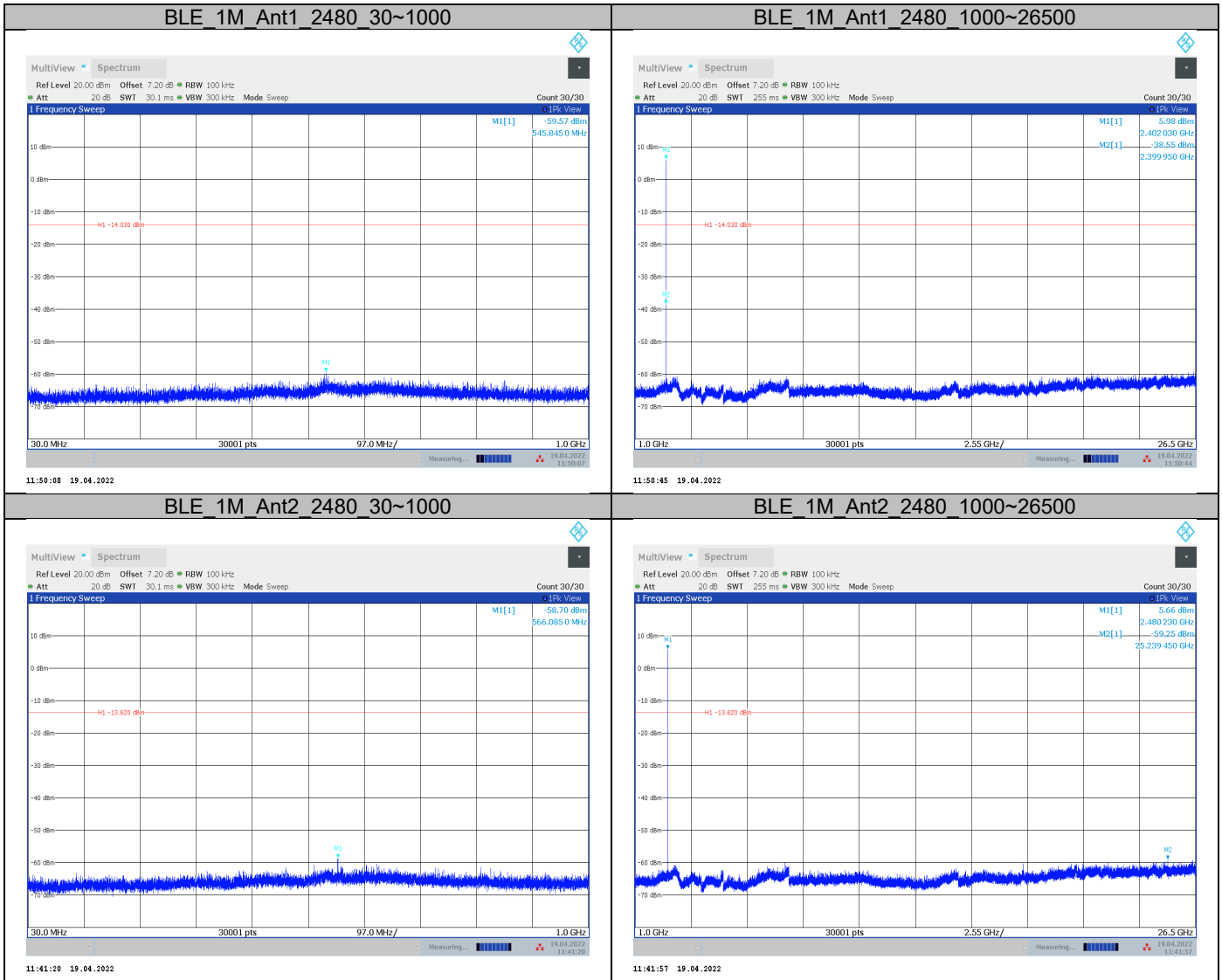
7.1 TEST RESULT

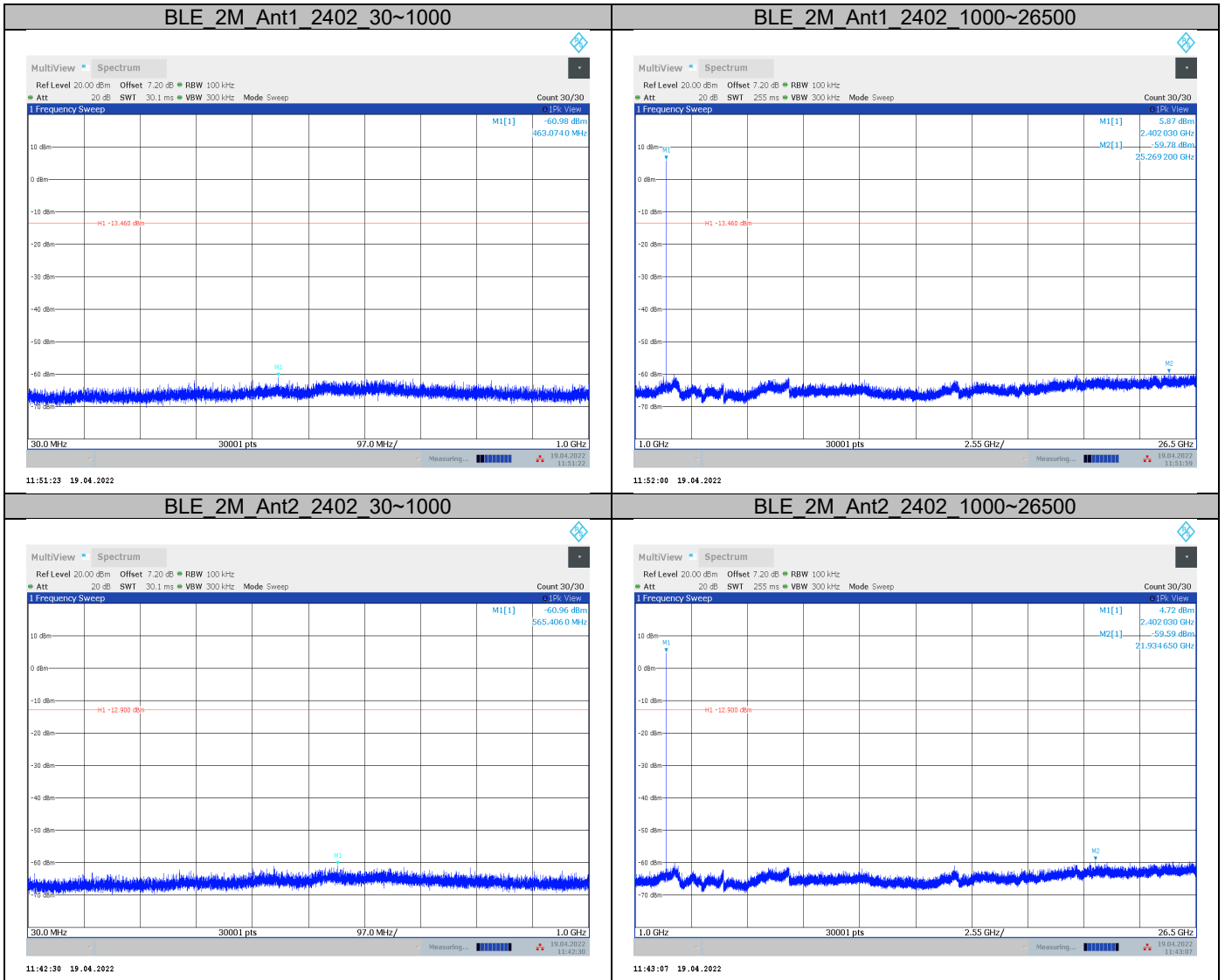
Test Mode	Antenna	Frequency [MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	30~1000	6.55	-60.99	≤-13.45	PASS
			1000~26500	6.55	-59.63	≤-13.45	PASS
	Ant2	2402	30~1000	7.09	-60.45	≤-12.91	PASS
			1000~26500	7.09	-59.4	≤-12.91	PASS
	Ant1	2440	30~1000	7.46	-60.89	≤-12.54	PASS
			1000~26500	7.46	-59.32	≤-12.54	PASS
	Ant2	2440	30~1000	7.87	-60.34	≤-12.13	PASS
			1000~26500	7.87	-59.04	≤-12.13	PASS
	Ant1	2480	30~1000	5.97	-59.57	≤-14.03	PASS
			1000~26500	5.97	-38.55	≤-14.03	PASS
	Ant2	2480	30~1000	6.38	-58.7	≤-13.62	PASS
			1000~26500	6.38	-59.25	≤-13.62	PASS
BLE_2M	Ant1	2402	30~1000	6.54	-60.98	≤-13.46	PASS
			1000~26500	6.54	-59.78	≤-13.46	PASS
	Ant2	2402	30~1000	7.10	-60.96	≤-12.9	PASS
			1000~26500	7.10	-59.59	≤-12.9	PASS
	Ant1	2440	30~1000	7.48	-61.25	≤-12.52	PASS
			1000~26500	7.48	-58.93	≤-12.52	PASS
	Ant2	2440	30~1000	7.86	-60.75	≤-12.14	PASS
			1000~26500	7.86	-59.67	≤-12.14	PASS
	Ant1	2480	30~1000	6.01	-61.38	≤-13.99	PASS
			1000~26500	6.01	-58.82	≤-13.99	PASS
	Ant2	2480	30~1000	6.39	-60.52	≤-13.61	PASS
			1000~26500	6.39	-59.79	≤-13.61	PASS

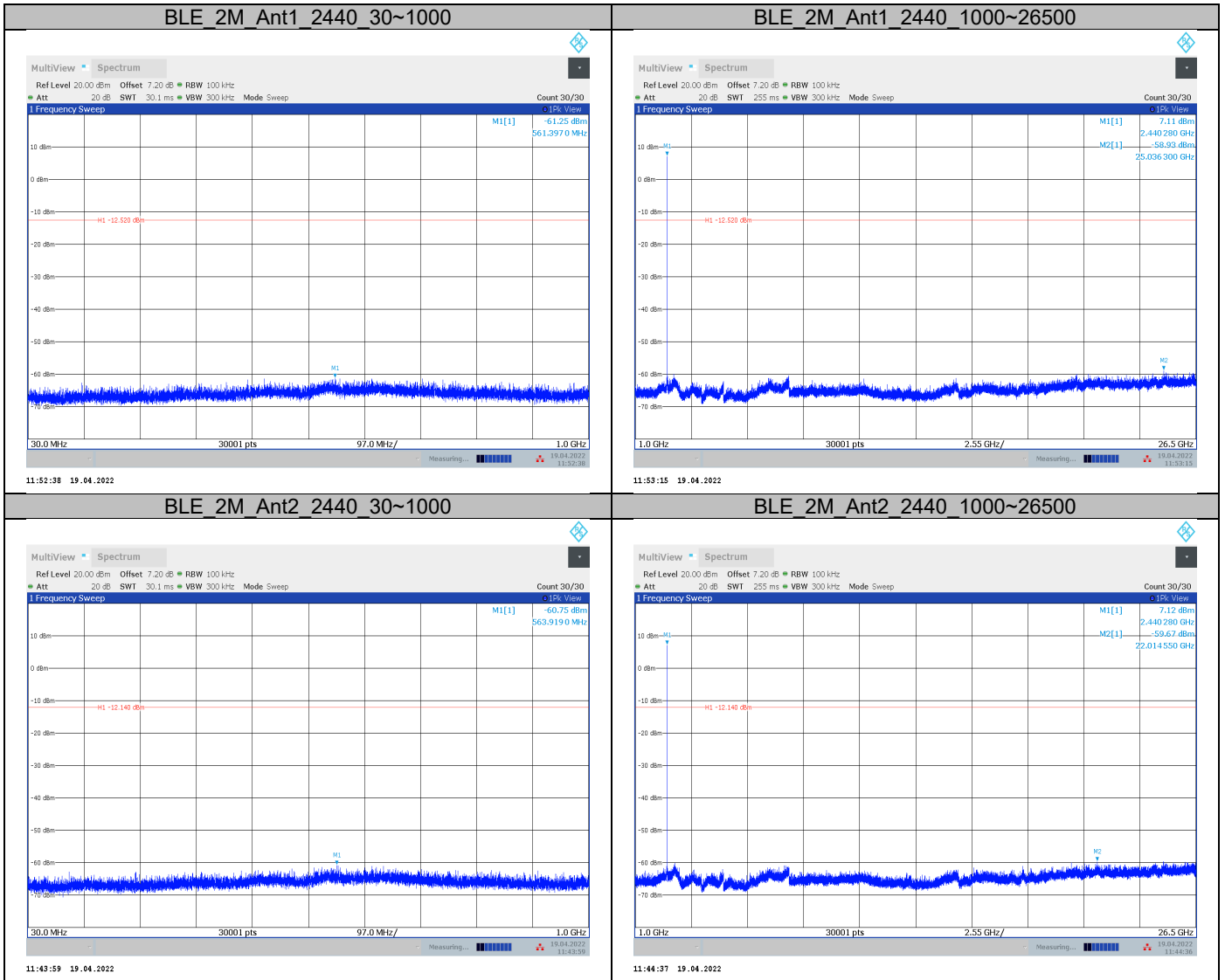
7.2 TEST GRAPHS

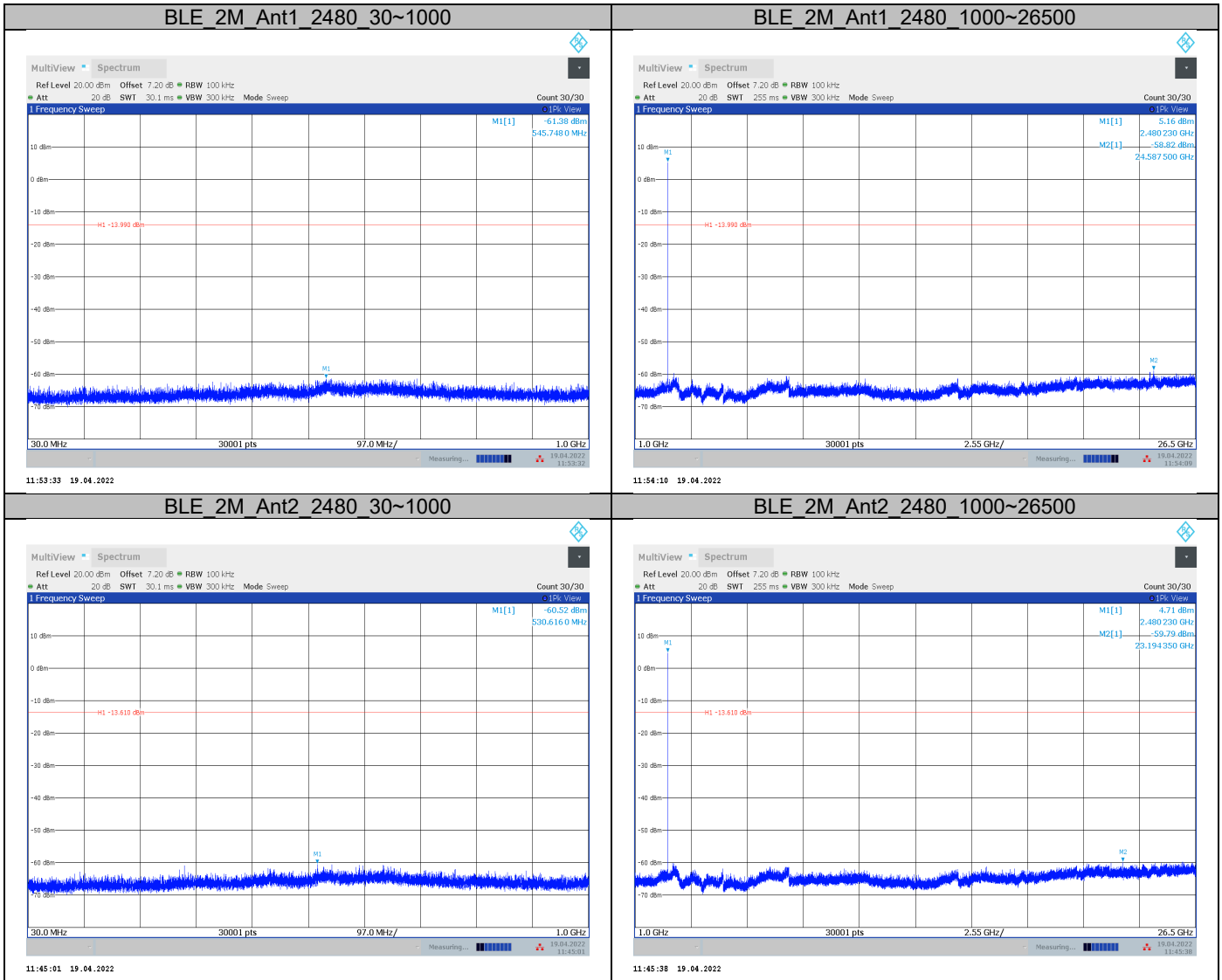










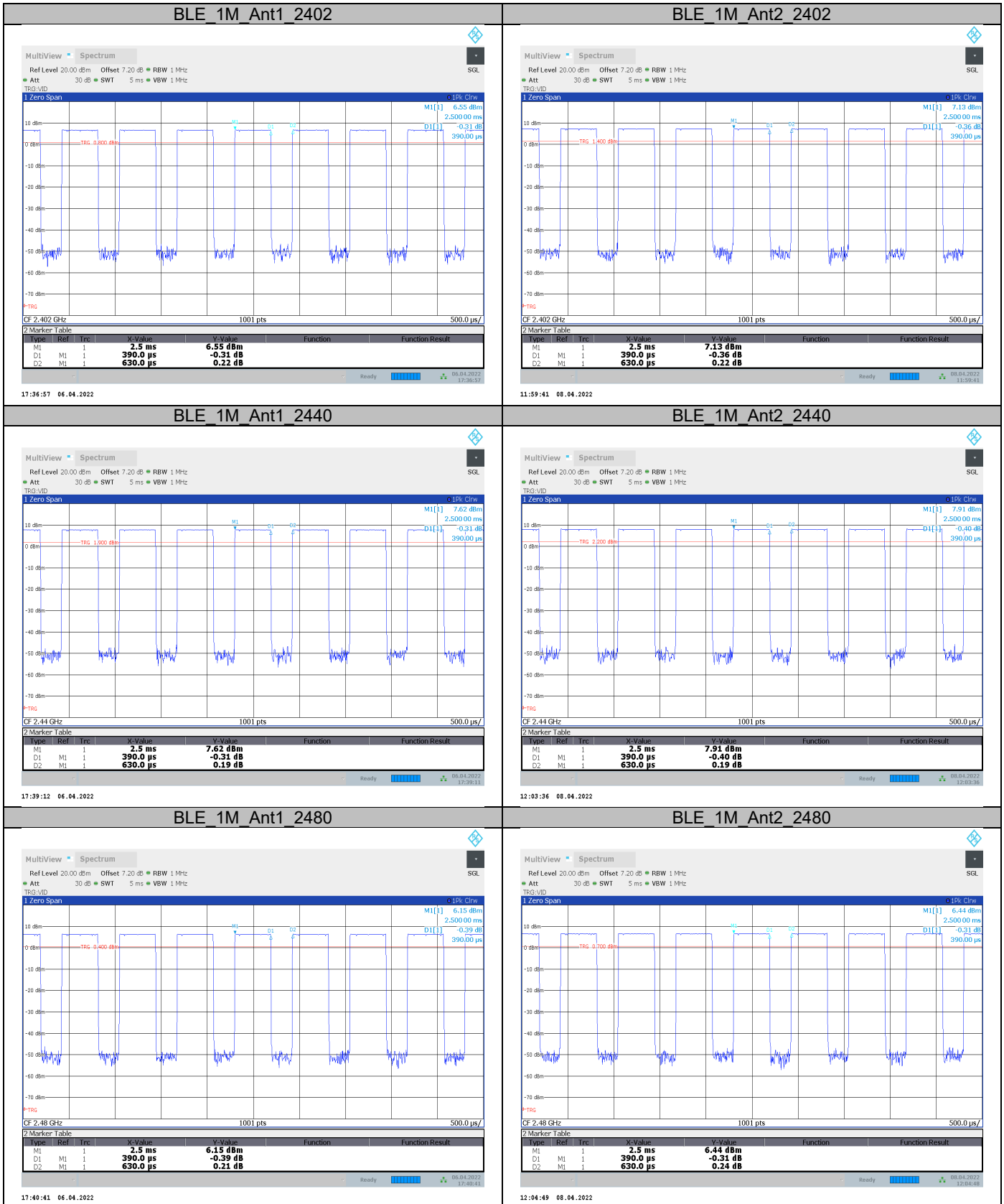


8. APPENDIX H: DUTY CYCLE

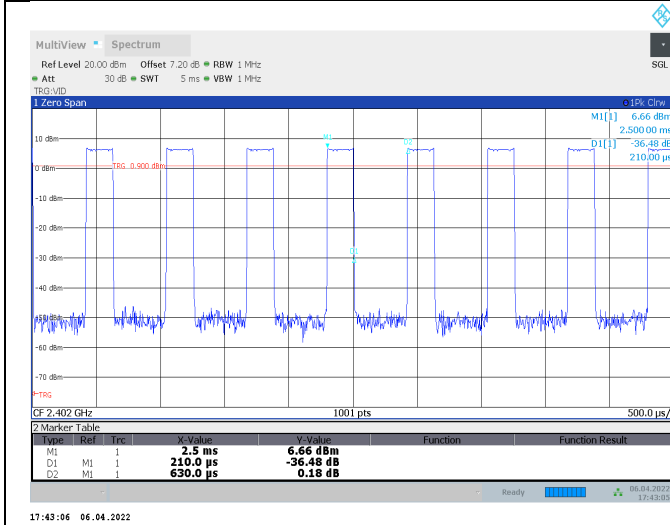
8.1 TEST RESULT

TestMode	Antenna	Frequency [MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
BLE_1M	Ant1	2402	0.39	0.63	61.90	2.08
	Ant2	2402	0.39	0.63	61.90	2.08
	Ant1	2440	0.39	0.63	61.90	2.08
	Ant2	2440	0.39	0.63	61.90	2.08
	Ant1	2480	0.39	0.63	61.90	2.08
	Ant2	2480	0.39	0.63	61.90	2.08
BLE_2M	Ant1	2402	0.21	0.63	33.33	4.77
	Ant2	2402	0.21	0.63	33.33	4.77
	Ant1	2440	0.21	0.63	33.33	4.77
	Ant2	2440	0.21	0.63	33.33	4.77
	Ant1	2480	0.21	0.63	33.33	4.77
	Ant2	2480	0.21	0.63	33.33	4.77

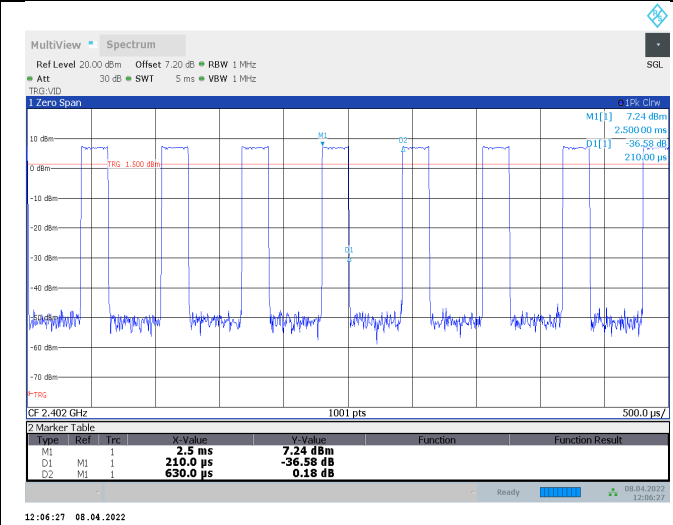
8.2 TEST GRAPHS



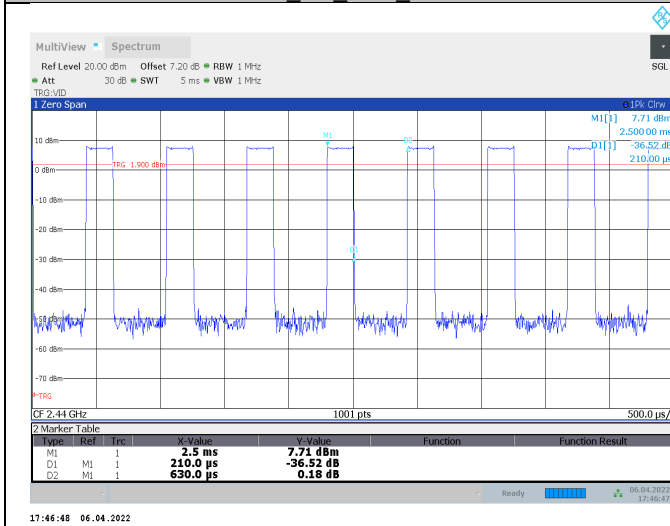
BLE_2M_Ant1_2402



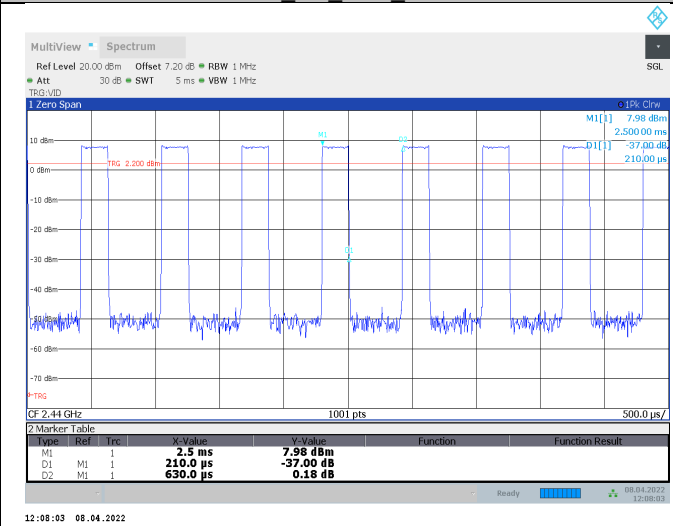
BLE_2M_Ant2_2402



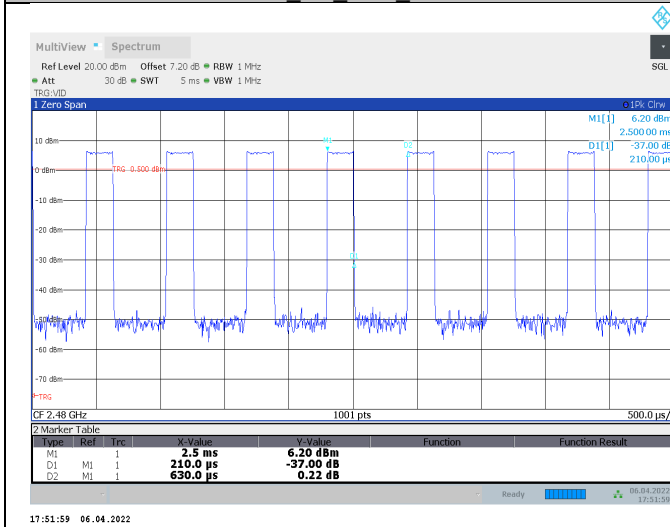
BLE_2M_Ant1_2440



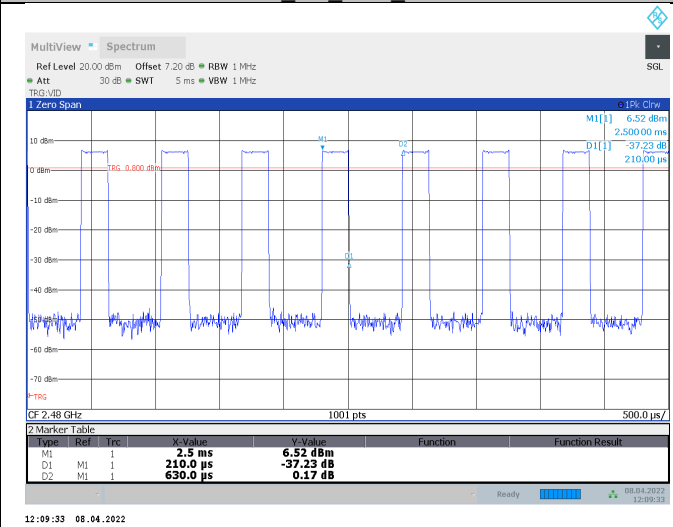
BLE_2M_Ant2_2440



BLE_2M_Ant1_2480



BLE_2M_Ant2_2480



End of Test Report