

Appendix A: DTS Bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.656	2401.668	2402.324	0.5	PASS
		2440	0.668	2439.652	2440.320	0.5	PASS
		2480	0.688	2479.644	2480.332	0.5	PASS

Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



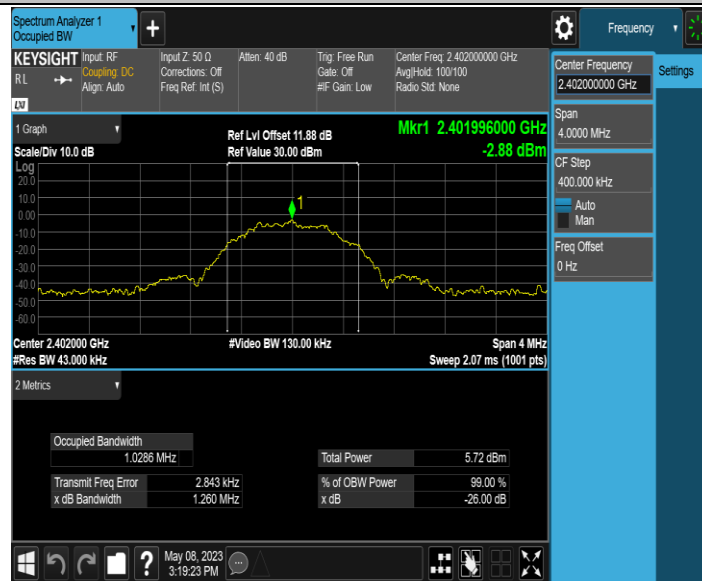
Appendix B: Occupied Channel Bandwidth

Test Result

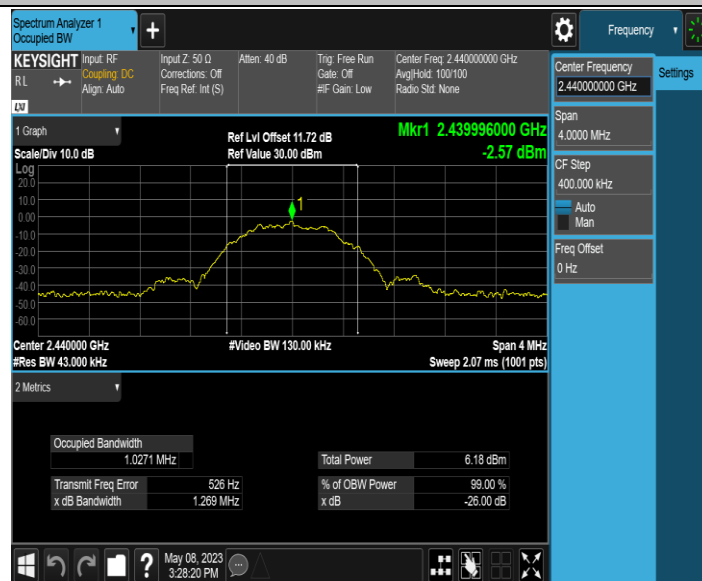
TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0286	2401.4885	2402.5171	---	---
		2440	1.0271	2439.4870	2440.5141	---	---
		2480	1.0290	2479.4863	2480.5153	---	---

Test Graphs

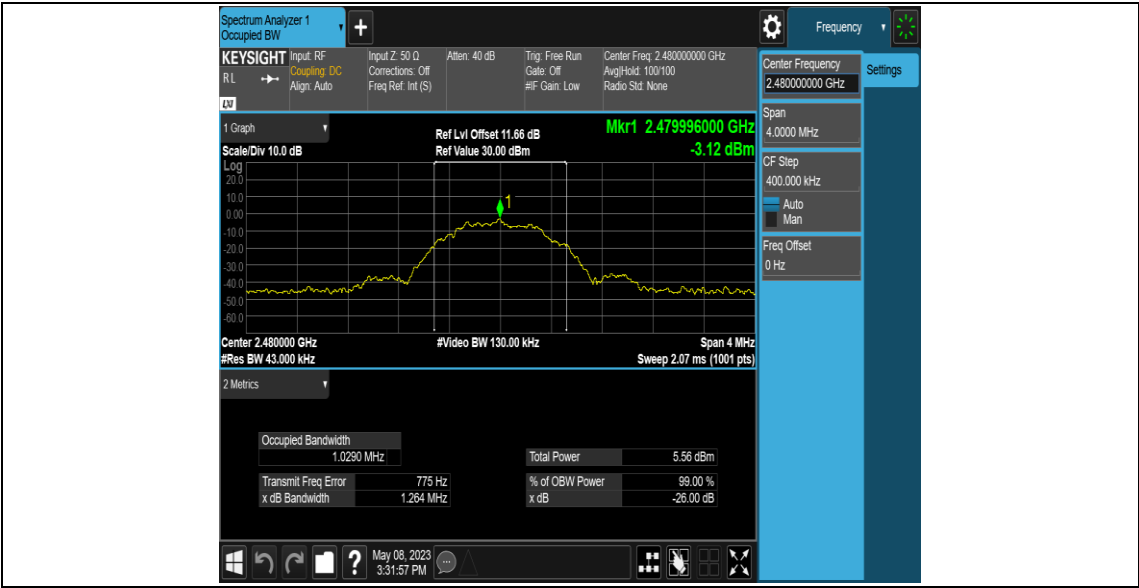
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



Appendix C: Maximum conducted output power

Test Result Peak

TestMode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	EIRP[dBm]	EIRP Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-0.49	≤30	1.51	≤36	PASS
		2440	-0.17	≤30	1.83	≤36	PASS
		2480	-0.69	≤30	1.31	≤36	PASS

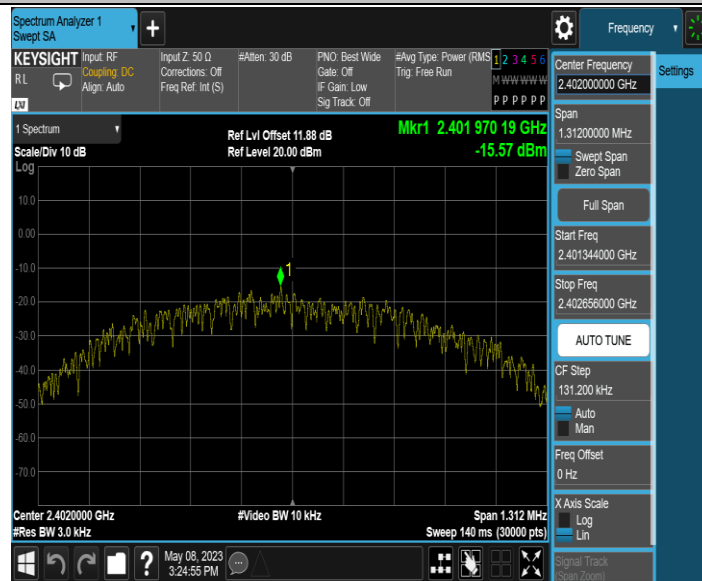
Appendix D: Maximum power spectral density

Test Result

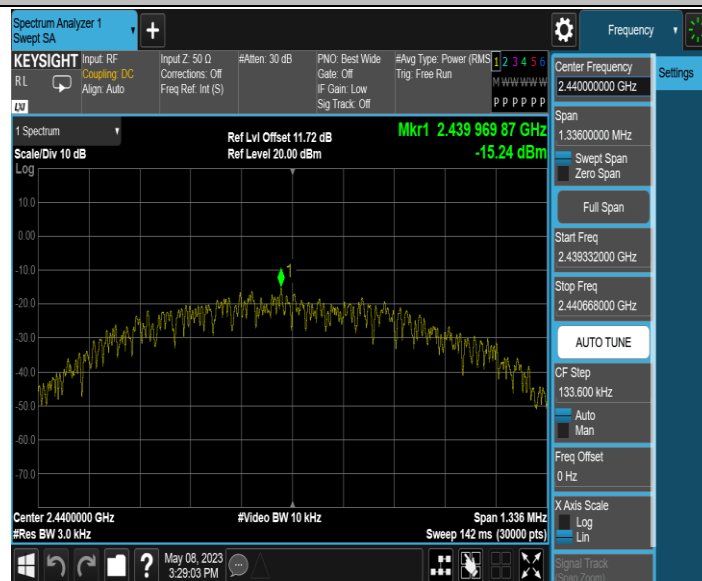
TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-15.57	≤8.00	PASS
		2440	-15.24	≤8.00	PASS
		2480	-15.86	≤8.00	PASS

Test Graphs

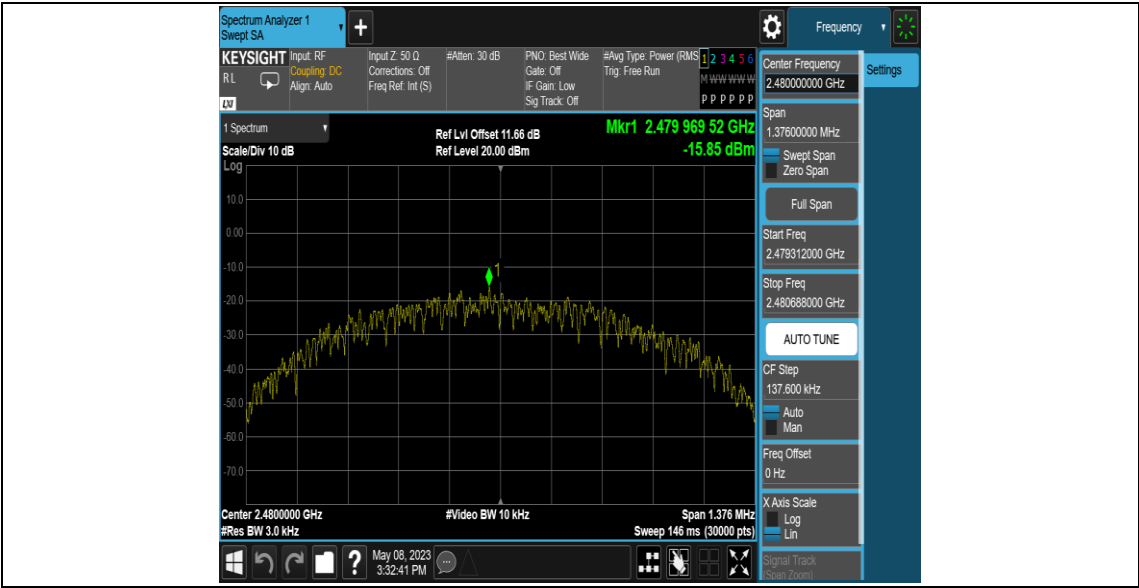
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



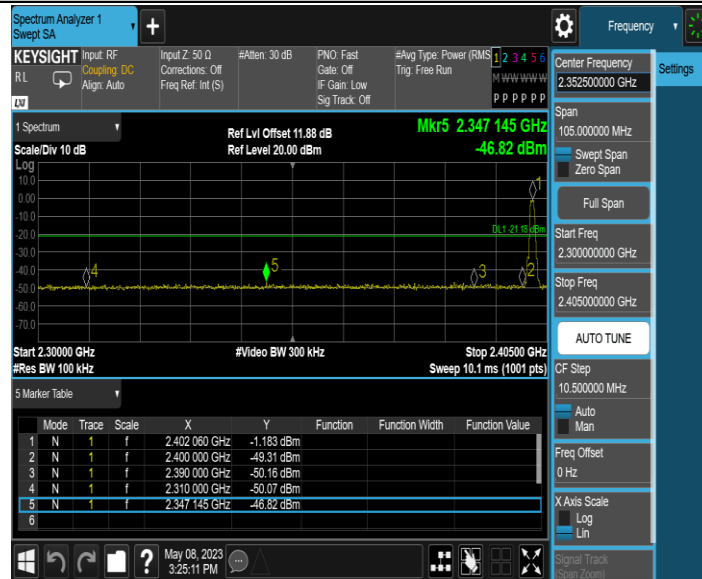
Appendix E: Band edge measurements

Test Result

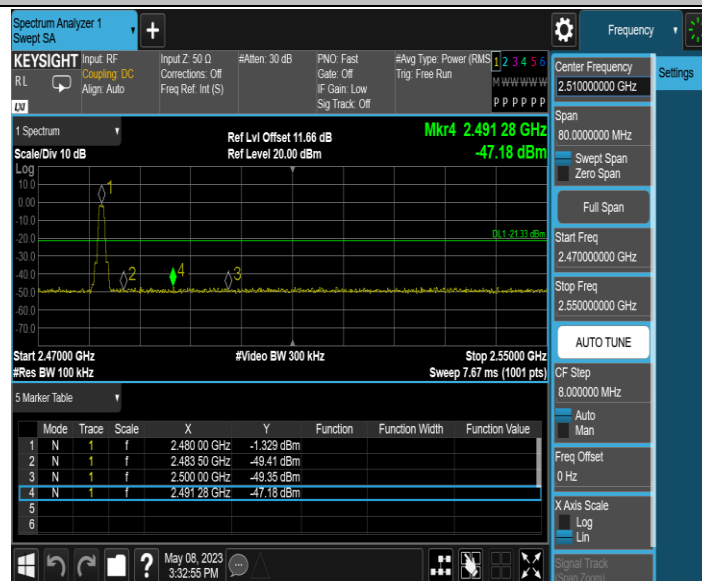
TestMode	Antenna	Ch Name	Frequency [MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-1.18	-46.82	≤-21.18	PASS
		High	2480	-1.33	-47.18	≤-21.33	PASS

Test Graphs

BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480



Appendix F: Conducted Spurious Emission

Test Result

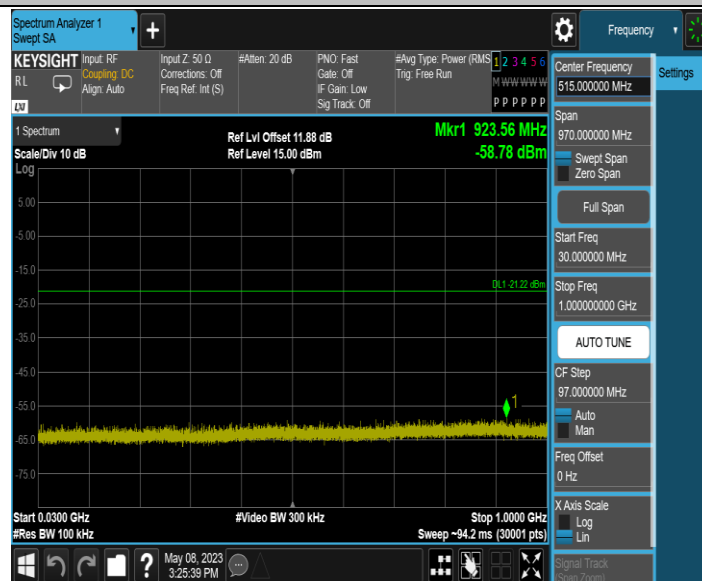
TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-1.22	-1.22	---	PASS
			30~1000	-1.22	-58.78	≤-21.22	PASS
			1000~26500	-1.22	-50.3	≤-21.22	PASS
		2440	Reference	-0.85	-0.85	---	PASS
			30~1000	-0.85	-58.67	≤-20.85	PASS
			1000~26500	-0.85	-50.27	≤-20.85	PASS
		2480	Reference	-1.48	-1.48	---	PASS
			30~1000	-1.48	-58.45	≤-21.48	PASS
			1000~26500	-1.48	-50.31	≤-21.48	PASS

Test Graphs

BLE_1M_Ant1_2402_0~Reference



BLE_1M_Ant1_2402_30~1000



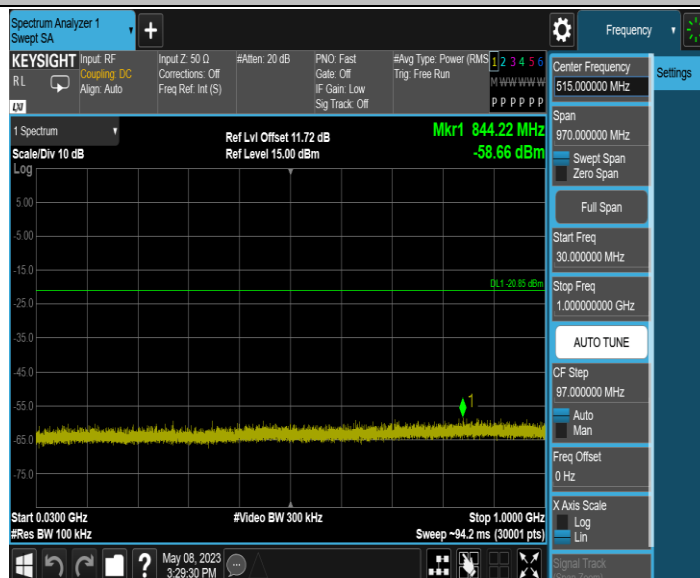
BLE_1M_Ant1_2402_1000~26500



BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



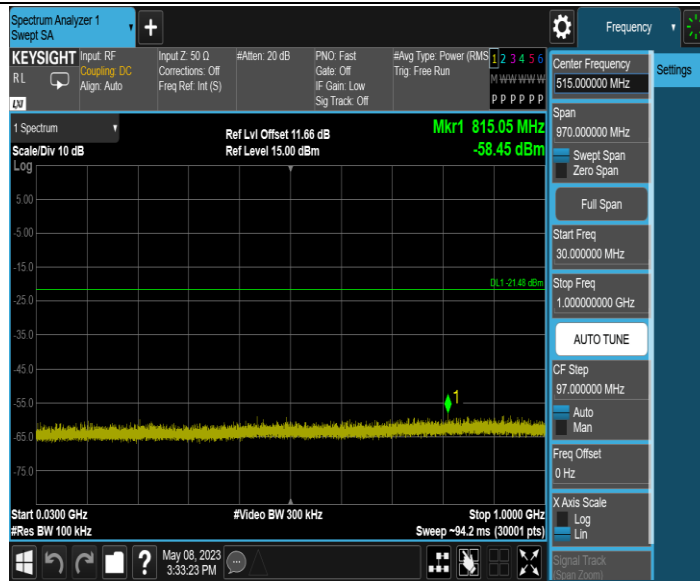
BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



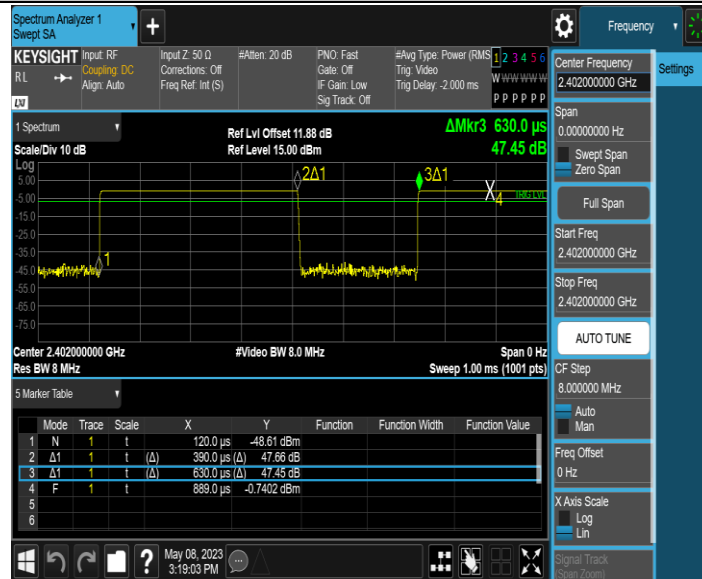
Appendix G: Duty Cycle

Test Result

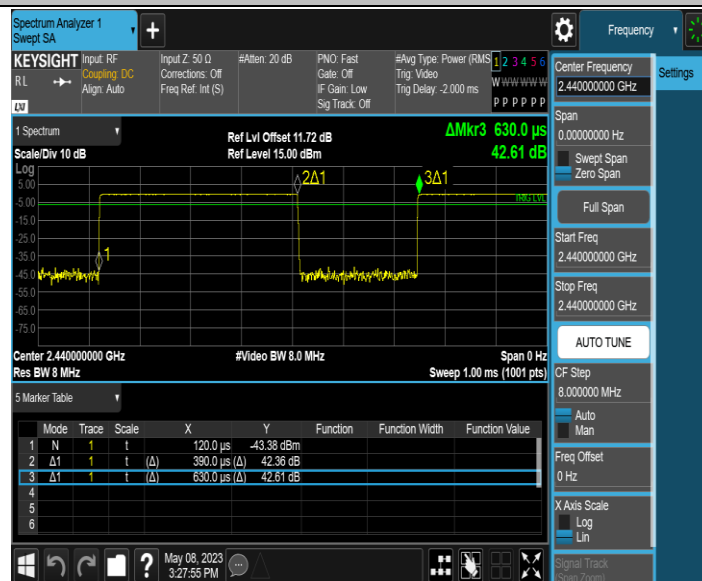
TestMode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
BLE_1M	Ant1	2402	0.39	0.63	61.90	2.08
		2440	0.39	0.63	61.90	2.08
		2480	0.39	0.63	61.90	2.08

Test Graphs

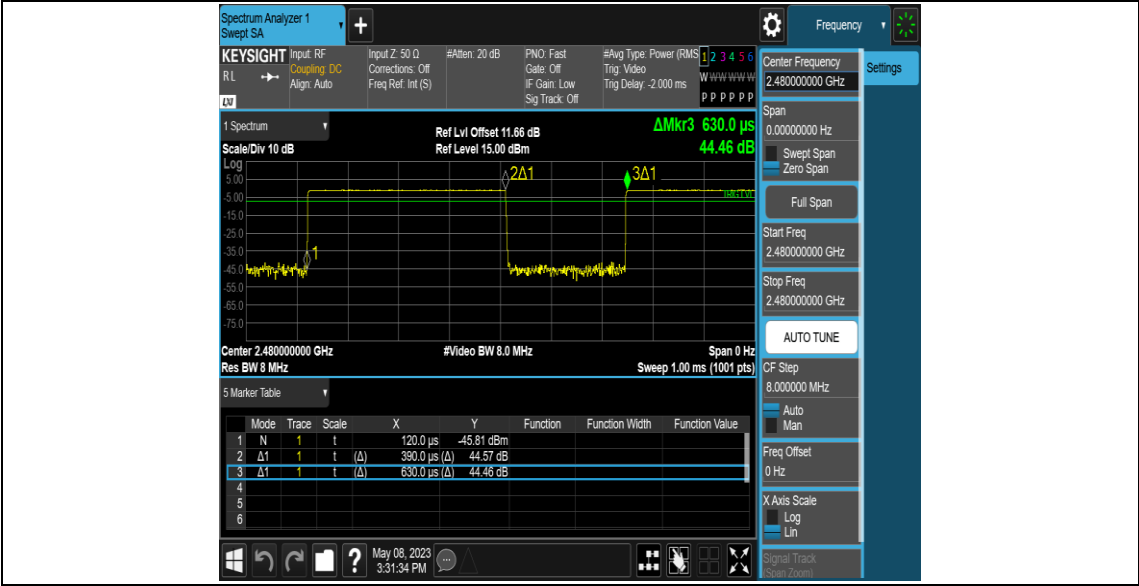
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



Appendix H: Emissions in Restricted Bands

Low channel

NO.	Freq. [MHz]	Level [dB μ V/m]	Factor [dB/m]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2323.72	47.61	6.50	74.00	26.39	150	175	Horizontal
2	2337.58	47.94	6.54	74.00	26.06	150	320	Horizontal
3	2351.31	47.61	6.56	74.00	26.39	150	48	Horizontal
4	2367.42	47.62	6.60	74.00	26.38	150	240	Horizontal
5	2380.62	48.12	6.62	74.00	25.88	150	180	Horizontal
6	2390	46.48	6.64	74.00	27.52	150	282	Horizontal

NO.	Freq. [MHz]	Level [dB μ V/m]	Factor [dB/m]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2328.21	49.24	6.52	74.00	24.76	150	194	Vertical
2	2348.67	47.81	6.56	74.00	26.19	150	317	Vertical
3	2366.62	47.84	6.60	74.00	26.16	150	182	Vertical
4	2377.84	49.01	6.62	74.00	24.99	150	189	Vertical
5	2380.88	47.87	6.62	74.00	26.13	150	357	Vertical
6	2390	47.42	6.64	74.00	26.58	150	141	Vertical

High channel

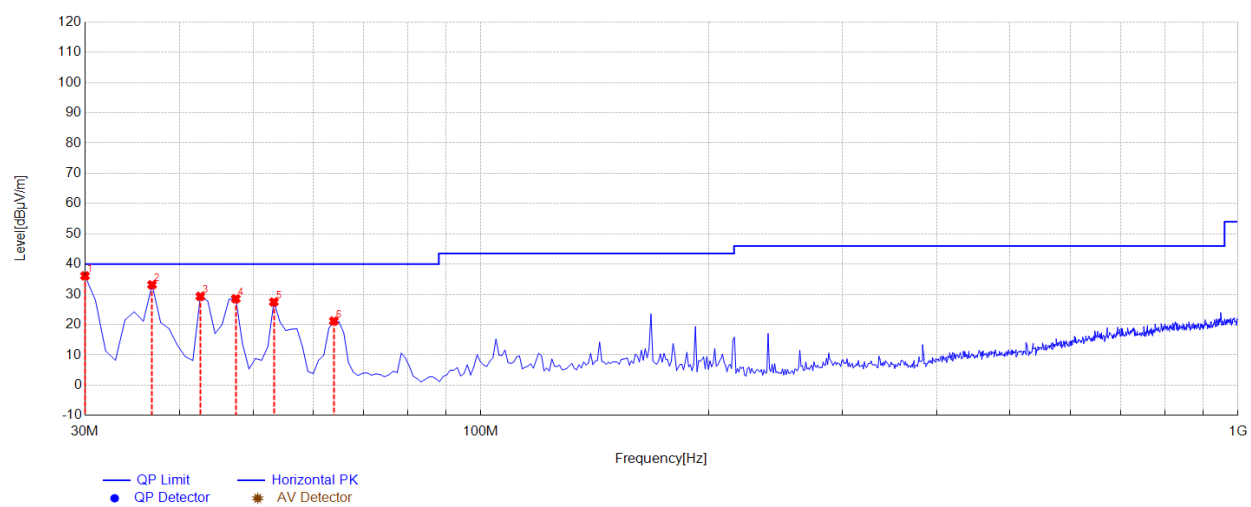
NO.	Freq. [MHz]	Level [dB μ V/m]	Factor [dB/m]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2483.5	46.73	7.20	74.00	27.27	150	220	Horizontal
2	2486.24	48.29	7.22	74.00	25.71	150	220	Horizontal
3	2488.57	48.06	7.24	74.00	25.94	150	274	Horizontal
4	2490.30	48.94	7.25	74.00	25.06	150	174	Horizontal
5	2491.52	48.05	7.25	74.00	25.95	150	264	Horizontal
6	2494.97	48.77	7.27	74.00	25.23	150	0	Horizontal

NO.	Freq. [MHz]	Level [dB μ V/m]	Factor [dB/m]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2483.5	47.74	7.20	74.00	26.26	150	282	Vertical
2	2485.47	48.94	7.22	74.00	25.06	150	171	Vertical
3	2489.53	48.26	7.24	74.00	25.74	150	210	Vertical
4	2492.60	48.32	7.26	74.00	25.68	150	337	Vertical
5	2494.78	48.73	7.27	74.00	25.27	150	302	Vertical
6	2495.90	48.86	7.29	74.00	25.14	150	243	Vertical

Note:

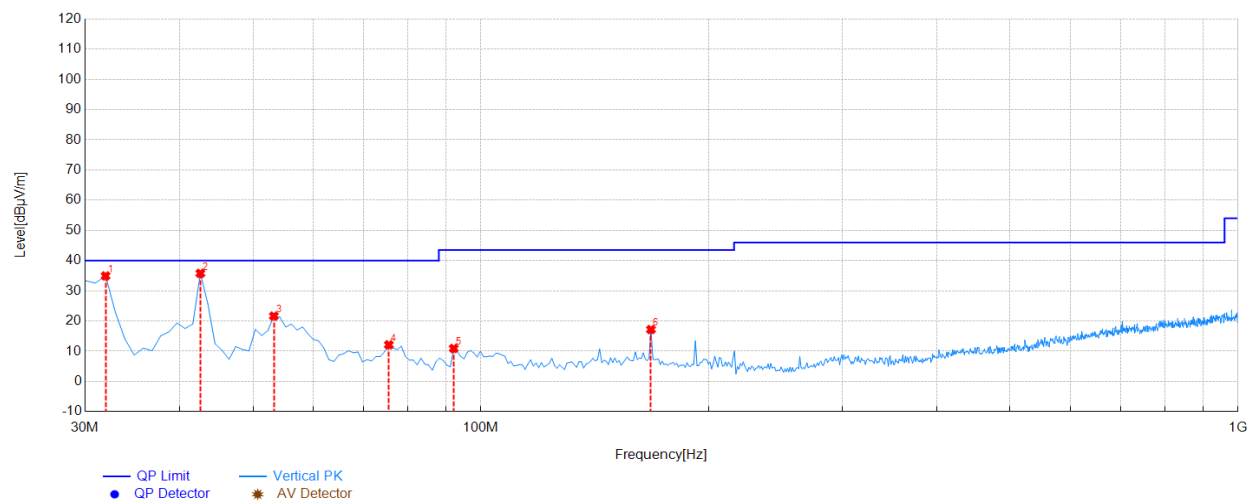
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dB μ V/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Appendix I: Spurious Emissions



NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Verdict
1	30	36.14	-9.01	40.00	3.86	150	200	Horizontal	PASS
2	36.79	33.20	-10.37	40.00	6.80	150	300	Horizontal	PASS
3	42.61	29.35	-10.35	40.00	10.65	150	20	Horizontal	PASS
4	47.46	28.58	-11.19	40.00	11.42	150	170	Horizontal	PASS
5	53.28	27.50	-11.75	40.00	12.50	150	150	Horizontal	PASS
6	63.95	21.23	-12.99	40.00	18.77	150	60	Horizontal	PASS

Test Graph



NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Verdict
1	31.94	34.95	-11.21	40.00	5.05	150	150	Vertical	PASS
2	42.61	35.80	-10.35	40.00	4.20	150	170	Vertical	PASS
3	53.28	21.66	-11.75	40.00	18.34	150	30	Vertical	PASS
4	75.59	12.14	-14.61	40.00	27.86	150	190	Vertical	PASS
5	92.08	10.94	-14.75	43.50	32.56	150	330	Vertical	PASS
6	167.74	17.20	-10.47	43.50	26.30	150	30	Vertical	PASS

Mode:	1M-2402
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NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4218	43.82	-14.85	74.00	30.18	150	288	Horizontal
2	5112	43.47	-13.79	74.00	30.53	150	108	Horizontal
3	6468	45.39	-11.74	74.00	28.61	150	323	Horizontal
4	7857	44.96	-10.48	74.00	29.04	150	349	Horizontal
5	9603	46.11	-8.44	74.00	27.89	150	5	Horizontal
6	11700	48.64	-4.22	74.00	25.36	150	70	Horizontal
7	17049	52.28	2.54	74.00	21.72	150	160	Horizontal

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3918	44.04	-14.91	74.00	29.96	150	204	Vertical
2	6033	45.56	-11.20	74.00	28.44	150	52	Vertical
3	8784	45.53	-9.32	74.00	28.47	150	196	Vertical
4	10800	47.41	-6.56	74.00	26.59	150	319	Vertical
5	13266	49.55	-2.22	74.00	24.45	150	47	Vertical
6	17289	53.27	2.66	74.00	20.73	150	235	Vertical

Mode:	1M-2440
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NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4200	43.88	-14.74	74.00	30.12	150	173	Horizontal
2	5223	43.64	-13.87	74.00	30.36	150	97	Horizontal
3	7902	44.97	-10.25	74.00	29.03	150	97	Horizontal
4	10965	48.00	-5.67	74.00	26.00	150	79	Horizontal
5	12132	48.73	-3.79	74.00	25.27	150	14	Horizontal
6	17529	53.11	2.67	74.00	20.89	150	182	Horizontal

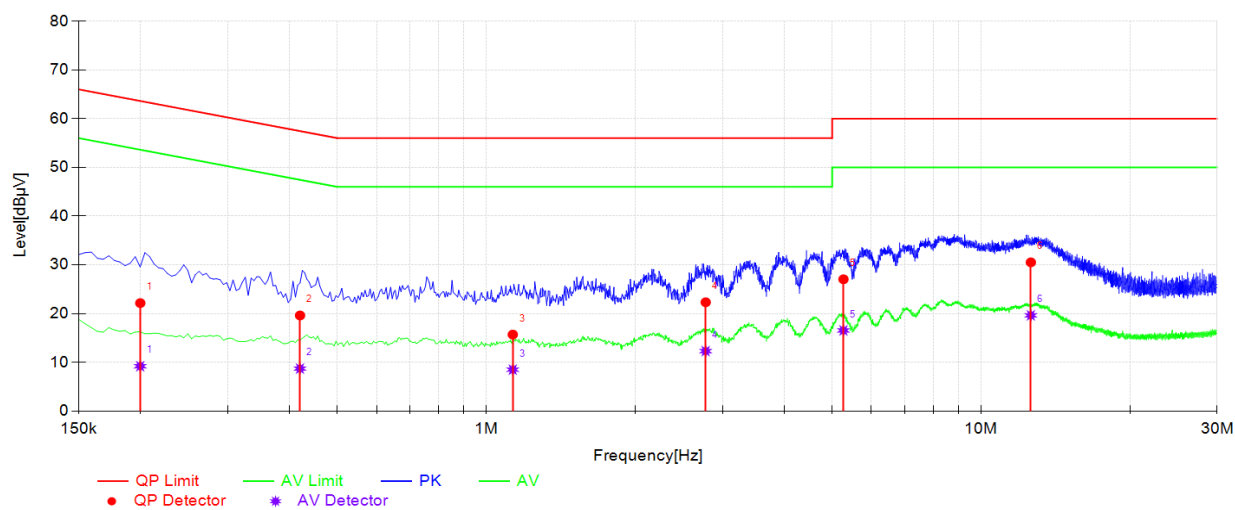
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3822	45.33	-15.33	74.00	28.67	150	309	Vertical
2	5712	44.11	-12.72	74.00	29.89	150	189	Vertical
3	7008	44.77	-11.52	74.00	29.23	150	10	Vertical
4	9324	46.05	-8.36	74.00	27.95	150	336	Vertical
5	13212	50.36	-1.78	74.00	23.64	150	28	Vertical
6	17319	53.26	2.51	74.00	20.74	150	66	Vertical

Mode:	1M-2480
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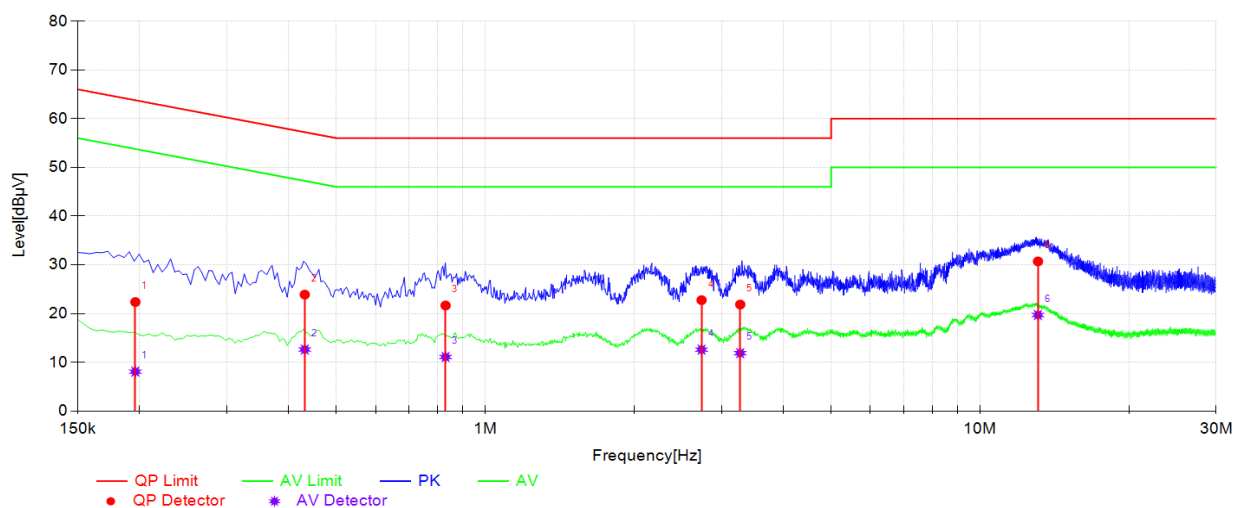
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3882	44.09	-14.72	74.00	29.91	150	211	Horizontal
2	6078	45.20	-11.29	74.00	28.80	150	262	Horizontal
3	7203	44.60	-11.05	74.00	29.40	150	53	Horizontal
4	9915	47.54	-7.29	74.00	26.46	150	10	Horizontal
5	13182	49.80	-1.89	74.00	24.20	150	173	Horizontal
6	17466	53.39	2.61	74.00	20.61	150	319	Horizontal

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4248	44.31	-15.04	74.00	29.69	150	96	Vertical
2	5760	46.59	-12.72	74.00	27.41	150	142	Vertical
3	7902	45.19	-10.25	74.00	28.81	150	316	Vertical
4	10614	46.75	-6.24	74.00	27.25	150	273	Vertical
5	11538	48.39	-5.13	74.00	25.61	150	5	Vertical
6	17508	53.93	3.01	74.00	20.07	150	117	Vertical

Appendix J: Conducted emission AC power port



Final Data List										
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Type	Verdict
1	0.1996	10.26	22.17	63.63	41.46	9.21	53.63	44.42	L1	PASS
2	0.4199	10.26	19.63	57.45	37.82	8.72	47.45	38.73	L1	PASS
3	1.1305	10.28	15.71	56.00	40.29	8.50	46.00	37.50	L1	PASS
4	2.7748	10.30	22.33	56.00	33.67	12.31	46.00	33.69	L1	PASS
5	5.2702	10.35	27.05	60.00	32.95	16.55	50.00	33.45	L1	PASS
6	12.6079	10.50	30.53	60.00	29.47	19.64	50.00	30.36	L1	PASS



Final Data List										
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Type	Verdict
1	0.1960	10.26	22.39	63.78	41.39	8.10	53.78	45.68	N	PASS
2	0.4313	10.26	23.91	57.23	33.32	12.64	47.23	34.59	N	PASS
3	0.8307	10.27	21.67	56.00	34.33	11.10	46.00	34.90	N	PASS
4	2.7348	10.34	22.77	56.00	33.23	12.61	46.00	33.39	N	PASS
5	3.2745	10.36	21.87	56.00	34.13	11.89	46.00	34.11	N	PASS
6	13.0935	10.51	30.72	60.00	29.28	19.72	50.00	30.28	N	PASS