

Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Smart bulb

Test Model: SBR30

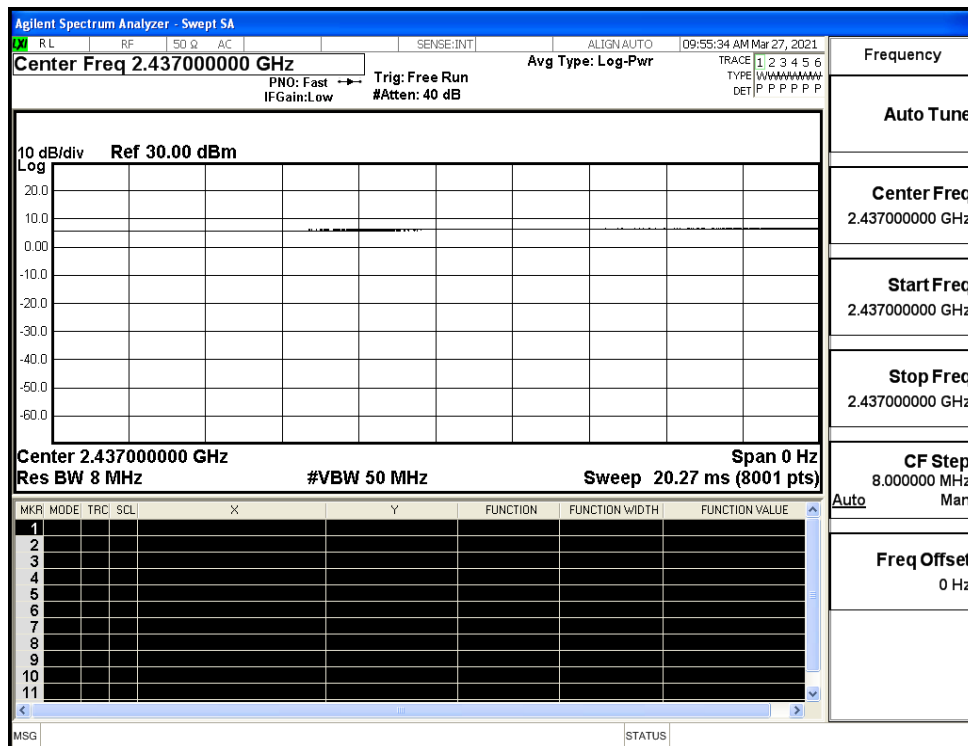
Environmental Conditions

Temperature:	24.6° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Li
Supervised by:	Li Huan

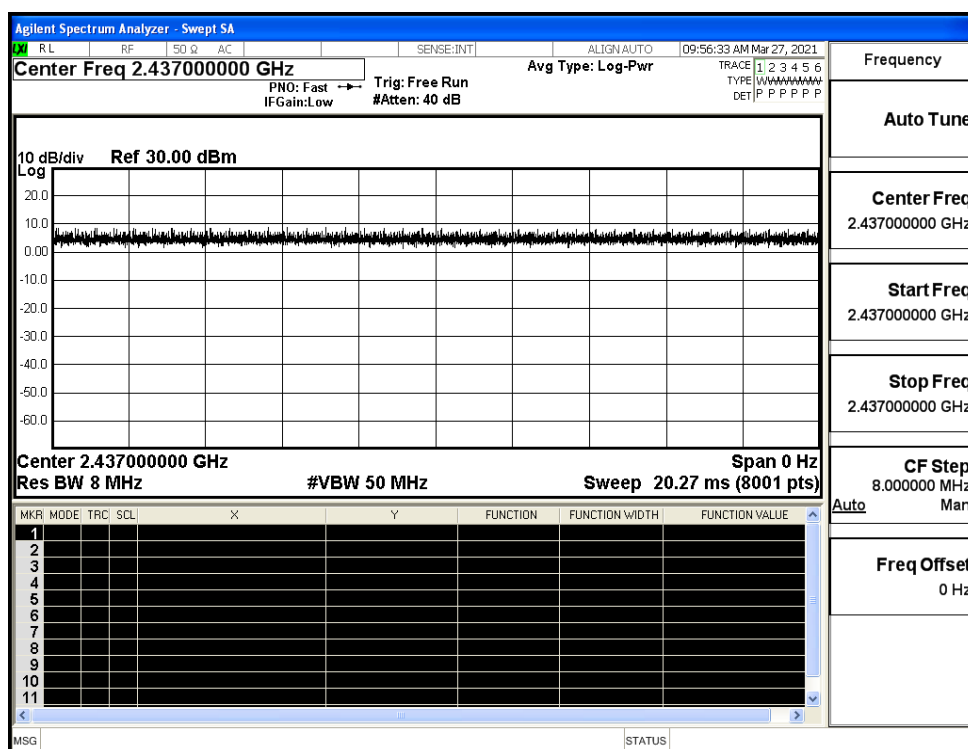
A.1 Duty Cycle

Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
11B	2437	Ant1	100	PASS
11G	2437	Ant1	100	PASS
11N20SISO	2437	Ant1	100	PASS
11N40SISO	2437	Ant1	100	PASS

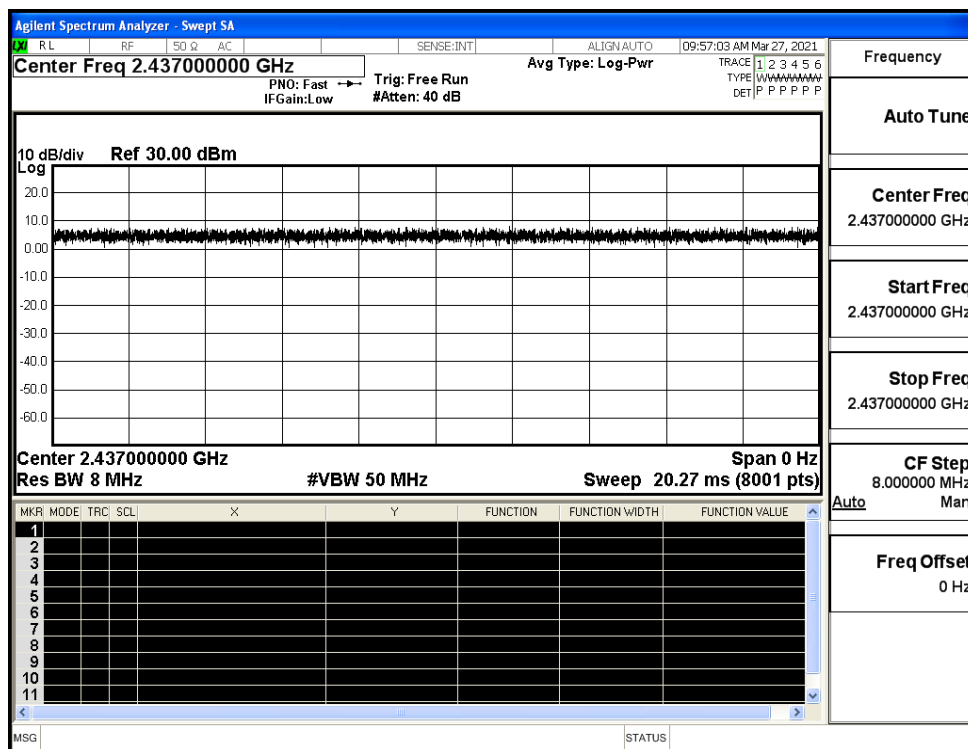
Duty Cycle_11B_2437_Ant1



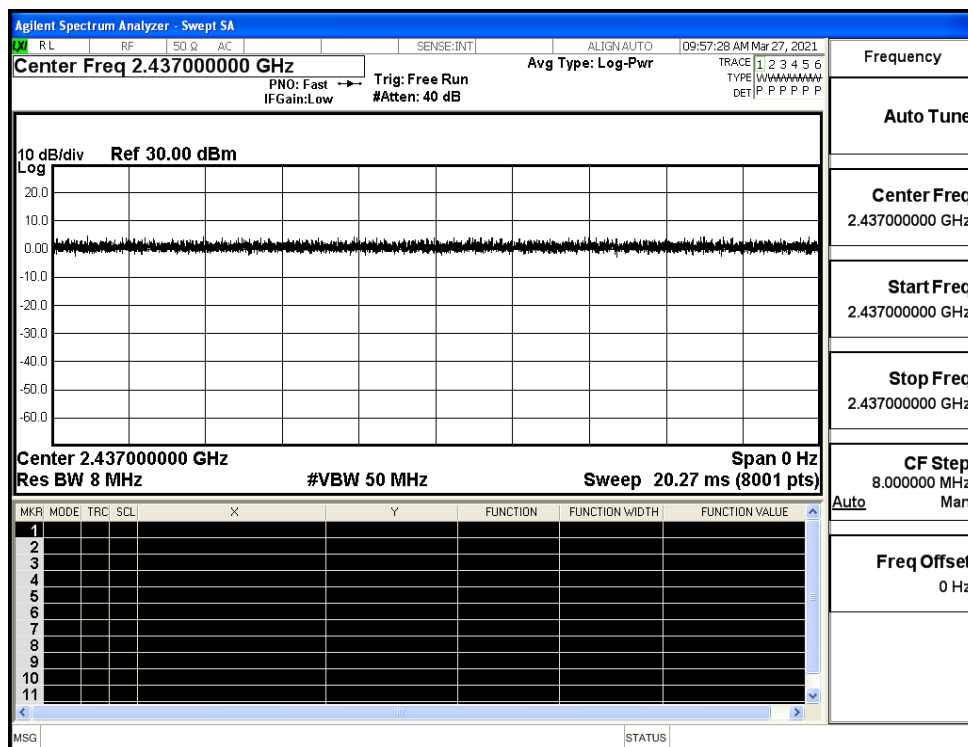
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



Duty Cycle_11N40SISO_2437_Ant1



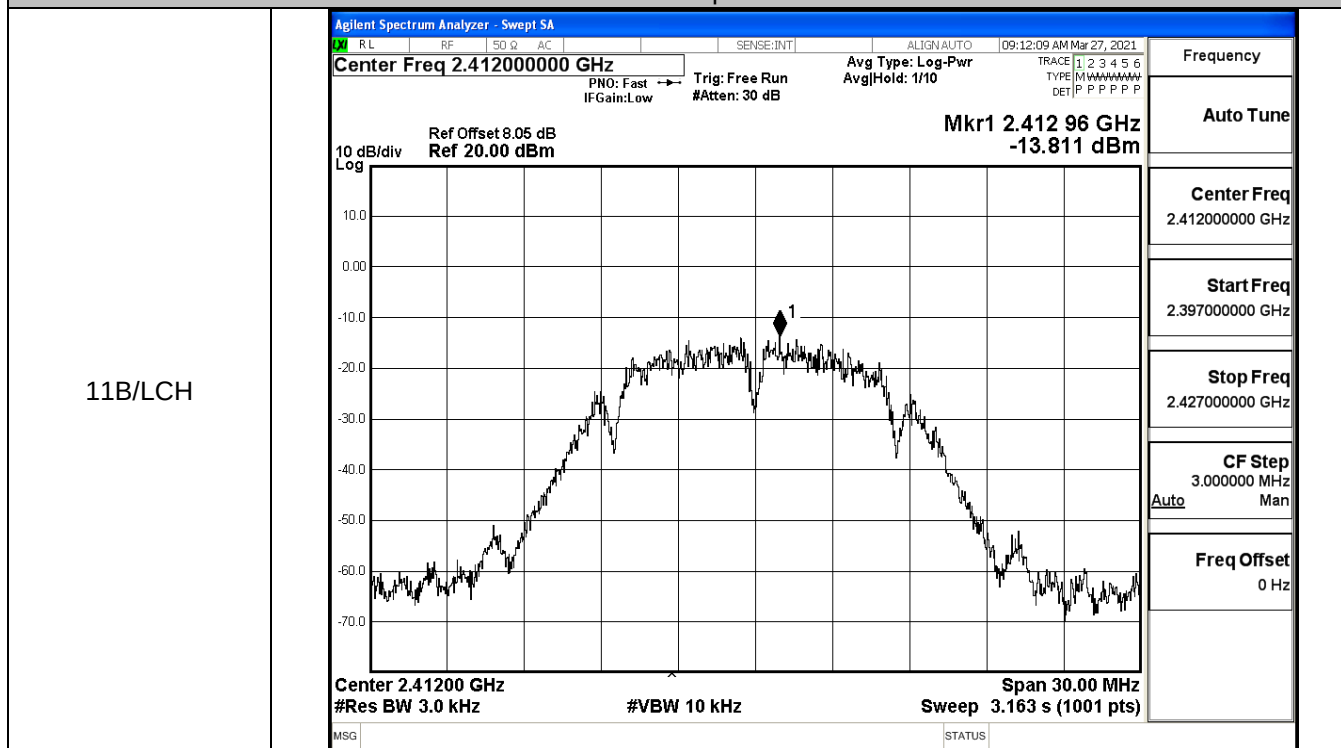
A.2 Maximum Conducted Output Power

Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	15.81	30	PASS
	MCH	16.31	30	PASS
	HCH	15.55	30	PASS
11G	LCH	14.36	30	PASS
	MCH	16.54	30	PASS
	HCH	15.81	30	PASS
11N20SISO	LCH	14.09	30	PASS
	MCH	16.43	30	PASS
	HCH	15.81	30	PASS
11N40SISO	LCH	16.41	30	PASS
	MCH	16.53	30	PASS
	HCH	16.21	30	PASS

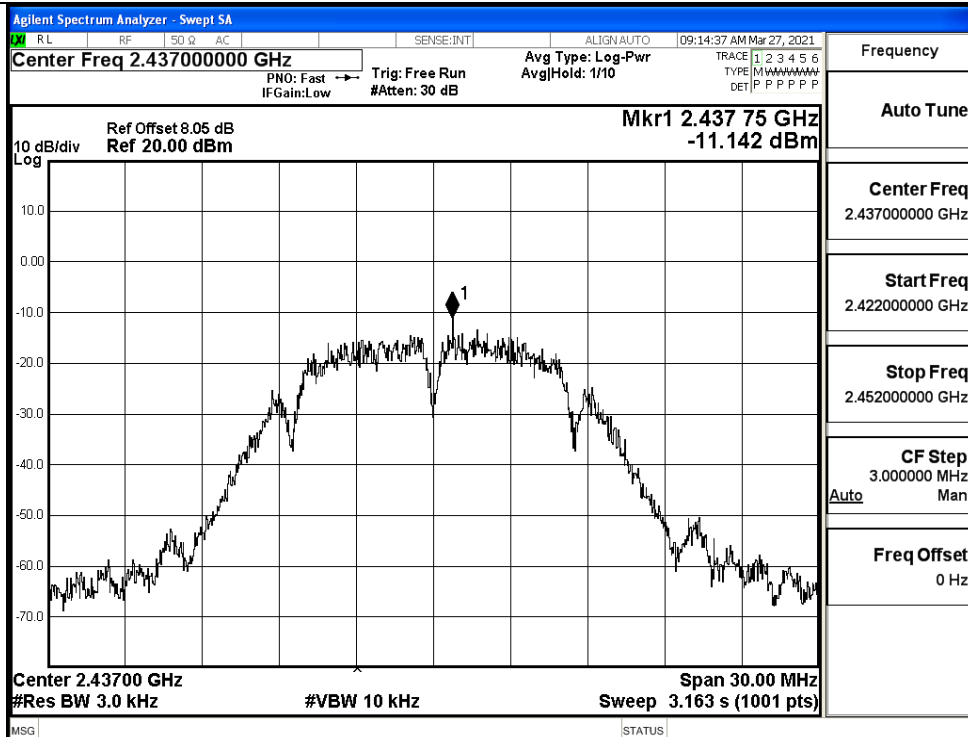
A.3 Maximum Power Spectral Density

Mode	Channel	Meas.Level [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-13.811	8	PASS
	MCH	-11.142	8	PASS
	HCH	-14.354	8	PASS
11G	LCH	-18.364	8	PASS
	MCH	-15.986	8	PASS
	HCH	-17.187	8	PASS
11N20SISO	LCH	-18.965	8	PASS
	MCH	-16.907	8	PASS
	HCH	-18.512	8	PASS
11N40SISO	LCH	-19.643	8	PASS
	MCH	-17.557	8	PASS
	HCH	-20.042	8	PASS

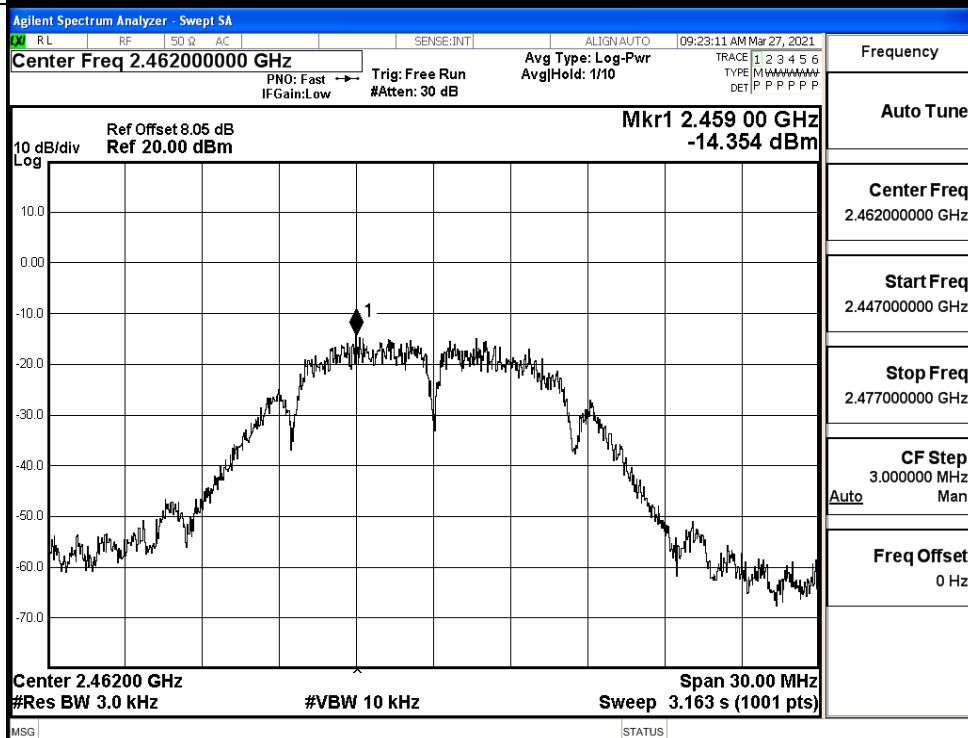
Test Graphs



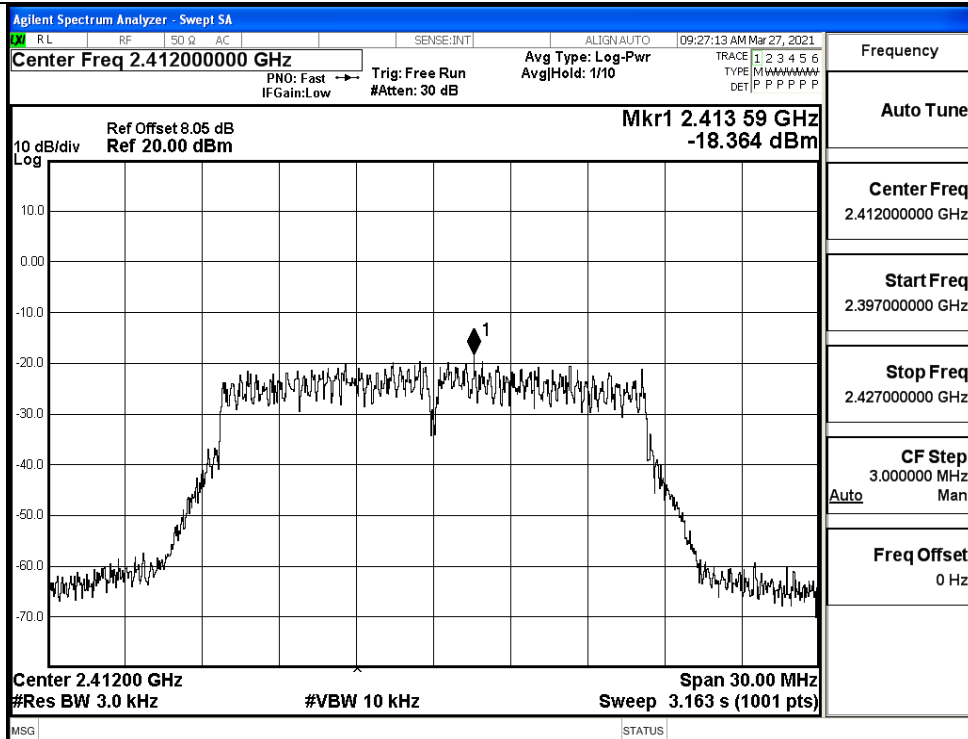
11B/MCH



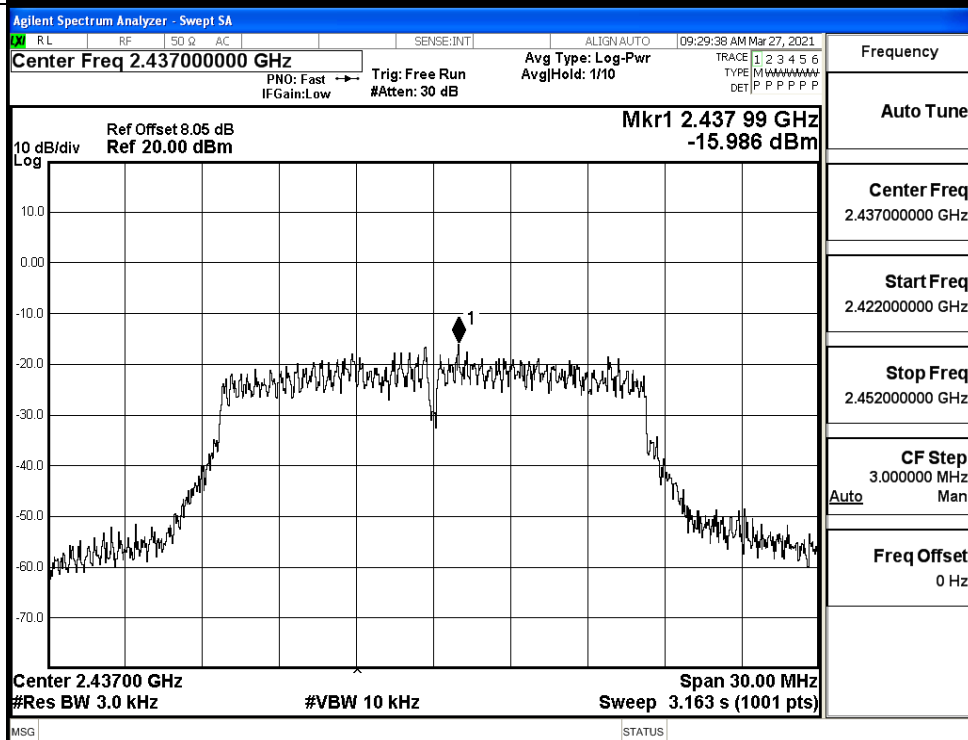
11B/HCH



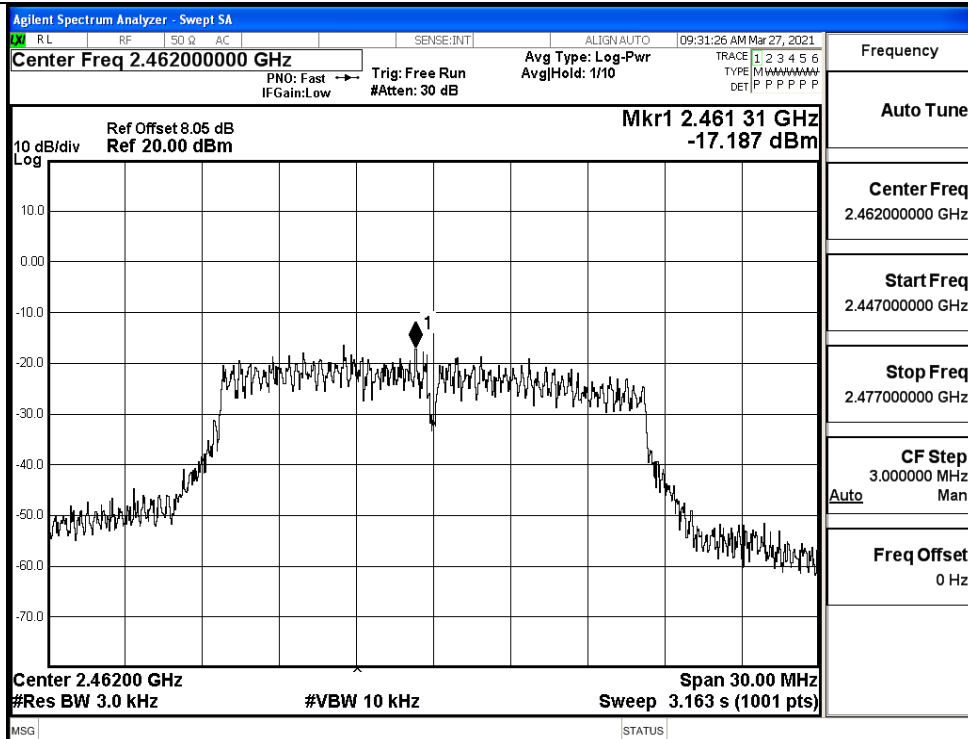
11G/LCH



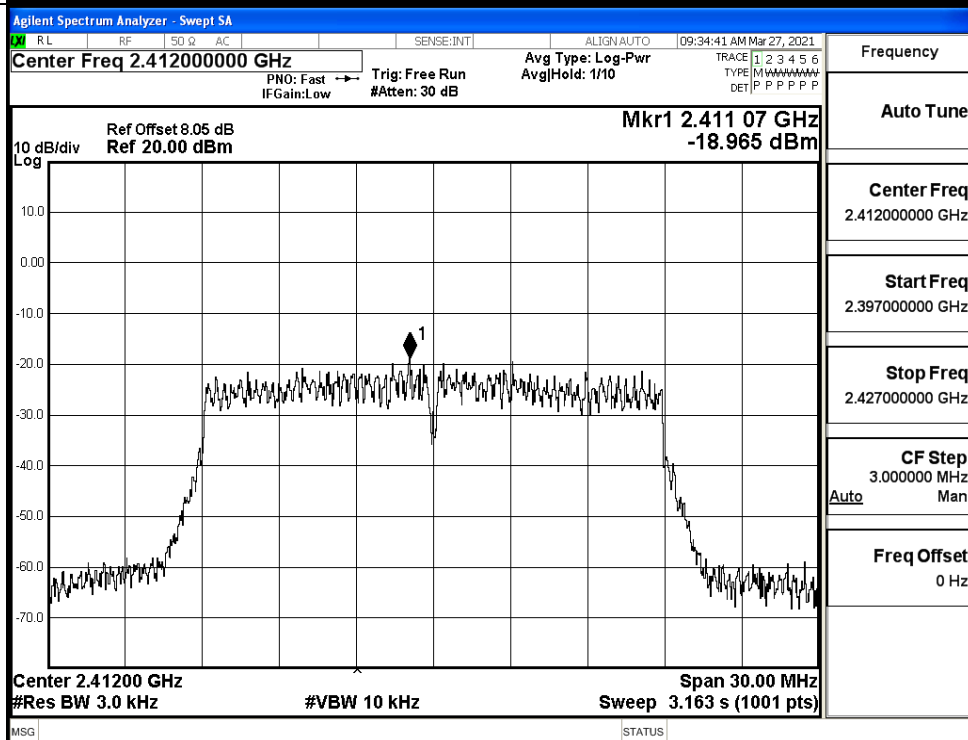
11G/MCH



11G/HCH

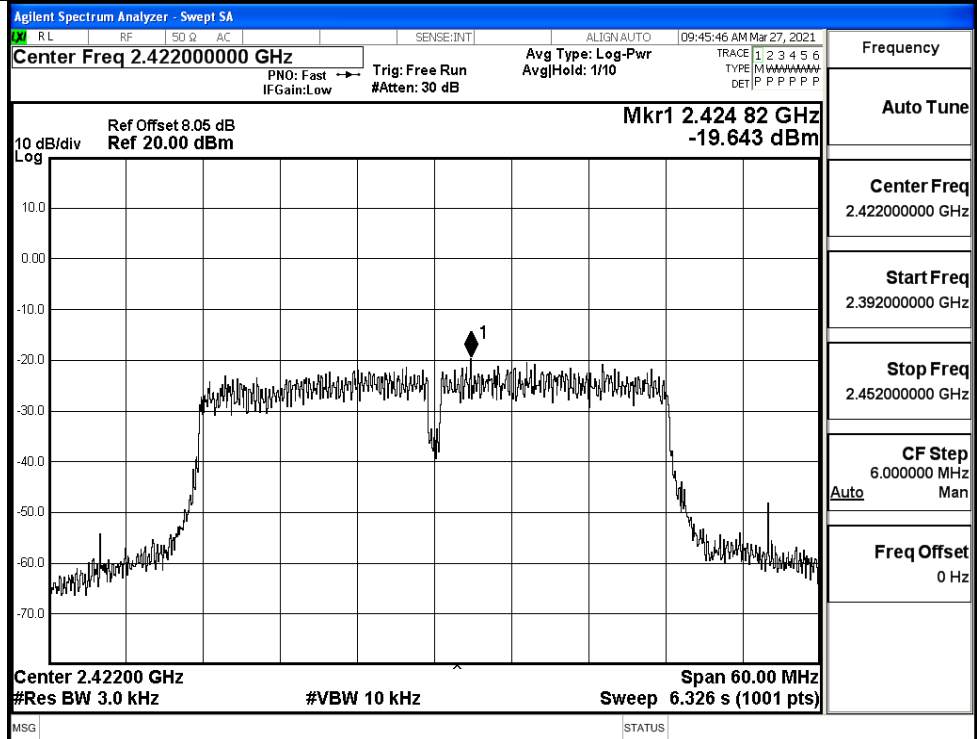


11N20SISO/LCH

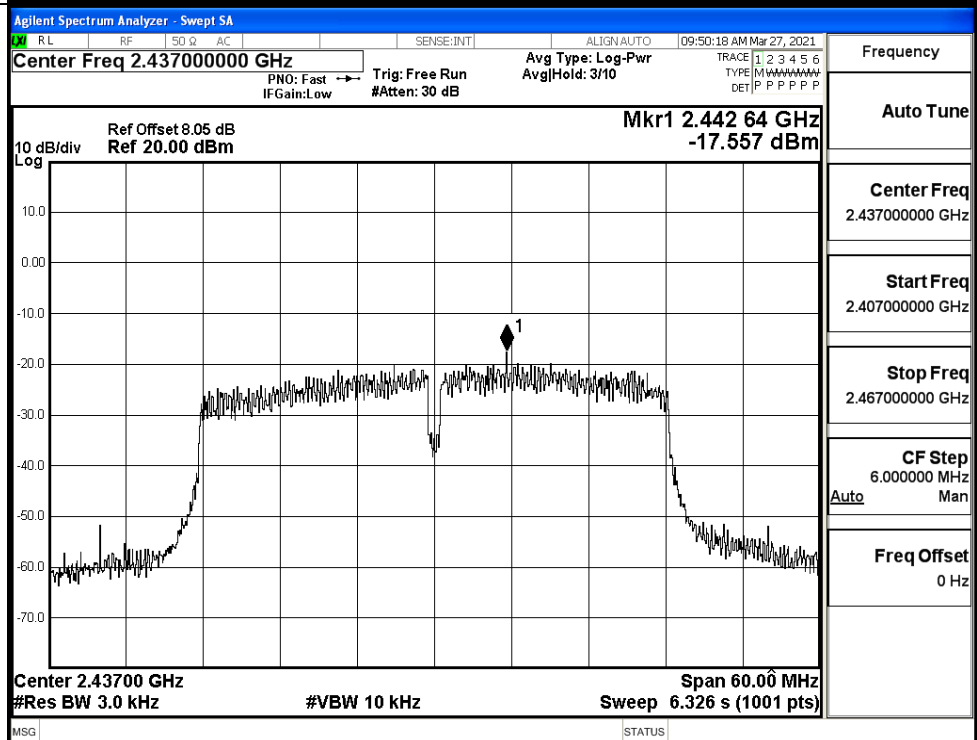


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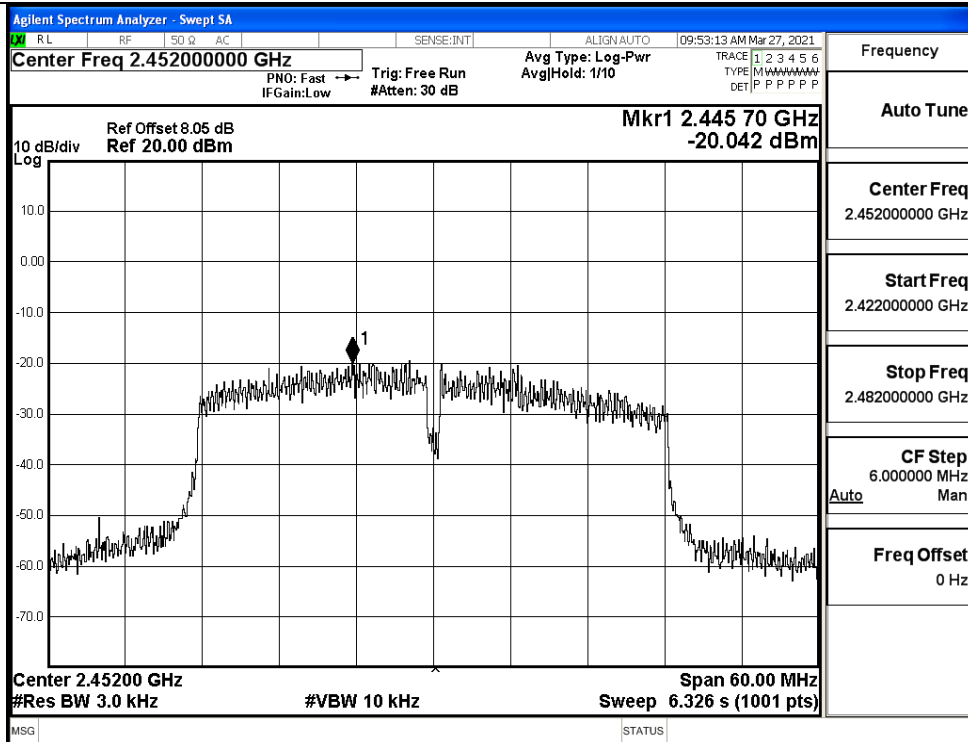
11N40SISO/LCH



11N40SISO/MCH



11N40SISO/HCH

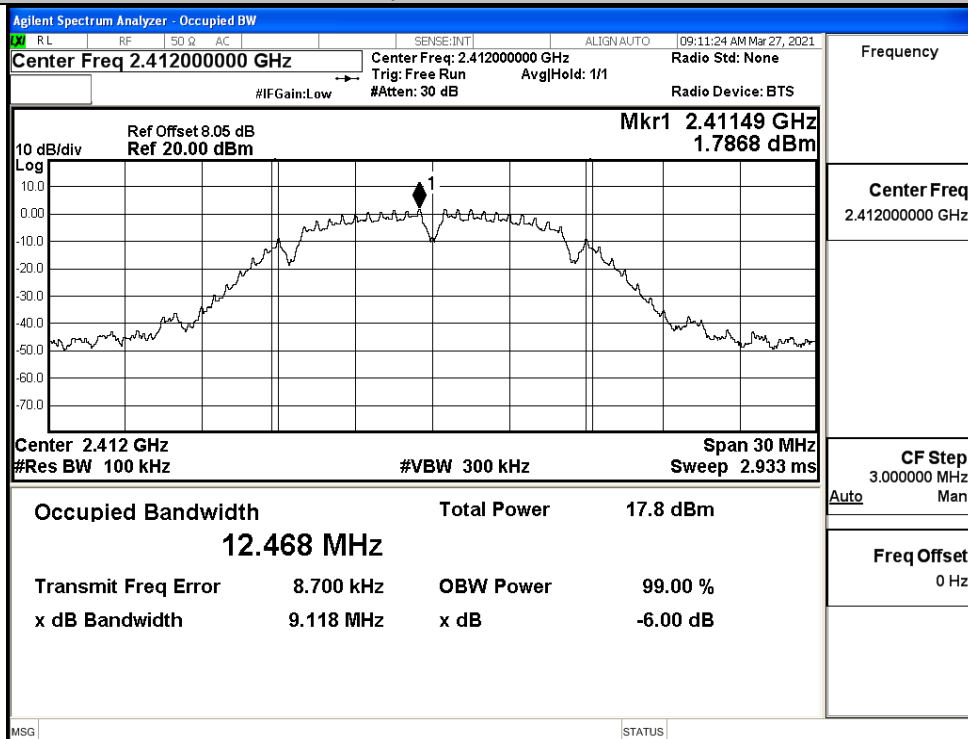


A.4 6dB Bandwidth

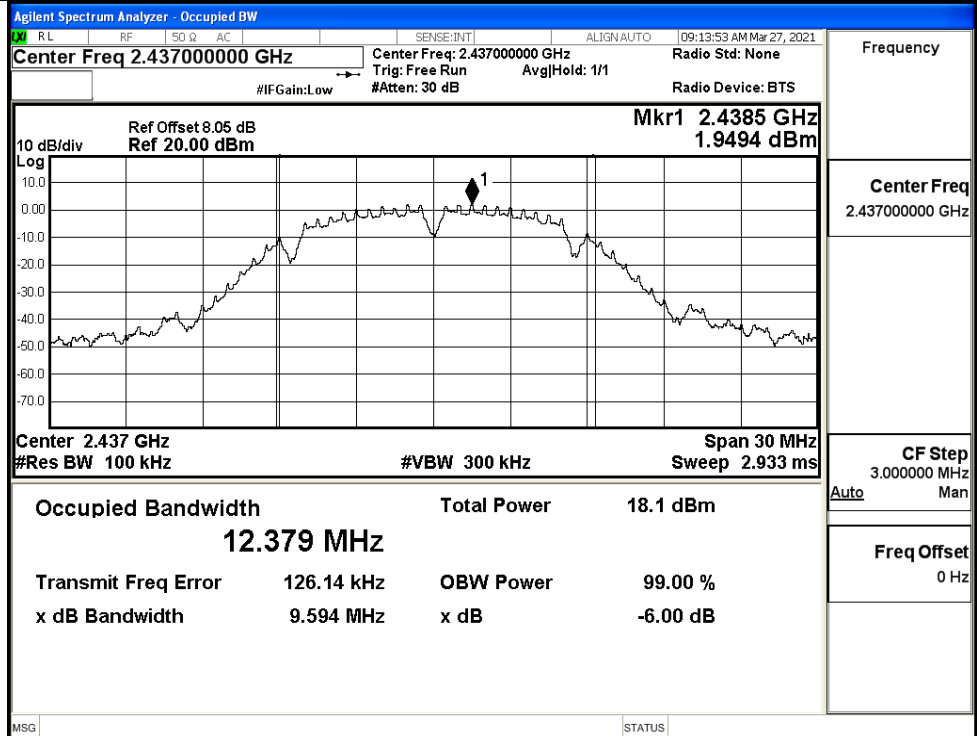
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	9.118	≥ 0.5	PASS
	MCH	9.594	≥ 0.5	PASS
	HCH	9.597	≥ 0.5	PASS
11G	LCH	15.16	≥ 0.5	PASS
	MCH	15.32	≥ 0.5	PASS
	HCH	15.72	≥ 0.5	PASS
11N20SISO	LCH	15.08	≥ 0.5	PASS
	MCH	15.44	≥ 0.5	PASS
	HCH	16.35	≥ 0.5	PASS
11N40SISO	LCH	35.39	≥ 0.5	PASS
	MCH	35.17	≥ 0.5	PASS
	HCH	35.13	≥ 0.5	PASS

Test Graphs

11B/LCH



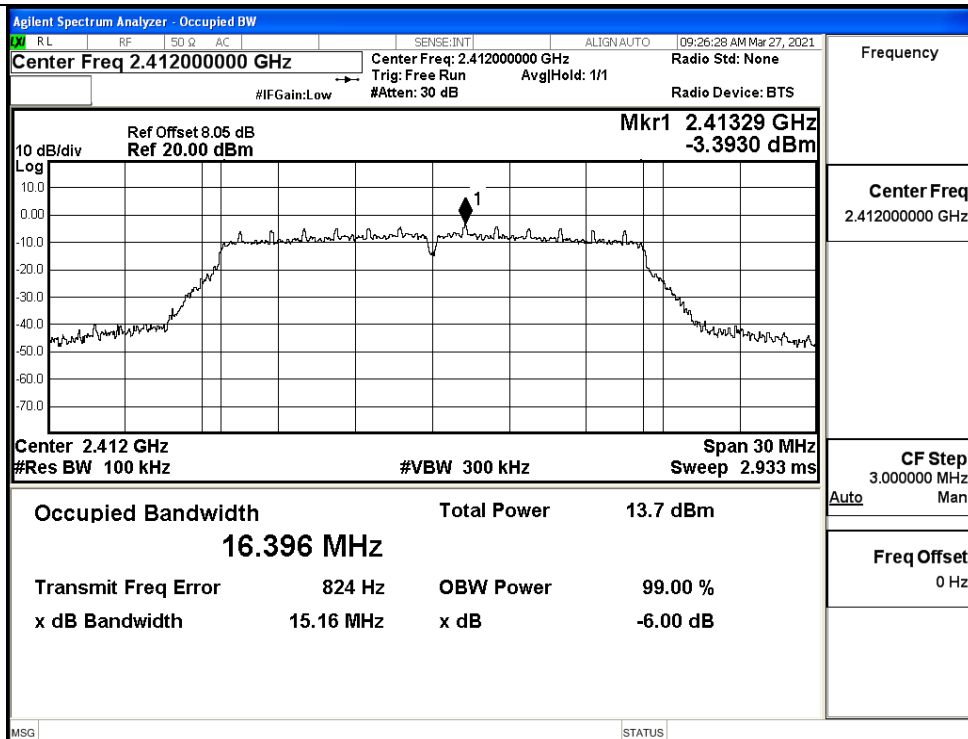
11B/MCH



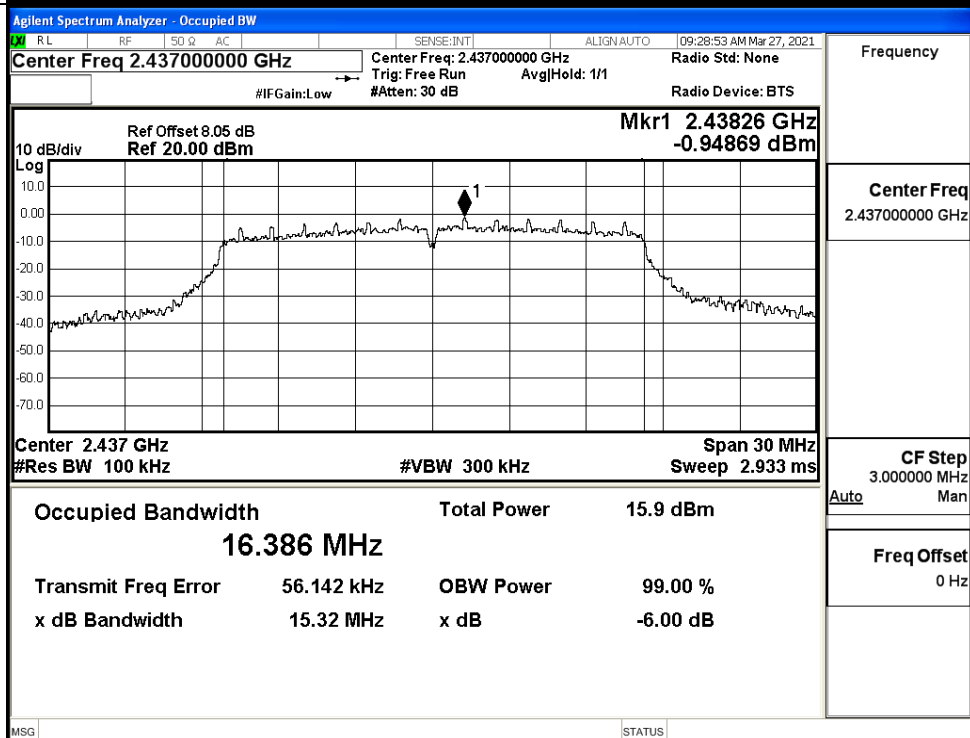
11B/HCH



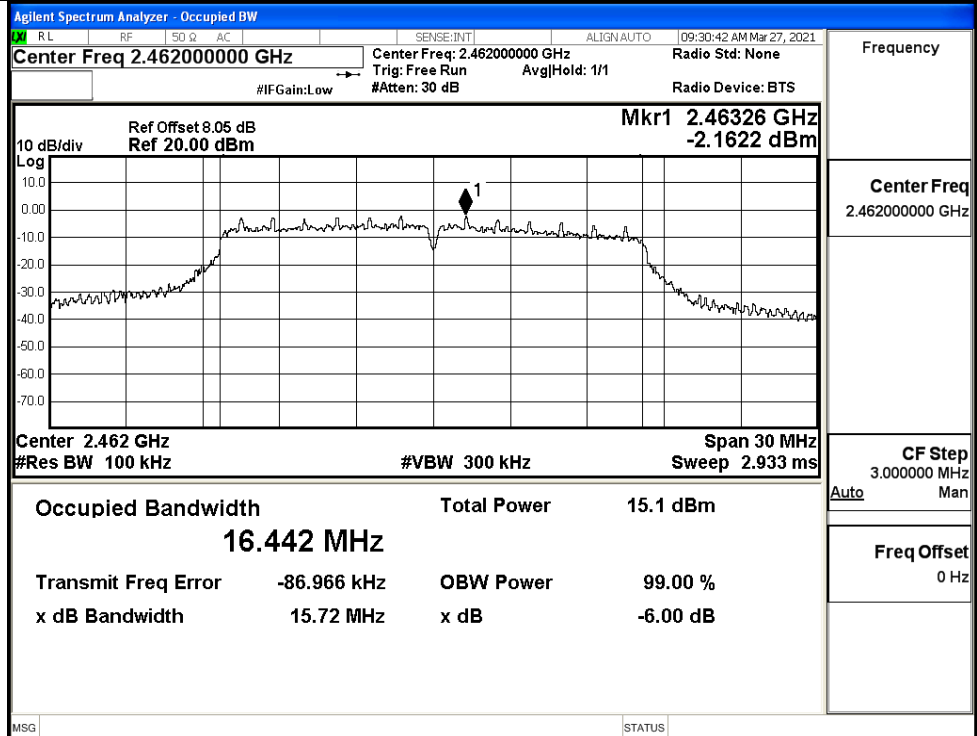
11G/LCH



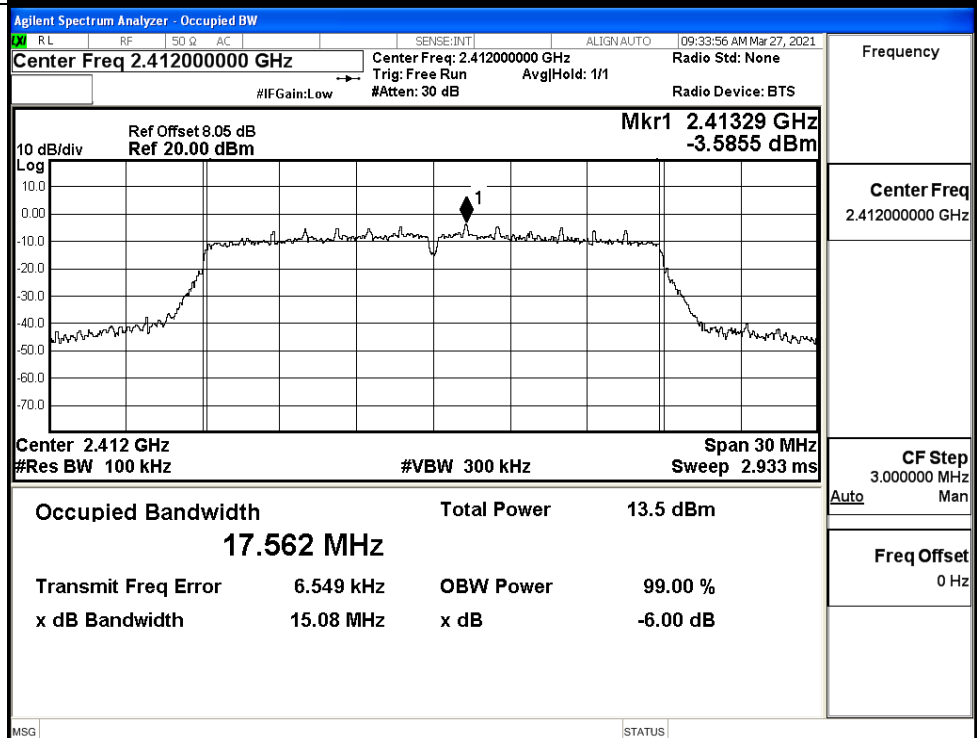
11G/MCH



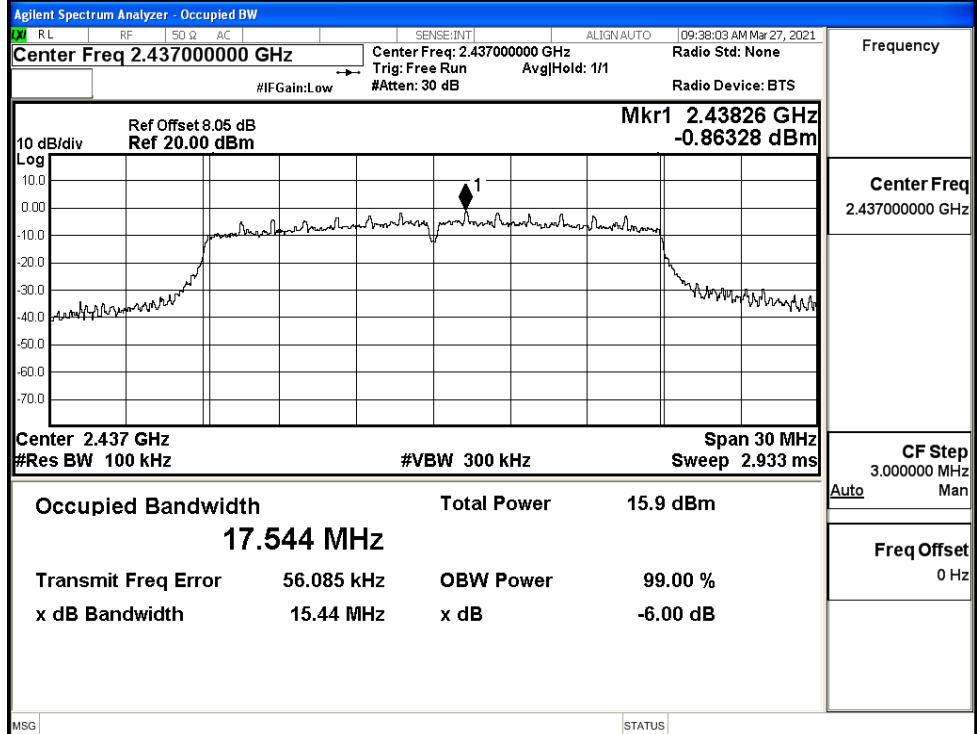
11G/HCH



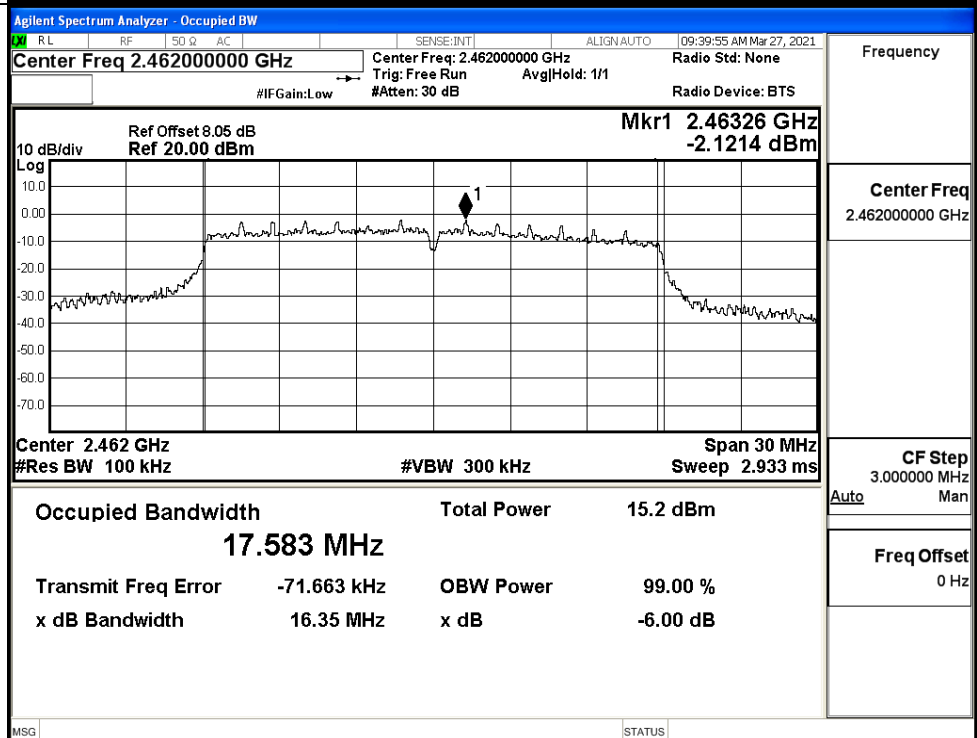
11N20SISO/LCH



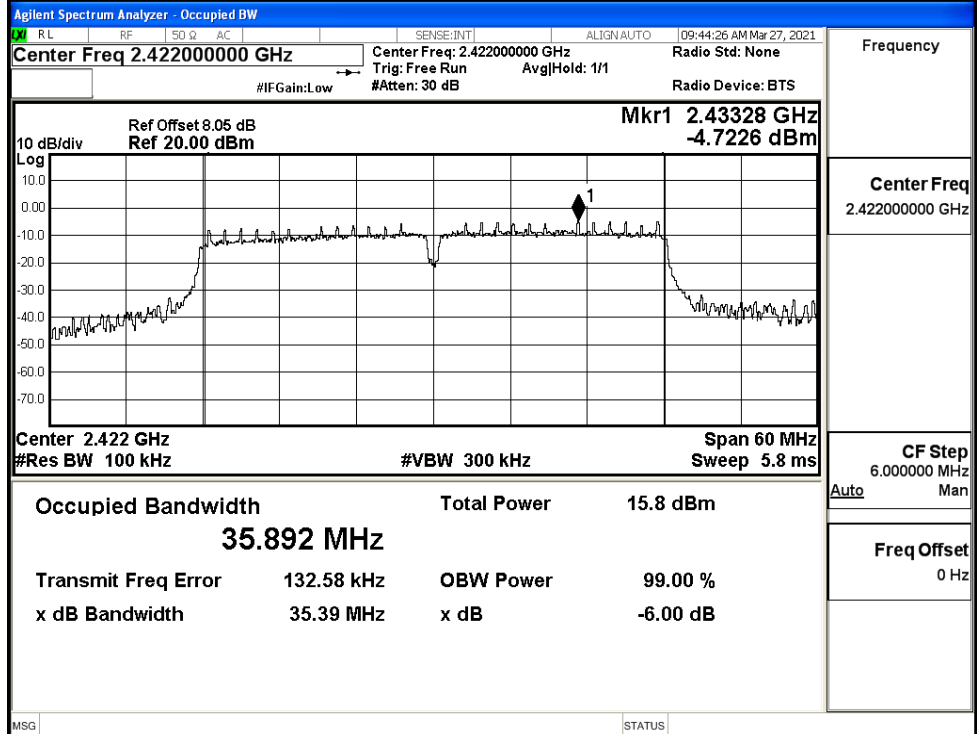
11N20SISO/MCH



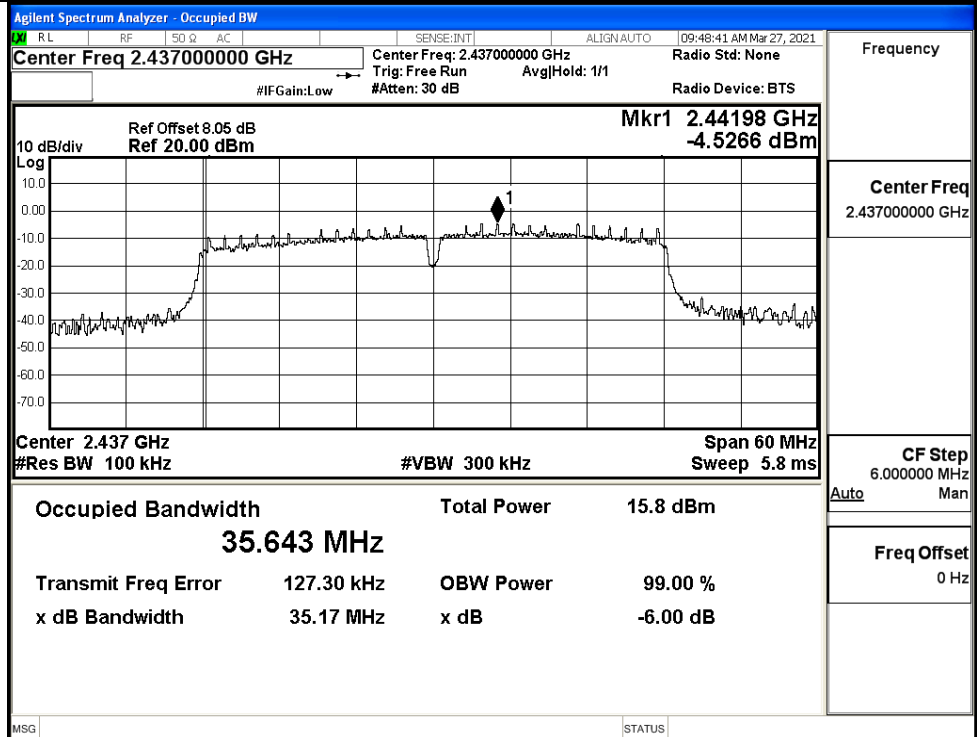
11N20SISO/HCH



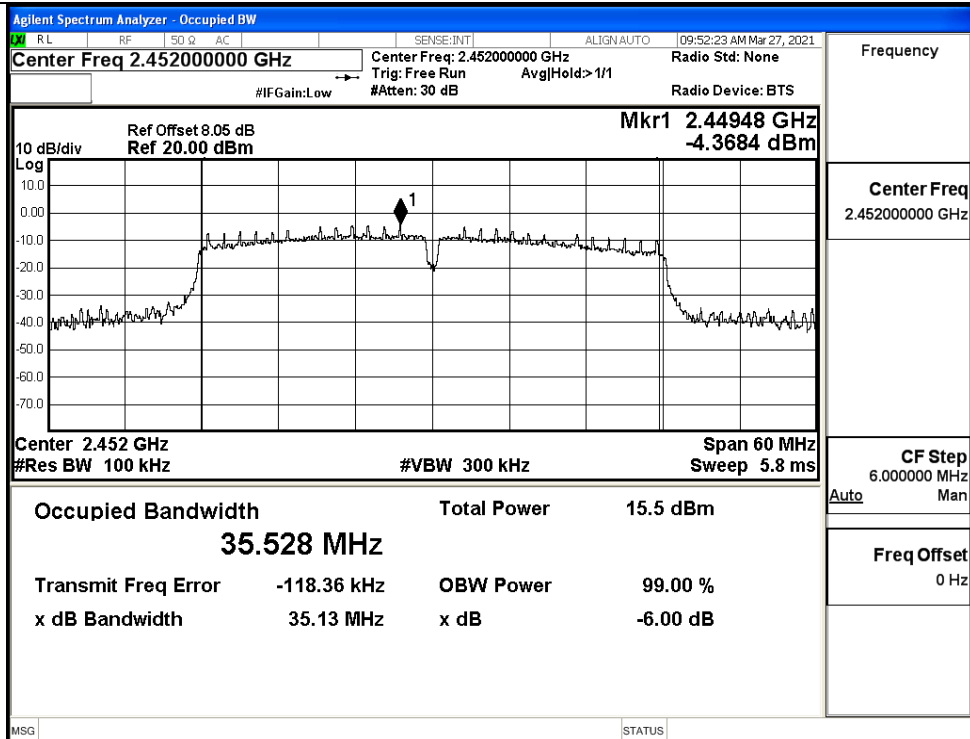
11N40SISO/LCH



11N40SISO/MCH



11N40SISO/HCH

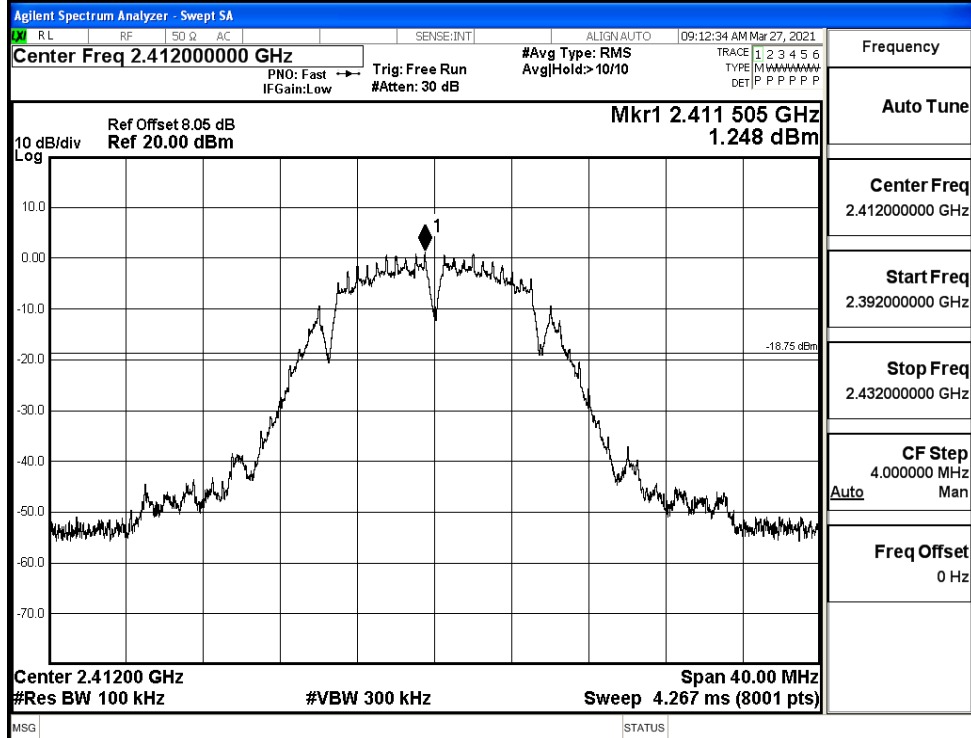


A.5 RF Conducted Spurious Emissions

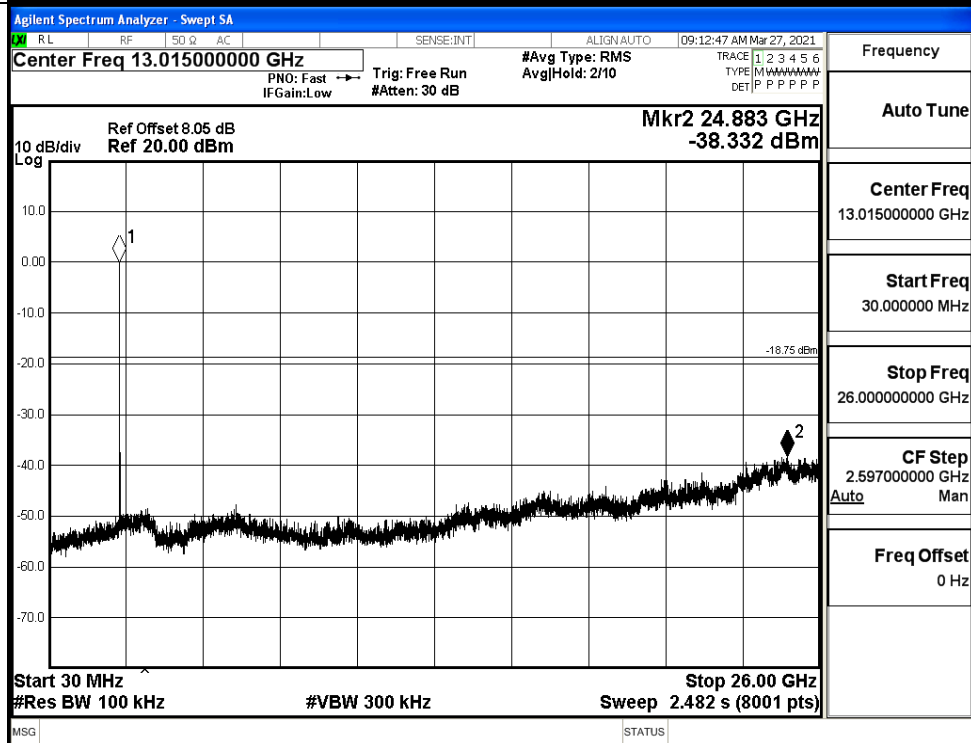
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	1.248	-38.332	-18.752	PASS
	MCH	1.962	-38.099	-18.038	PASS
	HCH	1.109	-37.541	-18.891	PASS
11G	LCH	-4.514	-37.749	-24.514	PASS
	MCH	-2.082	-37.996	-22.082	PASS
	HCH	-2.338	-37.530	-22.338	PASS
11N20 SISO	LCH	-3.382	-37.197	-23.382	PASS
	MCH	-1.045	-37.983	-21.045	PASS
	HCH	-2.405	-37.982	-22.405	PASS
11N40 SISO	LCH	-4.921	-37.685	-24.921	PASS
	MCH	-4.562	-38.393	-24.562	PASS
	HCH	-4.365	-38.729	-24.365	PASS

11B LCH Graphs

Pref/11B/LCH

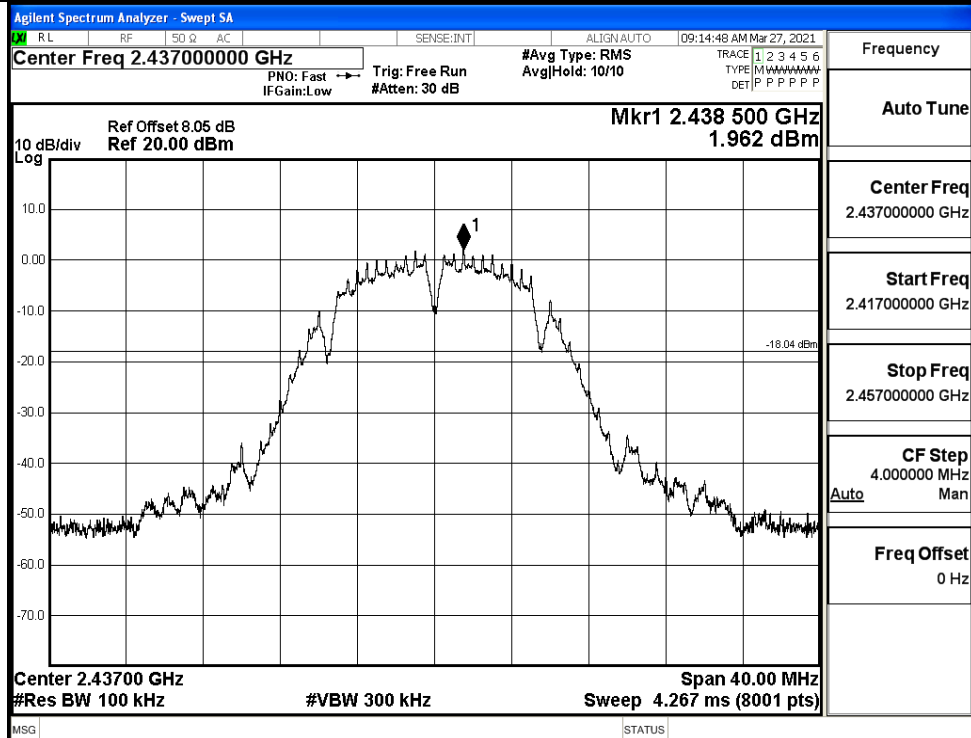


Puw/11B/LCH

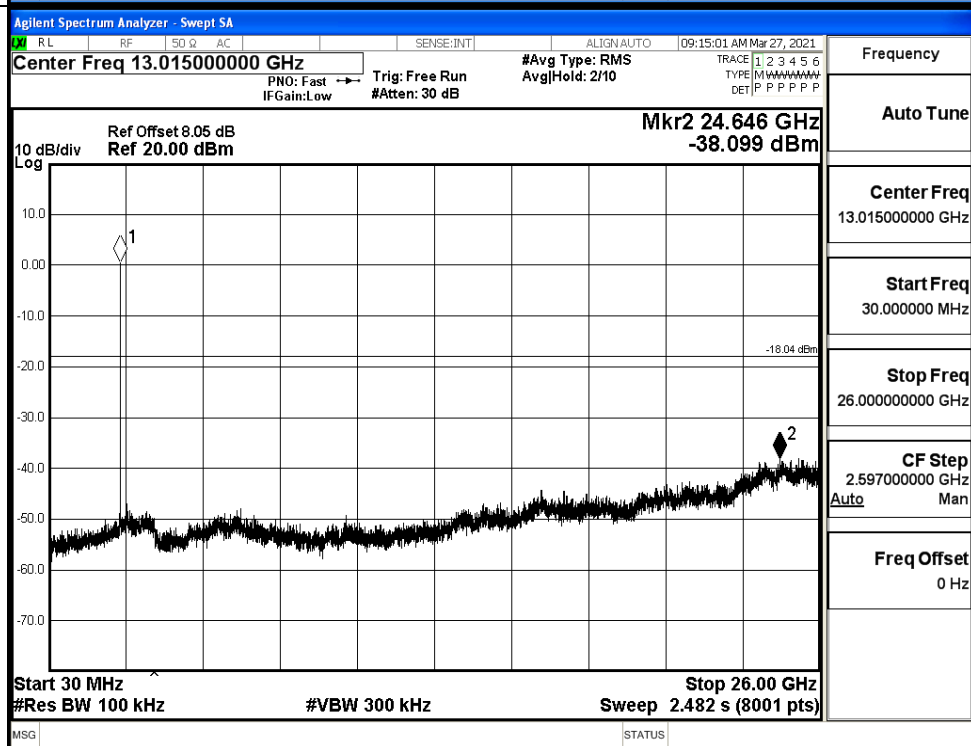


11B MCH Graphs

Pref/11B/MCH

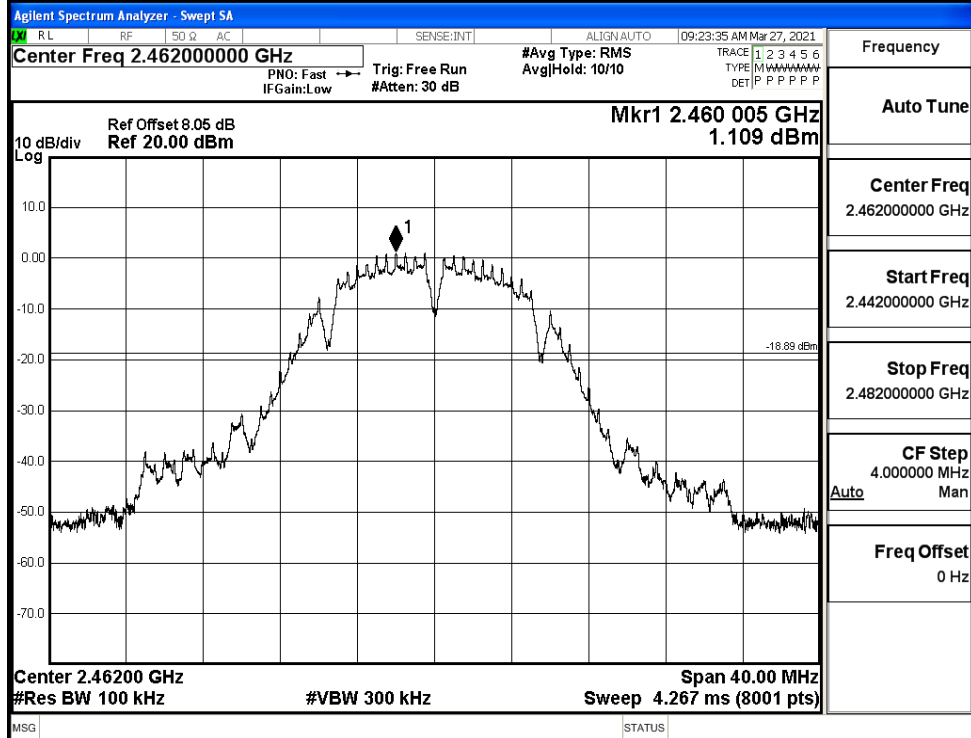


Puw/11B/MCH

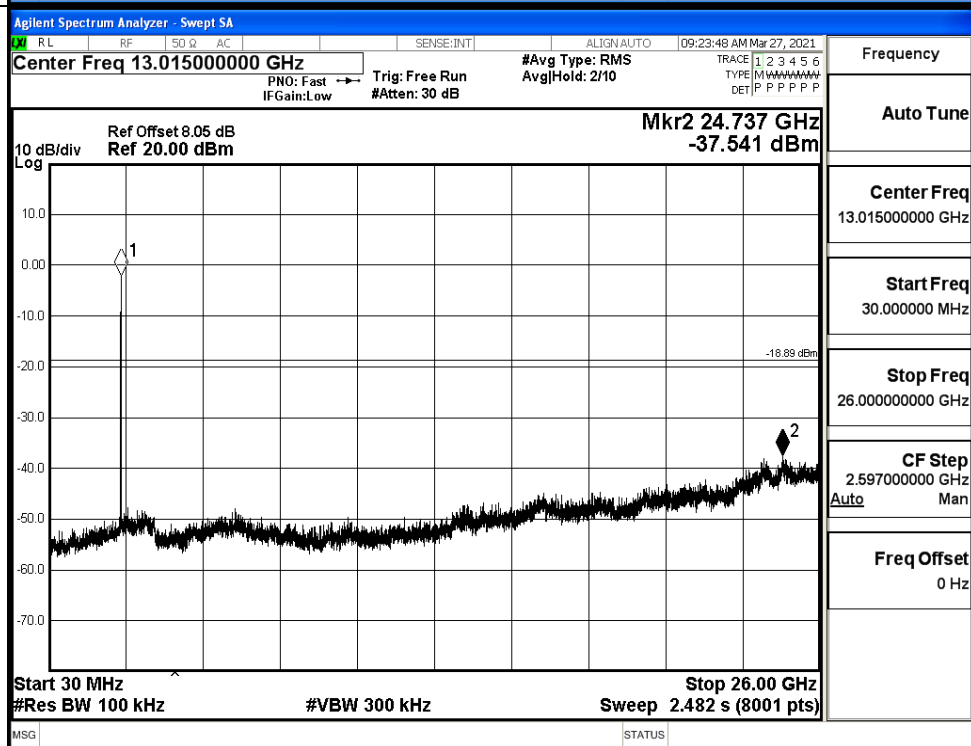


11B HCH Graphs

Pref/11B/HCH

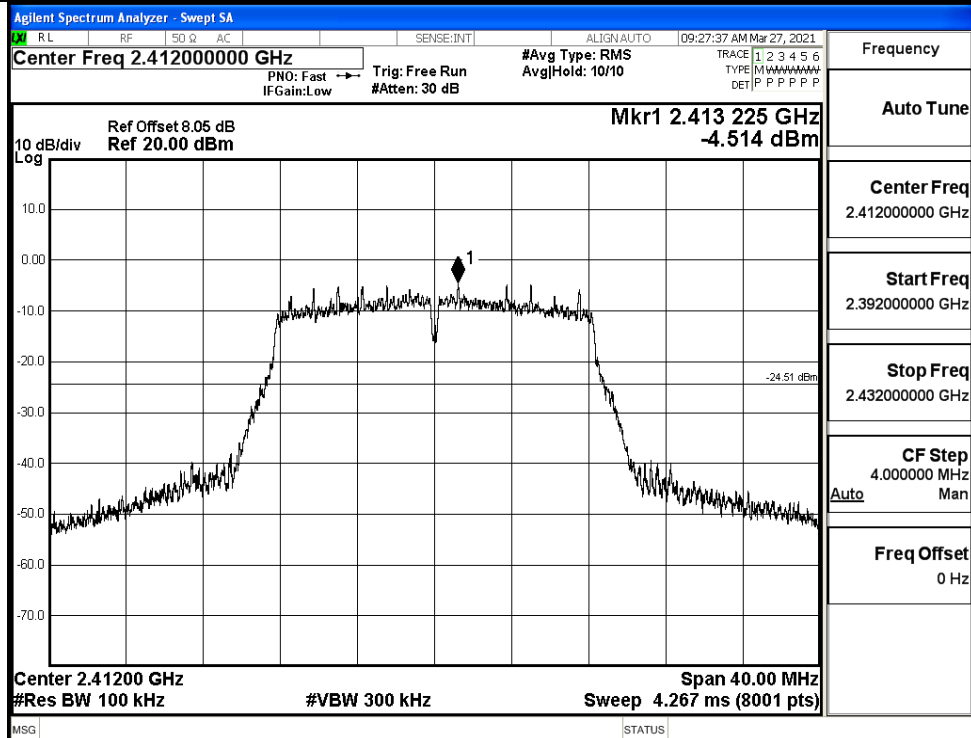


Puw/11B/HCH

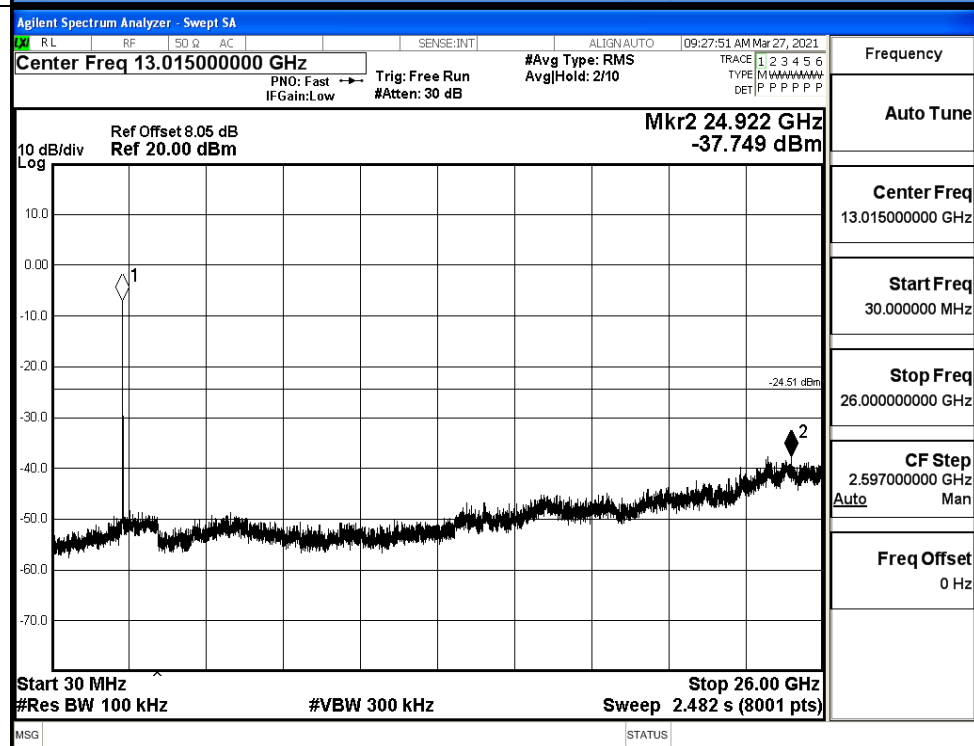


11G LCH Graphs

Pref/11G/LCH

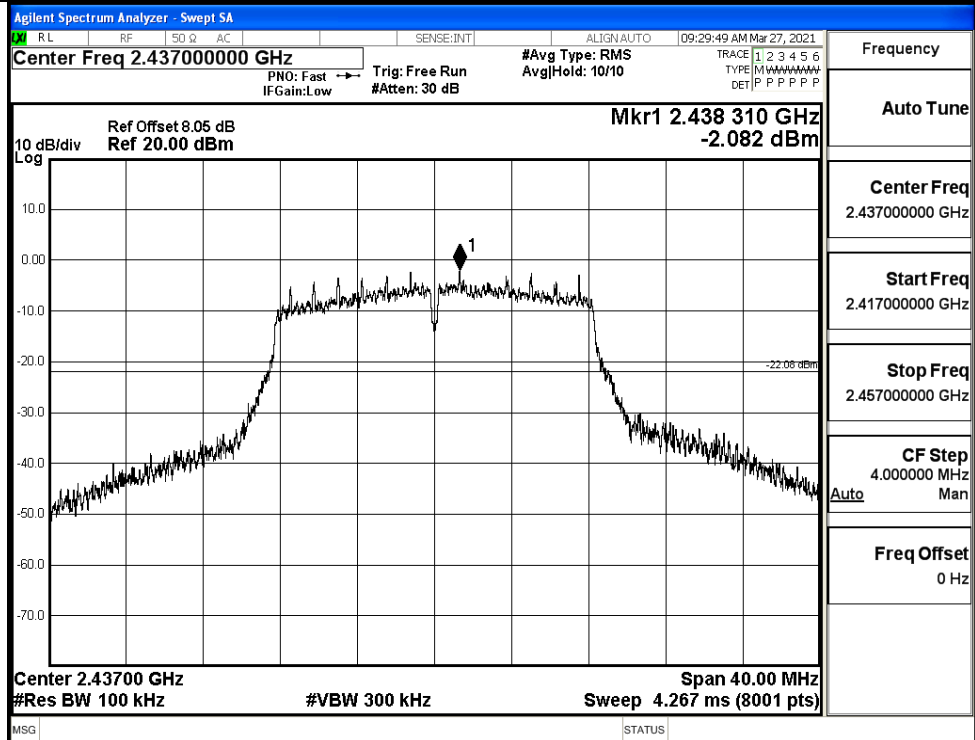


Puw/11G/LCH

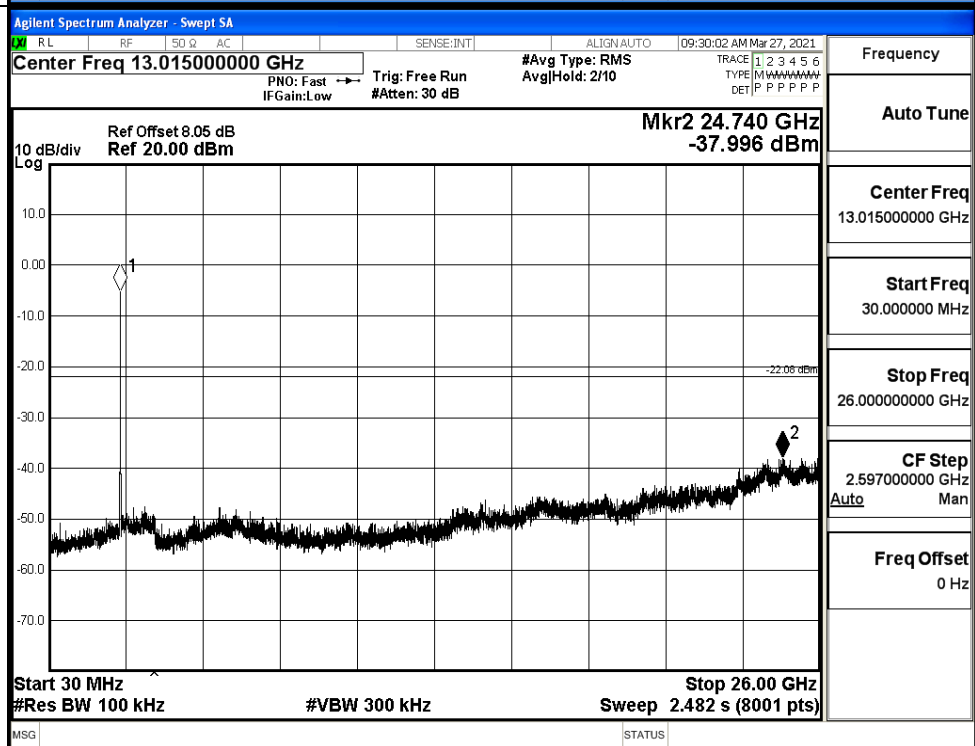


11G MCH Graphs

Pref/11G/MCH

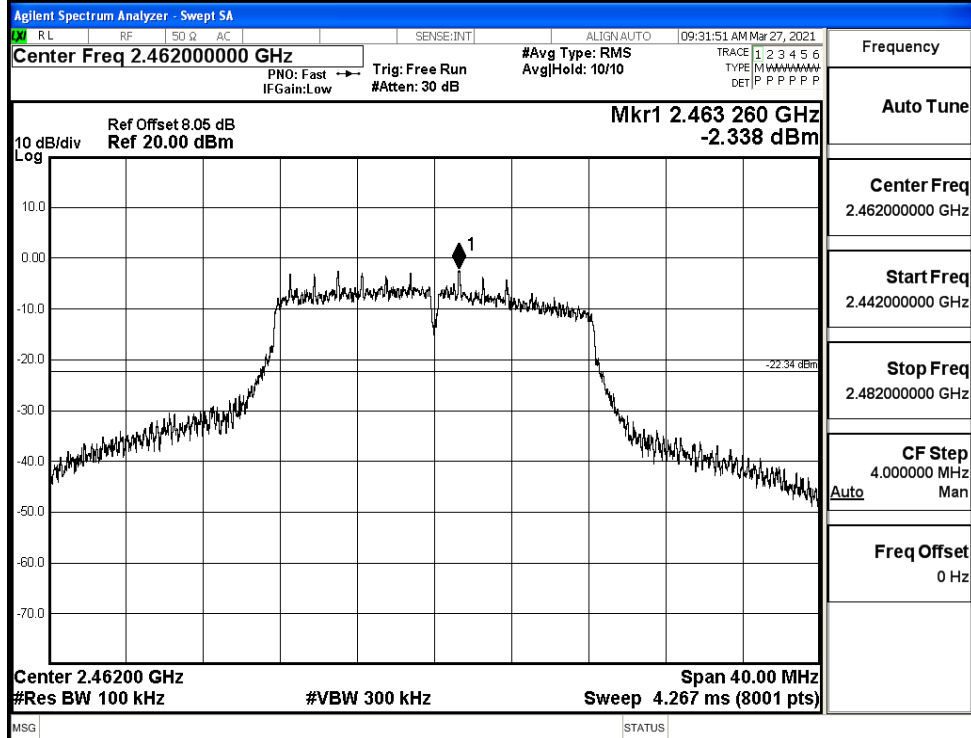


Puw/11G/MCH

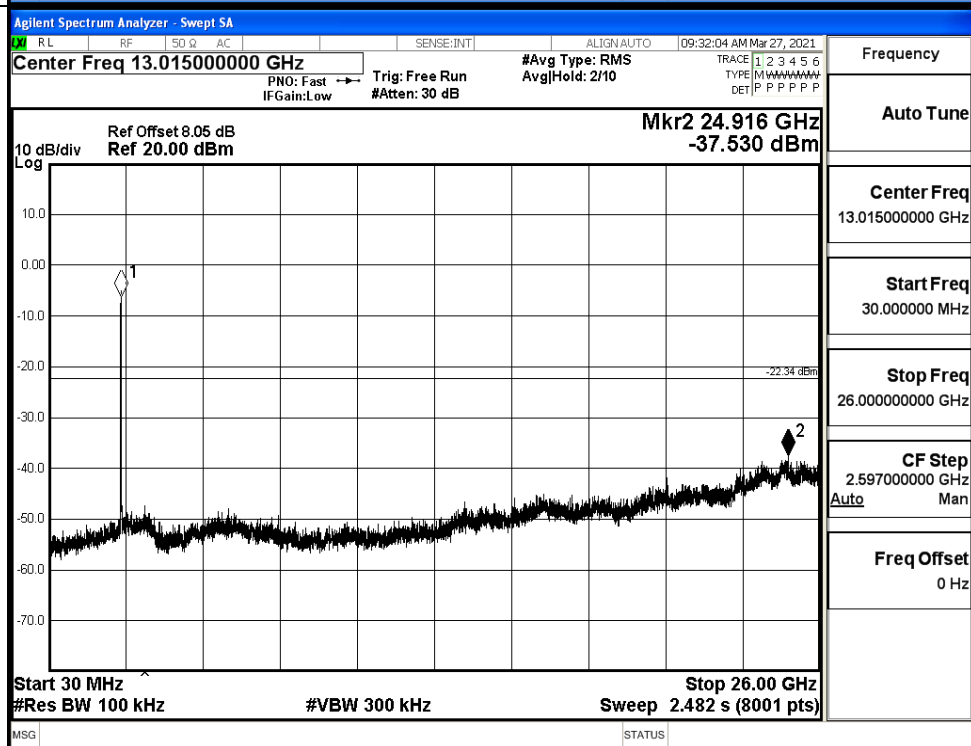


11G HCH Graphs

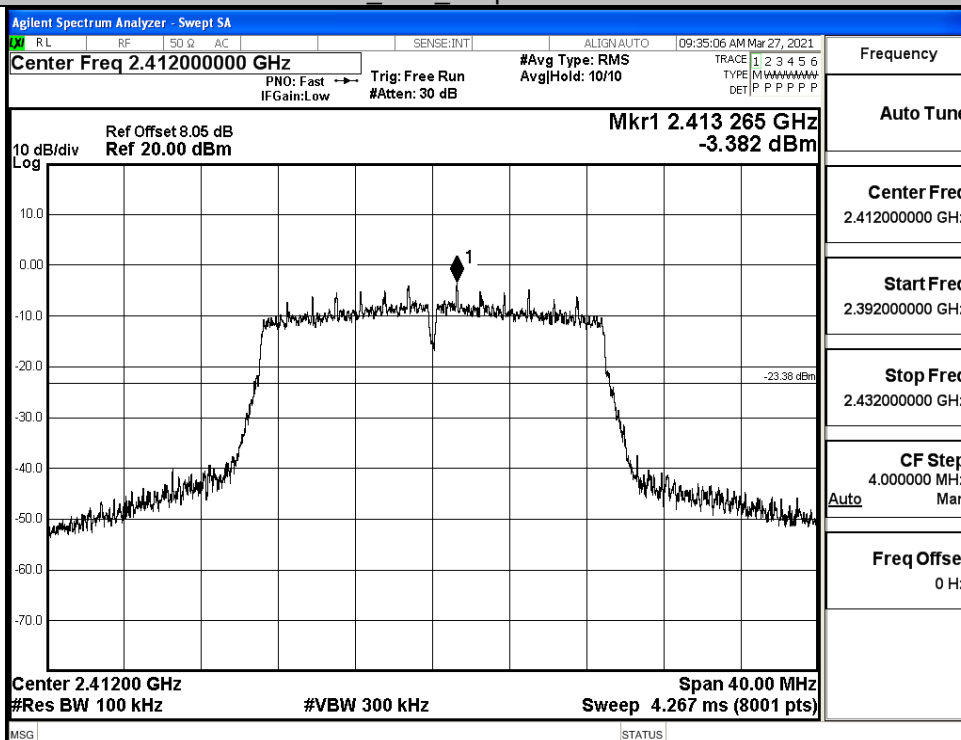
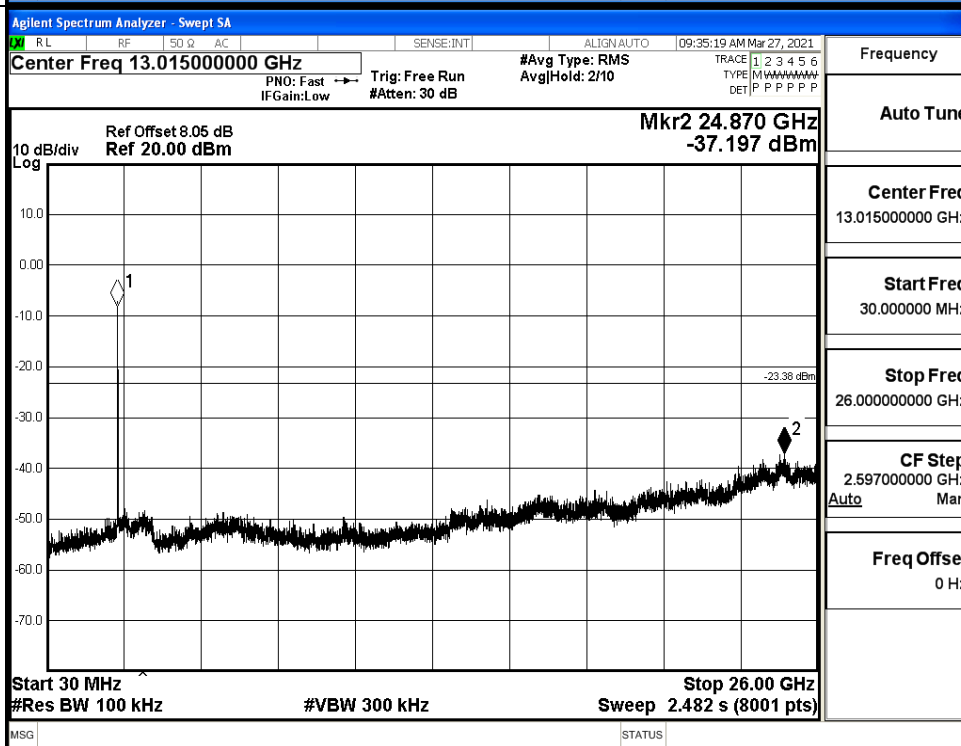
Pref/11G/HCH



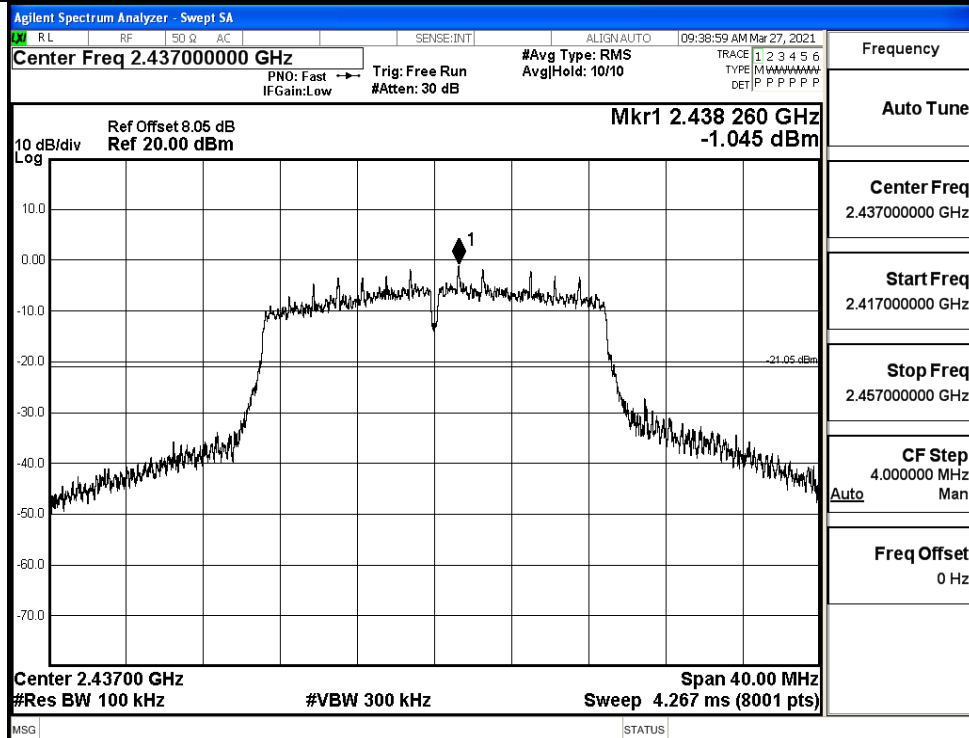
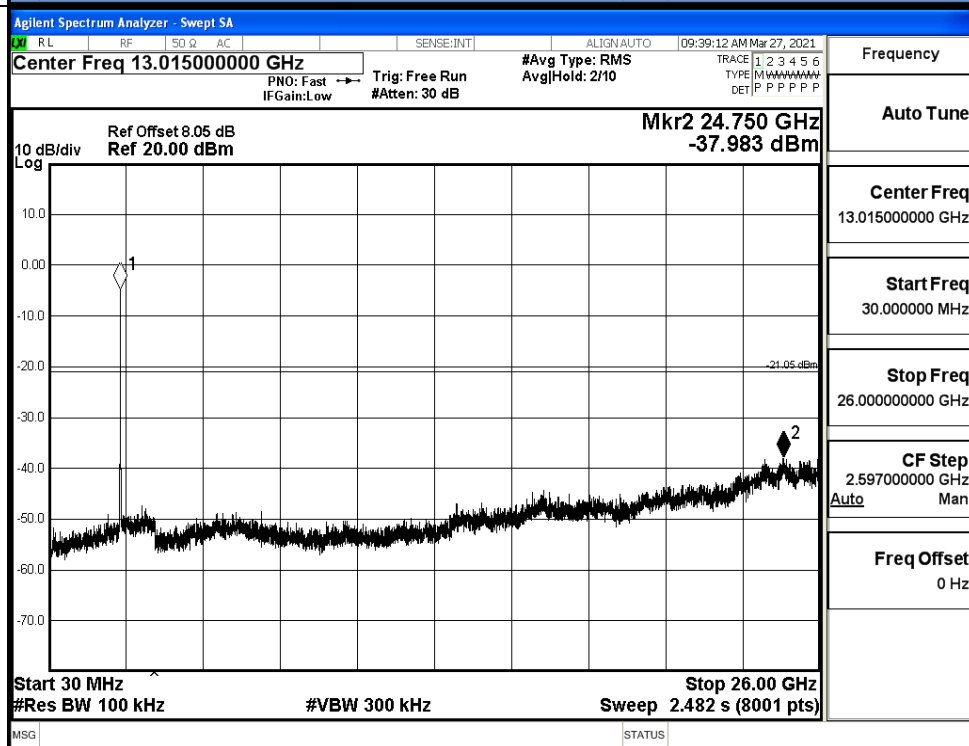
Puw/11G/HCH



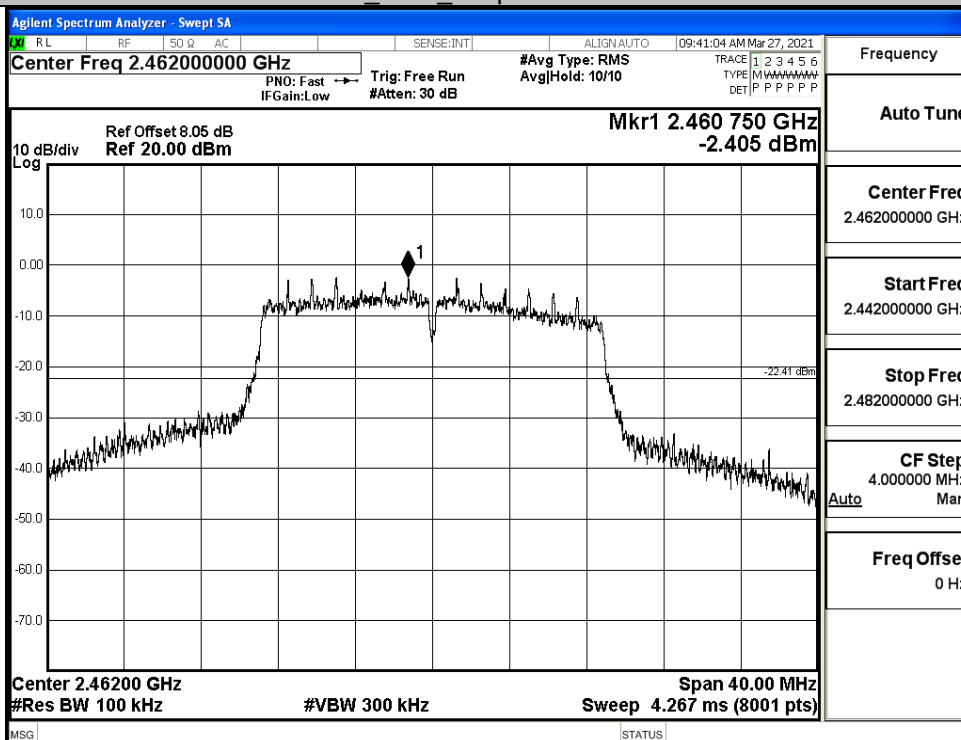
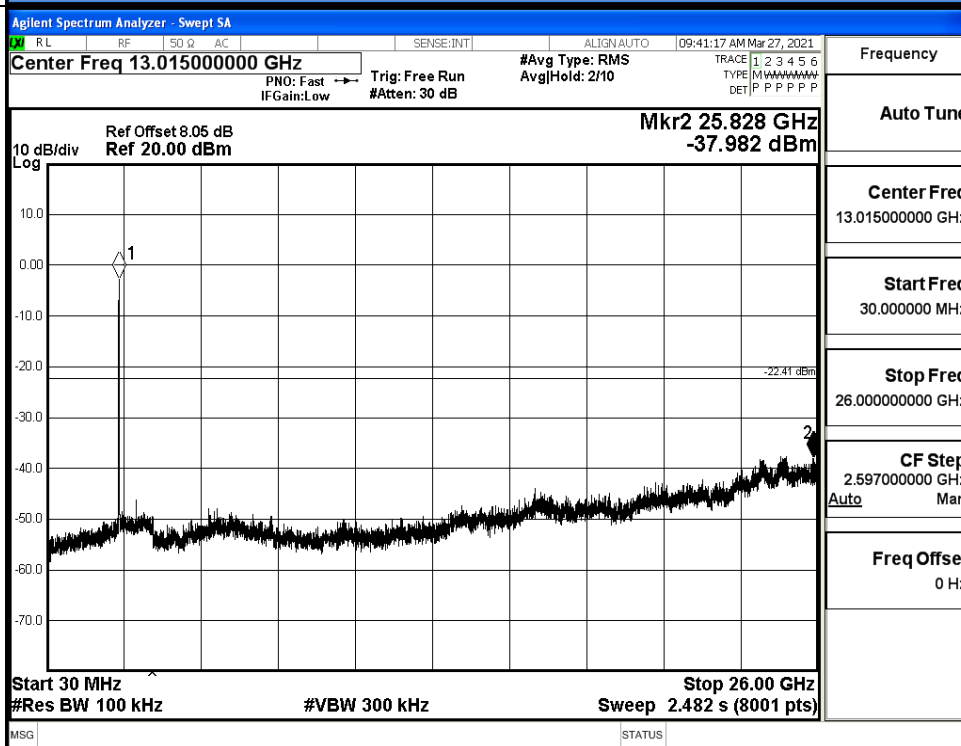
11N20SISO LCH Graphs

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

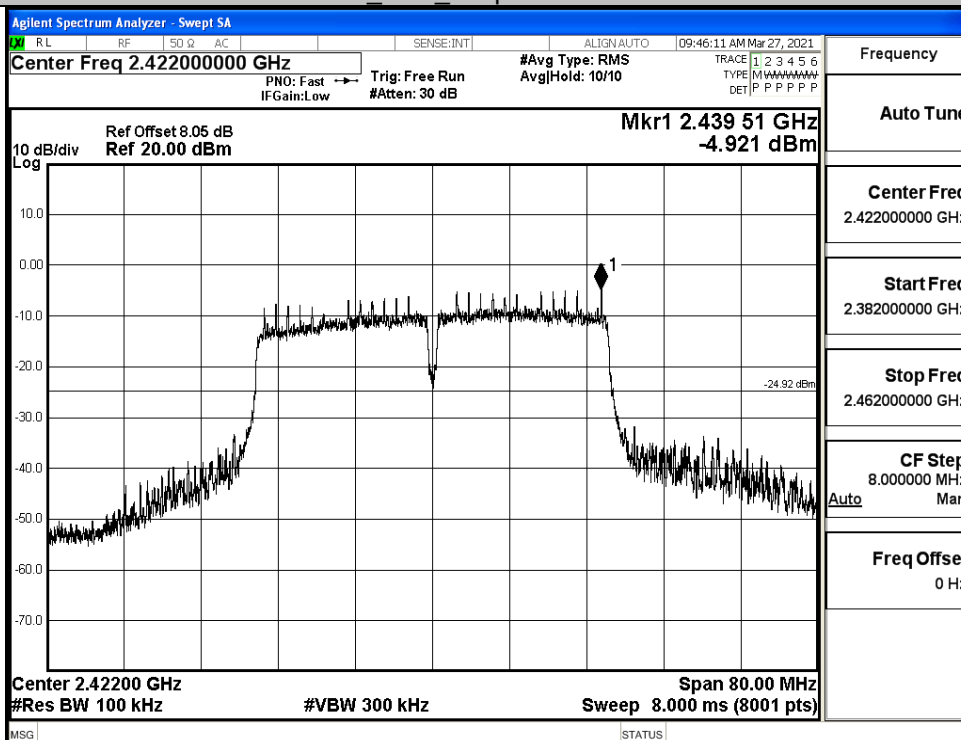
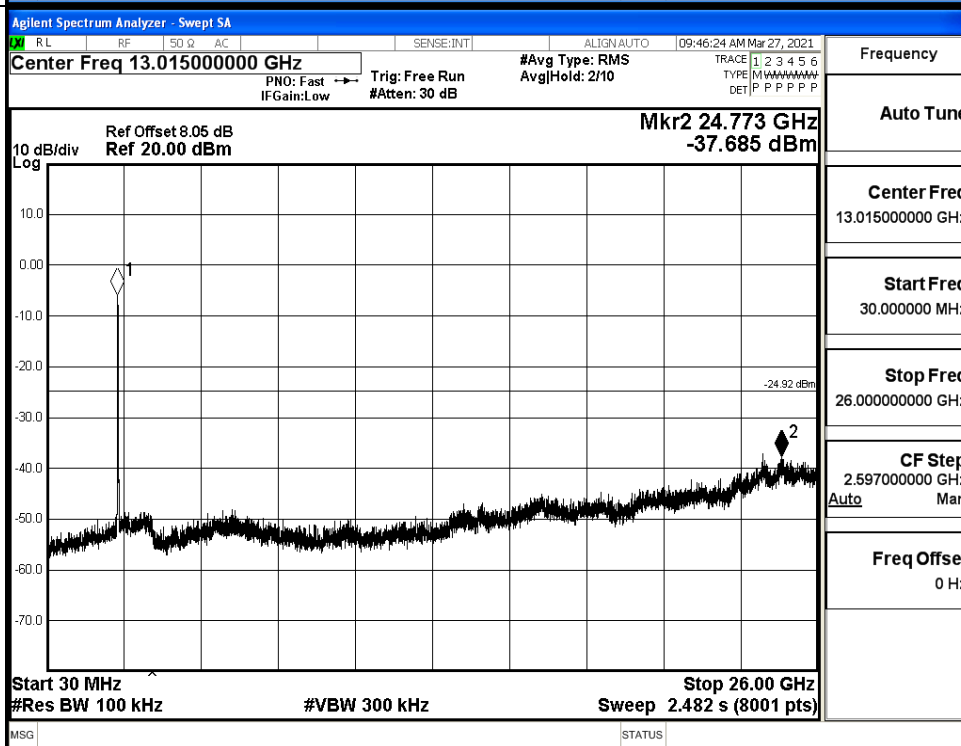
11N20SISO_MCH_Graphs

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

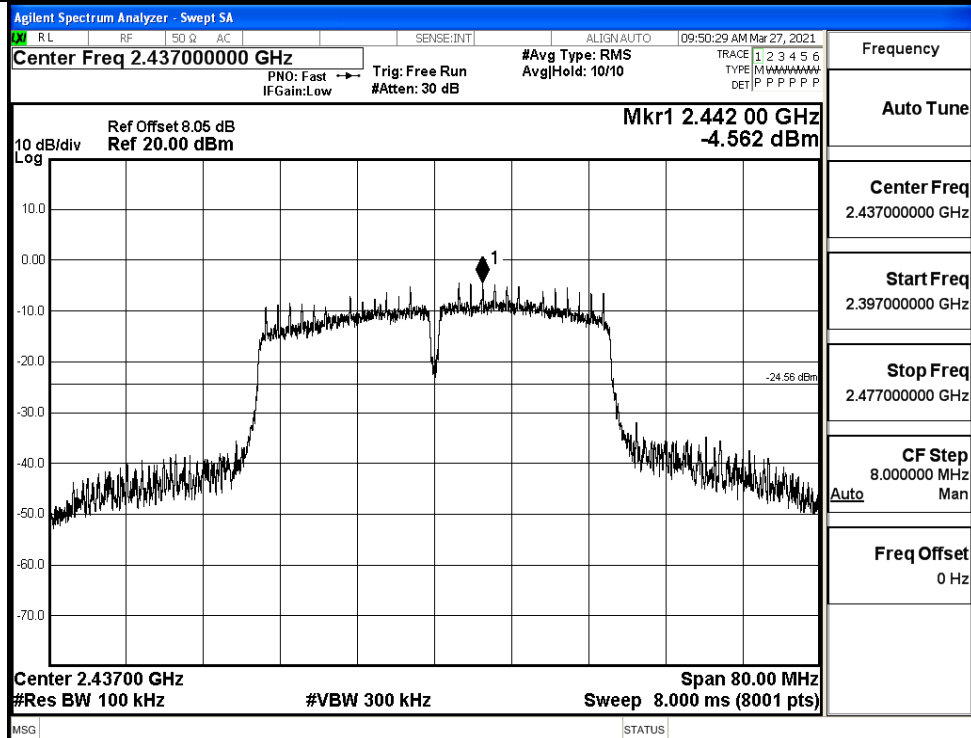
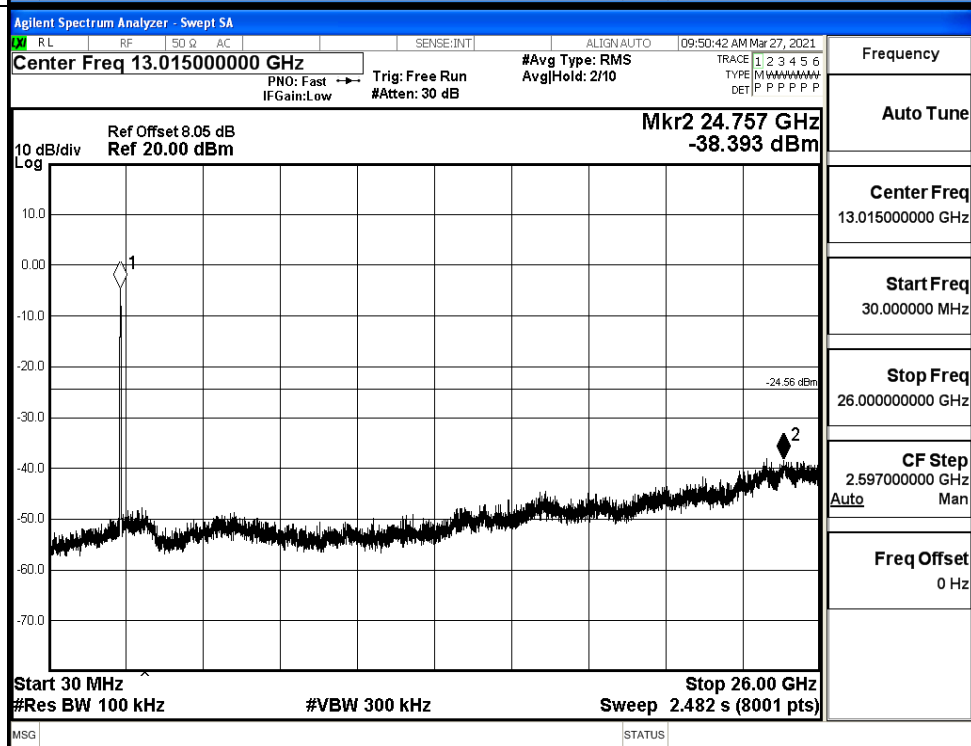
11N20SISO HCH Graphs

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

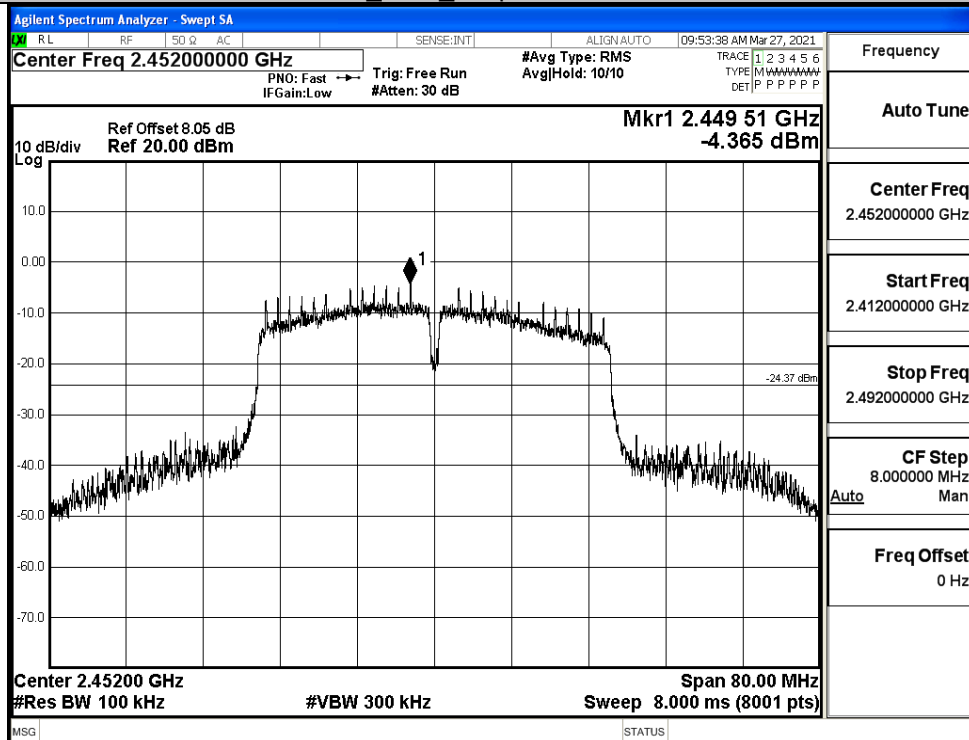
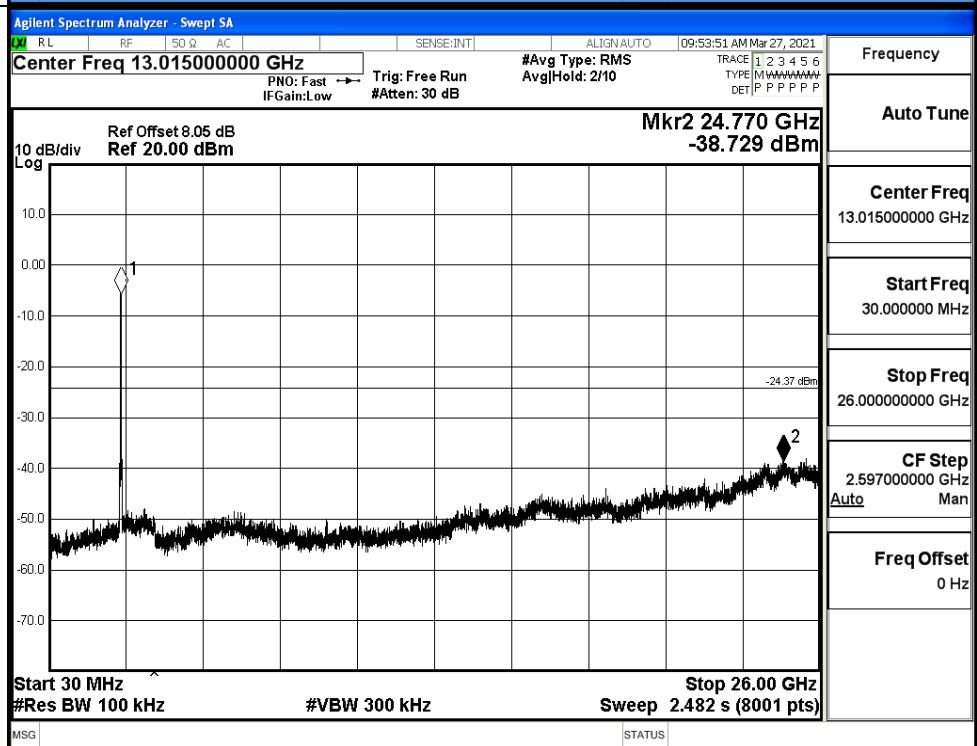
11N40SISO LCH Graphs

Pref/11N40
SISO/LCHPuw/11N40
SISO/LCH

11N40SISO_MCH_Graphs

Pref/11N40
SISO/MCHPuw/11N40
SISO/MCH

11N40SISO HCH Graphs

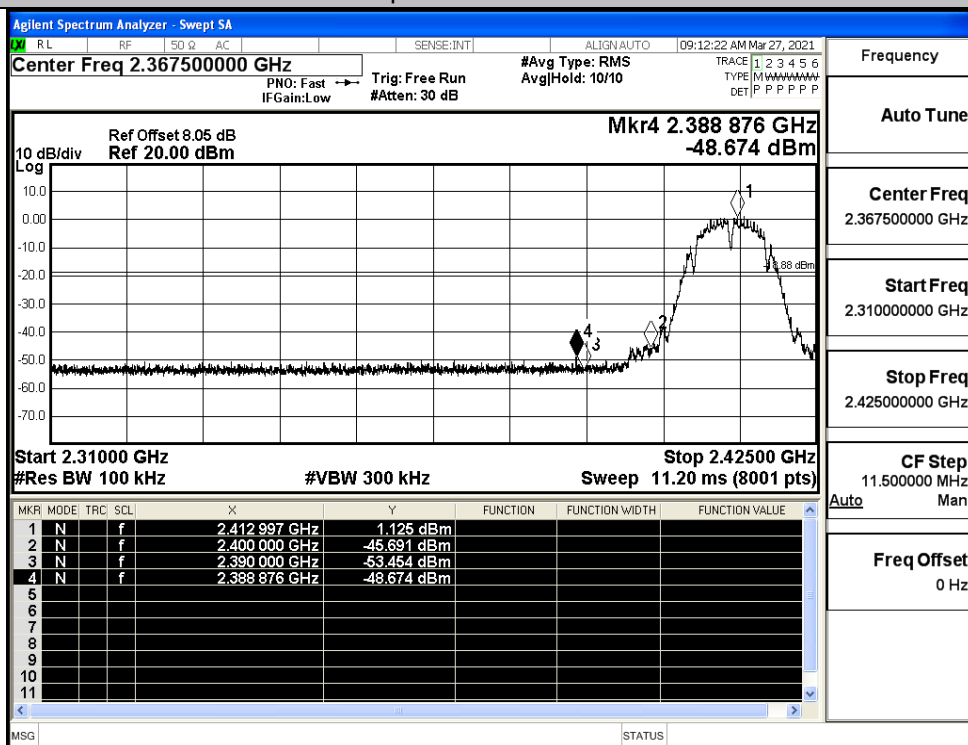
Pref/11N40
SISO/HCHPuw/11N40
SISO/HCH

A.6 Band-edge for RF Conducted Emissions

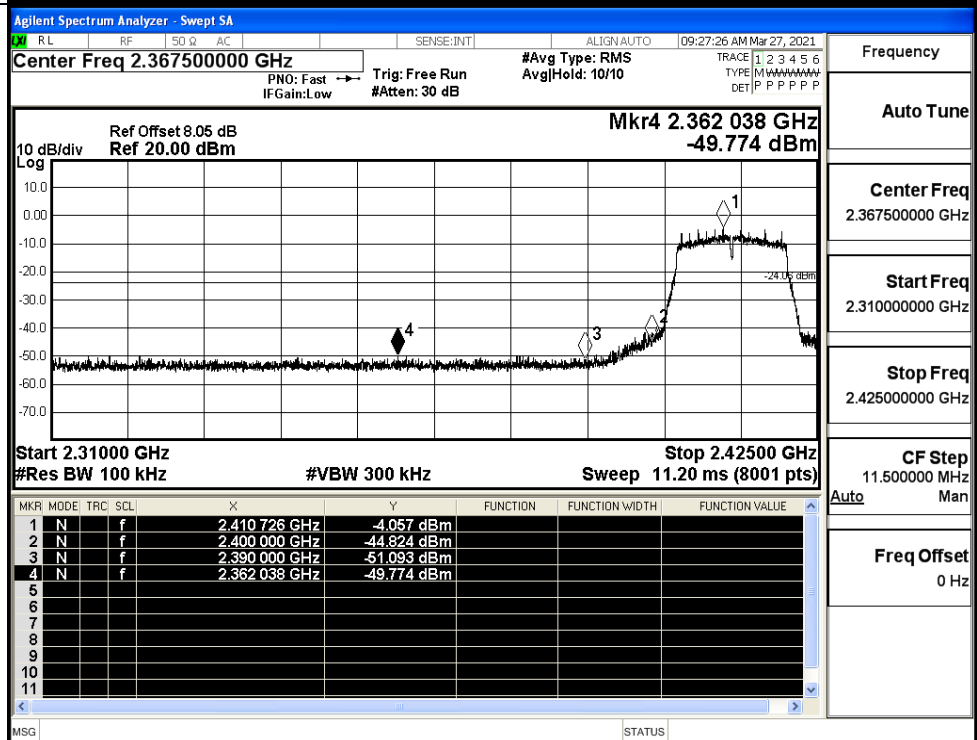
Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	1.125	-48.674	-18.88	PASS
	HCH	0.687	-47.787	-19.31	PASS
11G	LCH	-4.057	-49.774	-24.06	PASS
	HCH	-2.383	-45.620	-22.38	PASS
11N20SISO	LCH	-4.511	-49.651	-24.51	PASS
	HCH	-2.183	-45.034	-22.18	PASS
11N40SISO	LCH	-4.791	-48.279	-24.79	PASS
	HCH	-4.285	-36.897	-24.29	PASS

Test Graphs

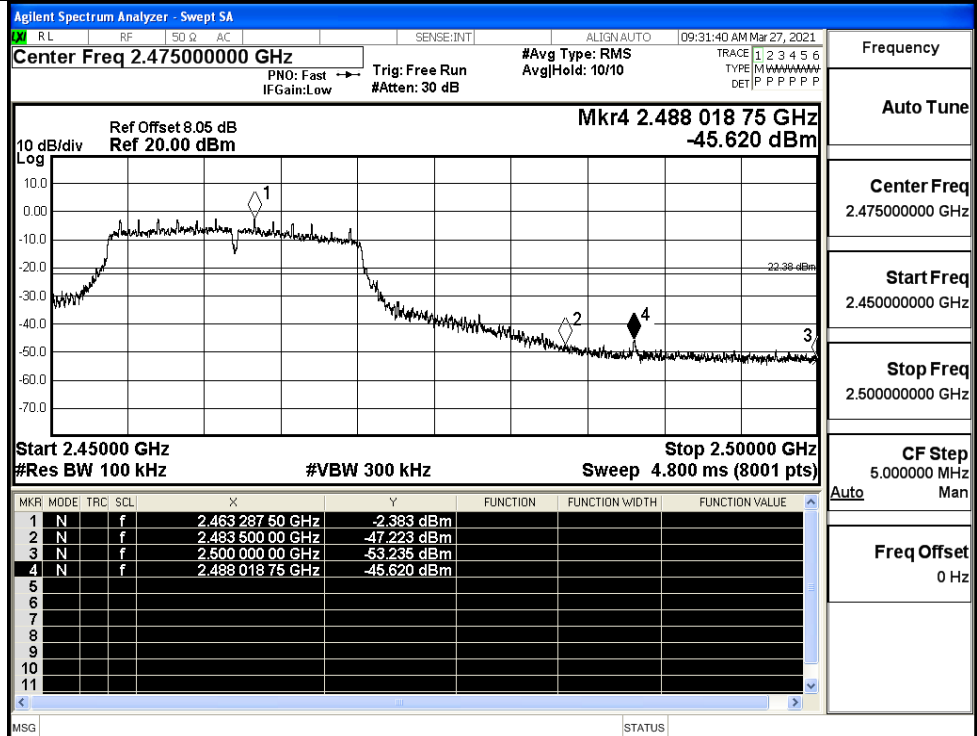
11B/LCH



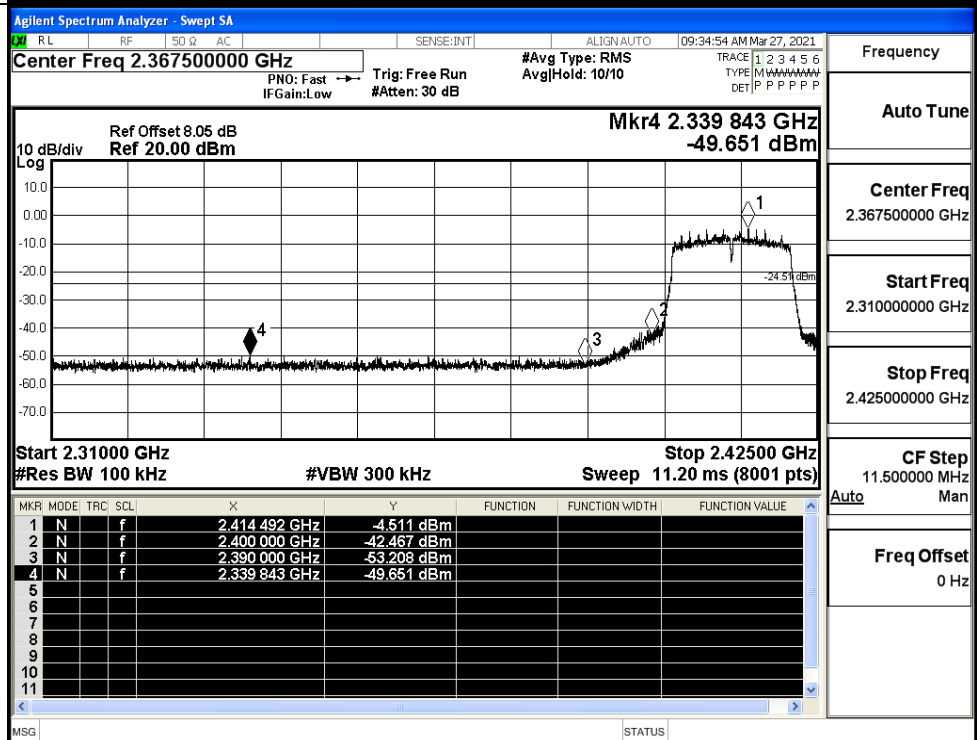
11G/LCH



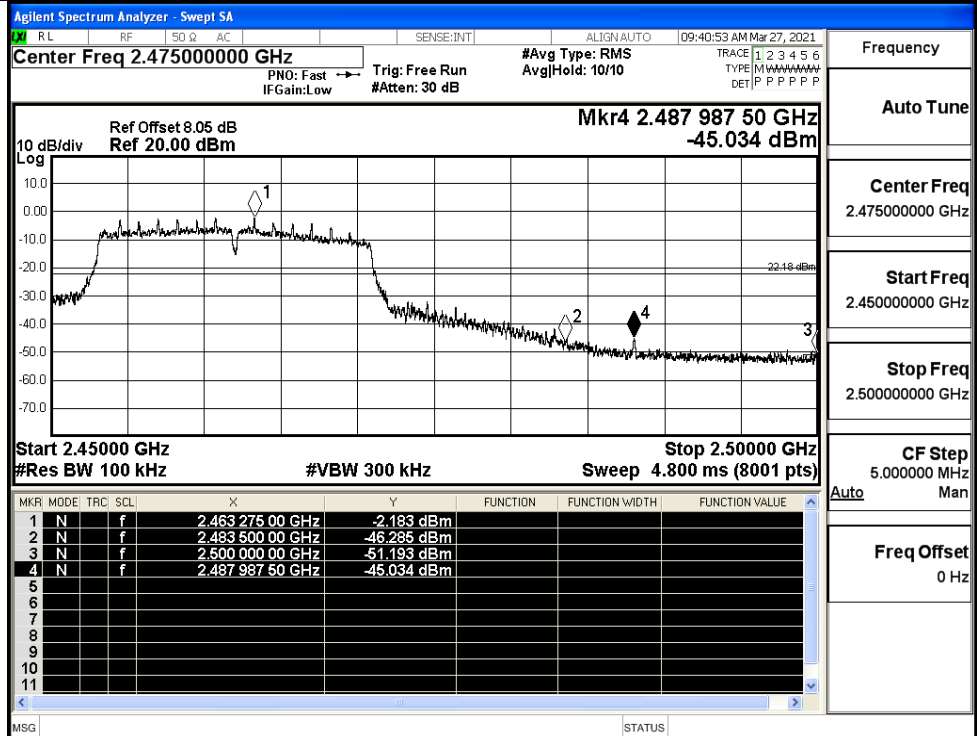
11G/HCH



11N20SISO/LCH



11N20SISO/HCH

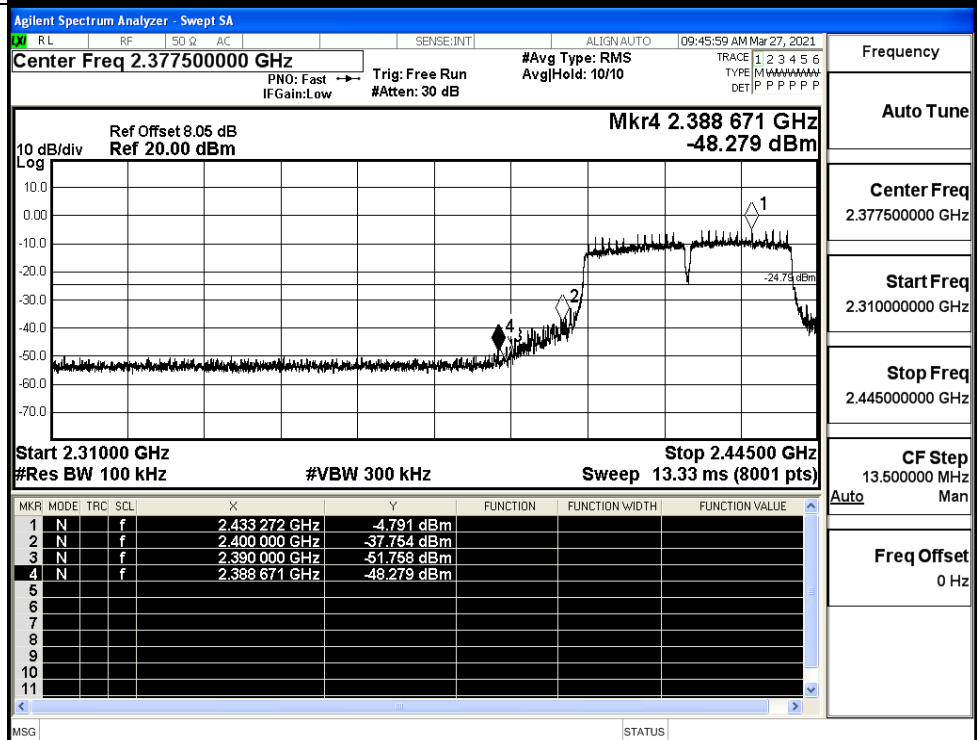


Frequency

Auto Tune

Center Freq
2.475000000 GHzStart Freq
2.450000000 GHzStop Freq
2.500000000 GHzCF Step
5.000000 MHz
Auto ManFreq Offset
0 Hz

11N40SISO/LCH

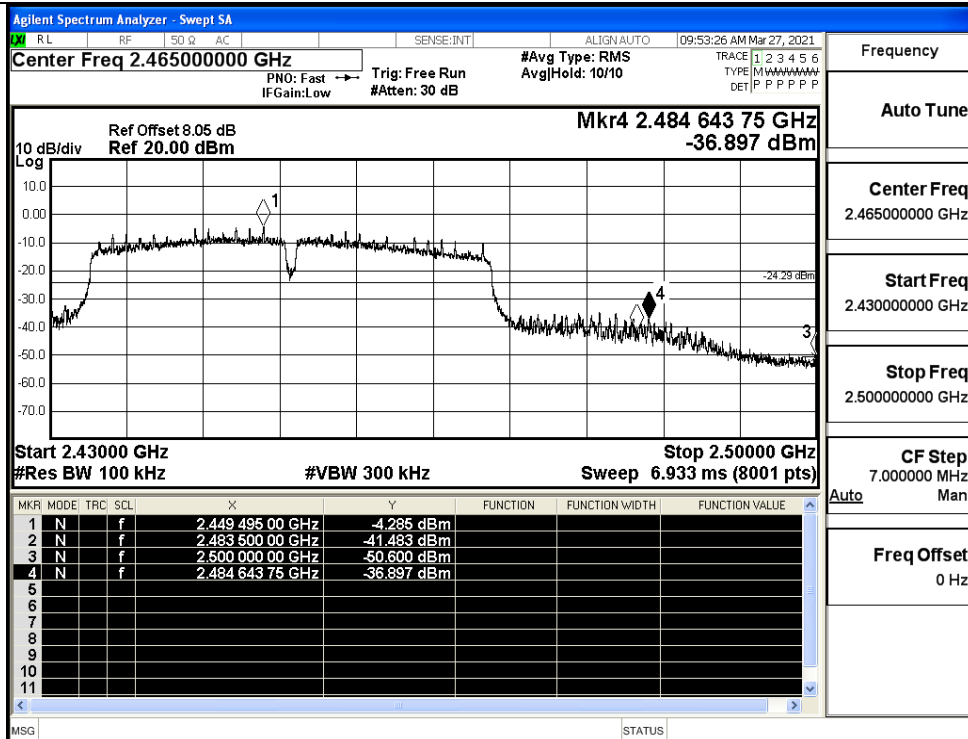


Frequency

Auto Tune

Center Freq
2.377500000 GHzStart Freq
2.310000000 GHzStop Freq
2.445000000 GHzCF Step
13.500000 MHz
Auto ManFreq Offset
0 Hz

11N40SISO/HCH

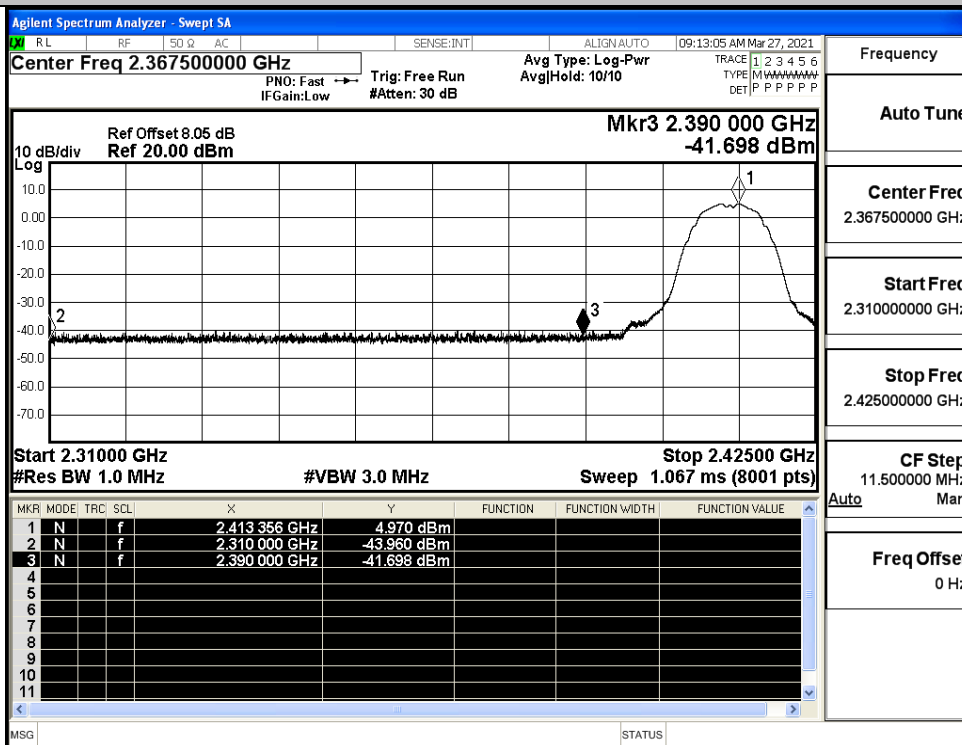


A.7 Restrict-band band-edge measurements

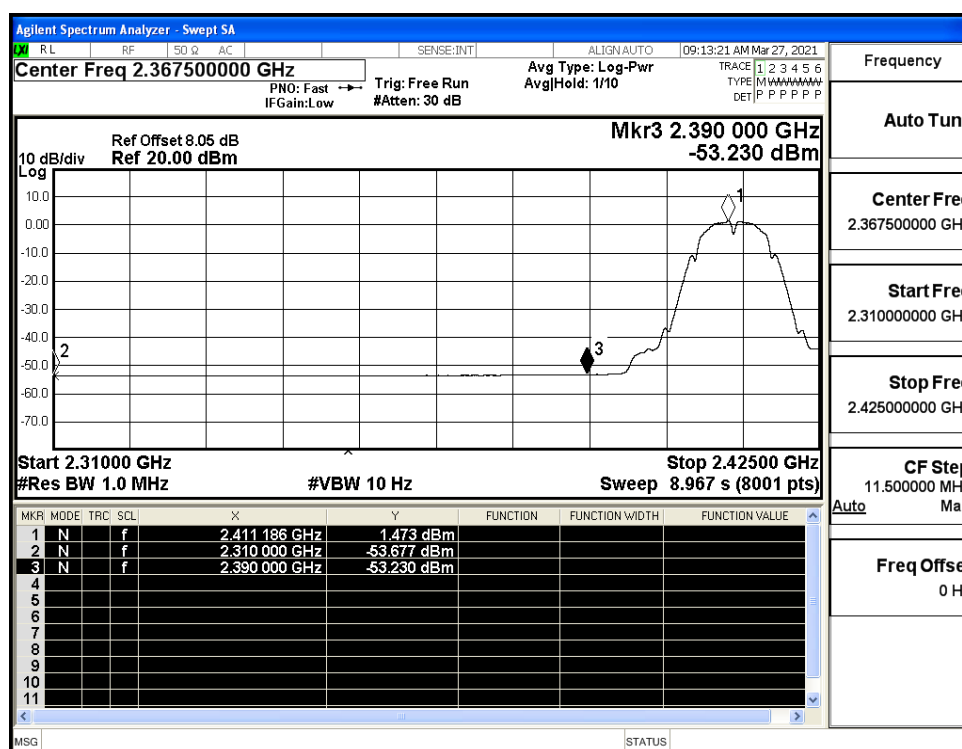
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
11B	2412	Ant1	2310.0	-43.96	2.0	0	53.27	PEAK	74	PASS
	2412	Ant1	2310.0	-53.68	2.0	0	43.55	AV	54	PASS
	2412	Ant1	2390.0	-41.70	2.0	0	55.53	PEAK	74	PASS
	2412	Ant1	2390.0	-53.23	2.0	0	44.00	AV	54	PASS
	2462	Ant1	2483.5	-41.56	2.0	0	55.67	PEAK	74	PASS
	2462	Ant1	2483.5	-51.91	2.0	0	45.32	AV	54	PASS
	2462	Ant1	2500.0	-41.80	2.0	0	55.43	PEAK	74	PASS
	2462	Ant1	2500.0	-52.70	2.0	0	44.53	AV	54	PASS
11G	2412	Ant1	2310.0	-43.04	2.0	0	54.19	PEAK	74	PASS
	2412	Ant1	2310.0	-53.68	2.0	0	43.55	AV	54	PASS
	2412	Ant1	2390.0	-42.62	2.0	0	54.61	PEAK	74	PASS
	2412	Ant1	2390.0	-53.12	2.0	0	44.11	AV	54	PASS
	2462	Ant1	2483.5	-35.29	2.0	0	61.94	PEAK	74	PASS
	2462	Ant1	2483.5	-49.59	2.0	0	47.64	AV	54	PASS
	2462	Ant1	2500.0	-42.46	2.0	0	54.77	PEAK	74	PASS
	2462	Ant1	2500.0	-52.70	2.0	0	44.53	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-44.25	2.0	0	52.98	PEAK	74	PASS
	2412	Ant1	2310.0	-53.65	2.0	0	43.58	AV	54	PASS
	2412	Ant1	2390.0	-42.43	2.0	0	54.80	PEAK	74	PASS
	2412	Ant1	2390.0	-53.02	2.0	0	44.21	AV	54	PASS
	2462	Ant1	2483.5	-34.84	2.0	0	62.39	PEAK	74	PASS
	2462	Ant1	2483.5	-48.46	2.0	0	48.77	AV	54	PASS
	2462	Ant1	2500.0	-42.21	2.0	0	55.02	PEAK	74	PASS
	2462	Ant1	2500.0	-52.66	2.0	0	44.57	AV	54	PASS
11N40 SISO	2422	Ant1	2310.0	-43.82	2.0	0	53.41	PEAK	74	PASS
	2422	Ant1	2310.0	-53.62	2.0	0	43.61	AV	54	PASS
	2422	Ant1	2390.0	-40.31	2.0	0	56.92	PEAK	74	PASS

	2422	Ant1	2390.0	-51.57	2.0	0	45.66	AV	54	PASS
	2452	Ant1	2483.5	-24.07	2.0	0	73.16	PEAK	74	PASS
	2452	Ant1	2483.5	-45.10	2.0	0	52.13	AV	54	PASS
	2452	Ant1	2500.0	-42.33	2.0	0	54.90	PEAK	74	PASS
	2452	Ant1	2500.0	-52.69	2.0	0	44.54	AV	54	PASS

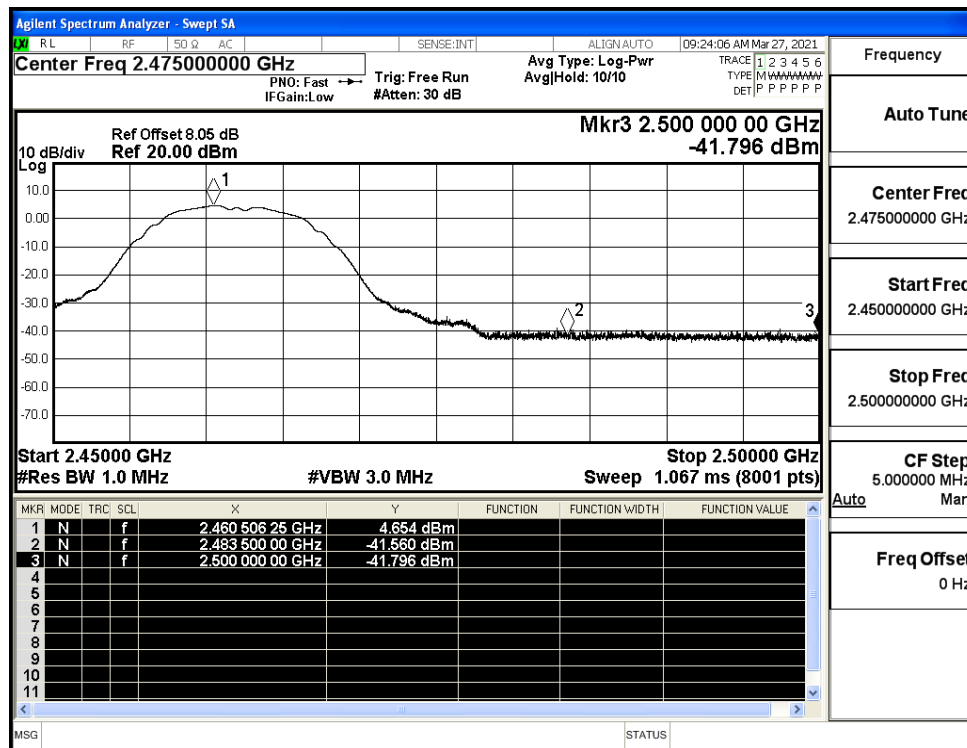
Restrict-band band-edge measurements_11B_2412_Ant1_PEAK



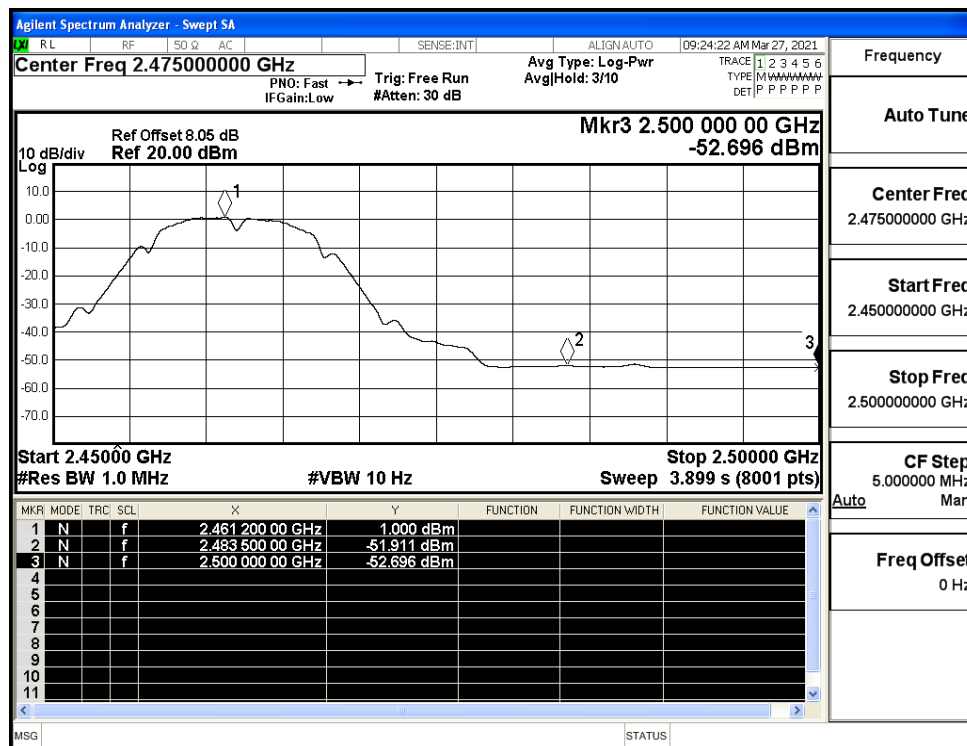
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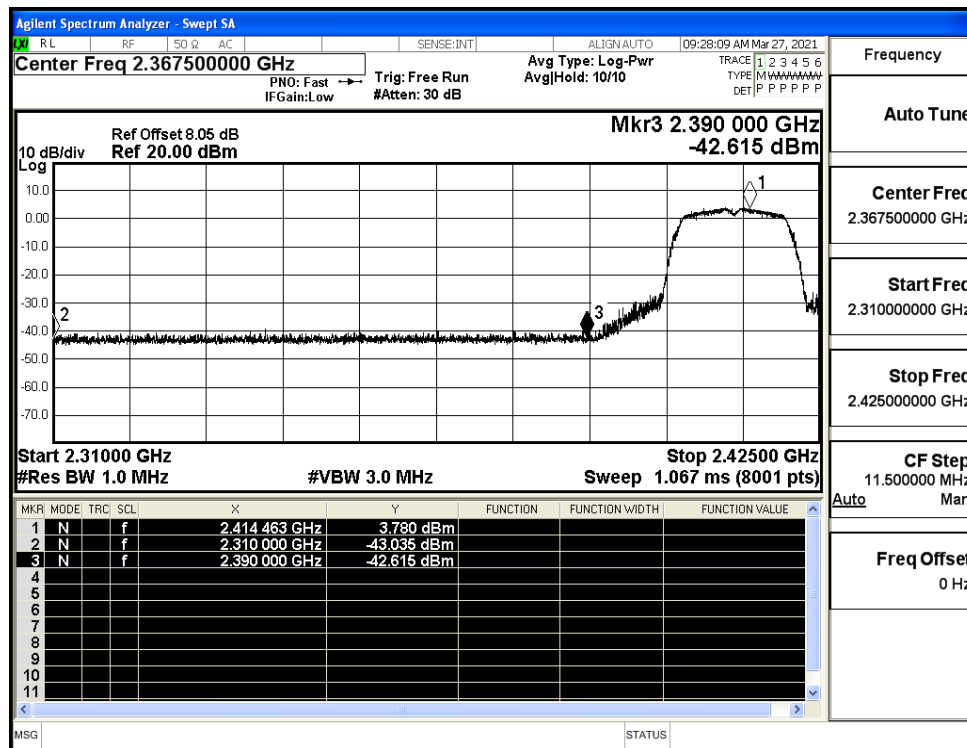
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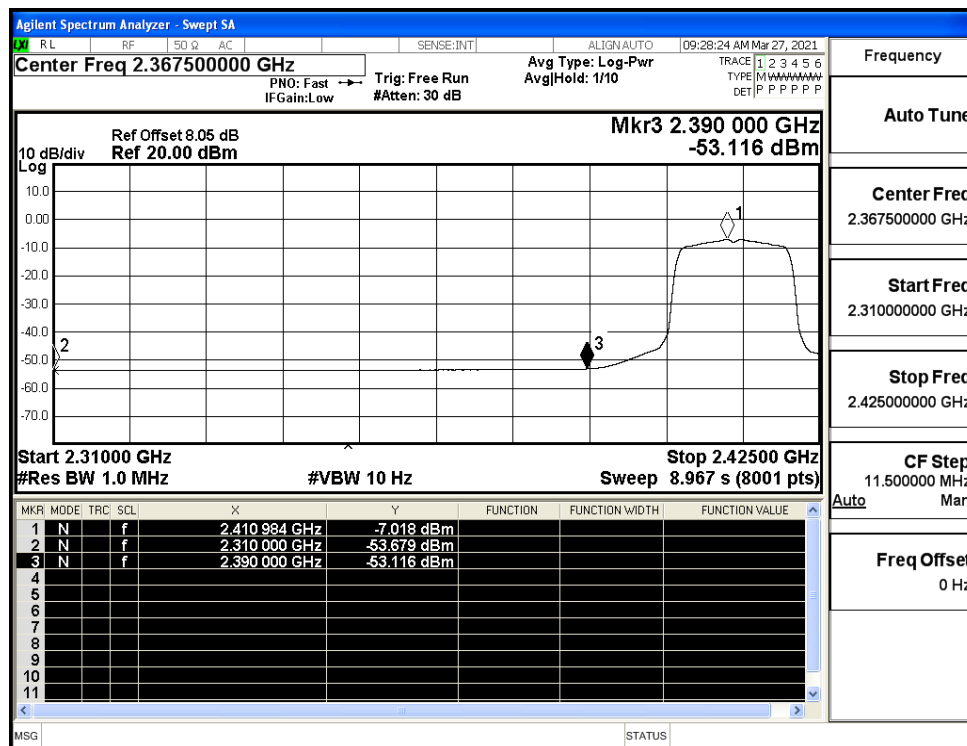
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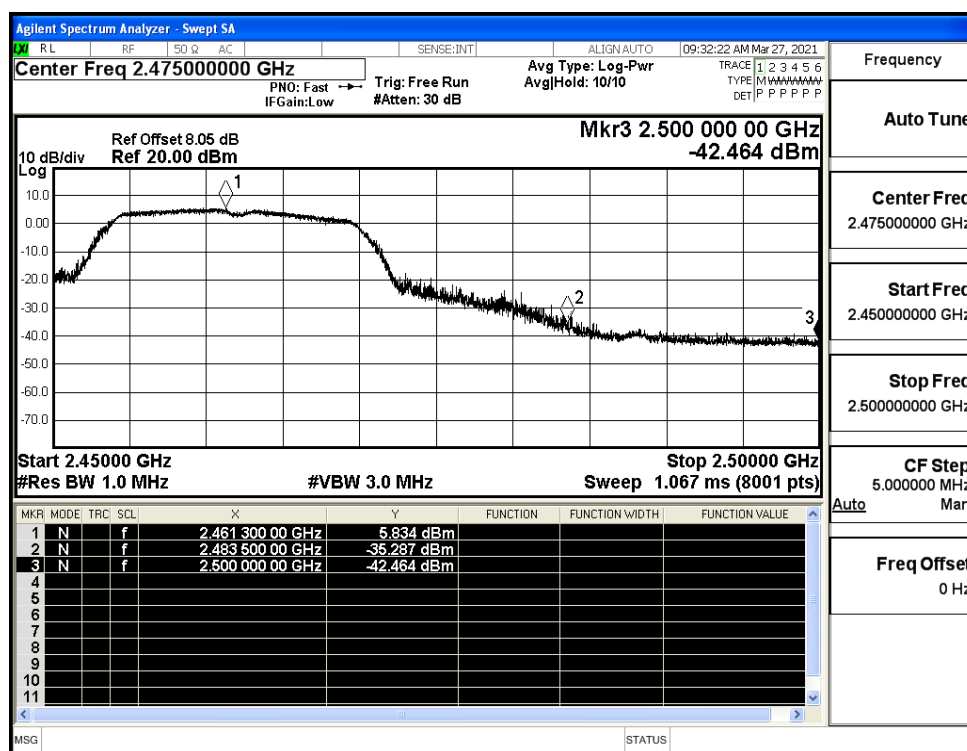
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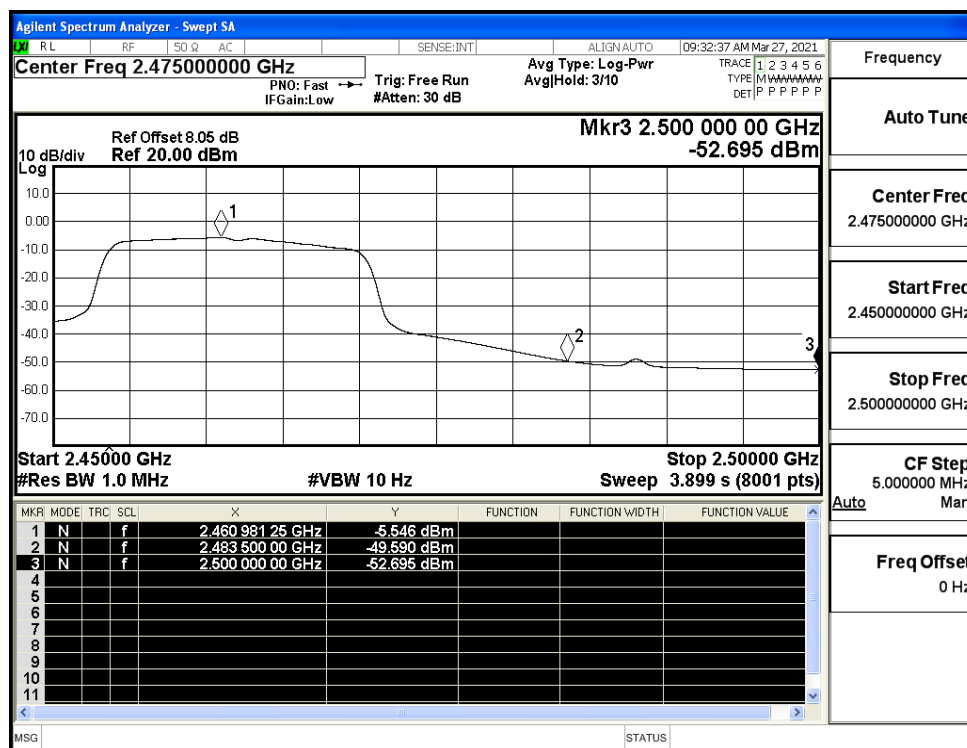
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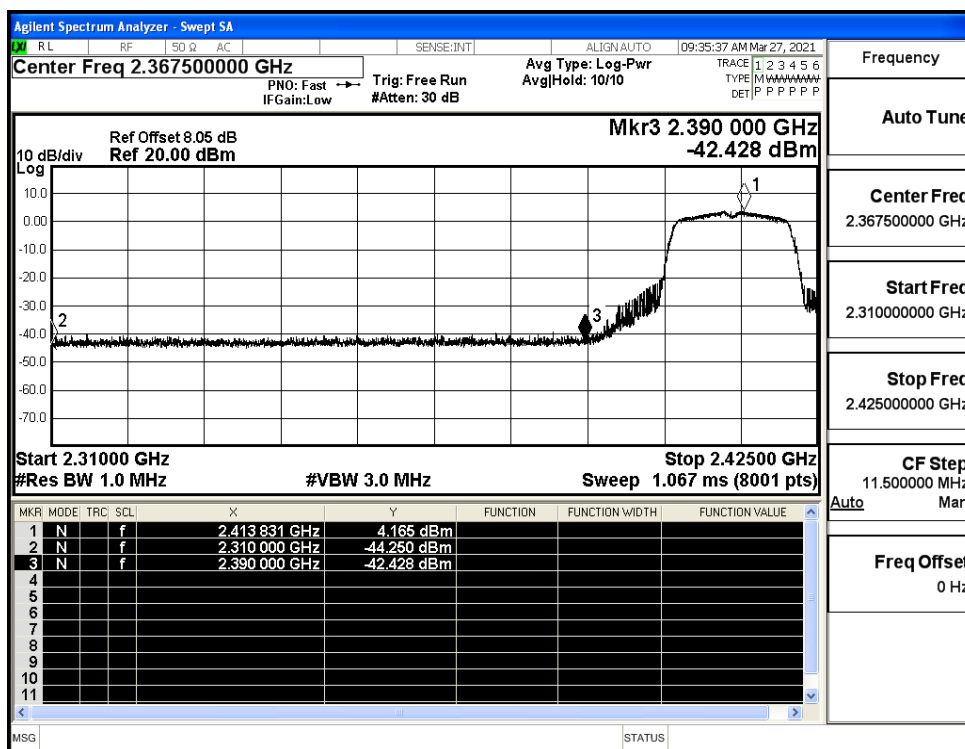
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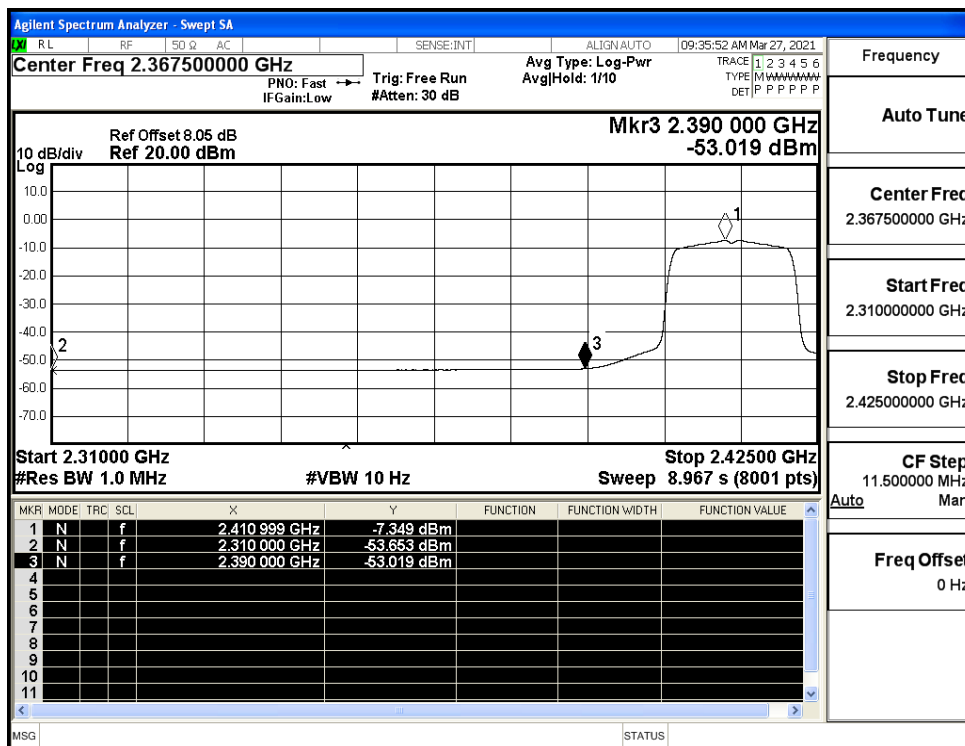
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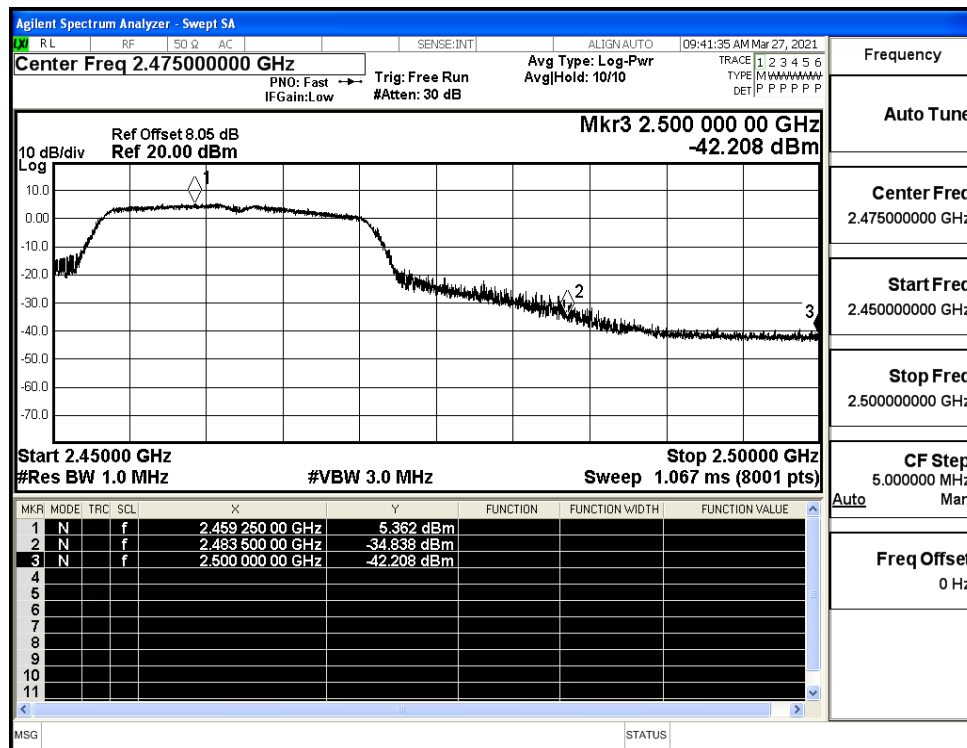
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_PEAK



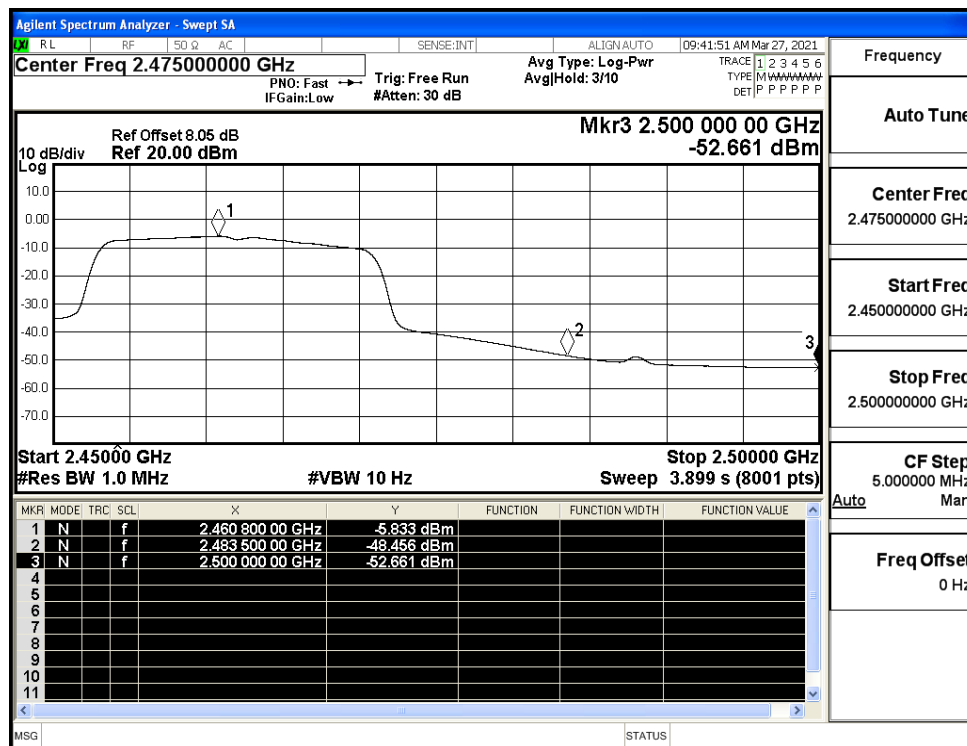
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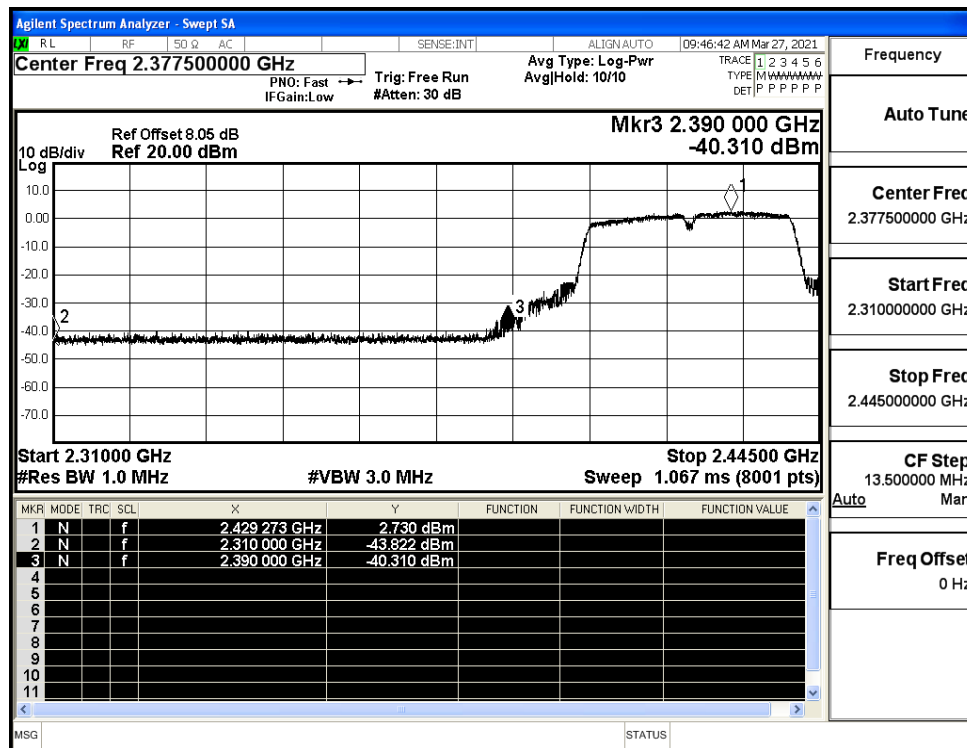
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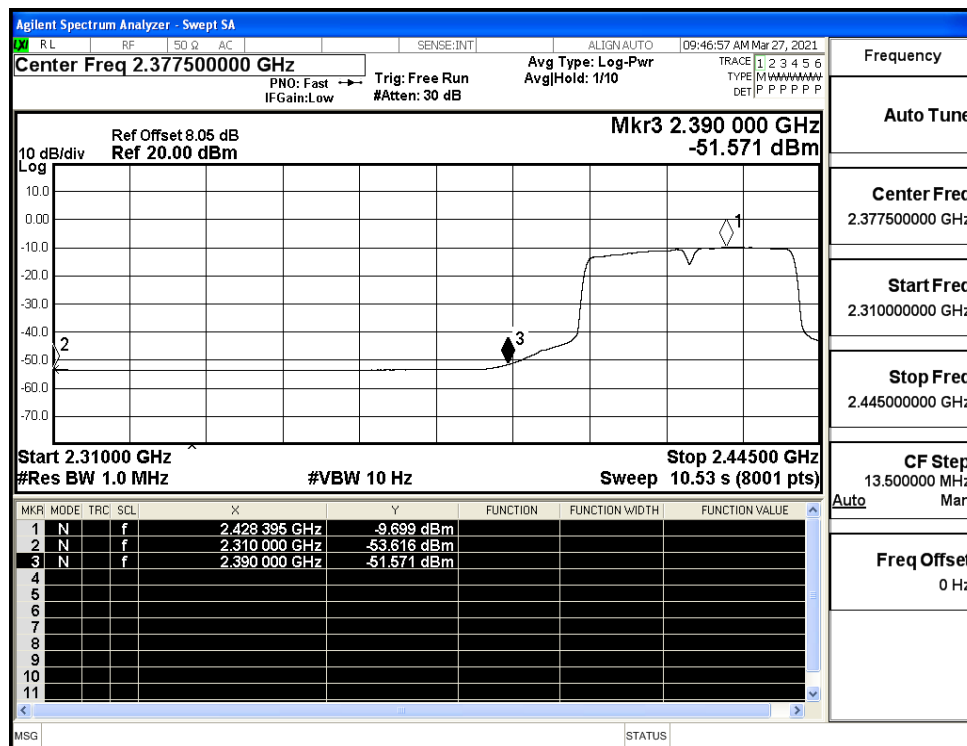
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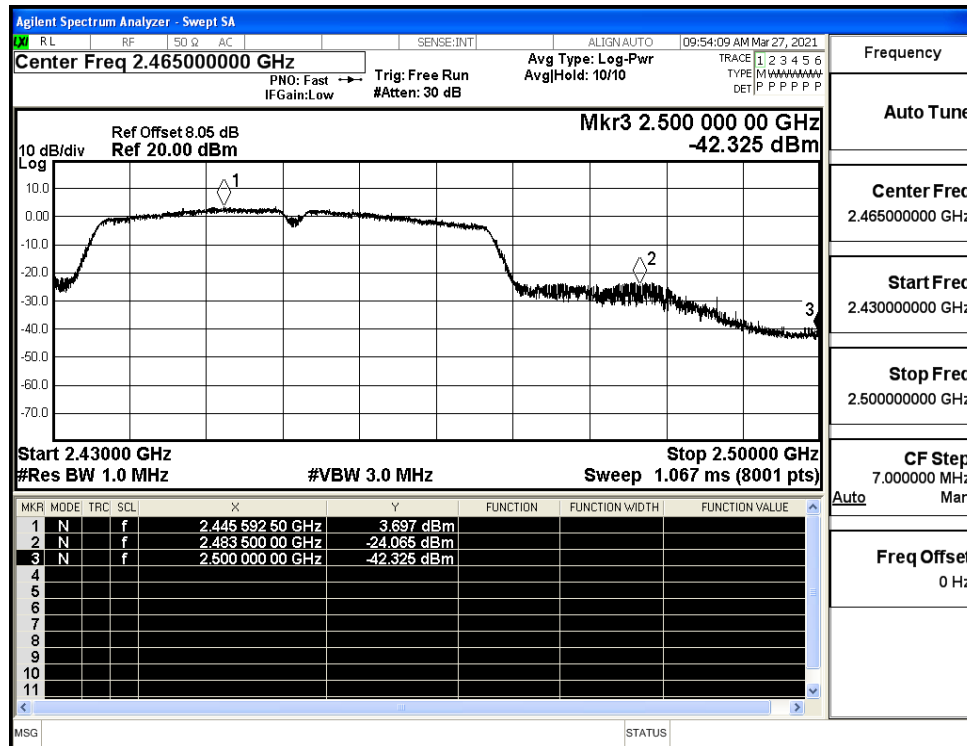
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Restrict-band band-edge measurements_11N40SISO_2422_Ant1_AV



Restrict-band band-edge measurements_11N40SISO_2452_Ant1_PEAK



Restrict-band band-edge measurements_11N40SISO_2452_Ant1_AV

