

Appendix C

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Multi Function Projector

Trade Mark: PHILIPS

Test Model: NeoPix Ultra

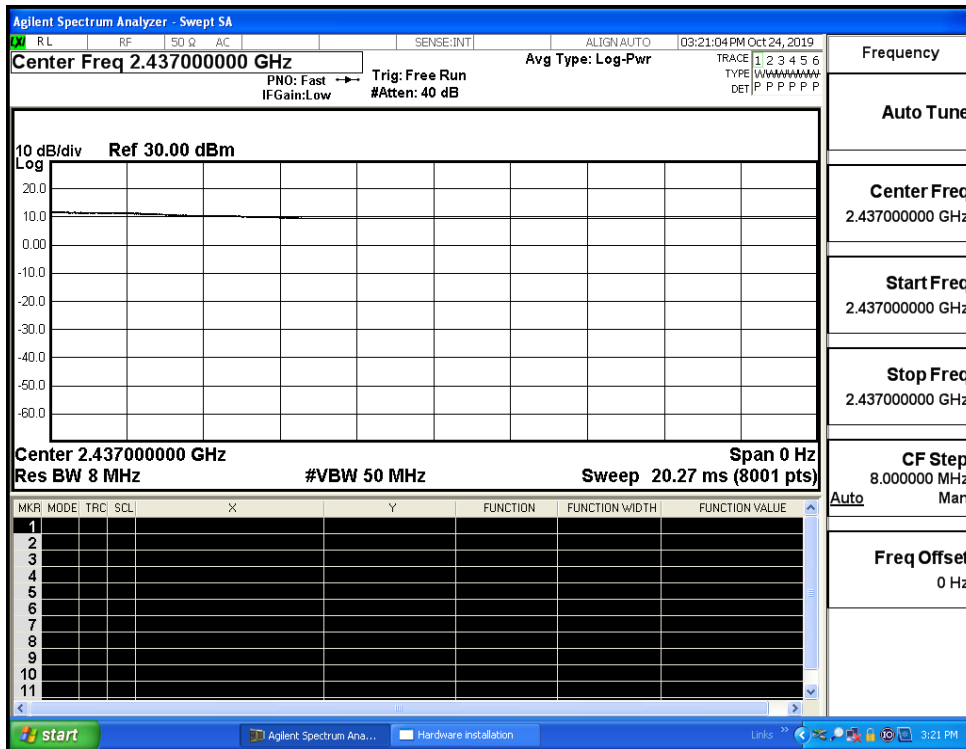
Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	50%
ATM Pressure:	100.0 kPa
Test Engineer:	
Supervised by:	Wang.Chuang

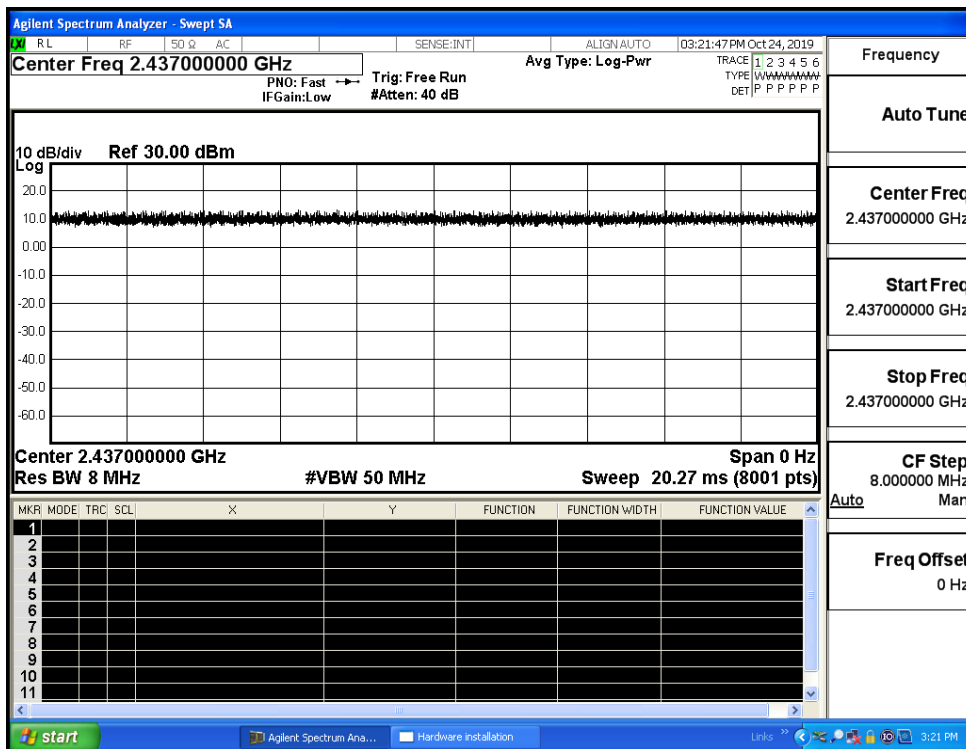
C.1 Duty Cycle

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

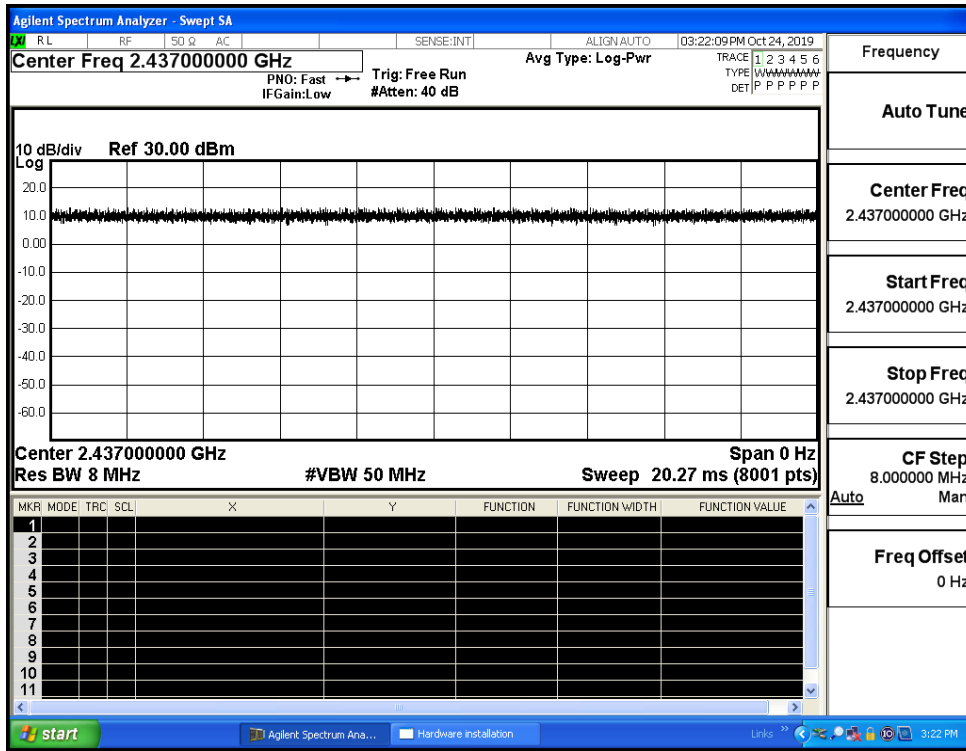
Duty Cycle_11B_2437_Ant1



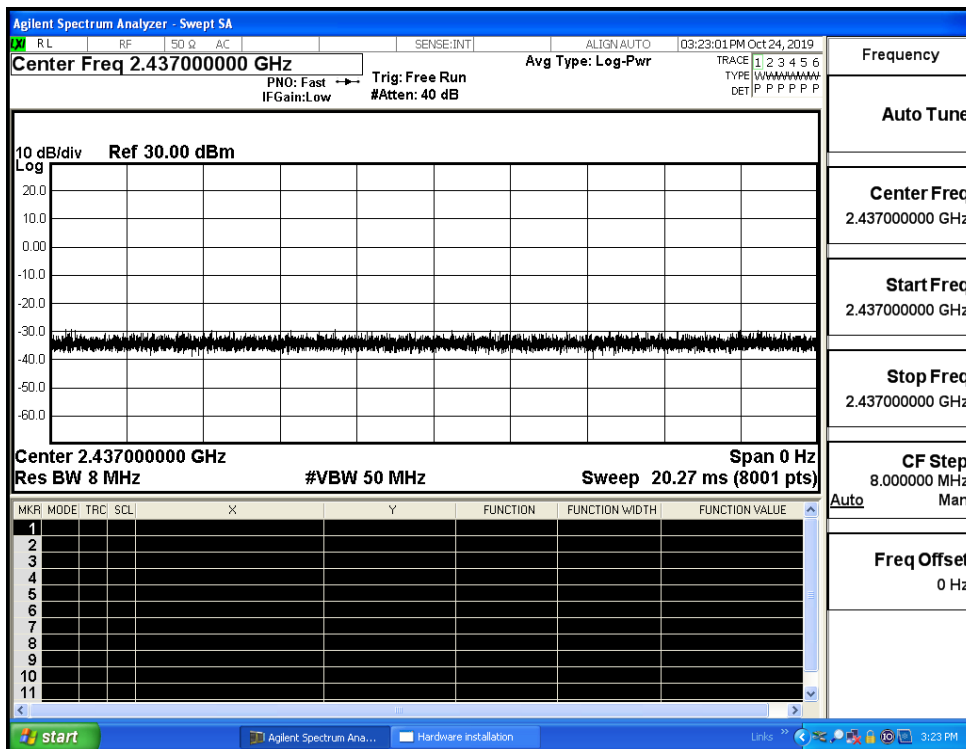
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



Duty Cycle_11N40SISO_2437_Ant1

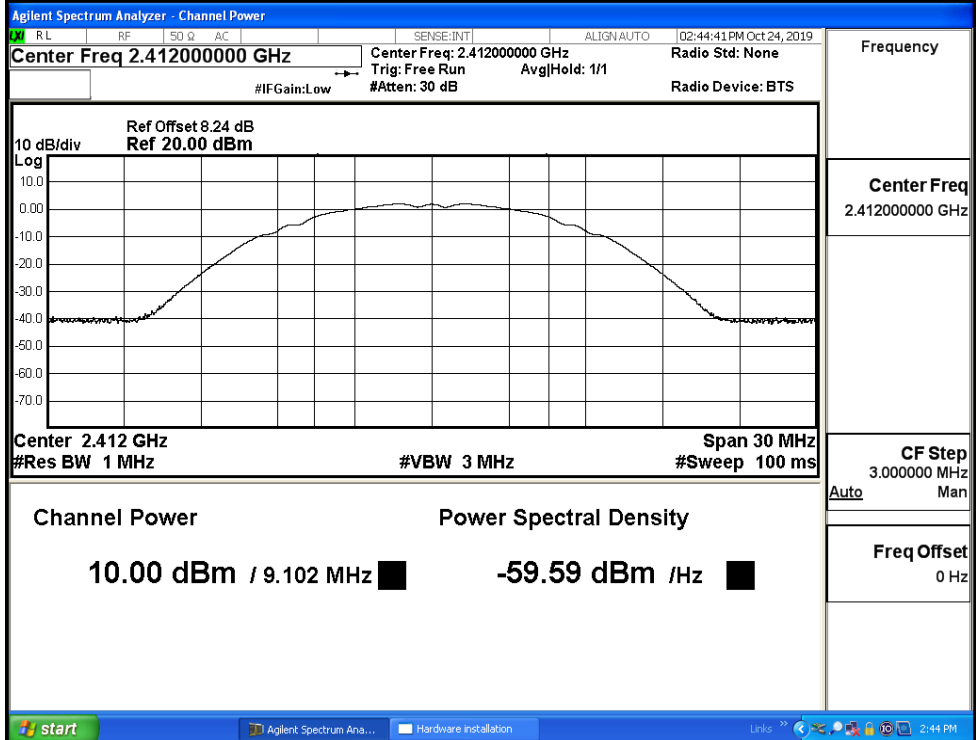


C.2 Maximum Conducted Output Power

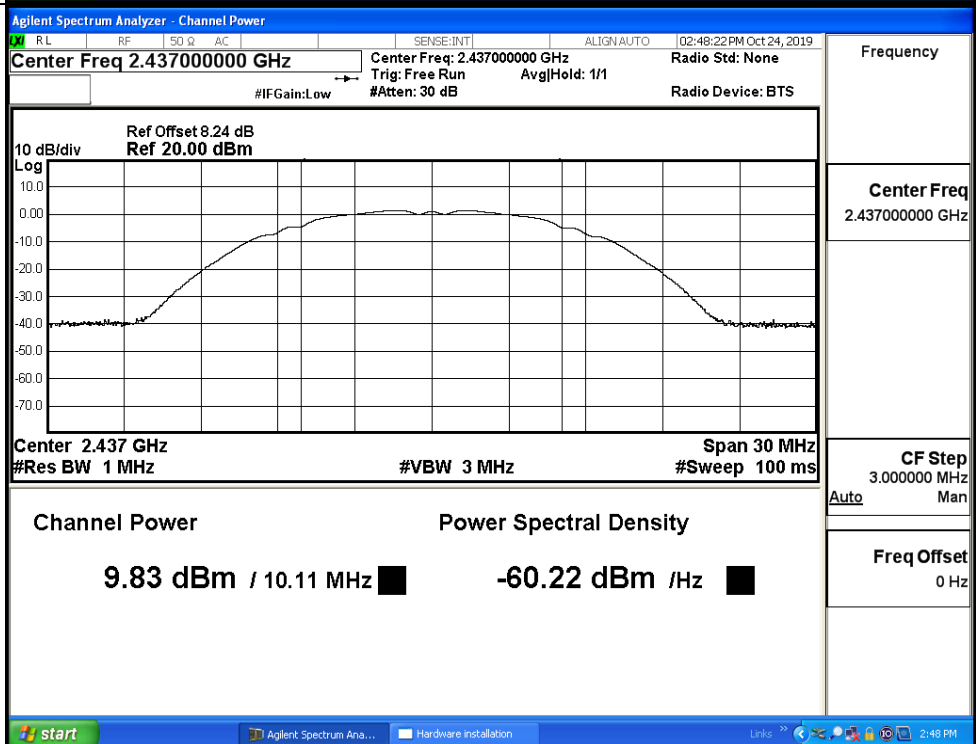
Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	10	30	PASS
	MCH	9.83	30	PASS
	HCH	9.41	30	PASS
11G	LCH	14.11	30	PASS
	MCH	14.51	30	PASS
	HCH	13.68	30	PASS
11N20SISO	LCH	14.03	30	PASS
	MCH	14.63	30	PASS
	HCH	13.81	30	PASS
11N40SISO	LCH	14.36	30	PASS
	MCH	14.54	30	PASS
	HCH	11.11	30	PASS

Test Graphs

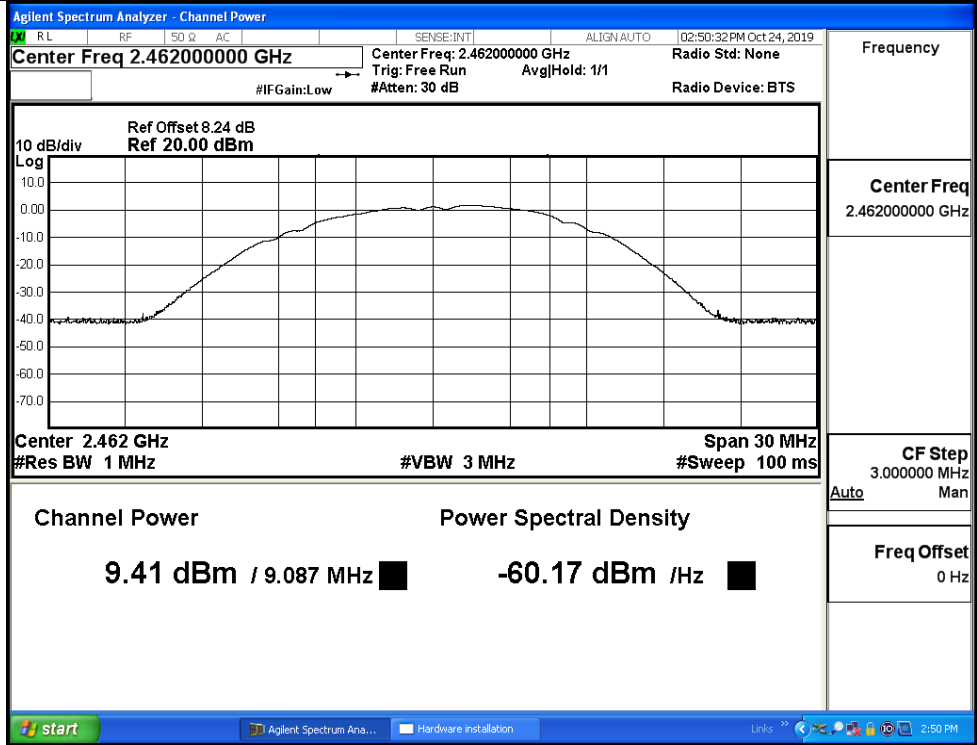
11B/LCH



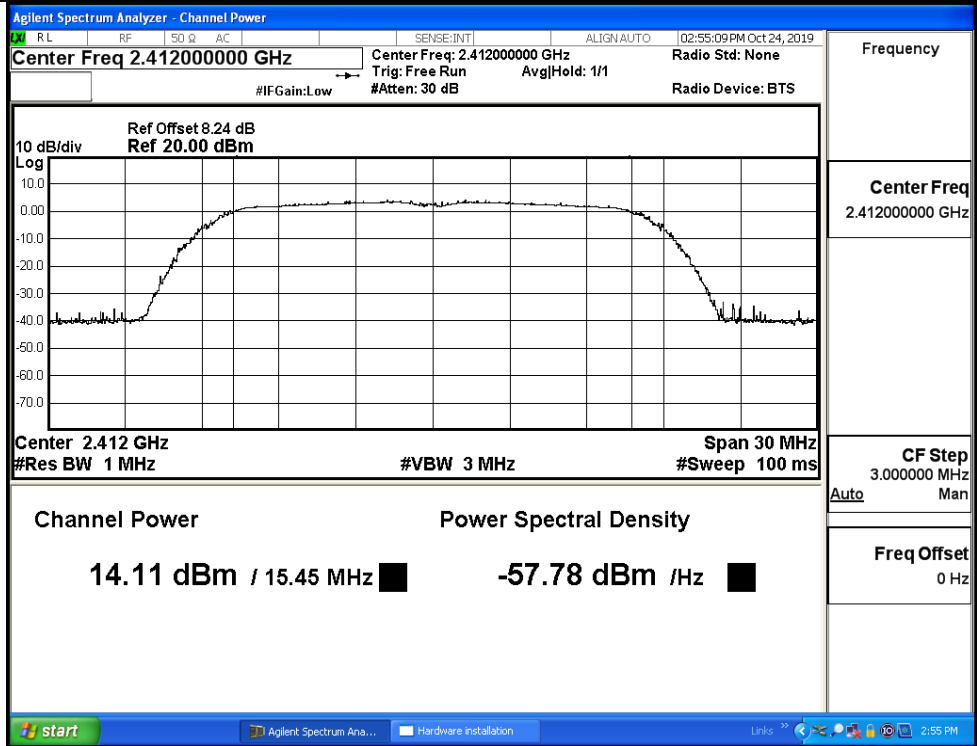
11B/MCH



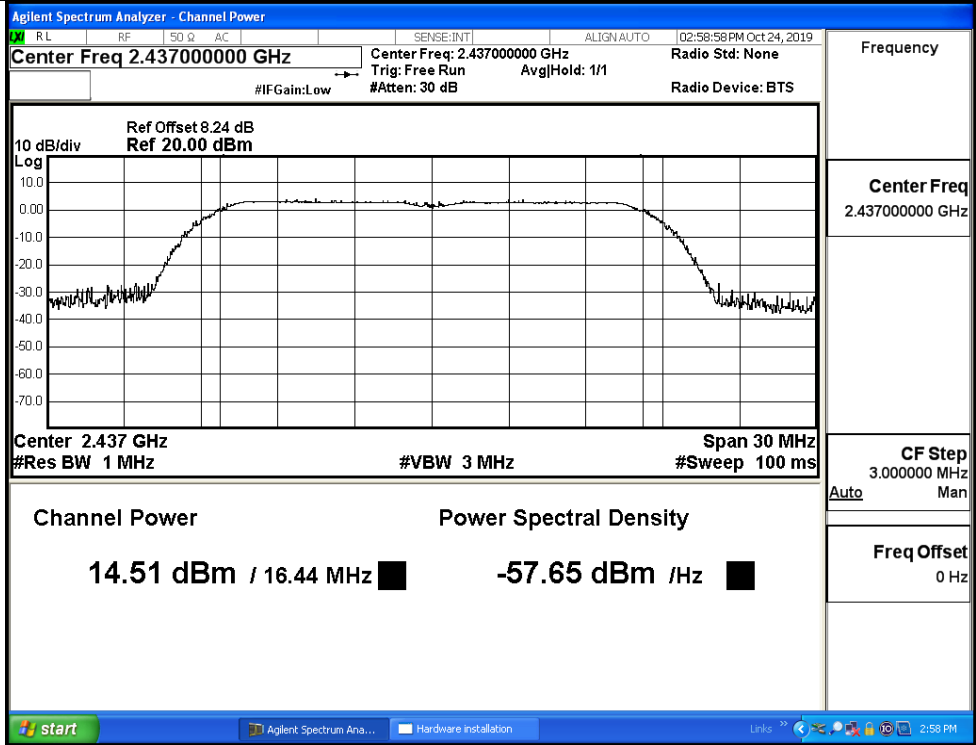
11B/HCH



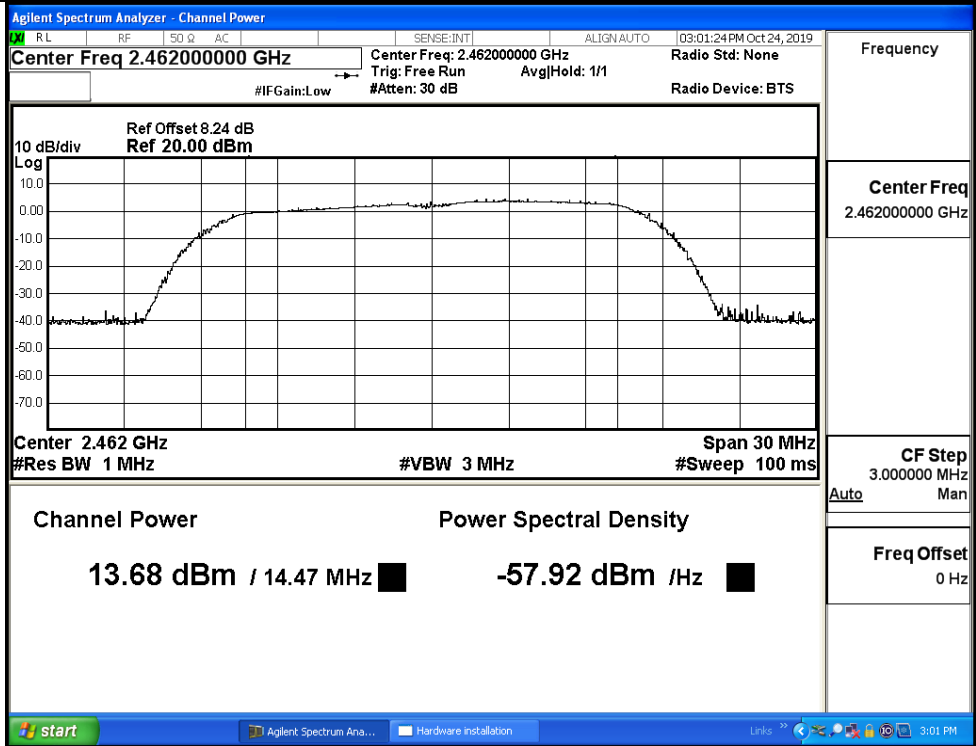
11G/LCH



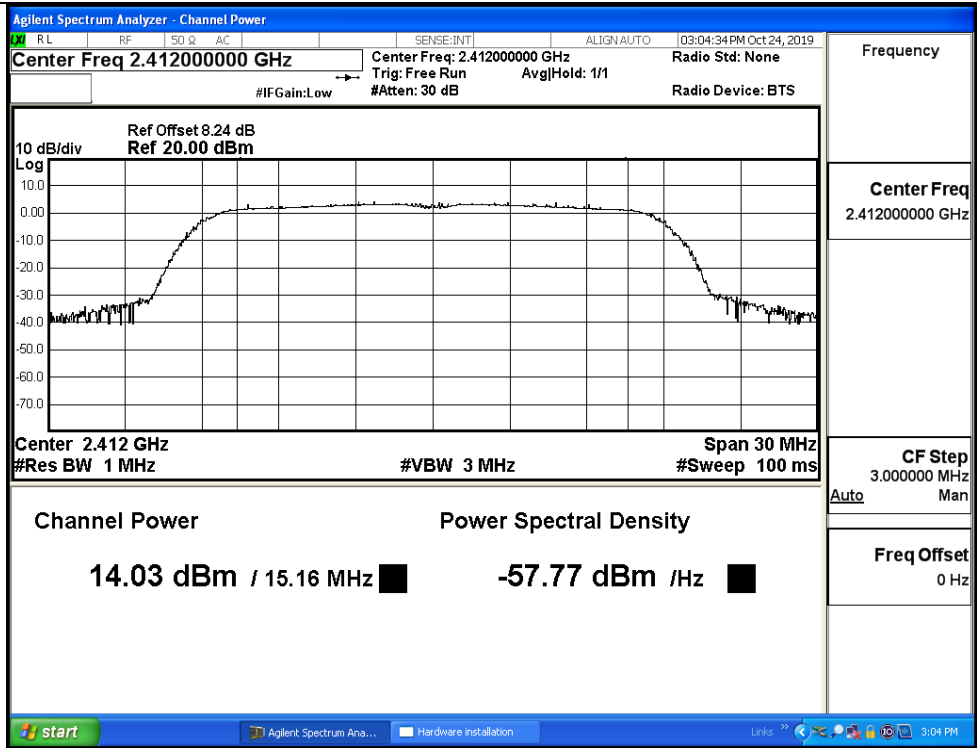
11G/MCH



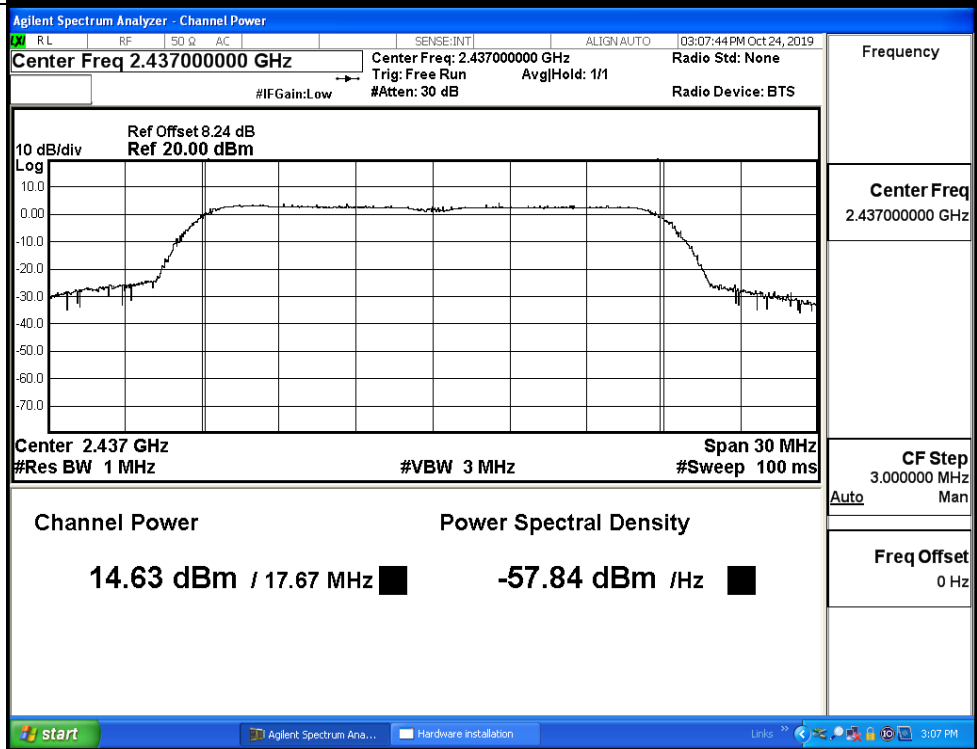
11G/HCH



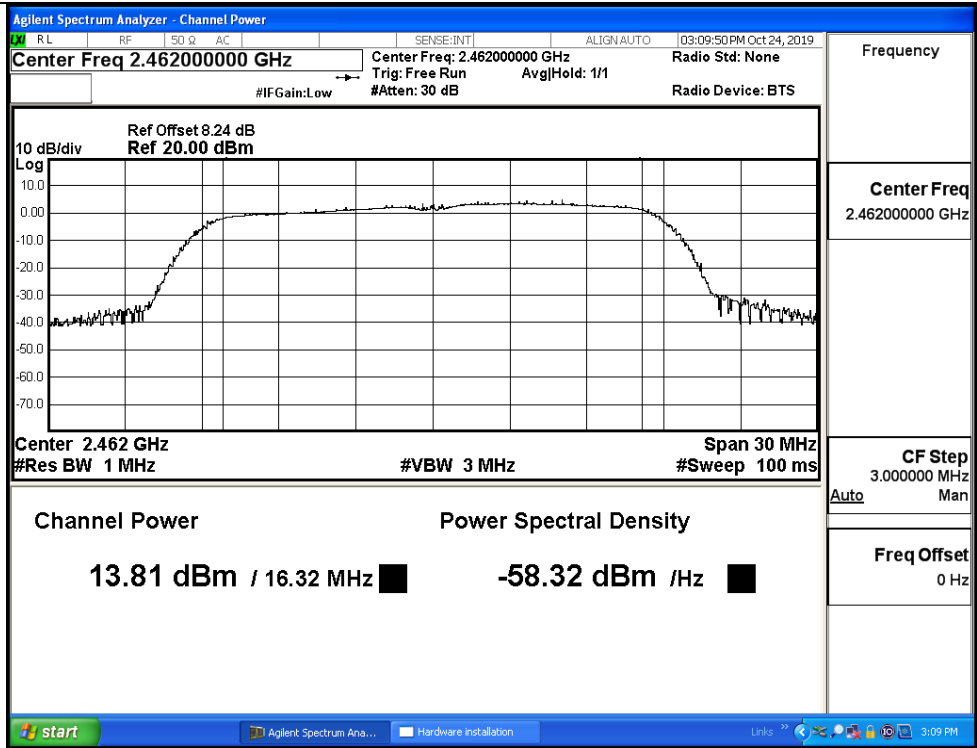
11N20SISO/LCH



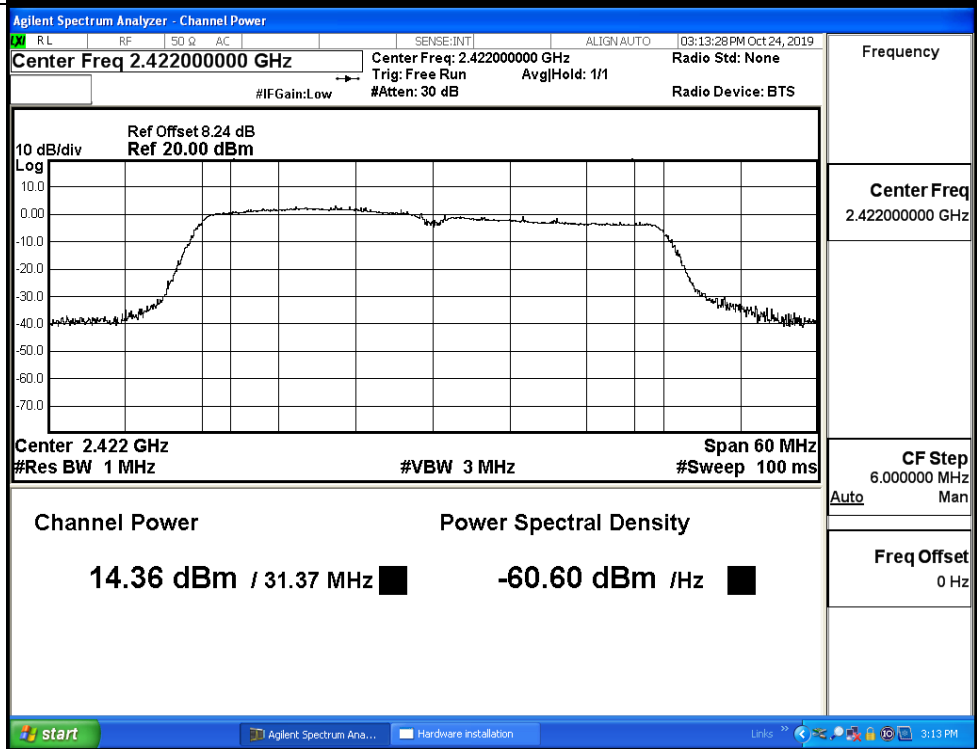
11N20SISO/MCH



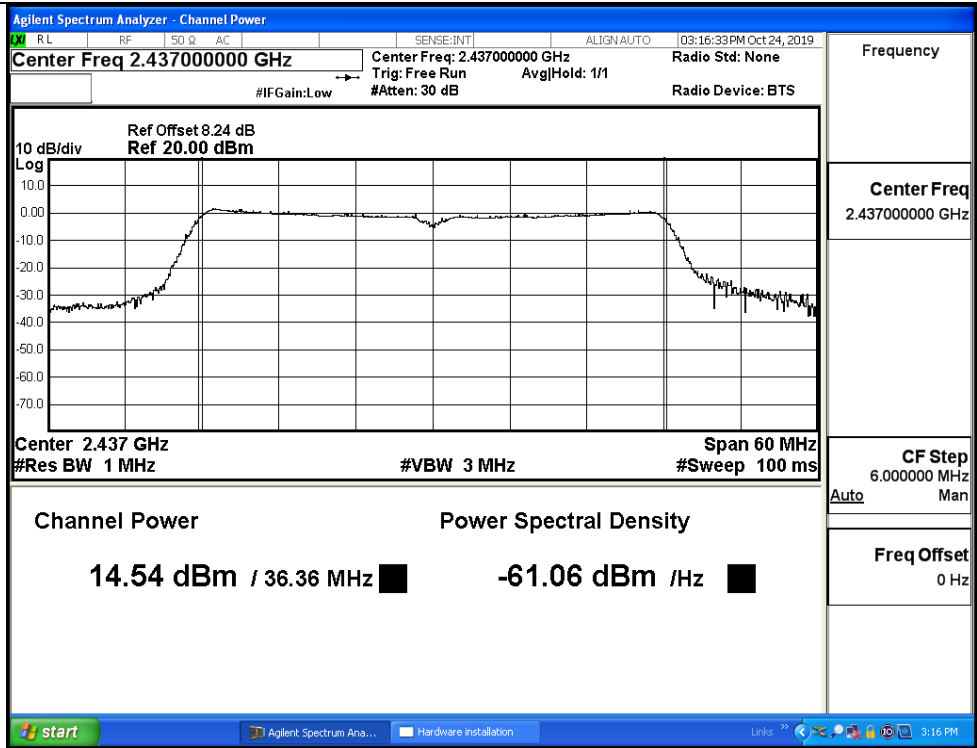
11N20SISO/HCH



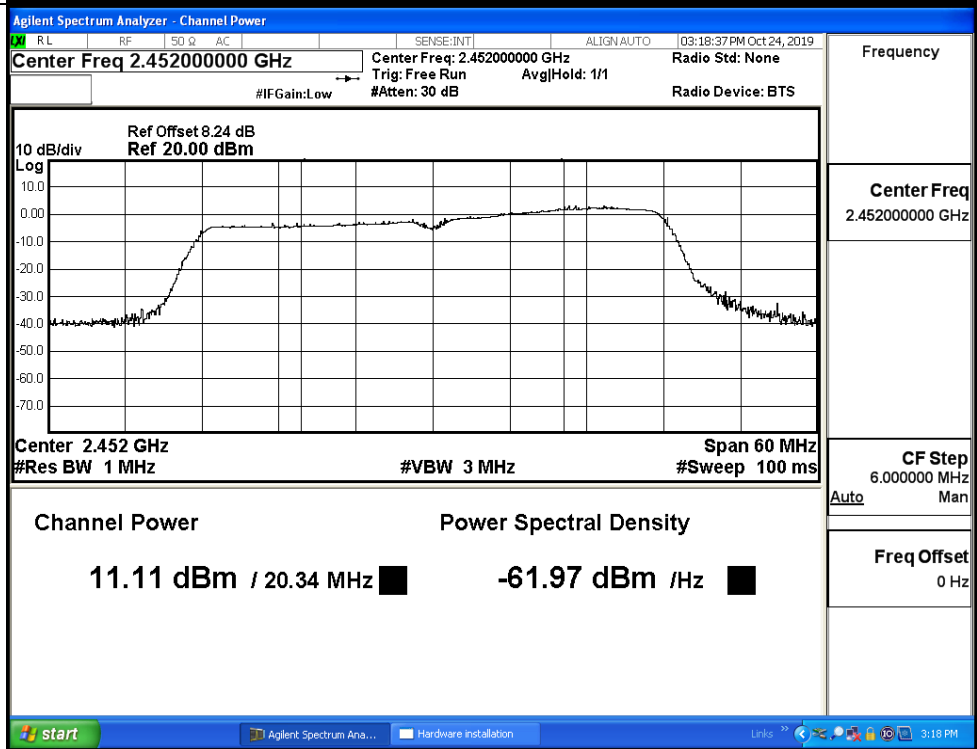
11N40SISO/LCH



11N40SISO/MCH



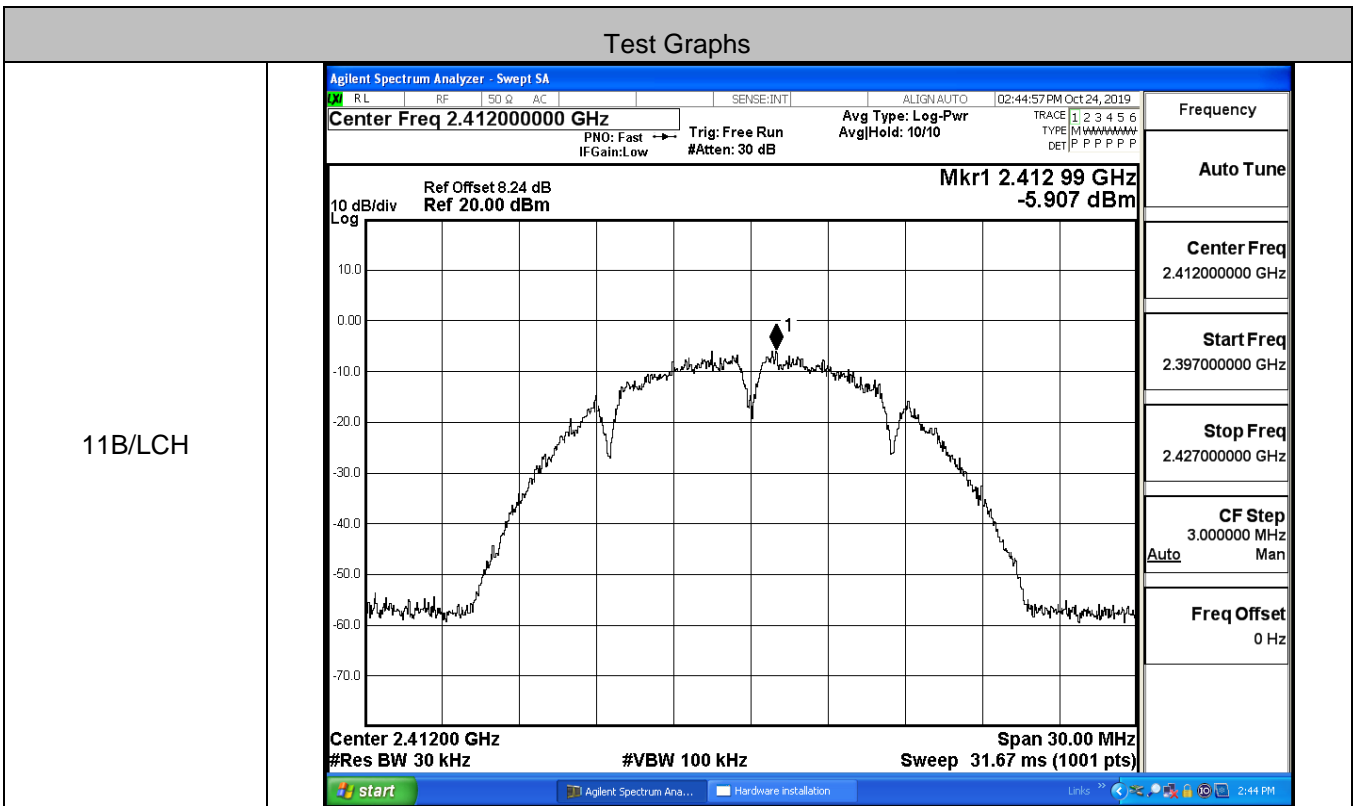
11N40SISO/HCH



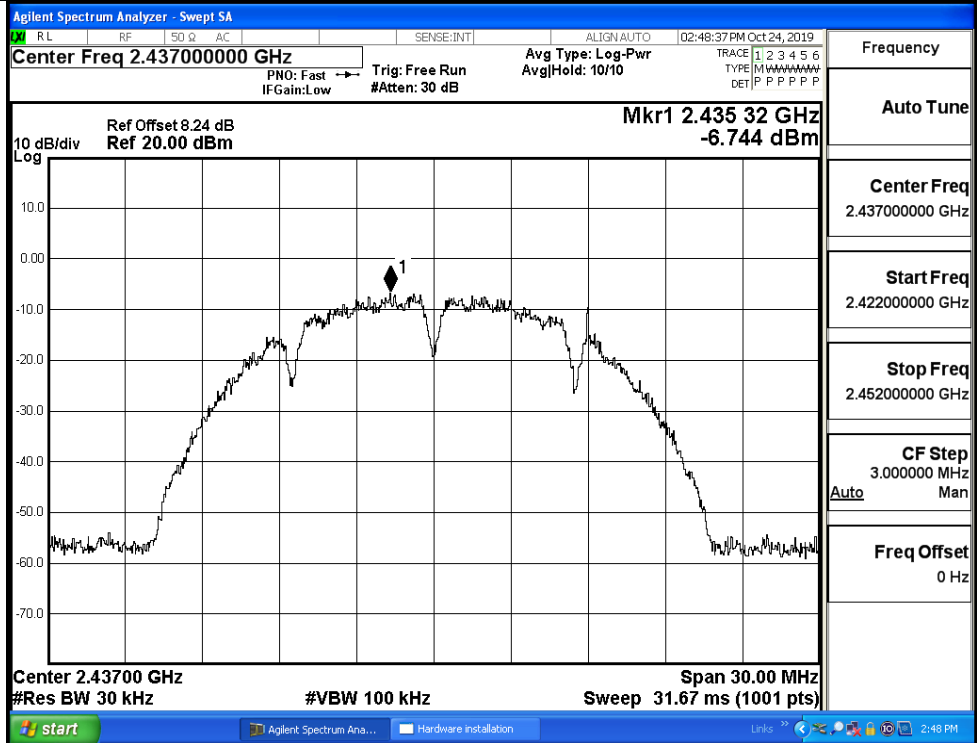
C.3 Maximum Power Spectral Density

Mode	Channel	Meas.Level [dBm/30KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-5.907	8	PASS
	MCH	-6.744	8	PASS
	HCH	-5.837	8	PASS
11G	LCH	-9.085	8	PASS
	MCH	-9.203	8	PASS
	HCH	-8.714	8	PASS
11N20SISO	LCH	-9.113	8	PASS
	MCH	-9.420	8	PASS
	HCH	-9.146	8	PASS
11N40SISO	LCH	-11.120	8	PASS
	MCH	-11.634	8	PASS
	HCH	-10.880	8	PASS

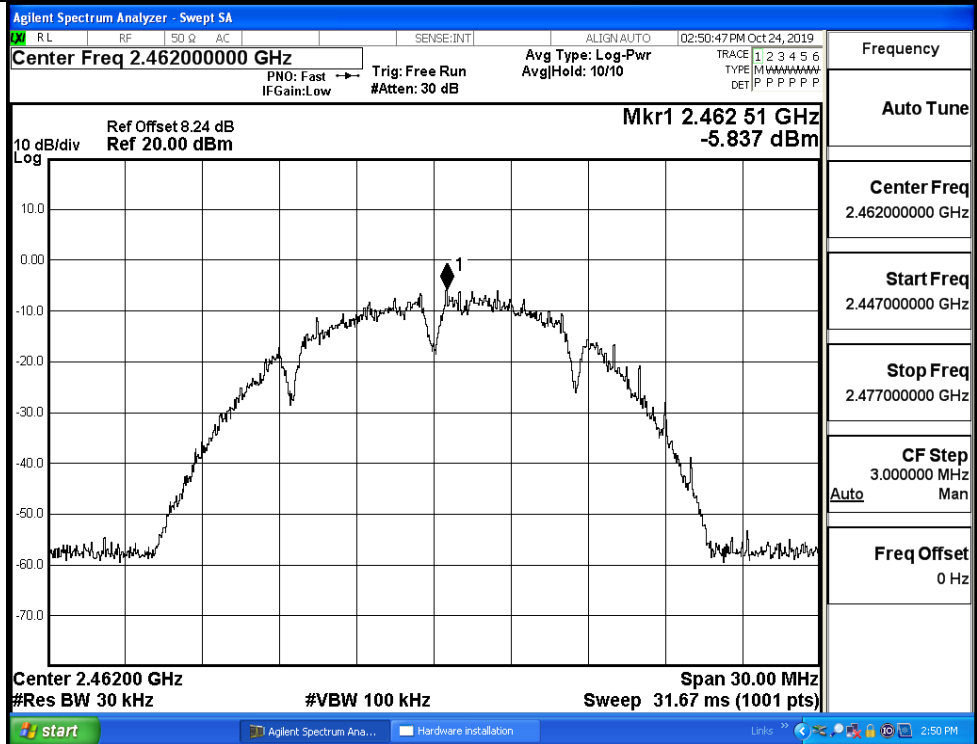
Test Graphs



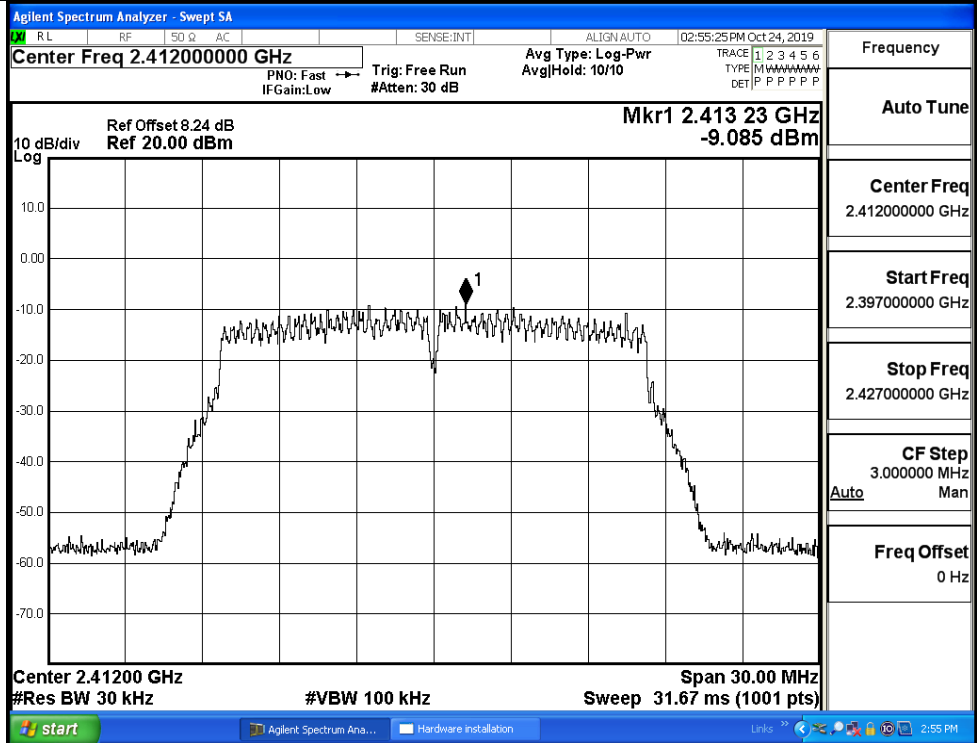
11B/MCH



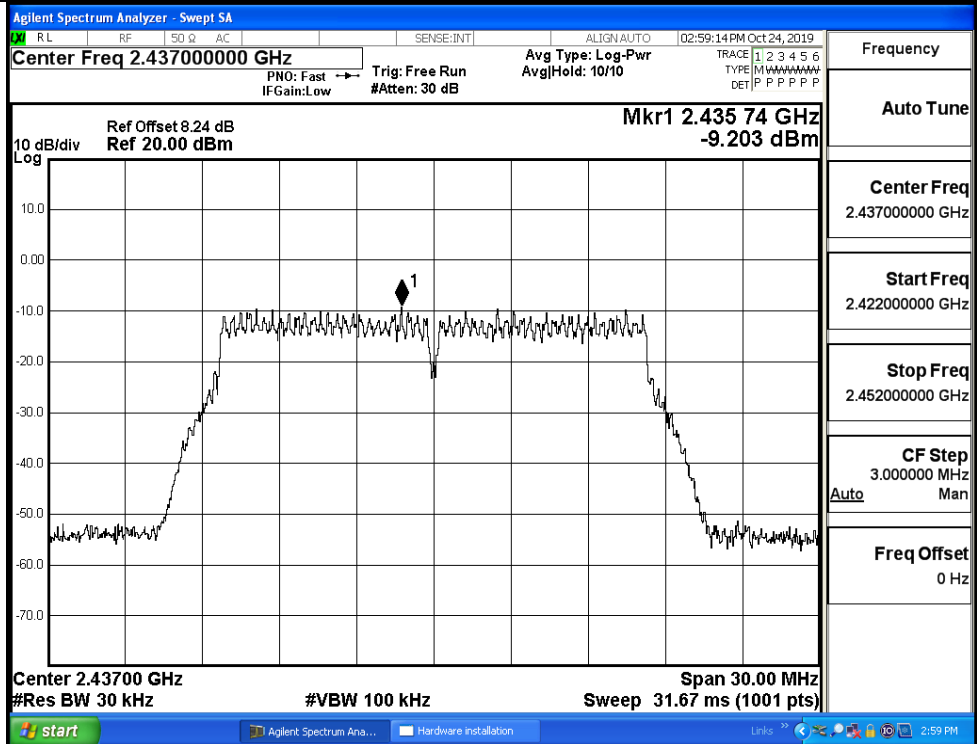
11B/HCH



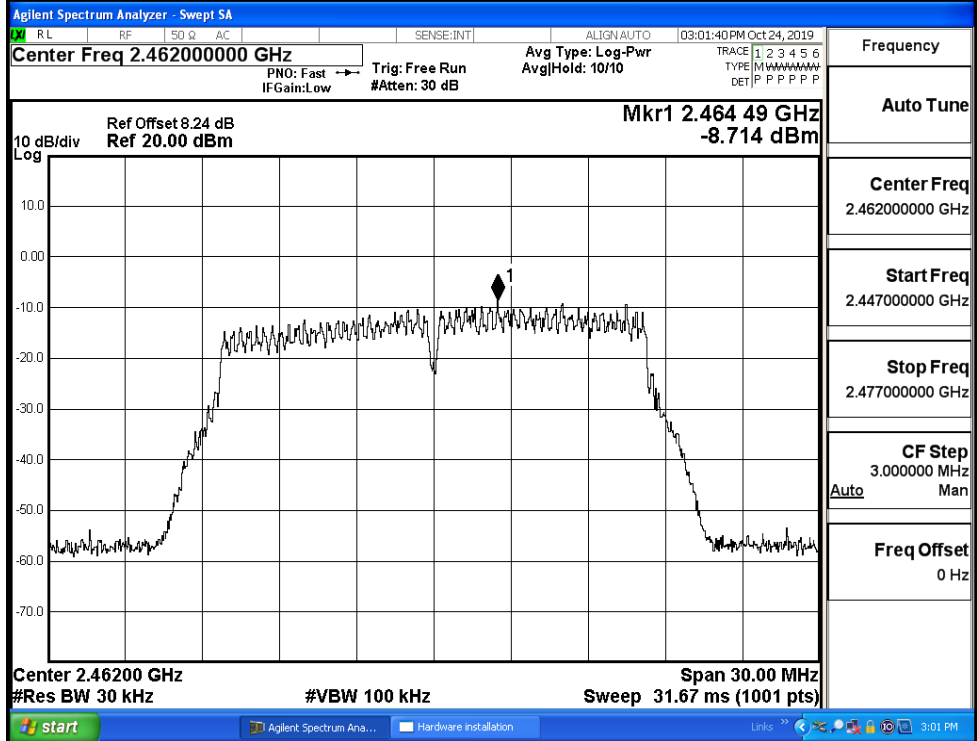
11G/LCH



11G/MCH

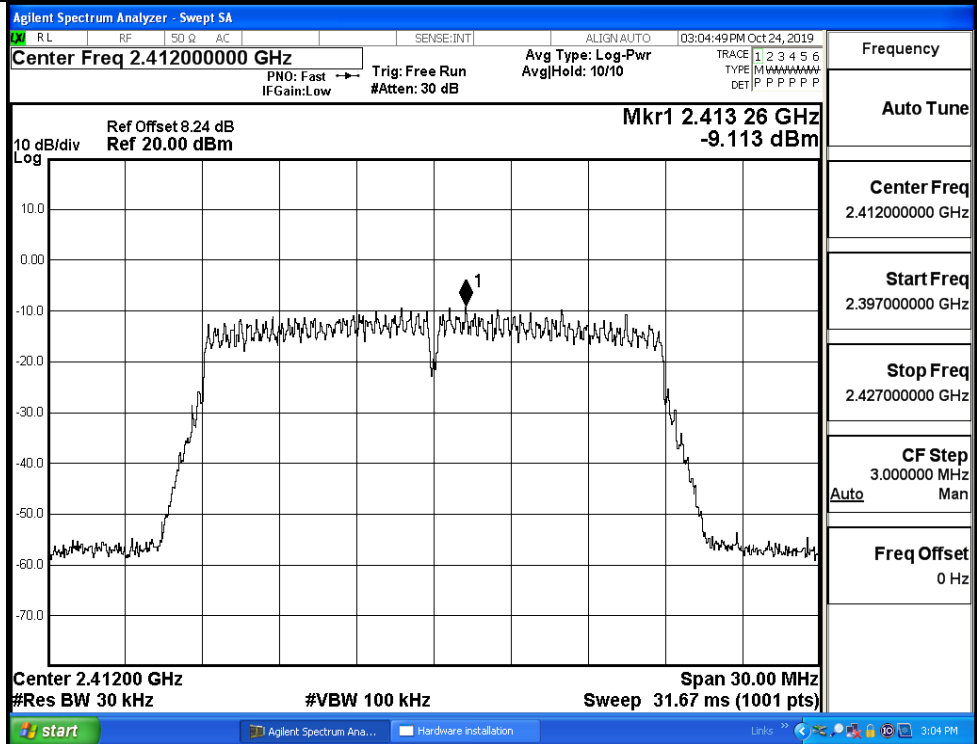


11G/HCH



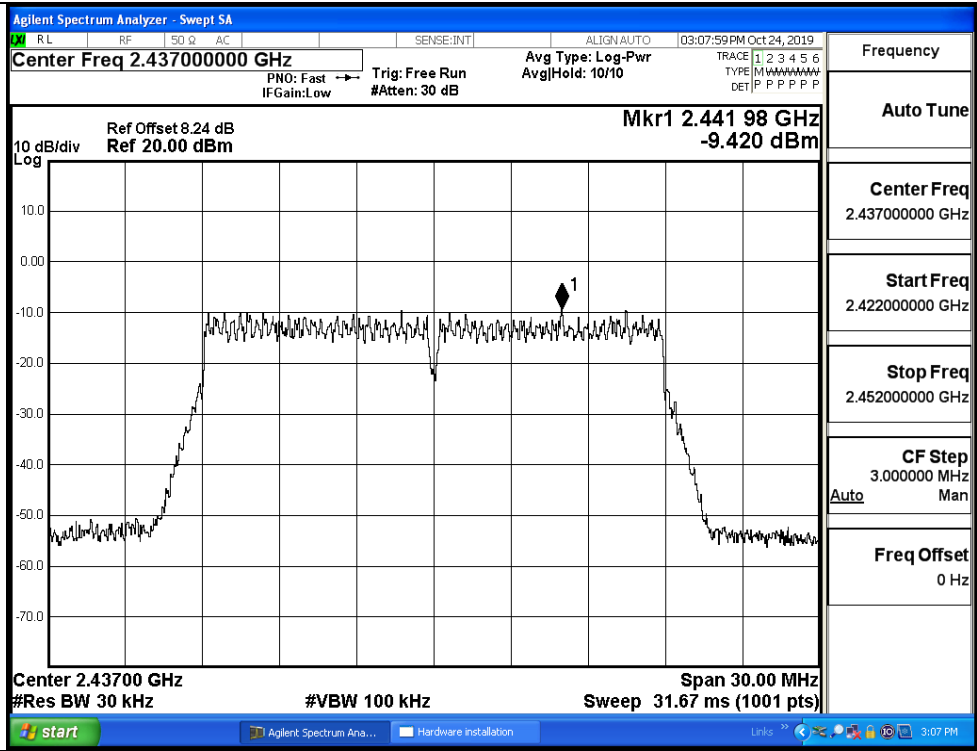
Frequency
Auto Tune
Center Freq 2.46200000 GHz
Start Freq 2.447000000 GHz
Stop Freq 2.477000000 GHz
CF Step 3.000000 MHz Auto Man
Freq Offset 0 Hz

11N20SISO/LCH

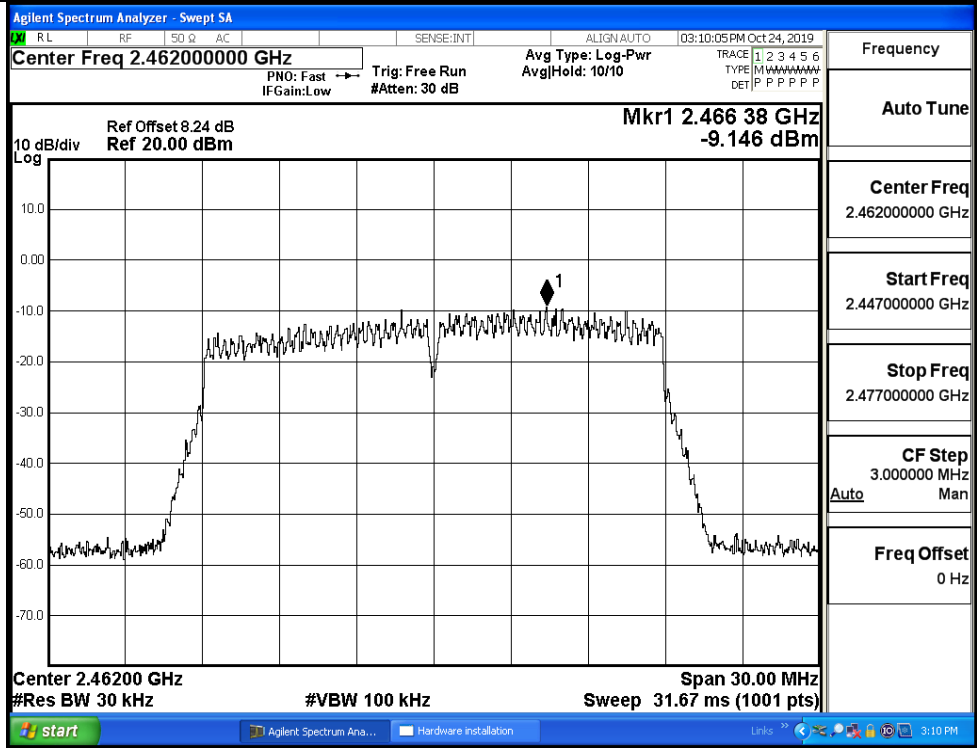


Frequency
Auto Tune
Center Freq 2.412000000 GHz
Start Freq 2.397000000 GHz
Stop Freq 2.427000000 GHz
CF Step 3.000000 MHz Auto Man
Freq Offset 0 Hz

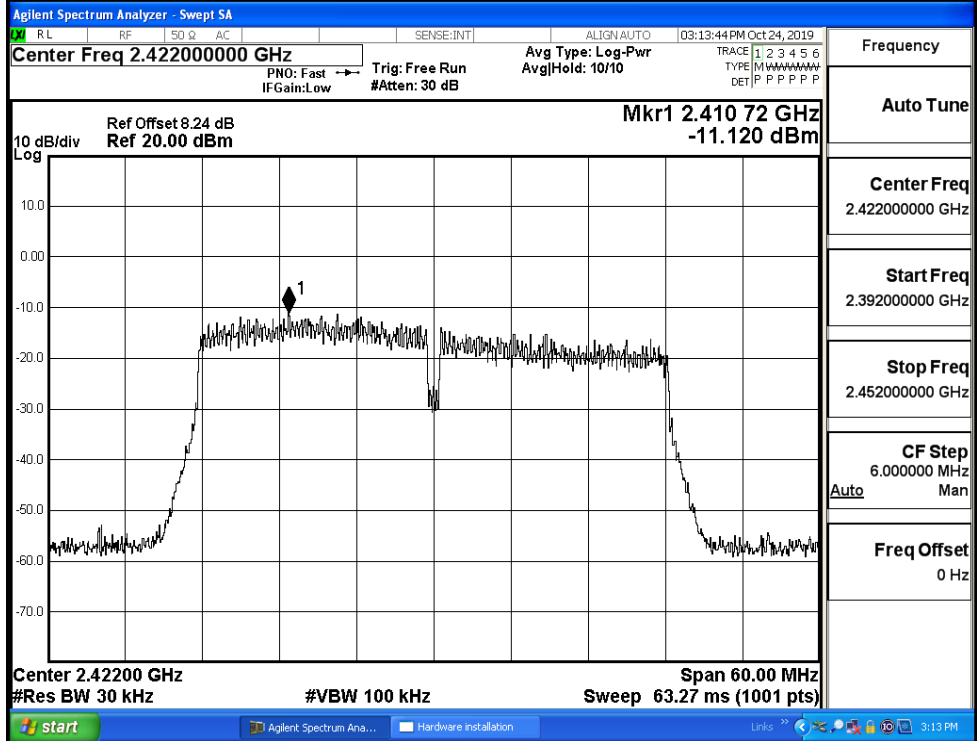
11N20SISO/MCH



11N20SISO/HCH

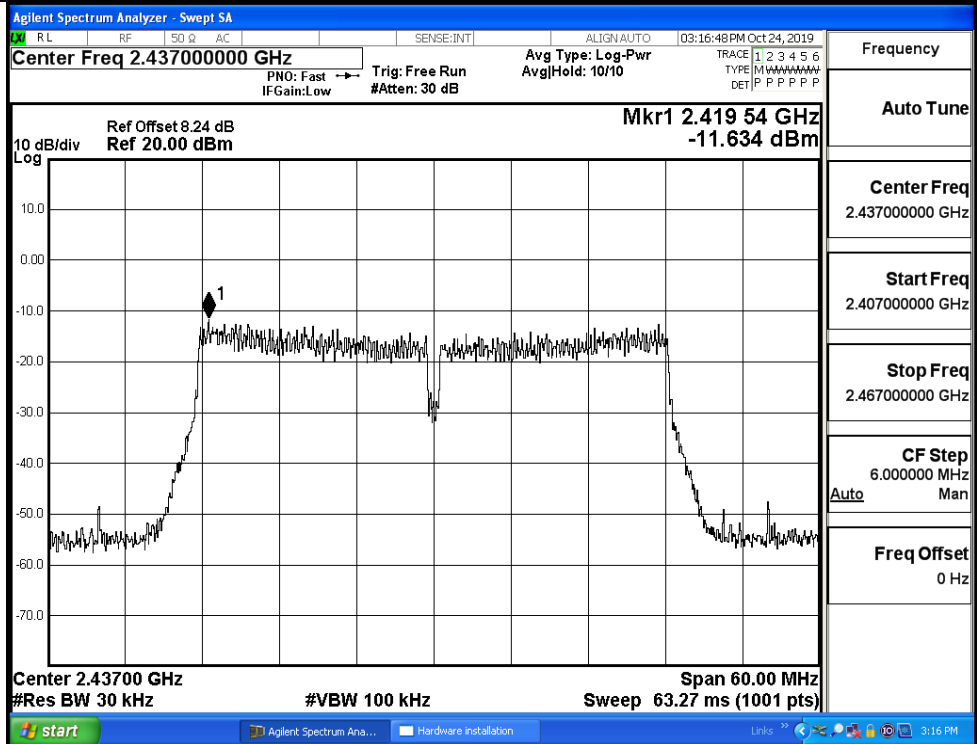


11N40SISO/LCH



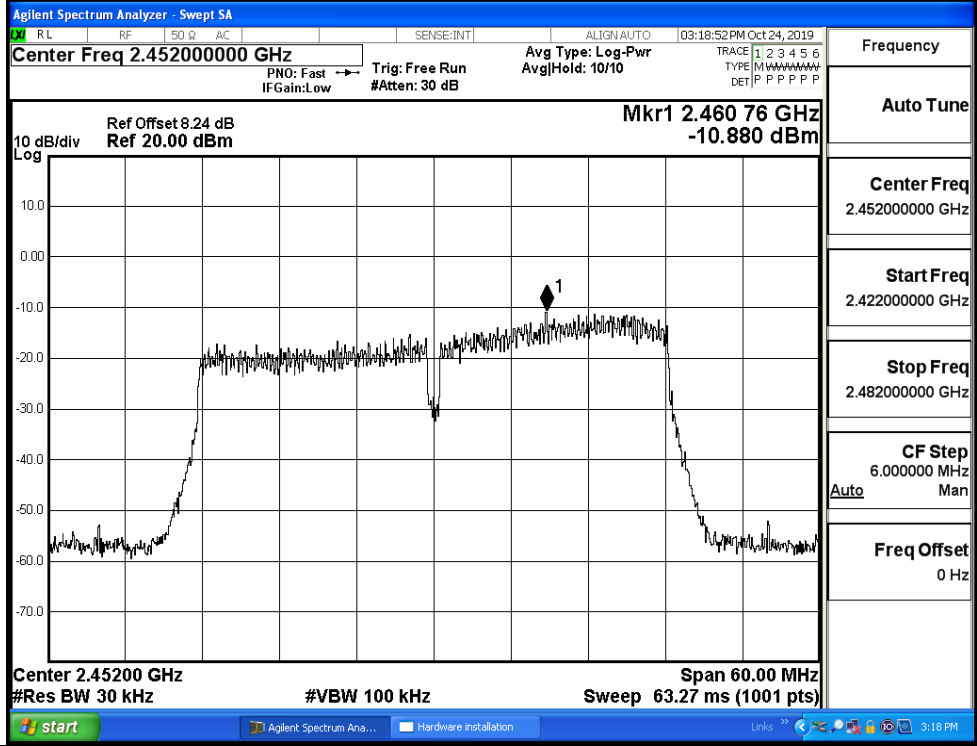
Frequency	2.42200000 GHz
Auto Tune	
Center Freq	2.42200000 GHz
Start Freq	2.39200000 GHz
Stop Freq	2.45200000 GHz
CF Step	6.000000 MHz Auto
Freq Offset	0 Hz

11N40SISO/MCH



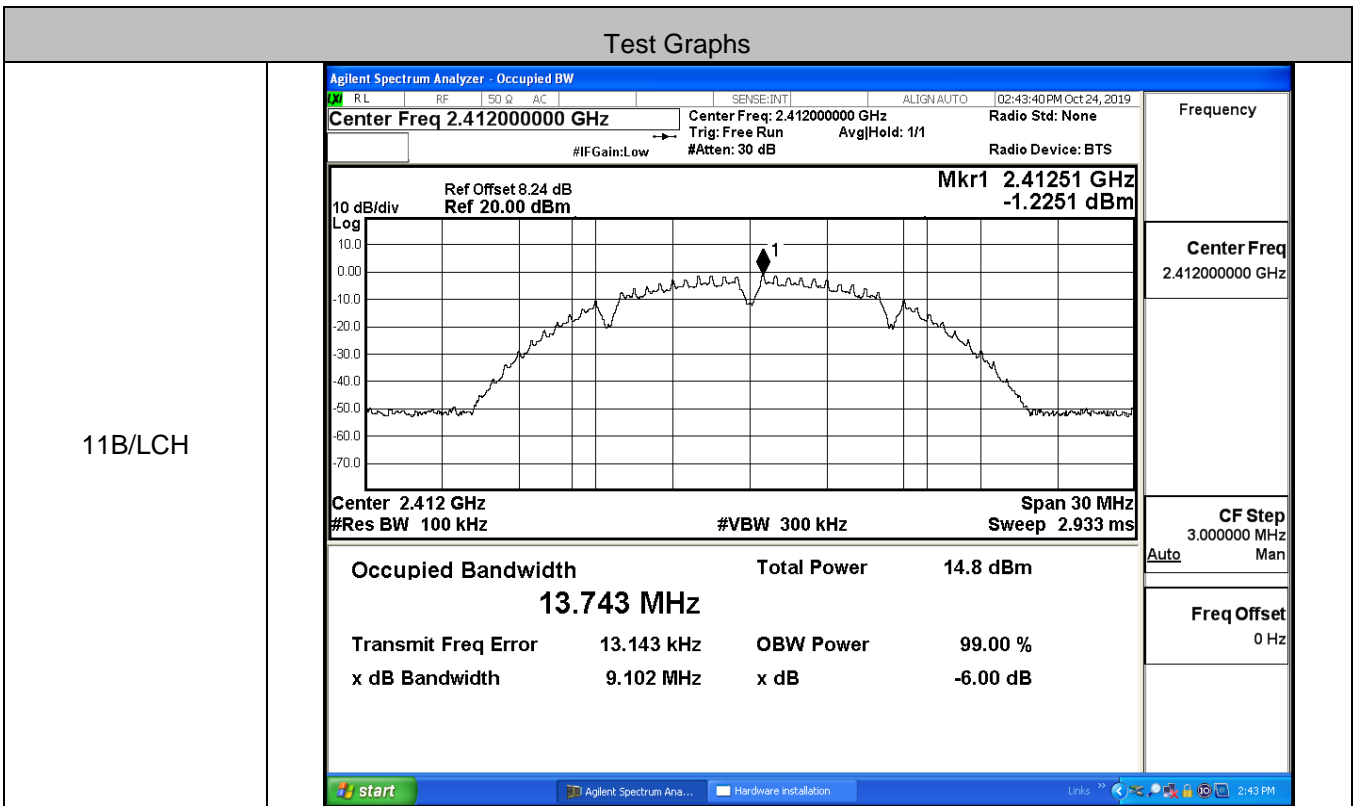
Frequency	2.43700000 GHz
Auto Tune	
Center Freq	2.43700000 GHz
Start Freq	2.40700000 GHz
Stop Freq	2.46700000 GHz
CF Step	6.000000 MHz Auto
Freq Offset	0 Hz

11N40SISO/HCH

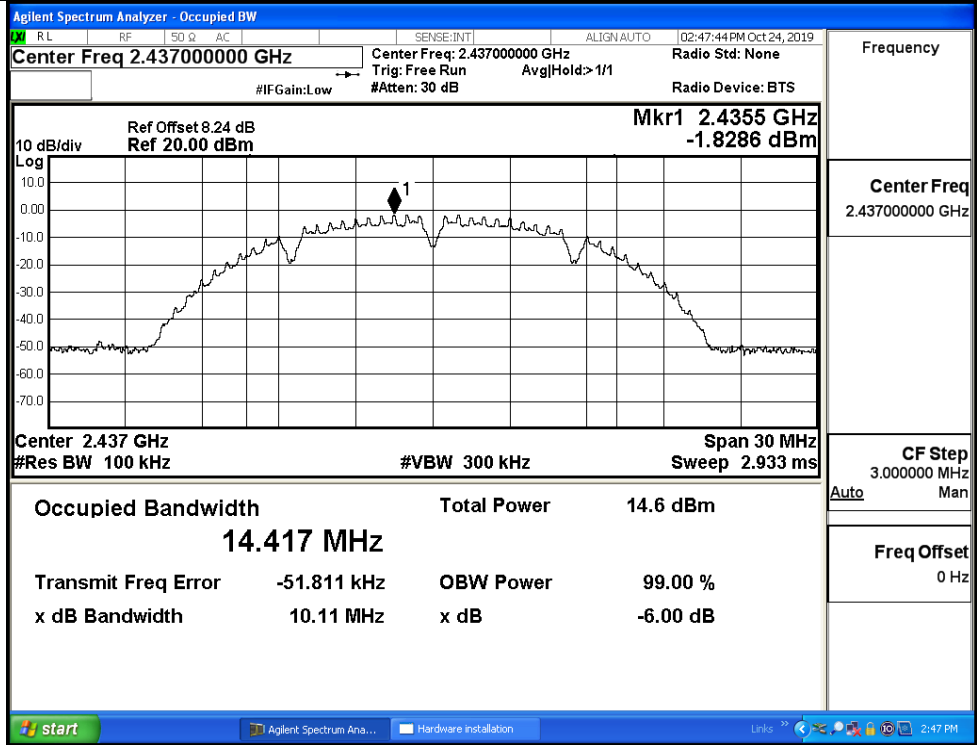


C.4 6dB Bandwidth

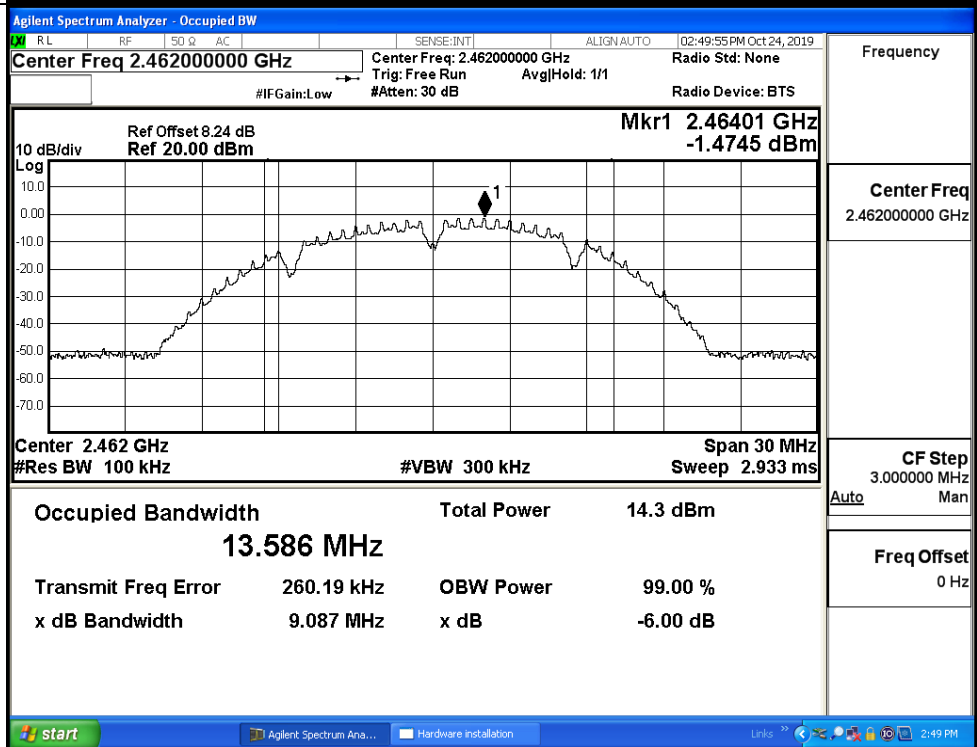
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	9.102	≥0.5	PASS
	MCH	10.11	≥0.5	PASS
	HCH	9.087	≥0.5	PASS
11G	LCH	15.45	≥0.5	PASS
	MCH	16.44	≥0.5	PASS
	HCH	14.47	≥0.5	PASS
11N20SISO	LCH	15.16	≥0.5	PASS
	MCH	17.67	≥0.5	PASS
	HCH	16.32	≥0.5	PASS
11N40SISO	LCH	31.37	≥0.5	PASS
	MCH	36.36	≥0.5	PASS
	HCH	20.34	≥0.5	PASS



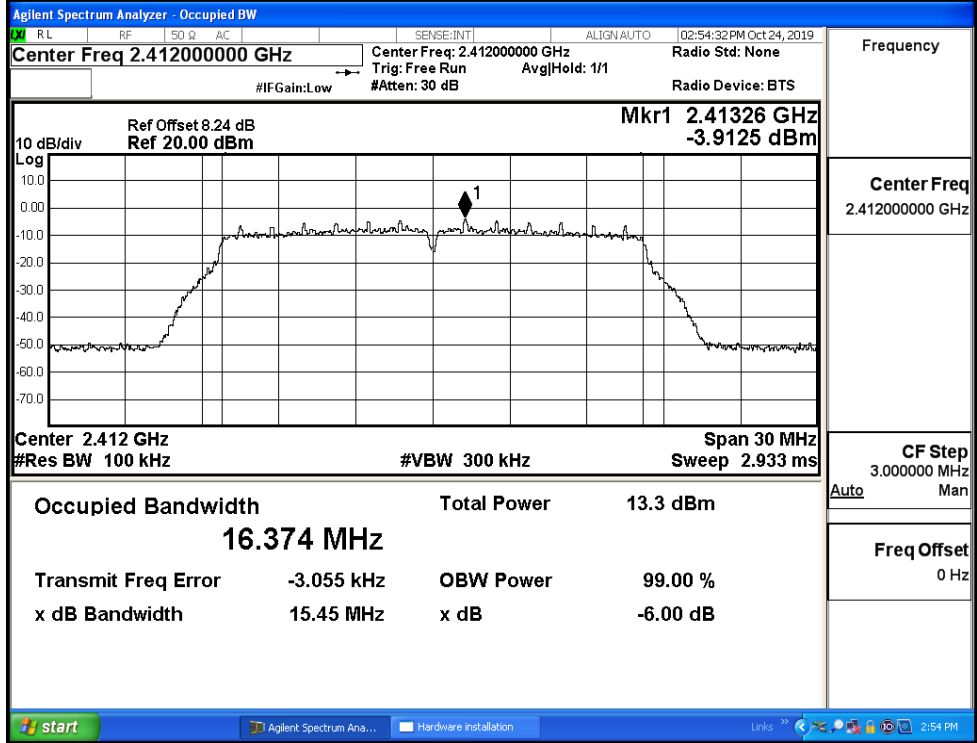
11B/MCH



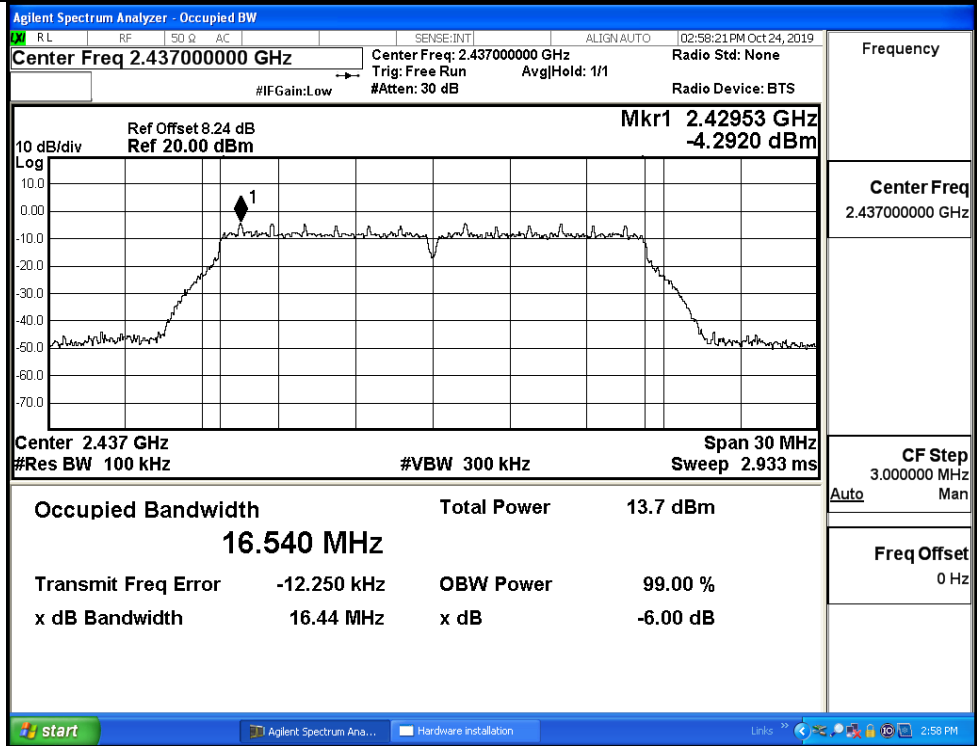
11B/HCH



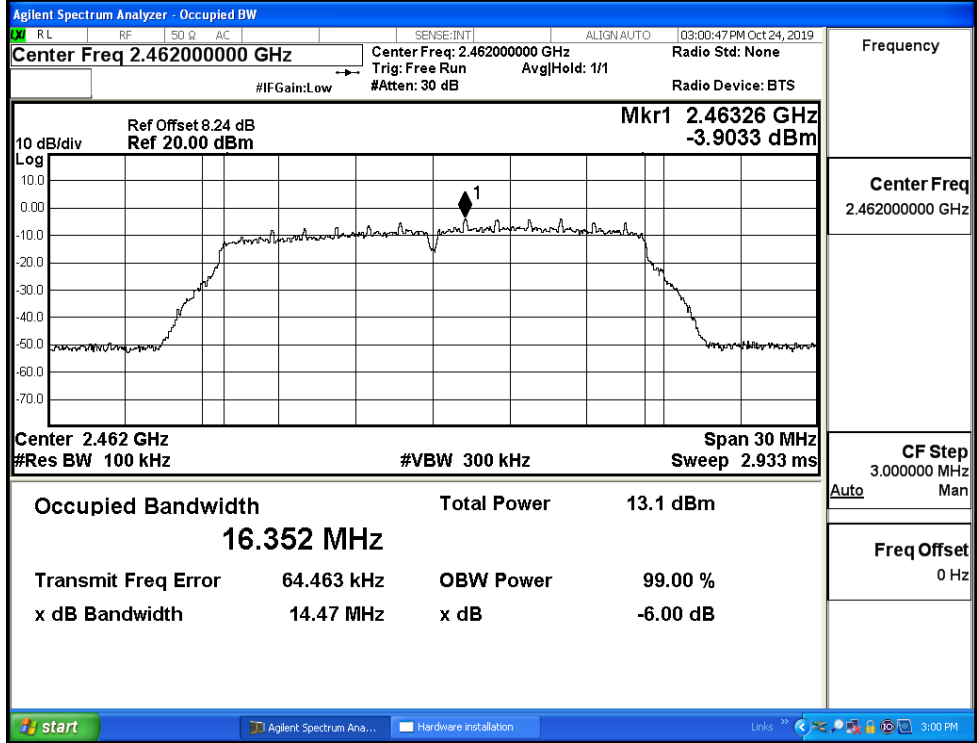
11G/LCH



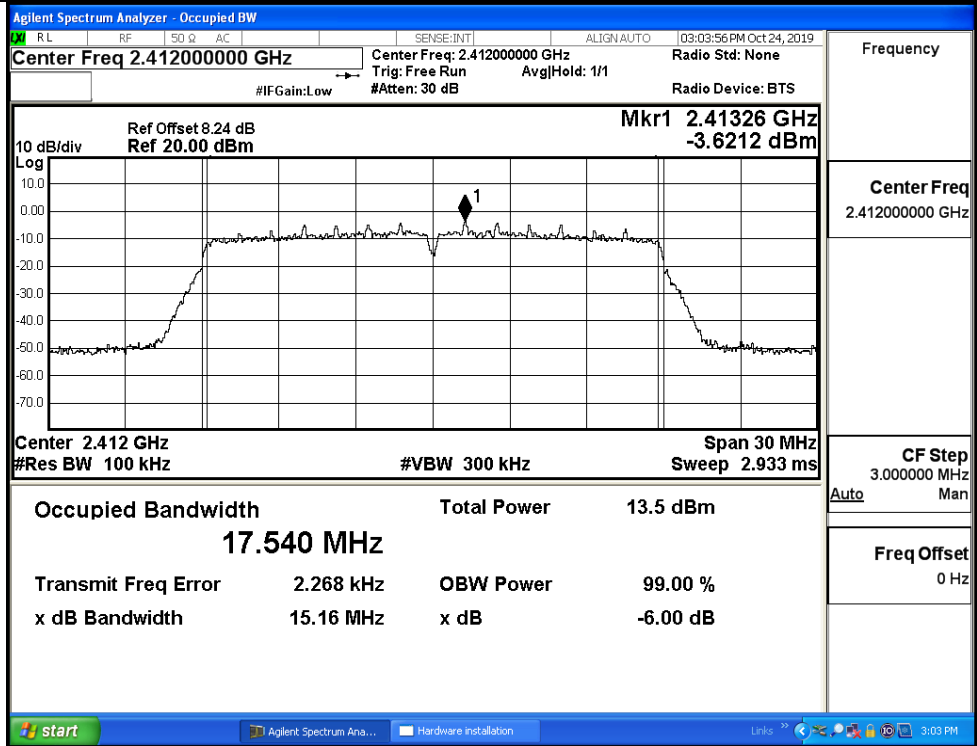
11G/MCH



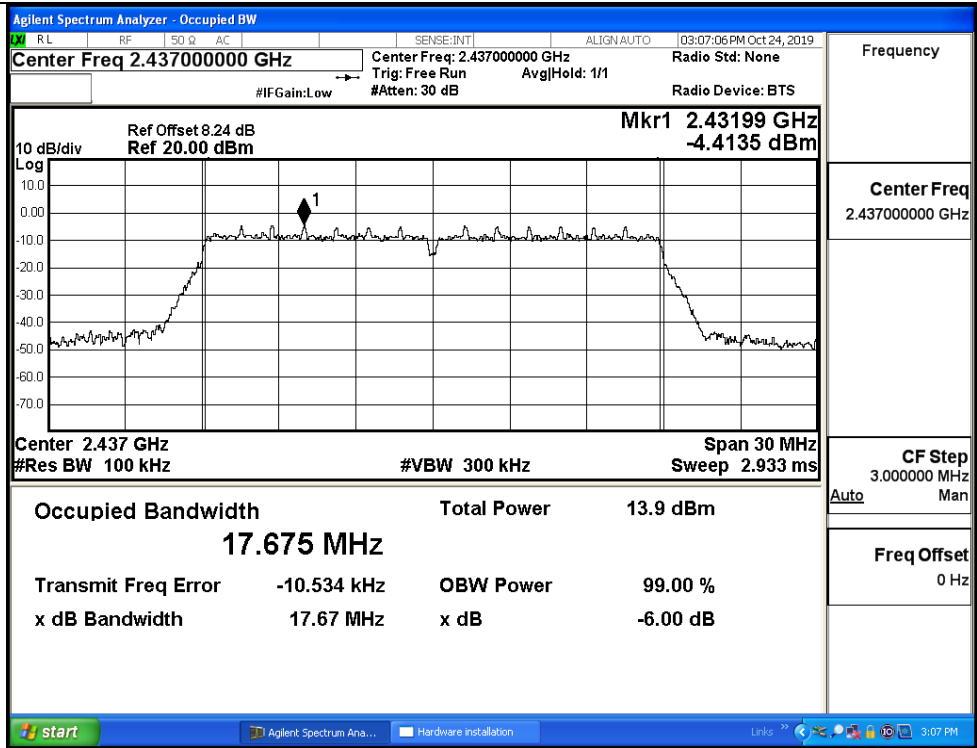
11G/HCH



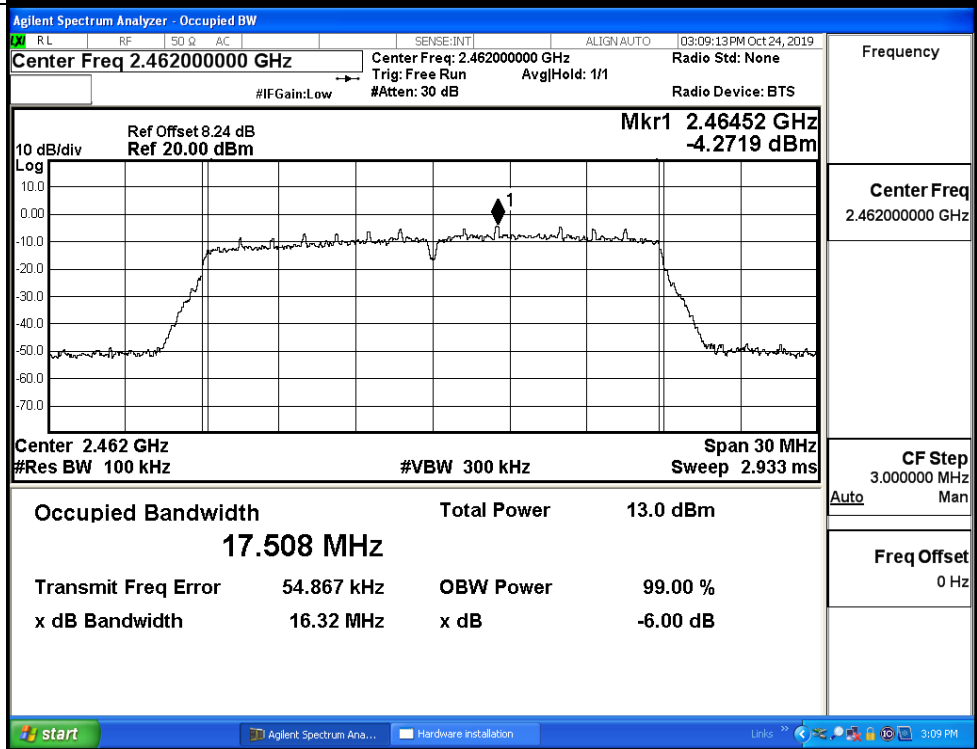
11N20SISO/LCH



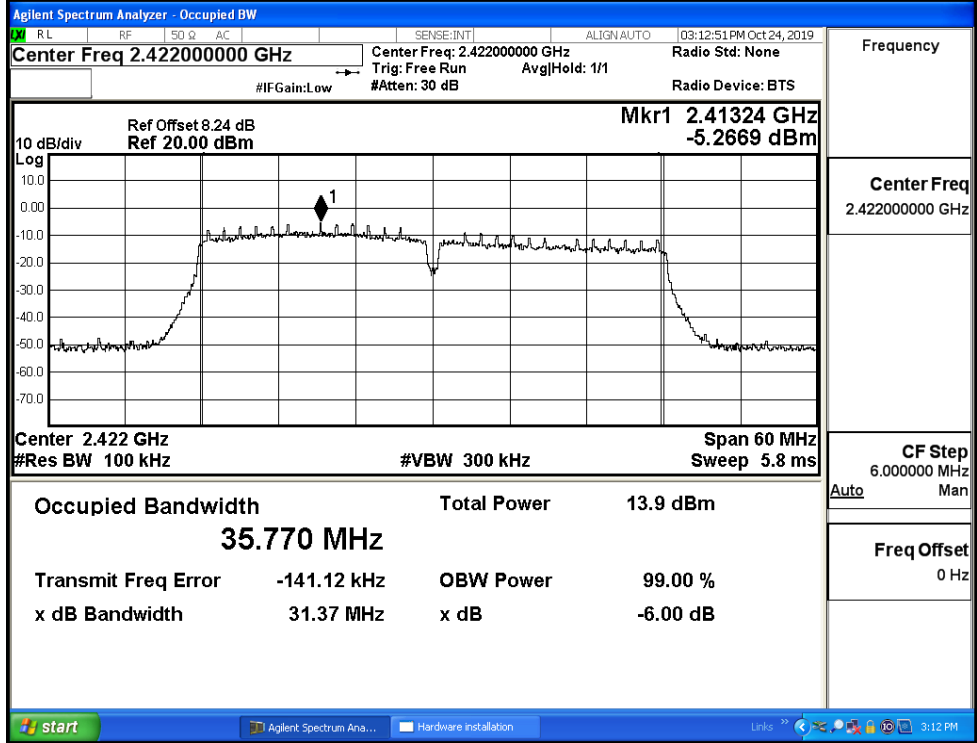
11N20SISO/MCH



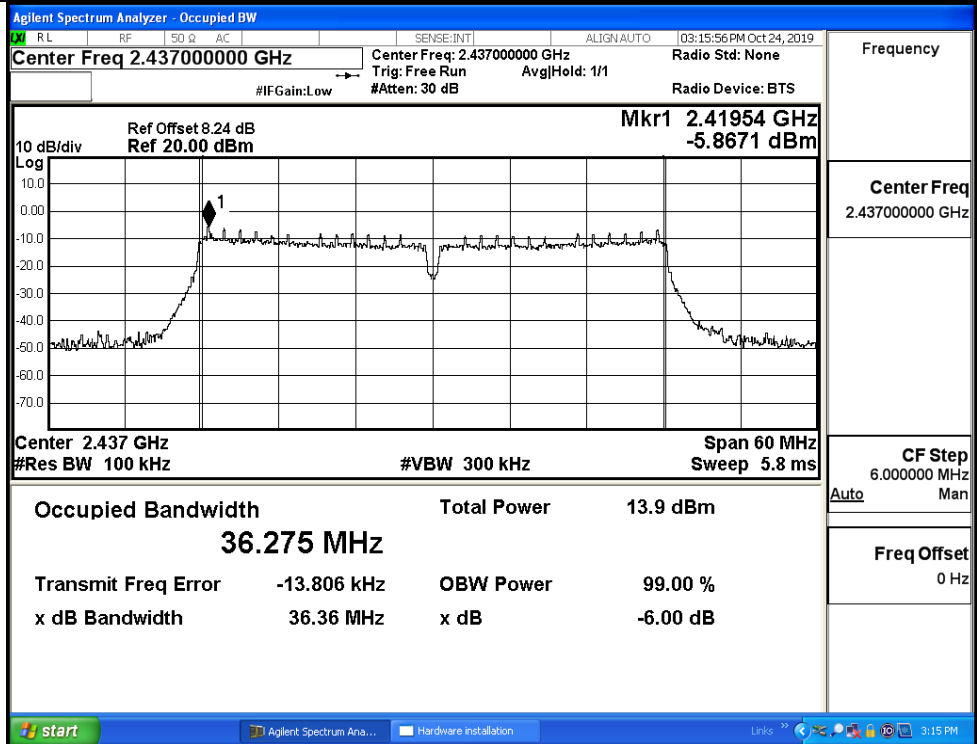
11N20SISO/HCH

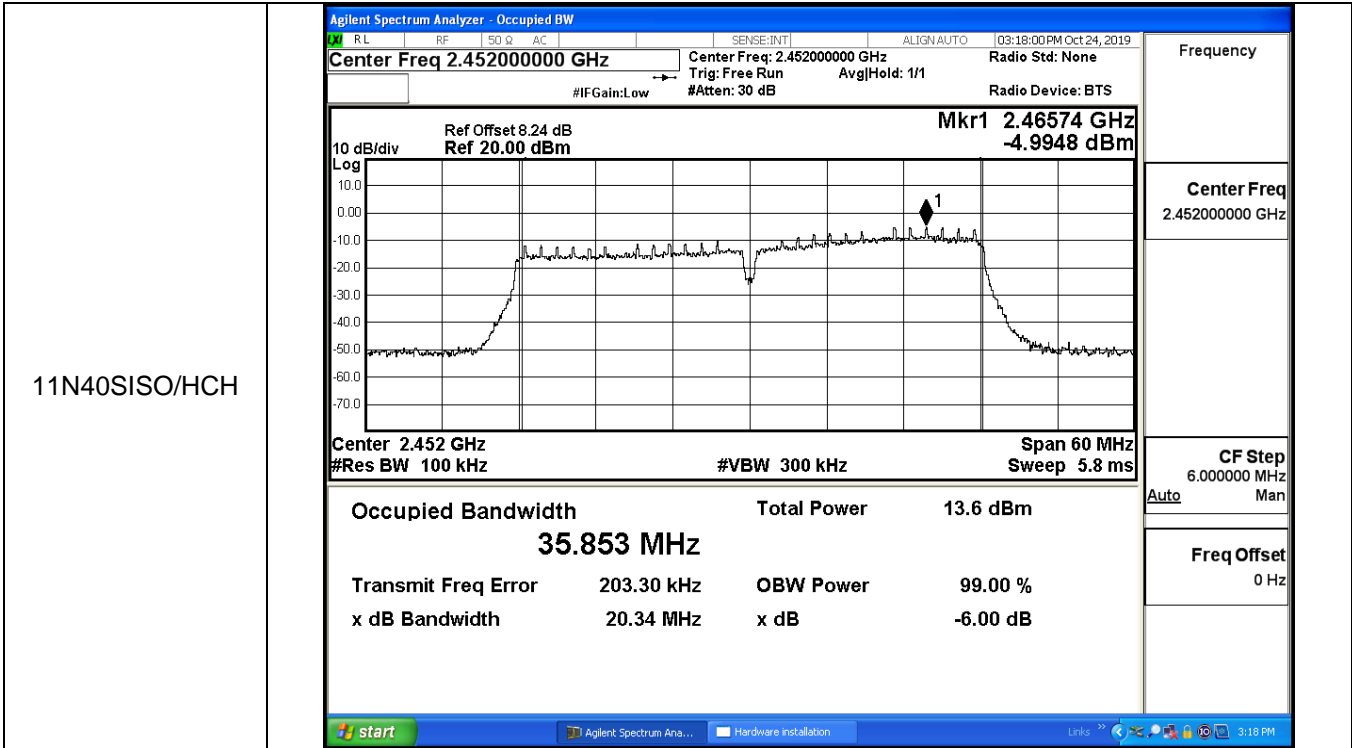


11N40SISO/LCH



11N40SISO/MCH





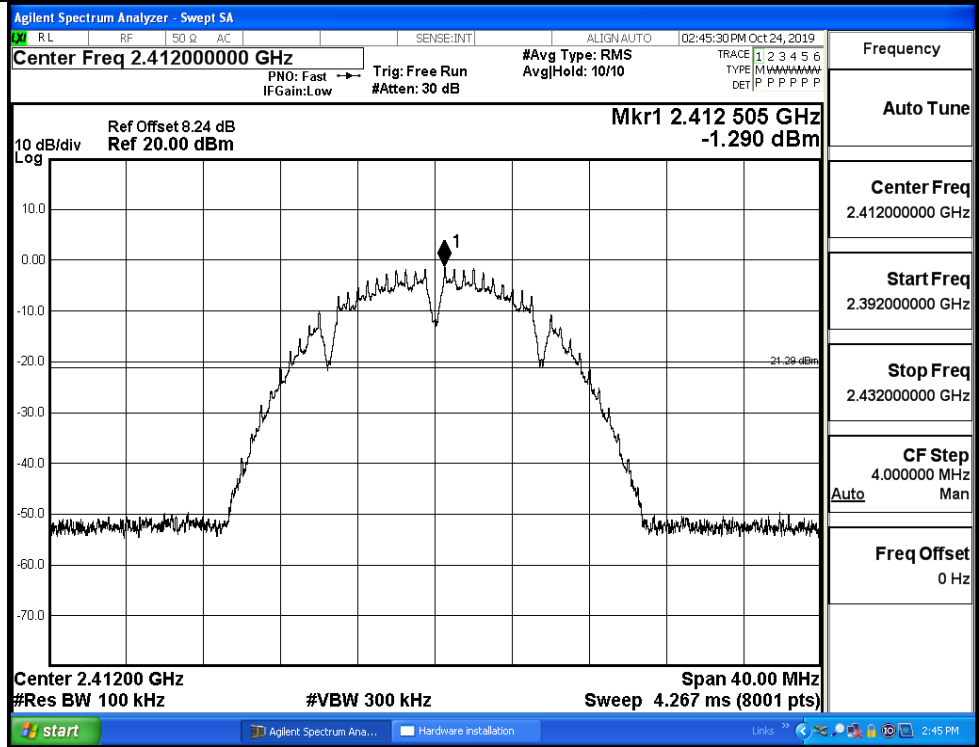
C.5 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdic
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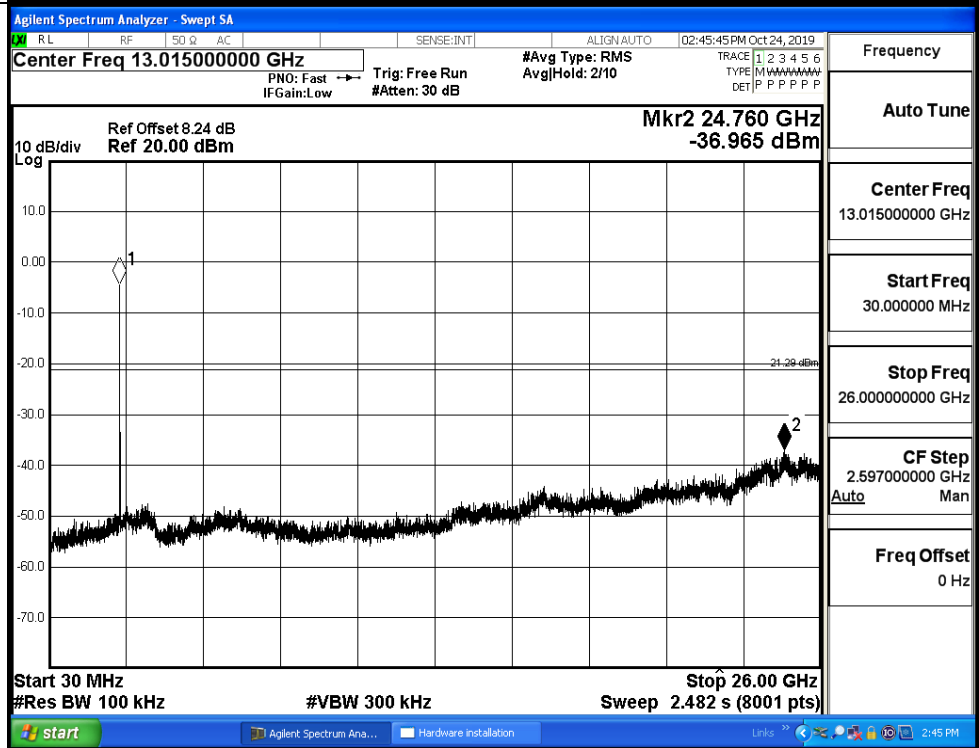
					t
11B	LCH	-1.29	-36.965	-21.290	PASS
	MCH	-1.99	-36.576	-21.990	PASS
	HCH	-1.881	-36.737	-21.881	PASS
11G	LCH	-4.419	-37.080	-24.419	PASS
	MCH	-4.461	-37.269	-24.461	PASS
	HCH	-4.047	-37.481	-24.047	PASS
11N20 SISO	LCH	-4.043	-37.723	-24.043	PASS
	MCH	-4.43	-37.230	-24.430	PASS
	HCH	-4.023	-38.156	-24.023	PASS
11N40 SISO	LCH	-5.323	-37.143	-25.323	PASS
	MCH	-6.15	-37.531	-26.150	PASS
	HCH	-5.152	-36.730	-25.152	PASS

11B_LCH_Graphs

Pref/11B/LCH

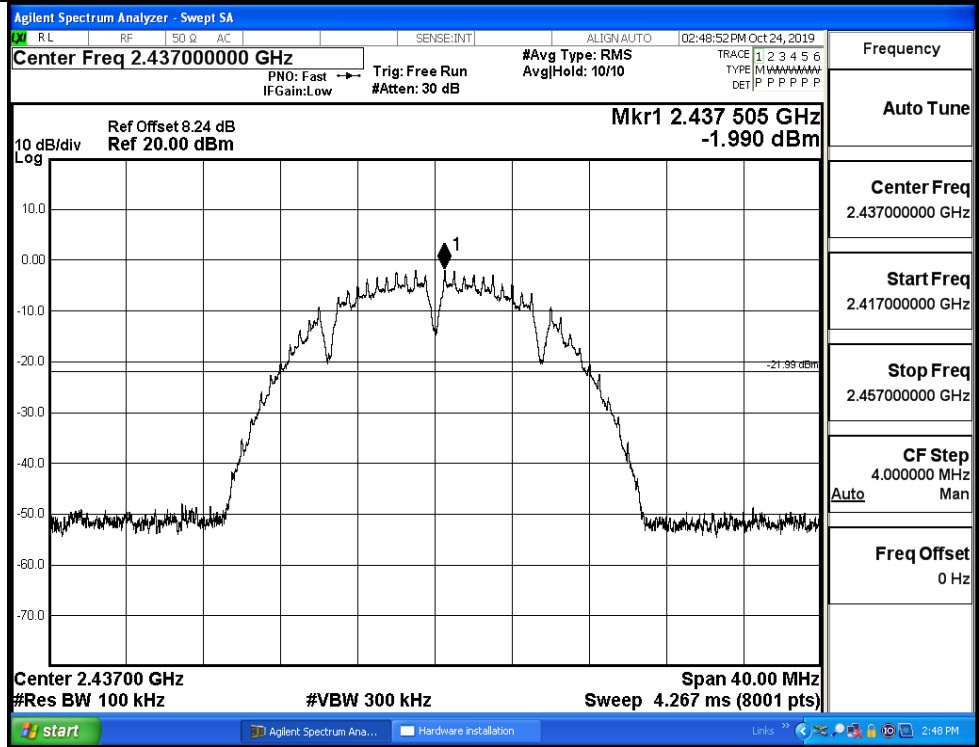


Puw/11B/LCH

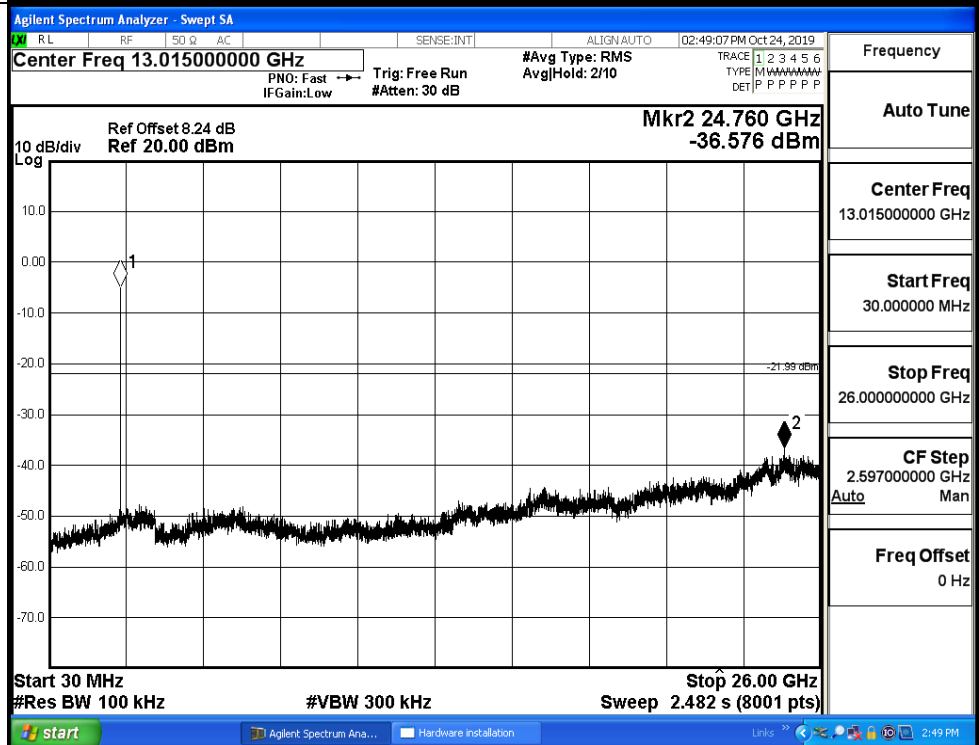


11B_MCH_Graphs

Pref/11B/MCH

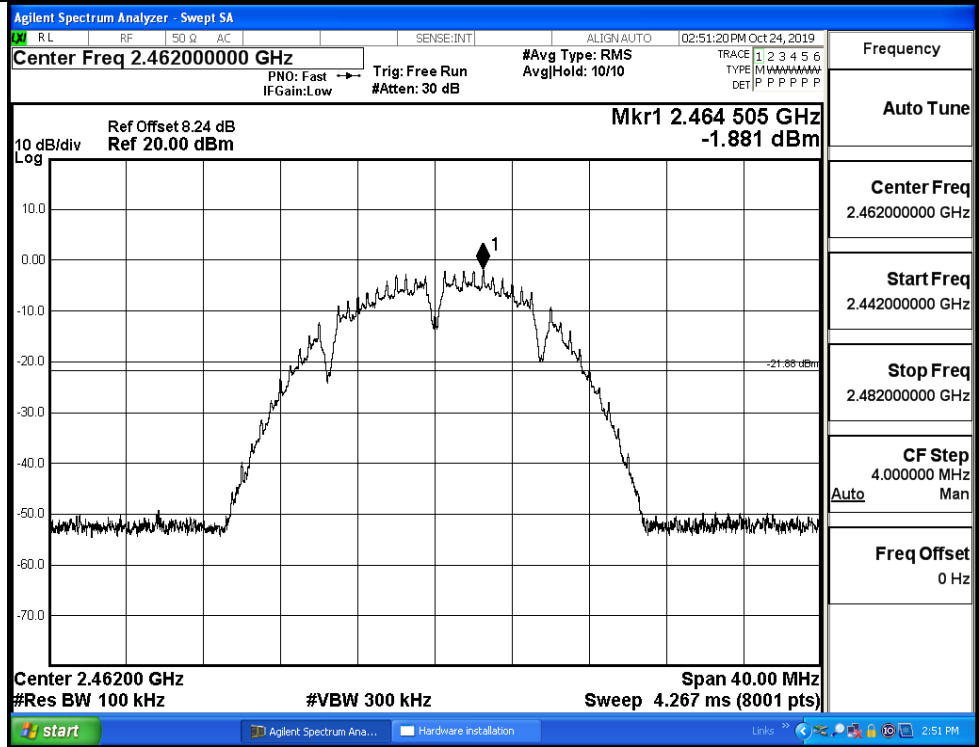


Puw/11B/MCH



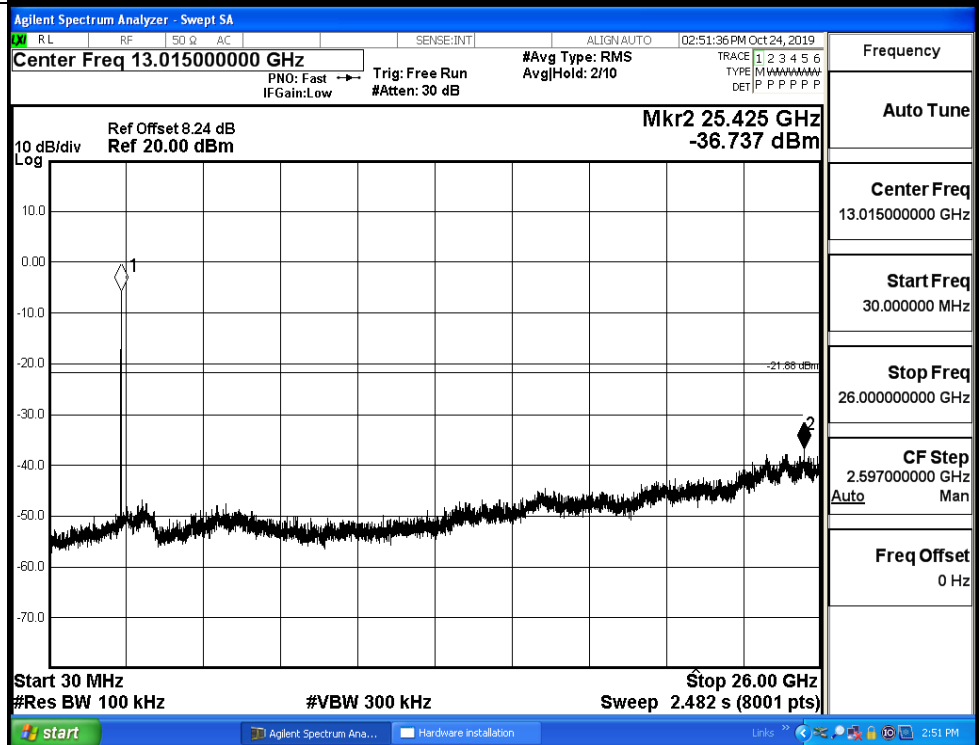
11B_HCH_Graphs

Pref/11B/HCH



Frequency	
Auto Tune	
Center Freq	2.462000000 GHz
Start Freq	2.442000000 GHz
Stop Freq	2.482000000 GHz
CF Step	4.000000 MHz Auto Man
Freq Offset	0 Hz

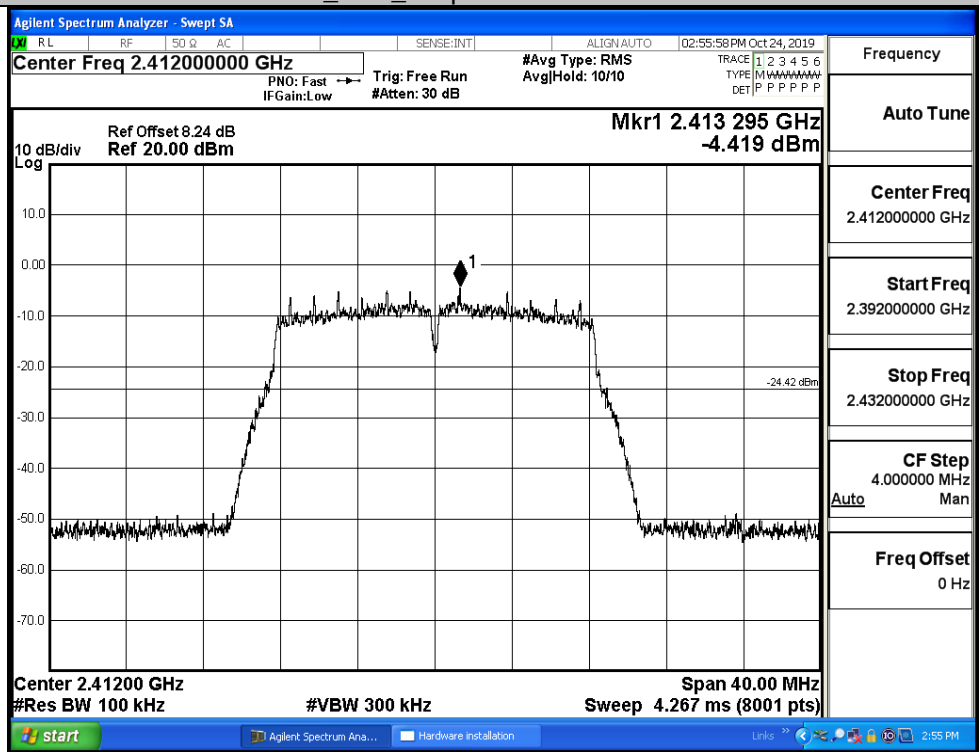
Puw/11B/HCH



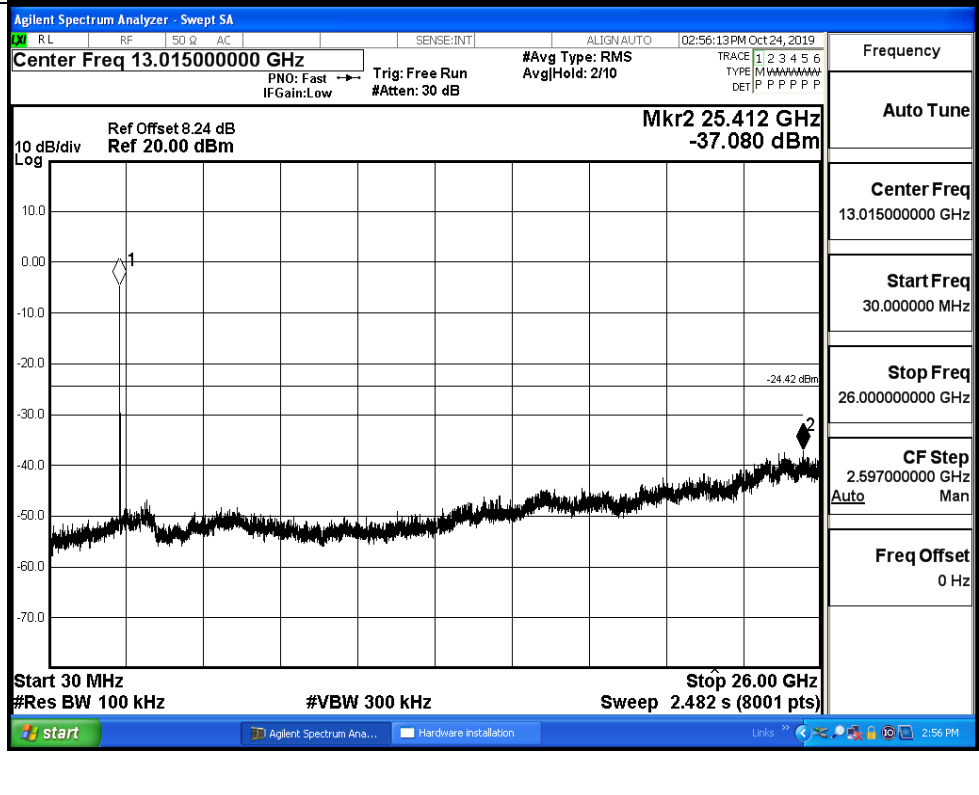
Frequency	
Auto Tune	
Center Freq	13.015000000 GHz
Start Freq	30.000000 MHz
Stop Freq	26.000000000 GHz
CF Step	2.597000000 GHz Auto Man
Freq Offset	0 Hz

11G_LCH_Graphs

Pref/11G/LCH

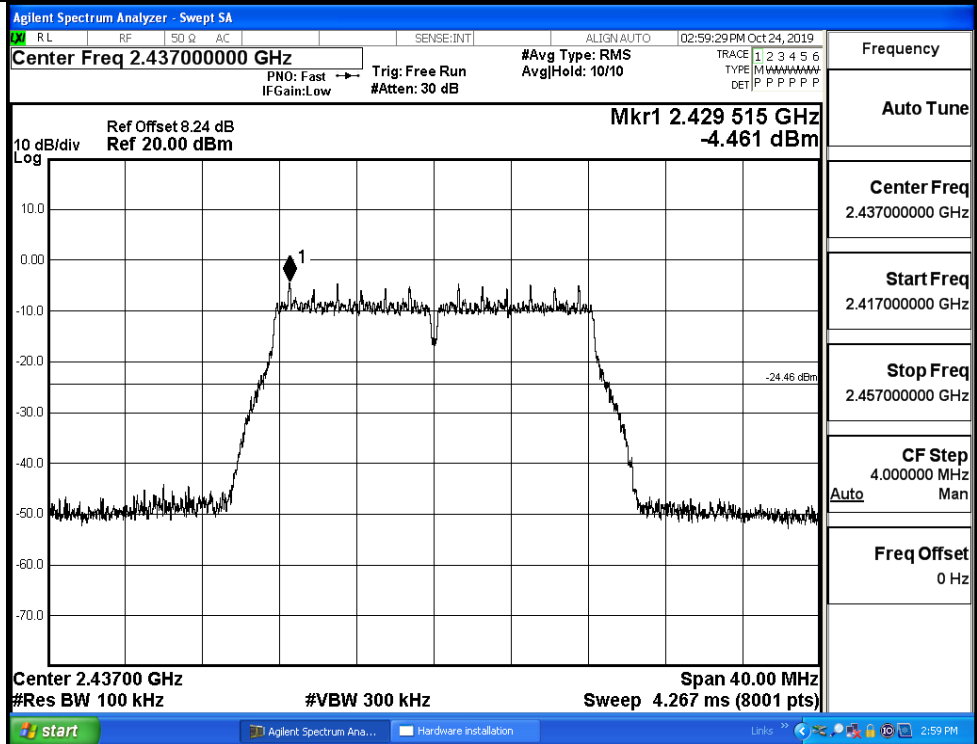


Puw/11G/LCH

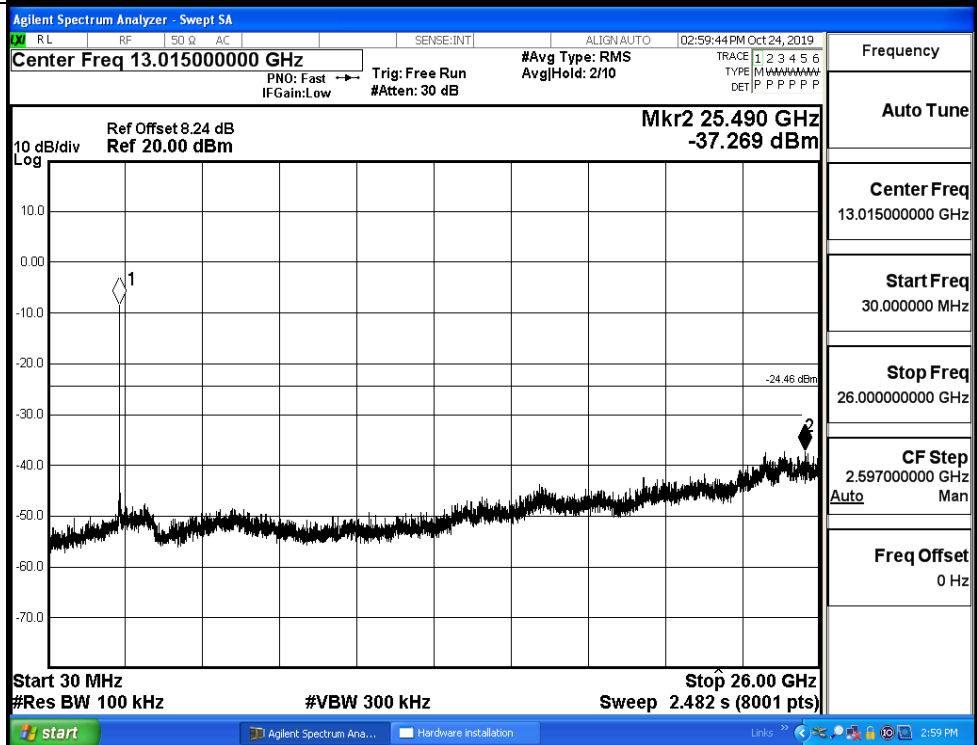


11G_MCH_Graphs

Pref/11G/MCH

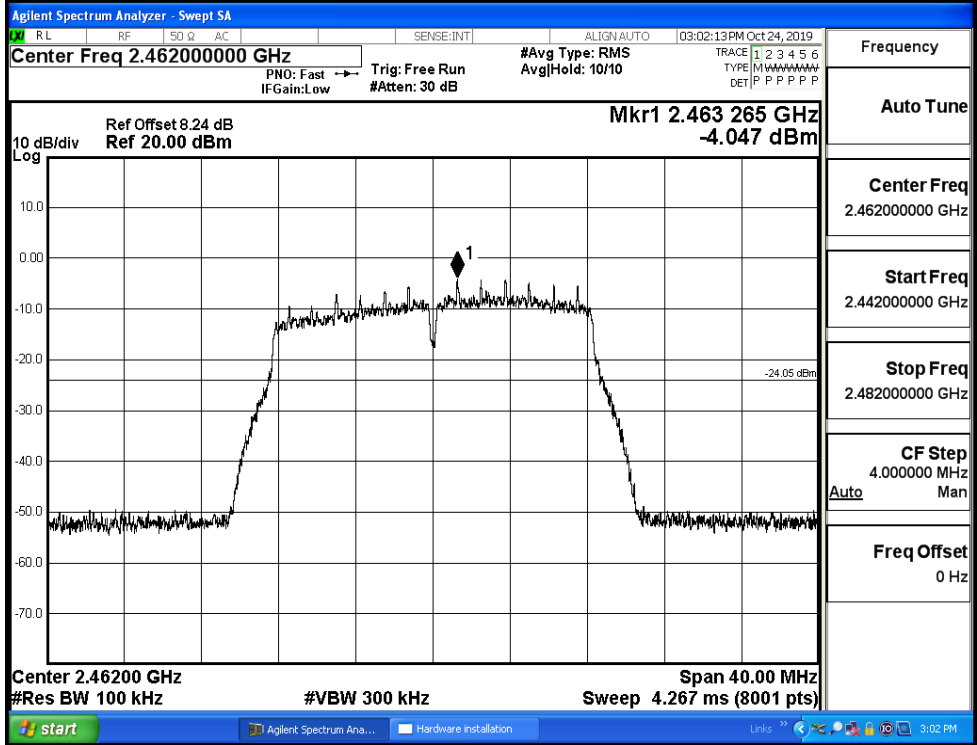


Puw/11G/MCH

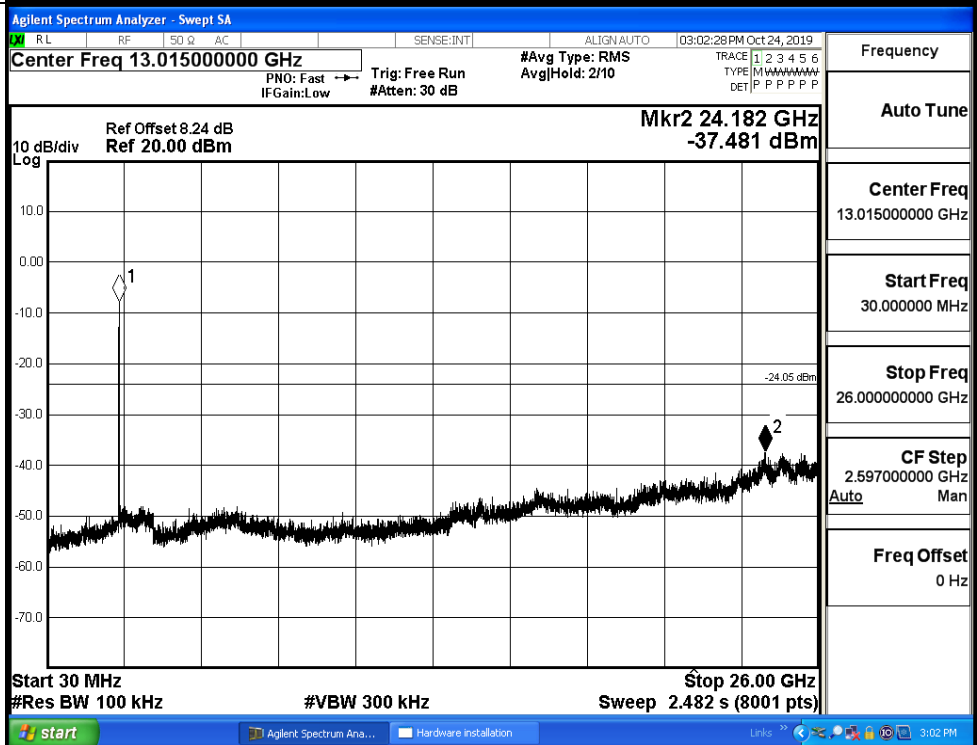


11G_HCH_Graphs

Pref/11G/HCH

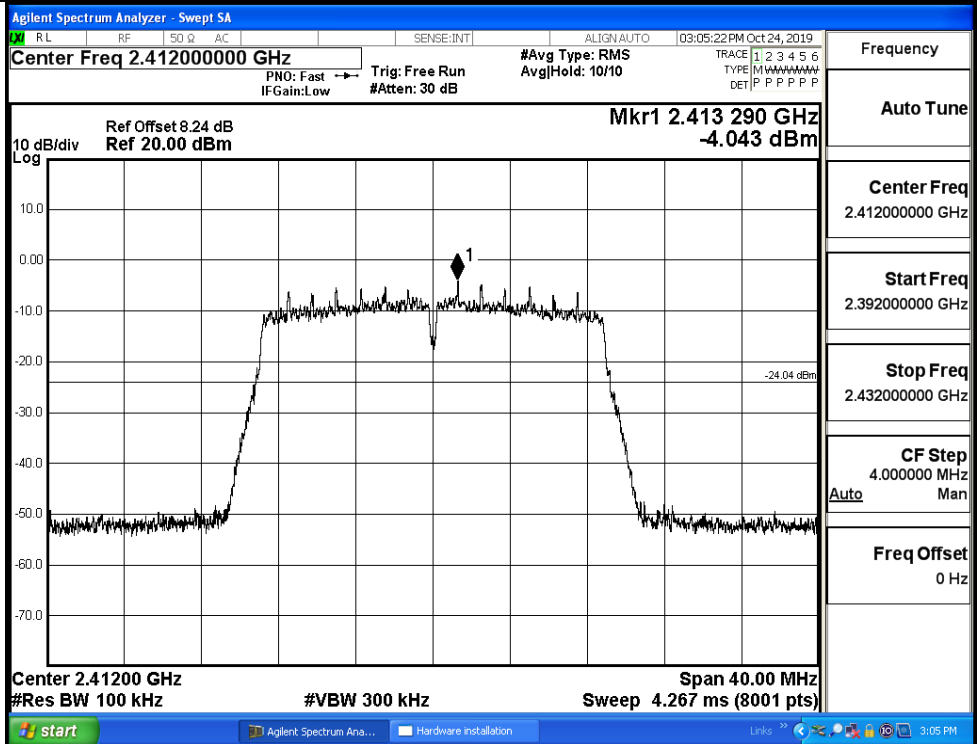


Puw/11G/HCH

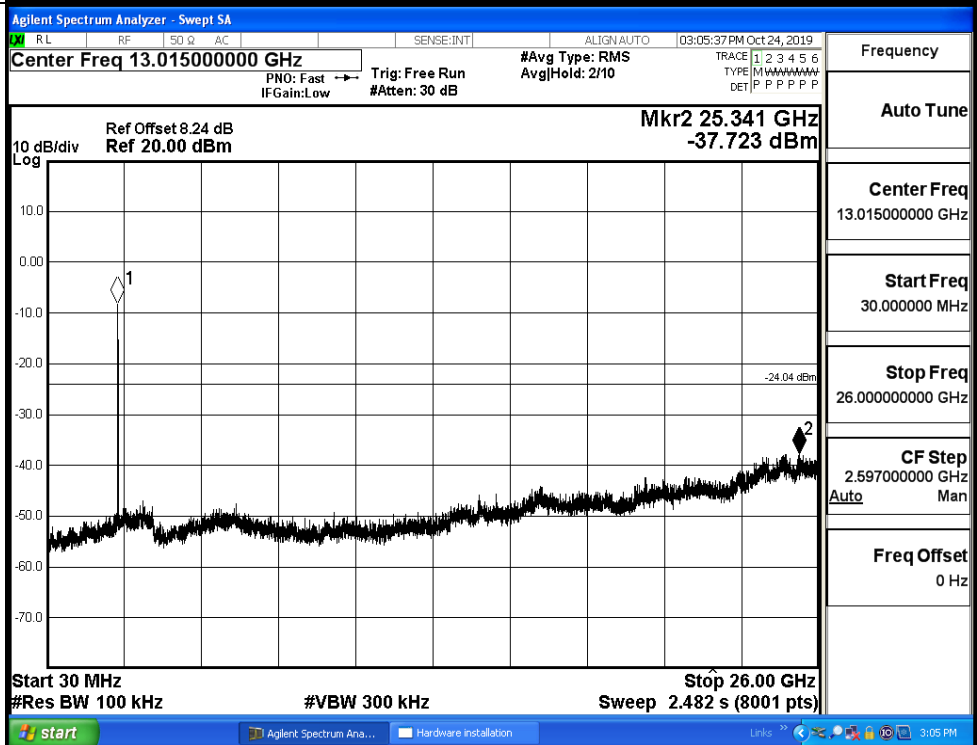


11N20SISO_LCH_Graphs

Pref/11N20SIS
O/LCH

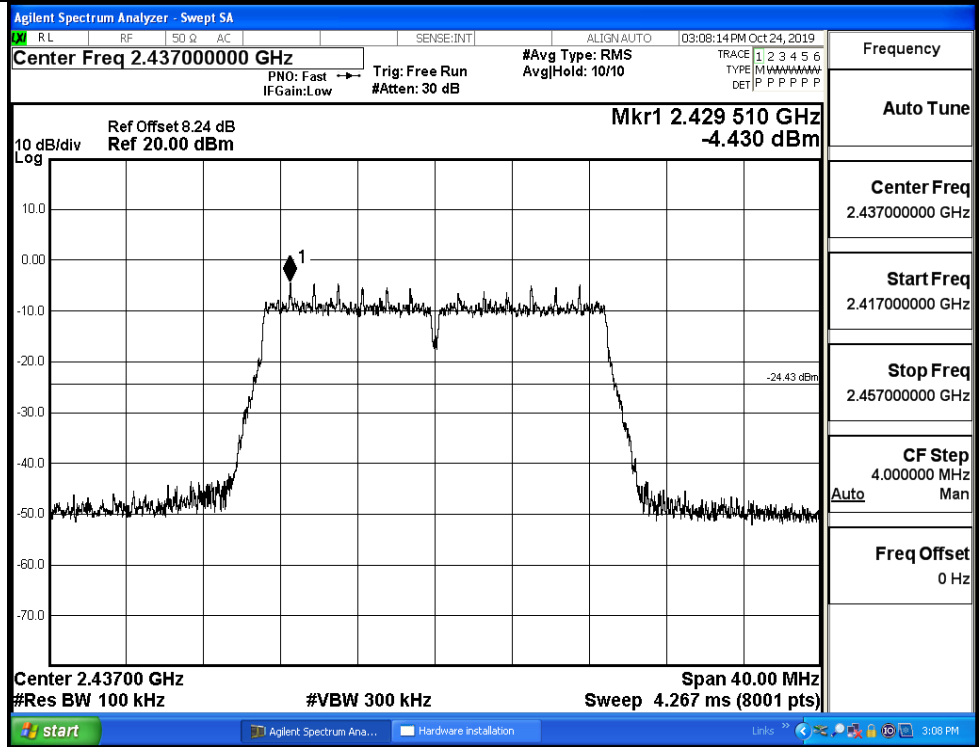


Puw/11N20
SISO/LCH

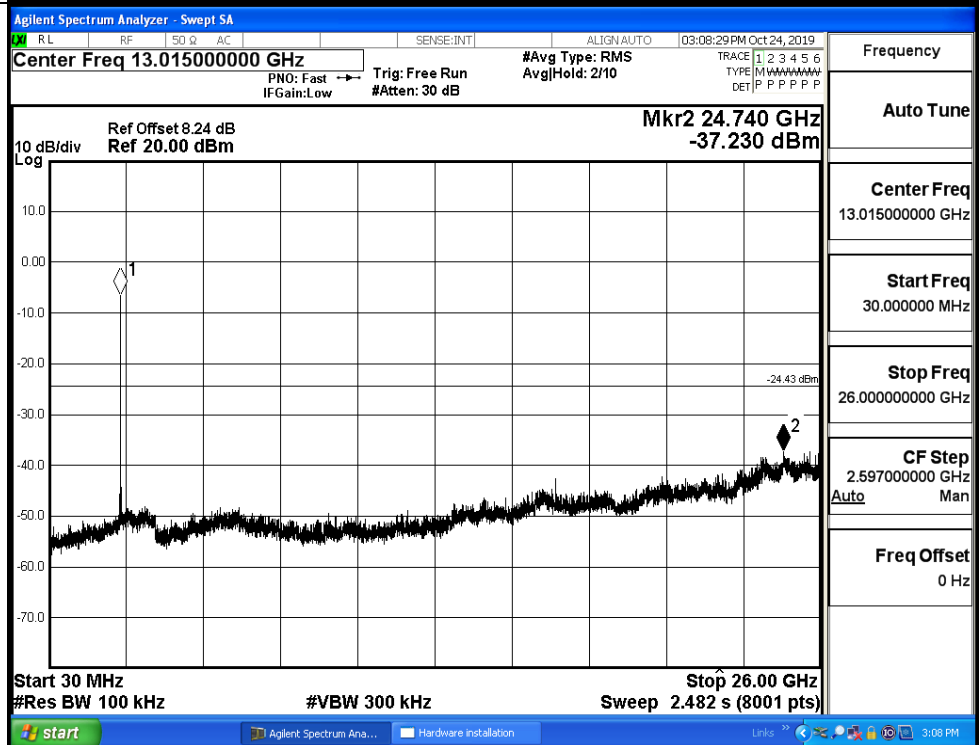


11N20SISO_MCH_Graphs

Pref/11N20
SISO/MCH

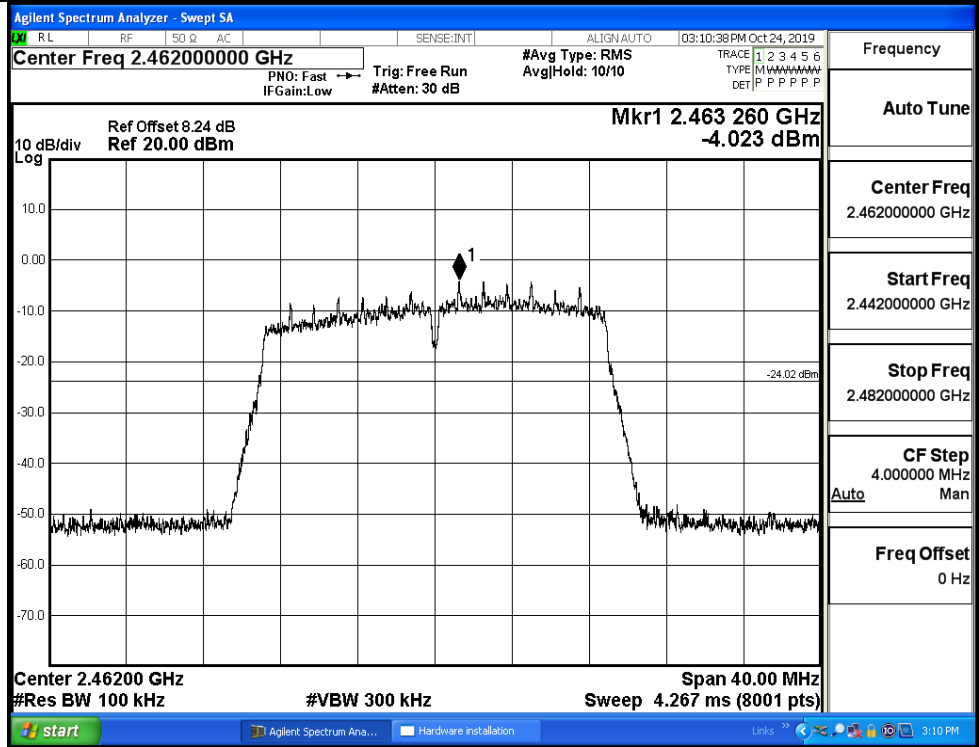


Puw/11N20
SISO/MCH



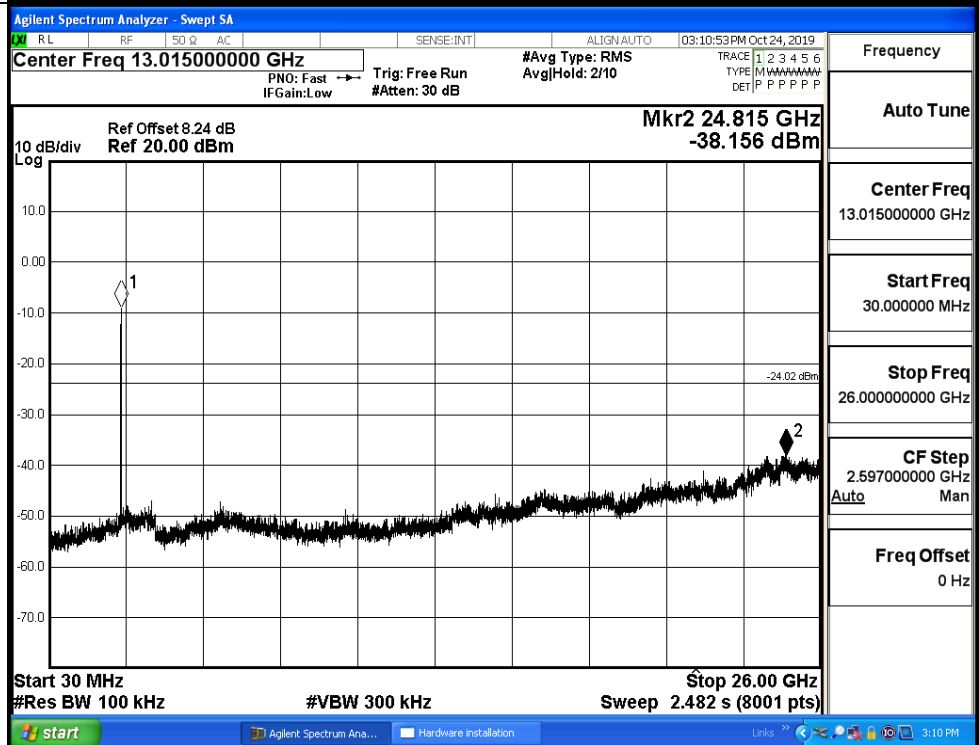
11N20SISO_HCH_Graphs

Pref/11N20
SISO/HCH



Frequency	
Auto Tune	
Center Freq	2.462000000 GHz
Start Freq	2.442000000 GHz
Stop Freq	2.482000000 GHz
CF Step	4.000000 MHz Auto Man
Freq Offset	0 Hz

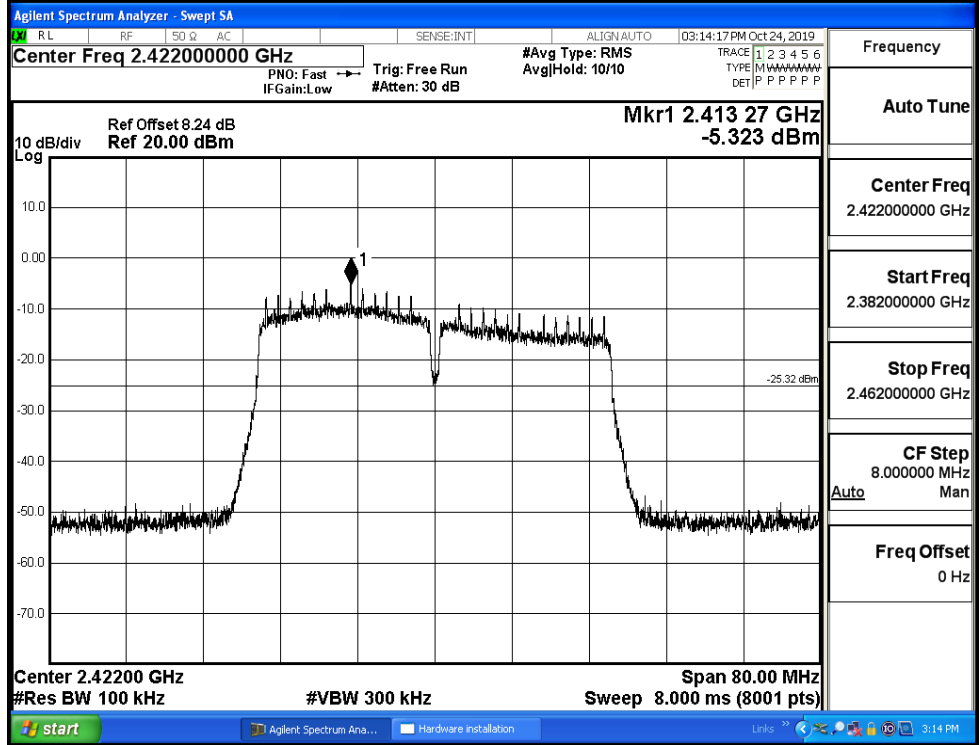
Puw/11N20
SISO/HCH



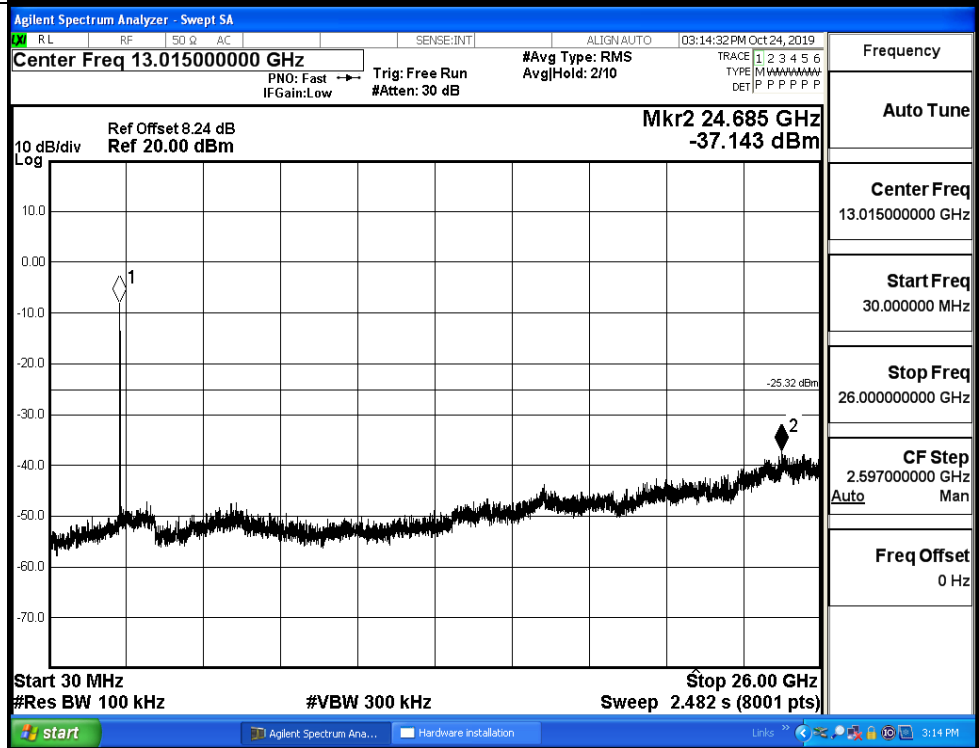
Frequency	
Auto Tune	
Center Freq	13.015000000 GHz
Start Freq	30.000000 MHz
Stop Freq	26.000000000 GHz
CF Step	2.597000000 GHz Auto Man
Freq Offset	0 Hz

11N40SISO_LCH_Graphs

Pref/11N40
SISO/LCH

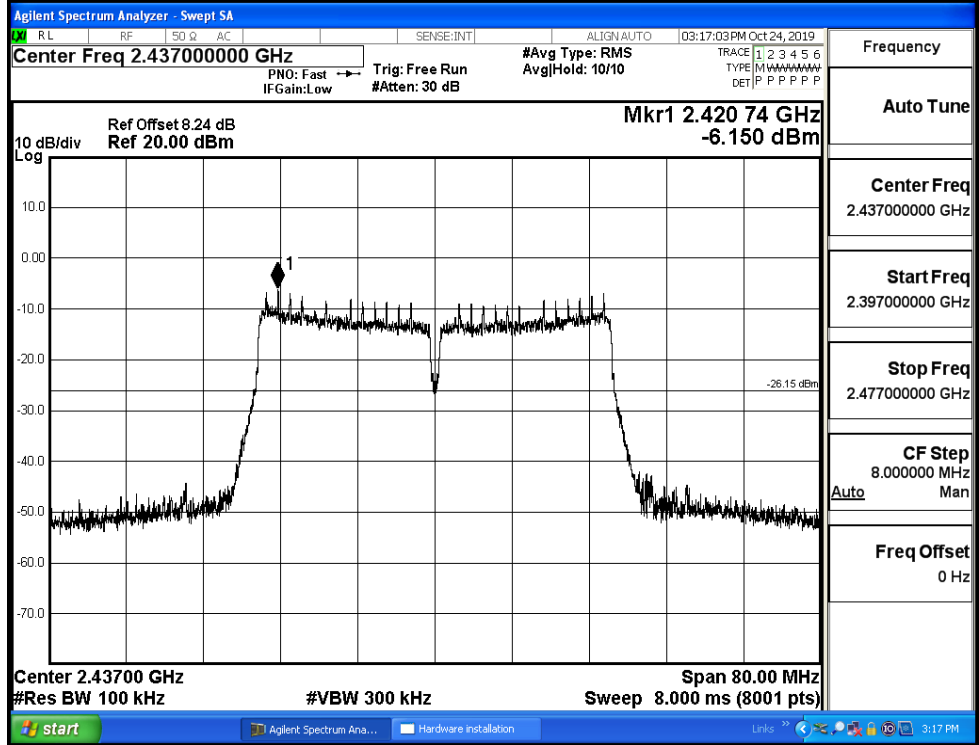


Puw/11N40
SISO/LCH

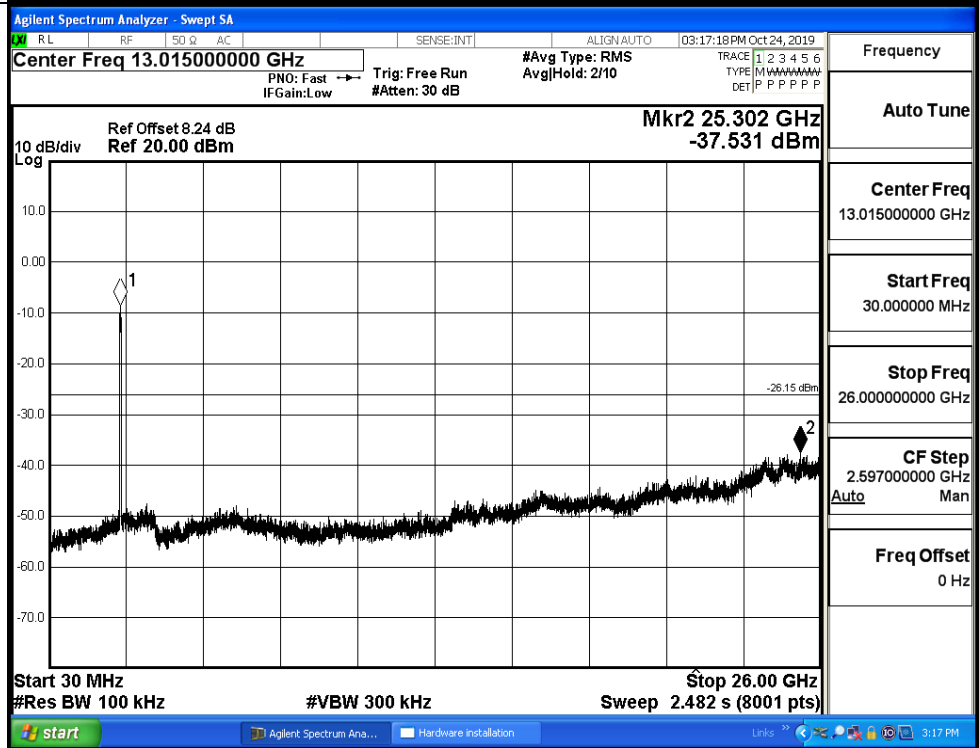


11N40SISO_MCH_Graphs

Pref/11N40
SISO/MCH

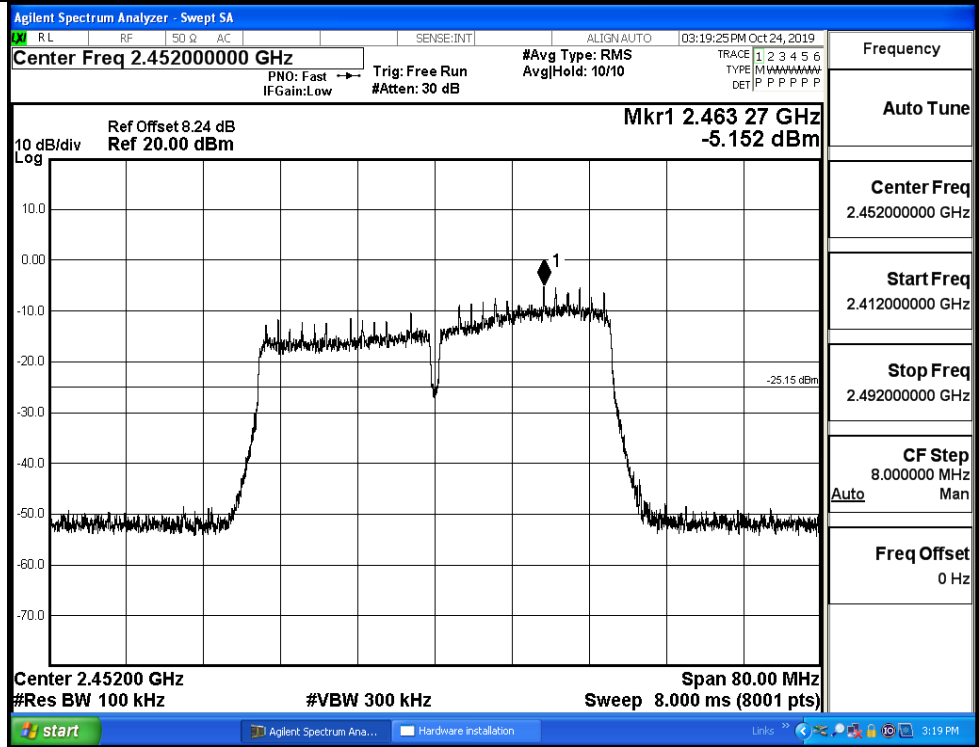


Puw/11N40
SISO/MCH

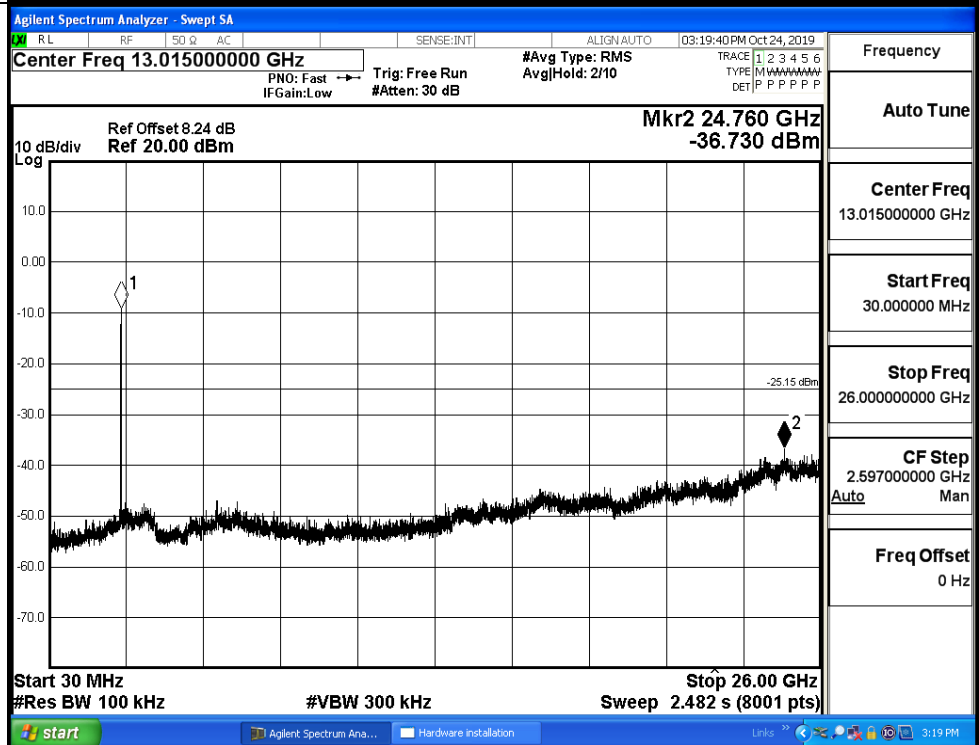


11N40SISO_HCH_Graphs

Pref/11N40
SISO/HCH

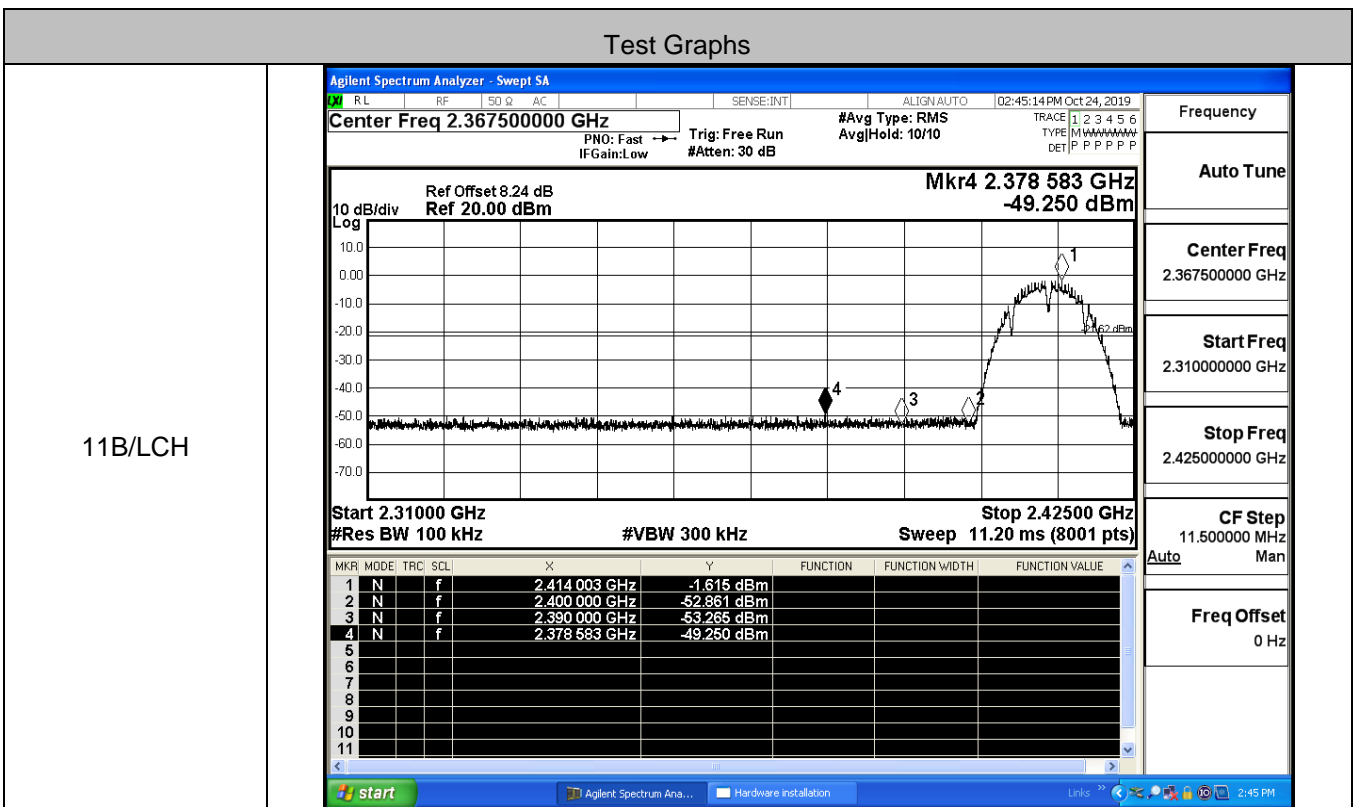


Puw/11N40
SISO/HCH

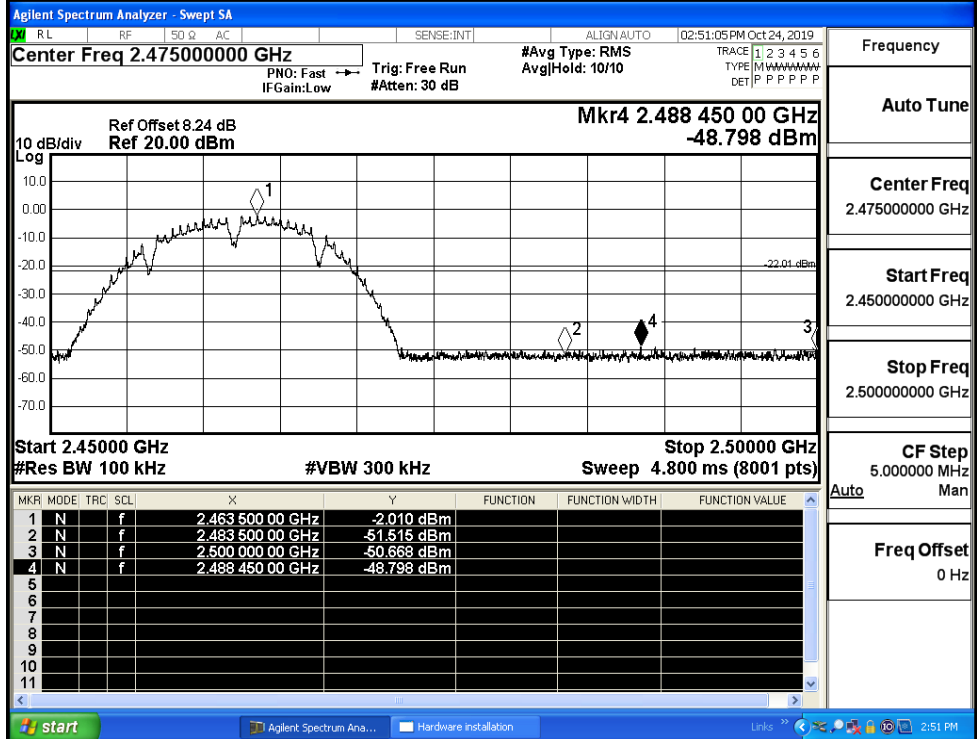


C.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-1.615	-49.250	-21.62	PASS
	HCH	-2.010	-48.798	-22.01	PASS
11G	LCH	-4.127	-49.037	-24.13	PASS
	HCH	-4.044	-49.032	-24.04	PASS
11N20SISO	LCH	-4.466	-49.013	-24.47	PASS
	HCH	-3.982	-48.713	-23.98	PASS
11N40SISO	LCH	-5.388	-49.811	-25.39	PASS
	HCH	-5.068	-48.969	-25.07	PASS



11B/HCH



Frequency

Auto Tune

Center Freq
2.47500000 GHz

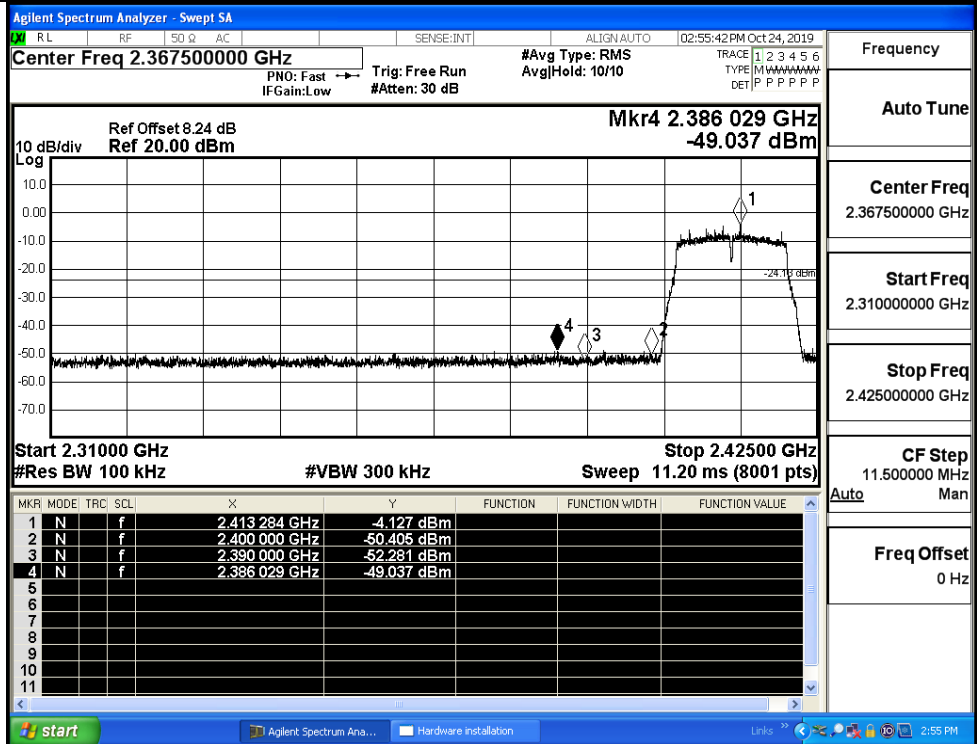
Start Freq
2.45000000 GHz

Stop Freq
2.50000000 GHz

CF Step
5.000000 MHz

Freq Offset
0 Hz

11G/LCH



Frequency

Auto Tune

Center Freq
2.36750000 GHz

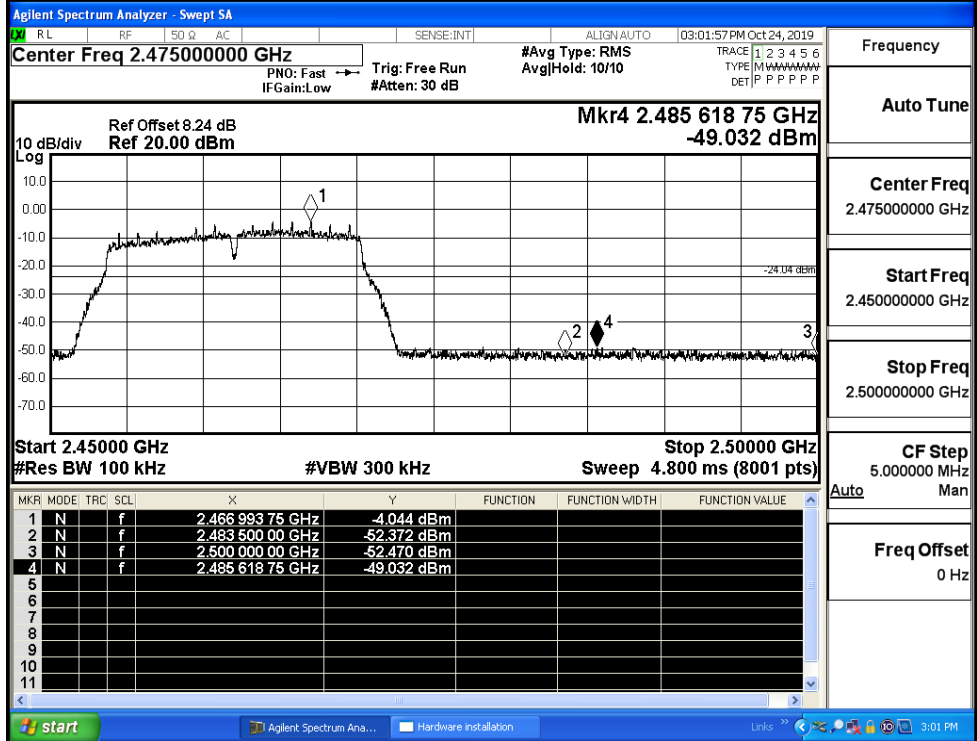
Start Freq
2.31000000 GHz

Stop Freq
2.42500000 GHz

CF Step
11.500000 MHz

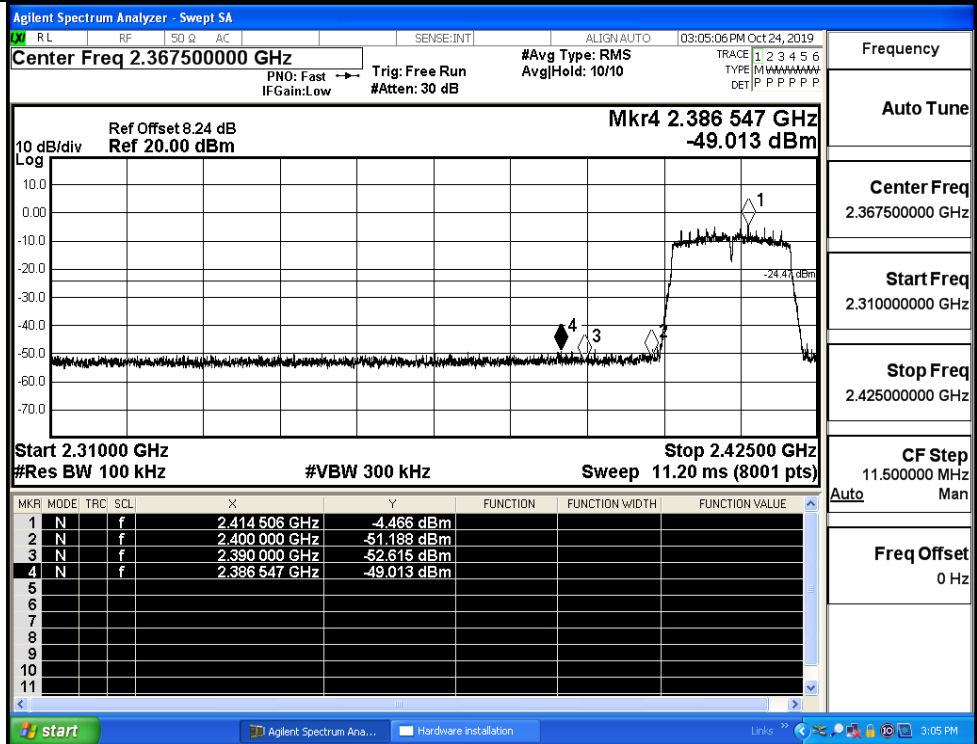
Freq Offset
0 Hz

11G/HCH



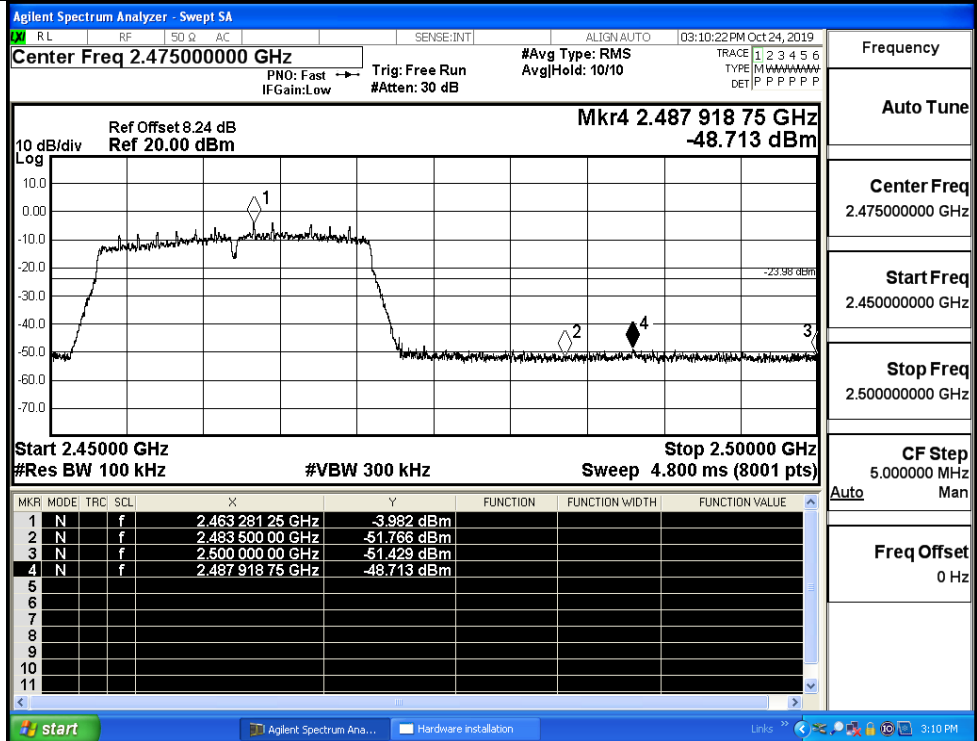
Frequency	
Auto Tune	
Center Freq	2.47500000 GHz
Start Freq	2.45000000 GHz
Stop Freq	2.50000000 GHz
CF Step	5.000000 MHz
Freq Offset	0 Hz

11N20SISO/LCH



Frequency	
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

11N20SISO/HCH



Frequency

Auto Tune

Center Freq
2.47500000 GHz

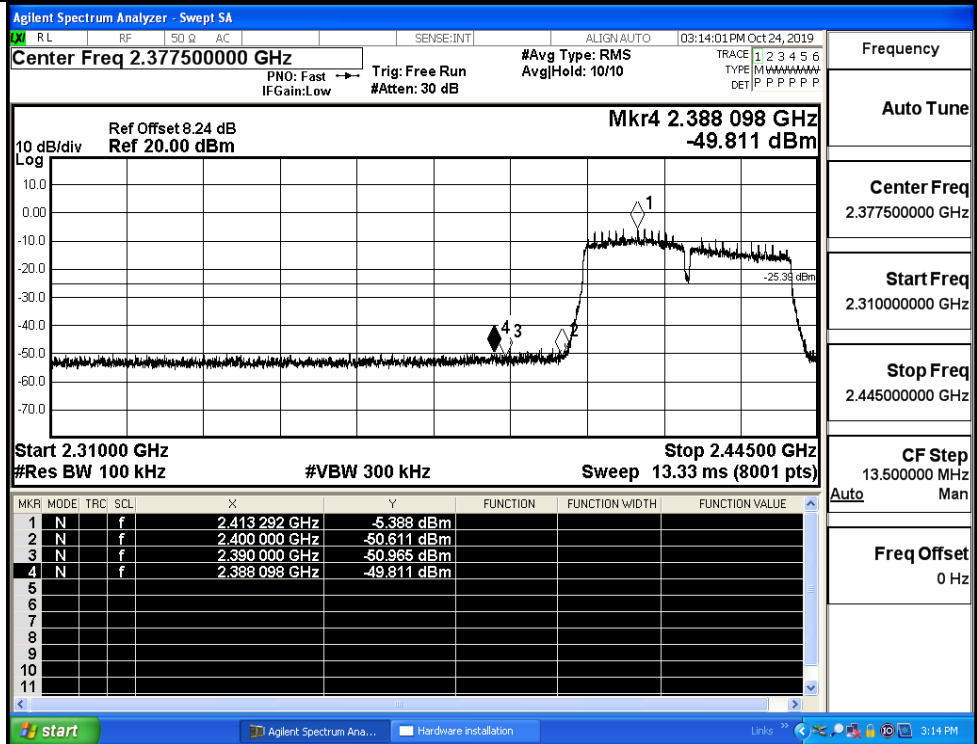
Start Freq
2.45000000 GHz

Stop Freq
2.50000000 GHz

CF Step
5.000000 MHz

Freq Offset
0 Hz

11N40SISO/LCH



Frequency

Auto Tune

Center Freq
2.37750000 GHz

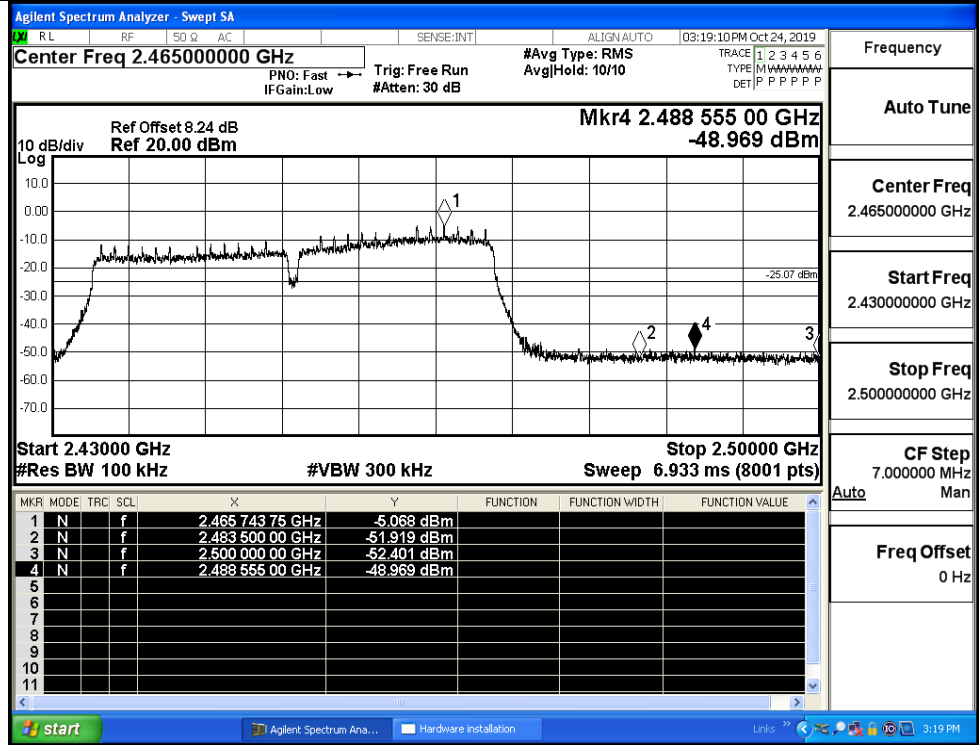
Start Freq
2.31000000 GHz

Stop Freq
2.44500000 GHz

CF Step
13.500000 MHz

Freq Offset
0 Hz

11N40SISO/HCH

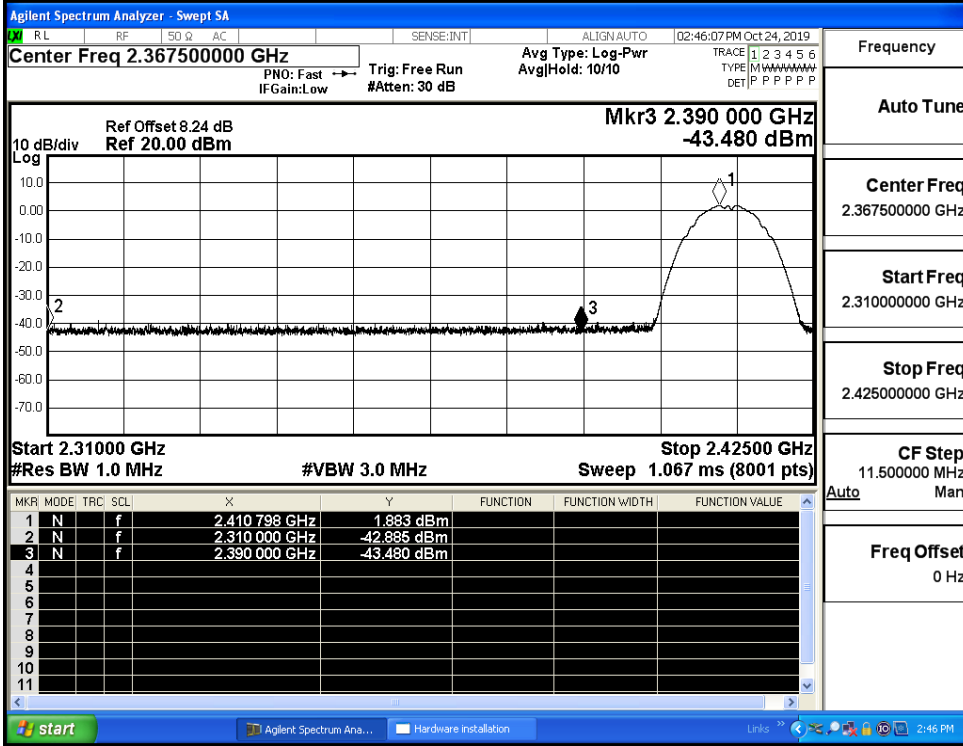


C.7 Restrict-band band-edge measurements

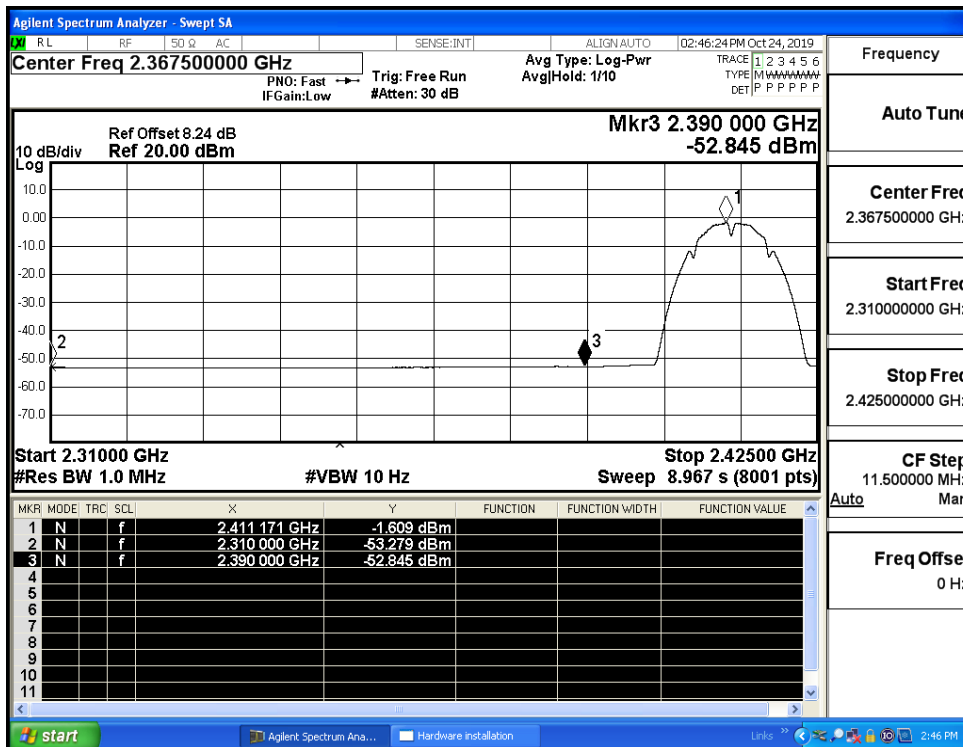
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBu V/m]	Verdict
11B	2412	Ant1	2310.0	-42.89	0	0	52.37	PEAK	74	PASS
	2412	Ant1	2310.0	-53.28	0	0	41.98	AV	54	PASS
	2412	Ant1	2390.0	-43.48	0	0	51.78	PEAK	74	PASS
	2412	Ant1	2390.0	-52.85	0	0	42.41	AV	54	PASS
	2462	Ant1	2483.5	-41.57	0	0	53.69	PEAK	74	PASS
	2462	Ant1	2483.5	-52.38	0	0	42.88	AV	54	PASS
	2462	Ant1	2500.0	-42.26	0	0	52.99	PEAK	74	PASS
	2462	Ant1	2500.0	-52.27	0	0	42.98	AV	54	PASS
11G	2412	Ant1	2310.0	-41.20	0	0	54.06	PEAK	74	PASS
	2412	Ant1	2310.0	-53.26	0	0	42.00	AV	54	PASS
	2412	Ant1	2390.0	-41.04	0	0	54.22	PEAK	74	PASS
	2412	Ant1	2390.0	-52.58	0	0	42.67	AV	54	PASS
	2462	Ant1	2483.5	-41.58	0	0	53.68	PEAK	74	PASS
	2462	Ant1	2483.5	-52.15	0	0	43.11	AV	54	PASS
	2462	Ant1	2500.0	-41.32	0	0	53.93	PEAK	74	PASS
	2462	Ant1	2500.0	-52.30	0	0	42.96	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-43.06	0	0	52.20	PEAK	74	PASS
	2412	Ant1	2310.0	-53.23	0	0	42.02	AV	54	PASS
	2412	Ant1	2390.0	-42.45	0	0	52.81	PEAK	74	PASS
	2412	Ant1	2390.0	-52.57	0	0	42.68	AV	54	PASS
	2462	Ant1	2483.5	-43.07	0	0	52.19	PEAK	74	PASS
	2462	Ant1	2483.5	-52.17	0	0	43.09	AV	54	PASS
	2462	Ant1	2500.0	-42.17	0	0	53.09	PEAK	74	PASS
	2462	Ant1	2500.0	-52.30	0	0	42.96	AV	54	PASS
11N40 SISO	2422	Ant1	2310.0	-43.54	0	0	51.72	PEAK	74	PASS
	2422	Ant1	2310.0	-53.24	0	0	42.02	AV	54	PASS

	2422	Ant1	2390.0	-41.43	0	0	53.83	PEAK	74	PASS
	2422	Ant1	2390.0	-52.25	0	0	43.00	AV	54	PASS
	2452	Ant1	2483.5	-42.27	0	0	52.99	PEAK	74	PASS
	2452	Ant1	2483.5	-51.94	0	0	43.32	AV	54	PASS
	2452	Ant1	2500.0	-42.78	0	0	52.47	PEAK	74	PASS
	2452	Ant1	2500.0	-52.29	0	0	42.97	AV	54	PASS

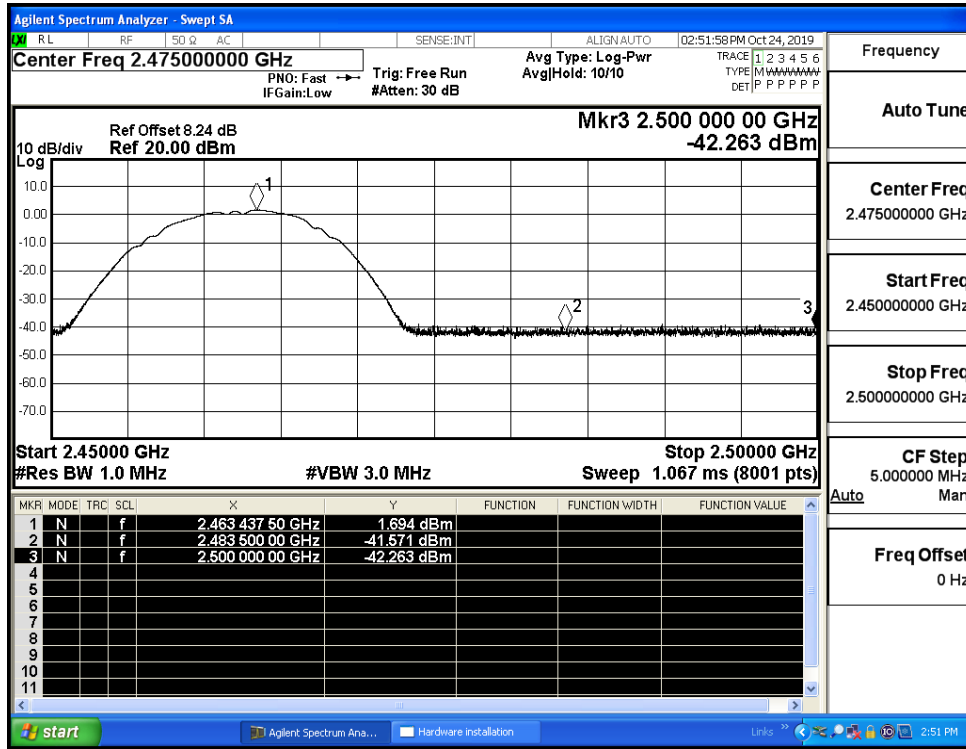
Restrict-band band-edge measurements_11B_2412_Ant1_PEAK



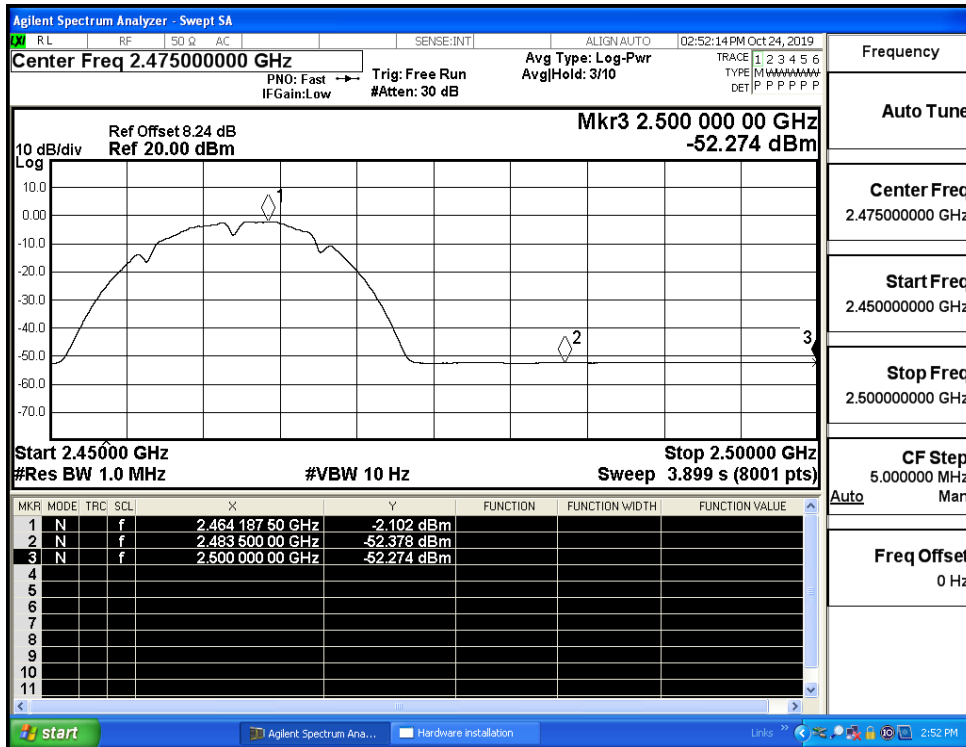
Restrict-band band-edge measurements_11B_2412_Ant1_AV



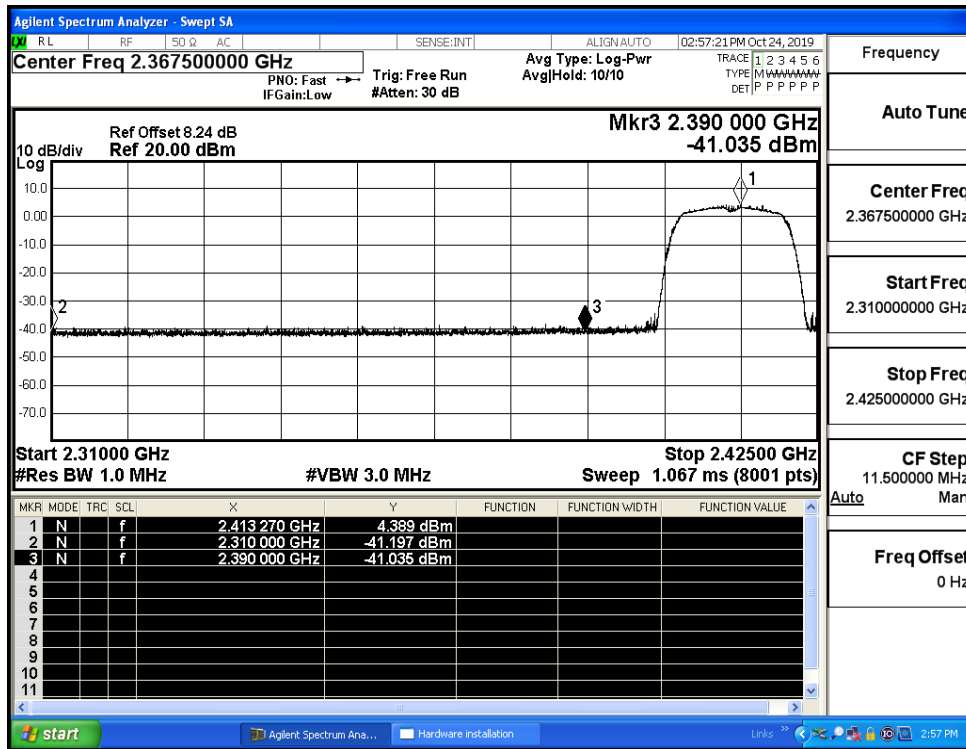
Restrict-band band-edge measurements_11B_2462_Ant1_PEAK



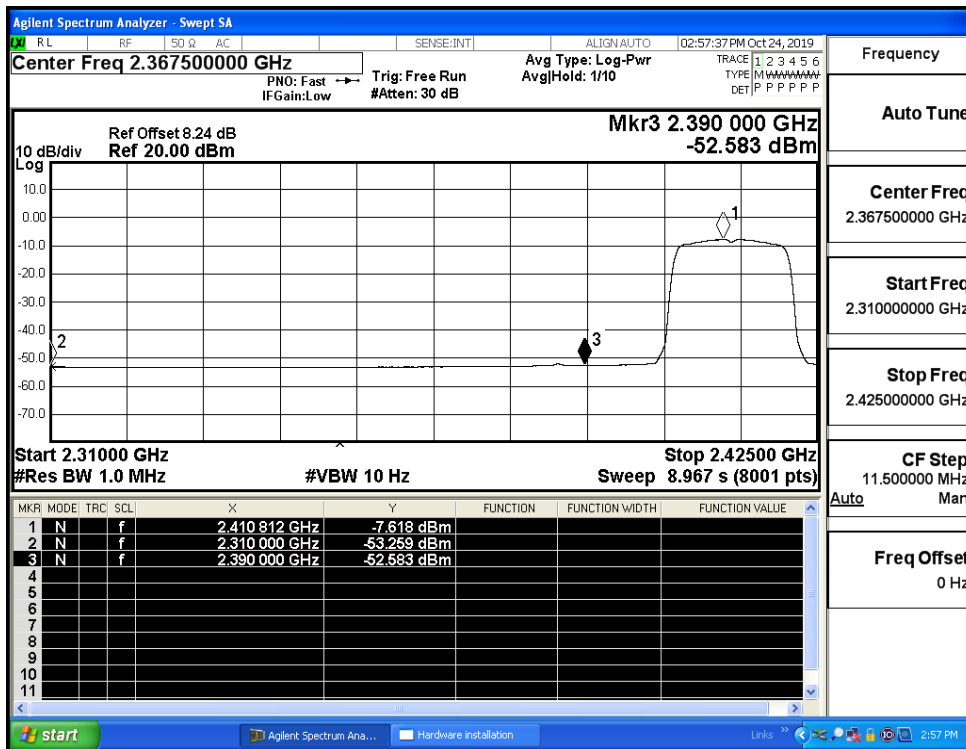
Restrict-band band-edge measurements_11B_2462_Ant1_AV



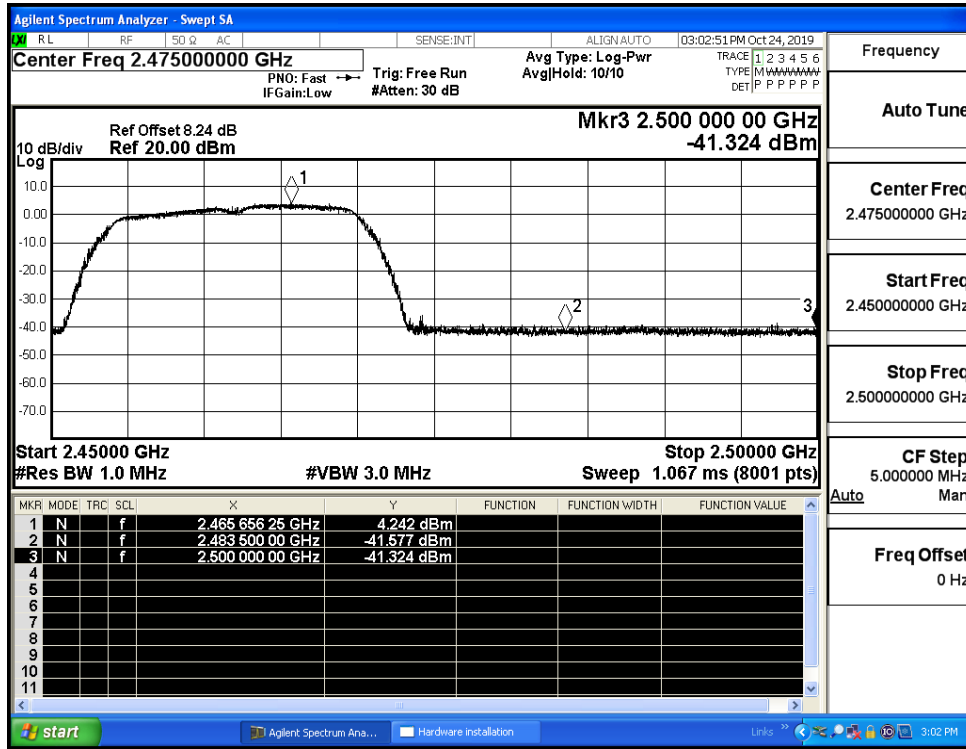
Restrict-band band-edge measurements_11G_2412_Ant1_PEAK



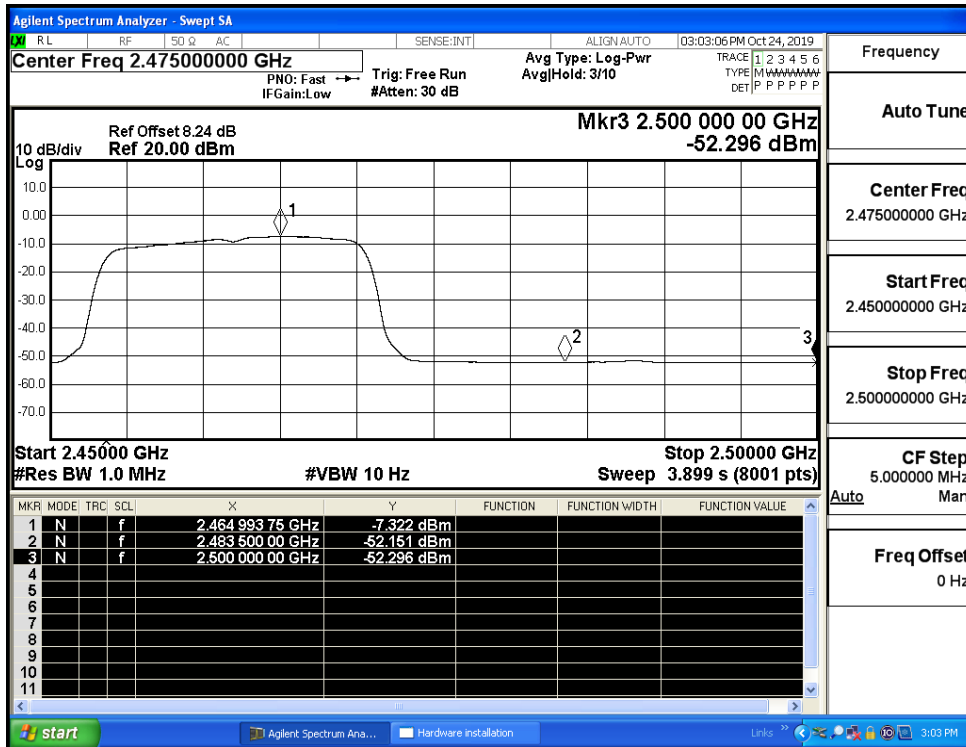
Restrict-band band-edge measurements_11G_2412_Ant1_AV



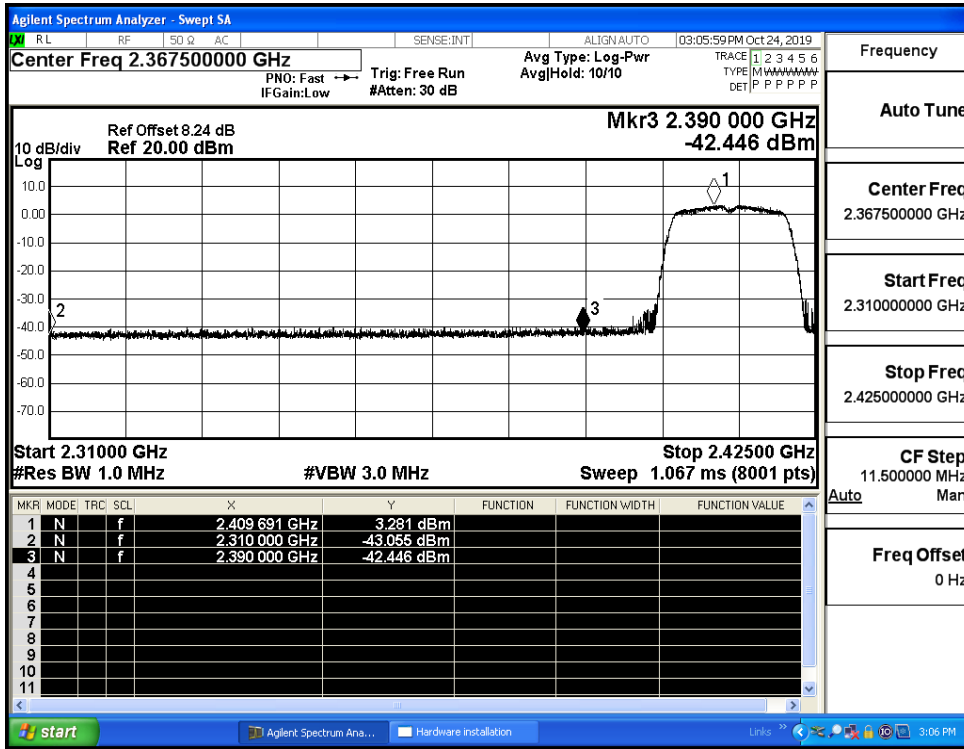
Restrict-band band-edge measurements_11G_2462_Ant1_PEAK



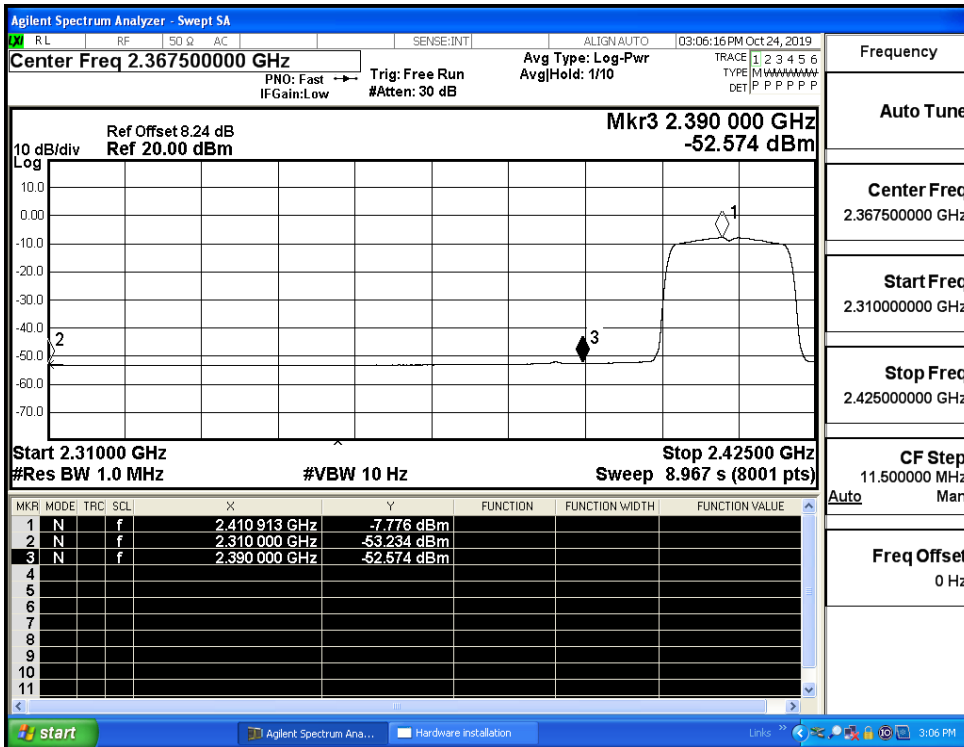
Restrict-band band-edge measurements_11G_2462_Ant1_AV



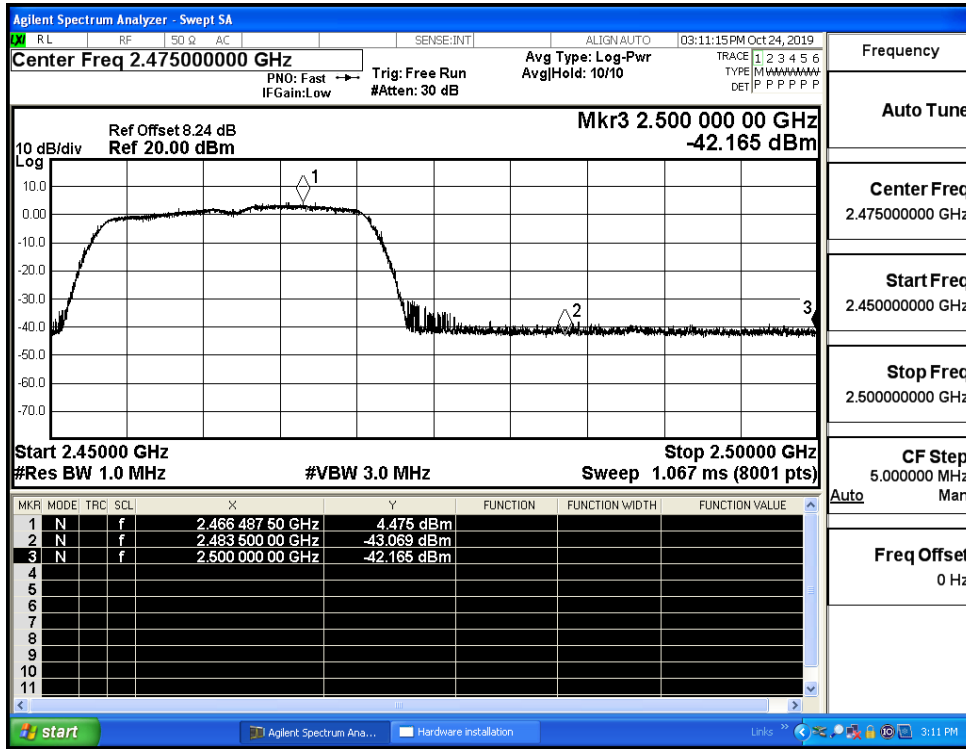
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_PEAK



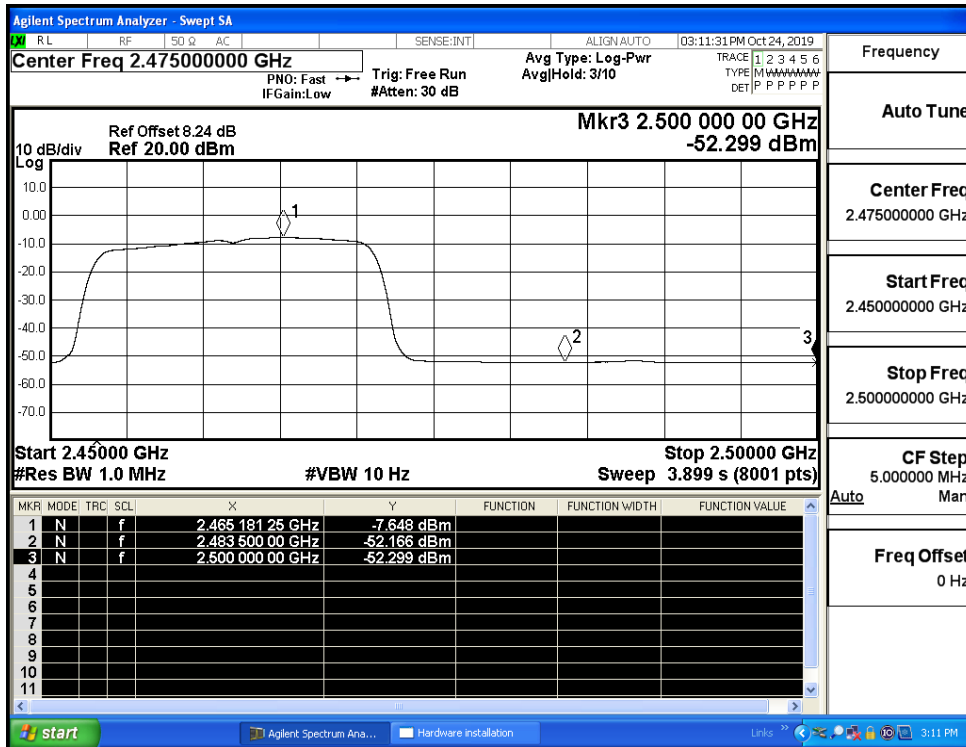
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_AV



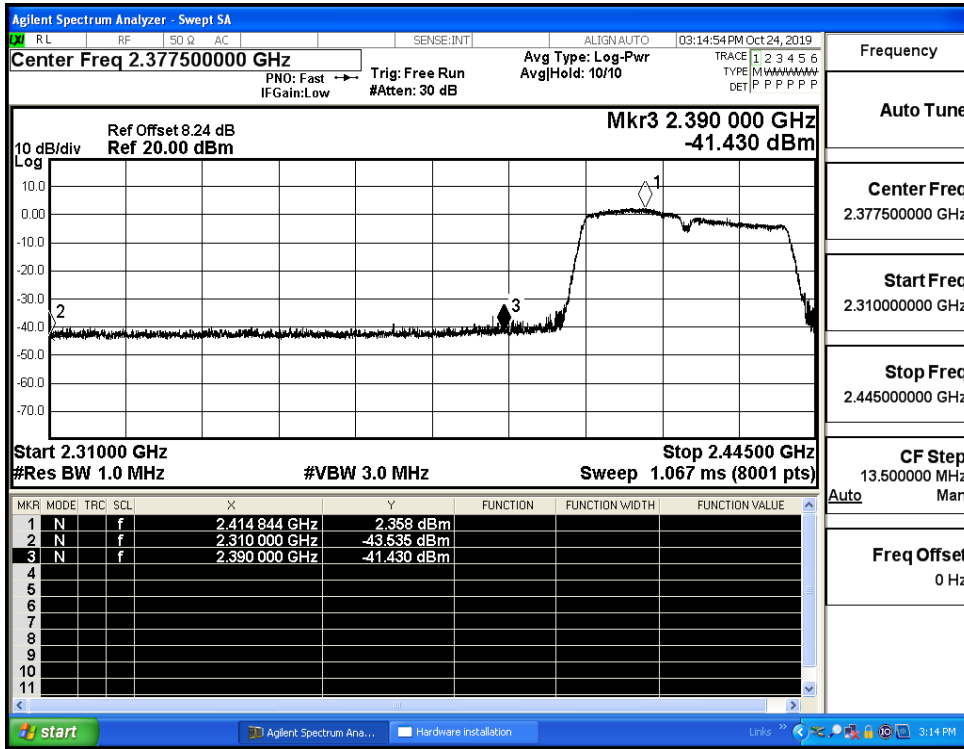
Restrict-band band-edge measurements_11N20SISO_2462_Ant1_PEAK



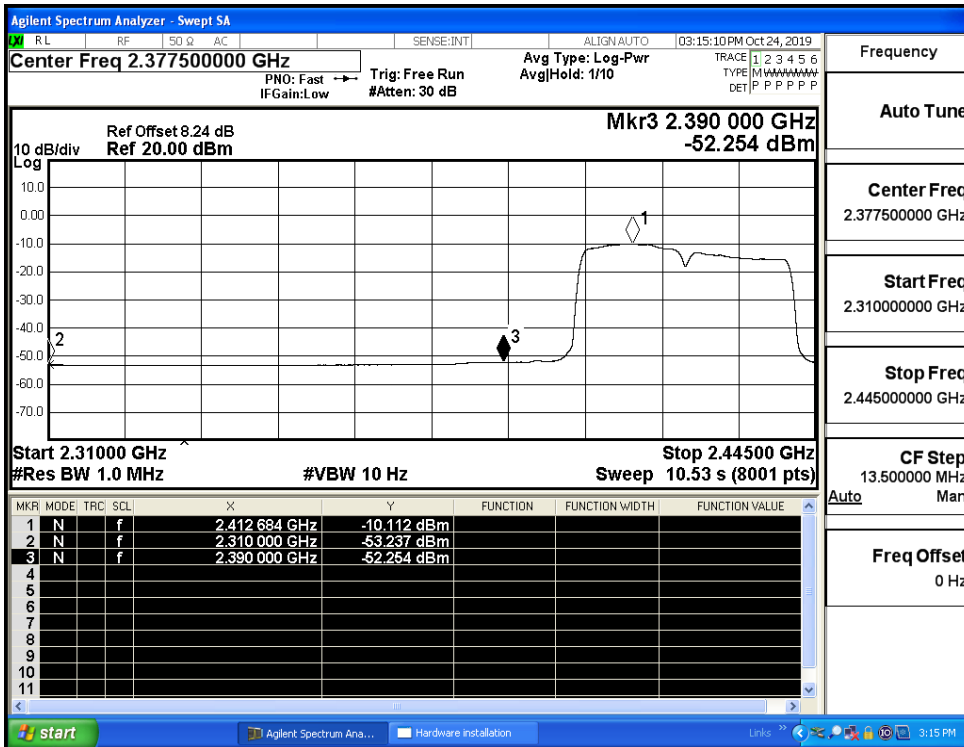
Restrict-band band-edge measurements_11N20SISO_2462_Ant1_AV



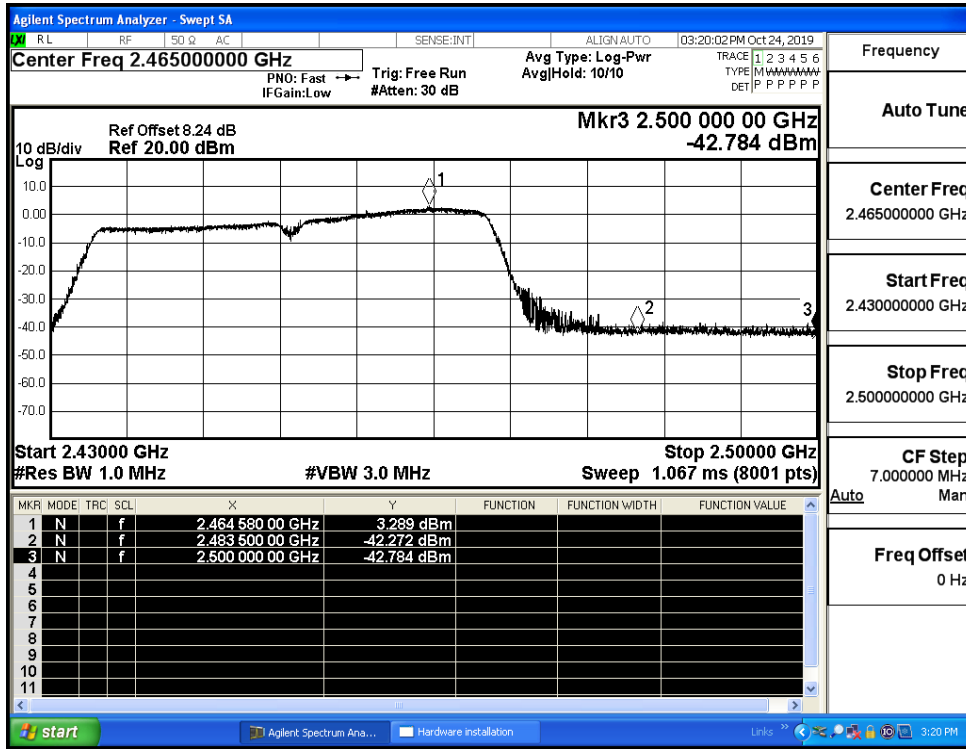
Restrict-band band-edge measurements_11N40SISO_2422_Ant1_PEAK



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

