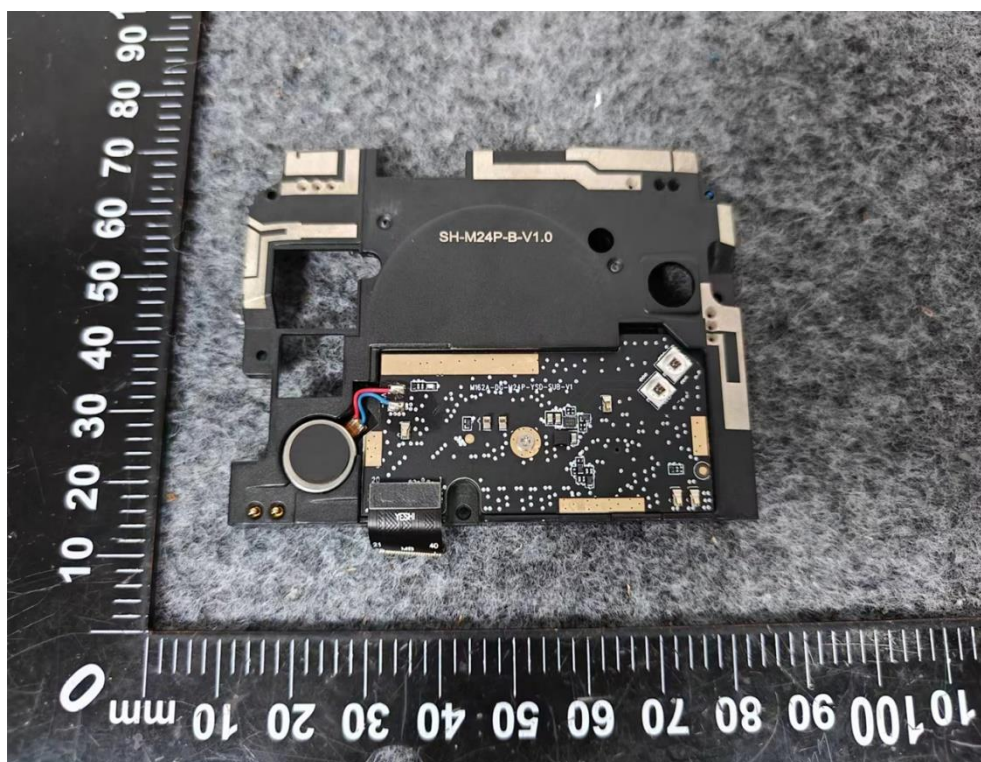
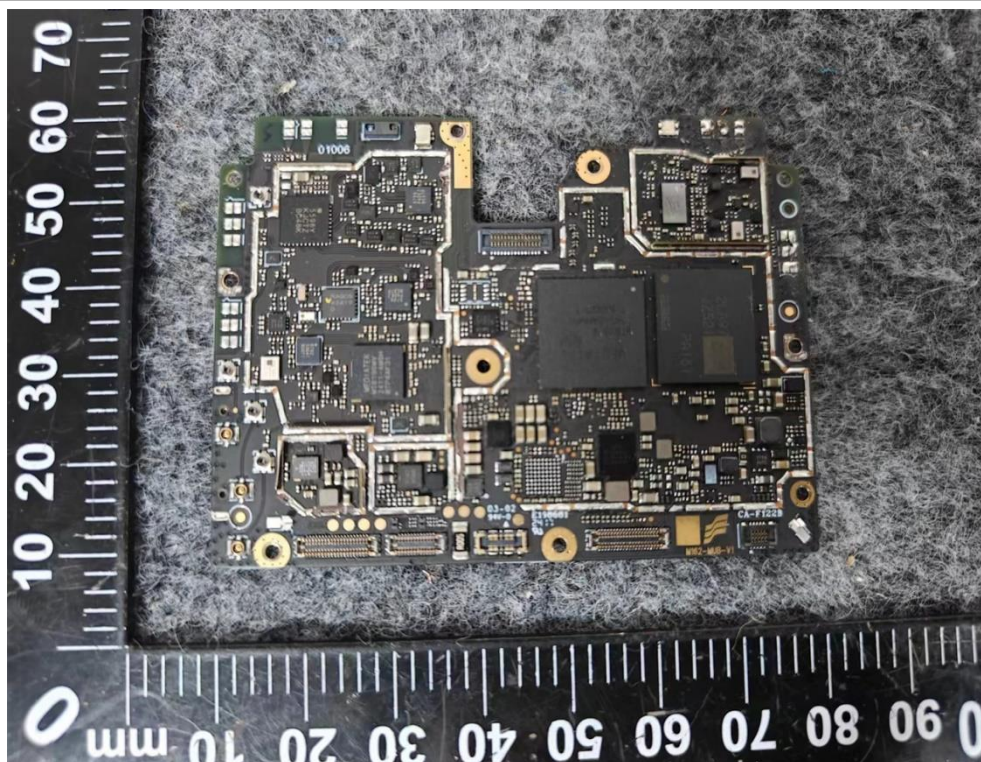
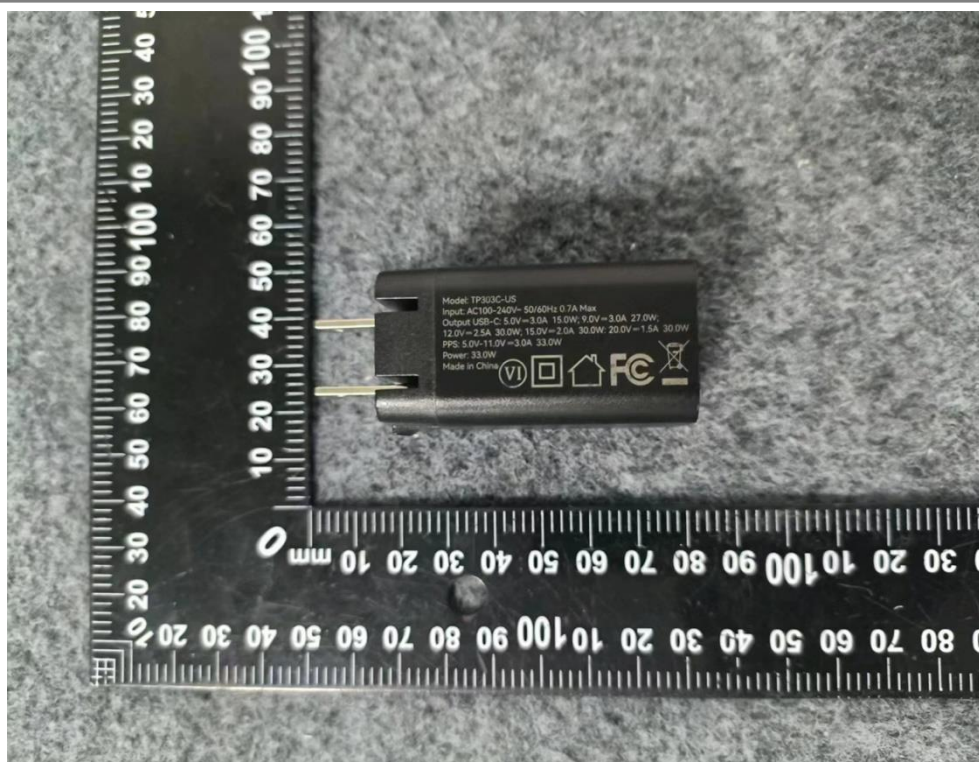


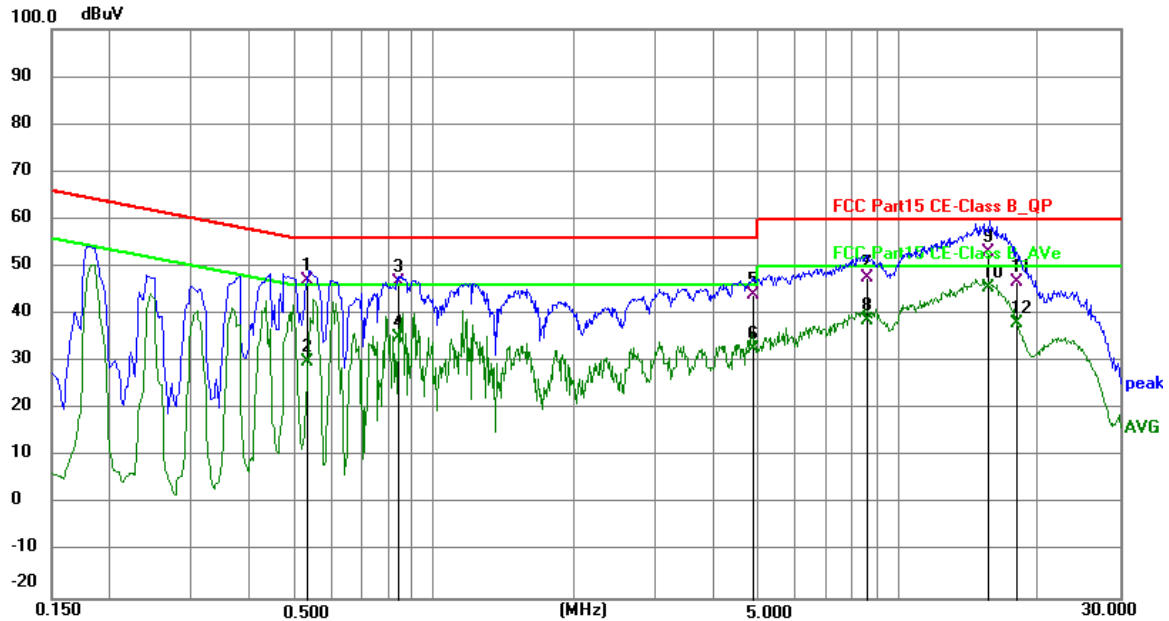




APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS

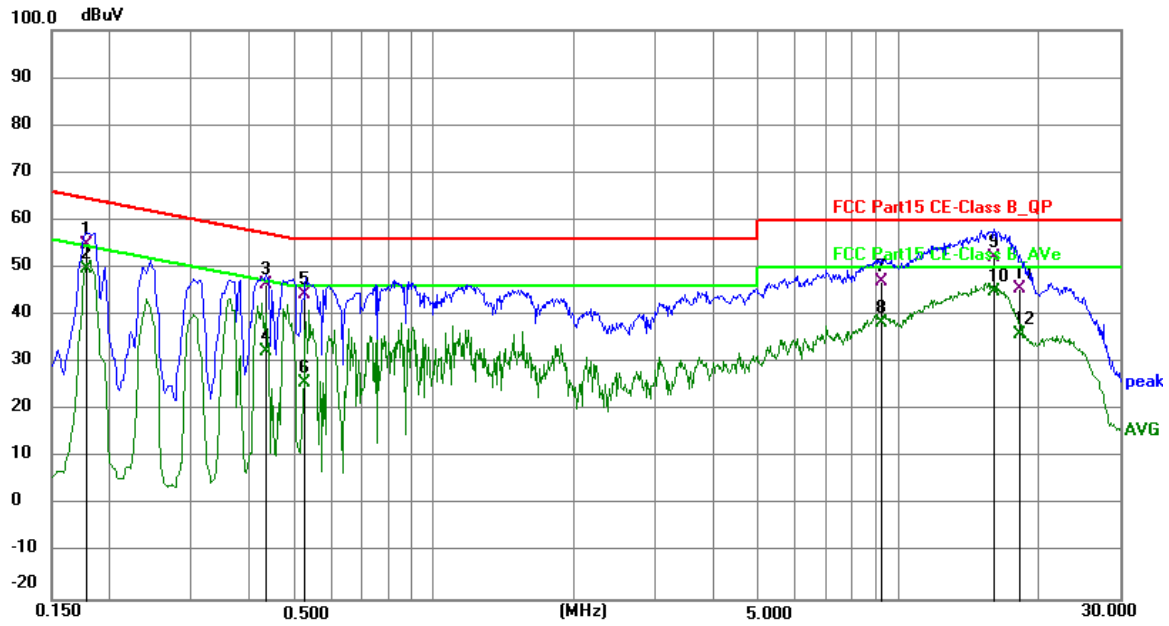
Only show the worst mode: GFSK 1M 2402MHz:

Polarization: Line



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.5326	37.37	9.62	46.99	56.00	-9.01	QP	P	
2	0.5326	20.45	9.62	30.07	46.00	-15.93	AVG	P	
3	0.8409	37.08	9.63	46.71	56.00	-9.29	QP	P	
4	0.8409	25.29	9.63	34.92	46.00	-11.08	AVG	P	
5	4.8743	34.39	9.68	44.07	56.00	-11.93	QP	P	
6	4.8743	22.91	9.68	32.59	46.00	-13.41	AVG	P	
7	8.5936	37.94	9.72	47.66	60.00	-12.34	QP	P	
8	8.5936	28.99	9.72	38.71	50.00	-11.29	AVG	P	
9	15.7749	43.17	9.75	52.92	60.00	-7.08	QP	P	
10 *	15.7749	35.91	9.75	45.66	50.00	-4.34	AVG	P	
11	17.9619	36.86	9.77	46.63	60.00	-13.37	QP	P	
12	17.9619	28.14	9.77	37.91	50.00	-12.09	AVG	P	

Polarization: Neutral



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1794	45.14	9.63	54.77	64.51	-9.74	QP	P	
2 *	0.1794	40.21	9.63	49.84	54.51	-4.67	AVG	P	
3	0.4370	36.97	9.62	46.59	57.12	-10.53	QP	P	
4	0.4370	22.64	9.62	32.26	47.12	-14.86	AVG	P	
5	0.5233	34.74	9.62	44.36	56.00	-11.64	QP	P	
6	0.5233	16.16	9.62	25.78	46.00	-20.22	AVG	P	
7	9.1841	37.32	9.72	47.04	60.00	-12.96	QP	P	
8	9.1841	28.70	9.72	38.42	50.00	-11.58	AVG	P	
9	16.1137	42.30	9.77	52.07	60.00	-7.93	QP	P	
10	16.1137	35.17	9.77	44.94	50.00	-5.06	AVG	P	
11	18.2414	35.72	9.80	45.52	60.00	-14.48	QP	P	
12	18.2414	26.02	9.80	35.82	50.00	-14.18	AVG	P	

APPENDIX B - RADIATED EMISSION -9 KHZ TO 30 MHZ

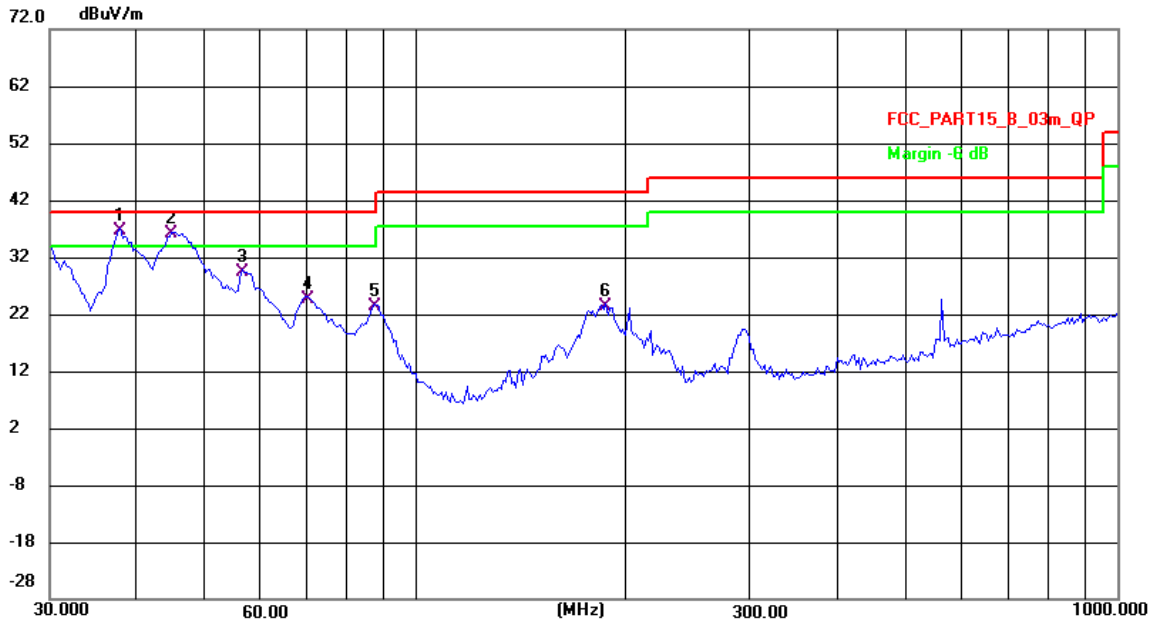
The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

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
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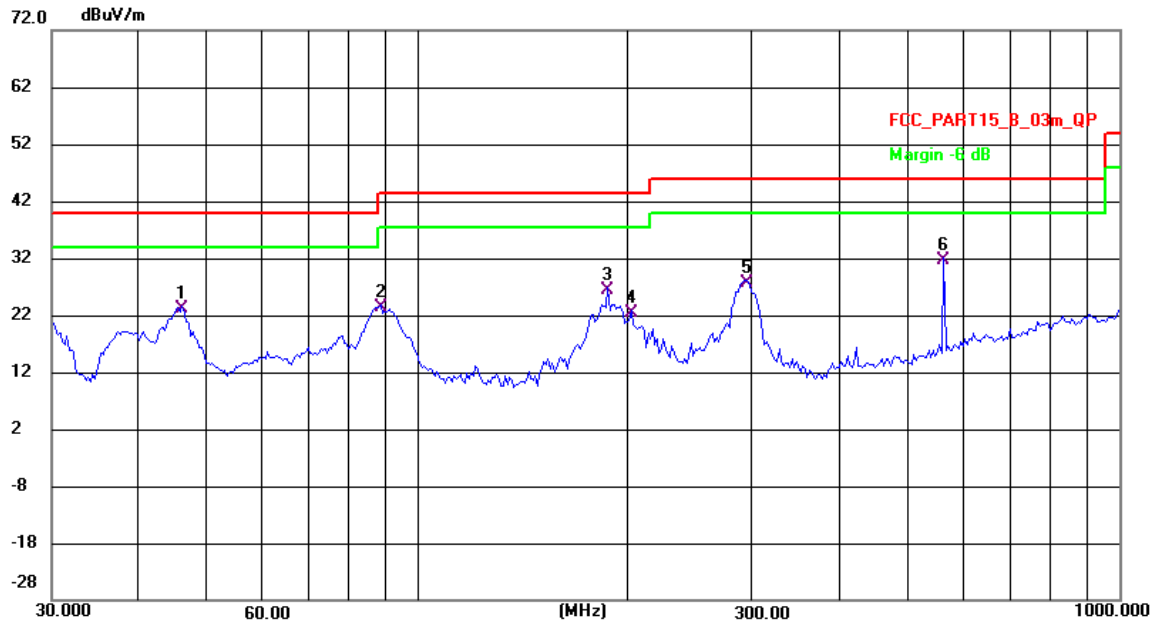


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1 *	37.8297	59.06	-22.44	36.62	40.00	-3.38	QP	100	97	P	
2 !	44.7793	58.27	-22.23	36.04	40.00	-3.96	QP	200	248	P	
3	56.4662	51.86	-22.44	29.42	40.00	-10.58	QP	100	125	P	
4	70.2096	48.75	-24.07	24.68	40.00	-15.32	QP	100	133	P	
5	87.2980	49.19	-25.78	23.41	40.00	-16.59	QP	100	67	P	
6	186.4684	46.76	-23.43	23.33	43.50	-20.17	QP	200	234	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	Height (cm)	Azimuth (deg.)	P/F	Remark
1	46.0558	45.32	-22.19	23.13	40.00	-16.87	QP	100	348	P	
2	88.5336	49.12	-25.76	23.36	43.50	-20.14	QP	200	12	P	
3	186.4684	49.88	-23.43	26.45	43.50	-17.05	QP	200	289	P	
4	201.4539	47.17	-24.74	22.43	43.50	-21.07	QP	100	96	P	
5	294.4260	50.08	-22.37	27.71	46.00	-18.29	QP	100	268	P	
6 *	562.0143	46.72	-15.03	31.69	46.00	-14.31	QP	200	295	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, Only show the worst mode: GFSK 1M

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	89.36	-27.15	62.21	74	-11.79	Peak
2	4804	V	68.64	-27.15	41.49	54	-12.51	Avg
3	7206	--	--	--	--	--	--	--
4	9608	--	--	--	--	--	--	--
5	4804	H	90.35	-27.15	63.2	74	-10.8	Peak
6	4804	H	67.59	-27.15	40.44	54	-13.56	Avg
7	7206	--	--	--	--	--	--	--
8	9608	--	--	--	--	--	--	--

Test Mode : GFSK TX Mid

1	4880	V	91.35	-27.83	63.52	74	-10.48	Peak
2	4880	V	70.28	-27.83	42.45	54	-11.55	Avg
3	7320	--	--	--	--	--	--	--
4	9760	--	--	--	--	--	--	--
5	4880	H	89.96	-27.83	62.13	74	-11.87	Peak
6	4880	H	70.28	-27.83	42.45	54	-11.55	Avg
7	7320	--	--	--	--	--	--	--
8	9760	--	--	--	--	--	--	--

Test Mode : GFSK TX High

1	4960	V	91.86	-28.45	63.41	74	-10.59	Peak
2	4960	V	70.27	-28.45	41.82	54	-12.18	Avg
3	7440	--	--	--	--	--	--	--
4	9920	--	--	--	--	--	--	--
5	4960	H	89.64	-28.45	61.19	74	-12.81	Peak
6	4960	H	70.28	-28.45	41.83	54	-12.17	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

Only show the worst mode: GFSK 1M

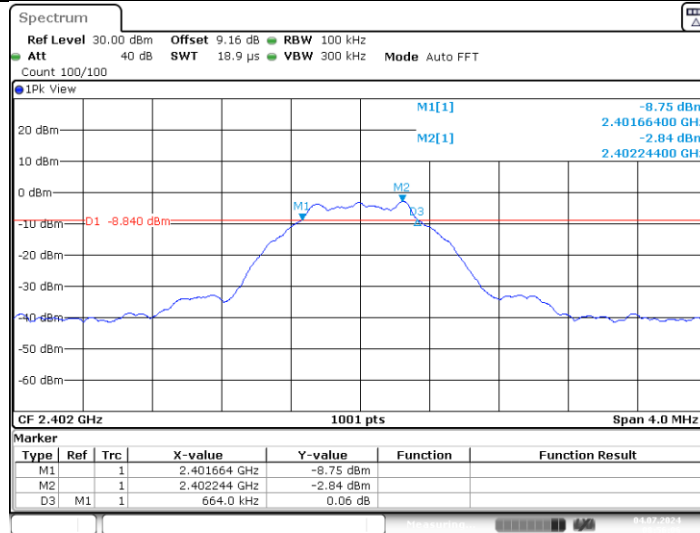
Test Results					PASS			
Frequency Range					2310MHz~2410MHz			
Test Mode					1Mbps: GFSK TX 2402MHz			
N o.	Freq MHz	Polarity	Reading (dBuV/m)	Correct Factor	Result (dBuV/m)	Limit (dBuV/m)	Margin	Remark
1	2390	H	74.99	-21.47	53.52	74.00	-20.48	Peak
2	2390	H	--	-21.47	--	54.00	--	Avg
3	2400	H	73.24	-26.12	47.12	74.00	-26.88	Peak
4	2400	H	--	-26.12	--	54.00	--	Avg
1	2390	V	74.58	-21.47	53.11	74.00	-20.89	Peak
2	2390	V	--	-21.47	--	54.00	--	Avg
3	2400	V	74.04	-26.12	47.92	74.00	-26.08	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	78.31	-25.29	53.02	74.00	-20.98	Peak
2	2483.5	H	--	-25.29	--	54.00	--	Avg
1	2483.5	V	77.06	-25.29	51.77	74.00	-22.23	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

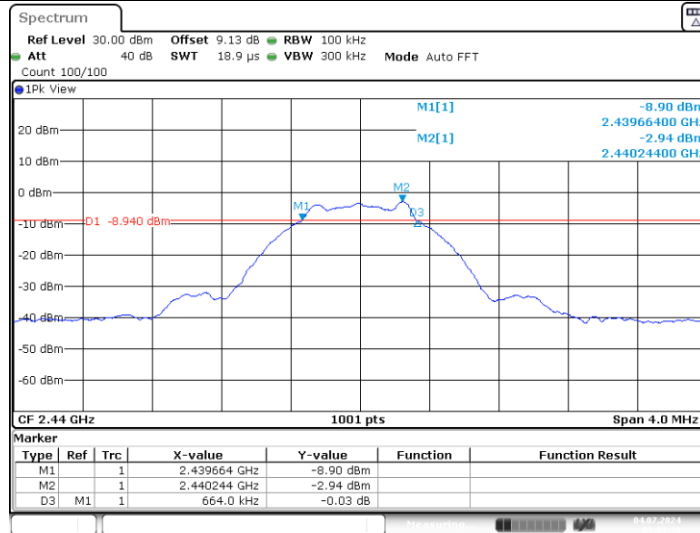
-6dB Bandwidth

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.66	2401.66	2402.33	0.5	PASS
		2440	0.66	2439.66	2440.33	0.5	PASS
		2480	0.66	2479.66	2480.32	0.5	PASS
BLE_2M	Ant1	2402	1.14	2401.44	2402.58	0.5	PASS
		2440	1.14	2439.43	2440.58	0.5	PASS
		2480	1.16	2479.42	2480.58	0.5	PASS

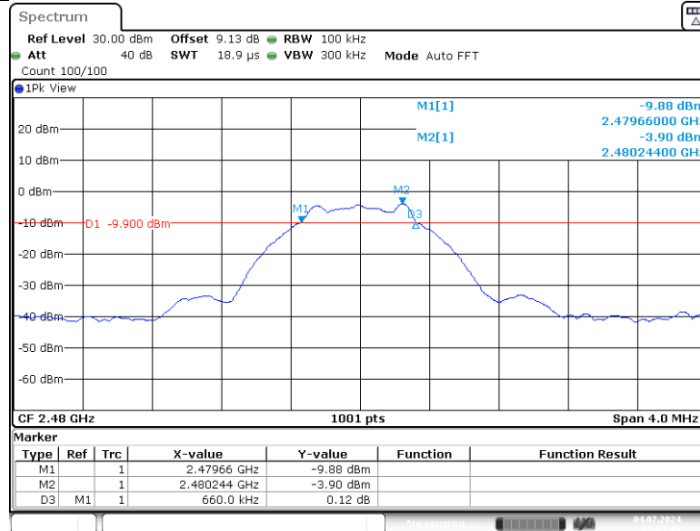
BLE_1M Ant1 2402



BLE_1M Ant1 2440

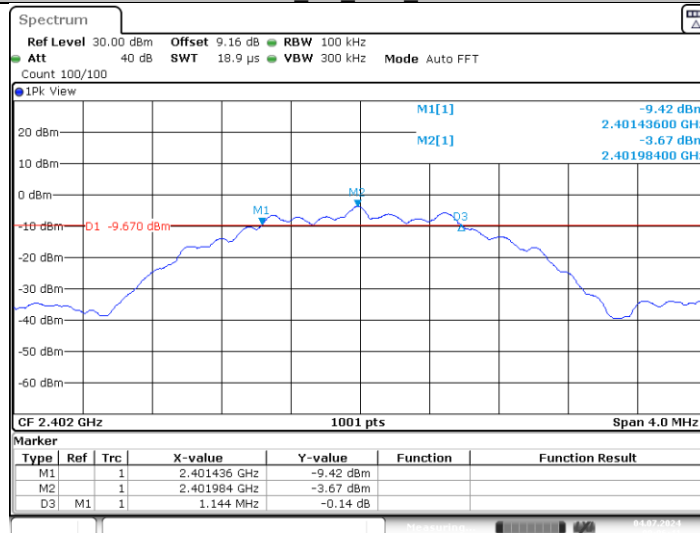


BLE 1M Ant1 2480



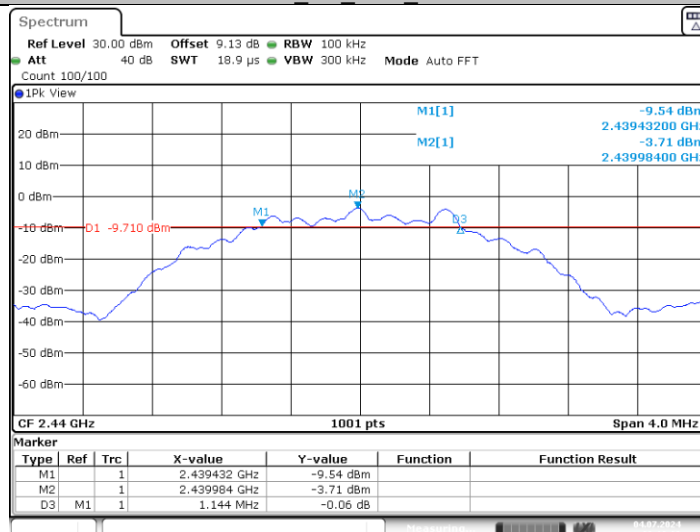
Date: 4.JUL.2024 09:03:45

BLE 2M Ant1 2402

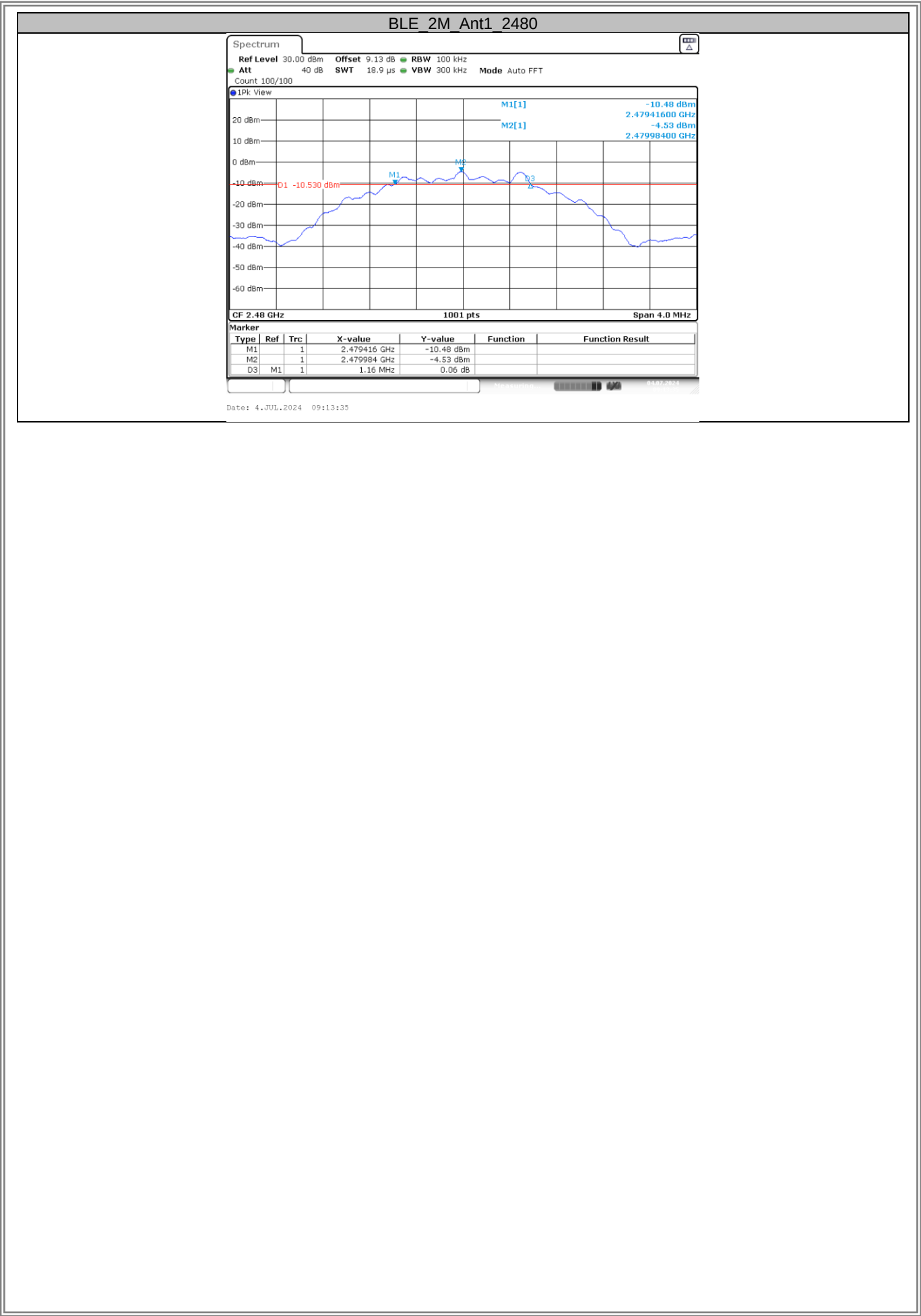


Date: 4.JUL.2024 09:06:41

BLE 2M Ant1 2440



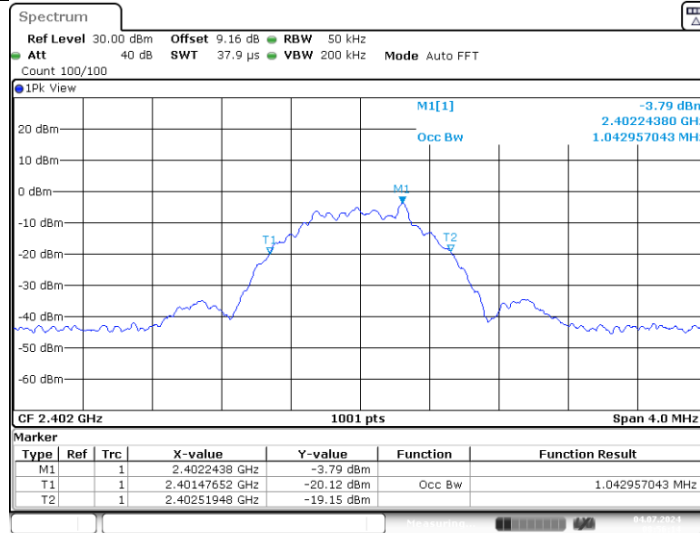
Date: 4.JUL.2024 09:10:00



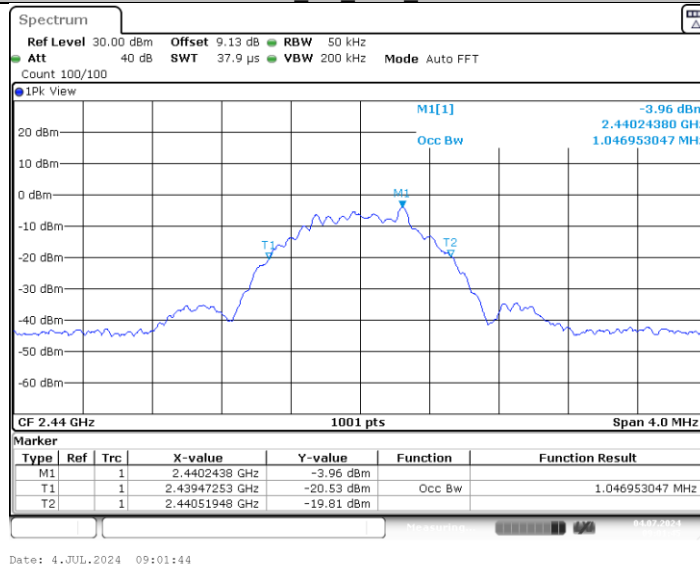
99% Occupied Bandwidth

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.043	2401.4765	2402.5195	---	---
		2440	1.047	2439.4725	2440.5195	---	---
		2480	1.059	2479.4685	2480.5275	---	---
BLE_2M	Ant1	2402	2.082	2400.9770	2403.0589	---	---
		2440	2.078	2438.9730	2441.0509	---	---
		2480	2.09	2478.9610	2481.0509	---	---

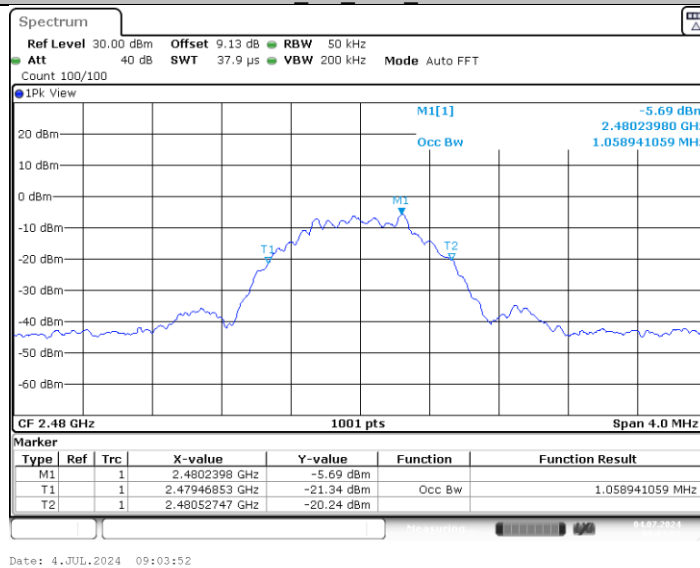
BLE 1M Ant1 2402



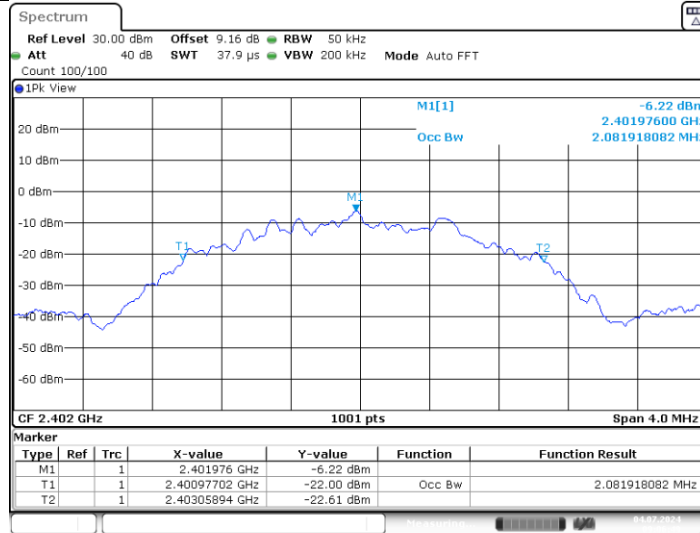
BLE 1M Ant1 2440



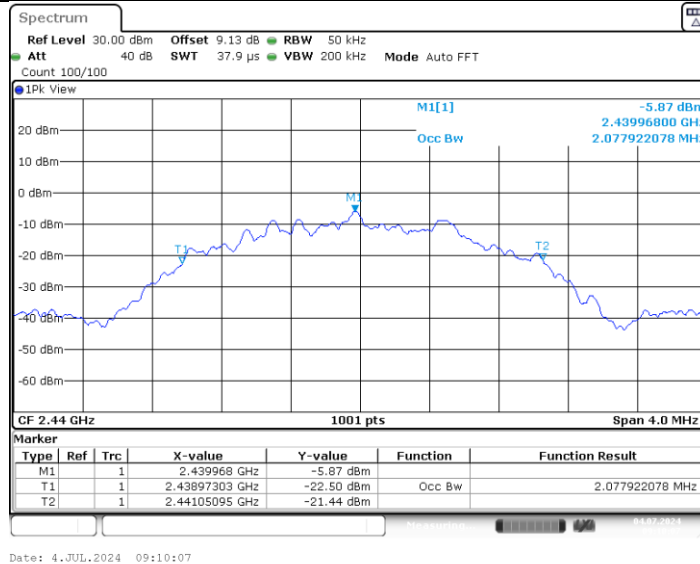
BLE 1M Ant1 2480



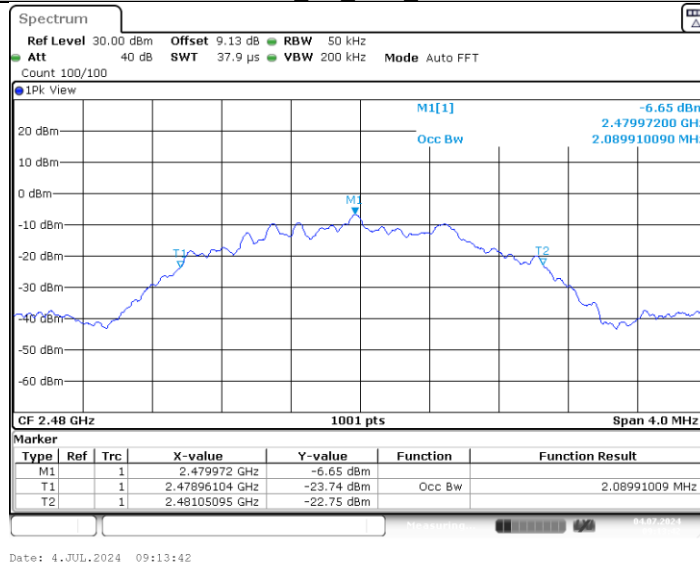
BLE 2M Ant1 2402



BLE 2M Ant1 2440



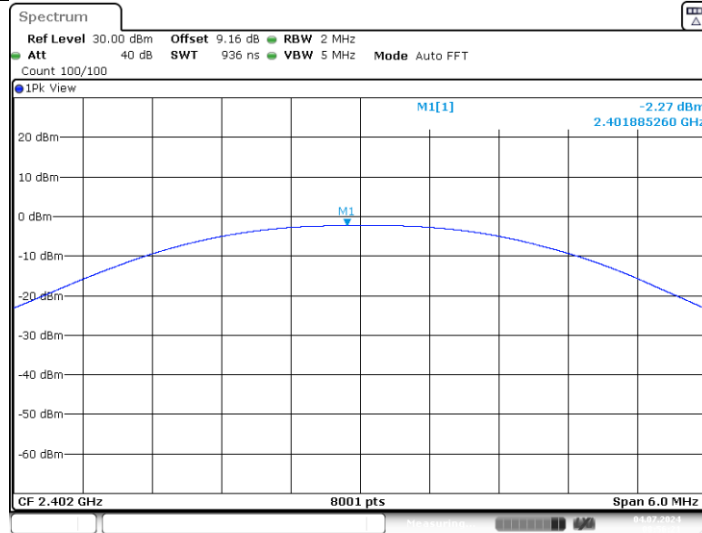
BLE 2M Ant1 2480



APPENDIX F - MAXIMUM OUTPUT POWER

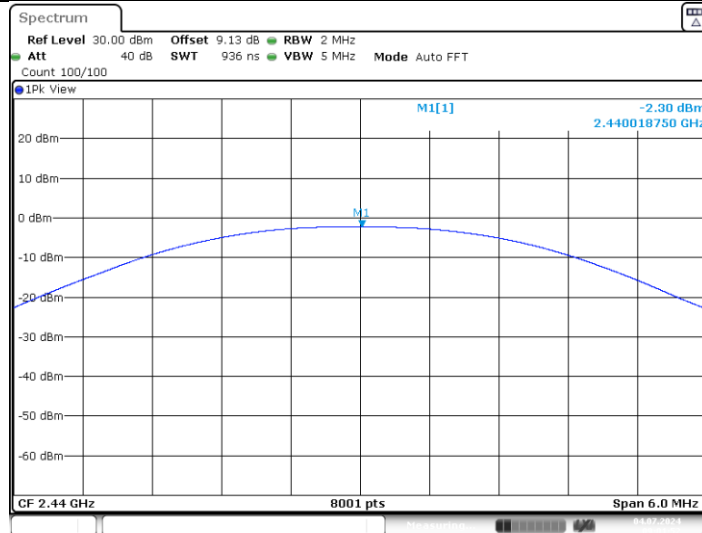
TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-2.27	≤30	PASS
		2440	-2.30	≤30	PASS
		2480	-3.11	≤30	PASS
BLE_2M	Ant1	2402	-2.51	≤30	PASS
		2440	-2.49	≤30	PASS
		2480	-3.20	≤30	PASS

BLE 1M Ant1 2402



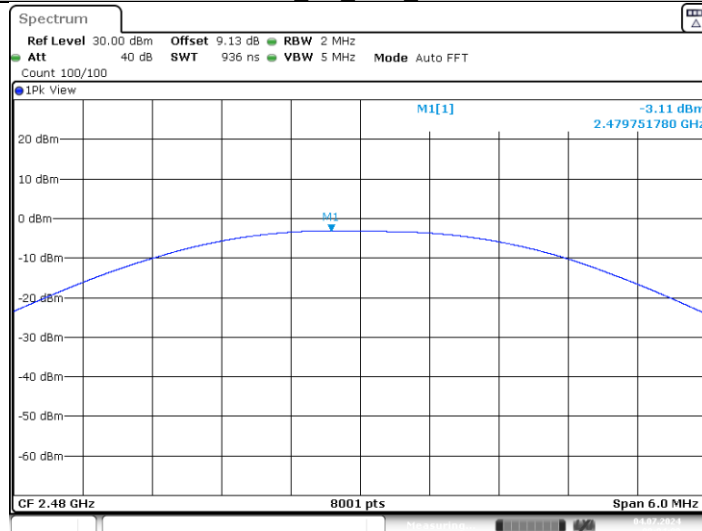
Date: 4.JUL.2024 08:56:22

BLE 1M Ant1 2440



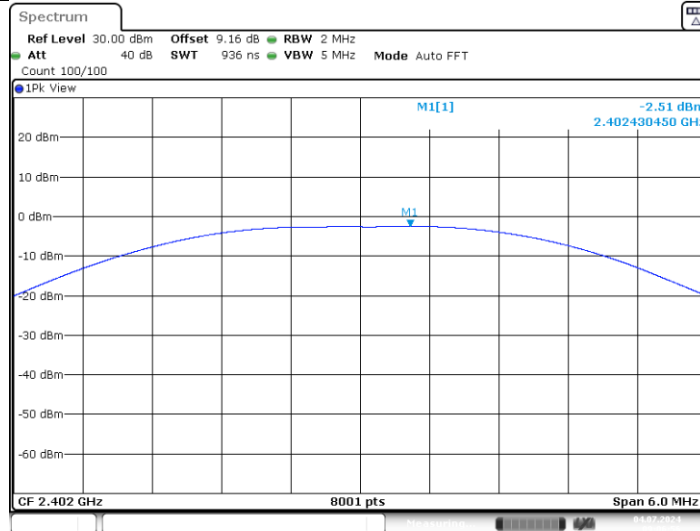
Date: 4.JUL.2024 09:01:52

BLE 1M Ant1 2480



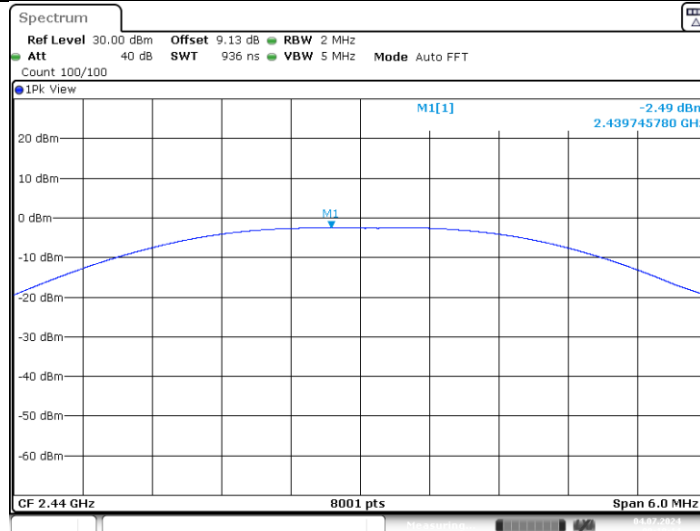
Date: 4.JUL.2024 09:04:00

BLE 2M Ant1 2402



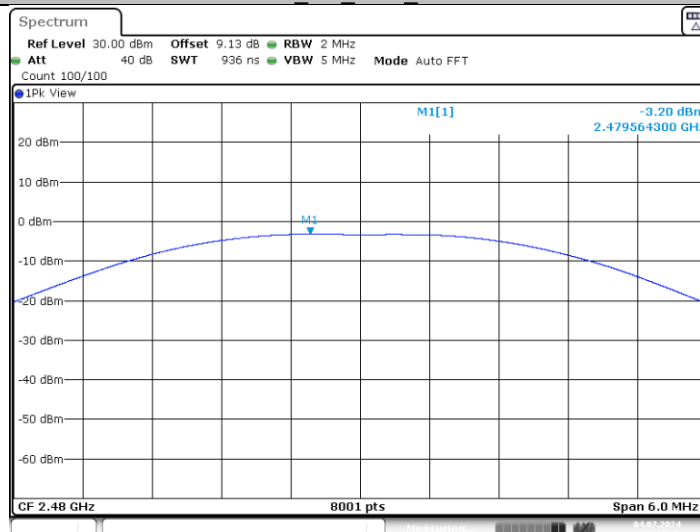
Date: 4.JUL.2024 09:06:56

BLE 2M Ant1 2440



Date: 4.JUL.2024 09:10:15

BLE 2M Ant1 2480



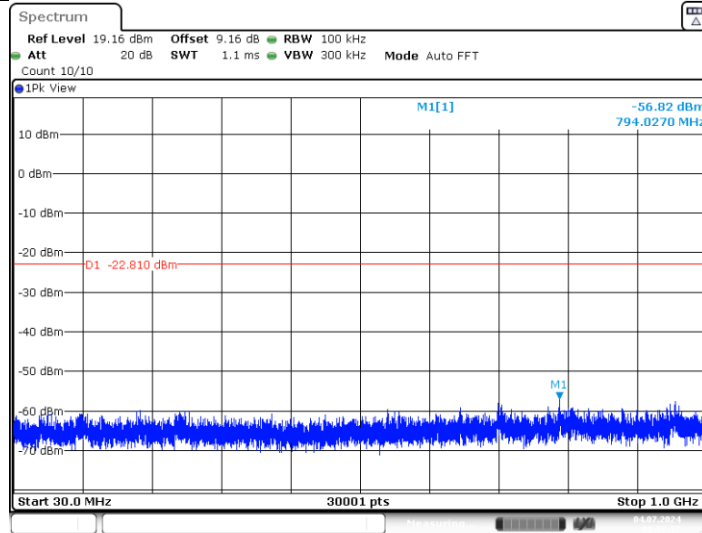
Date: 4.JUL.2024 09:13:50

APPENDIX G - CONDUCTED SPURIOUS EMISSION

Spurious Emission

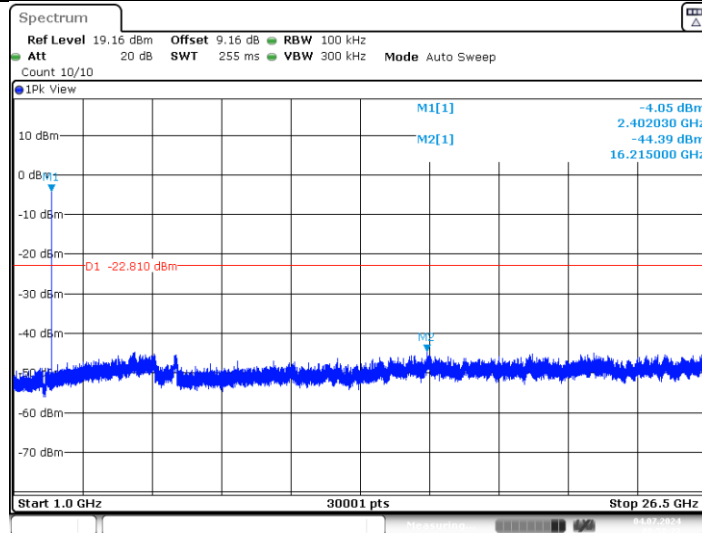
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	30~1000	-2.81	-56.82	≤-22.81	PASS
			1000~26500	-2.81	-44.39	≤-22.81	PASS
		2440	30~1000	-2.92	-58.59	≤-22.92	PASS
			1000~26500	-2.92	-43.7	≤-22.92	PASS
		2480	30~1000	-3.93	-57.96	≤-23.93	PASS
			1000~26500	-3.93	-38.29	≤-23.93	PASS
BLE_2M	Ant1	2402	30~1000	-3.63	-36.46	≤-23.63	PASS
			1000~26500	-3.63	-43.92	≤-23.63	PASS
		2440	30~1000	-3.63	-39.44	≤-23.63	PASS
			1000~26500	-3.63	-38.69	≤-23.63	PASS
		2480	30~1000	-4.43	-58.58	≤-24.43	PASS
			1000~26500	-4.43	-41.64	≤-24.43	PASS

BLE_1M_Ant1_2402_30~1000



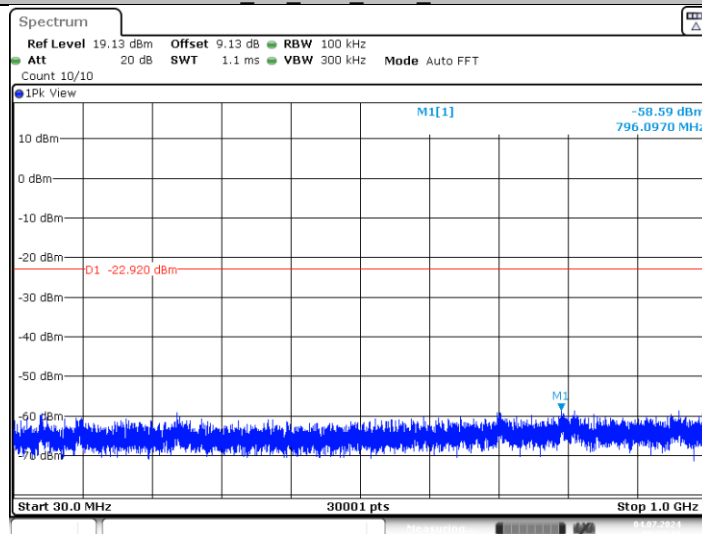
Date: 4.JUL.2024 08:57:57

BLE_1M_Ant1_2402_1000~26500



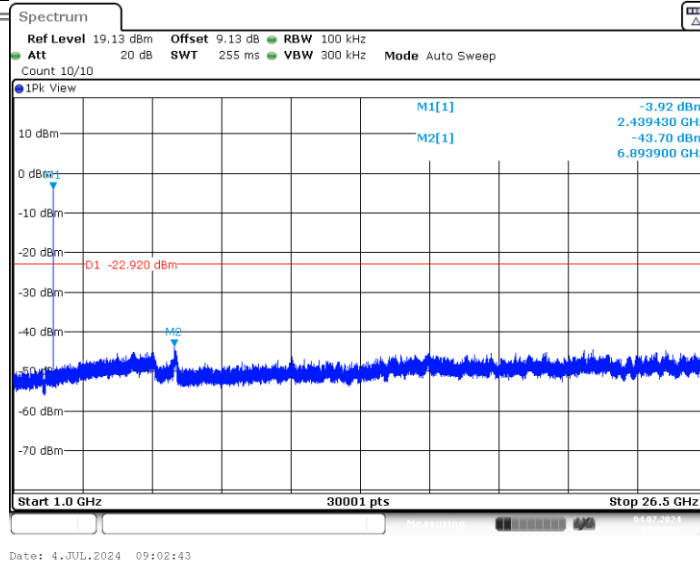
Date: 4.JUL.2024 08:58:22

BLE_1M_Ant1_2440_30~1000

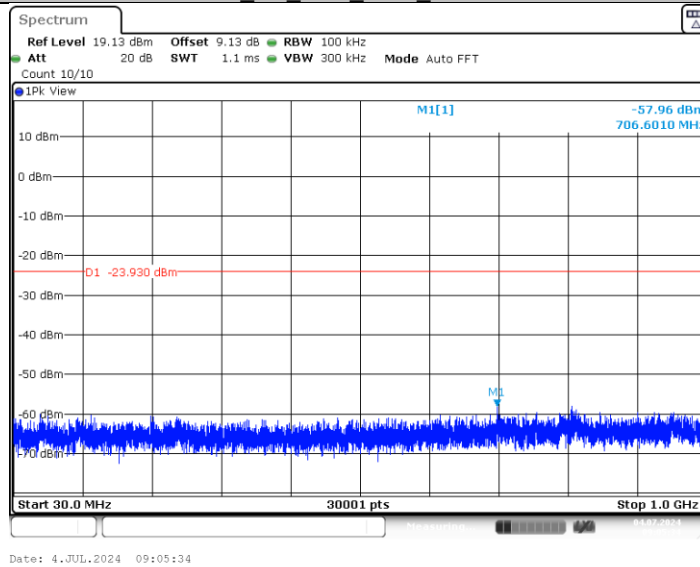


Date: 4.JUL.2024 09:02:18

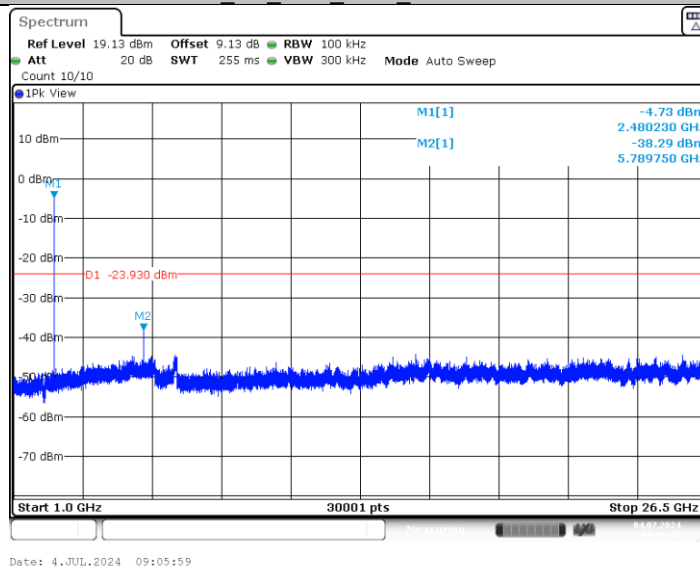
BLE_1M_Ant1_2440_1000~26500



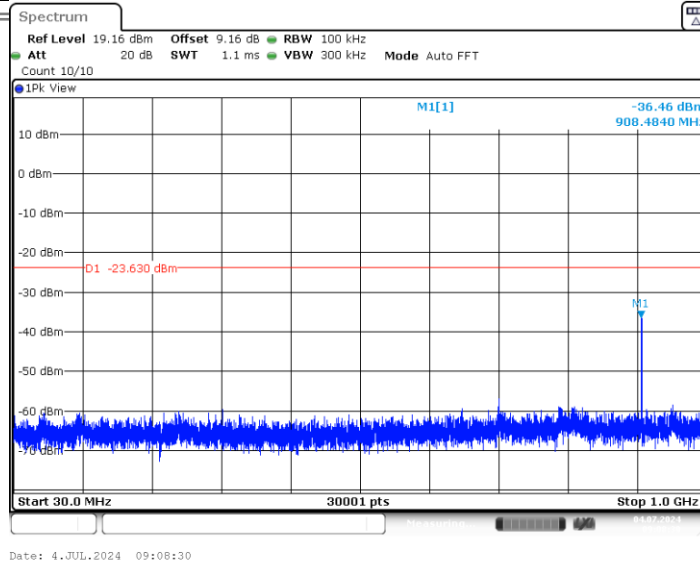
BLE 1M Ant1 2480 30~1000



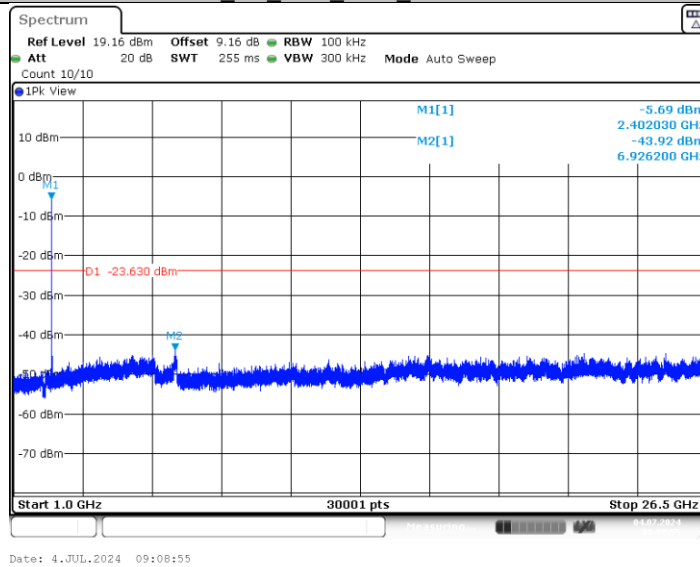
BLE 1M Ant1 2480 1000~26500



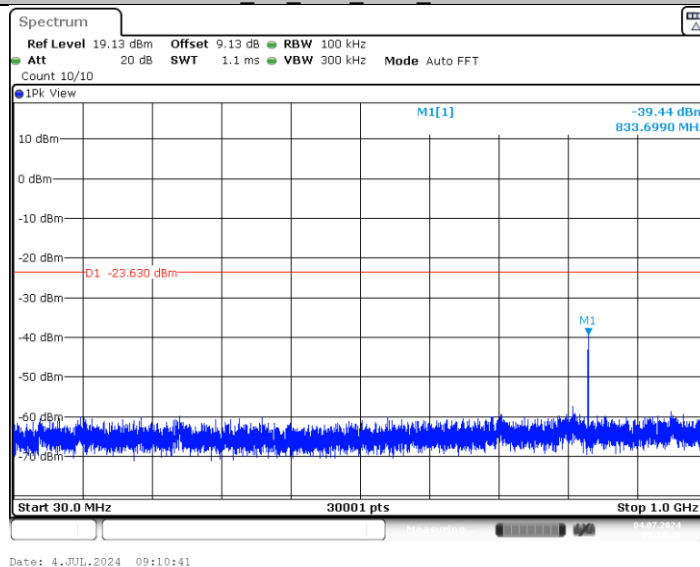
BLE 2M Ant1 2402 30~1000



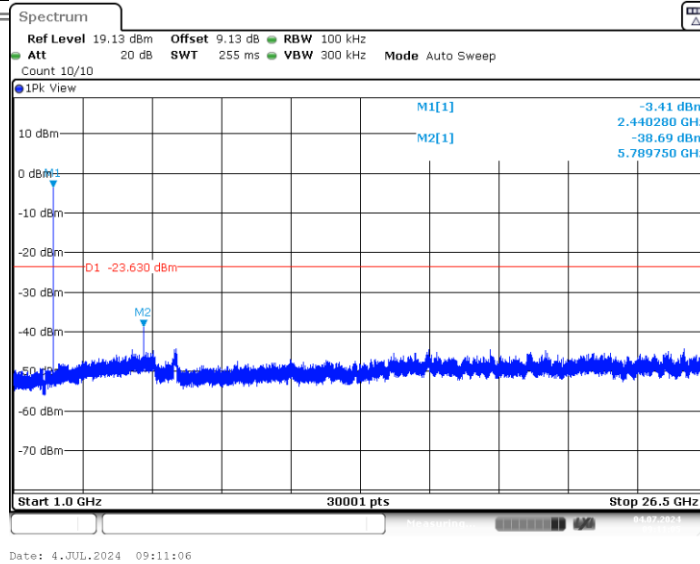
BLE_2M_Ant1_2402_1000~26500



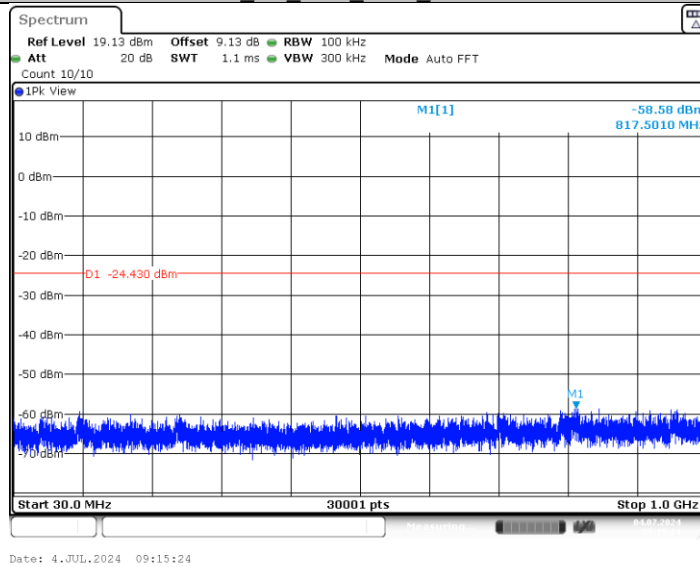
BLE_2M_Ant1_2440_30~1000



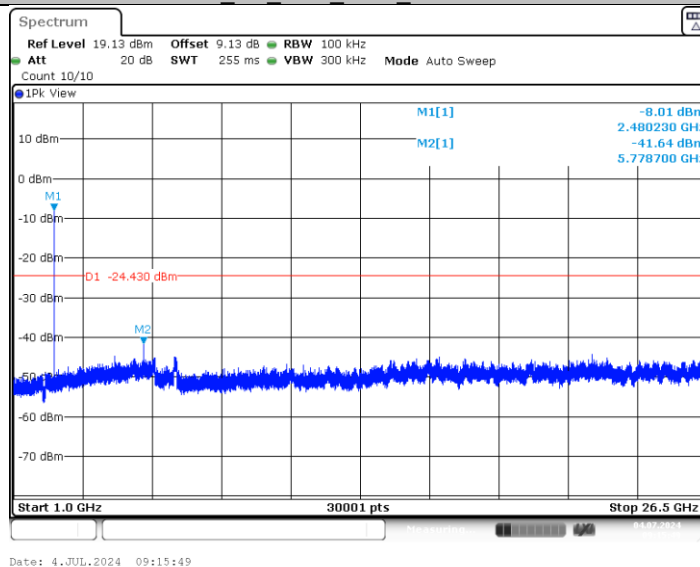
BLE_2M_Ant1_2440_1000~26500



BLE 2M Ant1 2480_30~1000



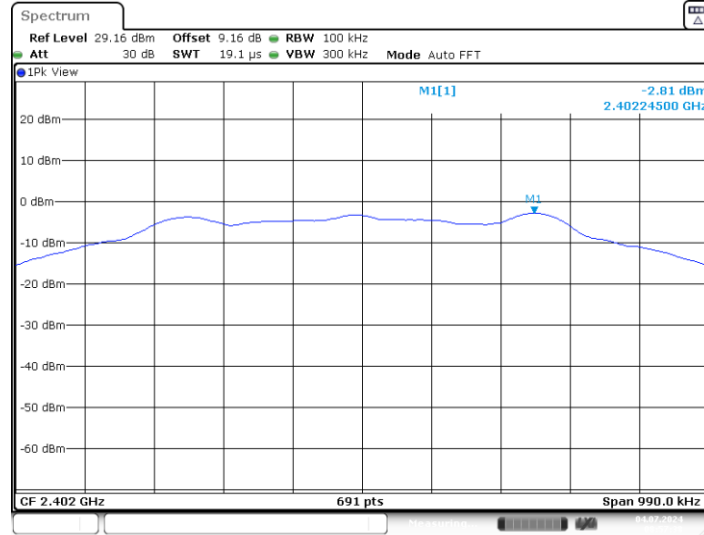
BLE 2M Ant1 2480_1000~26500



Reference level measurement

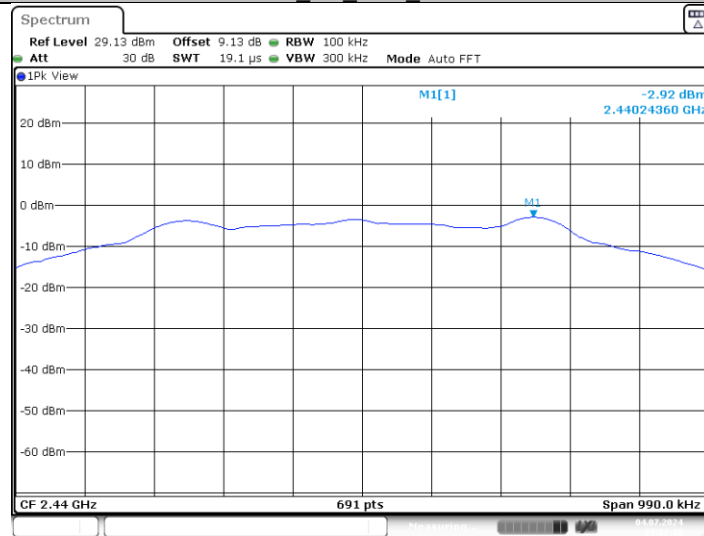
TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
BLE_1M	Ant1	2402	2402.25	-2.81
		2440	2440.24	-2.92
		2480	2480.24	-3.93
BLE_2M	Ant1	2402	2401.99	-3.63
		2440	2439.99	-3.63
		2480	2479.98	-4.43

BLE_1M_Ant1_2402



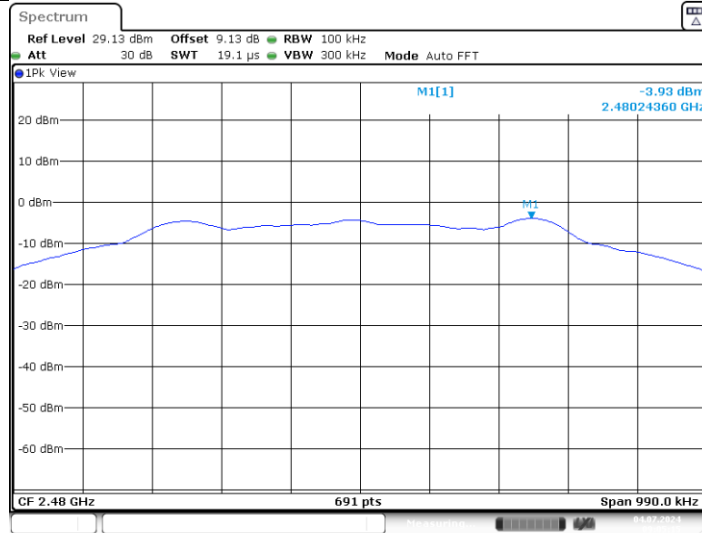
Date: 4.JUL.2024 08:57:38

BLE_1M_Ant1_2440



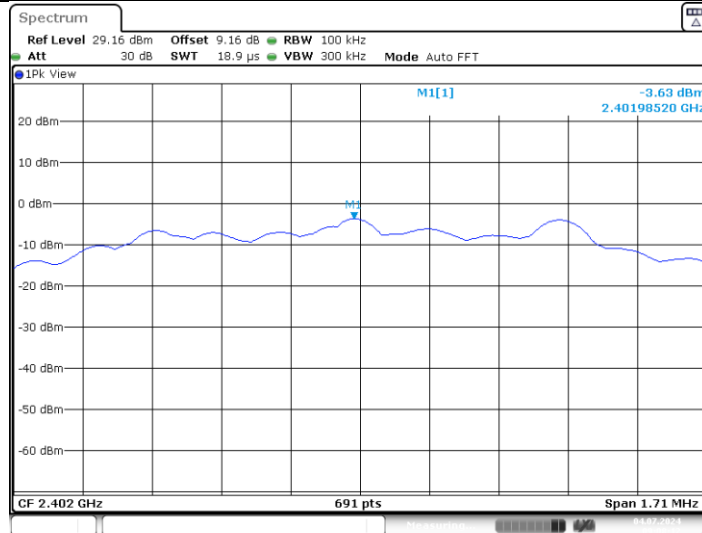
Date: 4.JUL.2024 09:02:10

BLE_1M_Ant1_2480



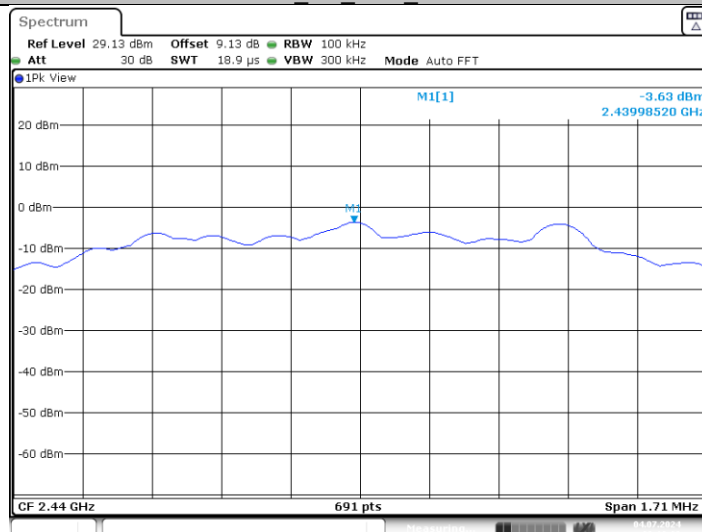
Date: 4.JUL.2024 09:05:15

BLE_2M_Ant1_2402

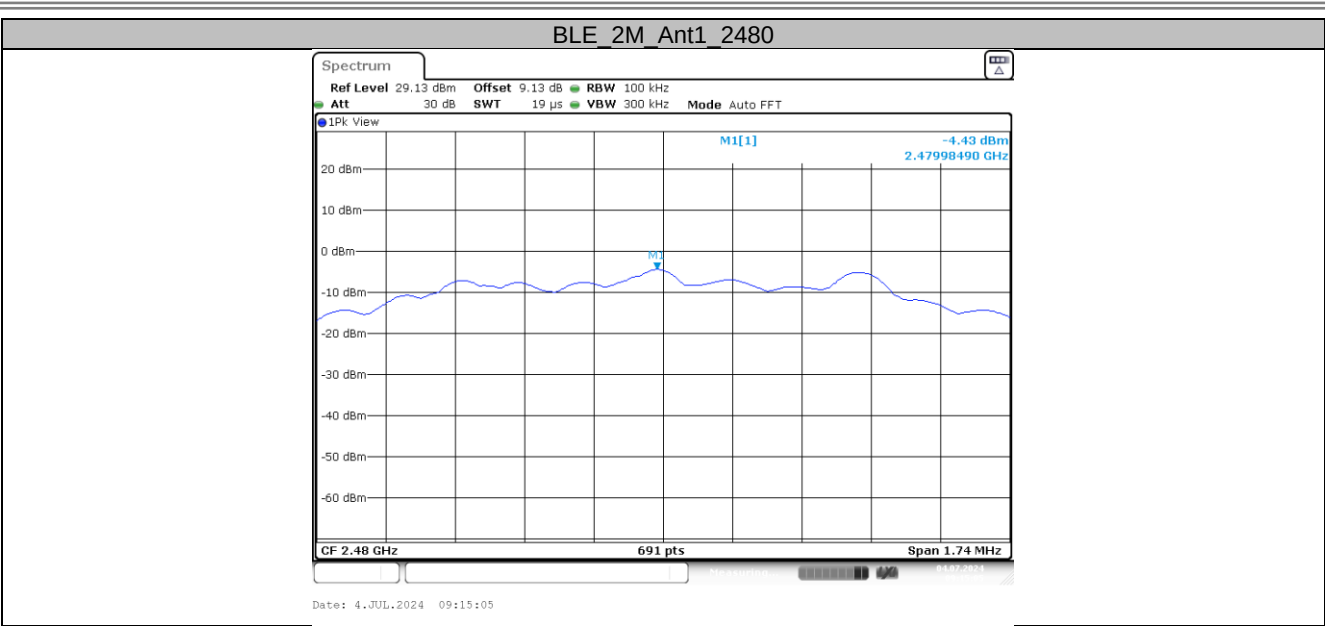


Date: 4.JUL.2024 09:08:12

BLE_2M_Ant1_2440



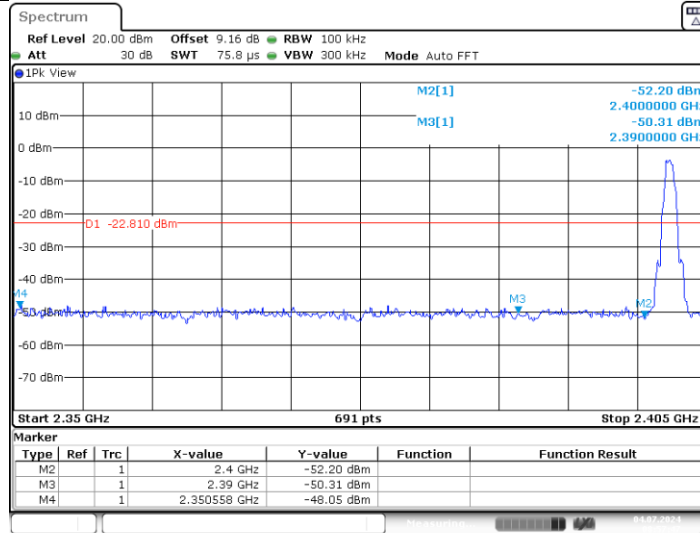
Date: 4.JUL.2024 09:10:33



Band edge measurements

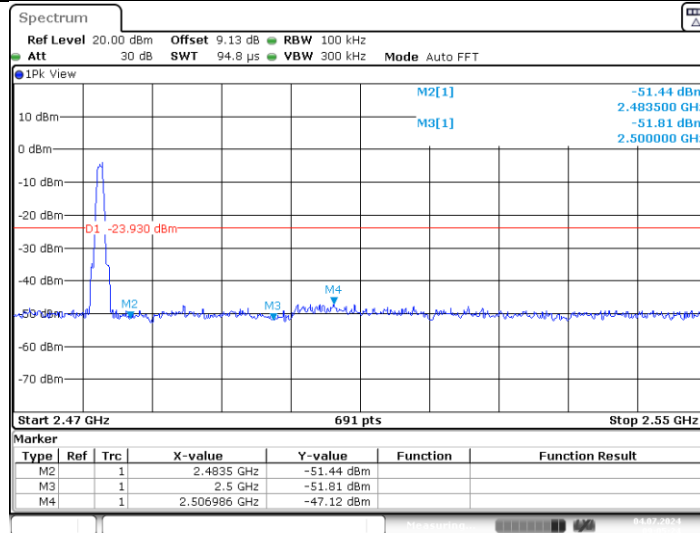
TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-2.81	-48.05	≤ -22.81	PASS
		High	2480	-3.93	-47.12	≤ -23.93	PASS
BLE_2M	Ant1	Low	2402	-3.63	-36.13	≤ -23.63	PASS
		High	2480	-4.43	-45.8	≤ -24.43	PASS

BLE 1M Ant1 Low 2402



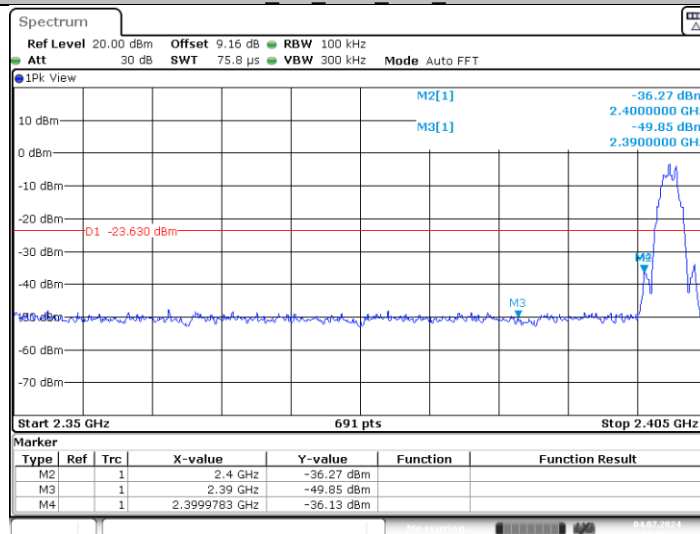
Date: 4.JUL.2024 08:57:48

BLE 1M Ant1 High 2480

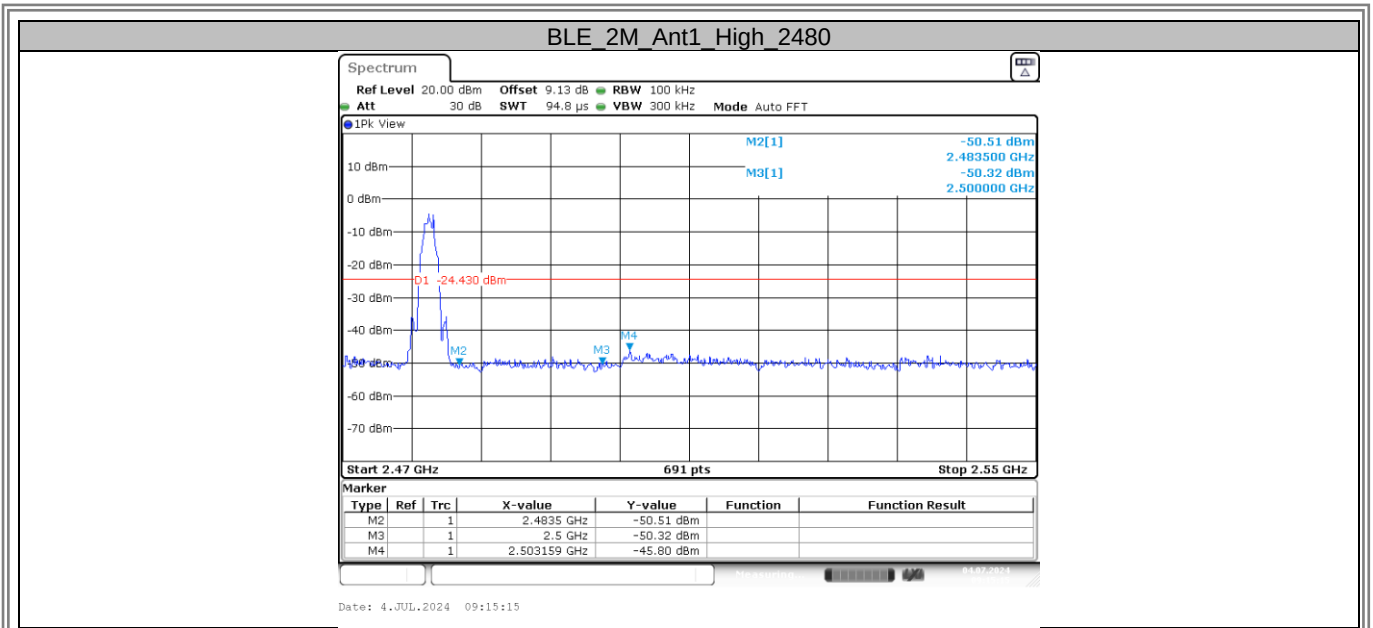


Date: 4.JUL.2024 09:05:25

BLE 2M Ant1 Low 2402



Date: 4.JUL.2024 09:08:21

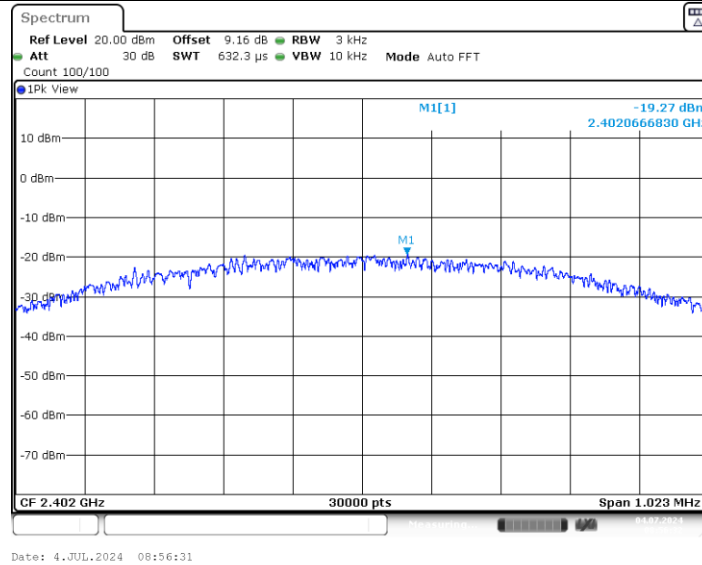


APPENDIX H- POWER SPECTRAL DENSITY

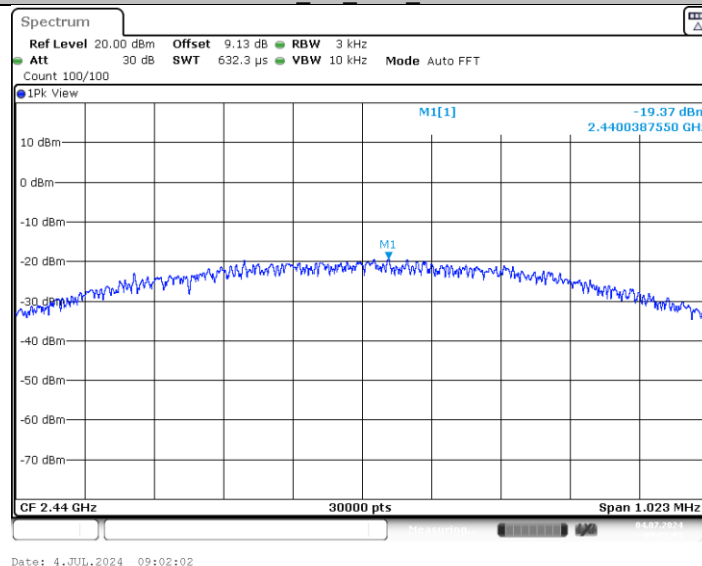
Power Spectral Density

TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-19.27	≤8.00	PASS
		2440	-19.37	≤8.00	PASS
		2480	-19.73	≤8.00	PASS
BLE_2M	Ant1	2402	-21.82	≤8.00	PASS
		2440	-21.25	≤8.00	PASS
		2480	-22.08	≤8.00	PASS

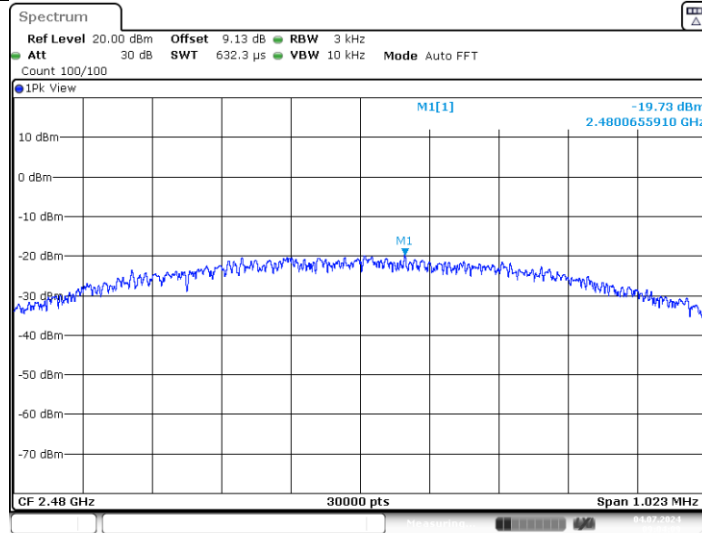
BLE_1M Ant1 2402



BLE_1M Ant1 2440

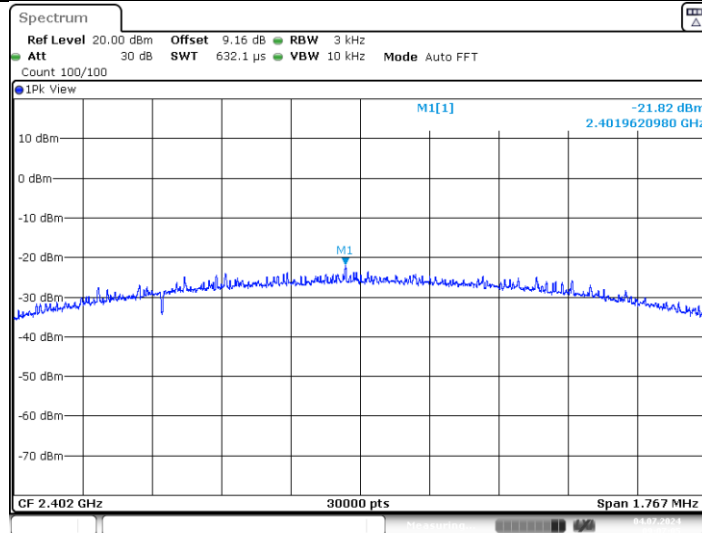


BLE_1M_Ant1_2480



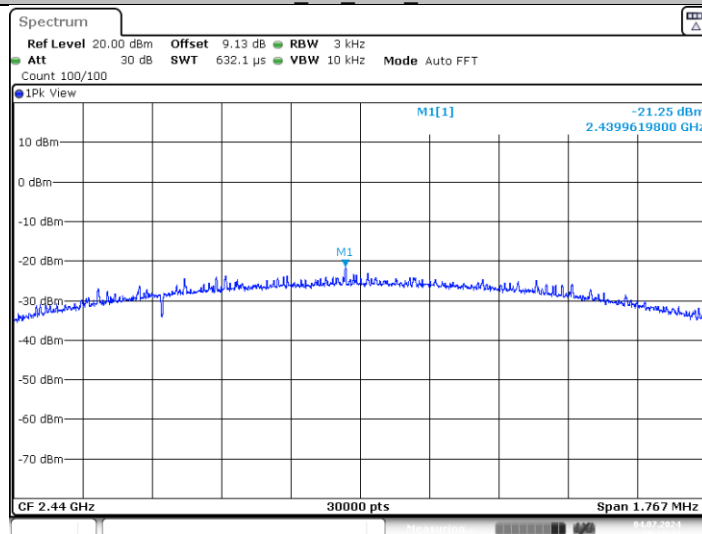
Date: 4.JUL.2024 09:04:09

BLE_2M_Ant1_2402

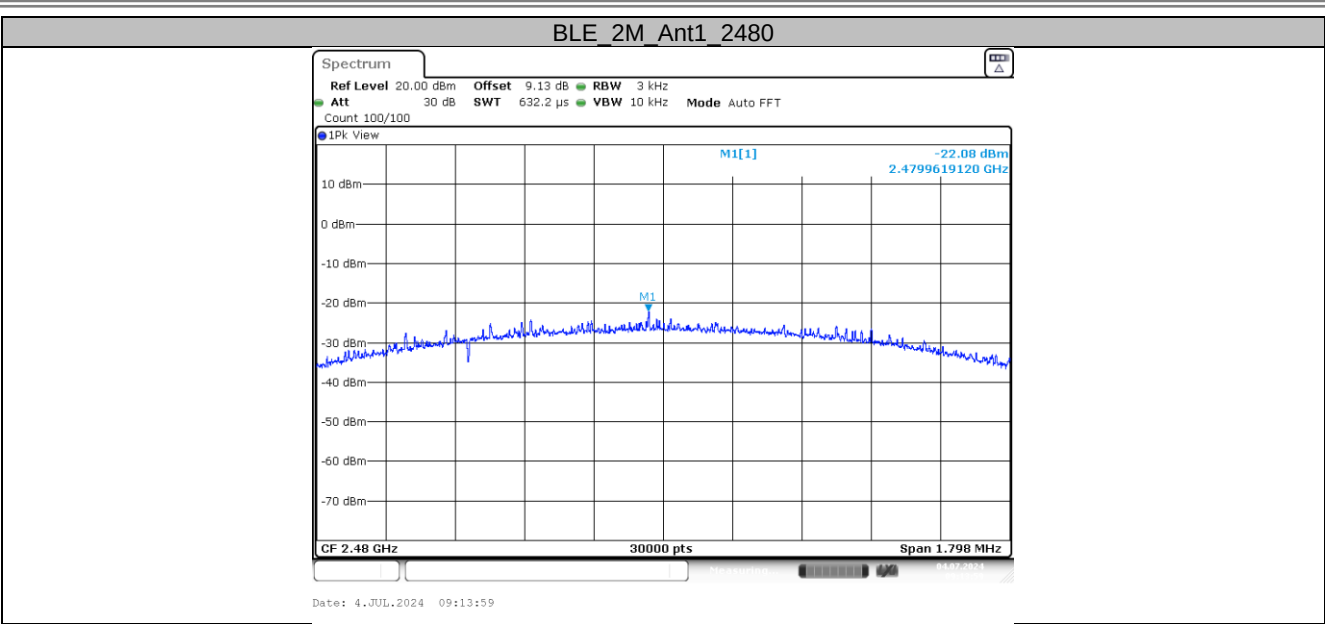


Date: 4.JUL.2024 09:07:05

BLE_2M_Ant1_2440



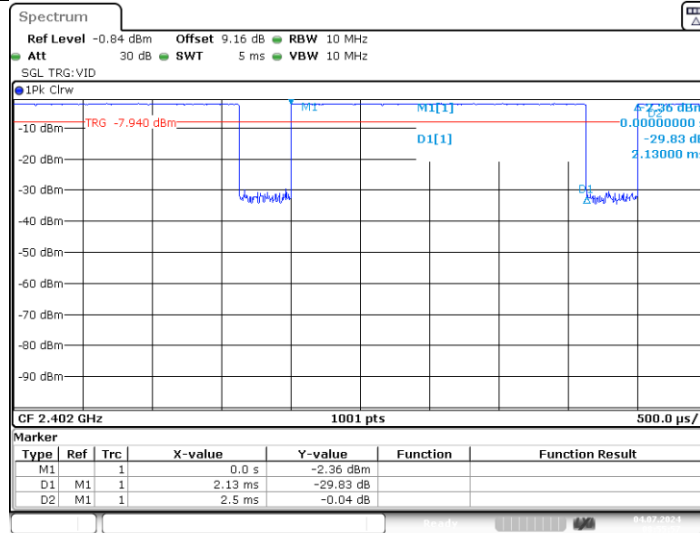
Date: 4.JUL.2024 09:10:24



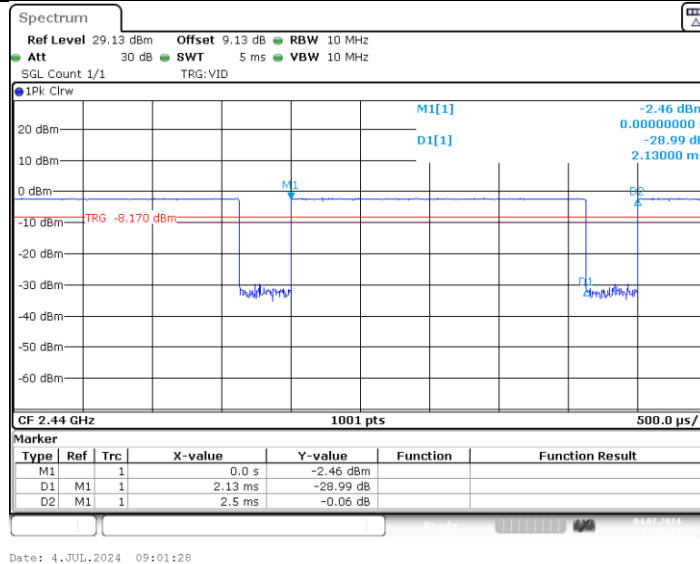
APPENDIX I DUTY CYCLE

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	---	---

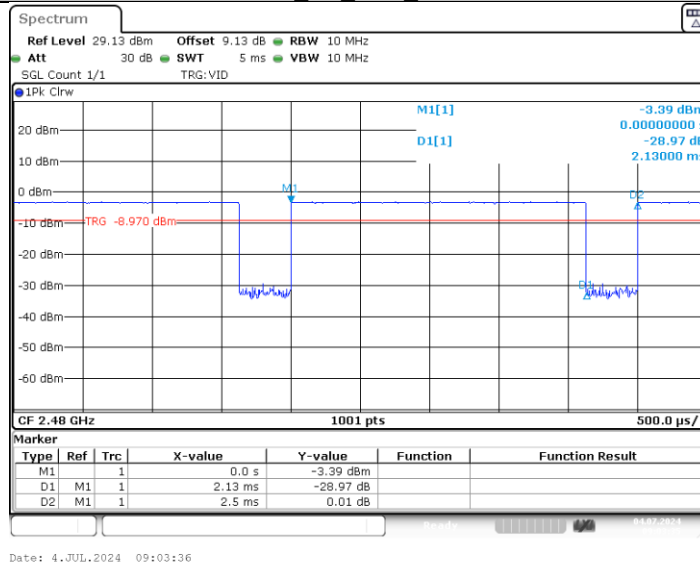
BLE 1M Ant1 2402

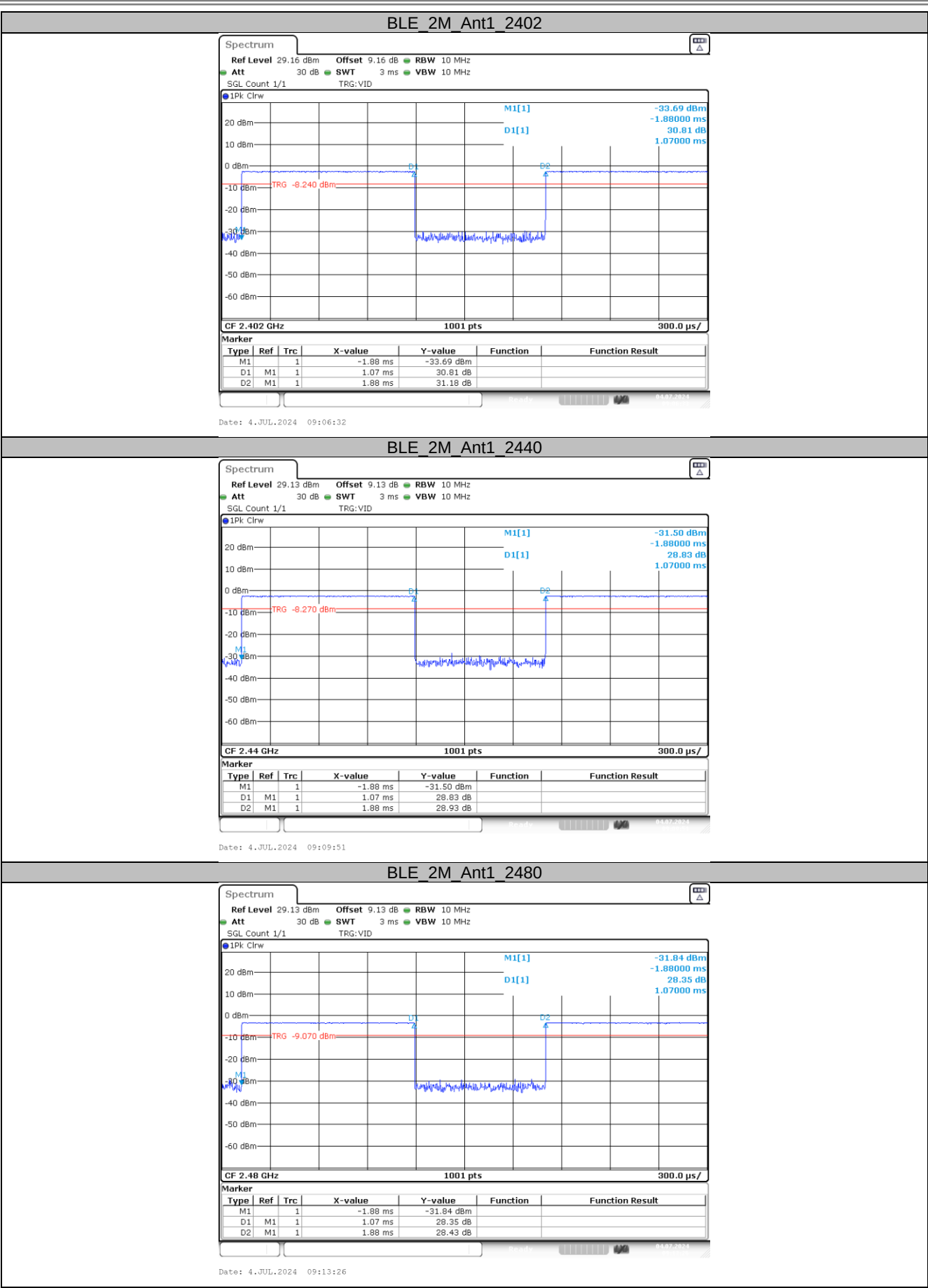


BLE 1M Ant1 2440



BLE 1M Ant1 2480





End of Test Report