

Appendix B

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Smart Gateway

Trade Mark: HEIMAN

Test Model: HS1GW-E-2

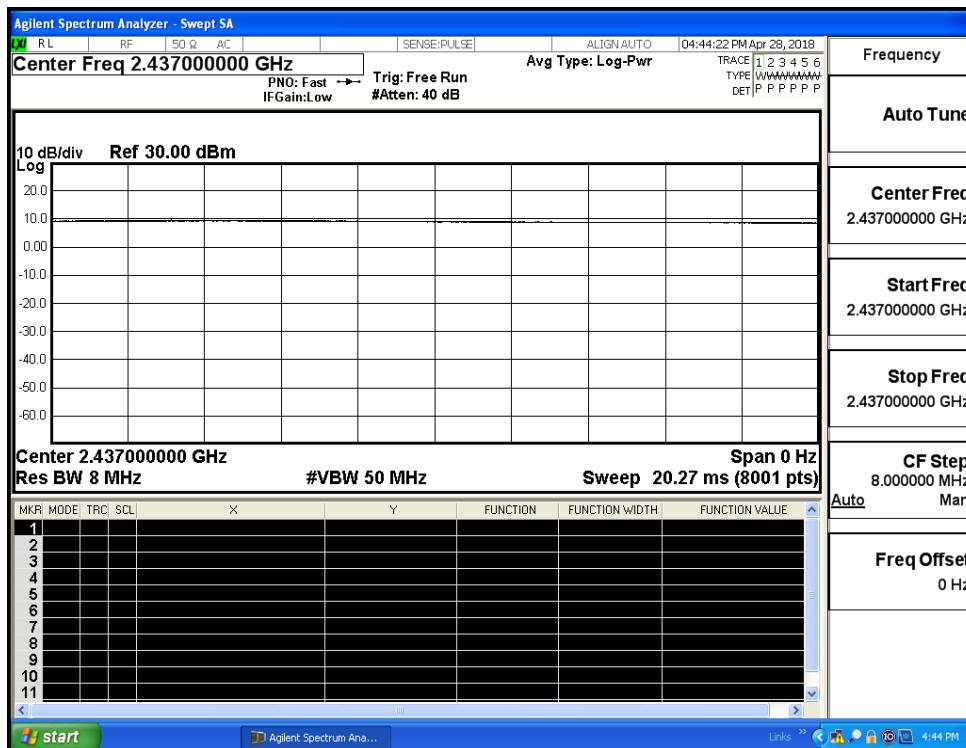
Environmental Conditions

Temperature:	22.6 ° C
Relative Humidity:	51.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Tom.Liu
Supervised by:	Jayden.Zhuo

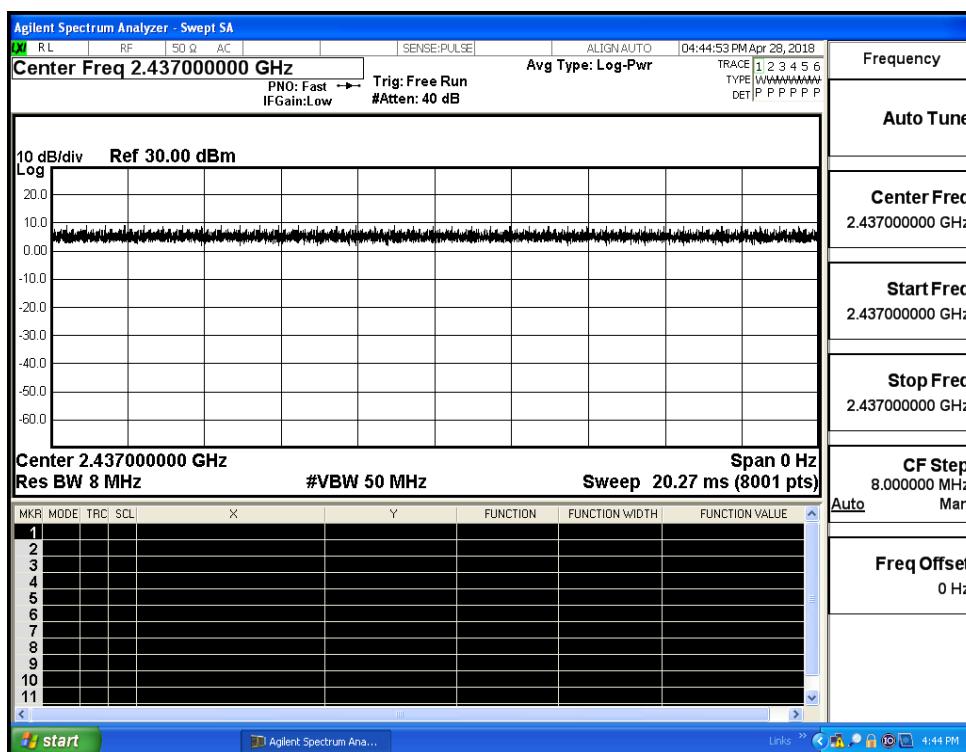
B.1 Duty Cycle

Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
11B	2437	Ant0	100	PASS
11G	2437	Ant0	100	PASS
11N20SISO	2437	Ant0	100	PASS
11N40SISO	2437	Ant0	100	PASS

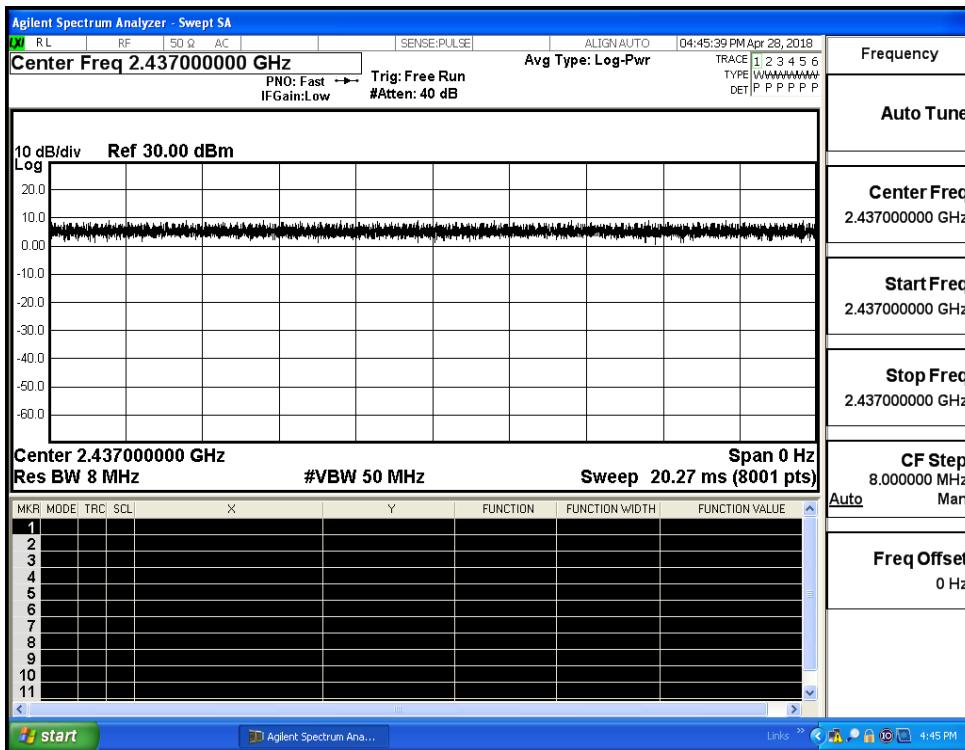
Duty Cycle_11B_2437_Ant0



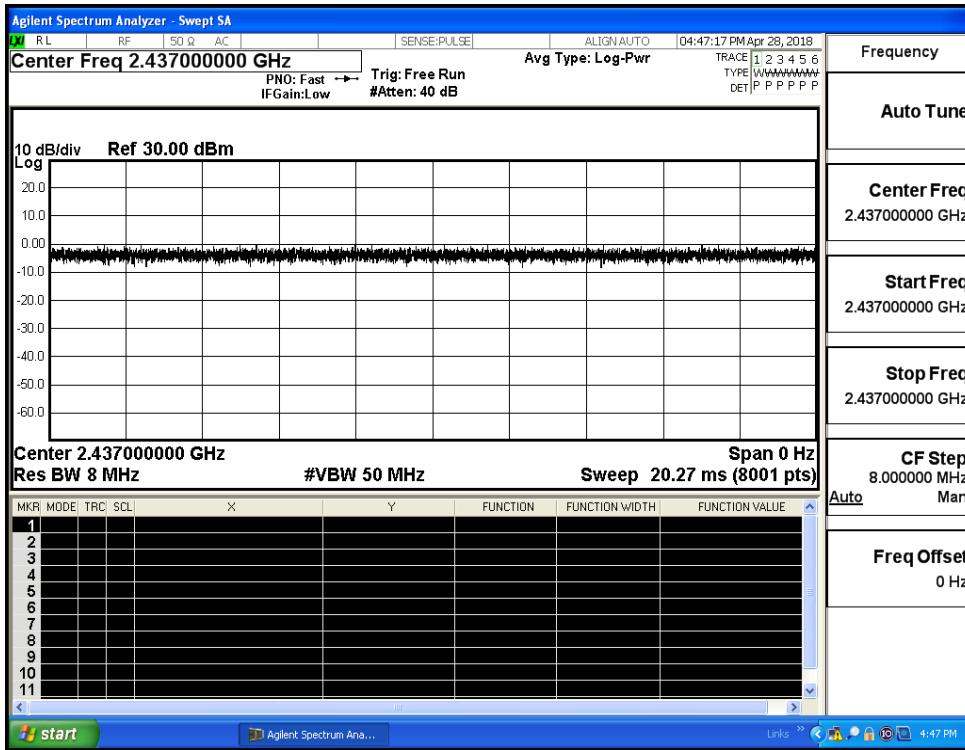
Duty Cycle_11G_2437_Ant0



Duty Cycle_11N20SISO_2437_Ant0



Duty Cycle_11N40SISO_2437_Ant0



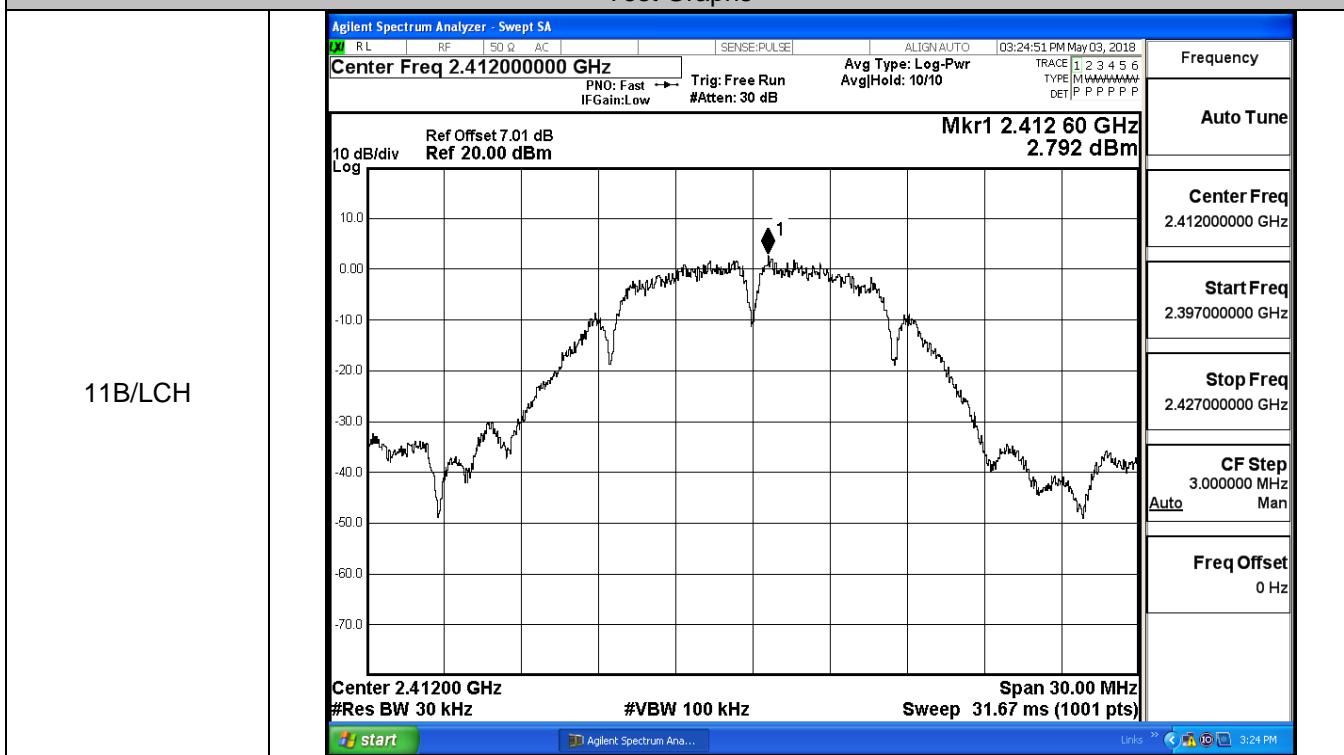
B.2 Maximum Conducted Output Power

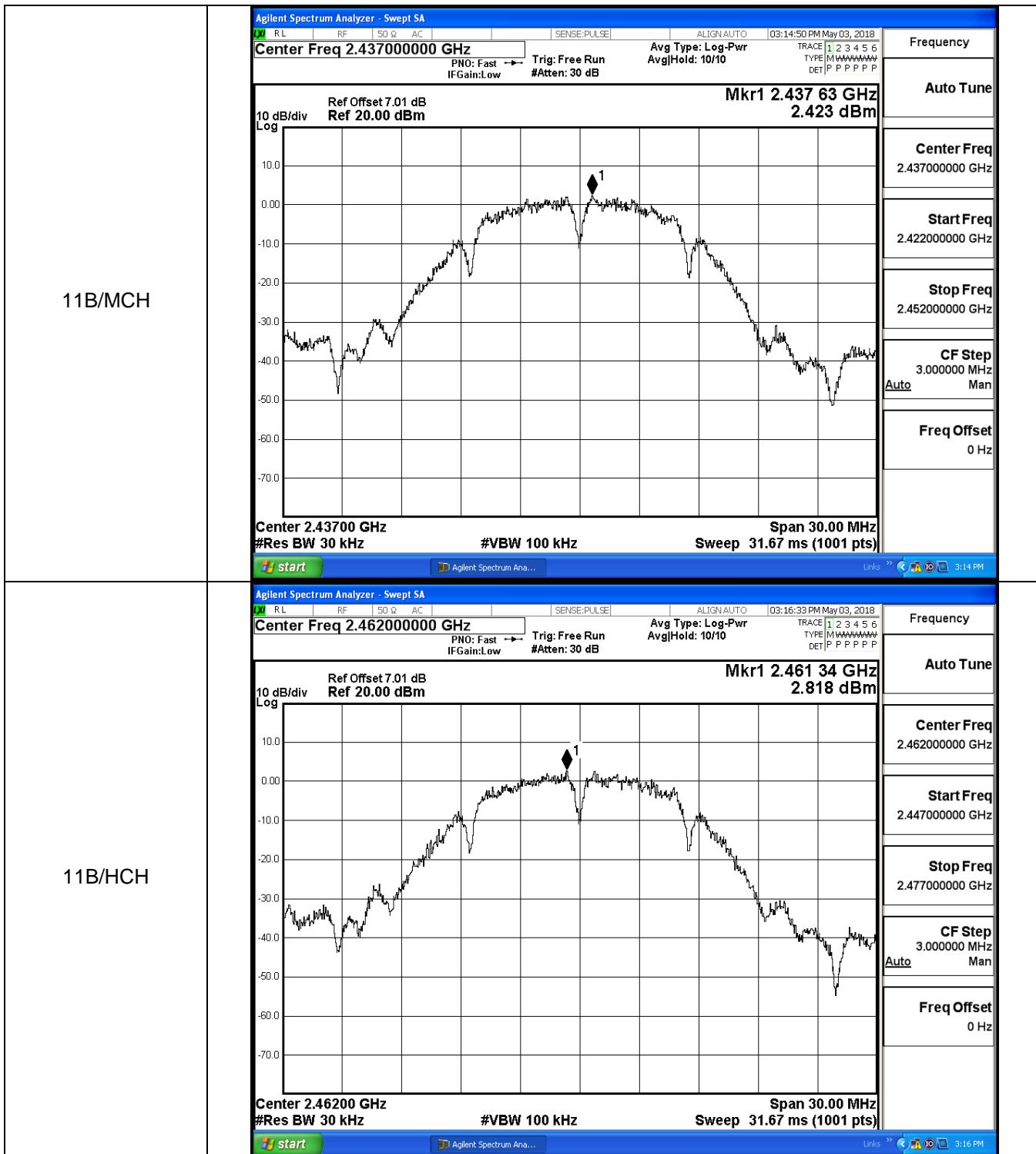
Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	18.65	30	PASS
	MCH	18.77	30	PASS
	HCH	18.62	30	PASS
11G	LCH	18.33	30	PASS
	MCH	18.15	30	PASS
	HCH	18.24	30	PASS
11N20SISO	LCH	17.32	30	PASS
	MCH	17.59	30	PASS
	HCH	17.66	30	PASS
11N40SISO	LCH	16.32	30	PASS
	MCH	16.89	30	PASS
	HCH	16.78	30	PASS

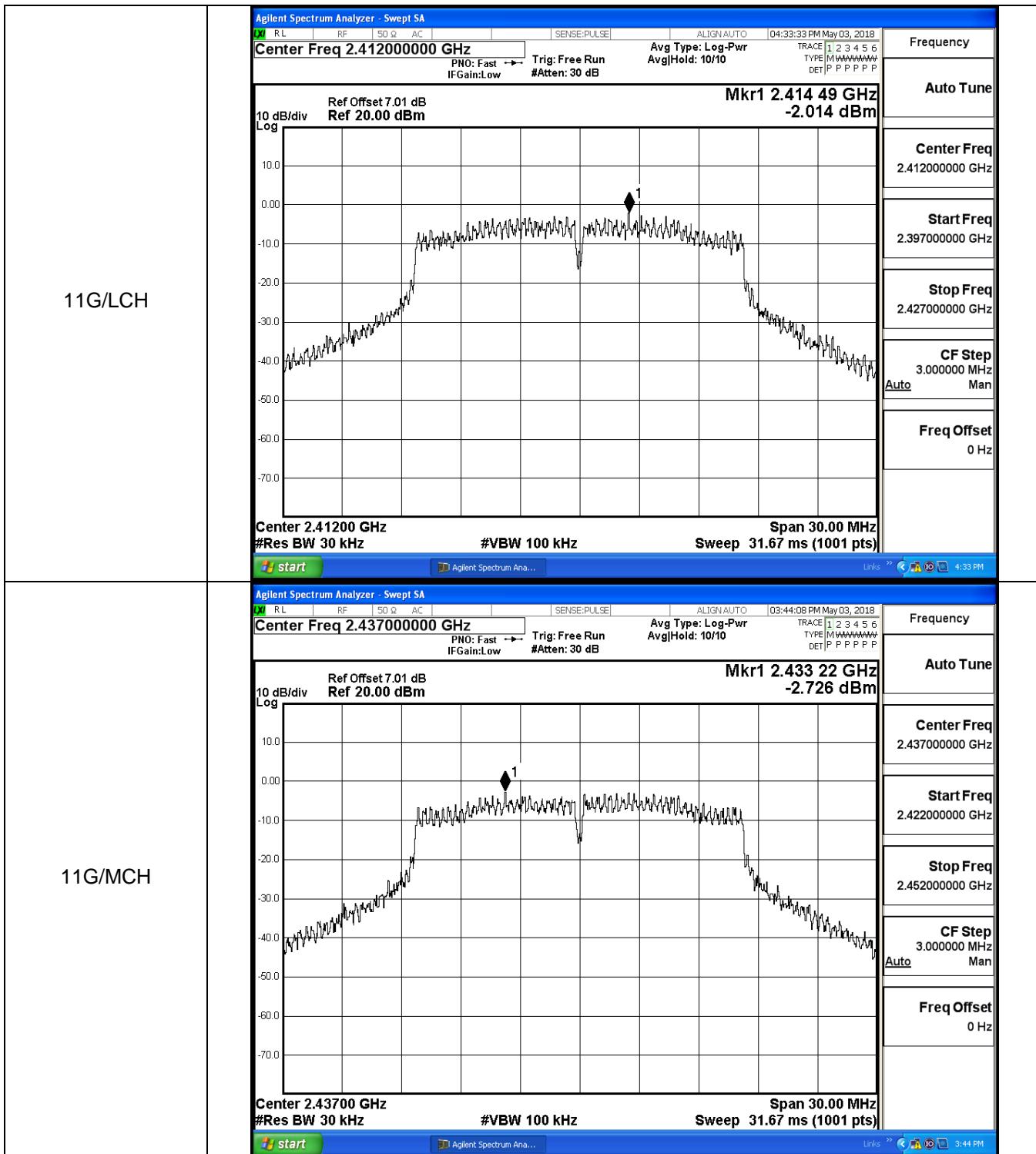
B.3 Maximum Power Spectral Density

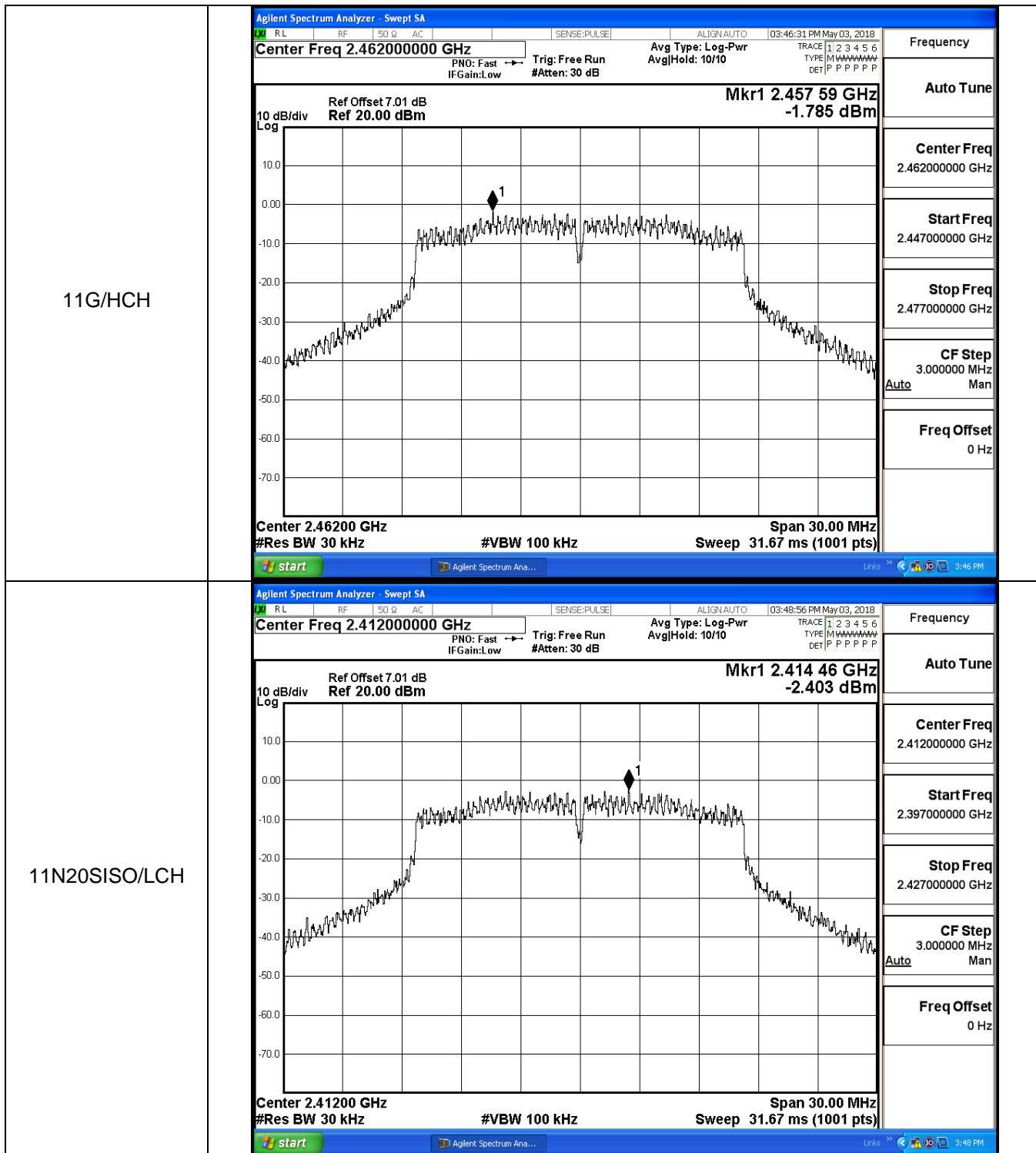
Mode	Channel	Meas.Level [dBm/30KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	2.792	8	PASS
	MCH	2.423	8	PASS
	HCH	2.818	8	PASS
11G	LCH	-2.014	8	PASS
	MCH	-2.726	8	PASS
	HCH	-1.785	8	PASS
11N20SISO	LCH	-2.403	8	PASS
	MCH	-1.960	8	PASS
	HCH	-1.822	8	PASS
11N40SISO	LCH	-6.189	8	PASS
	MCH	-5.579	8	PASS
	HCH	-5.622	8	PASS

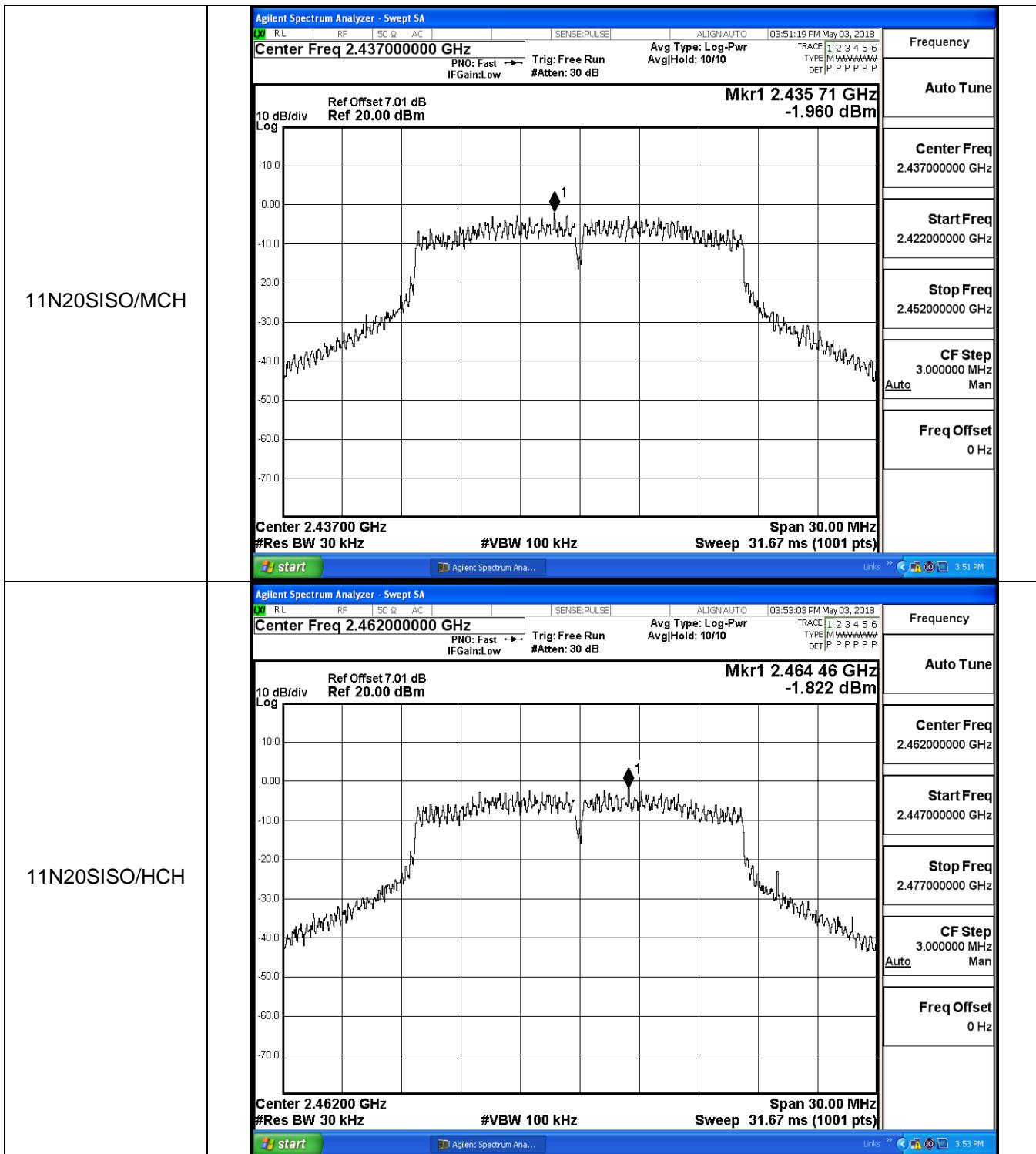
Test Graphs

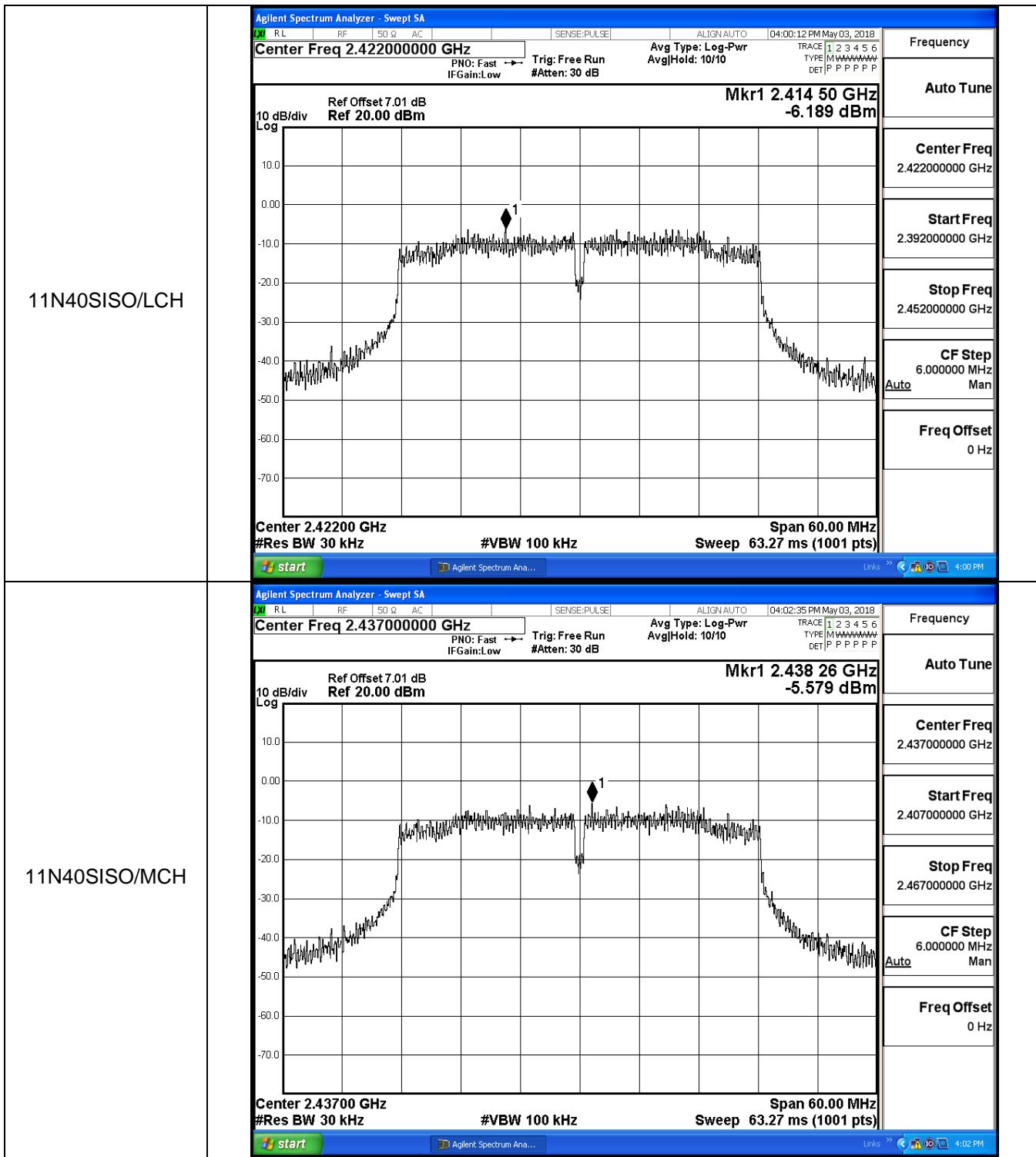


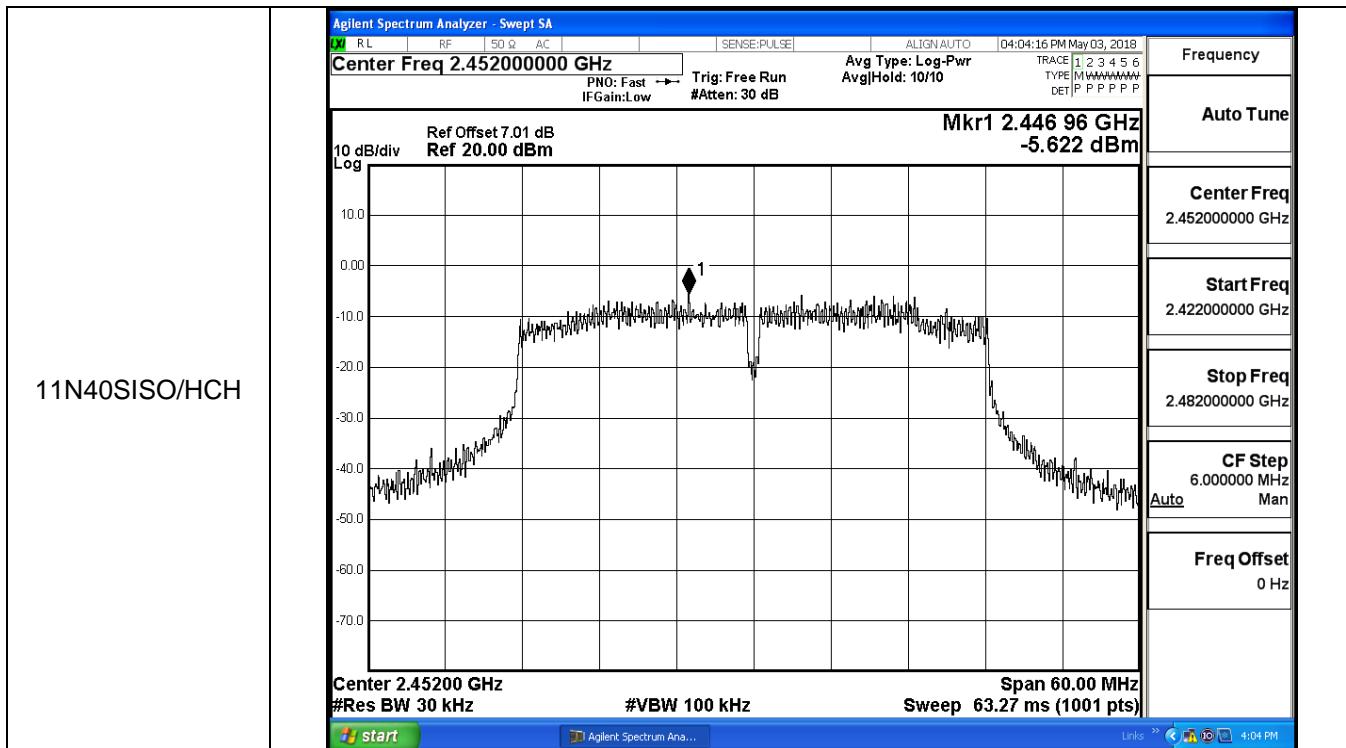






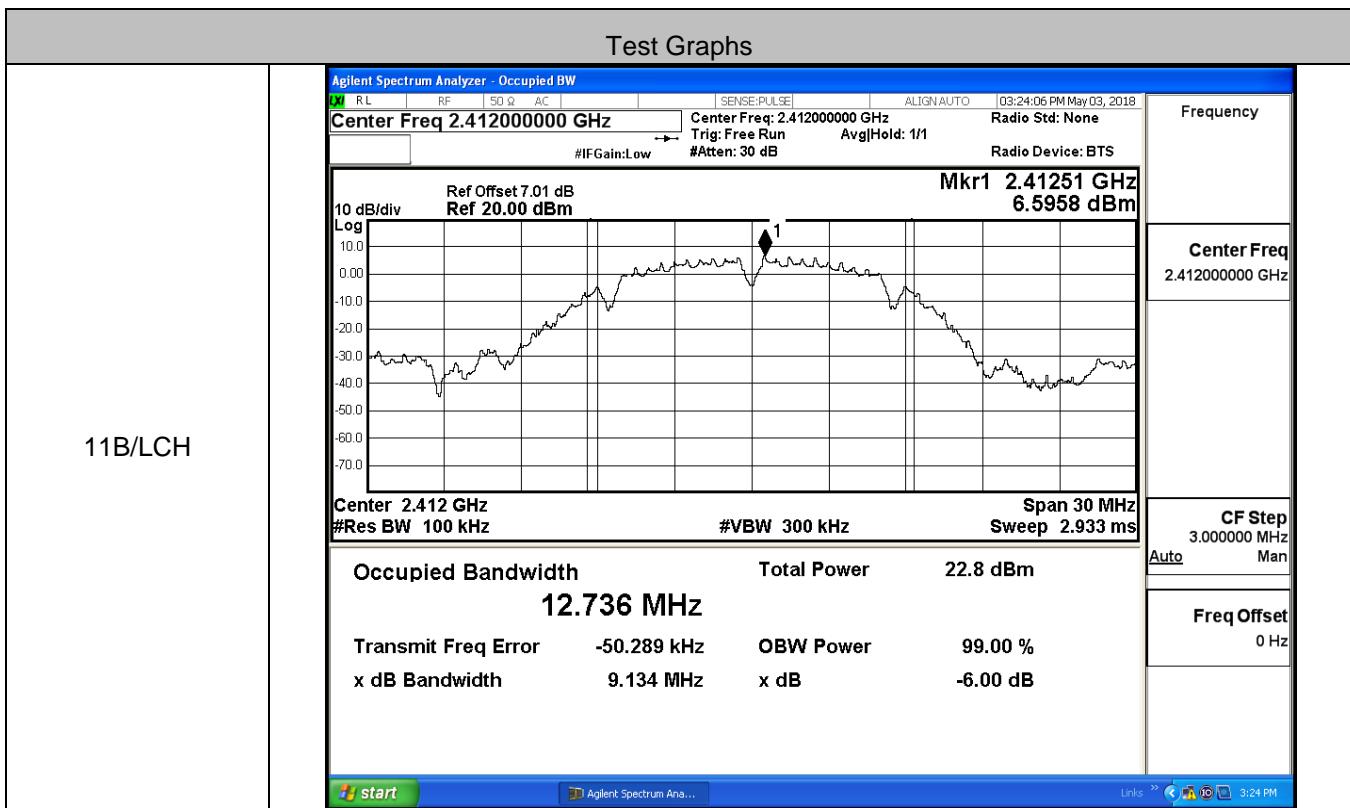


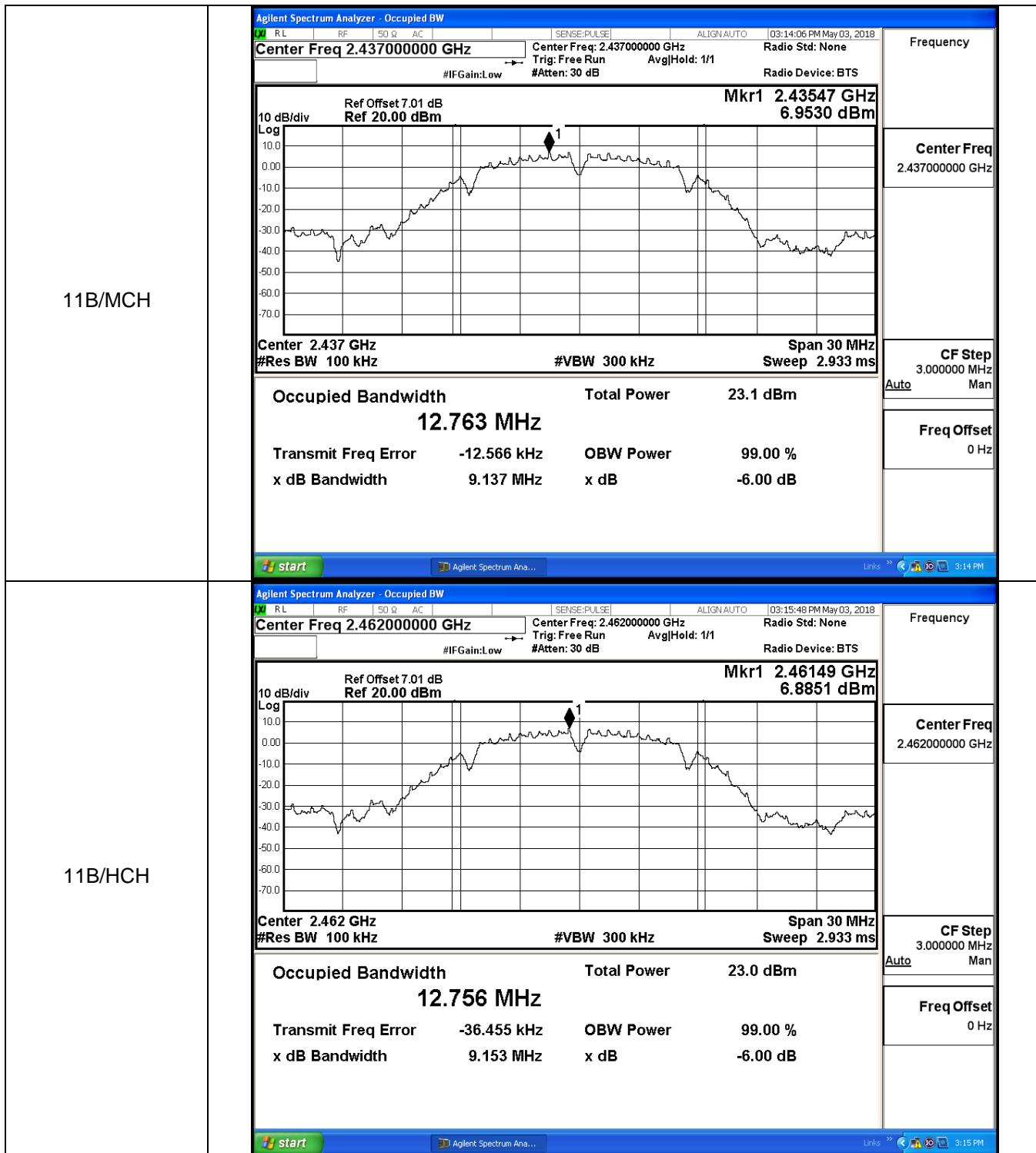


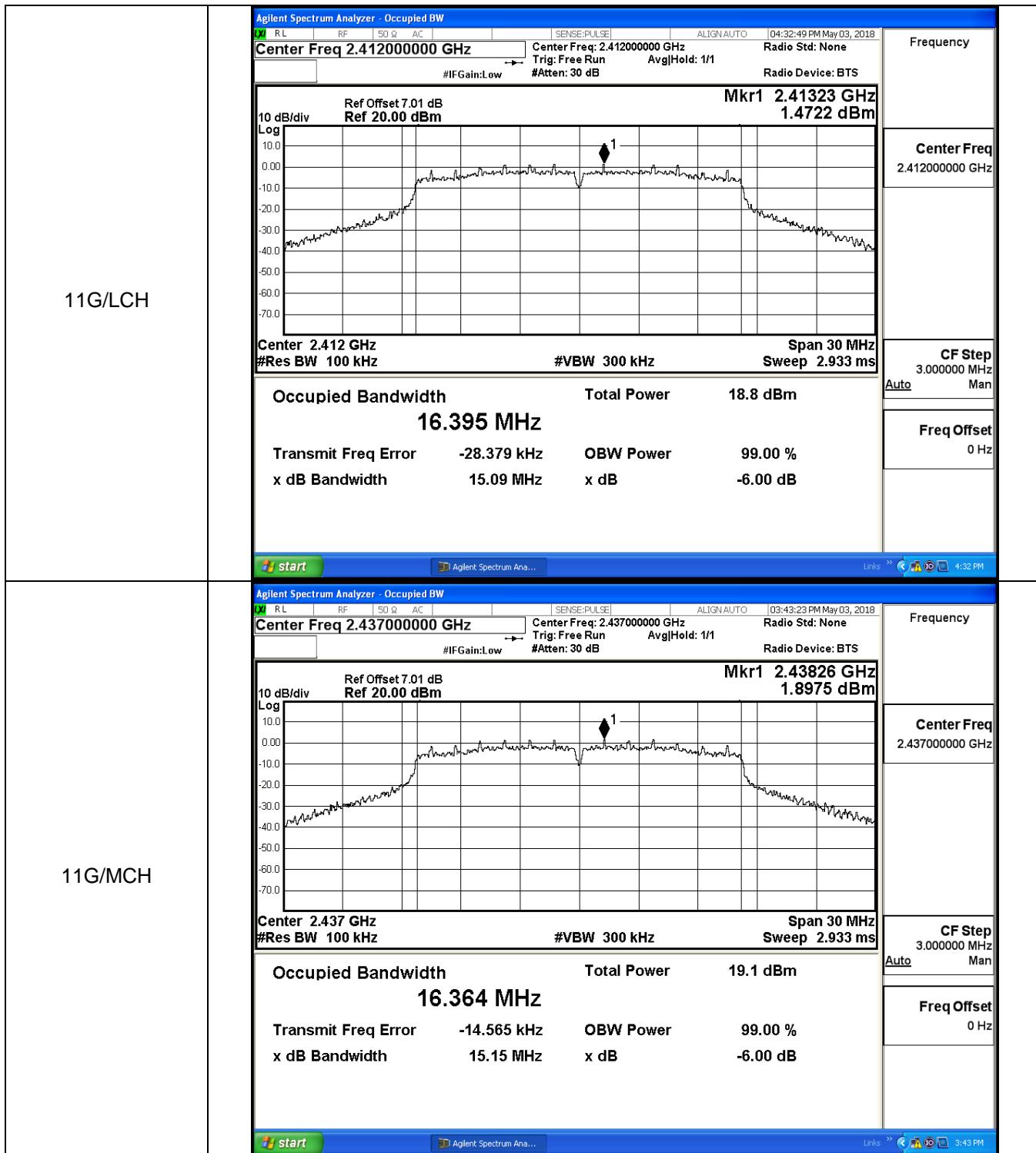


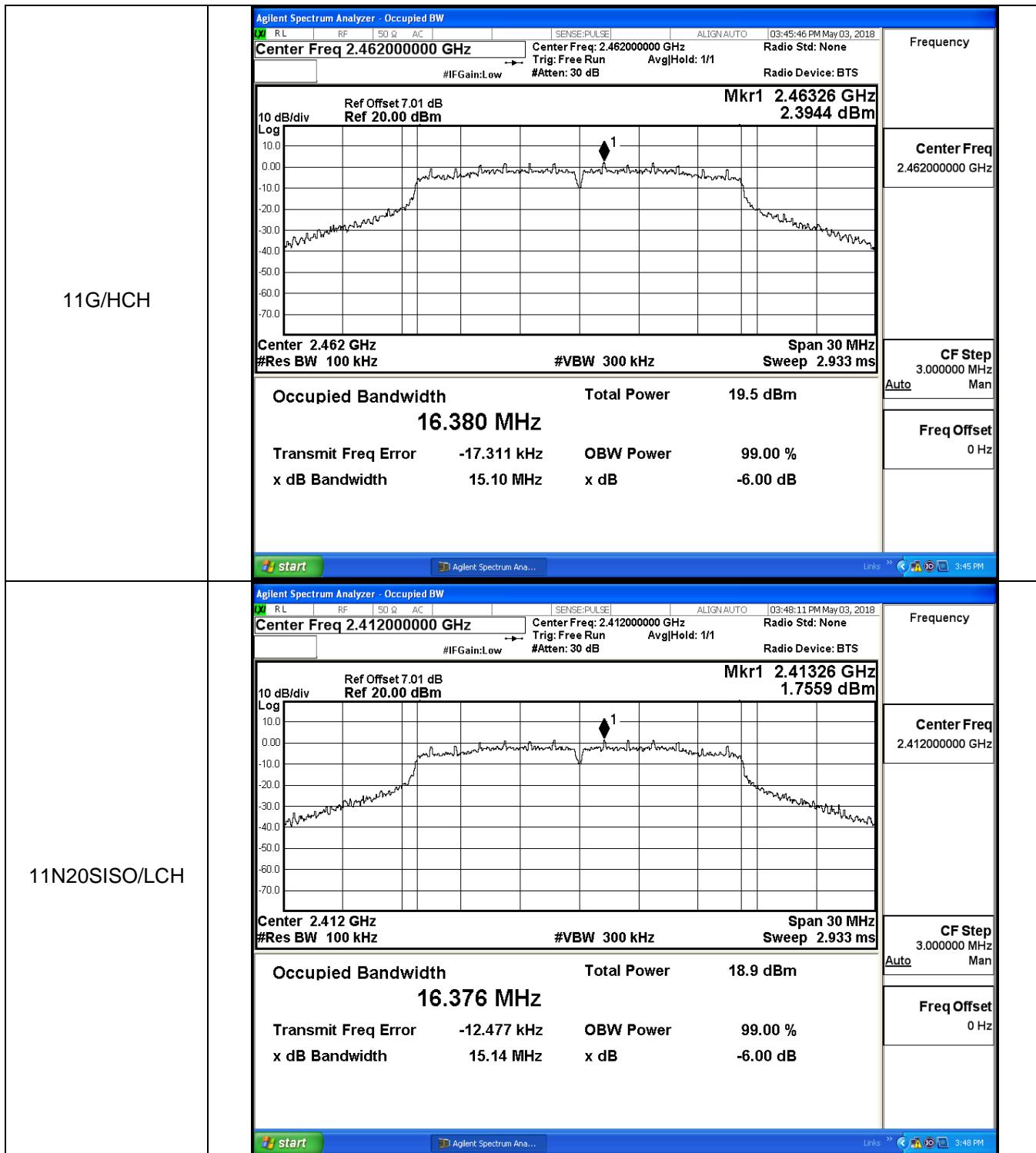
B.4 6dB Bandwidth

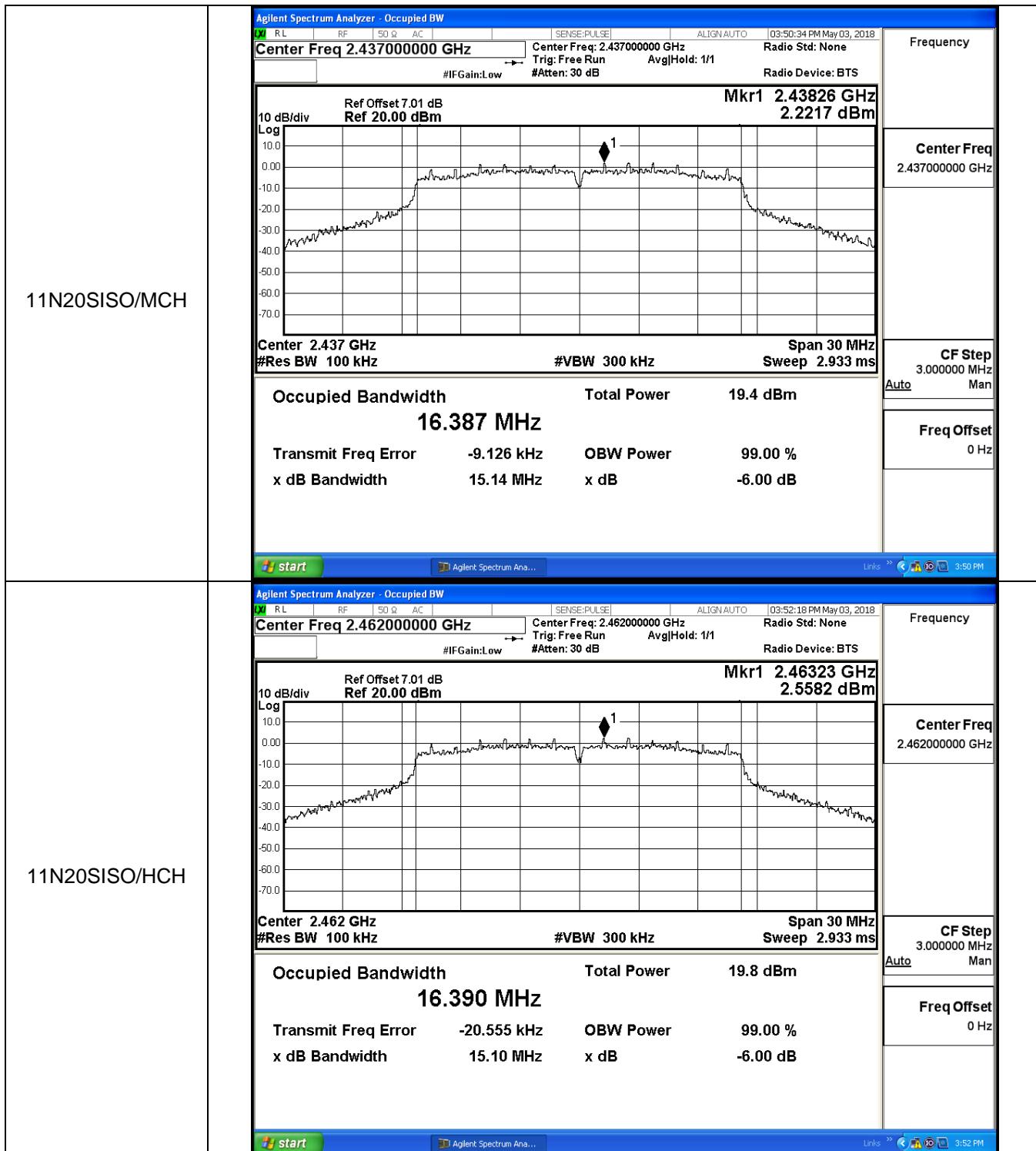
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	9.134	≥0.5	PASS
	MCH	9.137	≥0.5	PASS
	HCH	9.153	≥0.5	PASS
11G	LCH	15.09	≥0.5	PASS
	MCH	15.15	≥0.5	PASS
	HCH	15.10	≥0.5	PASS
11N20SISO	LCH	15.14	≥0.5	PASS
	MCH	15.14	≥0.5	PASS
	HCH	15.10	≥0.5	PASS
11N40SISO	LCH	35.15	≥0.5	PASS
	MCH	35.14	≥0.5	PASS
	HCH	35.16	≥0.5	PASS

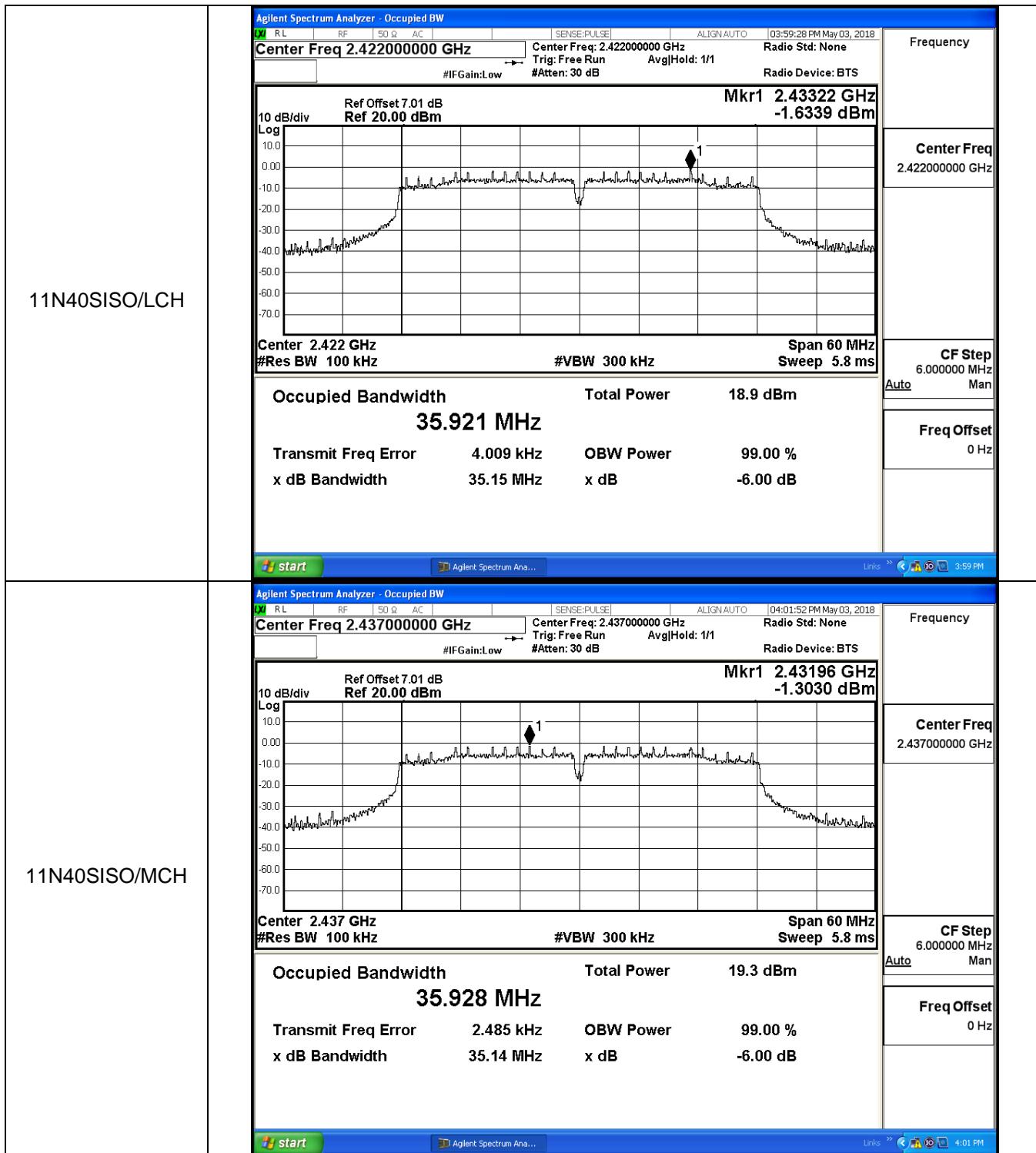


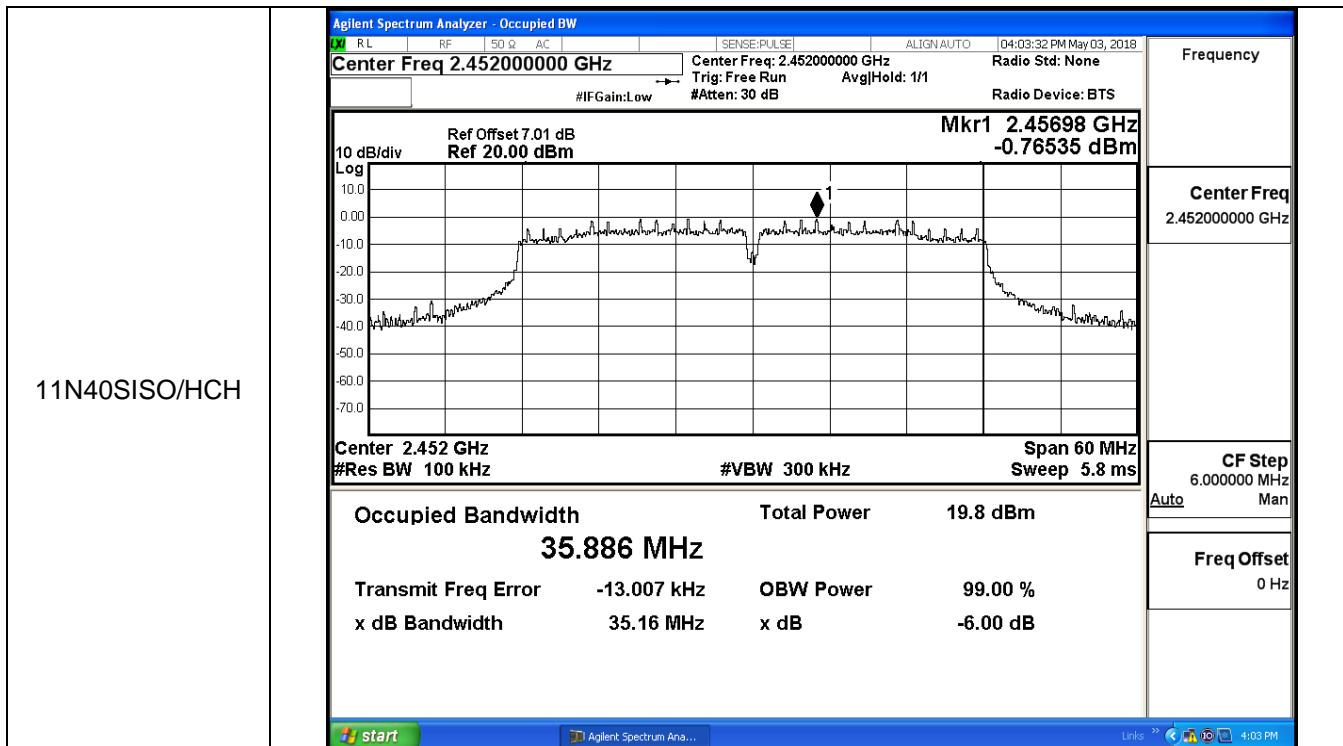






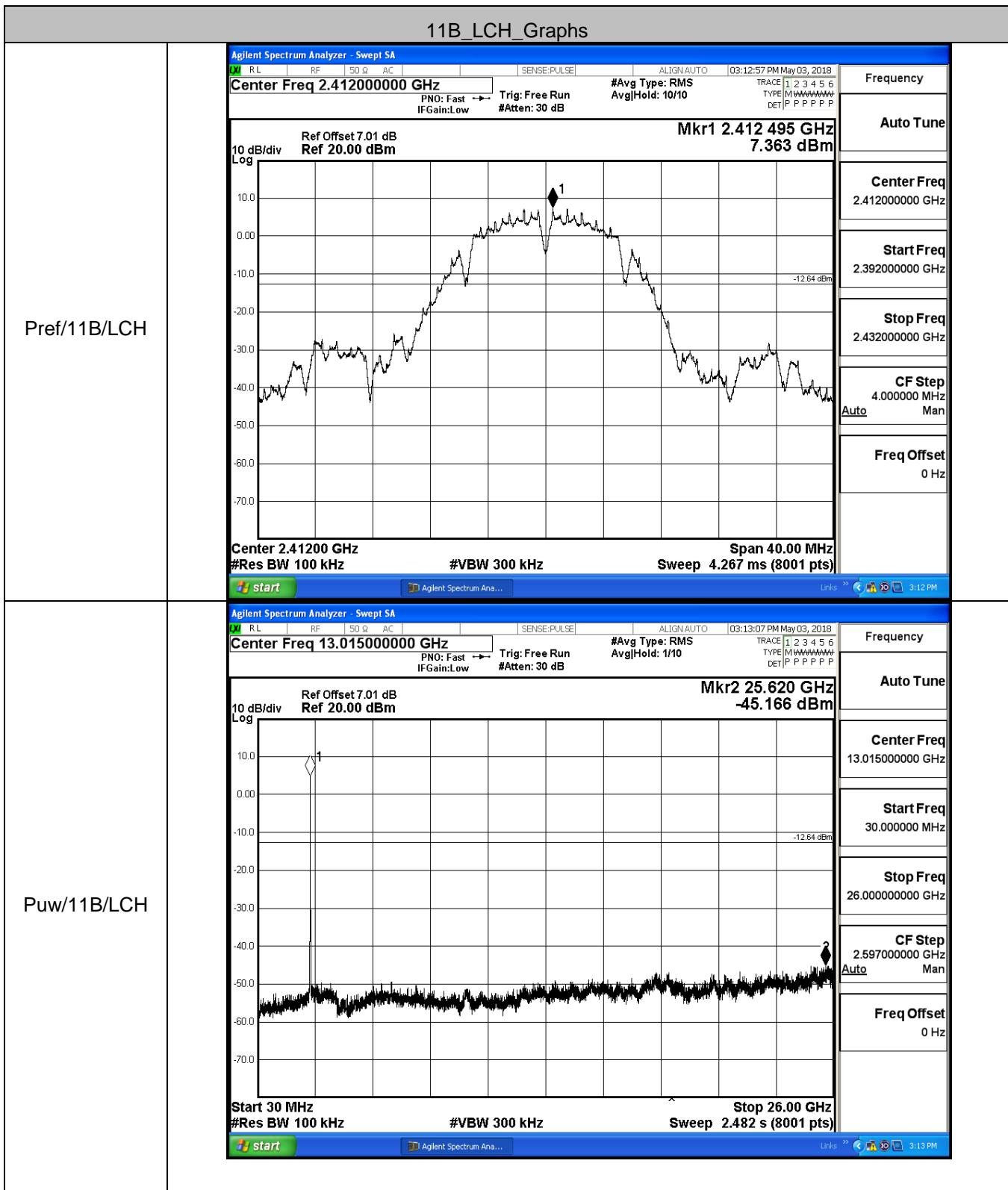


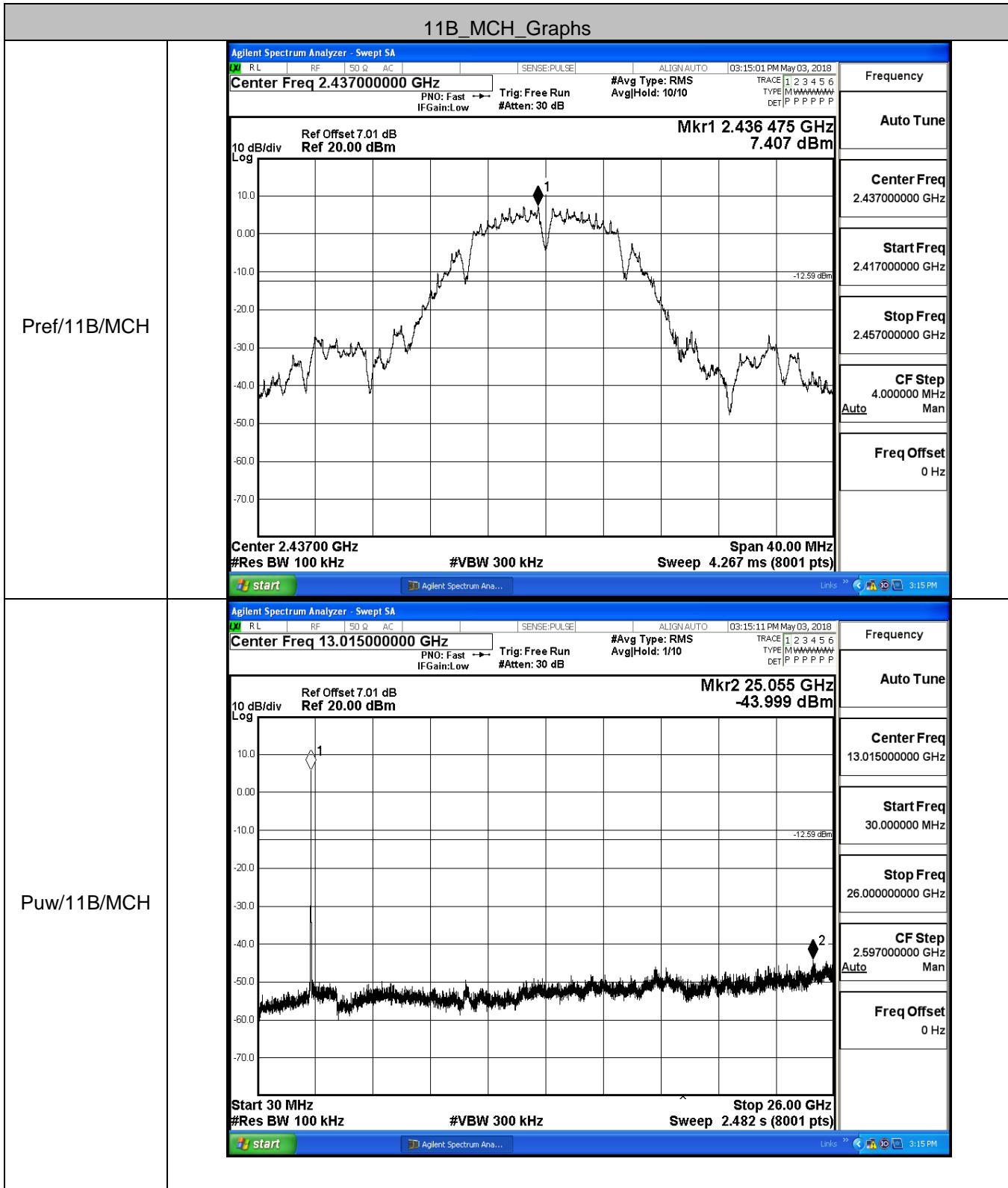


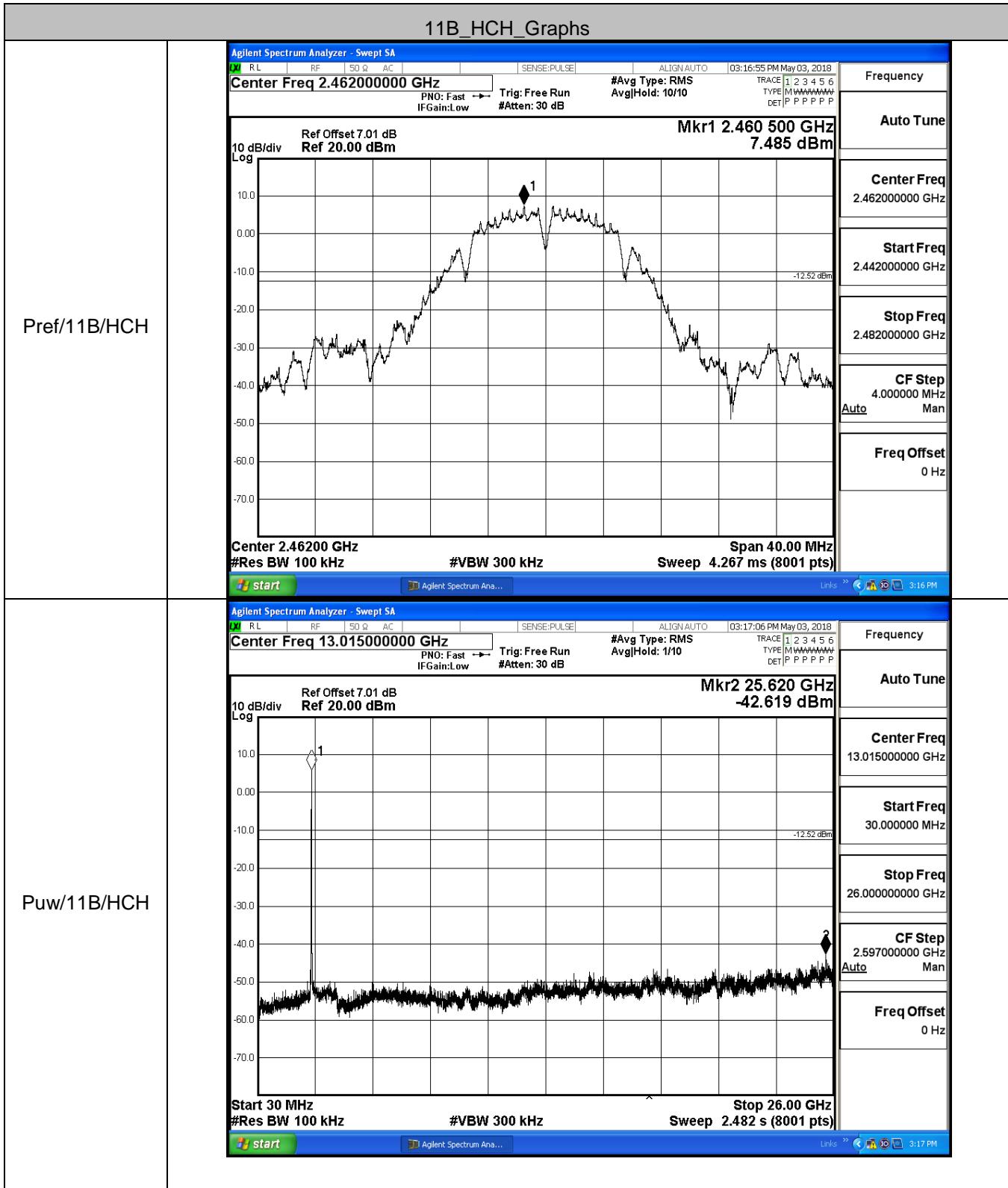


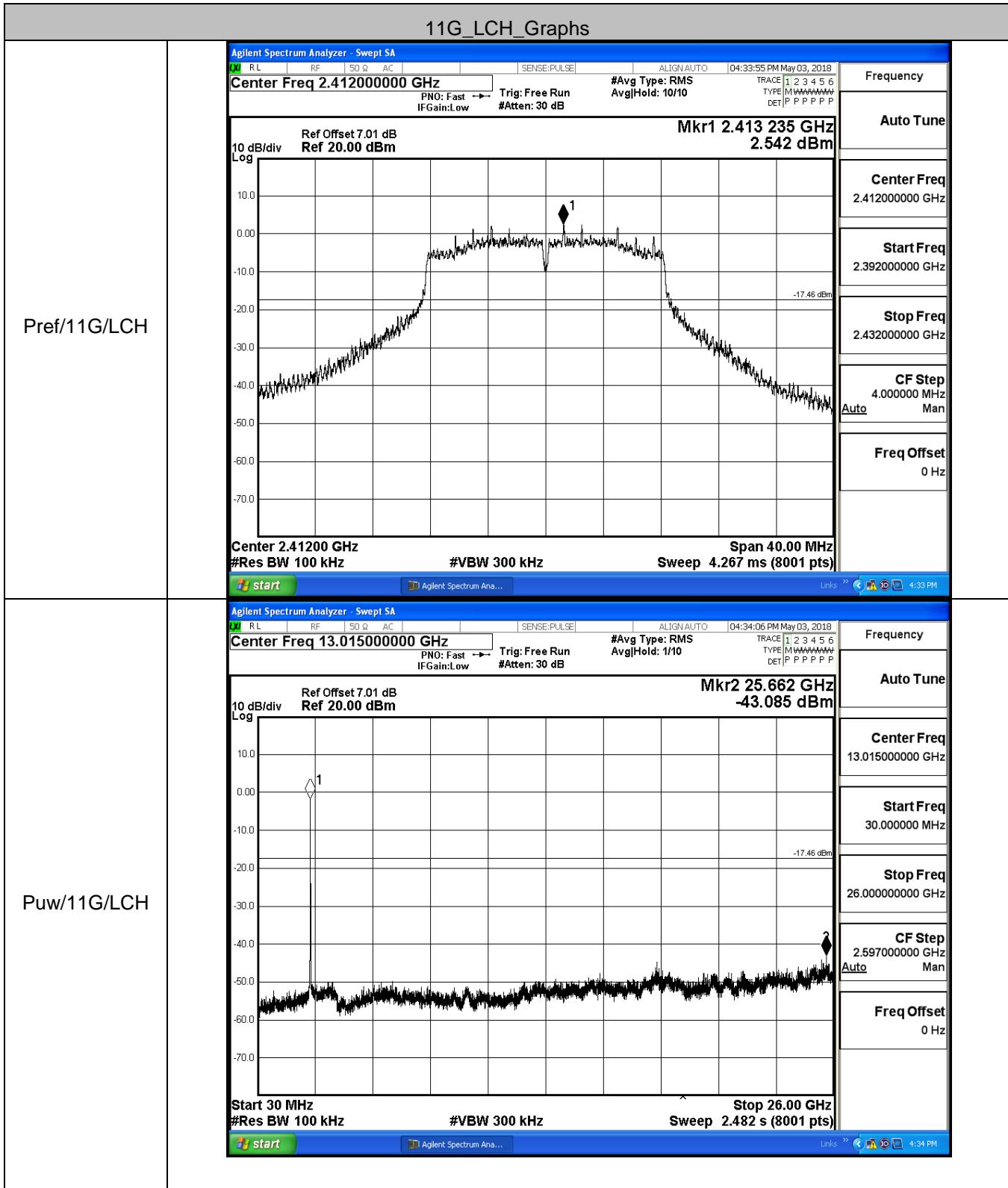
B.5 RF Conducted Spurious Emissions

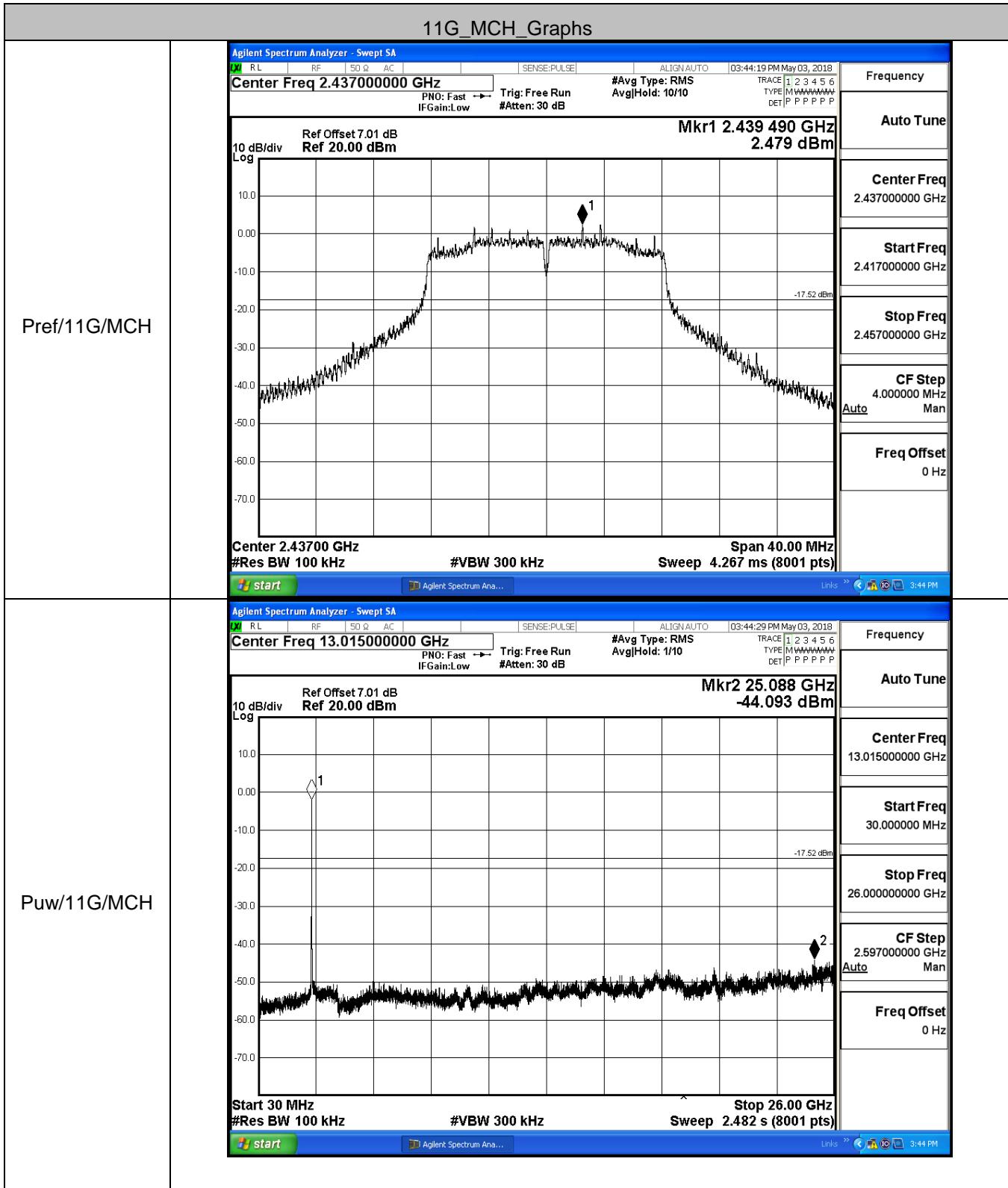
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	7.363	-45.166	-12.637	PASS
	MCH	7.407	-43.999	-12.593	PASS
	HCH	7.485	-42.619	-12.515	PASS
11G	LCH	2.542	-43.085	-17.458	PASS
	MCH	2.479	-44.093	-17.521	PASS
	HCH	3.122	-44.717	-16.878	PASS
11N20 SISO	LCH	1.982	-43.993	-18.018	PASS
	MCH	2.266	-44.303	-17.734	PASS
	HCH	2.803	-44.148	-17.197	PASS
11N40 SISO	LCH	-0.877	-44.324	-20.877	PASS
	MCH	-0.784	-44.158	-20.784	PASS
	HCH	-0.257	-44.347	-20.257	PASS

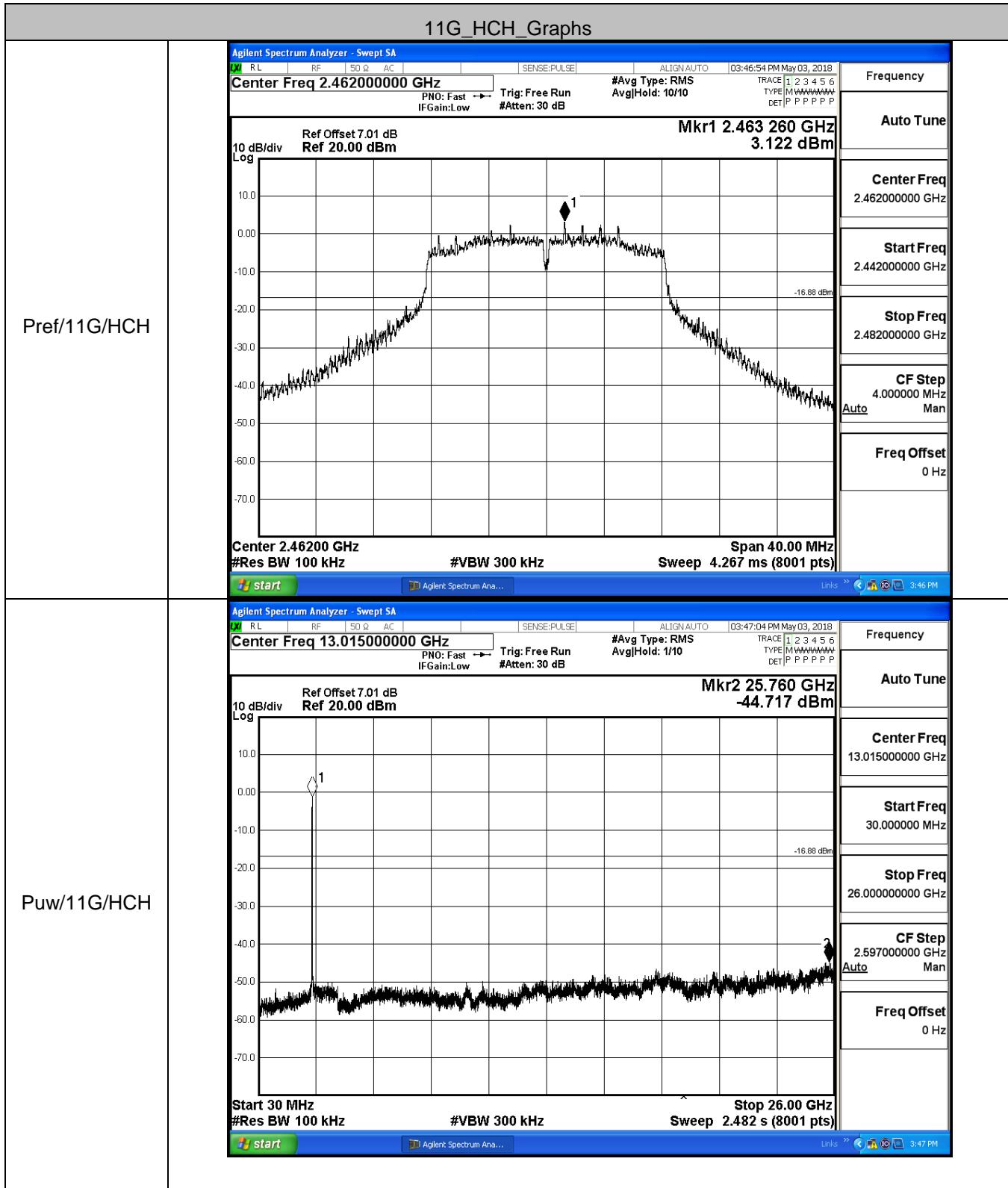


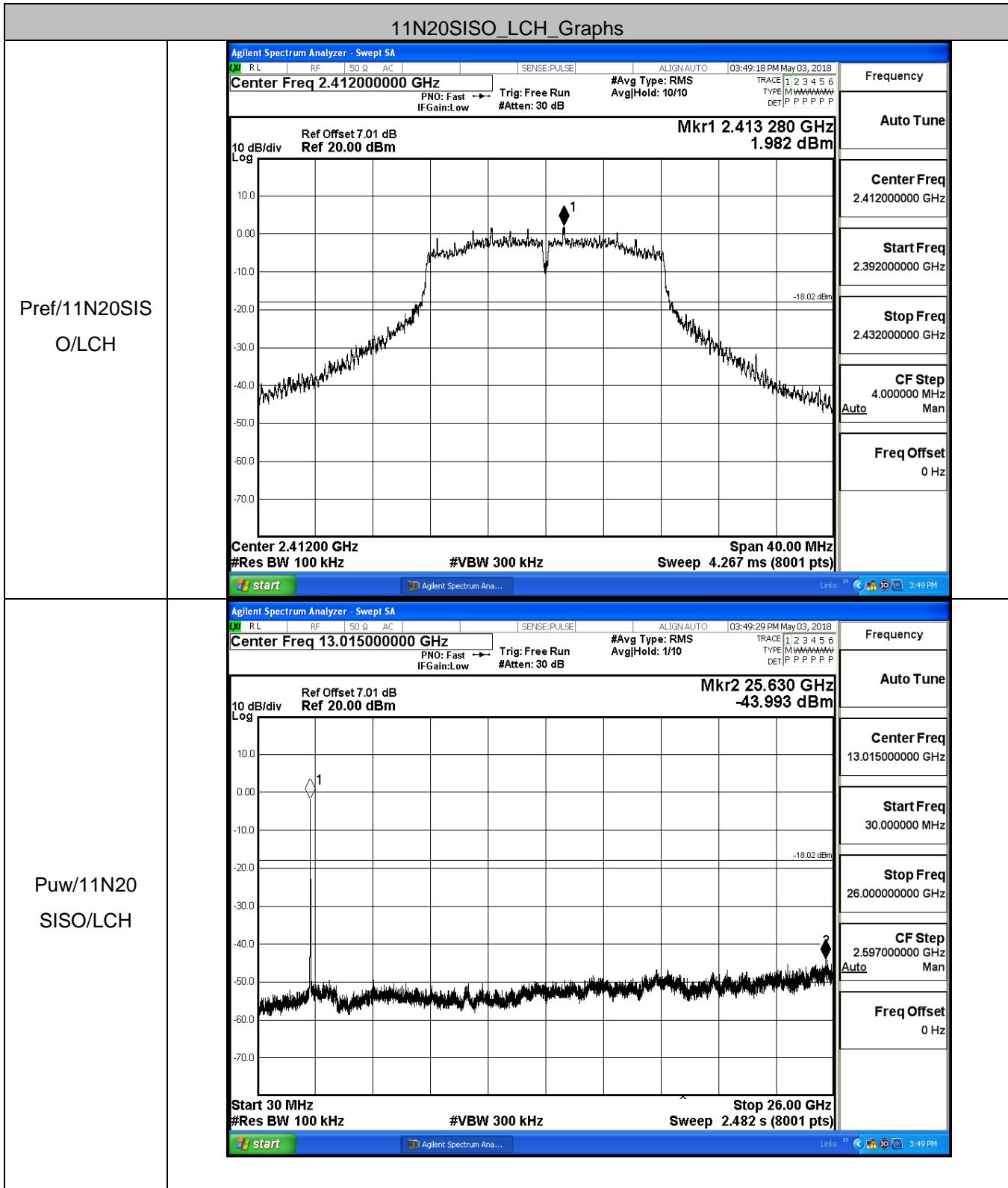


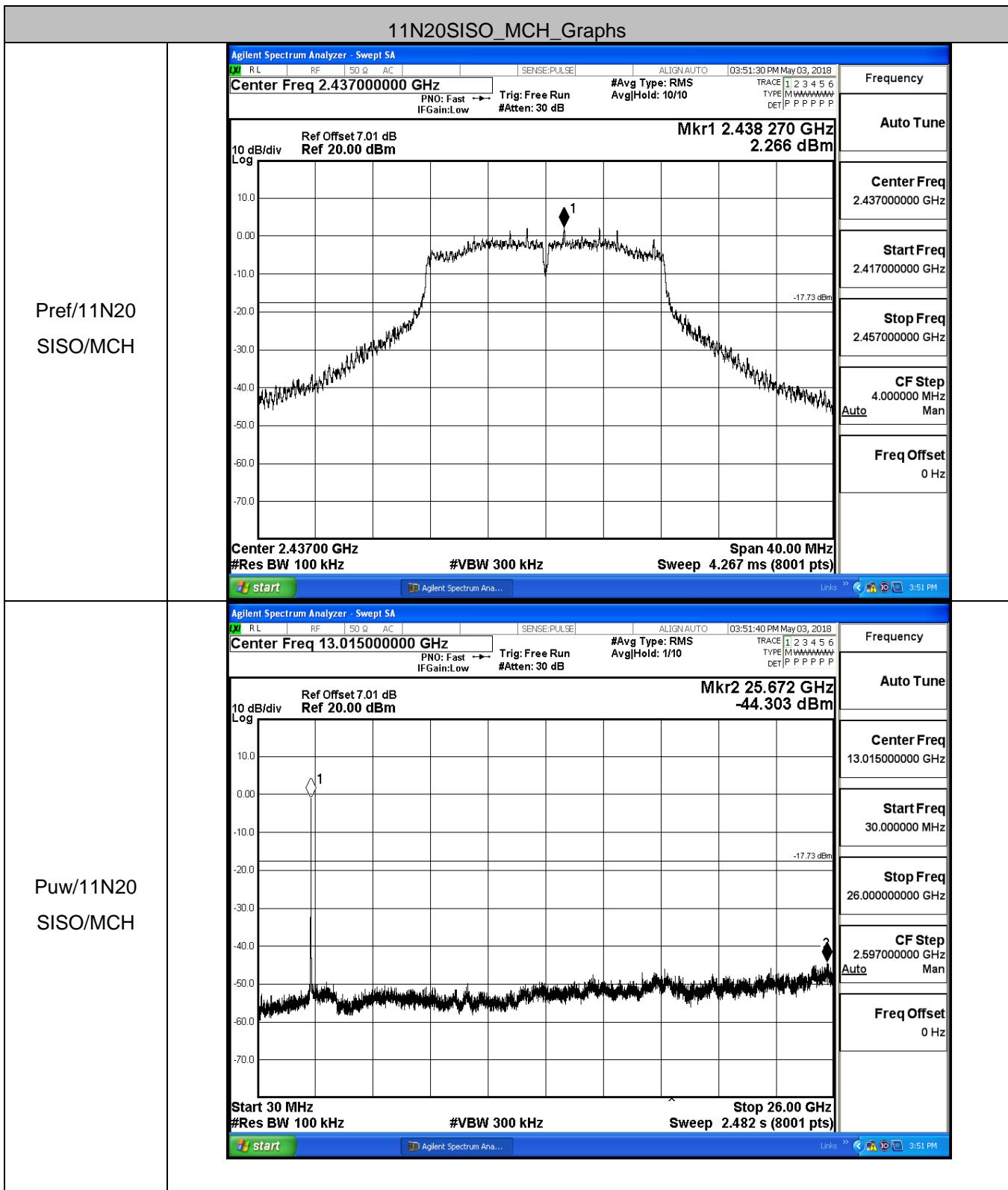


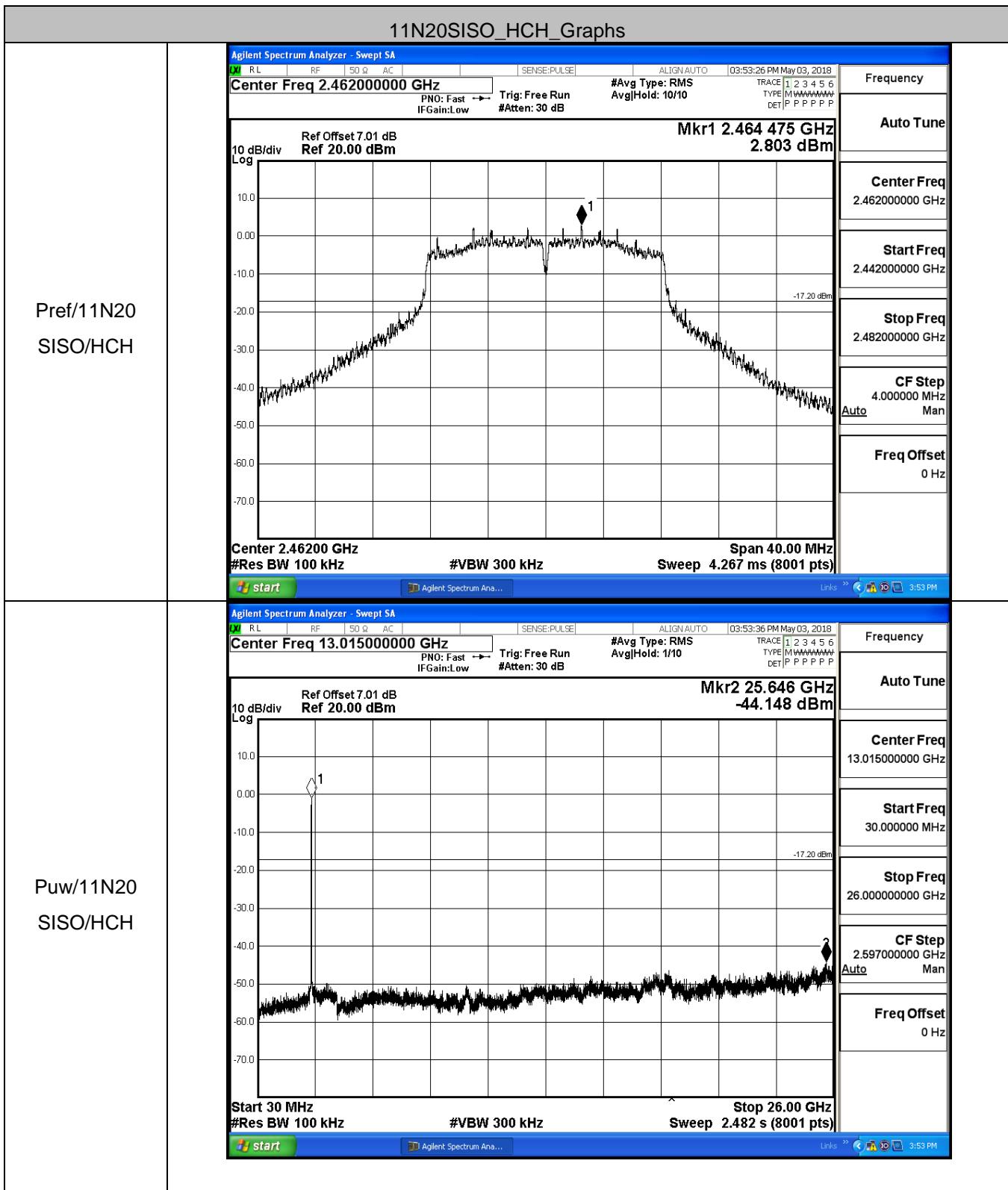


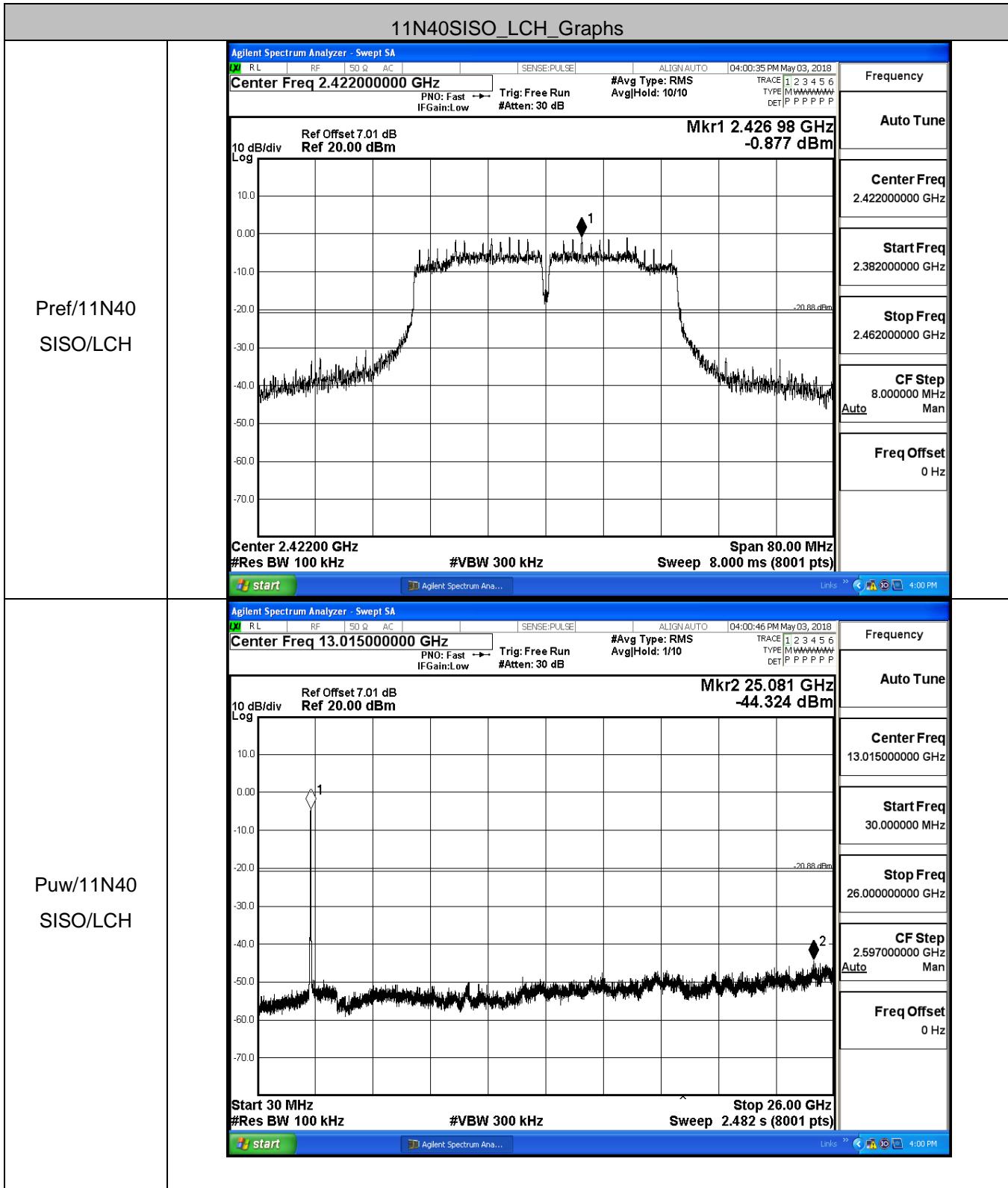


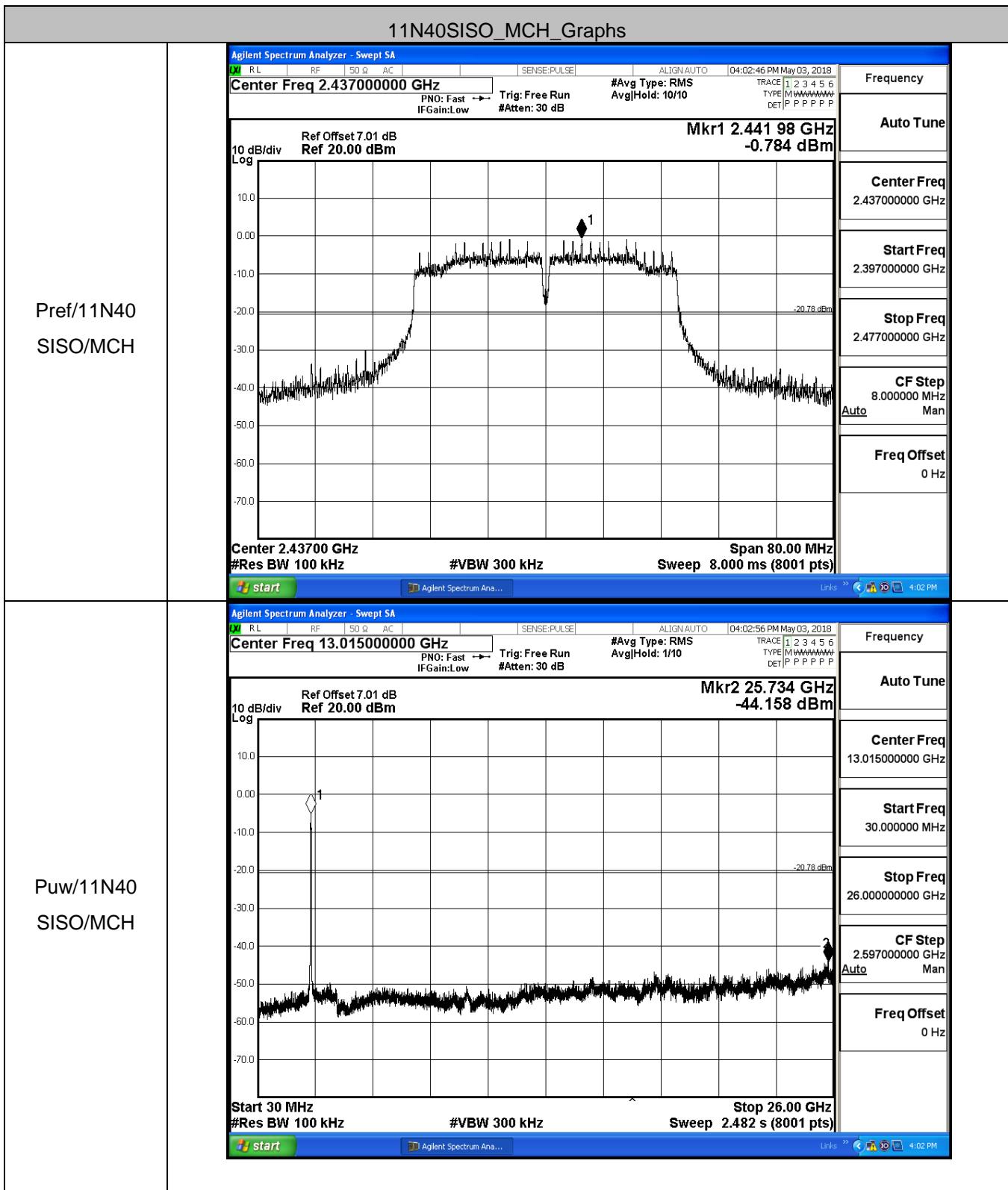


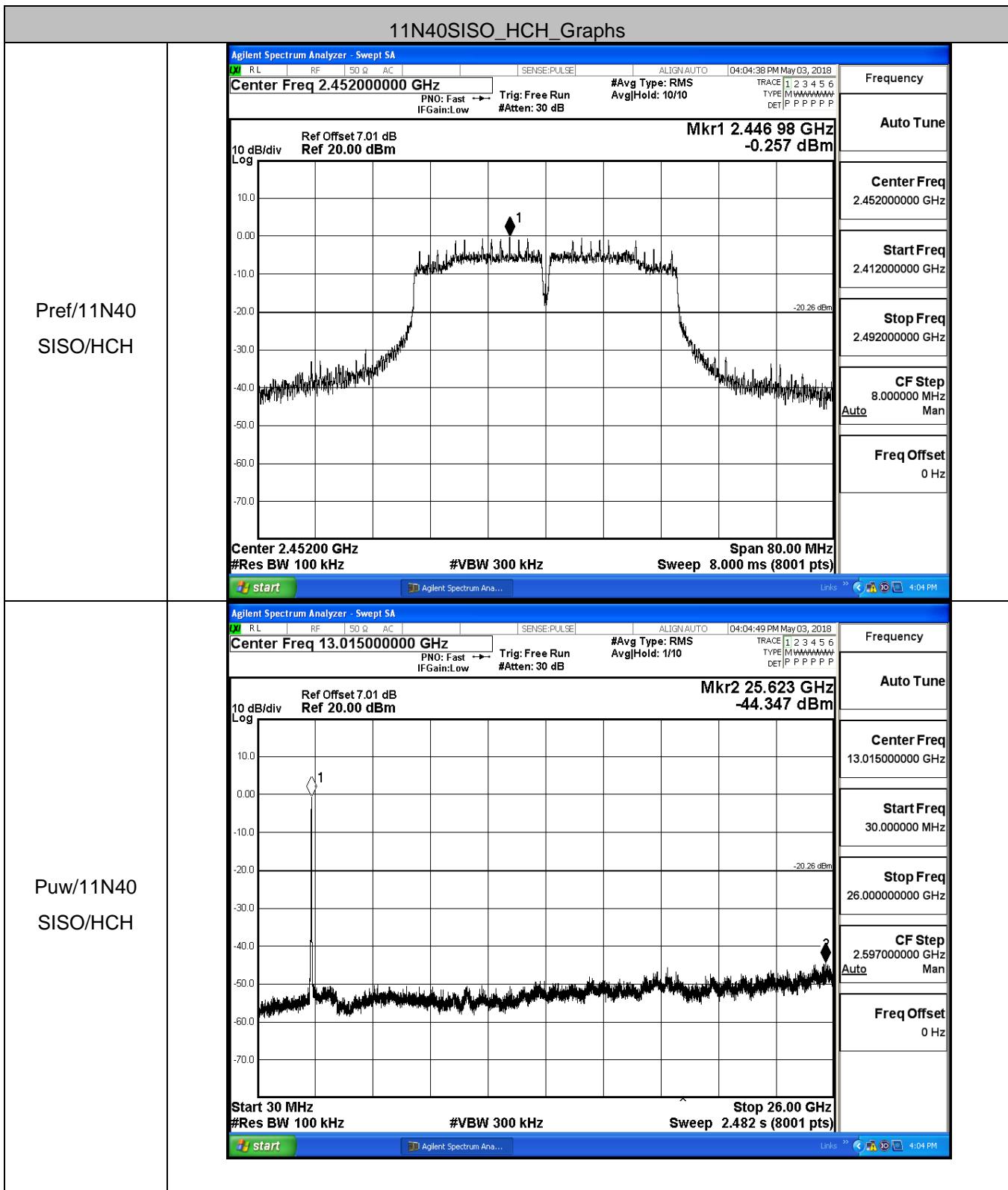






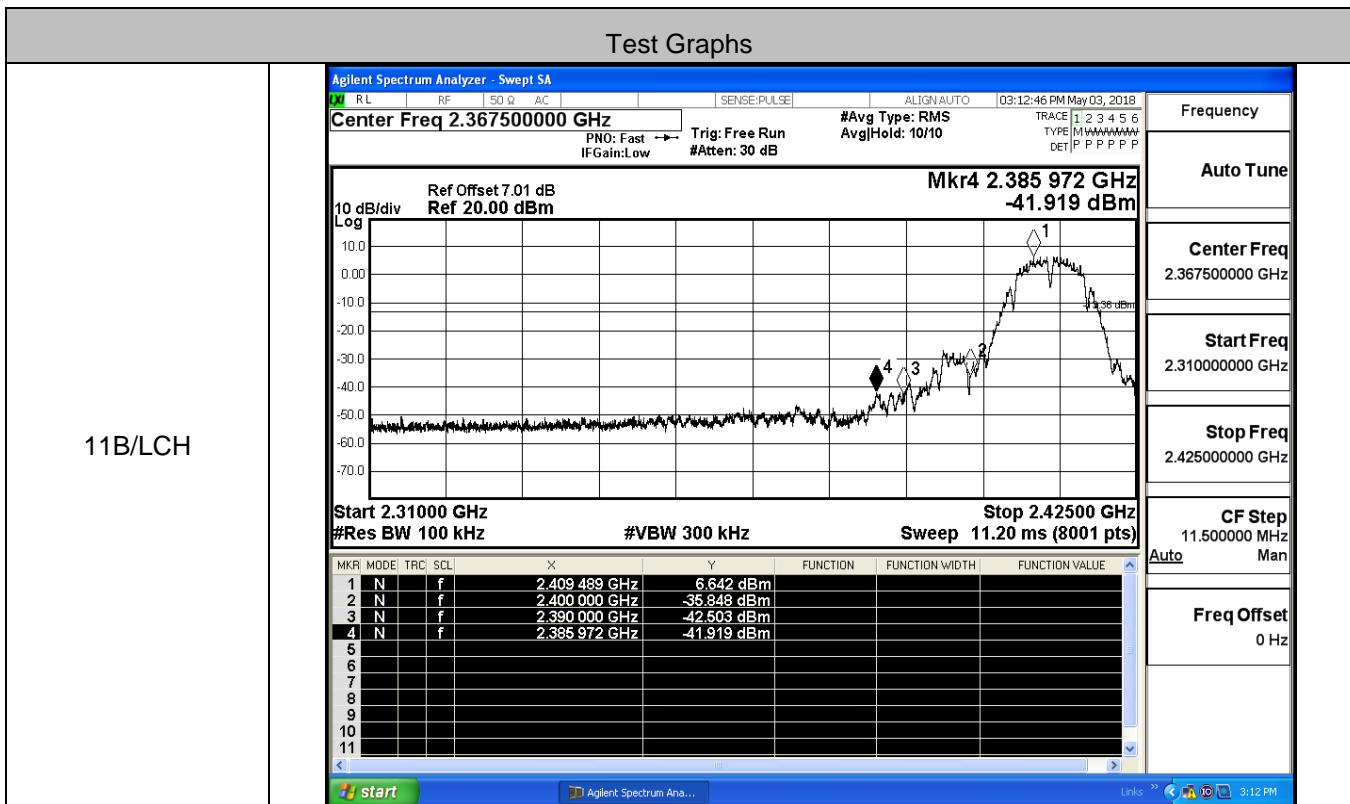


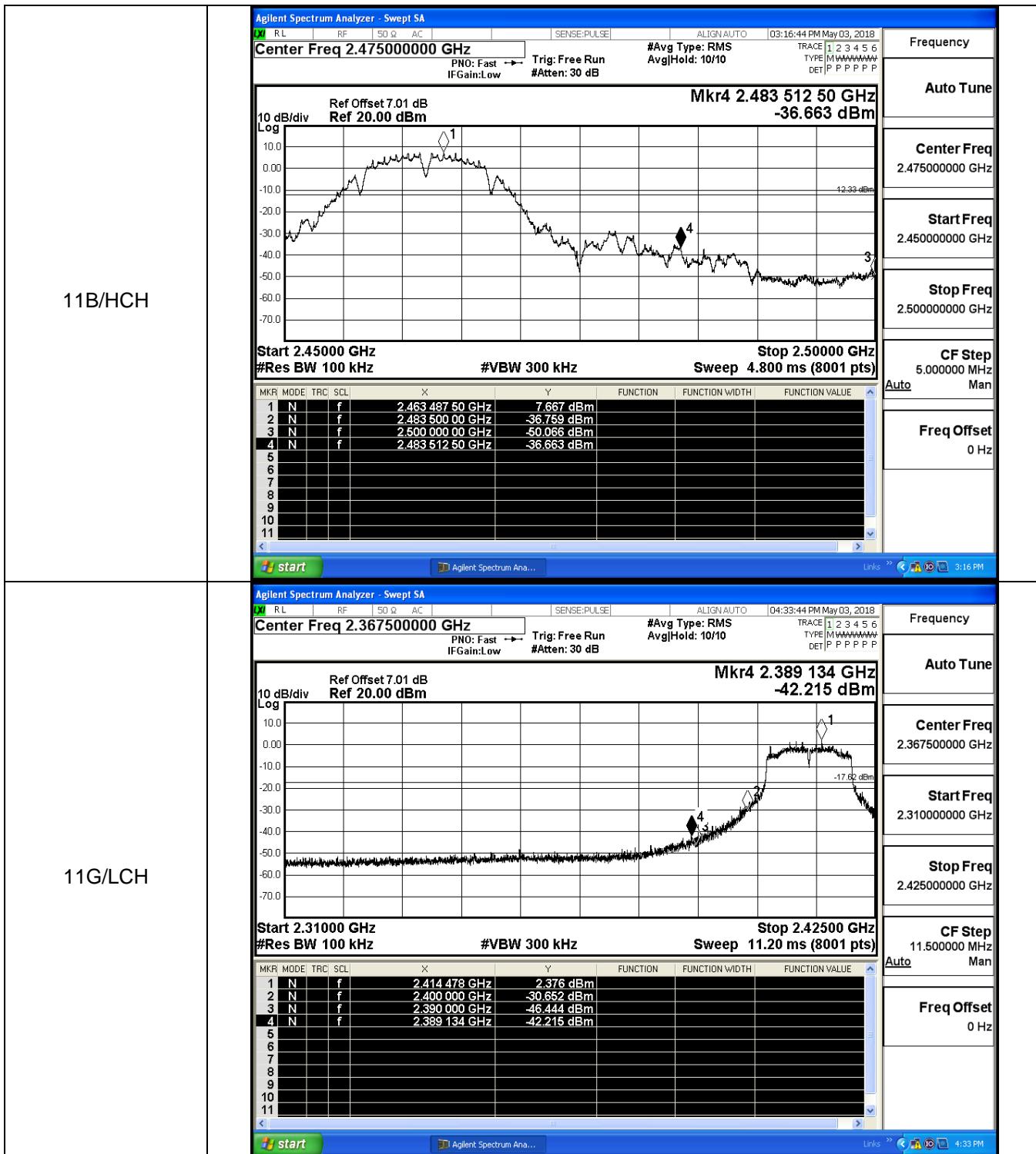




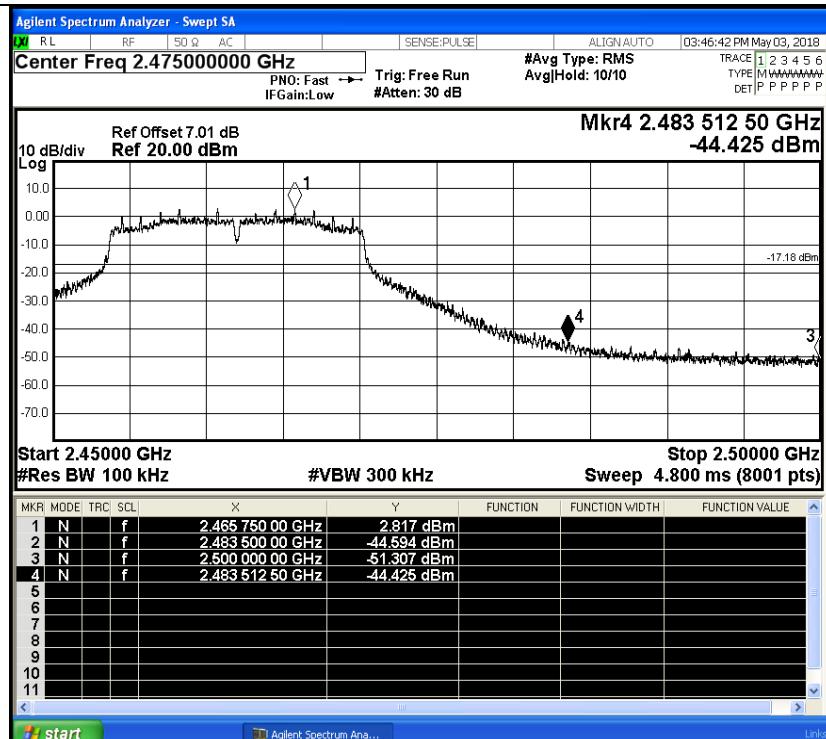
B.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	6.642	-41.919	-13.36	PASS
	HCH	7.667	-36.663	-12.33	PASS
11G	LCH	2.376	-42.215	-17.62	PASS
	HCH	2.817	-44.425	-17.18	PASS
11N20SISO	LCH	2.080	-42.214	-17.92	PASS
	HCH	3.211	-45.228	-16.79	PASS
11N40SISO	LCH	-0.892	-33.304	-20.89	PASS
	HCH	-0.403	-36.093	-20.4	PASS

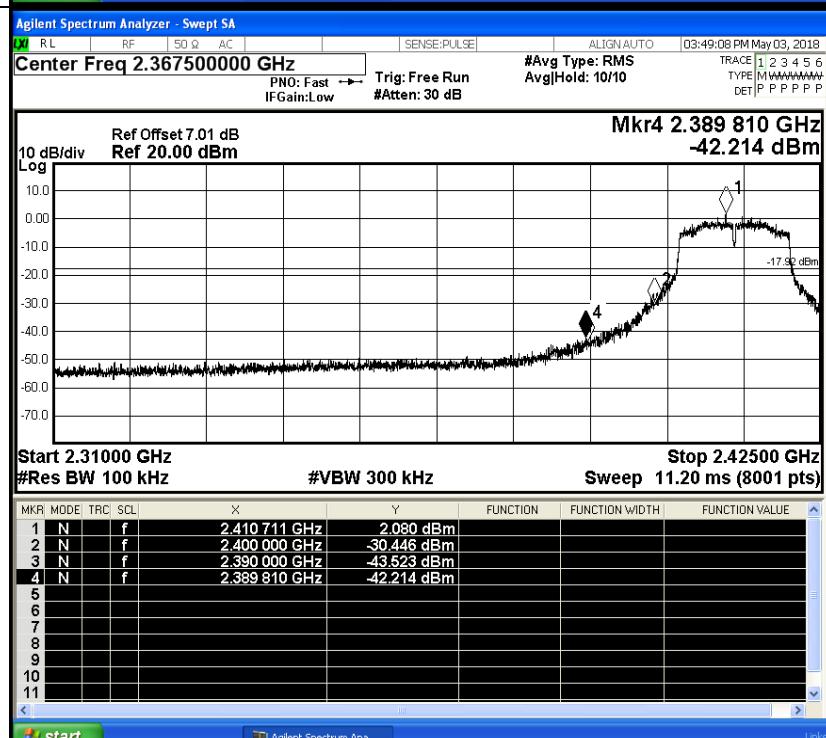


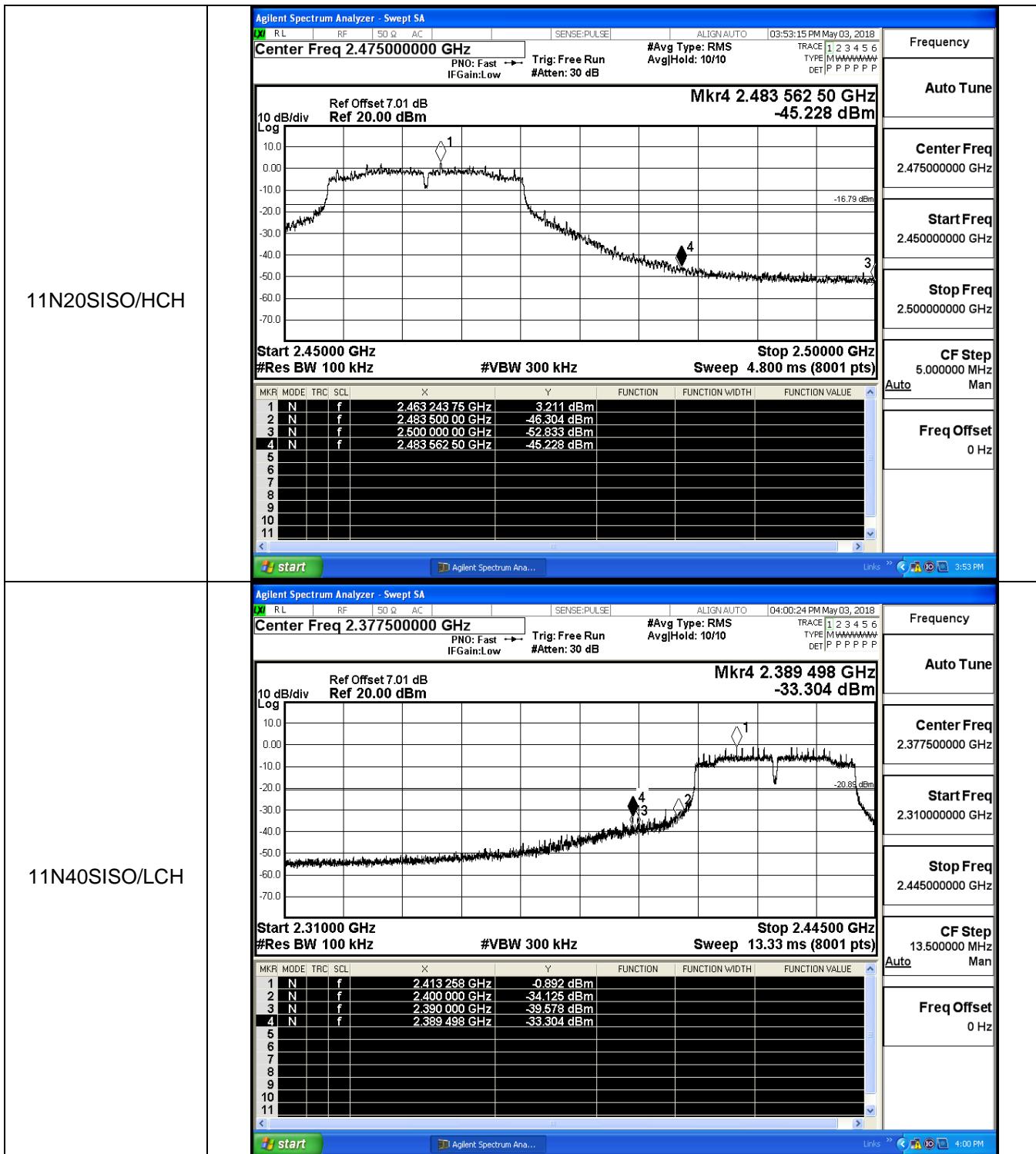


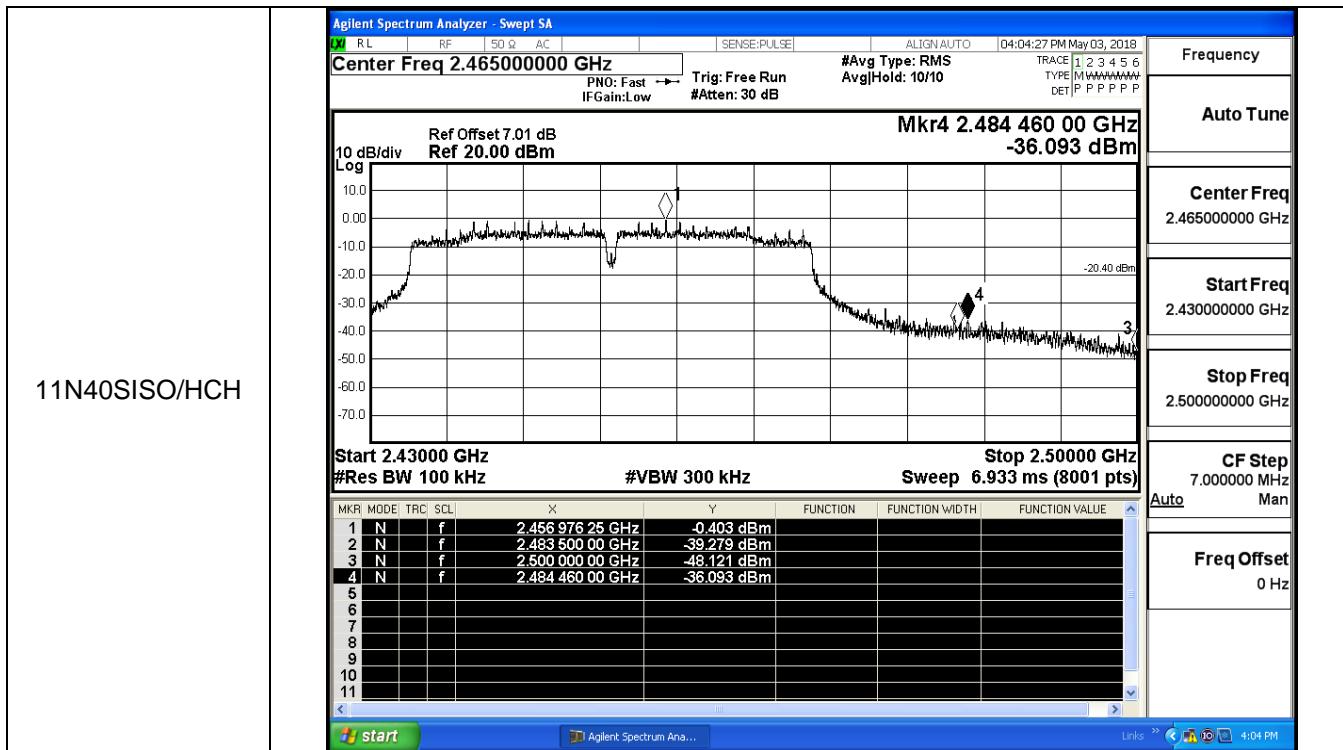
11G/HCH



11N20SISO/LCH





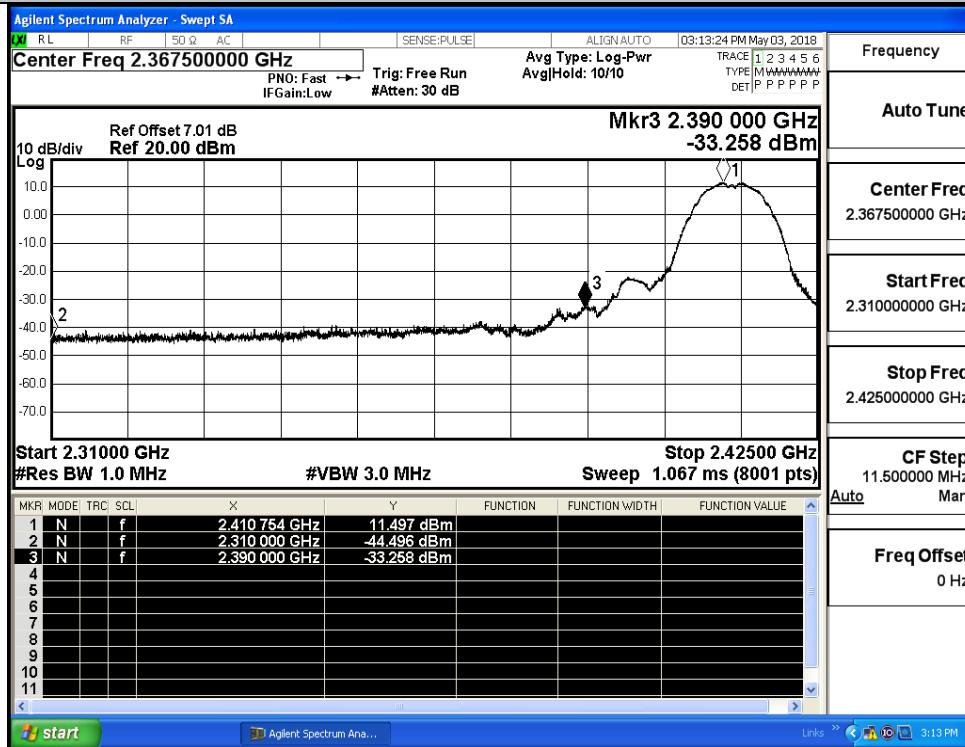


B.7 Restrict-band band-edge measurements

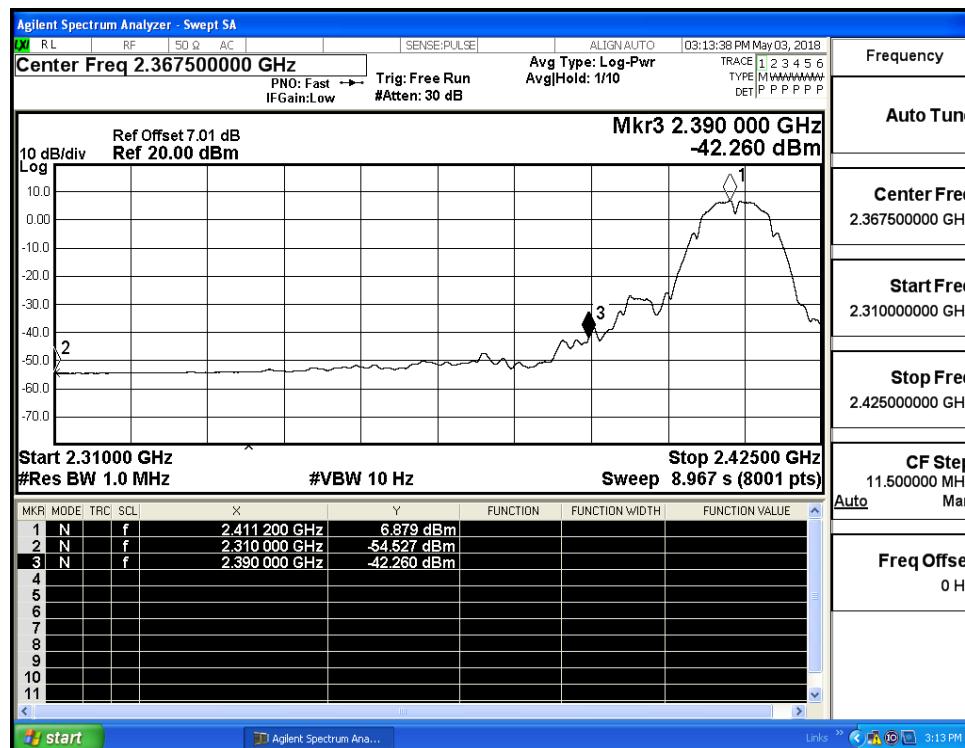
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBu V/m]	Verdict
11B	2412	Ant0	2310.0	-44.50	2.0	0	50.76	PEAK	74	PASS
	2412	Ant0	2310.0	-54.53	2.0	0	40.73	AV	54	PASS
	2412	Ant0	2390.0	-33.26	2.0	0	62.00	PEAK	74	PASS
	2412	Ant0	2390.0	-42.26	2.0	0	53.00	AV	54	PASS
	2462	Ant0	2483.5	-42.79	2.0	0	52.47	PEAK	74	PASS
	2462	Ant0	2483.5	-52.05	2.0	0	43.20	AV	54	PASS
	2462	Ant0	2500.0	-43.23	2.0	0	52.03	PEAK	74	PASS
	2462	Ant0	2500.0	-53.49	2.0	0	41.77	AV	54	PASS
11G	2412	Ant0	2310.0	-44.53	2.0	0	50.73	PEAK	74	PASS
	2412	Ant0	2310.0	-54.63	2.0	0	40.62	AV	54	PASS
	2412	Ant0	2390.0	-33.87	2.0	0	61.38	PEAK	74	PASS
	2412	Ant0	2390.0	-45.22	2.0	0	50.04	AV	54	PASS
	2462	Ant0	2483.5	-32.14	2.0	0	63.12	PEAK	74	PASS
	2462	Ant0	2483.5	-47.29	2.0	0	47.96	AV	54	PASS
	2462	Ant0	2500.0	-41.29	2.0	0	53.96	PEAK	74	PASS
	2462	Ant0	2500.0	-51.94	2.0	0	43.32	AV	54	PASS
11N20 SISO	2412	Ant0	2310.0	-43.82	2.0	0	51.44	PEAK	74	PASS
	2412	Ant0	2310.0	-54.58	2.0	0	40.68	AV	54	PASS
	2412	Ant0	2390.0	-32.66	2.0	0	62.60	PEAK	74	PASS
	2412	Ant0	2390.0	-45.68	2.0	0	49.57	AV	54	PASS
	2462	Ant0	2483.5	-34.34	2.0	0	60.92	PEAK	74	PASS
	2462	Ant0	2483.5	-47.37	2.0	0	47.89	AV	54	PASS
	2462	Ant0	2500.0	-42.27	2.0	0	52.99	PEAK	74	PASS
	2462	Ant0	2500.0	-51.91	2.0	0	43.35	AV	54	PASS
11N40 SISO	2422	Ant0	2310.0	-45.09	2.0	0	50.17	PEAK	74	PASS
	2422	Ant0	2310.0	-54.83	2.0	0	40.43	AV	54	PASS

	2422	Ant0	2390.0	-36.41	2.0	0	58.85	PEAK	74	PASS
	2422	Ant0	2390.0	-47.15	2.0	0	48.11	AV	54	PASS
	2452	Ant0	2483.5	-40.21	2.0	0	55.04	PEAK	74	PASS
	2452	Ant0	2483.5	-50.70	2.0	0	44.56	AV	54	PASS
	2452	Ant0	2500.0	-41.92	2.0	0	53.33	PEAK	74	PASS
	2452	Ant0	2500.0	-53.05	2.0	0	42.20	AV	54	PASS

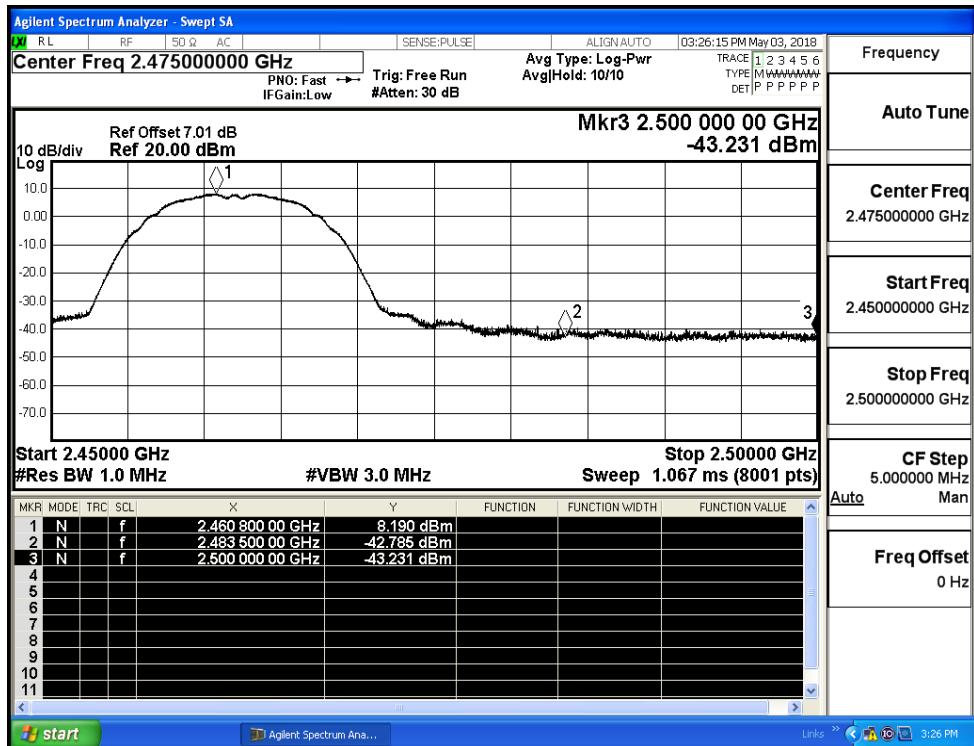
Restrict-band band-edge measurements_11B_2412_Ant0_PEAK



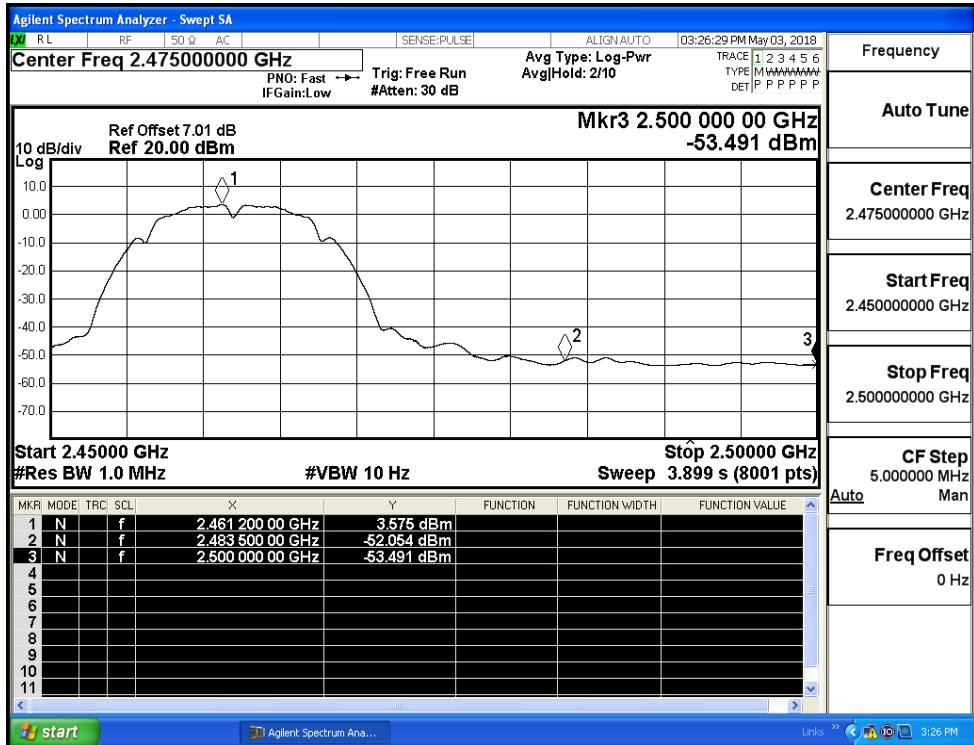
Restrict-band band-edge measurements_11B_2412_Ant0_AV



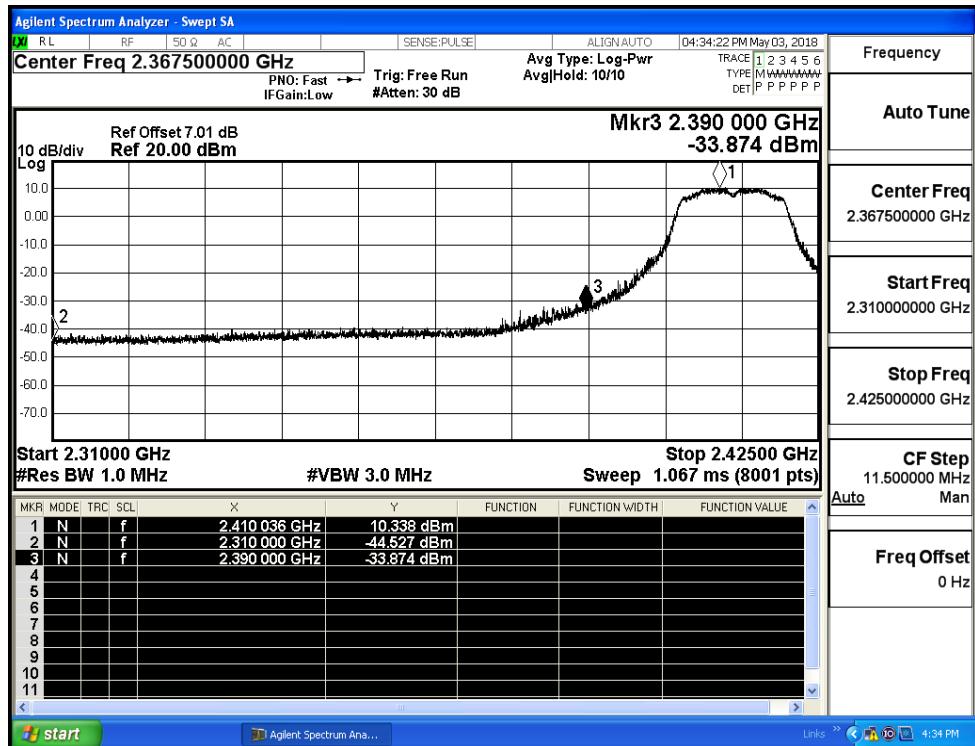
Restrict-band band-edge measurements_11B_2462_Ant0_PEAK



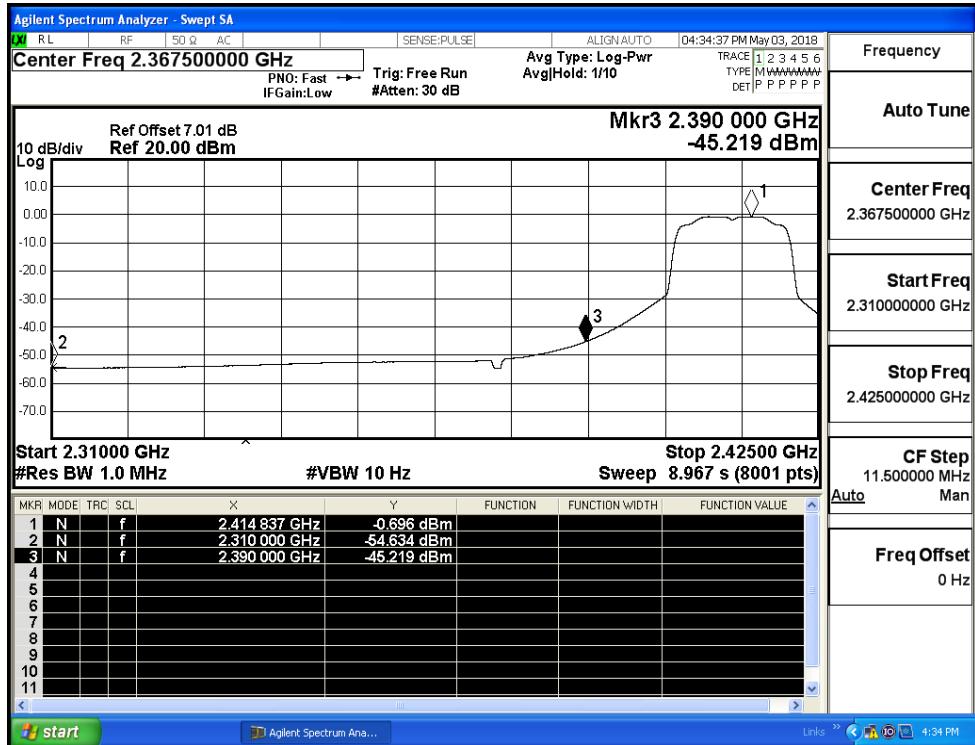
Restrict-band band-edge measurements_11B_2462_Ant0_AV



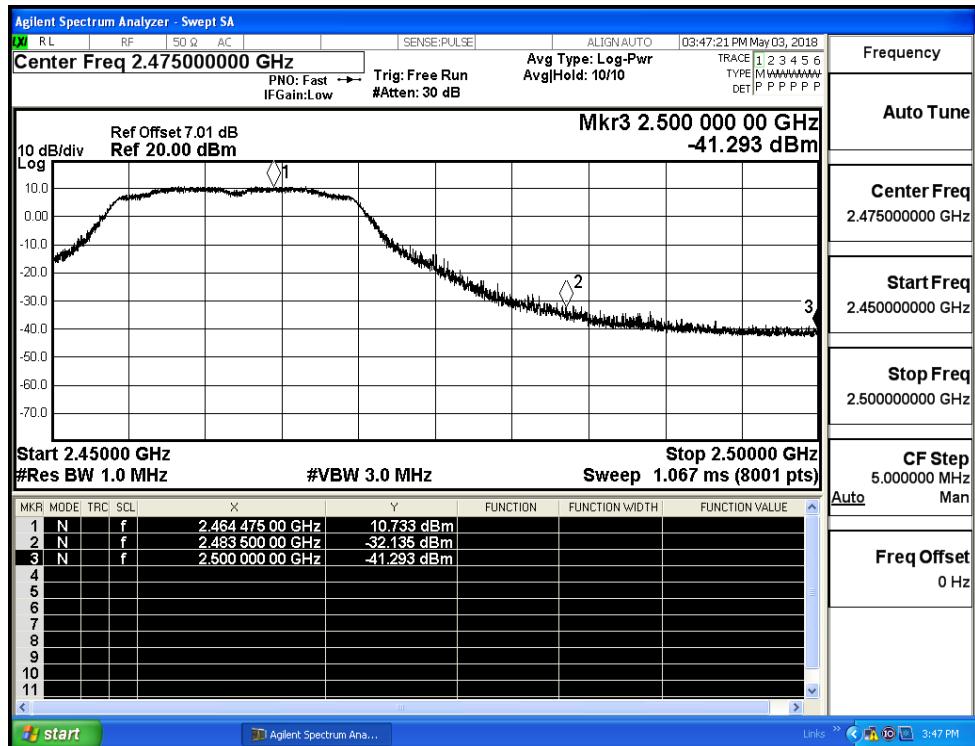
Restrict-band band-edge measurements_11G_2412_Ant0_PEAK



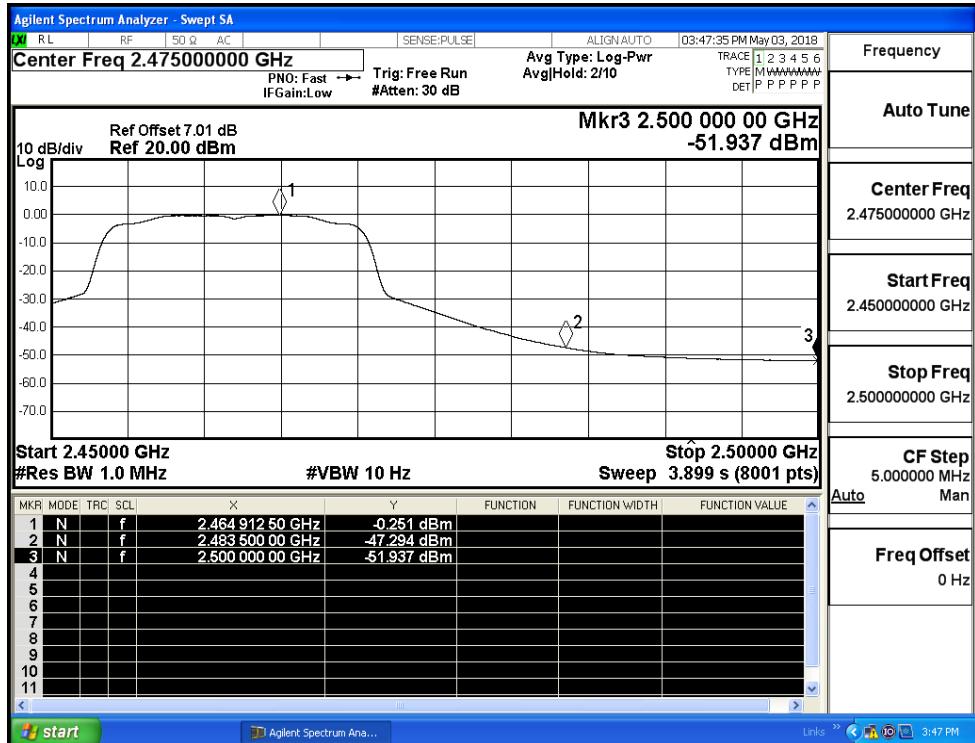
Restrict-band band-edge measurements_11G_2412_Ant0_AV



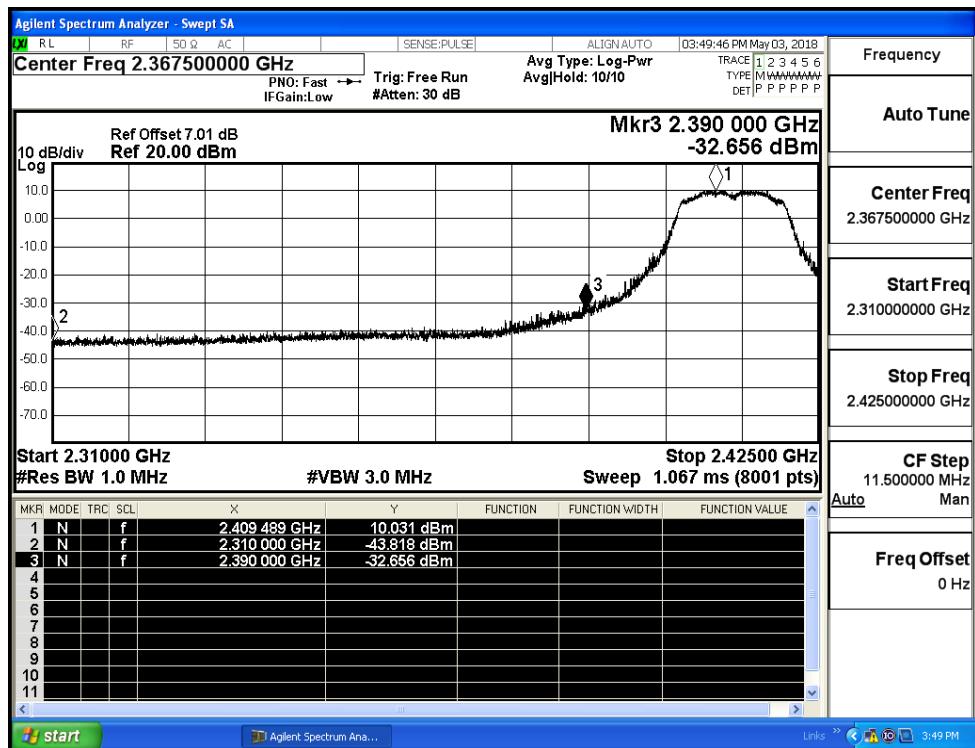
Restrict-band band-edge measurements_11G_2462_Ant0_PEAK



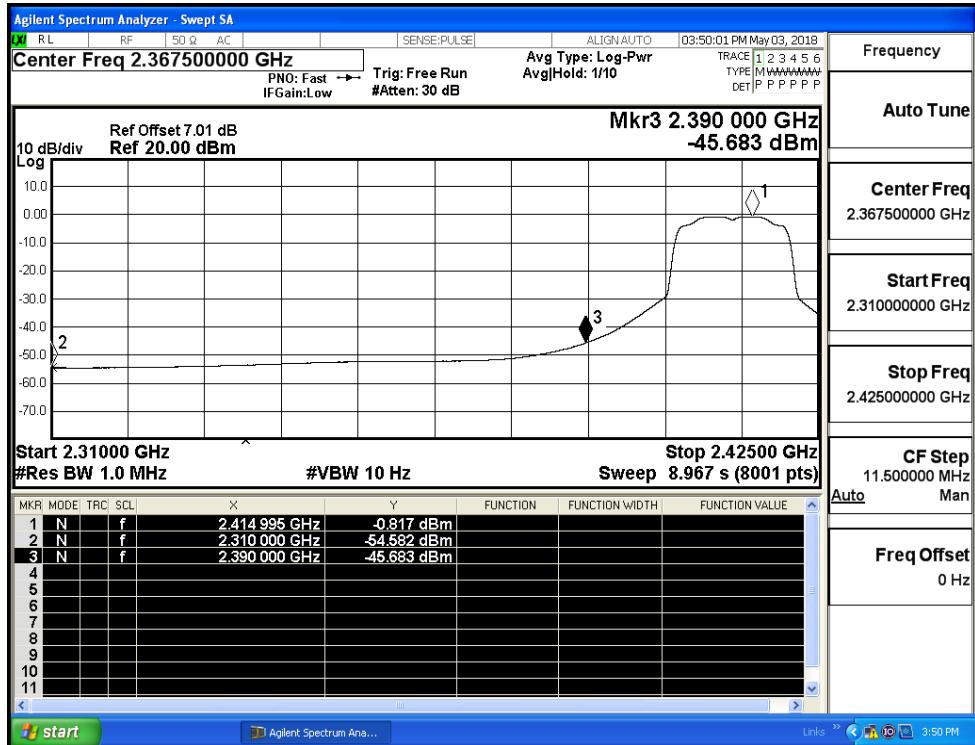
Restrict-band band-edge measurements_11G_2462_Ant0_AV



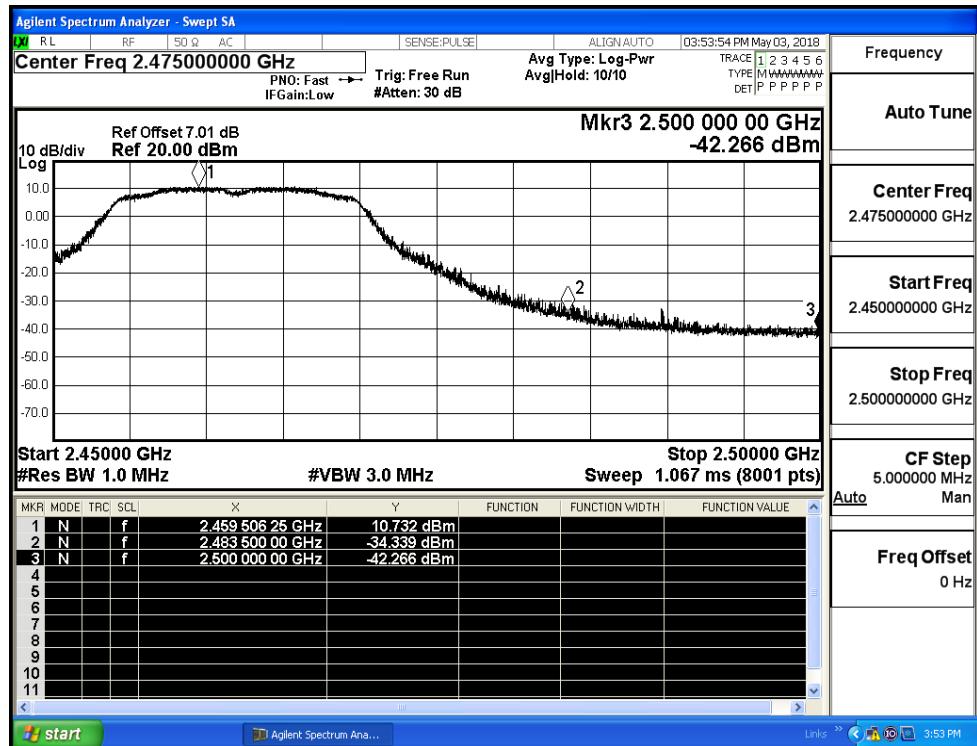
Restrict-band band-edge measurements_11N20SISO_2412_Ant0_PEAK



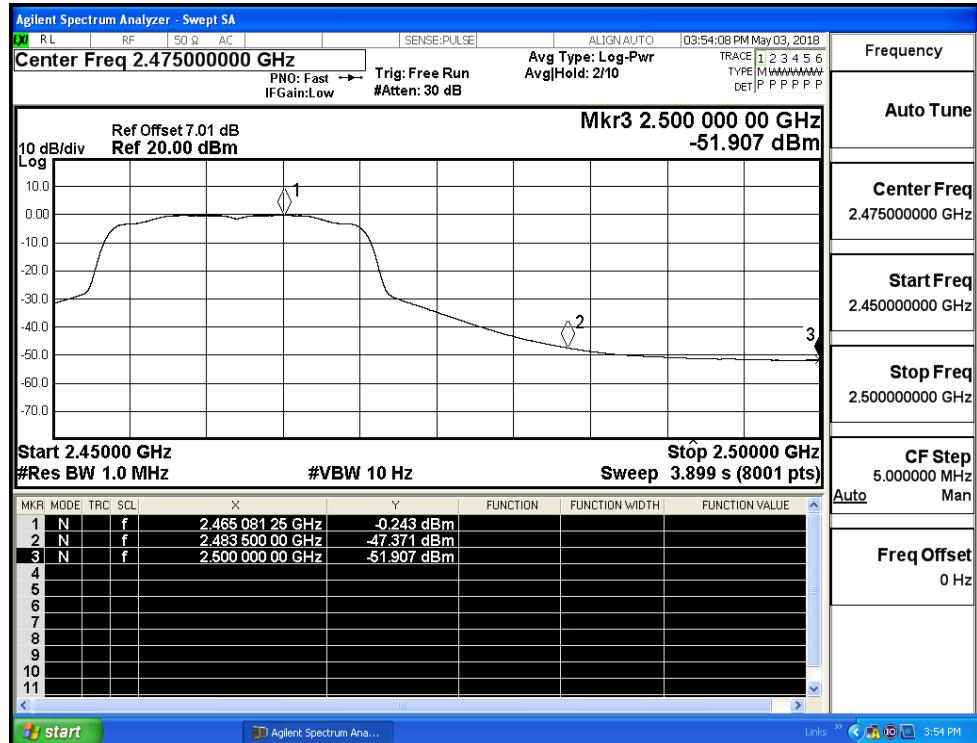
Restrict-band band-edge measurements_11N20SISO_2412_Ant0_AV



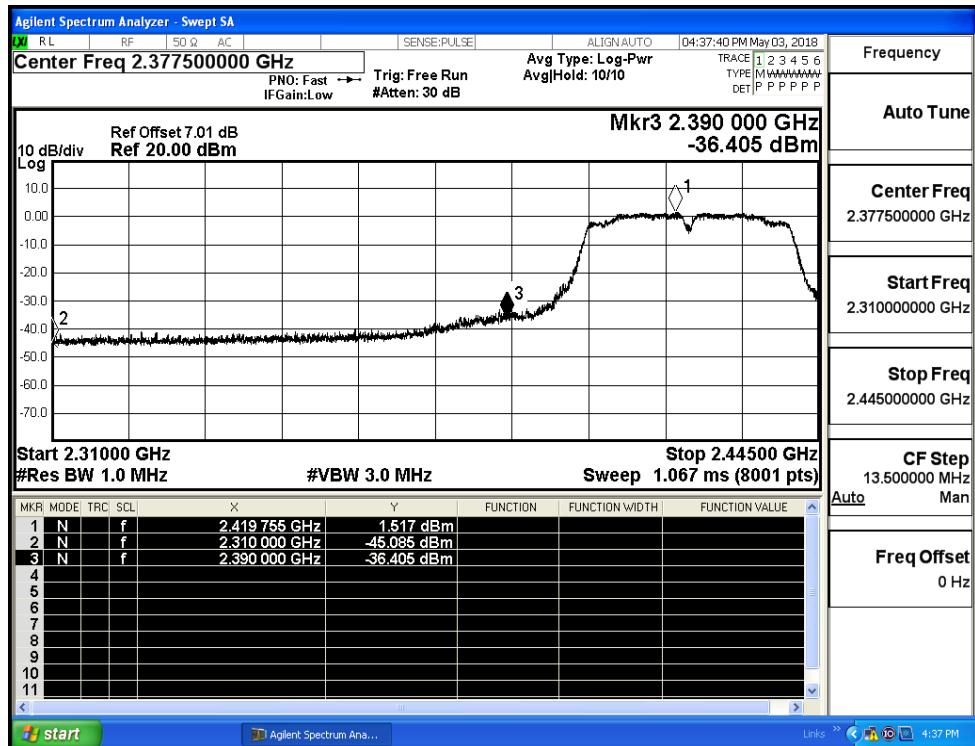
Restrict-band band-edge measurements_11N20SISO_2462_Ant0_PEAK



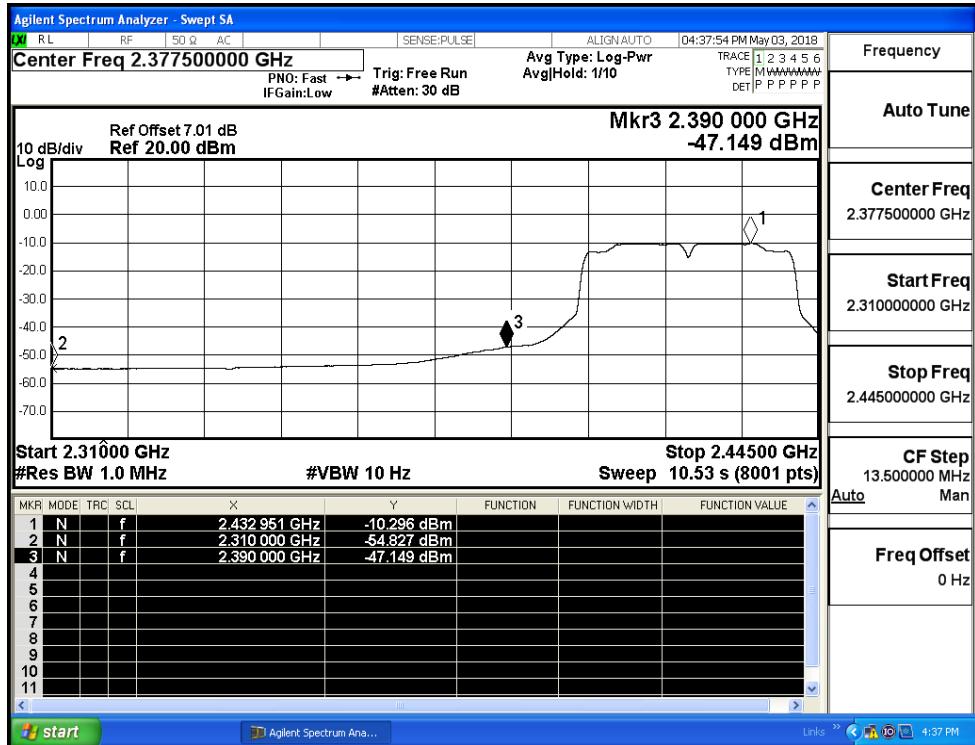
Restrict-band band-edge measurements_11N20SISO_2462_Ant0_AV



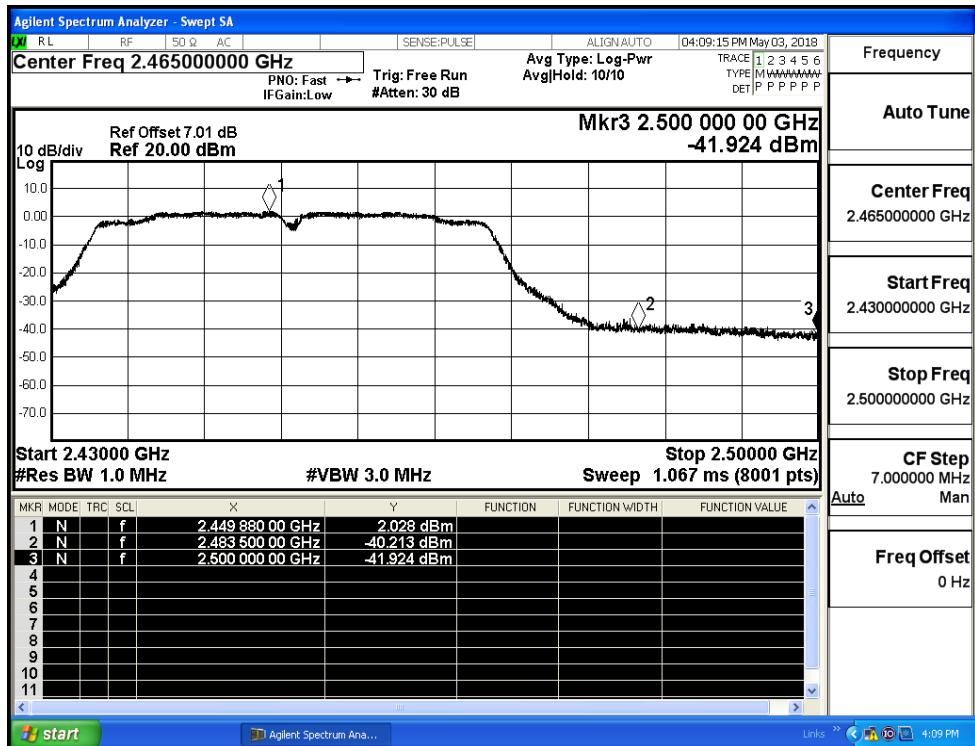
Restrict-band band-edge measurements_11N40SISO_2422_Ant0_PEAK



Restrict-band band-edge measurements_11N40SISO_2422_Ant0_AV



Restrict-band band-edge measurements_11N40SISO_2452_Ant0_PEAK



Restrict-band band-edge measurements_11N40SISO_2452_Ant0_AV

