



Appendix A

RF Test Data for BLE (Conducted Measurement)

Product Name: Smart Dimmer Switch

Test Model: US01

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:	Ling Zhu
	<i>Ling Zhu</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	0.652	2401.676	2402.328	0.5	PASS
		2440	0.652	2439.672	2440.324	0.5	PASS
		2480	0.644	2479.676	2480.320	0.5	PASS
BLE_2M	Ant1	2402	1.272	2401.332	2402.604	0.5	PASS
		2440	1.272	2439.332	2440.604	0.5	PASS
		2480	1.268	2479.332	2480.600	0.5	PASS



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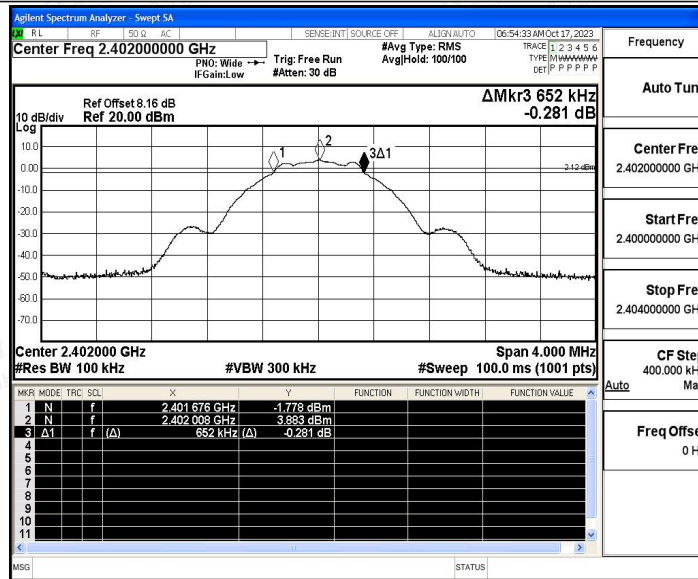
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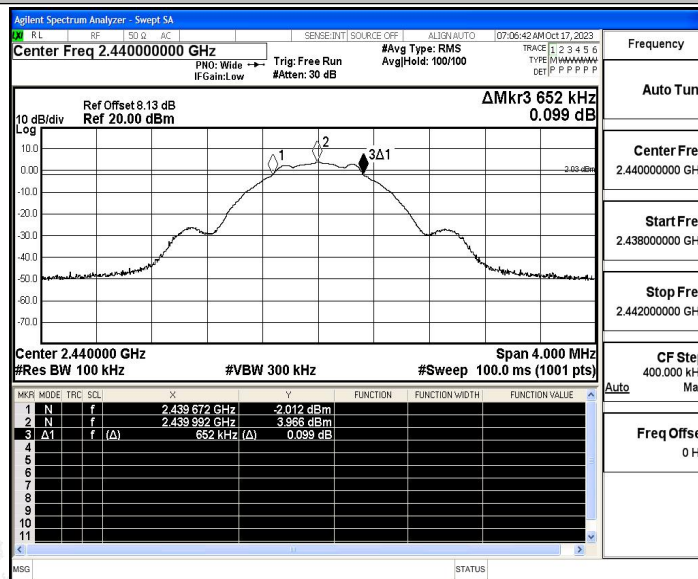


Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

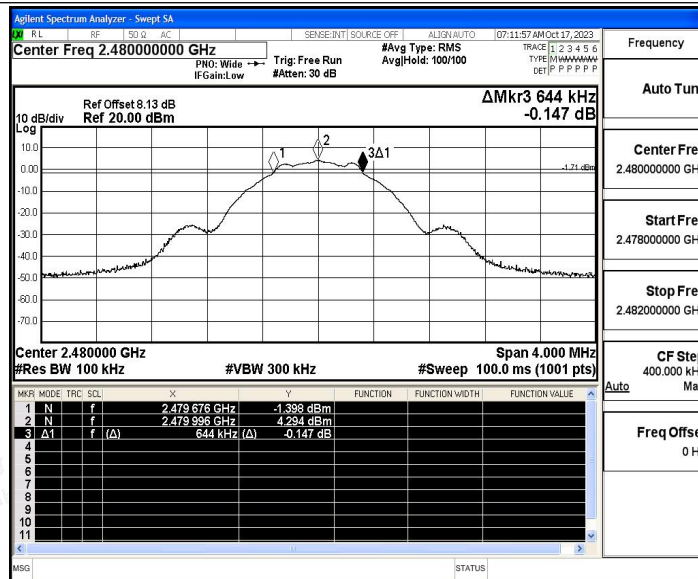


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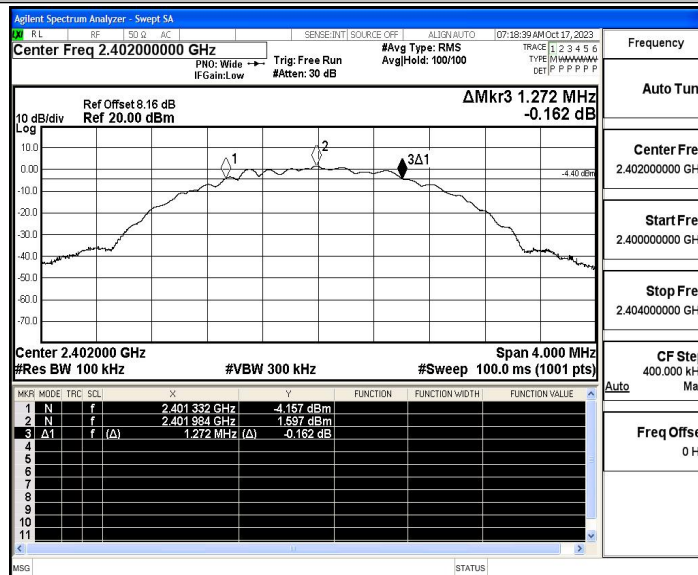
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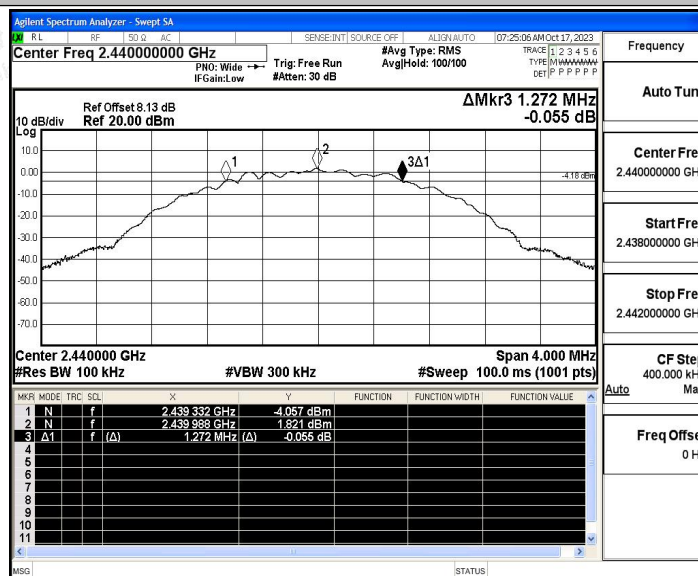
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BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



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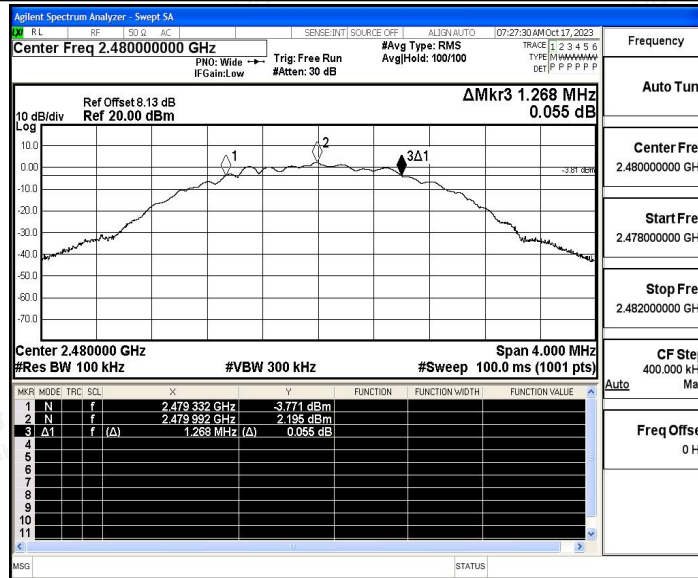
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BLE_2M_Ant1_2480



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A.2 Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0293	2401.4907	2402.5200	---	---
		2440	1.0320	2439.4871	2440.5191	---	---
		2480	1.0287	2479.4868	2480.5155	---	---
BLE_2M	Ant1	2402	2.0514	2400.9887	2403.0401	---	---
		2440	2.0492	2438.9875	2441.0367	---	---
		2480	2.0495	2478.9886	2481.0381	---	---



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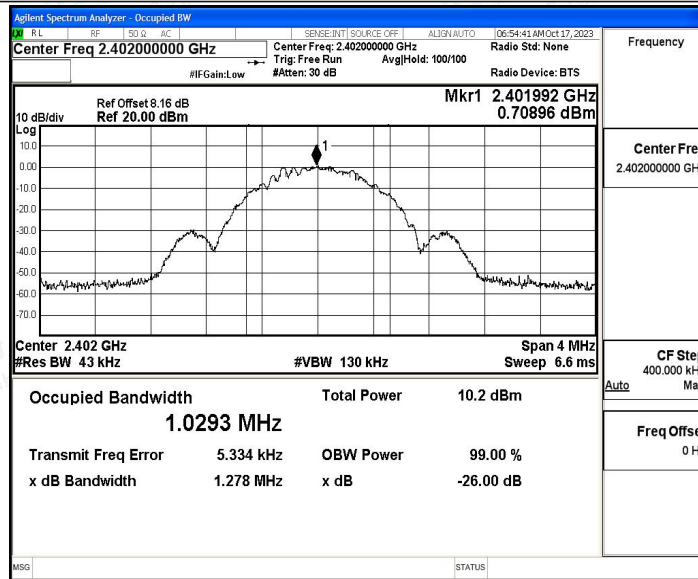
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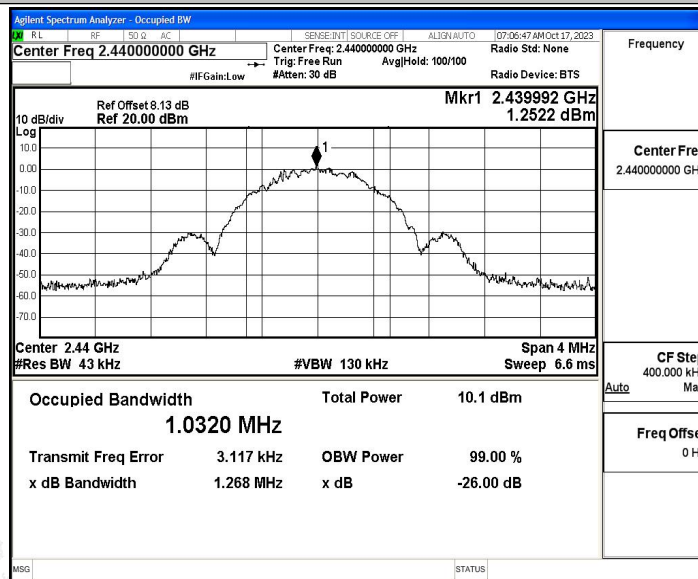


Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

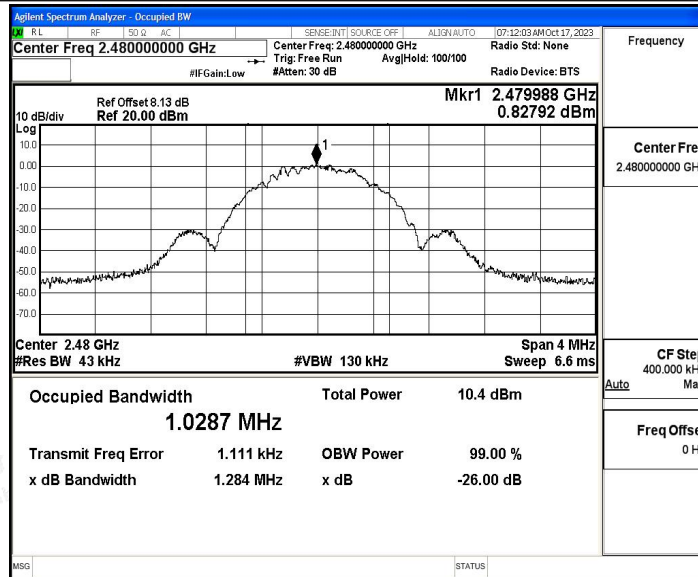


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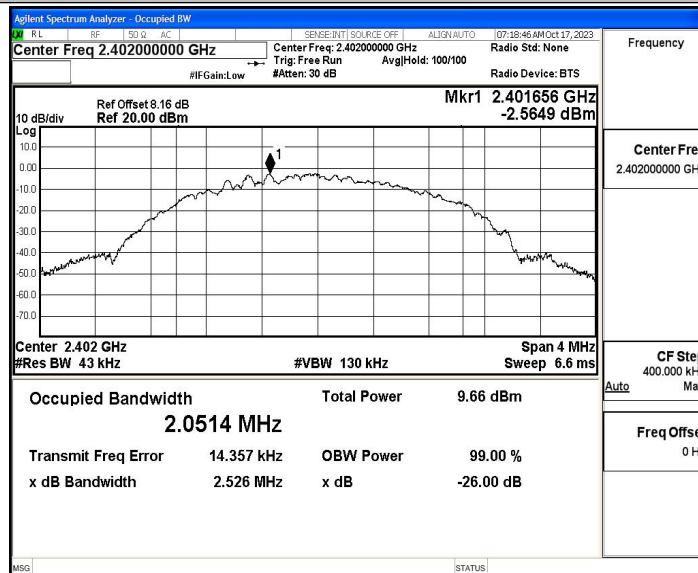
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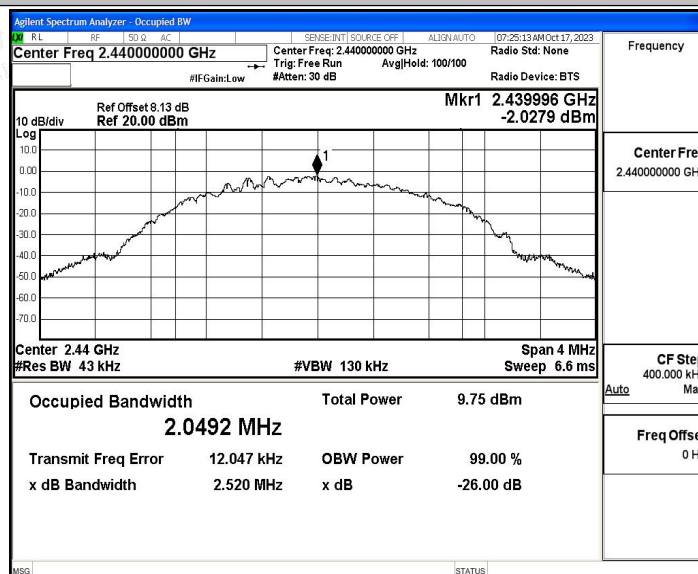
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BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



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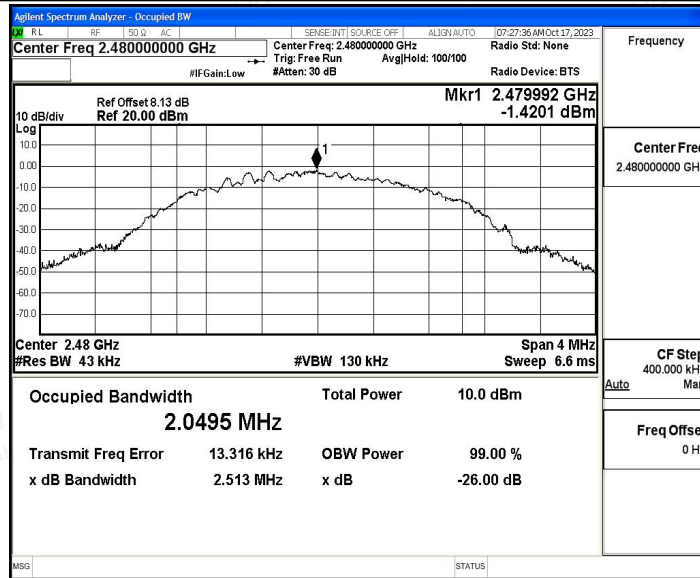
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BLE_2M_Ant1_2480



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A.3 Maximum Peak Conducted Output Power

Test Result Peak

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	5.03	≤30	PASS
		2440	5.11	≤30	PASS
		2480	5.34	≤30	PASS
BLE_2M	Ant1	2402	4.9	≤30	PASS
		2440	5.14	≤30	PASS
		2480	5.49	≤30	PASS

EIRP

Condition	Mode	Frequency (MHz)	Antenna	Maximum Peak Output Power [dBm]	Antenna Gain	Report EIRP Power(dBm)	Limit (dBm)	Verdict
NVNT	BLE_1M	2402	Ant1	5.03	-1.29	3.74	36	Pass
NVNT	BLE_1M	2440	Ant1	5.11	-1.29	3.82	36	Pass
NVNT	BLE_1M	2480	Ant1	5.34	-1.29	4.05	36	Pass
NVNT	BLE_2M	2402	Ant1	4.9	-1.29	3.61	36	Pass
NVNT	BLE_2M	2440	Ant1	5.14	-1.29	3.85	36	Pass
NVNT	BLE_2M	2480	Ant1	5.49	-1.29	4.2	36	Pass



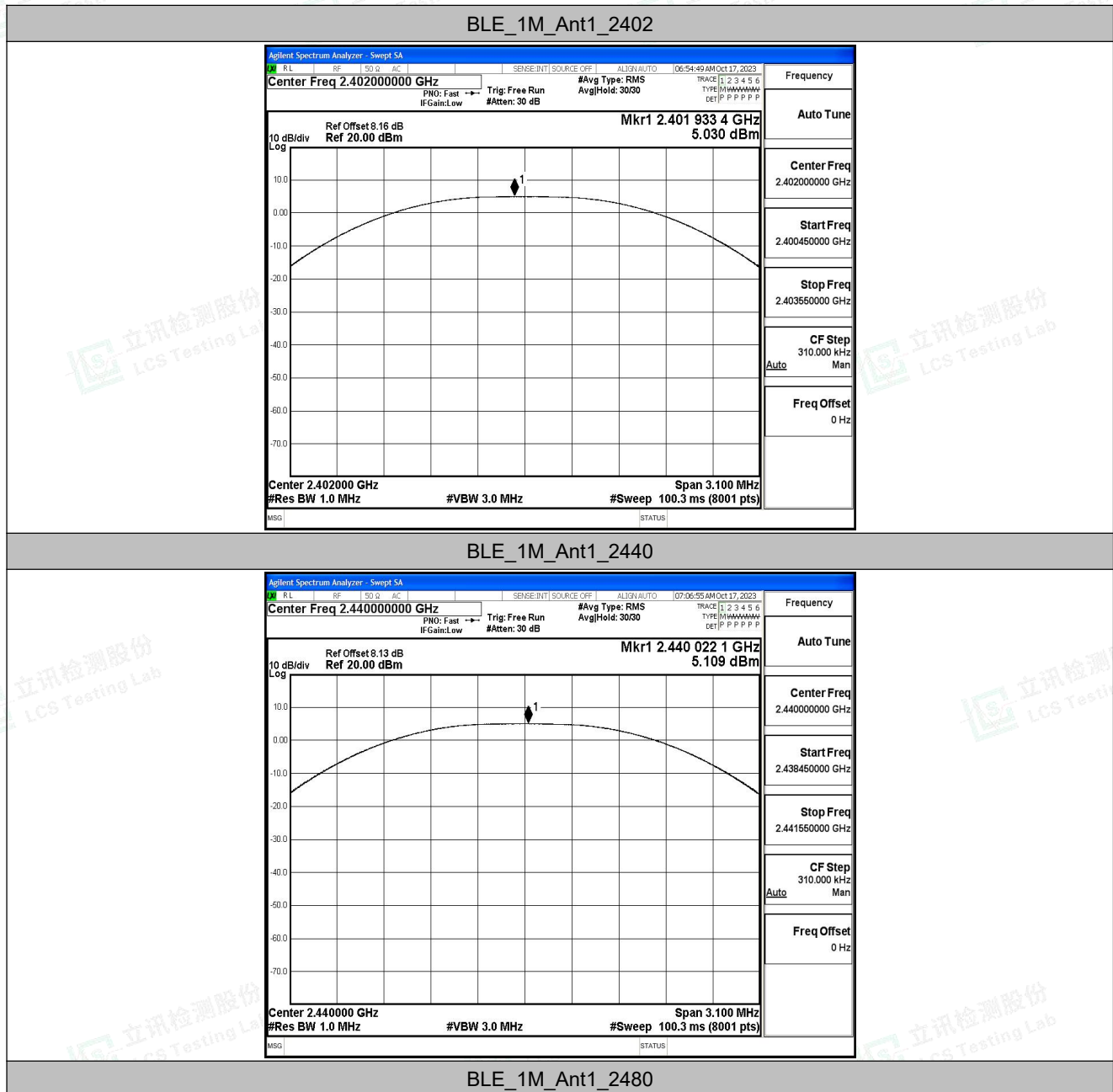
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Test Graphs

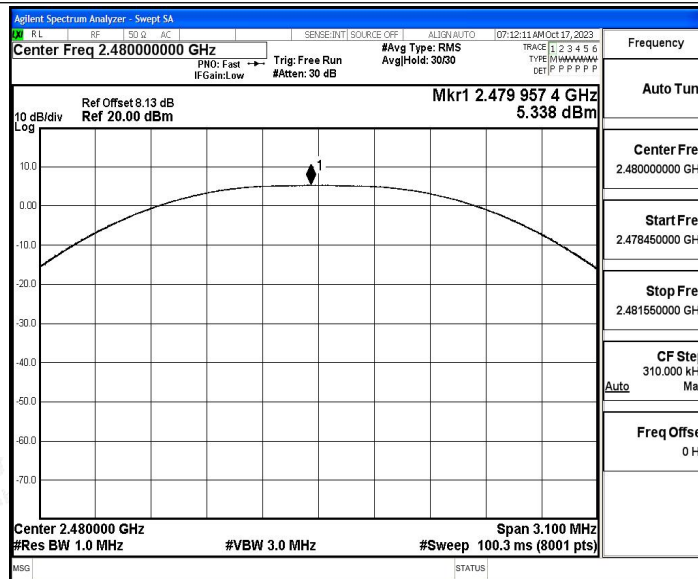


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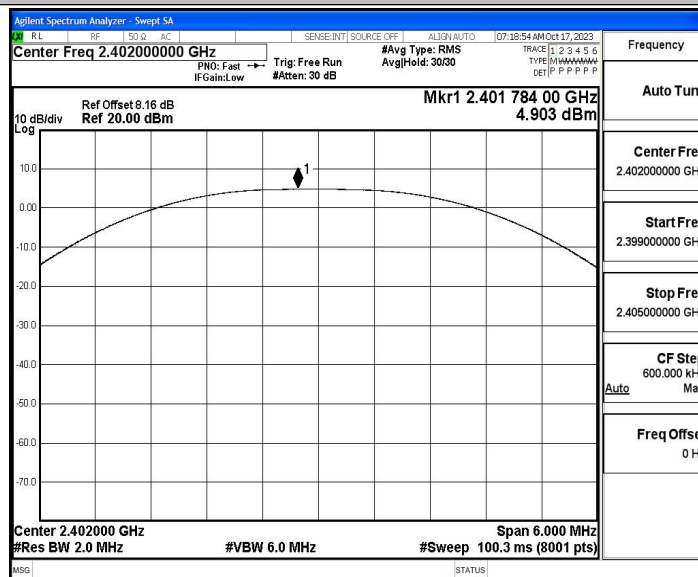
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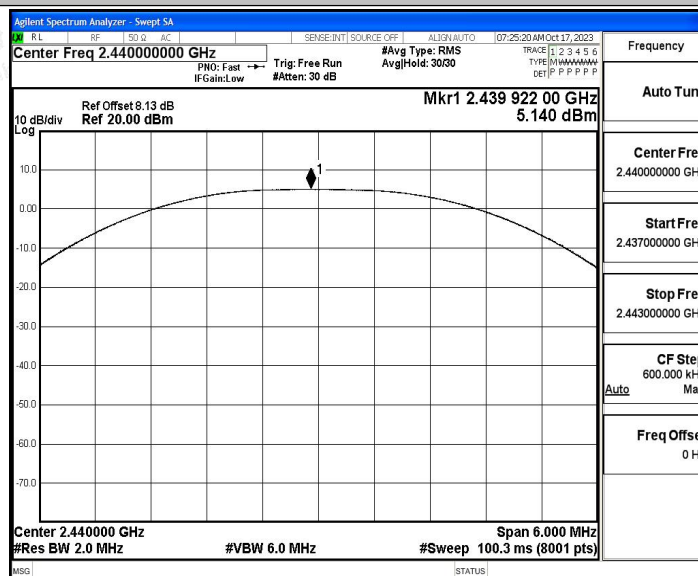
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BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



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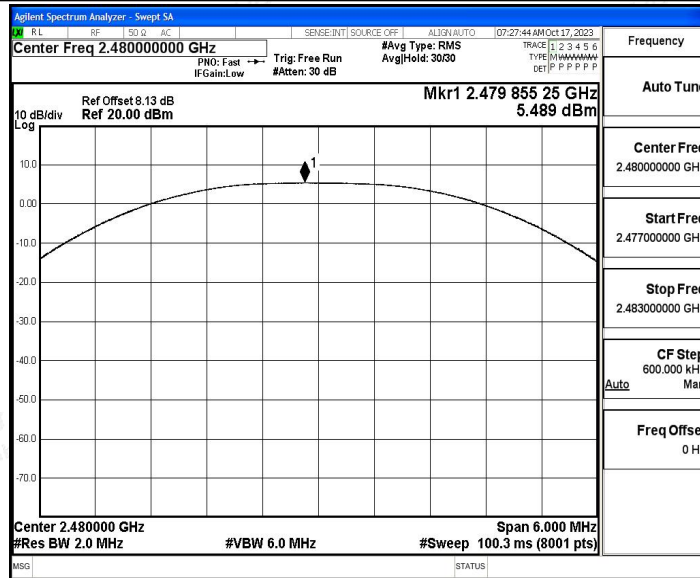
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BLE_2M_Ant1_2480



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A.4 Maximum power spectral density

Test Result

TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-11.4	≤8.00	PASS
		2440	-10.63	≤8.00	PASS
		2480	-9.79	≤8.00	PASS
BLE_2M	Ant1	2402	-16.61	≤8.00	PASS
		2440	-15.64	≤8.00	PASS
		2480	-13.95	≤8.00	PASS



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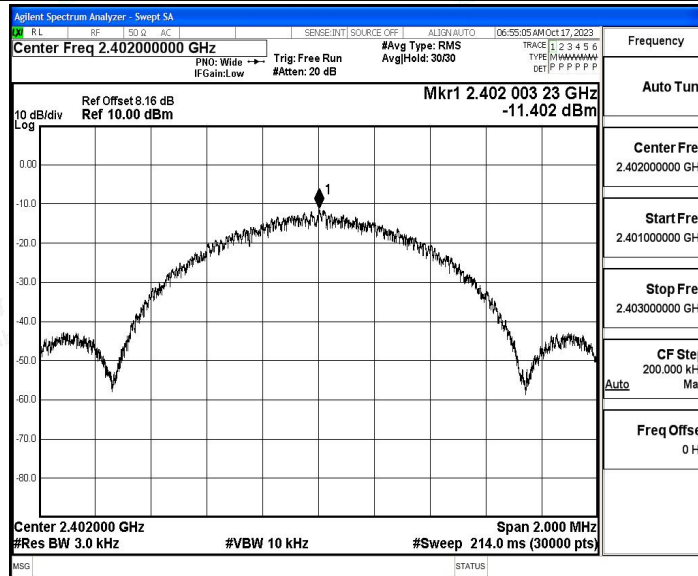
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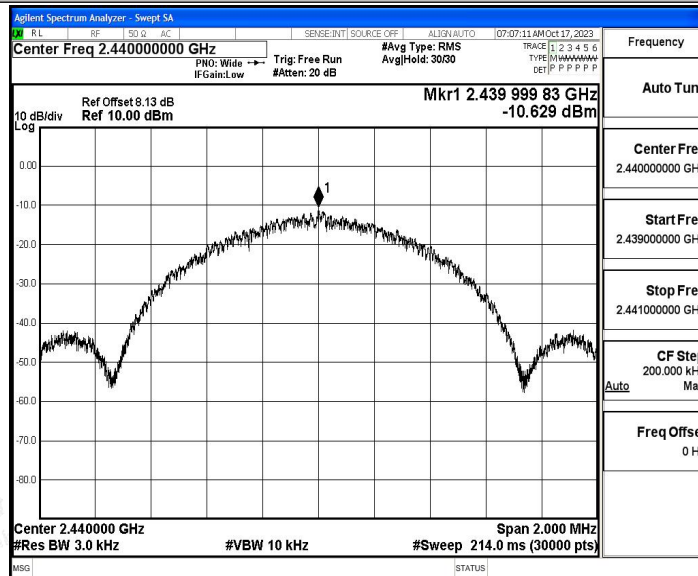


Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

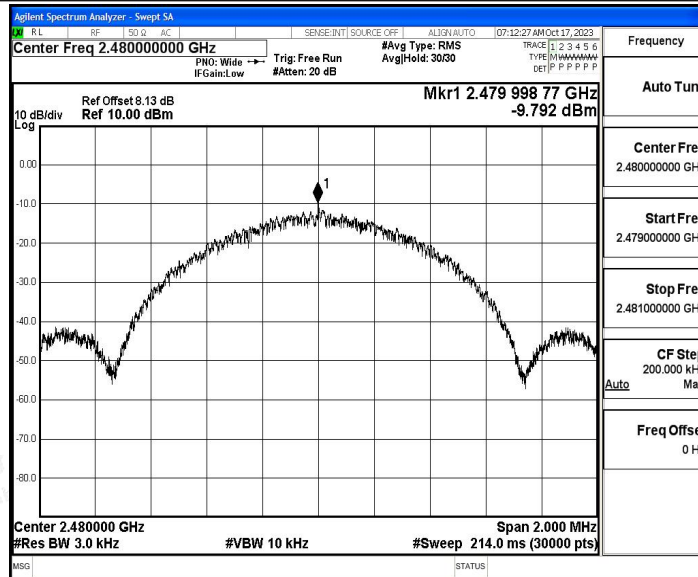


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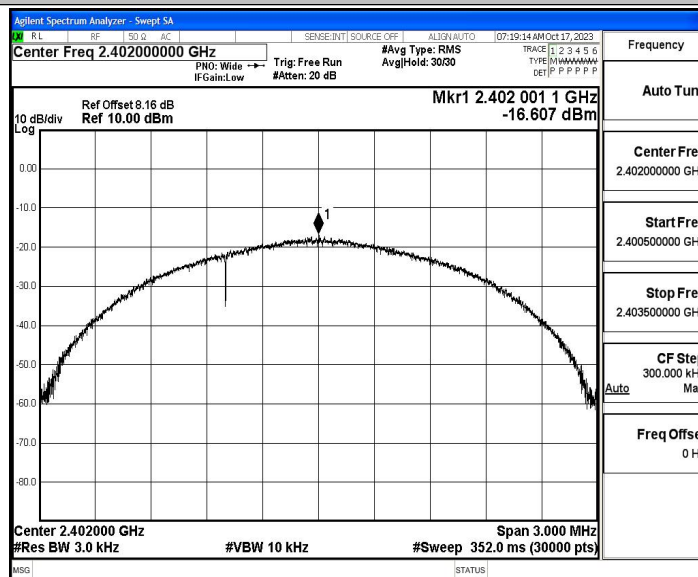
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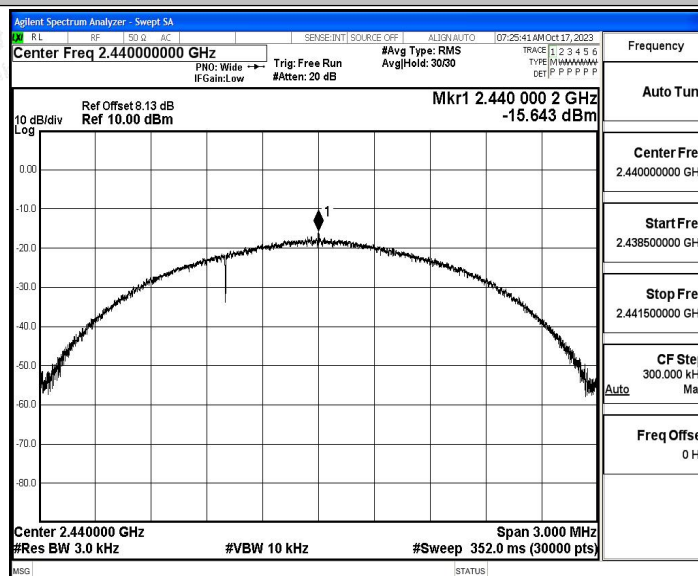
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BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



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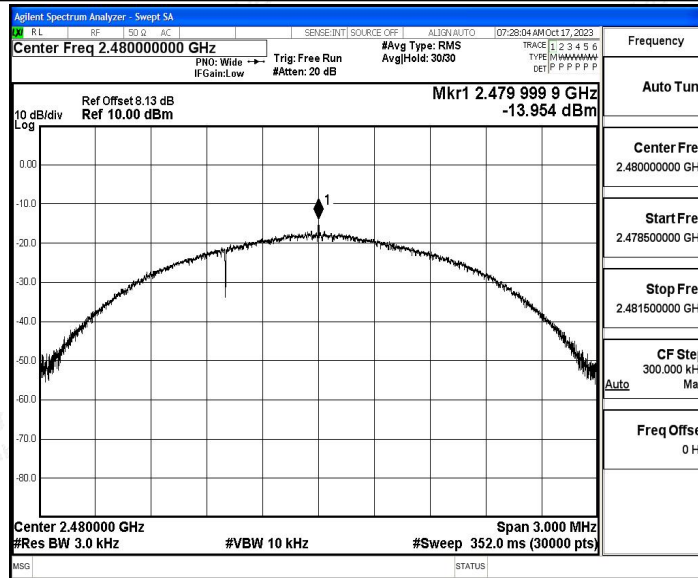
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BLE_2M_Ant1_2480



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A.5 Band edge measurements

Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	3.41	-49.44	≤-16.59	PASS
		High	2480	4.31	-50.1	≤-15.69	PASS
BLE_2M	Ant1	Low	2402	1.76	-44.97	≤-18.24	PASS
		High	2480	1.93	-49.52	≤-18.07	PASS



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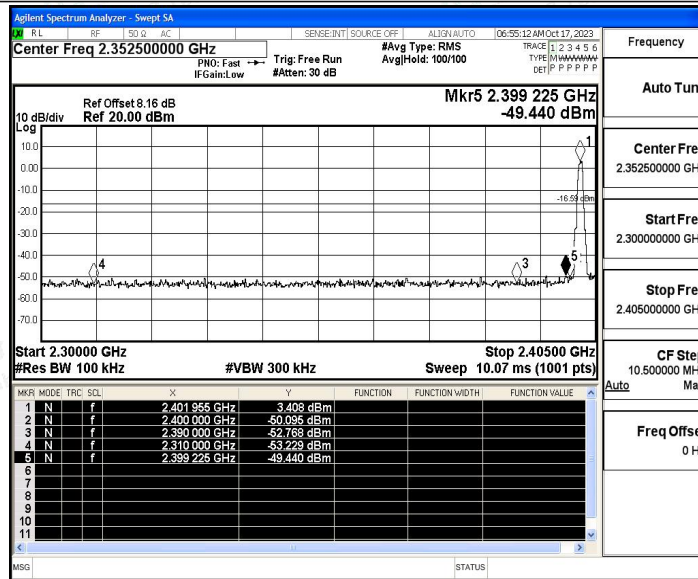
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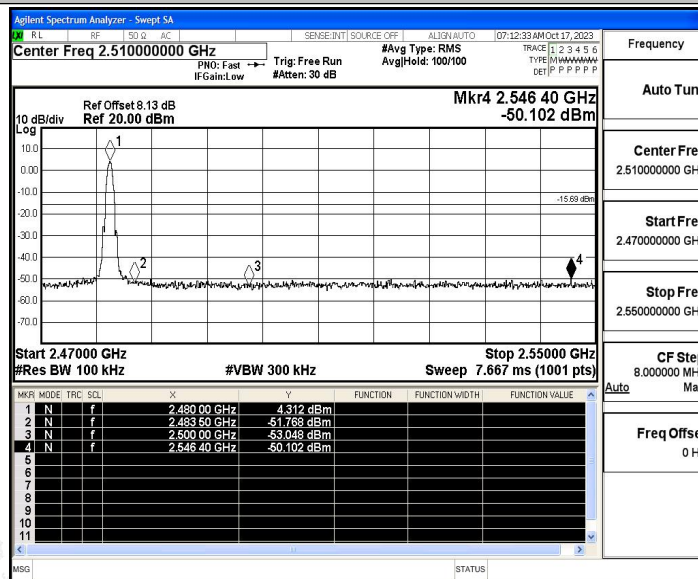


Test Graphs

BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2402

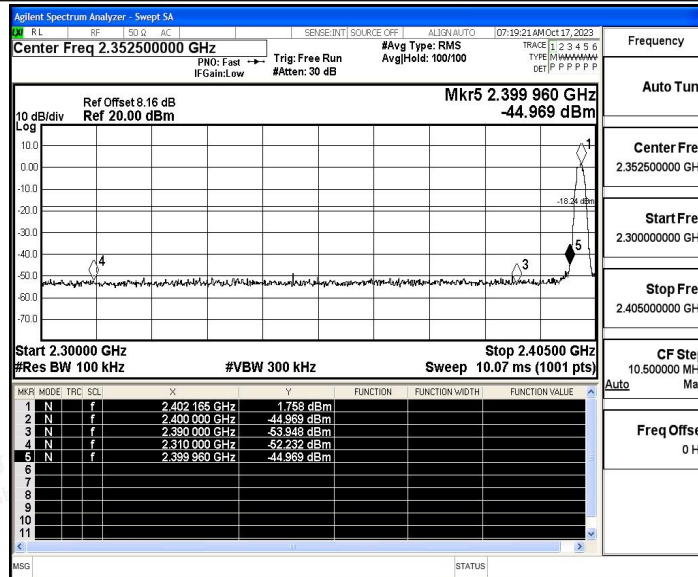


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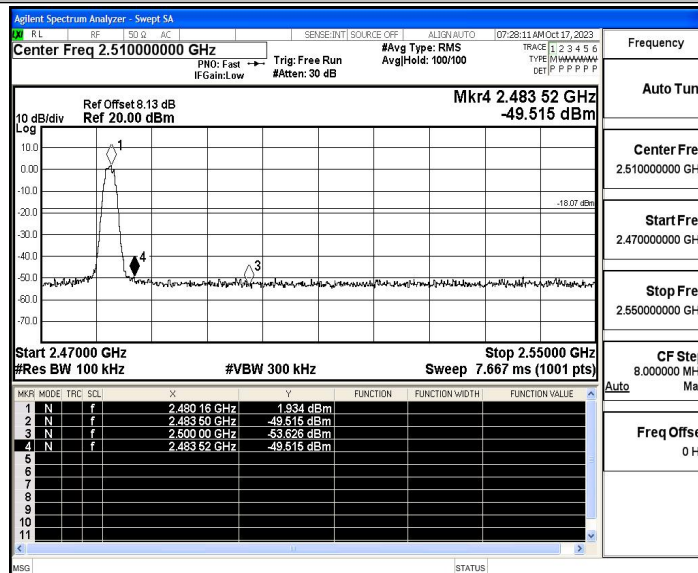
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BLE_2M_Ant1_High_2480



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A.6 Conducted Spurious Emission

Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	3.52	3.52	---	PASS
			30~1000	3.52	-61.51	≤-16.48	PASS
			1000~26500	3.52	-44.43	≤-16.48	PASS
		2440	Reference	3.65	3.65	---	PASS
			30~1000	3.65	-60.67	≤-16.35	PASS
			1000~26500	3.65	-44.71	≤-16.35	PASS
		2480	Reference	3.96	3.96	---	PASS
			30~1000	3.96	-60.43	≤-16.04	PASS
			1000~26500	3.96	-47.08	≤-16.04	PASS
BLE_2M	Ant1	2402	Reference	1.41	1.41	---	PASS
			30~1000	1.41	-61.48	≤-18.59	PASS
			1000~26500	1.41	-46.17	≤-18.59	PASS
		2440	Reference	1.85	1.85	---	PASS
			30~1000	1.85	-61.53	≤-18.15	PASS
			1000~26500	1.85	-47.4	≤-18.15	PASS
		2480	Reference	2.03	2.03	---	PASS
			30~1000	2.03	-61.56	≤-17.97	PASS
			1000~26500	2.03	-48.23	≤-17.97	PASS



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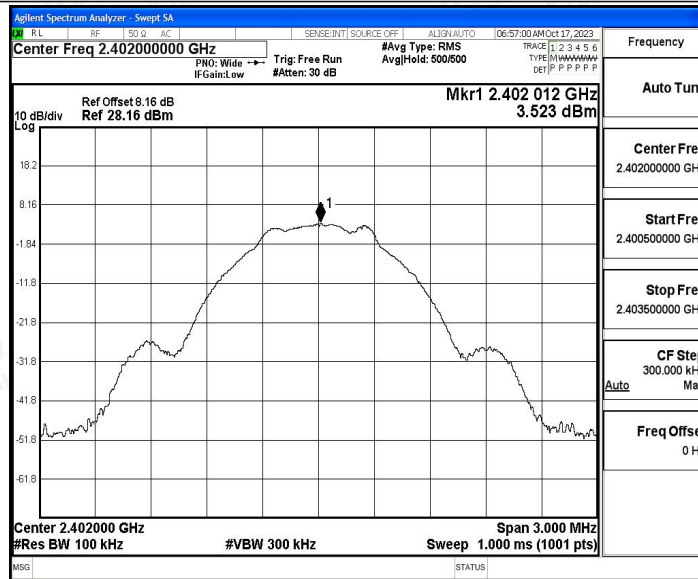
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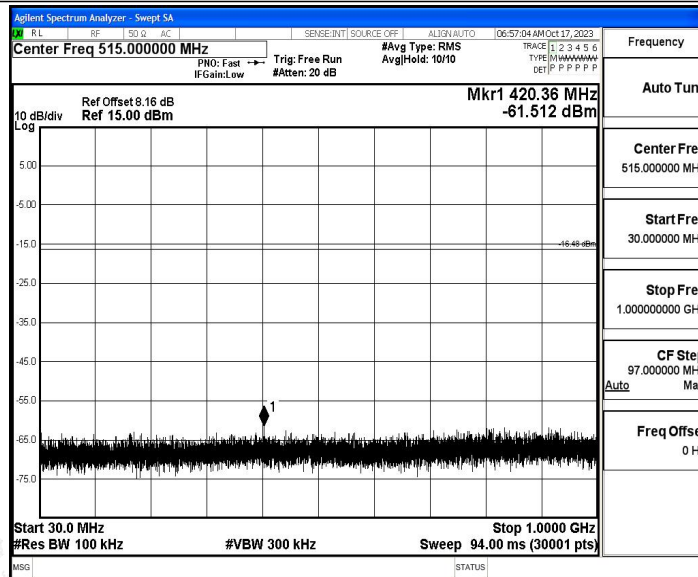


Test Graphs

BLE_1M_Ant1_2402_0~Reference



BLE_1M_Ant1_2402_30~1000



BLE_1M_Ant1_2402_1000~26500

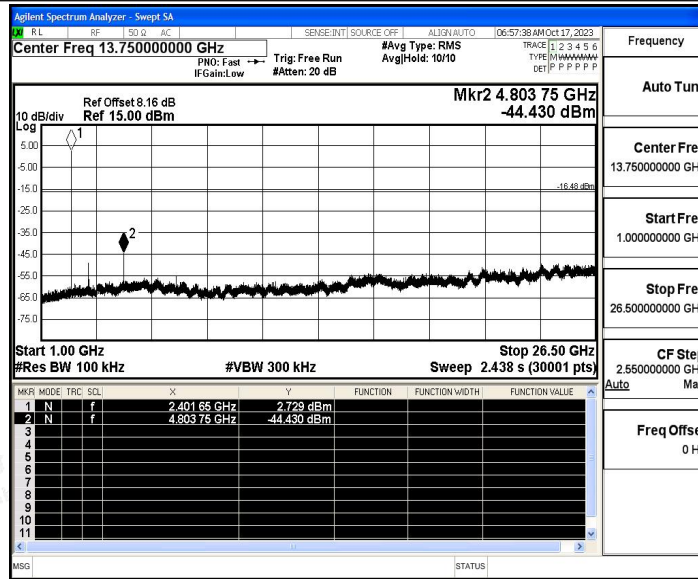


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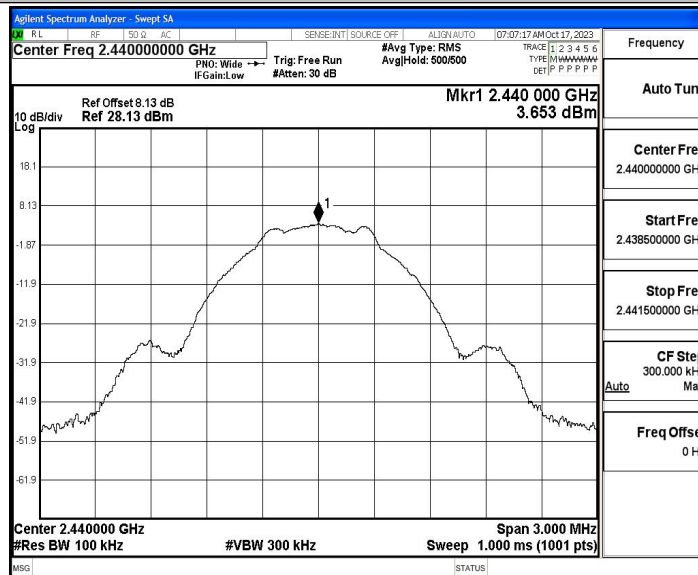
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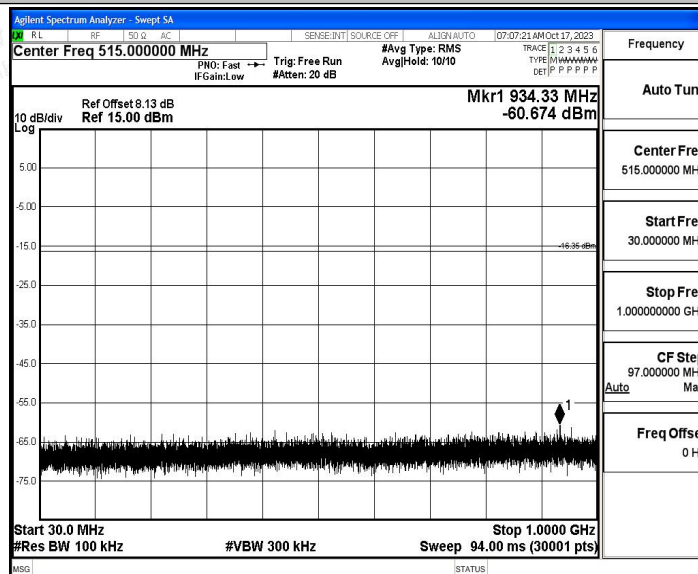
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BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



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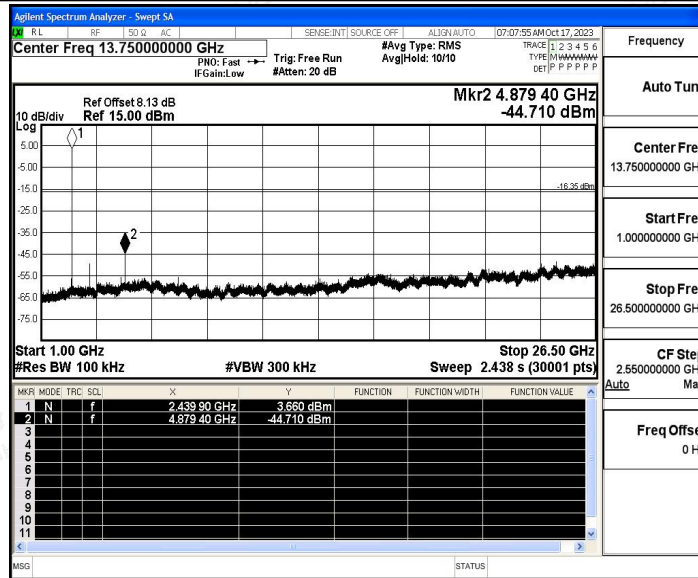
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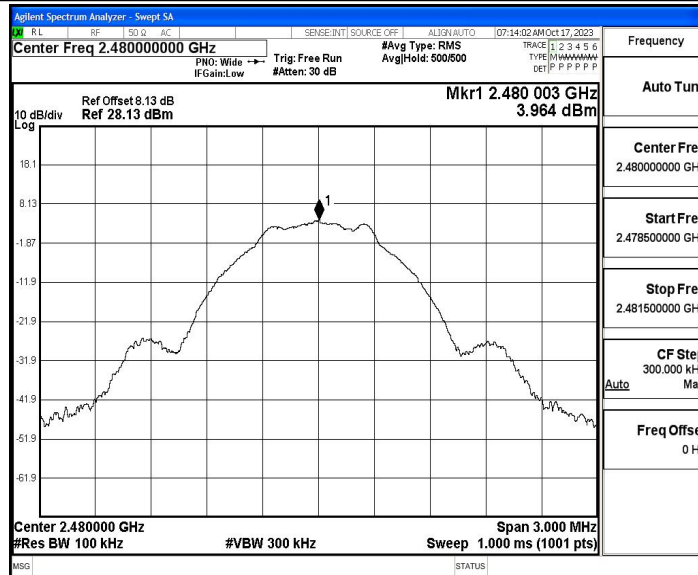
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BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000

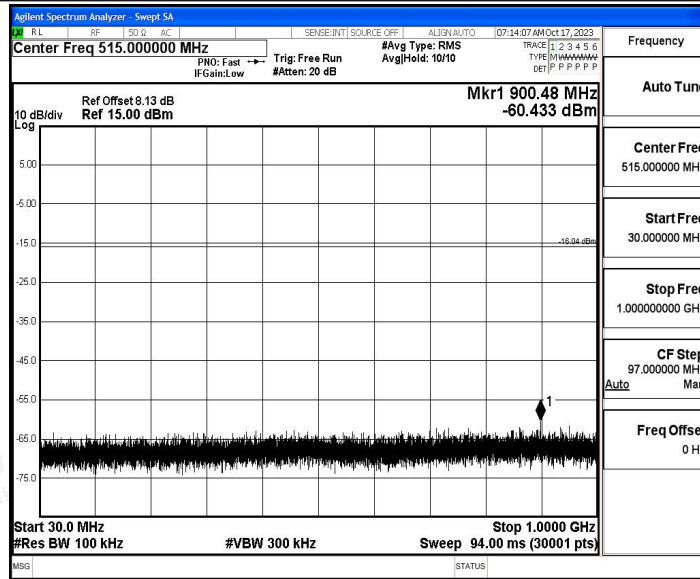


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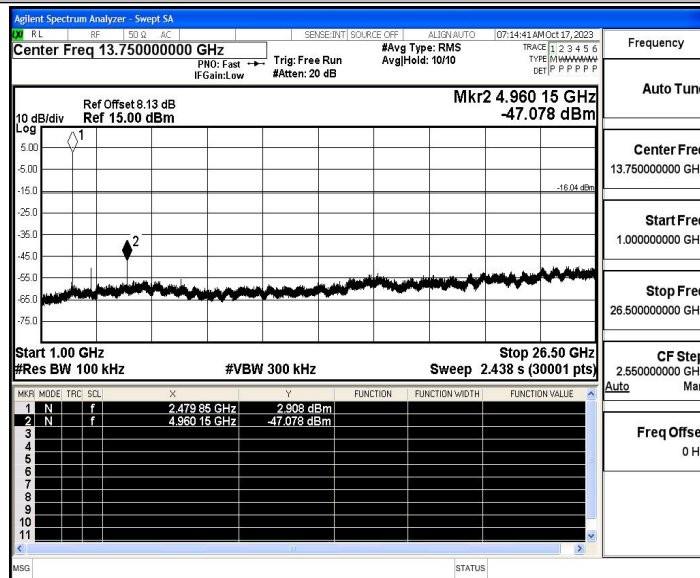
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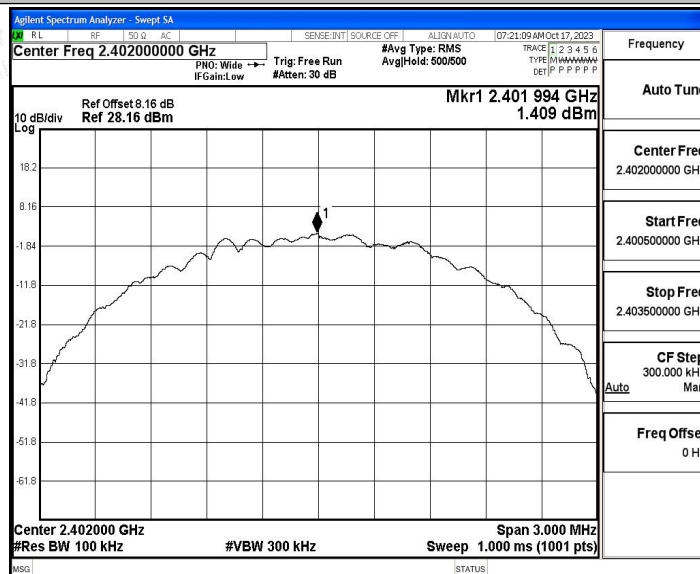
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BLE_1M_Ant1_2480_1000~26500



BLE_2M_Ant1_2402_0~Reference



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