

Appendix C

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Formuler Z10 Pro Max

Trade Mark: FORMULER

Test Model: Z10 Pro Max

Environmental Conditions

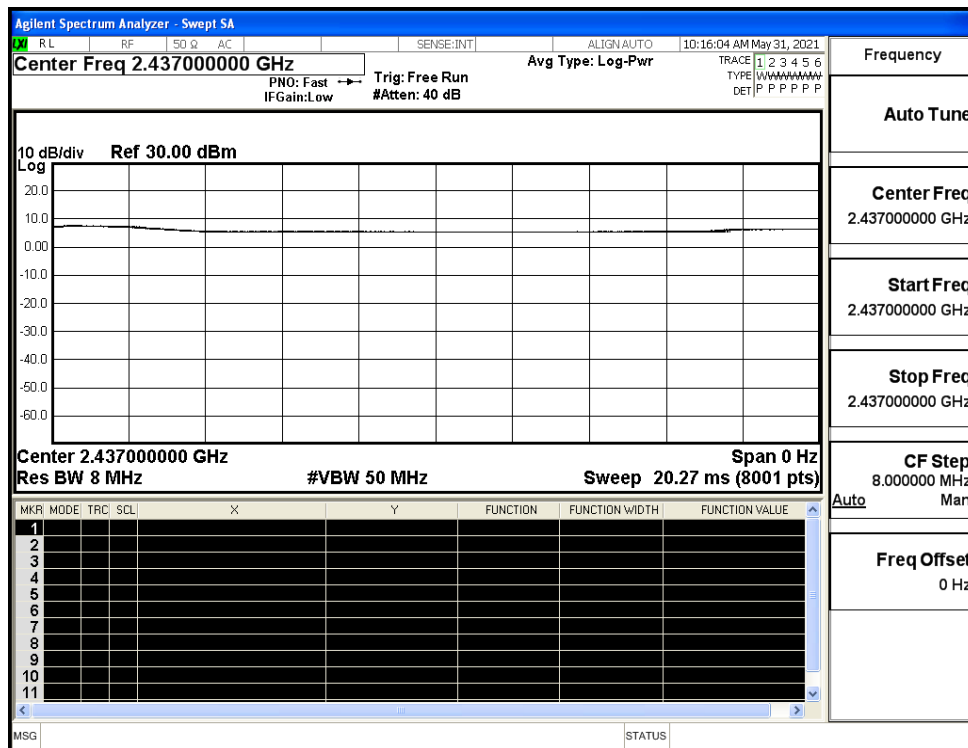
Temperature:	23.7 ° C
Relative Humidity:	51.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Li
Supervised by:	Li Huan

C.1 Duty Cycle

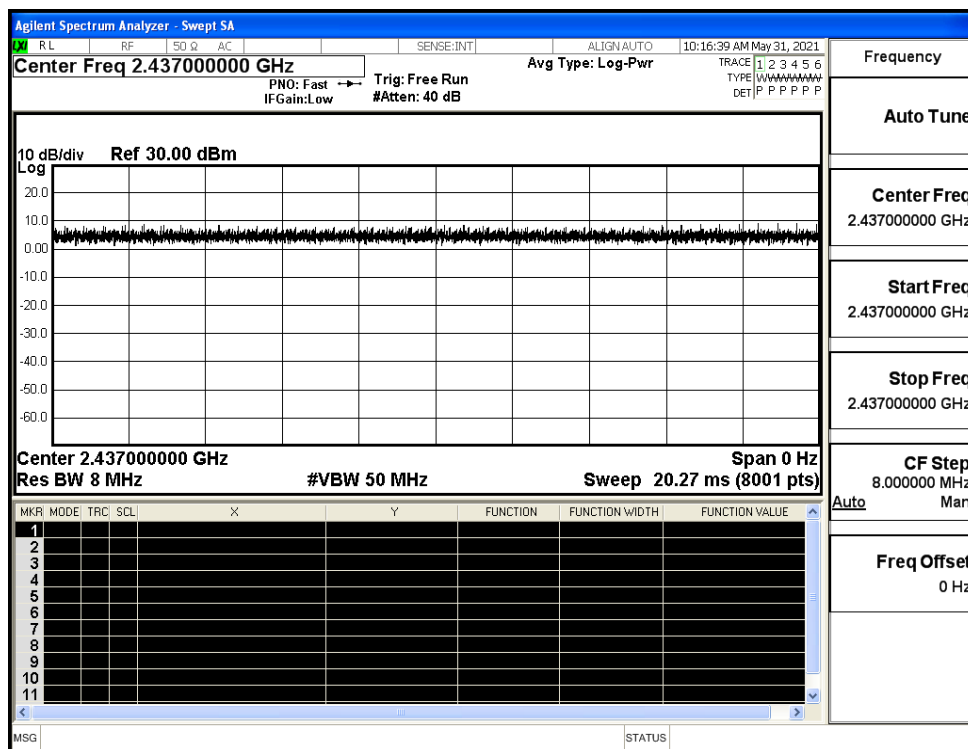
ANT0

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

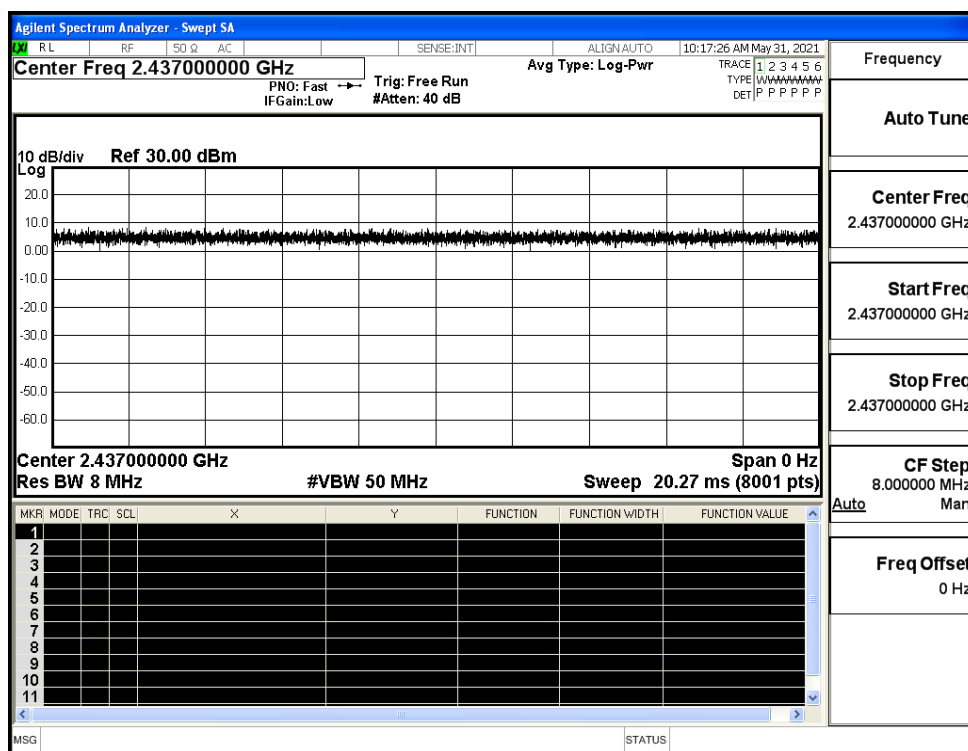
Duty Cycle_11B_2437_Ant1



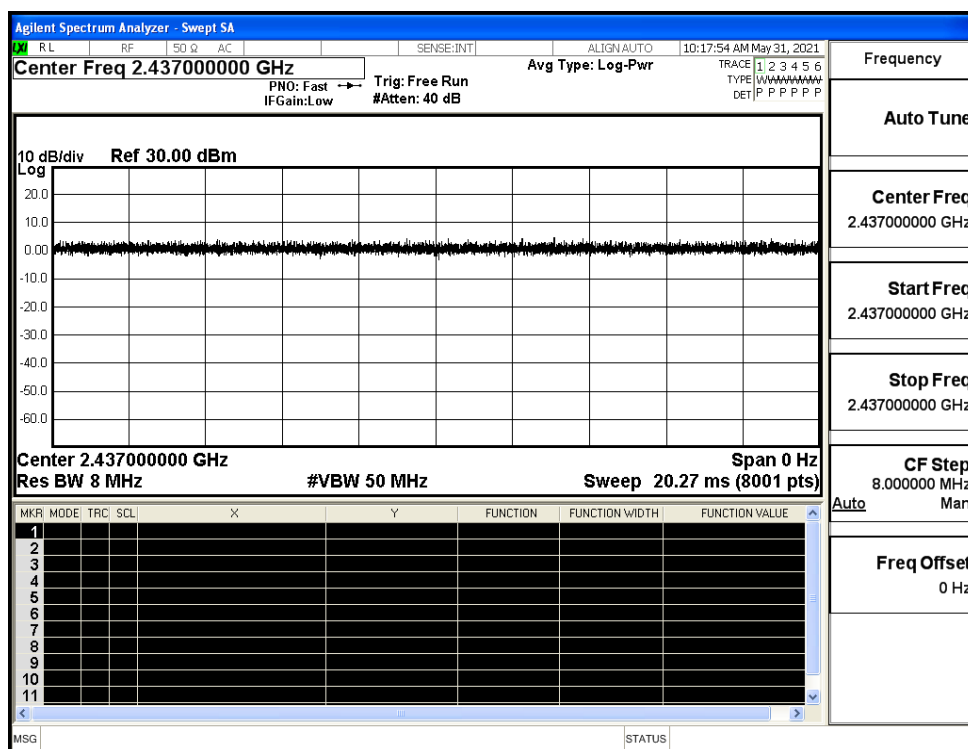
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



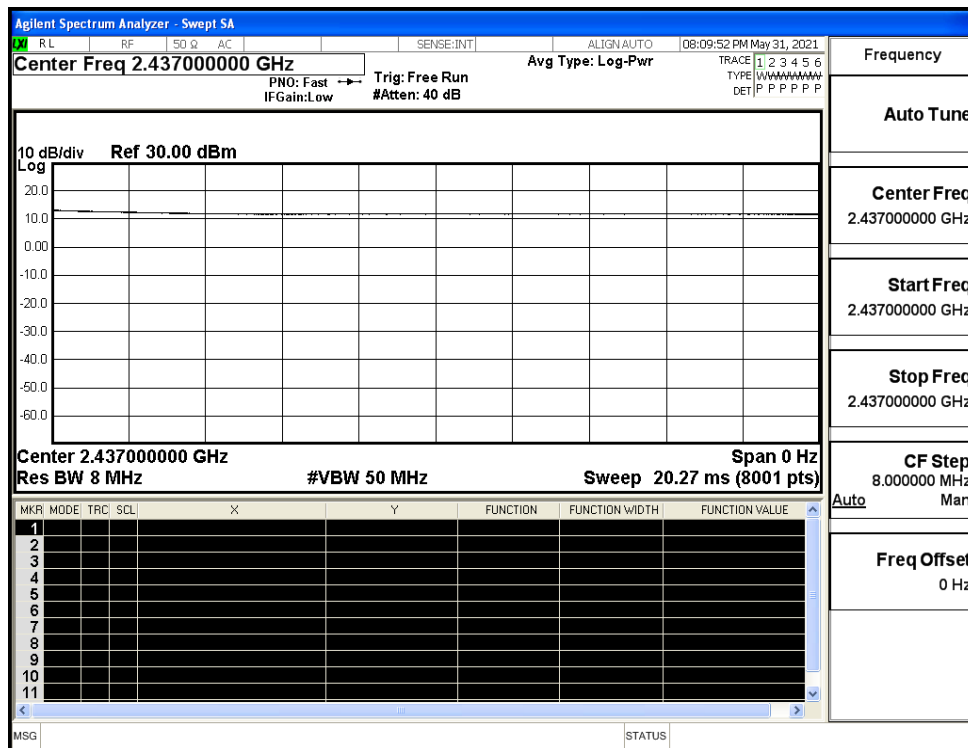
Duty Cycle_11N40SISO_2437_Ant1



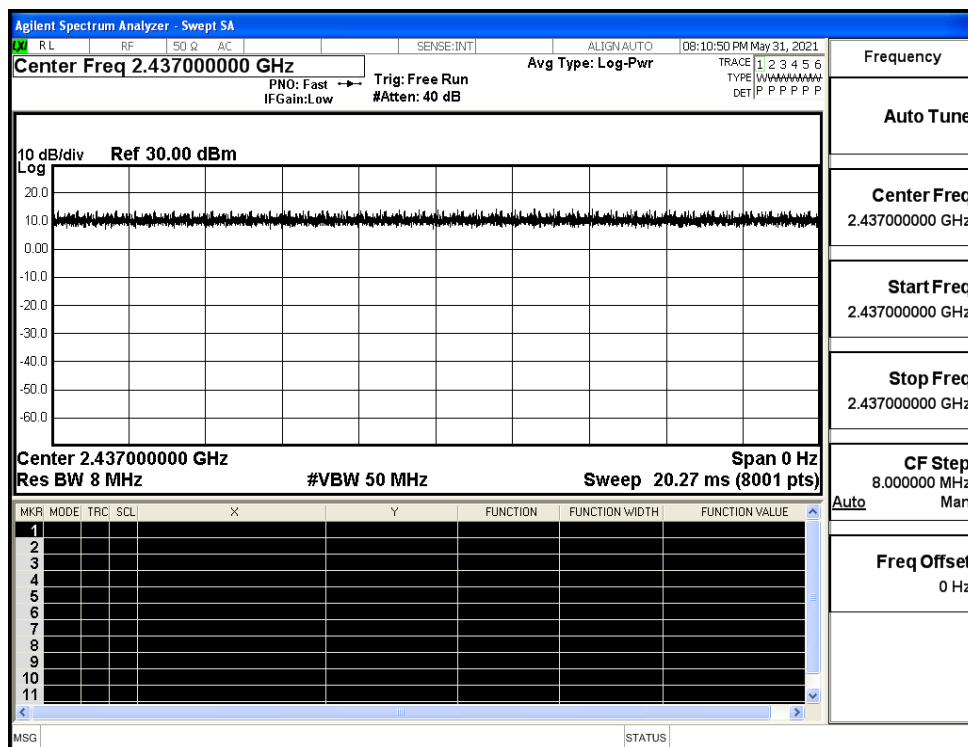
ANT1

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

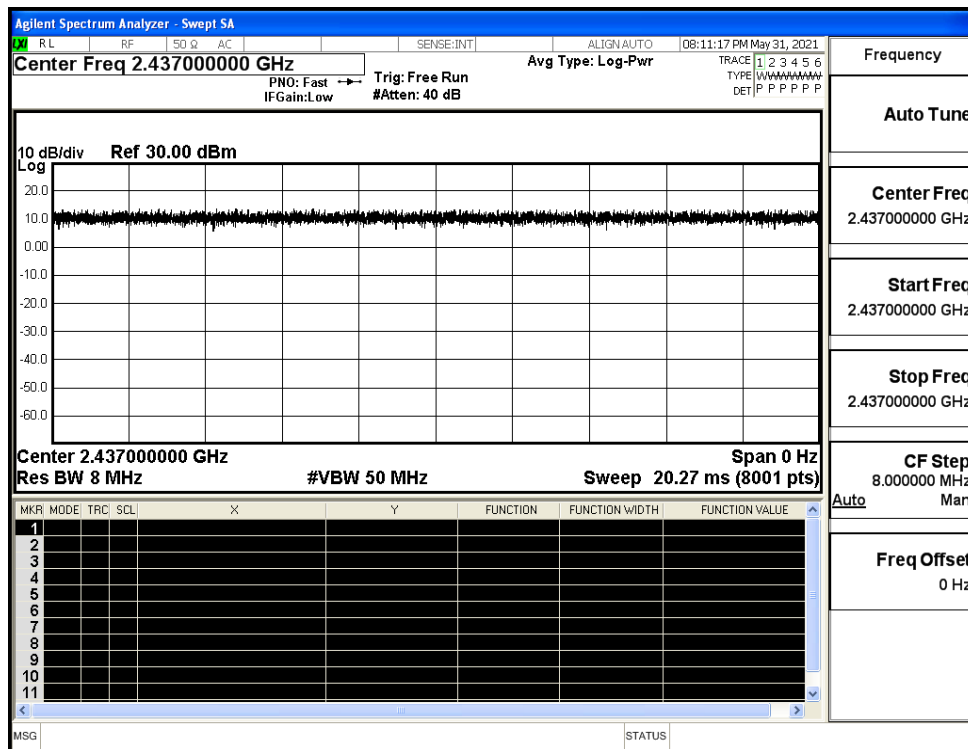
Duty Cycle_11B_2437_Ant1



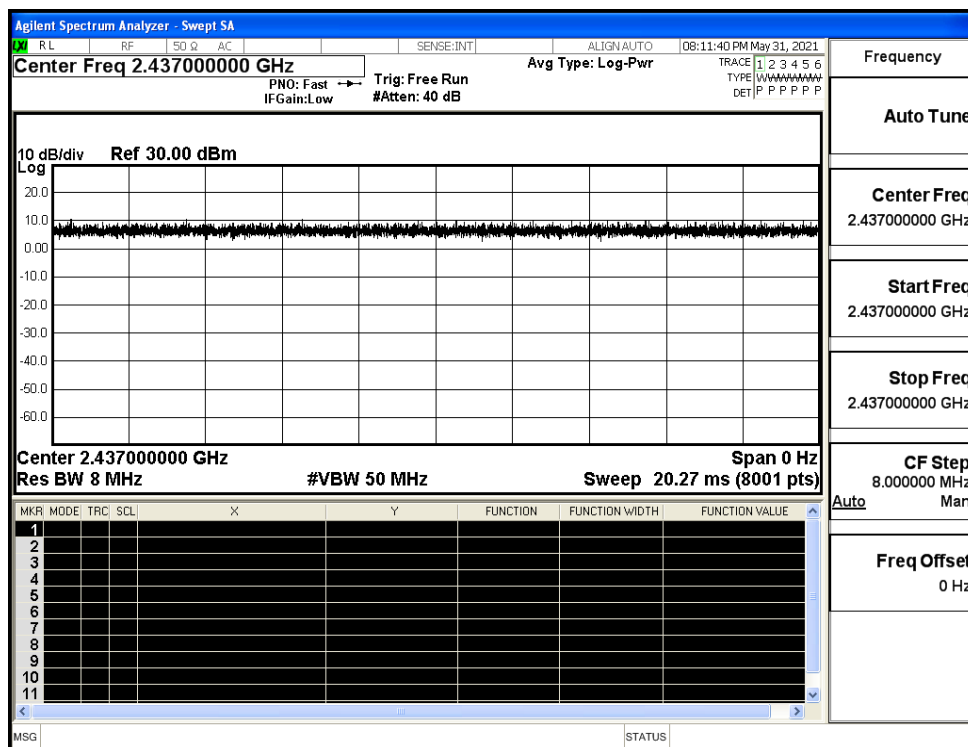
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



Duty Cycle_11N40SISO_2437_Ant1



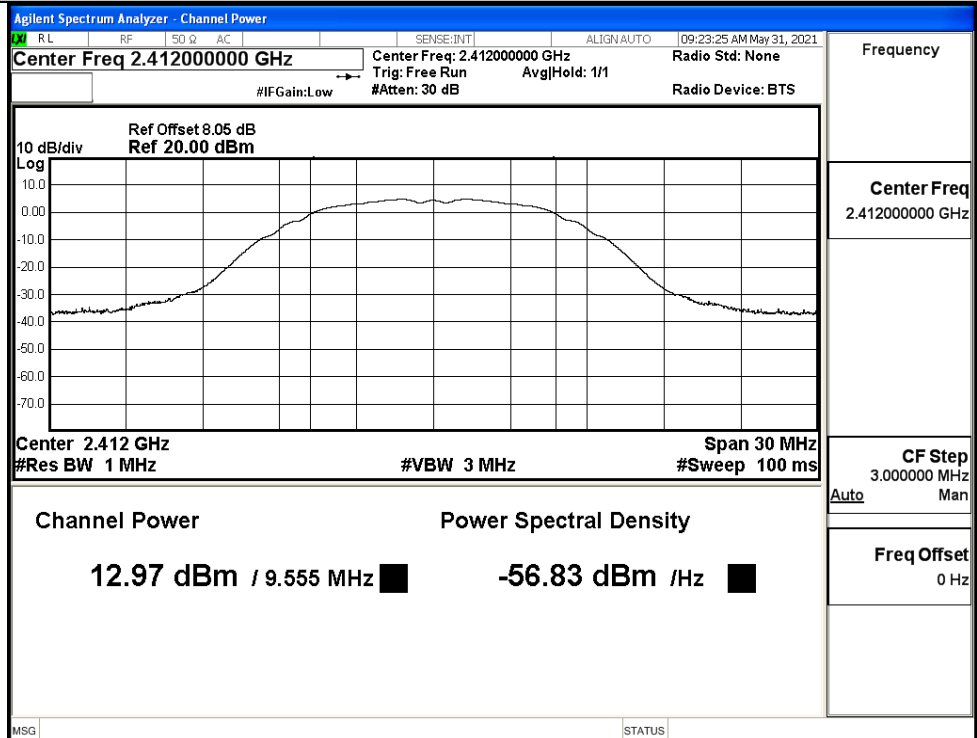
C.2 Maximum Conducted Output Power

ANT0

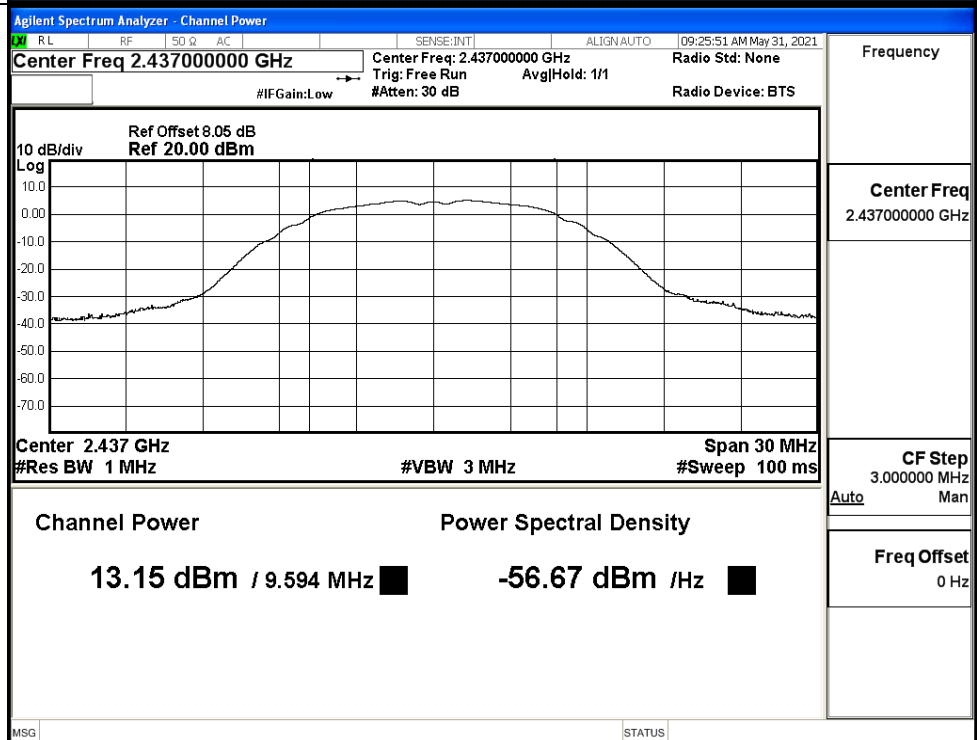
Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	12.97	30	PASS
	MCH	13.15	30	PASS
	HCH	12.48	30	PASS
11G	LCH	12.37	30	PASS
	MCH	12.67	30	PASS
	HCH	10	30	PASS
11N20SISO	LCH	12.11	30	PASS
	MCH	12.36	30	PASS
	HCH	11.61	30	PASS
11N40SISO	LCH	12.57	30	PASS
	MCH	12.55	30	PASS
	HCH	12.41	30	PASS

Test Graphs

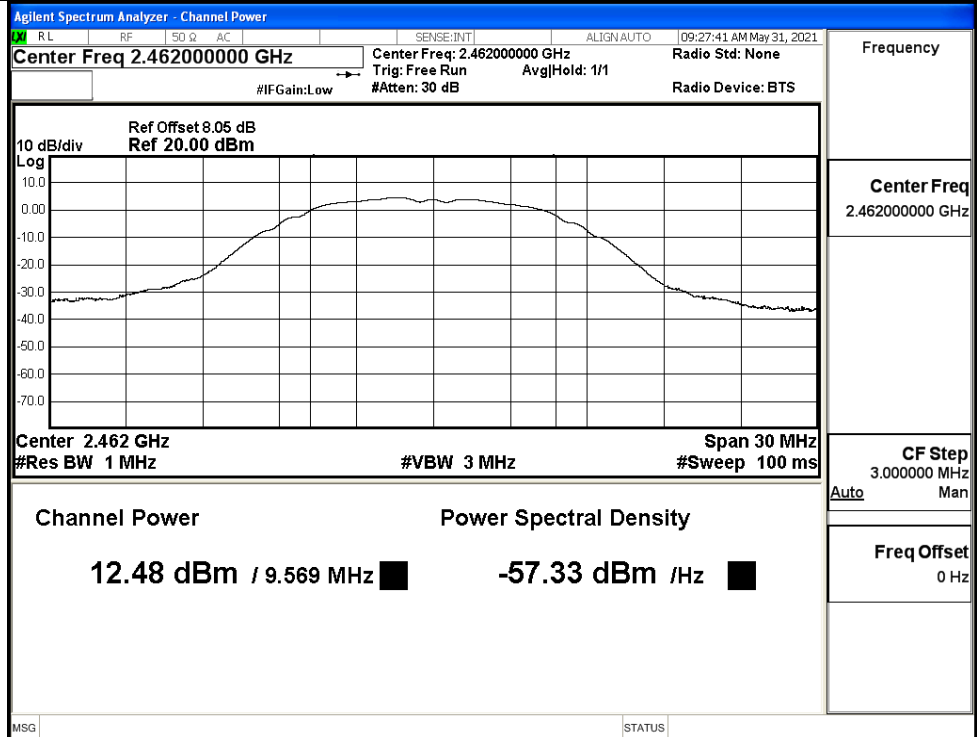
11B/LCH



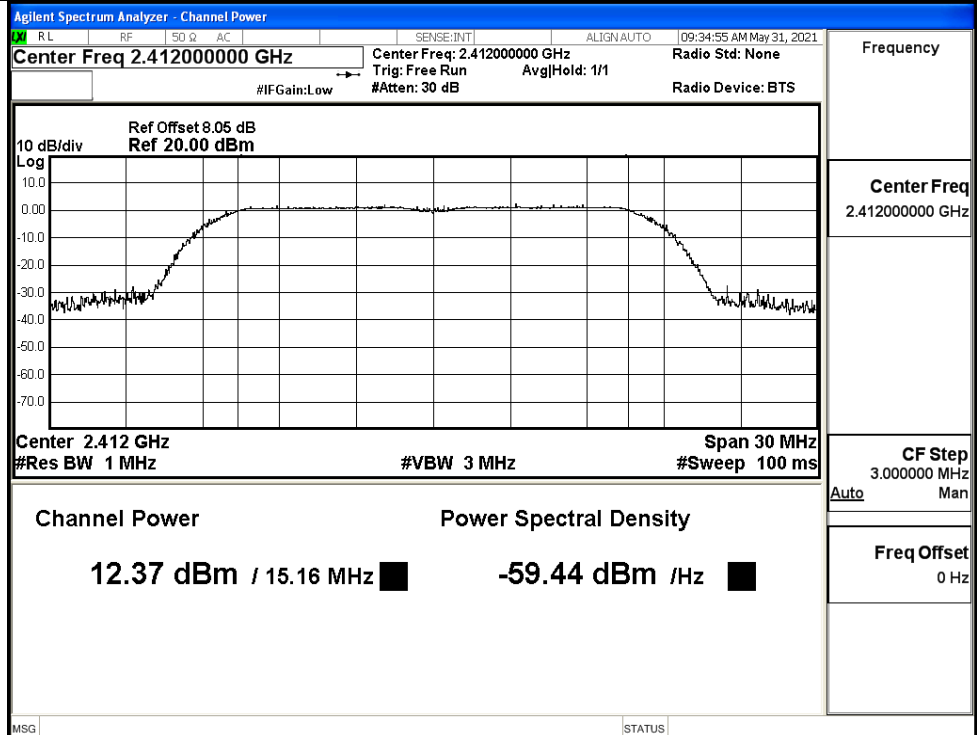
11B/MCH



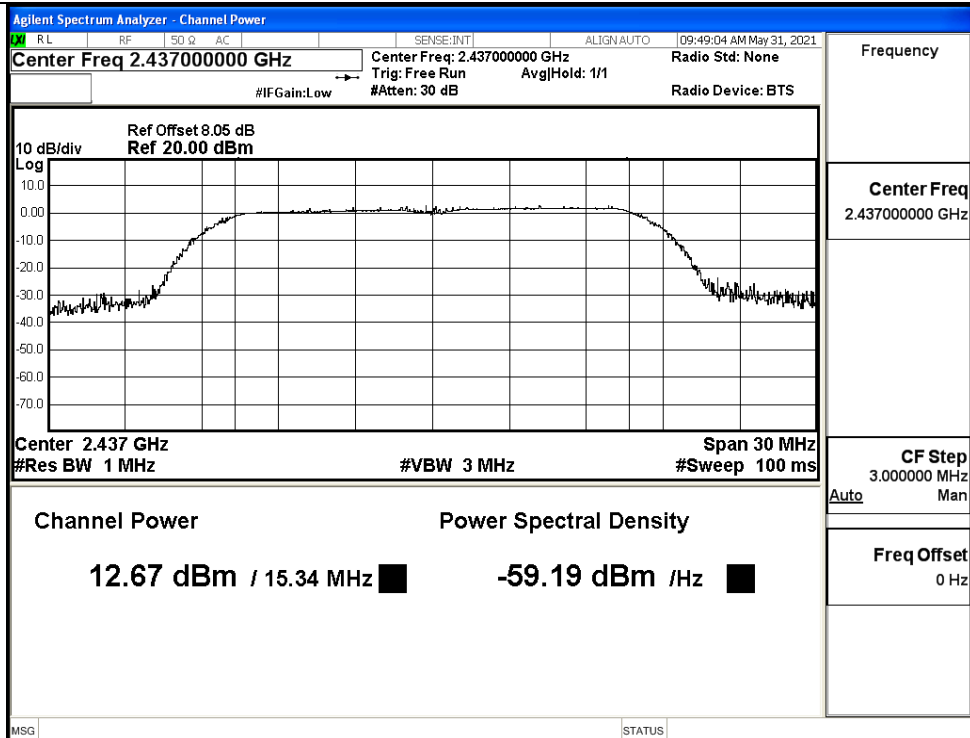
11B/HCH



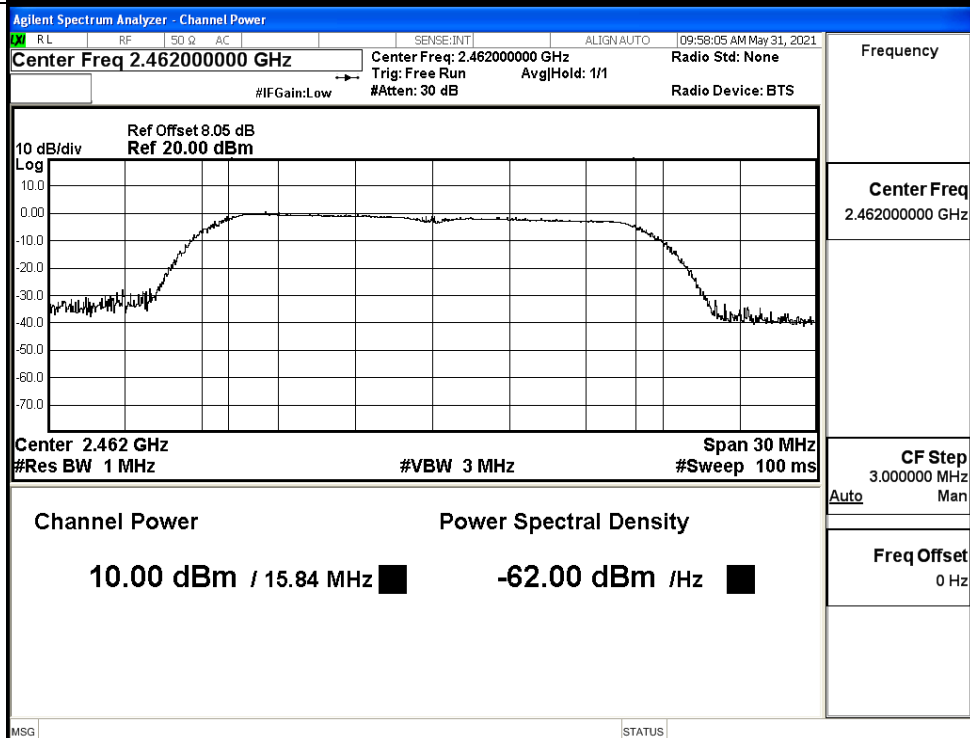
11G/LCH



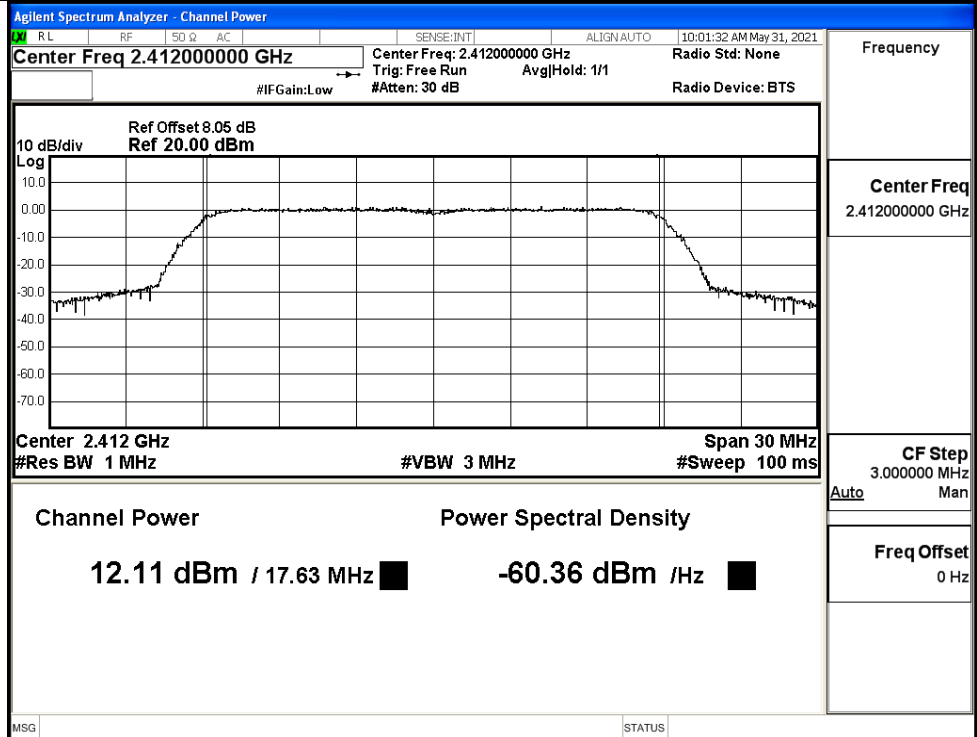
11G/MCH



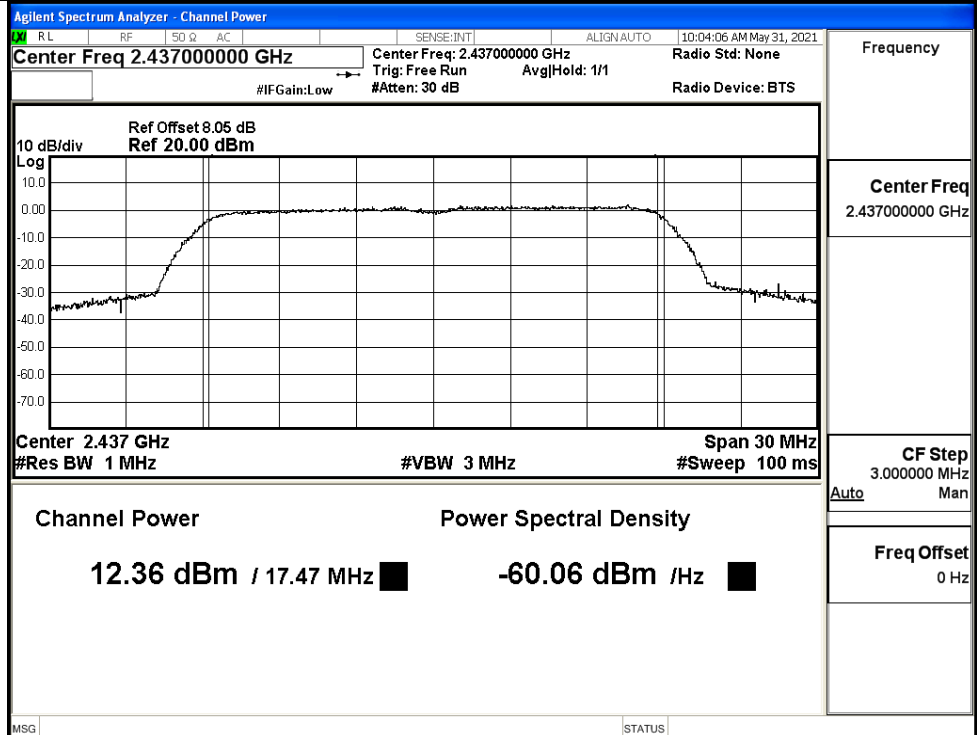
11G/HCH

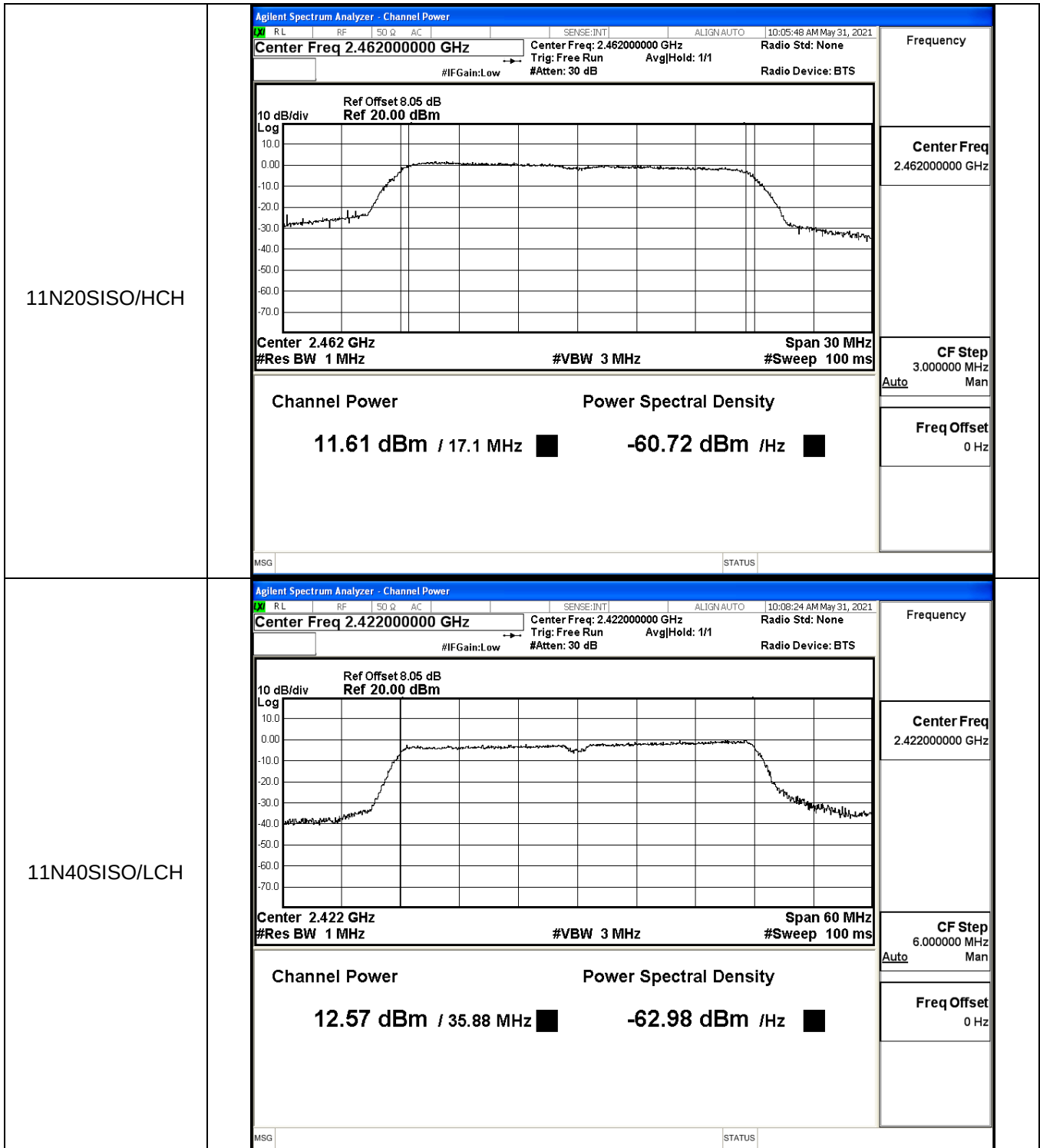


11N20SISO/LCH

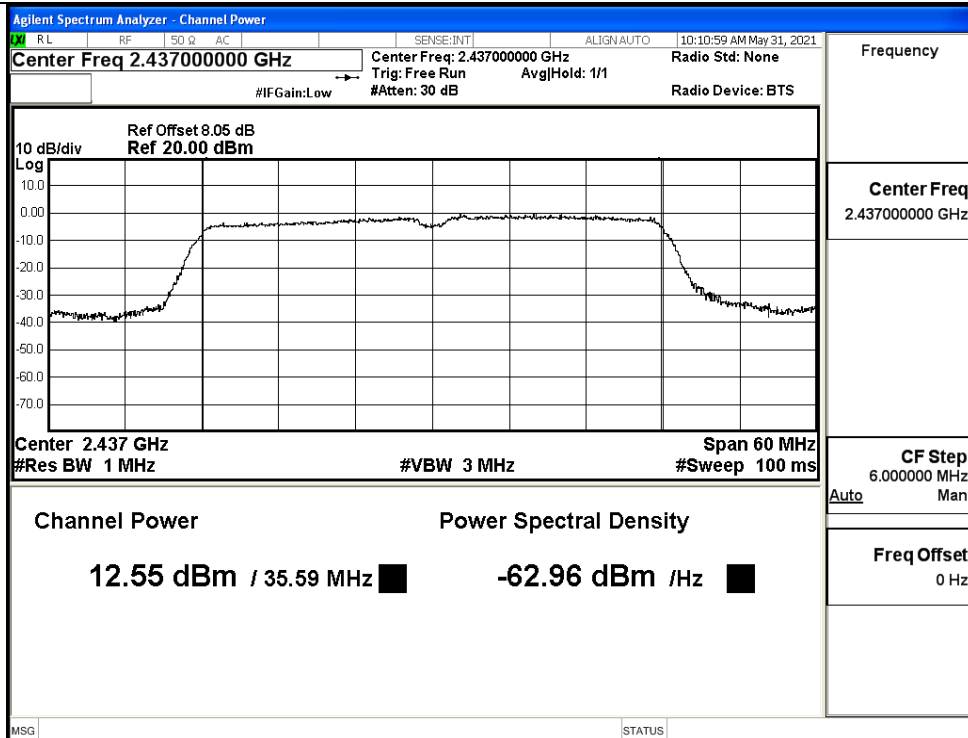


11N20SISO/MCH





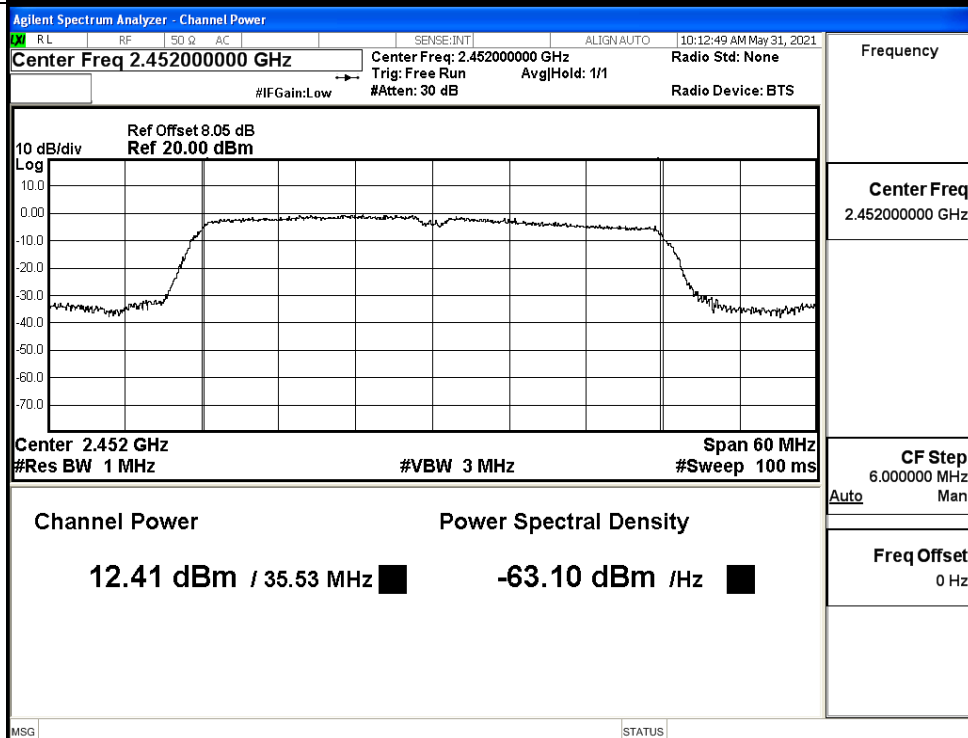
11N40SISO/MCH



Frequency

Center Freq
2.437000000 GHzCF Step
6.000000 MHz
Auto ManFreq Offset
0 Hz

11N40SISO/HCH



Frequency

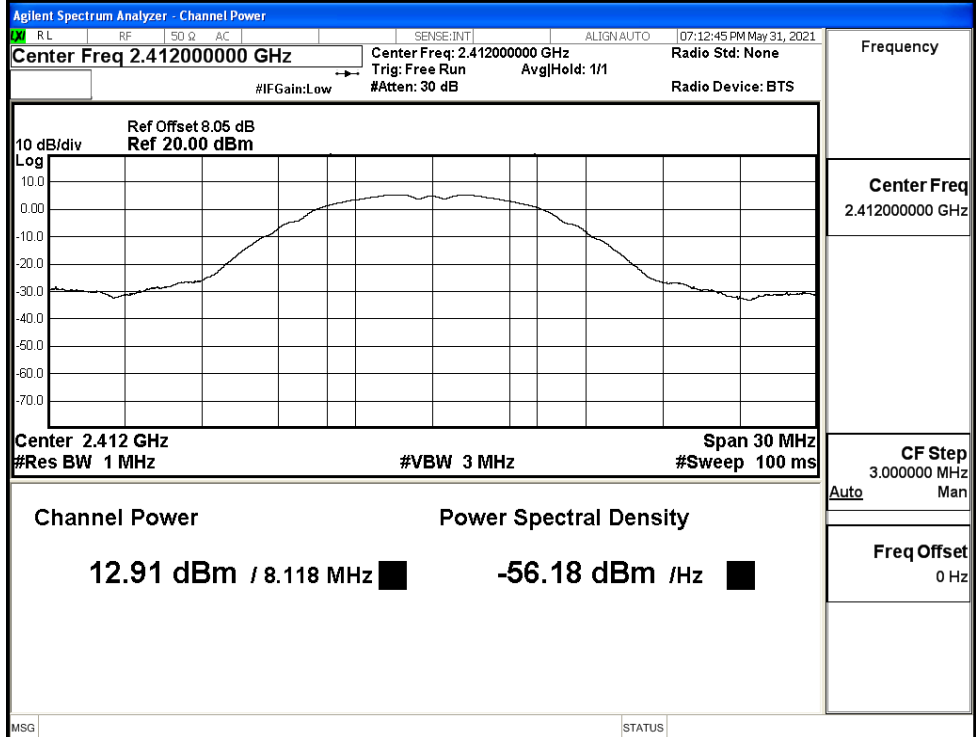
Center Freq
2.452000000 GHzCF Step
6.000000 MHz
Auto ManFreq Offset
0 Hz

ANT1

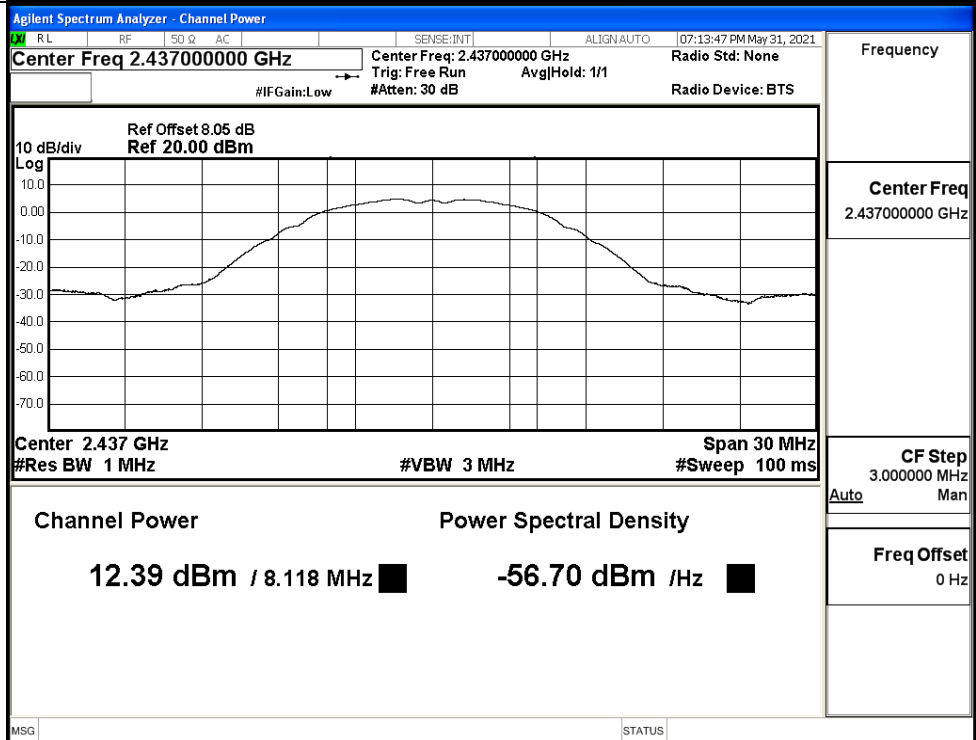
Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	12.91	30	PASS
	MCH	12.39	30	PASS
	HCH	12.33	30	PASS
11G	LCH	12.79	30	PASS
	MCH	11.97	30	PASS
	HCH	11.87	30	PASS
11N20SISO	LCH	11.25	30	PASS
	MCH	10.46	30	PASS
	HCH	10.39	30	PASS
11N40SISO	LCH	11.85	30	PASS
	MCH	11.86	30	PASS
	HCH	12.91	30	PASS

Test Graphs

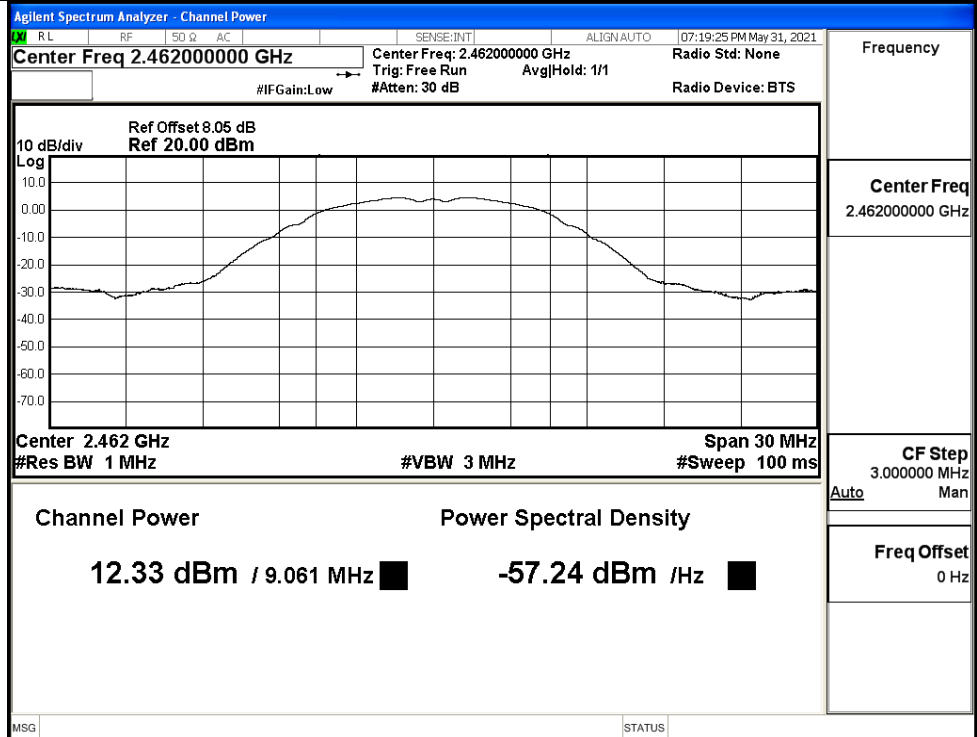
11B/LCH



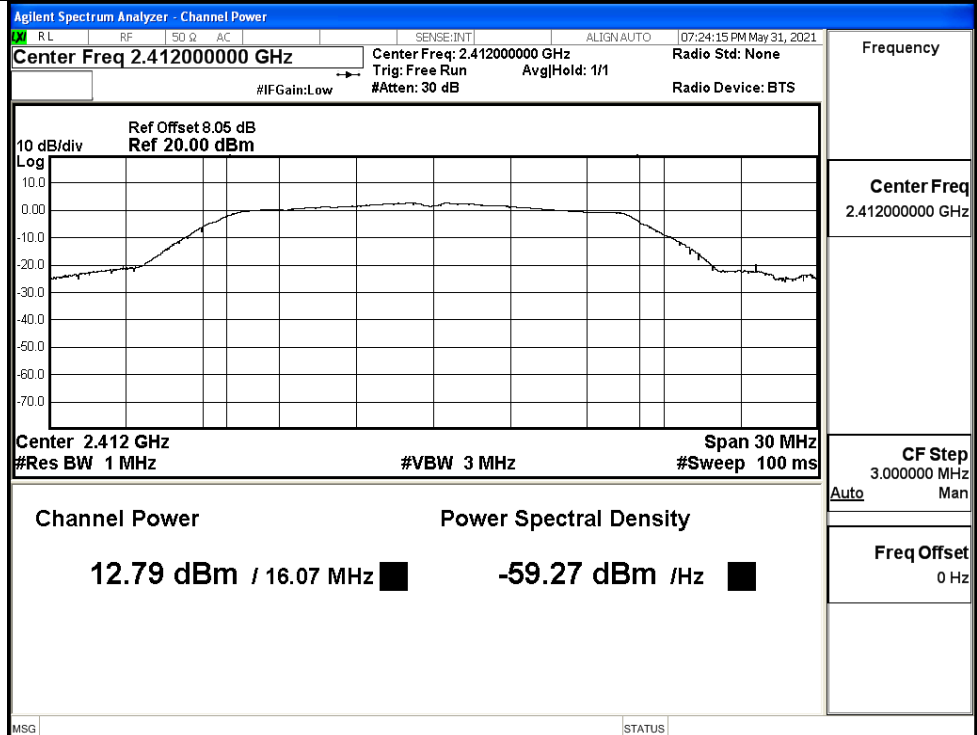
11B/MCH



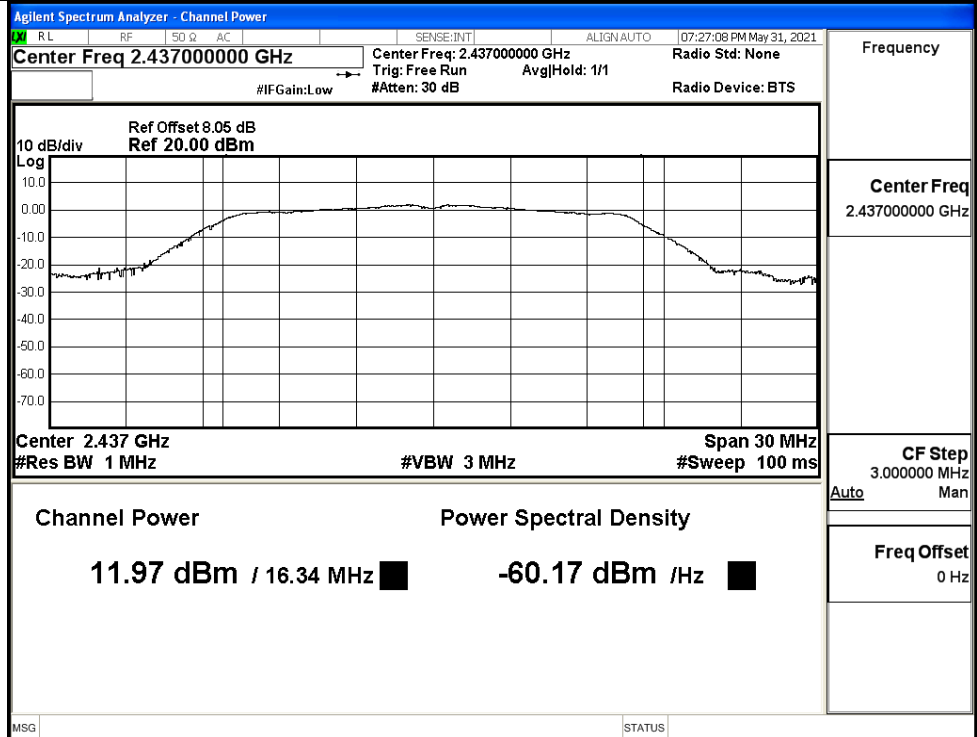
11B/HCH



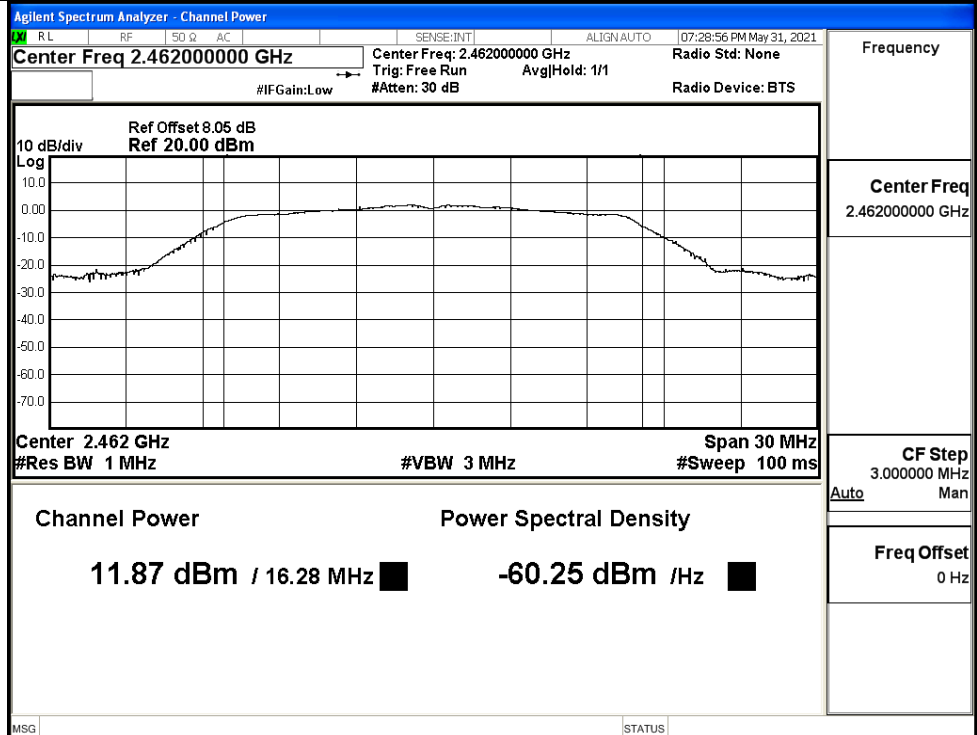
11G/LCH



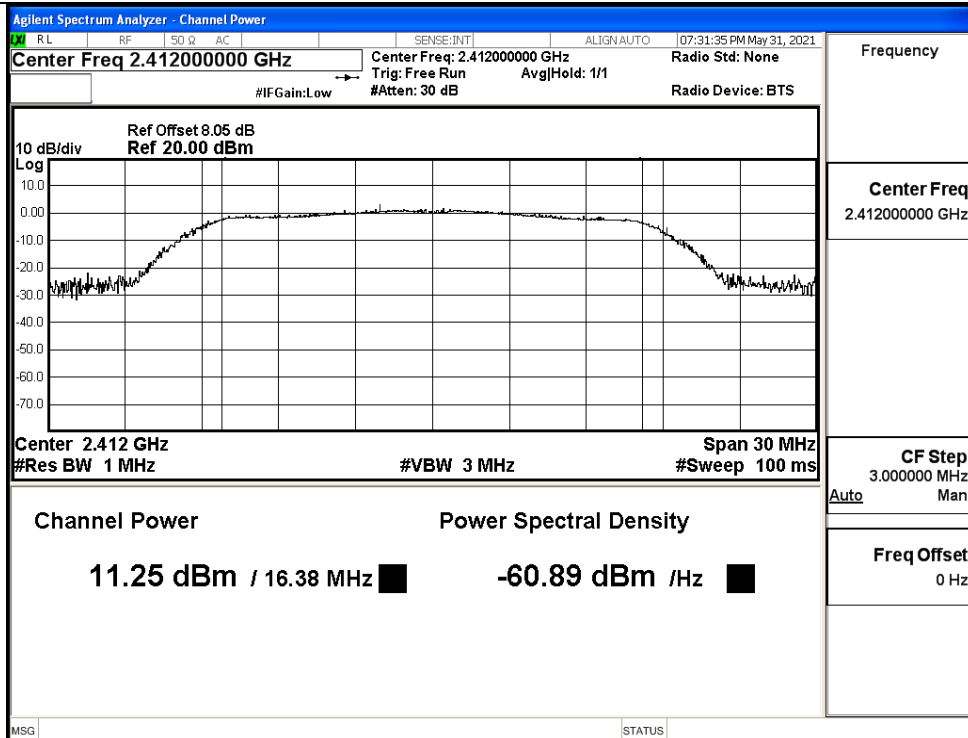
11G/MCH



11G/HCH



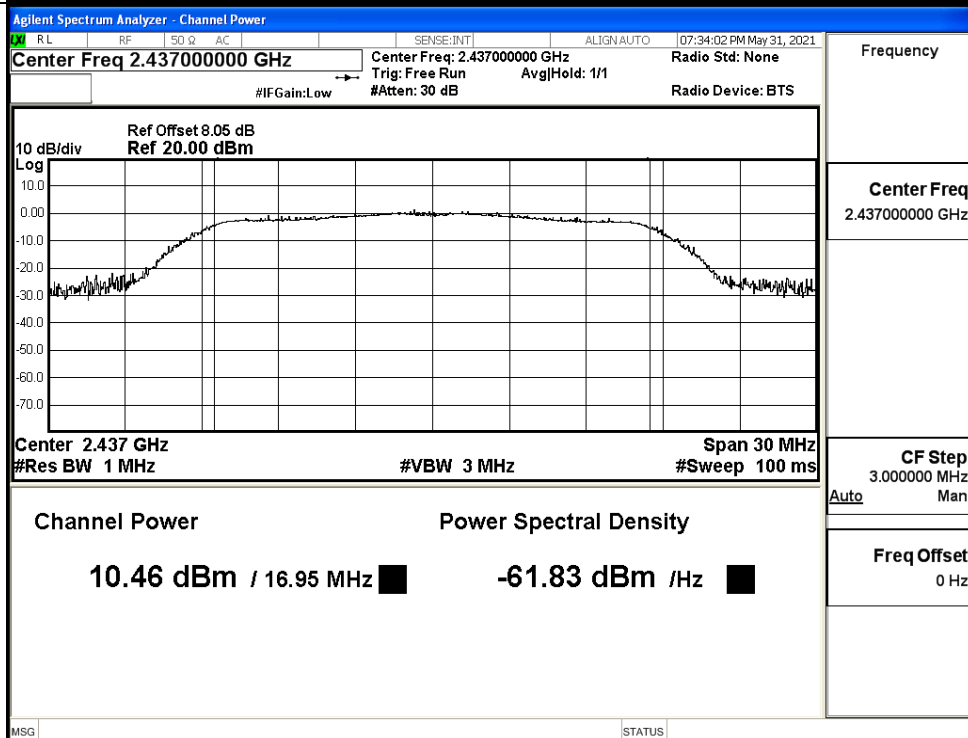
11N20SISO/LCH



Frequency

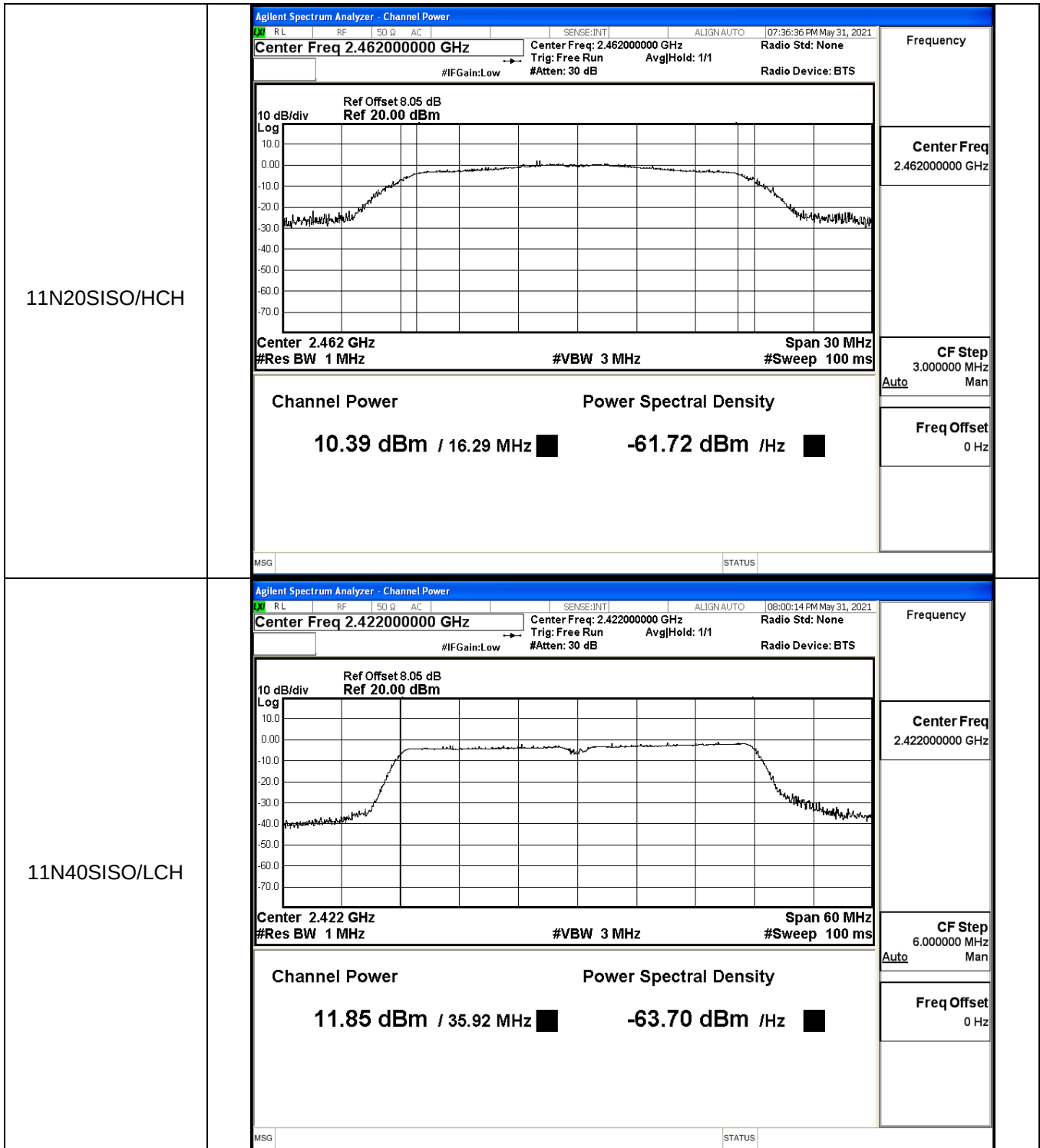
Center Freq
2.412000000 GHzCF Step
3.000000 MHz
Auto ManFreq Offset
0 Hz

11N20SISO/MCH

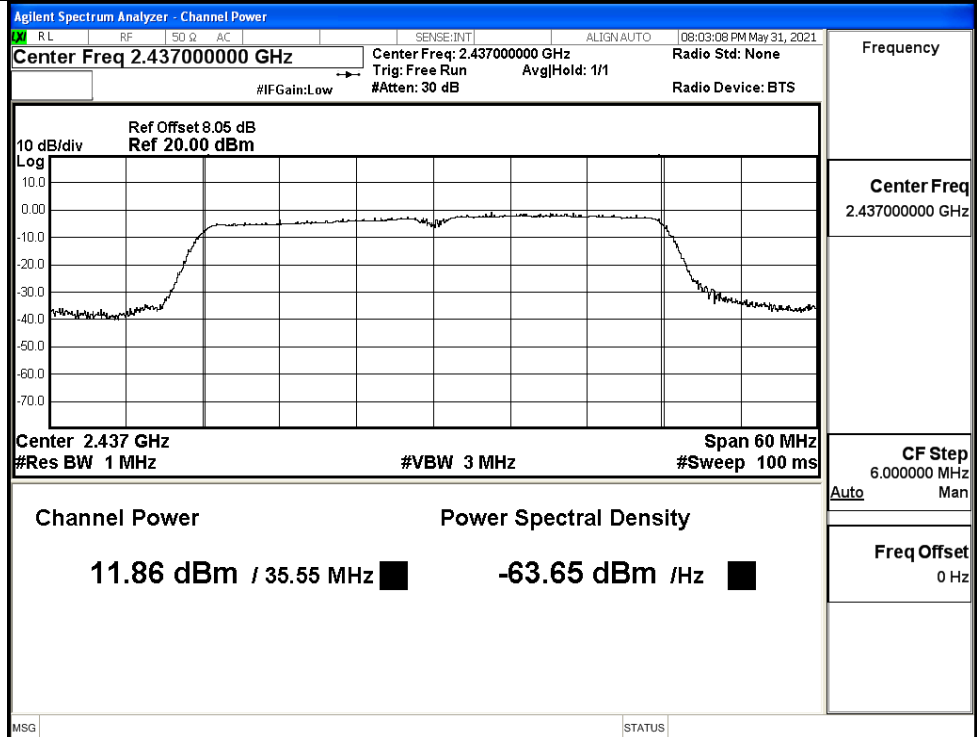


Frequency

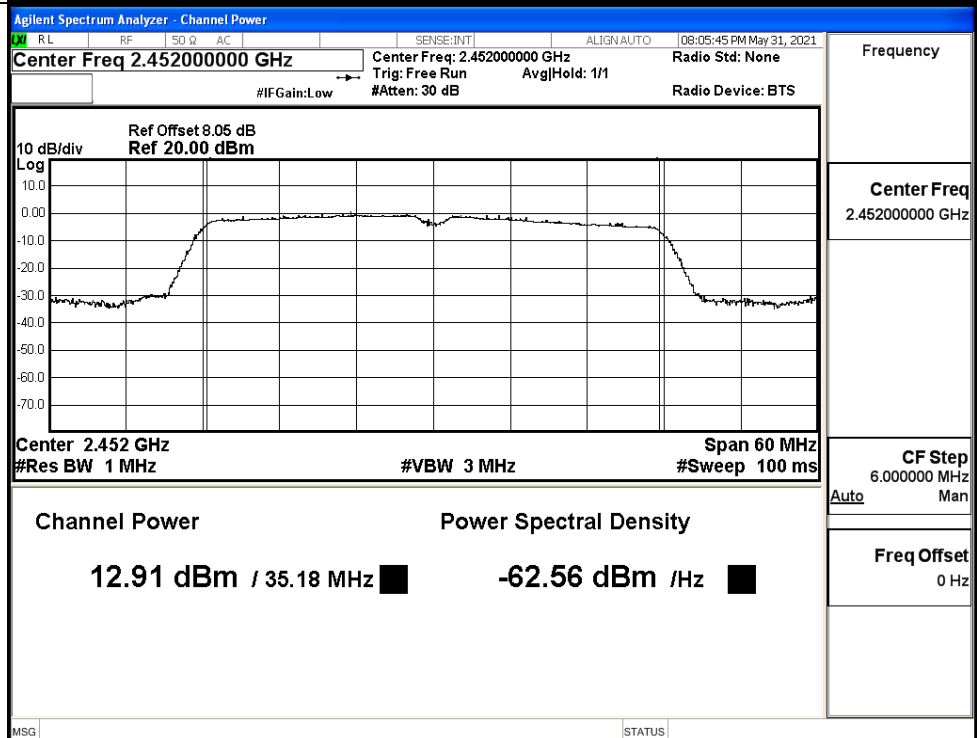
Center Freq
2.437000000 GHzCF Step
3.000000 MHz
Auto ManFreq Offset
0 Hz



11N40SISO/MCH



11N40SISO/HCH



MIMO

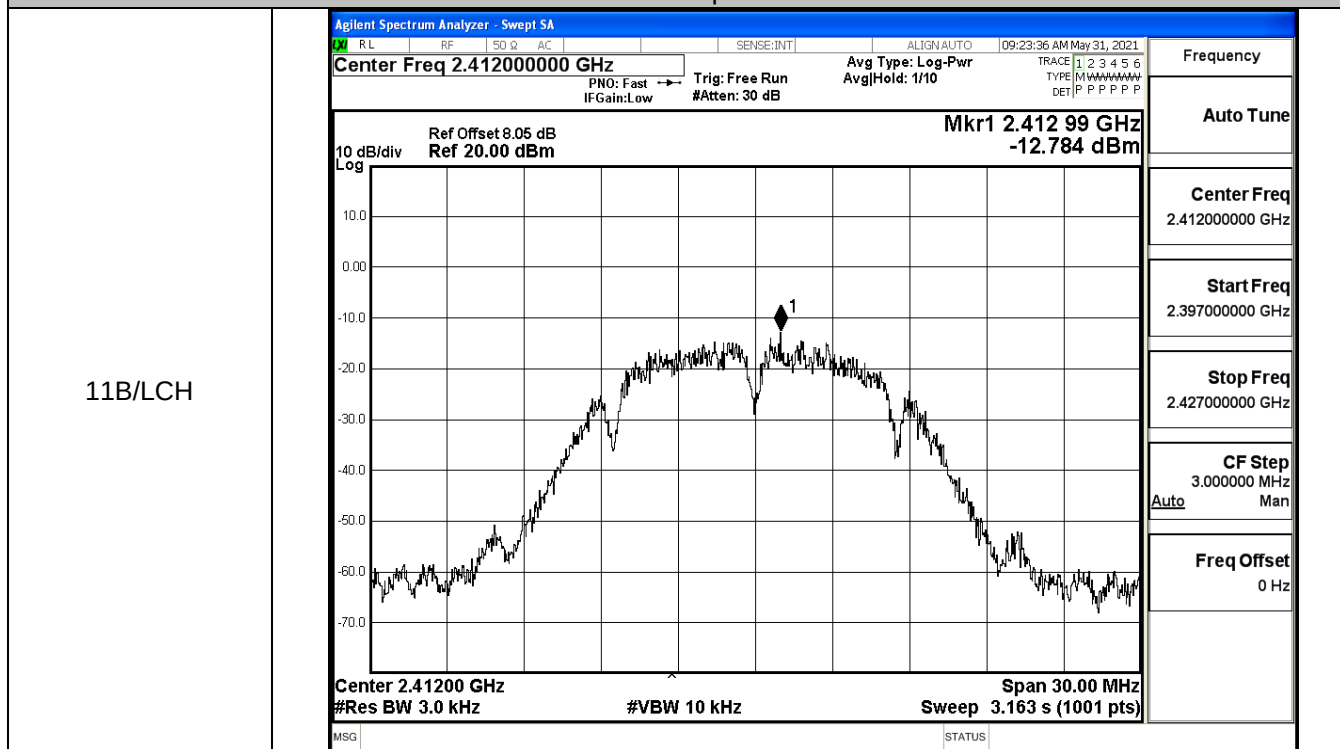
Mode	Channel	ANT 0 [dBm]	ANT 1 [dBm]	MIMO [dBm]	Limit [dBm]	Verdict
11N20	LCH	12.11	11.25	14.71	30	PASS
	MCH	12.36	10.46	14.52	30	PASS
	HCH	11.61	10.39	14.05	30	PASS
11N40	LCH	12.57	11.85	15.24	30	PASS
	MCH	12.55	11.86	15.23	30	PASS
	HCH	12.41	12.91	15.68	30	PASS

C.3 Maximum Power Spectral Density

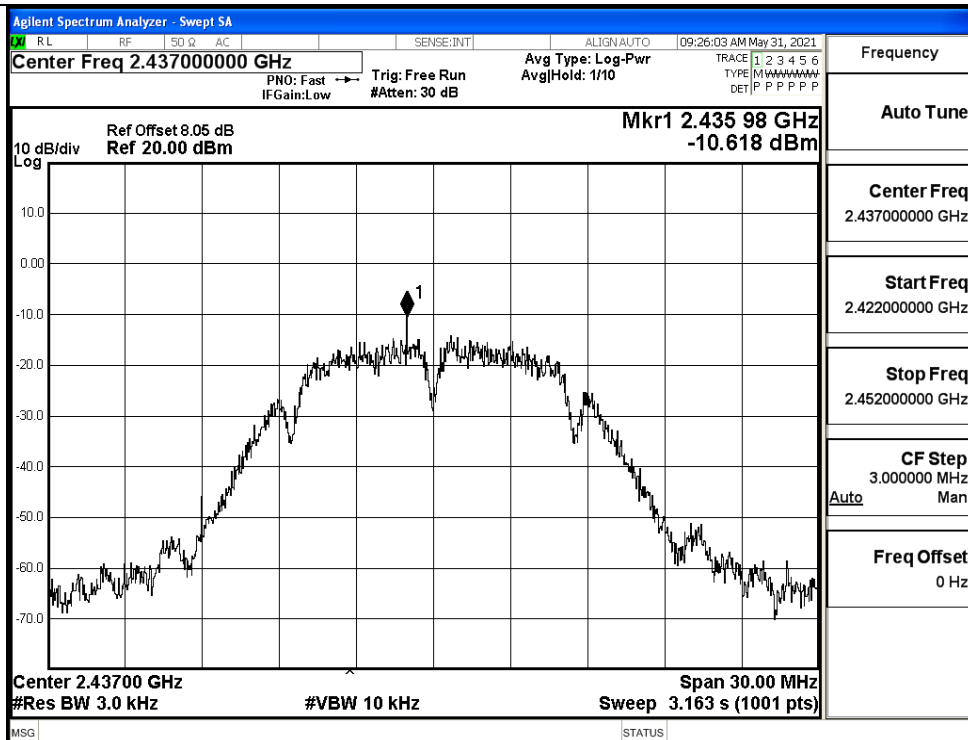
ANTO

Mode	Channel	Meas.Level [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-12.784	8	PASS
	MCH	-10.618	8	PASS
	HCH	-14.107	8	PASS
11G	LCH	-20.467	8	PASS
	MCH	-19.836	8	PASS
	HCH	-23.223	8	PASS
11N20SISO	LCH	-22.205	8	PASS
	MCH	-21.628	8	PASS
	HCH	-22.773	8	PASS
11N40SISO	LCH	-25.129	8	PASS
	MCH	-24.104	8	PASS
	HCH	-24.404	8	PASS

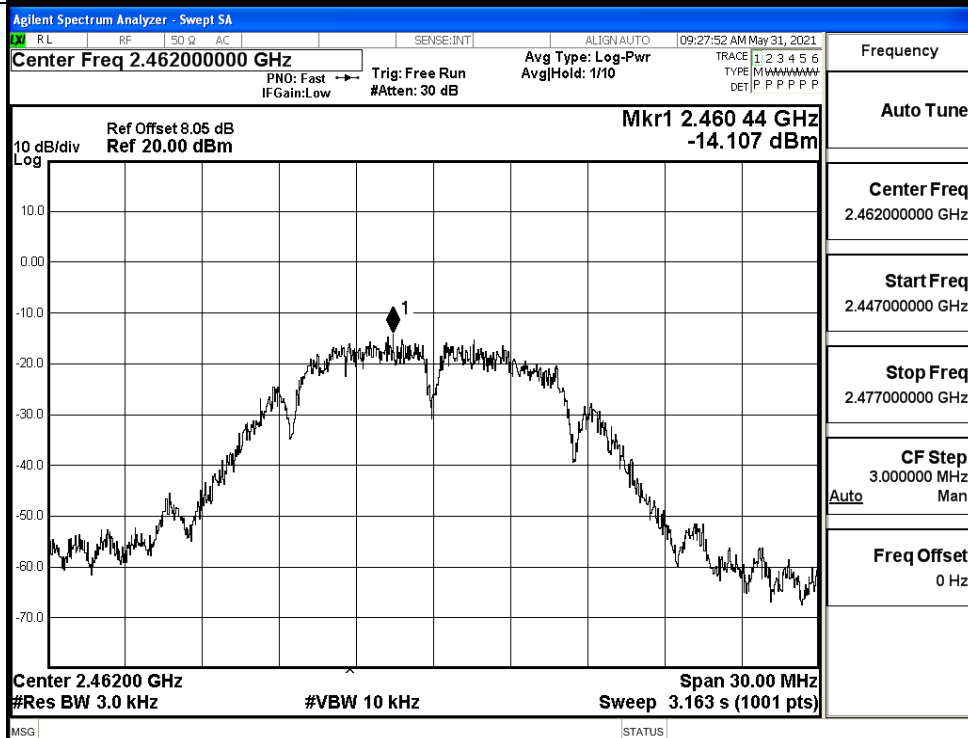
Test Graphs



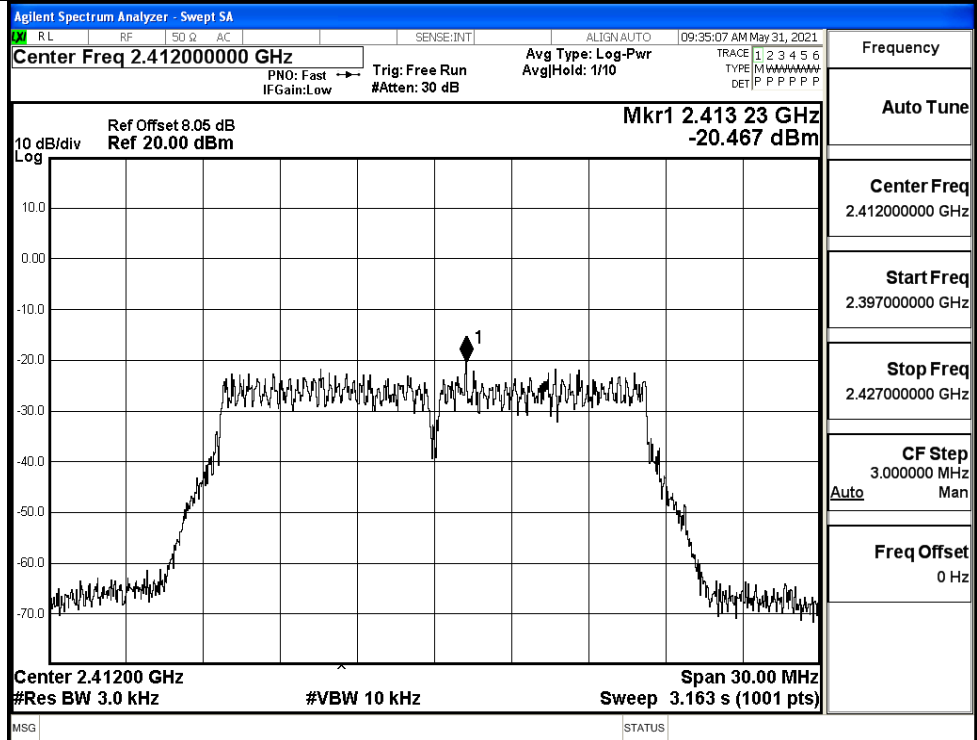
11B/MCH



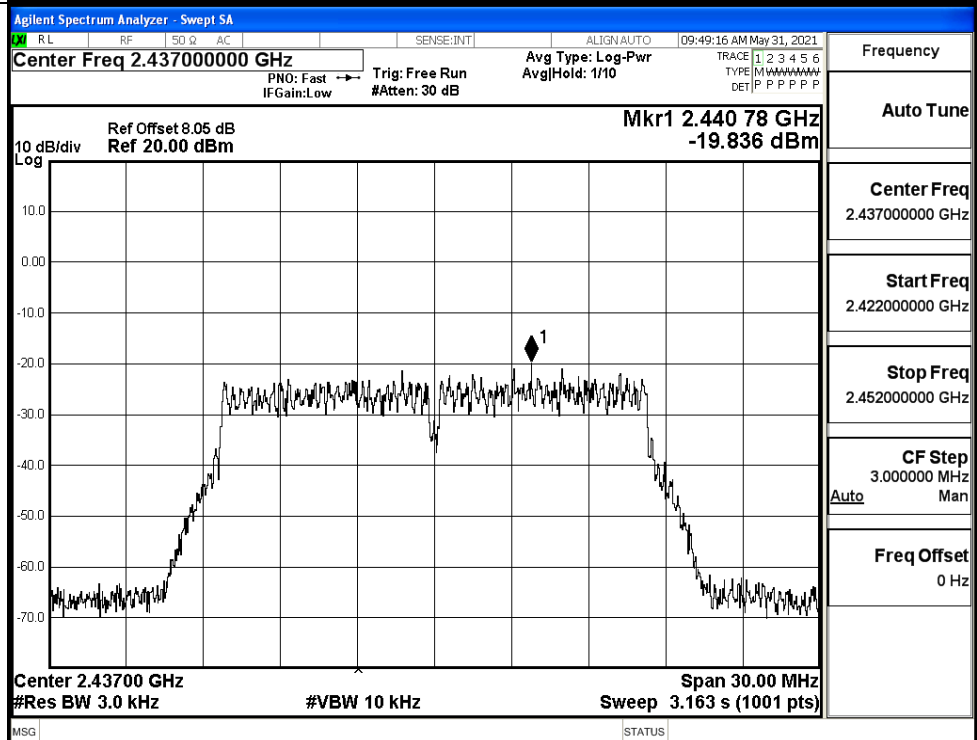
11B/HCH



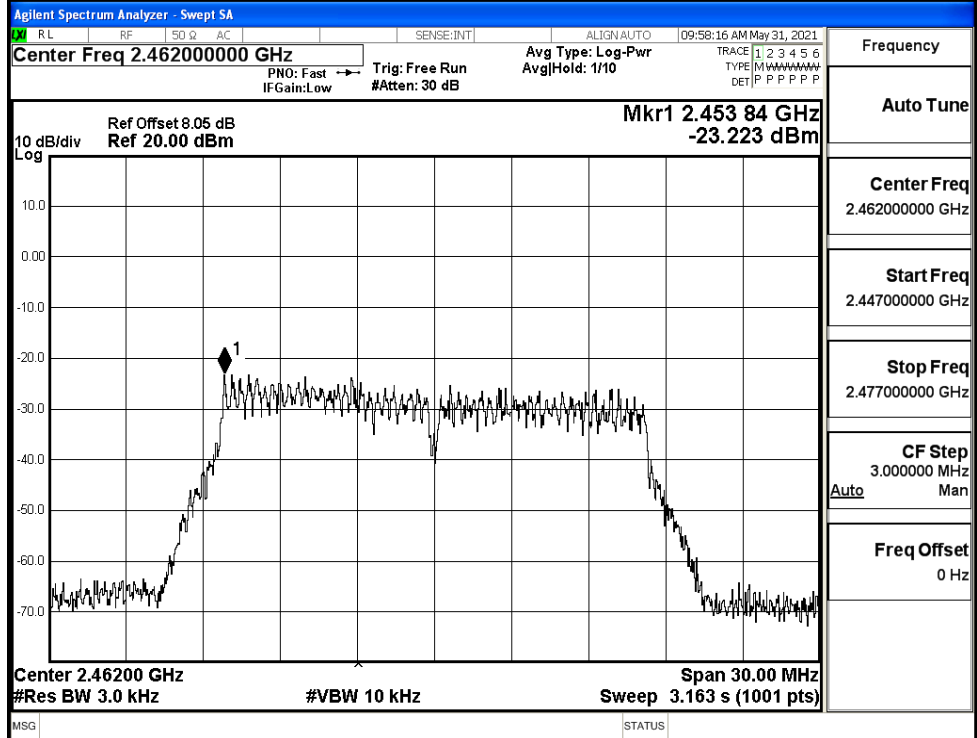
11G/LCH



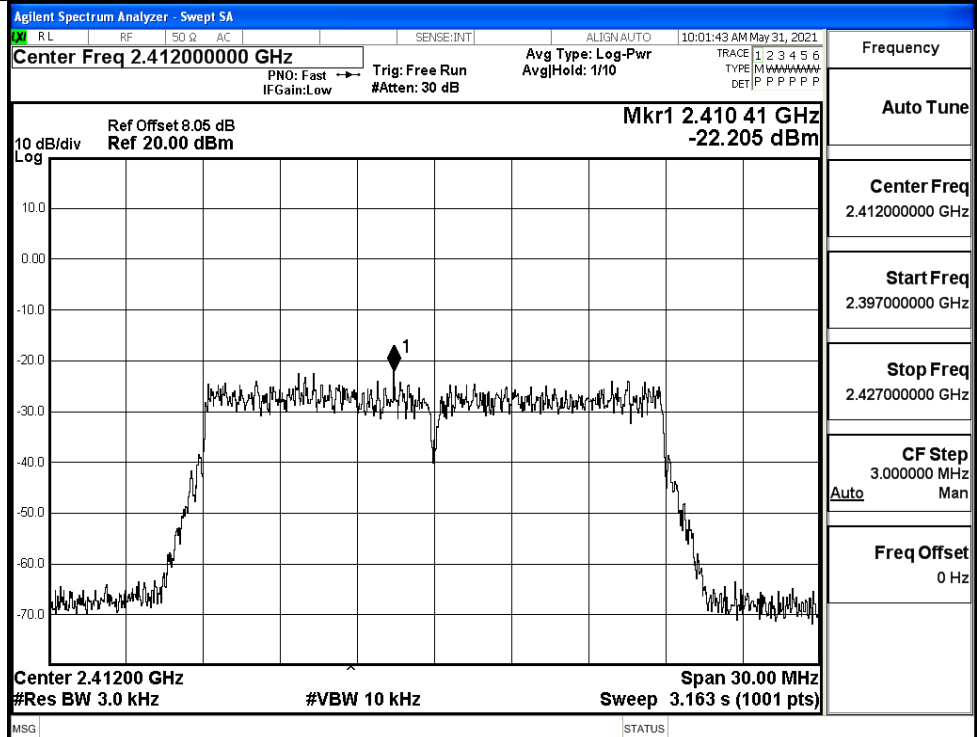
11G/MCH



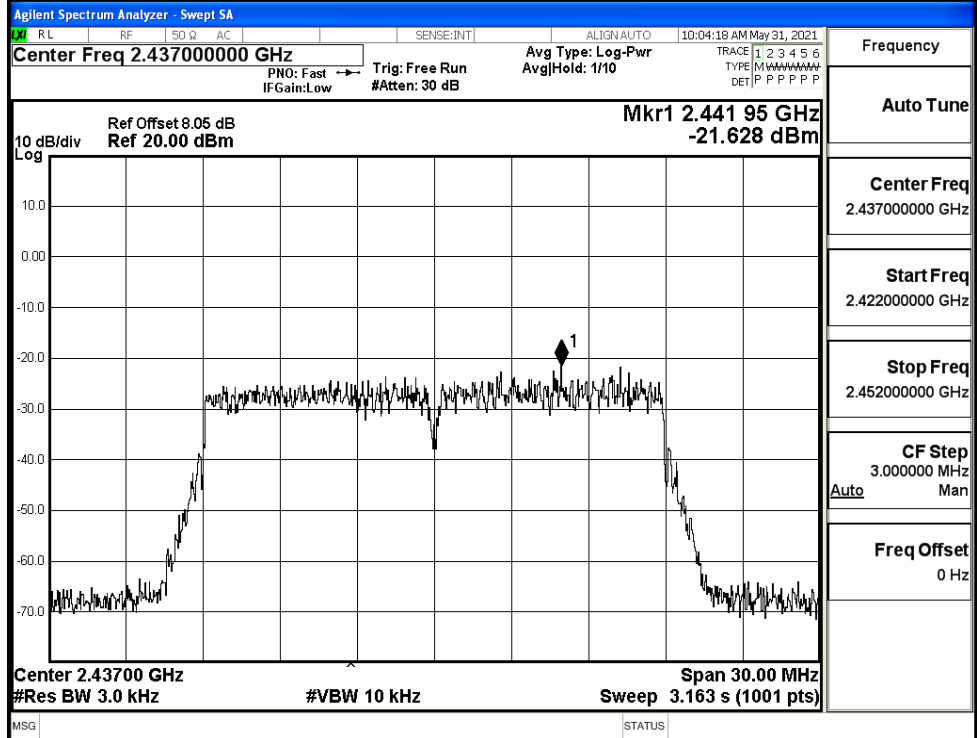
11G/HCH



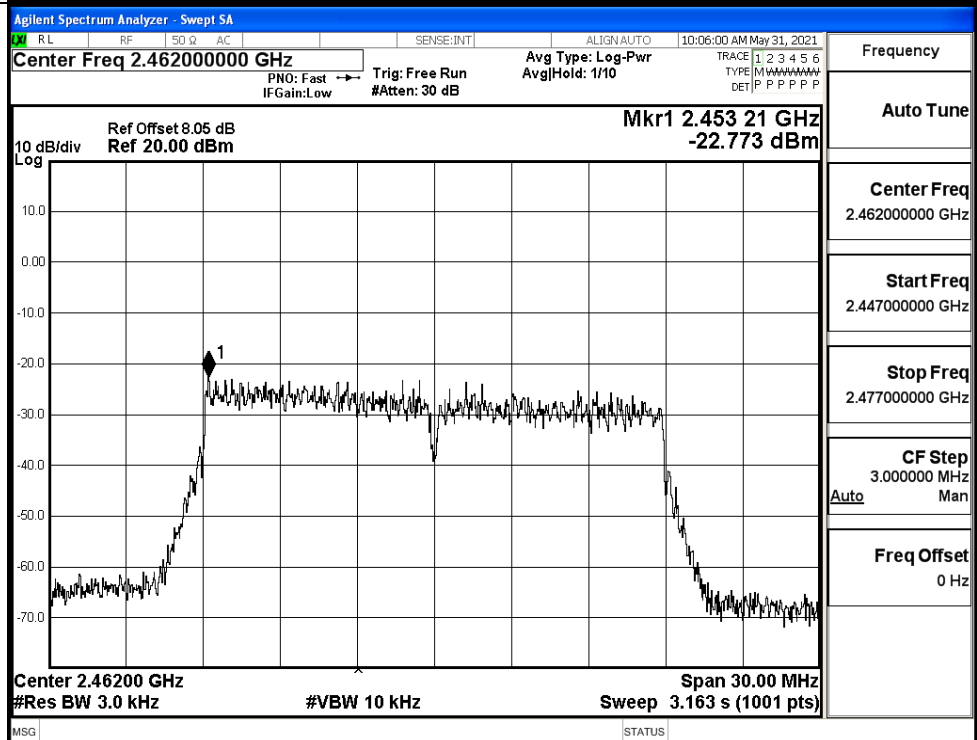
11N20SISO/LCH



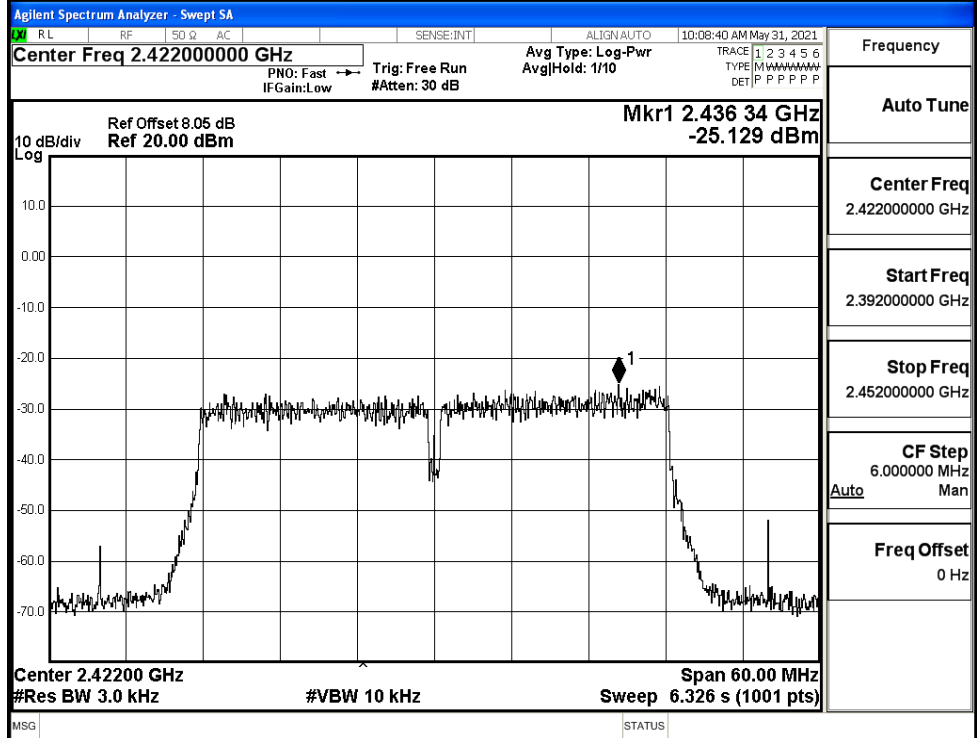
11N20SISO/MCH



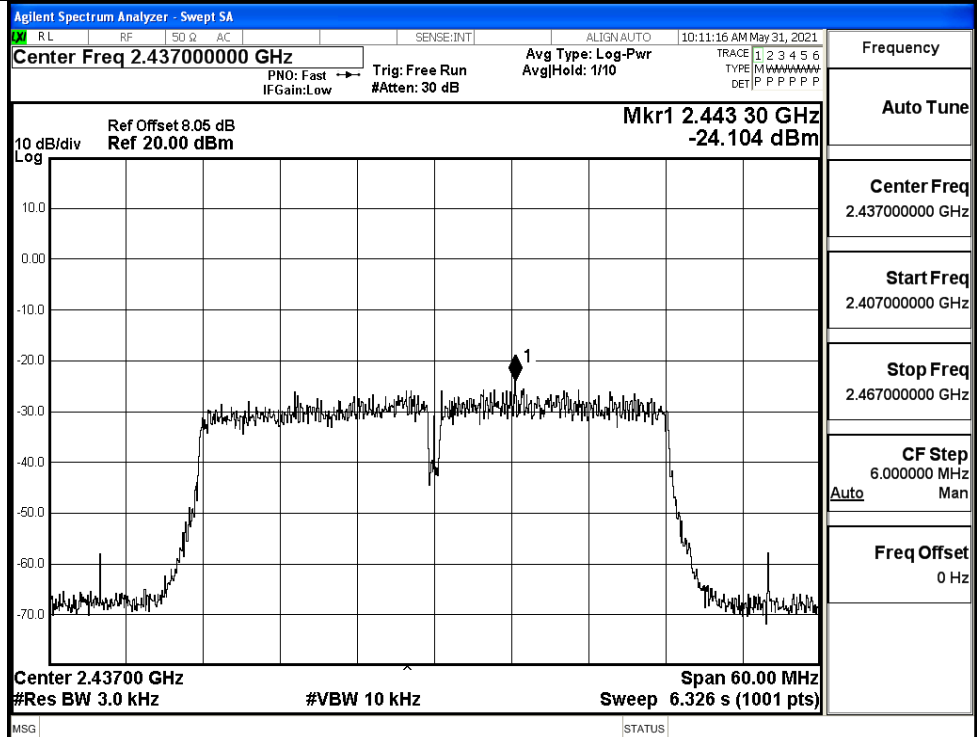
11N20SISO/HCH

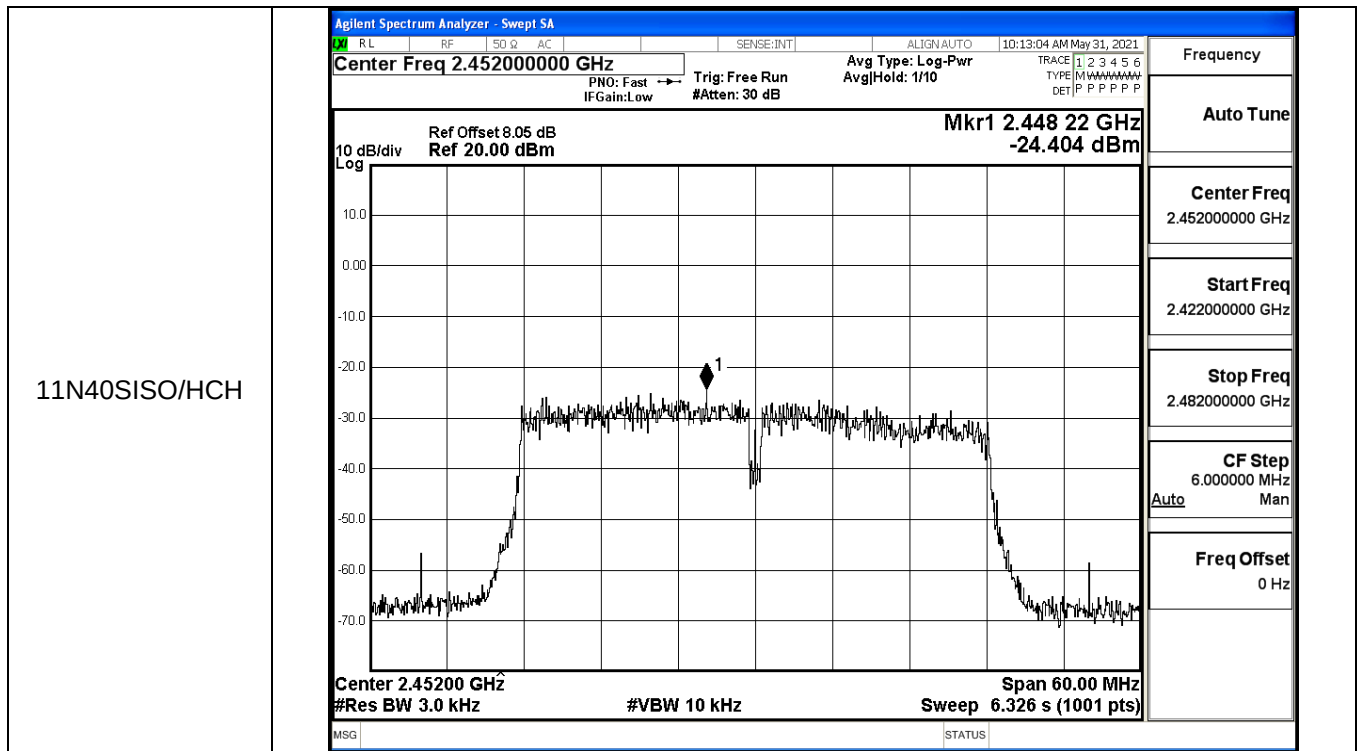


11N40SISO/LCH



11N40SISO/MCH

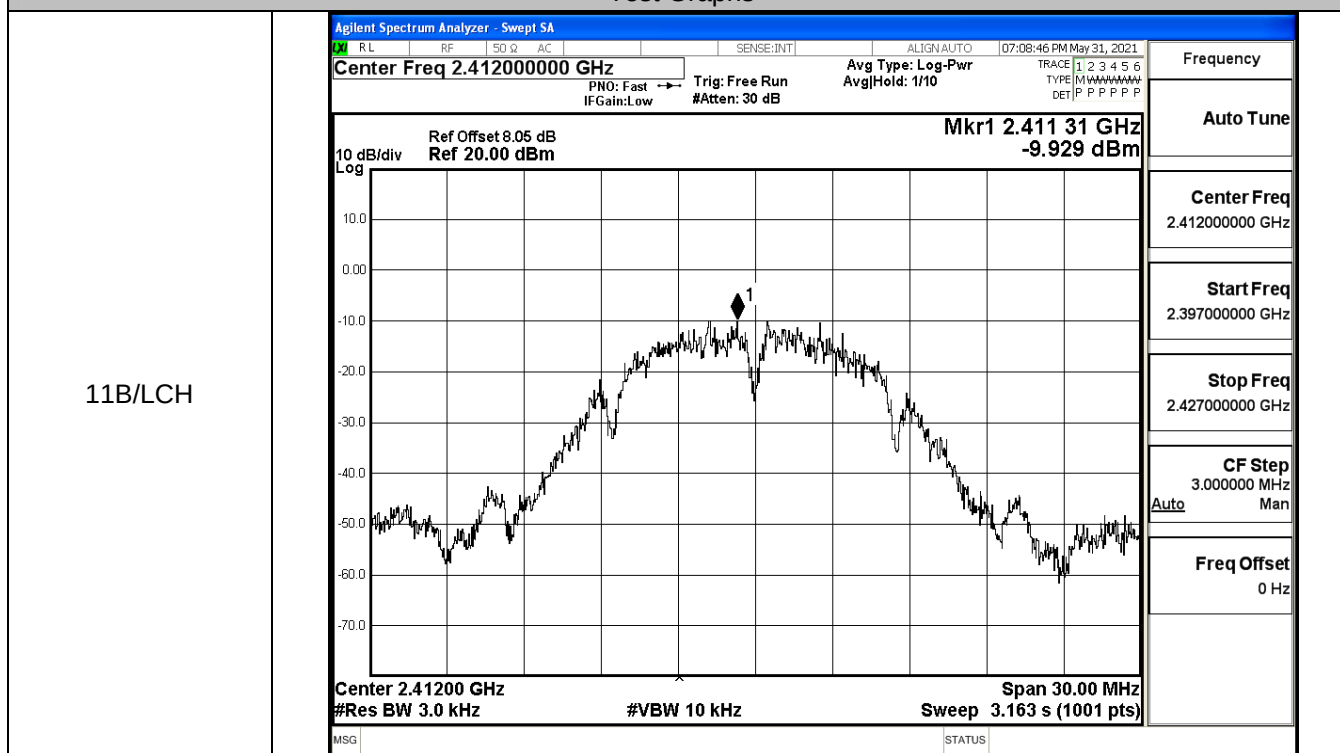




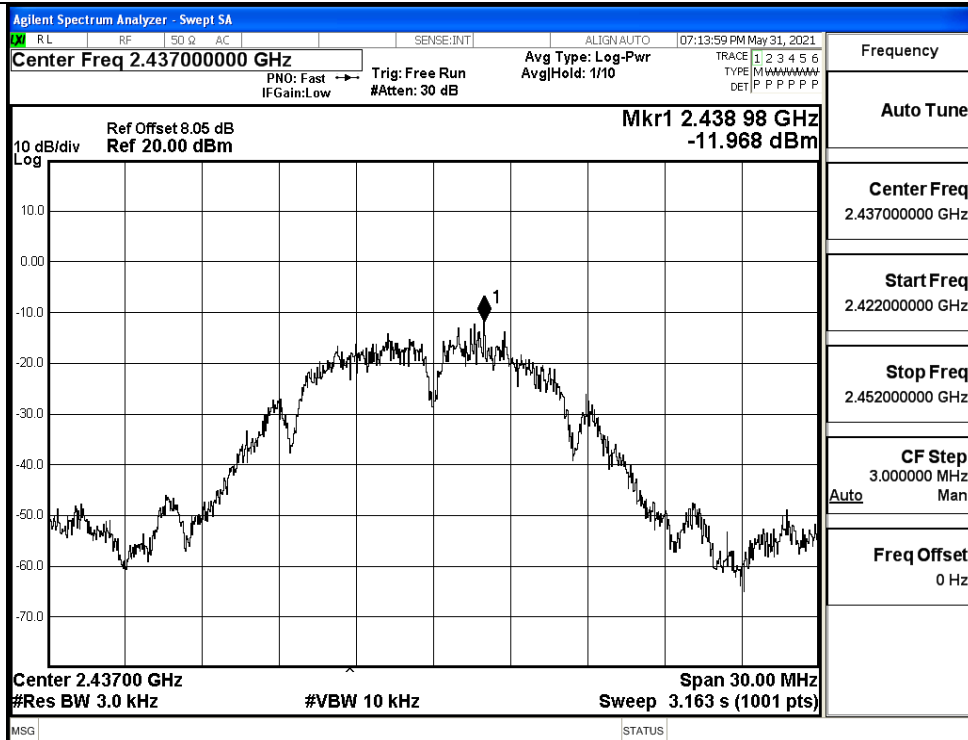
ANT1

Mode	Channel	Meas.Level [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-9.929	8	PASS
	MCH	-11.968	8	PASS
	HCH	-14.309	8	PASS
11G	LCH	-20.243	8	PASS
	MCH	-20.438	8	PASS
	HCH	-20.783	8	PASS
11N20SISO	LCH	-20.687	8	PASS
	MCH	-22.482	8	PASS
	HCH	-22.318	8	PASS
11N40SISO	LCH	-24.344	8	PASS
	MCH	-24.524	8	PASS
	HCH	-23.586	8	PASS

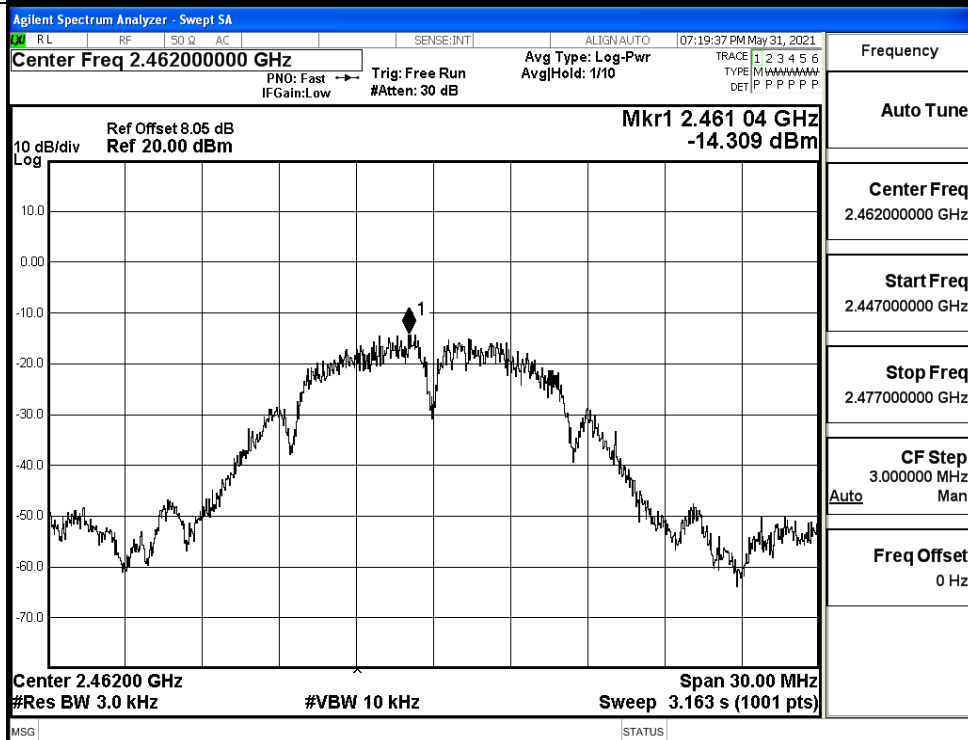
Test Graphs



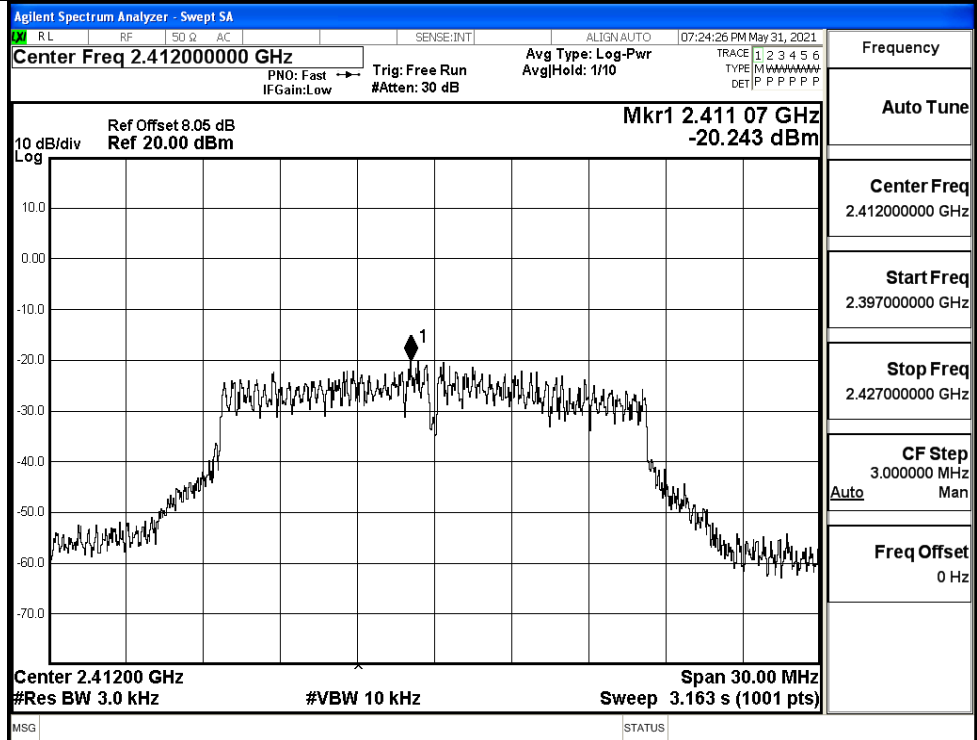
11B/MCH



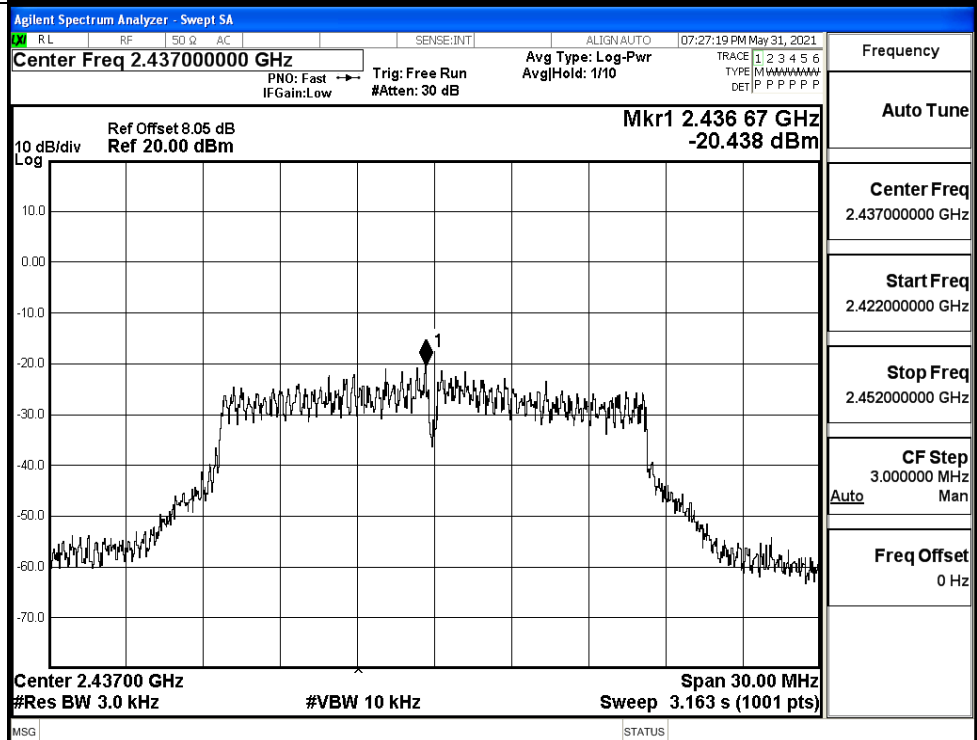
11B/HCH



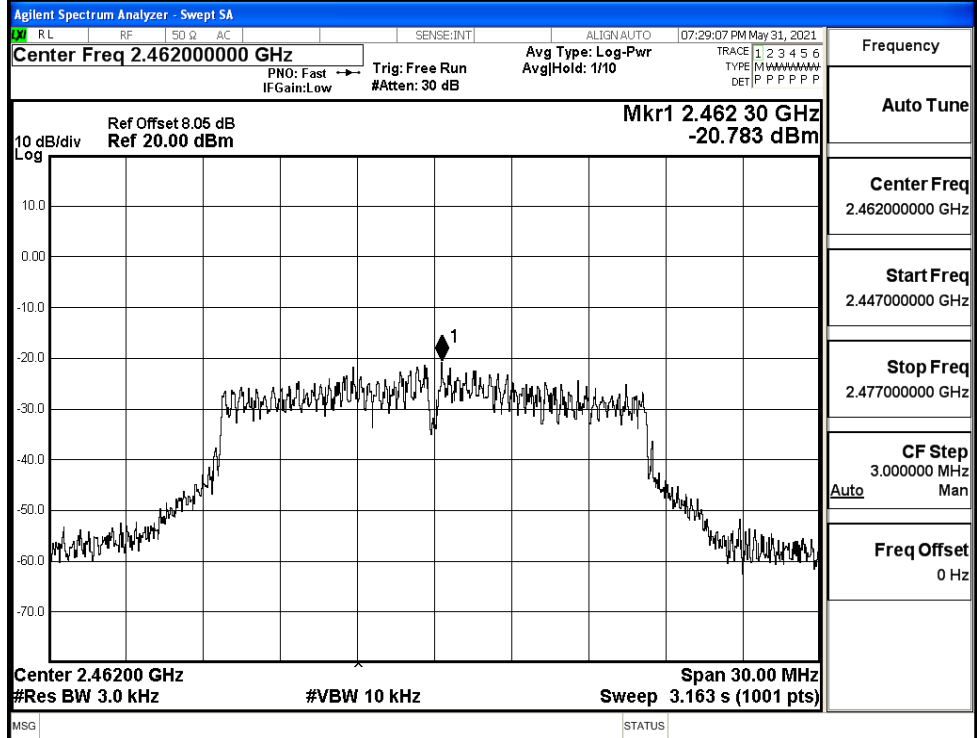
11G/LCH



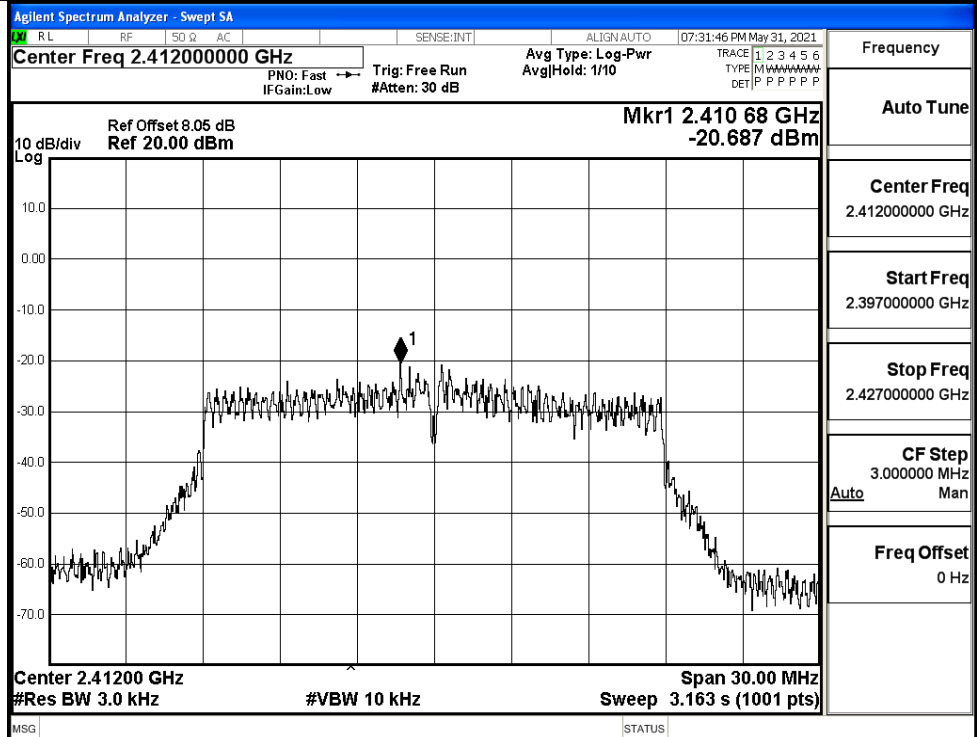
11G/MCH



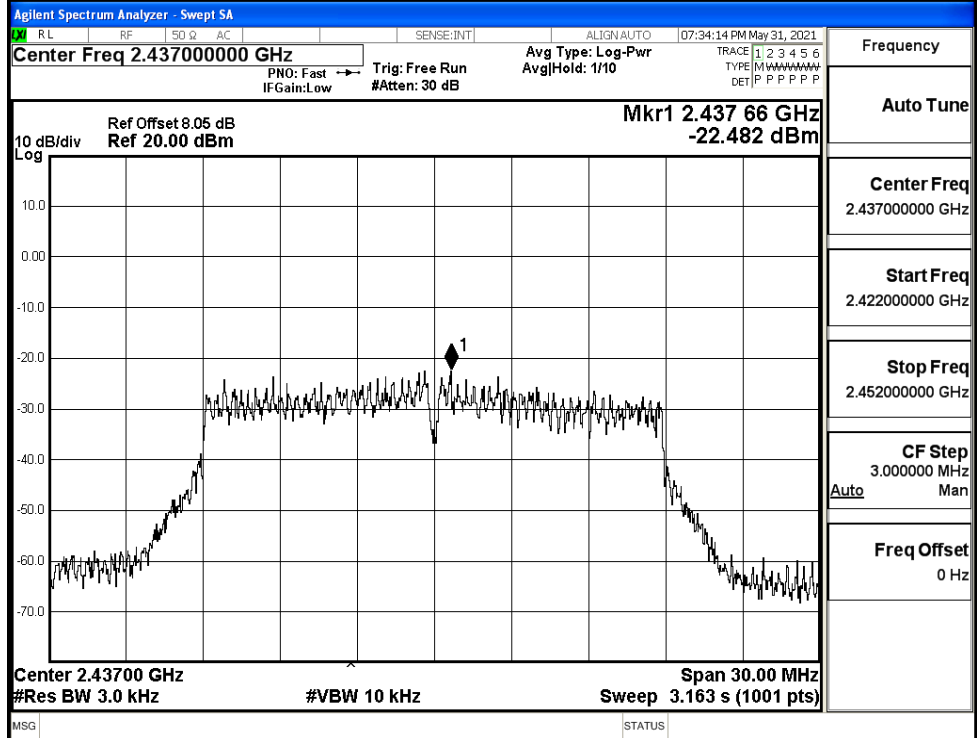
11G/HCH



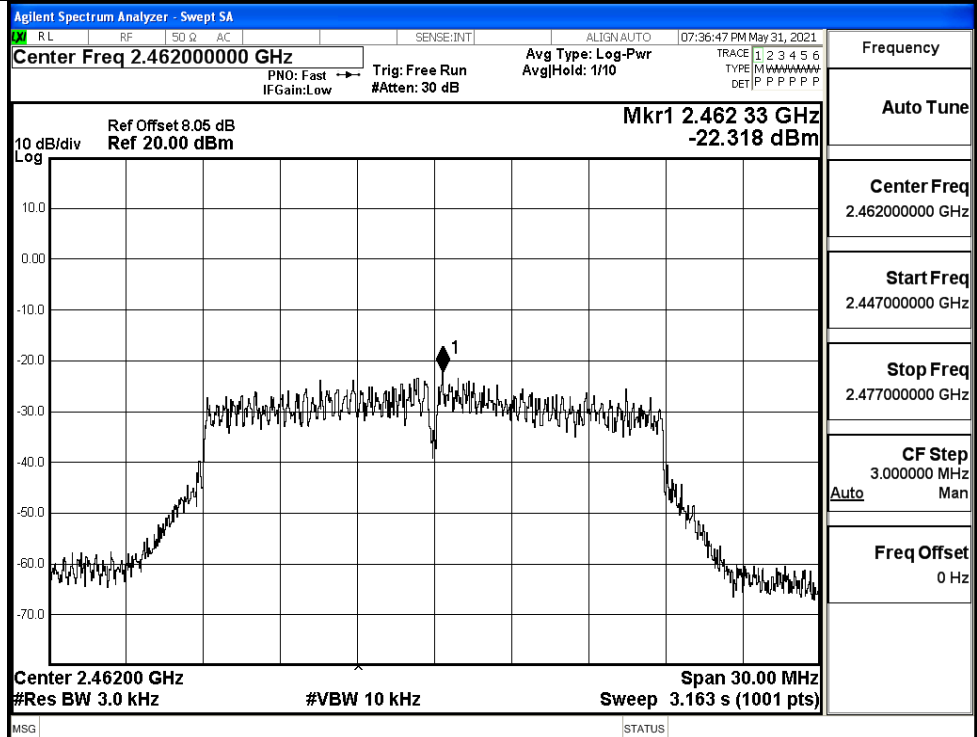
11N20SISO/LCH



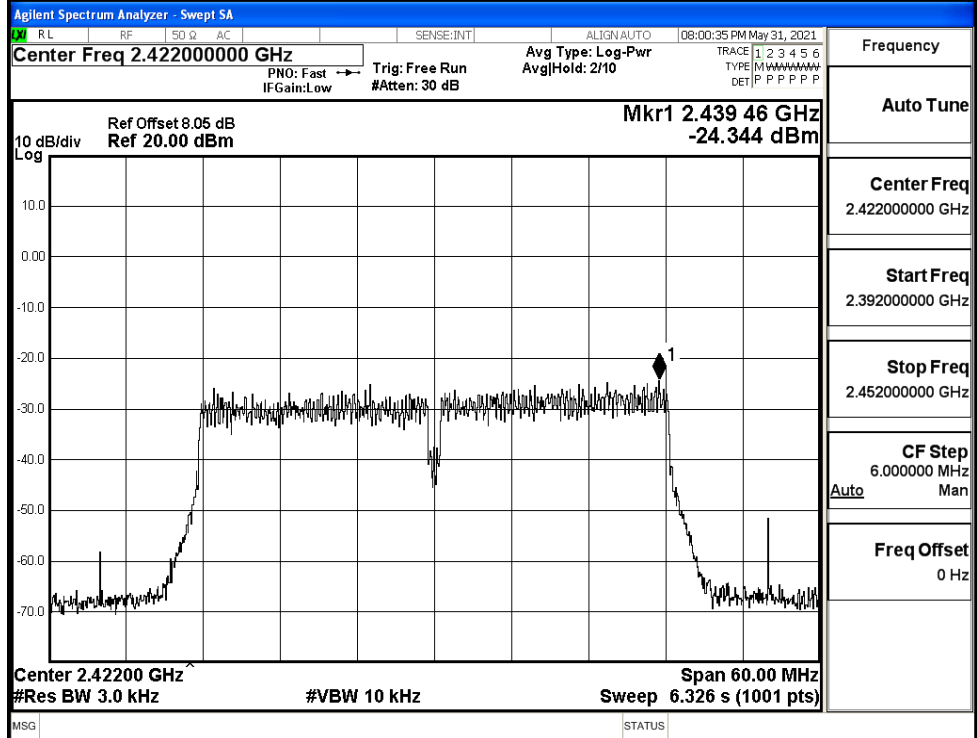
11N20SISO/MCH



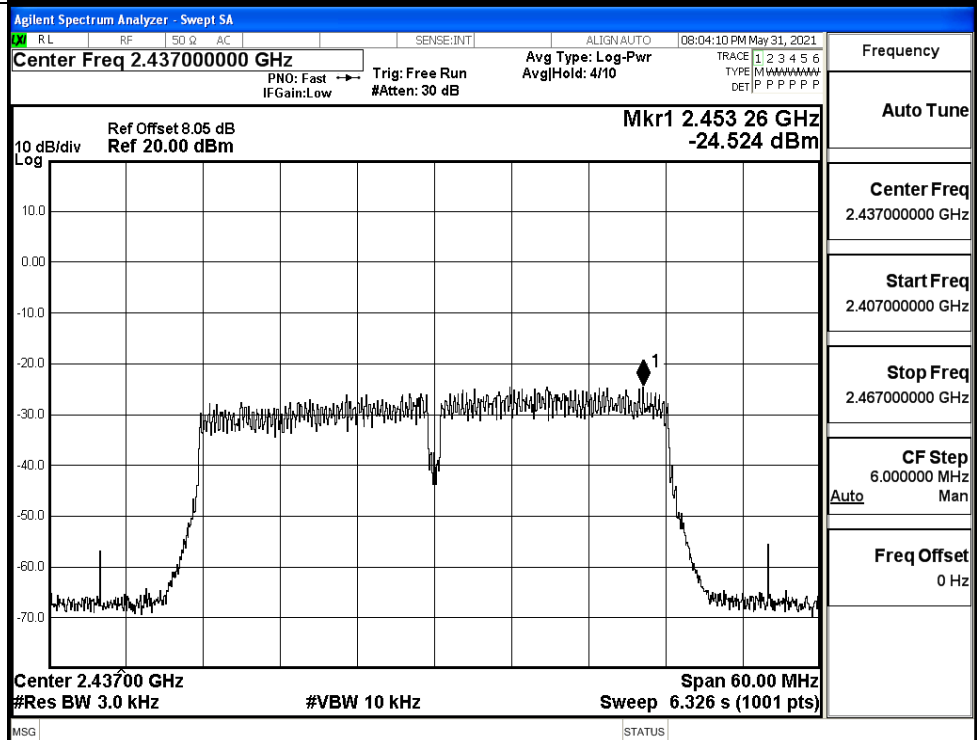
11N20SISO/HCH



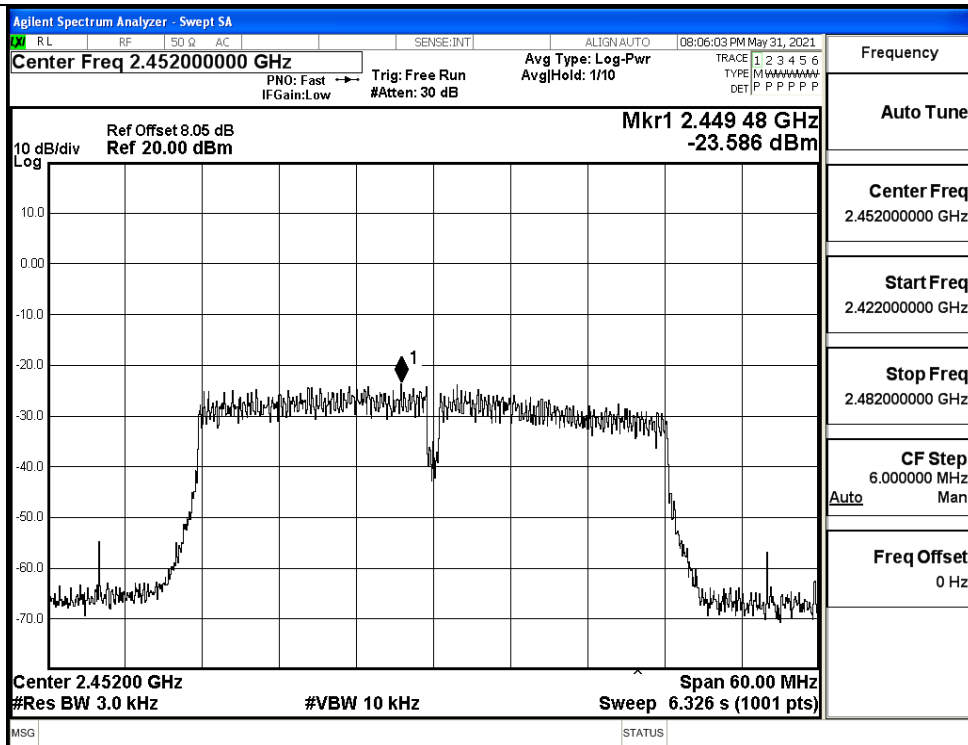
11N40SISO/LCH



11N40SISO/MCH



11N40SISO/HCH



MIMO

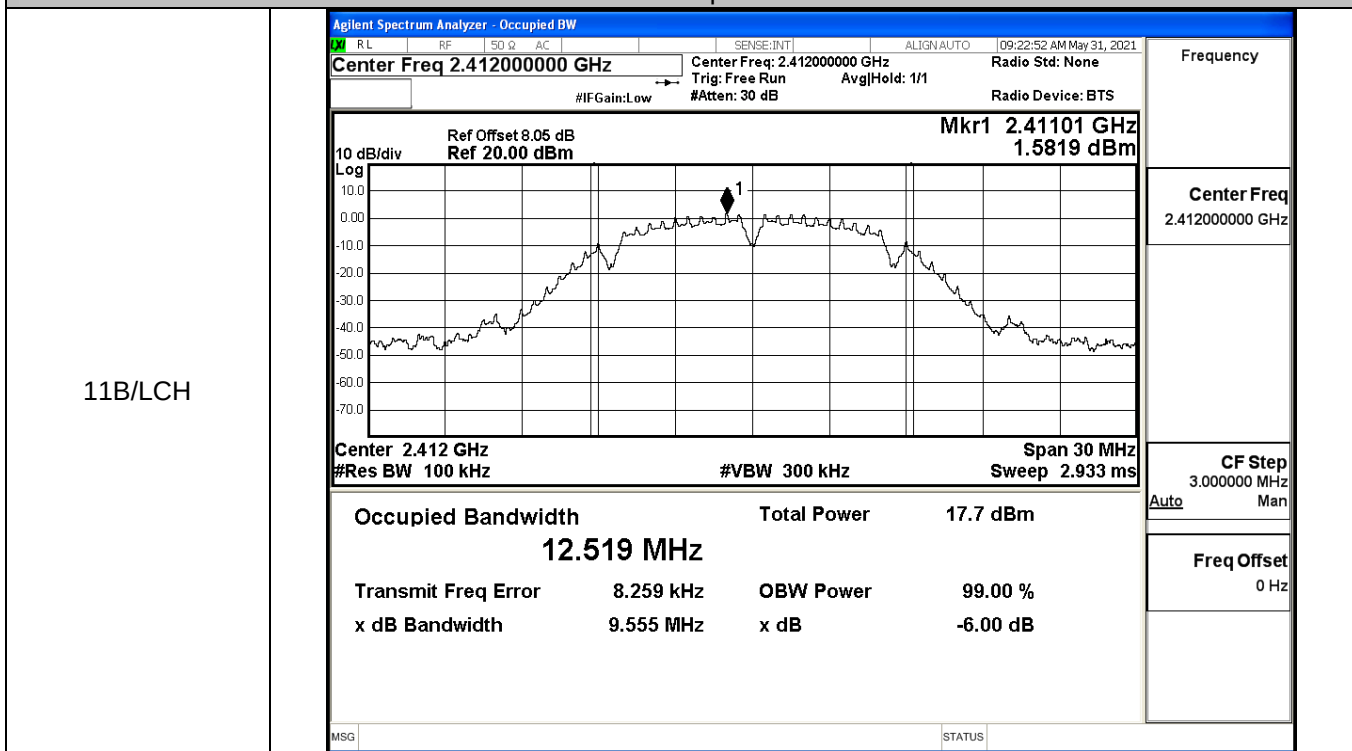
Mode	Channel	ANT 0 [dBm/3KHz]	ANT 1 [dBm/3KHz]	MIMO [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
11N20	LCH	-22.205	-20.687	-18.37	8.0	PASS
	MCH	-21.628	-22.482	-19.02	8.0	PASS
	HCH	-22.773	-22.318	-19.53	8.0	PASS
11N40	LCH	-25.129	-24.344	-21.71	8.0	PASS
	MCH	-24.104	-24.524	-21.30	8.0	PASS
	HCH	-24.404	-23.586	-20.97	8.0	PASS

C.4 6dB Bandwidth

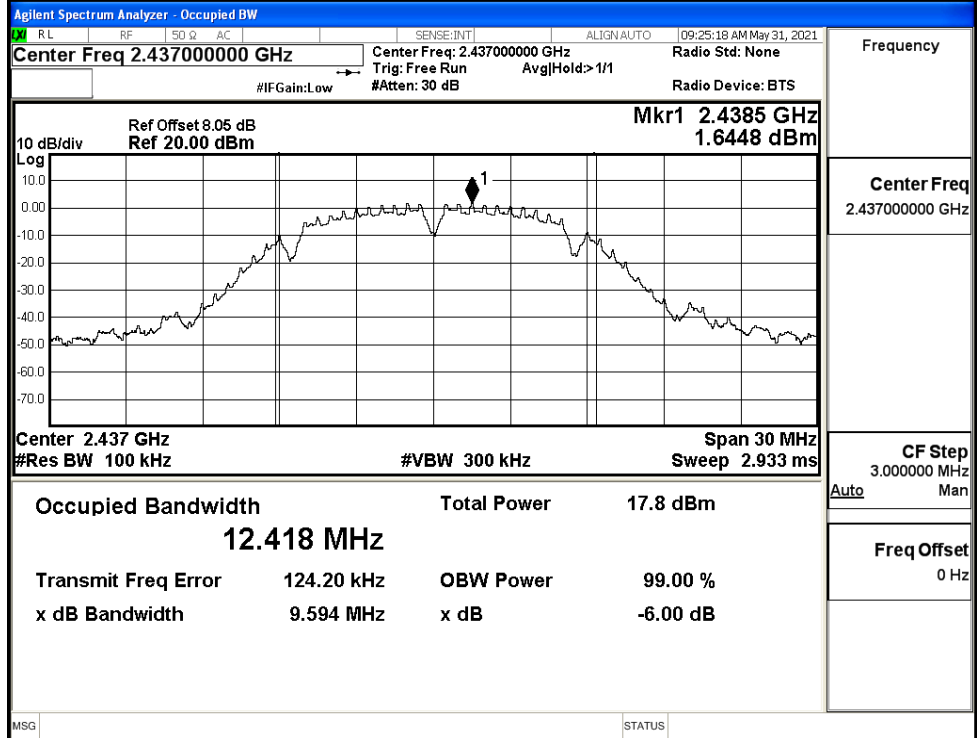
ANT0

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	9.555	≥ 0.5	PASS
	MCH	9.594	≥ 0.5	PASS
	HCH	9.569	≥ 0.5	PASS
11G	LCH	15.16	≥ 0.5	PASS
	MCH	15.34	≥ 0.5	PASS
	HCH	15.84	≥ 0.5	PASS
11N20SISO	LCH	17.63	≥ 0.5	PASS
	MCH	17.47	≥ 0.5	PASS
	HCH	17.10	≥ 0.5	PASS
11N40SISO	LCH	35.88	≥ 0.5	PASS
	MCH	35.59	≥ 0.5	PASS
	HCH	35.53	≥ 0.5	PASS

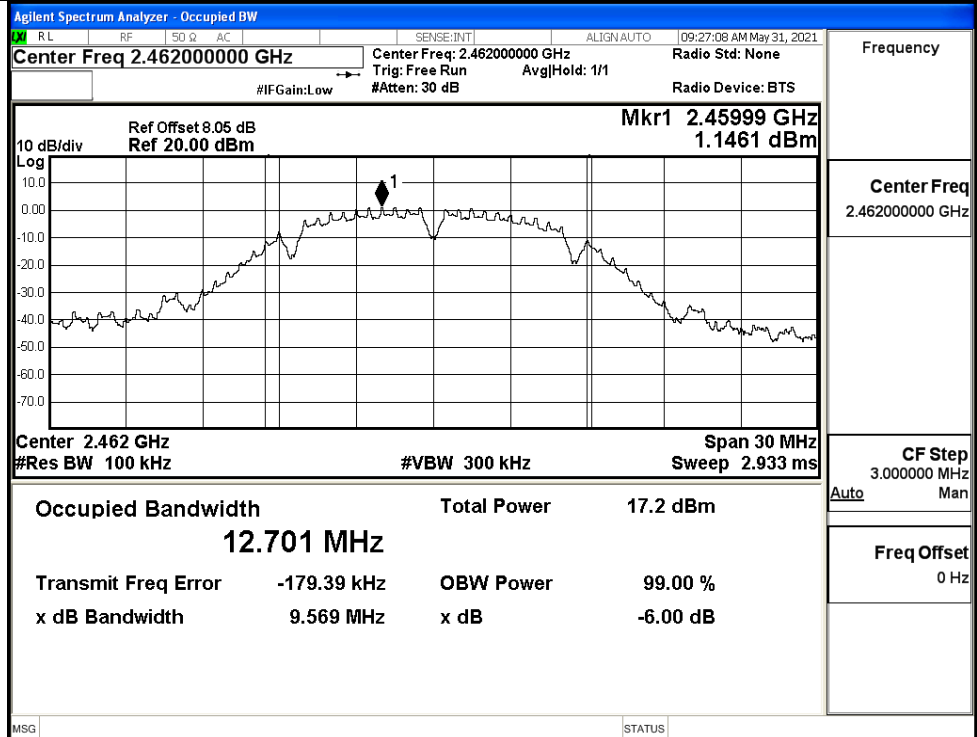
Test Graphs



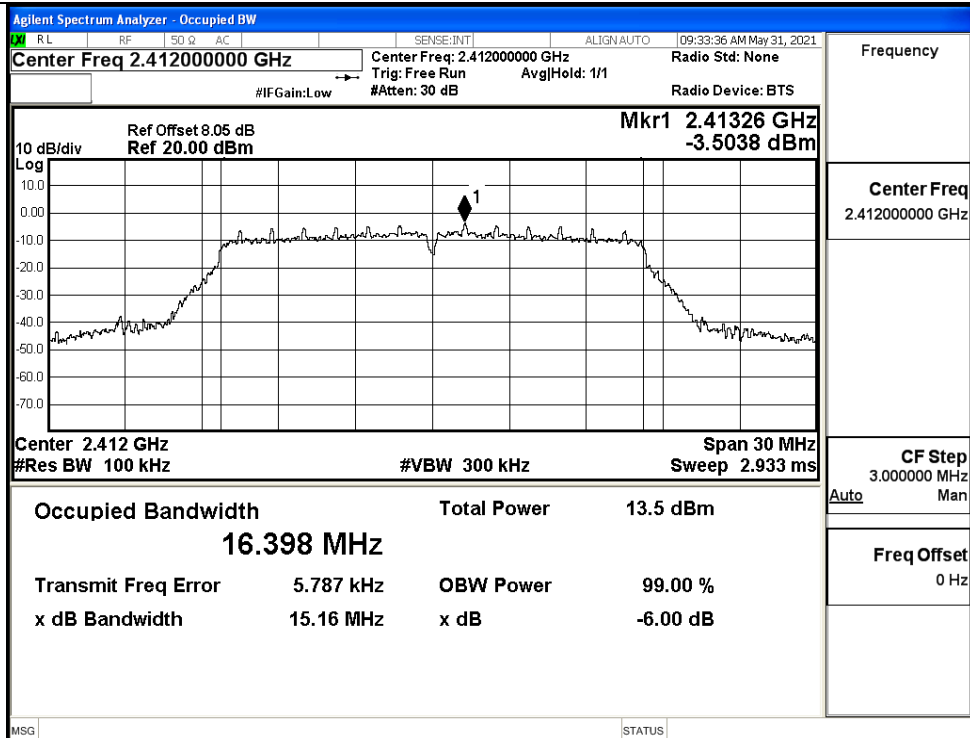
11B/MCH



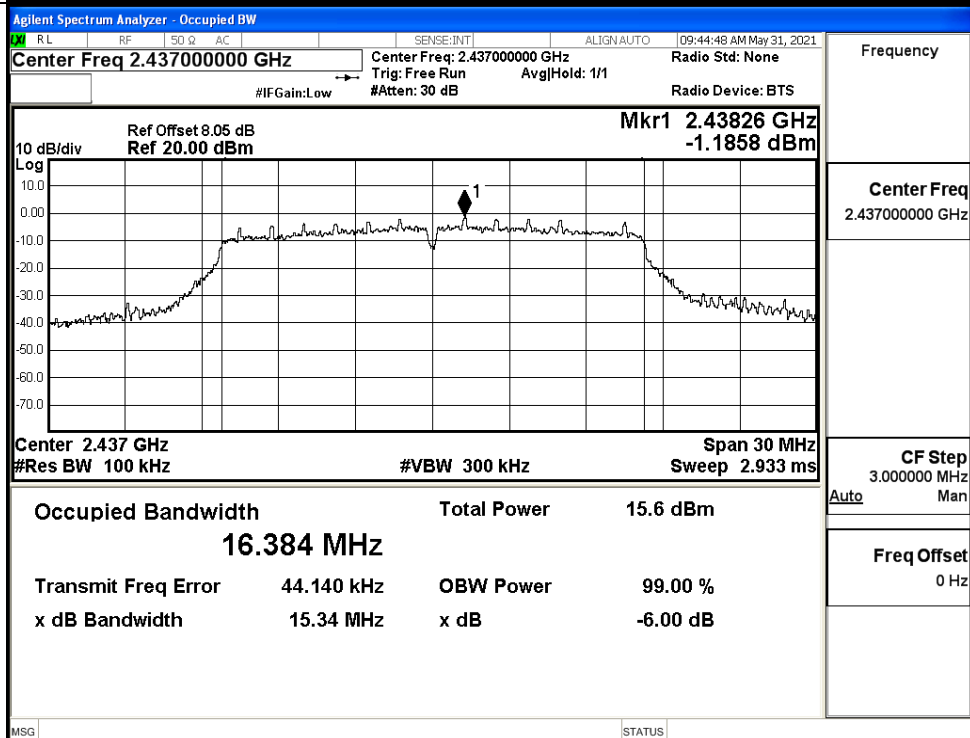
11B/HCH



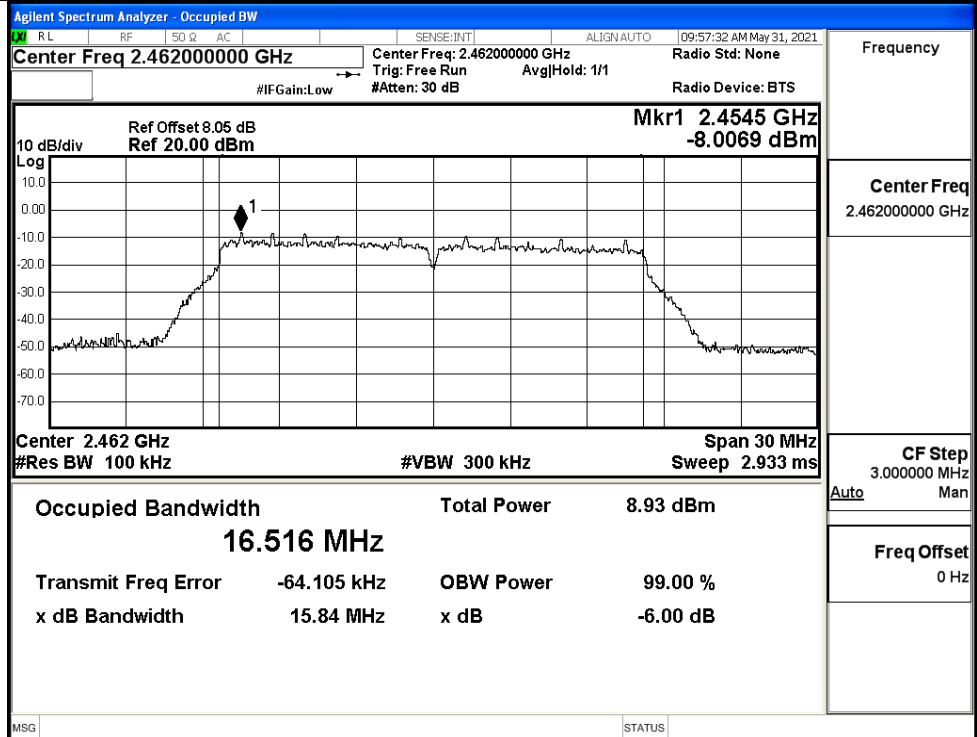
11G/LCH



11G/MCH



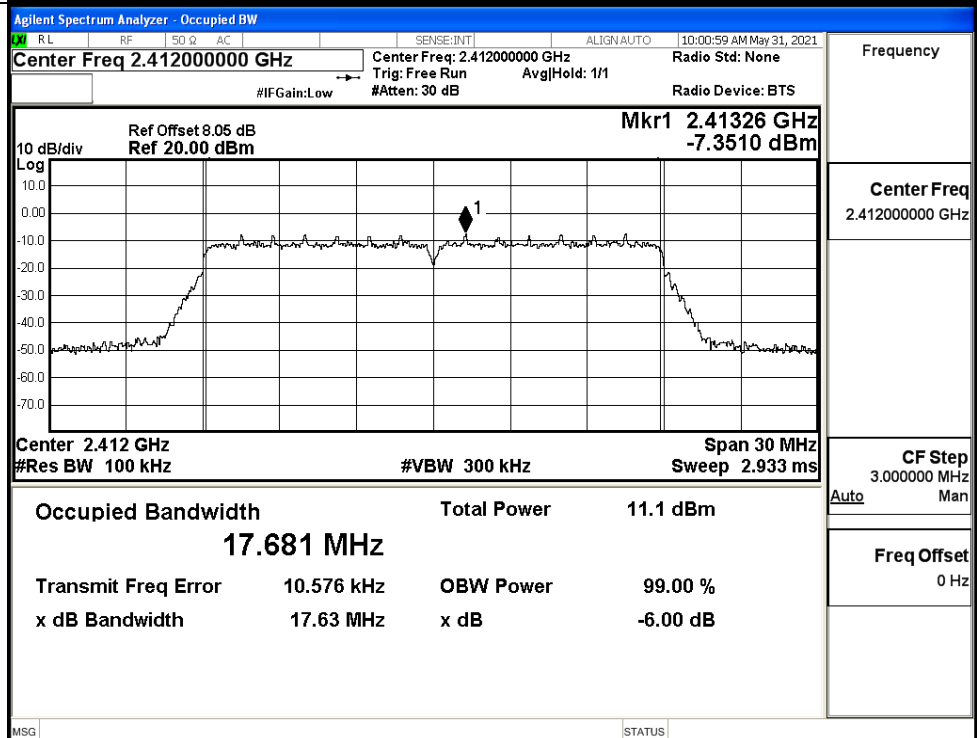
11G/HCH



Frequency

Center Freq
2.46200000 GHzCF Step
3.000000 MHz
Auto ManFreq Offset
0 Hz

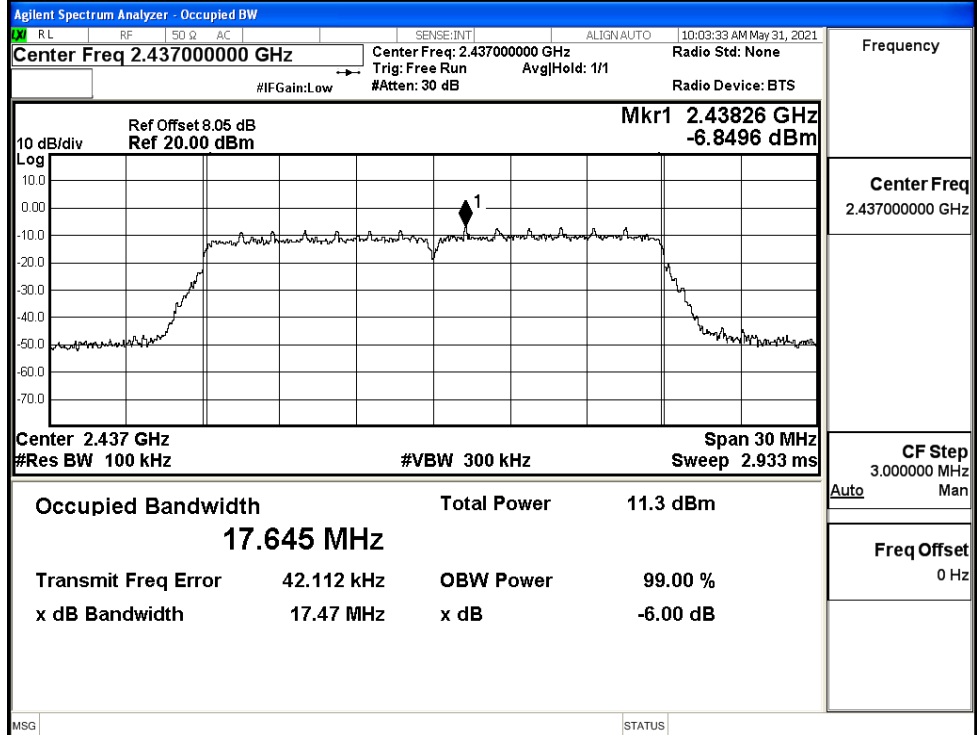
11N20SISO/LCH



Frequency

Center Freq
2.41200000 GHzCF Step
3.000000 MHz
Auto ManFreq Offset
0 Hz

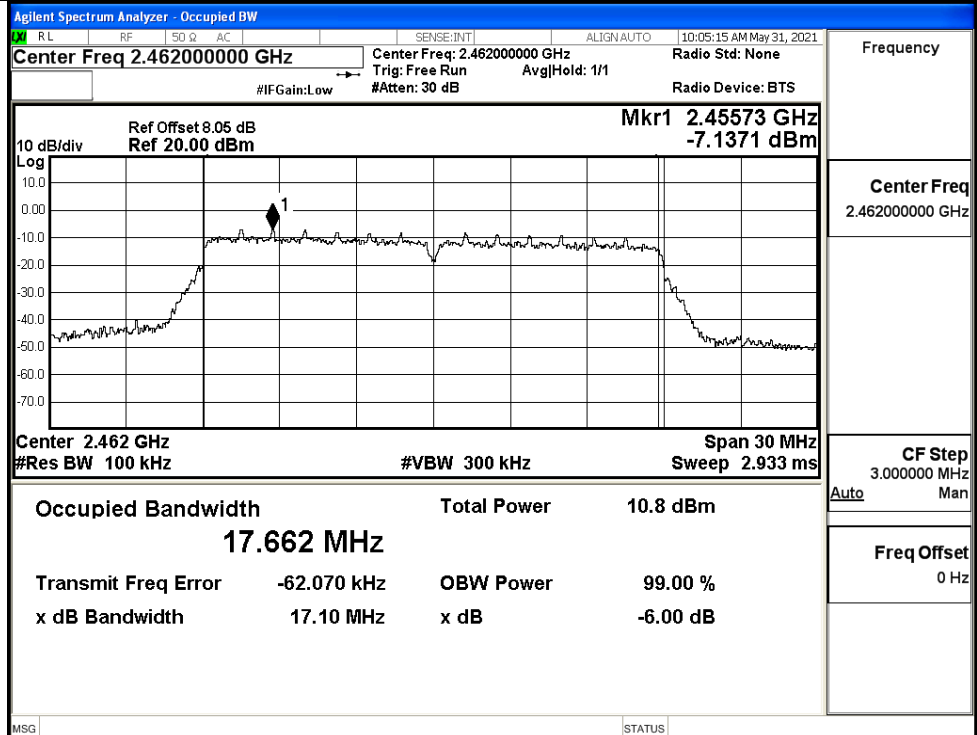
11N20SISO/MCH



Frequency

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

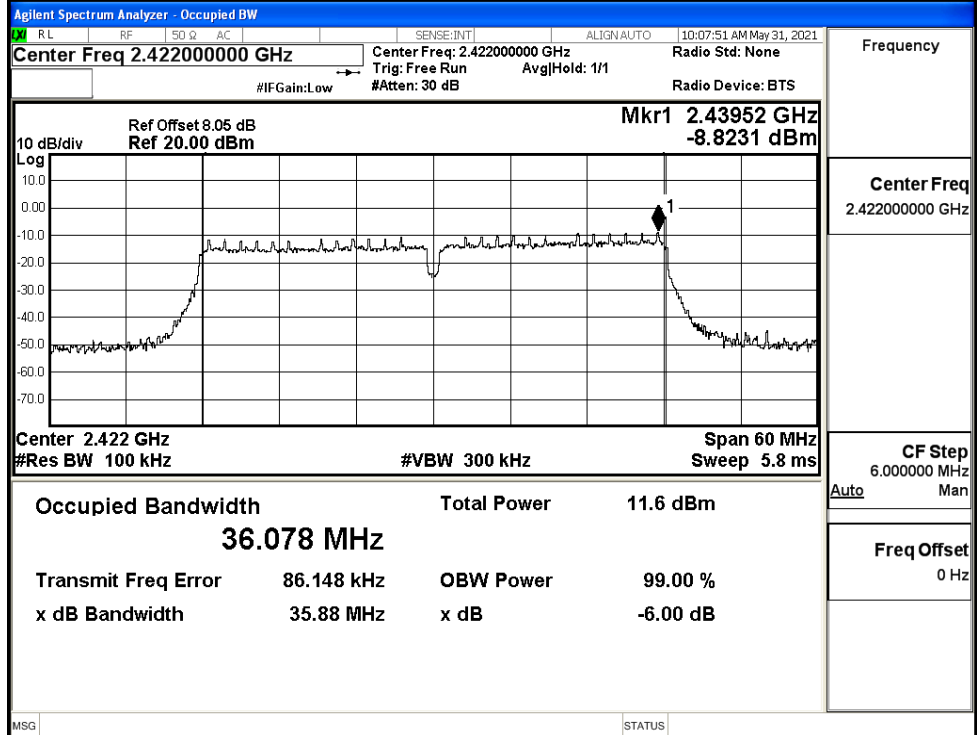
11N20SISO/HCH



Frequency

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

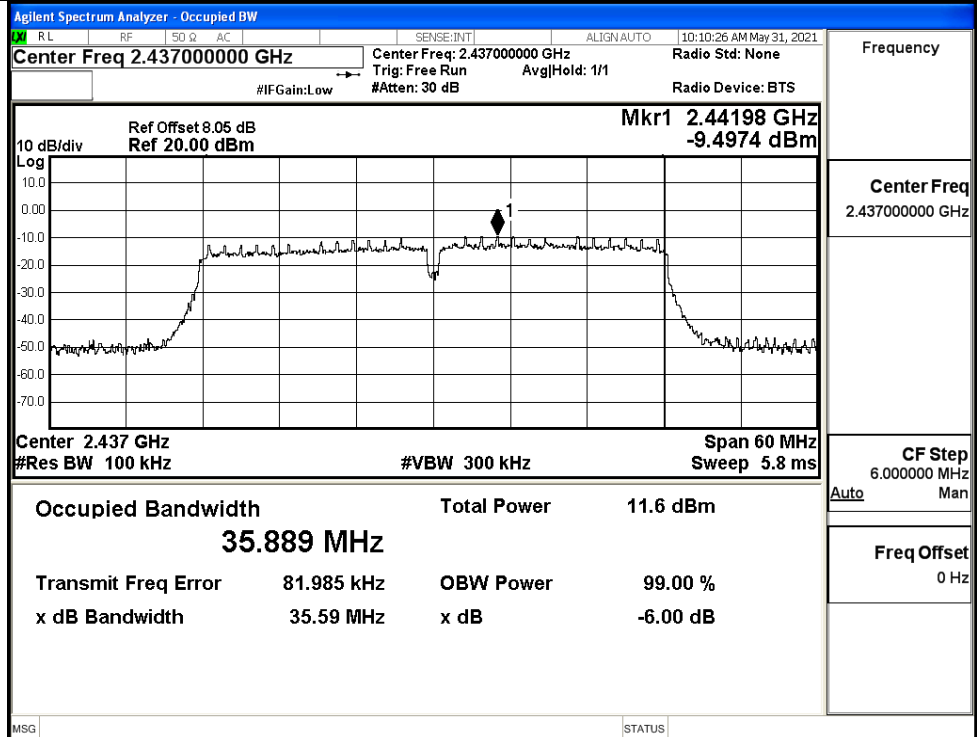
11N40SISO/LCH



Frequency

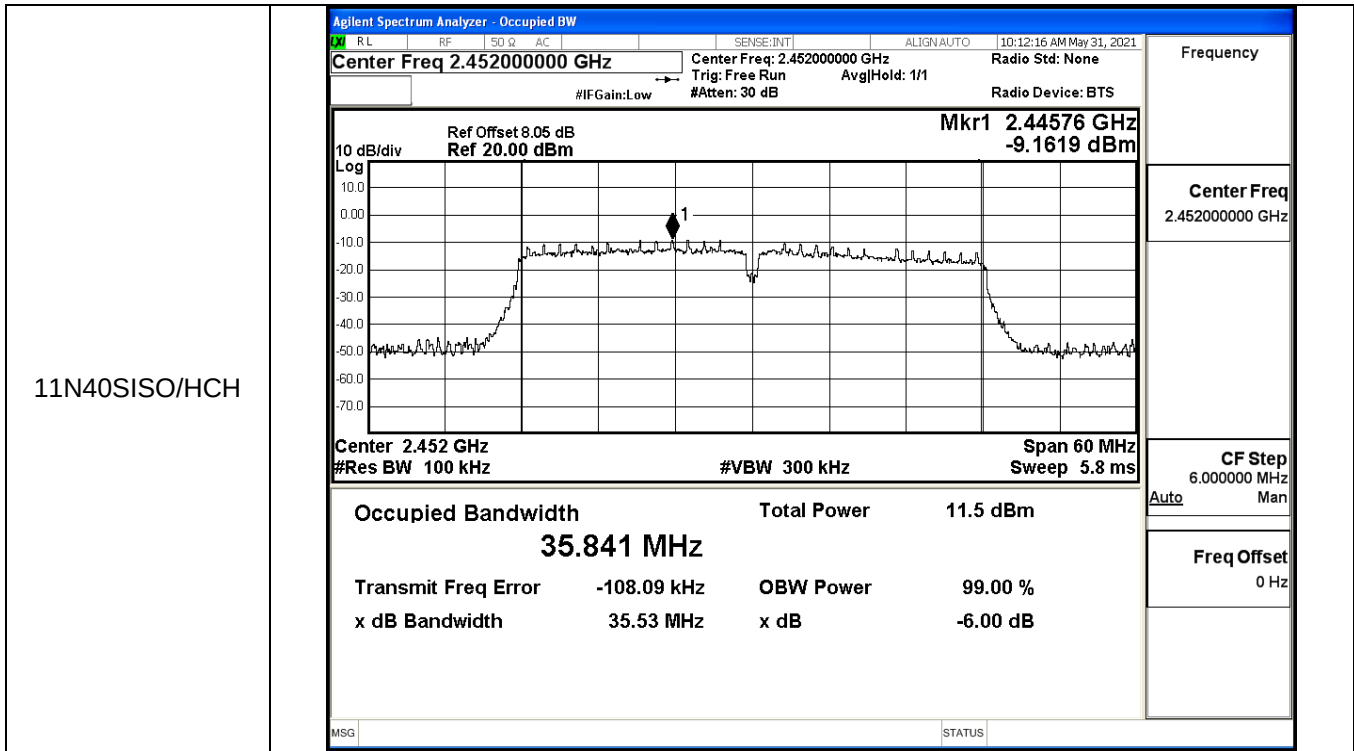
Center Freq
2.422000000 GHzCF Step
6.000000 MHz
Auto ManFreq Offset
0 Hz

11N40SISO/MCH



Frequency

Center Freq
2.437000000 GHzCF Step
6.000000 MHz
Auto ManFreq Offset
0 Hz

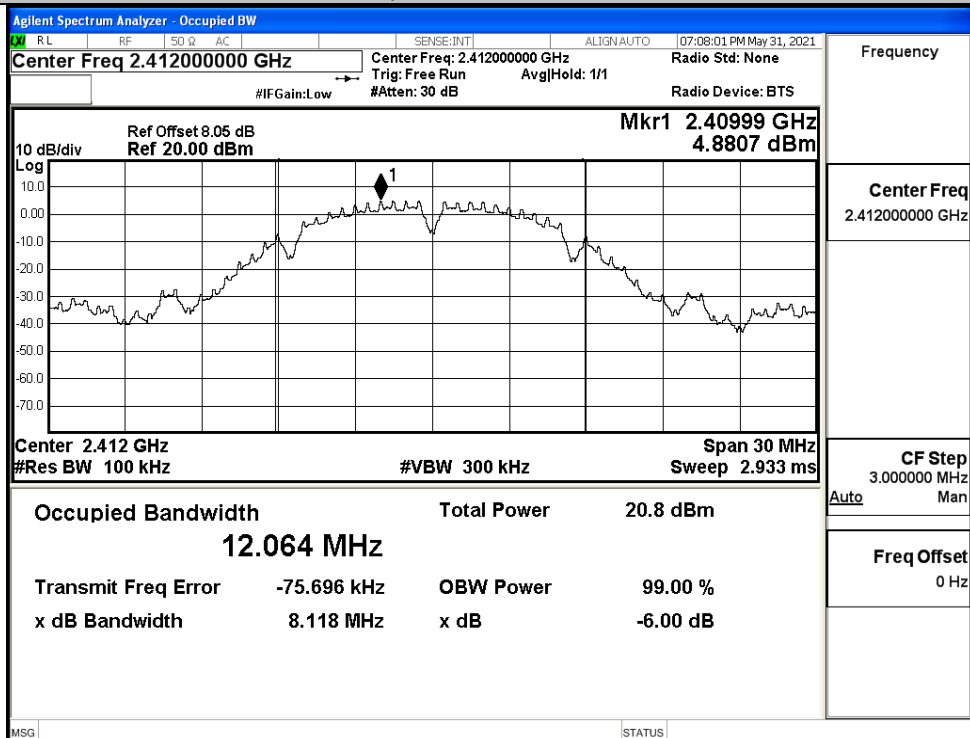


ANT1

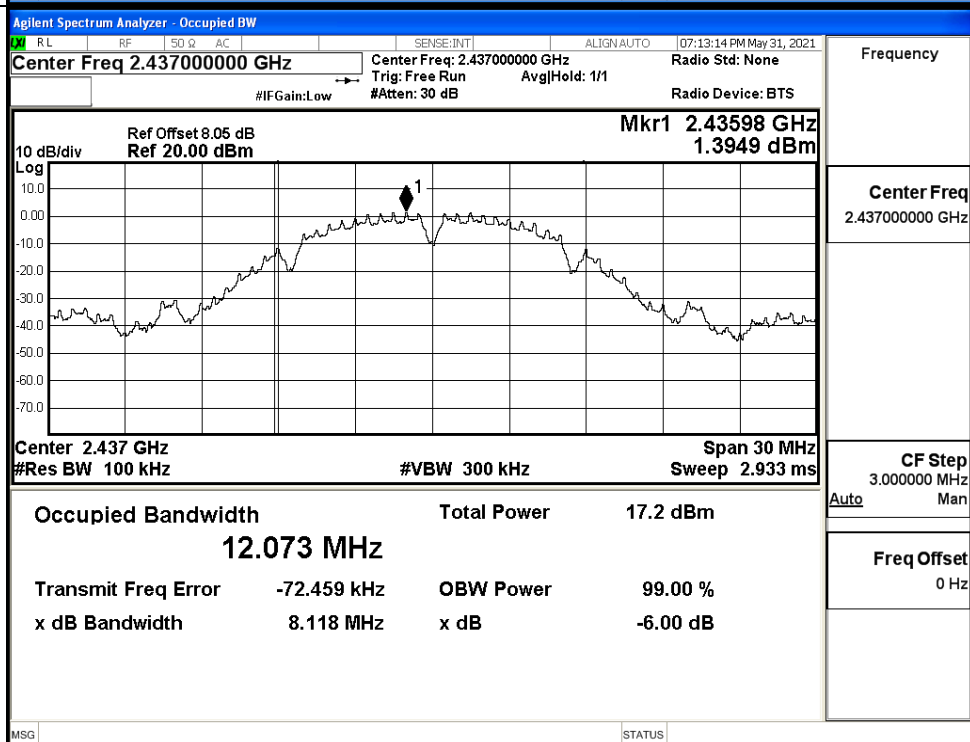
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	8.118	≥ 0.5	PASS
	MCH	8.118	≥ 0.5	PASS
	HCH	9.061	≥ 0.5	PASS
11G	LCH	16.07	≥ 0.5	PASS
	MCH	16.34	≥ 0.5	PASS
	HCH	16.28	≥ 0.5	PASS
11N20SISO	LCH	16.38	≥ 0.5	PASS
	MCH	16.95	≥ 0.5	PASS
	HCH	16.29	≥ 0.5	PASS
11N40SISO	LCH	35.92	≥ 0.5	PASS
	MCH	35.55	≥ 0.5	PASS
	HCH	35.18	≥ 0.5	PASS

Test Graphs

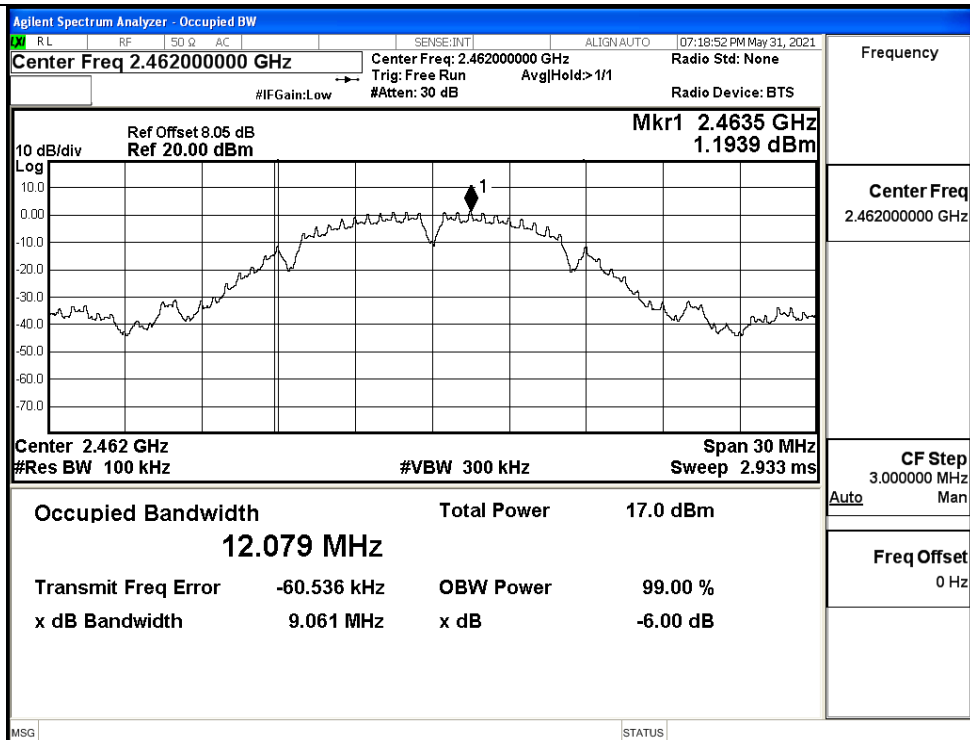
11B/LCH



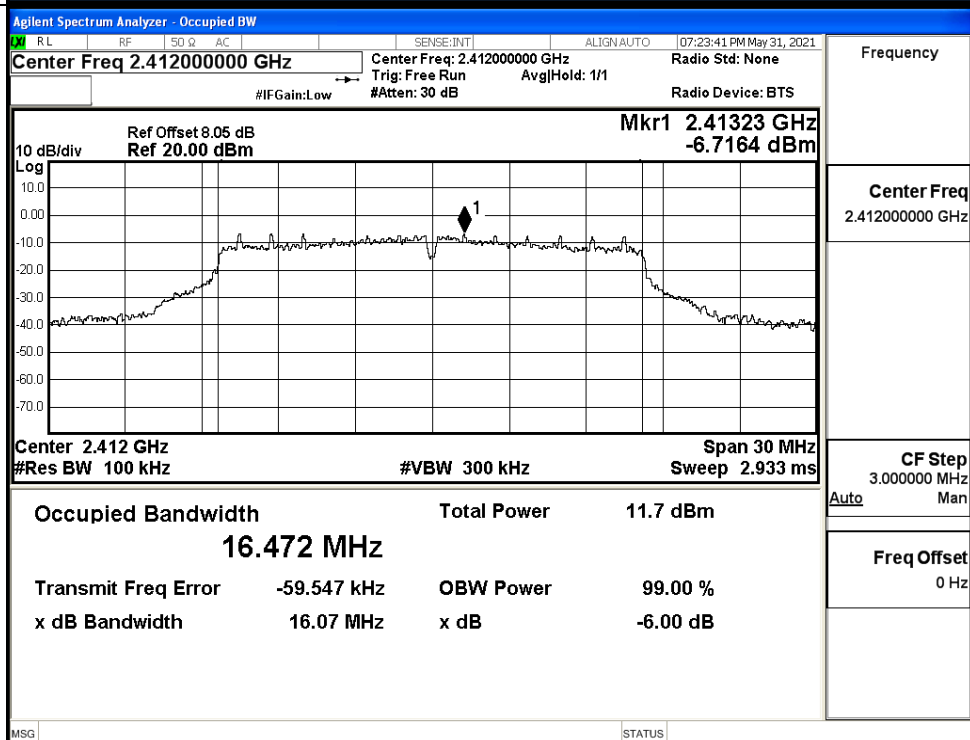
11B/MCH



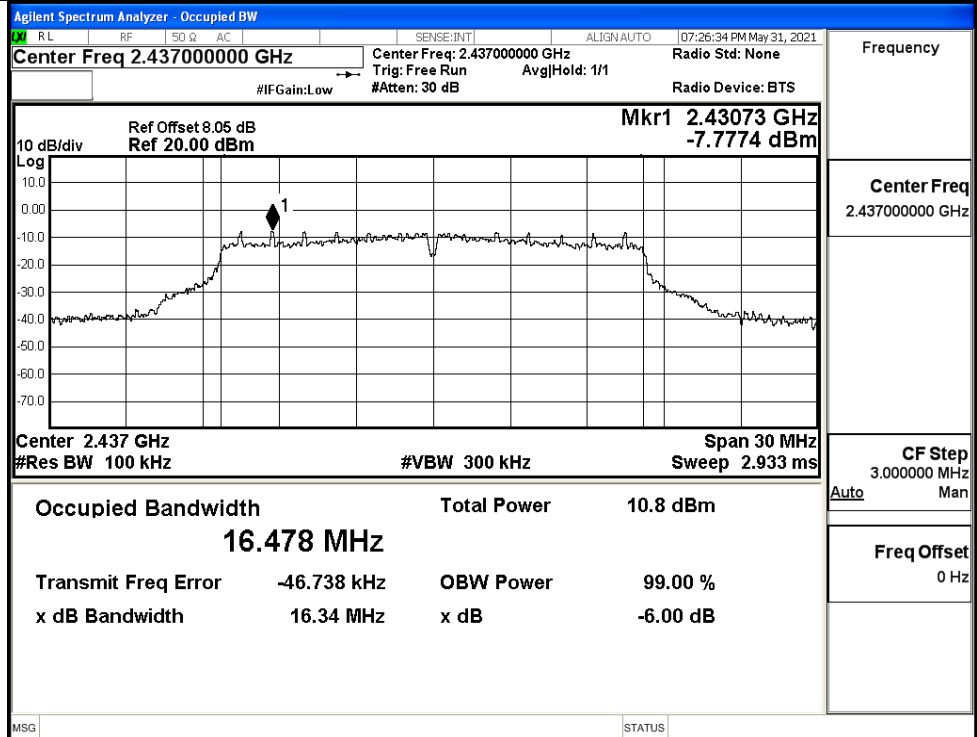
11B/HCH



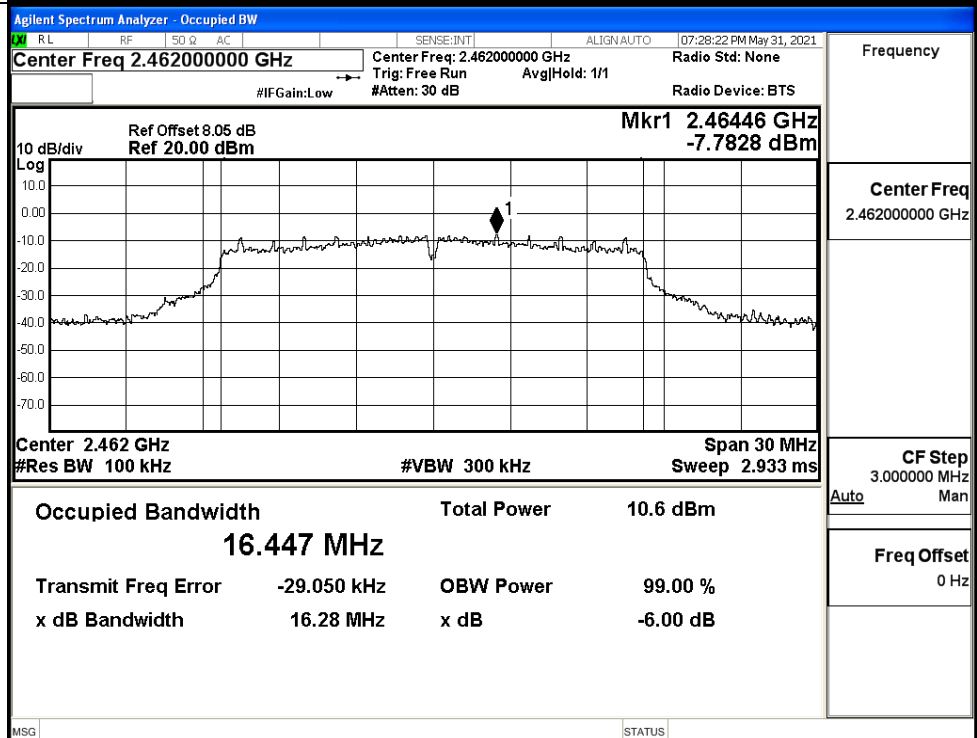
11G/LCH



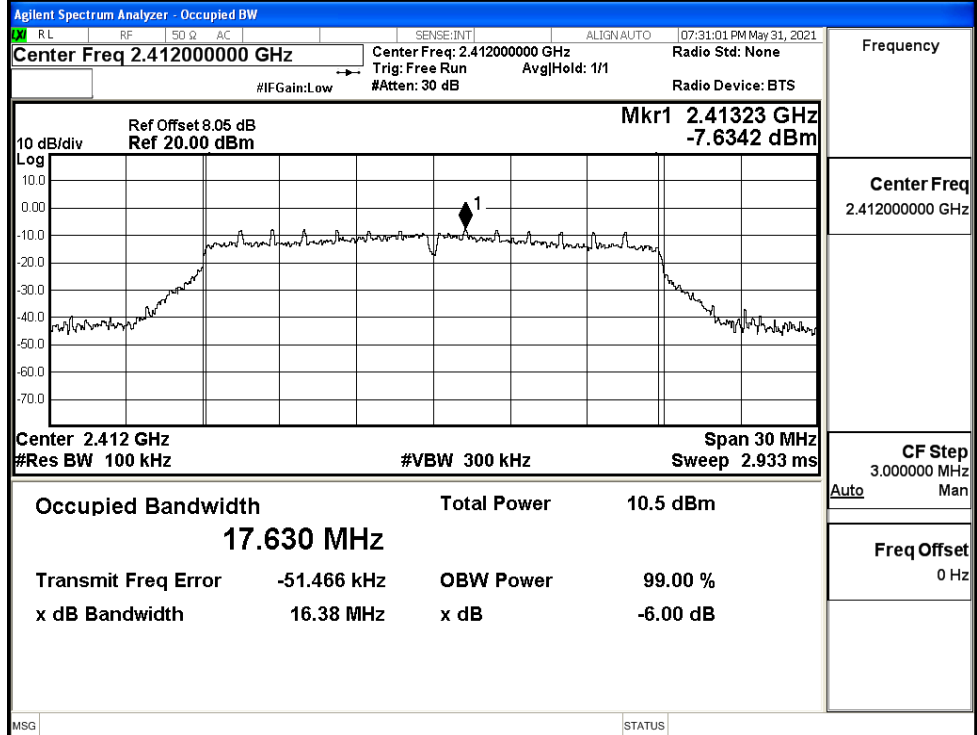
11G/MCH



11G/HCH



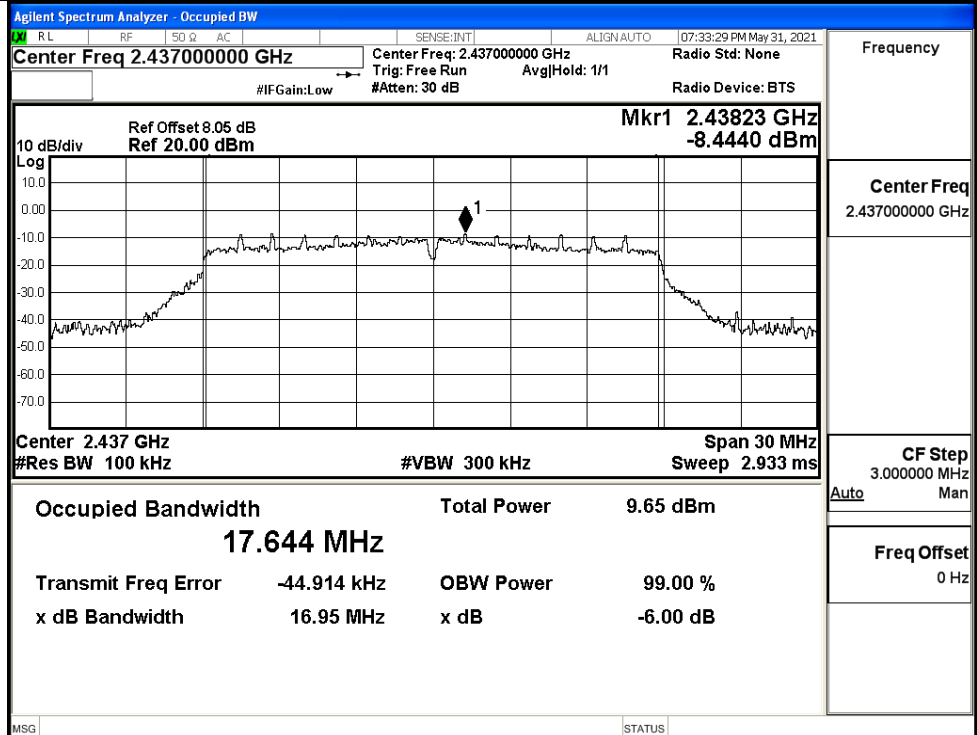
11N20SISO/LCH



Frequency

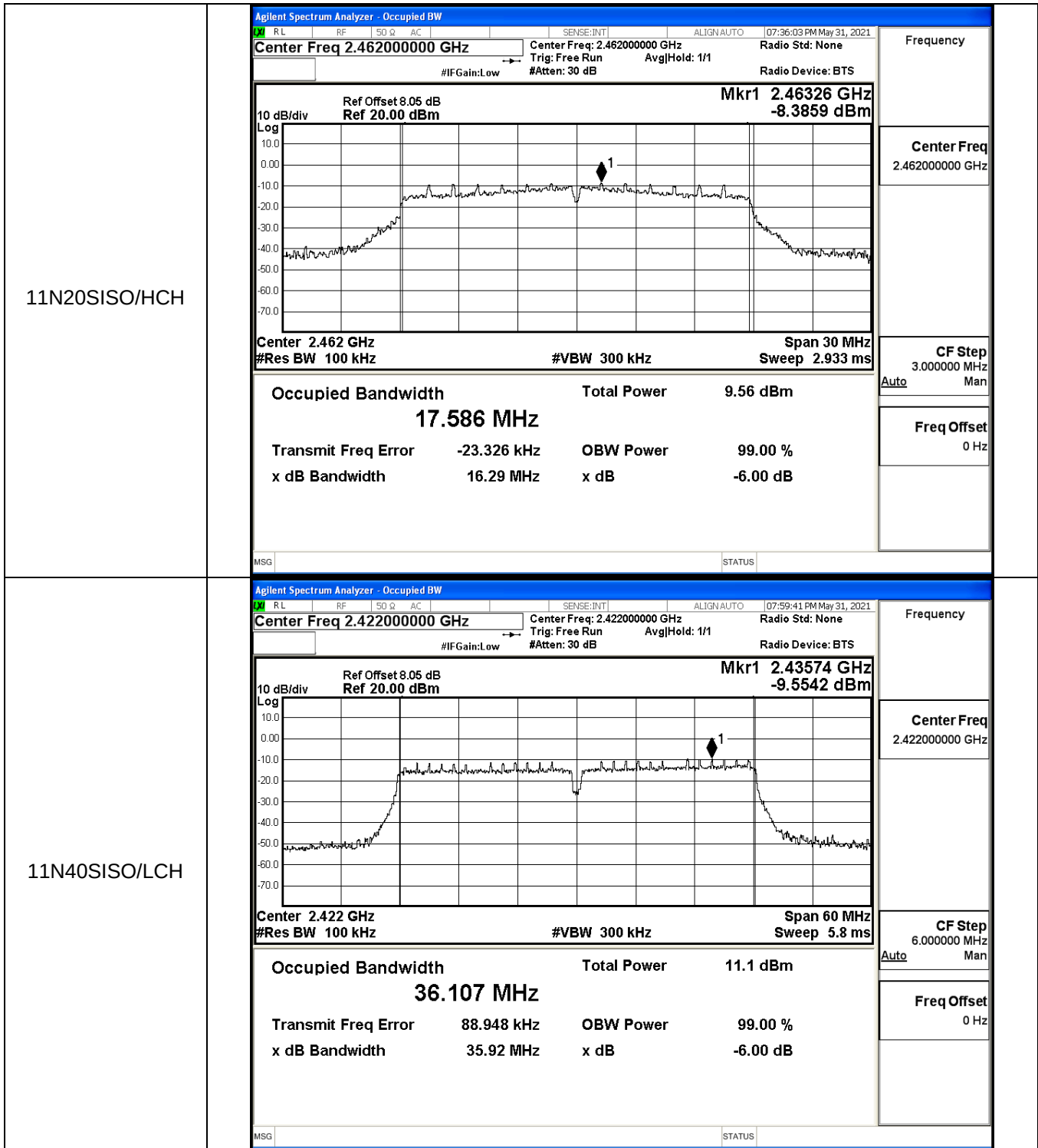
Center Freq
2.412000000 GHzCF Step
3.000000 MHz
Auto ManFreq Offset
0 Hz

11N20SISO/MCH

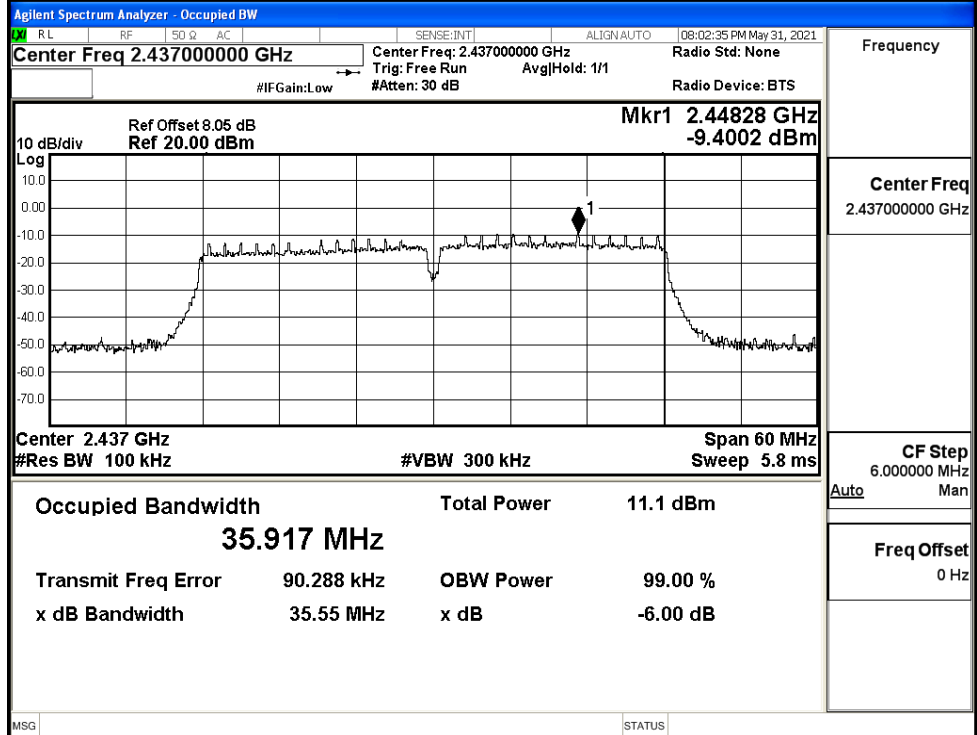


Frequency

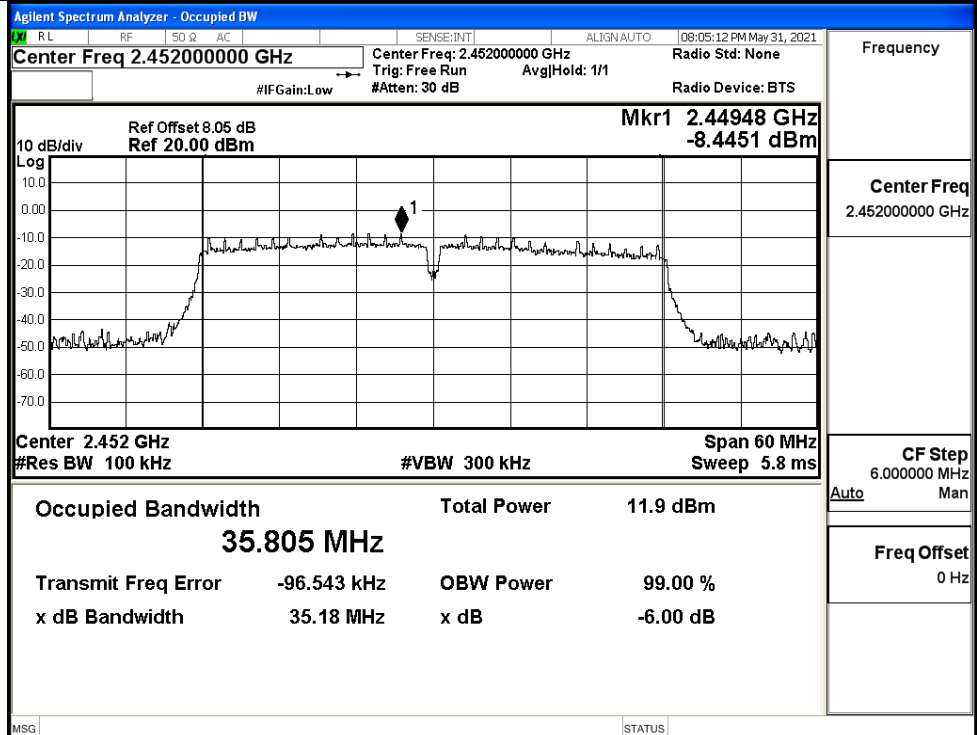
Center Freq
2.437000000 GHzCF Step
3.000000 MHz
Auto ManFreq Offset
0 Hz



11N40SISO/MCH



11N40SISO/HCH



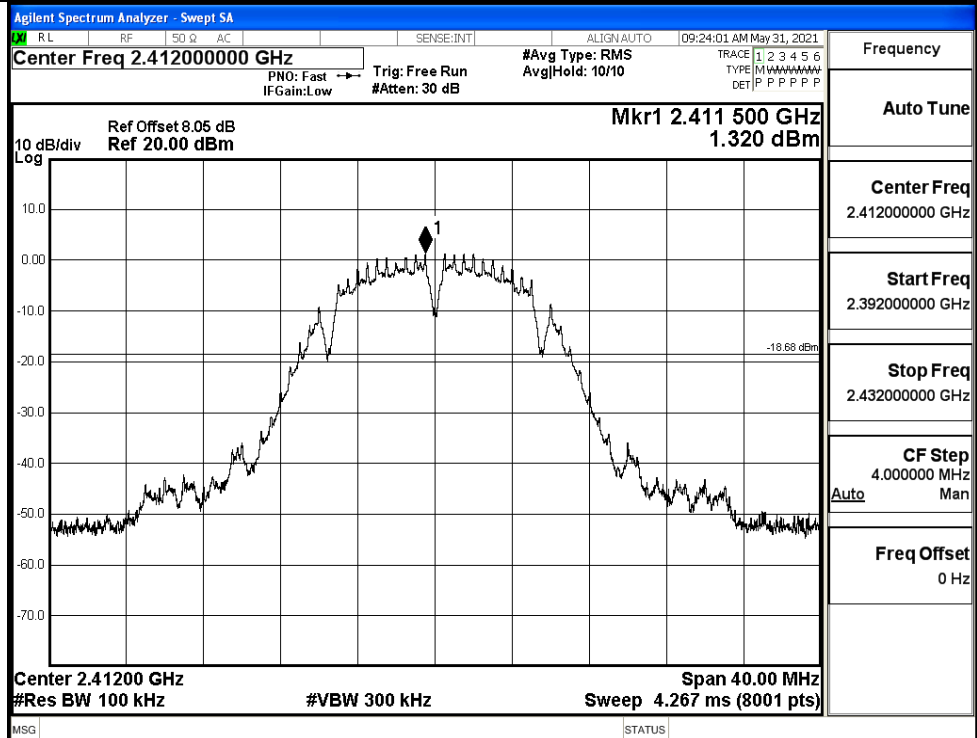
C.6 RF Conducted Spurious Emissions

ANT0

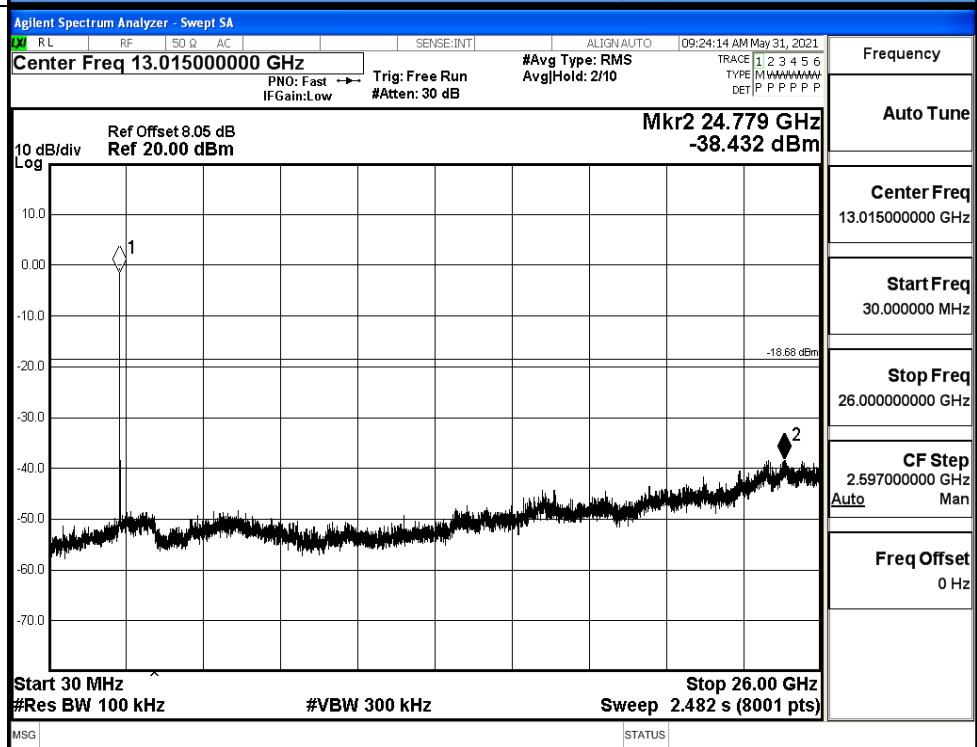
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	1.32	-38.432	-18.680	PASS
	MCH	1.926	-37.309	-18.074	PASS
	HCH	1.055	-36.949	-18.945	PASS
11G	LCH	-6.305	-36.901	-26.305	PASS
	MCH	-5.89	-38.621	-25.890	PASS
	HCH	-8.227	-37.520	-28.227	PASS
11N20 SISO	LCH	-7.491	-37.980	-27.491	PASS
	MCH	-6.955	-37.328	-26.955	PASS
	HCH	-6.875	-37.805	-26.875	PASS
11N40 SISO	LCH	-9.329	-38.174	-29.329	PASS
	MCH	-9.517	-38.237	-29.517	PASS
	HCH	-9.246	-37.326	-29.246	PASS

11B LCH Graphs

Pref/11B/LCH

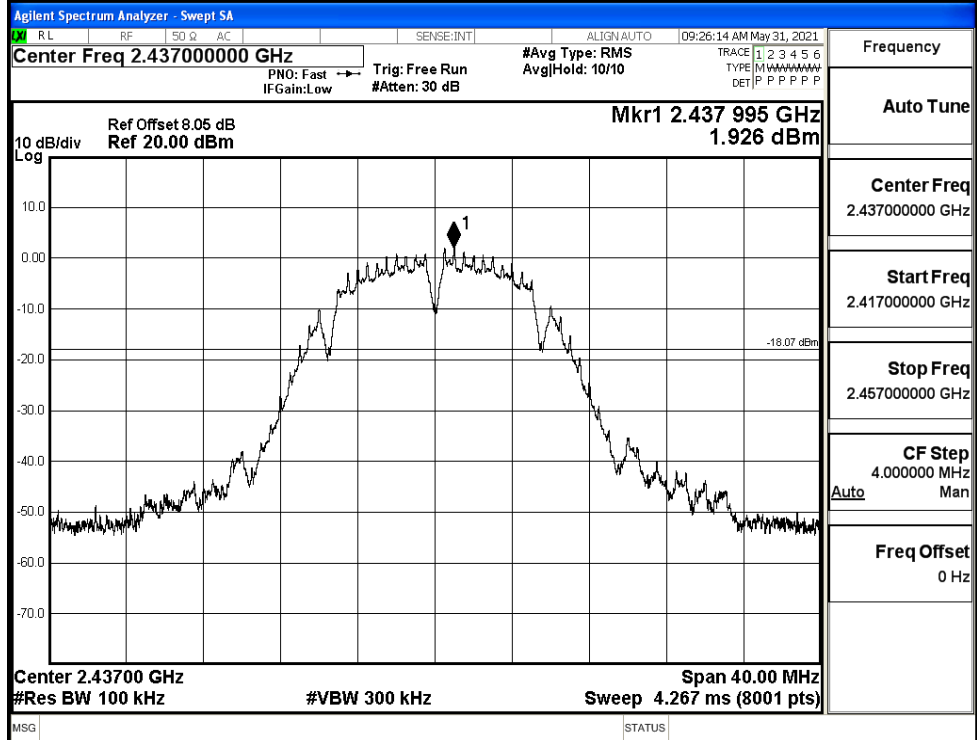


Puw/11B/LCH

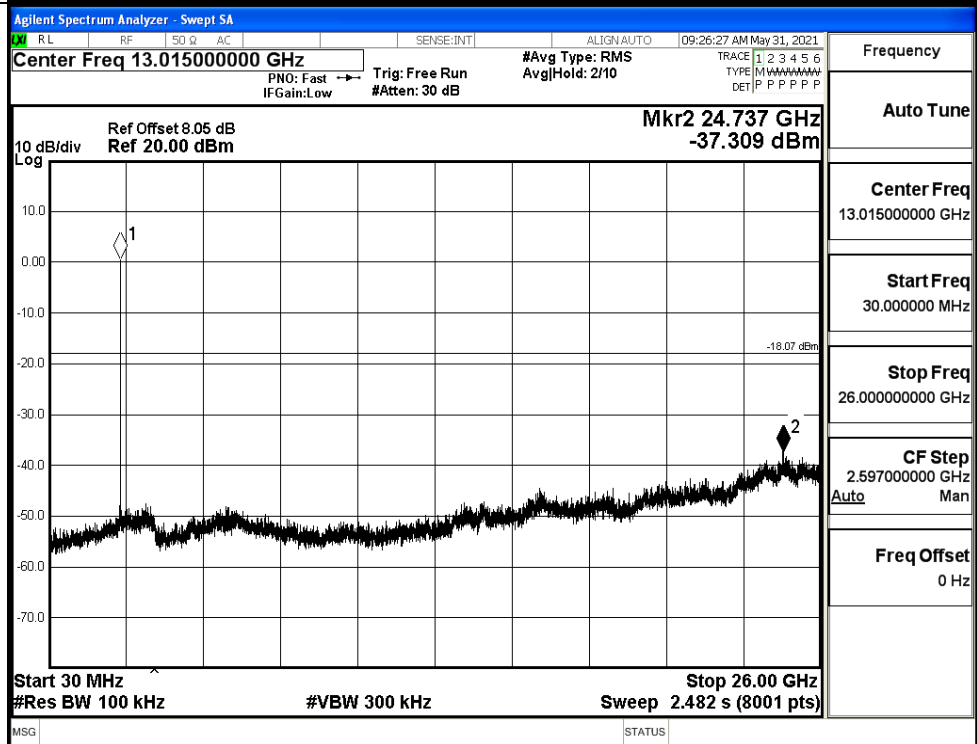


11B MCH Graphs

Pref/11B/MCH

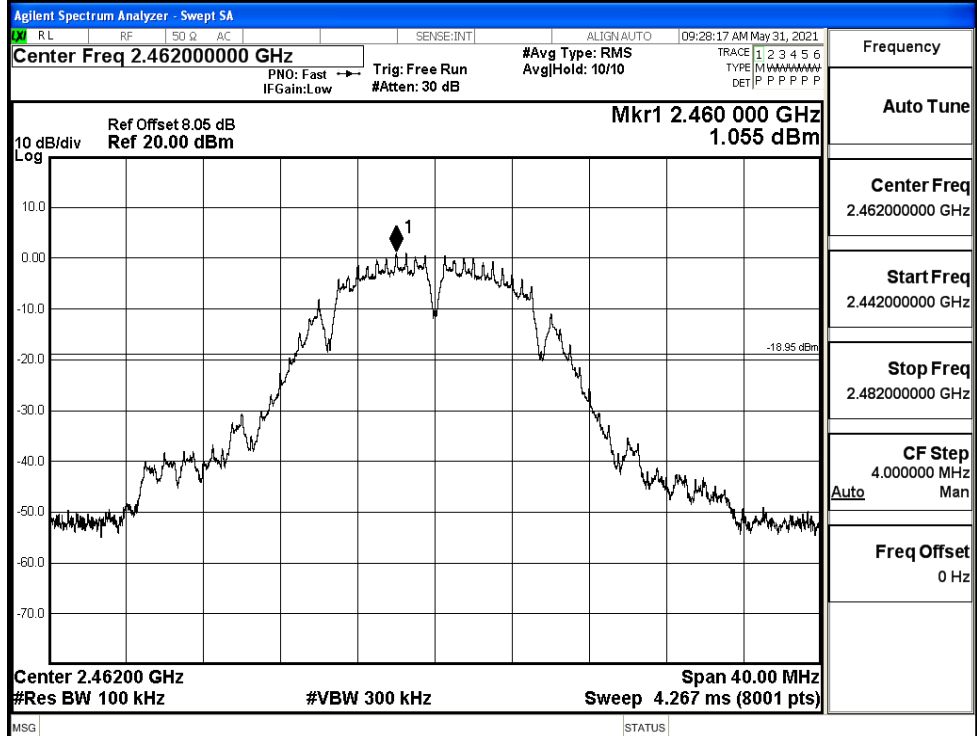


Puw/11B/MCH

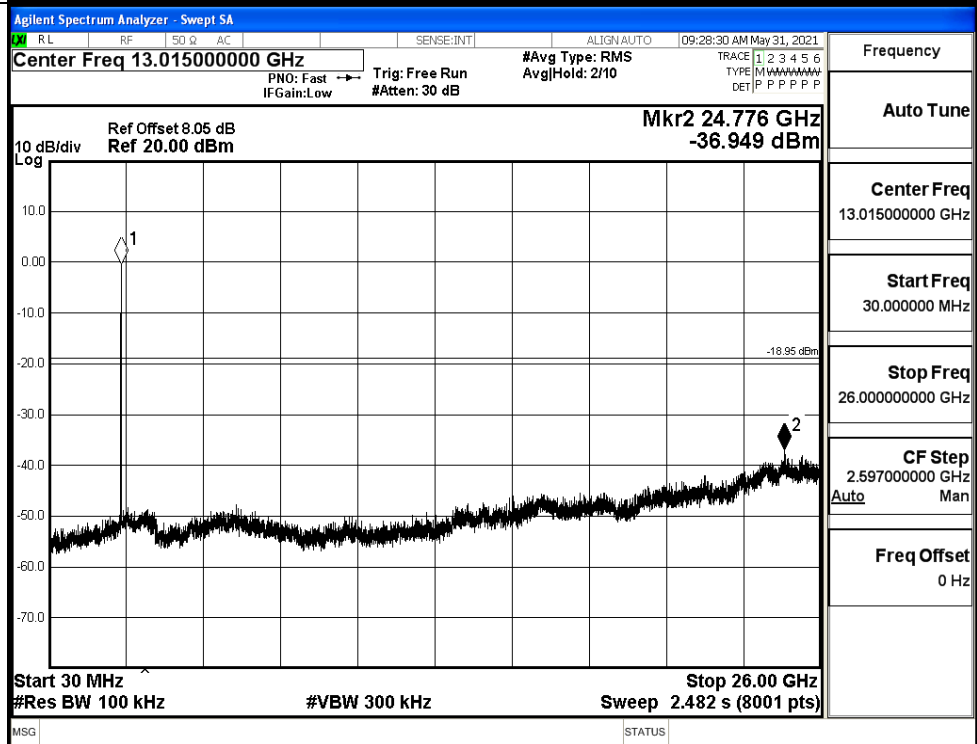


11B HCH Graphs

Pref/11B/HCH

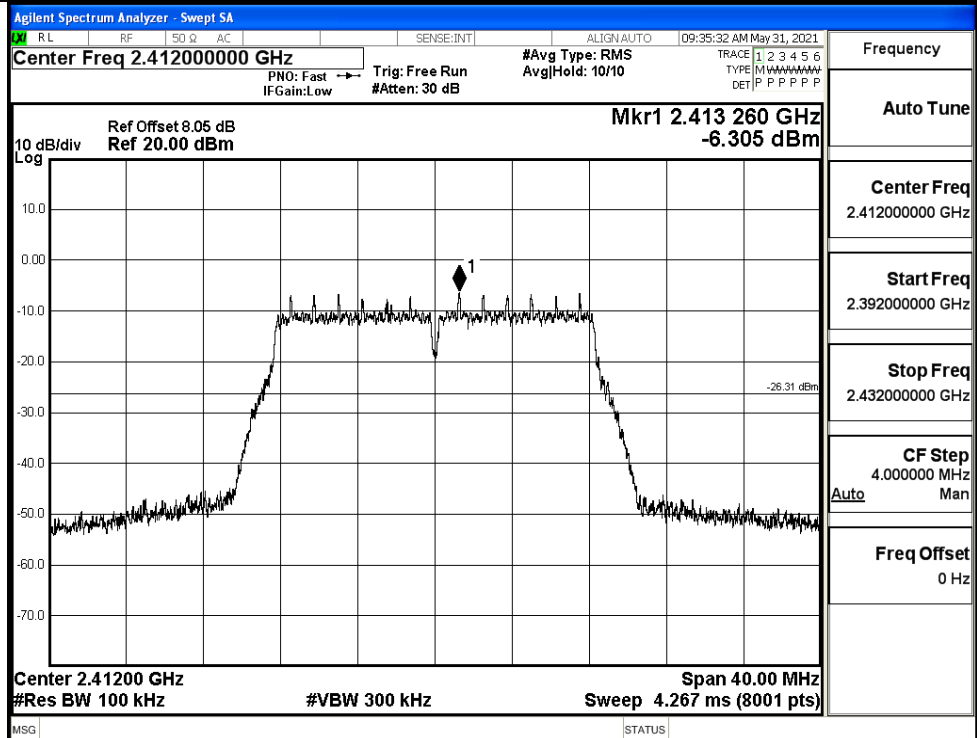


Puw/11B/HCH

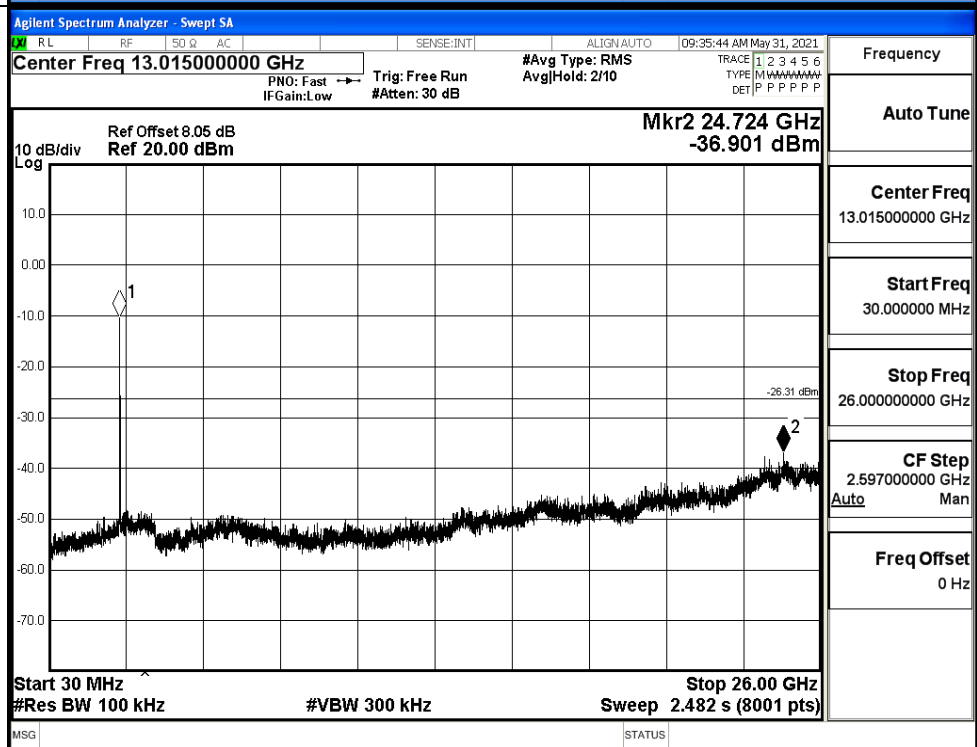


11G LCH Graphs

Pref/11G/LCH

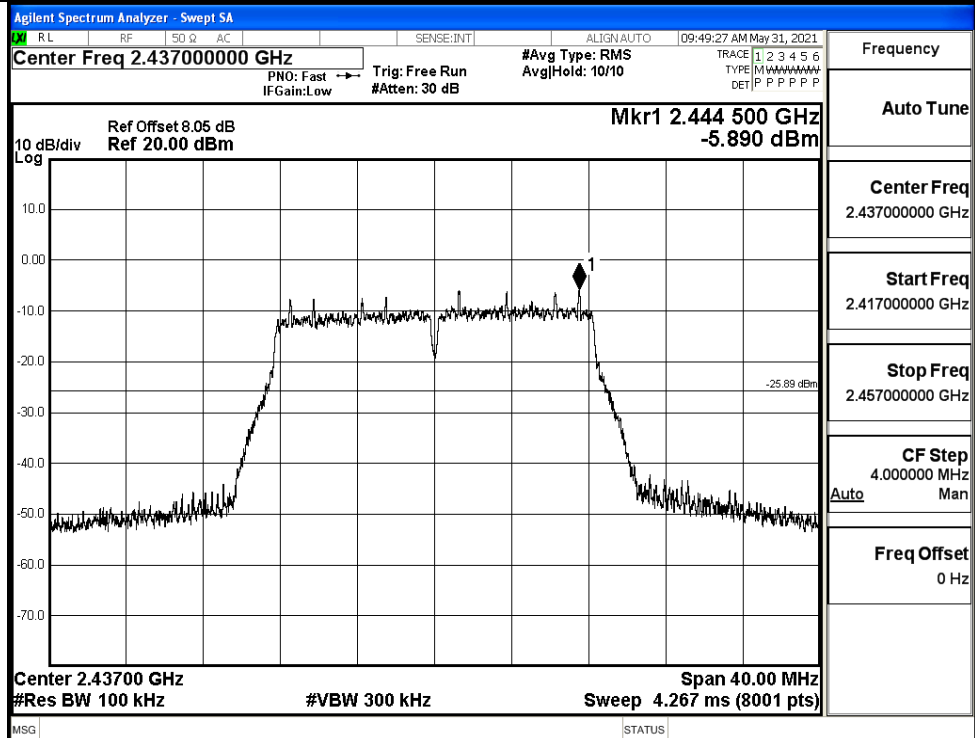


Puw/11G/LCH

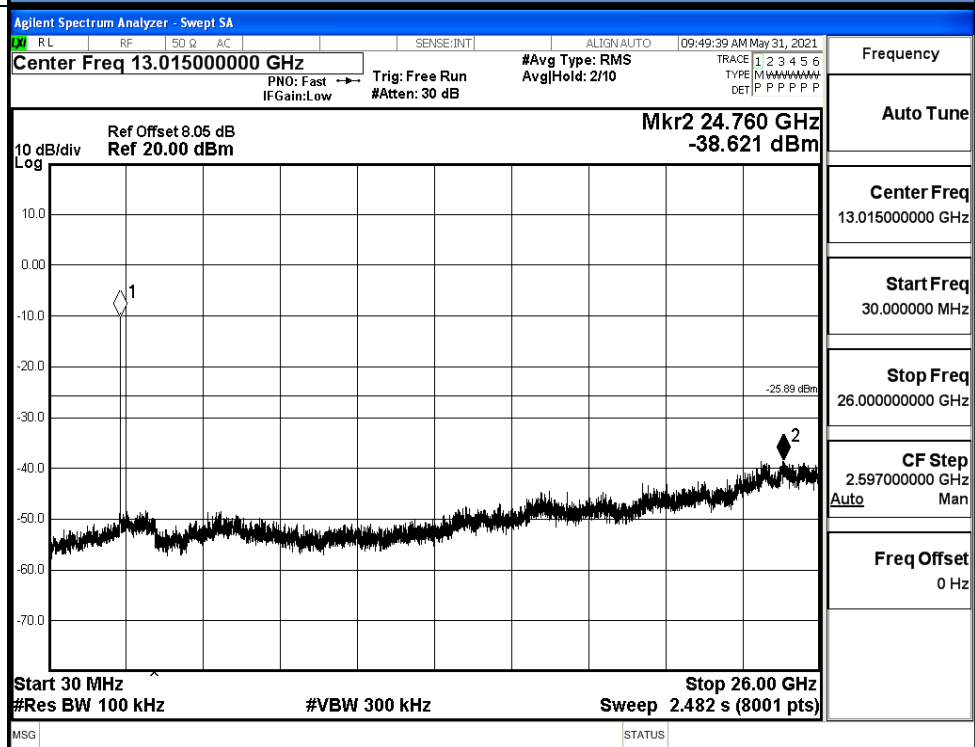


11G MCH Graphs

Pref/11G/MCH

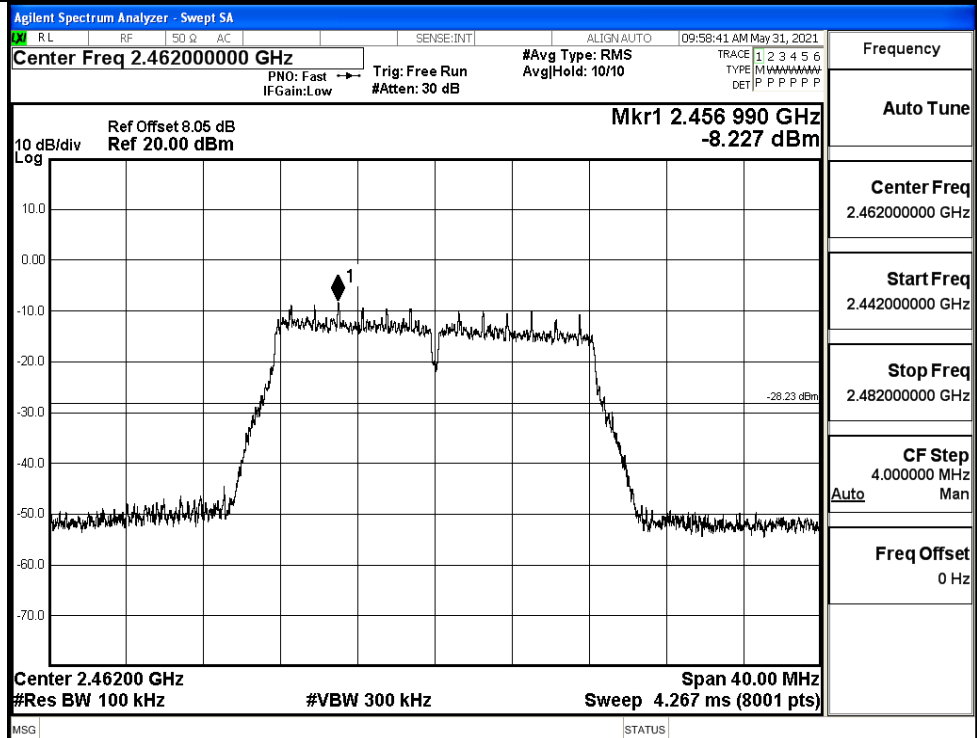


Puw/11G/MCH

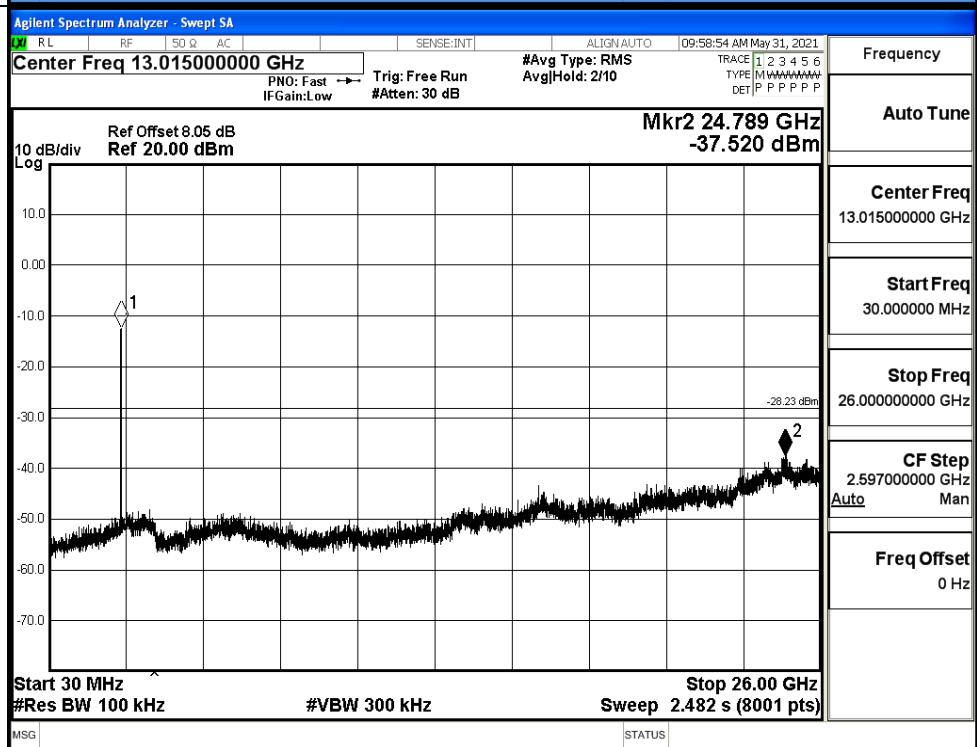


11G HCH Graphs

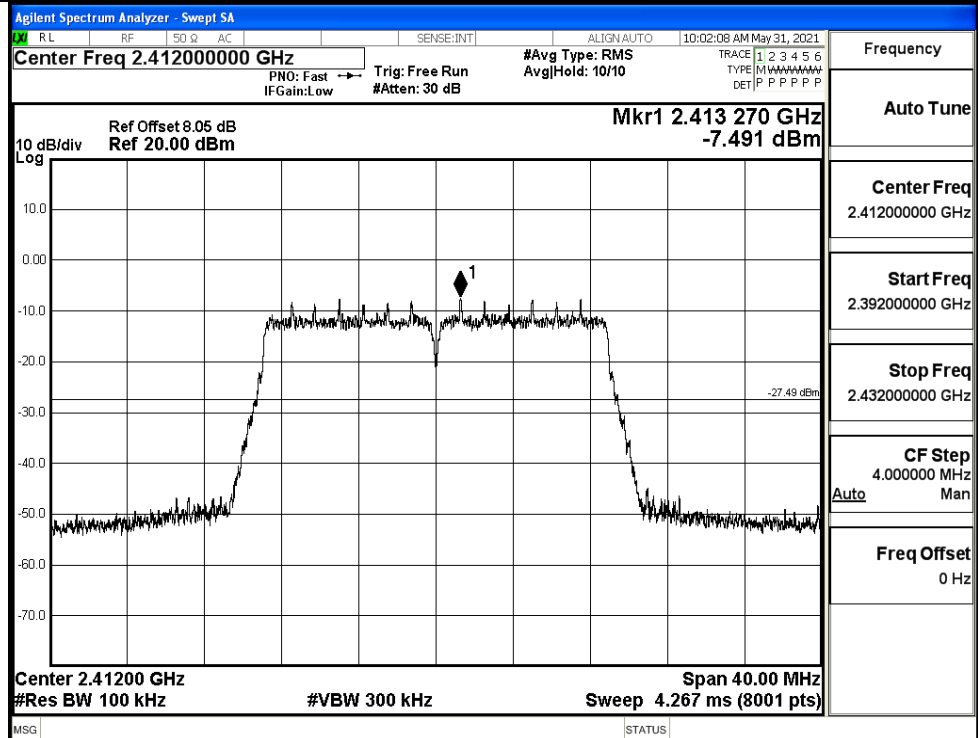
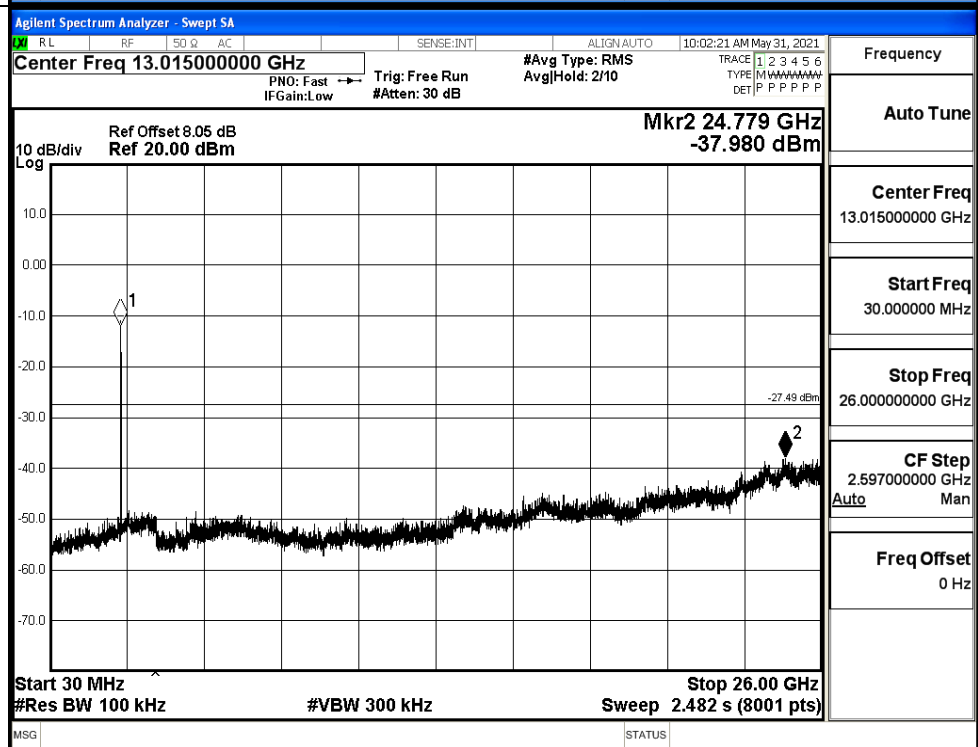
Pref/11G/HCH



Puw/11G/HCH

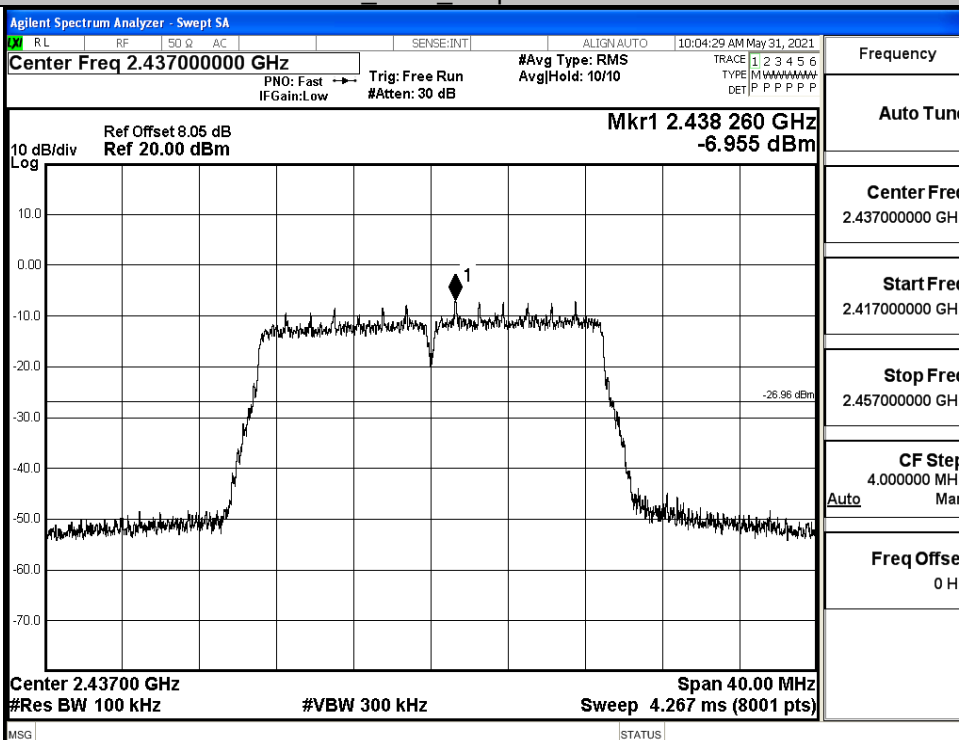


11N20SISO LCH Graphs

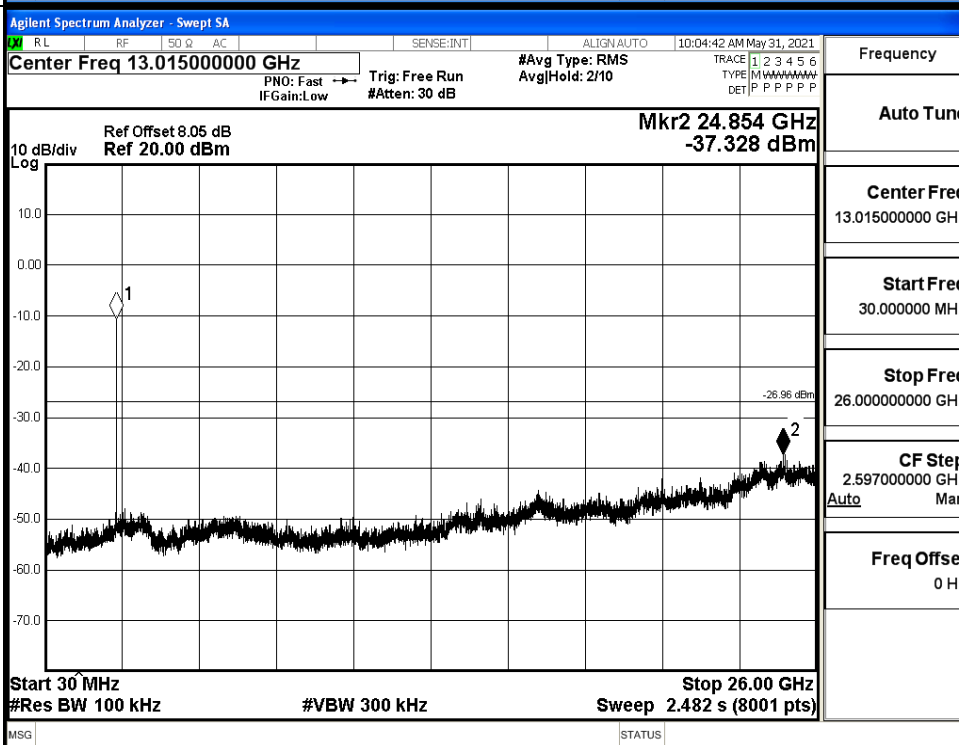
Pref/11N20SIS
O/LCHPuw/11N20
SISO/LCH

11N20SISO MCH Graphs

Pref/11N20
SISO/MCH

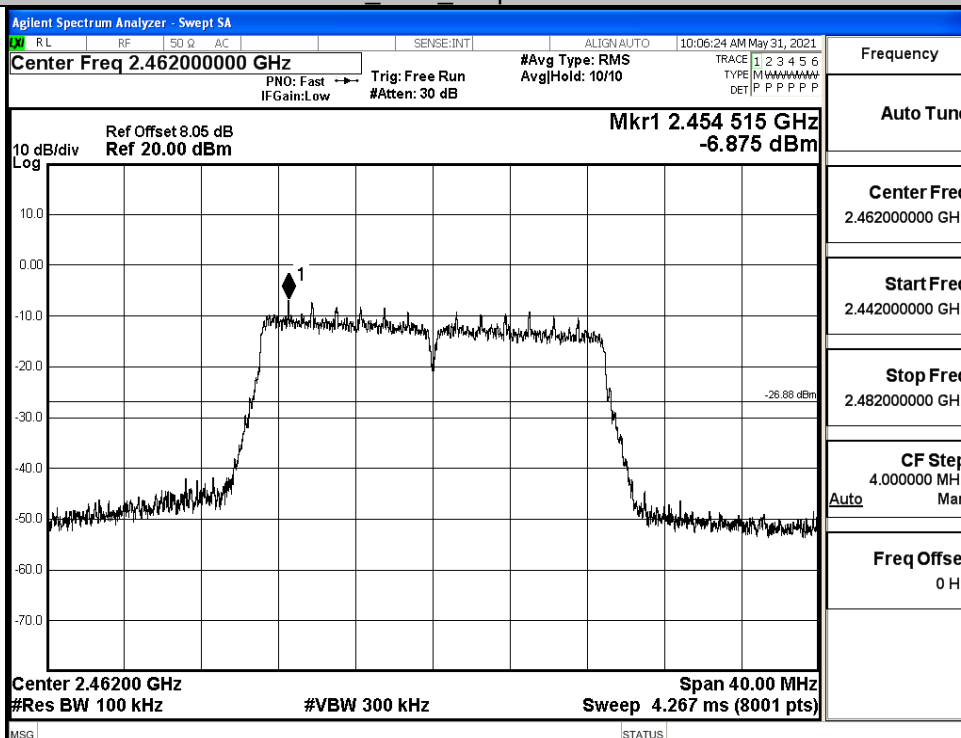


Puw/11N20
SISO/MCH

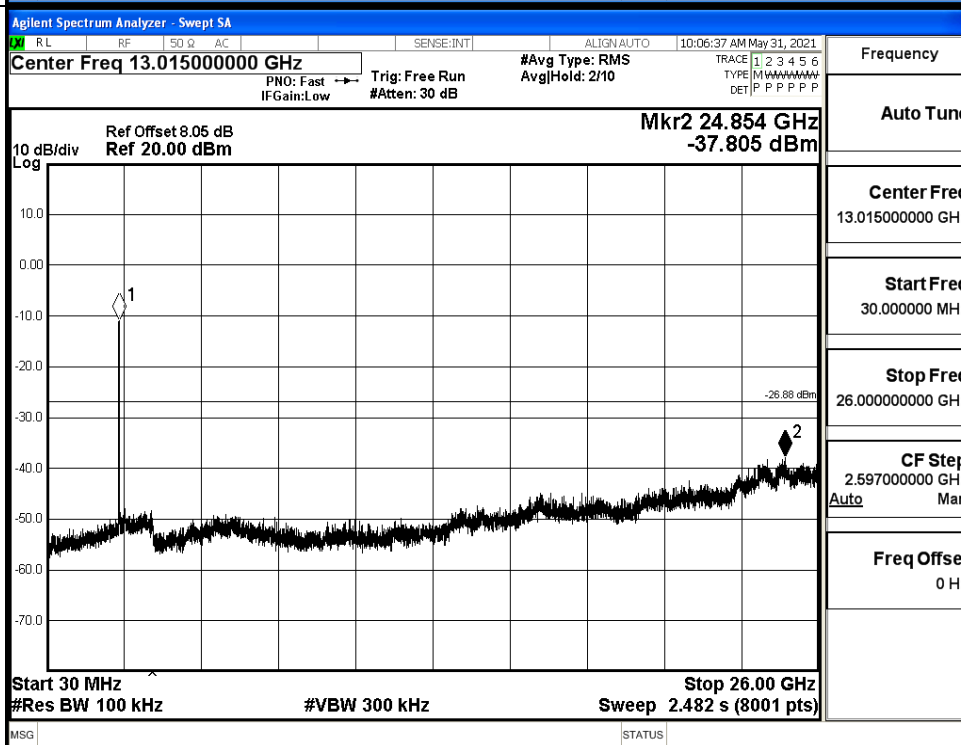


11N20SISO HCH Graphs

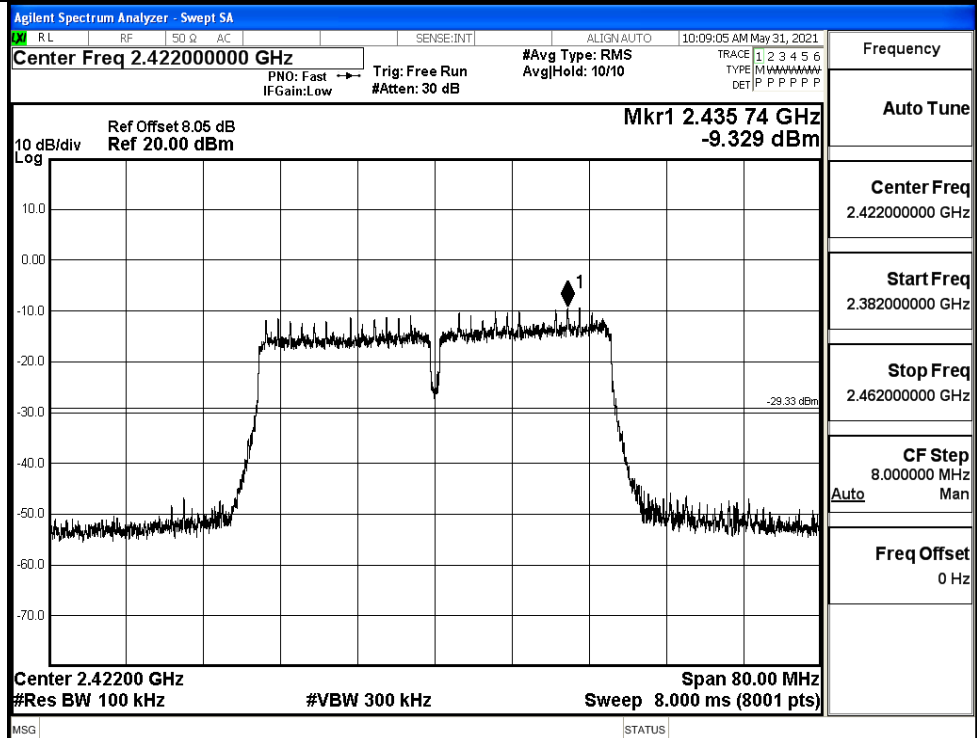
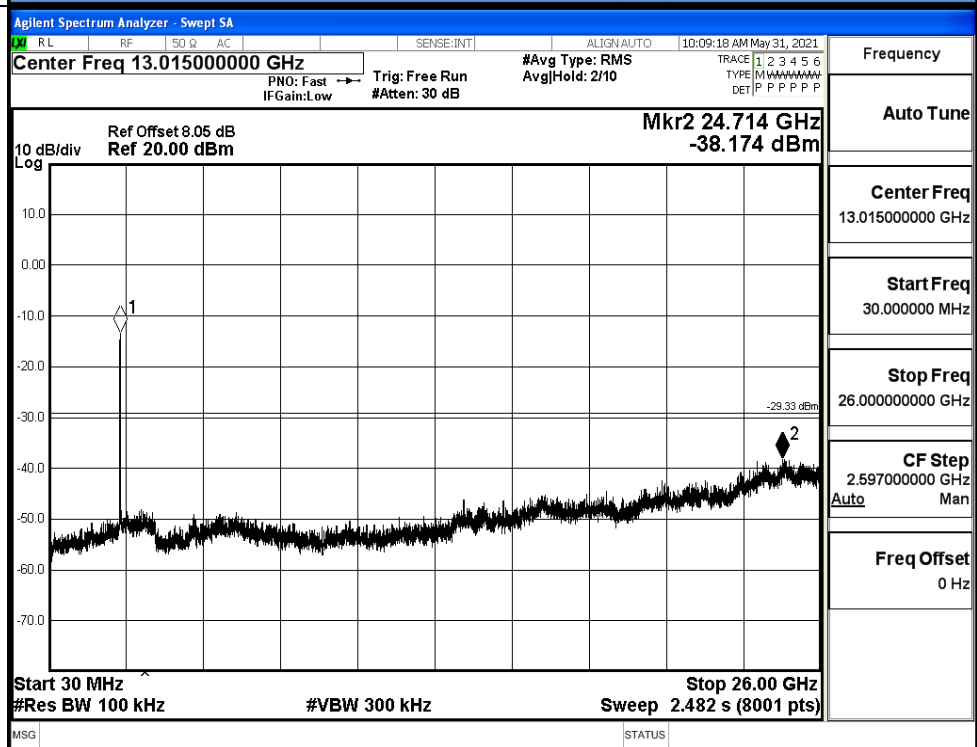
Pref/11N20
SISO/HCH



Puw/11N20
SISO/HCH

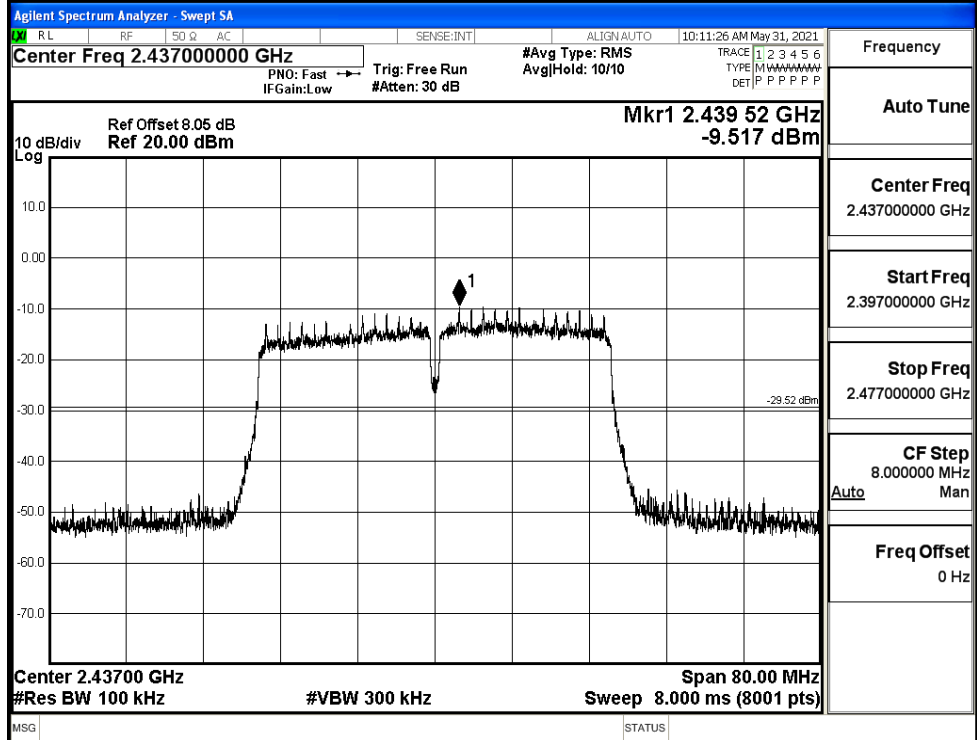


11N40SISO LCH Graphs

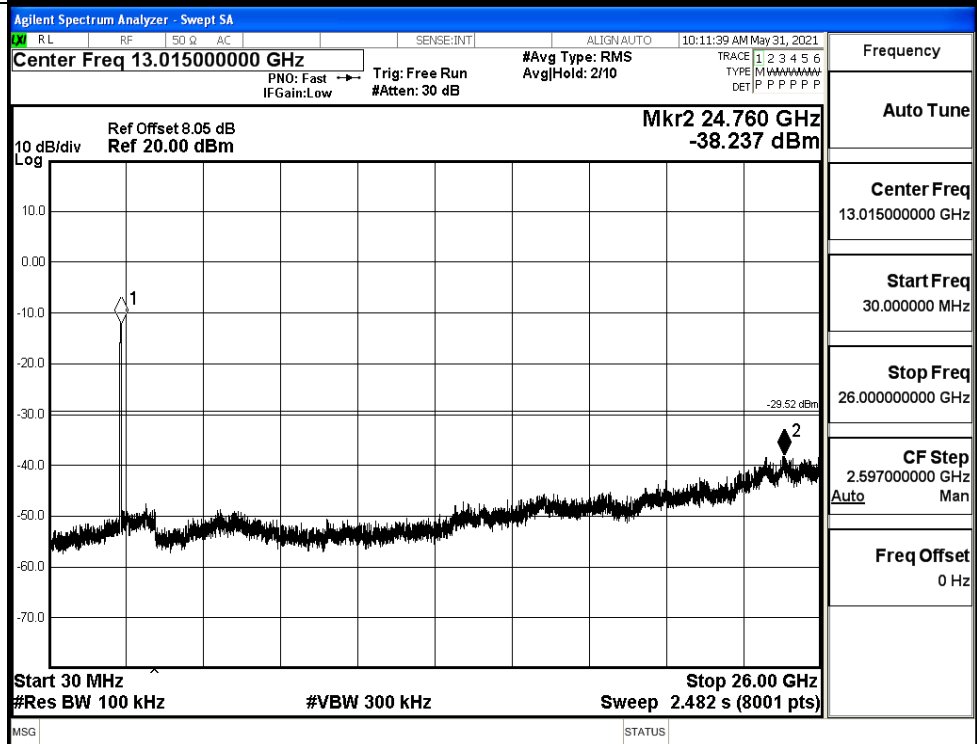
Pref/11N40
SISO/LCHPuw/11N40
SISO/LCH

11N40SISO MCH Graphs

Pref/11N40
SISO/MCH

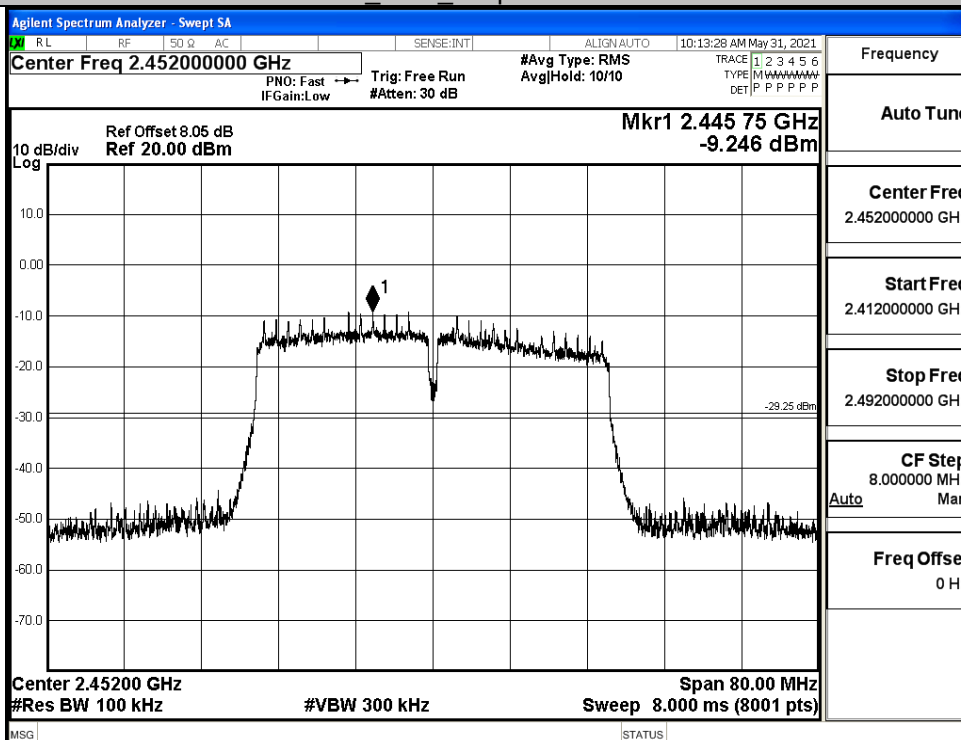


Puw/11N40
SISO/MCH

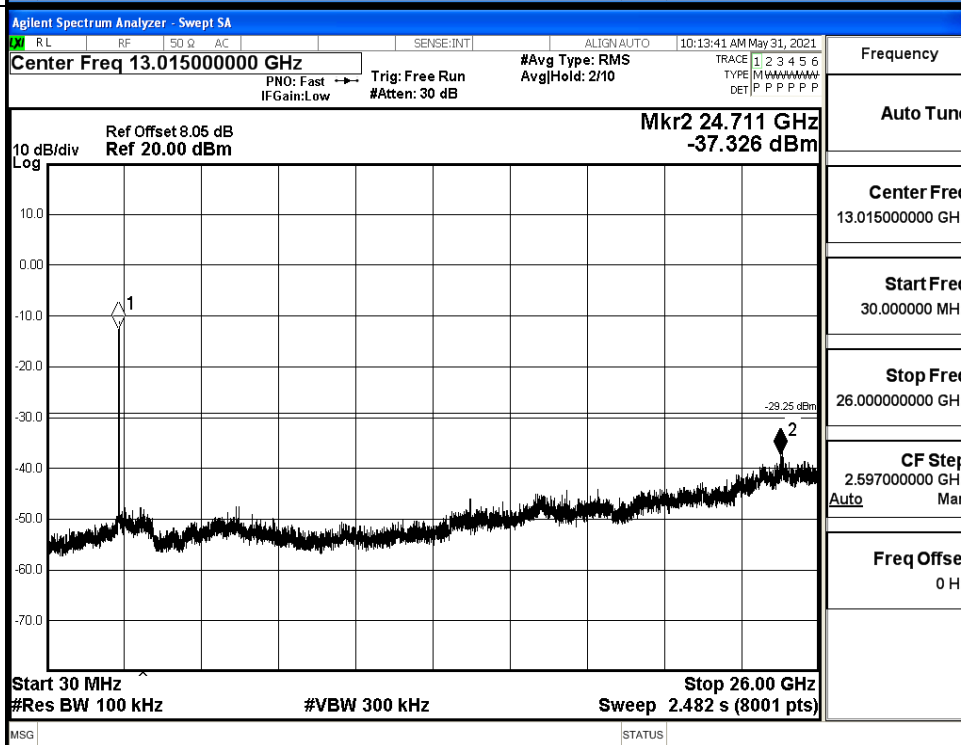


11N40SISO HCH Graphs

Pref/11N40
SISO/HCH



Puw/11N40
SISO/HCH



ANT1

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	4.923	-36.648	-15.077	PASS
	MCH	1.321	-38.277	-18.679	PASS
	HCH	0.7	-36.711	-19.300	PASS
11G	LCH	-6.941	-38.707	-26.941	PASS
	MCH	-7.551	-37.923	-27.551	PASS
	HCH	-7.755	-38.044	-27.755	PASS
11N20 SISO	LCH	-7.691	-38.853	-27.691	PASS
	MCH	-8.445	-37.598	-28.445	PASS
	HCH	-8.432	-37.900	-28.432	PASS
11N40 SISO	LCH	-9.583	-38.168	-29.583	PASS
	MCH	-9.499	-38.400	-29.499	PASS
	HCH	-8.189	-38.455	-28.189	PASS

11B LCH Graphs

Pref/11B/LCH

Agilent Spectrum Analyzer - Swept SA

Center Freq 2.412000000 GHz

Ref Offset 8.05 dB
Ref 20.00 dBm

Mkr1 2.410 495 GHz
4.923 dBm

10 dB/div
Log

Center 2.41200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 4.267 ms (8001 pts)

Frequency

Auto Tune

Center Freq
2.412000000 GHz

Start Freq
2.392000000 GHz

Stop Freq
2.432000000 GHz

CF Step
4.000000 MHz
Man

Freq Offset
0 Hz

Puw/11B/LCH

Agilent Spectrum Analyzer - Swept SA

Center Freq 13.015000000 GHz

Ref Offset 8.05 dB
Ref 20.00 dBm

Mkr2 25.987 GHz
-36.648 dBm

10 dB/div
Log

Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 2.482 s (8001 pts)

Frequency

Auto Tune

Center Freq
13.015000000 GHz

Start Freq
30.000000 MHz

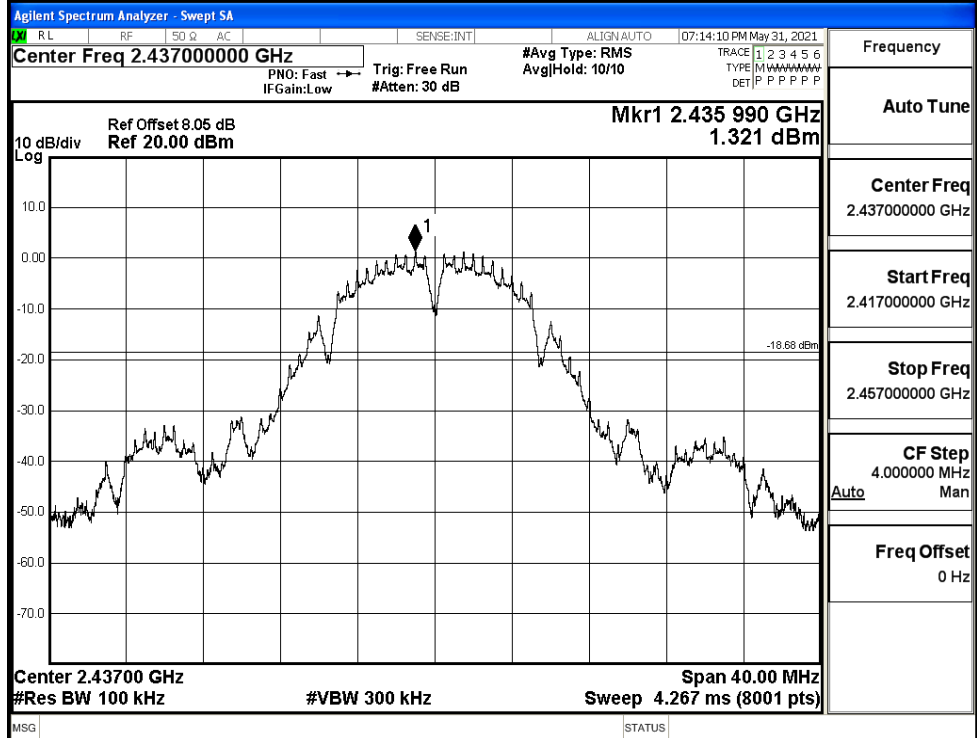
Stop Freq
26.000000000 GHz

CF Step
2.597000000 GHz
Man

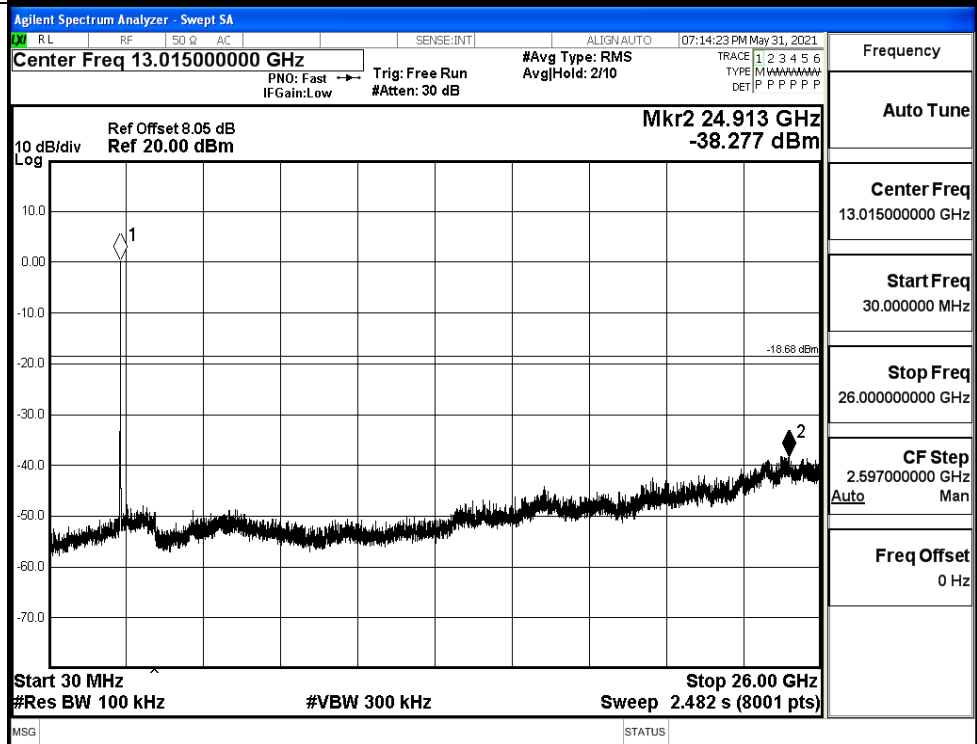
Freq Offset
0 Hz

11B MCH Graphs

Pref/11B/MCH

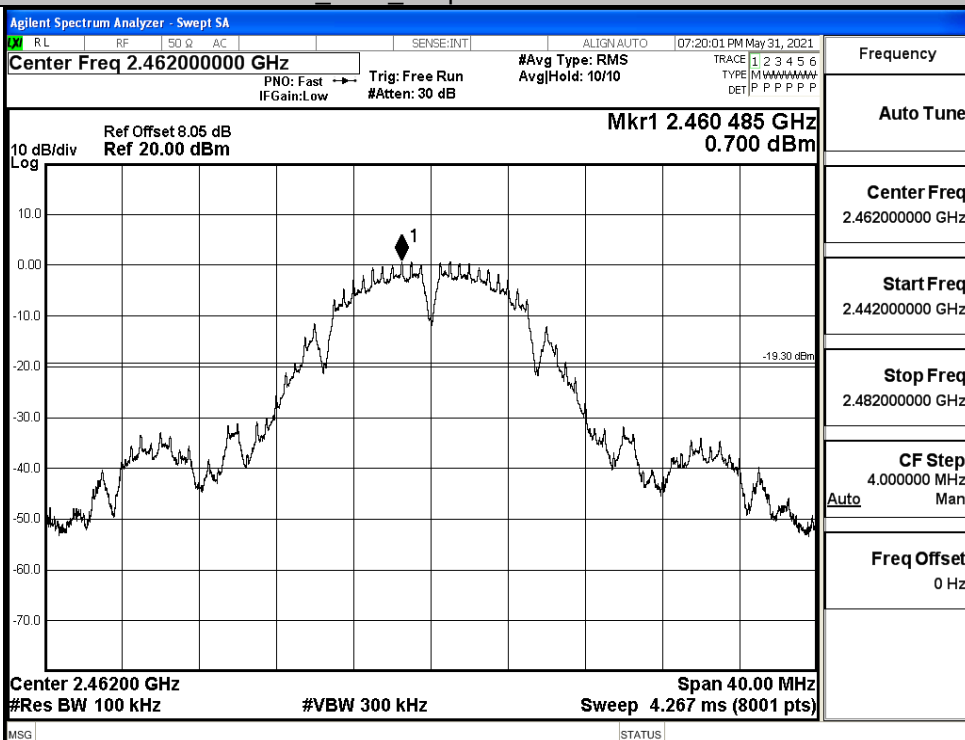


Puw/11B/MCH

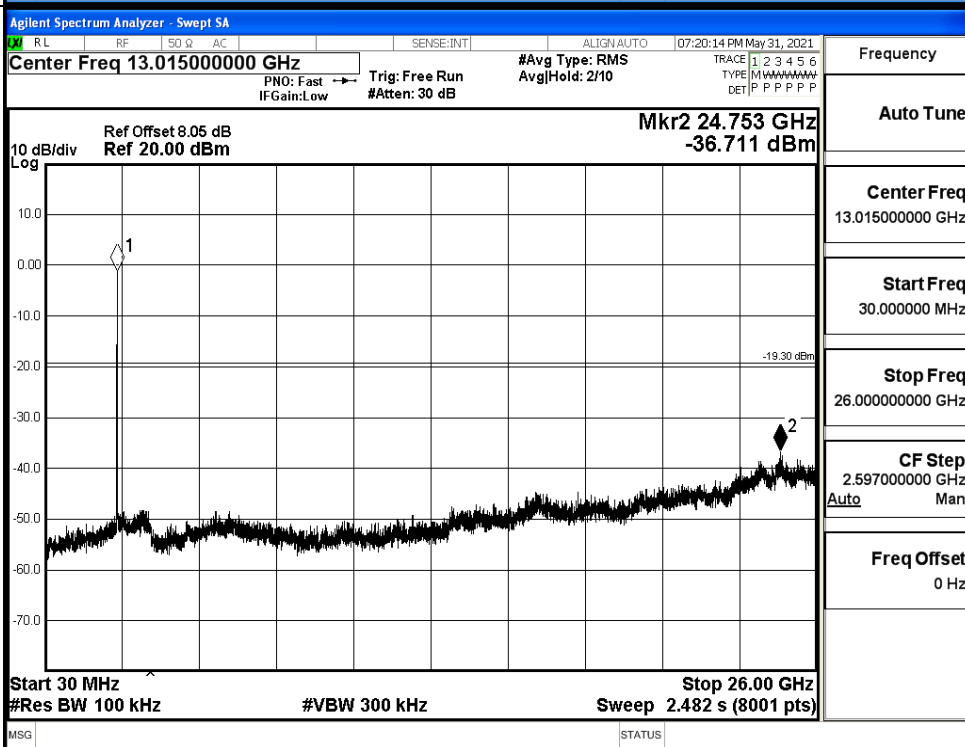


11B HCH Graphs

Pref/11B/HCH

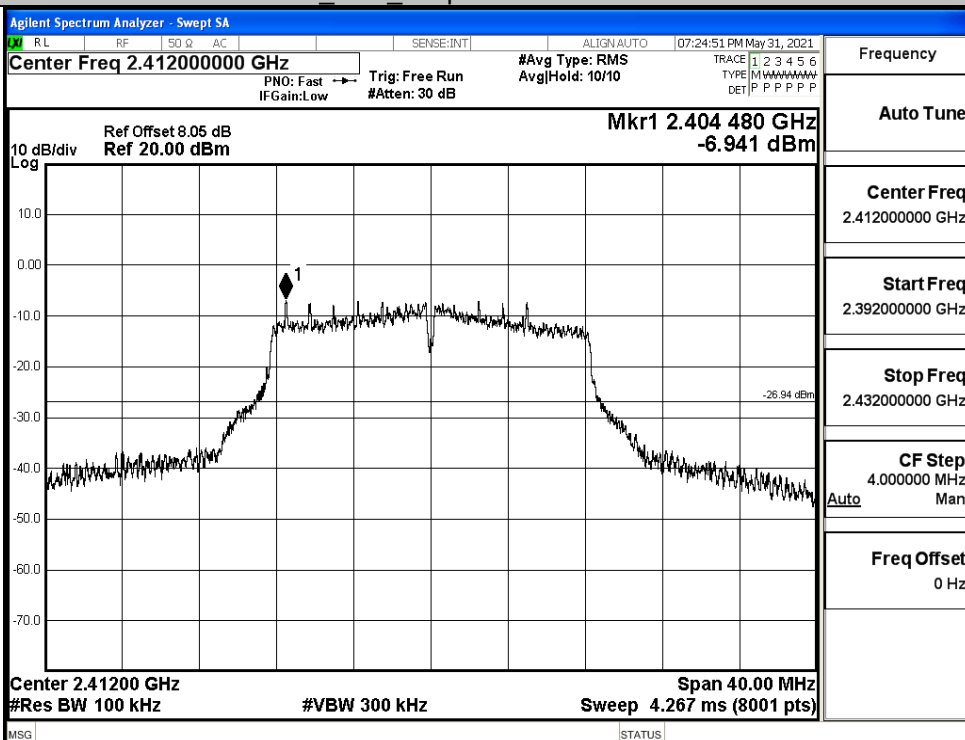


Puw/11B/HCH

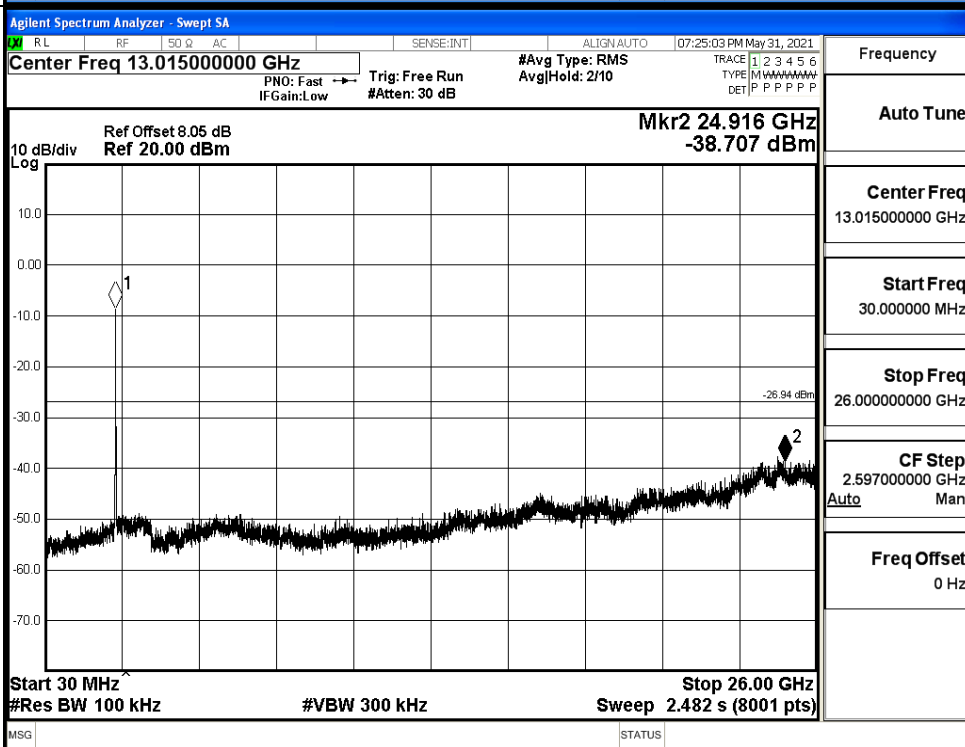


11G LCH Graphs

Pref/11G/LCH

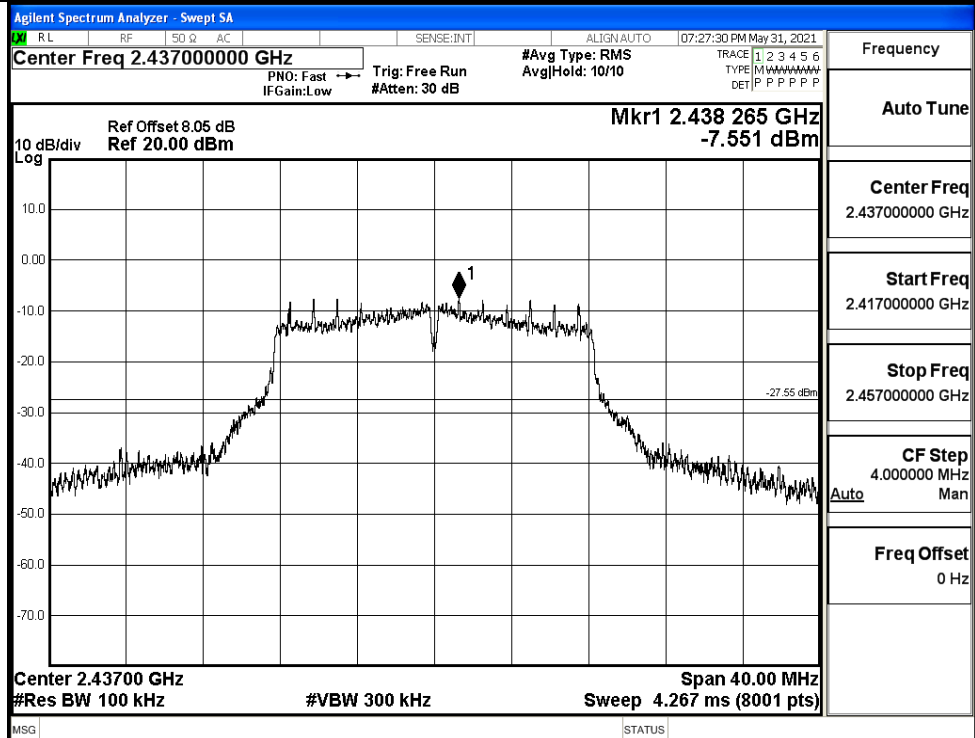


Puw/11G/LCH

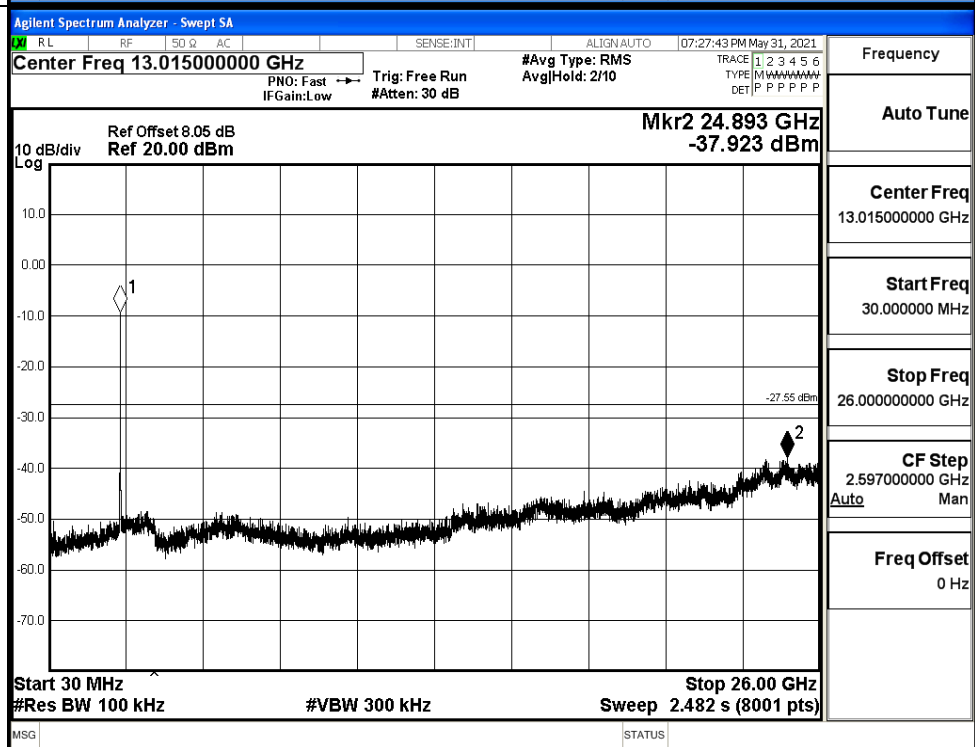


11G MCH Graphs

Pref/11G/MCH

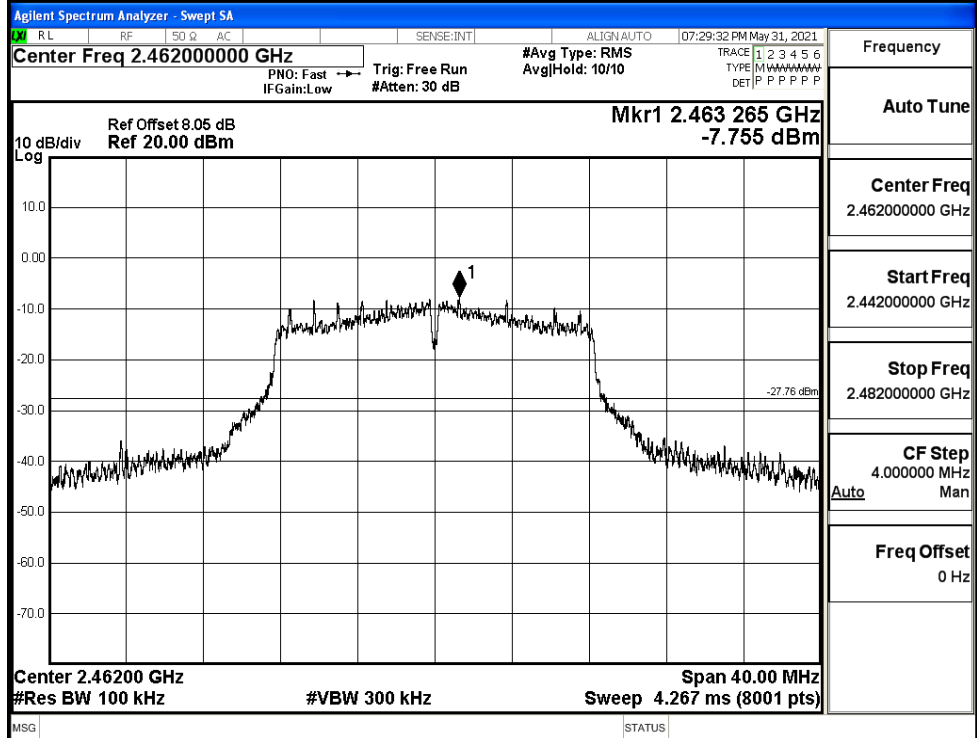


Puw/11G/MCH



11G HCH Graphs

Pref/11G/HCH



Puw/11G/HCH

