Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: WiFi Extender
Trade Mark: RangeXTD
Test Model: 30579

Environmental Conditions

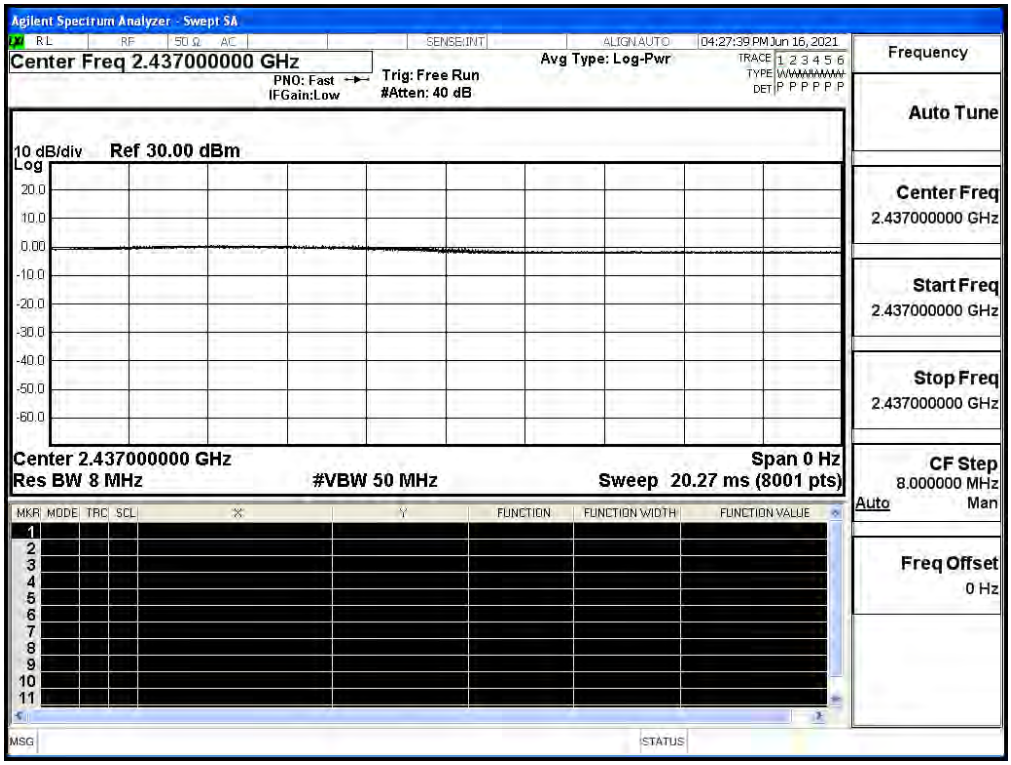
Temperature:	24.2° C
Relative Humidity:	57.7%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Li
Supervised by:	Li Huan

A.1 Duty Cycle

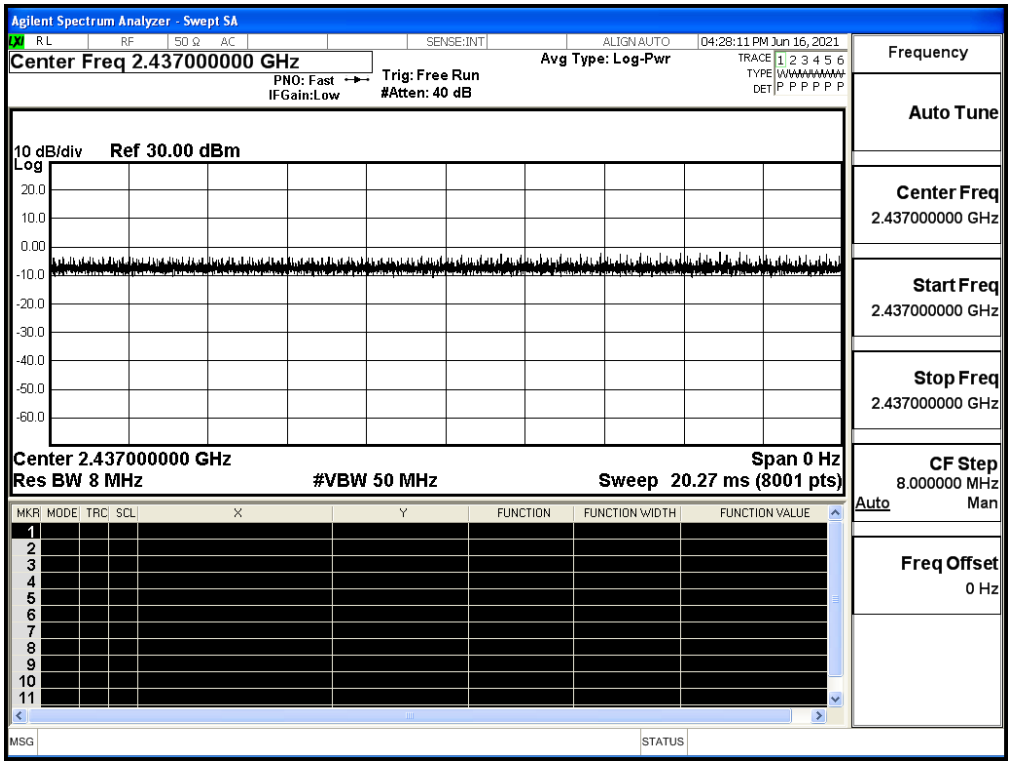
ANT0

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

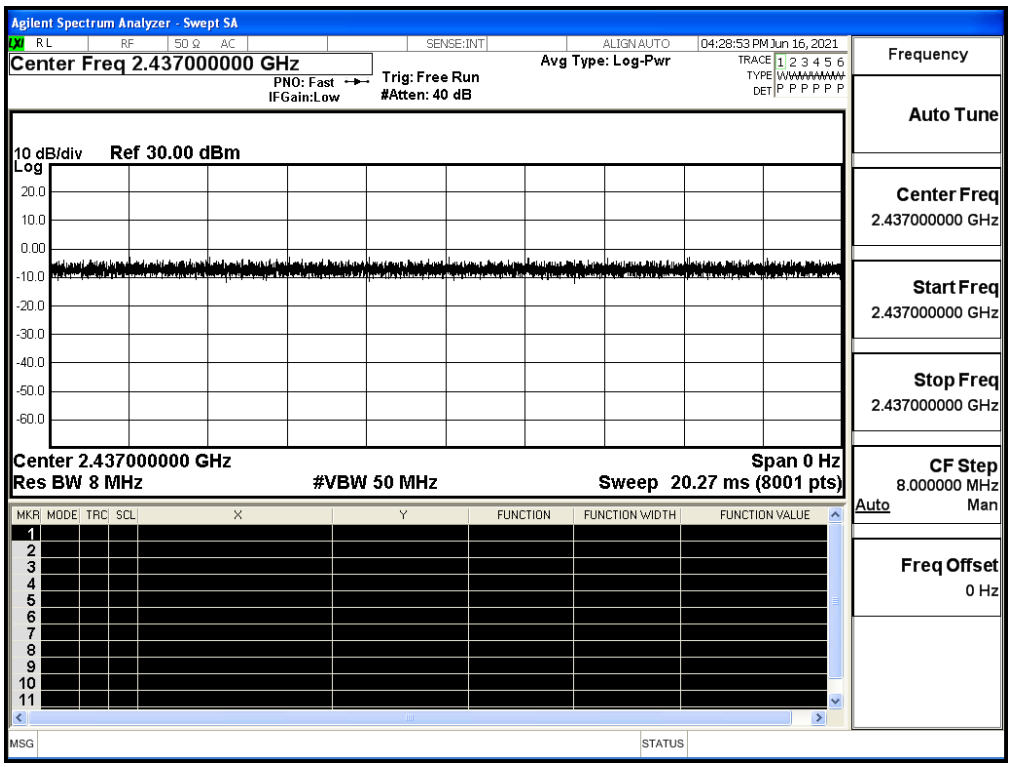
Duty Cycle_11B_2437_Ant0



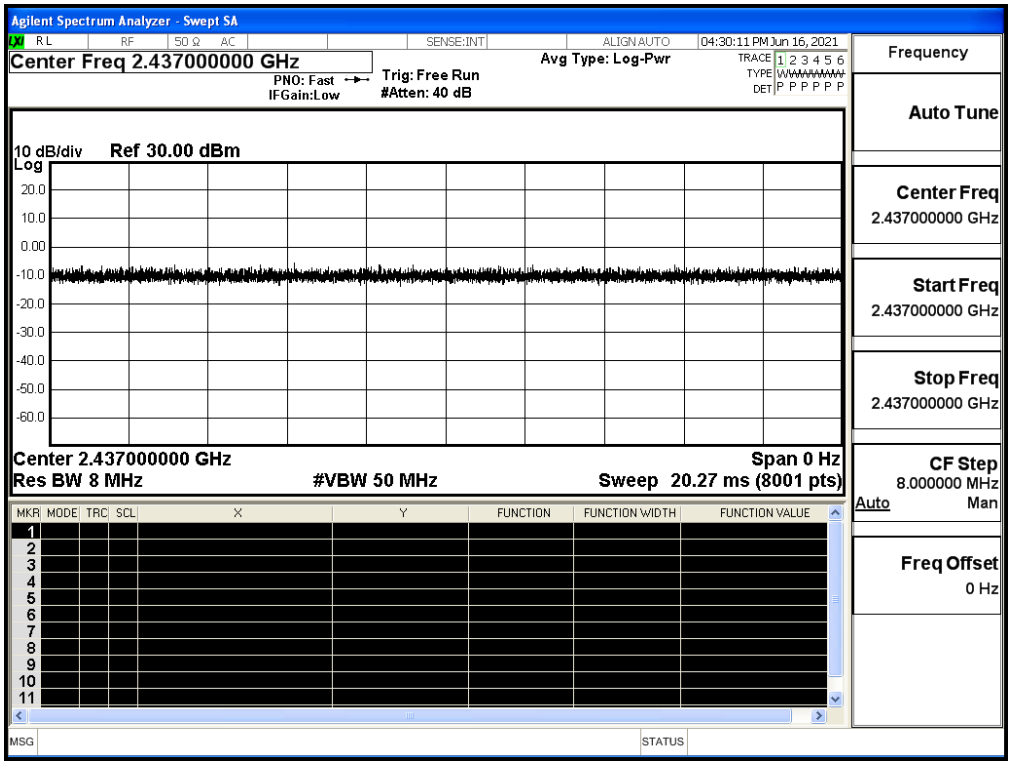
Duty Cycle_11G_2437_Ant0



Duty Cycle_11N20SISO_2437_Ant0



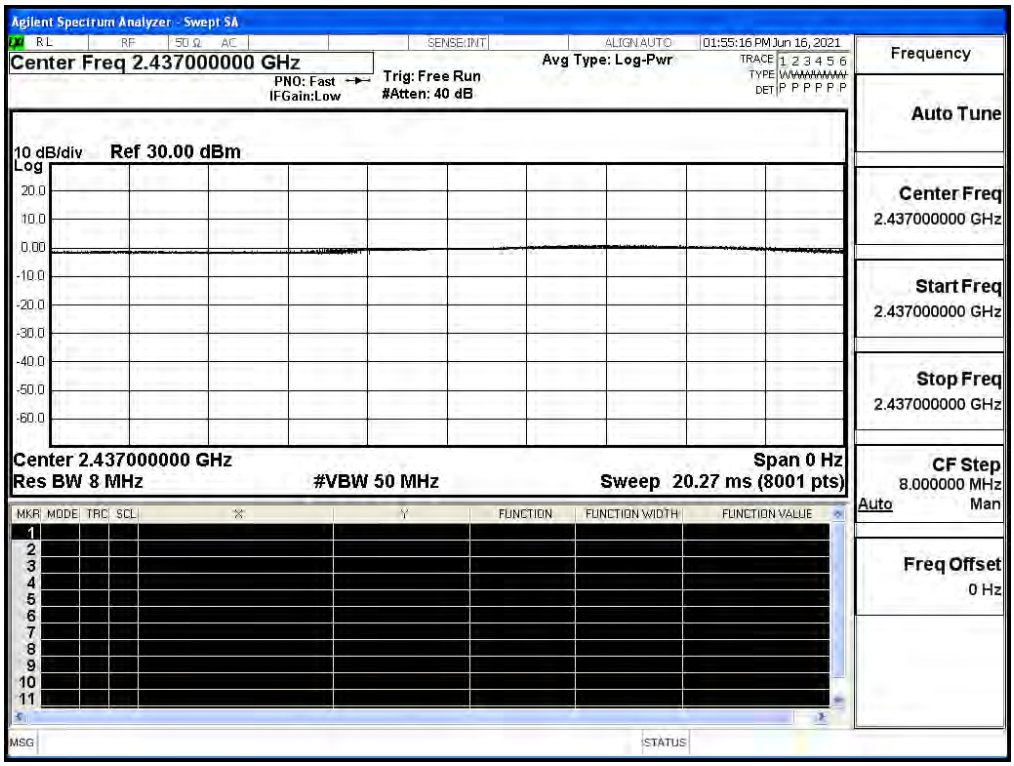
Duty Cycle_11N40SISO_2437_Ant0



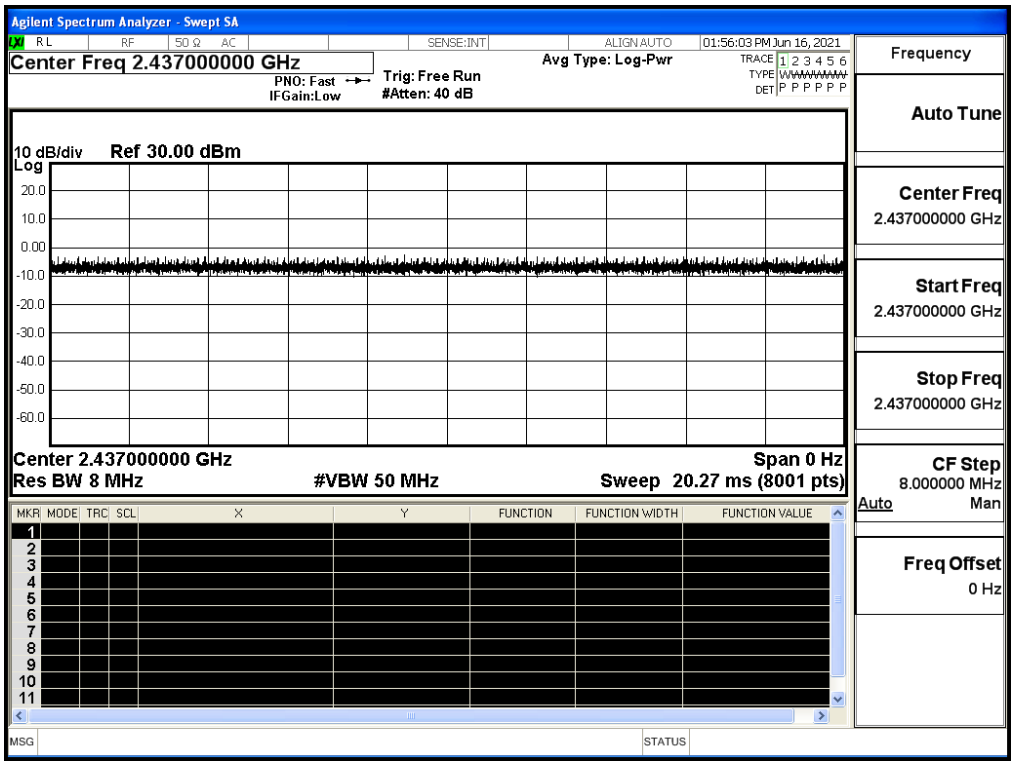
ANT1

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

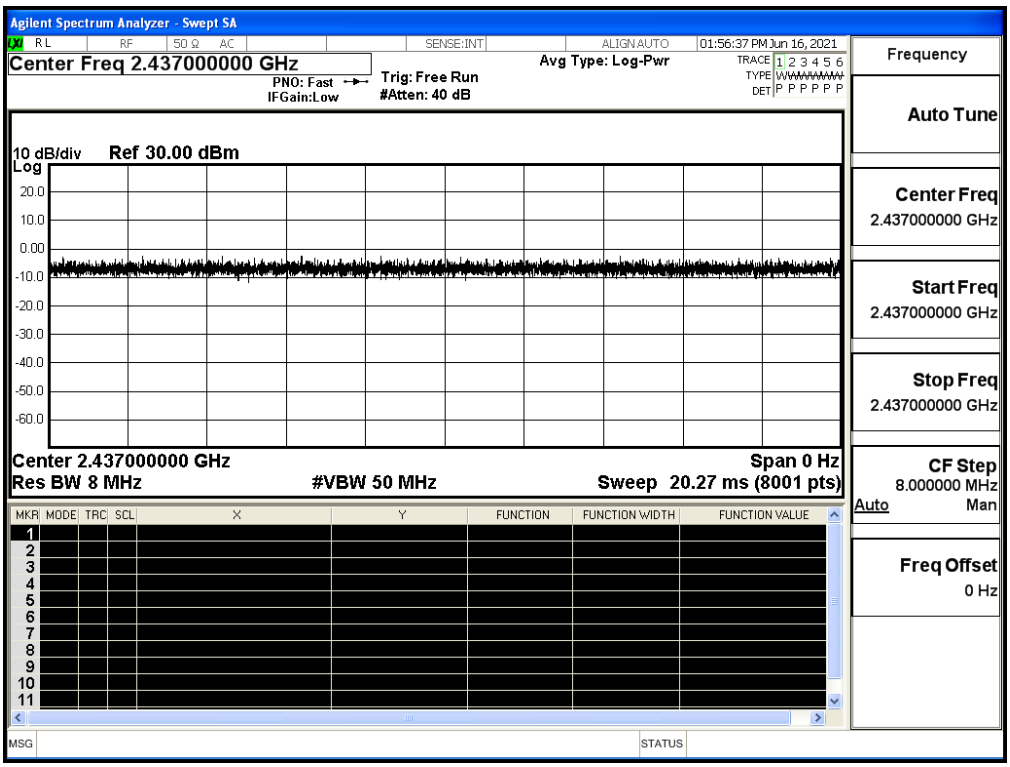
Duty Cycle_11B_2437_Ant1



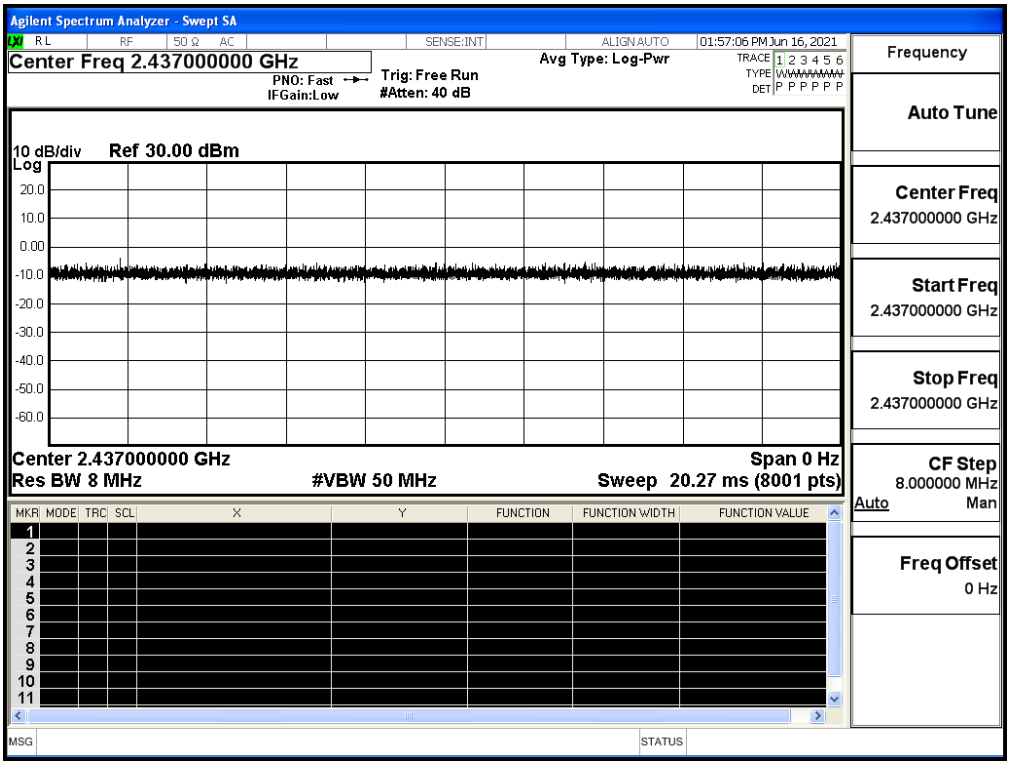
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



Duty Cycle_11N40SISO_2437_Ant1



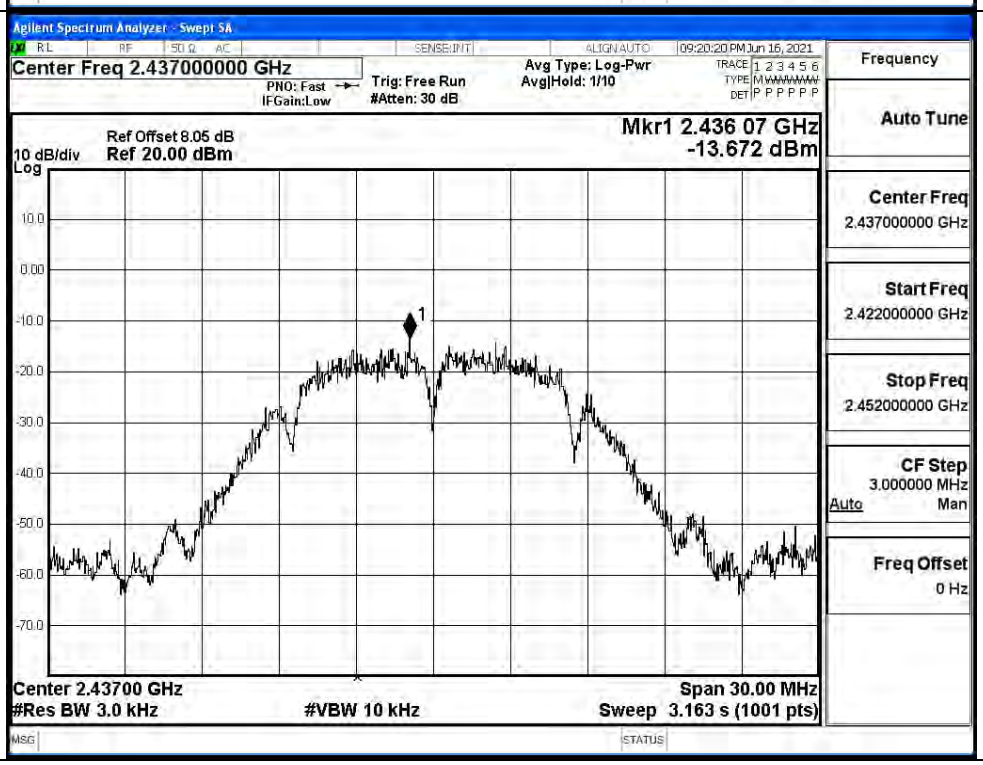
A.2 Maximum Conducted Output Power

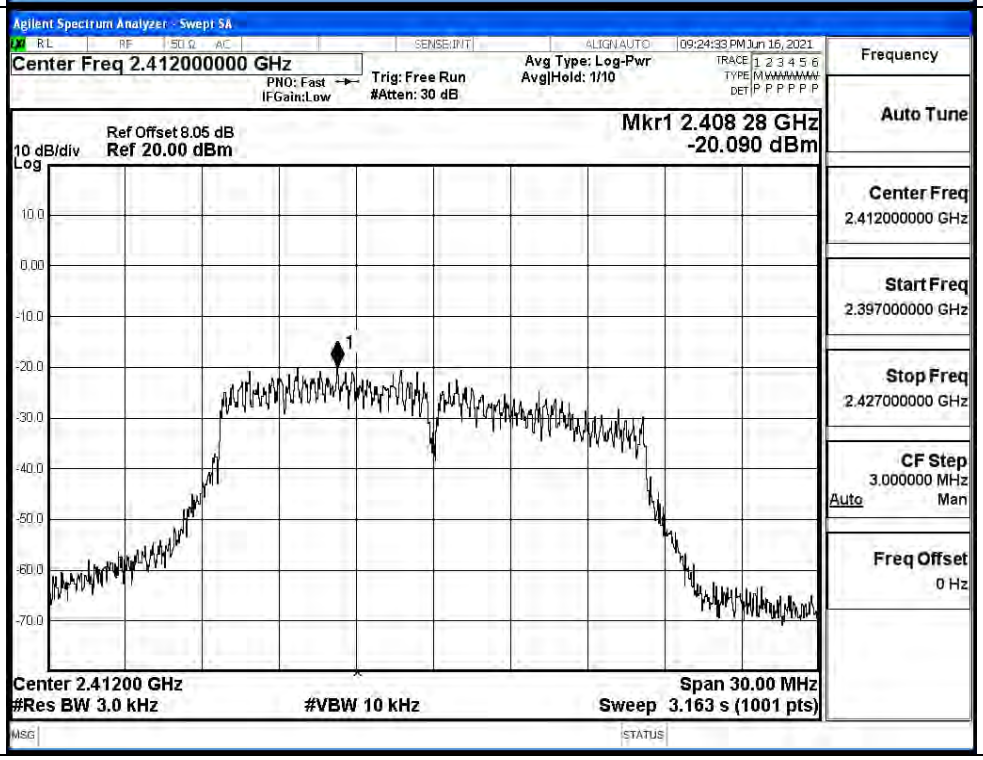
Mode	Channel	Peak Power [dBm]			Limit [dBm]	Verdict
		Ant 0	Ant 1	Sum		
11B	LCH	11.31	12.99	/	30	PASS
	MCH	12.67	12.63	/	30	PASS
	HCH	10.98	11.02	/	30	PASS
11G	LCH	11.67	10.99	/	30	PASS
	MCH	15.48	15.68	/	30	PASS
	HCH	14.45	13.96	/	30	PASS
11N20	LCH	12.22	11.75	15.00	30	PASS
	MCH	15.73	15.65	18.70	30	PASS
	HCH	14.27	13.78	17.04	30	PASS
11N40	LCH	9.71	9.37	12.55	30	PASS
	MCH	15.11	14.78	17.96	30	PASS
	HCH	13.79	13.53	16.67	30	PASS

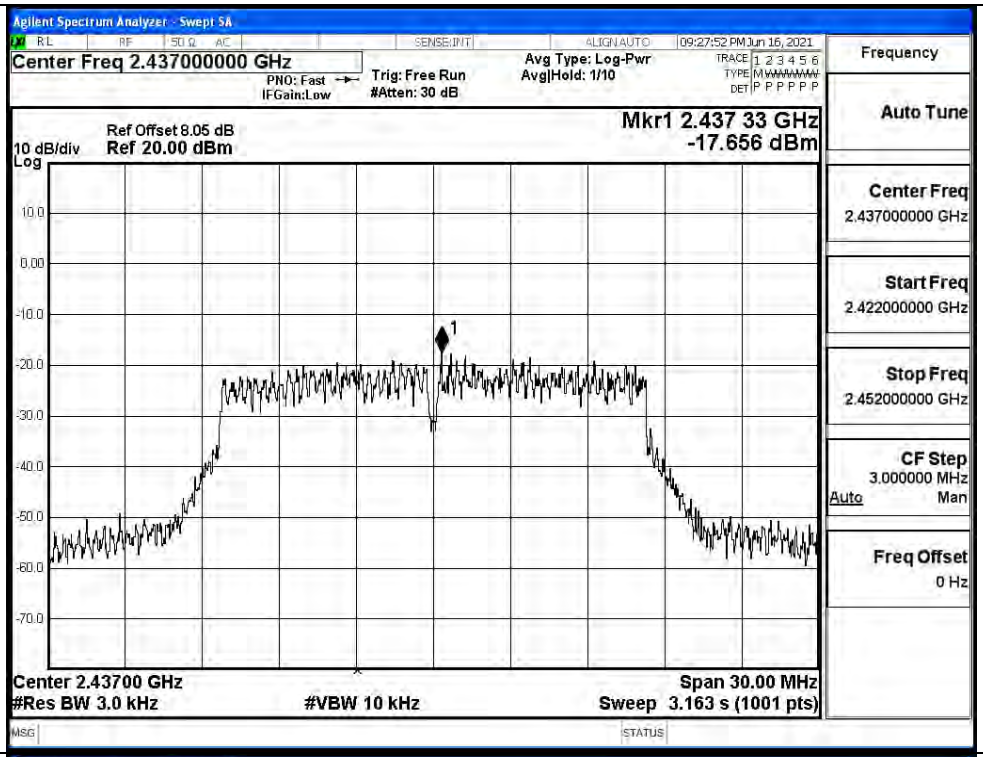
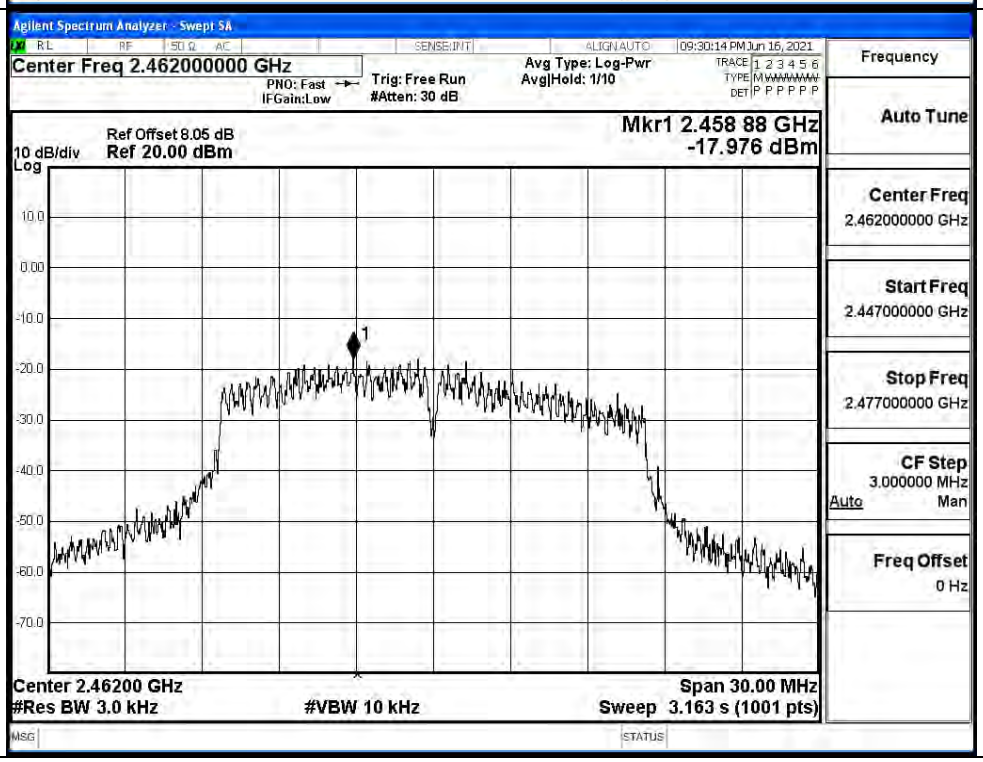
A.3 Maximum Power Spectral Density

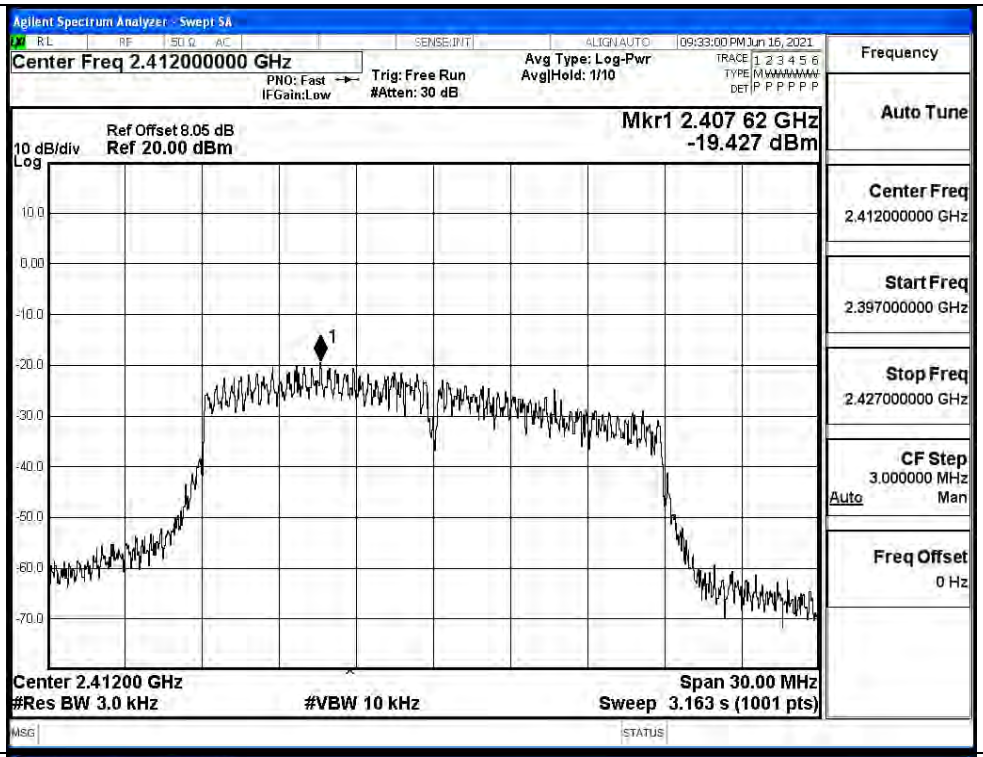
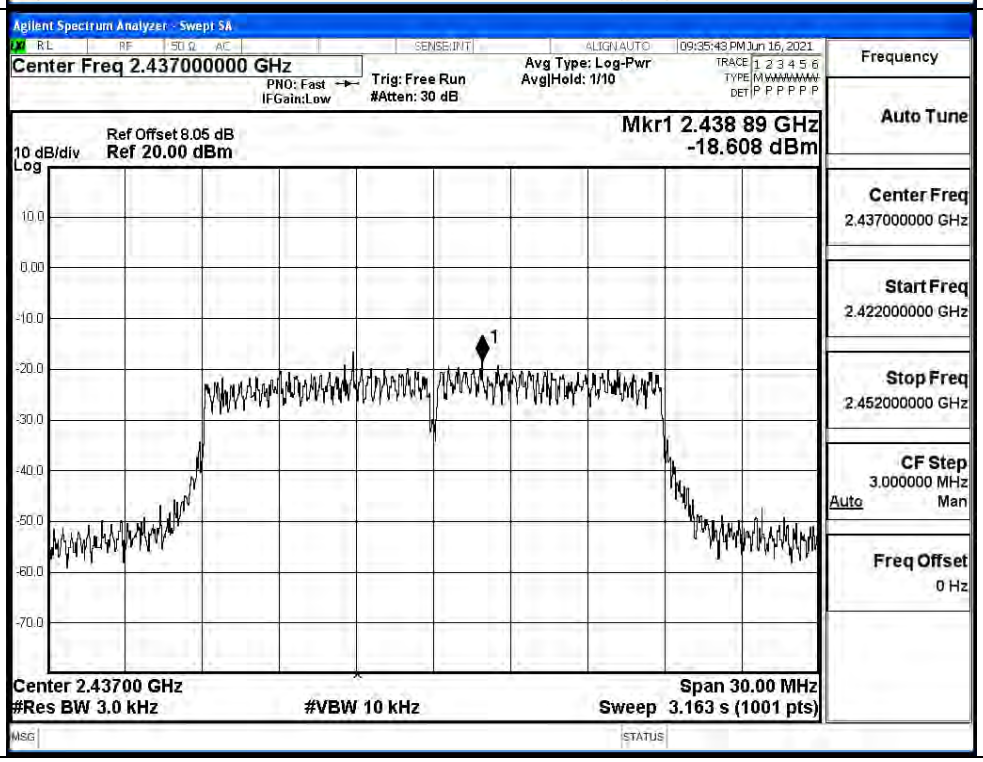
Mode	Channel	PSD Level [dBm/3KHz]		Limit [dBm/3KHz]	Verdict
		Ant 0	Ant 1		
11B	LCH	-15.134	-18.764	8	PASS
	MCH	-13.672	-13.718	8	PASS
	HCH	-16.052	-15.216	8	PASS
11G	LCH	-20.090	-14.703	8	PASS
	MCH	-17.656	-17.988	8	PASS
	HCH	-17.976	-18.102	8	PASS
11N20	LCH	-19.427	-20.434	8	PASS
	MCH	-18.608	-18.773	8	PASS
	HCH	-16.633	-18.596	8	PASS
11N40	LCH	-20.690	-19.979	8	PASS
	MCH	-18.875	-19.340	8	PASS
	HCH	-19.431	-18.800	8	PASS

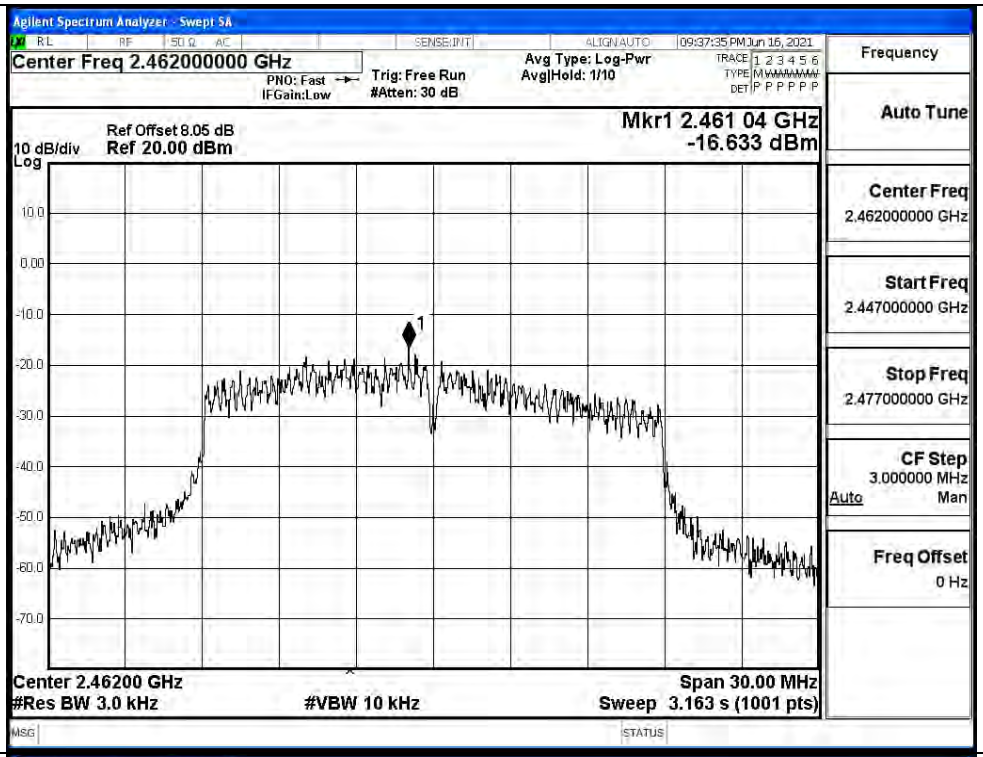
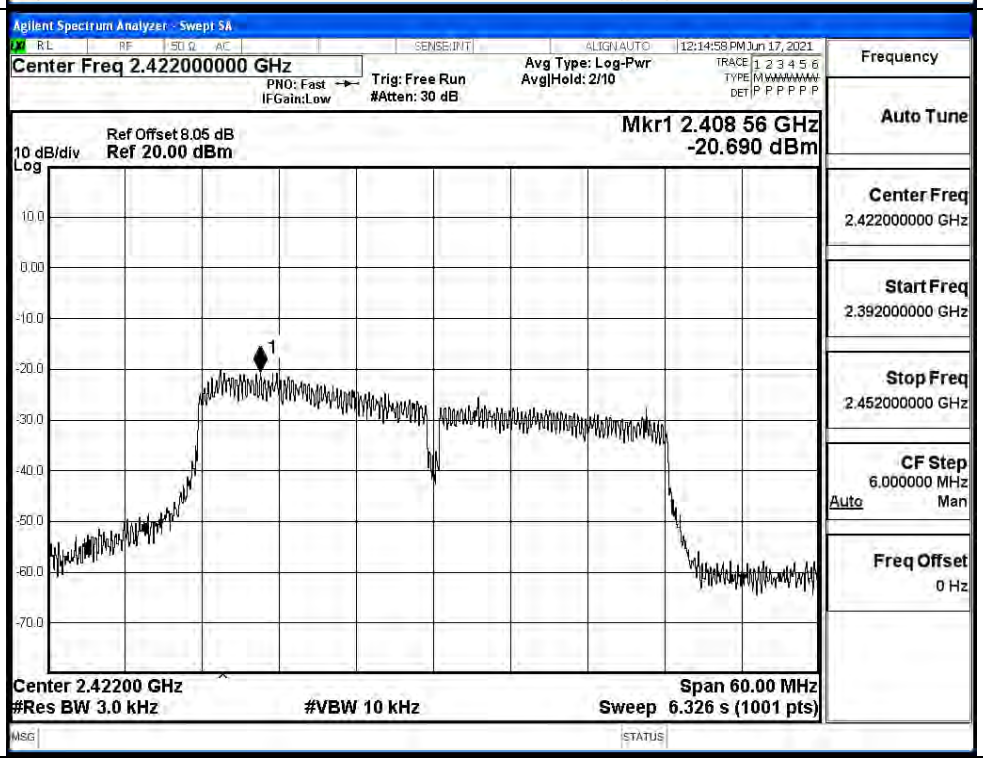
Mode	Channel	MIMO PSD [dBm/3KHz]			Limit [dBm/3KHz]	Verdict
		Ant 0	Ant 1	Sum		
11N20	LCH	-19.427	-20.434	-16.89	8	PASS
	MCH	-18.608	-18.773	-15.68	8	PASS
	HCH	-16.633	-18.596	-14.49	8	PASS
11N40	LCH	-20.690	-19.979	-17.31	8	PASS
	MCH	-18.875	-19.340	-16.09	8	PASS
	HCH	-19.431	-18.800	-16.09	8	PASS

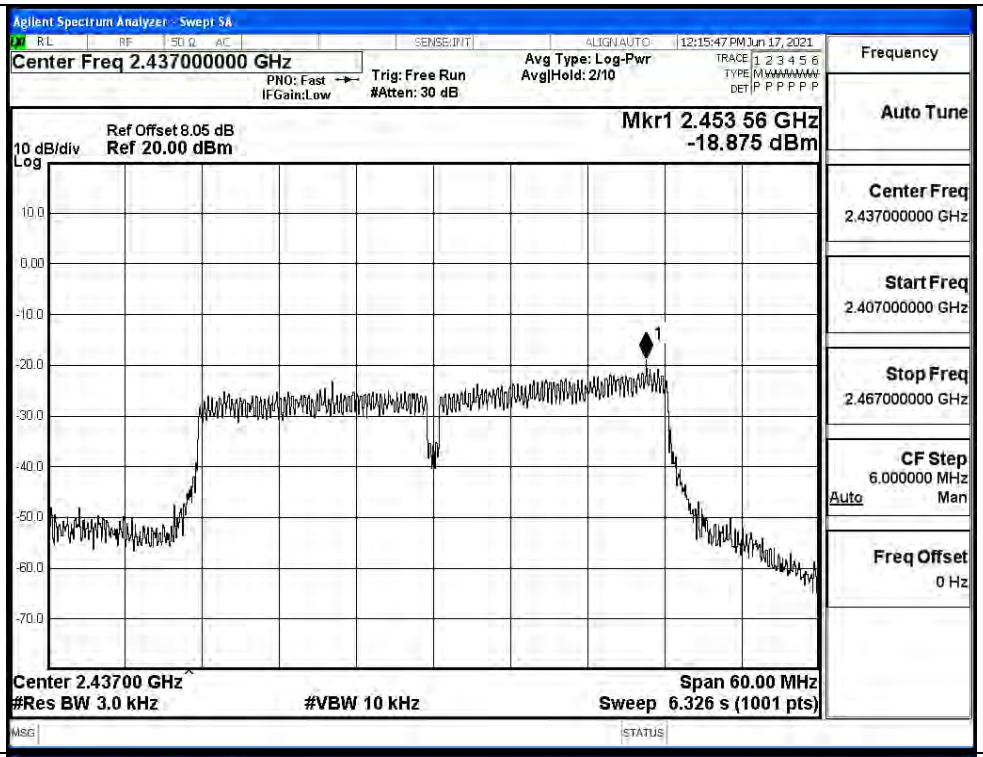
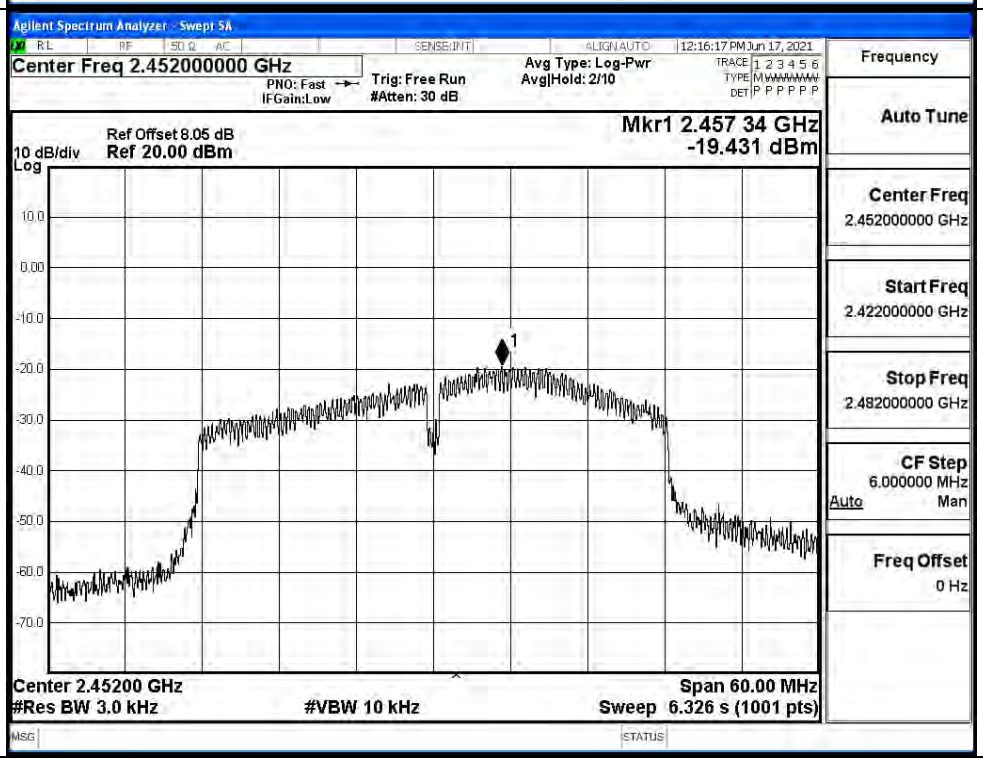
Test Graphs Ant 0		
11B/LCH		
11B/MCH		

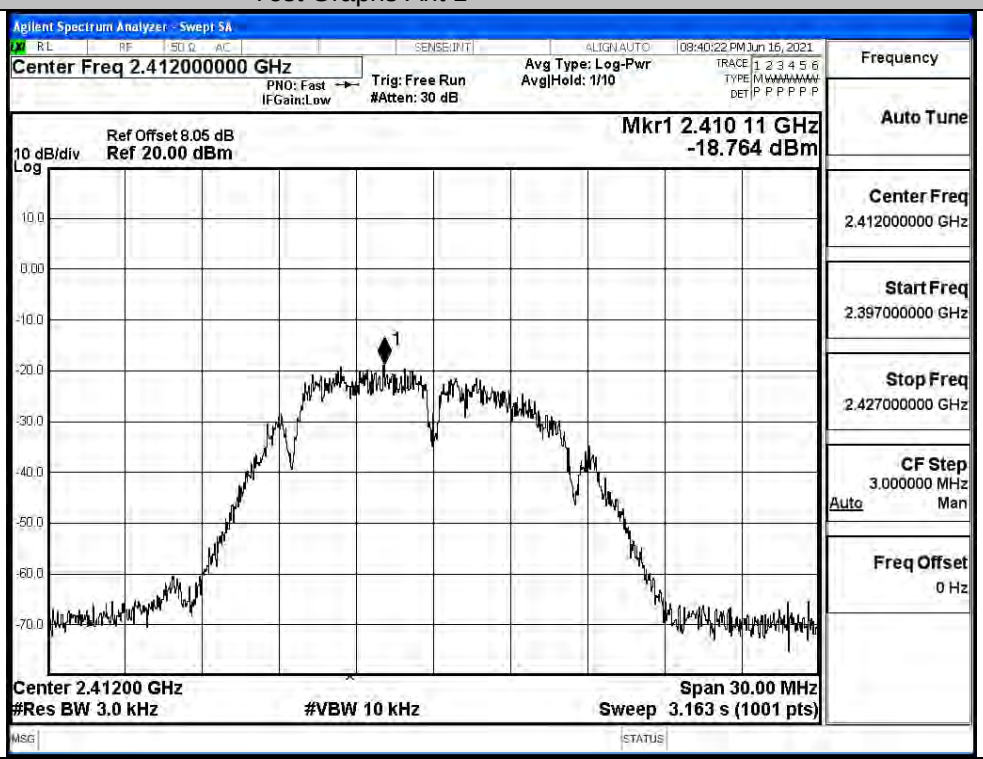
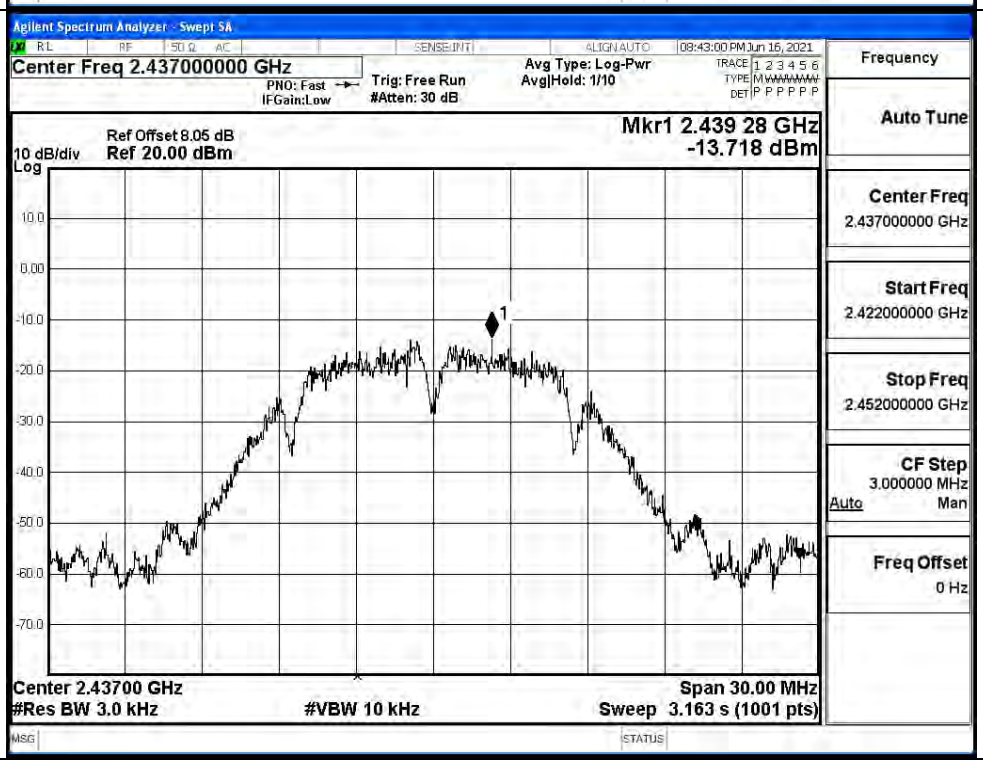
11B/HCH		
11G/LCH		

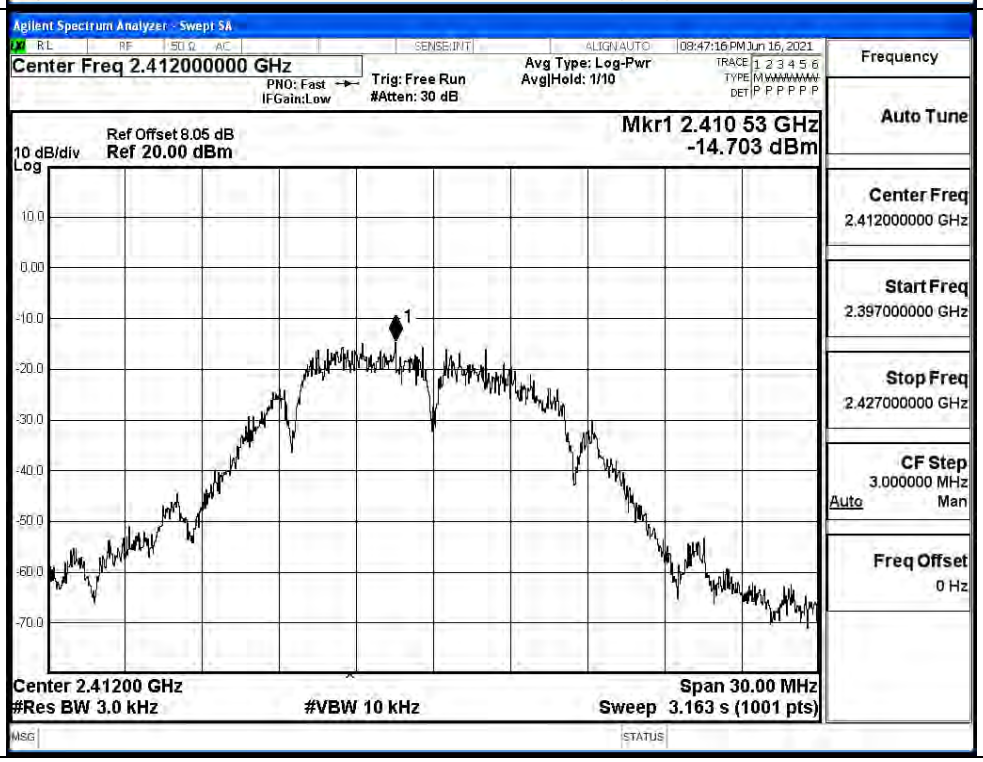
11G/MCH		
11G/HCH		

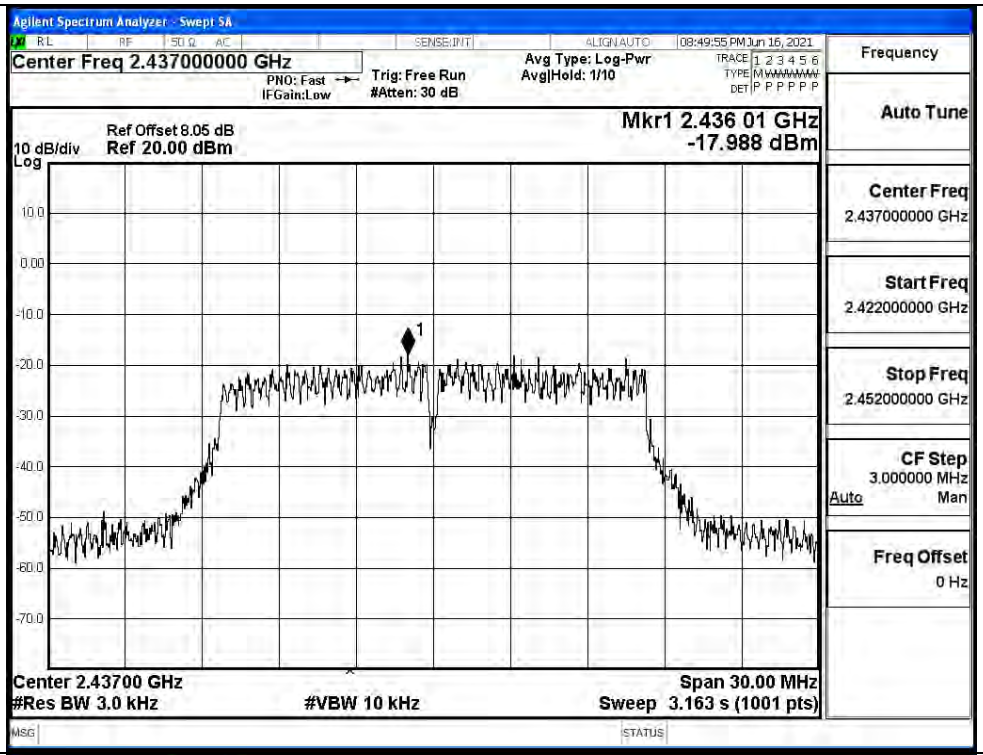
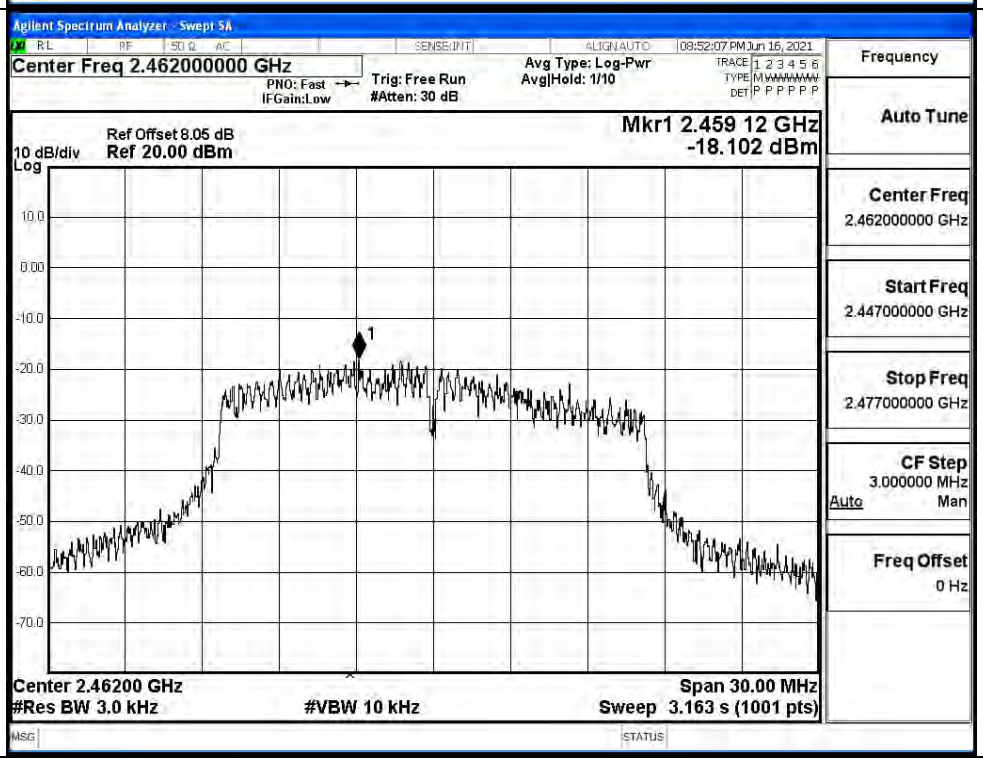
11N20SISO/LCH		
11N20SISO/MCH		

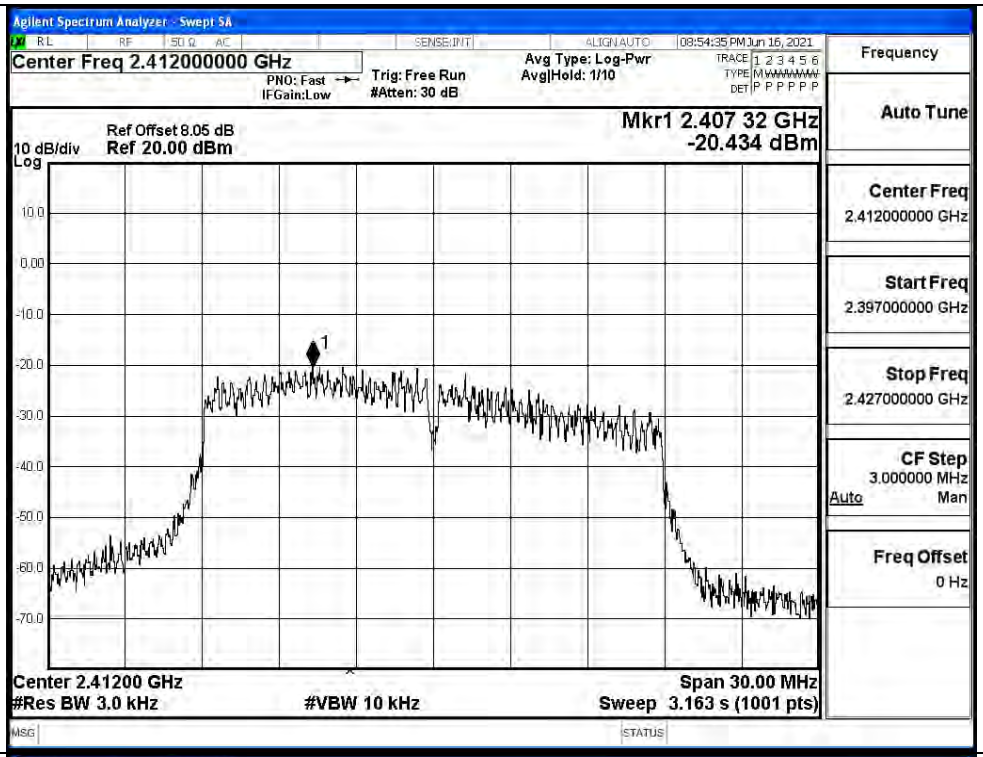
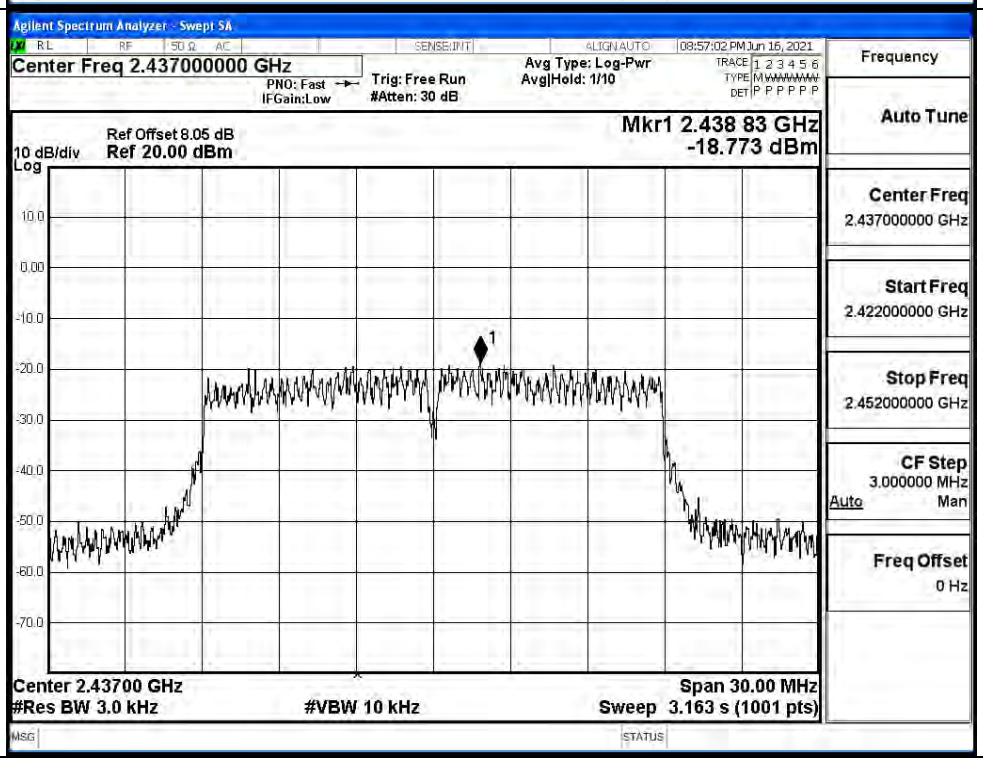
11N20SISO/HCH		
11N40SISO/LCH		

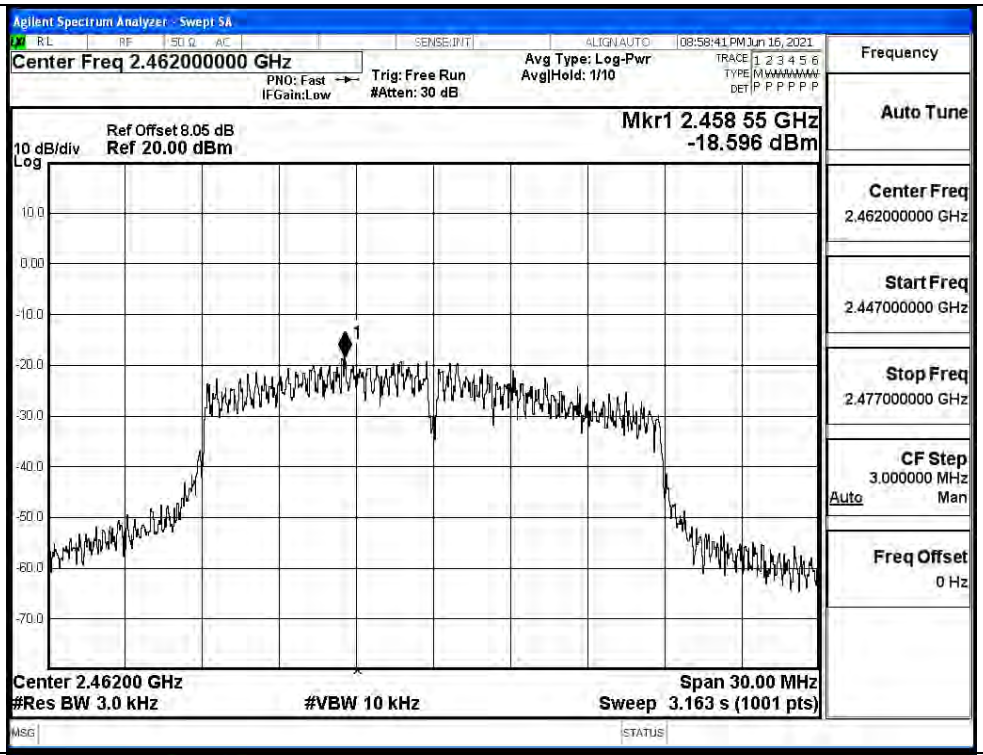
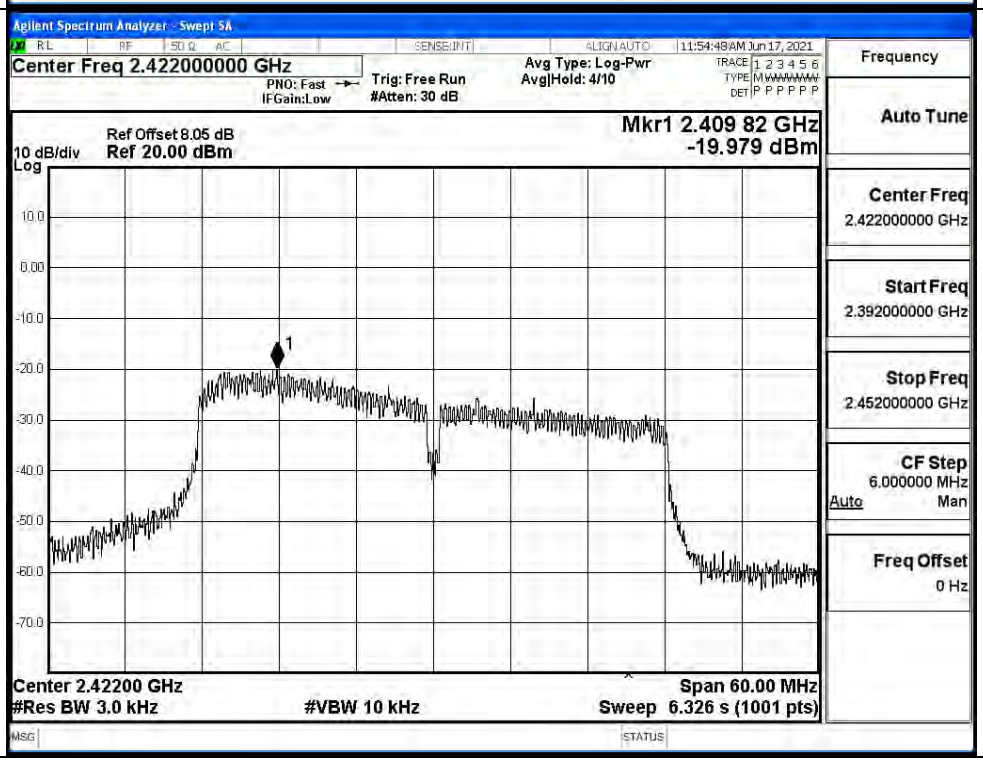
11N40SISO/MCH		
11N40SISO/HCH		

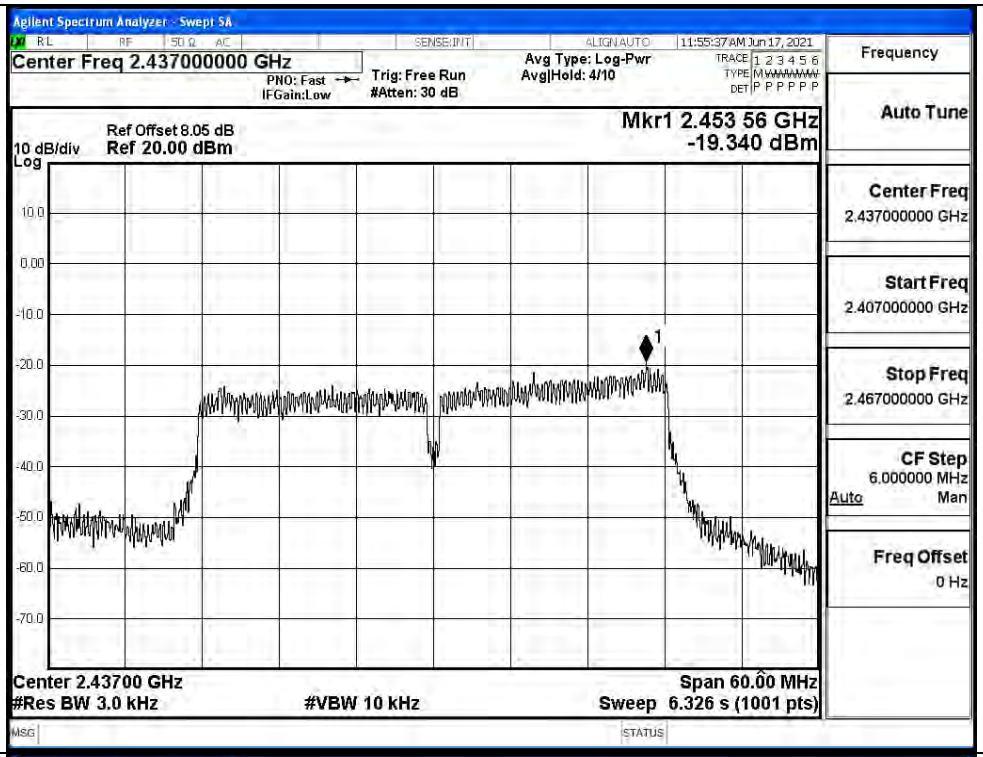
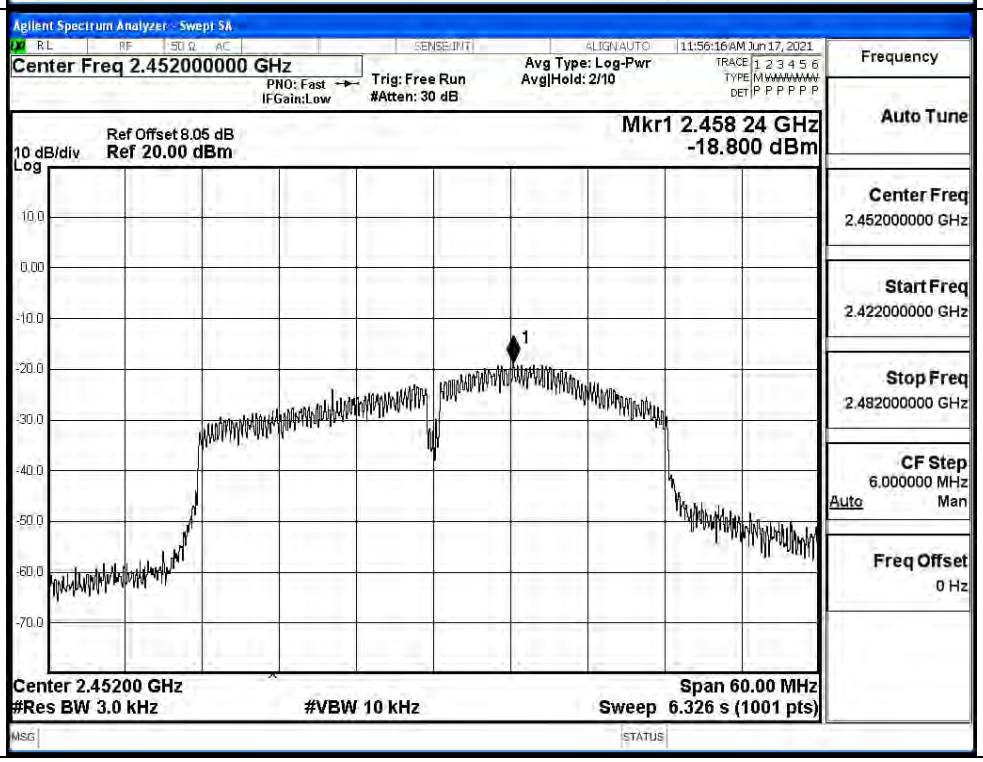
Test Graphs Ant 1		
11B/LCH		
11B/MCH		

11B/HCH		
11G/LCH		

11G/MCH		
11G/HCH		

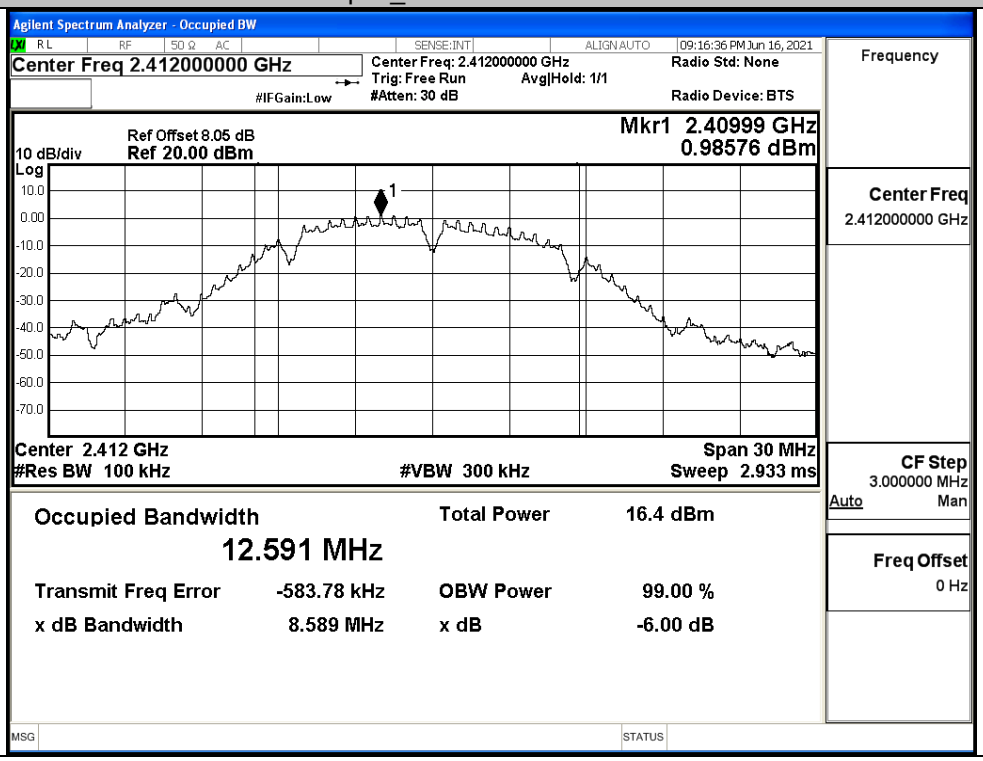
11N20SISO/LCH		
11N20SISO/MCH		

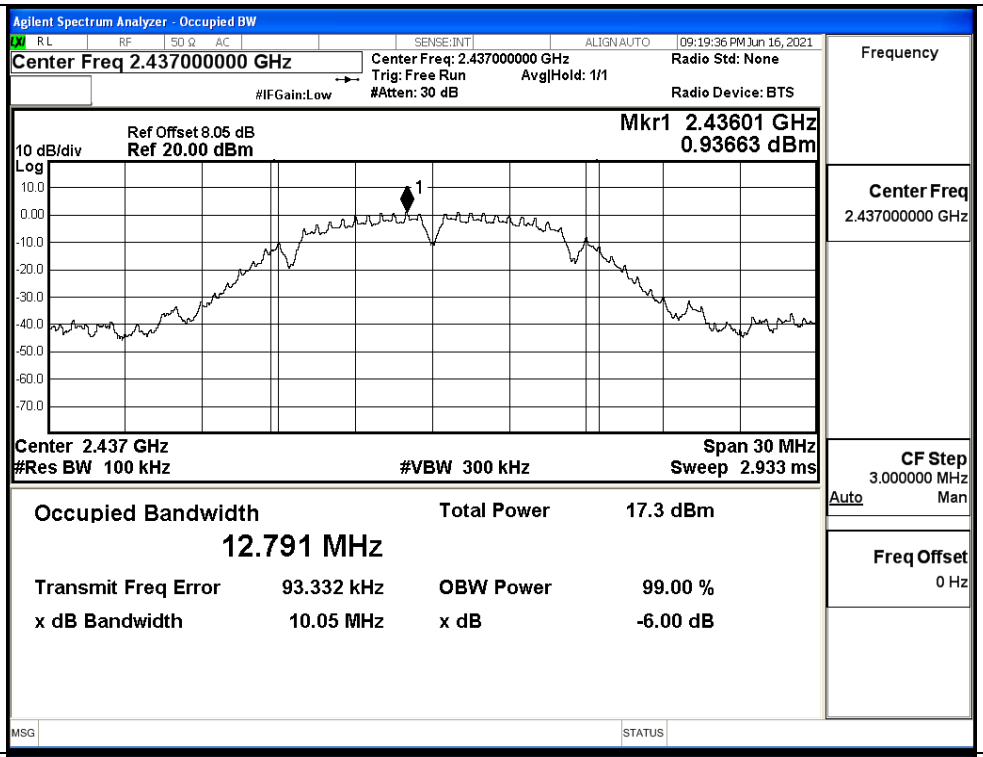
11N20SISO/HCH		
11N40SISO/LCH		

11N40SISO/MCH		
11N40SISO/HCH		

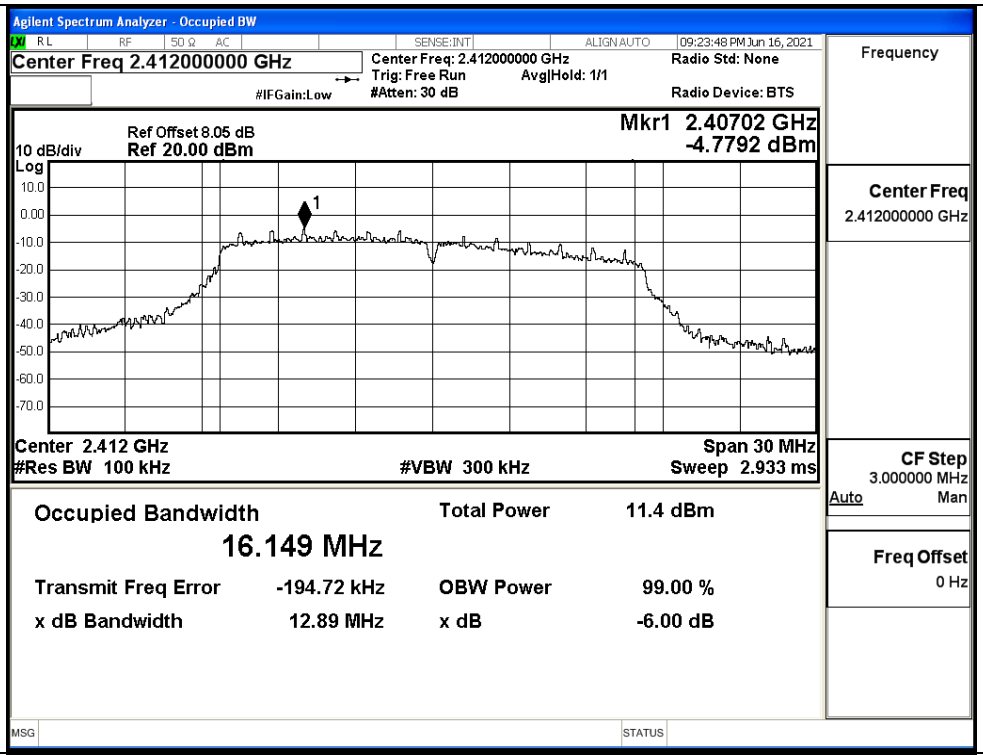
A.4 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]		Limit [MHz]	Verdict
		Ant 0	Ant 1		
11B	LCH	8.589	8.121	⩾0.5	PASS
	MCH	10.05	10.07	⩾0.5	PASS
	HCH	8.577	9.056	⩾0.5	PASS
11G	LCH	12.89	8.612	⩾0.5	PASS
	MCH	15.73	15.71	⩾0.5	PASS
	HCH	13.84	12.57	⩾0.5	PASS
11N20SISO	LCH	13.52	12.91	⩾0.5	PASS
	MCH	16.35	16.30	⩾0.5	PASS
	HCH	13.83	12.56	⩾0.5	PASS
11N40SISO	LCH	15.19	15.20	⩾0.5	PASS
	MCH	35.48	35.39	⩾0.5	PASS
	HCH	20.11	20.05	⩾0.5	PASS

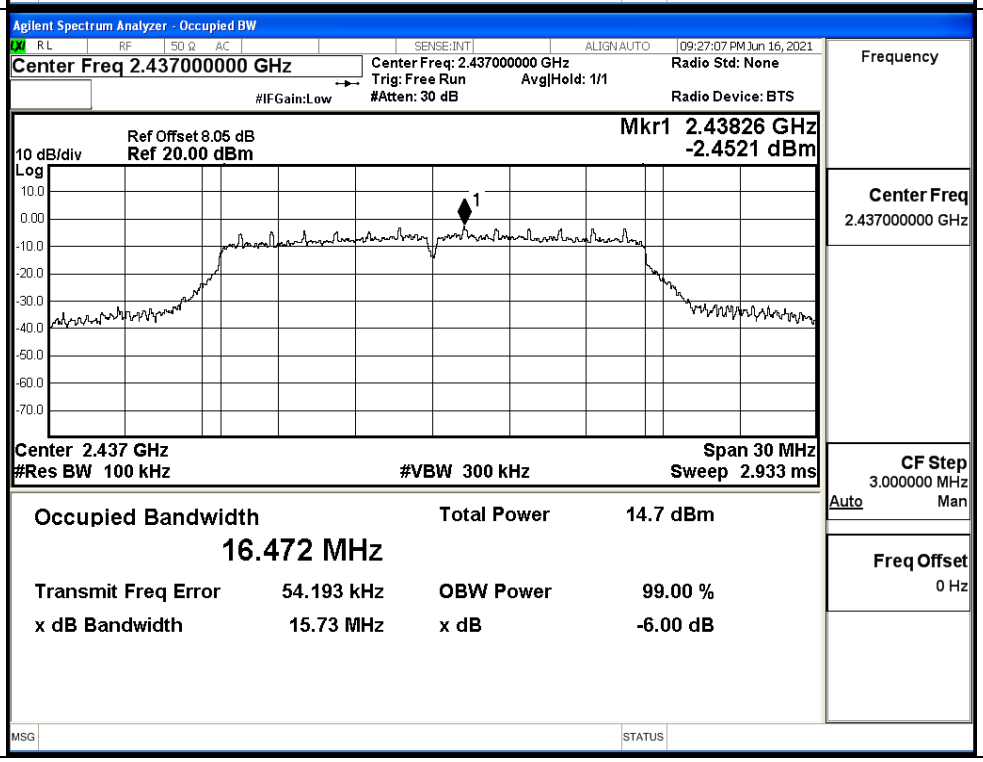
Test Graphs_ Ant 0	
11B/LCH	

11B/MCH		
11B/HCH		

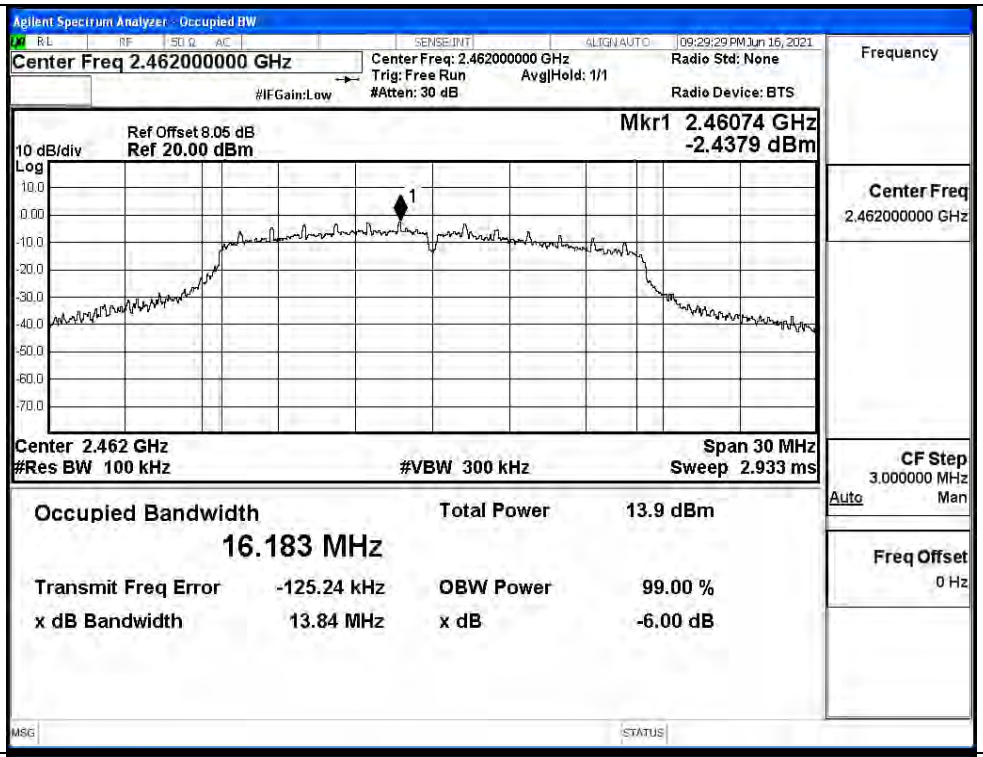
11G/LCH



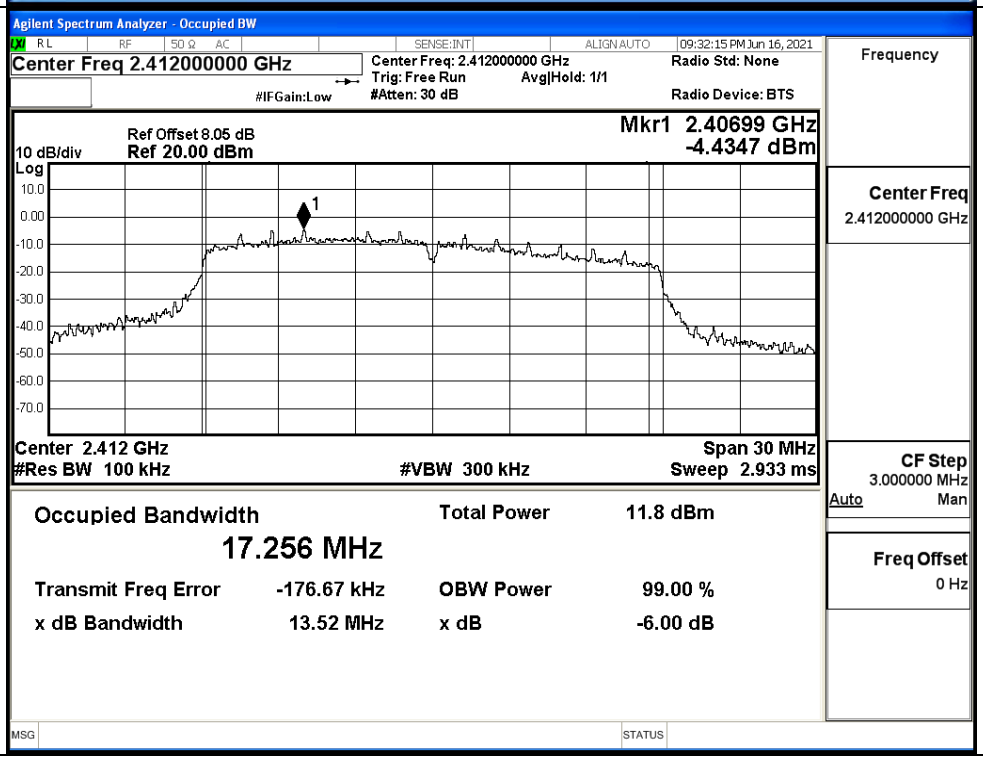
11G/MCH

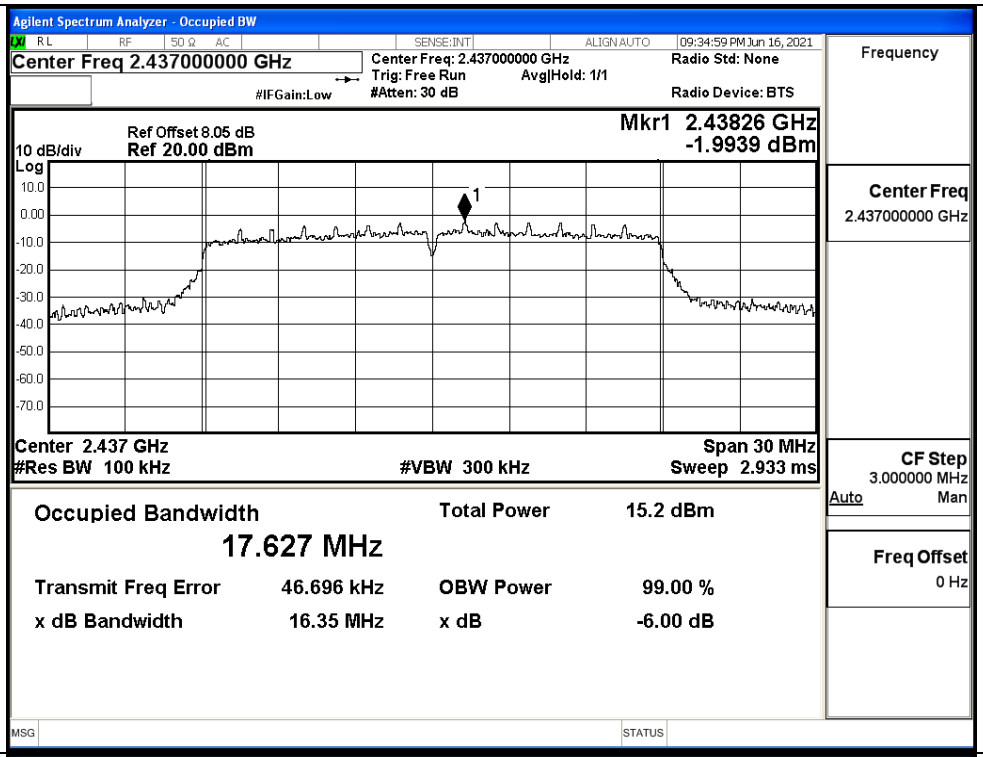
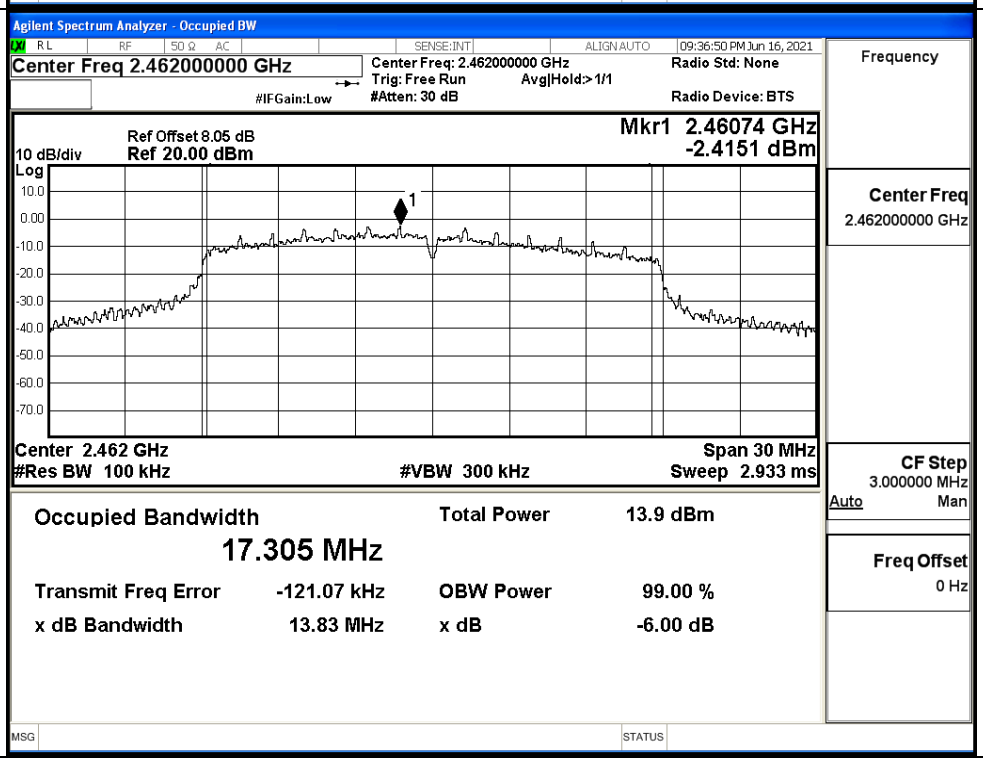


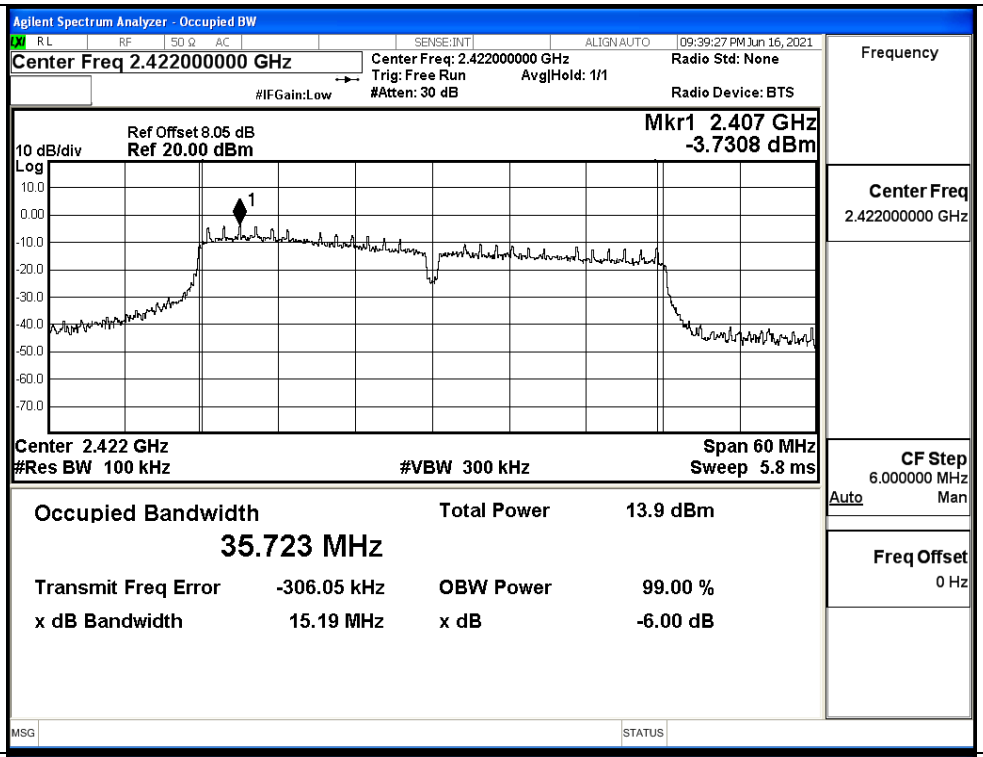
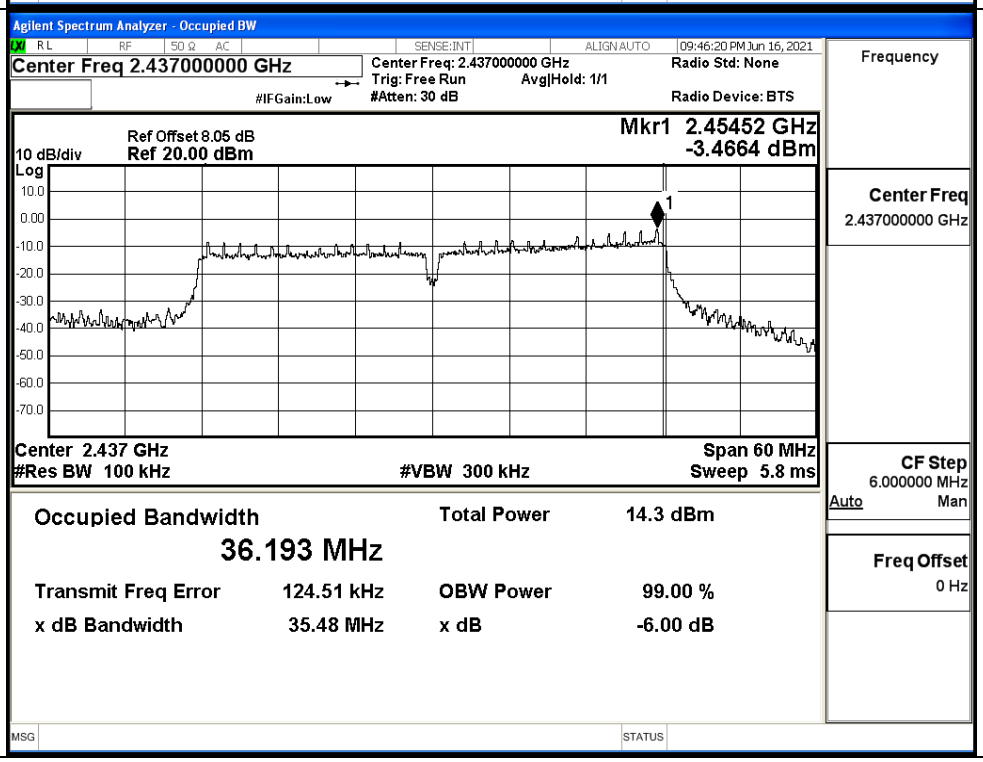
11G/HCH

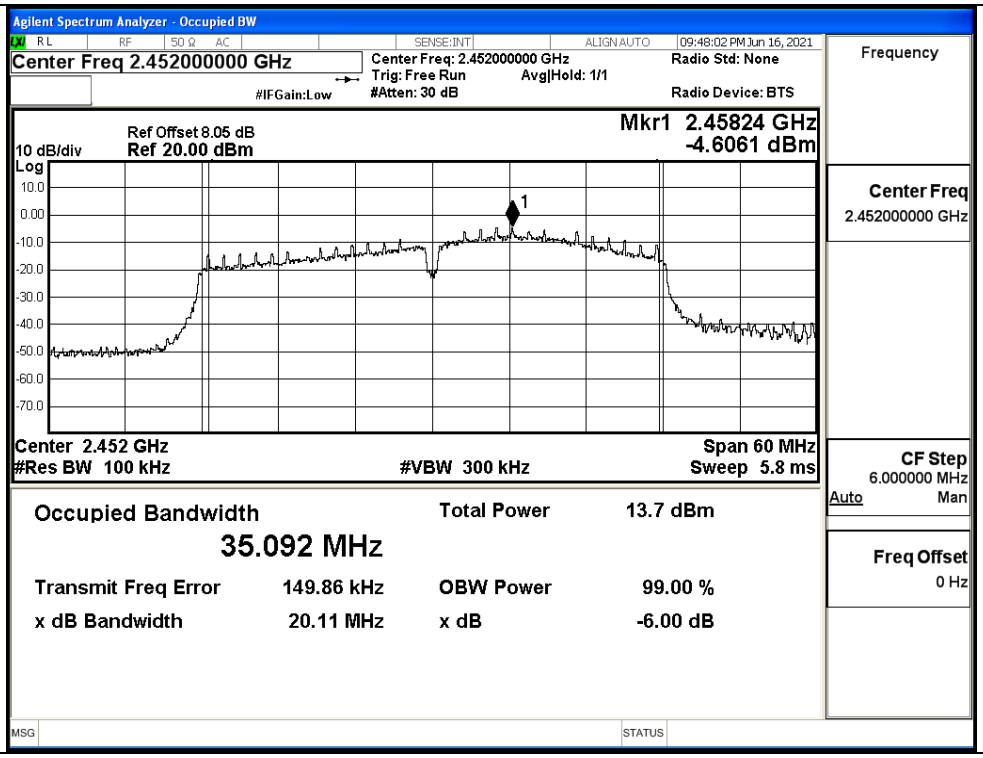


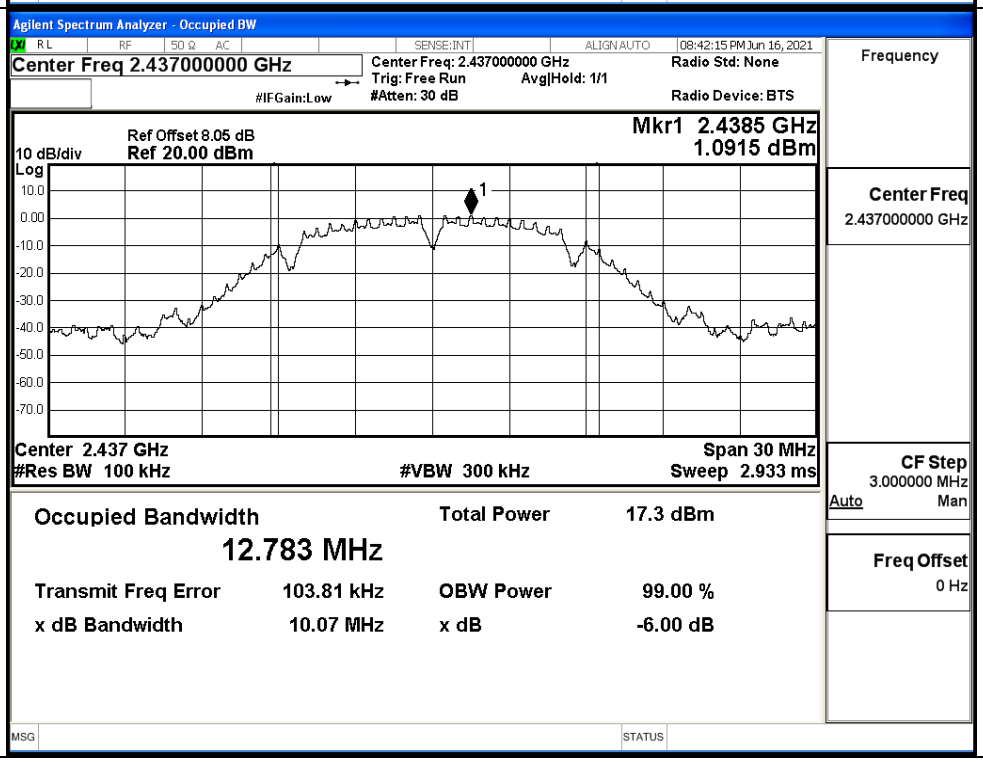
11N20SISO/LCH

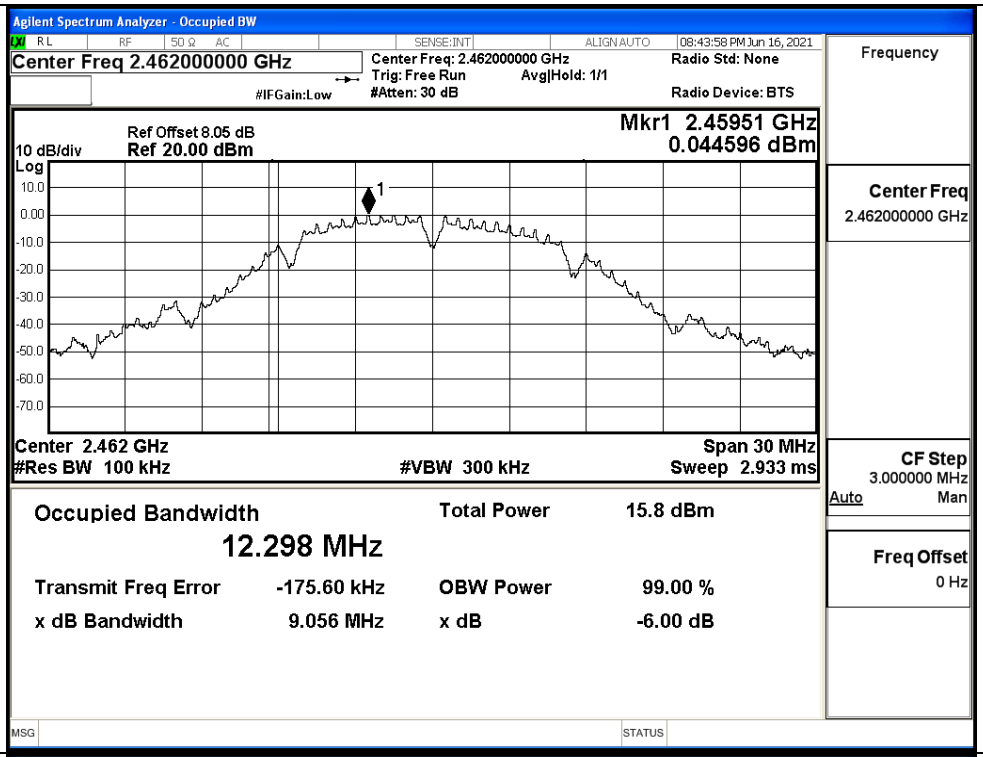
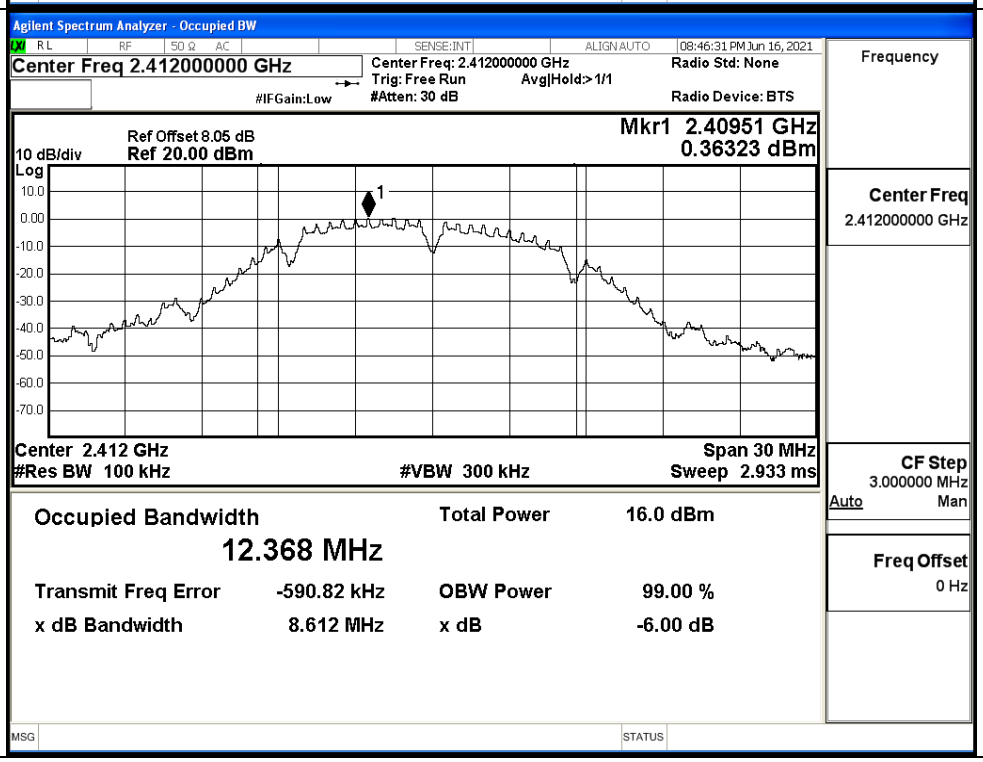


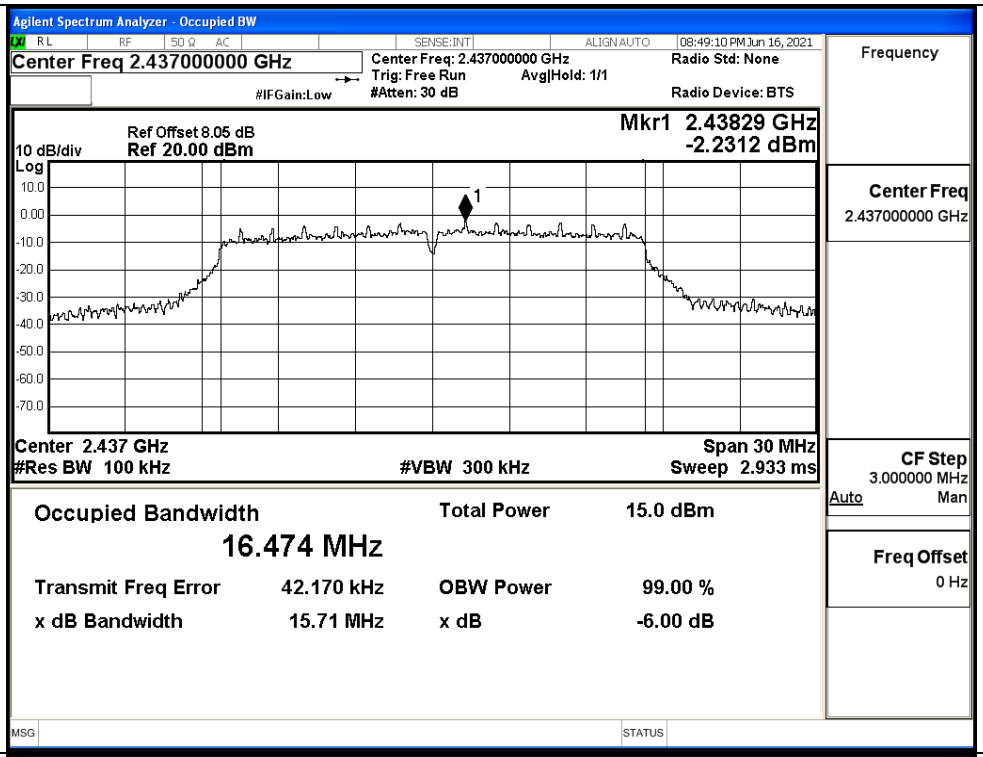
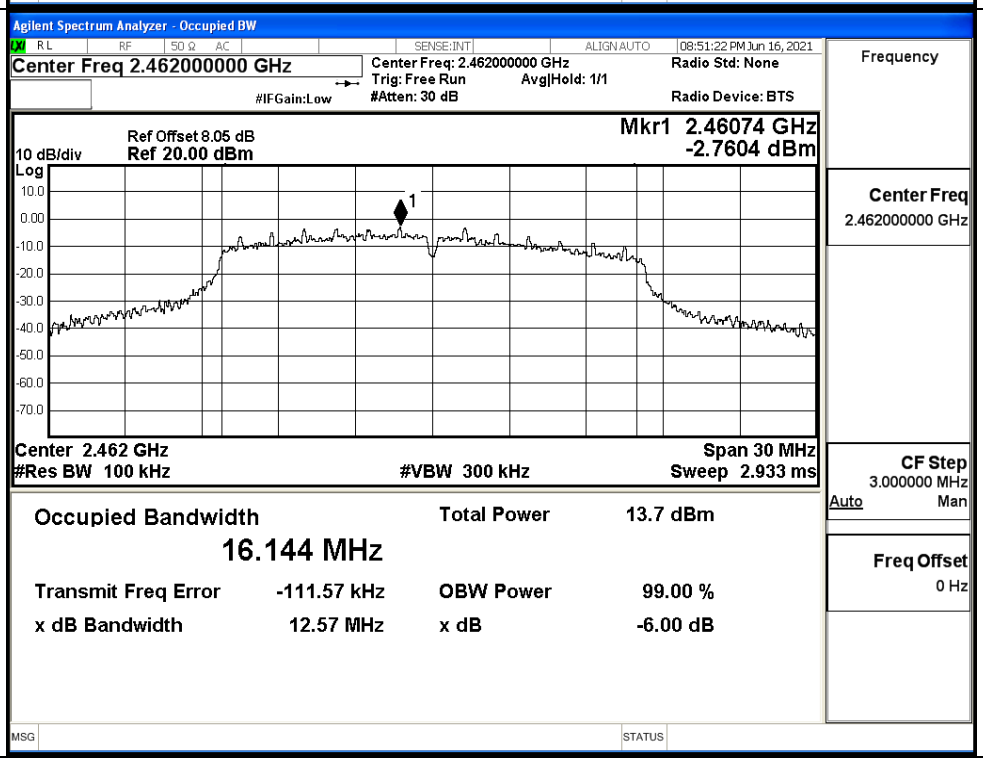
11N20SISO/MCH	
11N20SISO/HCH	

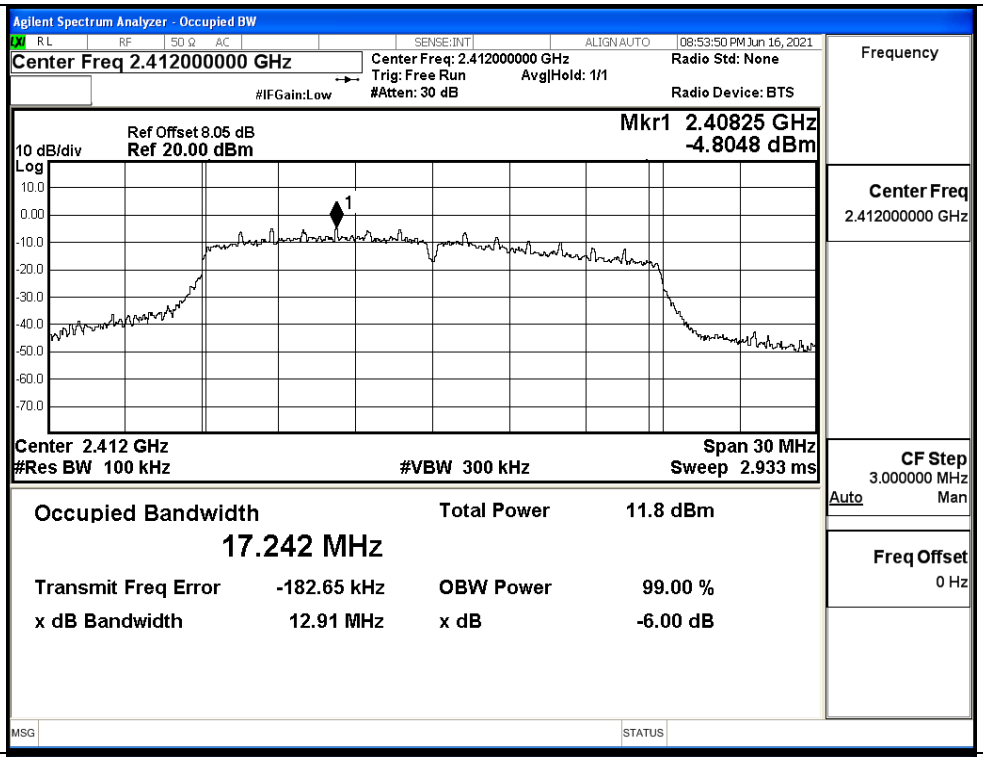
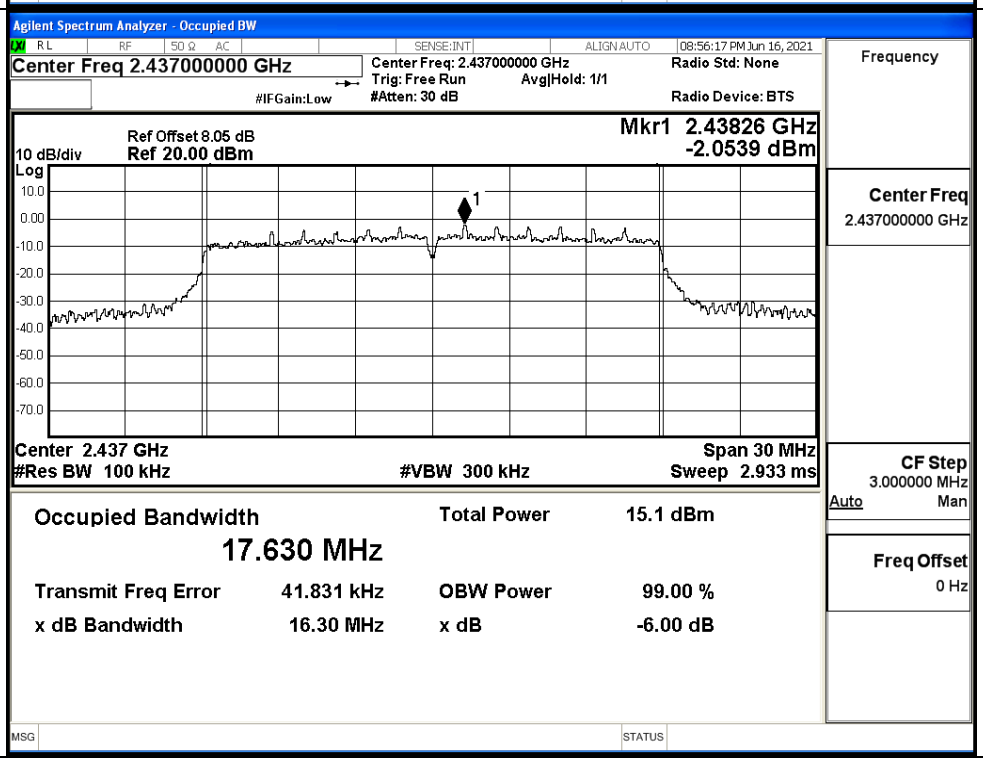
11N40SISO/LCH		
11N40SISO/MCH		

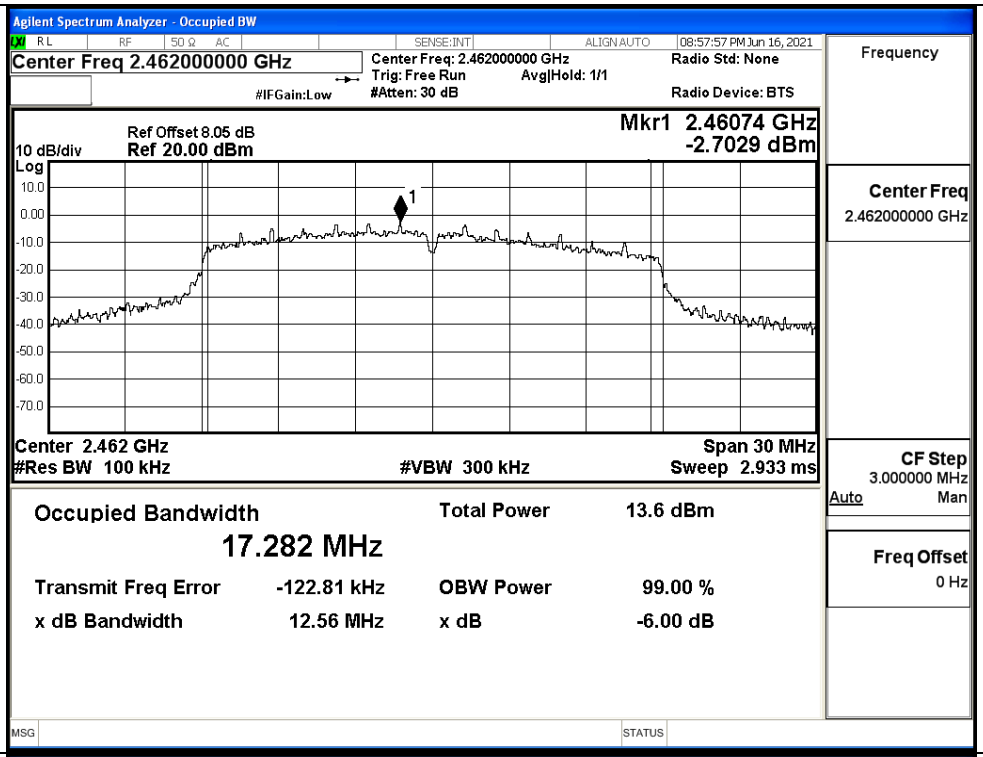
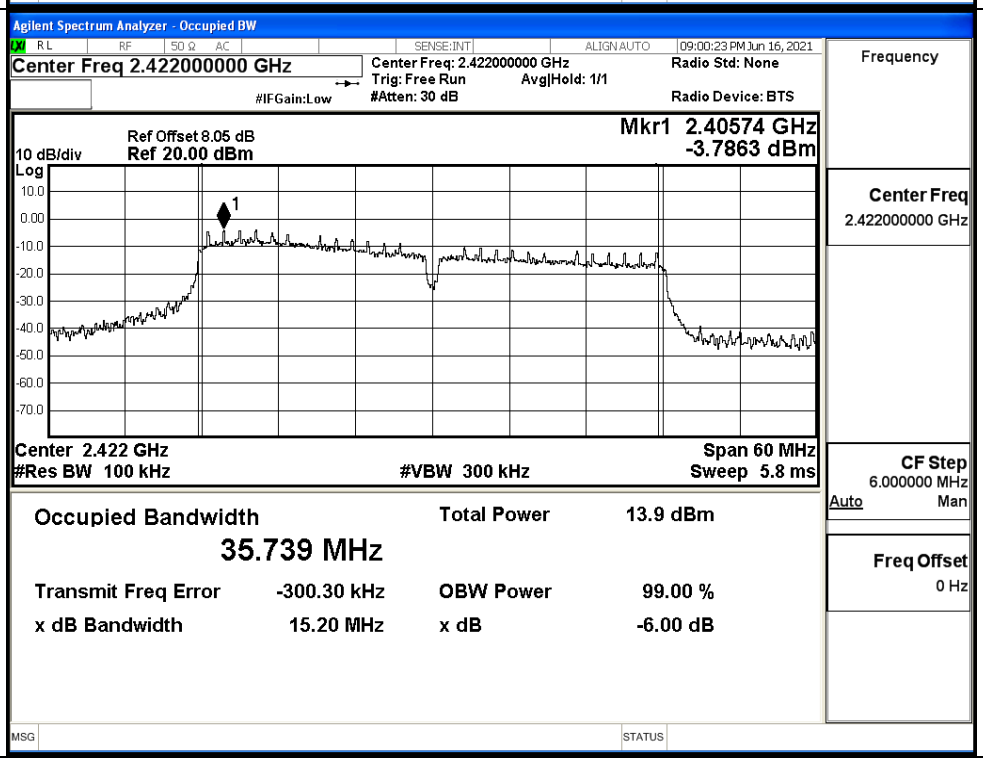
11N40SISO/HCH		

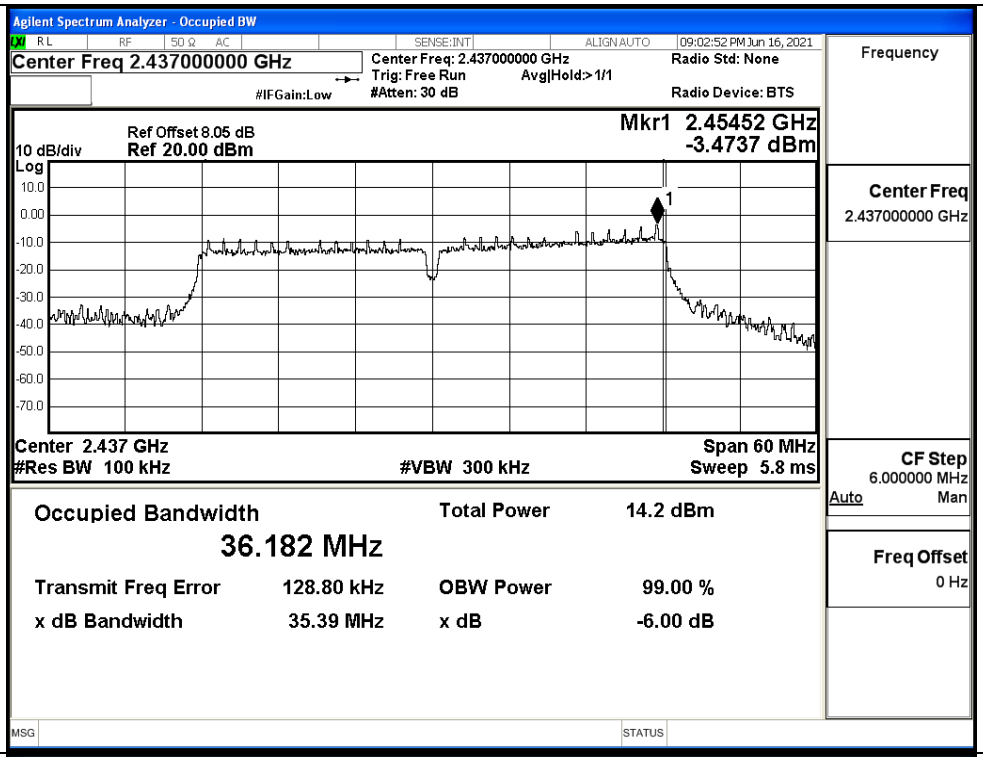
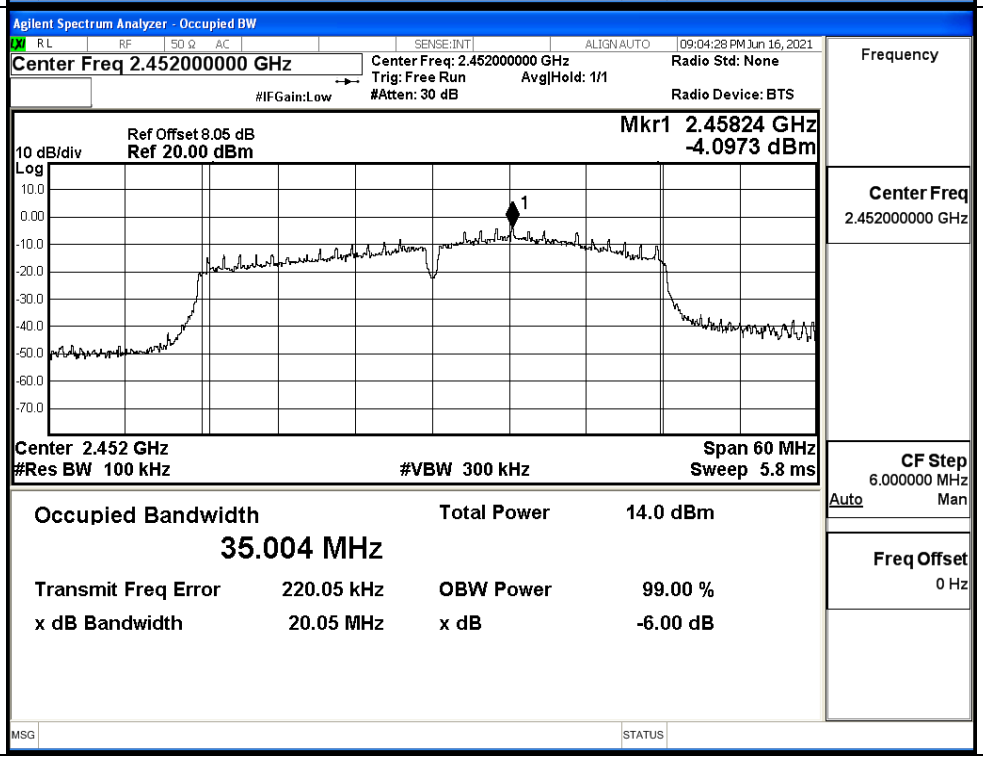
Test Graphs_ Ant 1		
11B/LCH		
11B/MCH		

11B/HCH		
11G/LCH		

11G/MCH		
11G/HCH		

11N20SISO/LCH		
11N20SISO/MCH		

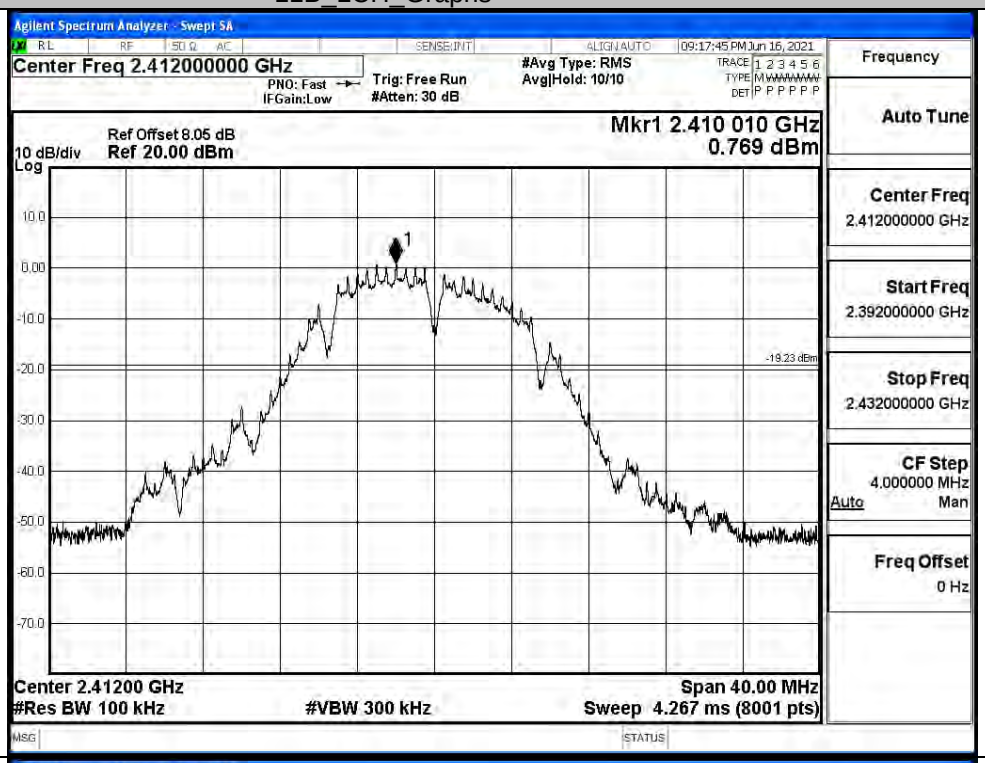
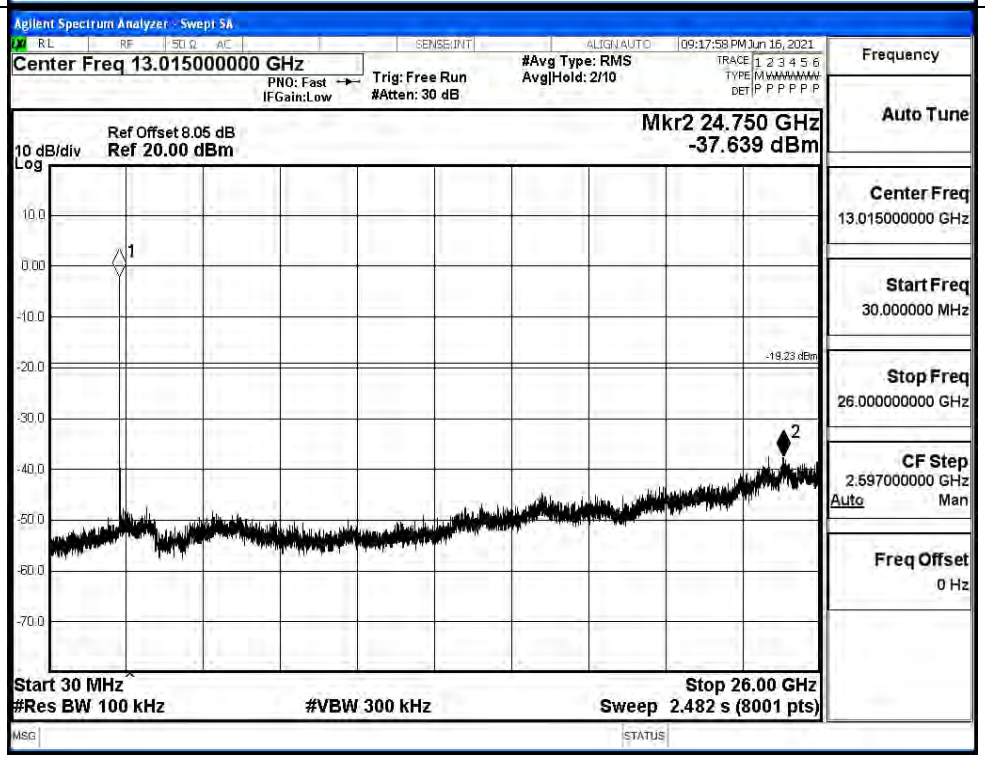
11N20SISO/HCH		
11N40SISO/LCH		

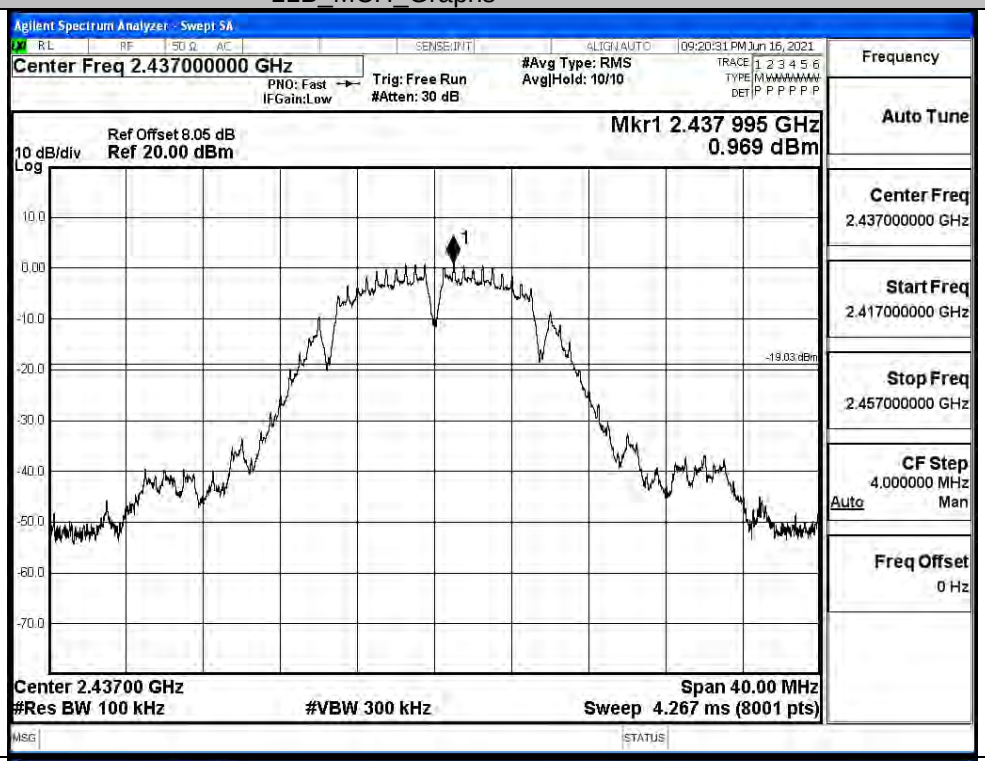
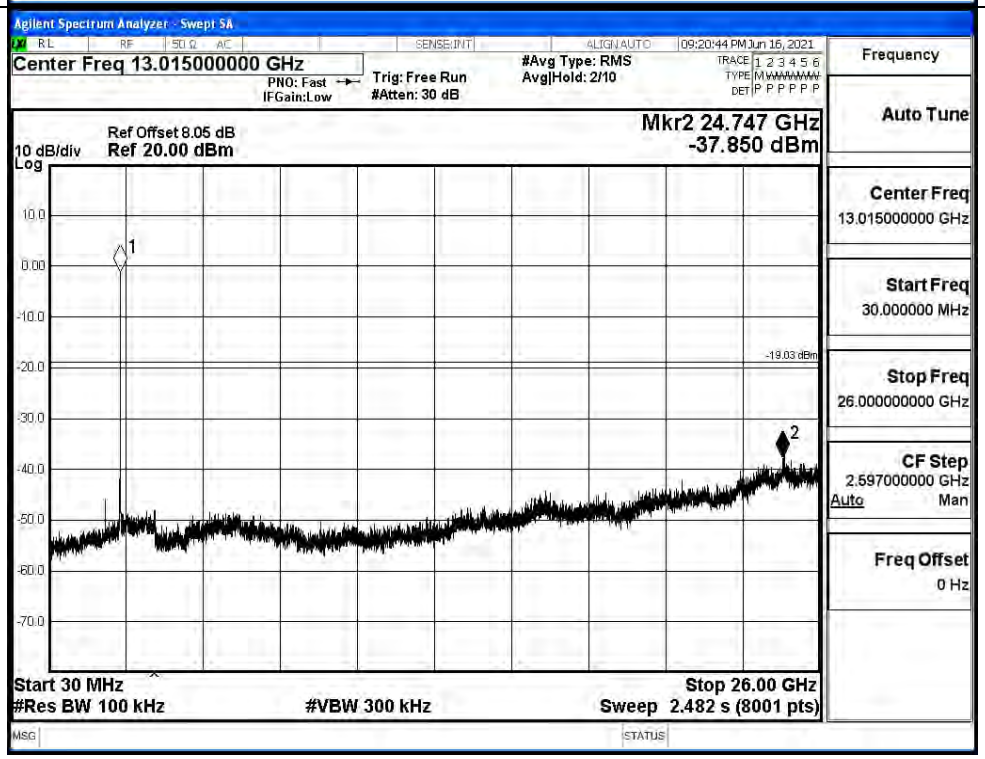
11N40SISO/MCH		
11N40SISO/HCH		

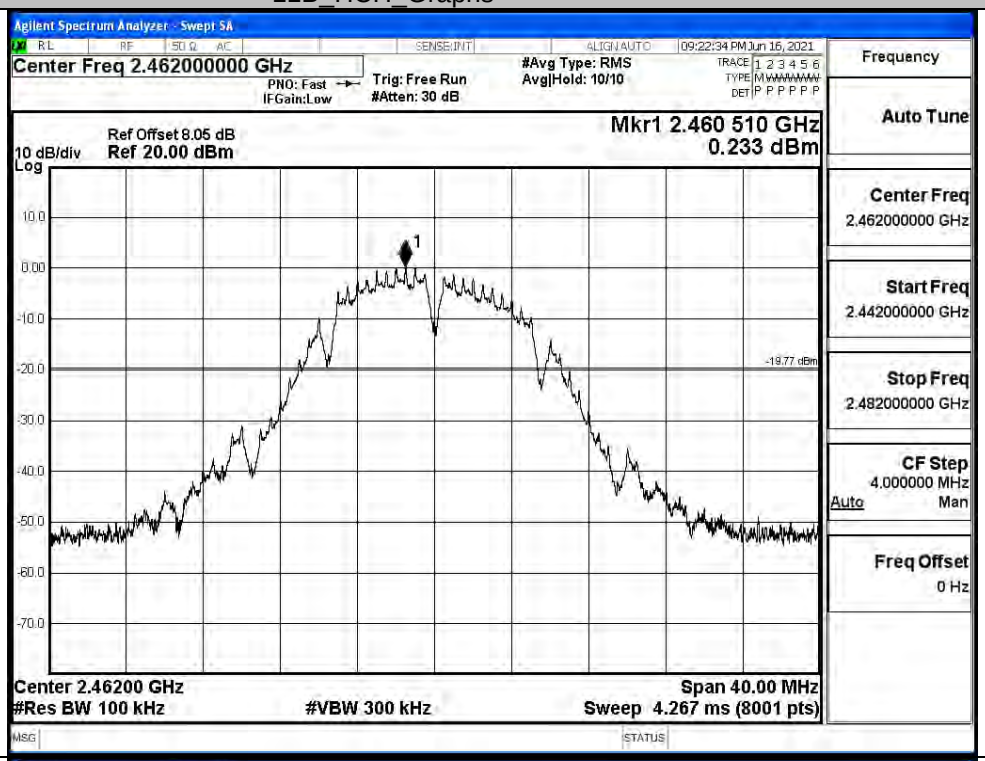
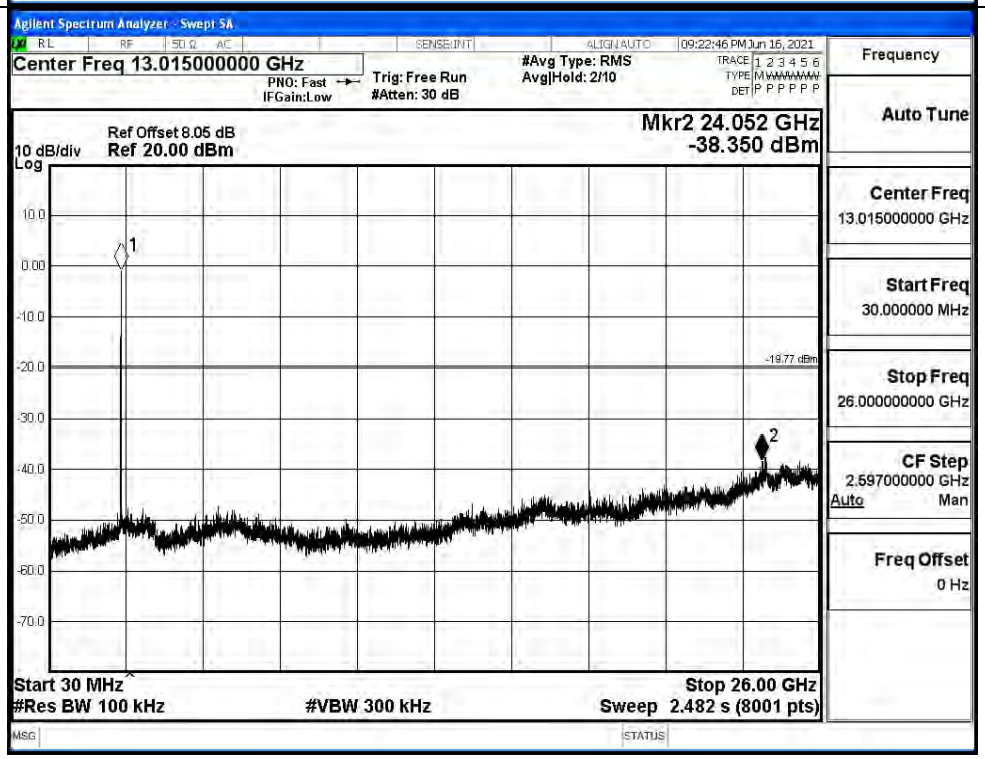
A.5 RF Conducted Spurious Emissions

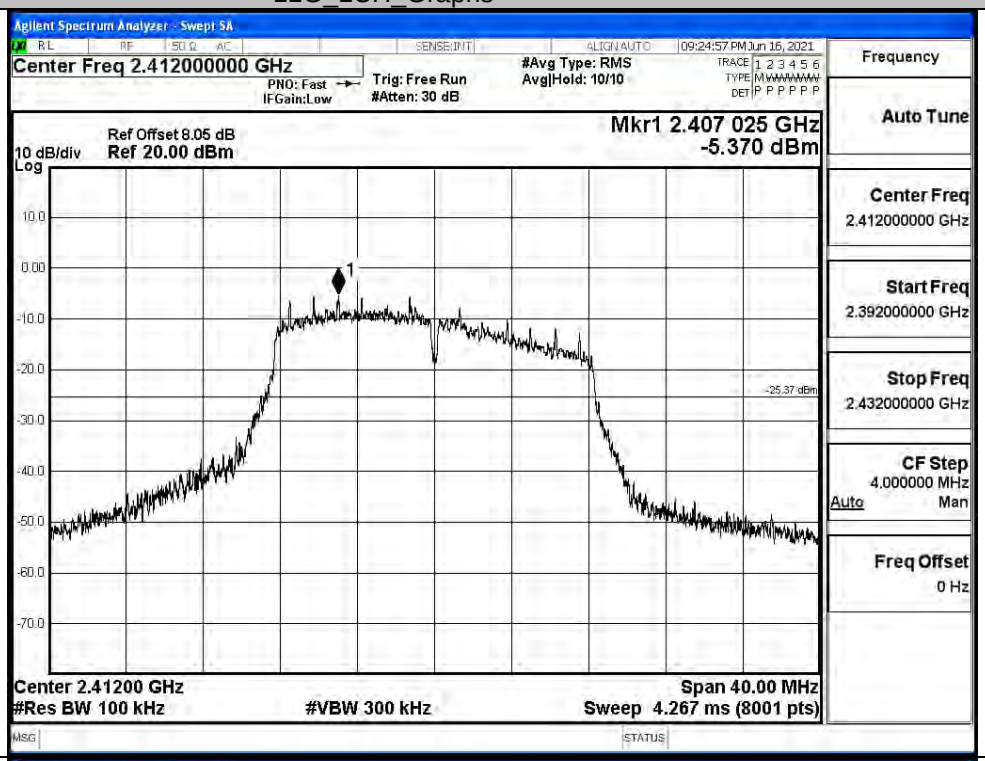
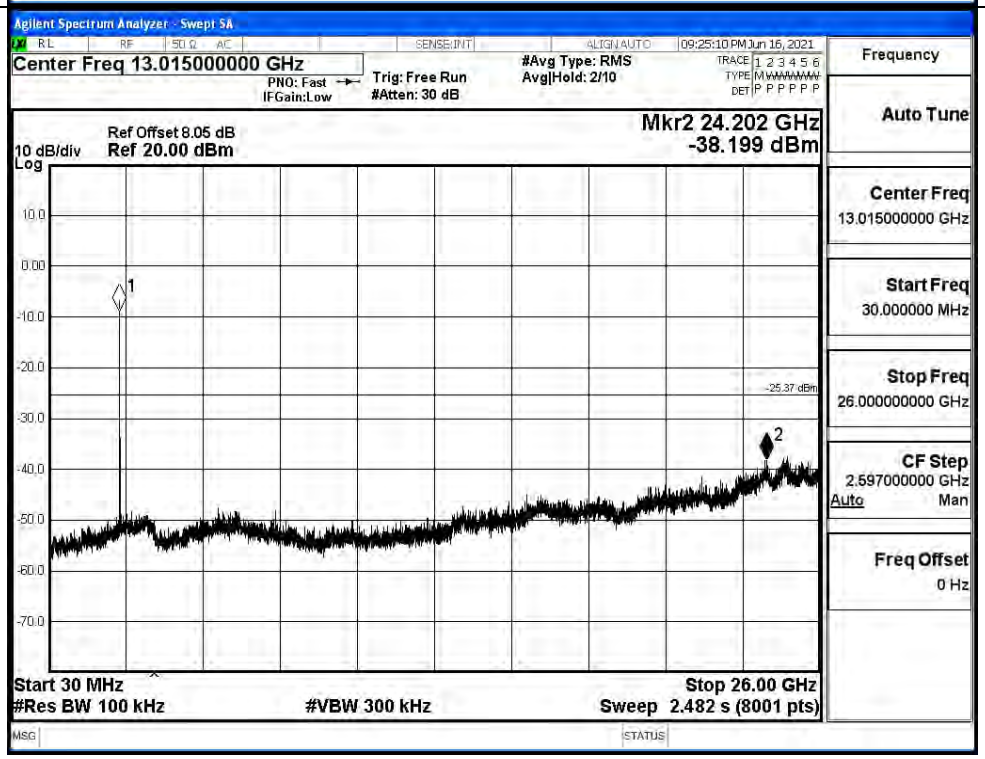
ANT 0

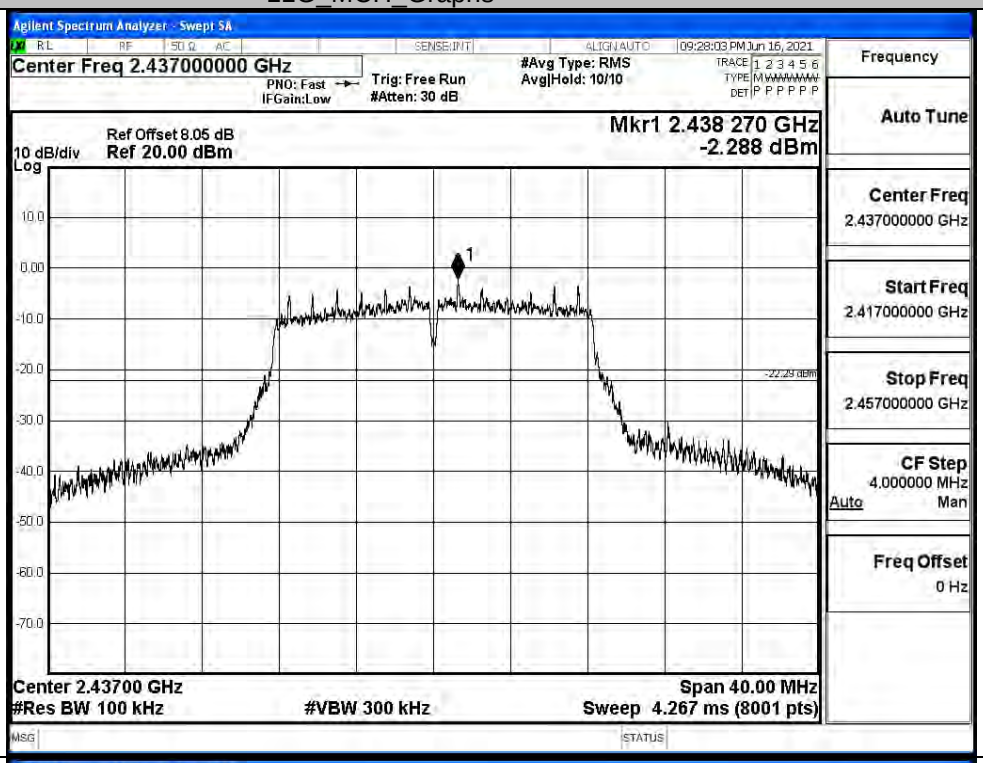
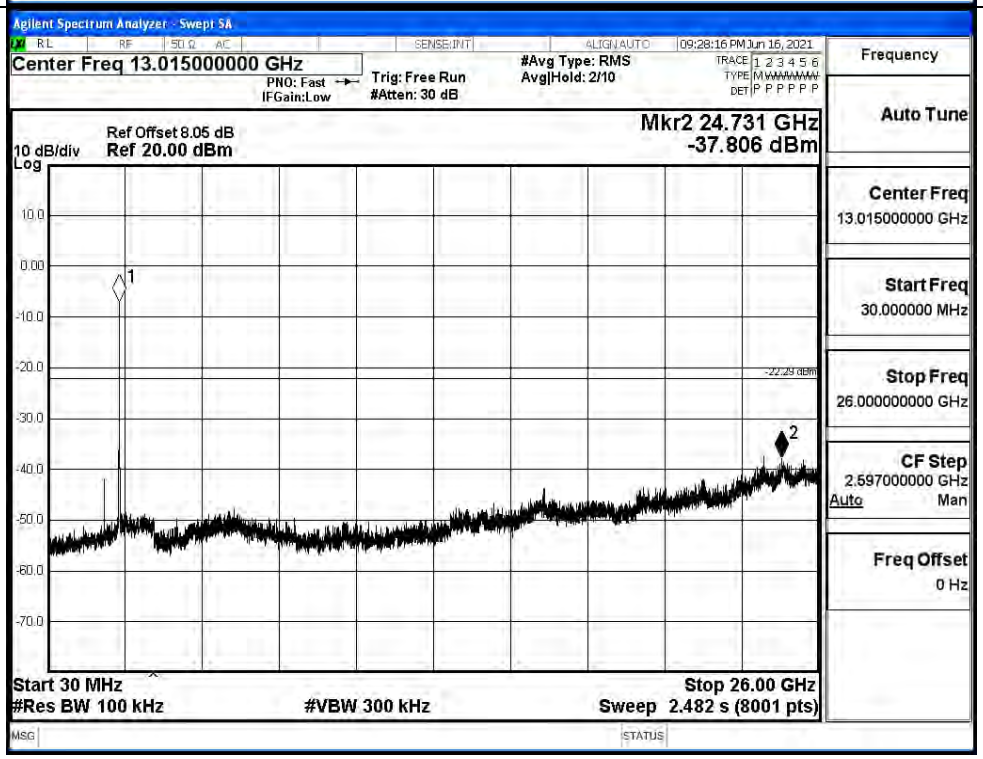
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	0.769	-37.639	-19.231	PASS
	MCH	0.969	-37.850	-19.031	PASS
	HCH	0.233	-38.350	-19.767	PASS
11G	LCH	-5.37	-38.199	-25.370	PASS
	MCH	-2.288	-37.806	-22.288	PASS
	HCH	-3.117	-38.393	-23.117	PASS
11N20 SISO	LCH	-4.907	-38.523	-24.907	PASS
	MCH	-2.878	-38.755	-22.878	PASS
	HCH	-2.439	-38.296	-22.439	PASS
11N40 SISO	LCH	-4.24	-37.001	-24.240	PASS
	MCH	-3.569	-38.577	-23.569	PASS
	HCH	-4.801	-37.742	-24.801	PASS

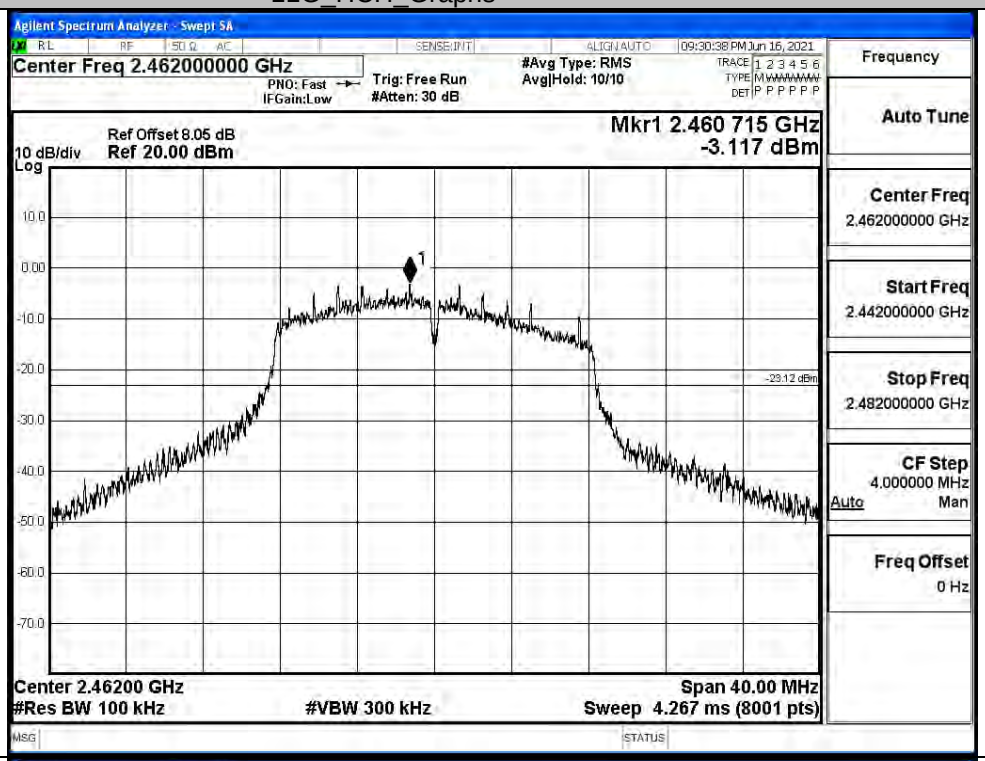
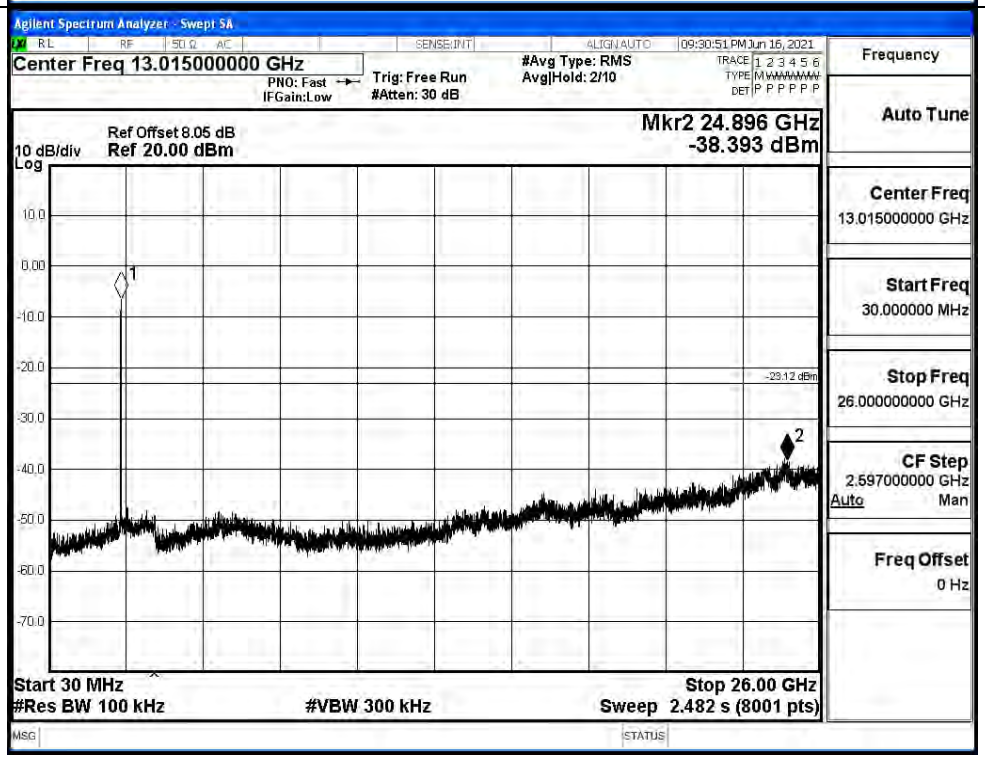
11B_LCH_Graphs		
Pref/11B/LCH		
Puw/11B/LCH		

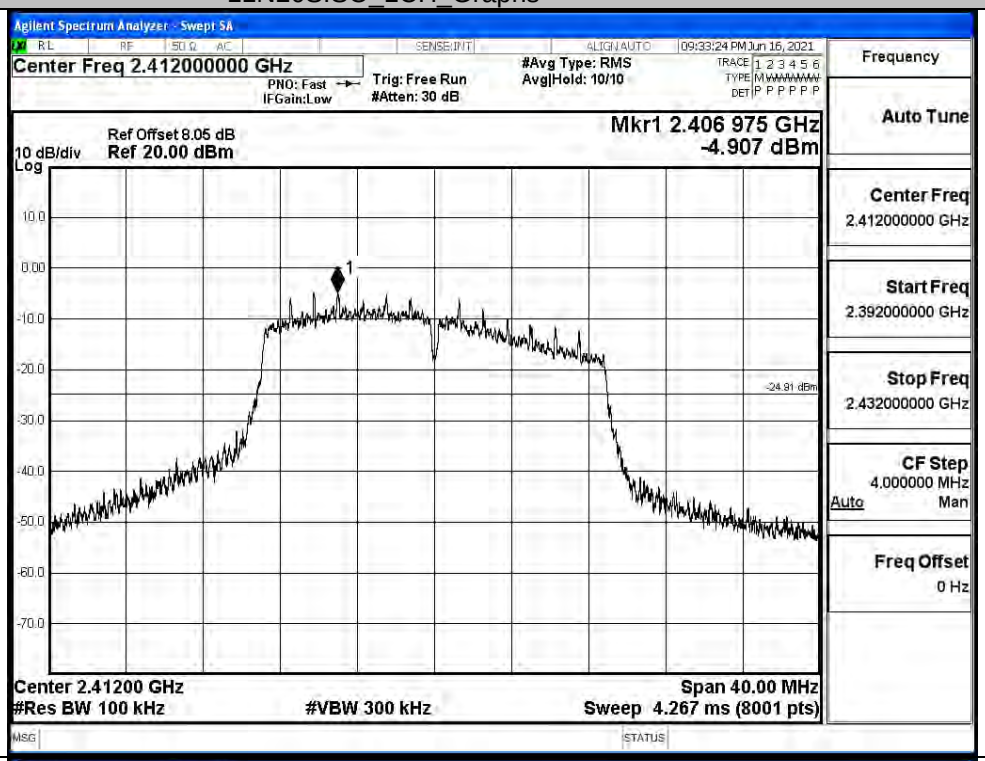
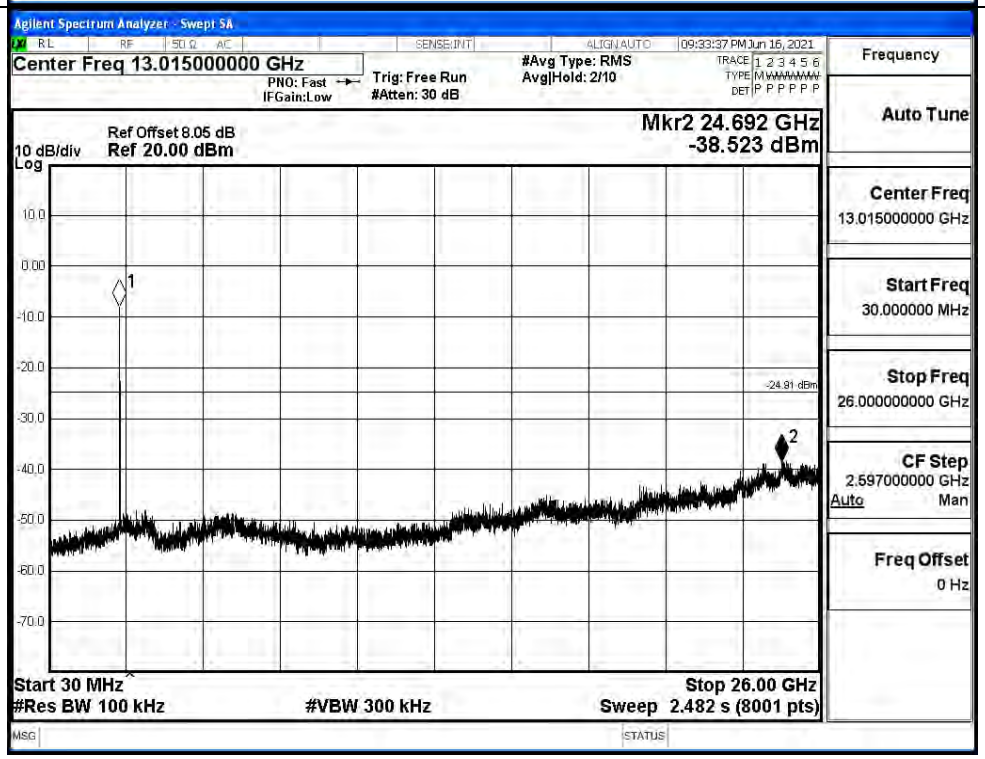
11B_MCH_Graphs	
Pref/11B/MCH	
Puw/11B/MCH	

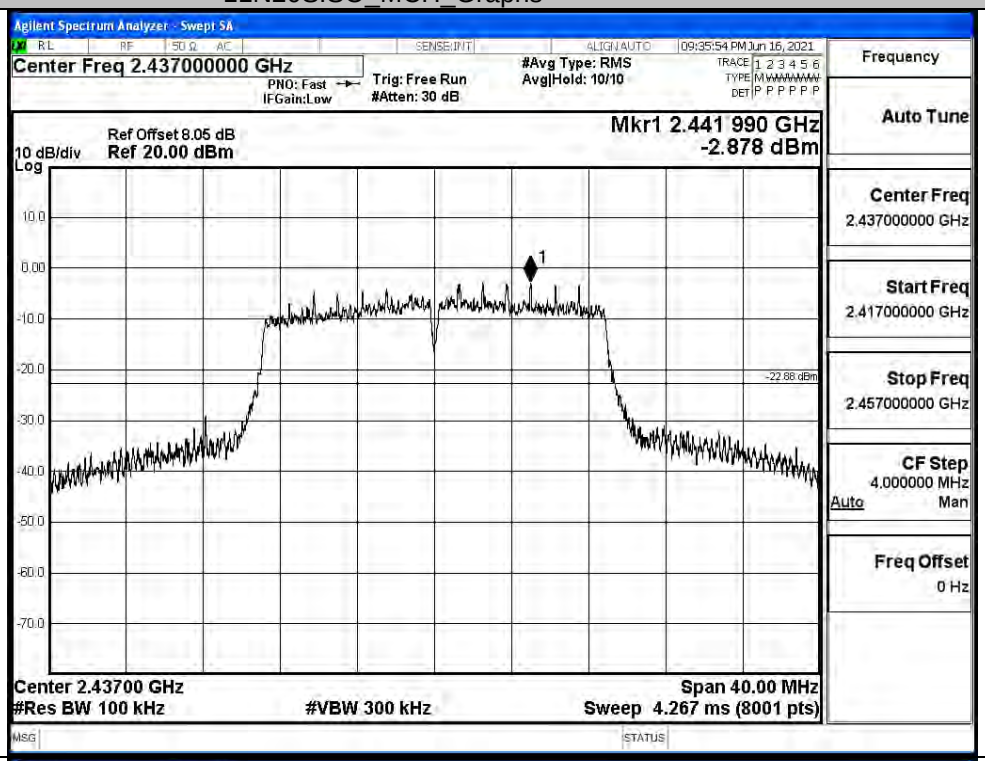
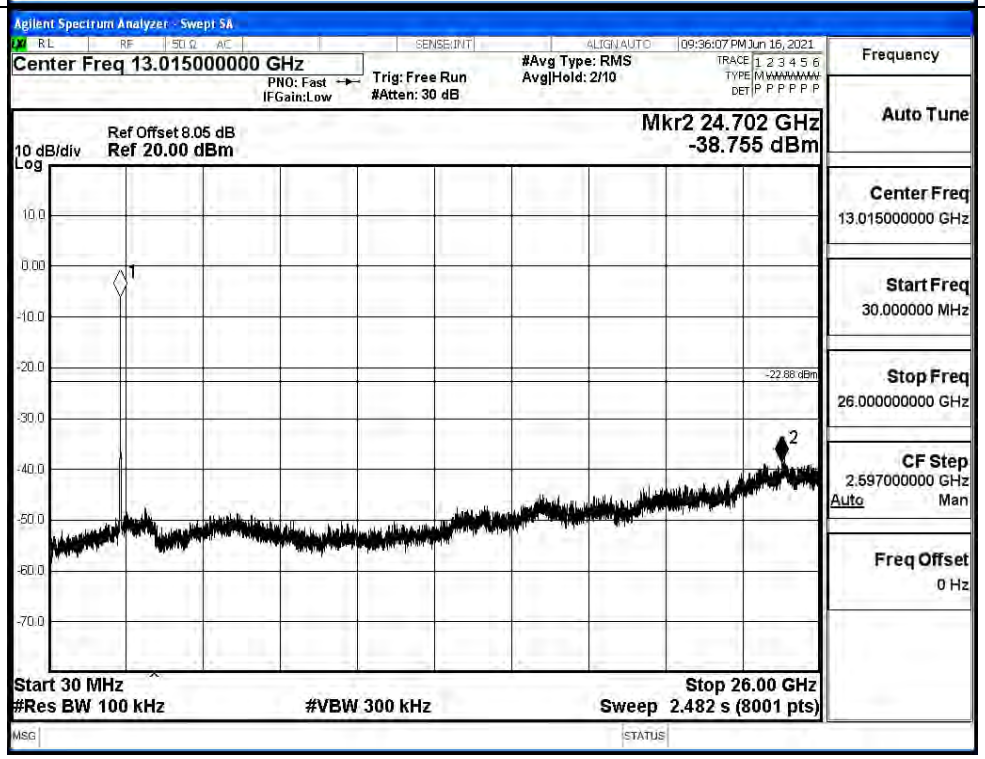
11B_HCH_Graphs	
Pref/11B/HCH	
Puw/11B/HCH	

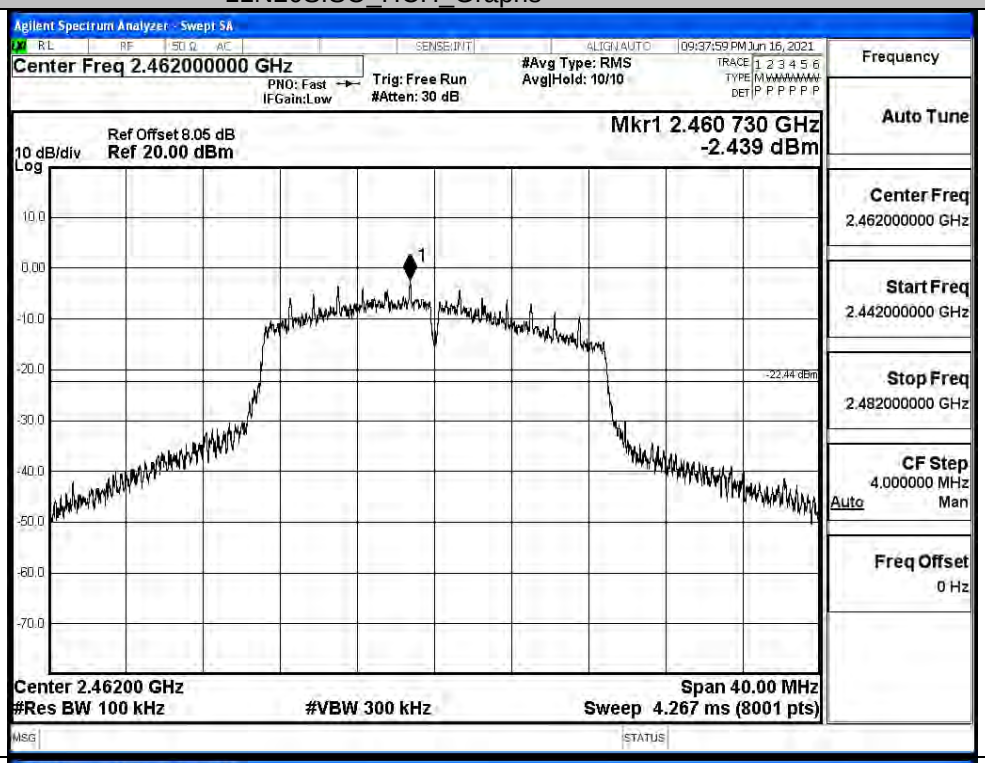
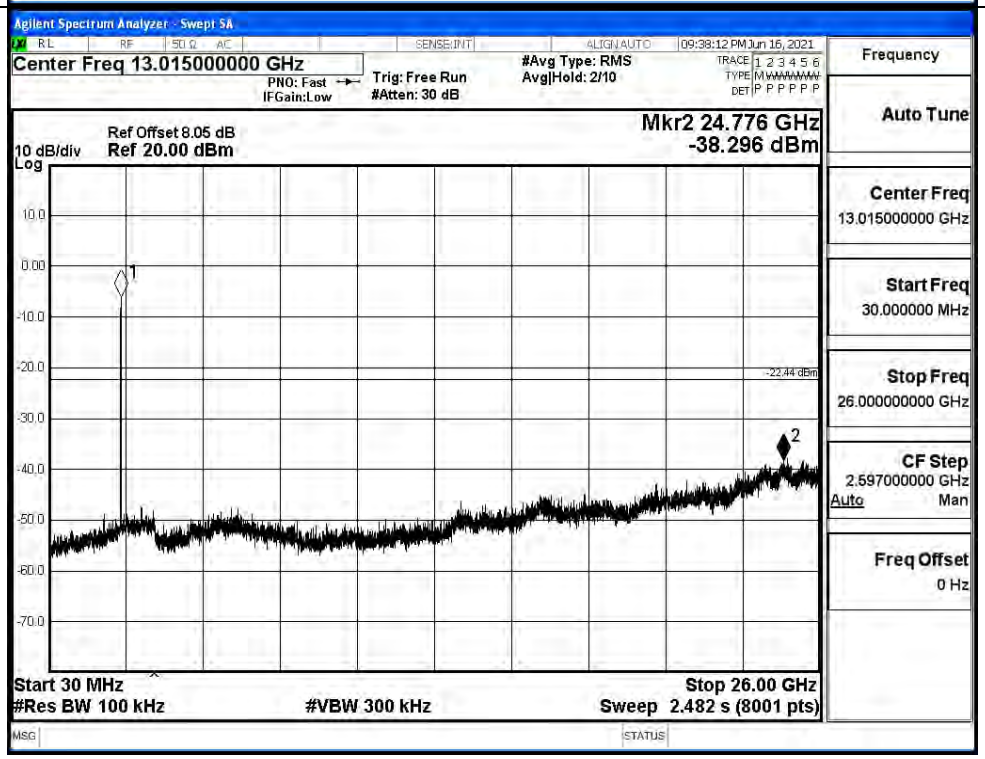
11G_LCH_Graphs		
Pref/11G/LCH		
Puw/11G/LCH		

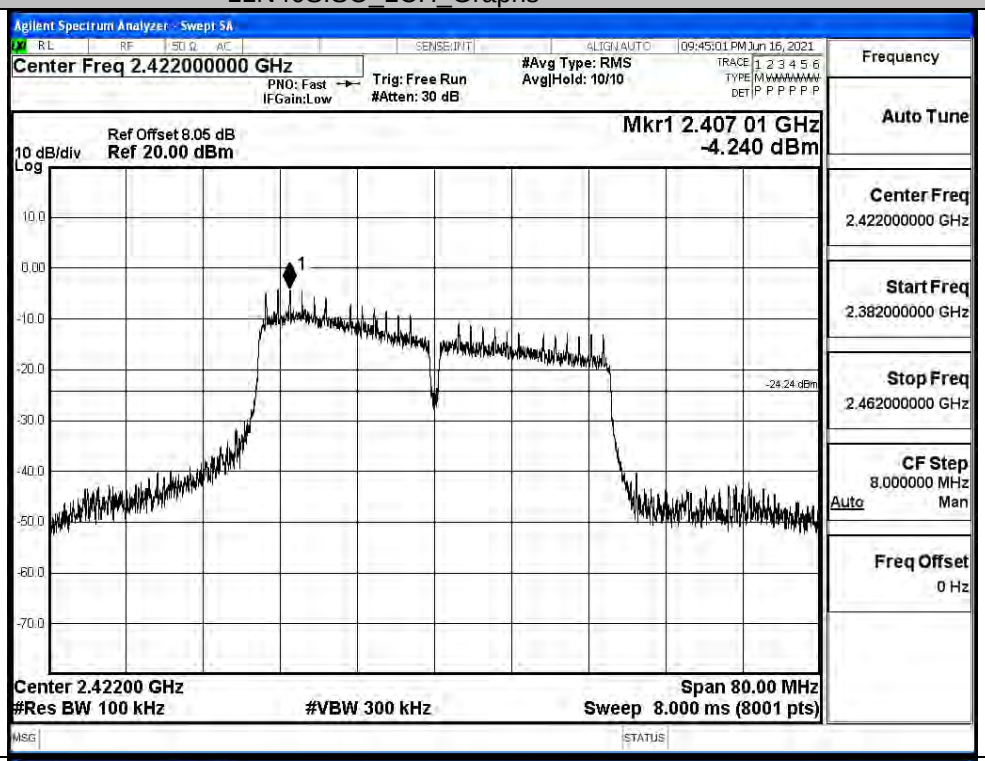
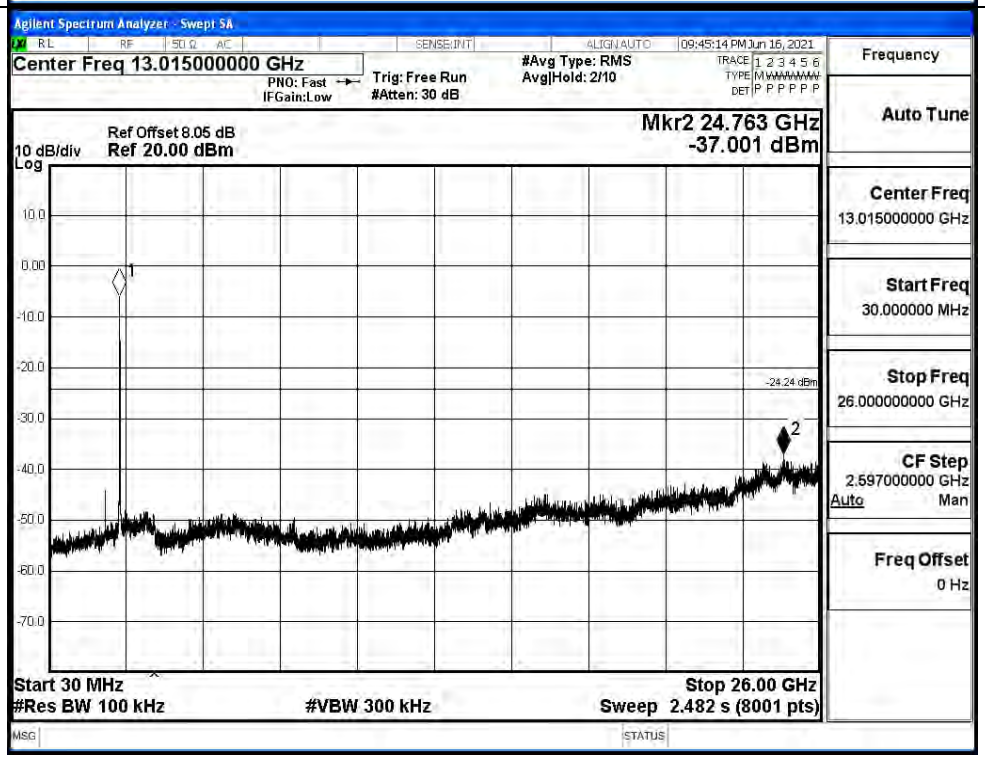
11G_MCH_Graphs		
Pref/11G/MCH		
Puw/11G/MCH		

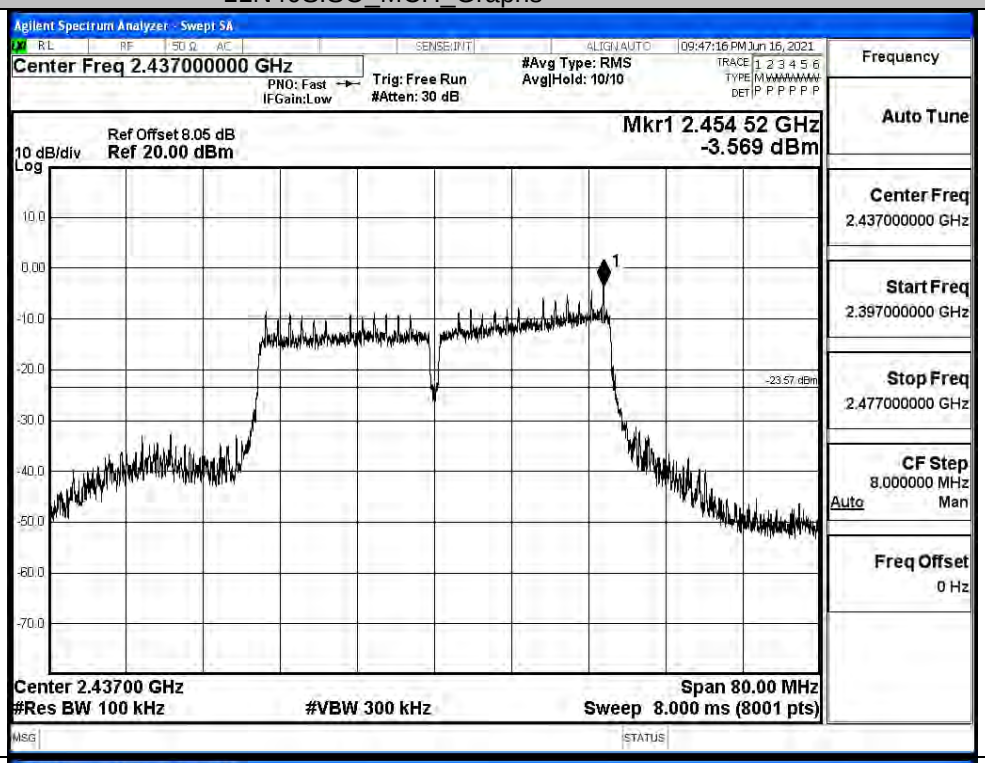
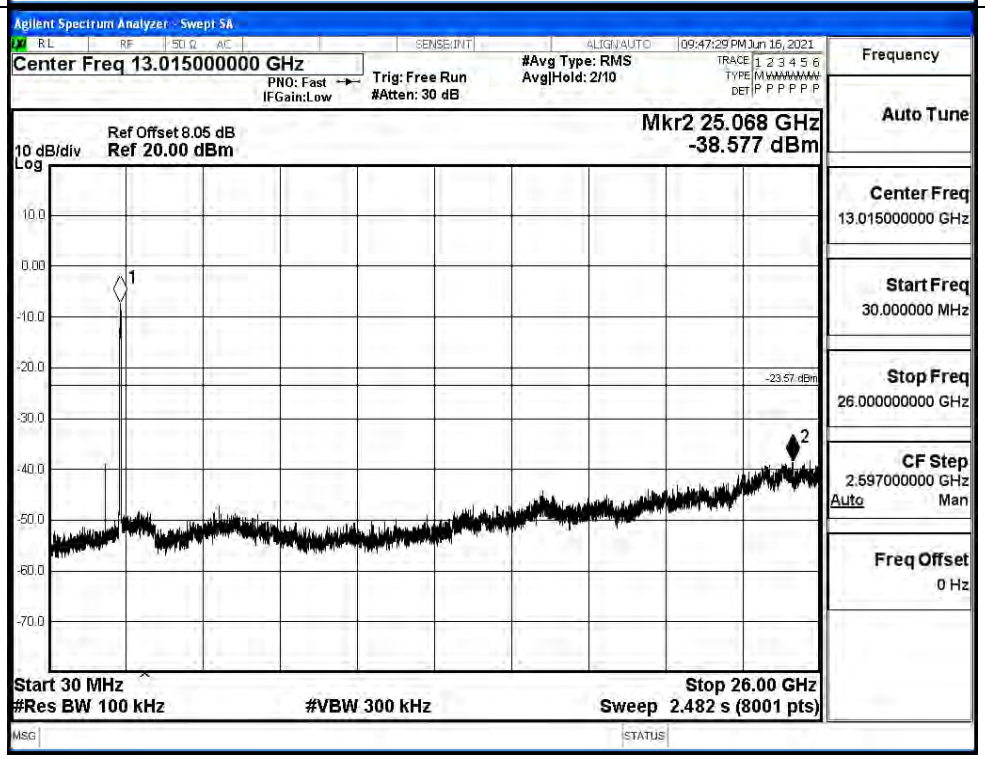
11G_HCH_Graphs		
Pref/11G/HCH		
Puw/11G/HCH		

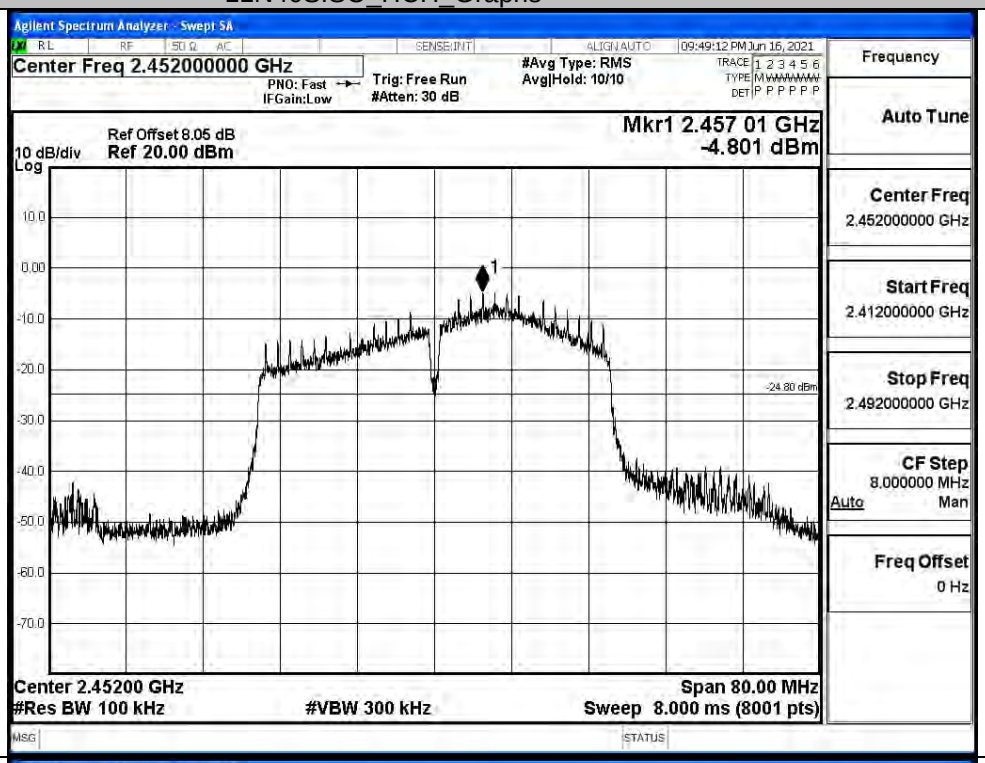
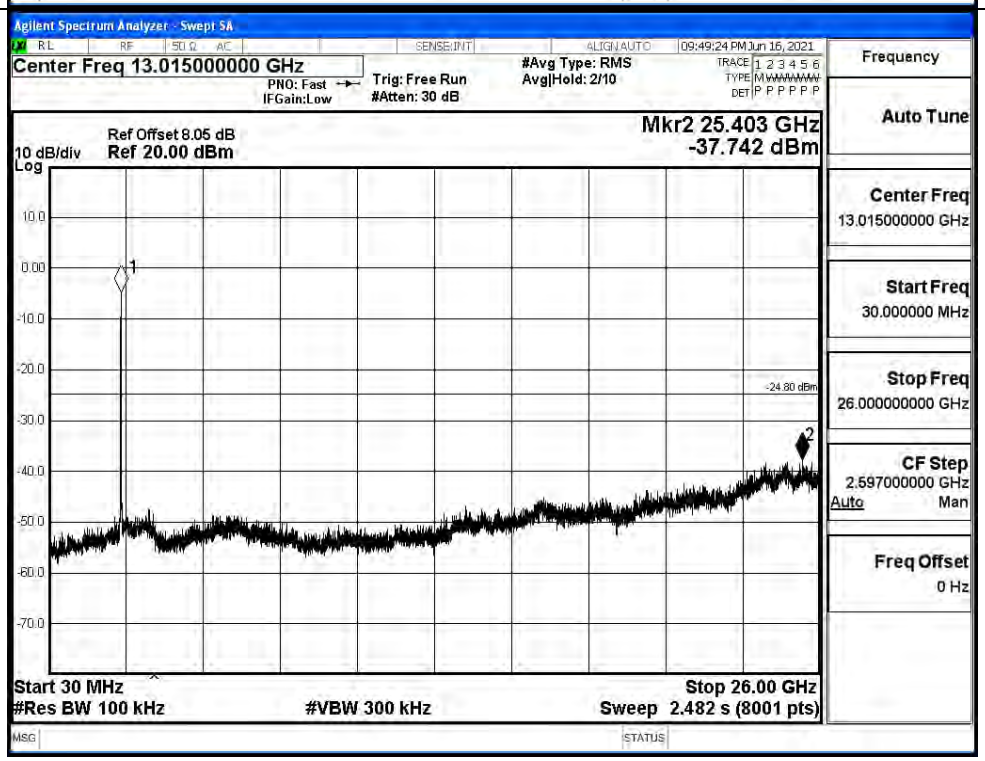
11N20SISO_LCH_Graphs		
Pref/11N20SISO/LCH		
Puw/11N20SISO/LCH		

11N20SISO_MCH_Graphs	
Pref/11N20 SISO/MCH	
Puw/11N20 SISO/MCH	

11N20SISO_HCH_Graphs	
Pref/11N20 SISO/HCH	
Puw/11N20 SISO/HCH	

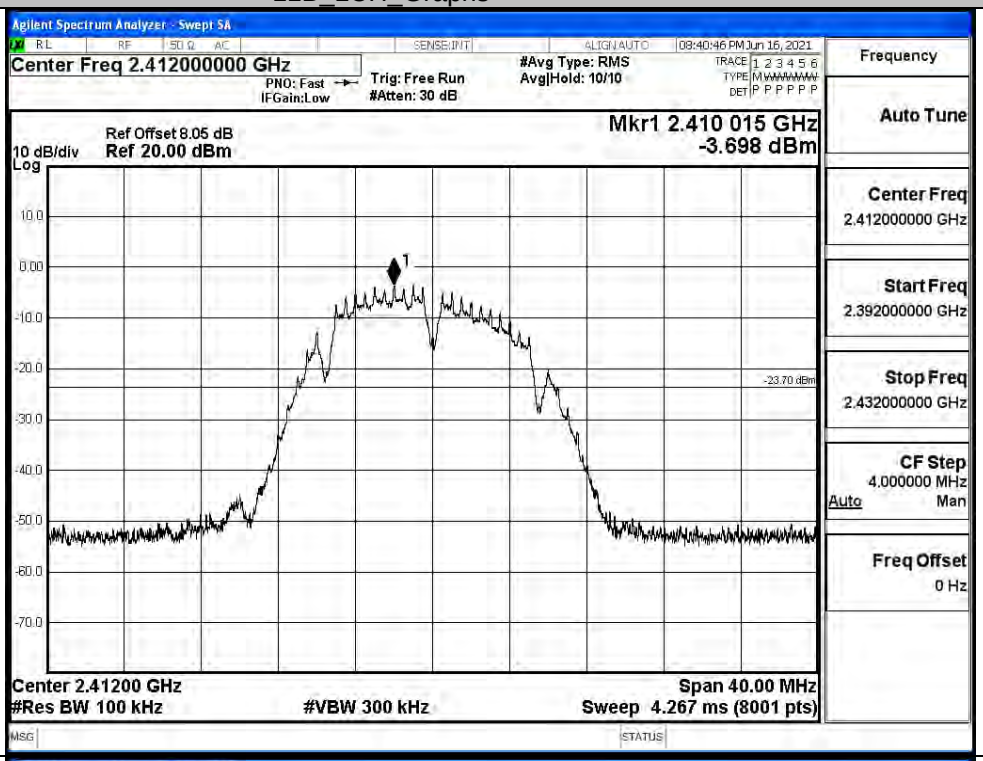
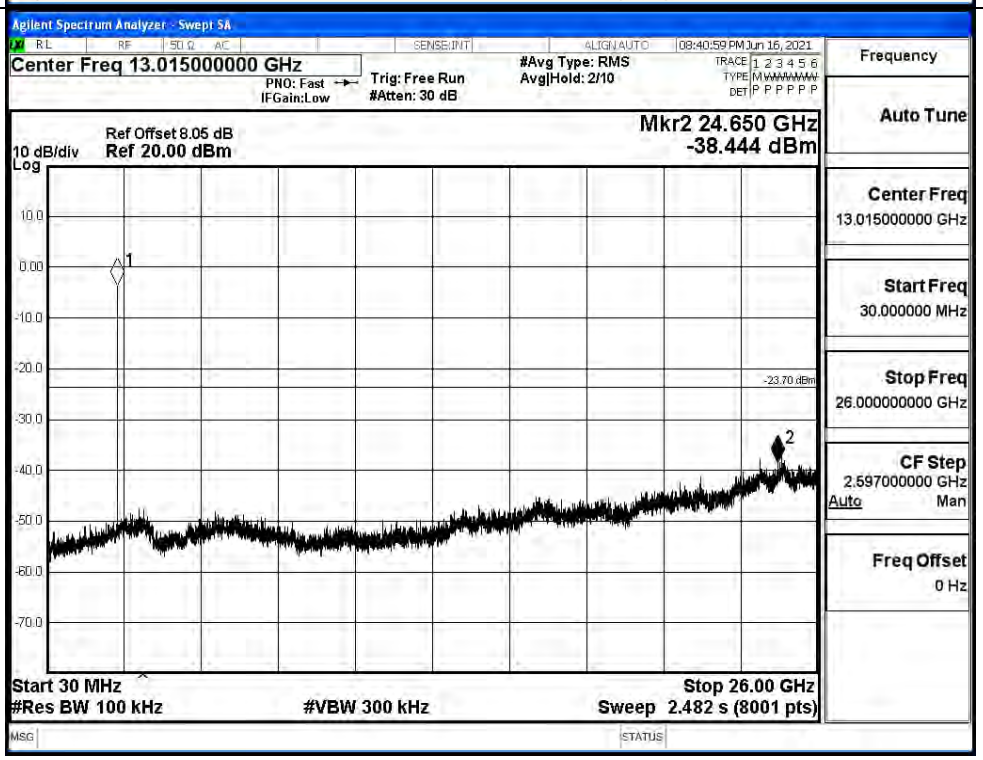
11N40SISO_LCH_Graphs	
Pref/11N40 SISO/LCH	
Puw/11N40 SISO/LCH	

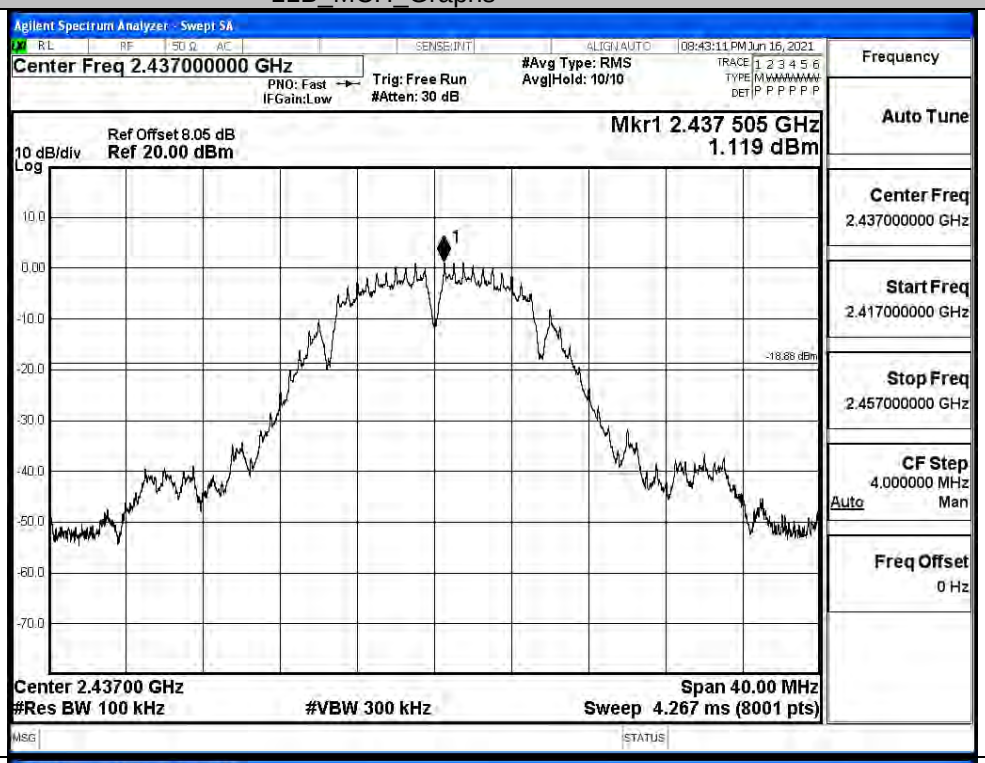
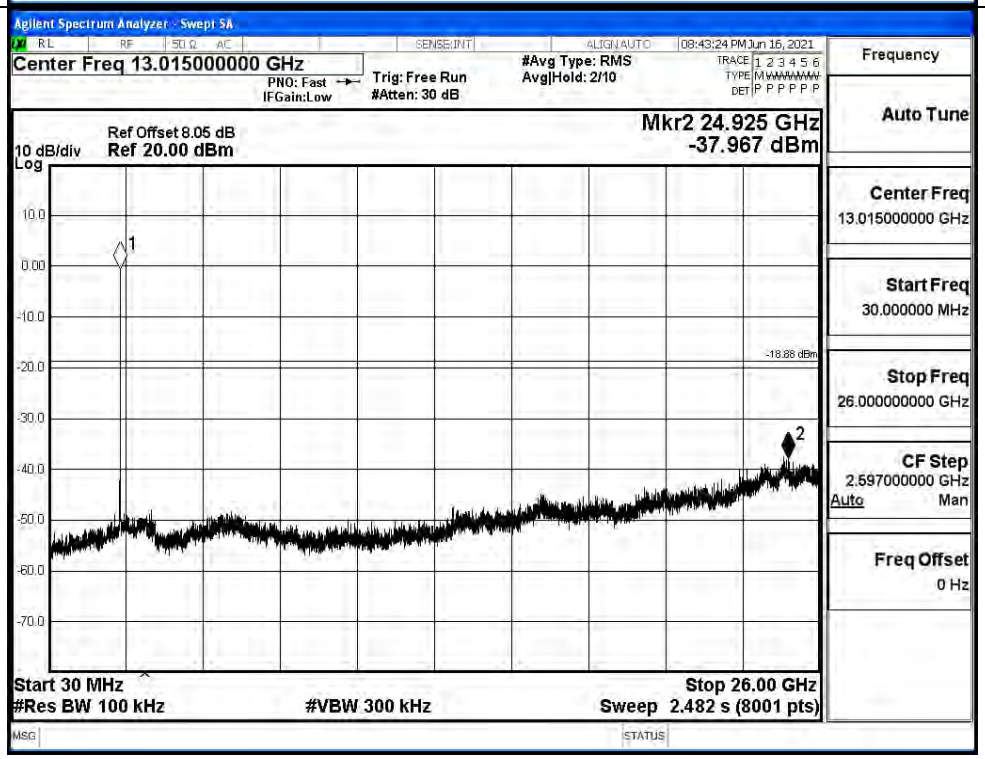
11N40SISO_MCH_Graphs	
Pref/11N40 SISO/MCH	
Puw/11N40 SISO/MCH	

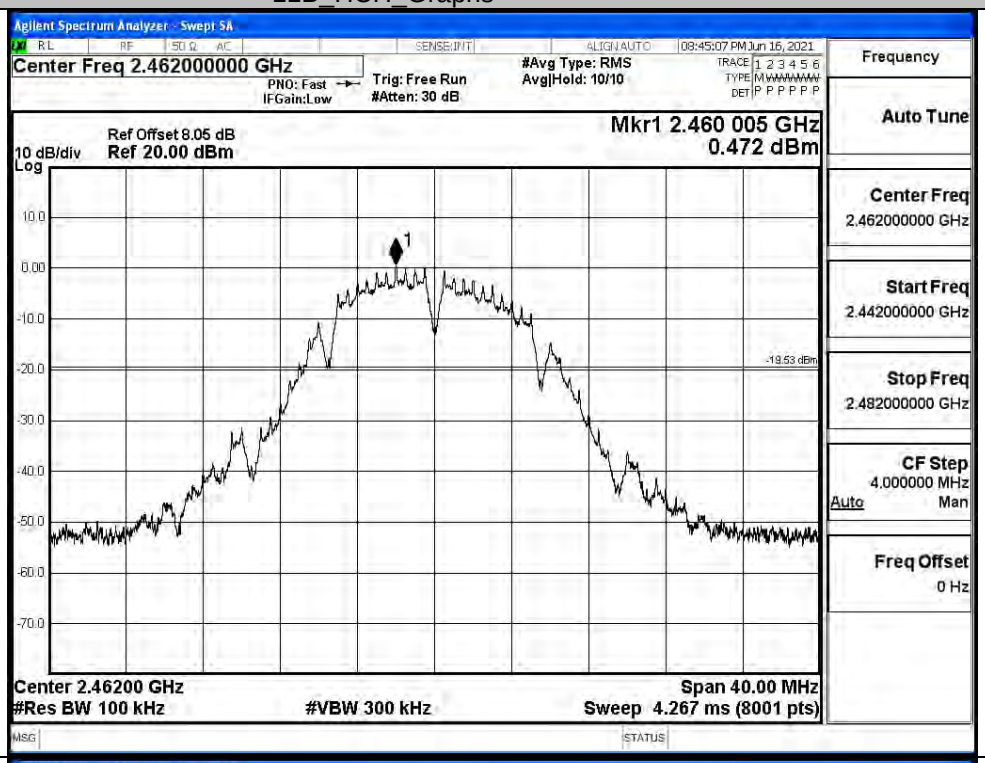
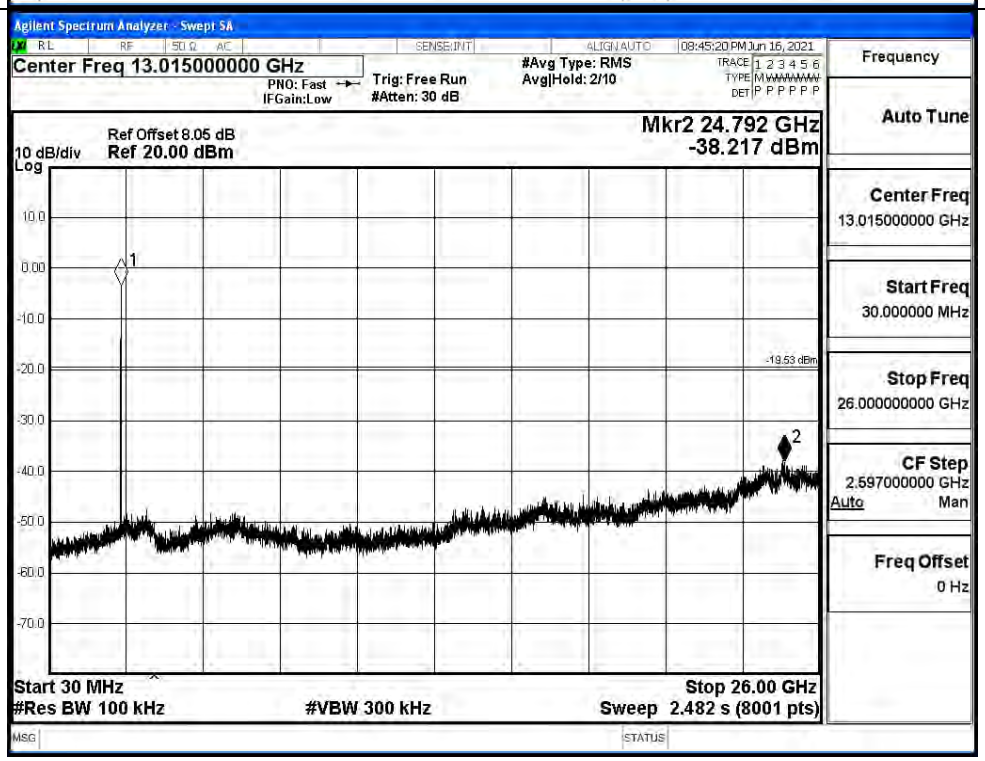
11N40SISO_HCH_Graphs	
Pref/11N40 SISO/HCH	
Puw/11N40 SISO/HCH	

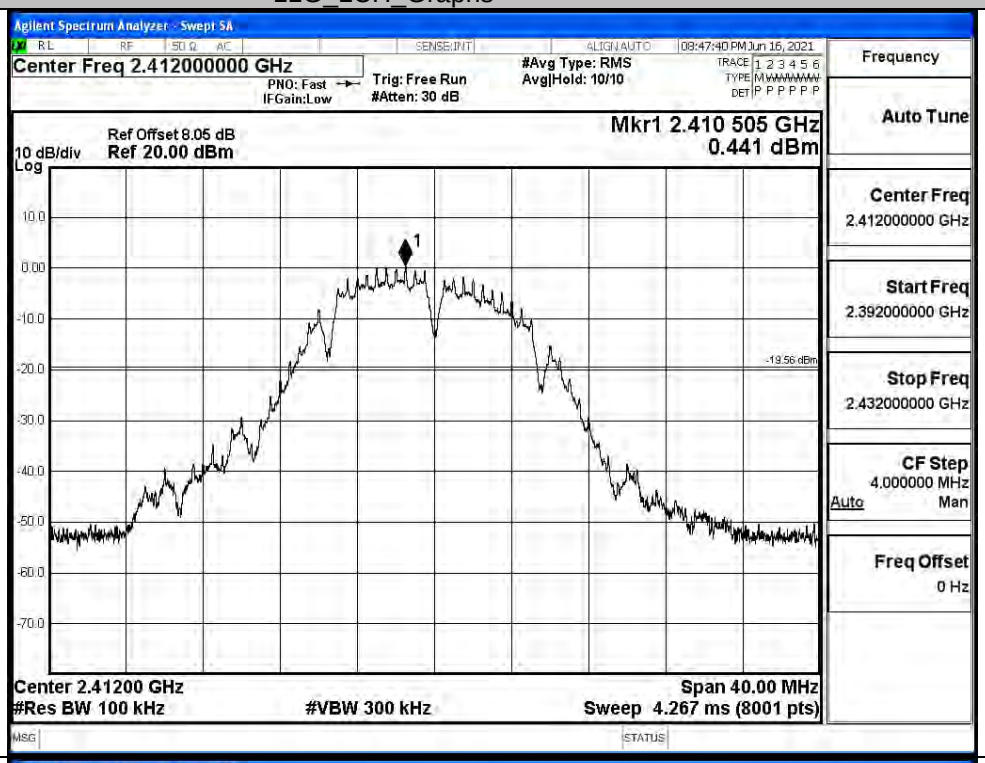
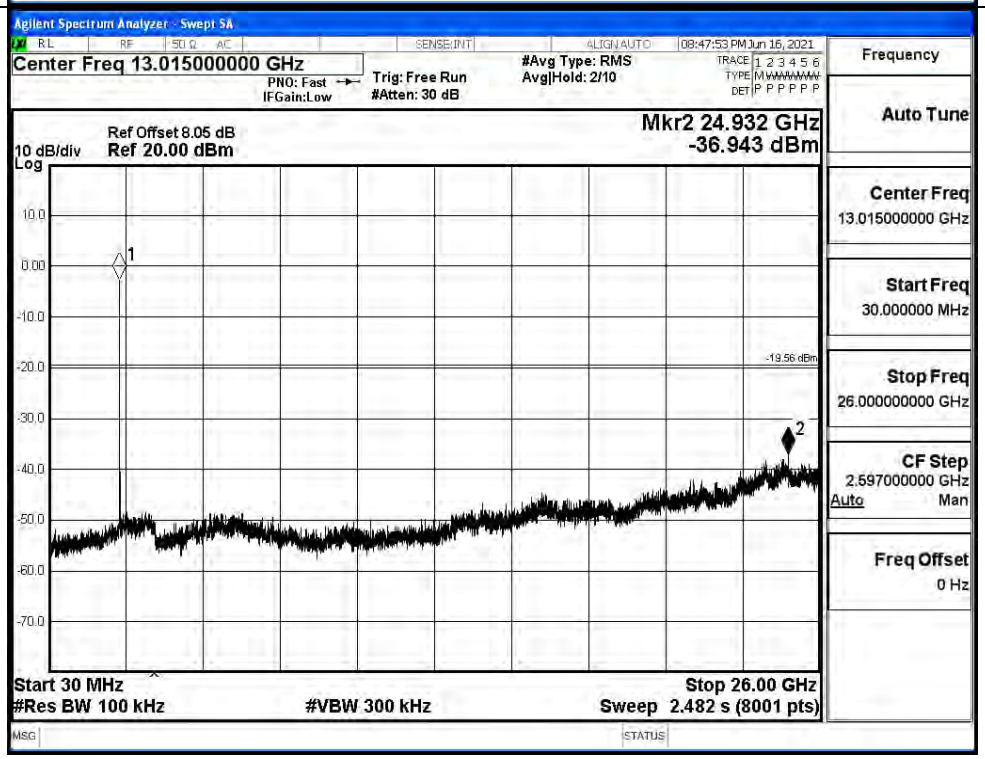
ANT 1

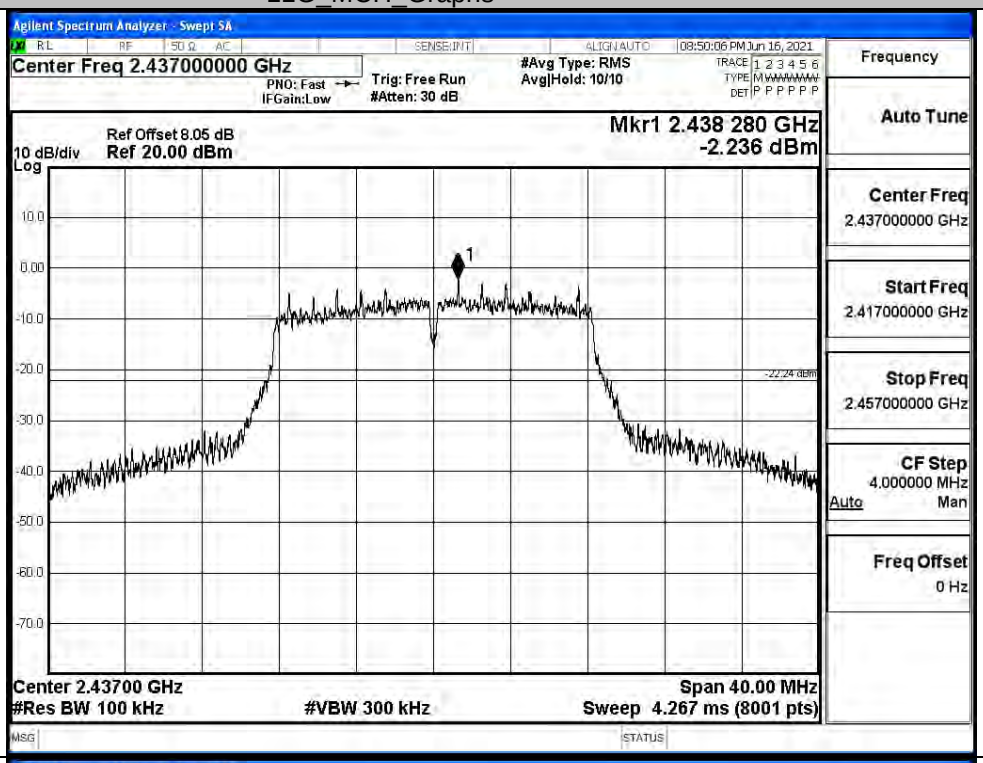
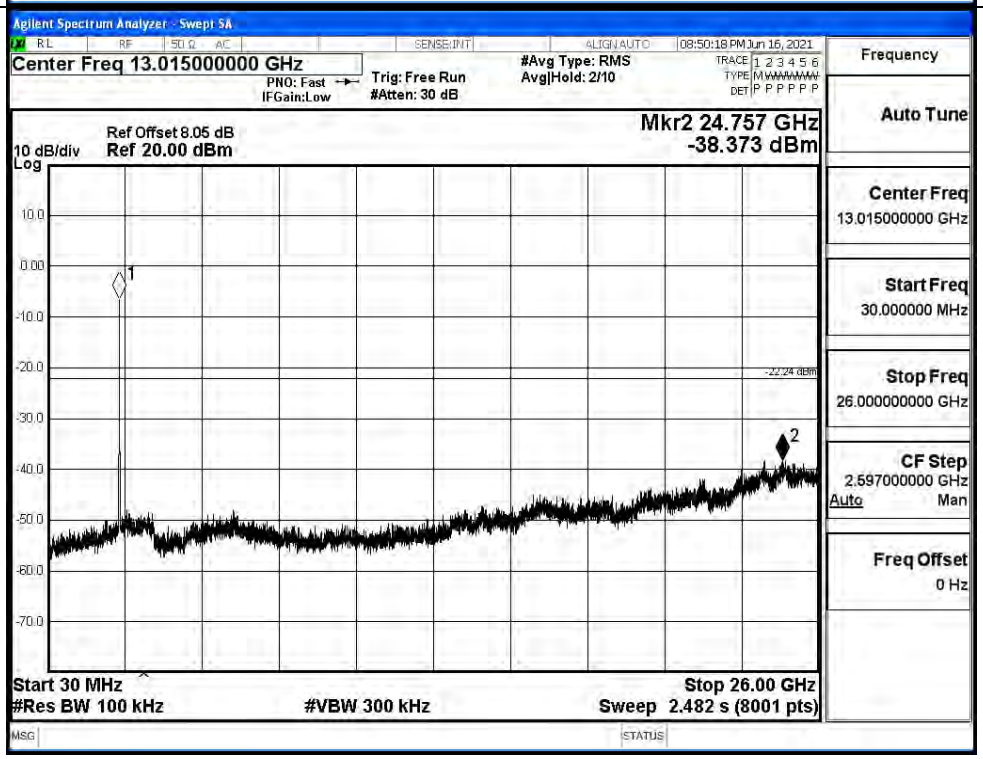
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-3.698	-38.444	-23.698	PASS
	MCH	1.119	-37.967	-18.881	PASS
	HCH	0.472	-38.217	-19.528	PASS
11G	LCH	0.441	-36.943	-19.559	PASS
	MCH	-2.236	-38.373	-22.236	PASS
	HCH	-2.647	-37.946	-22.647	PASS
11N20 SISO	LCH	-4.34	-38.167	-24.340	PASS
	MCH	-2.32	-38.613	-22.320	PASS
	HCH	-3.316	-38.510	-23.316	PASS
11N40 SISO	LCH	-3.975	-38.265	-23.975	PASS
	MCH	-3.601	-37.984	-23.601	PASS
	HCH	-4.273	-38.725	-24.273	PASS

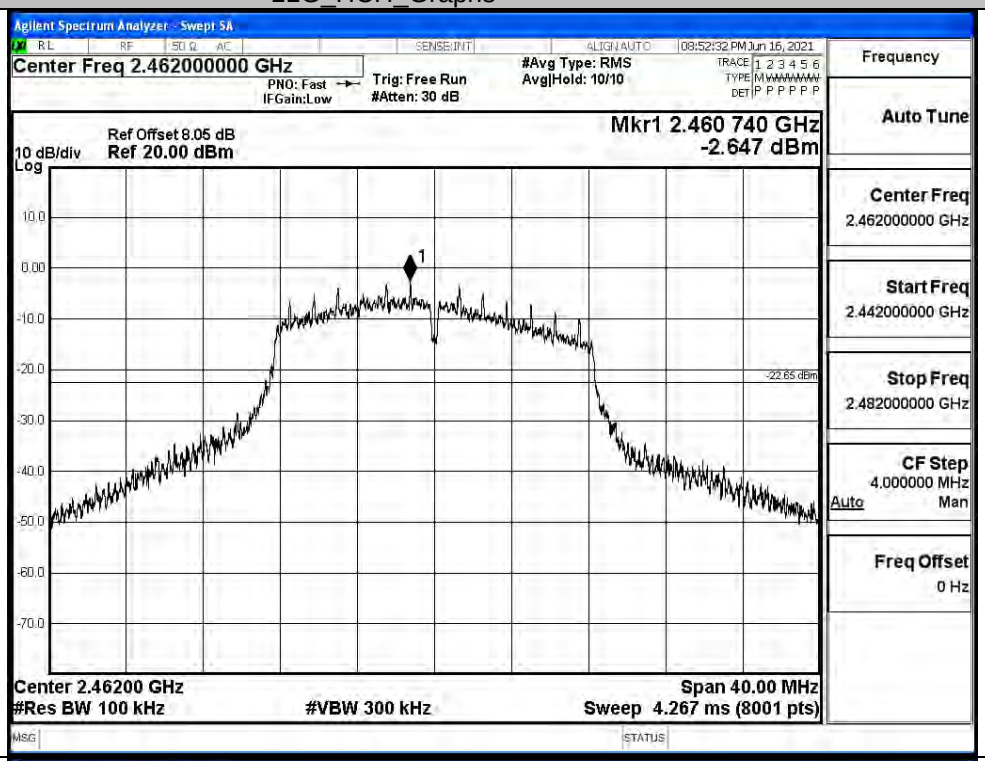
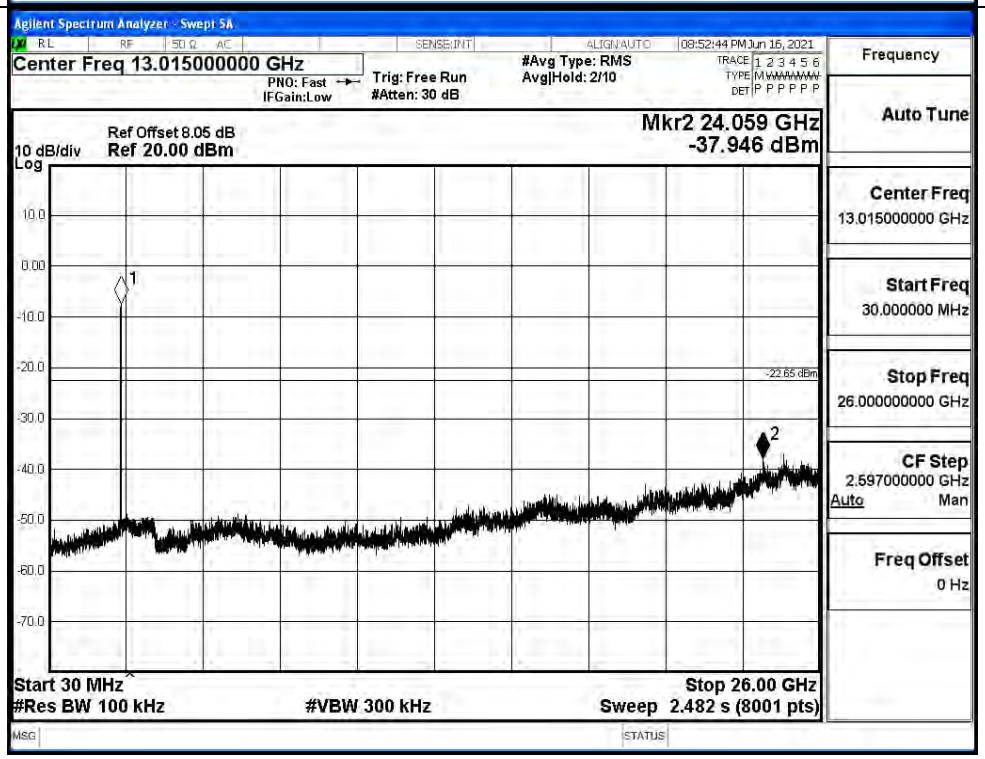
11B_LCH_Graphs		
Pref/11B/LCH		
Puw/11B/LCH		

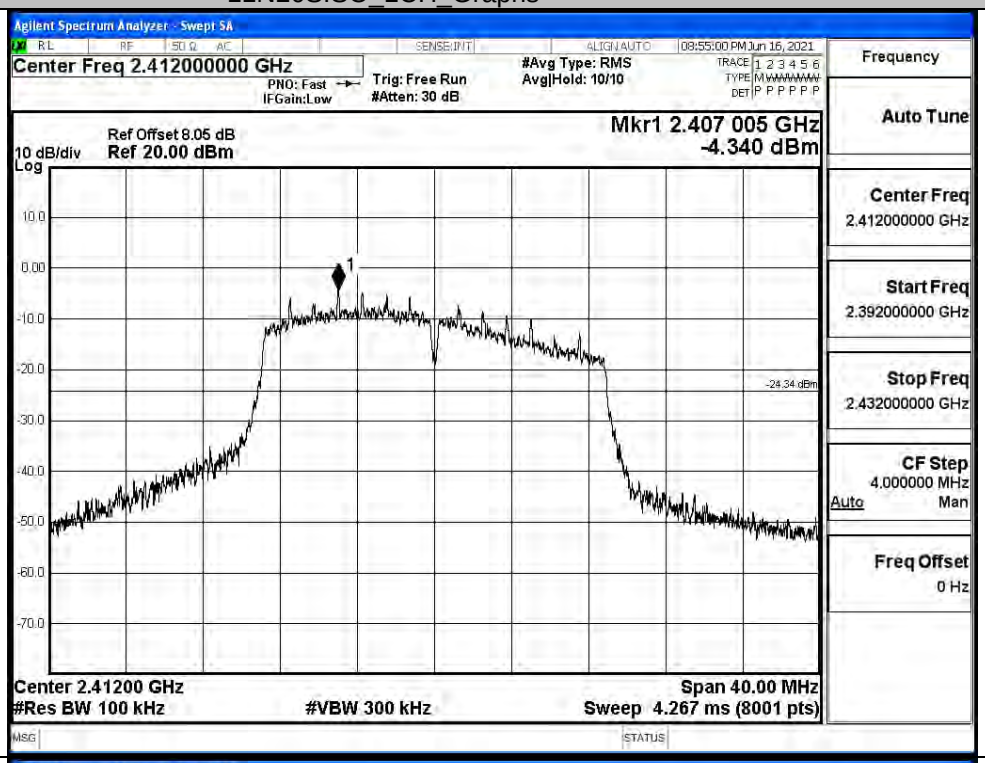
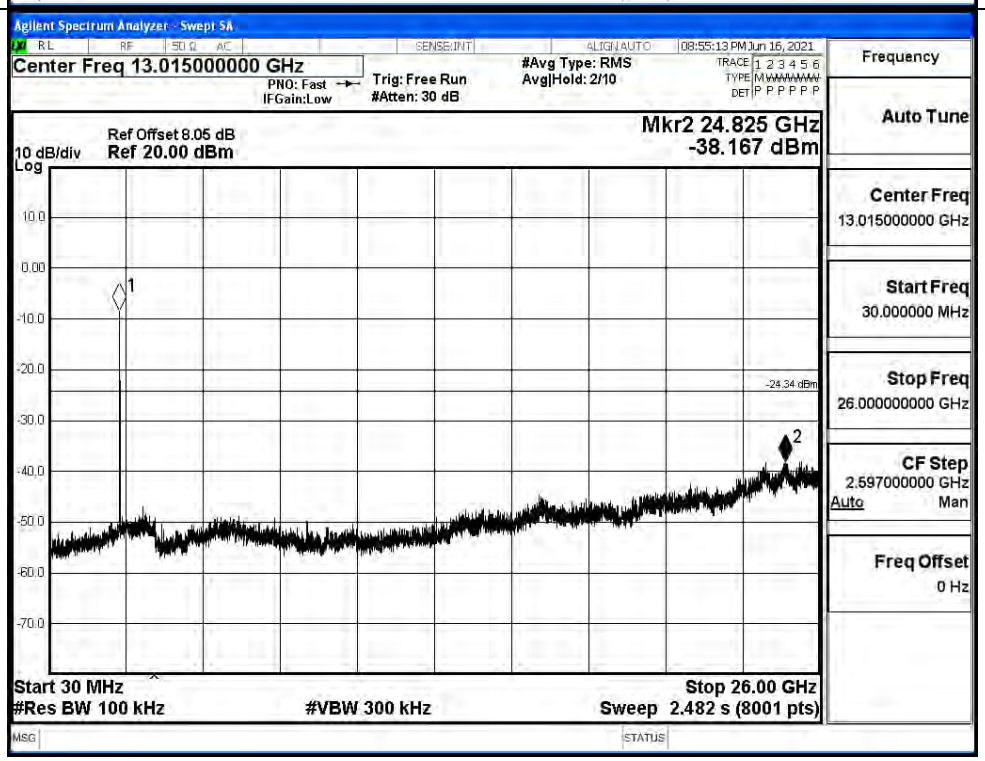
11B_MCH_Graphs		
Pref/11B/MCH		
Puw/11B/MCH		

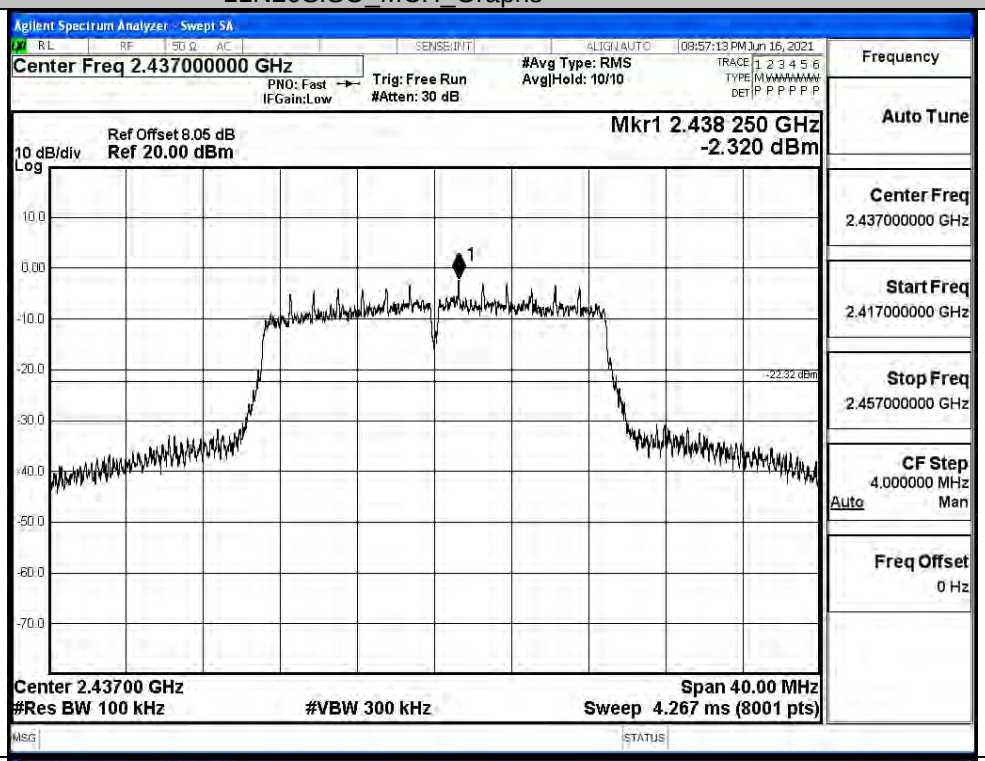
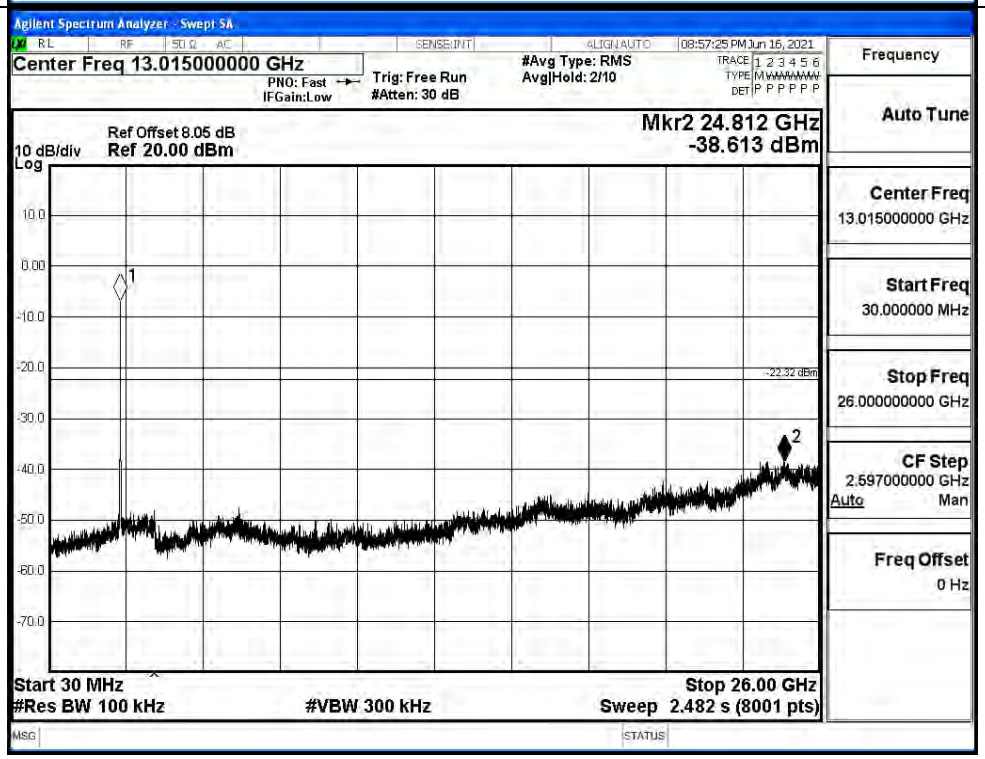
11B_HCH_Graphs	
Pref/11B/HCH	
Puw/11B/HCH	

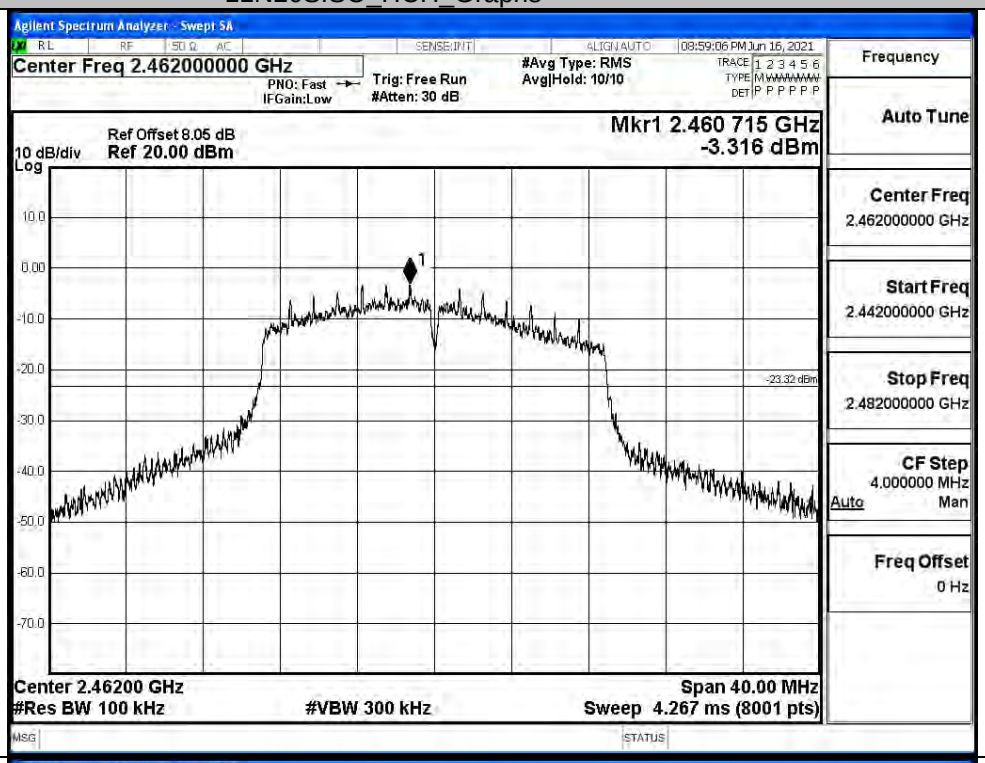
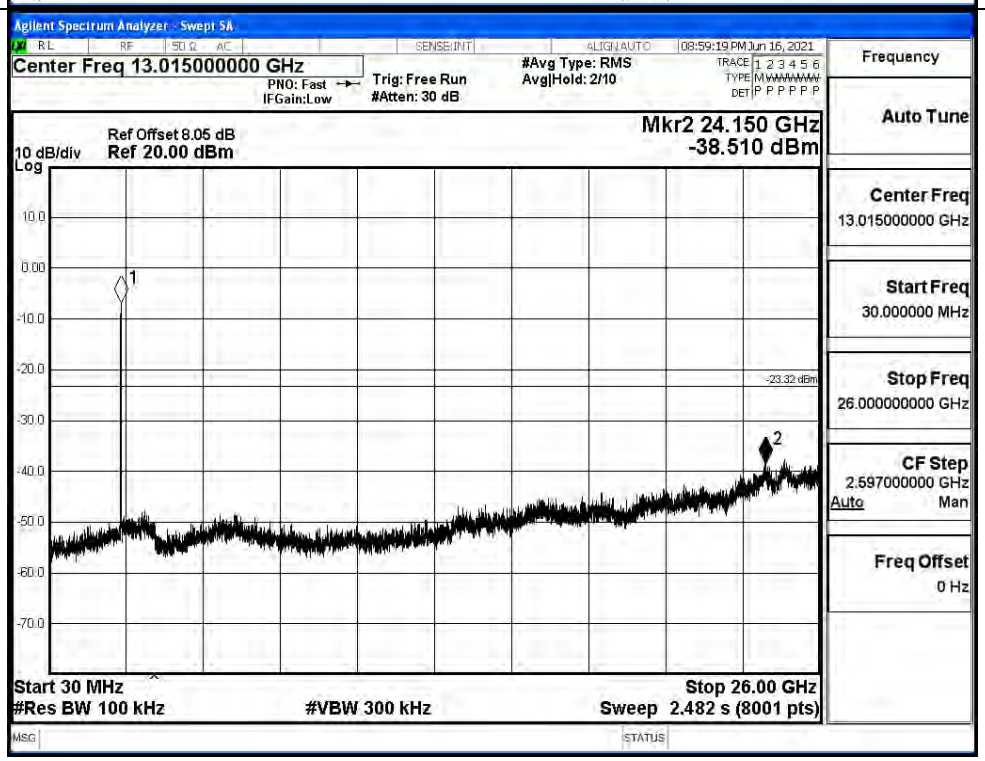
11G_LCH_Graphs		
Pref/11G/LCH		
Puw/11G/LCH		

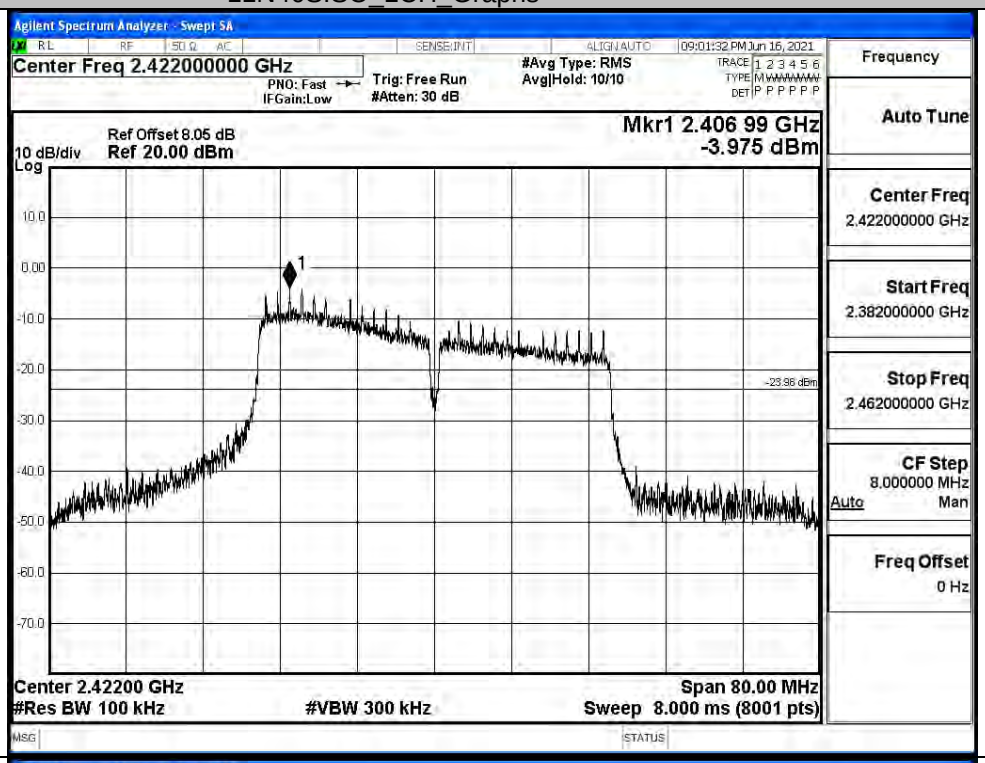
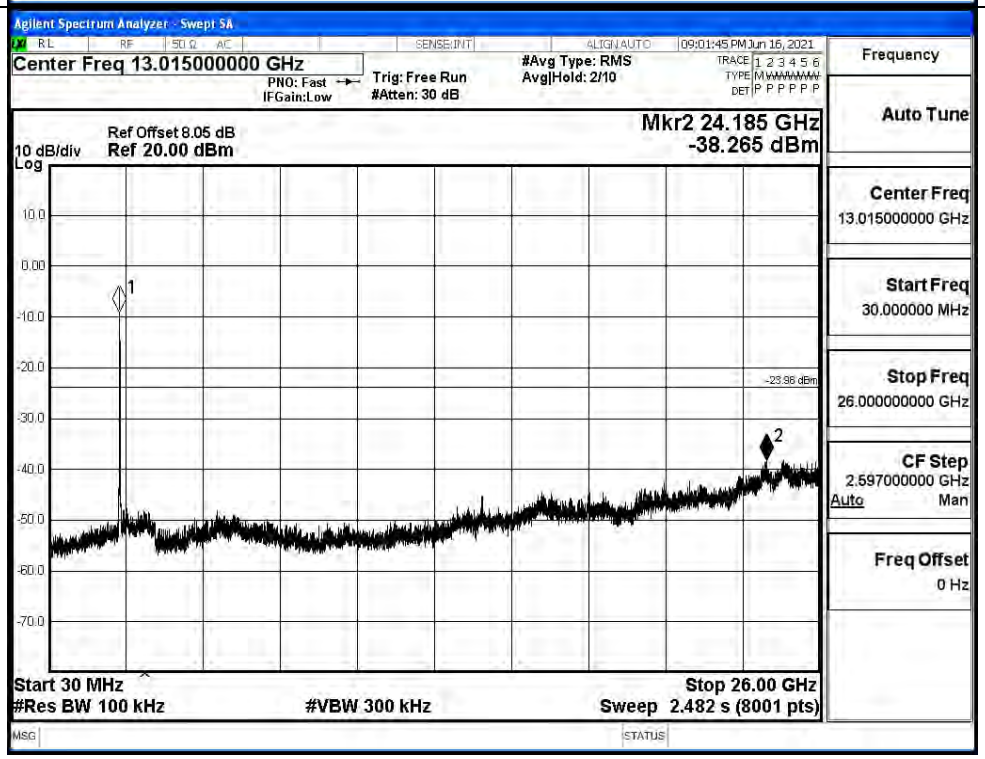
11G_MCH_Graphs		
Pref/11G/MCH		
Puw/11G/MCH		

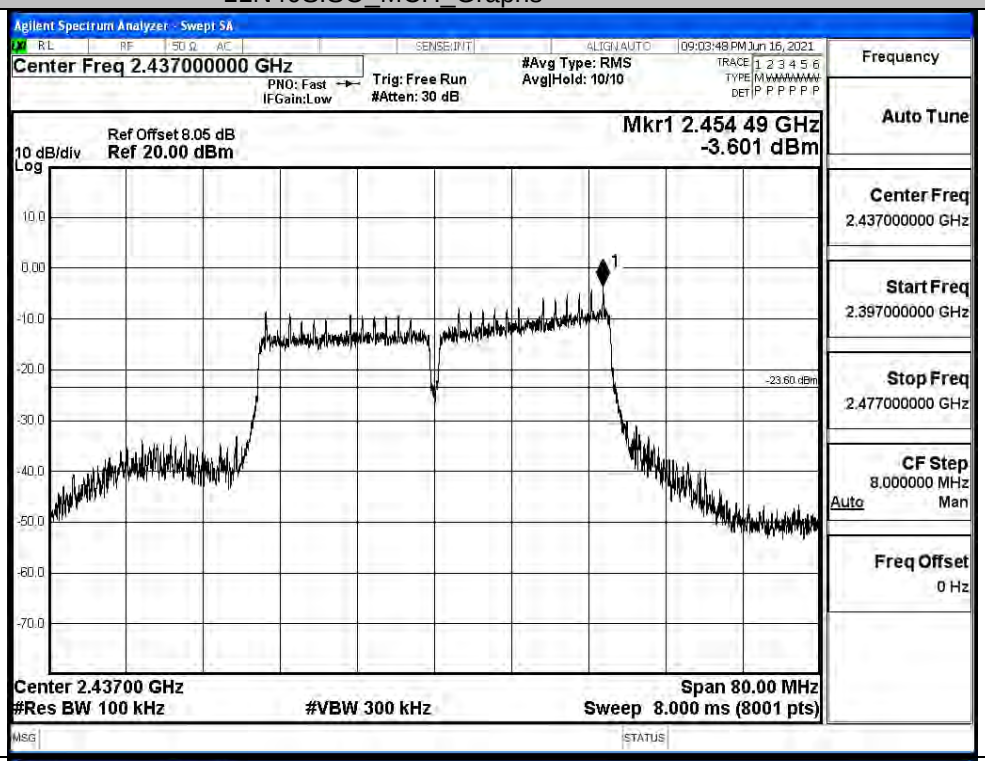
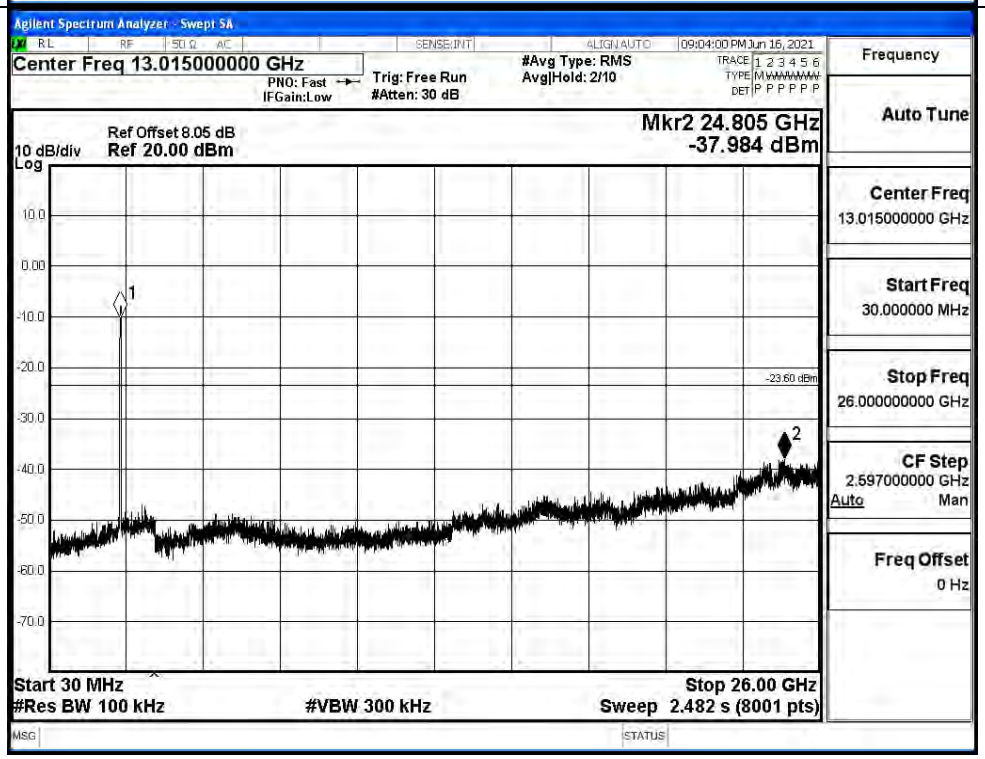
11G_HCH_Graphs	
Pref/11G/HCH	
Puw/11G/HCH	

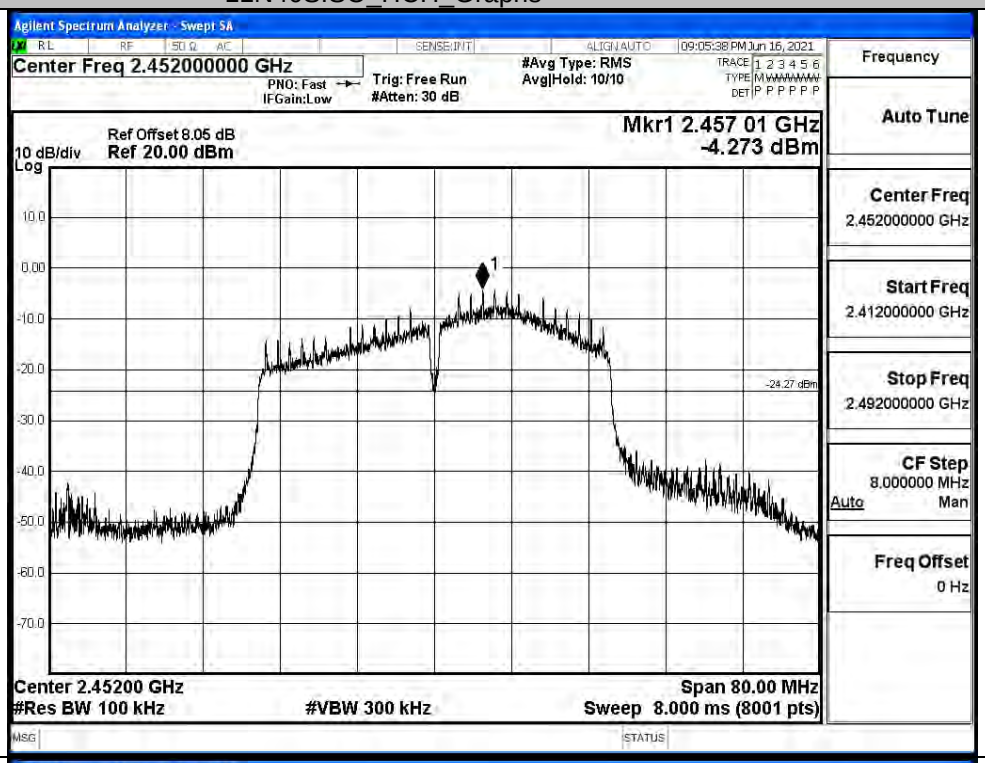
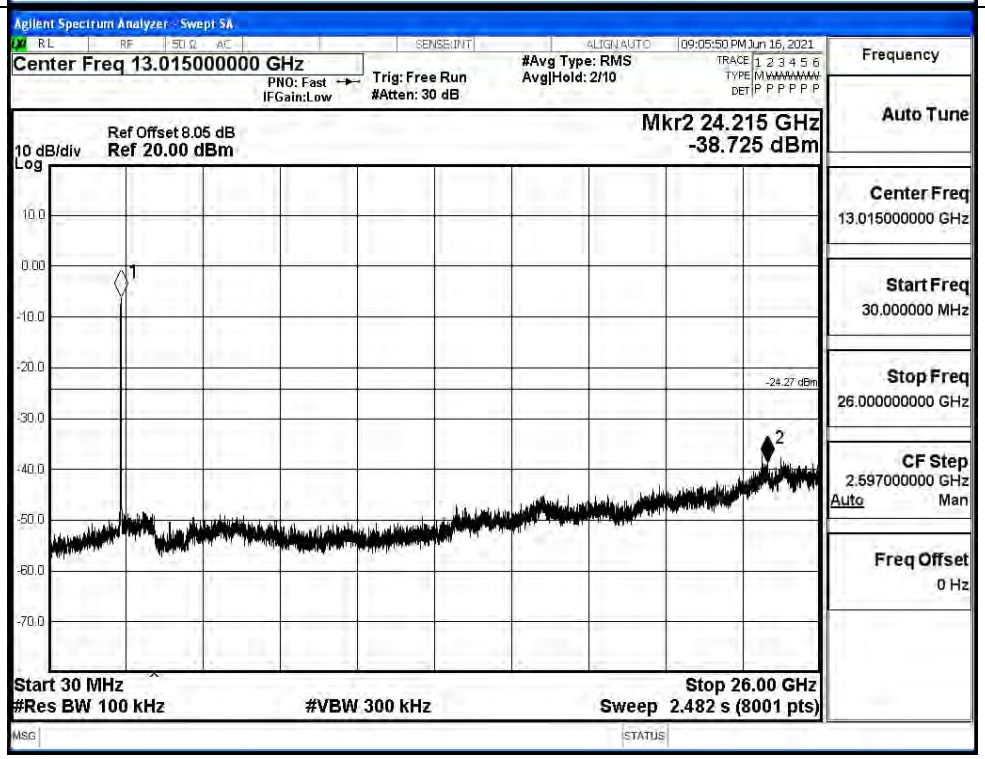
11N20SISO_LCH_Graphs	
Pref/11N20SISO/LCH	
Puw/11N20SISO/LCH	

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	

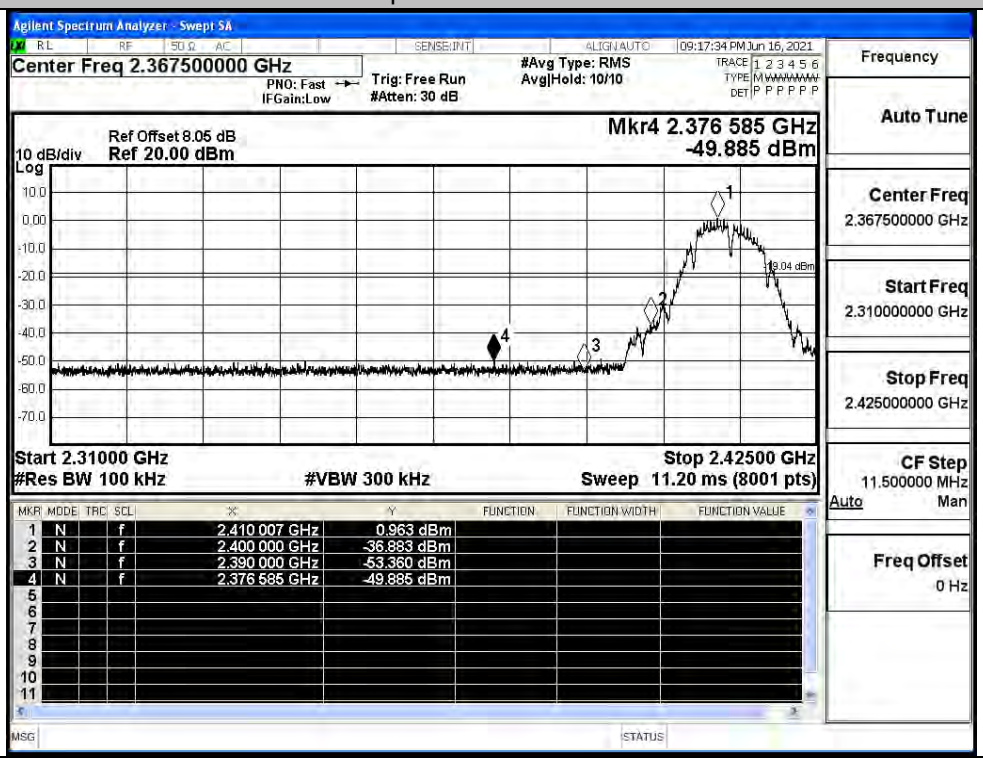
11N40SISO_MCH_Graphs	
Pref/11N40 SISO/MCH	
Puw/11N40 SISO/MCH	

11N40SISO_HCH_Graphs	
Pref/11N40 SISO/HCH	
Puw/11N40 SISO/HCH	

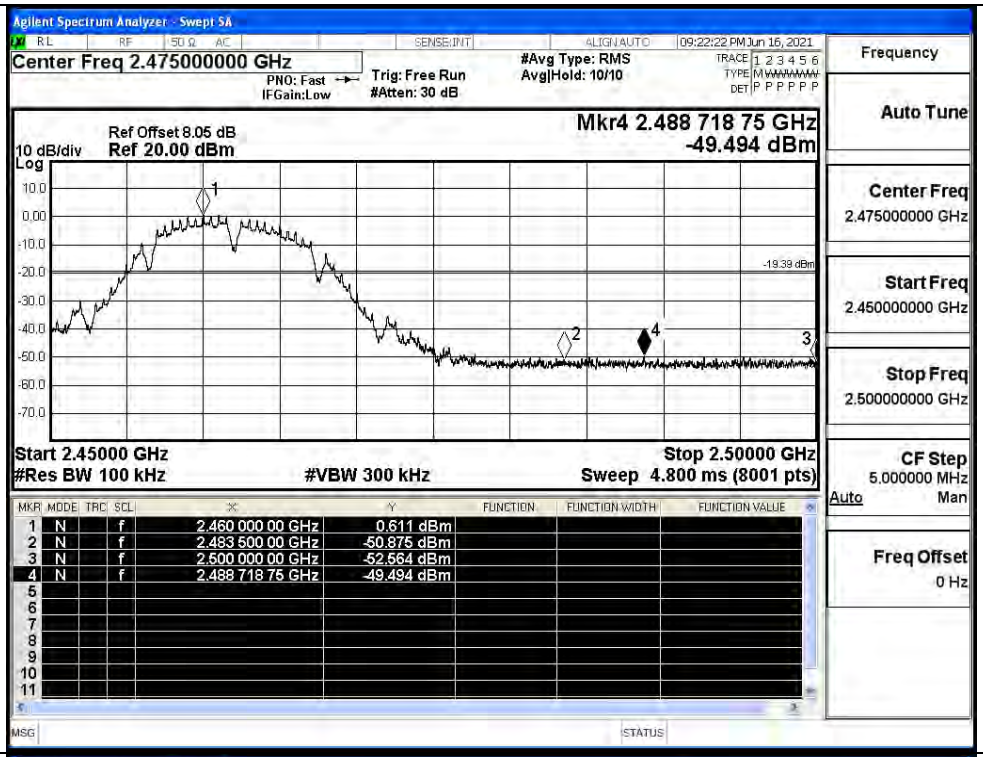
A.6 Band-edge for RF Conducted Emissions

ANT 0

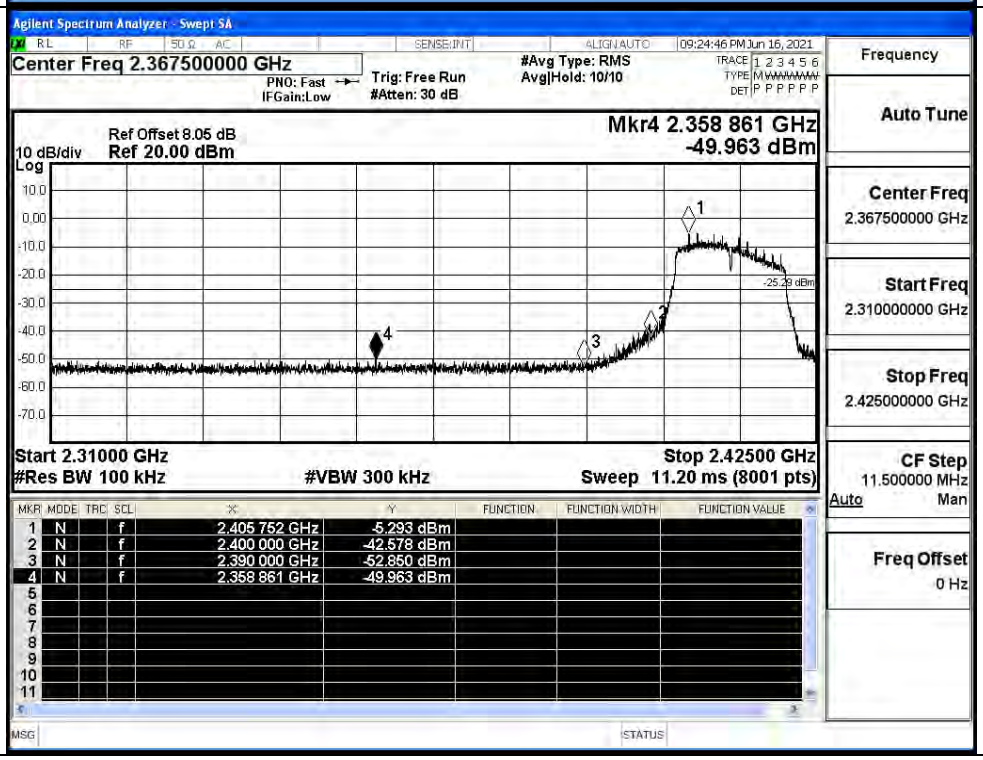
Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	0.963	-49.885	-19.04	PASS
	HCH	0.611	-49.494	-19.39	PASS
11G	LCH	-5.293	-49.963	-25.29	PASS
	HCH	-2.510	-46.918	-22.51	PASS
11N20SISO	LCH	-4.742	-49.571	-24.74	PASS
	HCH	-2.657	-45.880	-22.66	PASS
11N40SISO	LCH	-4.459	-43.177	-24.46	PASS
	HCH	-4.632	-40.299	-24.63	PASS

Test Graphs	
11B/LCH	

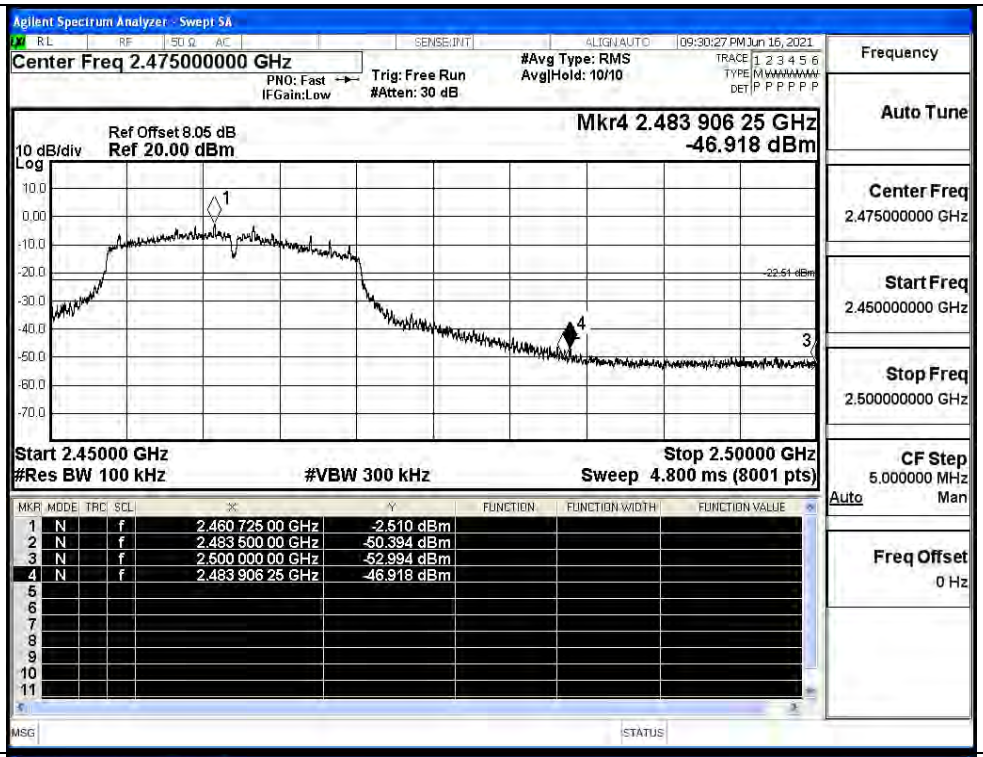
11B/HCH



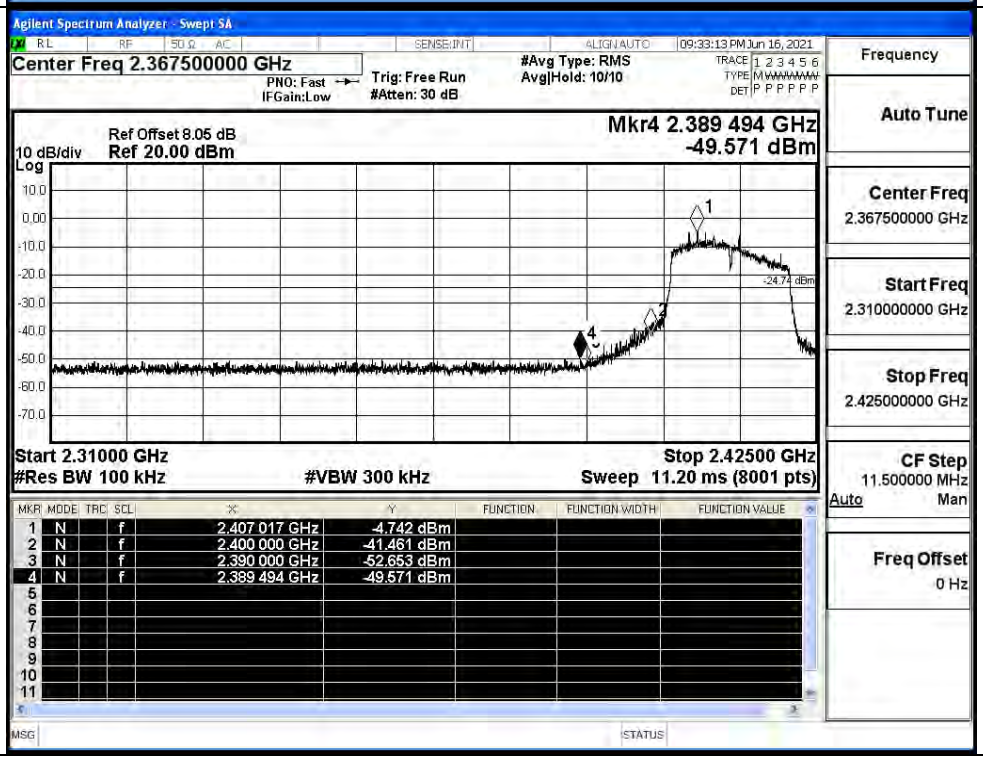
11G/LCH

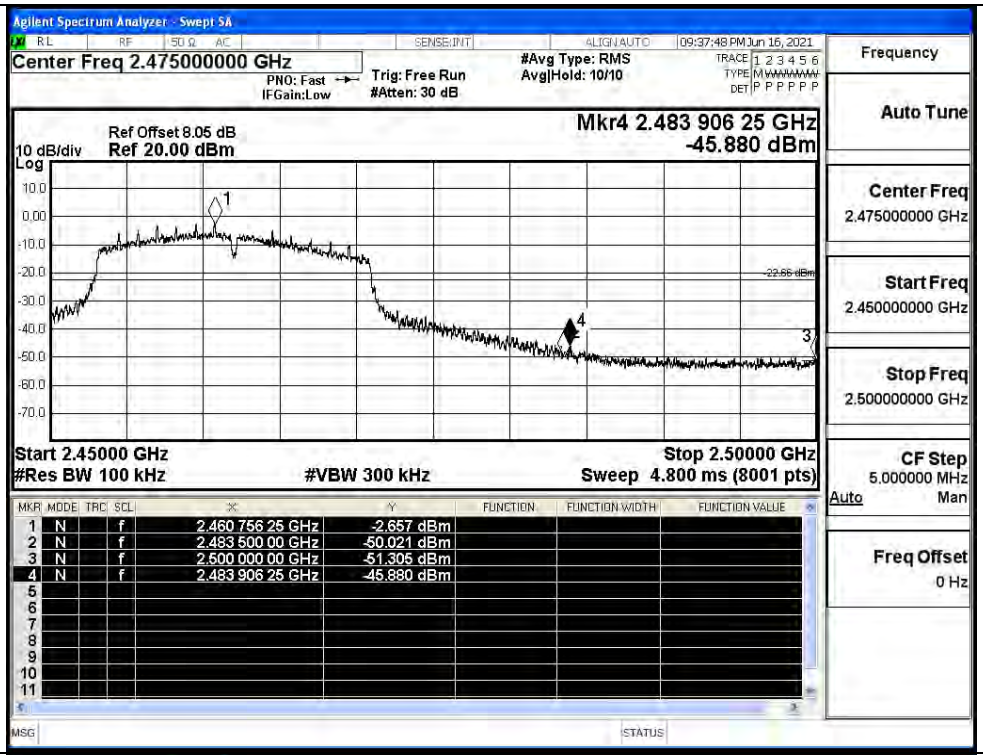
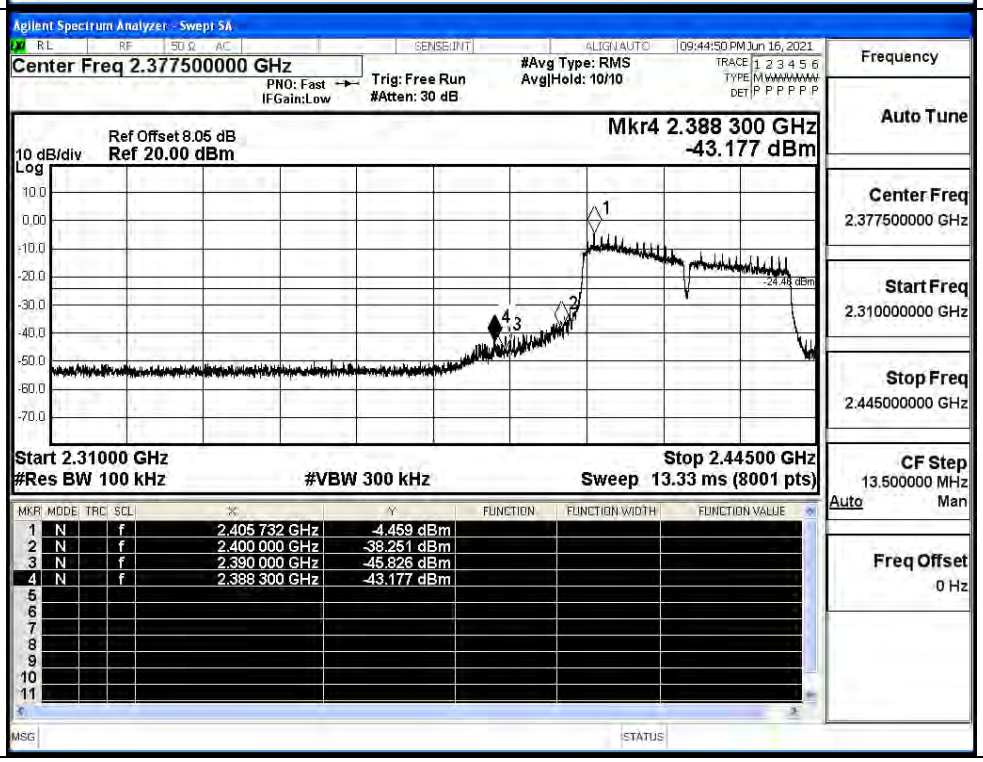


11G/HCH

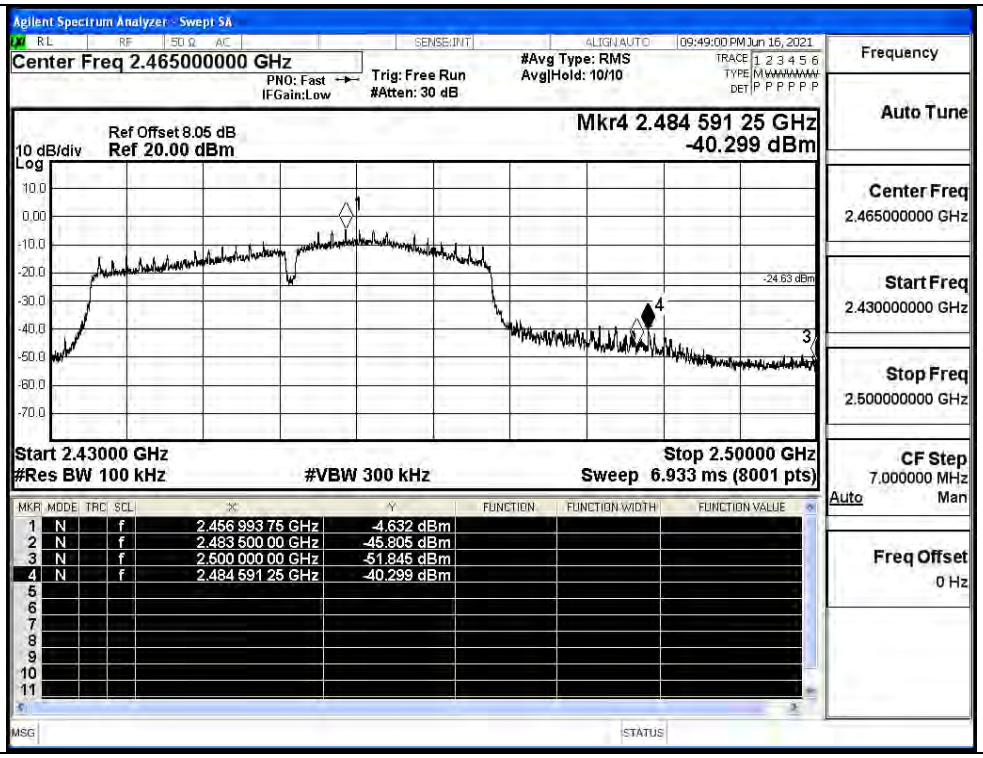


11N20SISO/LCH



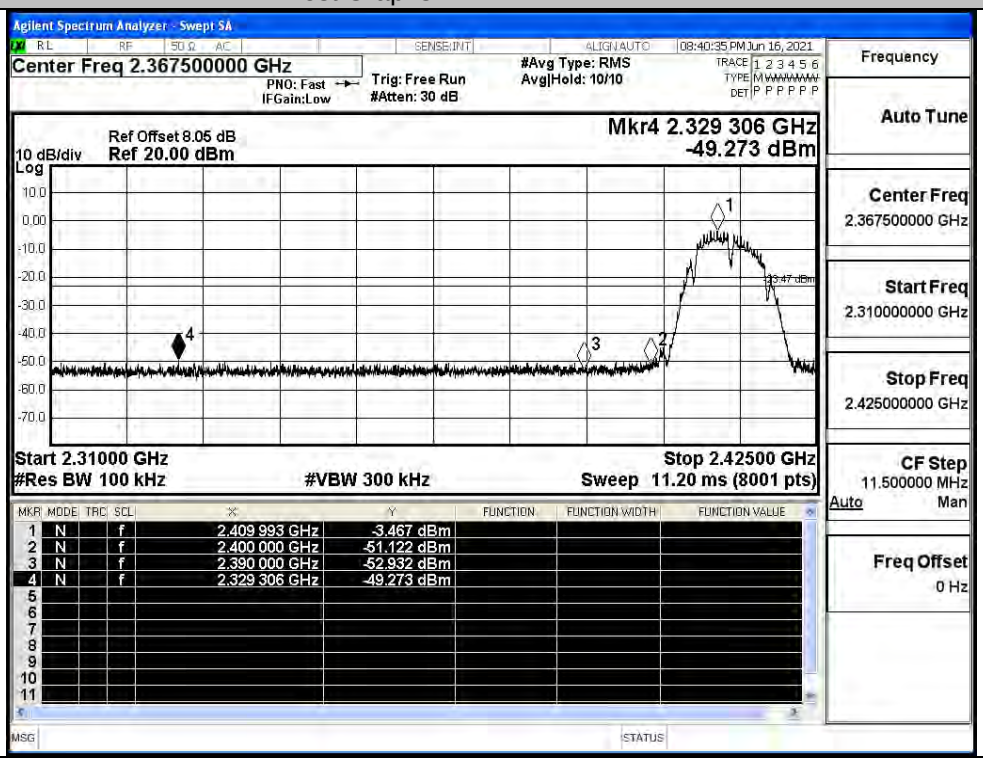
11N20SISO/HCH		
11N40SISO/LCH		

11N40SISO/HCH

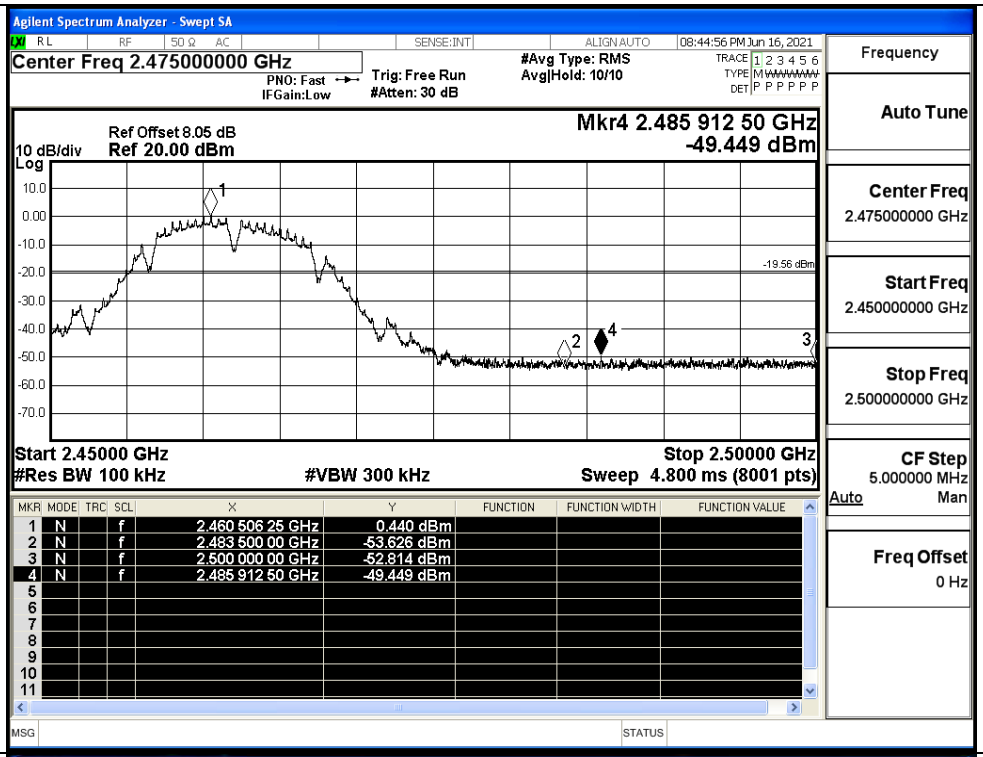


ANT 1

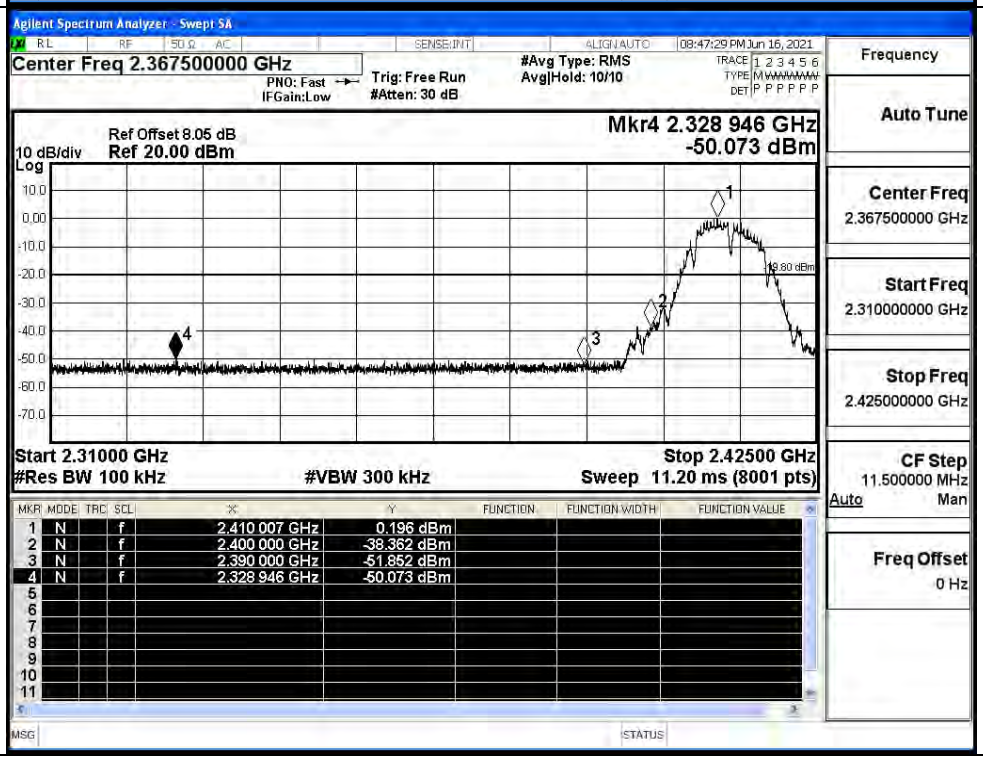
Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-3.467	-49.273	-23.47	PASS
	HCH	0.440	-49.449	-19.56	PASS
11G	LCH	0.196	-50.073	-19.8	PASS
	HCH	-2.688	-47.630	-22.69	PASS
11N20SISO	LCH	-5.231	-49.512	-25.23	PASS
	HCH	-3.191	-47.938	-23.19	PASS
11N40SISO	LCH	-3.762	-40.344	-23.76	PASS
	HCH	-4.622	-39.032	-24.62	PASS

Test Graphs	
11B/LCH	

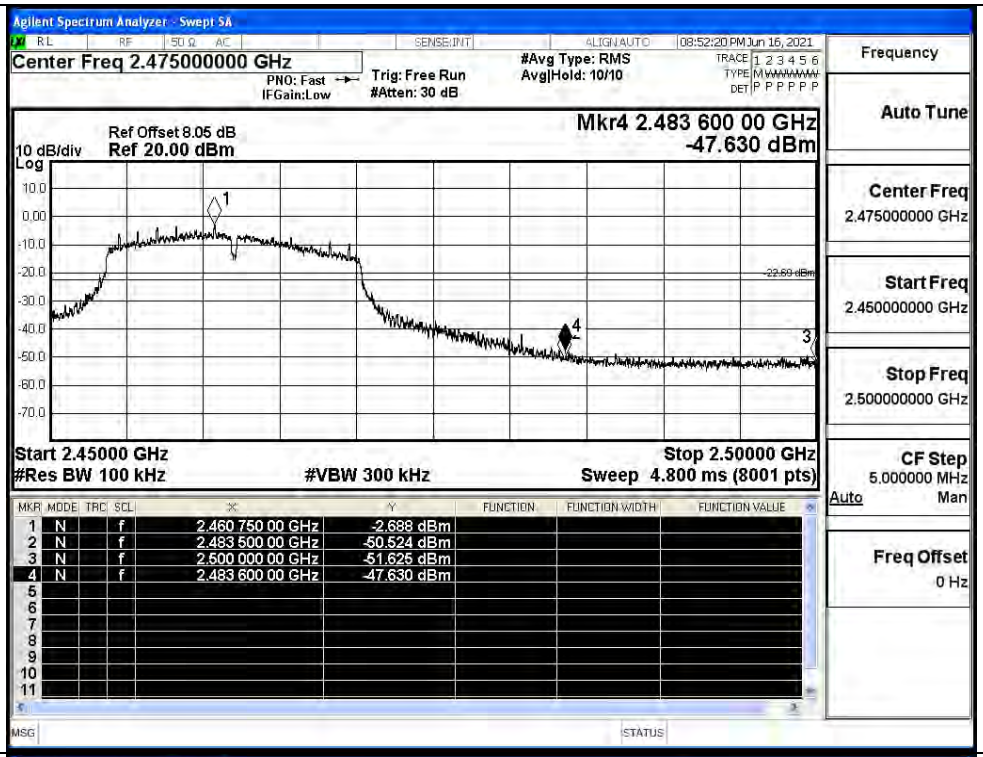
11B/HCH



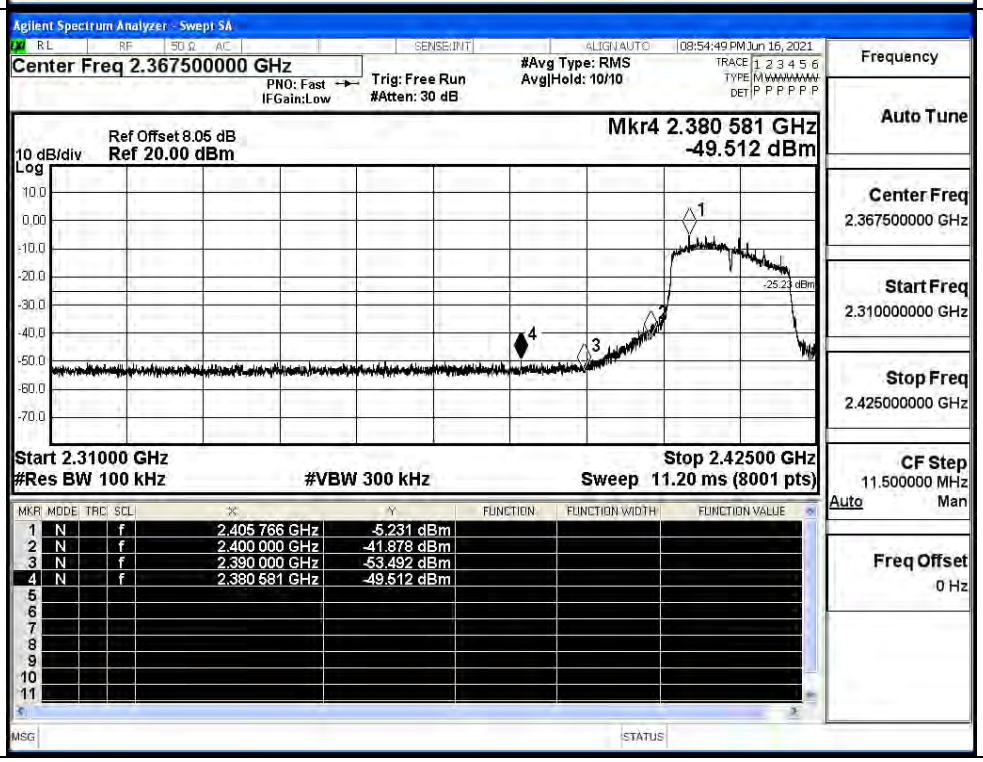
11G/LCH

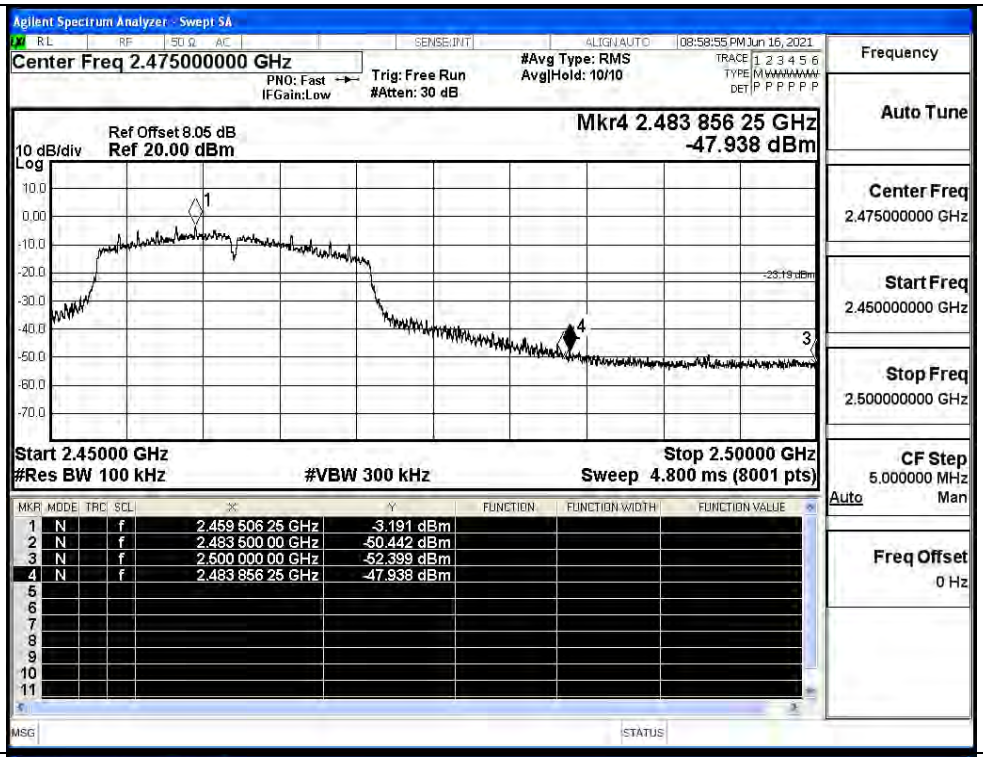
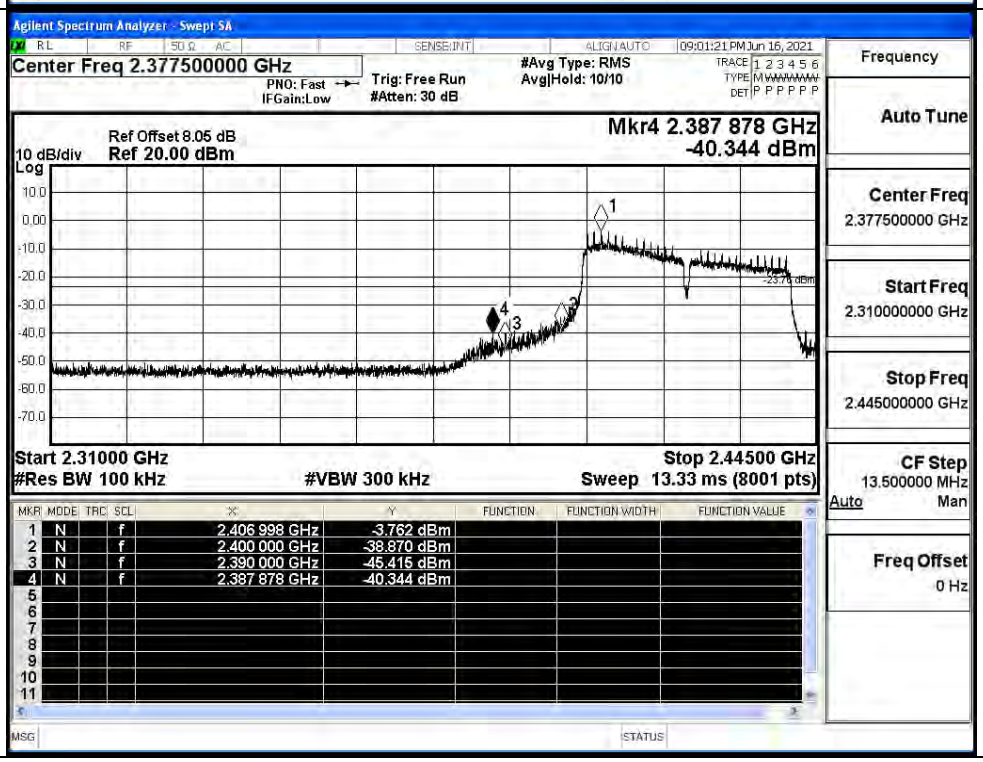


11G/HCH

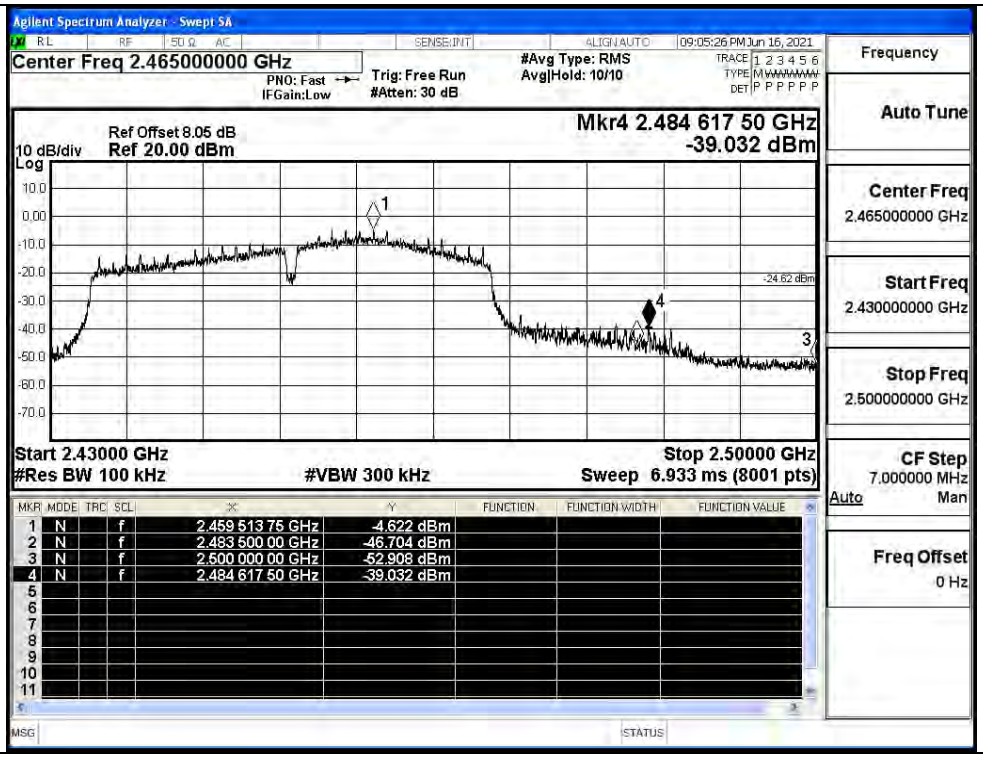


11N20SISO/LCH



11N20SISO/HCH		
11N40SISO/LCH		

11N40SISO/HCH



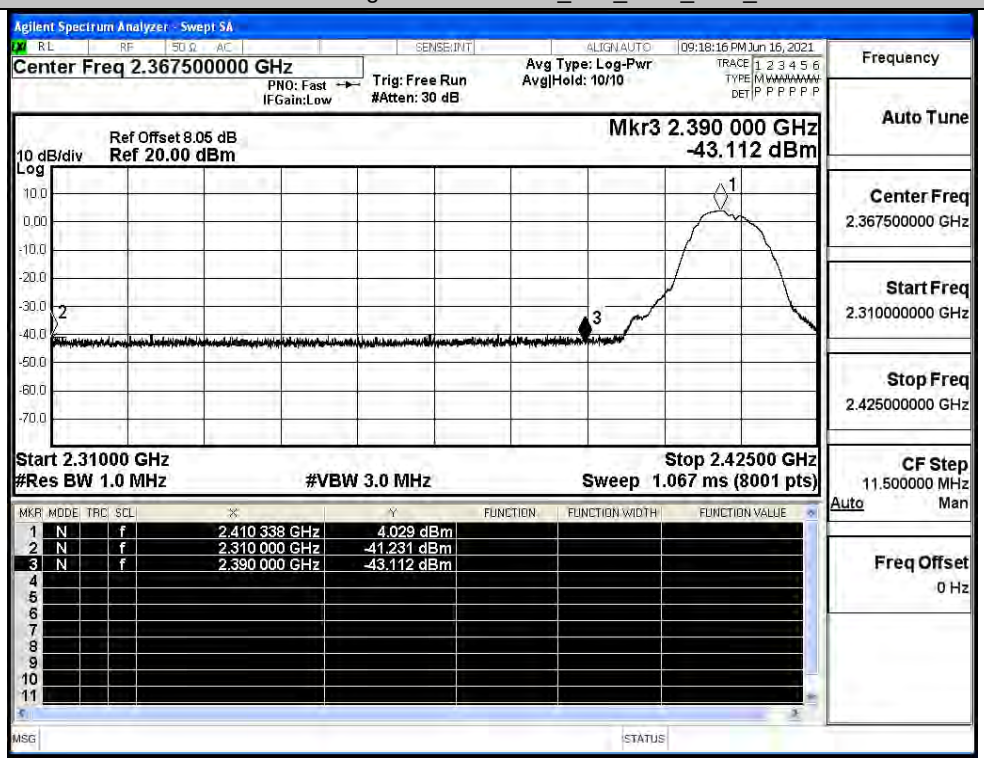
A.7 Restrict-band band-edge measurements

ANT0

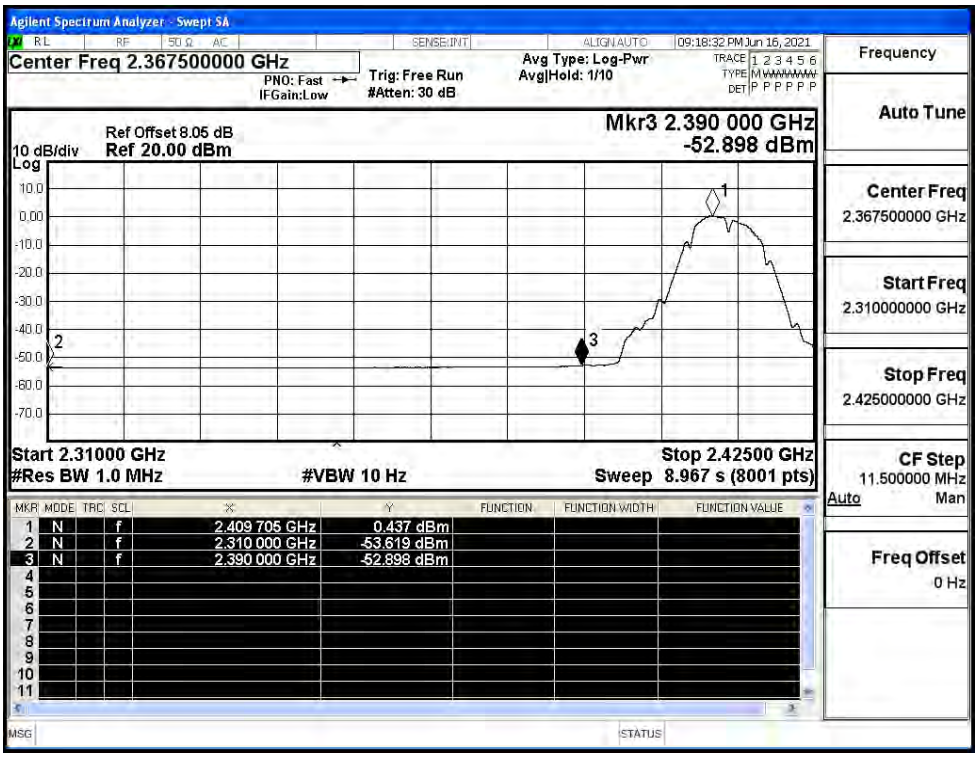
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
11B	2412	Ant0	2310.0	-41.23	2.0	0	56.03	PEAK	74	PASS
	2412	Ant0	2310.0	-53.62	2.0	0	43.64	AV	54	PASS
	2412	Ant0	2390.0	-43.11	2.0	0	54.15	PEAK	74	PASS
	2412	Ant0	2390.0	-52.90	2.0	0	44.36	AV	54	PASS
	2462	Ant0	2483.5	-43.30	2.0	0	53.96	PEAK	74	PASS
	2462	Ant0	2483.5	-52.56	2.0	0	44.70	AV	54	PASS
	2462	Ant0	2500.0	-42.79	2.0	0	54.47	PEAK	74	PASS
	2462	Ant0	2500.0	-52.65	2.0	0	44.61	AV	54	PASS
11G	2412	Ant0	2310.0	-42.12	2.0	0	55.14	PEAK	74	PASS
	2412	Ant0	2310.0	-53.58	2.0	0	43.68	AV	54	PASS
	2412	Ant0	2390.0	-42.35	2.0	0	54.91	PEAK	74	PASS
	2412	Ant0	2390.0	-52.88	2.0	0	44.38	AV	54	PASS
	2462	Ant0	2483.5	-39.38	2.0	0	57.88	PEAK	74	PASS
	2462	Ant0	2483.5	-50.60	2.0	0	46.66	AV	54	PASS
	2462	Ant0	2500.0	-41.48	2.0	0	55.78	PEAK	74	PASS
	2462	Ant0	2500.0	-52.69	2.0	0	44.57	AV	54	PASS
11N20 SISO	2412	Ant0	2310.0	-43.38	2.0	0	53.88	PEAK	74	PASS
	2412	Ant0	2310.0	-53.62	2.0	0	43.64	AV	54	PASS
	2412	Ant0	2390.0	-39.02	2.0	0	58.24	PEAK	74	PASS
	2412	Ant0	2390.0	-52.42	2.0	0	44.84	AV	54	PASS
	2462	Ant0	2483.5	-34.54	2.0	0	62.72	PEAK	74	PASS
	2462	Ant0	2483.5	-49.82	2.0	0	47.44	AV	54	PASS
	2462	Ant0	2500.0	-41.00	2.0	0	56.26	PEAK	74	PASS
	2462	Ant0	2500.0	-52.66	2.0	0	44.60	AV	54	PASS
11N40	2422	Ant0	2310.0	-42.13	2.0	0	55.13	PEAK	74	PASS

SISO	2422	Ant0	2310.0	-53.65	2.0	0	43.61	AV	54	PASS
	2422	Ant0	2390.0	-33.21	2.0	0	64.05	PEAK	74	PASS
	2422	Ant0	2390.0	-49.96	2.0	0	47.30	AV	54	PASS
	2452	Ant0	2483.5	-33.04	2.0	0	64.22	PEAK	74	PASS
	2452	Ant0	2483.5	-49.94	2.0	0	47.32	AV	54	PASS
	2452	Ant0	2500.0	-42.72	2.0	0	54.54	PEAK	74	PASS
	2452	Ant0	2500.0	-52.67	2.0	0	44.59	AV	54	PASS

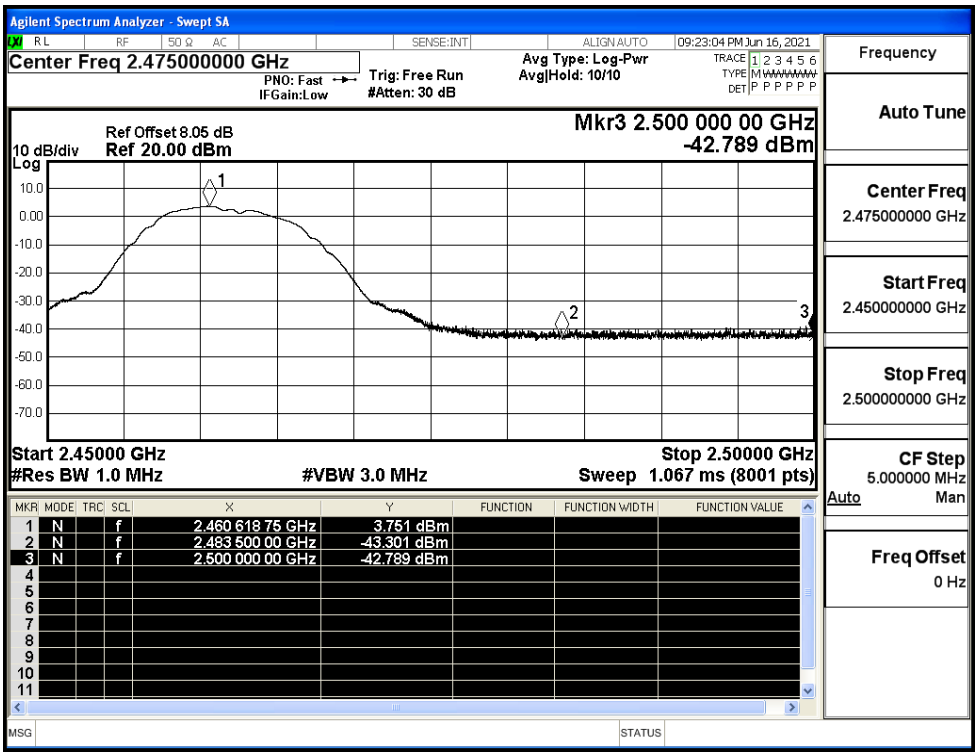
Restrict-band band-edge measurements_11B_2412_Ant0_PEAK



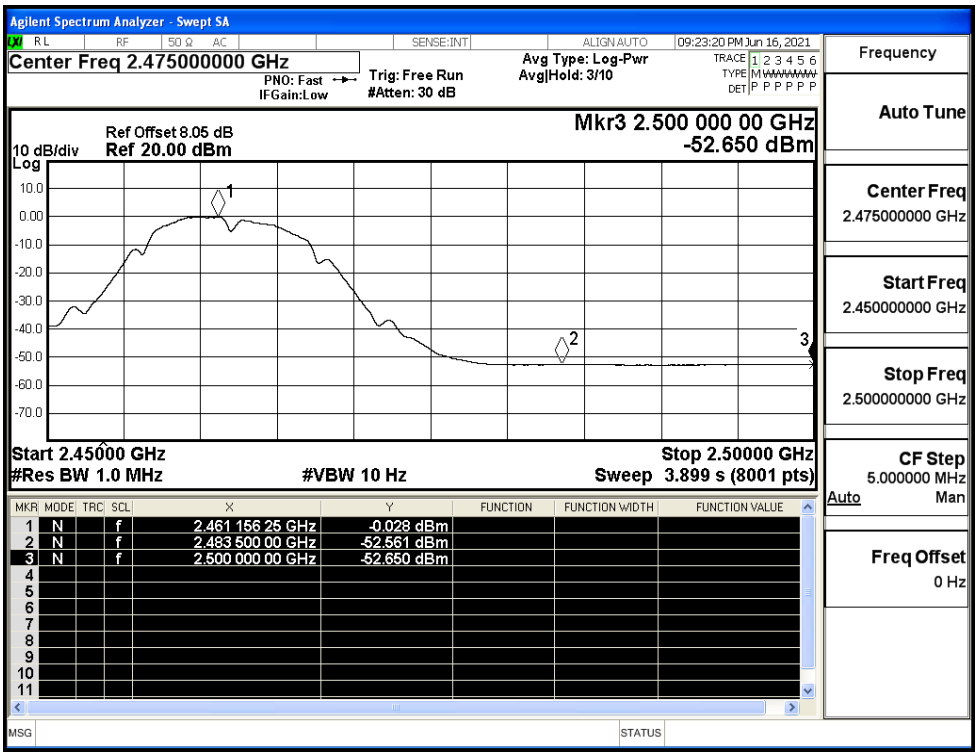
Restrict-band band-edge measurements_11B_2412_Ant0_AV



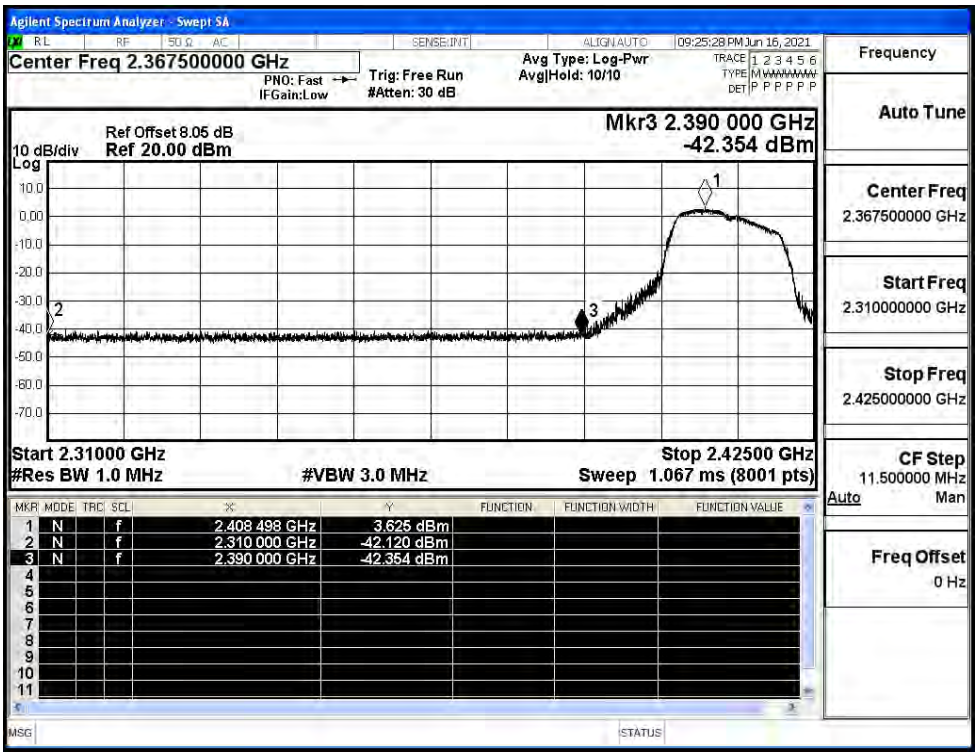
Restrict-band band-edge measurements_11B_2462_Ant0_PEAK



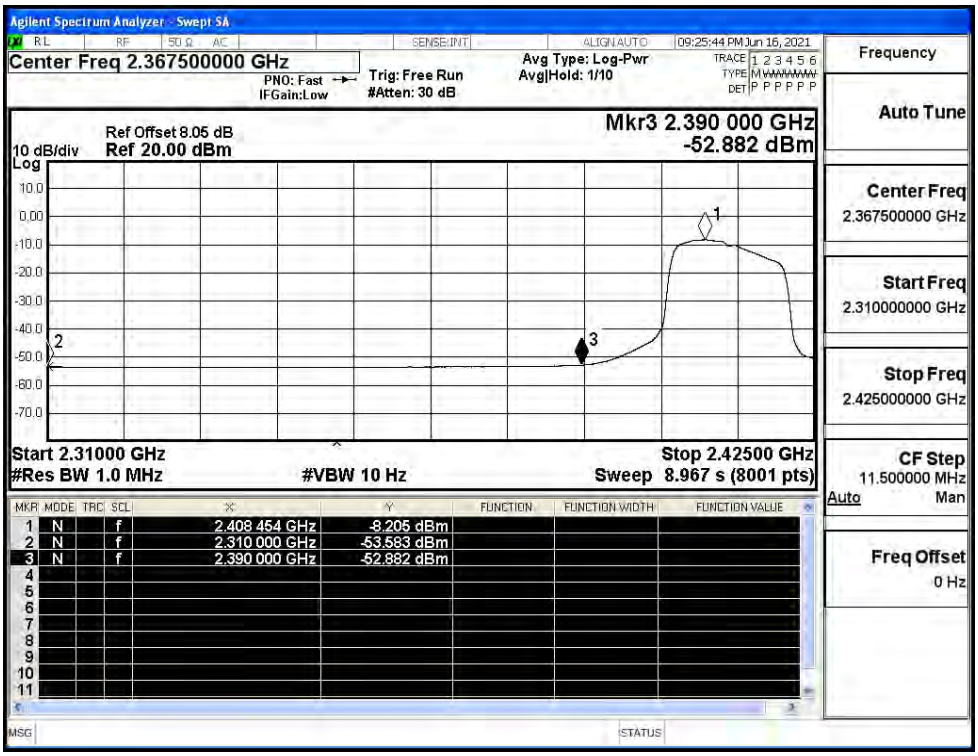
Restrict-band band-edge measurements_11B_2462_Ant0_AV



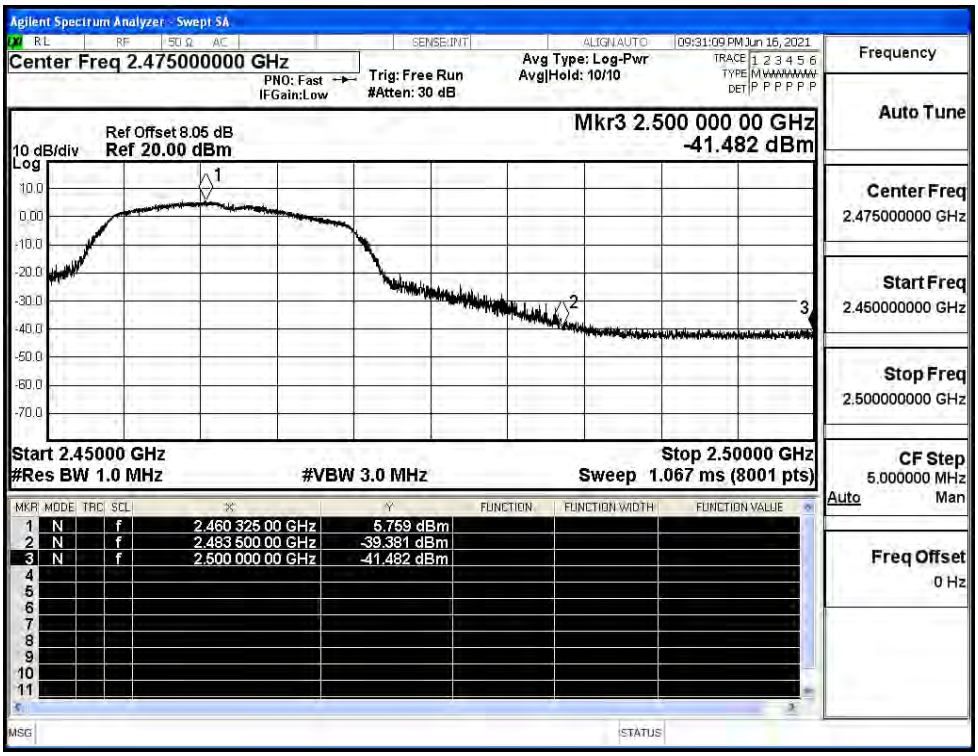
Restrict-band band-edge measurements_11G_2412_Ant0_PEAK



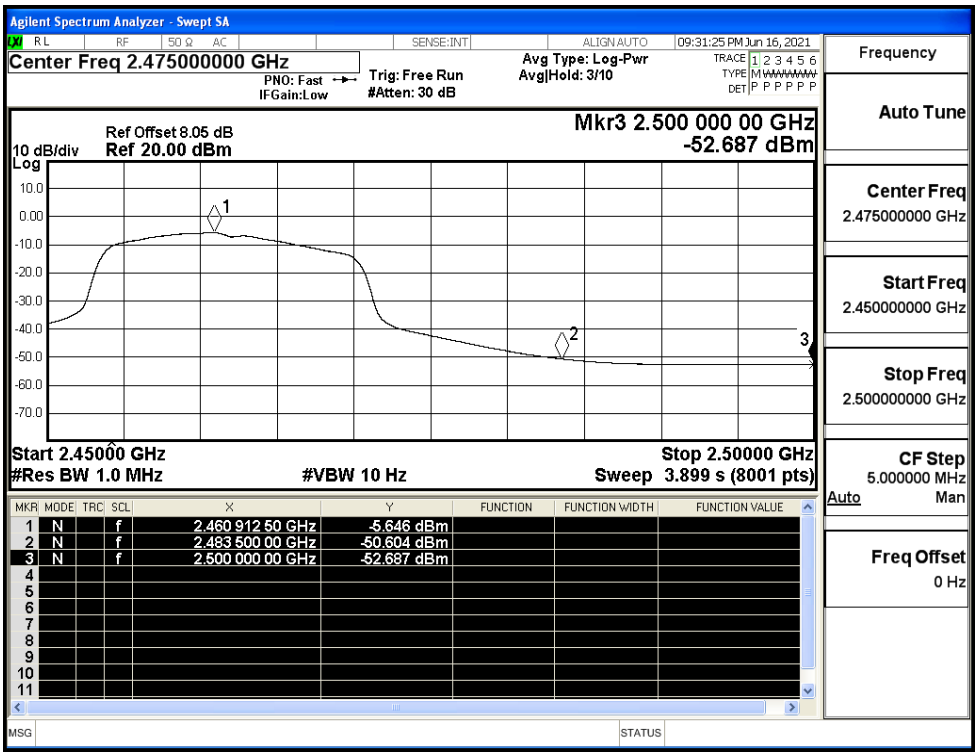
Restrict-band band-edge measurements_11G_2412_Ant0_AV



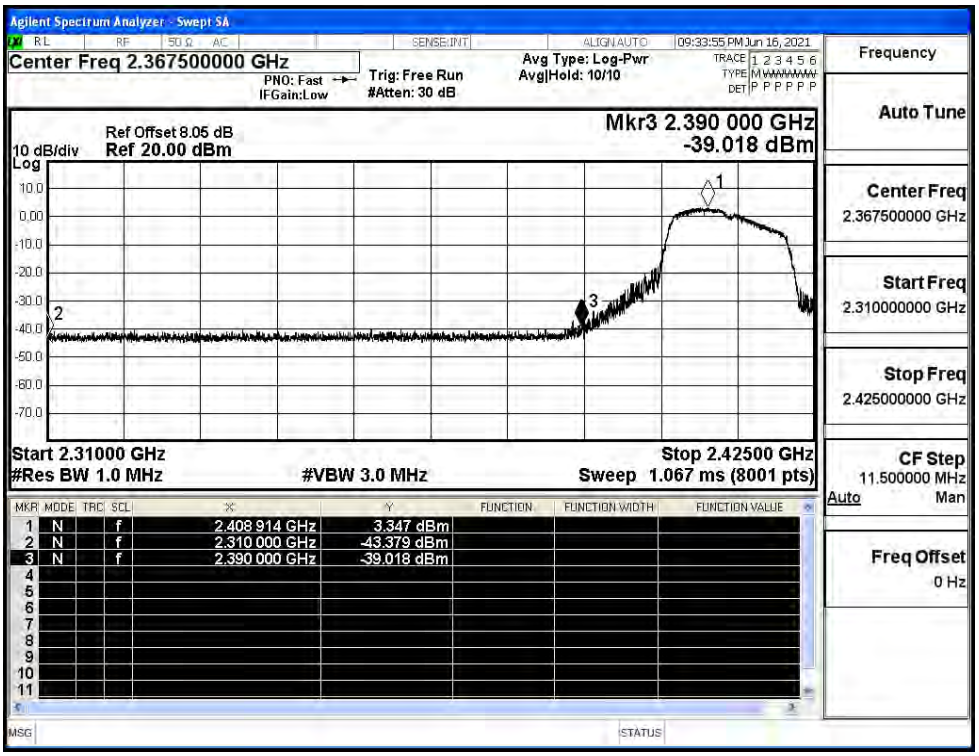
Restrict-band band-edge measurements_11G_2462_Ant0_PEAK



Restrict-band band-edge measurements_11G_2462_Ant0_AV



Restrict-band band-edge measurements_11N20SISO_2412_Ant0_PEAK



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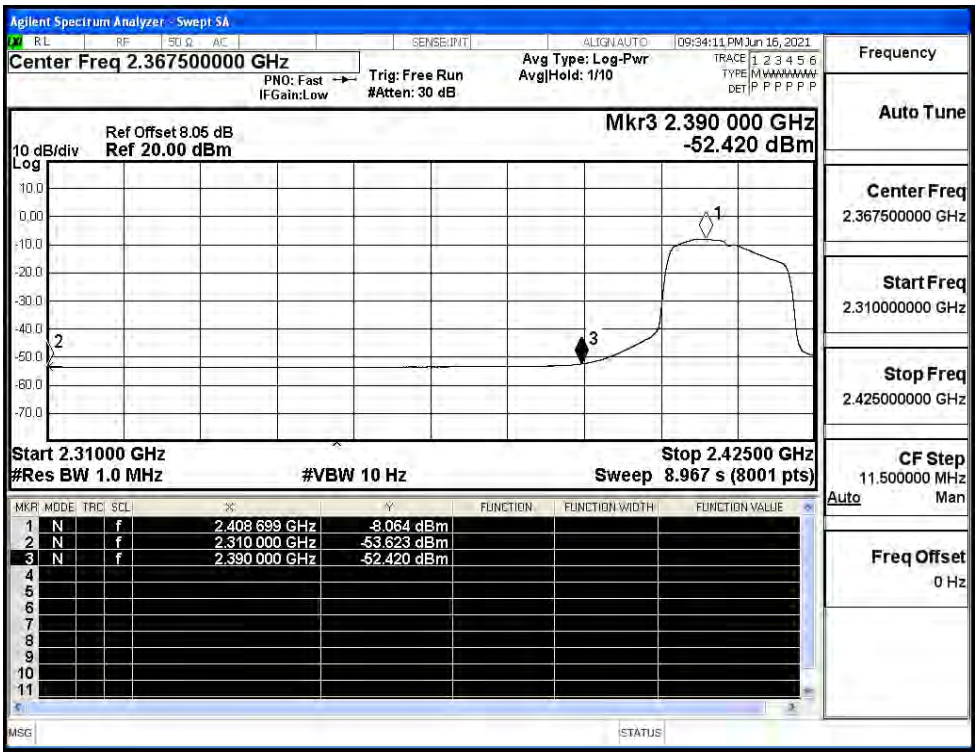
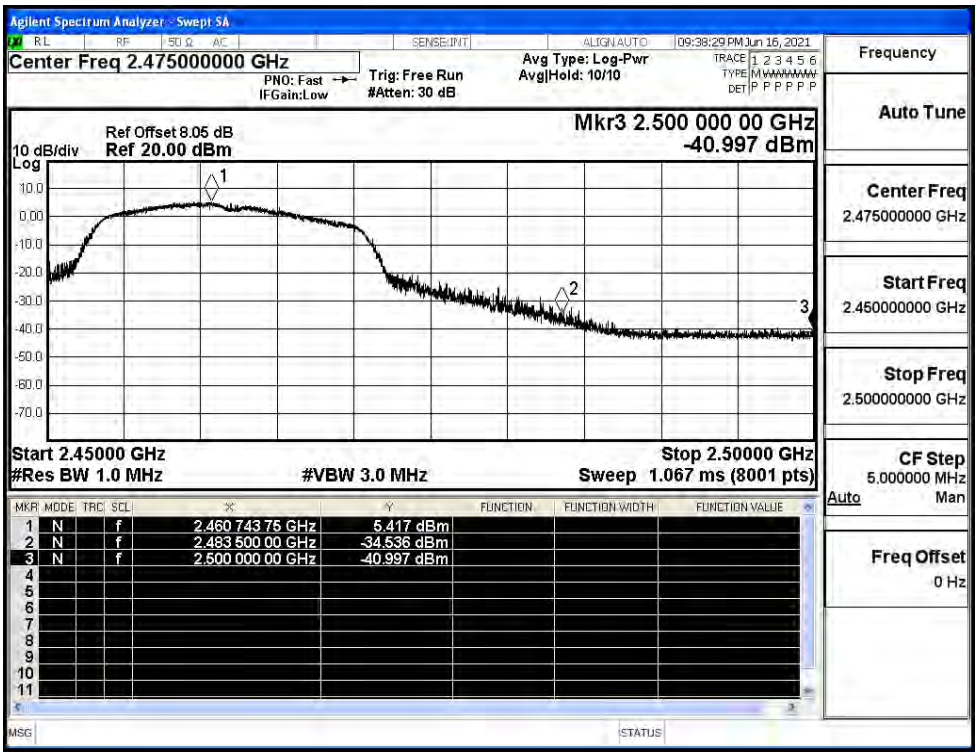
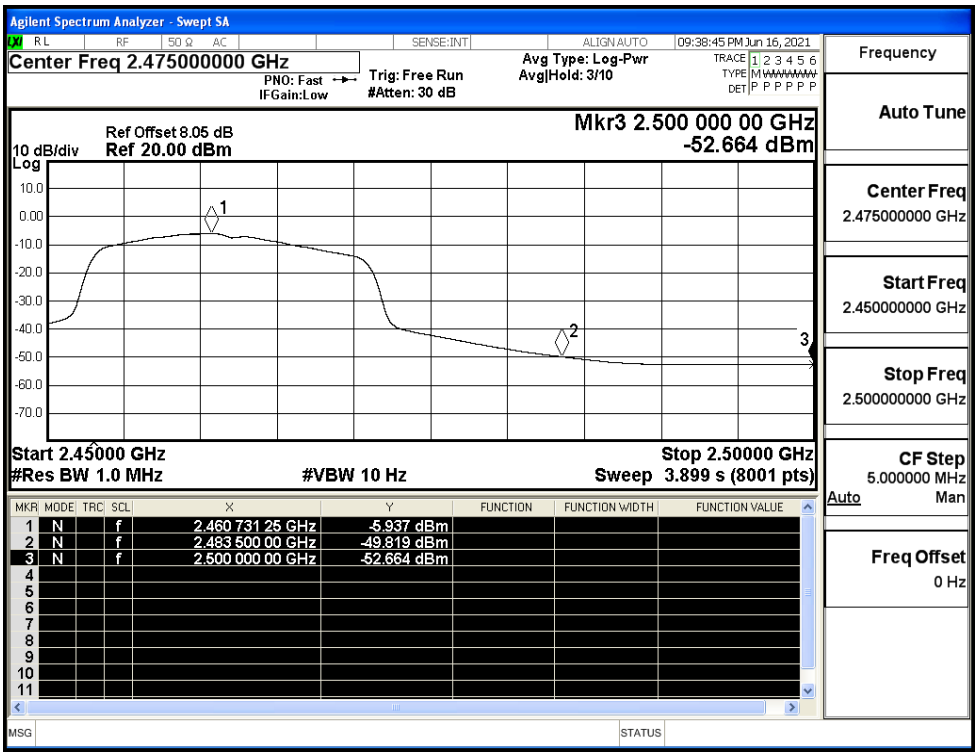


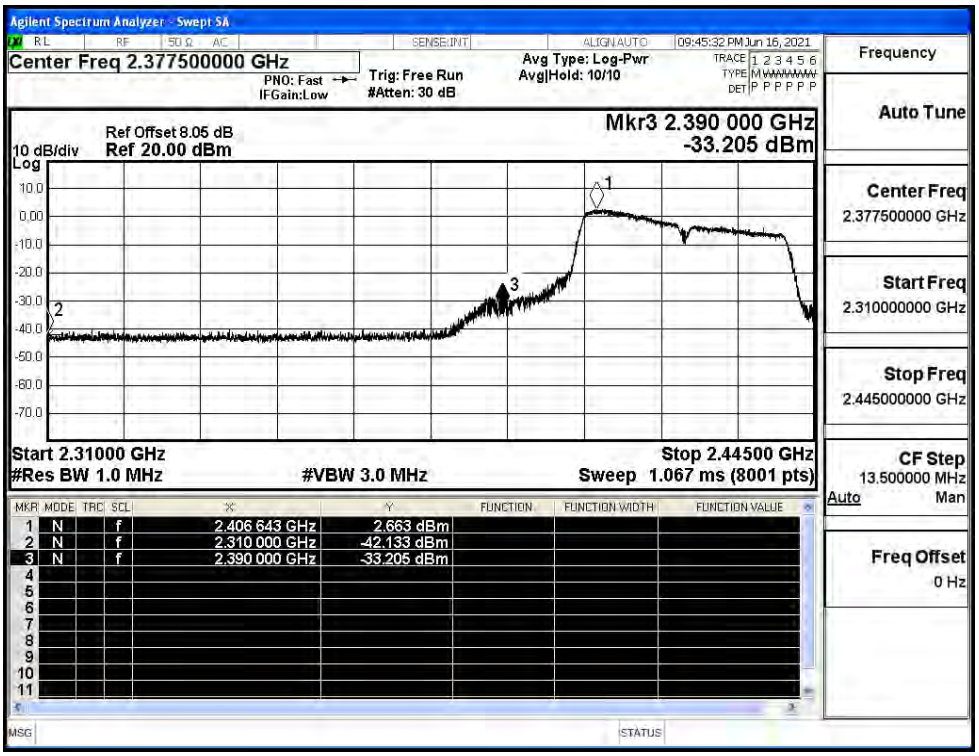
Restrict-band band-edge measurements_11N20SISO_2462_Ant0_PEAK



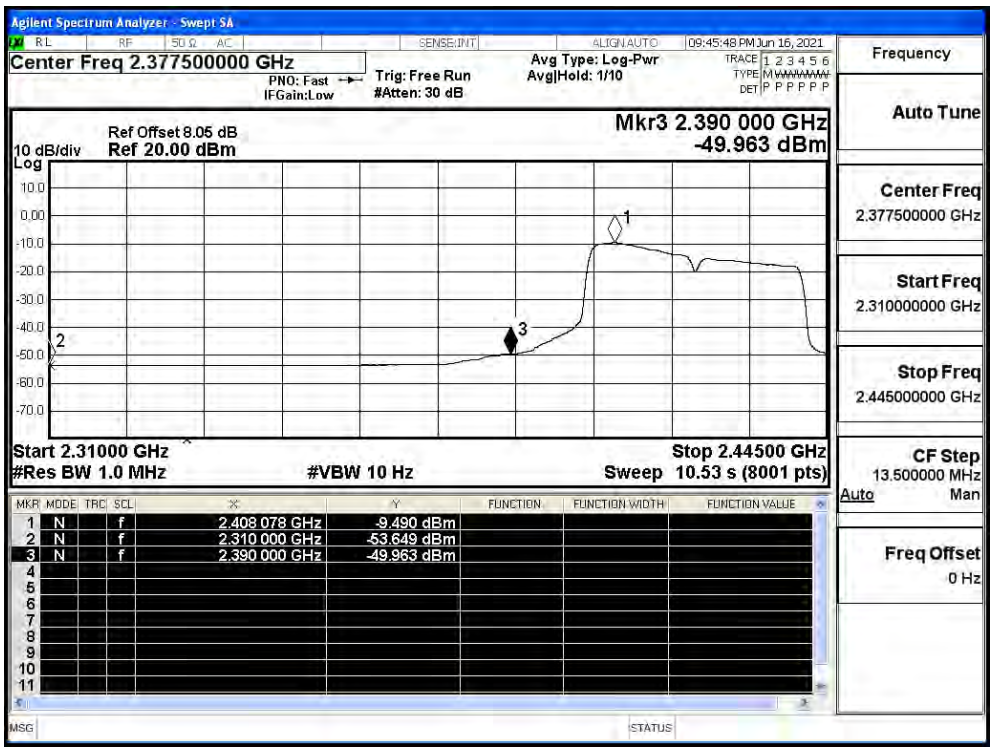
Restrict-band band-edge measurements_11N20SISO_2462_Ant0_AV



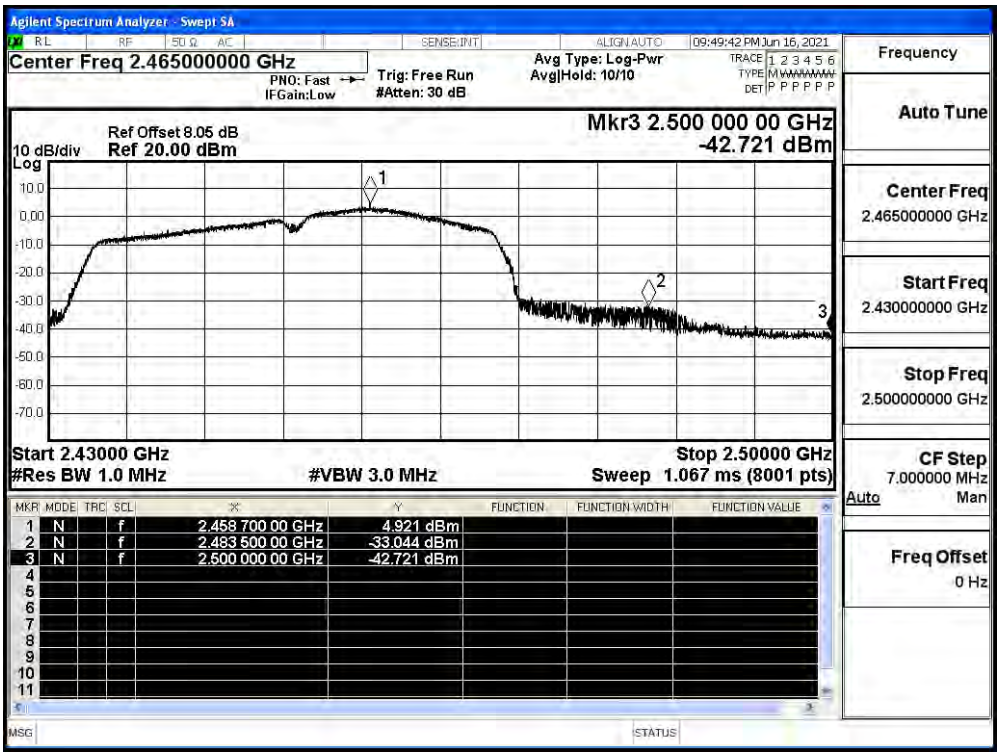
Restrict-band band-edge measurements_11N40SISO_2422_Ant0_PEAK



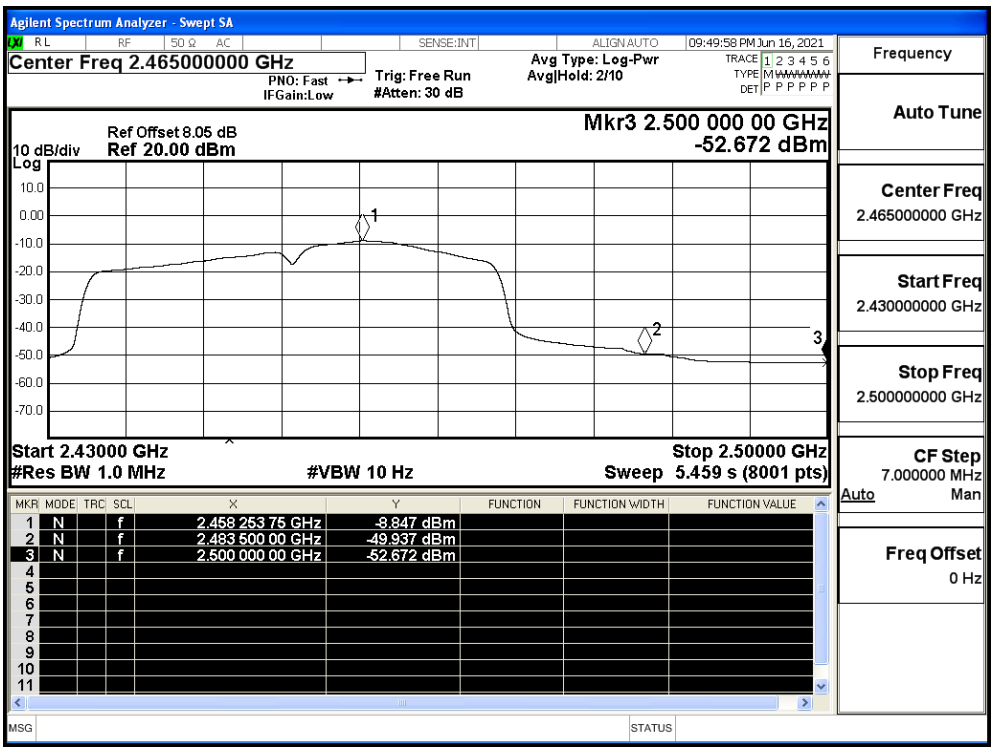
Restrict-band band-edge measurements_11N40SISO_2422_Ant0_AV



Restrict-band band-edge measurements_11N40SISO_2452_Ant0_PEAK



Restrict-band band-edge measurements_11N40SISO_2452_Ant0_AV

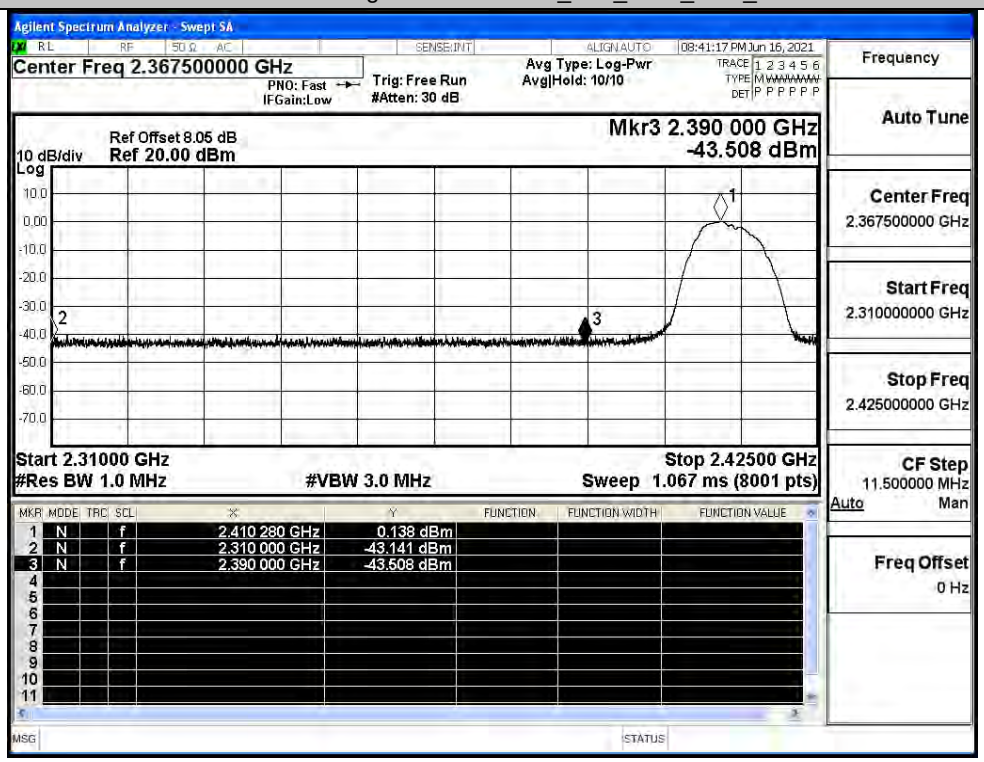


ANT1

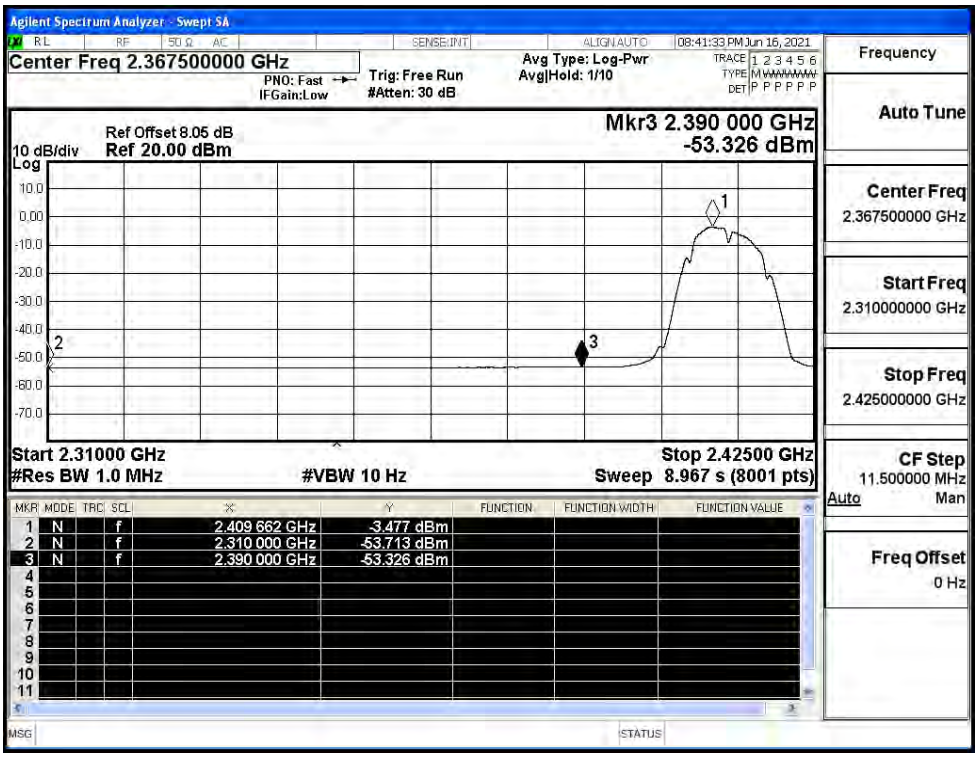
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
11B	2412	Ant1	2310.0	-43.14	2.0	0	54.12	PEAK	74	PASS
	2412	Ant1	2310.0	-53.71	2.0	0	43.55	AV	54	PASS
	2412	Ant1	2390.0	-43.51	2.0	0	53.75	PEAK	74	PASS
	2412	Ant1	2390.0	-53.33	2.0	0	43.93	AV	54	PASS
	2462	Ant1	2483.5	-42.38	2.0	0	54.88	PEAK	74	PASS
	2462	Ant1	2483.5	-52.67	2.0	0	44.59	AV	54	PASS
	2462	Ant1	2500.0	-43.08	2.0	0	54.18	PEAK	74	PASS
	2462	Ant1	2500.0	-52.72	2.0	0	44.54	AV	54	PASS
11G	2412	Ant1	2310.0	-43.46	2.0	0	53.80	PEAK	74	PASS
	2412	Ant1	2310.0	-53.72	2.0	0	43.54	AV	54	PASS
	2412	Ant1	2390.0	-42.78	2.0	0	54.48	PEAK	74	PASS
	2412	Ant1	2390.0	-52.98	2.0	0	44.28	AV	54	PASS
	2462	Ant1	2483.5	-40.07	2.0	0	57.19	PEAK	74	PASS
	2462	Ant1	2483.5	-50.87	2.0	0	46.39	AV	54	PASS
	2462	Ant1	2500.0	-42.10	2.0	0	55.16	PEAK	74	PASS
	2462	Ant1	2500.0	-52.68	2.0	0	44.58	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-44.02	2.0	0	53.24	PEAK	74	PASS
	2412	Ant1	2310.0	-53.67	2.0	0	43.59	AV	54	PASS
	2412	Ant1	2390.0	-41.31	2.0	0	55.95	PEAK	74	PASS
	2412	Ant1	2390.0	-52.46	2.0	0	44.80	AV	54	PASS
	2462	Ant1	2483.5	-37.72	2.0	0	59.54	PEAK	74	PASS
	2462	Ant1	2483.5	-50.25	2.0	0	47.01	AV	54	PASS
	2462	Ant1	2500.0	-42.63	2.0	0	54.63	PEAK	74	PASS
	2462	Ant1	2500.0	-52.70	2.0	0	44.56	AV	54	PASS
11N40 SISO	2422	Ant1	2310.0	-42.60	2.0	0	54.66	PEAK	74	PASS
	2422	Ant1	2310.0	-53.63	2.0	0	43.63	AV	54	PASS

	2422	Ant1	2390.0	-30.39	2.0	0	66.87	PEAK	74	PASS
	2422	Ant1	2390.0	-49.65	2.0	0	47.61	AV	54	PASS
	2452	Ant1	2483.5	-33.74	2.0	0	63.52	PEAK	74	PASS
	2452	Ant1	2483.5	-48.95	2.0	0	48.31	AV	54	PASS
	2452	Ant1	2500.0	-42.25	2.0	0	55.01	PEAK	74	PASS
	2452	Ant1	2500.0	-52.68	2.0	0	44.58	AV	54	PASS

Restrict-band band-edge measurements_11B_2412_Ant1_PEAK



Restrict-band band-edge measurements_11B_2412_Ant1_AV



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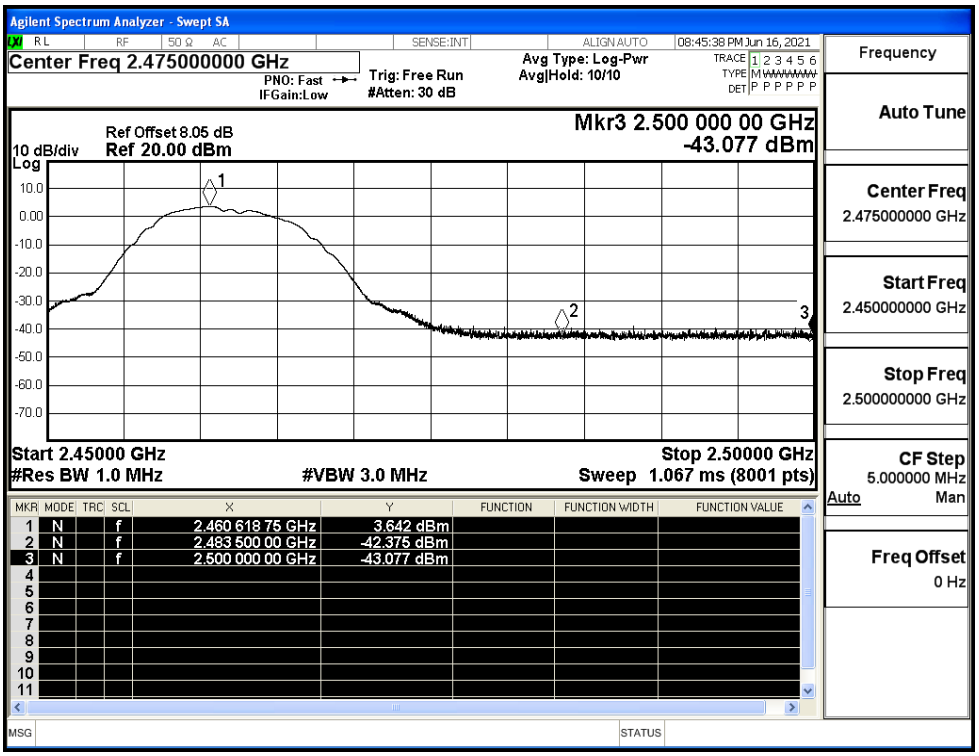

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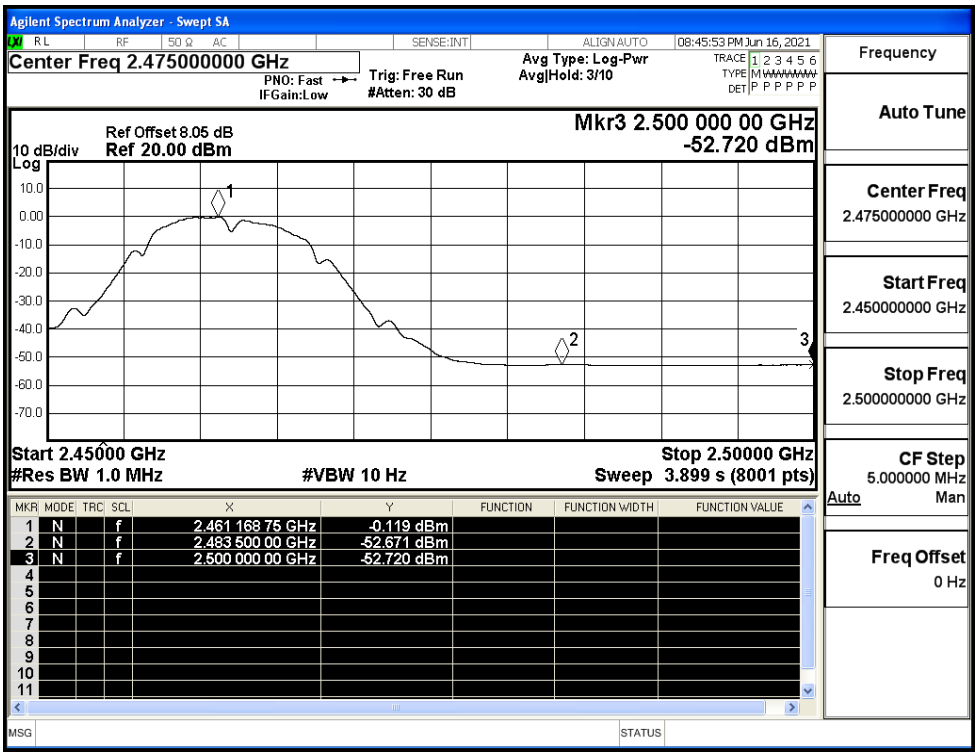

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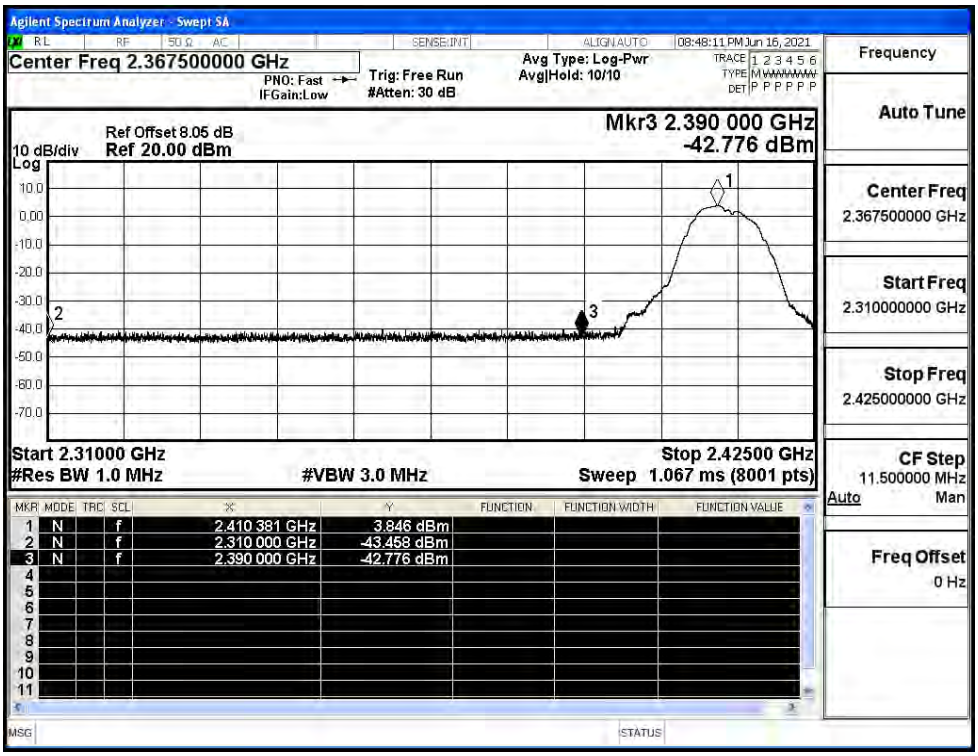

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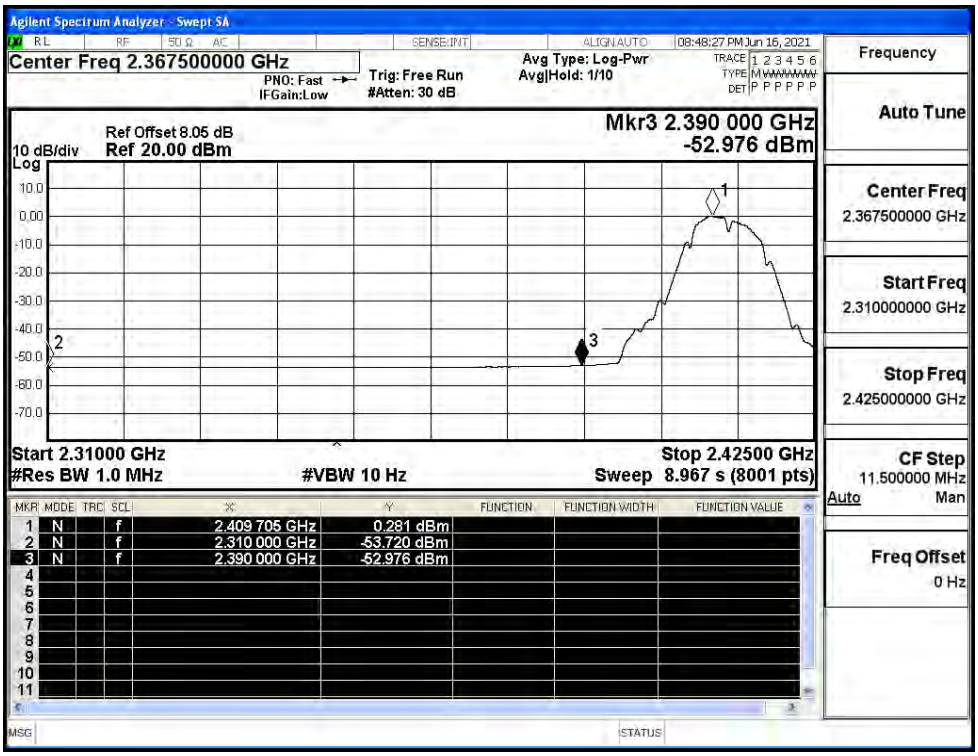

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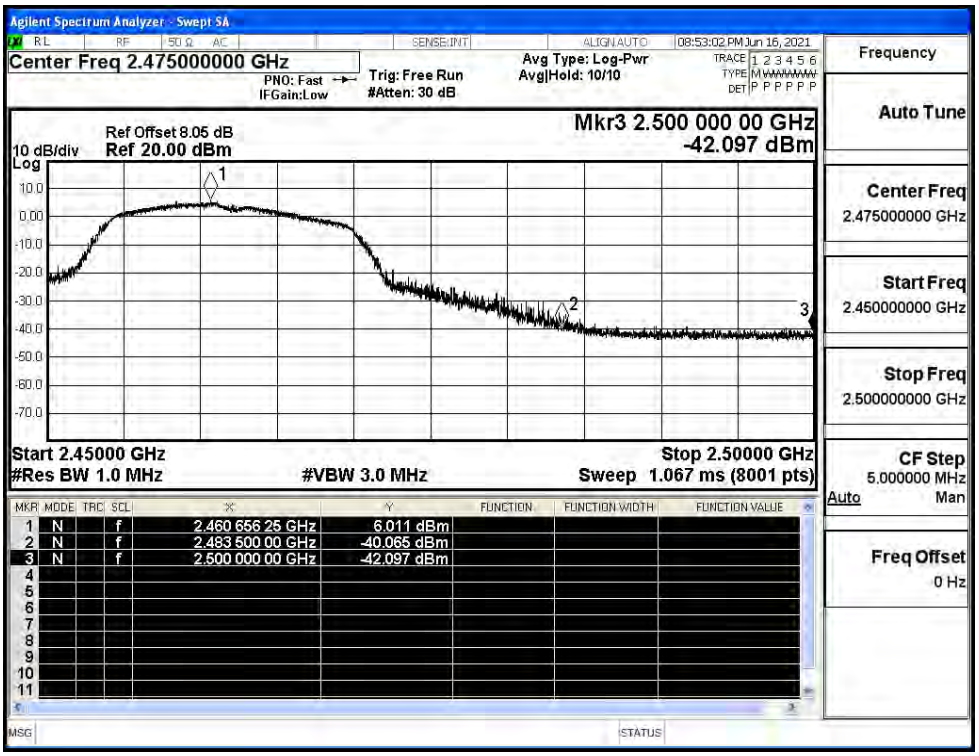
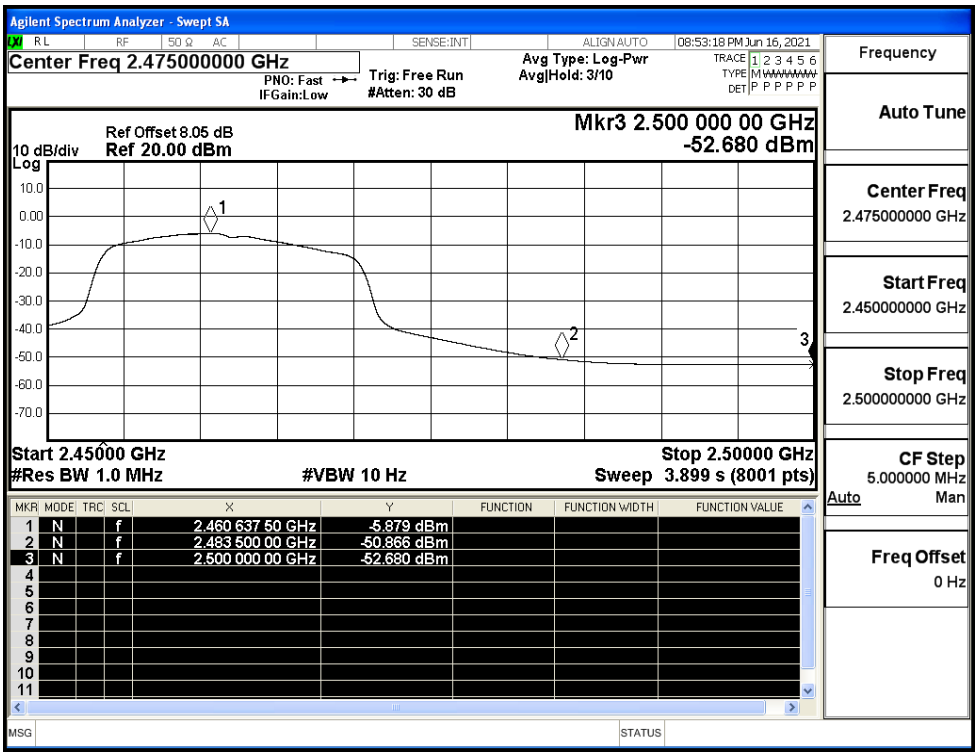


Restrict-band band-edge measurements_11G_2462_Ant1_AV



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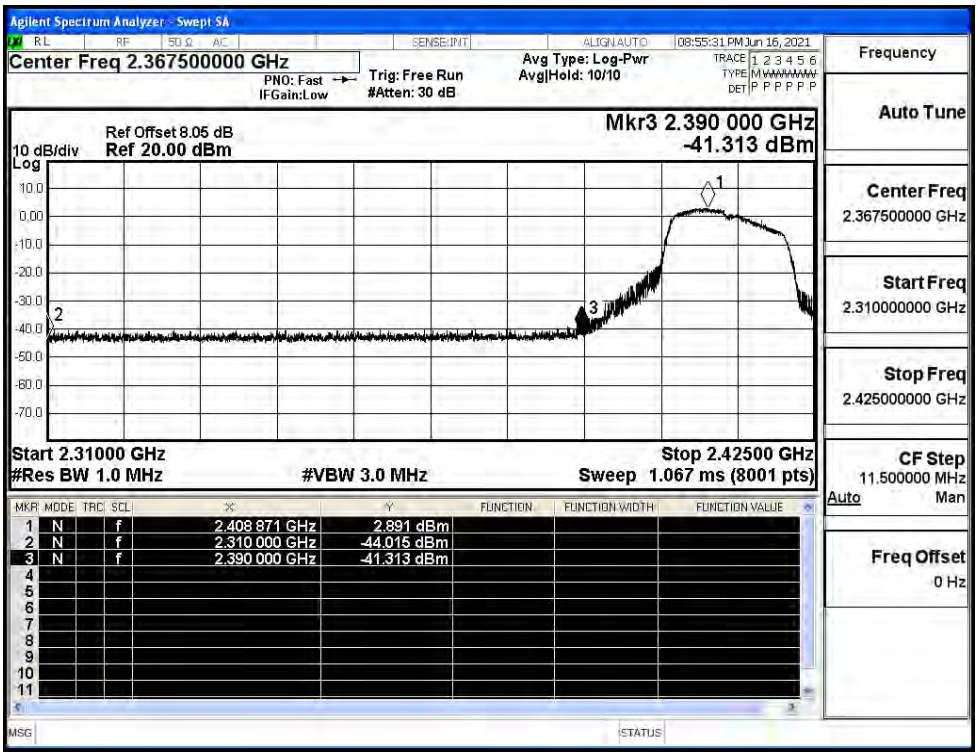

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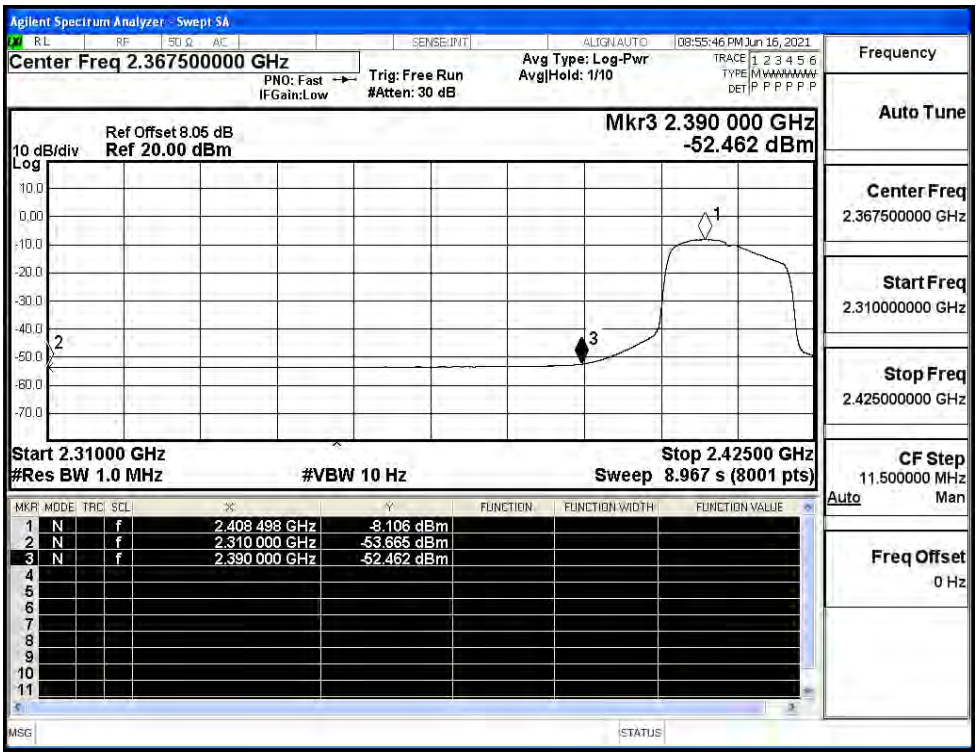
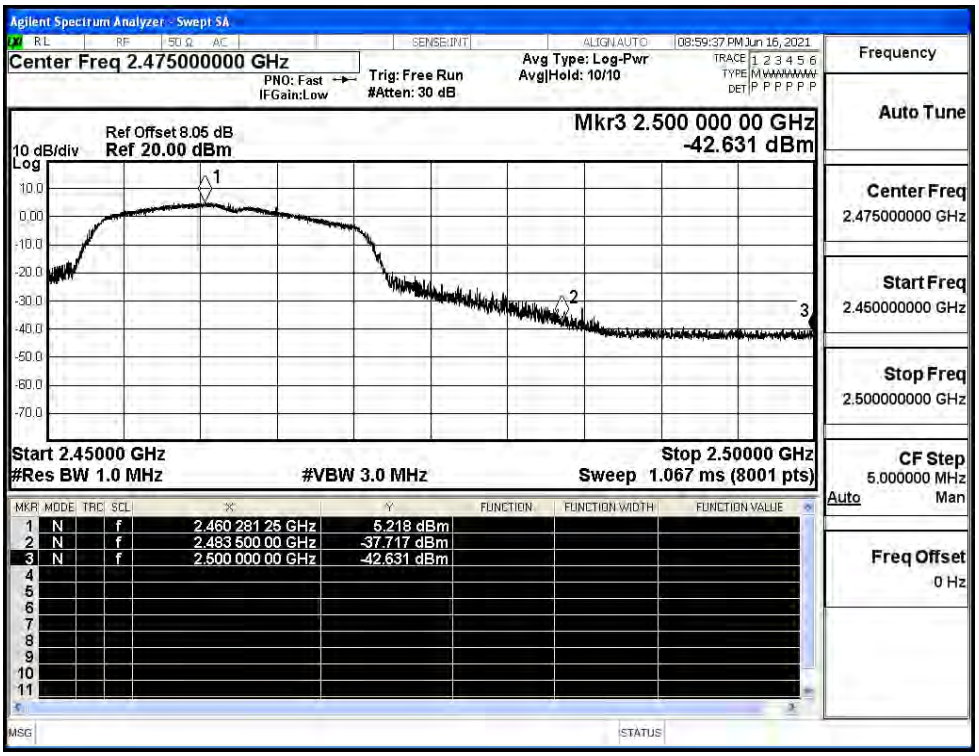
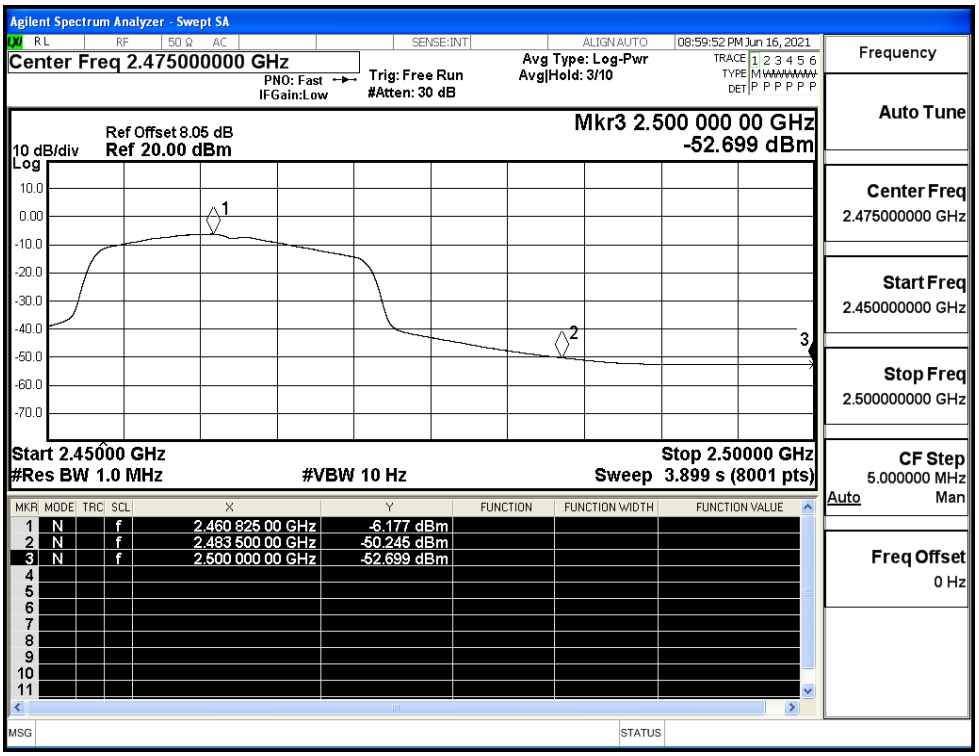


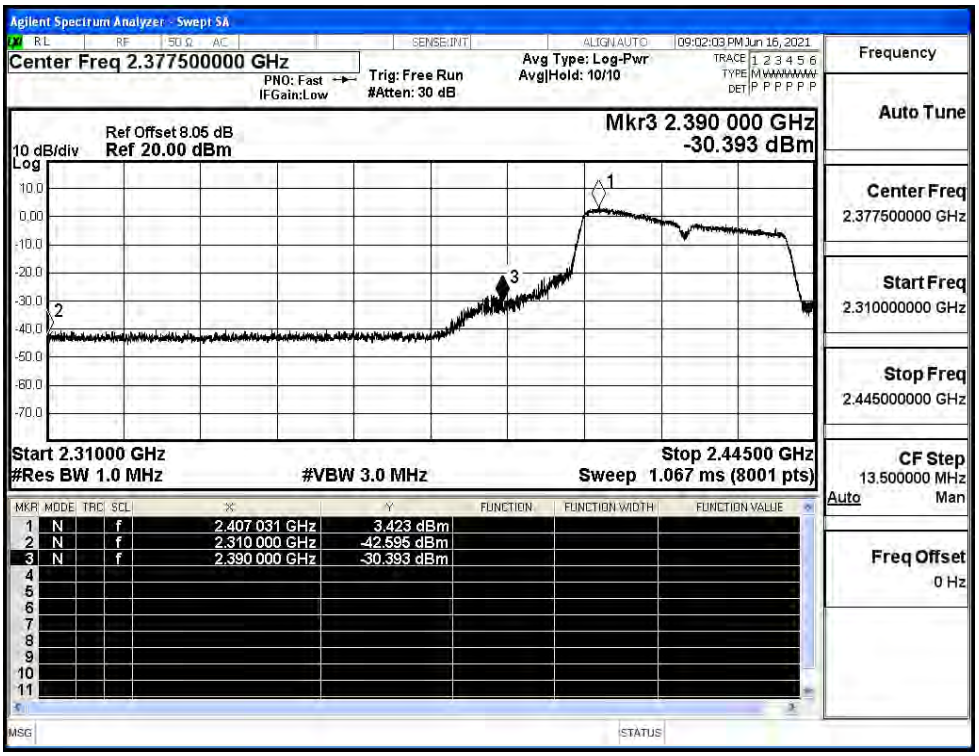
Restrict-band band-edge measurements_11N20SISO_2462_Ant1_PEAK



Restrict-band band-edge measurements_11N20SISO_2462_Ant1_AV



Restrict-band band-edge measurements_11N40SISO_2422_Ant1_PEAK



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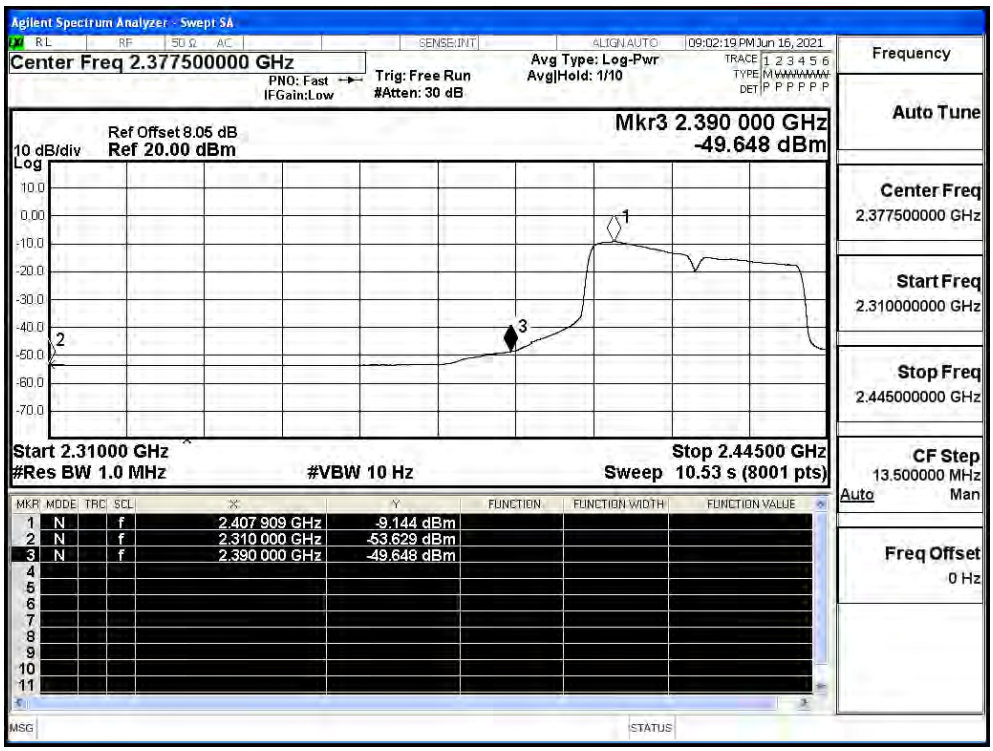
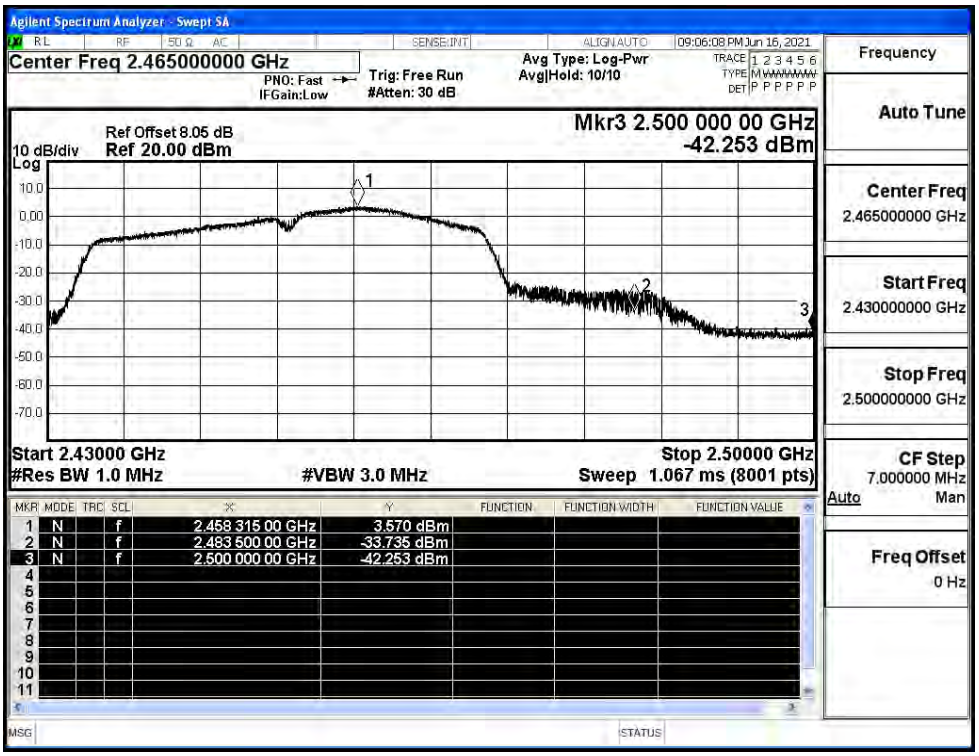
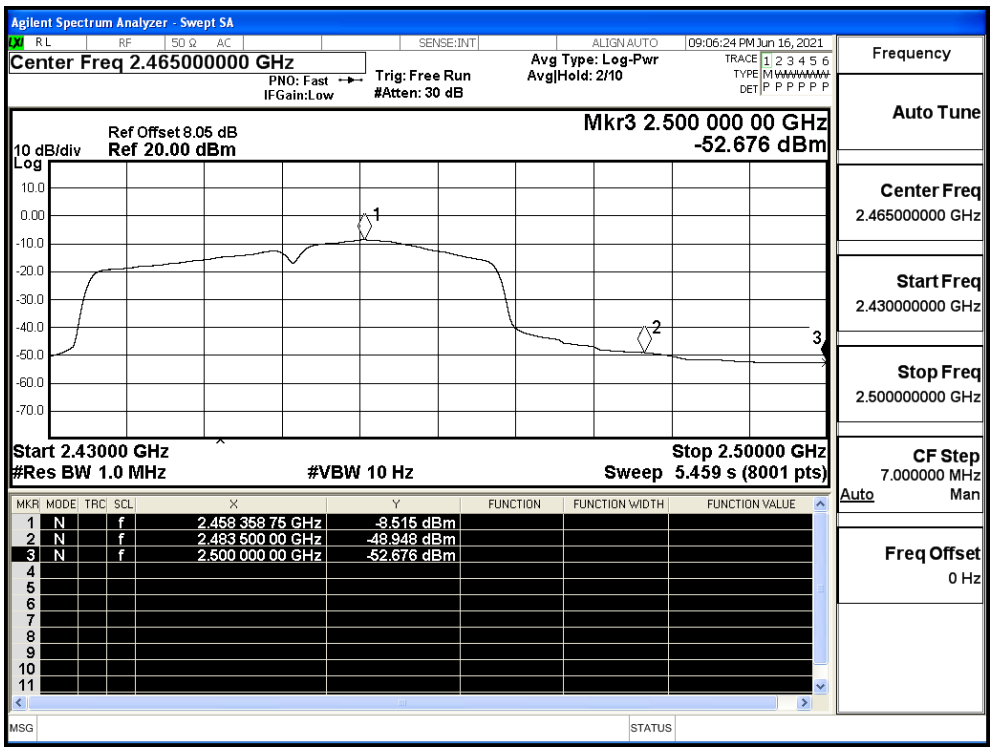


Restrict-band band-edge measurements_11N40SISO_2452_Ant1_PEAK



Restrict-band band-edge measurements_11N40SISO_2452_Ant1_AV



Combined Ant_0 and Ant_1

Test Mode	Freq.	Covert Radiated E Level At 3m (dBuV/m)			Antenna Gain (dBi)	Ground Factor	E [dBuV/m]	Detector	Limit (dBuV/m)
		Ant0	Ant1	Sum					
11N20 MIMO	2310.0	-43.38	-44.02	-40.68	5.01	0	59.59	Peak	74
	2310.0	-53.62	-53.67	-50.63	5.01	0	49.64	Average	54
	2390.0	-39.02	-41.31	-37.01	5.01	0	63.26	Peak	74
	2390.0	-52.42	-52.46	-49.43	5.01	0	50.84	Average	54
	2483.5	-34.54	-37.72	-32.83	5.01	0	67.44	Peak	74
	2483.5	-49.82	-50.25	-47.02	5.01	0	53.25	Average	54
	2500.0	-41.00	-42.63	-38.73	5.01	0	61.54	Peak	74
	2500.0	-52.66	-52.70	-49.67	5.01	0	50.6	Average	54
11N40 MIMO	2310.0	-42.13	-42.60	-39.35	5.01	0	60.92	Peak	74
	2310.0	-53.65	-53.63	-50.63	5.01	0	49.64	Average	54
	2390.0	-33.21	-30.39	-28.56	5.01	0	71.71	Peak	74
	2390.0	-49.96	-49.65	-46.79	5.01	0	53.48	Average	54
	2483.5	-33.04	-33.74	-30.37	5.01	0	69.90	Peak	74
	2483.5	-49.94	-48.95	-46.61	5.01	0	53.66	Average	54
	2500.0	-42.72	-42.25	-39.47	5.01	0	60.8	Peak	74
	2500.0	-52.67	-52.68	-49.66	5.01	0	50.61	Average	54