

Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Smart controller

Trade Mark:



Test Model: CL-CIN04-05

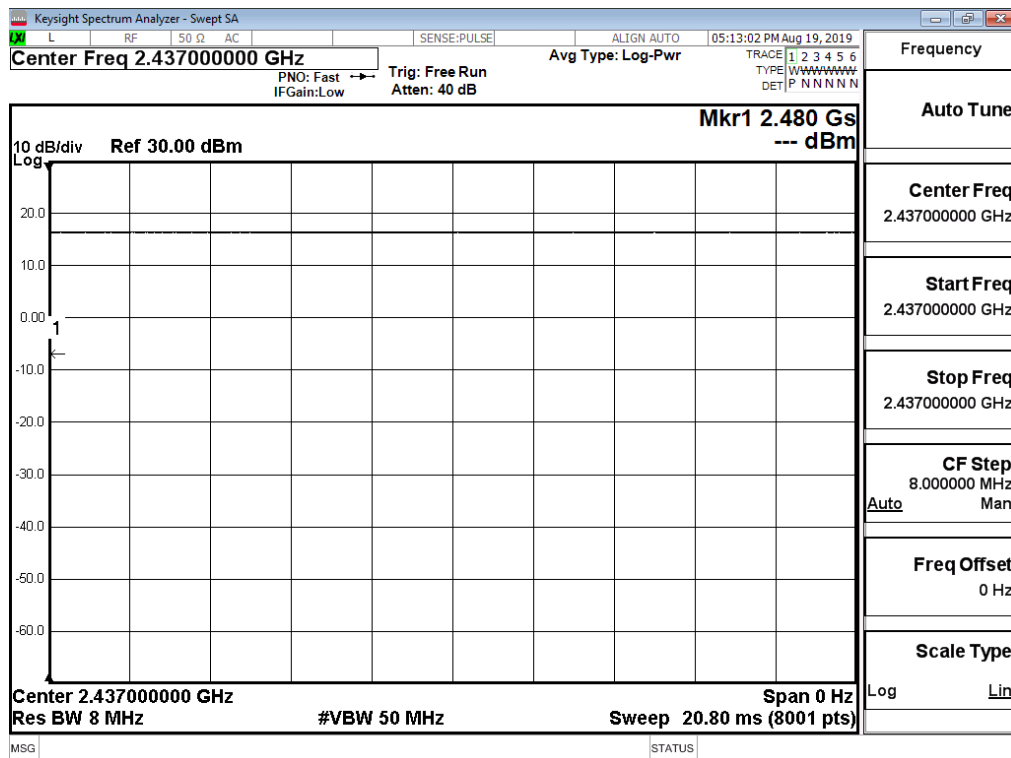
Environmental Conditions

Temperature:	23.4 ° C
Relative Humidity:	54.6%
ATM Pressure:	100.0 kPa
Test Engineer:	CHUANG WANG
Supervised by:	JAYDEN ZHUO

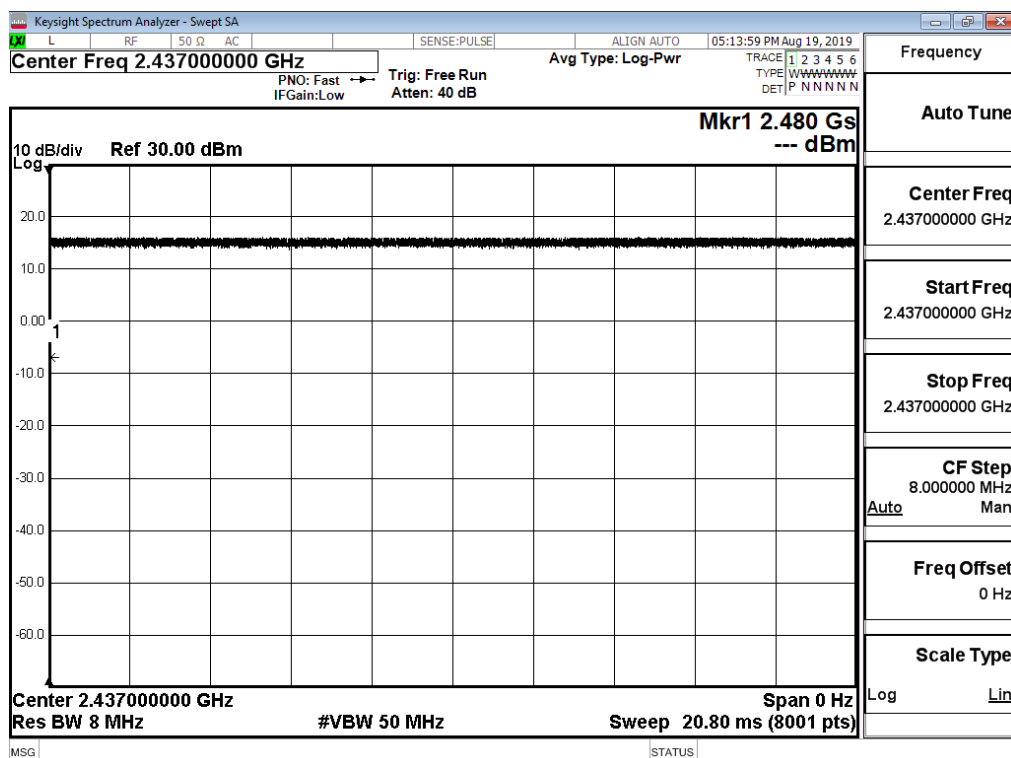
A.1 Duty Cycle

Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
11B	2437	Ant1	100	PASS
11G	2437	Ant1	100	PASS
11N20SISO	2437	Ant1	100	PASS

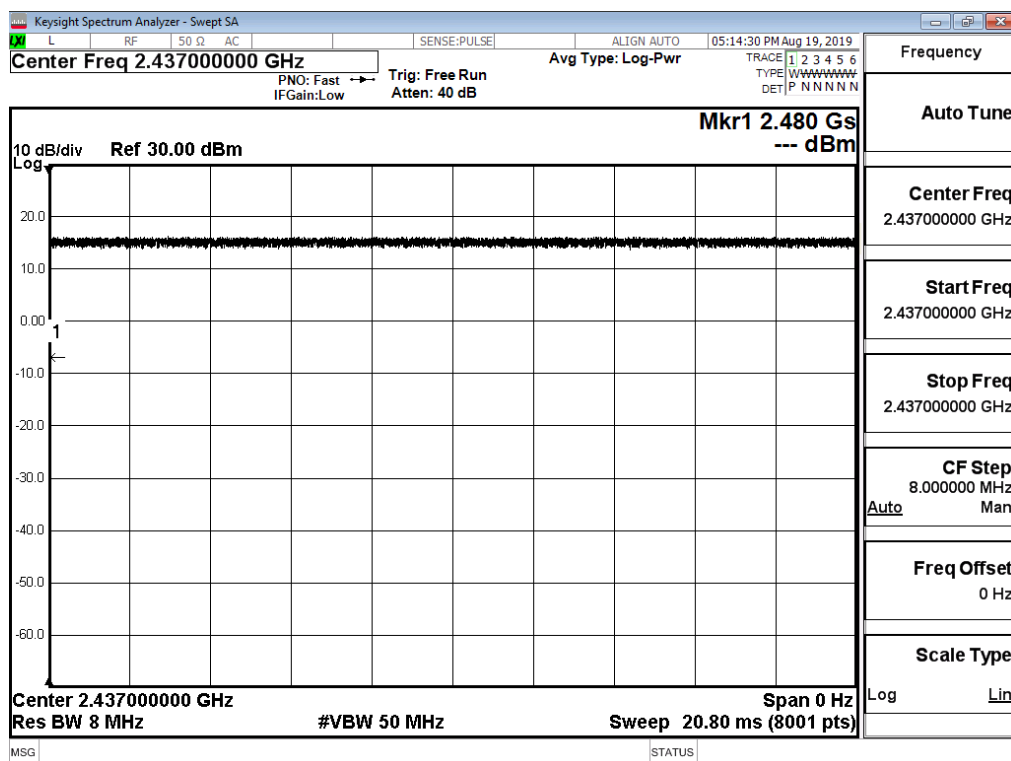
Duty Cycle_11B_2437_Ant1



Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



A.2 Maximum Conducted Output Power

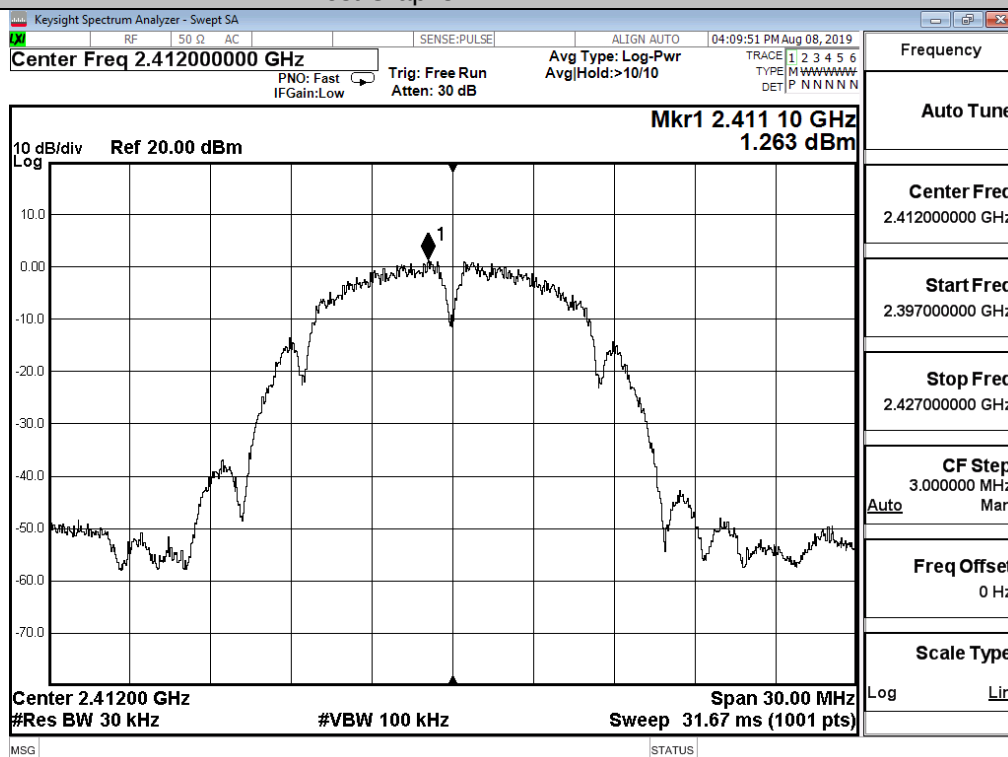
Mode	Channel	Meas. Peak Level [dBm]	Limit [dBm]	Verdict
11B	LCH	18.722	30	PASS
	MCH	17.778	30	PASS
	HCH	15.939	30	PASS
11G	LCH	18.926	30	PASS
	MCH	17.573	30	PASS
	HCH	17.508	30	PASS
11N20SISO	LCH	18.465	30	PASS
	MCH	17.449	30	PASS
	HCH	16.217	30	PASS

A.3 Maximum Power Spectral Density

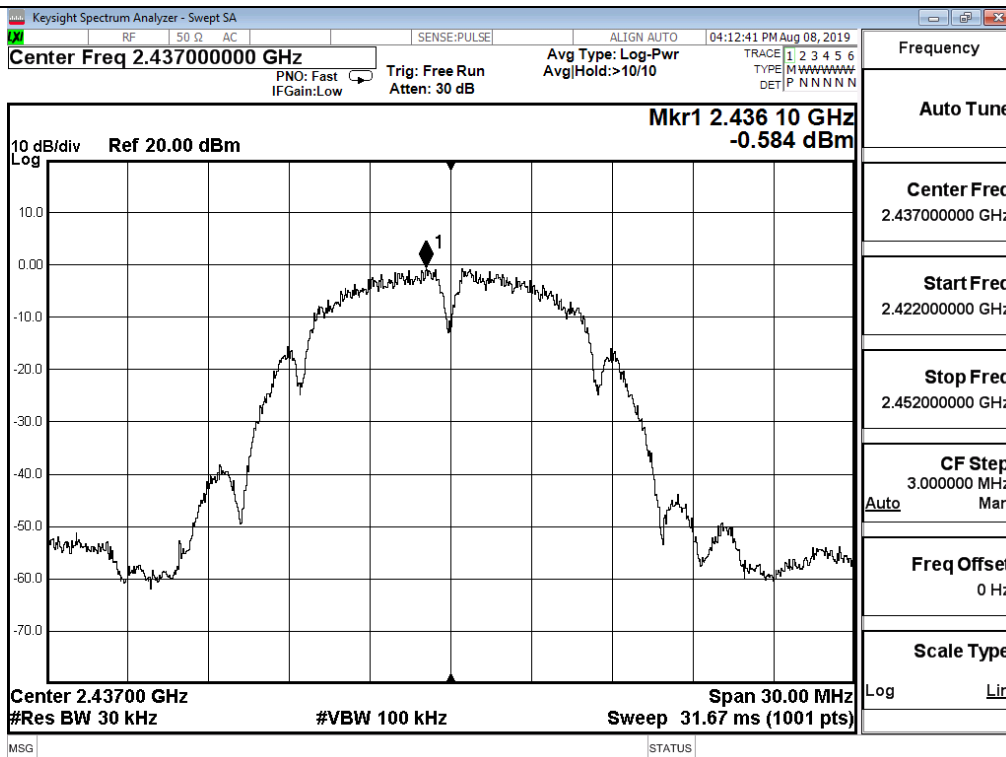
Mode	Channel	Meas.Level [dBm/30KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	1.263	8	PASS
	MCH	-0.584	8	PASS
	HCH	-2.076	8	PASS
11G	LCH	-3.868	8	PASS
	MCH	-1.459	8	PASS
	HCH	-2.447	8	PASS
11N20SISO	LCH	-0.480	8	PASS
	MCH	-1.074	8	PASS
	HCH	-1.931	8	PASS

Test Graphs

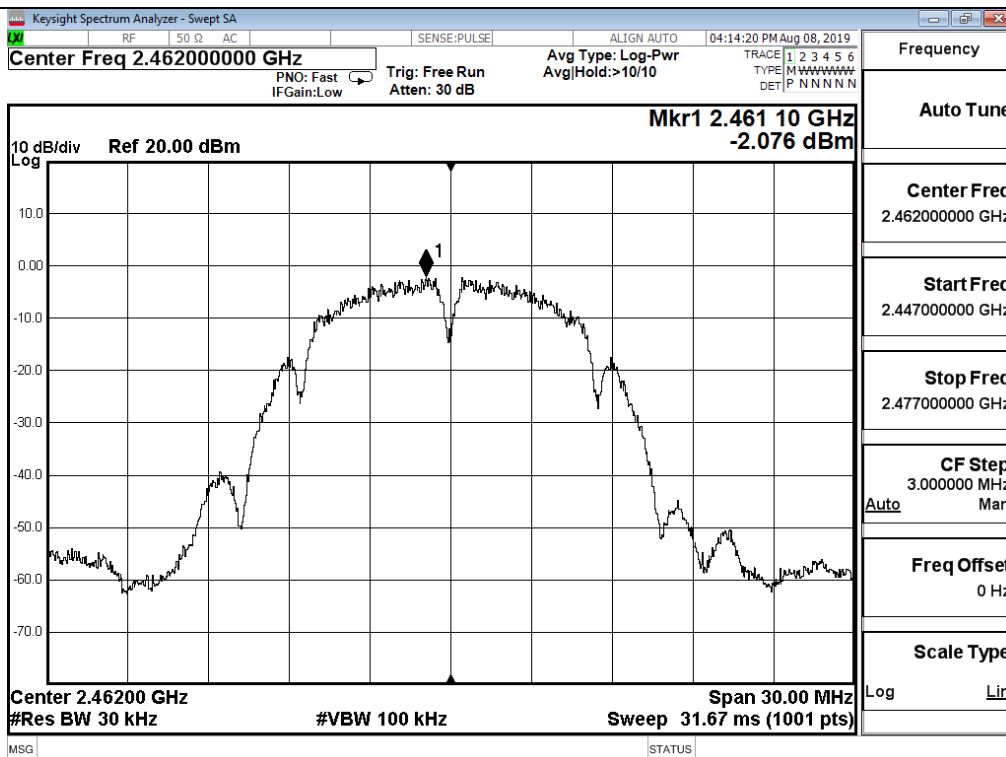
11B/LCH



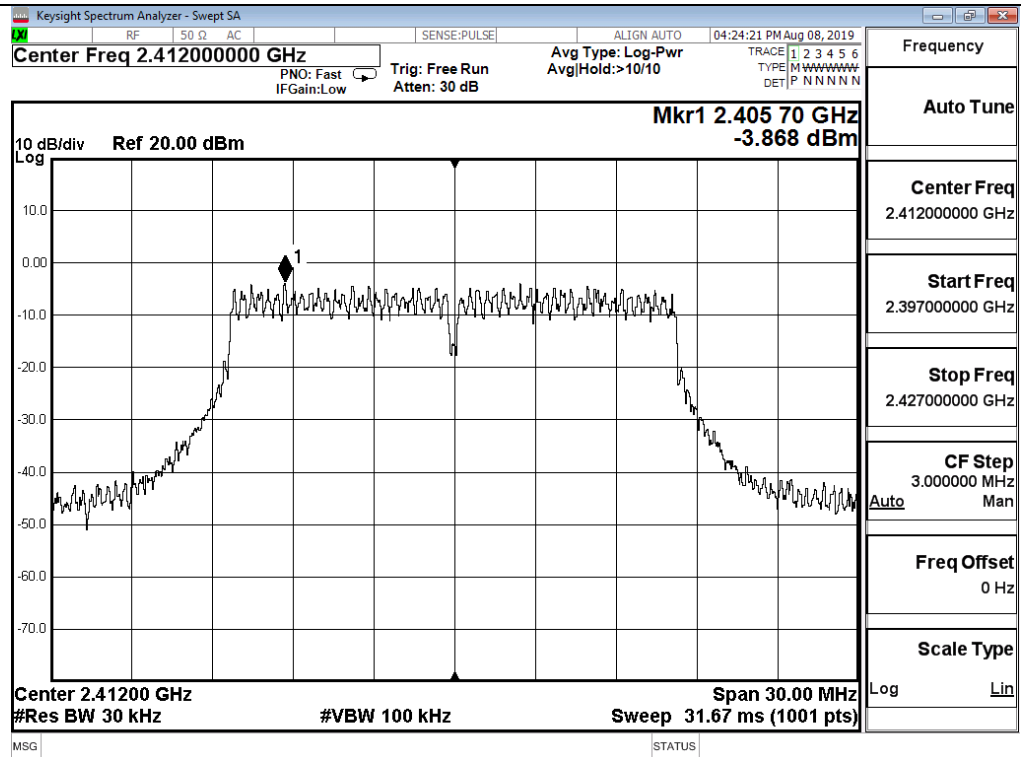
11B/MCH



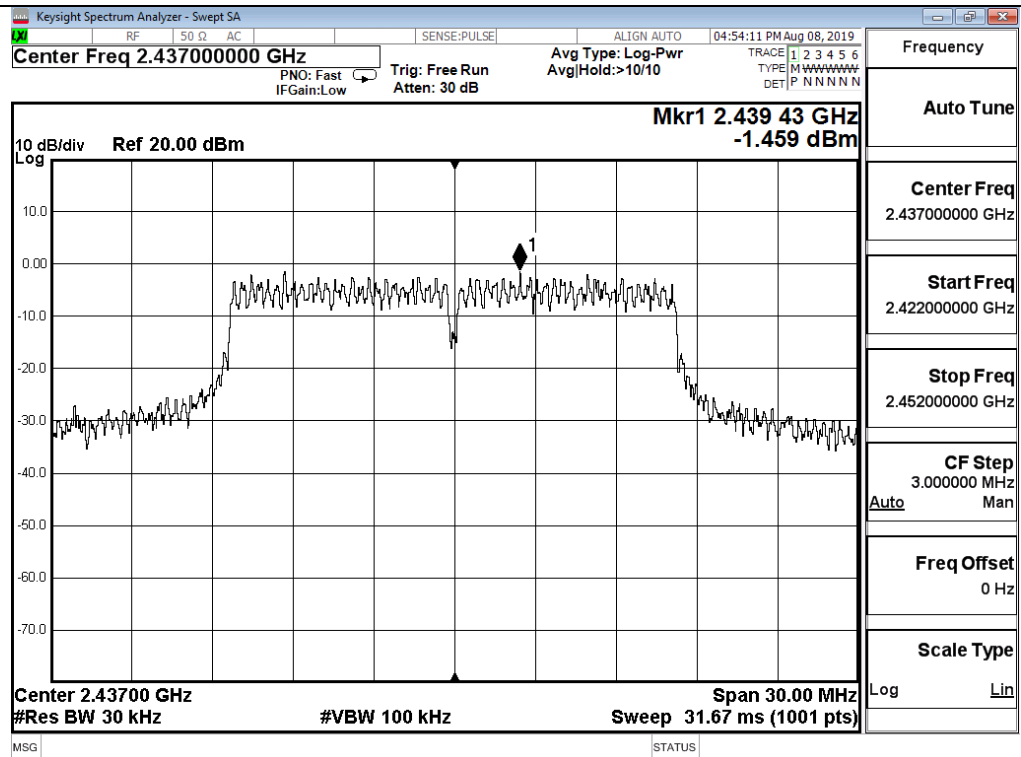
11B/HCH



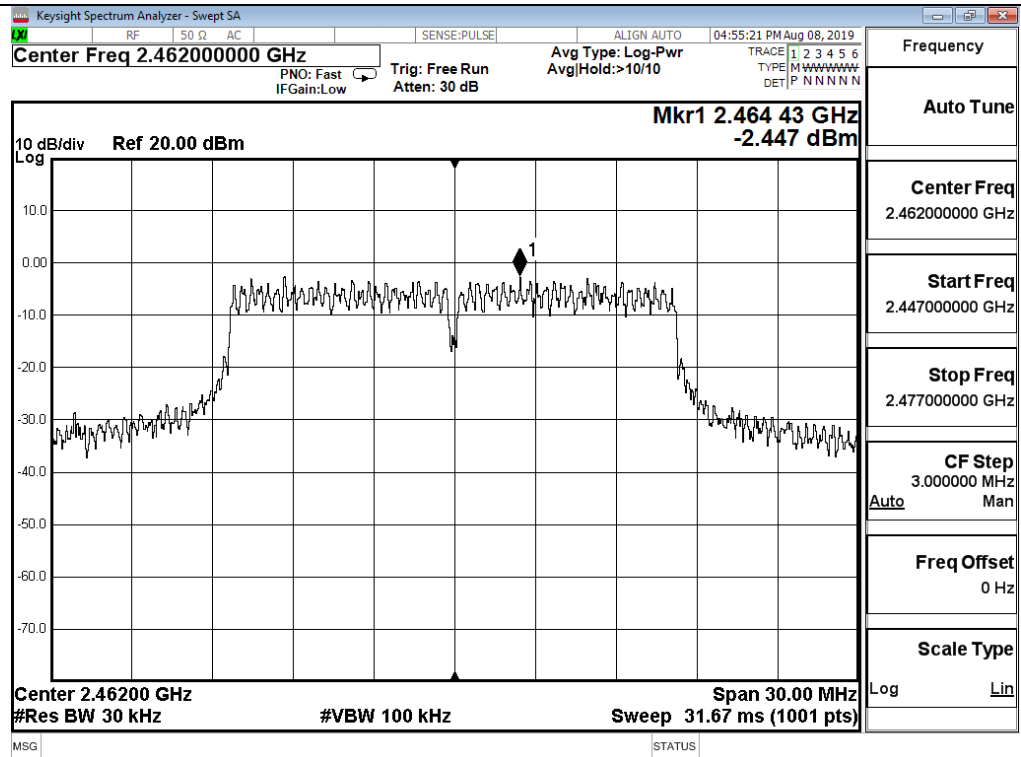
11G/LCH



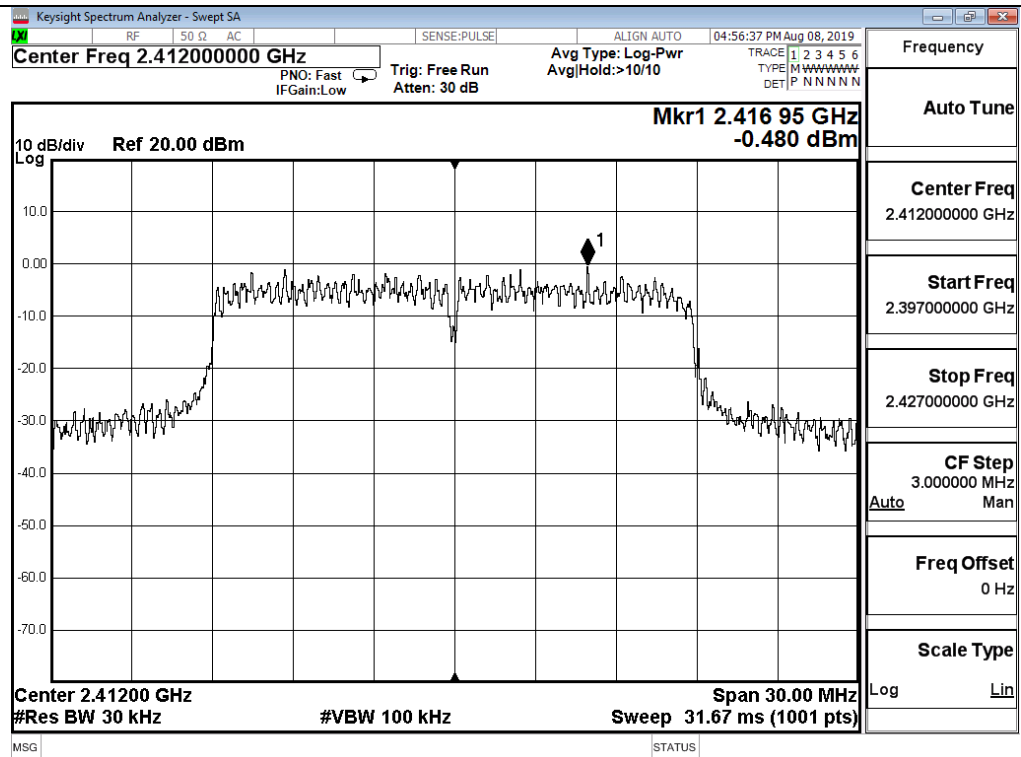
11G/MCH



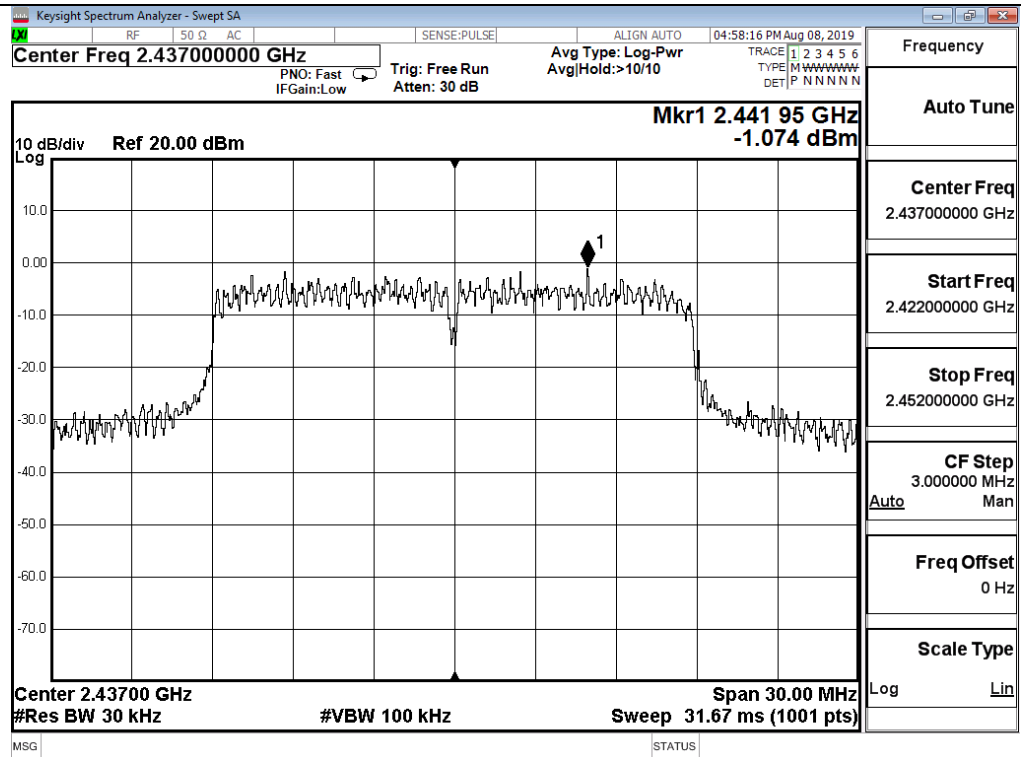
11G/HCH



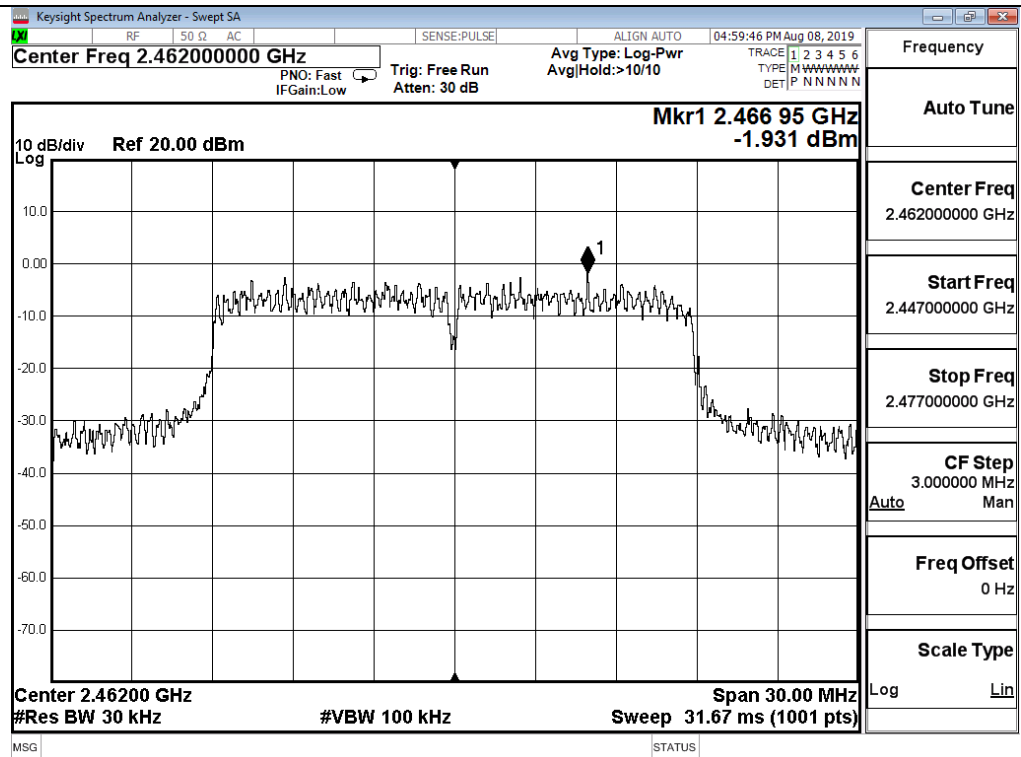
11N20SISO/LCH



11N20SISO/MCH



11N20SISO/HCH

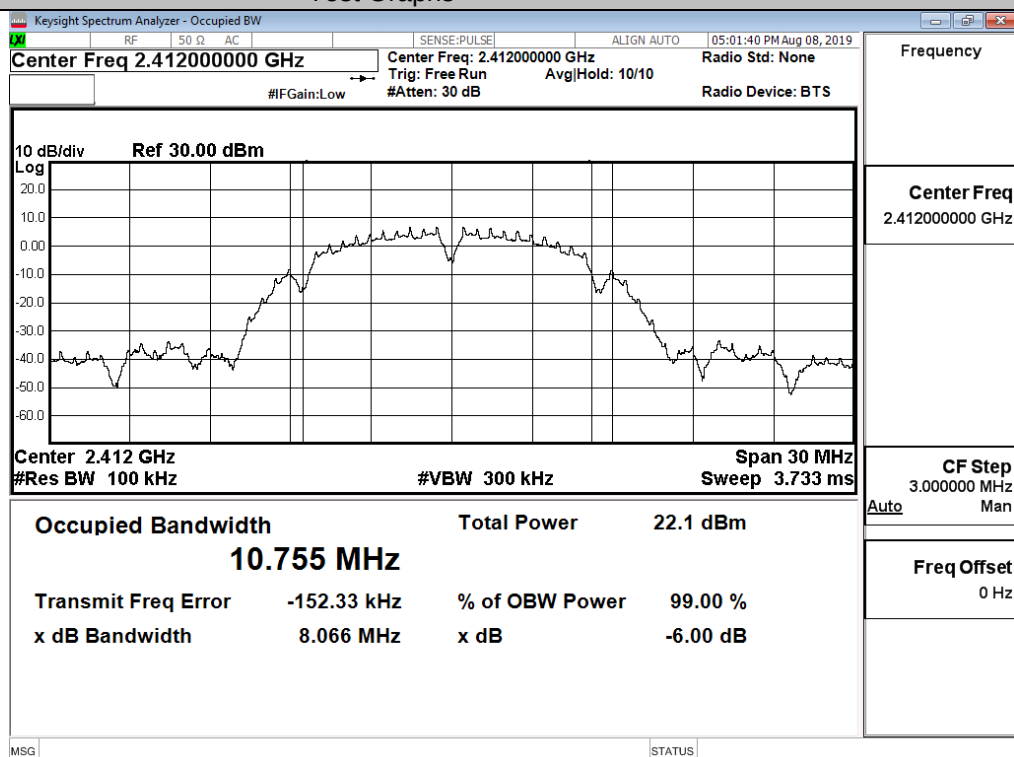


A.4 6dB Bandwidth

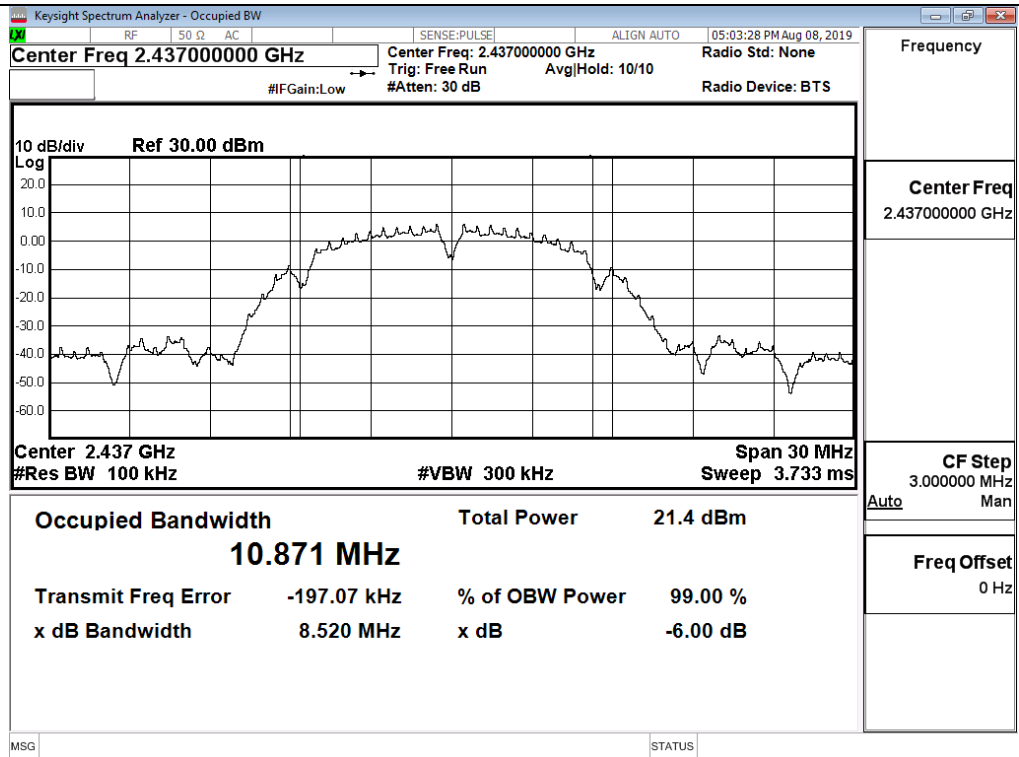
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	8.066	≥ 0.5	PASS
	MCH	8.520	≥ 0.5	PASS
	HCH	8.072	≥ 0.5	PASS
11G	LCH	16.30	≥ 0.5	PASS
	MCH	16.30	≥ 0.5	PASS
	HCH	16.30	≥ 0.5	PASS
11N20SISO	LCH	16.57	≥ 0.5	PASS
	MCH	16.59	≥ 0.5	PASS
	HCH	16.59	≥ 0.5	PASS

Test Graphs

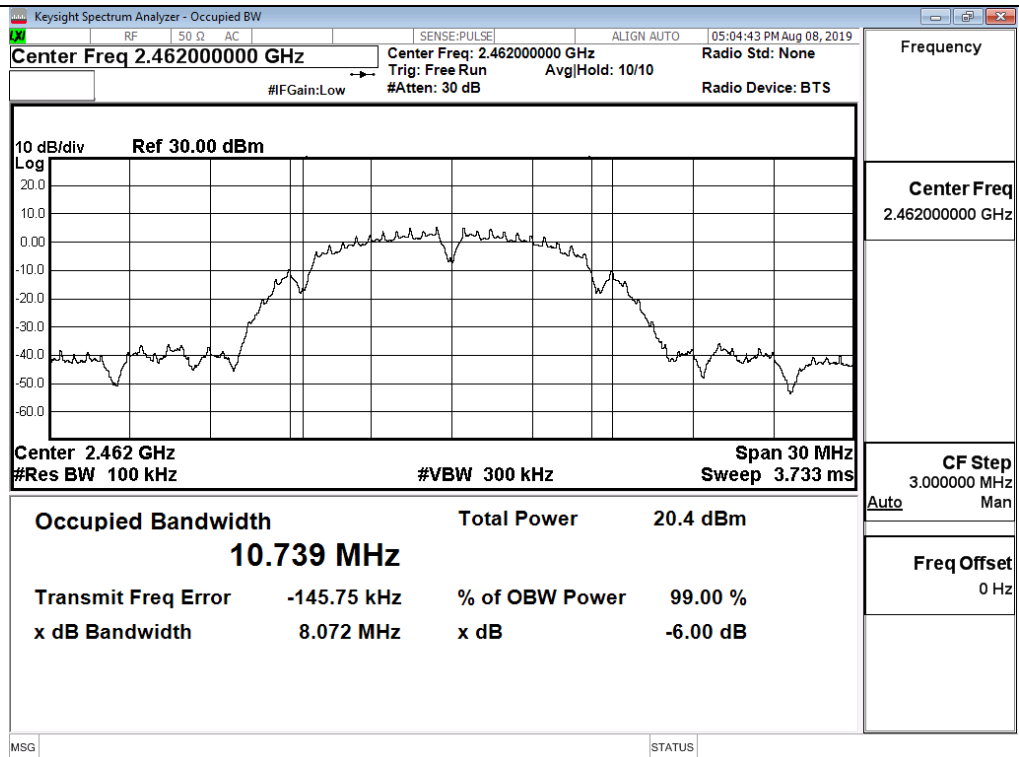
11B/LCH



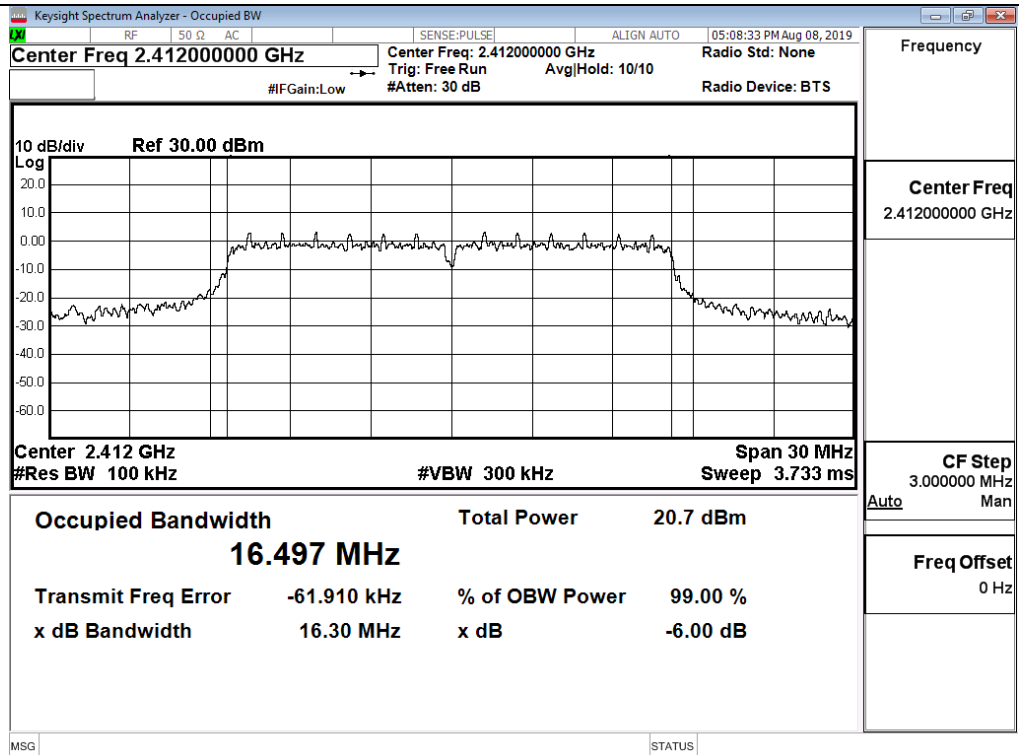
11B/MCH



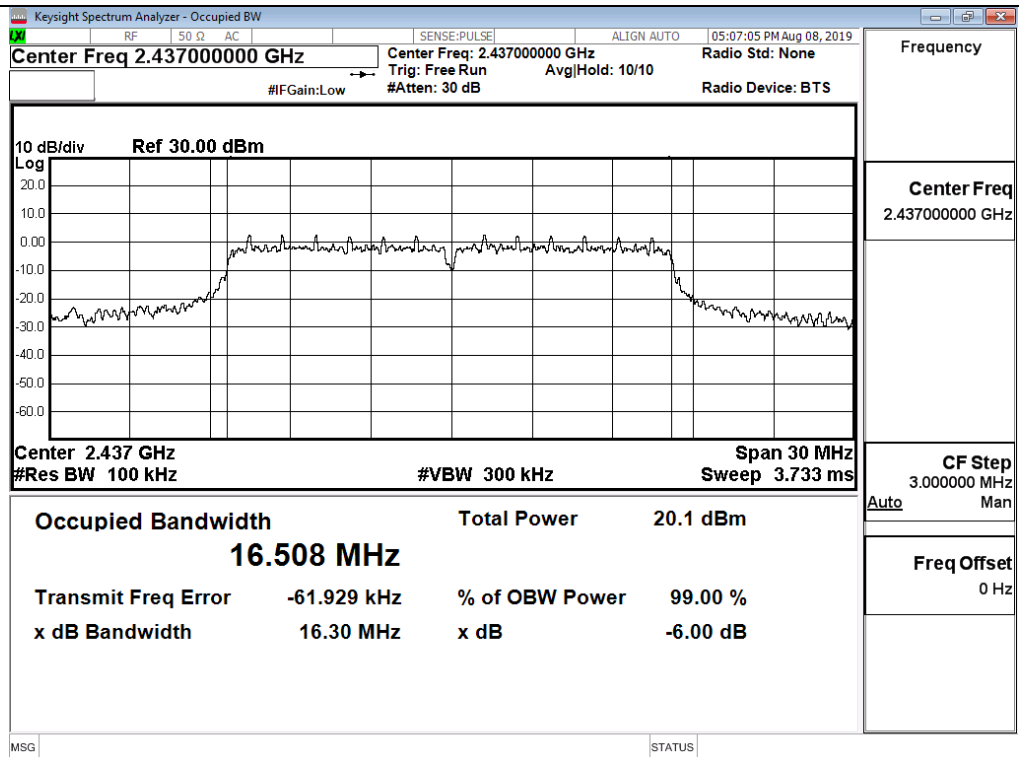
11B/HCH



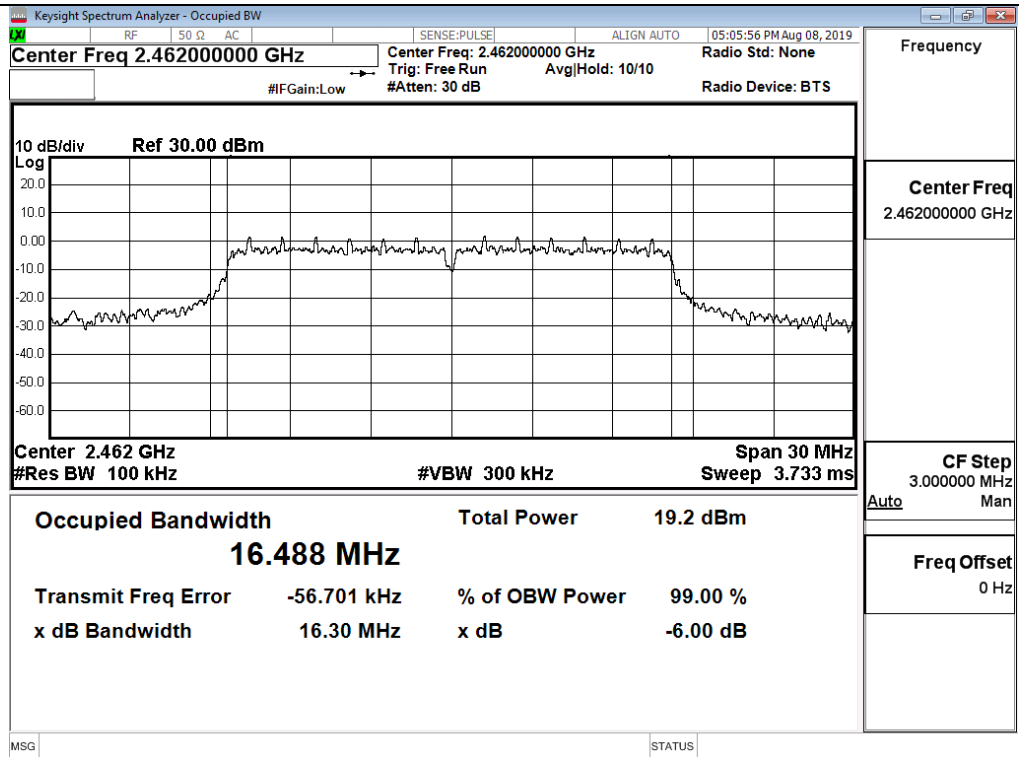
11G/LCH



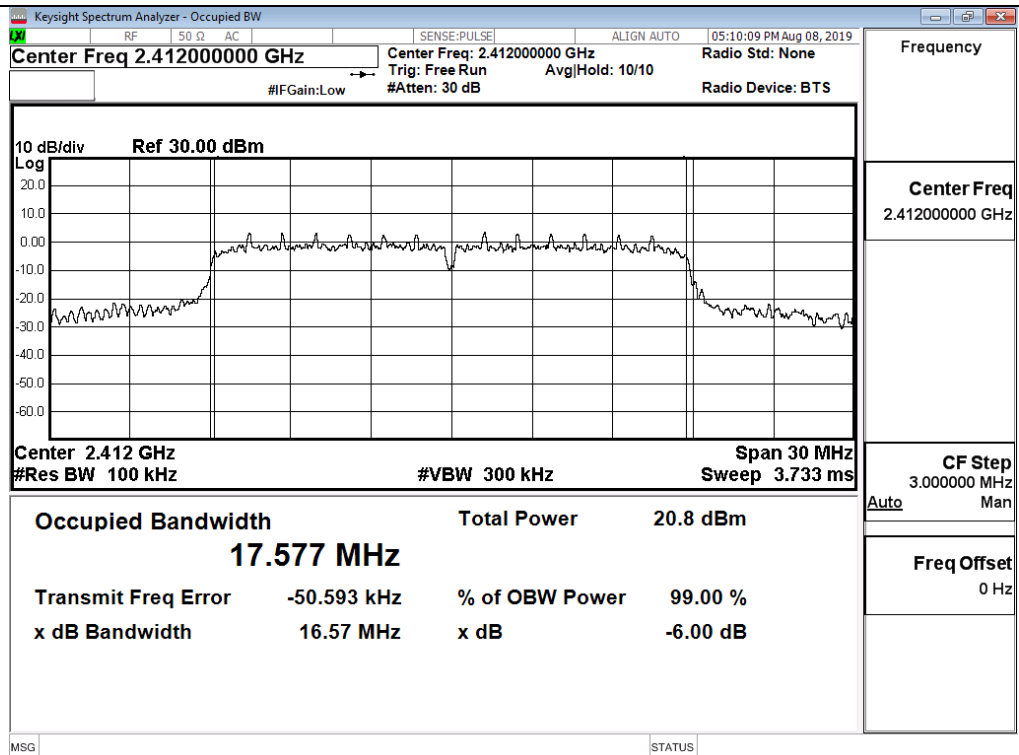
11G/MCH



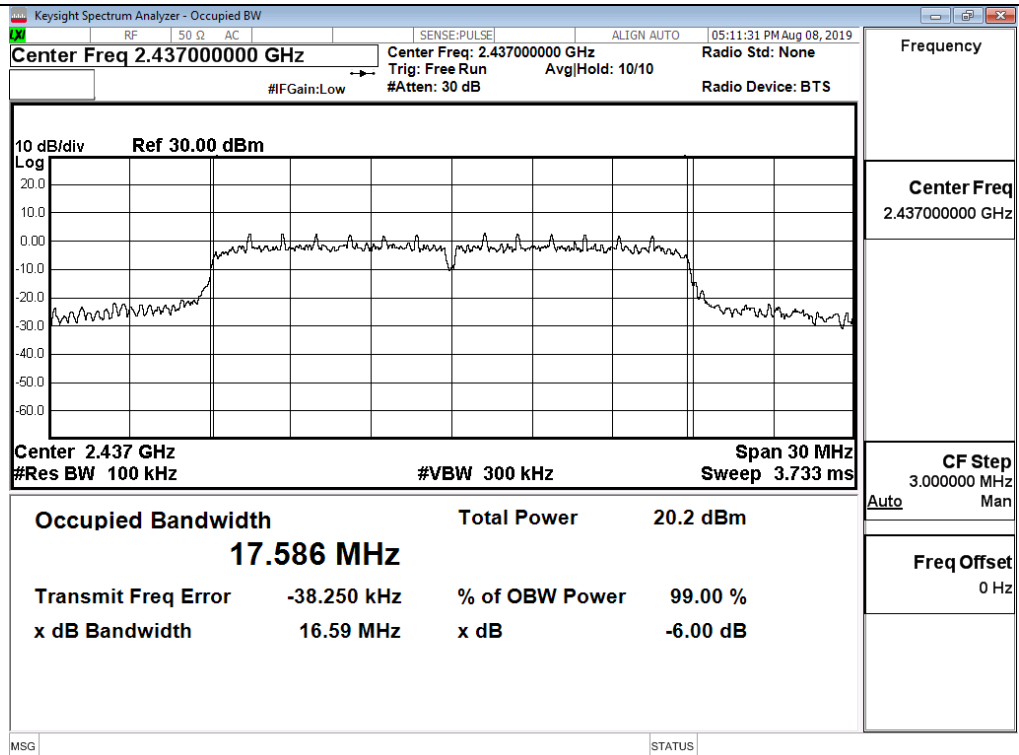
11G/HCH



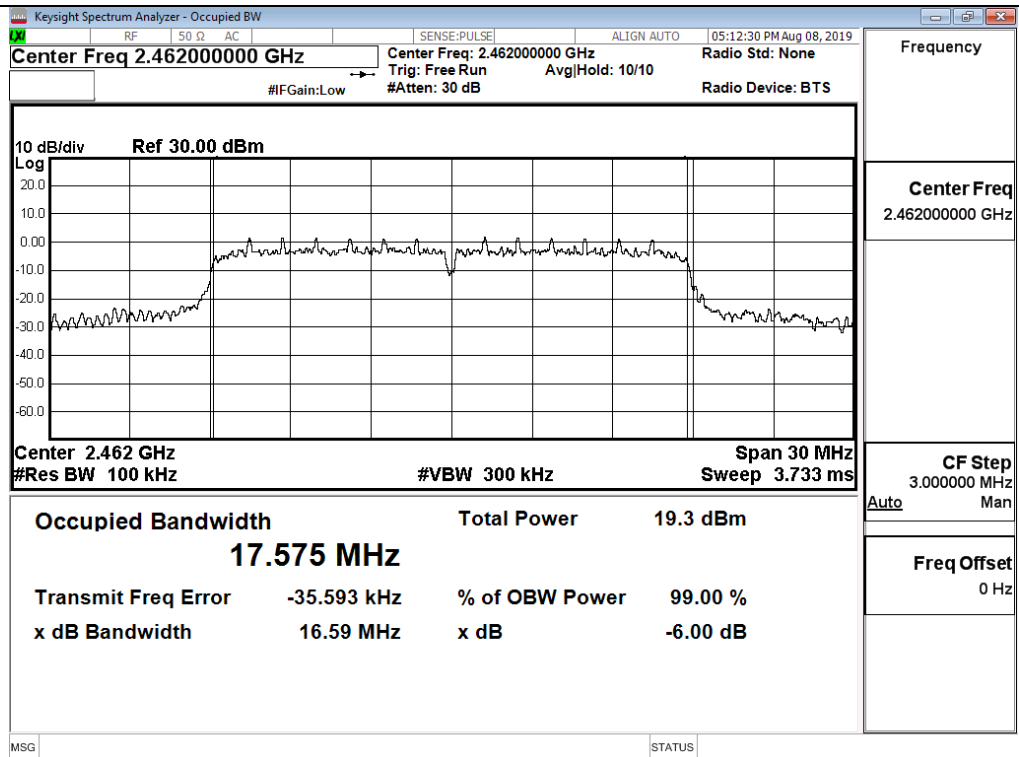
11N20SISO/LCH



11N20SISO/MCH



11N20SISO/HCH

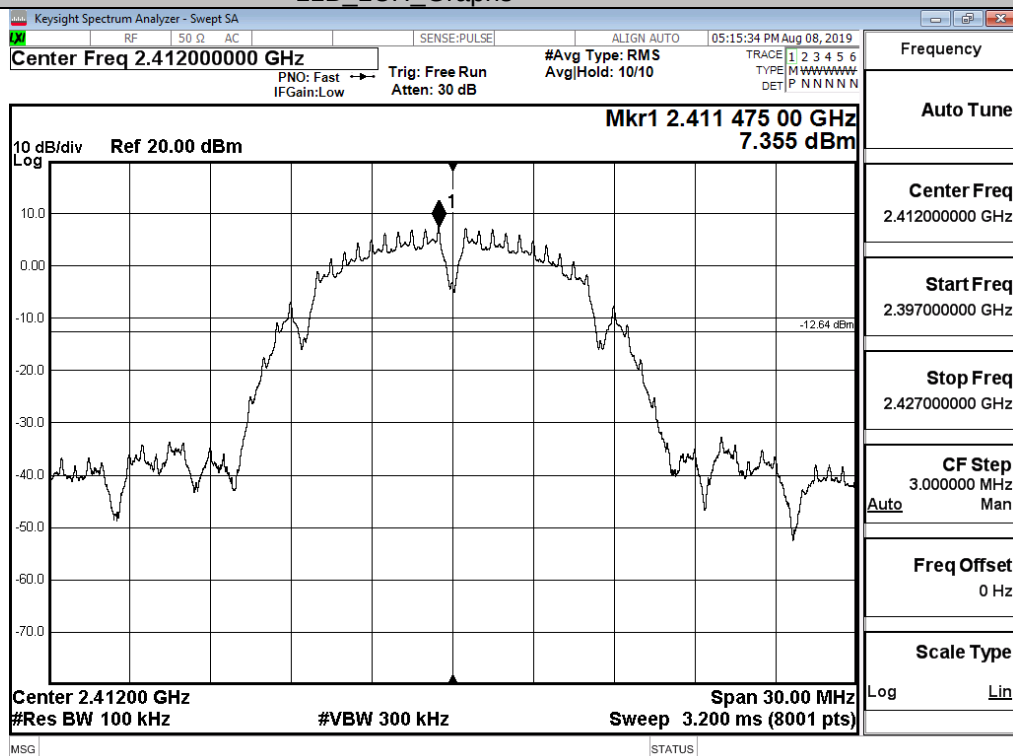


B.5 RF Conducted Spurious Emissions

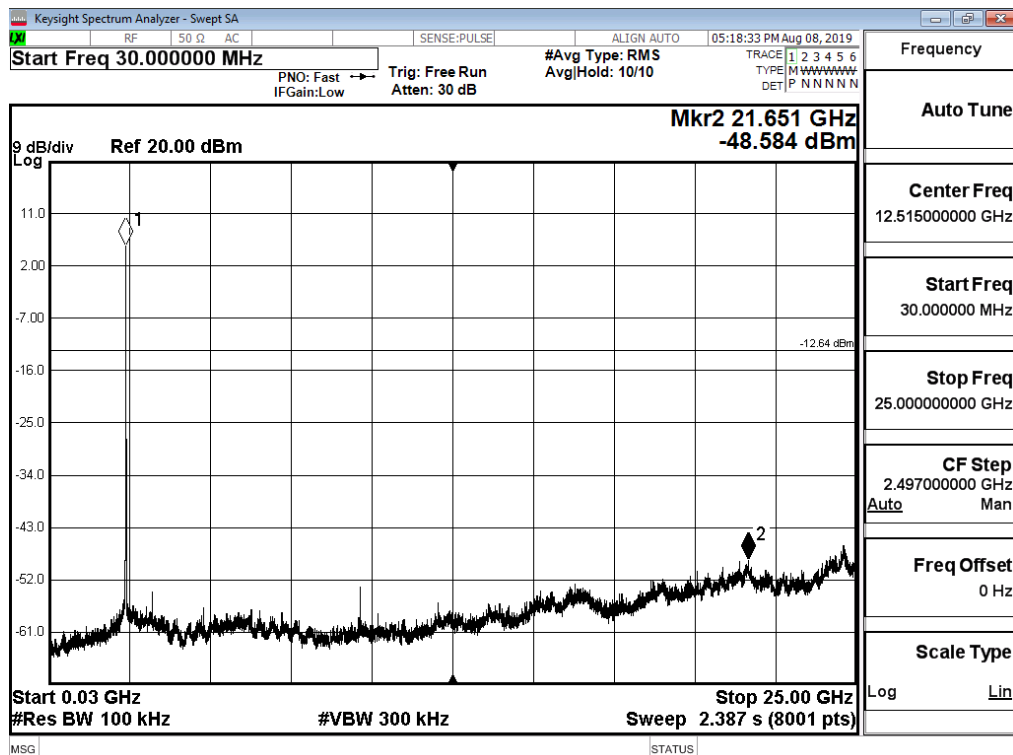
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	7.355	-48.584	-12.64	PASS
	MCH	6.556	-48.898	-13.44	PASS
	HCH	5.719	-47.820	-14.28	PASS
11G	LCH	2.728	-46.209	-17.27	PASS
	MCH	0.346	-49.141	-19.65	PASS
	HCH	-1.103	-48.642	-21.10	PASS
11N20 SISO	LCH	2.073	-49.271	-17.93	PASS
	MCH	0.253	-48.537	-19.75	PASS
	HCH	-1.051	-49.093	-21.05	PASS

11B LCH Graphs

Pref/11B/LCH

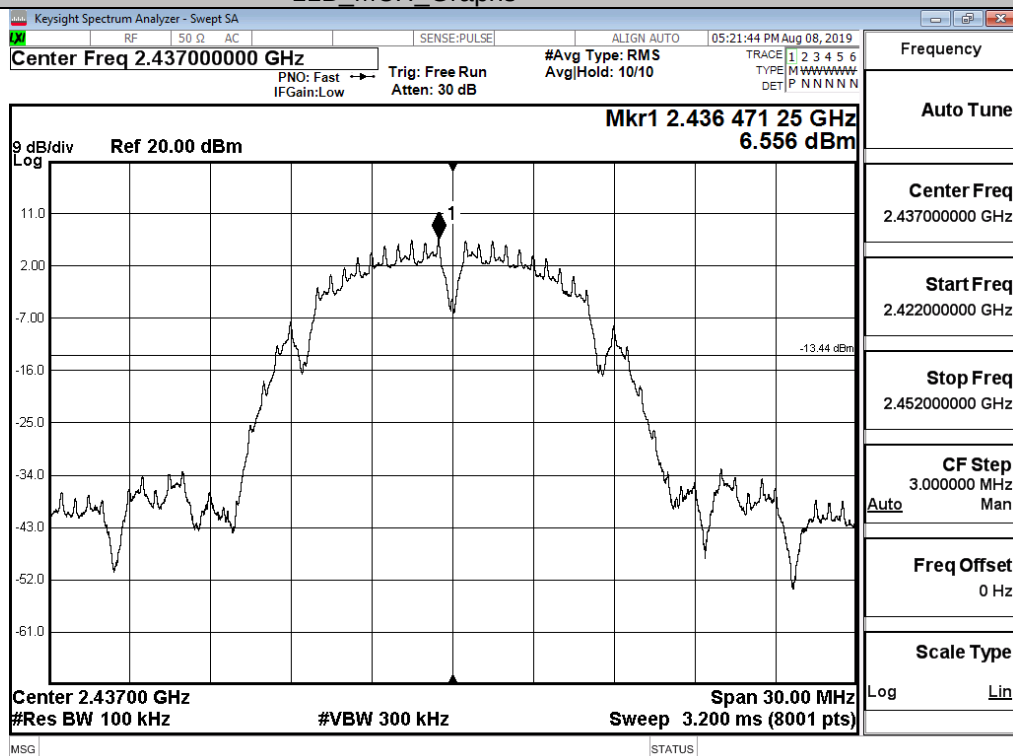


Puw/11B/LCH

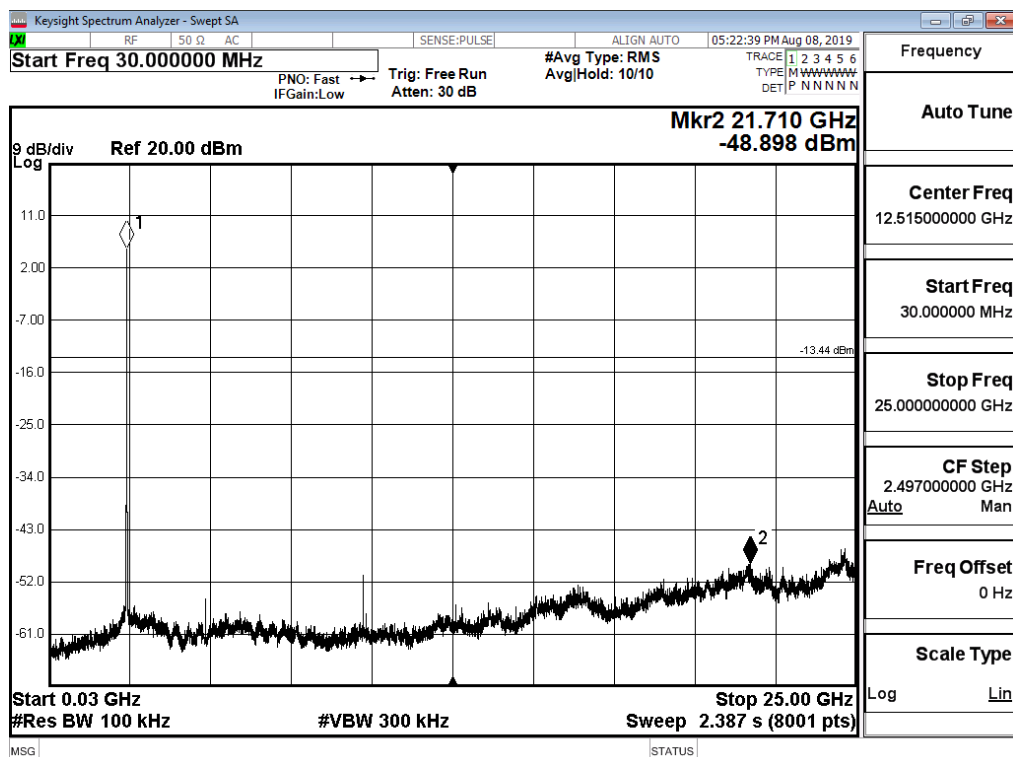


11B MCH Graphs

Pref/11B/MCH

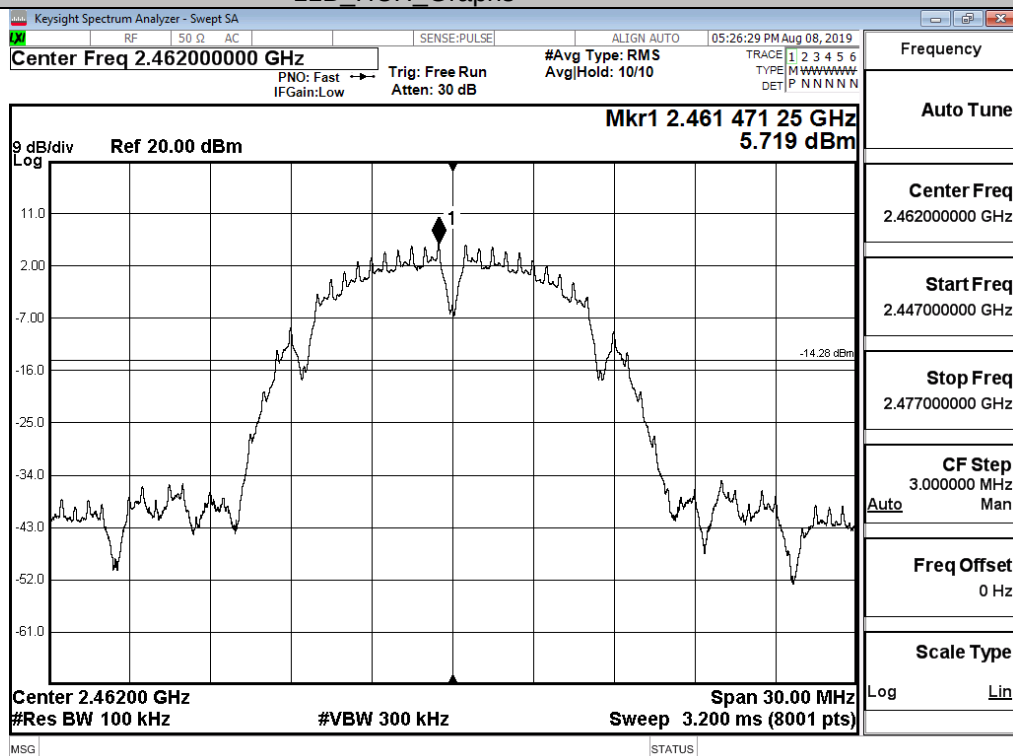


Puw/11B/MCH

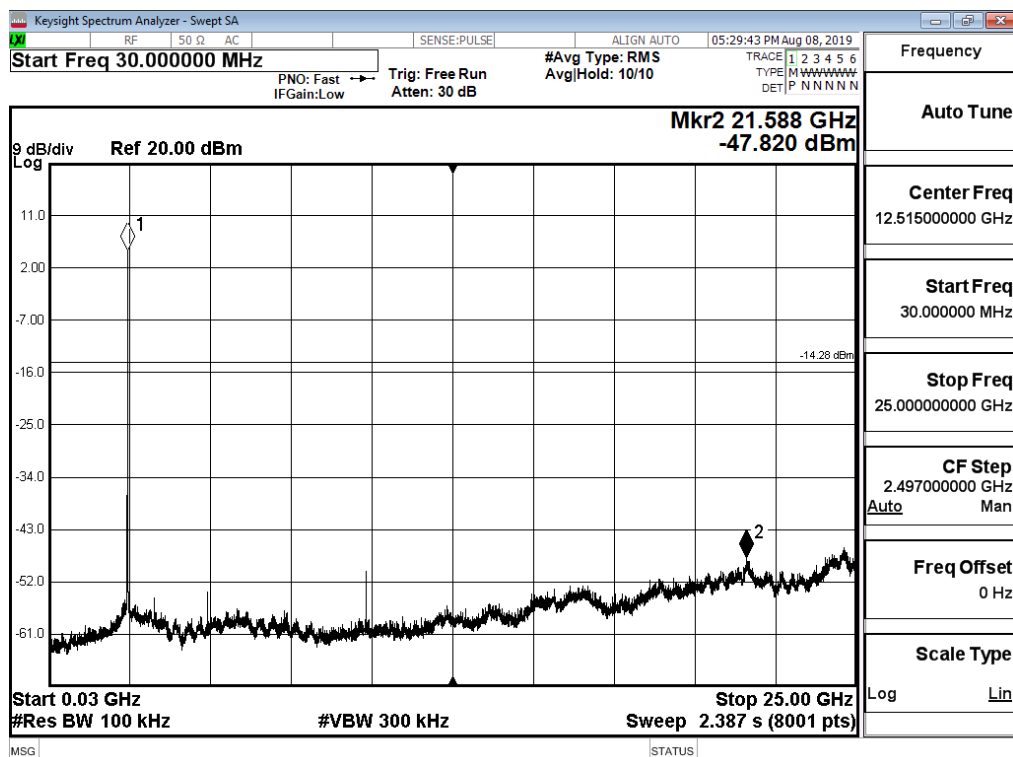


11B HCH Graphs

Pref/11B/HCH

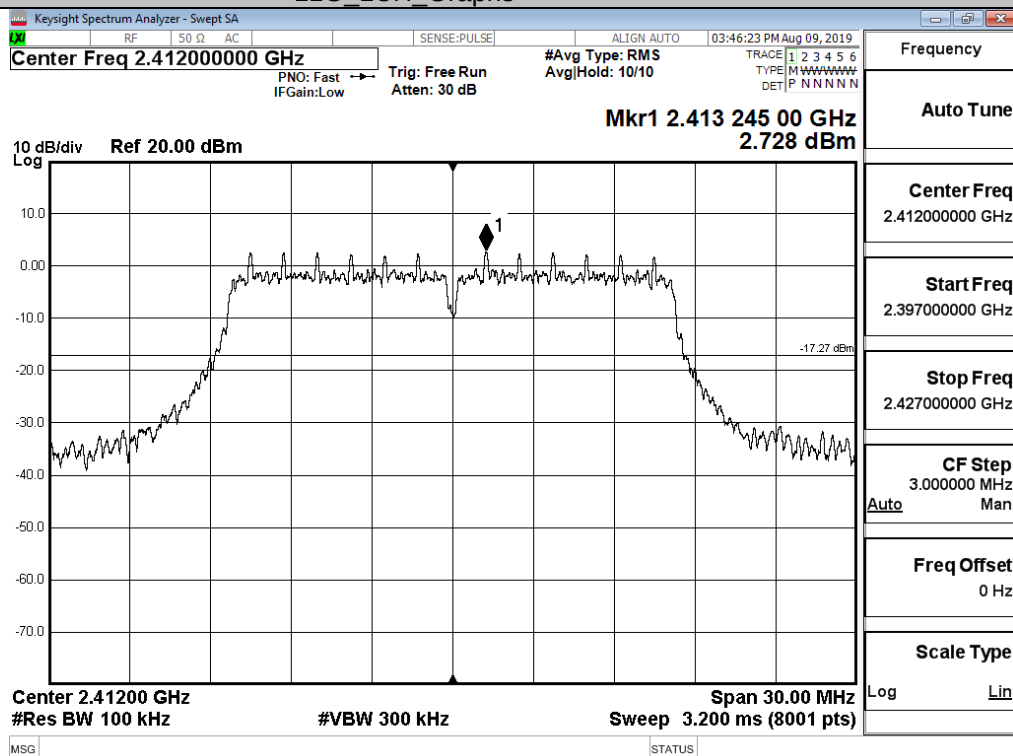


Puw/11B/HCH

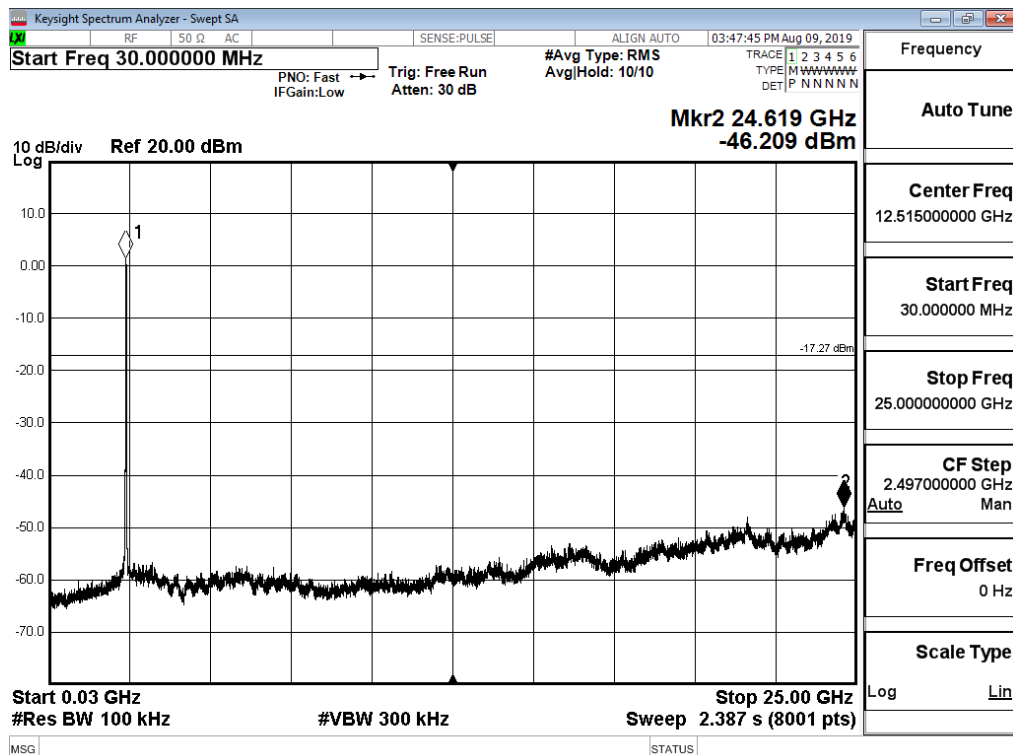


11G_LCH_Graphs

Pref/11G/LCH

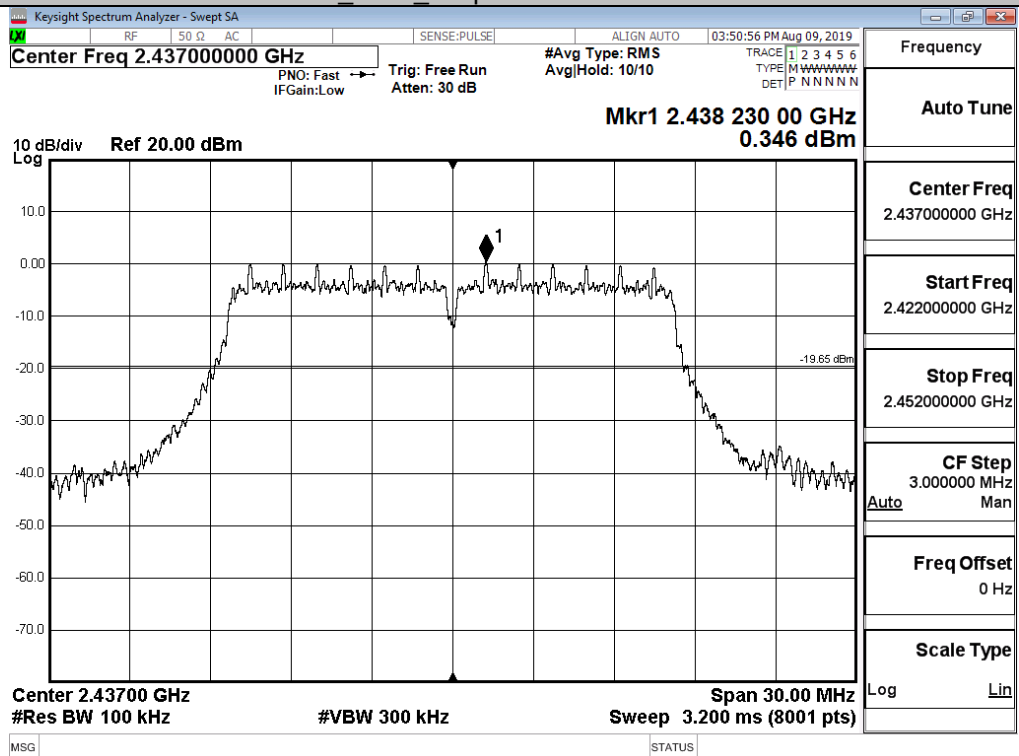


Puw/11G/LCH

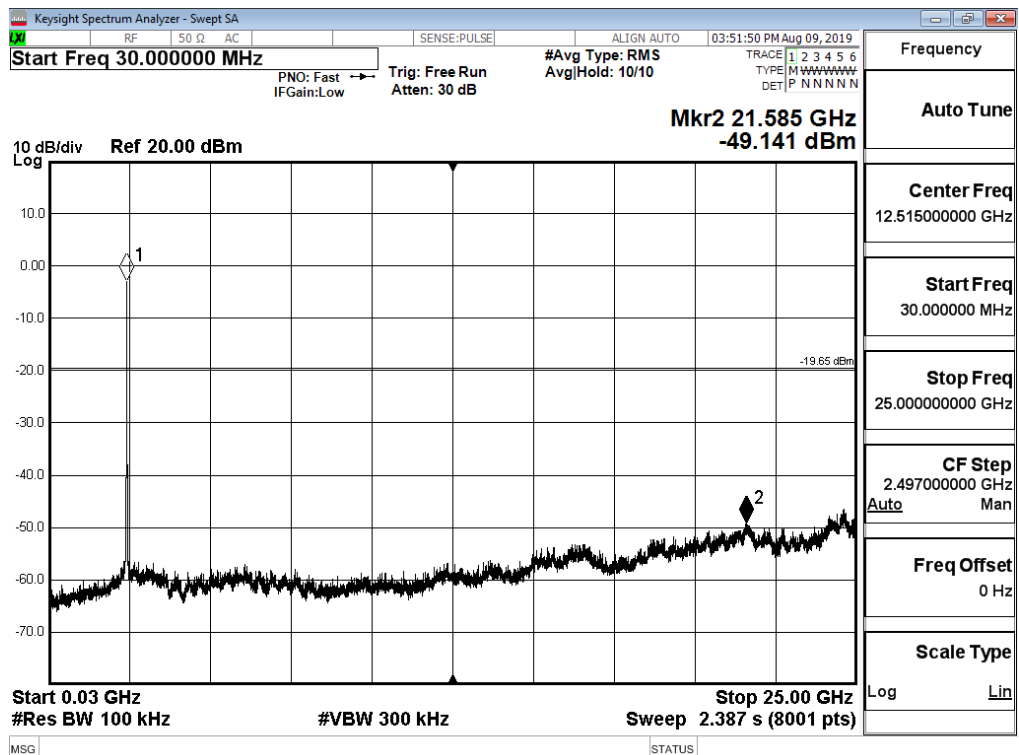


11G MCH Graphs

Pref/11G/MCH

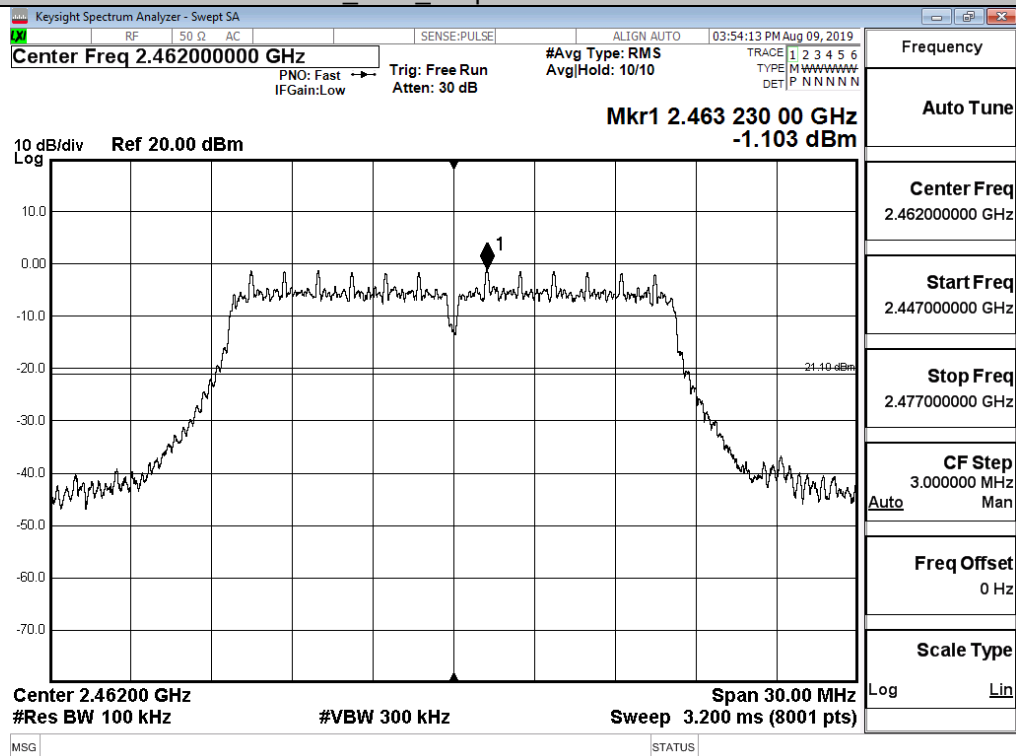


Puw/11G/MCH

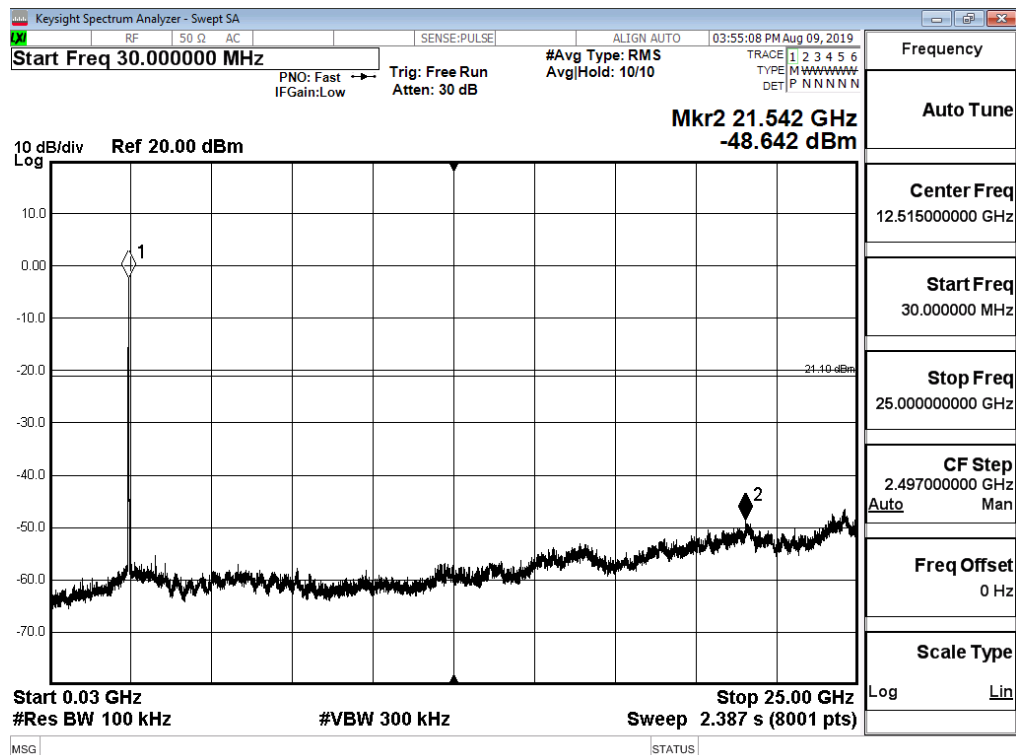


11G HCH Graphs

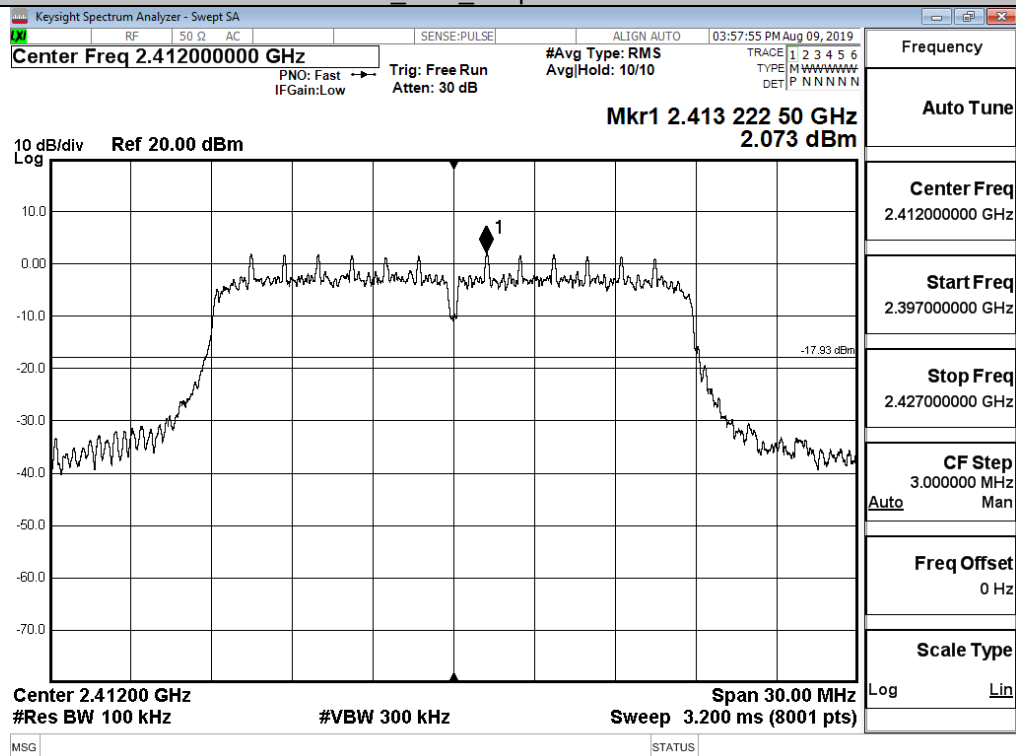
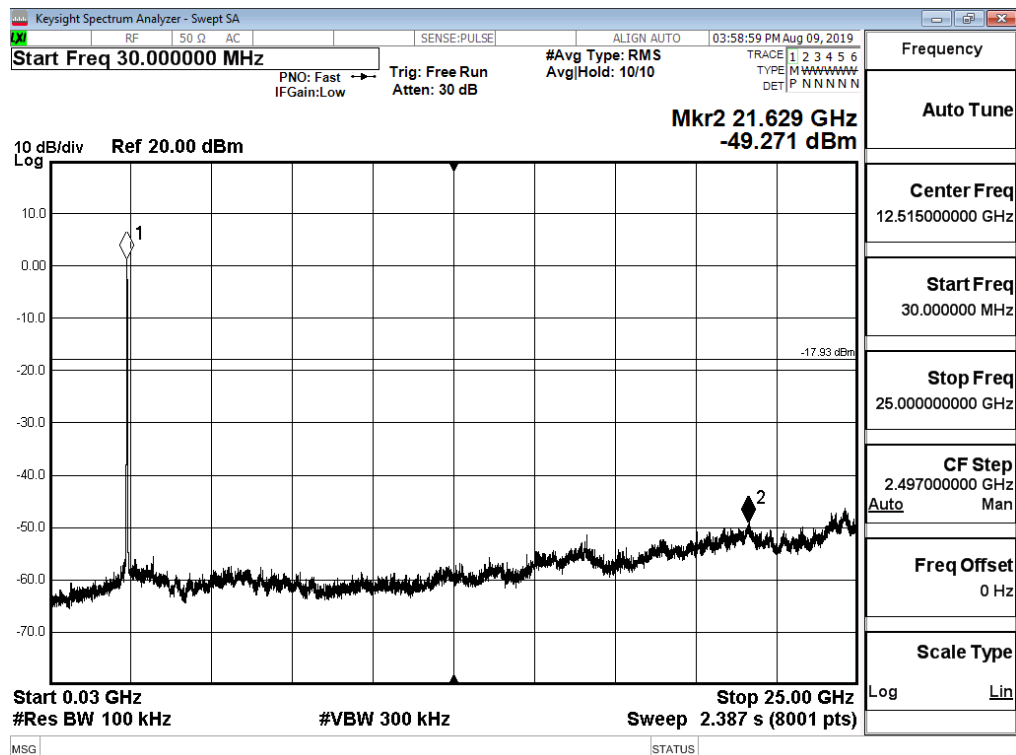
Pref/11G/HCH



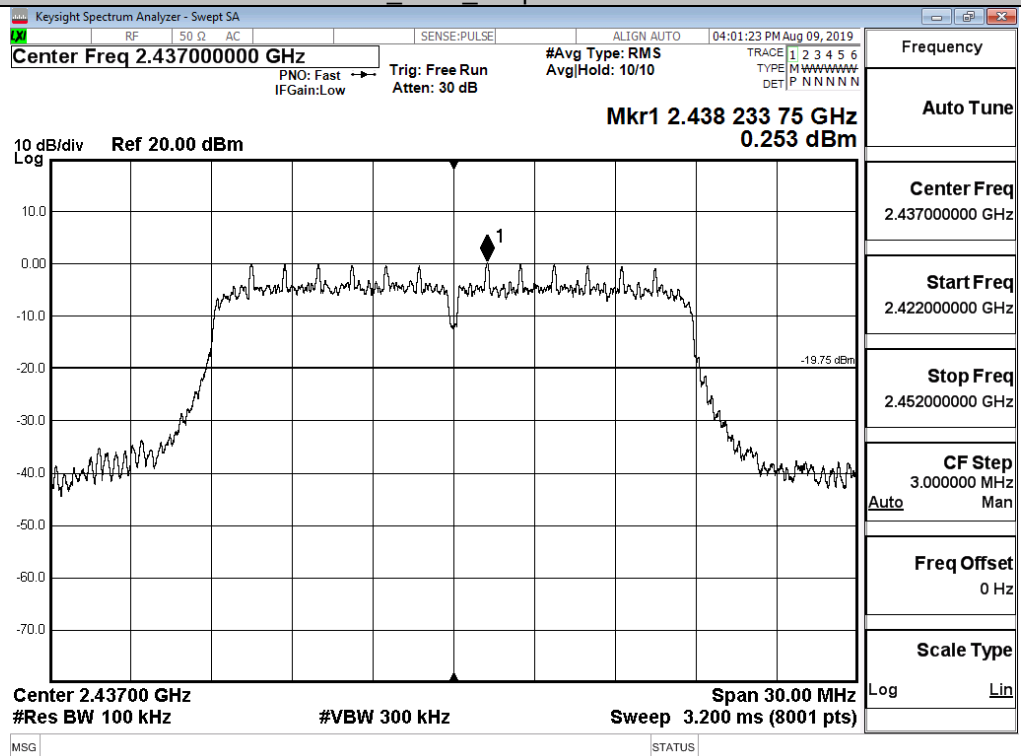
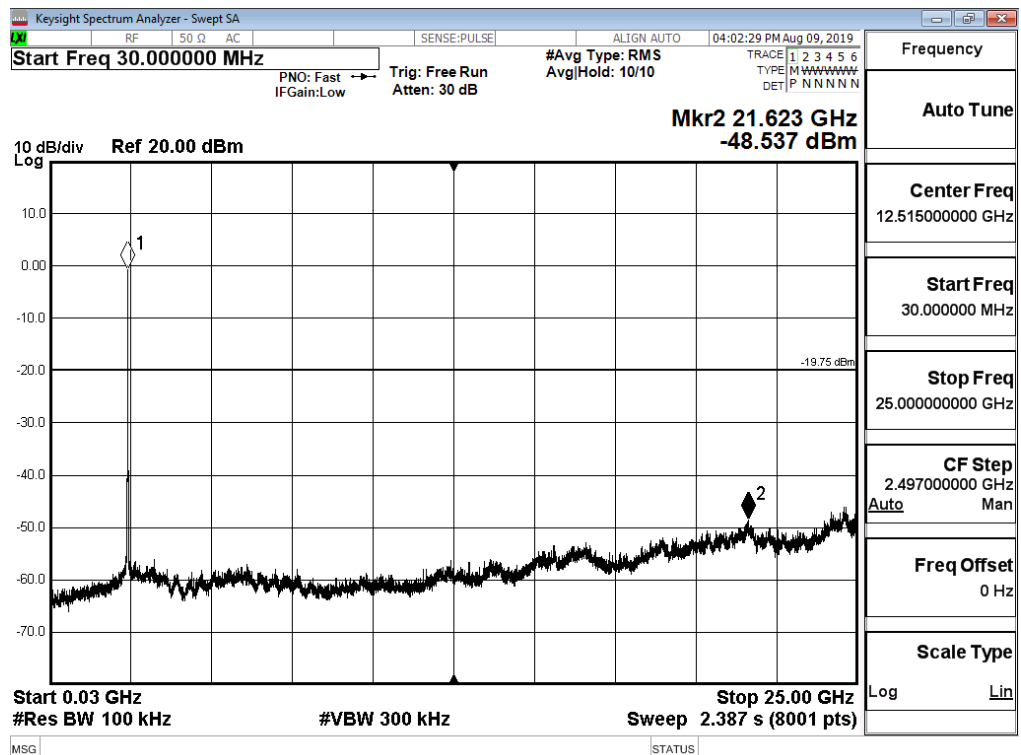
Puw/11G/HCH



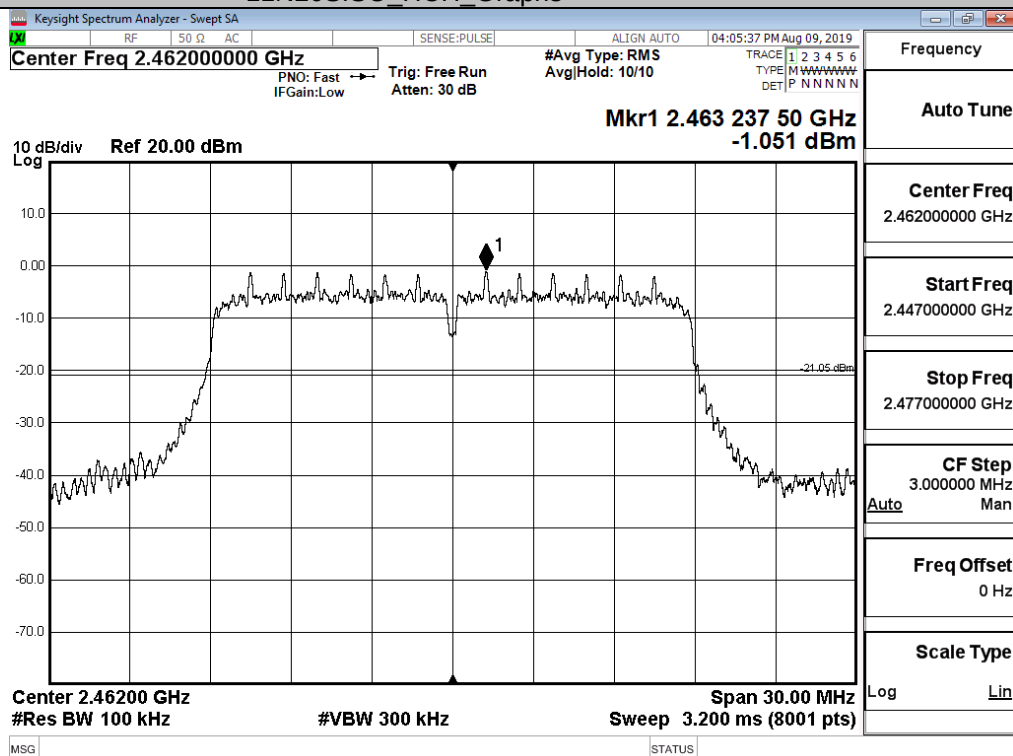
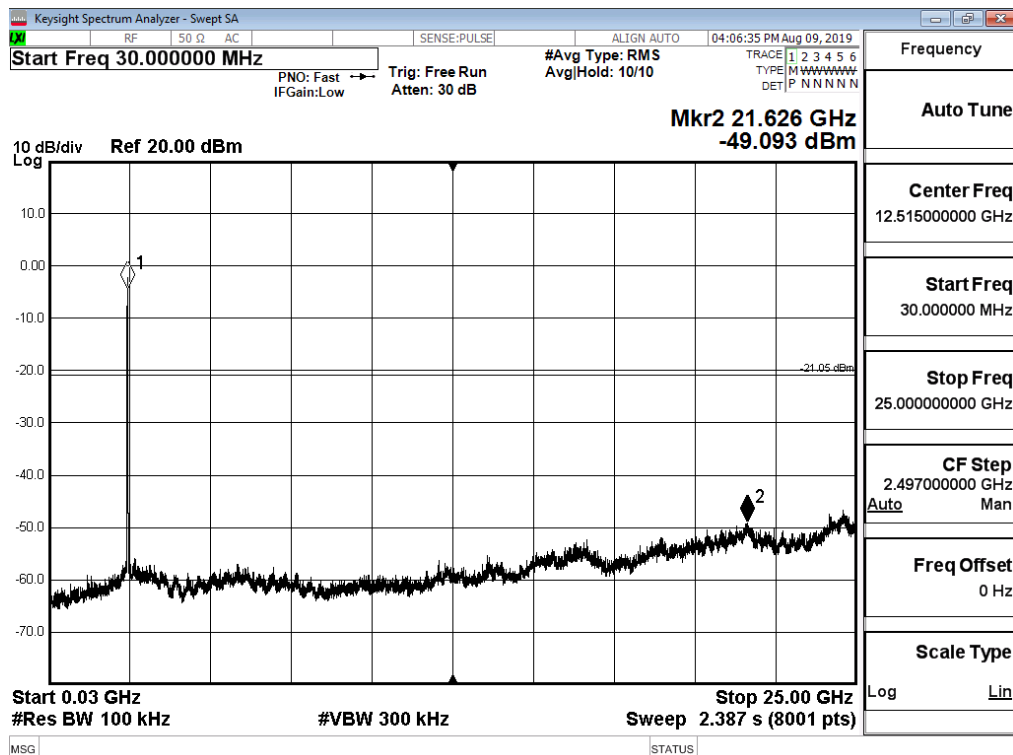
11N20SISO LCH Graphs

Pref/11N20SIS
O/LCHPuw/11N20
SISO/LCH

11N20SISO_MCH_Graphs

Pref/11N20
SISO/MCHPuw/11N20
SISO/MCH

11N20SISO HCH Graphs

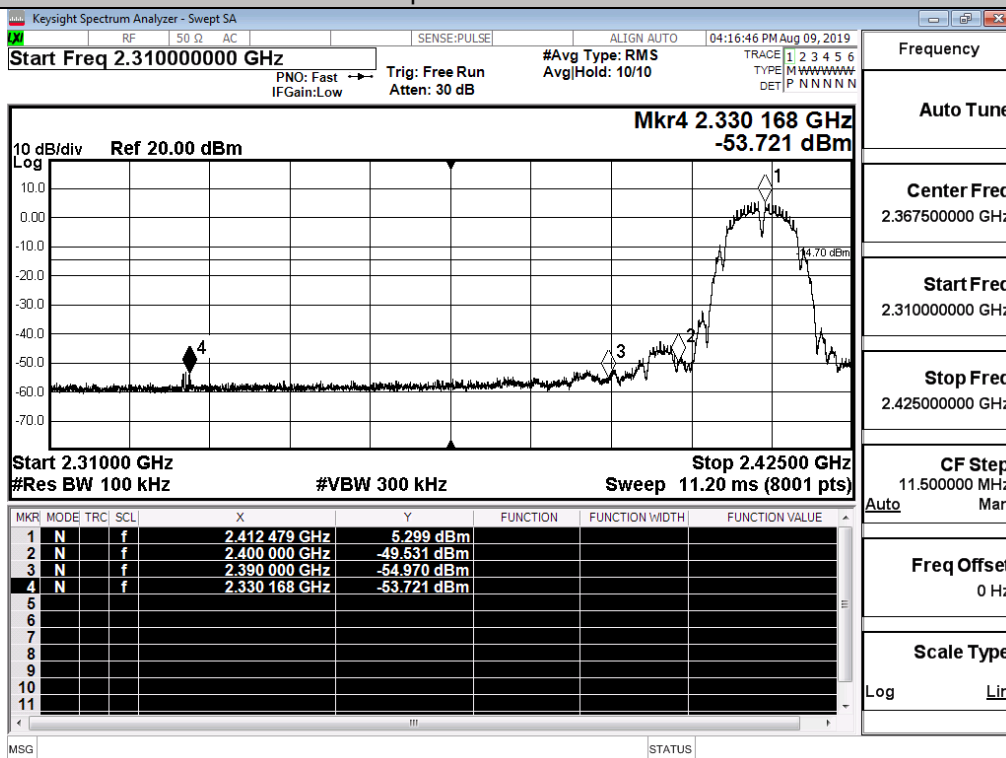
Pref/11N20
SISO/HCHPuw/11N20
SISO/HCH

B.6 Band-edge for RF Conducted Emissions

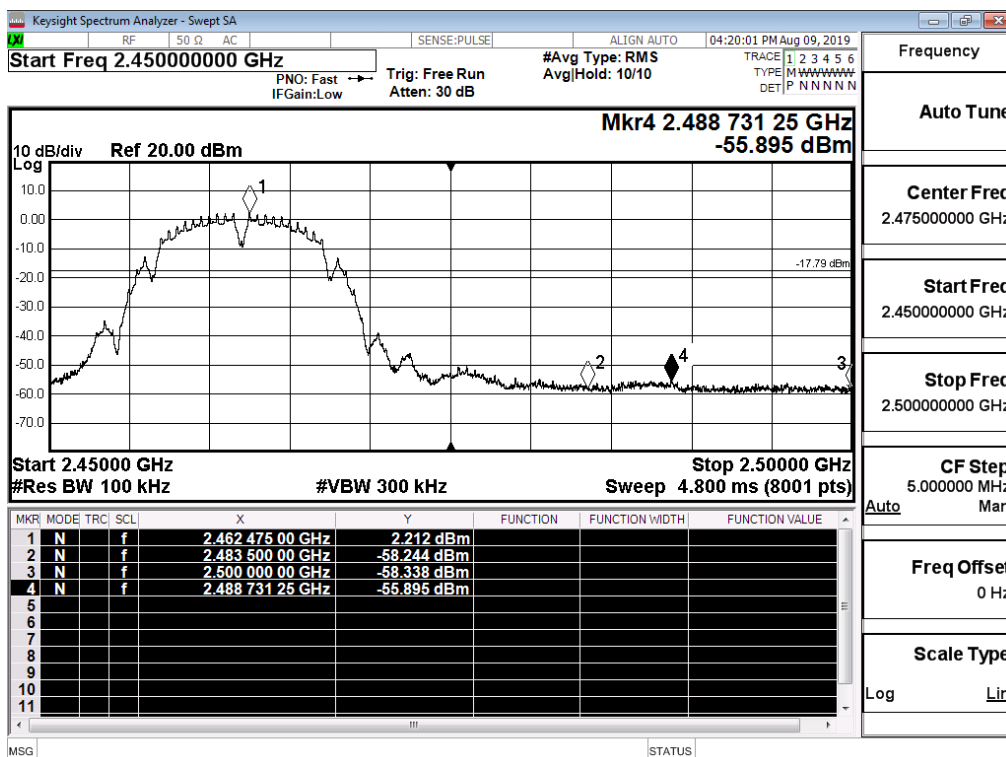
Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	5.299	-53.721	-14.70	PASS
	HCH	2.212	-55.895	-17.79	PASS
11G	LCH	2.148	-56.922	-17.85	PASS
	HCH	-0.891	-48.801	-20.89	PASS
11N20SISO	LCH	2.293	-53.566	-17.71	PASS
	HCH	-0.887	-50.056	-20.89	PASS

Test Graphs

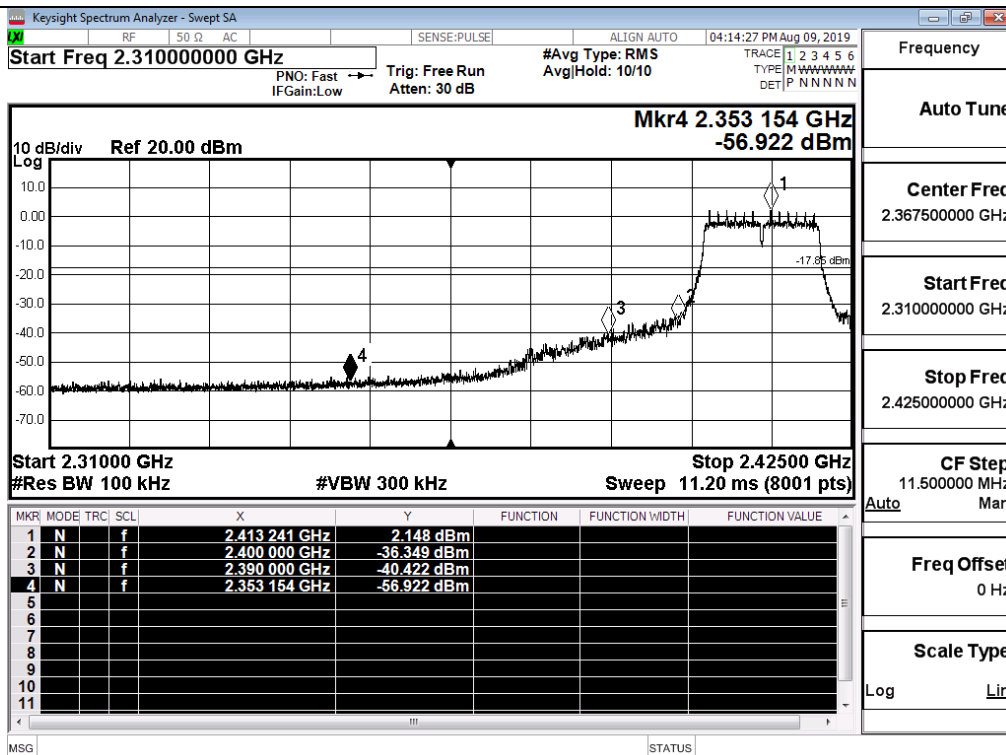
11B/LCH



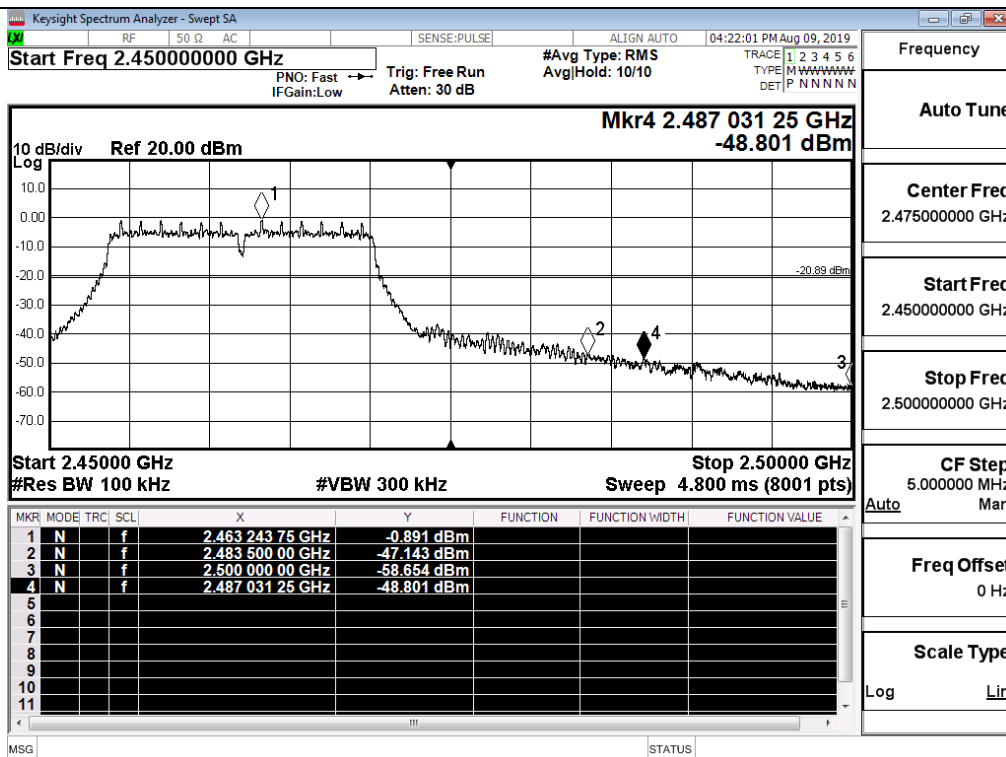
11B/HCH



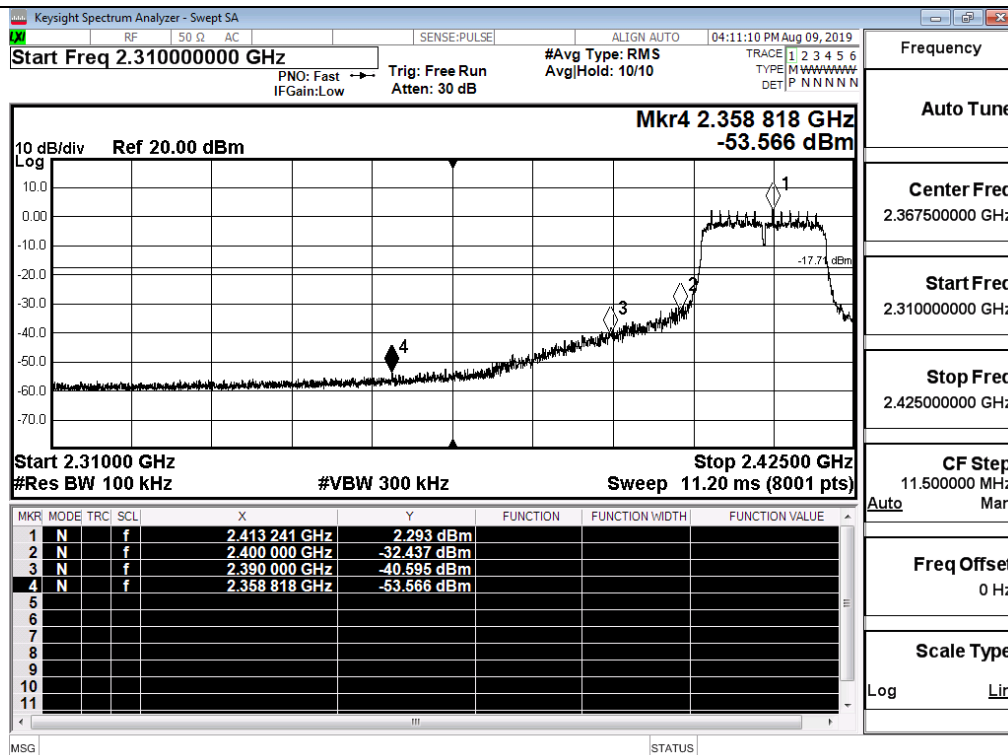
11G/LCH



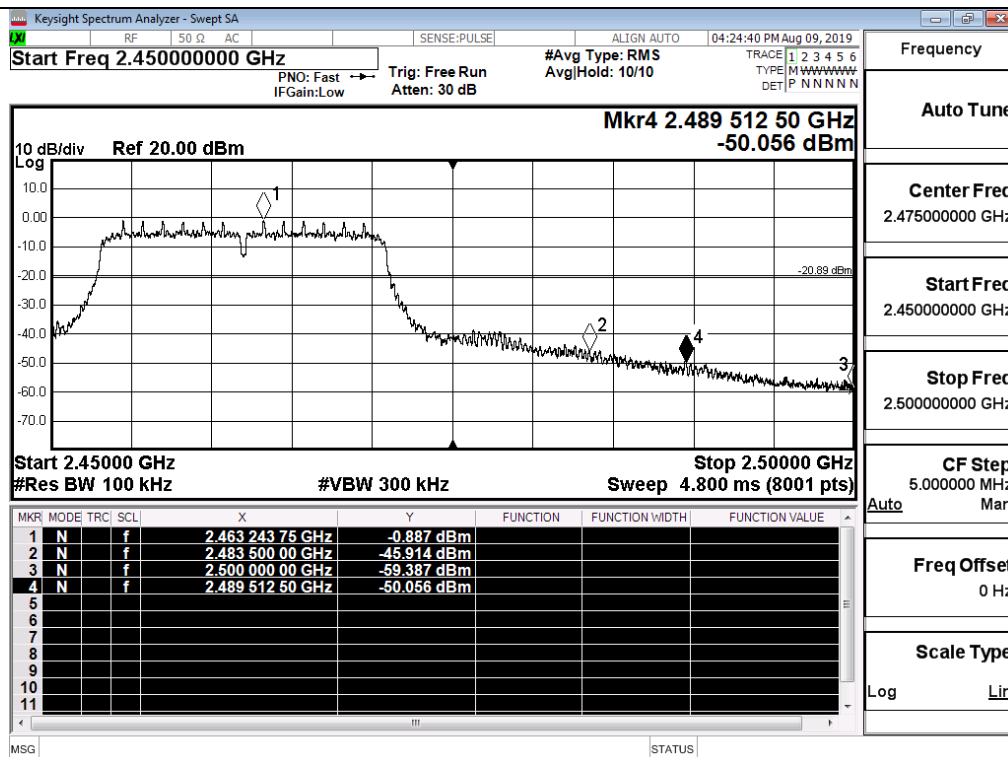
11G/HCH



11N20SISO/LCH



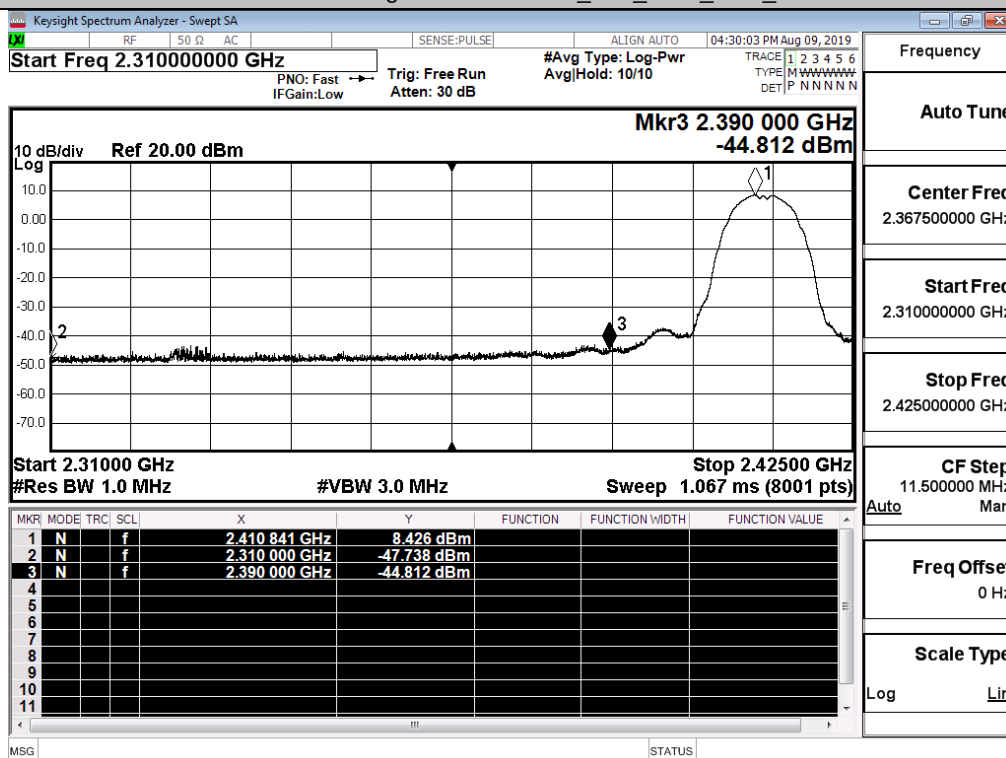
11N20SISO/HCH



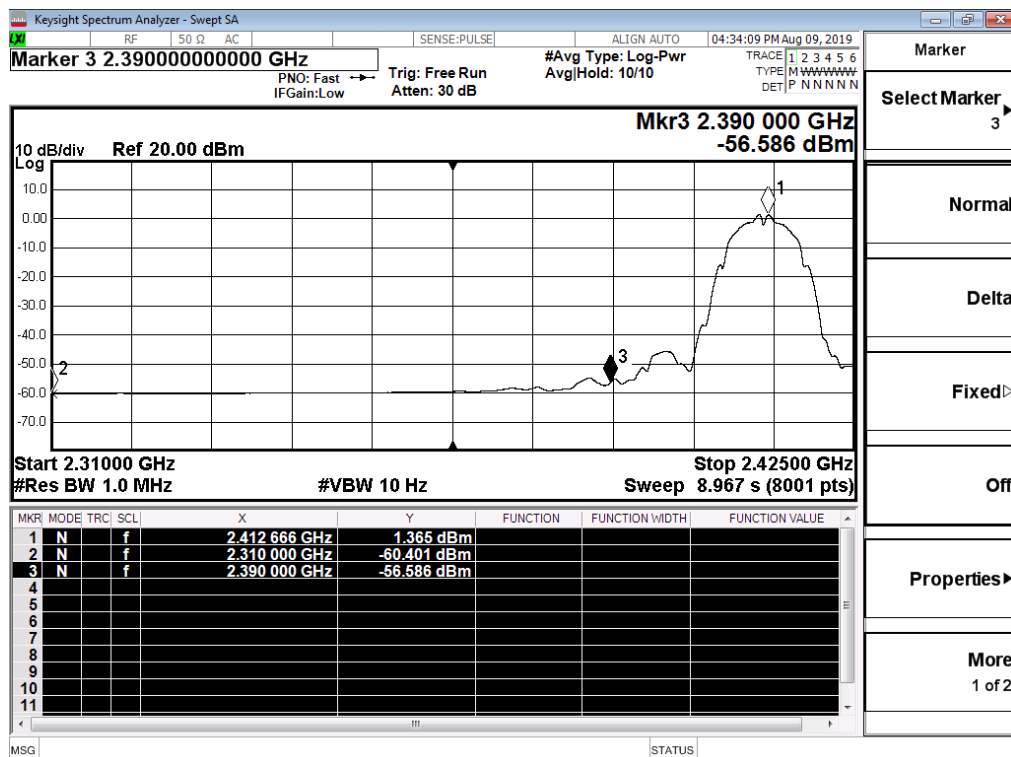
B.7 Restrict-band band-edge measurements

Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
11B	2412	Ant1	2310.0	-47.738	2.5	0	49.522	PEAK	74	PASS
	2412	Ant1	2310.0	-60.401	2.5	0	36.859	AV	54	PASS
	2412	Ant1	2390.0	-44.812	2.5	0	52.448	PEAK	74	PASS
	2412	Ant1	2390.0	-56.586	2.5	0	40.674	AV	54	PASS
	2462	Ant1	2483.5	-48.712	2.5	0	48.548	PEAK	74	PASS
	2462	Ant1	2483.5	-57.111	2.5	0	40.149	AV	54	PASS
	2462	Ant1	2500.0	-48.568	2.5	0	48.692	PEAK	74	PASS
	2462	Ant1	2500.0	-57.521	2.5	0	39.739	AV	54	PASS
11G	2412	Ant1	2310.0	-47.676	2.5	0	49.584	PEAK	74	PASS
	2412	Ant1	2310.0	-60.373	2.5	0	36.887	AV	54	PASS
	2412	Ant1	2390.0	-27.289	2.5	0	69.971	PEAK	74	PASS
	2412	Ant1	2390.0	-46.534	2.5	0	50.726	AV	54	PASS
	2462	Ant1	2483.5	-30.709	2.5	0	66.551	PEAK	74	PASS
	2462	Ant1	2483.5	-44.020	2.5	0	53.240	AV	54	PASS
	2462	Ant1	2500.0	-45.570	2.5	0	51.690	PEAK	74	PASS
	2462	Ant1	2500.0	-56.886	2.5	0	40.374	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-49.489	2.5	0	47.771	PEAK	74	PASS
	2412	Ant1	2310.0	-60.372	2.5	0	36.888	AV	54	PASS
	2412	Ant1	2390.0	-27.228	2.5	0	70.032	PEAK	74	PASS
	2412	Ant1	2390.0	-46.305	2.5	0	50.955	AV	54	PASS
	2462	Ant1	2483.5	-26.959	2.5	0	70.301	PEAK	74	PASS
	2462	Ant1	2483.5	-43.978	2.5	0	53.282	AV	54	PASS
	2462	Ant1	2500.0	-41.399	2.5	0	55.861	PEAK	74	PASS
	2462	Ant1	2500.0	-55.517	2.5	0	41.743	AV	54	PASS

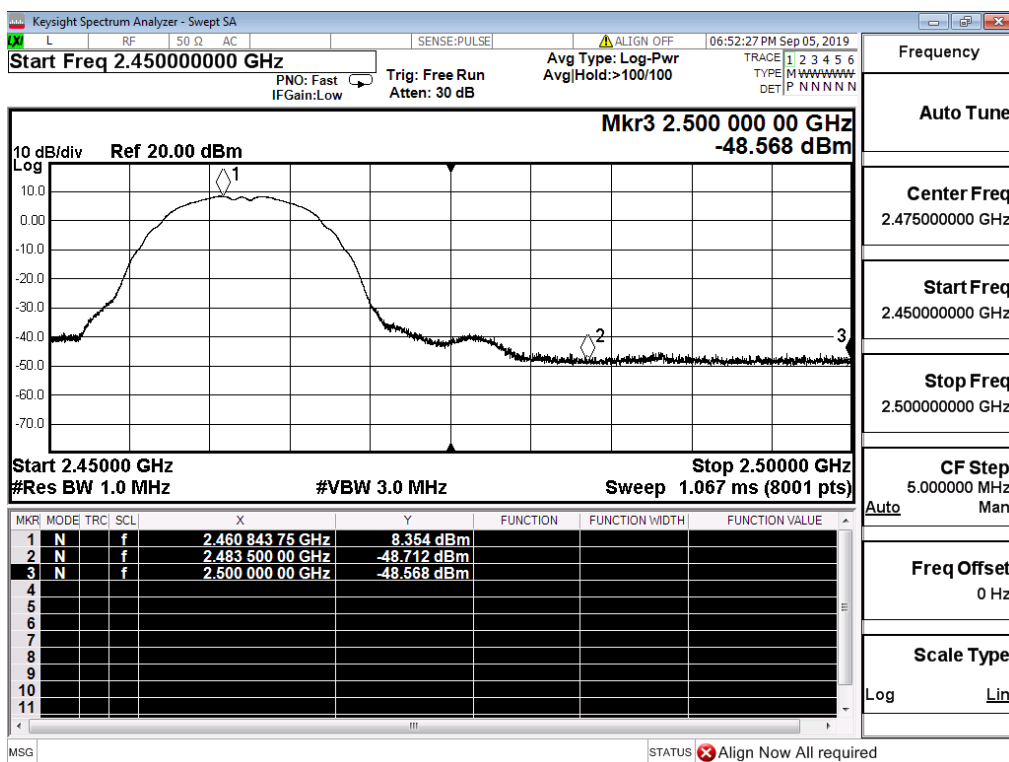
Restrict-band band-edge measurements_11B_2412_Ant1_PEAK



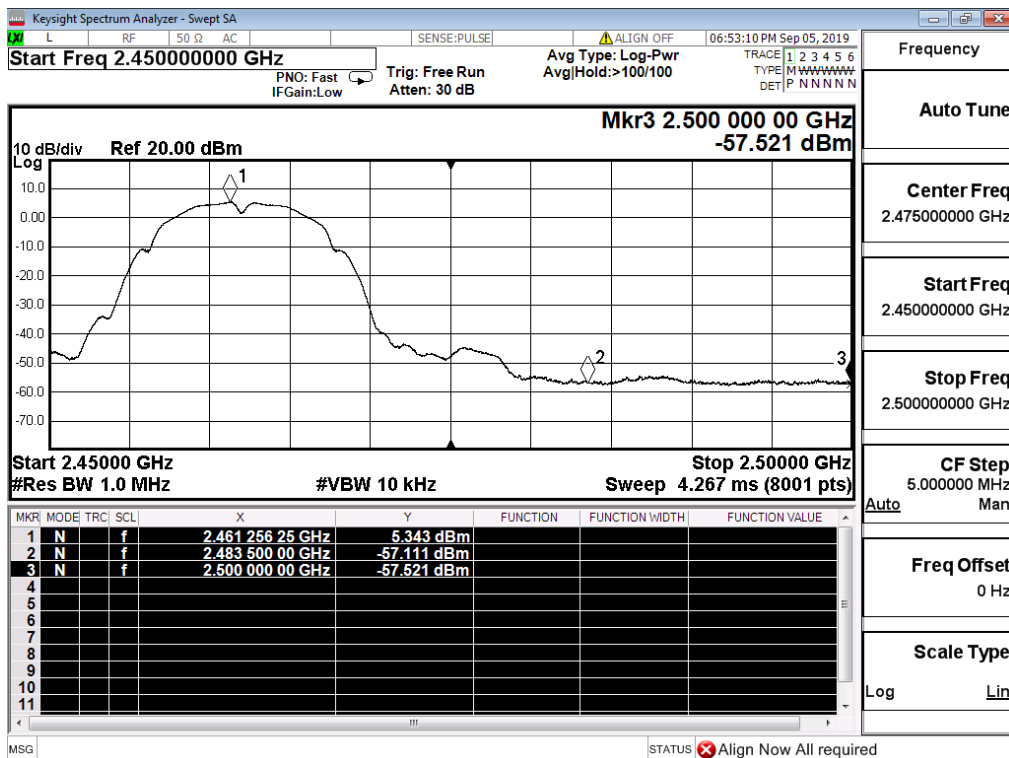
Restrict-band band-edge measurements_11B_2412_Ant1_AV



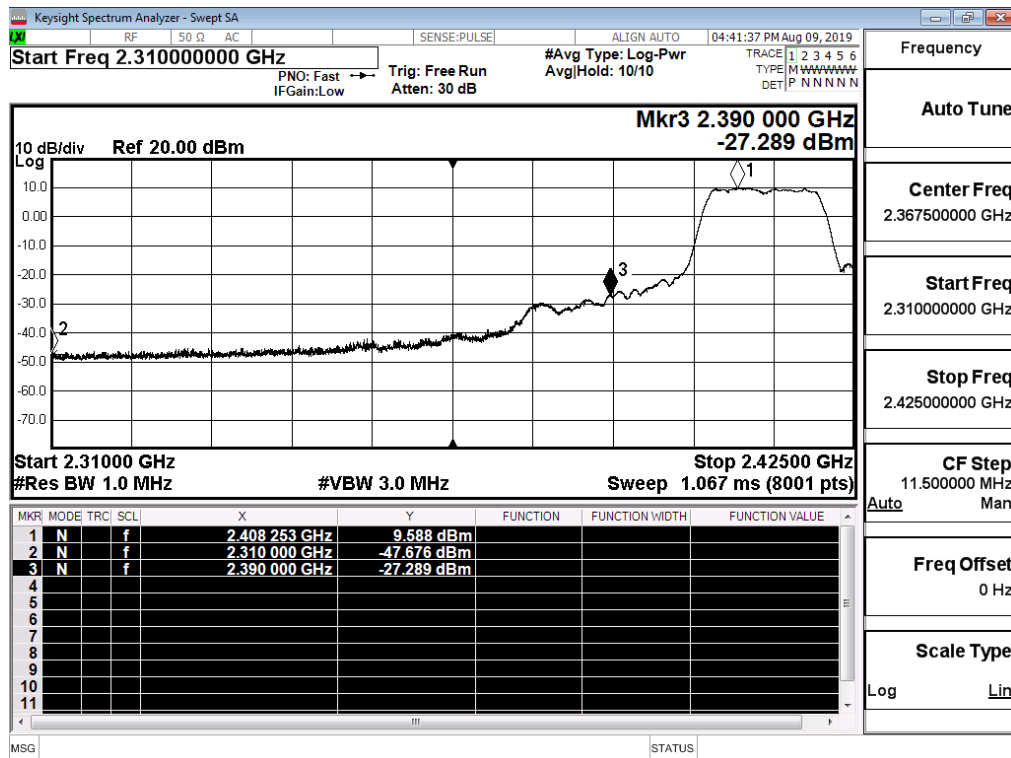
Restrict-band band-edge measurements_11B_2462_Ant1_PEAK



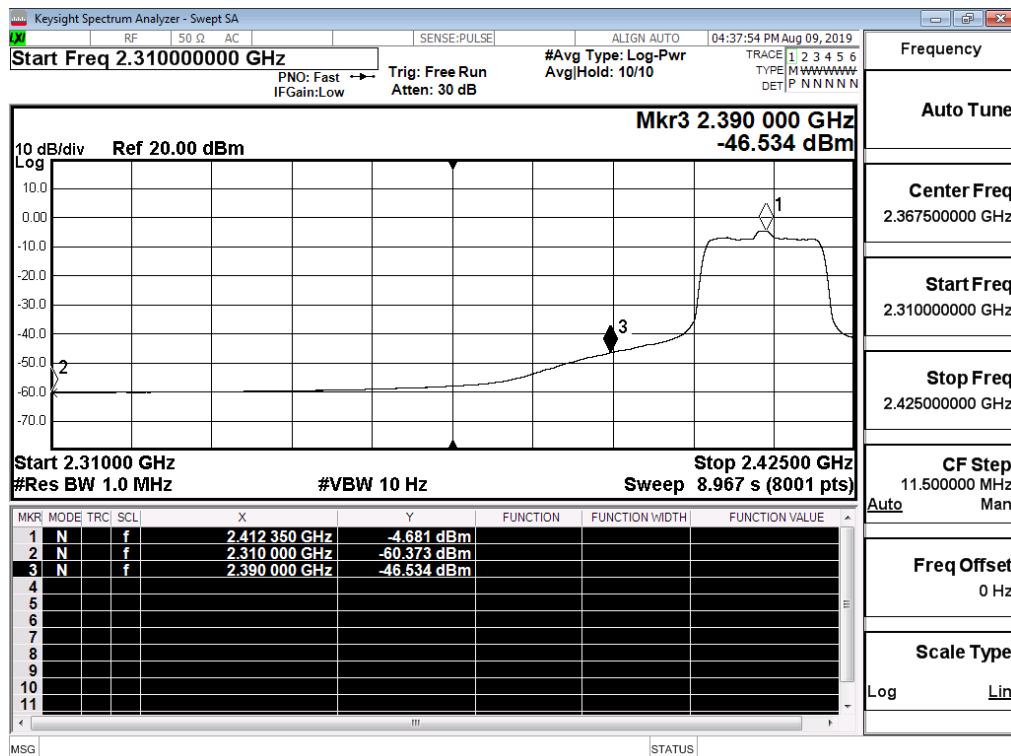
Restrict-band band-edge measurements_11B_2462_Ant1_AV



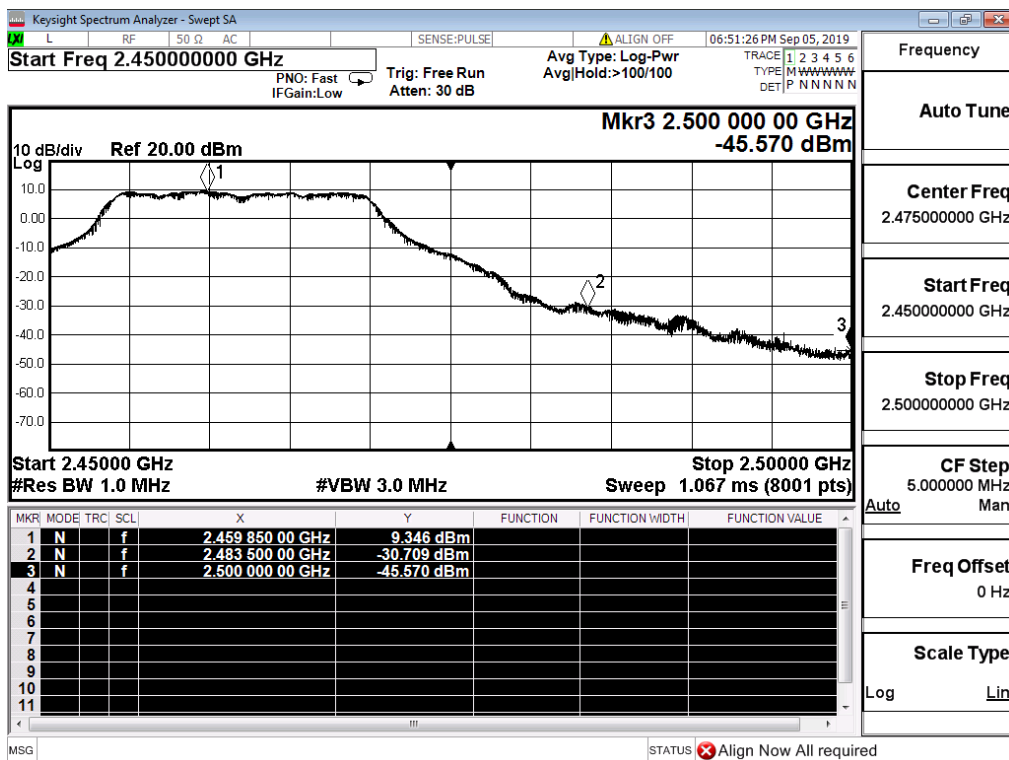
Restrict-band band-edge measurements_11G_2412_Ant1_PEAK



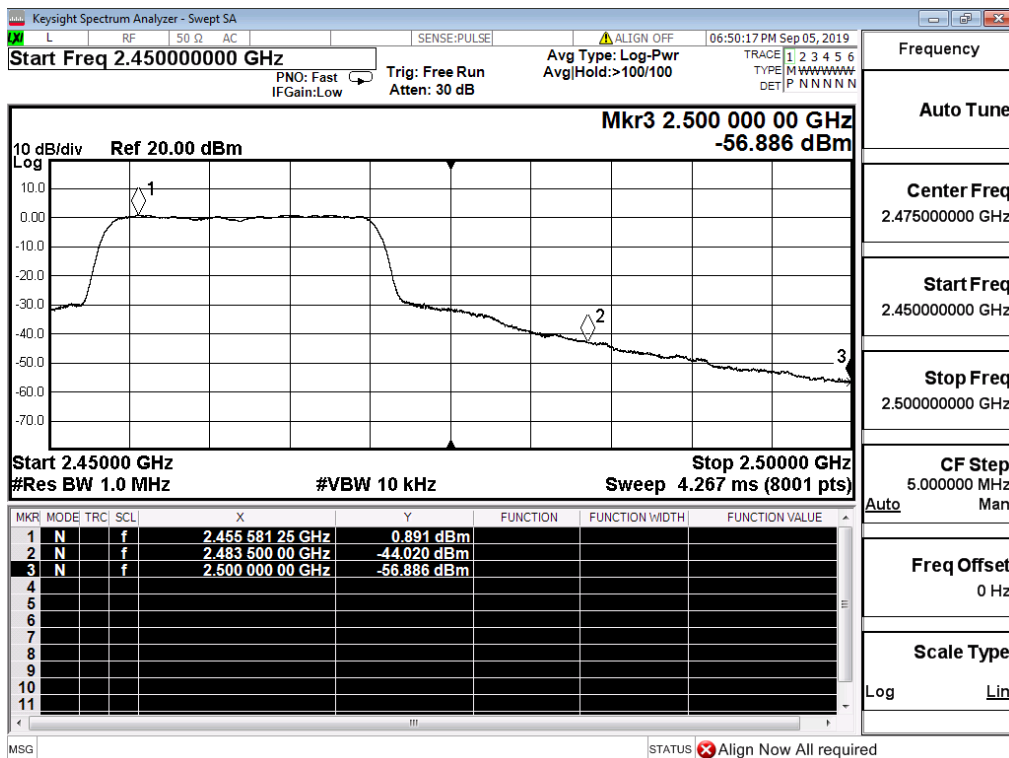
Restrict-band band-edge measurements_11G_2412_Ant1_AV



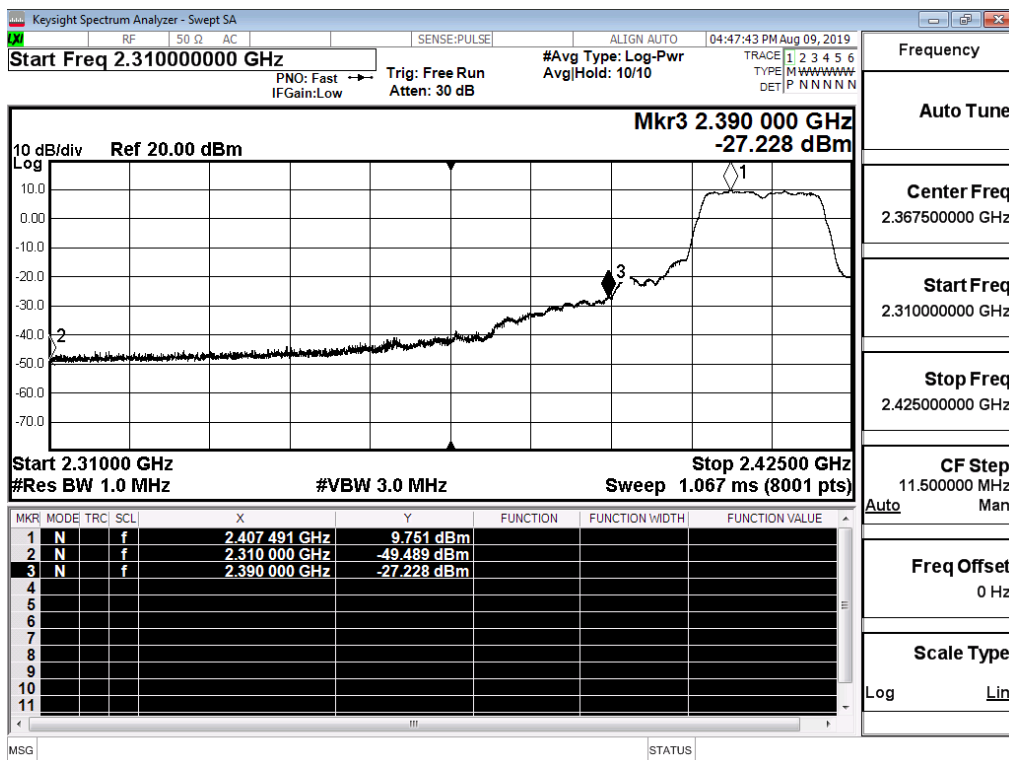
Restrict-band band-edge measurements_11G_2462_Ant1_PEAK



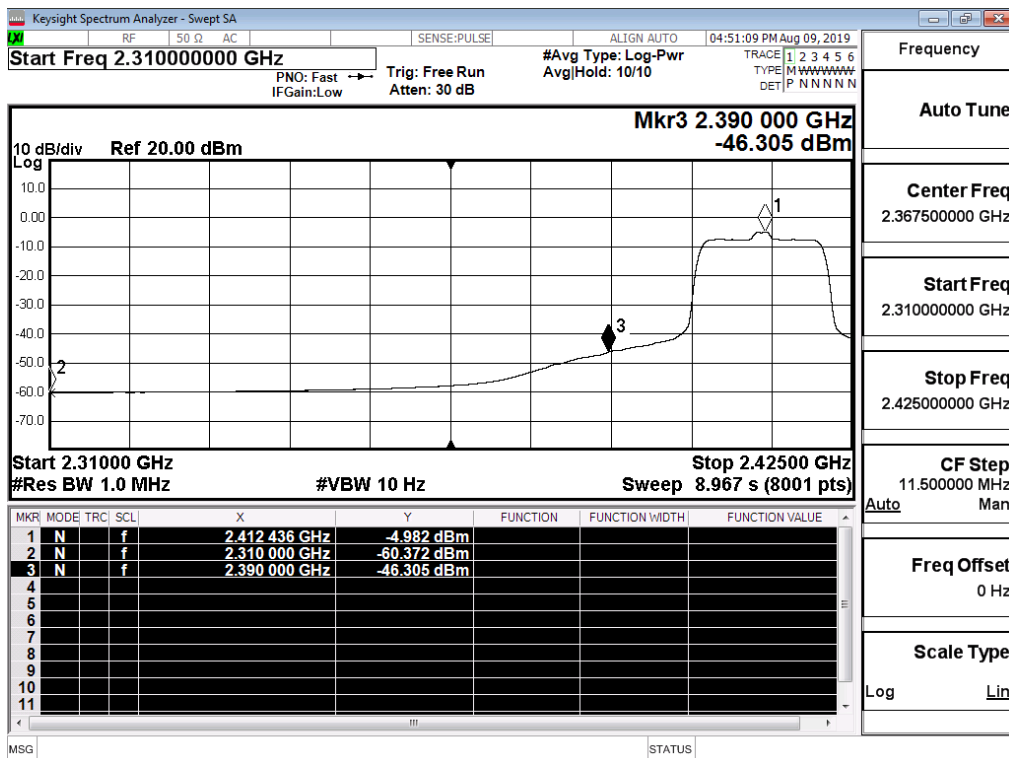
Restrict-band band-edge measurements_11G_2462_Ant1_AV



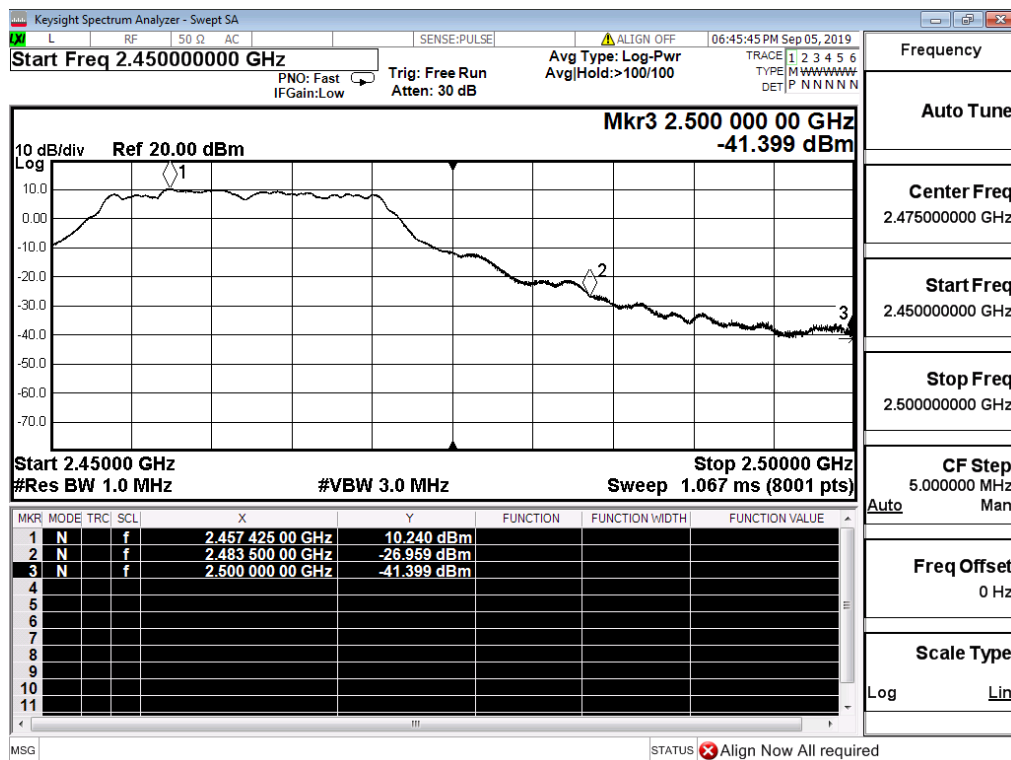
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_PEAK



Restrict-band band-edge measurements_11N20SISO_2412_Ant1_AV



Restrict-band band-edge measurements_11N20SISO_2462_Ant1_PEAK



Restrict-band band-edge measurements_11N20SISO_2462_Ant1_AV

