

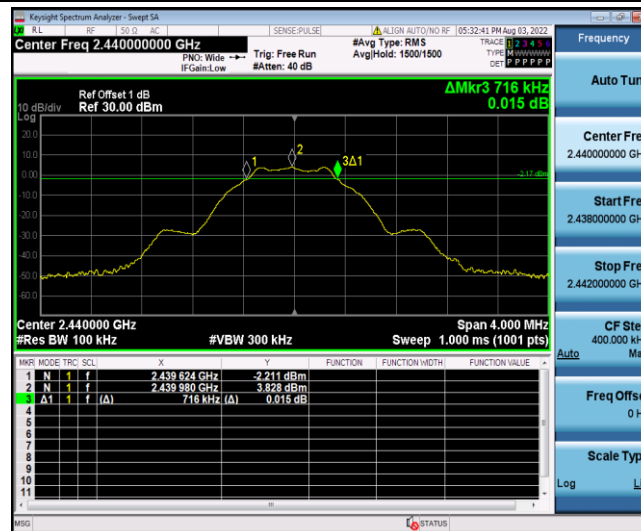
Appendix for BLE

Test Report No.:CTL2207053063-WF04

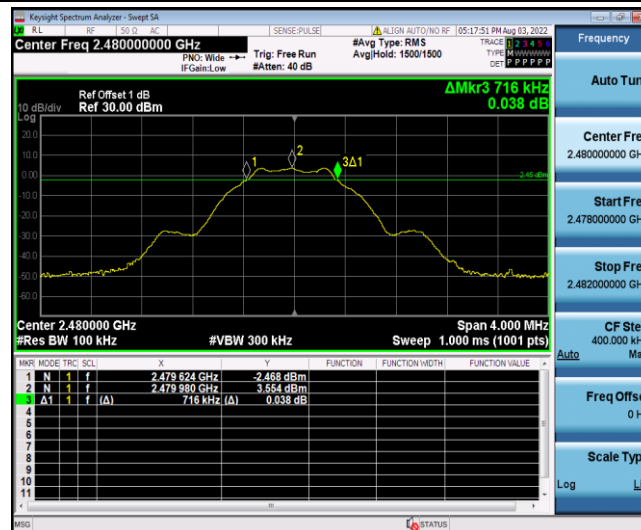
Appendix A: DTS Bandwidth

Test Result

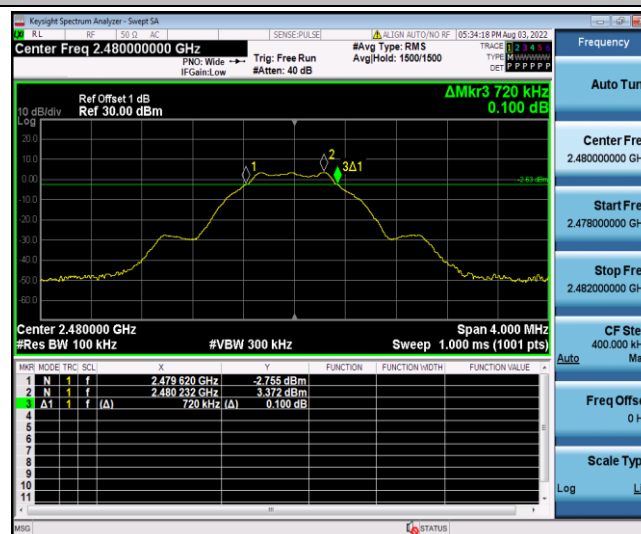
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_BT4.0	Ant1	2402	0.720	2401.624	2402.344	0.5	PASS
	Ant2	2402	0.716	2401.624	2402.340	0.5	PASS
	Ant1	2440	0.716	2439.624	2440.340	0.5	PASS
	Ant2	2440	0.716	2439.624	2440.340	0.5	PASS
	Ant1	2480	0.716	2479.624	2480.340	0.5	PASS
	Ant2	2480	0.720	2479.620	2480.340	0.5	PASS
BLE_BT5.0	Ant1	2402	1.188	2401.394	2402.582	0.5	PASS
	Ant2	2402	1.188	2401.394	2402.582	0.5	PASS
	Ant1	2440	1.188	2439.394	2440.582	0.5	PASS
	Ant2	2440	1.188	2439.394	2440.582	0.5	PASS
	Ant1	2480	1.188	2479.394	2480.582	0.5	PASS
	Ant2	2480	1.188	2479.394	2480.582	0.5	PASS



BLE_BT4.0_Ant2_2440



BLE_BT4.0_Ant1_2480



BLE_BT4.0_Ant2_2480



BLE BT5.0_Ant1_2402



BLE_BT5.0_Ant2_2402



BLE BT5.0_Ant1_2440



BLE_BT5.0_Ant2_2440



BLE_BT5.0_Ant1_2480



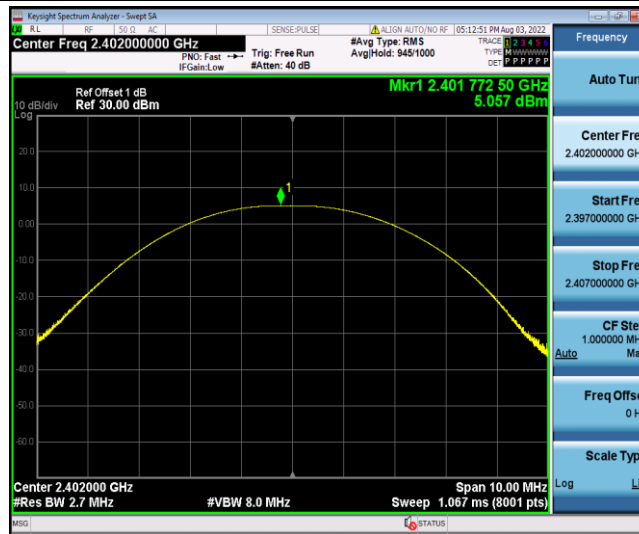
BLE_BT5.0_Ant2_2480

Appendix B: Maximum conducted output power

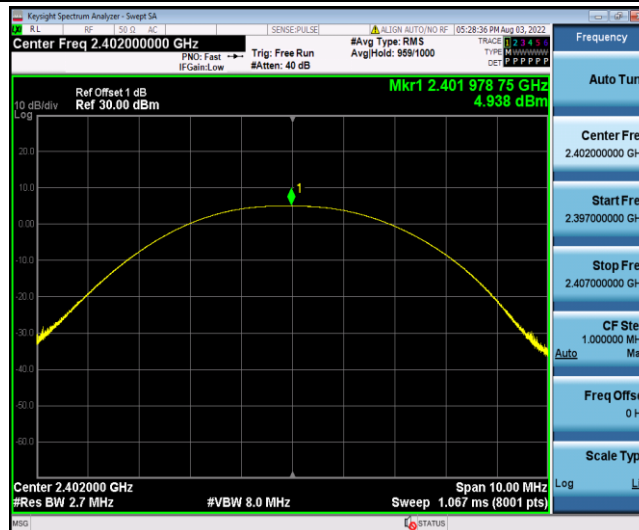
Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_BT4.0	Ant1	2402	5.06	≤30	PASS
	Ant2	2402	4.94	≤30	PASS
	Ant1	2440	4.82	≤30	PASS
	Ant2	2440	4.7	≤30	PASS
	Ant1	2480	4.42	≤30	PASS
	Ant2	2480	4.26	≤30	PASS
BLE_BT5.0	Ant1	2402	5.06	≤30	PASS
	Ant2	2402	4.96	≤30	PASS
	Ant1	2440	4.85	≤30	PASS
	Ant2	2440	4.72	≤30	PASS
	Ant1	2480	4.44	≤30	PASS
	Ant2	2480	4.27	≤30	PASS

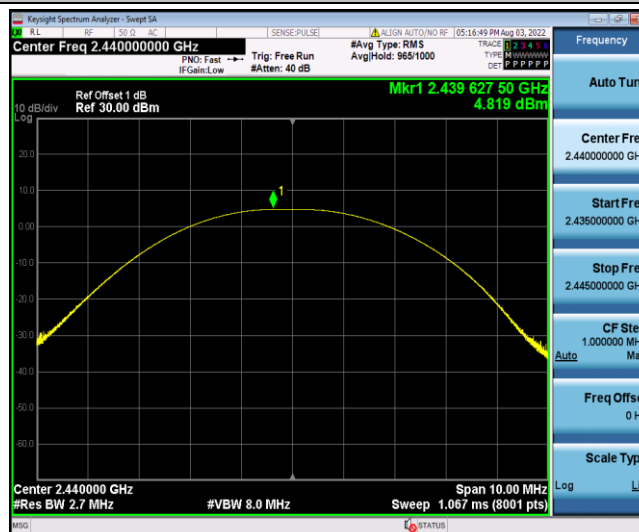
Test Graphs



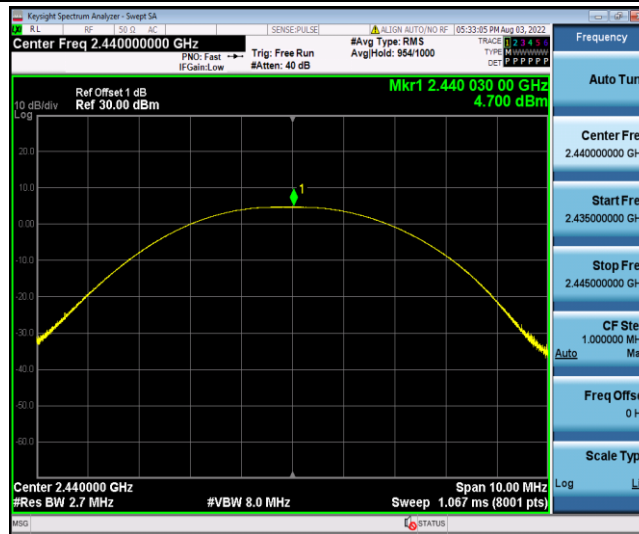
BLE_BT4.0_Ant1_2402



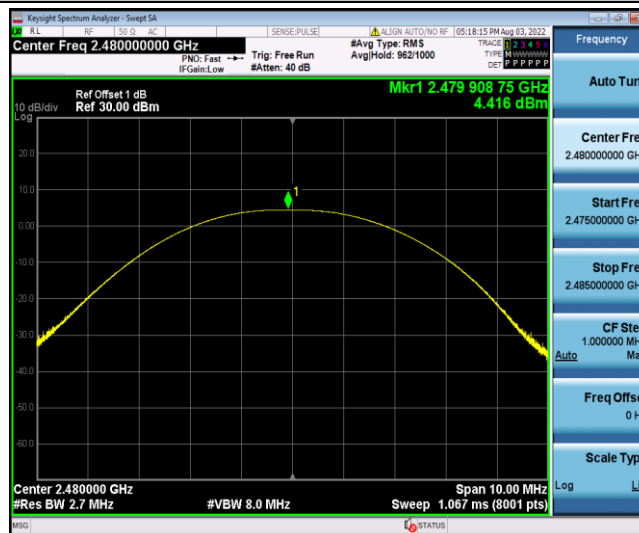
BLE_BT4.0_Ant2_2402



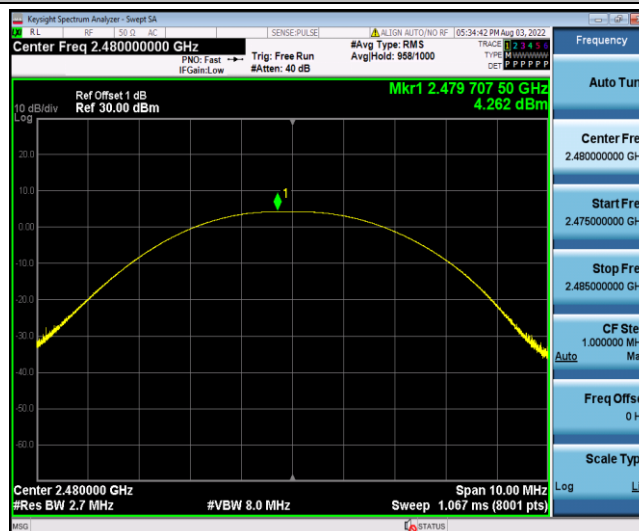
BLE_BT4.0_Ant1_2440



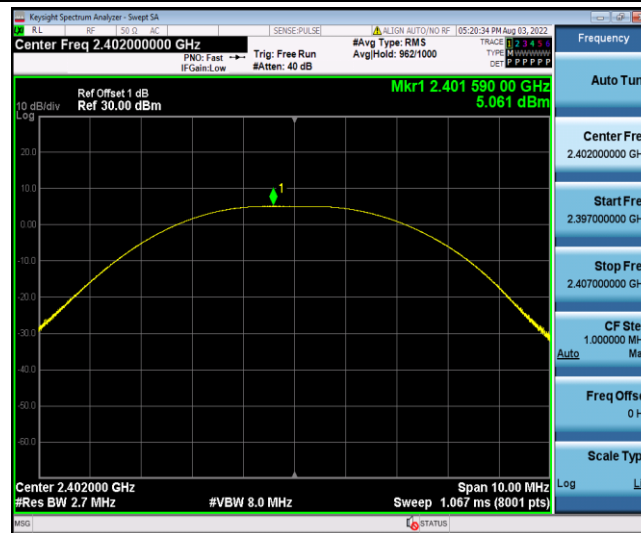
BLE_BT4.0_Ant2_2440



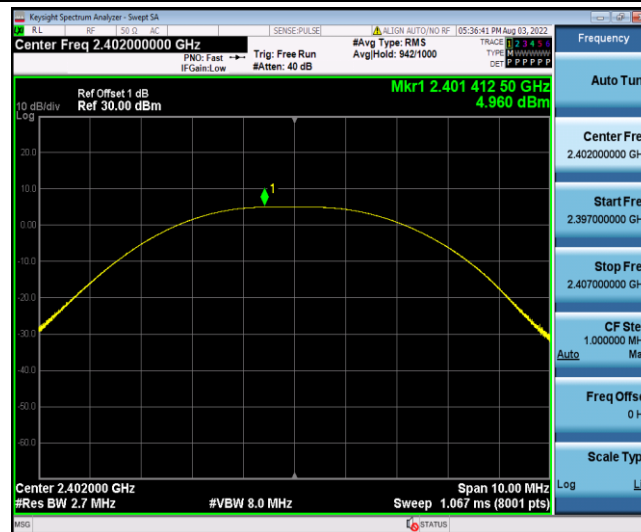
BLE_BT4.0_Ant1_2480



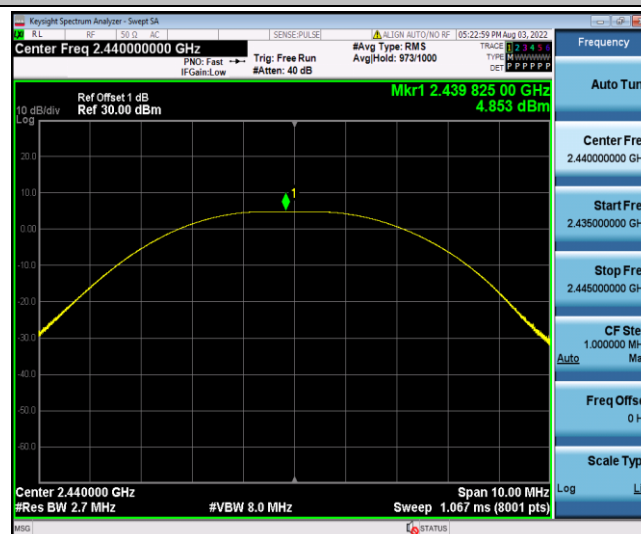
BLE_BT4.0_Ant2_2480



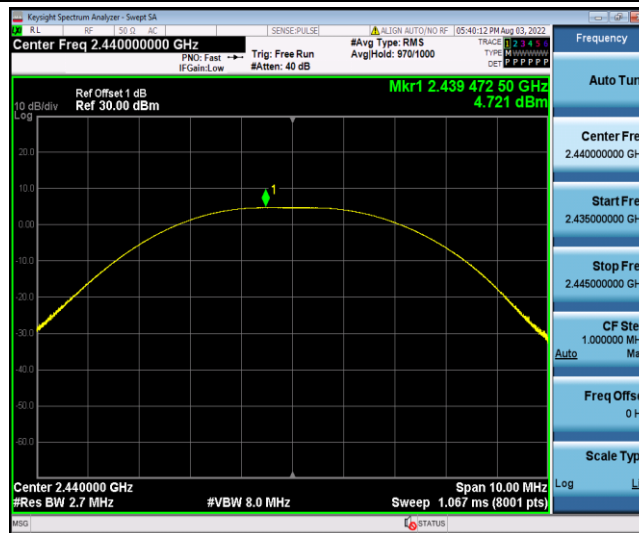
BLE BT5.0_Ant1_2402



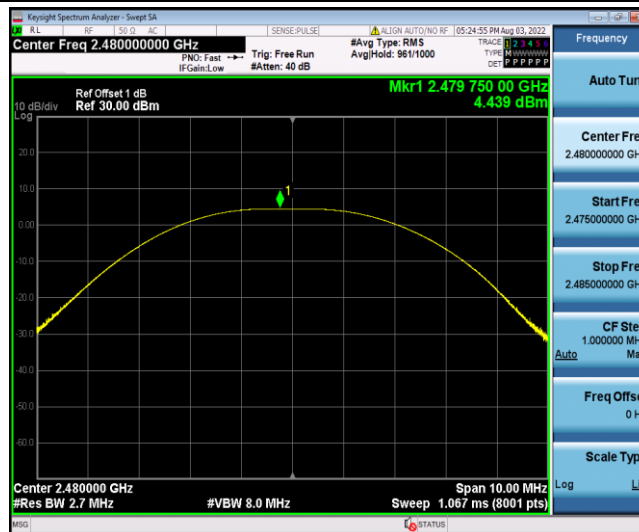
BLE_BT5.0_Ant2_2402



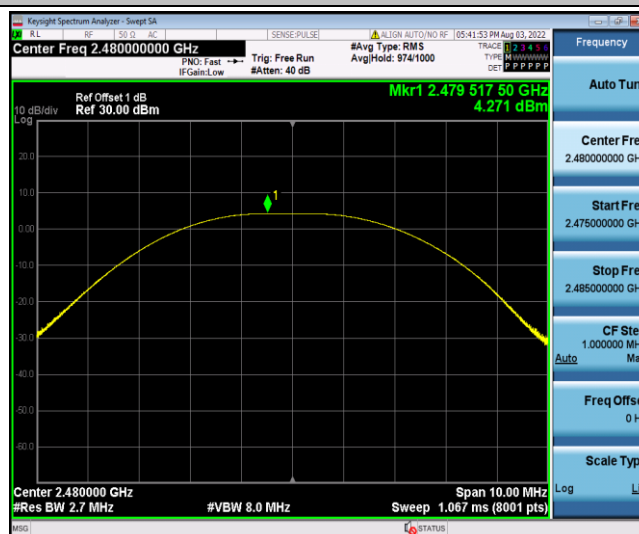
BLE BT5.0_Ant1_2440



BLE BT5.0_Ant2_2440



BLE_BT5.0_Ant1_2480



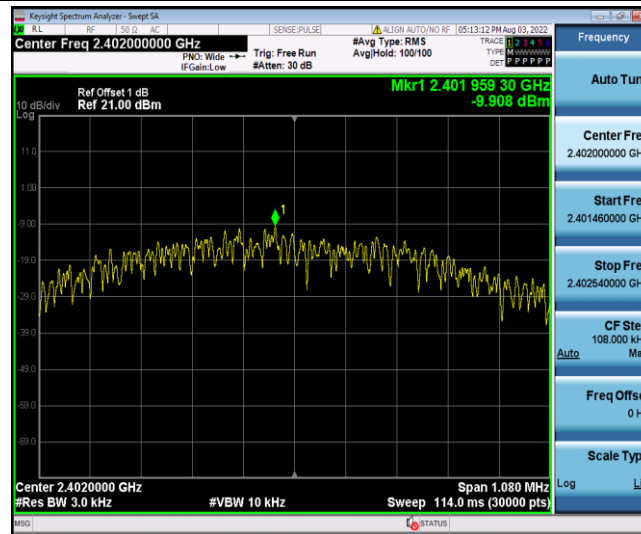
BLE BT5.0_Ant2_2480

Appendix C: Maximum power spectral density

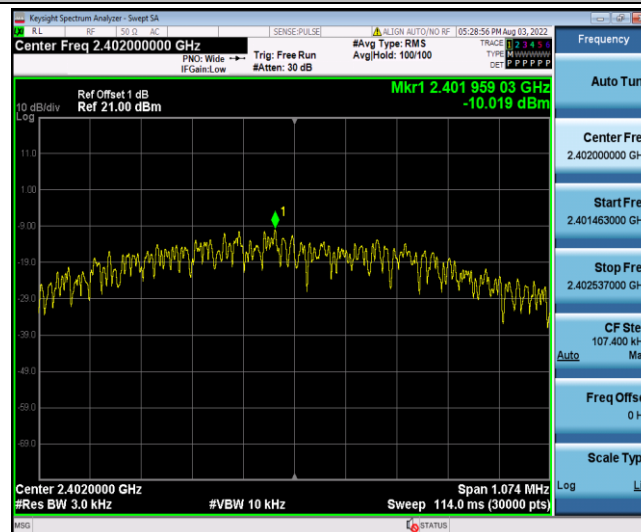
Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_BT4.0	Ant1	2402	-9.91	≤8	PASS
	Ant2	2402	-10.02	≤8	PASS
	Ant1	2440	-10.18	≤8	PASS
	Ant2	2440	-10.3	≤8	PASS
	Ant1	2480	-10.66	≤8	PASS
	Ant2	2480	-10.78	≤8	PASS
BLE_BT5.0	Ant1	2402	-13.34	≤8	PASS
	Ant2	2402	-13.47	≤8	PASS
	Ant1	2440	-13.55	≤8	PASS
	Ant2	2440	-13.71	≤8	PASS
	Ant1	2480	-13.9	≤8	PASS
	Ant2	2480	-14.12	≤8	PASS

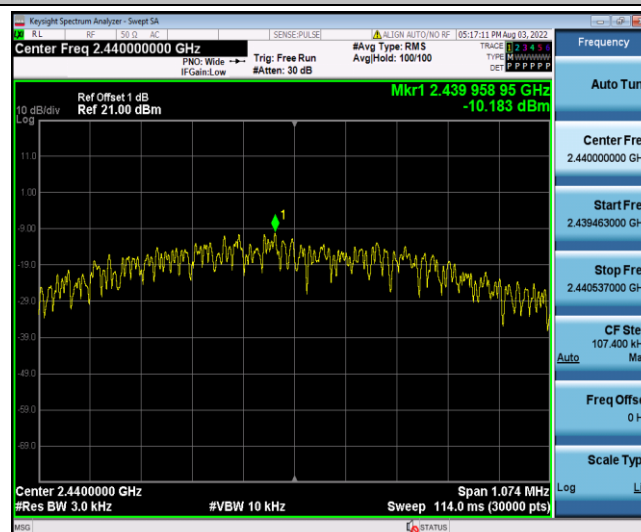
Test Graphs



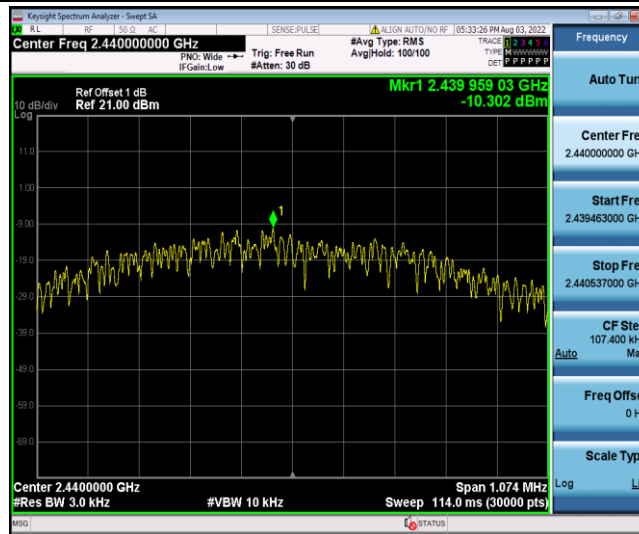
BLE_BT4.0_Ant1_2402



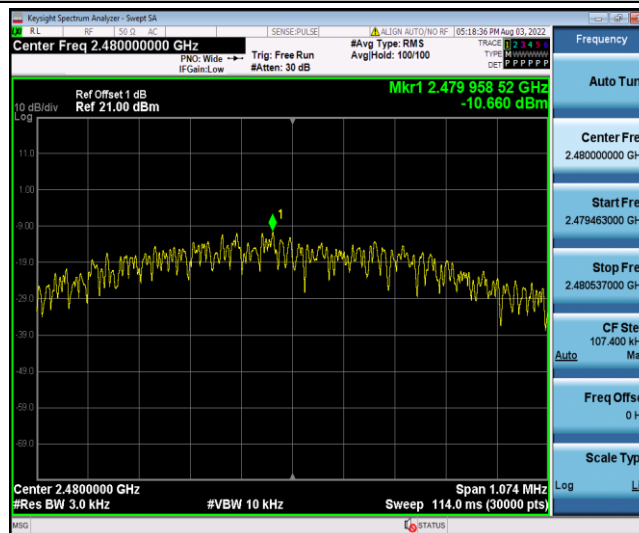
BLE_BT4.0_Ant2_2402



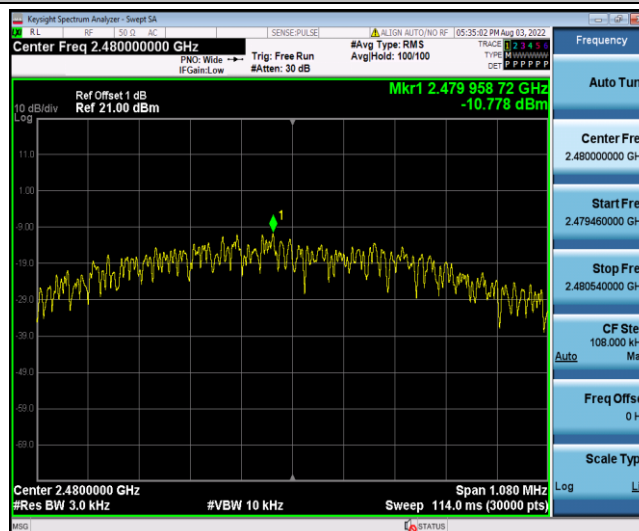
BLE_BT4.0_Ant1_2440



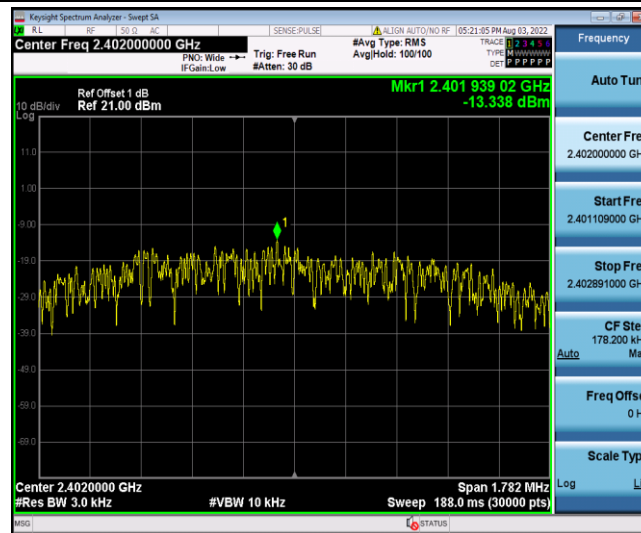
BLE_BT4.0_Ant2_2440



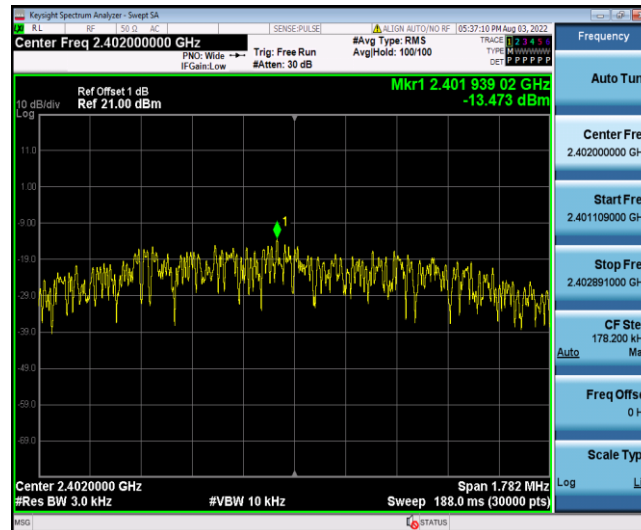
BLE_BT4.0_Ant1_2480



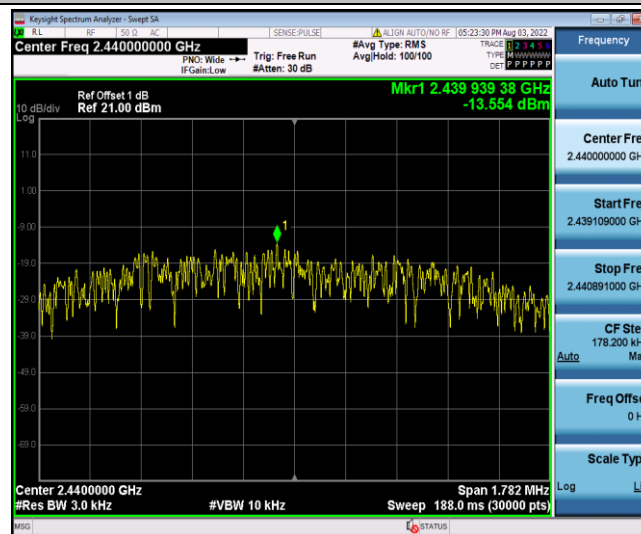
BLE_BT4.0_Ant2_2480



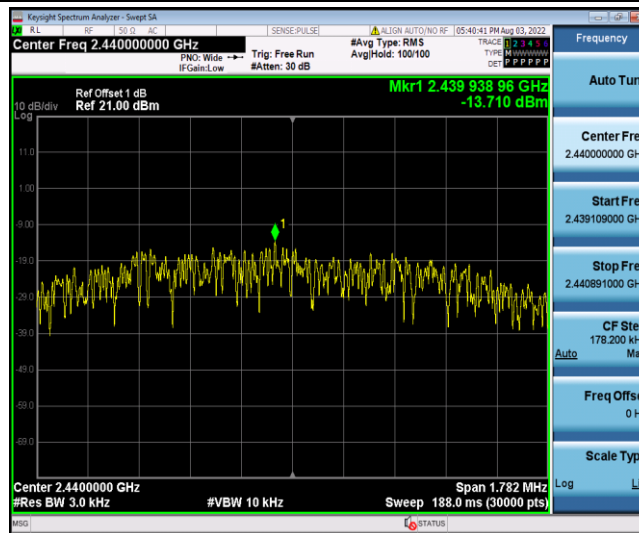
BLE BT5.0_Ant1_2402



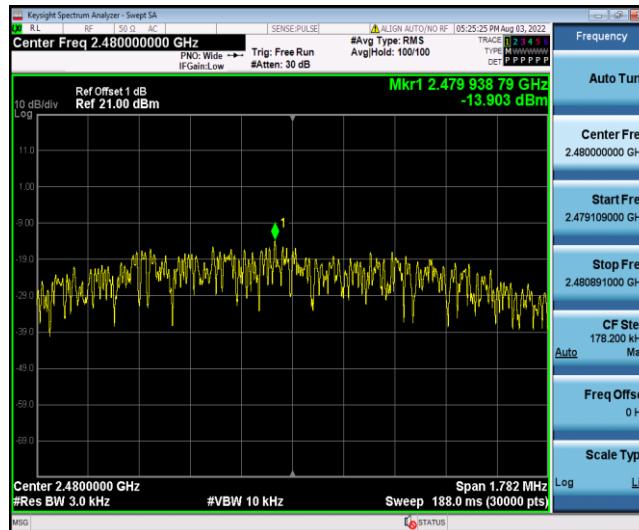
BLE_BT5.0_Ant2_2402



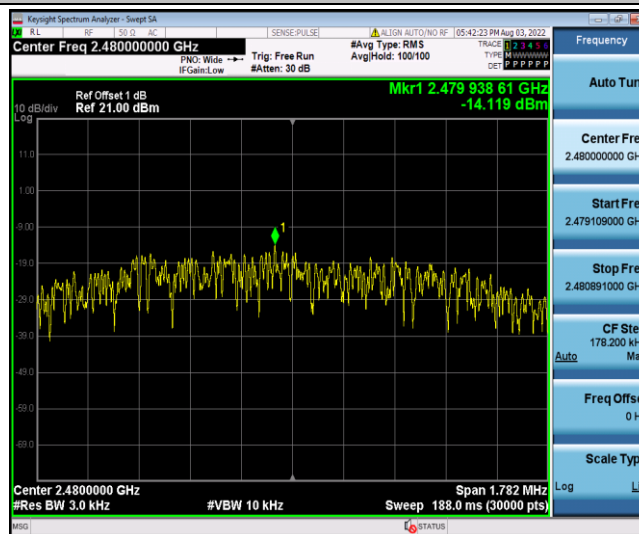
BLE BT5.0_Ant1_2440



BLE BT5.0_Ant2_2440



BLE BT5.0_Ant1_2480



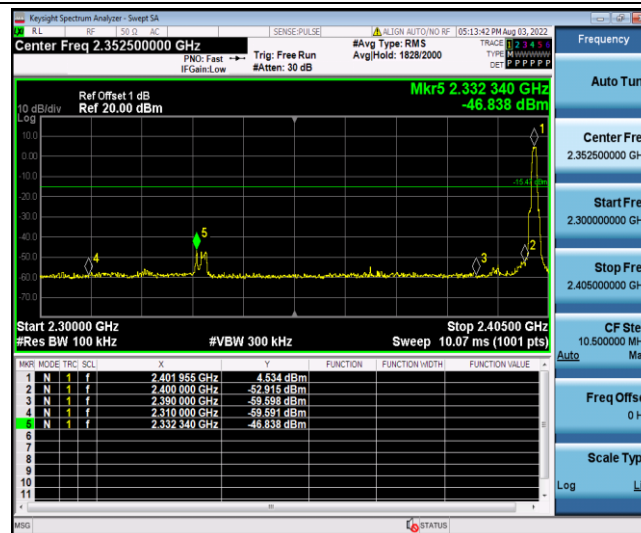
BLE BT5.0_Ant2_2480

Appendix D: Band edge measurements

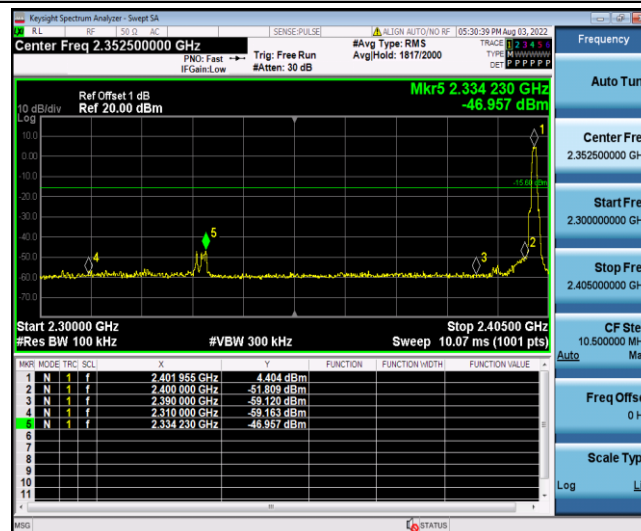
Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_BT4.0	Ant1	Low	2402	4.53	-46.84	≤ -15.47	PASS
	Ant2	Low	2402	4.40	-46.96	≤ -15.6	PASS
	Ant1	High	2480	3.89	-53.93	≤ -16.11	PASS
	Ant2	High	2480	3.71	-53.81	≤ -16.29	PASS
BLE_BT5.0	Ant1	Low	2402	4.72	-27.54	≤ -15.28	PASS
	Ant2	Low	2402	4.60	-27.69	≤ -15.4	PASS
	Ant1	High	2480	4.09	-43.14	≤ -15.91	PASS
	Ant2	High	2480	3.92	-43.71	≤ -16.08	PASS

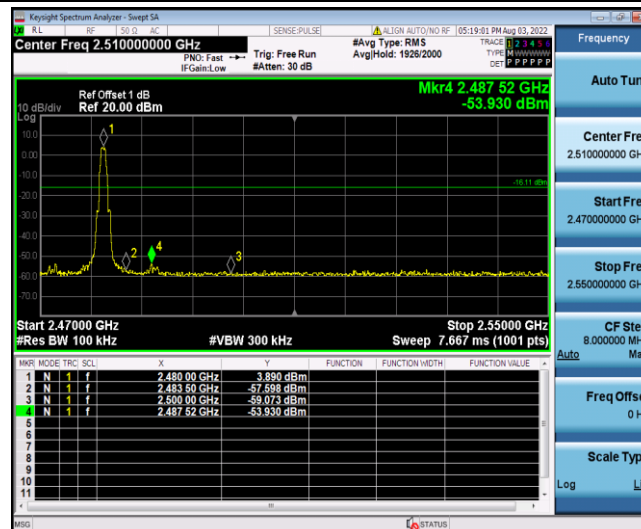
Test Graphs



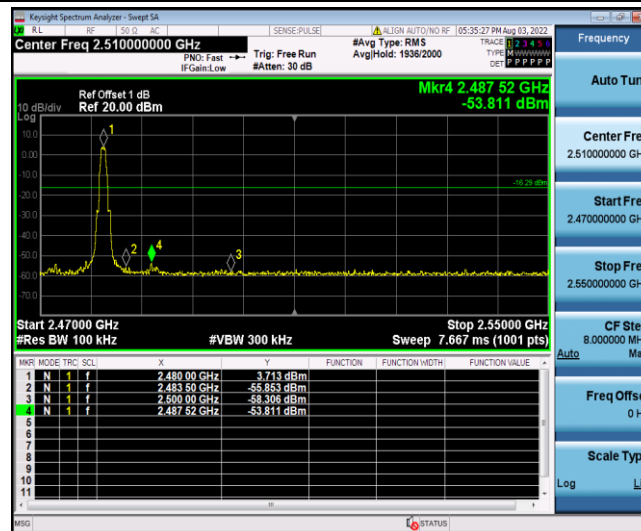
BLE_BT4.0_Ant1_Low_2402



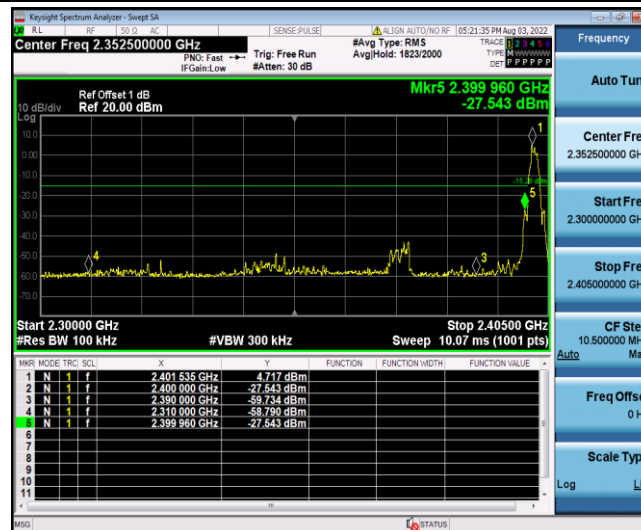
BLE_BT4.0_Ant2_Low_2402



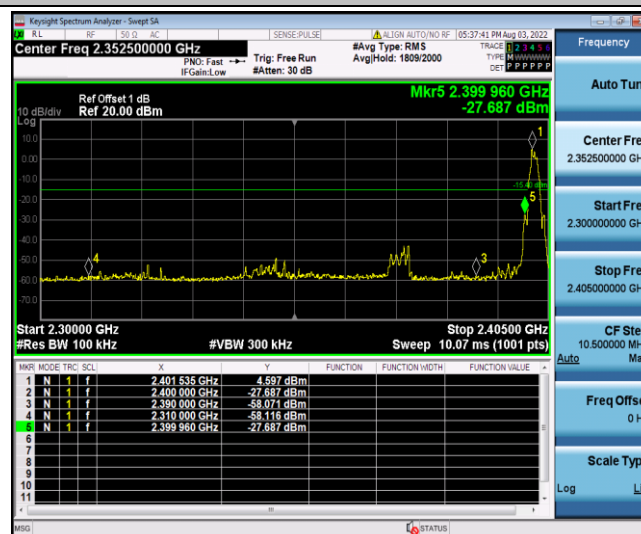
BLE_BT4.0_Ant1_High_2480



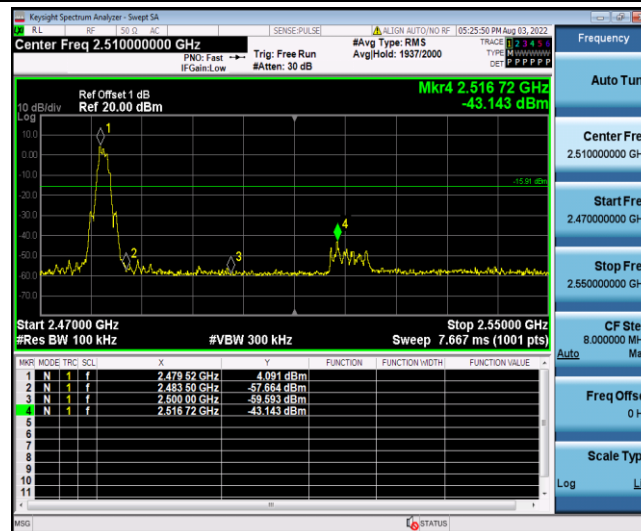
BLE BT4.0 Ant2 High 2480



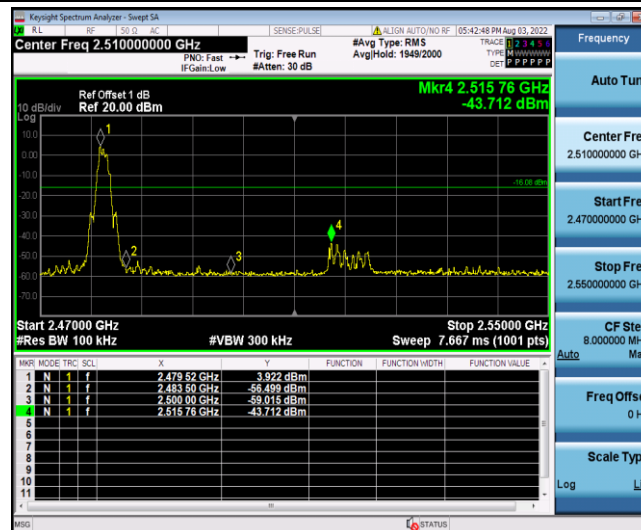
BLE_BT5.0_Ant1_Low_2402



BLE_BT5.0_Ant2_Low_2402



BLE BT5.0_Ant1_High_2480



BLE_BT5.0_Ant2_High_2480

Appendix E: Conducted Spurious Emission

Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_BT4.0	Ant1	2402	Reference	4.20	4.20	---	PASS
			30~3000	4.20	-54.76	≤ -15.8	PASS
			3000~26500	4.20	-43.18	≤ -15.8	PASS
	Ant2	2402	Reference	4.03	4.03	---	PASS
			30~3000	4.03	-55.84	≤ -15.97	PASS
			3000~26500	4.03	-42.91	≤ -15.97	PASS
	Ant1	2440	Reference	3.81	3.81	---	PASS
			30~3000	3.81	-55.93	≤ -16.19	PASS
			3000~26500	3.81	-40.05	≤ -16.19	PASS
	Ant2	2440	Reference	3.72	3.72	---	PASS
			30~3000	3.72	-52.01	≤ -16.28	PASS
			3000~26500	3.72	-45.13	≤ -16.28	PASS
	Ant1	2480	Reference	3.56	3.56	---	PASS
			30~3000	3.56	-55.76	≤ -16.44	PASS
			3000~26500	3.56	-40.97	≤ -16.44	PASS
	Ant2	2480	Reference	3.41	3.41	---	PASS
			30~3000	3.41	-55.93	≤ -16.59	PASS
			3000~26500	3.41	-44.93	≤ -16.59	PASS
BLE_BT5.0	Ant1	2402	Reference	4.53	4.53	---	PASS
			30~3000	4.53	-53.44	≤ -15.47	PASS
			3000~26500	4.53	-41.67	≤ -15.47	PASS
	Ant2	2402	Reference	4.44	4.44	---	PASS
			30~3000	4.44	-52.63	≤ -15.56	PASS
			3000~26500	4.44	-41.36	≤ -15.56	PASS
	Ant1	2440	Reference	4.25	4.25	---	PASS
			30~3000	4.25	-55.92	≤ -15.75	PASS
			3000~26500	4.25	-42.55	≤ -15.75	PASS
	Ant2	2440	Reference	4.18	4.18	---	PASS
			30~3000	4.18	-54.97	≤ -15.82	PASS
			3000~26500	4.18	-45.26	≤ -15.82	PASS
	Ant1	2480	Reference	3.76	3.76	---	PASS
			30~3000	3.76	-55.84	≤ -16.24	PASS
			3000~26500	3.76	-42.3	≤ -16.24	PASS
	Ant2	2480	Reference	3.48	3.48	---	PASS
			30~3000	3.48	-55.48	≤ -16.53	PASS
			3000~26500	3.48	-45.52	≤ -16.53	PASS