Appendix: Bluetooth LE

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Appendix A: DTS Bandwidth

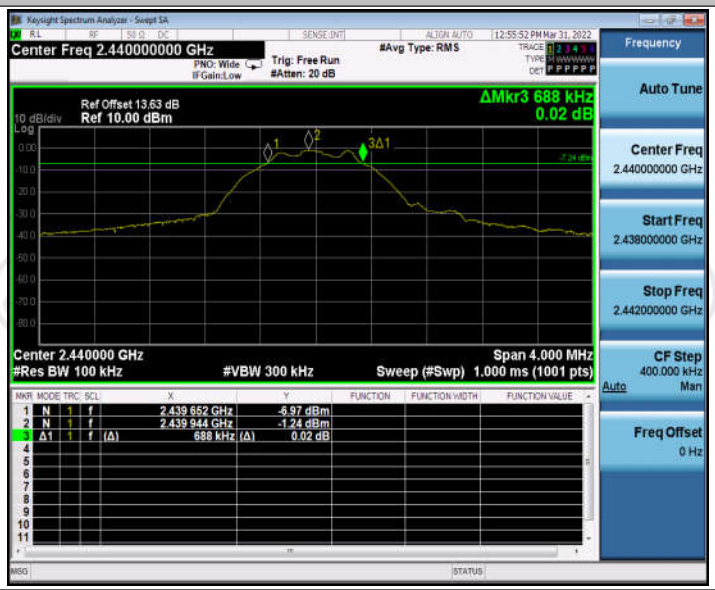
Test Result

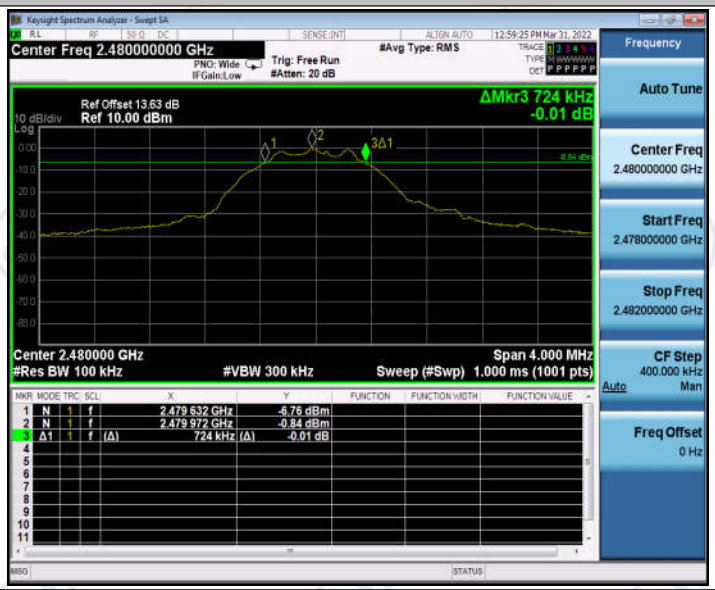
Test Mode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.712	2401.640	2402.352	0.5	PASS
		2440	0.688	2439.652	2440.340	0.5	PASS
		2480	0.724	2479.632	2480.356	0.5	PASS
BLE_2M	Ant1	2402	1.040	2401.468	2402.508	0.5	PASS
		2440	1.048	2439.464	2440.512	0.5	PASS
		2480	1.044	2479.464	2480.508	0.5	PASS

Test Graphs

BLE_1M_Ant1_2402

BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

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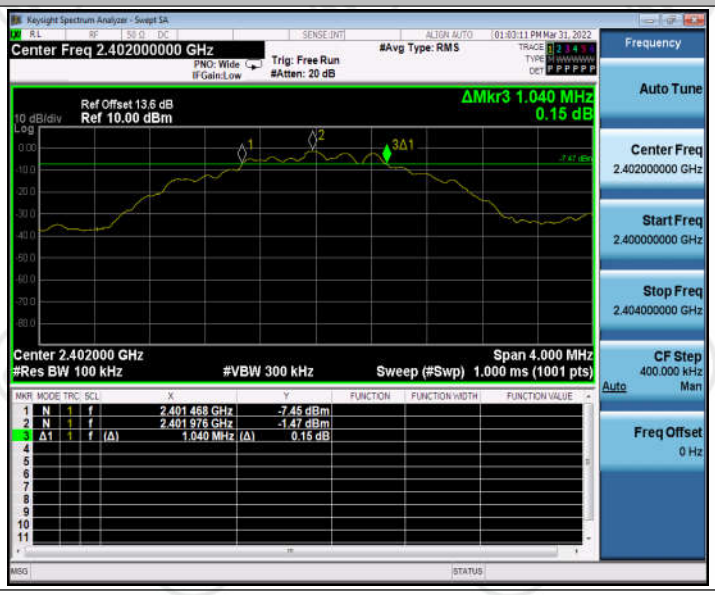
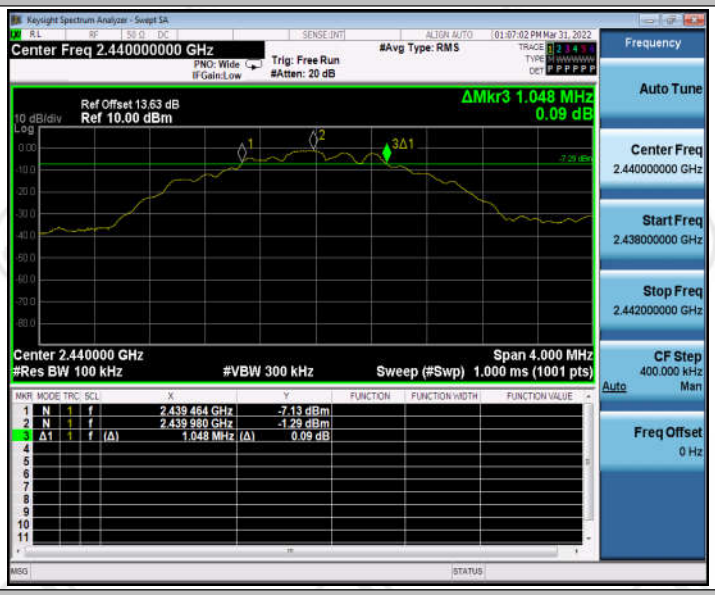
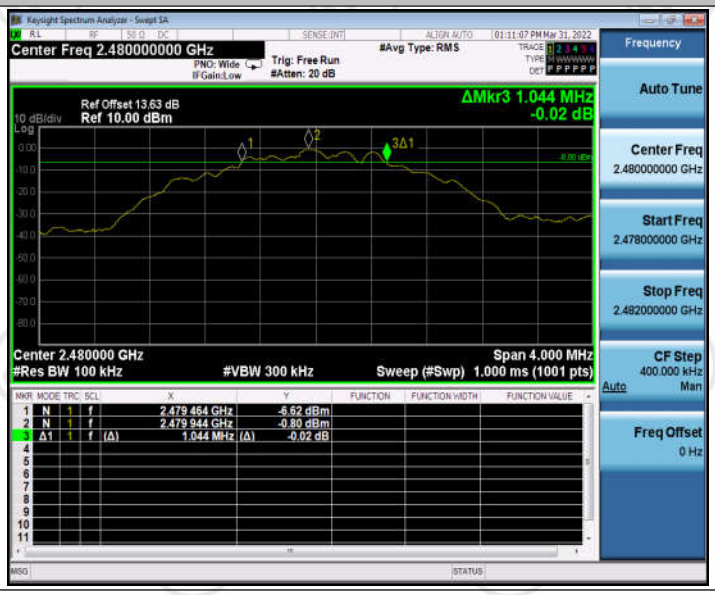


BLE_2M_Ant1_2440

BLE_2M_Ant1_2480


Appendix B: Occupied Channel Bandwidth

Test Result

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0747	2401.461	2402.536	---	---
		2440	1.0607	2439.468	2440.529	---	---
		2480	1.0745	2479.458	2480.533	---	---
BLE_2M	Ant1	2402	2.1276	2400.933	2403.061	---	---
		2440	2.0657	2438.968	2441.034	---	---
		2480	2.0487	2478.975	2481.024	---	---

Test Graphs

BLE_1M_Ant1_2402

BLE_1M_Ant1_2440

BLE_1M_Ant1_2480

BLE_2M_Ant1_2402

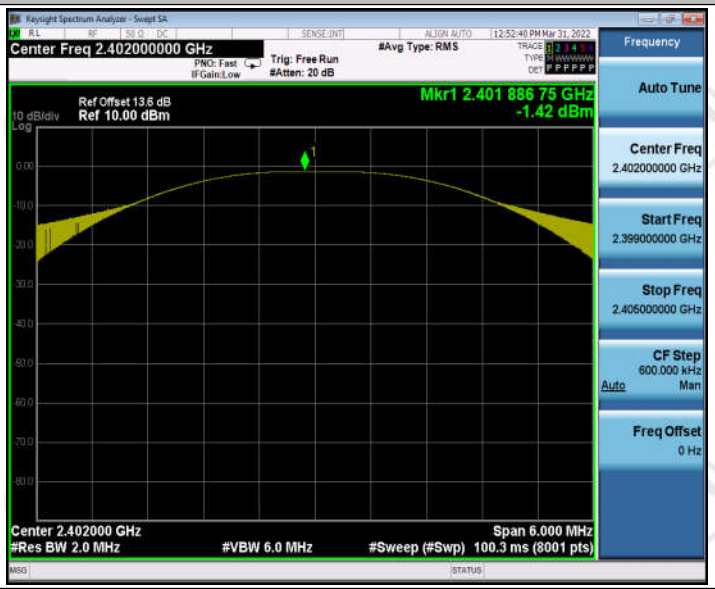
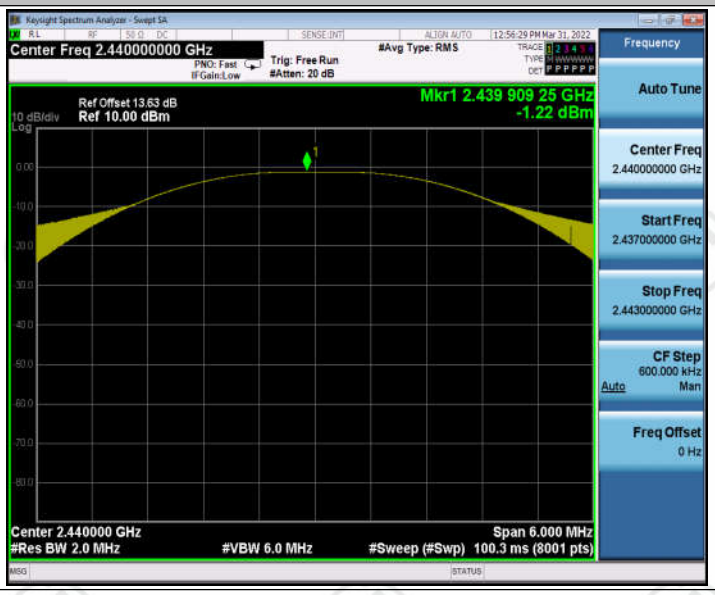
BLE_2M_Ant1_2440
BLE_2M_Ant1_2480

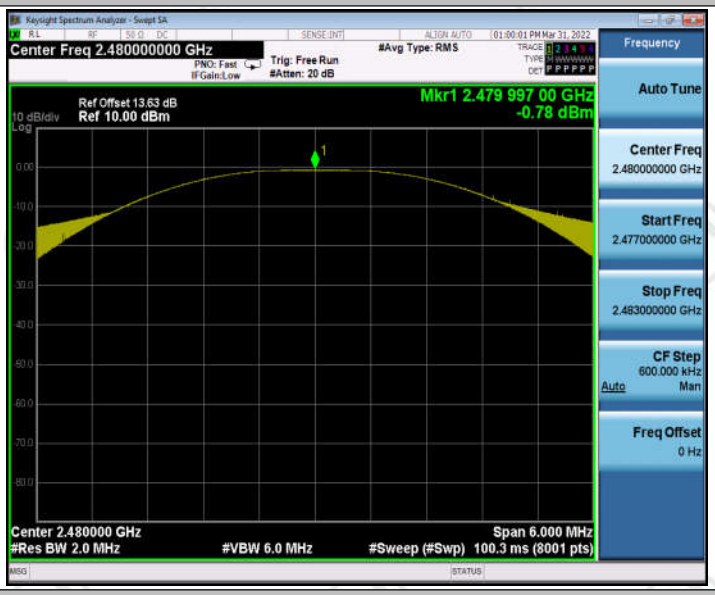
Appendix C: Maximum conducted output power

Test Result Peak

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-1.42	≤30	PASS
		2440	-1.22	≤30	PASS
		2480	-0.78	≤30	PASS
BLE_2M	Ant1	2402	-1.42	≤30	PASS
		2440	-1.22	≤30	PASS
		2480	-0.77	≤30	PASS

Test Graphs Peak

BLE_1M_Ant1_2402

BLE_1M_Ant1_2440


BLE_1M_Ant1_2480

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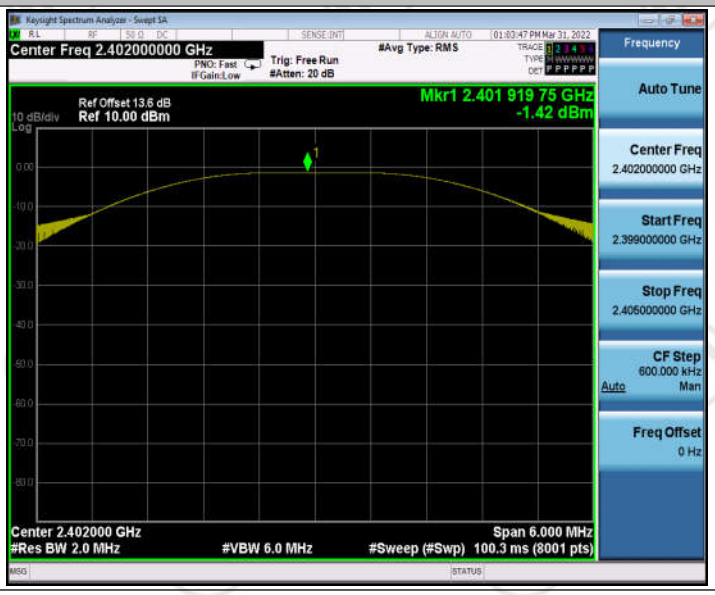
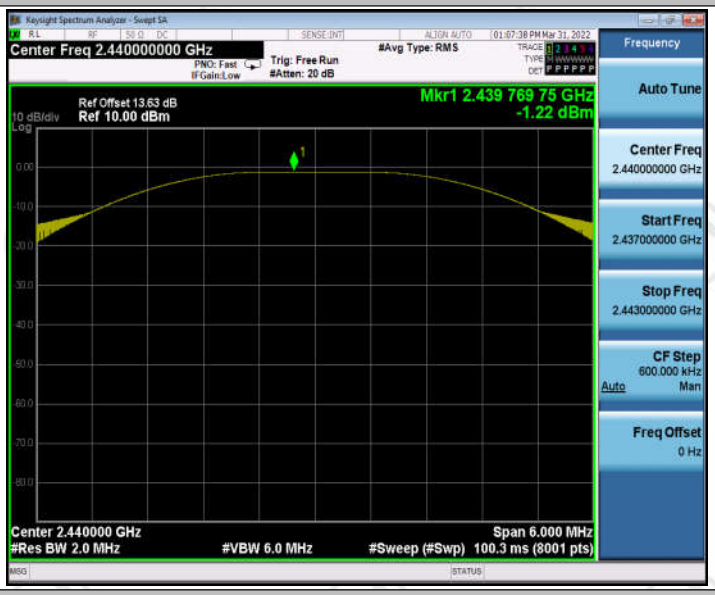


BLE_2M_Ant1_2440

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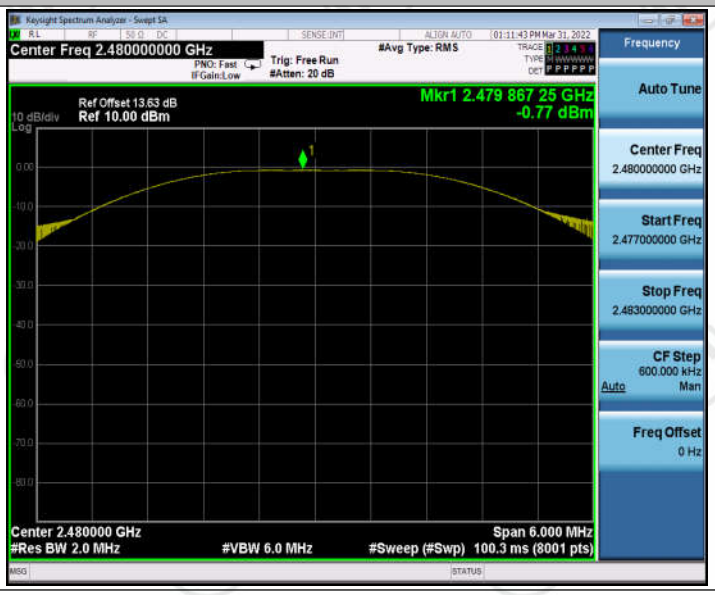


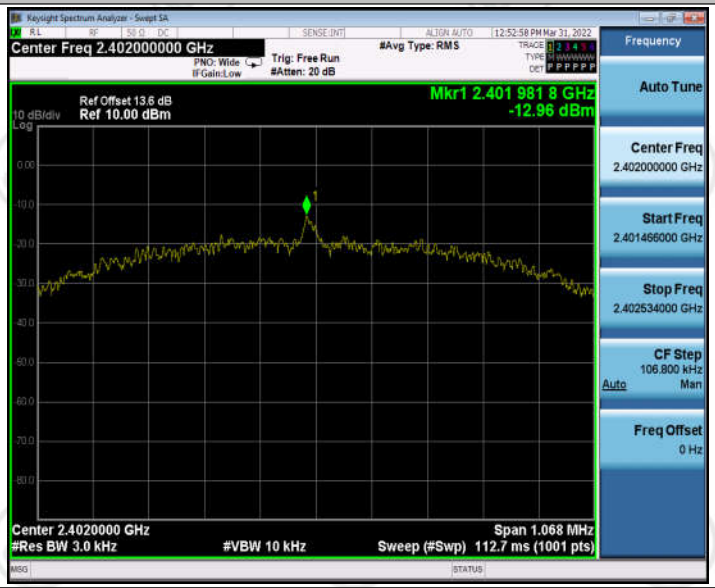
Appendix D: Maximum power spectral density

Test Result

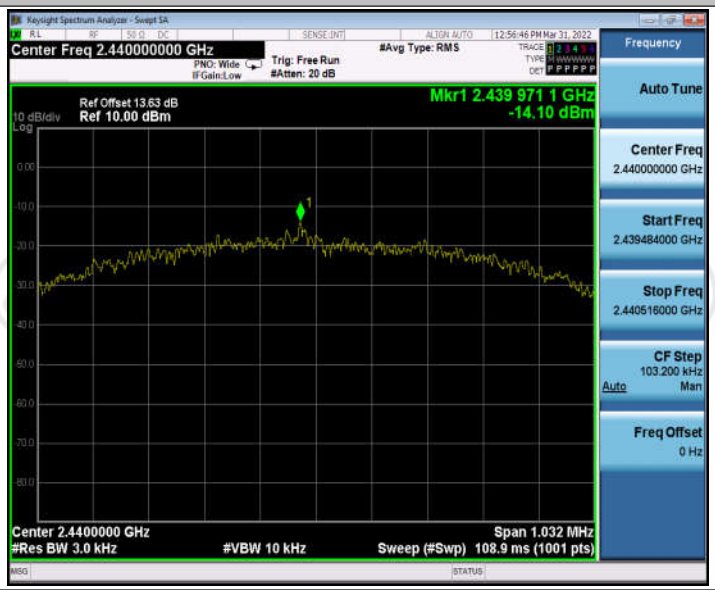
Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-12.96	≤8.00	PASS
		2440	-14.1	≤8.00	PASS
		2480	-12.39	≤8.00	PASS
BLE_2M	Ant1	2402	-13.1	≤8.00	PASS
		2440	-13.56	≤8.00	PASS
		2480	-13.12	≤8.00	PASS

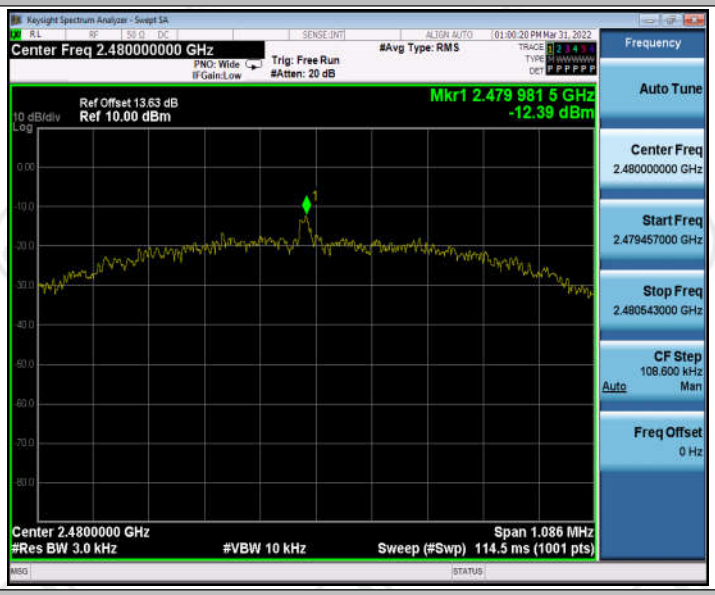
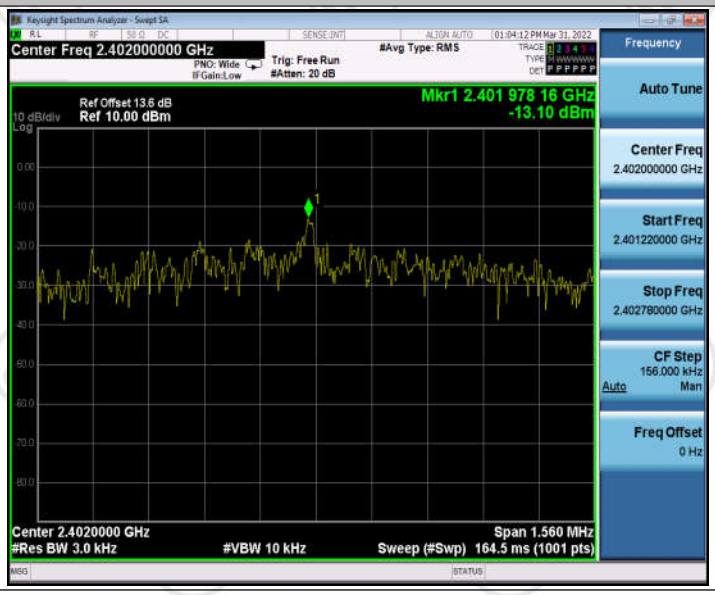
Test Graphs

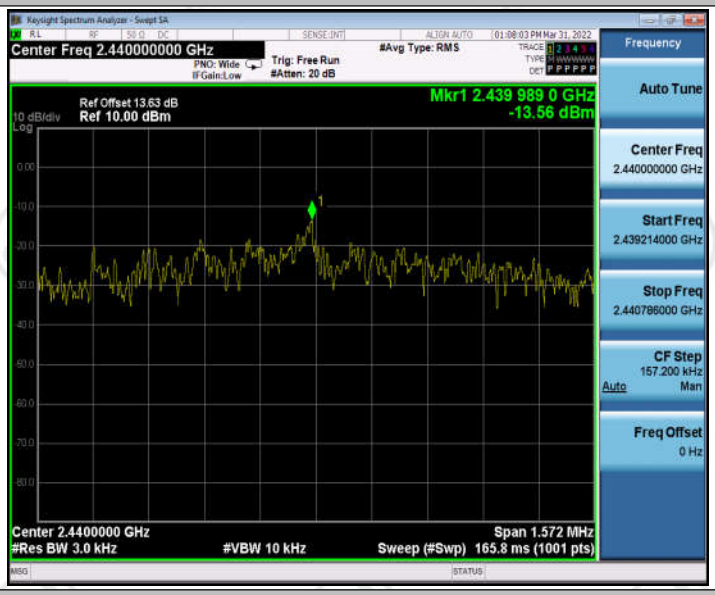
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

BLE_2M_Ant1_2402


BLE_2M_Ant1_2440

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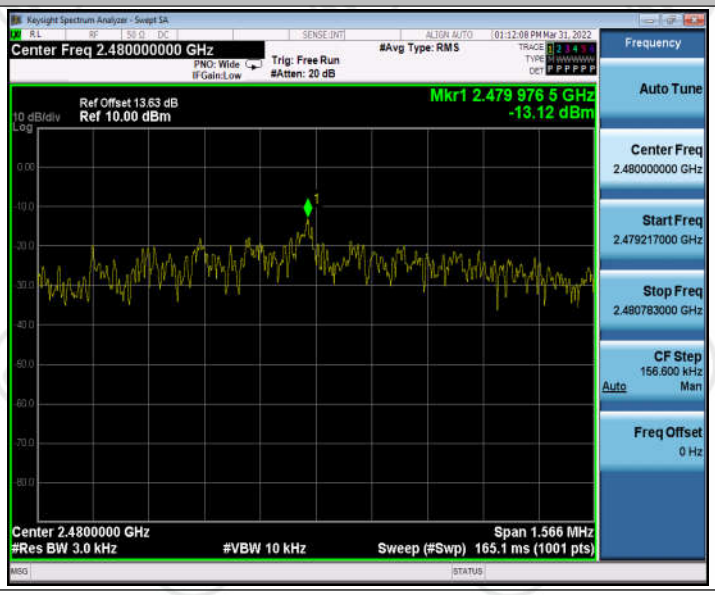


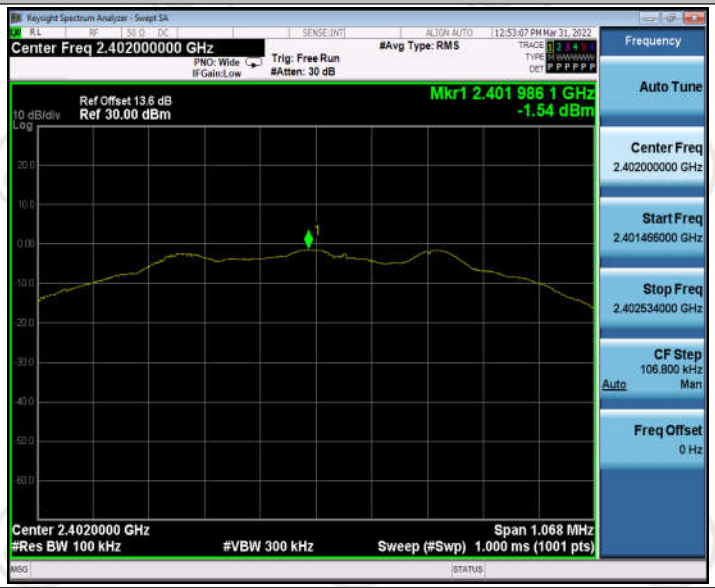
Appendix E: Reference level measurement

Test Result

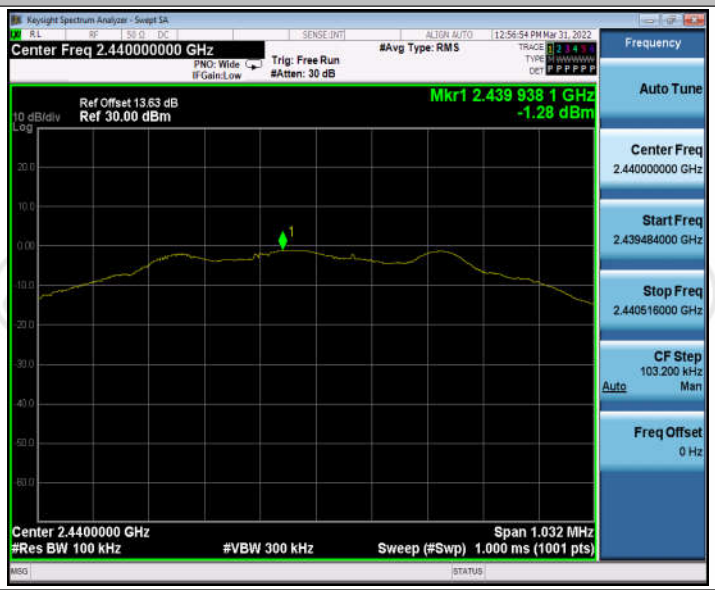
Test Mode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
BLE_1M	Ant1	2402	2401.99	-1.54
		2440	2439.94	-1.28
		2480	2479.98	-0.85
BLE_2M	Ant1	2402	2401.98	-1.52
		2440	2439.97	-1.28
		2480	2479.97	-0.82

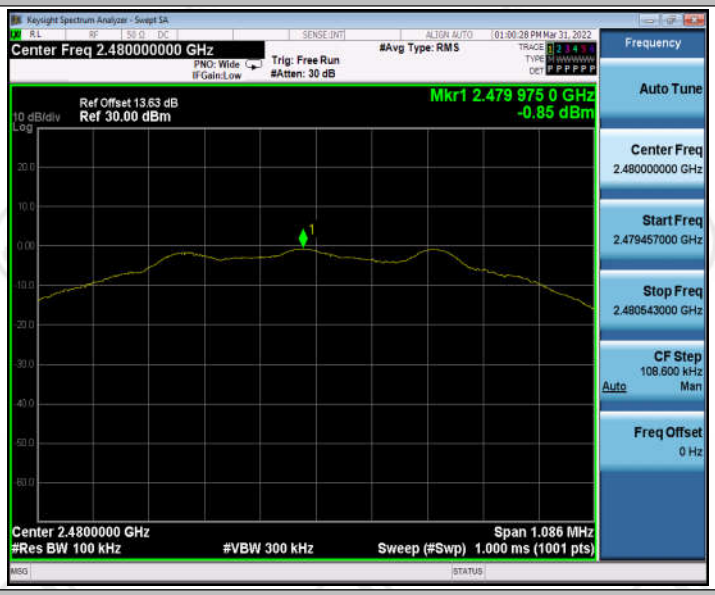
Test Graphs

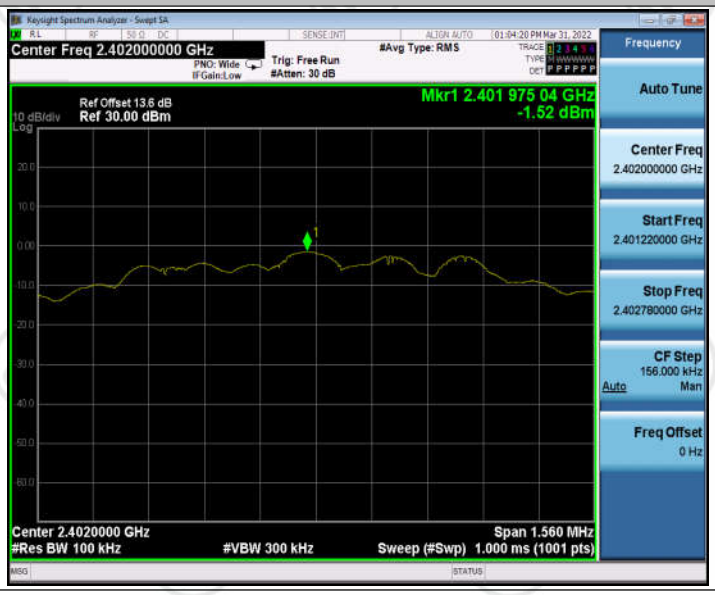
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480


BLE_2M_Ant1_2402


BLE_2M_Ant1_2440
BLE_2M_Ant1_2480

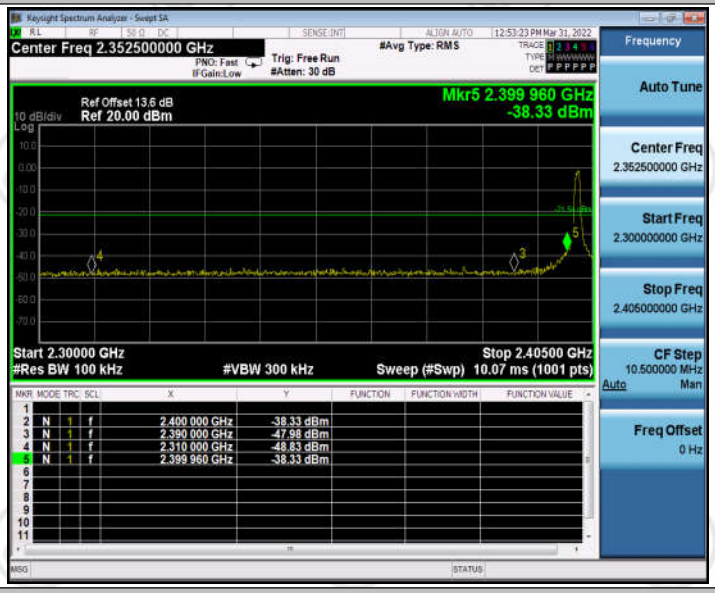
Appendix F: Band edge measurements

Test Result

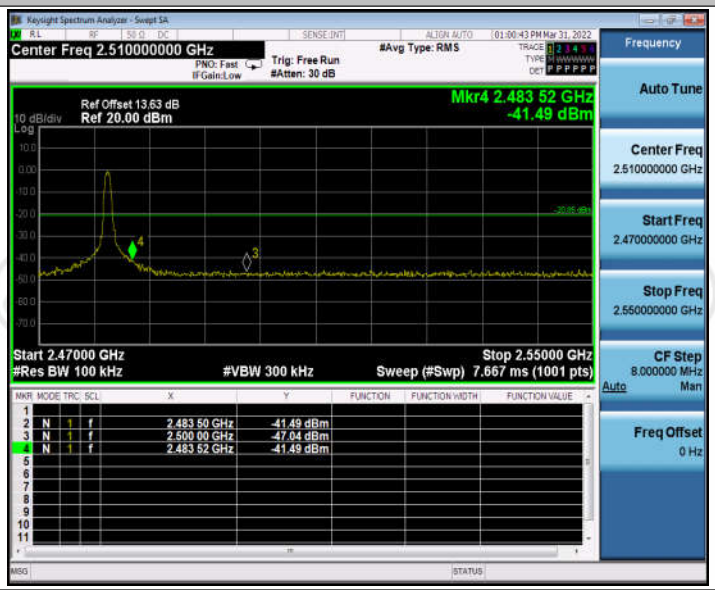
Test Mode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-1.54	-38.33	≤-21.54	PASS
		High	2480	-0.85	-41.5	≤-20.85	PASS
BLE_2M	Ant1	Low	2402	-1.52	-36.17	≤-21.52	PASS
		High	2480	-0.82	-41.84	≤-20.82	PASS

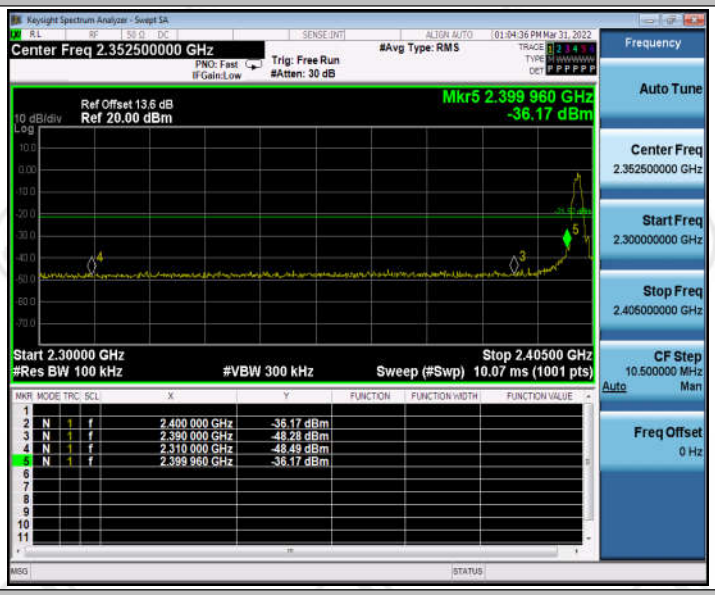
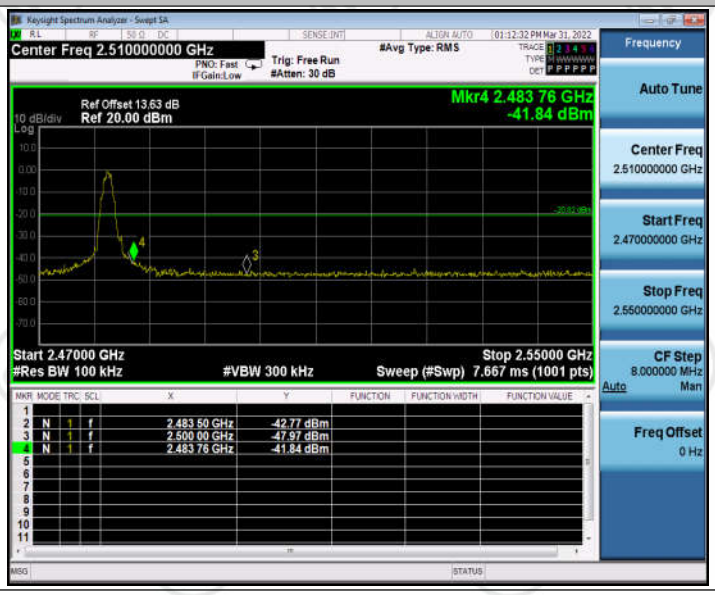
Test Graphs

BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2402

BLE_2M_Ant1_High_2480


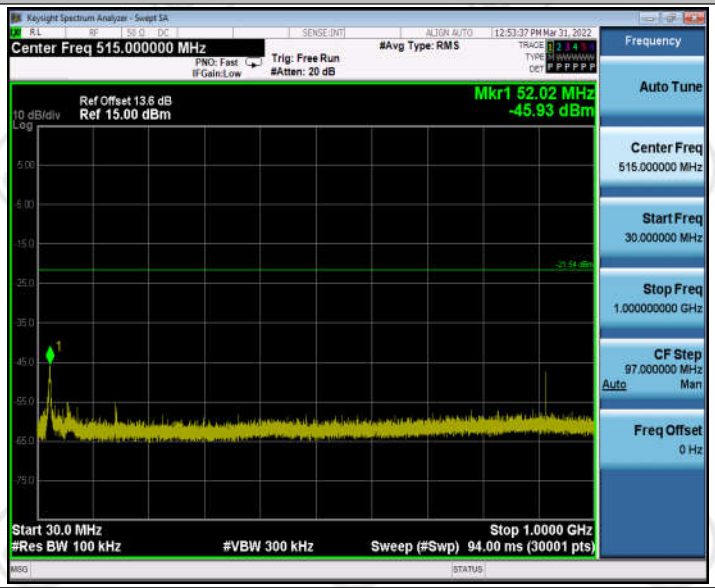
Appendix G: Conducted Spurious Emission

Test Result

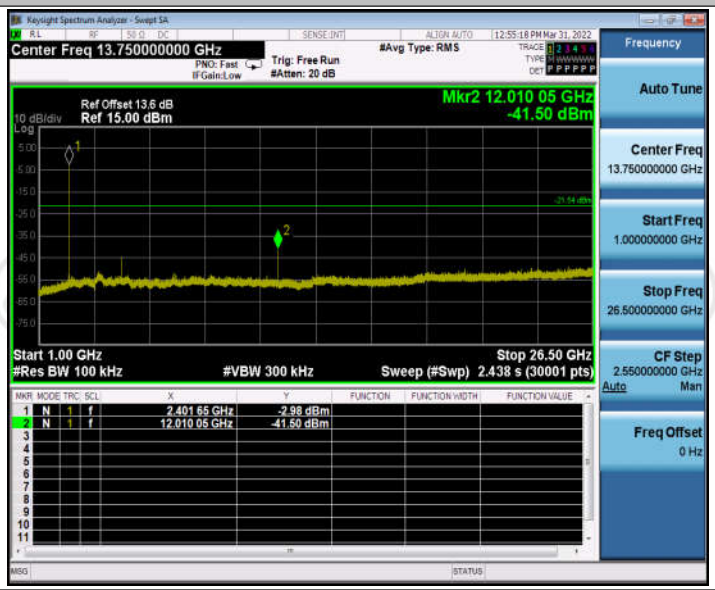
Test Mode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	30~1000	-1.54	-45.93	≤-21.54	PASS
			1000~26500	-1.54	-41.5	≤-21.54	PASS
		2440	30~1000	-1.28	-45.42	≤-21.28	PASS
			1000~26500	-1.28	-44.21	≤-21.28	PASS
		2480	30~1000	-0.85	-45.85	≤-20.85	PASS
			1000~26500	-0.85	-42.76	≤-20.85	PASS
BLE_2M	Ant1	2402	30~1000	-1.52	-46.76	≤-21.52	PASS
			1000~26500	-1.52	-40.05	≤-21.52	PASS
		2440	30~1000	-1.28	-46.45	≤-21.28	PASS
			1000~26500	-1.28	-42.07	≤-21.28	PASS
		2480	30~1000	-0.82	-46.2	≤-20.82	PASS
			1000~26500	-0.82	-45.17	≤-20.82	PASS

Test Graphs

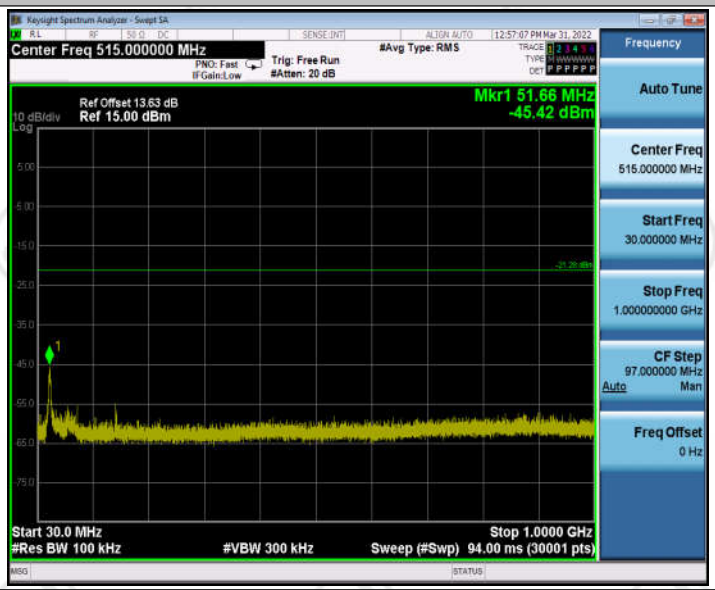
BLE_1M_Ant1_2402_30~1000



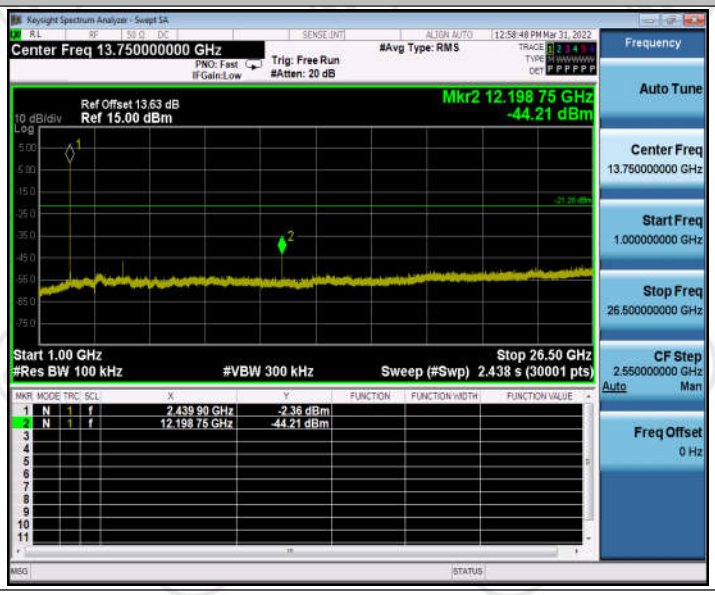
BLE_1M_Ant1_2402_1000~26500

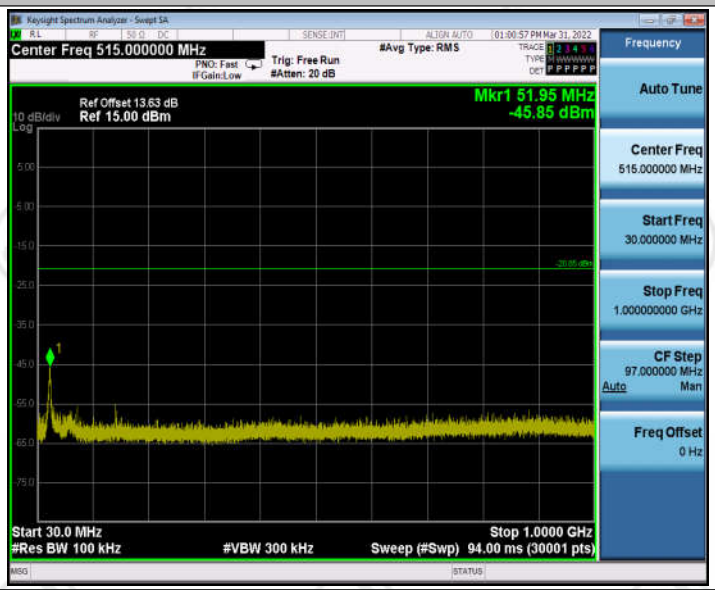
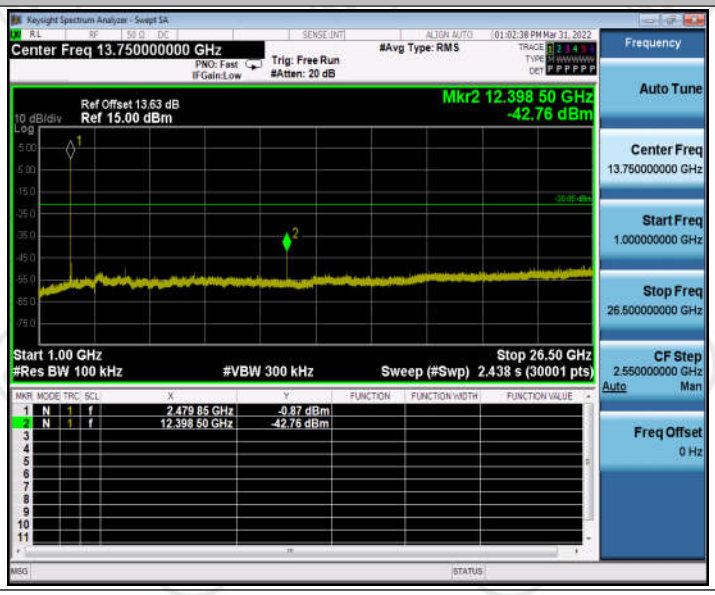


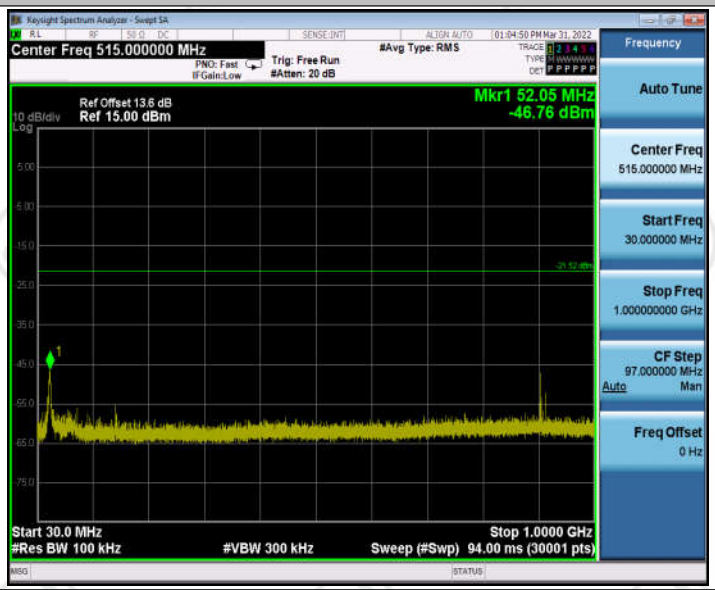
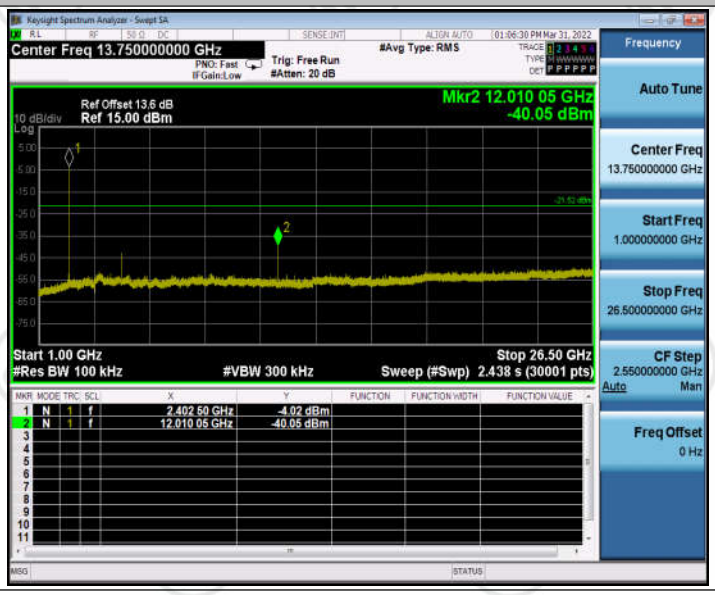
BLE_1M_Ant1_2440_30~1000

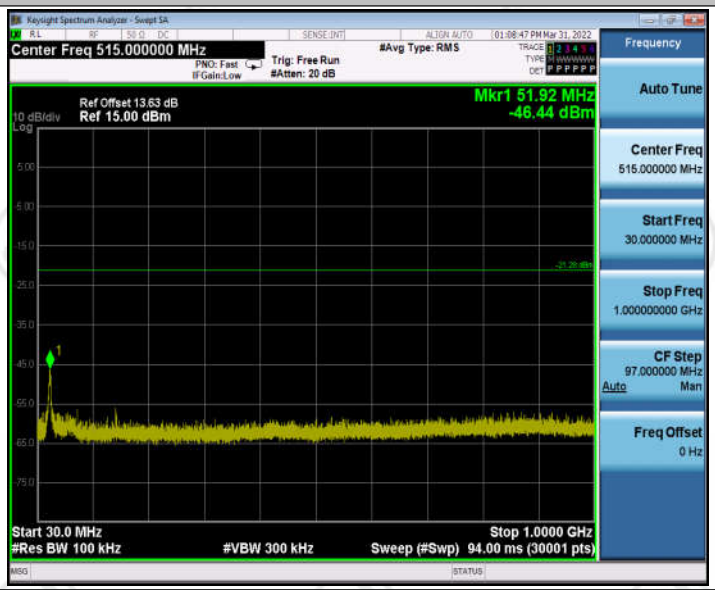
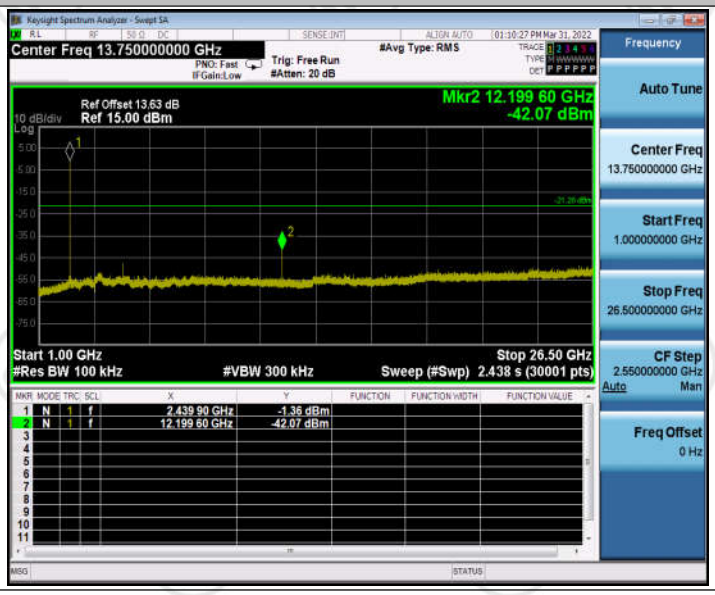


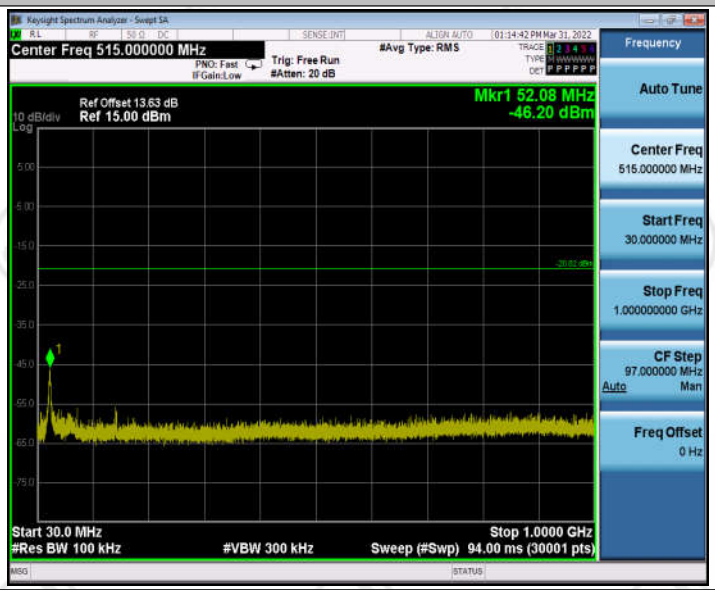
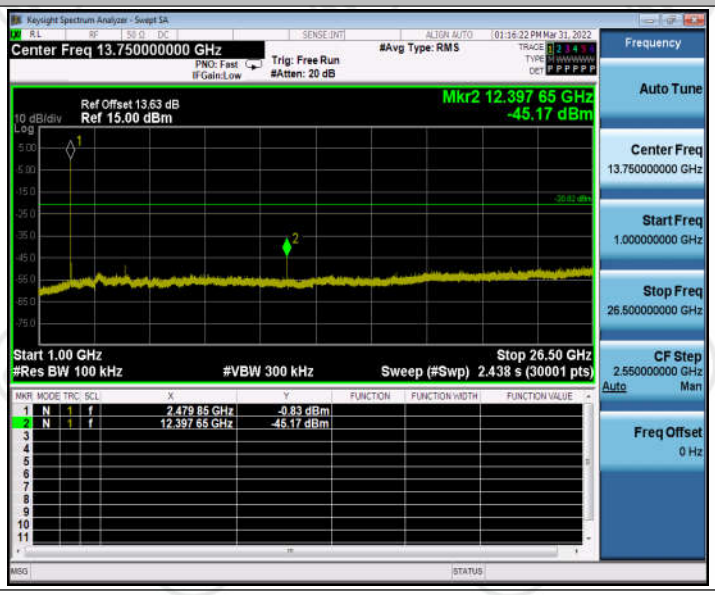
BLE_1M_Ant1_2440_1000~26500



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


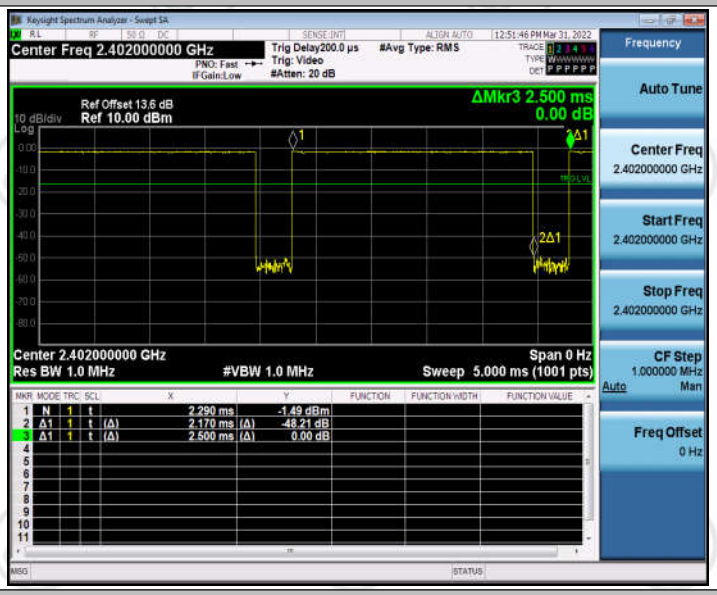
Appendix H: Duty Cycle

Test Result

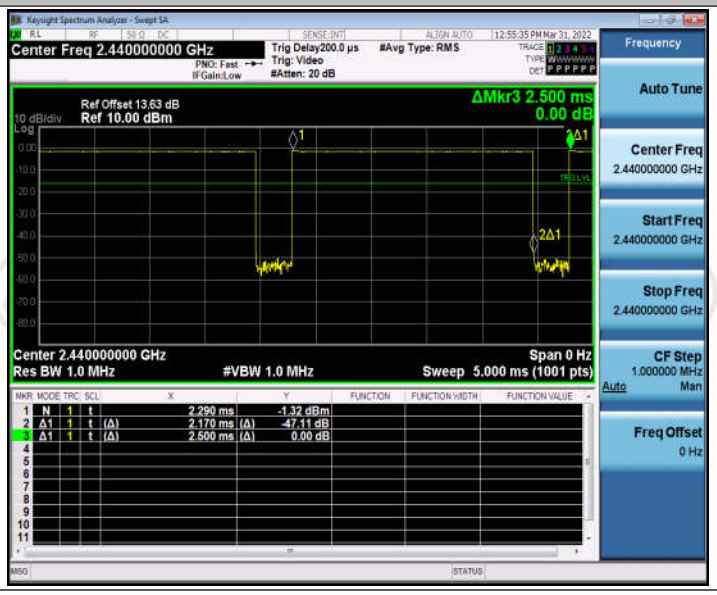
Test Mode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
BLE_1M	Ant1	2402	2.17	2.50	86.80	0.61
		2440	2.17	2.50	86.80	0.61
		2480	2.17	2.50	86.80	0.61
BLE_2M	Ant1	2402	1.12	1.87	59.89	2.23
		2440	1.12	1.88	59.57	2.25
		2480	1.12	1.87	59.89	2.23

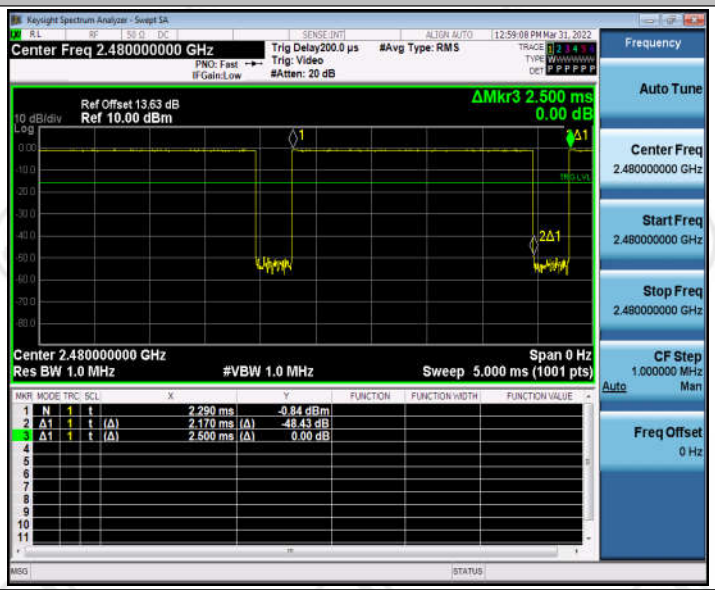
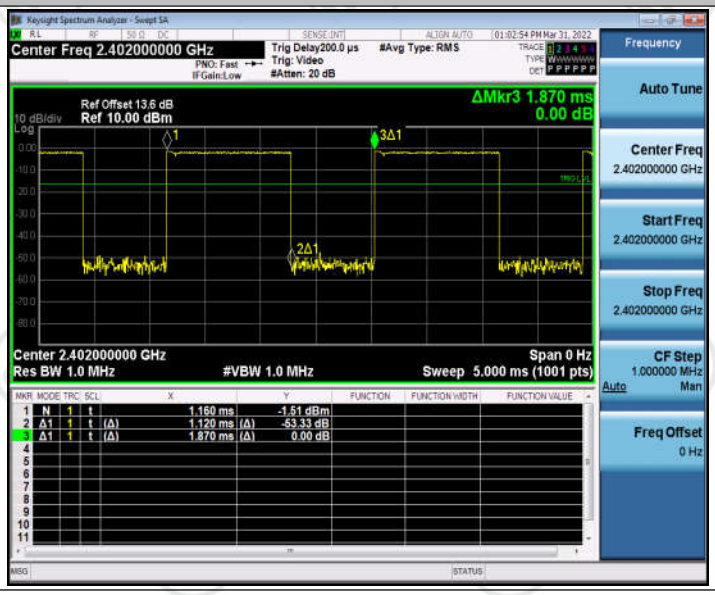
Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

BLE_2M_Ant1_2402


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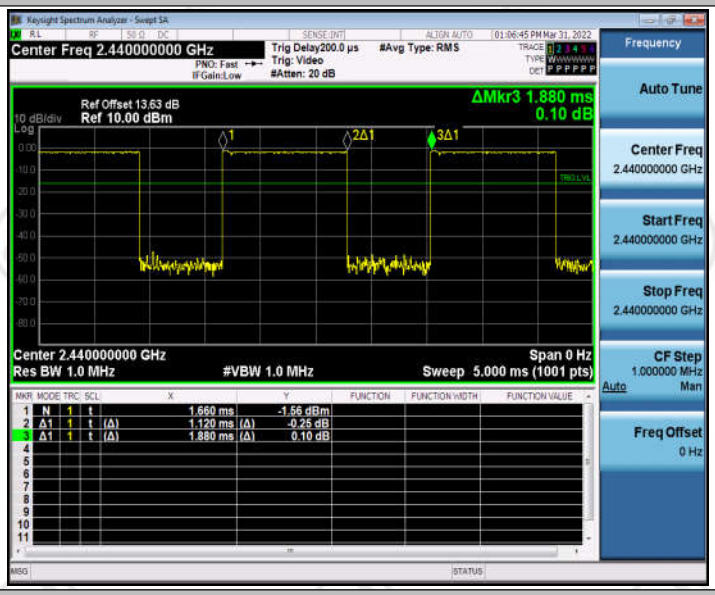
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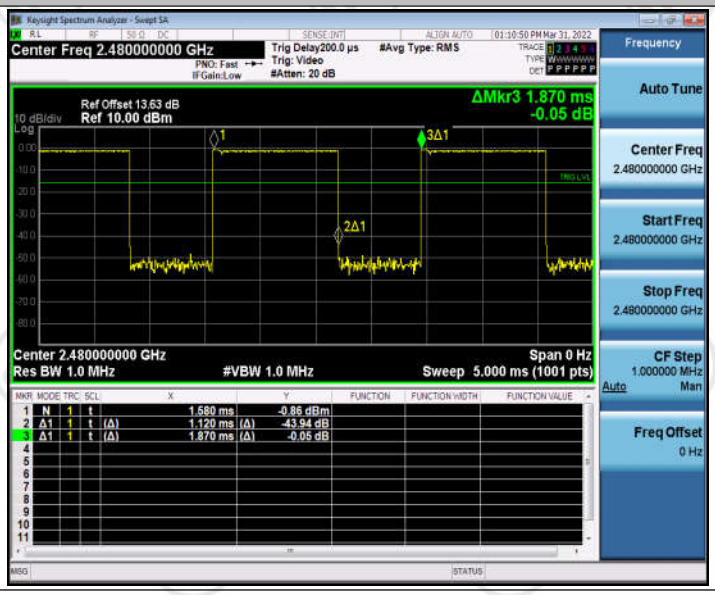

*** End of Report ***