

Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Smart Doorbell
Trade Mark: BOSMA, OWLET HOME
Test Model: Sentry Plus

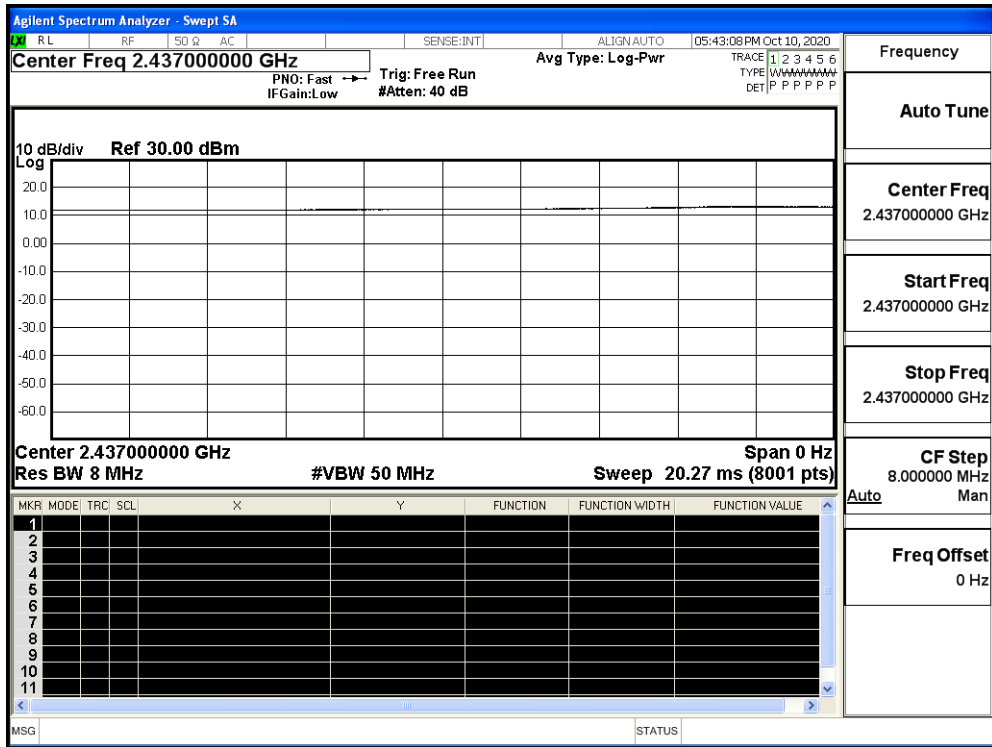
Environmental Conditions

Temperature:	23.2 ° C
Relative Humidity:	53.7%
ATM Pressure:	100.0 kPa
Test Engineer:	Kay Hu
Supervised by:	Li Huan

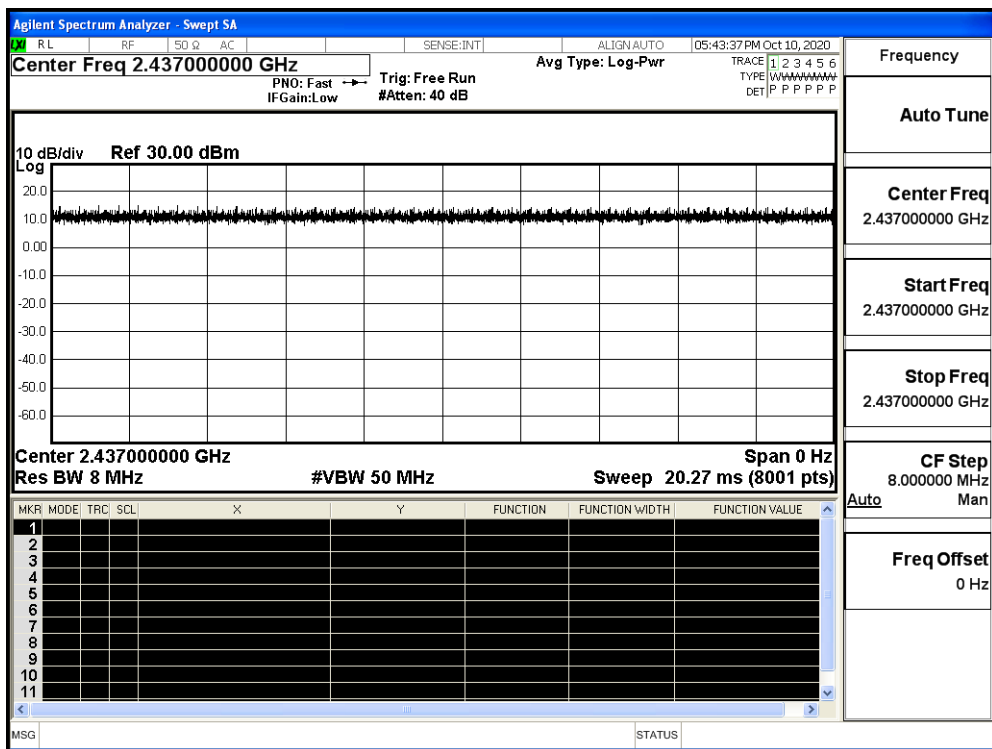
A.1 Duty Cycle

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

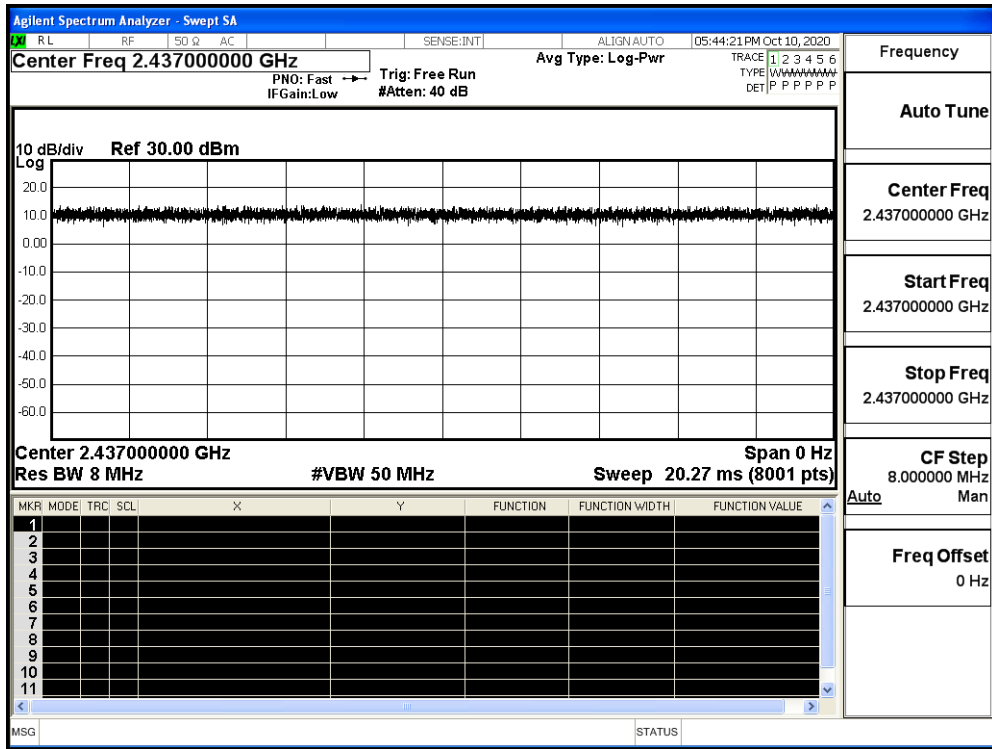
Duty Cycle_11B_2437_Ant1



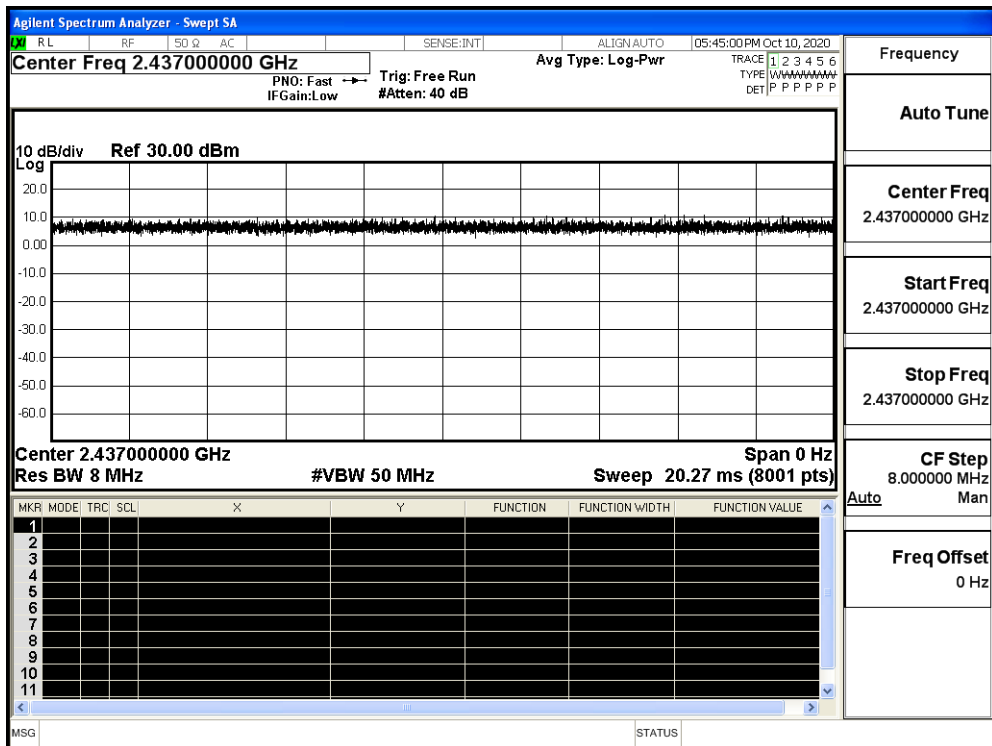
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



Duty Cycle_11N40SISO_2437_Ant1

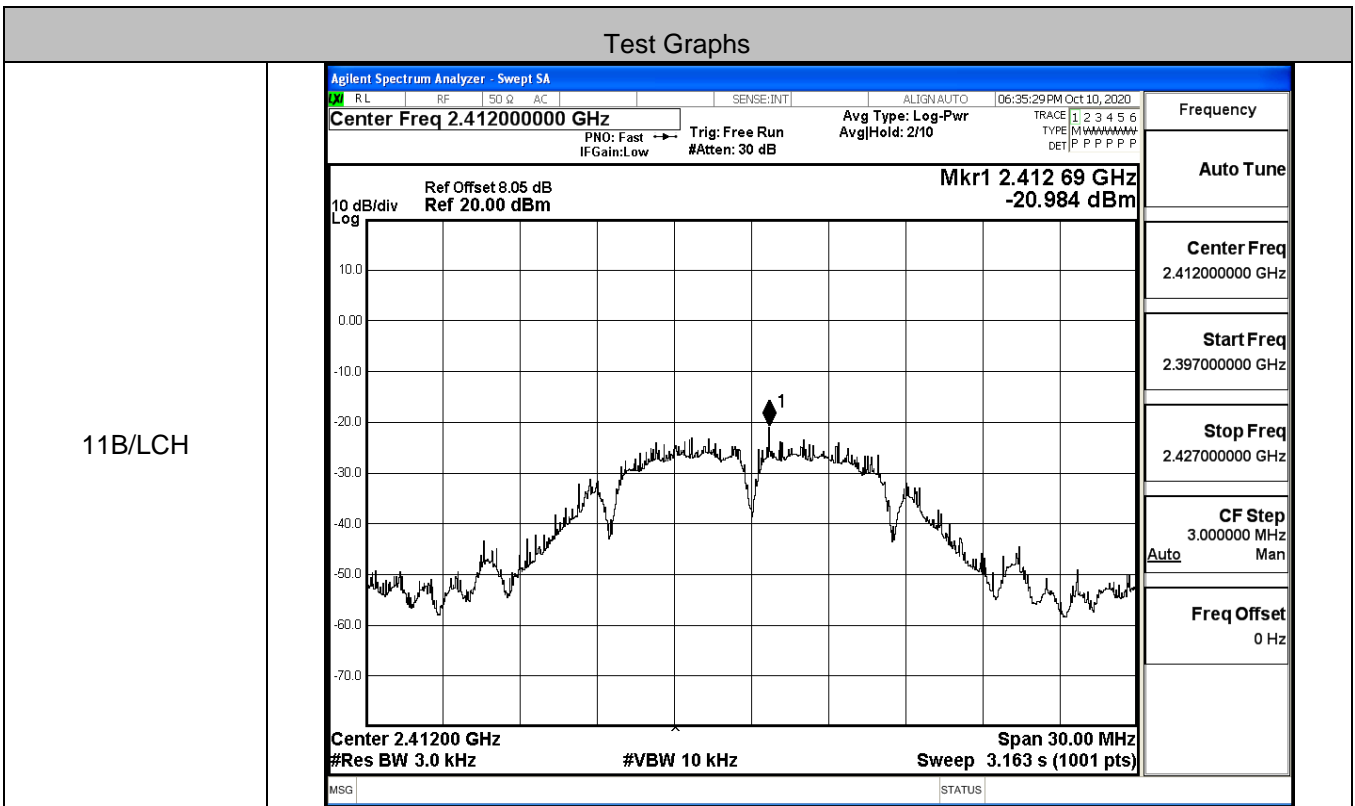


A.2 Maximum Conducted Output Power

Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	7.36	30	PASS
	MCH	7.46	30	PASS
	HCH	8.69	30	PASS
11G	LCH	10.94	30	PASS
	MCH	9.91	30	PASS
	HCH	9.06	30	PASS
11N20SISO	LCH	11.09	30	PASS
	MCH	10.07	30	PASS
	HCH	9.17	30	PASS
11N40SISO	LCH	10.83	30	PASS
	MCH	10.19	30	PASS
	HCH	9.59	30	PASS

A.3 Maximum Power Spectral Density

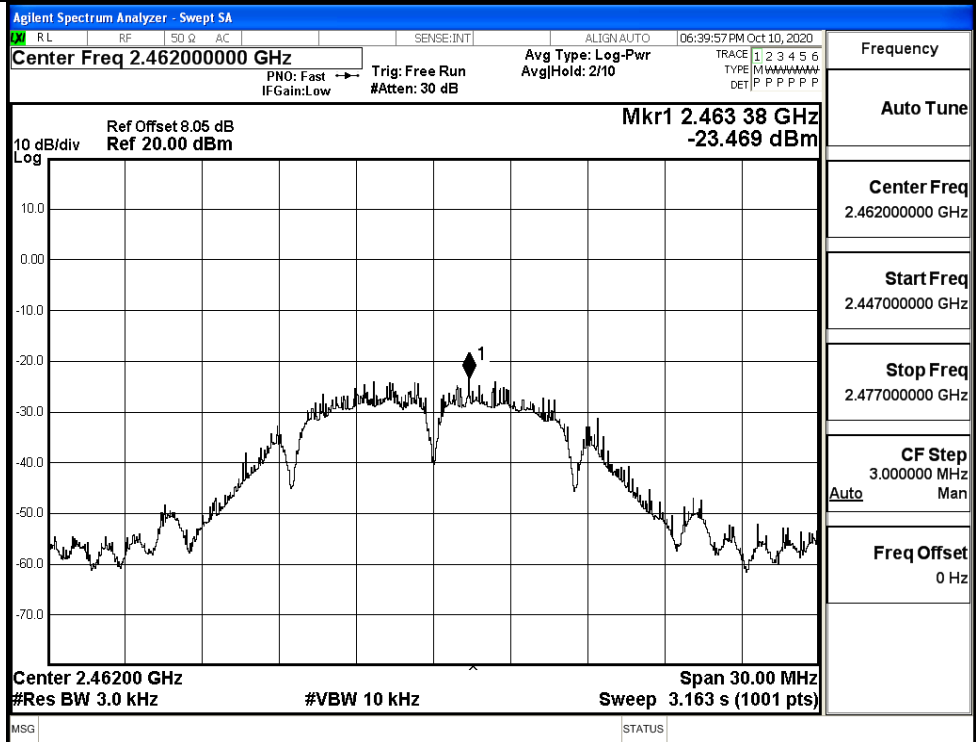
Mode	Channel	Meas.Level [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-20.984	8	PASS
	MCH	-23.963	8	PASS
	HCH	-23.469	8	PASS
11G	LCH	-24.739	8	PASS
	MCH	-25.569	8	PASS
	HCH	-26.610	8	PASS
11N20SISO	LCH	-24.946	8	PASS
	MCH	-25.427	8	PASS
	HCH	-26.407	8	PASS
11N40SISO	LCH	-26.198	8	PASS
	MCH	-27.204	8	PASS
	HCH	-28.688	8	PASS



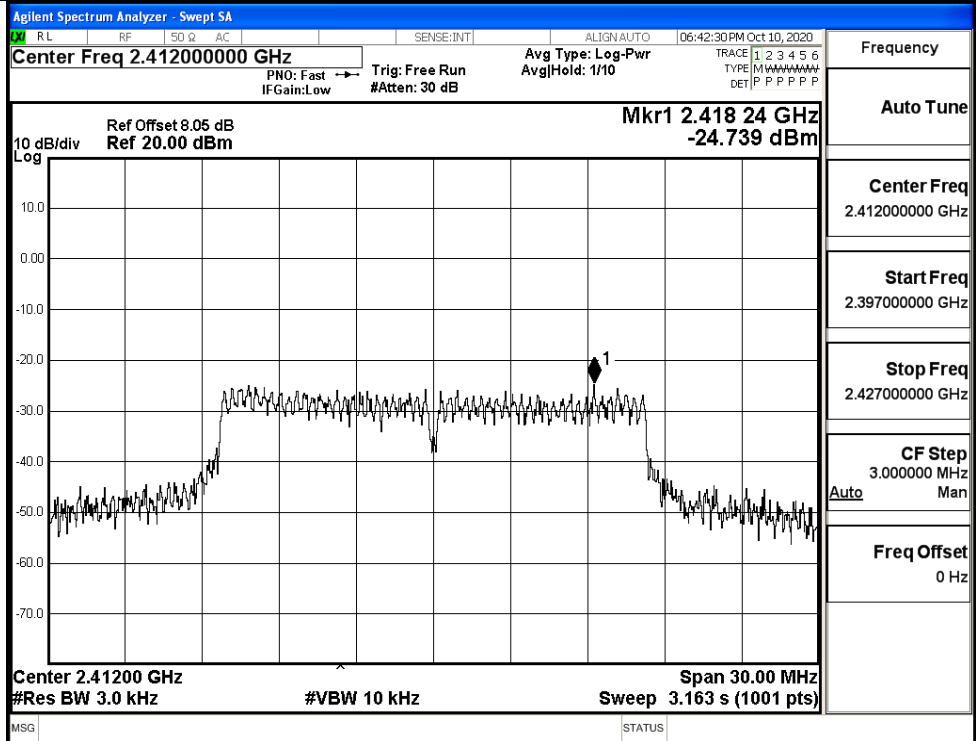
11B/MCH



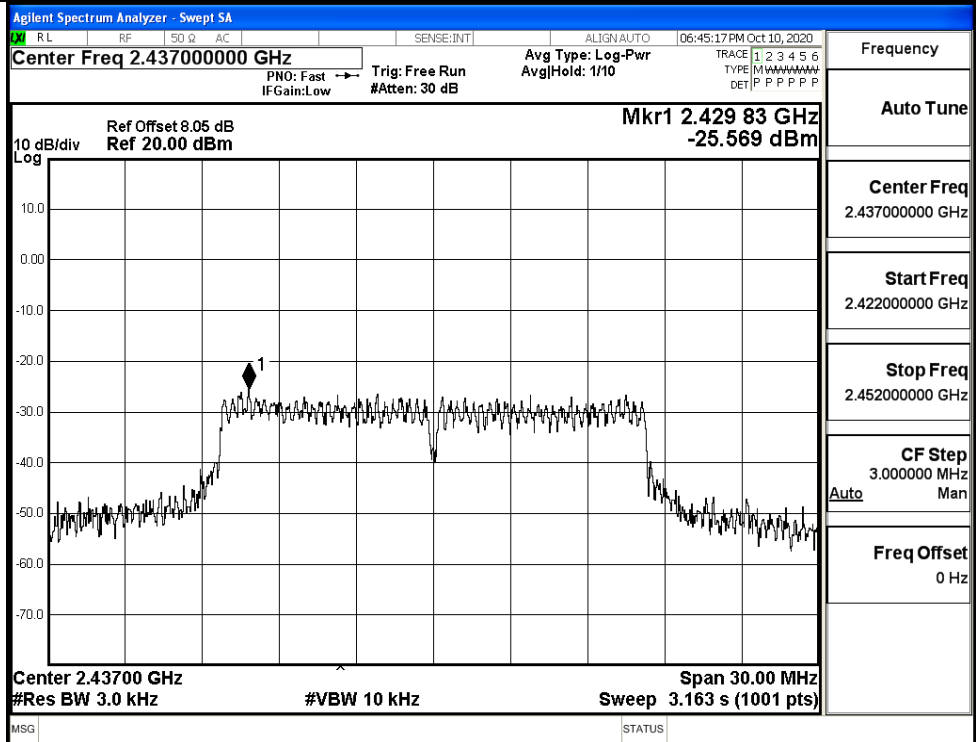
11B/HCH



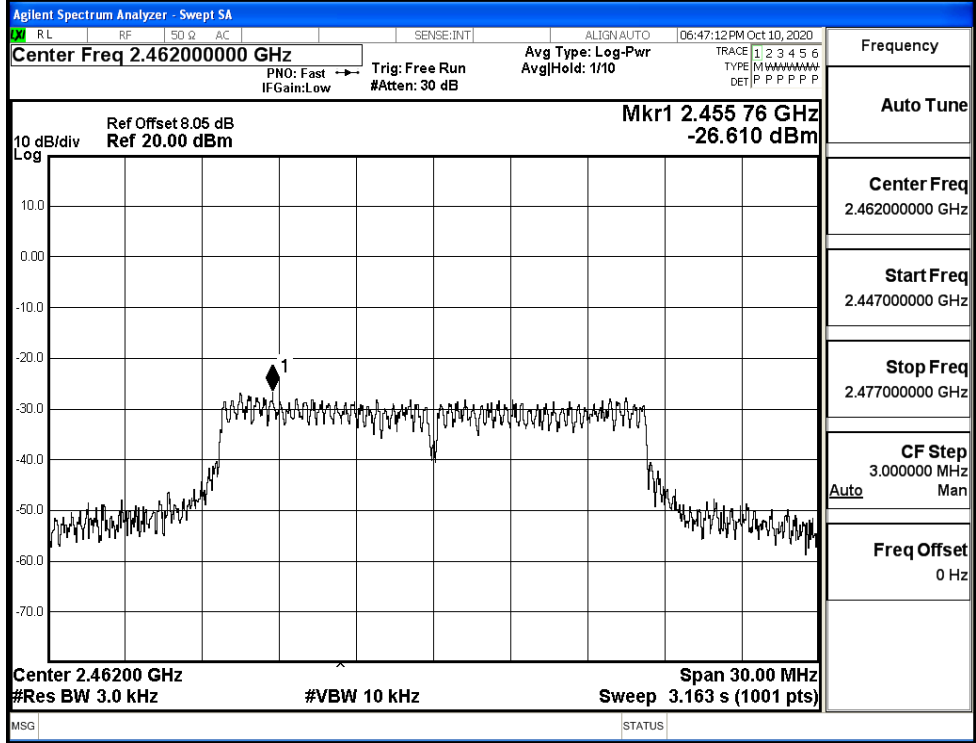
11G/LCH



11G/MCH

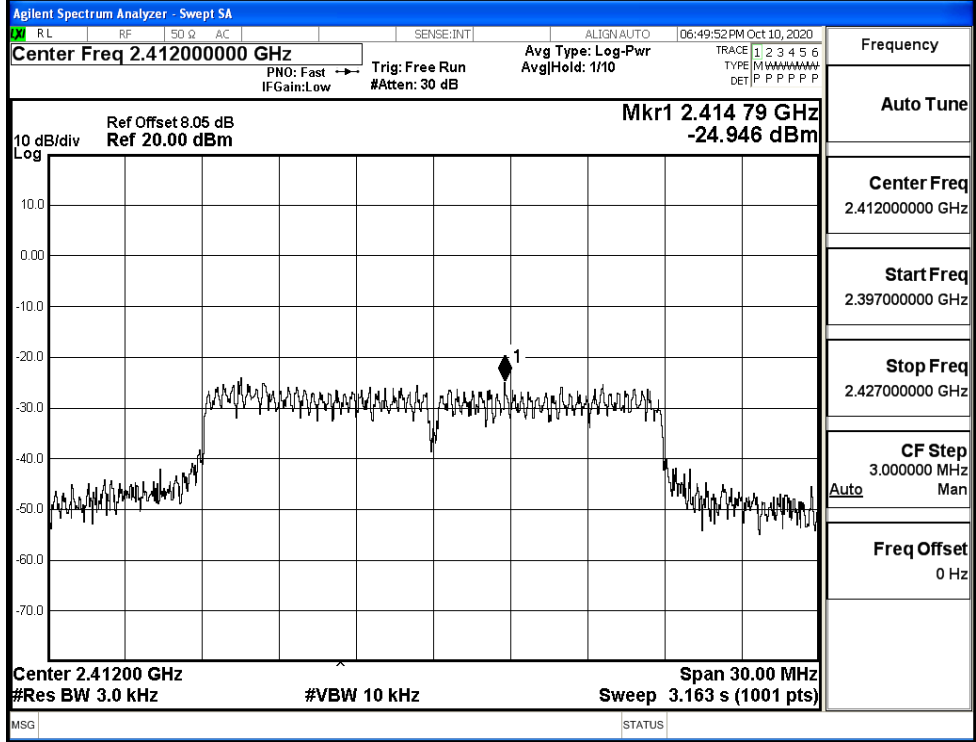


11G/HCH

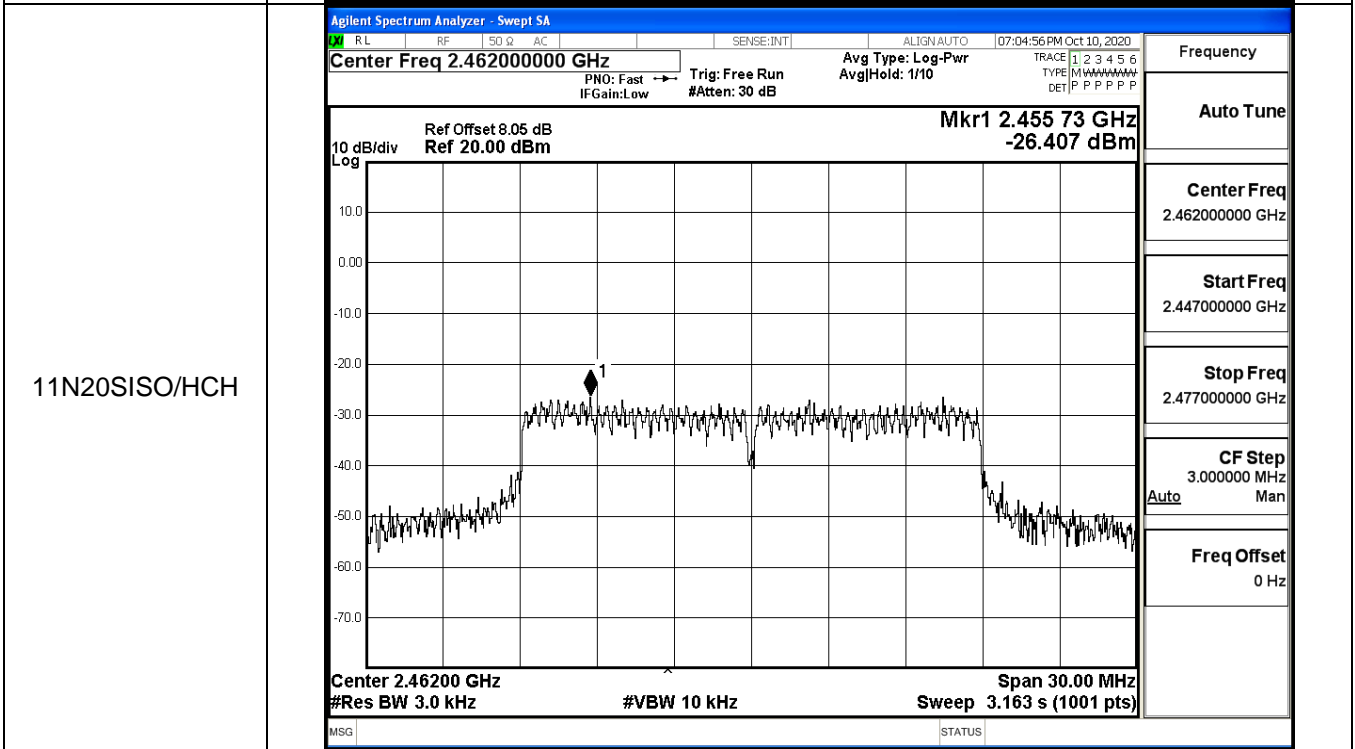
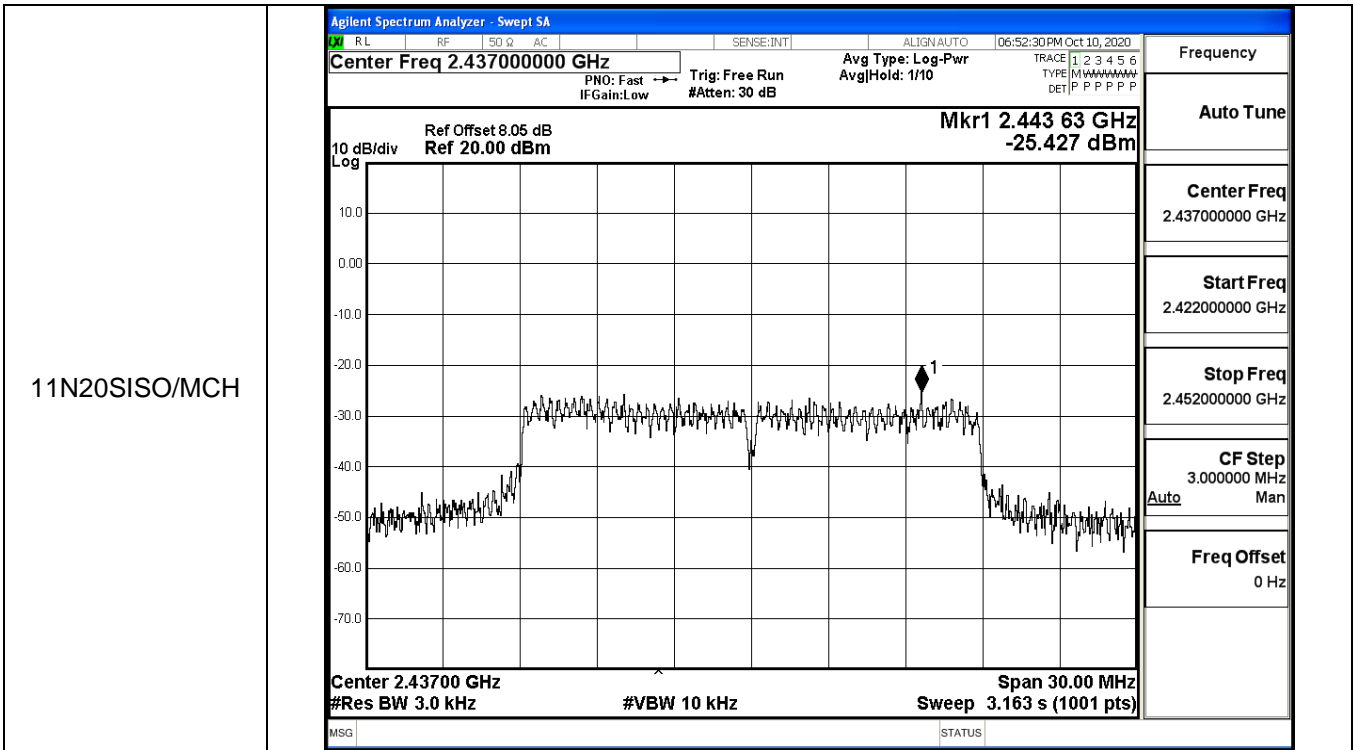


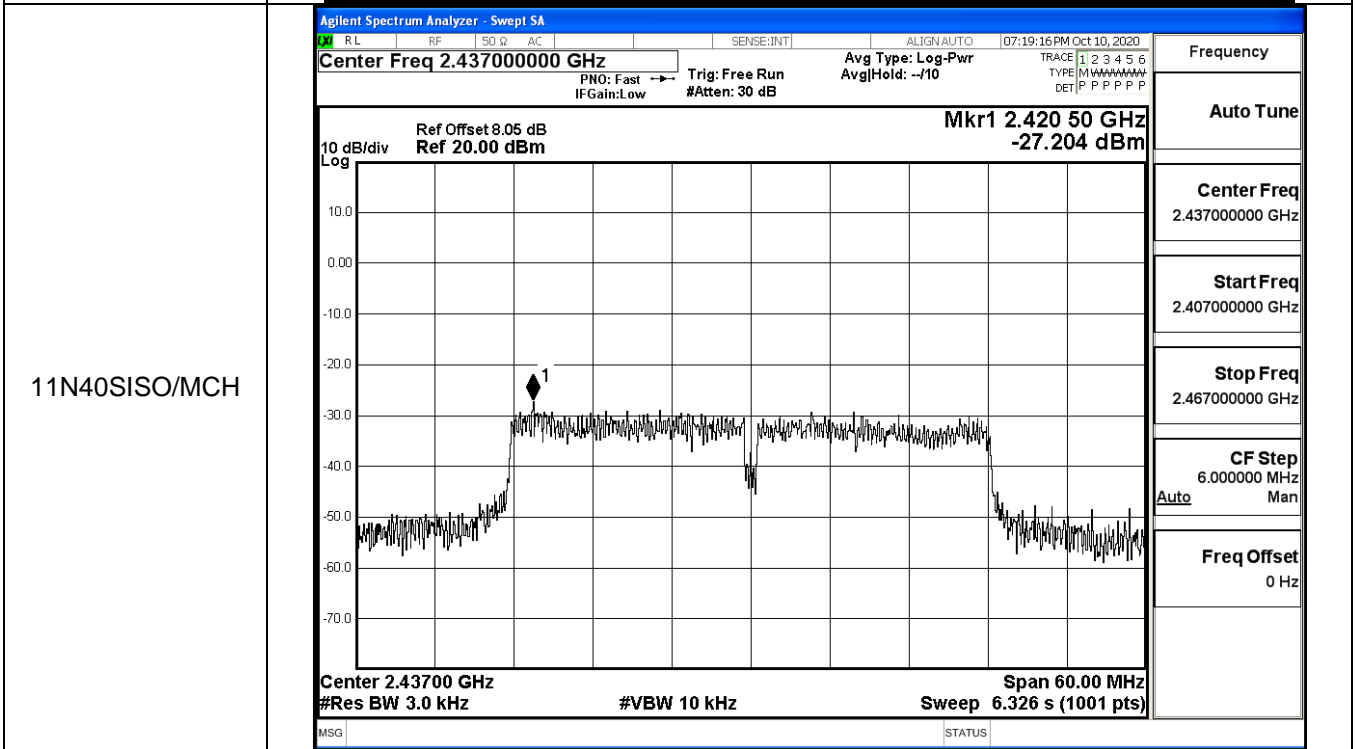
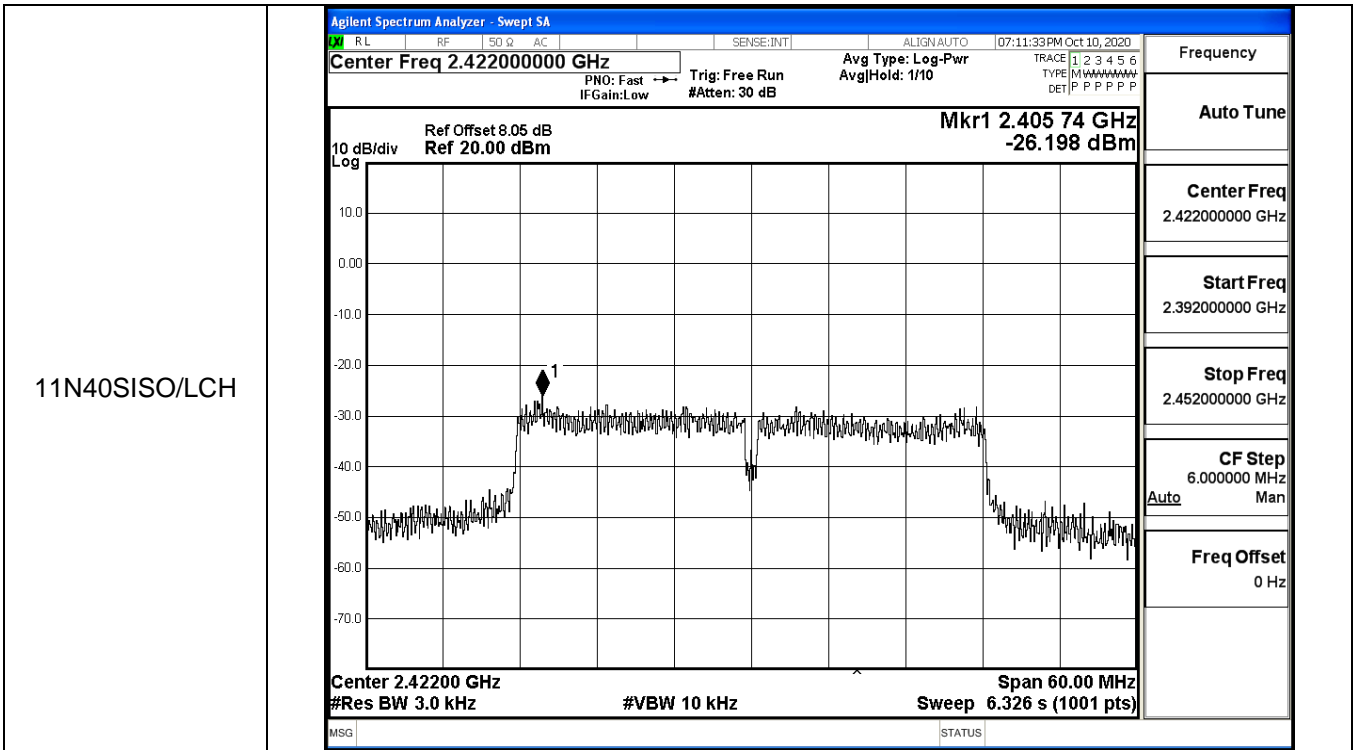
Frequency
Auto Tune
Center Freq 2.46200000 GHz
Start Freq 2.447000000 GHz
Stop Freq 2.477000000 GHz
CF Step 3.000000 MHz Auto Man
Freq Offset 0 Hz

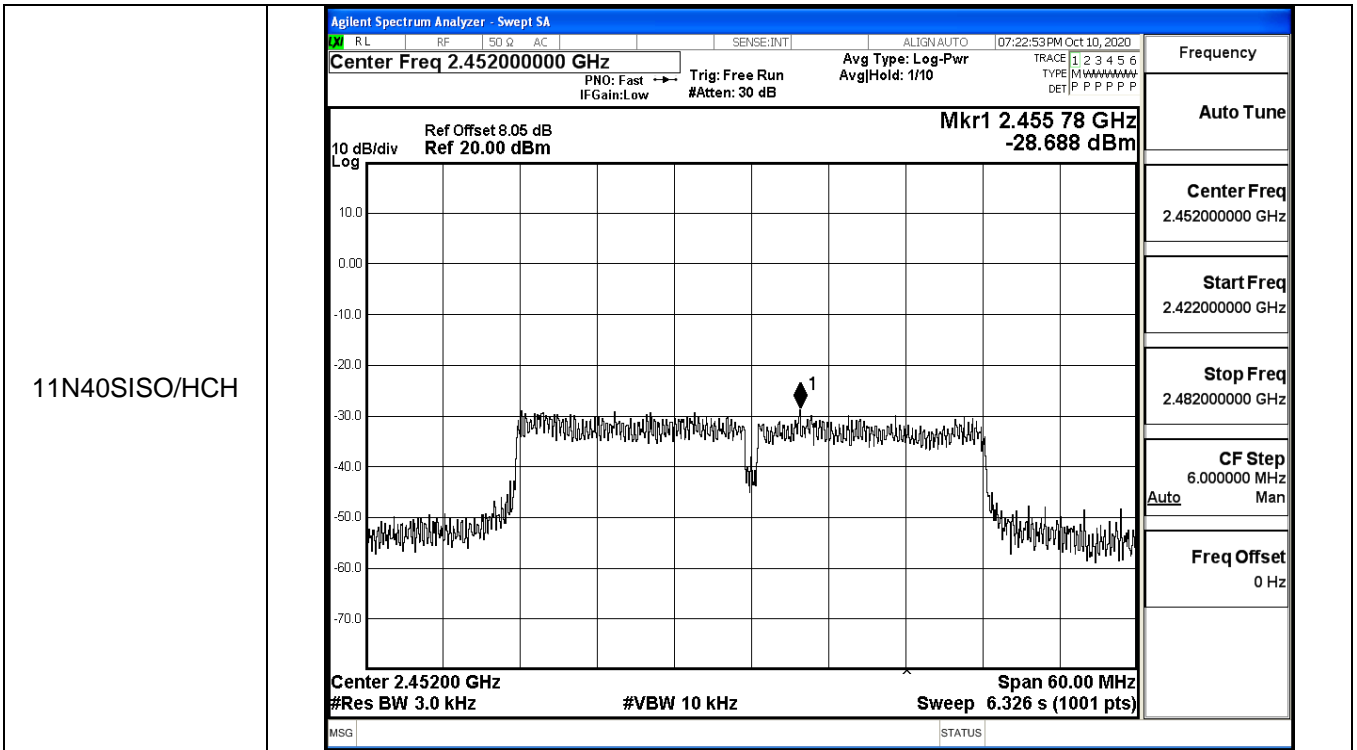
11N20SISO/LCH



Frequency
Auto Tune
Center Freq 2.41200000 GHz
Start Freq 2.397000000 GHz
Stop Freq 2.427000000 GHz
CF Step 3.000000 MHz Auto Man
Freq Offset 0 Hz

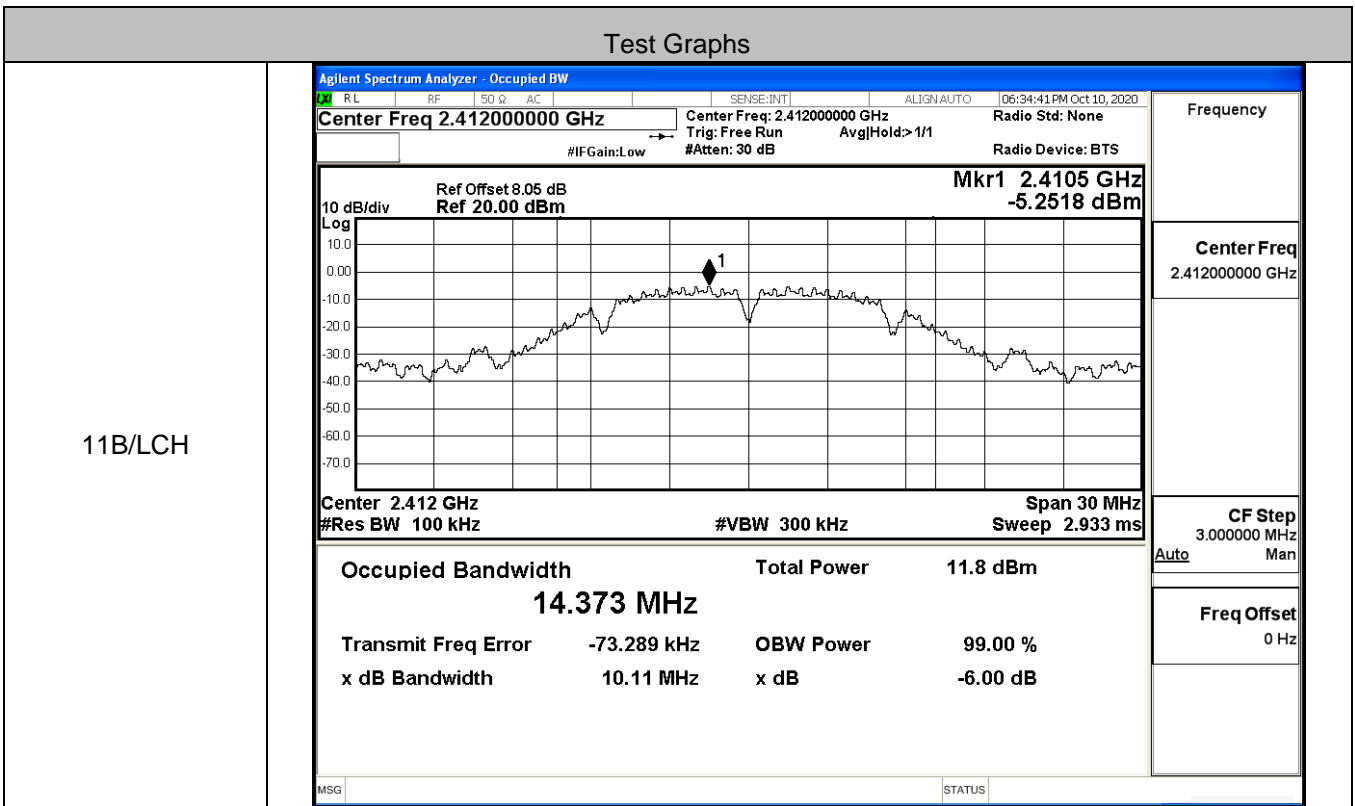




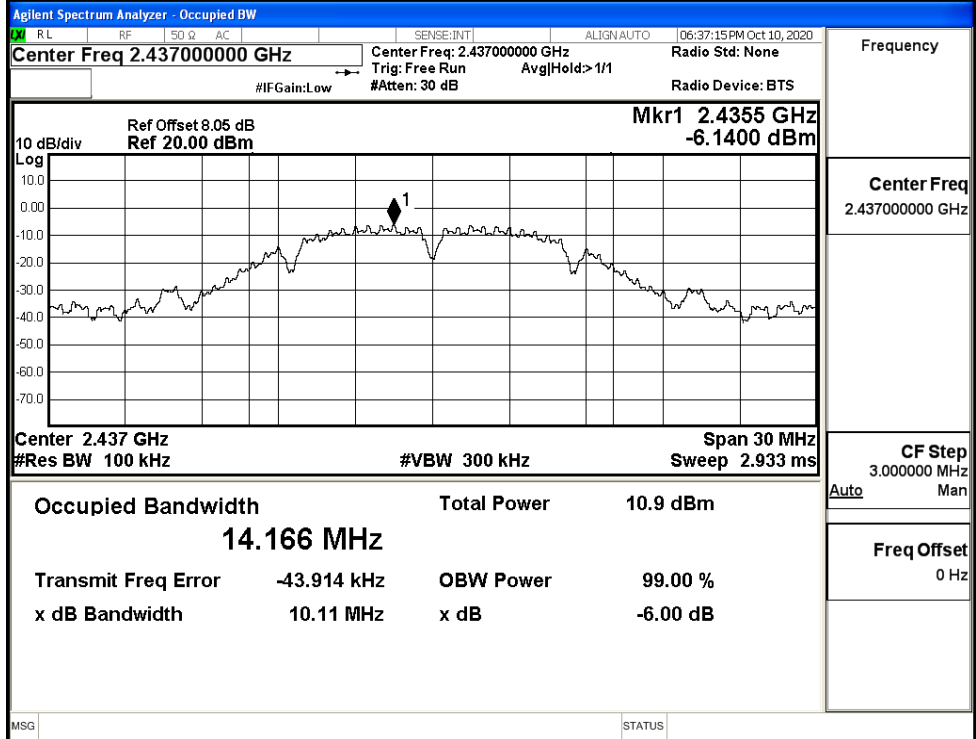


A.4 6dB Bandwidth

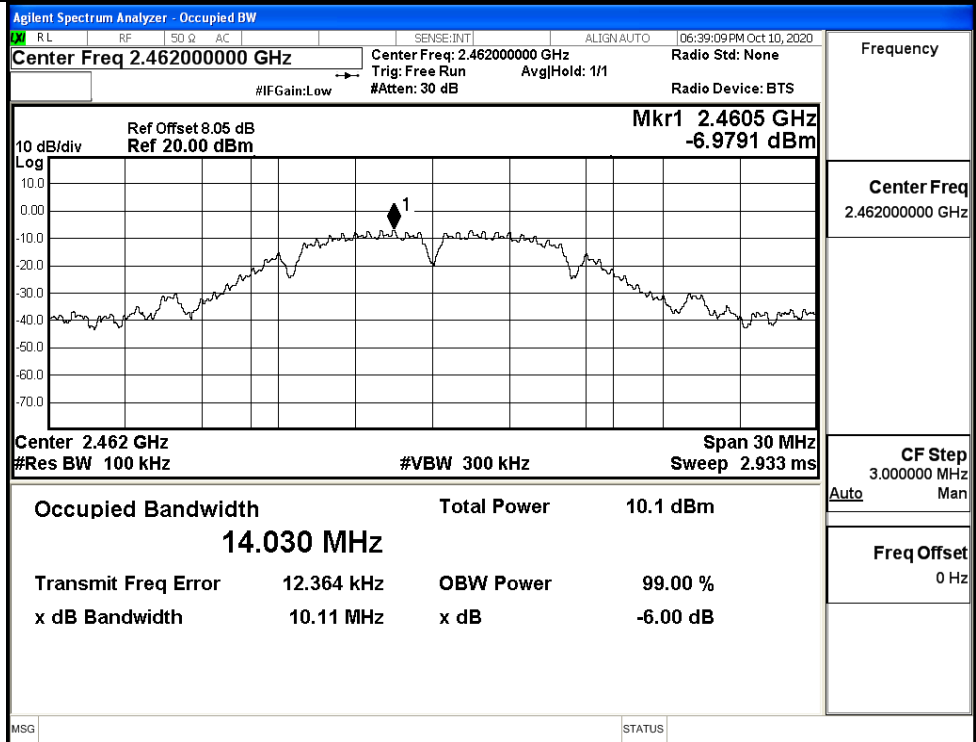
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	10.11	≥0.5	PASS
	MCH	10.11	≥0.5	PASS
	HCH	10.11	≥0.5	PASS
11G	LCH	16.35	≥0.5	PASS
	MCH	16.35	≥0.5	PASS
	HCH	16.38	≥0.5	PASS
11N20SISO	LCH	17.01	≥0.5	PASS
	MCH	17.30	≥0.5	PASS
	HCH	17.08	≥0.5	PASS
11N40SISO	LCH	35.79	≥0.5	PASS
	MCH	35.80	≥0.5	PASS
	HCH	35.95	≥0.5	PASS



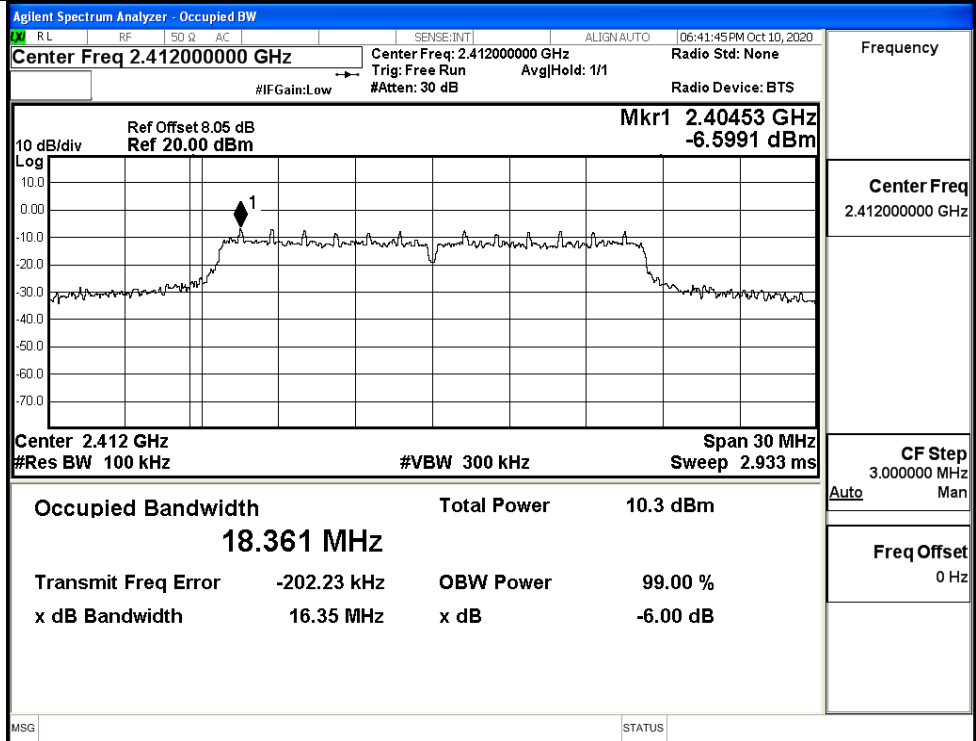
11B/MCH



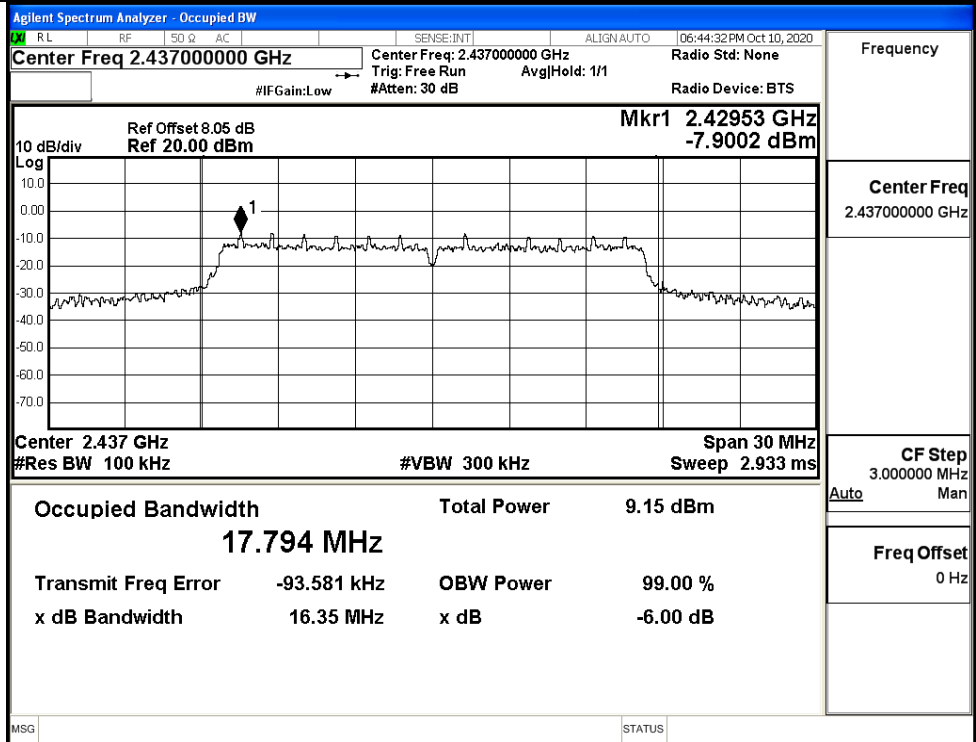
11B/HCH



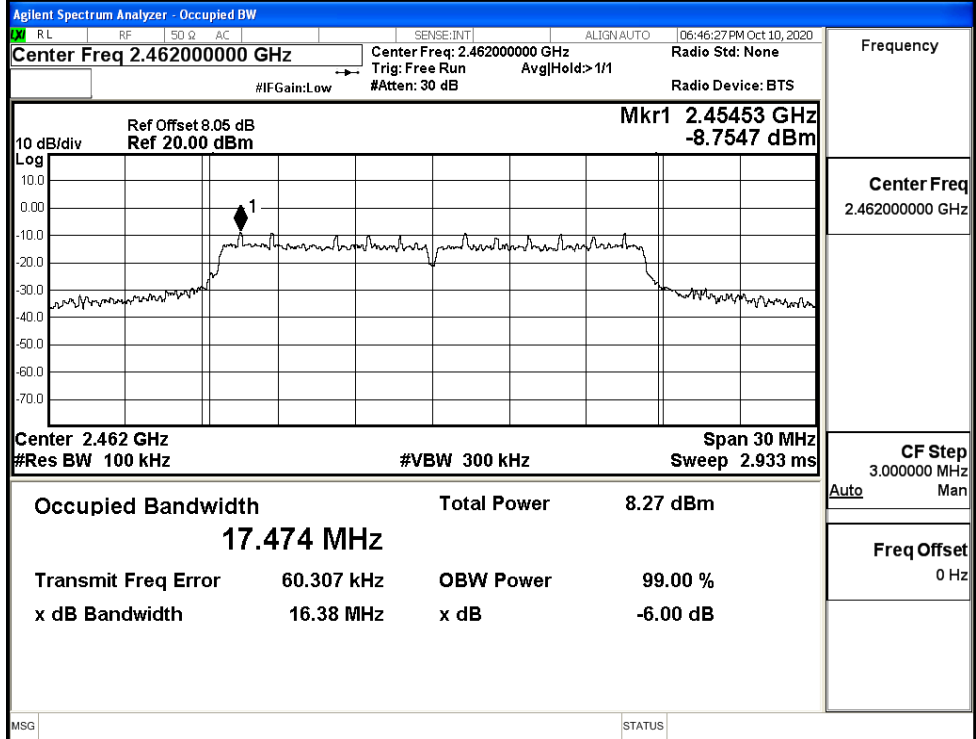
11G/LCH



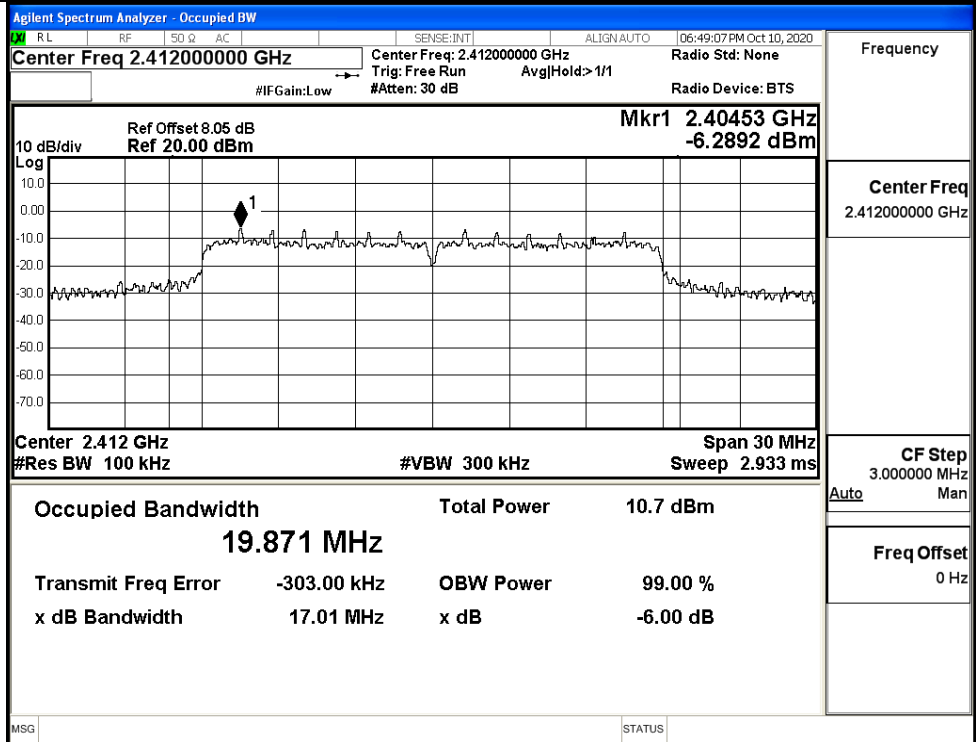
11G/MCH

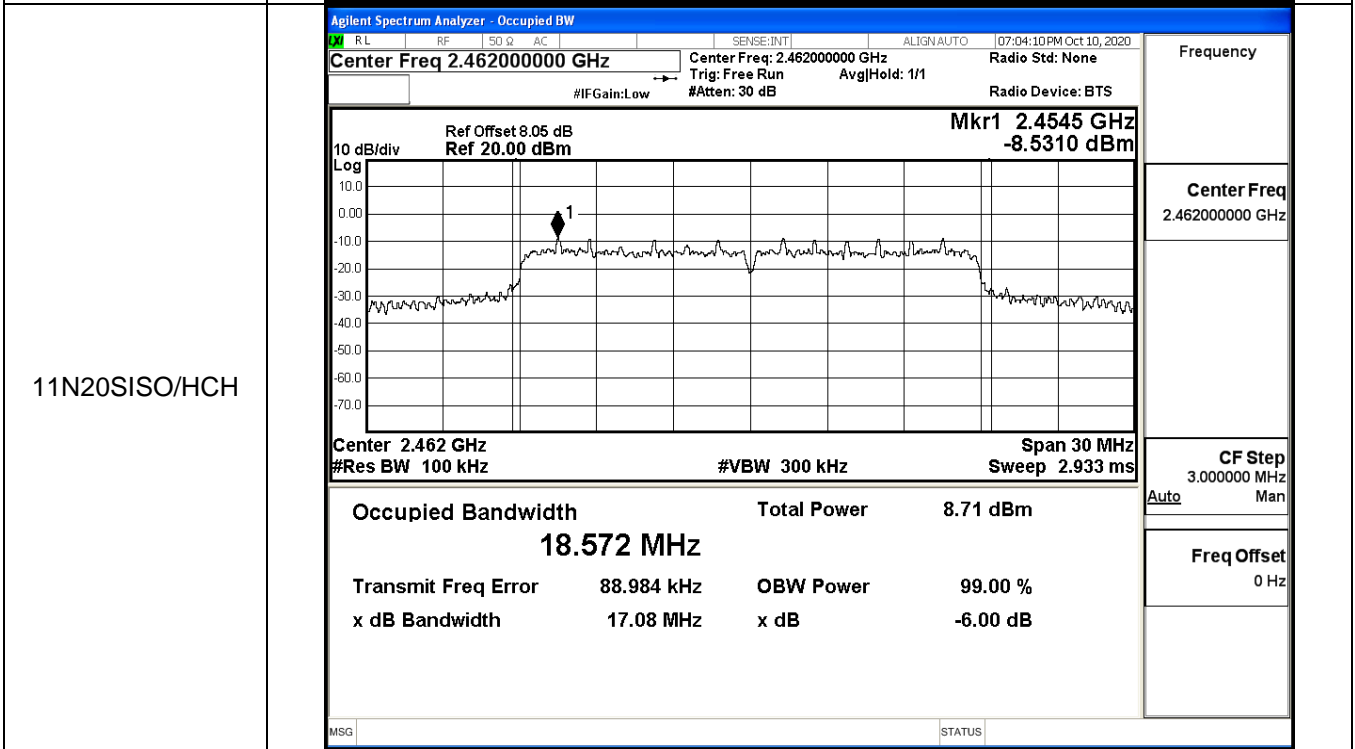
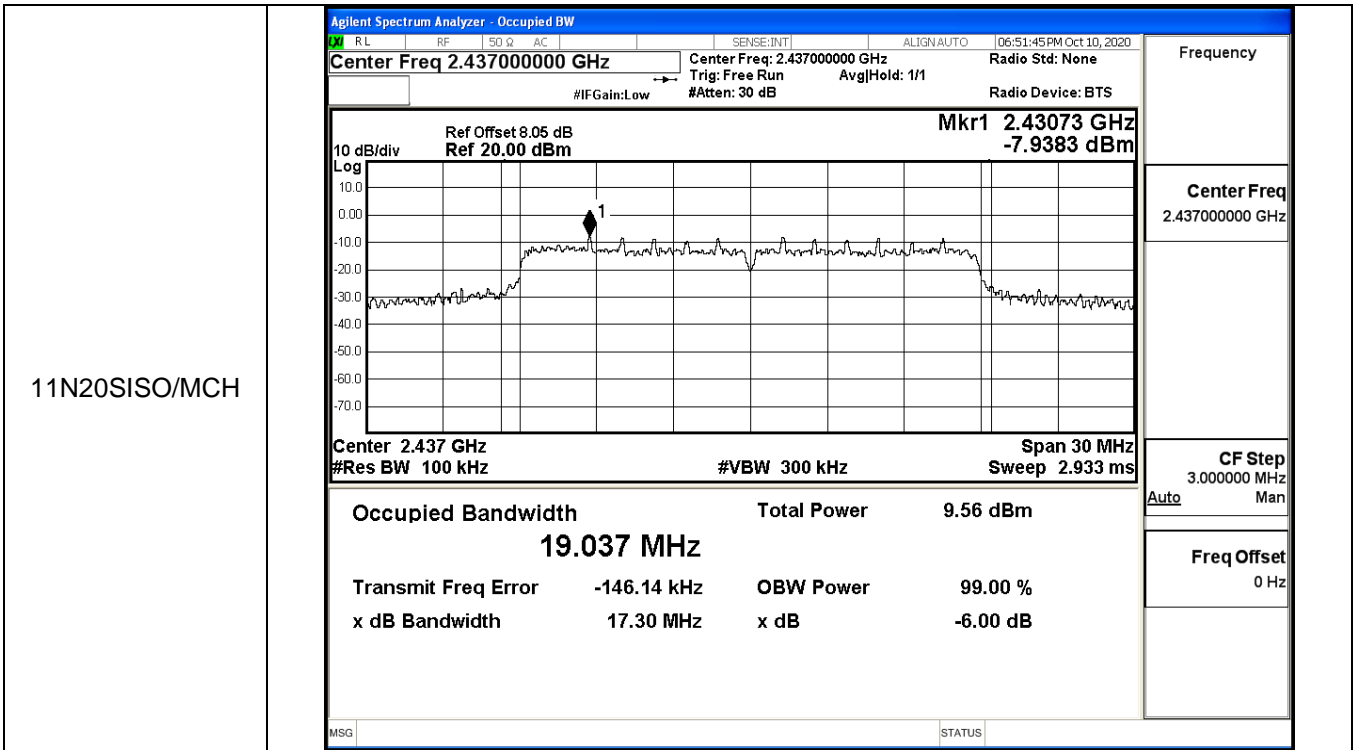


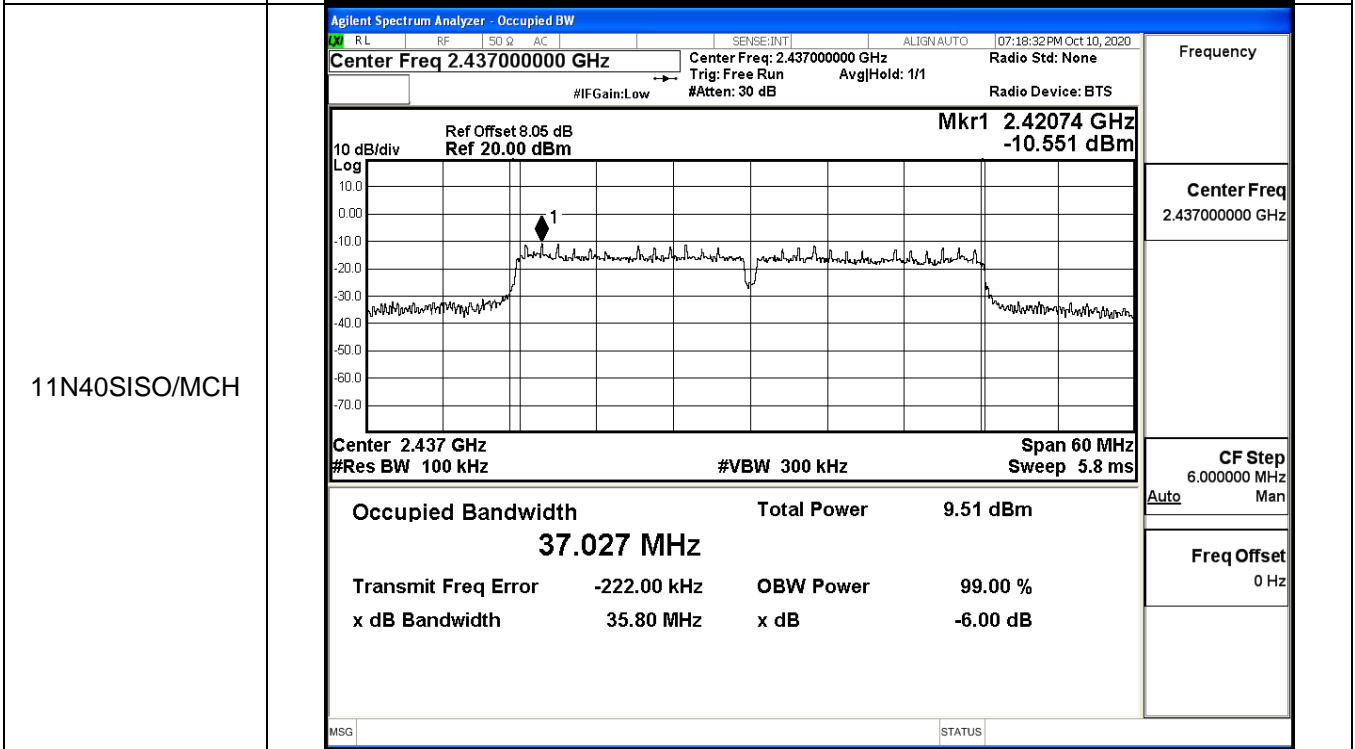
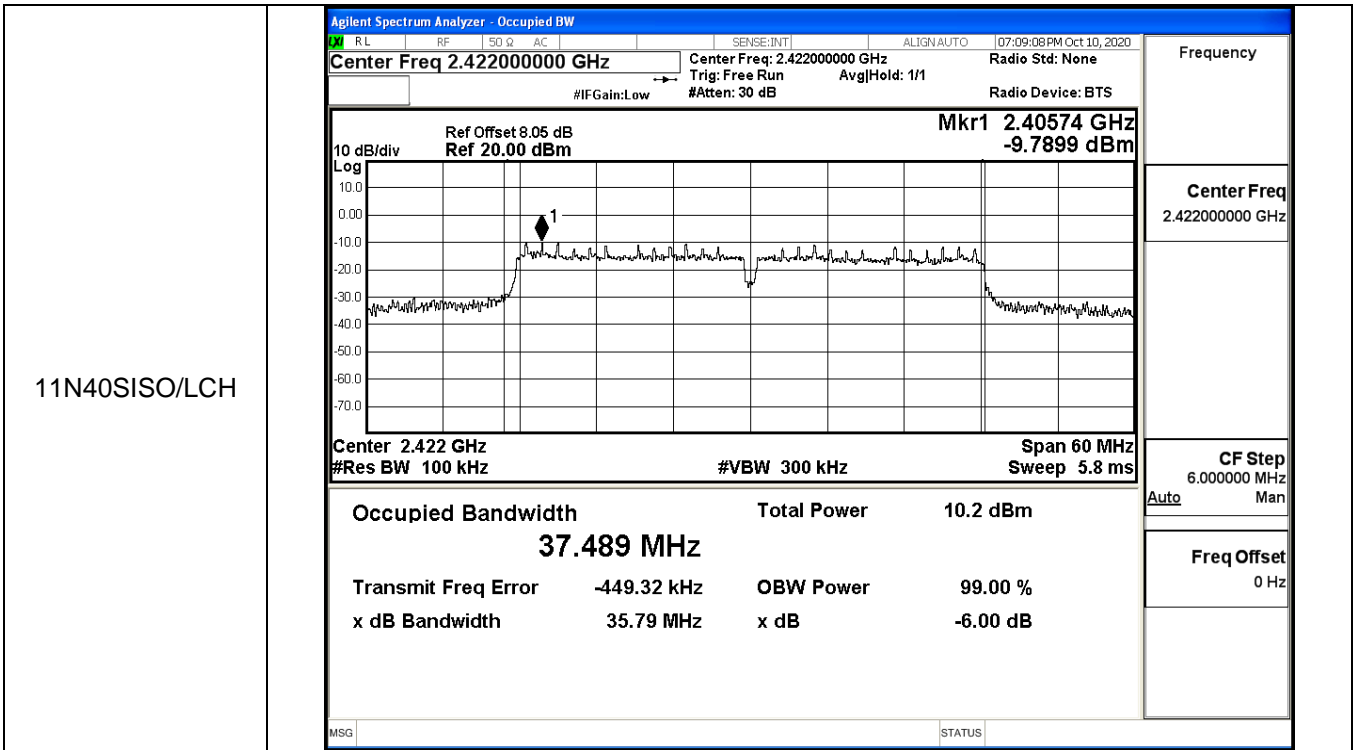
11G/HCH

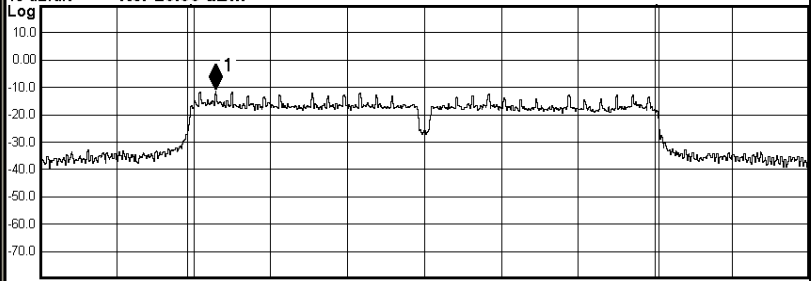


11N20SISO/LCH





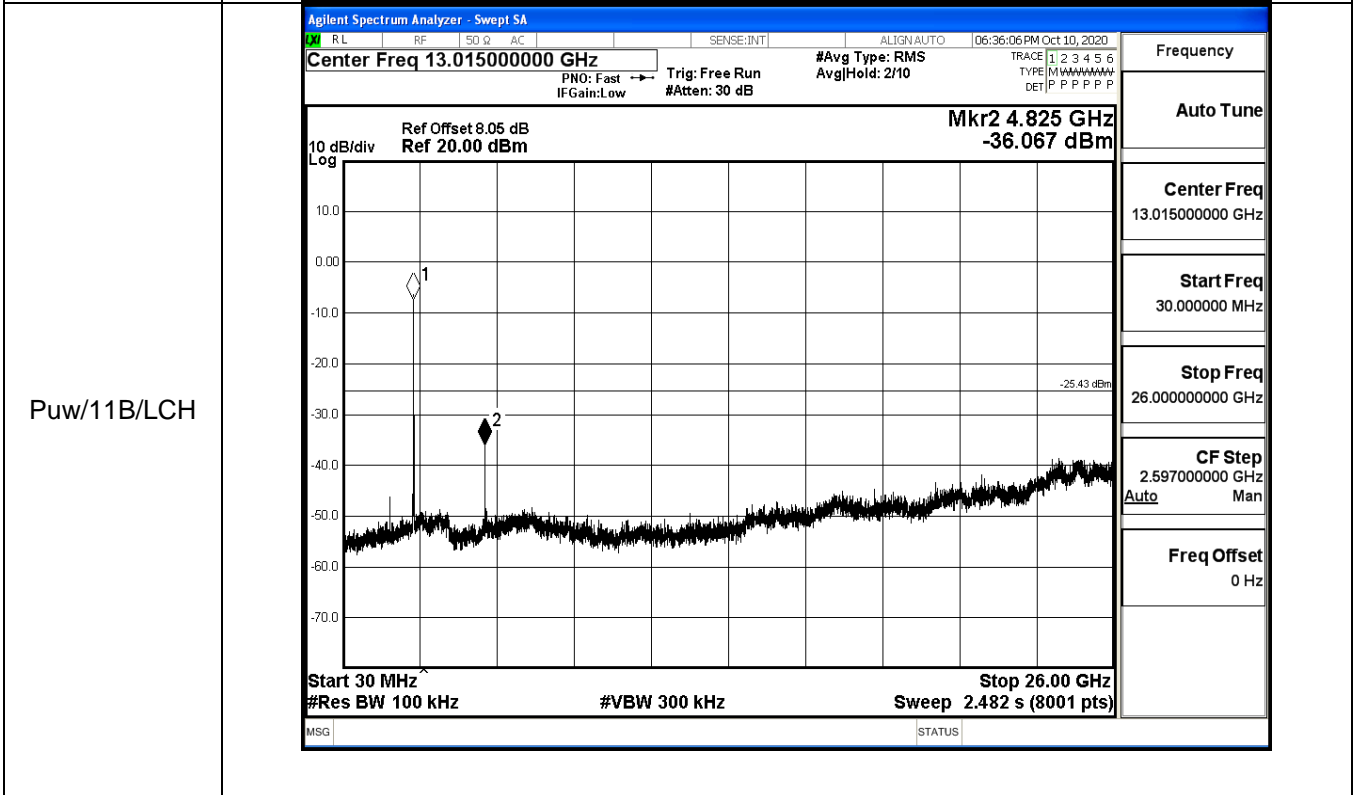
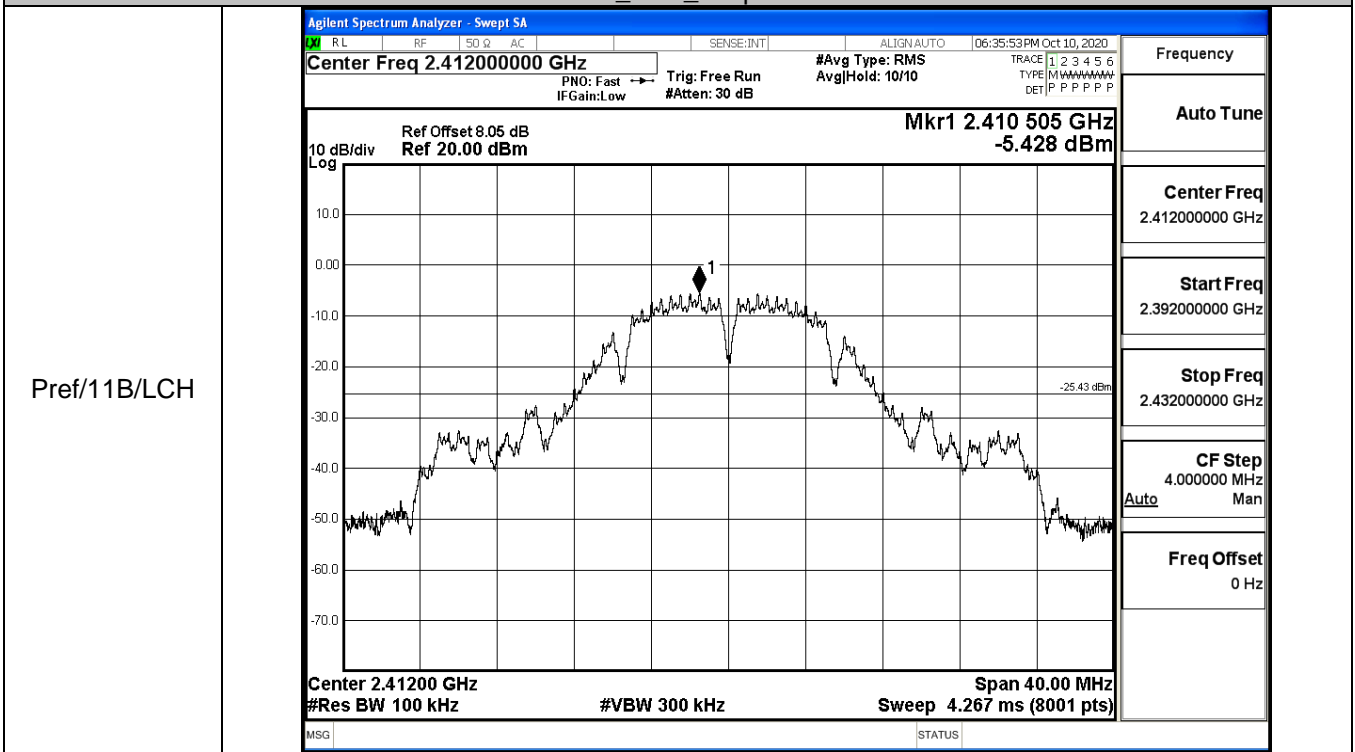


11N40SISO/HCH	Agilent Spectrum Analyzer - Occupied BW		
	RL RF 50 Ω AC SENSE:INT ALIGN AUTO 07:20:20 PM Oct 10, 2020		
	Center Freq 2.45200000 GHz	Center Freq: 2.45200000 GHz Trig: Free Run Avg Hold: 1/1	Radio Std: None Radio Device: BTS
	#IFGain:Low #Atten: 30 dB		
	Mkr1 2.43574 GHz -11.228 dBm		
<div style="display: flex; justify-content: space-between; font-size: small;"> 10 dB/div Ref Offset 8.05 dB Ref 20.00 dBm </div> 			
Center 2.452 GHz #Res BW 100 kHz	#VBW 300 kHz	Span 60 MHz Sweep 5.8 ms	
Occupied Bandwidth	Total Power	8.92 dBm	
36.716 MHz			
Transmit Freq Error	-67.491 kHz	OBW Power 99.00 %	
x dB Bandwidth	35.95 MHz	x dB -6.00 dB	
MSG	STATUS		

A.5 RF Conducted Spurious Emissions

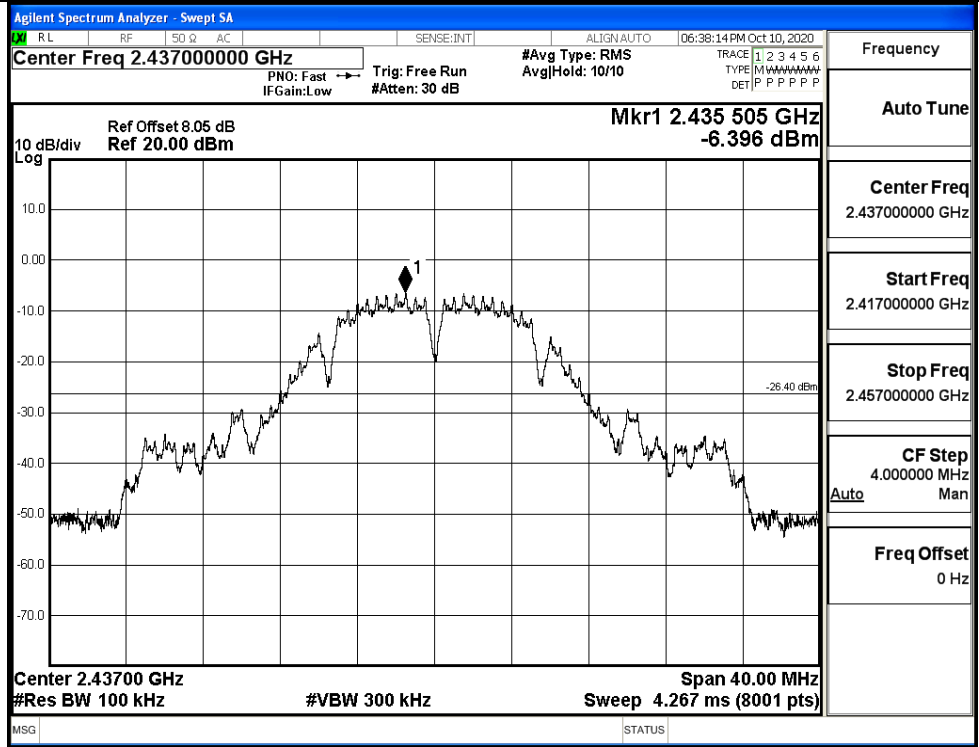
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-5.428	-36.067	-25.428	PASS
	MCH	-6.396	-35.680	-26.396	PASS
	HCH	-7.235	-37.274	-27.235	PASS
11G	LCH	-7.556	-38.222	-27.556	PASS
	MCH	-7.901	-38.481	-27.901	PASS
	HCH	-9.57	-37.484	-29.570	PASS
11N20 SISO	LCH	-6.591	-37.962	-26.591	PASS
	MCH	-8.09	-38.462	-28.090	PASS
	HCH	-8.637	-38.957	-28.637	PASS
11N40 SISO	LCH	-9.953	-37.634	-29.953	PASS
	MCH	-10.872	-37.836	-30.872	PASS
	HCH	-11.339	-38.162	-31.339	PASS

11B_LCH_Graphs

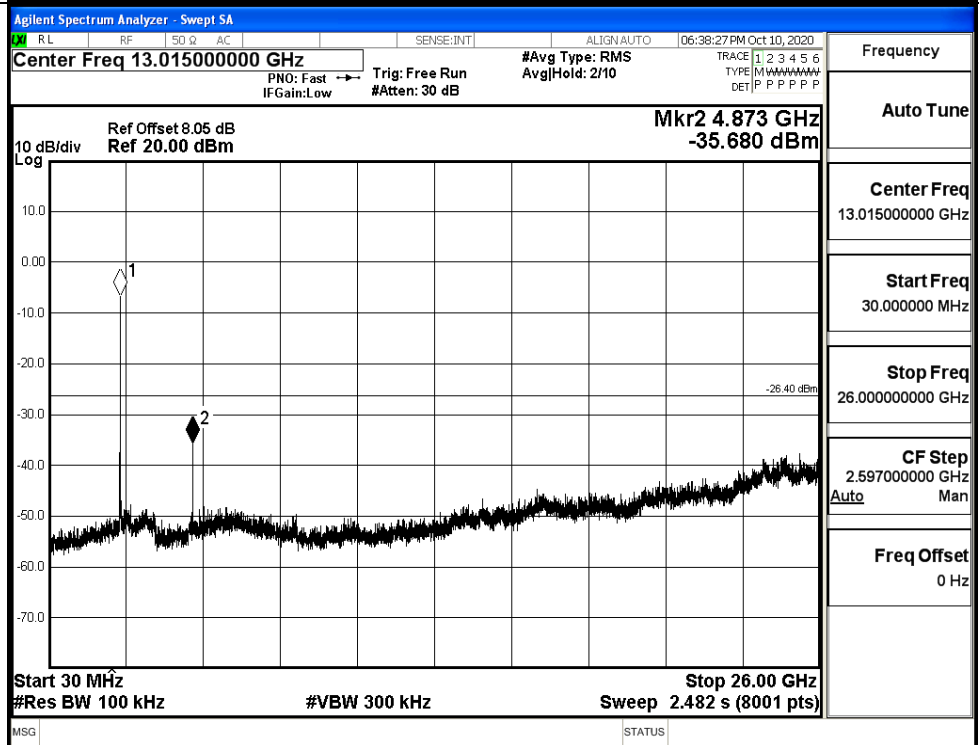


11B_MCH_Graphs

Pref/11B/MCH

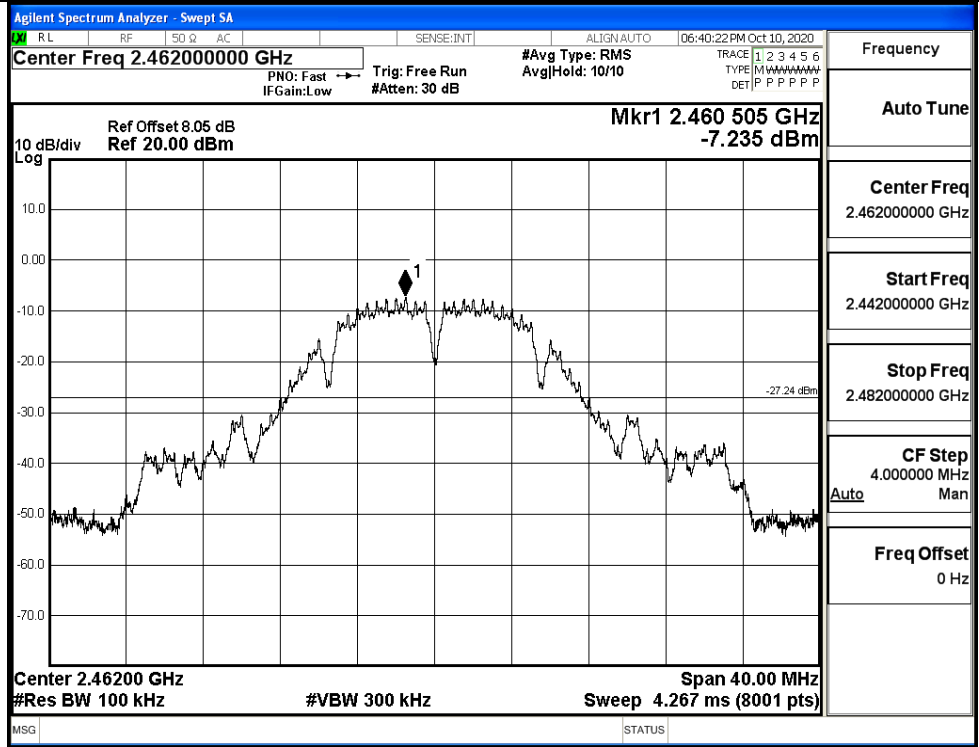


Puw/11B/MCH

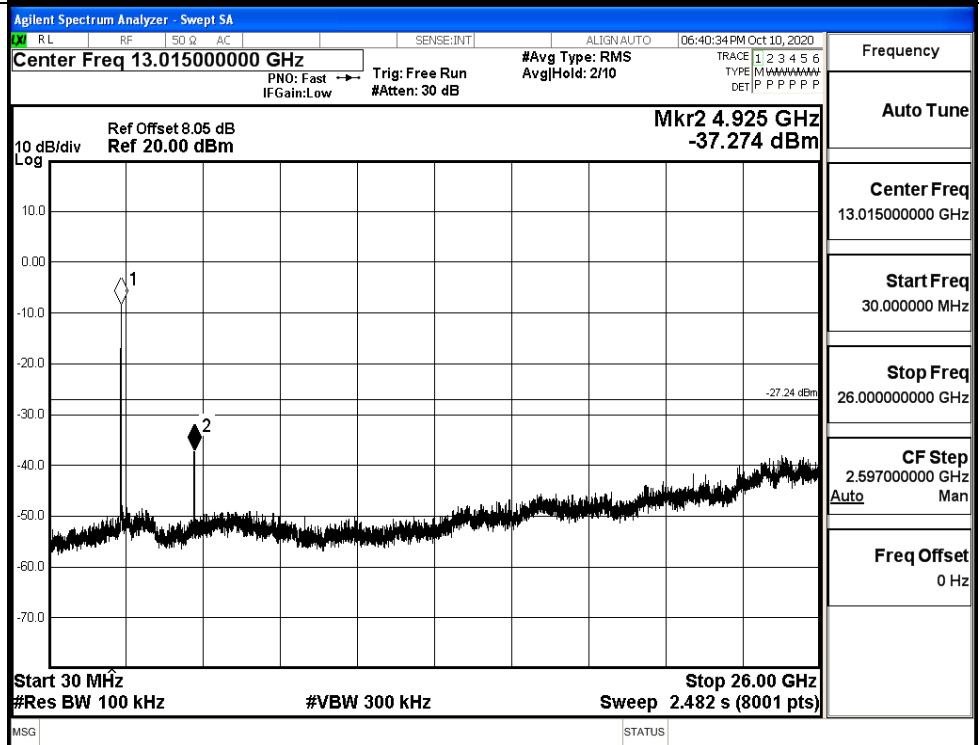


11B_HCH_Graphs

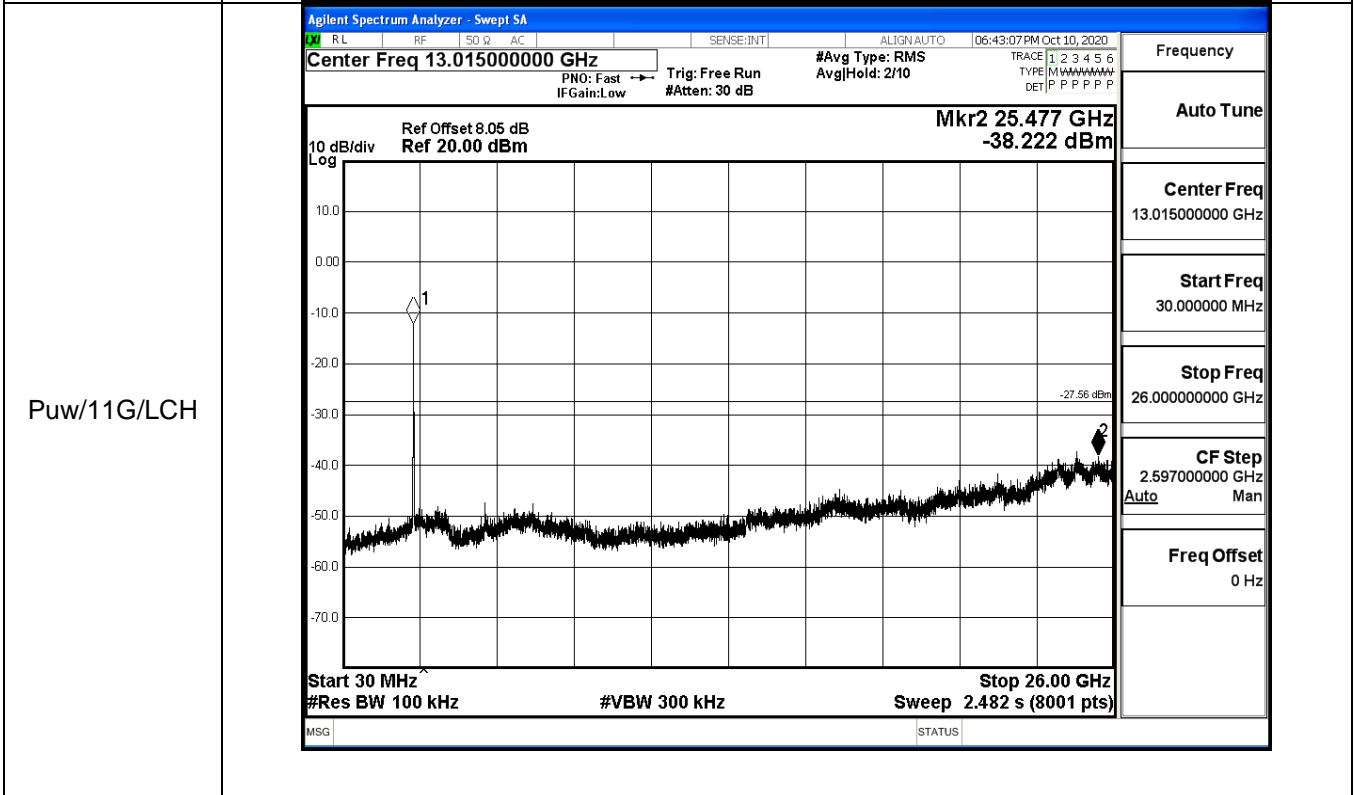
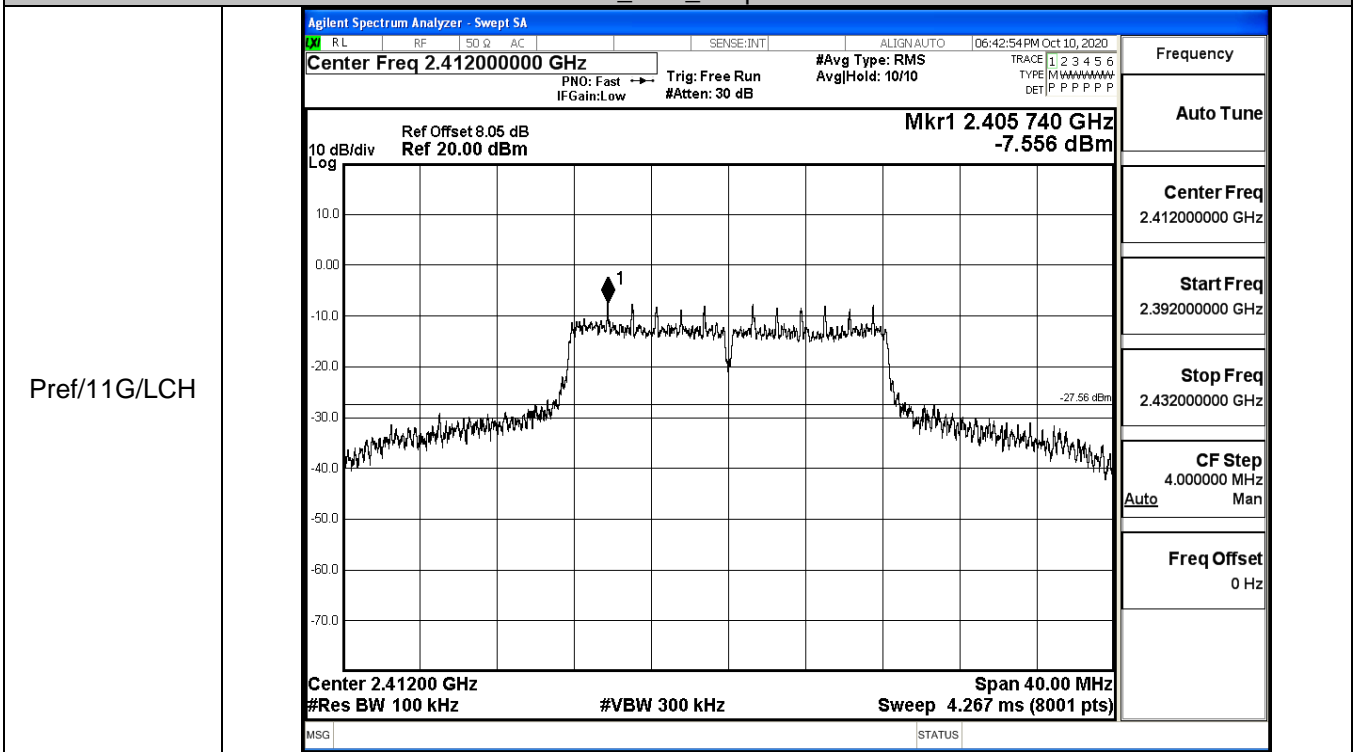
Pref/11B/HCH



Puw/11B/HCH

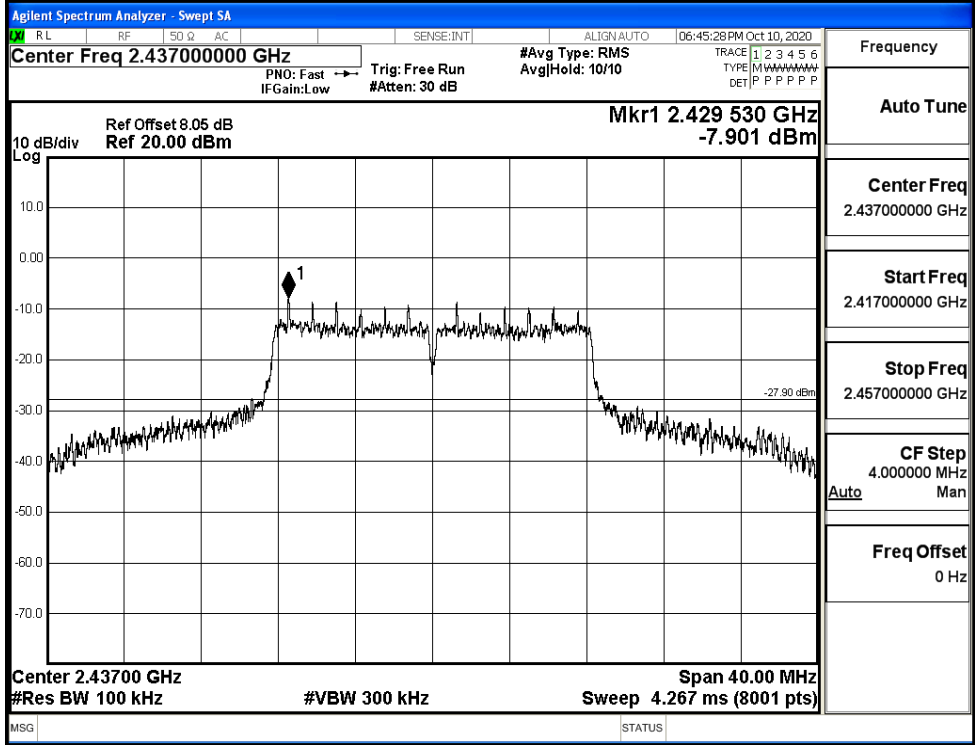


11G_LCH_Graphs

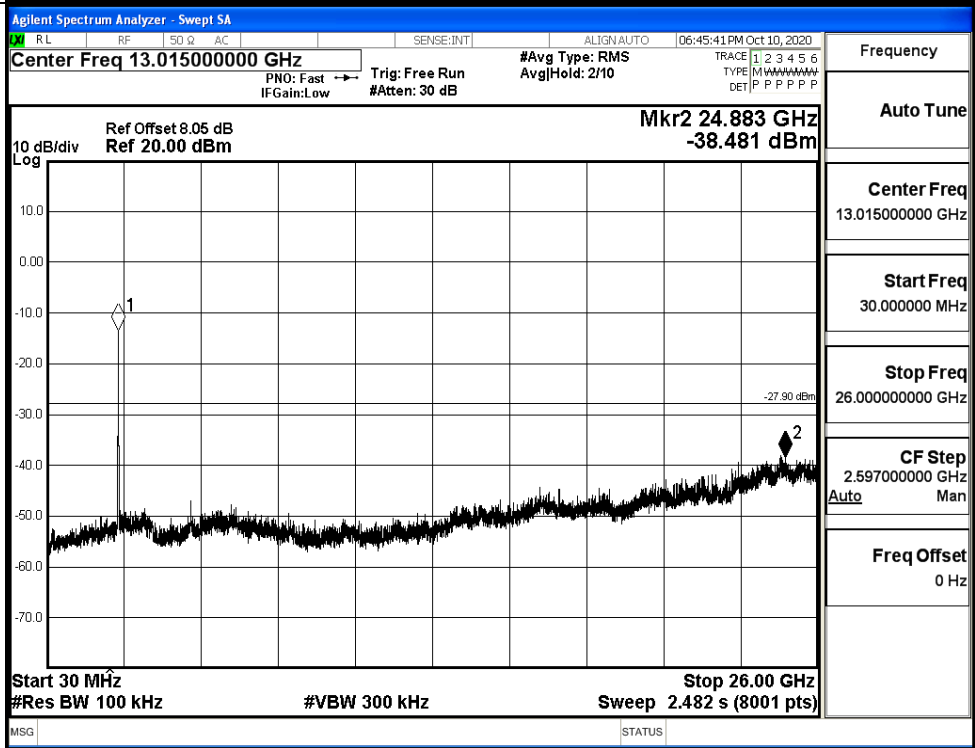


11G_MCH_Graphs

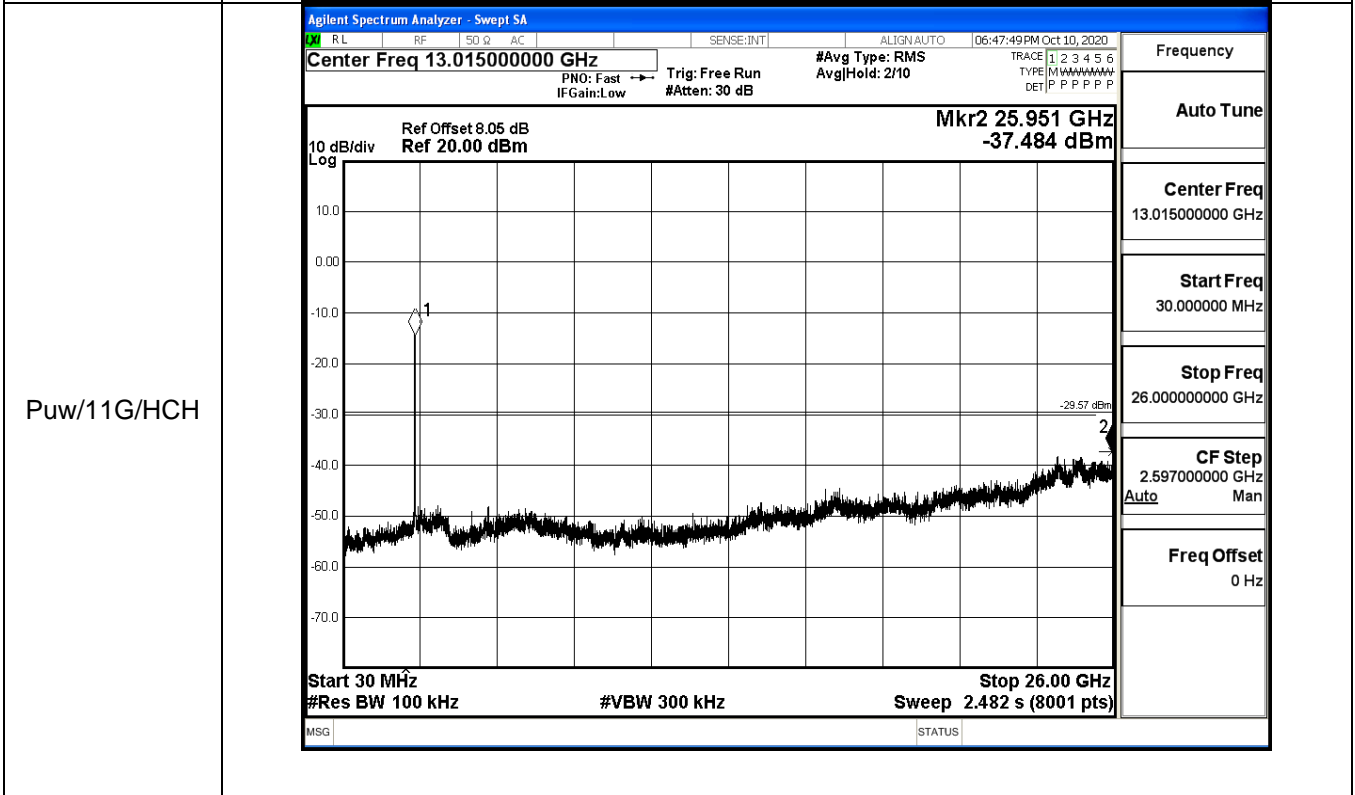
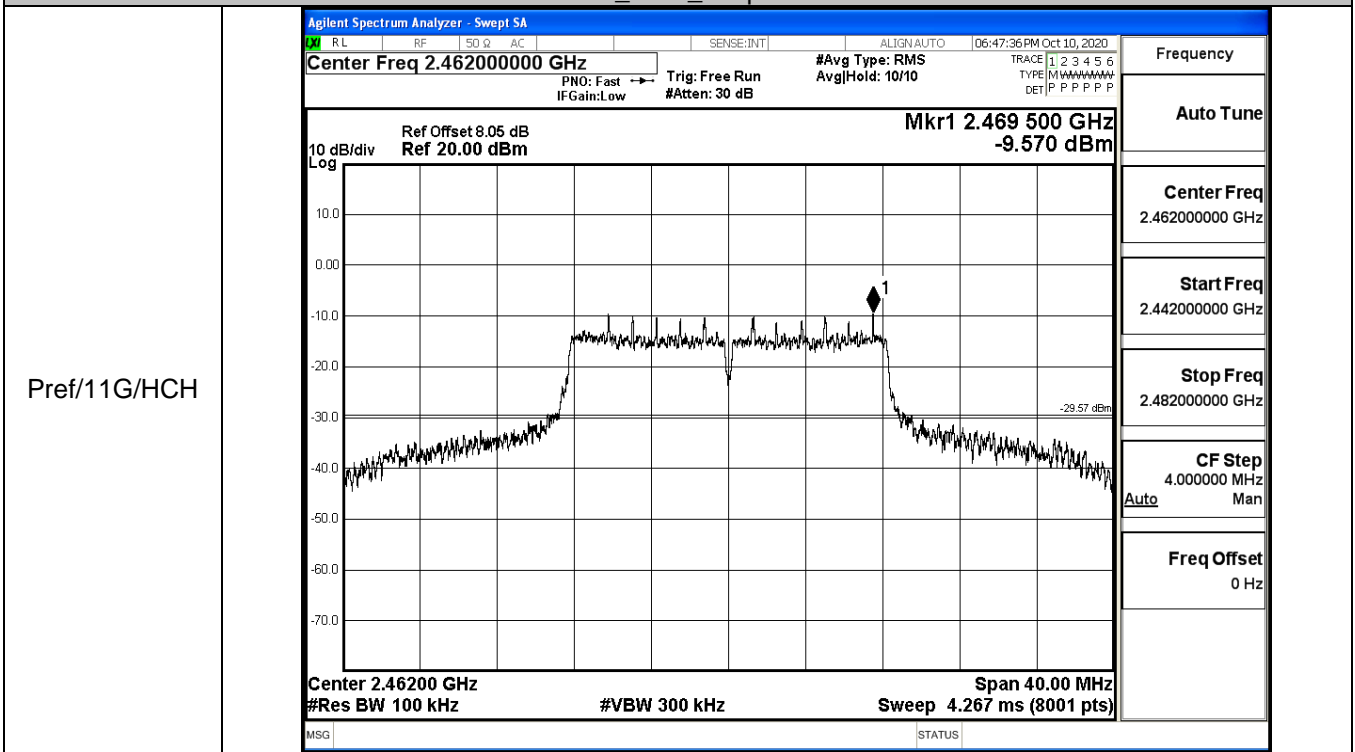
Pref/11G/MCH



Puw/11G/MCH

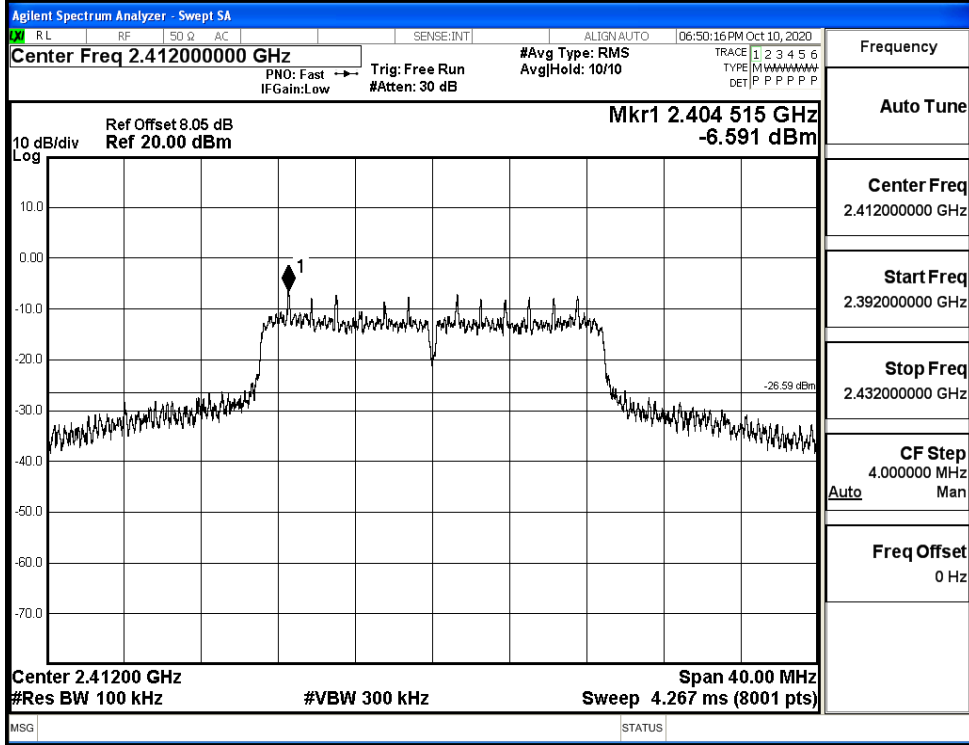


11G_HCH_Graphs

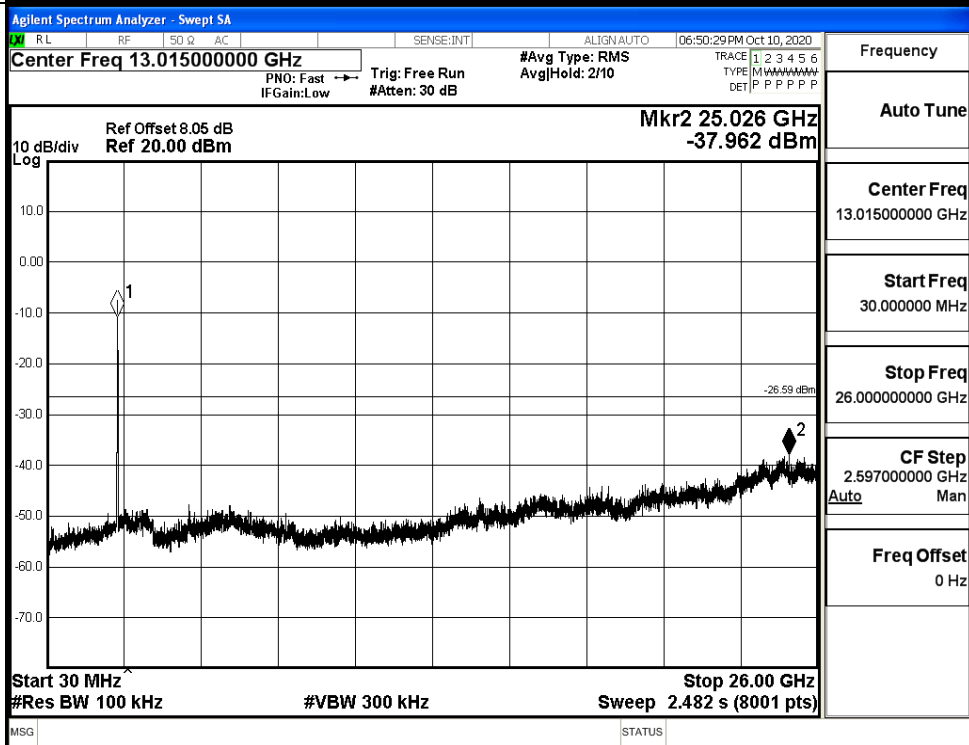


11N20SISO_LCH_Graphs

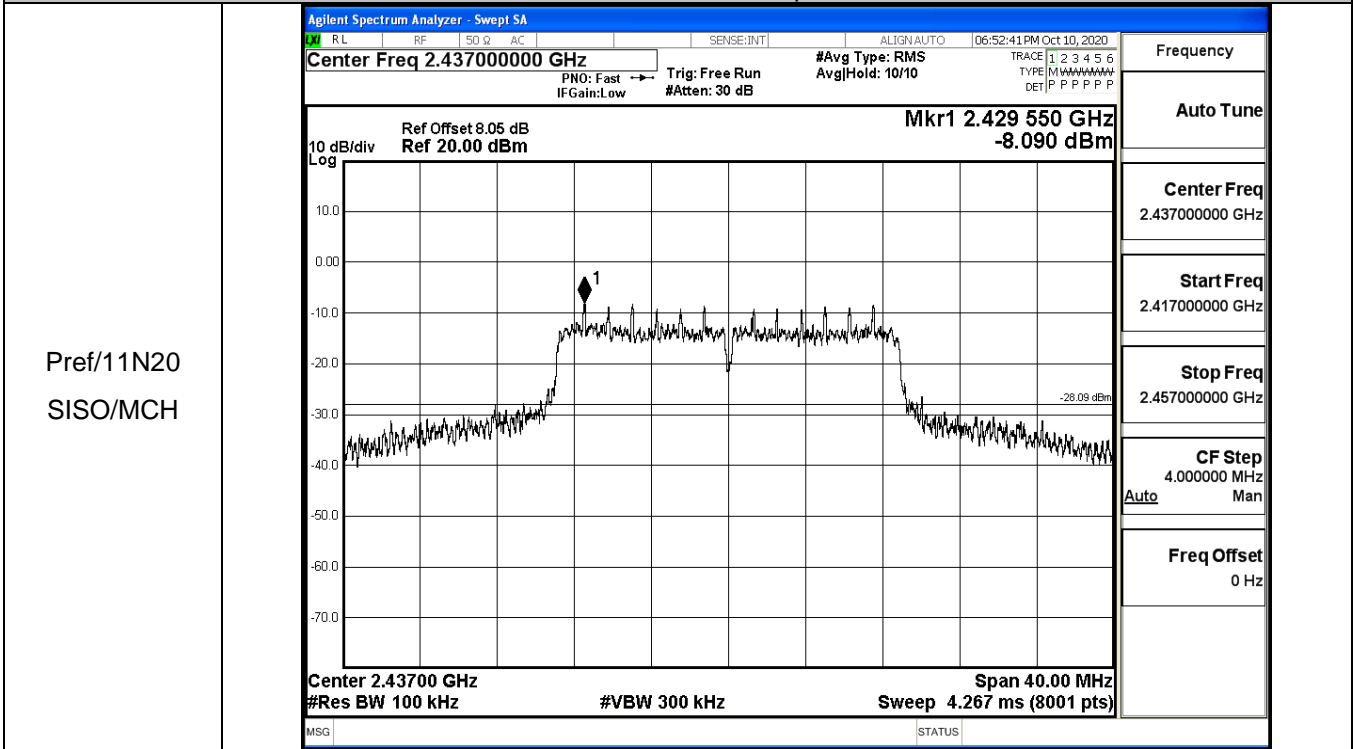
Pref/11N20SIS
O/LCH



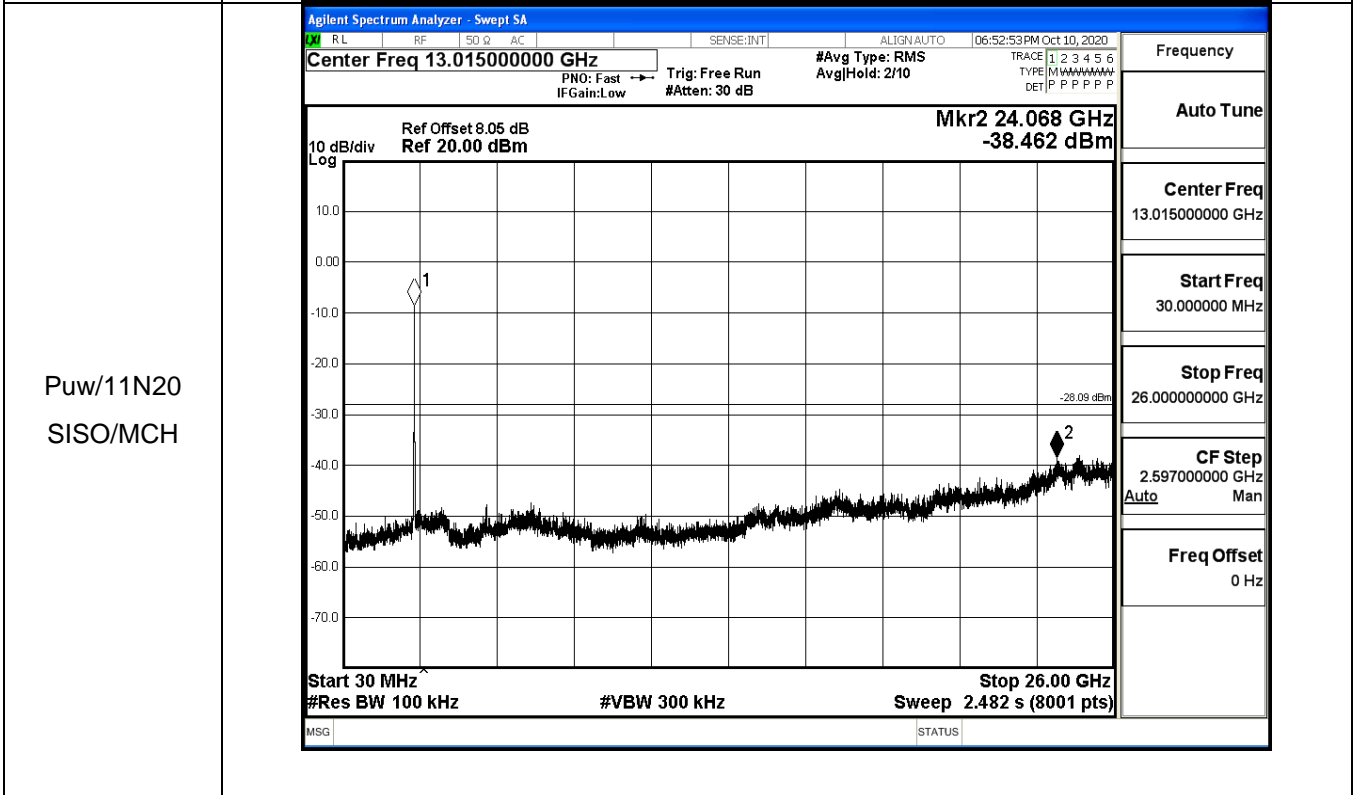
Puw/11N20
SISO/LCH



11N20SISO_MCH_Graphs

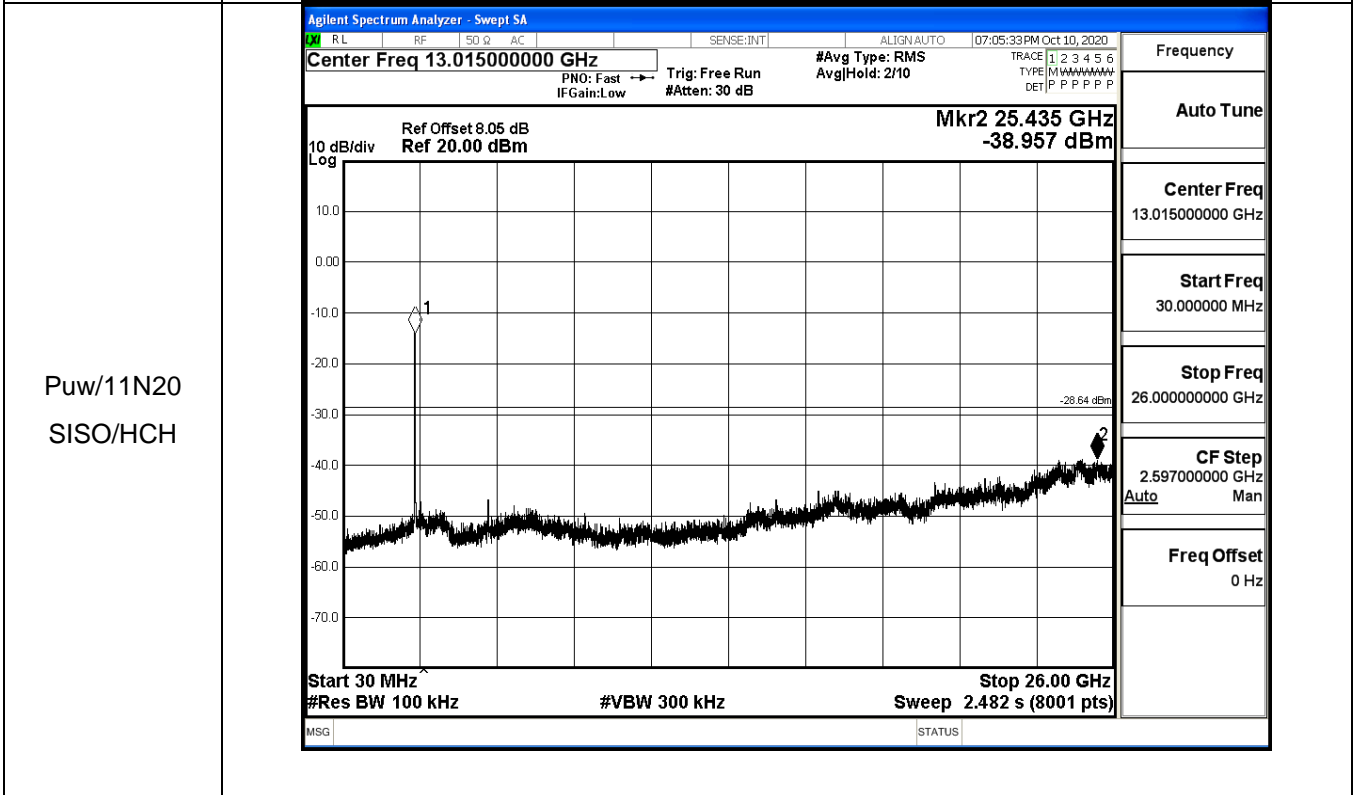
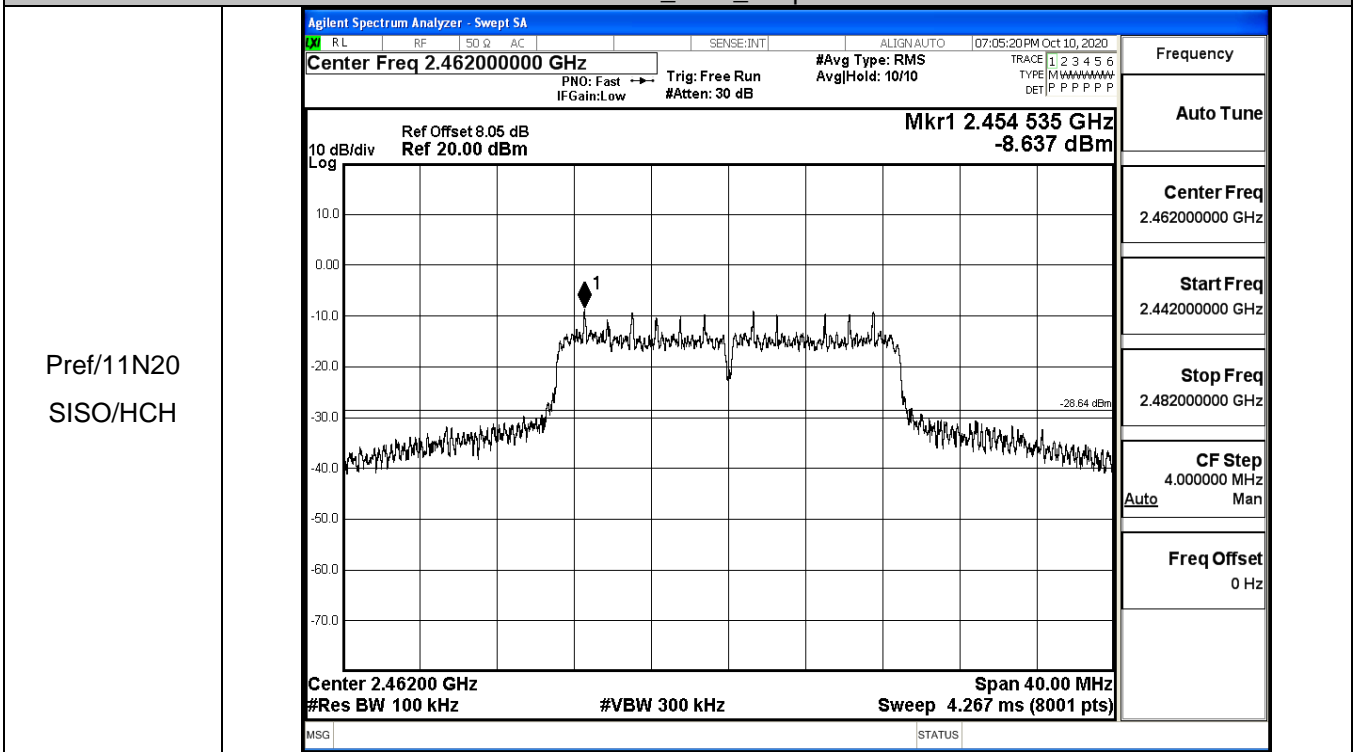


Pref/11N20
SISO/MCH

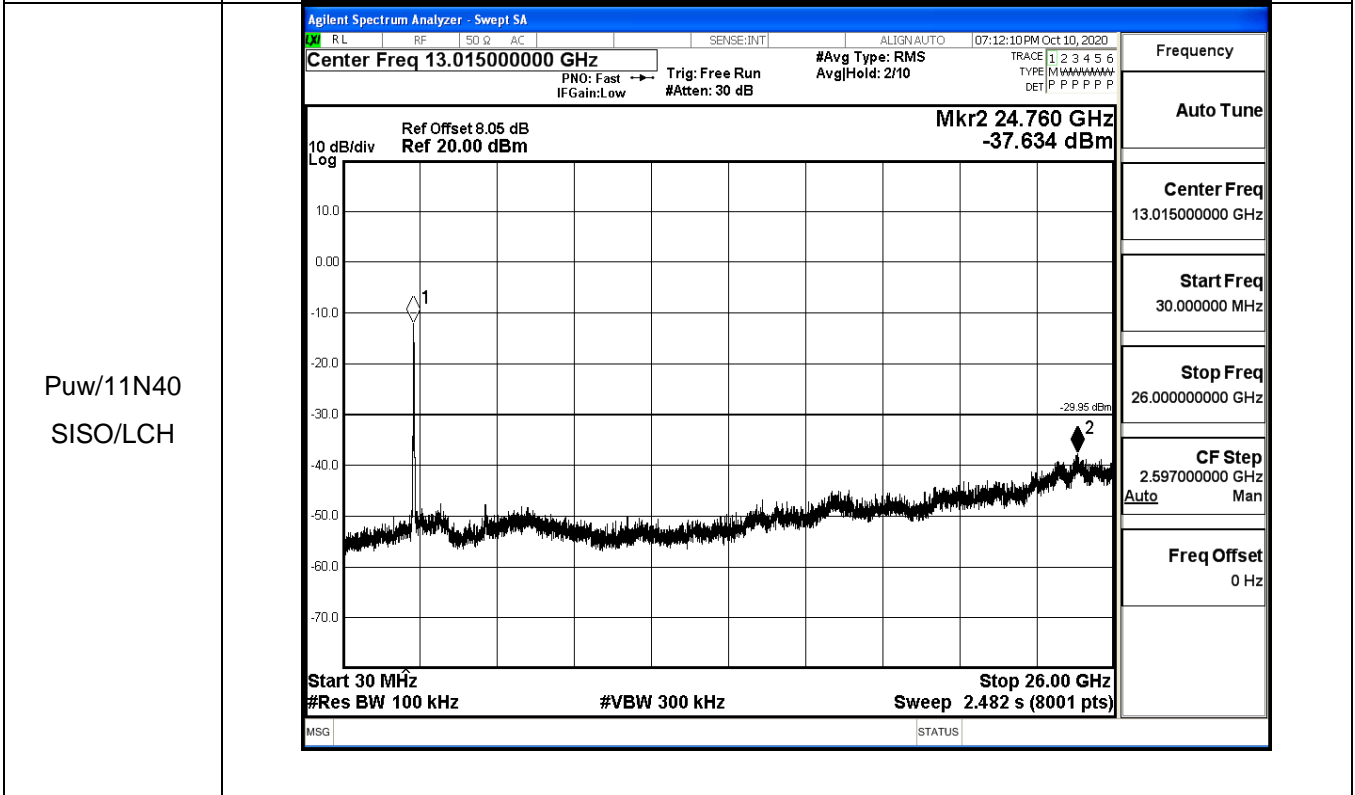
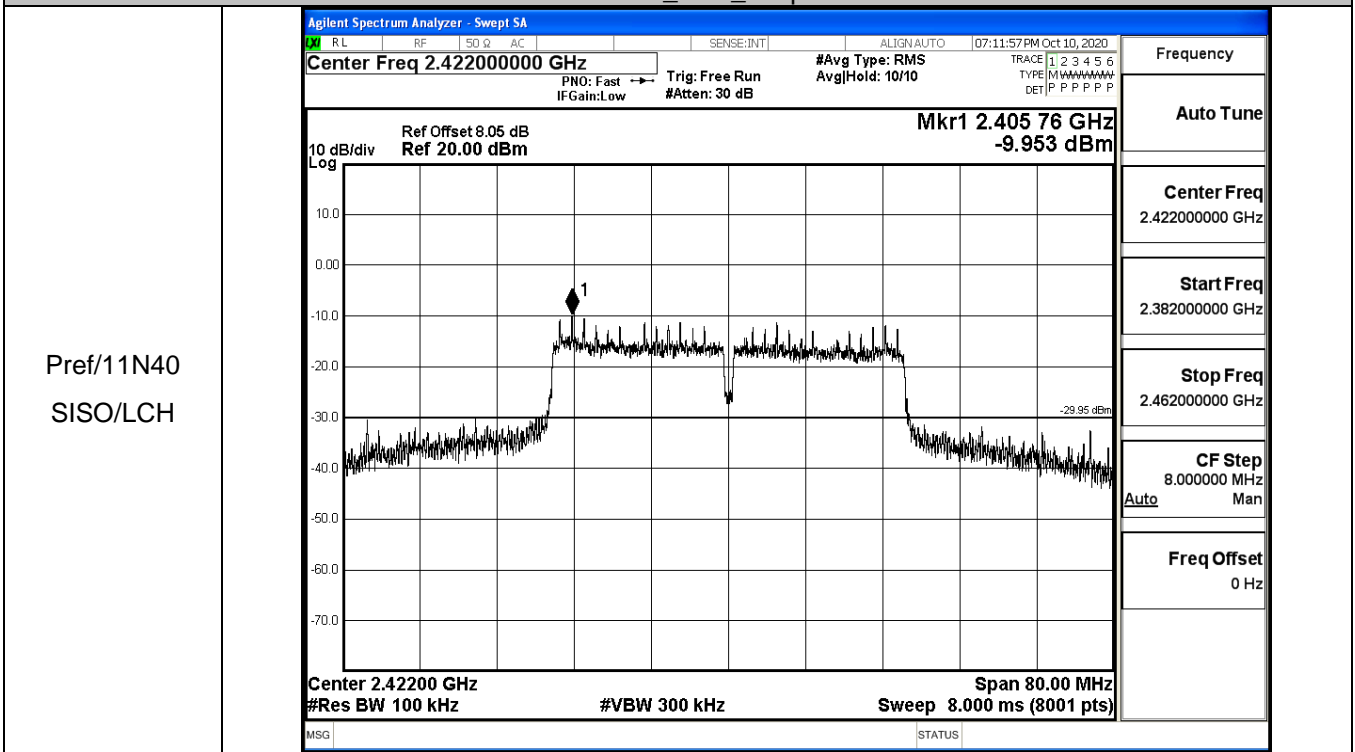


Puw/11N20
SISO/MCH

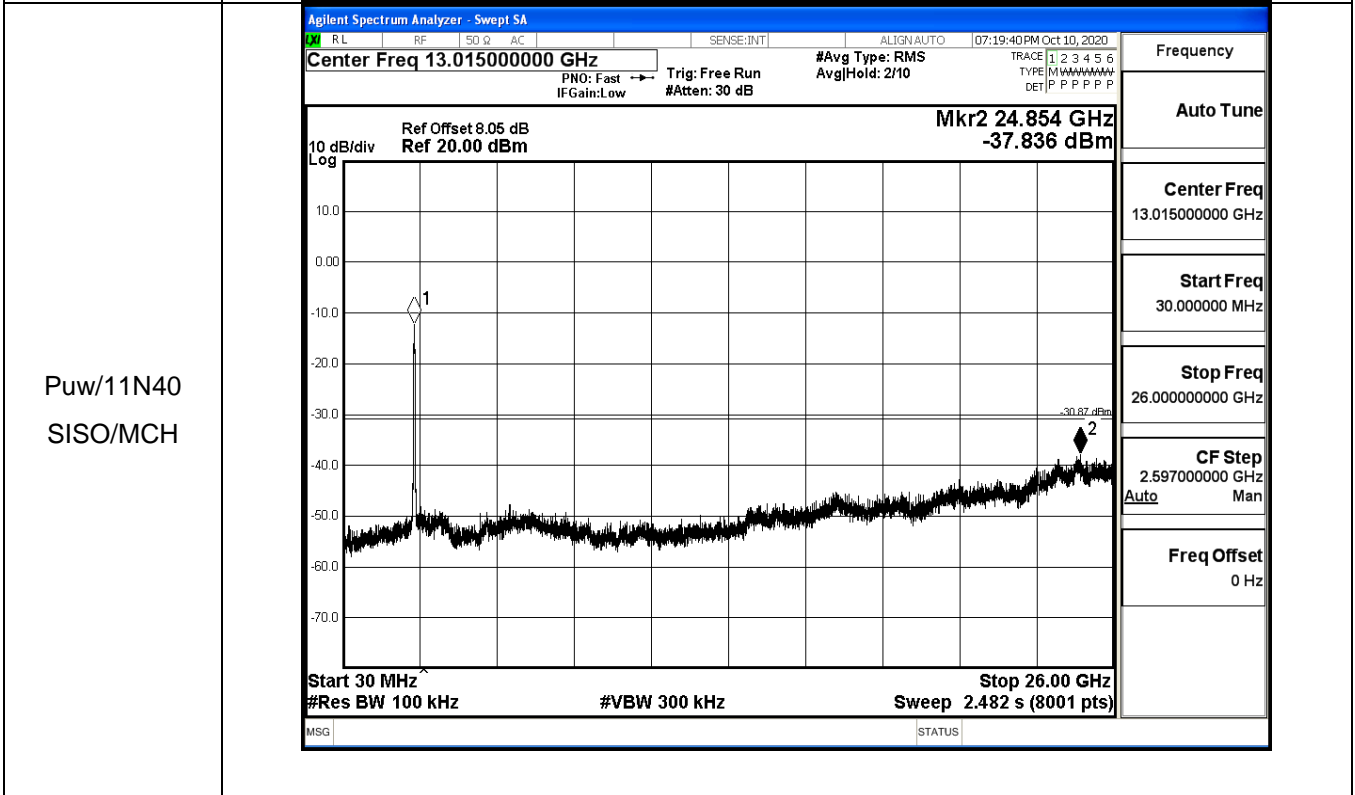
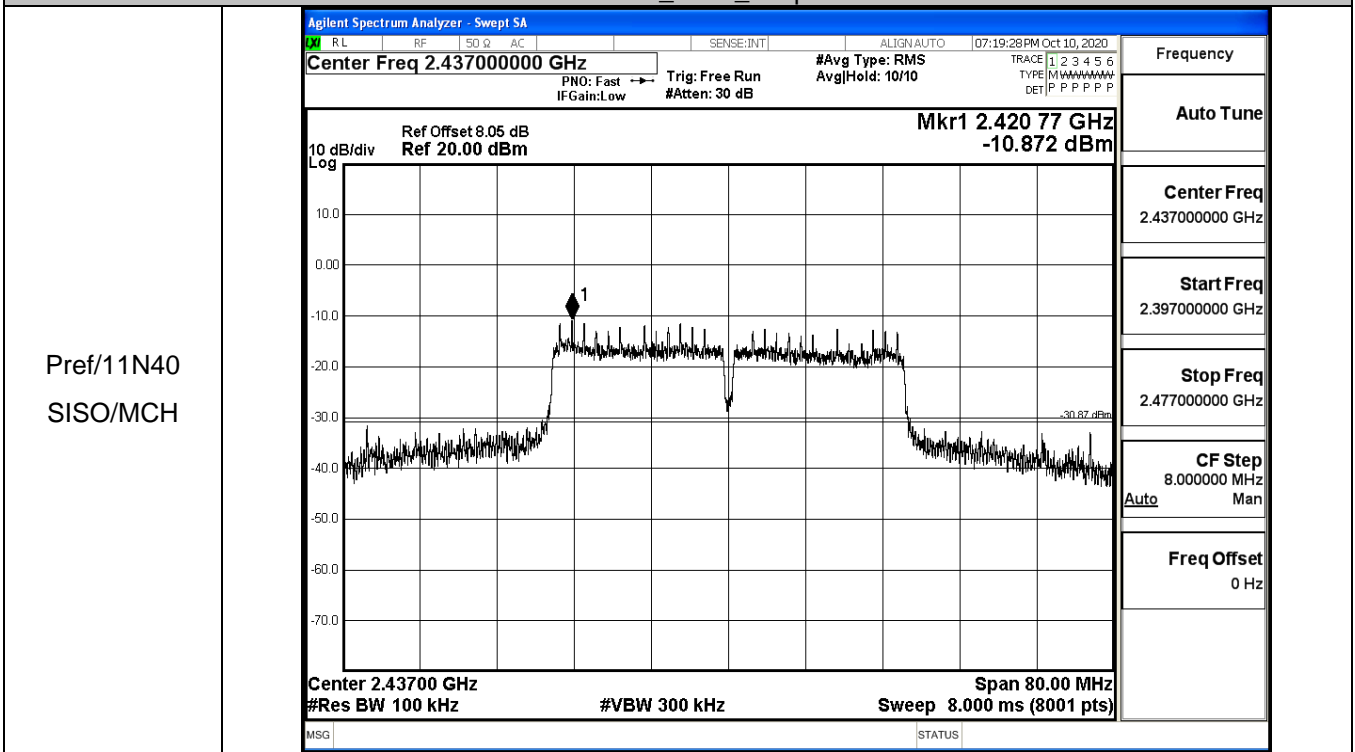
11N20SISO_HCH_Graphs



11N40SISO_LCH_Graphs

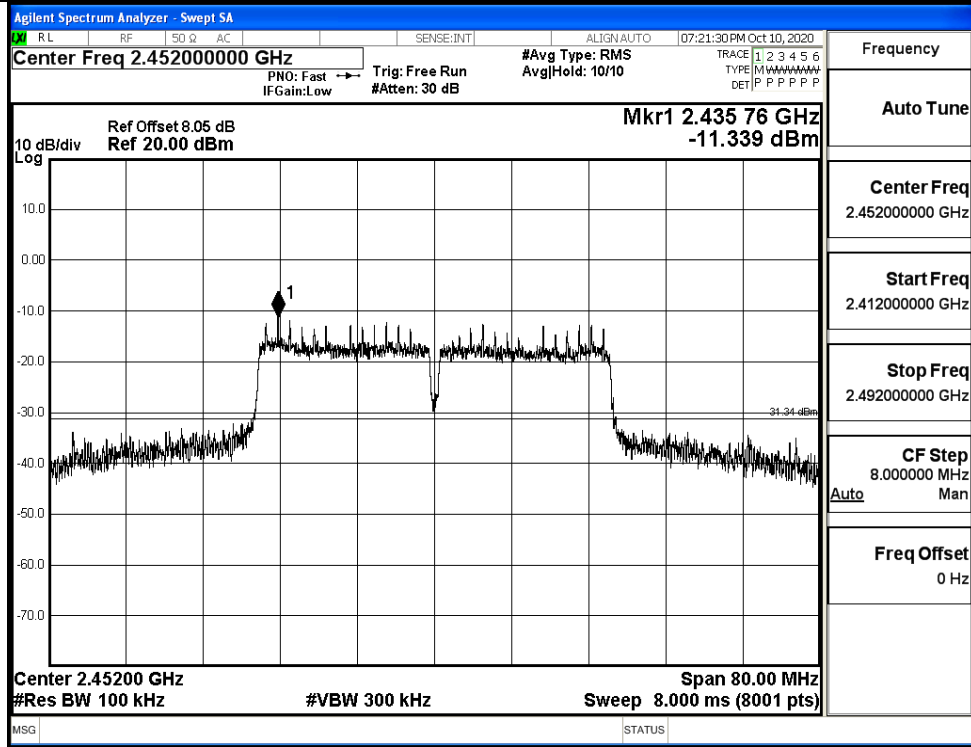


11N40SISO_MCH_Graphs

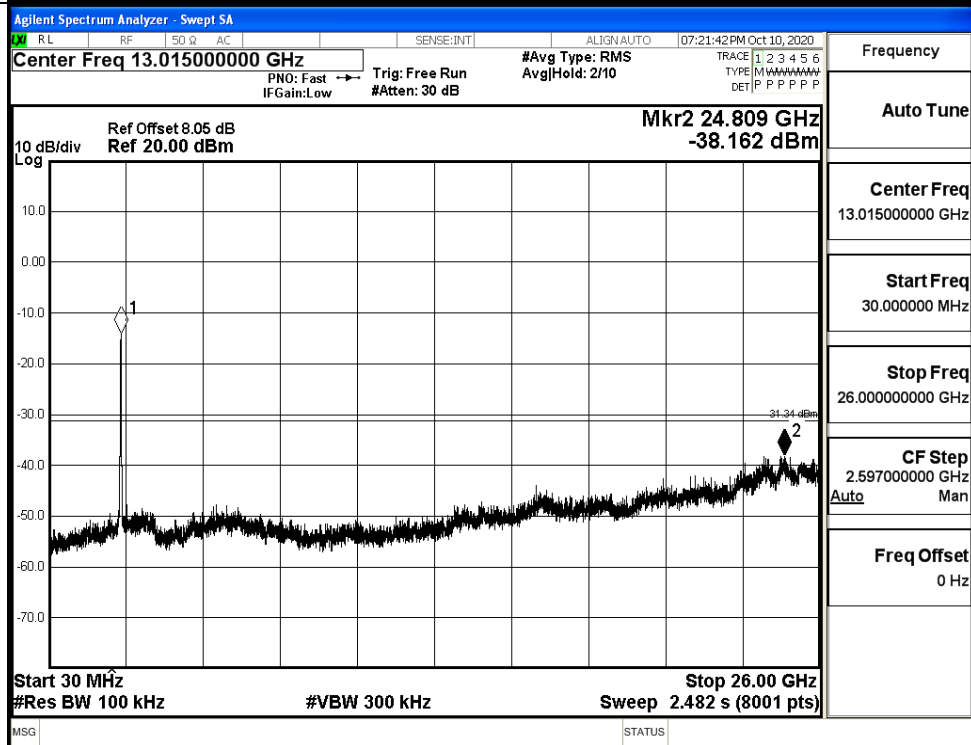


11N40SISO_HCH_Graphs

Pref/11N40
SISO/HCH

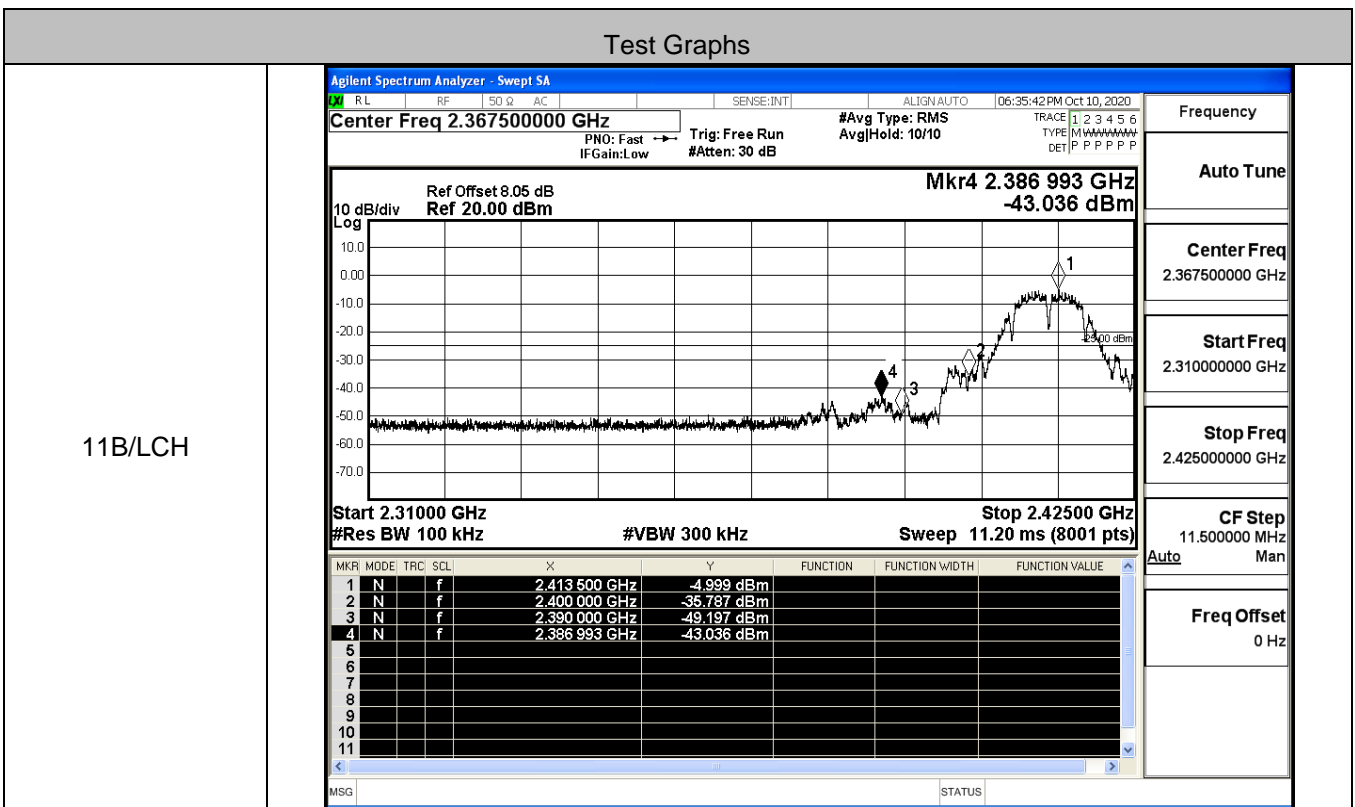


Puw/11N40
SISO/HCH

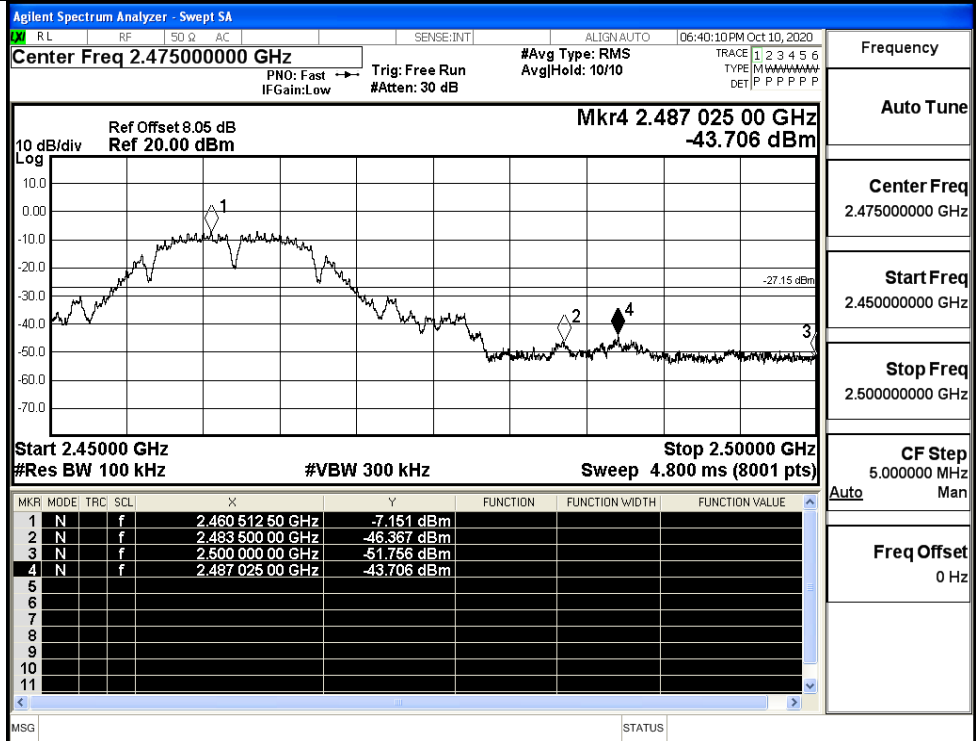


A.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-4.999	-43.036	-25	PASS
	HCH	-7.151	-43.706	-27.15	PASS
11G	LCH	-7.120	-40.364	-27.12	PASS
	HCH	-9.029	-41.714	-29.03	PASS
11N20SISO	LCH	-7.508	-36.912	-27.51	PASS
	HCH	-9.148	-38.151	-29.15	PASS
11N40SISO	LCH	-10.232	-31.605	-30.23	PASS
	HCH	-11.738	-33.734	-31.74	PASS



11B/HCH



Frequency

Auto Tune

Center Freq
2.475000000 GHz

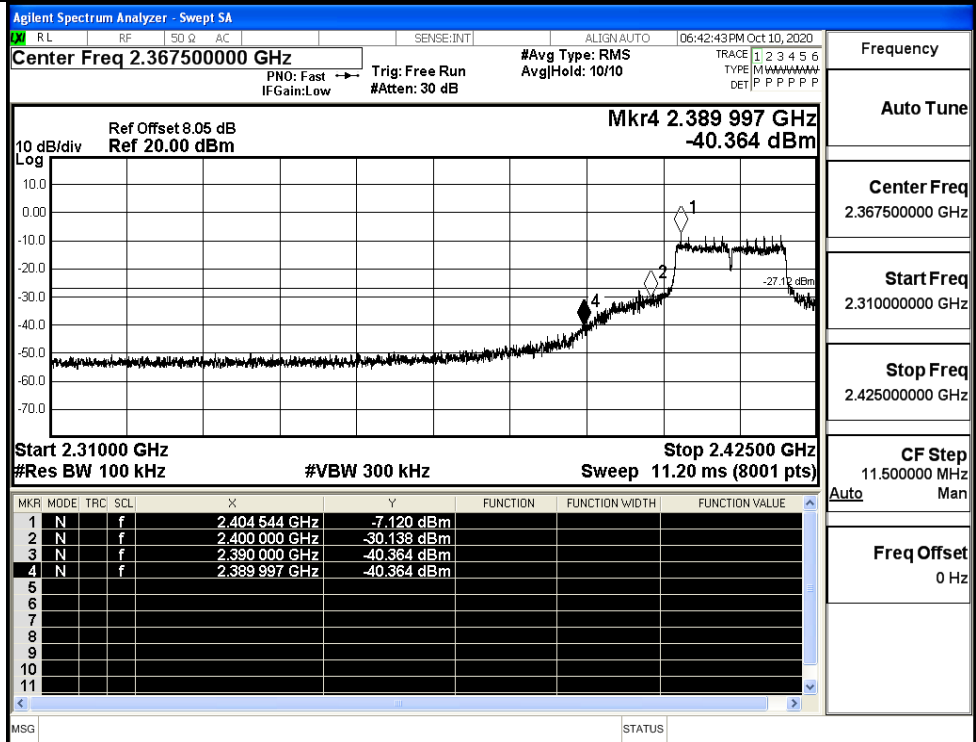
Start Freq
2.450000000 GHz

Stop Freq
2.500000000 GHz

CF Step
5.000000 MHz

Freq Offset
0 Hz

11G/LCH



Frequency

Auto Tune

Center Freq
2.367500000 GHz

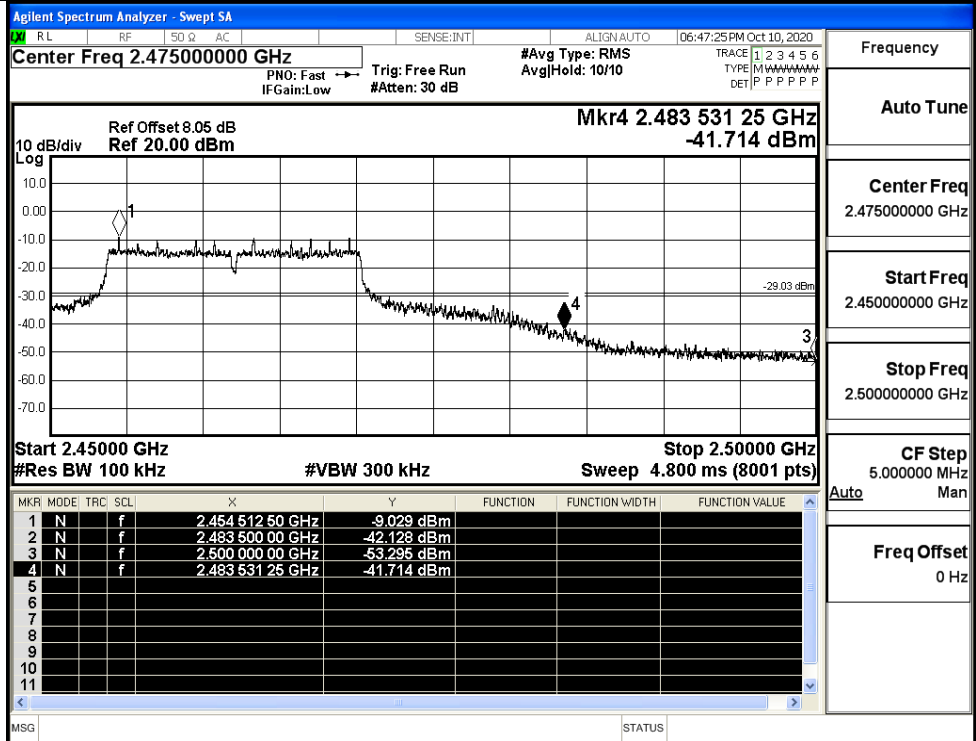
Start Freq
2.310000000 GHz

Stop Freq
2.425000000 GHz

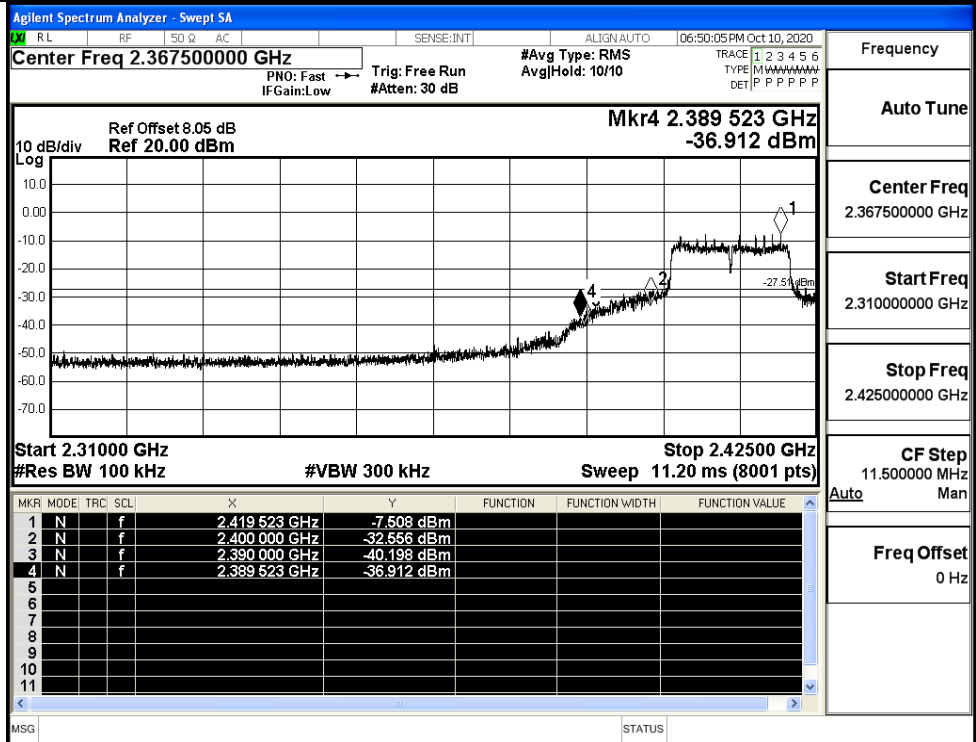
CF Step
11.500000 MHz

Freq Offset
0 Hz

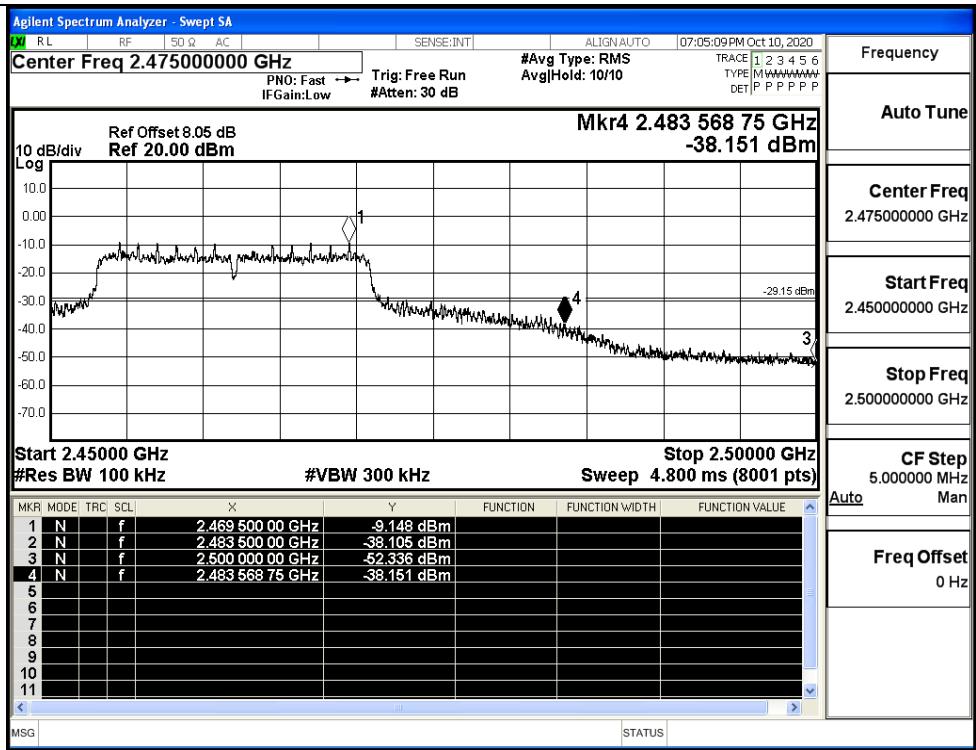
11G/HCH



11N20SISO/LCH

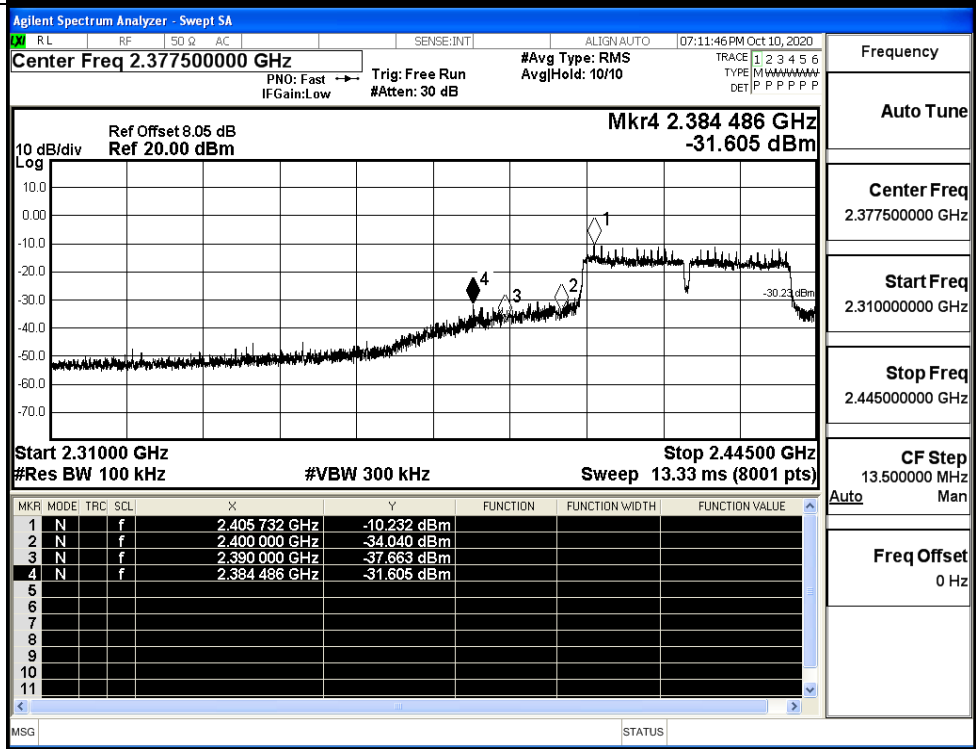


11N20SISO/HCH



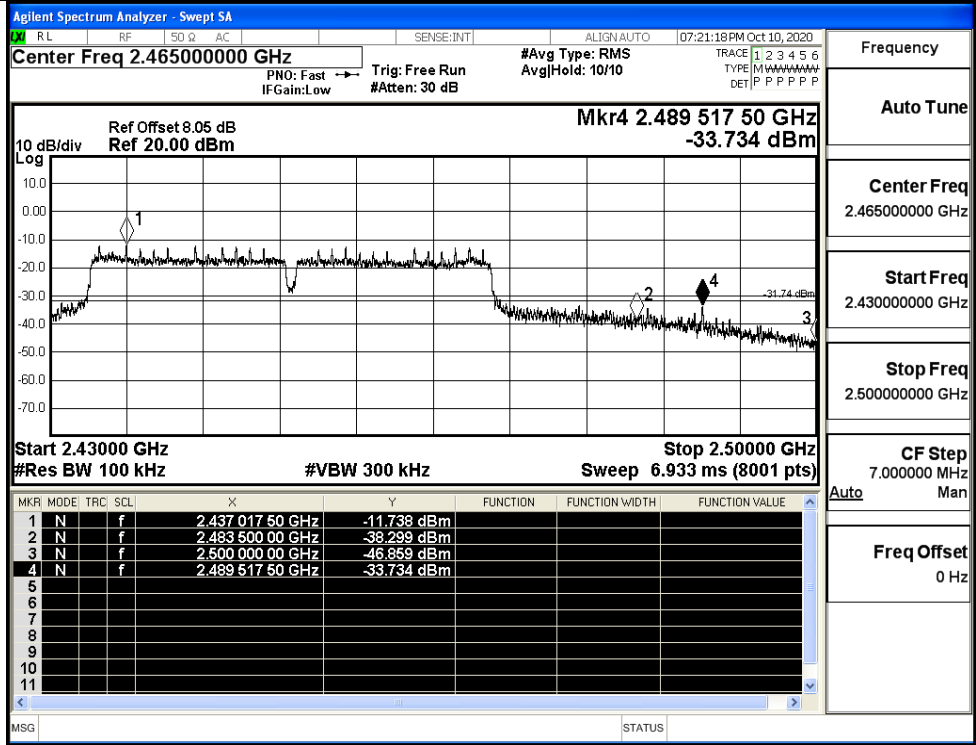
Frequency	
Auto Tune	
Center Freq	2.475000000 GHz
Start Freq	2.450000000 GHz
Stop Freq	2.500000000 GHz
CF Step	5.000000 MHz
Freq Offset	0 Hz

11N40SISO/LCH



Frequency	
Auto Tune	
Center Freq	2.377500000 GHz
Start Freq	2.310000000 GHz
Stop Freq	2.445000000 GHz
CF Step	13.500000 MHz
Freq Offset	0 Hz

11N40SISO/HCH

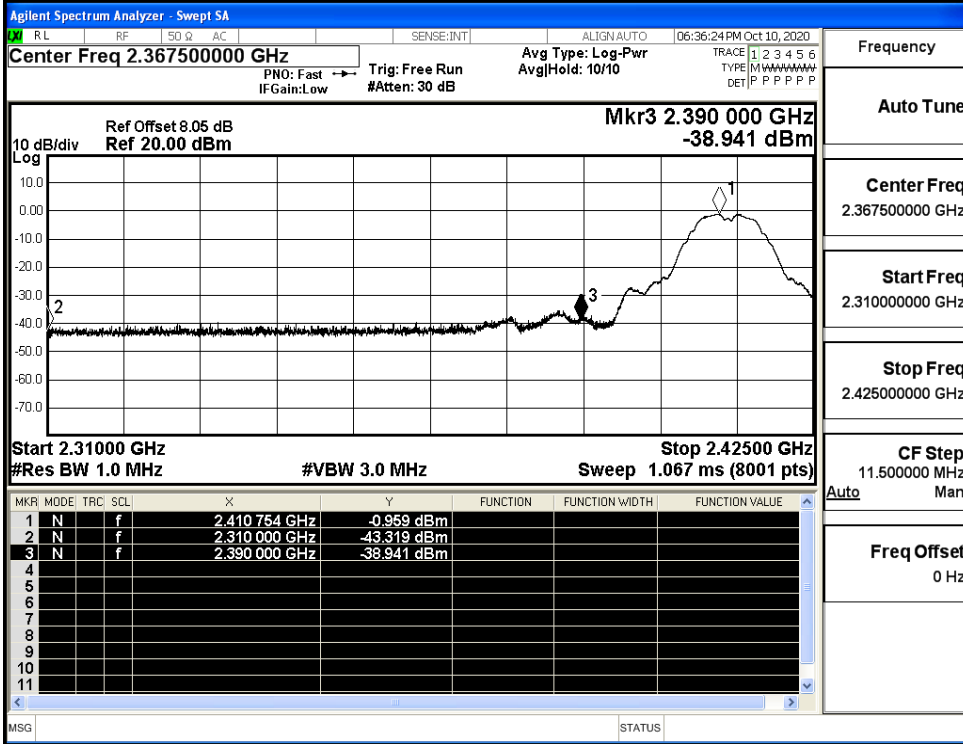


A.7 Restrict-band band-edge measurements

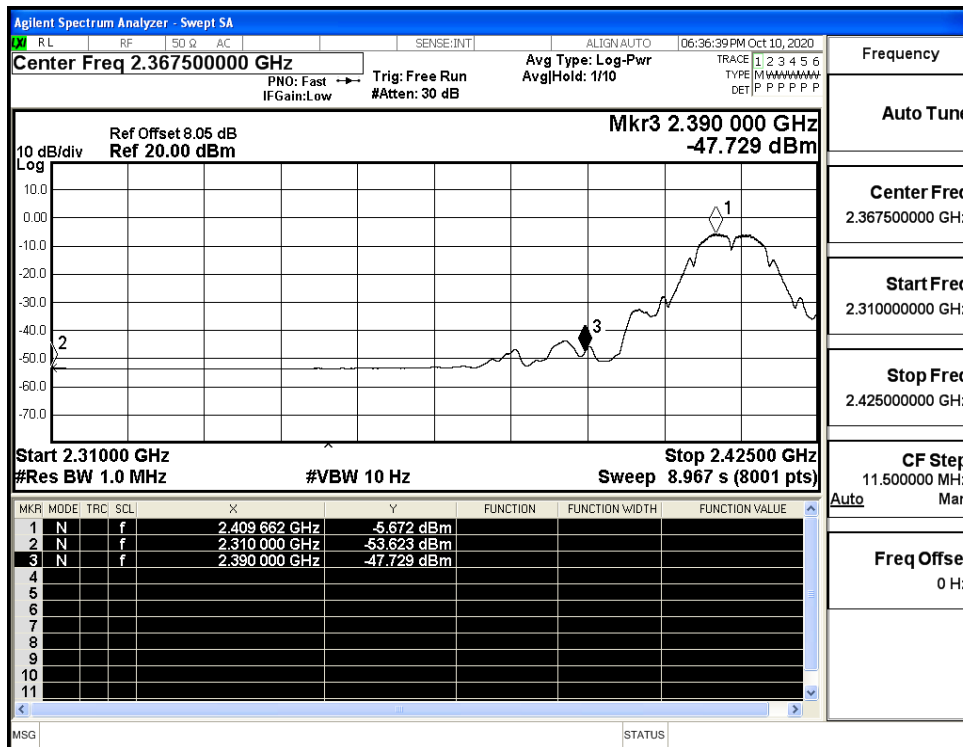
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBu V/m]	Verdict
11B	2412	Ant1	2310.0	-43.32	3.0	0	54.94	PEAK	74	PASS
	2412	Ant1	2310.0	-53.62	3.0	0	44.64	AV	54	PASS
	2412	Ant1	2390.0	-38.94	3.0	0	59.32	PEAK	74	PASS
	2412	Ant1	2390.0	-47.73	3.0	0	50.53	AV	54	PASS
	2462	Ant1	2483.5	-39.66	3.0	0	58.6	PEAK	74	PASS
	2462	Ant1	2483.5	-47.92	3.0	0	50.34	AV	54	PASS
	2462	Ant1	2500.0	-42.72	3.0	0	55.54	PEAK	74	PASS
	2462	Ant1	2500.0	-52.59	3.0	0	45.67	AV	54	PASS
11G	2412	Ant1	2310.0	-42.38	3.0	0	55.88	PEAK	74	PASS
	2412	Ant1	2310.0	-53.49	3.0	0	44.77	AV	54	PASS
	2412	Ant1	2390.0	-27.49	3.0	0	70.77	PEAK	74	PASS
	2412	Ant1	2390.0	-44.57	3.0	0	53.69	AV	54	PASS
	2462	Ant1	2483.5	-31.11	3.0	0	67.15	PEAK	74	PASS
	2462	Ant1	2483.5	-46.31	3.0	0	51.95	AV	54	PASS
	2462	Ant1	2500.0	-40.24	3.0	0	58.02	PEAK	74	PASS
	2462	Ant1	2500.0	-52.03	3.0	0	46.23	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-42.35	3.0	0	55.91	PEAK	74	PASS
	2412	Ant1	2310.0	-53.51	3.0	0	44.75	AV	54	PASS
	2412	Ant1	2390.0	-24.88	3.0	0	73.38	PEAK	74	PASS
	2412	Ant1	2390.0	-44.71	3.0	0	53.55	AV	54	PASS
	2462	Ant1	2483.5	-27.99	3.0	0	70.27	PEAK	74	PASS
	2462	Ant1	2483.5	-44.98	3.0	0	53.28	AV	54	PASS
	2462	Ant1	2500.0	-41.30	3.0	0	56.96	PEAK	74	PASS
	2462	Ant1	2500.0	-51.78	3.0	0	46.48	AV	54	PASS
11N40 SISO	2422	Ant1	2310.0	-43.37	3.0	0	54.89	PEAK	74	PASS
	2422	Ant1	2310.0	-53.43	3.0	0	44.83	AV	54	PASS

	2422	Ant1	2390.0	-27.58	3.0	0	70.68	PEAK	74	PASS
	2422	Ant1	2390.0	-44.73	3.0	0	53.53	AV	54	PASS
	2452	Ant1	2483.5	-28.49	3.0	0	69.77	PEAK	74	PASS
	2452	Ant1	2483.5	-45.07	3.0	0	53.19	AV	54	PASS
	2452	Ant1	2500.0	-34.47	3.0	0	63.79	PEAK	74	PASS
	2452	Ant1	2500.0	-48.68	3.0	0	49.58	AV	54	PASS

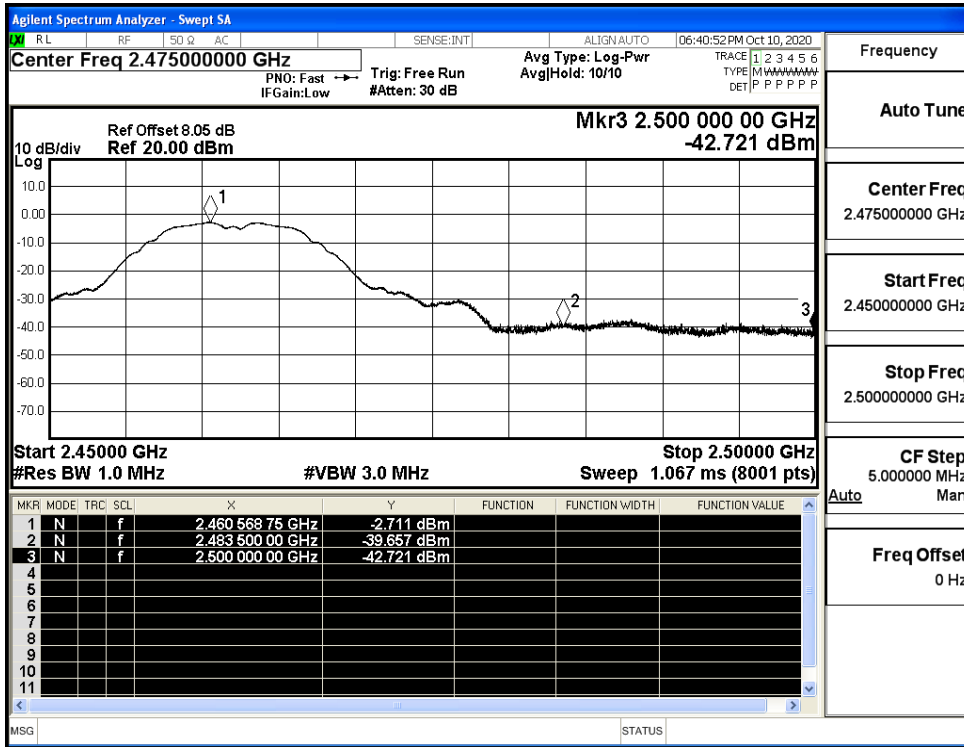
Restrict-band band-edge measurements_11B_2412_Ant1_PEAK



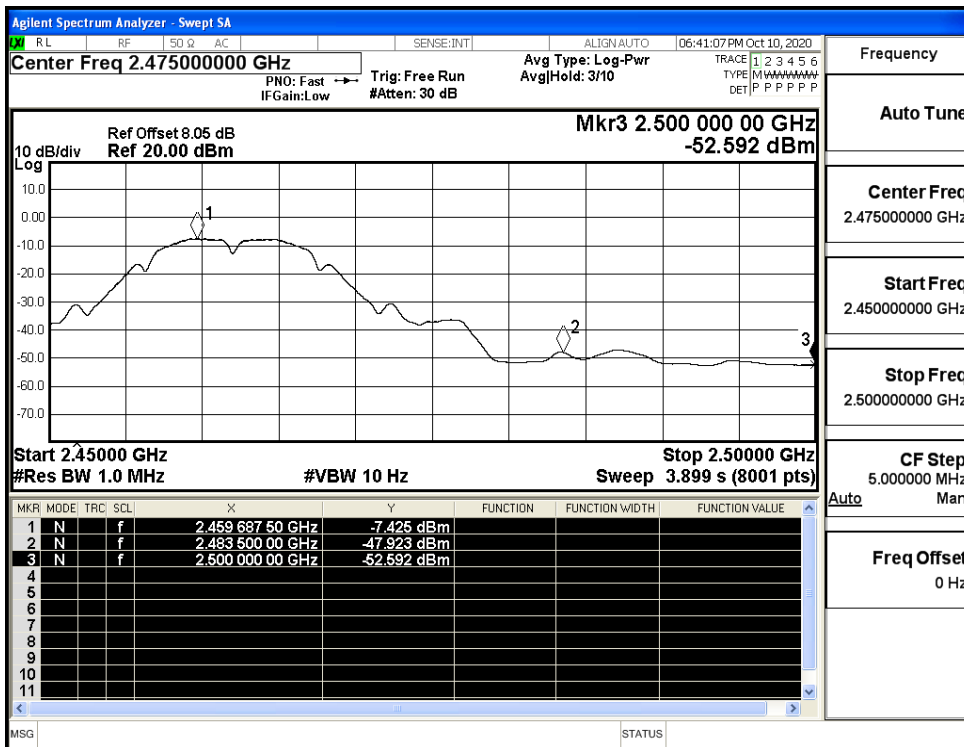
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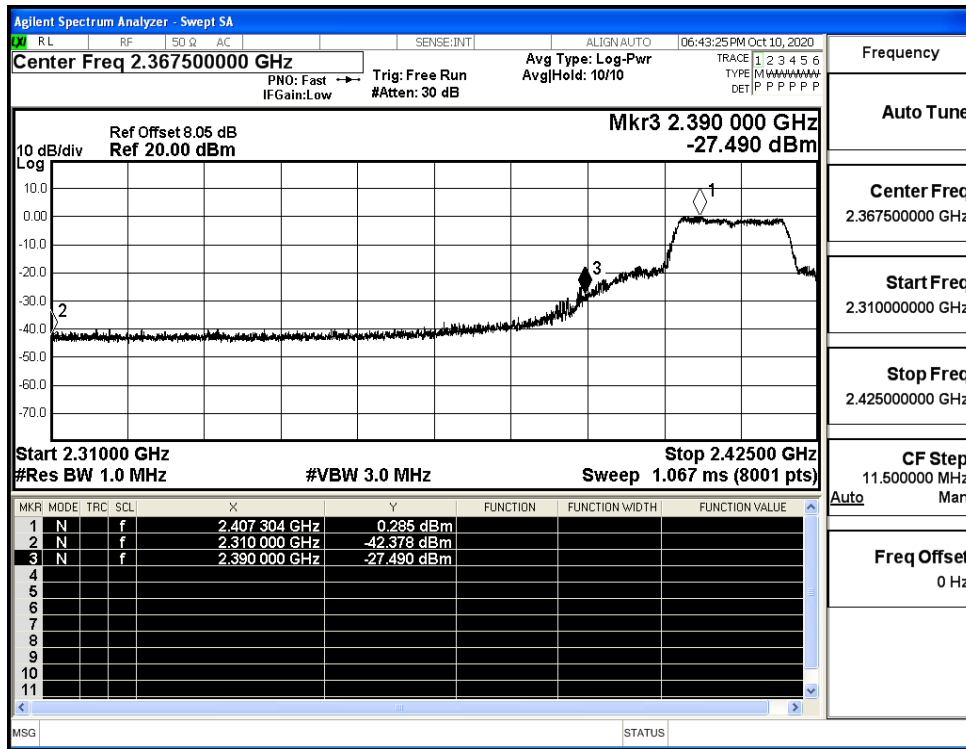
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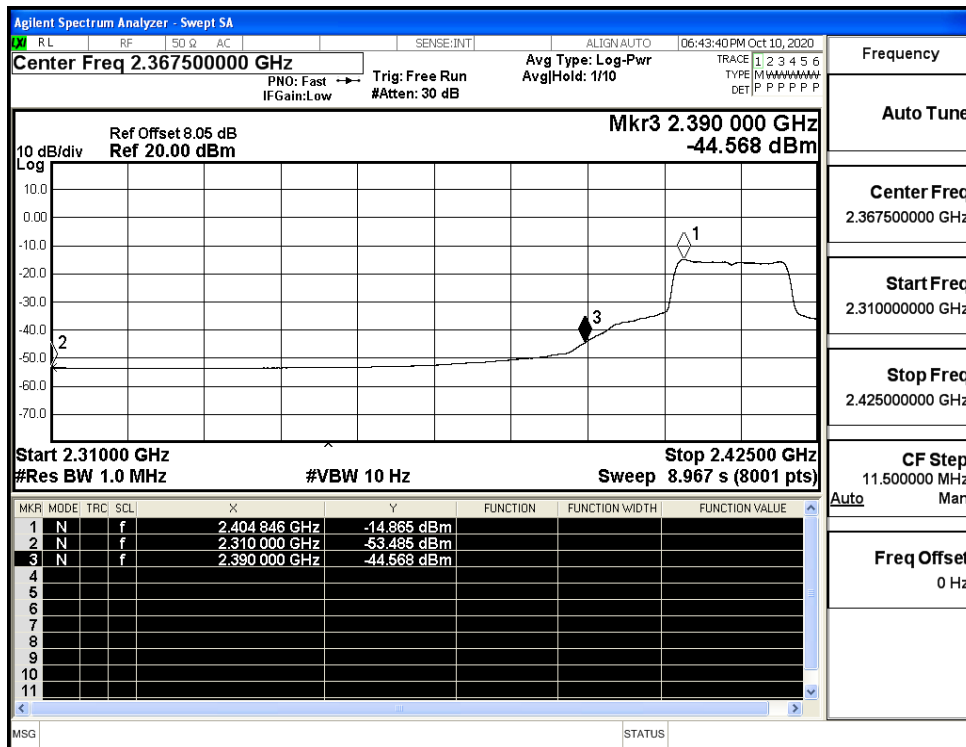
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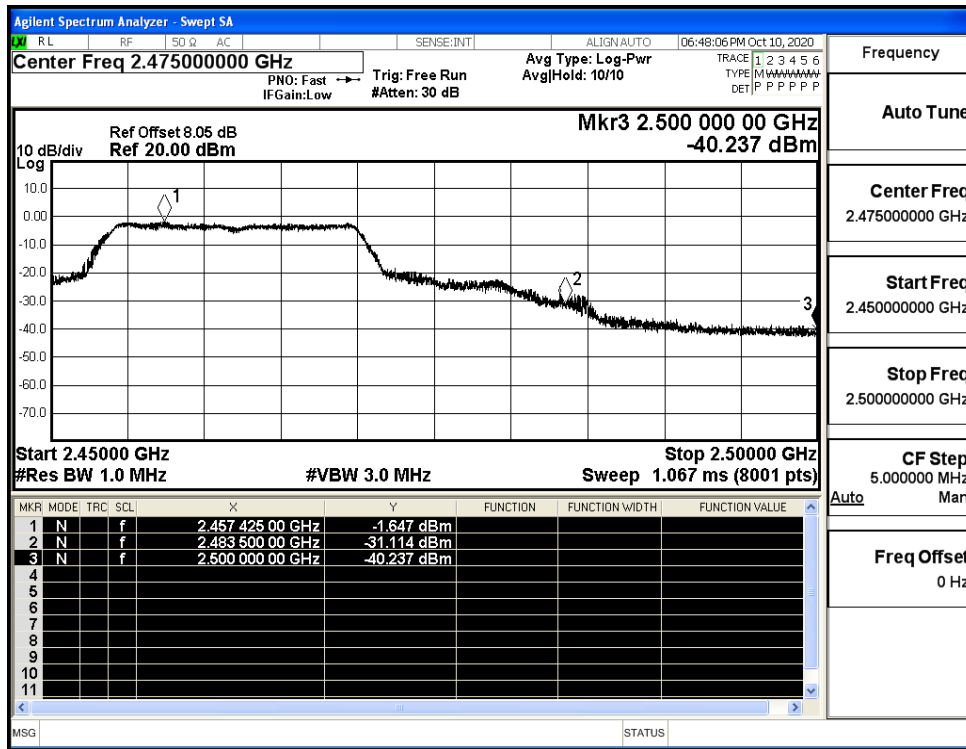
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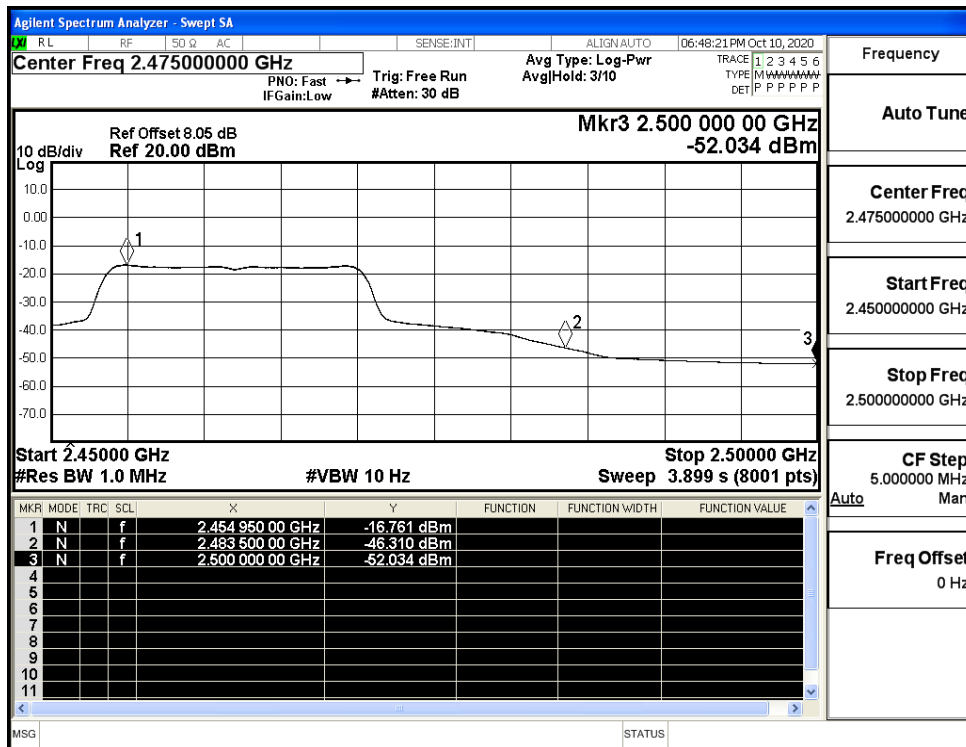
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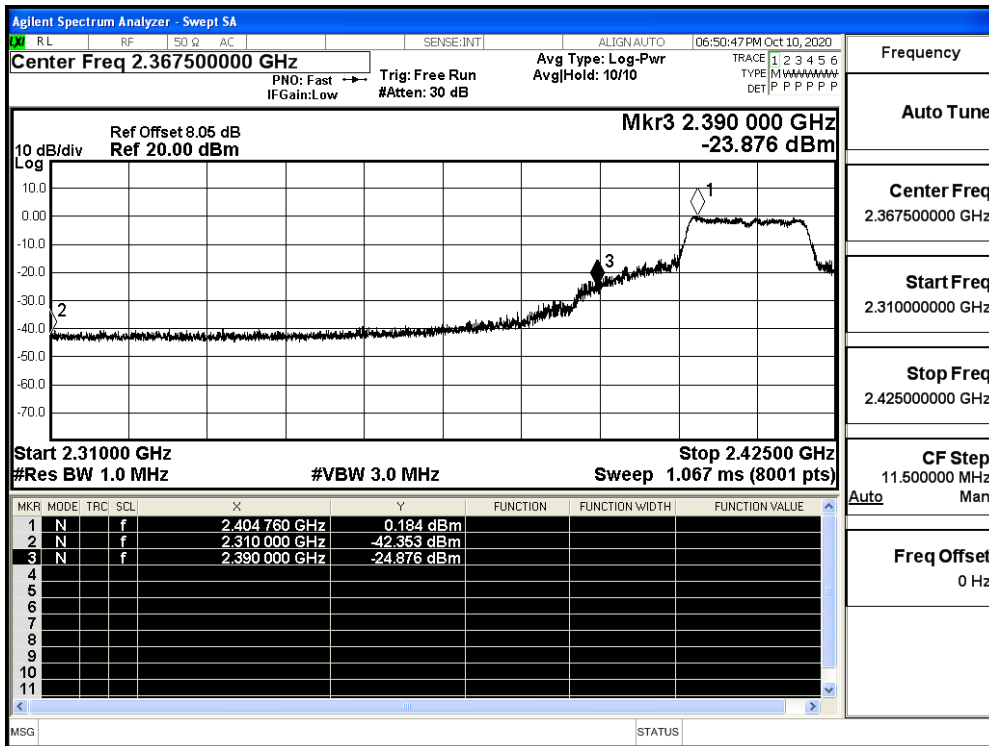
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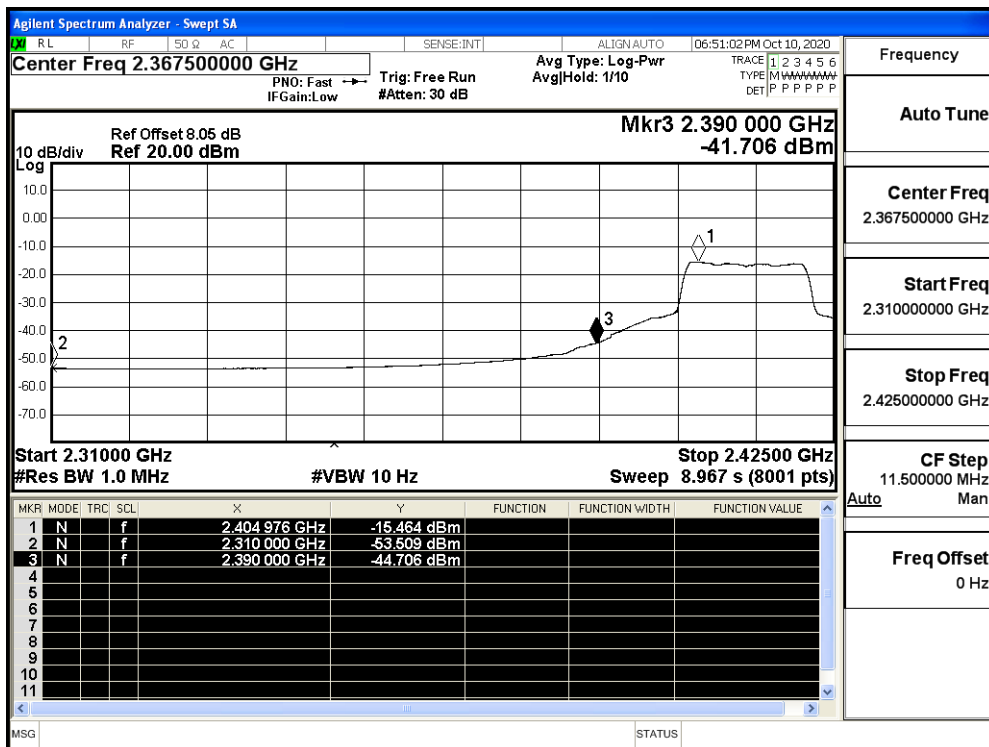
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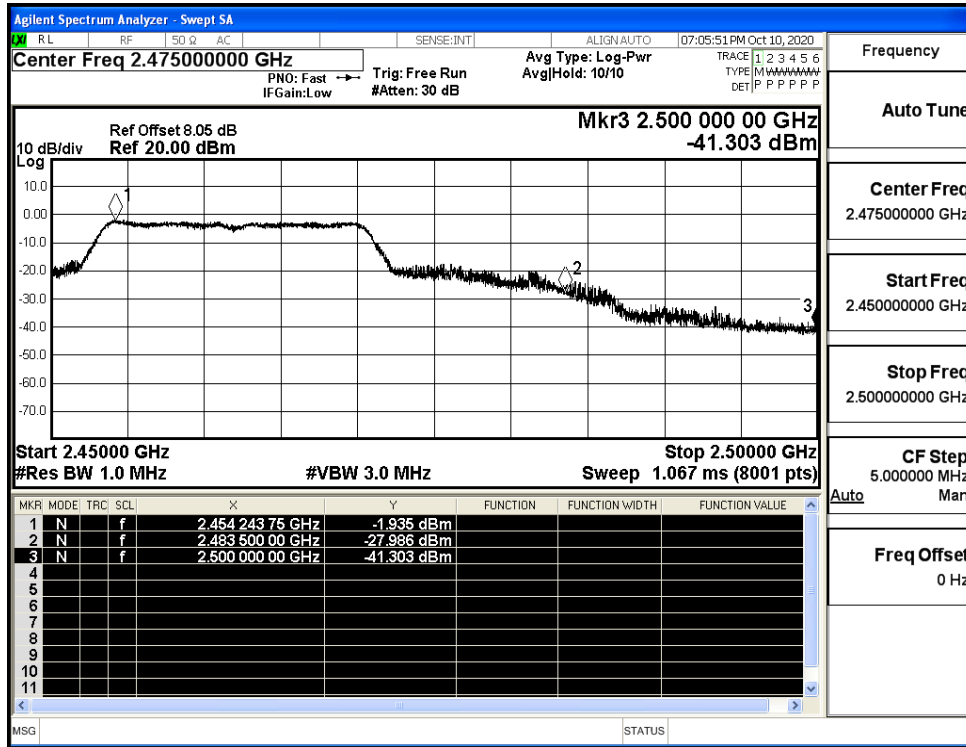
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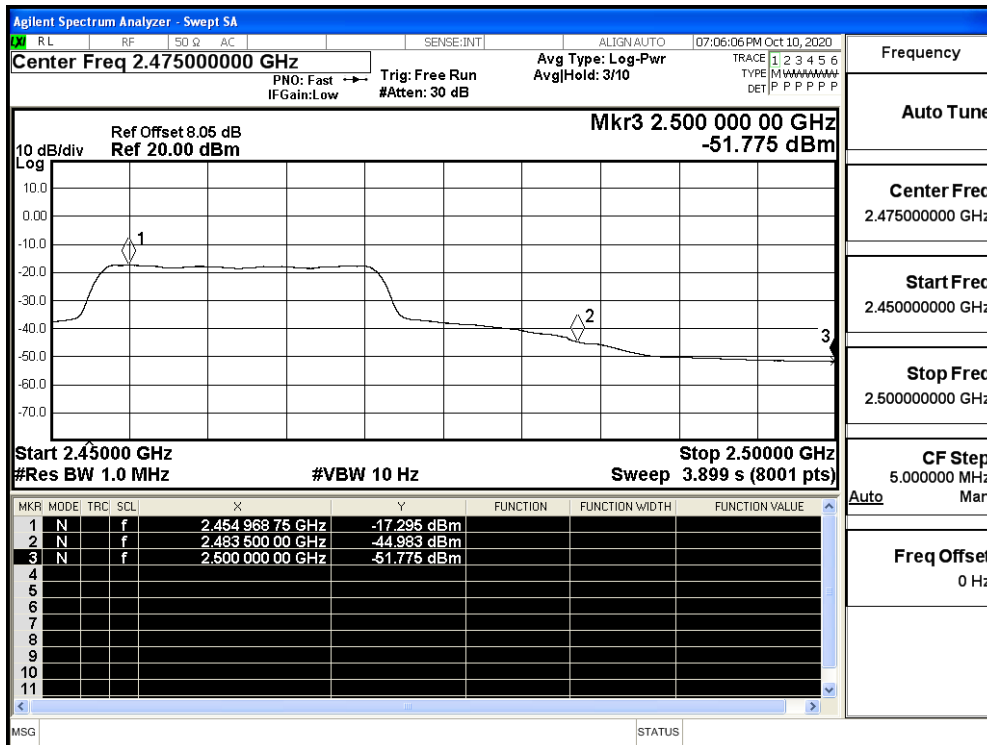
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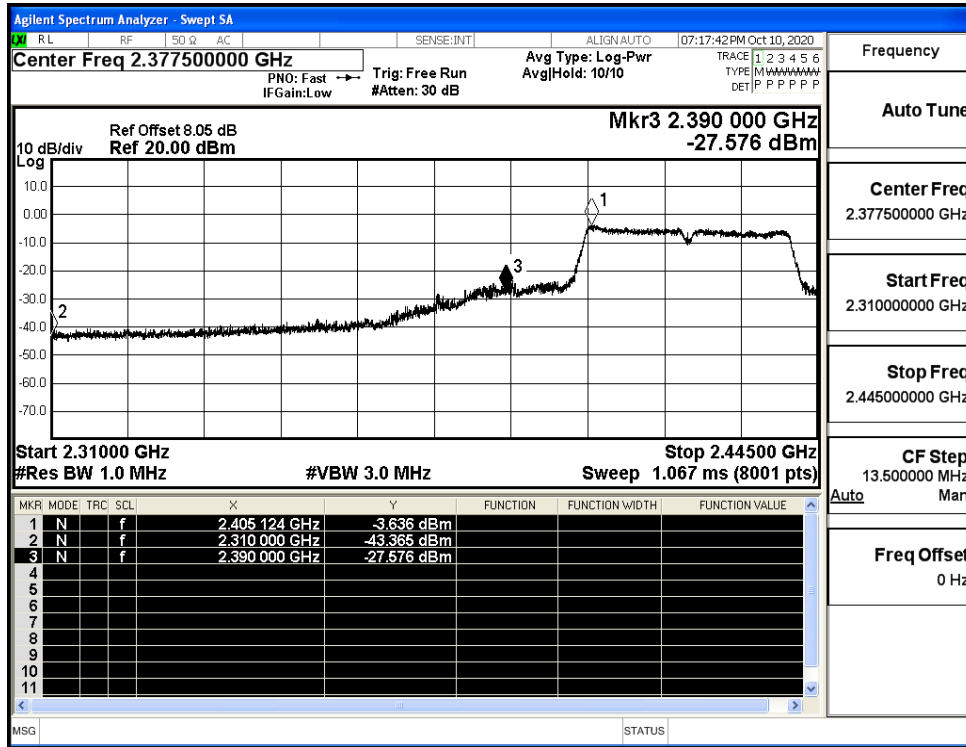
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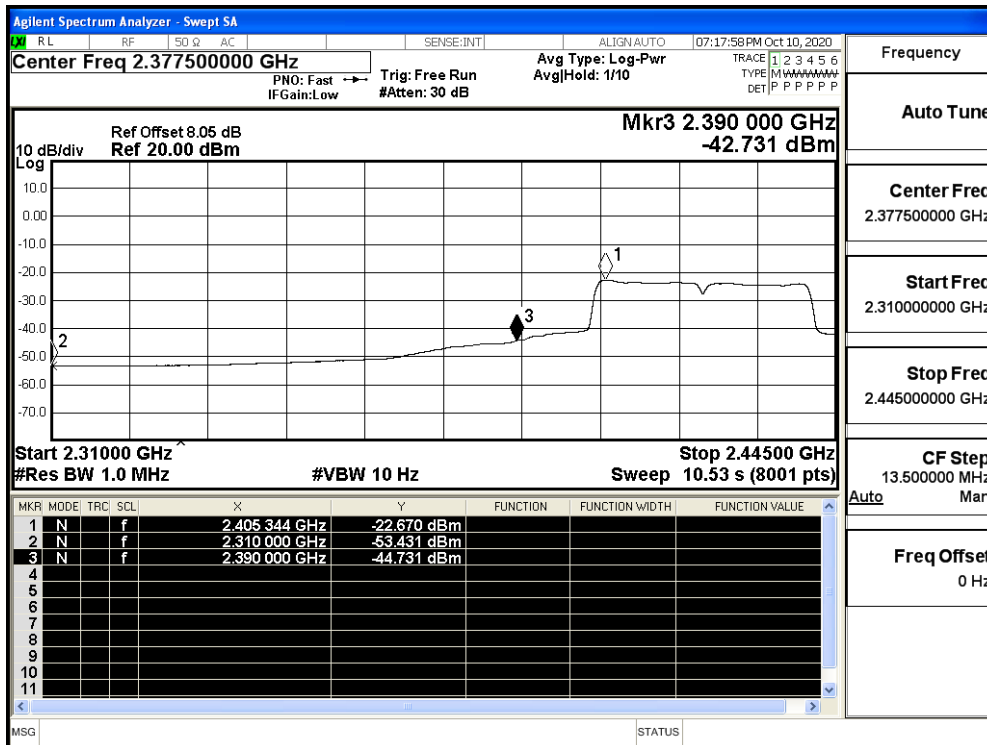
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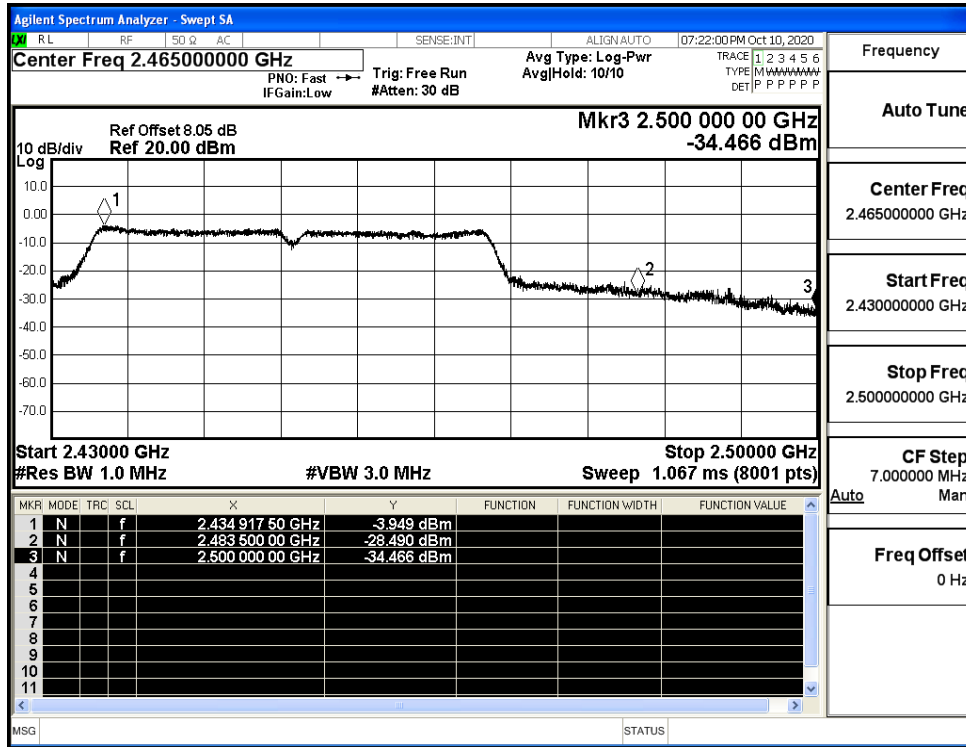
Restrict-band band-edge measurements_11N40SISO_2422_Ant1_PEAK



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

