



Appendix A

RF Test Data for BTLE (Conducted Measurement)

Product Name: Creative BT-L3

Test Model: SA0190

Environmental Conditions

Temperature:	23.1° C
Relative Humidity:	52.3%
ATM Pressure:	100.0 kPa
Test Engineer:	<i>Nick Peng</i> Nick Peng
Supervised by:	<i>Li huan</i> Li huan





A.1 DTS Bandwidth

Test Result

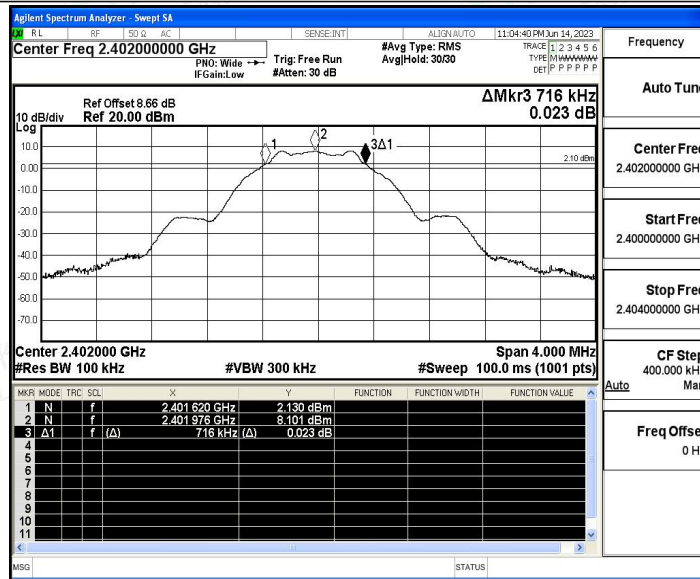
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.716	2401.620	2402.336	0.5	PASS
		2440	0.712	2439.624	2440.336	0.5	PASS
		2480	0.716	2479.620	2480.336	0.5	PASS



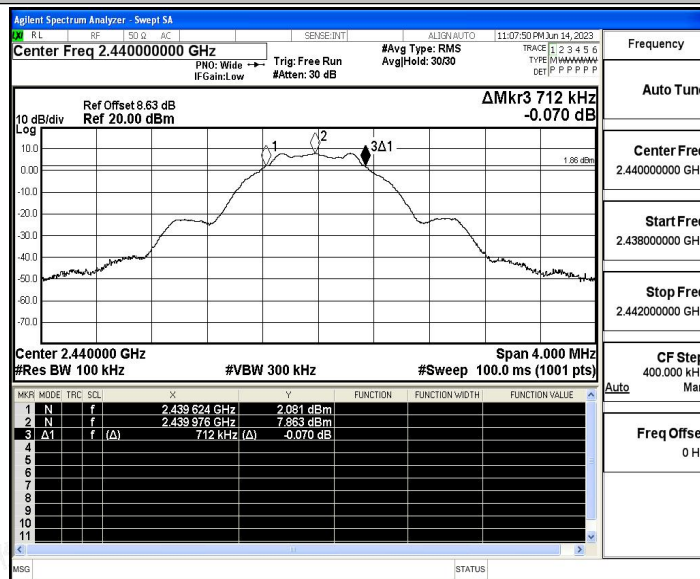


Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

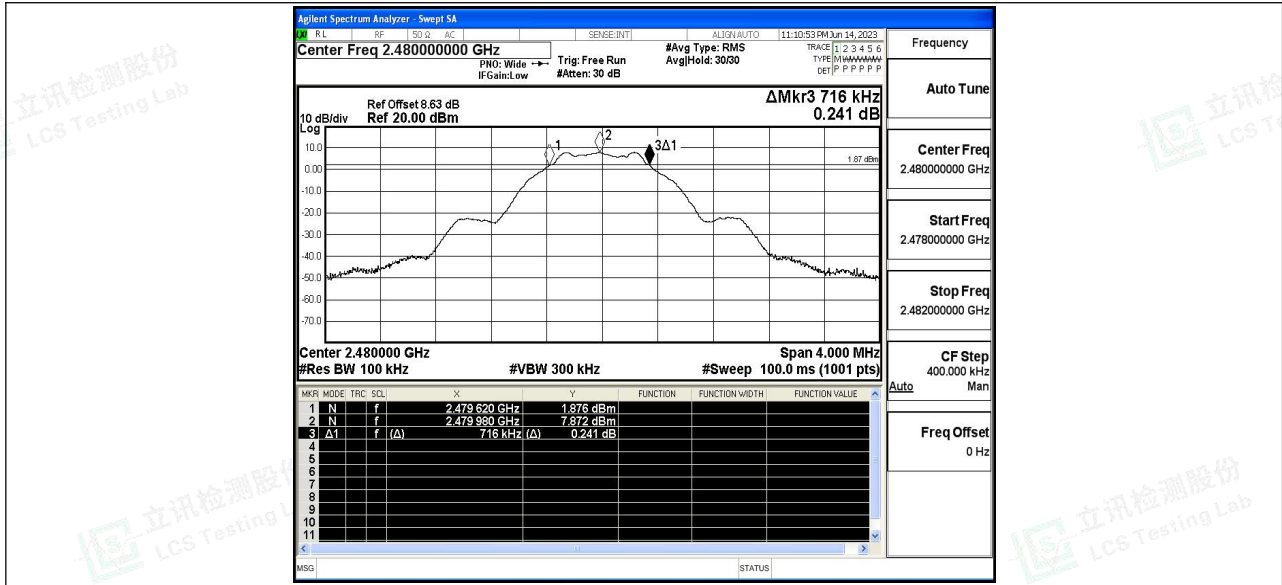


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A.2 Occupied Channel Bandwidth

Test Result

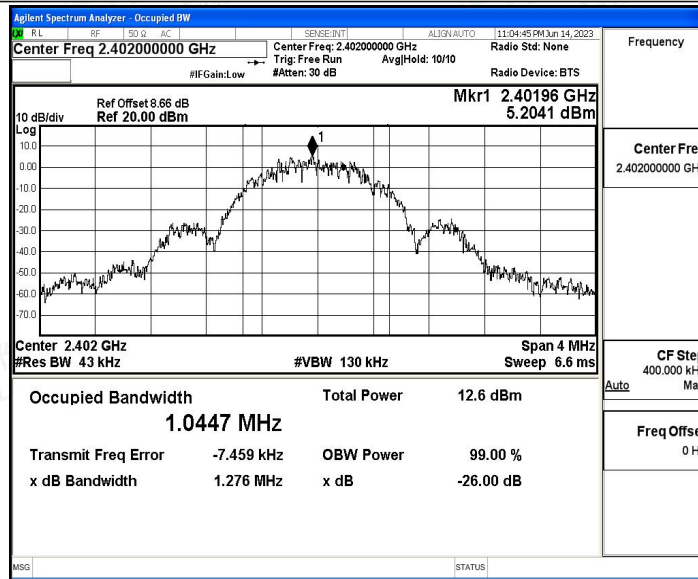
TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0447	2401.4702	2402.5149	---	---
		2440	1.0293	2439.4909	2440.5202	---	---
		2480	1.0050	2479.4930	2480.4980	---	---



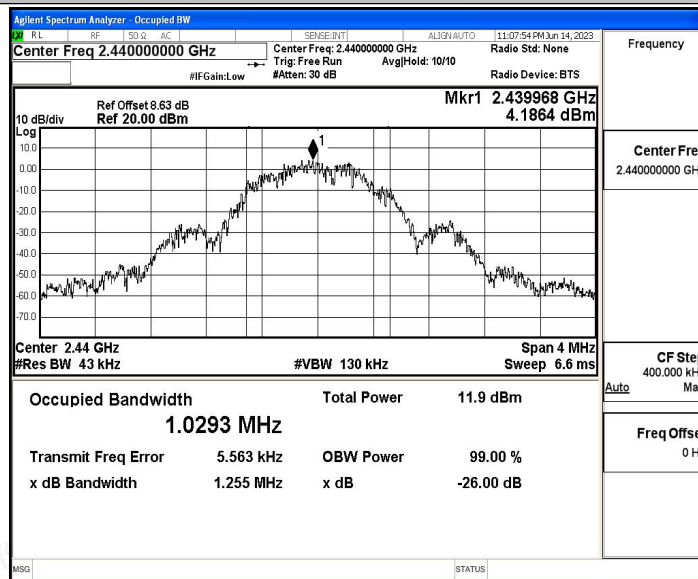


Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

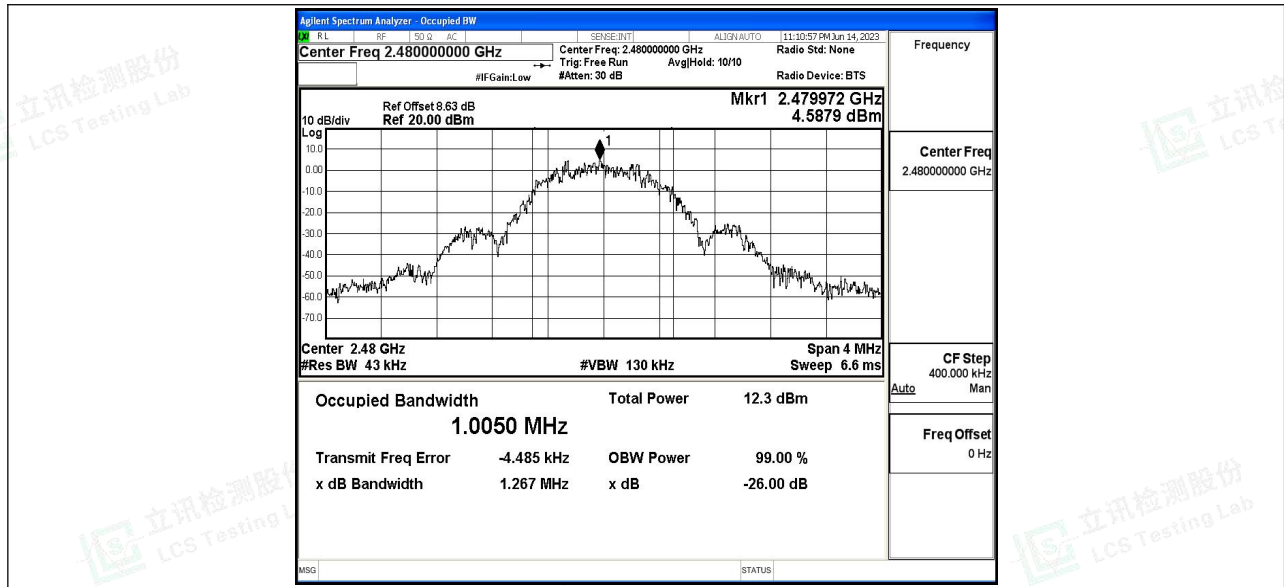


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A.3 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE_1M	2402	Ant1	8.9	30	Pass
NVNT	BLE_1M	2440	Ant1	8.67	30	Pass
NVNT	BLE_1M	2480	Ant1	8.68	30	Pass

EIRP

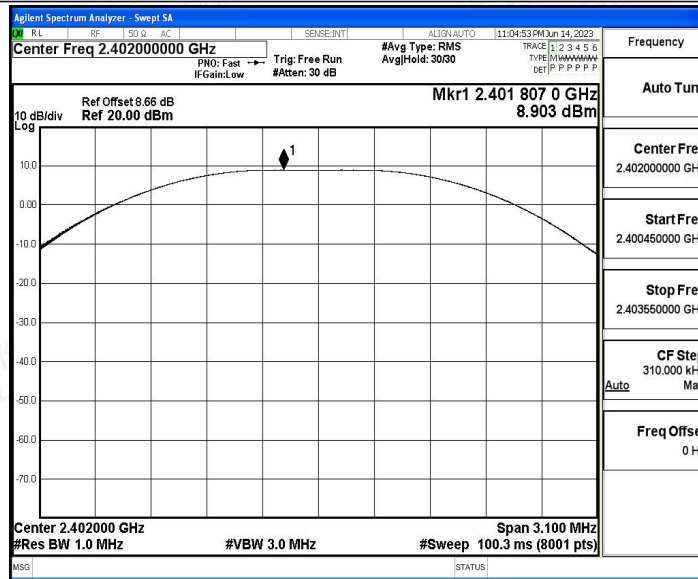
TestMode	Frequency (MHz)	Maximum Peak Output Power [dBm]	Antenna Gain	Report EIRP Power(dBm)	Limit[dBm]	Verdict
BLE_1M	2402	8.9	-0.98	7.92	36	PASS
BLE_1M	2440	8.67	-0.98	7.69	36	PASS
BLE_1M	2480	8.68	-0.98	7.7	36	PASS



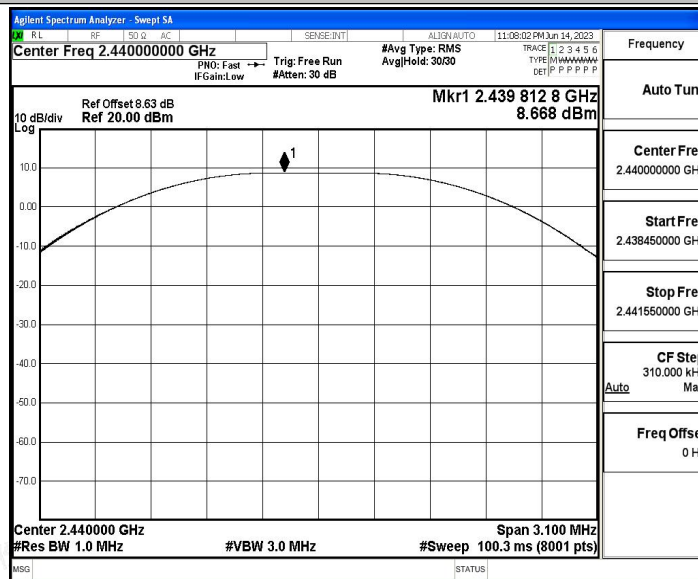


Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

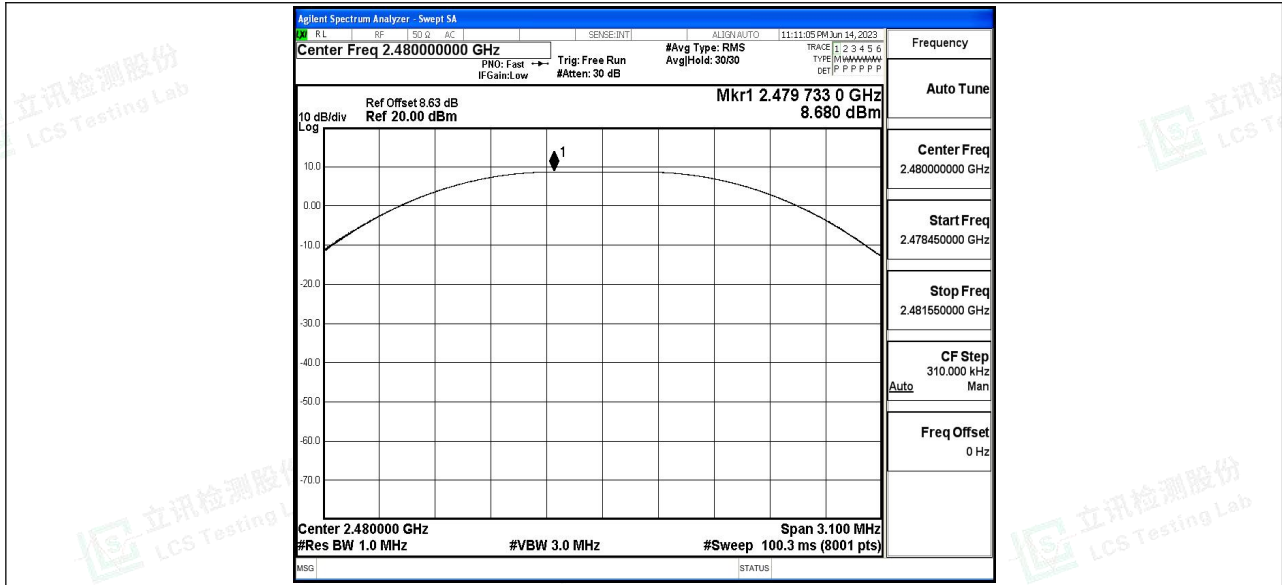


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A.4 Maximum power spectral density

Test Result

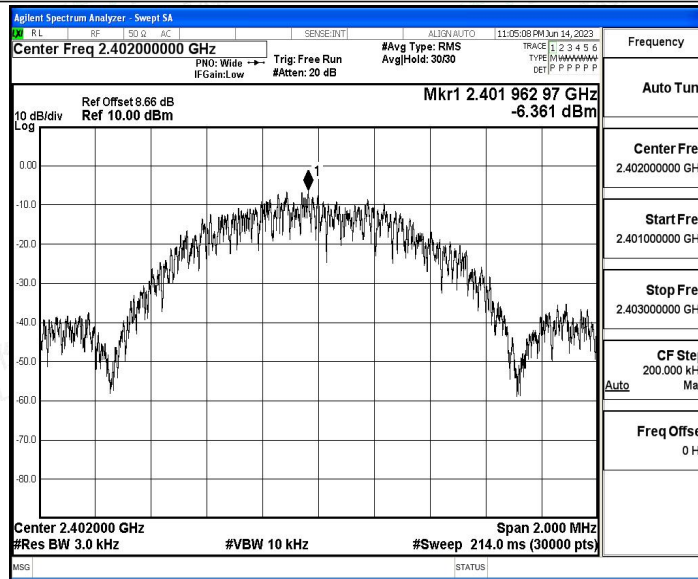
TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-6.36	≤8.00	PASS
		2440	-6.67	≤8.00	PASS
		2480	-6.75	≤8.00	PASS



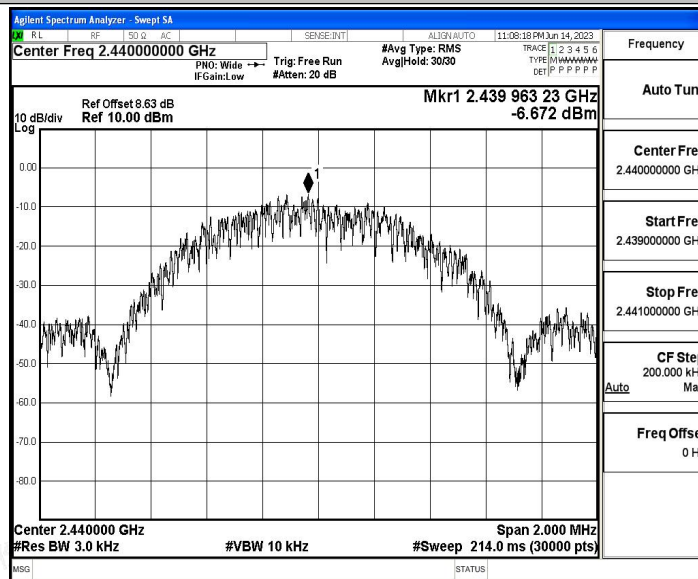


Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

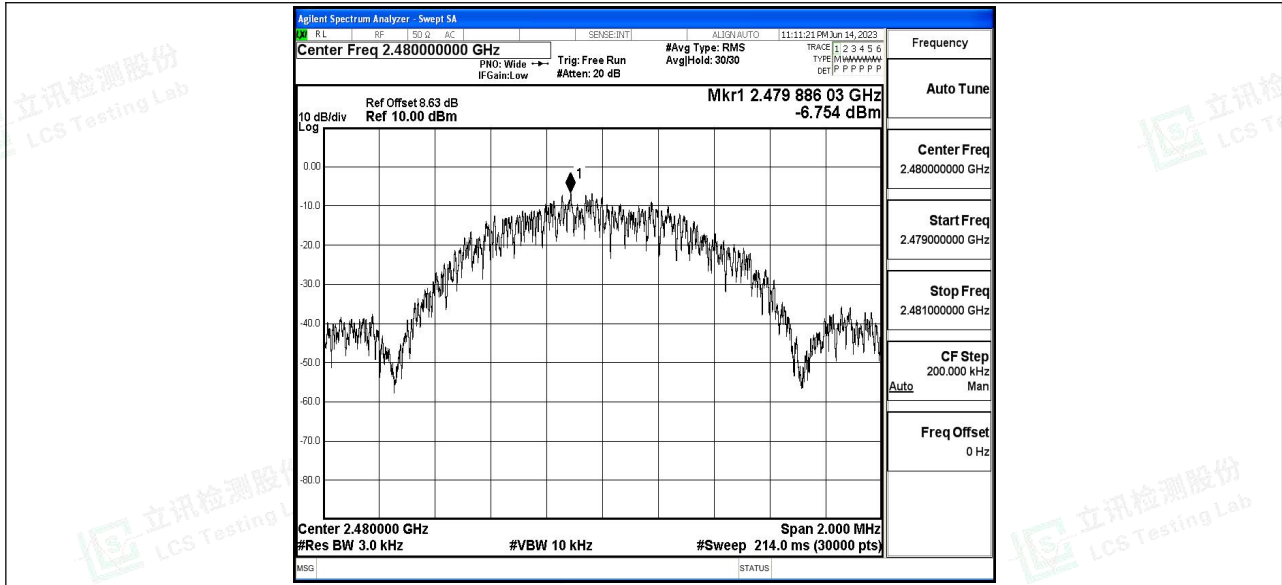


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A.5 Band edge measurements

Test Result

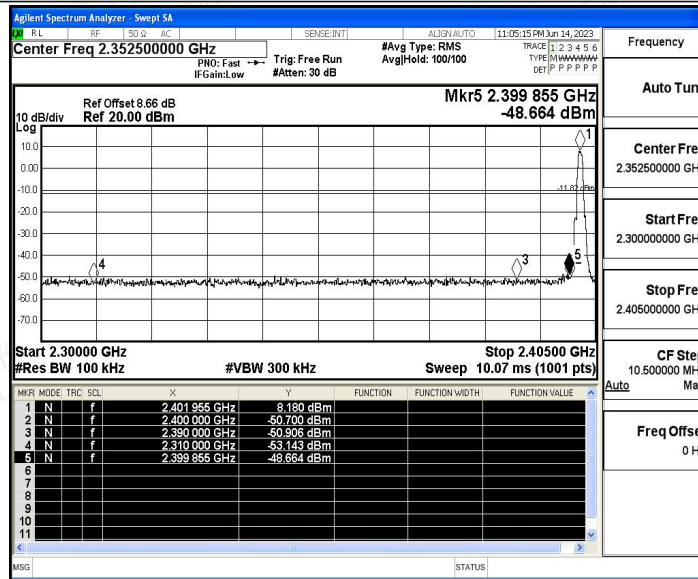
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	8.18	-48.66	≤-11.82	PASS
		High	2480	8.08	-48.29	≤-11.92	PASS



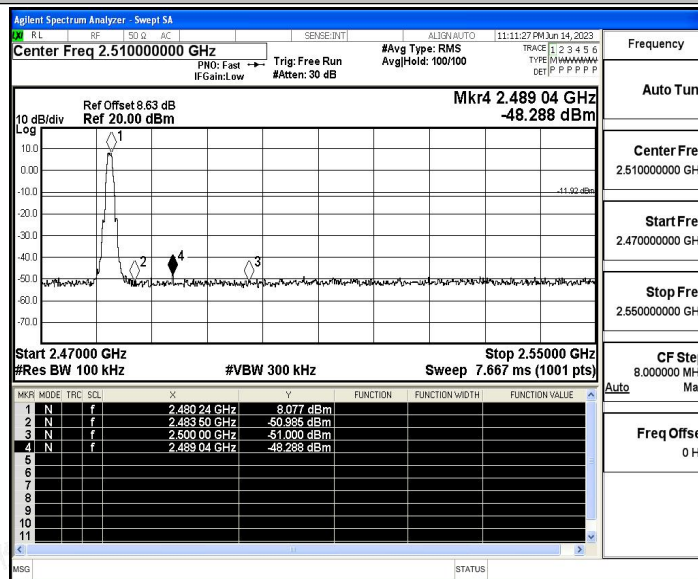


Test Graphs

BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480



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A.6 Conducted Spurious Emission

Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	7.52	7.52	---	PASS
			30~1000	7.52	-61.05	≤-12.48	PASS
			1000~26500	7.52	-46.55	≤-12.48	PASS
		2440	Reference	7.05	7.05	---	PASS
			30~1000	7.05	-59.82	≤-12.95	PASS
			1000~26500	7.05	-46.48	≤-12.95	PASS
		2480	Reference	7.85	7.85	---	PASS
			30~1000	7.85	-61.07	≤-12.15	PASS
			1000~26500	7.85	-46.04	≤-12.15	PASS



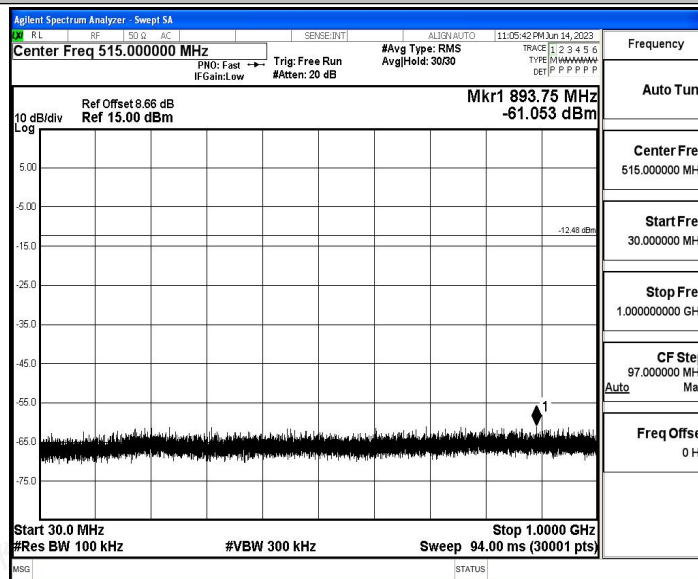


Test Graphs

BLE_1M_Ant1_2402_0~Reference



BLE_1M_Ant1_2402_30~1000



BLE_1M_Ant1_2402_1000~26500

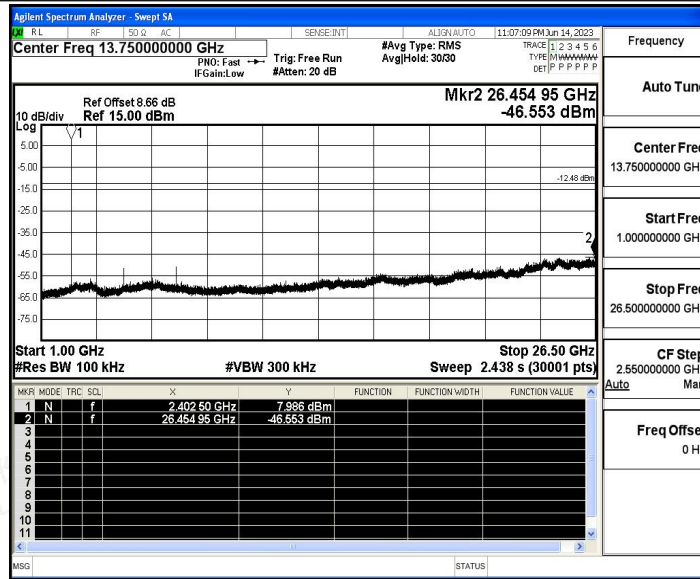


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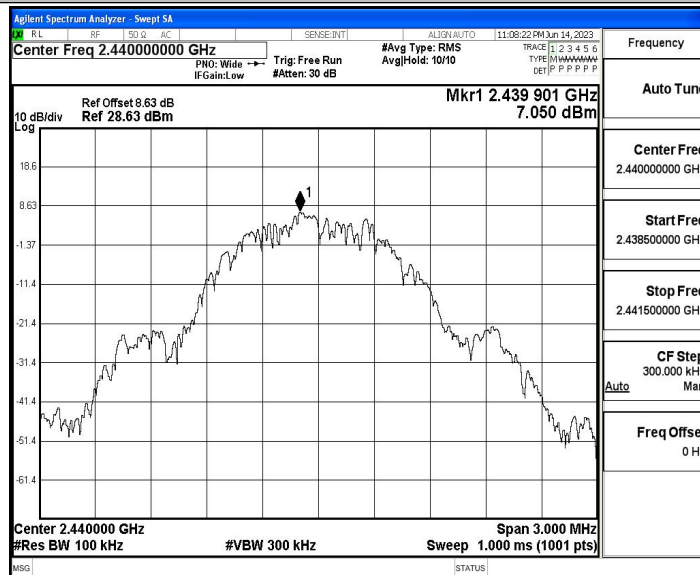
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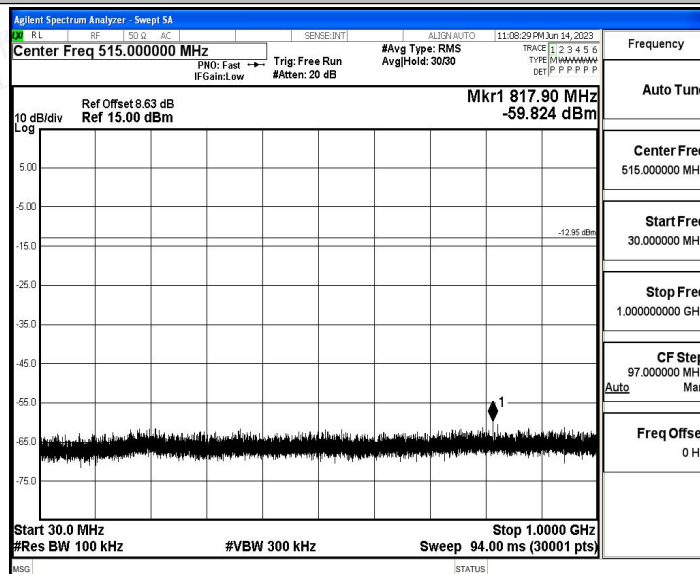
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BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



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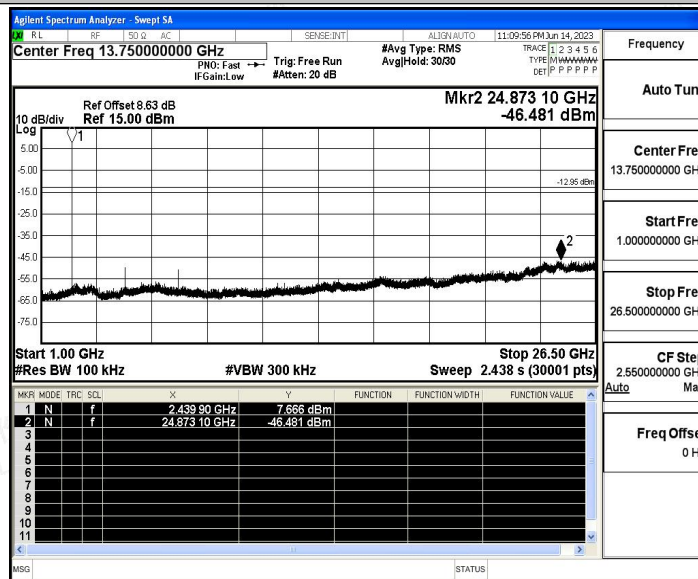
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BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000

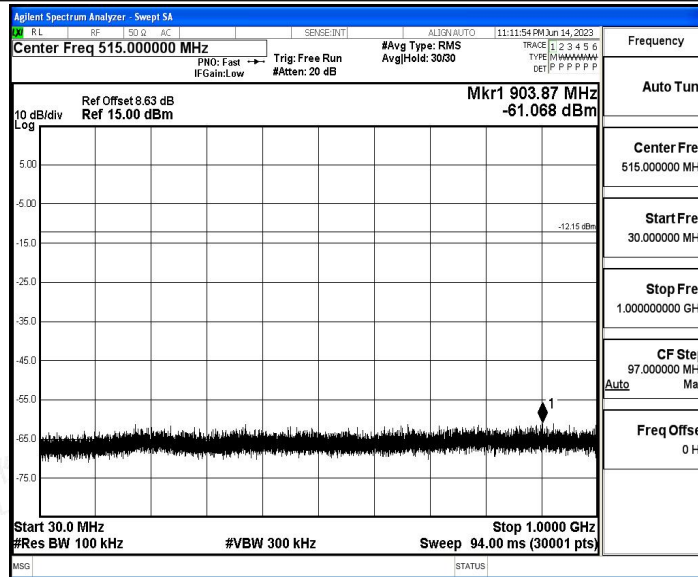


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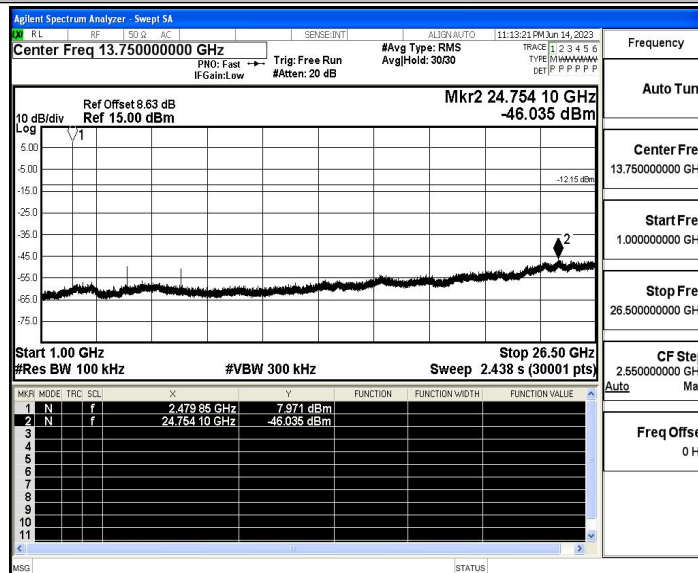
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BLE_1M_Ant1_2480_1000~26500



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A.7 Duty Cycle

Test Result

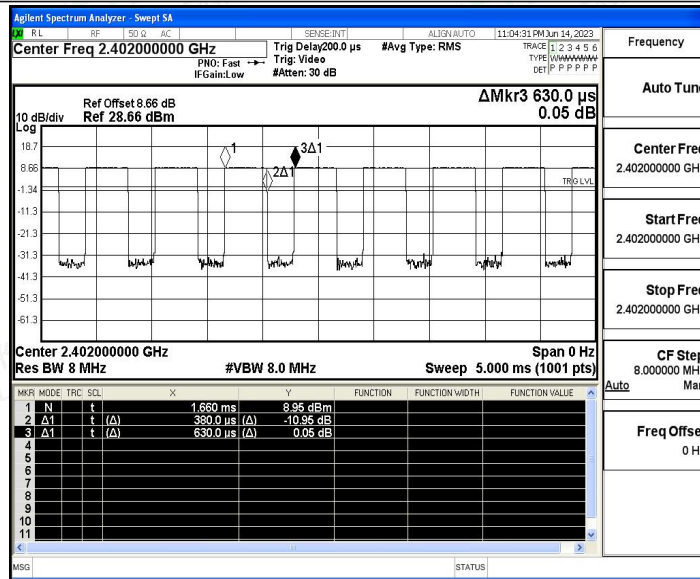
TestMode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]	1/T Factor[dB]
BLE_1M	Ant1	2402	0.38	0.63	60.32	2.20	2.63
		2440	0.38	0.63	60.32	2.20	2.63
		2480	0.38	0.63	60.32	2.20	2.63



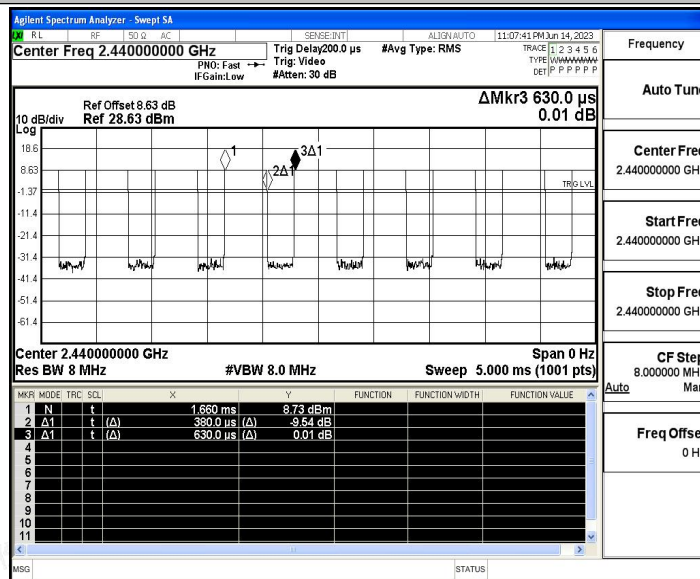


Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

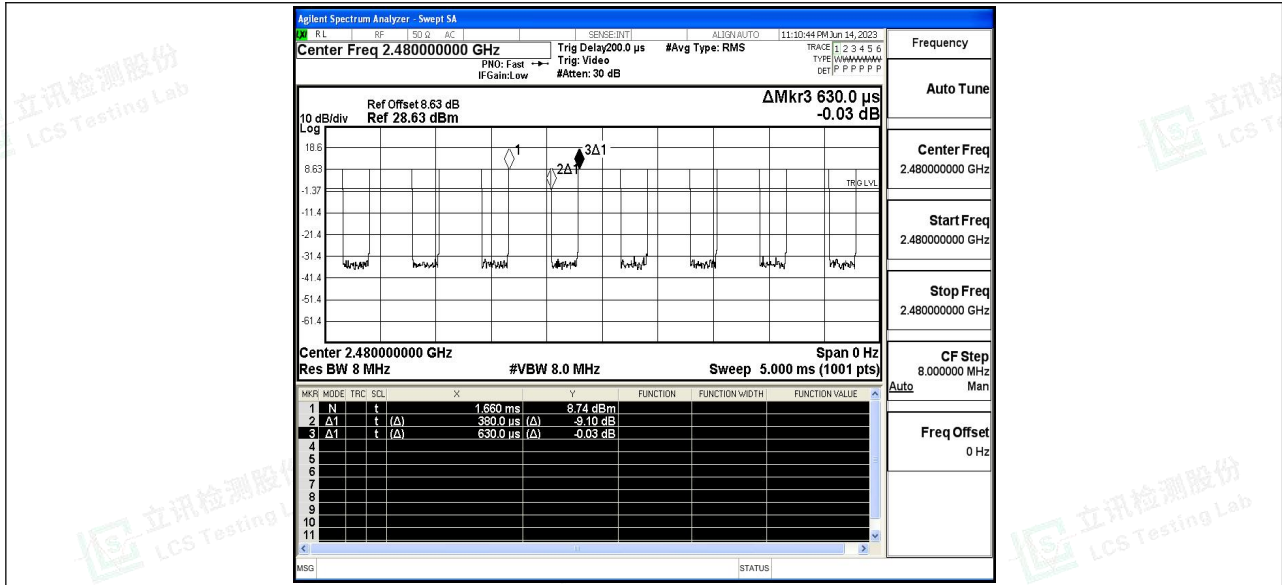


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A.8 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Frequenc y[MHz]	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-47.66	≤-41.20	47.54	≤54	PASS
				AV	2389.145	-46.7	≤-41.20	48.50	≤54	PASS
				AV	2390.000	-47.47	≤-41.20	47.73	≤54	PASS
				Peak	2310.000	-40.35	≤-21.20	54.85	≤74	PASS
				Peak	2380.745	-37.84	≤-21.20	57.36	≤74	PASS
				Peak	2390.000	-40.59	≤-21.20	54.61	≤74	PASS
		High	2480	AV	2483.500	-44.2	≤-41.20	51.00	≤54	PASS
				AV	2483.520	-44.2	≤-41.20	51.00	≤54	PASS
				AV	2500.000	-46.77	≤-41.20	48.43	≤54	PASS
				Peak	2483.500	-40.4	≤-21.20	54.80	≤74	PASS
				Peak	2492.160	-37.06	≤-21.20	58.14	≤74	PASS
				Peak	2500.000	-38.84	≤-21.20	56.36	≤74	PASS

Note:

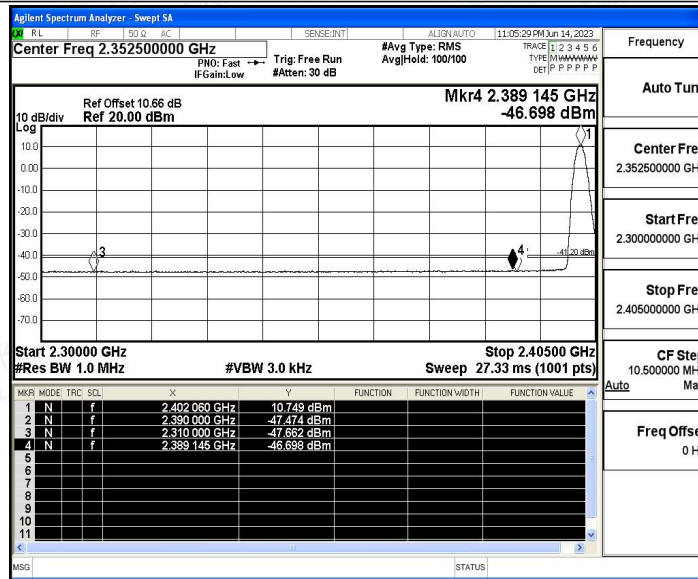
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



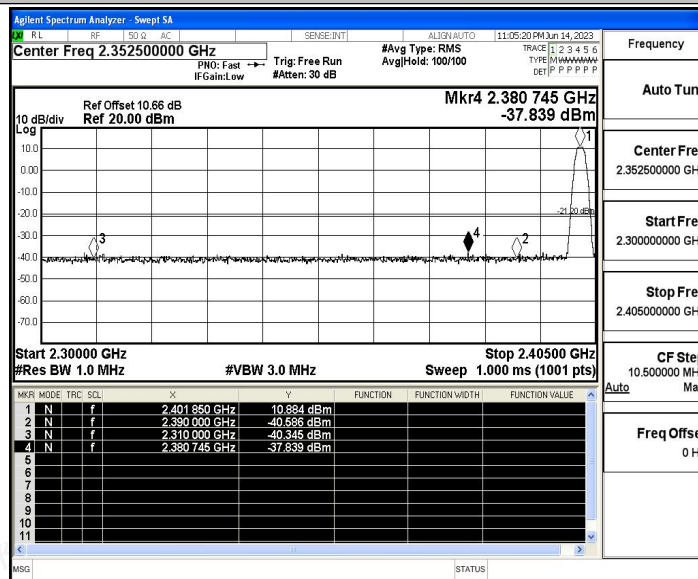


Test Graphs

BLE_1M_Ant1_Low_2402_AV



BLE_1M_Ant1_Low_2402_Peak



BLE_1M_Ant1_High_2480_AV

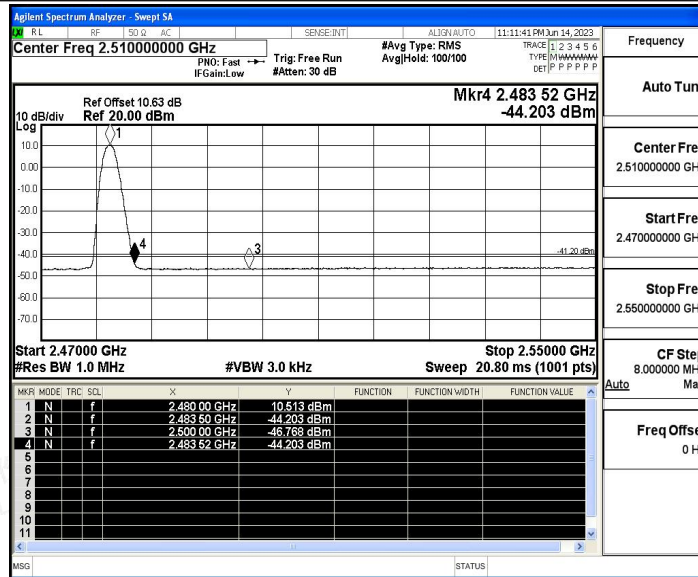


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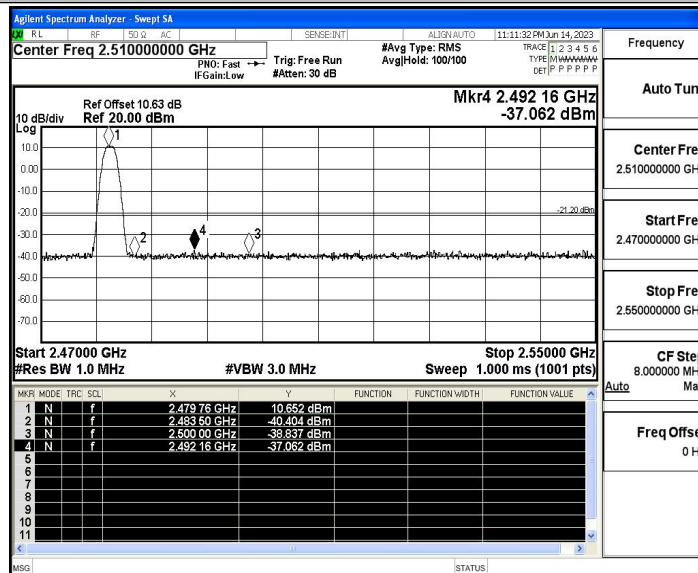
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BLE_1M_Ant1_High_2480_Peak



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