



Appendix B

RF Test Data for BT LE (Conducted Measurement)

Product Name: ROCKIN ROLLER 360

Test Model: MNRR360

Environmental Conditions

Temperature:	23.5° C
Relative Humidity:	53.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Taylor Hu
Supervised by:	Li Huan





B.1 DTS Bandwidth

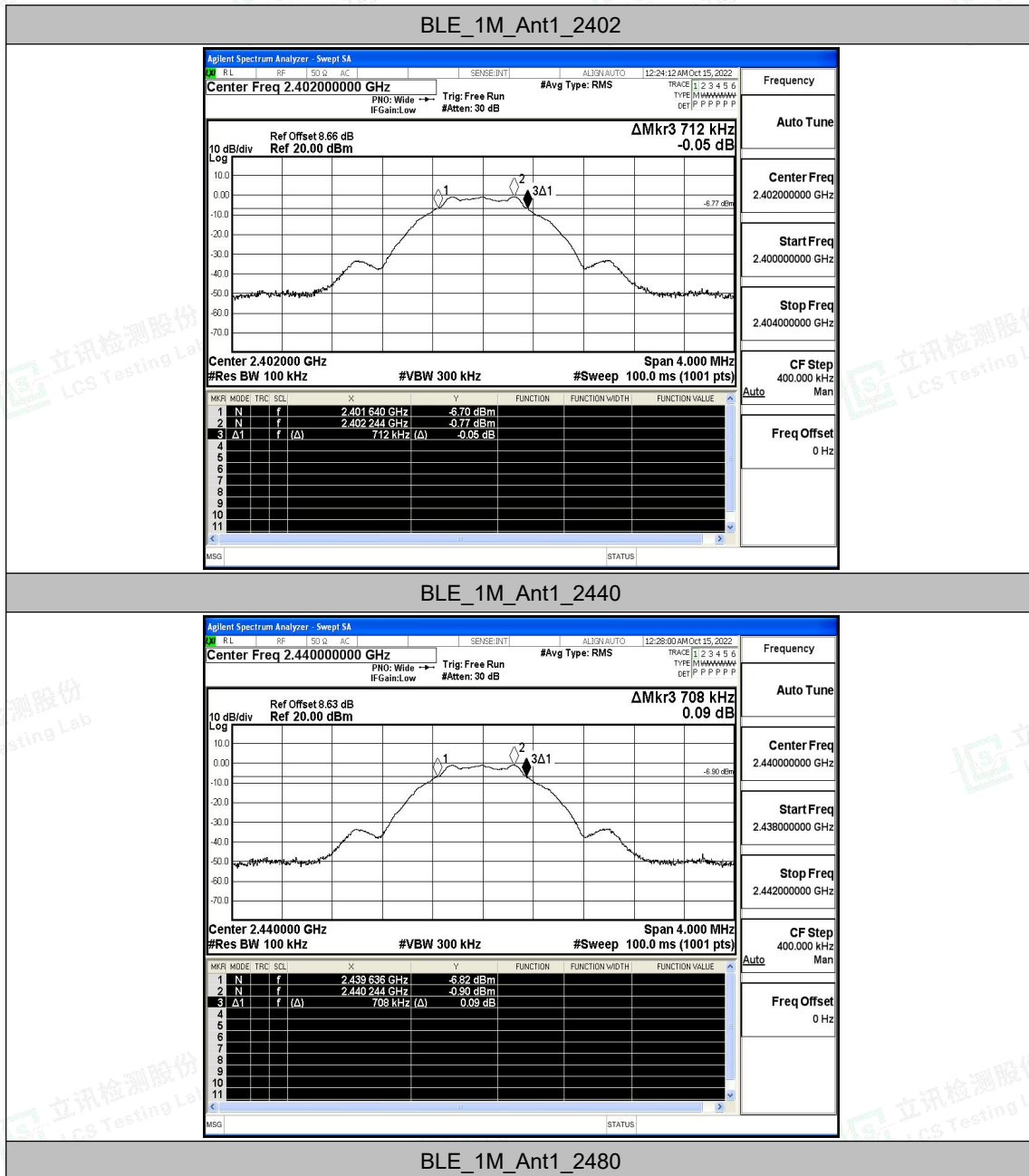
Test Result

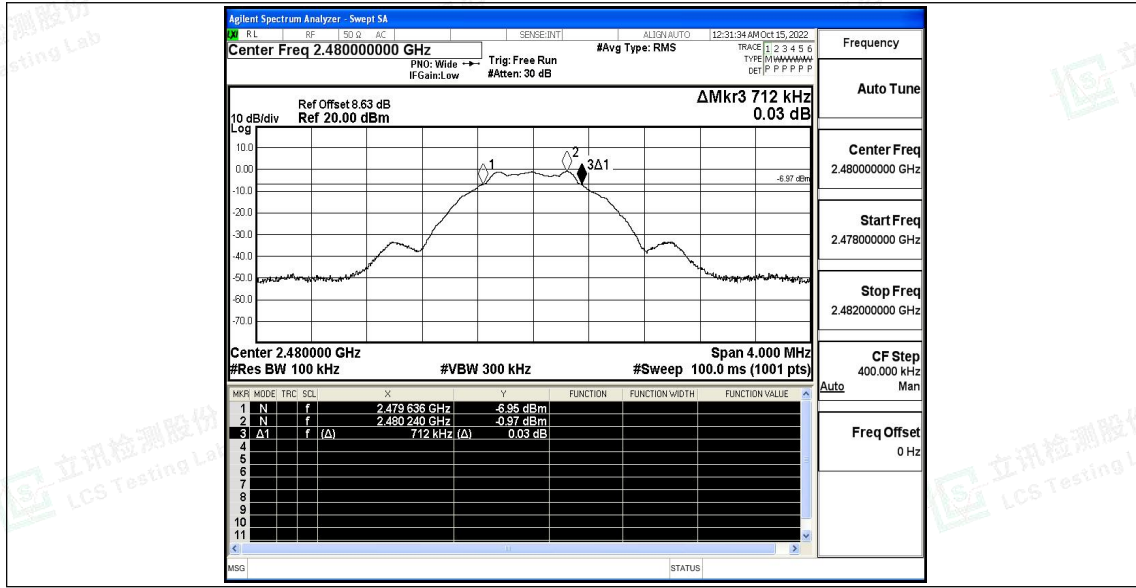
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.712	2401.640	2402.352	0.5	PASS
		2440	0.708	2439.636	2440.344	0.5	PASS
		2480	0.712	2479.636	2480.348	0.5	PASS





Test Graphs







B.2 Occupied Channel Bandwidth

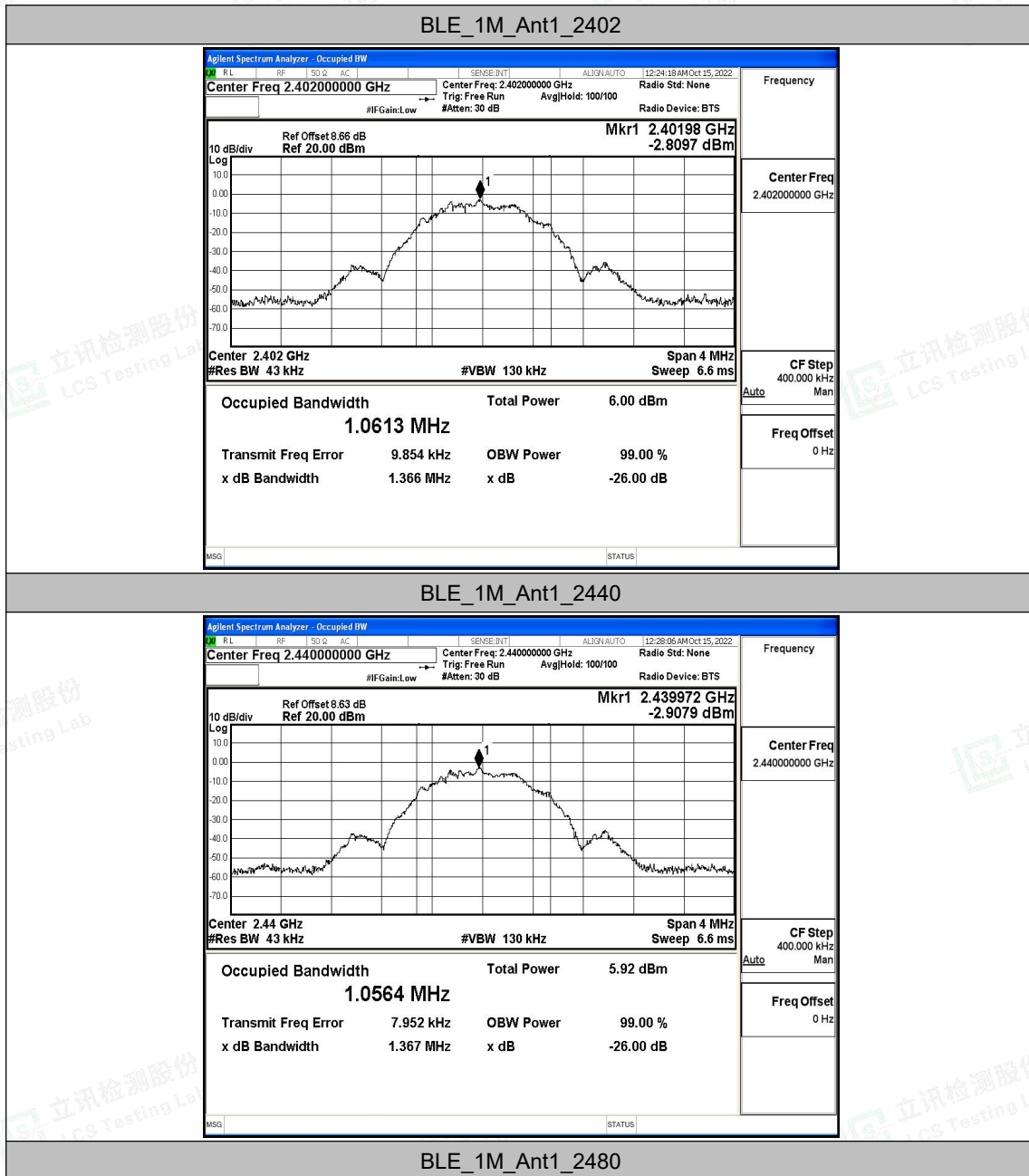
Test Result

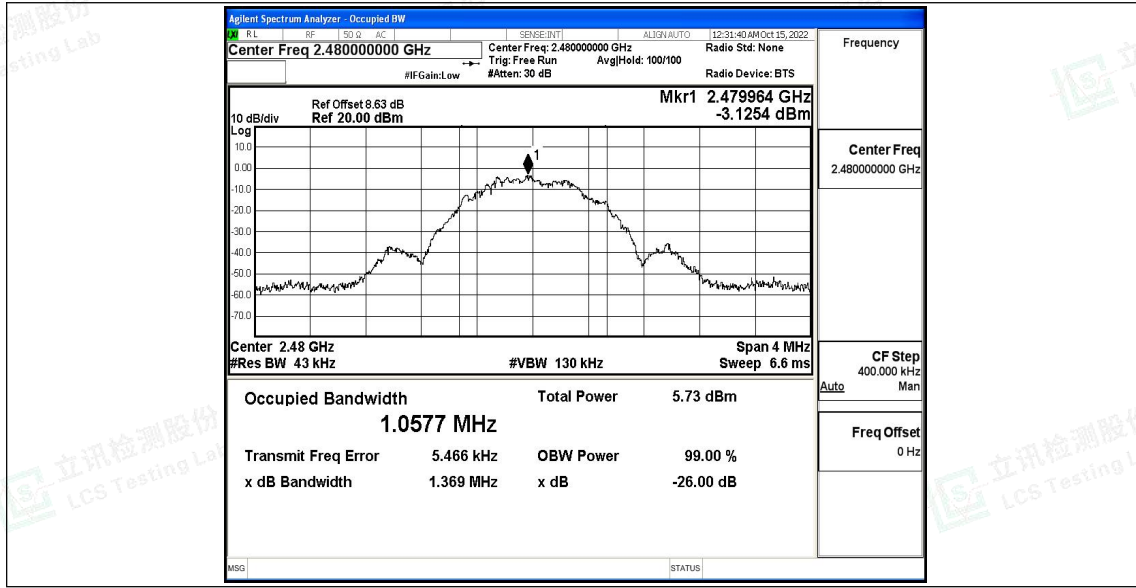
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0613	2401.4792	2402.5405	---	---
		2440	1.0564	2439.4798	2440.5362	---	---
		2480	1.0577	2479.4766	2480.5343	---	---





Test Graphs







B.3 Maximum conducted output power

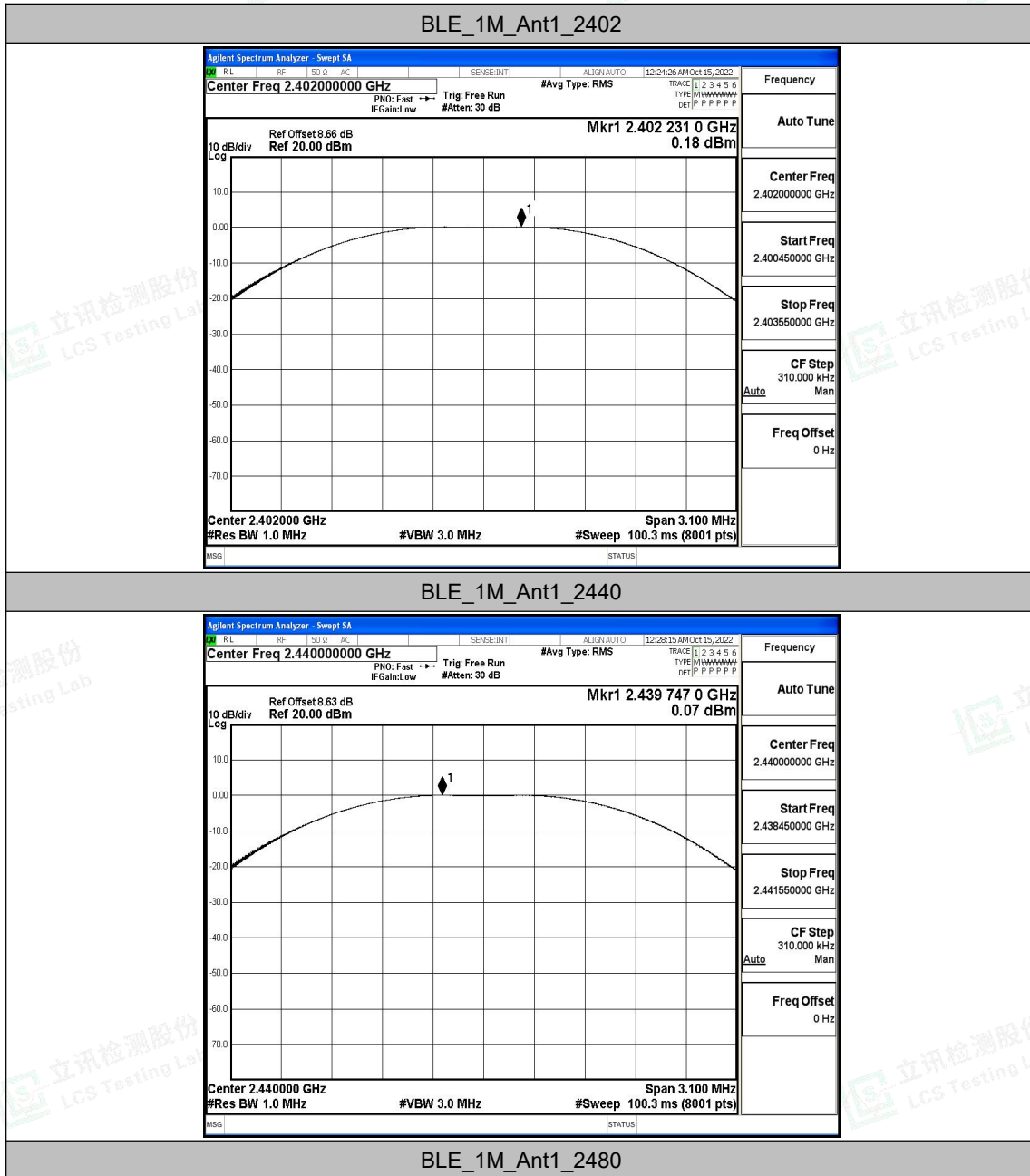
Test Result

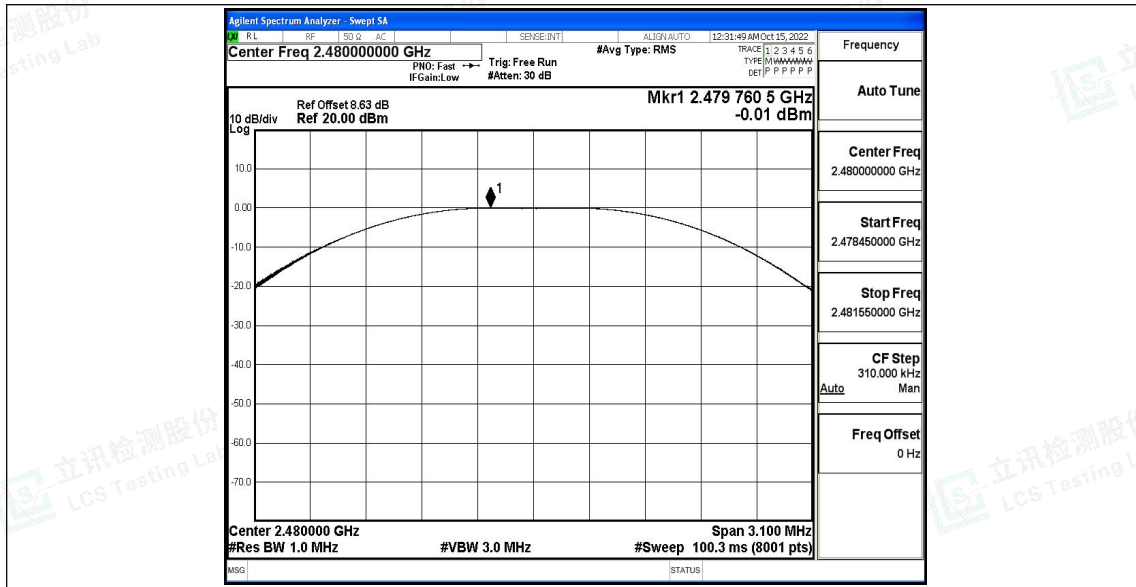
TestMode	Antenna	Channel	Result [dBm]	Limit [dBm]	Antenna Gain (dBi)	EIRP [dBm]	EIRP Limit [dBm]	Verdict
BLE_1M	Ant1	2402	0.18	≤30	3.64	3.82	≤36	PASS
		2440	0.07	≤30	3.64	3.71	≤36	PASS
		2480	-0.01	≤30	3.64	3.63	≤36	PASS





Test Graphs







B.4 Maximum power spectral density

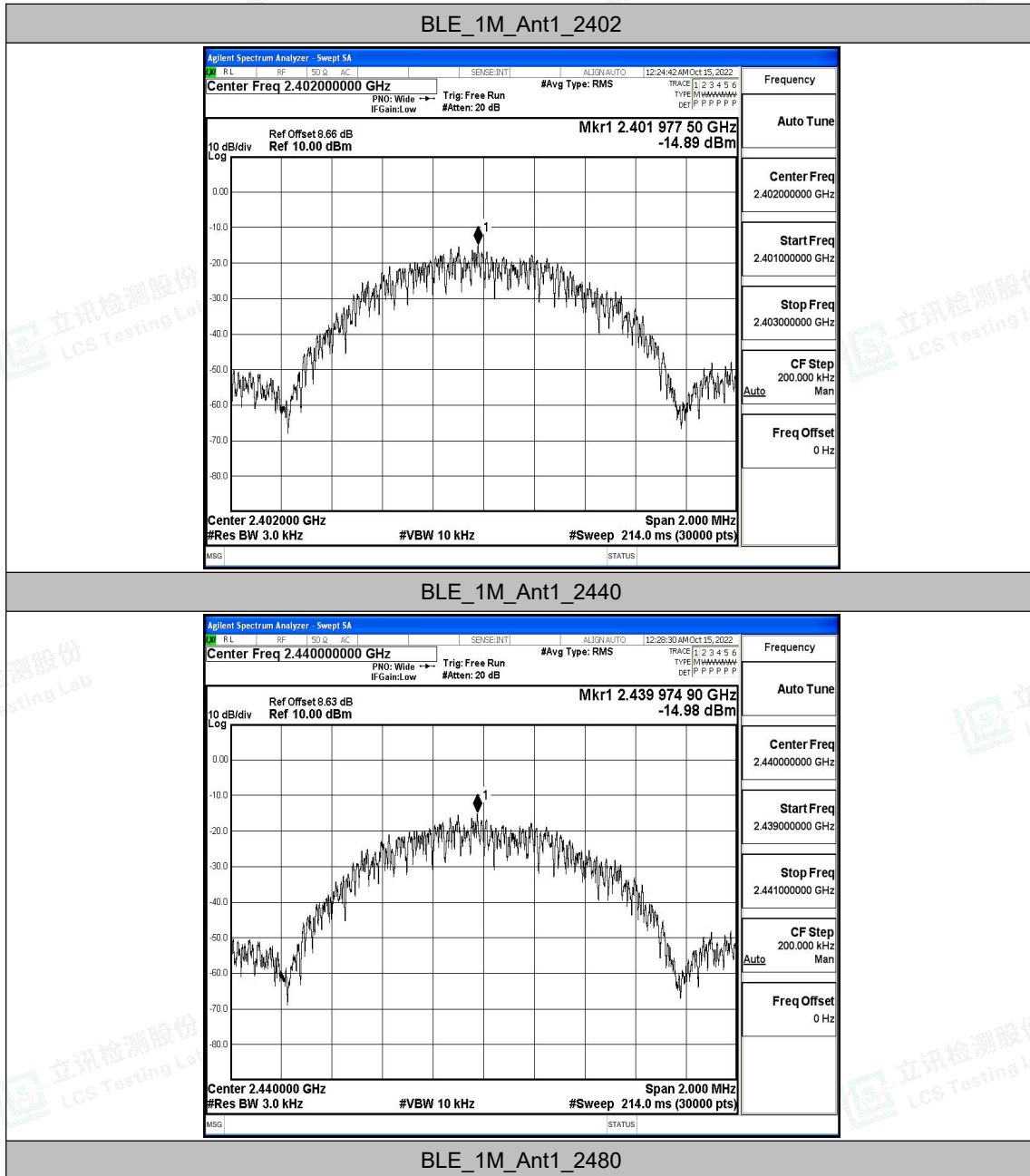
Test Result

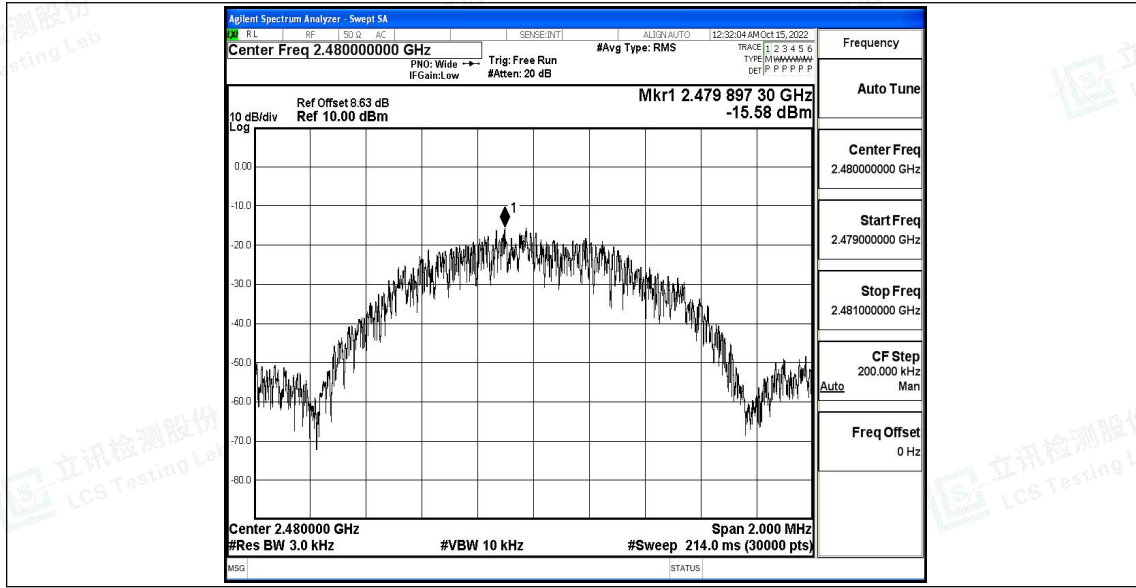
TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-14.89	≤8.00	PASS
		2440	-14.98	≤8.00	PASS
		2480	-15.58	≤8.00	PASS





Test Graphs







B.5 Band edge measurements

Test Result

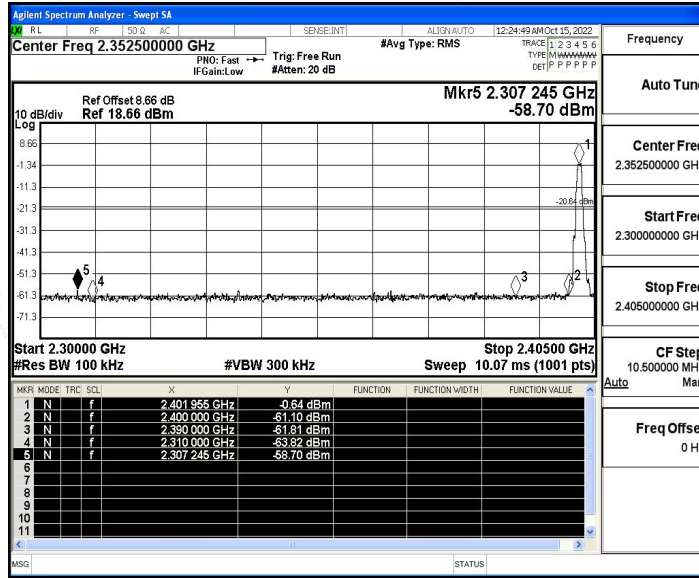
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-0.64	-58.7	≤-20.64	PASS
		High	2480	-0.80	-58.26	≤-20.8	PASS



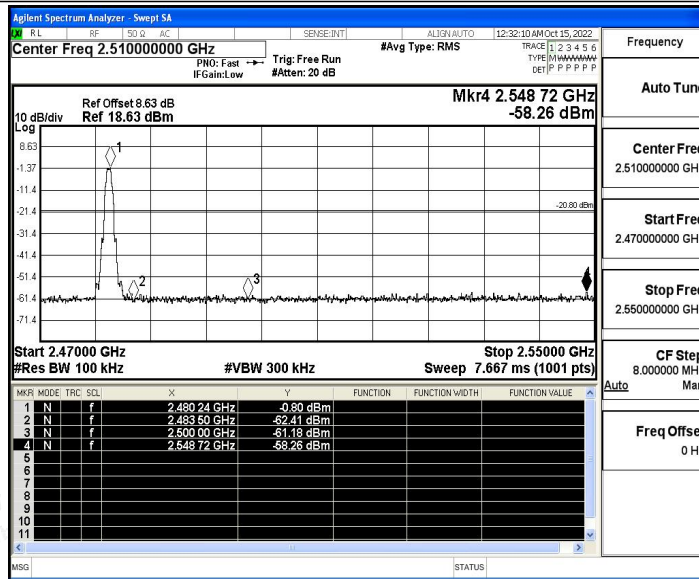


Test Graphs

BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480





B.6 Conducted Spurious Emission

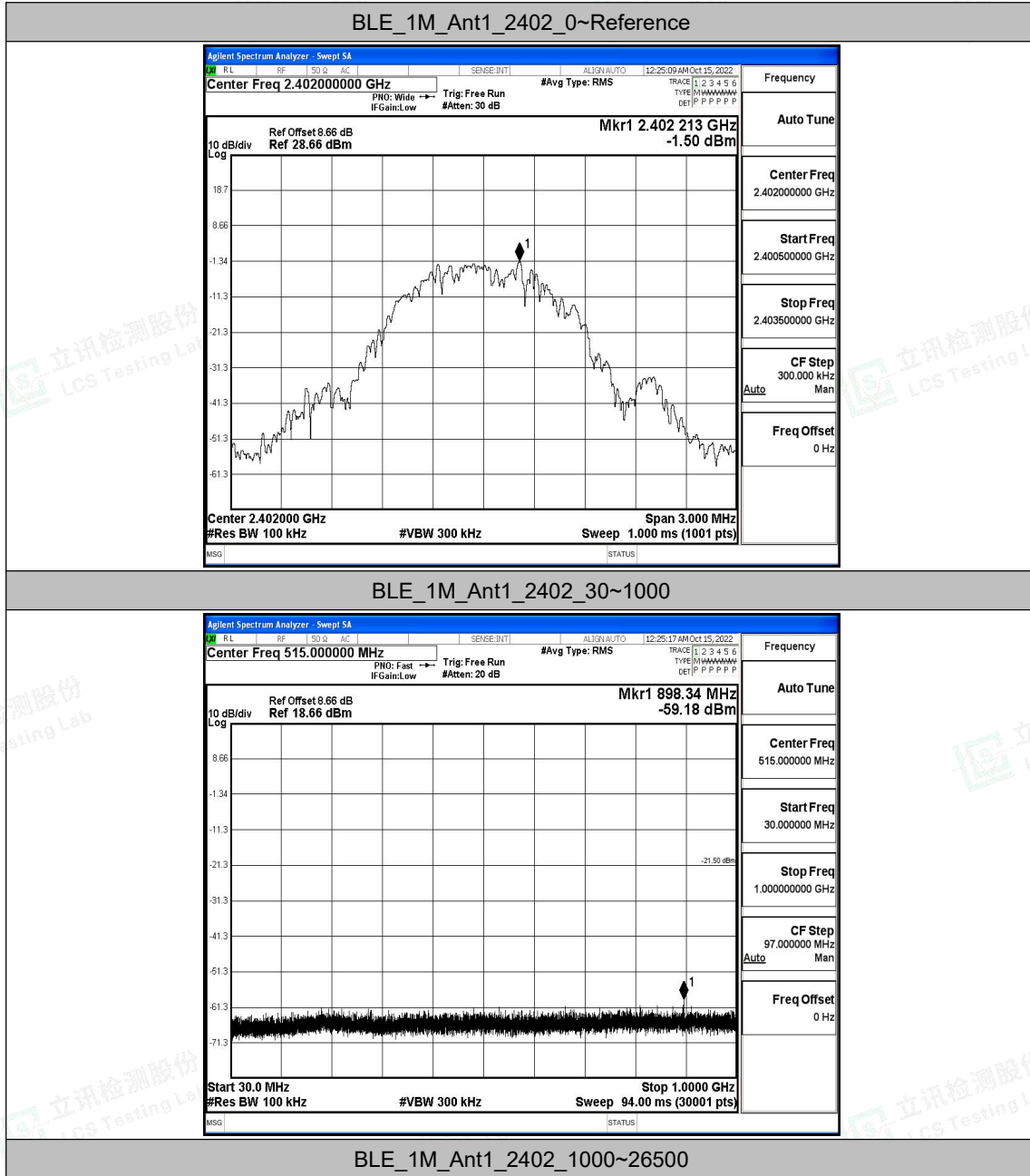
Test Result

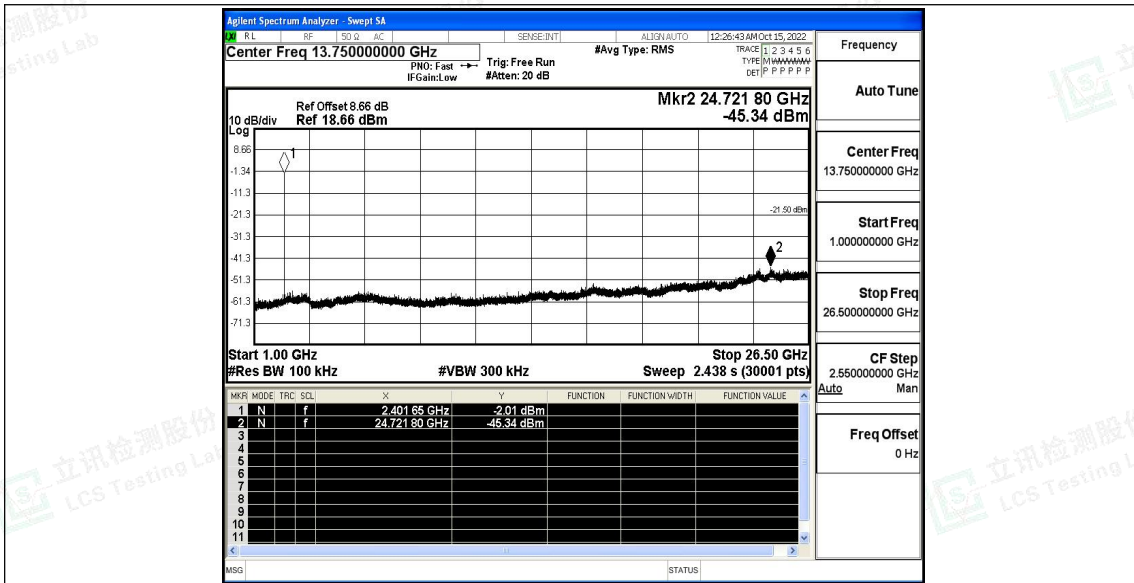
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-1.50	-1.50	---	PASS
			30~1000	-1.50	-59.18	≤-21.5	PASS
			1000~26500	-1.50	-45.34	≤-21.5	PASS
		2440	Reference	-0.91	-0.91	---	PASS
			30~1000	-0.91	-59.27	≤-20.91	PASS
			1000~26500	-0.91	-46.16	≤-20.91	PASS
		2480	Reference	-2.33	-2.33	---	PASS
			30~1000	-2.33	-60.91	≤-22.33	PASS
			1000~26500	-2.33	-46.26	≤-22.33	PASS



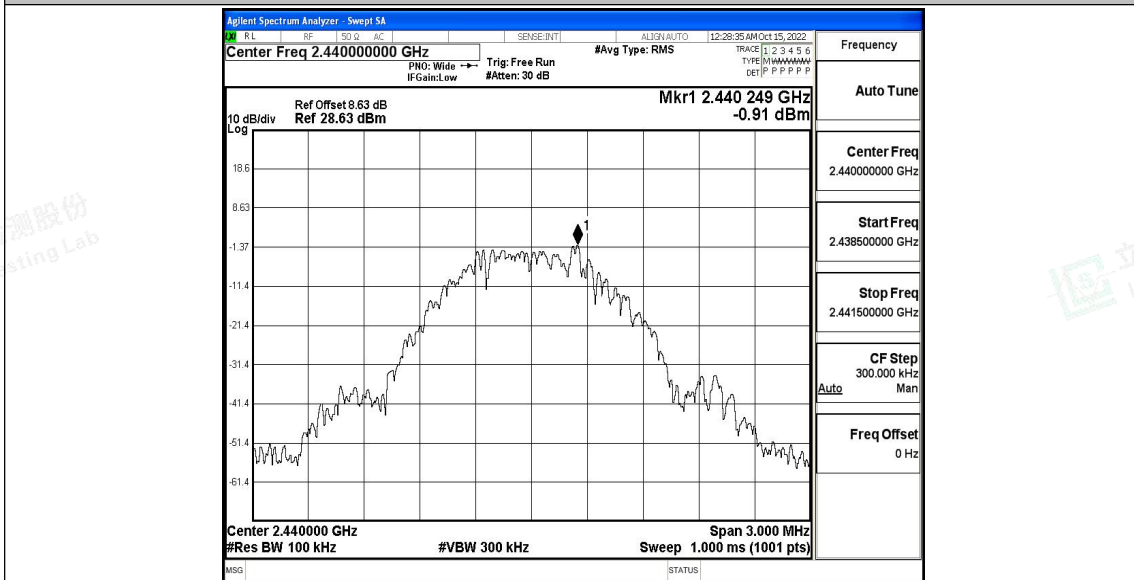


Test Graphs



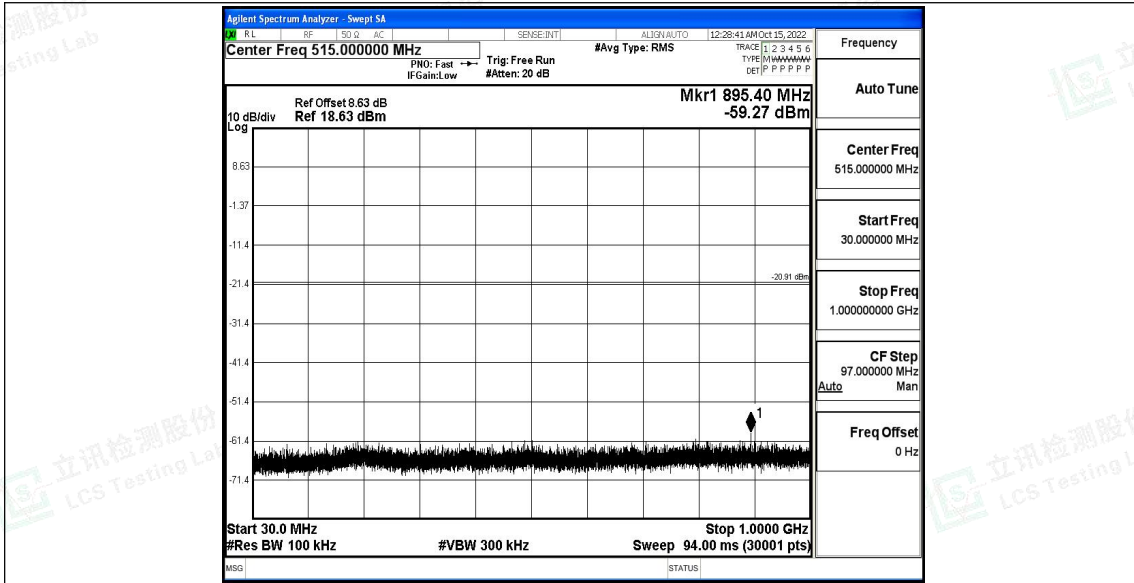


BLE_1M_Ant1_2440_0~Reference

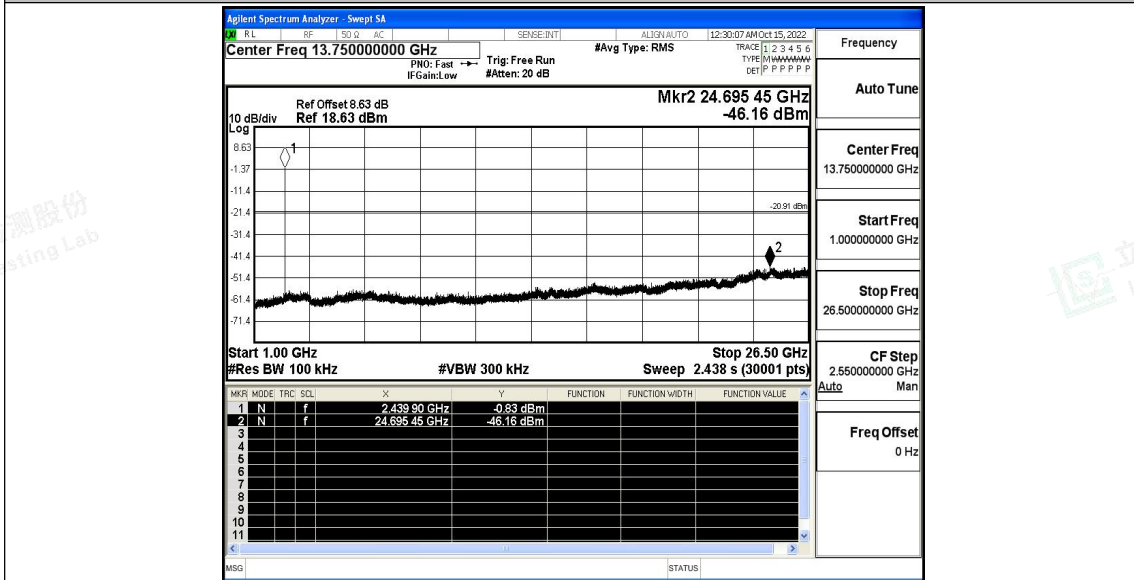


BLE_1M_Ant1_2440_30~1000



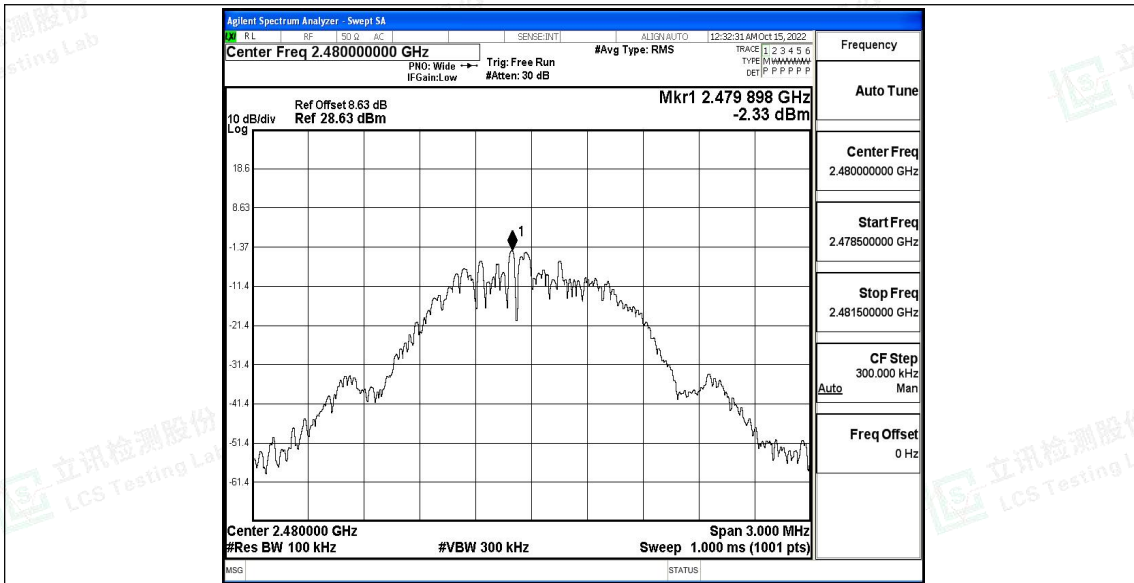


BLE_1M_Ant1_2440_1000~26500

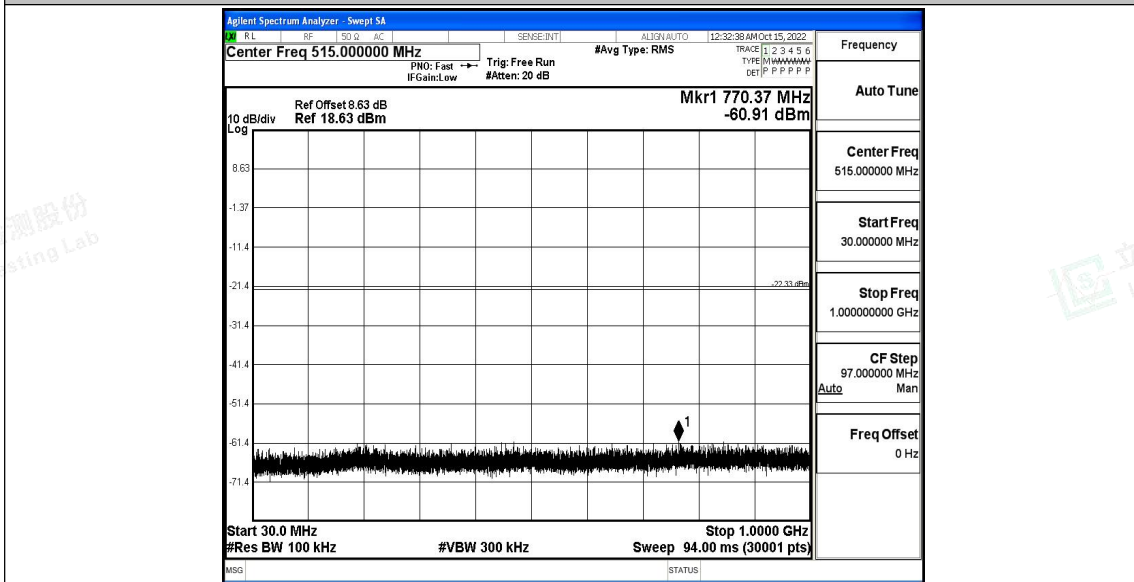


BLE_1M_Ant1_2480_0~Reference



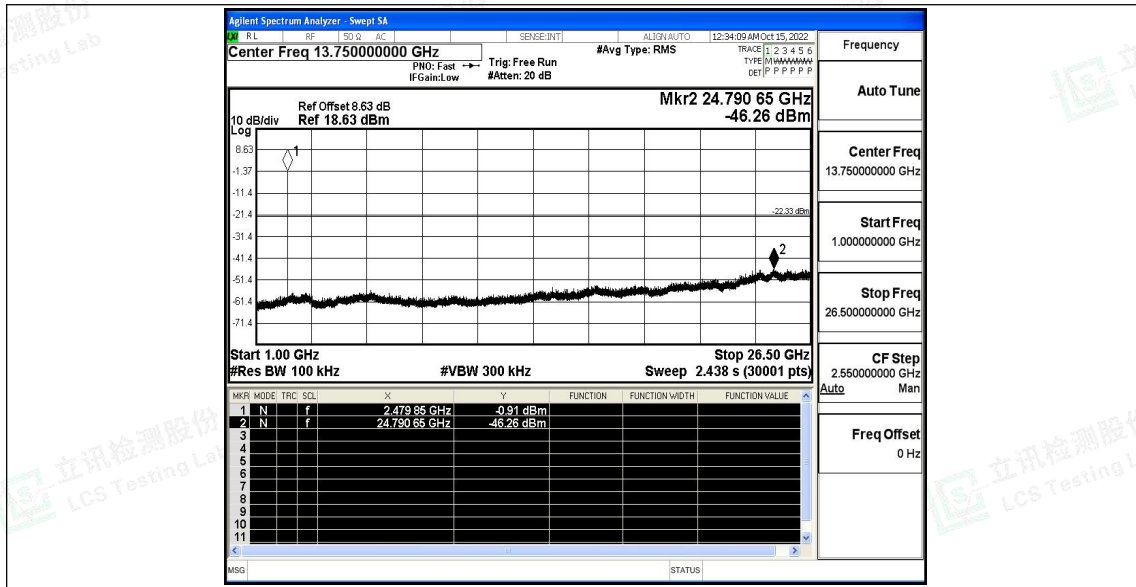


BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500







B.7 Duty Cycle

Test Result

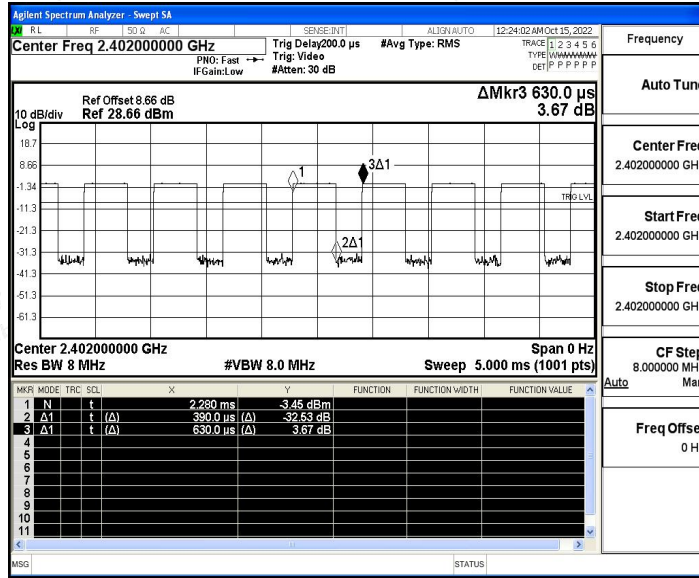
TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	1/T	Limit	Verdict
BLE_1M	Ant1	2402	0.39	0.63	0.6190	61.90	2.08	2.56	---	---
		2440	0.39	0.63	0.6190	61.90	2.08	2.56	---	---
		2480	0.38	0.62	0.6129	61.29	2.13	2.63	---	---



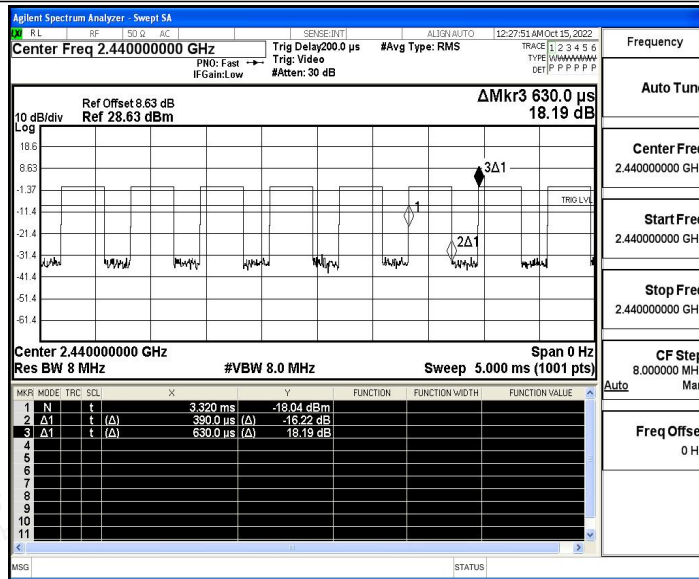


Test Graphs

BLE_1M_Ant1_2402

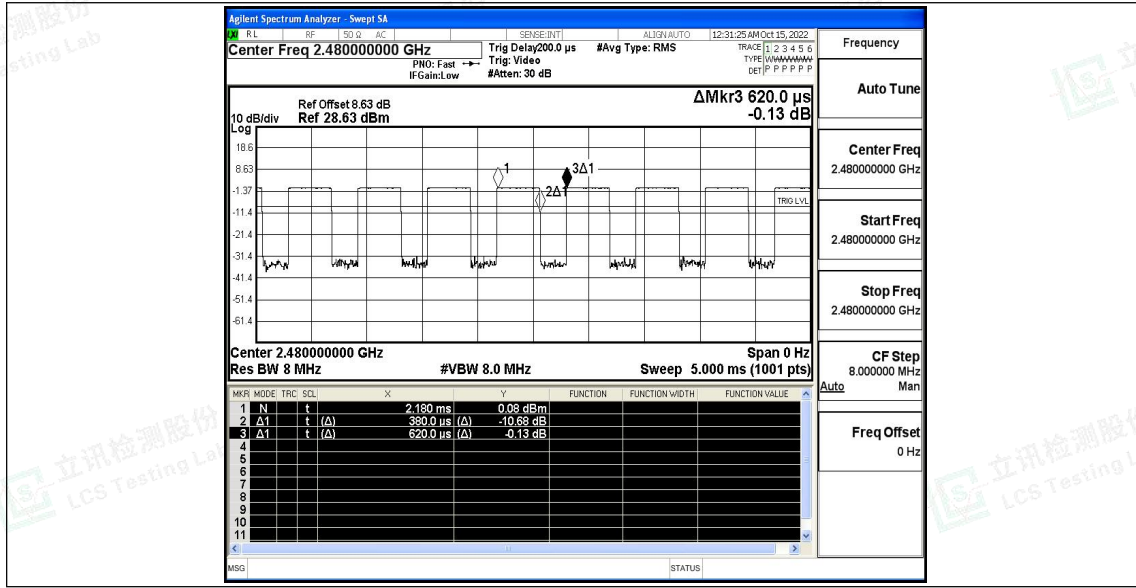


BLE_1M_Ant1_2440



BLE_1M_Ant1_2480







B.8 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-57.52	≤-41.20	37.68	≤54	PASS
				AV	2389.985	-56.81	≤-41.20	38.39	≤54	PASS
				AV	2390.000	-56.81	≤-41.20	38.39	≤54	PASS
				Peak	2310.000	-51.84	≤-21.20	43.36	≤74	PASS
				Peak	2365.520	-48.14	≤-21.20	47.06	≤74	PASS
				Peak	2390.000	-51.61	≤-21.20	43.59	≤74	PASS
		High	2480	AV	2483.500	-53.66	≤-41.20	41.54	≤54	PASS
				AV	2483.520	-53.66	≤-41.20	41.54	≤54	PASS
				AV	2500.000	-56.55	≤-41.20	38.65	≤54	PASS
				Peak	2483.500	-49.45	≤-21.20	45.75	≤74	PASS
				Peak	2489.040	-47.51	≤-21.20	47.69	≤74	PASS
				Peak	2500.000	-49.88	≤-21.20	45.32	≤74	PASS

Note:

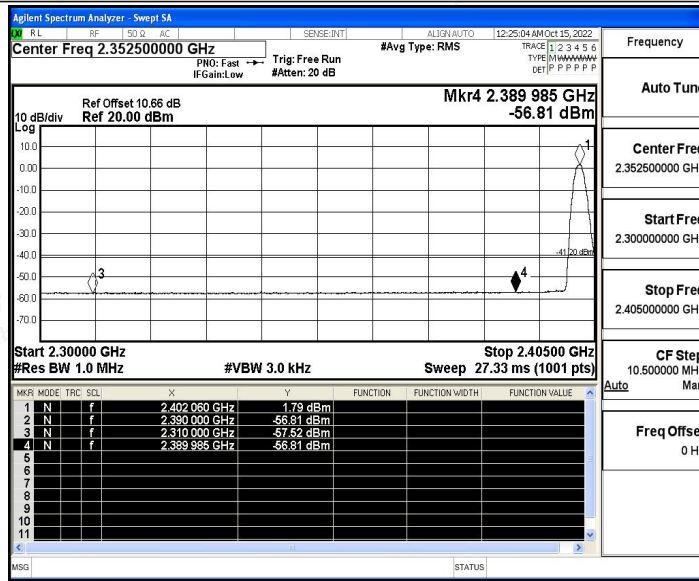
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



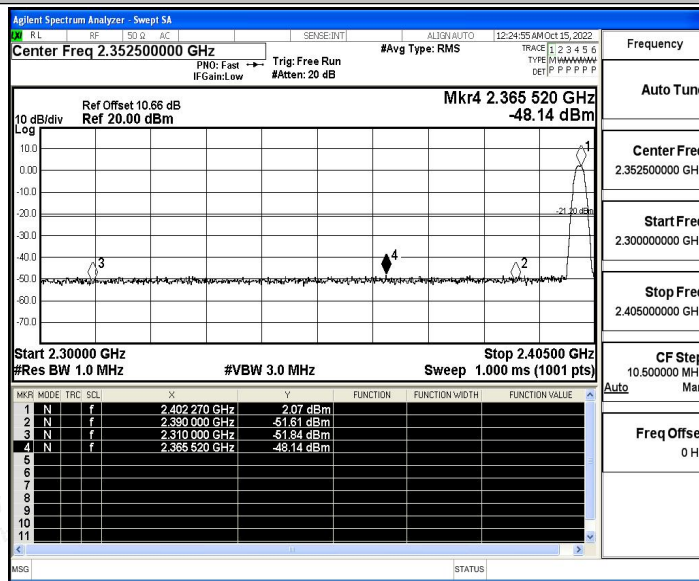


Test Graphs

BLE_1M_Ant1_Low_2402_AV

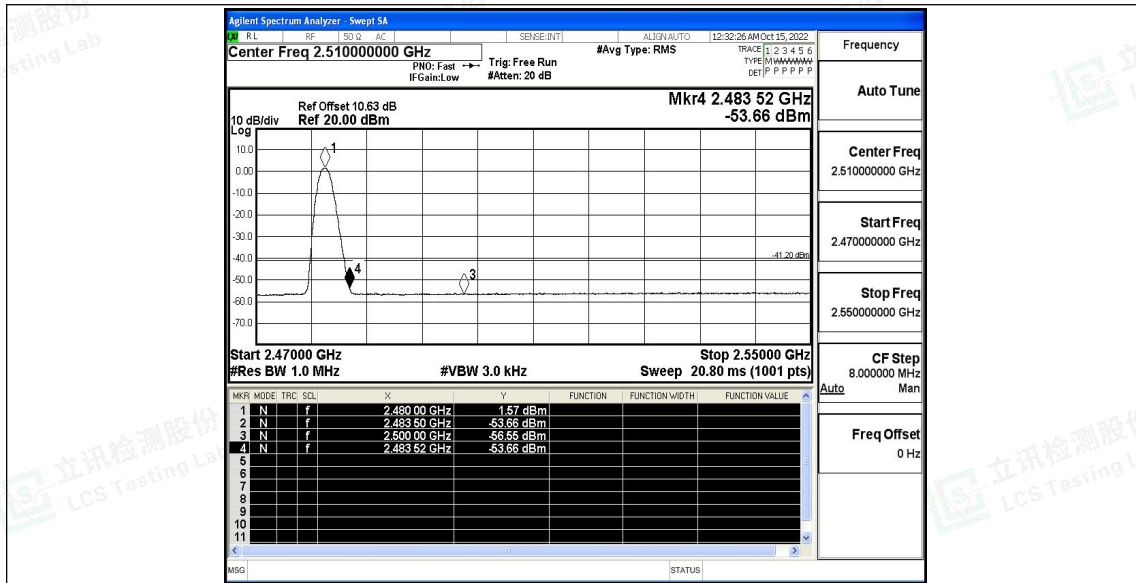


BLE_1M_Ant1_Low_2402_Peak



BLE_1M_Ant1_High_2480_AV





BLE_1M_Ant1_High_2480_Peak

