Appendix for Bluetooth BLE Mode

Product Name: ConnectSens Wireless Sensor
Model No: WS300

Appendix A: DTS Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.684	2401.748	2402.432	0.5	PASS
		2440	0.680	2439.740	2440.420	0.5	PASS
		2480	0.680	2479.744	2480.424	0.5	PASS

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_S8	Ant1	2402	0.612	2401.776	2402.388	0.5	PASS
		2440	0.636	2439.768	2440.404	0.5	PASS
		2480	0.708	2479.740	2480.448	0.5	PASS

Test Graphs

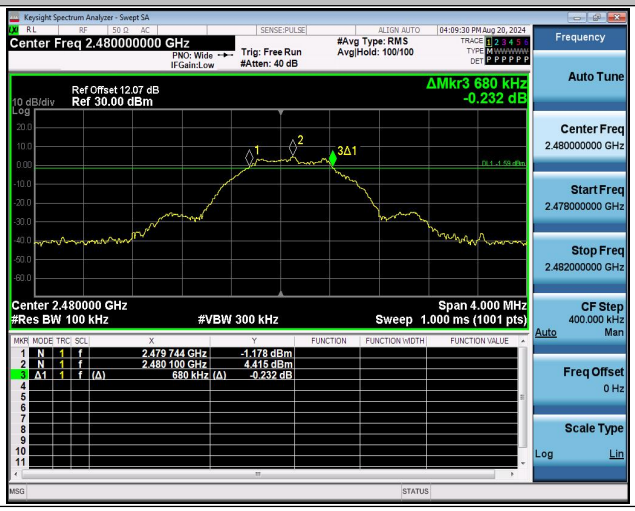
BLE_1M_Ant1_2402



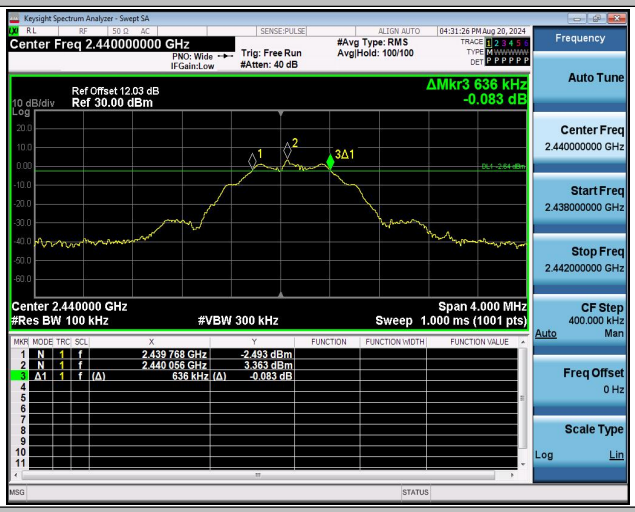
BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



BLE_S8_Ant1_2402

BLE_S8_Ant1_2440

BLE_S8_Ant1_2480


Appendix B: Maximum conducted output power

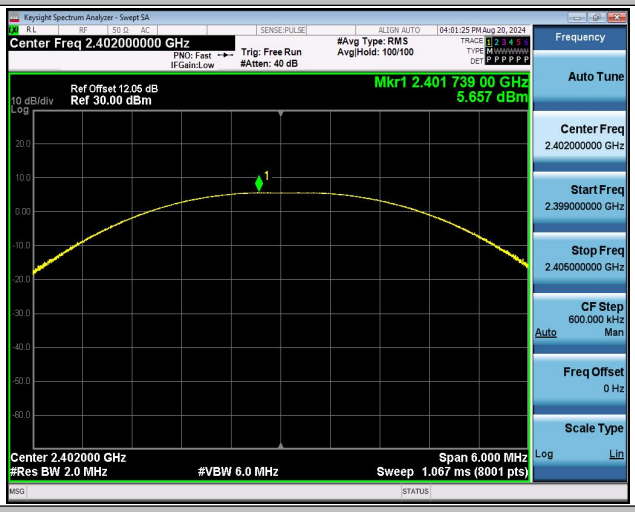
Test Result Peak

TestMode	Antenna	Freq(MHz)	Conducted Peak Powert[dBm]	Conducted Limit[dBm]	EIRP[dBm]	EIRP Limit[dBm]	Verdict
BLE_1M	Ant1	2402	5.66	≤30	9.36	≤36	PASS
		2440	5.00	≤30	8.70	≤36	PASS
		2480	4.73	≤30	8.43	≤36	PASS

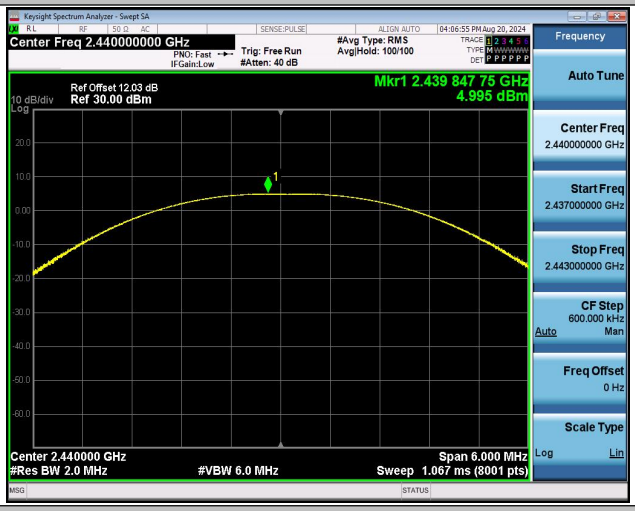
TestMode	Antenna	Freq(MHz)	Conducted Peak Powert[dBm]	Conducted Limit[dBm]	EIRP[dBm]	EIRP Limit[dBm]	Verdict
BLE_S8	Ant1	2402	5.67	≤30	9.37	≤36	PASS
		2440	4.97	≤30	8.67	≤36	PASS
		2480	4.74	≤30	8.44	≤36	PASS

Test Graphs Peak

BLE_1M_Ant1_2402



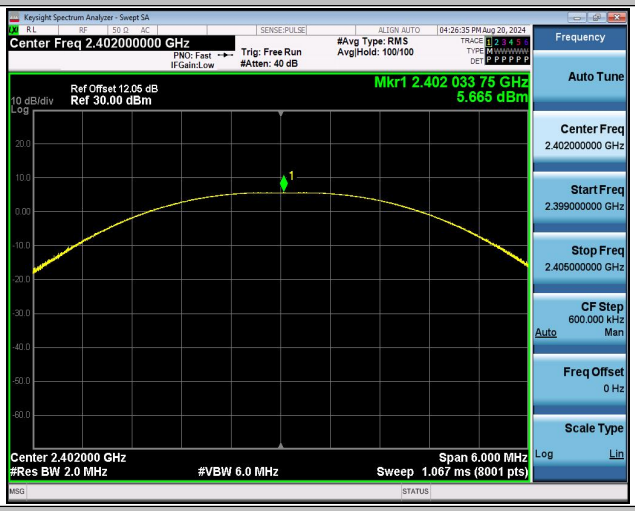
BLE_1M_Ant1_2440



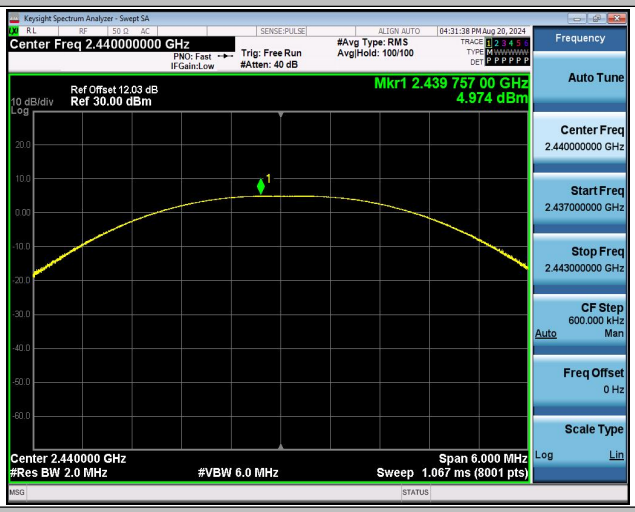
BLE_1M_Ant1_2480



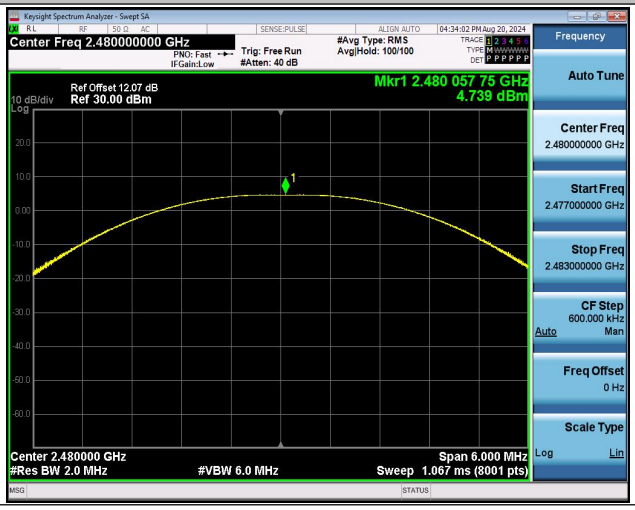
BLE_S8_Ant1_2402



BLE_S8_Ant1_2440



BLE_S8_Ant1_2480



Appendix C: Maximum power spectral density

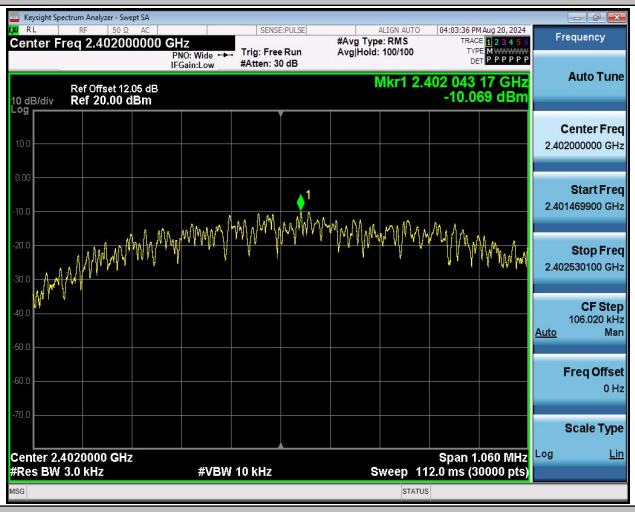
Test Result

TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-10.07	≤8.00	PASS
		2440	-10.74	≤8.00	PASS
		2480	-11.00	≤8.00	PASS

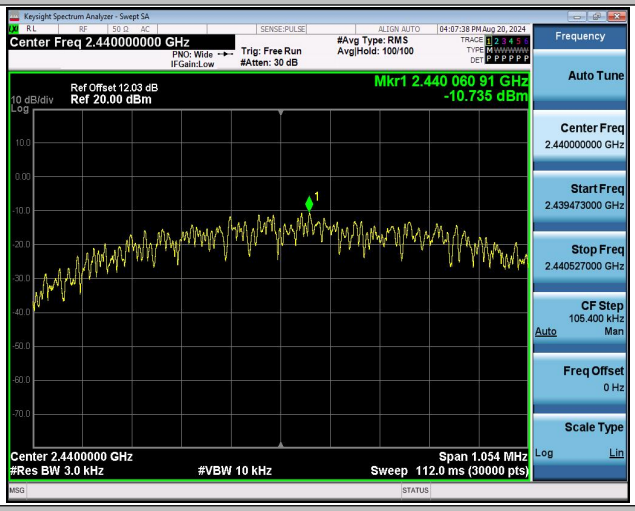
TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_S8	Ant1	2402	-0.59	≤8.00	PASS
		2440	-1.25	≤8.00	PASS
		2480	-1.54	≤8.00	PASS

Test Graphs

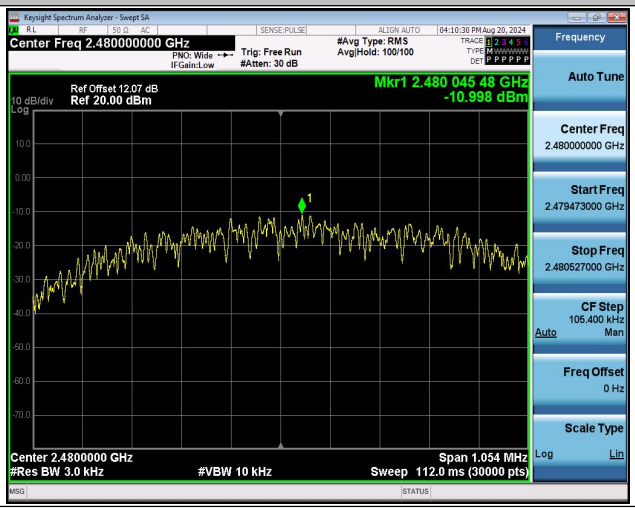
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



BLE_S8_Ant1_2402

BLE_S8_Ant1_2440

BLE_S8_Ant1_2480


Appendix D: Band edge measurements

Reference level measurement

Test Result

TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
BLE_1M	Ant1	2402	2402.09	5.39
		2440	2440.09	4.70
		2480	2480.10	4.32

TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
BLE_S8	Ant1	2402	2402.10	5.16
		2440	2440.12	3.63
		2480	2480.09	4.34

Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



BLE_S8_Ant1_2402



BLE_S8_Ant1_2440



BLE_S8_Ant1_2480



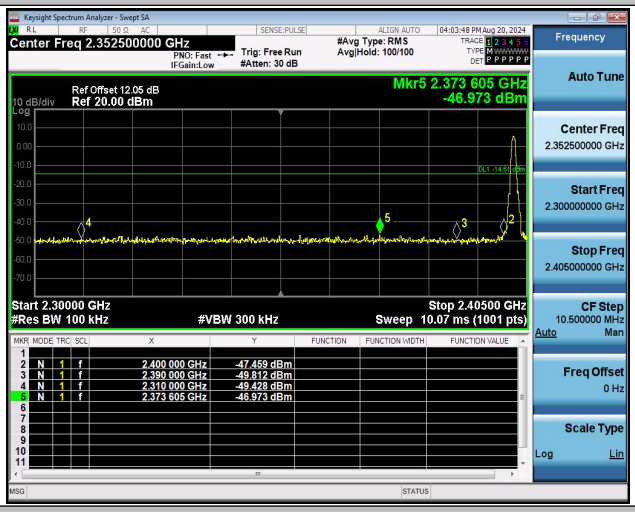
Band edge measurements

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	5.39	-46.97	≤-14.61	PASS
		High	2480	4.32	-47.46	≤-15.68	PASS

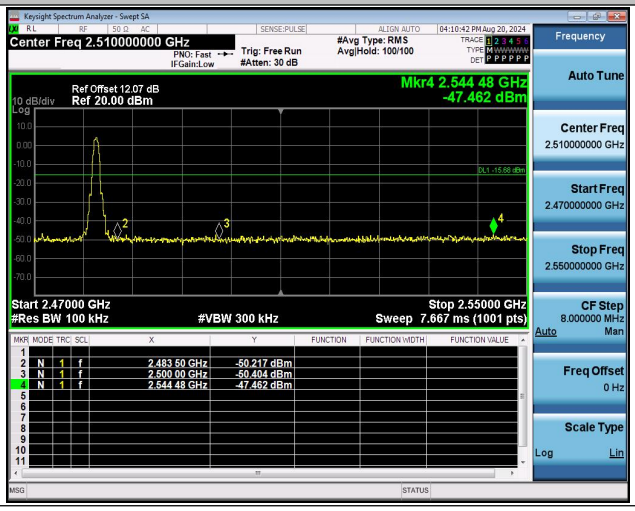
TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_S8	Ant1	Low	2402	5.16	-46.78	≤-14.84	PASS
		High	2480	4.34	-46.38	≤-15.66	PASS

Test Graphs

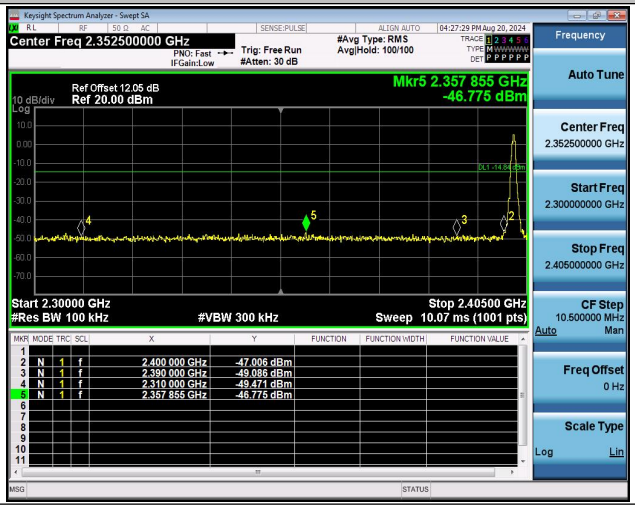
BLE_1M_Ant1_Low_2402

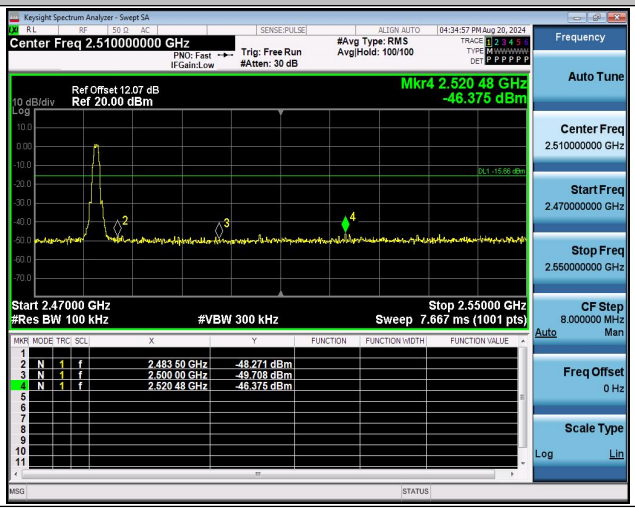


BLE_1M_Ant1_High_2480



BLE_S8_Ant1_Low_2402



BLE_S8_Ant1_High_2480


Appendix E: Conducted Spurious Emission

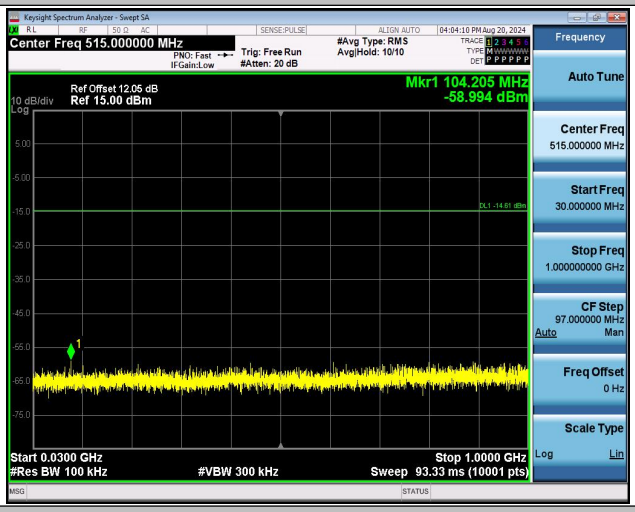
Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	30~1000	5.39	-58.99	≤-14.61	PASS
			1000~26500	5.39	-43.86	≤-14.61	PASS
		2440	30~1000	4.70	-58.92	≤-15.3	PASS
			1000~26500	4.70	-44.01	≤-15.3	PASS
		2480	30~1000	4.32	-58.92	≤-15.68	PASS
			1000~26500	4.32	-43.42	≤-15.68	PASS

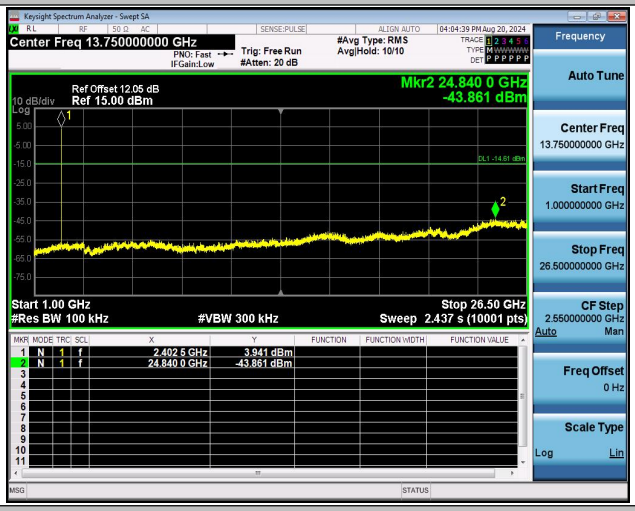
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_S8	Ant1	2402	30~1000	5.16	-57.87	≤-14.84	PASS
			1000~26500	5.16	-43.97	≤-14.84	PASS
		2440	30~1000	3.63	-59.02	≤-16.37	PASS
			1000~26500	3.63	-44.36	≤-16.37	PASS
		2480	30~1000	4.34	-57.99	≤-15.66	PASS
			1000~26500	4.34	-44.3	≤-15.66	PASS

Test Graphs

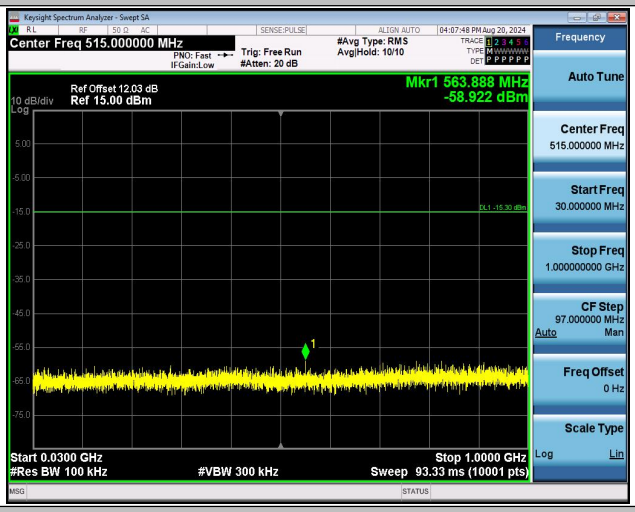
BLE_1M_Ant1_2402_30~1000



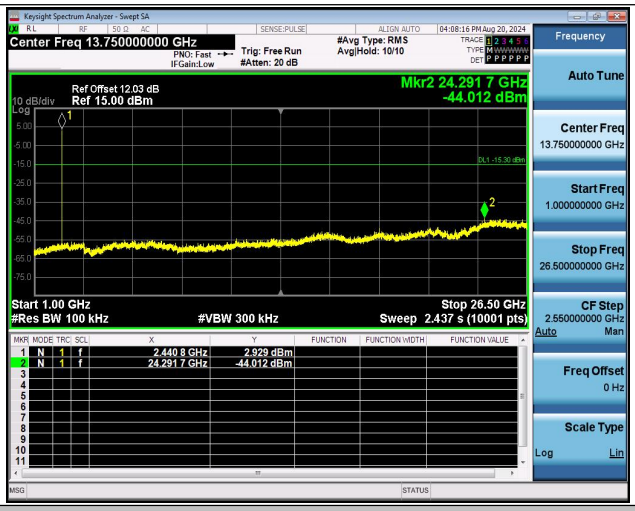
BLE_1M_Ant1_2402_1000~26500



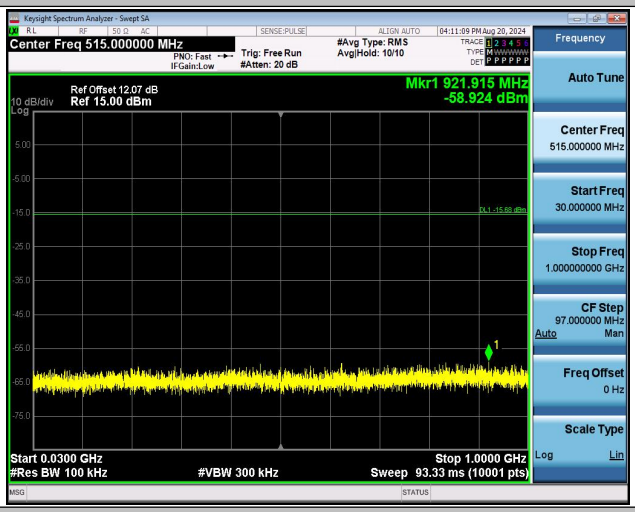
BLE_1M_Ant1_2440_30~1000



BLE_1M_Ant1_2440_1000~26500



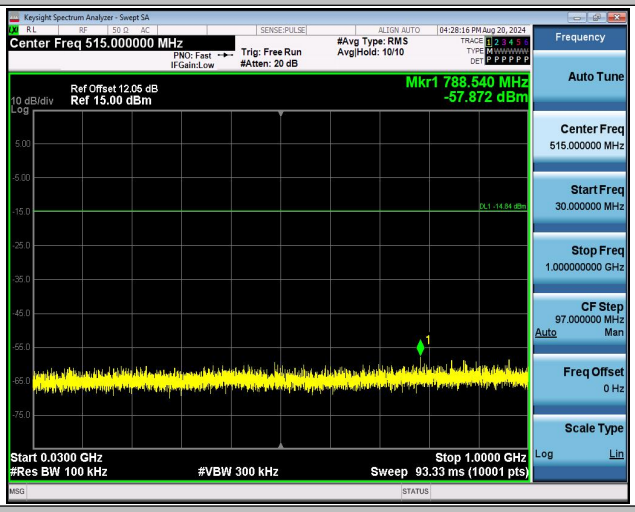
BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



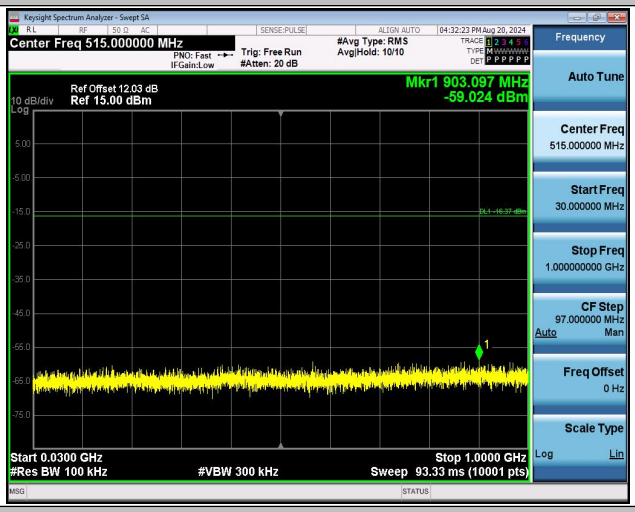
BLE_S8_Ant1_2402_30~1000



BLE_S8_Ant1_2402_1000~26500



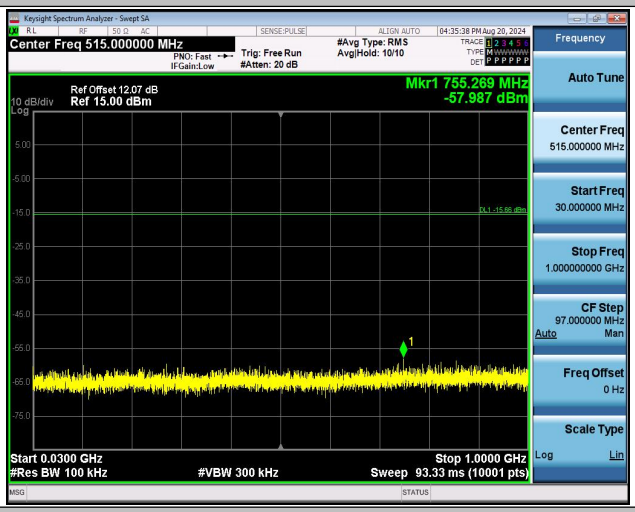
BLE_S8_Ant1_2440_30~1000



BLE_S8_Ant1_2440_1000~26500



BLE_S8_Ant1_2480_30~1000



BLE_S8_Ant1_2480_1000~26500

