



RF Test Report

For

Project No.:	ZKT-241025L13925E
Client:	YA LI ELECTRIC CO LTD
Manufacturer:	YA LI ELECTRIC CO LTD
Product Description:	LED CONTROLLER
Model No.	YL-LEDAPP-01
Test Engineer:	Jim Liu
Test Date:	2024-10-13



Appendix A: DTS Bandwidth

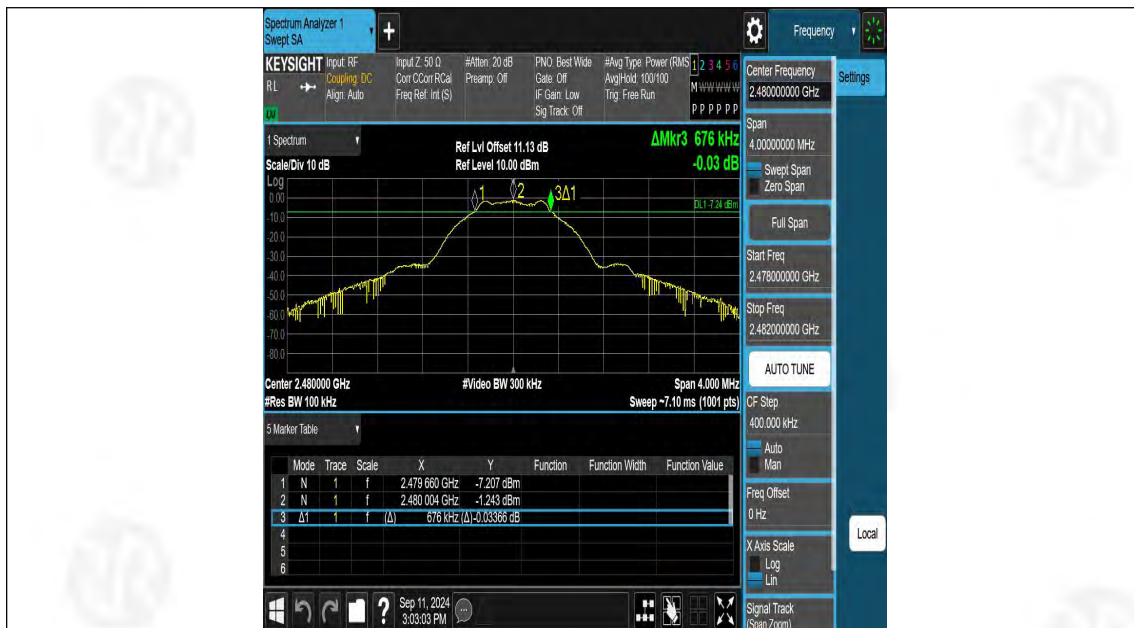
Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.684	2401.660	2402.344	0.5	PASS
BLE_1M	Ant1	2440	0.672	2439.660	2440.332	0.5	PASS
BLE_1M	Ant1	2480	0.676	2479.660	2480.336	0.5	PASS
BLE_2M	Ant1	2402	1.156	2401.424	2402.580	0.5	PASS
BLE_2M	Ant1	2440	1.152	2439.424	2440.576	0.5	PASS
BLE_2M	Ant1	2480	1.148	2479.432	2480.580	0.5	PASS



Test Graphs





BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2440-PASS



BLE_2M-Ant1-2480-PASS



Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0153	2401.4990	2402.5143	---	---
BLE_1M	Ant1	2440	1.0122	2439.4998	2440.5120	---	---
BLE_1M	Ant1	2480	1.0123	2479.4998	2480.5121	---	---
BLE_2M	Ant1	2402	2.0272	2401.0048	2403.0320	---	---
BLE_2M	Ant1	2440	2.0245	2439.0061	2441.0306	---	---
BLE_2M	Ant1	2480	2.0297	2479.0039	2481.0336	---	---



Test Graphs





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

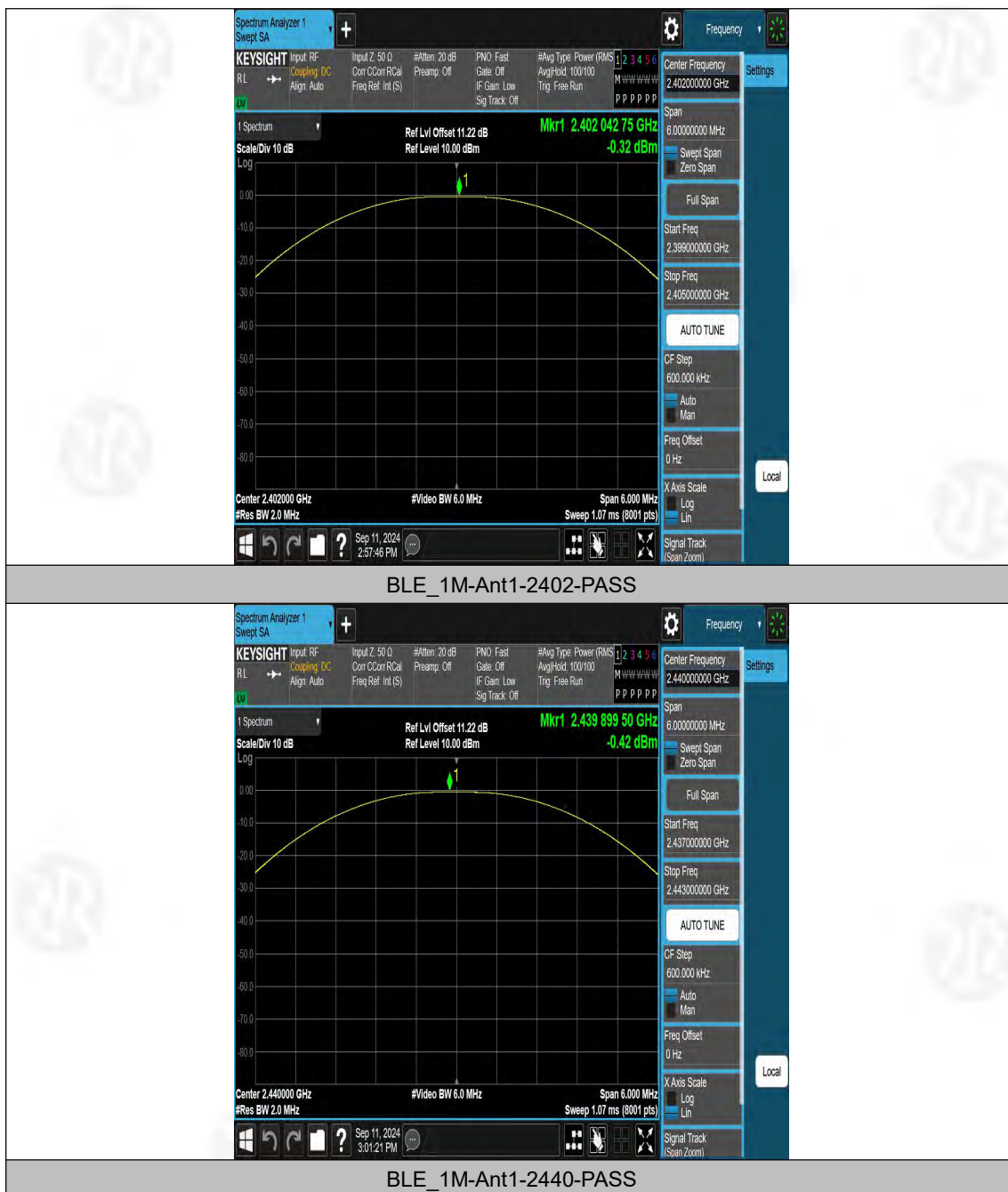
TestMode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	EIRP[dBm]	EIRP Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-0.32	≤30	-0.32	≤36	PASS
BLE_1M	Ant1	2440	-0.42	≤30	-0.42	≤36	PASS
BLE_1M	Ant1	2480	-0.52	≤30	-0.52	≤36	PASS
BLE_2M	Ant1	2402	-0.27	≤30	-0.27	≤36	PASS
BLE_2M	Ant1	2440	-0.38	≤30	-0.38	≤36	PASS
BLE_2M	Ant1	2480	-0.51	≤30	-0.51	≤36	PASS

Test Result Average

Test Mode	Antenna	Frequency[MHz]	Conducted Sensor power[dBm]	Duty Cycle [%]	DC Factor [dBm]	Result [dBm]	Limit [dBm]	Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Verdict
TestMode	Antenna	Channel	RawPower	DC	DcFactor	Result	Limit	Gain	EIRP	Limit1	Verdict



Test Graphs Peak





BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2440-PASS



BLE_2M-Ant1-2480-PASS



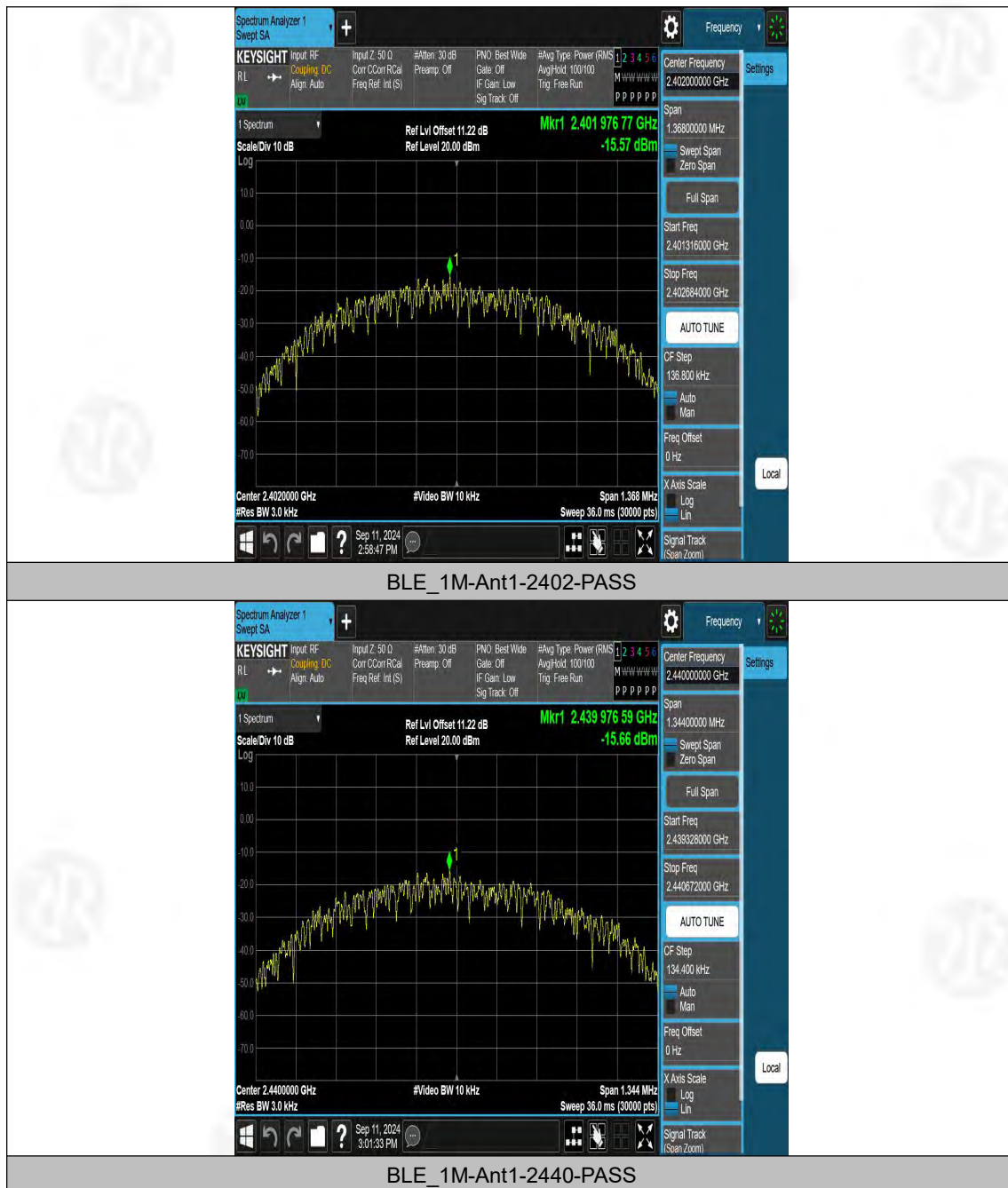
Appendix D: Maximum power spectral density

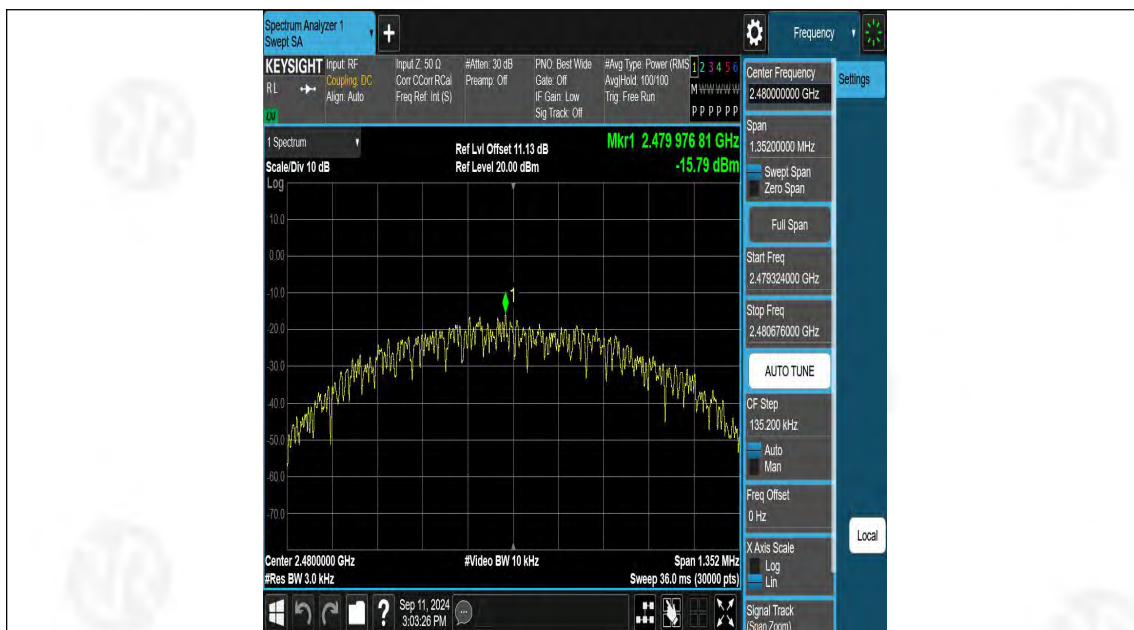
Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-15.57	≤8.00	PASS
BLE_1M	Ant1	2440	-15.66	≤8.00	PASS
BLE_1M	Ant1	2480	-15.79	≤8.00	PASS
BLE_2M	Ant1	2402	-17.85	≤8.00	PASS
BLE_2M	Ant1	2440	-17.97	≤8.00	PASS
BLE_2M	Ant1	2480	-18.13	≤8.00	PASS

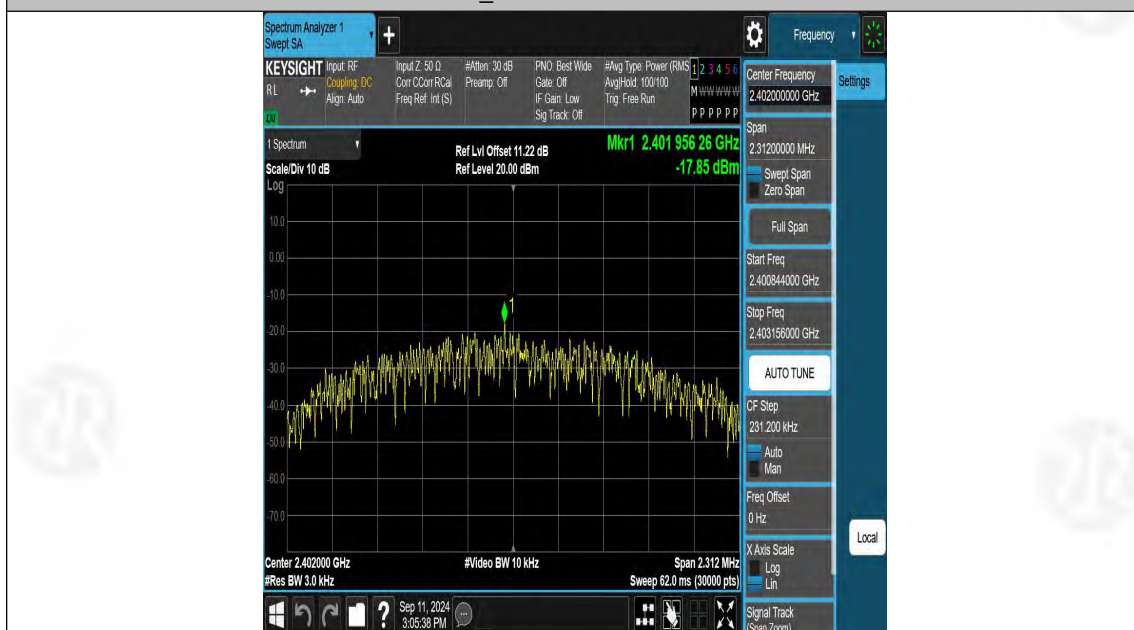


Test Graphs

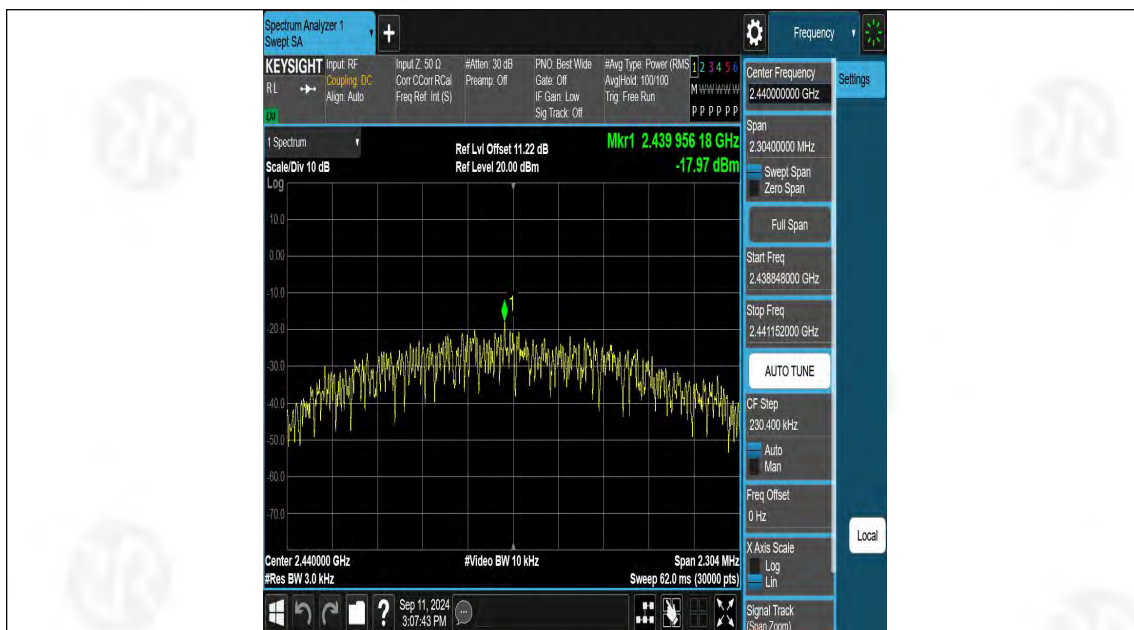




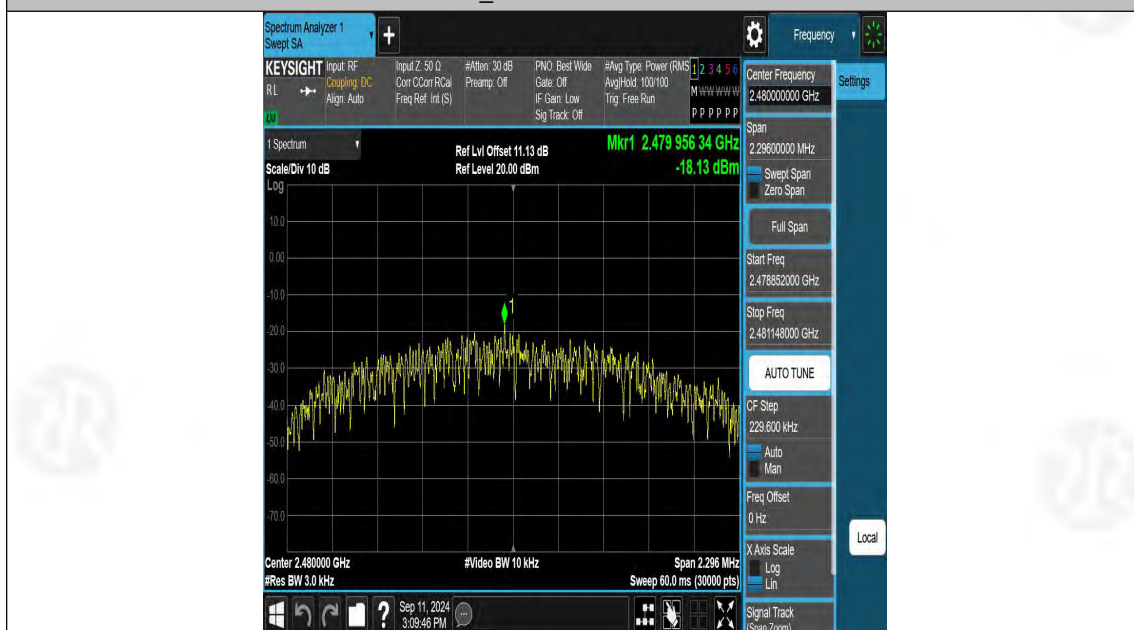
BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2440-PASS



BLE_2M-Ant1-2480-PASS



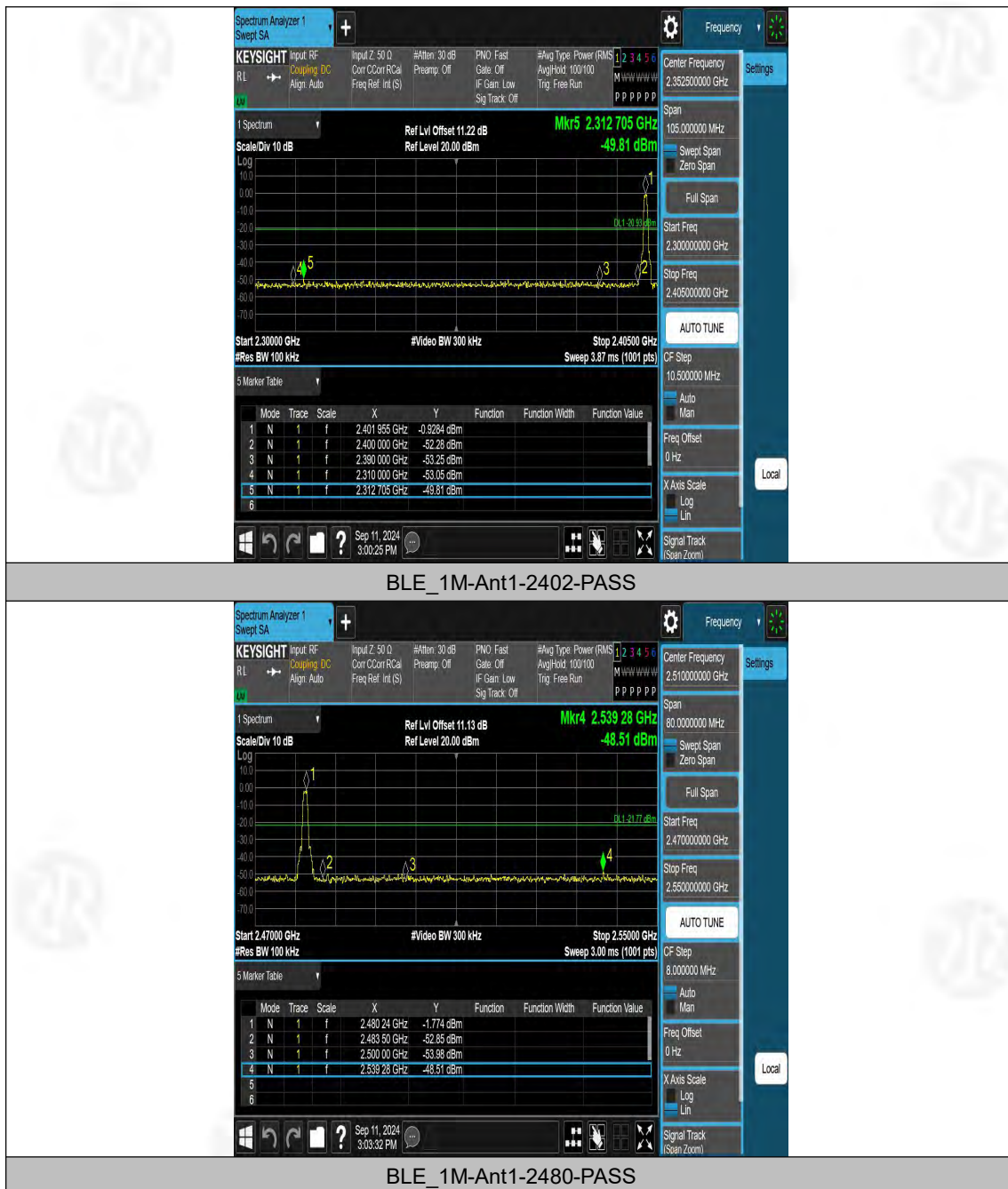
Appendix F: Band edge measurements

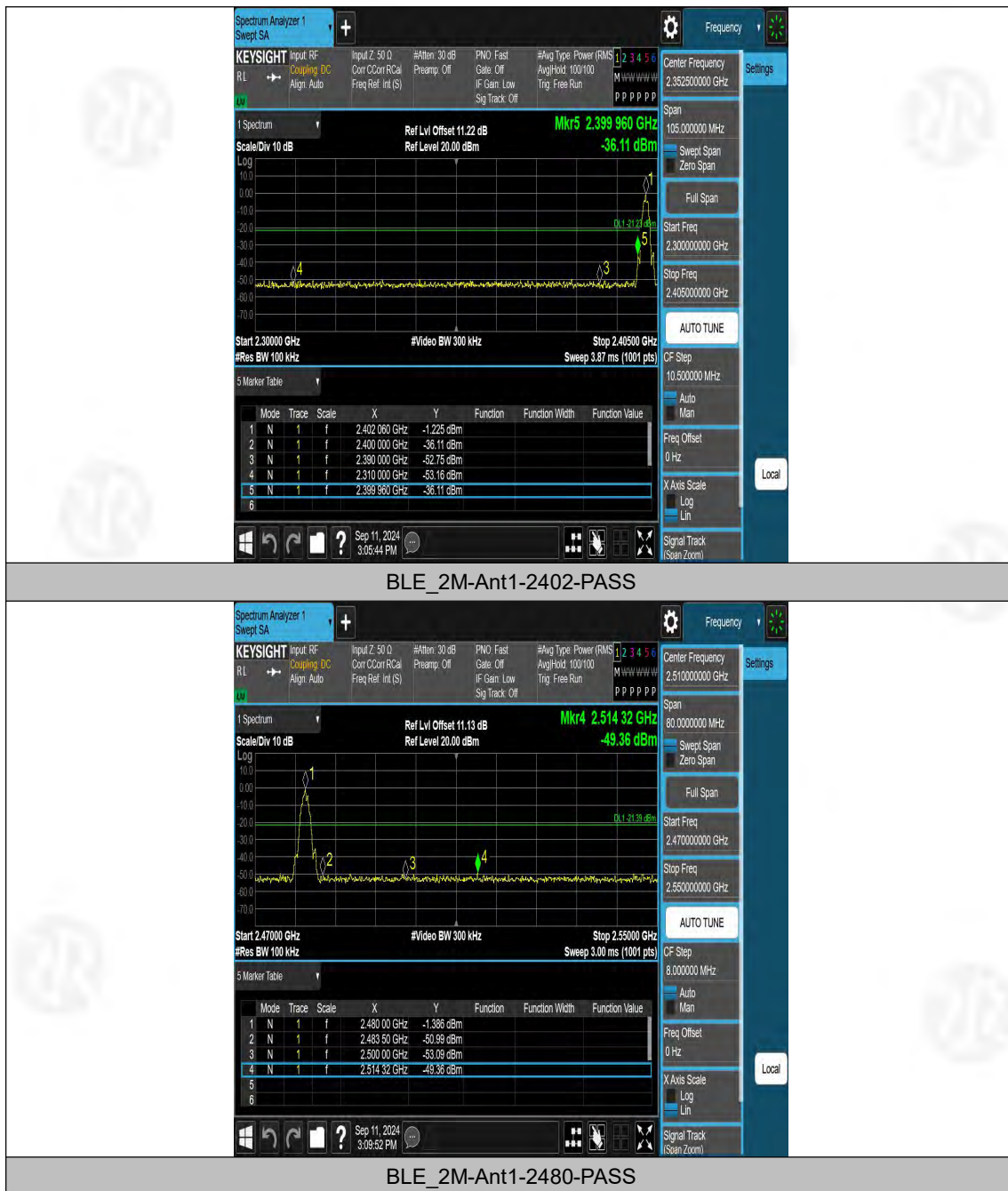
Test Result

TestMod e	Antenn a	ChNam e	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdic t
BLE_1M	Ant1	Low	2402	-0.93	-49.81	≤-20.93	PASS
BLE_1M	Ant1	High	2480	-1.77	-48.52	≤-21.77	PASS
BLE_2M	Ant1	Low	2402	-1.23	-36.11	≤-21.23	PASS
BLE_2M	Ant1	High	2480	-1.39	-49.36	≤-21.39	PASS



Test Graphs







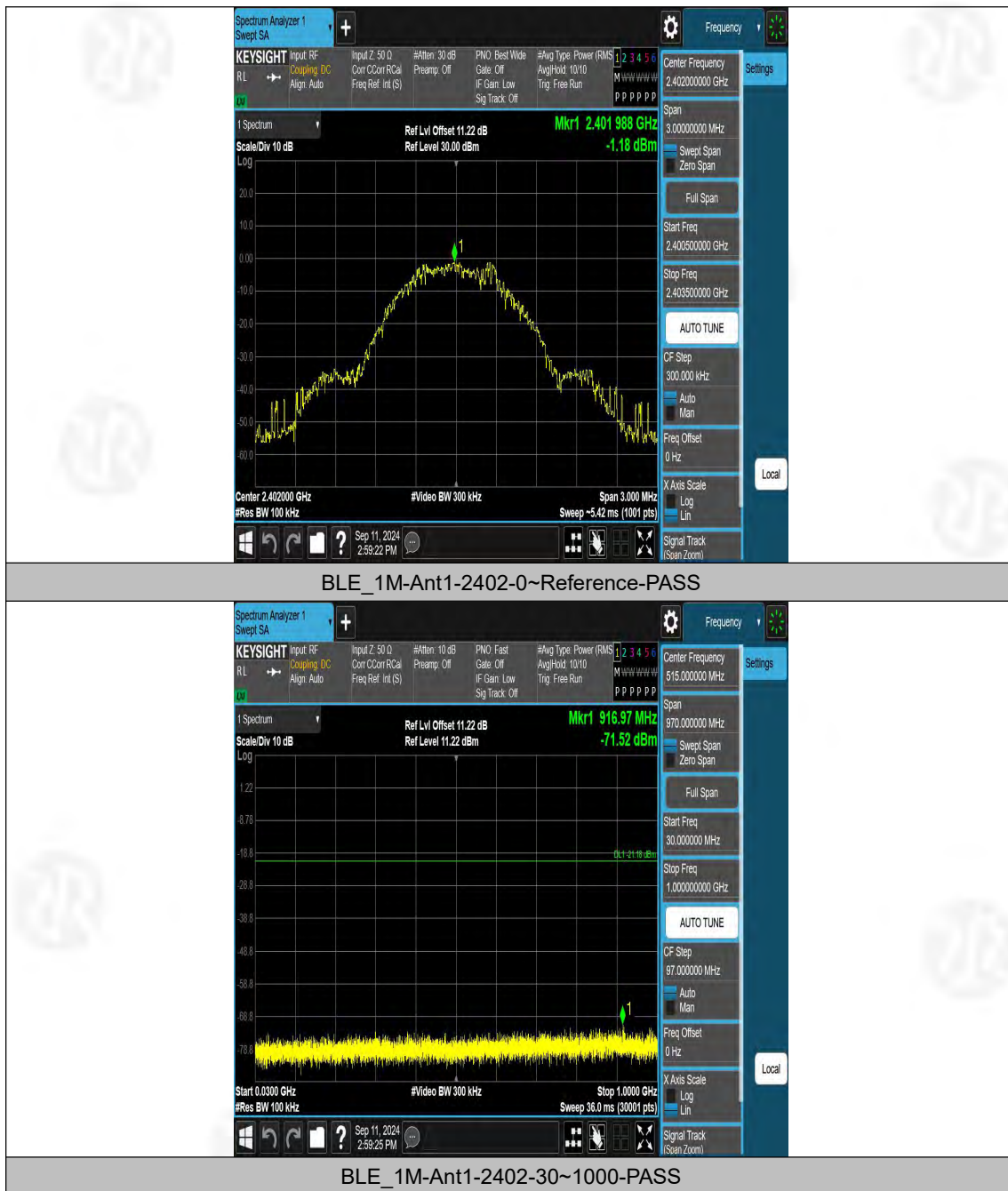
Appendix G: Conducted Spurious Emission

Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0~Reference	-1.18	-1.18	---	PASS
BLE_1M	Ant1	2402	30~1000	-1.18	-71.52	≤-21.18	PASS
BLE_1M	Ant1	2402	1000~26500	-1.18	-49.8	≤-21.18	PASS
BLE_1M	Ant1	2440	0~Reference	-1.17	-1.17	---	PASS
BLE_1M	Ant1	2440	30~1000	-1.17	-71.75	≤-21.17	PASS
BLE_1M	Ant1	2440	1000~26500	-1.17	-49.81	≤-21.17	PASS
BLE_1M	Ant1	2480	0~Reference	-1.20	-1.20	---	PASS
BLE_1M	Ant1	2480	30~1000	-1.20	-71.23	≤-21.2	PASS
BLE_1M	Ant1	2480	1000~26500	-1.20	-49.59	≤-21.2	PASS
BLE_2M	Ant1	2402	0~Reference	-1.18	-1.18	---	PASS
BLE_2M	Ant1	2402	30~1000	-1.18	-72.06	≤-21.18	PASS
BLE_2M	Ant1	2402	1000~26500	-1.18	-49.34	≤-21.18	PASS
BLE_2M	Ant1	2440	0~Reference	-1.25	-1.25	---	PASS
BLE_2M	Ant1	2440	30~1000	-1.25	-71.6	≤-21.25	PASS
BLE_2M	Ant1	2440	1000~26500	-1.25	-49.68	≤-21.25	PASS
BLE_2M	Ant1	2480	0~Reference	-1.46	-1.46	---	PASS
BLE_2M	Ant1	2480	30~1000	-1.46	-71.77	≤-21.46	PASS
BLE_2M	Ant1	2480	1000~26500	-1.46	-49.48	≤-21.46	PASS



Test Graphs

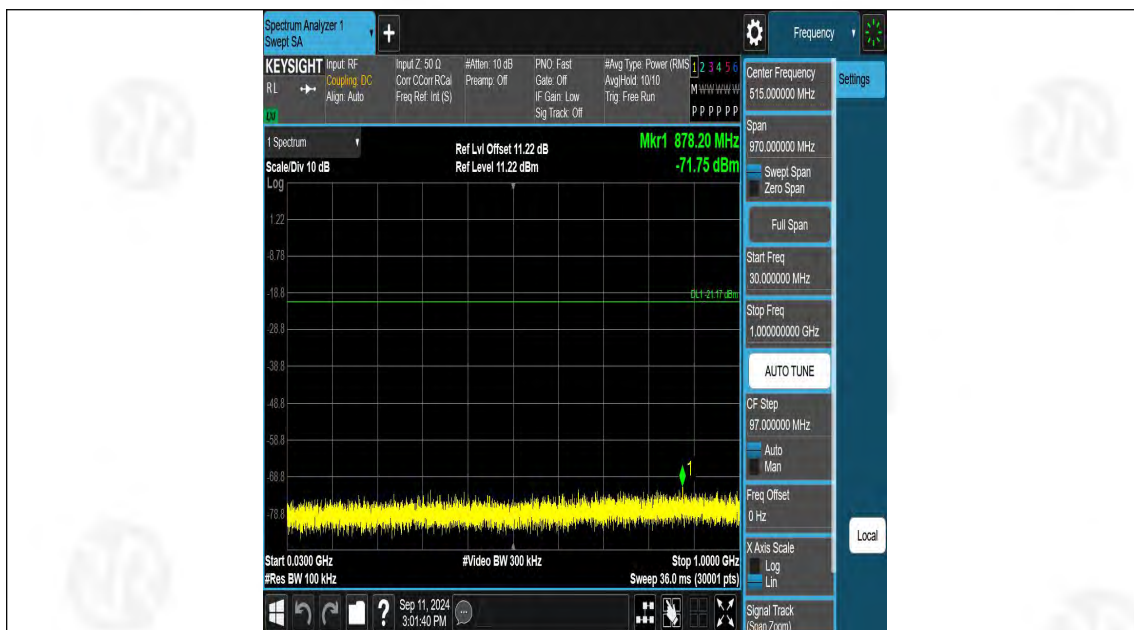




BLE_1M-Ant1-2402-1000~26500-PASS



BLE_1M-Ant1-2440-0~Reference-PASS



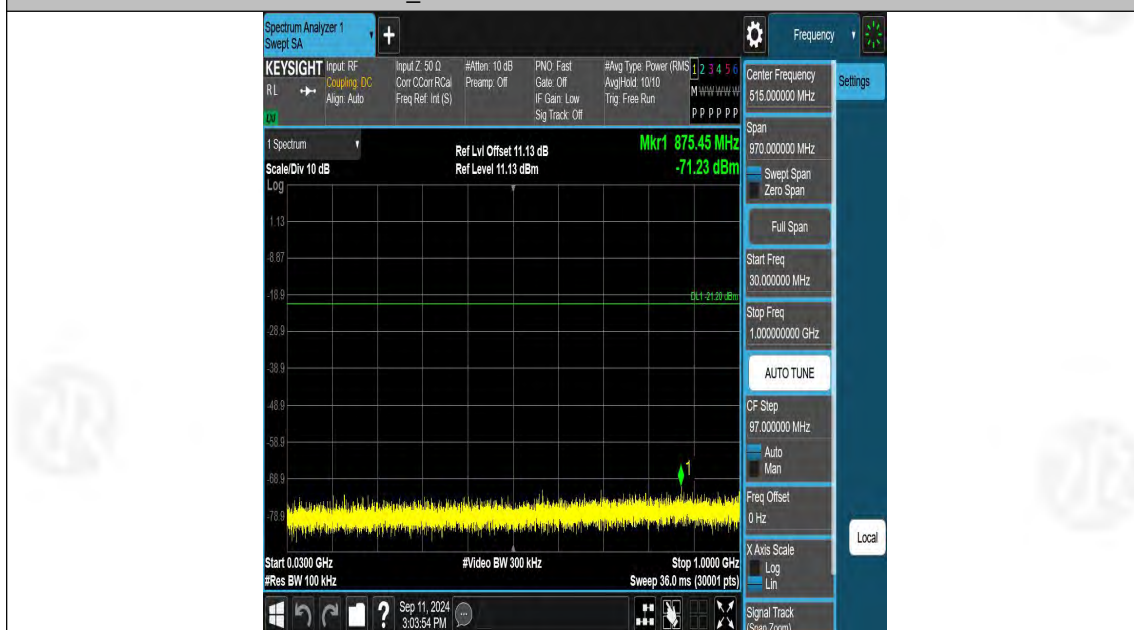
BLE_1M-Ant1-2440-30~1000-PASS



BLE_1M-Ant1-2440-1000~26500-PASS



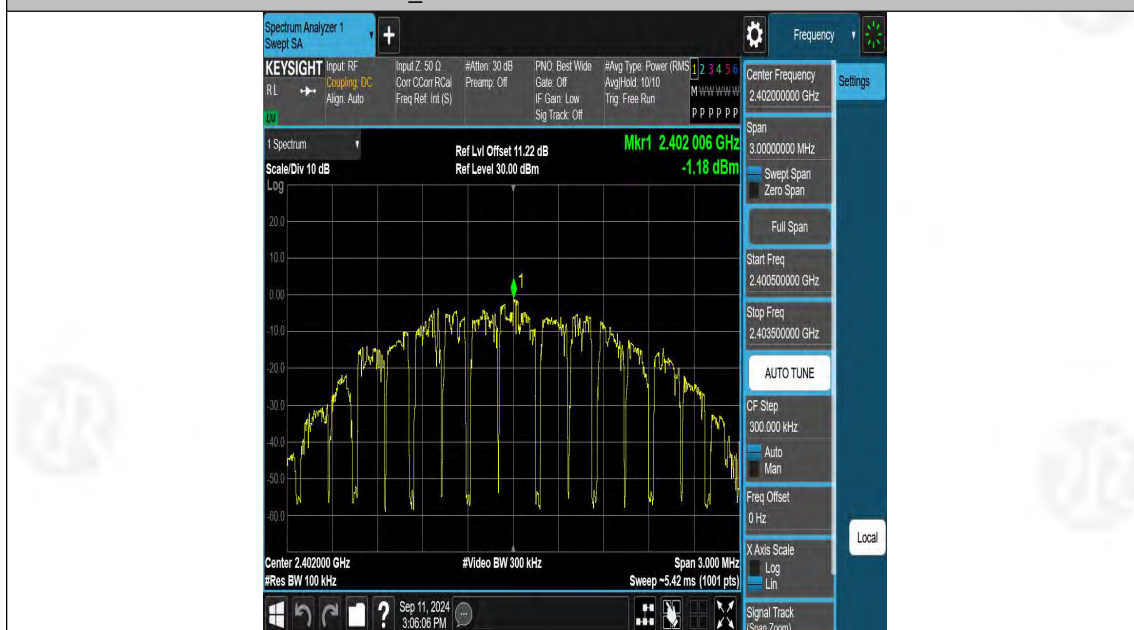
BLE_1M-Ant1-2480-0~Reference-PASS



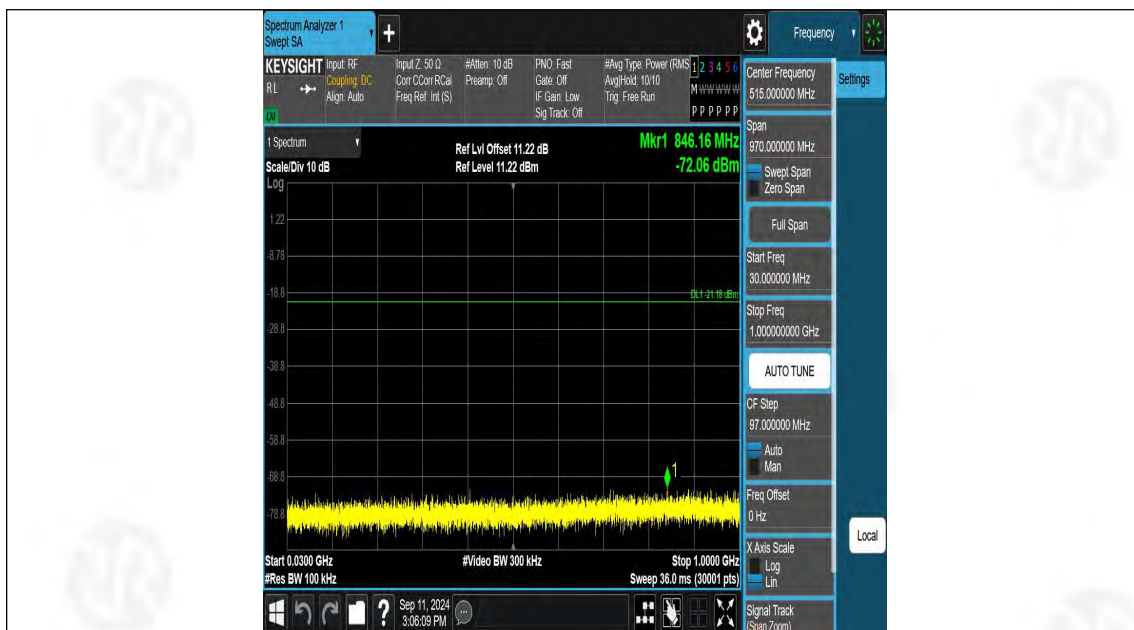
BLE_1M-Ant1-2480-30~1000-PASS



BLE_1M-Ant1-2480-1000~26500-PASS



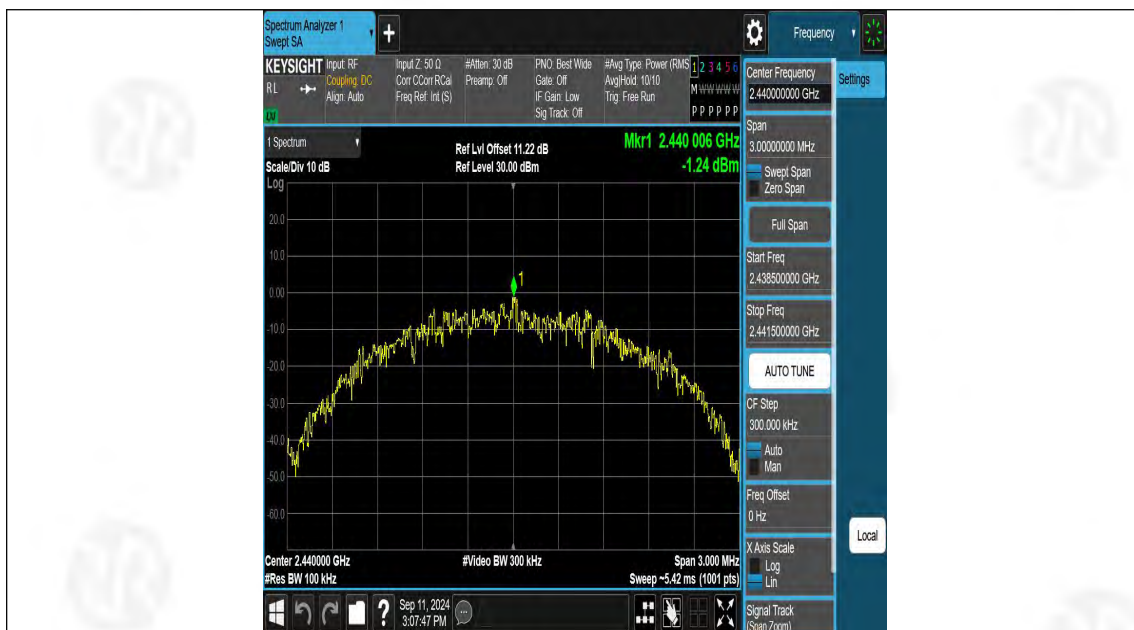
BLE_2M-Ant1-2402-0~Reference-PASS



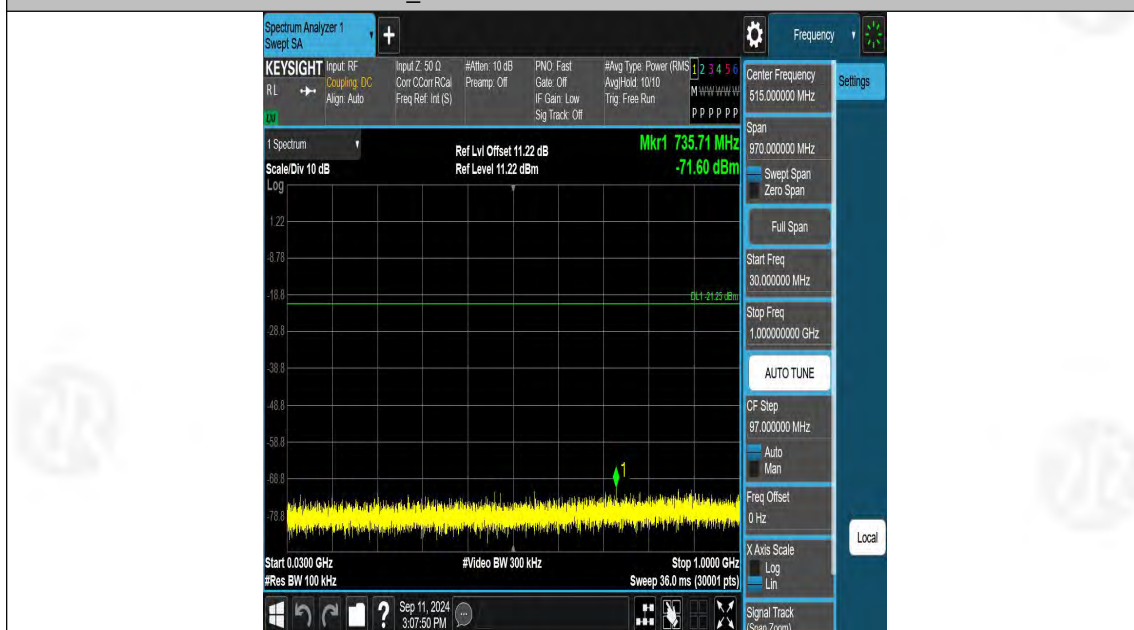
BLE_2M-Ant1-2402-30~1000-PASS



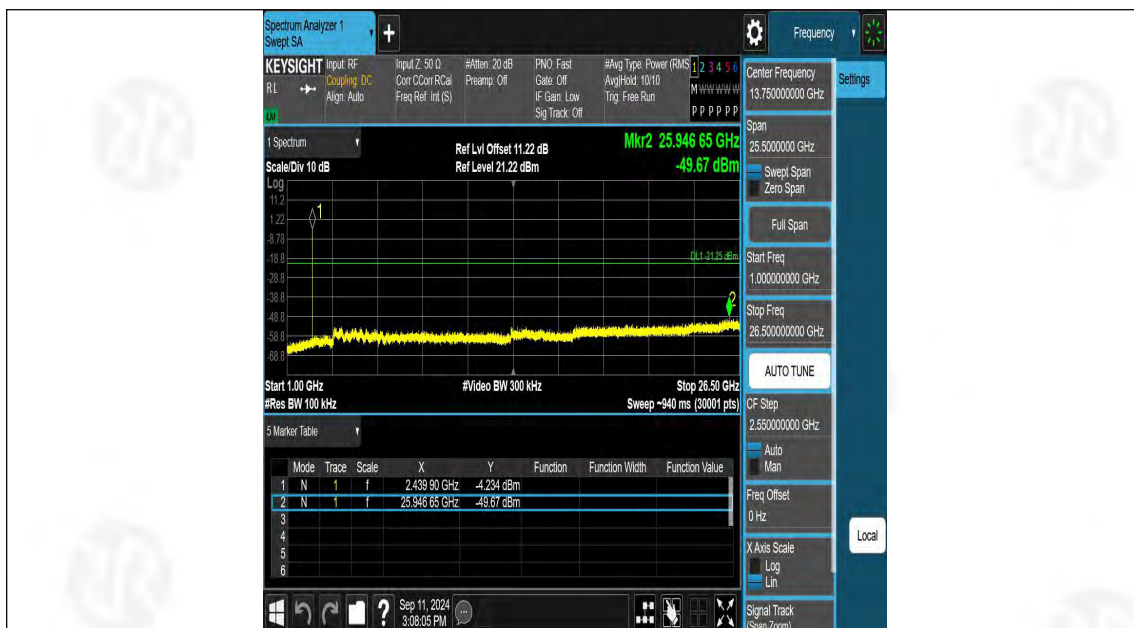
BLE_2M-Ant1-2402-1000~26500-PASS



BLE_2M-Ant1-2440-0~Reference-PASS



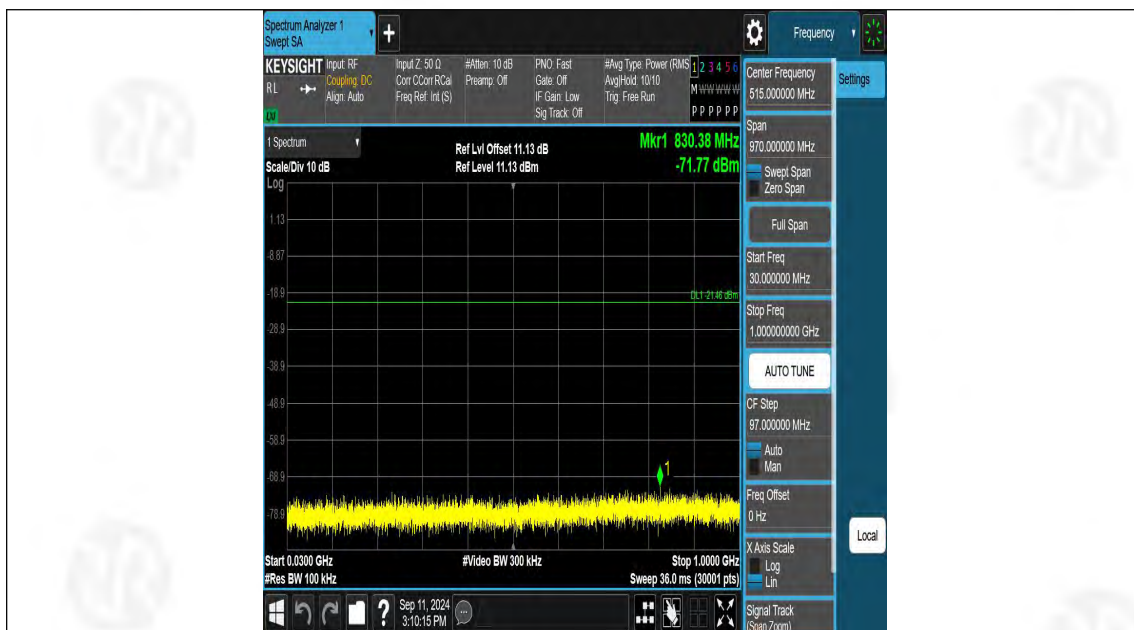
BLE_2M-Ant1-2440-30~1000-PASS



BLE_2M-Ant1-2440-1000~26500-PASS



BLE_2M-Ant1-2480-0~Reference-PASS



BLE_2M-Ant1-2480-30~1000-PASS



BLE_2M-Ant1-2480-1000~26500-PASS



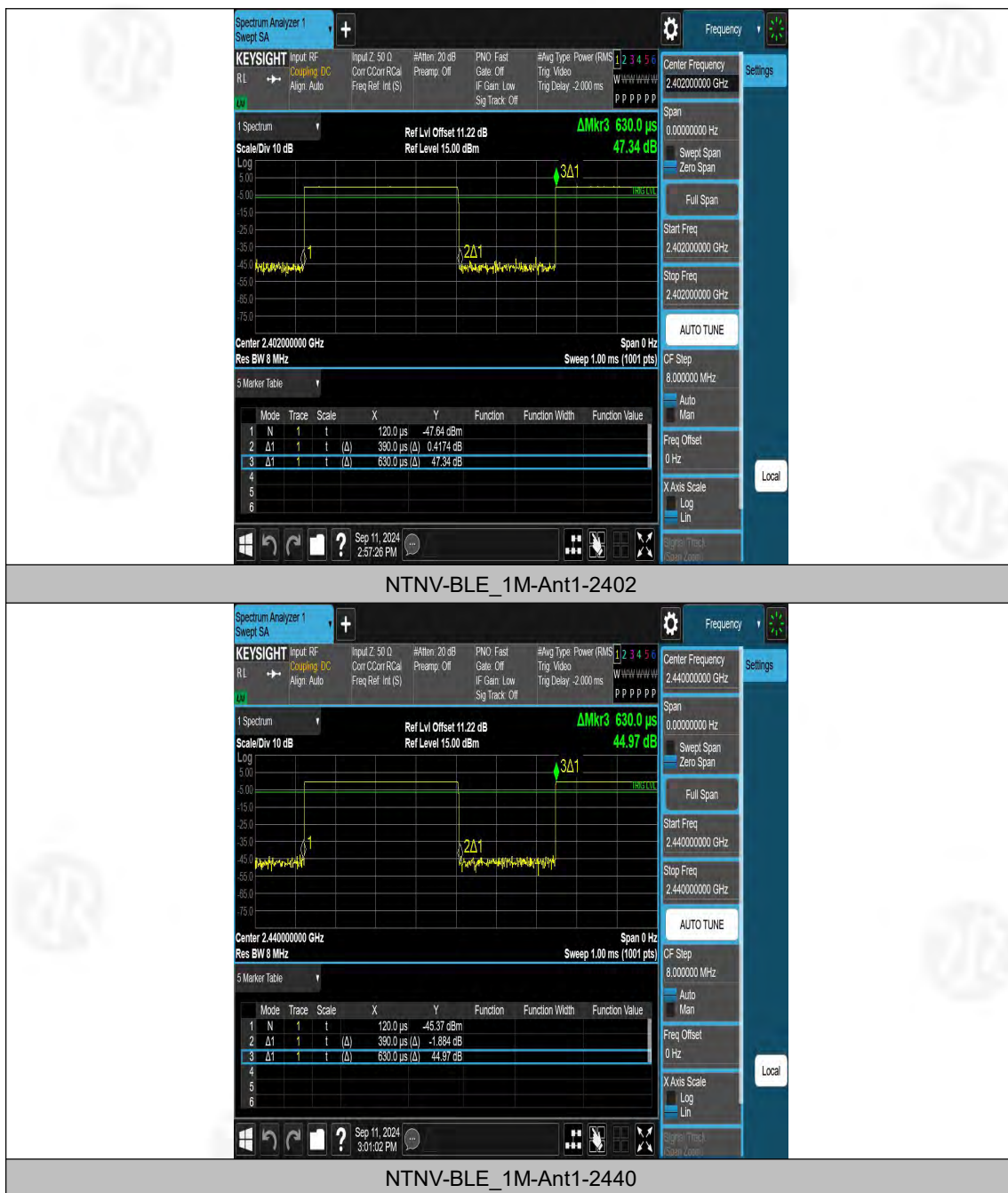
Appendix H: Duty Cycle

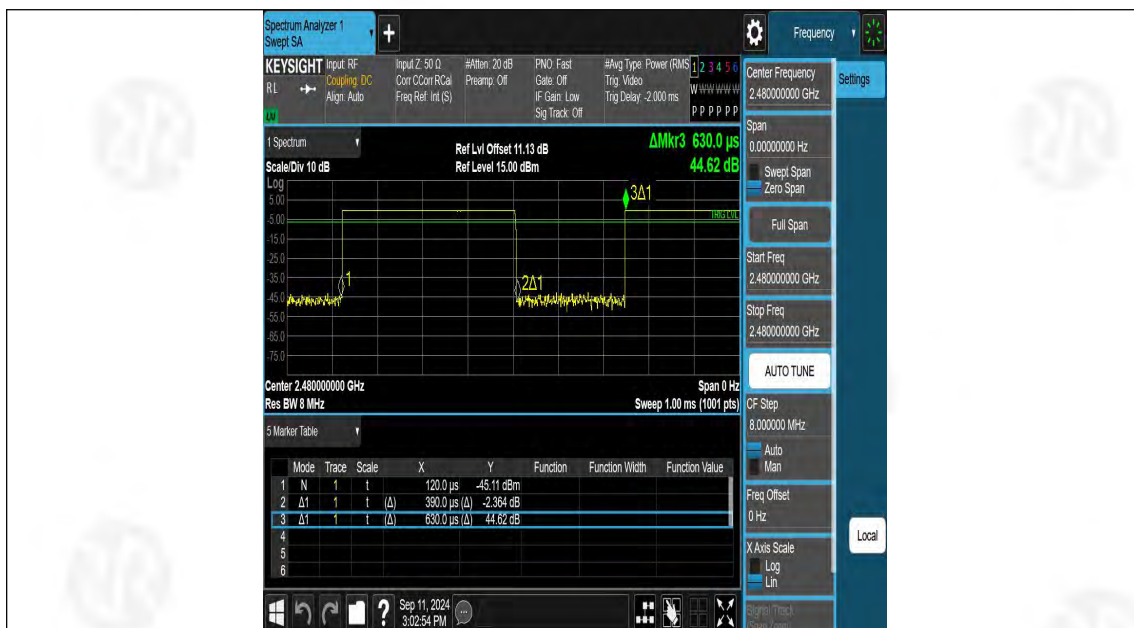
Test Result

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
BLE_1M	Ant1	2440	0.39	0.63	61.90	2.08
BLE_1M	Ant1	2480	0.39	0.63	61.90	2.08
BLE_2M	Ant1	2402	0.20	0.63	31.75	4.98
BLE_2M	Ant1	2440	0.20	0.63	31.75	4.98
BLE_2M	Ant1	2480	0.20	0.63	31.75	4.98

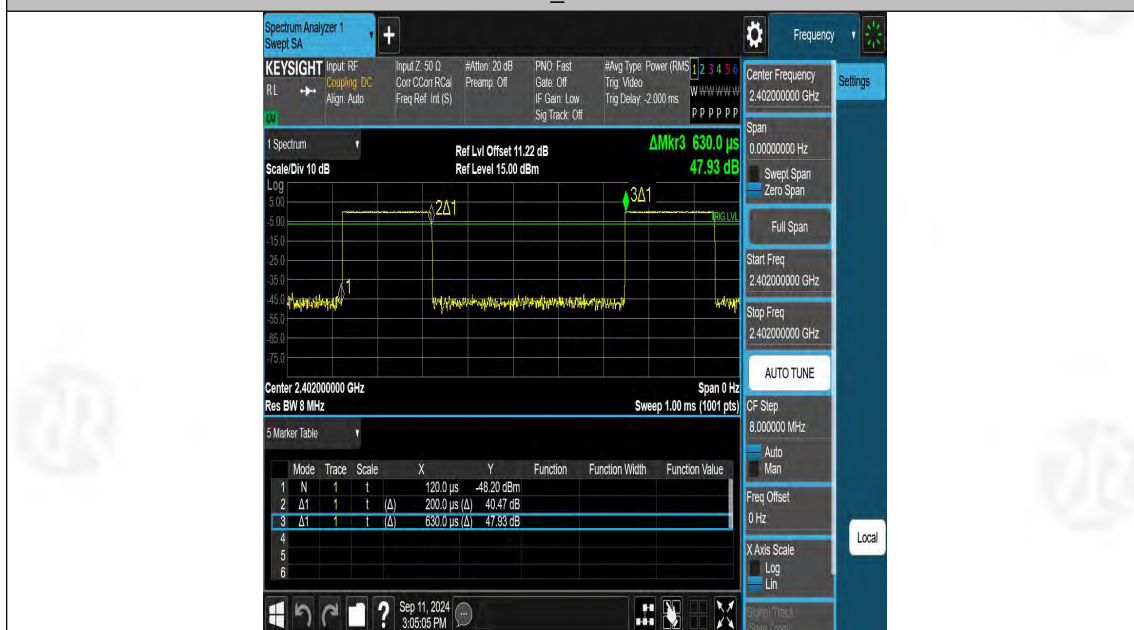


Test Graphs





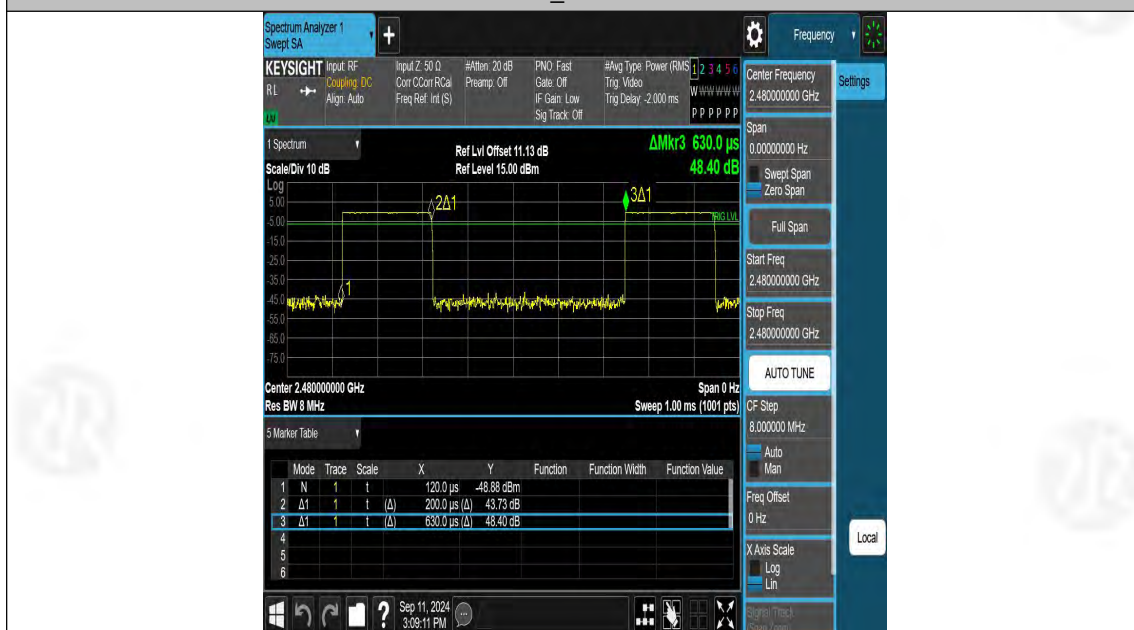
NTNV-BLE_1M-Ant1-2480



NTNV-BLE_2M-Ant1-2402



NTNV-BLE_2M-Ant1-2440



NTNV-BLE_2M-Ant1-2480