

Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: 4G Mi-Fi

Trade Mark: LOGIC, iSWAG, UNONU

Test Model: ML10

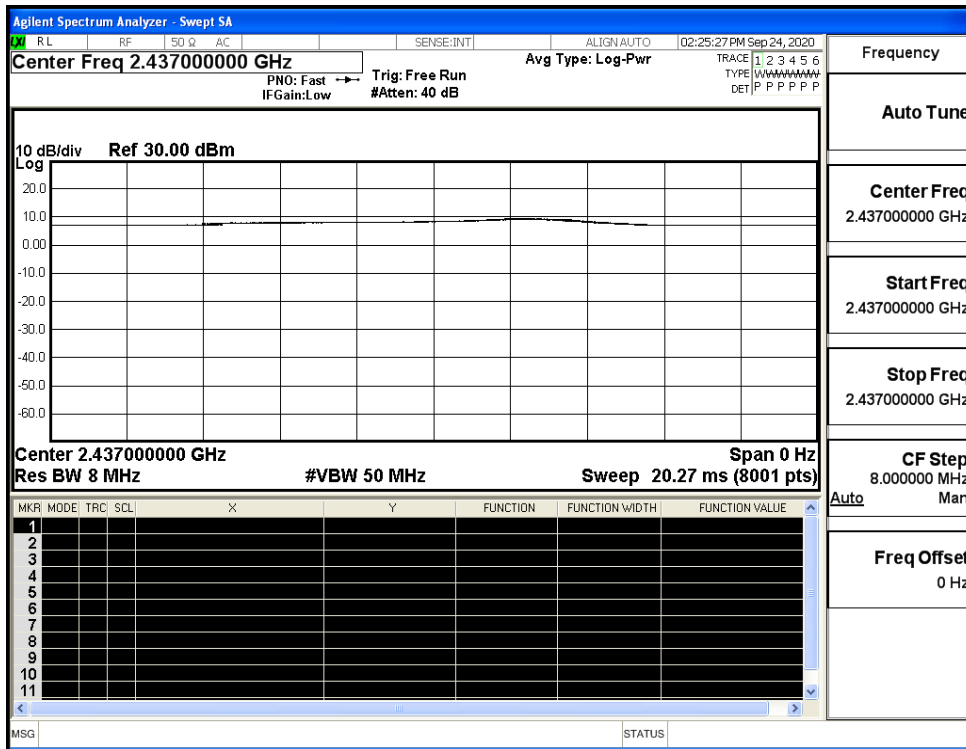
Environmental Conditions

Temperature:	25.3 ° C
Relative Humidity:	50.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond Lu
Supervised by:	LI HUAN

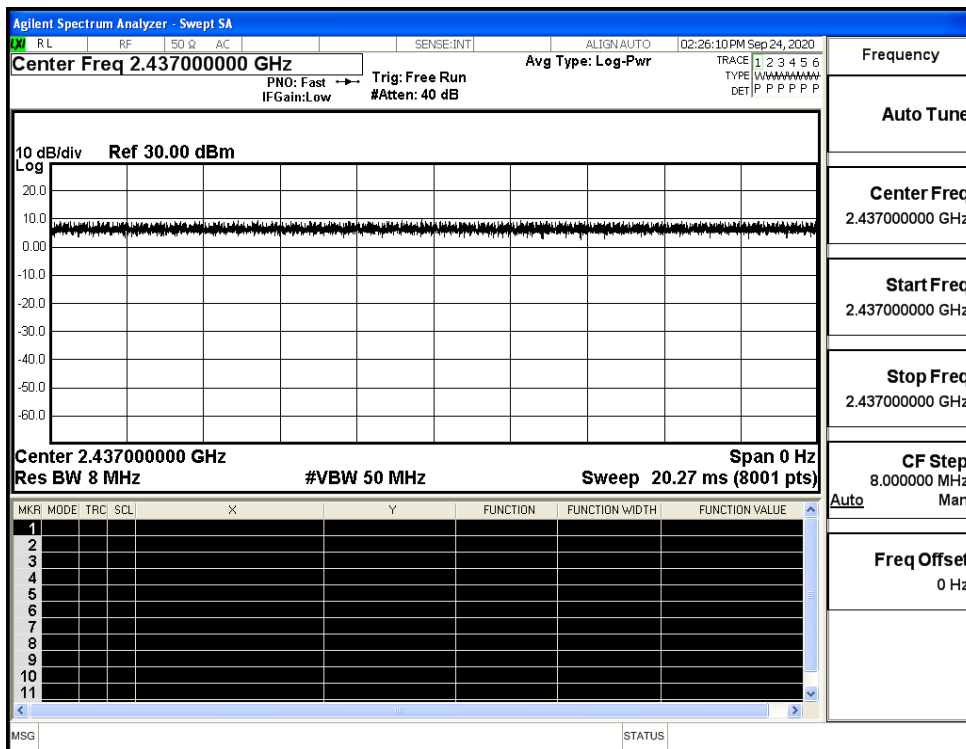
A.1 Duty Cycle

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

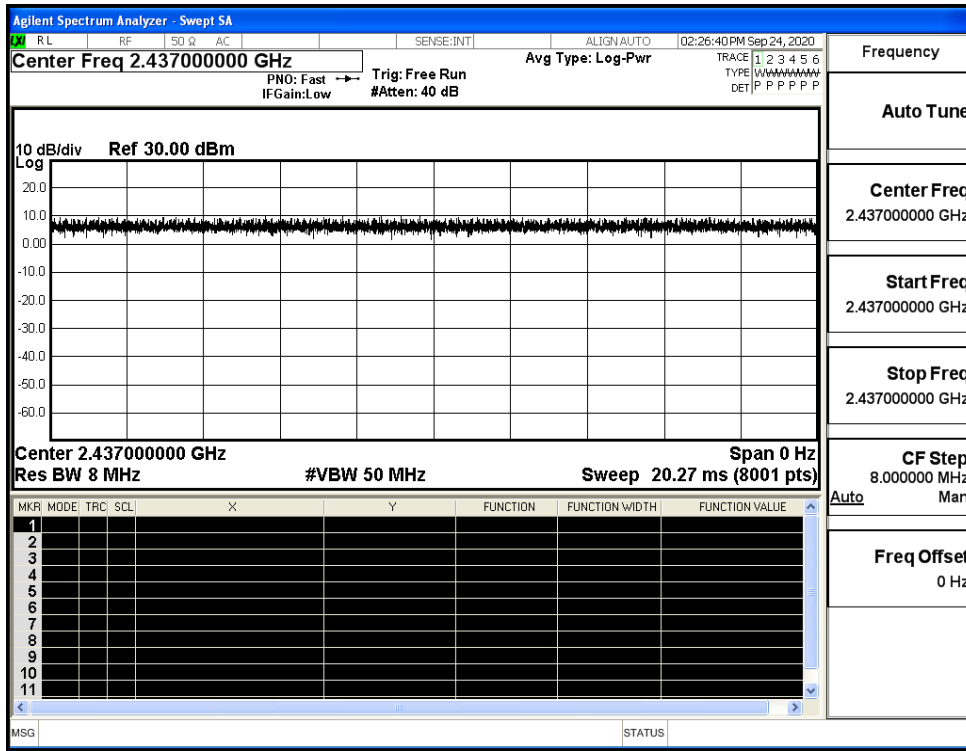
Duty Cycle_11B_2437_Ant1



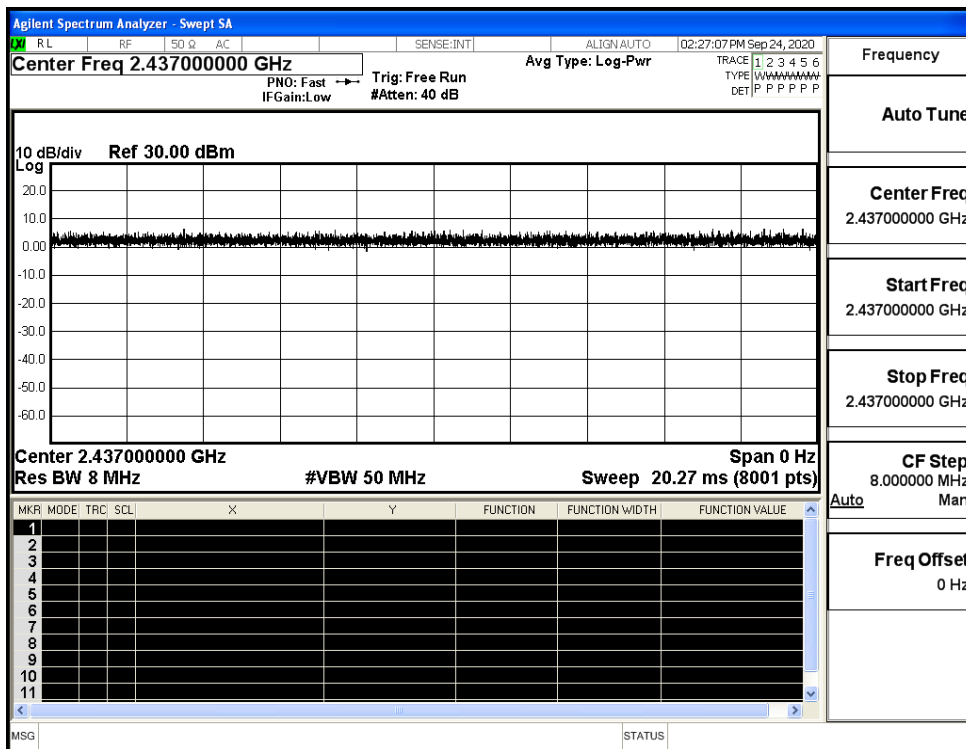
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



Duty Cycle_11N40SISO_2437_Ant1

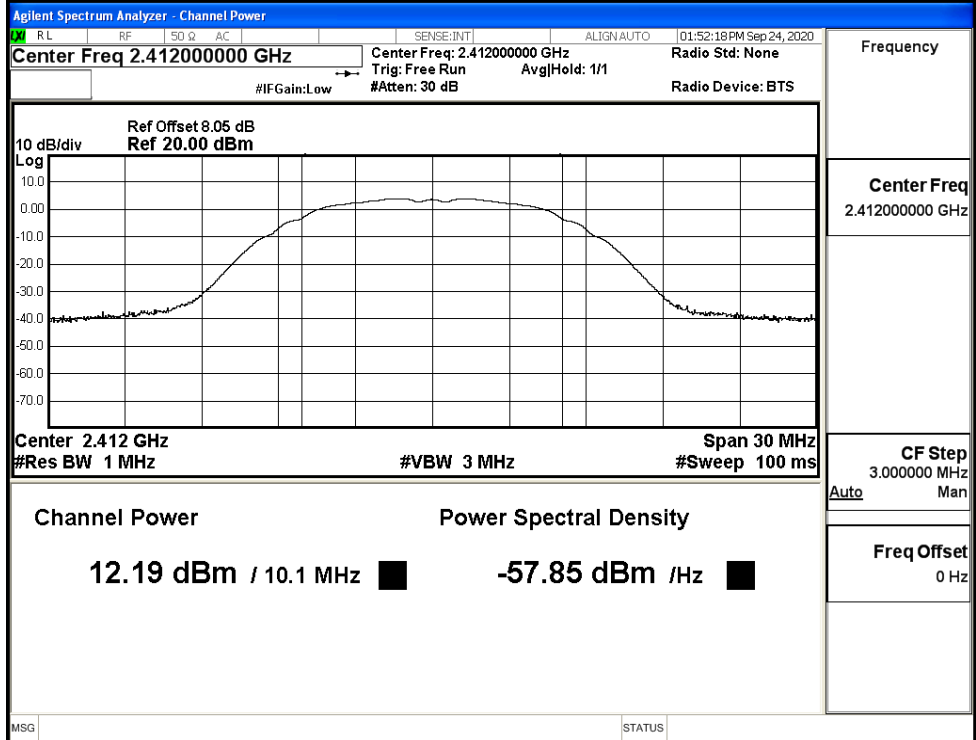


A.2 Maximum Conducted Output Power

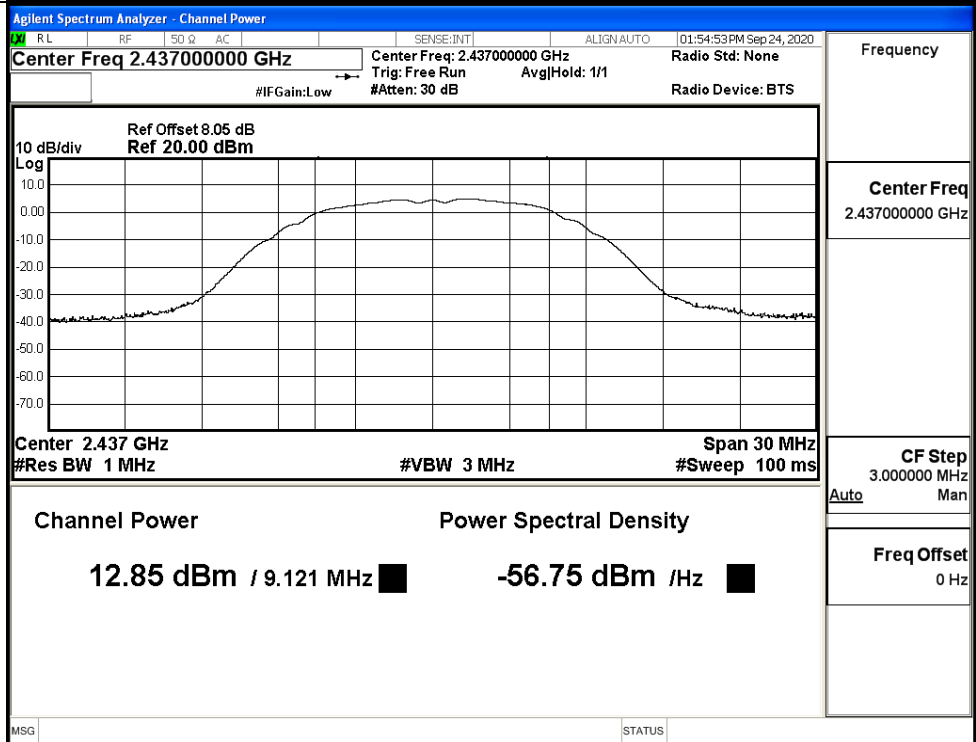
Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	12.19	30	PASS
	MCH	12.85	30	PASS
	HCH	12.17	30	PASS
11G	LCH	12.55	30	PASS
	MCH	13.17	30	PASS
	HCH	13.01	30	PASS
11N20SISO	LCH	12.16	30	PASS
	MCH	12.25	30	PASS
	HCH	12.31	30	PASS
11N40SISO	LCH	12.90	30	PASS
	MCH	13.13	30	PASS
	HCH	13.05	30	PASS

Test Graphs

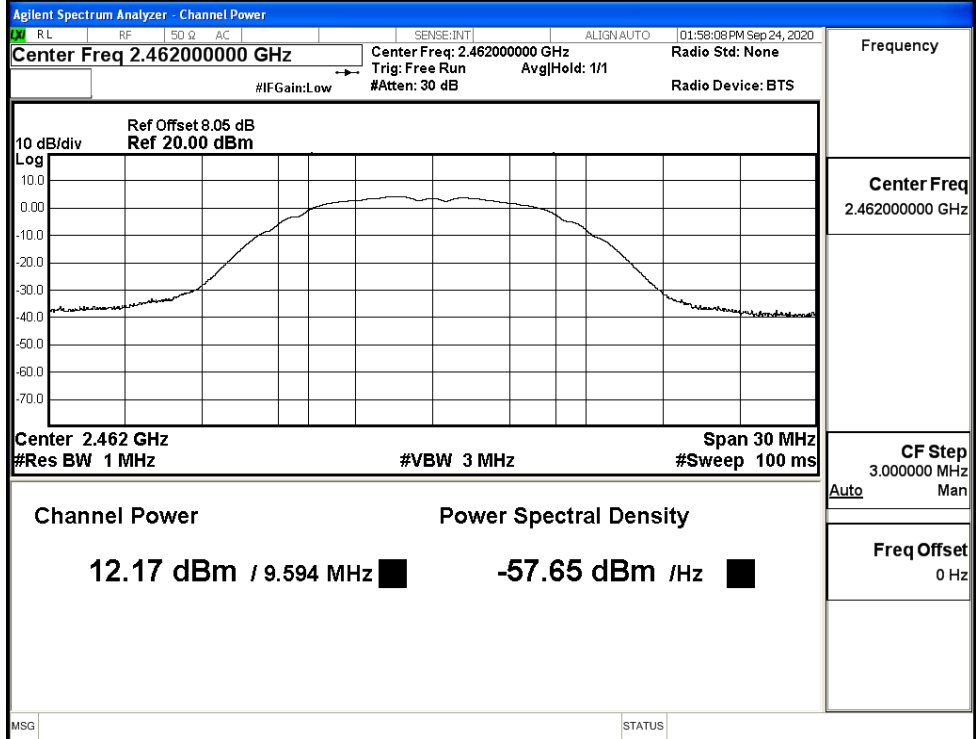
11B/LCH



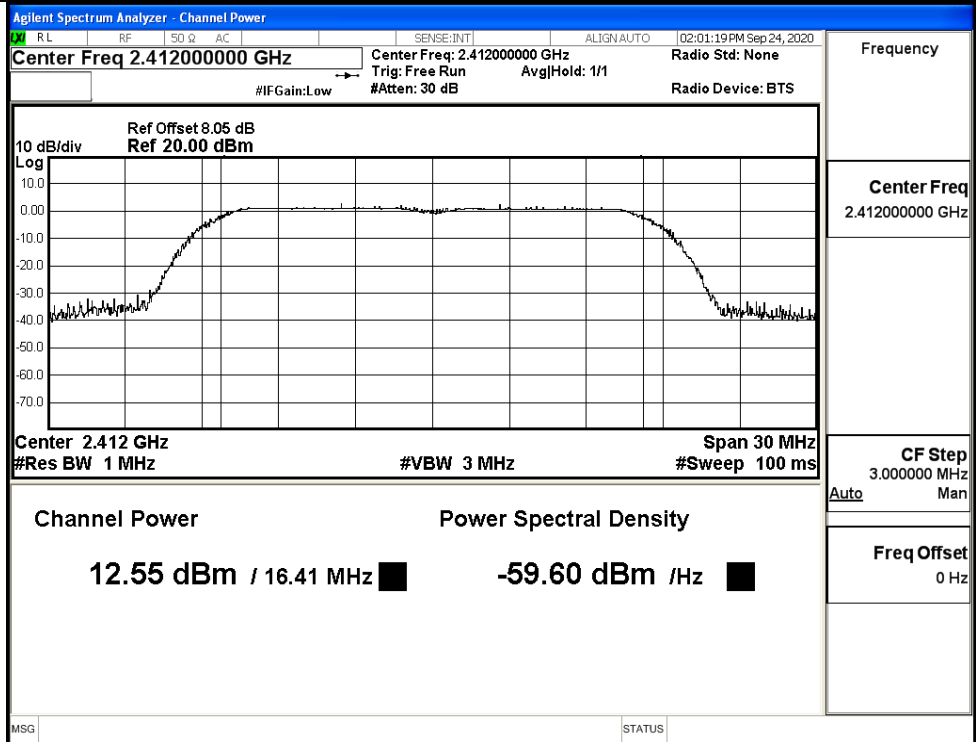
11B/MCH

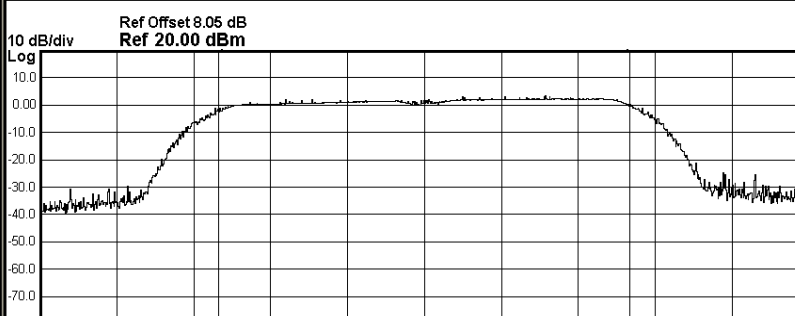
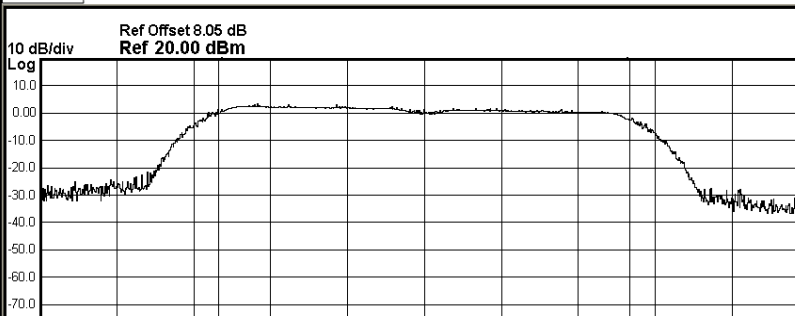


11B/HCH

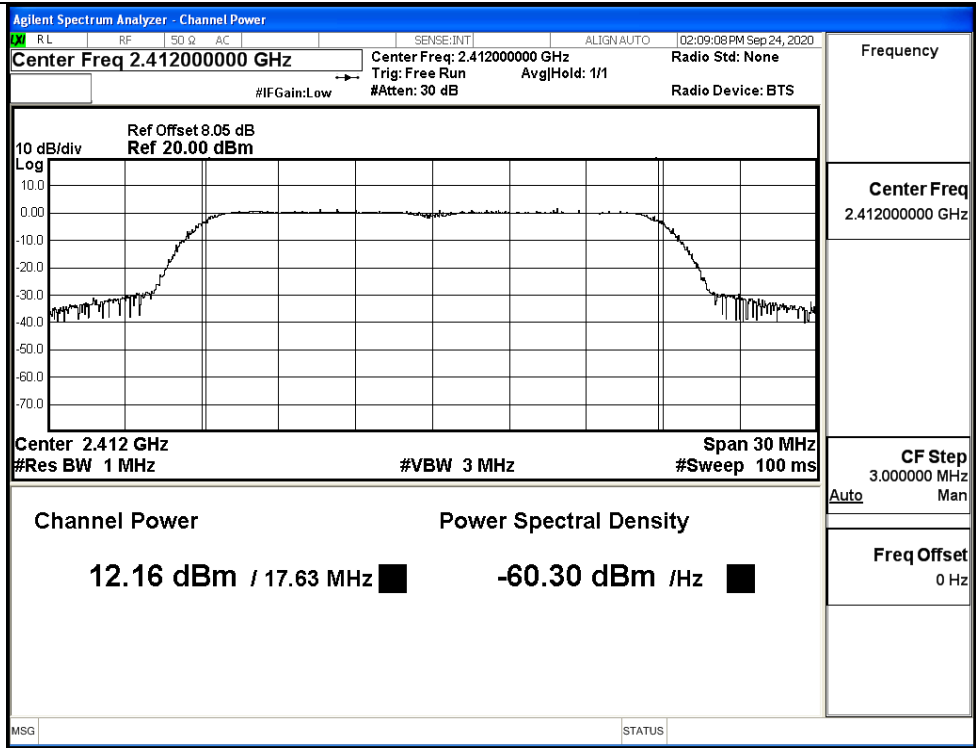


11G/LCH



<p>11G/MCH</p>	<p>Agilent Spectrum Analyzer - Channel Power</p> <p>RL RF 50 Ω AC SENSE:INT ALIGN AUTO 02:04:02 PM Sep 24, 2020</p> <p>Center Freq 2.437000000 GHz Center Freq: 2.437000000 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 Ref 20.00 dBm</p> <p>Center 2.437 GHz Span 30 MHz #Res BW 1 MHz #VBW 3 MHz #Sweep 100 ms</p> <p>Channel Power Power Spectral Density</p> <p>13.17 dBm / 16.02 MHz -58.88 dBm /Hz</p> <p>MSG STATUS</p>	<p>Frequency</p> <p>Center Freq 2.437000000 GHz</p> <p>CF Step 3.000000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>
	<p>11G/HCH</p>	<p>Agilent Spectrum Analyzer - Channel Power</p> <p>RL RF 50 Ω AC SENSE:INT ALIGN AUTO 02:05:54 PM Sep 24, 2020</p> <p>Center Freq 2.462000000 GHz Center Freq: 2.462000000 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 Ref 20.00 dBm</p> <p>Center 2.462 GHz Span 30 MHz #Res BW 1 MHz #VBW 3 MHz #Sweep 100 ms</p> <p>Channel Power Power Spectral Density</p> <p>13.01 dBm / 16.01 MHz -59.03 dBm /Hz</p> <p>MSG STATUS</p>

11N20SISO/LCH

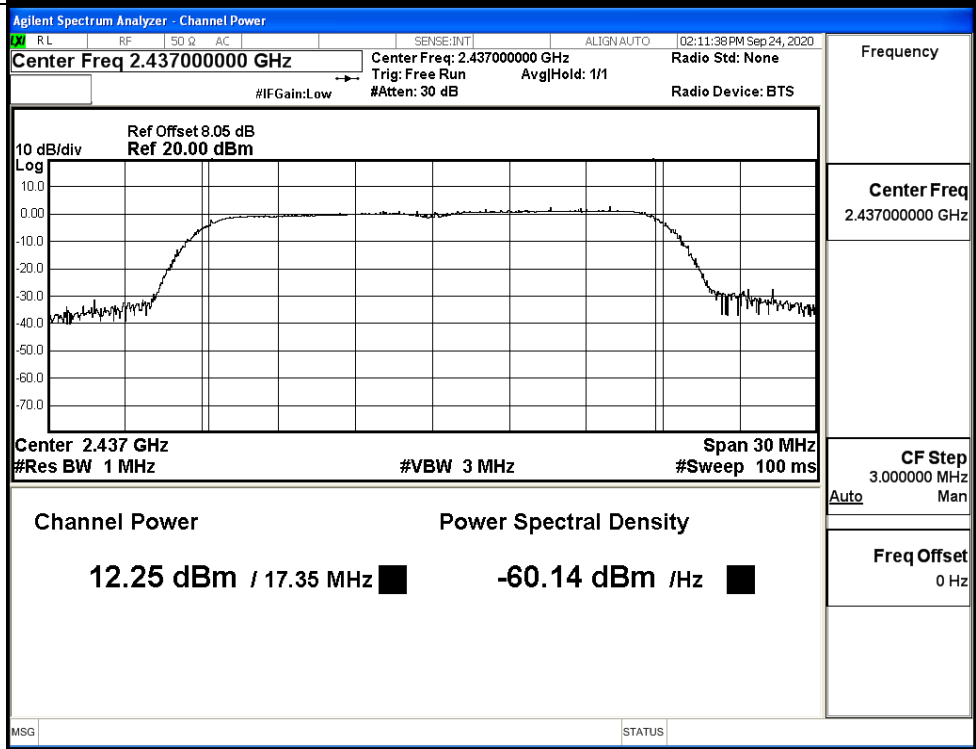


Frequency
2.41200000 GHz

CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

11N20SISO/MCH

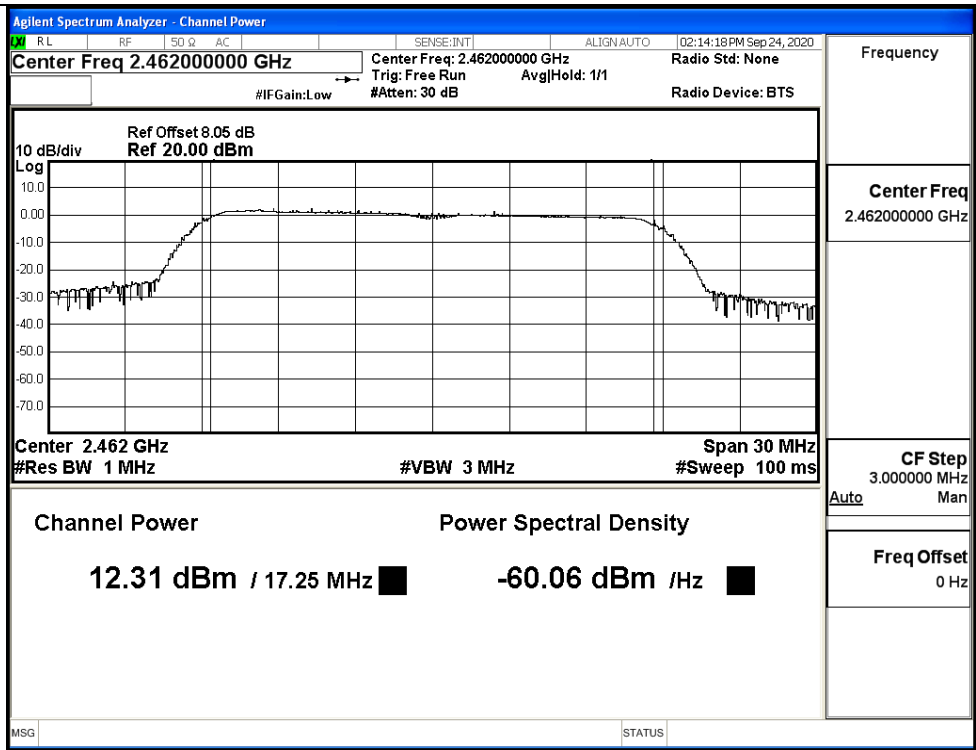


Frequency
2.43700000 GHz

CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

11N20SISO/HCH

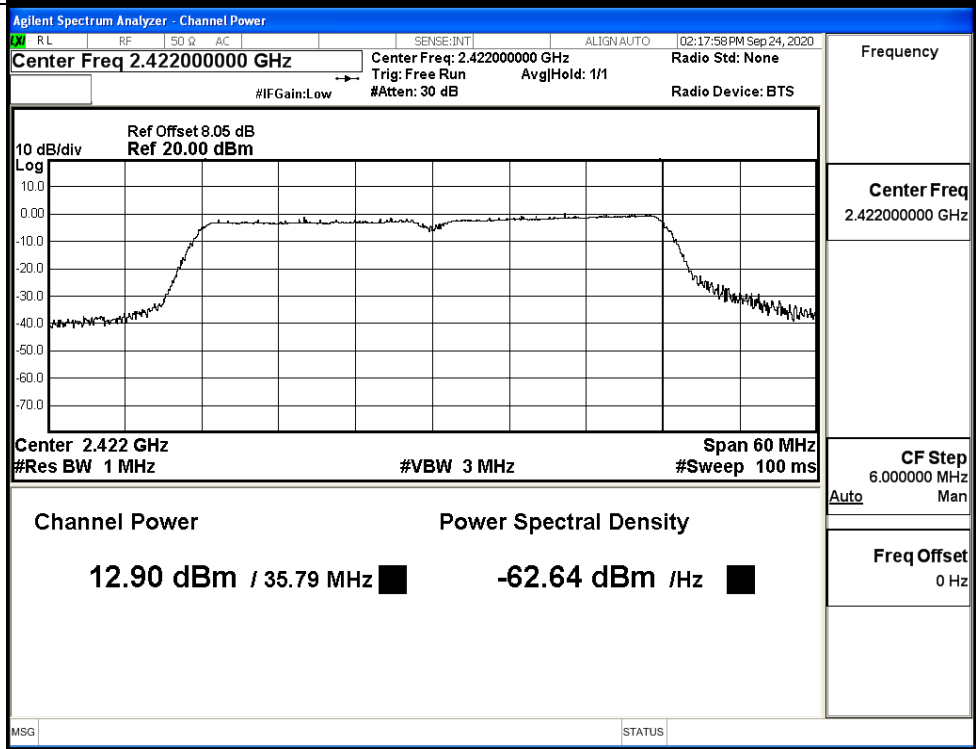


Frequency
Center Freq
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CF Step
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Auto Man

Freq Offset
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11N40SISO/LCH

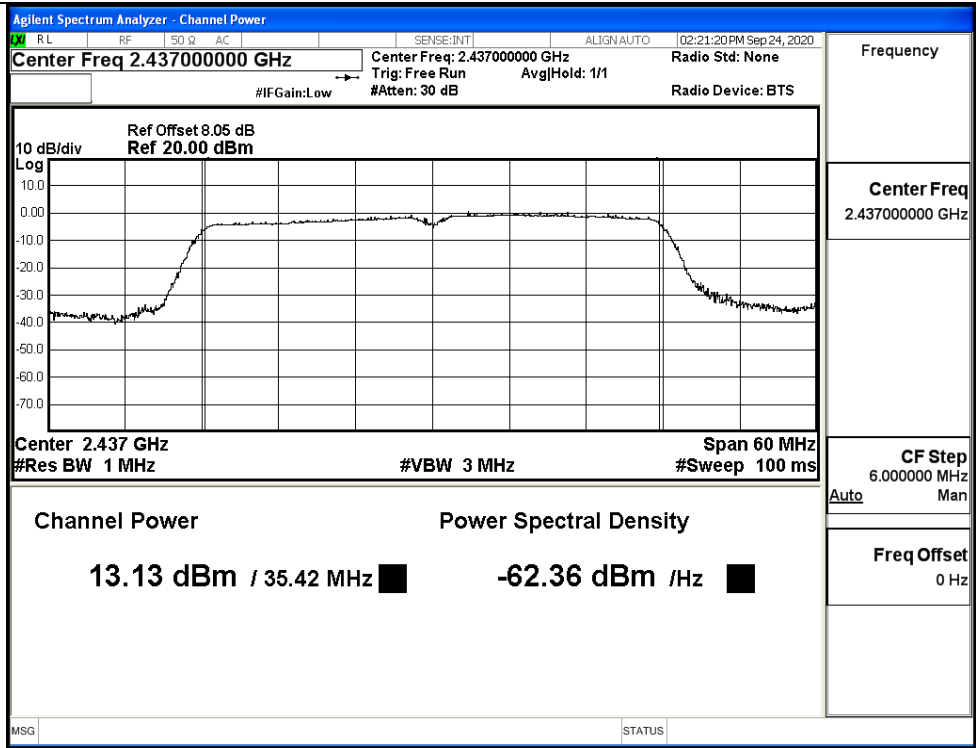


Frequency
Center Freq
2.42200000 GHz

CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

11N40SISO/MCH



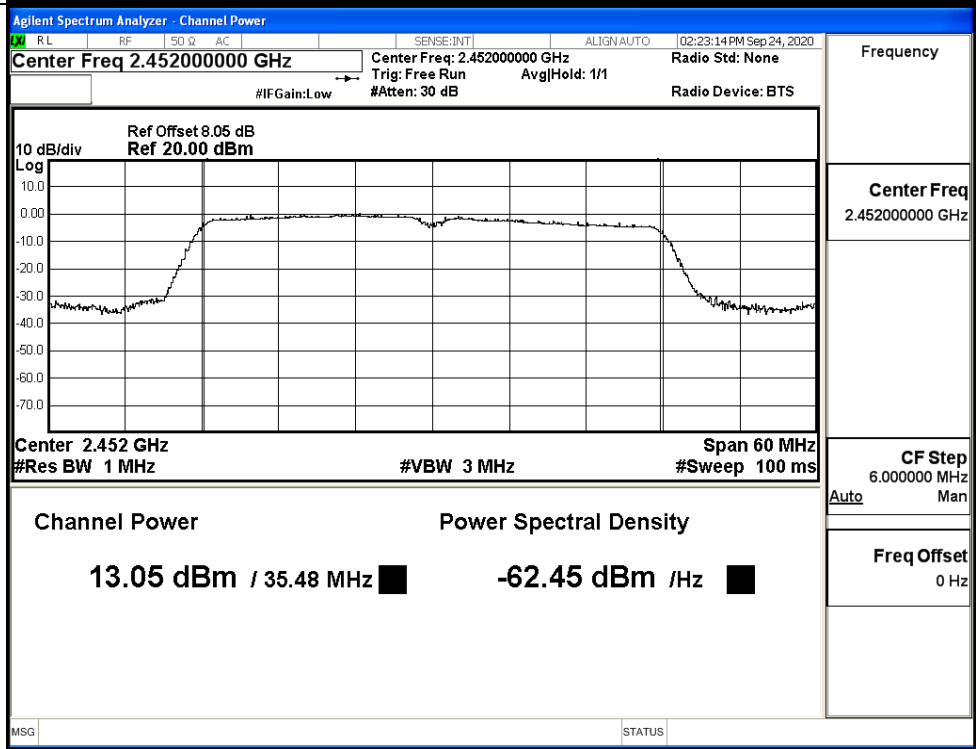
Frequency
2.43700000 GHz

Center Freq
2.43700000 GHz

CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

11N40SISO/HCH



Frequency
2.45200000 GHz

Center Freq
2.45200000 GHz

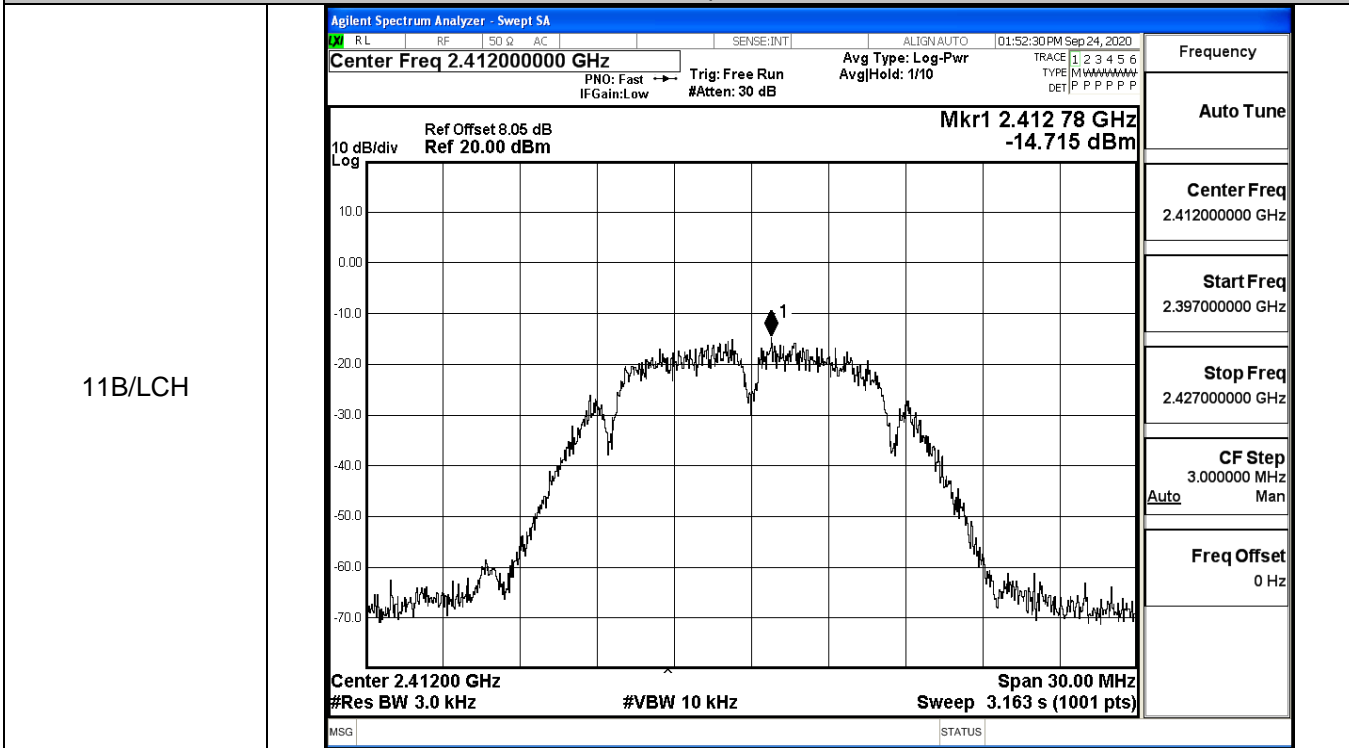
CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

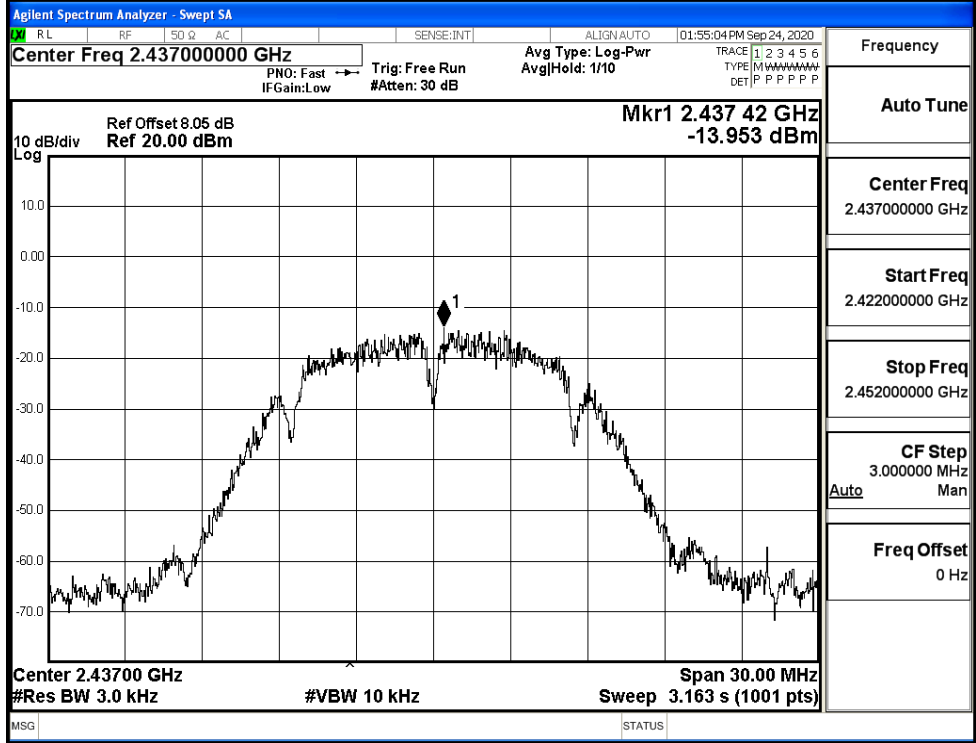
A.3 Maximum Power Spectral Density

Mode	Channel	Meas.Level [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-14.715	8	PASS
	MCH	-13.953	8	PASS
	HCH	-13.799	8	PASS
11G	LCH	-19.546	8	PASS
	MCH	-20.448	8	PASS
	HCH	-20.288	8	PASS
11N20SISO	LCH	-20.536	8	PASS
	MCH	-20.075	8	PASS
	HCH	-21.245	8	PASS
11N40SISO	LCH	-23.383	8	PASS
	MCH	-22.718	8	PASS
	HCH	-23.132	8	PASS

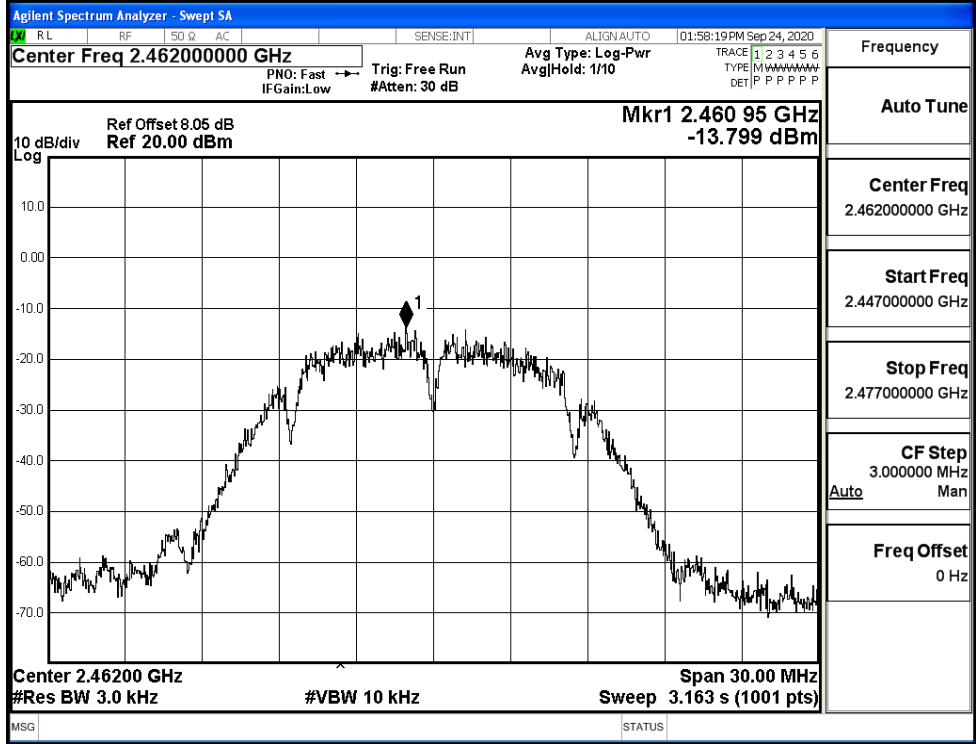
Test Graphs



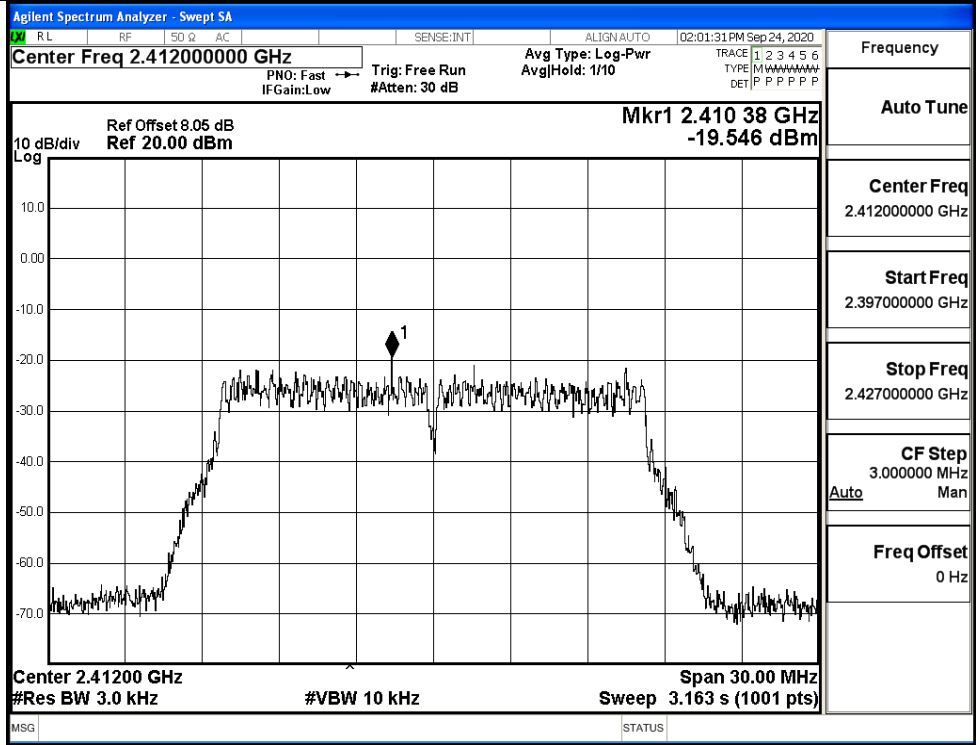
11B/MCH



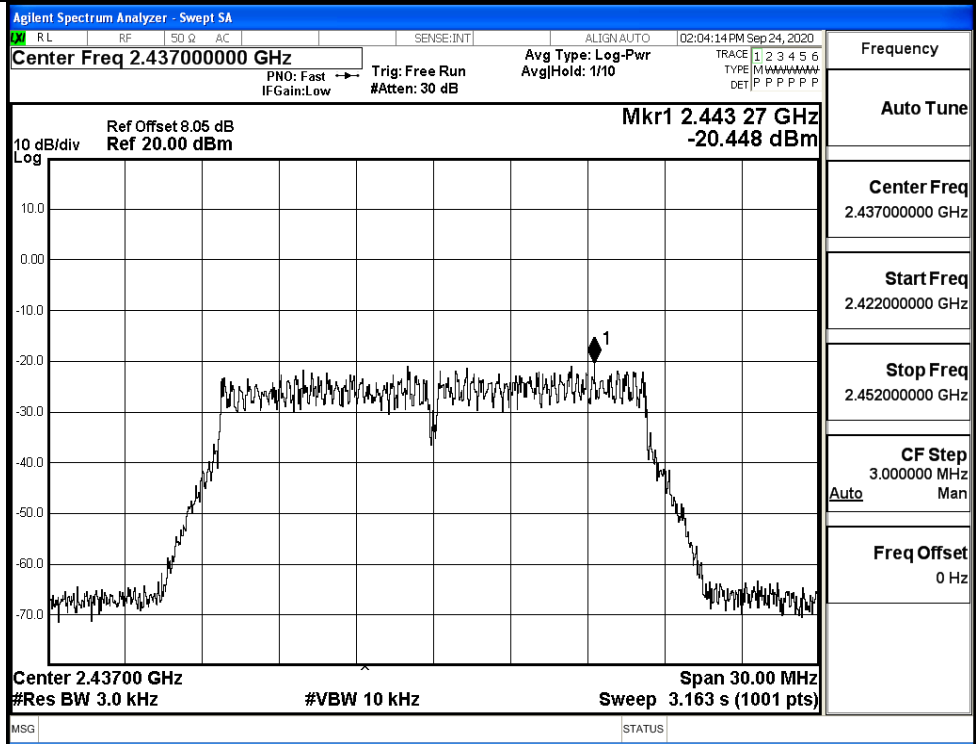
11B/HCH



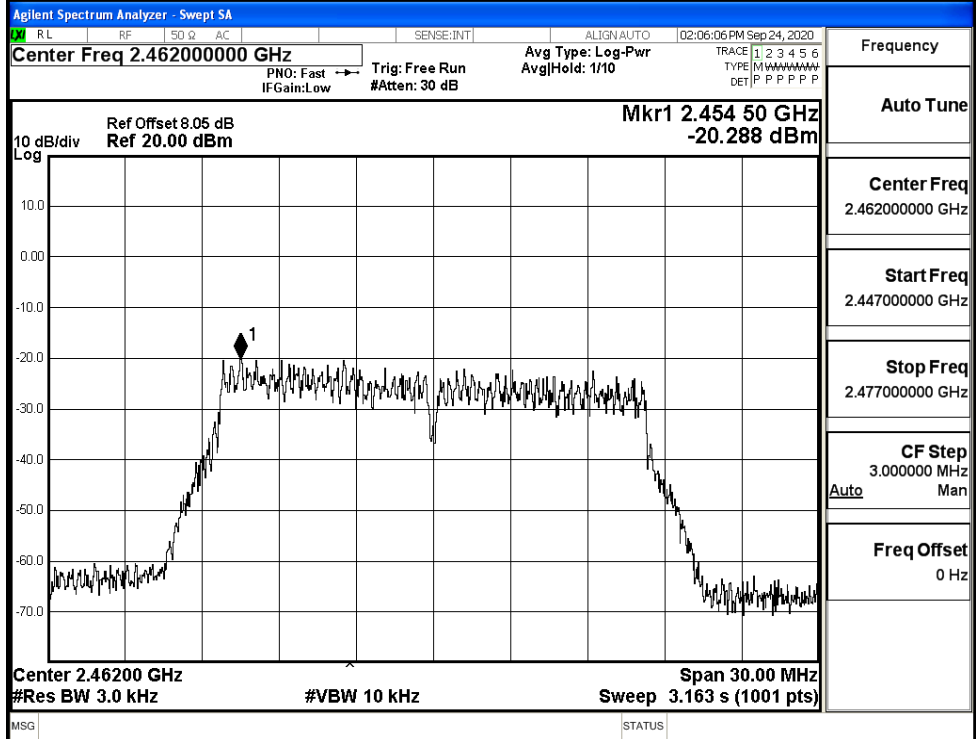
11G/LCH



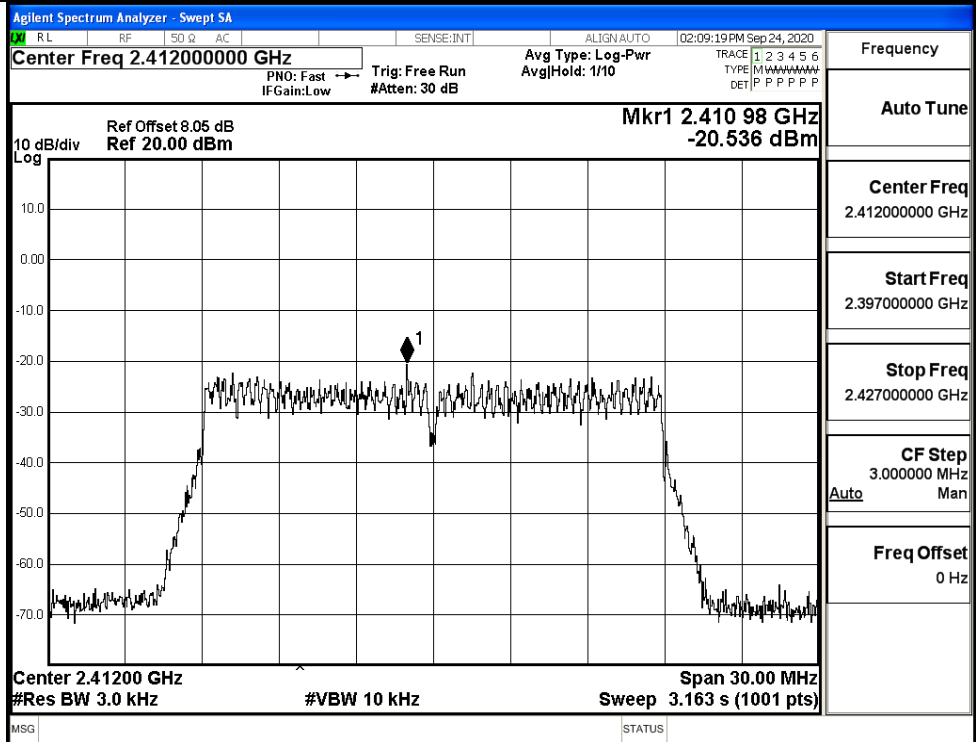
11G/MCH



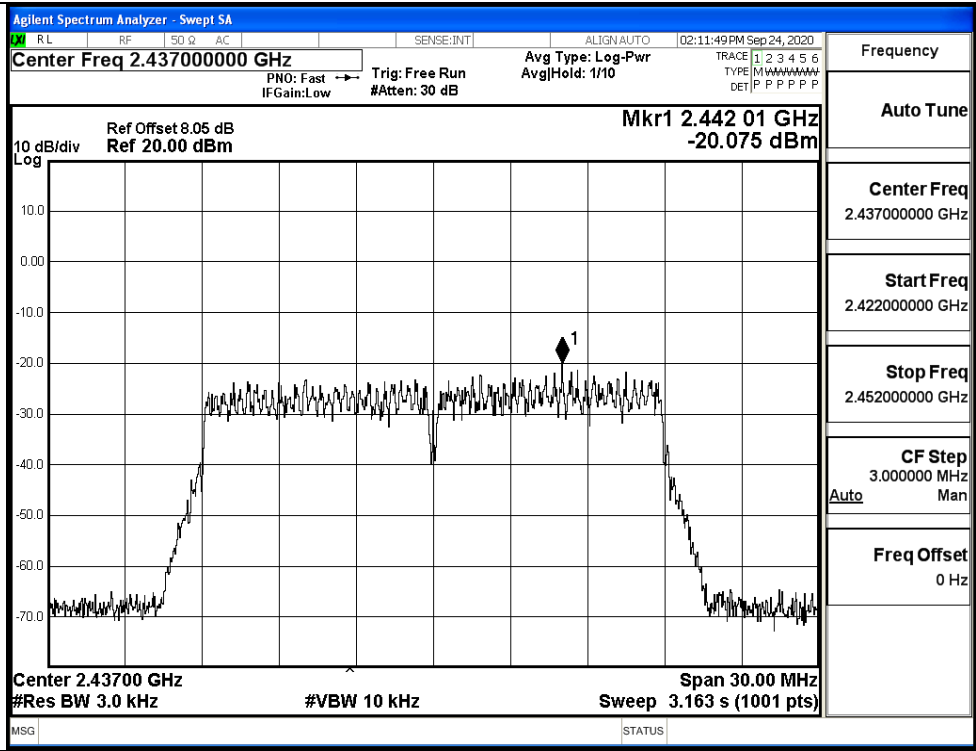
11G/HCH



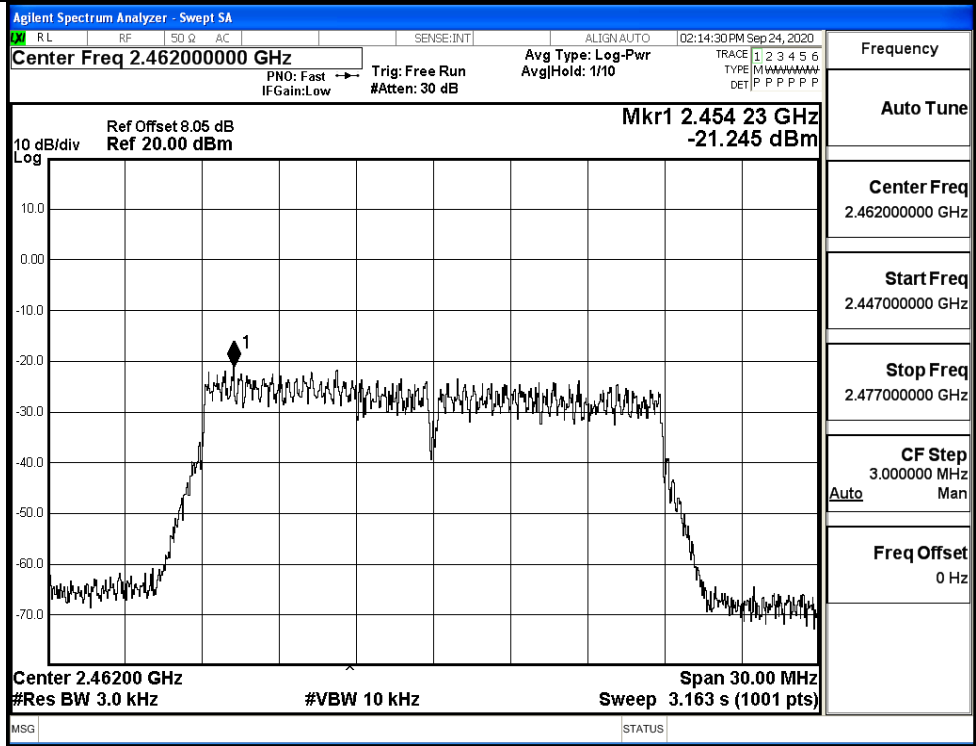
11N20SISO/LCH



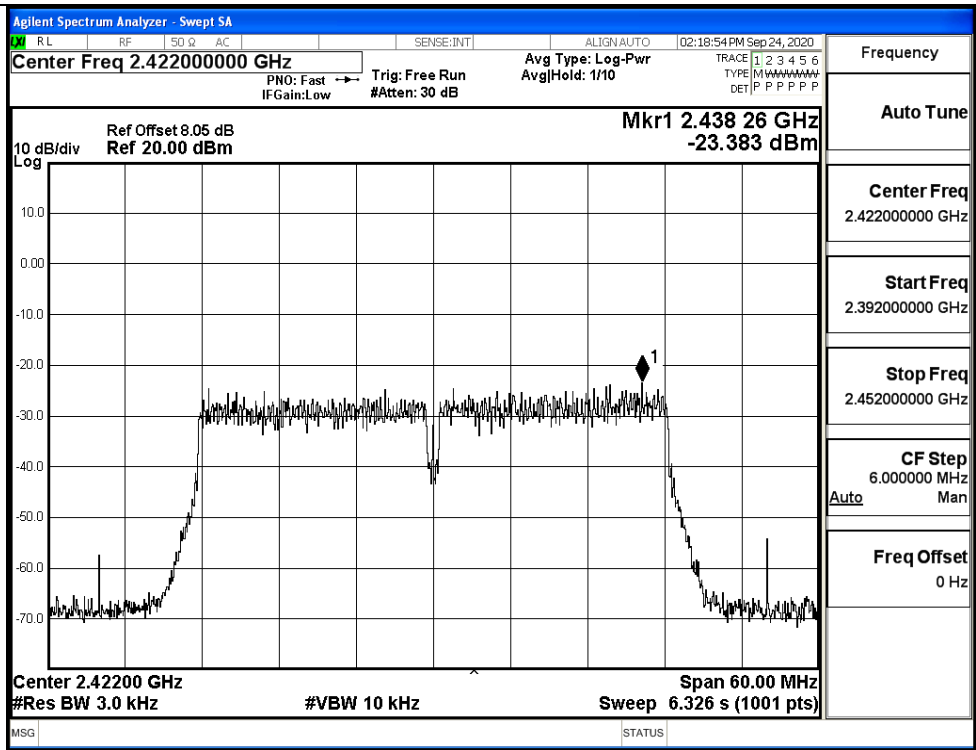
11N20SISO/MCH



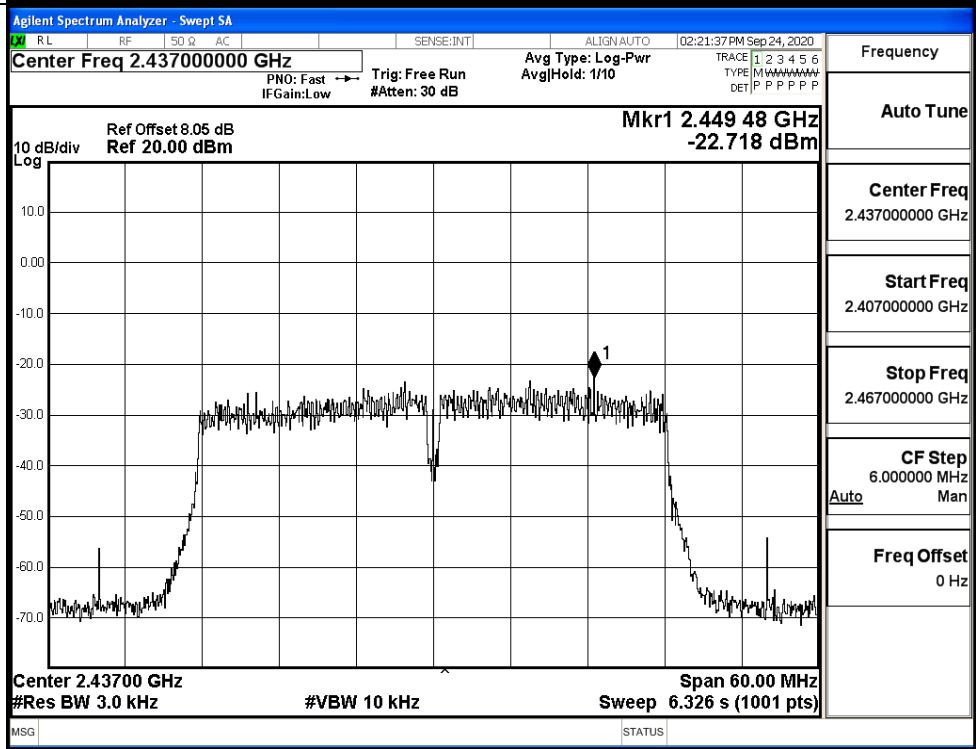
11N20SISO/HCH



11N40SISO/LCH

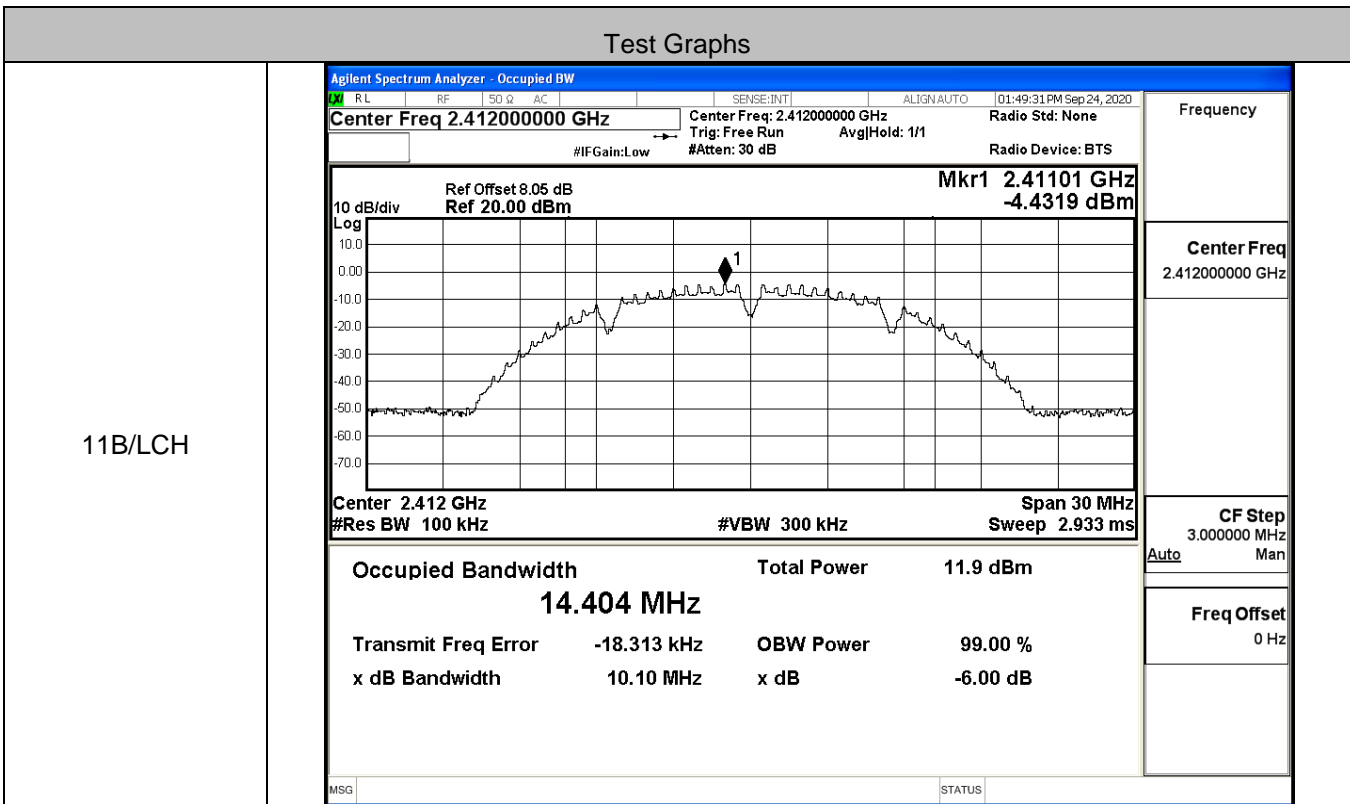


11N40SISO/MCH

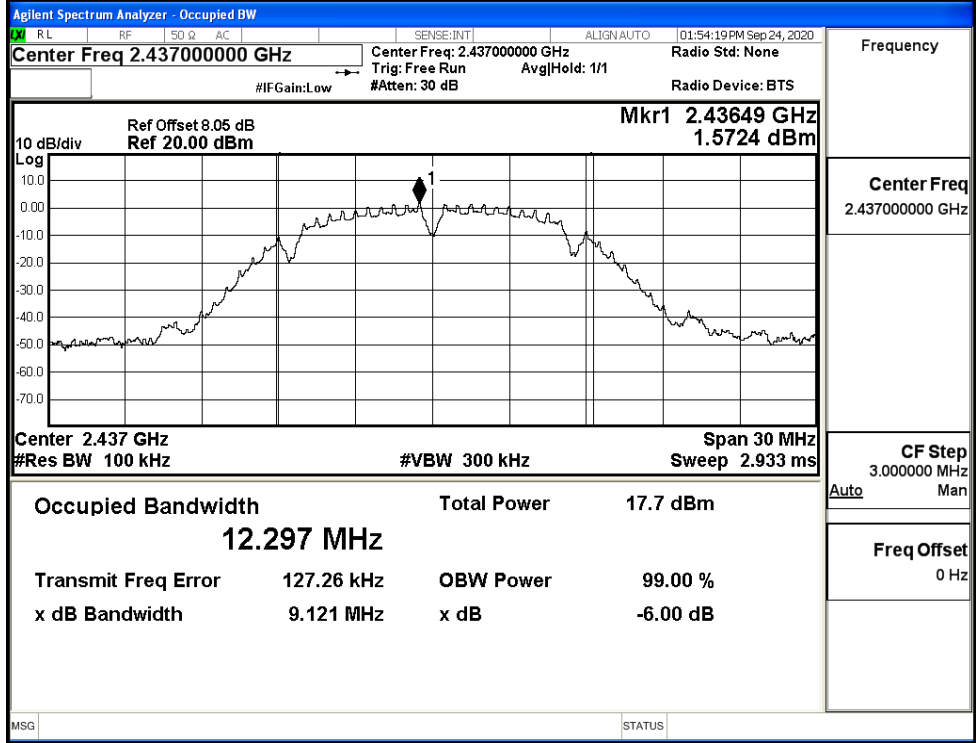


A.4 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	10.10	≥0.5	PASS
	MCH	9.121	≥0.5	PASS
	HCH	9.594	≥0.5	PASS
11G	LCH	16.41	≥0.5	PASS
	MCH	16.02	≥0.5	PASS
	HCH	16.01	≥0.5	PASS
11N20SISO	LCH	17.63	≥0.5	PASS
	MCH	17.35	≥0.5	PASS
	HCH	17.25	≥0.5	PASS
11N40SISO	LCH	35.79	≥0.5	PASS
	MCH	35.42	≥0.5	PASS
	HCH	35.48	≥0.5	PASS

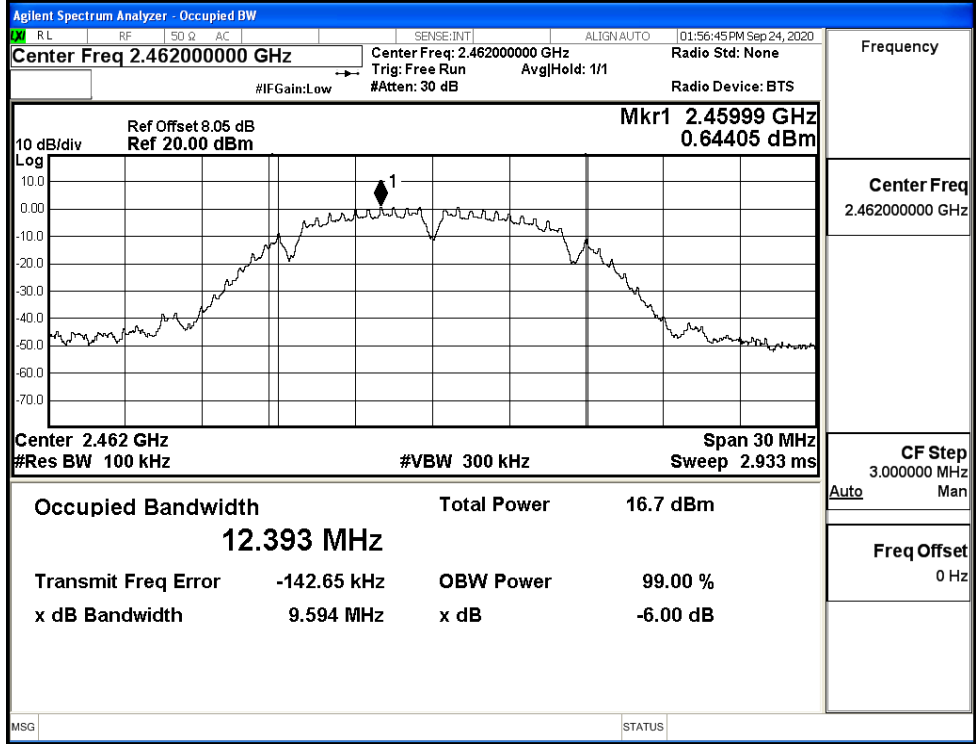


11B/MCH



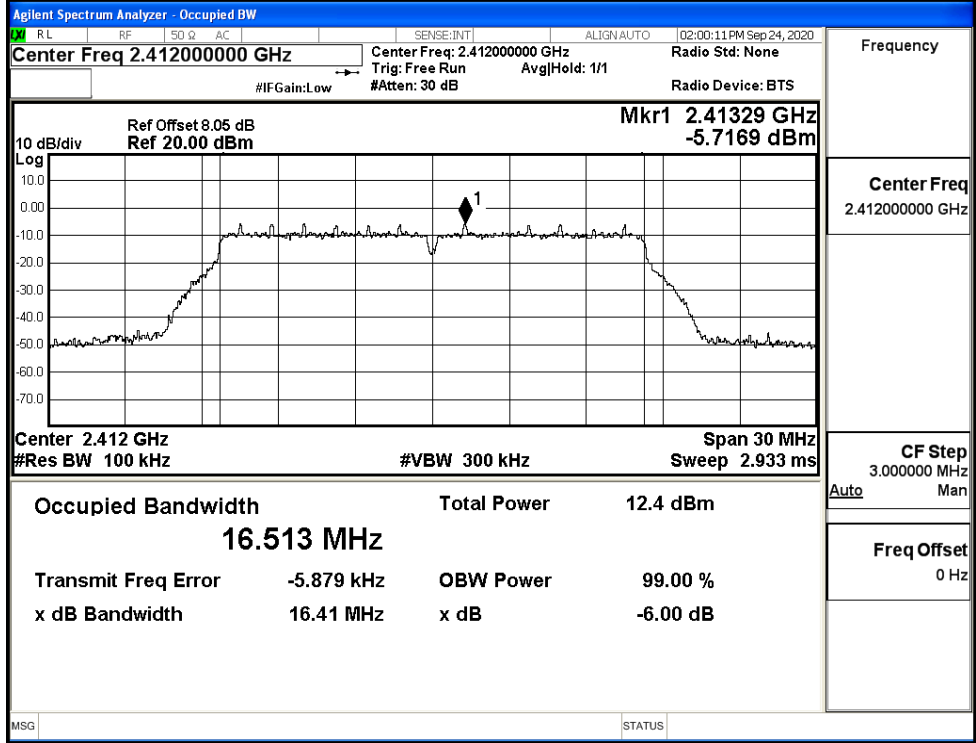
Frequency	2.43700000 GHz
Center Freq	2.43700000 GHz
CF Step	3.000000 MHz
Auto	Man
Freq Offset	0 Hz

11B/HCH



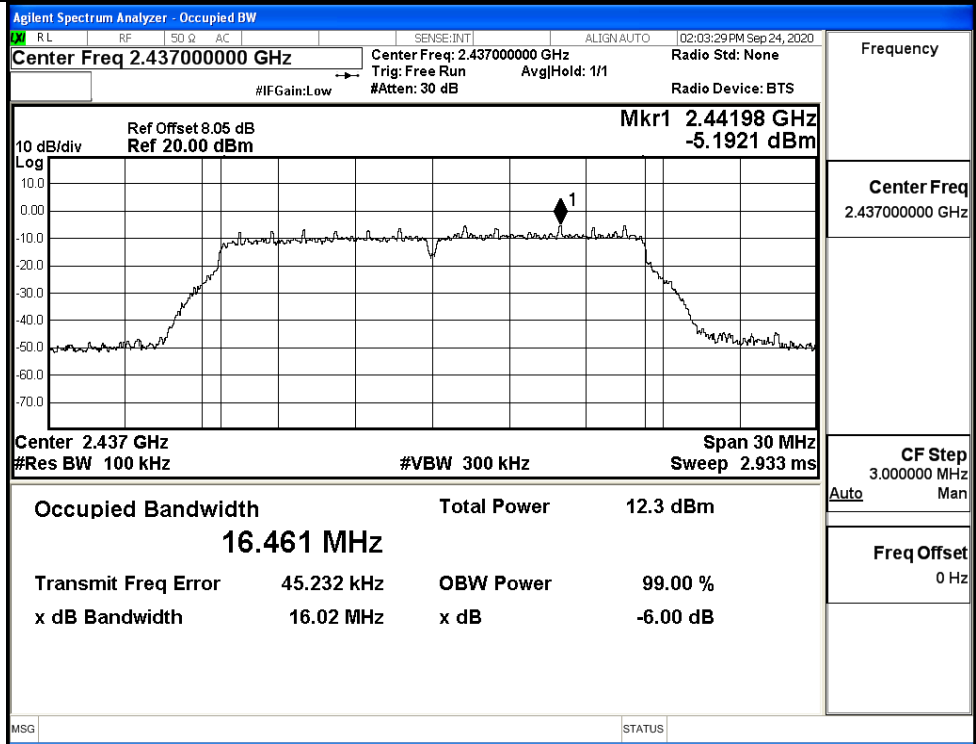
Frequency	2.46200000 GHz
Center Freq	2.46200000 GHz
CF Step	3.000000 MHz
Auto	Man
Freq Offset	0 Hz

11G/LCH



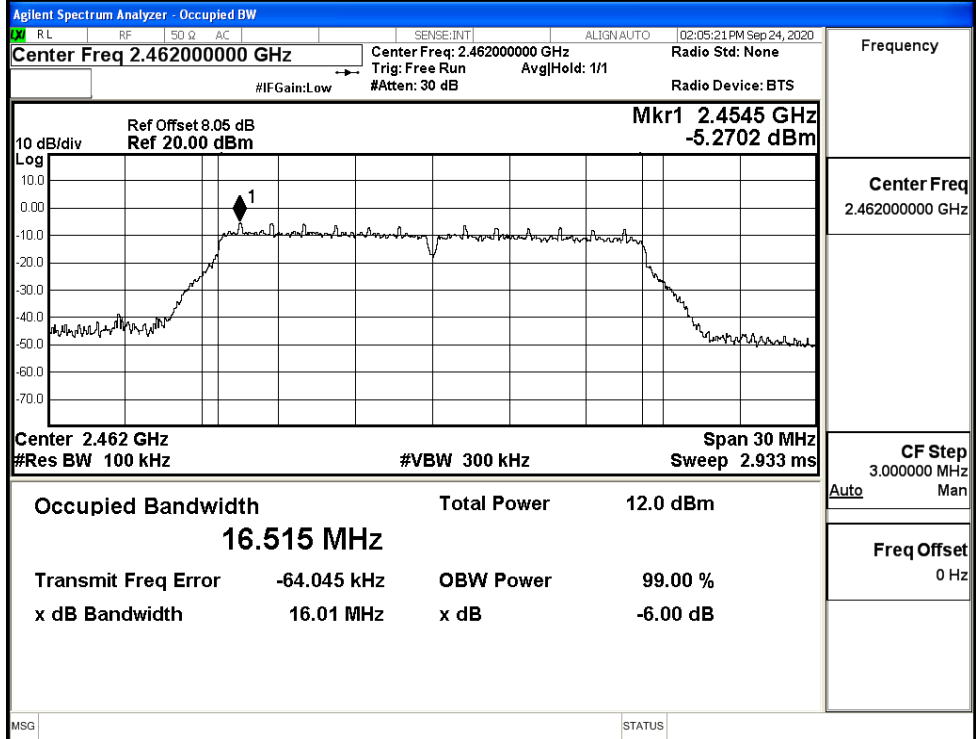
Frequency	2.41200000 GHz
Center Freq	2.41200000 GHz
CF Step	3.000000 MHz
Auto	Man
Freq Offset	0 Hz

11G/MCH



Frequency	2.43700000 GHz
Center Freq	2.43700000 GHz
CF Step	3.000000 MHz
Auto	Man
Freq Offset	0 Hz

11G/HCH



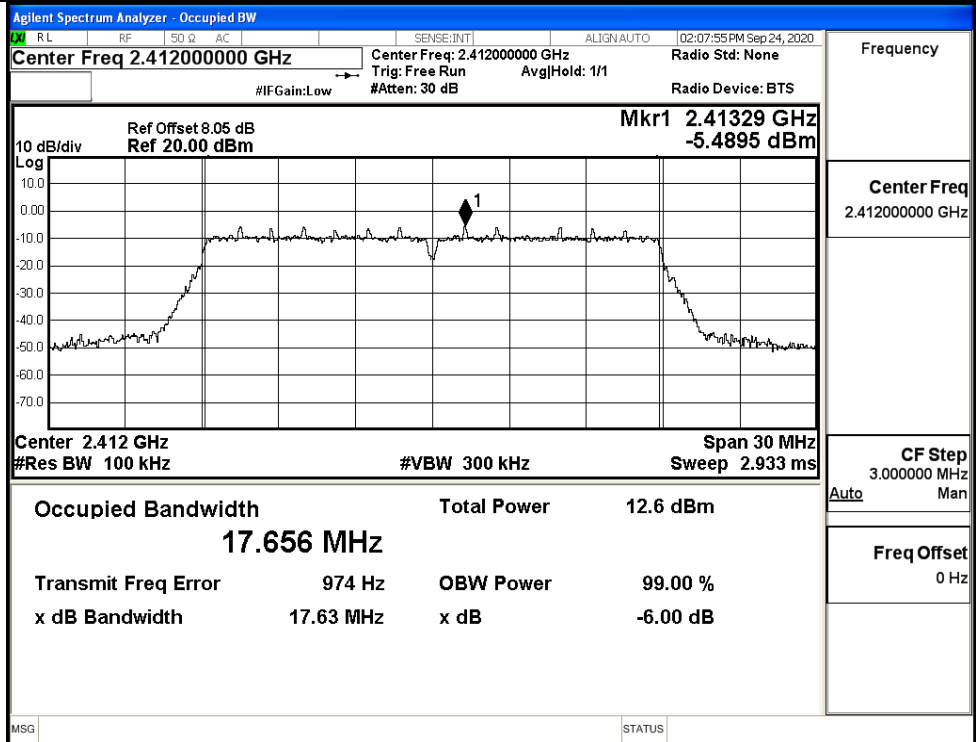
Frequency

Center Freq
2.46200000 GHz

CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

11N20SISO/LCH



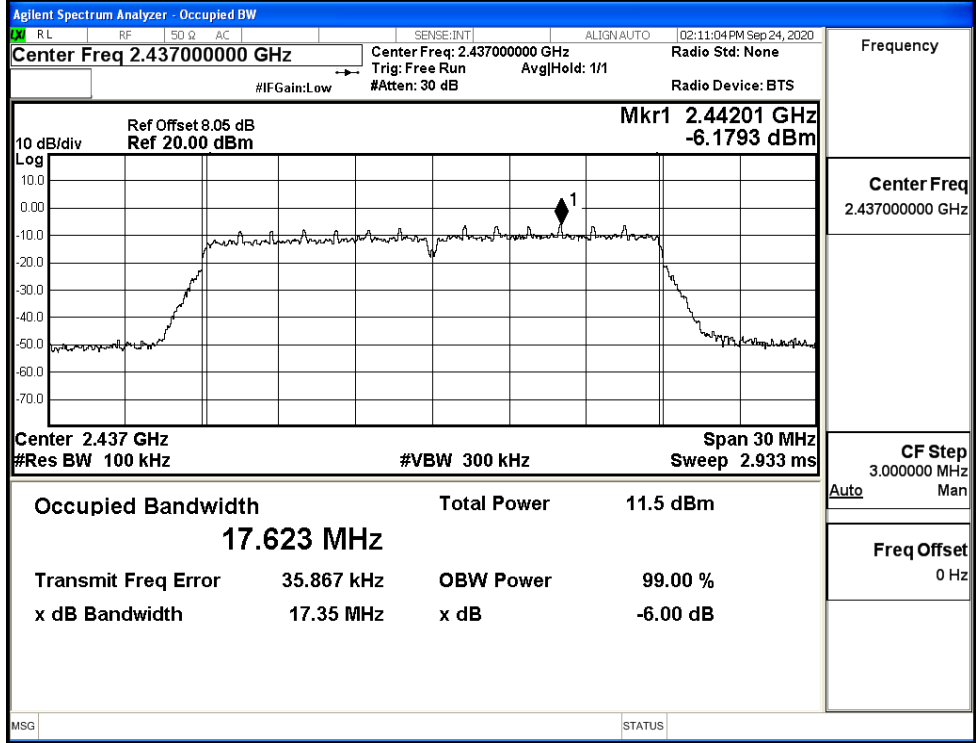
Frequency

Center Freq
2.41200000 GHz

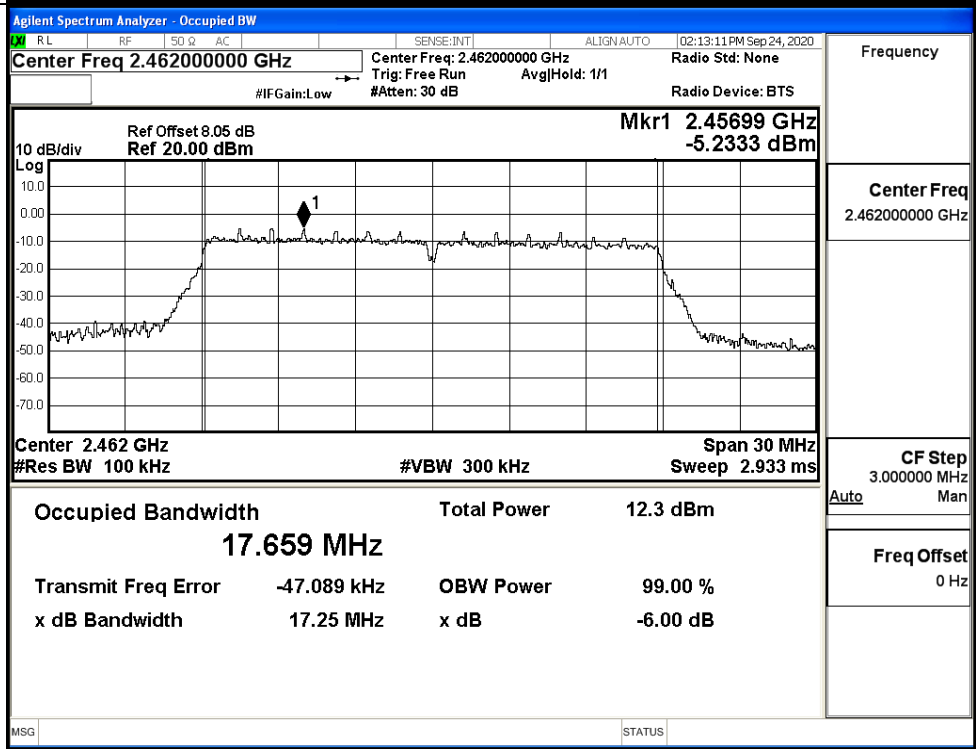
CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

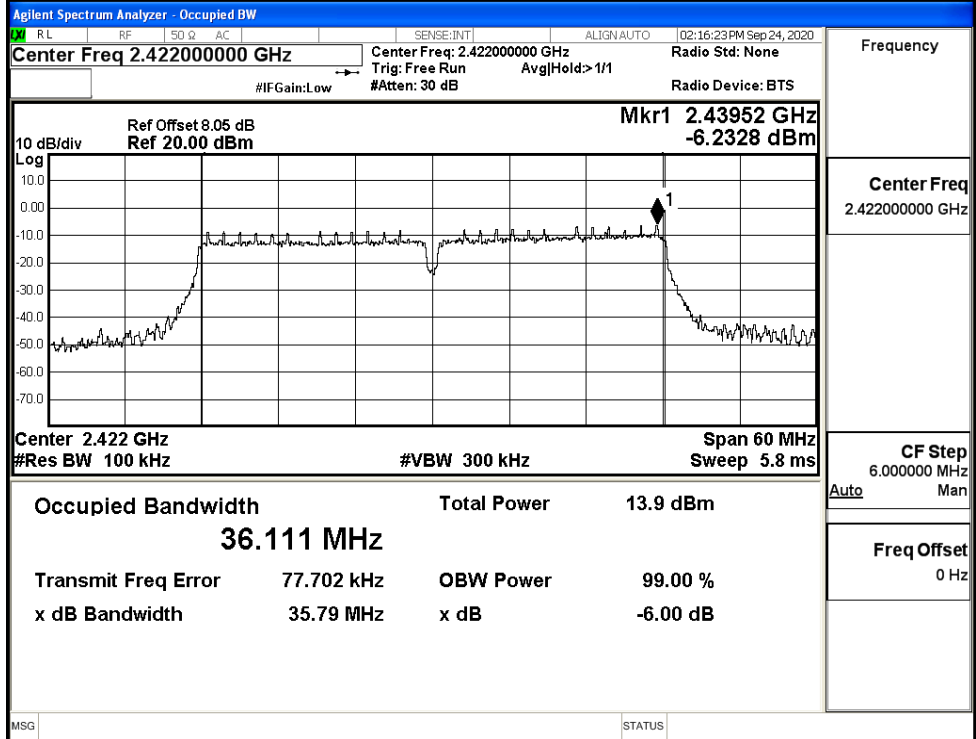
11N20SISO/MCH



11N20SISO/HCH

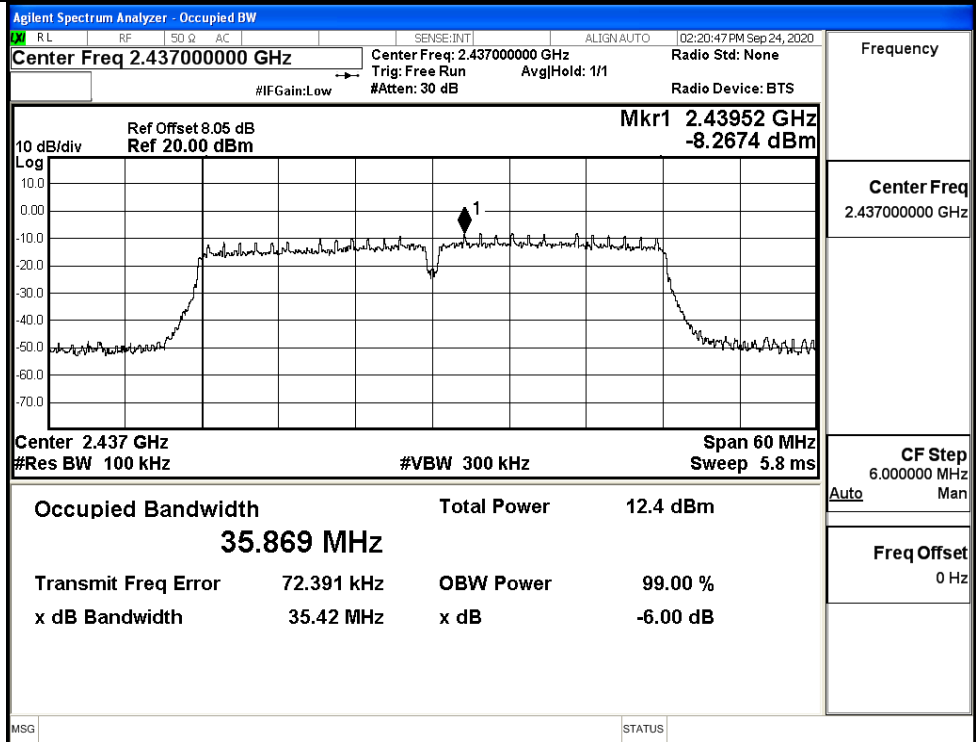


11N40SISO/LCH



Frequency	2.42200000 GHz
Center Freq	2.42200000 GHz
CF Step	6.000000 MHz
Auto Man	Auto
Freq Offset	0 Hz

11N40SISO/MCH



Frequency	2.43700000 GHz
Center Freq	2.43700000 GHz
CF Step	6.000000 MHz
Auto Man	Auto
Freq Offset	0 Hz

11N40SISO/HCH

Agilent Spectrum Analyzer - Occupied BW

RL	RF	50 Ω	AC	SENSE:INT	ALIGN AUTO	02:22:41 PM Sep 24, 2020
Center Freq 2.45200000 GHz				Center Freq: 2.45200000 GHz	Radio Std: None	Frequency
				Trig: Free Run	Avg Hold: 1/1	
				#IFGain: Low	#Atten: 30 dB	Radio Device: BTS

10 dB/div	Ref Offset 8.05 dB	Mkr1 2.44576 GHz
Log	Ref 20.00 dBm	-8.1689 dBm

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

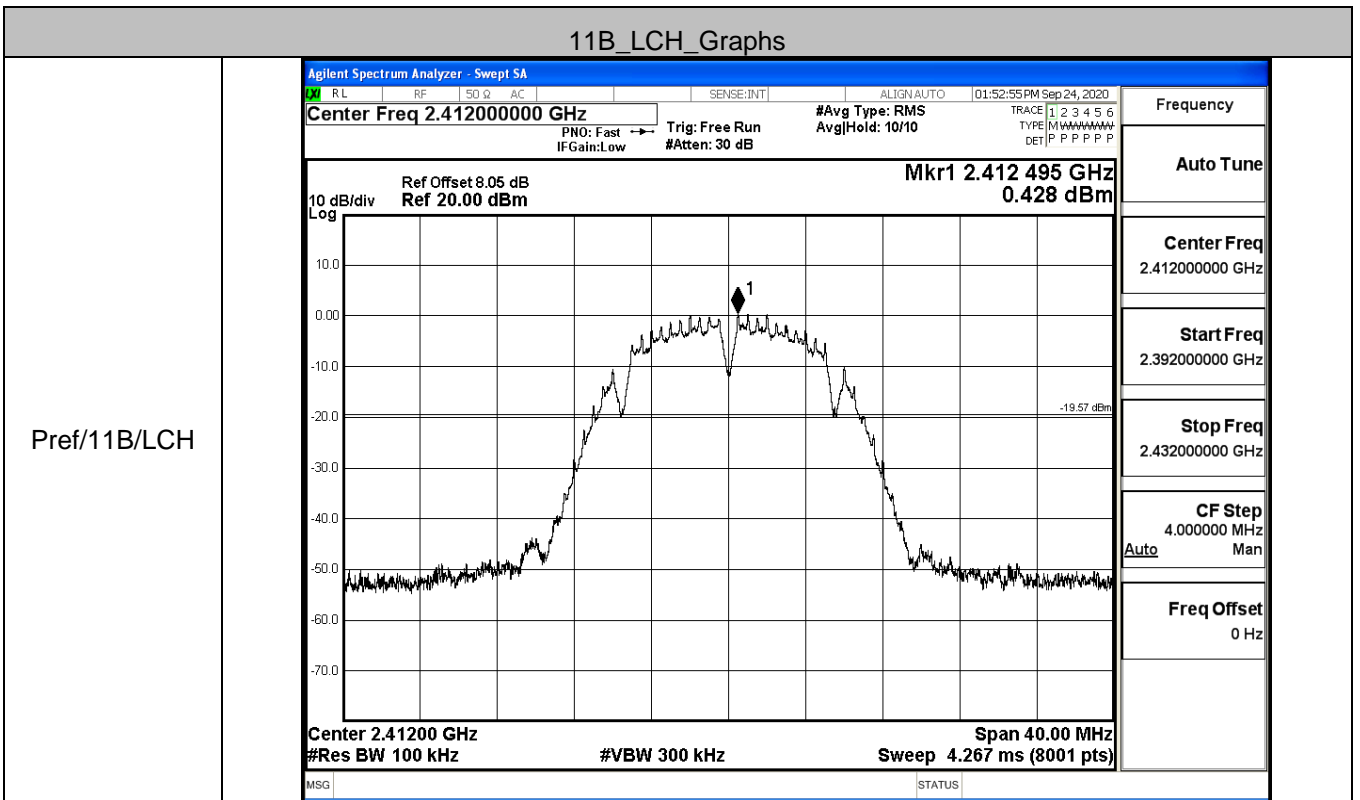
Occupied Bandwidth	Total Power	12.1 dBm
35.813 MHz		
Transmit Freq Error	-82.236 kHz	OBW Power 99.00 %
x dB Bandwidth	35.48 MHz	x dB -6.00 dB

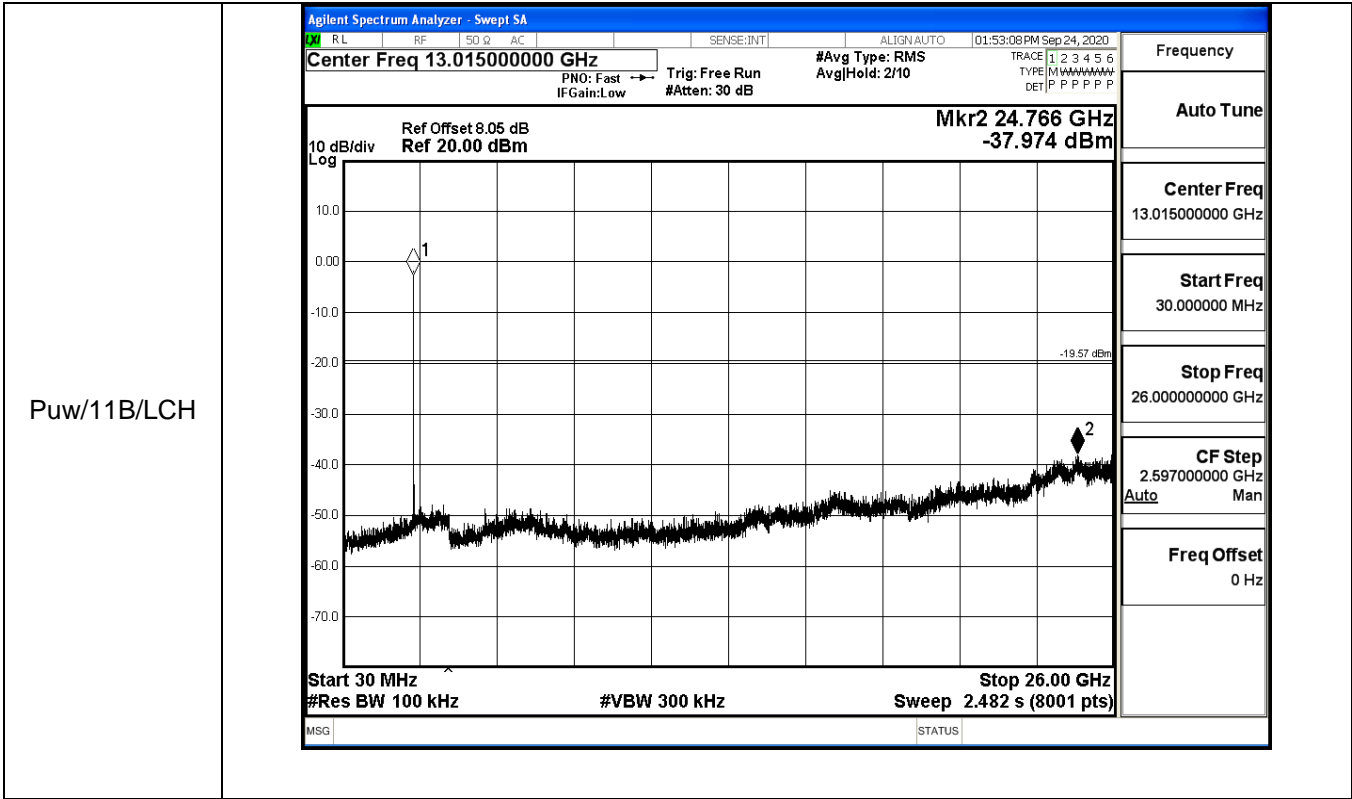
CF Step	6.000000 MHz
Auto	Man
Freq Offset	0 Hz

MSG
STATUS

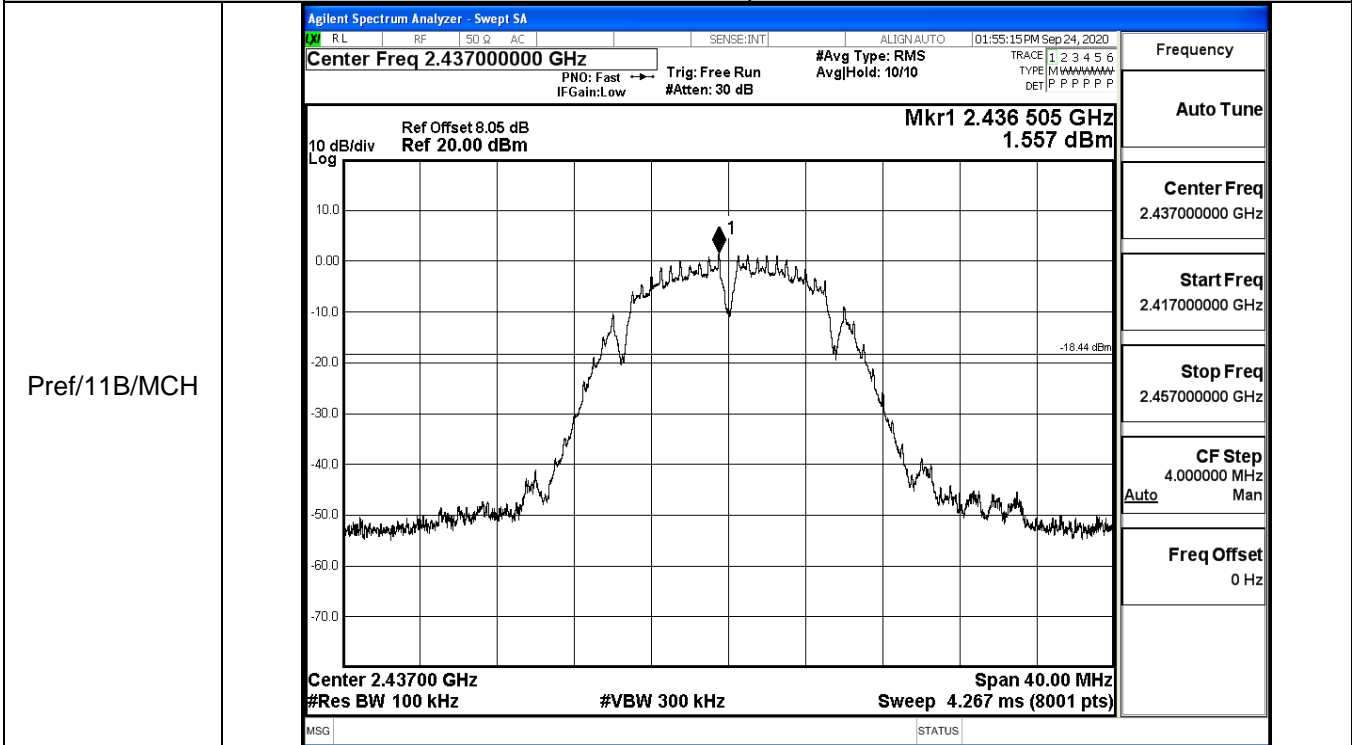
A.5 RF Conducted Spurious Emissions

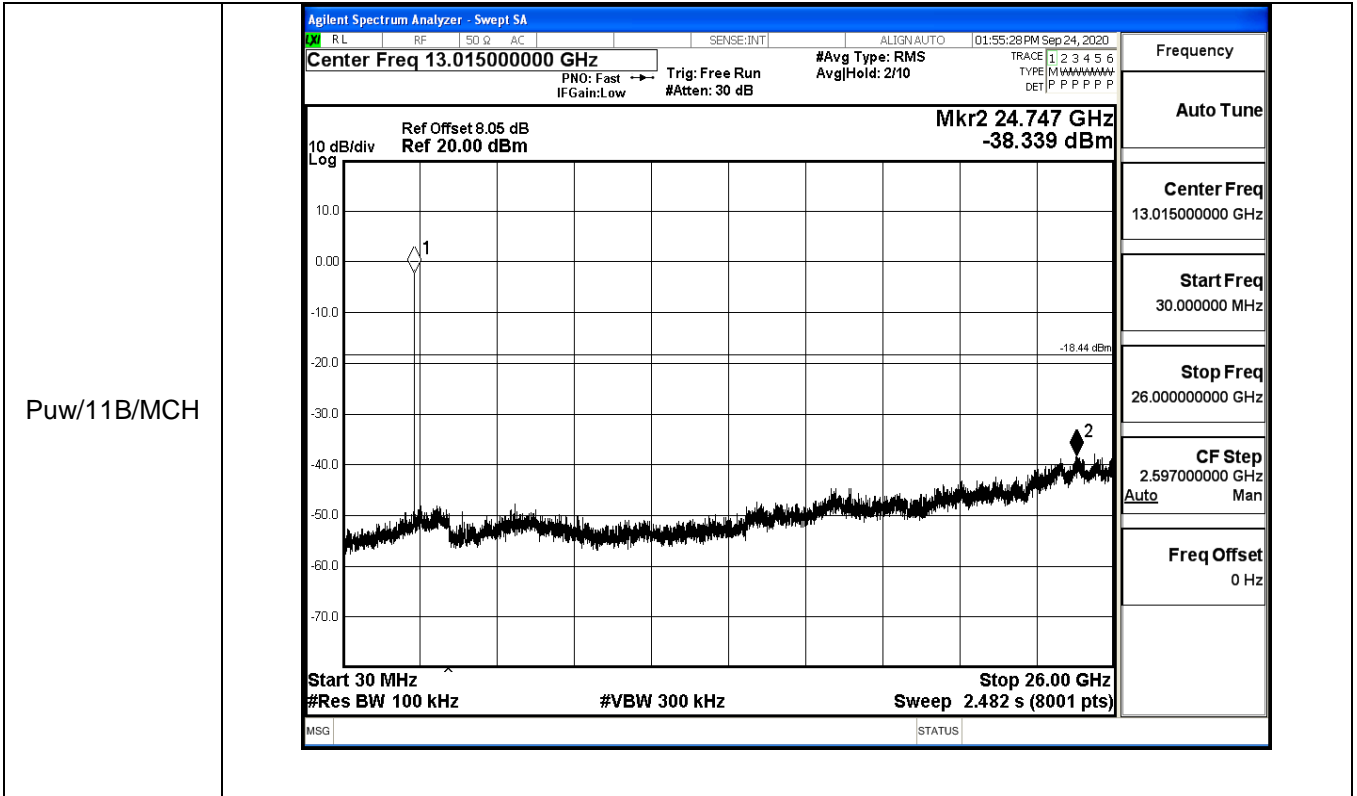
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	0.428	-37.974	-19.572	PASS
	MCH	1.557	-38.339	-18.443	PASS
	HCH	0.904	-37.384	-19.096	PASS
11G	LCH	-6.695	-37.869	-26.695	PASS
	MCH	-5.003	-38.119	-25.003	PASS
	HCH	-5.088	-37.609	-25.088	PASS
11N20 SISO	LCH	-6.692	-37.858	-26.692	PASS
	MCH	-6.219	-38.633	-26.219	PASS
	HCH	-6.182	-38.518	-26.182	PASS
11N40 SISO	LCH	-8.611	-37.607	-28.611	PASS
	MCH	-8.308	-38.356	-28.308	PASS
	HCH	-8.081	-37.685	-28.081	PASS



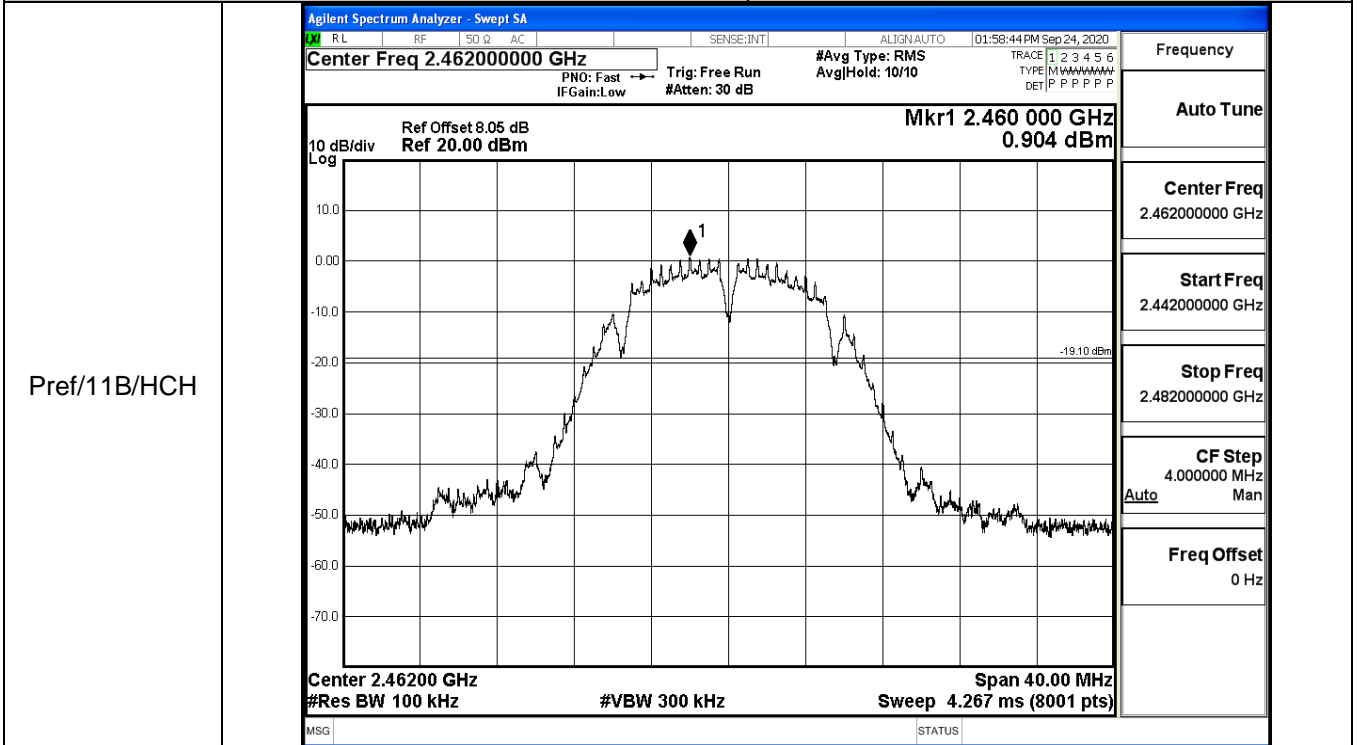


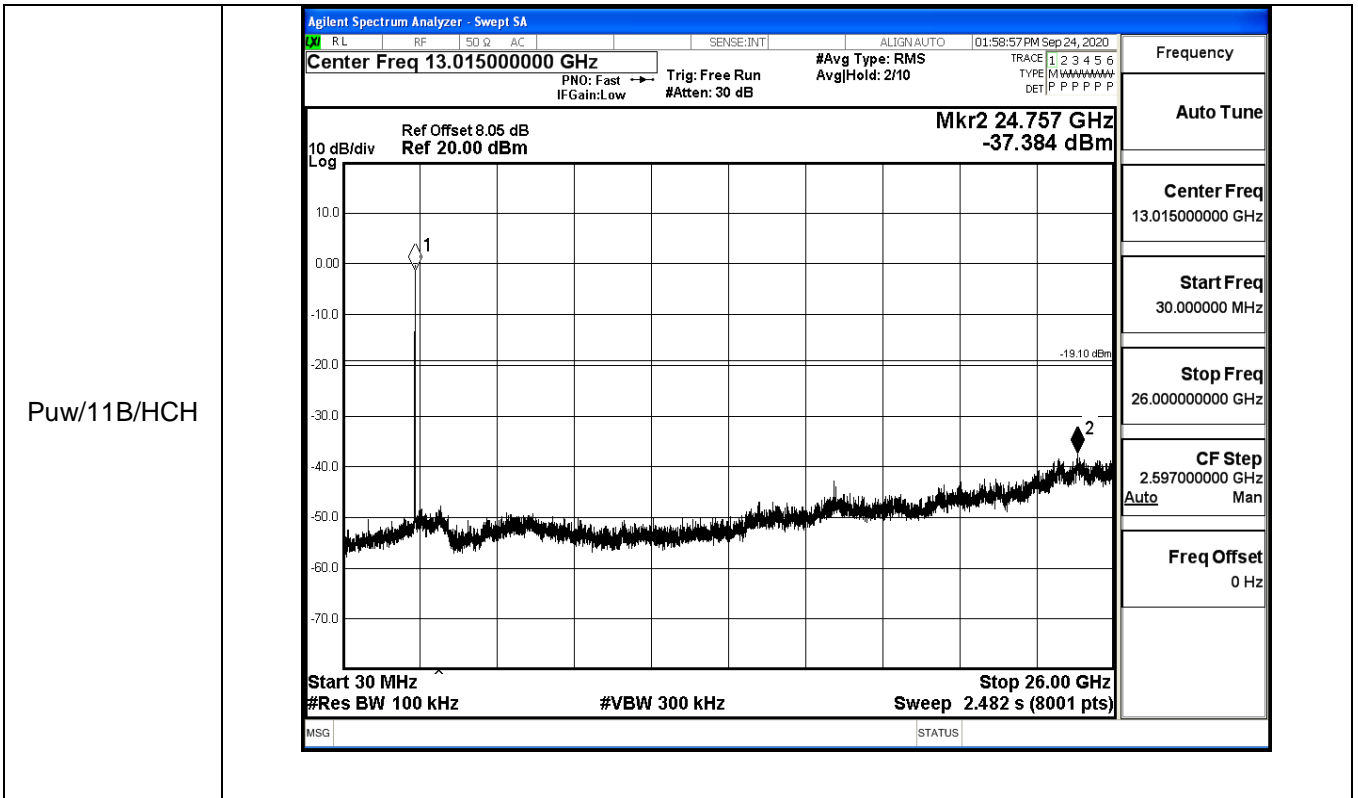
11B_MCH_Graphs



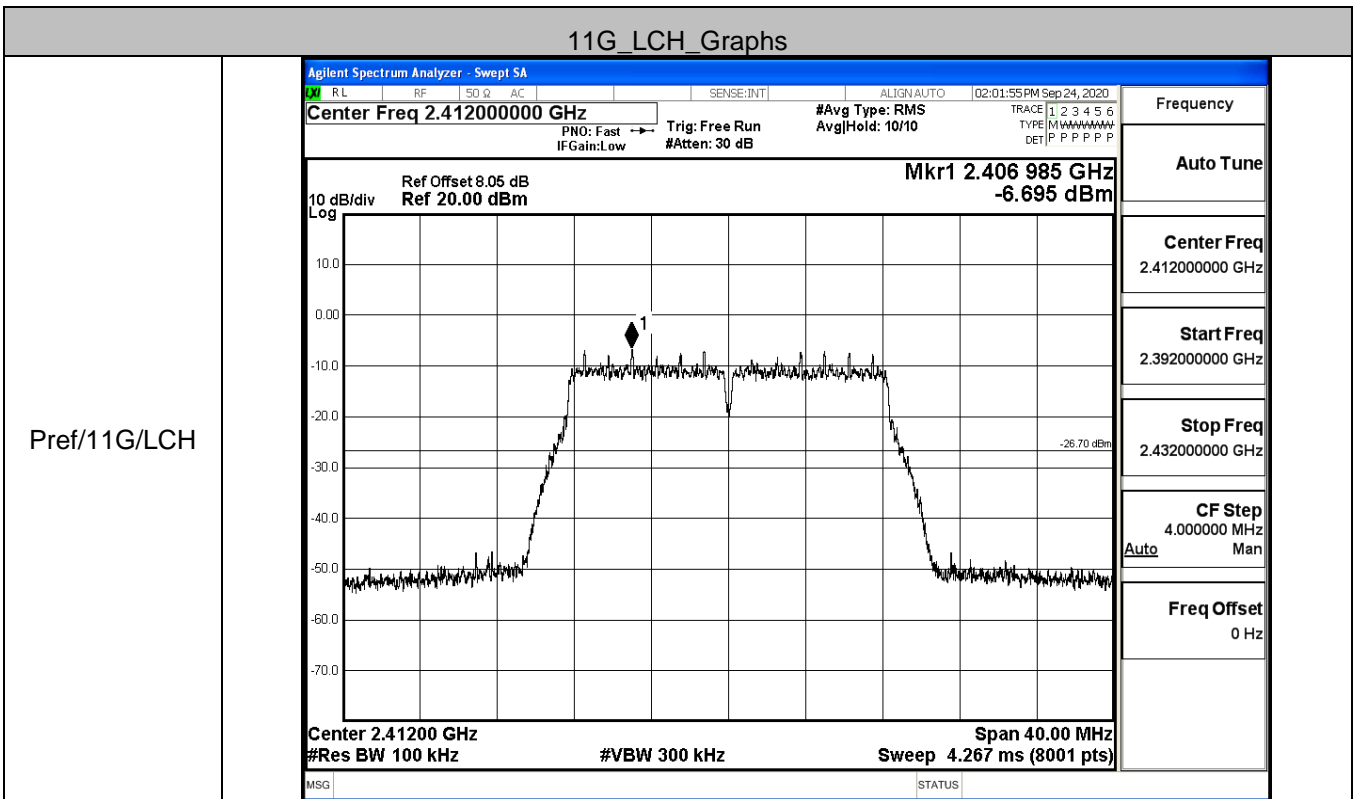


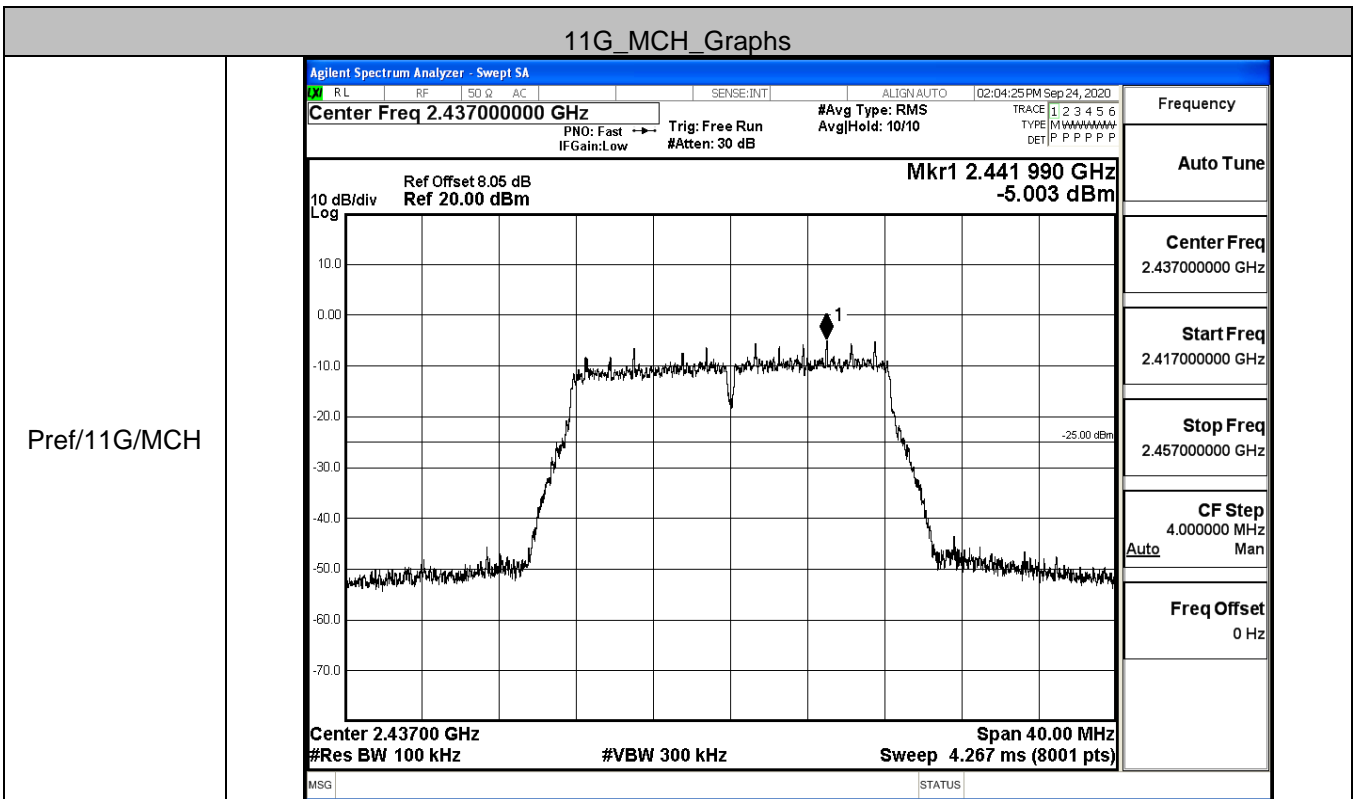
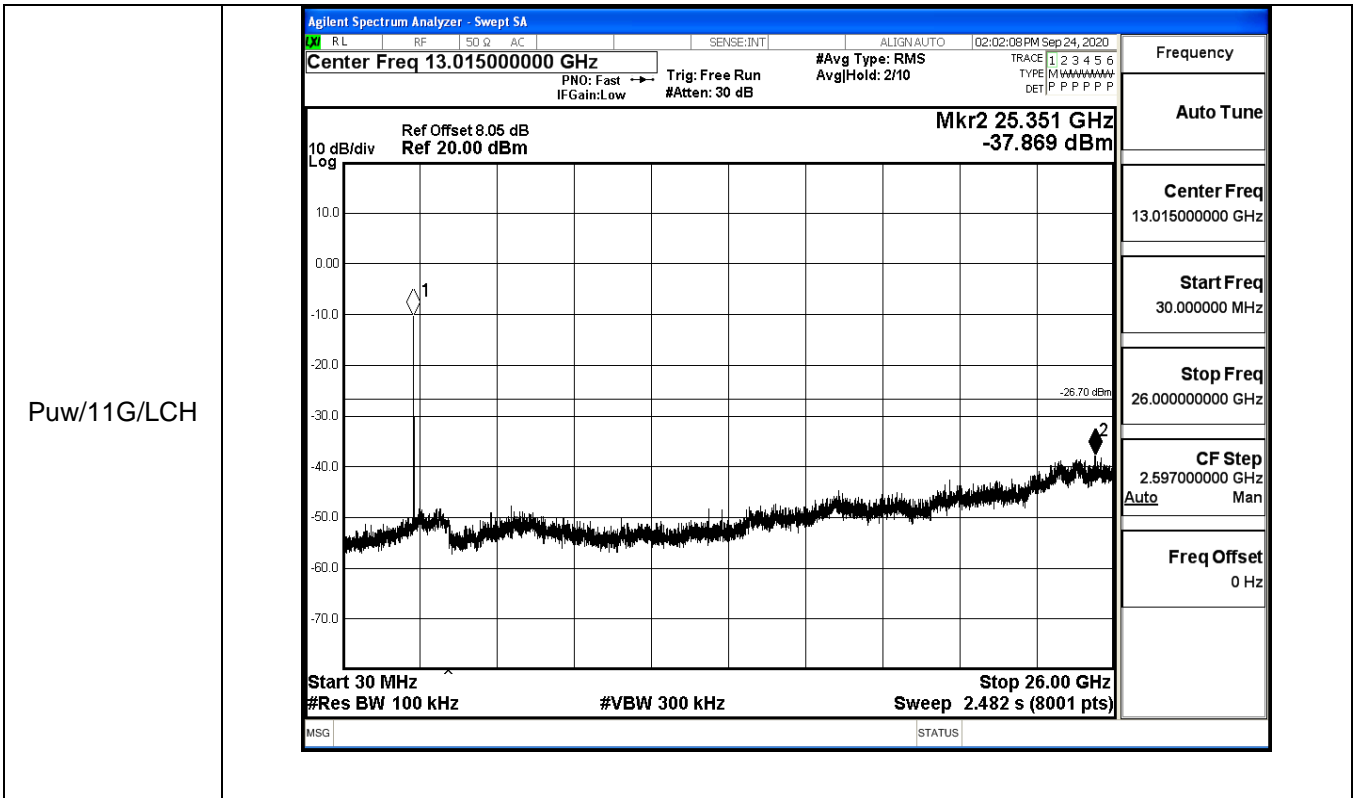
11B_HCH_Graphs



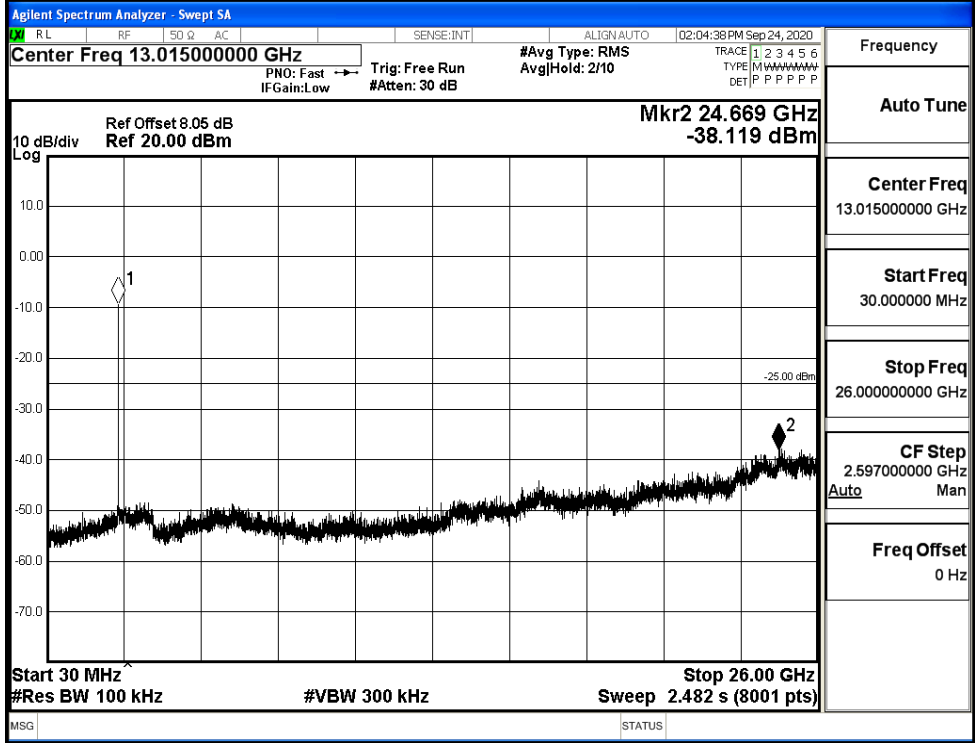


11G_LCH_Graphs



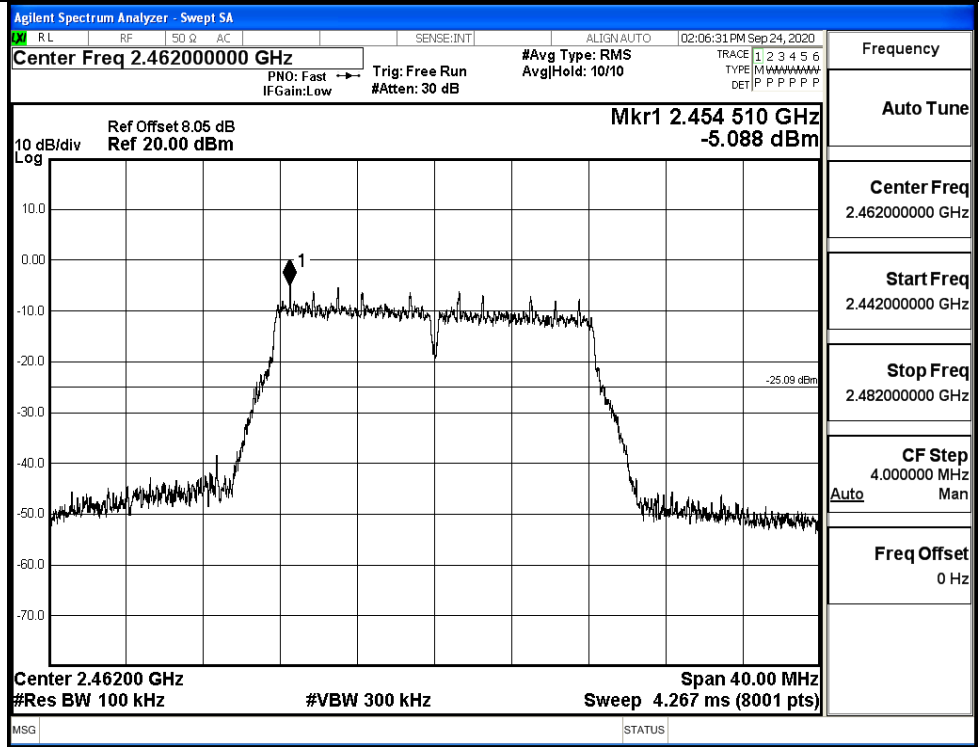


Puw/11G/MCH

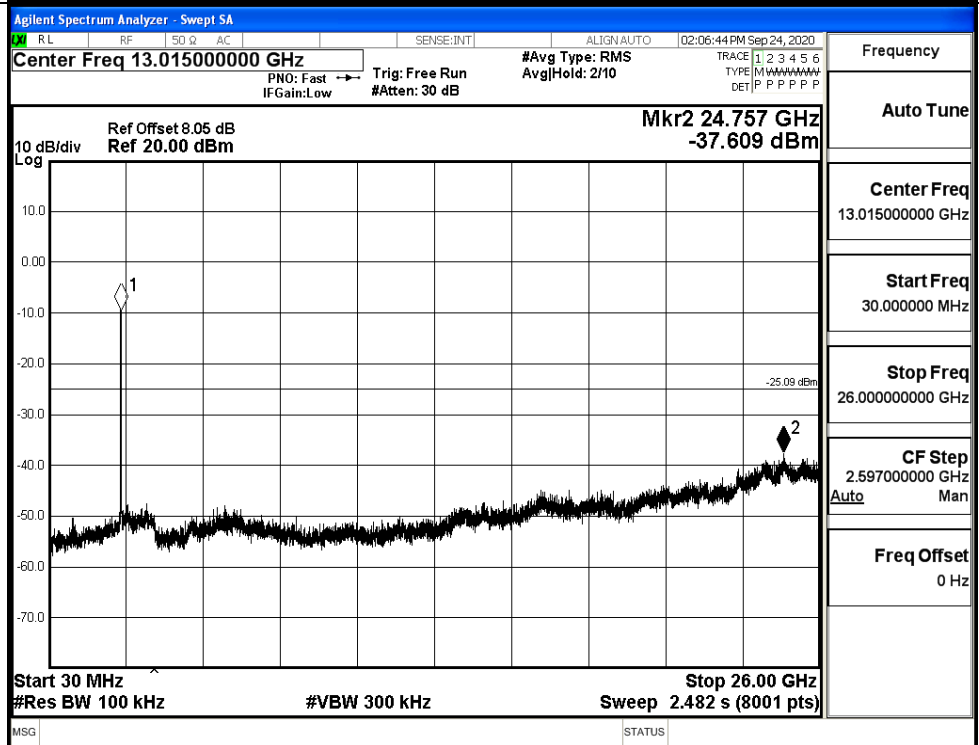


11G_HCH_Graphs

Pref/11G/HCH

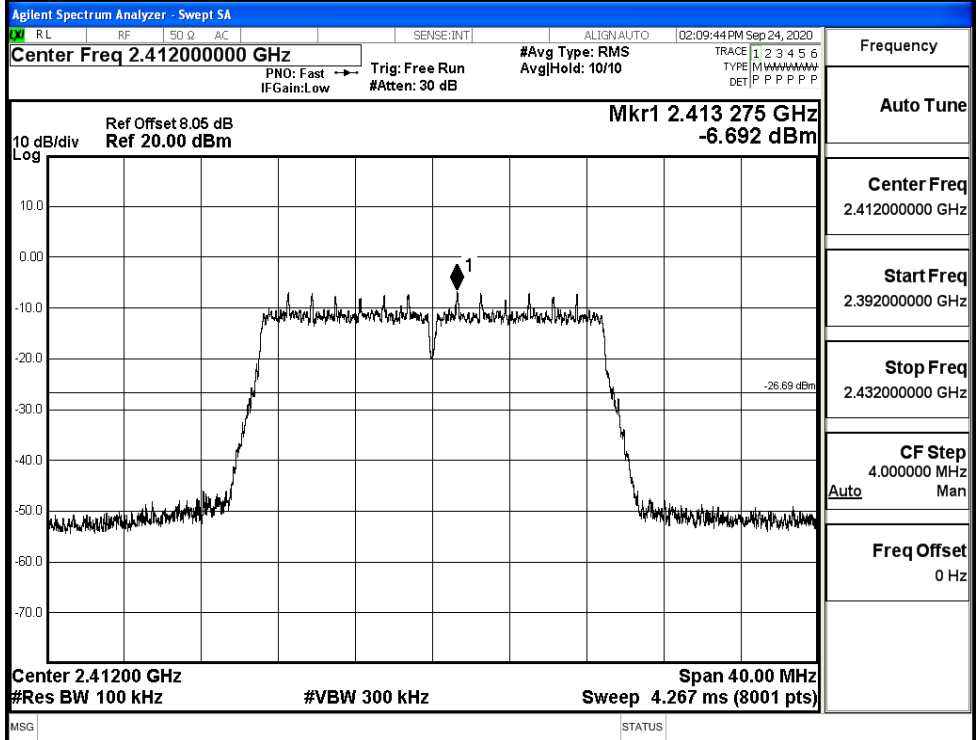


Puw/11G/HCH

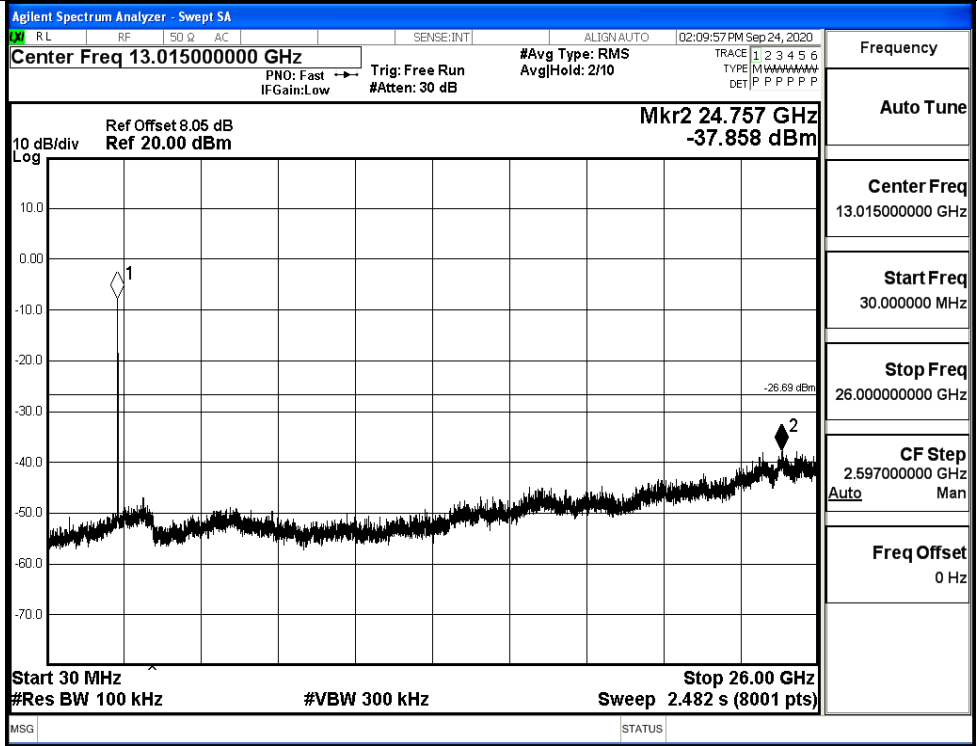


11N20SISO_LCH_Graphs

Pref/11N20SIS
O/LCH

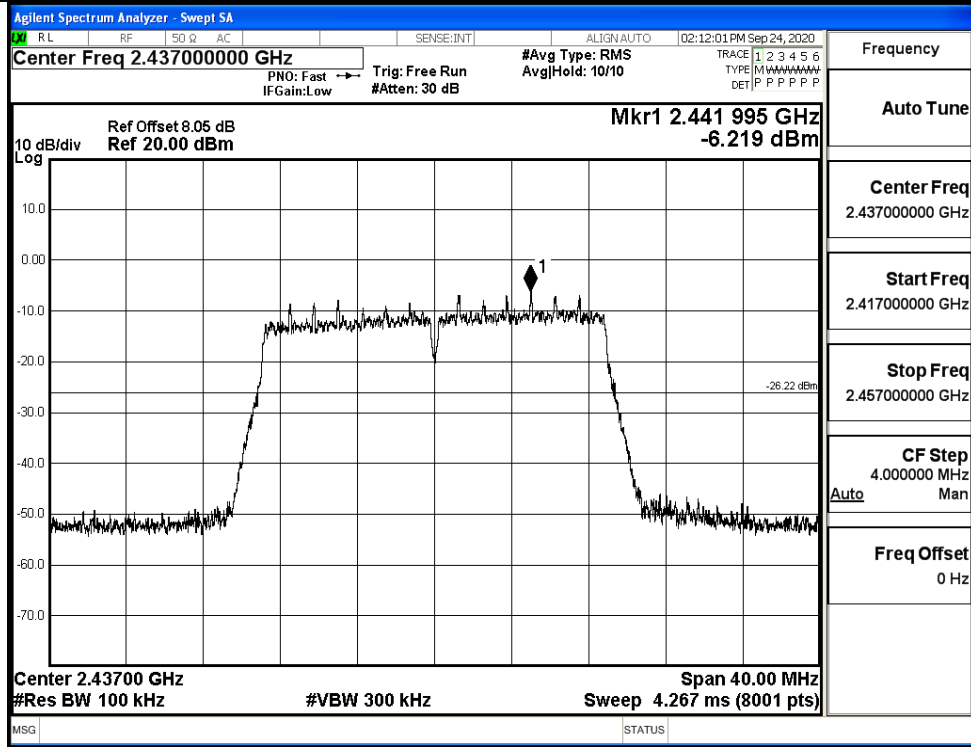


Puw/11N20
SISO/LCH

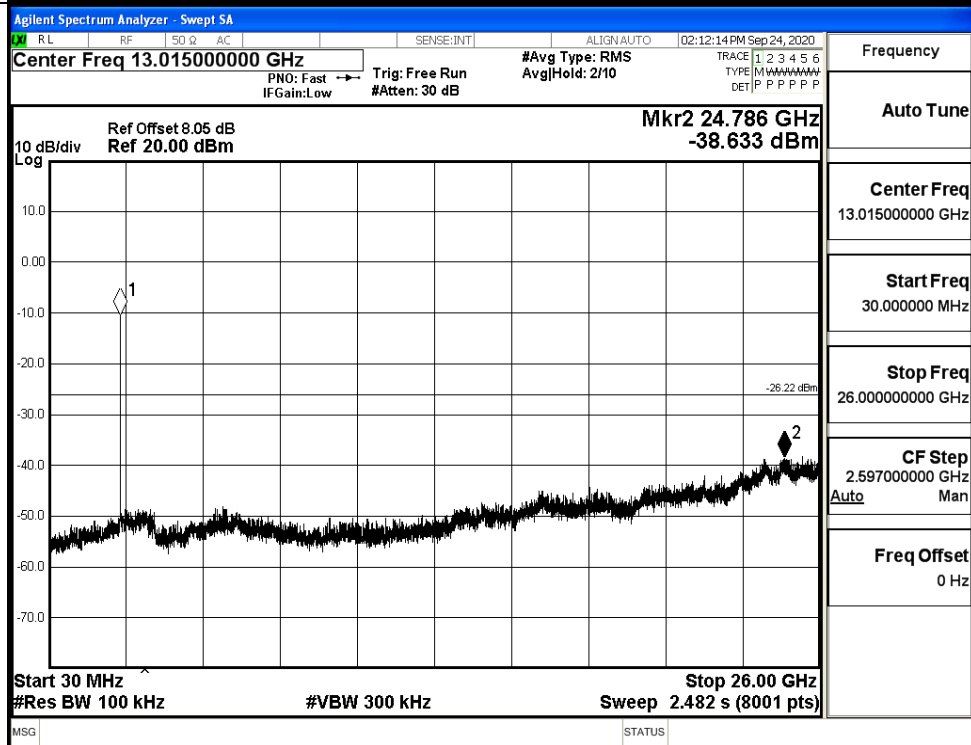


11N20SISO_MCH_Graphs

Pref/11N20
SISO/MCH

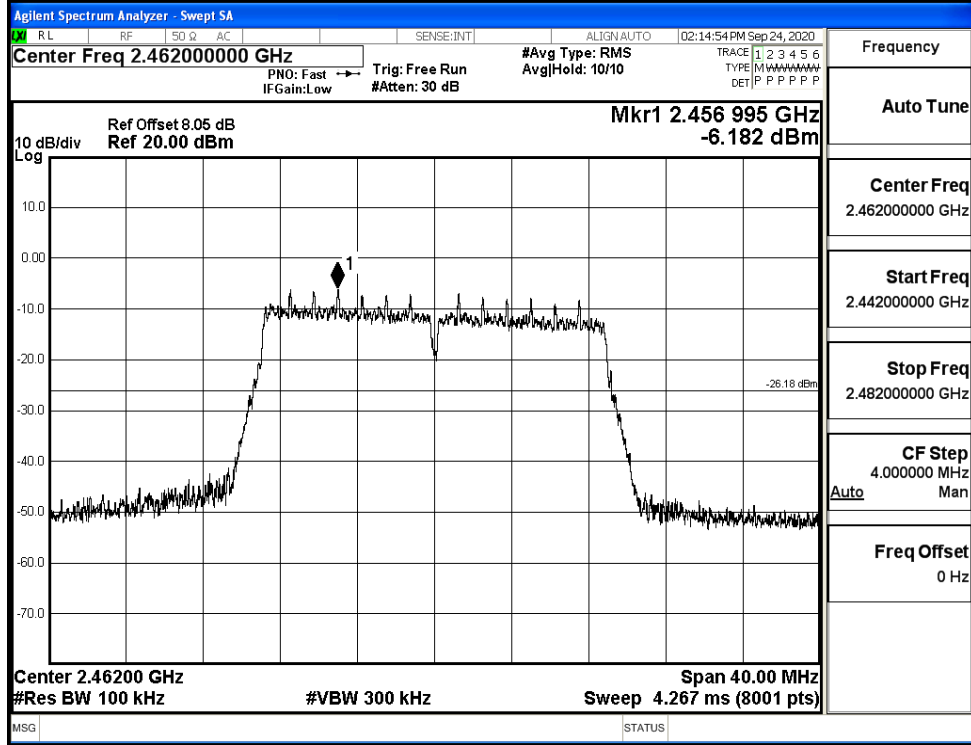


Puw/11N20
SISO/MCH

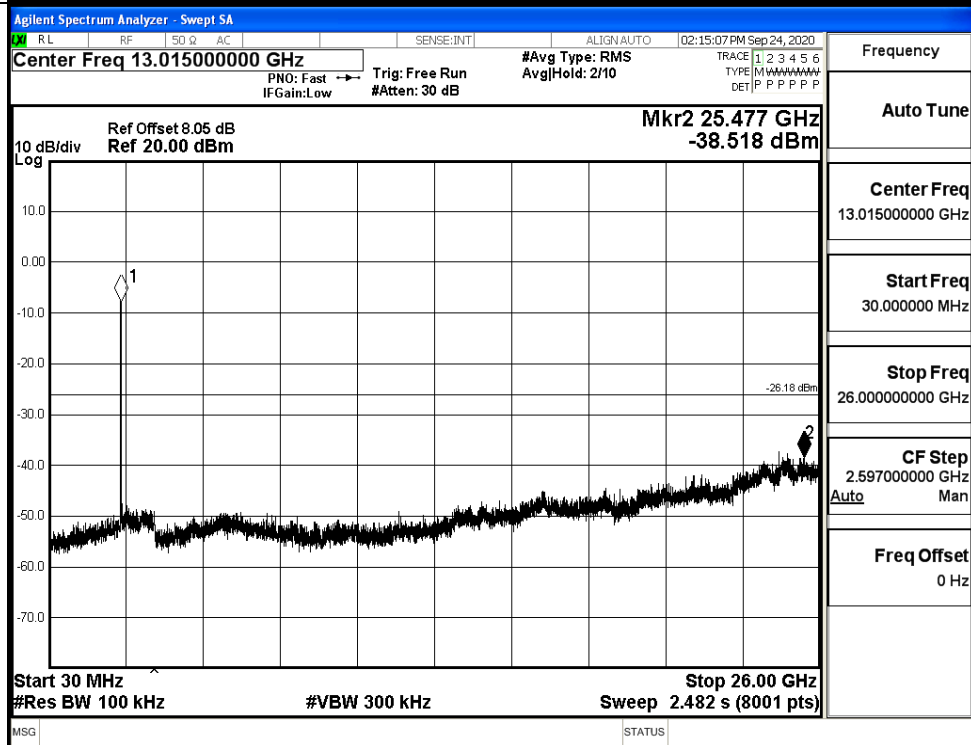


11N20SISO_HCH_Graphs

Pref/11N20
SISO/HCH

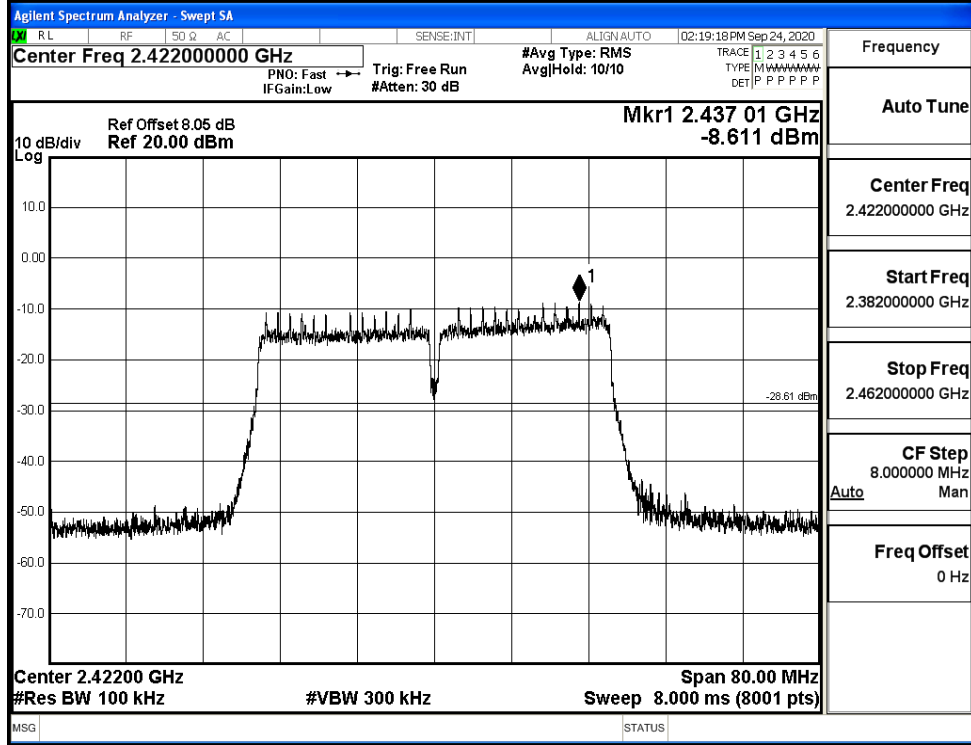


Puw/11N20
SISO/HCH

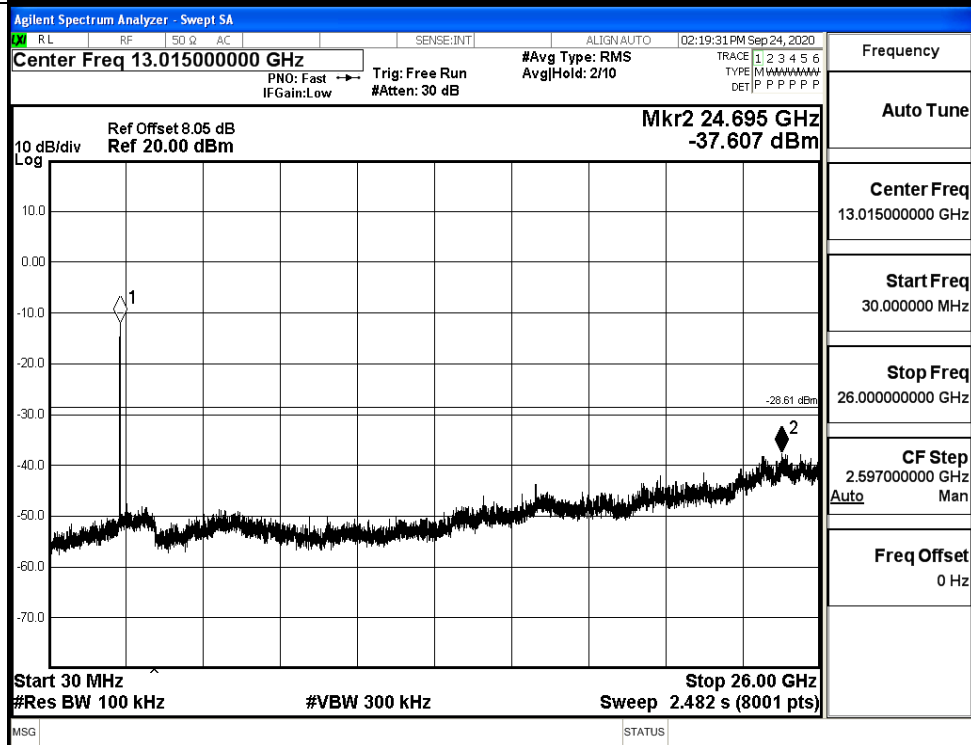


11N40SISO_LCH_Graphs

Pref/11N40
SISO/LCH

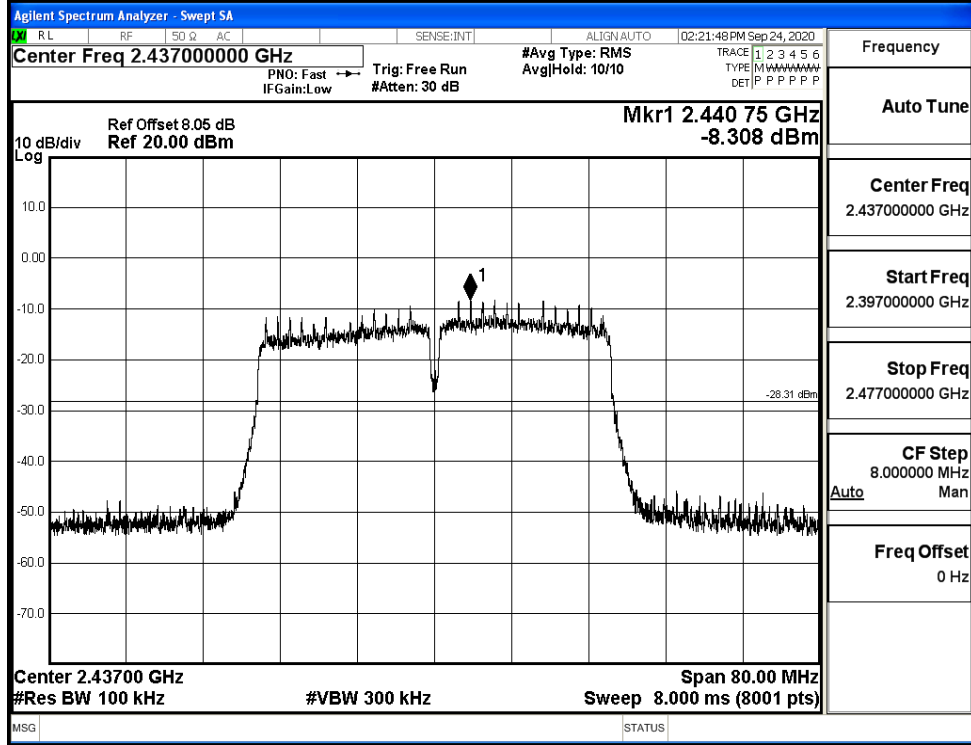


Puw/11N40
SISO/LCH

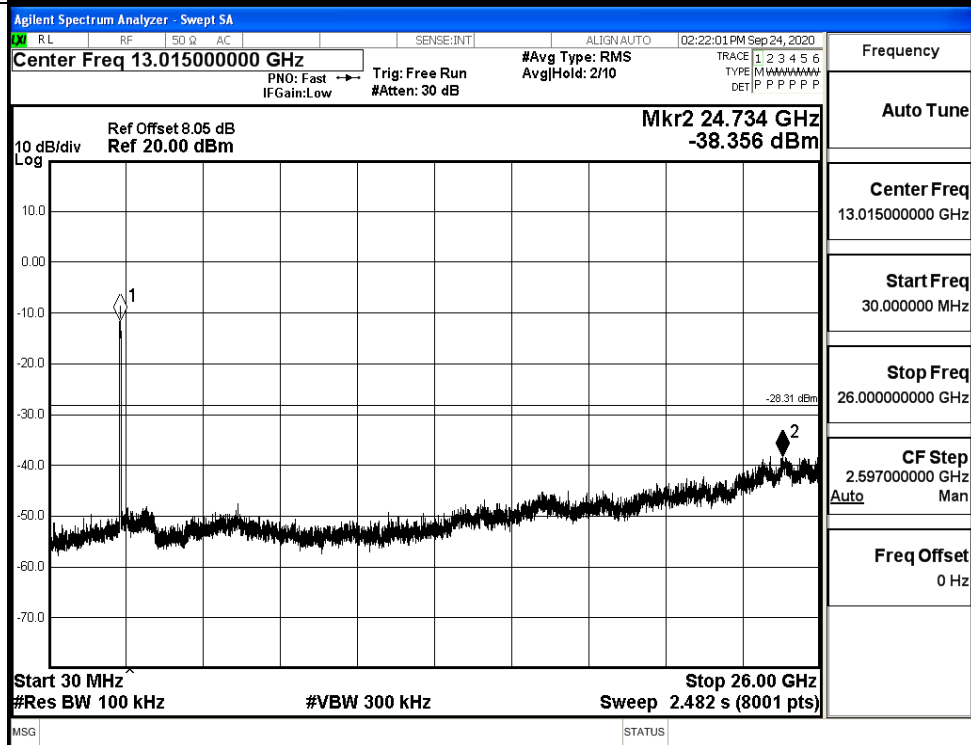


11N40SISO_MCH_Graphs

Pref/11N40
SISO/MCH

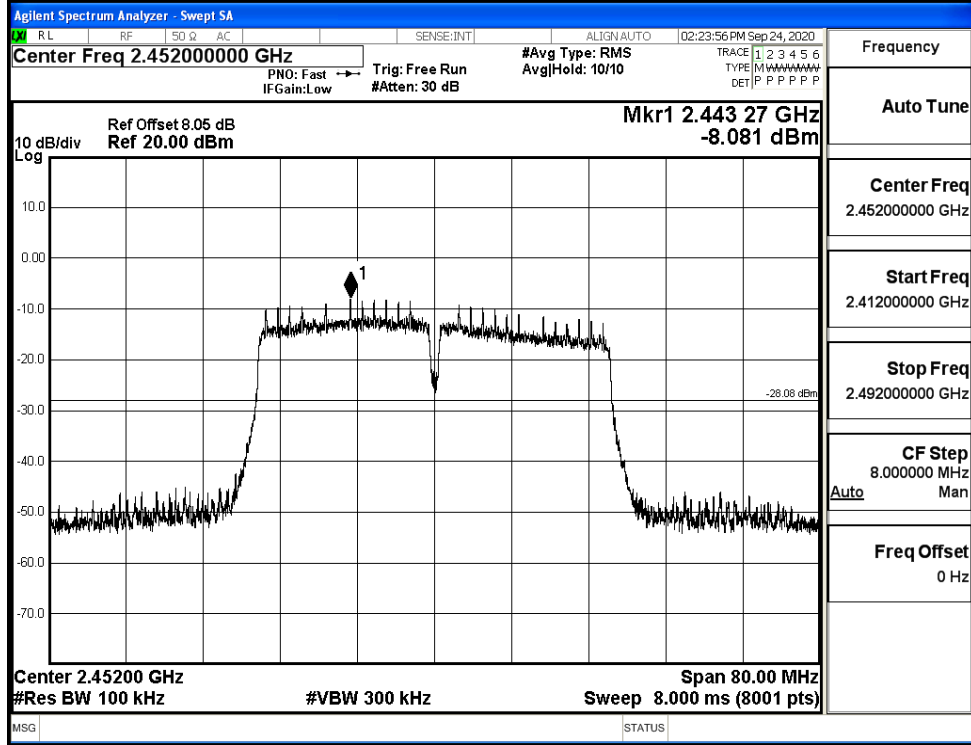


Puw/11N40
SISO/MCH

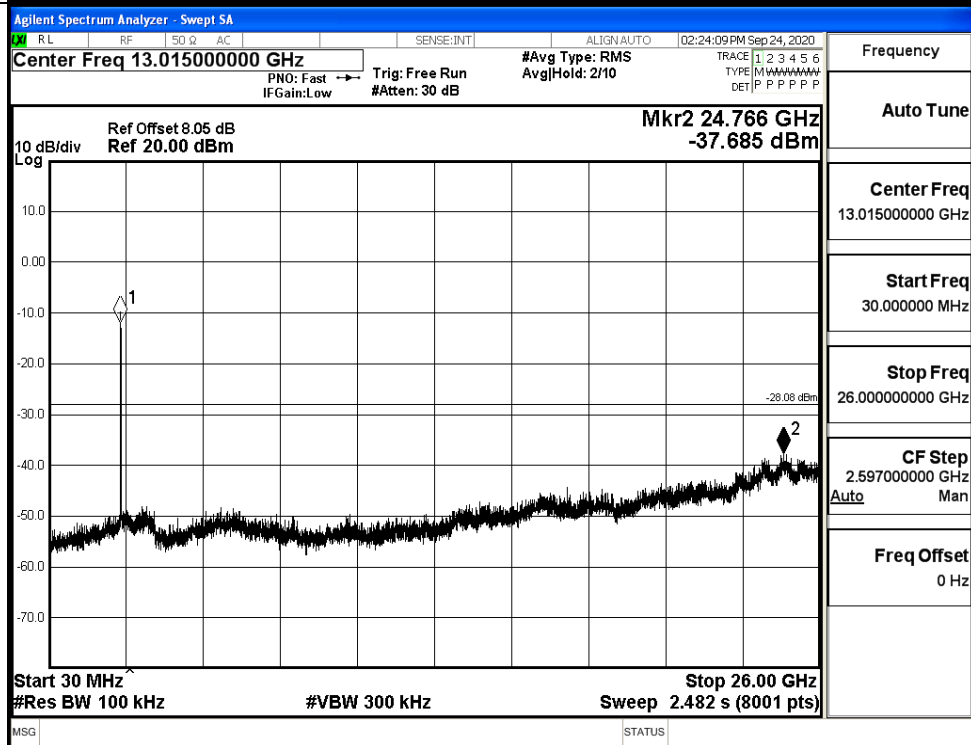


11N40SISO_HCH_Graphs

Pref/11N40
SISO/HCH

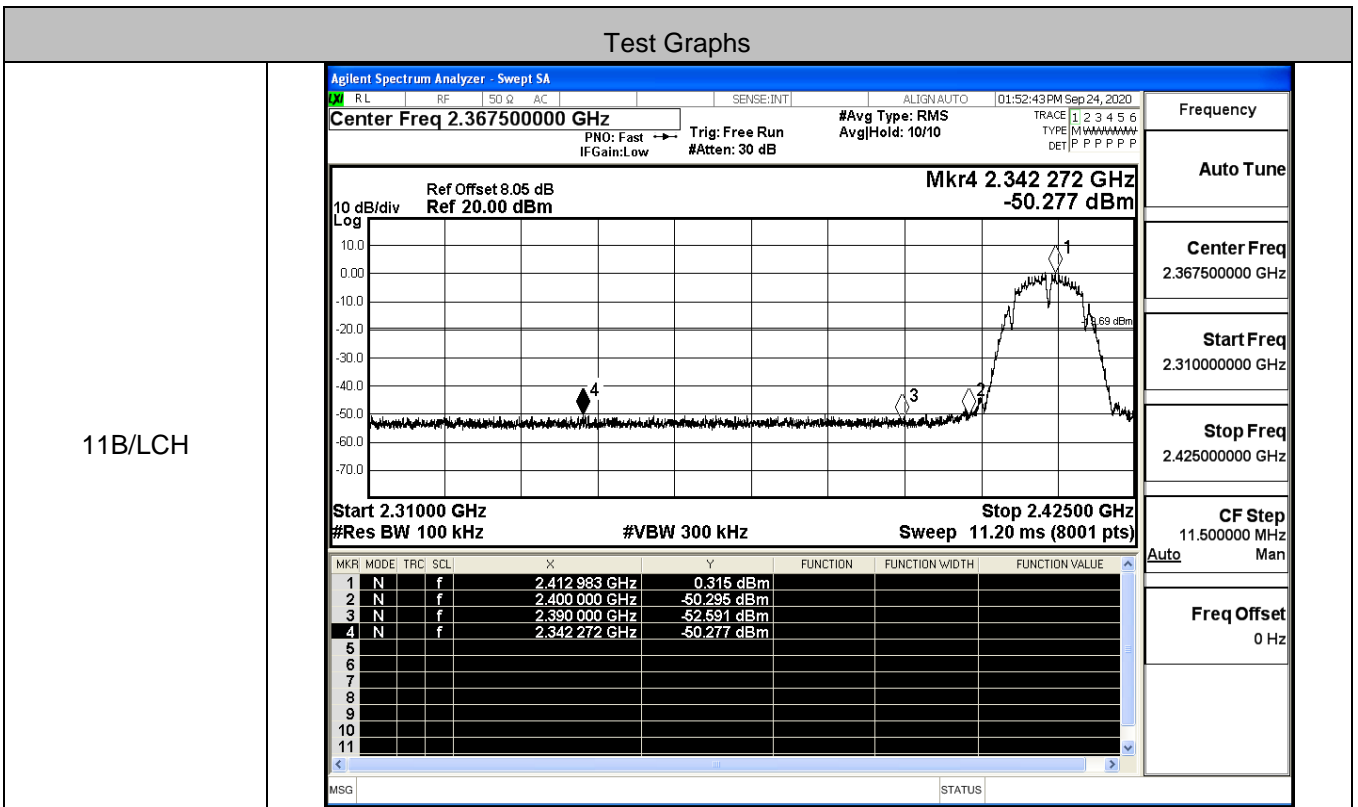


Puw/11N40
SISO/HCH

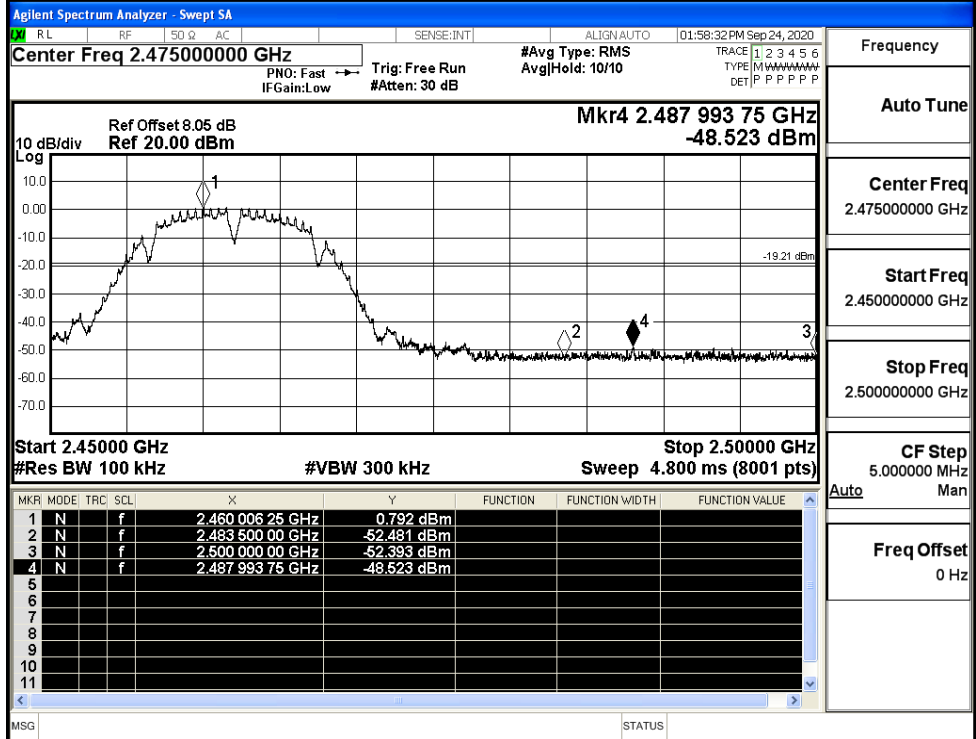


A.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	0.315	-50.277	-19.69	PASS
	HCH	0.792	-48.523	-19.21	PASS
11G	LCH	-6.614	-49.692	-26.61	PASS
	HCH	-5.321	-46.925	-25.32	PASS
11N20SISO	LCH	-6.784	-50.166	-26.78	PASS
	HCH	-6.136	-47.556	-26.14	PASS
11N40SISO	LCH	-8.444	-49.726	-28.44	PASS
	HCH	-8.014	-46.797	-28.01	PASS

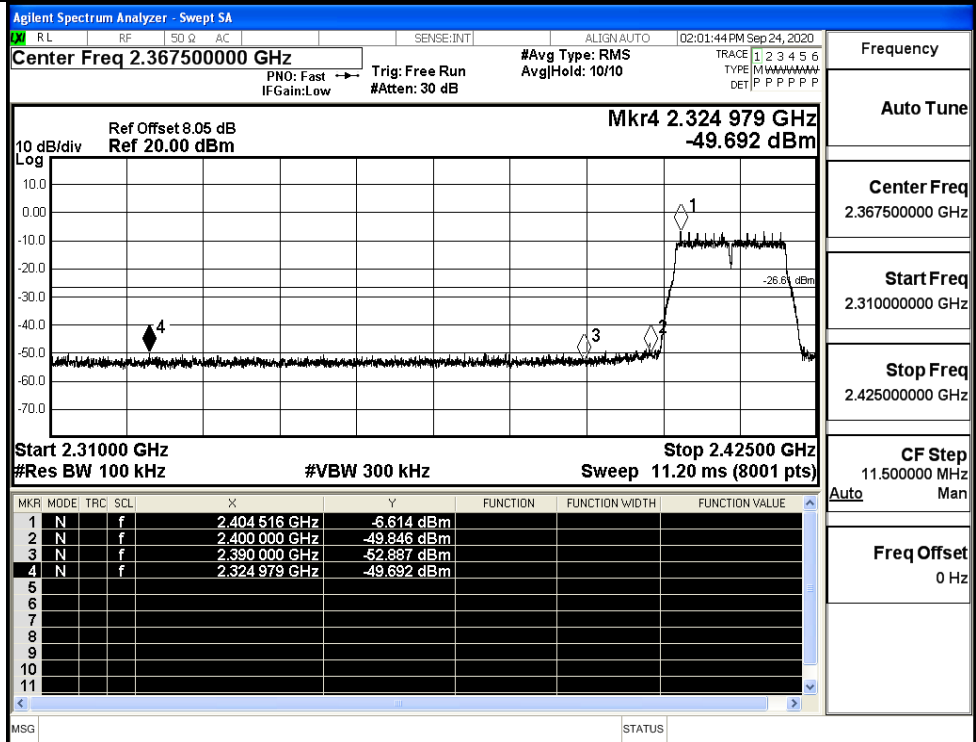


11B/HCH



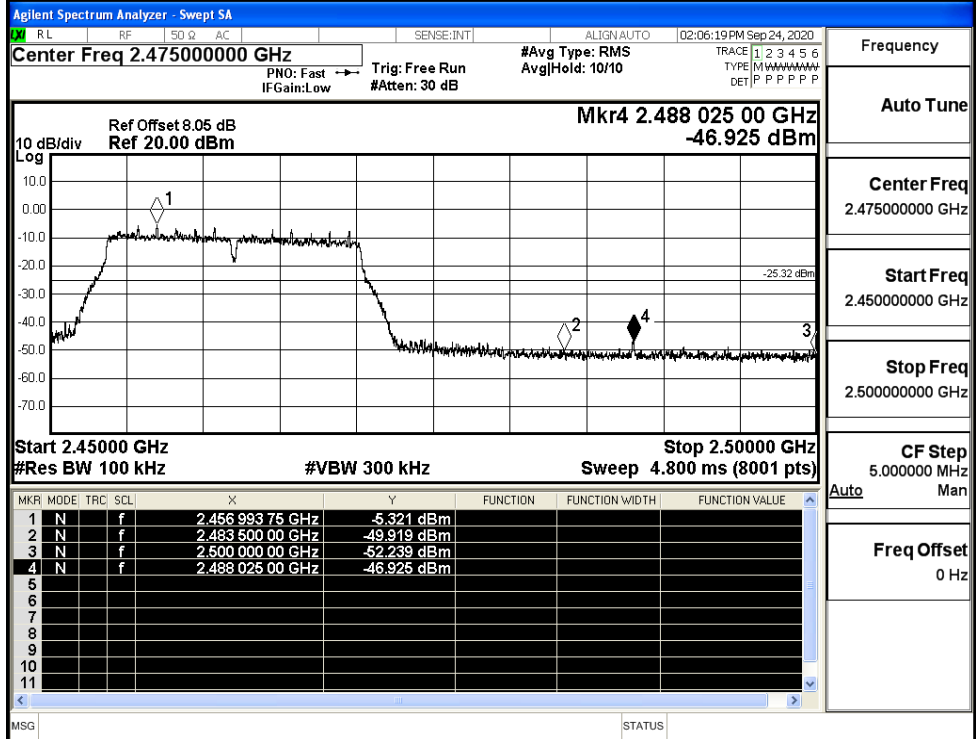
Frequency	2.47500000 GHz
Auto Tune	
Center Freq	2.47500000 GHz
Start Freq	2.45000000 GHz
Stop Freq	2.50000000 GHz
CF Step	5.000000 MHz
Freq Offset	0 Hz

11G/LCH



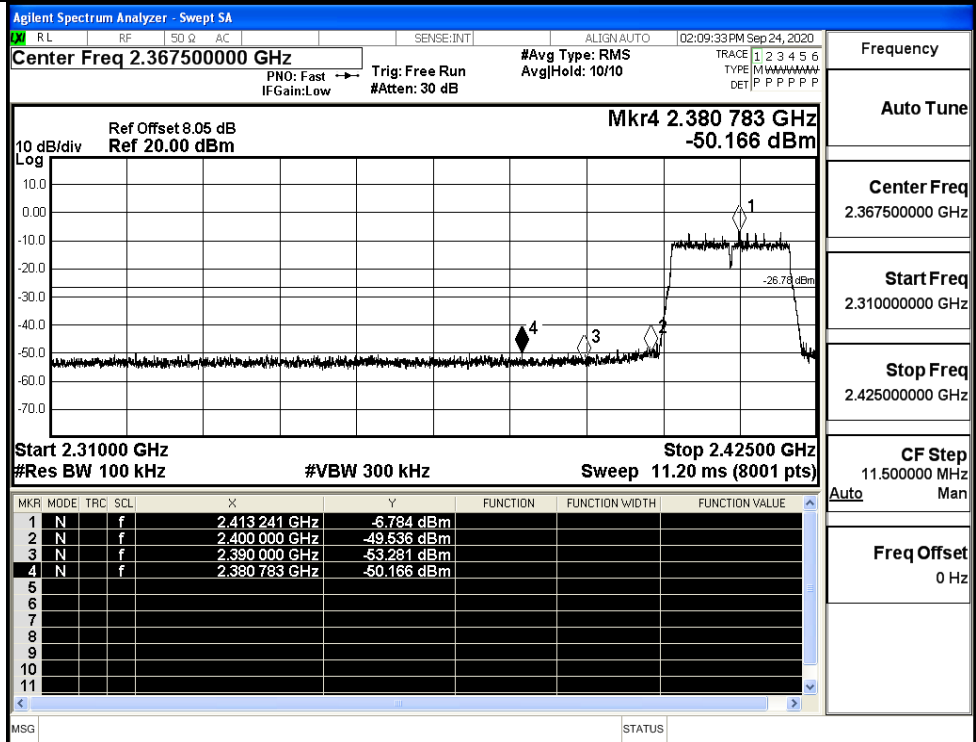
Frequency	2.36750000 GHz
Auto Tune	
Center Freq	2.36750000 GHz
Start Freq	2.31000000 GHz
Stop Freq	2.42500000 GHz
CF Step	11.500000 MHz
Freq Offset	0 Hz

11G/HCH



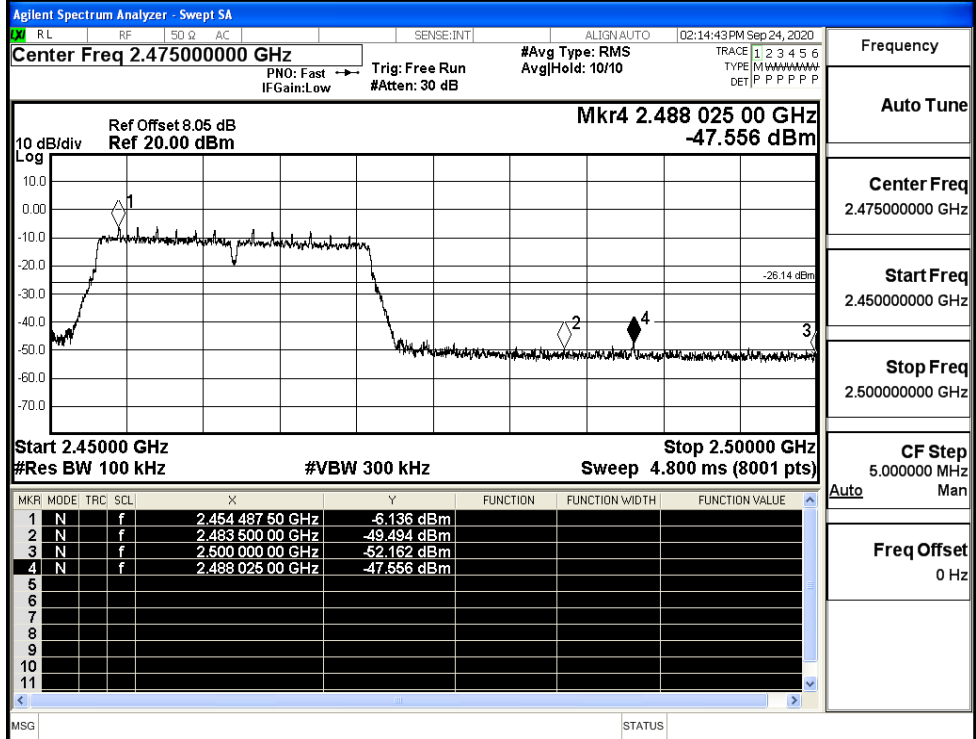
Frequency	2.475000000 GHz
Auto Tune	
Center Freq	2.475000000 GHz
Start Freq	2.450000000 GHz
Stop Freq	2.500000000 GHz
CF Step	5.000000 MHz
Freq Offset	0 Hz

11N20SISO/LCH



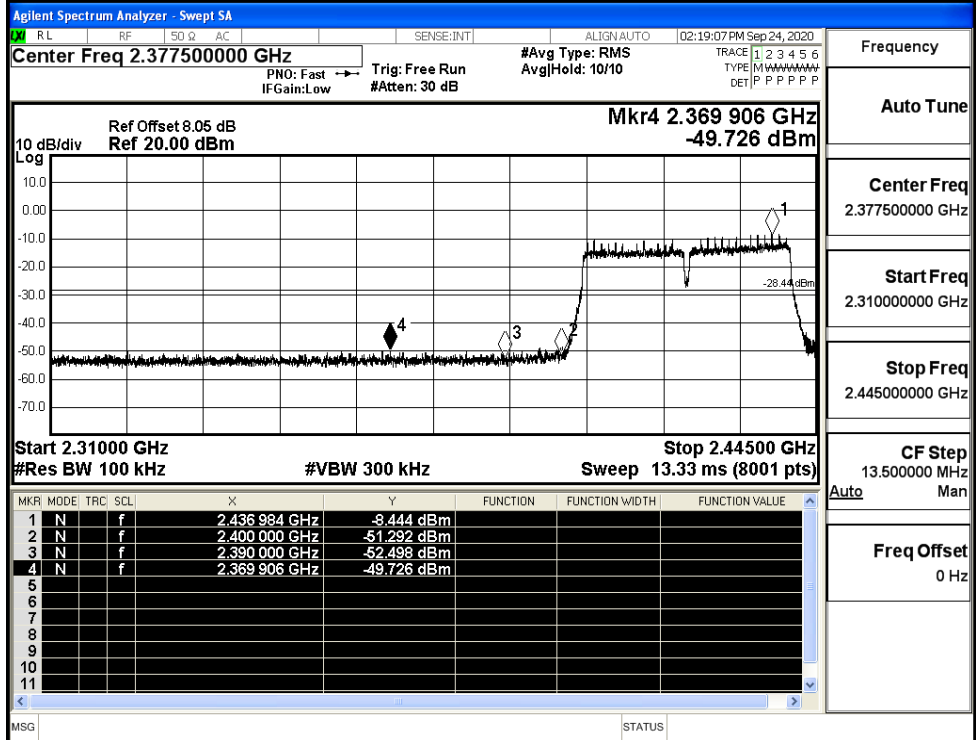
Frequency	2.367500000 GHz
Auto Tune	
Center Freq	2.367500000 GHz
Start Freq	2.310000000 GHz
Stop Freq	2.425000000 GHz
CF Step	11.500000 MHz
Freq Offset	0 Hz

11N20SISO/HCH



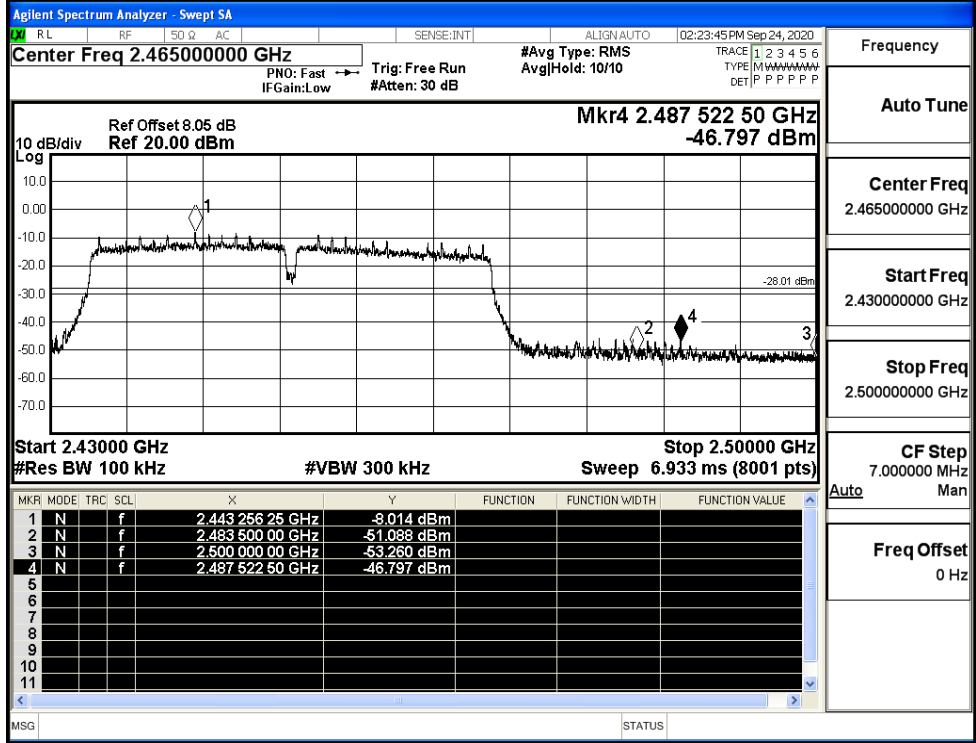
Frequency	2.475000000 GHz
Auto Tune	
Center Freq	2.475000000 GHz
Start Freq	2.450000000 GHz
Stop Freq	2.500000000 GHz
CF Step	5.000000 MHz
Freq Offset	0 Hz

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



Frequency

Auto Tune

Center Freq
2.465000000 GHz

Start Freq
2.430000000 GHz

Stop Freq
2.500000000 GHz

CF Step
7.000000 MHz

Auto Man

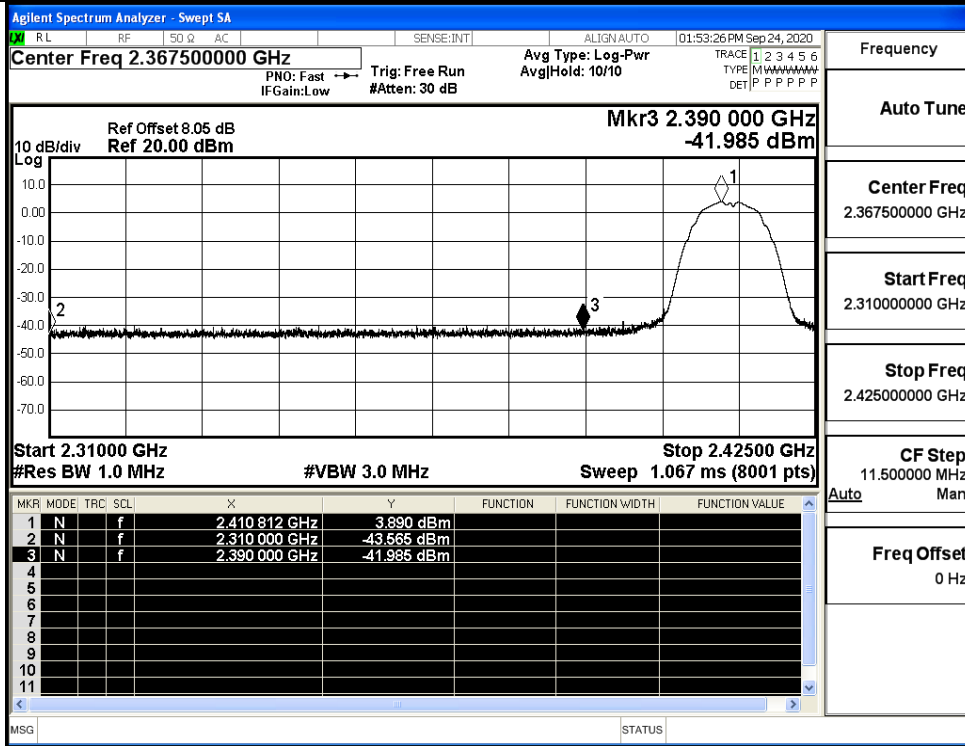
Freq Offset
0 Hz

A.7 Restrict-band band-edge measurements

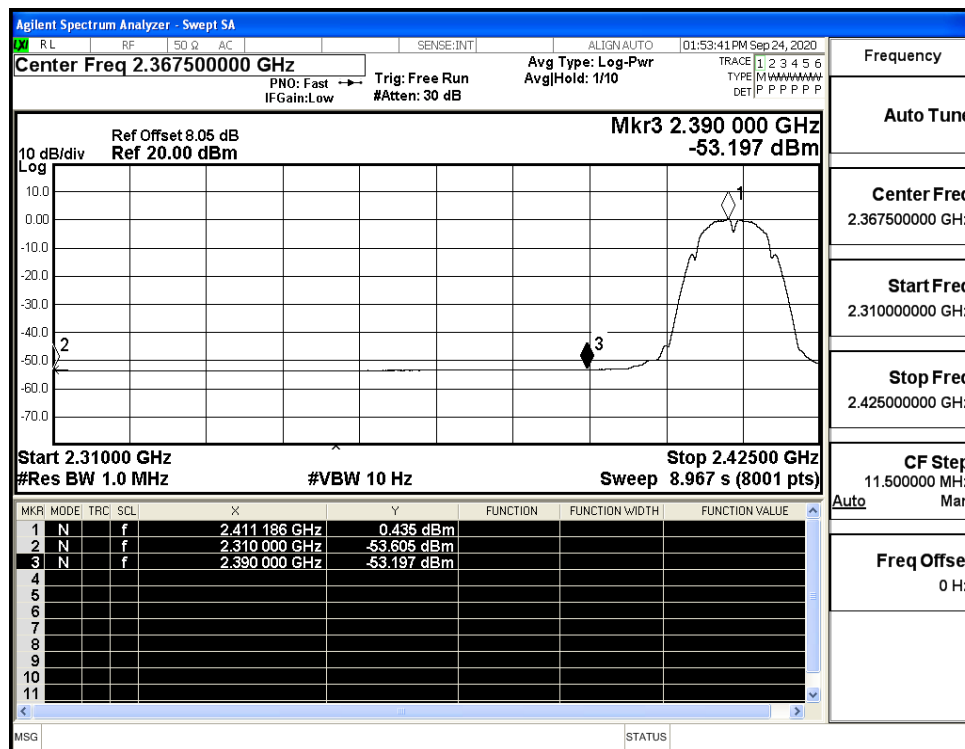
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBu V/m]	Verdict
11B	2412	Ant1	2310.0	-43.57	2.0	0	53.66	PEAK	74	PASS
	2412	Ant1	2310.0	-53.61	2.0	0	43.62	AV	54	PASS
	2412	Ant1	2390.0	-41.99	2.0	0	55.24	PEAK	74	PASS
	2412	Ant1	2390.0	-53.20	2.0	0	44.03	AV	54	PASS
	2462	Ant1	2483.5	-41.76	2.0	0	55.47	PEAK	74	PASS
	2462	Ant1	2483.5	-52.53	2.0	0	44.70	AV	54	PASS
	2462	Ant1	2500.0	-41.75	2.0	0	55.48	PEAK	74	PASS
	2462	Ant1	2500.0	-52.60	2.0	0	44.63	AV	54	PASS
11G	2412	Ant1	2310.0	-43.35	2.0	0	53.88	PEAK	74	PASS
	2412	Ant1	2310.0	-53.58	2.0	0	43.65	AV	54	PASS
	2412	Ant1	2390.0	-43.82	2.0	0	53.41	PEAK	74	PASS
	2412	Ant1	2390.0	-53.14	2.0	0	44.09	AV	54	PASS
	2462	Ant1	2483.5	-39.89	2.0	0	57.34	PEAK	74	PASS
	2462	Ant1	2483.5	-51.98	2.0	0	45.25	AV	54	PASS
	2462	Ant1	2500.0	-41.88	2.0	0	55.35	PEAK	74	PASS
	2462	Ant1	2500.0	-52.56	2.0	0	44.67	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-42.96	2.0	0	54.27	PEAK	74	PASS
	2412	Ant1	2310.0	-53.56	2.0	0	43.67	AV	54	PASS
	2412	Ant1	2390.0	-42.90	2.0	0	54.33	PEAK	74	PASS
	2412	Ant1	2390.0	-53.08	2.0	0	44.15	AV	54	PASS
	2462	Ant1	2483.5	-42.05	2.0	0	55.18	PEAK	74	PASS
	2462	Ant1	2483.5	-52.26	2.0	0	44.97	AV	54	PASS
	2462	Ant1	2500.0	-43.06	2.0	0	54.17	PEAK	74	PASS
	2462	Ant1	2500.0	-52.59	2.0	0	44.64	AV	54	PASS
11N40 SISO	2422	Ant1	2310.0	-42.38	2.0	0	54.85	PEAK	74	PASS
	2422	Ant1	2310.0	-53.56	2.0	0	43.67	AV	54	PASS

	2422	Ant1	2390.0	-42.36	2.0	0	54.87	PEAK	74	PASS
	2422	Ant1	2390.0	-53.09	2.0	0	44.14	AV	54	PASS
	2452	Ant1	2483.5	-41.21	2.0	0	56.02	PEAK	74	PASS
	2452	Ant1	2483.5	-52.06	2.0	0	45.17	AV	54	PASS
	2452	Ant1	2500.0	-41.35	2.0	0	55.88	PEAK	74	PASS
	2452	Ant1	2500.0	-52.64	2.0	0	44.59	AV	54	PASS

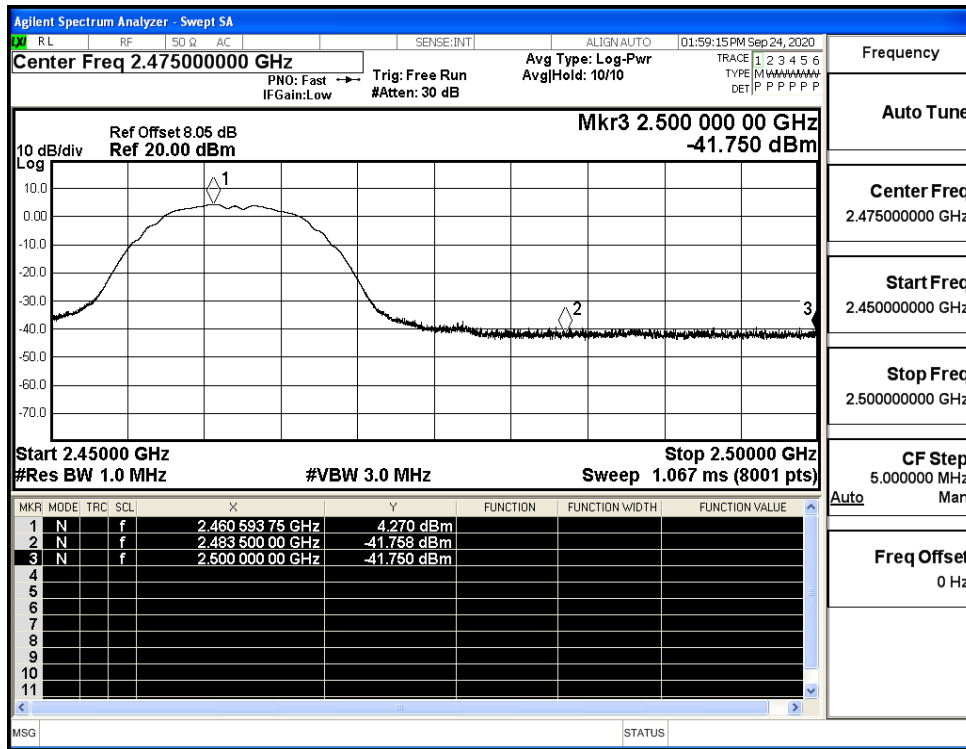
Restrict-band band-edge measurements_11B_2412_Ant1_PEAK



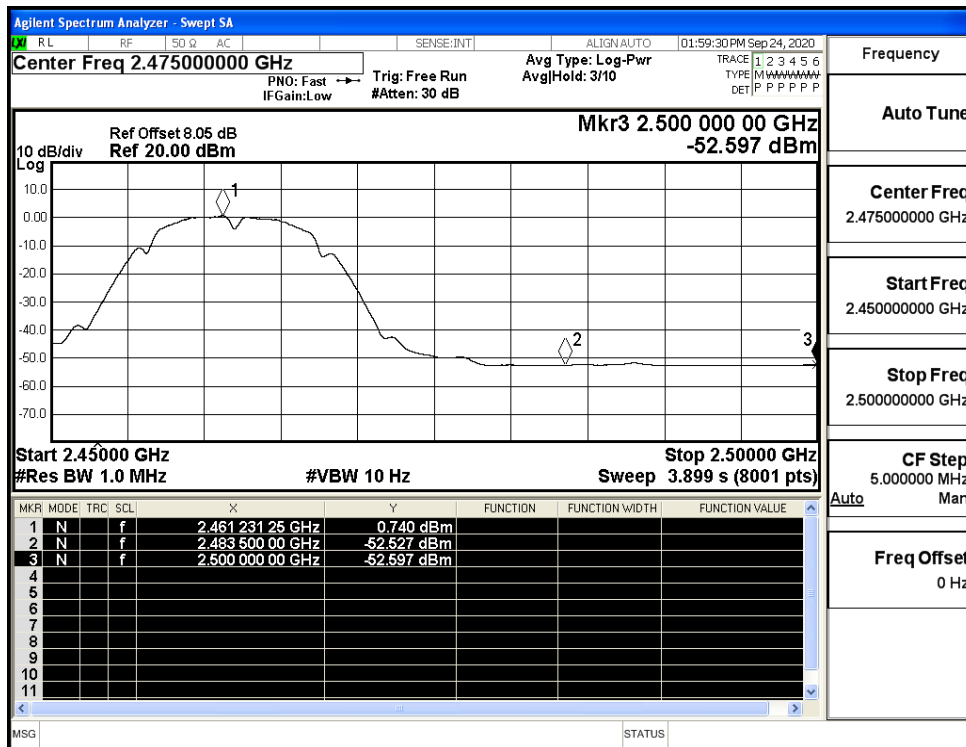
Restrict-band band-edge measurements_11B_2412_Ant1_AV



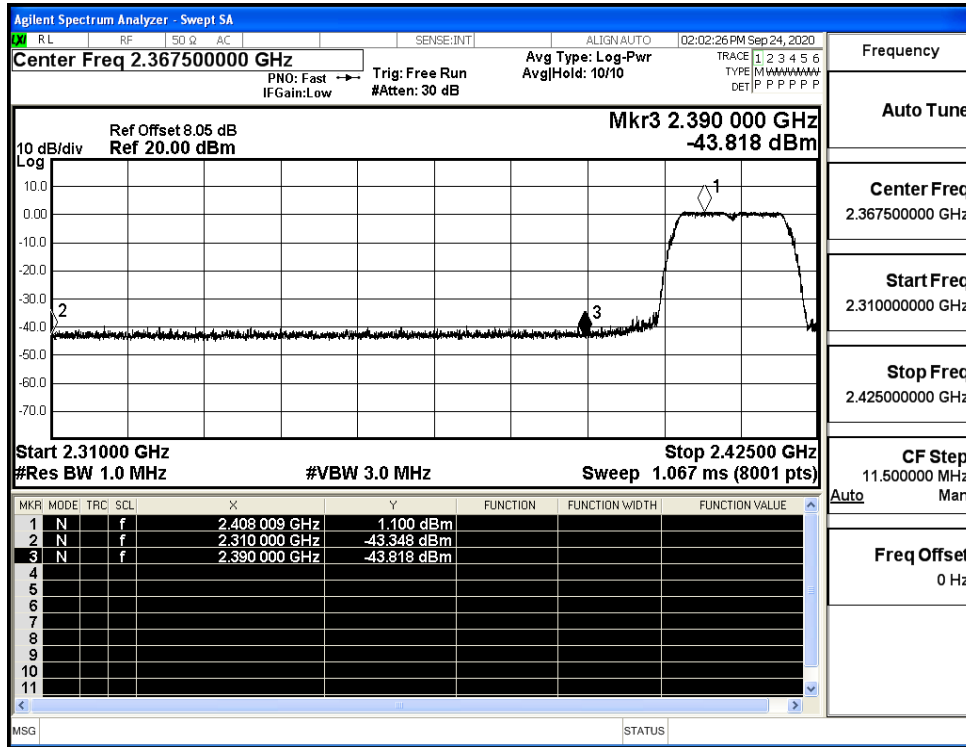
Restrict-band band-edge measurements_11B_2462_Ant1_PEAK



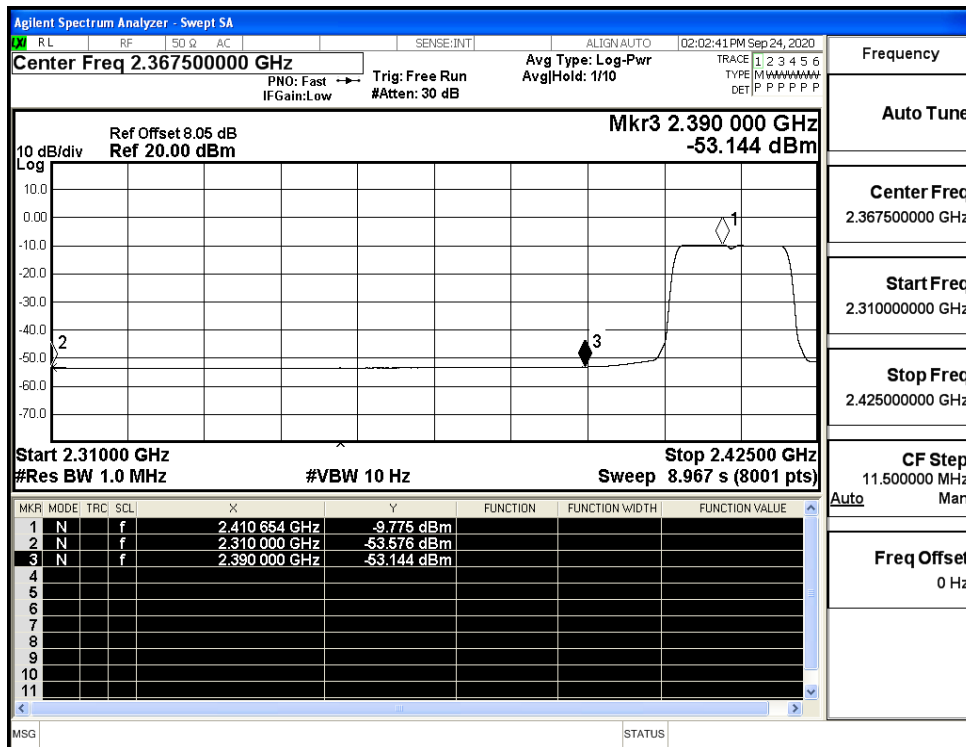
Restrict-band band-edge measurements_11B_2462_Ant1_AV



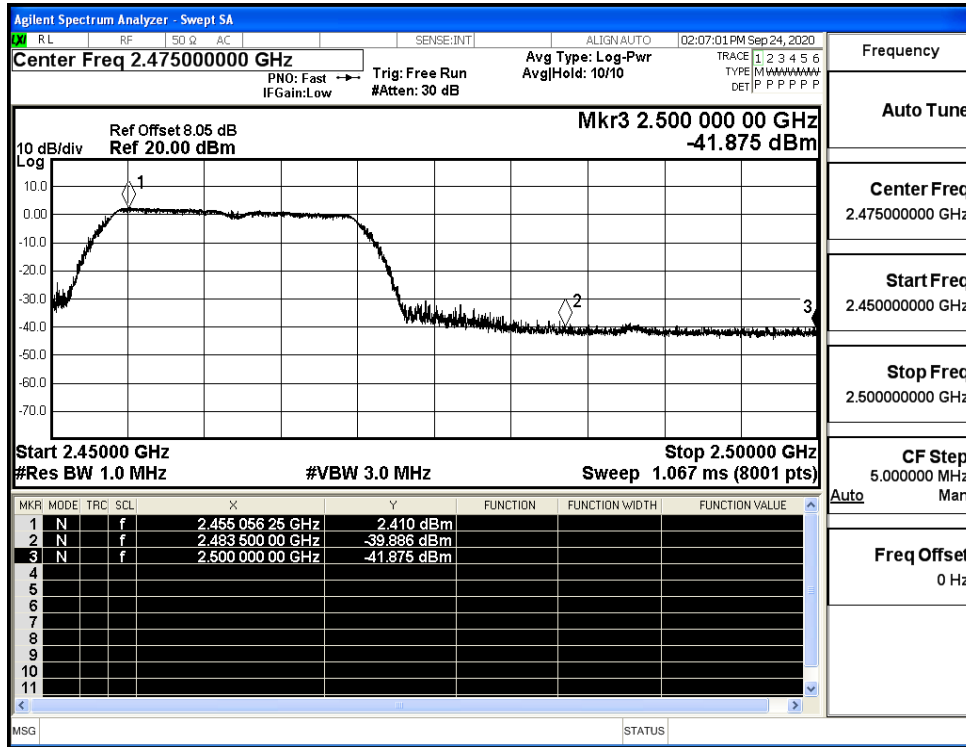
Restrict-band band-edge measurements_11G_2412_Ant1_PEAK



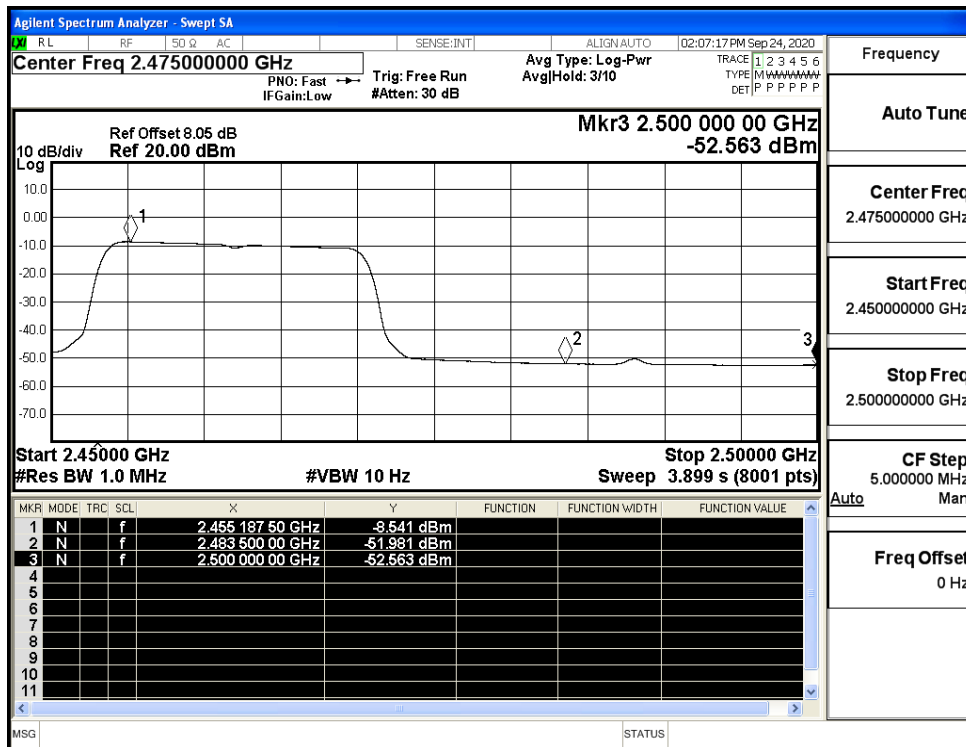
Restrict-band band-edge measurements_11G_2412_Ant1_AV



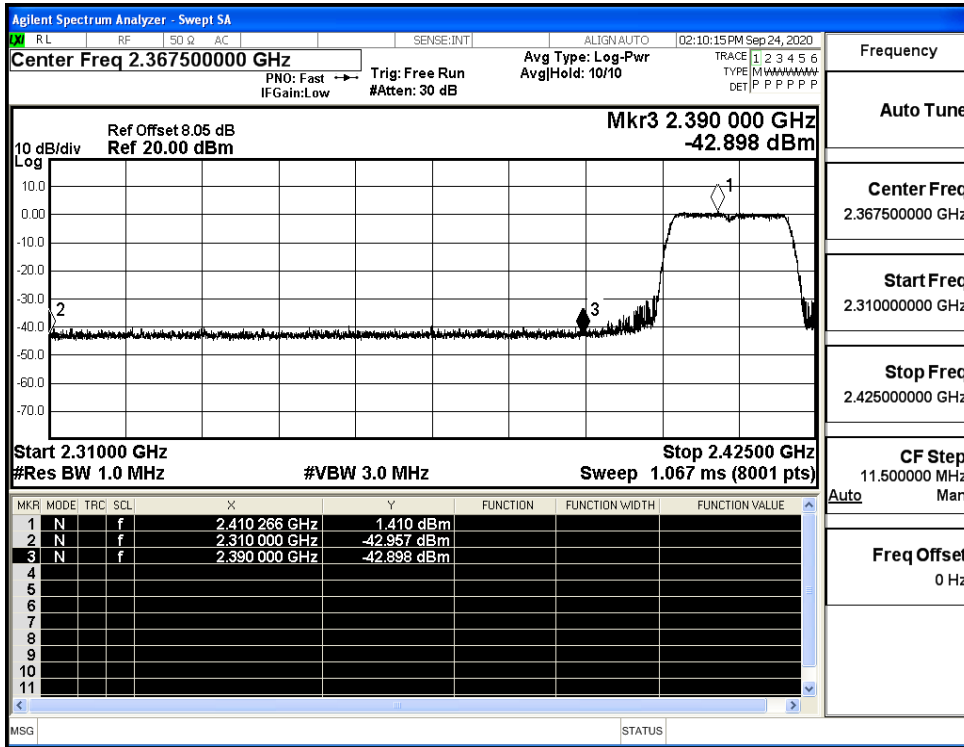
Restrict-band band-edge measurements_11G_2462_Ant1_PEAK



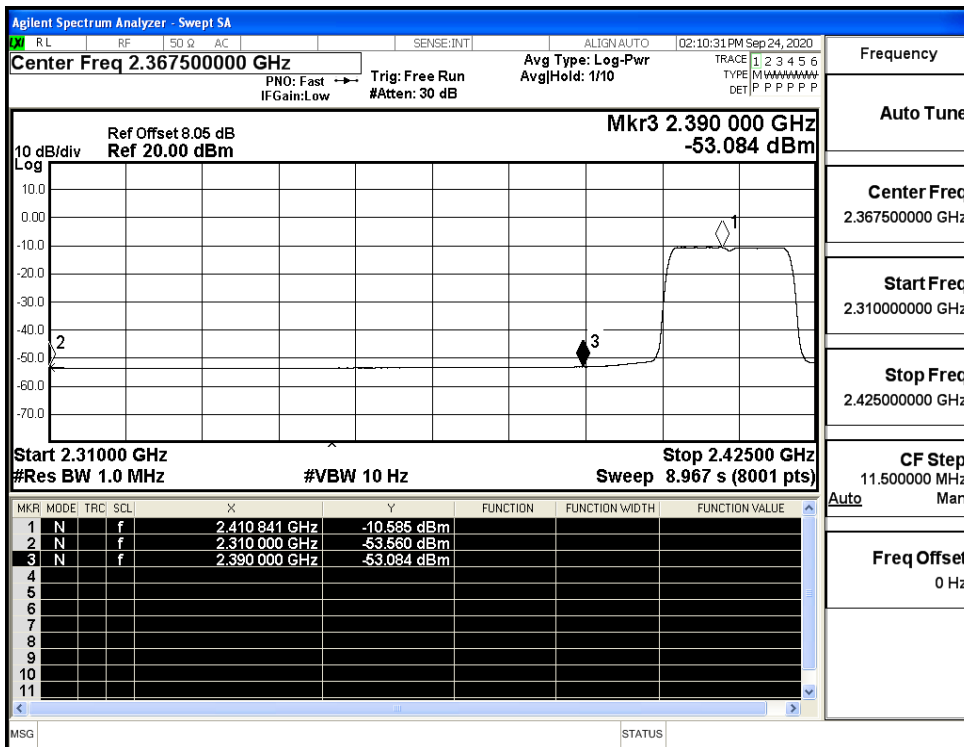
Restrict-band band-edge measurements_11G_2462_Ant1_AV



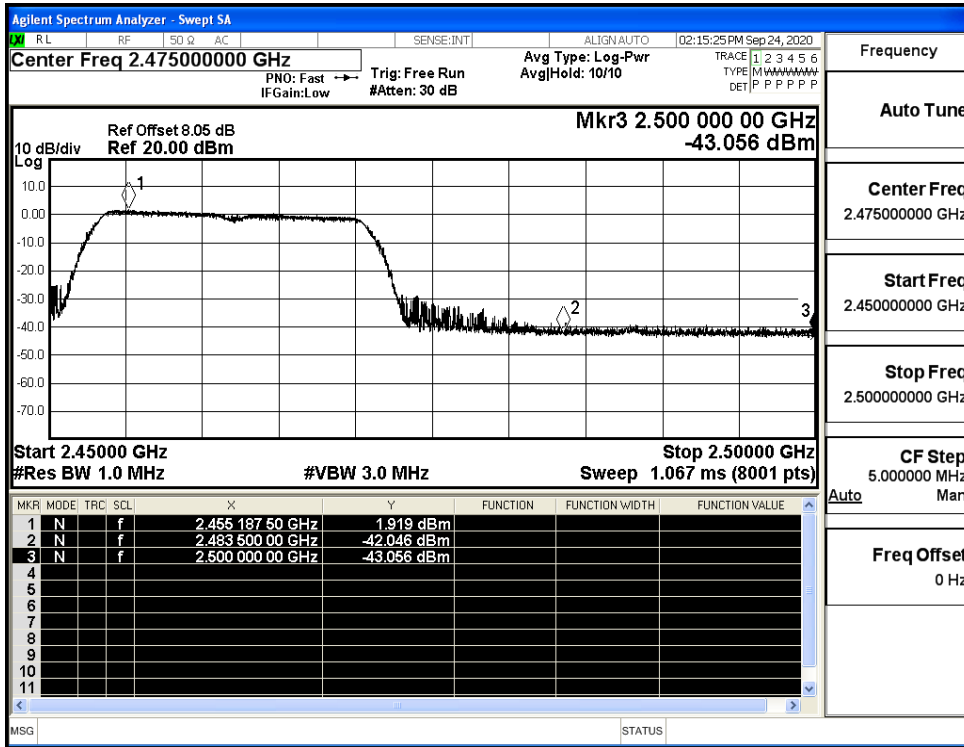
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_PEAK



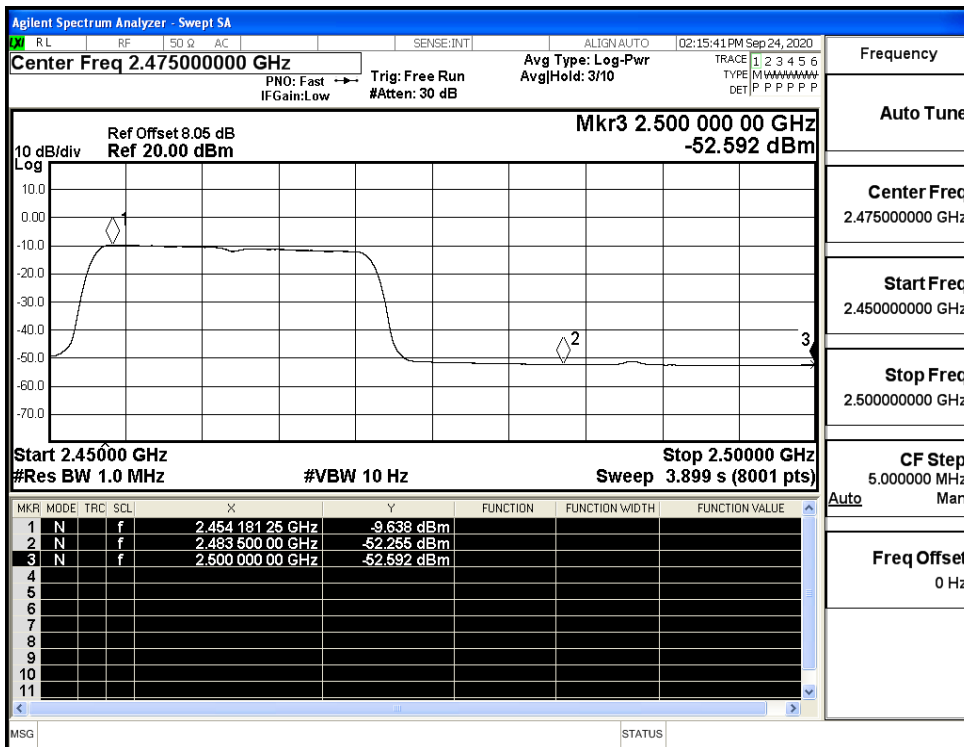
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_AV



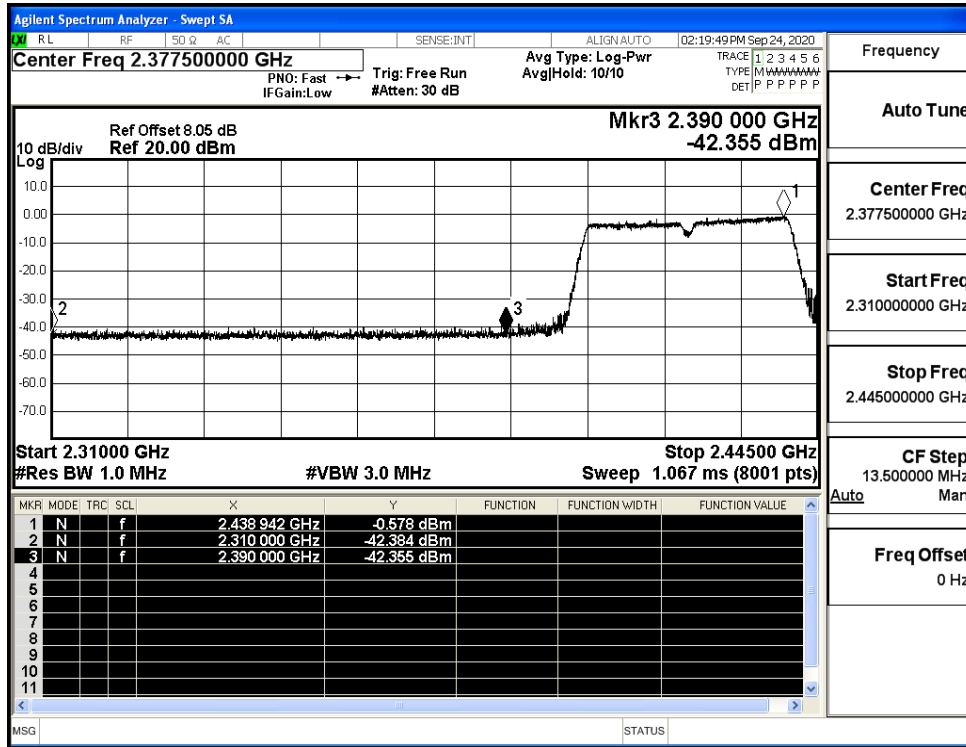
Restrict-band band-edge measurements_11N20SISO_2462_Ant1_PEAK



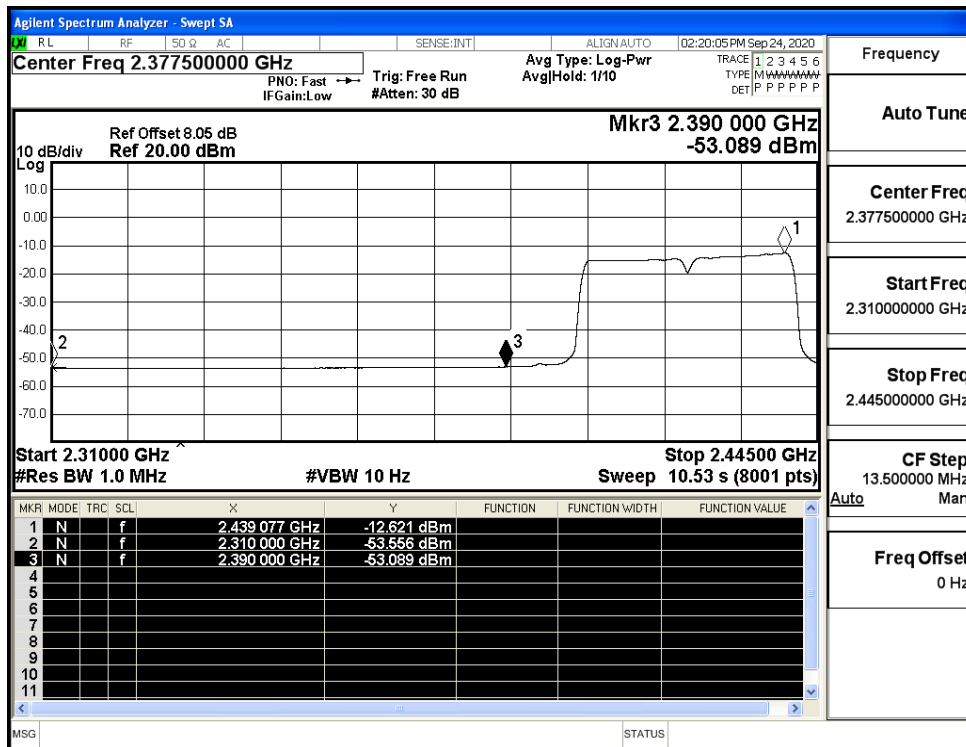
Restrict-band band-edge measurements_11N20SISO_2462_Ant1_AV



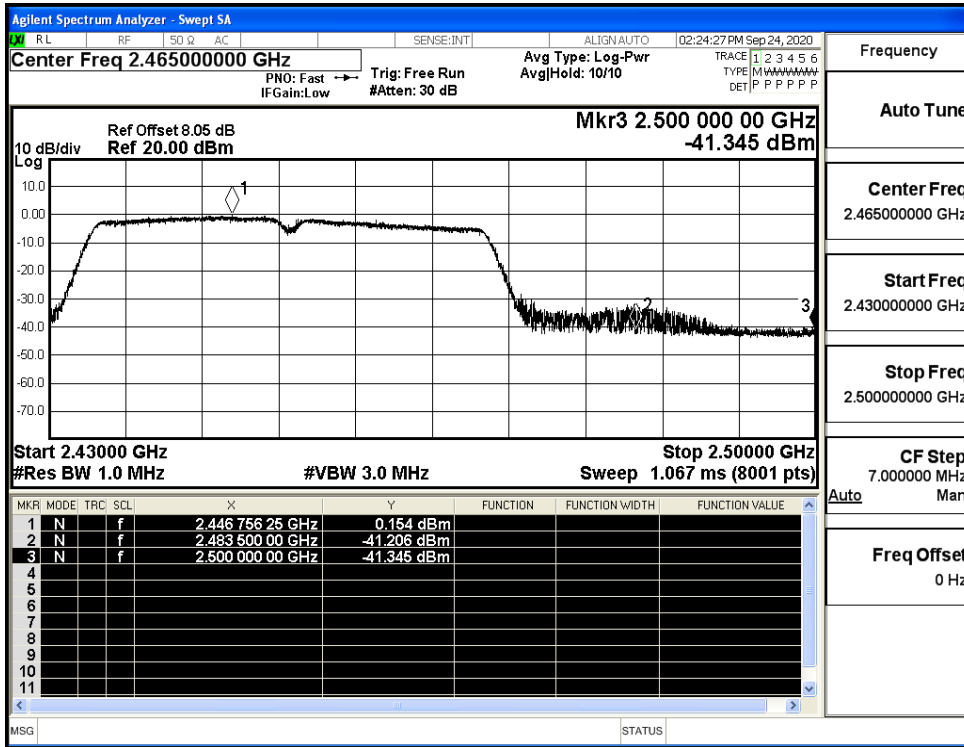
Restrict-band band-edge measurements_11N40SISO_2422_Ant1_PEAK



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

