



Appendix A

RF Test Data for BT LE (Conducted Measurement)

Product Name: smart watch

Test Model: B40

Environmental Conditions

Temperature:	23.8 ° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Paddi Chen
Supervised by:	Nick Peng





A.1 DTS Bandwidth

Test Result

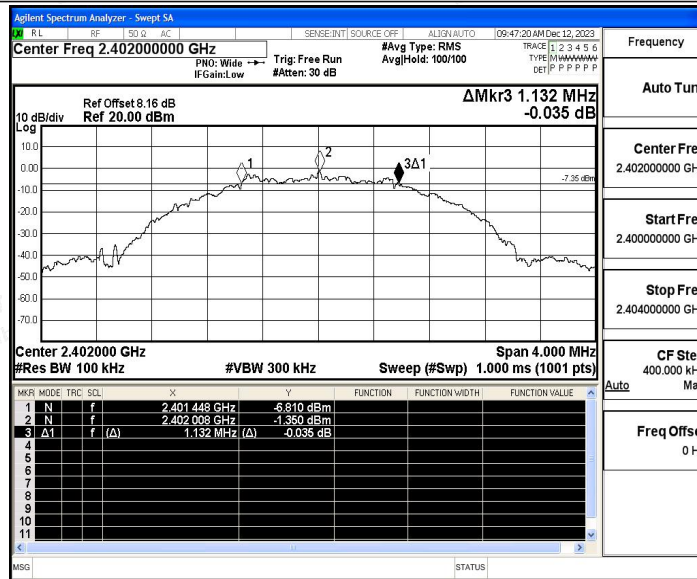
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_2M	Ant1	2402	1.132	2401.448	2402.580	0.5	PASS
		2440	1.124	2439.428	2440.552	0.5	PASS
		2480	1.344	2479.320	2480.664	0.5	PASS



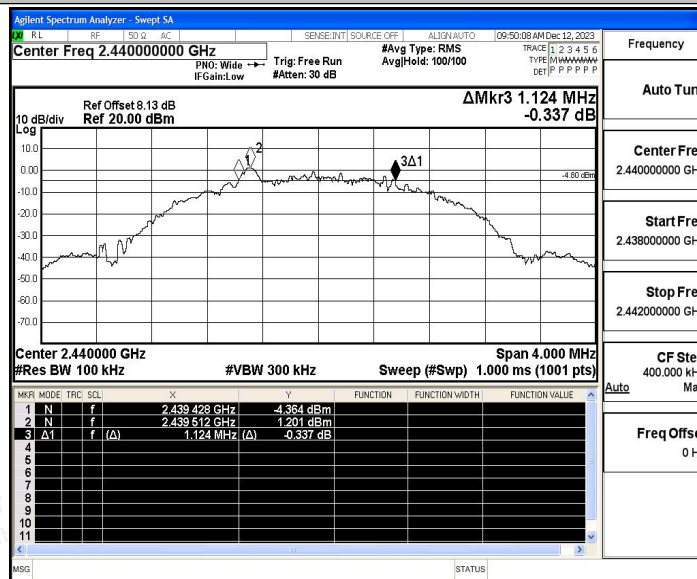


Test Graphs

BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

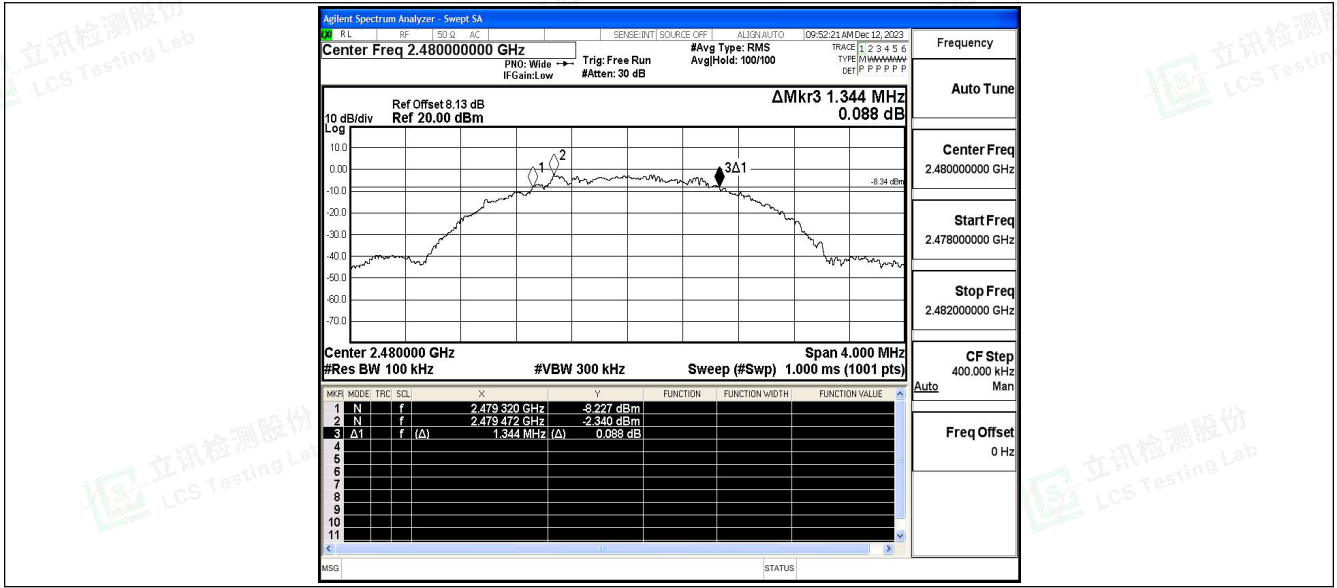


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A.2 Maximum peak conducted output power

Test Result

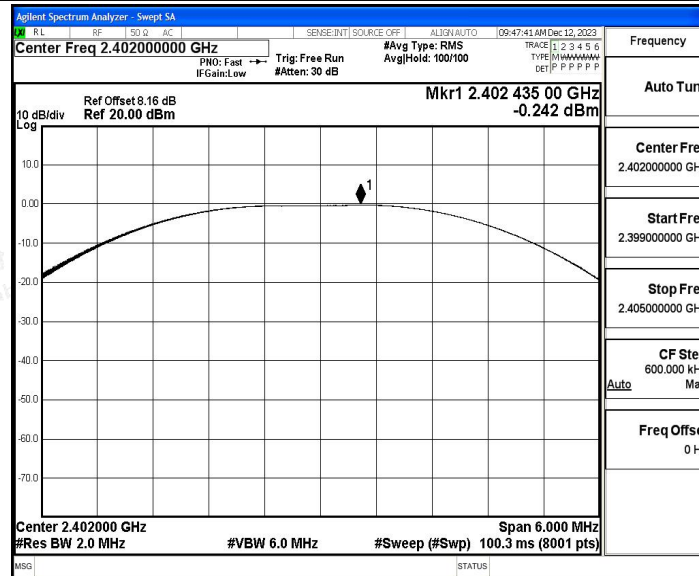
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_2M	Ant1	2402	-0.24	≤30	PASS
		2440	1.81	≤30	PASS
		2480	0.64	≤30	PASS



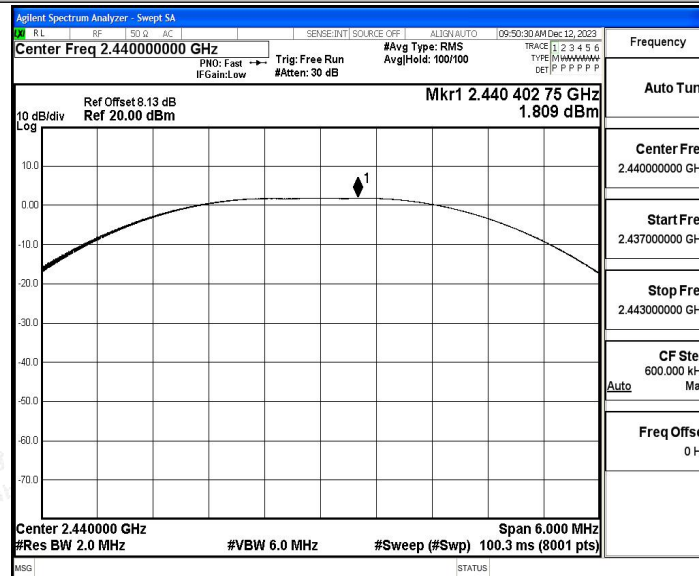


Test Graphs

BLE_2M_Ant1_2402

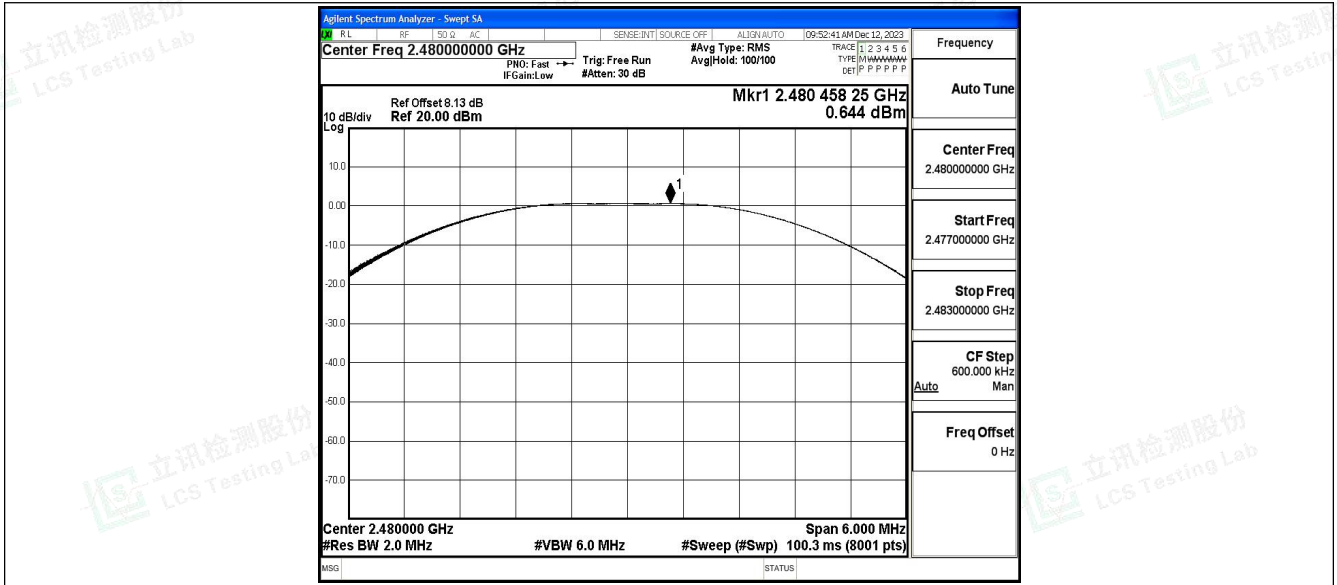


BLE_2M_Ant1_2440



BLE_2M_Ant1_2480







A.3 Maximum power spectral density

Test Result

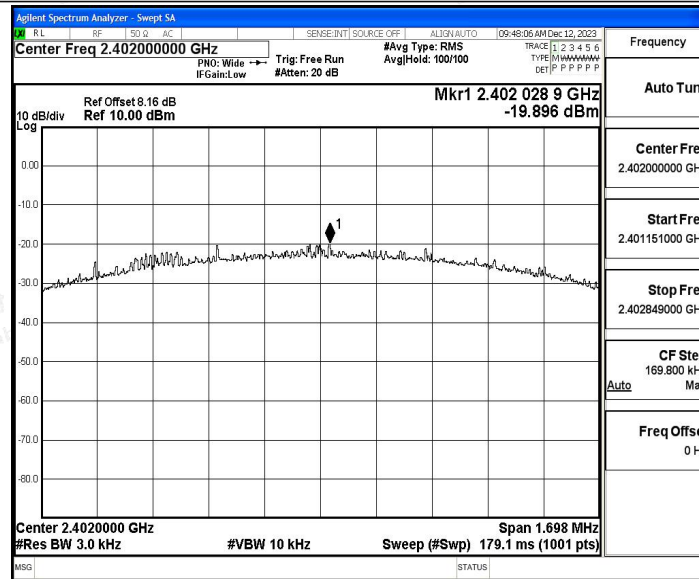
TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_2M	Ant1	2402	-19.9	≤8.00	PASS
		2440	-17.68	≤8.00	PASS
		2480	-18.91	≤8.00	PASS



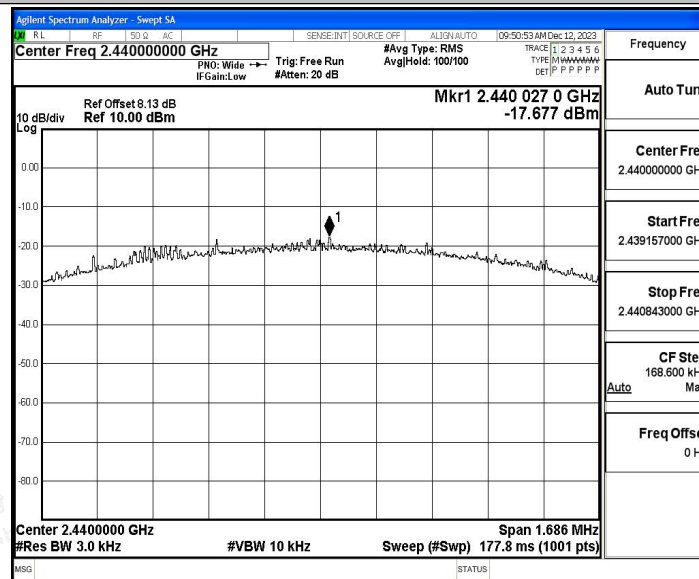


Test Graphs

BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

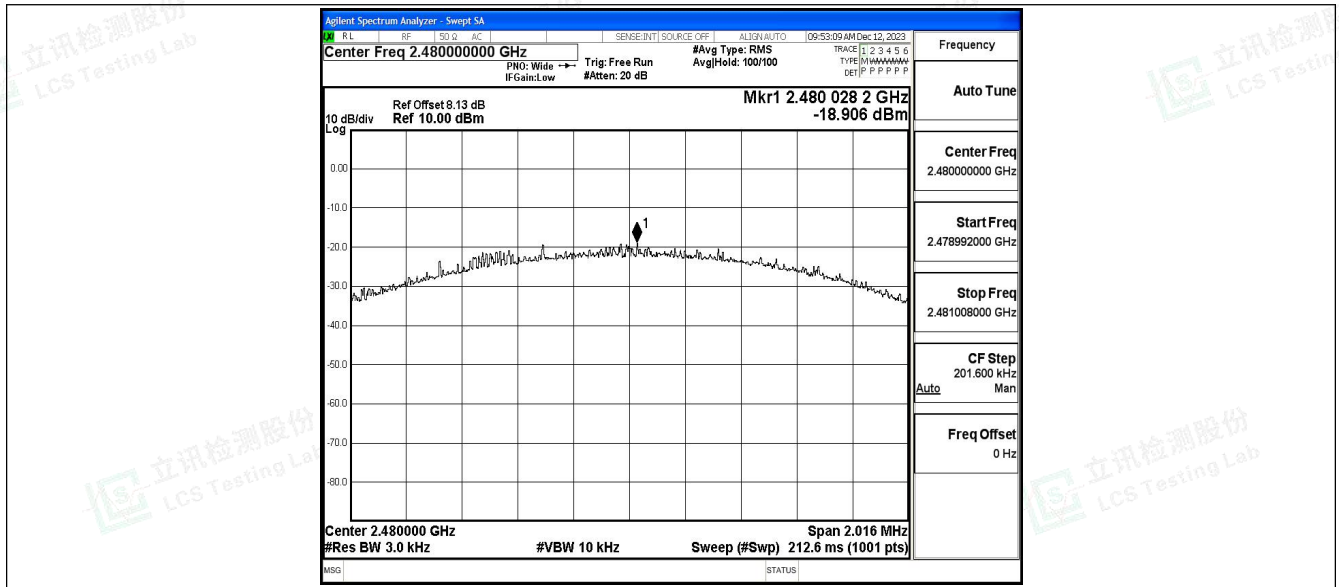


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A.4 Band edge measurements

Test Result

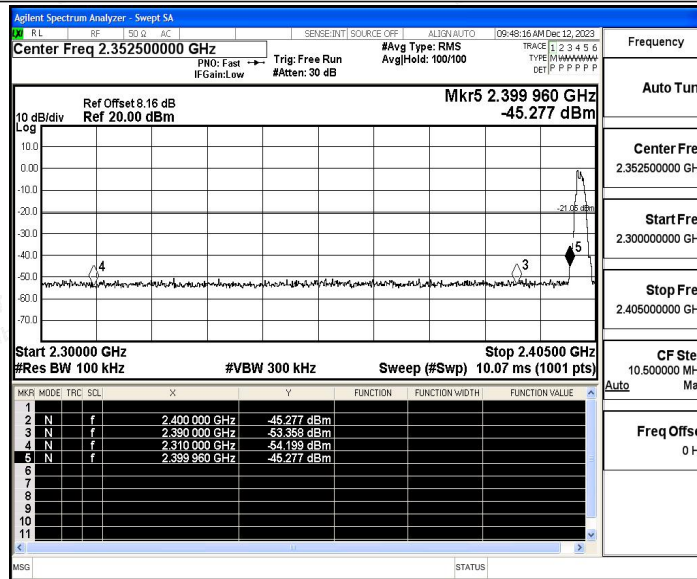
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_2M	Ant1	Low	2402	-1.05	-45.28	≤-21.05	PASS
		High	2480	0.16	-48.83	≤-19.84	PASS



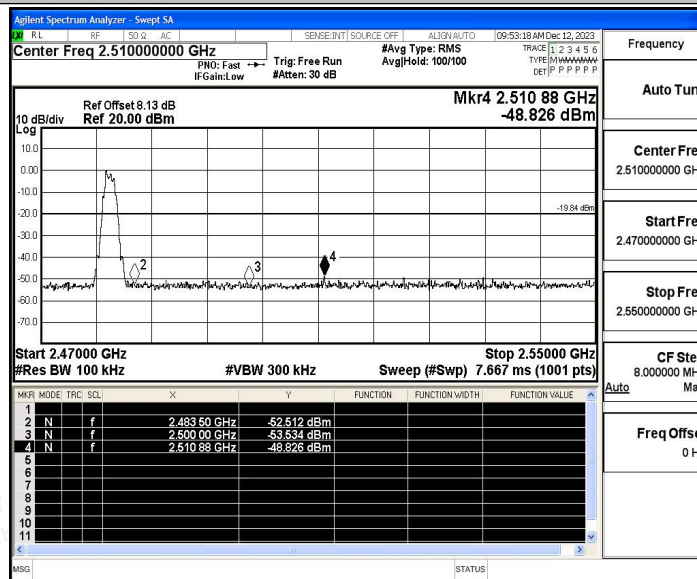


Test Graphs

BLE_2M_Ant1_Low_2402



BLE_2M_Ant1_High_2480



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A.5 Conducted Spurious Emission

Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_2M	Ant1	2402	30~1000	-1.05	-61.7	≤-21.05	PASS
			1000~26500	-1.05	-47.16	≤-21.05	PASS
		2440	30~1000	1.27	-61.73	≤-18.73	PASS
			1000~26500	1.27	-49.32	≤-18.73	PASS
		2480	30~1000	0.16	-61.92	≤-19.84	PASS
			1000~26500	0.16	-49.01	≤-19.84	PASS

Reference level measurement

Test Result

TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
BLE_2M	Ant1	2402	2401.49	-1.05
		2440	2439.51	1.27
		2480	2479.50	0.16



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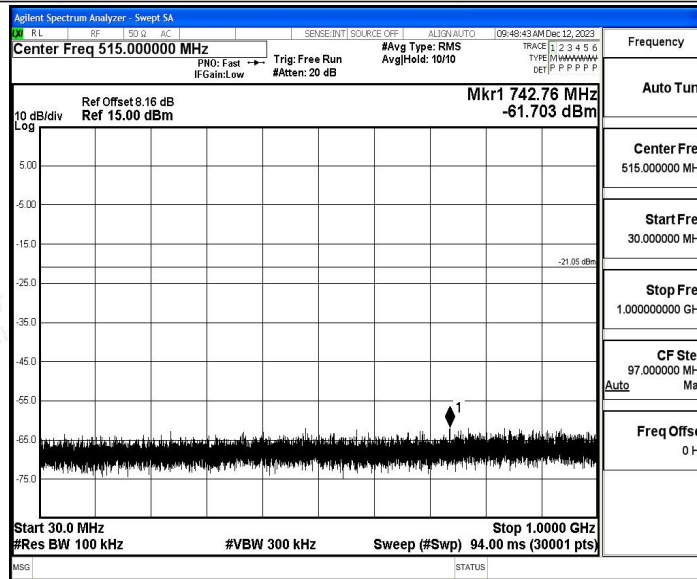
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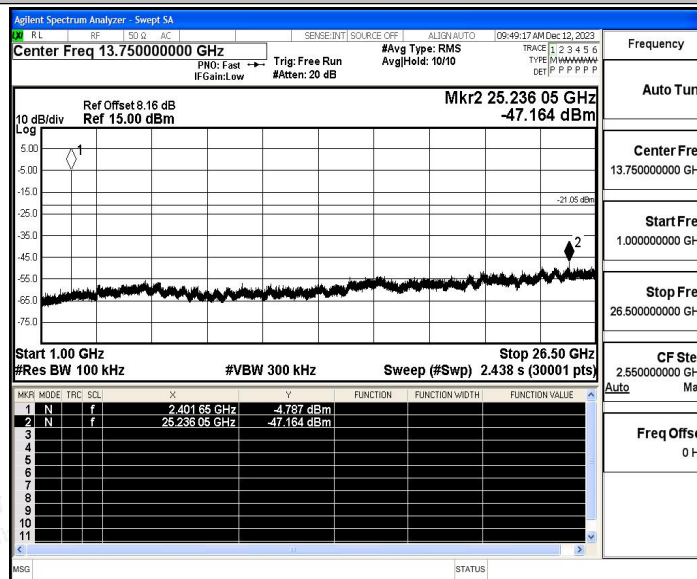


Test Graphs

BLE_2M_Ant1_2402_30~1000



BLE_2M_Ant1_2402_1000~26500



BLE_2M_Ant1_2440_30~1000

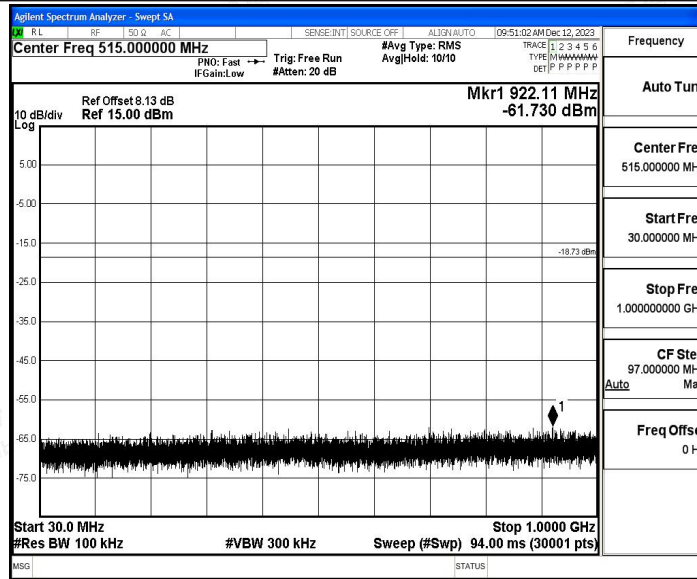


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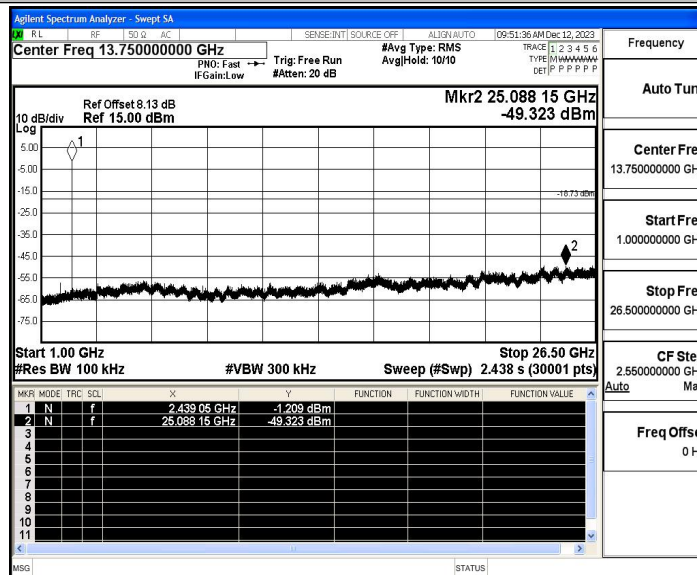
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BLE_2M_Ant1_2440_1000~26500



BLE_2M_Ant1_2480_30~1000

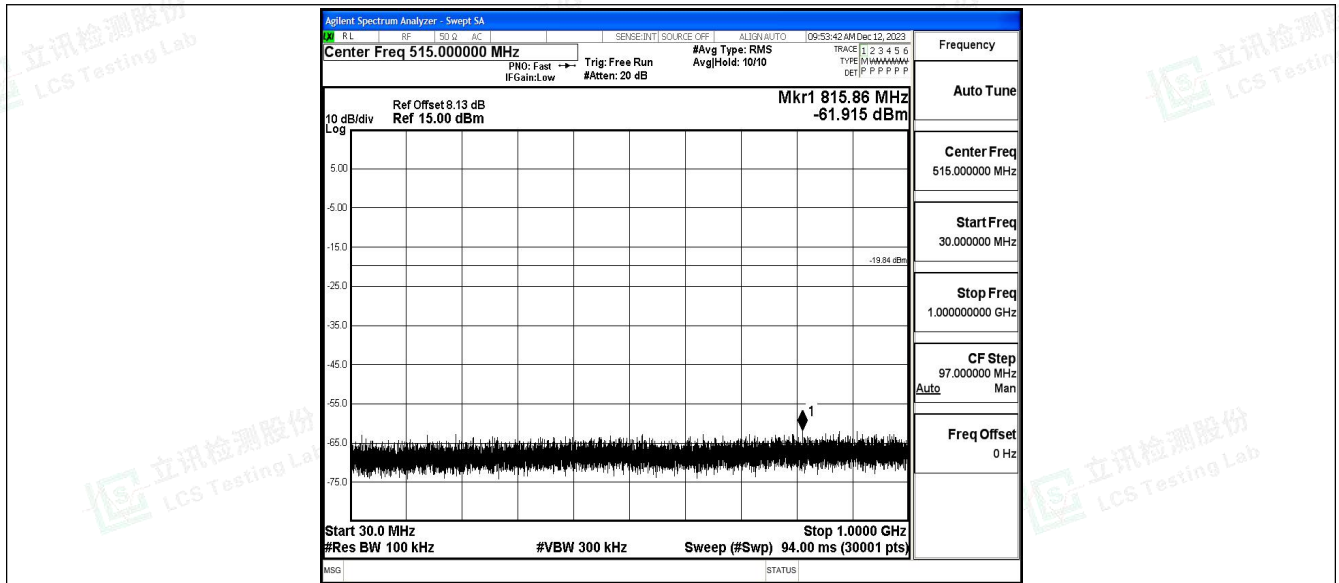


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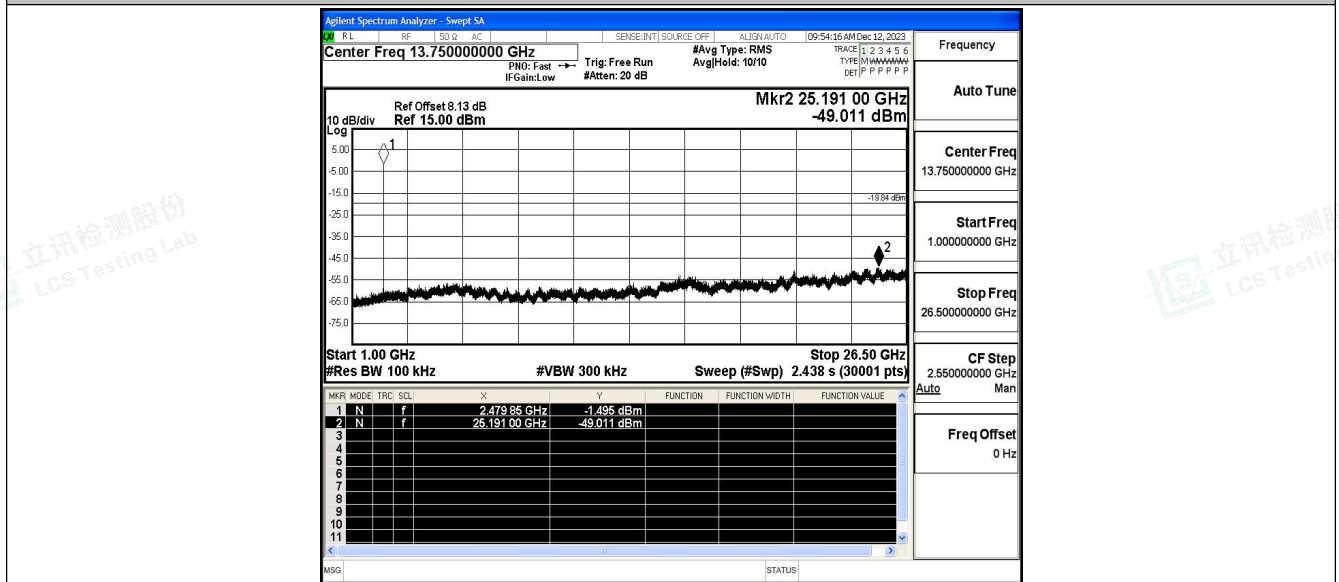
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BLE_2M_Ant1_2480_1000~26500



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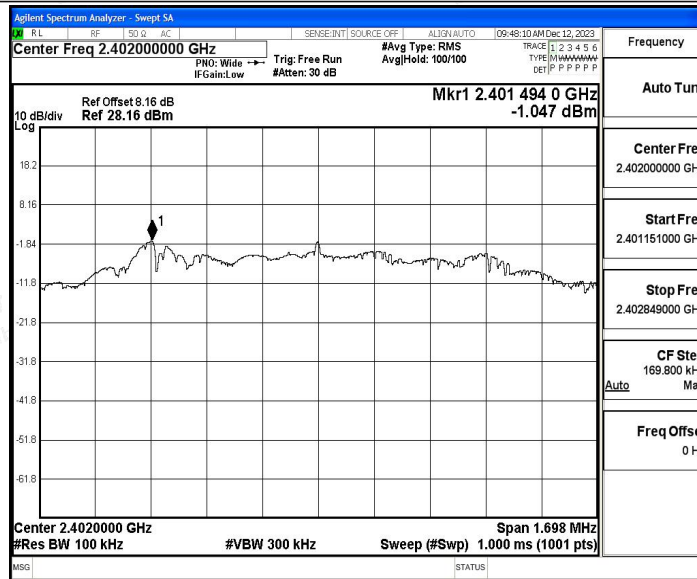
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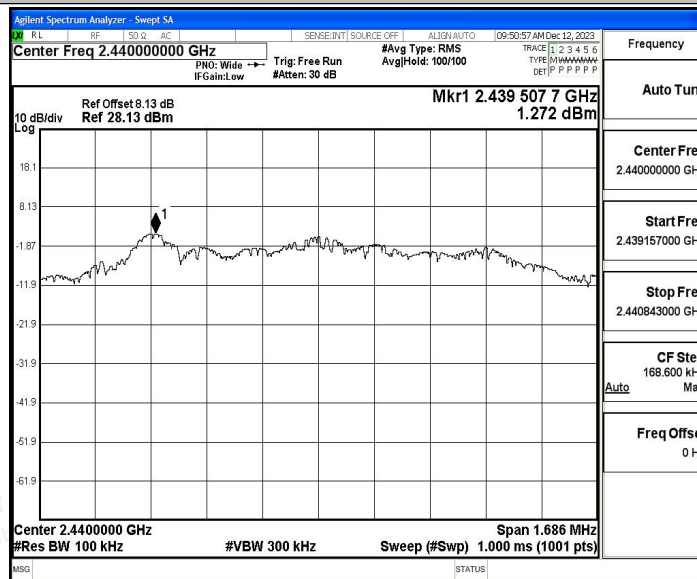


Test Graphs

BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

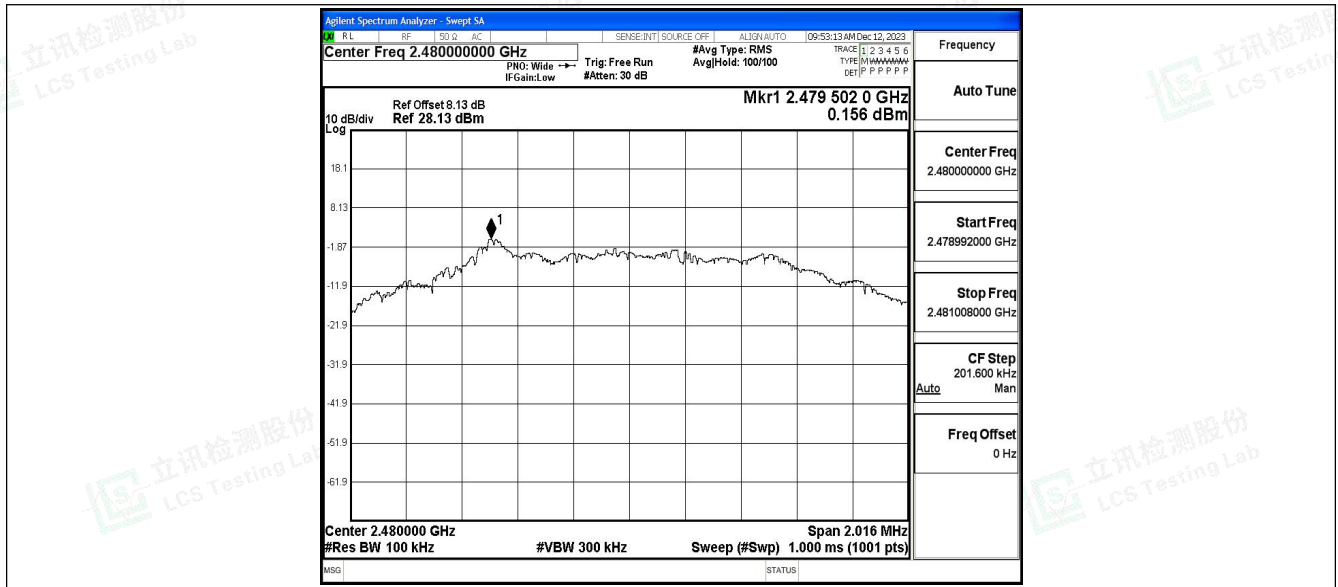


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A.6 Duty Cycle

Test Result

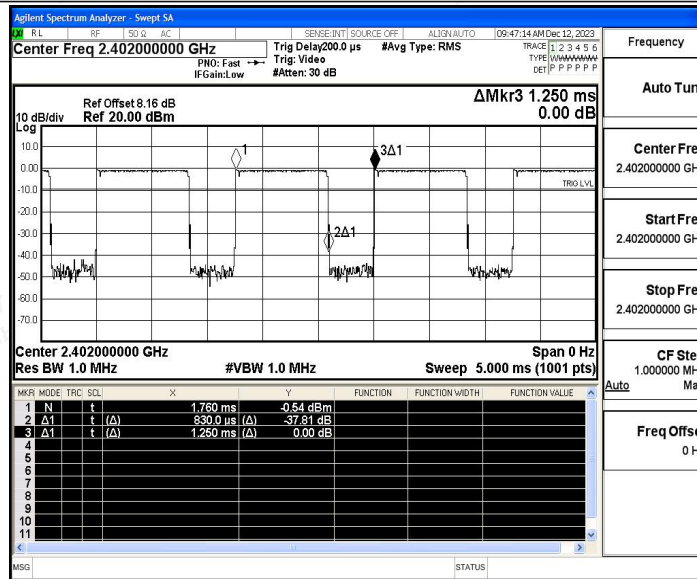
TestMode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]	1/T Factor[dB]
BLE_2M	Ant1	2402	0.83	1.25	66.40	1.78	1.20
		2440	0.83	1.25	66.40	1.78	1.20
		2480	0.83	1.25	66.40	1.78	1.20



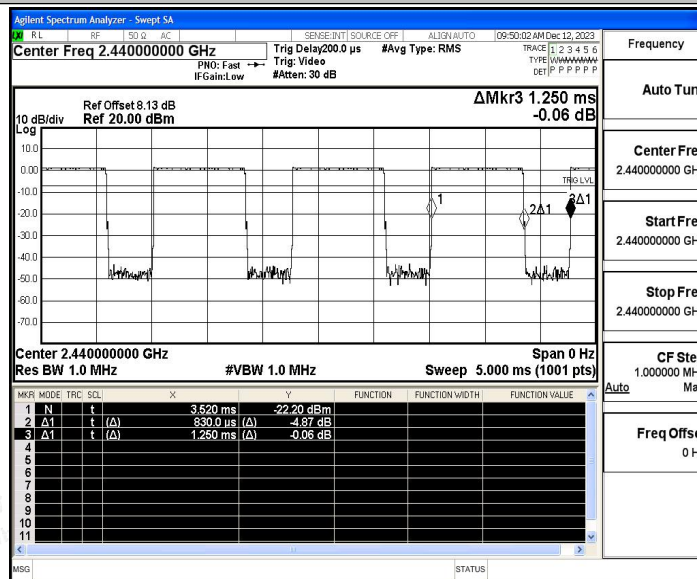


Test Graphs

BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

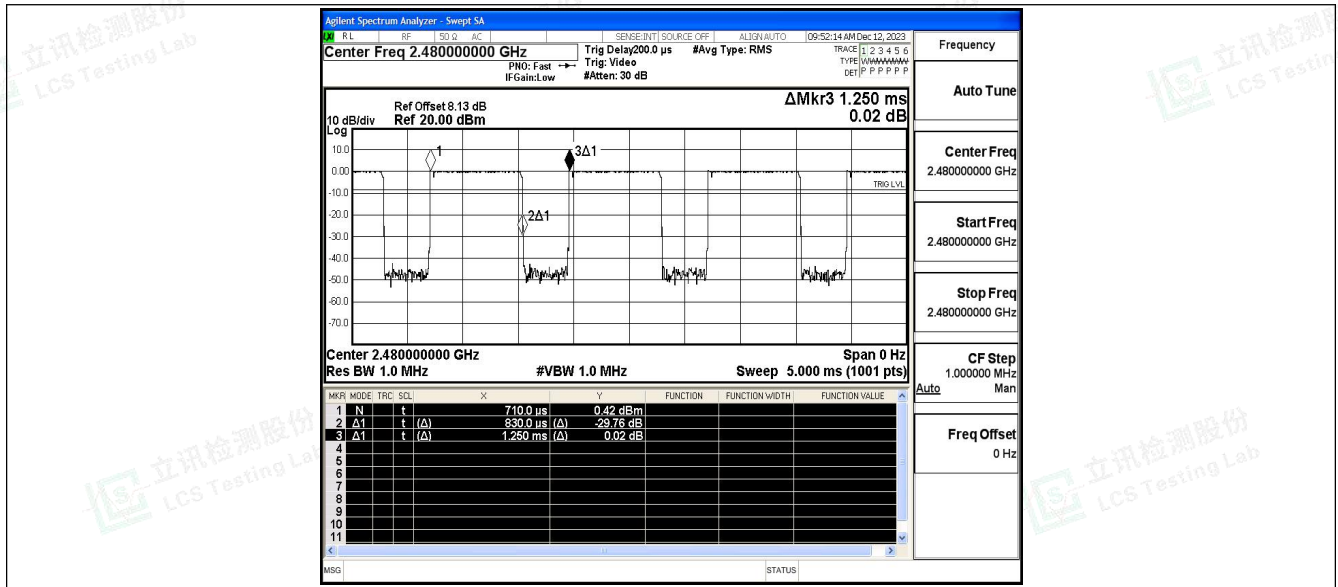


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A.7 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Frequenc y[MHz]	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_2M	Ant1	Low	2402	AV	2310.000	-48.81	≤-41.20	46.39	≤54	PASS
				AV	2375.390	-48.2	≤-41.20	47.00	≤54	PASS
				AV	2390.000	-48.42	≤-41.20	46.78	≤54	PASS
				Peak	2310.000	-43.25	≤-21.20	51.95	≤74	PASS
				Peak	2389.670	-39.37	≤-21.20	55.83	≤74	PASS
				Peak	2390.000	-40.38	≤-21.20	54.82	≤74	PASS
		High	2480	AV	2483.500	-46.73	≤-41.20	48.47	≤54	PASS
				AV	2483.520	-46.73	≤-41.20	48.47	≤54	PASS
				AV	2500.000	-48.36	≤-41.20	46.84	≤54	PASS
				Peak	2483.500	-41.97	≤-21.20	53.23	≤74	PASS
				Peak	2489.120	-39.05	≤-21.20	56.15	≤74	PASS
				Peak	2500.000	-41.46	≤-21.20	53.74	≤74	PASS

Note:

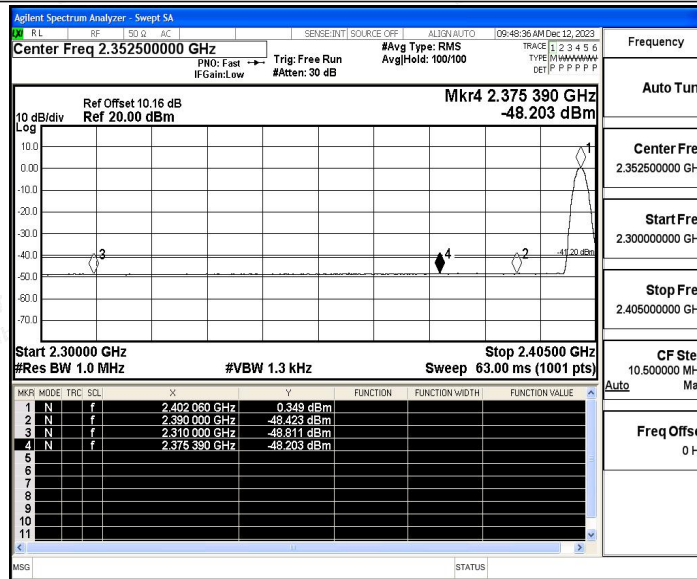
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



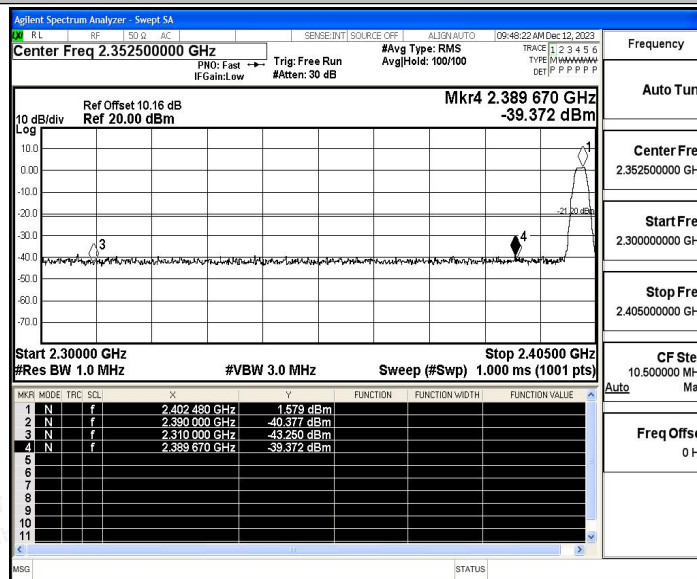


Test Graphs

BLE_2M_Ant1_Low_2402_AV



BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV

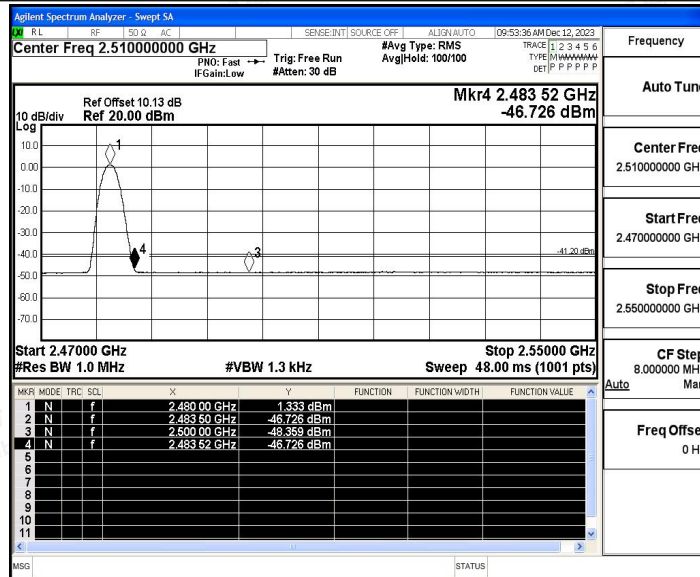


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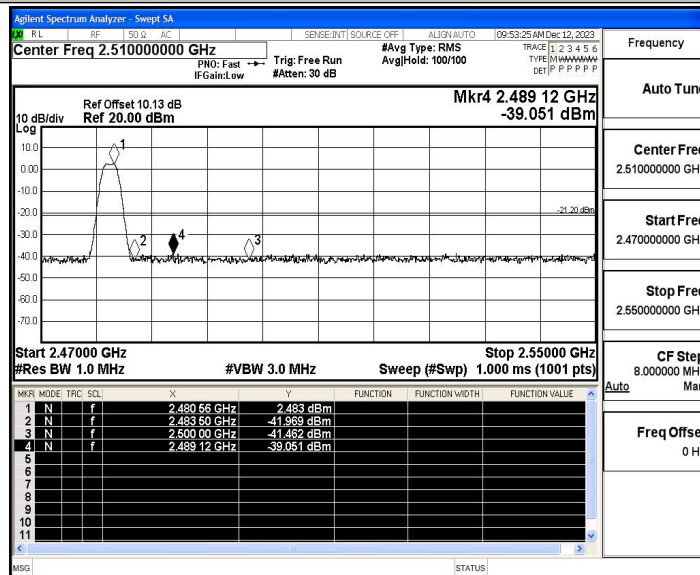
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BLE_2M_Ant1_High_2480_Peak



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