

Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Visual ear spoon

Trade Mark: E-enjoy

Test Model: E-enjoy P30

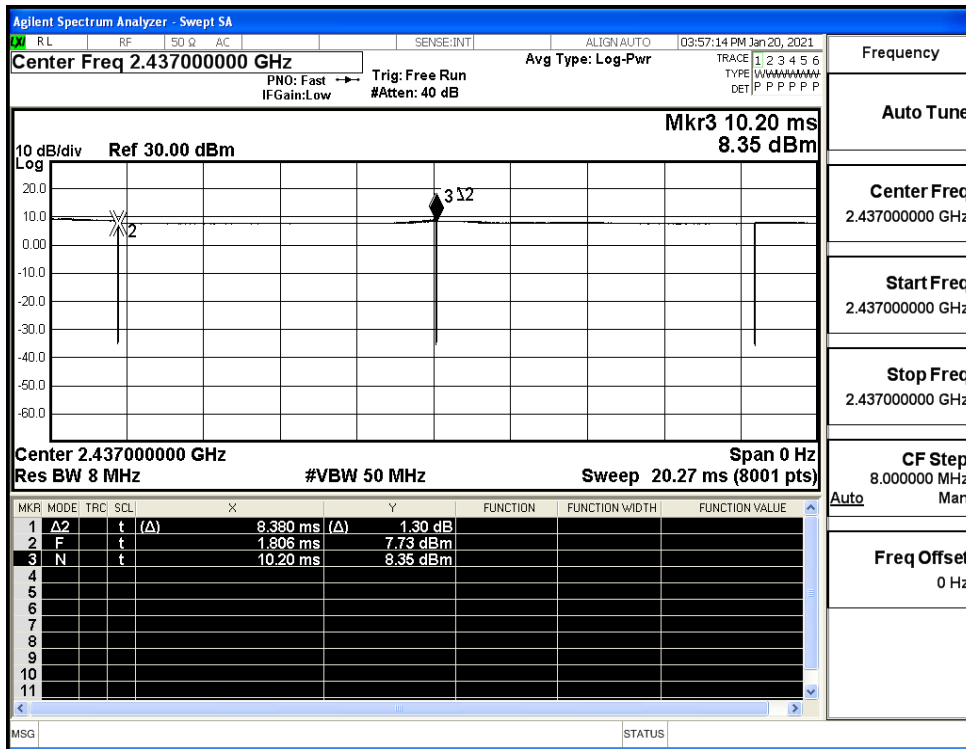
Environmental Conditions

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

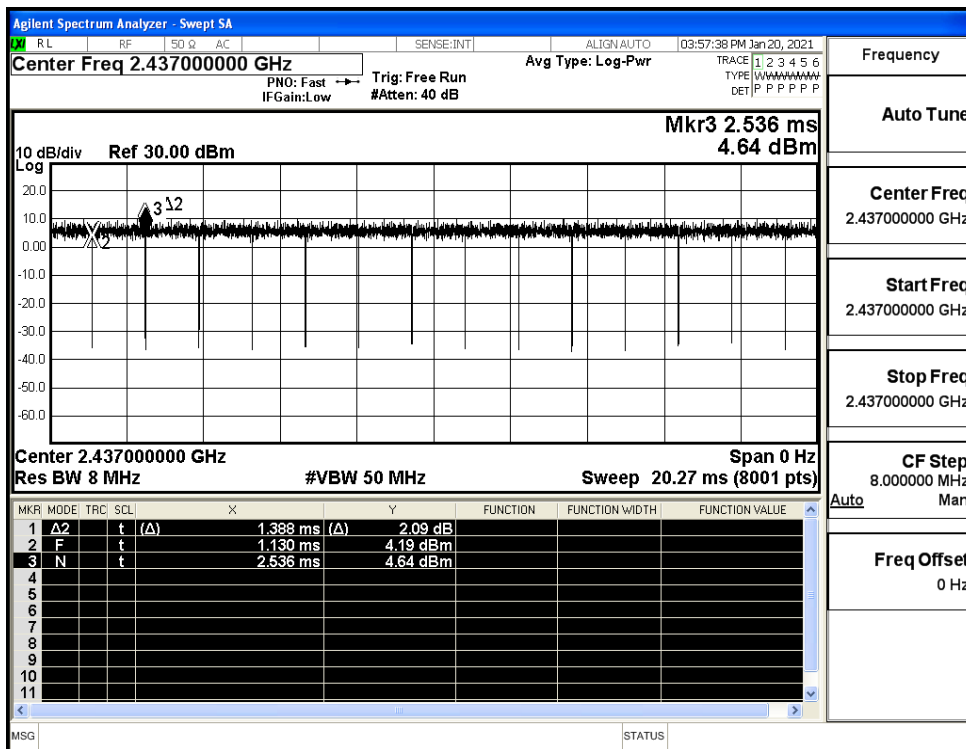
A.1 Duty Cycle

Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
11B	2437	Ant1	99.79	PASS
11G	2437	Ant1	98.74	PASS
11N20SISO	2437	Ant1	98.46	PASS
11N40SISO	2437	Ant1	98.07	PASS

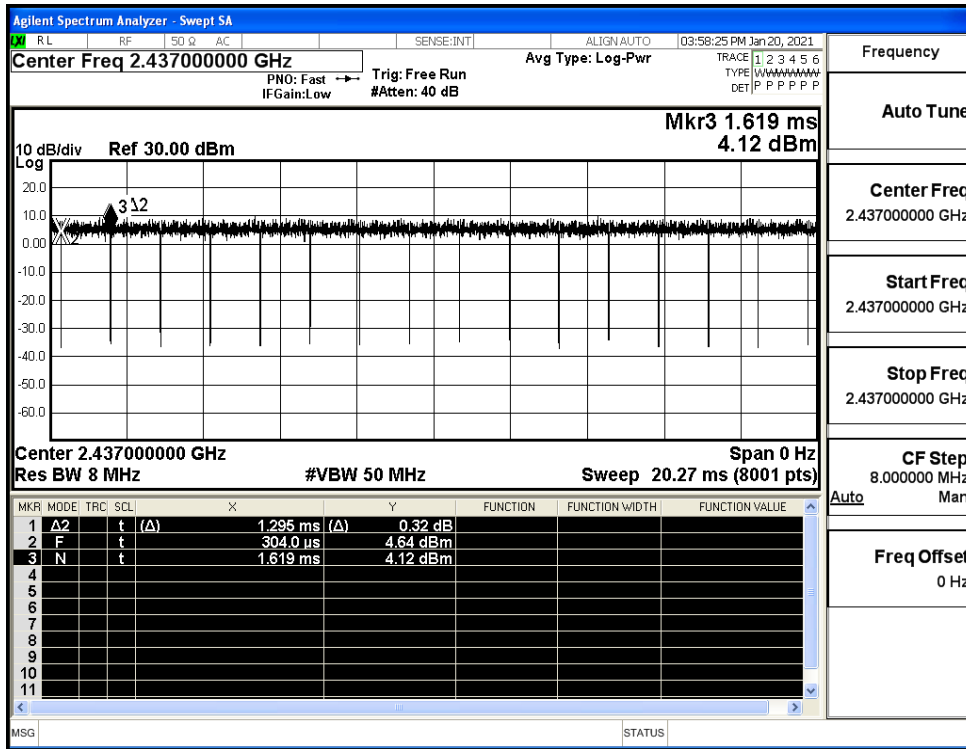
Duty Cycle_11B_2437_Ant1



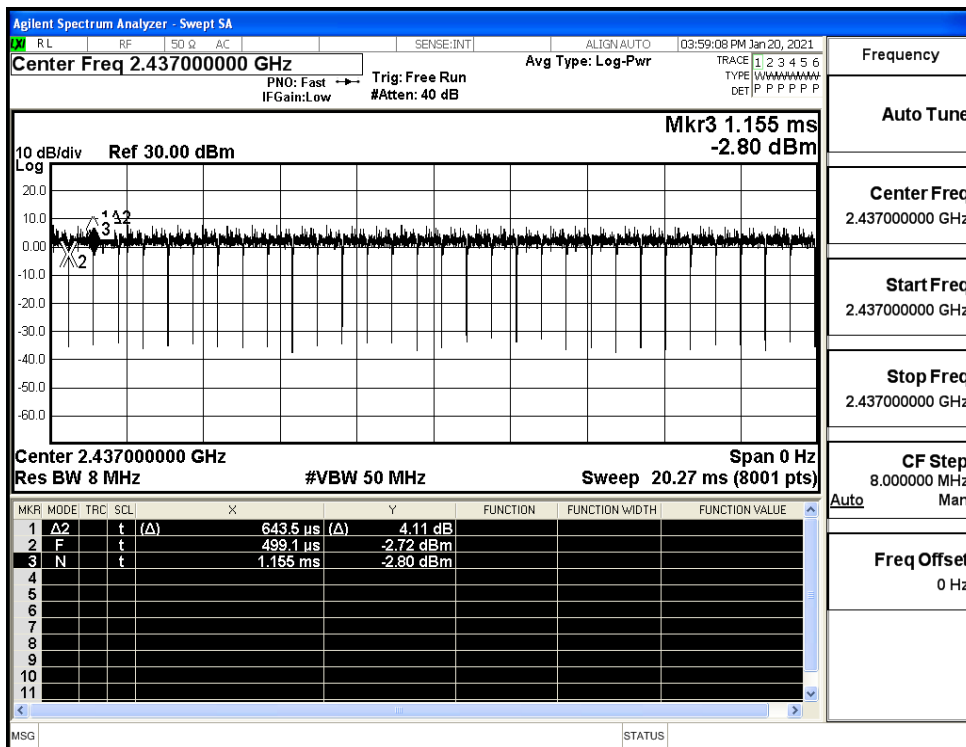
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



Duty Cycle_11N40SISO_2437_Ant1

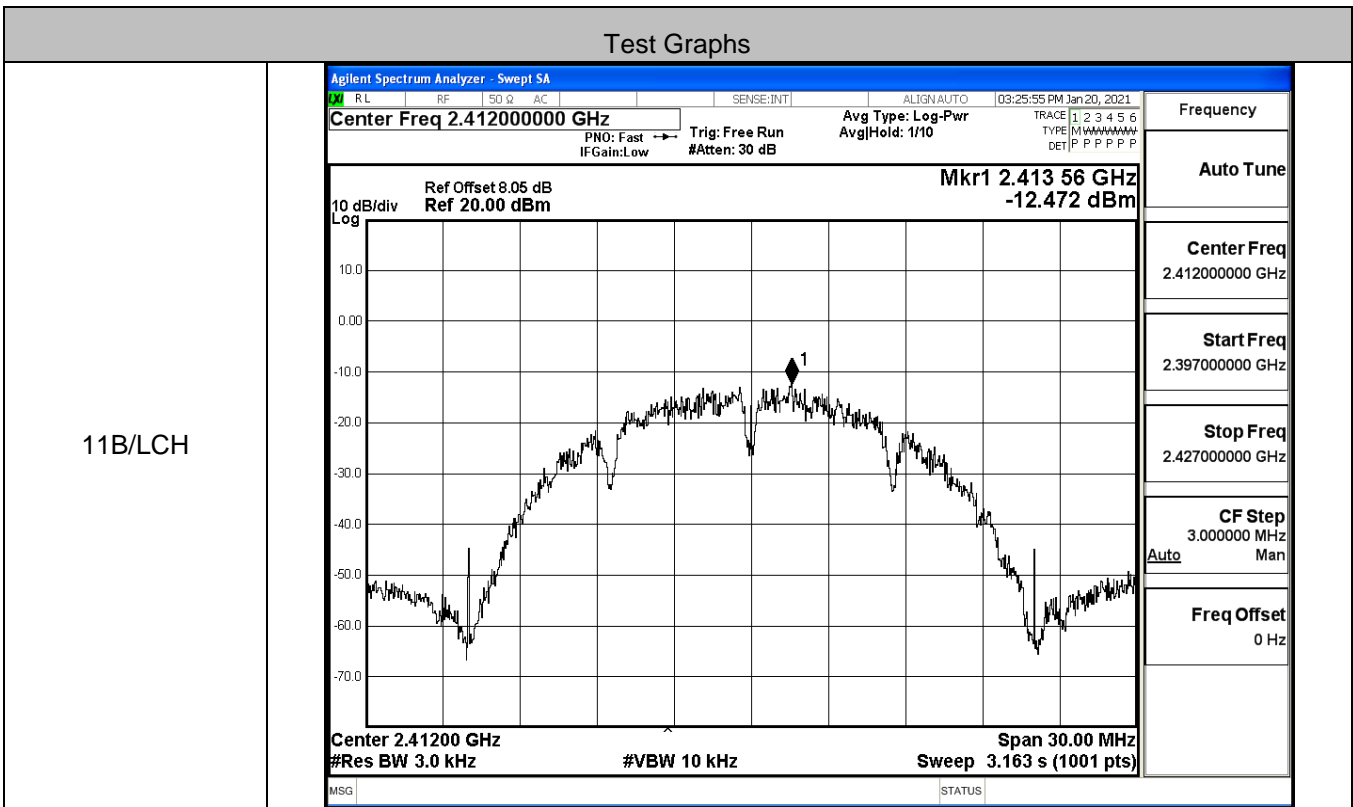


A.2 Maximum Conducted Output Power

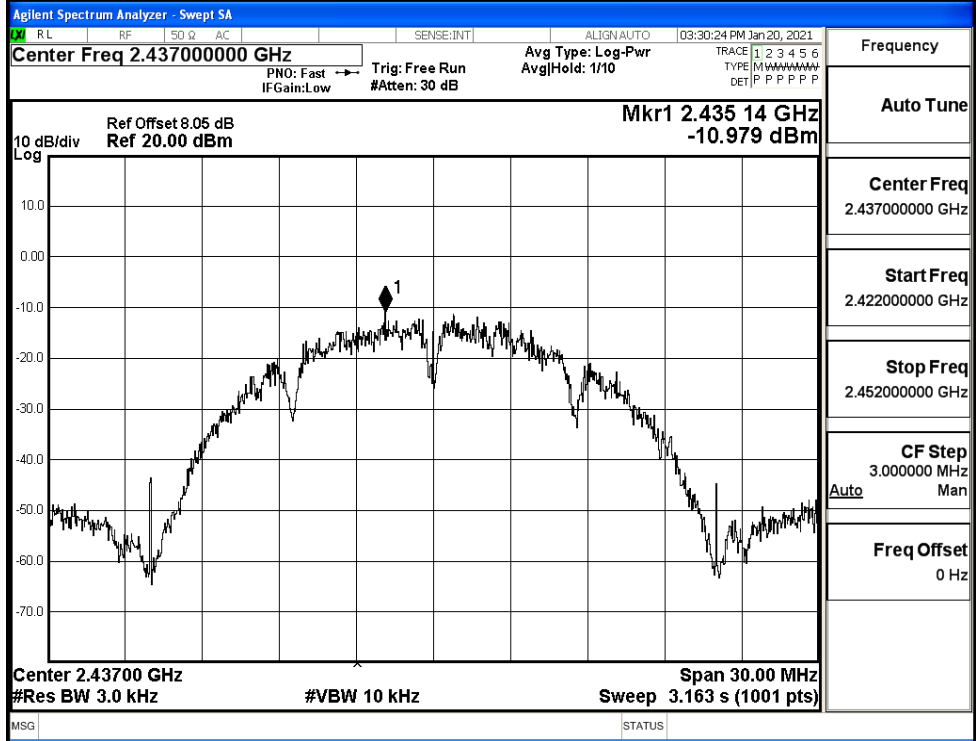
Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	8.12	30	PASS
	MCH	8.8	30	PASS
	HCH	7.22	30	PASS
11G	LCH	8.79	30	PASS
	MCH	7.99	30	PASS
	HCH	8.14	30	PASS
11N20SISO	LCH	7.25	30	PASS
	MCH	8.09	30	PASS
	HCH	8.48	30	PASS
11N40SISO	LCH	7.74	30	PASS
	MCH	8.1	30	PASS
	HCH	7.2	30	PASS

A.3 Maximum Power Spectral Density

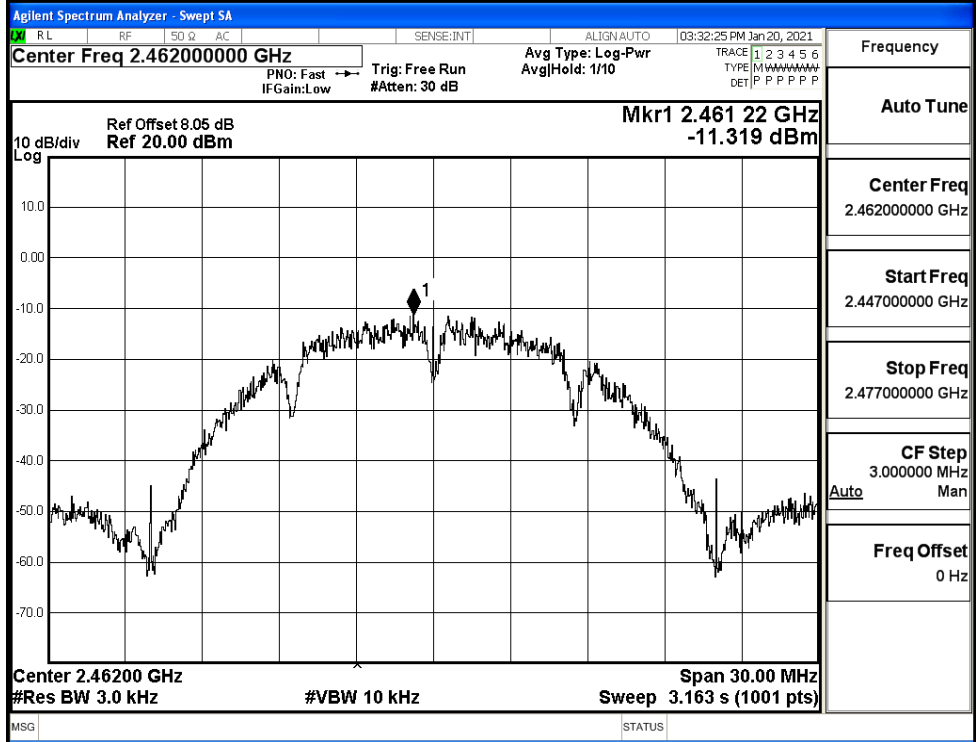
Mode	Channel	Meas.Level [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-12.472	8	PASS
	MCH	-10.979	8	PASS
	HCH	-11.319	8	PASS
11G	LCH	-16.523	8	PASS
	MCH	-14.879	8	PASS
	HCH	-14.654	8	PASS
11N20SISO	LCH	-16.762	8	PASS
	MCH	-15.790	8	PASS
	HCH	-15.286	8	PASS
11N40SISO	LCH	-18.257	8	PASS
	MCH	-17.655	8	PASS
	HCH	-16.713	8	PASS



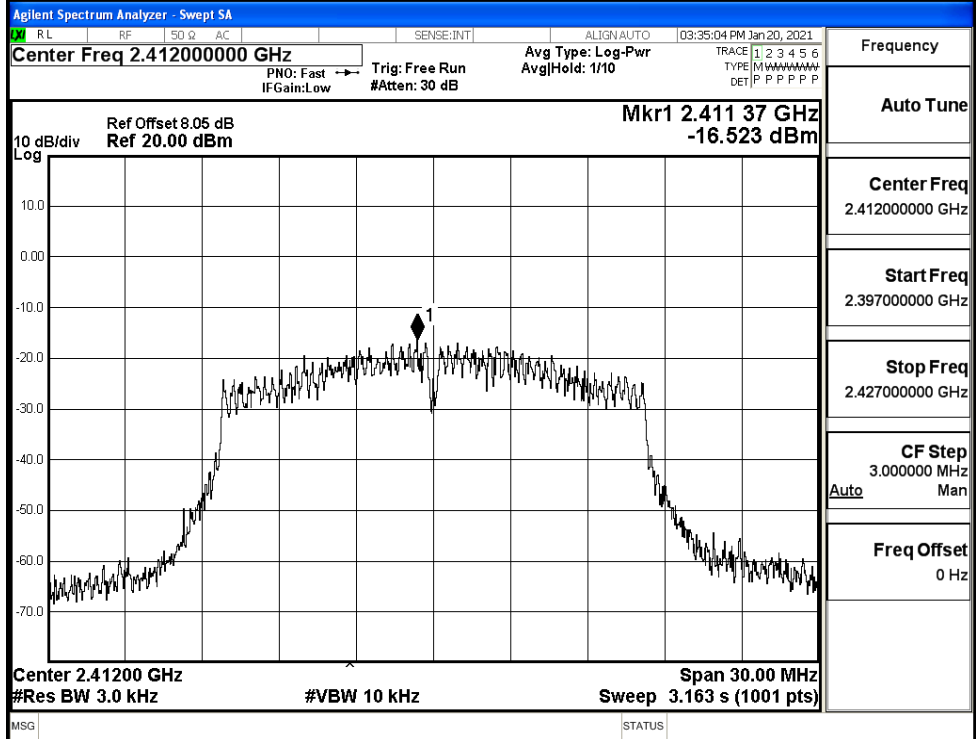
11B/MCH



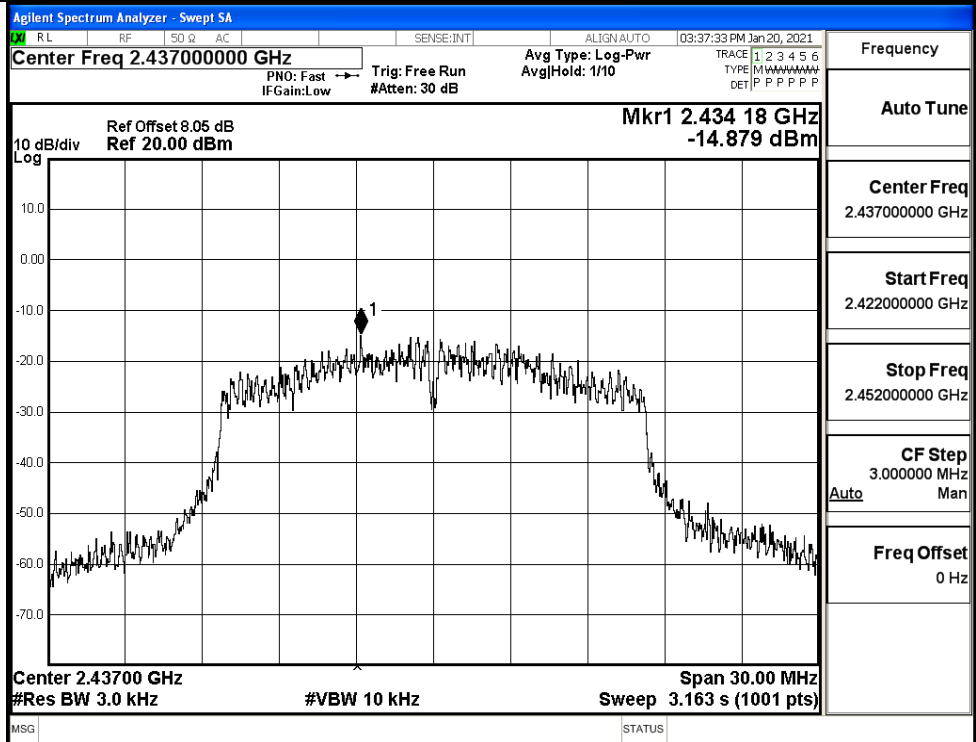
11B/HCH



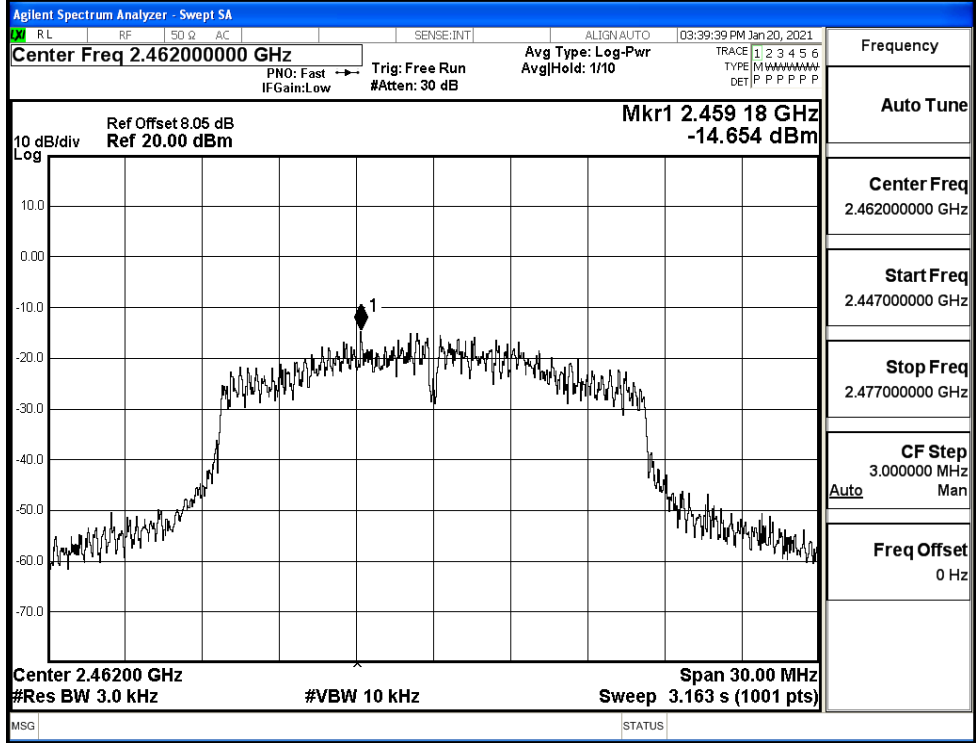
11G/LCH



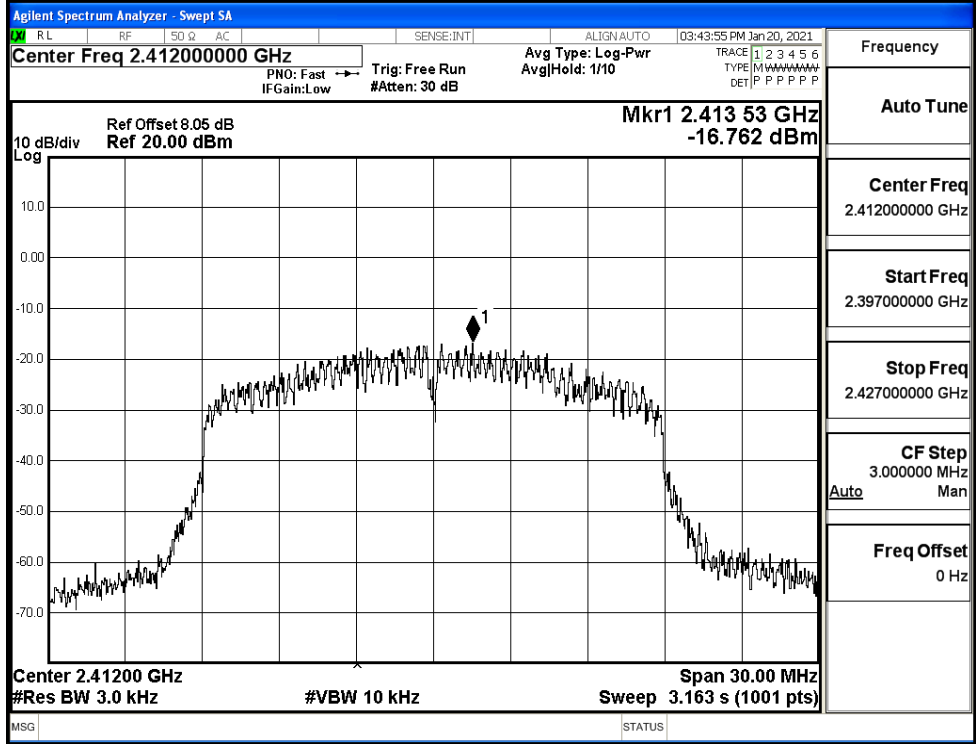
11G/MCH



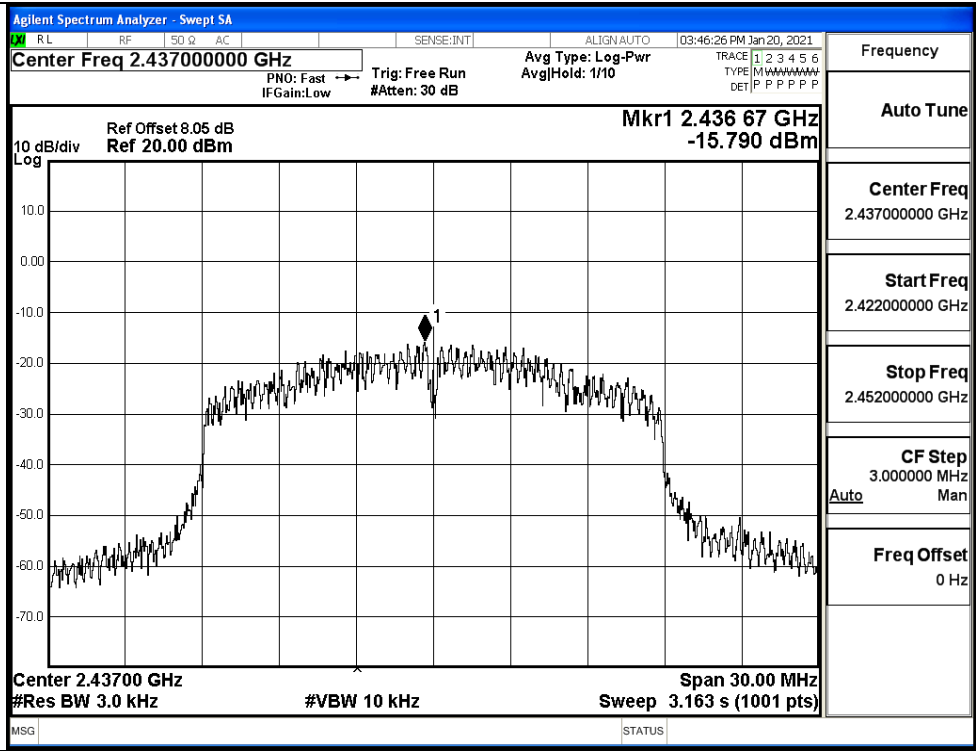
11G/HCH



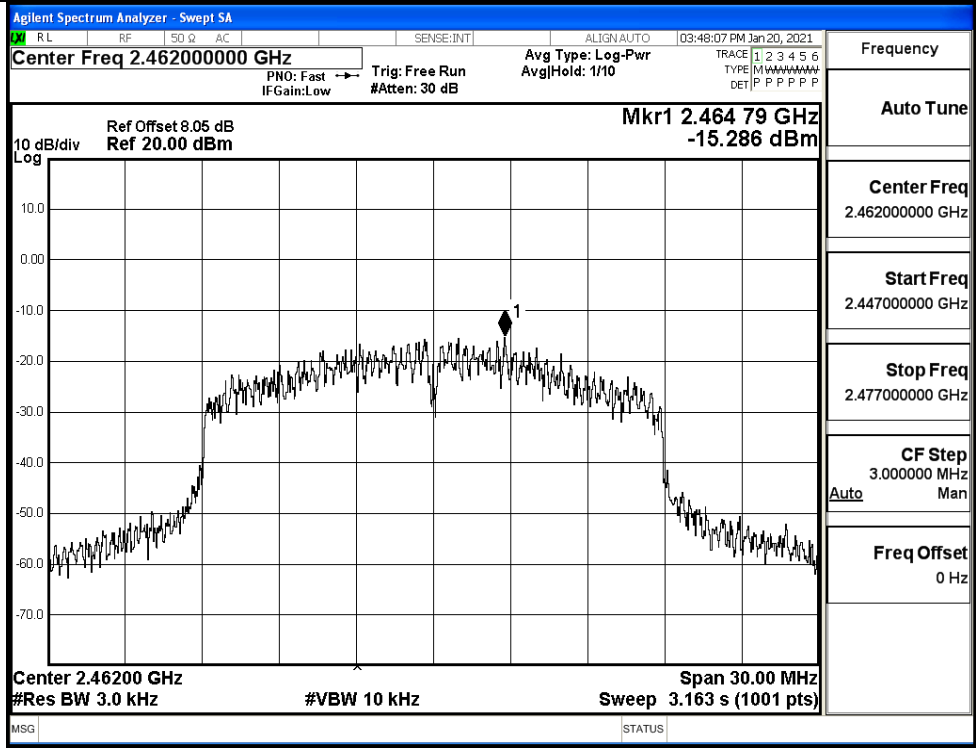
11N20SISO/LCH

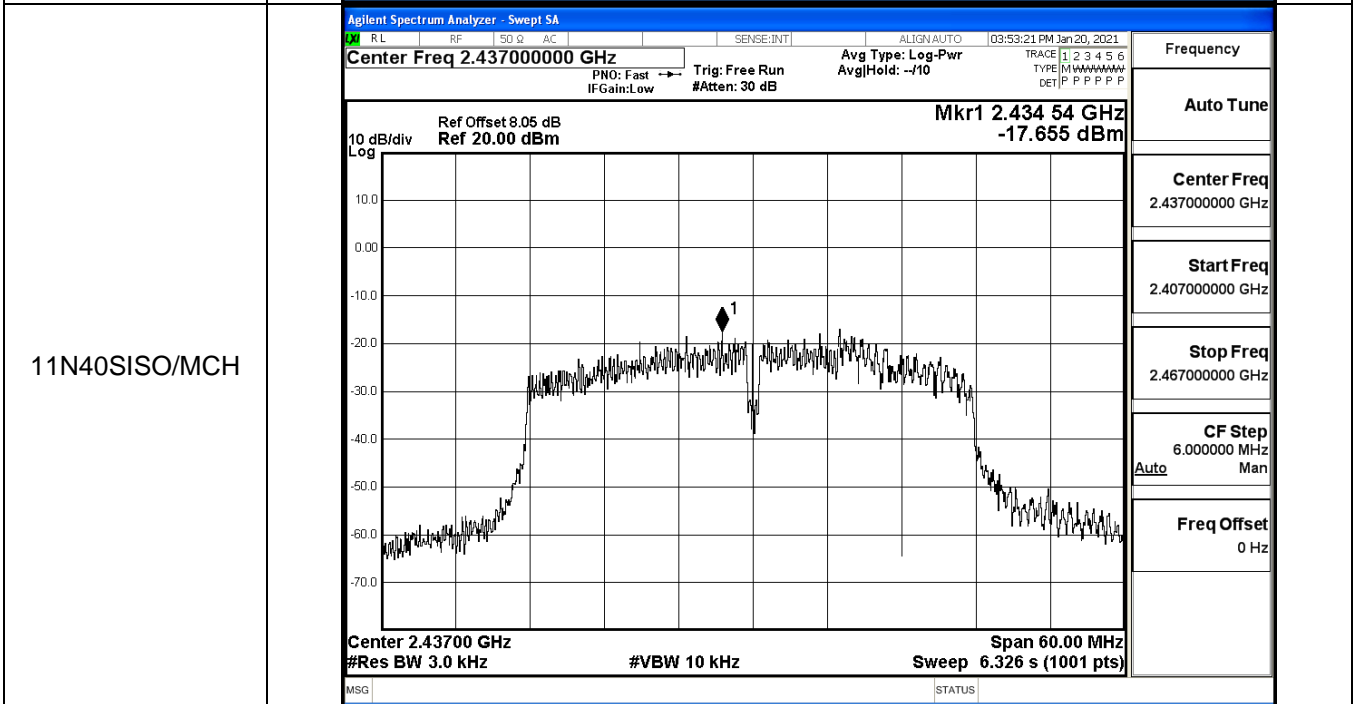
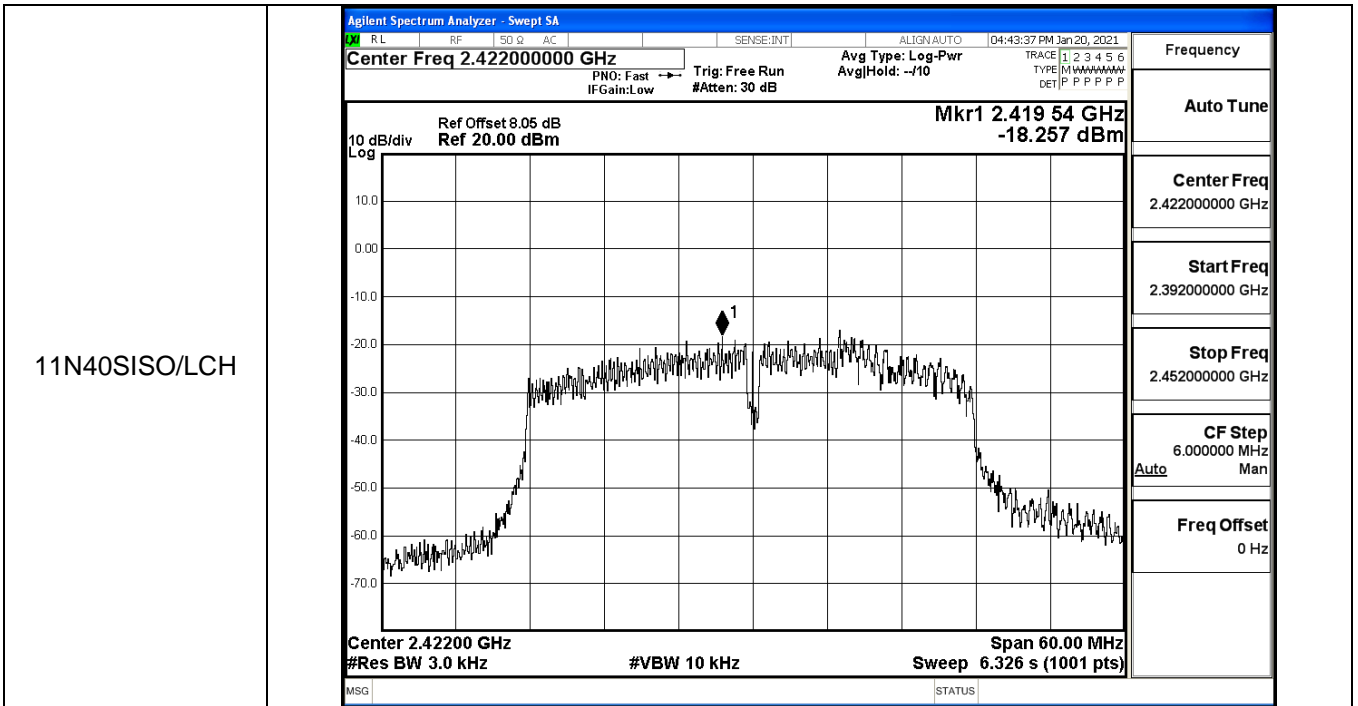


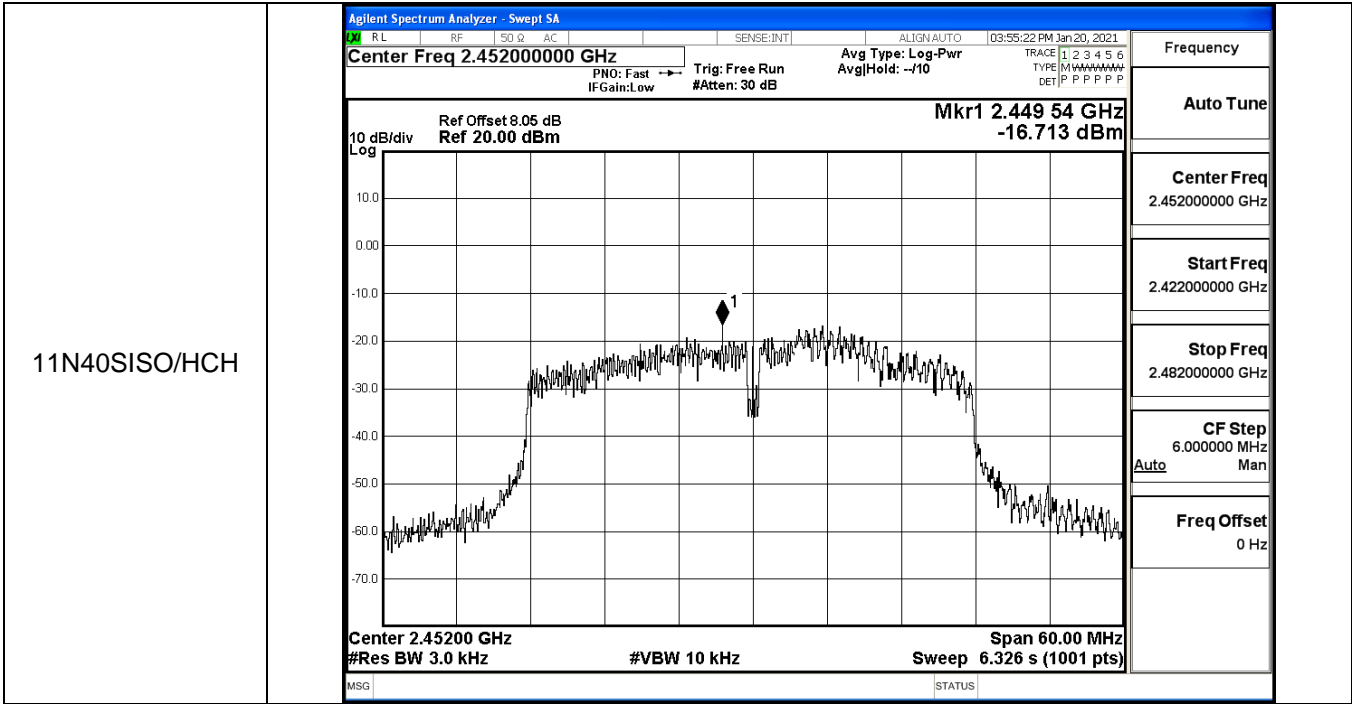
11N20SISO/MCH



11N20SISO/HCH

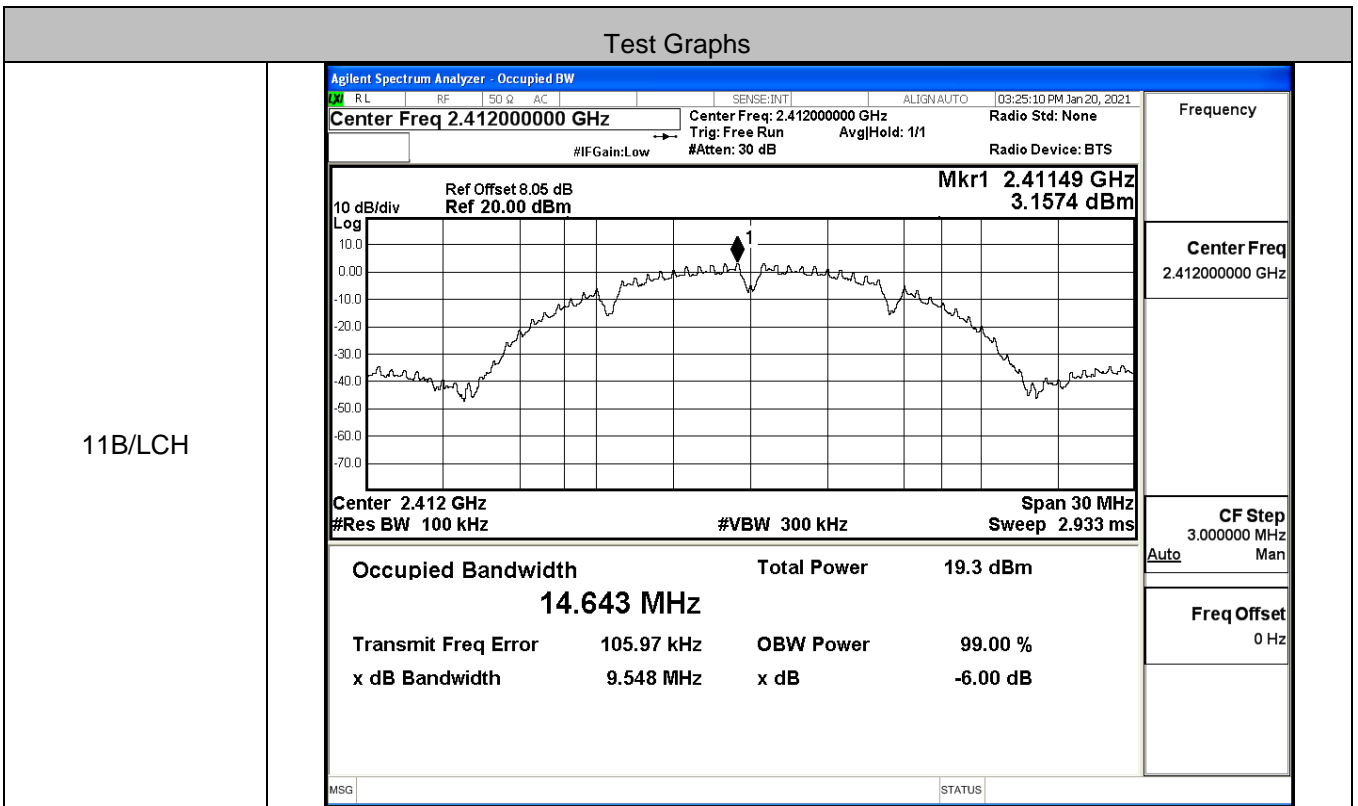






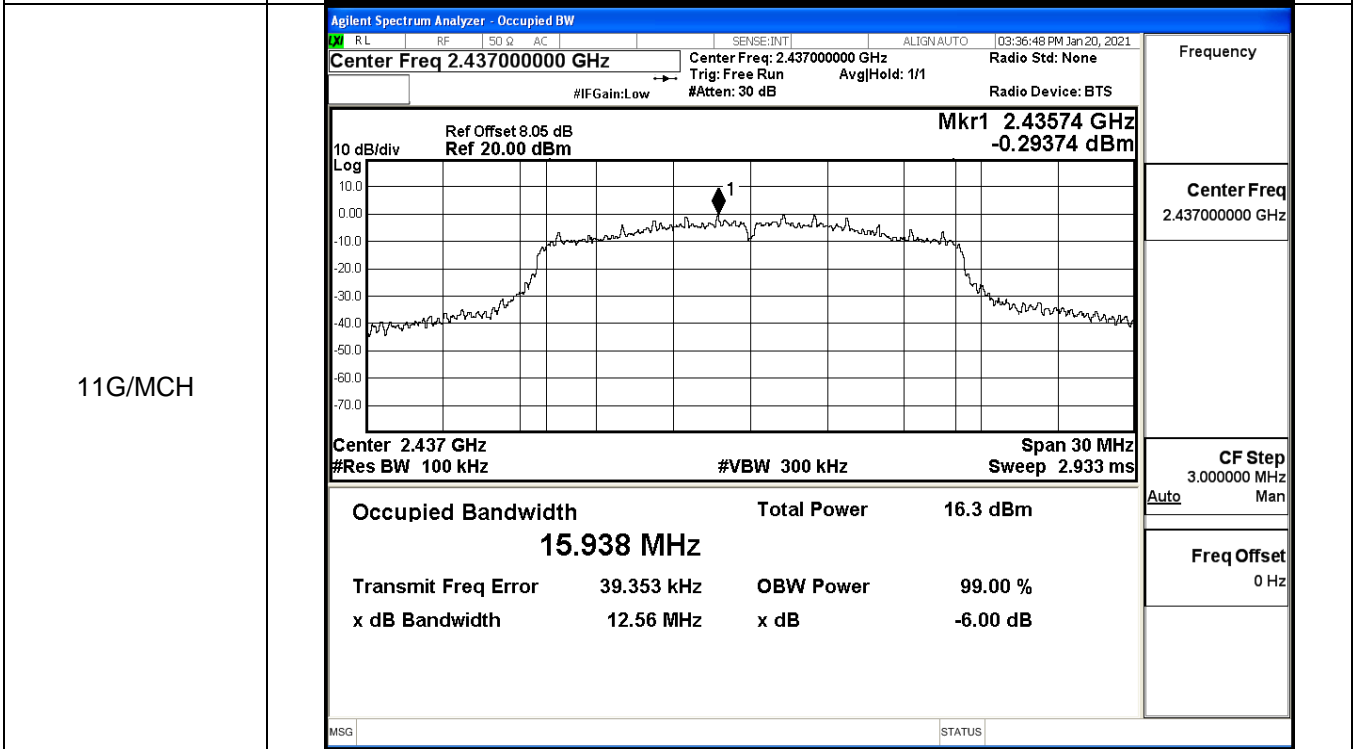
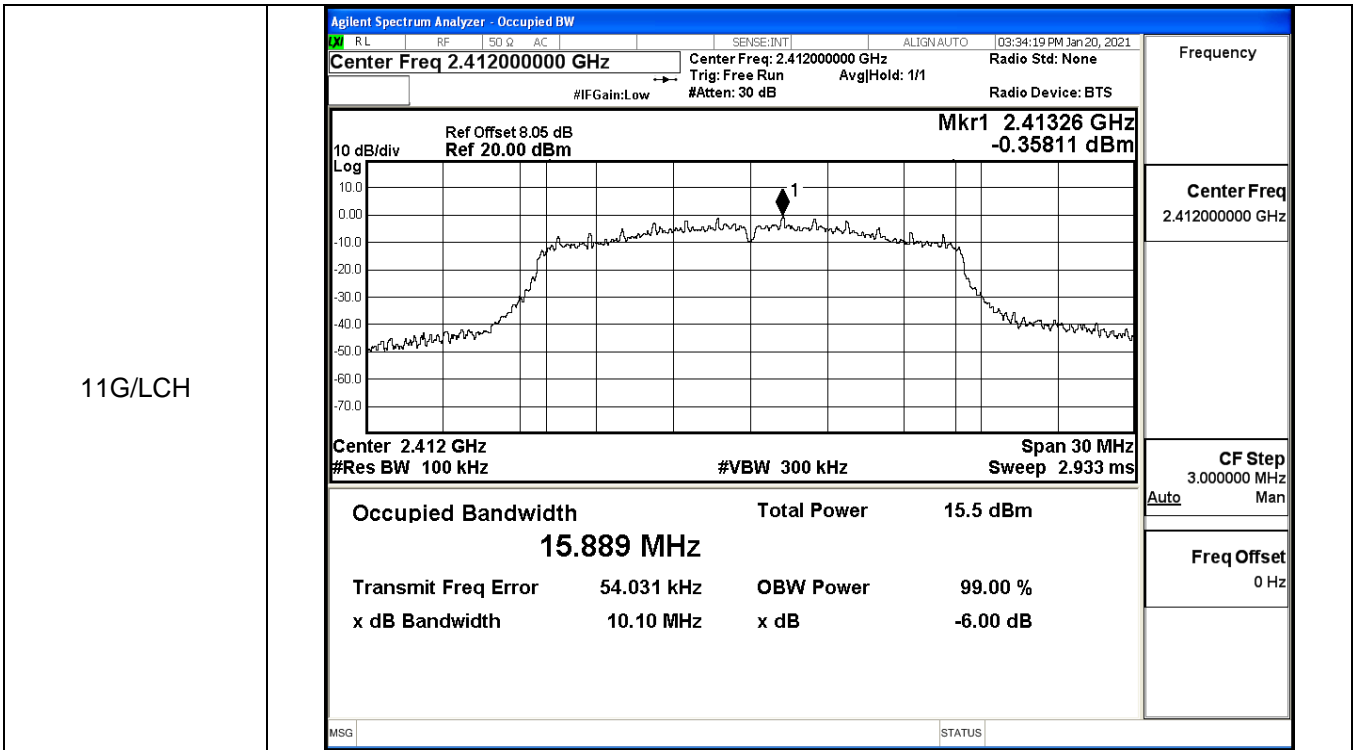
A.4 6dB Bandwidth

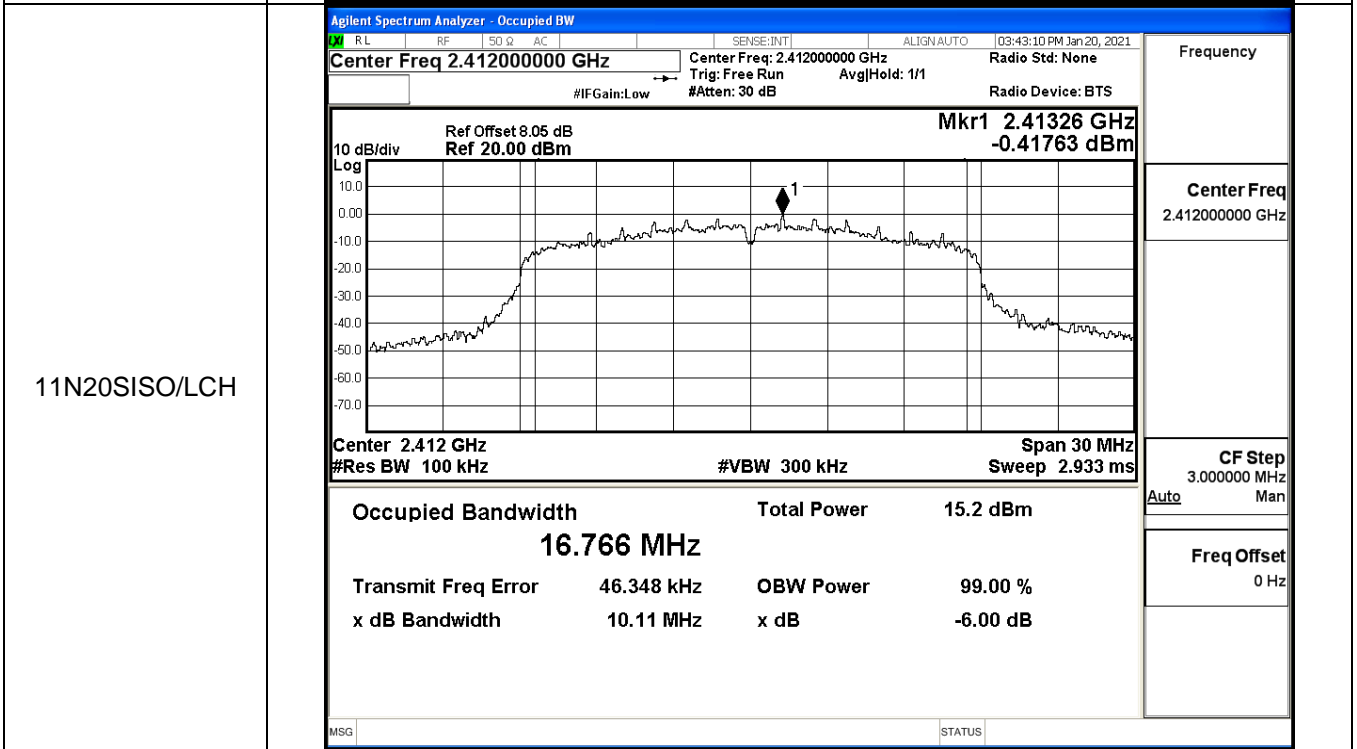
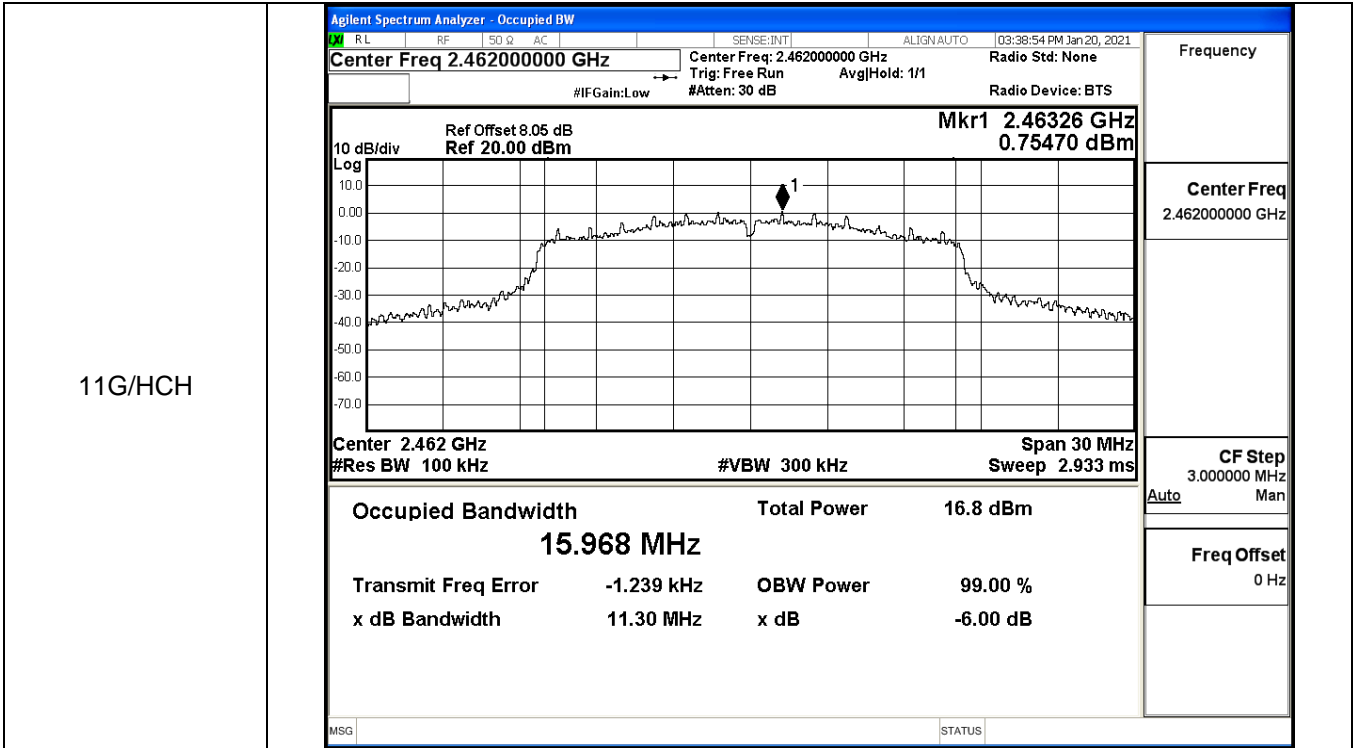
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	9.548	≥0.5	PASS
	MCH	9.115	≥0.5	PASS
	HCH	9.118	≥0.5	PASS
11G	LCH	10.10	≥0.5	PASS
	MCH	12.56	≥0.5	PASS
	HCH	11.30	≥0.5	PASS
11N20SISO	LCH	10.11	≥0.5	PASS
	MCH	10.10	≥0.5	PASS
	HCH	11.32	≥0.5	PASS
11N40SISO	LCH	33.81	≥0.5	PASS
	MCH	33.80	≥0.5	PASS
	HCH	32.55	≥0.5	PASS



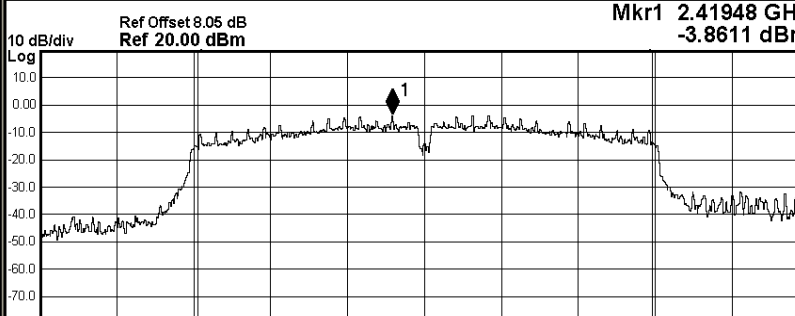
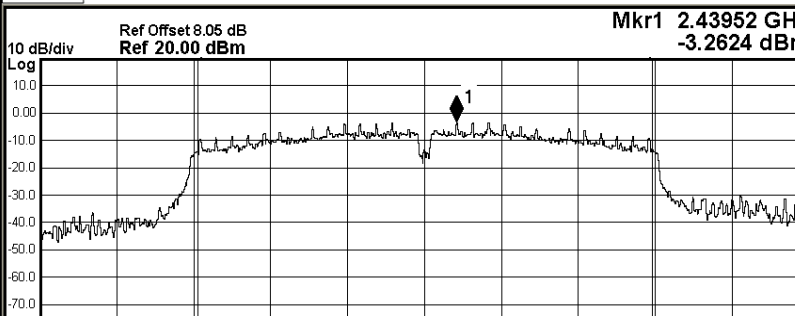
11B/MCH	Agilent Spectrum Analyzer - Occupied BW RL RF SQ AC SENSE:INT ALIGN AUTO 03:29:39 PM Jan 20, 2021 Center Freq 2.43700000 GHz Center Freq: 2.43700000 GHz Radio Std: None Trig: Free Run AvgHold: 1/1 #IFGain:Low #Atten: 30 dB Radio Device: BTS		Frequency
	Ref Offset 8.05 dB Mkr1 2.43649 GHz Ref 20.00 dB 4.0262 dBm 		Center Freq 2.43700000 GHz
	Center 2.437 GHz Span 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.933 ms		CF Step 3.000000 MHz Auto Man
	Occupied Bandwidth Total Power 20.1 dBm 14.738 MHz Transmit Freq Error 102.07 kHz OBW Power 99.00 % x dB Bandwidth 9.115 MHz x dB -6.00 dB		Freq Offset 0 Hz

11B/HCH	Agilent Spectrum Analyzer - Occupied BW RL RF SQ AC SENSE:INT ALIGN AUTO 03:31:40 PM Jan 20, 2021 Center Freq 2.46200000 GHz Center Freq: 2.46200000 GHz Radio Std: None Trig: Free Run AvgHold: >1/1 #IFGain:Low #Atten: 30 dB Radio Device: BTS		Frequency
	Ref Offset 8.05 dB Mkr1 2.46101 GHz Ref 20.00 dB 4.3614 dBm 		Center Freq 2.46200000 GHz
	Center 2.462 GHz Span 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.933 ms		CF Step 3.000000 MHz Auto Man
	Occupied Bandwidth Total Power 20.5 dBm 14.718 MHz Transmit Freq Error 101.85 kHz OBW Power 99.00 % x dB Bandwidth 9.118 MHz x dB -6.00 dB		Freq Offset 0 Hz





<p>11N20SISO/MCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.43700000 GHz</p> <p>Center Freq: 2.43700000 GHz Trig: Free Run #IFGain:Low #Atten: 30 dB</p> <p>Mkr1 2.43829 GHz 0.32177 dBm</p> <p>10 dB/div Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms</p> <p>Occupied Bandwidth 16.804 MHz Total Power 16.1 dBm</p> <p>Transmit Freq Error 28.510 kHz OBW Power 99.00 % x dB Bandwidth 10.10 MHz x dB -6.00 dB</p>	<p>Frequency</p> <p>Center Freq 2.43700000 GHz</p> <p>CF Step 3.000000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>
<p>11N20SISO/HCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.46200000 GHz</p> <p>Center Freq: 2.46200000 GHz Trig: Free Run #IFGain:Low #Atten: 30 dB</p> <p>Mkr1 2.46326 GHz 0.68434 dBm</p> <p>10 dB/div Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms</p> <p>Occupied Bandwidth 16.819 MHz Total Power 16.3 dBm</p> <p>Transmit Freq Error -8.202 kHz OBW Power 99.00 % x dB Bandwidth 11.32 MHz x dB -6.00 dB</p>	<p>Frequency</p> <p>Center Freq 2.46200000 GHz</p> <p>CF Step 3.000000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>

<p>11N40SISO/LCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>RL RF 50 Ω AC SENSE:INT ALIGN AUTO 04:42:52 PM Jan 20, 2021</p> <p>Center Freq 2.42200000 GHz Center Freq: 2.42200000 GHz Radio Std: None Trig: Free Run Avg/Hold: 1/1 #IFGain:Low #Atten: 30 dB Radio Device: BTS</p>  <p>10 dB/div Ref Offset 8.05 dB Mkr1 2.41948 GHz Ref 20.00 dBm -3.8611 dBm</p> <p>Center 2.422 GHz Span 60 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 5.8 ms</p> <p>Occupied Bandwidth Total Power 16.1 dBm 35.324 MHz</p> <p>Transmit Freq Error 109.09 kHz OBW Power 99.00 % x dB Bandwidth 33.81 MHz x dB -6.00 dB</p> <p>MSG STATUS</p>	<p>Frequency</p> <p>Center Freq 2.42200000 GHz</p> <p>CF Step 6.000000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>
<p>11N40SISO/MCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>RL RF 50 Ω AC SENSE:INT ALIGN AUTO 03:52:36 PM Jan 20, 2021</p> <p>Center Freq 2.43700000 GHz Center Freq: 2.43700000 GHz Radio Std: None Trig: Free Run Avg/Hold: 1/1 #IFGain:Low #Atten: 30 dB Radio Device: BTS</p>  <p>10 dB/div Ref Offset 8.05 dB Mkr1 2.43952 GHz Ref 20.00 dBm -3.2624 dBm</p> <p>Center 2.437 GHz Span 60 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 5.8 ms</p> <p>Occupied Bandwidth Total Power 16.4 dBm 35.411 MHz</p> <p>Transmit Freq Error 80.130 kHz OBW Power 99.00 % x dB Bandwidth 33.80 MHz x dB -6.00 dB</p> <p>MSG STATUS</p>	<p>Frequency</p> <p>Center Freq 2.43700000 GHz</p> <p>CF Step 6.000000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>

11N40SISO/HCH

Agilent Spectrum Analyzer - Occupied BW

<input checked="" type="checkbox"/> RL	<input type="checkbox"/> RF	<input type="checkbox"/> SQ	<input type="checkbox"/> AC	<input type="checkbox"/> SENSE:INT	<input type="checkbox"/> ALIGN AUTO	03:54:38 PM Jan 20, 2021
Center Freq 2.45200000 GHz			Center Freq: 2.45200000 GHz		Radio Std: None	
			Trig: Free Run		Avg Hold: 1/1	
#IF Gain: Low			#Atten: 30 dB		Radio Device: BTS	

10 dB/div	Ref Offset 8.05 dB	Mkr1 2.44954 GHz
Log	Ref 20.00 dBm	-3.1140 dBm

Center 2.452 GHz	#VBW 300 kHz	Span 60 MHz
#Res BW 100 kHz		Sweep 5.8 ms

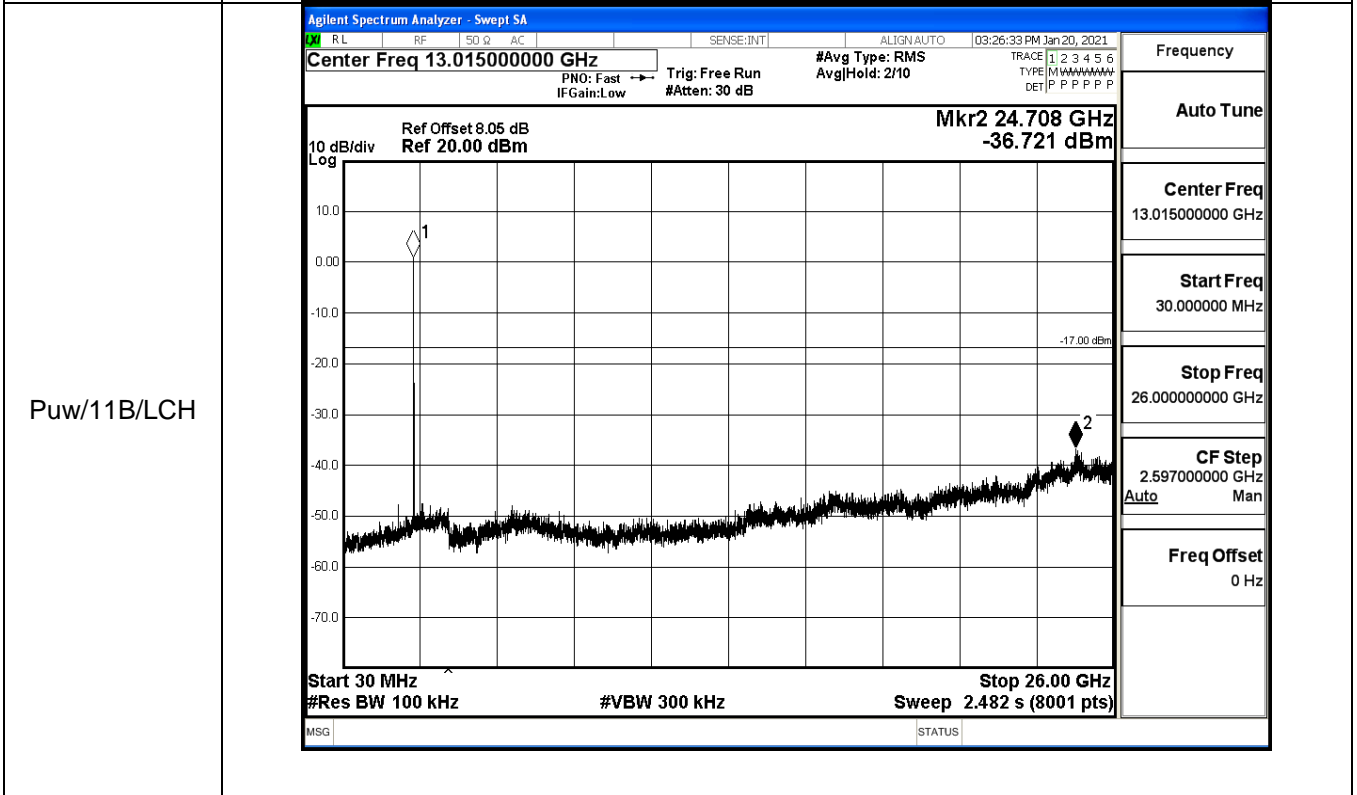
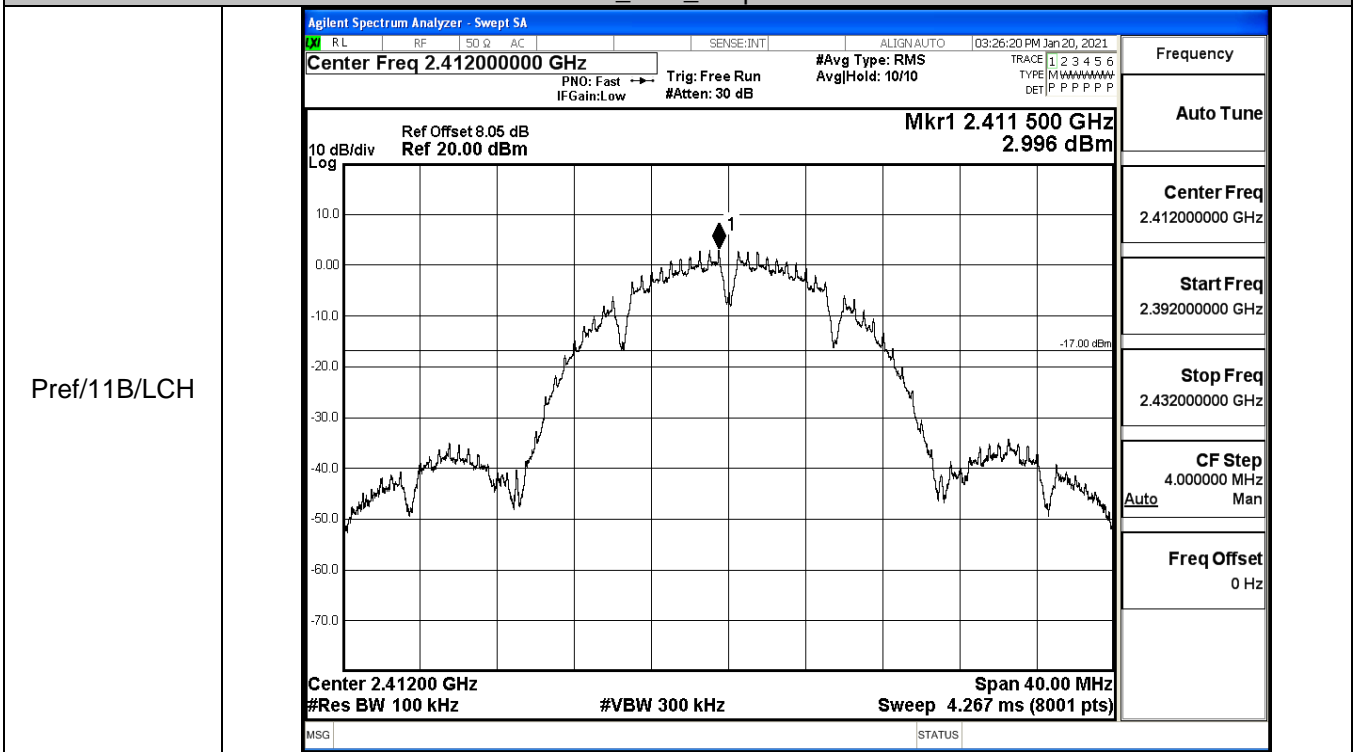
Occupied Bandwidth	Total Power	16.6 dBm
35.406 MHz		
Transmit Freq Error	12.538 kHz	OBW Power
x dB Bandwidth	32.55 MHz	x dB
		99.00 %
		-6.00 dB

CF Step	6.000000 MHz
Auto	Man
Freq Offset	0 Hz

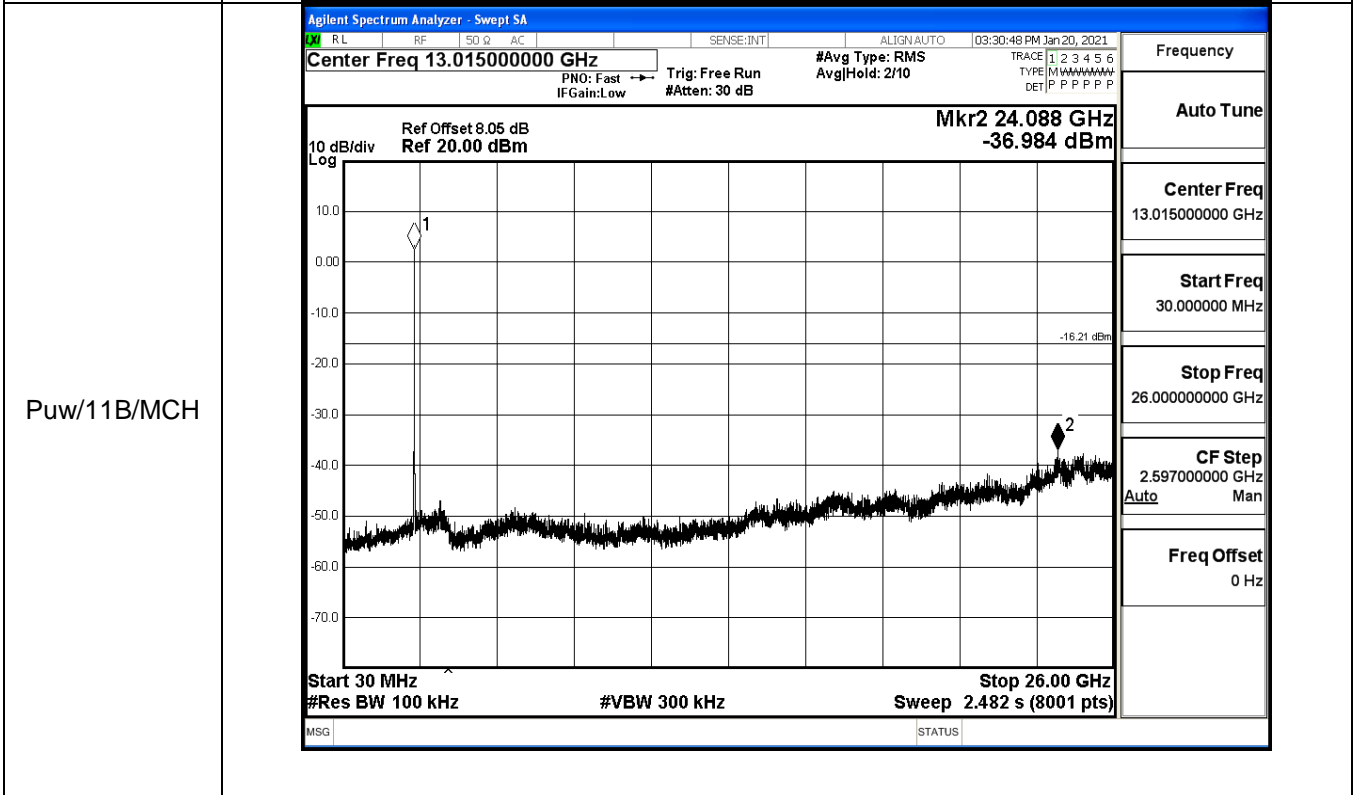
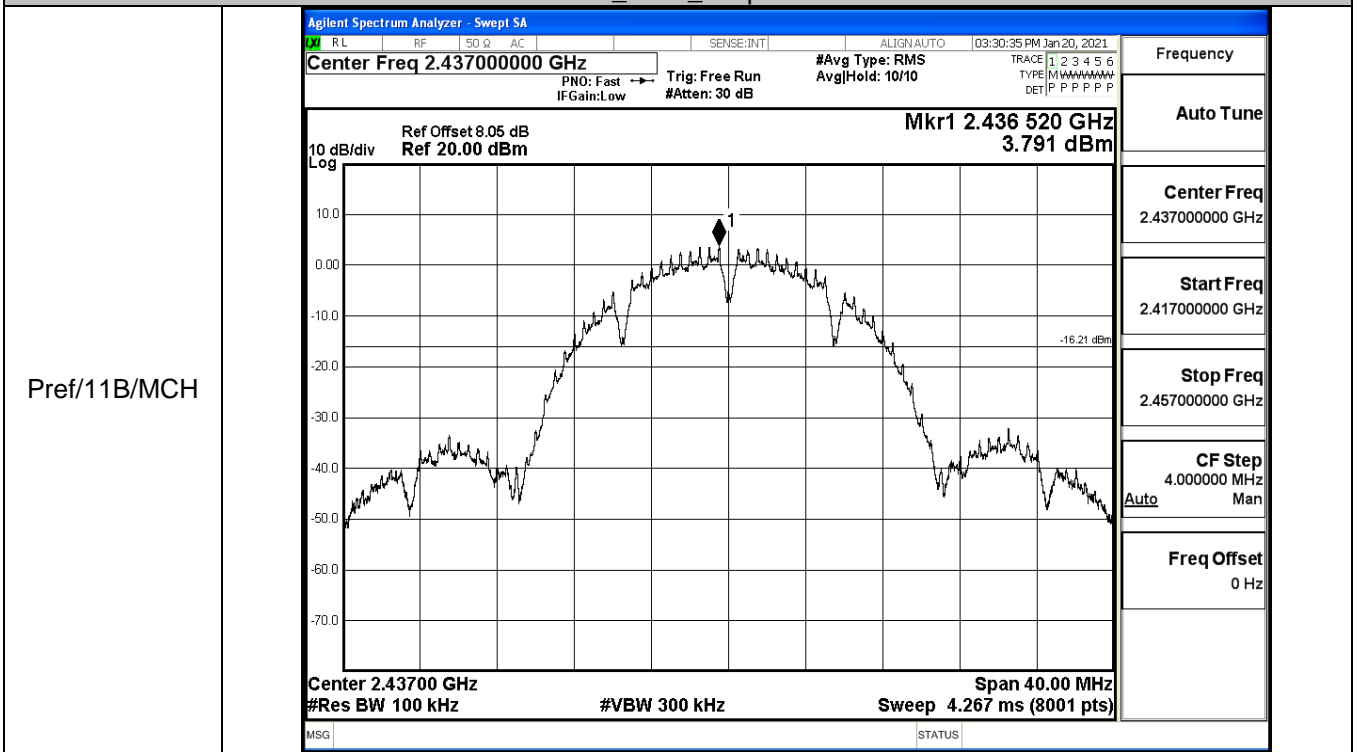
A.5 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	2.996	-36.721	-17.004	PASS
	MCH	3.791	-36.984	-16.209	PASS
	HCH	4.171	-37.766	-15.829	PASS
11G	LCH	-0.66	-37.836	-20.660	PASS
	MCH	-1.642	-37.569	-21.642	PASS
	HCH	-0.595	-37.928	-20.595	PASS
11N20 SISO	LCH	-1.12	-38.021	-21.120	PASS
	MCH	-0.645	-37.695	-20.645	PASS
	HCH	0.118	-37.294	-19.882	PASS
11N40 SISO	LCH	-4.048	-37.391	-24.048	PASS
	MCH	-3.424	-37.508	-23.424	PASS
	HCH	-3.314	-37.780	-23.314	PASS

11B_LCH_Graphs

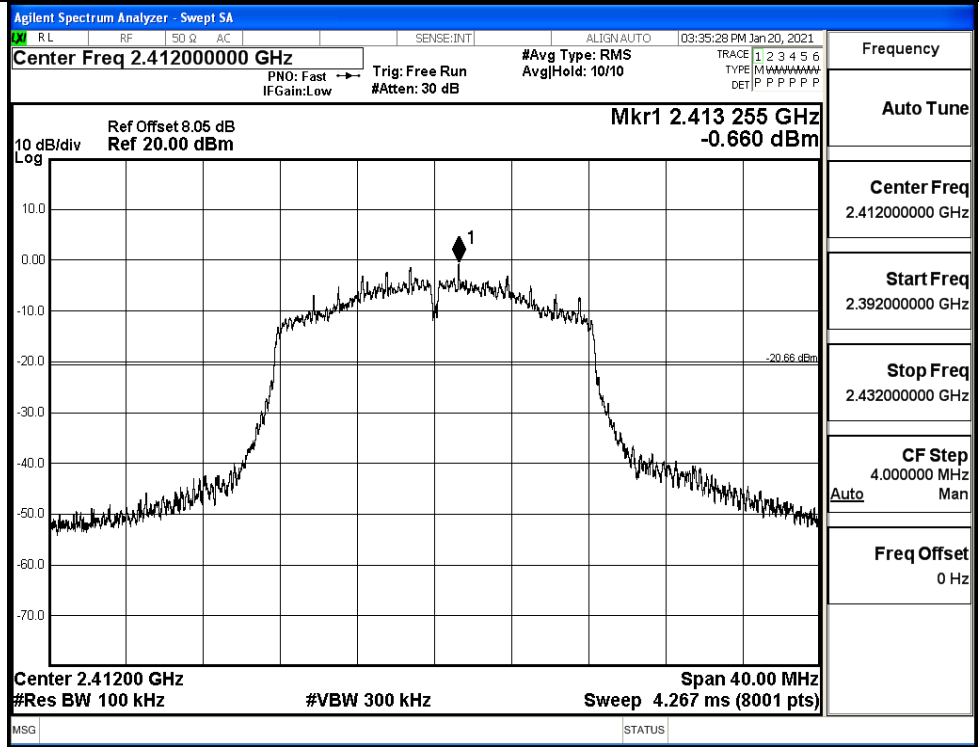


11B_MCH_Graphs

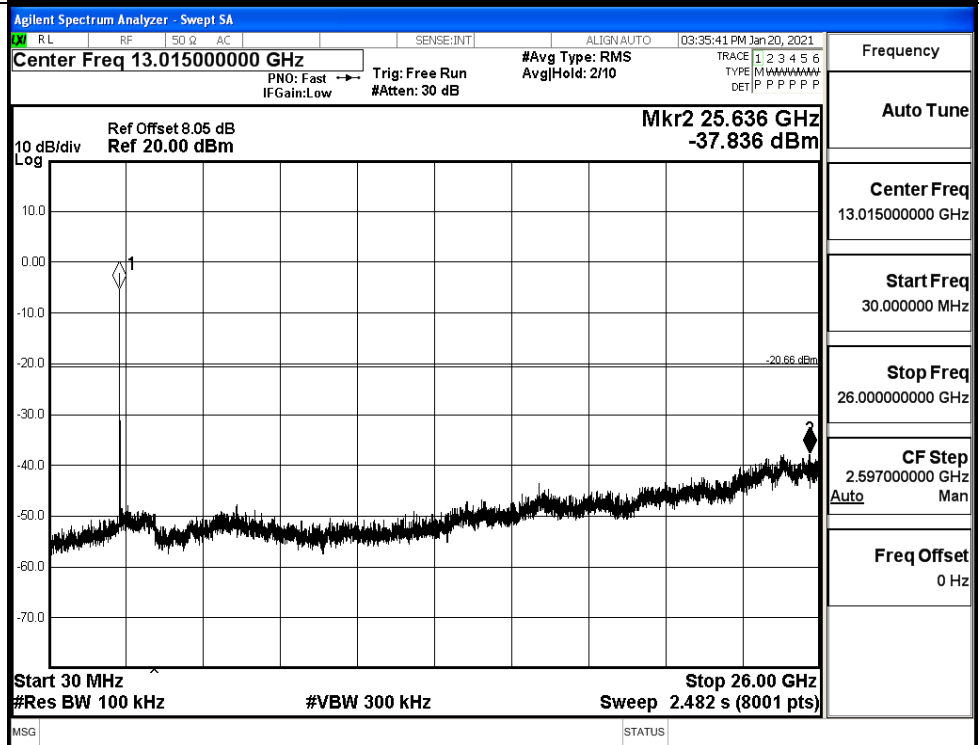


11G_LCH_Graphs

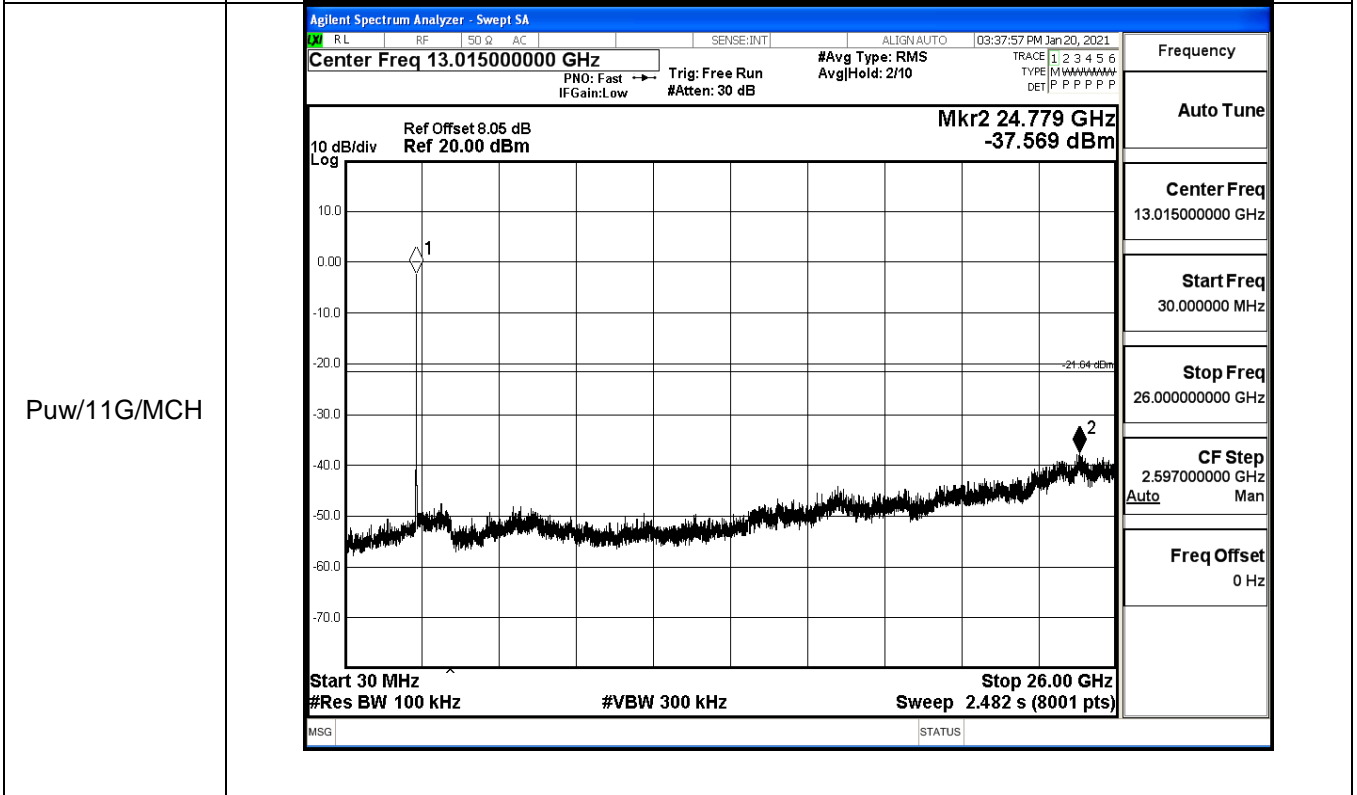
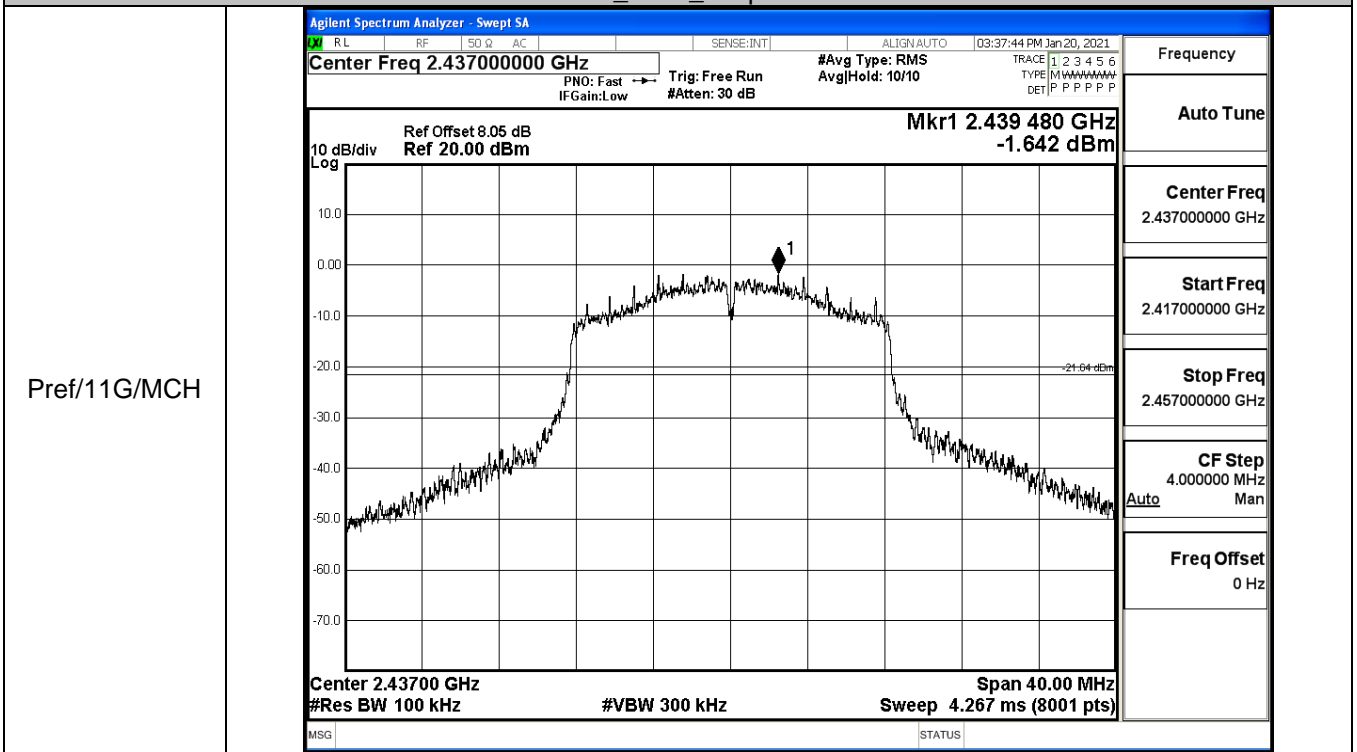
Pref/11G/LCH



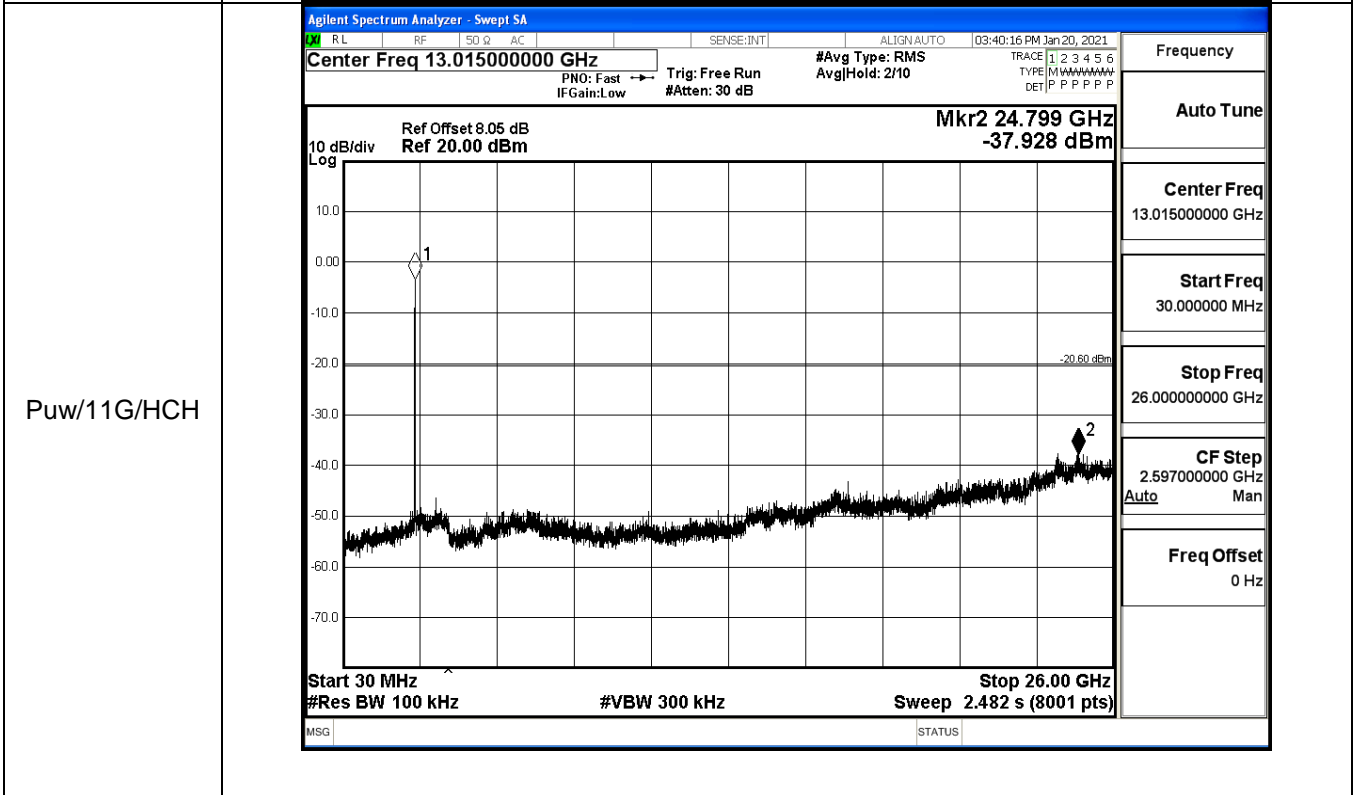
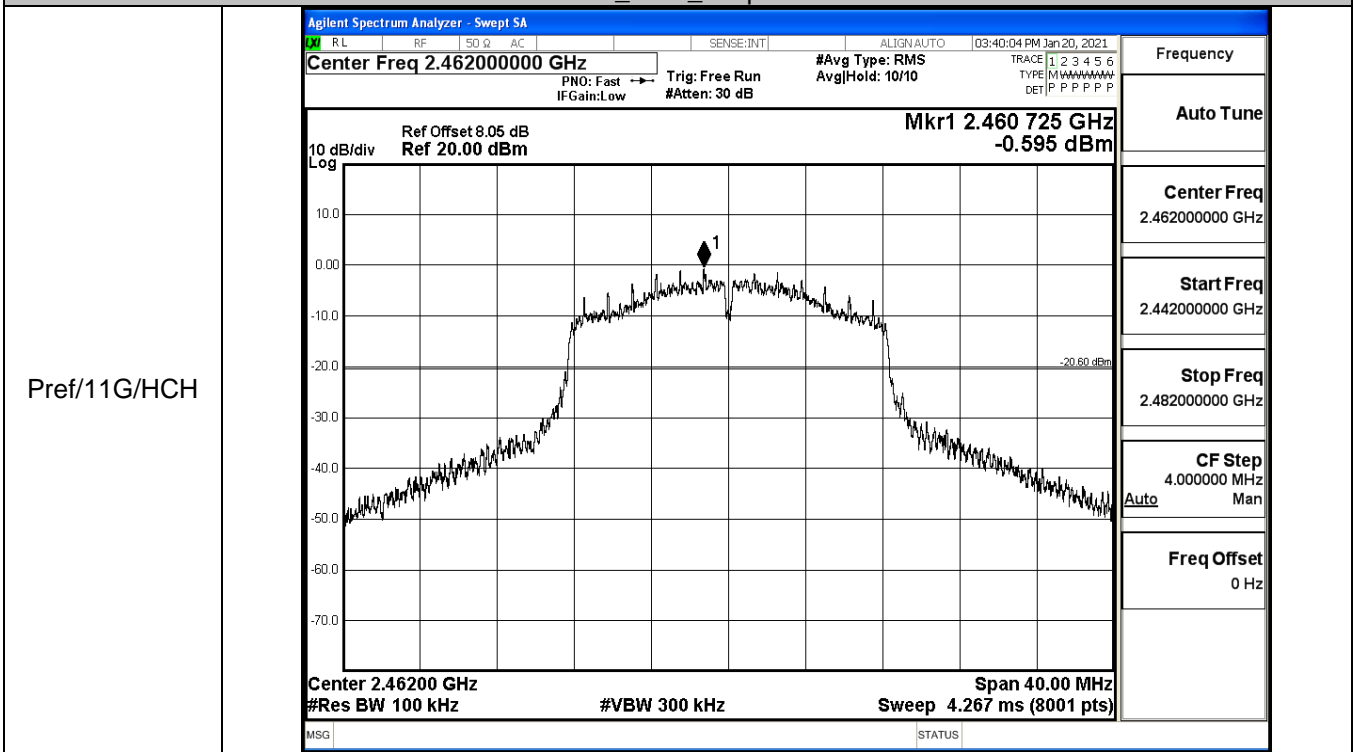
Puw/11G/LCH



11G_MCH_Graphs

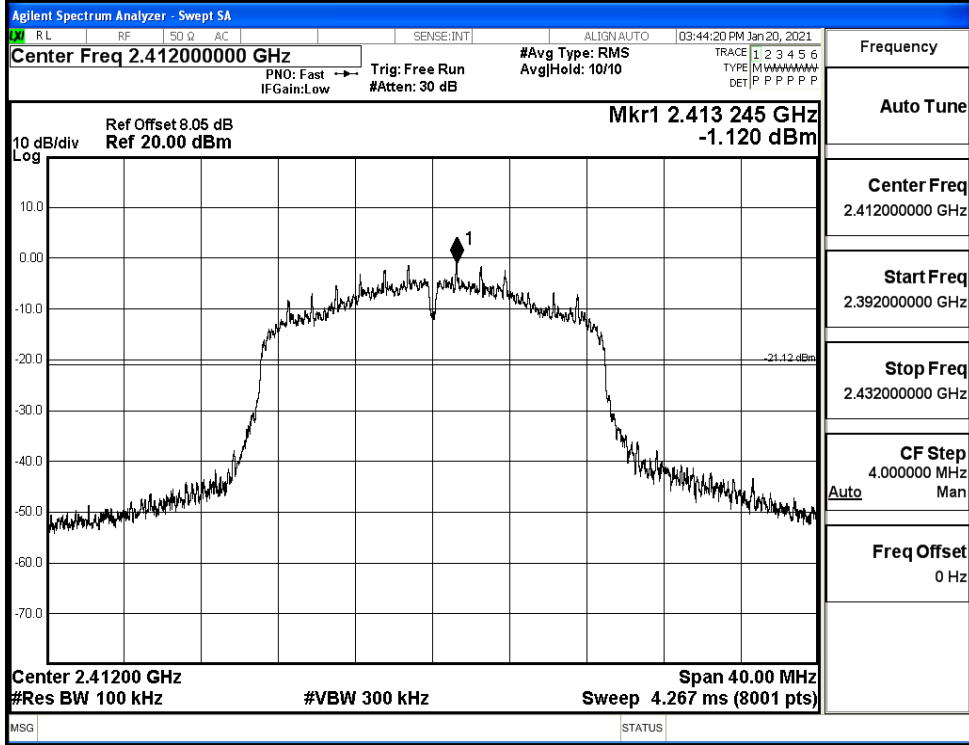


11G_HCH_Graphs

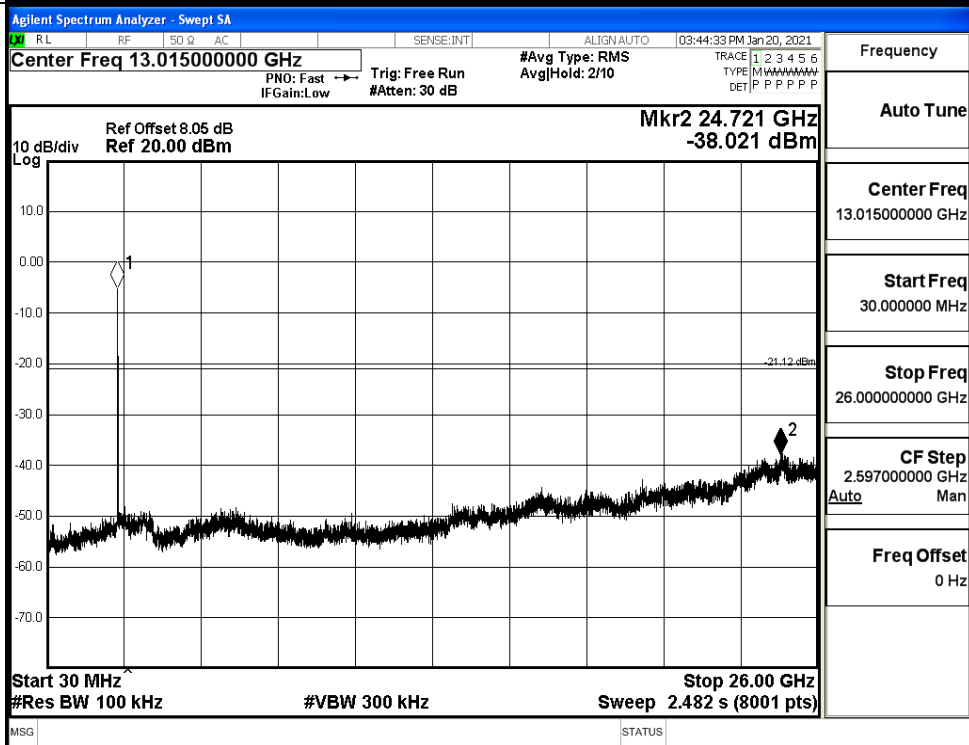


11N20SISO_LCH_Graphs

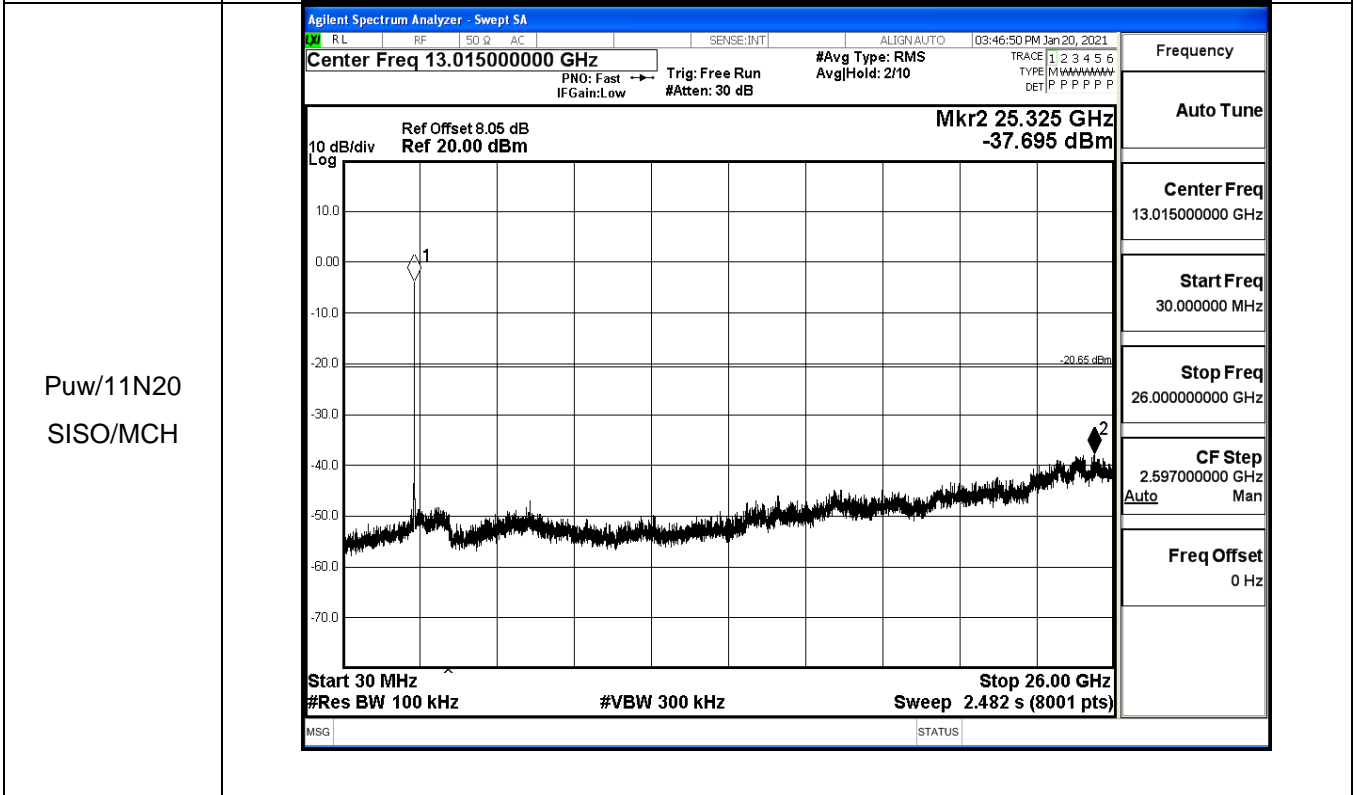
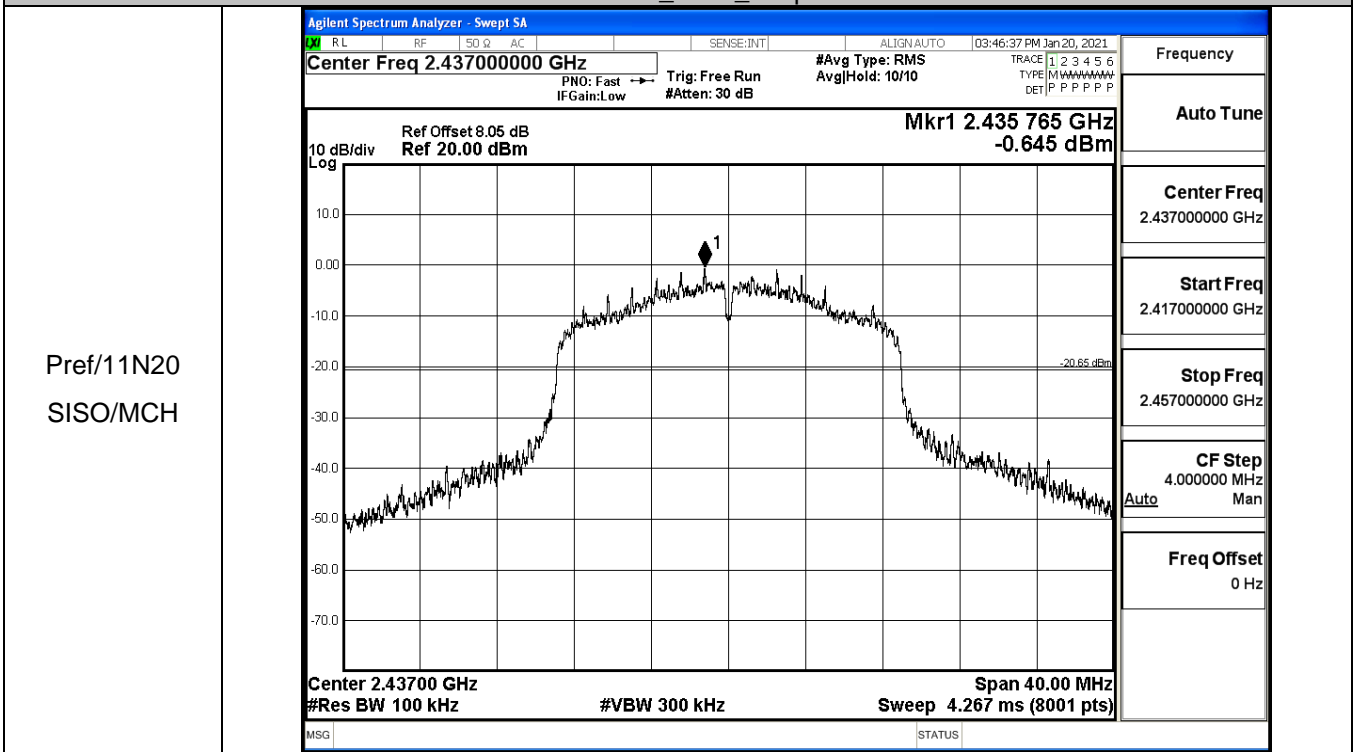
Pref/11N20SIS
O/LCH



Puw/11N20
SISO/LCH

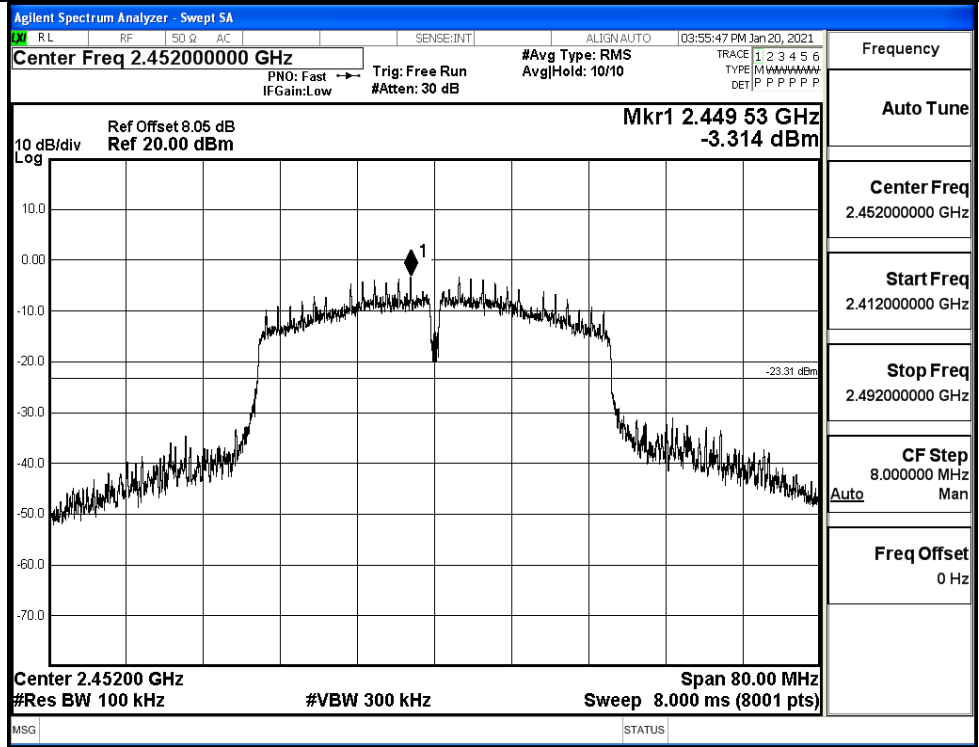


11N20SISO_MCH_Graphs

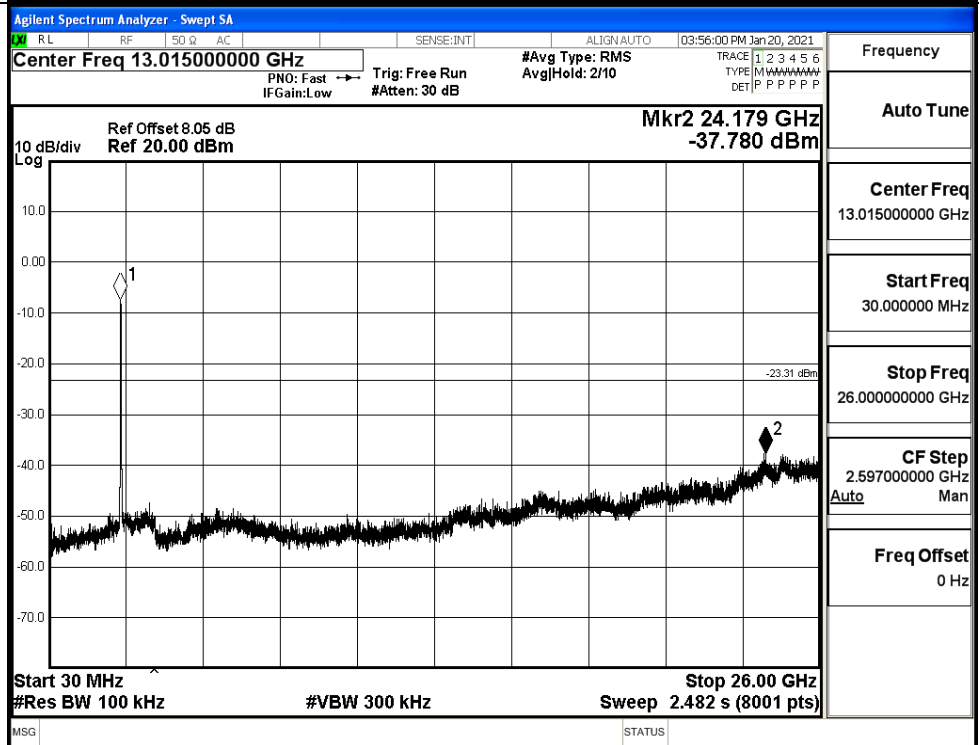


11N40SISO_HCH_Graphs

Pref/11N40
SISO/HCH

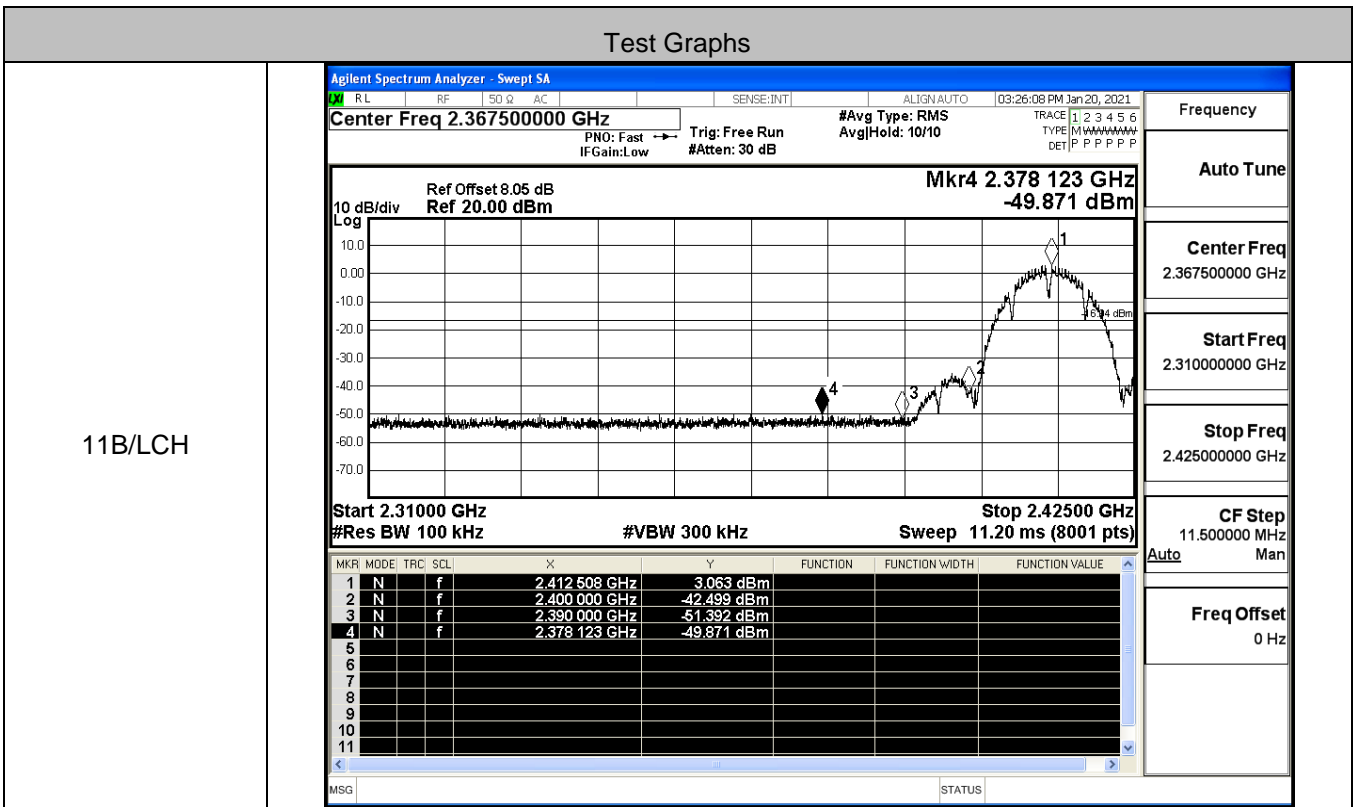


Puw/11N40
SISO/HCH

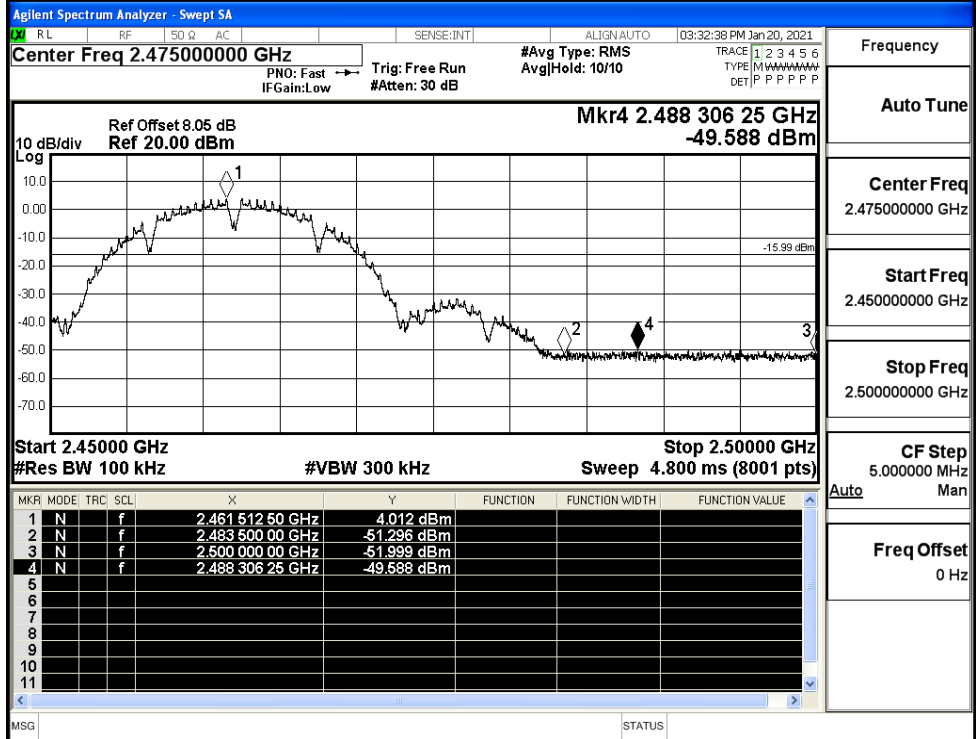


A.6 Band-edge for RF Conducted Emissions

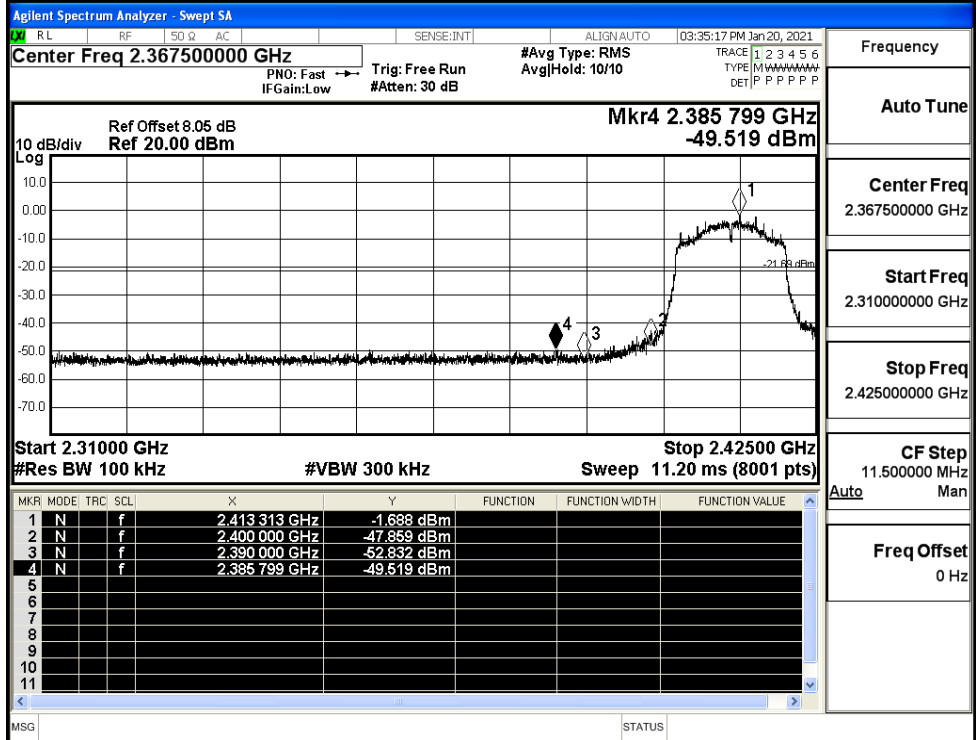
Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	3.063	-49.871	-16.94	PASS
	HCH	4.012	-49.588	-15.99	PASS
11G	LCH	-1.688	-49.519	-21.69	PASS
	HCH	-0.154	-47.582	-20.15	PASS
11N20SISO	LCH	-0.695	-48.459	-20.7	PASS
	HCH	0.138	-47.238	-19.86	PASS
11N40SISO	LCH	-4.039	-46.168	-24.04	PASS
	HCH	-3.314	-36.695	-23.31	PASS



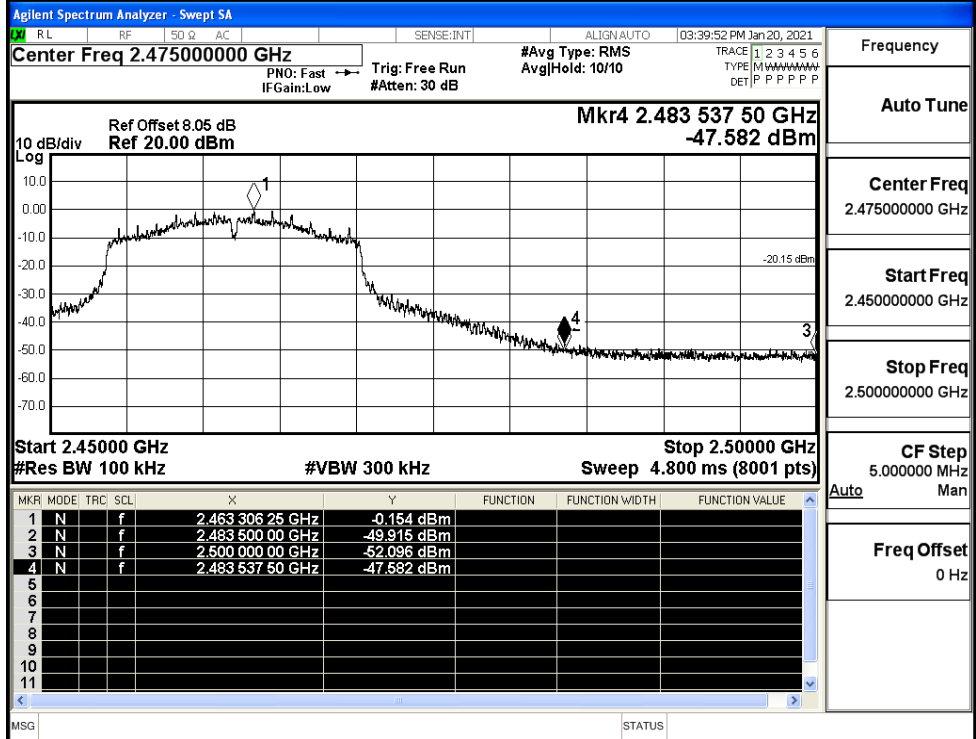
11B/HCH



11G/LCH

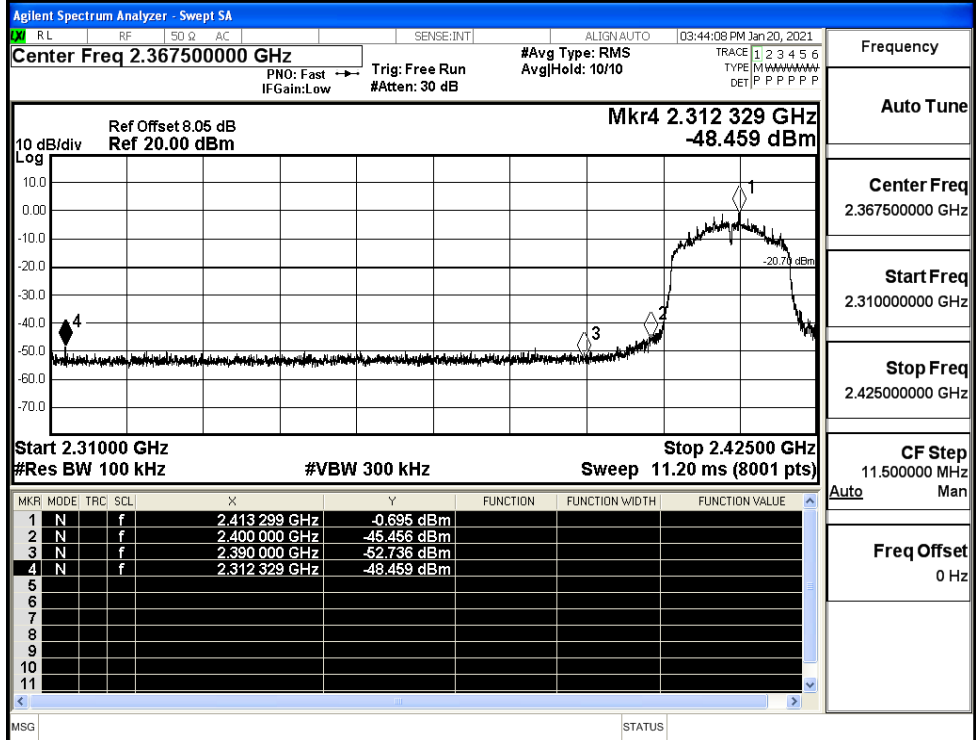


11G/HCH



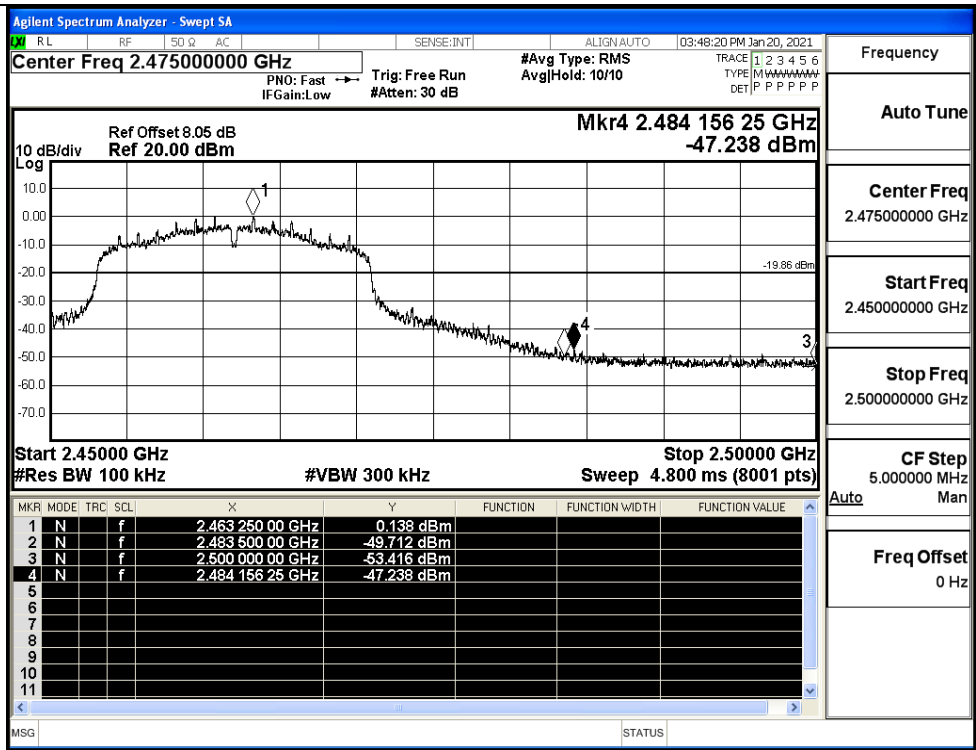
Frequency	2.475000000 GHz
Auto Tune	
Center Freq	2.475000000 GHz
Start Freq	2.450000000 GHz
Stop Freq	2.500000000 GHz
CF Step	5.000000 MHz
Freq Offset	0 Hz

11N20SISO/LCH



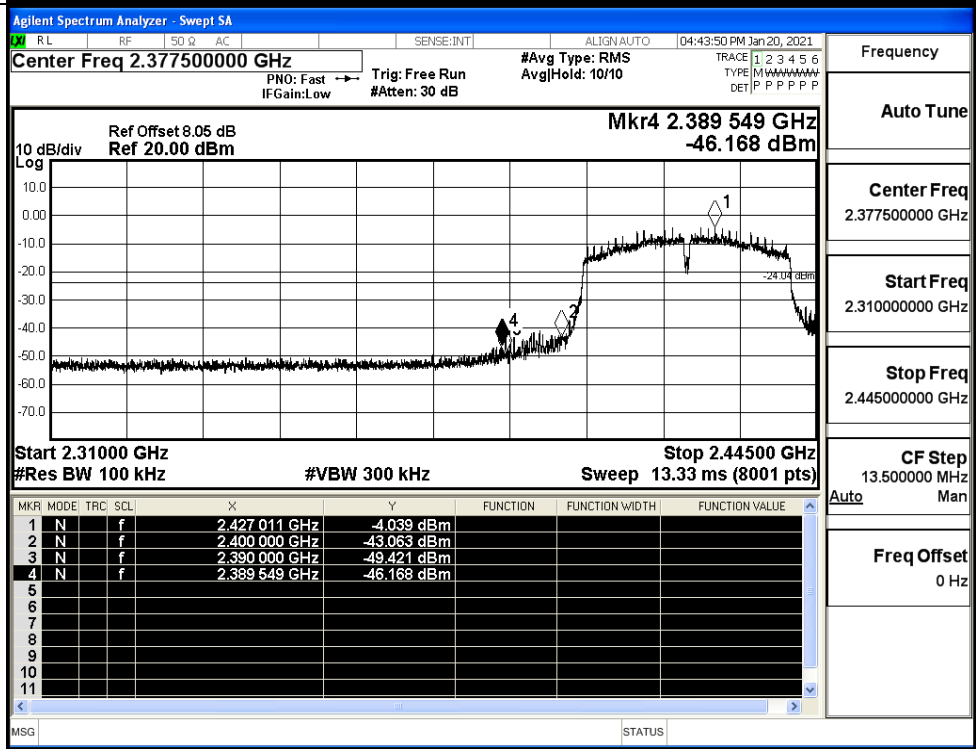
Frequency	2.367500000 GHz
Auto Tune	
Center Freq	2.367500000 GHz
Start Freq	2.310000000 GHz
Stop Freq	2.425000000 GHz
CF Step	11.500000 MHz
Freq Offset	0 Hz

11N20SISO/HCH



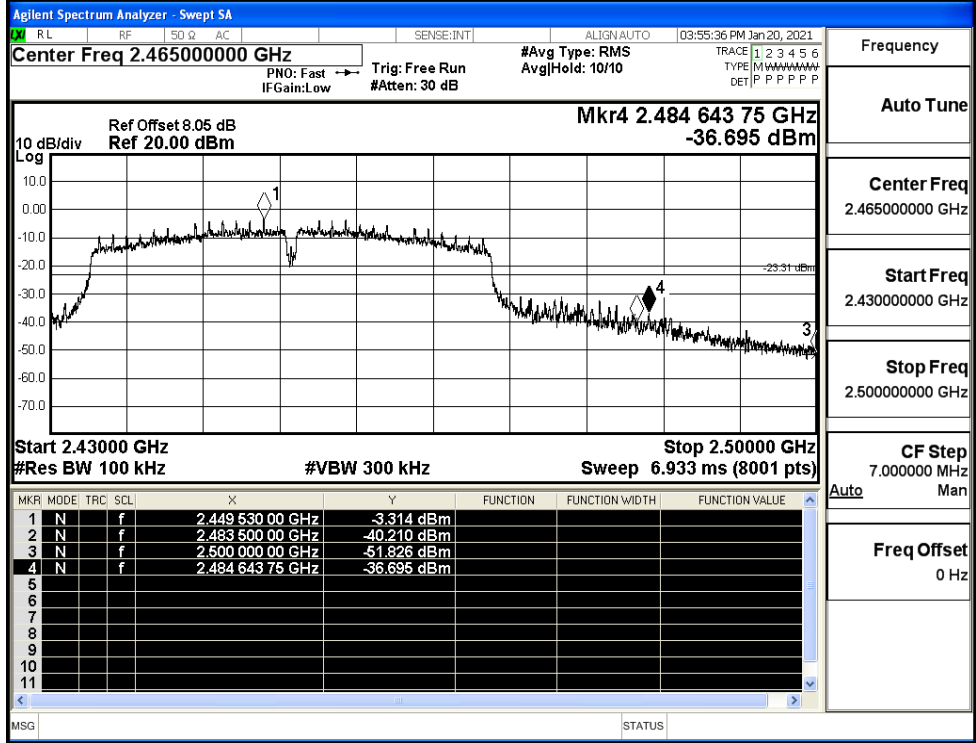
Frequency	2.475000000 GHz
Auto Tune	
Center Freq	2.475000000 GHz
Start Freq	2.450000000 GHz
Stop Freq	2.500000000 GHz
CF Step	5.000000 MHz
Freq Offset	0 Hz

11N40SISO/LCH



Frequency	2.377500000 GHz
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

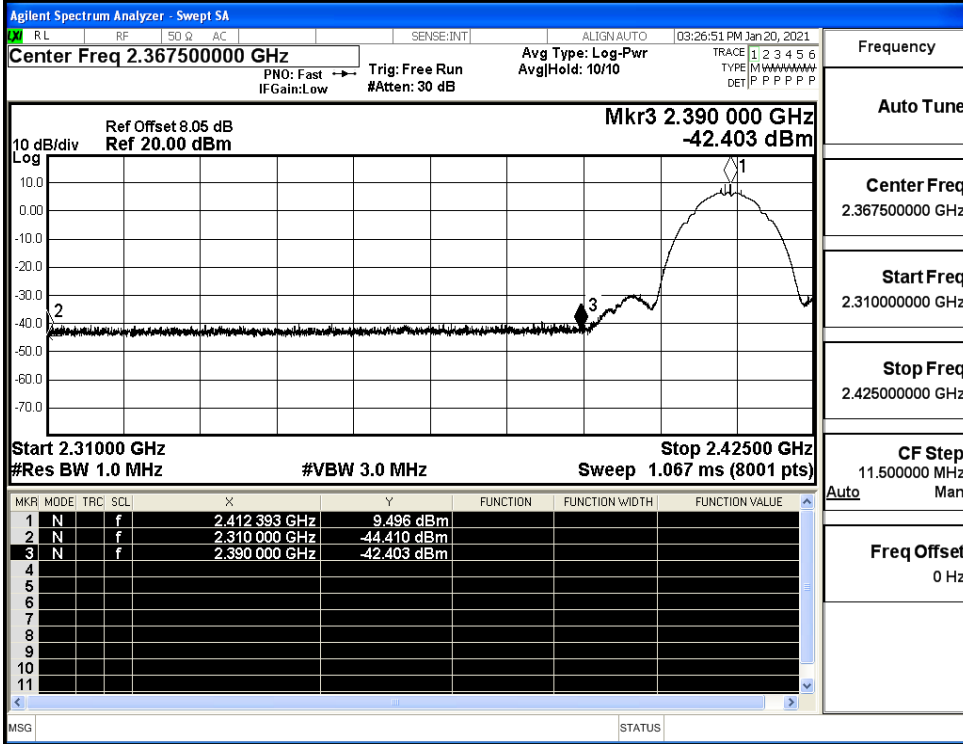


A.7 Restrict-band band-edge measurements

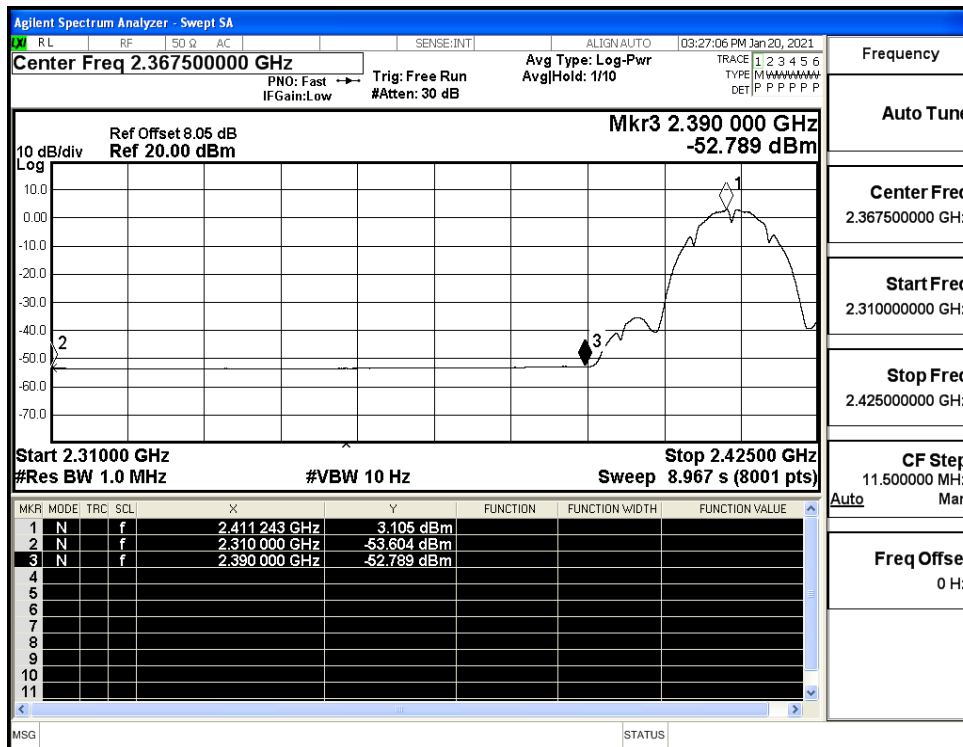
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBu V/m]	Verdict
11B	2412	Ant1	2310.0	-44.41	2.0	0	52.85	PEAK	74	PASS
	2412	Ant1	2310.0	-53.60	2.0	0	43.65	AV	54	PASS
	2412	Ant1	2390.0	-42.40	2.0	0	54.85	PEAK	74	PASS
	2412	Ant1	2390.0	-52.79	2.0	0	44.47	AV	54	PASS
	2462	Ant1	2483.5	-41.55	2.0	0	55.71	PEAK	74	PASS
	2462	Ant1	2483.5	-52.32	2.0	0	44.94	AV	54	PASS
	2462	Ant1	2500.0	-42.18	2.0	0	55.08	PEAK	74	PASS
	2462	Ant1	2500.0	-52.39	2.0	0	44.86	AV	54	PASS
11G	2412	Ant1	2310.0	-42.79	2.0	0	54.47	PEAK	74	PASS
	2412	Ant1	2310.0	-53.54	2.0	0	43.72	AV	54	PASS
	2412	Ant1	2390.0	-41.96	2.0	0	55.3	PEAK	74	PASS
	2412	Ant1	2390.0	-52.79	2.0	0	44.47	AV	54	PASS
	2462	Ant1	2483.5	-37.22	2.0	0	60.04	PEAK	74	PASS
	2462	Ant1	2483.5	-50.65	2.0	0	46.61	AV	54	PASS
	2462	Ant1	2500.0	-41.46	2.0	0	55.79	PEAK	74	PASS
	2462	Ant1	2500.0	-52.36	2.0	0	44.9	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-43.59	2.0	0	53.67	PEAK	74	PASS
	2412	Ant1	2310.0	-53.56	2.0	0	43.7	AV	54	PASS
	2412	Ant1	2390.0	-43.22	2.0	0	54.04	PEAK	74	PASS
	2412	Ant1	2390.0	-52.81	2.0	0	44.44	AV	54	PASS
	2462	Ant1	2483.5	-38.96	2.0	0	58.3	PEAK	74	PASS
	2462	Ant1	2483.5	-50.51	2.0	0	46.75	AV	54	PASS
	2462	Ant1	2500.0	-40.75	2.0	0	56.51	PEAK	74	PASS
	2462	Ant1	2500.0	-52.35	2.0	0	44.91	AV	54	PASS
11N40 SISO	2422	Ant1	2310.0	-43.23	2.0	0	54.03	PEAK	74	PASS
	2422	Ant1	2310.0	-53.52	2.0	0	43.74	AV	54	PASS

	2422	Ant1	2390.0	-37.77	2.0	0	59.49	PEAK	74	PASS
	2422	Ant1	2390.0	-50.33	2.0	0	46.93	AV	54	PASS
	2452	Ant1	2483.5	-28.29	2.0	0	68.97	PEAK	74	PASS
	2452	Ant1	2483.5	-42.85	2.0	0	54.41	AV	54	PASS
	2452	Ant1	2500.0	-39.92	2.0	0	57.34	PEAK	74	PASS
	2452	Ant1	2500.0	-51.10	2.0	0	46.15	AV	54	PASS

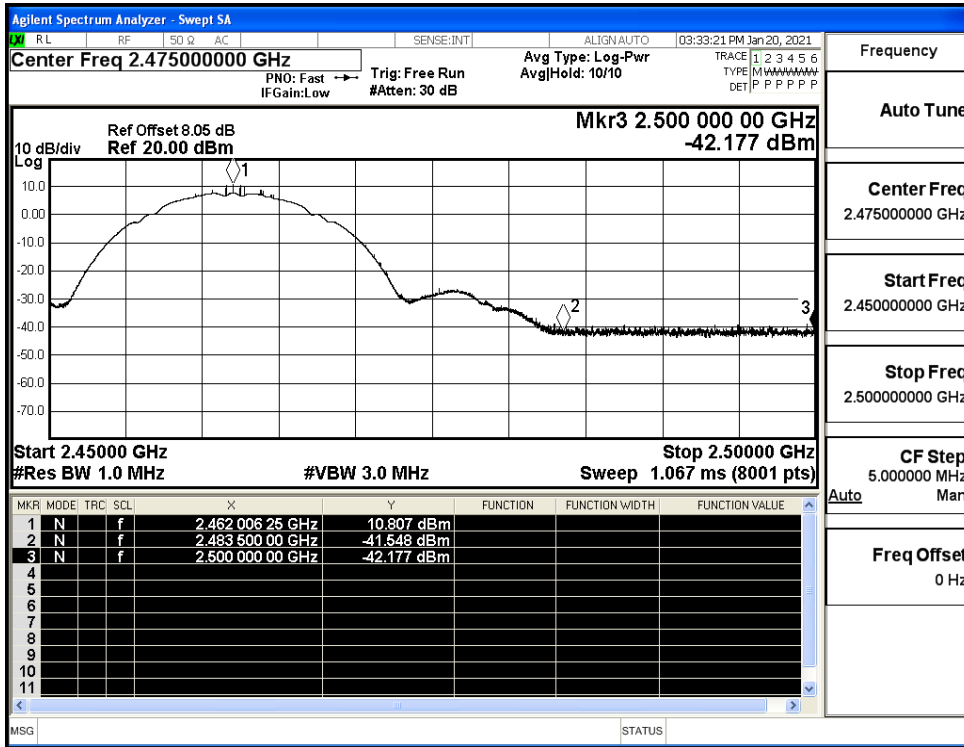
Restrict-band band-edge measurements_11B_2412_Ant1_PEAK



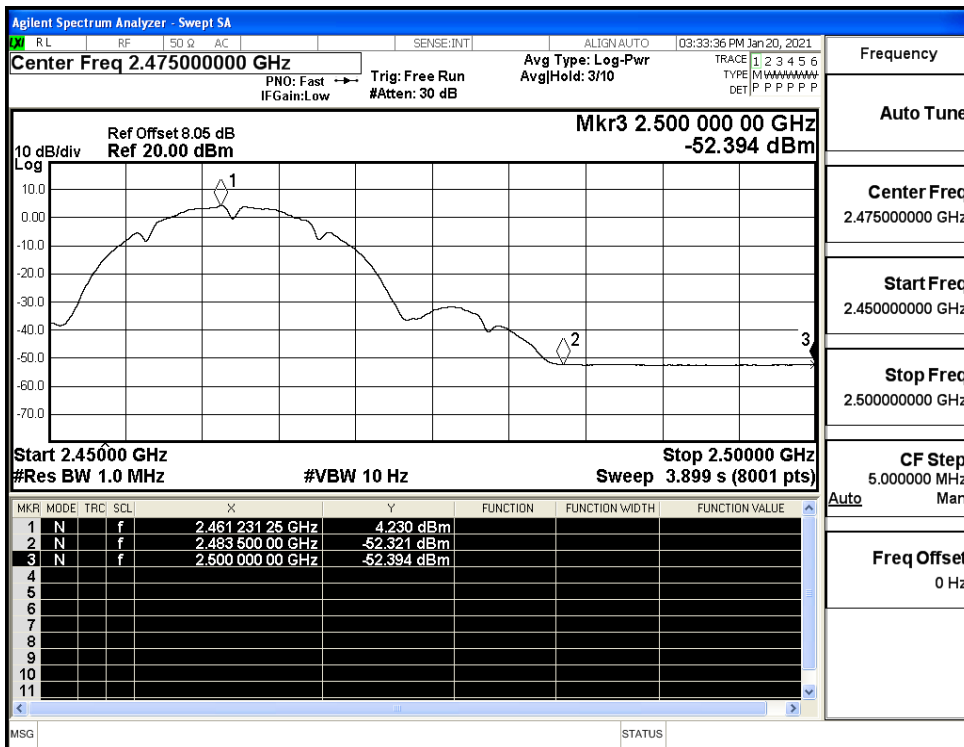
Restrict-band band-edge measurements_11B_2412_Ant1_AV



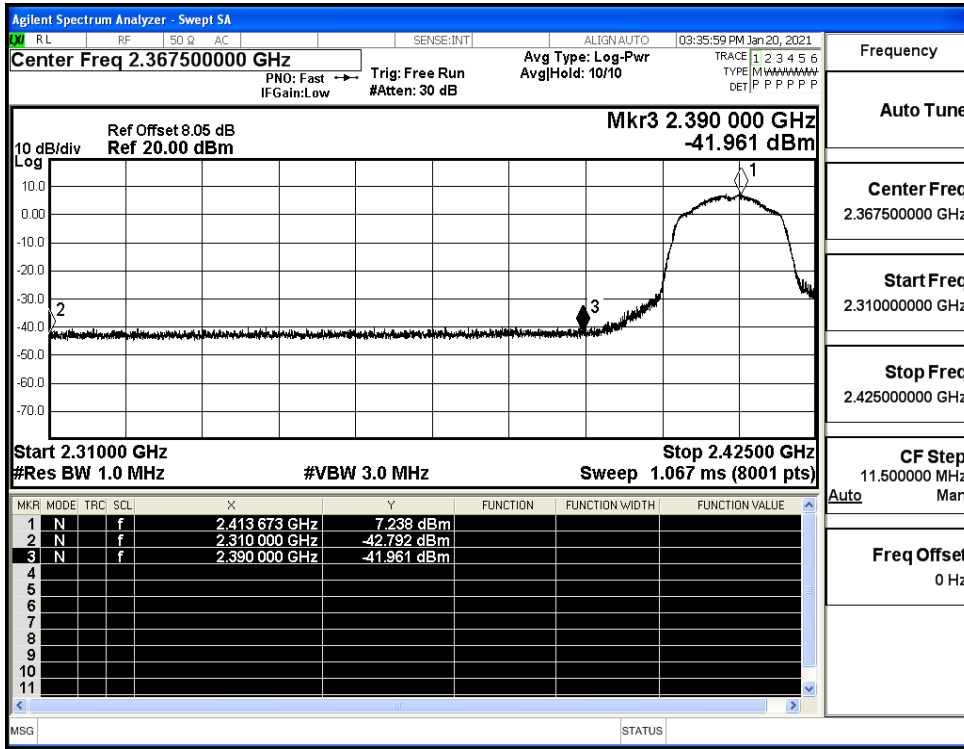
Restrict-band band-edge measurements_11B_2462_Ant1_PEAK



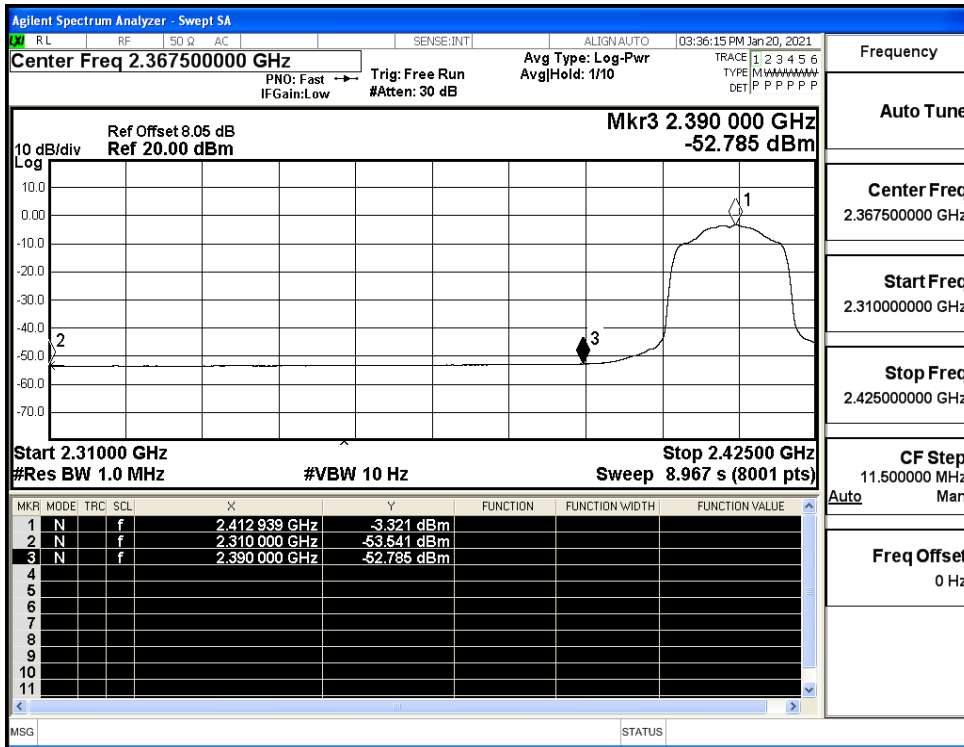
Restrict-band band-edge measurements_11B_2462_Ant1_AV



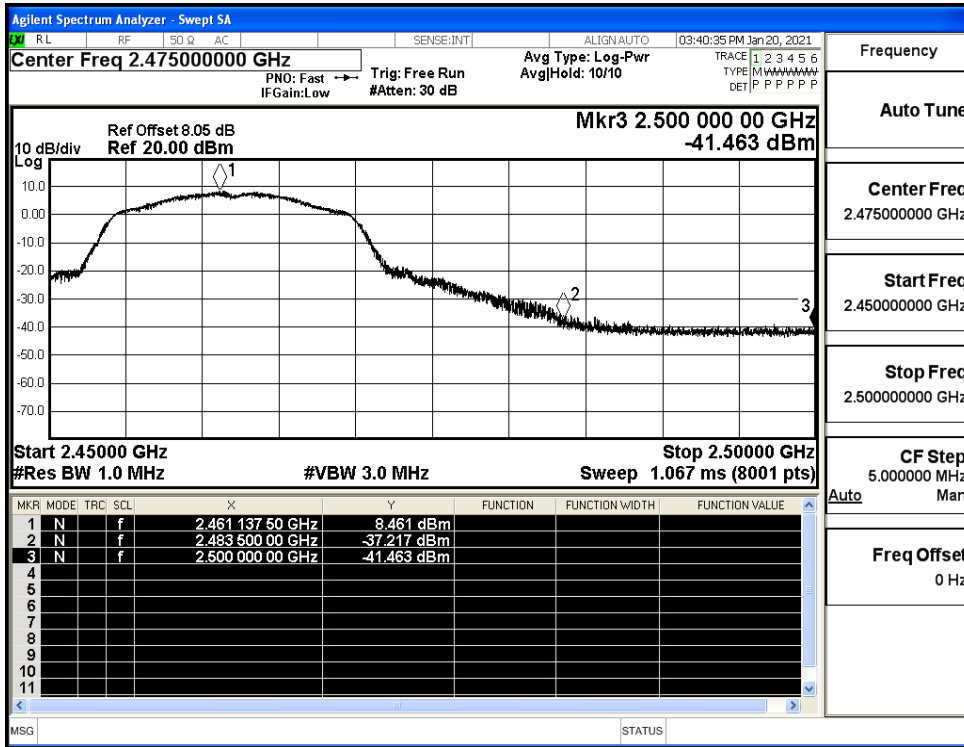
Restrict-band band-edge measurements_11G_2412_Ant1_PEAK



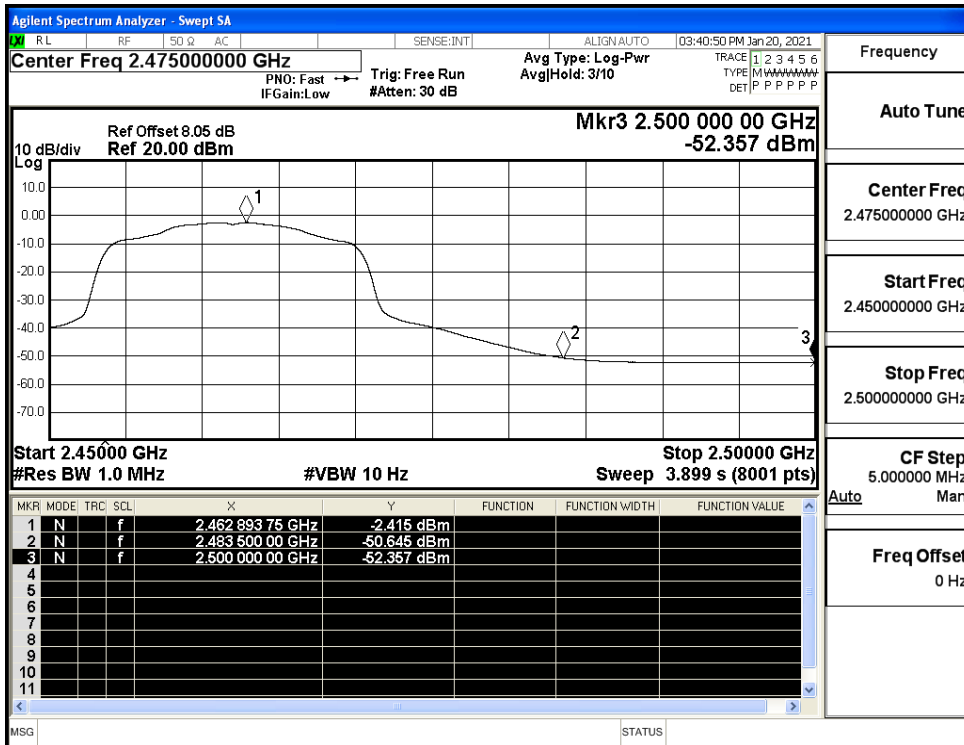
Restrict-band band-edge measurements_11G_2412_Ant1_AV



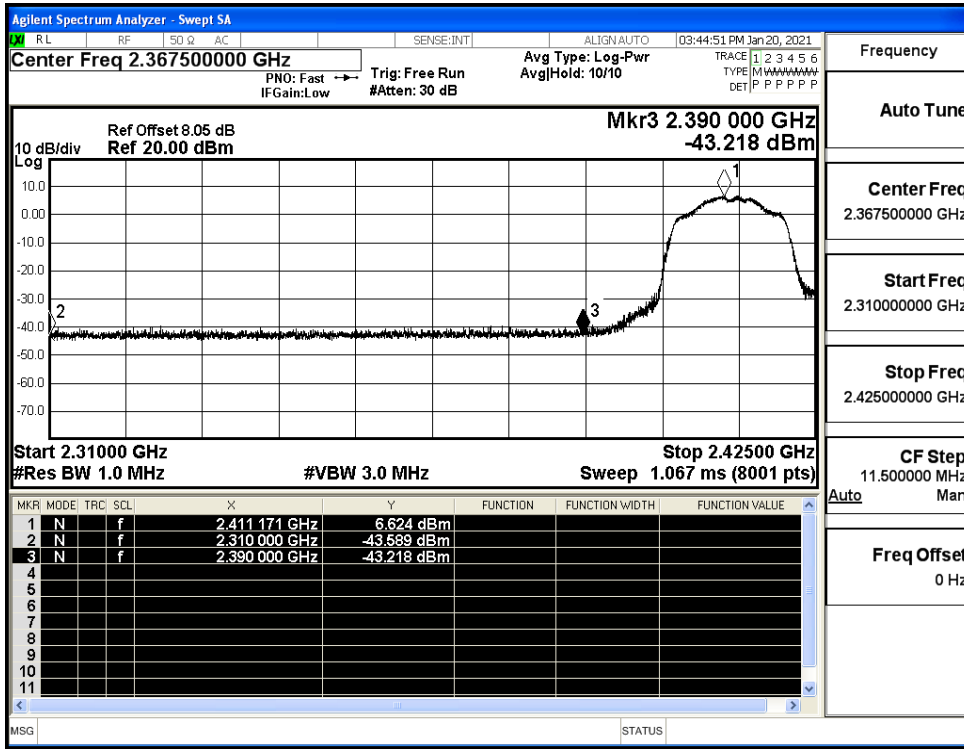
Restrict-band band-edge measurements_11G_2462_Ant1_PEAK



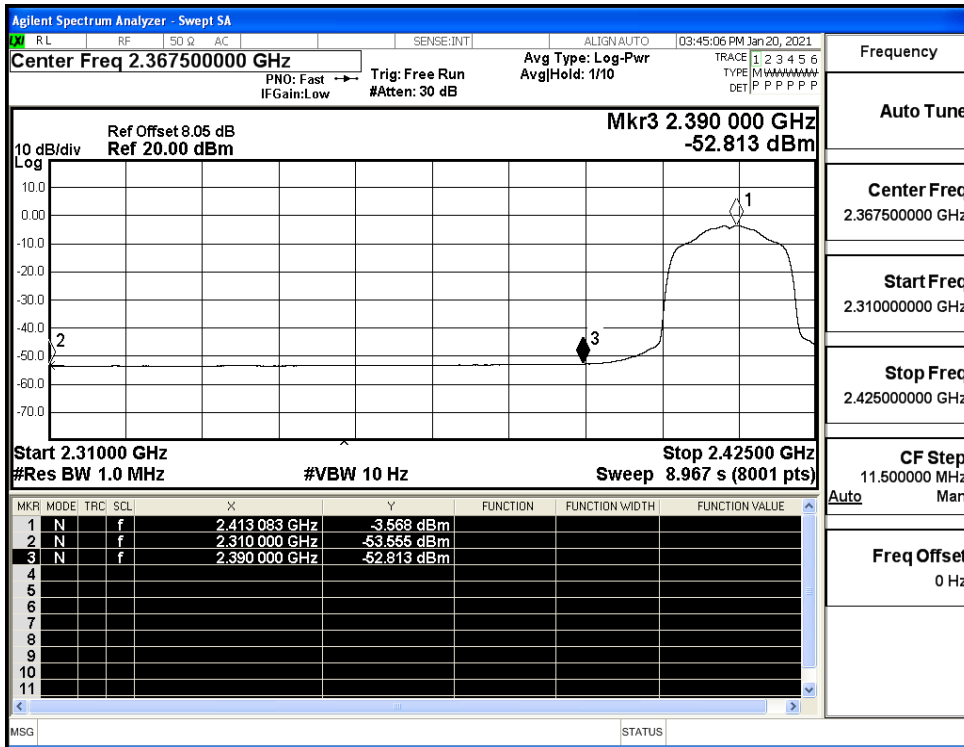
Restrict-band band-edge measurements_11G_2462_Ant1_AV



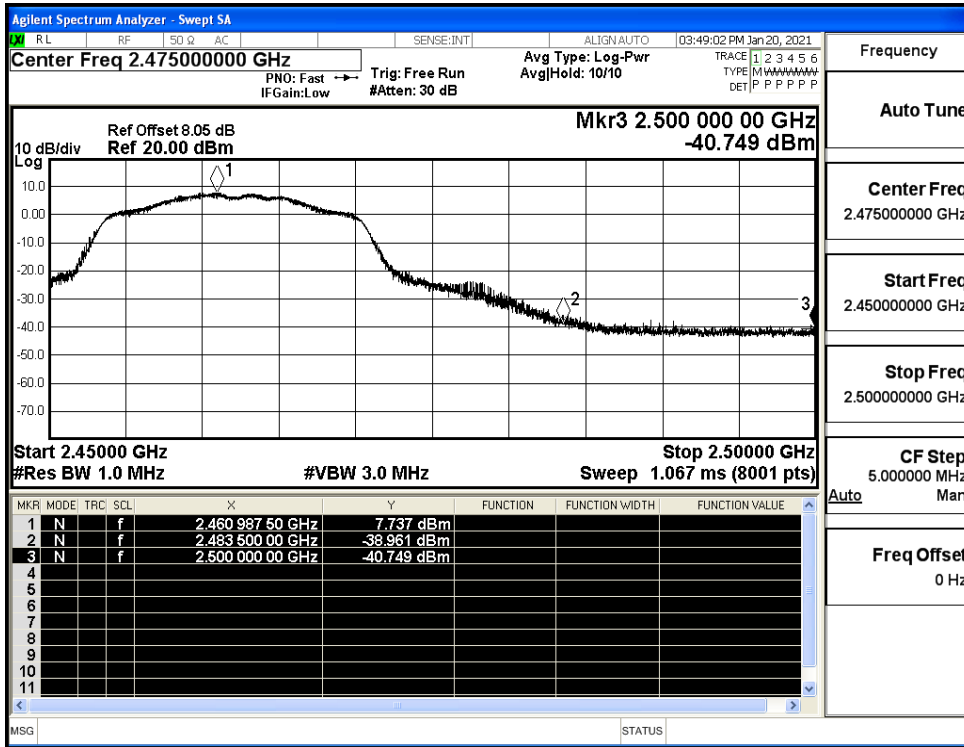
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_PEAK



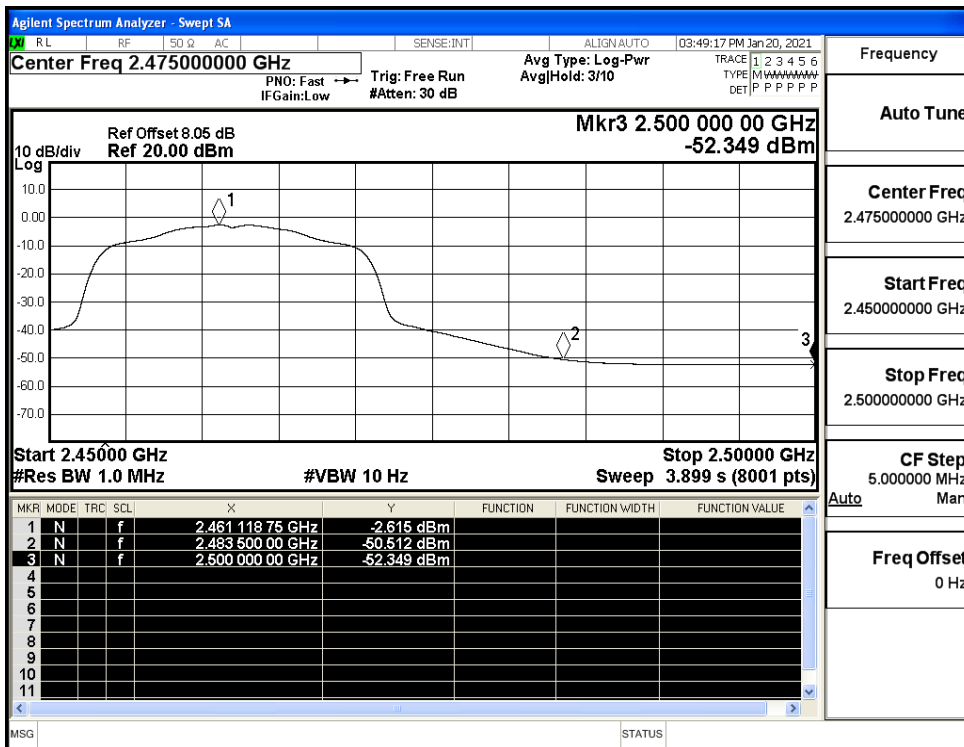
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_AV



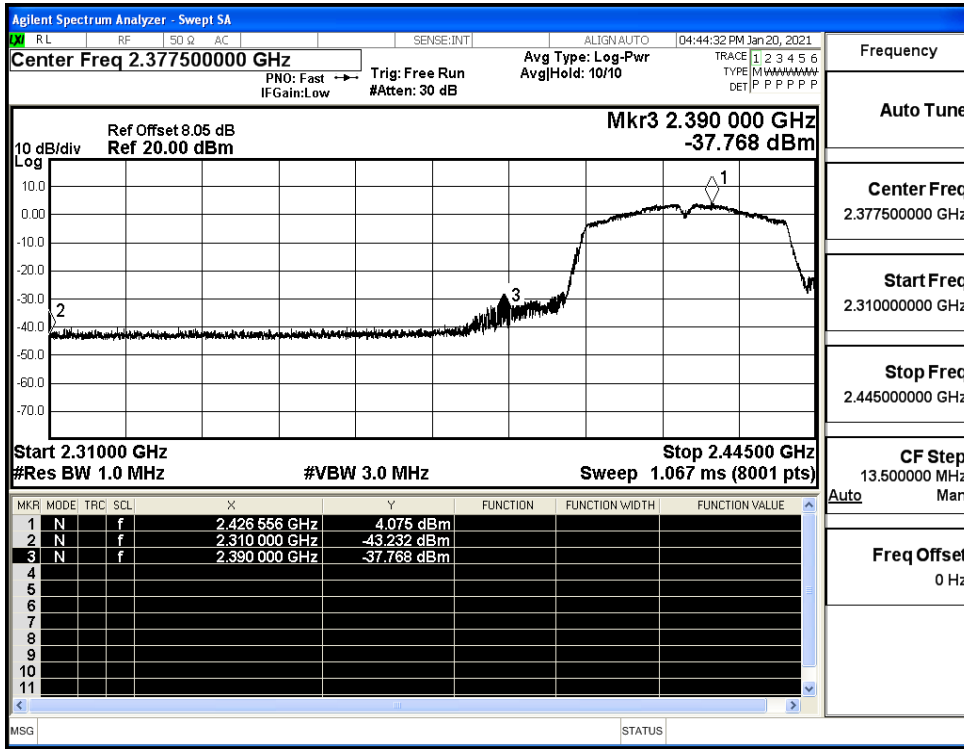
Restrict-band band-edge measurements_11N20SISO_2462_Ant1_PEAK



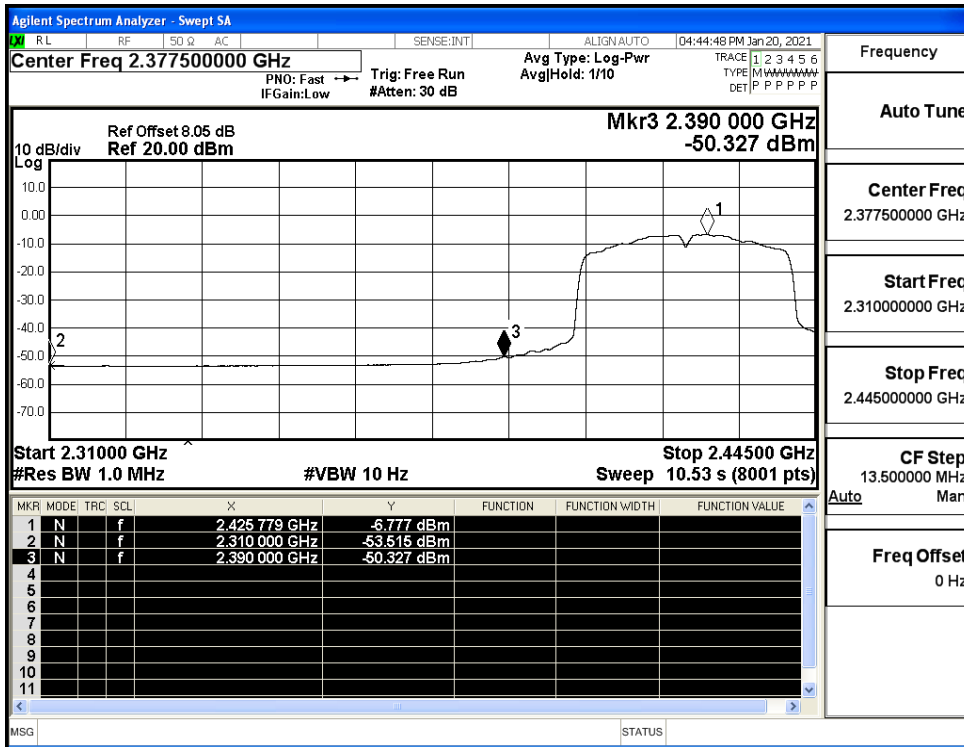
Restrict-band band-edge measurements_11N20SISO_2462_Ant1_AV



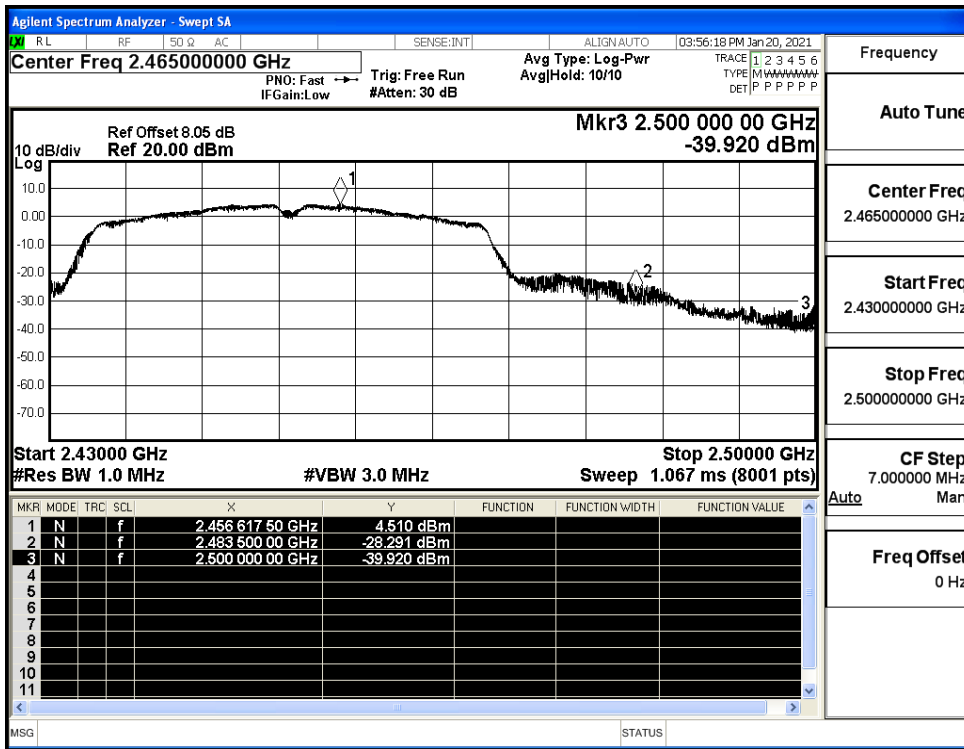
Restrict-band band-edge measurements_11N40SISO_2422_Ant1_PEAK



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

