

Appendix C

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: IPTV Set-Top Box

Trade Mark: N/A

Test Model: SML-5041W

Environmental Conditions

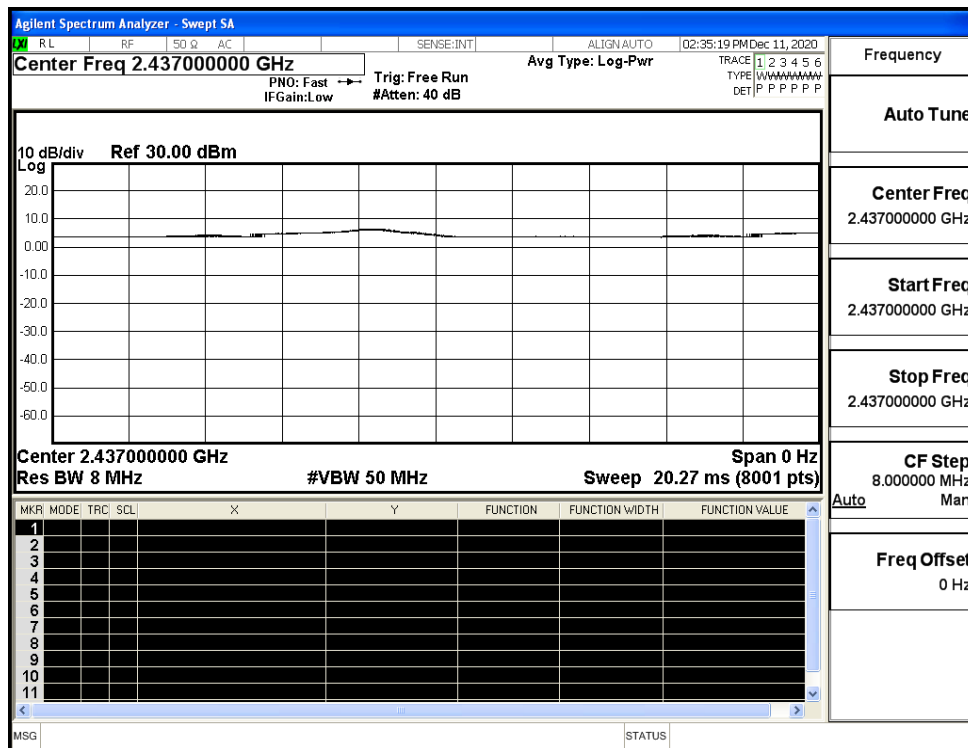
Temperature:	22.3° C
Relative Humidity:	53.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond Lu
Supervised by:	Li Huan

C.1 Duty Cycle

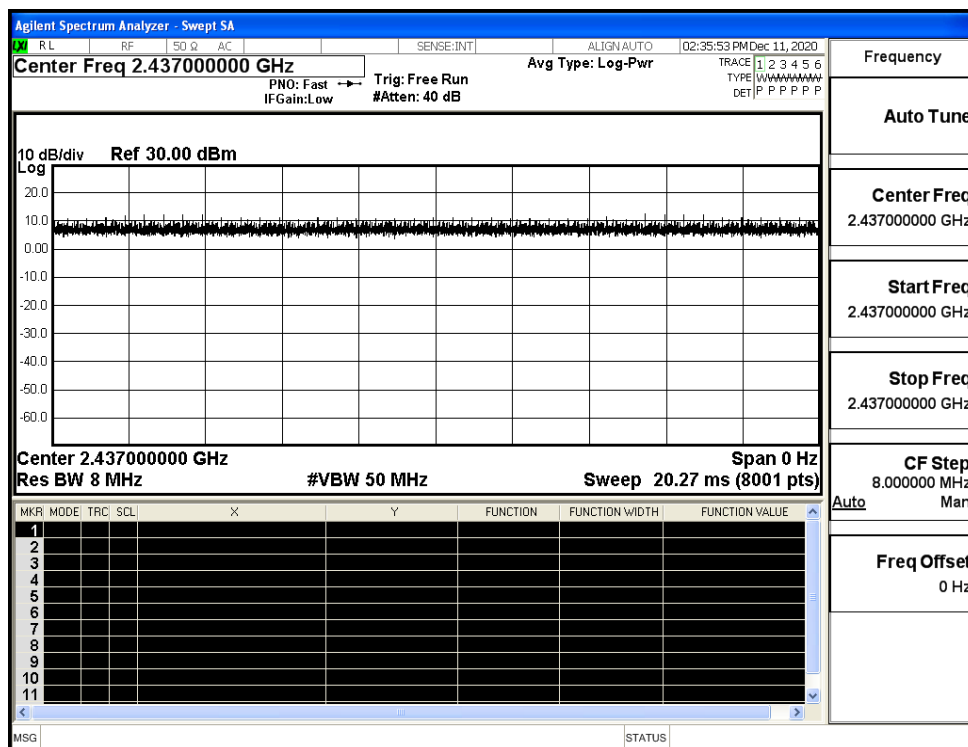
ANT0

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

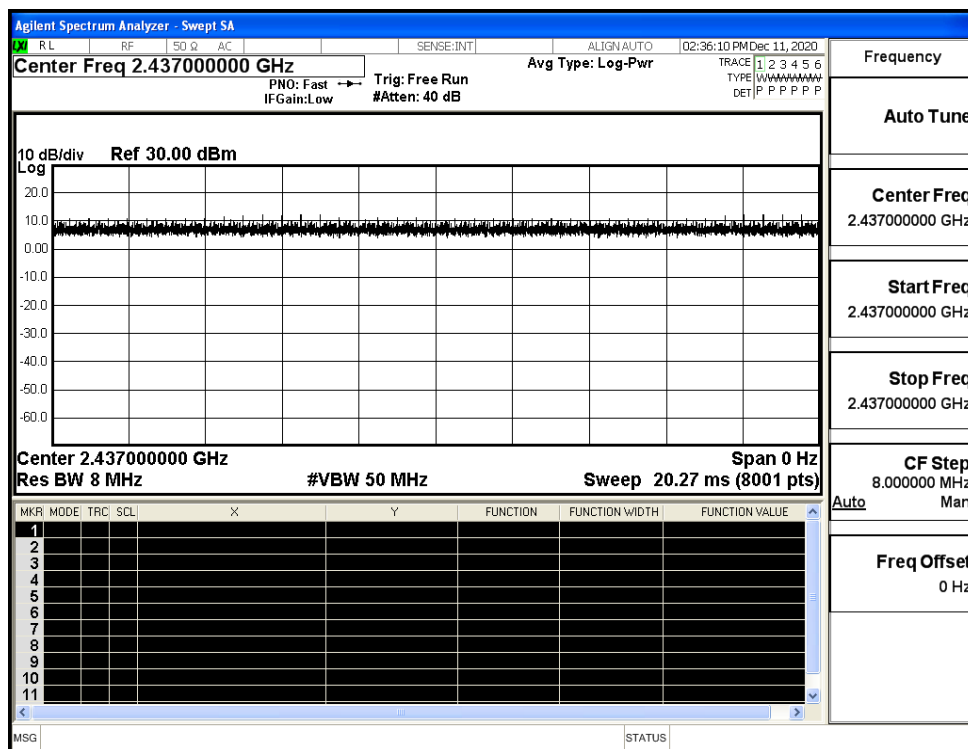
Duty Cycle_11B_2437_Ant1



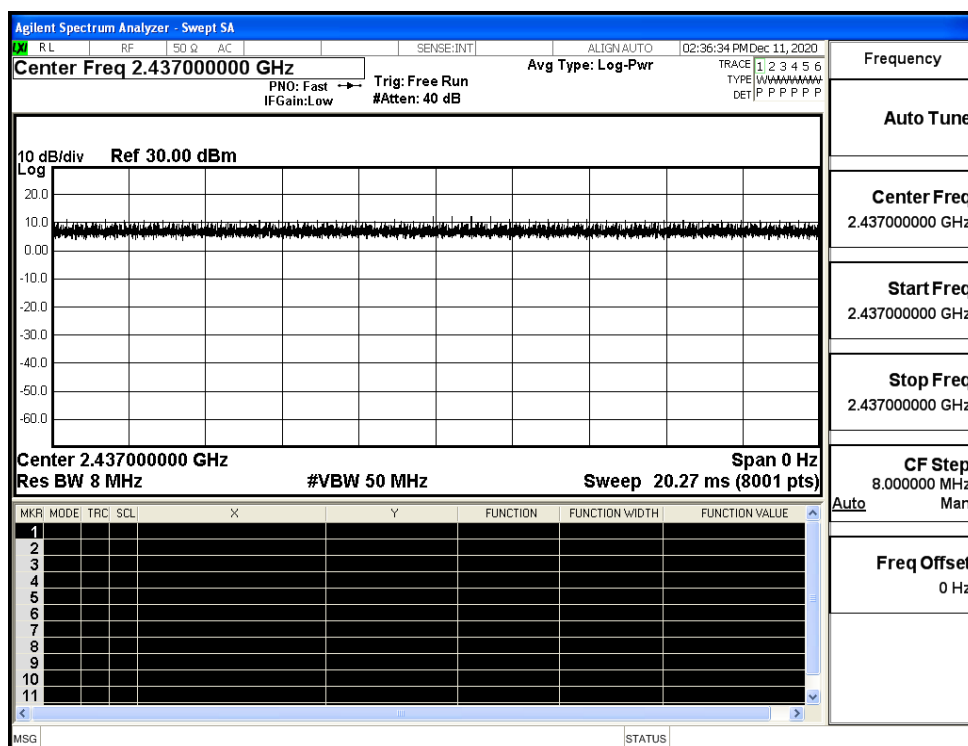
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



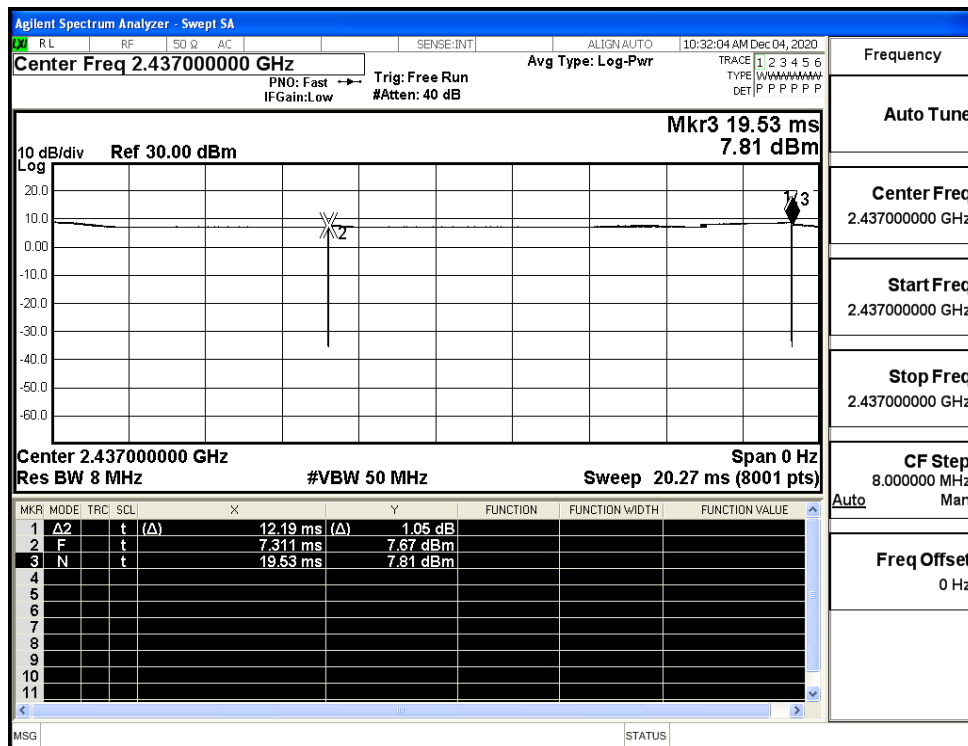
Duty Cycle_11N40SISO_2437_Ant1



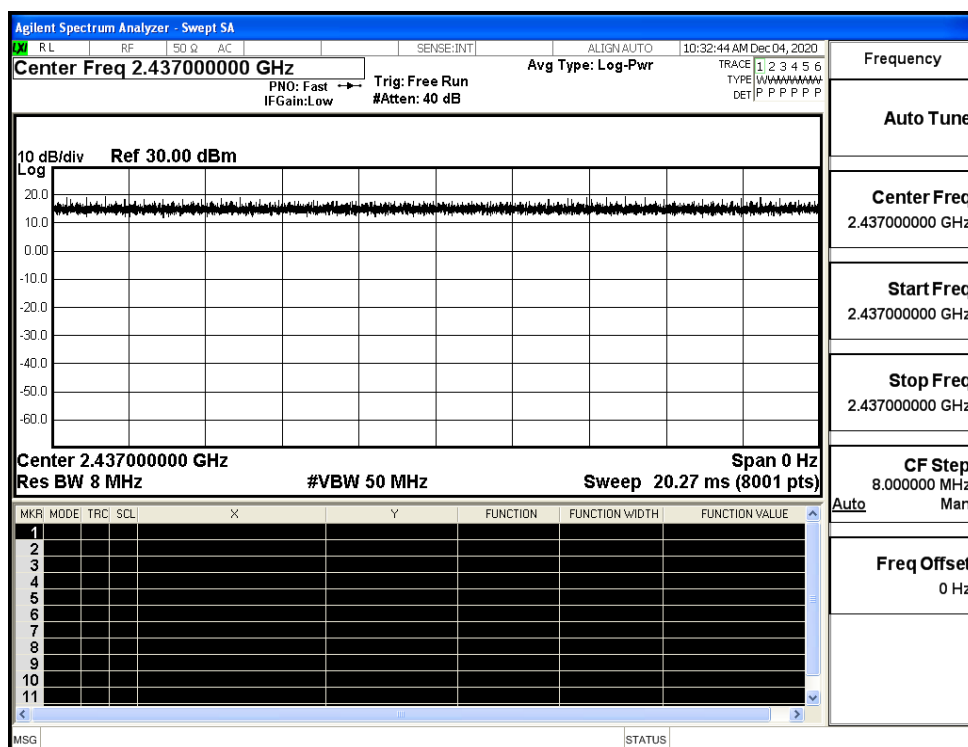
ANT1

Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
11B	2437	Ant1	99.73	PASS
11G	2437	Ant1	100	PASS
11N20SISO	2437	Ant1	100	PASS
11N40SISO	2437	Ant1	100	PASS

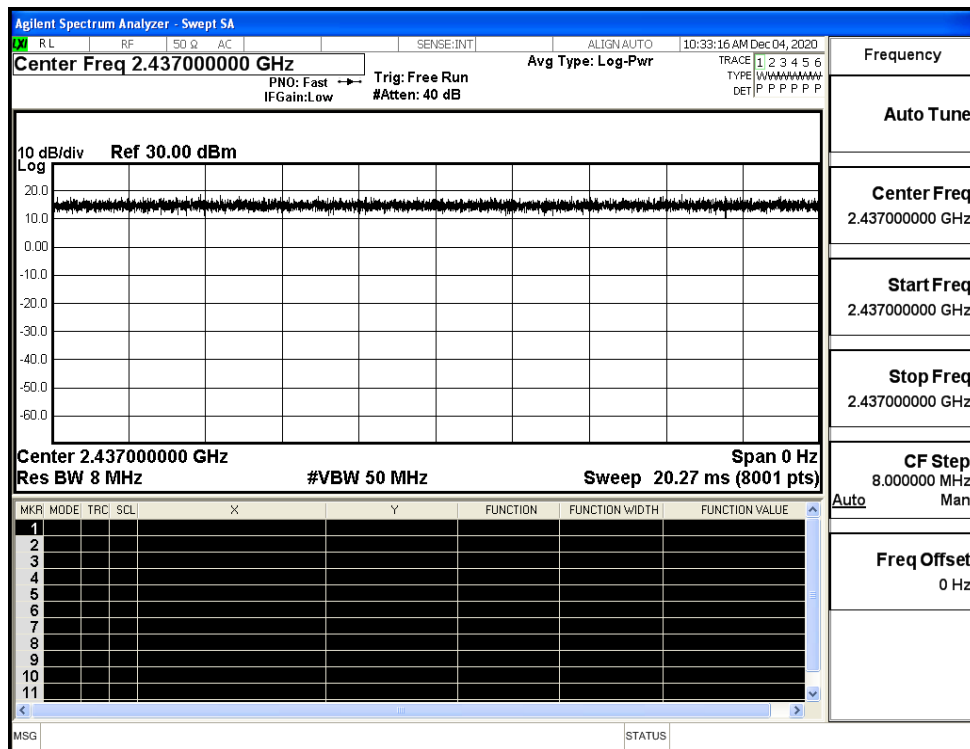
Duty Cycle_11B_2437_Ant1



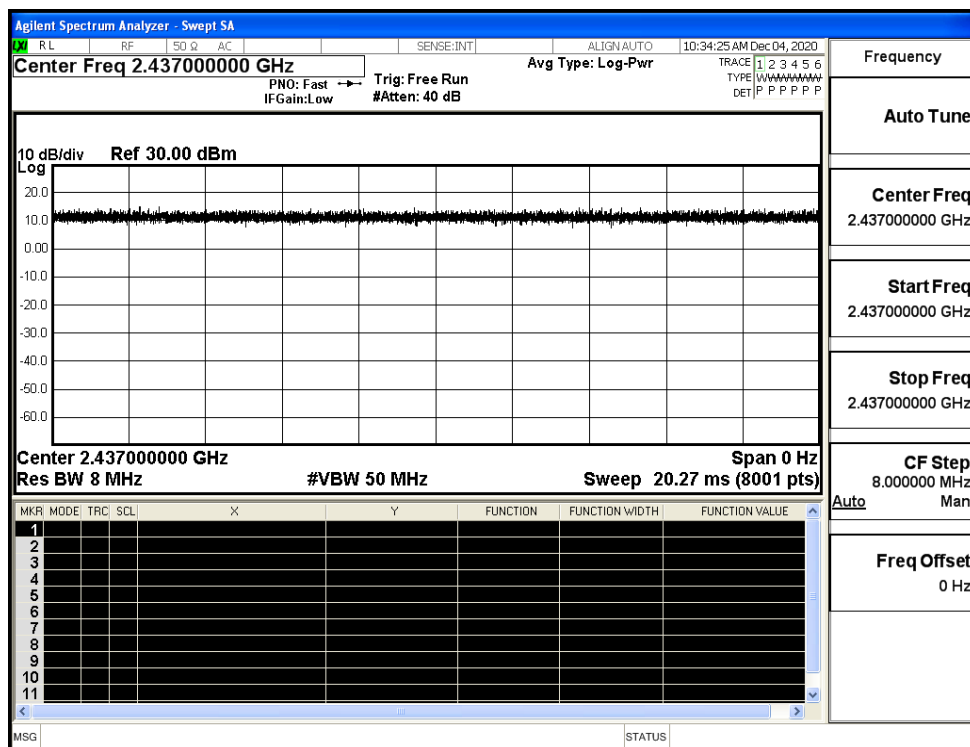
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



Duty Cycle_11N40SISO_2437_Ant1



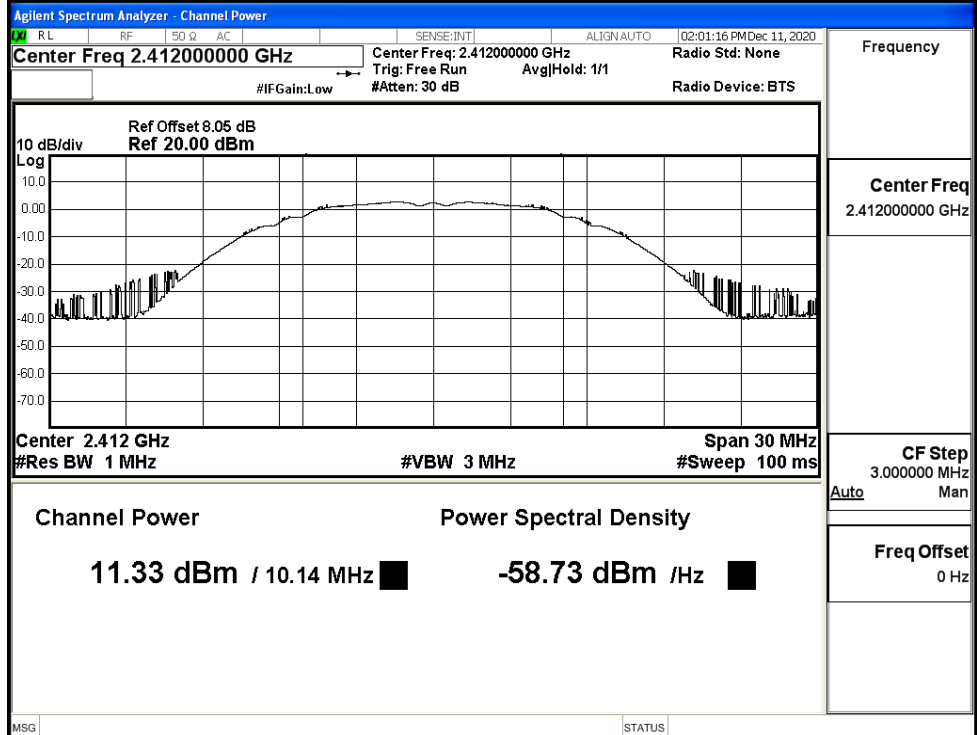
C.2 Maximum Conducted Output Power

ANT0

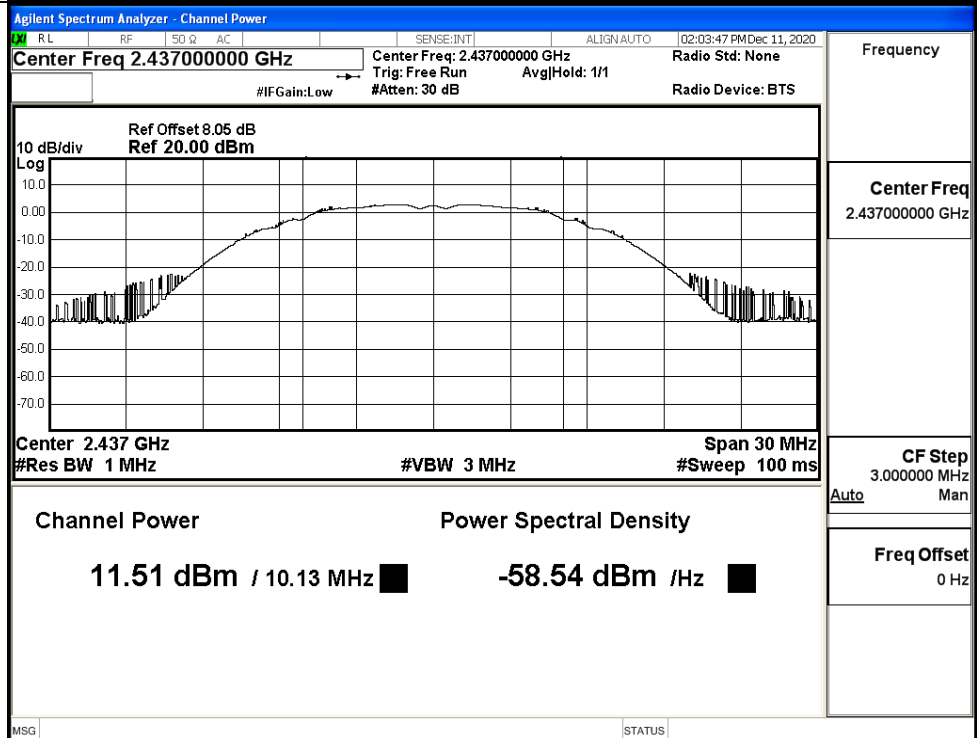
Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	11.33	30	PASS
	MCH	11.51	30	PASS
	HCH	10.98	30	PASS
11G	LCH	19.9	30	PASS
	MCH	20.07	30	PASS
	HCH	19.22	30	PASS
11N20SISO	LCH	19.69	30	PASS
	MCH	19.68	30	PASS
	HCH	18.79	30	PASS
11N40SISO	LCH	19.71	30	PASS
	MCH	19.75	30	PASS
	HCH	19.28	30	PASS

Test Graphs

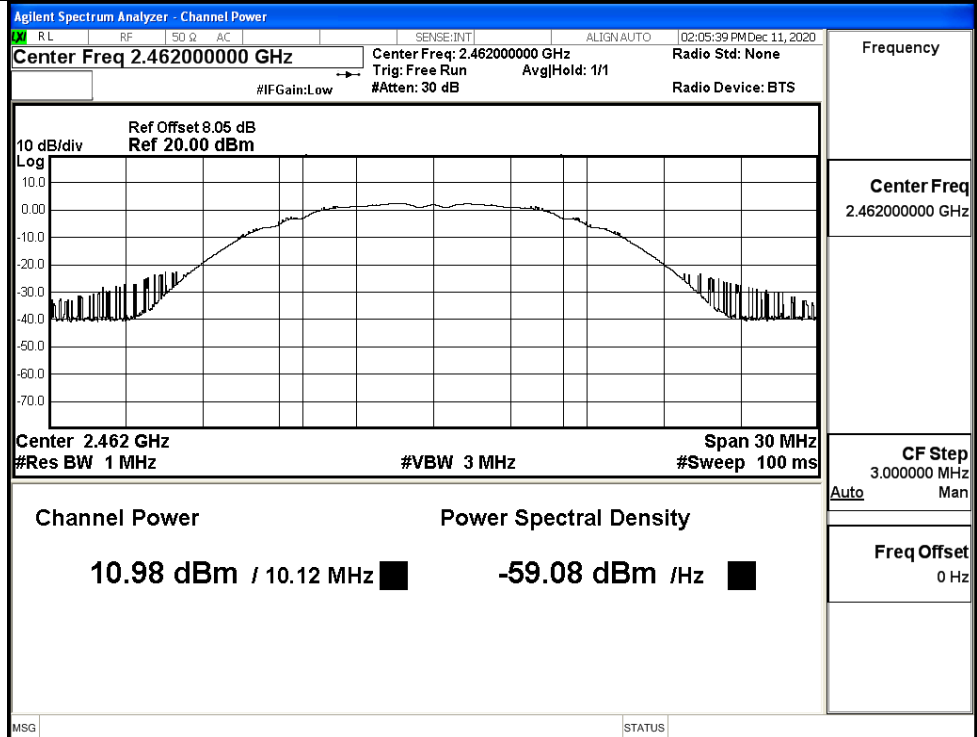
11B/LCH



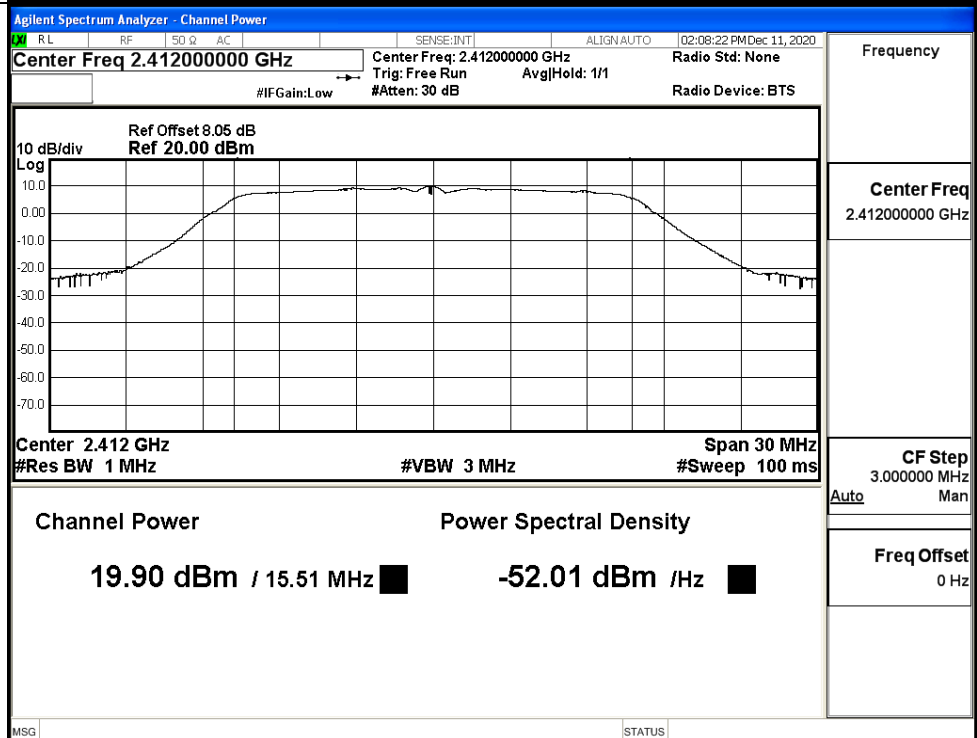
11B/MCH



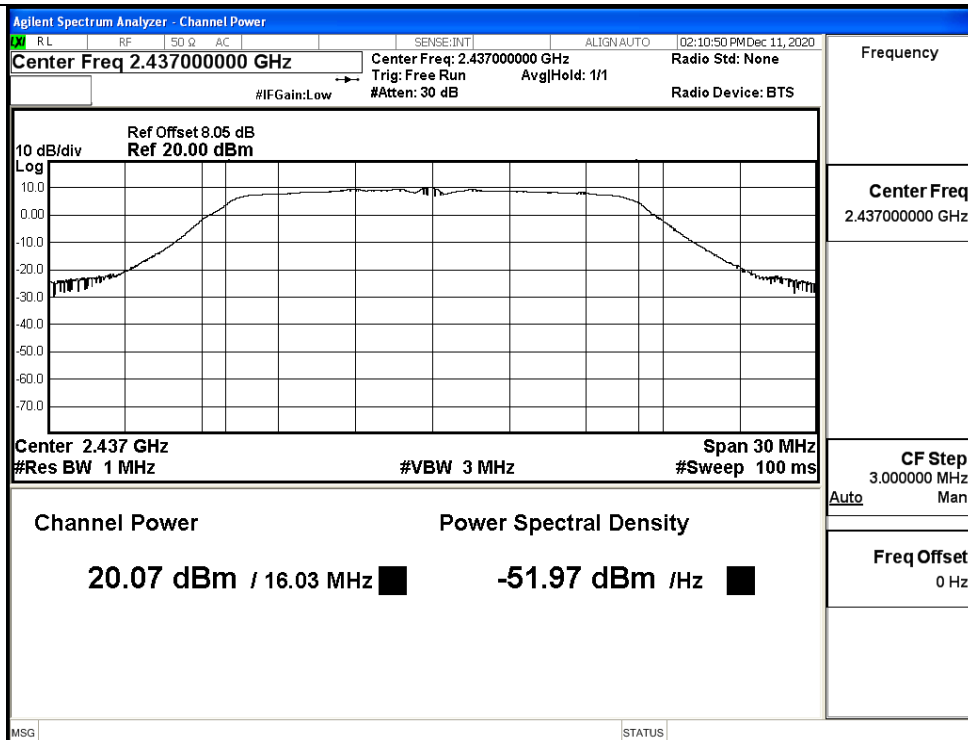
11B/HCH



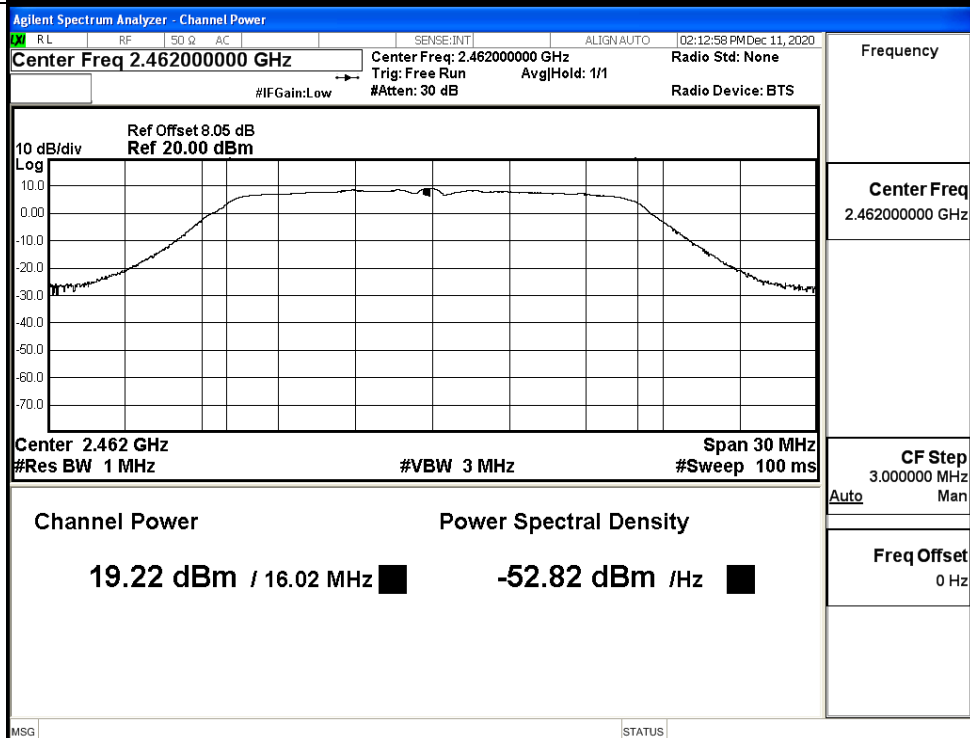
11G/LCH



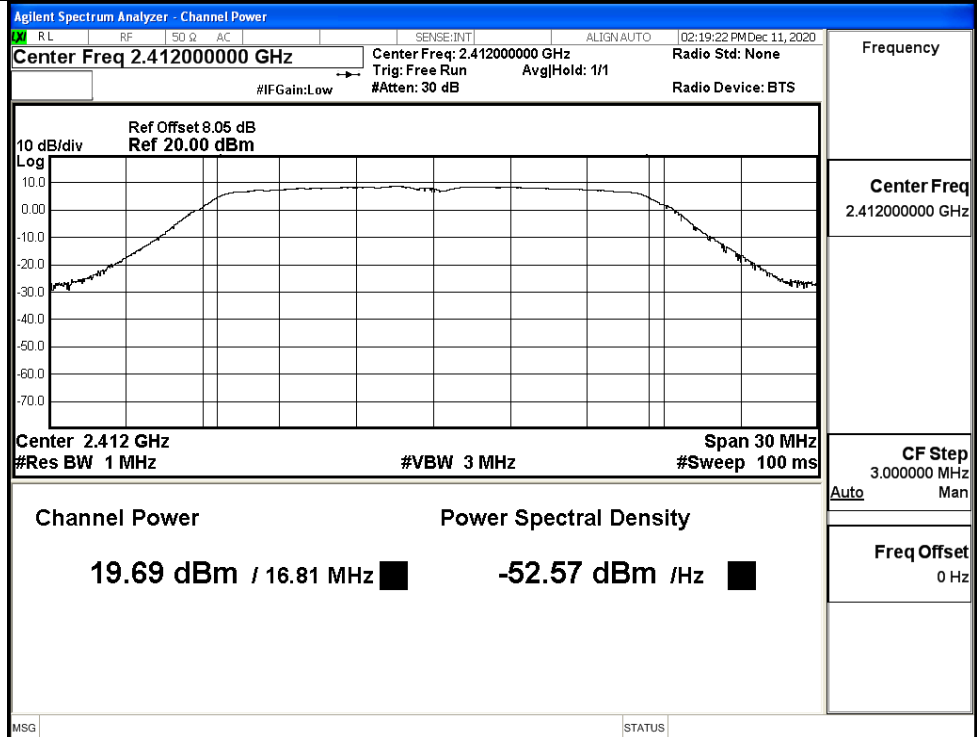
11G/MCH



11G/HCH



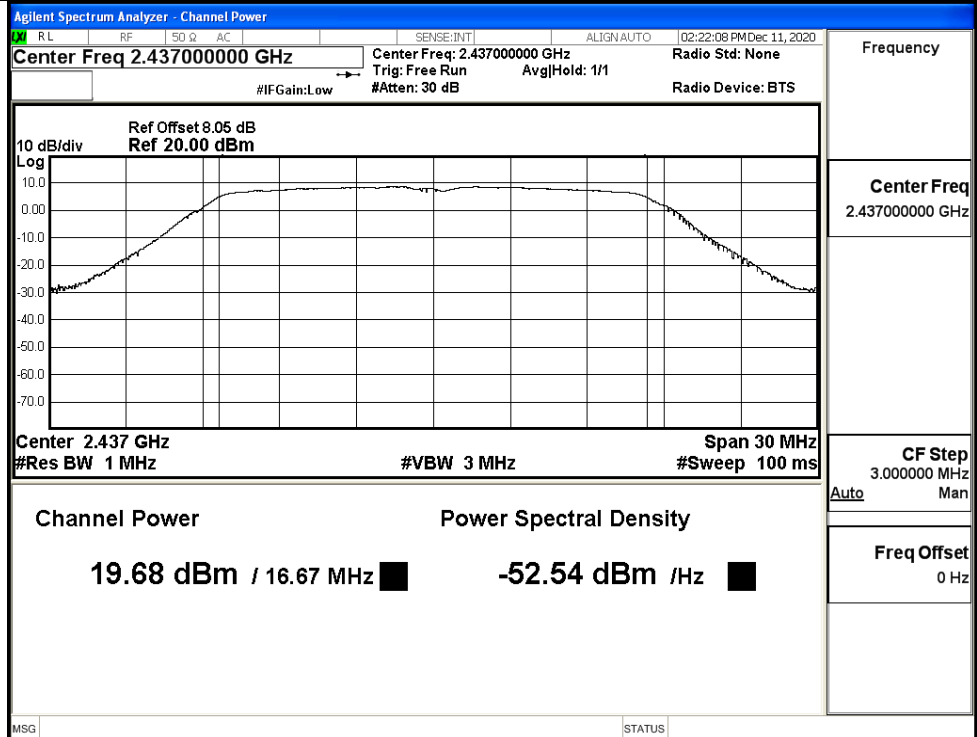
11N20SISO/LCH



Frequency

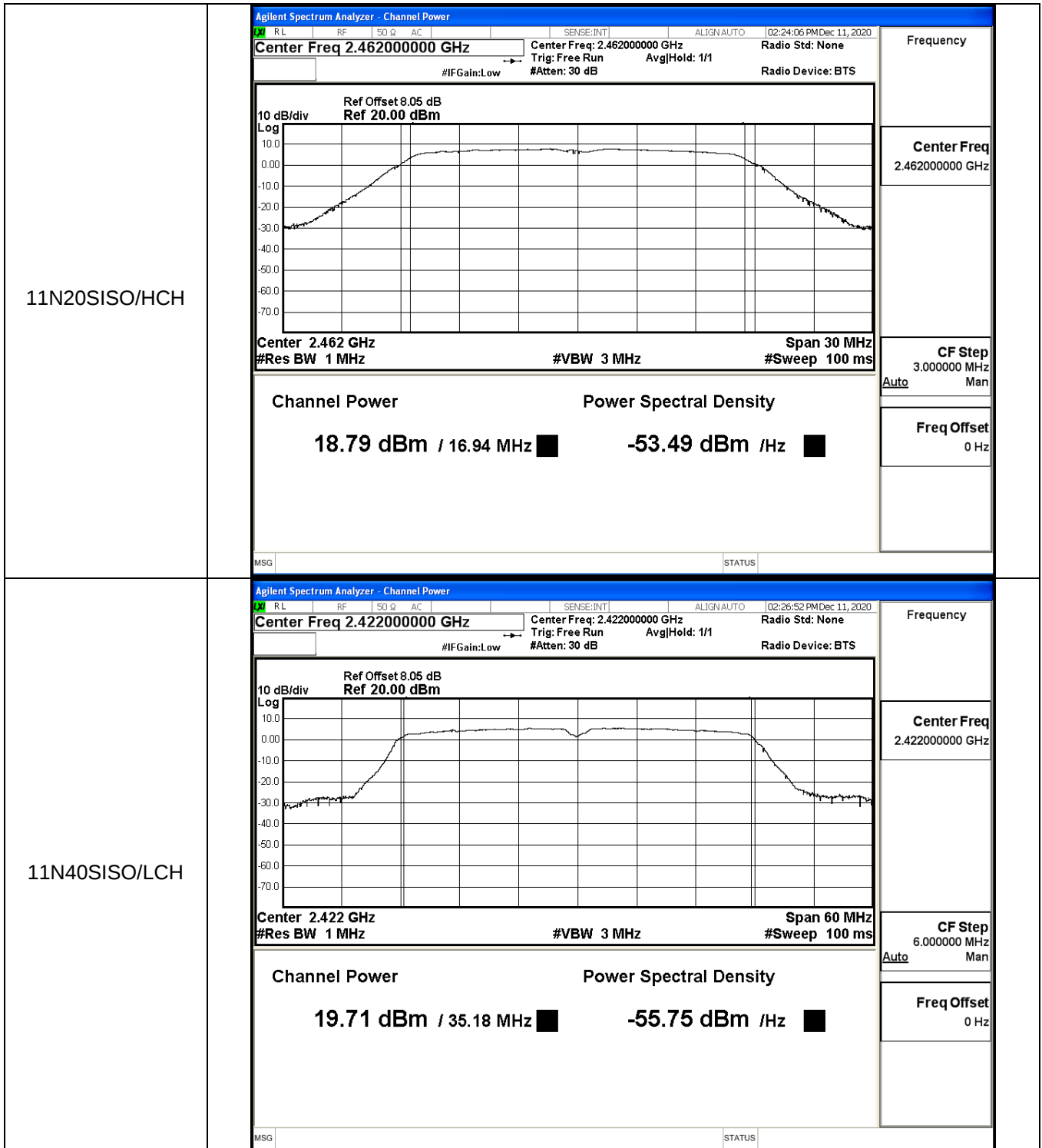
Center Freq
2.412000000 GHzCF Step
3.000000 MHz
Auto ManFreq Offset
0 Hz

11N20SISO/MCH

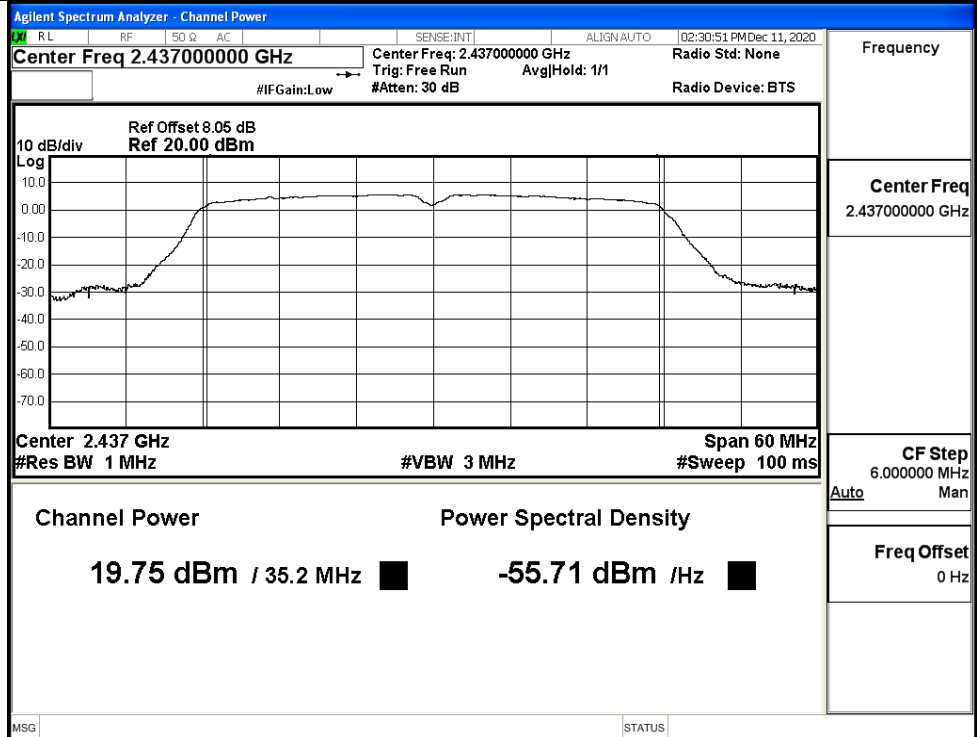


Frequency

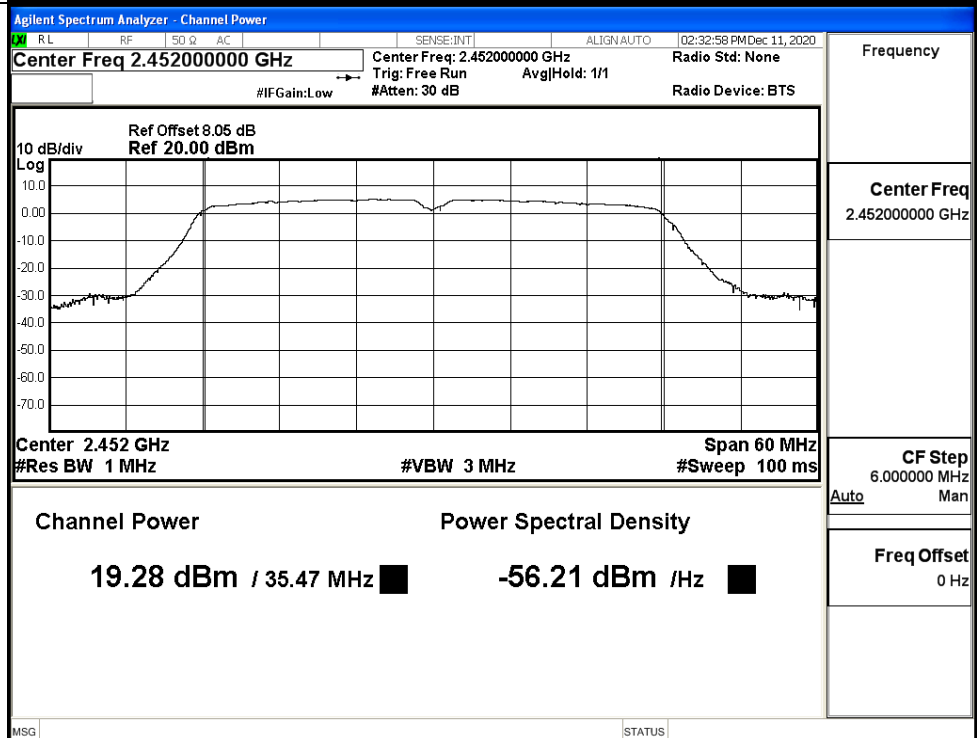
Center Freq
2.437000000 GHzCF Step
3.000000 MHz
Auto ManFreq Offset
0 Hz



11N40SISO/MCH



11N40SISO/HCH

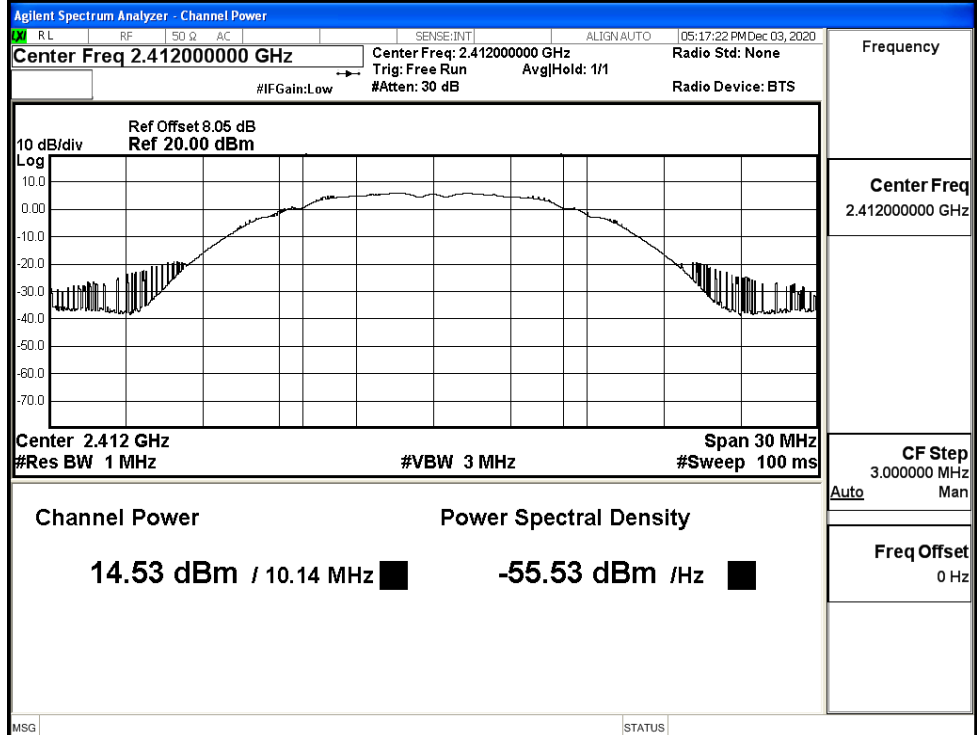


ANT1

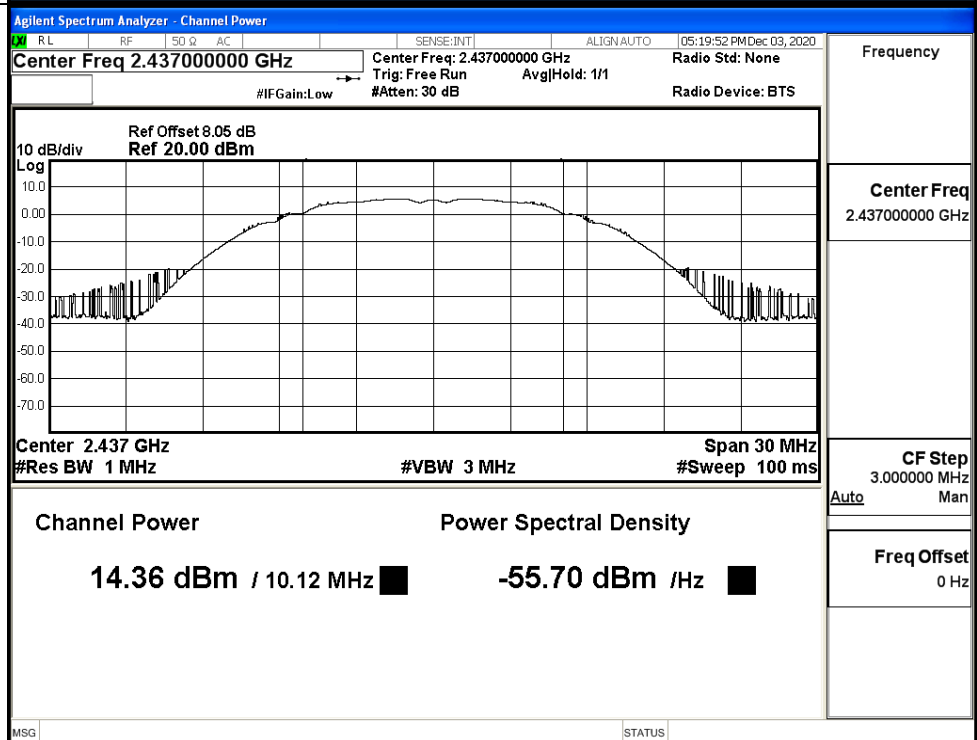
Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	14.53	30	PASS
	MCH	14.36	30	PASS
	HCH	13.41	30	PASS
11G	LCH	18.58	30	PASS
	MCH	18.41	30	PASS
	HCH	17.44	30	PASS
11N20SISO	LCH	18.28	30	PASS
	MCH	18.16	30	PASS
	HCH	17.04	30	PASS
11N40SISO	LCH	18.37	30	PASS
	MCH	18.21	30	PASS
	HCH	17.52	30	PASS

Test Graphs

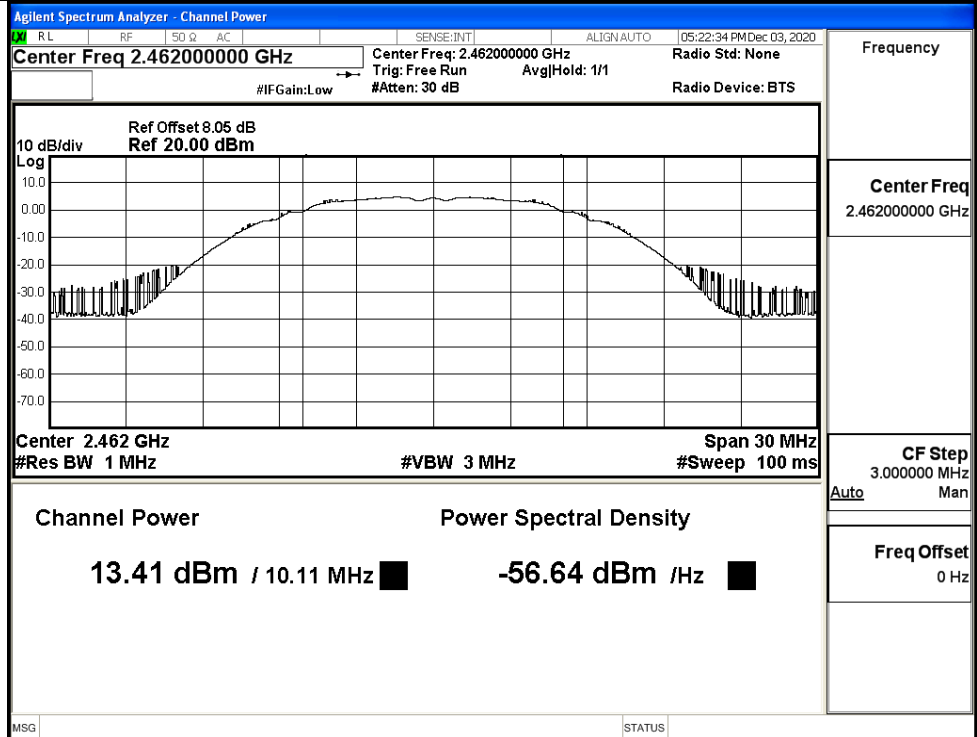
11B/LCH



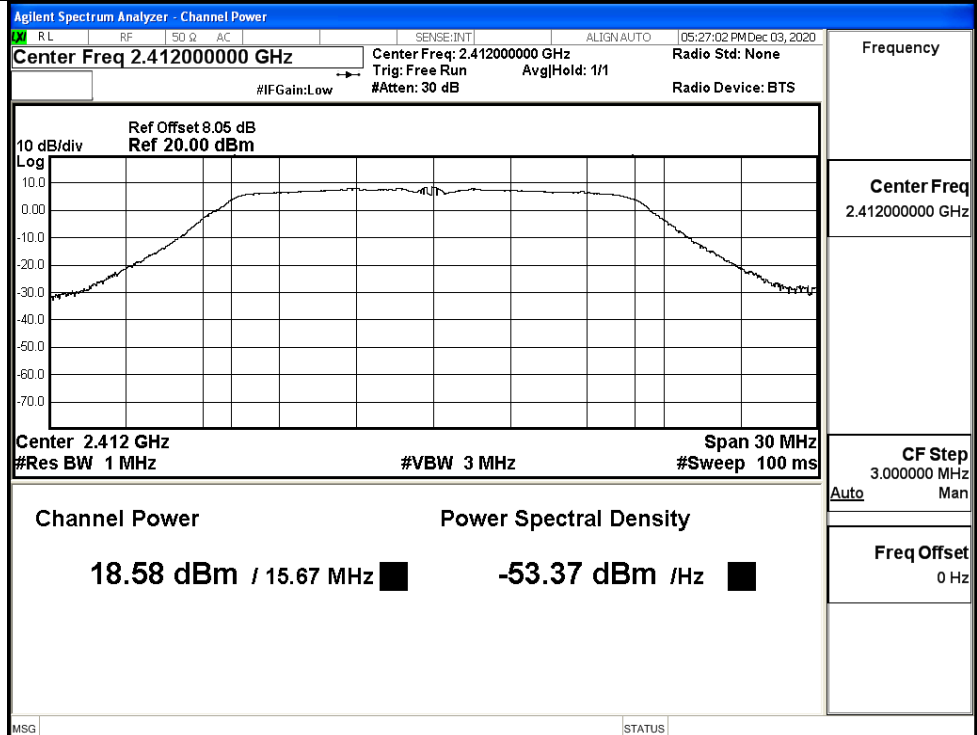
11B/MCH



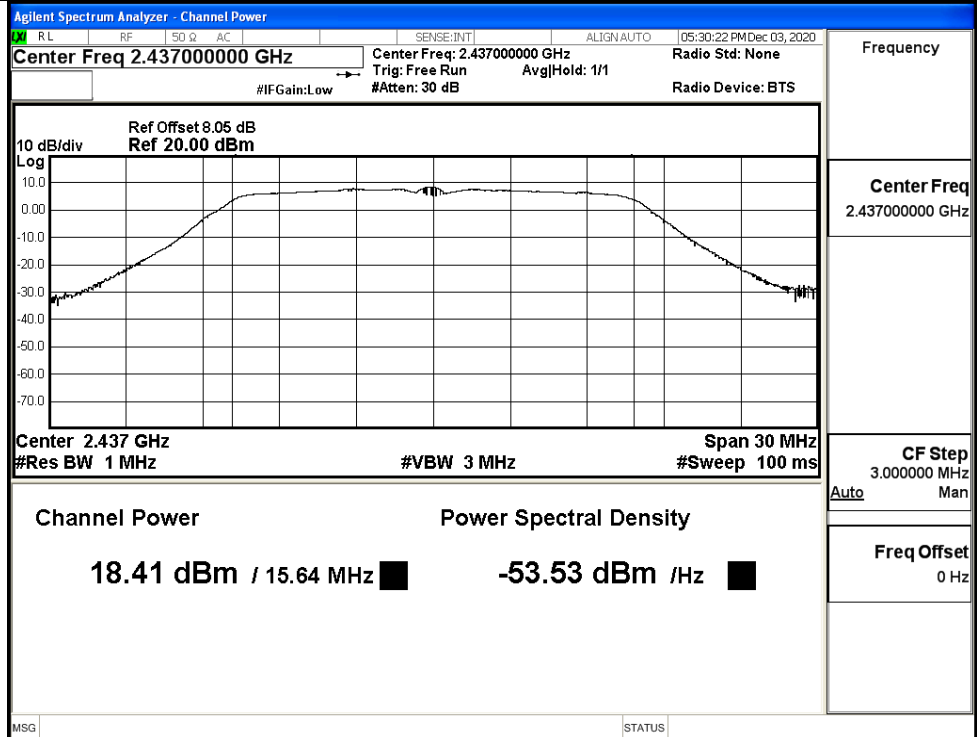
11B/HCH



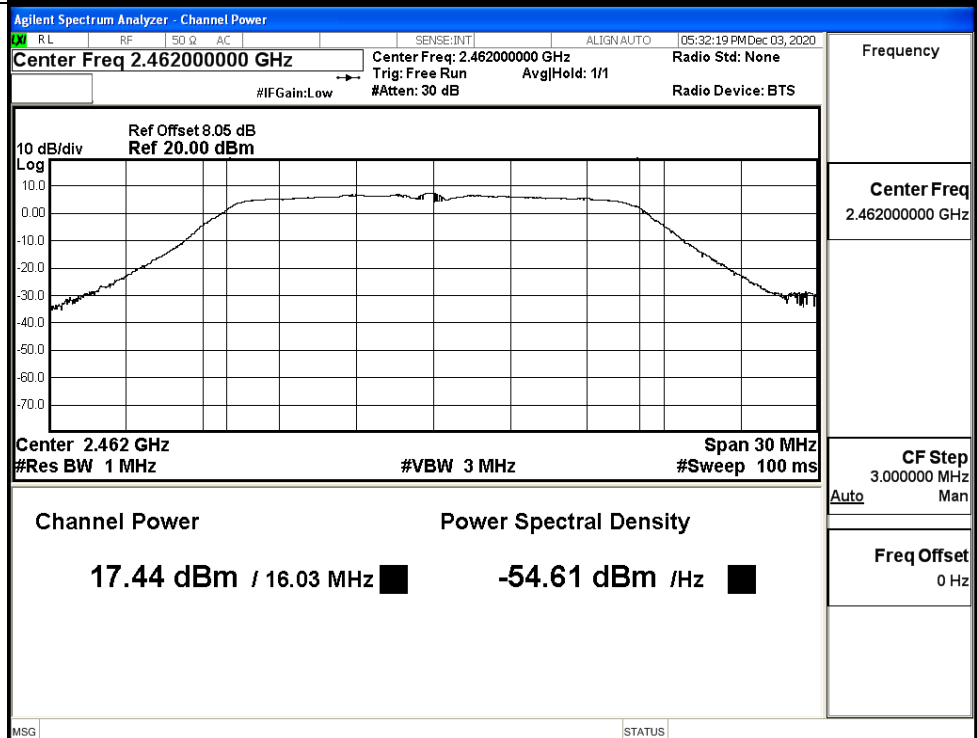
11G/LCH



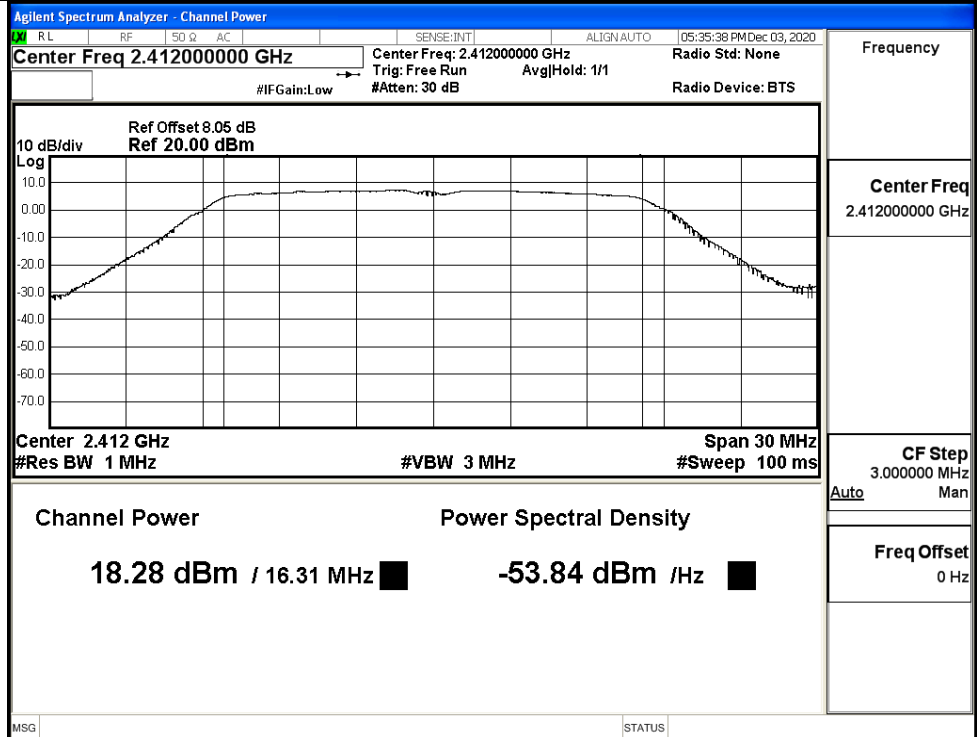
11G/MCH



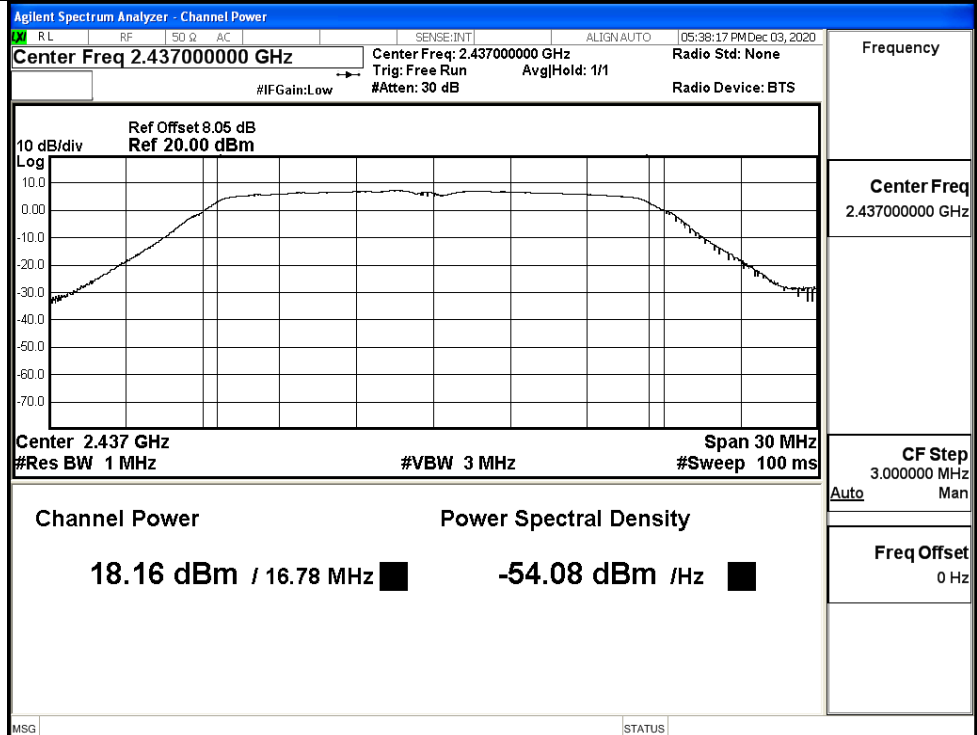
11G/HCH

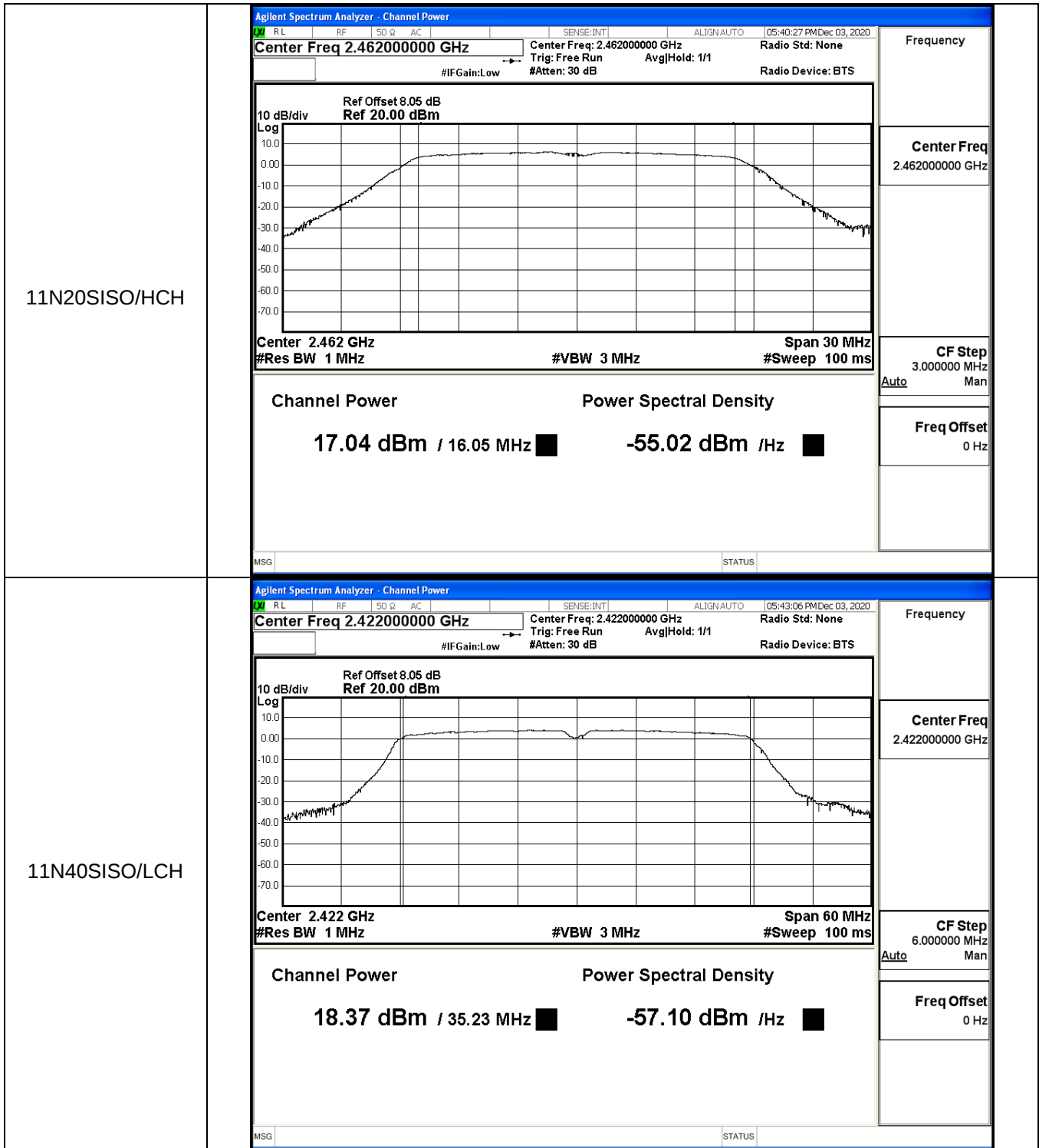


11N20SISO/LCH

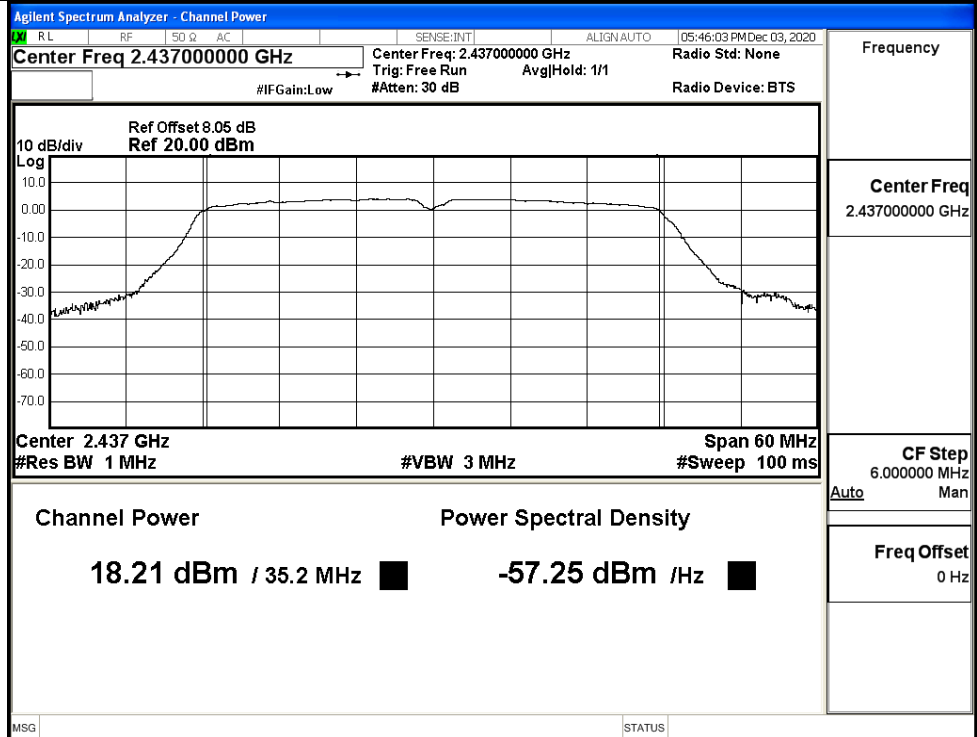


11N20SISO/MCH

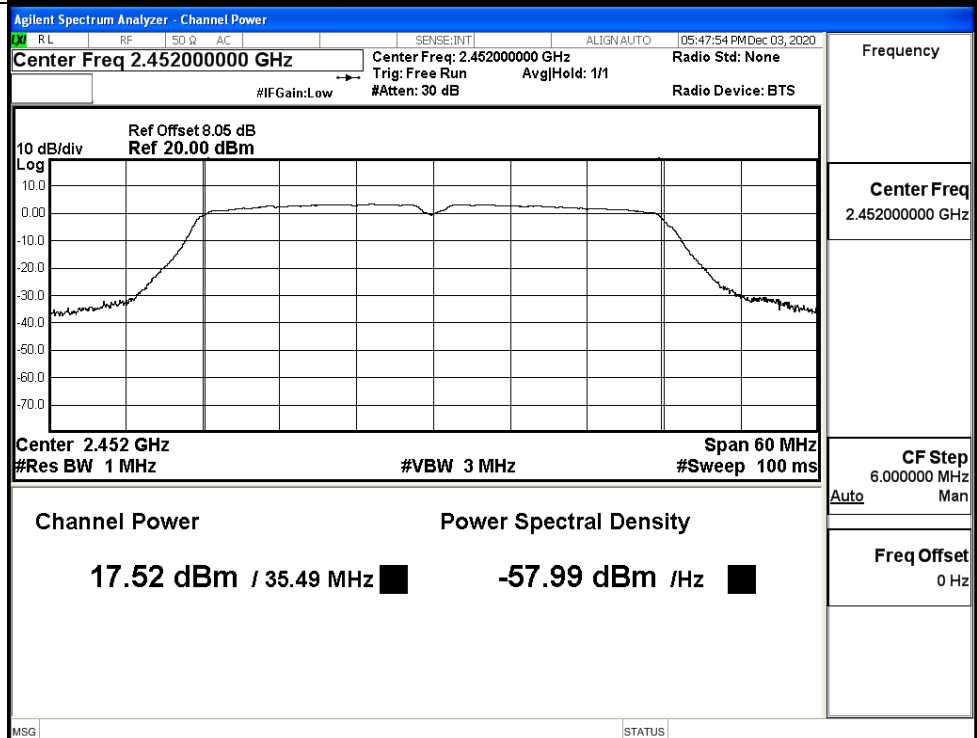




11N40SISO/MCH



11N40SISO/HCH



MIMO

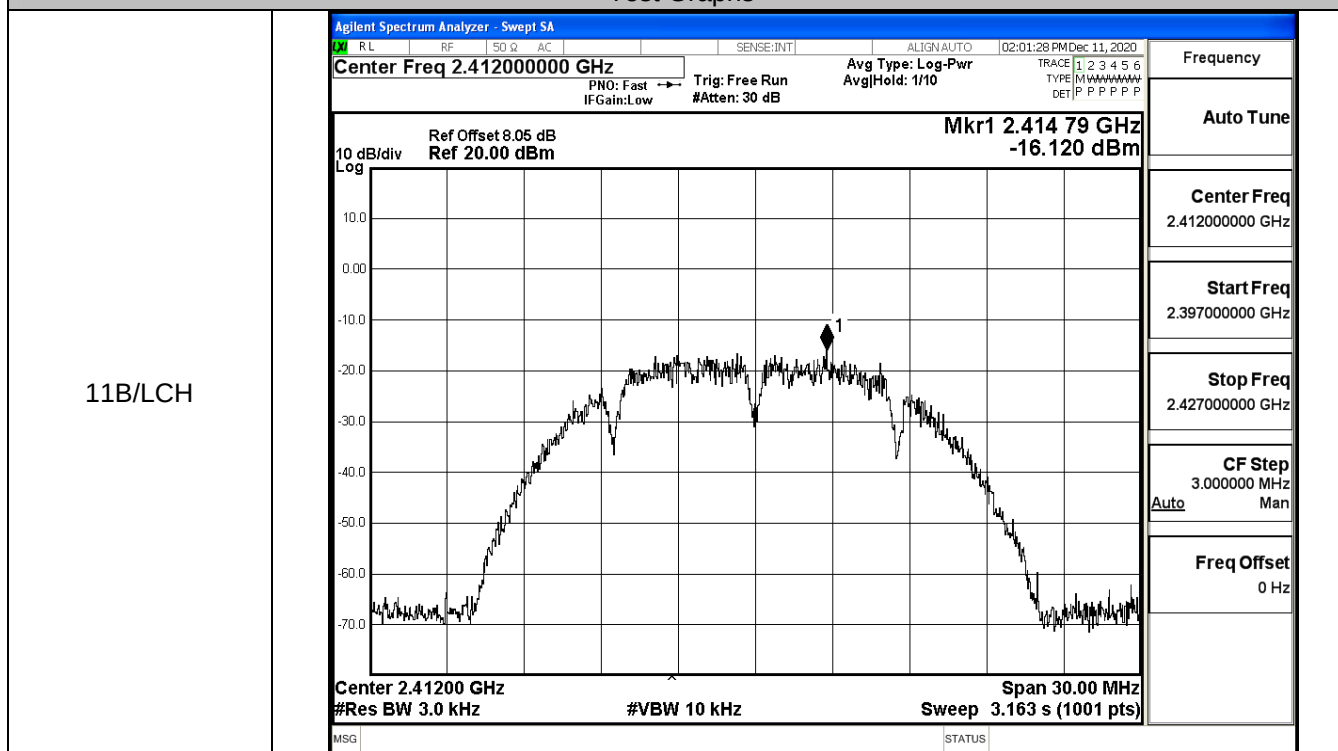
Mode	Channel	ANT 0 [dBm]	ANT 1 [dBm]	MIMO [dBm]	Limit [dBm]	Verdict
11N20	LCH	19.69	18.28	22.05	30	PASS
	MCH	19.68	18.16	22.00	30	PASS
	HCH	18.79	17.04	21.01	30	PASS
11N40	LCH	19.71	18.37	22.10	30	PASS
	MCH	19.75	18.21	22.06	30	PASS
	HCH	19.28	17.52	21.50	30	PASS

C.3 Maximum Power Spectral Density

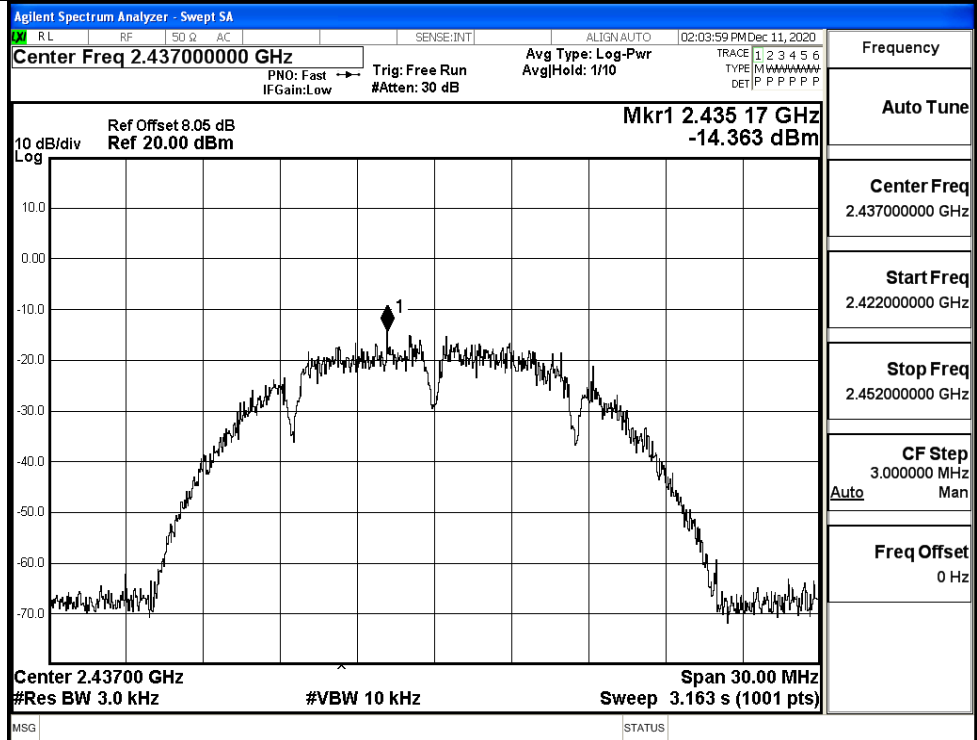
ANTO

Mode	Channel	Meas.Level [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-16.120	8	PASS
	MCH	-14.363	8	PASS
	HCH	-14.555	8	PASS
11G	LCH	-14.390	8	PASS
	MCH	-14.336	8	PASS
	HCH	-14.421	8	PASS
11N20SISO	LCH	-14.077	8	PASS
	MCH	-13.690	8	PASS
	HCH	-15.452	8	PASS
11N40SISO	LCH	-16.060	8	PASS
	MCH	-17.051	8	PASS
	HCH	-15.666	8	PASS

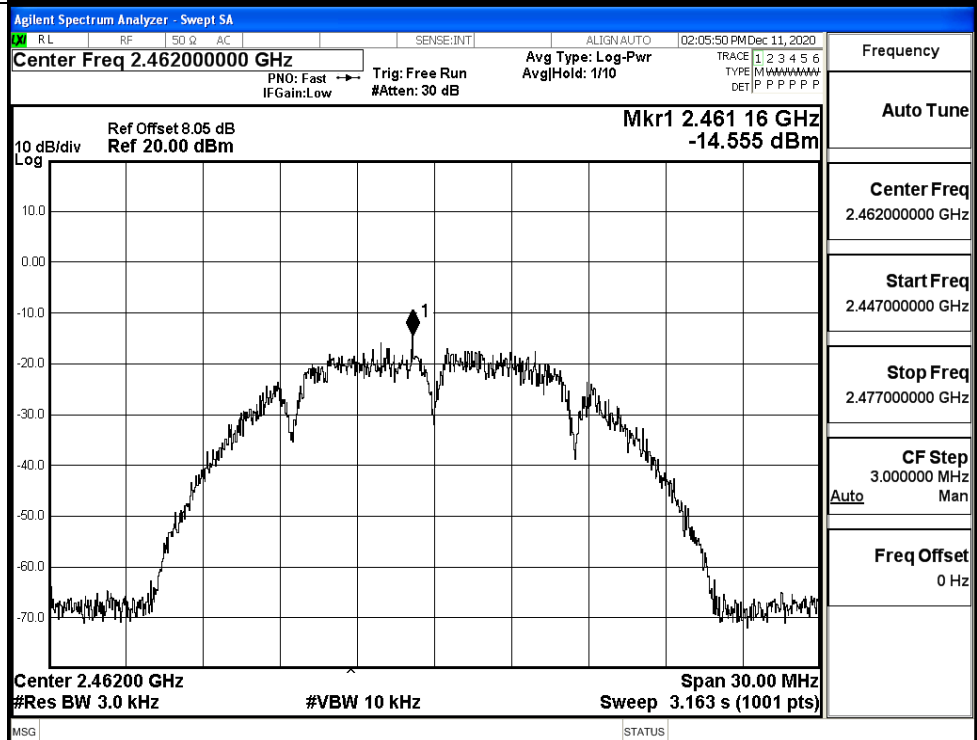
Test Graphs



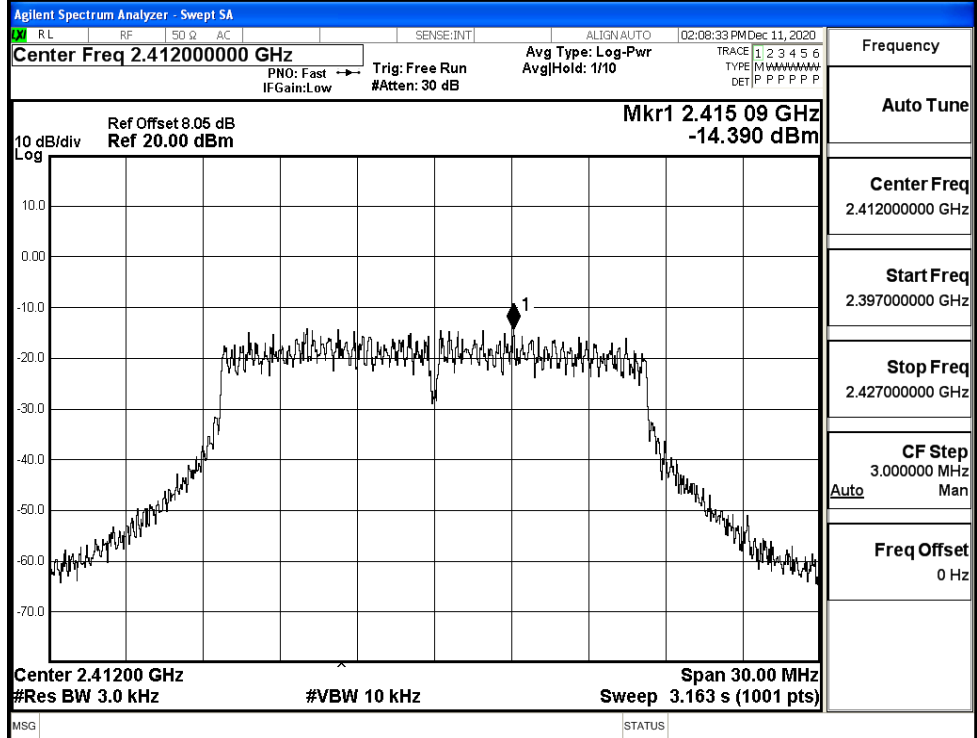
11B/MCH



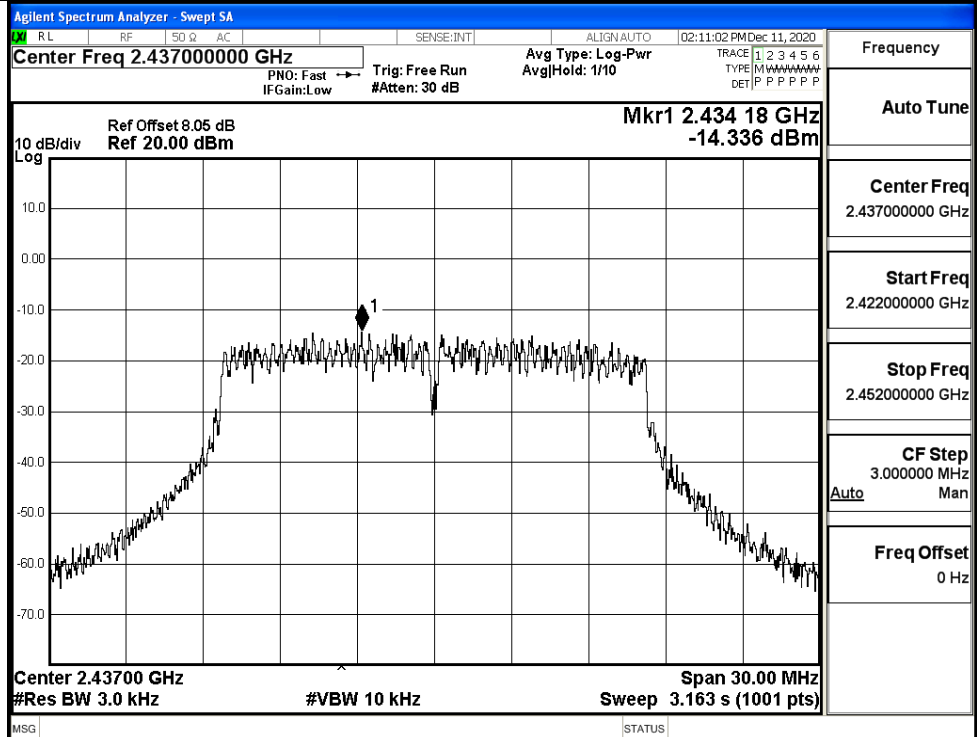
11B/HCH



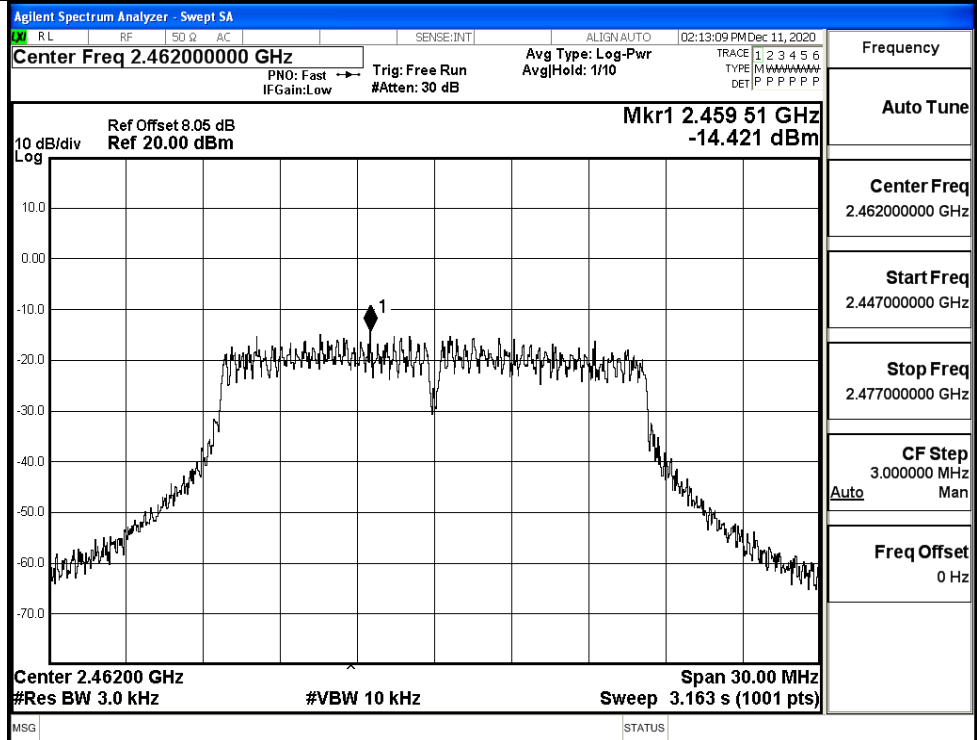
11G/LCH



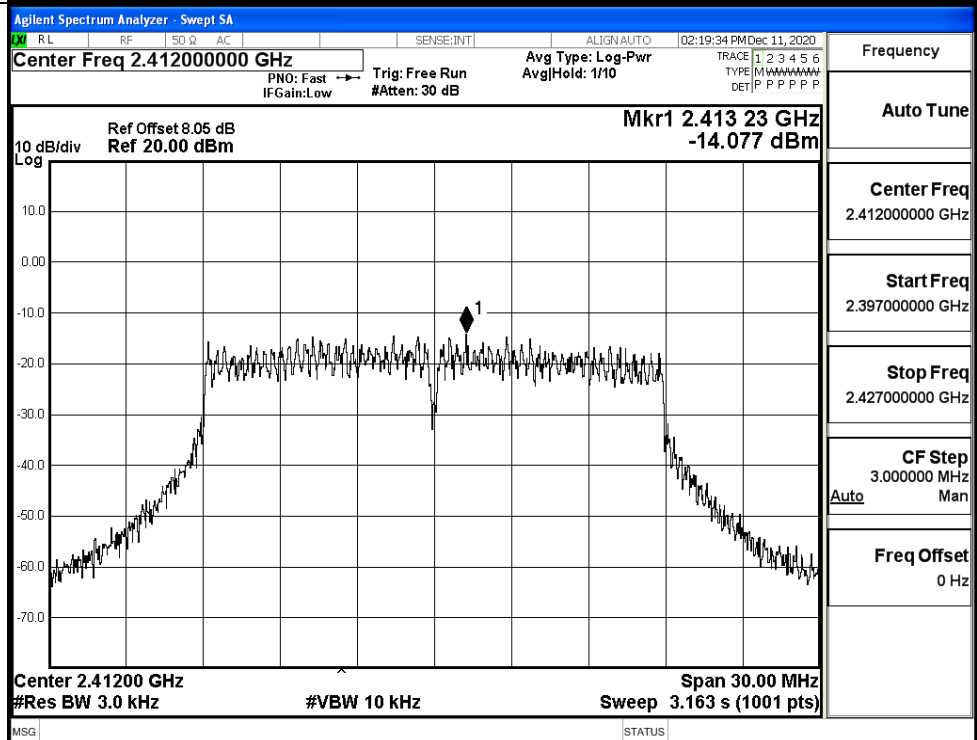
11G/MCH



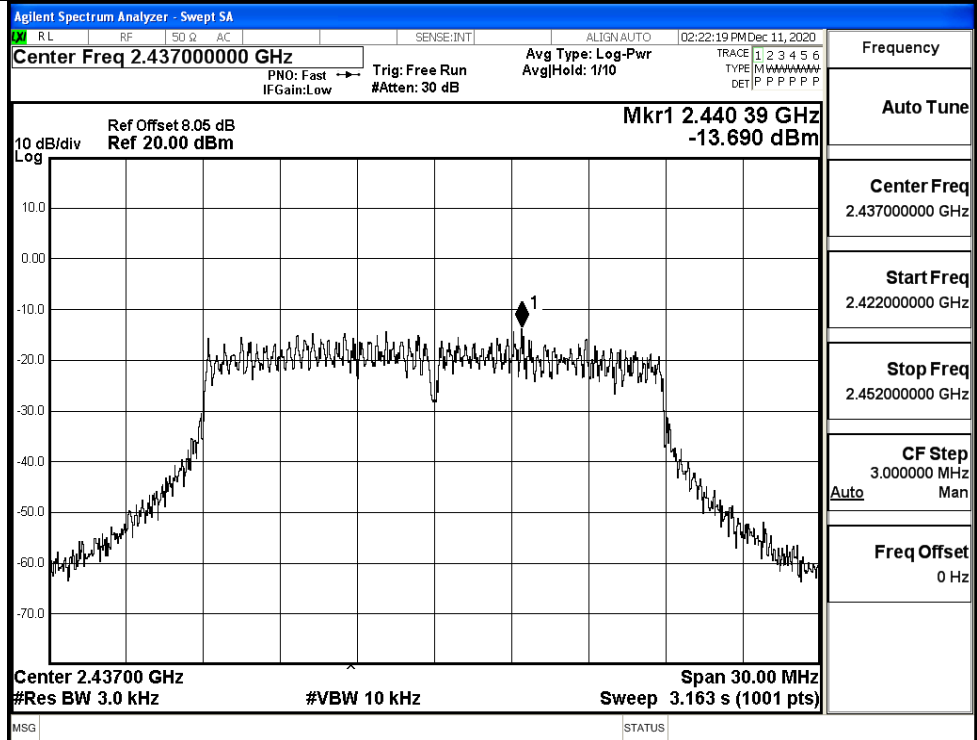
11G/HCH



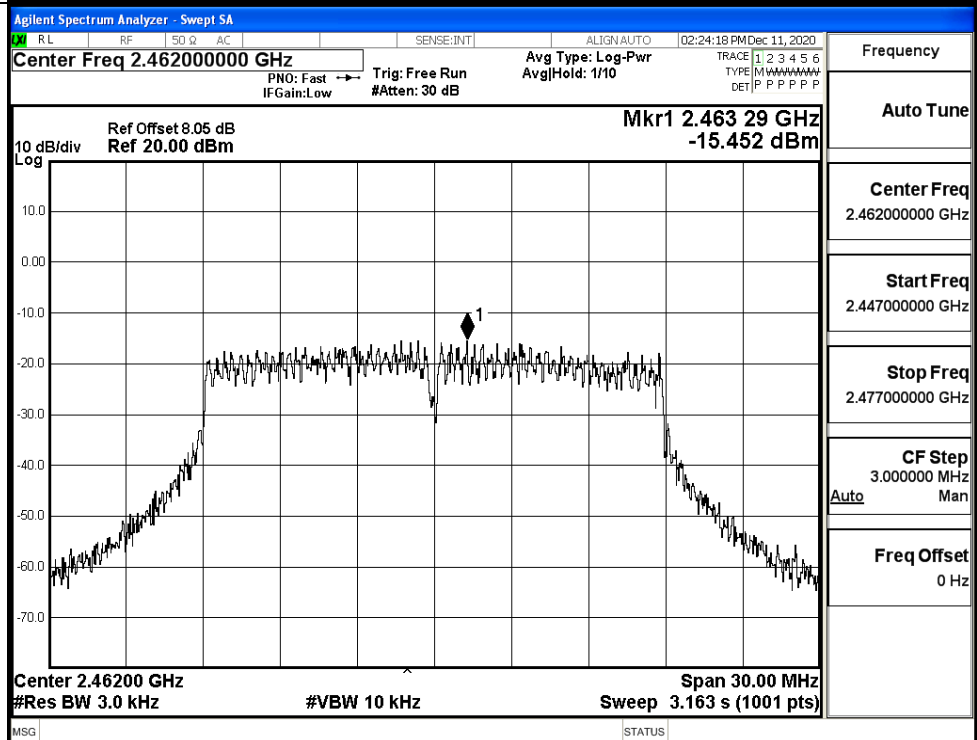
11N20SISO/LCH



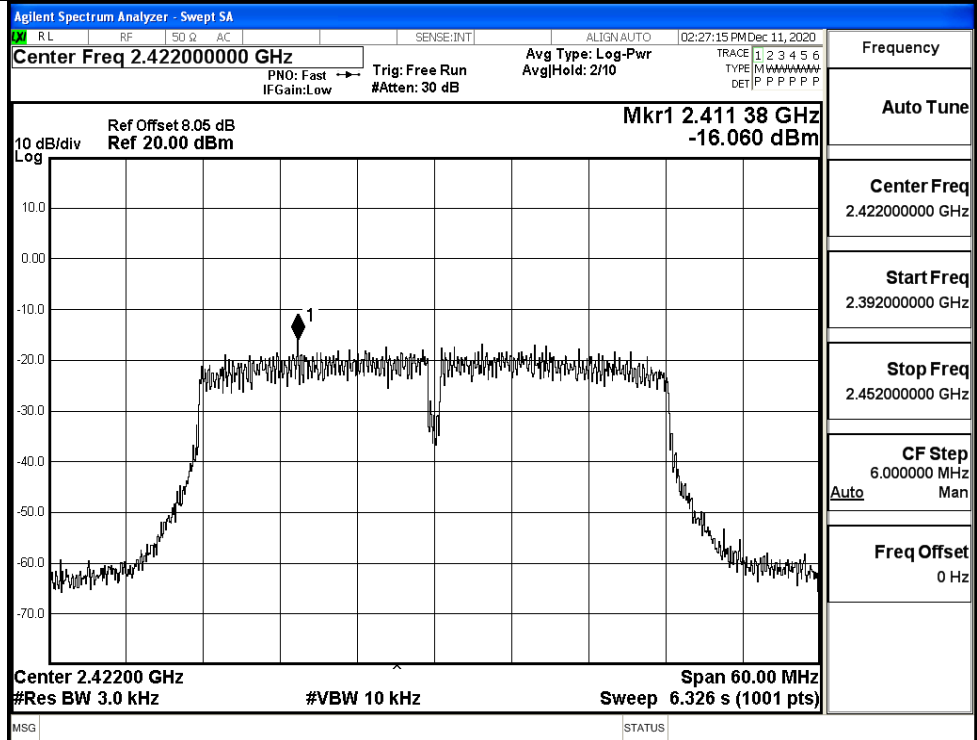
11N20SISO/MCH



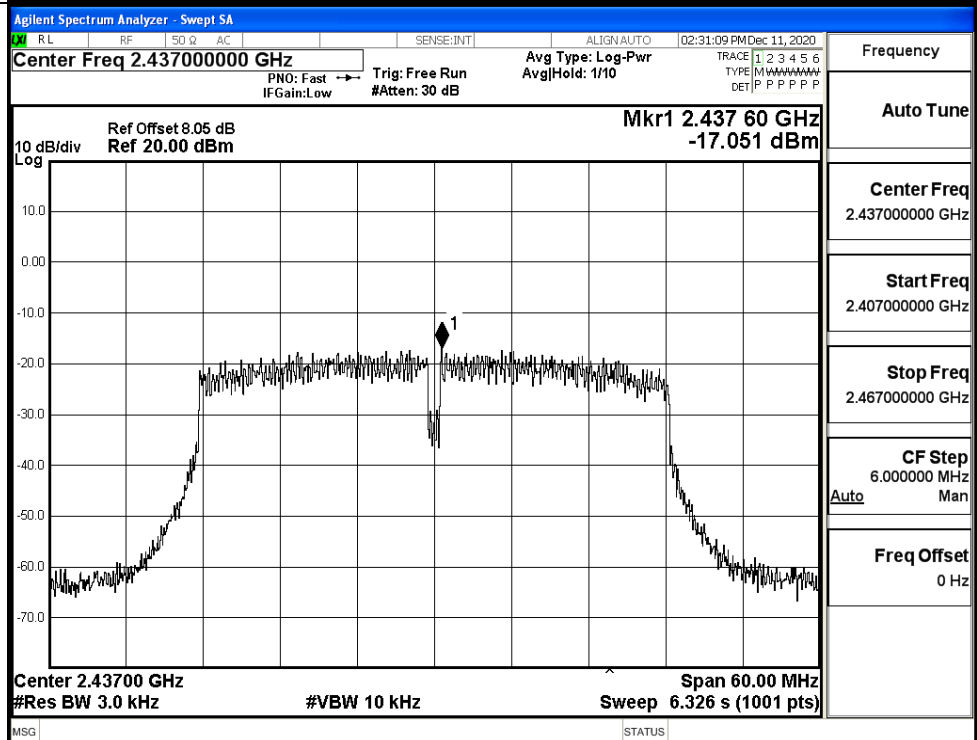
11N20SISO/HCH



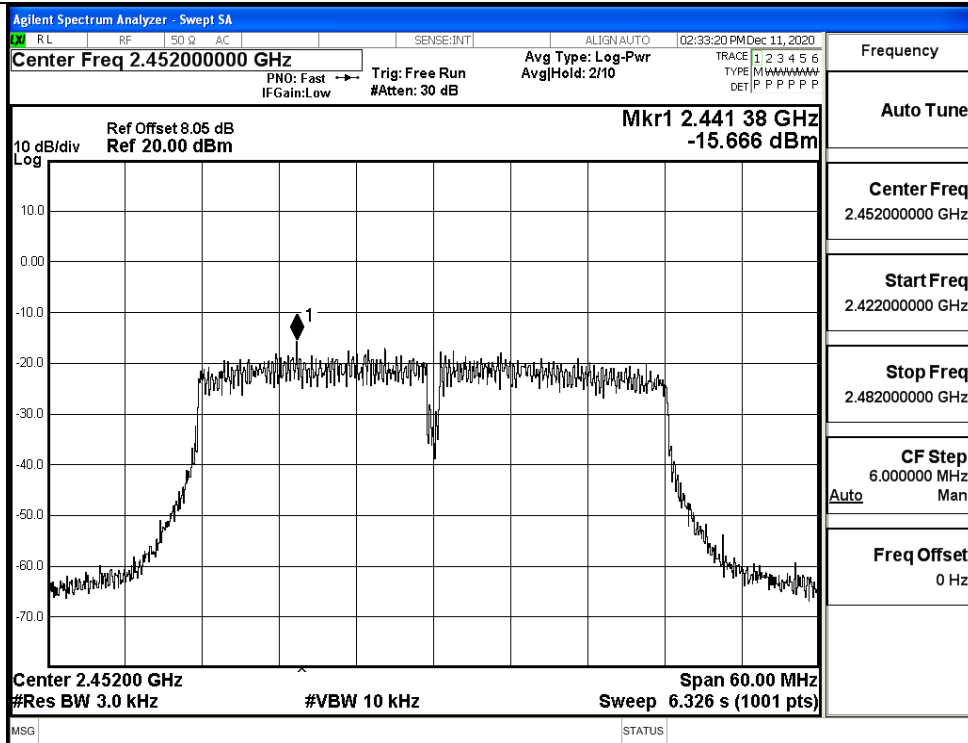
11N40SISO/LCH



11N40SISO/MCH



11N40SISO/HCH

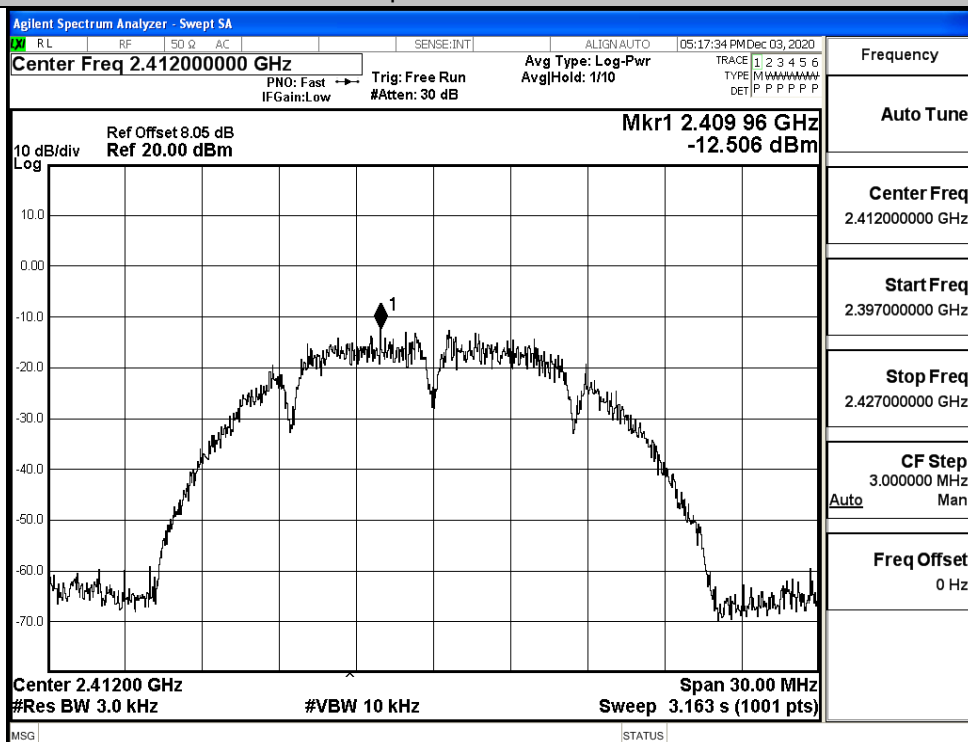


ANT1

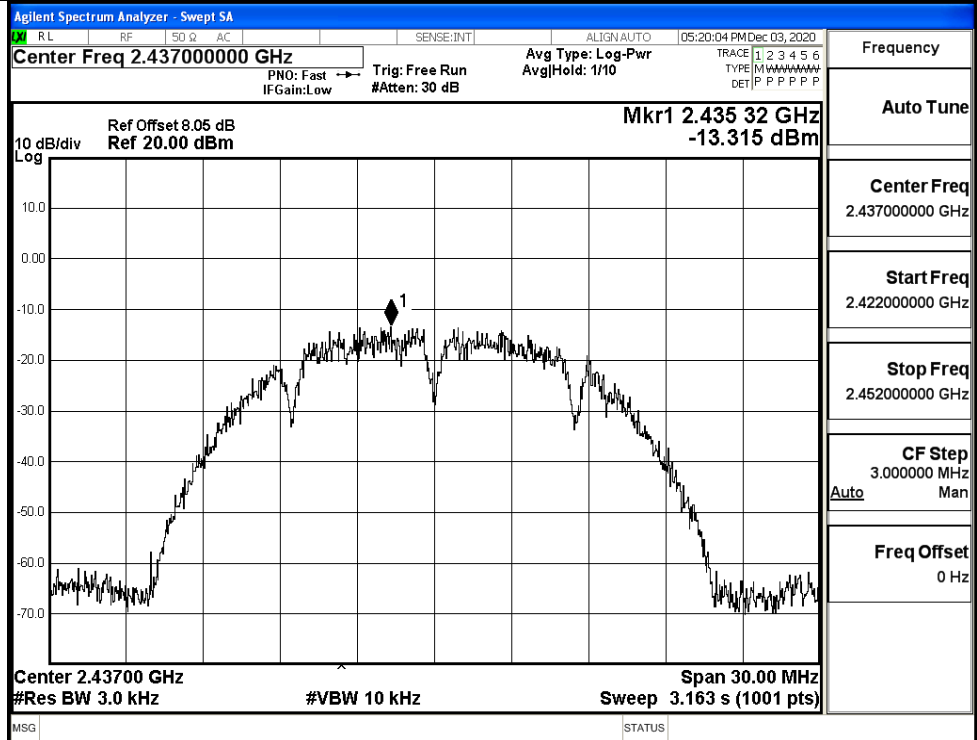
Mode	Channel	Meas.Level [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-12.506	8	PASS
	MCH	-13.315	8	PASS
	HCH	-13.486	8	PASS
11G	LCH	-15.680	8	PASS
	MCH	-16.109	8	PASS
	HCH	-16.397	8	PASS
11N20SISO	LCH	-14.671	8	PASS
	MCH	-15.347	8	PASS
	HCH	-16.037	8	PASS
11N40SISO	LCH	-17.814	8	PASS
	MCH	-17.384	8	PASS
	HCH	-17.423	8	PASS

Test Graphs

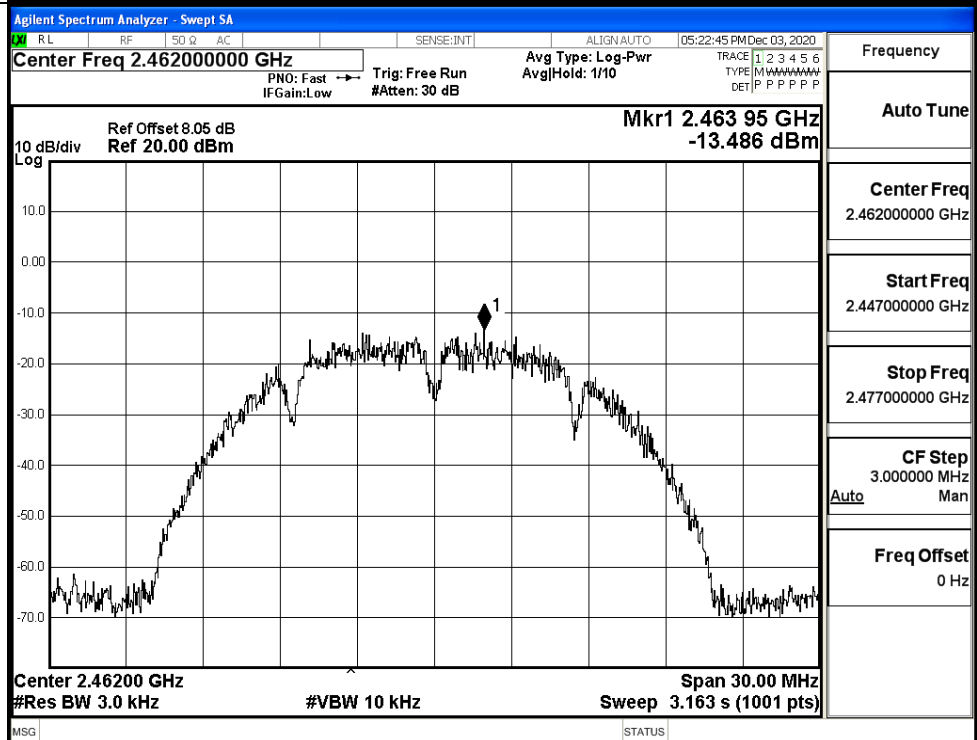
11B/LCH



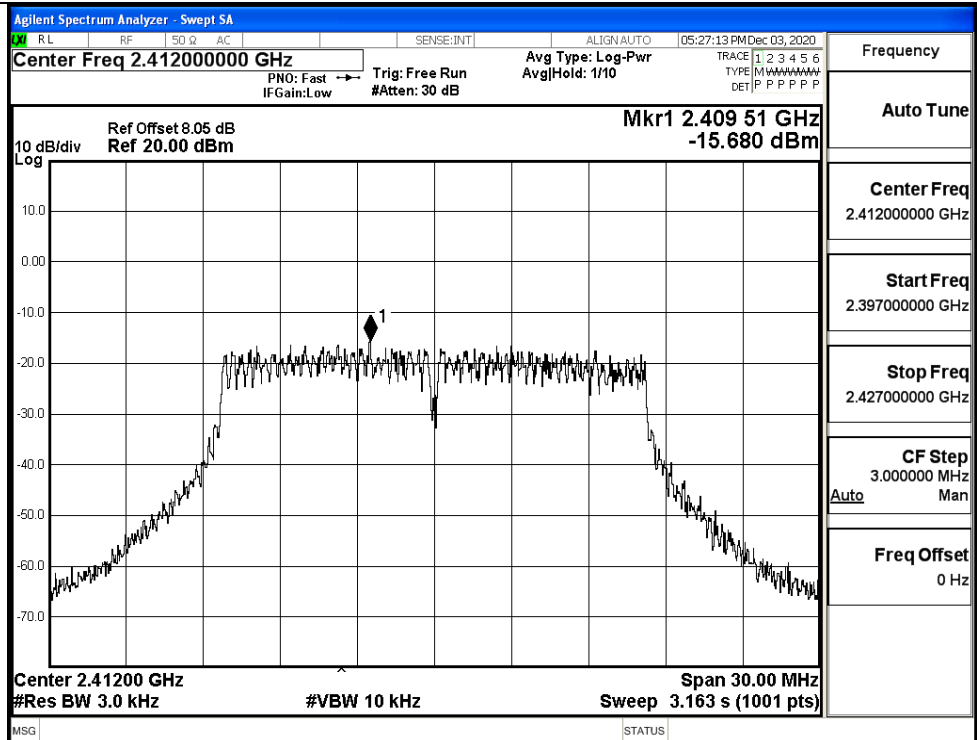
11B/MCH



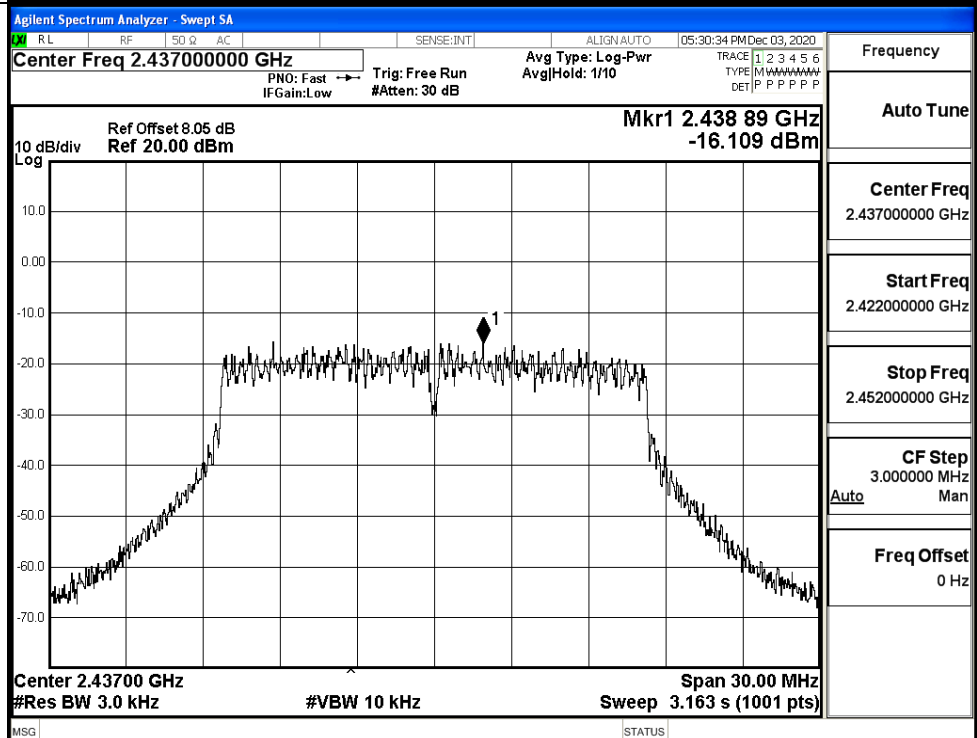
11B/HCH



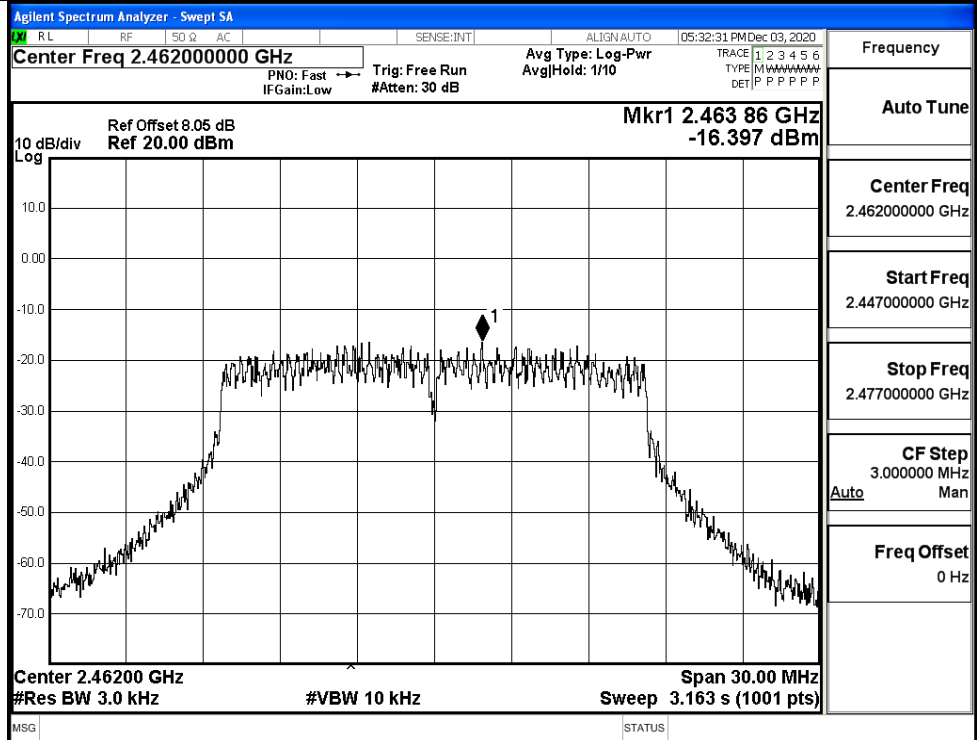
11G/LCH



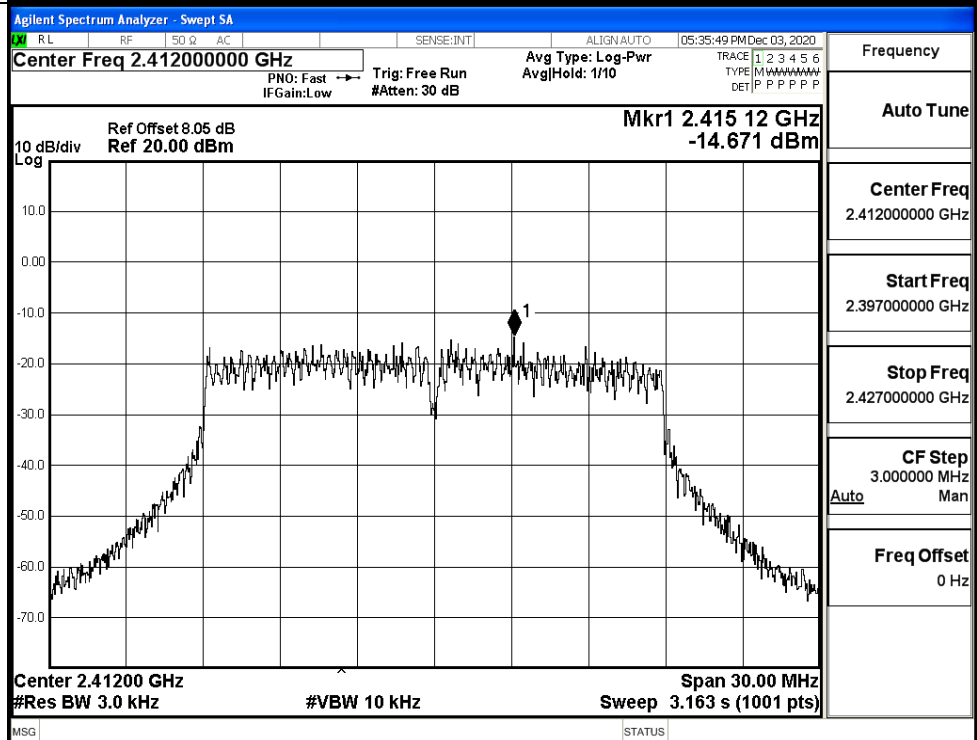
11G/MCH



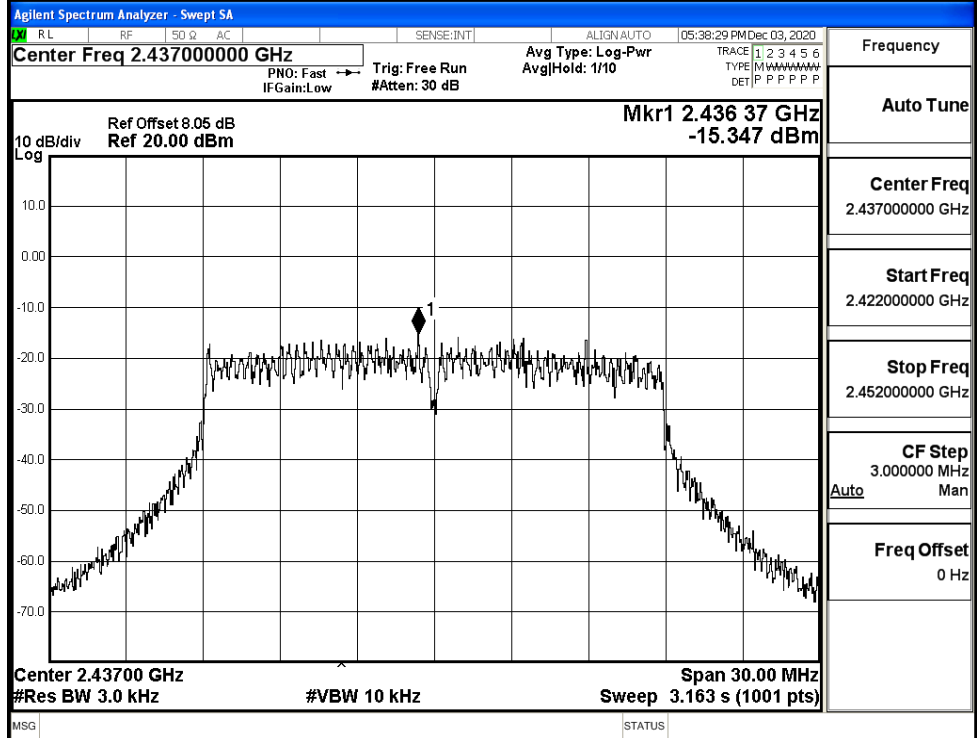
11G/HCH



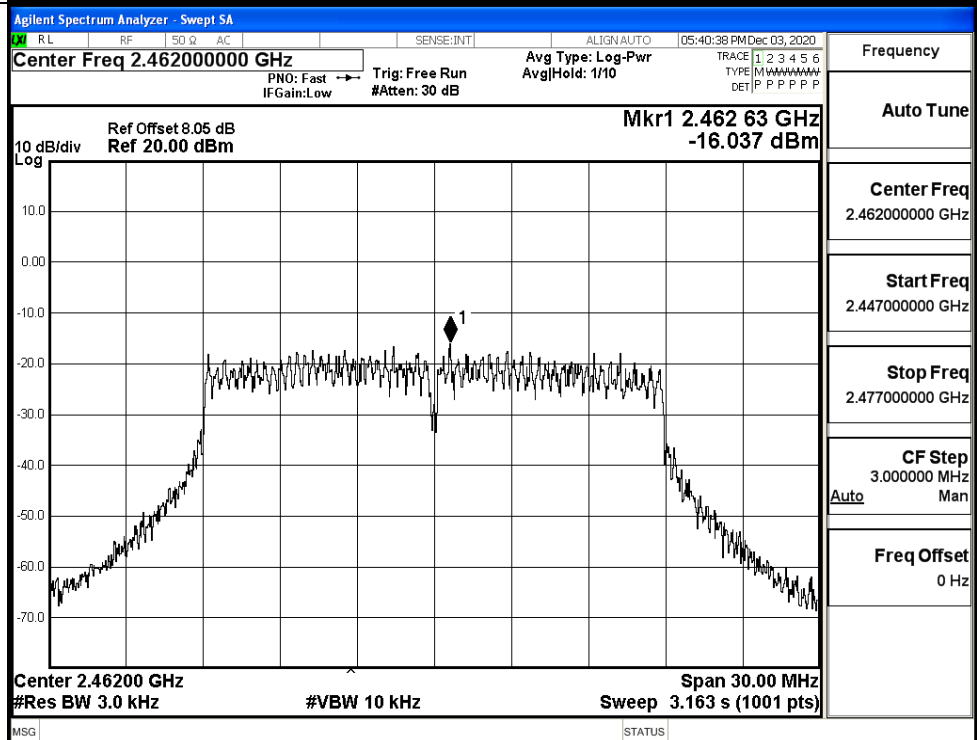
11N20SISO/LCH



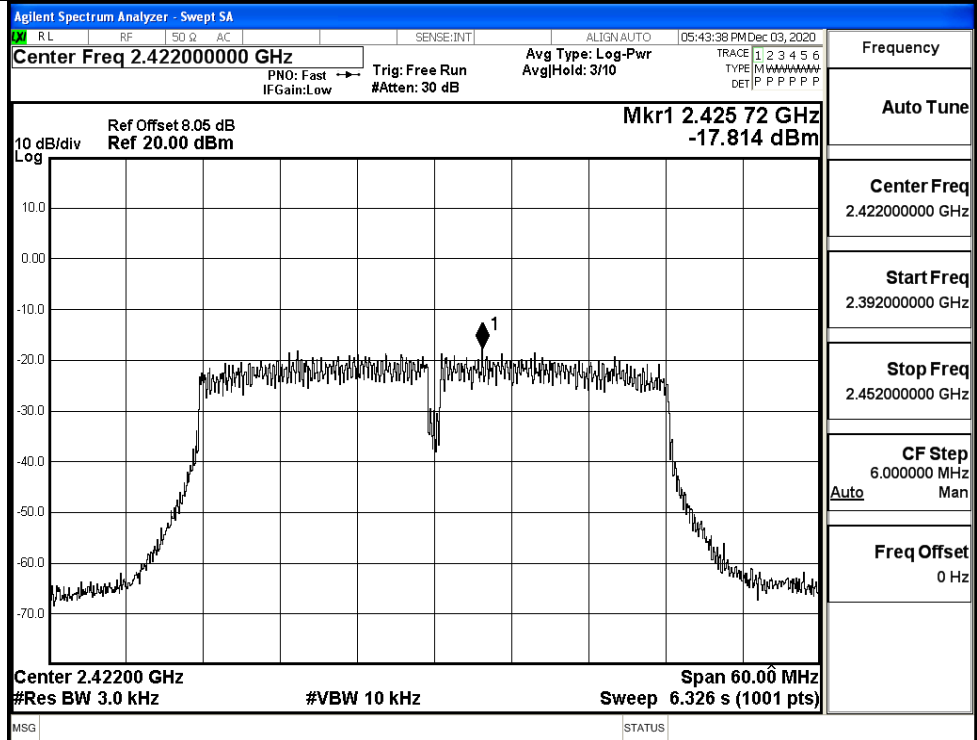
11N20SISO/MCH



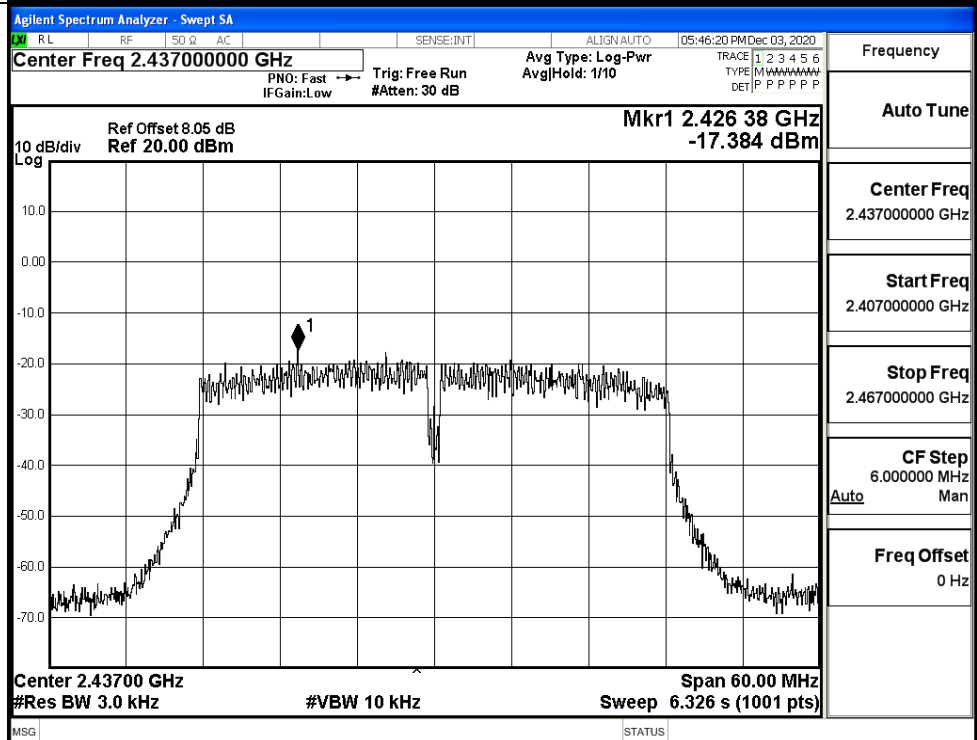
11N20SISO/HCH

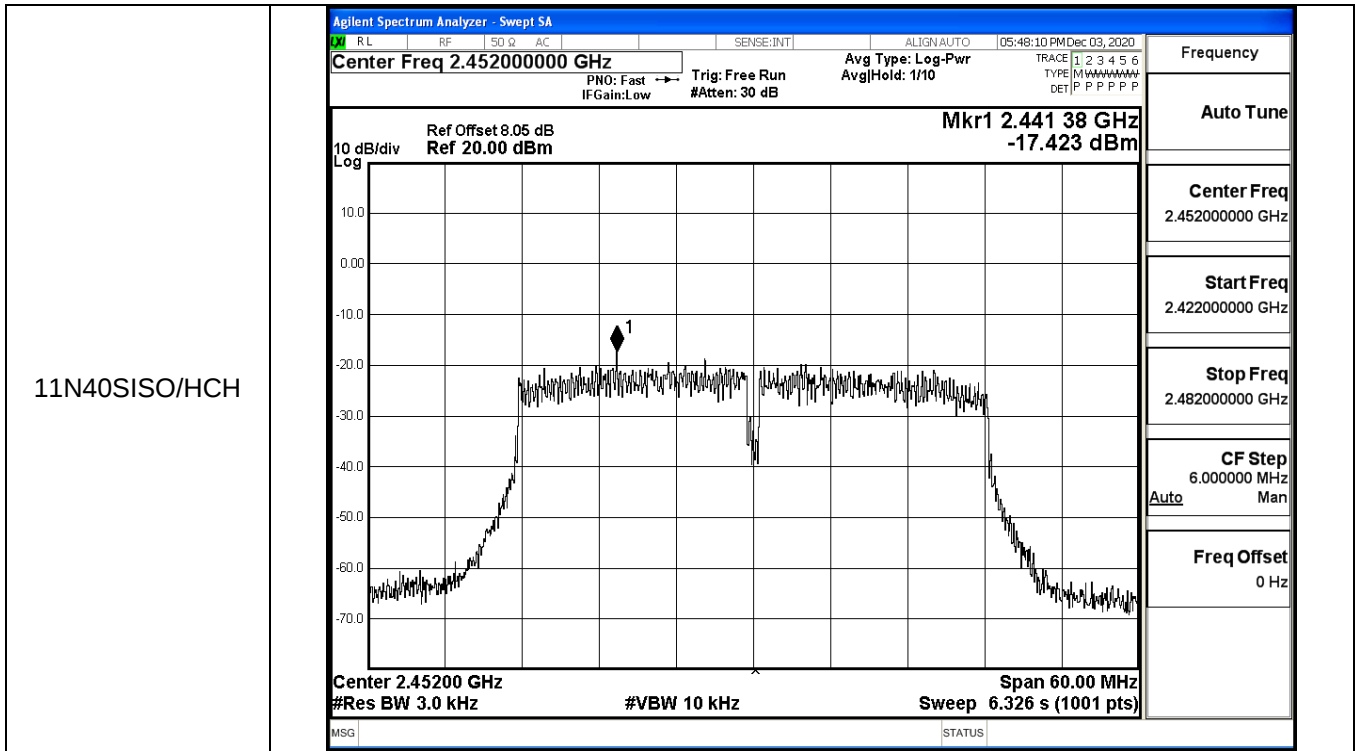


11N40SISO/LCH



11N40SISO/MCH





MIMO

Mode	Channel	ANT 0 [dBm/3KHz]	ANT 1 [dBm/3KHz]	MIMO [dBm/3KHz]	10log(N-3) dB	Meas.Level [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
11N20	LCH	-14.077	-14.671	-11.35	3.01	-8.34	7.99	PASS
	MCH	-13.690	-15.347	-11.43	3.01	-8.42	7.99	PASS
	HCH	-15.452	-16.037	-12.72	3.01	-9.71	7.99	PASS
11N40	LCH	-16.060	-17.814	-13.84	3.01	-10.83	7.99	PASS
	MCH	-17.051	-17.384	-14.20	3.01	-11.19	7.99	PASS
	HCH	-15.666	-17.423	-13.45	3.01	-10.44	7.99	PASS

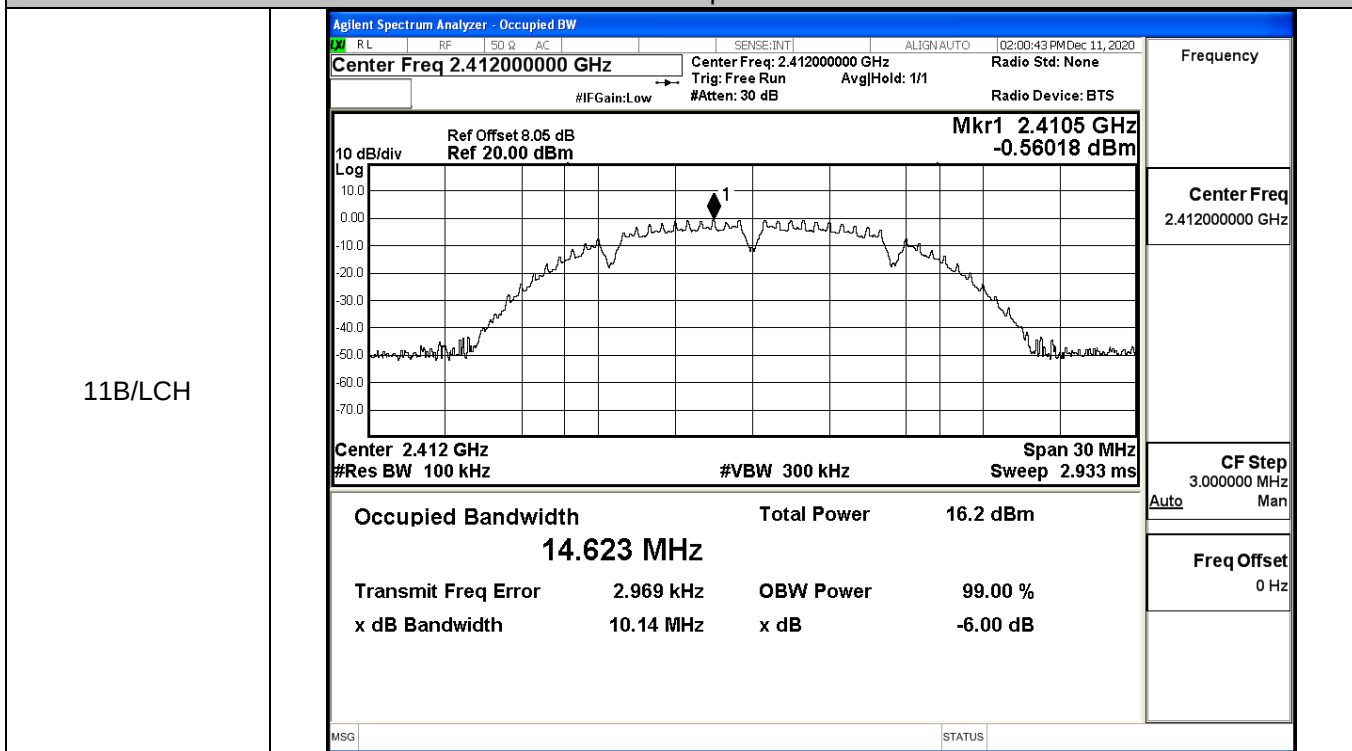
Directional gain = $3\text{dBi} + 10 \log(2) = 6.01\text{dBi} > 6\text{dBi}$, So the power density limit shall be reduced to $8 - (6.01 - 6) = 7.99$

C.4 6dB Bandwidth

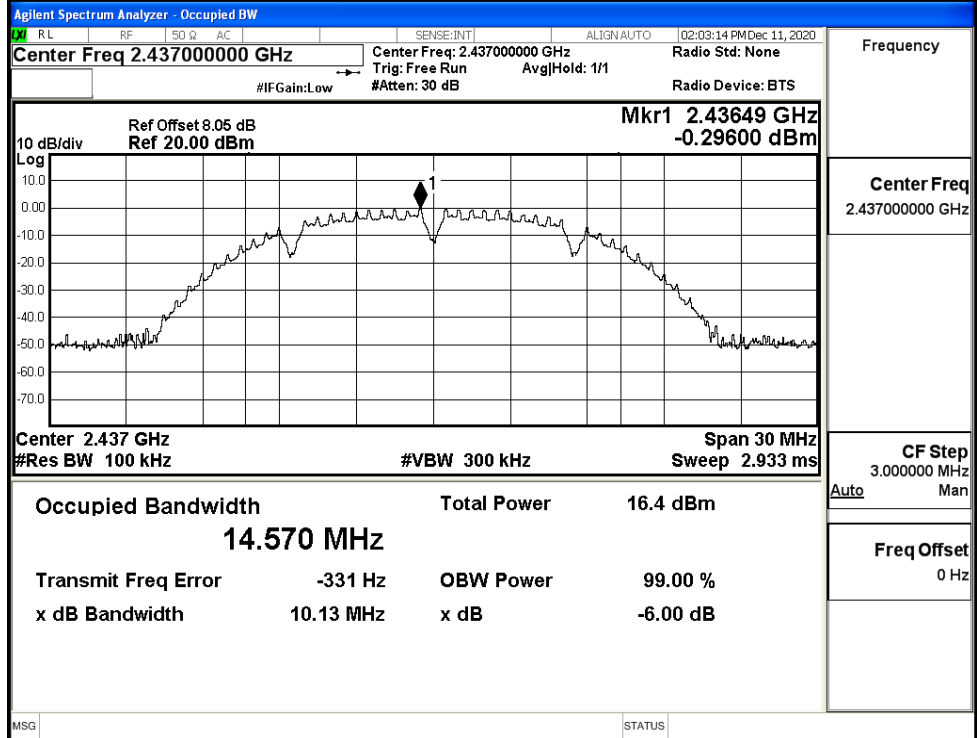
ANTO

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	10.14	≥ 0.5	PASS
	MCH	10.13	≥ 0.5	PASS
	HCH	10.12	≥ 0.5	PASS
11G	LCH	15.51	≥ 0.5	PASS
	MCH	16.03	≥ 0.5	PASS
	HCH	16.02	≥ 0.5	PASS
11N20SISO	LCH	16.81	≥ 0.5	PASS
	MCH	16.67	≥ 0.5	PASS
	HCH	16.94	≥ 0.5	PASS
11N40SISO	LCH	35.18	≥ 0.5	PASS
	MCH	35.20	≥ 0.5	PASS
	HCH	35.47	≥ 0.5	PASS

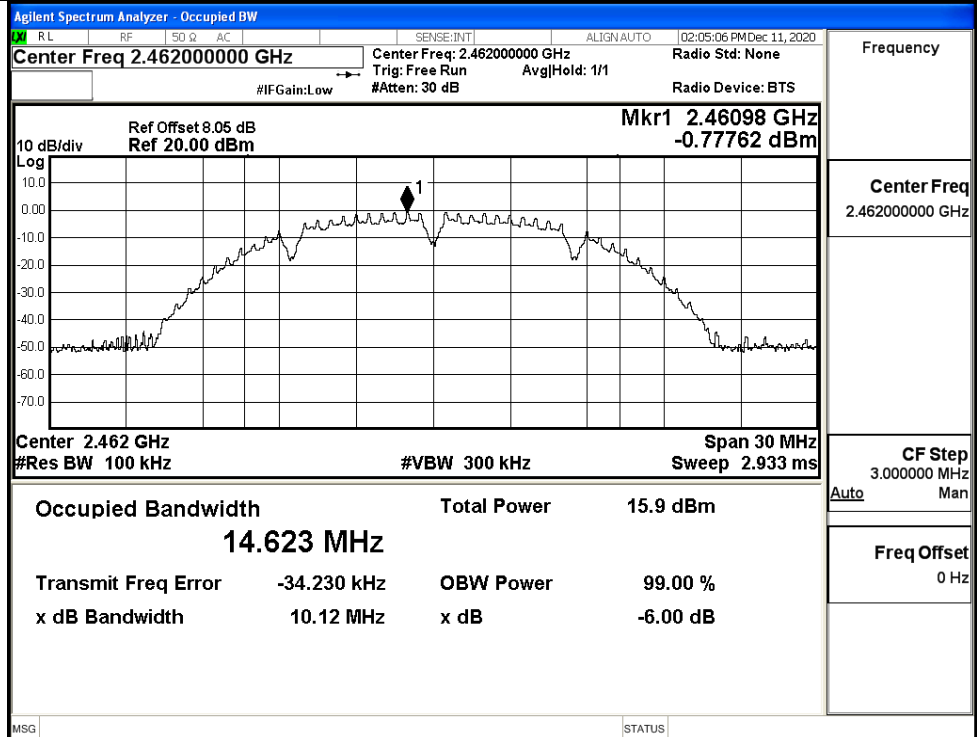
Test Graphs



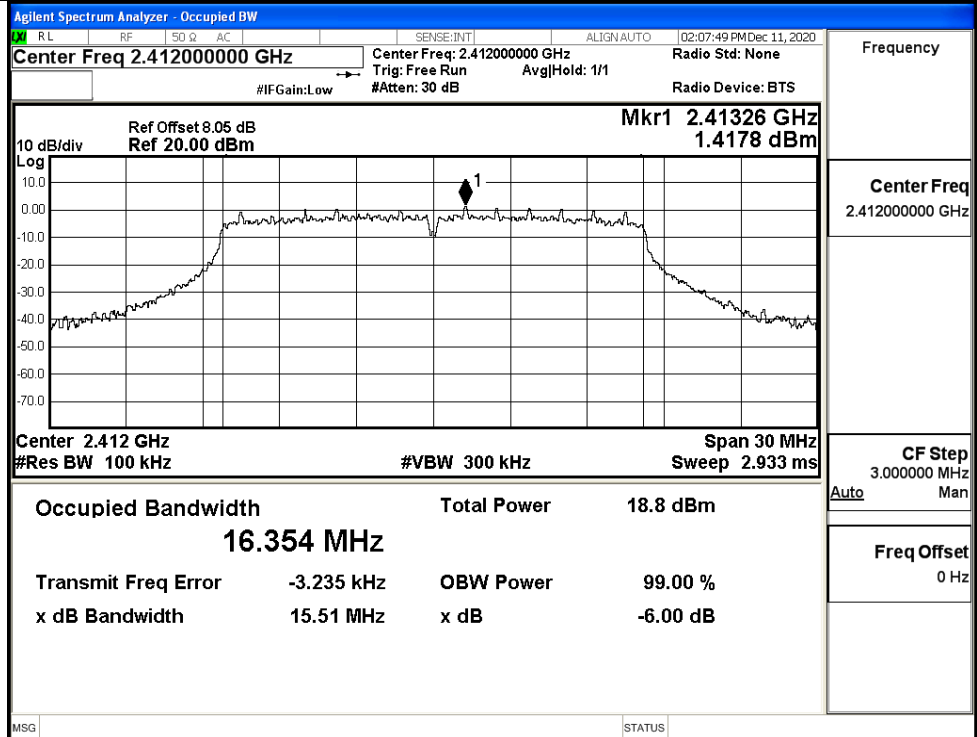
11B/MCH



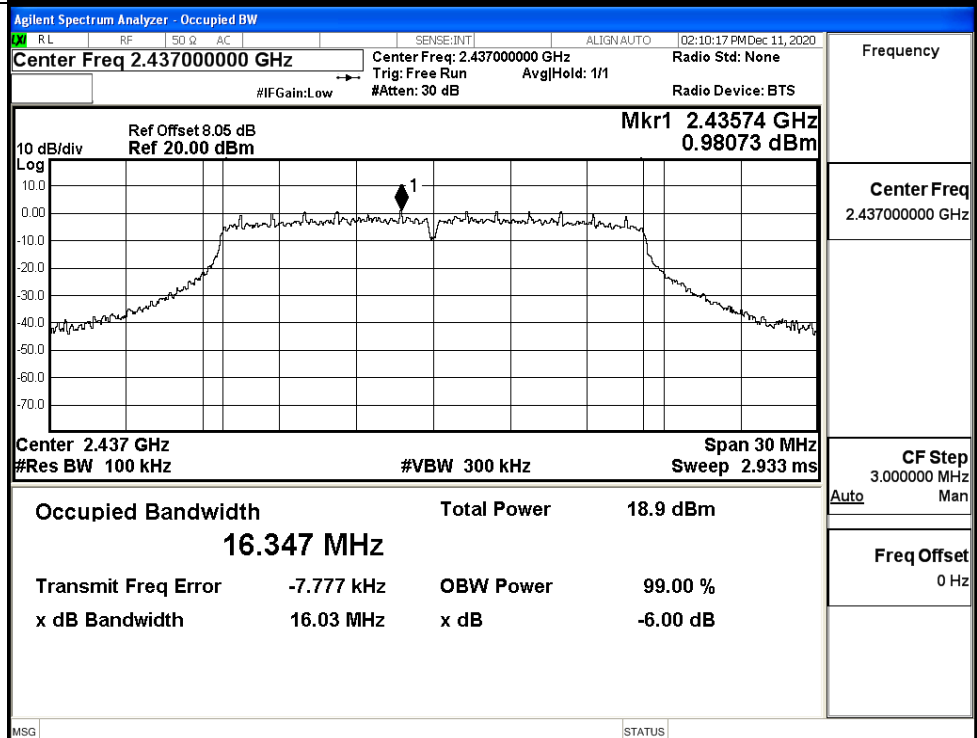
11B/HCH



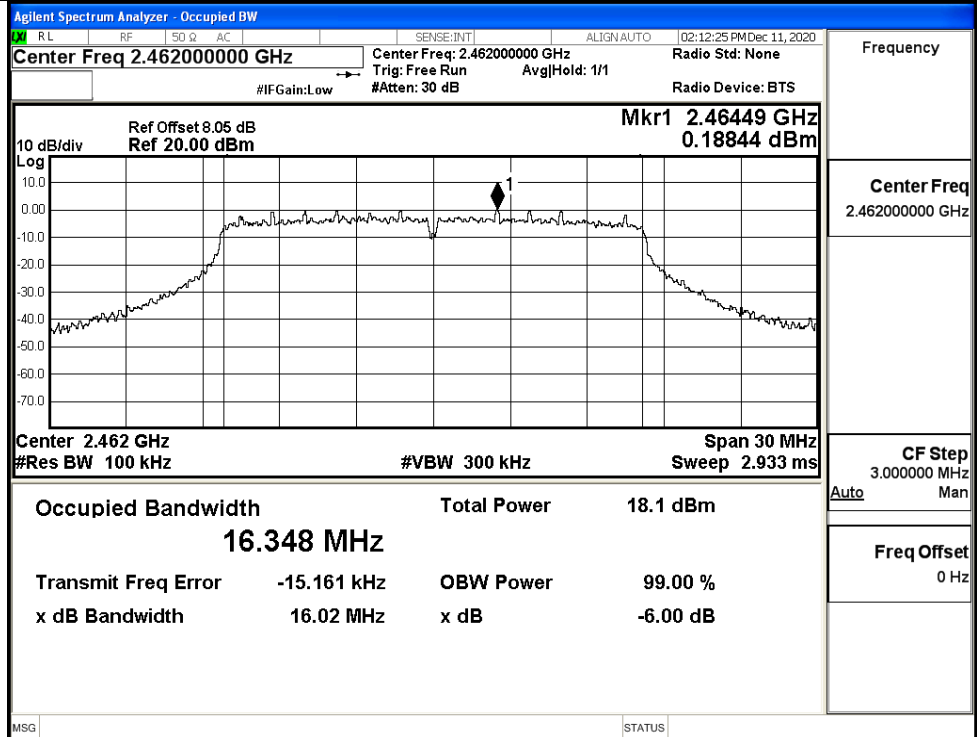
11G/LCH



11G/MCH



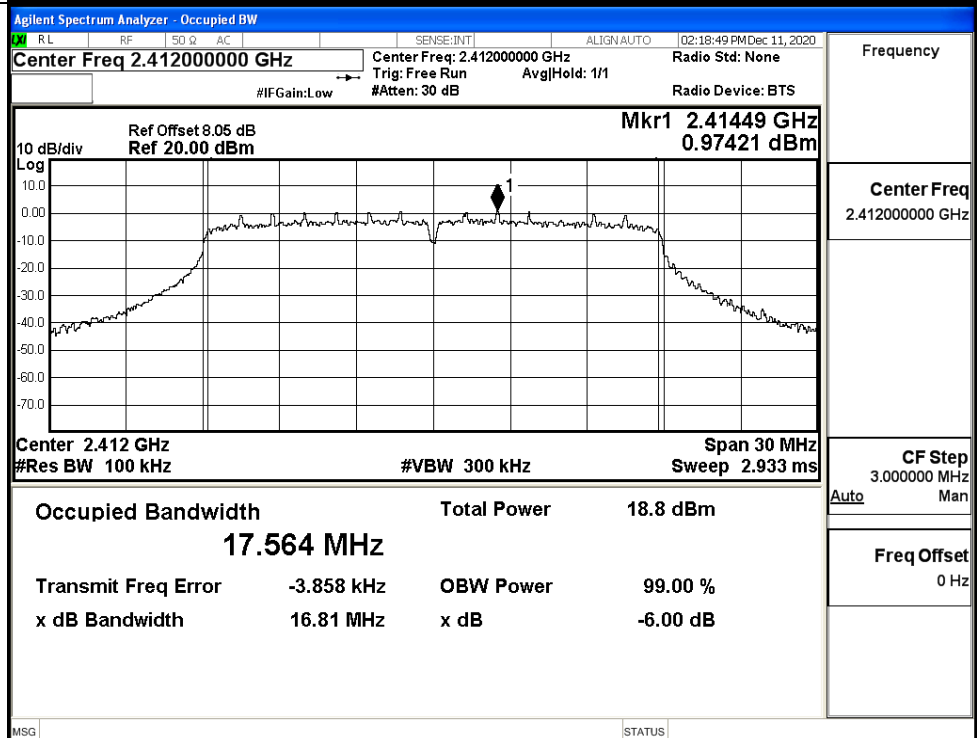
11G/HCH



Frequency

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

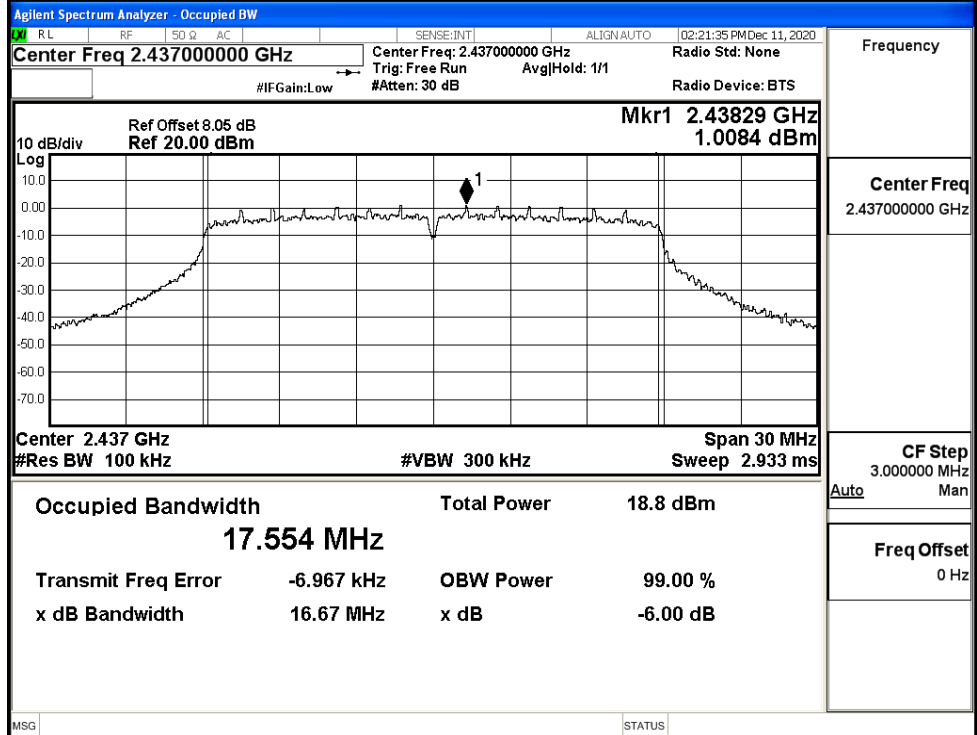
11N20SISO/LCH



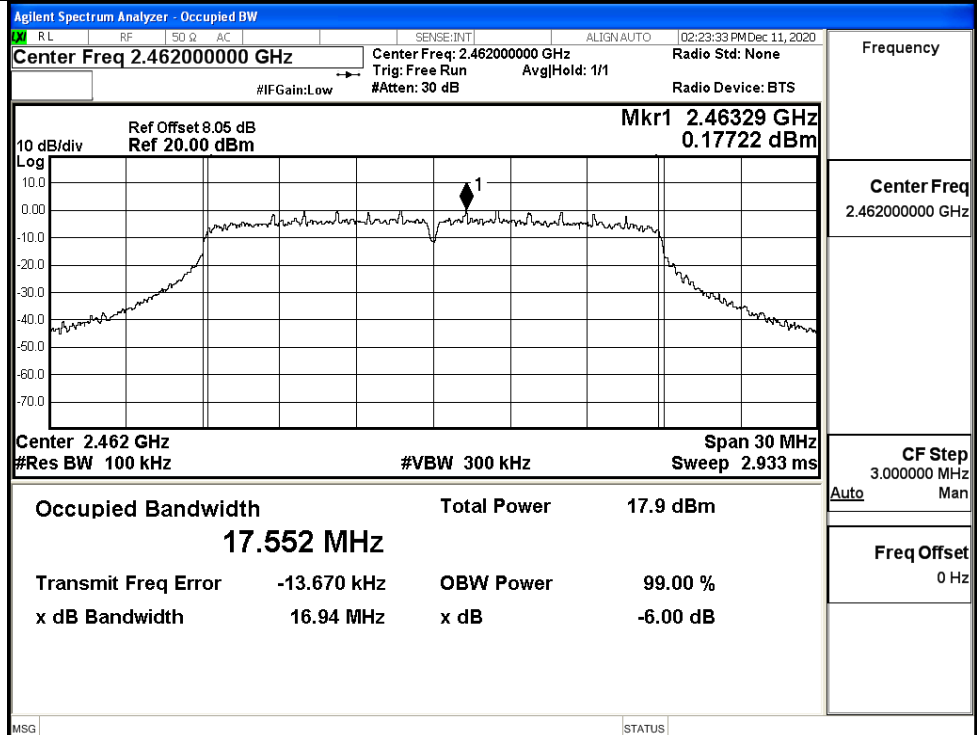
Frequency

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

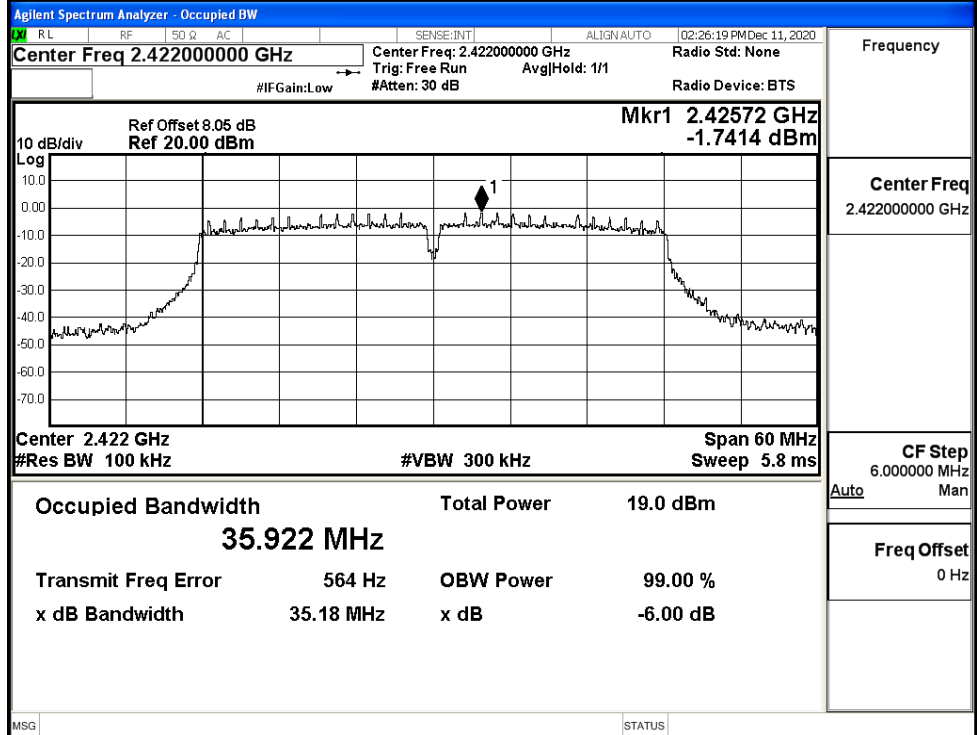
11N20SISO/MCH



11N20SISO/HCH



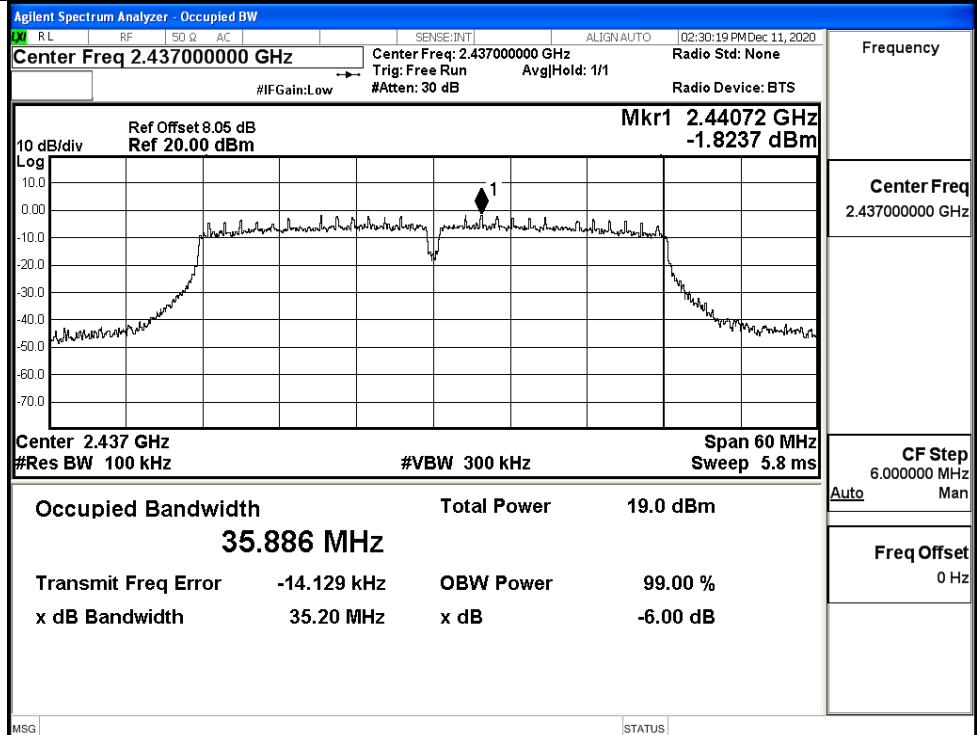
11N40SISO/LCH



Frequency

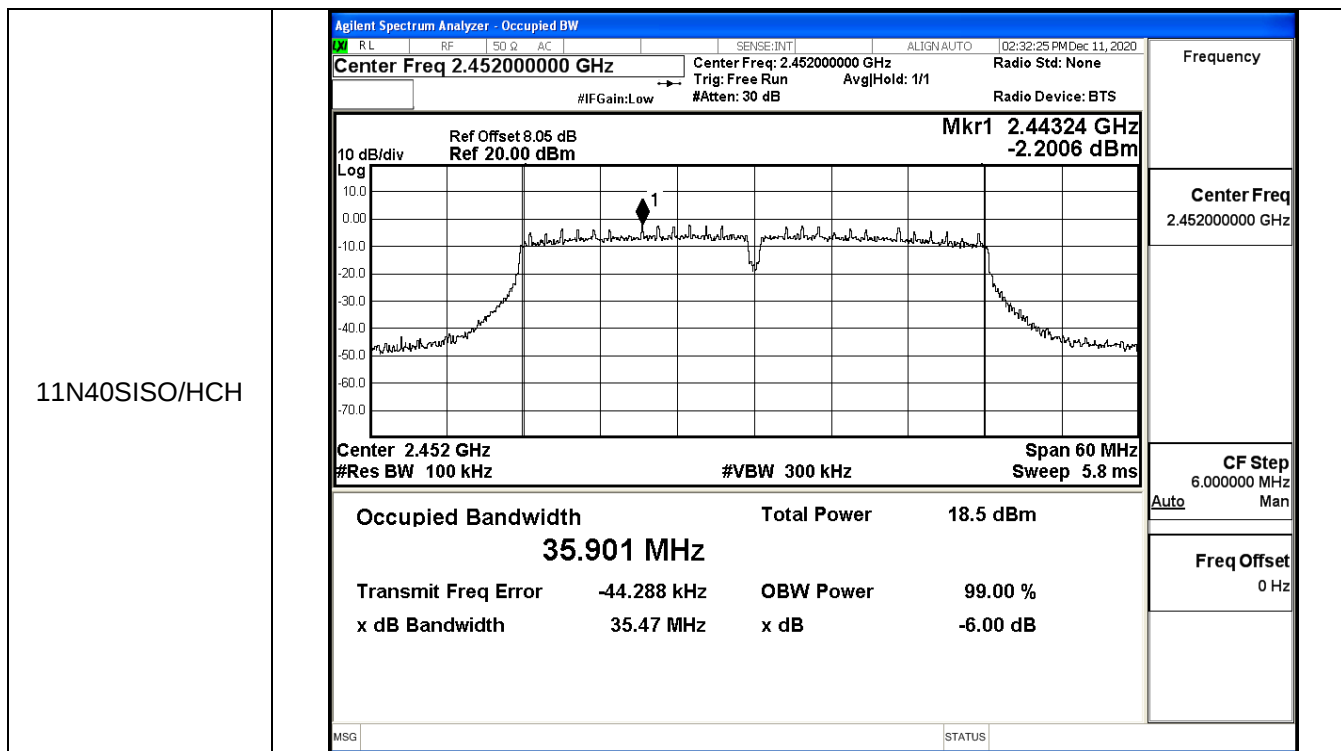
Center Freq
2.422000000 GHzCF Step
6.000000 MHz
Auto ManFreq Offset
0 Hz

11N40SISO/MCH



Frequency

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

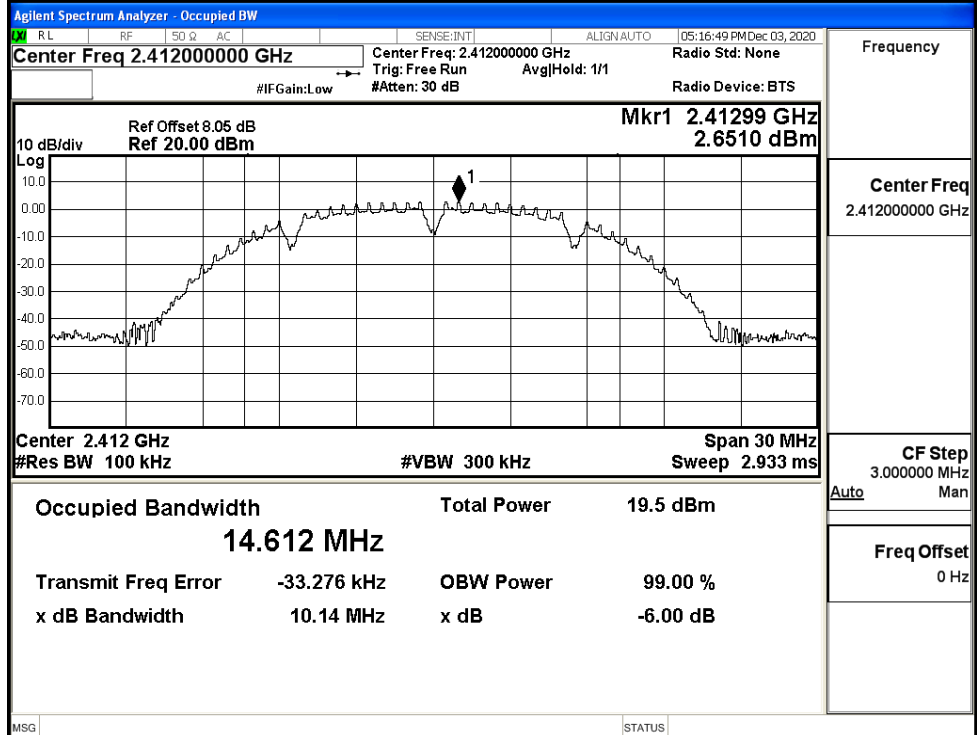


ANT1

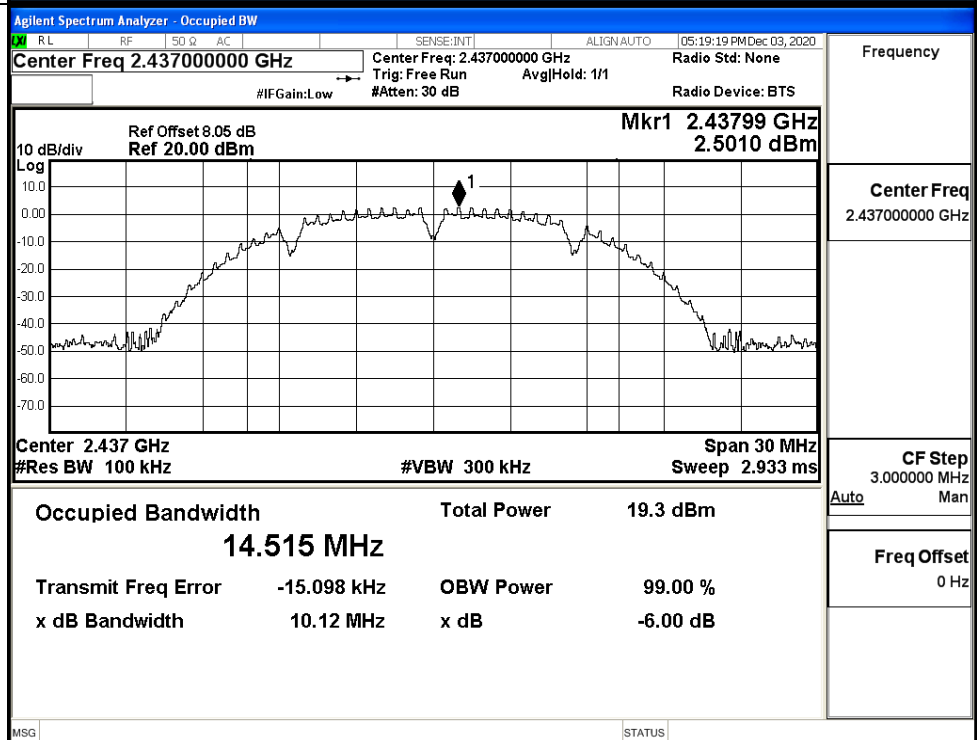
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	10.14	≥ 0.5	PASS
	MCH	10.12	≥ 0.5	PASS
	HCH	10.11	≥ 0.5	PASS
11G	LCH	15.67	≥ 0.5	PASS
	MCH	15.64	≥ 0.5	PASS
	HCH	16.03	≥ 0.5	PASS
11N20SISO	LCH	16.31	≥ 0.5	PASS
	MCH	16.78	≥ 0.5	PASS
	HCH	16.05	≥ 0.5	PASS
11N40SISO	LCH	35.23	≥ 0.5	PASS
	MCH	35.20	≥ 0.5	PASS
	HCH	35.49	≥ 0.5	PASS

Test Graphs

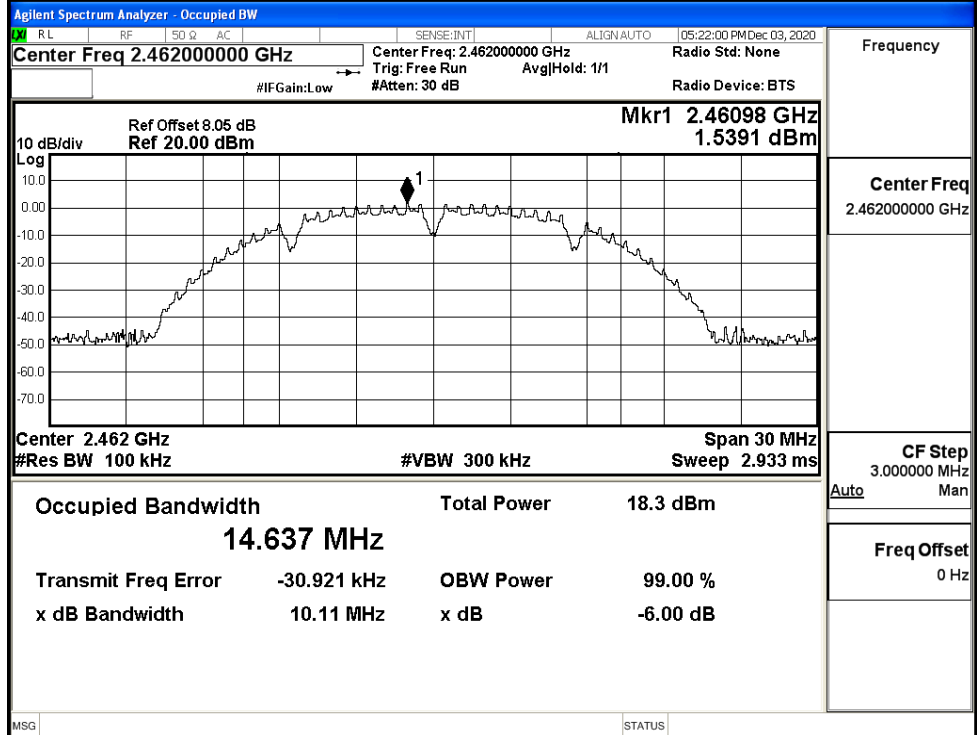
11B/LCH



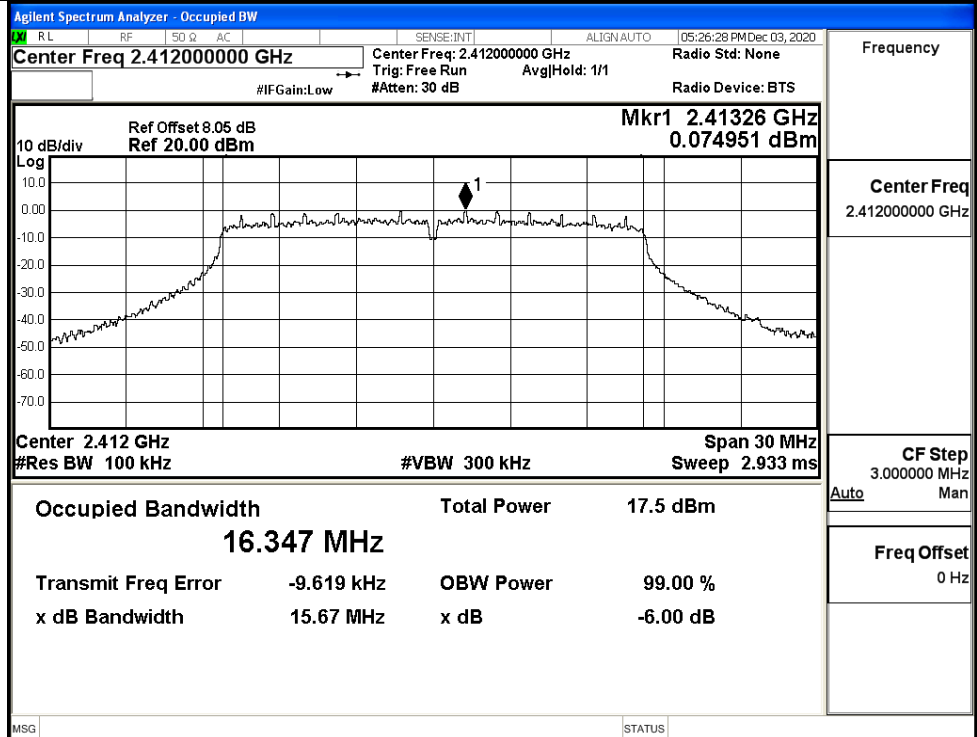
11B/MCH



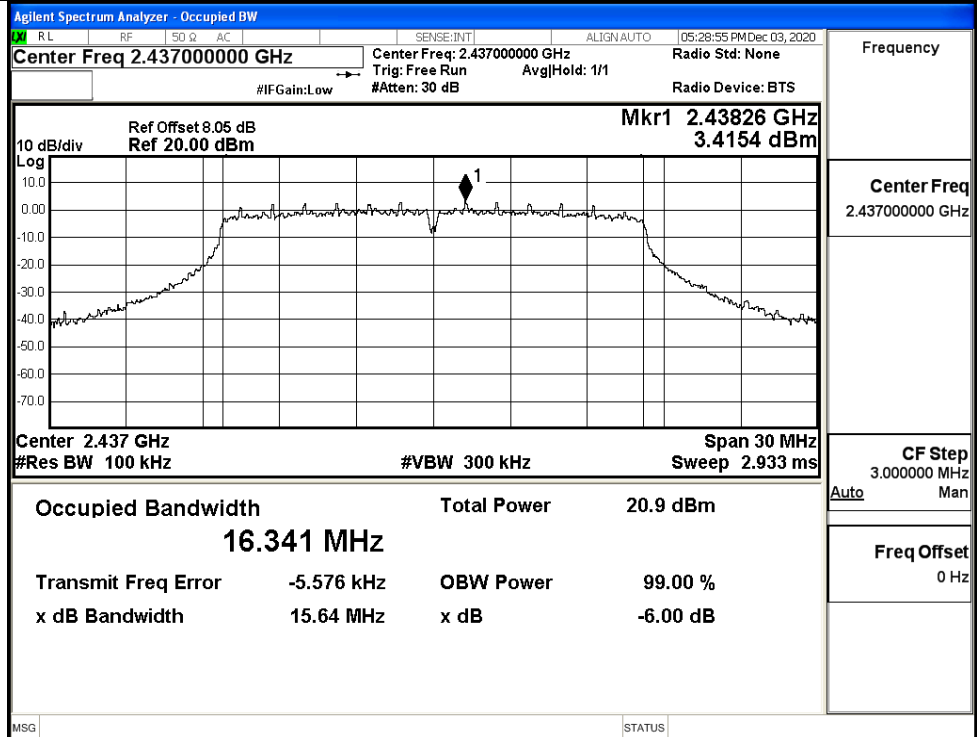
11B/HCH



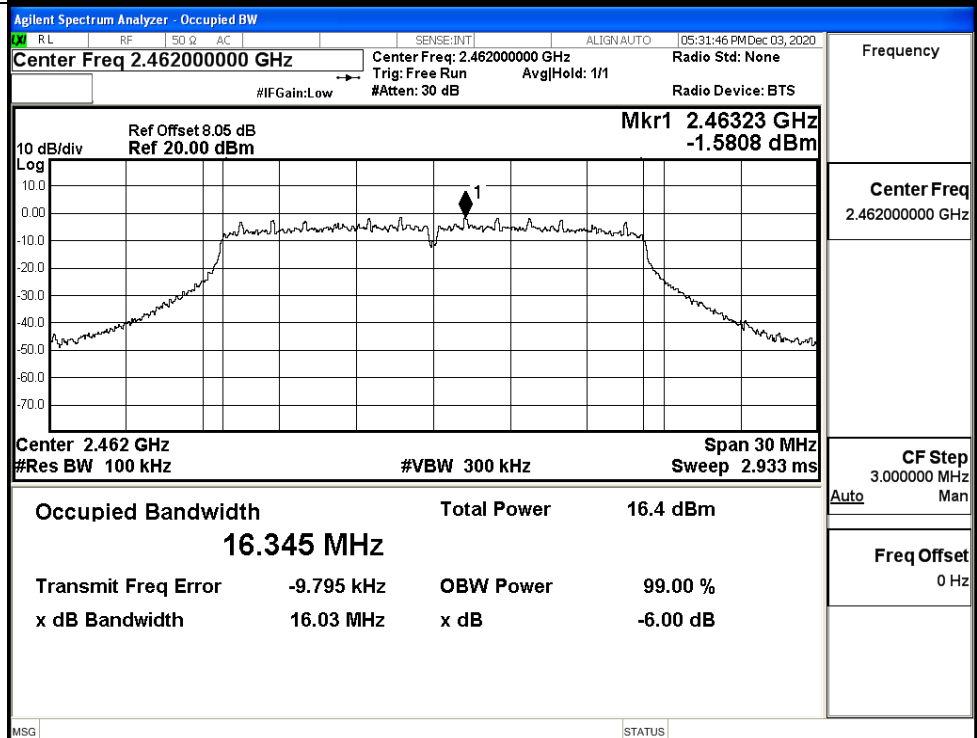
11G/LCH



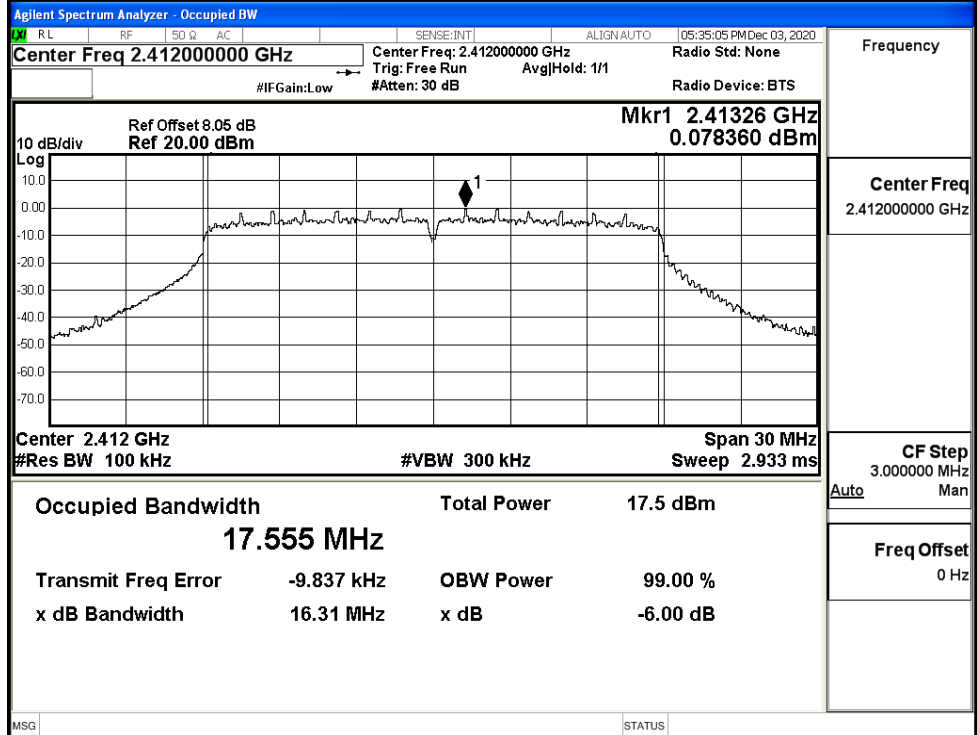
11G/MCH



11G/HCH



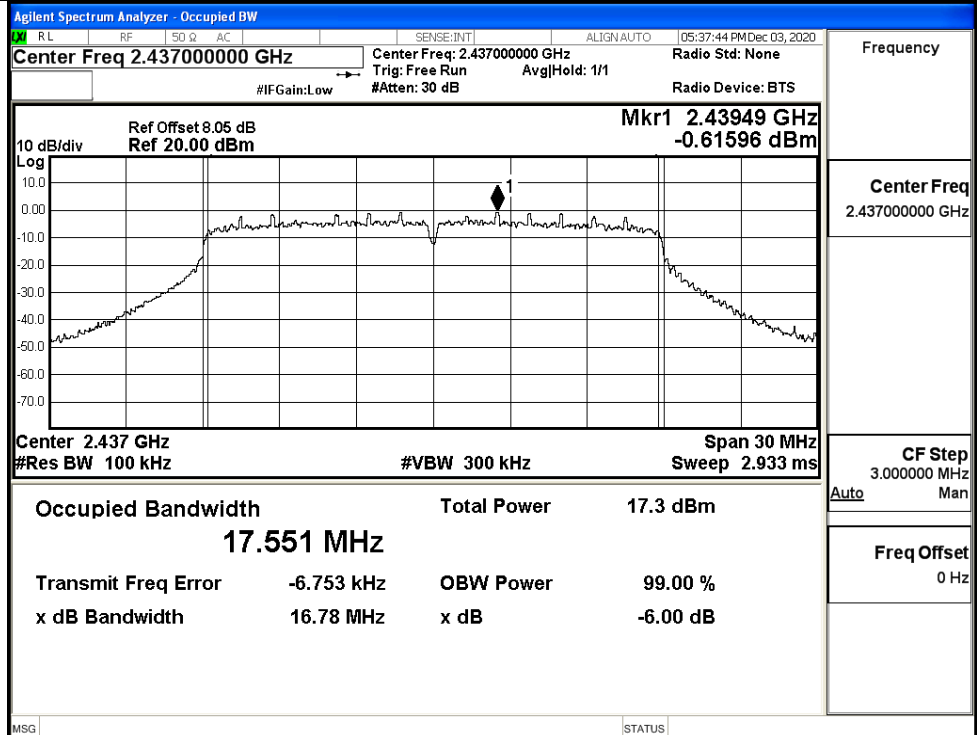
11N20SISO/LCH



Frequency

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

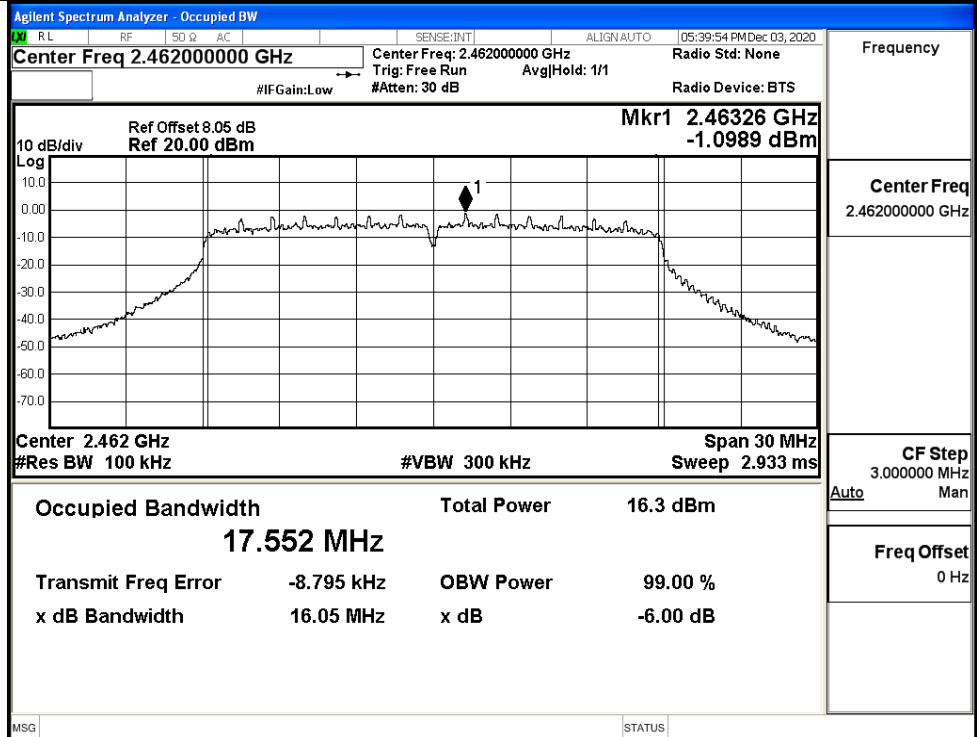
11N20SISO/MCH



Frequency

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

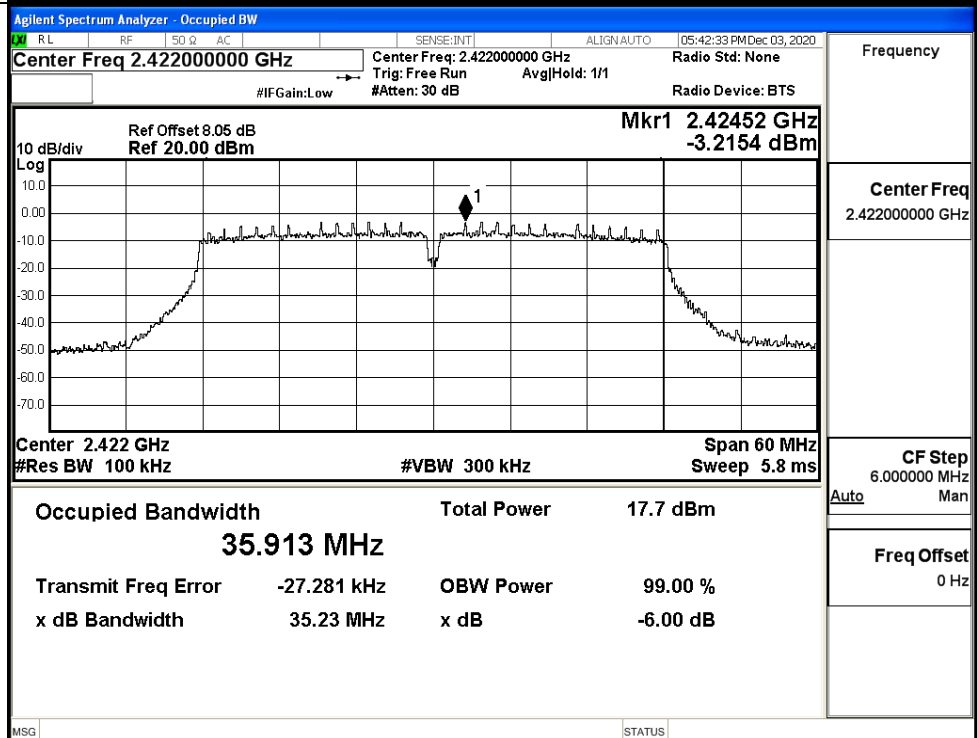
11N20SISO/HCH



Frequency

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

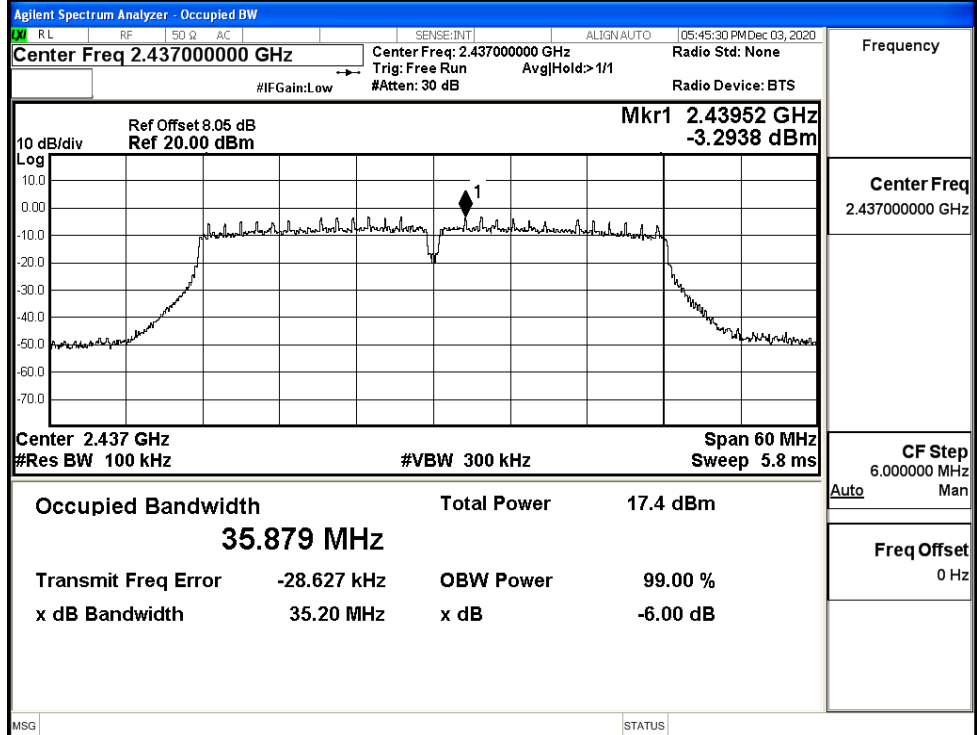
11N40SISO/LCH



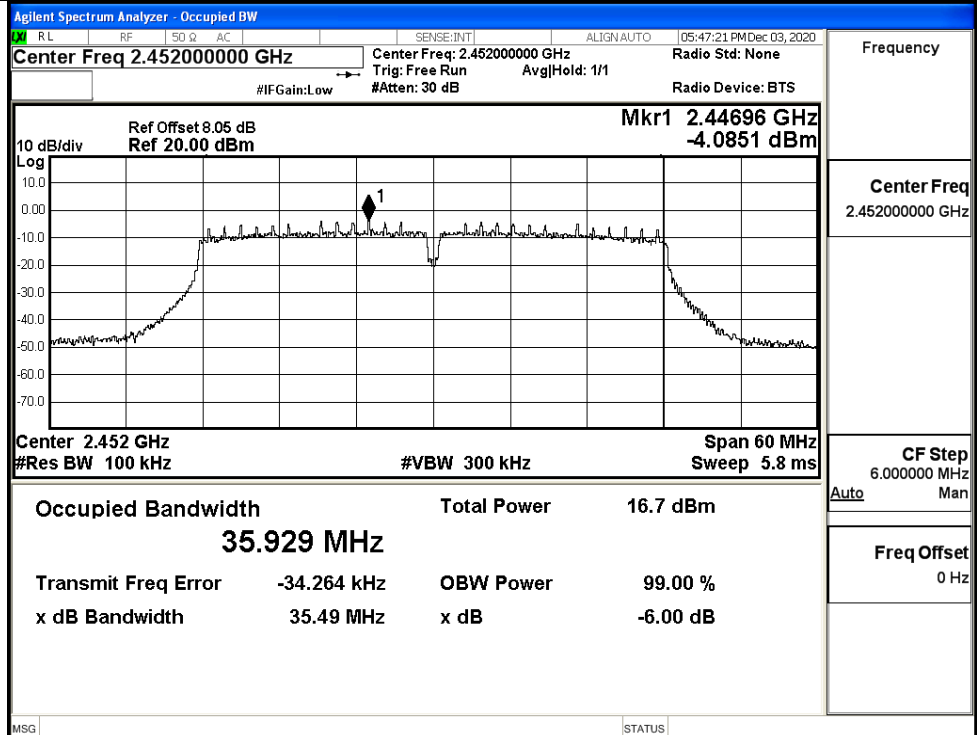
Frequency

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

11N40SISO/MCH



11N40SISO/HCH

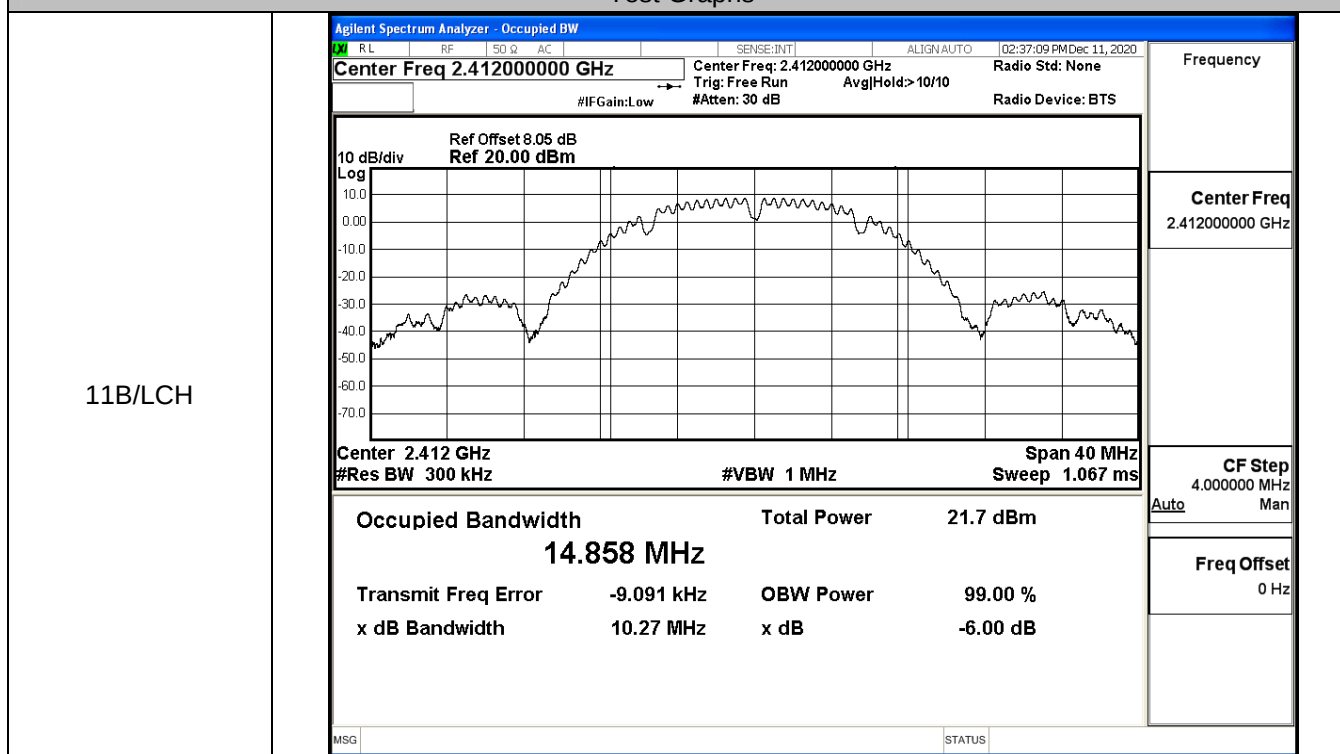


C.5 Occupied Bandwidth

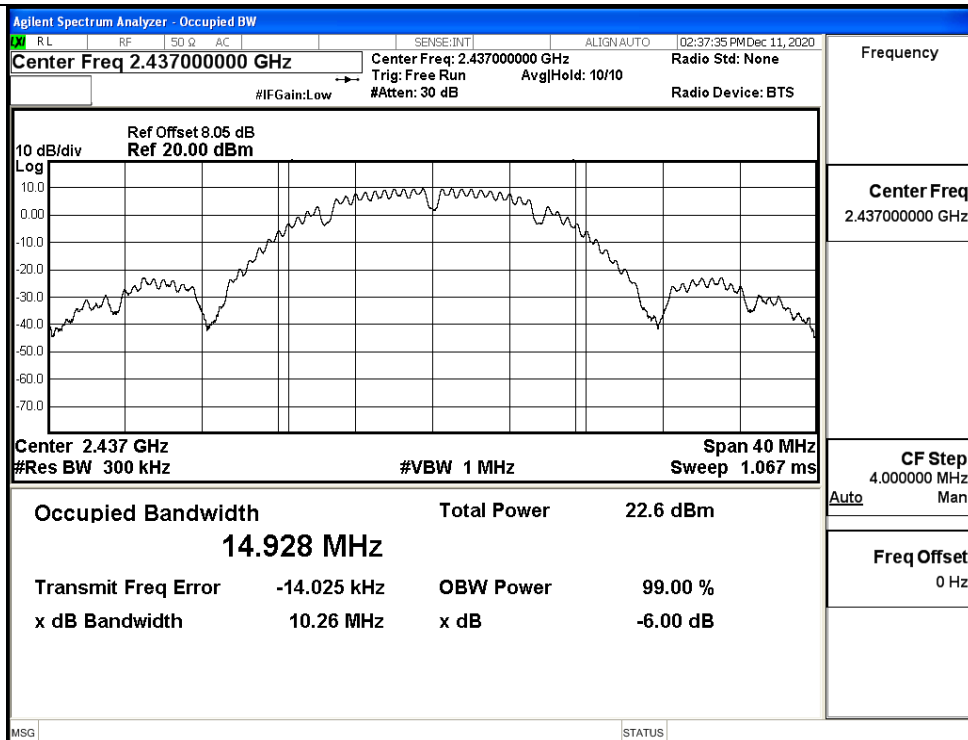
ANT0

Mode	Channel	Occupied Bandwidth [MHz]	Verdict
11B	LCH	14.858	PASS
	MCH	14.928	PASS
	HCH	14.944	PASS
11G	LCH	16.548	PASS
	MCH	16.519	PASS
	HCH	16.549	PASS
11N20SISO	LCH	17.699	PASS
	MCH	17.675	PASS
	HCH	17.684	PASS
11N40SISO	LCH	36.098	PASS
	MCH	36.028	PASS
	HCH	36.094	PASS

Test Graphs



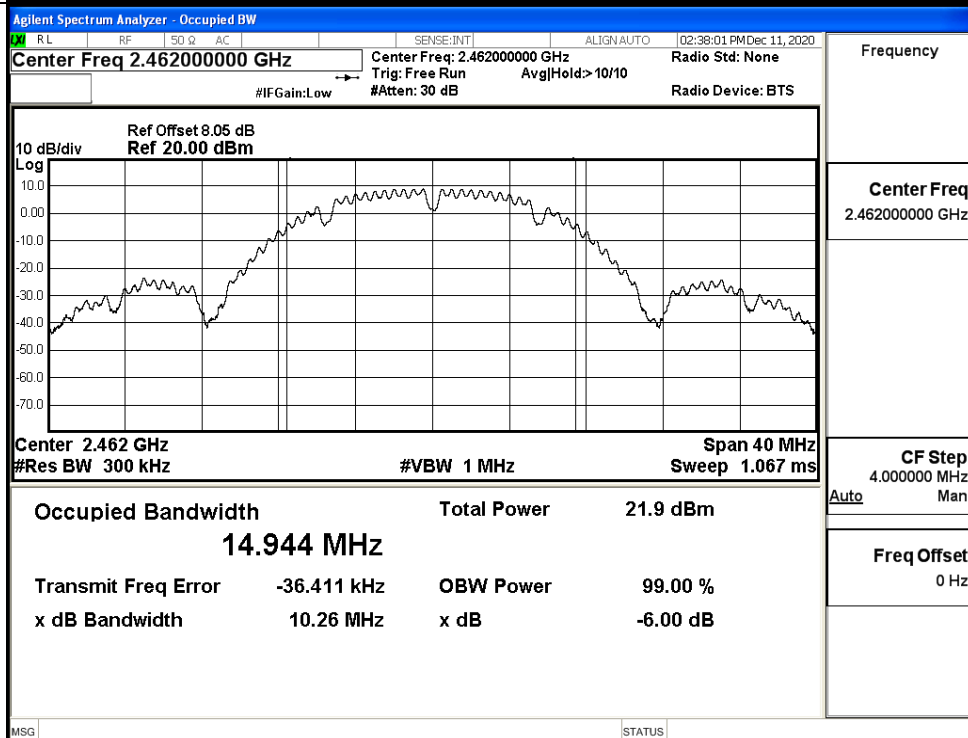
11B/MCH



Frequency

Center Freq
2.437000000 GHzCF Step
4.000000 MHz
Auto ManFreq Offset
0 Hz

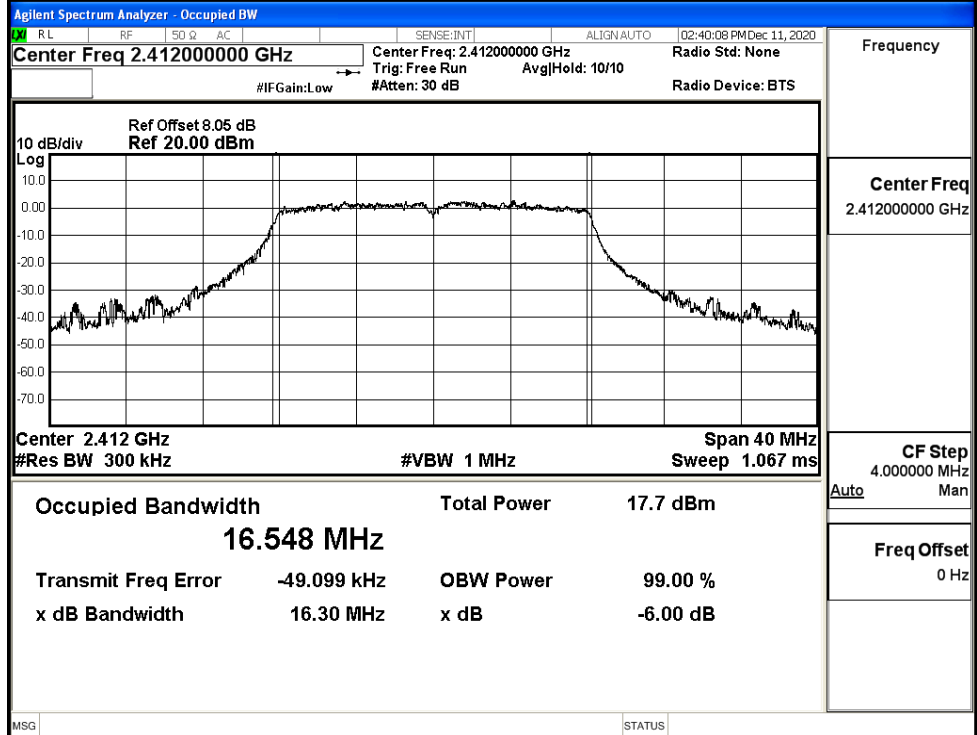
11B/HCH



Frequency

Center Freq
2.462000000 GHzCF Step
4.000000 MHz
Auto ManFreq Offset
0 Hz

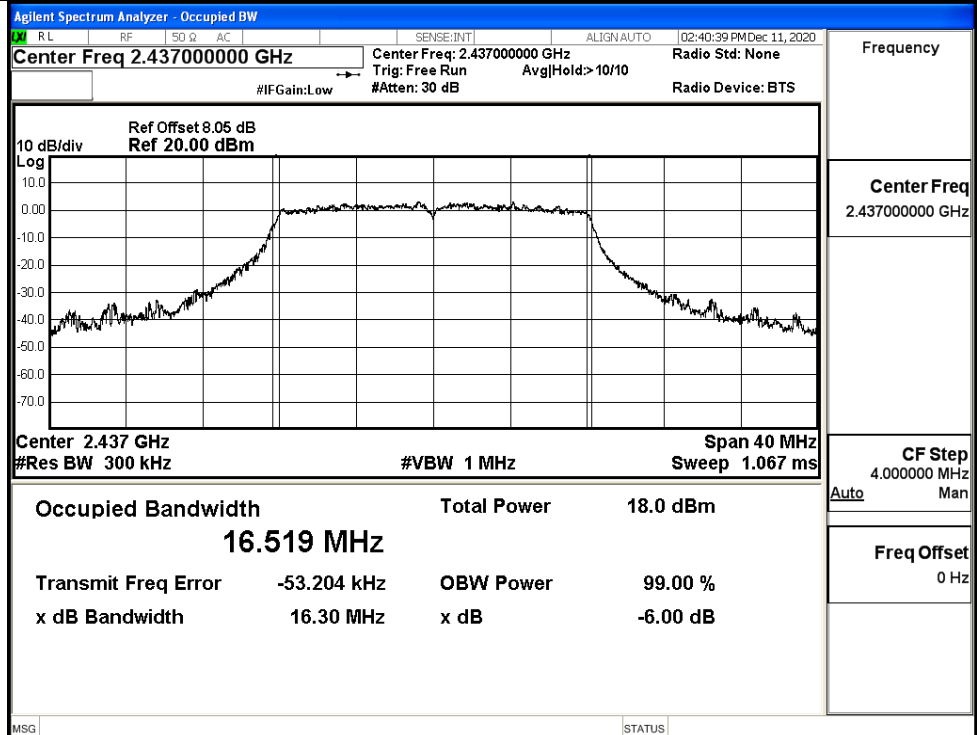
11G/LCH



Frequency

Center Freq
2.412000000 GHzCF Step
4.000000 MHz
Auto ManFreq Offset
0 Hz

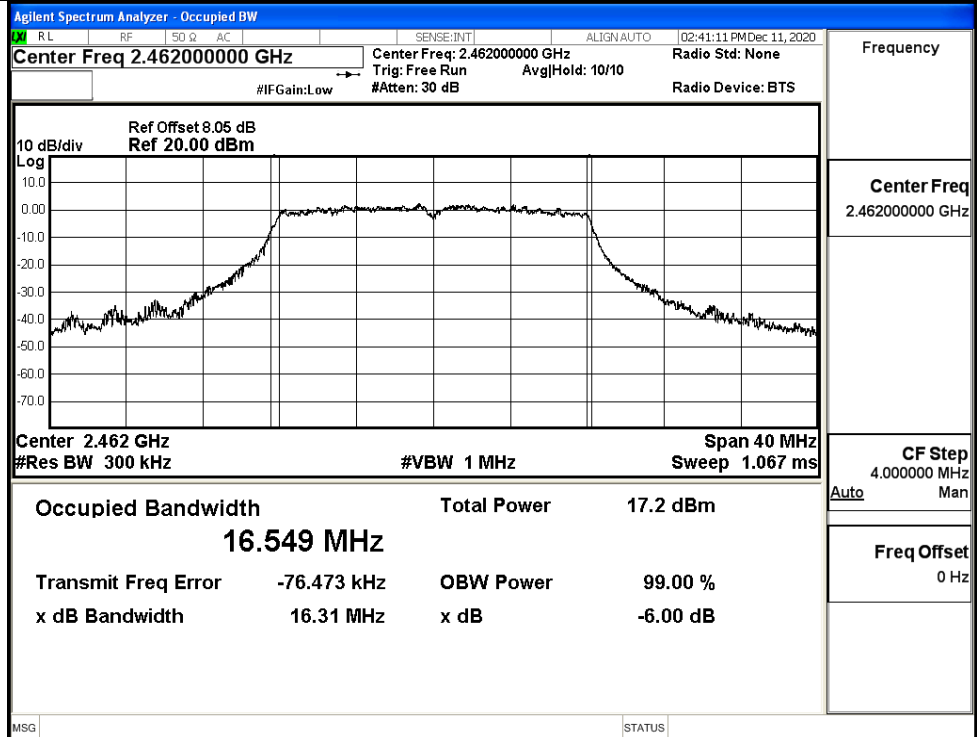
11G/MCH



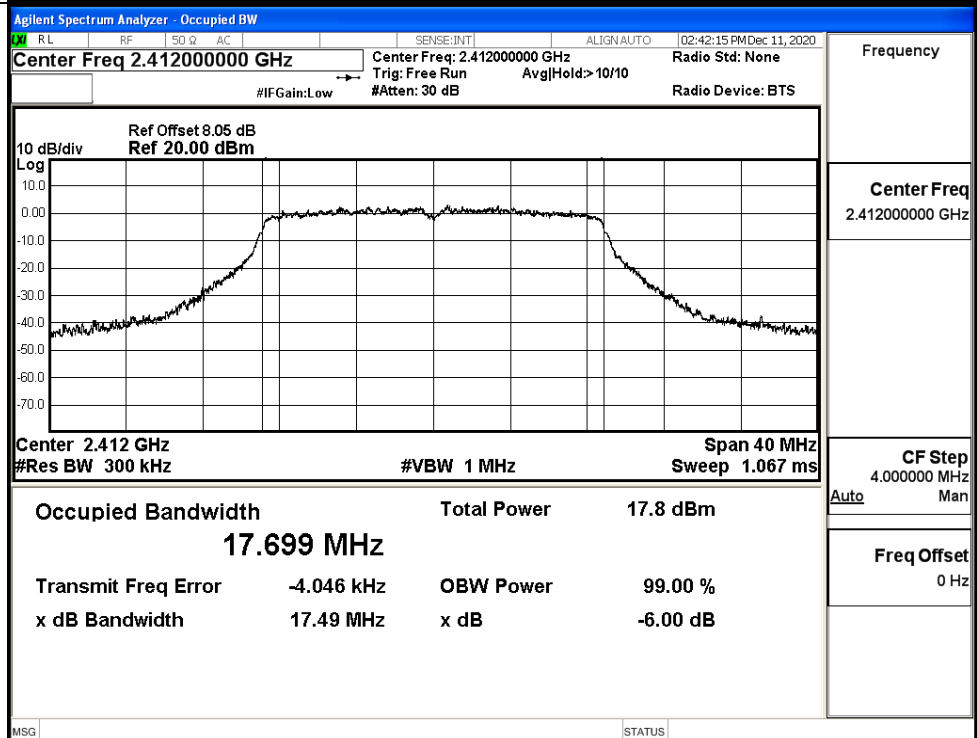
Frequency

Center Freq
2.437000000 GHzCF Step
4.000000 MHz
Auto ManFreq Offset
0 Hz

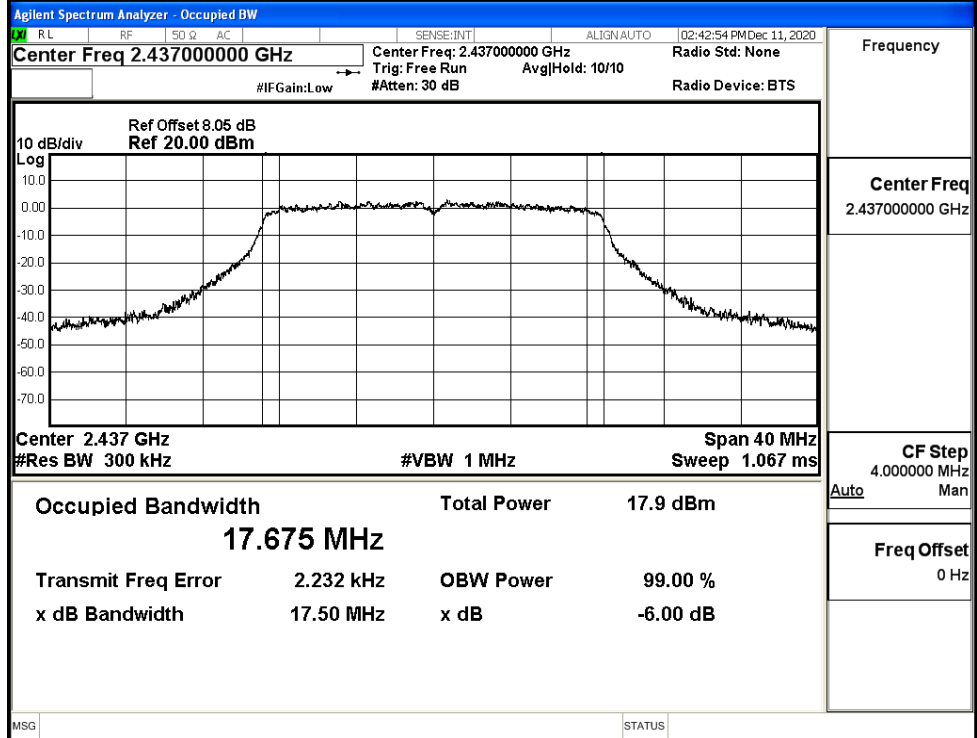
11G/HCH



11N20SISO/LCH



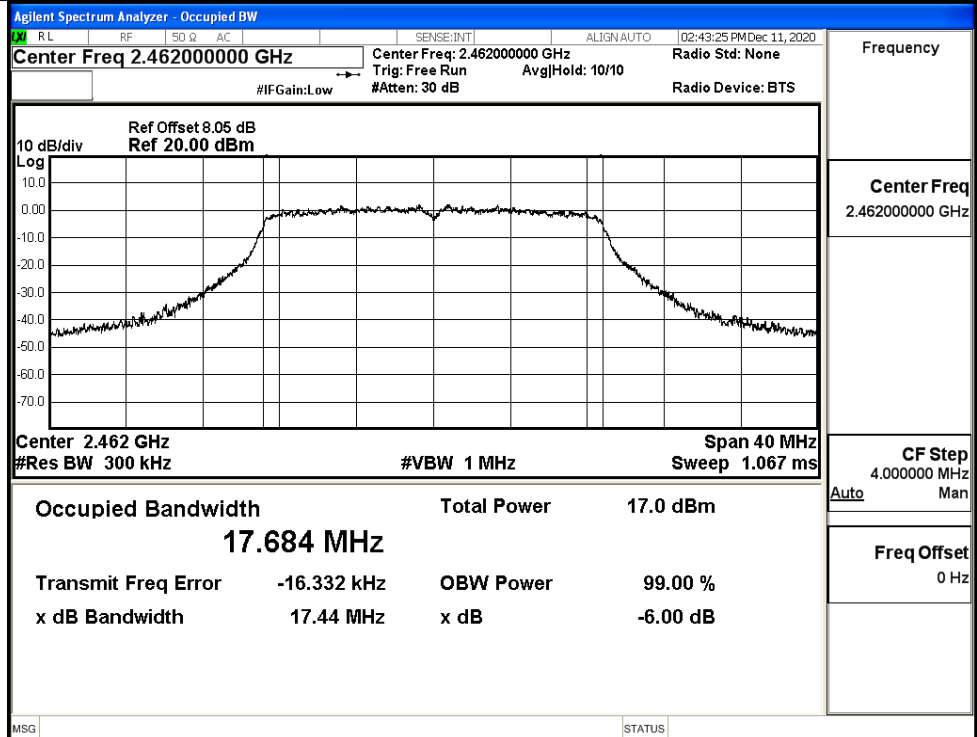
11N20SISO/MCH



Frequency

Center Freq
2.437000000 GHzCF Step
4.000000 MHz
Auto ManFreq Offset
0 Hz

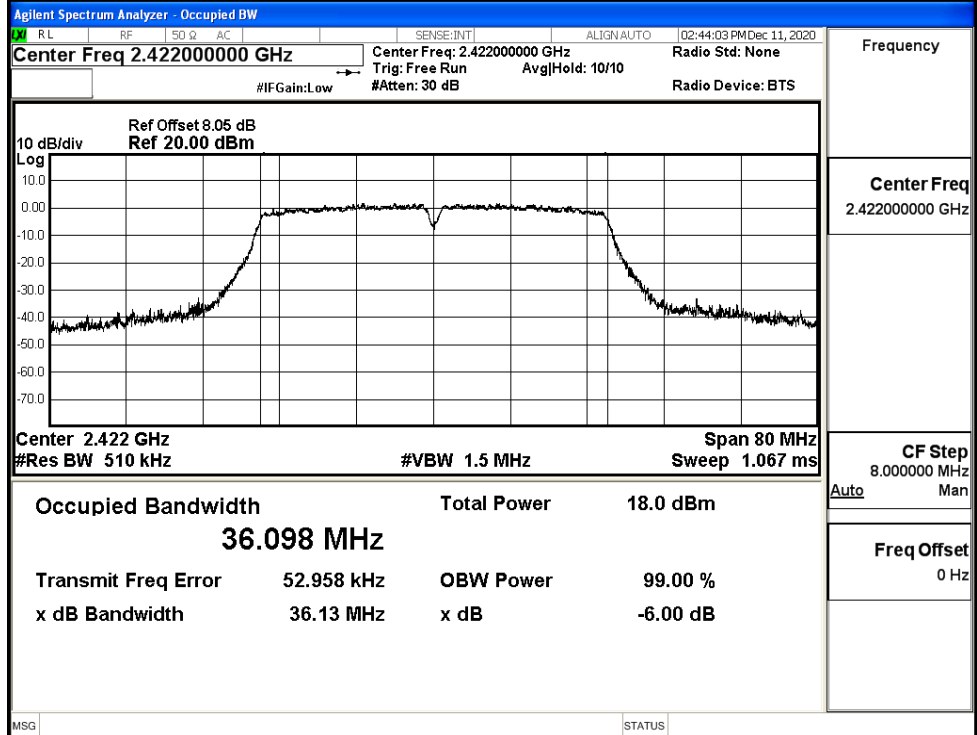
11N20SISO/HCH



Frequency

Center Freq
2.462000000 GHzCF Step
4.000000 MHz
Auto ManFreq Offset
0 Hz

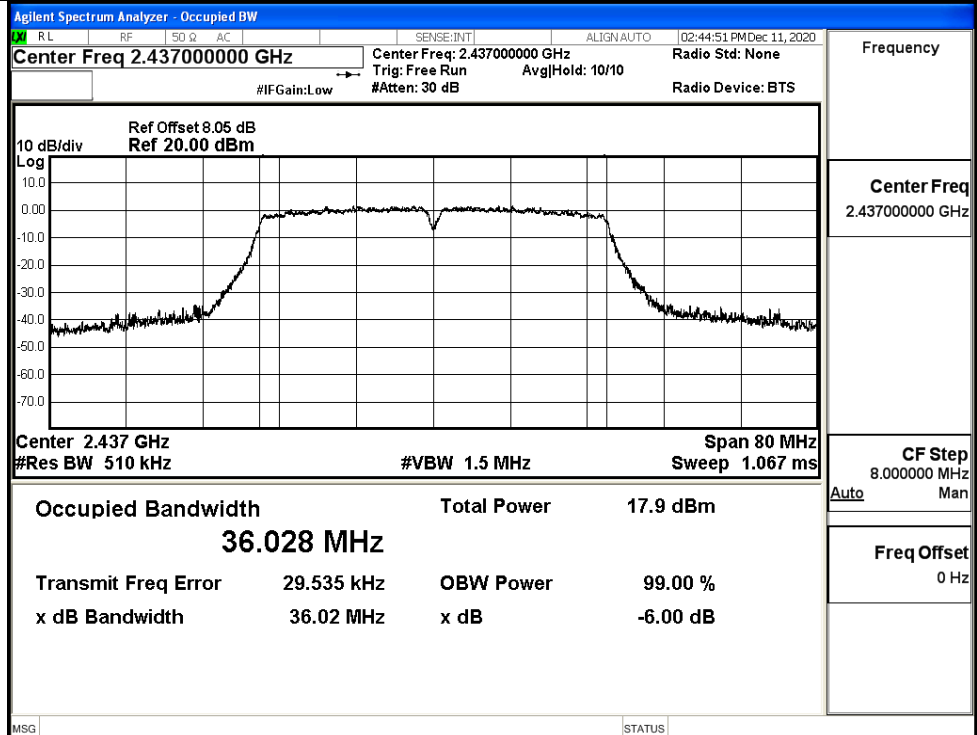
11N40SISO/LCH



Frequency

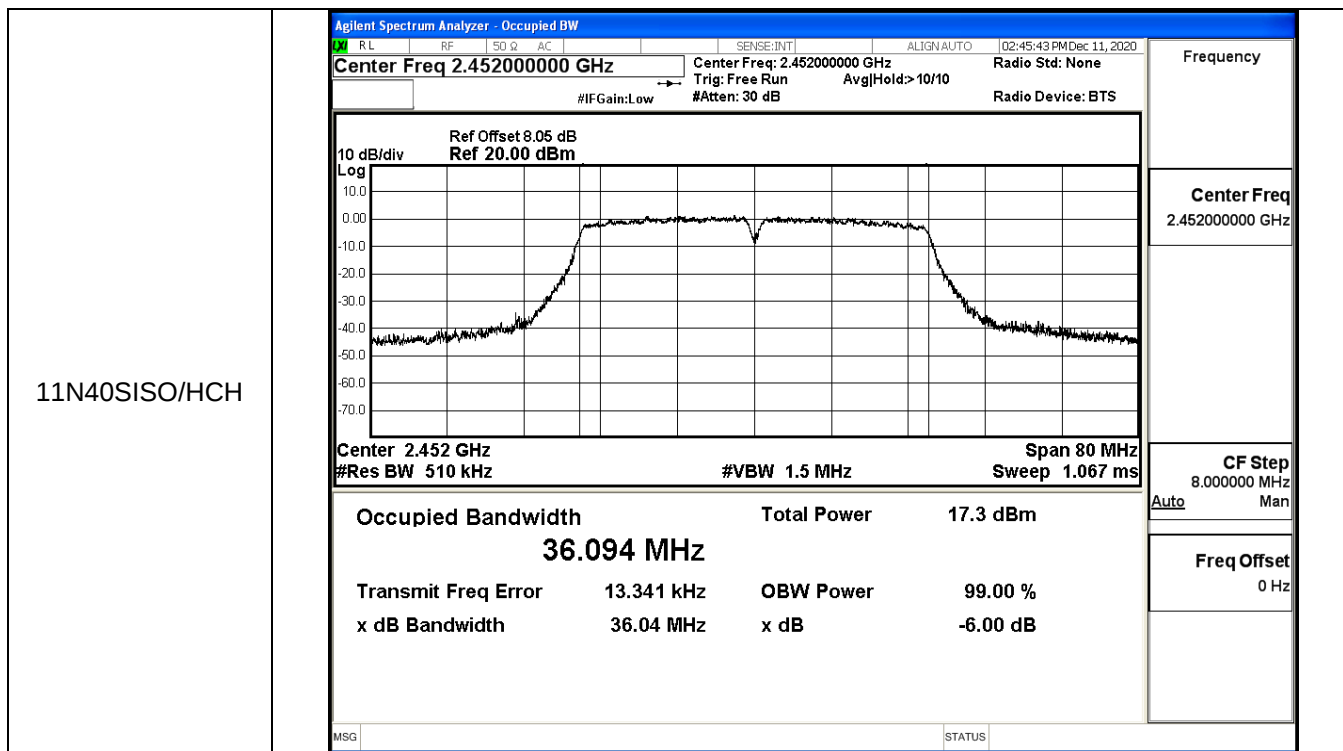
Center Freq
2.422000000 GHzCF Step
8.000000 MHz
Auto ManFreq Offset
0 Hz

11N40SISO/MCH



Frequency

Center Freq
2.437000000 GHzCF Step
8.000000 MHz
Auto ManFreq Offset
0 Hz

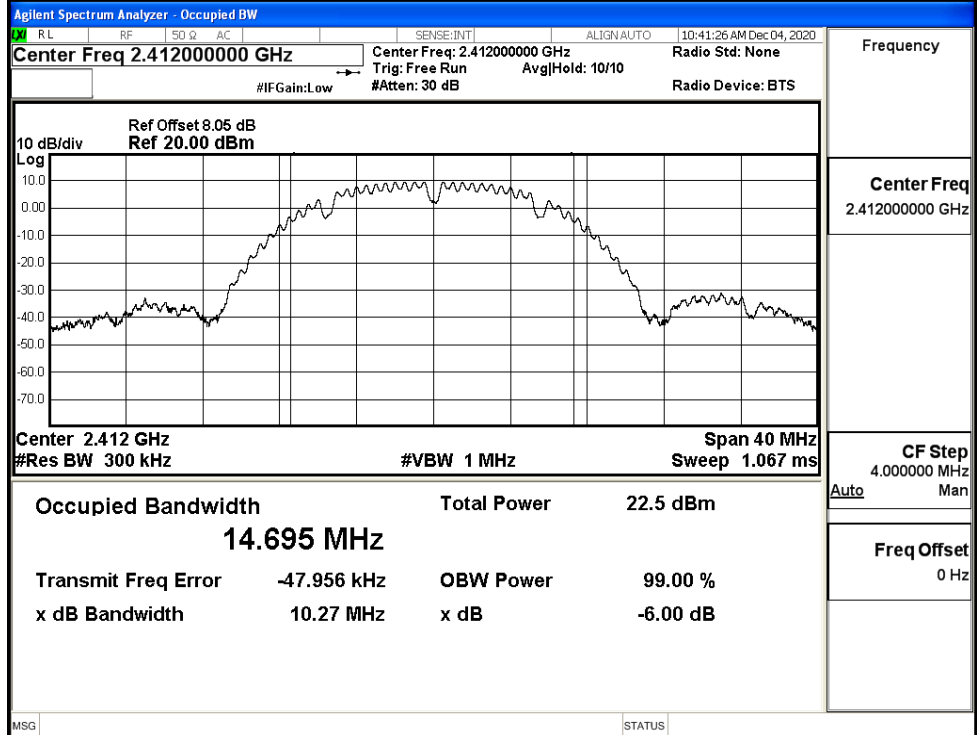


ANT1

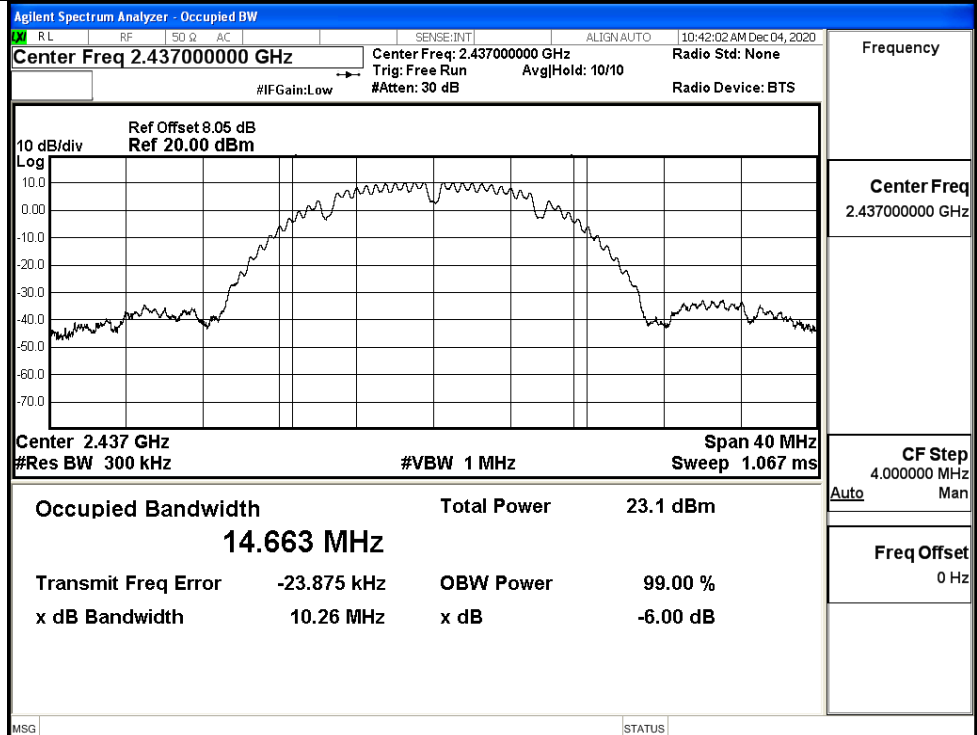
Mode	Channel	Occupied Bandwidth [MHz]	Verdict
11B	LCH	14.695	PASS
	MCH	14.663	PASS
	HCH	14.719	PASS
11G	LCH	16.973	PASS
	MCH	16.735	PASS
	HCH	16.759	PASS
11N20SISO	LCH	18.025	PASS
	MCH	17.907	PASS
	HCH	17.971	PASS
11N40SISO	LCH	36.514	PASS
	MCH	36.385	PASS
	HCH	36.395	PASS

Test Graphs

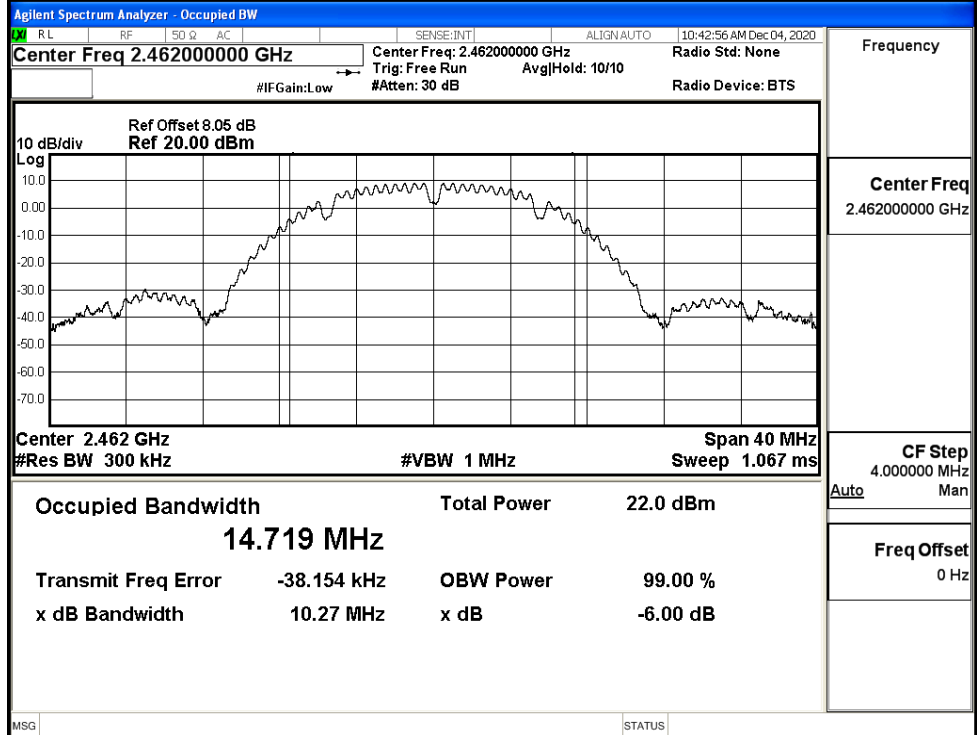
11B/LCH



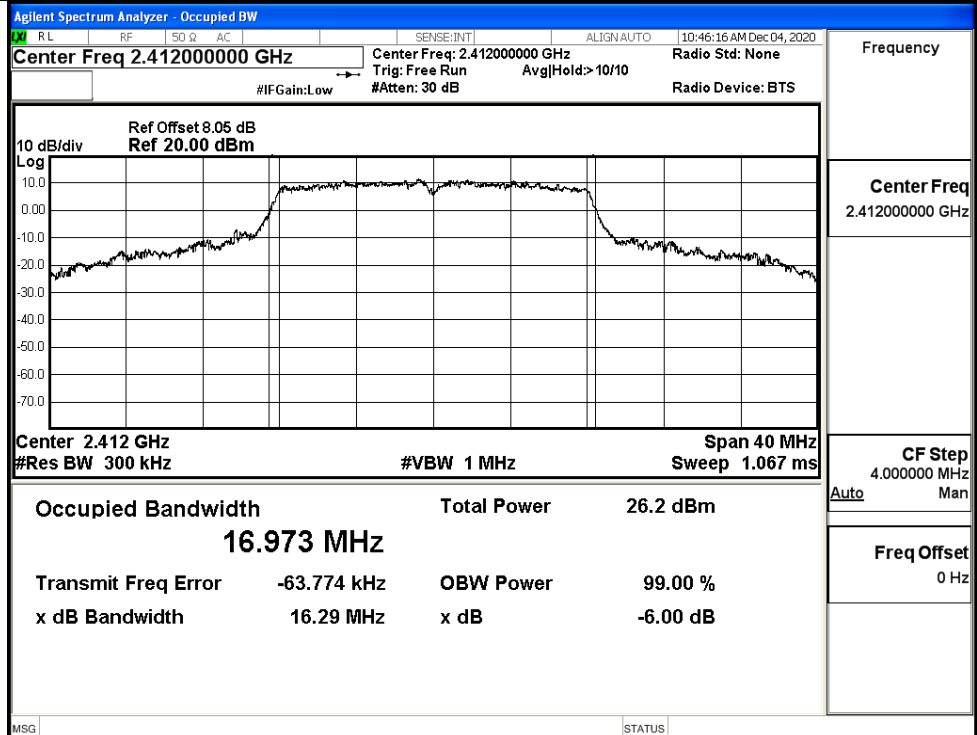
11B/MCH



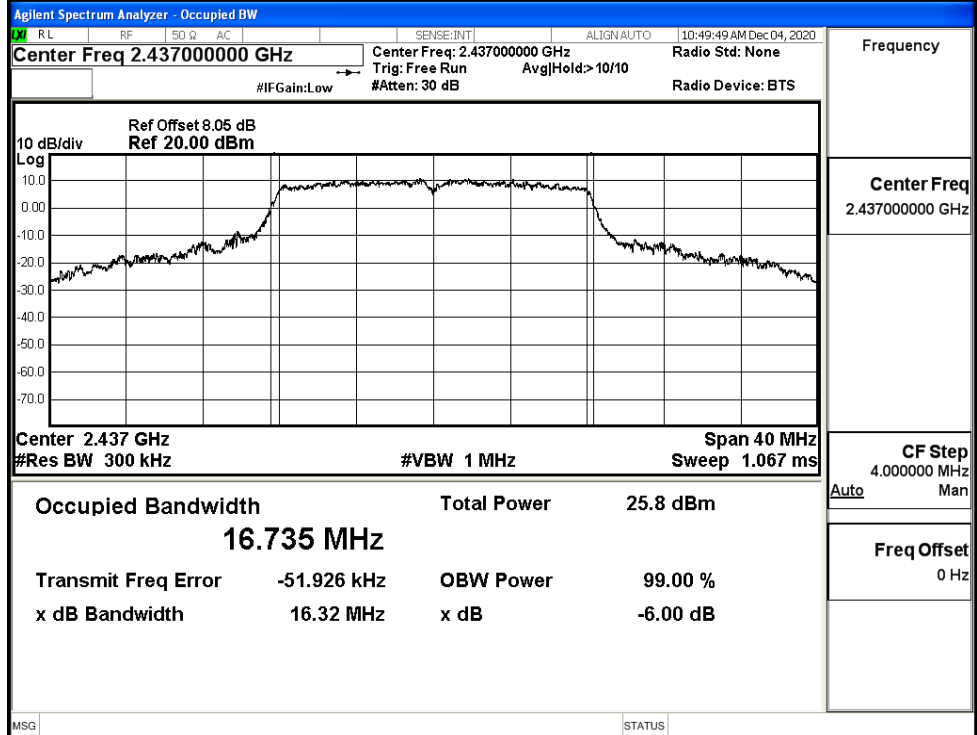
11B/HCH



11G/LCH



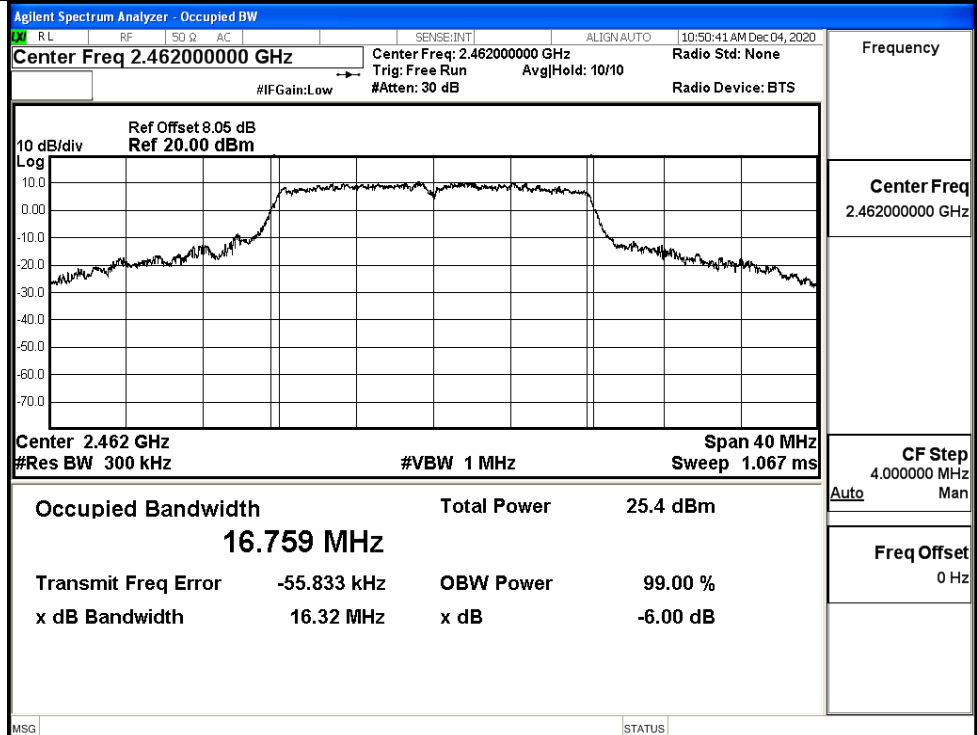
11G/MCH



Frequency

Center Freq
2.437000000 GHzCF Step
4.000000 MHz
Auto ManFreq Offset
0 Hz

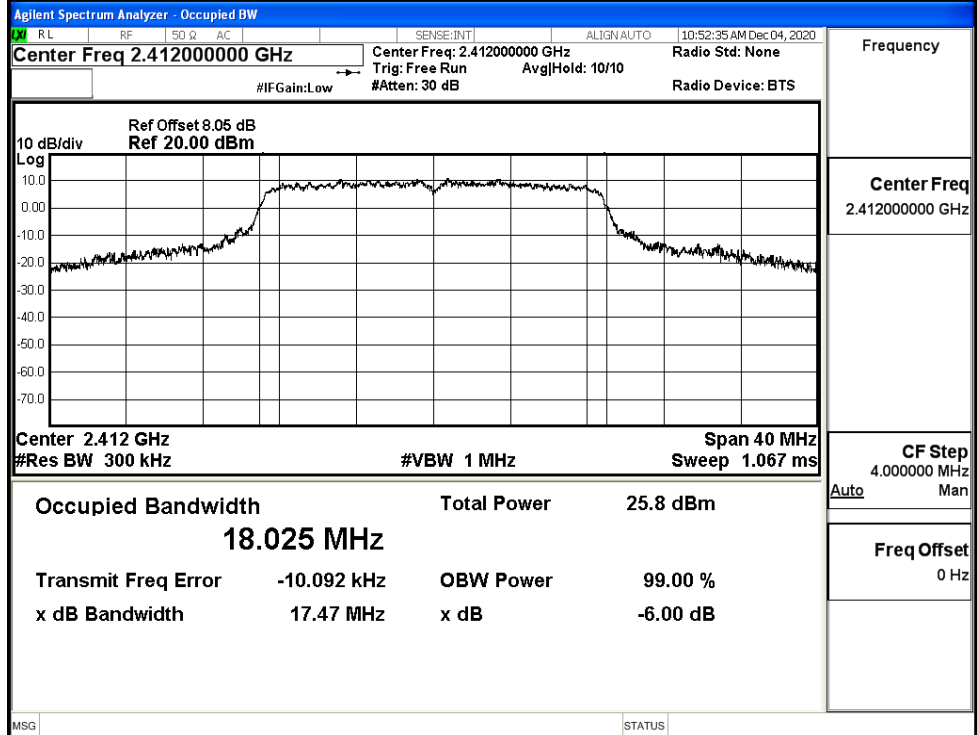
11G/HCH



Frequency

Center Freq
2.462000000 GHzCF Step
4.000000 MHz
Auto ManFreq Offset
0 Hz

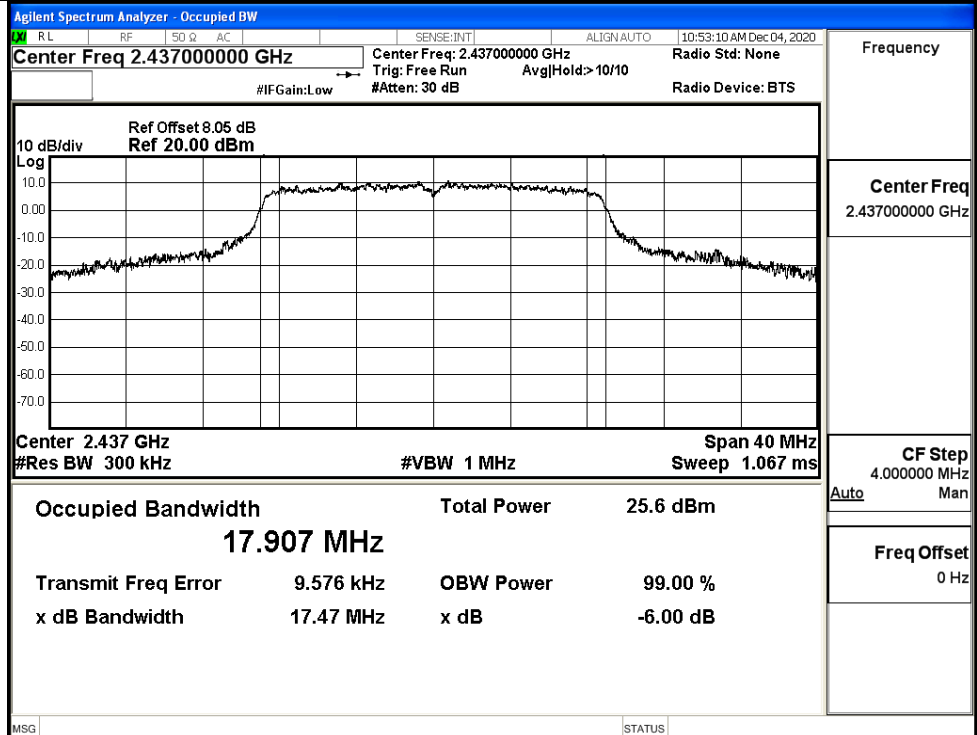
11N20SISO/LCH



Frequency

Center Freq
2.412000000 GHzCF Step
4.000000 MHz
Auto ManFreq Offset
0 Hz

11N20SISO/MCH



Frequency

Center Freq
2.437000000 GHzCF Step
4.000000 MHz
Auto ManFreq Offset
0 Hz

