

Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Vilo Mesh Wi-Fi System

Trade Mark: N/A

Test Model: VLWF01

Environmental Conditions

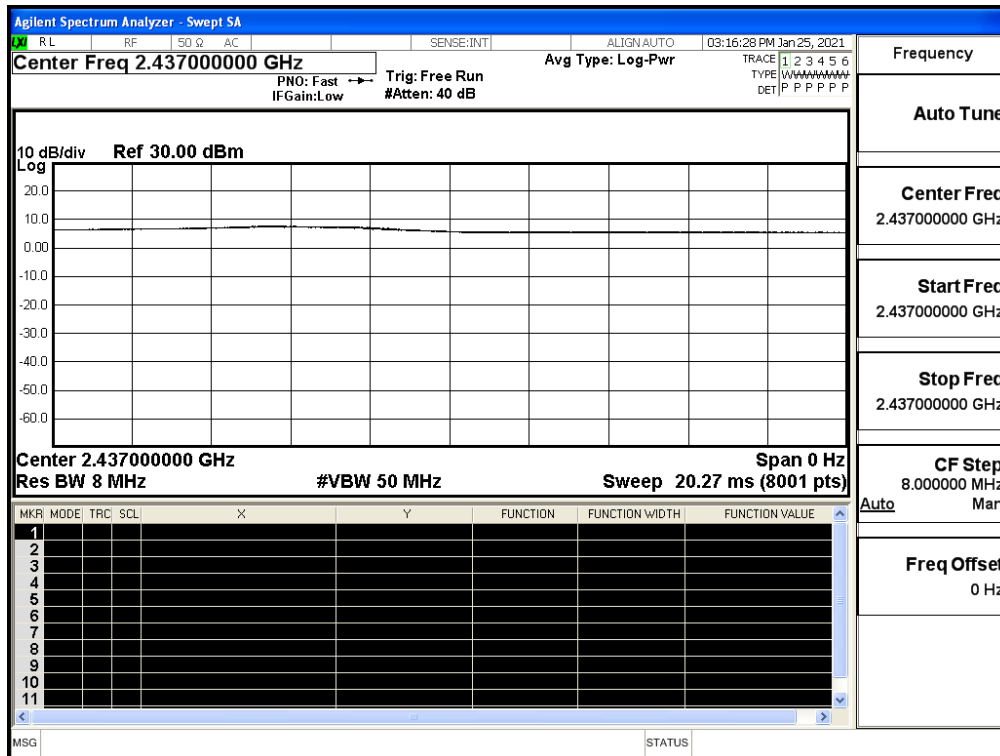
Temperature:	24.6° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Ben Jin
Supervised by:	Li Huan

A.1 Duty Cycle

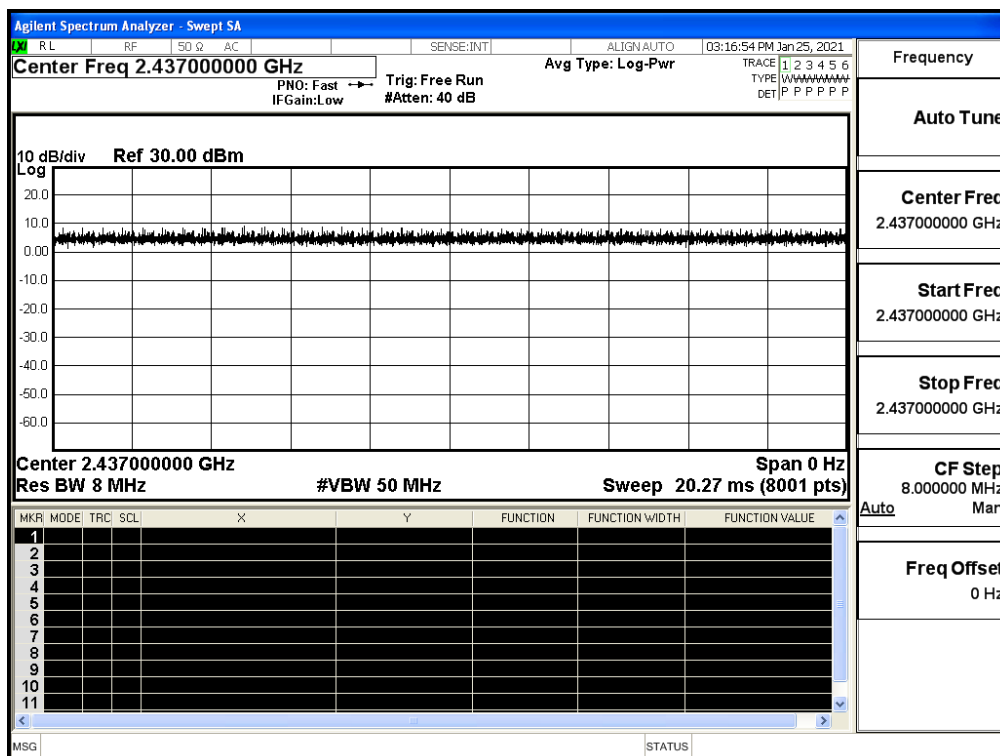
ANT0

Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
11B	2437	Ant0	100	PASS
11G	2437	Ant0	100	PASS
11N20SISO	2437	Ant0	100	PASS
11N40SISO	2437	Ant0	100	PASS

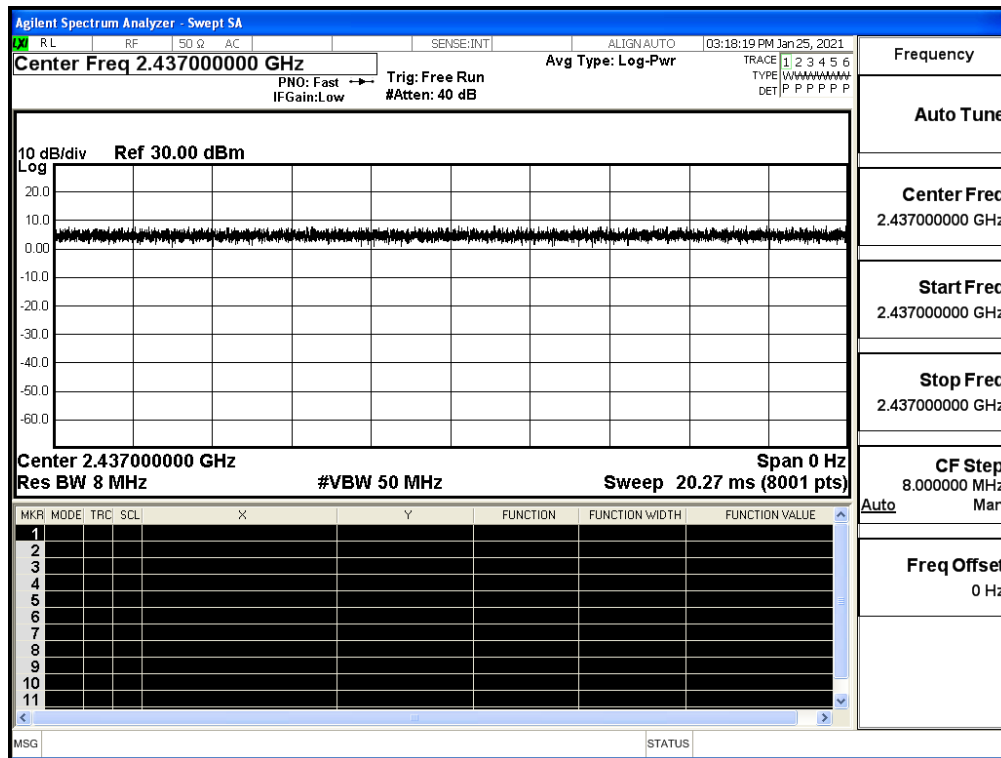
Duty Cycle_11B_2437_Ant0



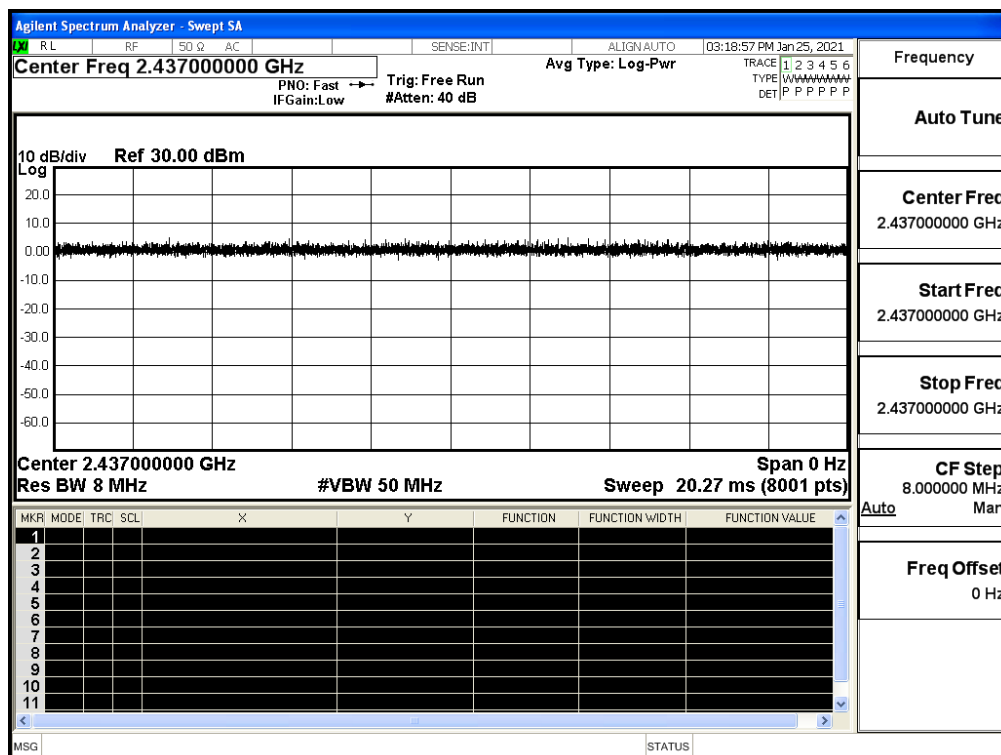
Duty Cycle_11G_2437_Ant0



Duty Cycle_11N20SISO_2437_Ant0



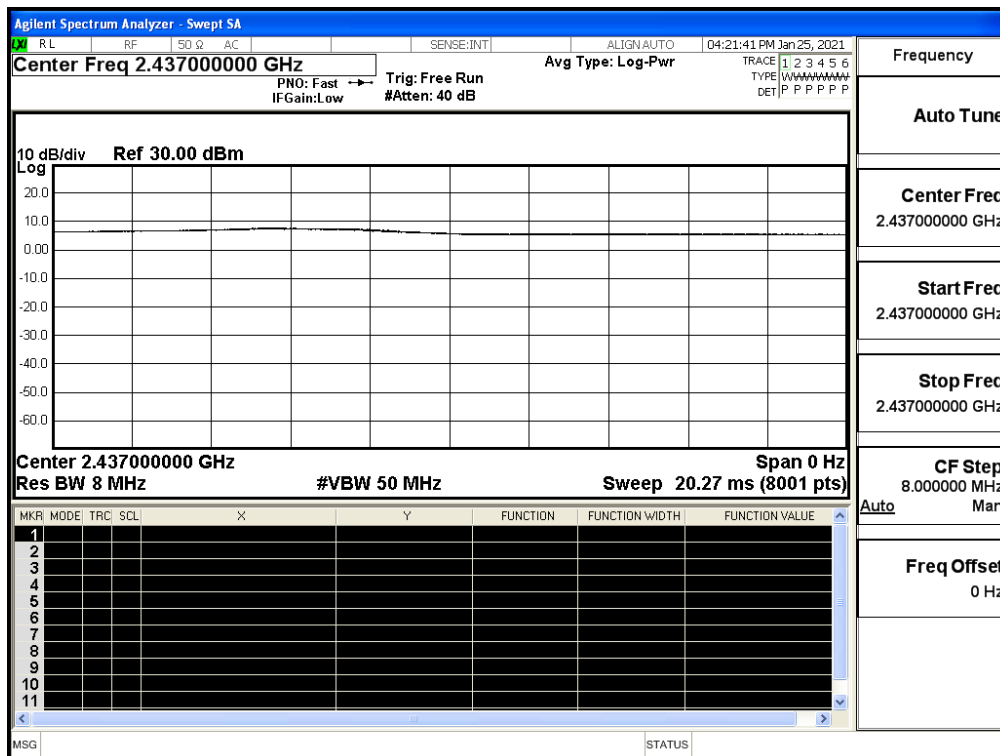
Duty Cycle_11N40SISO_2437_Ant0



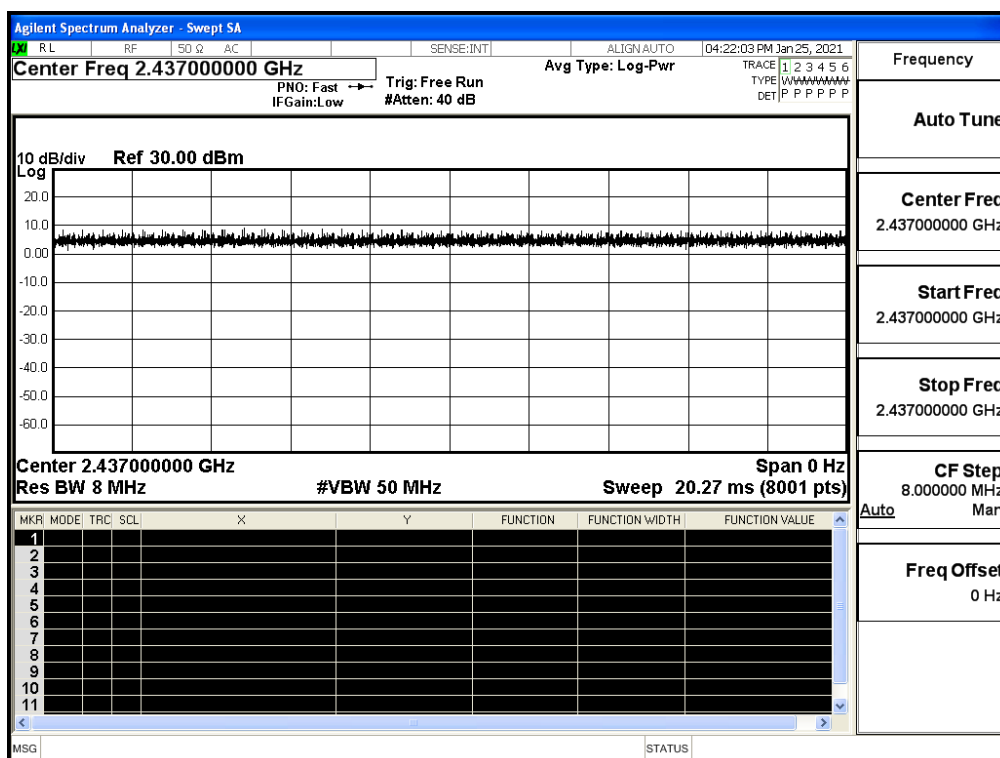
ANT1

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

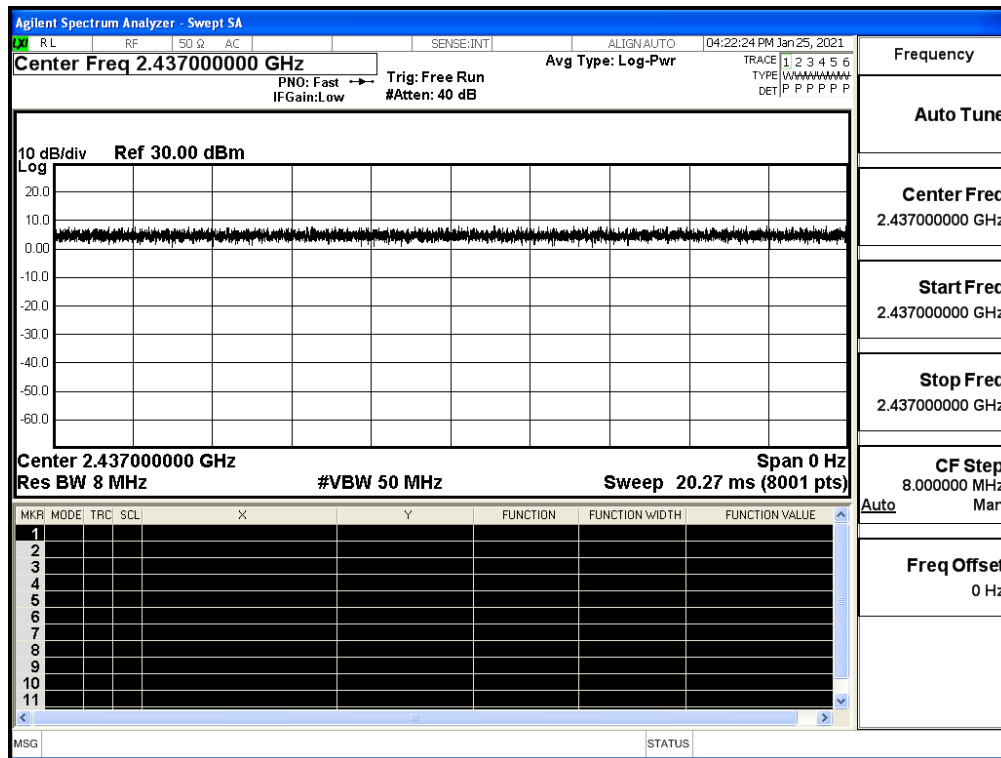
Duty Cycle_11B_2437_Ant1



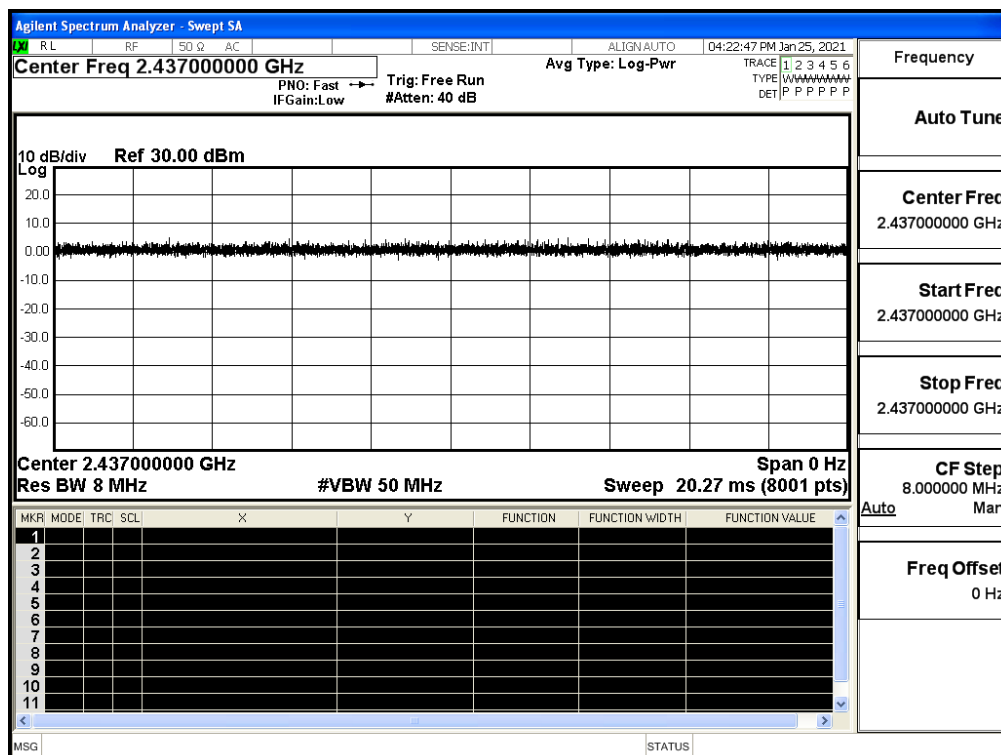
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



Duty Cycle_11N40SISO_2437_Ant1



A.2 Maximum Conducted Output Power

ANT0

Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	10.7	30	PASS
	MCH	12.2	30	PASS
	HCH	12.76	30	PASS
11G	LCH	10.51	30	PASS
	MCH	11.76	30	PASS
	HCH	12.48	30	PASS
11N20SISO	LCH	10.05	30	PASS
	MCH	11.52	30	PASS
	HCH	12.03	30	PASS
11N40SISO	LCH	9.99	30	PASS
	MCH	10.74	30	PASS
	HCH	11.15	30	PASS

Mode	Channel	Meas.Level [dBm]	Ant Gain (dBi)	Report EIRP Power(dBm)	Limit [dBm]	Verdict
11B	LCH	10.7	5.0	15.70	36	PASS
	MCH	12.2	5.0	17.20	36	PASS
	HCH	12.76	5.0	17.76	36	PASS
11G	LCH	10.51	5.0	15.51	36	PASS
	MCH	11.76	5.0	16.76	36	PASS
	HCH	12.48	5.0	17.48	36	PASS
11N20SISO	LCH	10.05	5.0	15.05	36	PASS
	MCH	11.52	5.0	16.52	36	PASS
	HCH	12.03	5.0	17.03	36	PASS
11N40SISO	LCH	9.99	5.0	14.99	36	PASS
	MCH	10.74	5.0	15.74	36	PASS
	HCH	11.15	5.0	16.15	36	PASS

ANT1

Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	10.01	30	PASS
	MCH	11.62	30	PASS
	HCH	12.91	30	PASS
11G	LCH	10.7	30	PASS
	MCH	12.38	30	PASS
	HCH	13.77	30	PASS
11N20SISO	LCH	10.32	30	PASS
	MCH	11.96	30	PASS
	HCH	13.37	30	PASS
11N40SISO	LCH	10.45	30	PASS
	MCH	11.21	30	PASS
	HCH	12.25	30	PASS

Mode	Channel	Meas.Level [dBm]	Ant Gain (dBi)	Report EIRP Power(dBm)	Limit [dBm]	Verdict
11B	LCH	10.01	5.0	15.01	36	PASS
	MCH	11.62	5.0	16.62	36	PASS
	HCH	12.91	5.0	17.91	36	PASS
11G	LCH	10.7	5.0	15.7	36	PASS
	MCH	12.38	5.0	17.38	36	PASS
	HCH	13.77	5.0	18.77	36	PASS
11N20SISO	LCH	10.32	5.0	15.32	36	PASS
	MCH	11.96	5.0	16.96	36	PASS
	HCH	13.37	5.0	18.37	36	PASS
11N40SISO	LCH	10.45	5.0	15.45	36	PASS
	MCH	11.21	5.0	16.21	36	PASS
	HCH	12.25	5.0	17.25	36	PASS

MIMO

Mode	Channel	ANT 0 [dBm]	ANT 1 [dBm]	MIMO [dBm]	Limit [dBm]	Verdict
11N20	LCH	10.05	10.32	13.20	27.99	PASS
	MCH	11.52	11.96	14.76	27.99	PASS
	HCH	12.03	13.37	15.76	27.99	PASS
11N40	LCH	9.99	10.45	13.24	27.99	PASS
	MCH	10.74	11.21	13.99	27.99	PASS
	HCH	11.15	12.25	14.75	27.99	PASS

MIMO

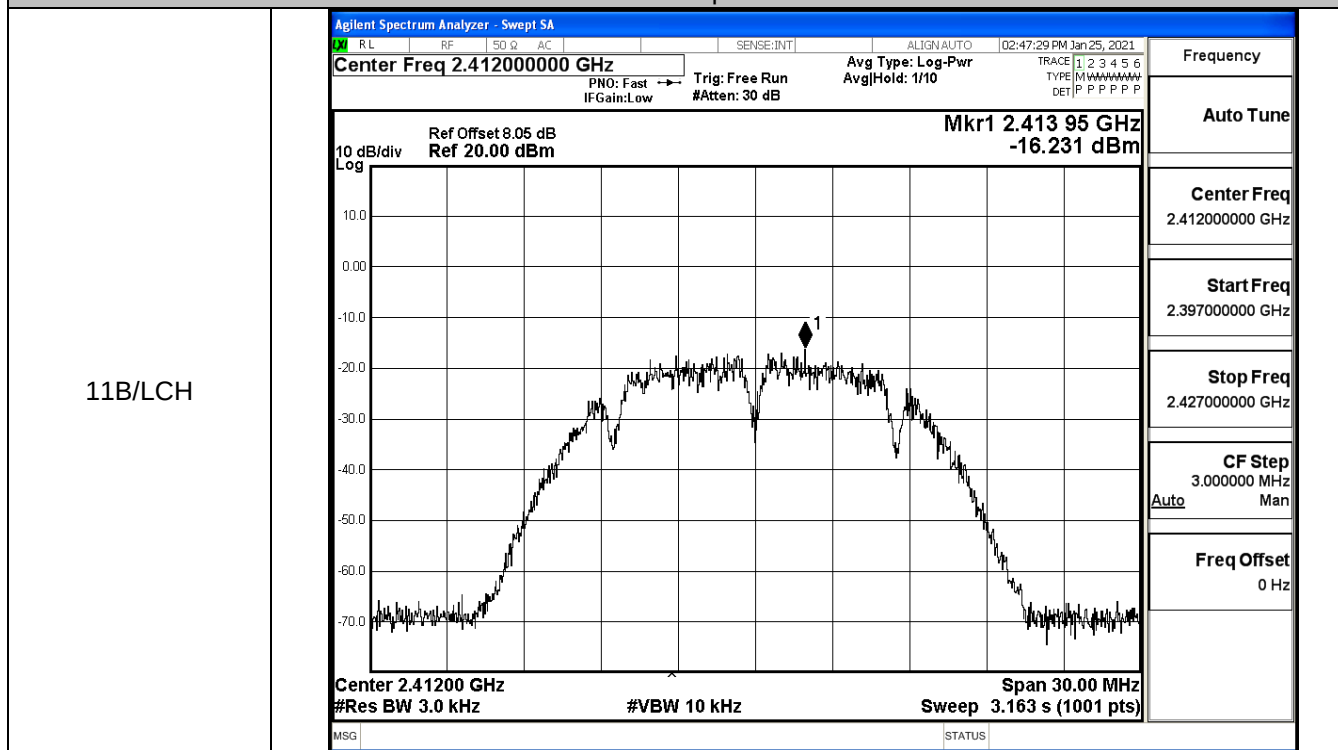
Mode	Channel	ANT 0 [dBm]	ANT 1 [dBm]	MIMO EIRP Power(dBm)	Limit [dBm]	Verdict
11N20	LCH	15.05	15.32	18.20	33.99	PASS
	MCH	16.52	16.96	19.76	33.99	PASS
	HCH	17.03	18.37	20.76	33.99	PASS
11N40	LCH	14.99	15.45	18.24	33.99	PASS
	MCH	15.74	16.21	18.99	33.99	PASS
	HCH	16.15	17.25	19.75	33.99	PASS

A.3 Maximum Power Spectral Density

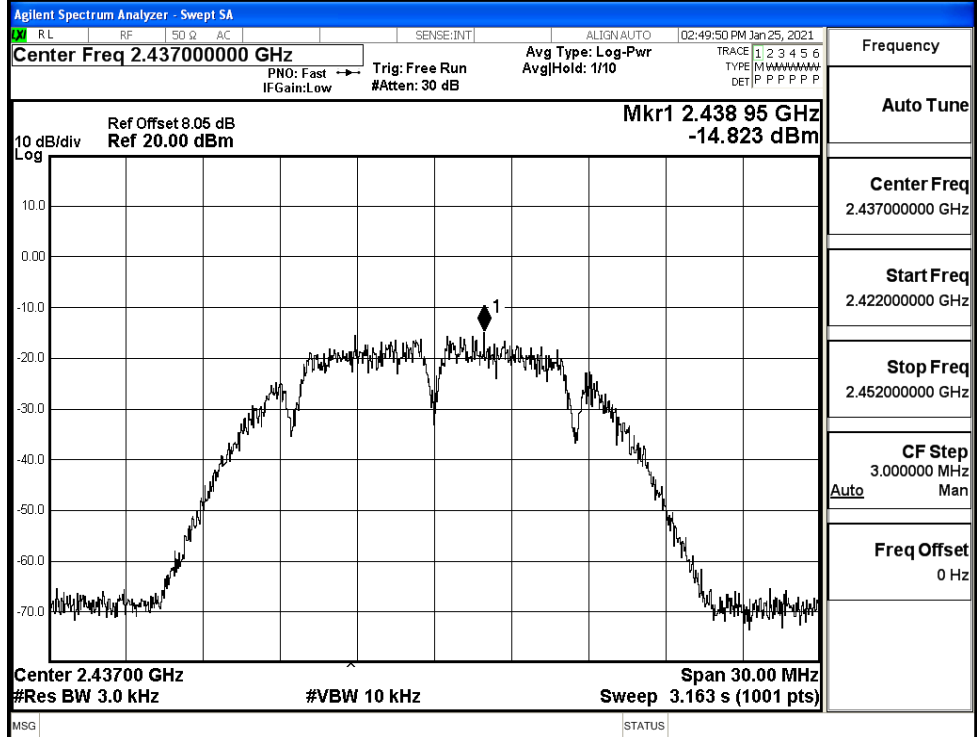
ANTO

Mode	Channel	Meas.Level [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-16.231	8	PASS
	MCH	-14.823	8	PASS
	HCH	-14.393	8	PASS
11G	LCH	-22.245	8	PASS
	MCH	-21.176	8	PASS
	HCH	-20.657	8	PASS
11N20SISO	LCH	-21.547	8	PASS
	MCH	-21.735	8	PASS
	HCH	-19.785	8	PASS
11N40SISO	LCH	-23.734	8	PASS
	MCH	-23.155	8	PASS
	HCH	-23.287	8	PASS

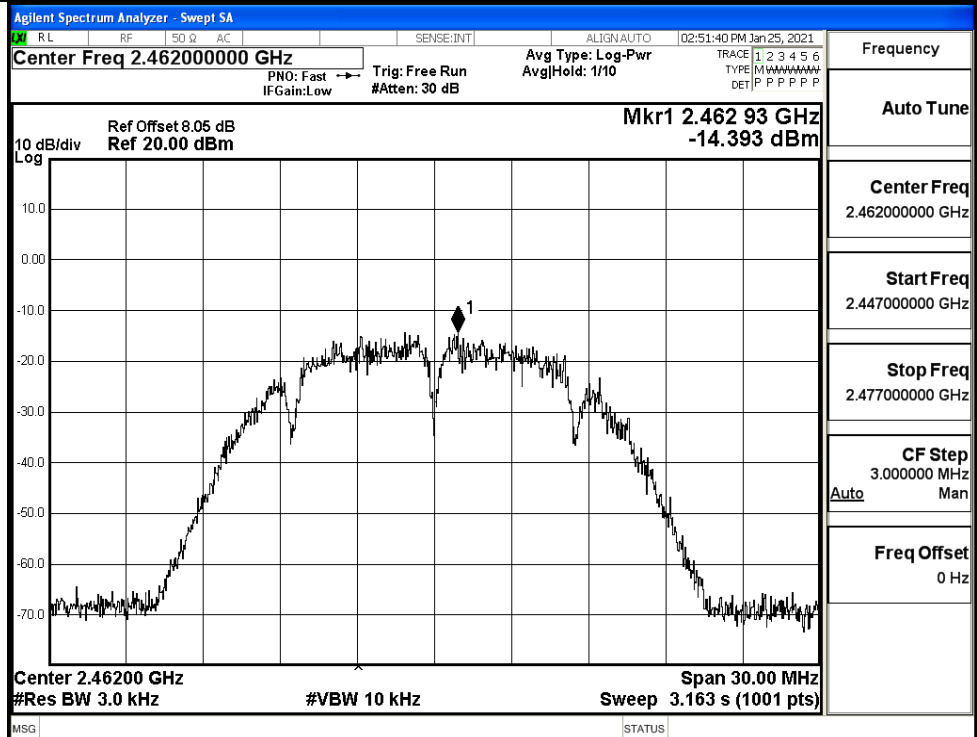
Test Graphs



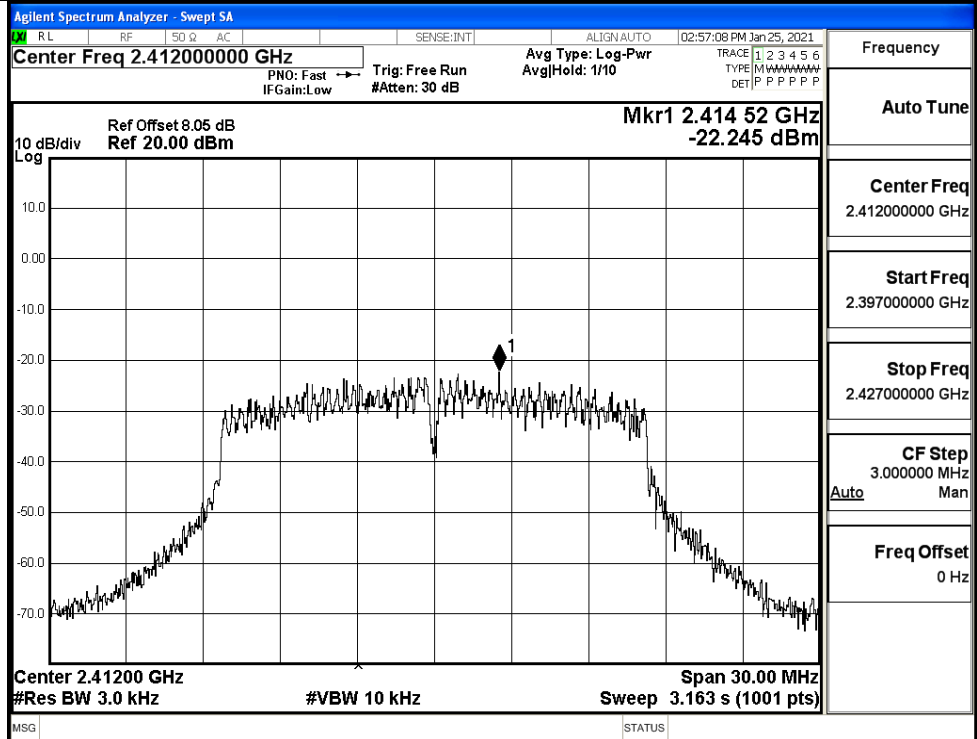
11B/MCH



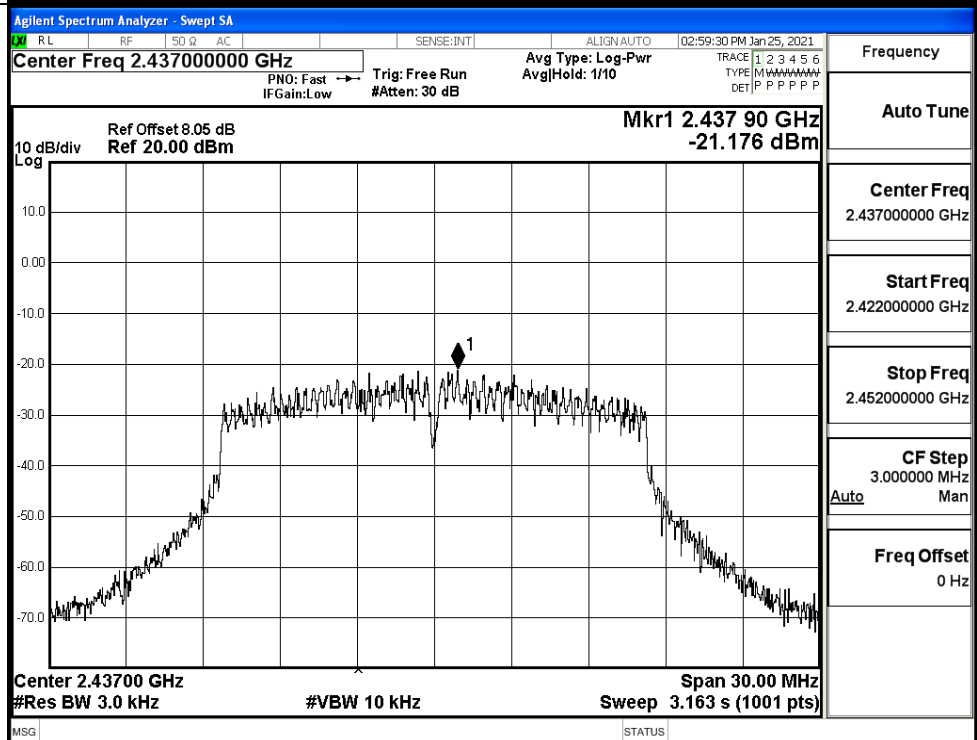
11B/HCH



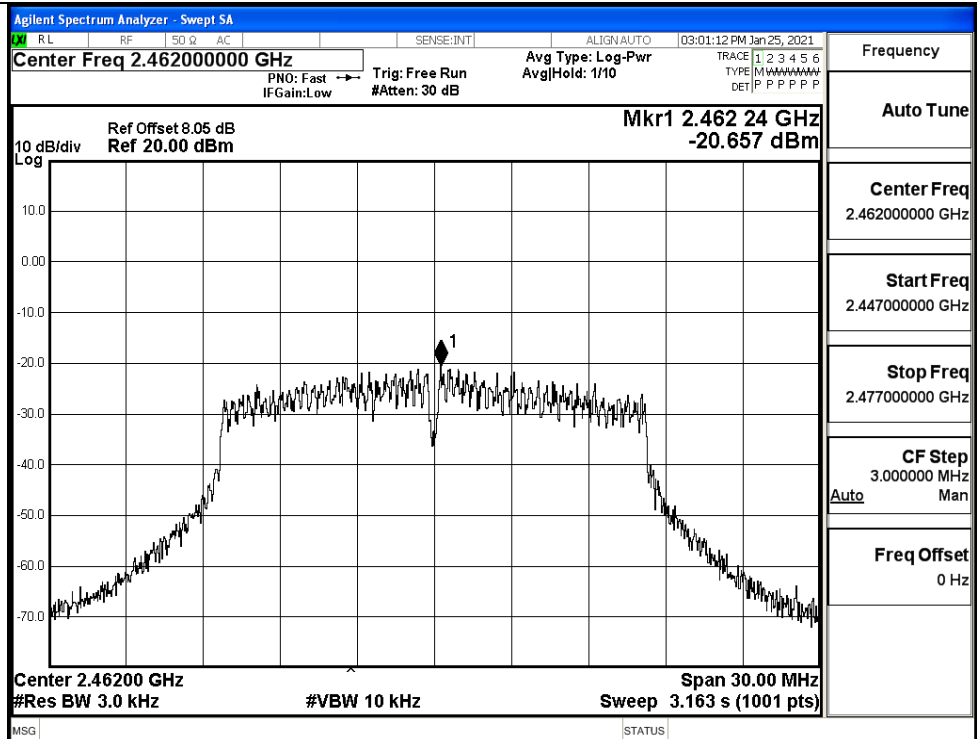
11G/LCH



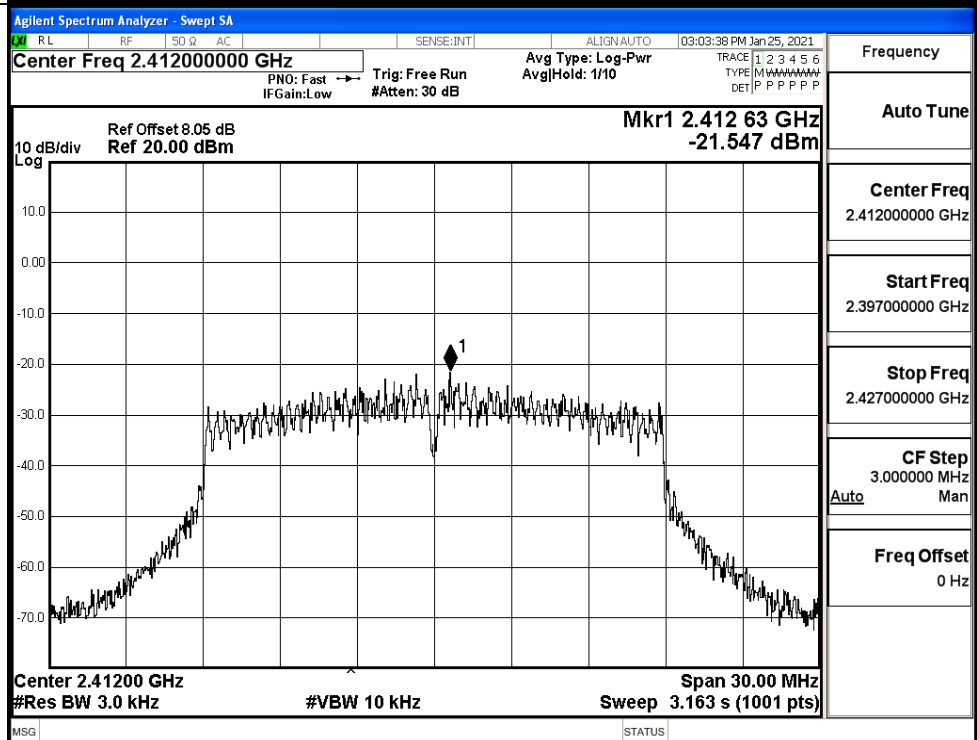
11G/MCH



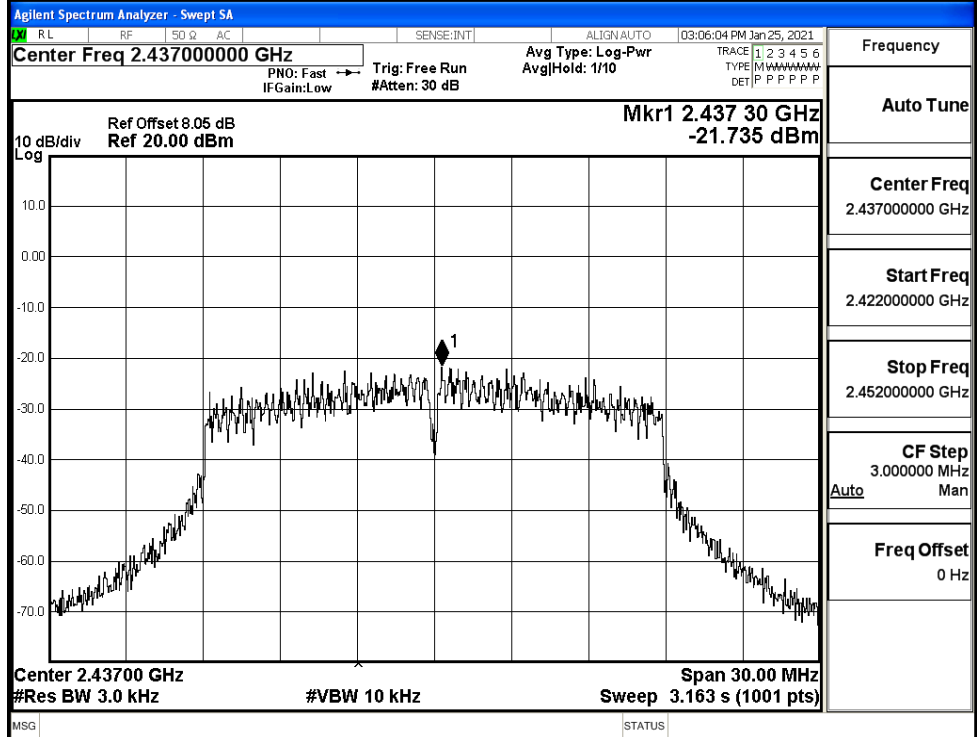
11G/HCH



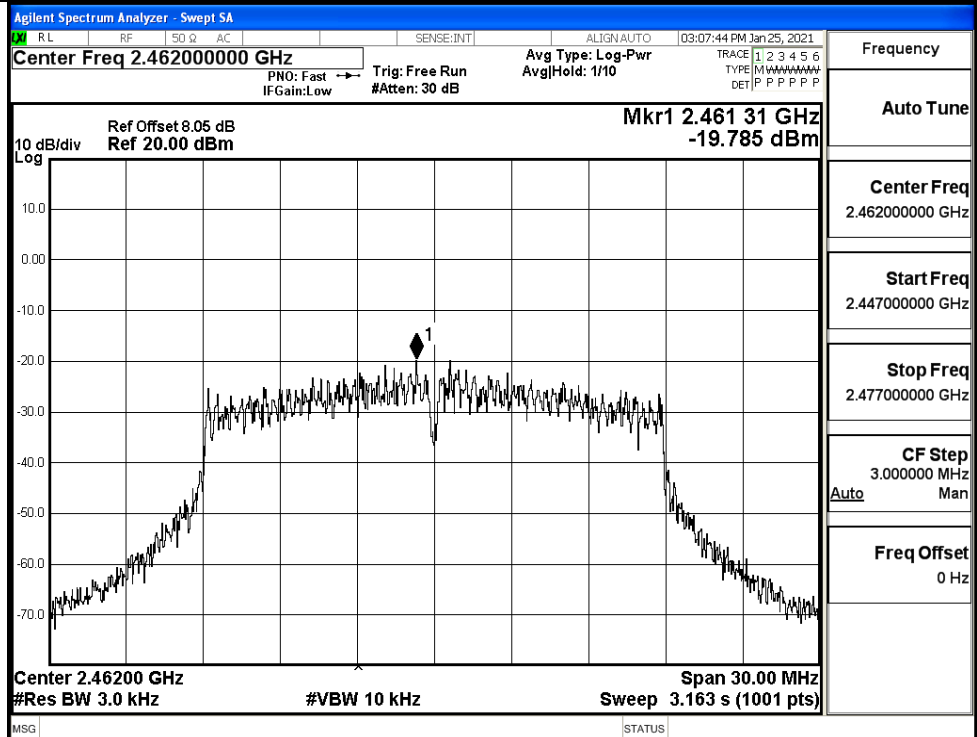
11N20SISO/LCH



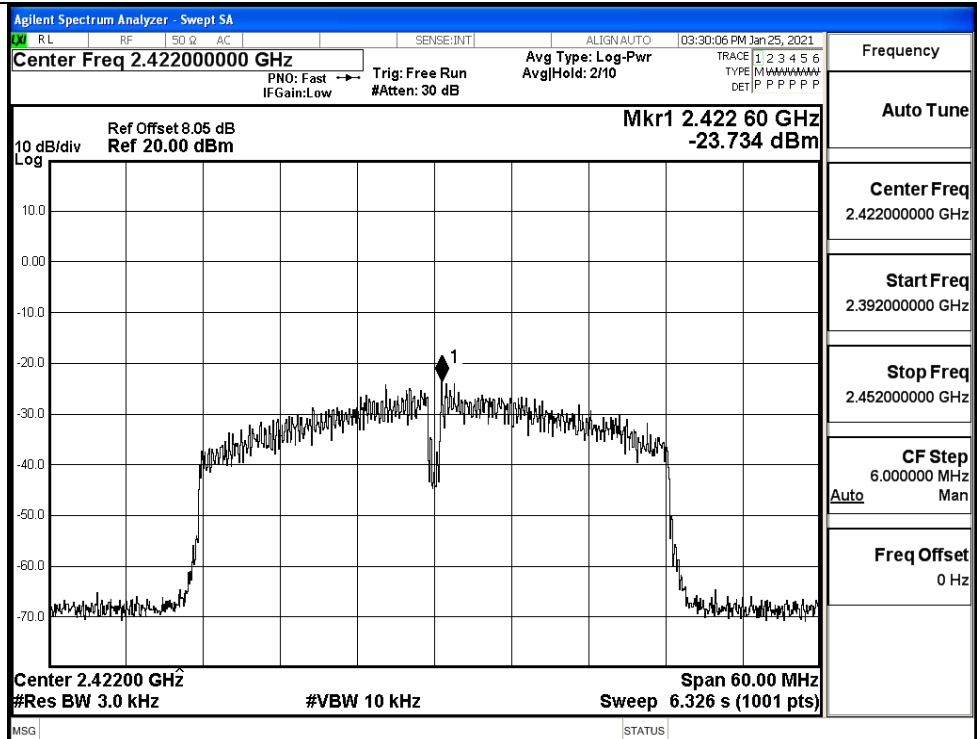
11N20SISO/MCH



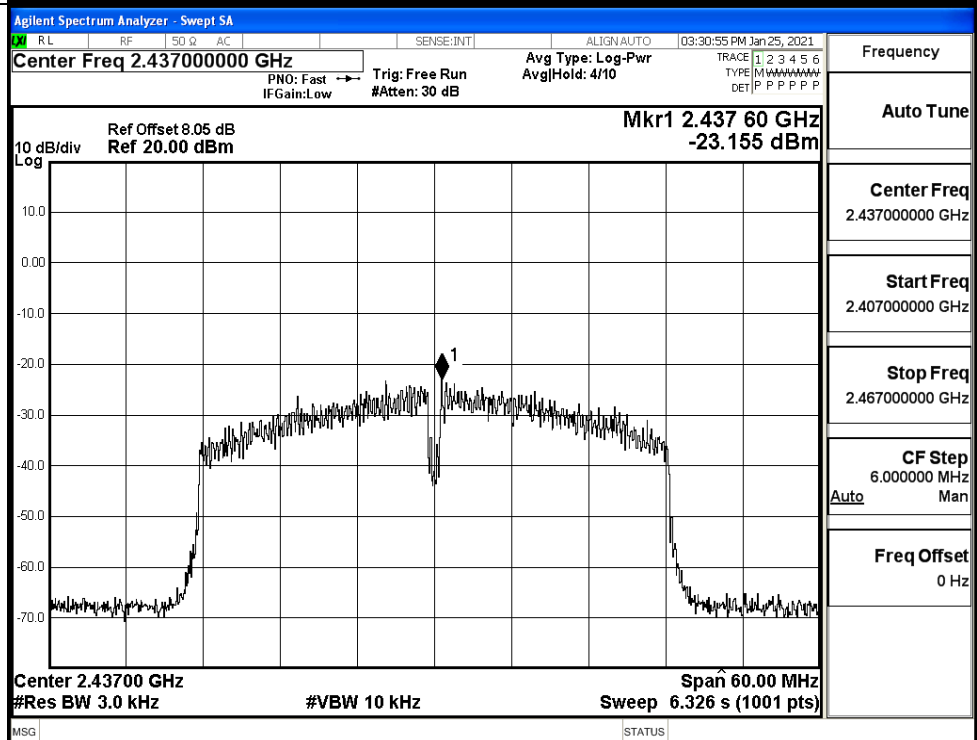
11N20SISO/HCH



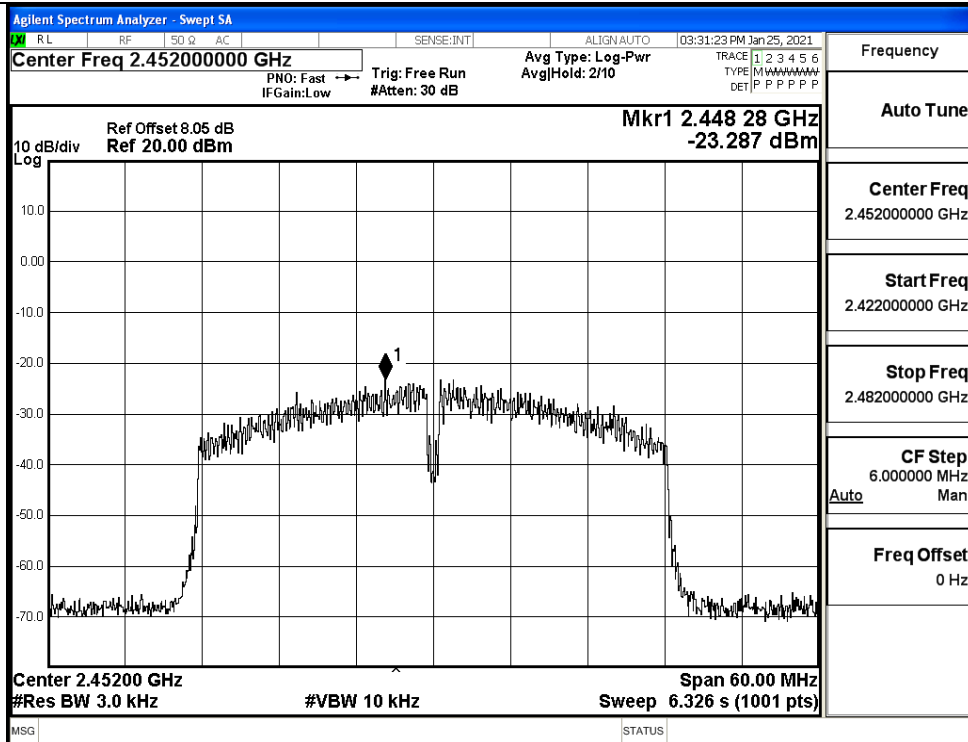
11N40SISO/LCH



11N40SISO/MCH



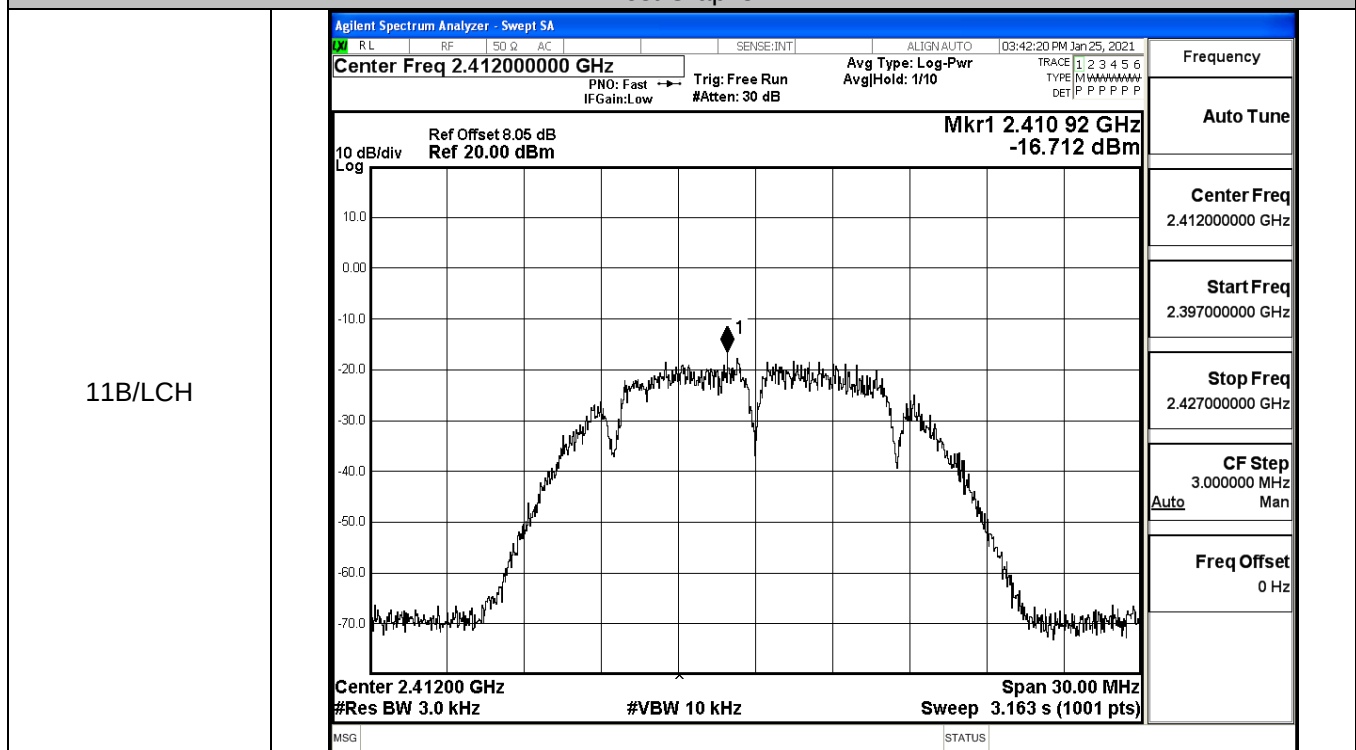
11N40SISO/HCH



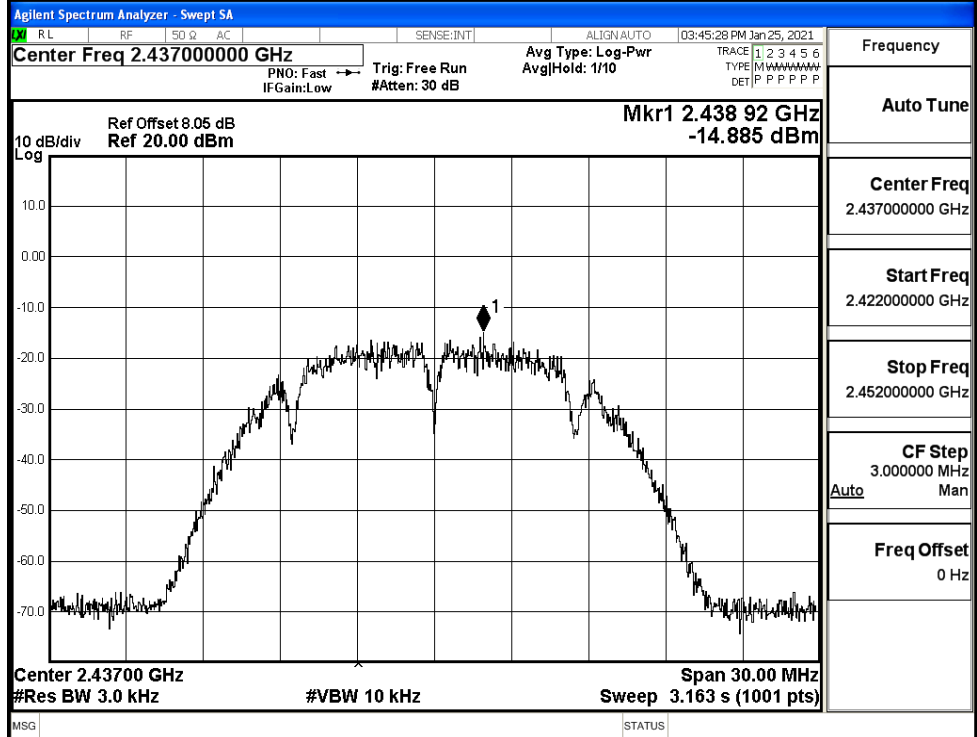
ANT1

Mode	Channel	Meas.Level [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-16.712	8	PASS
	MCH	-14.885	8	PASS
	HCH	-13.510	8	PASS
11G	LCH	-21.995	8	PASS
	MCH	-20.606	8	PASS
	HCH	-18.719	8	PASS
11N20SISO	LCH	-20.839	8	PASS
	MCH	-19.176	8	PASS
	HCH	-18.701	8	PASS
11N40SISO	LCH	-23.821	8	PASS
	MCH	-22.528	8	PASS
	HCH	-21.625	8	PASS

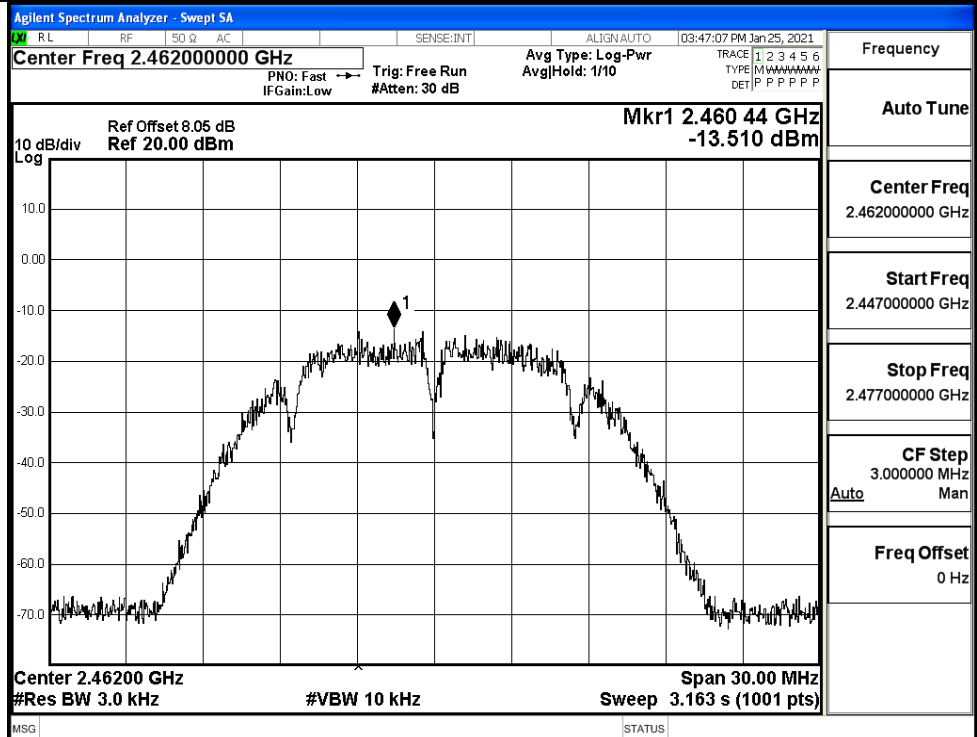
Test Graphs



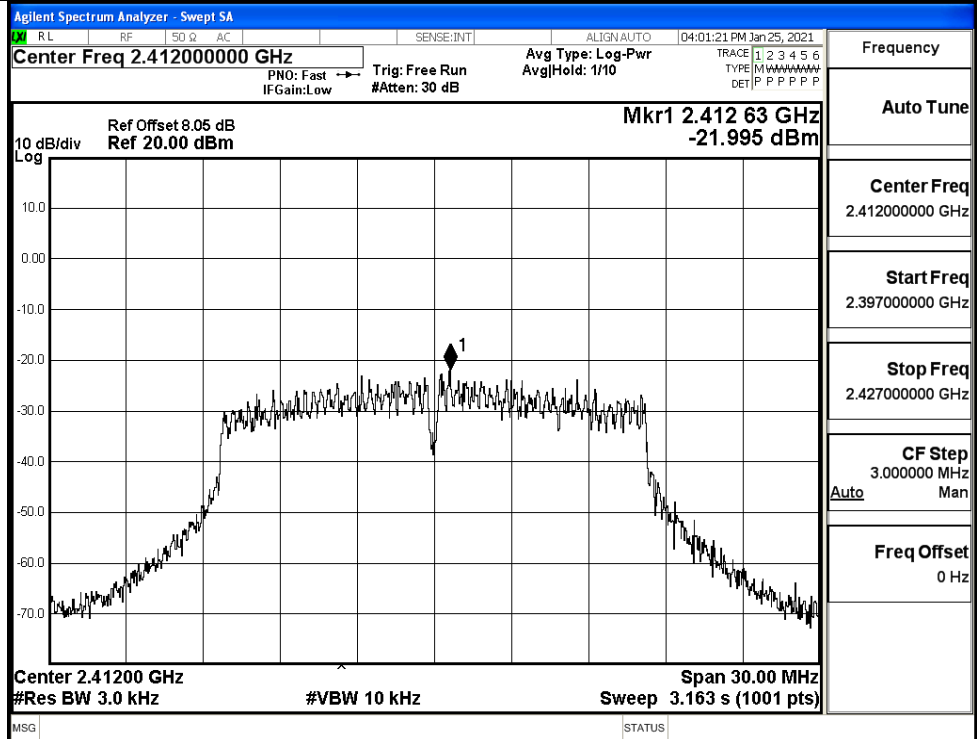
11B/MCH



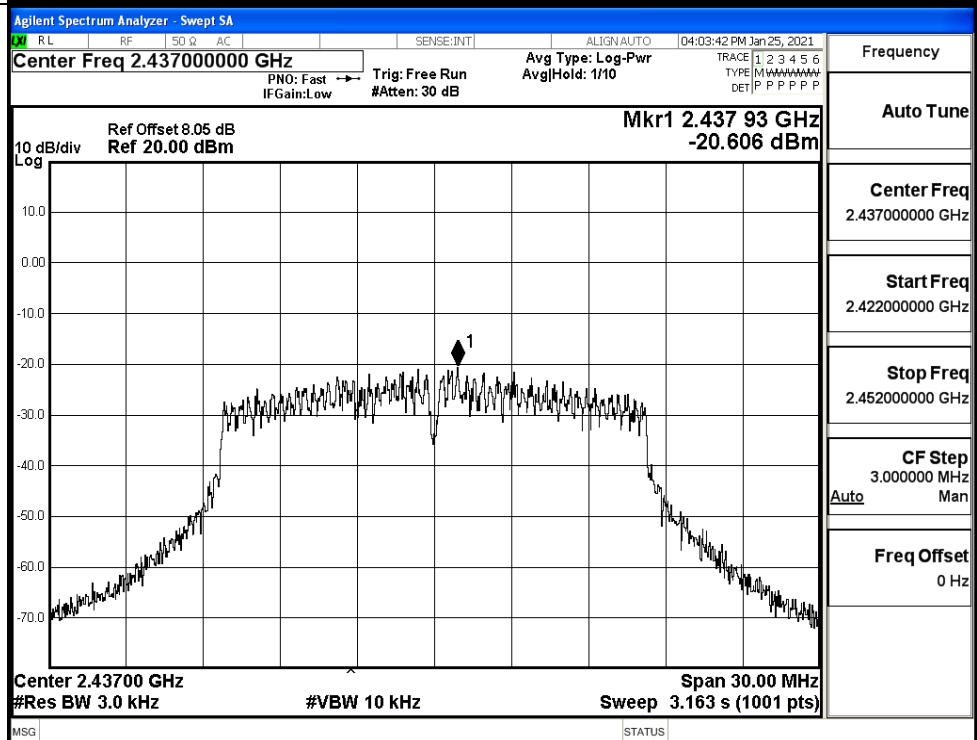
11B/HCH



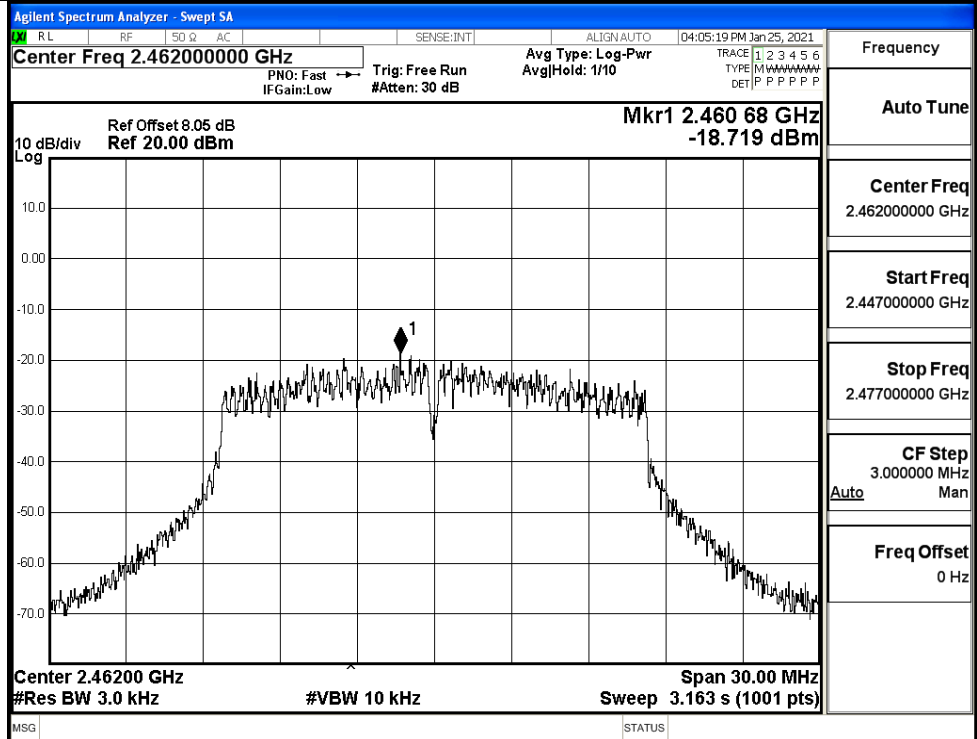
11G/LCH



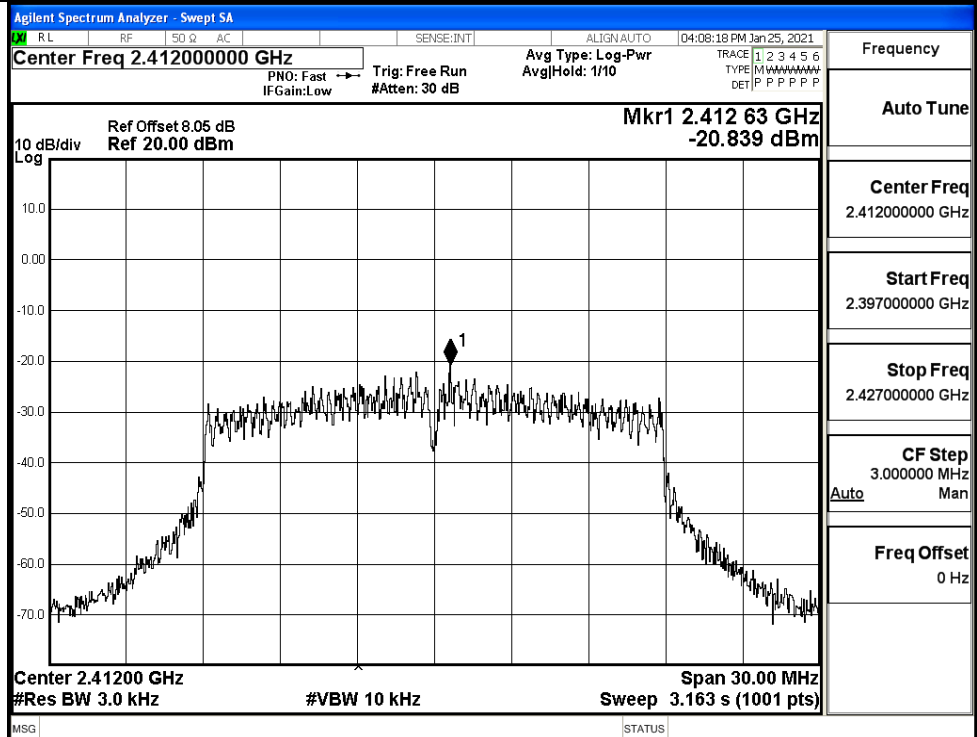
11G/MCH



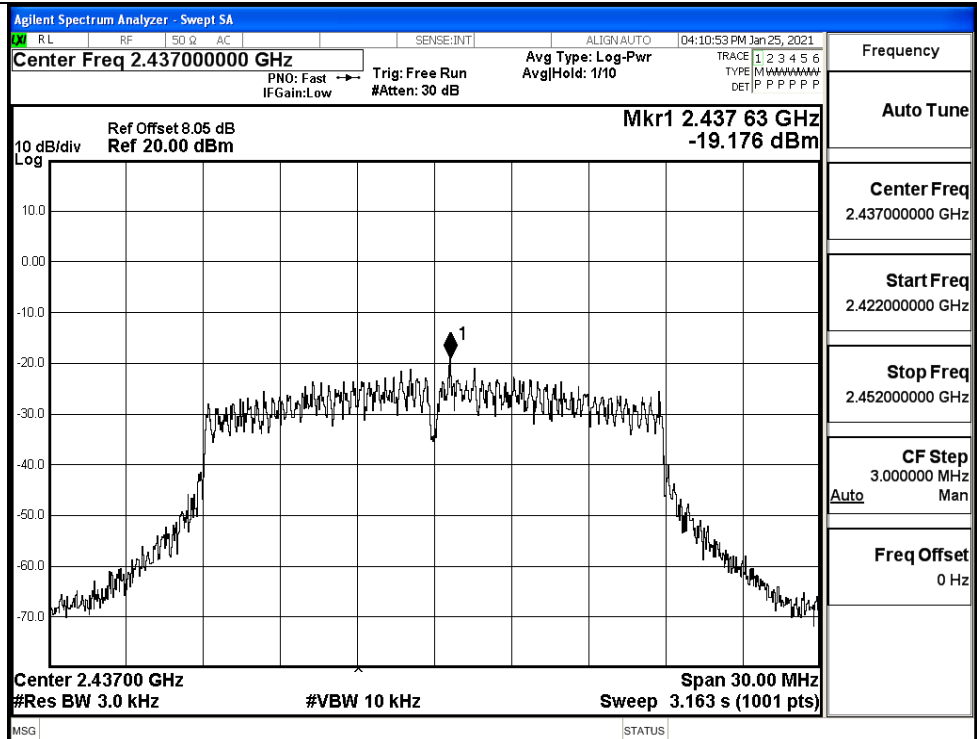
11G/HCH



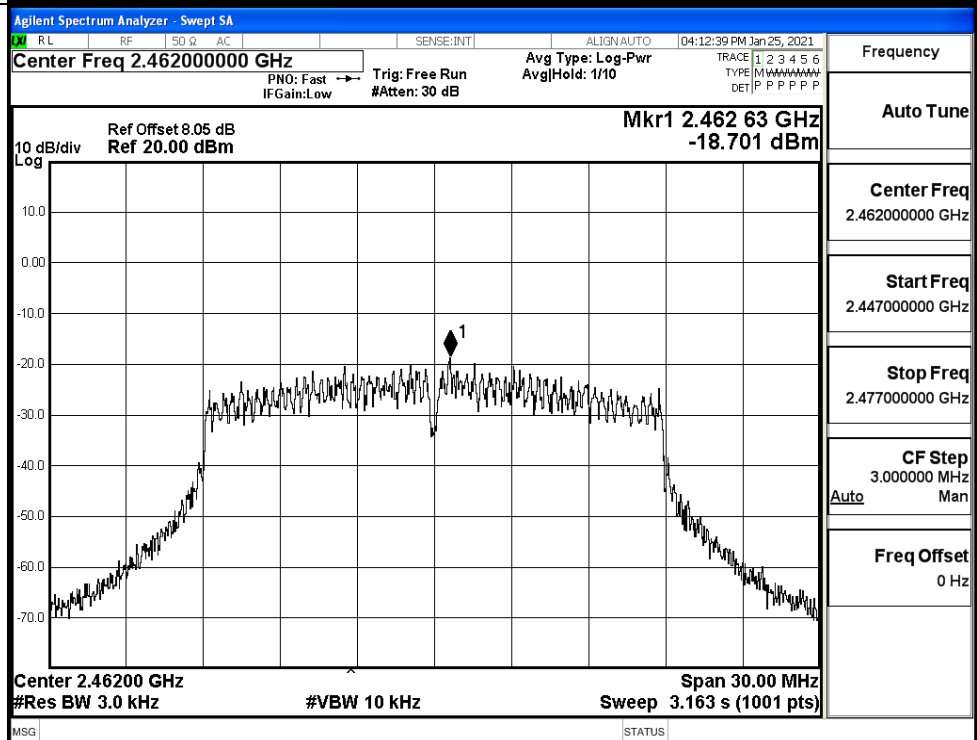
11N20SISO/LCH



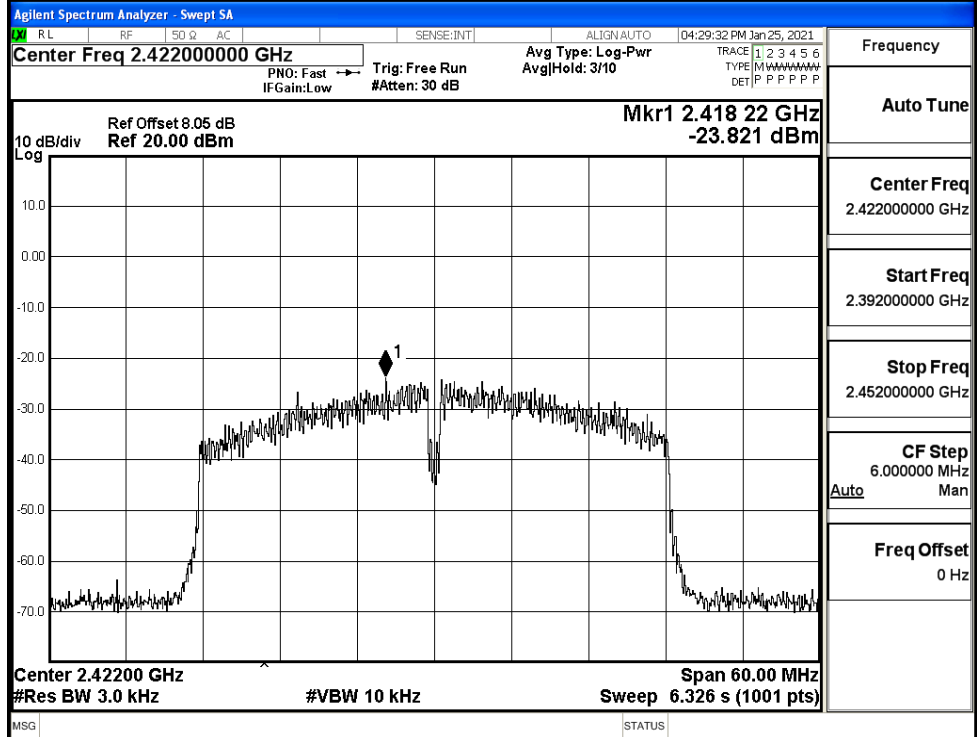
11N20SISO/MCH



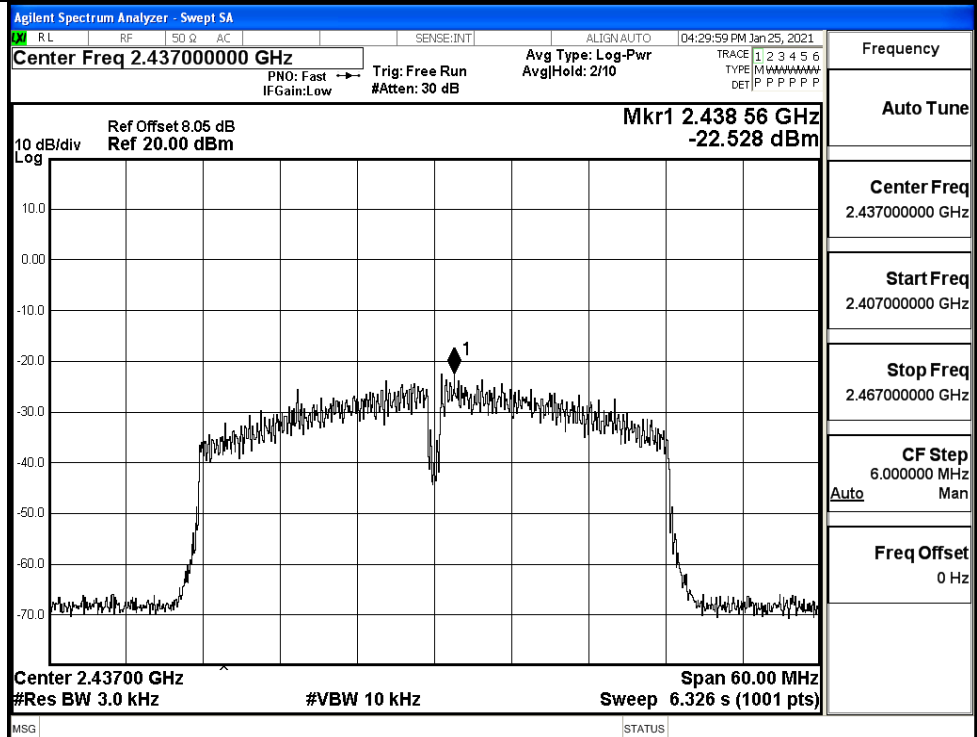
11N20SISO/HCH



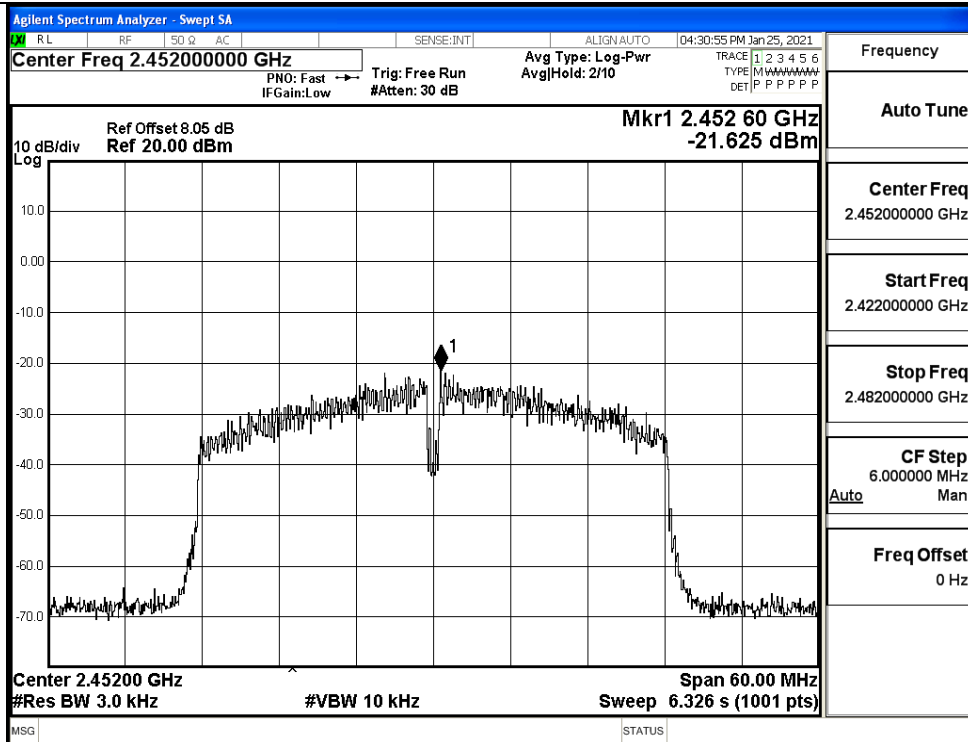
11N40SISO/LCH



11N40SISO/MCH



11N40SISO/HCH



MIMO

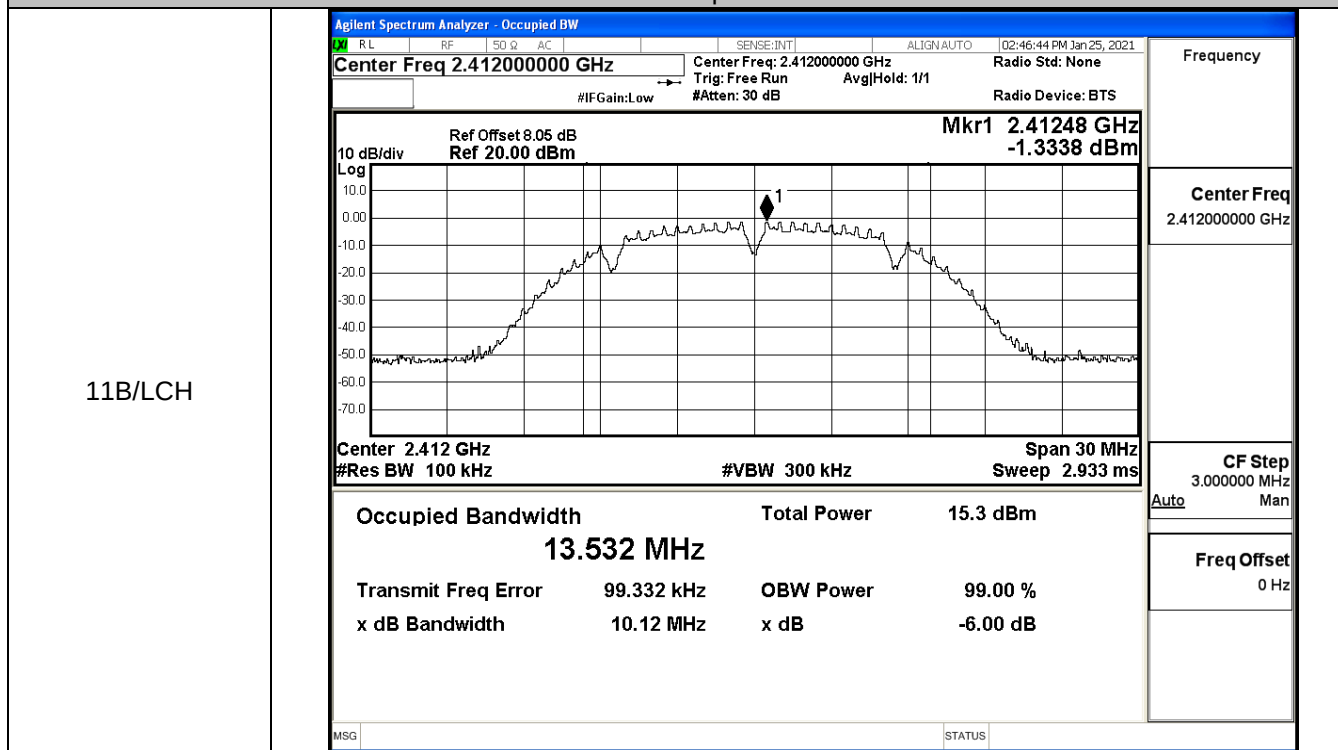
Mode	Channel	ANT 0 [dBm/3KHz]	ANT 1 [dBm/3KHz]	MIMO [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
11N20	LCH	-21.547	-20.839	-18.168	6.99	PASS
	MCH	-21.735	-19.176	-17.259	6.99	PASS
	HCH	-19.785	-18.701	-16.199	6.99	PASS
11N40	LCH	-23.734	-23.821	-20.767	6.99	PASS
	MCH	-23.155	-22.528	-19.820	6.99	PASS
	HCH	-23.287	-21.625	-19.367	6.99	PASS

A.4 6dB Bandwidth

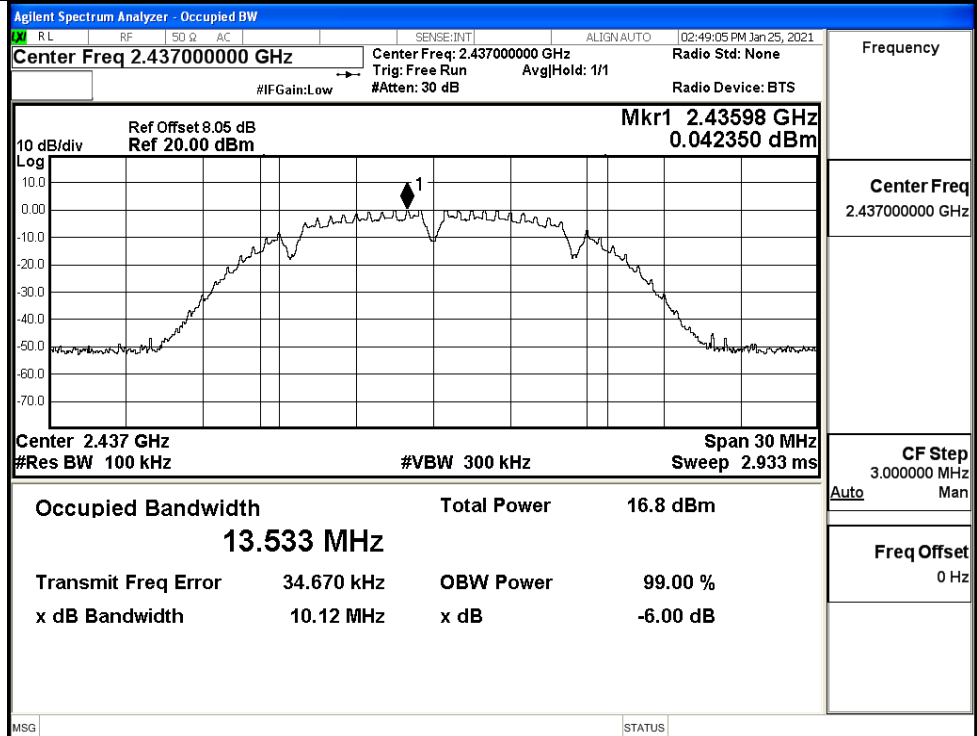
ANTO

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	10.12	≥ 0.5	PASS
	MCH	10.12	≥ 0.5	PASS
	HCH	10.11	≥ 0.5	PASS
11G	LCH	15.08	≥ 0.5	PASS
	MCH	13.85	≥ 0.5	PASS
	HCH	15.06	≥ 0.5	PASS
11N20SISO	LCH	15.09	≥ 0.5	PASS
	MCH	15.09	≥ 0.5	PASS
	HCH	15.04	≥ 0.5	PASS
11N40SISO	LCH	25.06	≥ 0.5	PASS
	MCH	25.08	≥ 0.5	PASS
	HCH	23.86	≥ 0.5	PASS

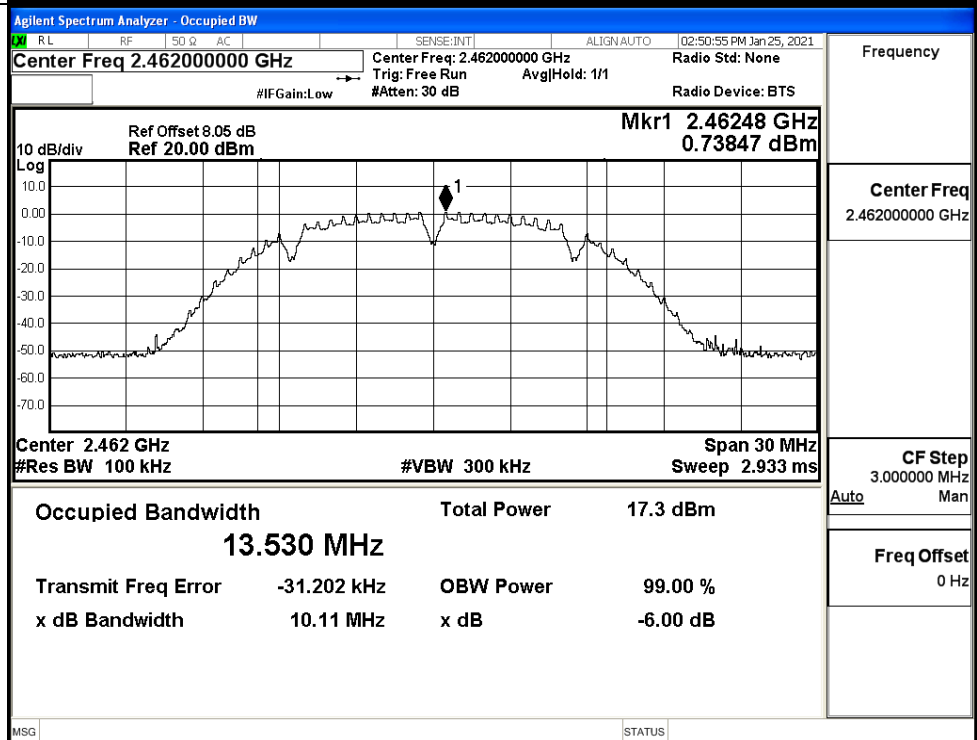
Test Graphs



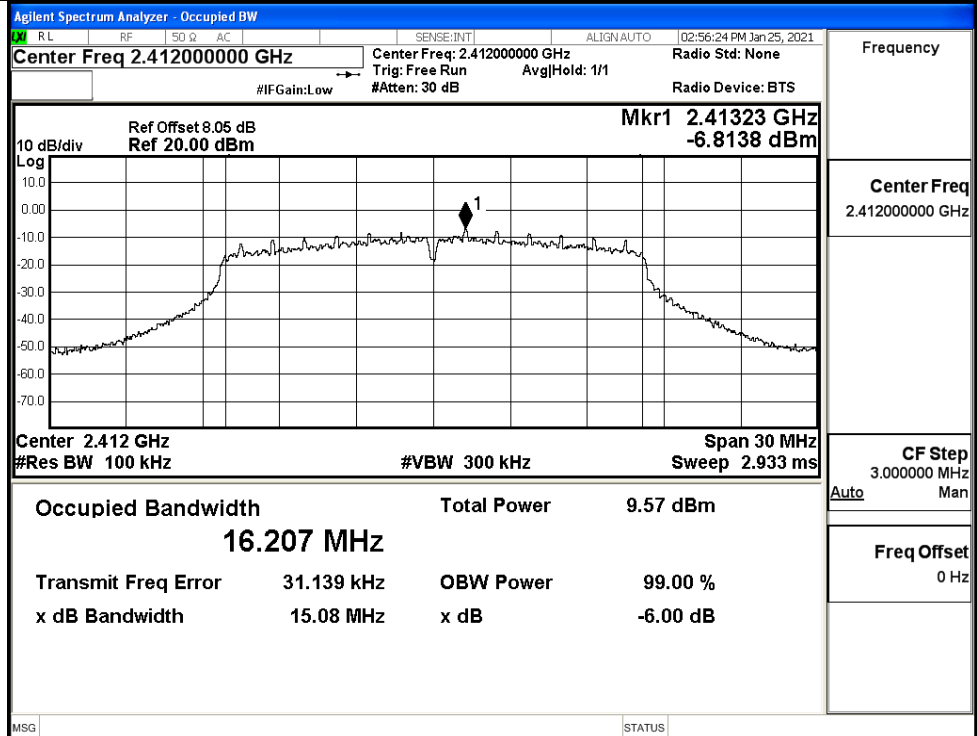
11B/MCH



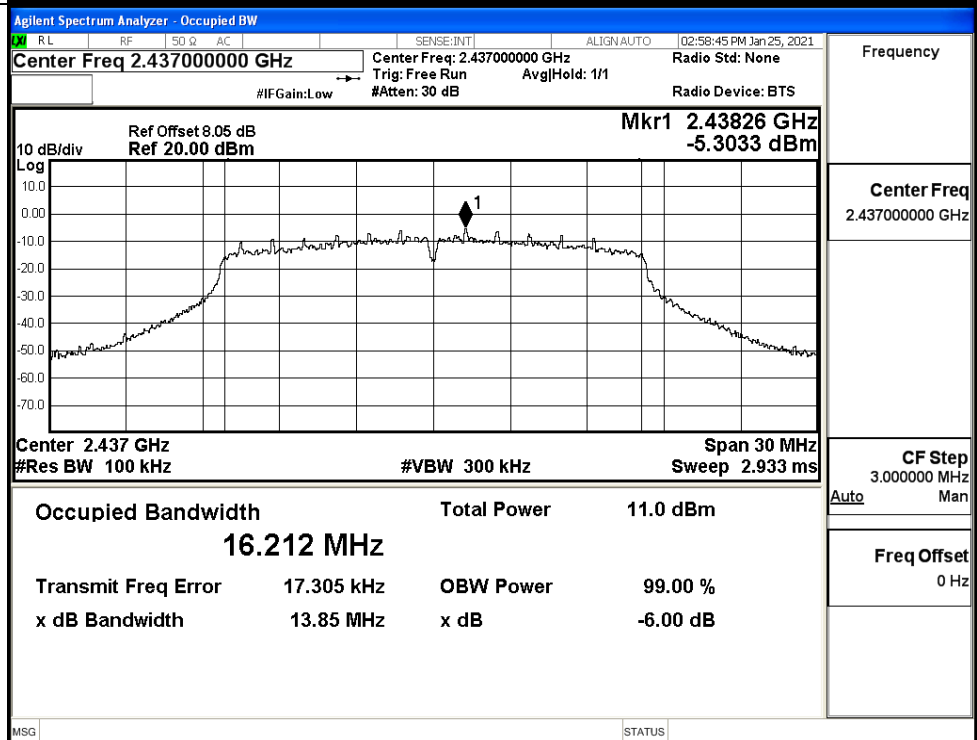
11B/HCH



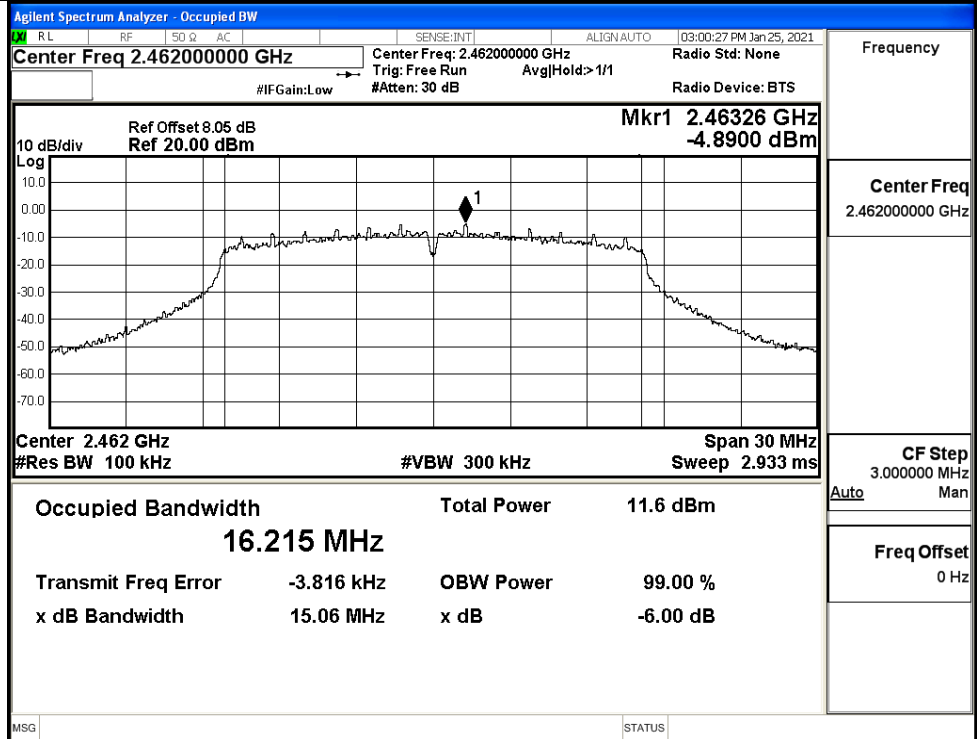
11G/LCH



11G/MCH



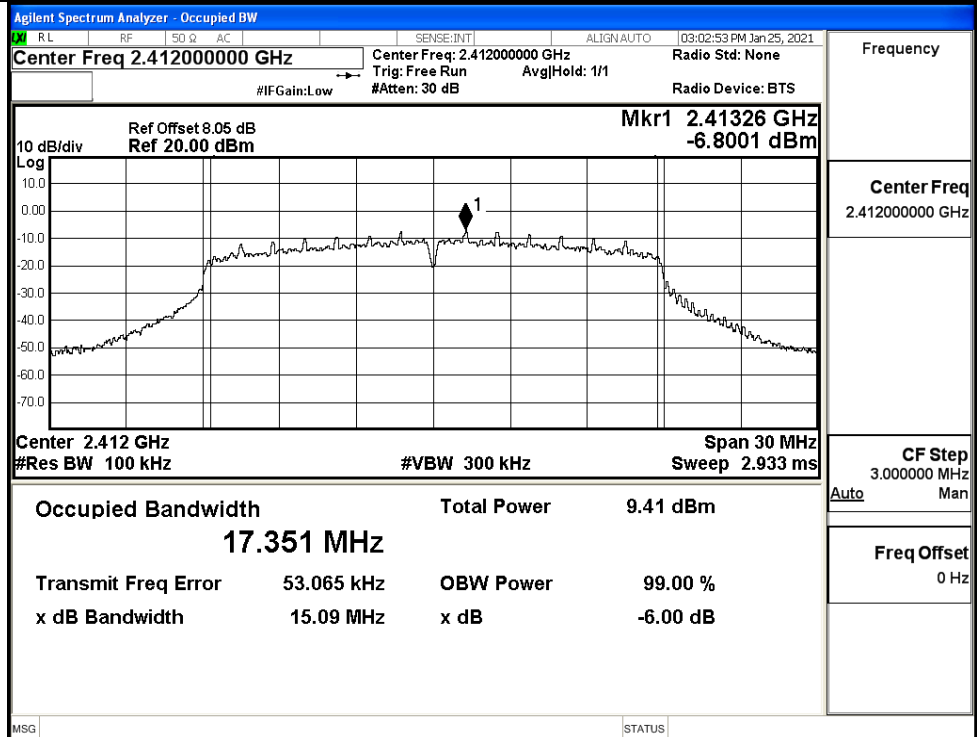
11G/HCH



Frequency

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

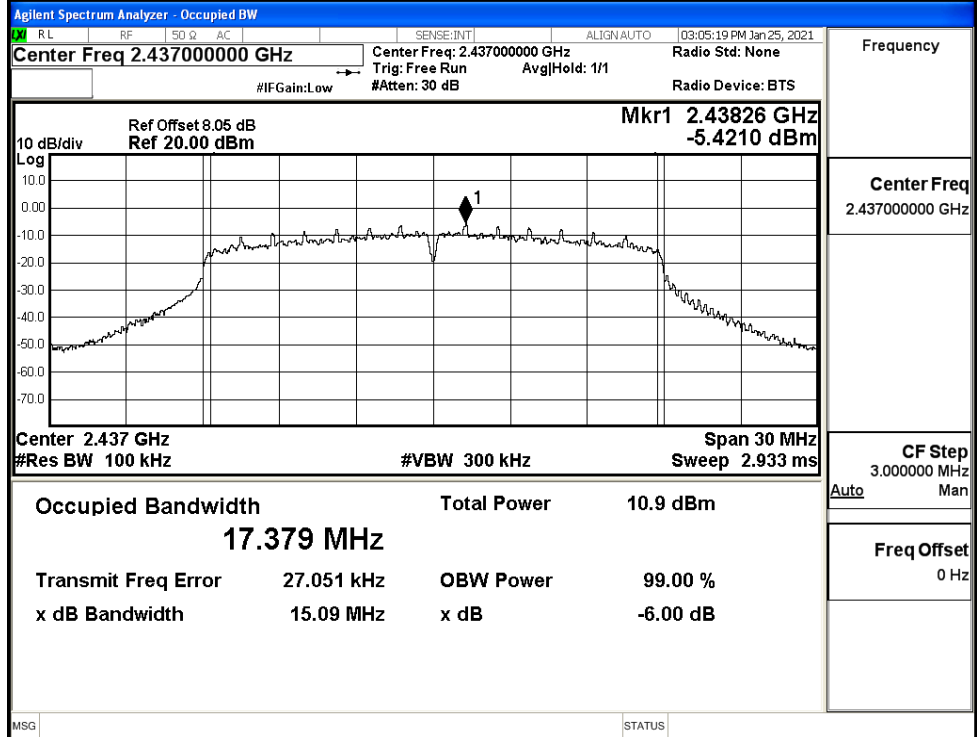
11N20SISO/LCH



Frequency

Center Freq
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3.000000 MHz
Auto ManFreq Offset
0 Hz

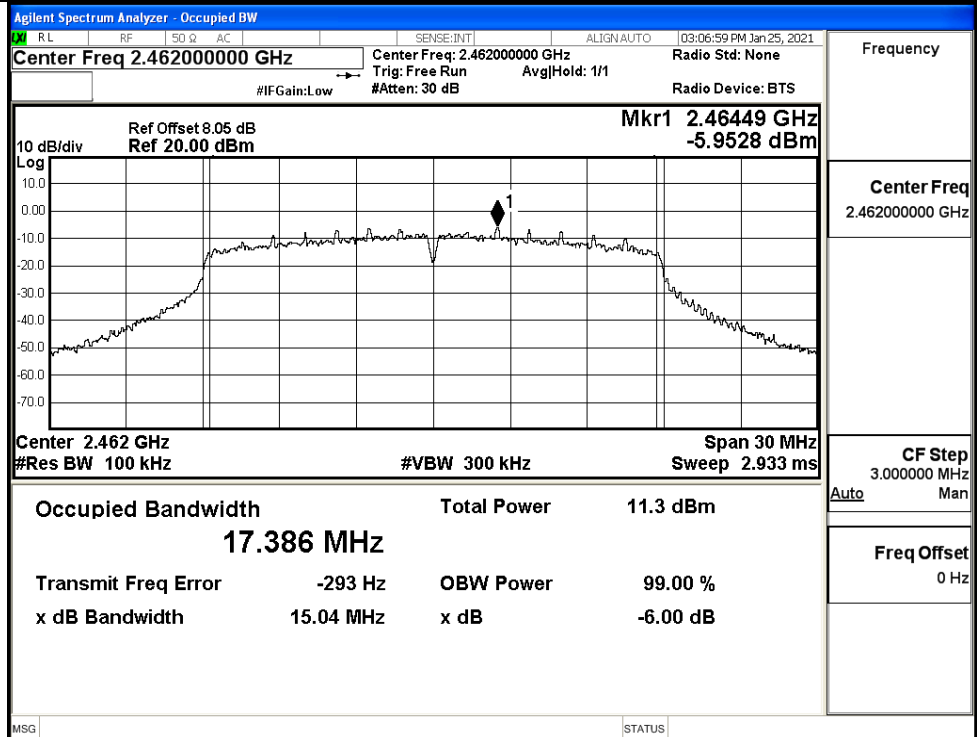
11N20SISO/MCH



Frequency

Center Freq
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Auto ManFreq Offset
0 Hz

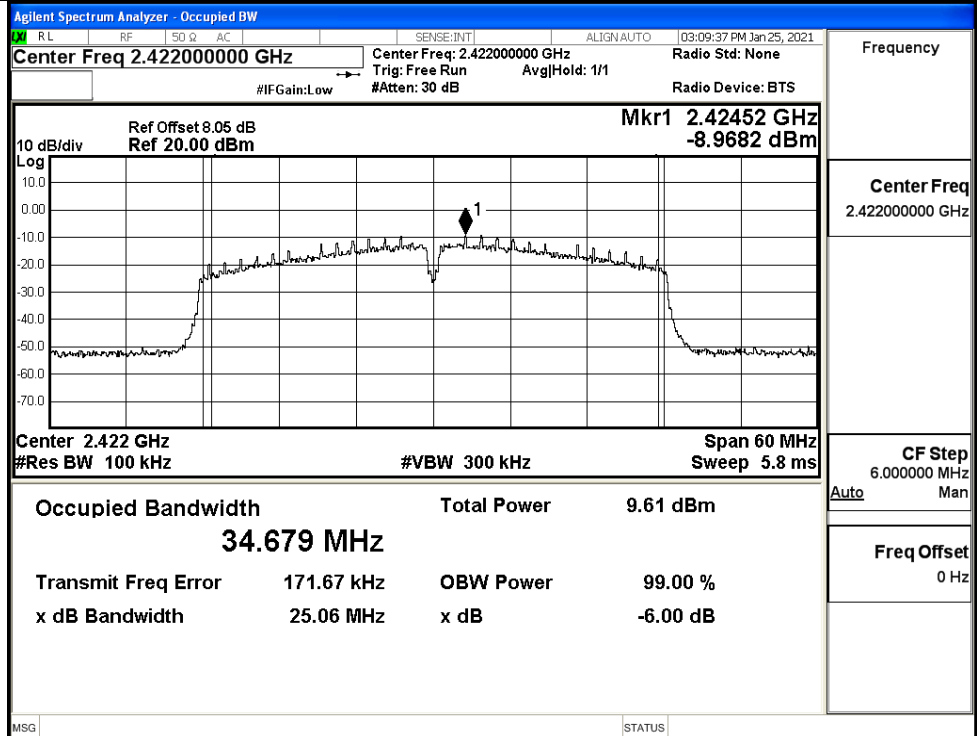
11N20SISO/HCH



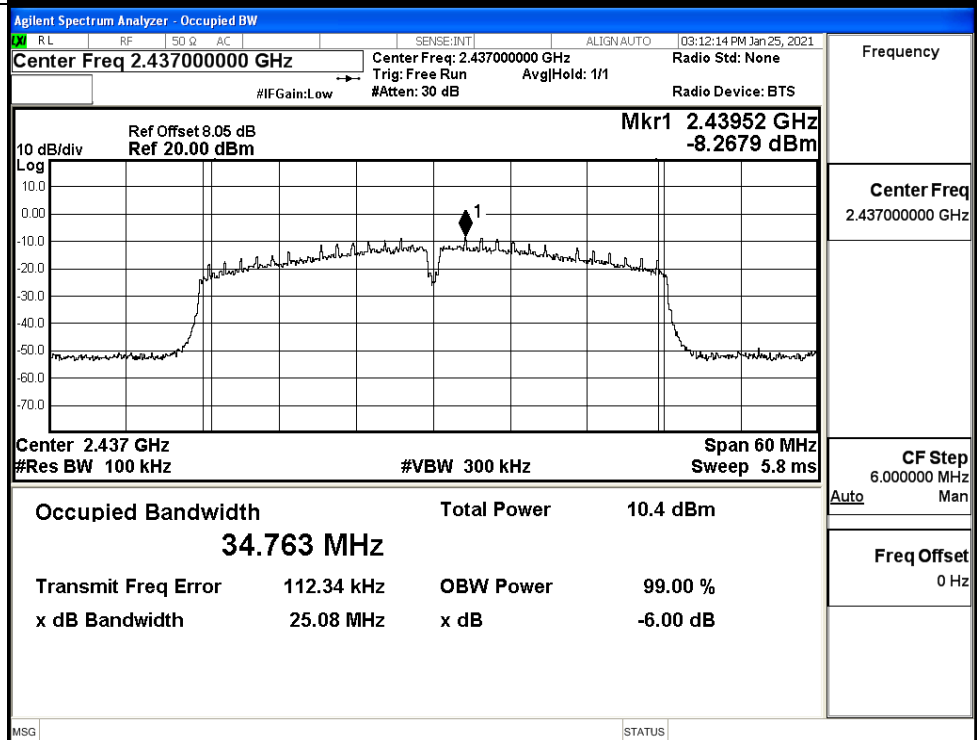
Frequency

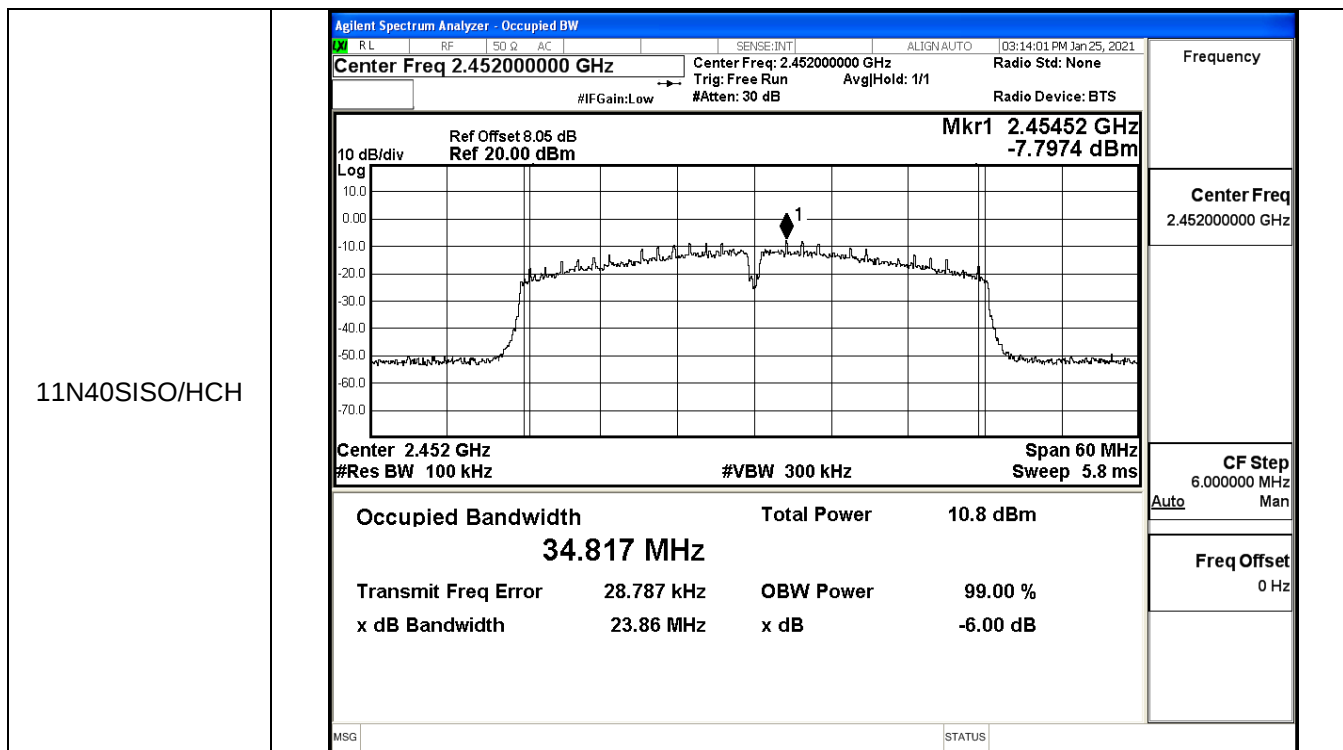
Center Freq
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3.000000 MHz
Auto ManFreq Offset
0 Hz

11N40SISO/LCH



11N40SISO/MCH



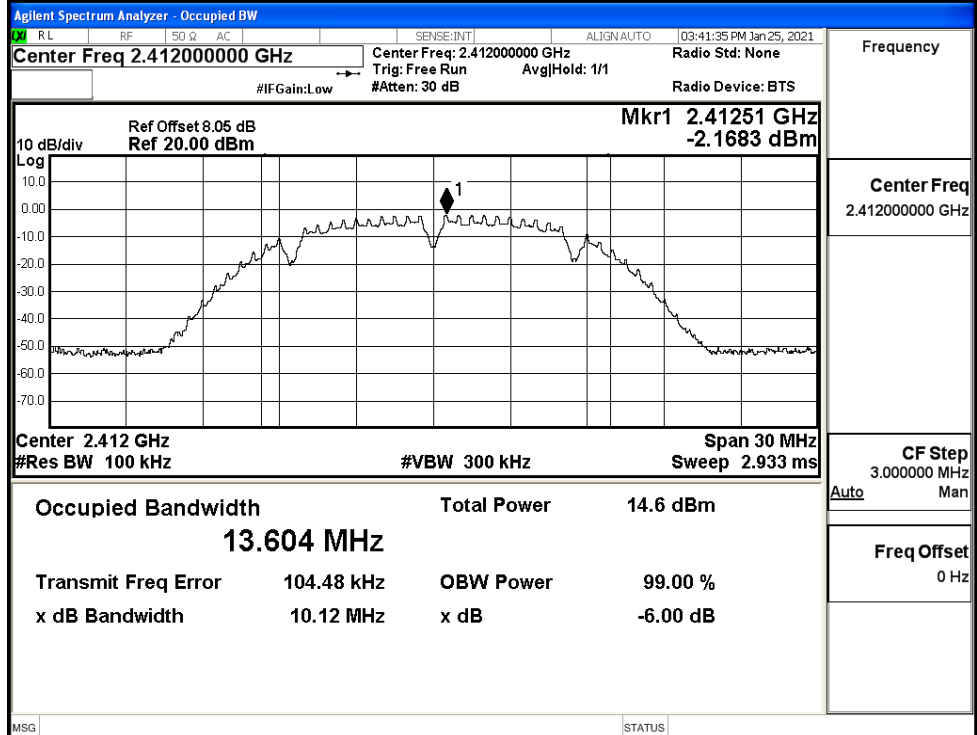


ANT1

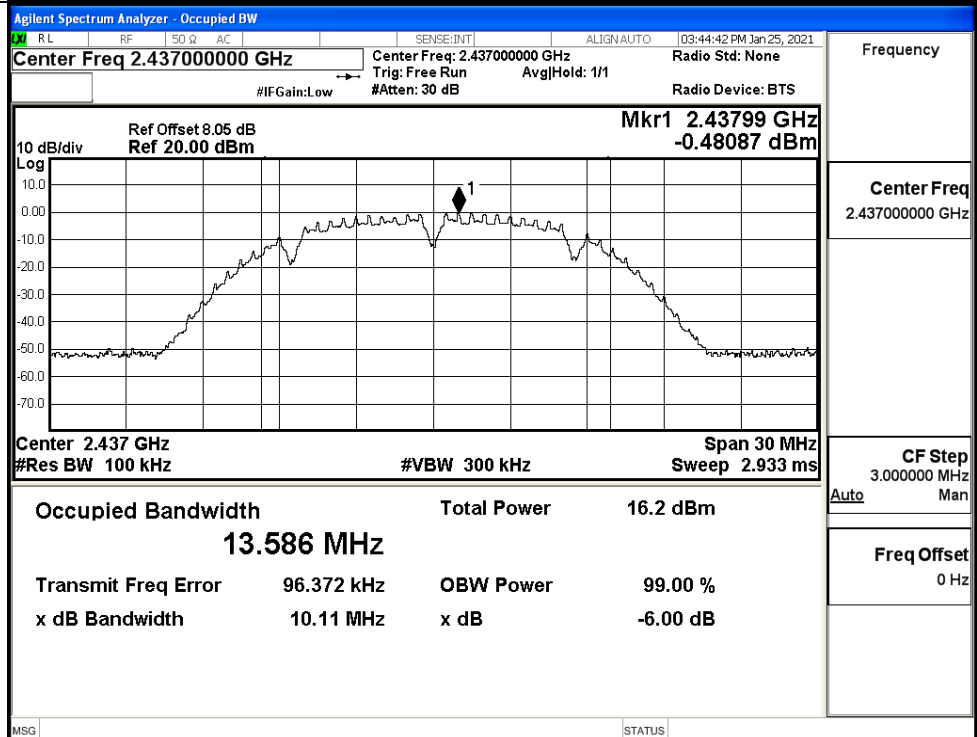
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	10.12	≥ 0.5	PASS
	MCH	10.11	≥ 0.5	PASS
	HCH	10.12	≥ 0.5	PASS
11G	LCH	15.11	≥ 0.5	PASS
	MCH	15.13	≥ 0.5	PASS
	HCH	15.12	≥ 0.5	PASS
11N20SISO	LCH	15.12	≥ 0.5	PASS
	MCH	15.11	≥ 0.5	PASS
	HCH	15.08	≥ 0.5	PASS
11N40SISO	LCH	26.32	≥ 0.5	PASS
	MCH	23.86	≥ 0.5	PASS
	HCH	25.07	≥ 0.5	PASS

Test Graphs

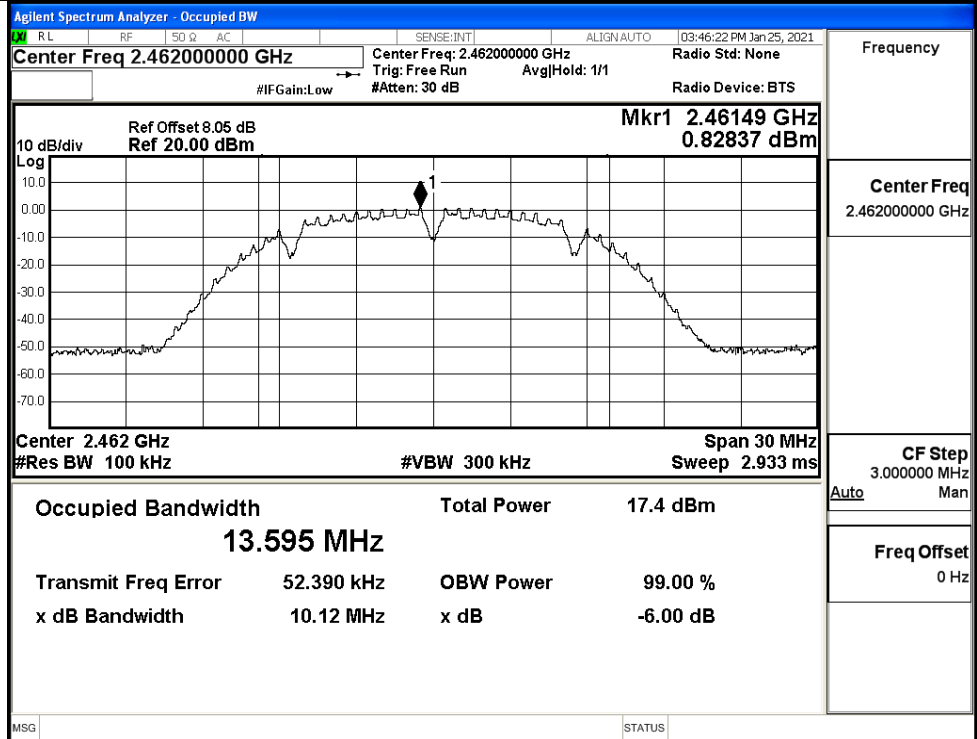
11B/LCH



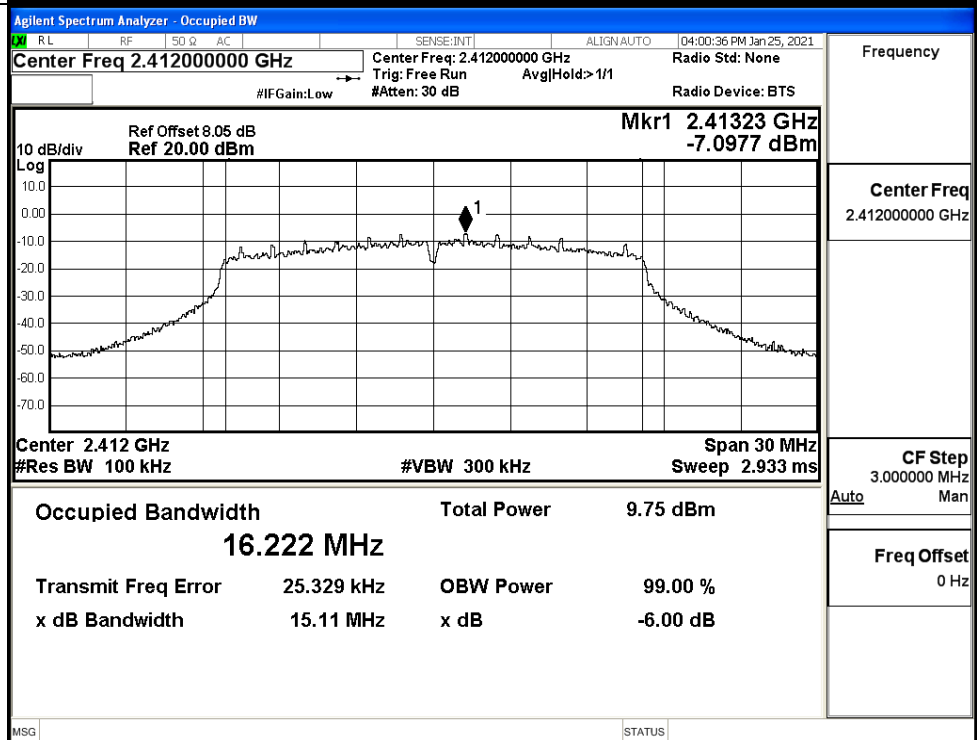
11B/MCH



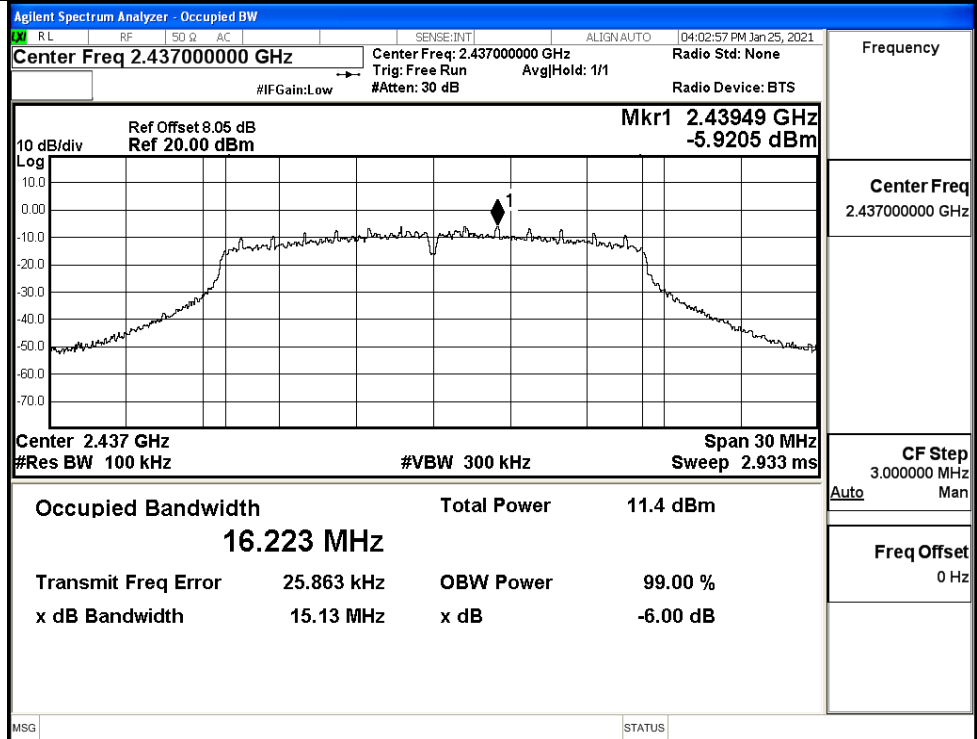
11B/HCH



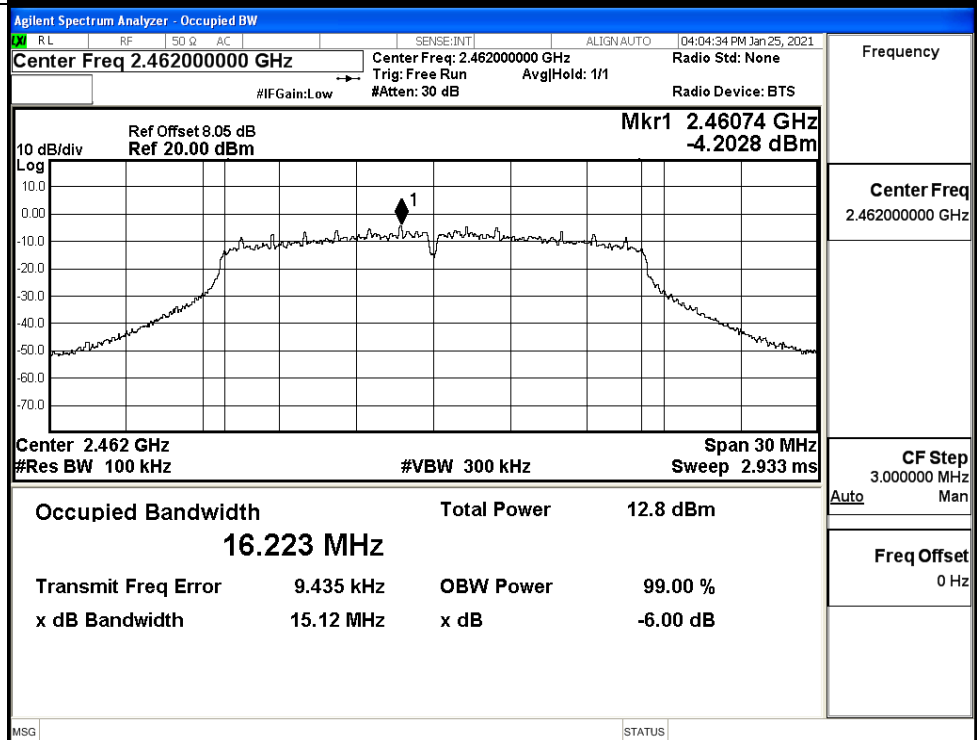
11G/LCH



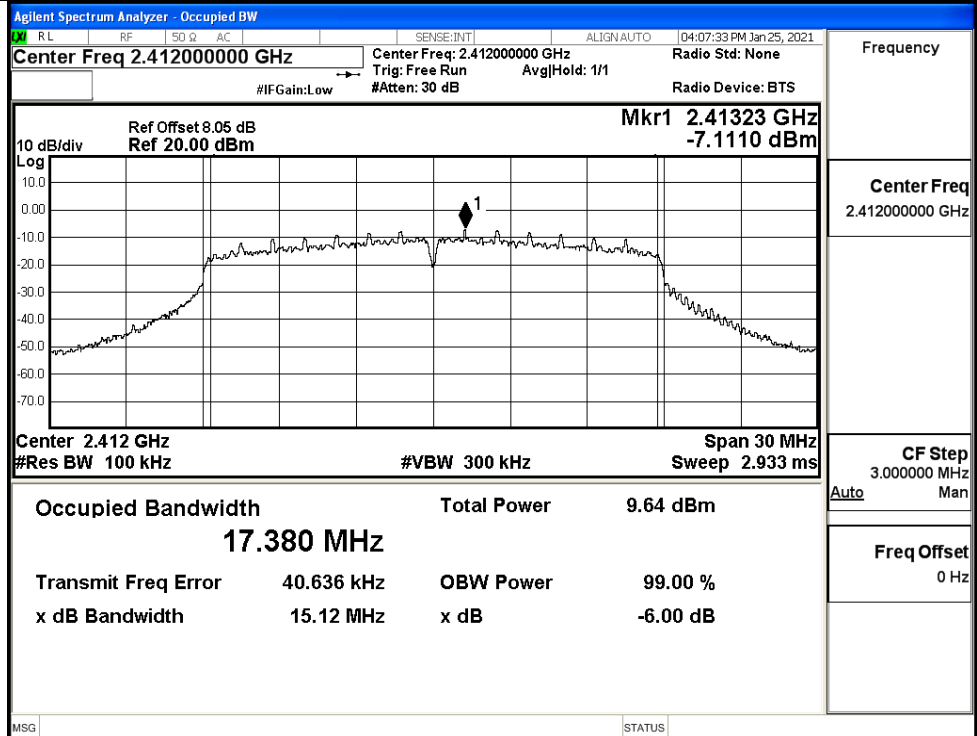
11G/MCH



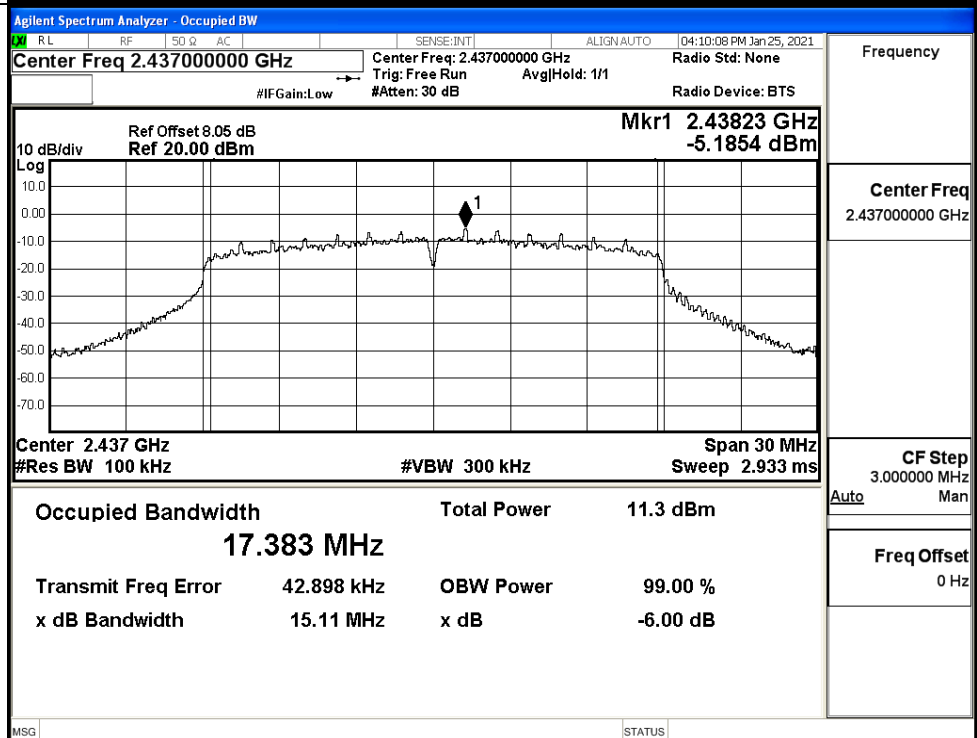
11G/HCH



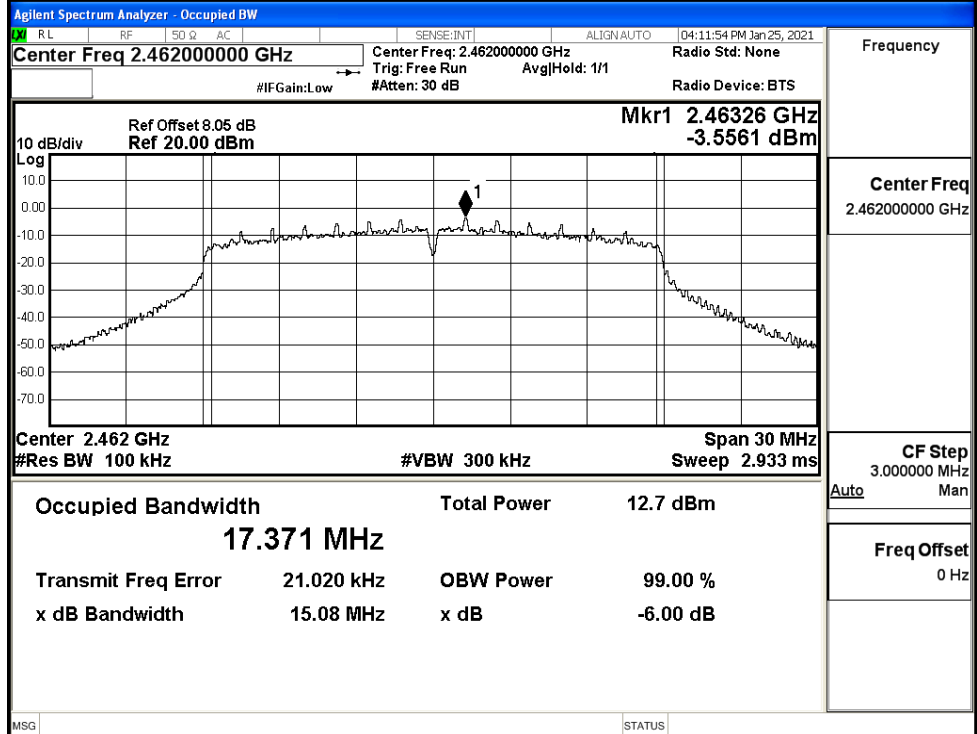
11N20SISO/LCH



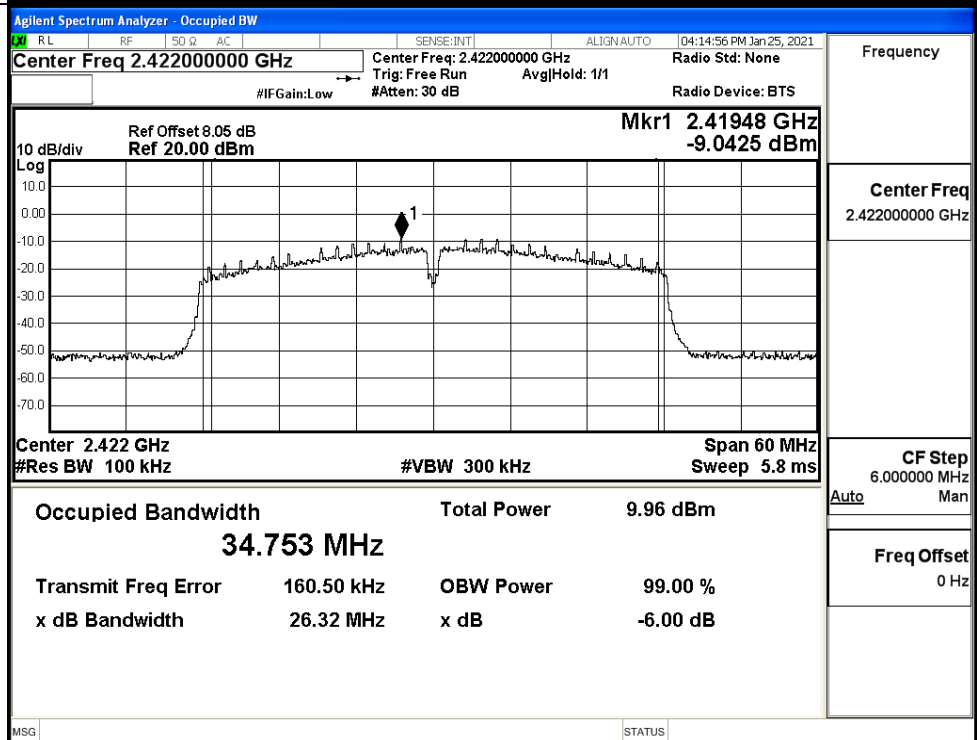
11N20SISO/MCH



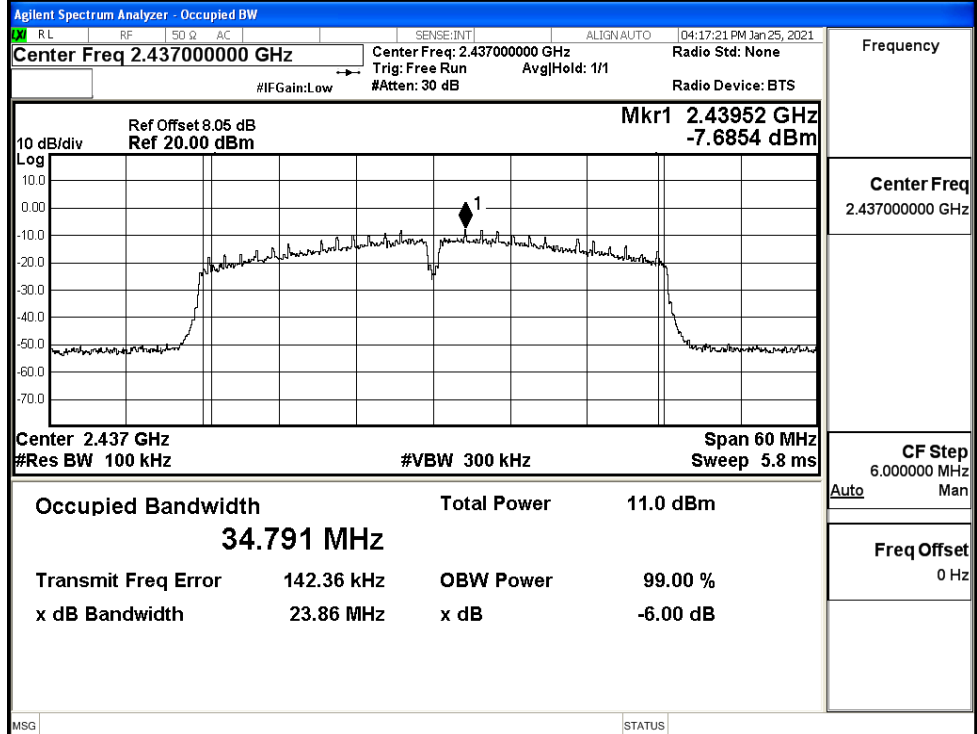
11N20SISO/HCH



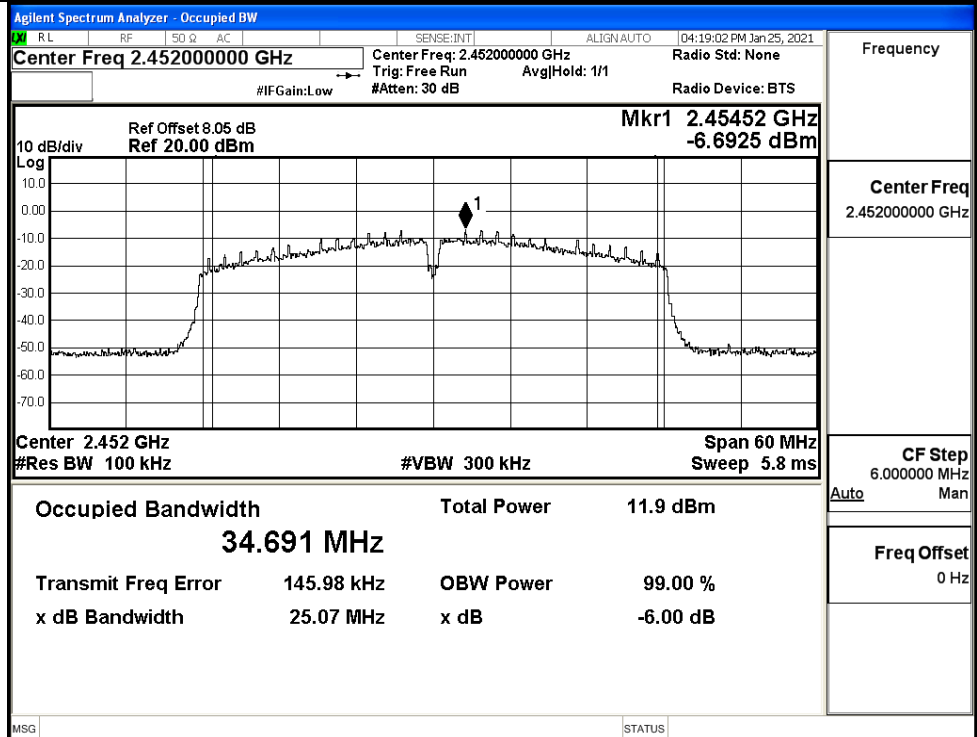
11N40SISO/LCH



11N40SISO/MCH



11N40SISO/HCH

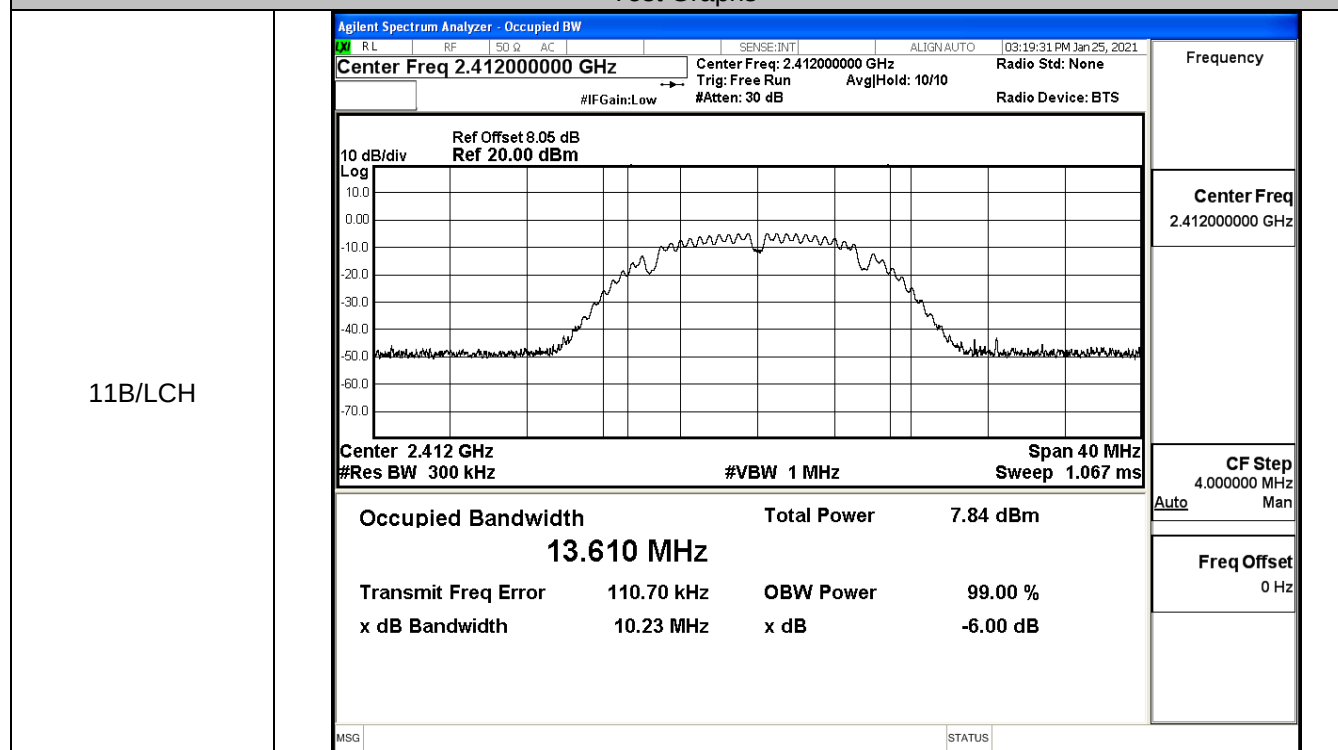


A.5 Occupied Bandwidth

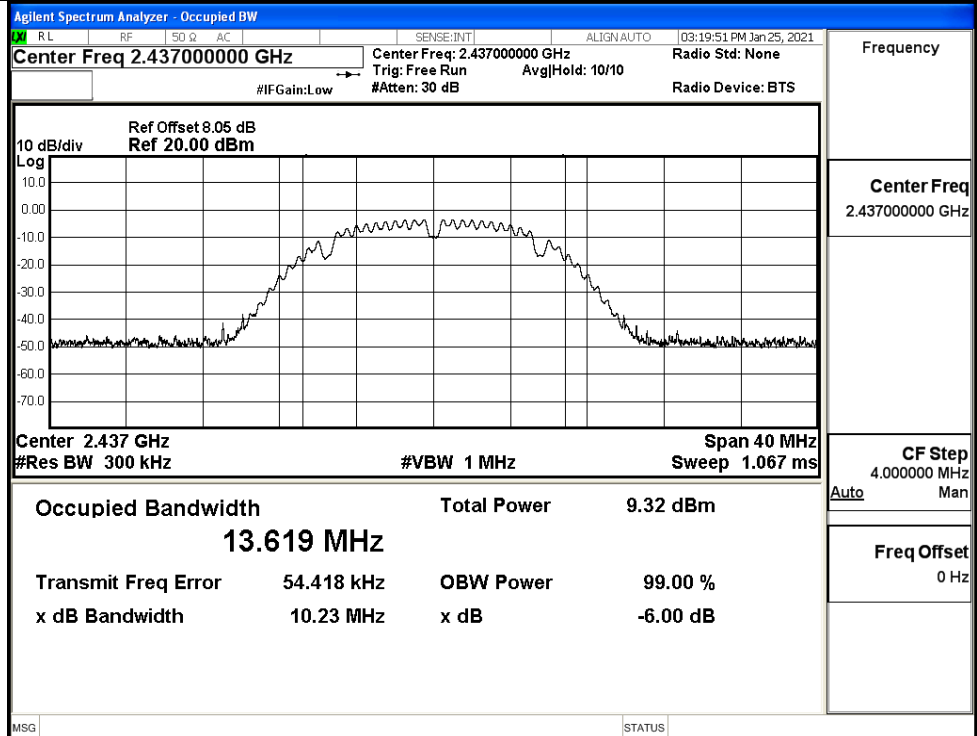
ANT0

Mode	Channel	Occupied Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	13.610	≥ 0.5	PASS
	MCH	13.619	≥ 0.5	PASS
	HCH	13.604	≥ 0.5	PASS
11G	LCH	16.348	≥ 0.5	PASS
	MCH	16.343	≥ 0.5	PASS
	HCH	16.342	≥ 0.5	PASS
11N20SISO	LCH	17.451	≥ 0.5	PASS
	MCH	17.478	≥ 0.5	PASS
	HCH	17.486	≥ 0.5	PASS
11N40SISO	LCH	34.504	≥ 0.5	PASS
	MCH	34.551	≥ 0.5	PASS
	HCH	34.507	≥ 0.5	PASS

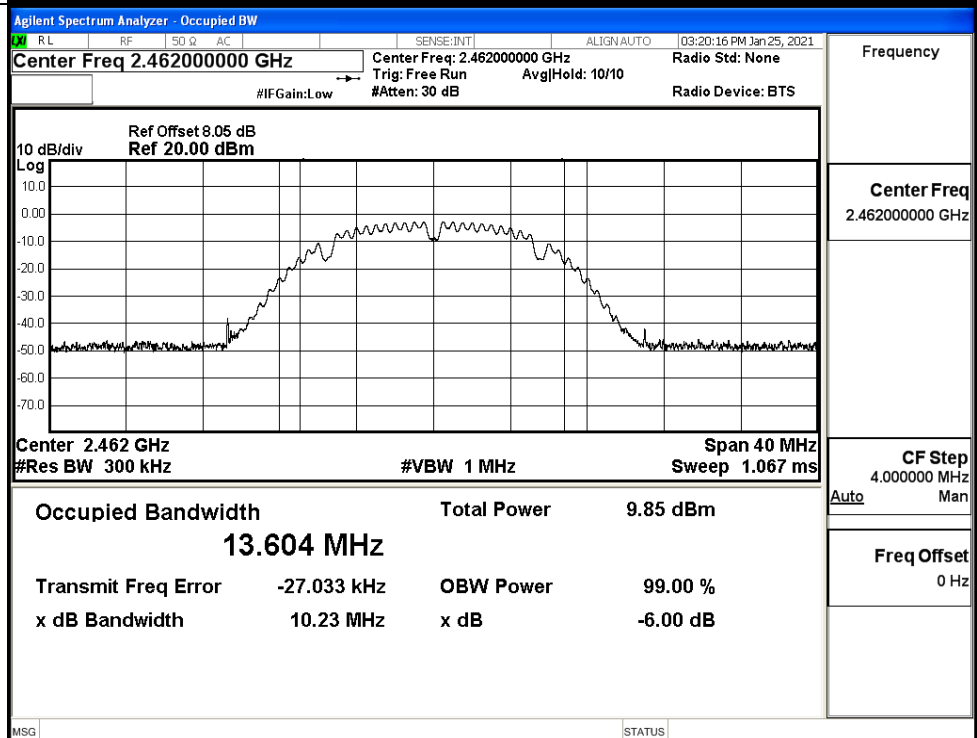
Test Graphs



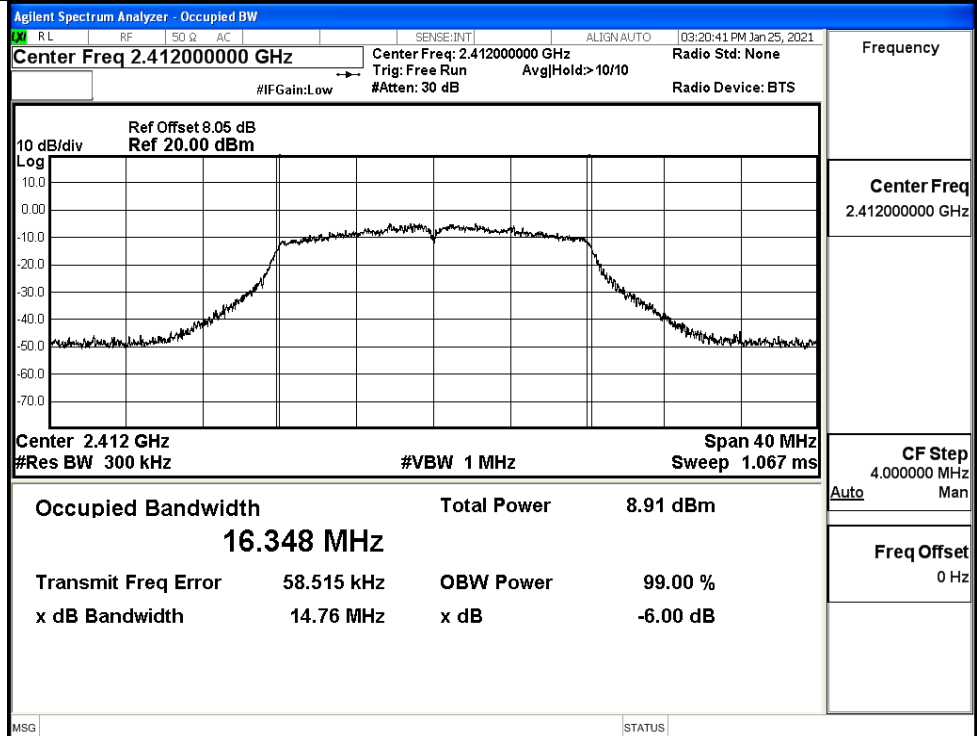
11B/MCH



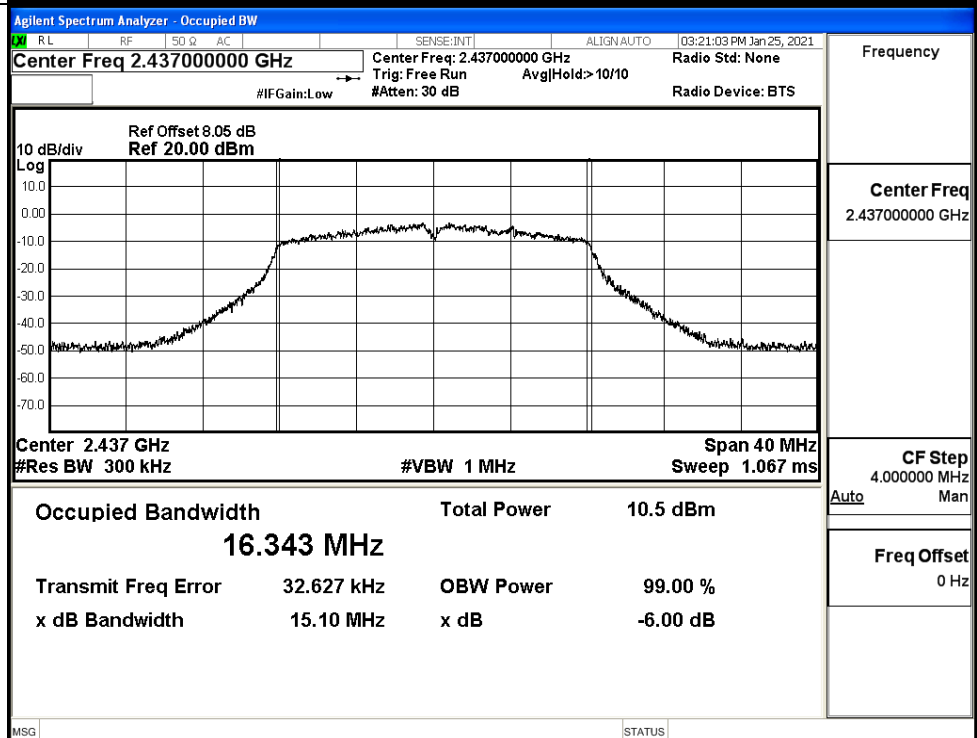
11B/HCH



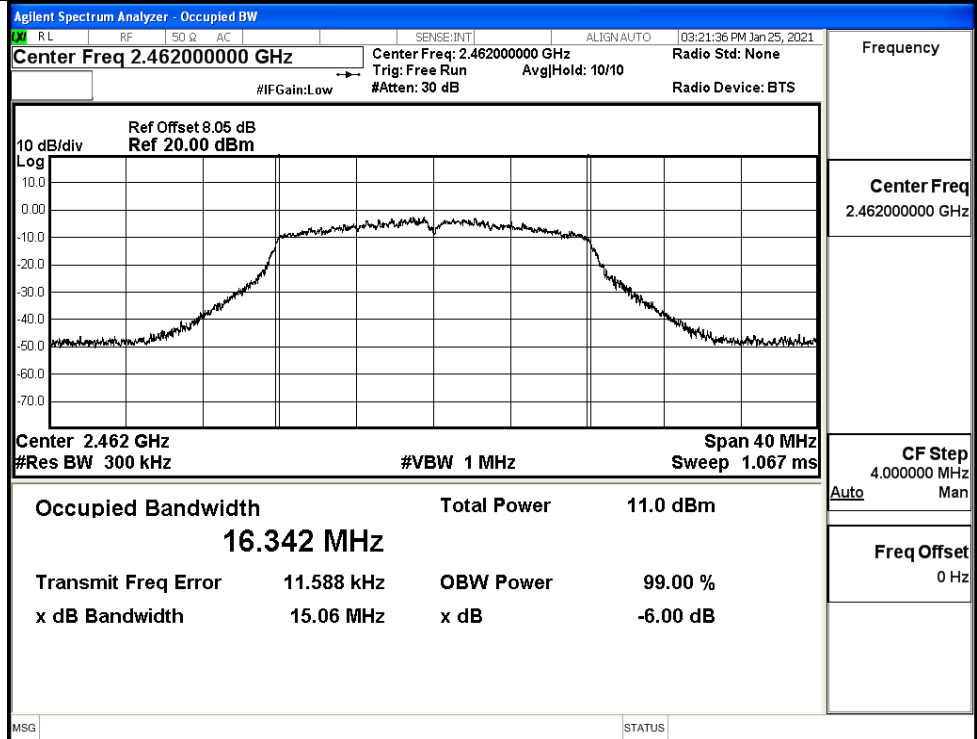
11G/LCH



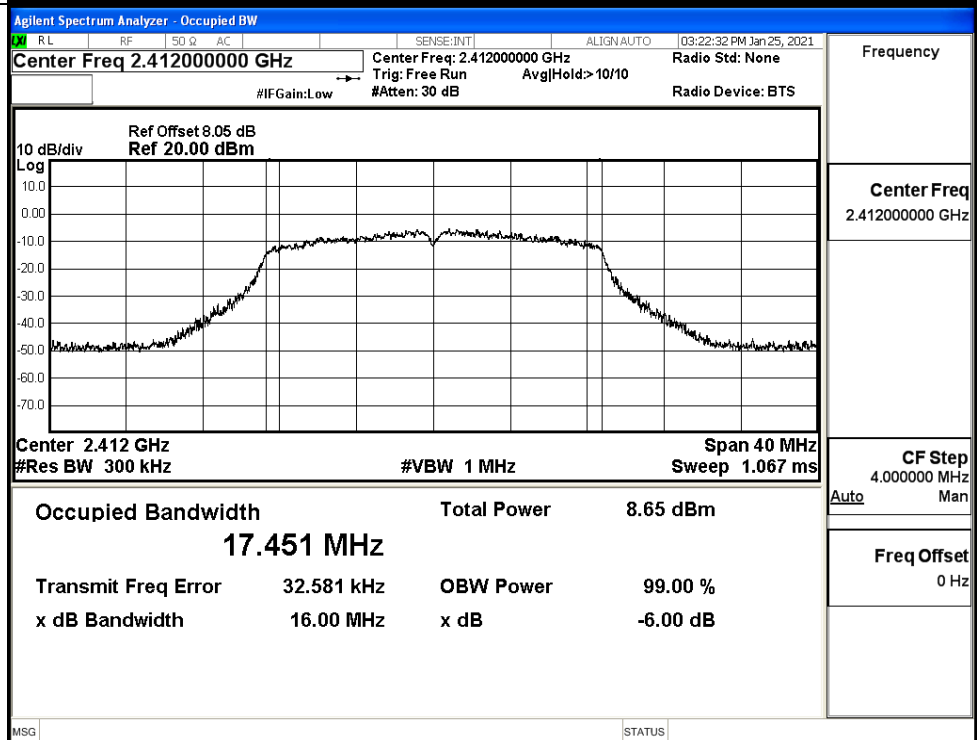
11G/MCH



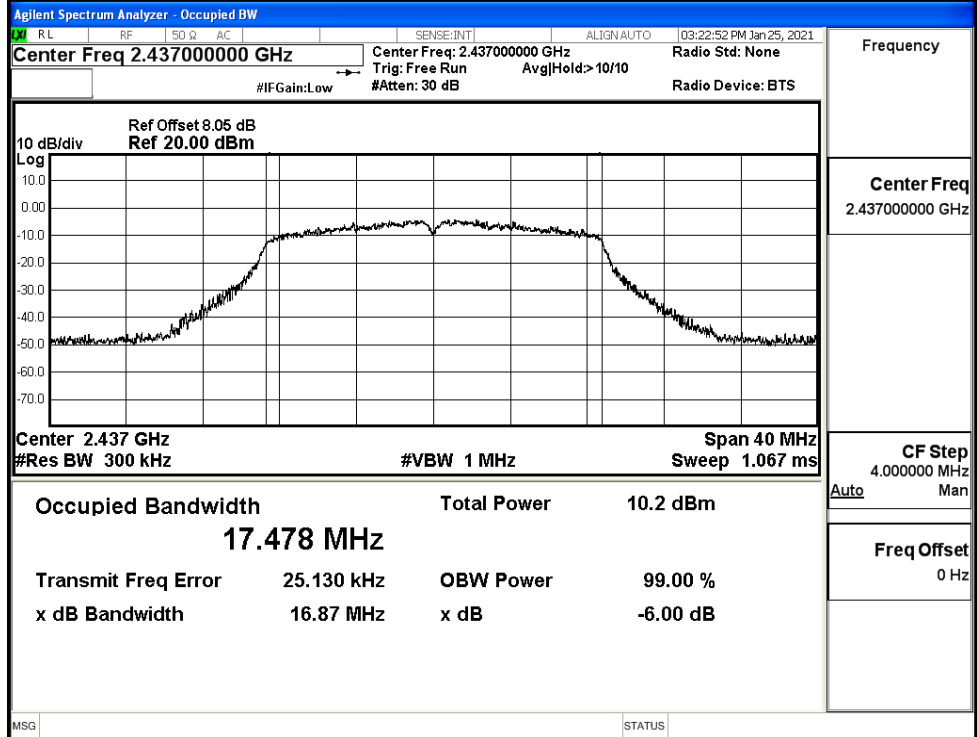
11G/HCH



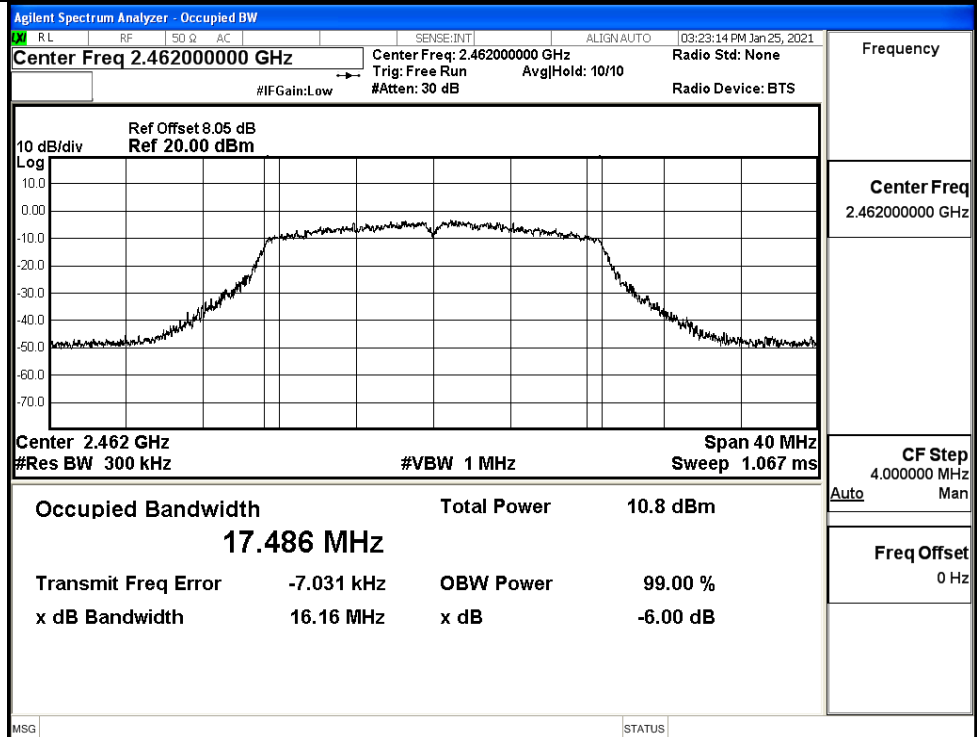
11N20SISO/LCH



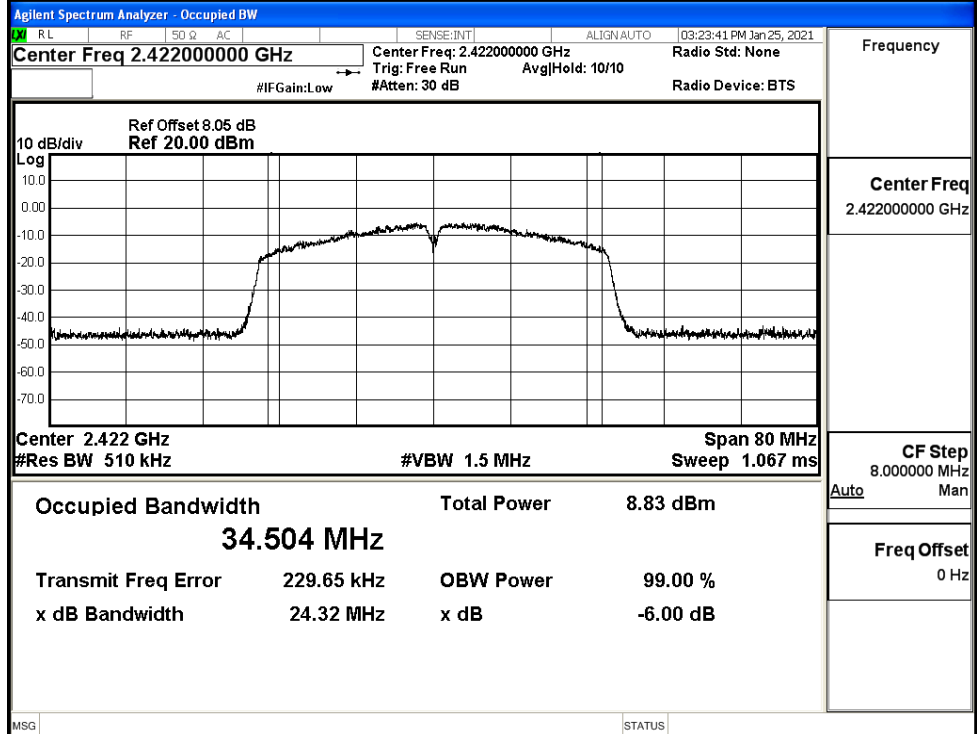
11N20SISO/MCH



11N20SISO/HCH



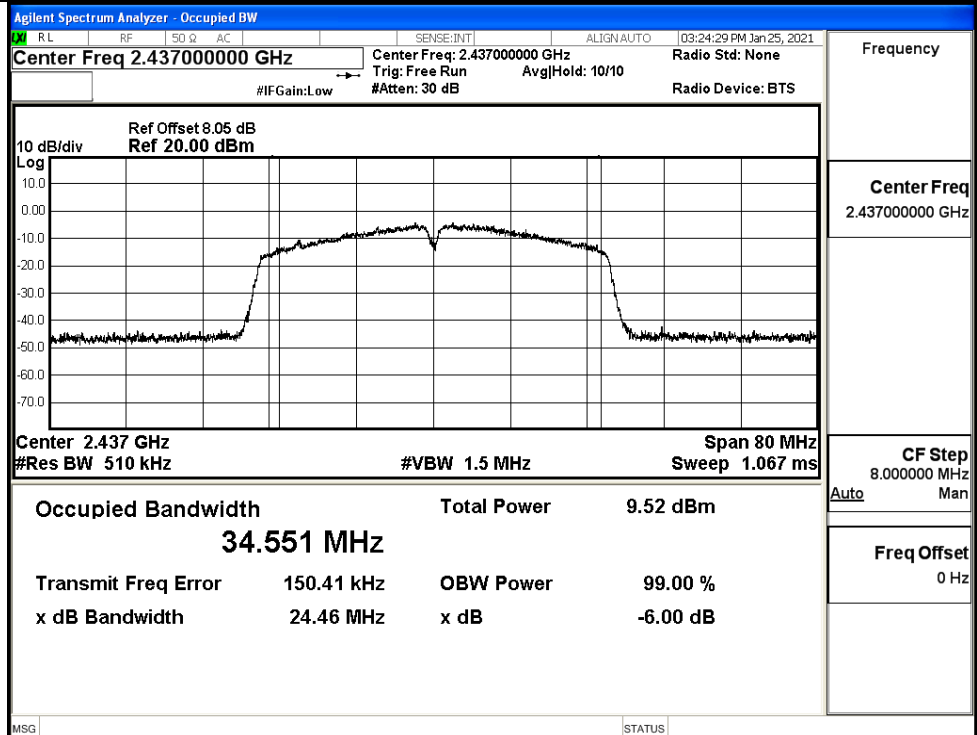
11N40SISO/LCH



Frequency

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

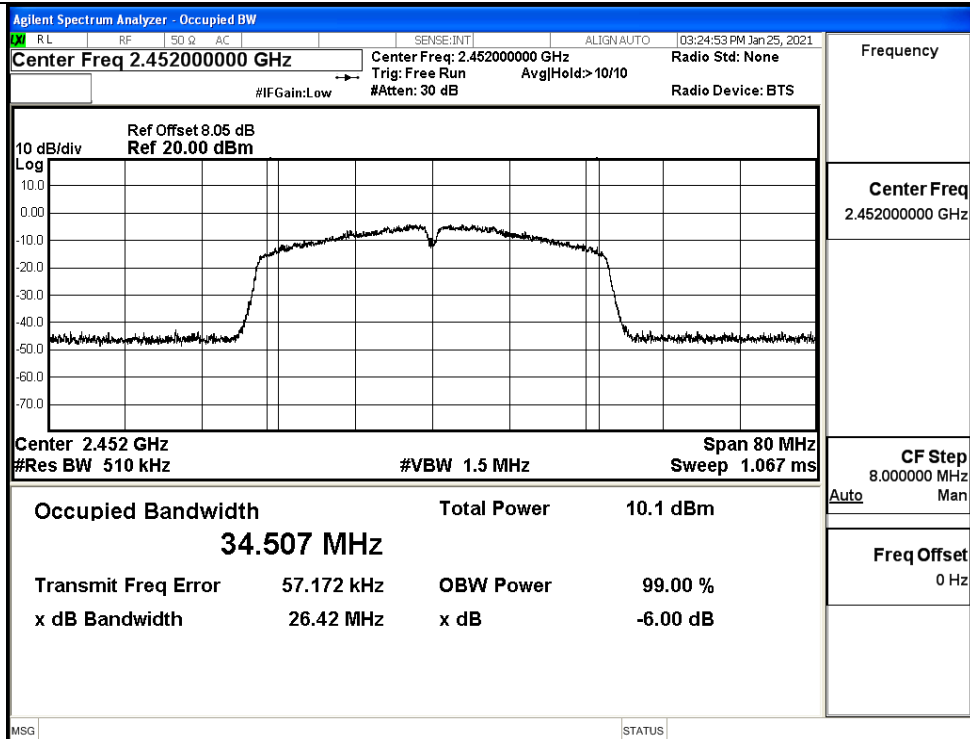
11N40SISO/MCH



Frequency

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

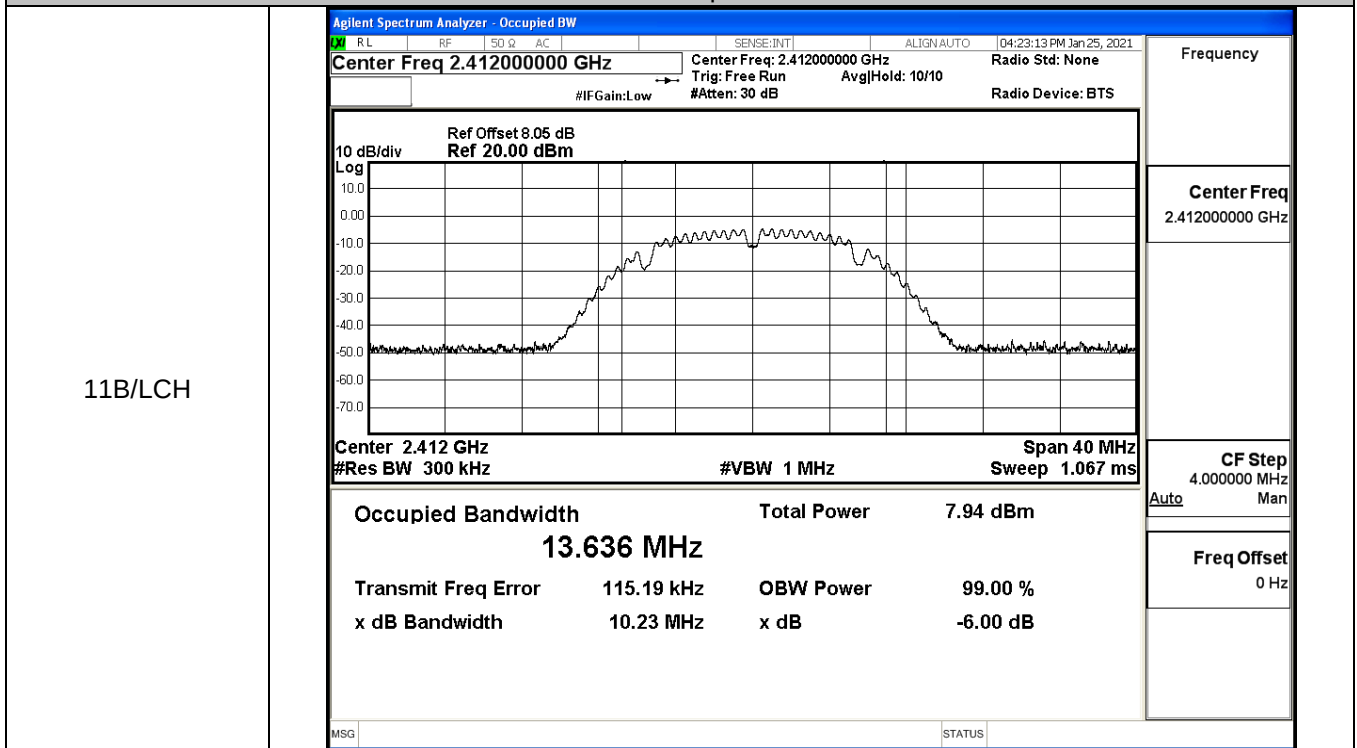
11N40SISO/HCH



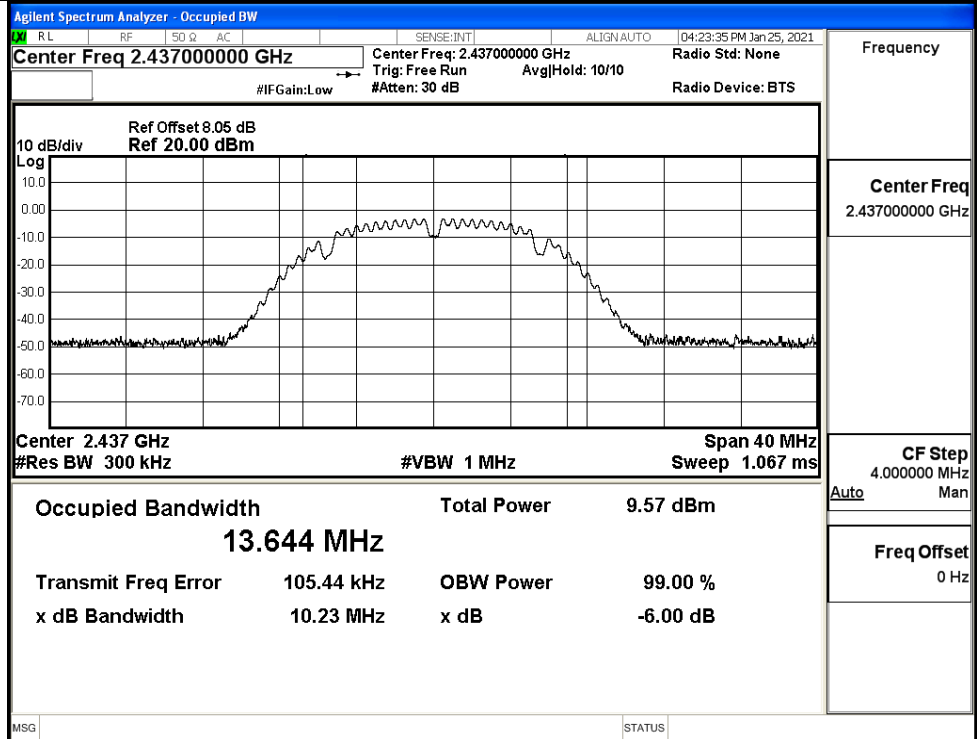
ANT1

Mode	Channel	Occupied Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	13.636	≥ 0.5	PASS
	MCH	13.644	≥ 0.5	PASS
	HCH	13.610	≥ 0.5	PASS
11G	LCH	16.362	≥ 0.5	PASS
	MCH	16.400	≥ 0.5	PASS
	HCH	16.327	≥ 0.5	PASS
11N20SISO	LCH	17.488	≥ 0.5	PASS
	MCH	17.508	≥ 0.5	PASS
	HCH	17.477	≥ 0.5	PASS
11N40SISO	LCH	34.581	≥ 0.5	PASS
	MCH	34.643	≥ 0.5	PASS
	HCH	34.536	≥ 0.5	PASS

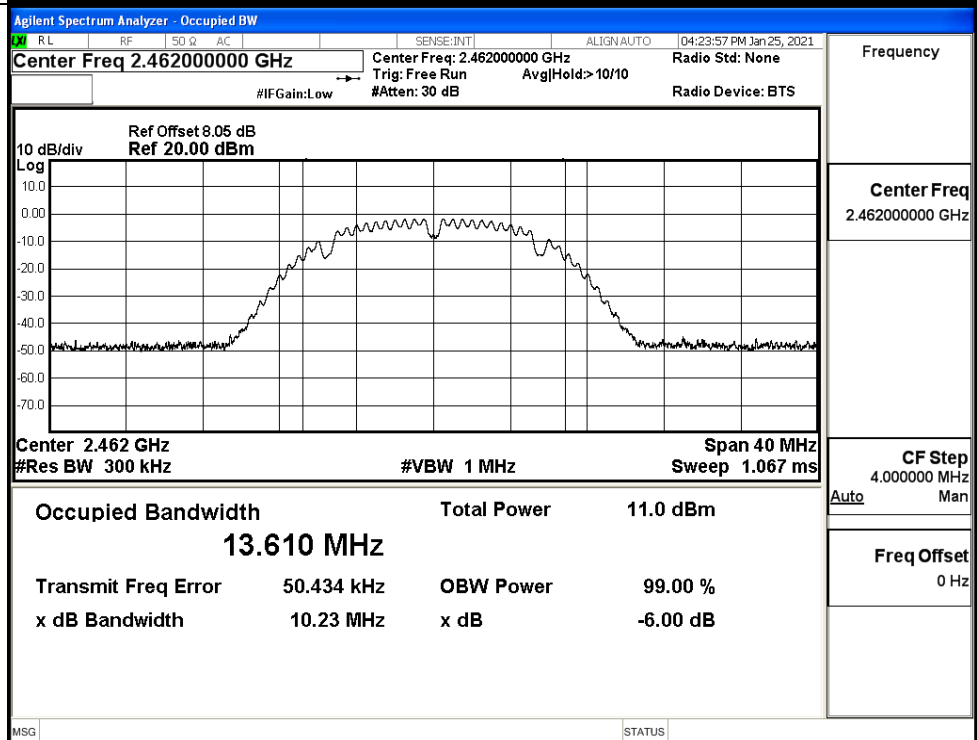
Test Graphs



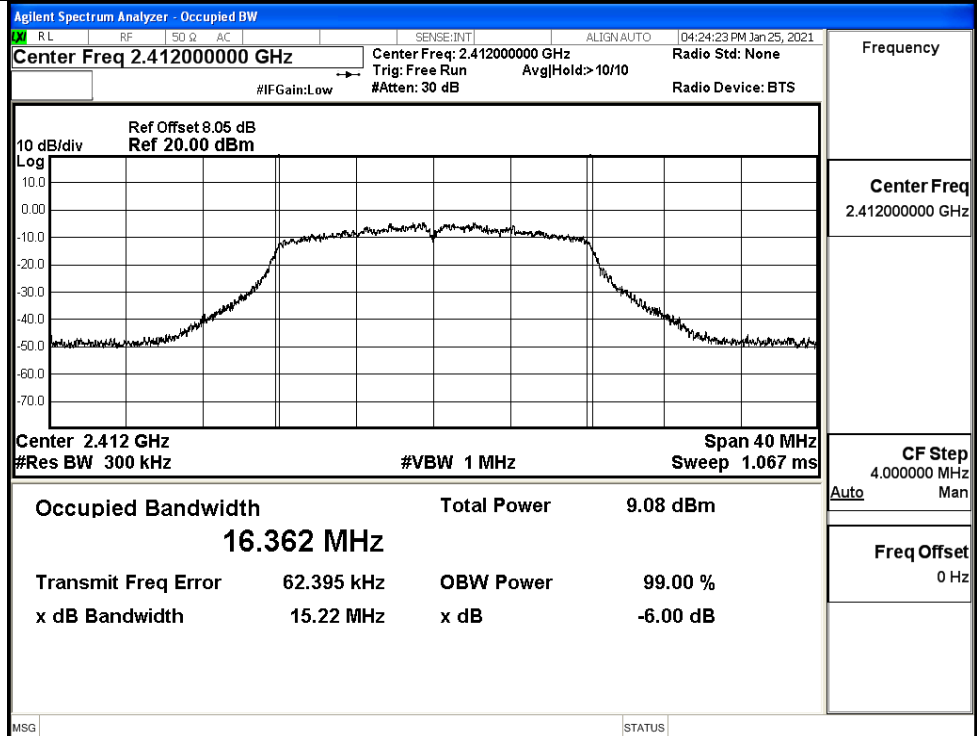
11B/MCH



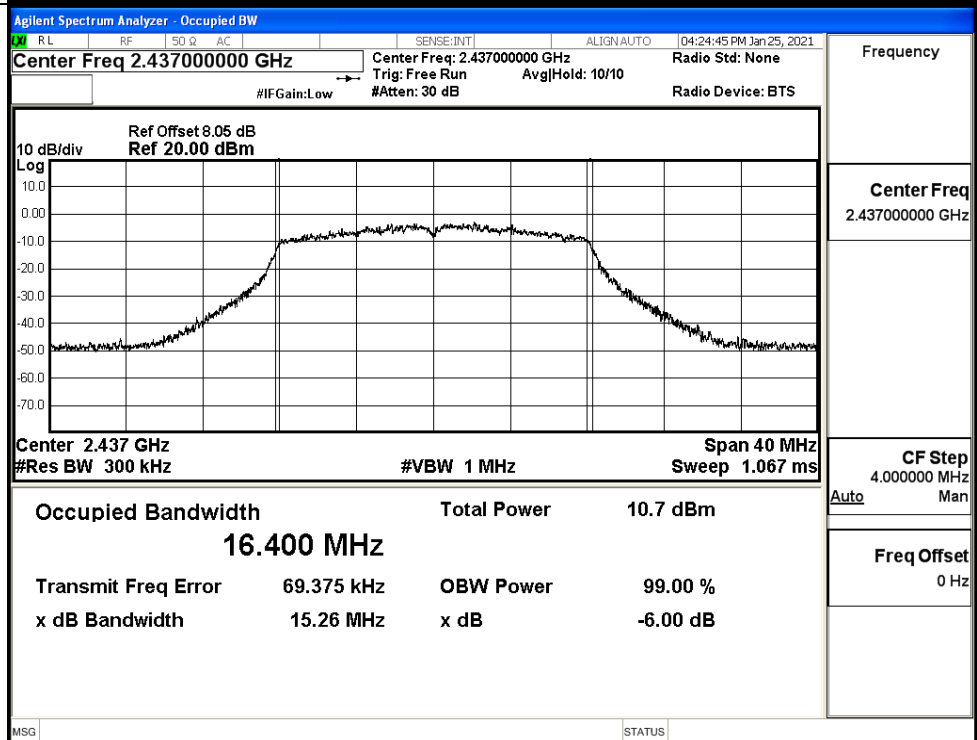
11B/HCH



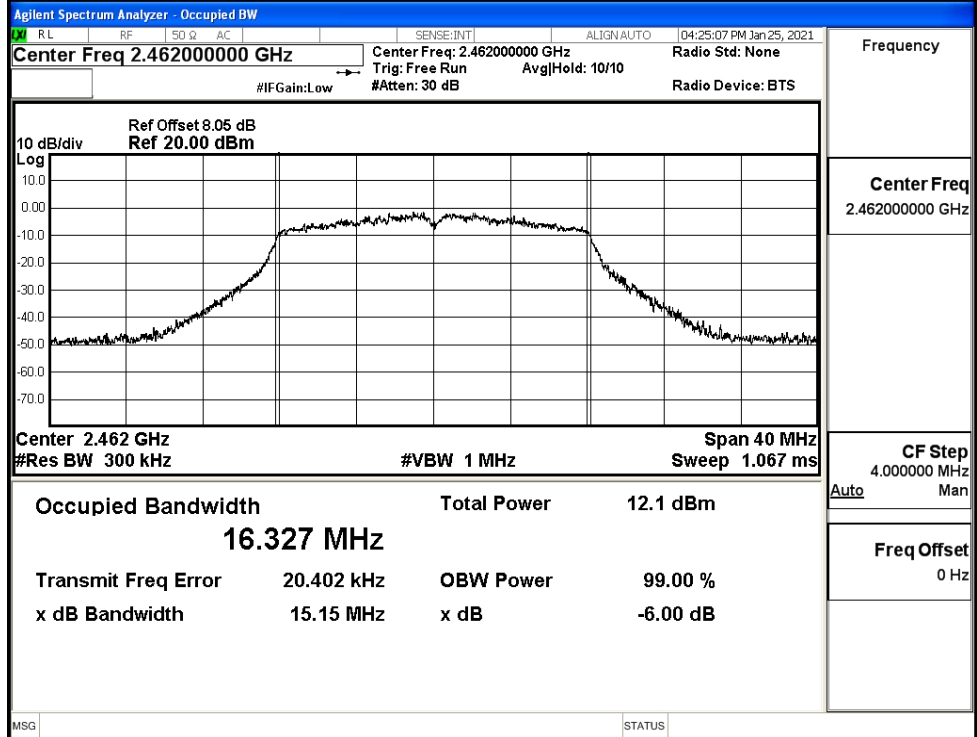
11G/LCH



11G/MCH



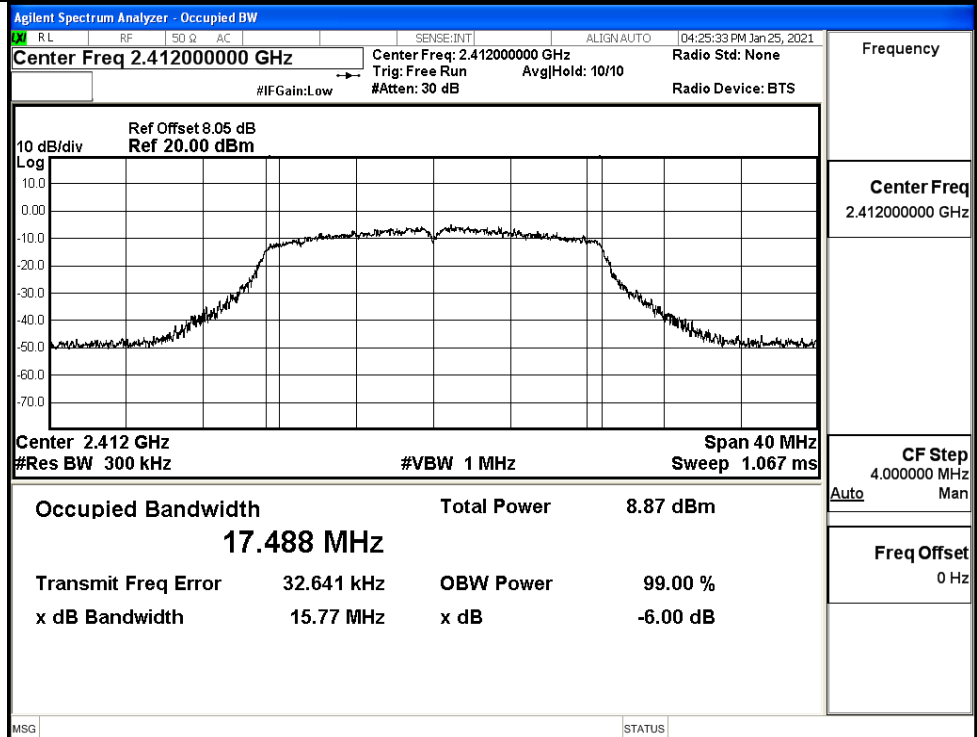
11G/HCH



Frequency

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

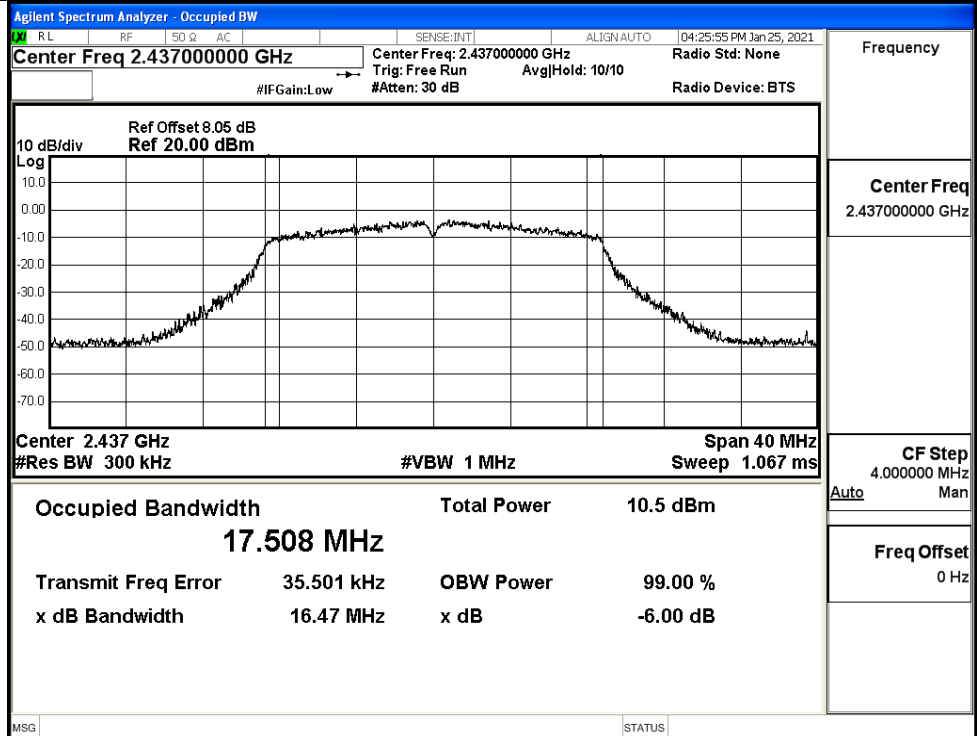
11N20SISO/LCH



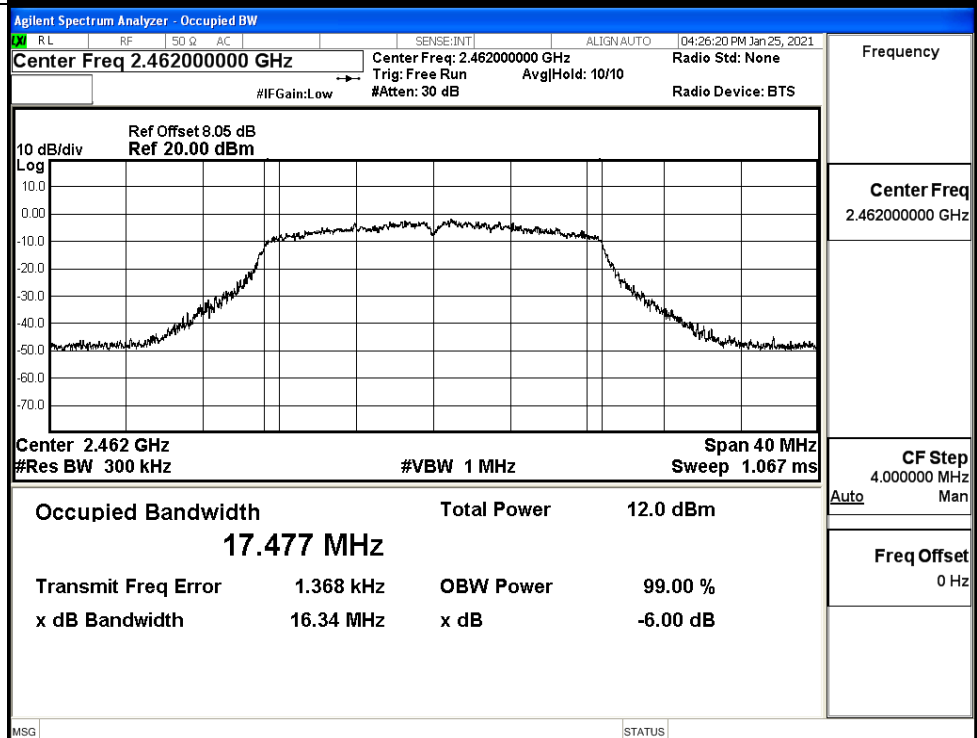
Frequency

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

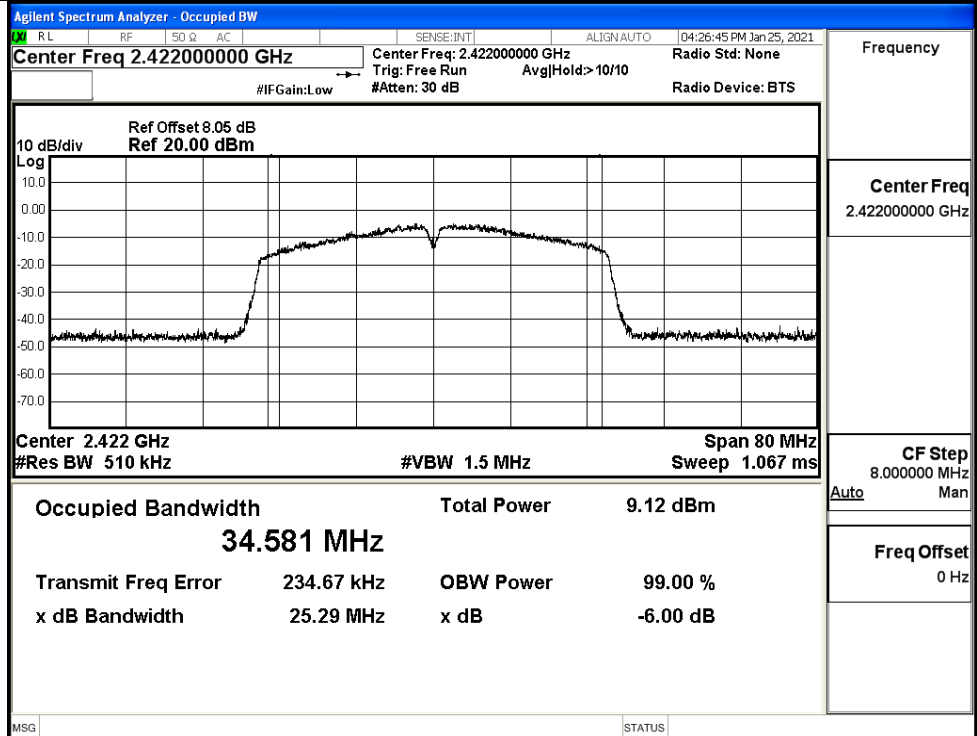
11N20SISO/MCH



11N20SISO/HCH



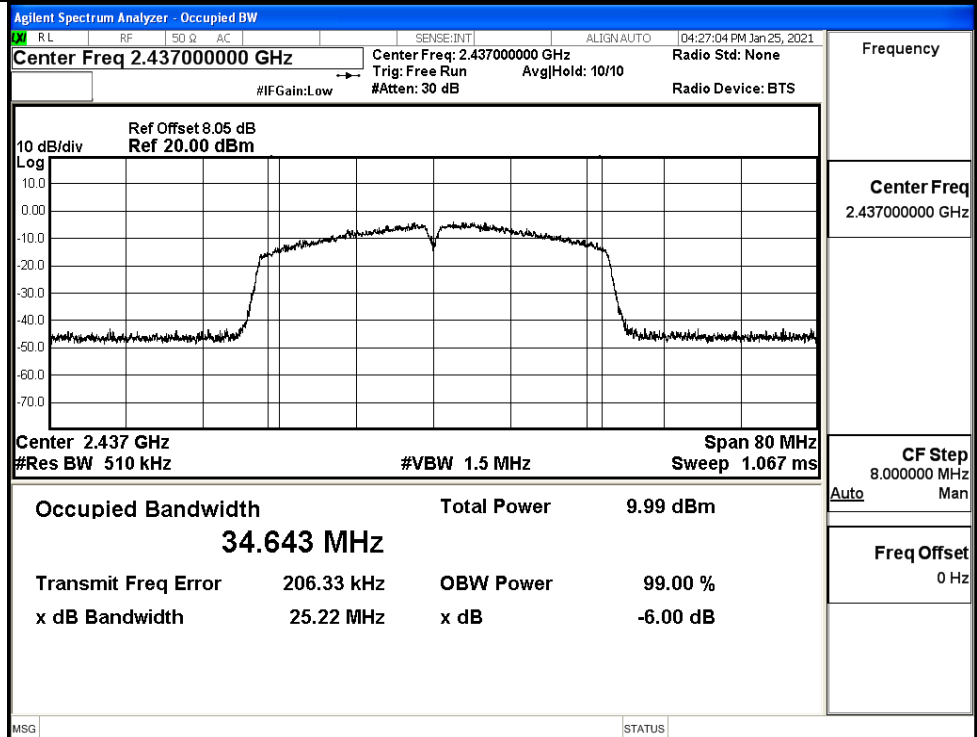
11N40SISO/LCH



Frequency

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

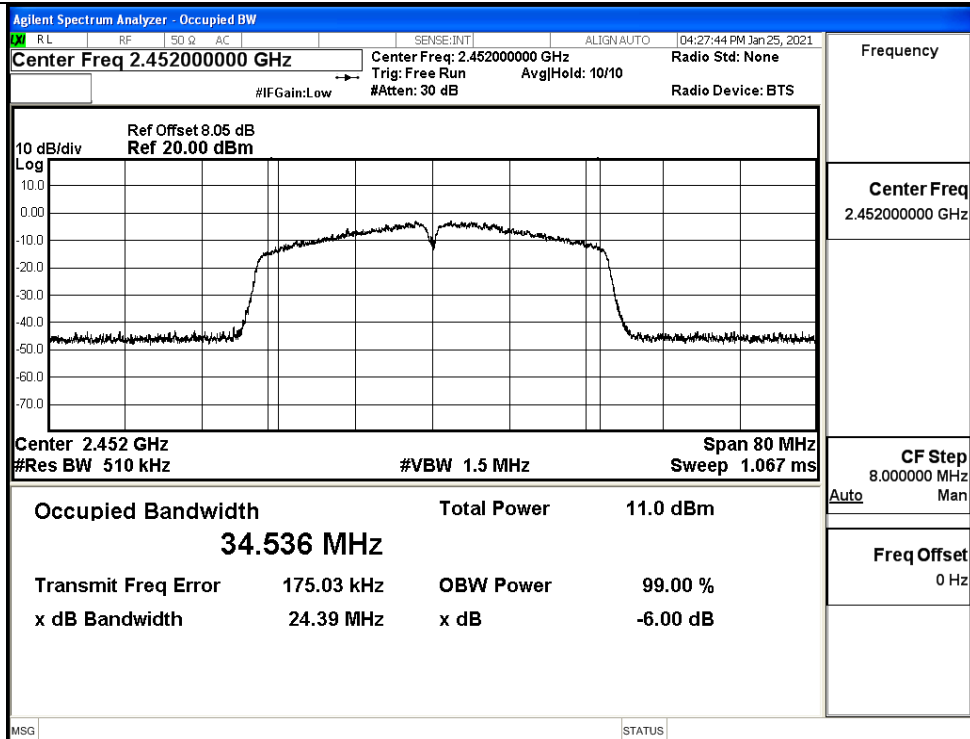
11N40SISO/MCH



Frequency

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

11N40SISO/HCH



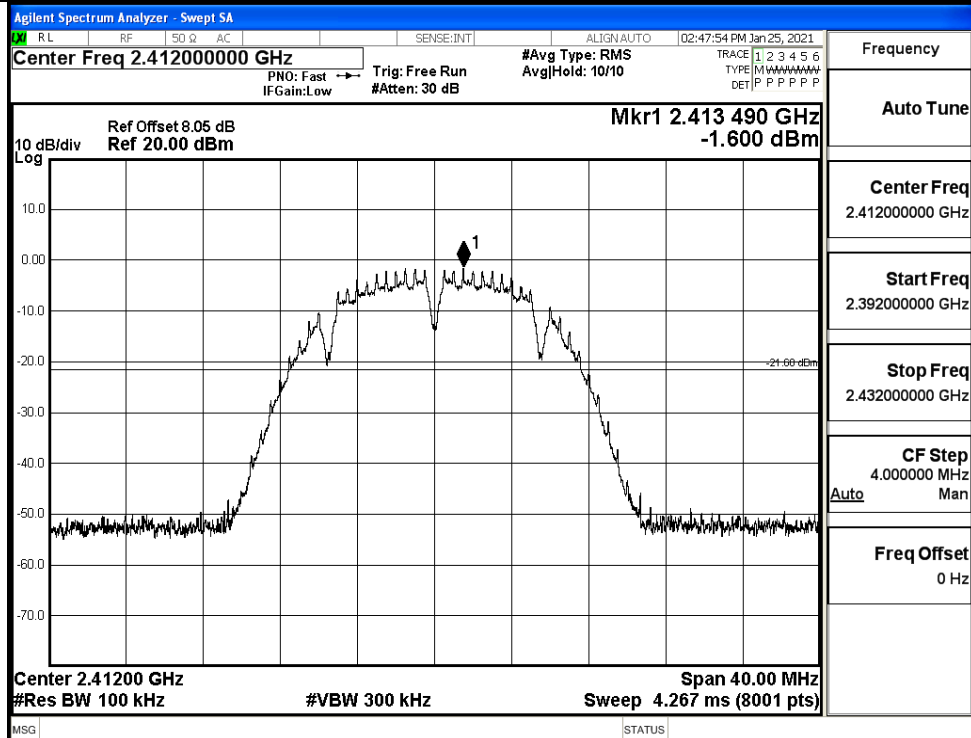
A.6 RF Conducted Spurious Emissions

ANT0

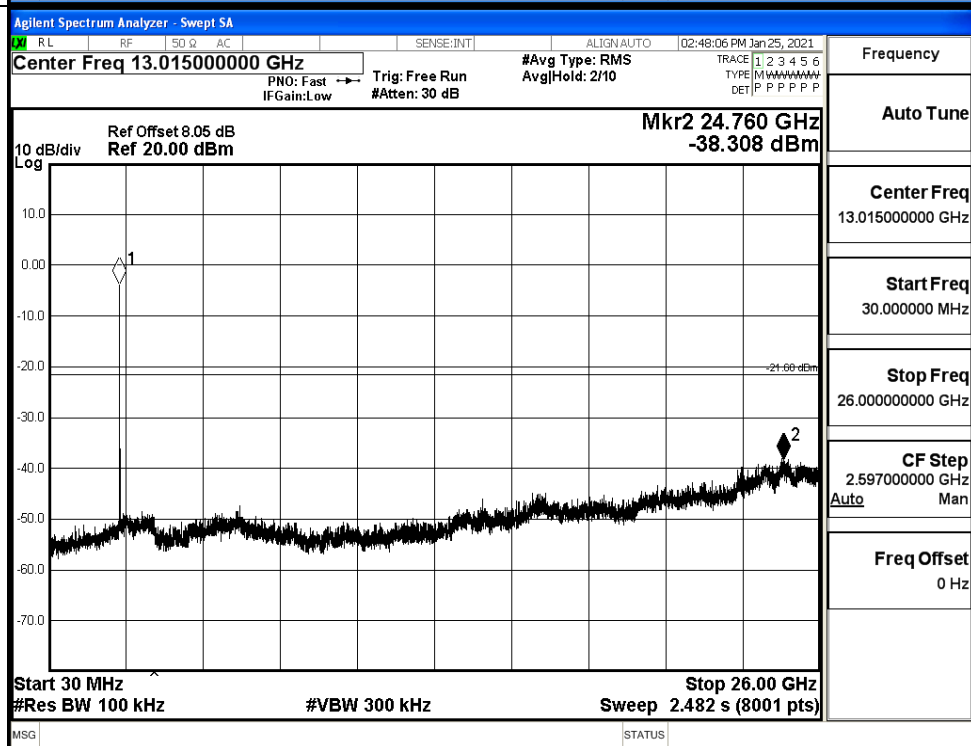
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-1.6	-38.308	-21.600	PASS
	MCH	0.094	-38.153	-19.906	PASS
	HCH	0.475	-37.323	-19.525	PASS
11G	LCH	-7.287	-37.502	-27.287	PASS
	MCH	-6.044	-37.215	-26.044	PASS
	HCH	-5.601	-37.813	-25.601	PASS
11N20 SISO	LCH	-8.025	-37.211	-28.025	PASS
	MCH	-6.37	-37.822	-26.370	PASS
	HCH	-4.936	-38.359	-24.936	PASS
11N40 SISO	LCH	-9.119	-37.110	-29.119	PASS
	MCH	-8.709	-38.538	-28.709	PASS
	HCH	-7.832	-38.404	-27.832	PASS

11B LCH Graphs

Pref/11B/LCH

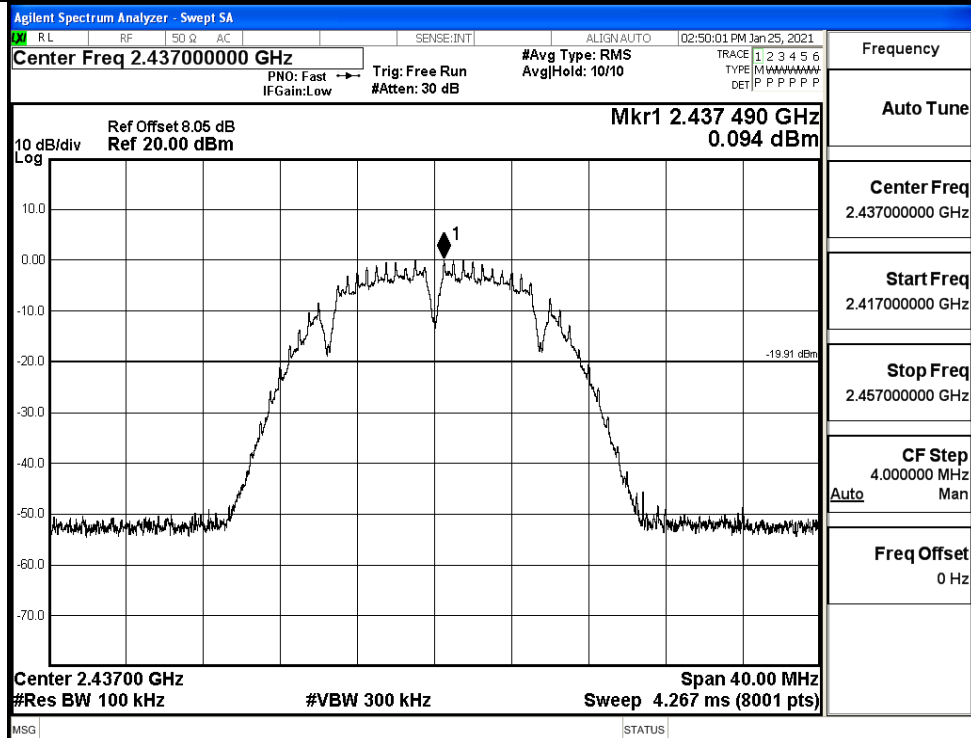


Puw/11B/LCH

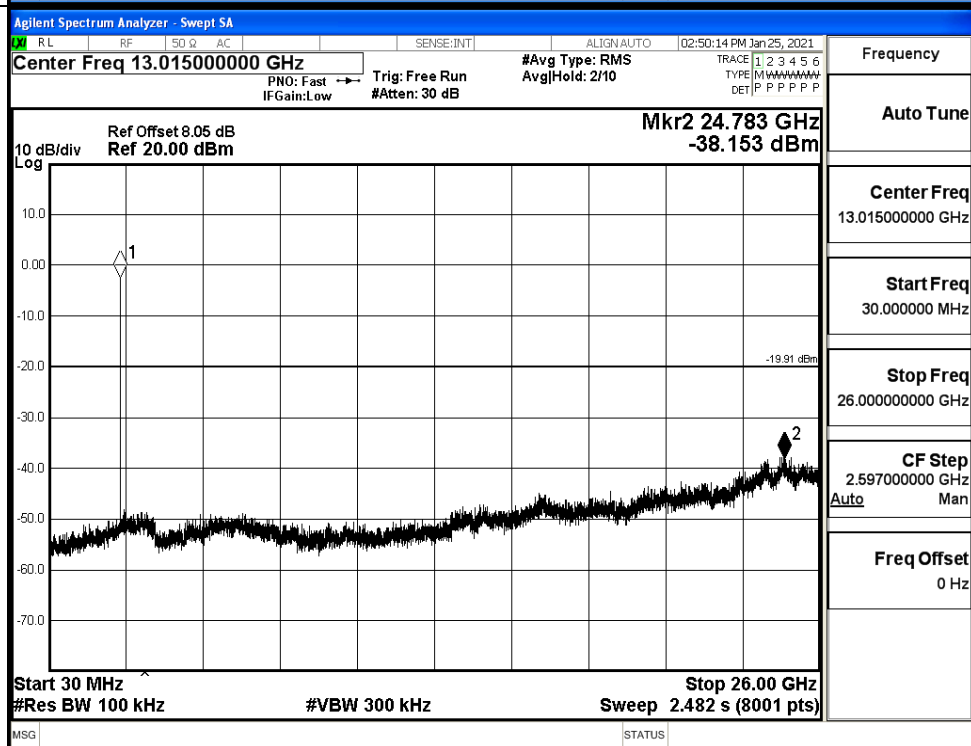


11B MCH Graphs

Pref/11B/MCH

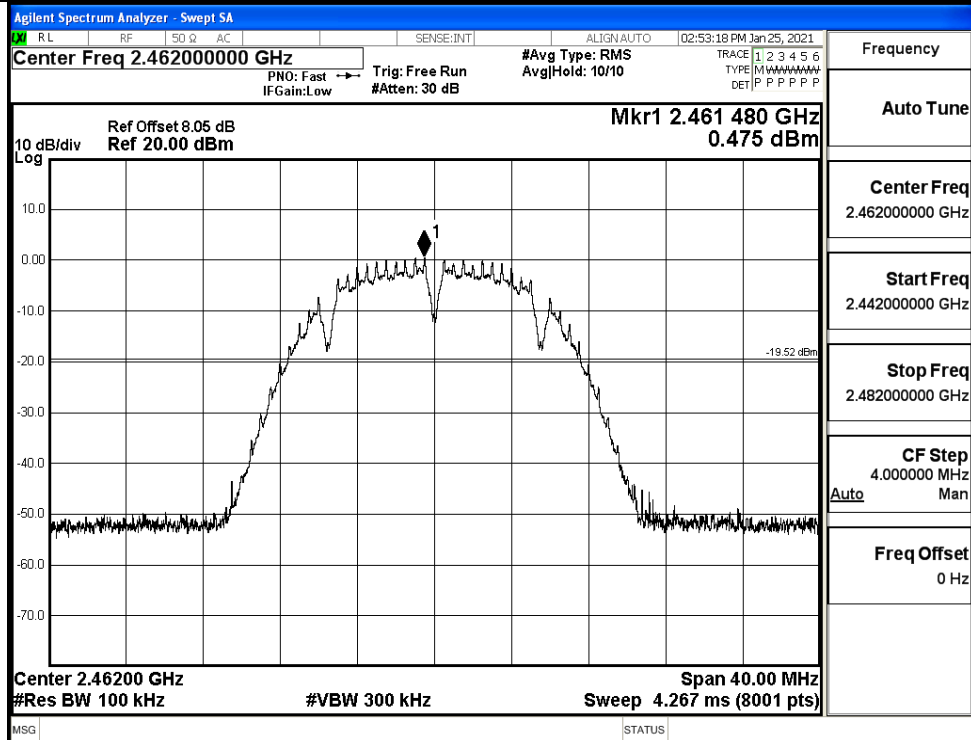


Puw/11B/MCH

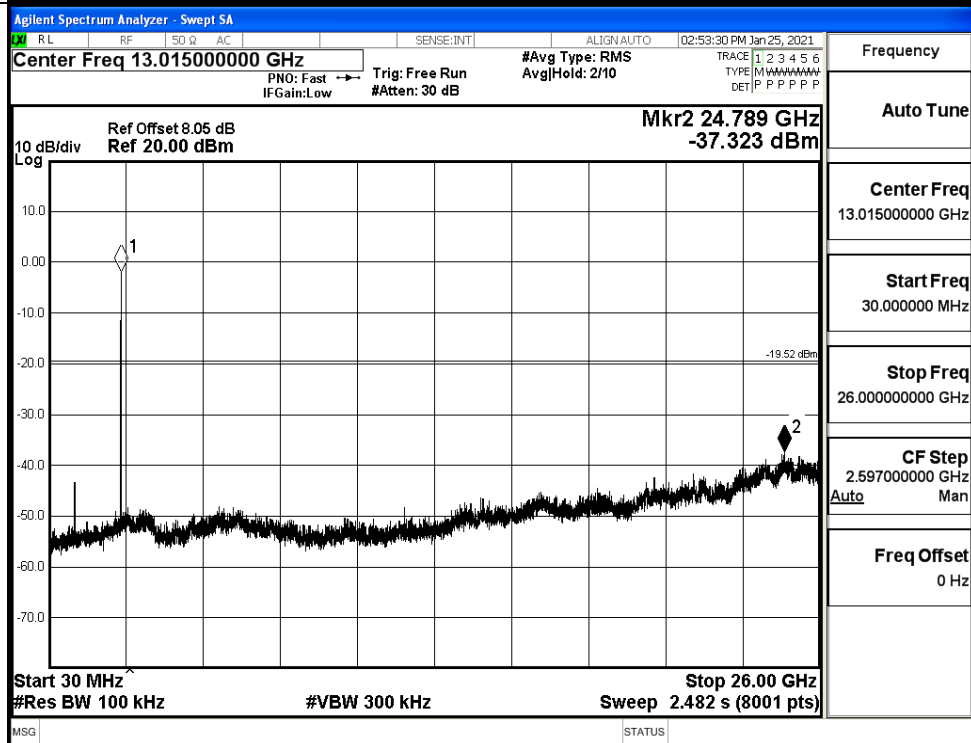


11B HCH Graphs

Pref/11B/HCH

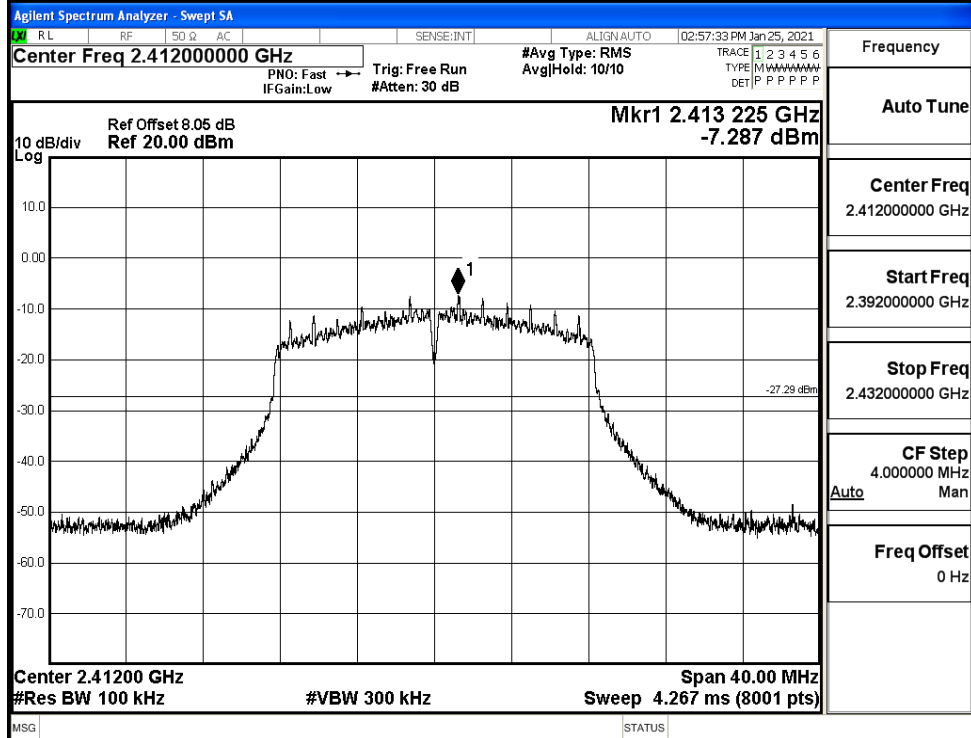


Puw/11B/HCH

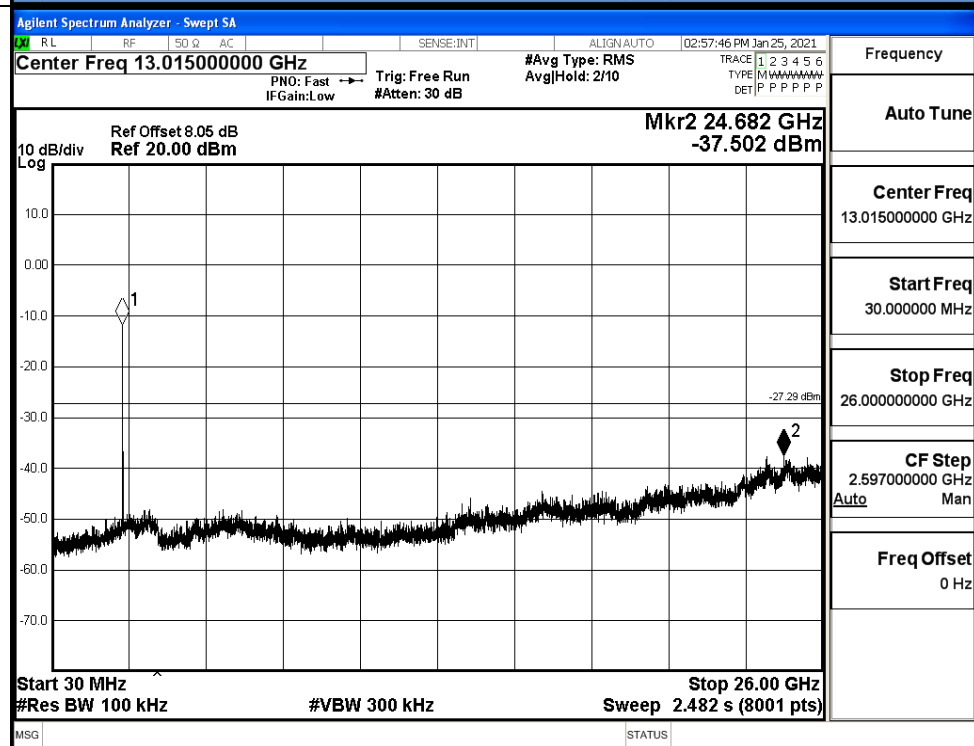


11G_LCH_Graphs

Pref/11G/LCH

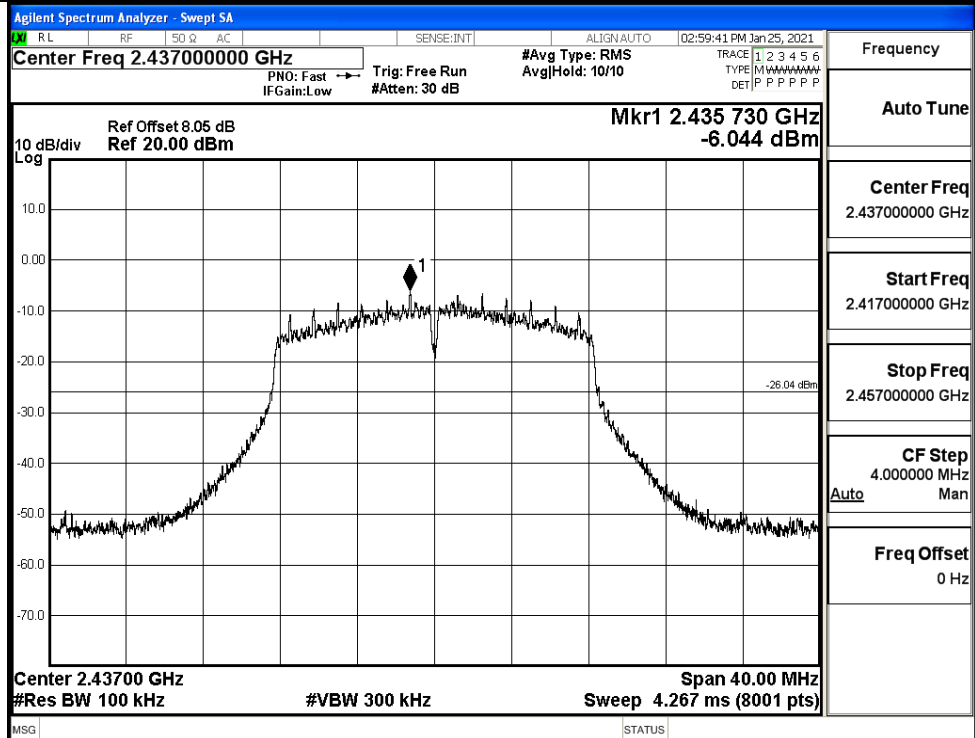


Puw/11G/LCH

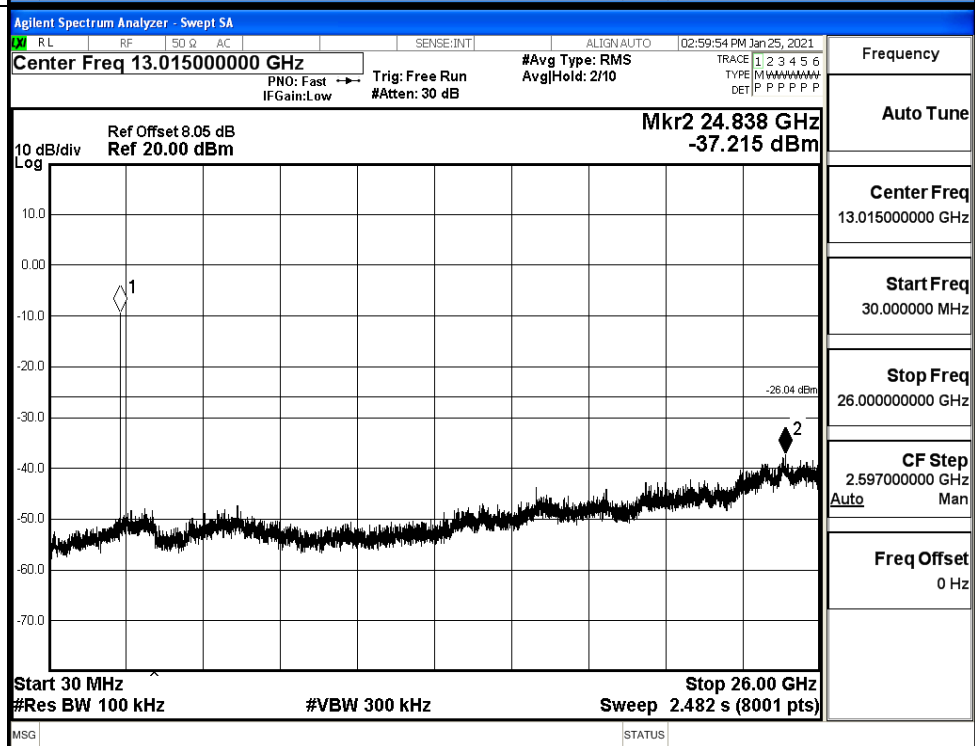


11G MCH Graphs

Pref/11G/MCH

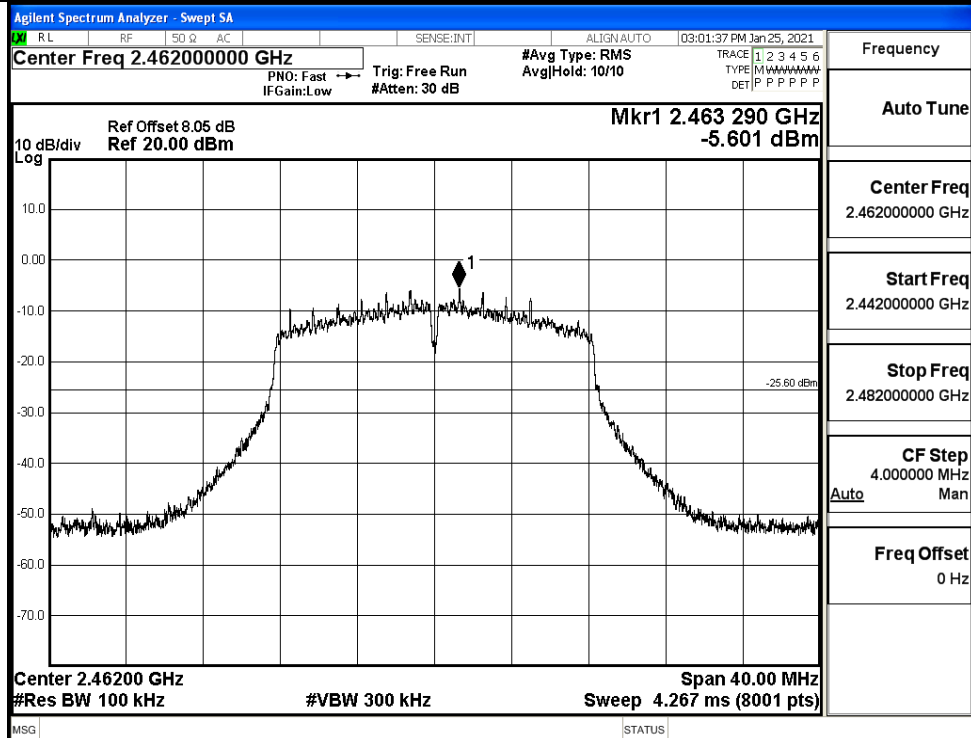


Puw/11G/MCH

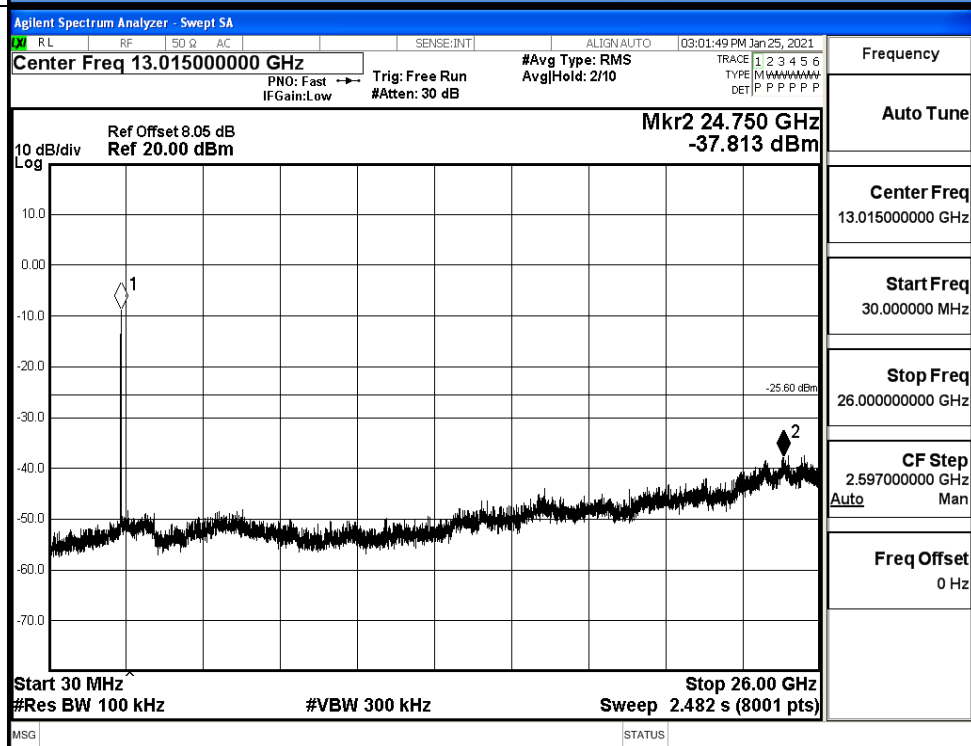


11G HCH Graphs

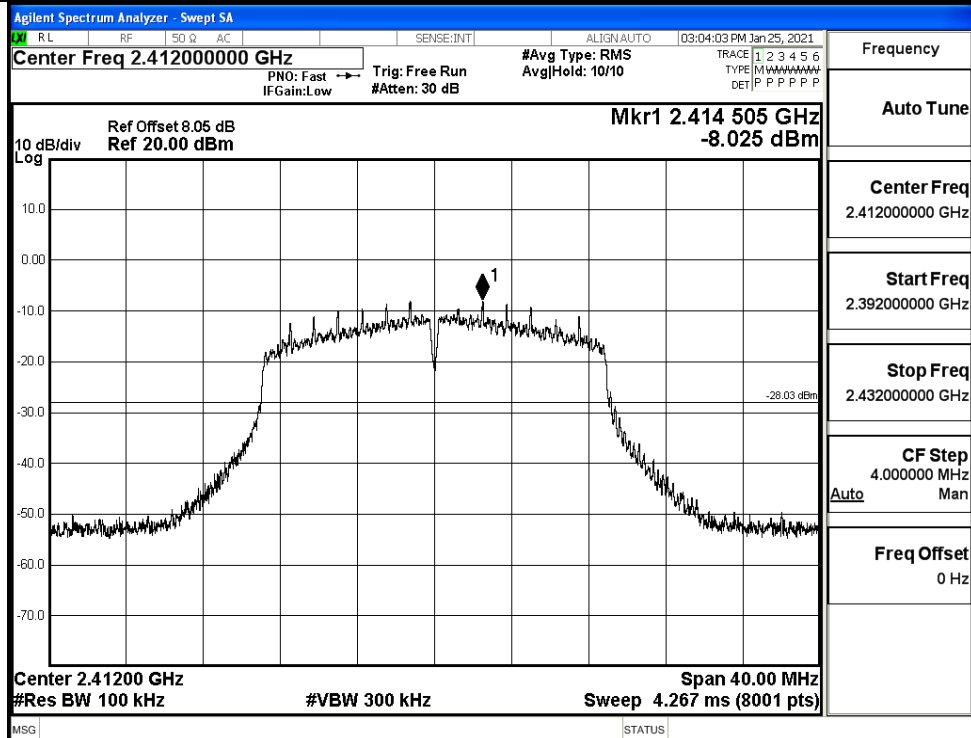
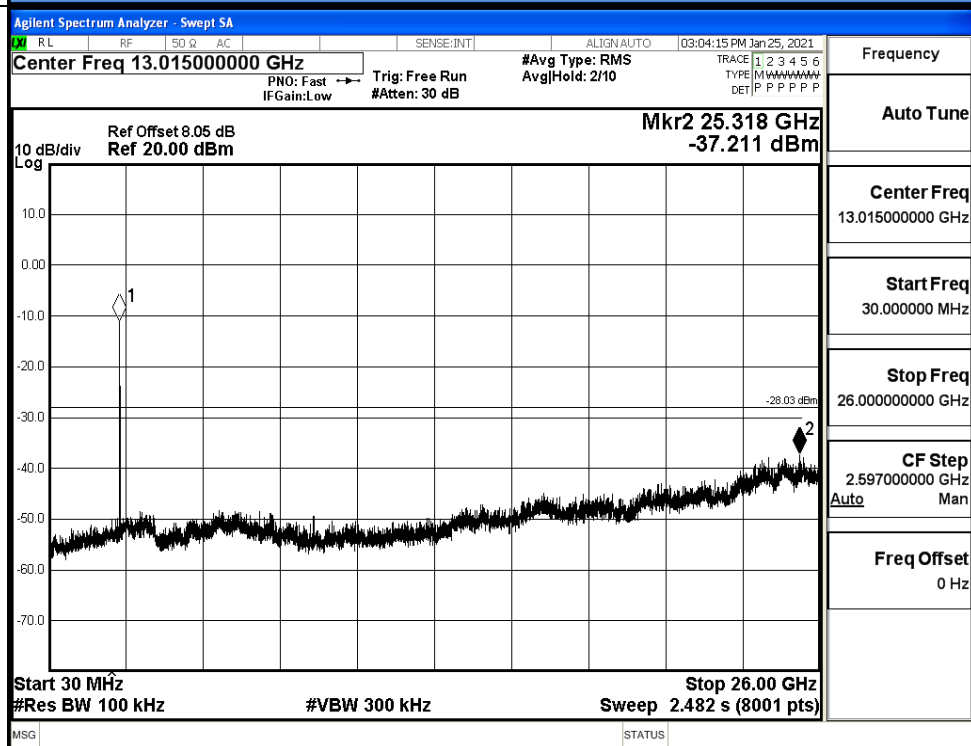
Pref/11G/HCH



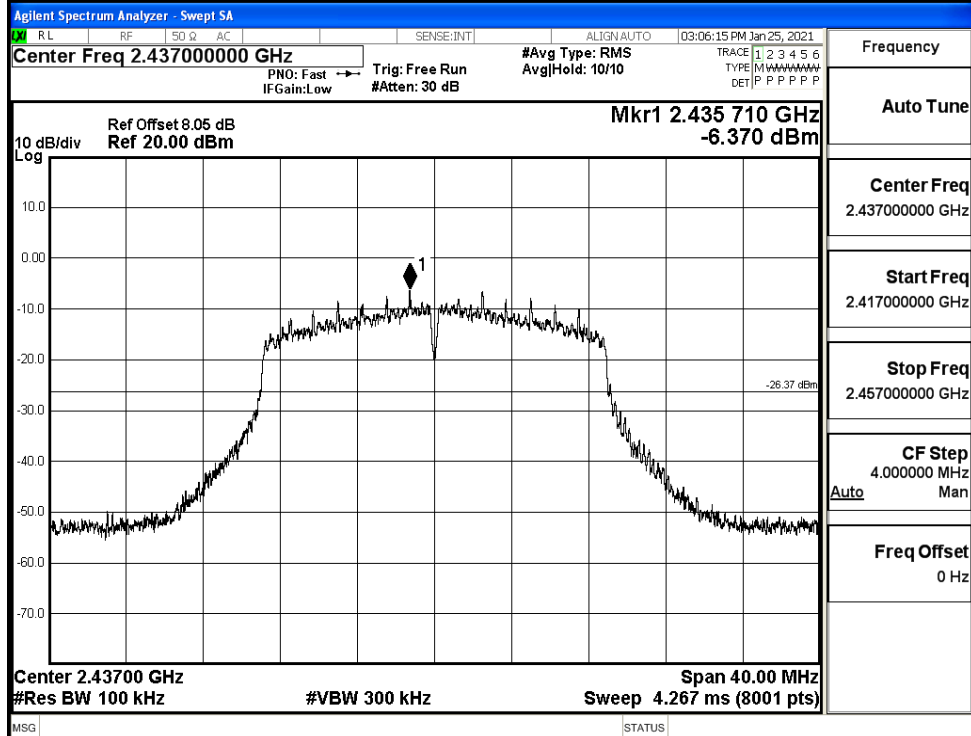
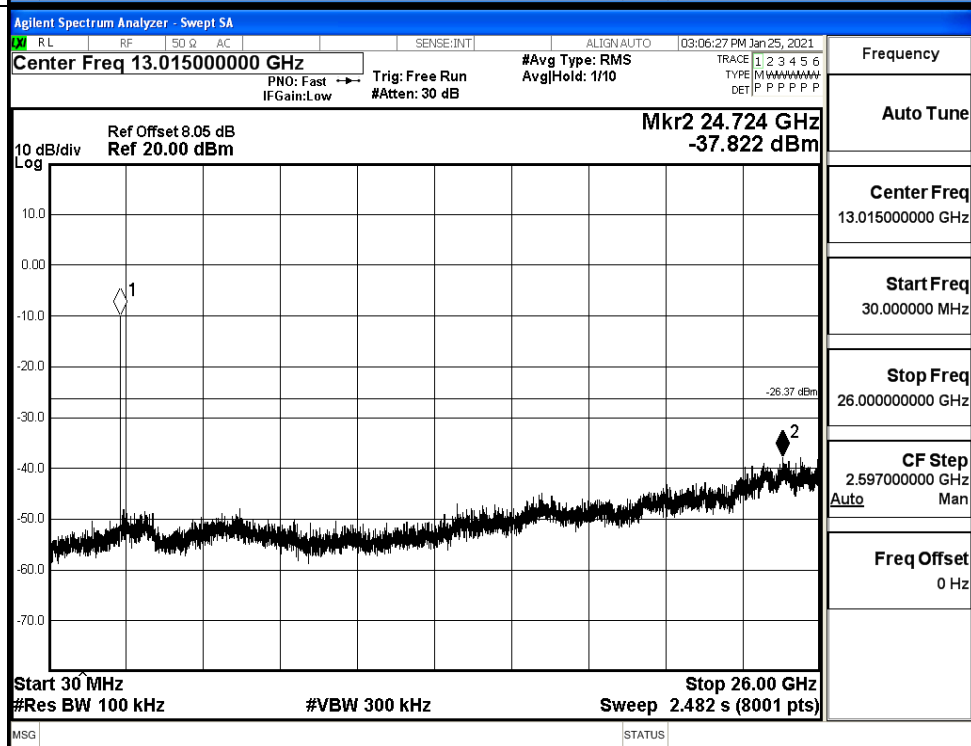
Puw/11G/HCH



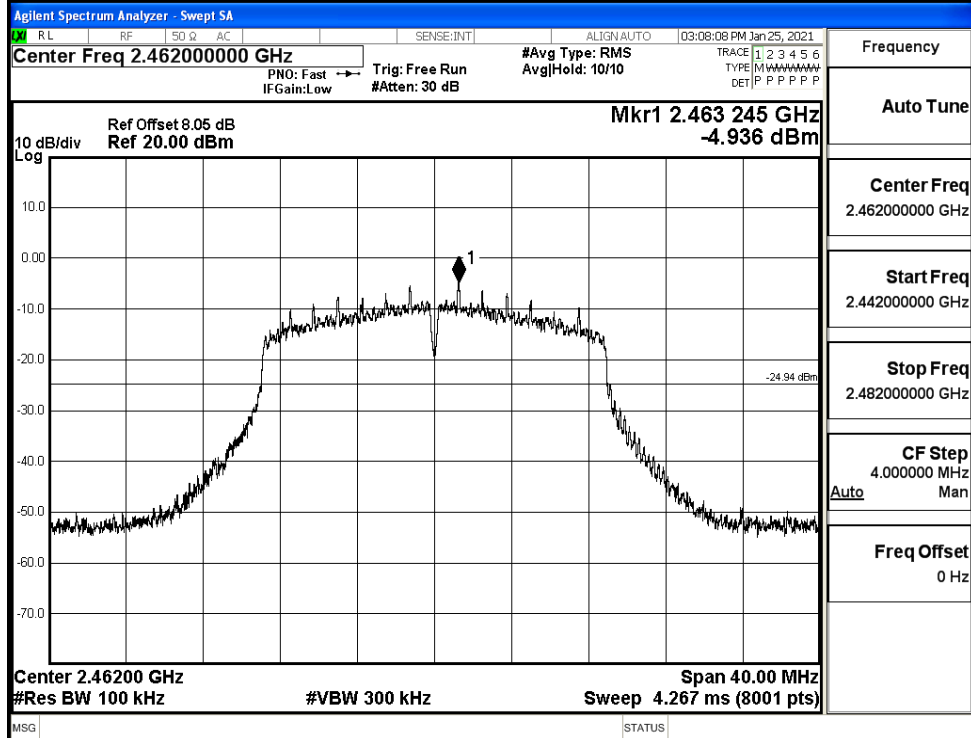
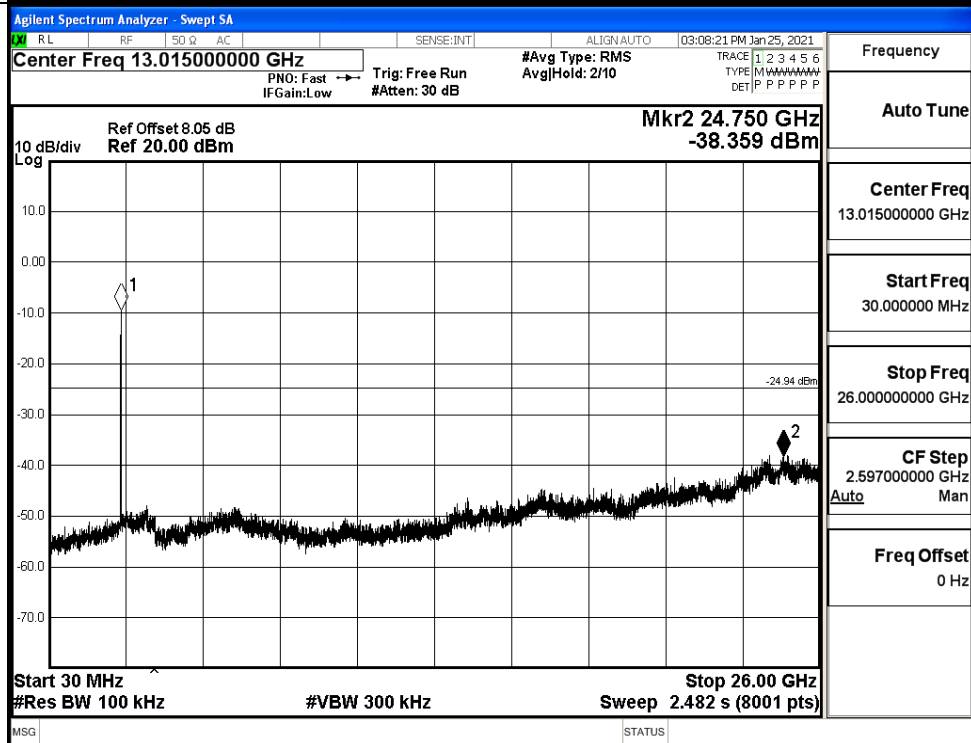
11N20SISO LCH Graphs

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

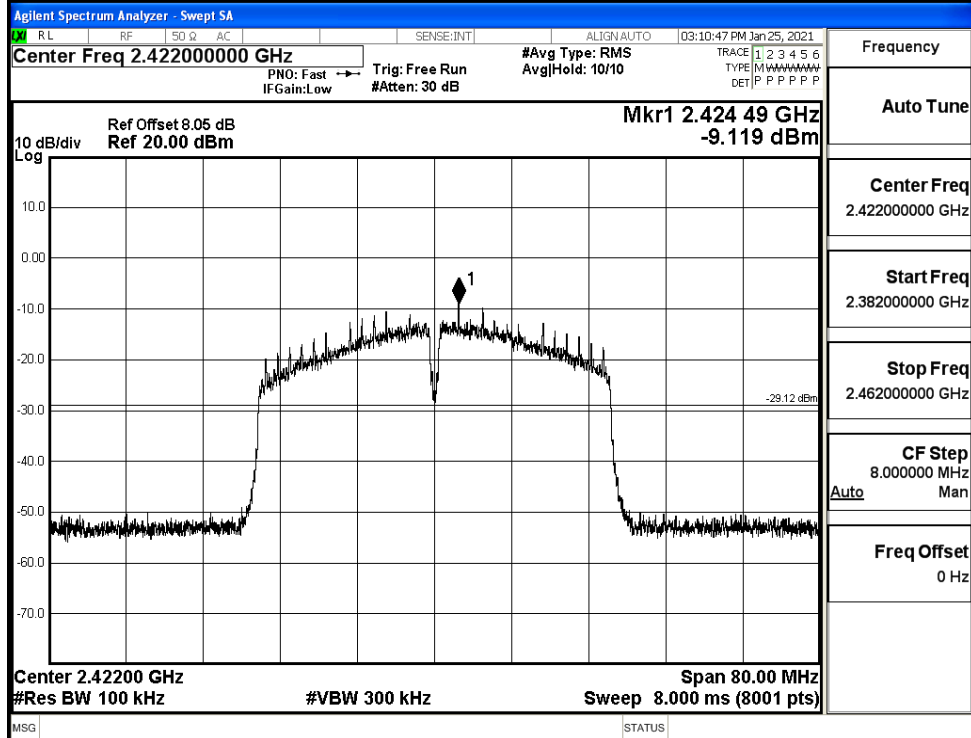
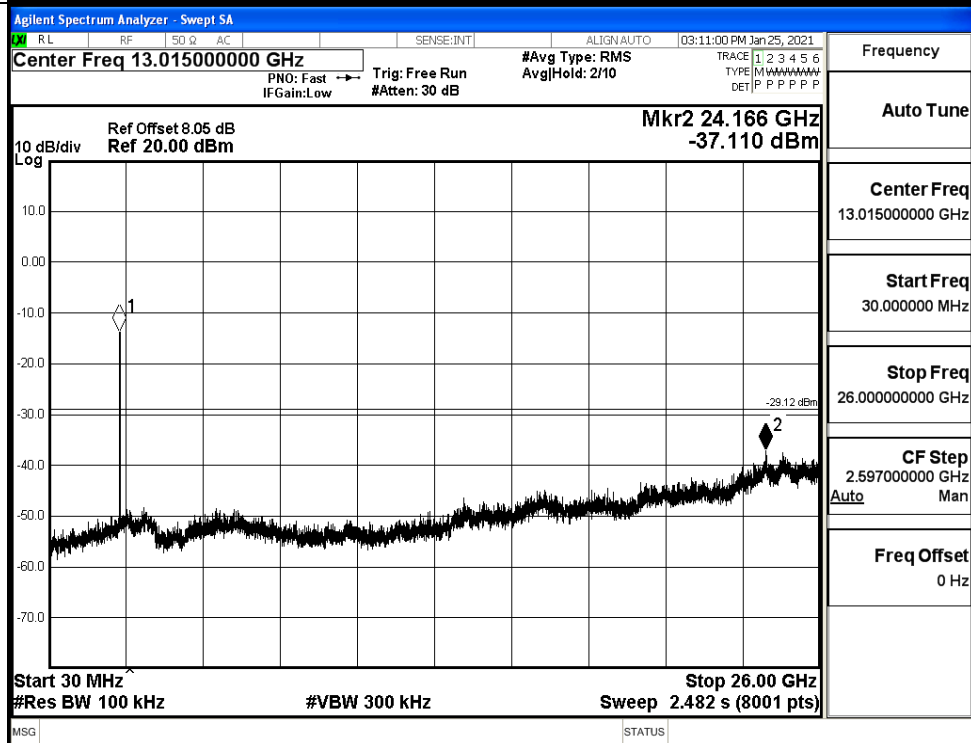
11N20SISO_MCH_Graphs

Pref/11N20
SISO/MCHPuw/11N20
SISO/MCH

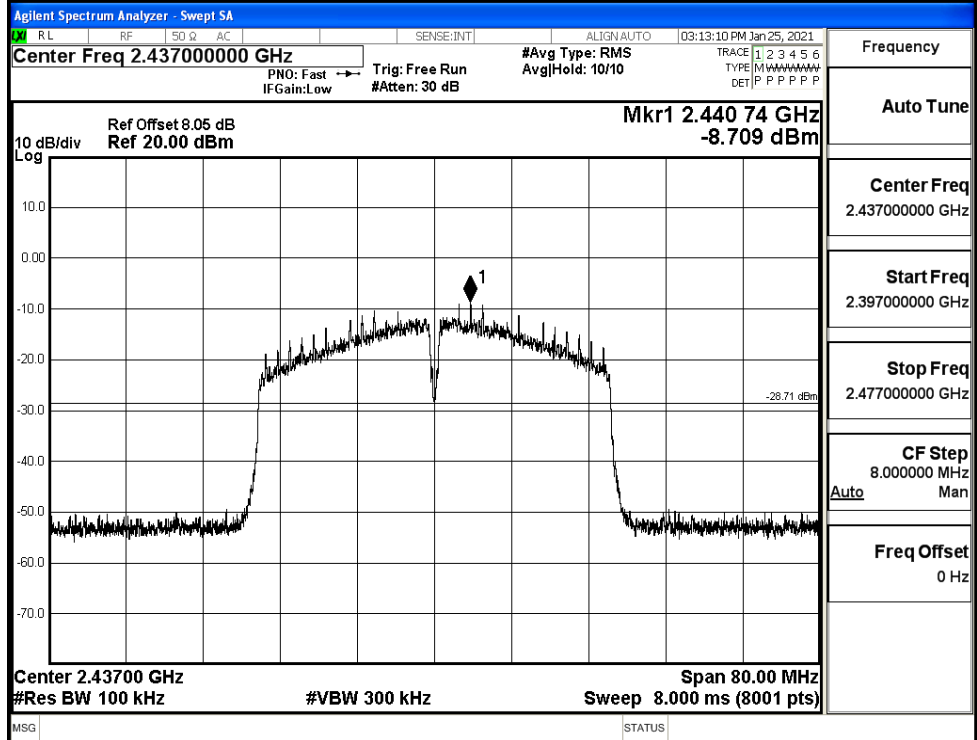
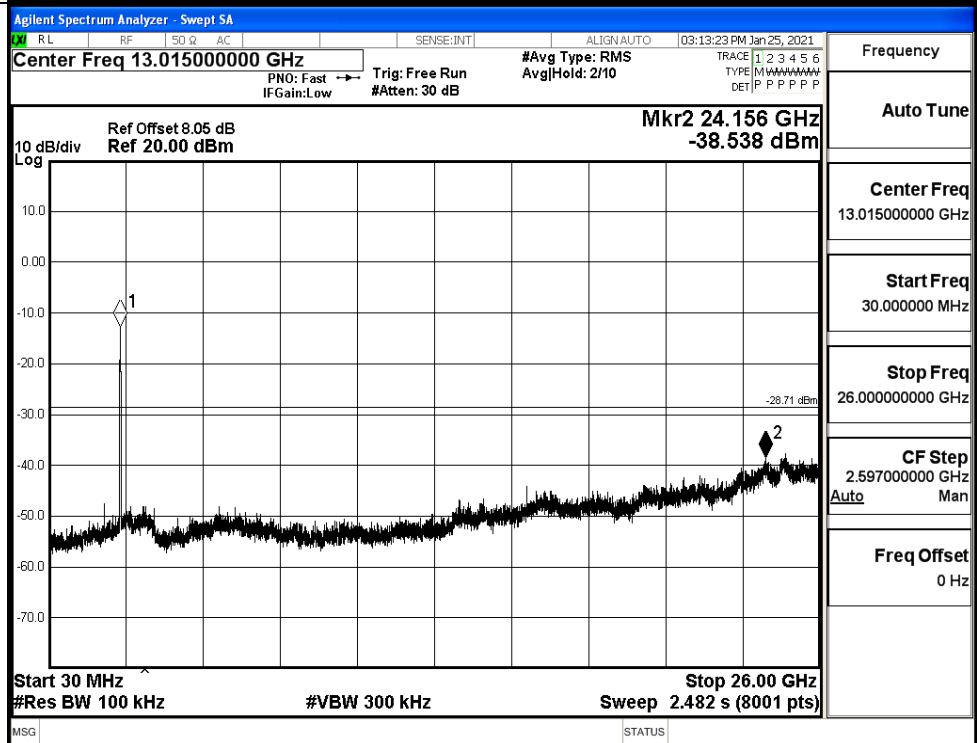
11N20SISO HCH Graphs

Pref/11N20
SISO/HCHPuw/11N20
SISO/HCH

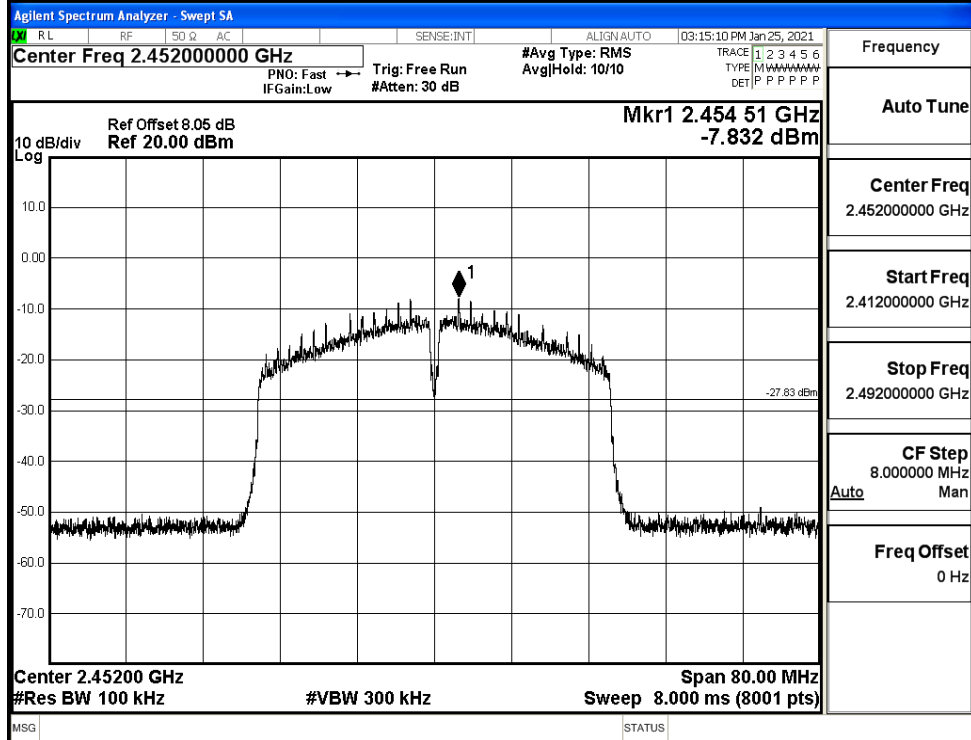
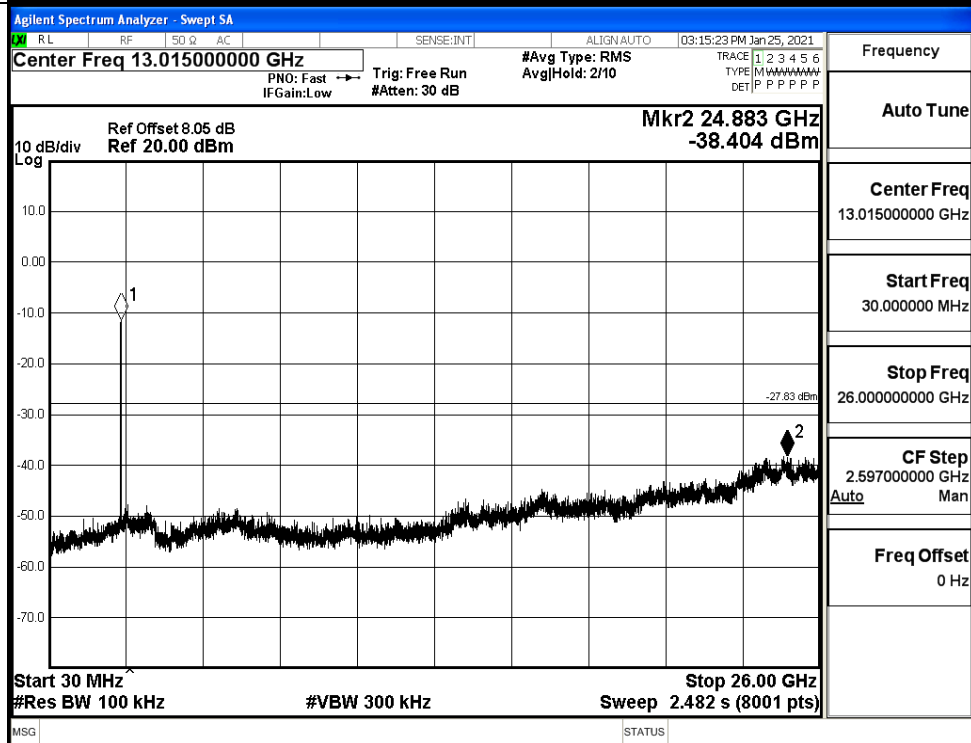
11N40SISO LCH Graphs

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

11N40SISO_MCH_Graphs

Pref/11N40
SISO/MCHPuw/11N40
SISO/MCH

11N40SISO HCH Graphs

Pref/11N40
SISO/HCHPuw/11N40
SISO/HCH

ANT1

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-2.174	-37.401	-22.174	PASS
	MCH	-0.426	-37.797	-20.426	PASS
	HCH	0.817	-38.028	-19.183	PASS
11G	LCH	-6.607	-37.855	-26.607	PASS
	MCH	-5.352	-36.890	-25.352	PASS
	HCH	-3.571	-38.249	-23.571	PASS
11N20 SISO	LCH	-6.705	-38.233	-26.705	PASS
	MCH	-5.72	-38.296	-25.720	PASS
	HCH	-4.205	-38.485	-24.205	PASS
11N40 SISO	LCH	-8.749	-37.927	-28.749	PASS
	MCH	-7.696	-38.324	-27.696	PASS
	HCH	-7.111	-38.255	-27.111	PASS