





## Appendix A

### RF Test Data for BLE V5.0 (DTS) (Conducted Measurement)

Product Name: Barcode Scanner

Test Model: NLS-BS50

#### Environmental Conditions

Temperature:	22.5°C
Relative Humidity:	53.5%
ATM Pressure:	100.0 kPa
Test Engineer:	 Bill Zhu
Supervised by:	 Li Huan



## A.1 DTS Bandwidth

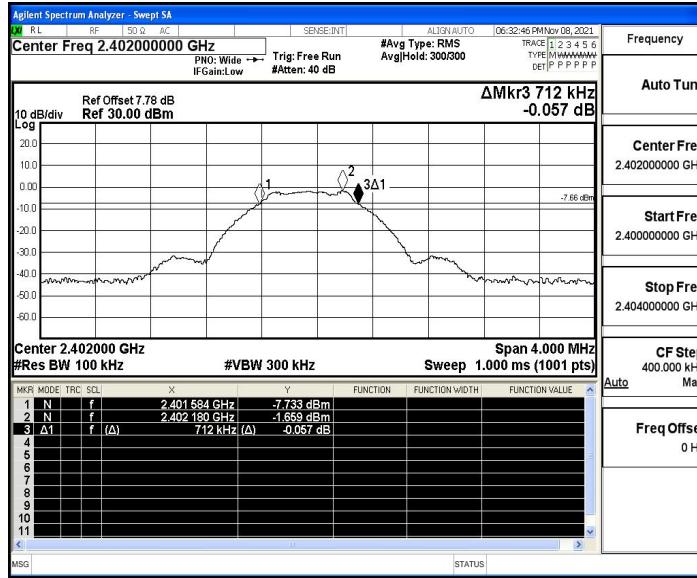
### Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.712	2401.584	2402.296	≥0.5	PASS
		2440	0.720	2439.576	2440.296	≥0.5	PASS
		2480	0.716	2479.576	2480.292	≥0.5	PASS
BLE_2M	Ant1	2402	1.248	2401.292	2402.540	≥0.5	PASS
		2440	1.248	2439.288	2440.536	≥0.5	PASS
		2480	1.256	2479.288	2480.544	≥0.5	PASS

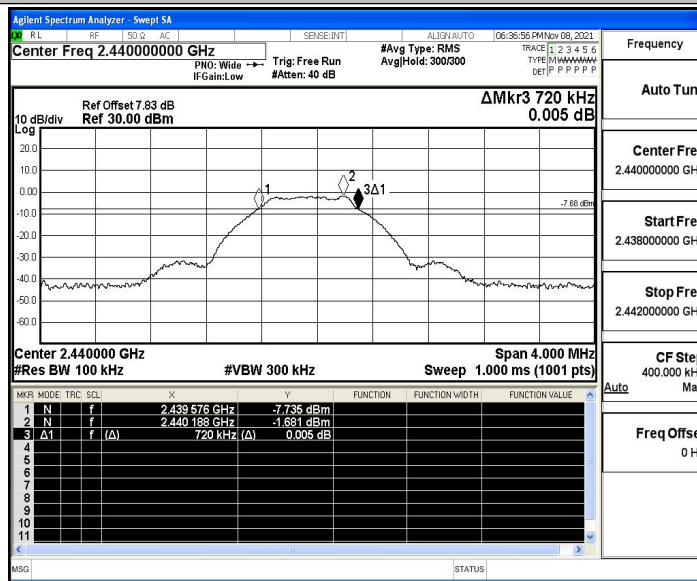


### Test Graphs

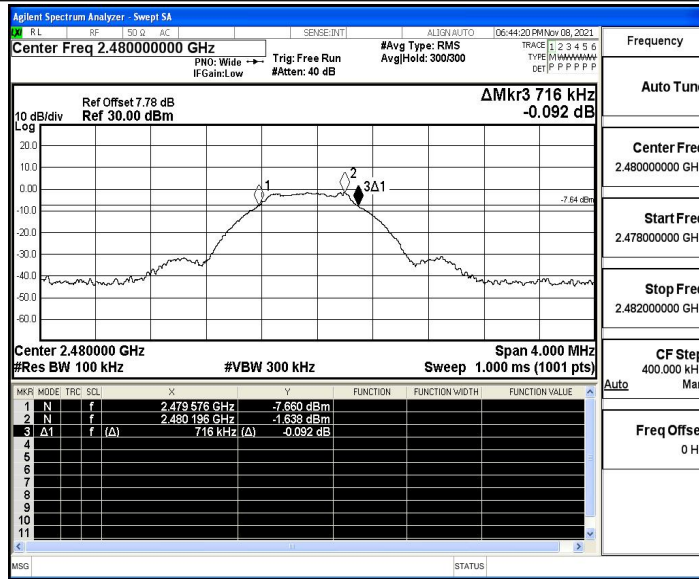
BLE\_1M\_Ant1\_2402



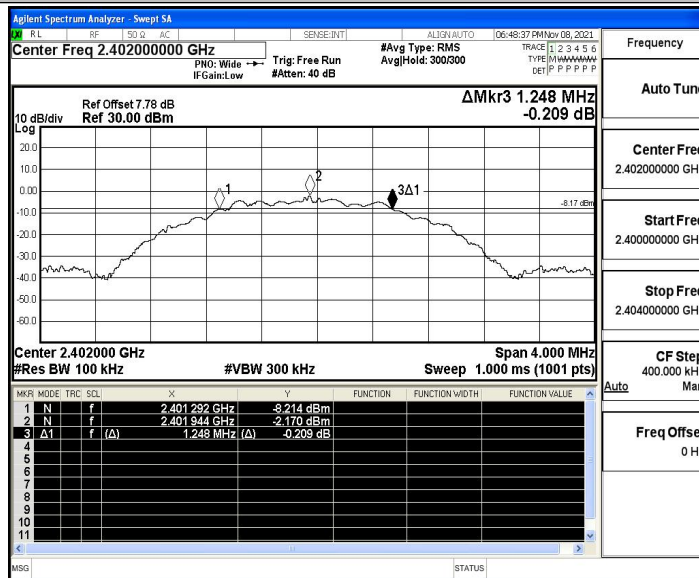
BLE\_1M\_Ant1\_2440



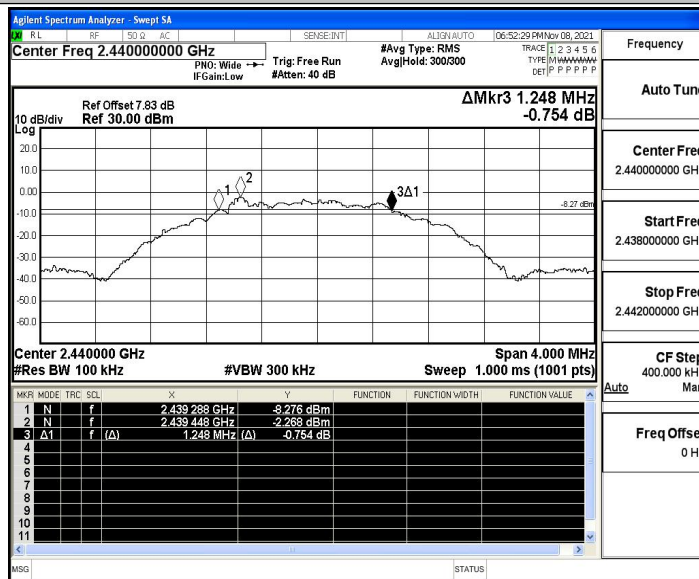
BLE\_1M\_Ant1\_2480



BLE\_2M\_Ant1\_2402

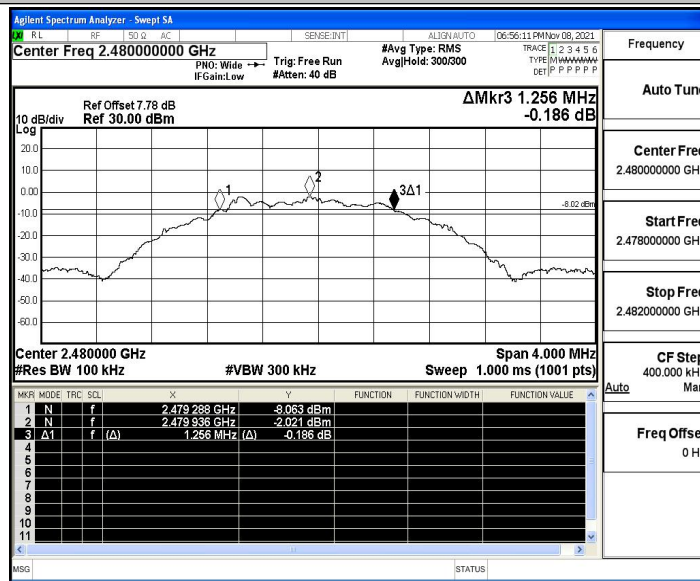


BLE\_2M\_Ant1\_2440





BLE\_2M\_Ant1\_2480





## A.2 Maximum peak conducted output power

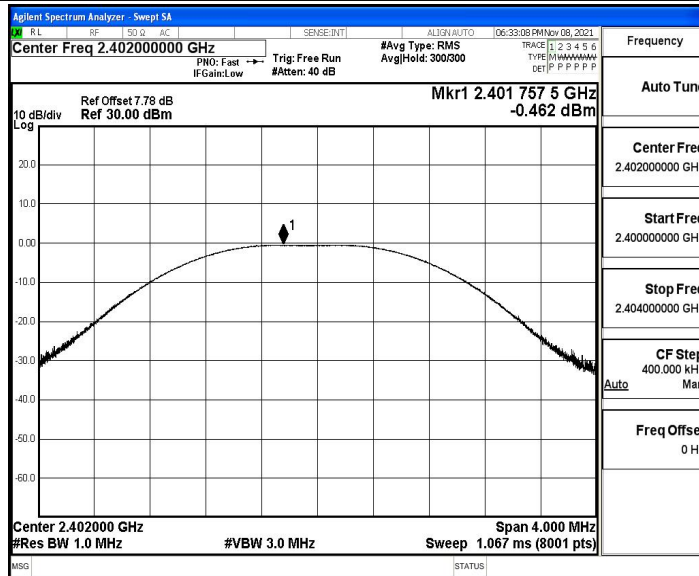
### Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-0.46	≤30	PASS
		2440	-0.49	≤30	PASS
		2480	-0.3	≤30	PASS
BLE_2M	Ant1	2402	-0.72	≤30	PASS
		2440	-0.71	≤30	PASS
		2480	-0.48	≤30	PASS

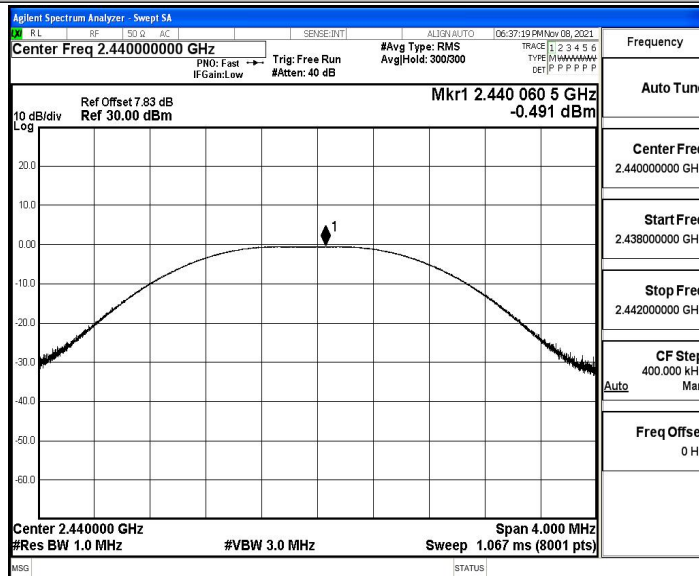


### Test Graphs

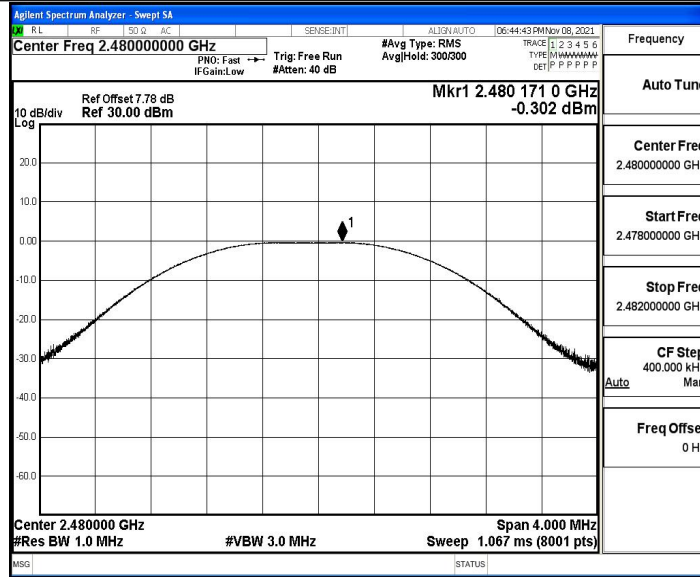
BLE\_1M\_Ant1\_2402



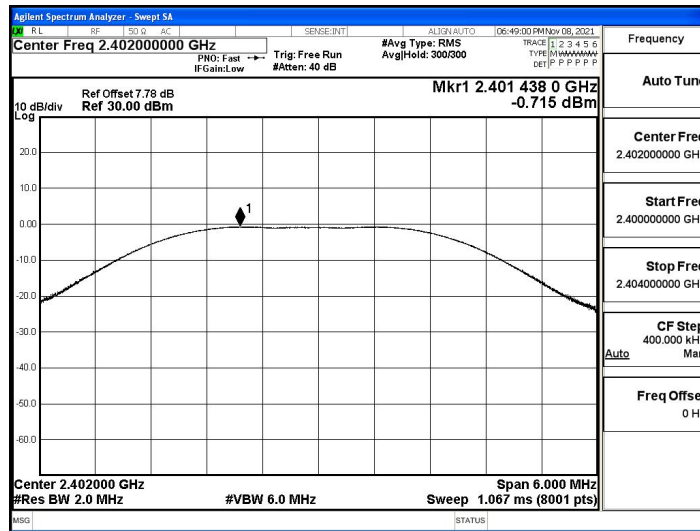
BLE\_1M\_Ant1\_2440



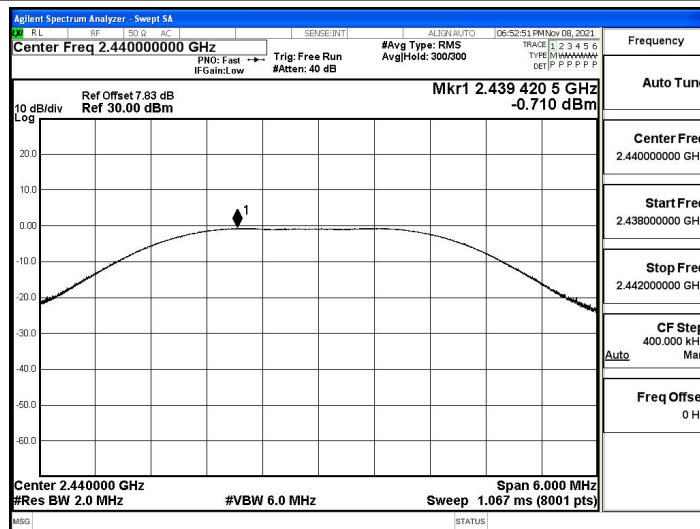
BLE\_1M\_Ant1\_2480



BLE\_2M\_Ant1\_2402

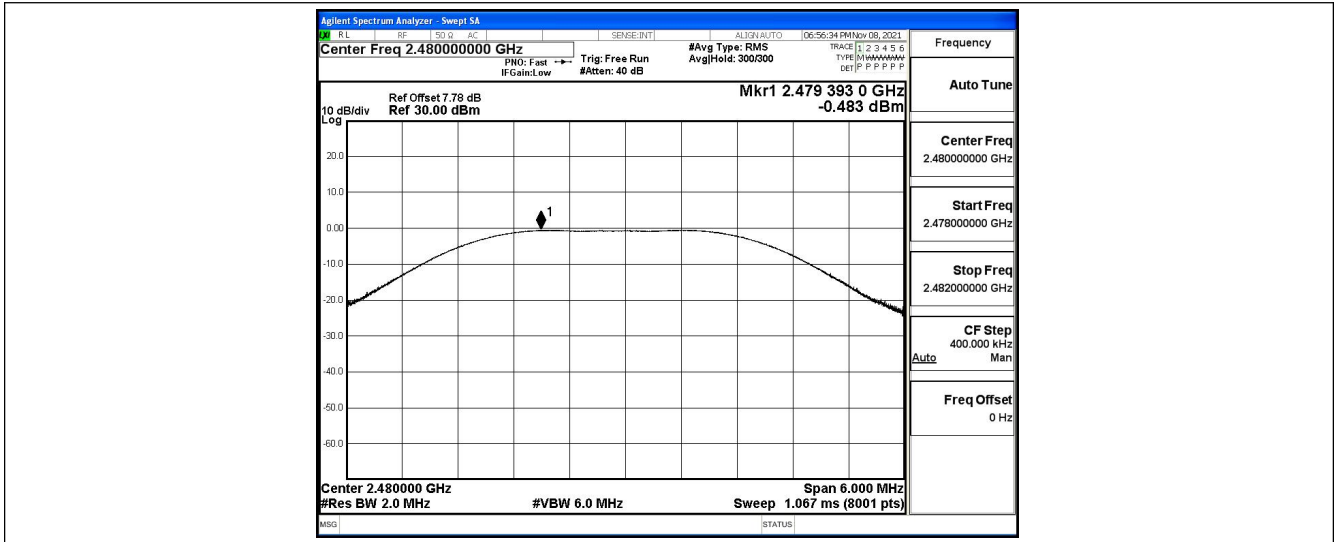


BLE\_2M\_Ant1\_2440



BLE\_2M\_Ant1\_2480







## A.3 Maximum power spectral density

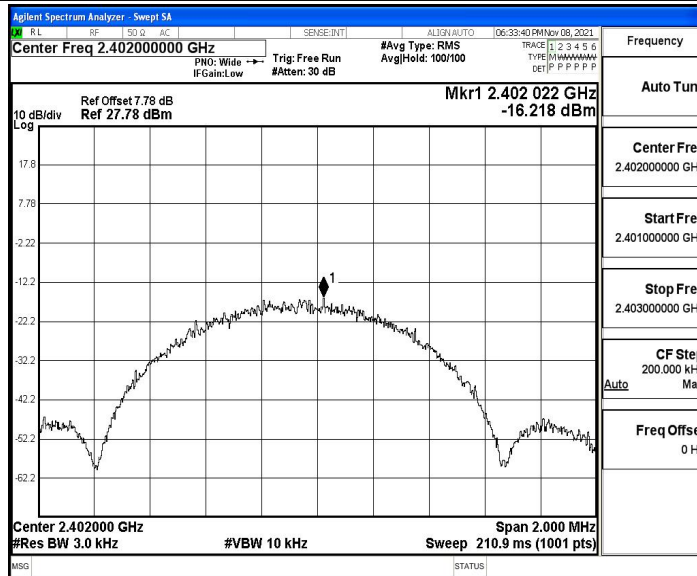
### Test Result

TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-16.22	≤8	PASS
		2440	-16.17	≤8	PASS
		2480	-16.28	≤8	PASS
BLE_2M	Ant1	2402	-19.31	≤8	PASS
		2440	-19.43	≤8	PASS
		2480	-18.97	≤8	PASS

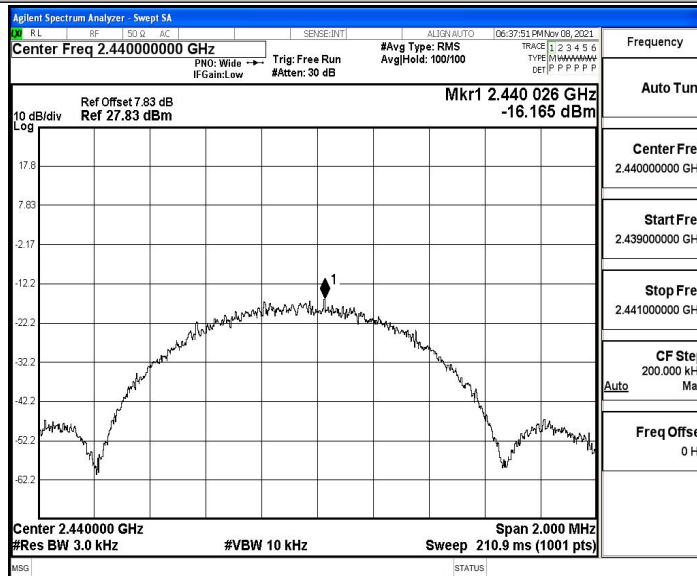


### Test Graphs

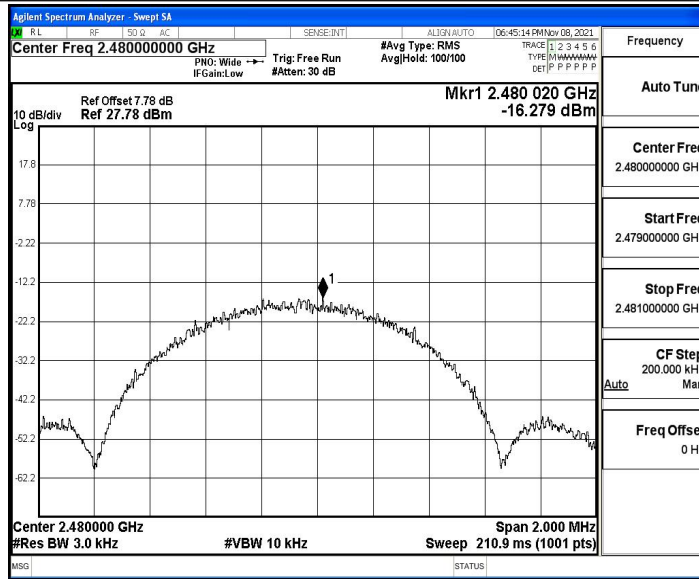
BLE\_1M\_Ant1\_2402



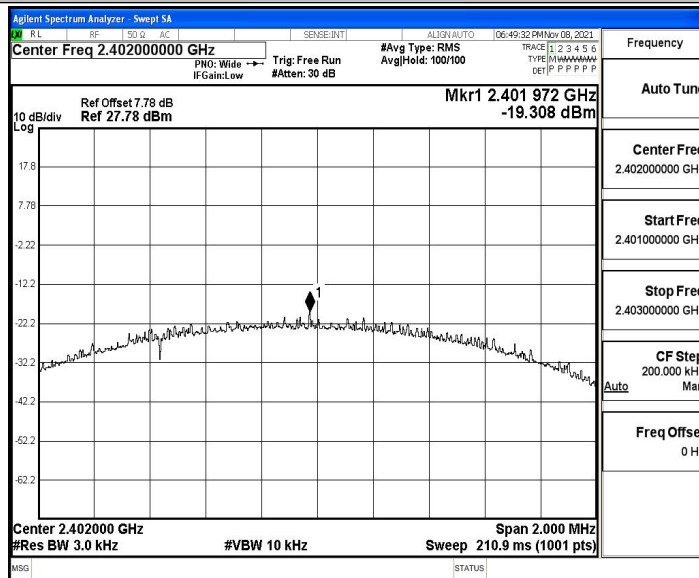
BLE\_1M\_Ant1\_2440



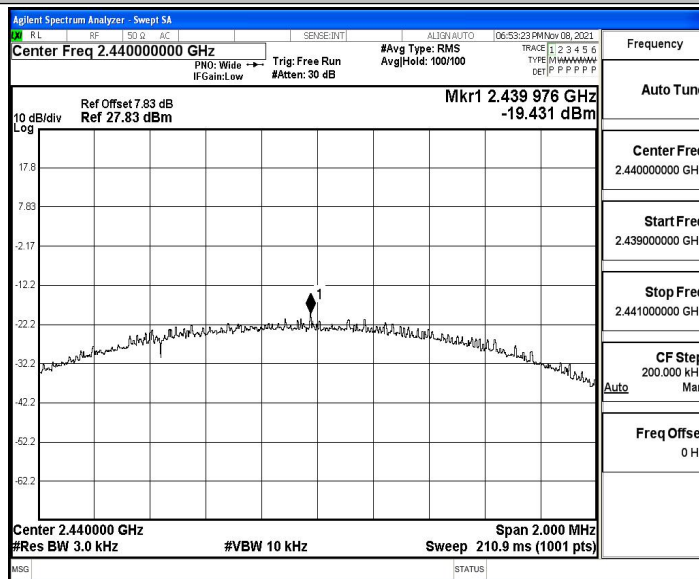
BLE\_1M\_Ant1\_2480



BLE\_2M\_Ant1\_2402

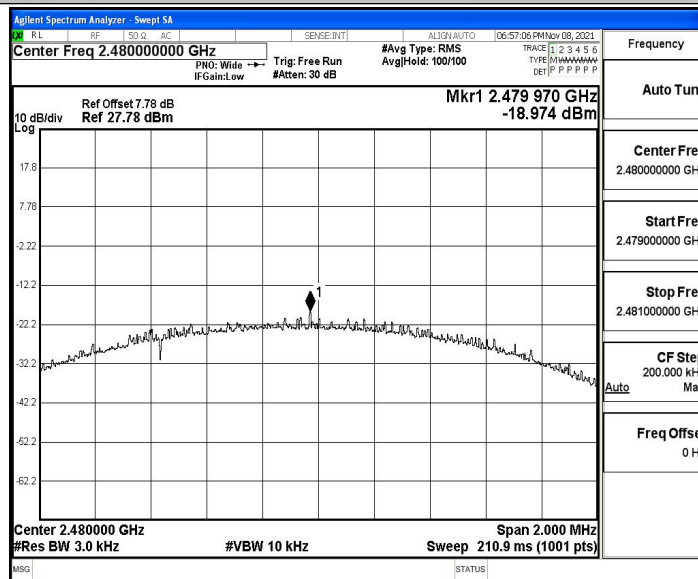


BLE\_2M\_Ant1\_2440





BLE\_2M\_Ant1\_2480





## A.4 Band edge measurements

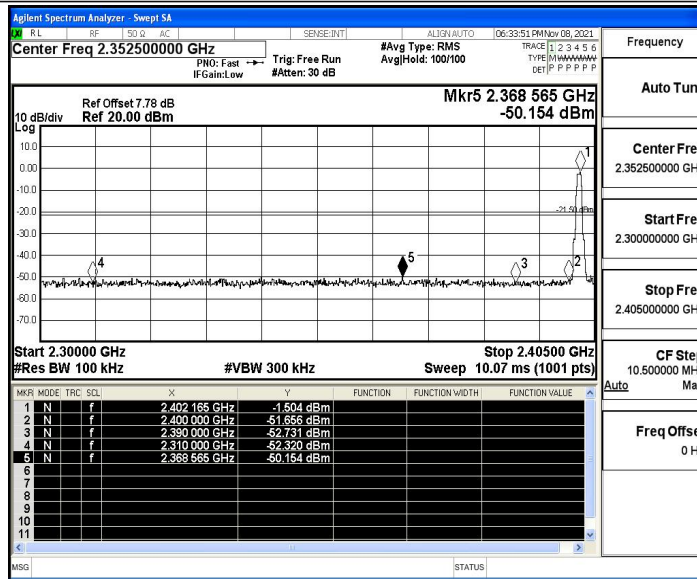
### Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-1.50	-50.15	$\leq -21.5$	PASS
		High	2480	-1.36	-49.48	$\leq -21.36$	PASS
BLE_2M	Ant1	Low	2402	-1.97	-35.52	$\leq -21.97$	PASS
		High	2480	-1.46	-49.33	$\leq -21.46$	PASS

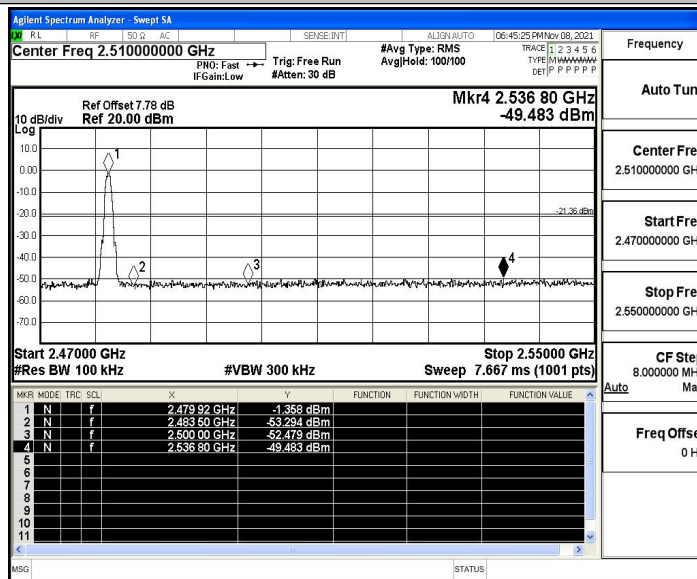


### Test Graphs

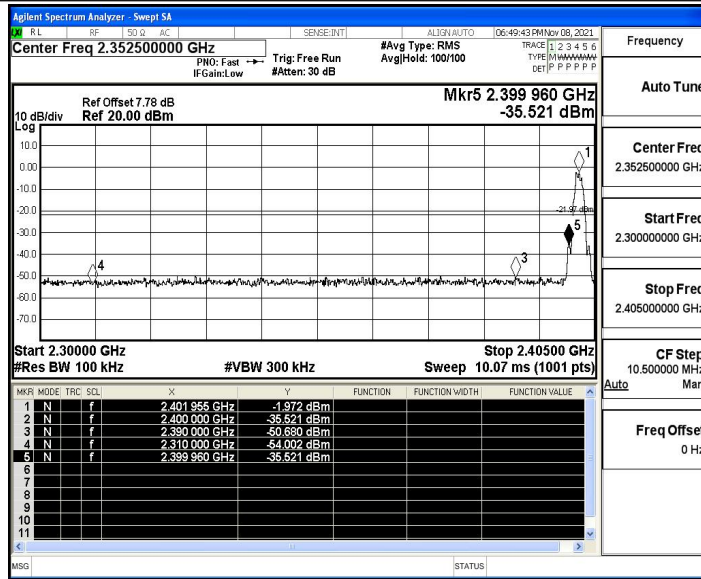
#### BLE\_1M\_Ant1\_Low\_2402



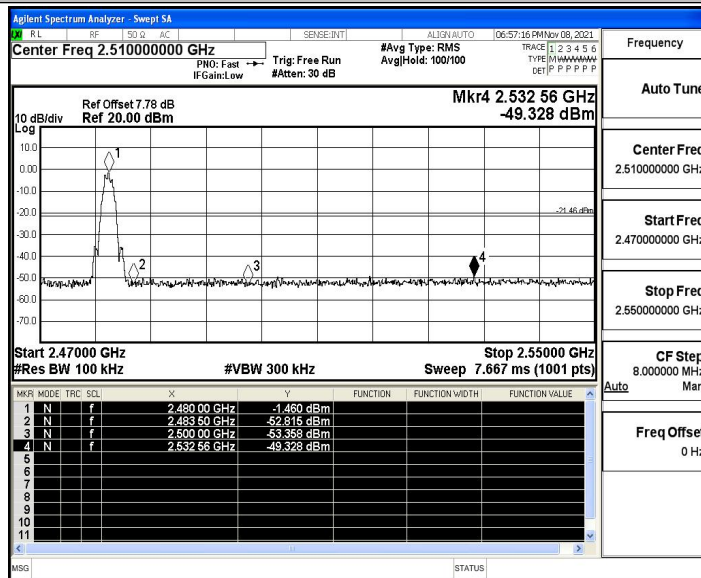
#### BLE\_1M\_Ant1\_High\_2480



#### BLE\_2M\_Ant1\_Low\_2402



BLE\_2M\_Ant1\_High\_2480







## A.5 Conducted Spurious Emission

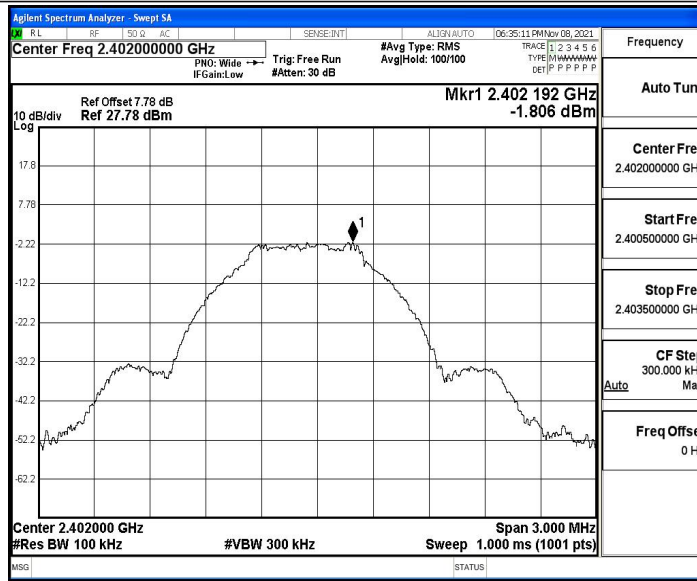
### Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-1.81	-1.81	---	PASS
			30~1000	-1.81	-61.83	≤-21.81	PASS
			1000~26500	-1.81	-47.9	≤-21.81	PASS
		2440	Reference	-1.76	-1.76	---	PASS
			30~1000	-1.76	-52.32	≤-21.76	PASS
			1000~26500	-1.76	-47.5	≤-21.76	PASS
		2480	Reference	-1.76	-1.76	---	PASS
			30~1000	-1.76	-62.15	≤-21.76	PASS
			1000~26500	-1.76	-47.43	≤-21.76	PASS
BLE_2M	Ant1	2402	Reference	-2.35	-2.35	---	PASS
			30~1000	-2.35	-61.82	≤-22.35	PASS
			1000~26500	-2.35	-47.69	≤-22.35	PASS
		2440	Reference	-2.98	-2.98	---	PASS
			30~1000	-2.98	-61.81	≤-22.98	PASS
			1000~26500	-2.98	-46.65	≤-22.98	PASS
		2480	Reference	-2.15	-2.15	---	PASS
			30~1000	-2.15	-61.32	≤-22.15	PASS
			1000~26500	-2.15	-47.11	≤-22.15	PASS

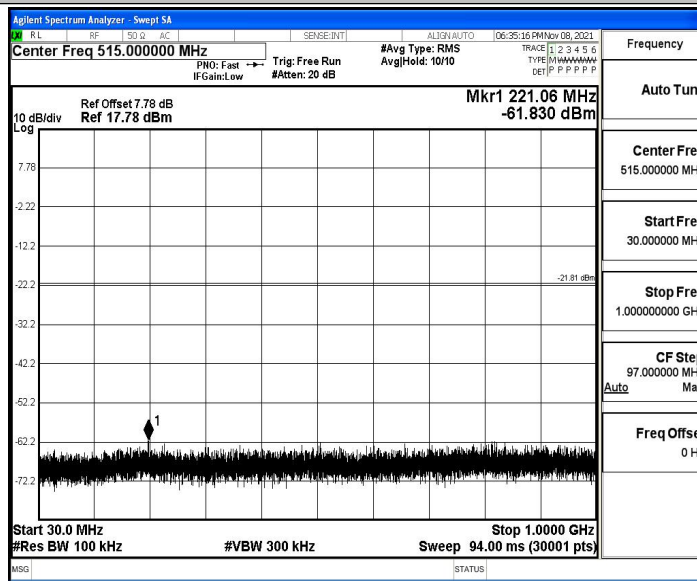


### Test Graphs

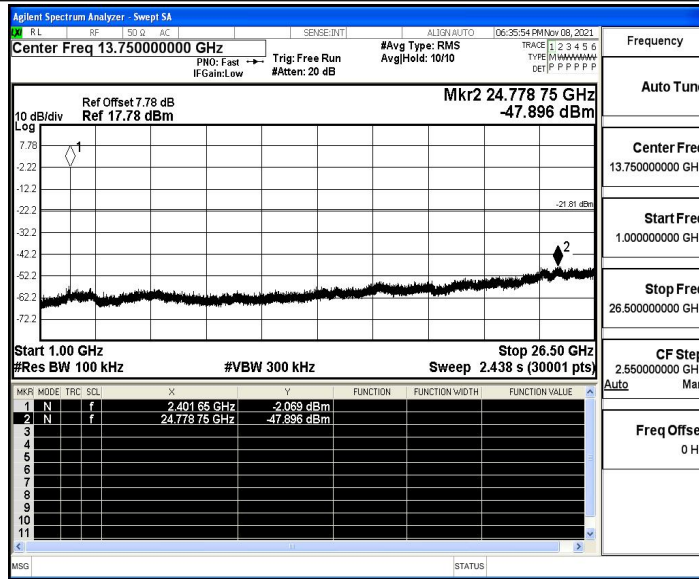
BLE\_1M\_Ant1\_2402\_0~Reference



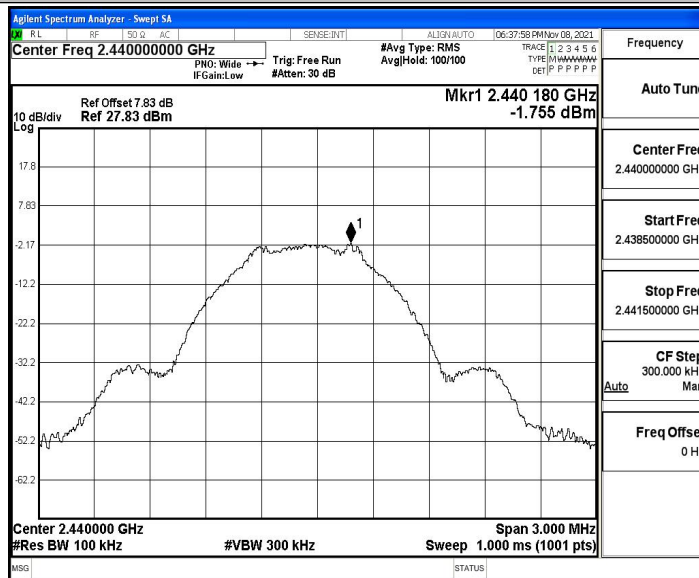
BLE\_1M\_Ant1\_2402\_30~1000



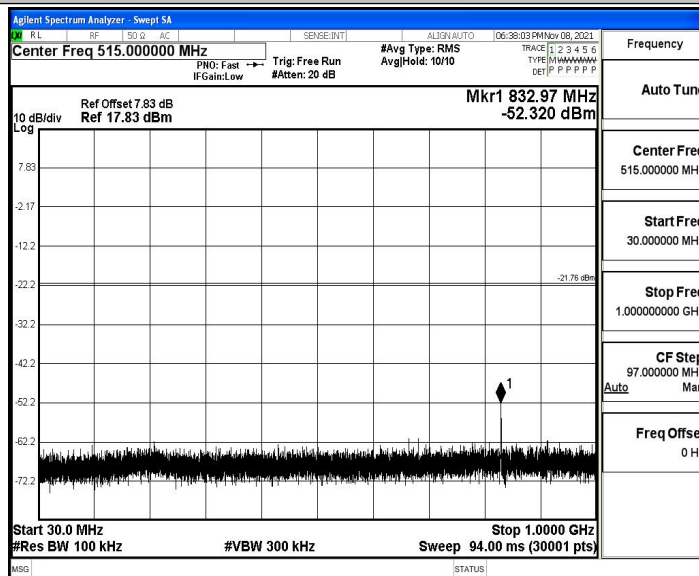
BLE\_1M\_Ant1\_2402\_1000~26500



BLE\_1M\_Ant1\_2440\_0~Reference

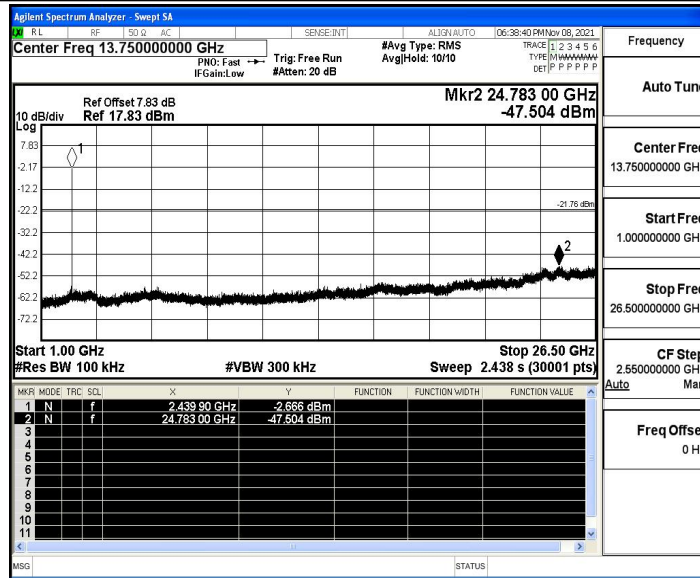


BLE\_1M\_Ant1\_2440\_30~1000

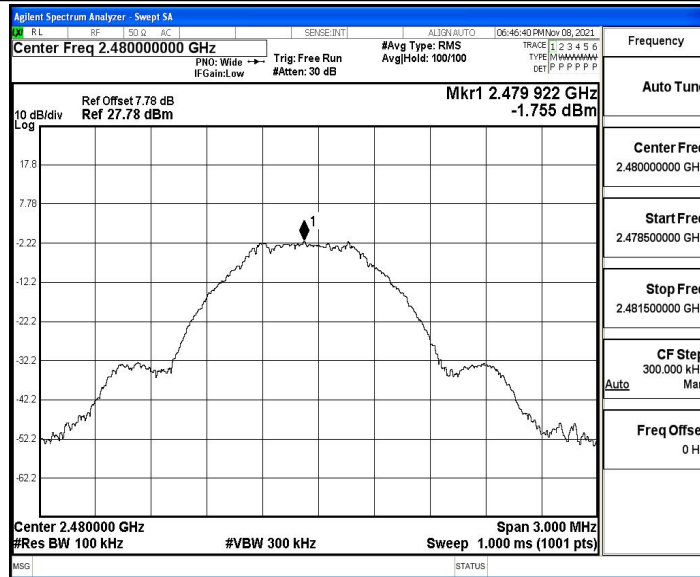




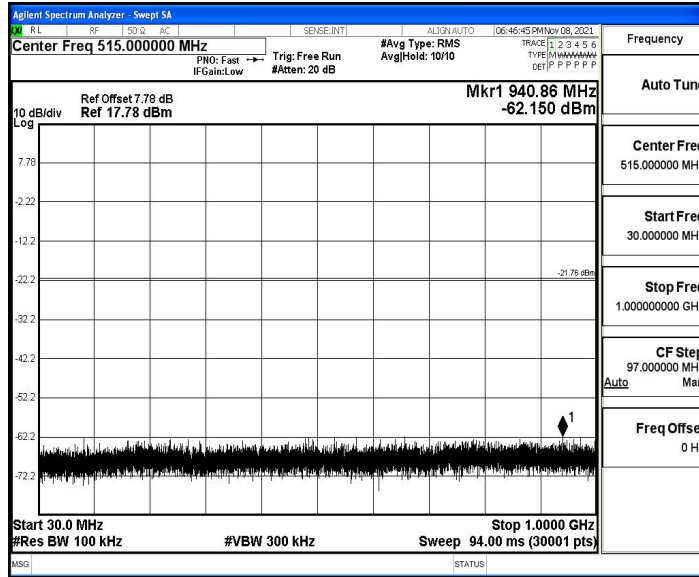
BLE\_1M\_Ant1\_2440\_1000~26500



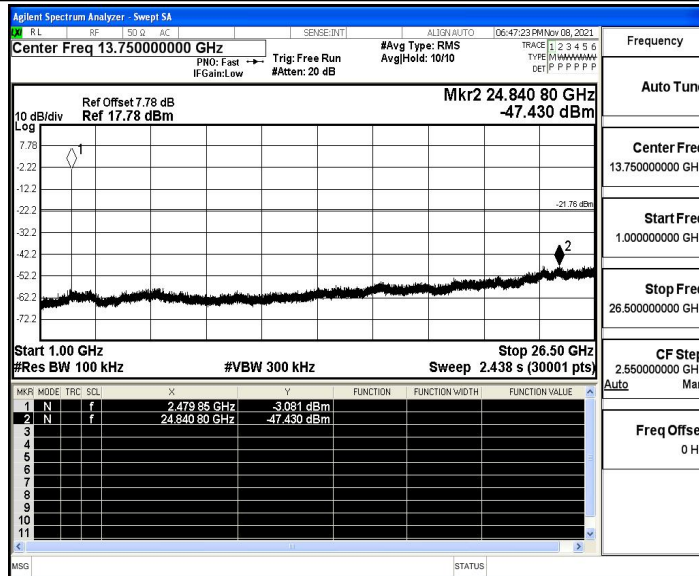
BLE\_1M\_Ant1\_2480\_0~Reference



BLE\_1M\_Ant1\_2480\_30~1000



BLE\_1M\_Ant1\_2480\_1000~26500



BLE\_2M\_Ant1\_2402\_0~Reference

