



Appendix A

RF Test Data for BLE (Conducted Measurement)

Product Name: Pearl River Intelligent System

Test Model: QU1

Environmental Conditions

Temperature:	23.5 °C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Nick Peng
	<i>Nick Peng</i>
Supervised by:	Jack Cheng
	<i>Jack cheng</i>



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A.1 DTS Bandwidth

Test Result

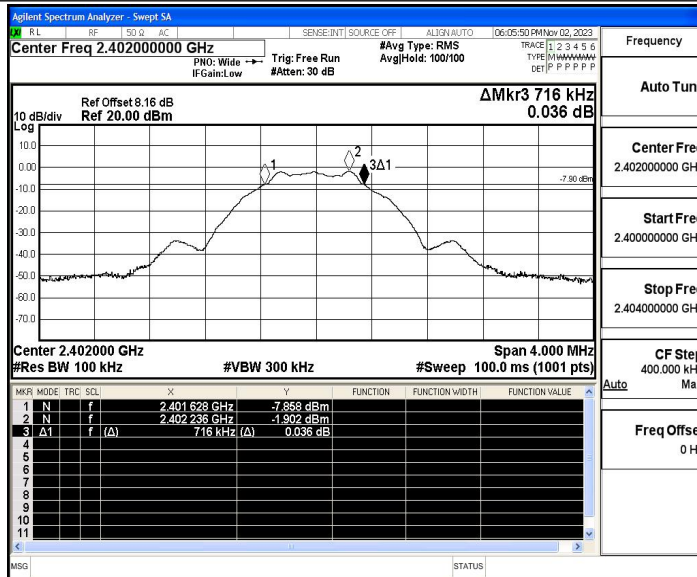
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.716	2401.628	2402.344	0.5	PASS
		2440	0.716	2439.628	2440.344	0.5	PASS
		2480	0.712	2479.628	2480.340	0.5	PASS



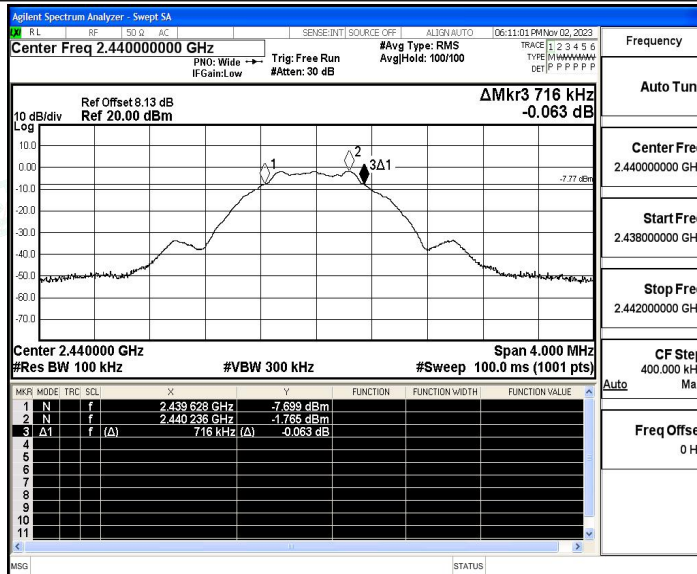


Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

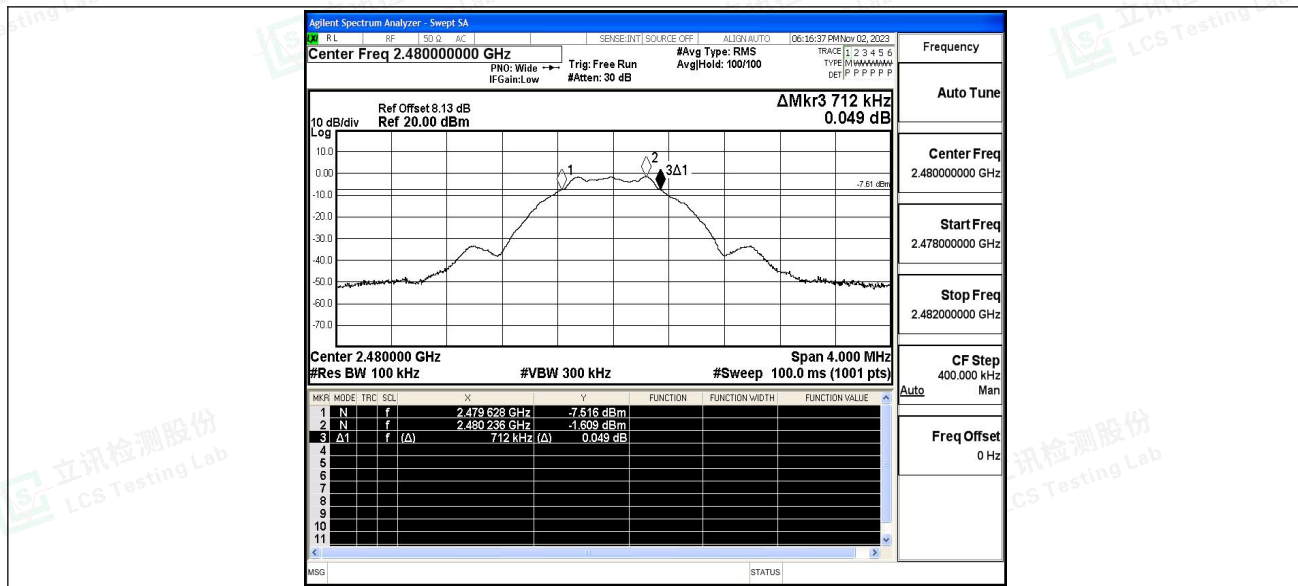


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A.2 Maximum conducted output power

Test Result

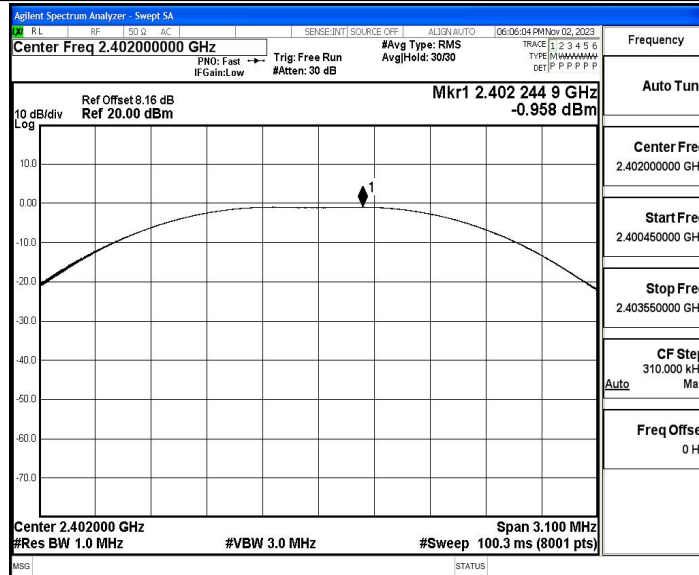
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-0.96	≤30	PASS
		2440	-0.81	≤30	PASS
		2480	-0.66	≤30	PASS



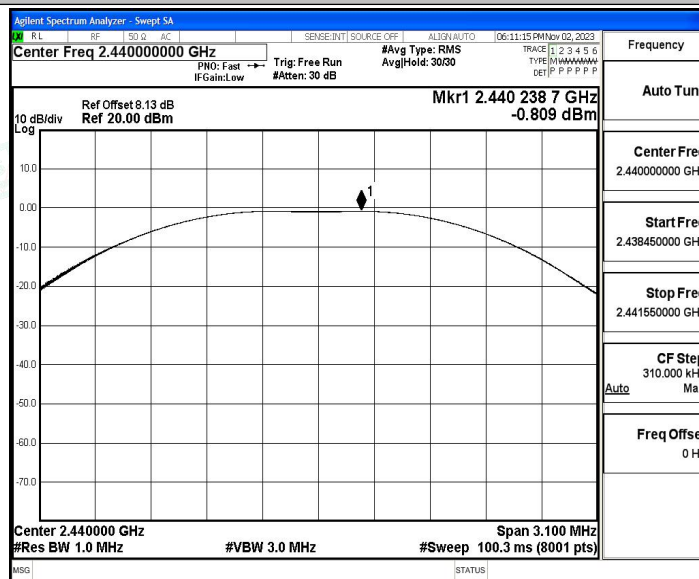


Test Graphs

BLE_1M_Ant1_2402

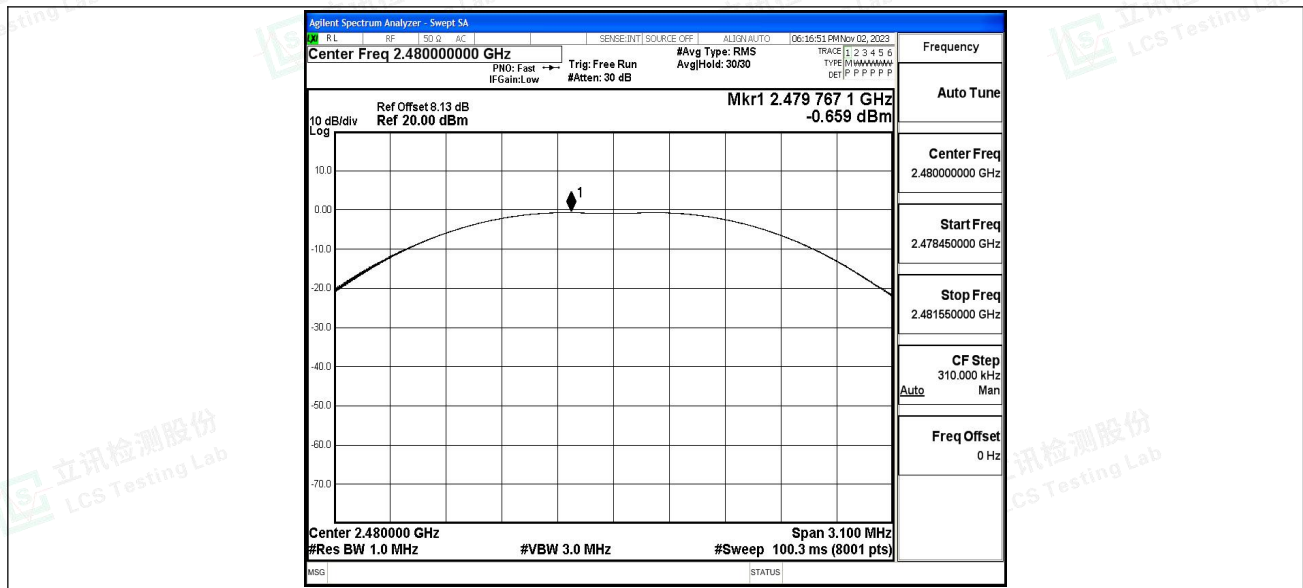


BLE_1M_Ant1_2440



BLE_1M_Ant1_2480







A.3 Maximum power spectral density

Test Result

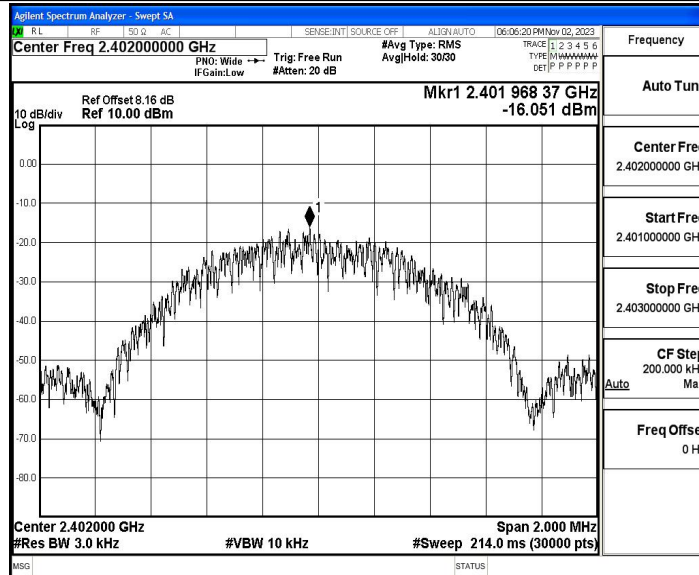
TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-16.05	≤8.00	PASS
		2440	-15.83	≤8.00	PASS
		2480	-15.76	≤8.00	PASS



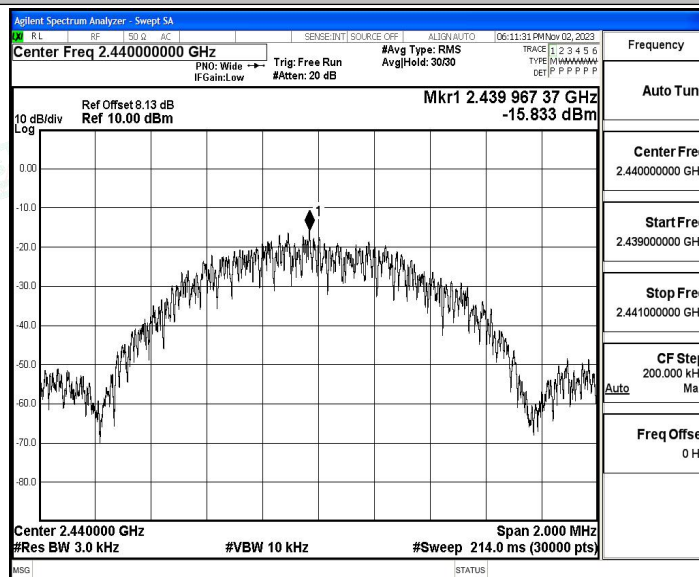


Test Graphs

BLE_1M_Ant1_2402

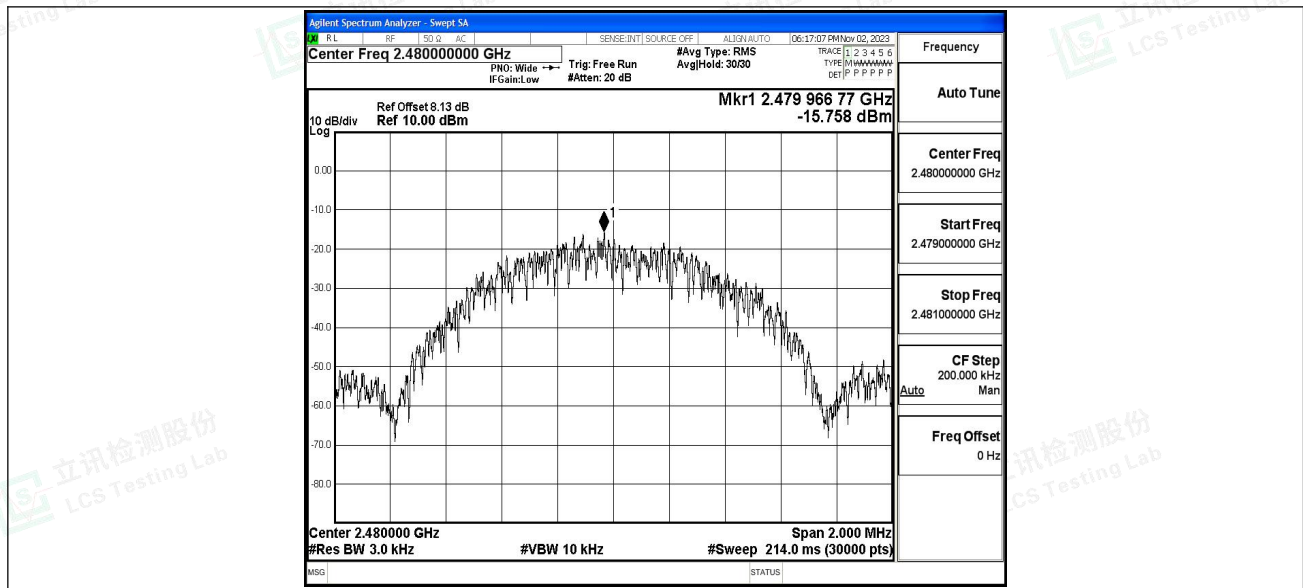


BLE_1M_Ant1_2440



BLE_1M_Ant1_2480





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A.4 Band edge measurements

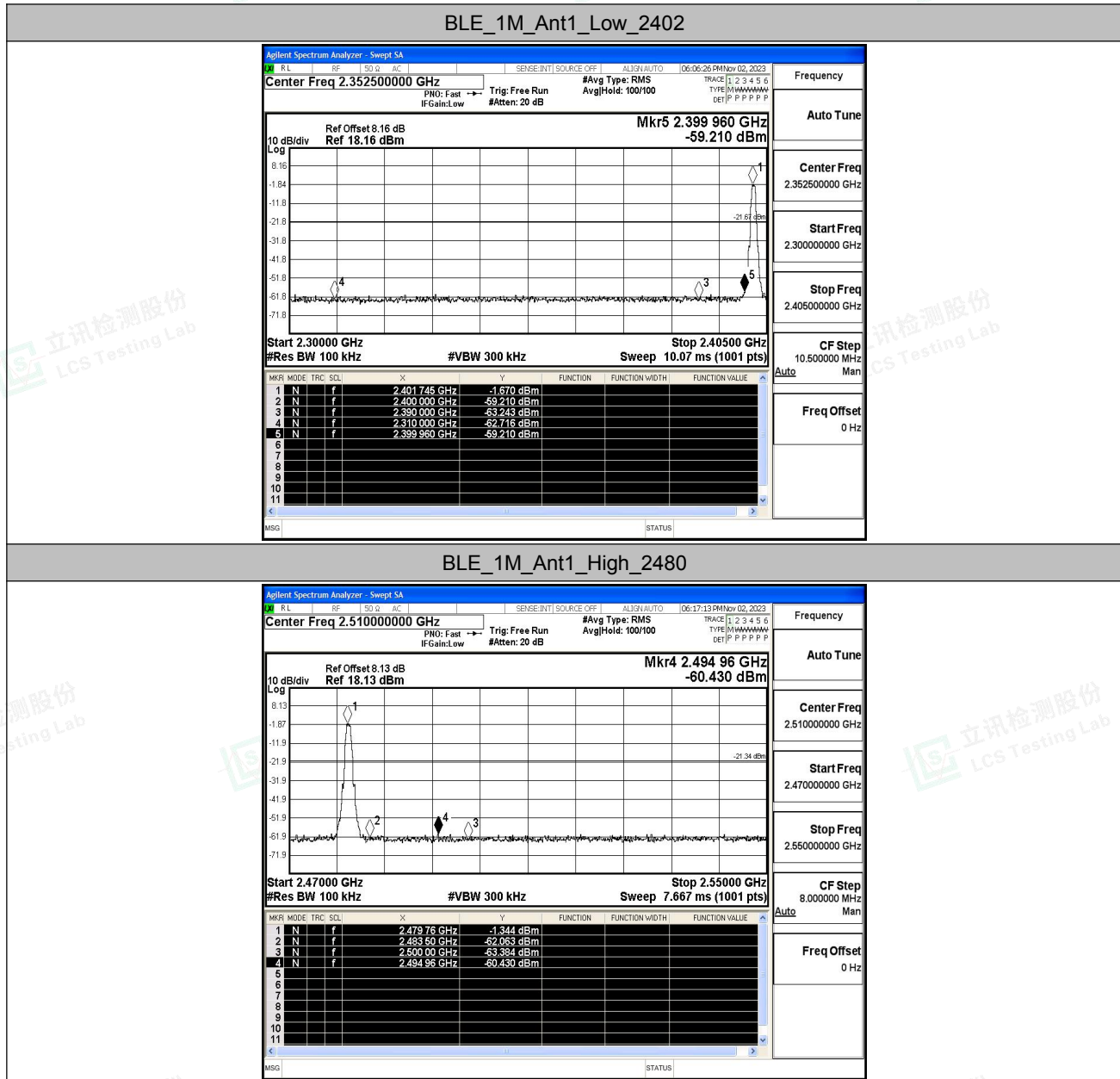
Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-1.67	-59.21	≤-21.67	PASS
		High	2480	-1.34	-60.43	≤-21.34	PASS





Test Graphs



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A.5 Conducted Spurious Emission

Test Result

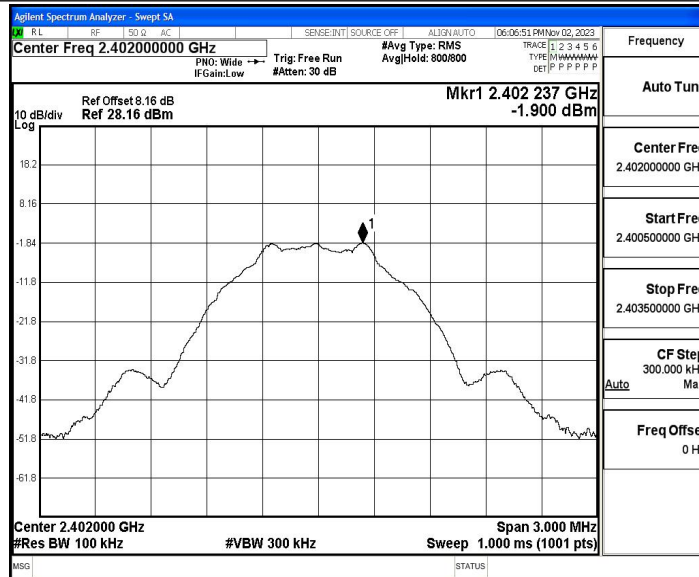
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-1.90	-1.90	---	PASS
			30~1000	-1.90	-61.92	≤-21.9	PASS
			1000~26500	-1.90	-49.17	≤-21.9	PASS
		2440	Reference	-1.74	-1.74	---	PASS
			30~1000	-1.74	-61.63	≤-21.74	PASS
			1000~26500	-1.74	-49.63	≤-21.74	PASS
		2480	Reference	-1.58	-1.58	---	PASS
			30~1000	-1.58	-60.96	≤-21.58	PASS
			1000~26500	-1.58	-49.67	≤-21.58	PASS



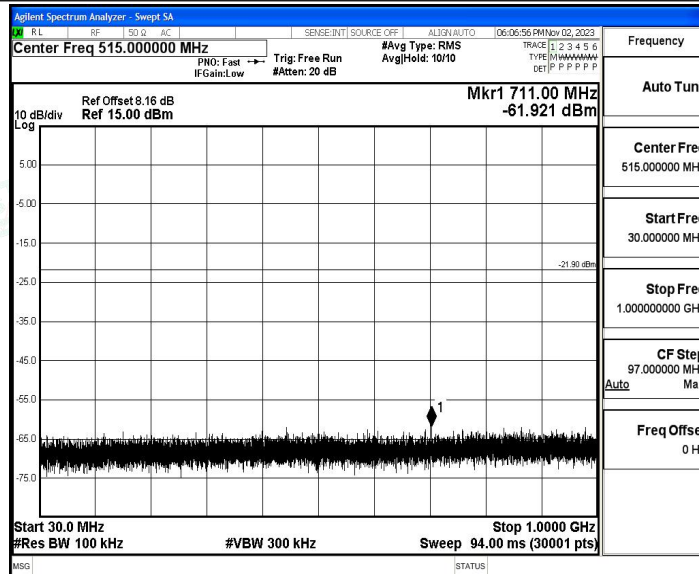


Test Graphs

BLE_1M_Ant1_2402_0~Reference



BLE_1M_Ant1_2402_30~1000



BLE_1M_Ant1_2402_1000~26500

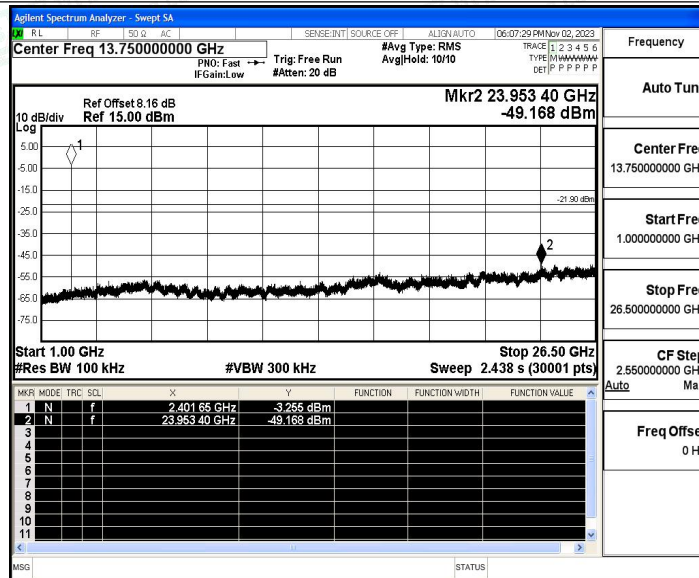


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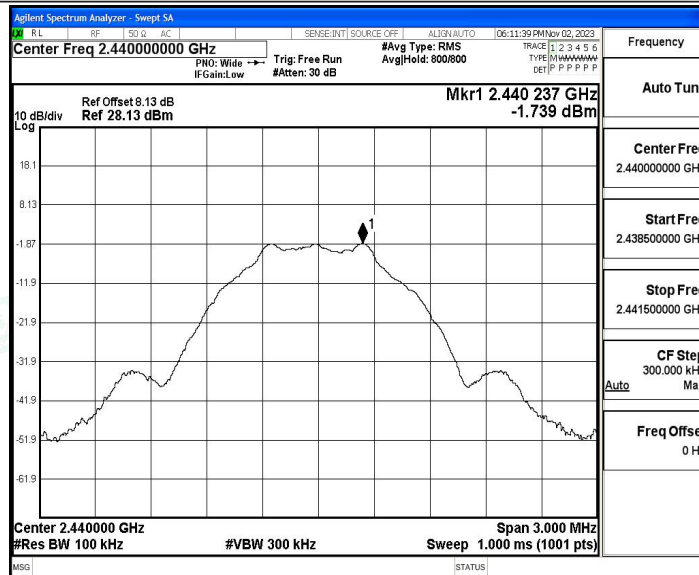
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BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000

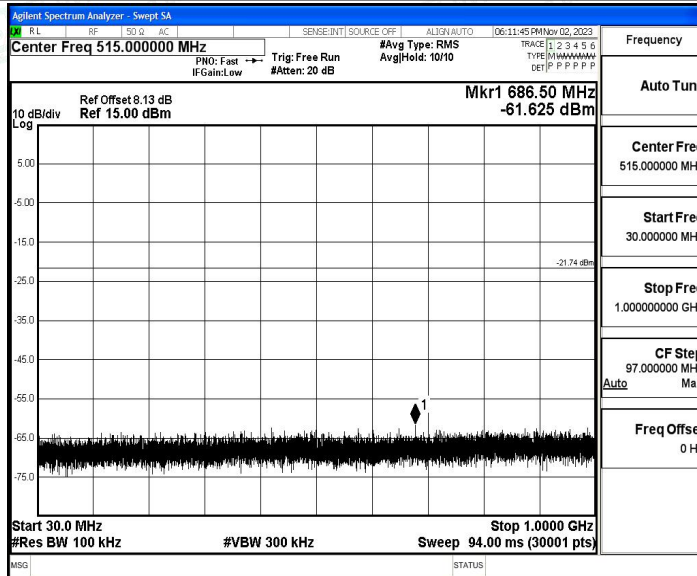


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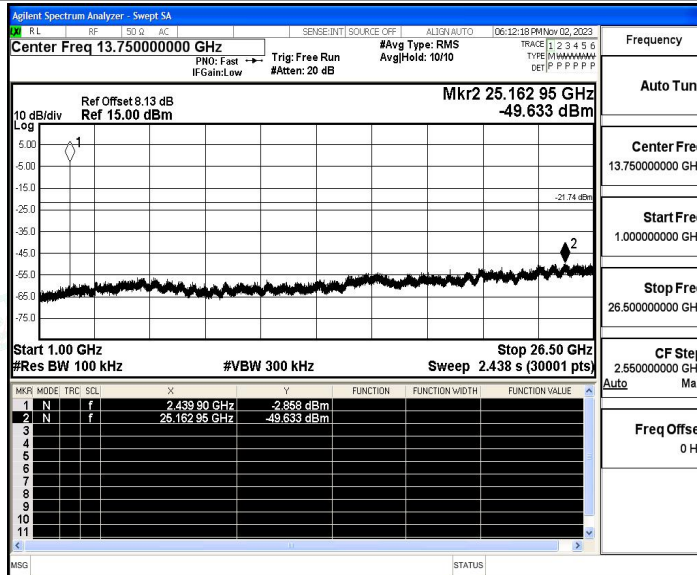
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BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference

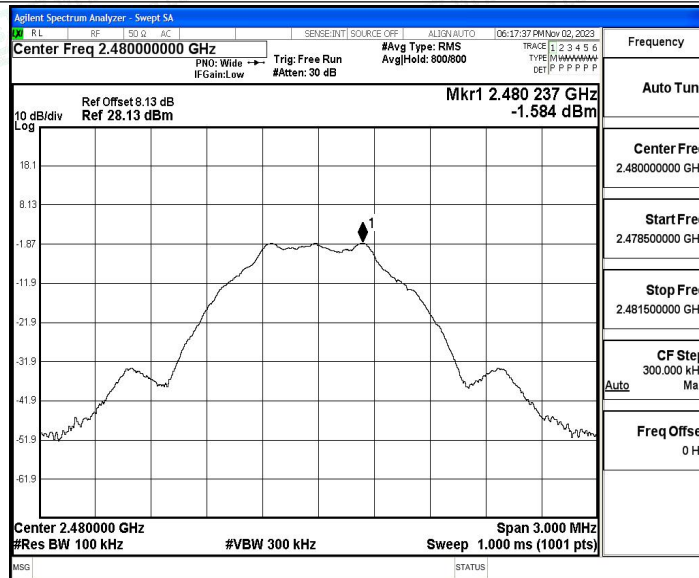


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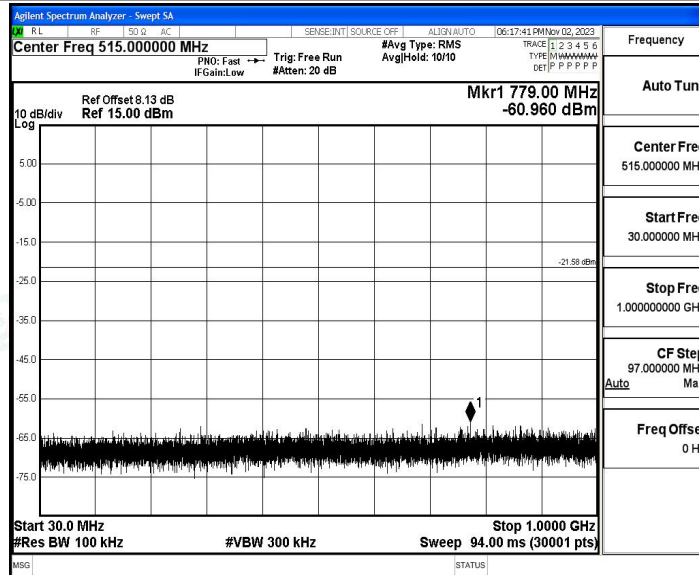
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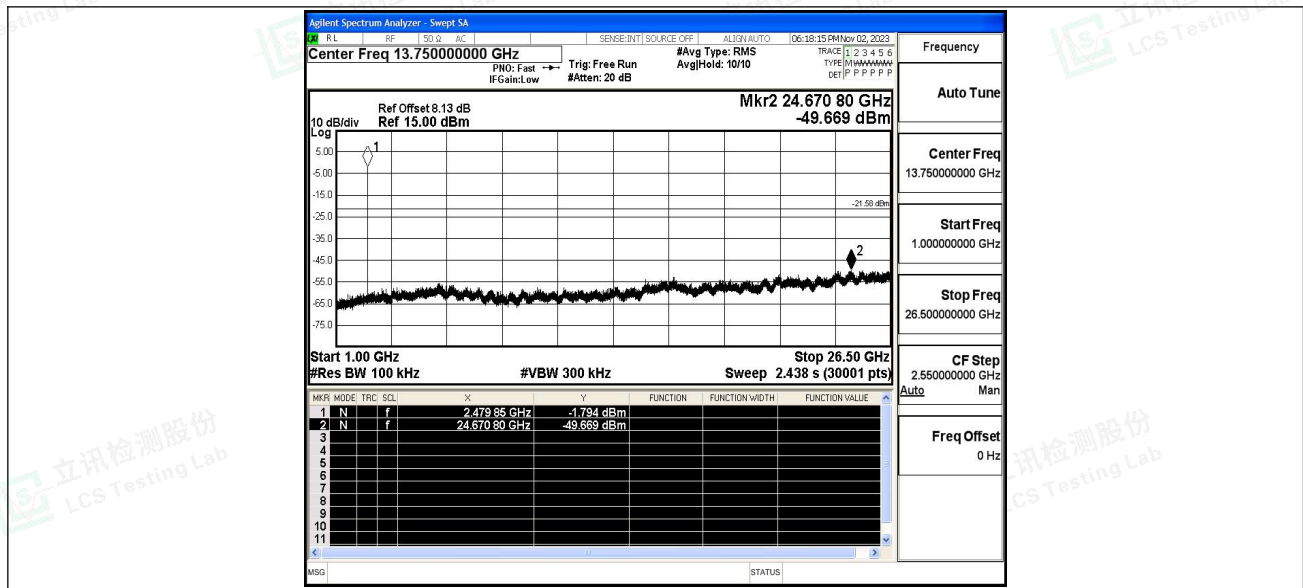


BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500





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A.6 Duty Cycle

Test Result

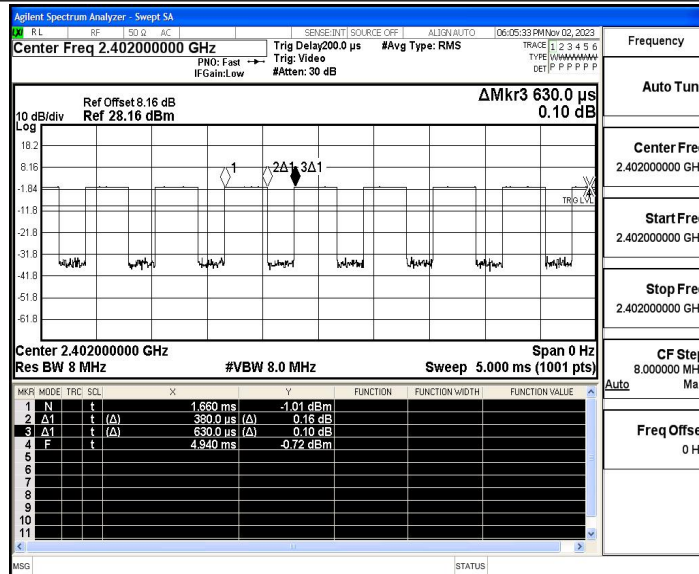
TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	1/T	Limit	Verdict
BLE_1M	Ant1	2402	0.38	0.63	0.6032	60.32	2.20	2.63	---	---
		2440	0.38	0.63	0.6032	60.32	2.20	2.63	---	---
		2480	0.38	0.63	0.6032	60.32	2.20	2.63	---	---



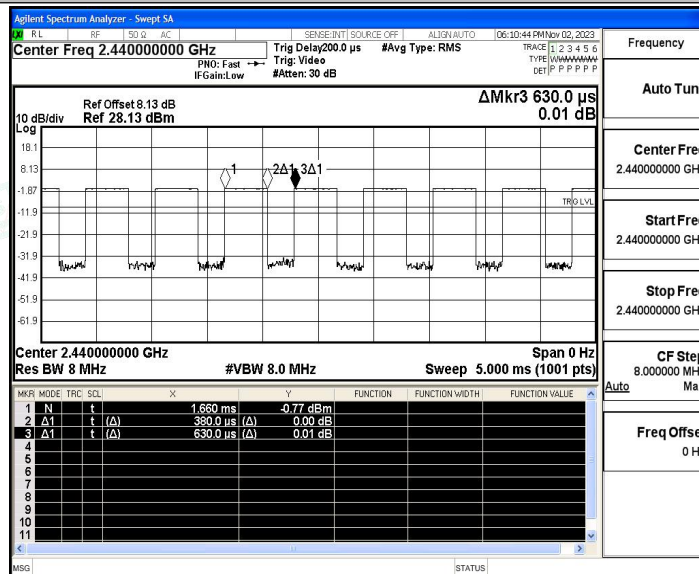


Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

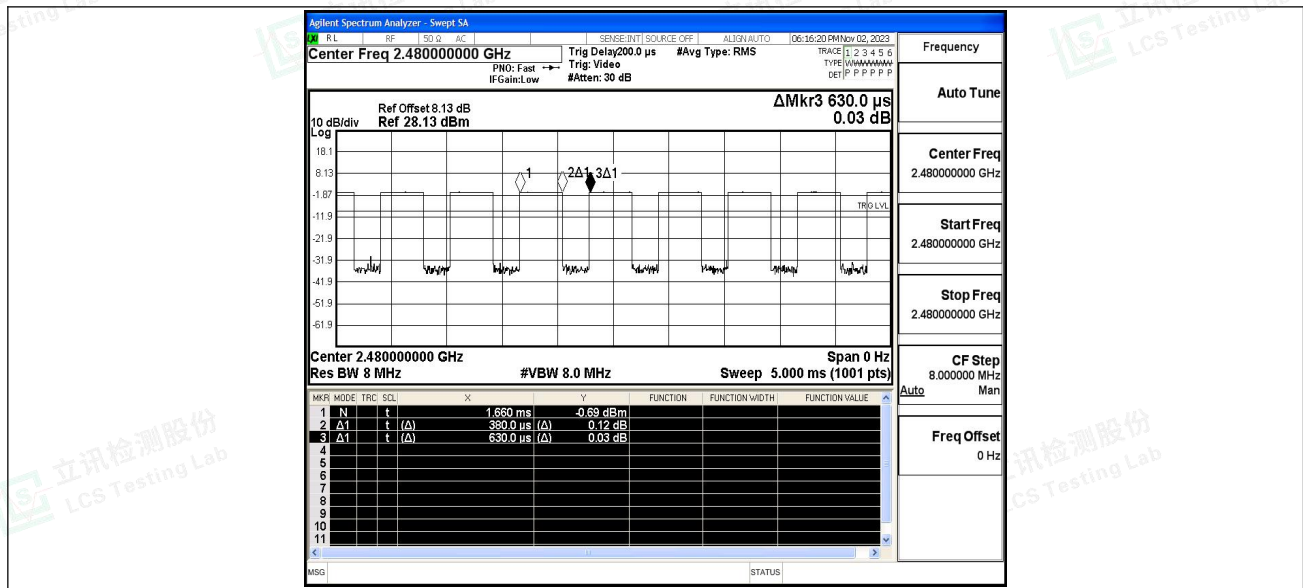


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A.7 Emissions in Restricted Bands

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	-58.61	≤-41.20	36.59	≤54	PASS
				AV	2388.830	-57.76	≤-41.20	37.44	≤54	PASS
				AV	2390.000	-58.32	≤-41.20	36.88	≤54	PASS
				Peak	2310.000	-51.67	≤-21.20	43.53	≤74	PASS
				Peak	2341.790	-48.74	≤-21.20	46.46	≤74	PASS
				Peak	2390.000	-52.5	≤-21.20	42.70	≤74	PASS
		High	2480	AV	2483.500	-54.55	≤-41.20	40.65	≤54	PASS
				AV	2483.520	-54.55	≤-41.20	40.65	≤54	PASS
				AV	2500.000	-57.96	≤-41.20	37.24	≤54	PASS
				Peak	2483.500	-51.78	≤-21.20	43.42	≤74	PASS
				Peak	2484.160	-48.84	≤-21.20	46.36	≤74	PASS
				Peak	2500.000	-51.47	≤-21.20	43.73	≤74	PASS

Note:

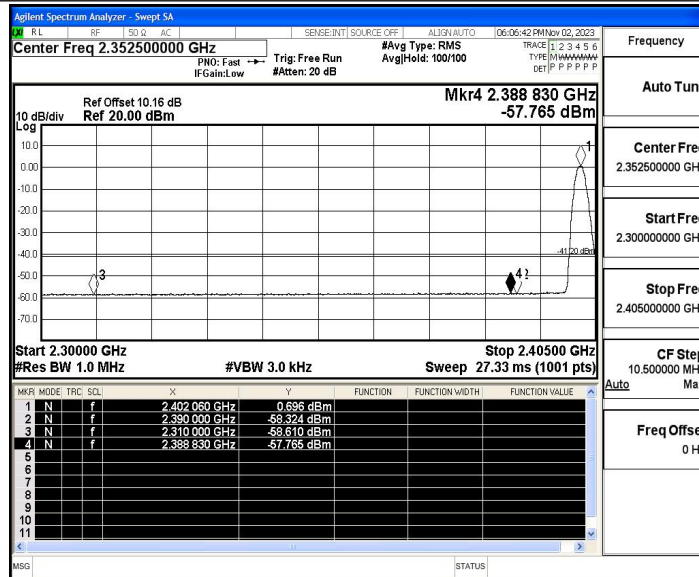
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



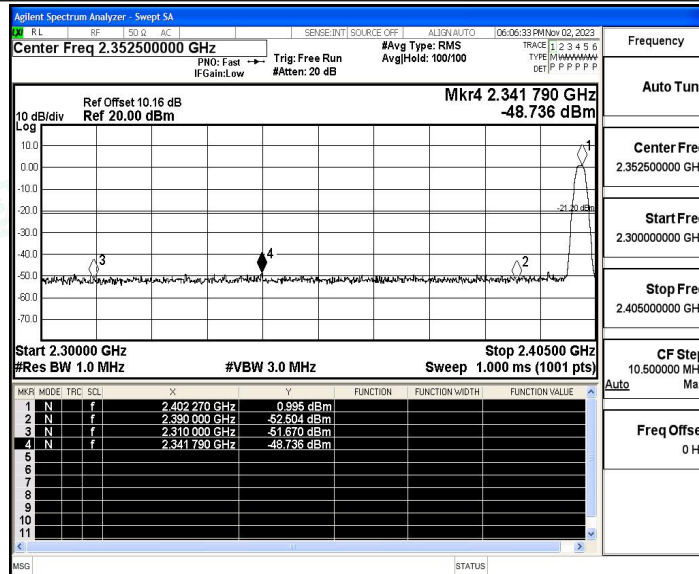


Test Graphs

BLE_1M_Ant1_Low_2402_AV



BLE_1M_Ant1_Low_2402_Peak



BLE_1M_Ant1_High_2480_AV

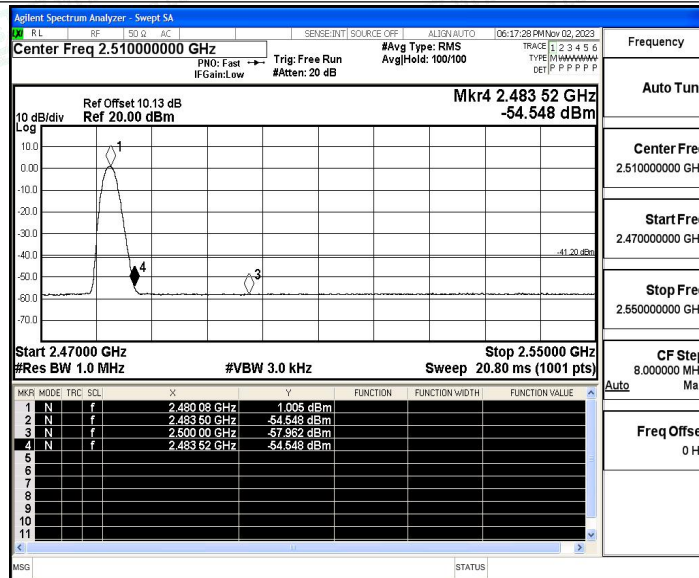


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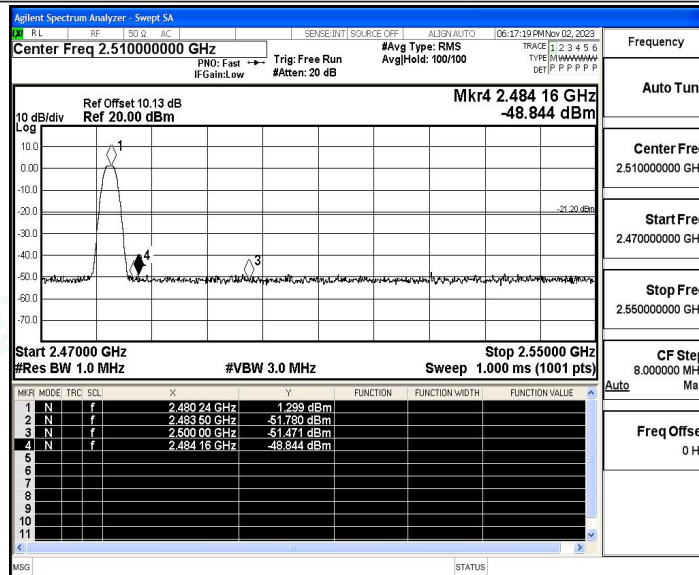
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BLE_1M_Ant1_High_2480_Peak



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