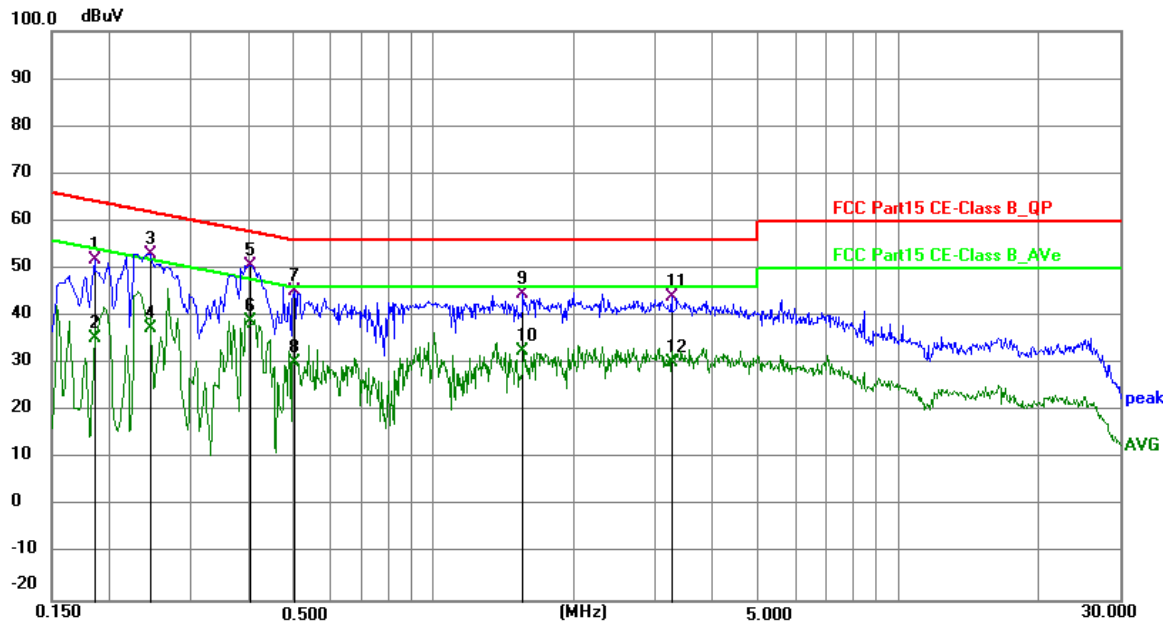


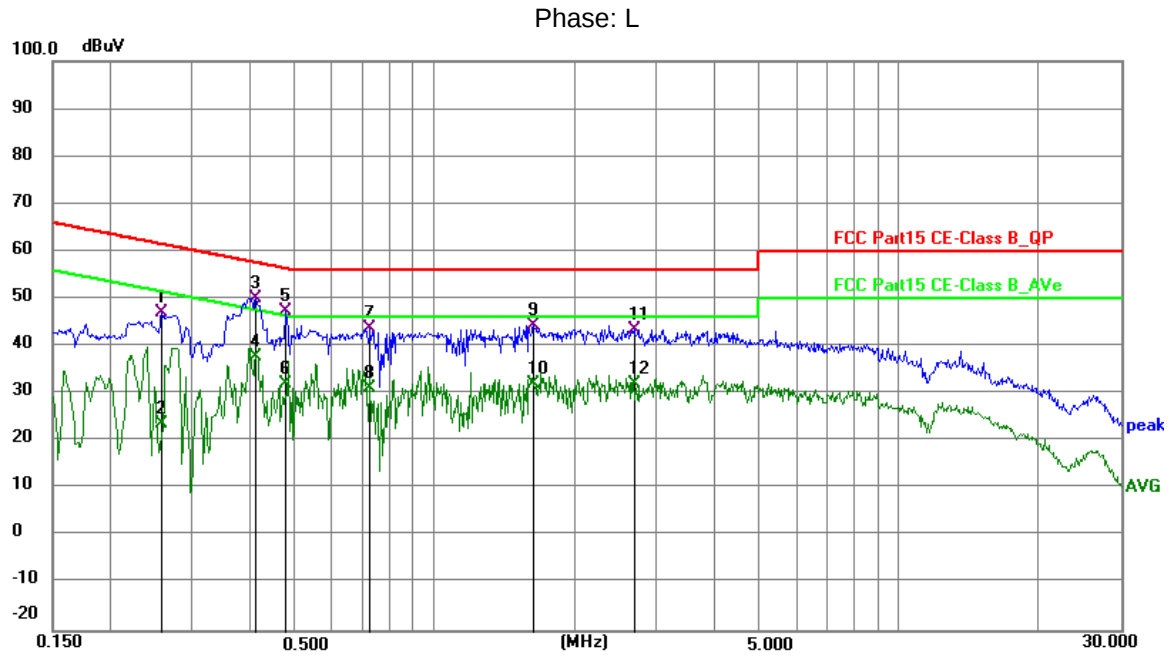


APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS

Phase: N



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1860	42.33	9.63	51.96	64.21	-12.25	QP	P	
2	0.1860	25.62	9.63	35.25	54.21	-18.96	AVG	P	
3	0.2444	43.54	9.63	53.17	61.95	-8.78	QP	P	
4	0.2444	27.95	9.63	37.58	51.95	-14.37	AVG	P	
5 *	0.4020	41.17	9.62	50.79	57.81	-7.02	QP	P	
6	0.4020	29.34	9.62	38.96	47.81	-8.85	AVG	P	
7	0.5010	35.75	9.62	45.37	56.00	-10.63	QP	P	
8	0.5010	20.63	9.62	30.25	46.00	-15.75	AVG	P	
9	1.5584	34.90	9.65	44.55	56.00	-11.45	QP	P	
10	1.5584	22.86	9.65	32.51	46.00	-13.49	AVG	P	
11	3.2505	34.24	9.67	43.91	56.00	-12.09	QP	P	
12	3.2505	20.61	9.67	30.28	46.00	-15.72	AVG	P	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.2580	37.33	9.63	46.96	61.50	-14.54	QP	P	
2	0.2580	13.88	9.63	23.51	51.50	-27.99	AVG	P	
3 *	0.4110	40.44	9.63	50.07	57.63	-7.56	QP	P	
4	0.4110	28.23	9.63	37.86	47.63	-9.77	AVG	P	
5	0.4784	37.88	9.62	47.50	56.37	-8.87	QP	P	
6	0.4784	22.53	9.62	32.15	46.37	-14.22	AVG	P	
7	0.7260	34.13	9.63	43.76	56.00	-12.24	QP	P	
8	0.7260	21.65	9.63	31.28	46.00	-14.72	AVG	P	
9	1.6305	34.82	9.65	44.47	56.00	-11.53	QP	P	
10	1.6305	22.49	9.65	32.14	46.00	-13.86	AVG	P	
11	2.6880	33.93	9.65	43.58	56.00	-12.42	QP	P	
12	2.6880	22.50	9.65	32.15	46.00	-13.85	AVG	P	

APPENDIX B - RADIATED EMISSION -9 KHZ TO 30 MHZ

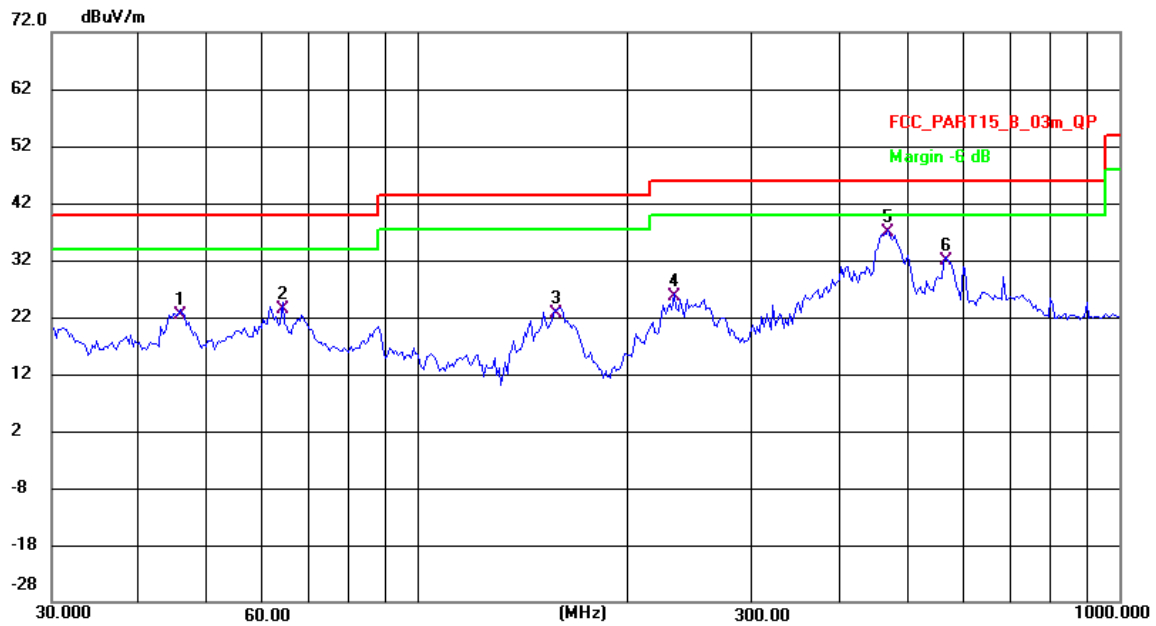
The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

APPENDIX C - RADIATED EMISSION-30 MHZ TO 1000 MHZ

Only show the worst mode:

Test Mode	TX Mode_1Mbps Channel 00	Polarization	Vertical
-----------	--------------------------	--------------	----------

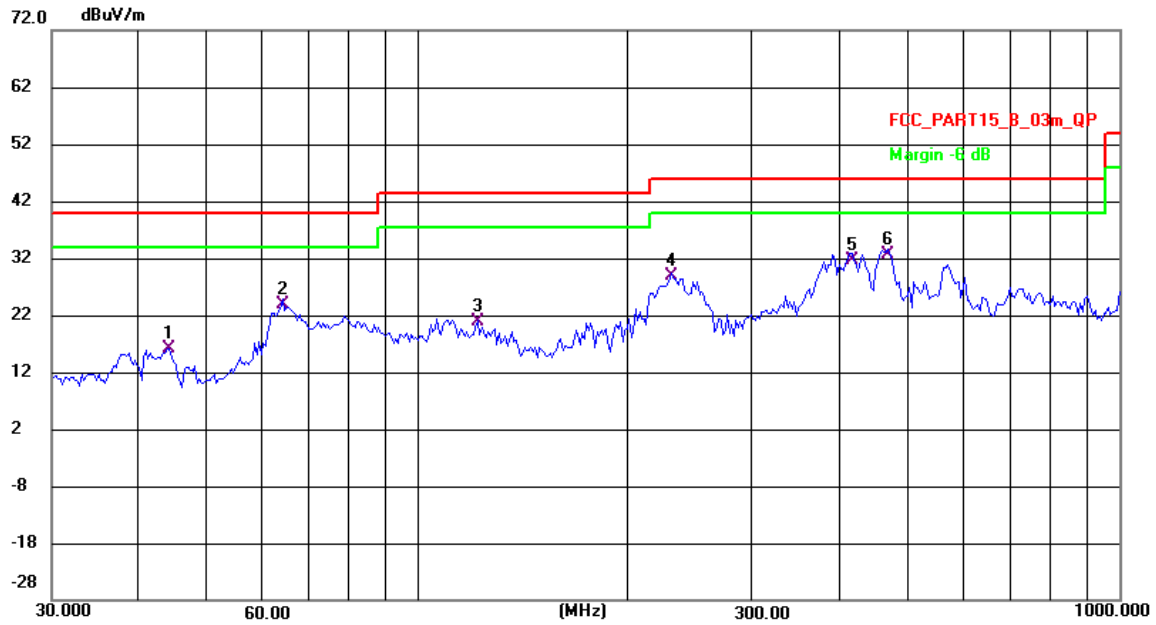


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	45.7332	44.67	-22.20	22.47	40.00	-17.53	QP	P	
2	64.0800	46.57	-23.15	23.42	40.00	-16.58	QP	P	
3	158.6397	43.43	-20.74	22.69	43.50	-20.81	QP	P	
4	231.8530	50.48	-24.87	25.61	46.00	-20.39	QP	P	
5 *	468.1650	54.26	-17.41	36.85	46.00	-9.15	QP	P	
6	565.9774	46.76	-14.89	31.87	46.00	-14.13	QP	P	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX Mode_1Mbps Channel 00	Polarization	Horizontal
-----------	--------------------------	--------------	------------



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	44.1543	38.21	-22.20	16.01	40.00	-23.99	QP	P	
2	64.0800	47.04	-23.15	23.89	40.00	-16.11	QP	P	
3	121.4623	43.63	-22.67	20.96	43.50	-22.54	QP	P	
4	230.2295	53.94	-25.00	28.94	46.00	-17.06	QP	P	
5	415.4486	50.23	-18.65	31.58	46.00	-14.42	QP	P	
6 *	468.1650	50.15	-17.41	32.74	46.00	-13.26	QP	P	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

APPENDIX D - RADIATED EMISSION - ABOVE 1000 MHZ

Test Result of RADIATED EMISSION-1000MHz TO 25GHz

Test Mode : GFSK TX Low

No.	Freq MHz	Polarity	Reading (dBuV/m)	Correct Factor	Result (dBuV/m)	Limit (dBuV/m)	Margin	Remark
1	4804	V	87.91	-27.15	60.76	74	-13.24	Peak
2	4804	V	69.83	-27.15	42.68	54	-11.32	Avg
3	7206	--	--	--		--		--
4	9608	--	--	--		--		--
5	4804	H	91.08	-27.15	63.93	74	-10.07	Peak
6	4804	H	69.97	-27.15	42.82	54	-11.18	Avg
7	7206	--	--	--	--	--	--	--
8	9608	--	--	--	--	--	--	--

Test Mode : GFSK TX Mid

1	4880	V	89.01	-27.83	61.18	74	-12.82	Peak
2	4880	V	73.61	-27.83	45.78	54	-8.22	Avg
3	7320	--	--	--		--		--
4	9760	--	--	--		--		--
5	4880	H	90.17	-27.83	62.34	74	-11.66	Peak
6	4880	H	71.69	-27.83	43.86	54	-10.14	Avg
7	7320	--	--	--	--	--	--	--
8	9760	--	--	--	--	--	--	--

Test Mode : GFSK TX High

1	4960	V	92.91	-28.45	64.46	74	-9.54	Peak
2	4960	V	71.93	-28.45	43.48	54	-10.52	Avg
3	7440	--	--	--		--		--
4	9920	--	--	--		--		--
5	4960	H	91.47	-28.45	63.02	74	-10.98	Peak
6	4960	H	69.38	-28.45	40.93	54	-13.07	Avg
7	7440	--	--	--	--	--	--	--
8	9920	--	--	--	--	--	--	--

Note

1. Means other frequency and mode comply with standard requirements and at least have 20dB margin.

:

2. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain.

Result=Reading + Correct Factor. Margin= Result-Limit.

Test Result of Radiated Spurious at Band edges

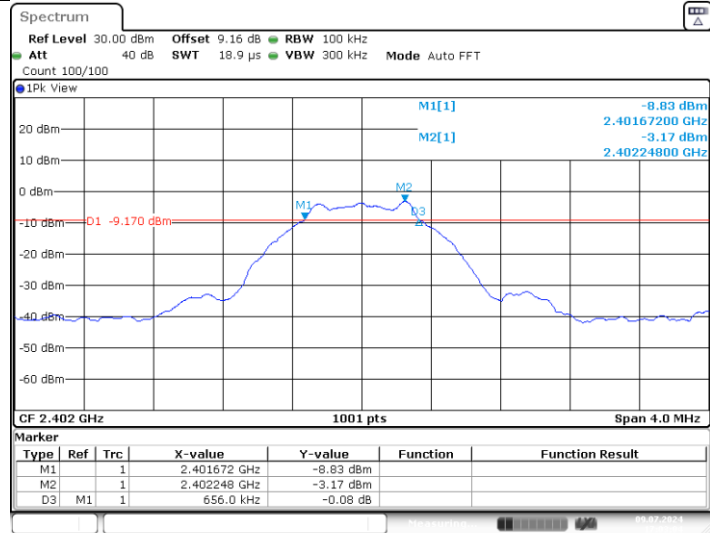
Test Results					PASS			
Frequency Range					2310MHz~2410MHz			
Test Mode					1Mbps: GFSK TX 2402MHz			
N o.	Freq MHz	Polarity	Reading (dBuV/m)	Correct Factor	Result (dBuV/m)	Limit (dBuV/m)	Margin	Remark
1	2390	H	74.92	-21.47	53.45	74.00	-20.55	Peak
2	2390	H	--	-21.47	--	54.00	--	Avg
3	2400	H	76.02	-26.12	49.90	74.00	-24.10	Peak
4	2400	H	--	-26.12	--	54.00	--	Avg
1	2390	V	71.08	-21.47	49.61	74.00	-24.39	Peak
2	2390	V	--	-21.47	--	54.00	--	Avg
3	2400	V	75.86	-26.12	49.74	74.00	-24.26	Peak
4	2400	V	--	-26.12	--	54.00	--	Avg
Test Results					PASS			
Frequency Range					2450MHz~2550MHz			
Test Mode					1Mbps: GFSK TX 2480MHz			
1	2483.5	H	76.28	-25.29	50.99	74.00	-23.01	Peak
2	2483.5	H	--	-25.29	--	54.00	--	Avg
1	2483.5	V	75.31	-25.29	50.02	74.00	-23.98	Peak
2	2483.5	V	--	-25.29	--	54.00	--	Avg
Note: 1. Means other frequency and mode comply with standard requirements and at least have 20dB margin. 2. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain. Result=Reading + Correct Factor. Margin= Result-Limit. 3. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out.								

APPENDIX E - BANDWIDTH

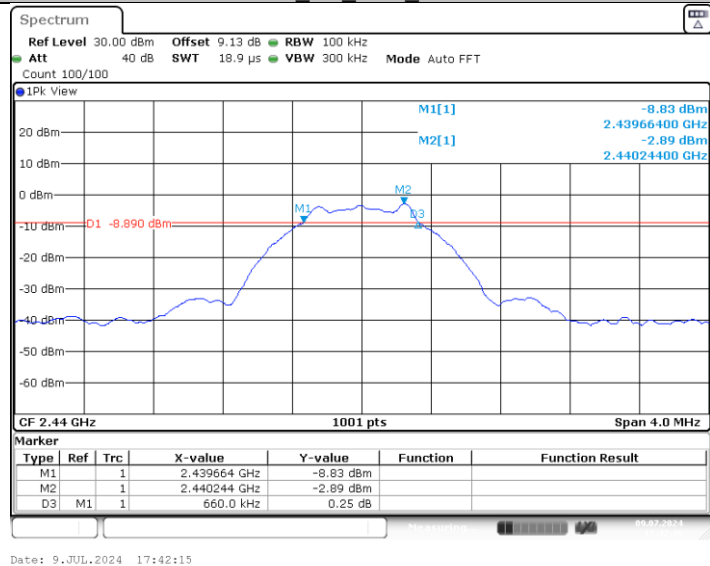
-6dB Bandwidth

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.66	2401.67	2402.33	0.5	PASS
		2440	0.66	2439.66	2440.32	0.5	PASS
		2480	0.66	2479.66	2480.32	0.5	PASS
BLE_2M	Ant1	2402	1.16	2401.42	2402.58	0.5	PASS
		2440	1.14	2439.44	2440.58	0.5	PASS
		2480	1.14	2479.44	2480.58	0.5	PASS

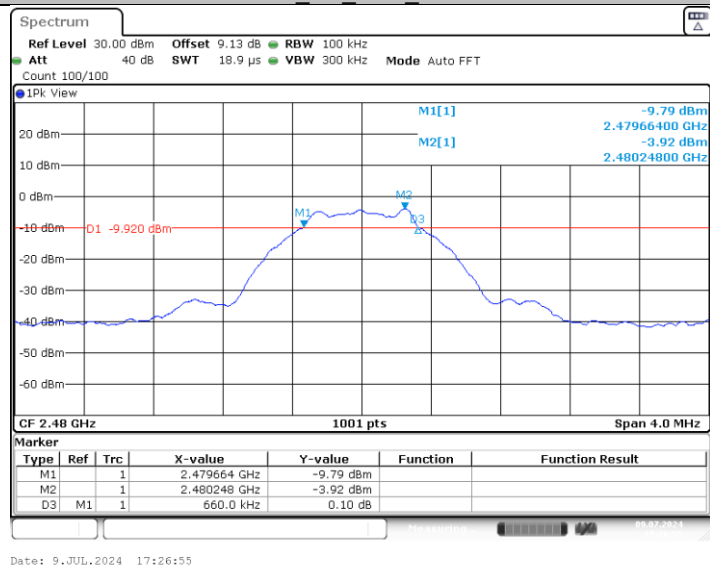
BLE_1M_Ant1_2402



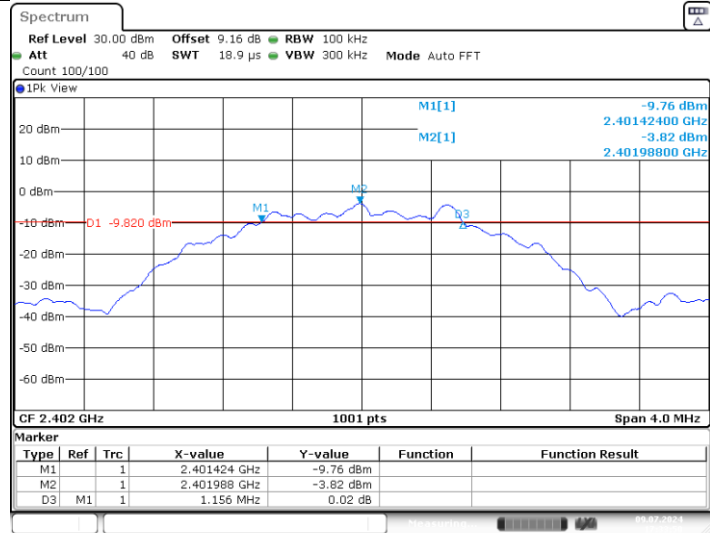
BLE_1M_Ant1_2440



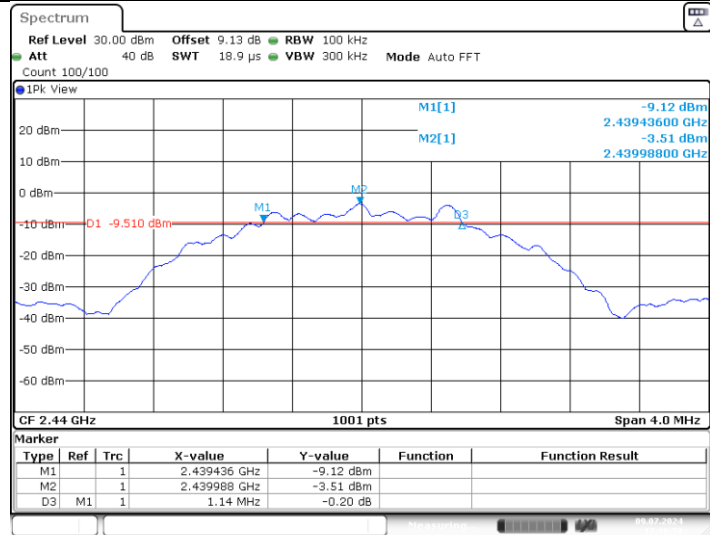
BLE_1M_Ant1_2480



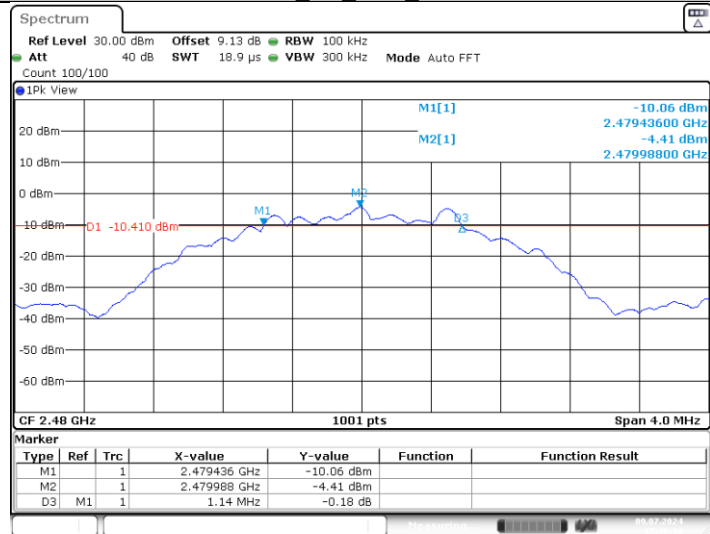
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



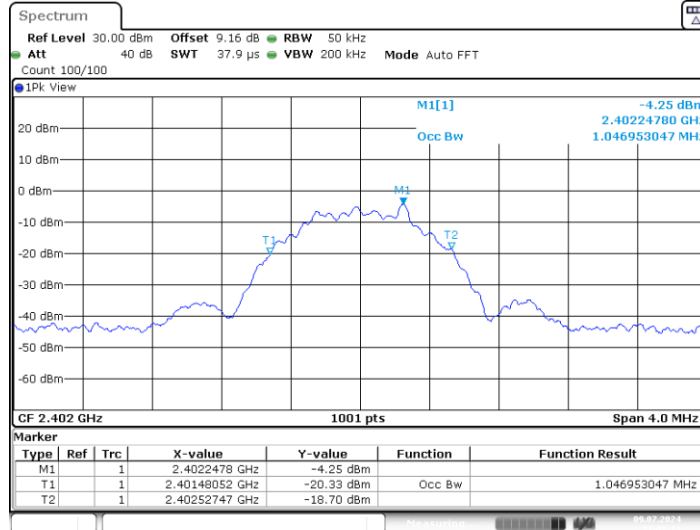
BLE_2M_Ant1_2480



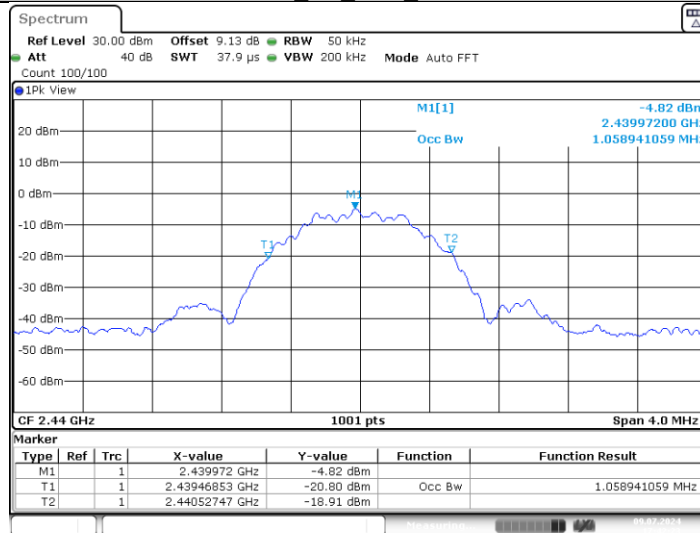
99% Occupied Bandwidth

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.047	2401.4805	2402.5275	---	---
		2440	1.059	2439.4685	2440.5275	---	---
		2480	1.051	2479.4725	2480.5235	---	---
BLE_2M	Ant1	2402	2.078	2400.9770	2403.0549	---	---
		2440	2.082	2438.9690	2441.0509	---	---
		2480	2.082	2478.9650	2481.0470	---	---

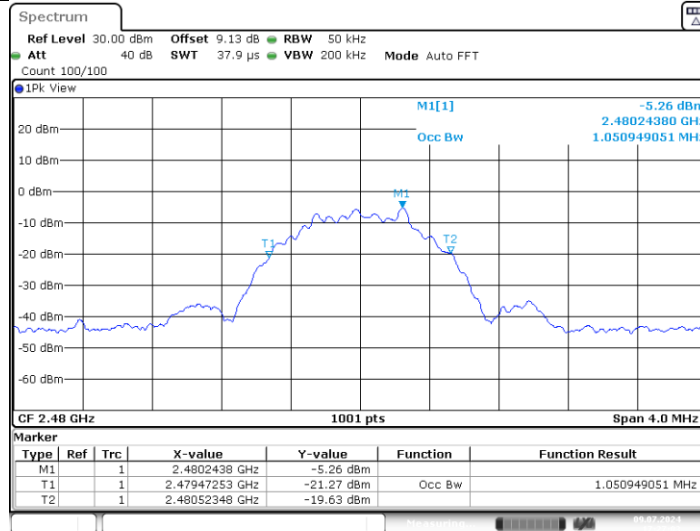
BLE 1M Ant1 2402



BLE 1M Ant1 2440

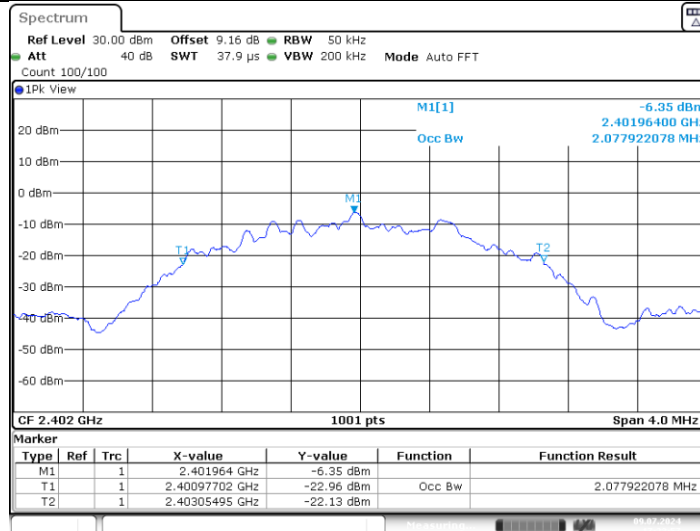


BLE 1M Ant1 2480



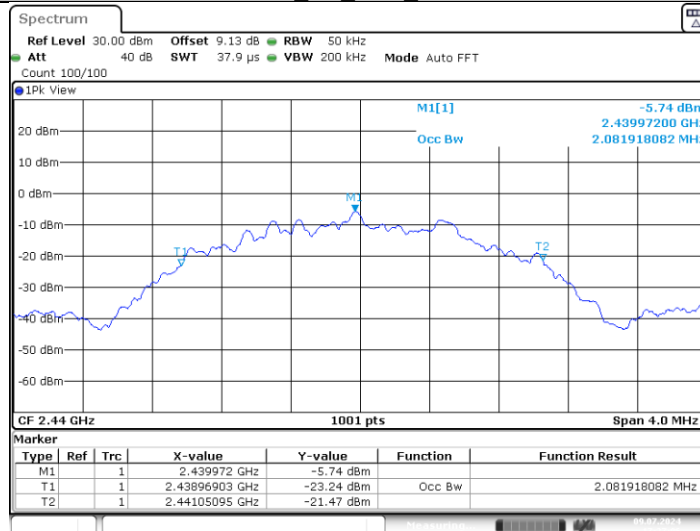
Date: 9.JUL.2024 17:27:02

BLE 2M Ant1 2402

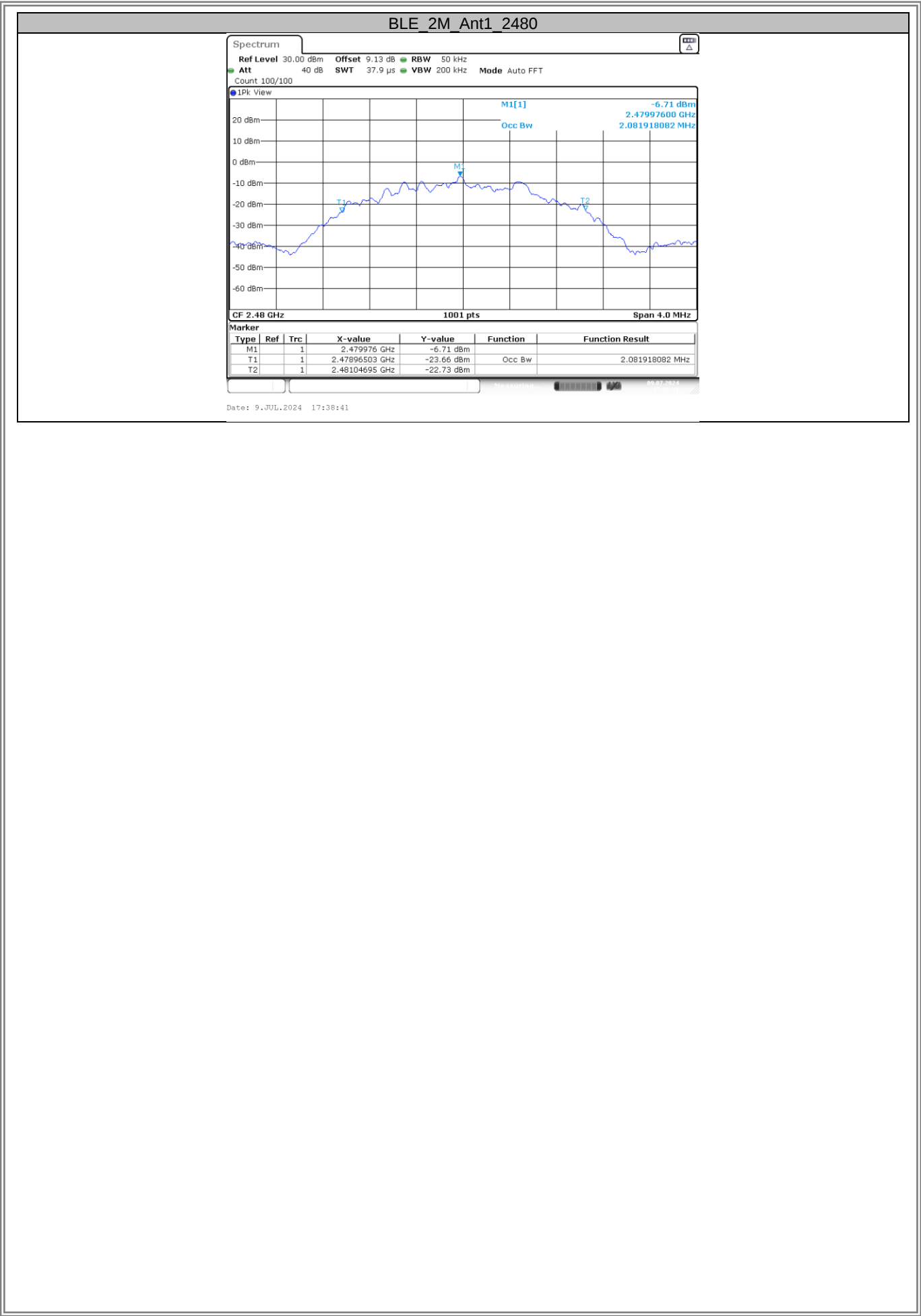


Date: 9.JUL.2024 17:33:57

BLE 2M Ant1 2440



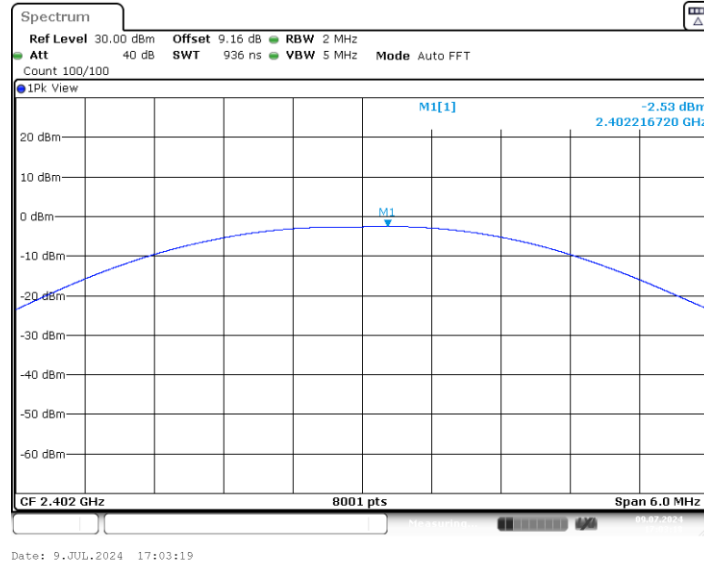
Date: 9.JUL.2024 17:37:05



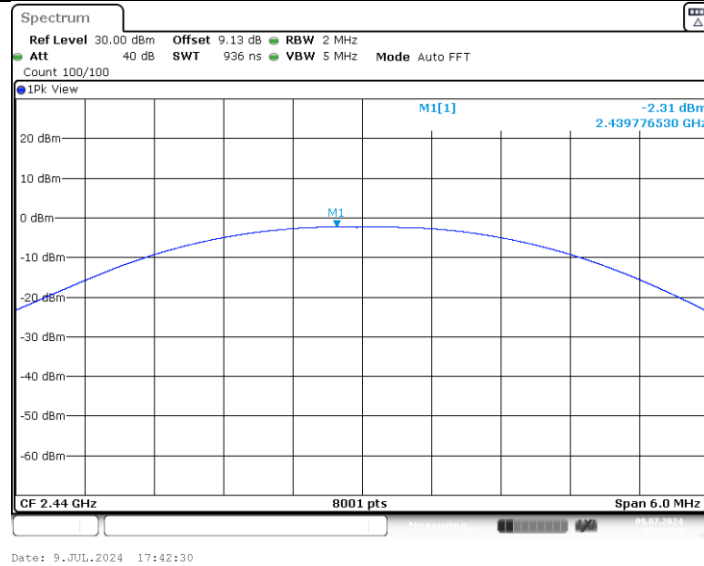
APPENDIX F - MAXIMUM OUTPUT POWER

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-2.53	≤30	PASS
		2440	-2.31	≤30	PASS
		2480	-3.14	≤30	PASS
BLE_2M	Ant1	2402	-2.42	≤30	PASS
		2440	-2.25	≤30	PASS
		2480	-3.14	≤30	PASS

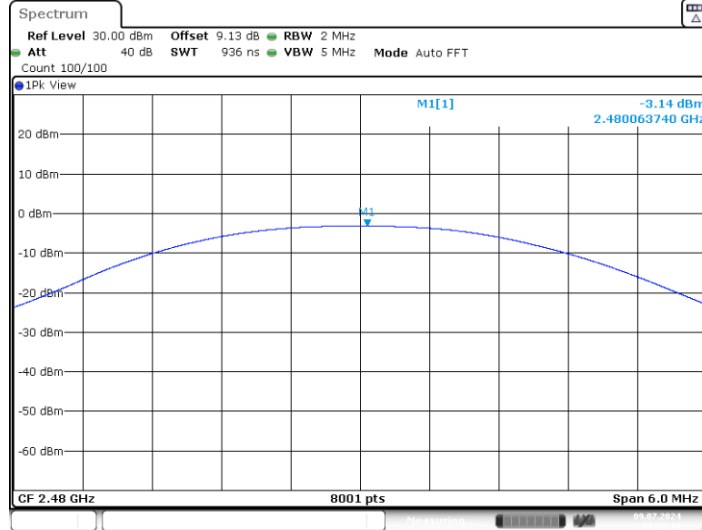
BLE 1M Ant1 2402



BLE 1M Ant1 2440

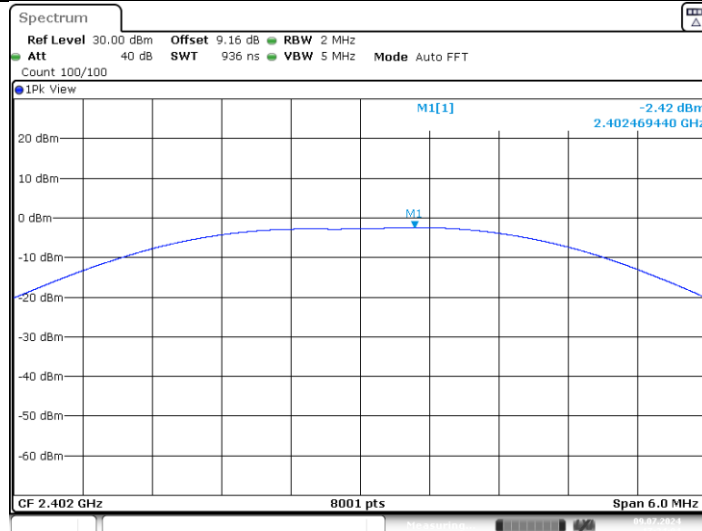


BLE 1M Ant1 2480



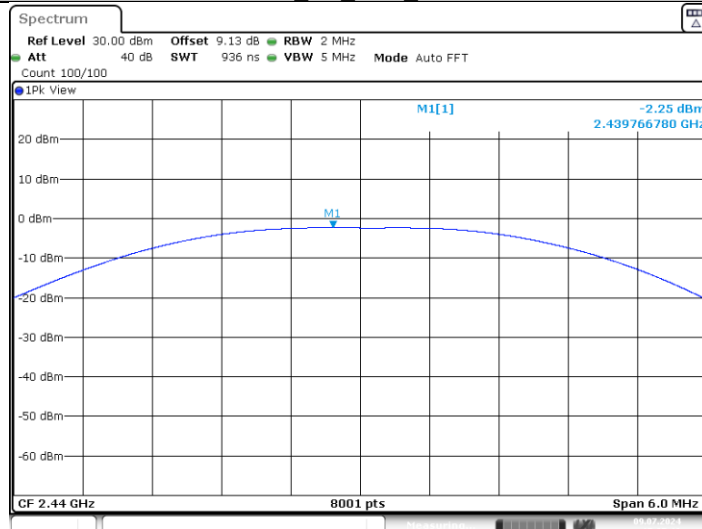
Date: 9.JUL.2024 17:27:10

BLE 2M Ant1 2402

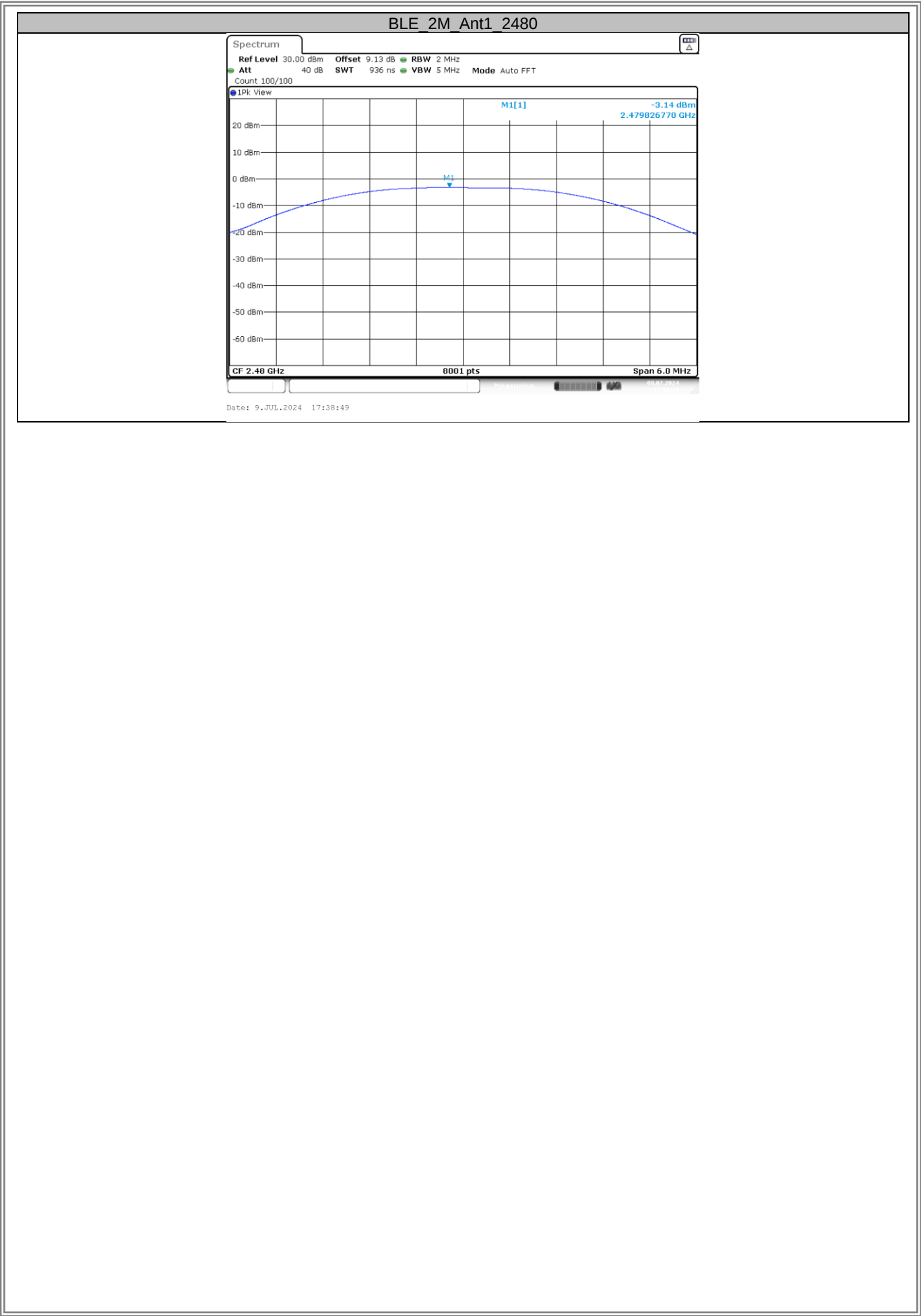


Date: 9.JUL.2024 17:34:05

BLE 2M Ant1 2440



Date: 9.JUL.2024 17:37:13

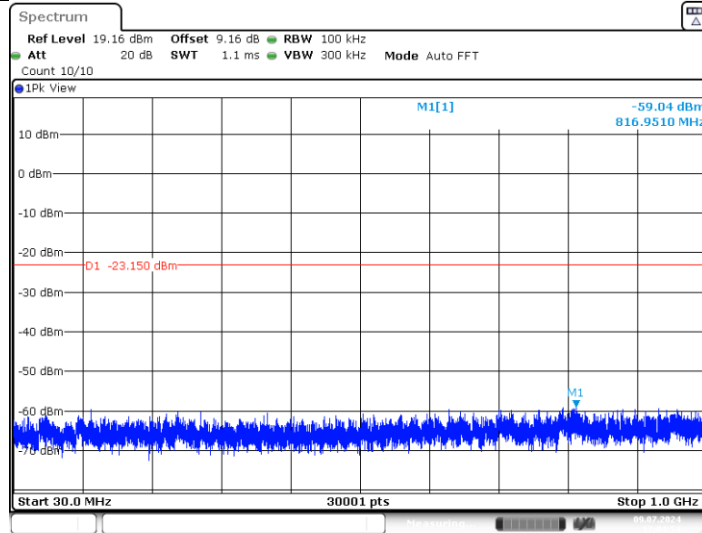


APPENDIX G - CONDUCTED SPURIOUS EMISSION

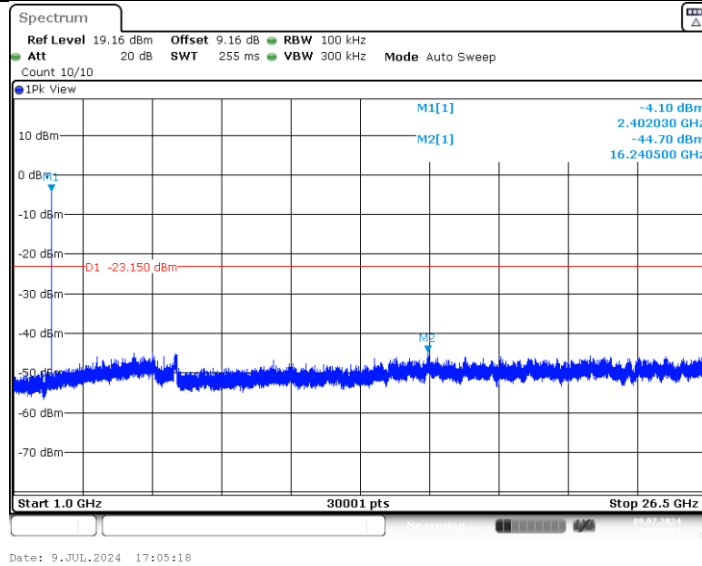
Spurious Emission

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	30~1000	-3.15	-59.04	≤-23.15	PASS
			1000~26500	-3.15	-44.7	≤-23.15	PASS
		2440	30~1000	-2.91	-58.92	≤-22.91	PASS
			1000~26500	-2.91	-44.96	≤-22.91	PASS
		2480	30~1000	-3.95	-58.79	≤-23.95	PASS
			1000~26500	-3.95	-44.97	≤-23.95	PASS
BLE_2M	Ant1	2402	30~1000	-3.77	-30.84	≤-23.77	PASS
			1000~26500	-3.77	-44.64	≤-23.77	PASS
		2440	30~1000	-3.54	-58.72	≤-23.54	PASS
			1000~26500	-3.54	-45.08	≤-23.54	PASS
		2480	30~1000	-4.42	-58.28	≤-24.42	PASS
			1000~26500	-4.42	-44.88	≤-24.42	PASS

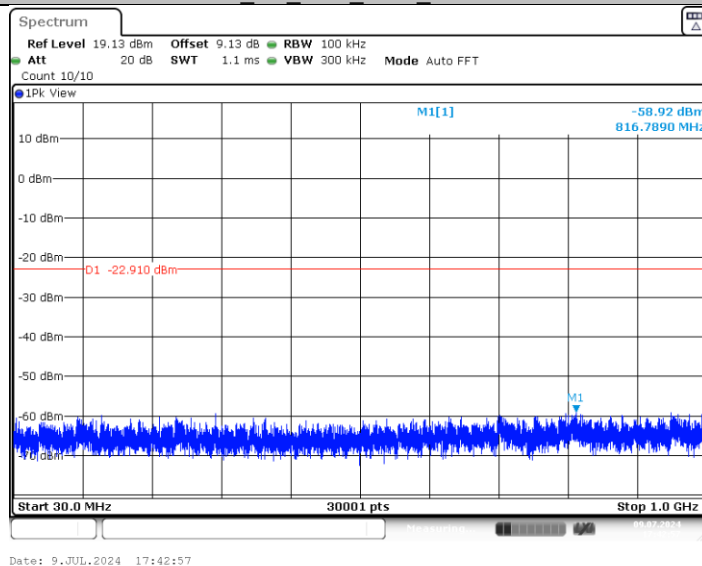
BLE 1M Ant1 2402_30~1000



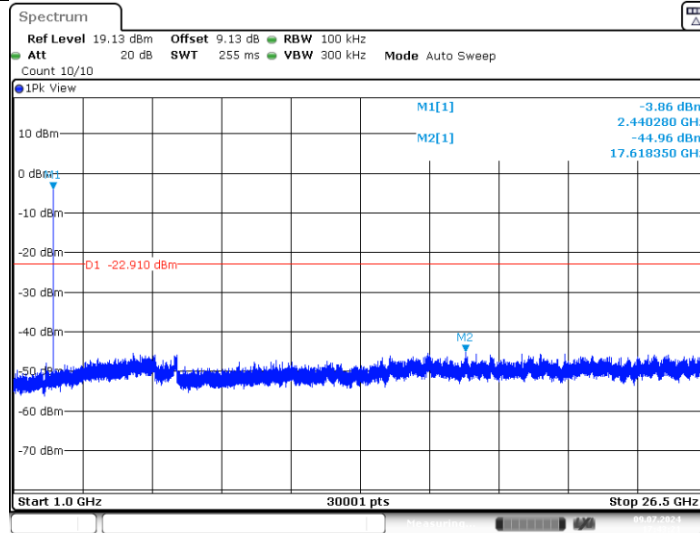
BLE 1M Ant1 2402_1000~26500



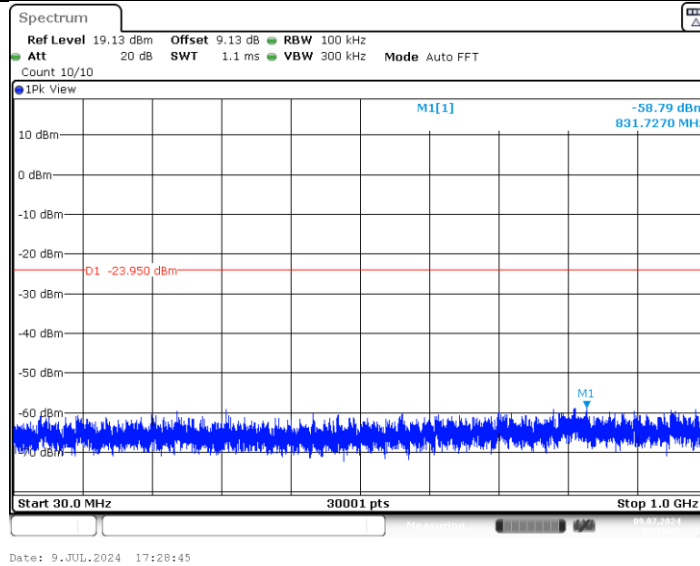
BLE 1M Ant1 2440_30~1000



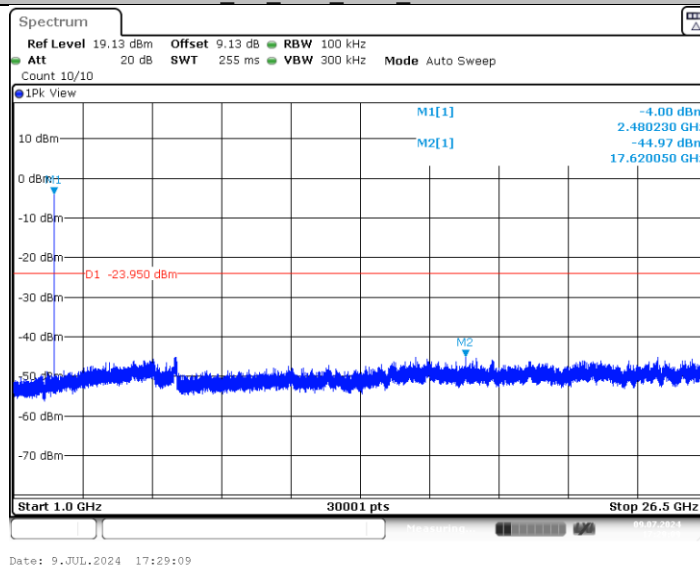
BLE_1M_Ant1_2440_1000-26500



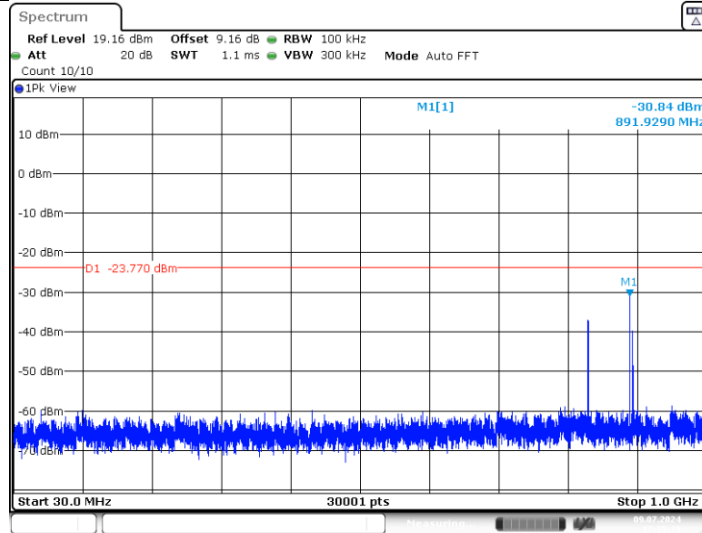
BLE_1M_Ant1_2480_30-1000



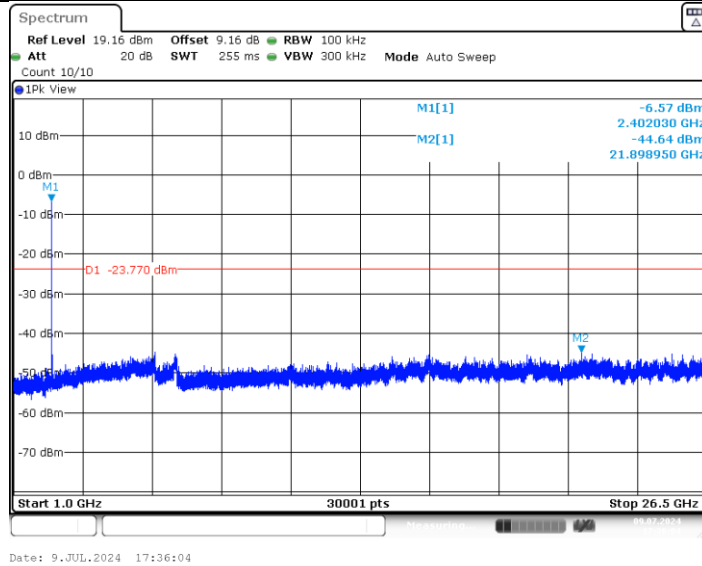
BLE_1M_Ant1_2480_1000-26500



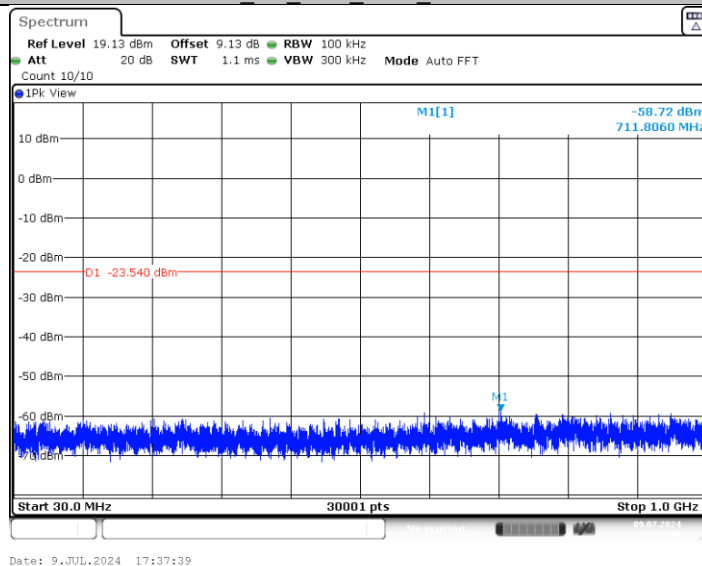
BLE_2M_Ant1_2402_30~1000



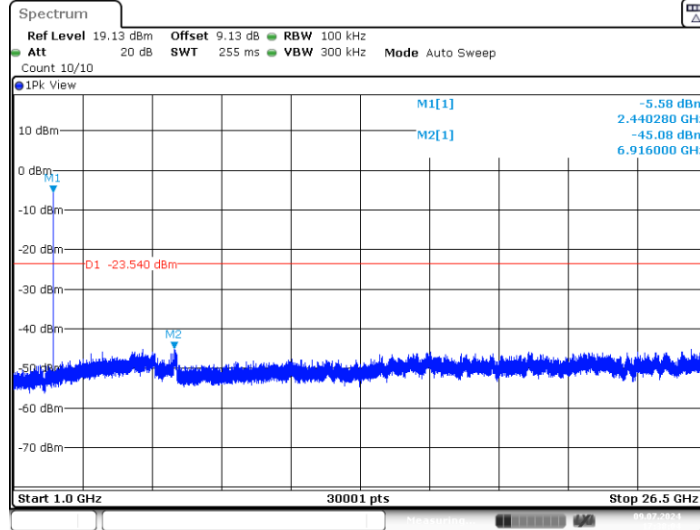
BLE_2M_Ant1_2402_1000~26500



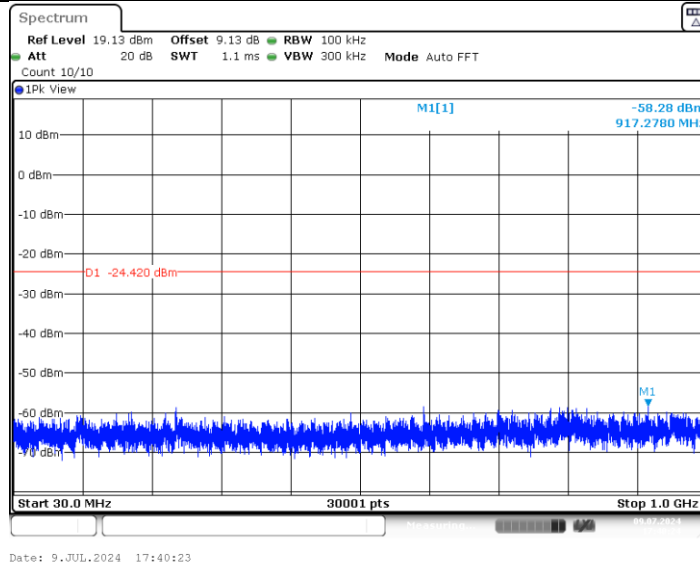
BLE_2M_Ant1_2440_30~1000



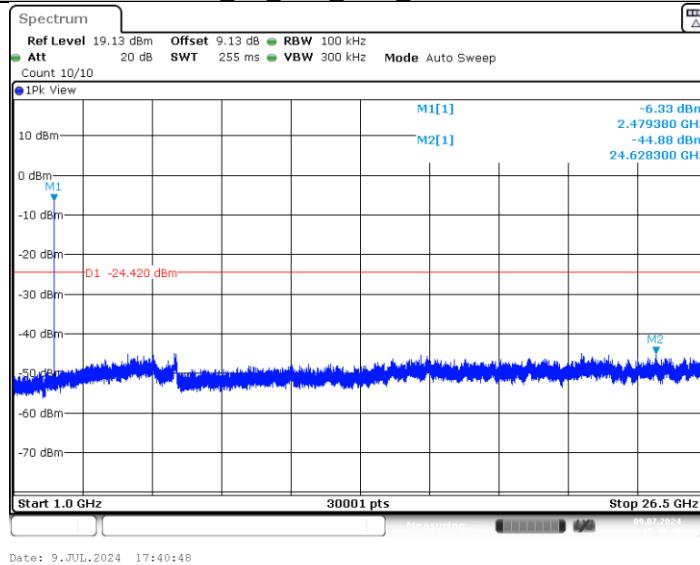
BLE 2M Ant1 2440 1000-26500



BLE 2M Ant1 2480 30-1000



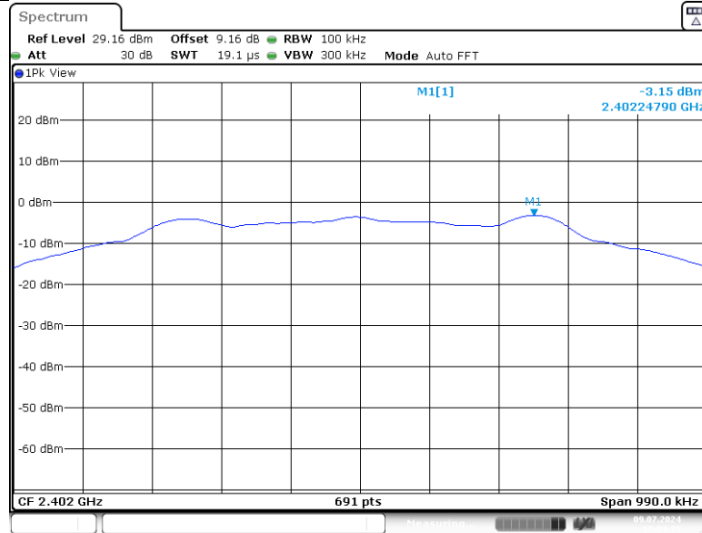
BLE 2M Ant1 2480 1000-26500



Reference level measurement

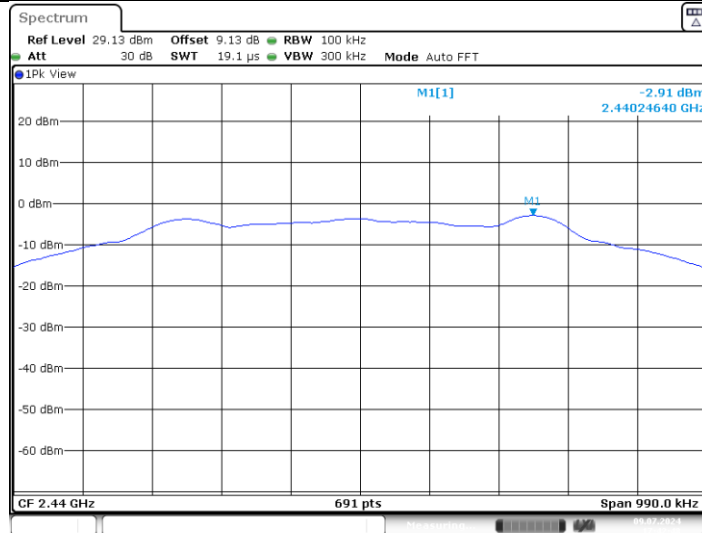
TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
BLE_1M	Ant1	2402	2402.25	-3.15
		2440	2440.25	-2.91
		2480	2480.25	-3.95
BLE_2M	Ant1	2402	2401.99	-3.77
		2440	2439.99	-3.54
		2480	2479.99	-4.42

BLE_1M_Ant1_2402



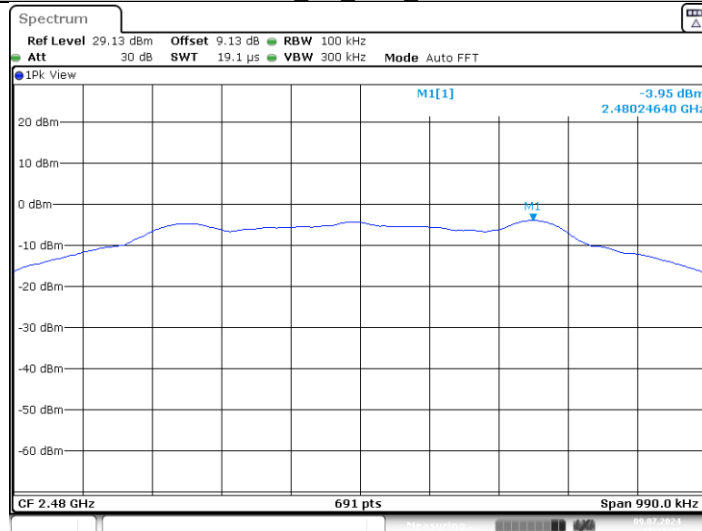
Date: 9.JUL.2024 17:04:35

BLE_1M_Ant1_2440



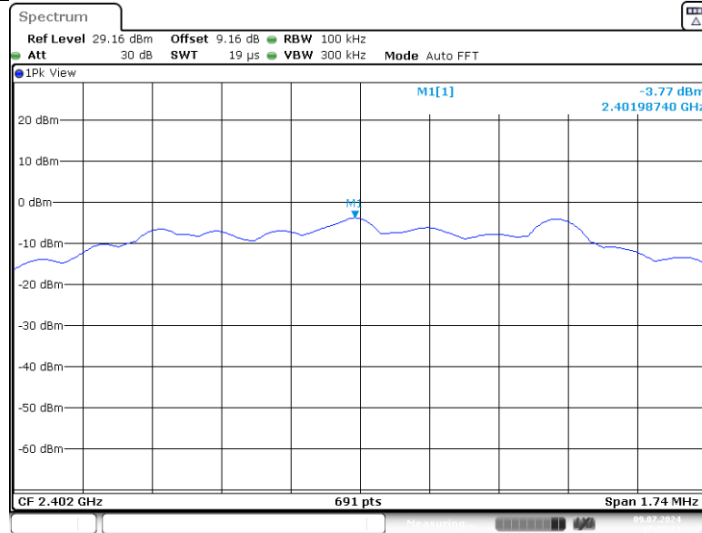
Date: 9.JUL.2024 17:42:48

BLE_1M_Ant1_2480



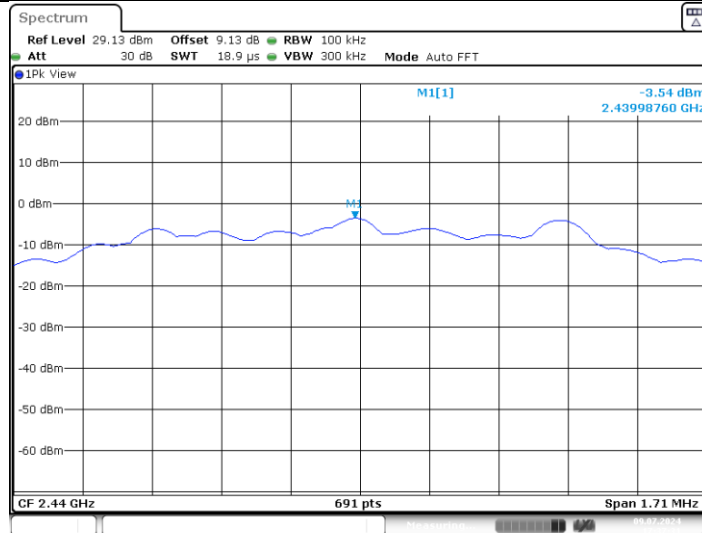
Date: 9.JUL.2024 17:28:26

BLE_2M_Ant1_2402



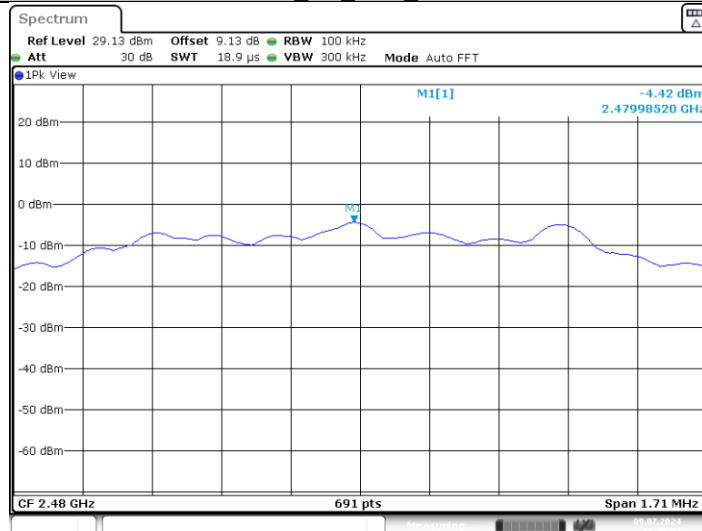
Date: 9.JUL.2024 17:35:21

BLE_2M_Ant1_2440



Date: 9.JUL.2024 17:37:31

BLE_2M_Ant1_2480

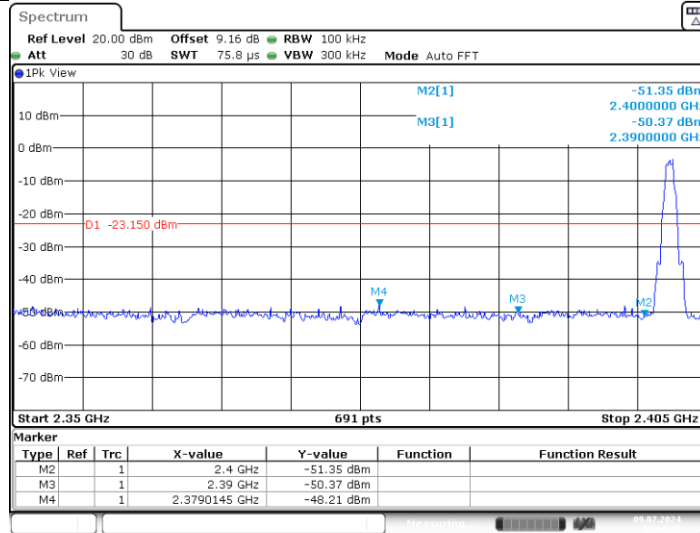


Date: 9.JUL.2024 17:40:05

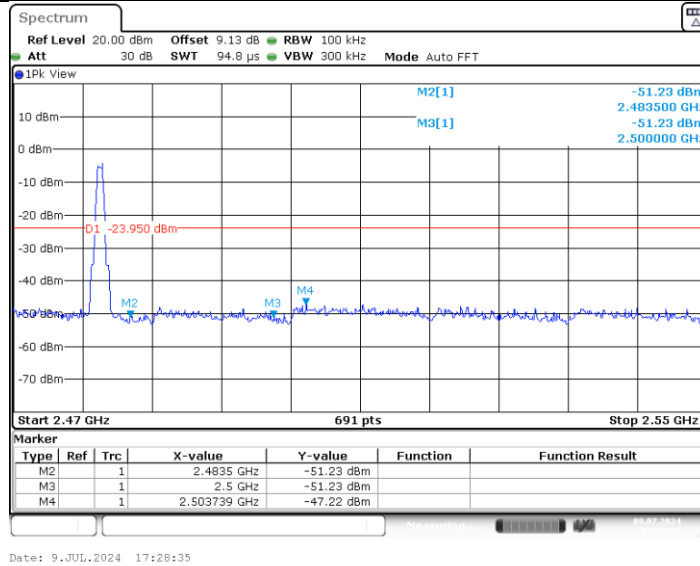
Band edge measurements

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-3.15	-48.21	≤ -23.15	PASS
		High	2480	-3.95	-47.22	≤ -23.95	PASS
BLE_2M	Ant1	Low	2402	-3.77	-36.26	≤ -23.77	PASS
		High	2480	-4.42	-47.04	≤ -24.42	PASS

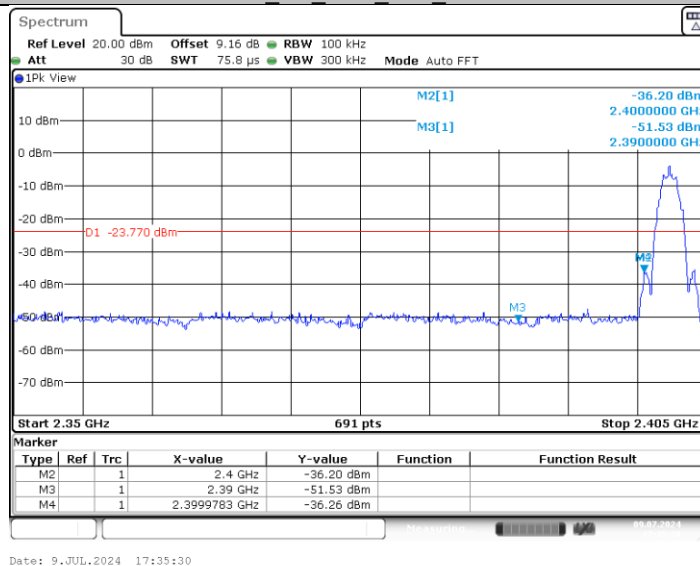
BLE 1M Ant1 Low 2402

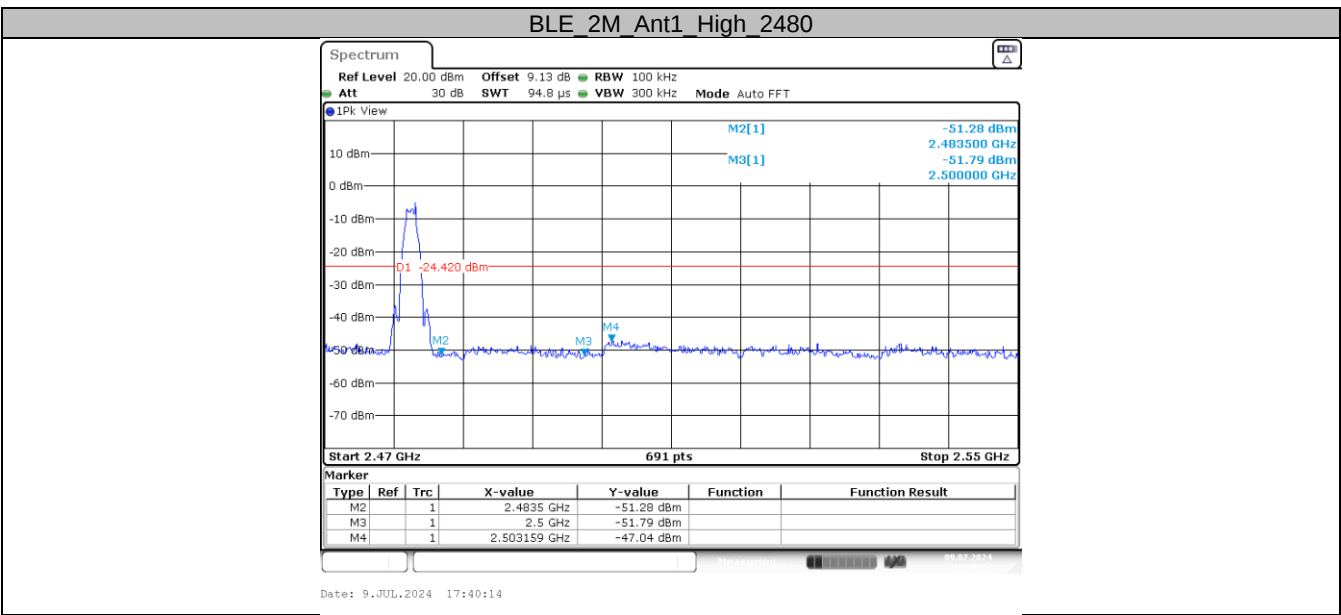


BLE 1M Ant1 High 2480



BLE 2M Ant1 Low 2402



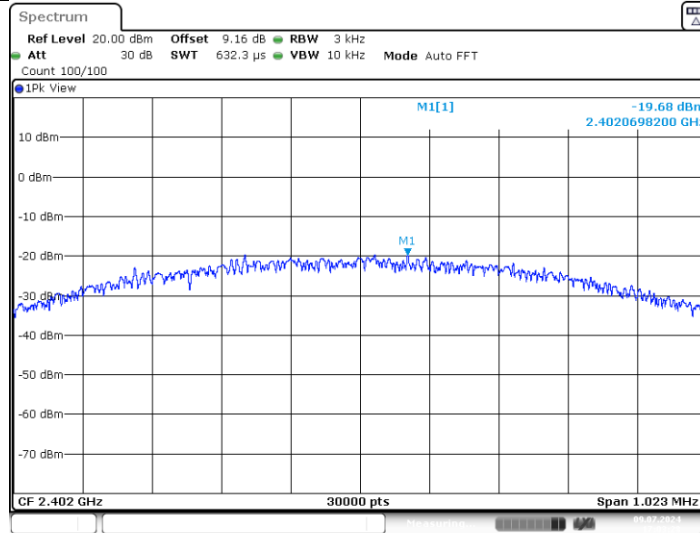


APPENDIX H- POWER SPECTRAL DENSITY

Power Spectral Density

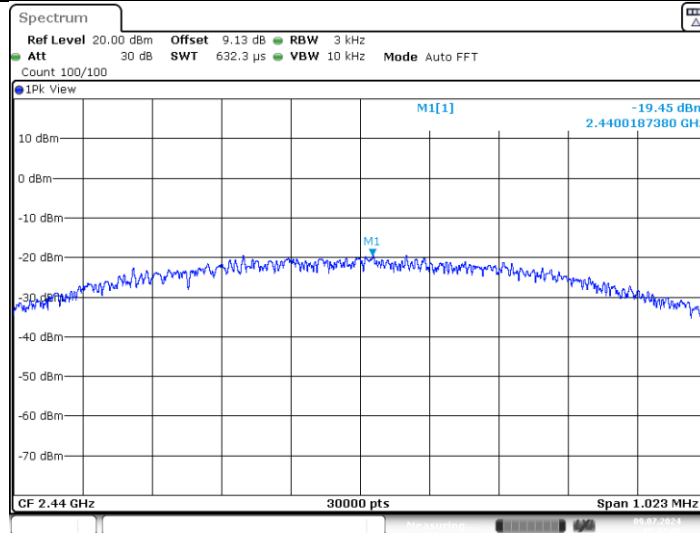
TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-19.68	≤8.00	PASS
		2440	-19.45	≤8.00	PASS
		2480	-20.44	≤8.00	PASS
BLE_2M	Ant1	2402	-21.63	≤8.00	PASS
		2440	-21.35	≤8.00	PASS
		2480	-22.24	≤8.00	PASS

BLE_1M_Ant1_2402



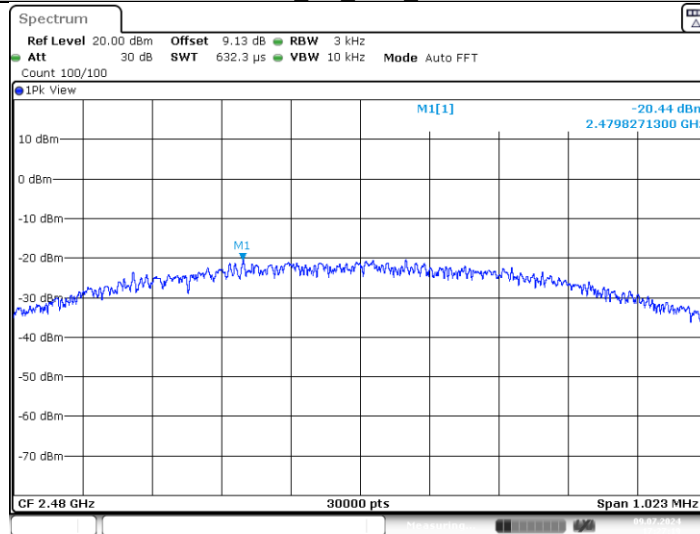
Date: 9.JUL.2024 17:03:28

BLE_1M_Ant1_2440



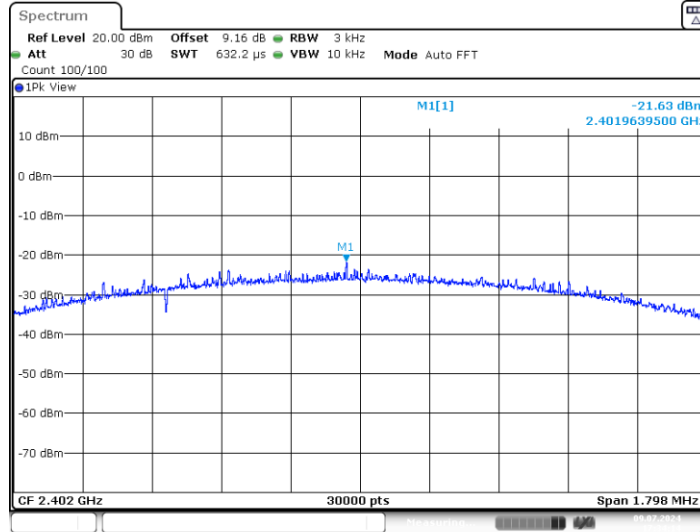
Date: 9.JUL.2024 17:42:40

BLE_1M_Ant1_2480



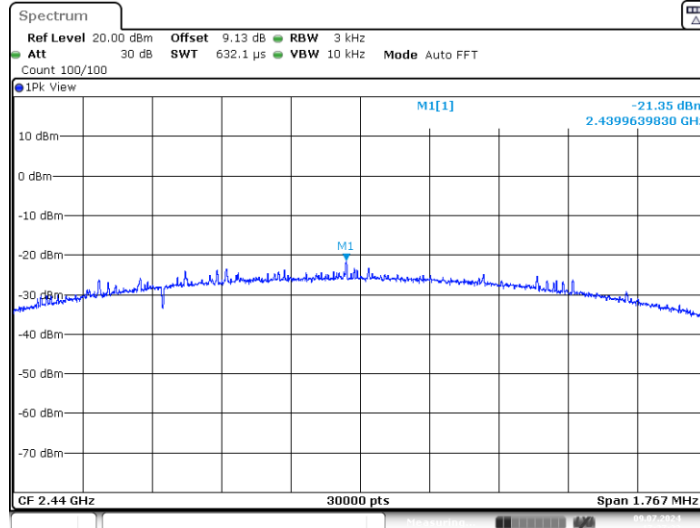
Date: 9.JUL.2024 17:27:19

BLE_2M_Ant1_2402



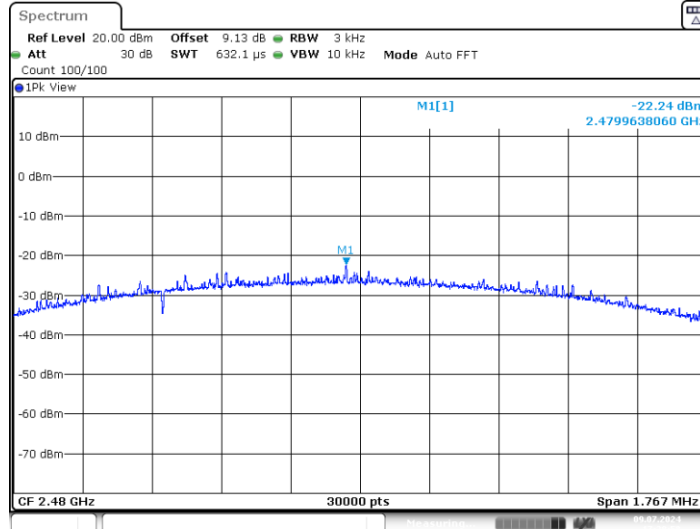
Date: 9.JUL.2024 17:34:14

BLE_2M_Ant1_2440



Date: 9.JUL.2024 17:37:23

BLE_2M_Ant1_2480

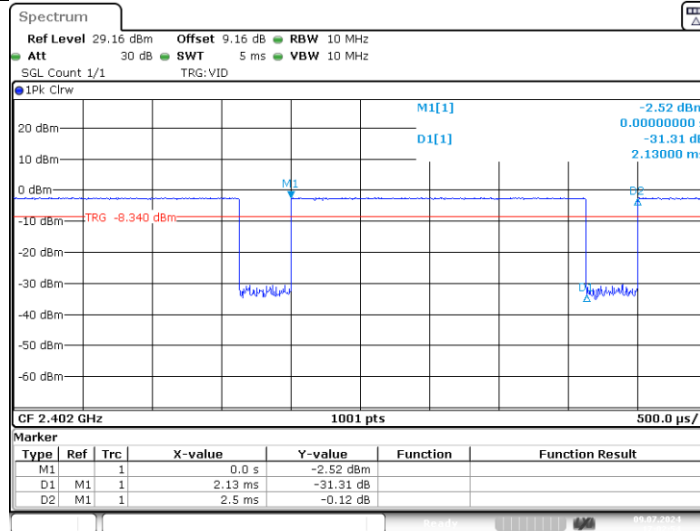


Date: 9.JUL.2024 17:38:58

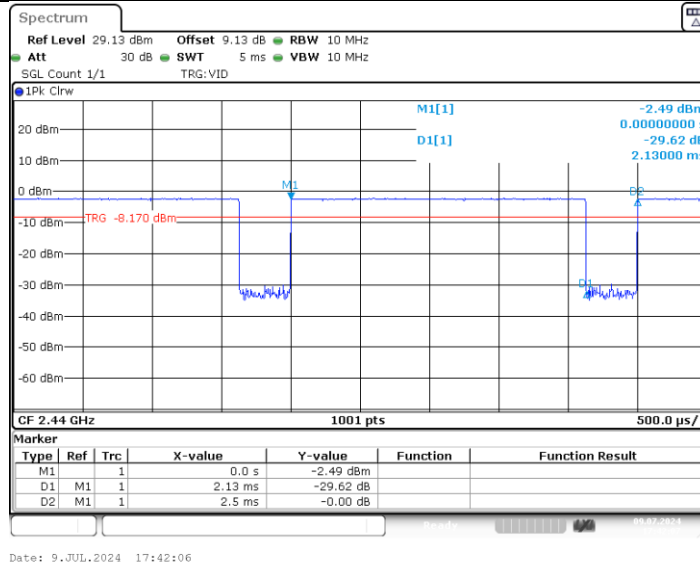
APPENDIX I DUTY CYCLE

TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	2.13	2.50	0.8520	85.20	0.70	---	---
		2440	2.13	2.50	0.8520	85.20	0.70	---	---
		2480	2.13	2.50	0.8520	85.20	0.70	---	---
BLE_2M	Ant1	2402	1.07	1.88	0.5691	56.91	2.45	---	---
		2440	1.07	1.88	0.5691	56.91	2.45	---	---
		2480	1.07	1.88	0.5691	56.91	2.45	---	---

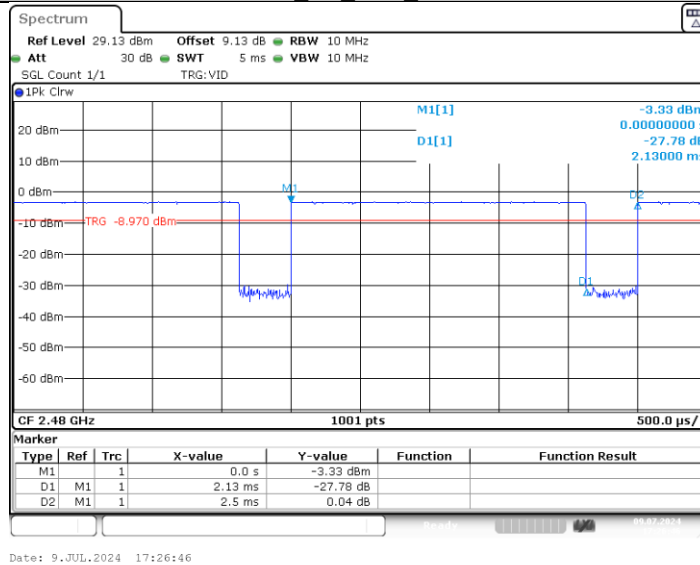
BLE 1M Ant1 2402

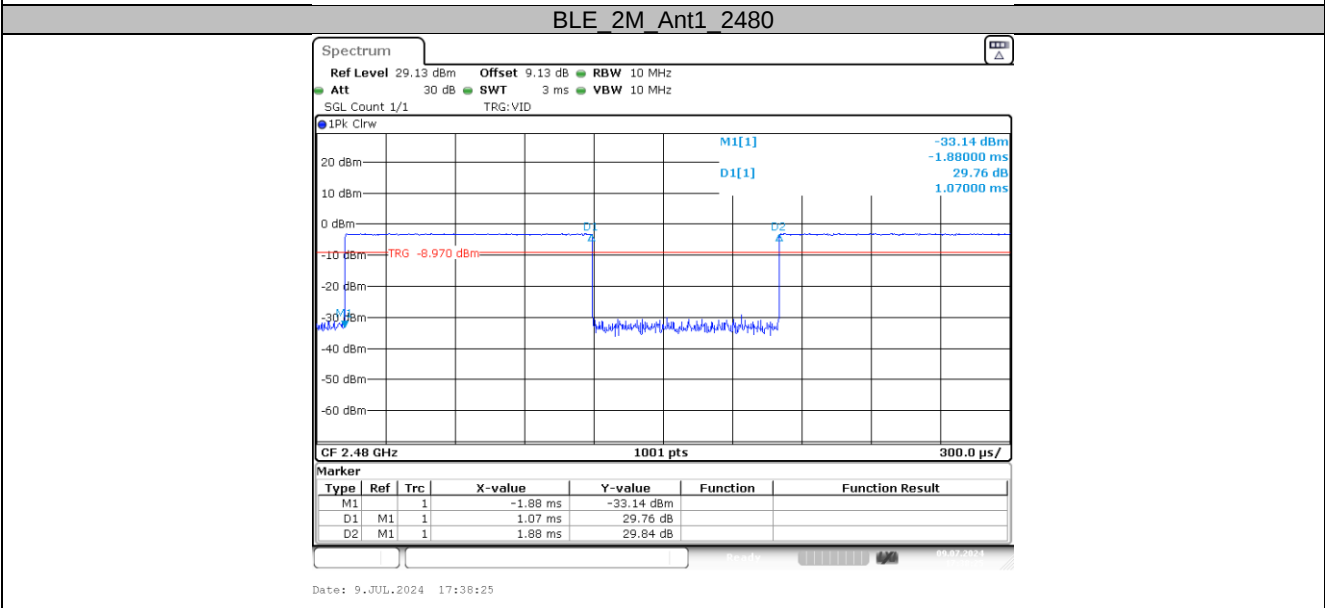
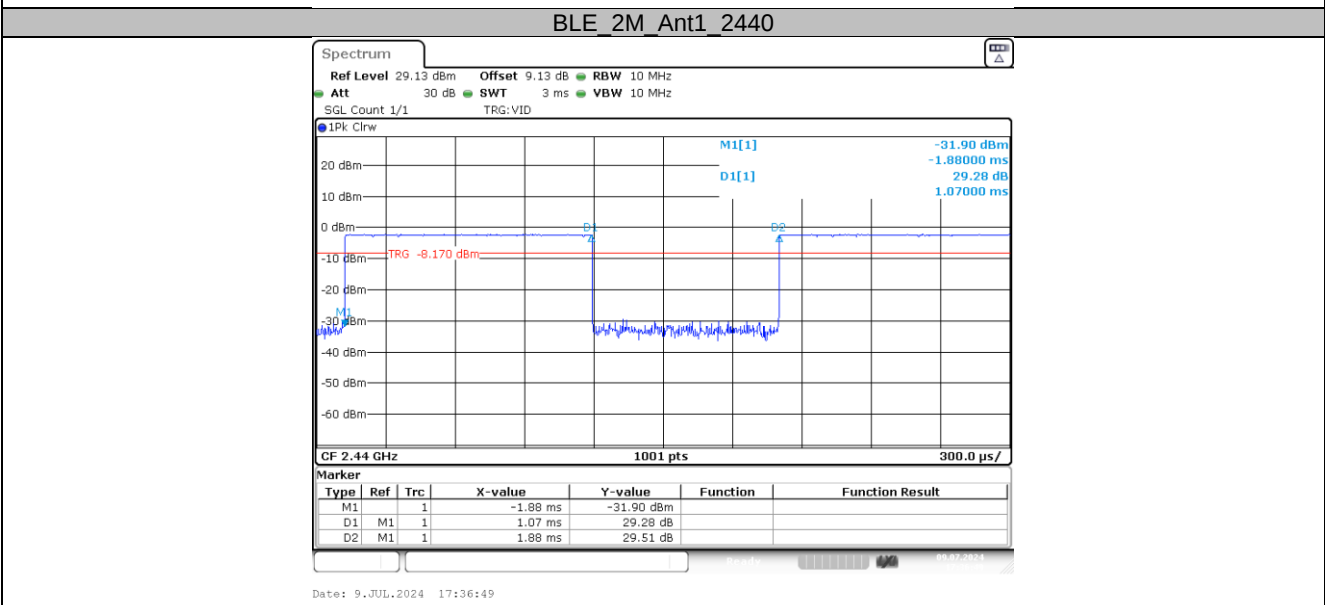
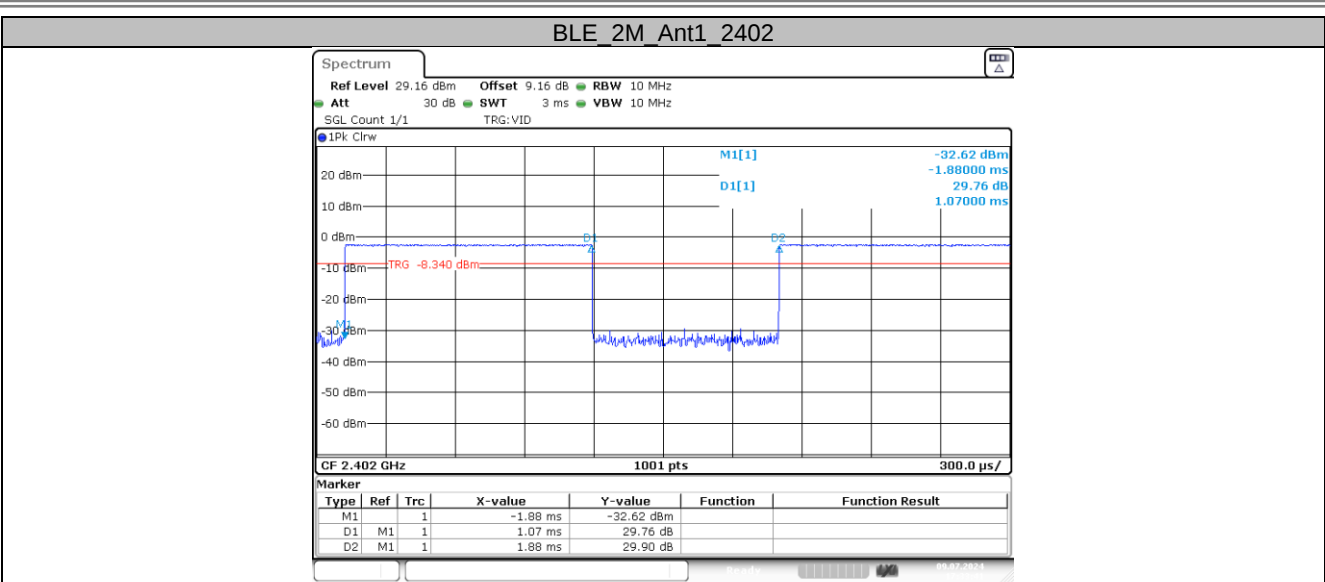


BLE 1M Ant1 2440



BLE 1M Ant1 2480





End of Test Report