

Appendix A

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

Product Name: 5.0 Bluetooth adapter

Trade Mark: N/A

Test Model: RTL5.0

FCC ID: 2A3F2-RTL50

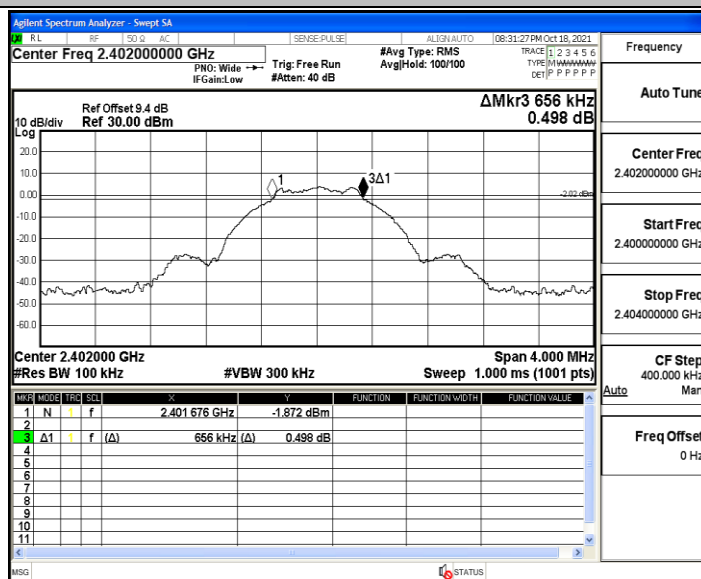
Environmental Conditions

Temperature:	22.8° C
Relative Humidity:	60%
ATM Pressure:	100.0 kPa
Test Engineer:	Nancy Li
Supervised by:	Hugo Chen
NOTE	N/A

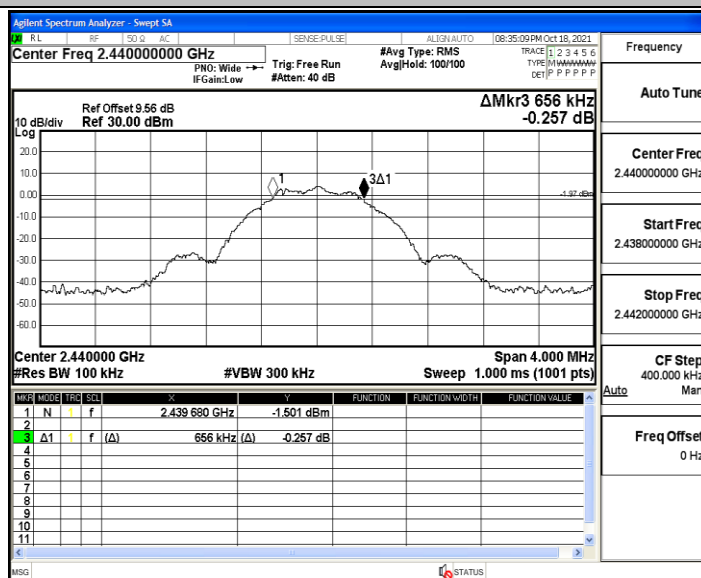
A.1. 6dB Bandwidth

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.656	2401.676	2402.332	0.5	PASS
		2440	0.656	2439.680	2440.336	0.5	PASS
		2480	0.648	2479.668	2480.316	0.5	PASS
BLE_2M	Ant1	2402	0.964	2401.440	2402.404	0.5	PASS
		2440	1.124	2439.460	2440.584	0.5	PASS
		2480	1.140	2479.432	2480.572	0.5	PASS

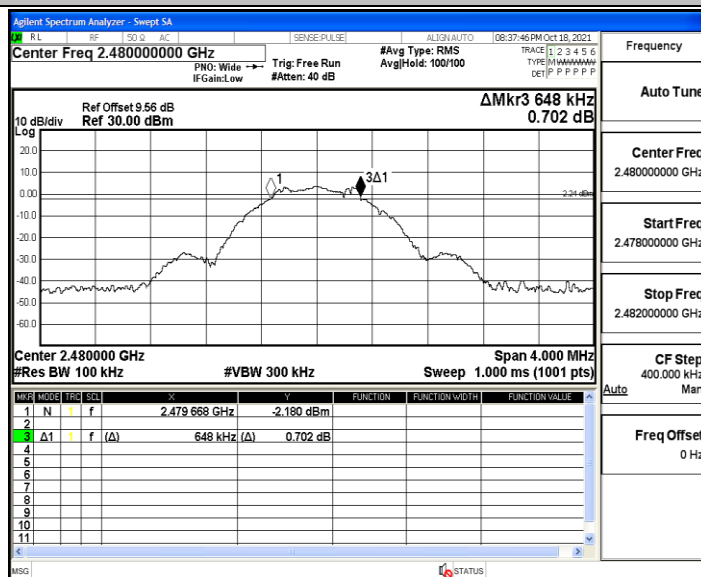
BLE_1M_Ant1_2402



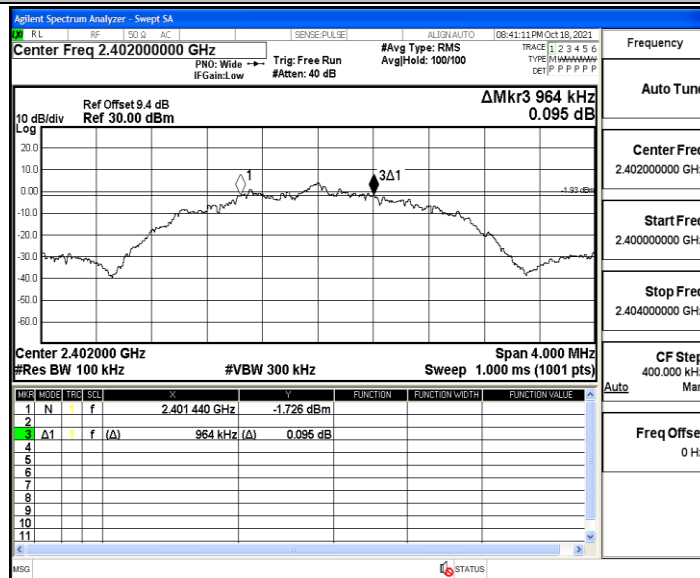
BLE_1M_Ant1_2440



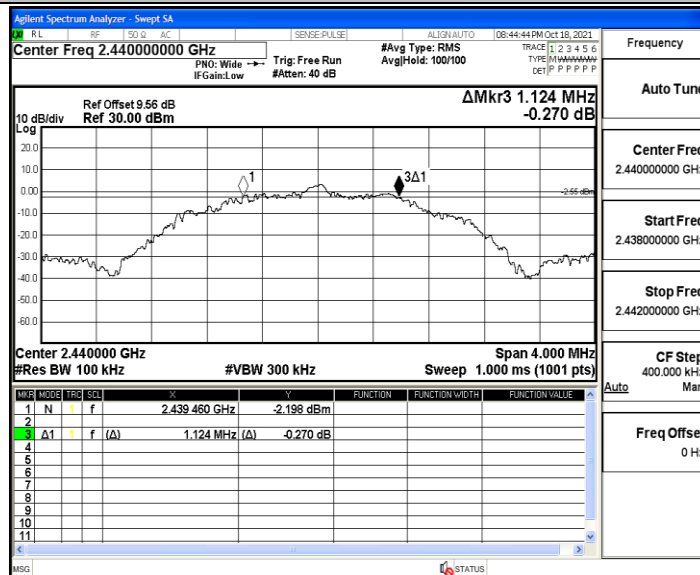
BLE_1M_Ant1_2480



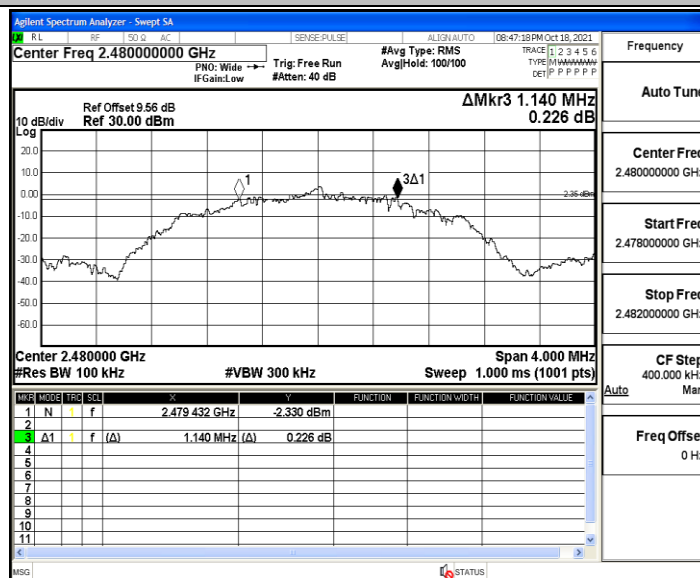
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

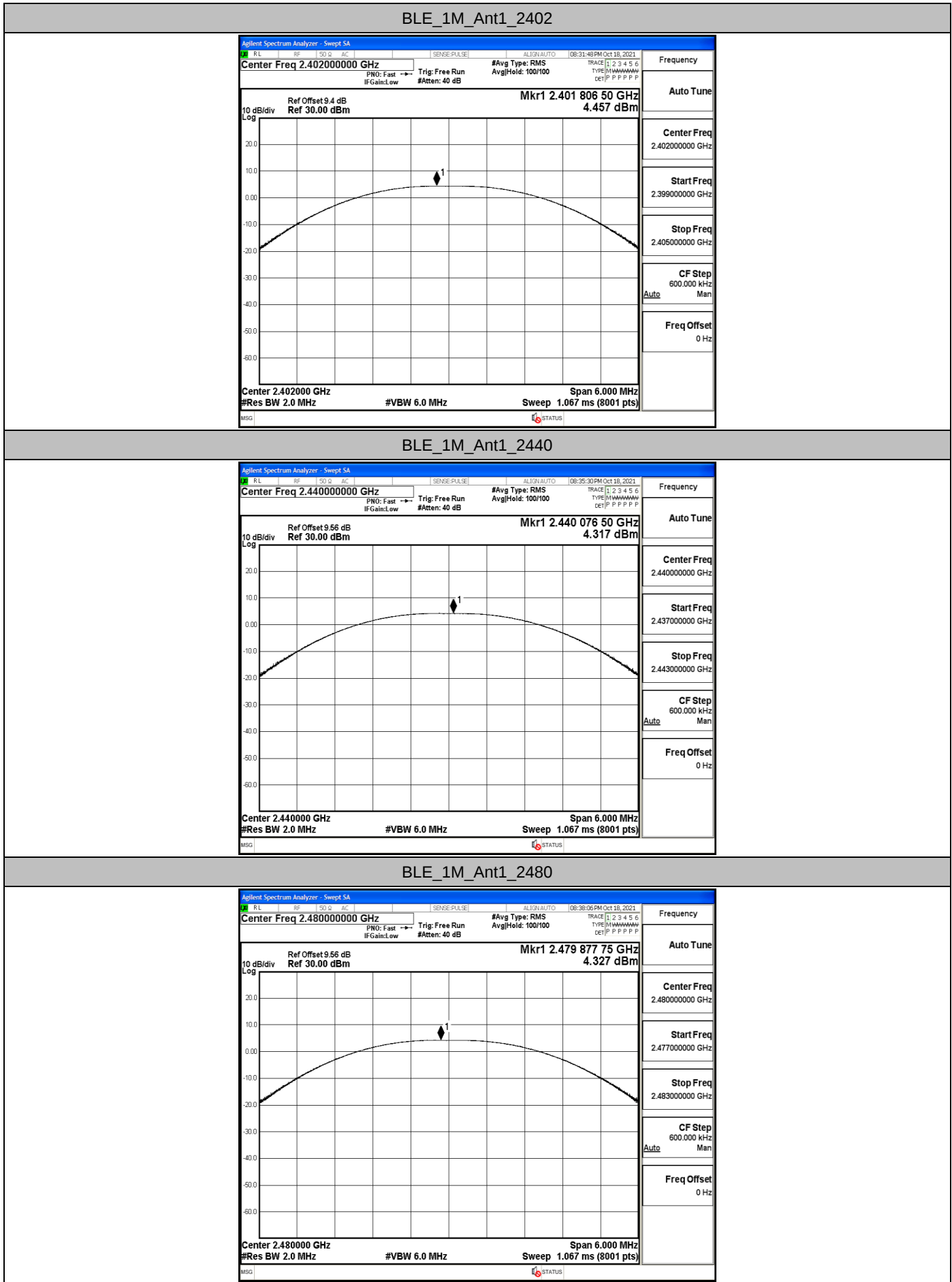


A.2. Occupied Bandwidth

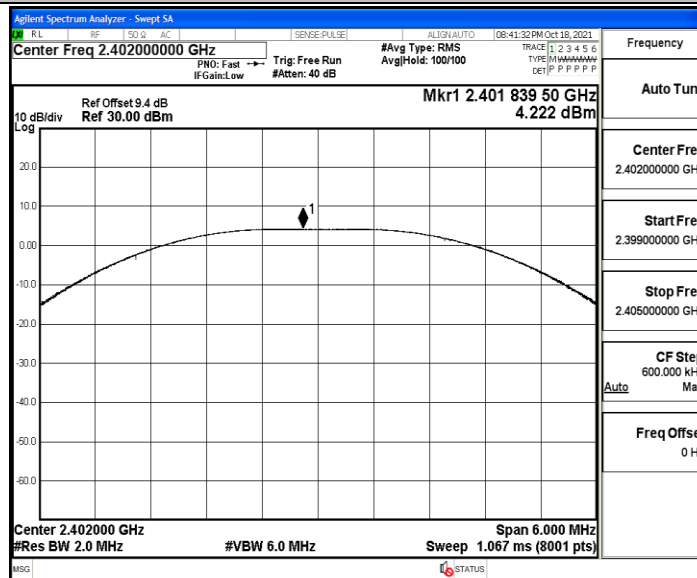
Test Mode	Test Channel	Ant	OBW[MHz]	Limit[MHz]	Verdict
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A.3. Maximum peak conducted output power

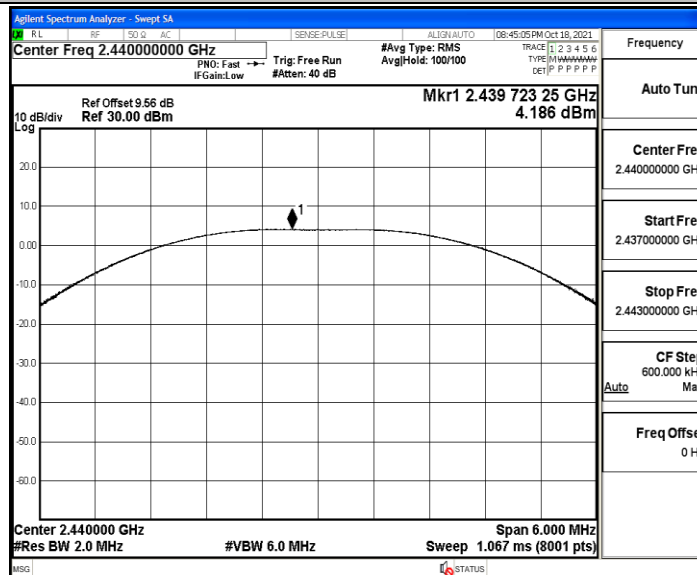
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	4.46	≤30	PASS
		2440	4.32	≤30	PASS
		2480	4.33	≤30	PASS
BLE_2M	Ant1	2402	4.22	≤30	PASS
		2440	4.19	≤30	PASS
		2480	4.2	≤30	PASS



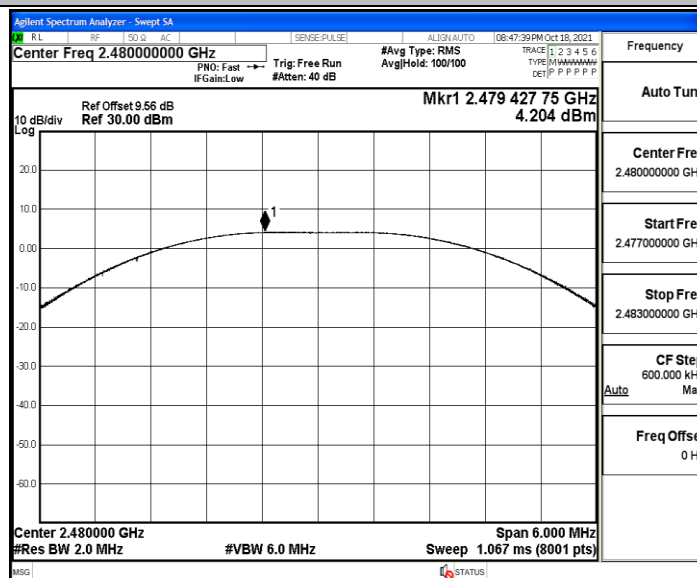
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



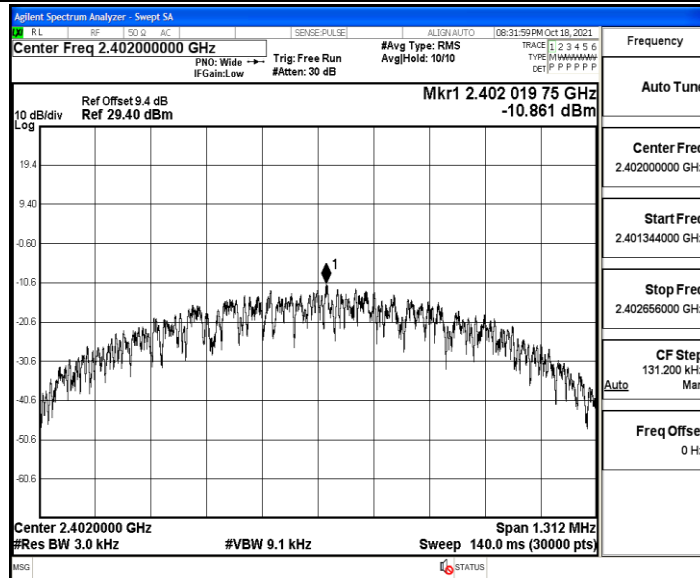
BLE_2M_Ant1_2480



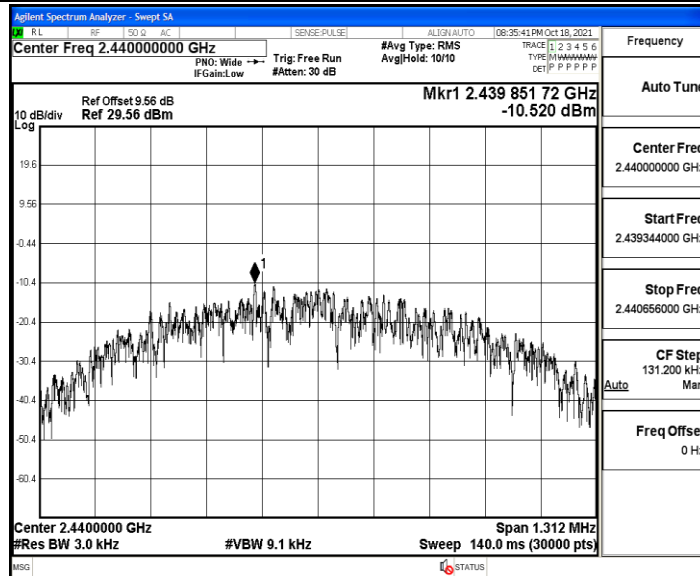
A.4. Maximum Peak power spectral density

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-10.86	≤8	PASS
		2440	-10.52	≤8	PASS
		2480	-11.24	≤8	PASS
BLE_2M	Ant1	2402	-12.77	≤8	PASS
		2440	-13.29	≤8	PASS
		2480	-13.81	≤8	PASS

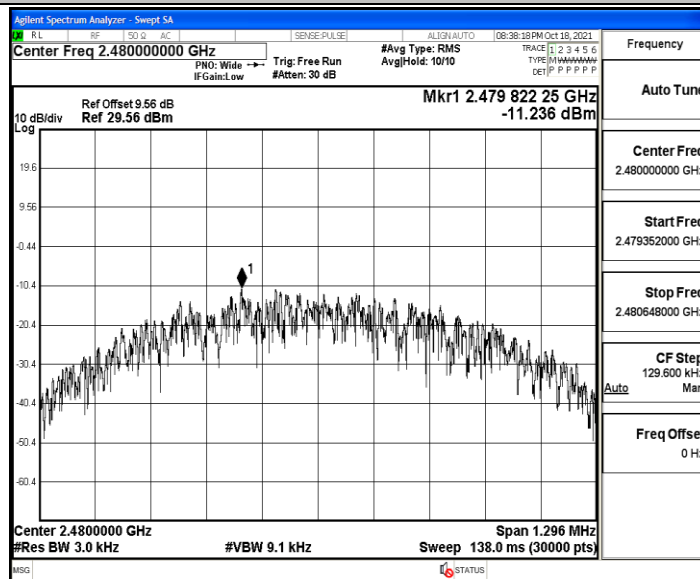
BLE_1M_Ant1_2402



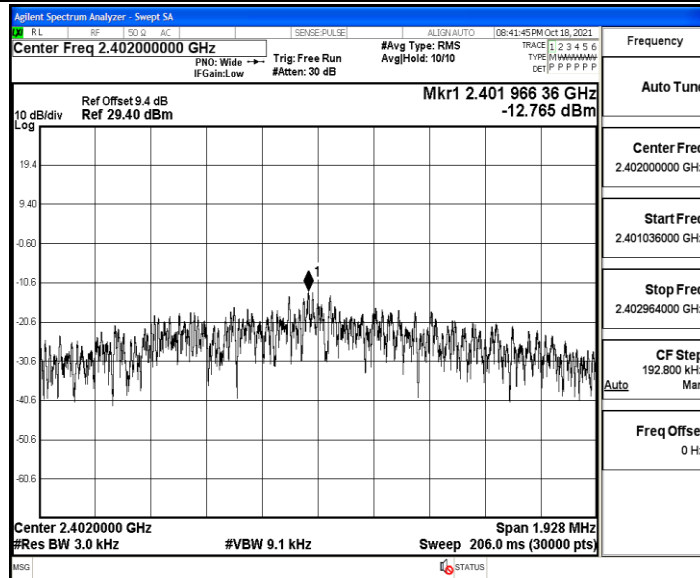
BLE_1M_Ant1_2440



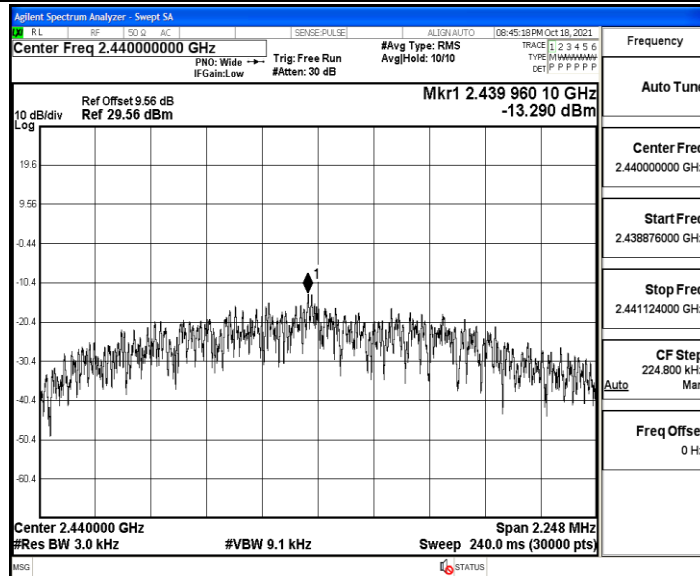
BLE_1M_Ant1_2480



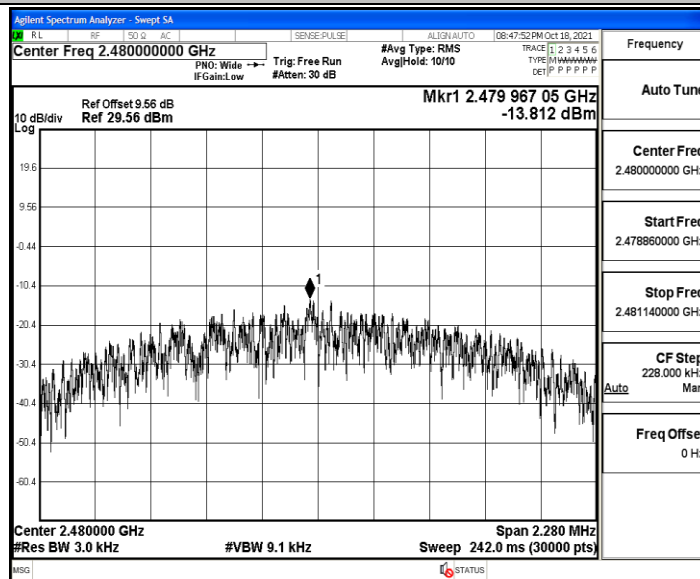
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



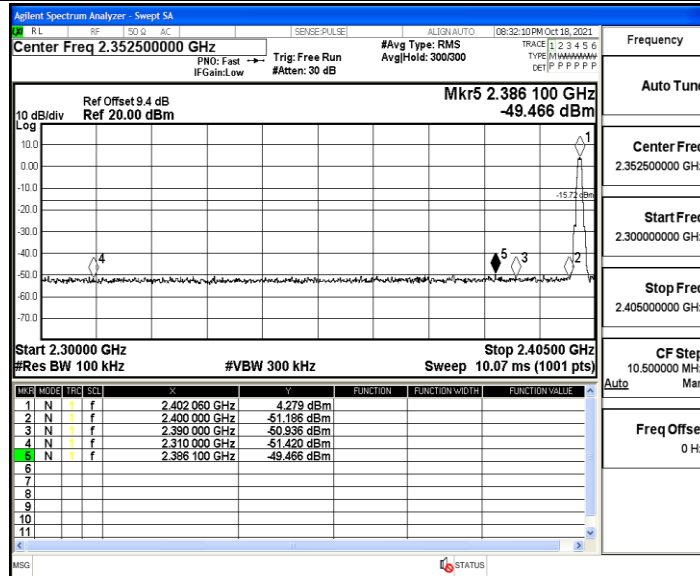
BLE_2M_Ant1_2480



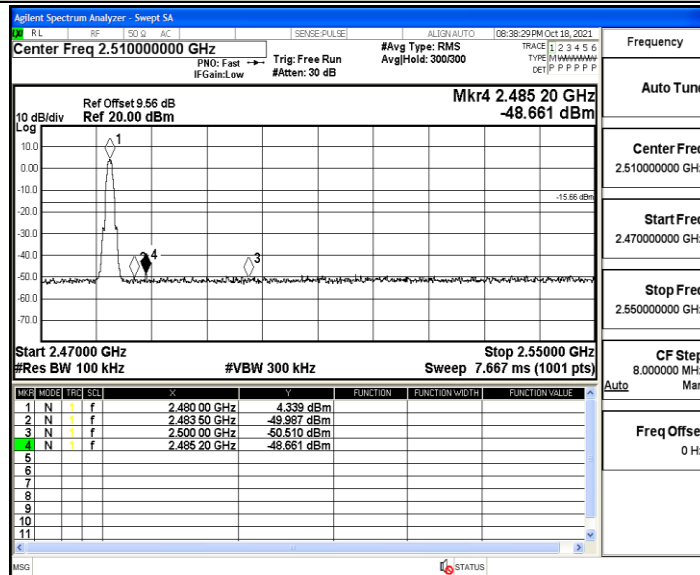
A.5. Band-edge for RF Conducted Emissions

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	4.28	-49.47	≤-15.72	PASS
		High	2480	4.34	-48.66	≤-15.66	PASS
BLE_2M	Ant1	Low	2402	3.24	-27.74	≤-16.76	PASS
		High	2480	3.72	-48.89	≤-16.28	PASS

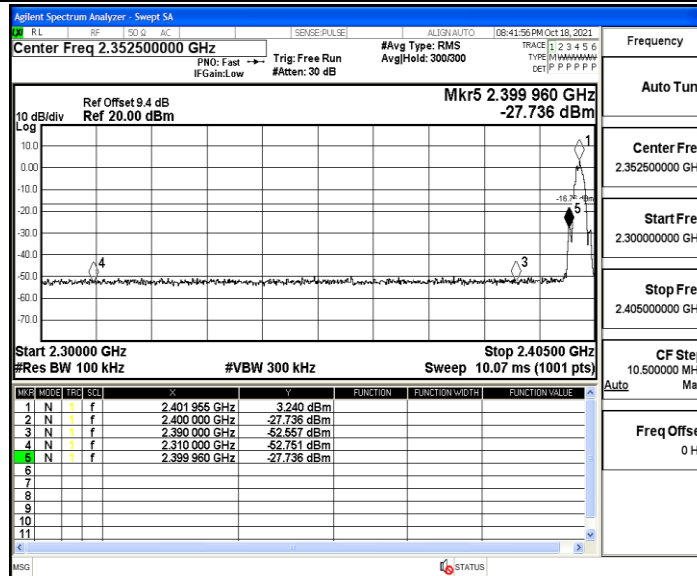
BLE_1M_Ant1_Low_2402



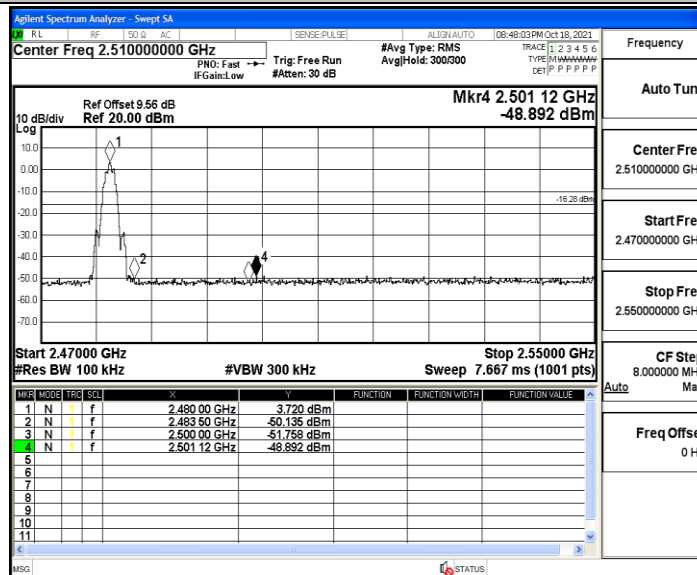
BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2402

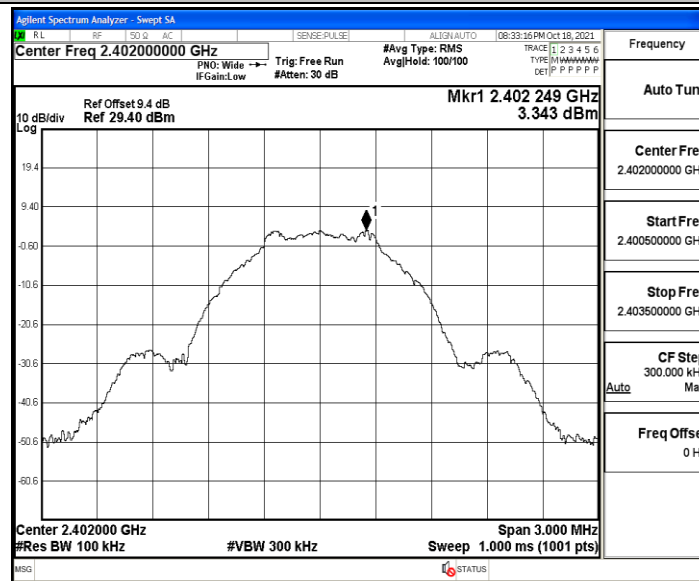


BLE_2M_Ant1_High_2480

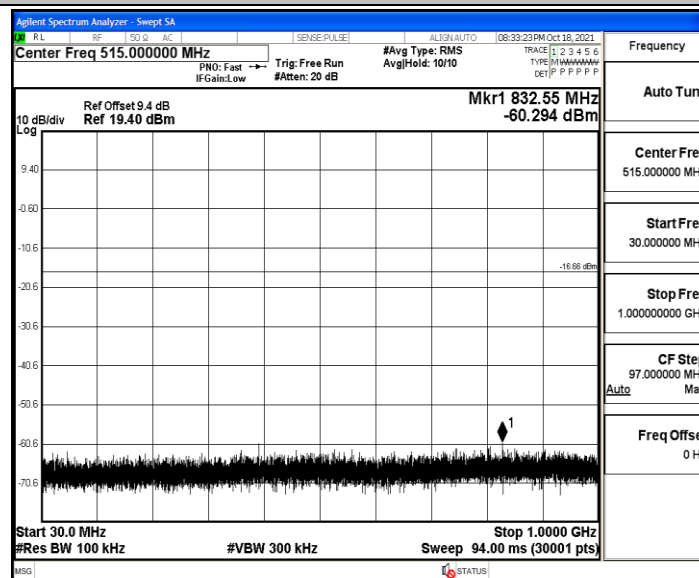


A.6. RF Conducted Spurious Emissions

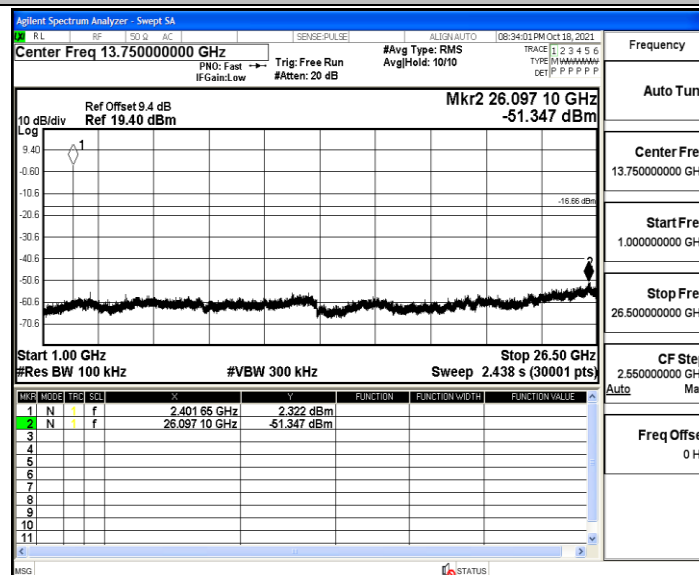
BLE_1M_Ant1_2402_0~Reference



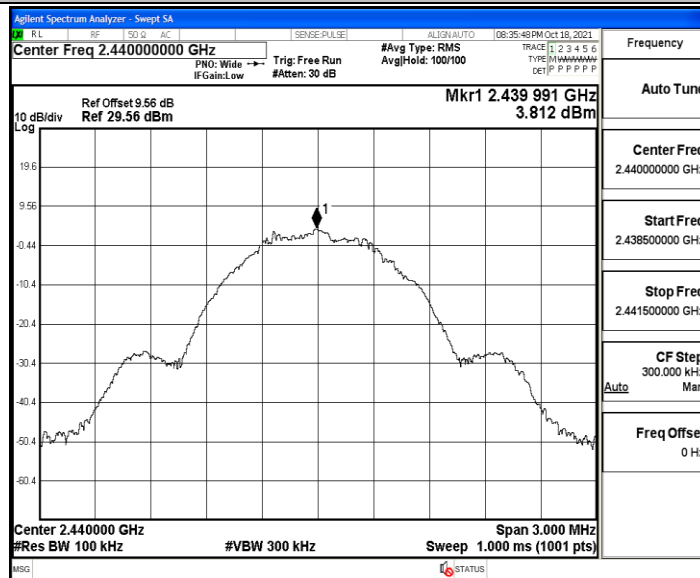
BLE_1M_Ant1_2402_30~1000



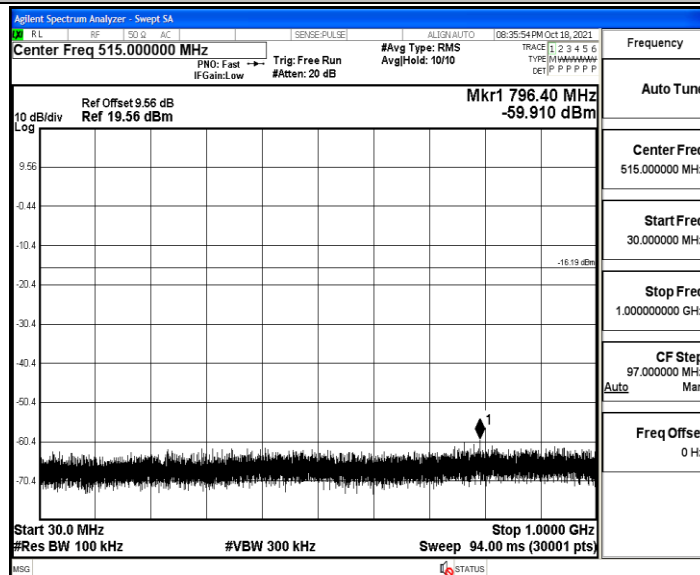
BLE_1M_Ant1_2402_1000~26500



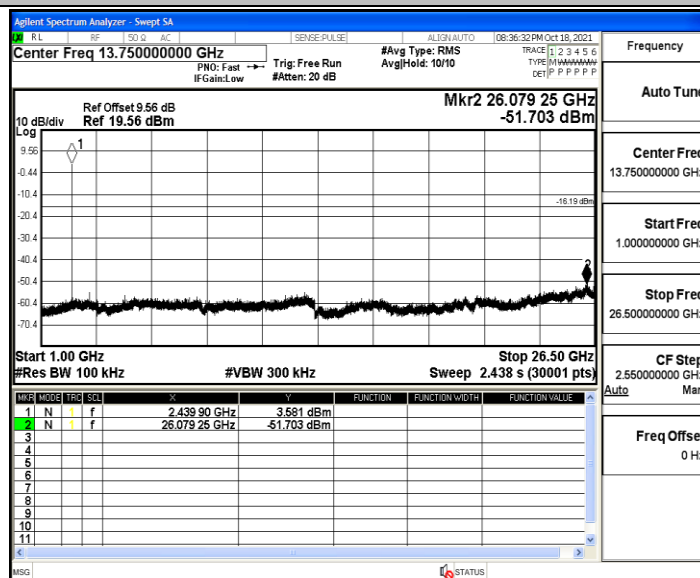
BLE_1M_Ant1_2440_0~Reference



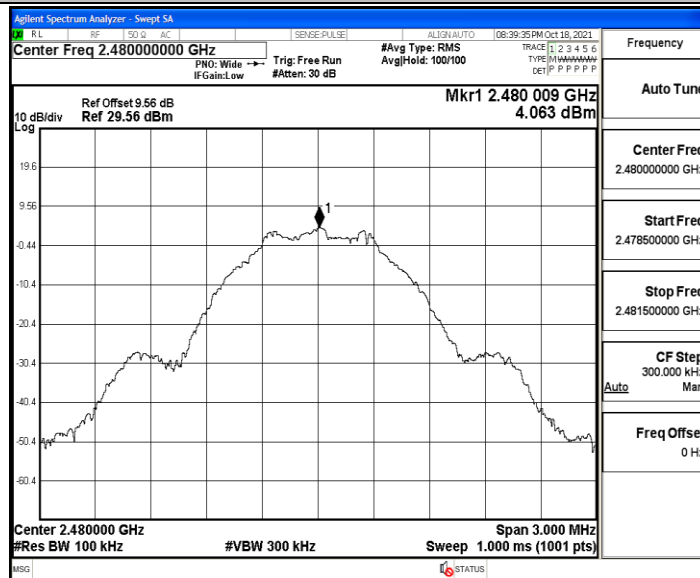
BLE_1M_Ant1_2440_30~1000



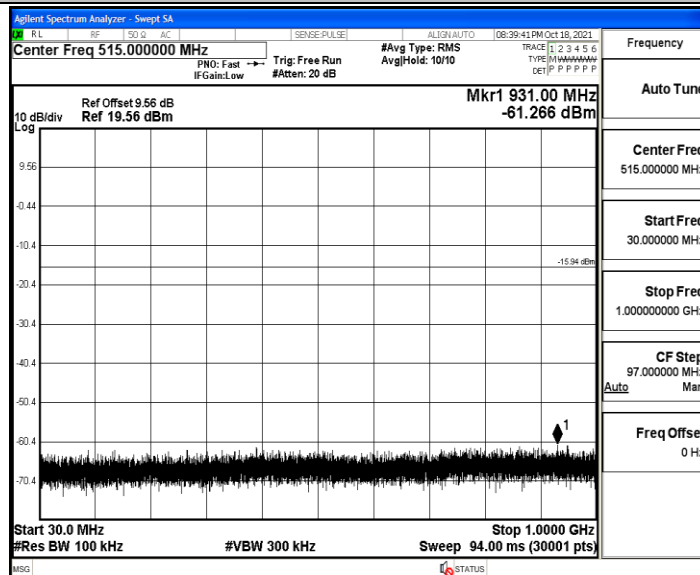
BLE_1M_Ant1_2440_1000~26500



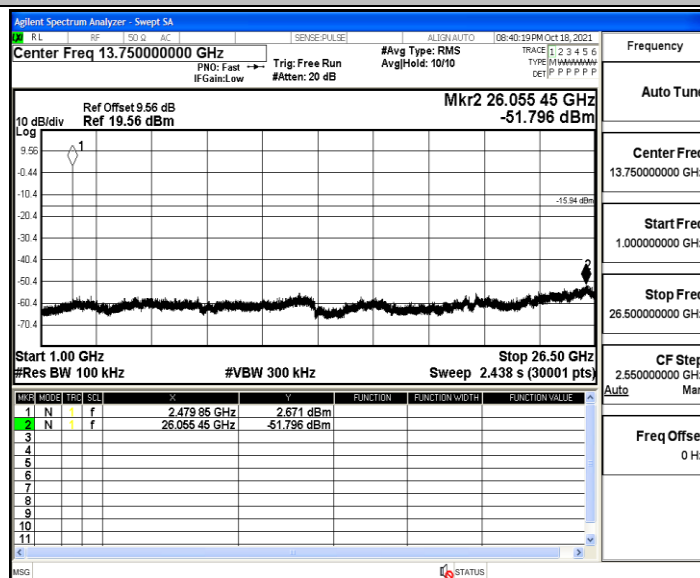
BLE_1M_Ant1_2480_0~Reference

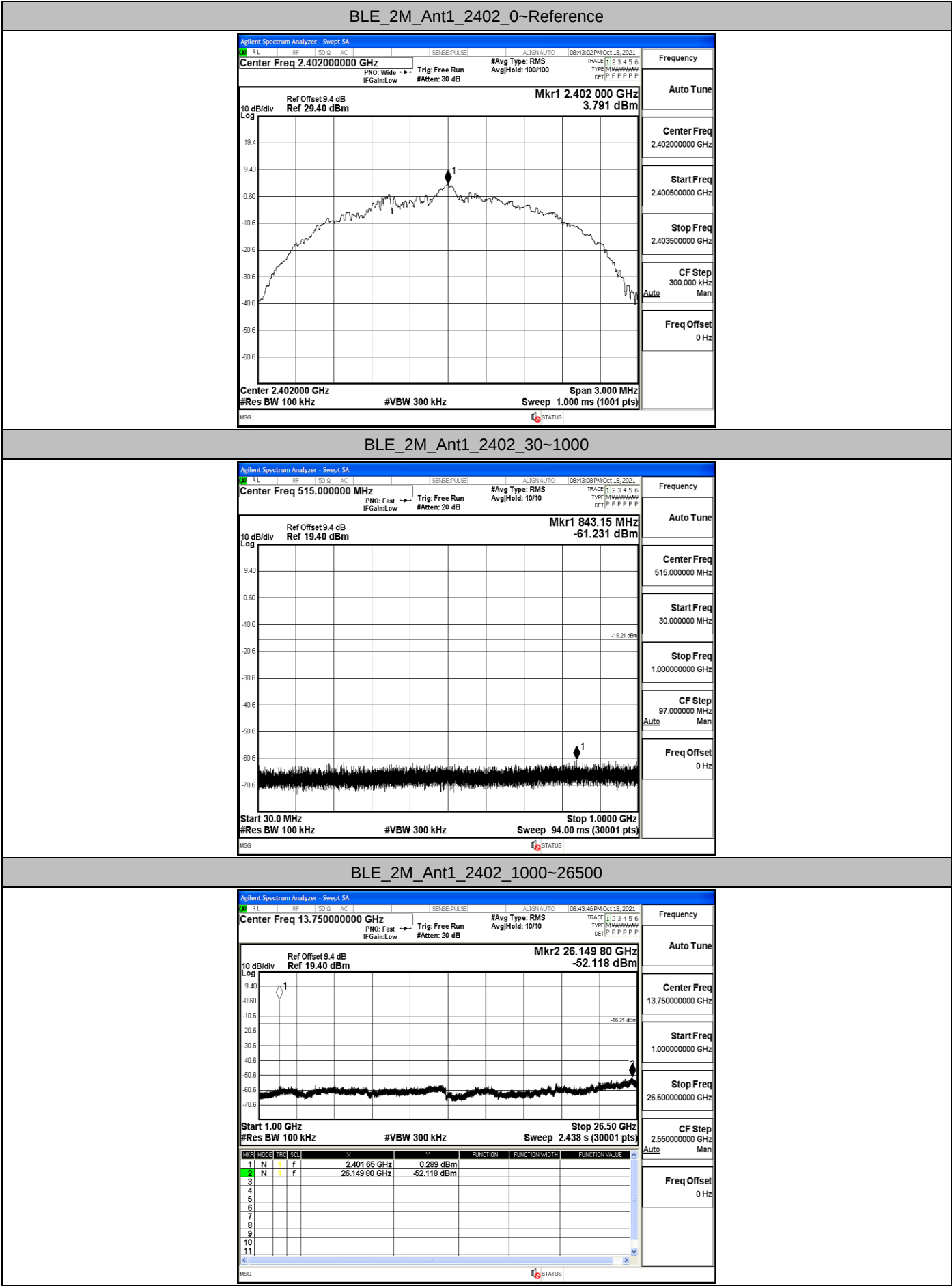


BLE_1M_Ant1_2480_30~1000

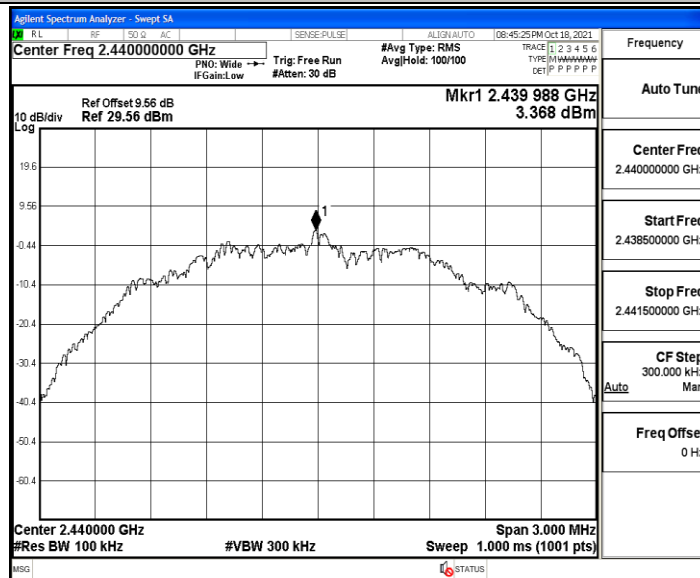


BLE_1M_Ant1_2480_1000~26500

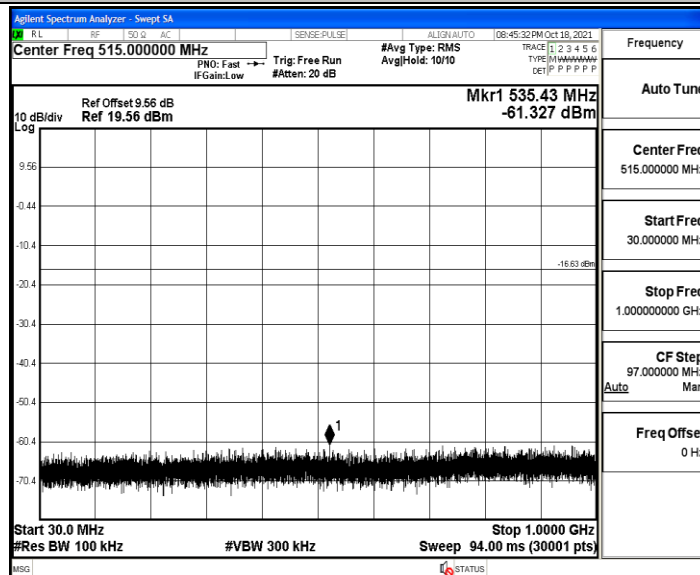




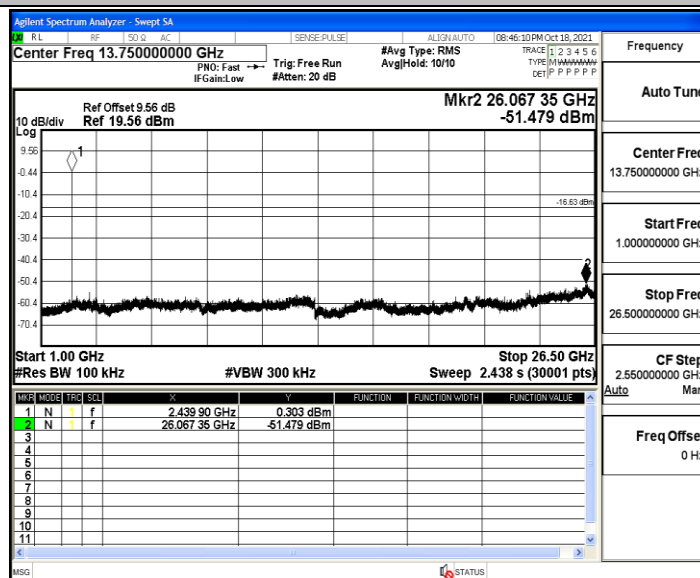
BLE_2M_Ant1_2440_0~Reference



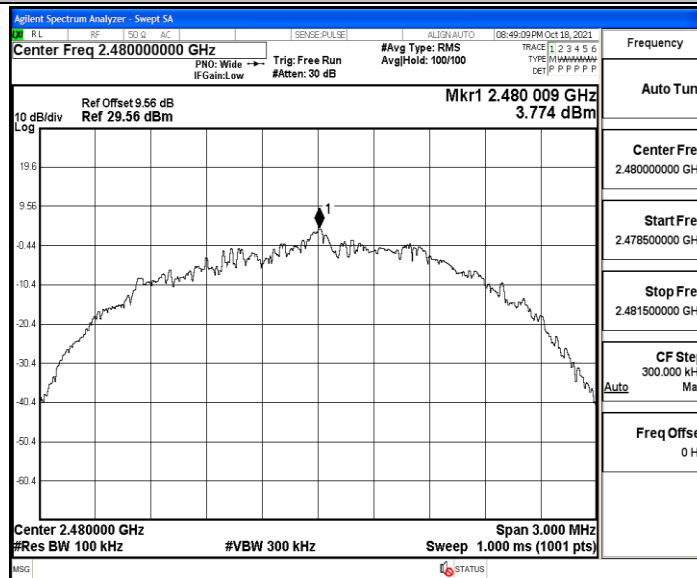
BLE_2M_Ant1_2440_30~1000



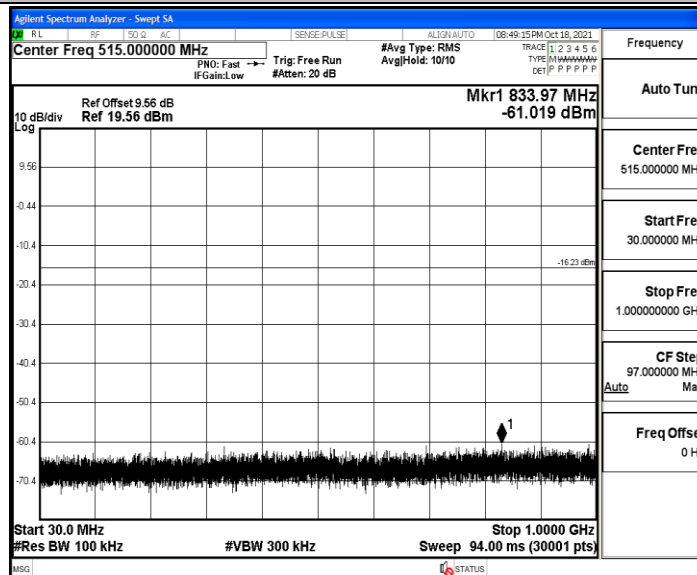
BLE_2M_Ant1_2440_1000~26500



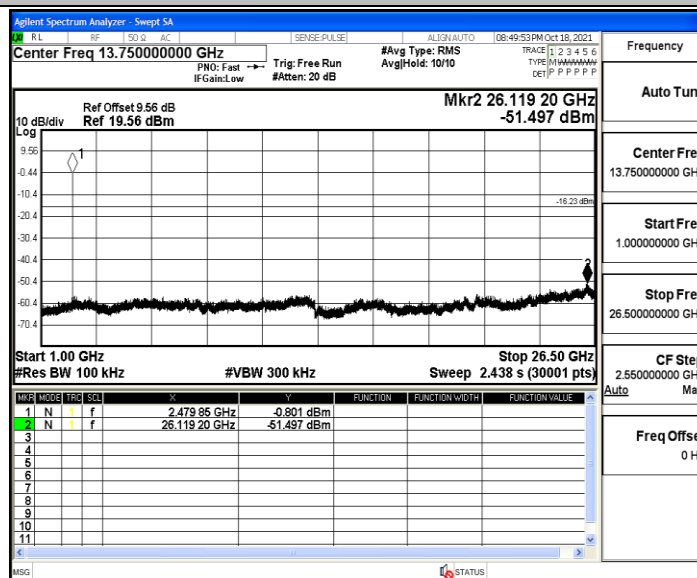
BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



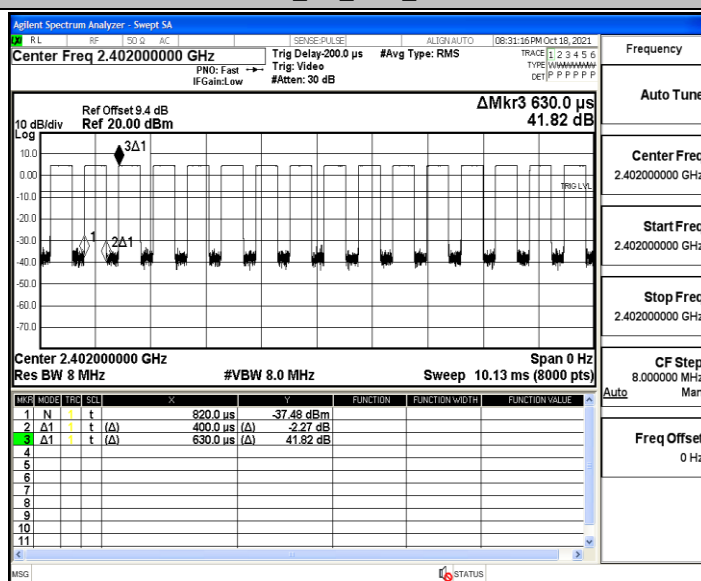
BLE_2M_Ant1_2480_1000~26500



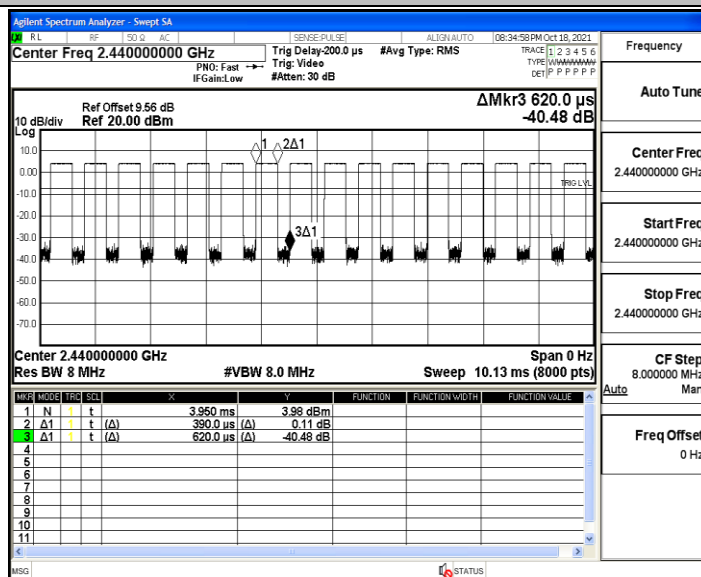
A.7. Duty Cycle

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/B [kHz]
BLE_1M	Ant1	2402	0.40	0.63	63.49	1.6
		2440	0.39	0.62	62.90	1.6
		2480	0.40	0.63	63.49	1.6
BLE_2M	Ant1	2402	0.21	0.63	33.33	1.6
		2440	0.21	0.62	33.87	1.6
		2480	0.21	0.62	33.87	1.6

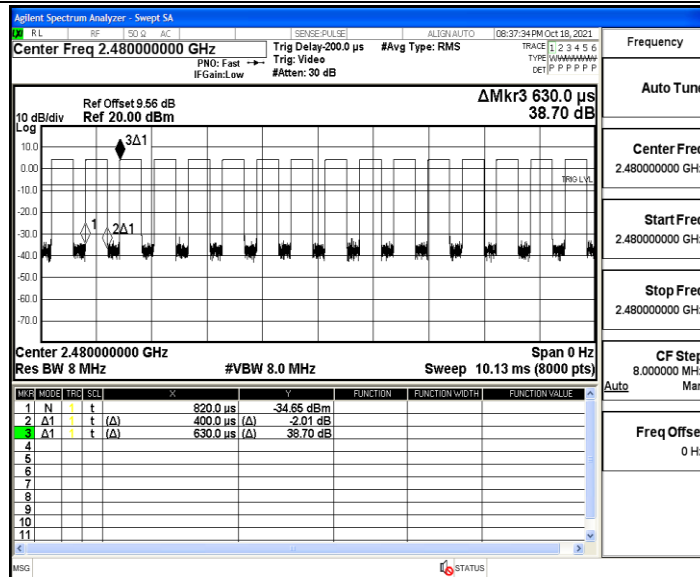
BLE_1M_Ant1_2402



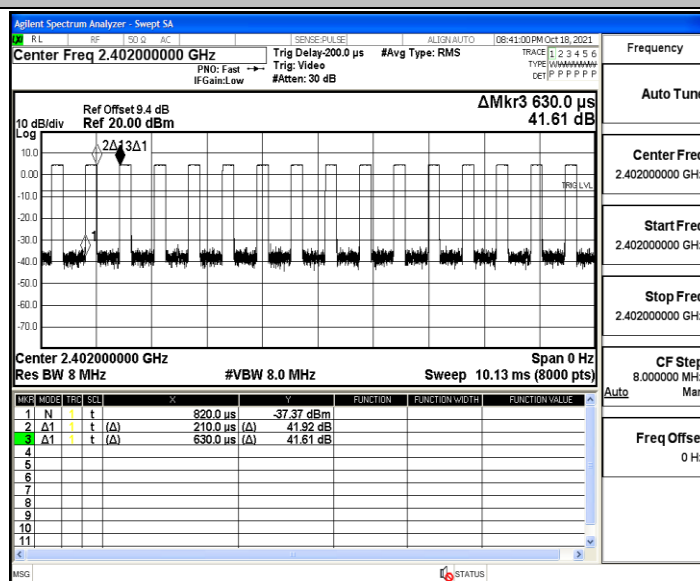
BLE_1M_Ant1_2440



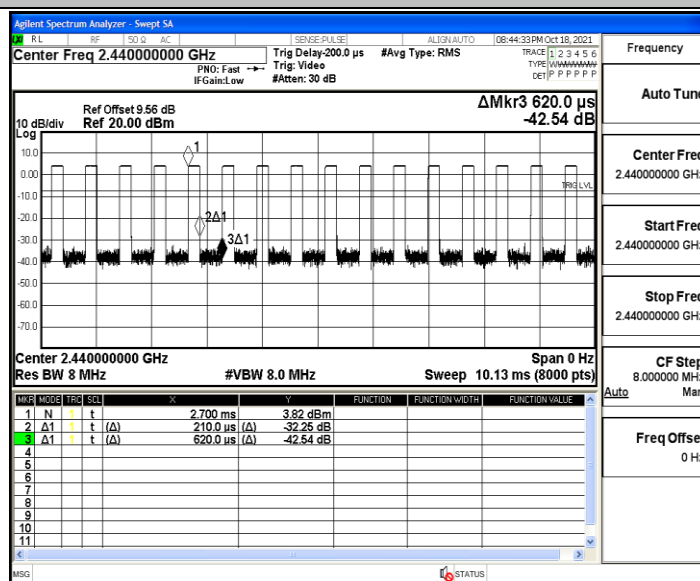
BLE_1M_Ant1_2480



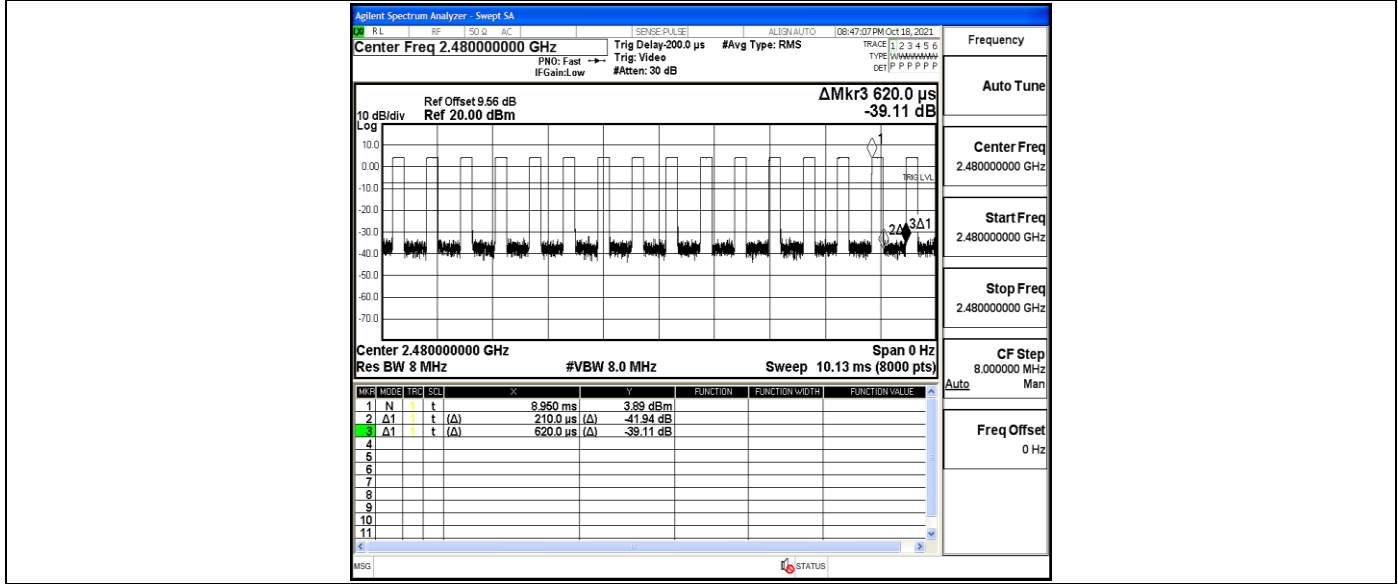
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

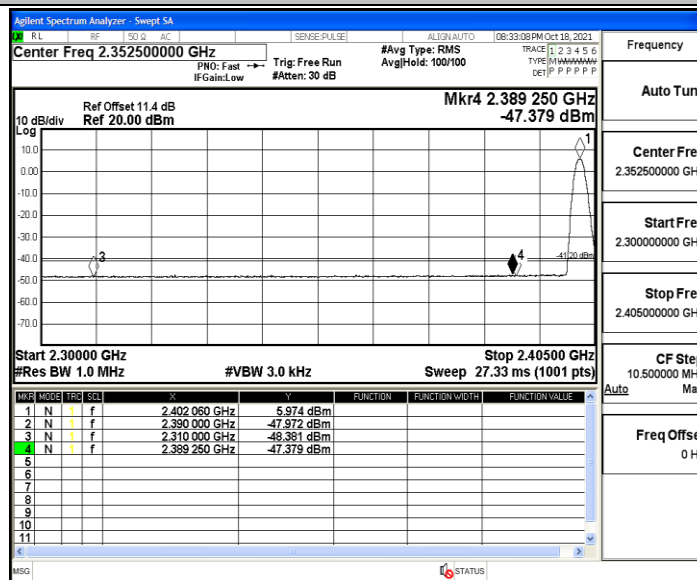


A.8. Restrict-band band-edge measurements

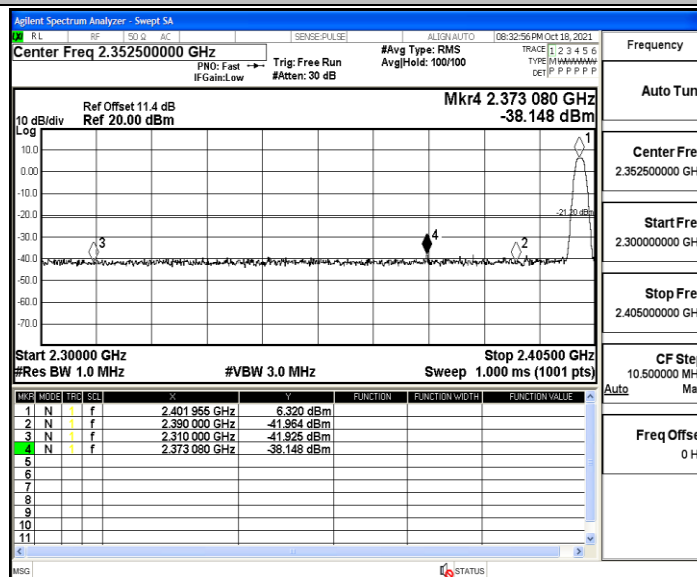
TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-48.38	≤-41.20	PASS
				AV	2389.250	-47.38	≤-41.20	PASS
				AV	2390.000	-47.97	≤-41.20	PASS
				Peak	2310.000	-41.93	≤-21.20	PASS
				Peak	2373.080	-38.15	≤-21.20	PASS
				Peak	2390.000	-41.96	≤-21.20	PASS
		High	2480	AV	2483.500	-46.03	≤-41.20	PASS
				AV	2483.520	-46.03	≤-41.20	PASS
				AV	2500.000	-47.28	≤-41.20	PASS
				Peak	2483.500	-40.27	≤-21.20	PASS
				Peak	2487.360	-38.62	≤-21.20	PASS
				Peak	2500.000	-38.78	≤-21.20	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-48.04	≤-41.20	PASS
				AV	2365.100	-47.05	≤-41.20	PASS
				AV	2390.000	-47.68	≤-41.20	PASS
				Peak	2310.000	-41.93	≤-21.20	PASS
				Peak	2331.605	-38.43	≤-21.20	PASS
				Peak	2390.000	-41.31	≤-21.20	PASS
		High	2480	AV	2483.500	-43.76	≤-41.20	PASS
				AV	2483.520	-43.76	≤-41.20	PASS
				AV	2500.000	-47.12	≤-41.20	PASS
				Peak	2483.500	-40.82	≤-21.20	PASS
				Peak	2494.560	-38.35	≤-21.20	PASS
				Peak	2500.000	-41.33	≤-21.20	PASS

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.

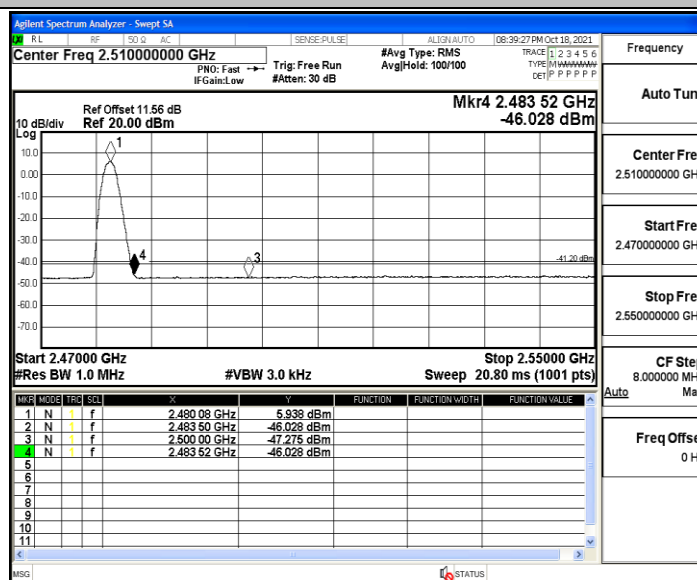
BLE_1M_Ant1_Low_2402_AV



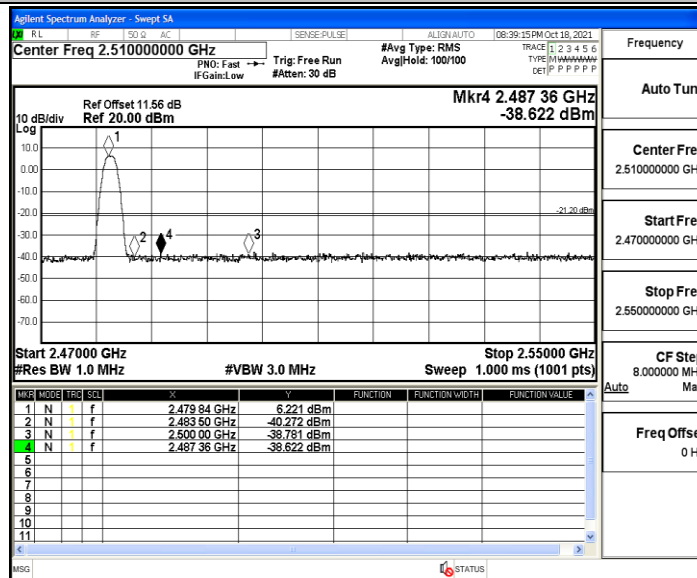
BLE_1M_Ant1_Low_2402_Peak



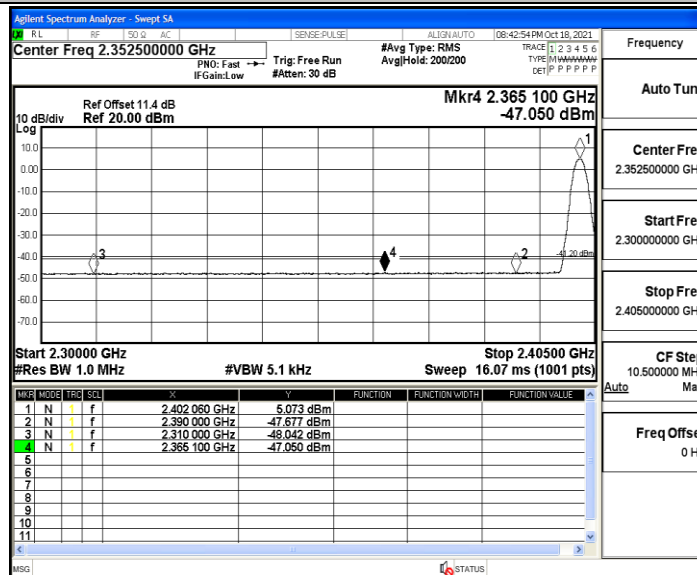
BLE_1M_Ant1_High_2480_AV



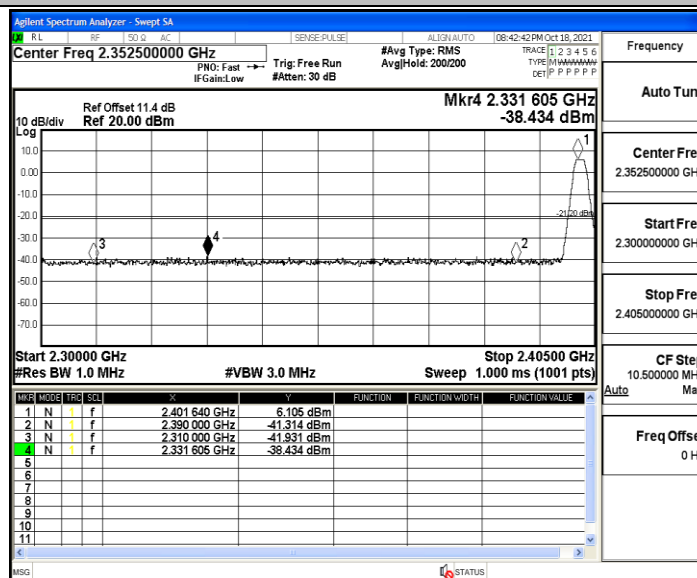
BLE_1M_Ant1_High_2480_Peak



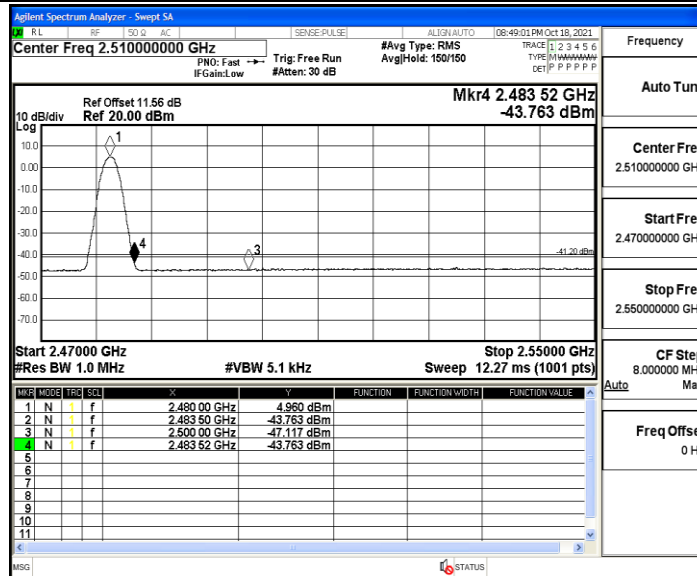
BLE_2M_Ant1_Low_2402_AV



BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak

