



Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Smart Humidity & Temperature Sensor

Test Model: ShellyH&T

Environmental Conditions

Temperature:	23.5 ° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	kayHu Kay Hu
Supervised by:	LiHuan Li Huan





A.1 DTS Bandwidth

Test Result

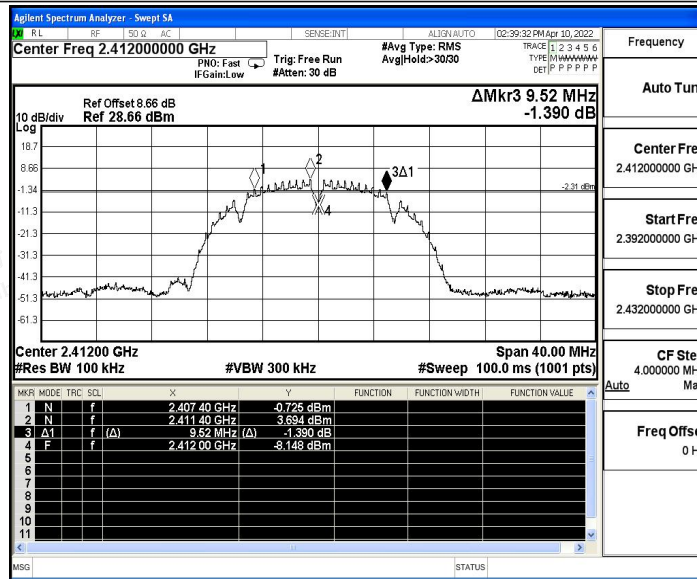
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.520	2407.400	2416.920	0.5	PASS
		2437	9.520	2432.400	2441.920	0.5	PASS
		2462	10.000	2456.920	2466.920	0.5	PASS
11G	Ant1	2412	16.320	2403.760	2420.080	0.5	PASS
		2437	16.280	2428.800	2445.080	0.5	PASS
		2462	16.320	2453.760	2470.080	0.5	PASS
11N20SISO	Ant1	2412	16.520	2403.760	2420.280	0.5	PASS
		2437	16.520	2428.760	2445.280	0.5	PASS
		2462	16.560	2453.760	2470.320	0.5	PASS



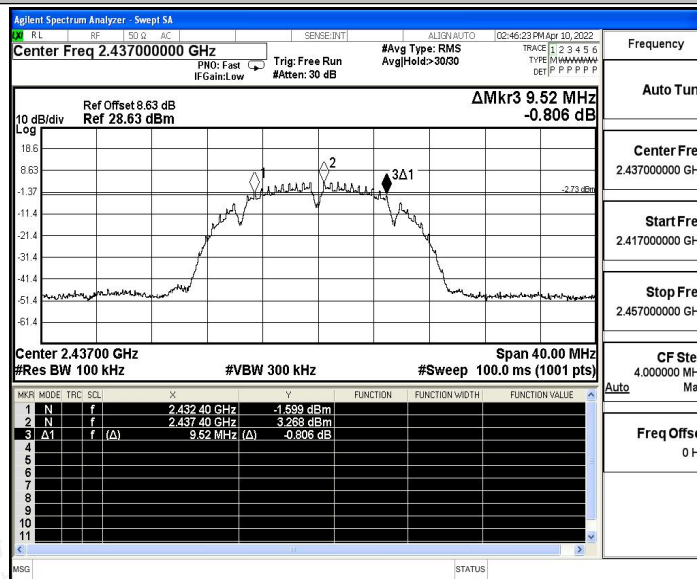


Test Graphs

11B_Ant1_2412



11B_Ant1_2437



11B_Ant1_2462

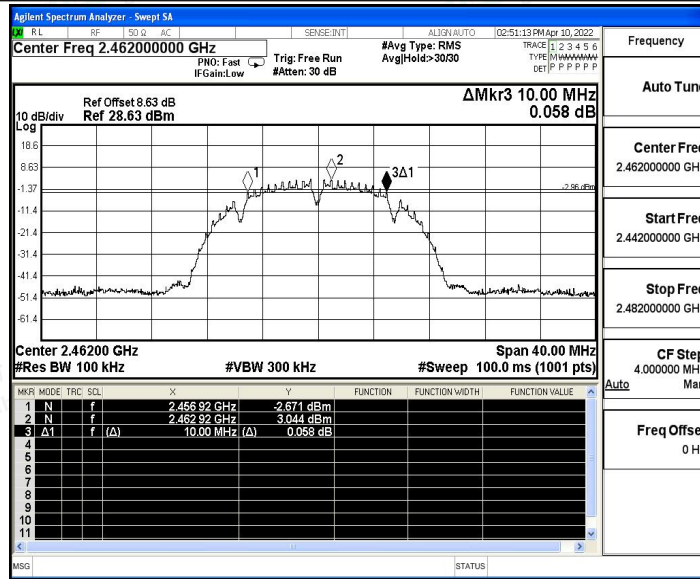


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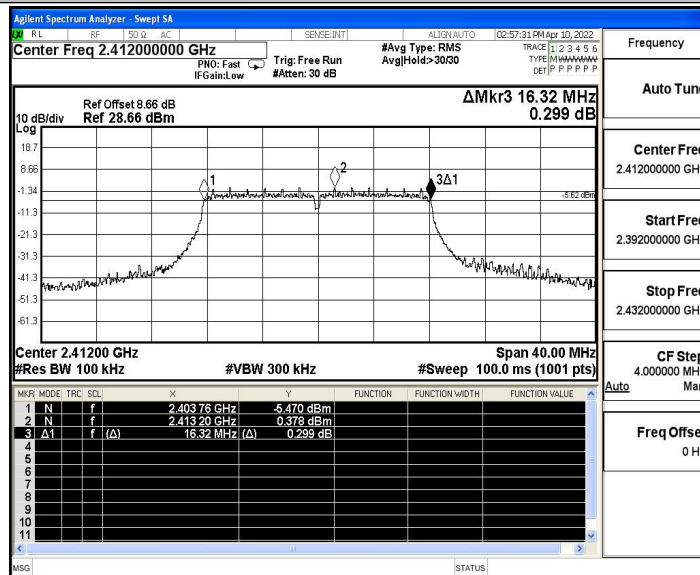
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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11G_Ant1_2412



11G_Ant1_2437

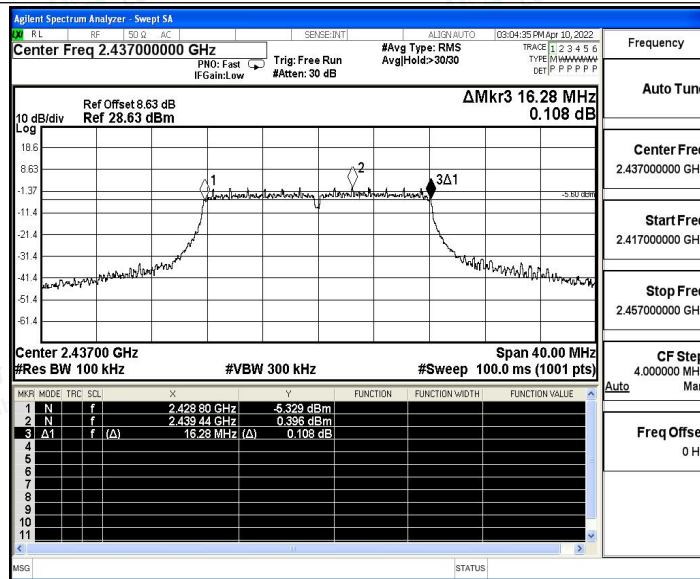


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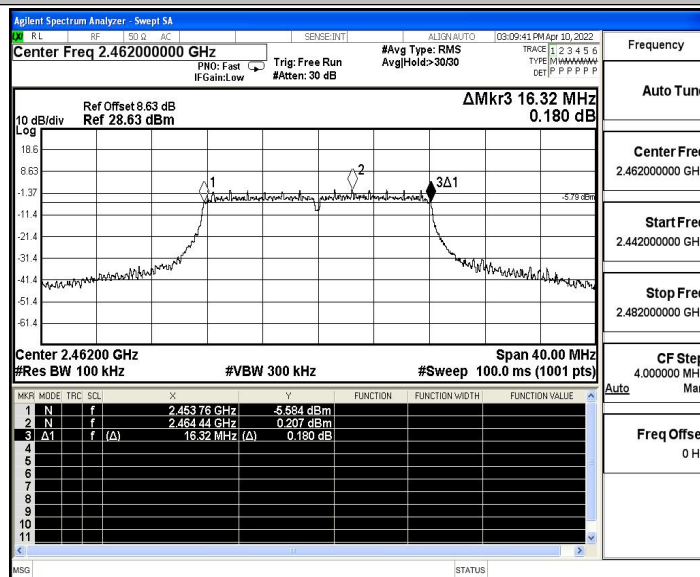
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11G_Ant1_2462



11N20SISO_Ant1_2412

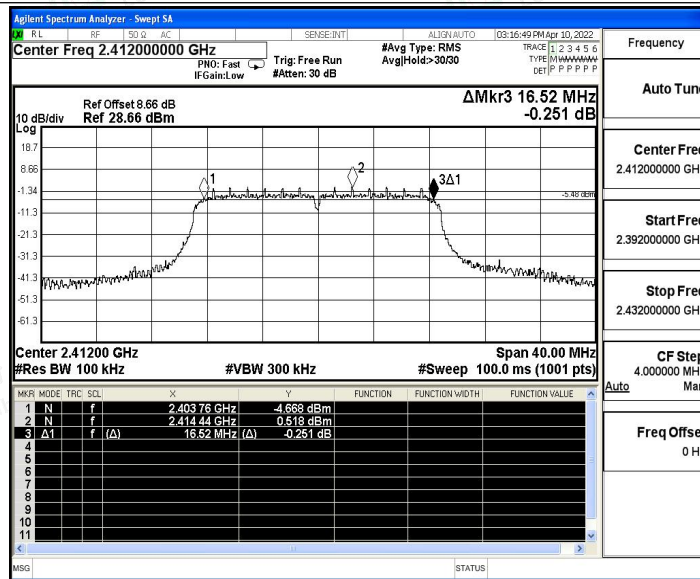


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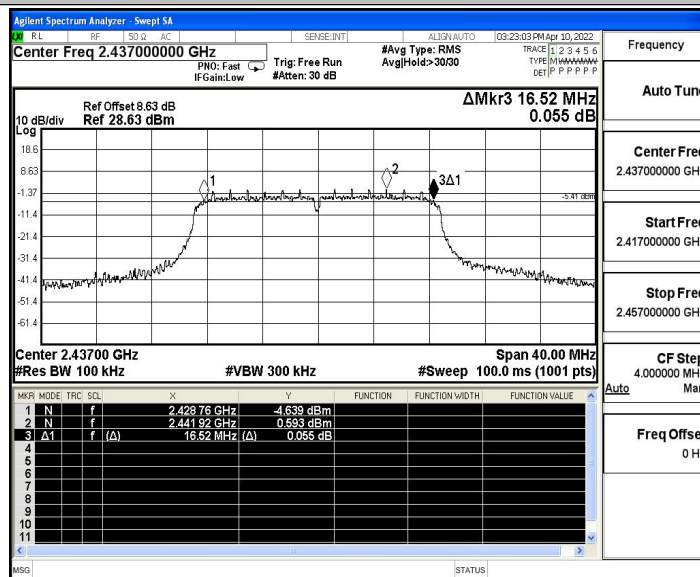
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11N20SISO_Ant1_2437



11N20SISO_Ant1_2462

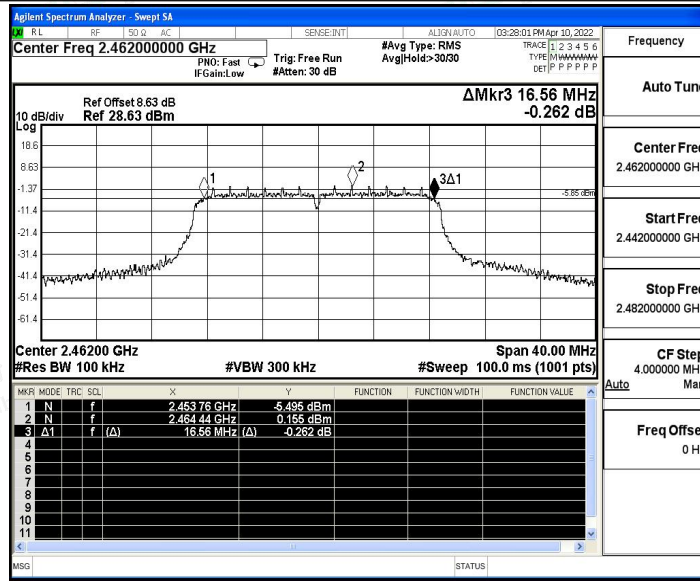


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A.2 Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	15.25	≤30.00	PASS
		2437	15.13	≤30.00	PASS
		2462	14.85	≤30.00	PASS
11G	Ant1	2412	20.09	≤30.00	PASS
		2437	20.03	≤30.00	PASS
		2462	19.74	≤30.00	PASS
11N20SISO	Ant1	2412	20.06	≤30.00	PASS
		2437	20.09	≤30.00	PASS
		2462	19.65	≤30.00	PASS



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A.3 Maximum power spectral density

Test Result

TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-11.65	≤8.00	PASS
		2437	-10.57	≤8.00	PASS
		2462	-11.88	≤8.00	PASS
11G	Ant1	2412	-13.11	≤8.00	PASS
		2437	-13.16	≤8.00	PASS
		2462	-13.41	≤8.00	PASS
11N20SISO	Ant1	2412	-12.97	≤8.00	PASS
		2437	-13.37	≤8.00	PASS
		2462	-12.62	≤8.00	PASS



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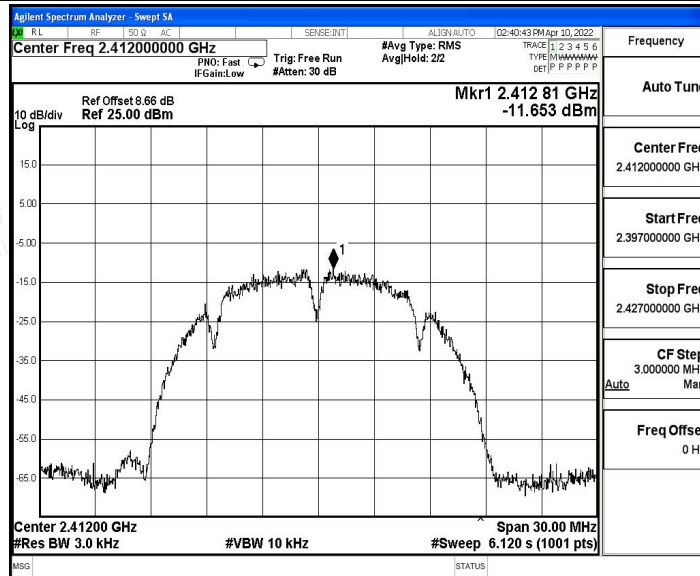
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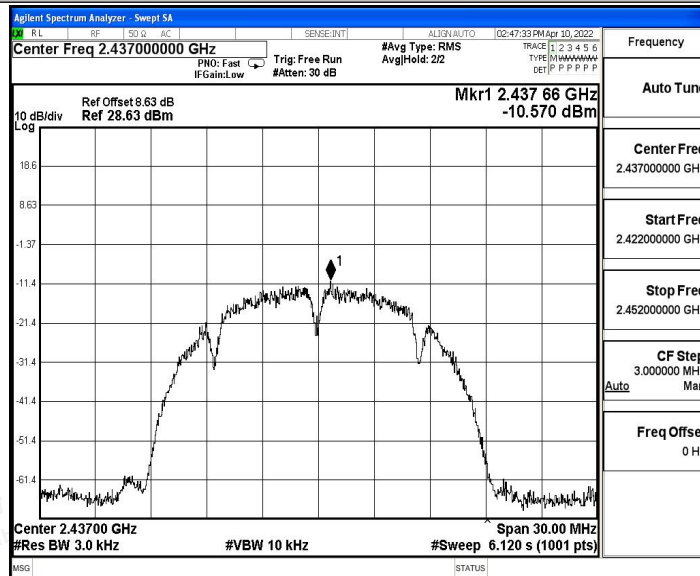


Test Graphs

11B_Ant1_2412



11B_Ant1_2437



11B_Ant1_2462

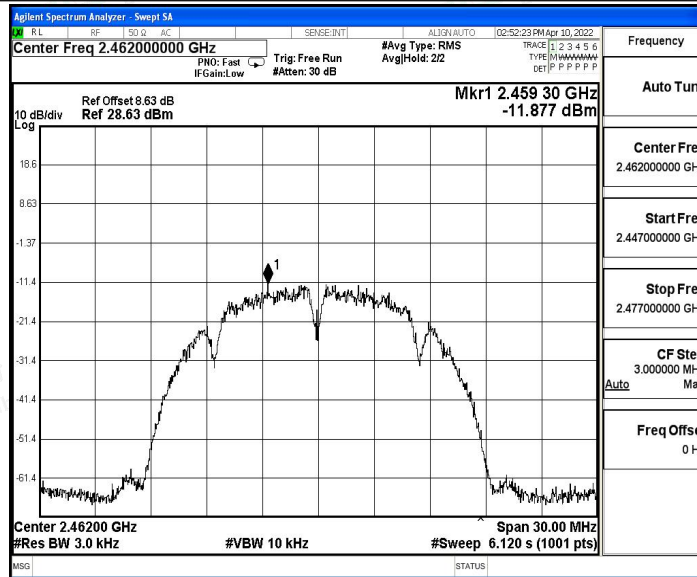


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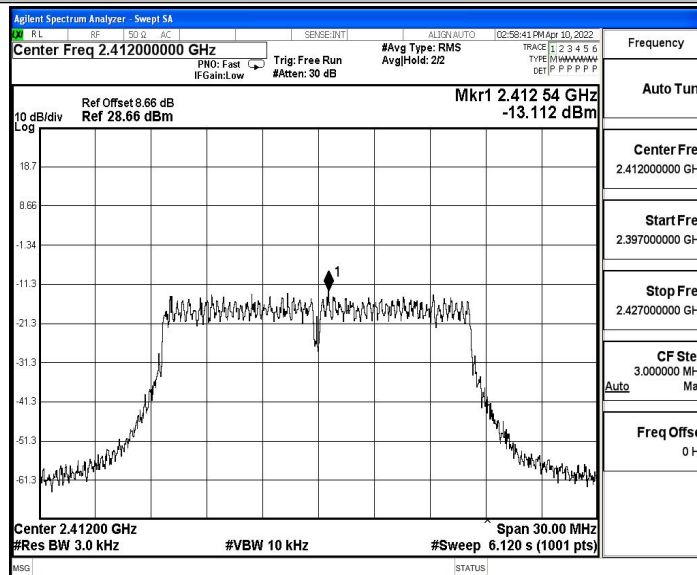
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11G_Ant1_2412



11G_Ant1_2437

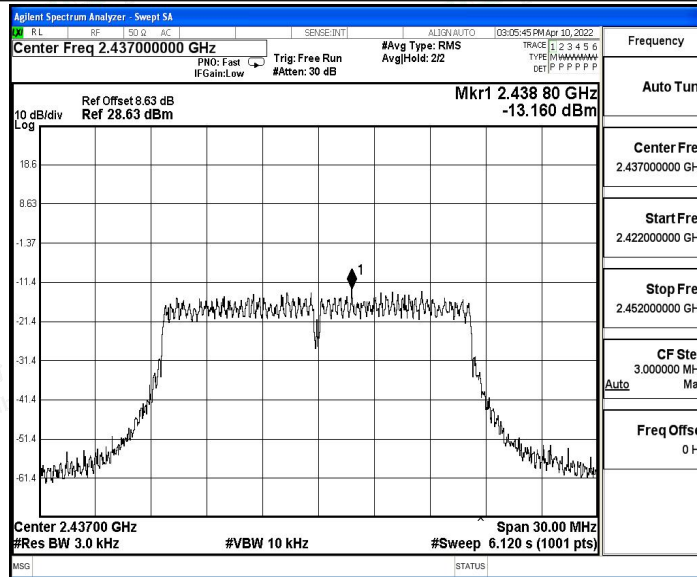


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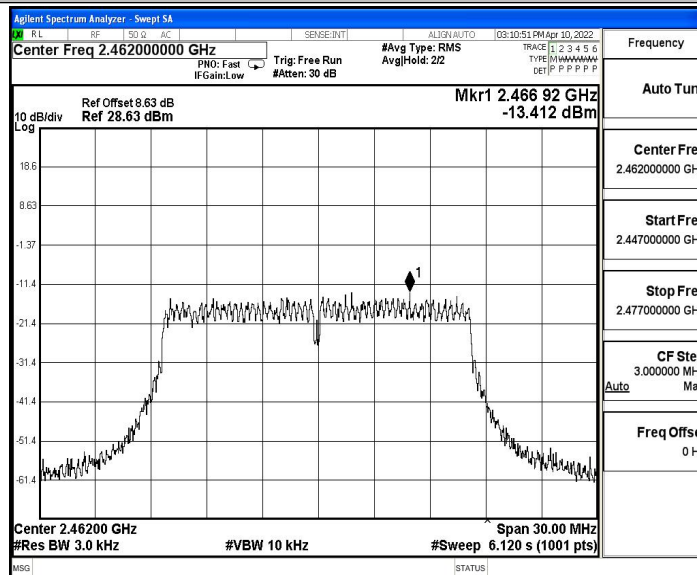
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11G_Ant1_2462



11N20SISO_Ant1_2412

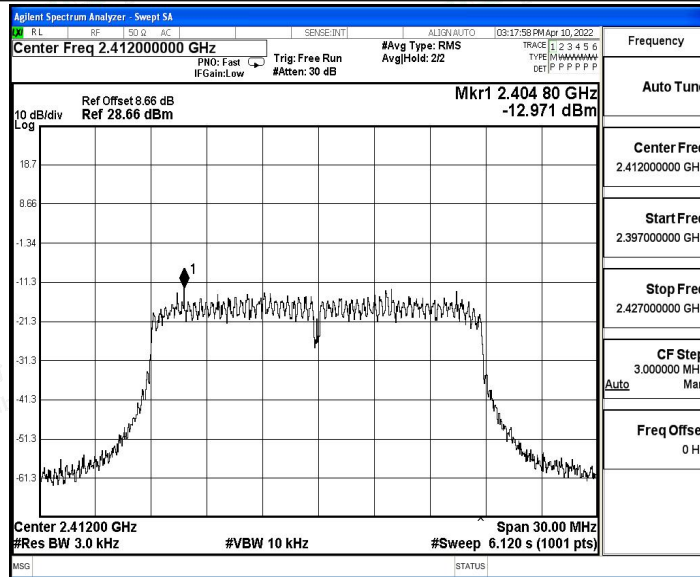


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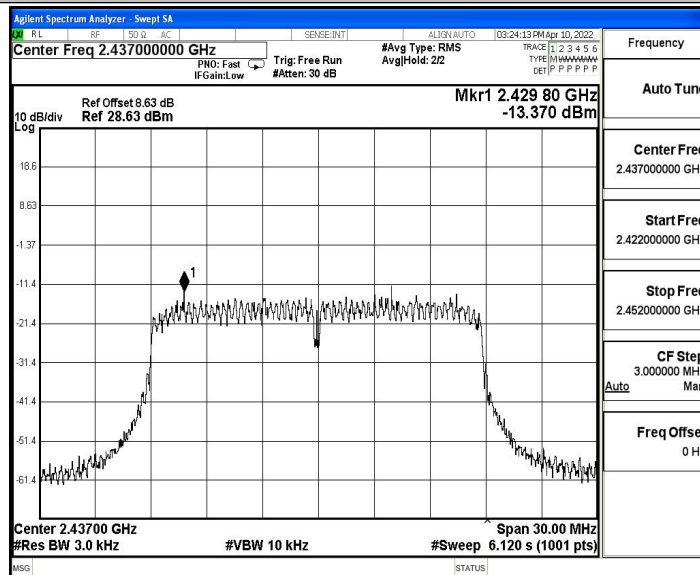
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11N20SISO_Ant1_2437



11N20SISO_Ant1_2462

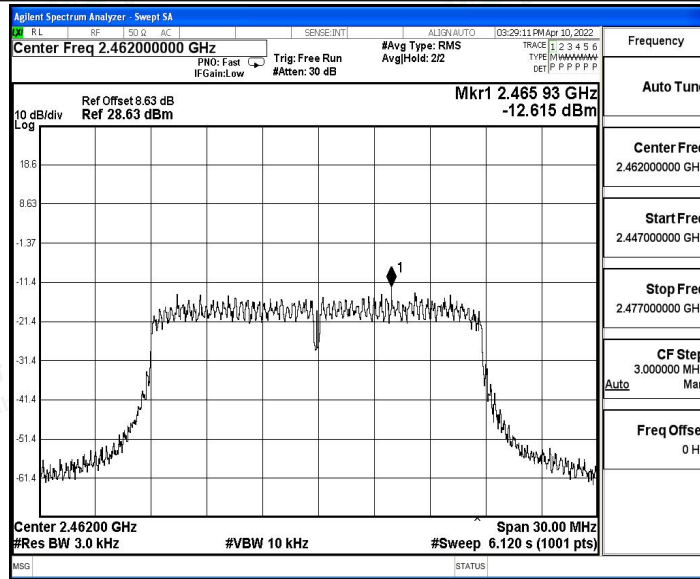


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A.4 Band edge measurements

Test Result

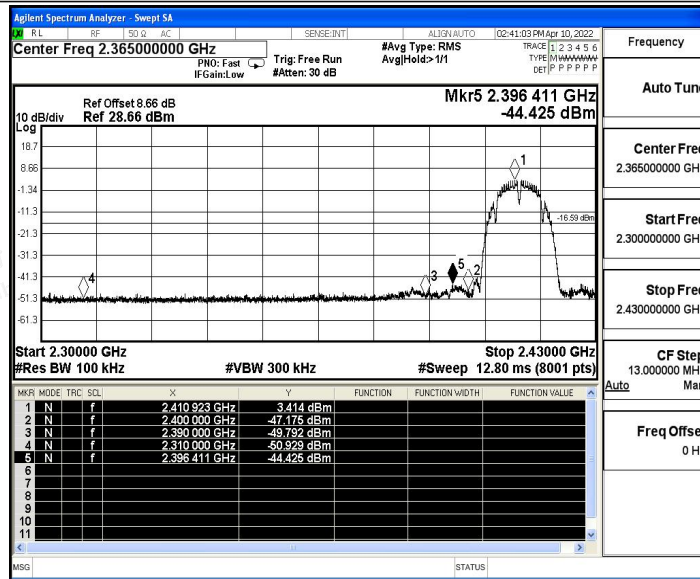
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	3.41	-44.43	≤-16.59	PASS
		High	2462	2.68	-46.08	≤-17.32	PASS
11G	Ant1	Low	2412	0.43	-35.79	≤-19.57	PASS
		High	2462	0.07	-45.82	≤-19.93	PASS
11N20SISO	Ant1	Low	2412	0.51	-37.27	≤-19.49	PASS
		High	2462	0.26	-45.17	≤-19.74	PASS



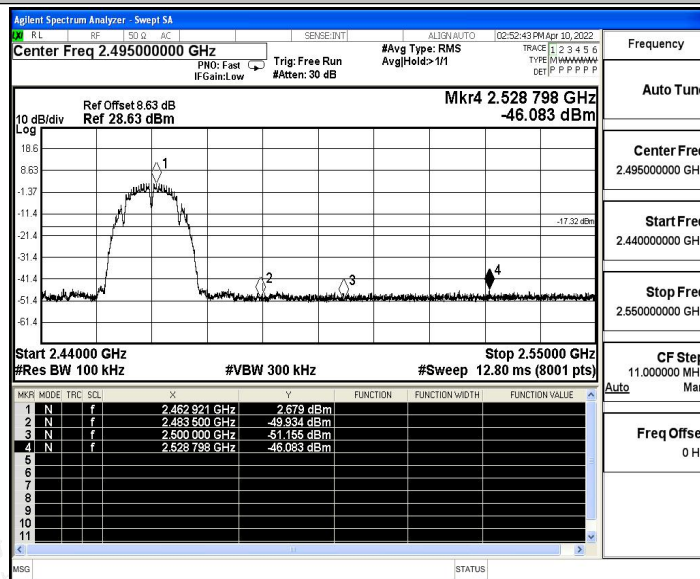


Test Graphs

11B_Ant1_Low_2412



11B_Ant1_High_2462



11G_Ant1_Low_2412

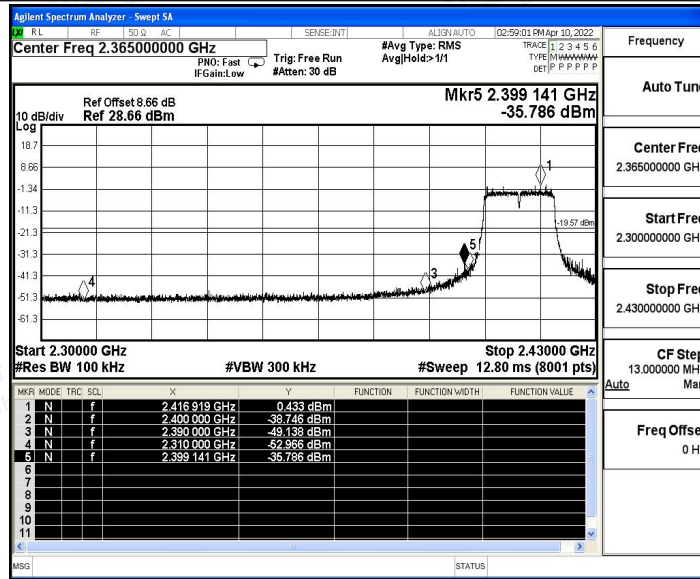


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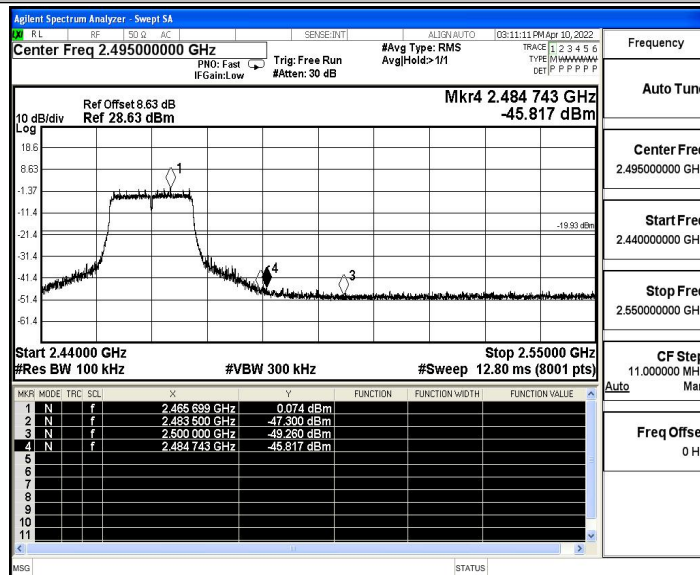
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11G_Ant1_High_2462



11N20SISO_Ant1_Low_2412

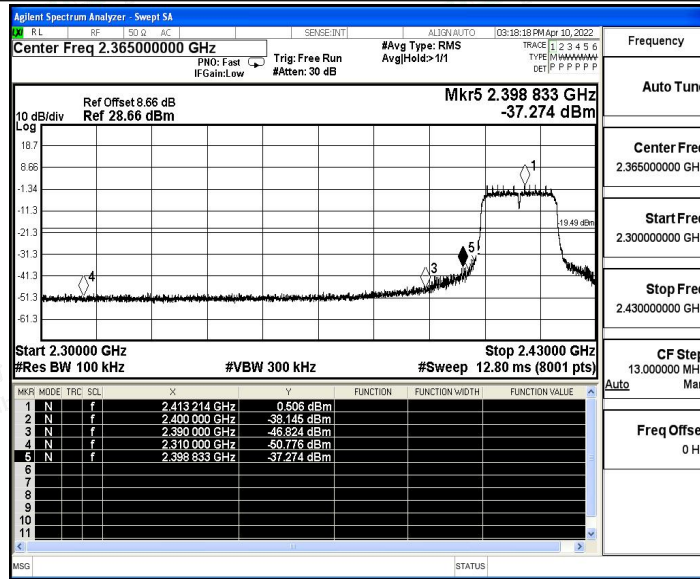


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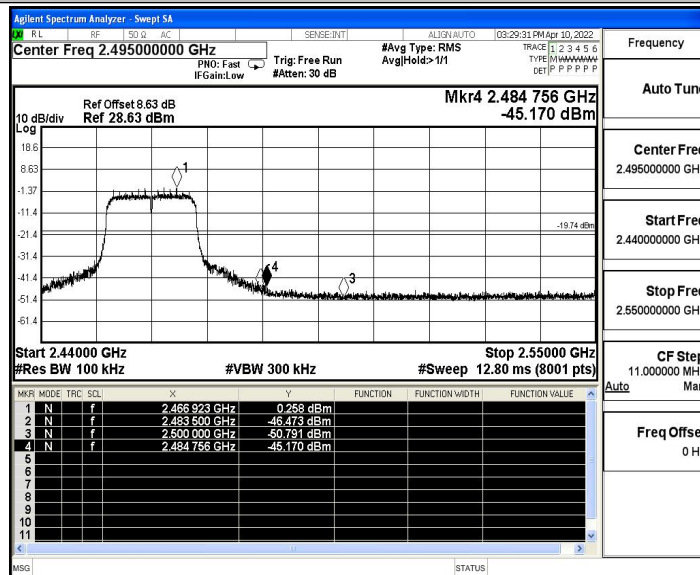
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11N20SISO_Ant1_High_2462



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A.5 Conducted Spurious Emission

Test Result

TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	2.98	2.98	---	PASS
			30~1000	2.98	-60.69	≤ -17.02	PASS
			1000~26500	2.98	-37.65	≤ -17.02	PASS
		2437	Reference	3.44	3.44	---	PASS
			30~1000	3.44	-60.43	≤ -16.56	PASS
			1000~26500	3.44	-46	≤ -16.56	PASS
		2462	Reference	2.88	2.88	---	PASS
			30~1000	2.88	-59.47	≤ -17.12	PASS
			1000~26500	2.88	-46.01	≤ -17.12	PASS
11G	Ant1	2412	Reference	0.58	0.58	---	PASS
			30~1000	0.58	-60.51	≤ -19.42	PASS
			1000~26500	0.58	-46	≤ -19.42	PASS
		2437	Reference	0.30	0.30	---	PASS
			30~1000	0.30	-60.45	≤ -19.7	PASS
			1000~26500	0.30	-46.58	≤ -19.7	PASS
		2462	Reference	0.50	0.50	---	PASS
			30~1000	0.50	-59.61	≤ -19.5	PASS
			1000~26500	0.50	-46.19	≤ -19.5	PASS
11N20SISO	Ant1	2412	Reference	0.99	0.99	---	PASS
			30~1000	0.99	-59.64	≤ -19.01	PASS
			1000~26500	0.99	-46.08	≤ -19.01	PASS
		2437	Reference	0.77	0.77	---	PASS
			30~1000	0.77	-58.11	≤ -19.23	PASS
			1000~26500	0.77	-46.37	≤ -19.23	PASS
		2462	Reference	0.69	0.69	---	PASS
			30~1000	0.69	-60.04	≤ -19.31	PASS
			1000~26500	0.69	-46.26	≤ -19.31	PASS



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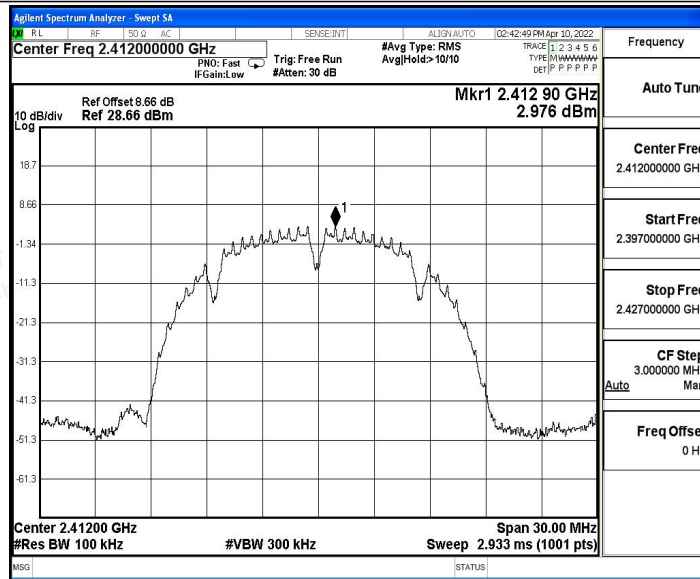
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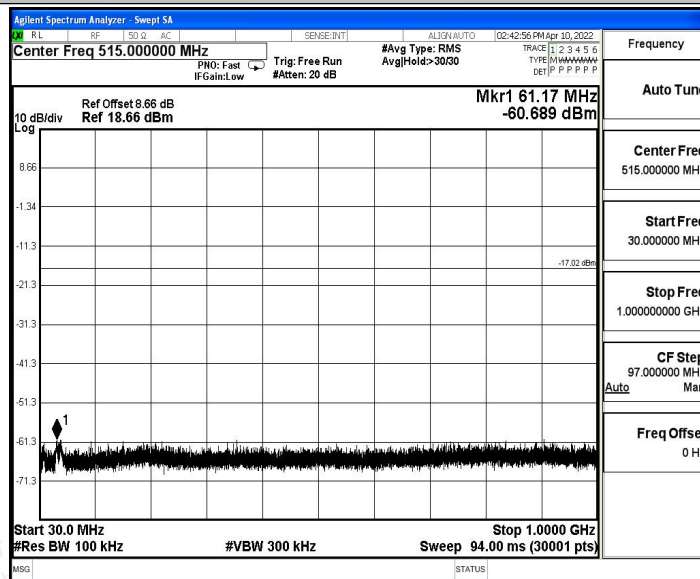


Test Graphs

11B_Ant1_2412_0~Reference



11B_Ant1_2412_30~1000



11B_Ant1_2412_1000~26500

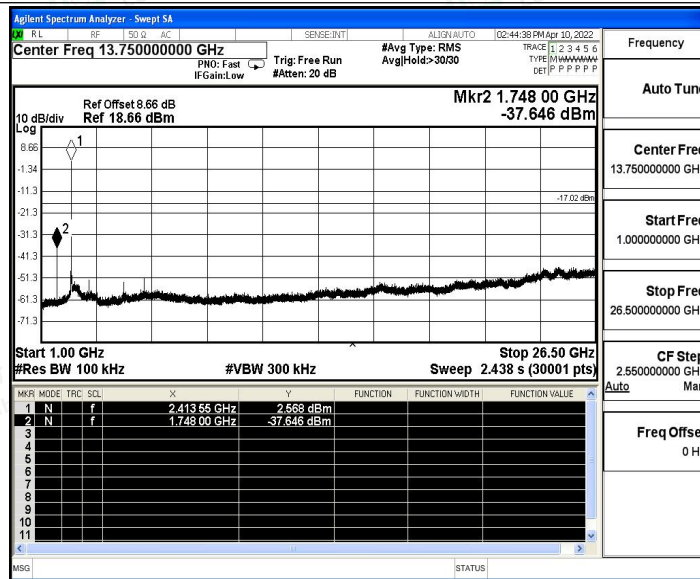


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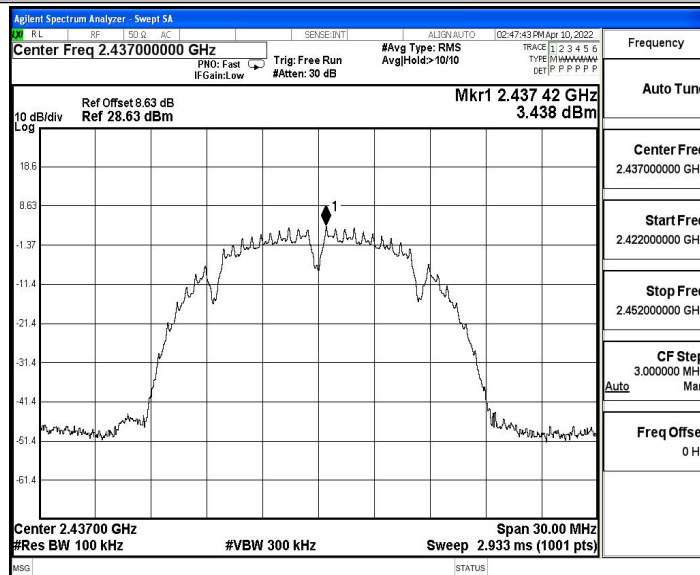
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11B_Ant1_2437_0~Reference



11B_Ant1_2437_30~1000

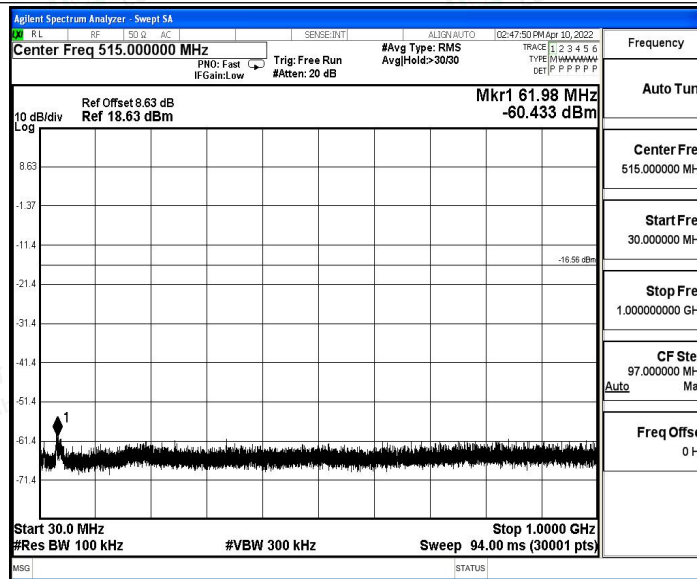


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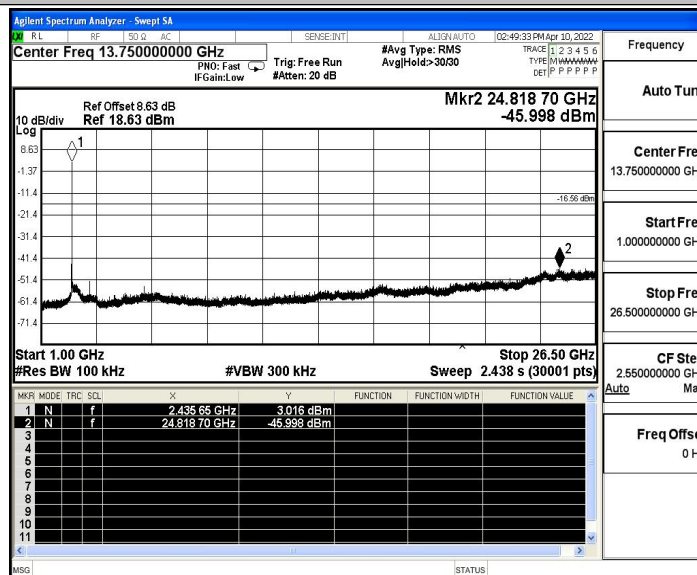
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11B_Ant1_2437_1000~26500



11B_Ant1_2462_0~Reference

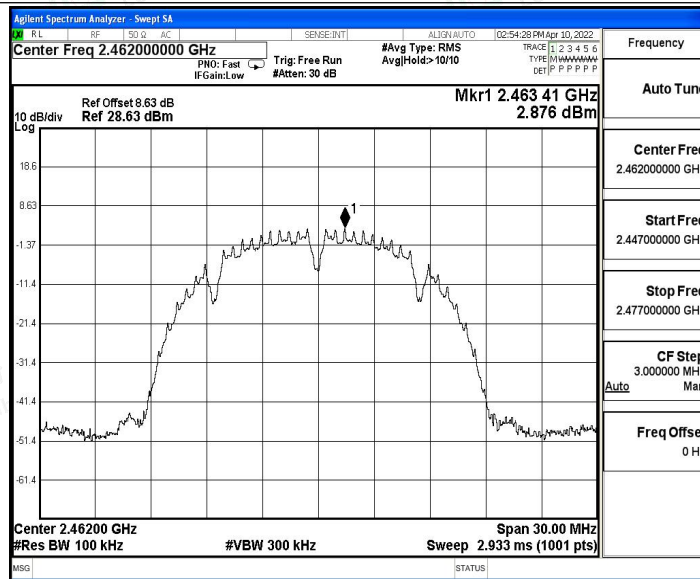


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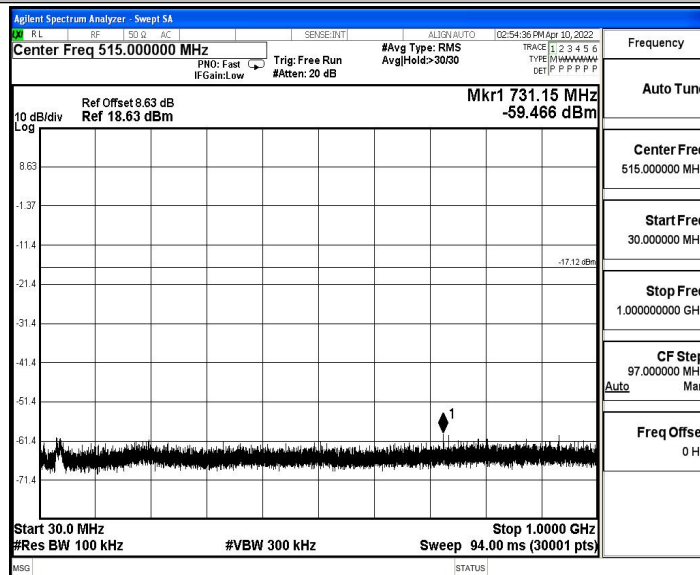
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11B_Ant1_2462_30~1000



11B_Ant1_2462_1000~26500

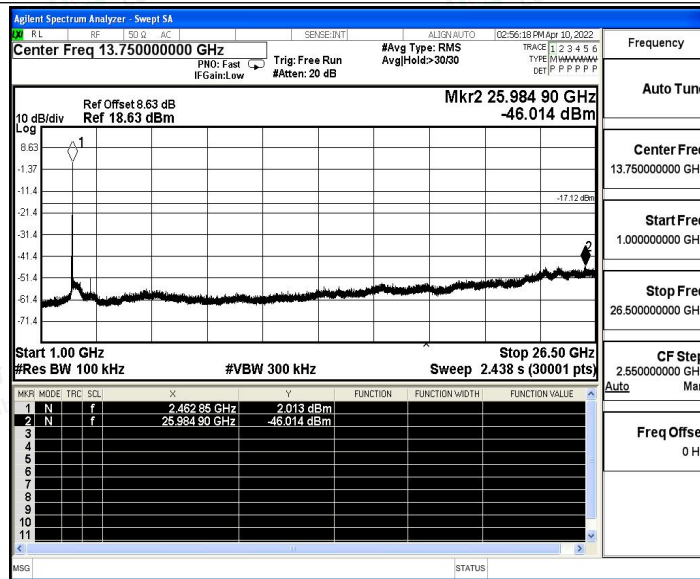


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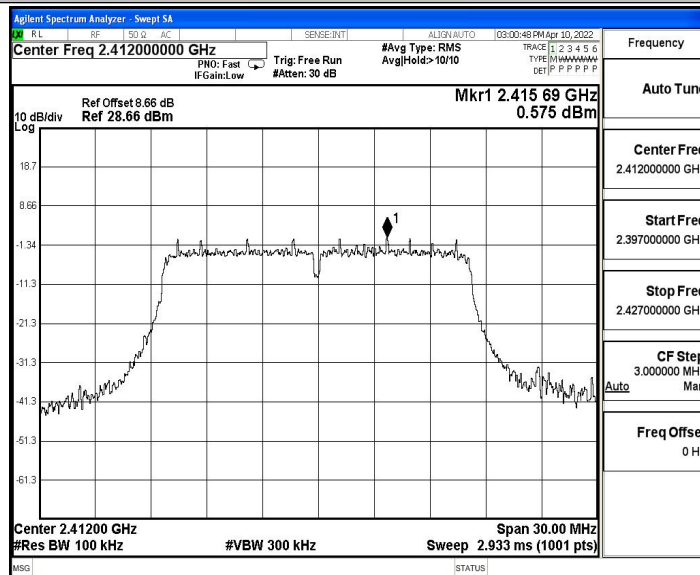
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11G_Ant1_2412_0~Reference



11G_Ant1_2412_30~1000

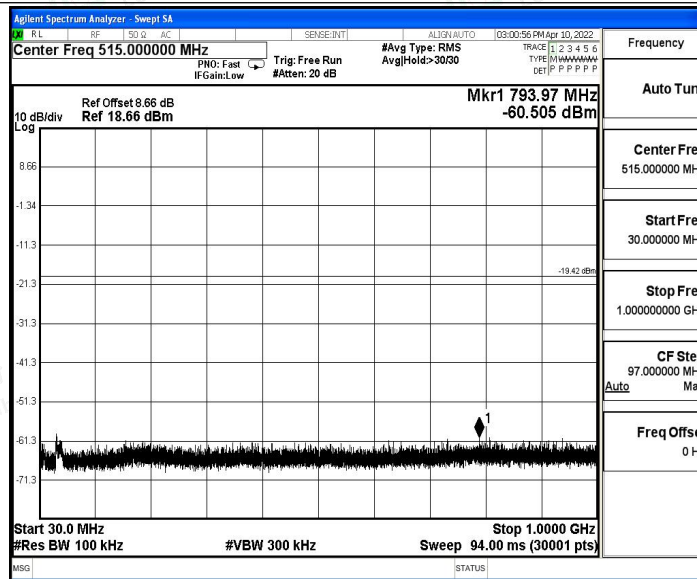


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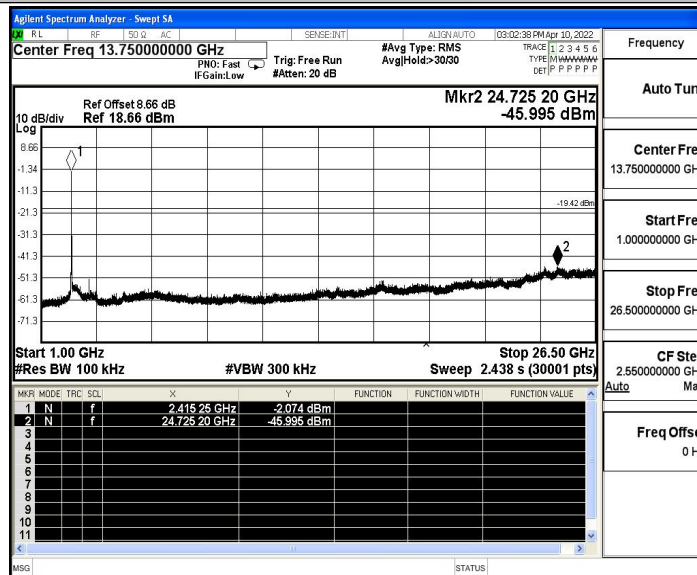
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11G_Ant1_2412_1000~26500



11G_Ant1_2437_0~Reference



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