

RF Test Data for BT(BLE) (Conducted Measurement)

Product Name: NucBox4

Trade Mark: GMKtec,GMKTEC

Test Model: KB4

FCC ID: 2AXUD-KB4

Environmental Conditions

Temperature:	25.5°C
Relative Humidity:	55%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

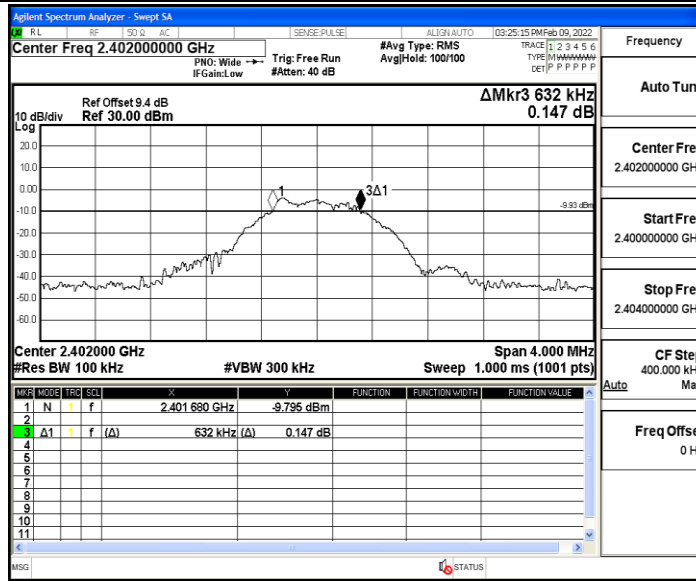
Appendix A: DTS Bandwidth

Test Result

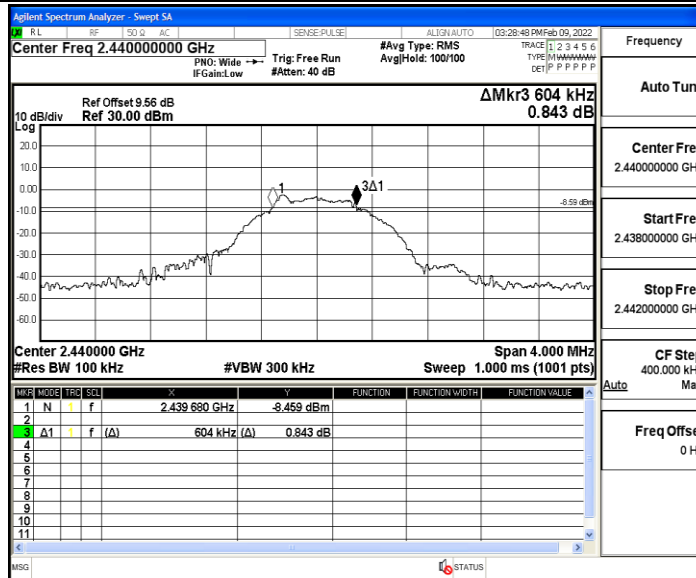
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.632	2401.680	2402.312	0.5	PASS
		2440	0.604	2439.680	2440.284	0.5	PASS
		2480	0.620	2479.684	2480.304	0.5	PASS

Test Graphs

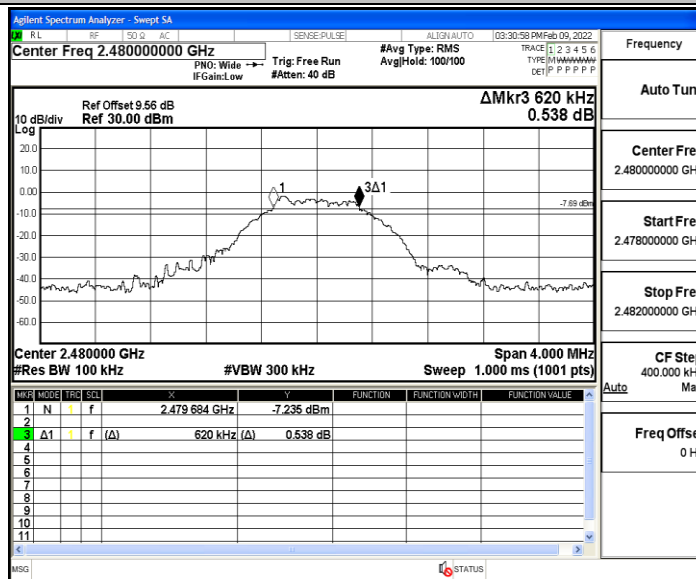
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



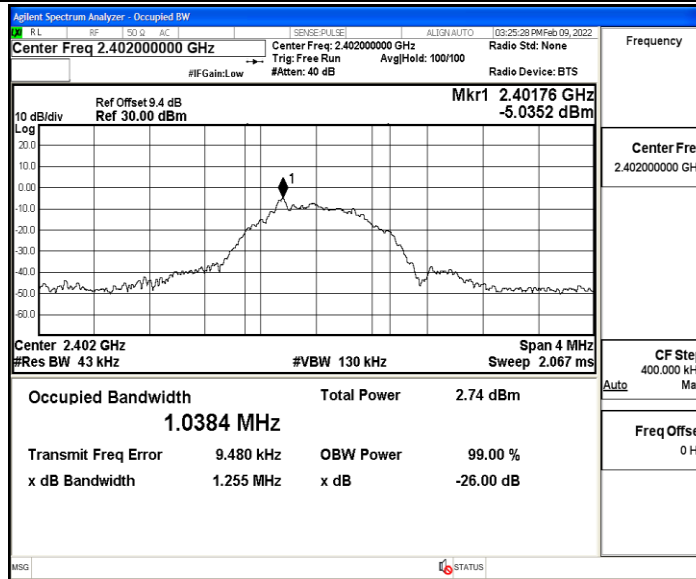
Appendix B: Occupied Channel Bandwidth

Test Result

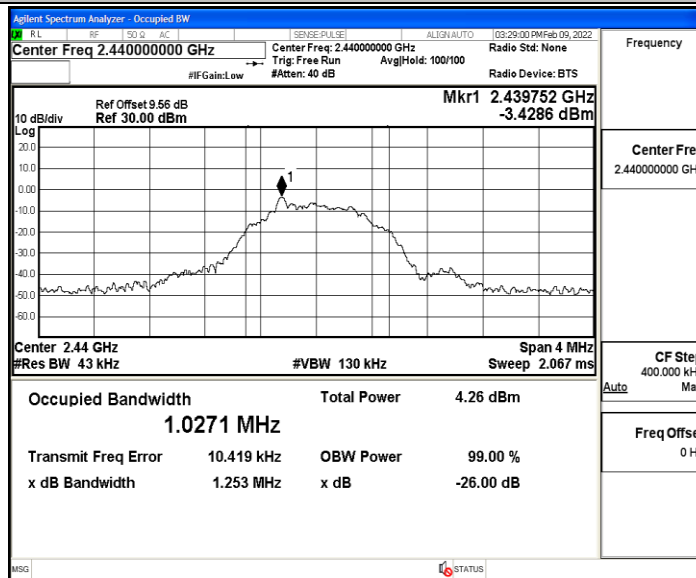
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0384	2401.490	2402.529	---	PASS
		2440	1.0271	2439.497	2440.524	---	PASS
		2480	1.0321	2479.496	2480.528	---	PASS

Test Graphs

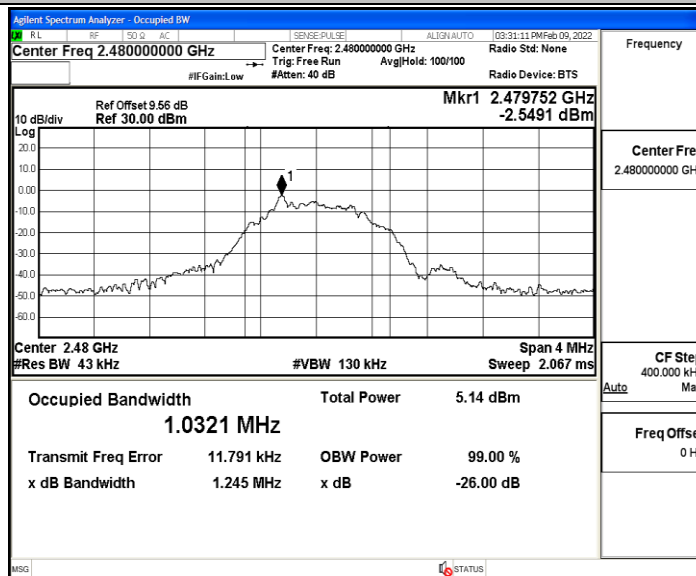
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

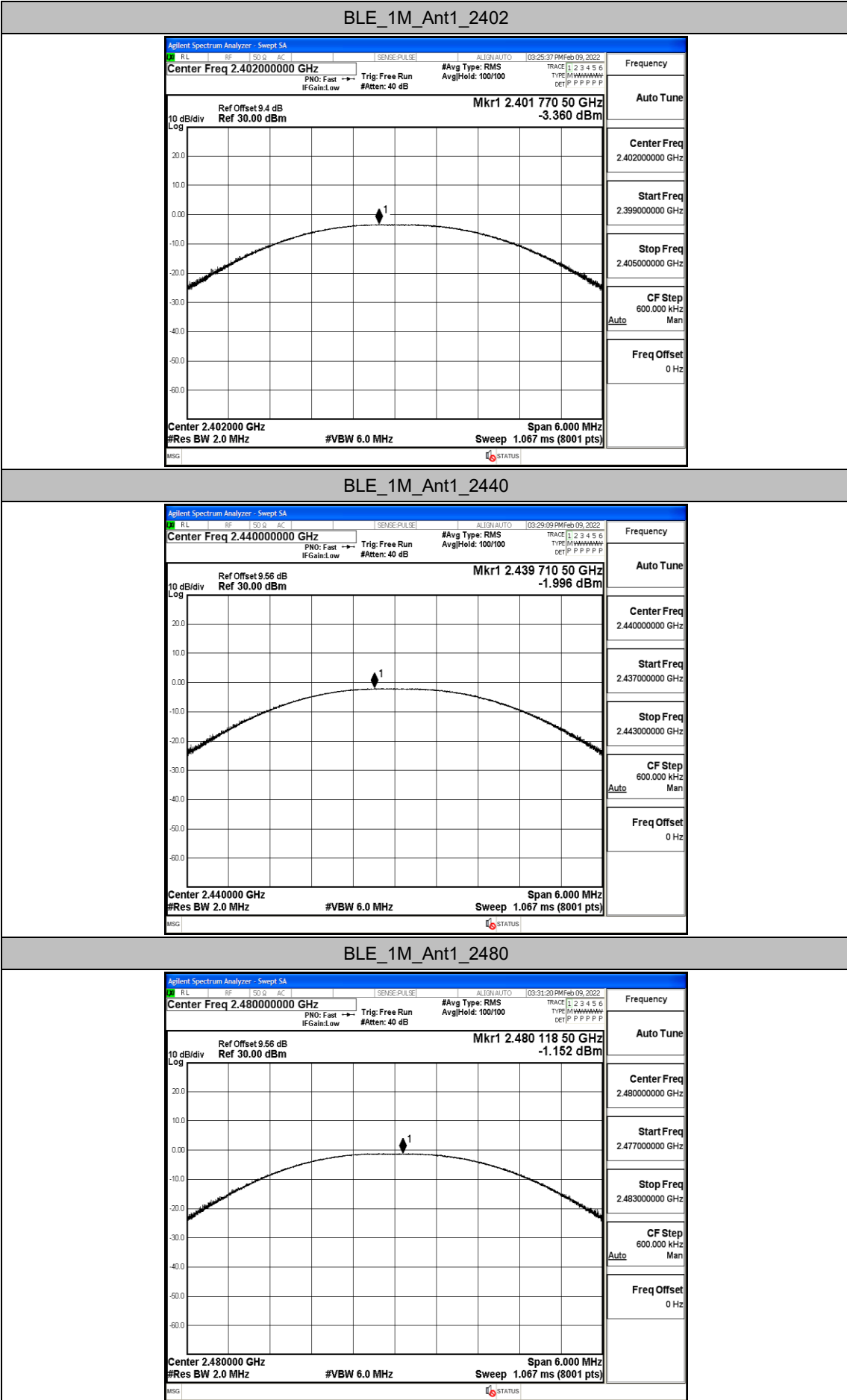


Appendix C: Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-3.36	≤30	PASS
		2440	-2.00	≤30	PASS
		2480	-1.15	≤30	PASS

Test Graphs



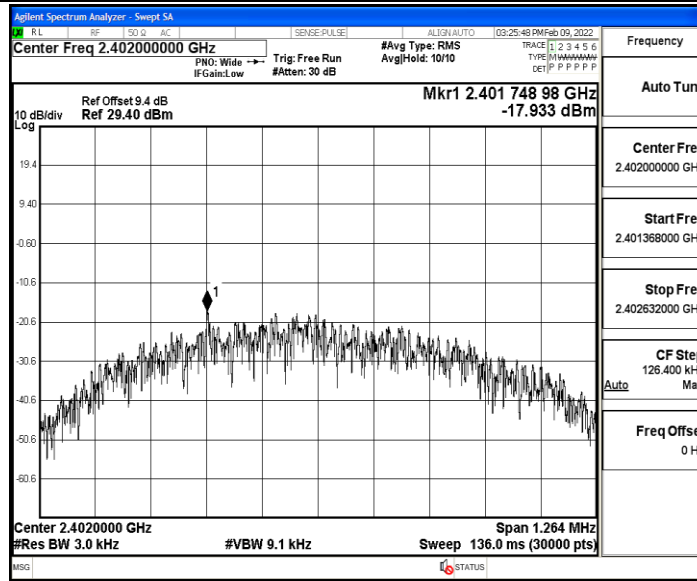
Appendix D: Maximum power spectral density

Test Result

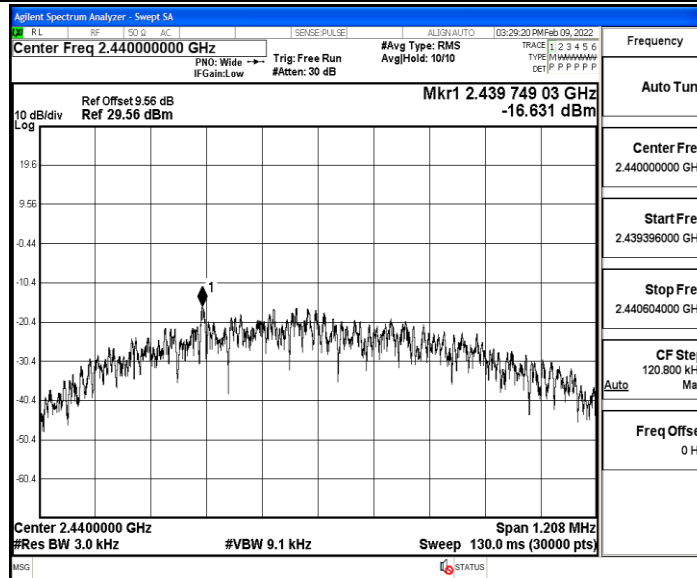
TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-17.93	≤8	PASS
		2440	-16.63	≤8	PASS
		2480	-15.73	≤8	PASS

Test Graphs

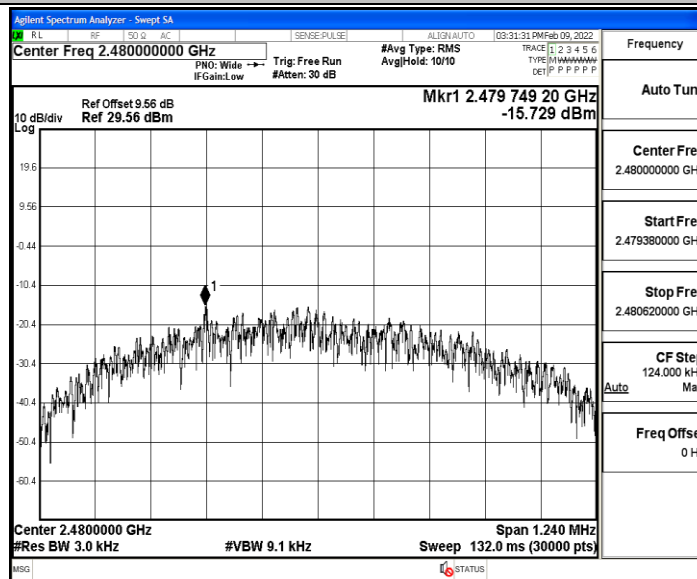
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



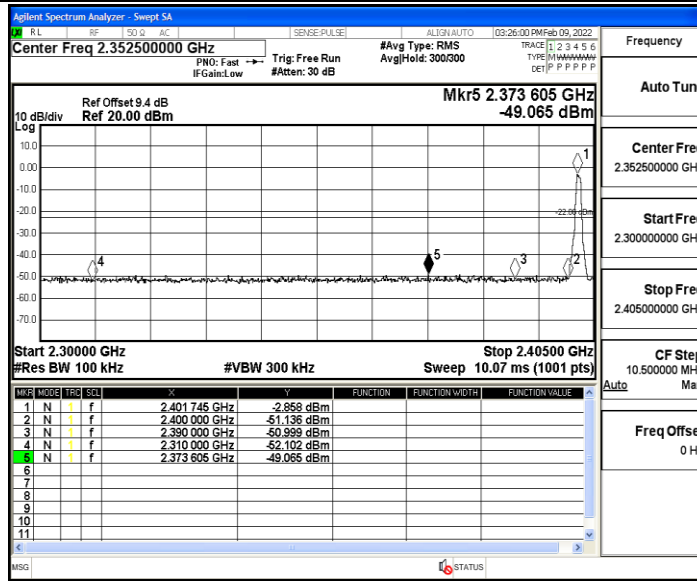
Appendix E: Band edge measurements

Test Result

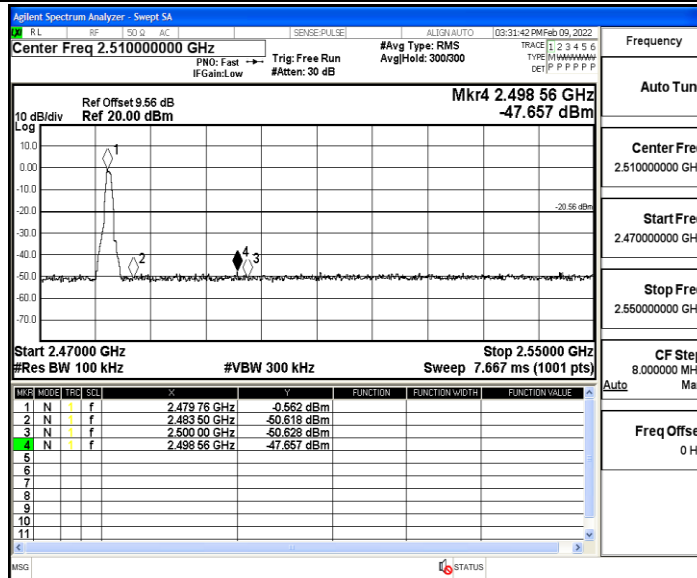
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-2.86	-49.07	≤-22.86	PASS
		High	2480	-0.56	-47.66	≤-20.56	PASS

Test Graphs

BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480

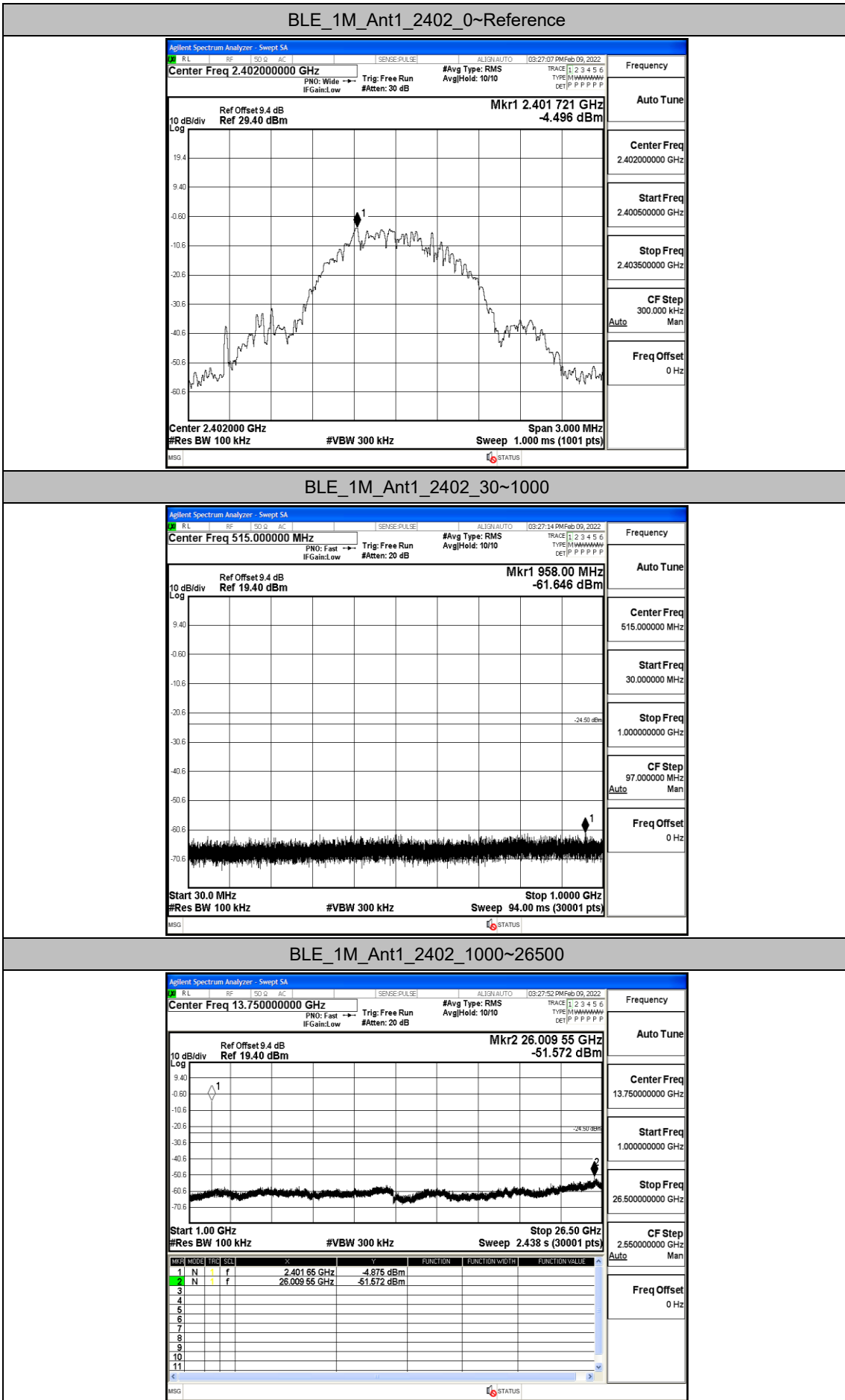


Appendix F: Conducted Spurious Emission

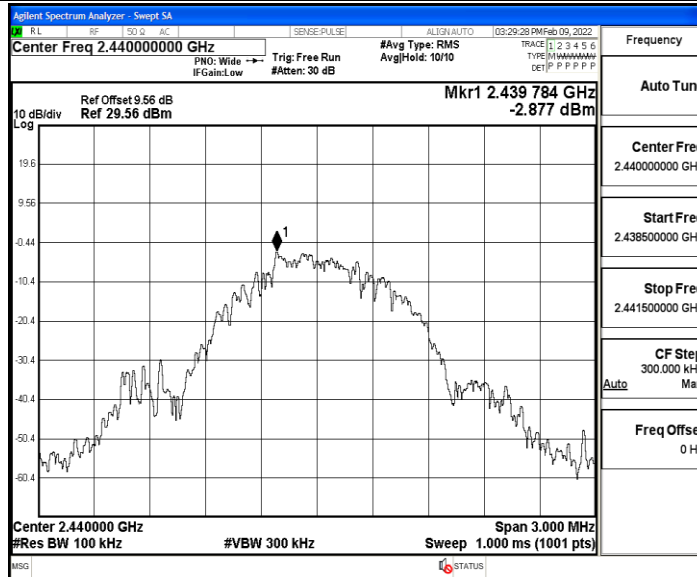
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-4.50	-4.50	---	PASS
			30~1000	-4.50	-61.65	≤-24.5	PASS
			1000~26500	-4.50	-51.57	≤-24.5	PASS
		2440	Reference	-2.88	-2.88	---	PASS
			30~1000	-2.88	-61.69	≤-22.88	PASS
			1000~26500	-2.88	-51.66	≤-22.88	PASS
		2480	Reference	-1.55	-1.55	---	PASS
			30~1000	-1.55	-61.08	≤-21.55	PASS
			1000~26500	-1.55	-52.6	≤-21.55	PASS

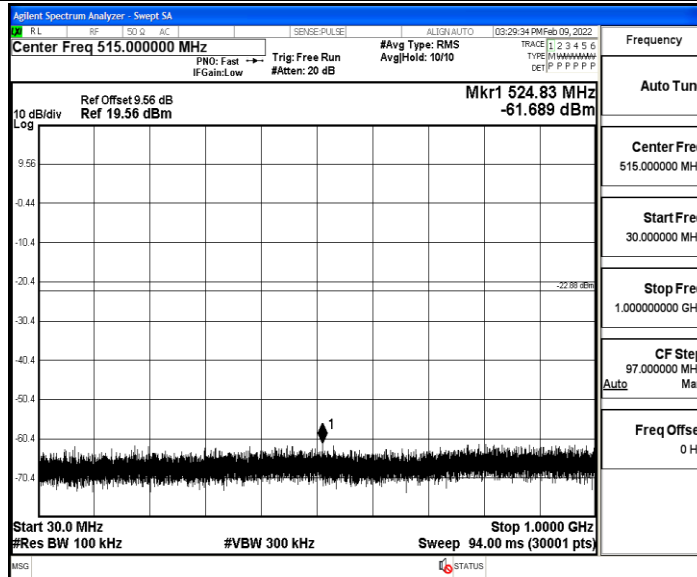
Test Graphs



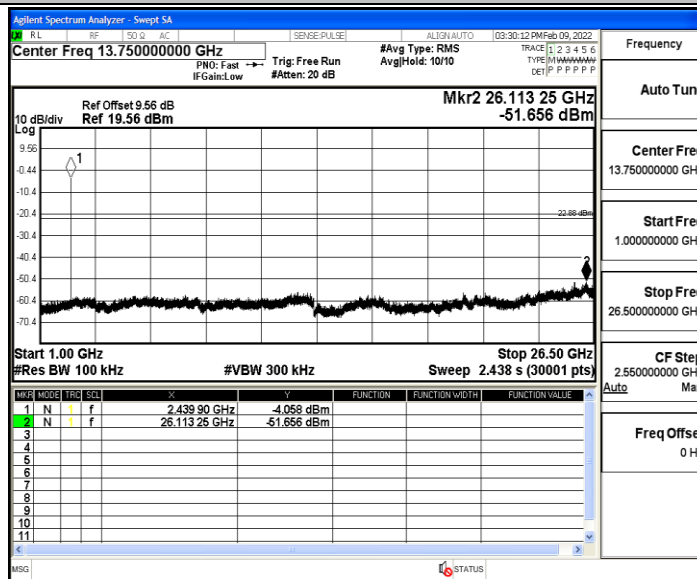
BLE_1M_Ant1_2440_0~Reference



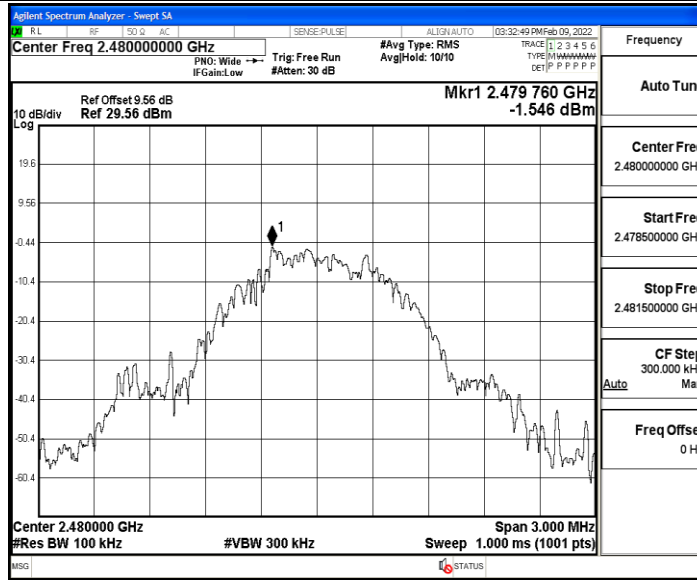
BLE_1M_Ant1_2440_30~1000



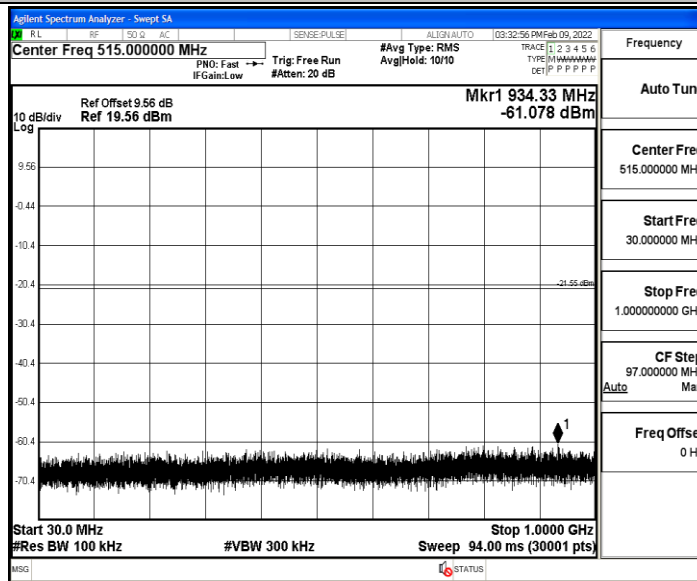
BLE_1M_Ant1_2440_1000~26500



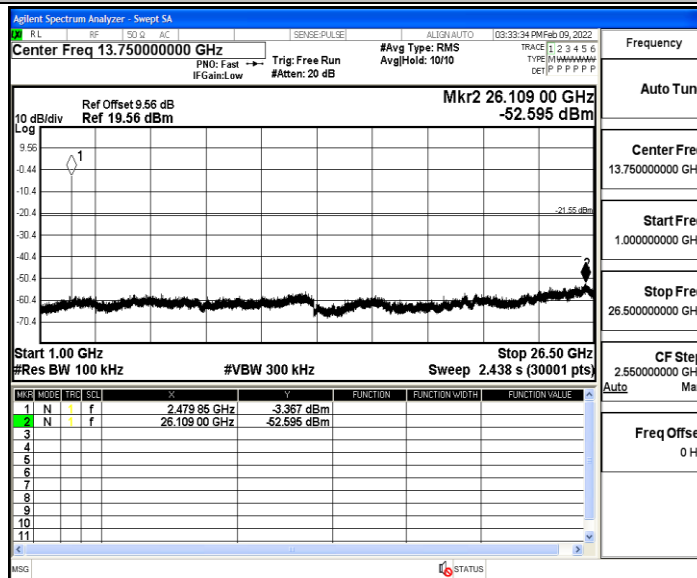
BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



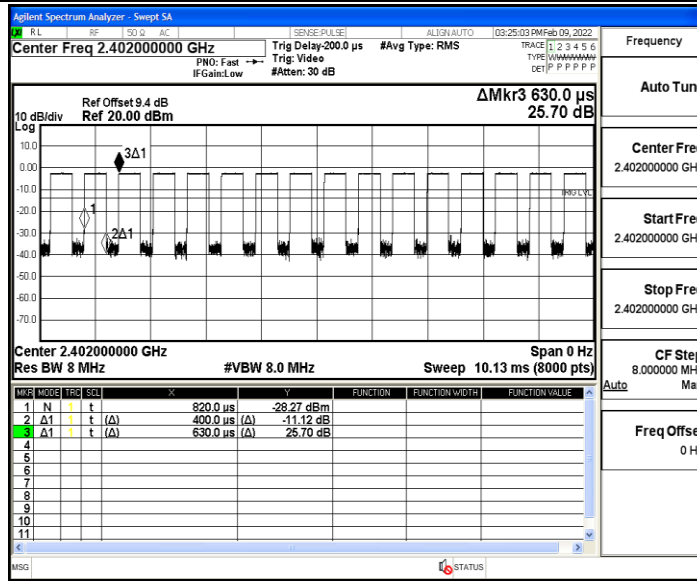
Appendix G: Duty Cycle

Test Result

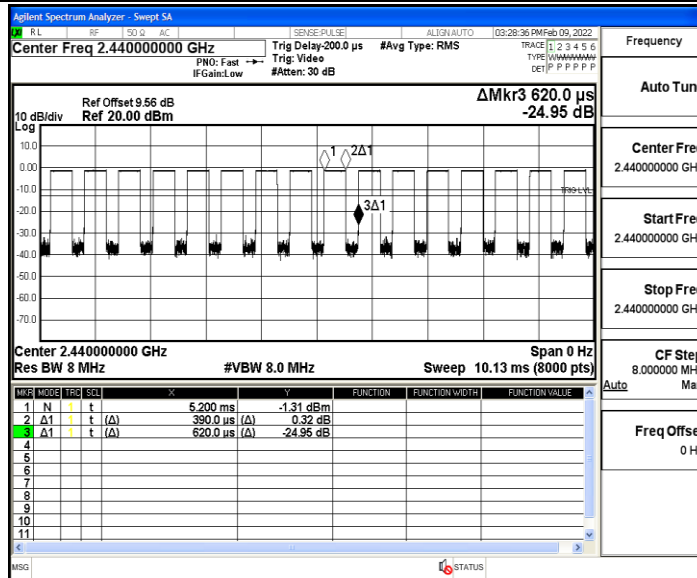
TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T[kHz]
BLE_1M	Ant1	2402	0.40	0.63	63.49	2.50
		2440	0.39	0.62	62.90	2.56
		2480	0.40	0.63	63.49	2.50

Test Graphs

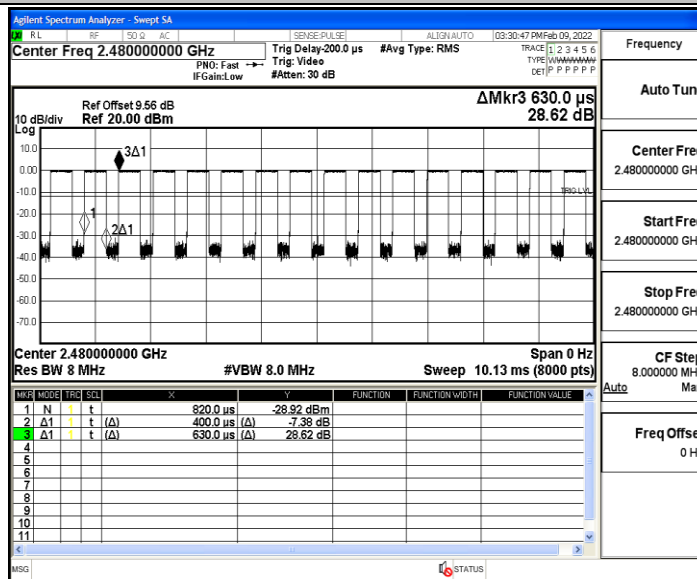
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



Appendix H: Emissions in Restricted Bands

Test Result

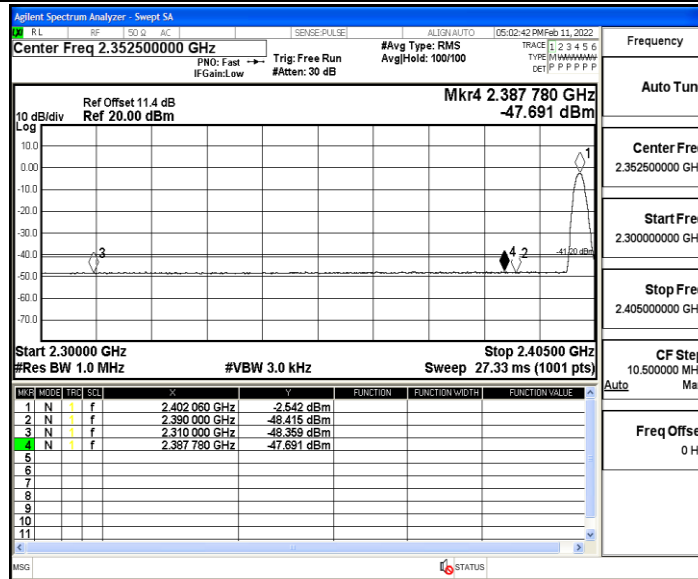
TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-48.36	≤-41.20	PASS
				AV	2387.780	-47.69	≤-41.20	PASS
				AV	2390.000	-48.42	≤-41.20	PASS
				Peak	2310.000	-43.33	≤-21.20	PASS
				Peak	2380.850	-38.92	≤-21.20	PASS
				Peak	2390.000	-42.66	≤-21.20	PASS
		High	2480	AV	2483.500	-47.66	≤-41.20	PASS
				AV	2495.120	-47.11	≤-41.20	PASS
				AV	2500.000	-47.41	≤-41.20	PASS
				Peak	2483.500	-42.16	≤-21.20	PASS
				Peak	2498.320	-38.28	≤-21.20	PASS
				Peak	2500.000	-41.03	≤-21.20	PASS

Note:

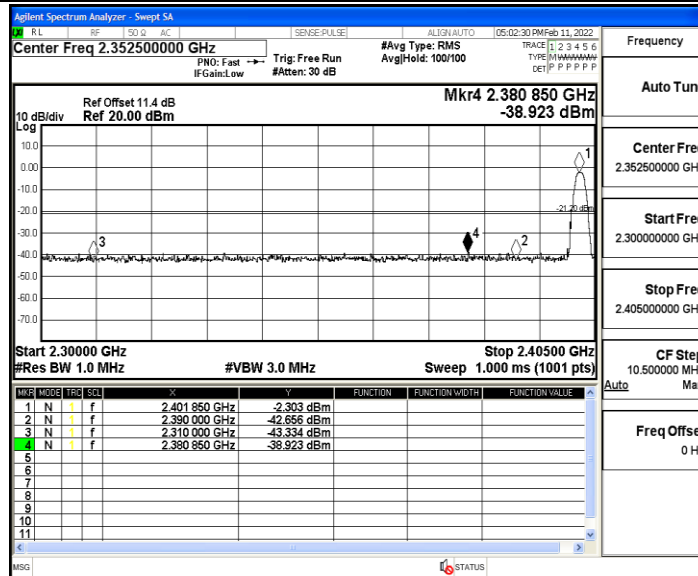
1. The Antenna Gain is compensated in the graph with 2dBi and Antenna Gain which is Higher.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

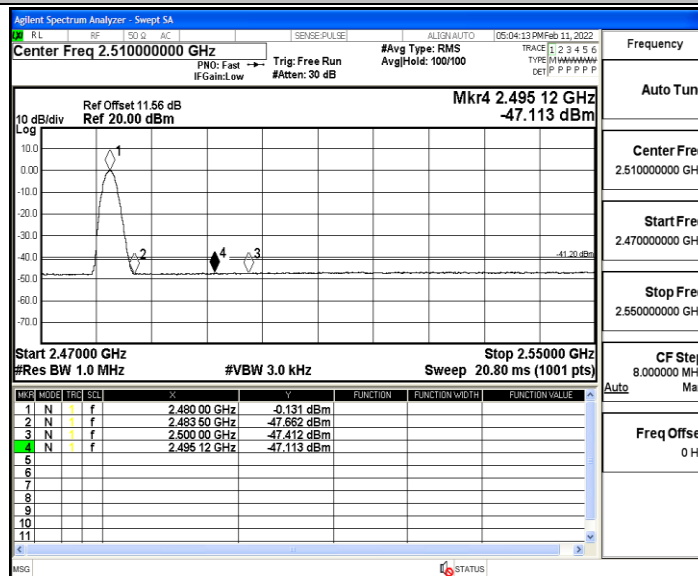
BLE_1M_Ant1_Low_2402_AV



BLE_1M_Ant1_Low_2402_Peak



BLE_1M_Ant1_High_2480_AV



BLE_1M_Ant1_High_2480_Peak

