

Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: 1080P IOT CAMERA

Trade Mark: Momentum

Test Model: MOCAM-1080-01

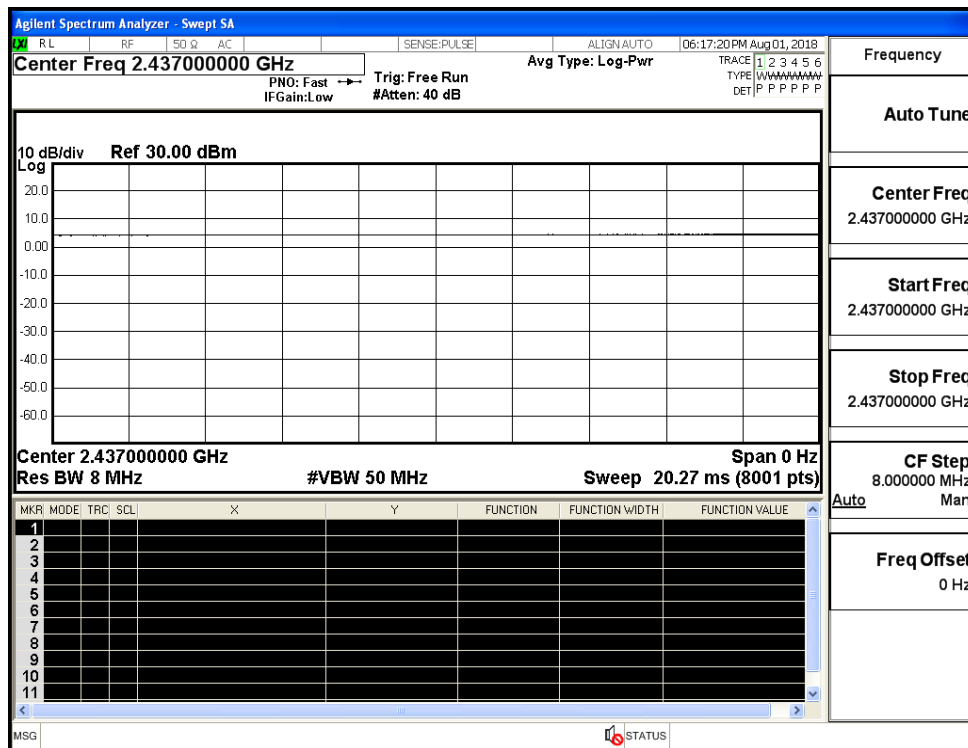
Environmental Conditions

Temperature:	24.2 ° C
Relative Humidity:	53.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond.Lu
Supervised by:	Jayden.Zhuo

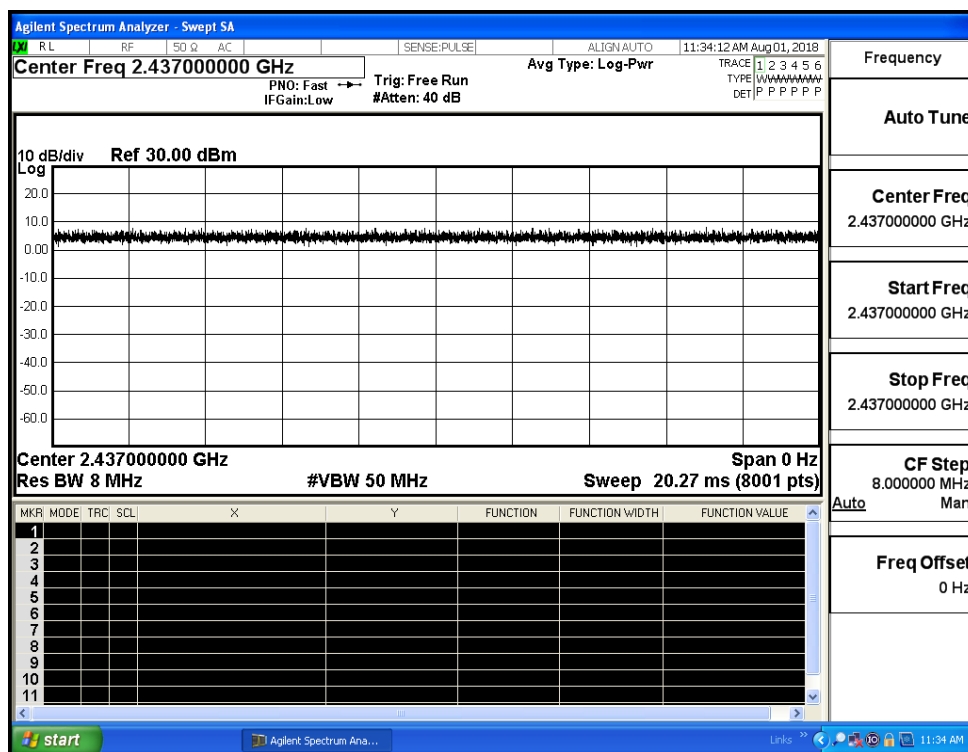
A.1 Duty Cycle

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

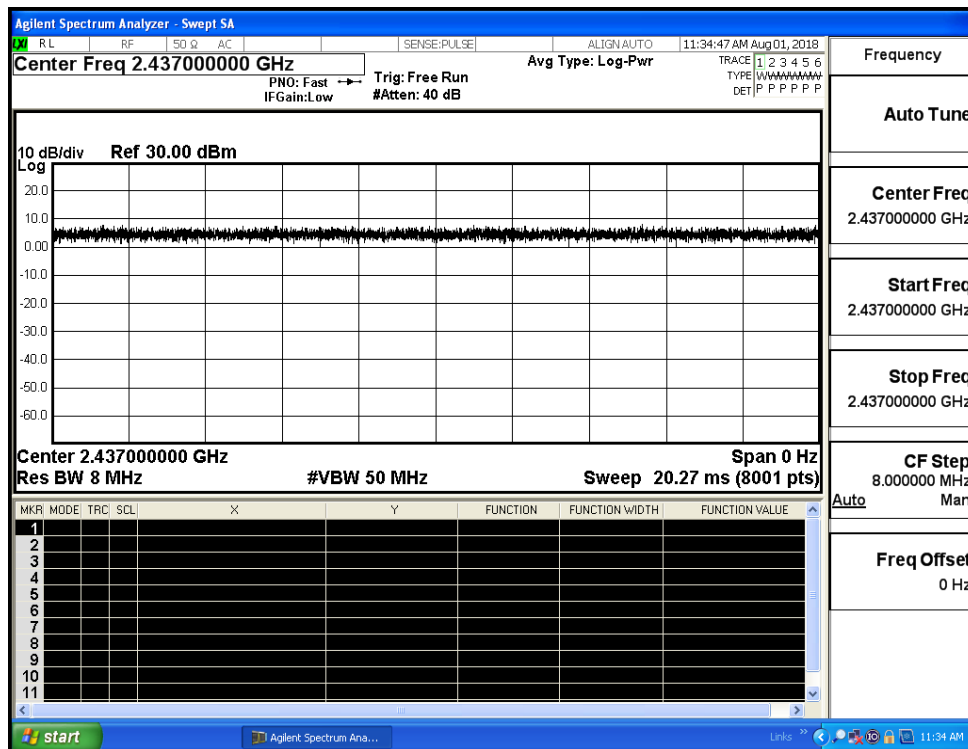
Duty Cycle_11B_2437_Ant1



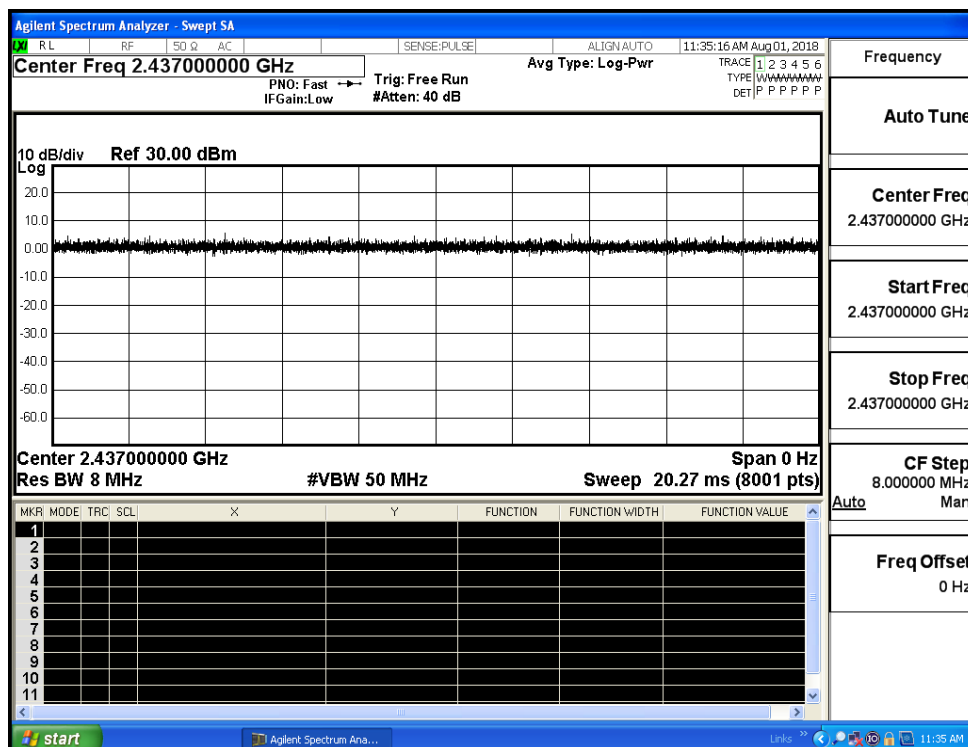
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



Duty Cycle_11N40SISO_2437_Ant1



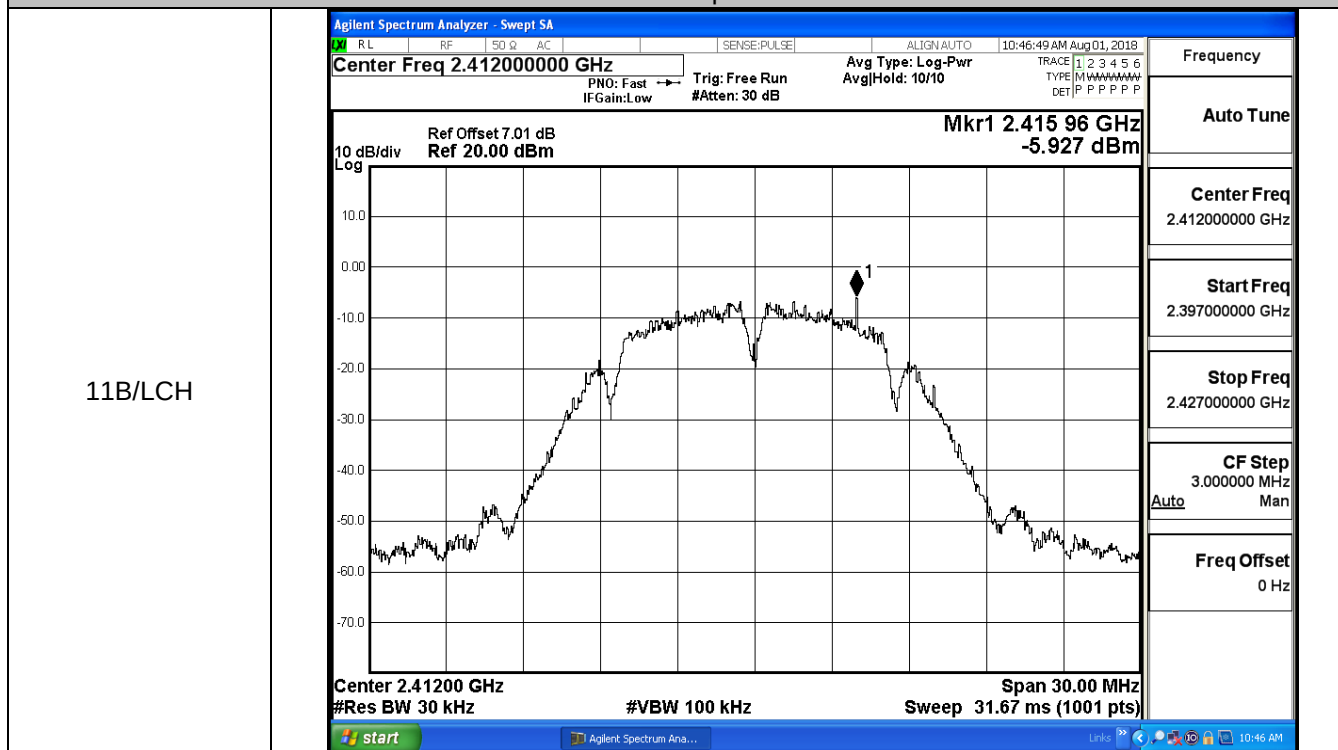
A.2 Maximum Conducted Output Power

Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	11.61	30	PASS
	MCH	11.73	30	PASS
	HCH	10.86	30	PASS
11G	LCH	12.70	30	PASS
	MCH	9.86	30	PASS
	HCH	12.00	30	PASS
11N20SISO	LCH	11.28	30	PASS
	MCH	11.02	30	PASS
	HCH	10.92	30	PASS
11N40SISO	LCH	11.17	30	PASS
	MCH	12.35	30	PASS
	HCH	10.56	30	PASS

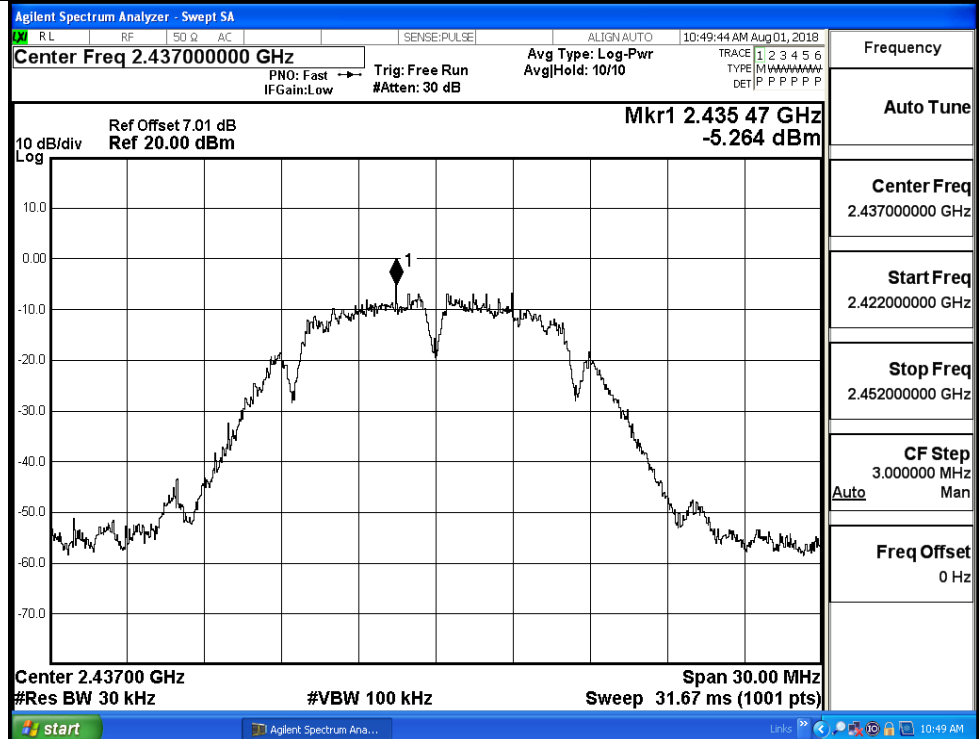
A.3 Maximum Power Spectral Density

Mode	Channel	Meas.Level [dBm/30KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-5.927	8	PASS
	MCH	-5.264	8	PASS
	HCH	-6.347	8	PASS
11G	LCH	-13.819	8	PASS
	MCH	-13.763	8	PASS
	HCH	-13.615	8	PASS
11N20SISO	LCH	-15.050	8	PASS
	MCH	-13.185	8	PASS
	HCH	-13.427	8	PASS
11N40SISO	LCH	-17.108	8	PASS
	MCH	-17.041	8	PASS
	HCH	-17.166	8	PASS

Test Graphs



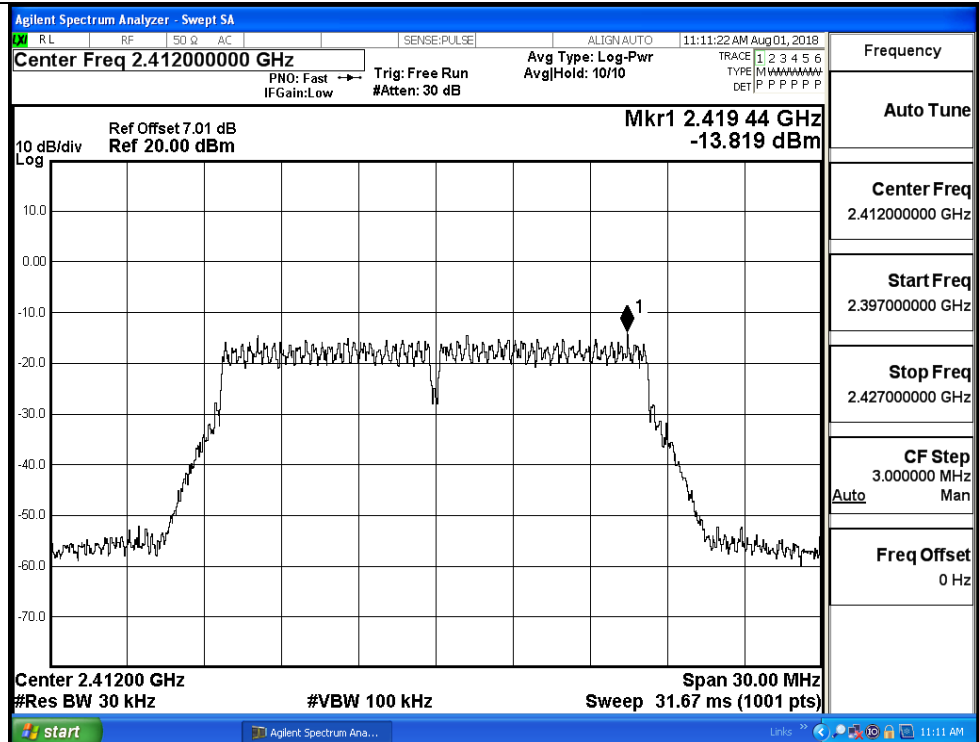
11B/MCH



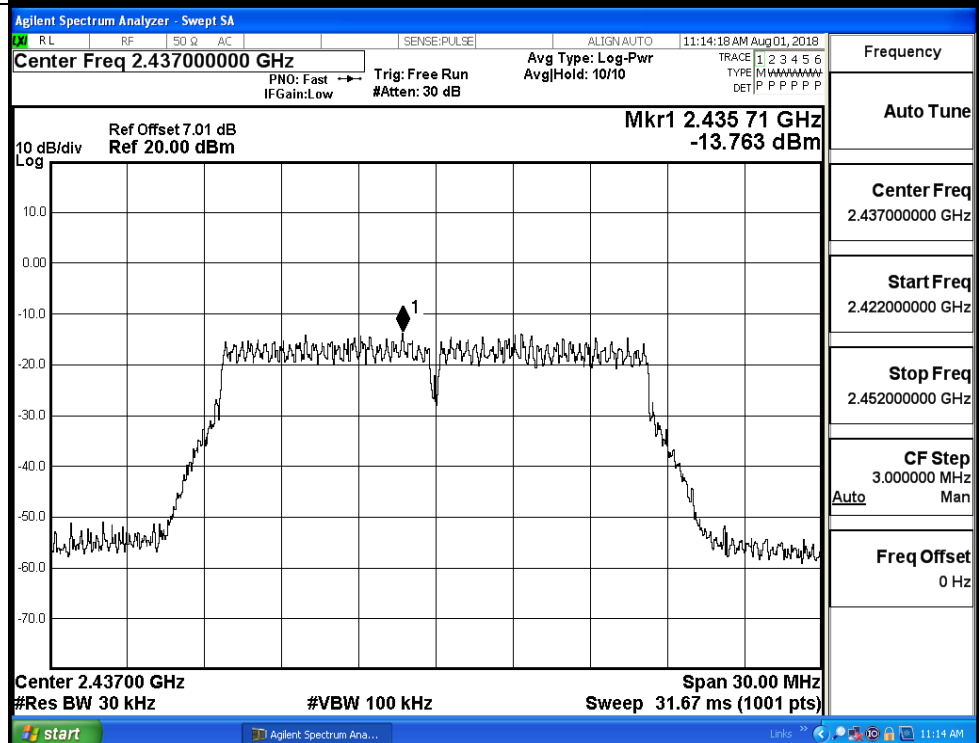
11B/HCH



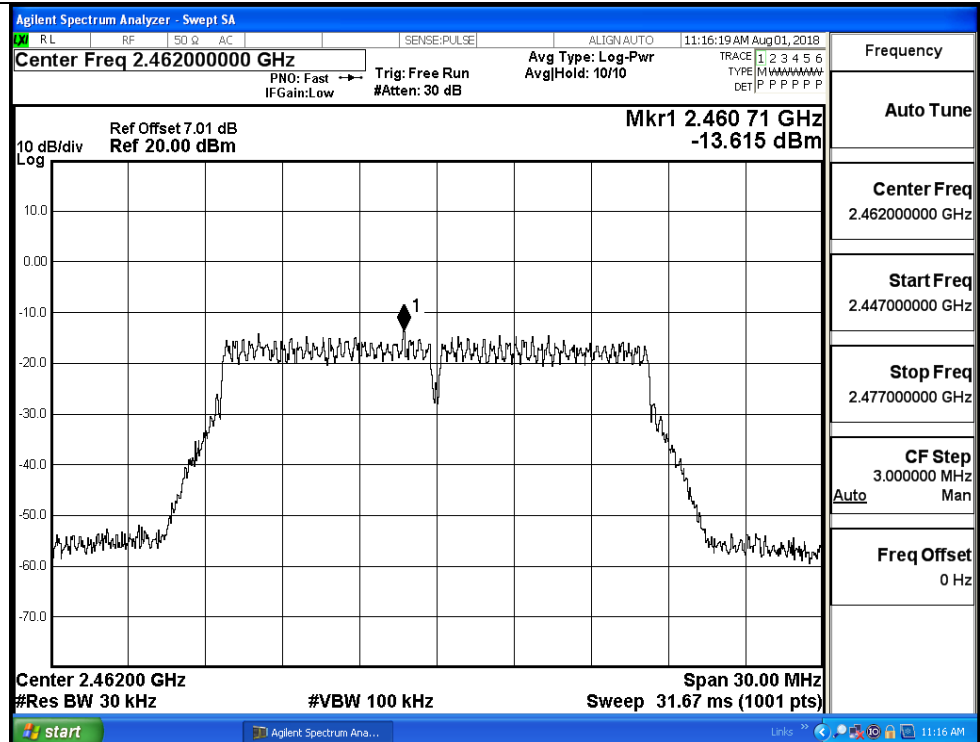
11G/LCH



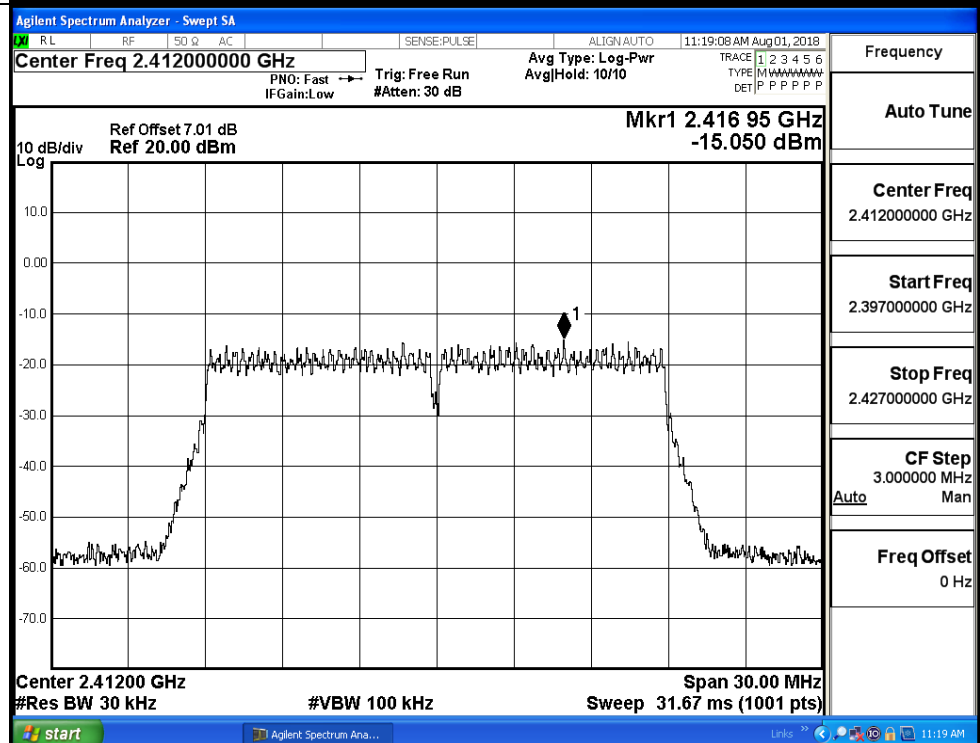
11G/MCH



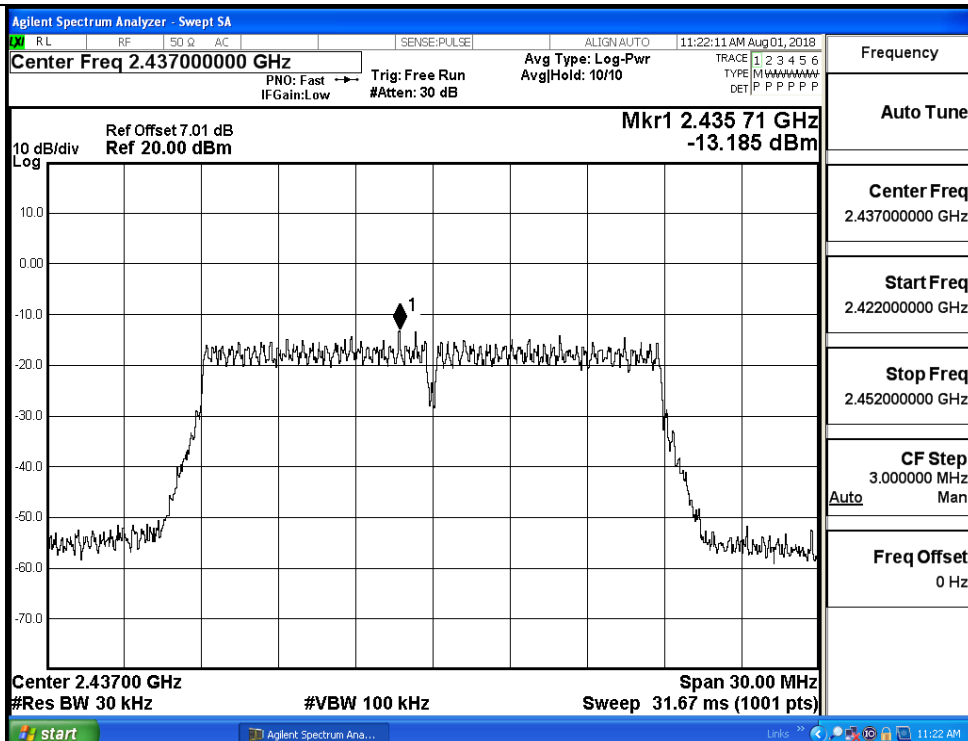
11G/HCH



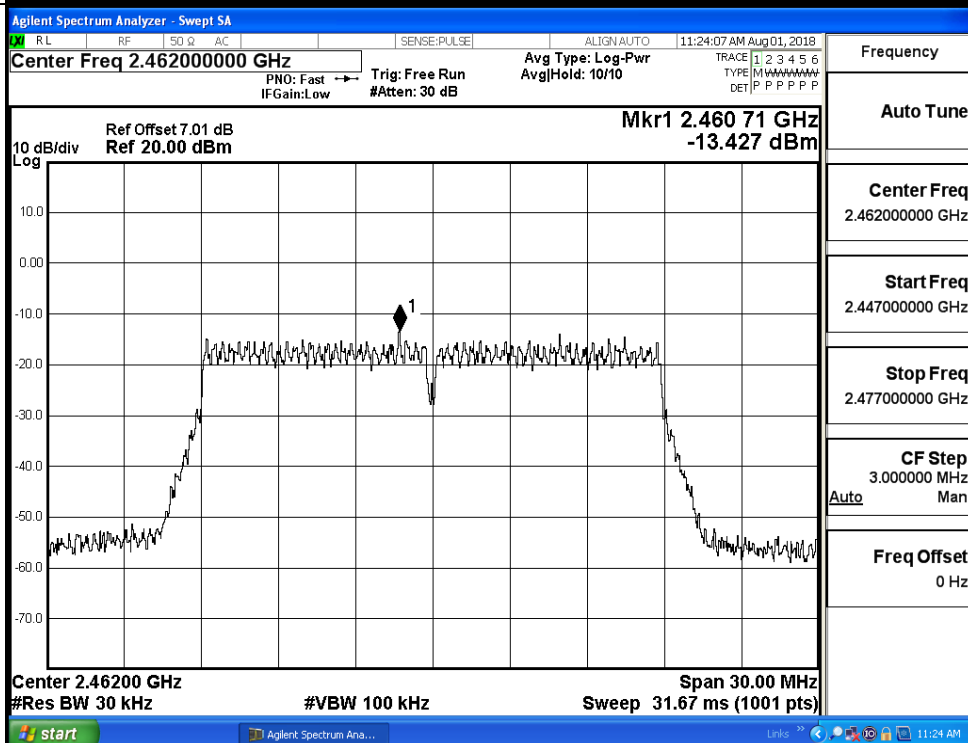
11N20SISO/LCH

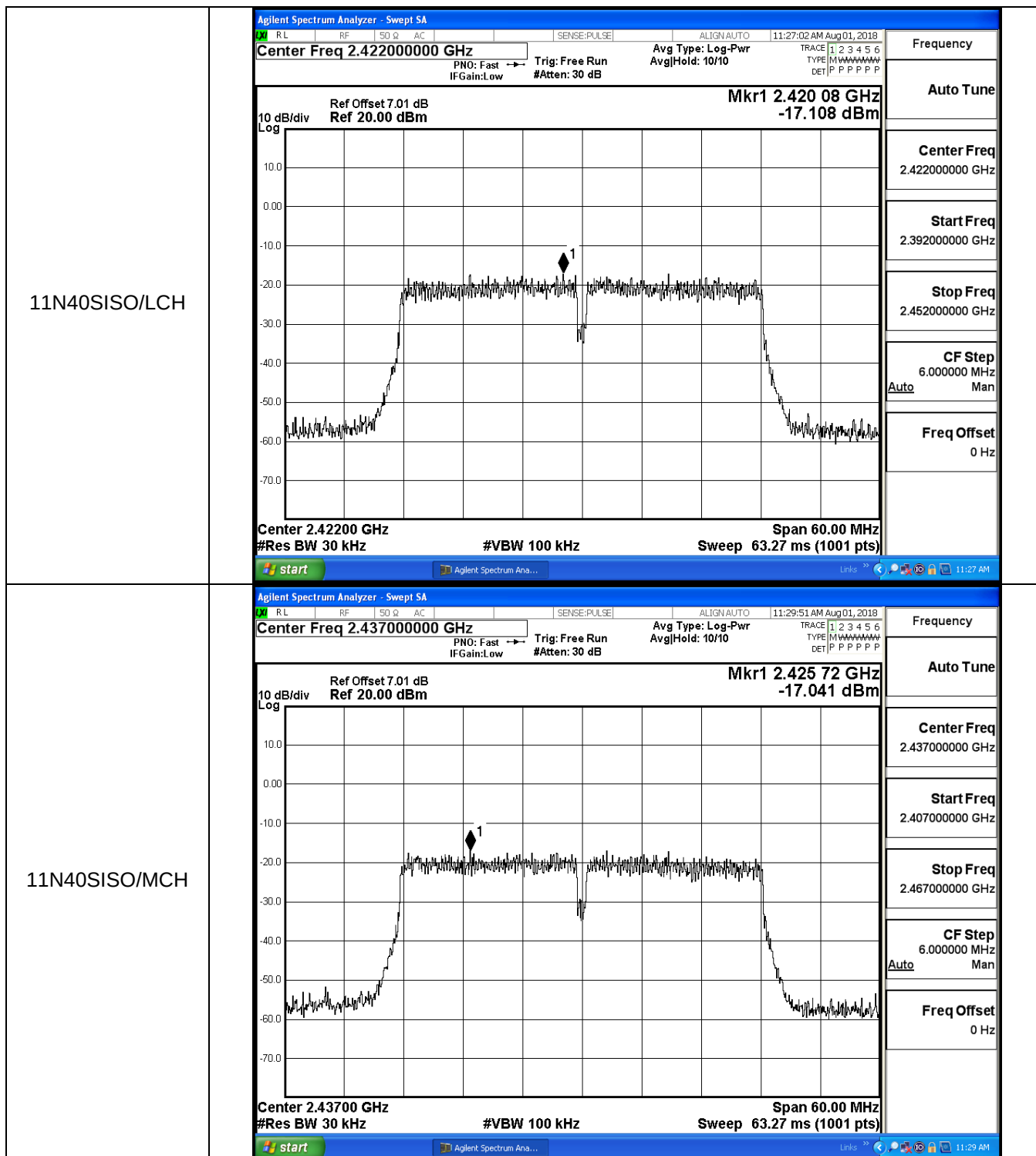


11N20SISO/MCH

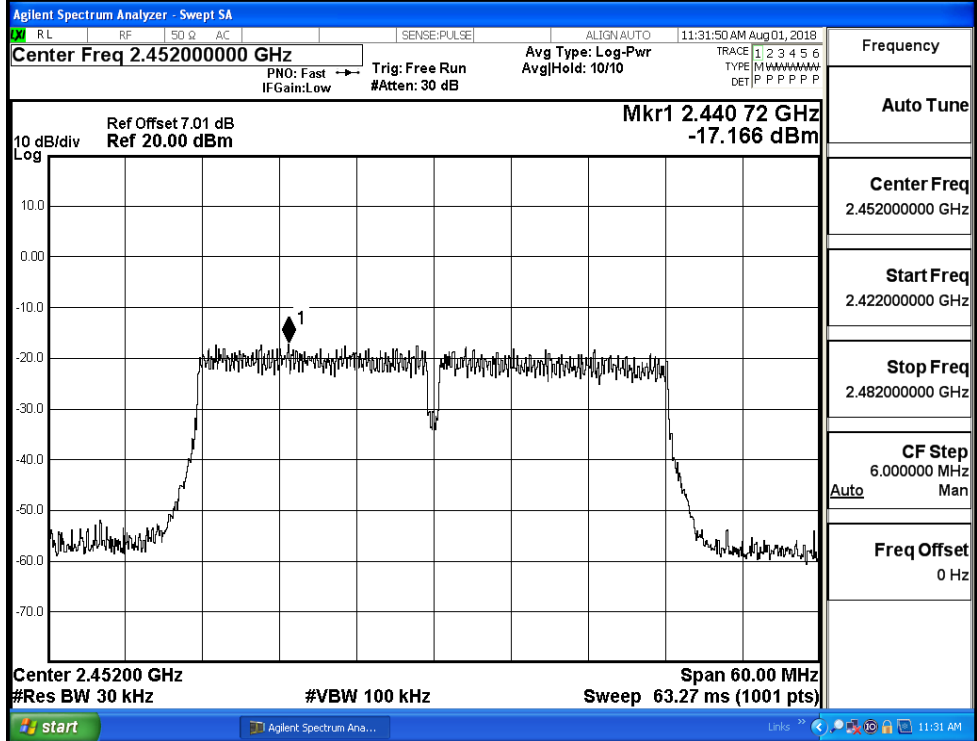


11N20SISO/HCH





11N40SISO/HCH

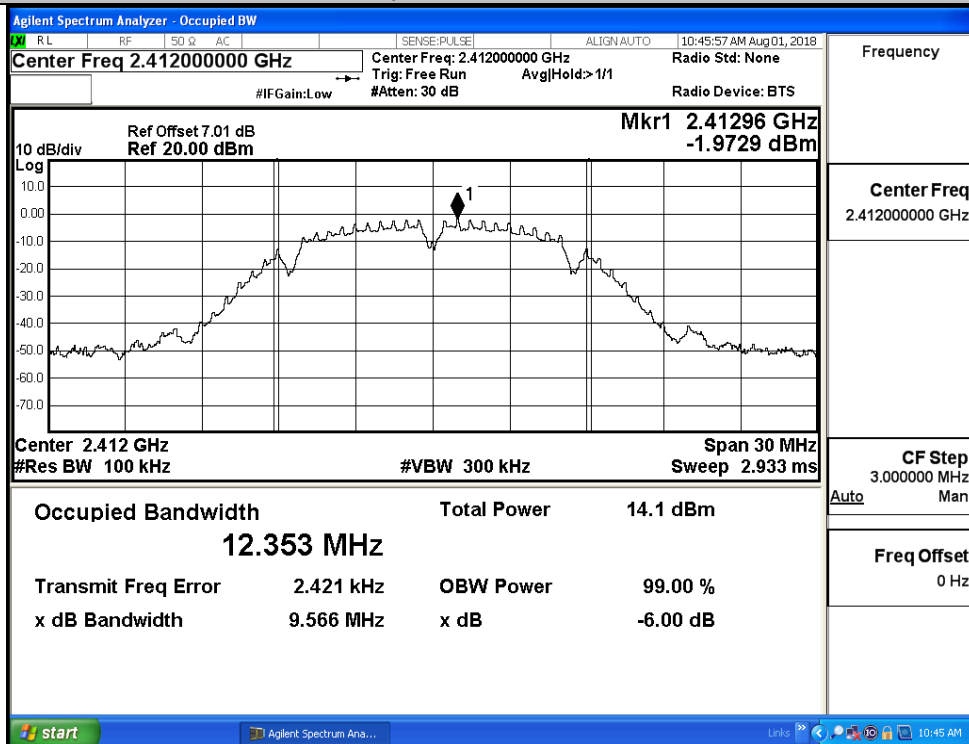


A.4 6dB Bandwidth

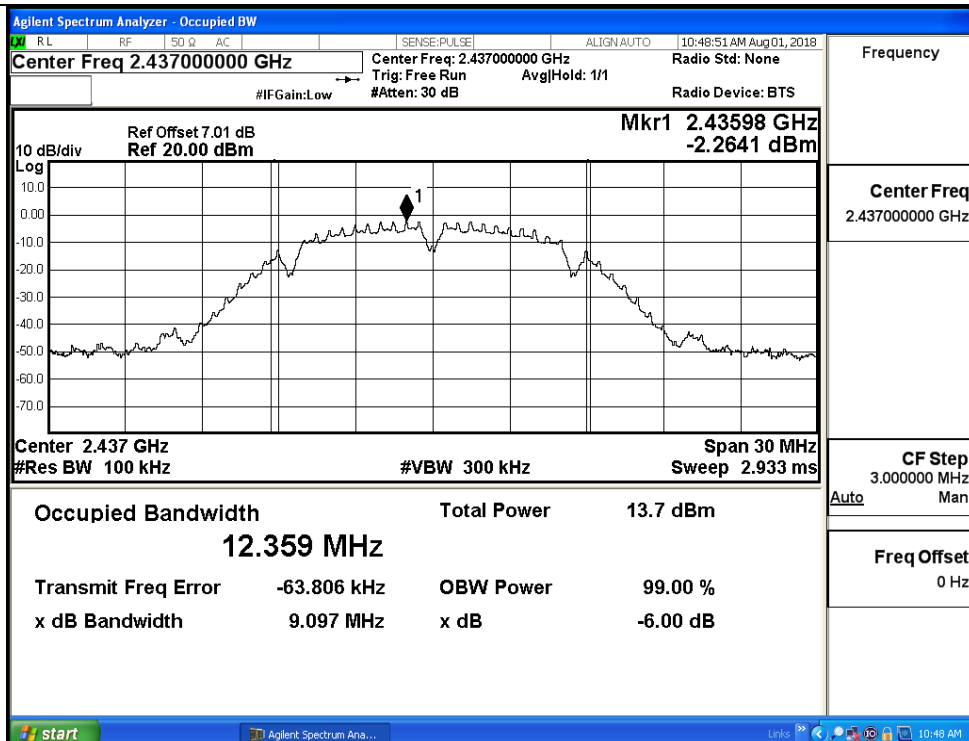
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	9.566	≥ 0.5	PASS
	MCH	9.097	≥ 0.5	PASS
	HCH	9.115	≥ 0.5	PASS
11G	LCH	16.37	≥ 0.5	PASS
	MCH	16.40	≥ 0.5	PASS
	HCH	16.39	≥ 0.5	PASS
11N20SISO	LCH	17.61	≥ 0.5	PASS
	MCH	17.61	≥ 0.5	PASS
	HCH	17.62	≥ 0.5	PASS
11N40SISO	LCH	35.79	≥ 0.5	PASS
	MCH	35.97	≥ 0.5	PASS
	HCH	35.96	≥ 0.5	PASS

Test Graphs

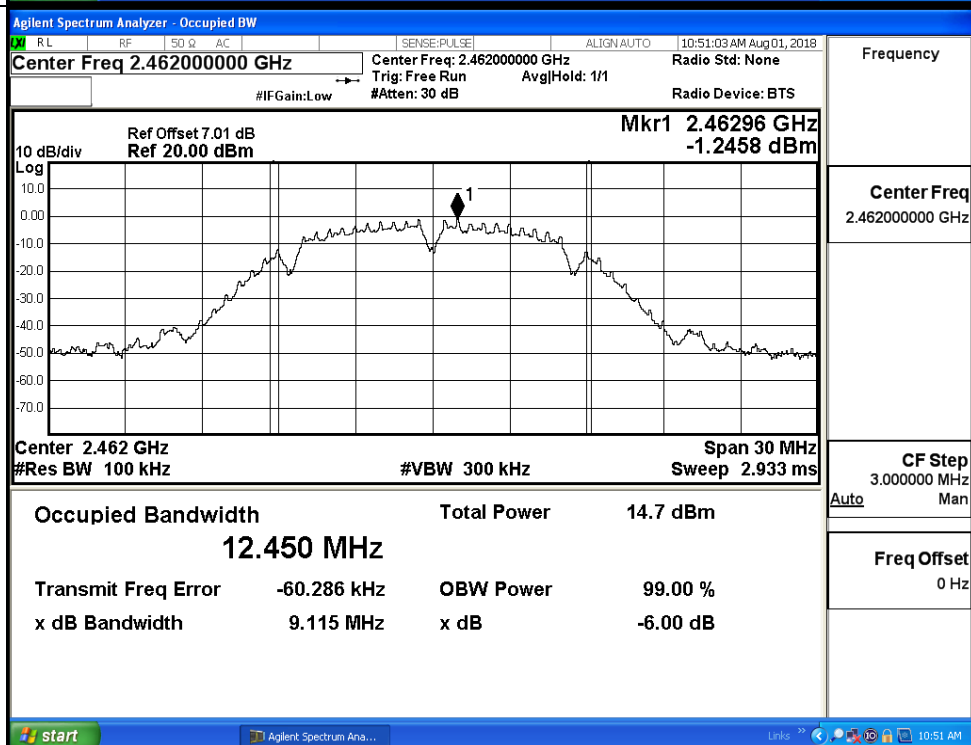
11B/LCH



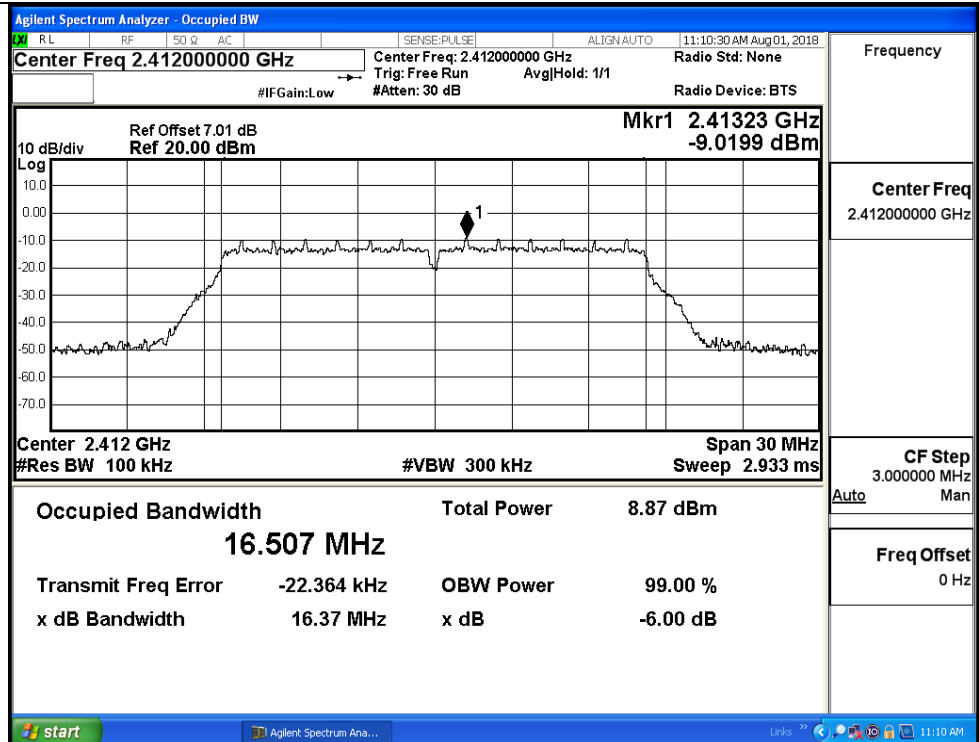
11B/MCH



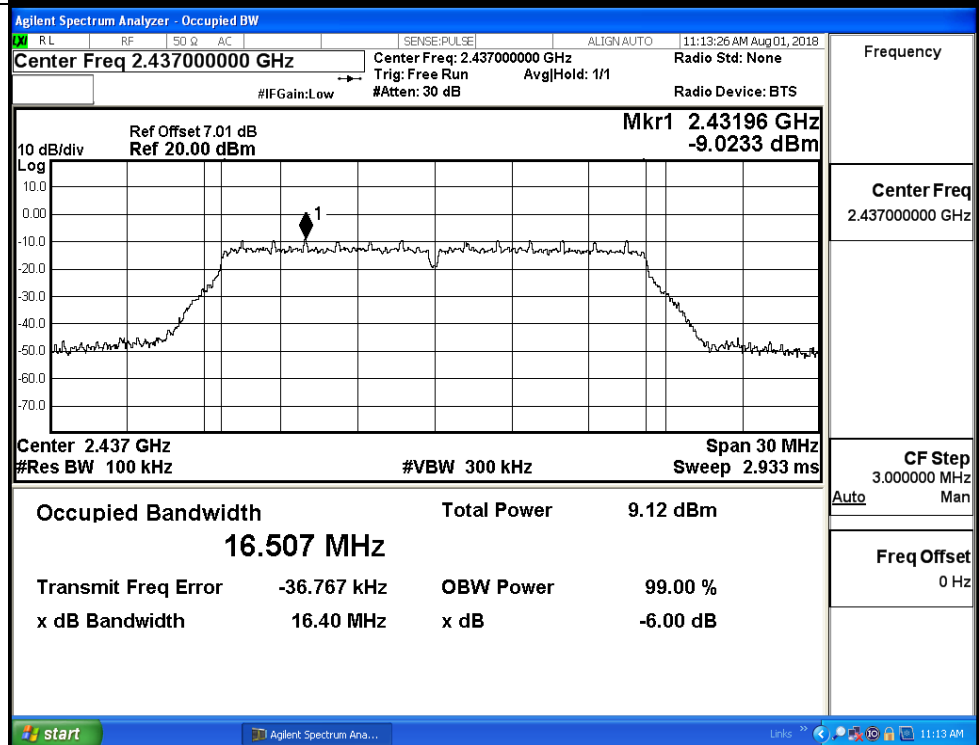
11B/HCH



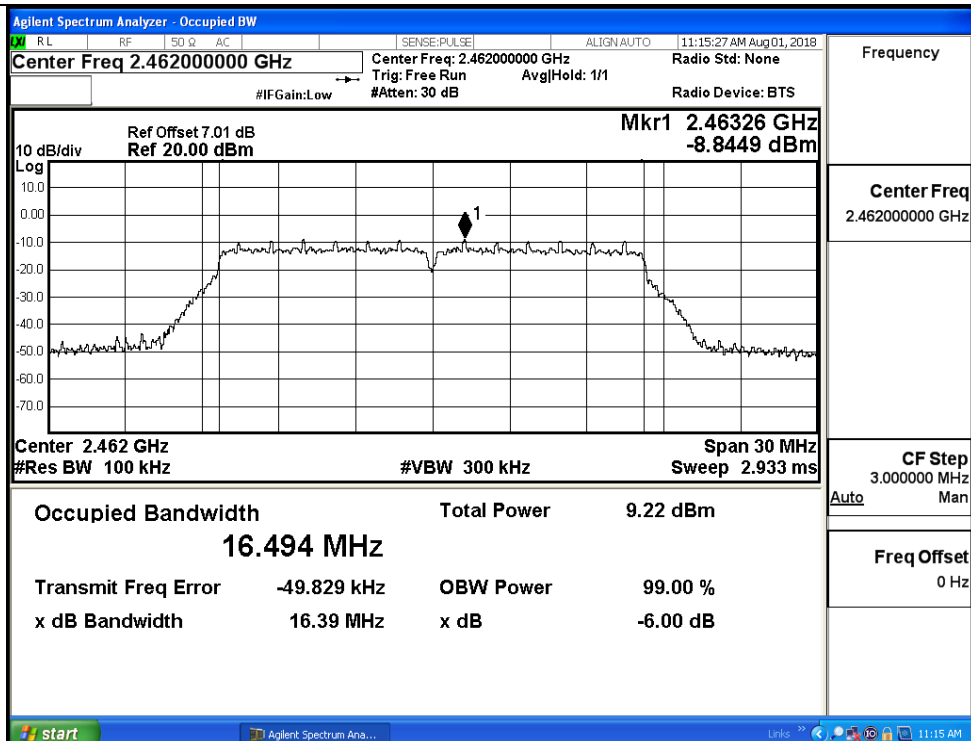
11G/LCH



11G/MCH



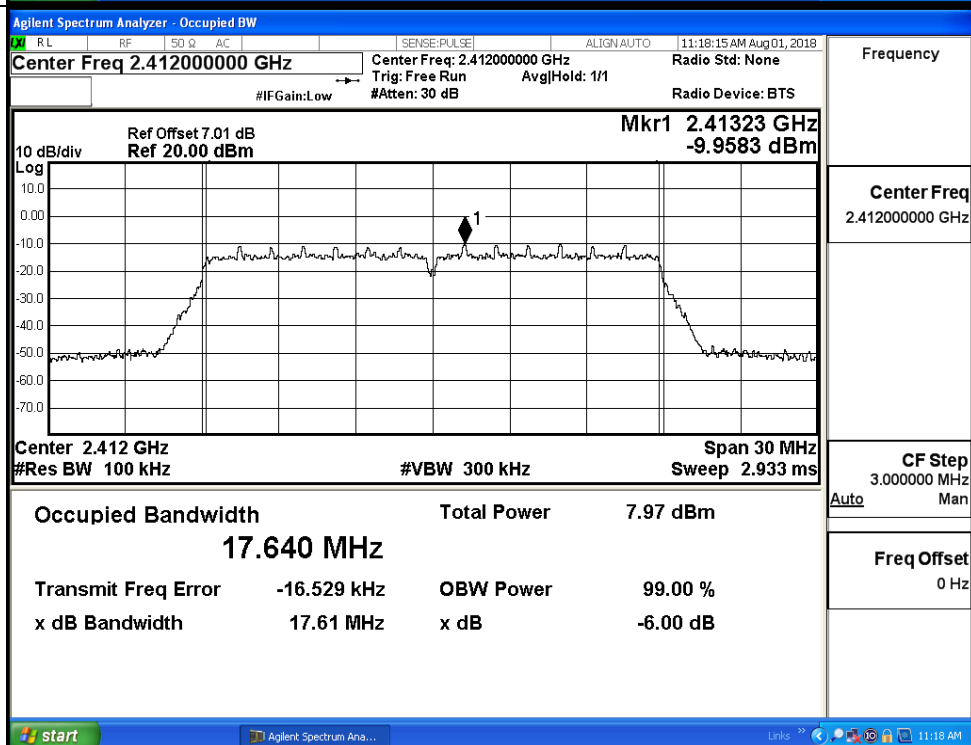
11G/HCH



Frequency

Center Freq
2.462000000 GHzCF Step
3.000000 MHz
Auto ManFreq Offset
0 Hz

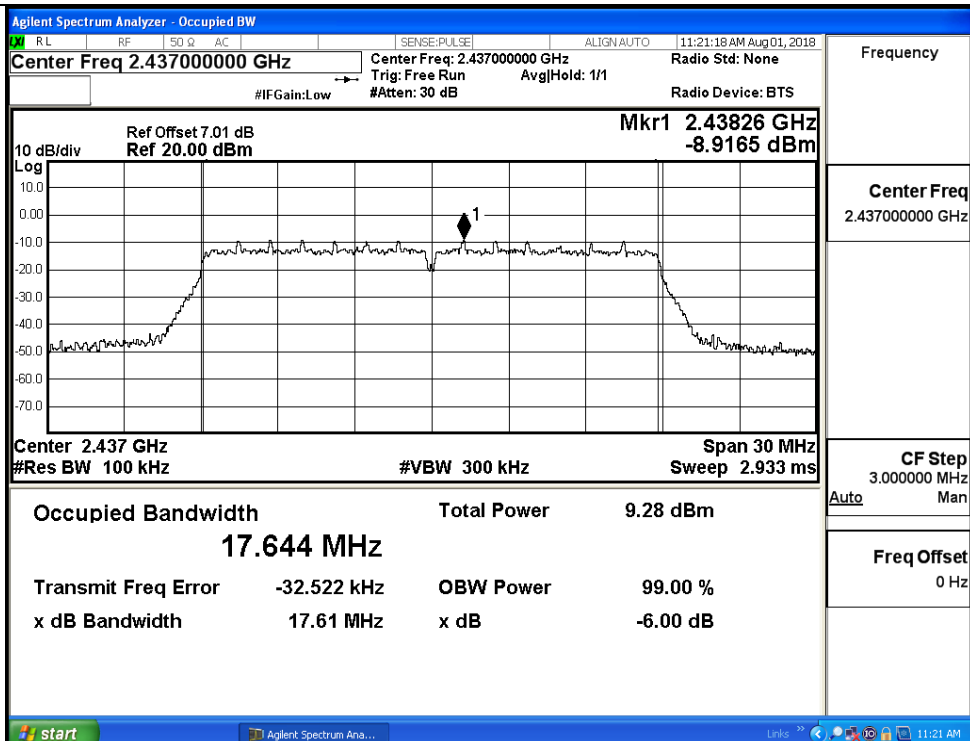
11N20SISO/LCH



Frequency

Center Freq
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3.000000 MHz
Auto ManFreq Offset
0 Hz

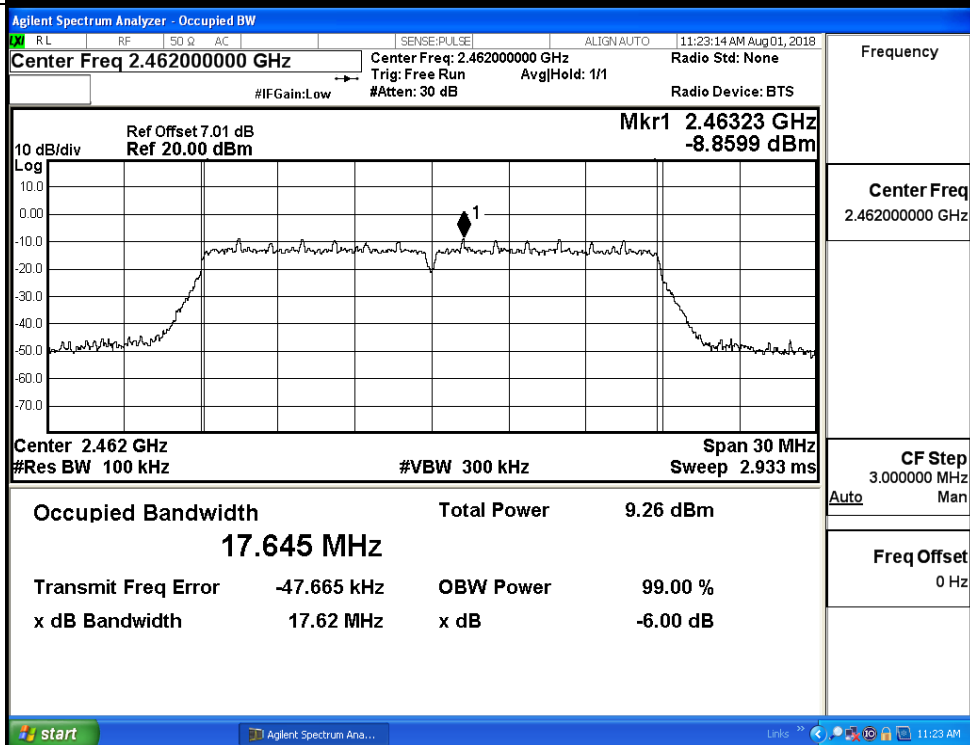
11N20SISO/MCH



Frequency

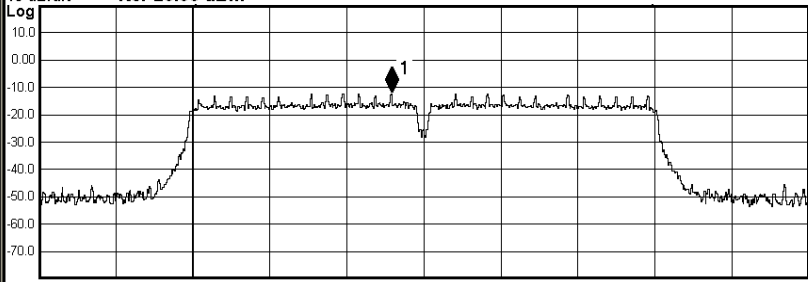
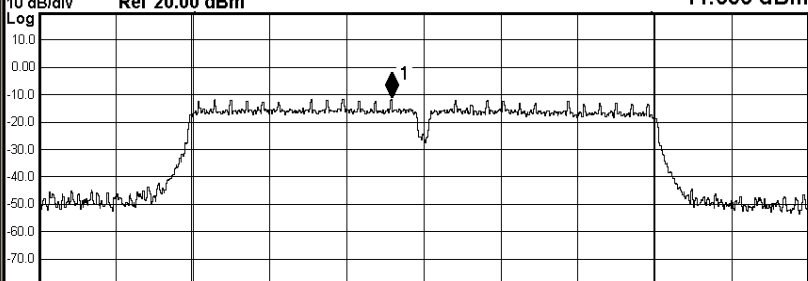
Center Freq
2.437000000 GHzCF Step
3.000000 MHz
Auto ManFreq Offset
0 Hz

11N20SISO/HCH

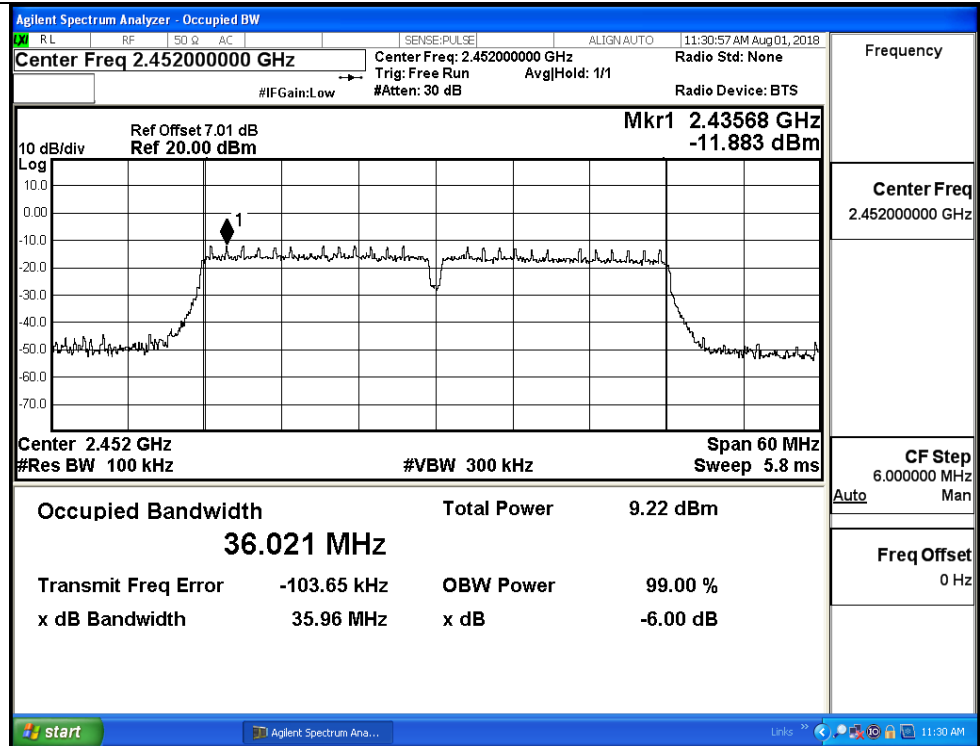


Frequency

Center Freq
2.462000000 GHzCF Step
3.000000 MHz
Auto ManFreq Offset
0 Hz

11N40SISO/LCH	Agilent Spectrum Analyzer - Occupied BW RL RF 50 Q AC SENSE:PULSE ALIGN: AUTO 11:26:09 AM Aug 01, 2018 Center Freq 2.422000000 GHz Center Freq: 2.422000000 GHz Trig: Free Run Avg Hold: 1/1 Radio Std: None #IFGain: Low #Atten: 30 dB Radio Device: BTS 10 dB/div Ref Offset 7.01 dB Ref 20.00 dBm Mkr1 2.41948 GHz -12.255 dBm  Center 2.422 GHz #Res BW 100 kHz #VBW 300 kHz Span 60 MHz Sweep 5.8 ms Occupied Bandwidth 36.003 MHz Total Power 8.98 dBm Transmit Freq Error -23.276 kHz OBW Power 99.00 % x dB Bandwidth 35.79 MHz x dB -6.00 dB start Agilent Spectrum Ana... Links 11:26 AM	Frequency Center Freq 2.422000000 GHz CF Step 6.000000 MHz Auto Man Freq Offset 0 Hz
11N40SISO/MCH	Agilent Spectrum Analyzer - Occupied BW RL RF 50 Q AC SENSE:PULSE ALIGN: AUTO 11:28:58 AM Aug 01, 2018 Center Freq 2.437000000 GHz Center Freq: 2.437000000 GHz Trig: Free Run Avg Hold: 1/1 Radio Std: None #IFGain: Low #Atten: 30 dB Radio Device: BTS 10 dB/div Ref Offset 7.01 dB Ref 20.00 dBm Mkr1 2.43448 GHz -11.656 dBm  Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 60 MHz Sweep 5.8 ms Occupied Bandwidth 36.012 MHz Total Power 9.58 dBm Transmit Freq Error -80.750 kHz OBW Power 99.00 % x dB Bandwidth 35.97 MHz x dB -6.00 dB start Agilent Spectrum Ana... Links 11:28 AM	Frequency Center Freq 2.437000000 GHz CF Step 6.000000 MHz Auto Man Freq Offset 0 Hz

11N40SISO/HCH

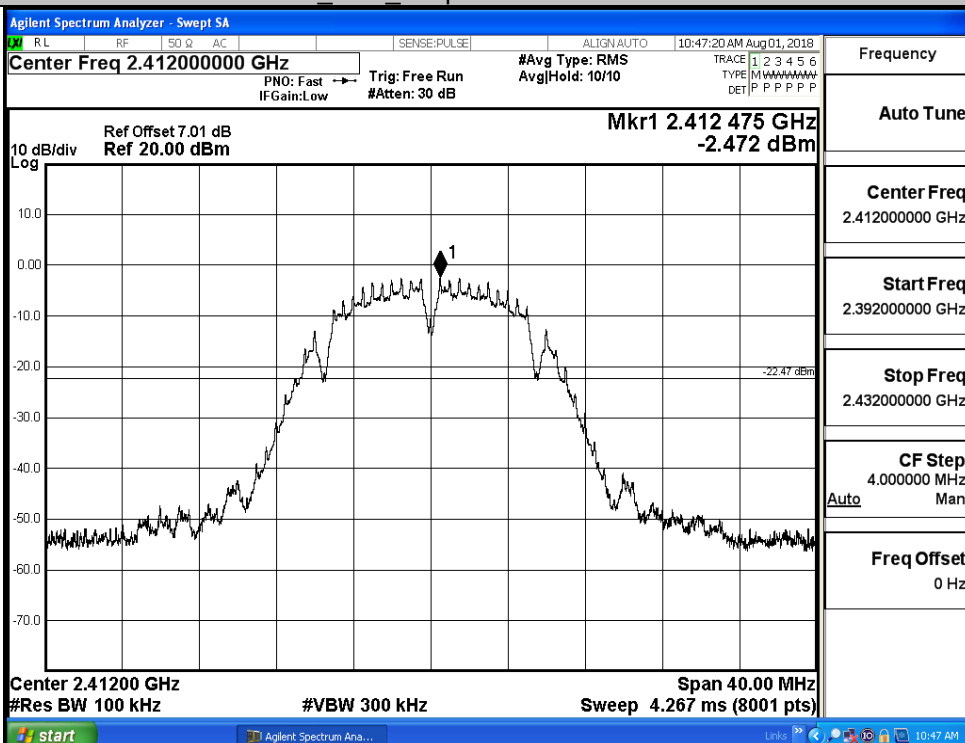


A.5 RF Conducted Spurious Emissions

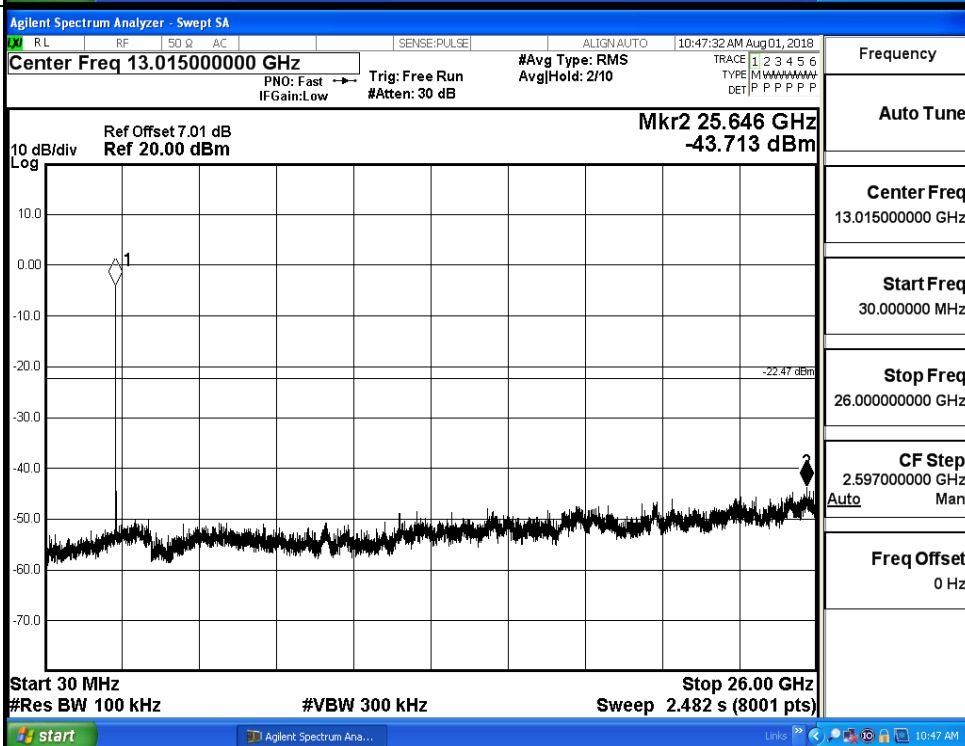
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-2.472	-43.713	-22.472	PASS
	MCH	-1.385	-44.812	-22.267	PASS
	HCH	-1.283	-43.575	-21.283	PASS
11G	LCH	-9.241	-44.960	-29.241	PASS
	MCH	-9.009	-42.857	-29.009	PASS
	HCH	-9.042	-44.607	-29.042	PASS
11N20 SISO	LCH	-10.363	-44.560	-30.363	PASS
	MCH	-8.841	-44.281	-28.841	PASS
	HCH	-9.263	-44.501	-29.263	PASS
11N40 SISO	LCH	-12.235	-45.260	-32.235	PASS
	MCH	-11.705	-44.237	-31.705	PASS
	HCH	-11.911	-45.093	-31.911	PASS

11B LCH Graphs

Pref/11B/LCH

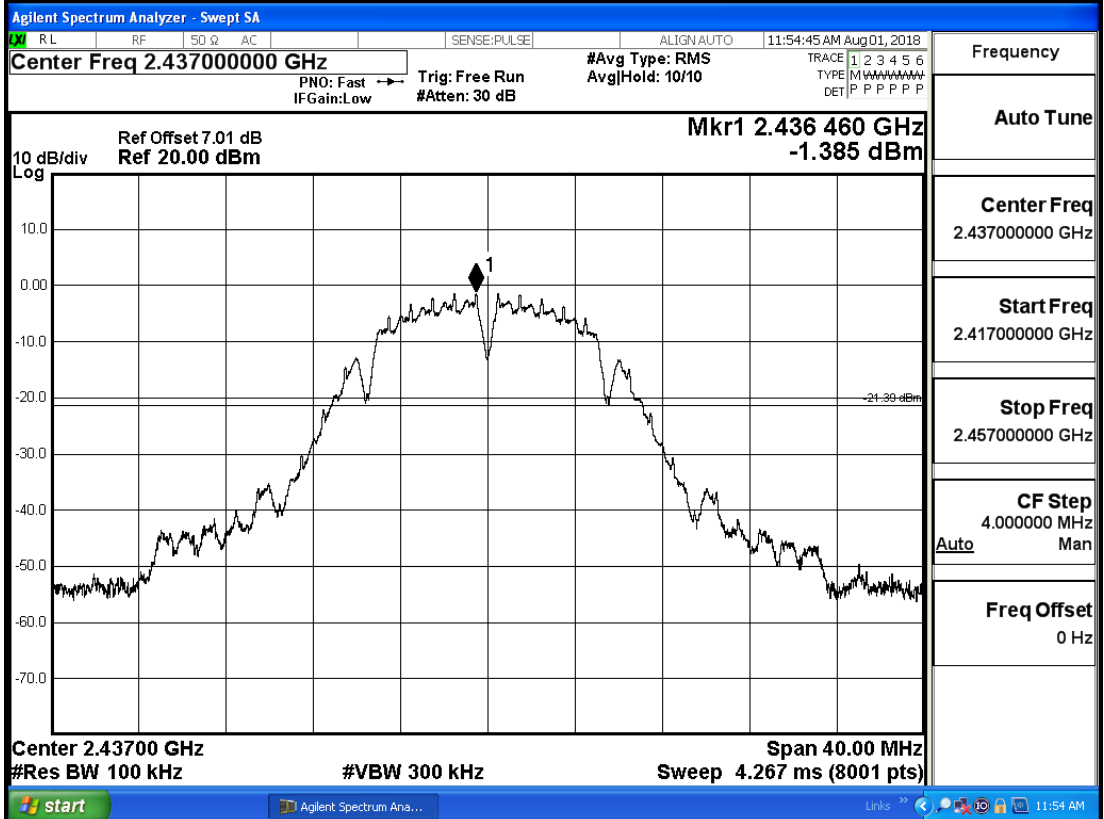


Puw/11B/LCH

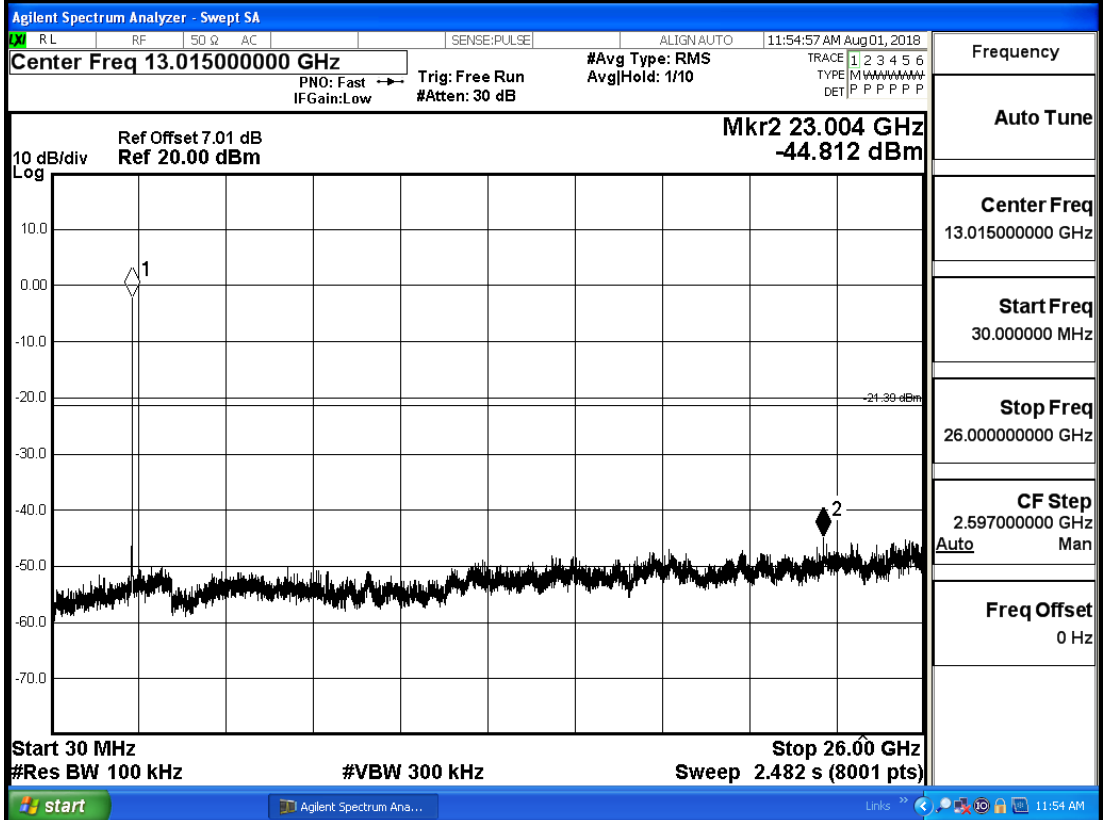


11B MCH_Graphs

Pref/11B/MCH

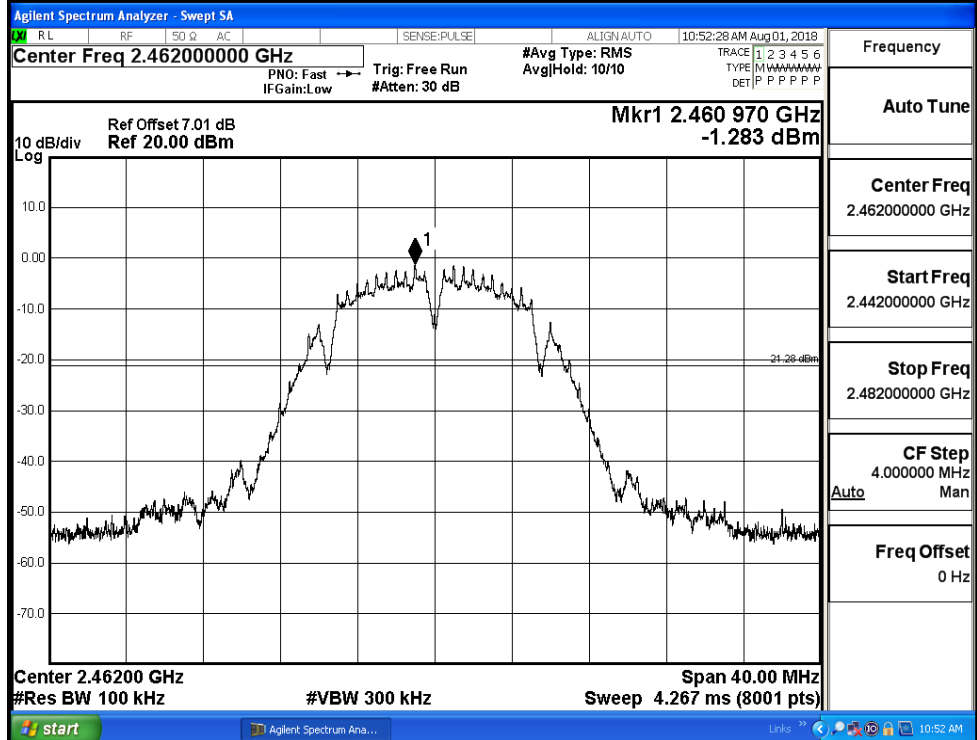


Puw/11B/MCH

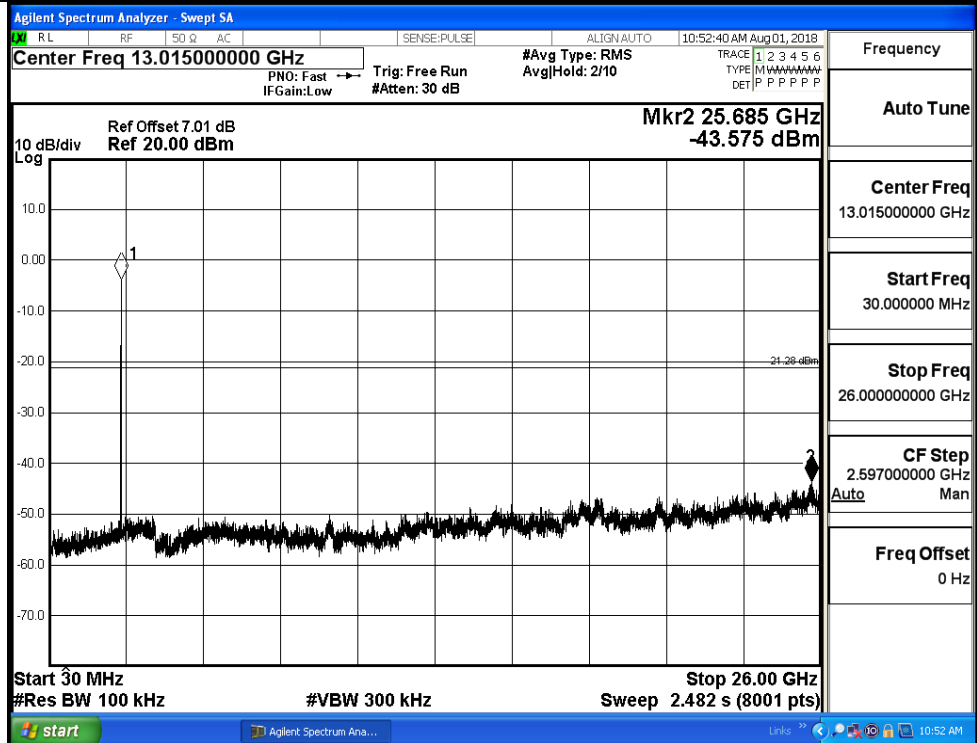


11B HCH Graphs

Pref/11B/HCH

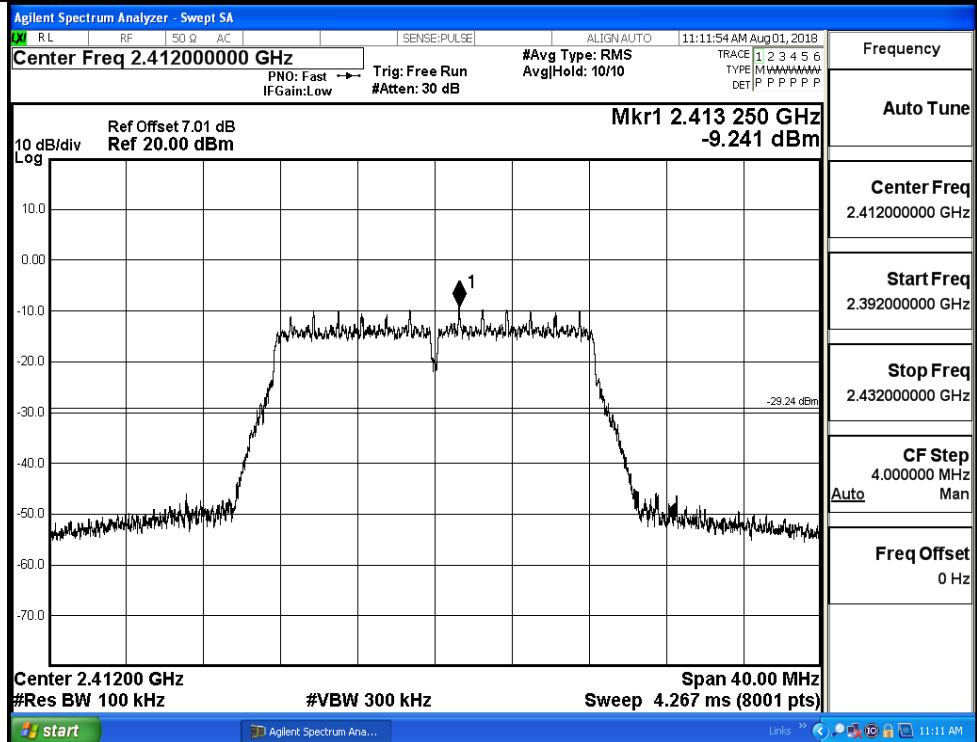


Puw/11B/HCH

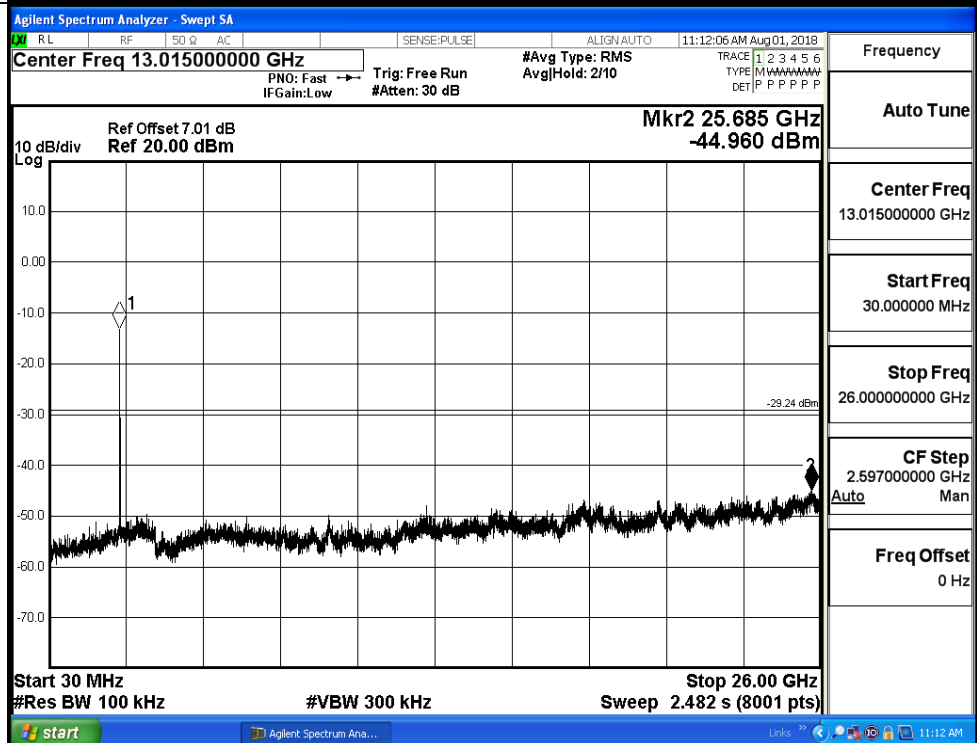


11G LCH Graphs

Pref/11G/LCH

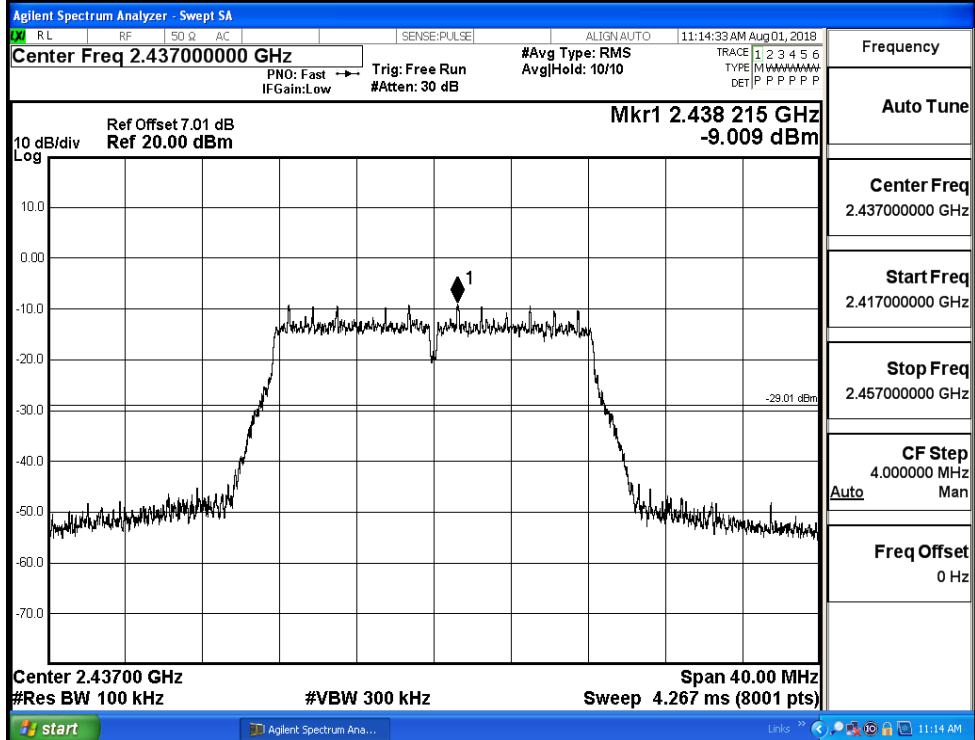


Puw/11G/LCH

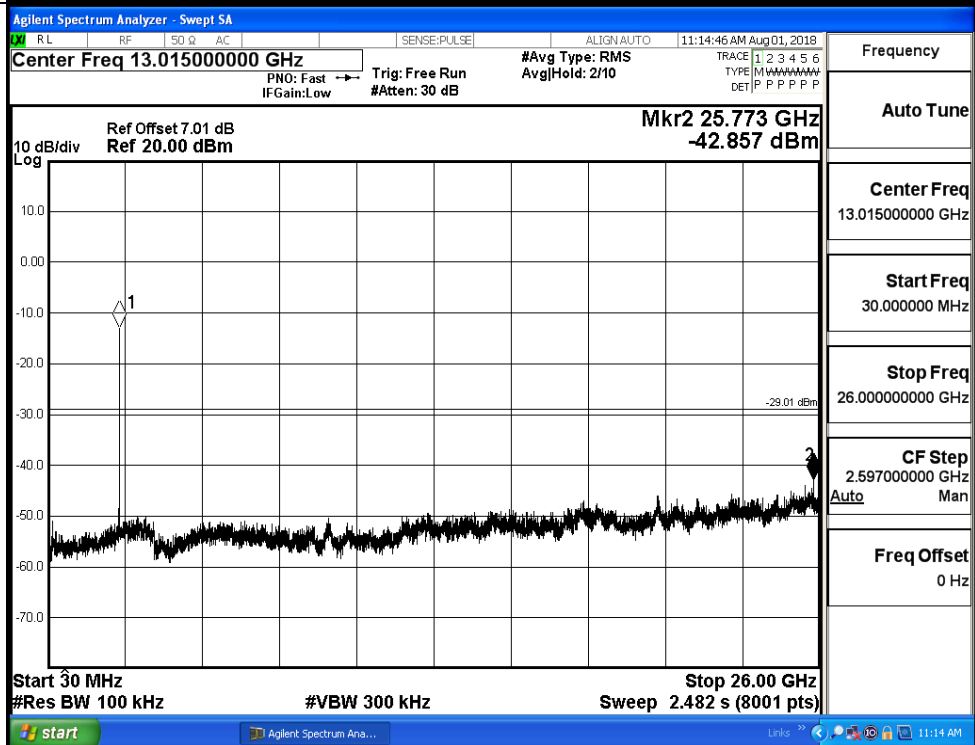


11G MCH Graphs

Pref/11G/MCH

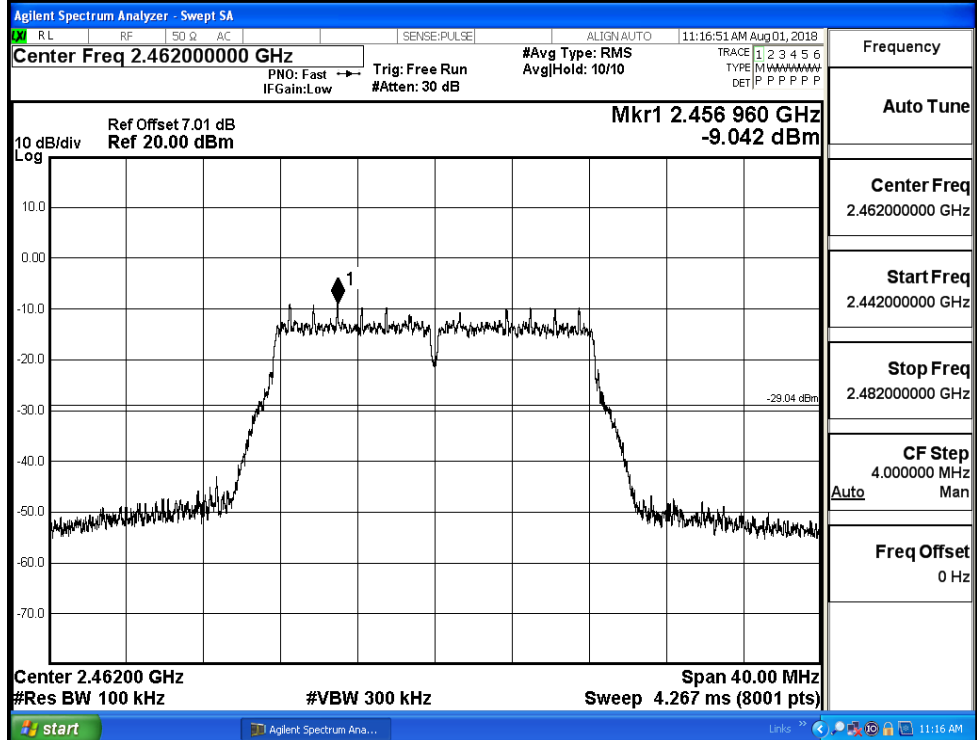


Puw/11G/MCH

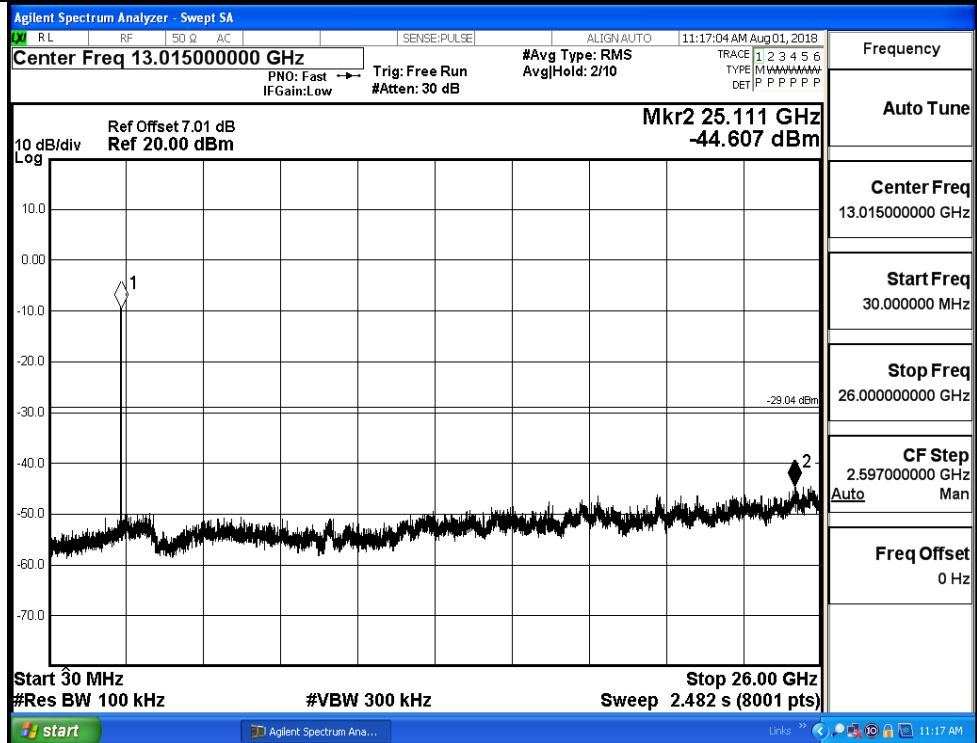


11G HCH Graphs

Pref/11G/HCH

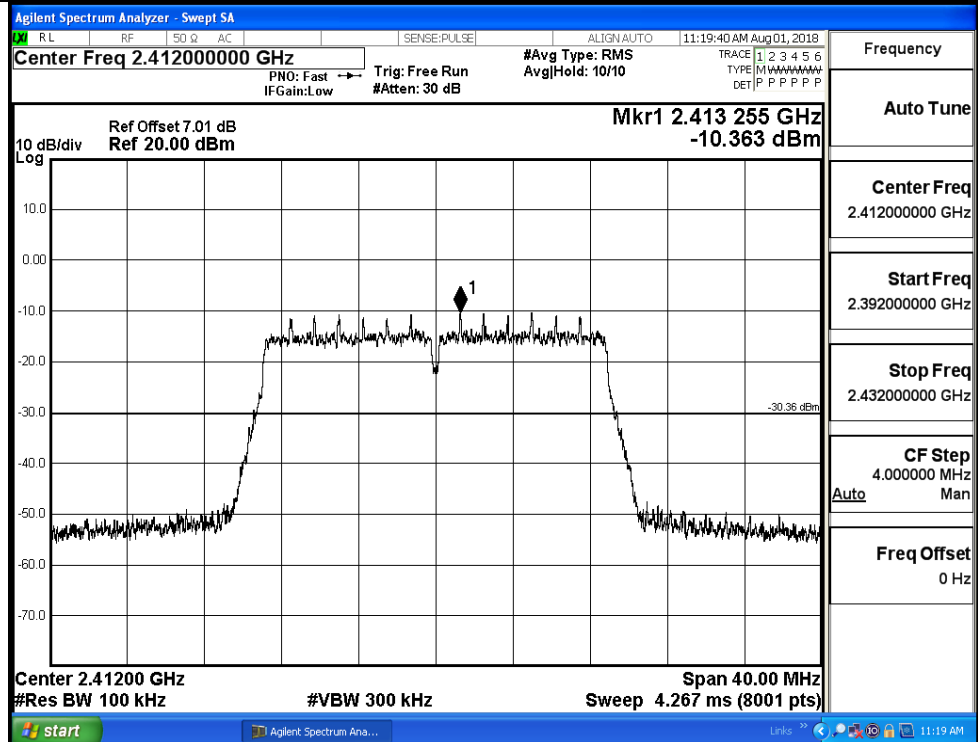


Puw/11G/HCH

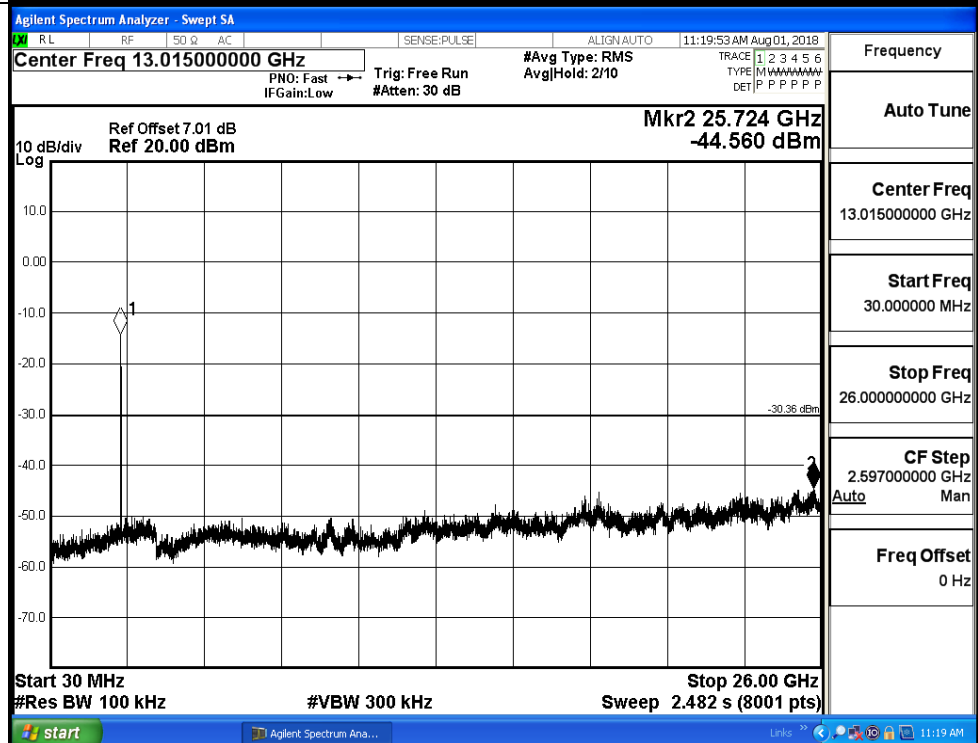


11N20SISO LCH Graphs

Pref/11N20SIS
O/LCH

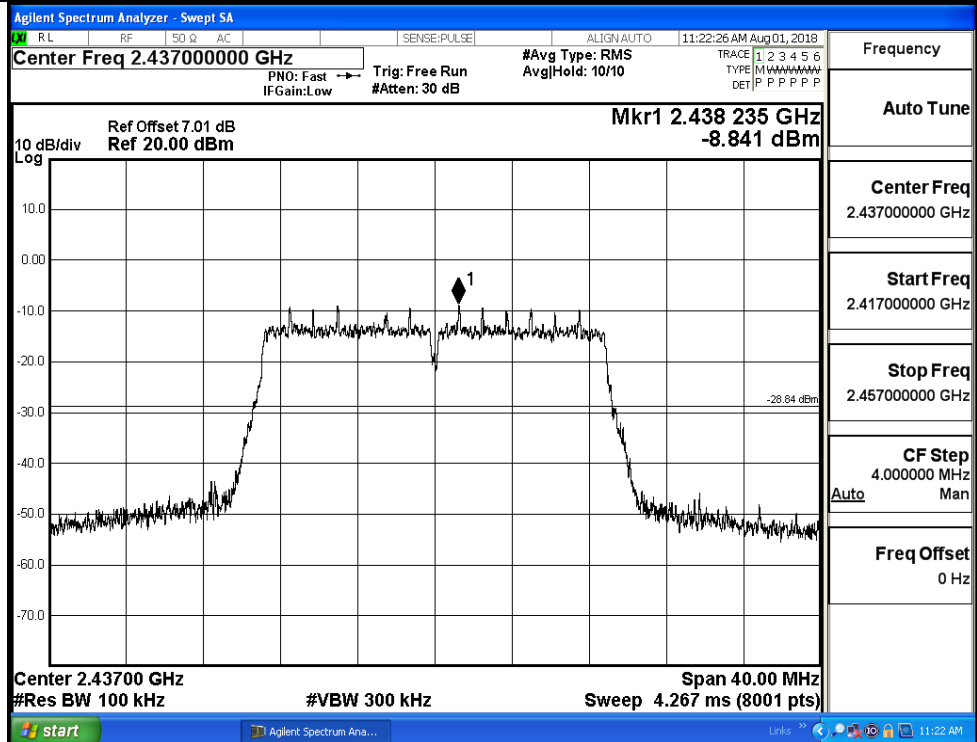


Puw/11N20
SISO/LCH

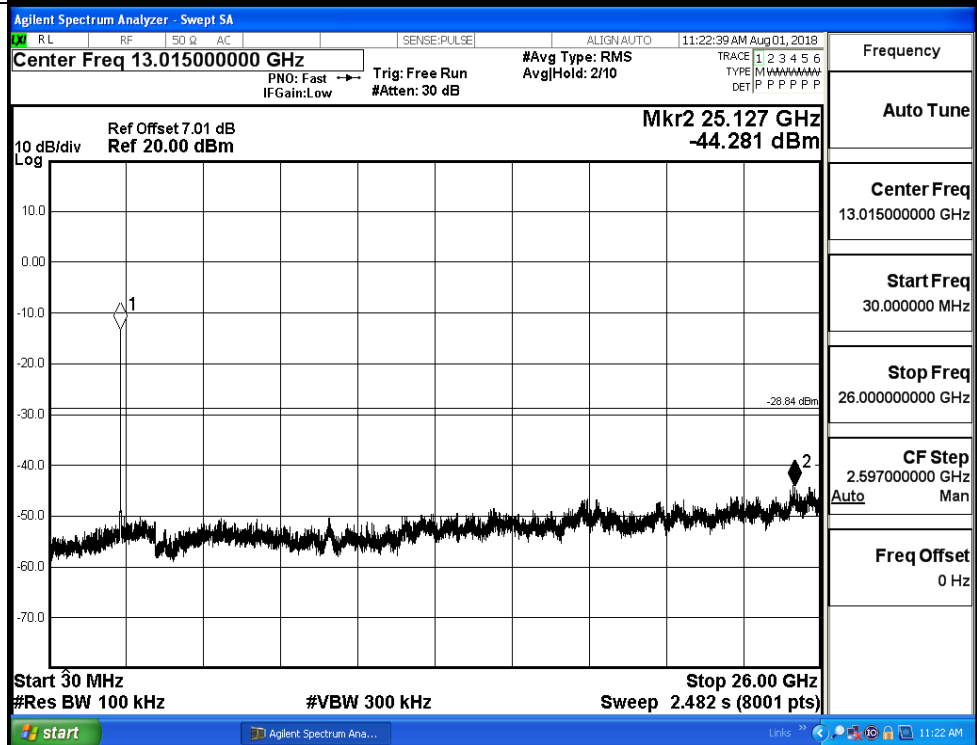


11N20SISO_MCH_Graphs

Pref/11N20
SISO/MCH

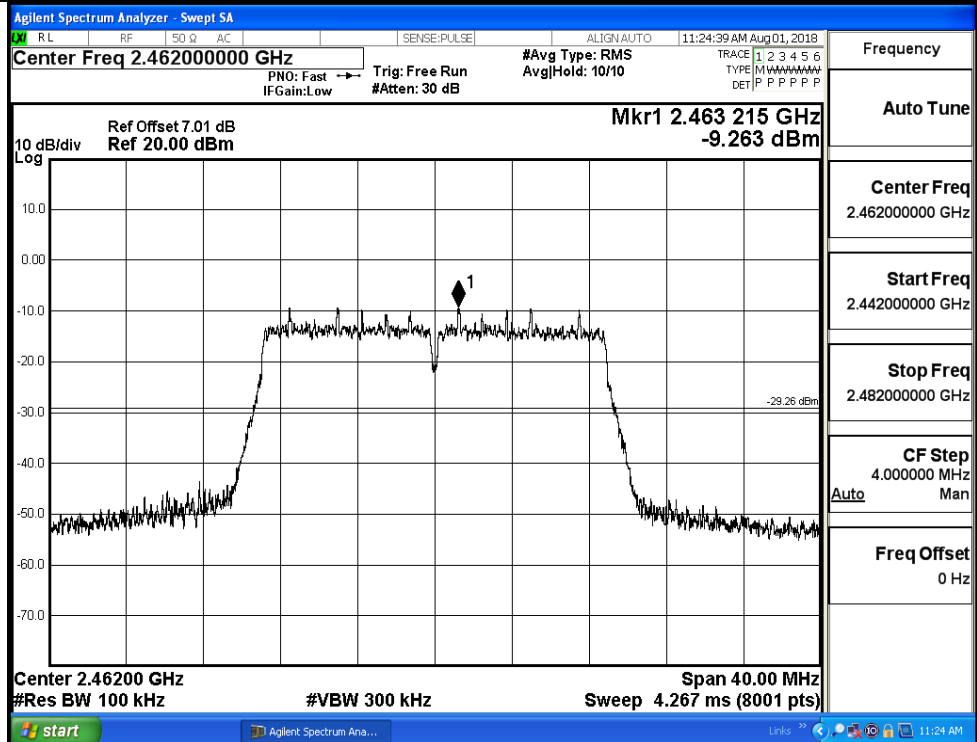


Puw/11N20
SISO/MCH

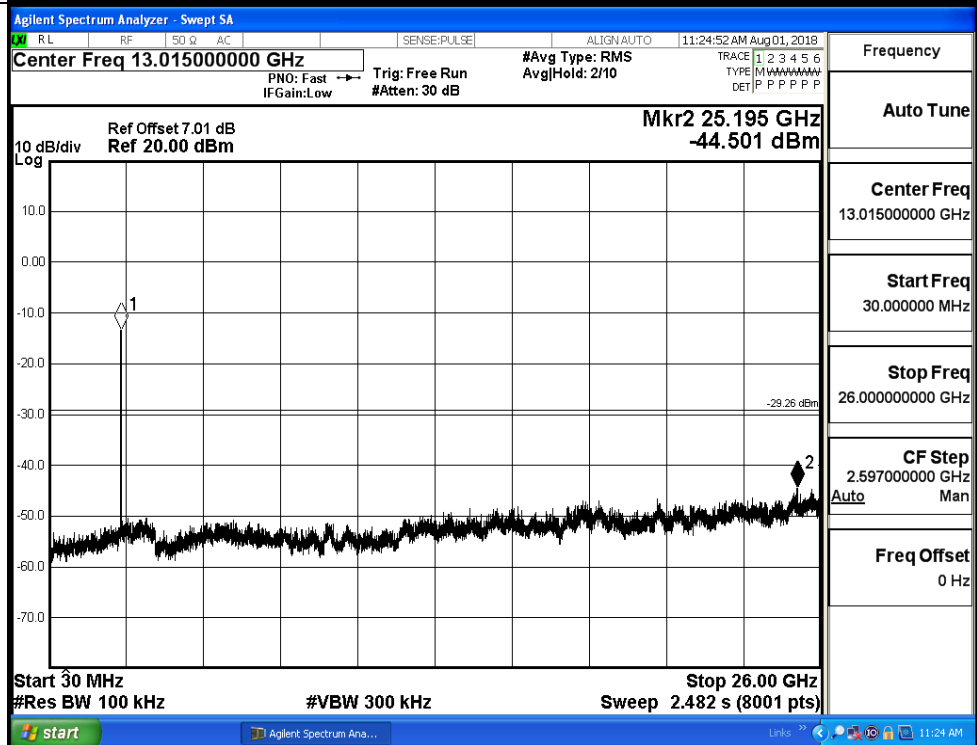


11N20SISO HCH Graphs

Pref/11N20
SISO/HCH

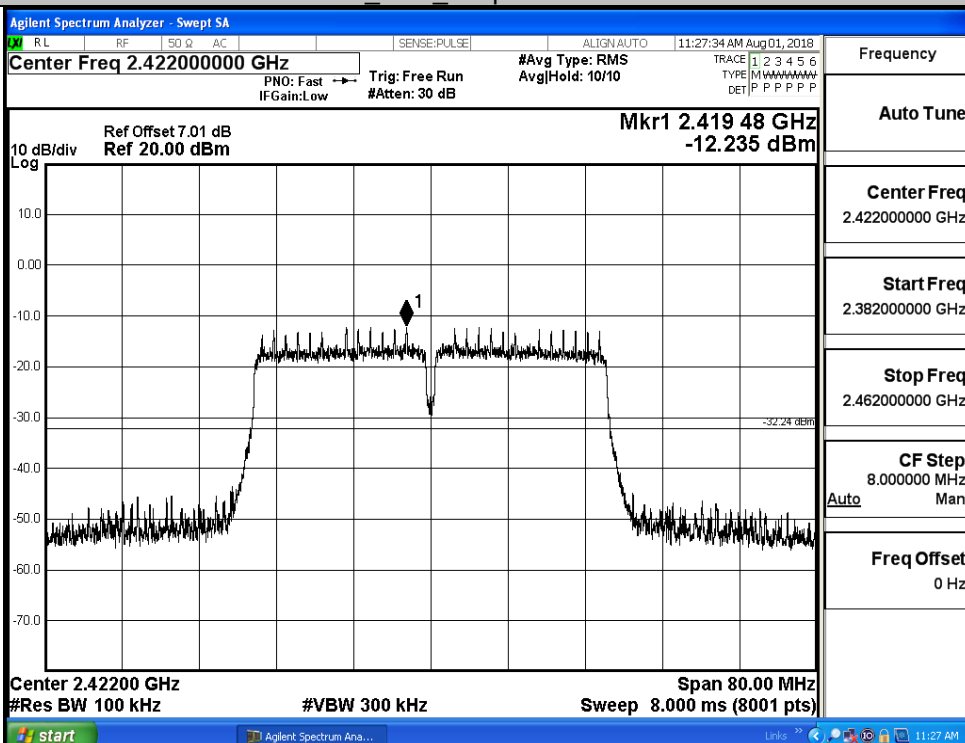


Puw/11N20
SISO/HCH

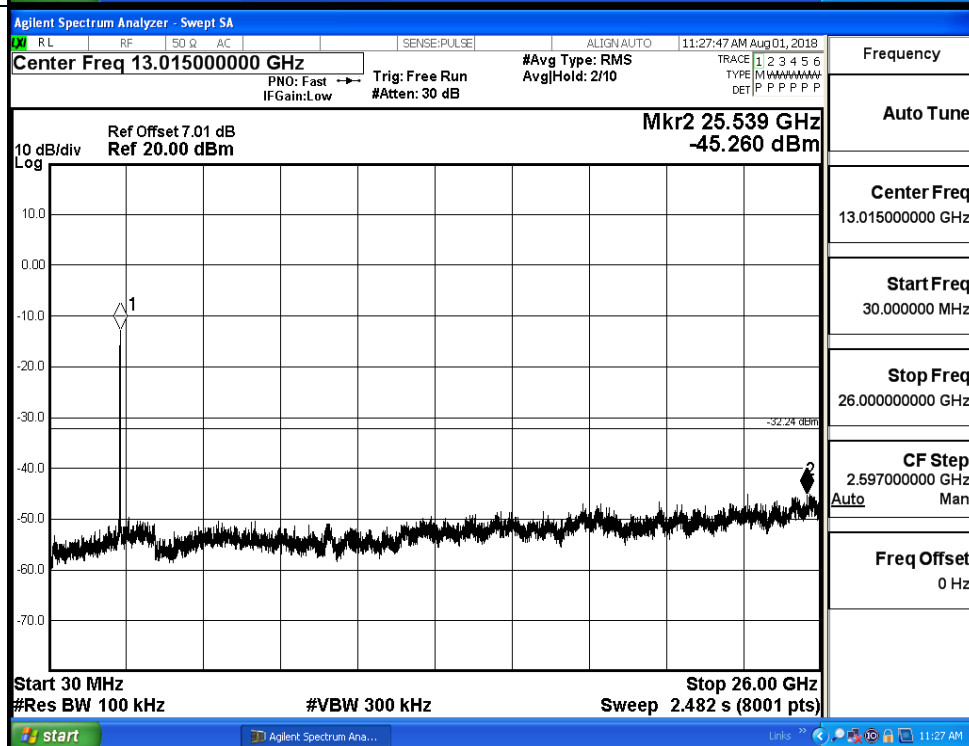


11N40SISO LCH Graphs

Pref/11N40
SISO/LCH

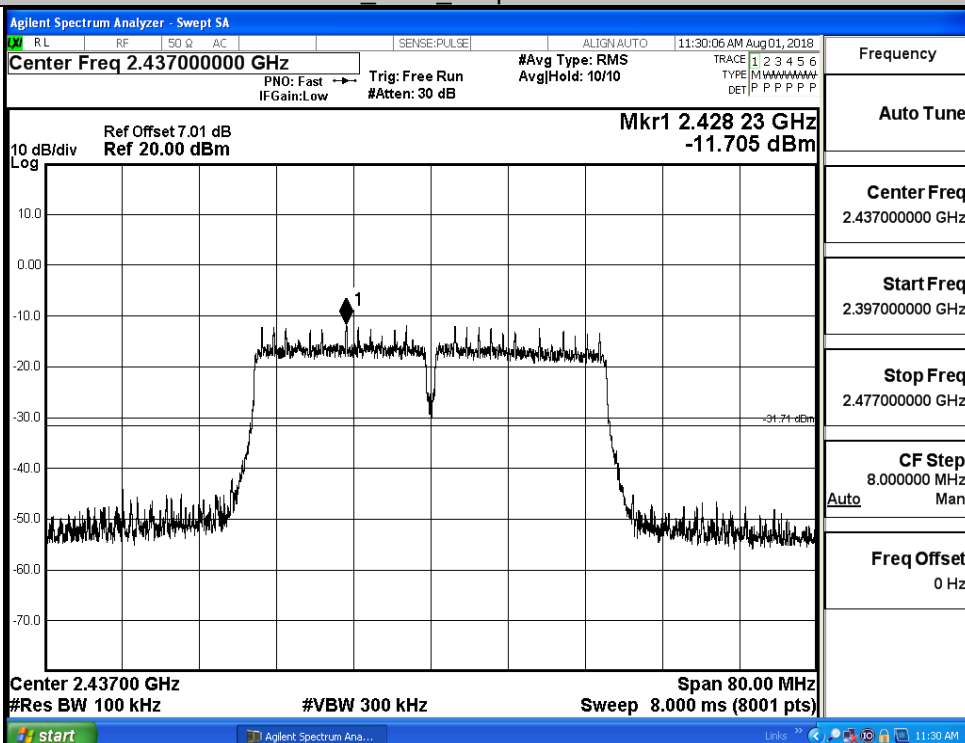


Puw/11N40
SISO/LCH

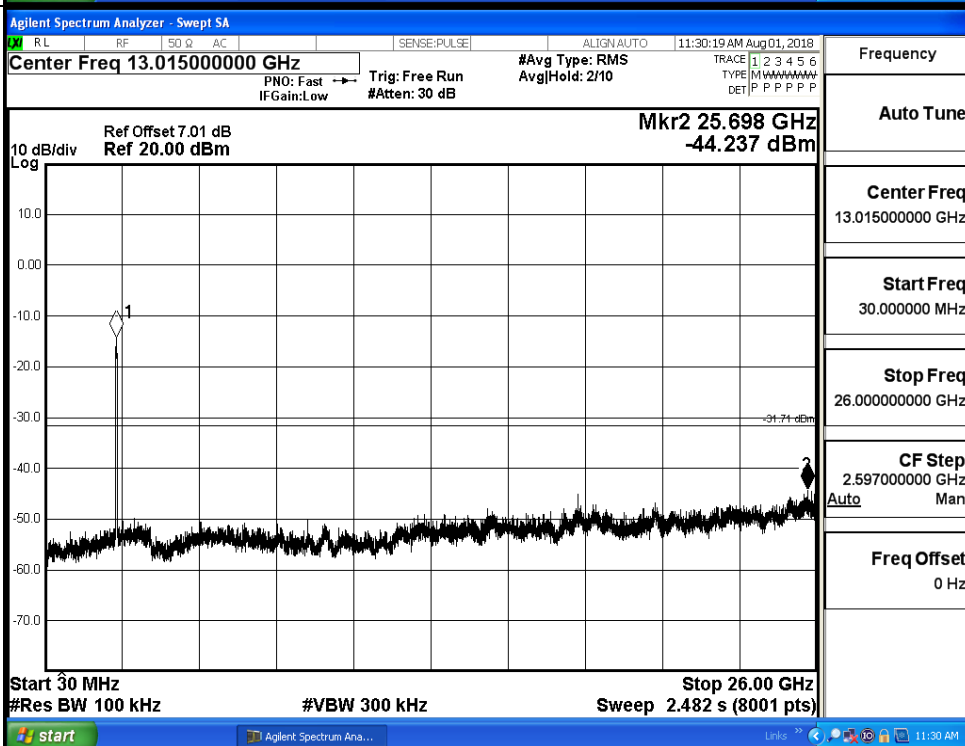


11N40SISO_MCH_Graphs

Pref/11N40
SISO/MCH

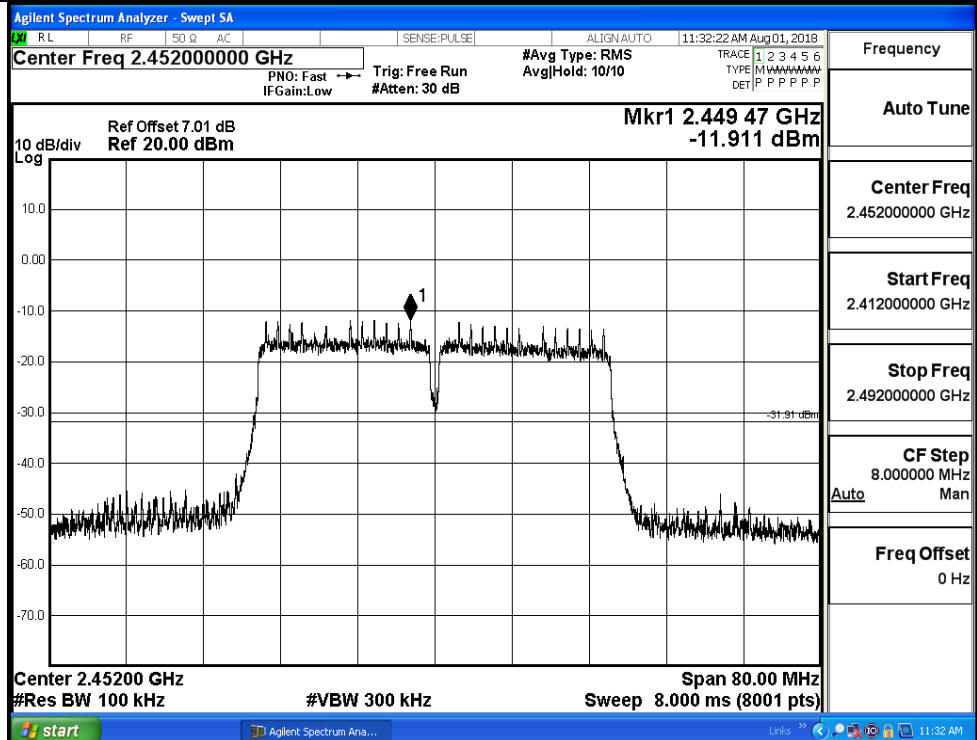


Puw/11N40
SISO/MCH

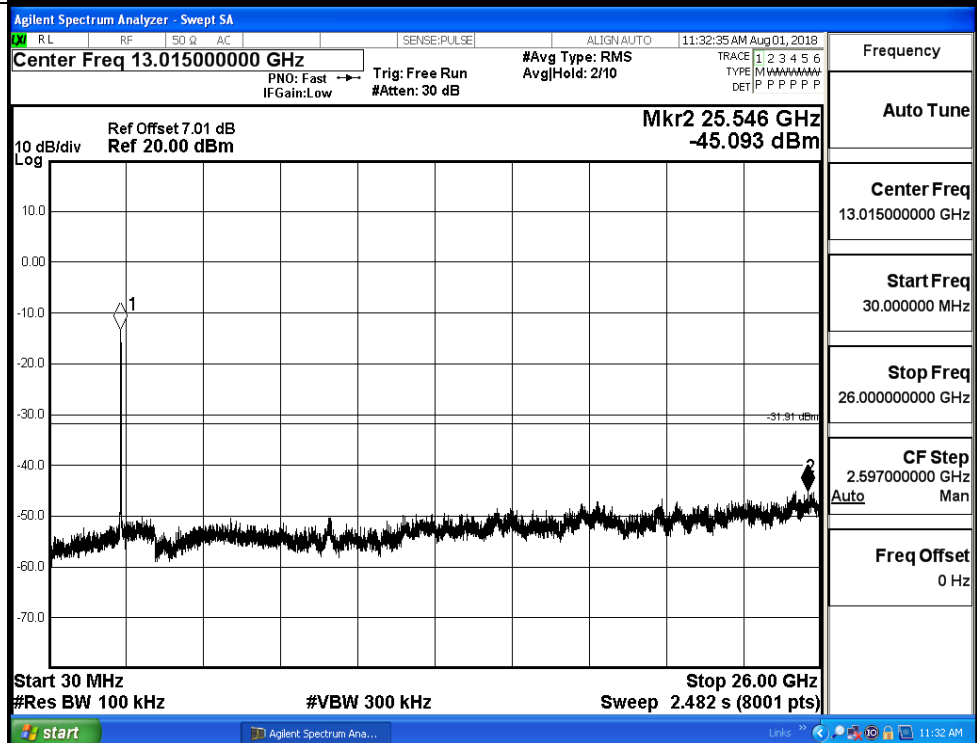


11N40SISO HCH Graphs

Pref/11N40
SISO/HCH



Puw/11N40
SISO/HCH

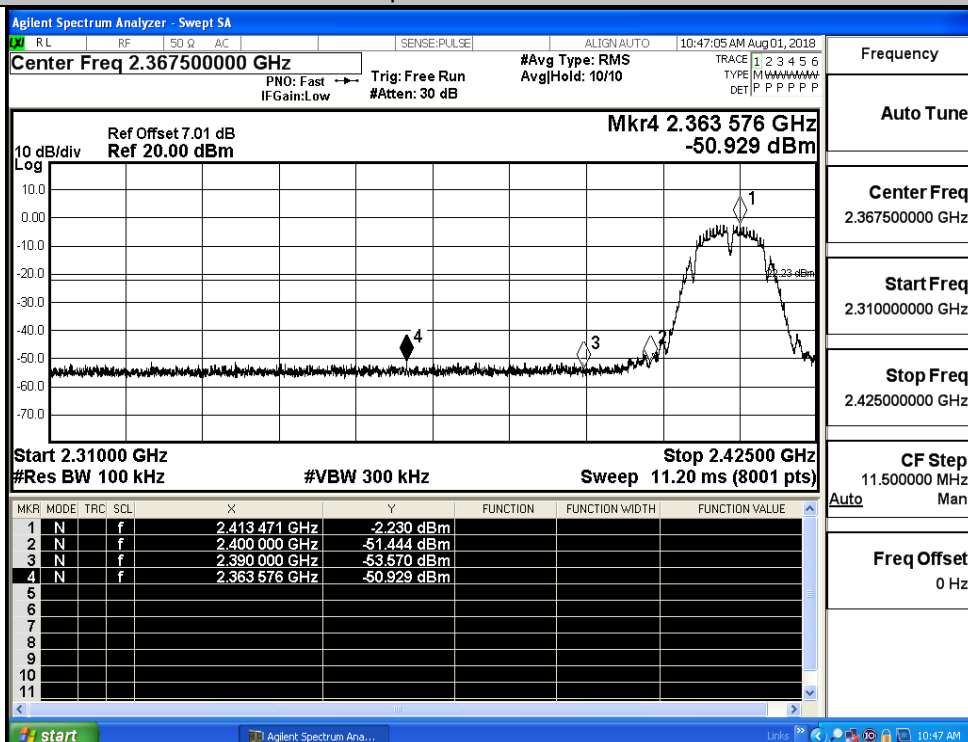


A.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-2.230	-50.929	-22.23	PASS
	HCH	-1.262	-51.353	-21.26	PASS
11G	LCH	-9.006	-51.084	-29.01	PASS
	HCH	-8.984	-50.647	-28.98	PASS
11N20SISO	LCH	-10.600	-51.120	-30.6	PASS
	HCH	-9.175	-50.746	-29.18	PASS
11N40SISO	LCH	-12.091	-47.878	-32.09	PASS
	HCH	-11.742	-49.002	-31.74	PASS

Test Graphs

11B/LCH

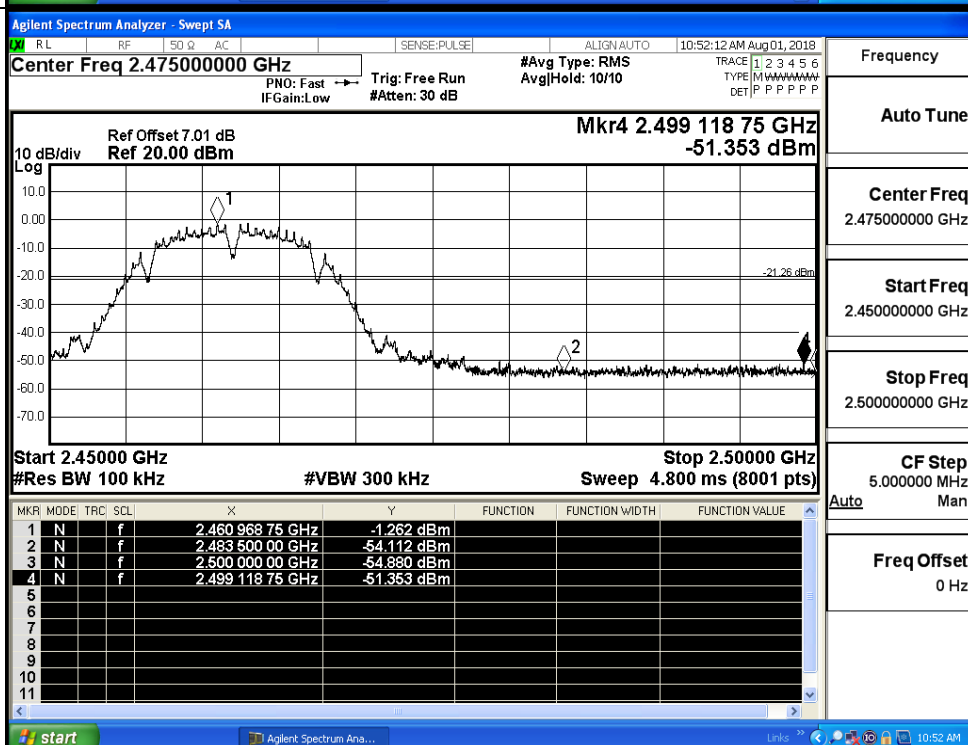


Frequency

Auto Tune

Center Freq
2.367500000 GHzStart Freq
2.310000000 GHzStop Freq
2.425000000 GHzCF Step
11.500000 MHz
ManFreq Offset
0 Hz

11B/HCH

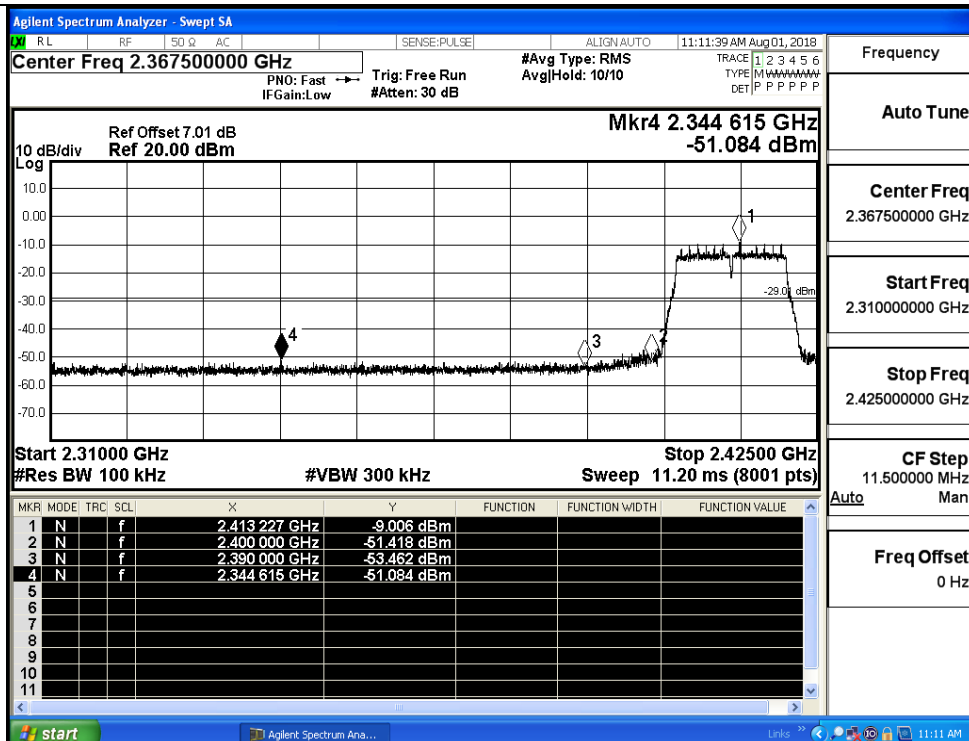


Frequency

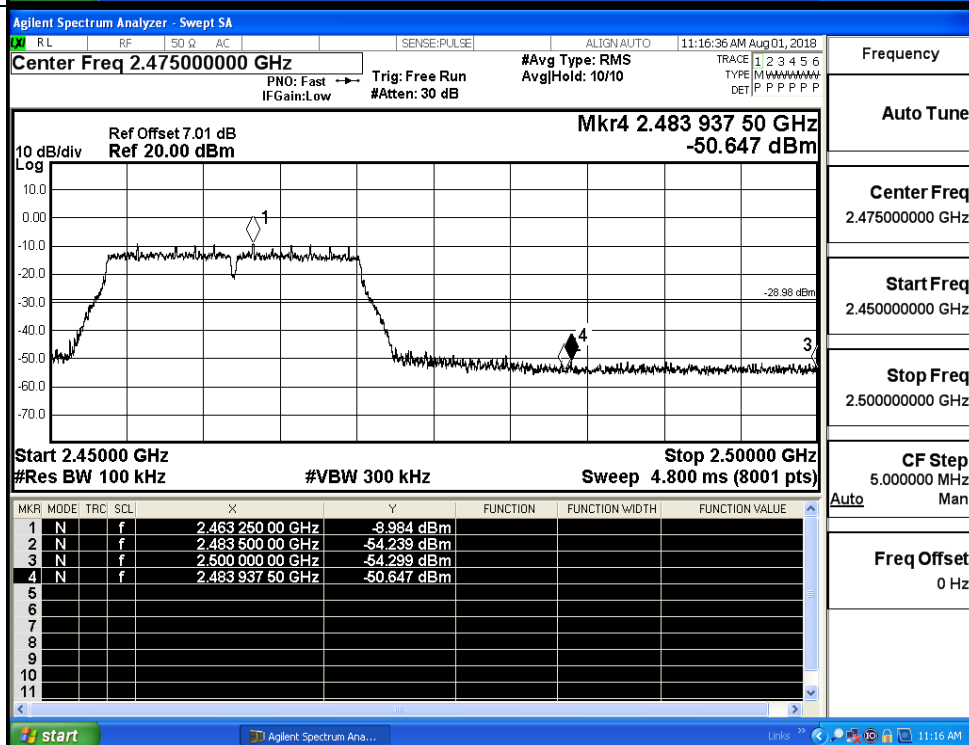
Auto Tune

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

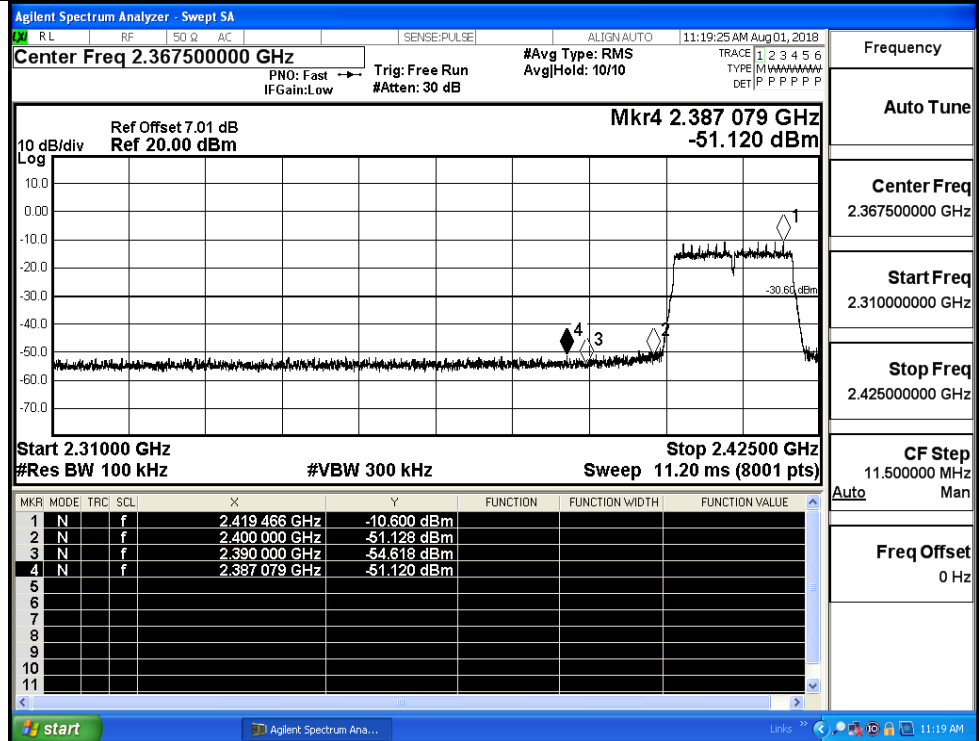
11G/LCH



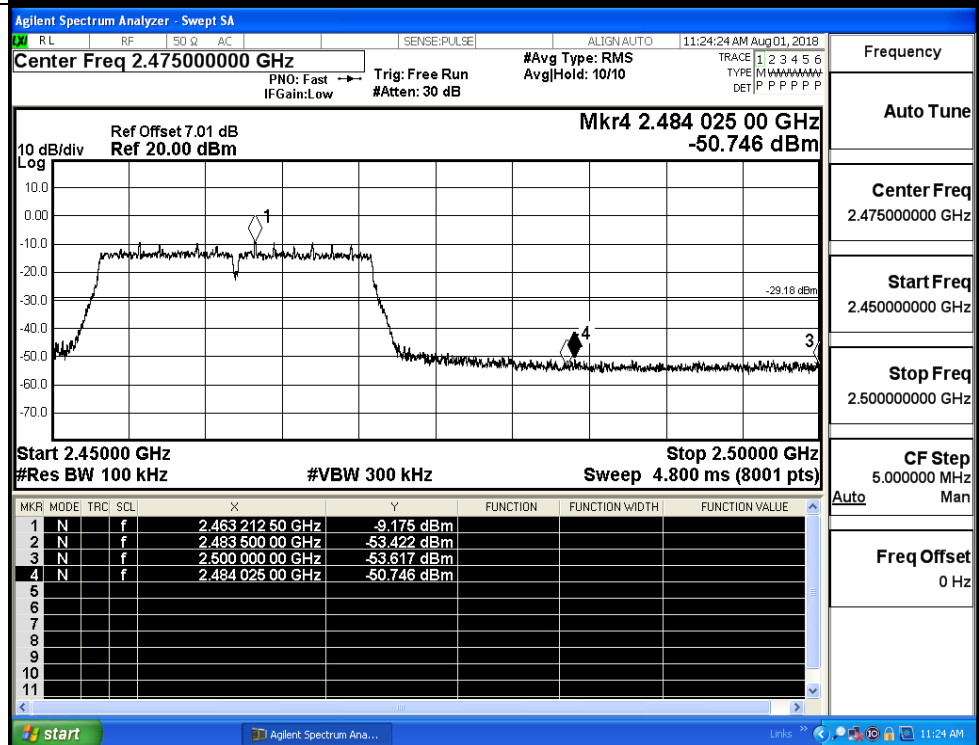
11G/HCH



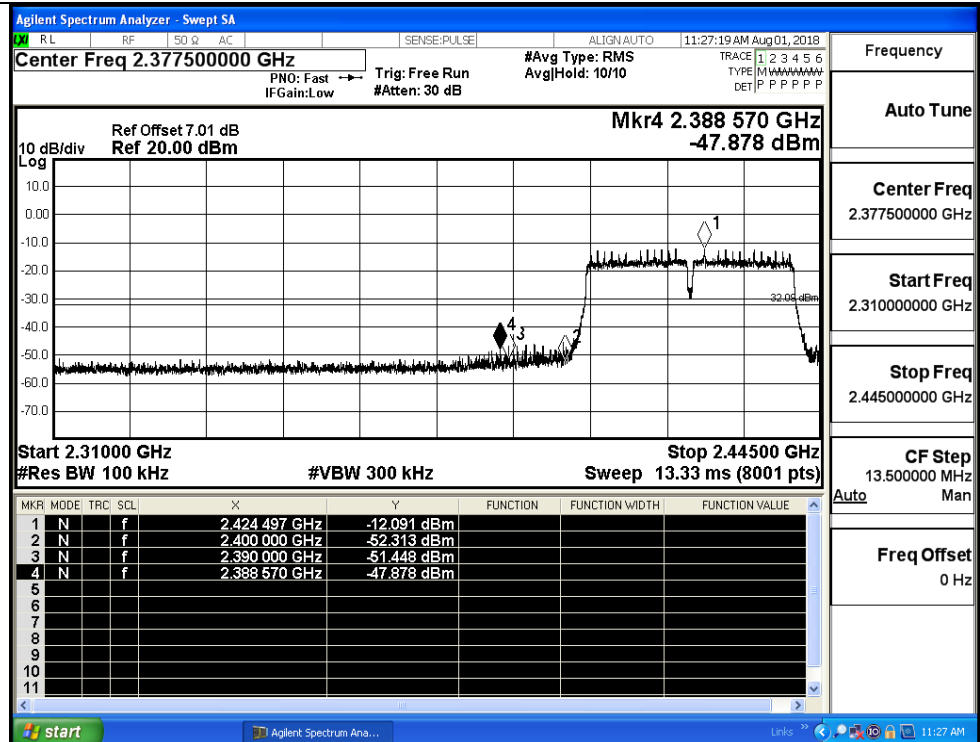
11N20SISO/LCH



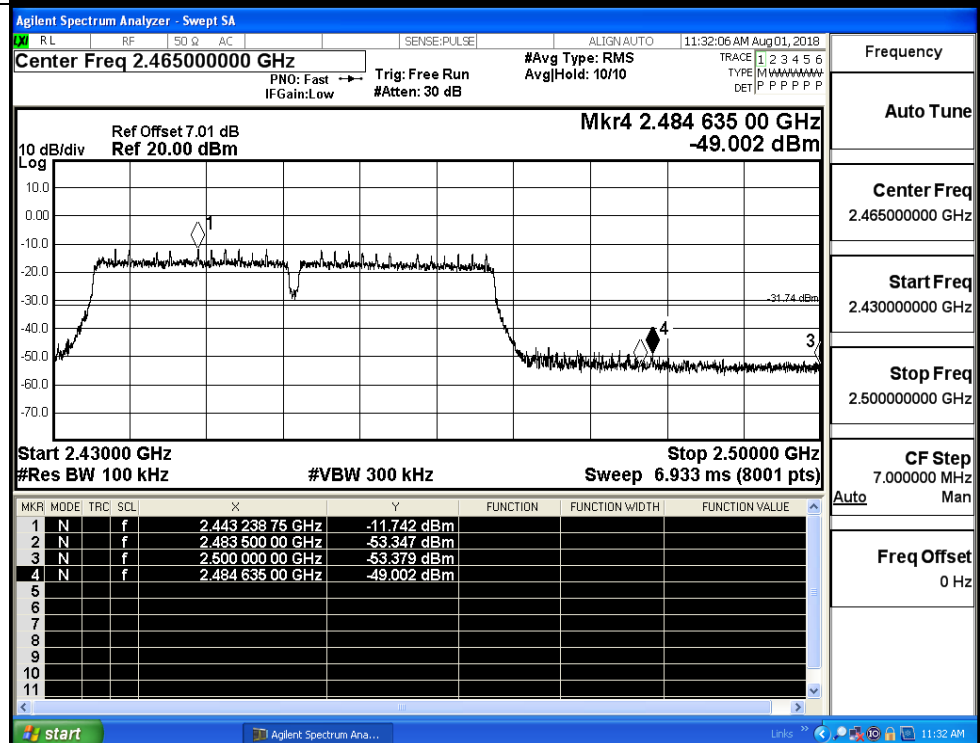
11N20SISO/HCH



11N40SISO/LCH



11N40SISO/HCH

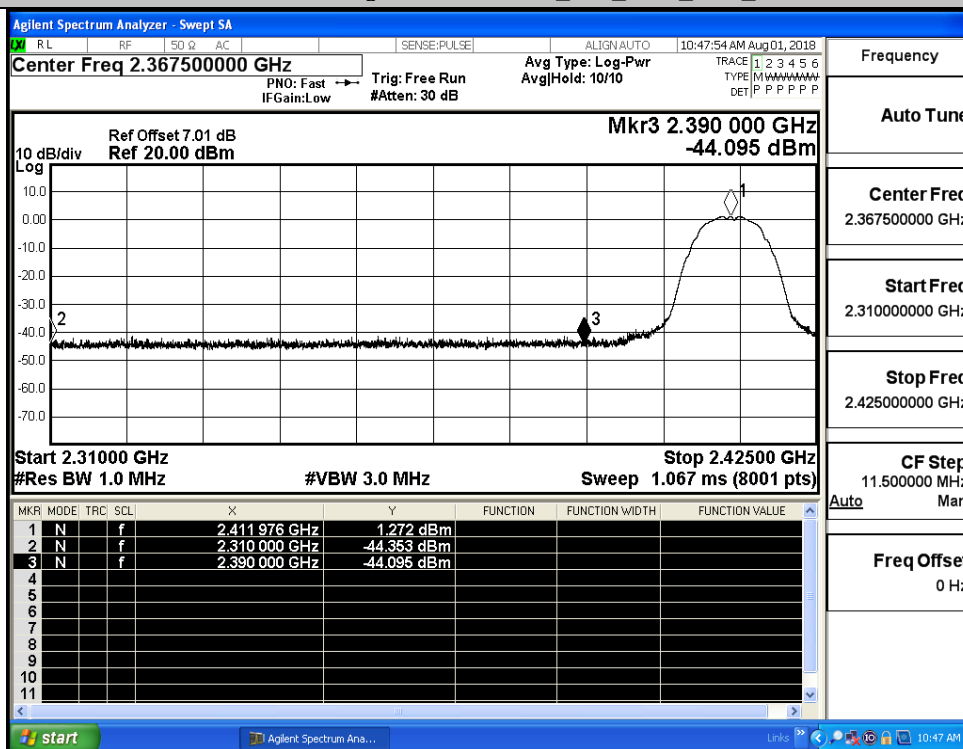


A.7 Restrict-band band-edge measurements

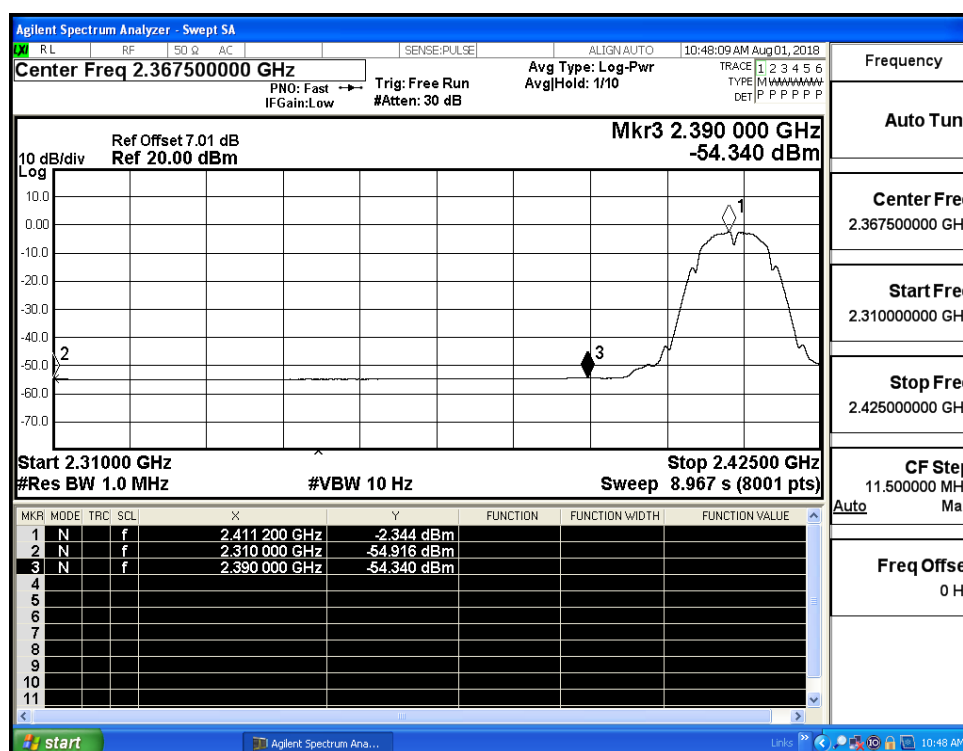
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
11B	2412	Ant1	2310.0	-44.35	3.0	0	56.92	PEAK	74	PASS
	2412	Ant1	2310.0	-54.92	3.0	0	46.35	AV	54	PASS
	2412	Ant1	2390.0	-44.10	3.0	0	57.17	PEAK	74	PASS
	2412	Ant1	2390.0	-54.34	3.0	0	46.93	AV	54	PASS
	2462	Ant1	2483.5	-43.88	3.0	0	57.39	PEAK	74	PASS
	2462	Ant1	2483.5	-54.36	3.0	0	46.91	AV	54	PASS
	2462	Ant1	2500.0	-43.69	3.0	0	57.58	PEAK	74	PASS
	2462	Ant1	2500.0	-54.23	3.0	0	47.04	AV	54	PASS
11G	2412	Ant1	2310.0	-43.21	3.0	0	58.06	PEAK	74	PASS
	2412	Ant1	2310.0	-54.92	3.0	0	46.35	AV	54	PASS
	2412	Ant1	2390.0	-44.40	3.0	0	56.87	PEAK	74	PASS
	2412	Ant1	2390.0	-54.21	3.0	0	47.06	AV	54	PASS
	2462	Ant1	2483.5	-43.88	3.0	0	57.39	PEAK	74	PASS
	2462	Ant1	2483.5	-54.08	3.0	0	47.19	AV	54	PASS
	2462	Ant1	2500.0	-43.36	3.0	0	57.91	PEAK	74	PASS
	2462	Ant1	2500.0	-54.19	3.0	0	47.08	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-44.31	3.0	0	53.95	PEAK	74	PASS
	2412	Ant1	2310.0	-54.95	3.0	0	43.31	AV	54	PASS
	2412	Ant1	2390.0	-44.02	3.0	0	54.24	PEAK	74	PASS
	2412	Ant1	2390.0	-54.21	3.0	0	44.05	AV	54	PASS
	2462	Ant1	2483.5	-43.15	3.0	0	55.11	PEAK	74	PASS
	2462	Ant1	2483.5	-53.89	3.0	0	44.37	AV	54	PASS
	2462	Ant1	2500.0	-43.53	3.0	0	54.73	PEAK	74	PASS
	2462	Ant1	2500.0	-54.16	3.0	0	44.10	AV	54	PASS
11N40 SISO	2422	Ant1	2310.0	-44.13	3.0	0	54.13	PEAK	74	PASS
	2422	Ant1	2310.0	-54.94	3.0	0	43.32	AV	54	PASS

	2422	Ant1	2390.0	-35.23	3.0	0	63.03	PEAK	74	PASS
	2422	Ant1	2390.0	-53.40	3.0	0	44.86	AV	54	PASS
	2452	Ant1	2483.5	-37.57	3.0	0	60.69	PEAK	74	PASS
	2452	Ant1	2483.5	-53.74	3.0	0	44.52	AV	54	PASS
	2452	Ant1	2500.0	-42.02	3.0	0	56.24	PEAK	74	PASS
	2452	Ant1	2500.0	-54.19	3.0	0	44.07	AV	54	PASS

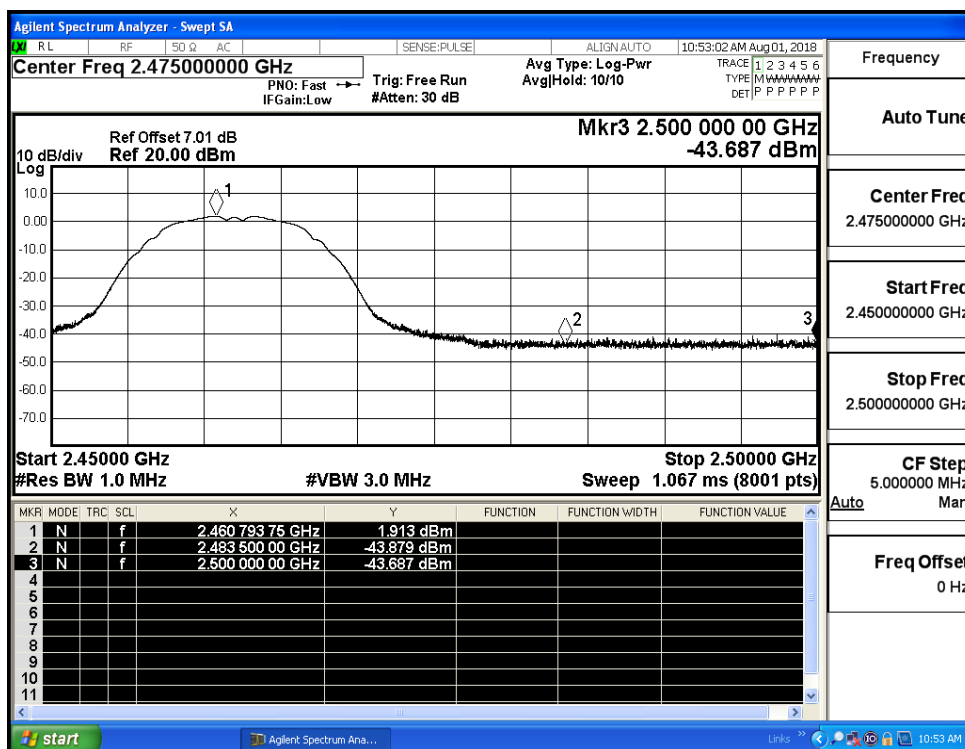
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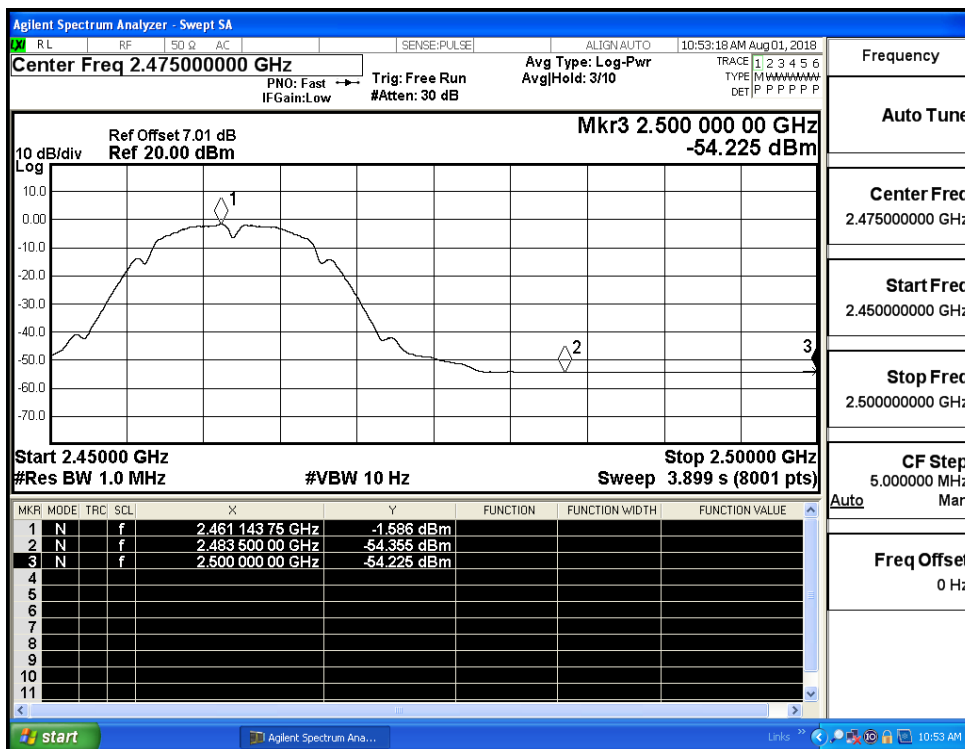
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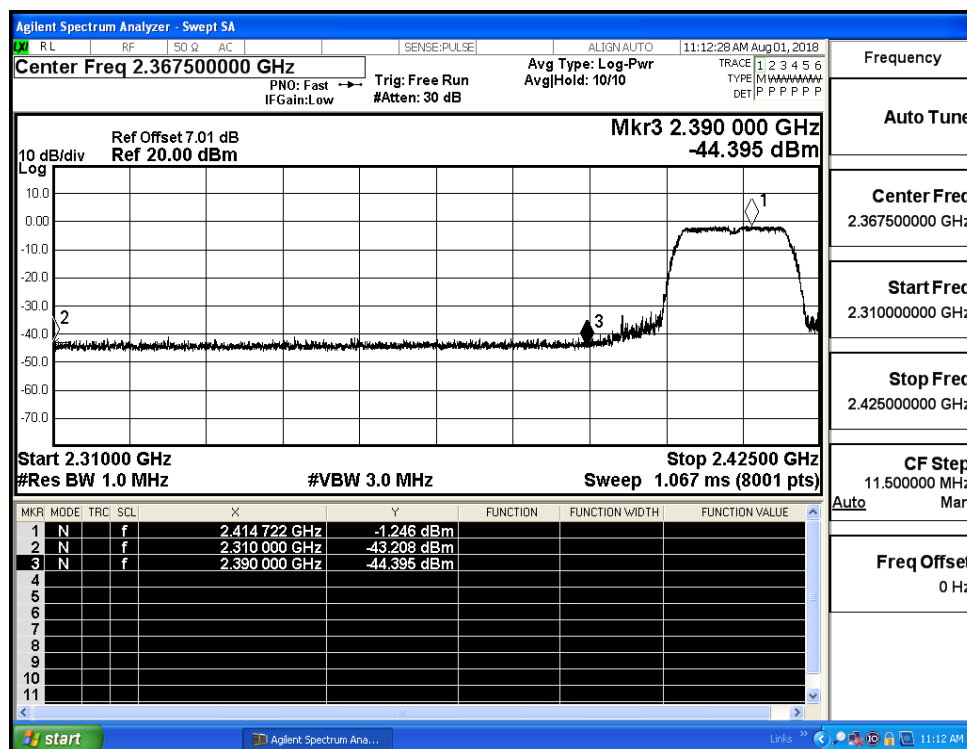
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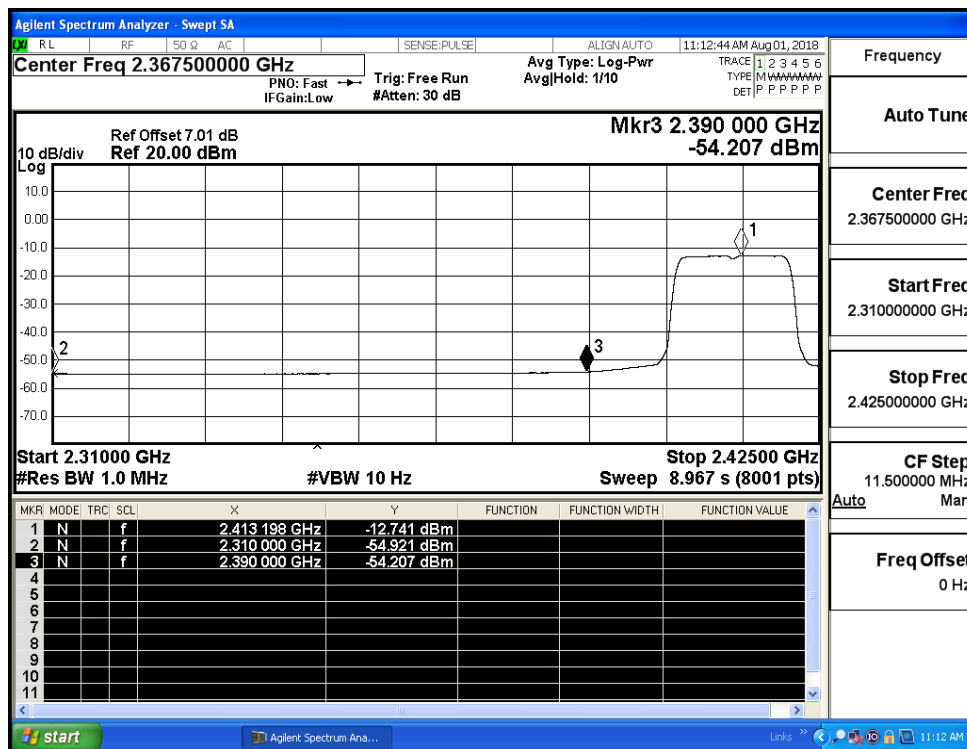
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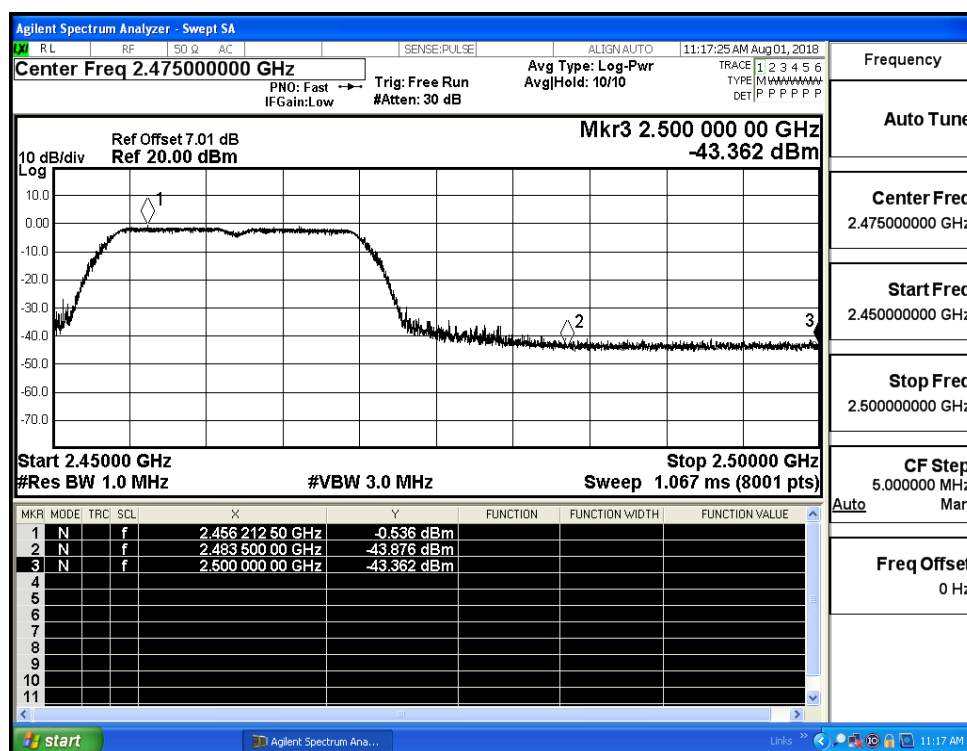
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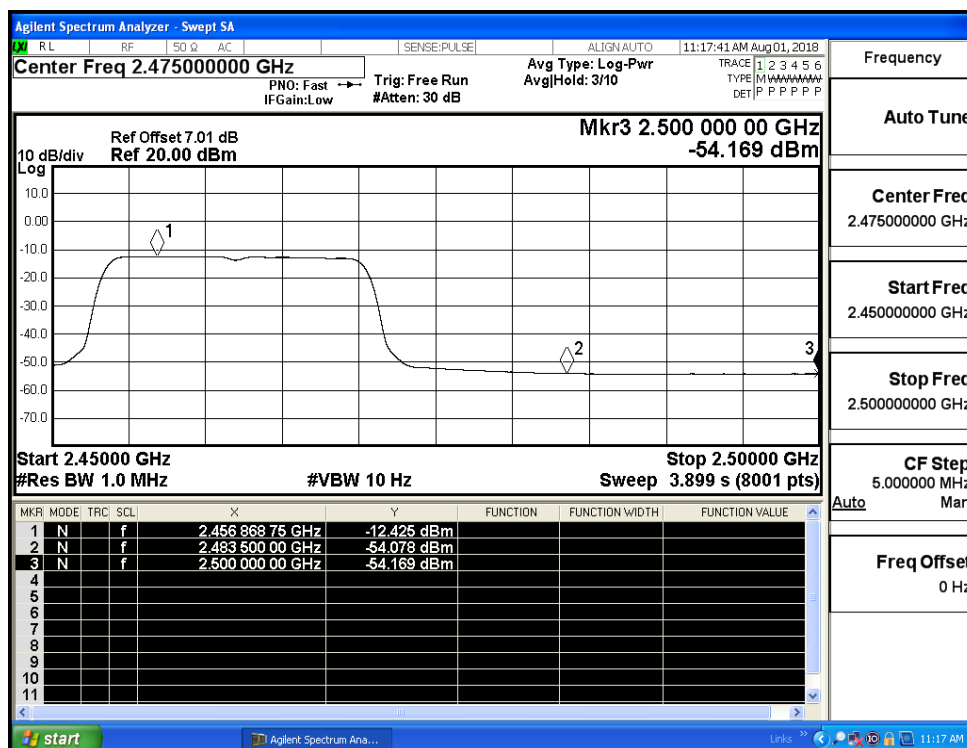
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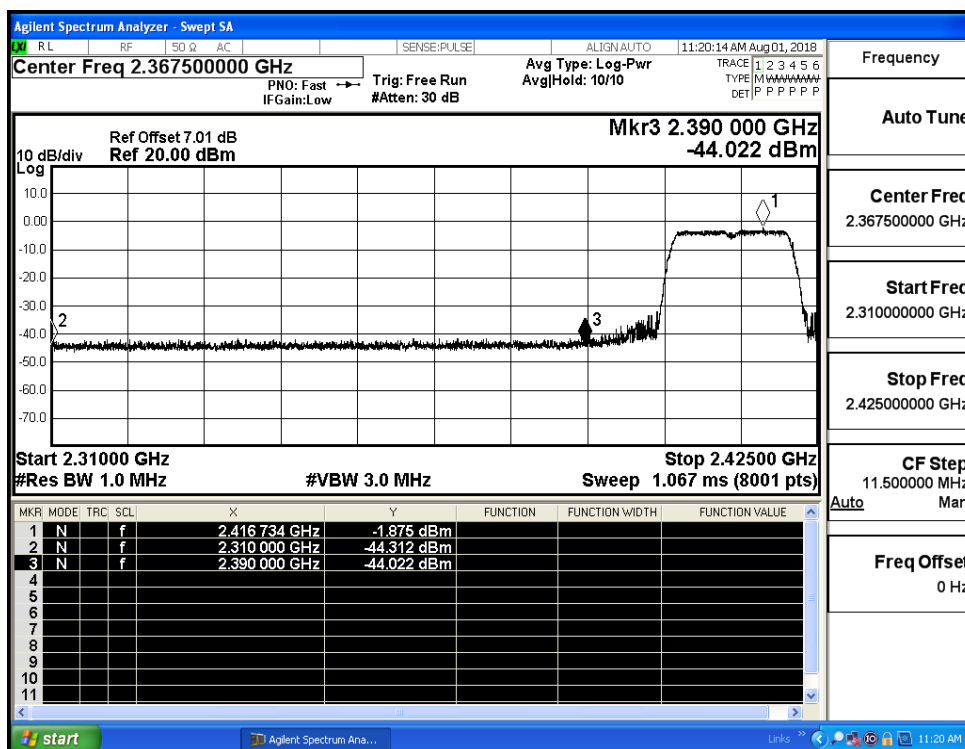
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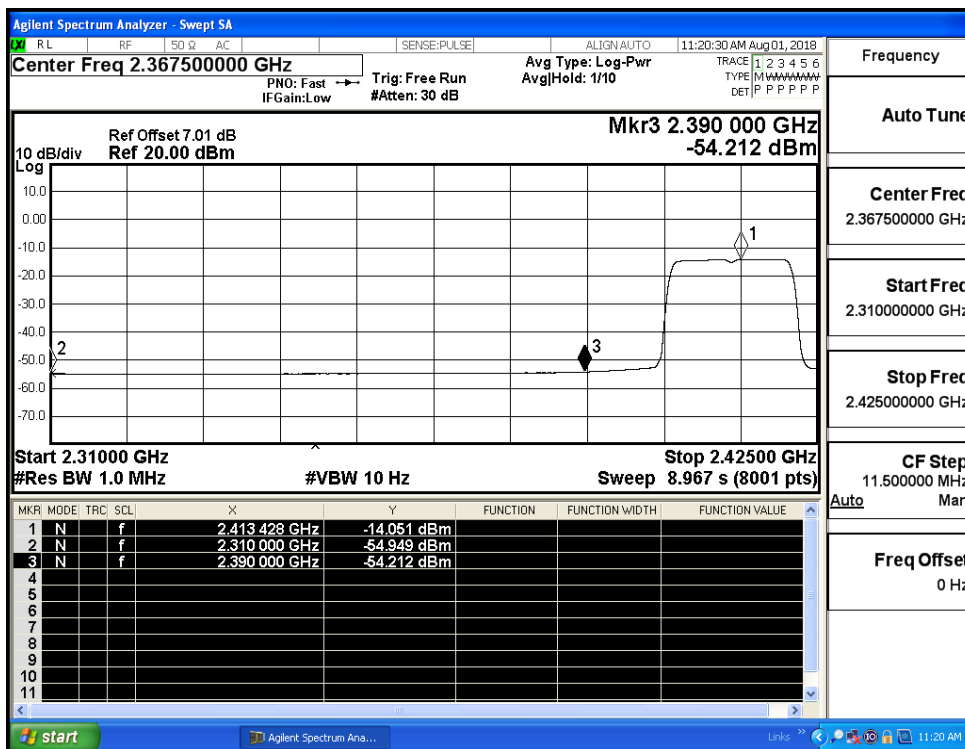
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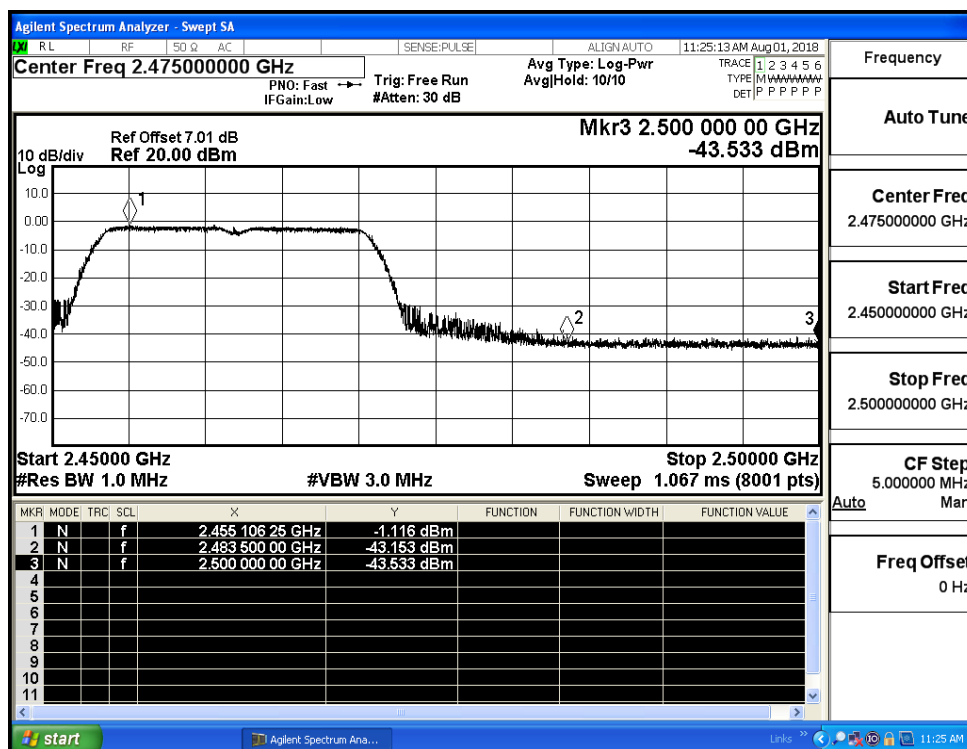
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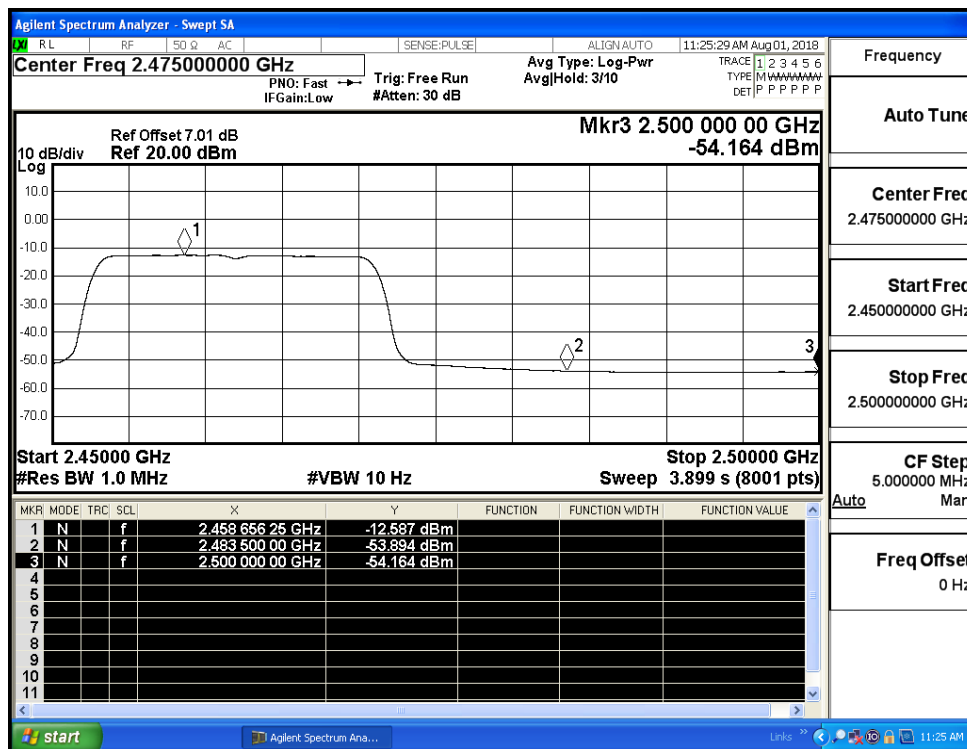
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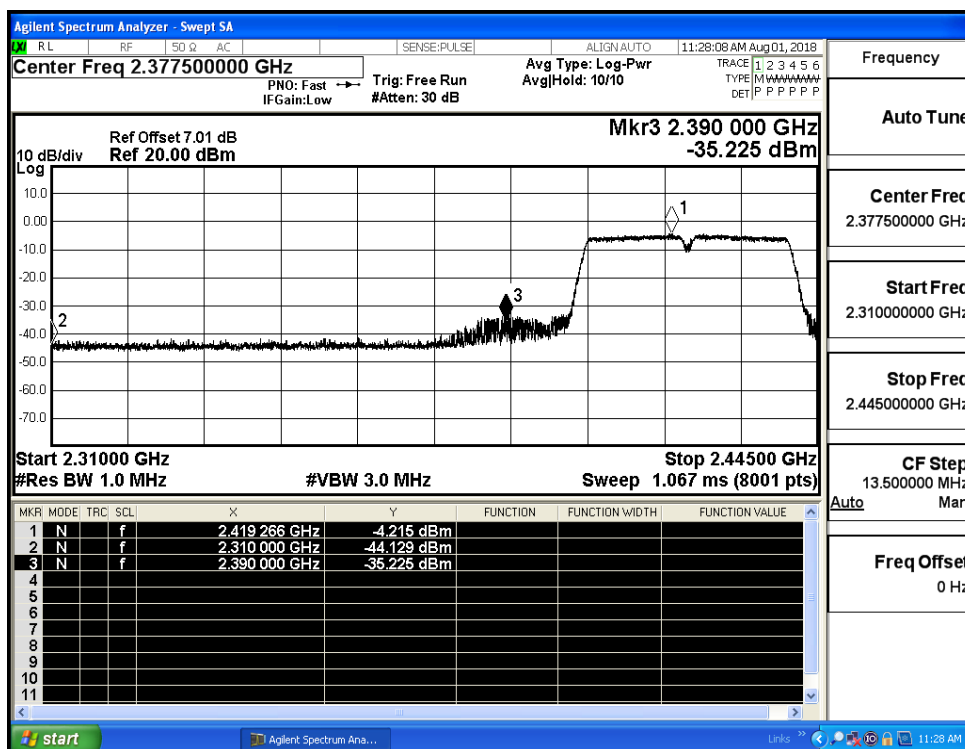
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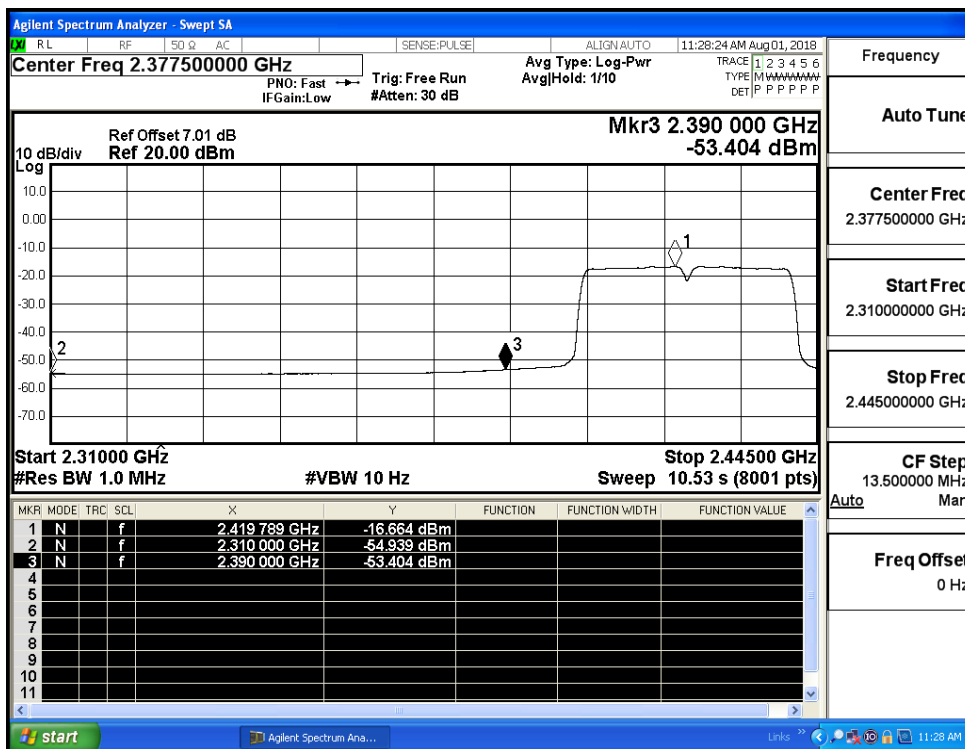
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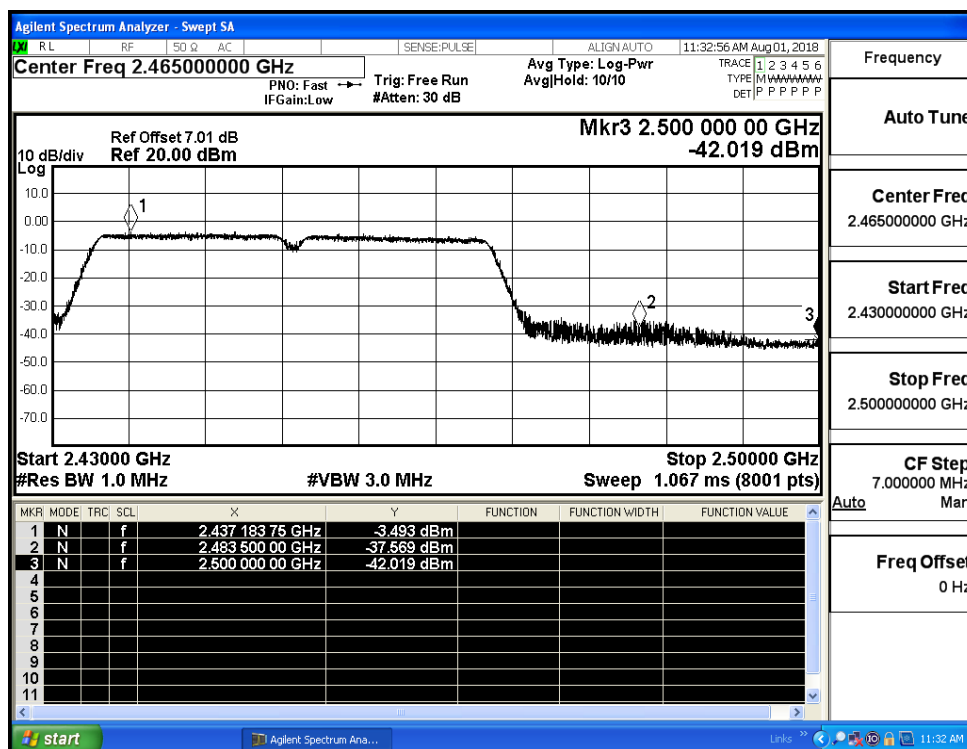
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Restrict-band band-edge measurements_11N40SISO_2422_Ant1_AV



Restrict-band band-edge measurements_11N40SISO_2452_Ant1_PEAK



Restrict-band band-edge measurements_11N40SISO_2452_Ant1_AV

