

Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: LED Lamps

Trade Mark: YAMAO

Test Model: YMDWF BR30 10W 1835-20-50

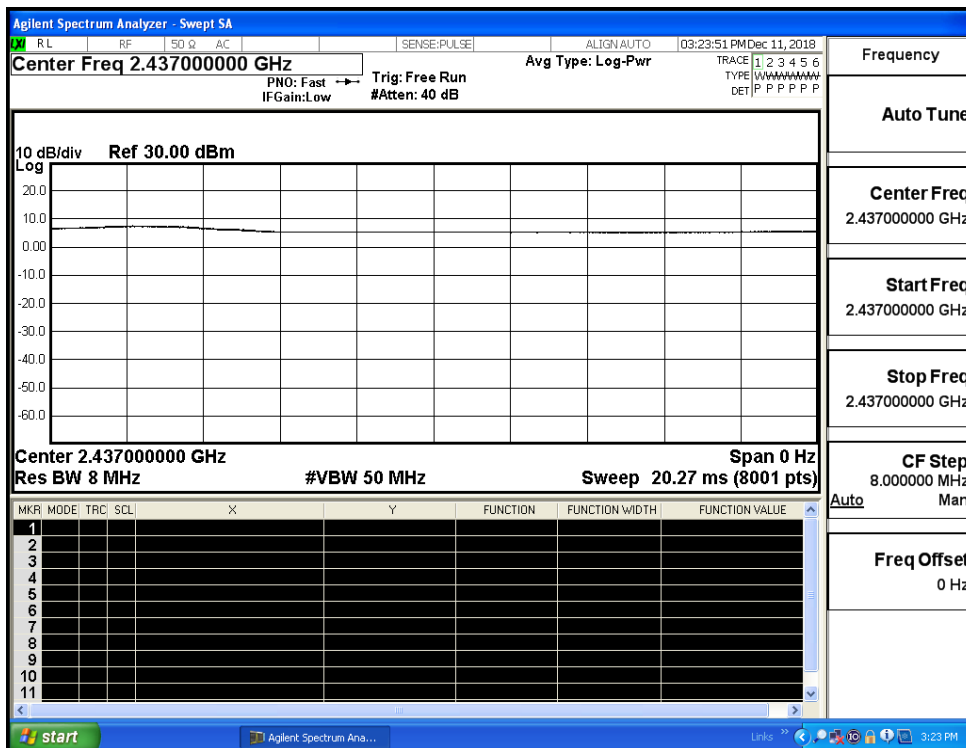
Environmental Conditions

Temperature:	24.6 ° C
Relative Humidity:	52.6%
ATM Pressure:	100.0 kPa
Test Engineer:	WANGCHUANG
Supervised by:	Jayden.Zhuo

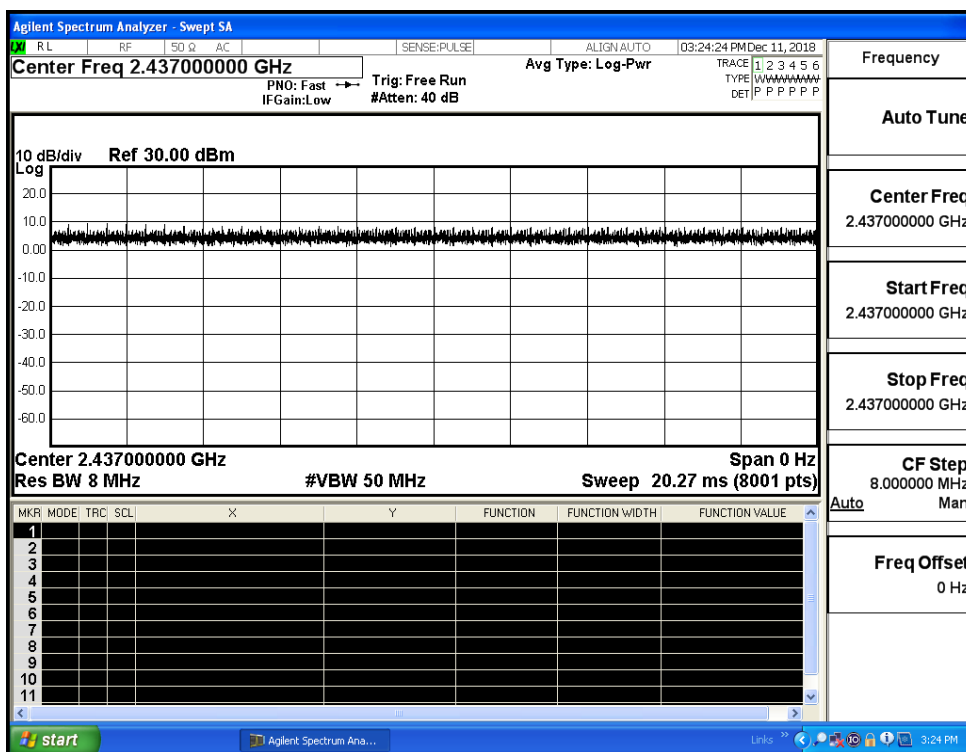
A.1 Duty Cycle

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

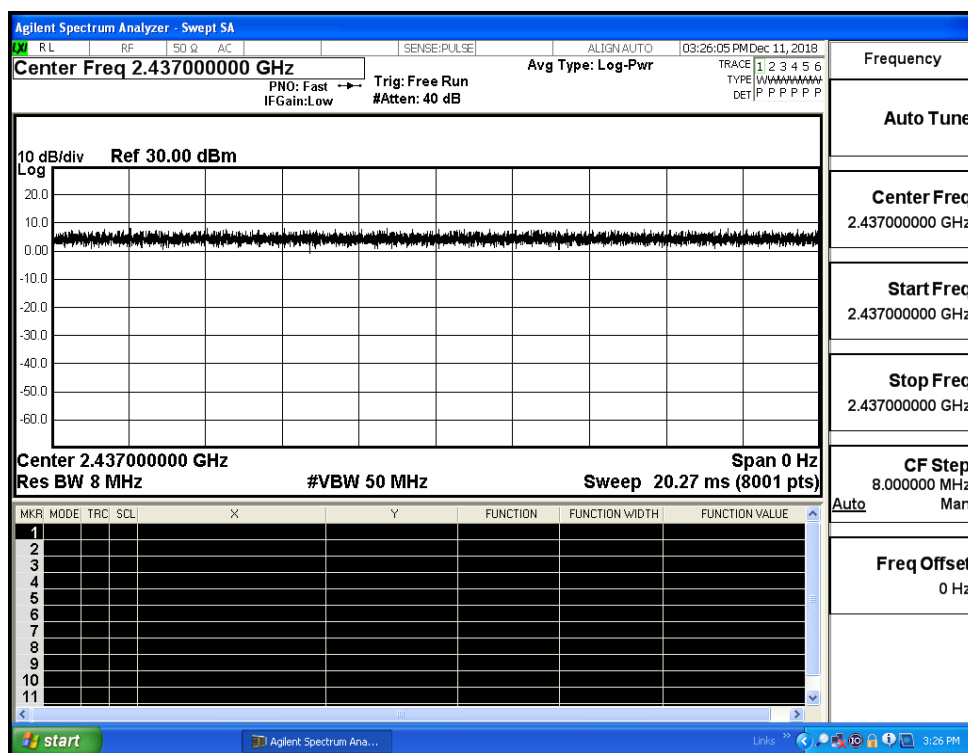
Duty Cycle_11B_2437_Ant1



Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



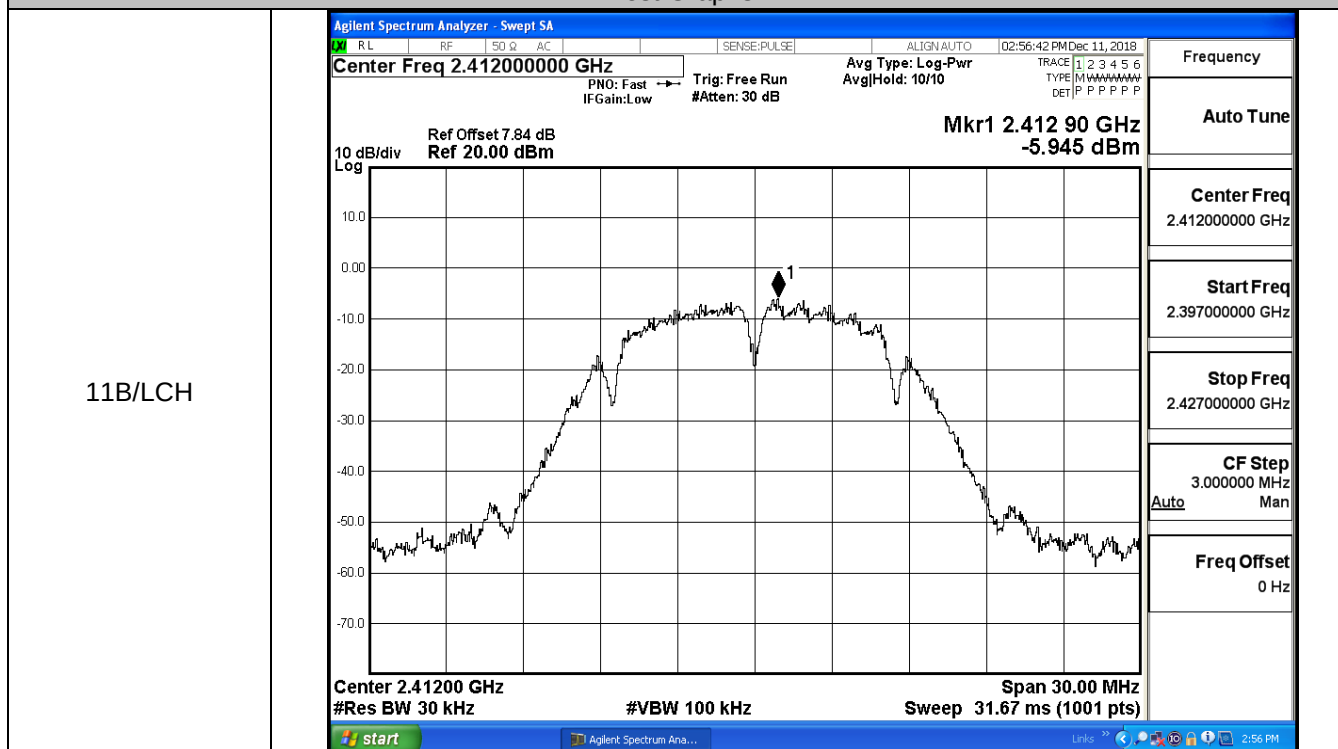
A.2 Maximum Conducted Output Power

Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	12.03	30	PASS
	MCH	12.71	30	PASS
	HCH	12.67	30	PASS
11G	LCH	12.64	30	PASS
	MCH	12.89	30	PASS
	HCH	12.87	30	PASS
11N20SISO	LCH	12.59	30	PASS
	MCH	13.05	30	PASS
	HCH	13.05	30	PASS

A.3 Maximum Power Spectral Density

Mode	Channel	Meas.Level [dBm/30KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-5.945	8	PASS
	MCH	-5.170	8	PASS
	HCH	-5.242	8	PASS
11G	LCH	-11.918	8	PASS
	MCH	-11.857	8	PASS
	HCH	-11.846	8	PASS
11N20SISO	LCH	-11.984	8	PASS
	MCH	-11.482	8	PASS
	HCH	-11.392	8	PASS

Test Graphs



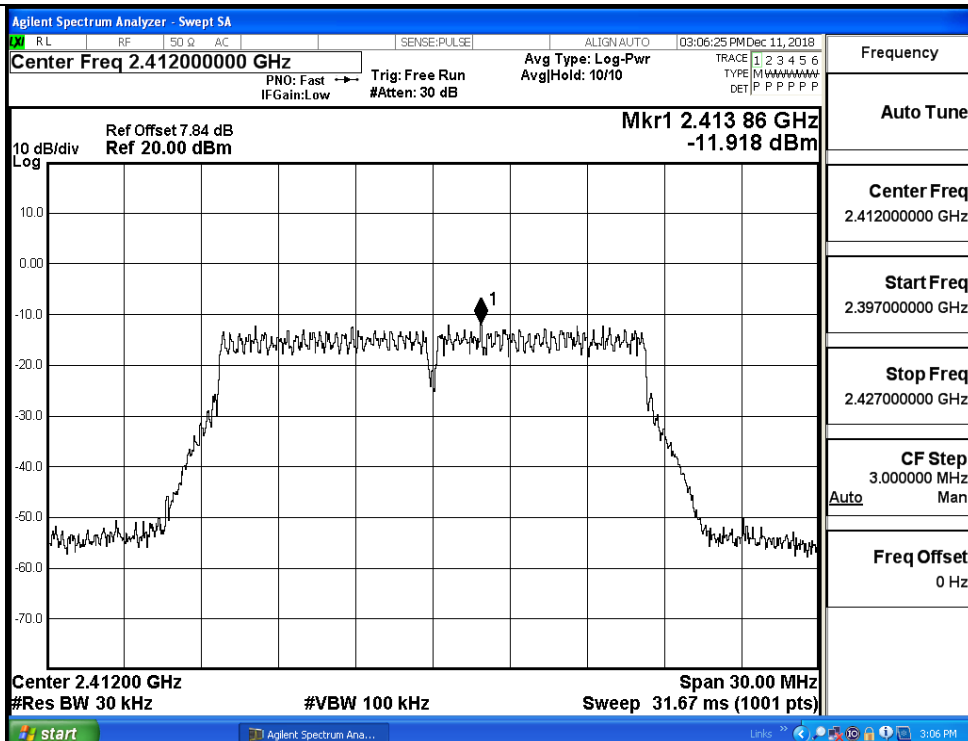
11B/MCH



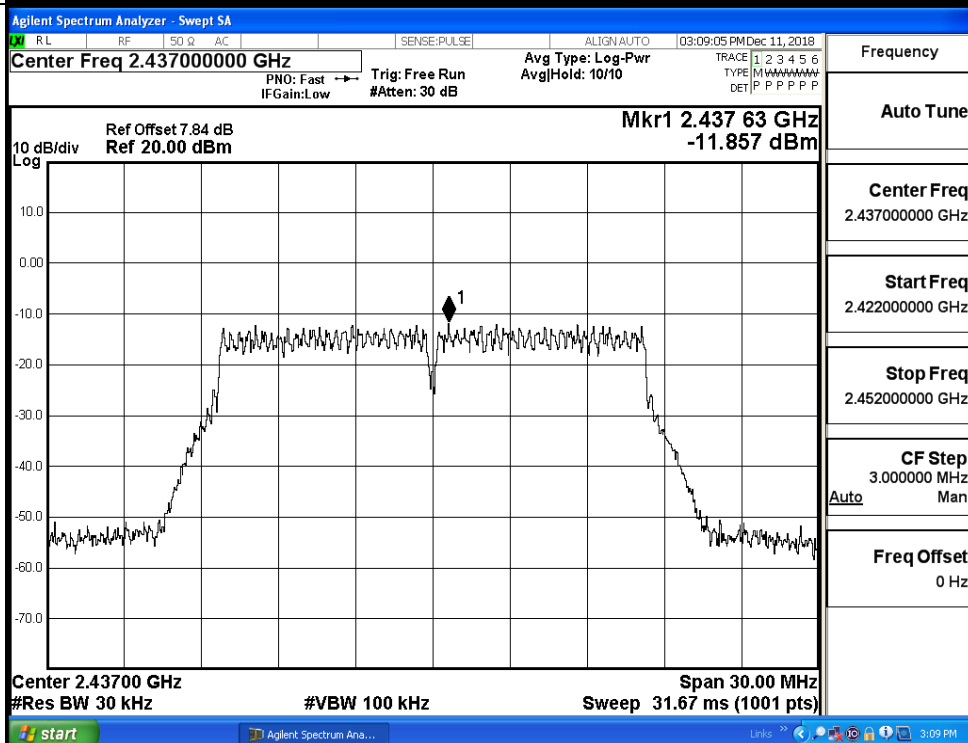
11B/HCH



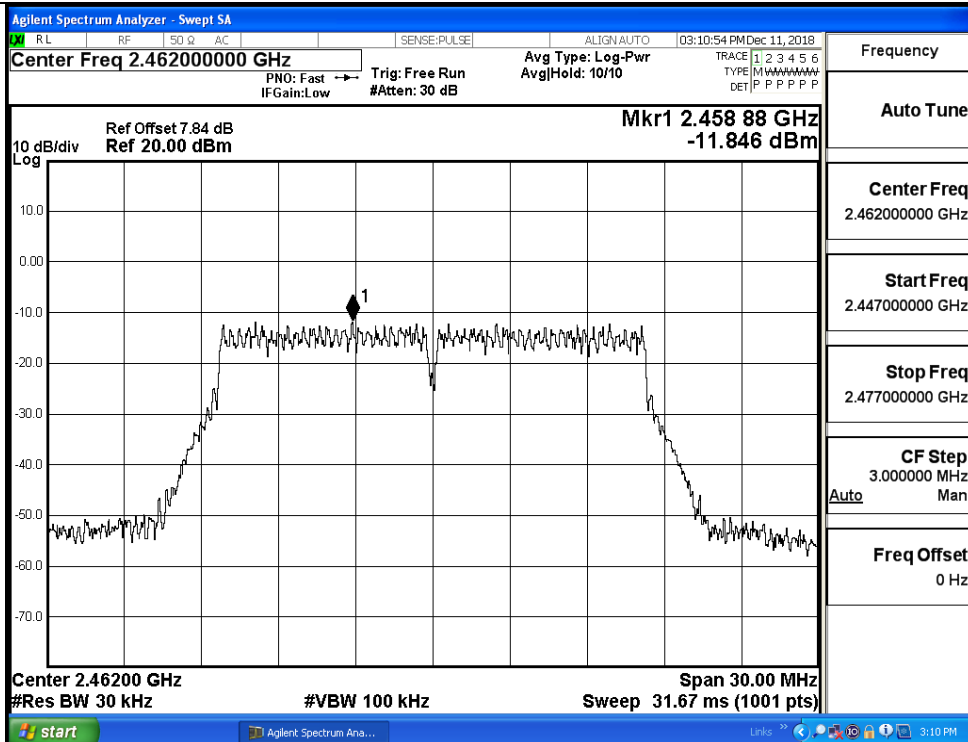
11G/LCH



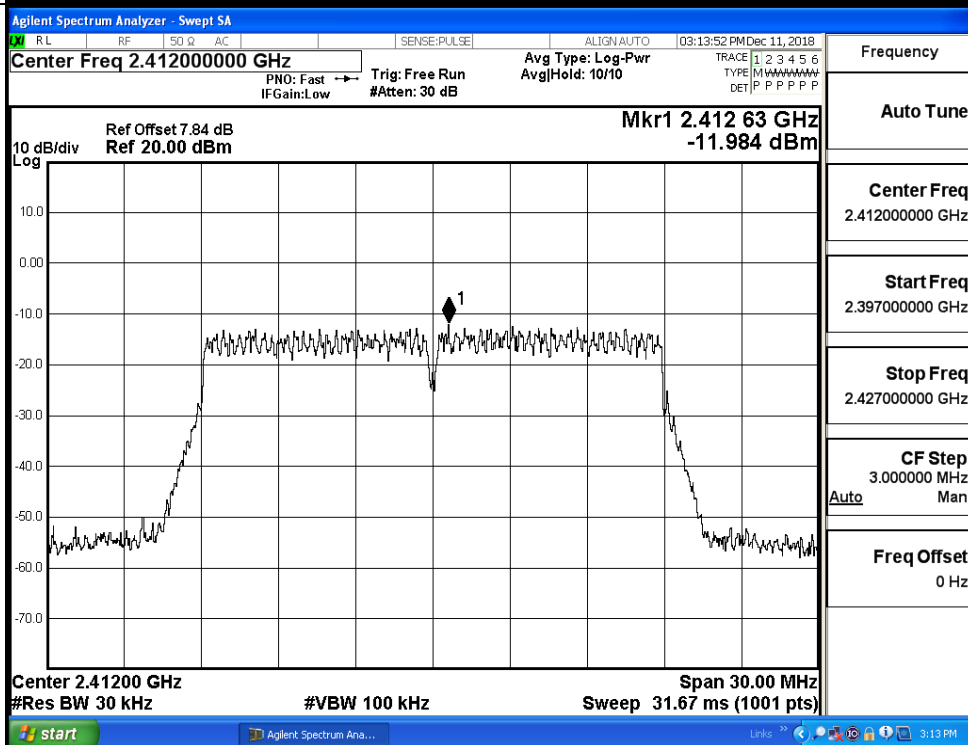
11G/MCH

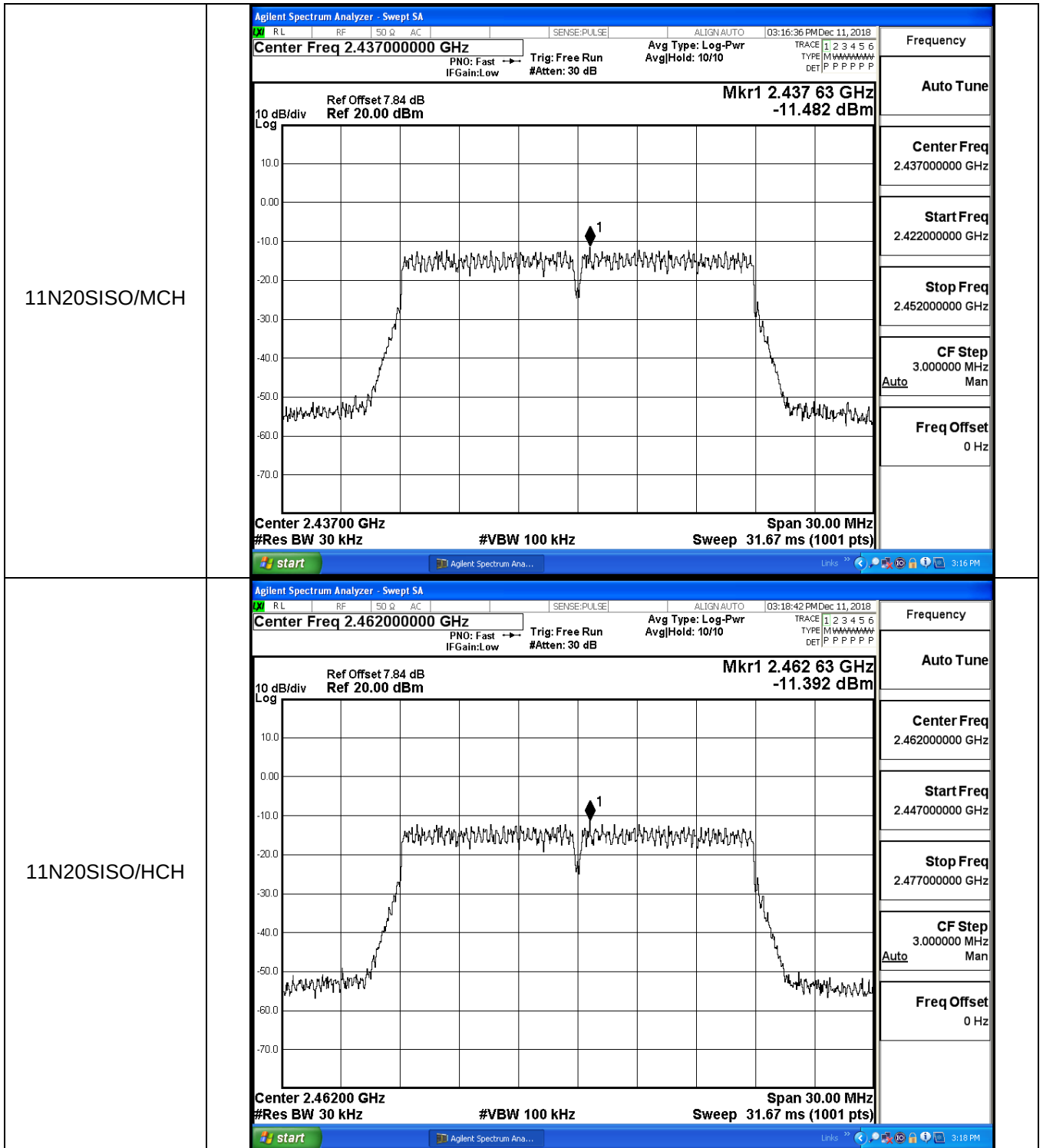


11G/HCH



11N20SISO/LCH

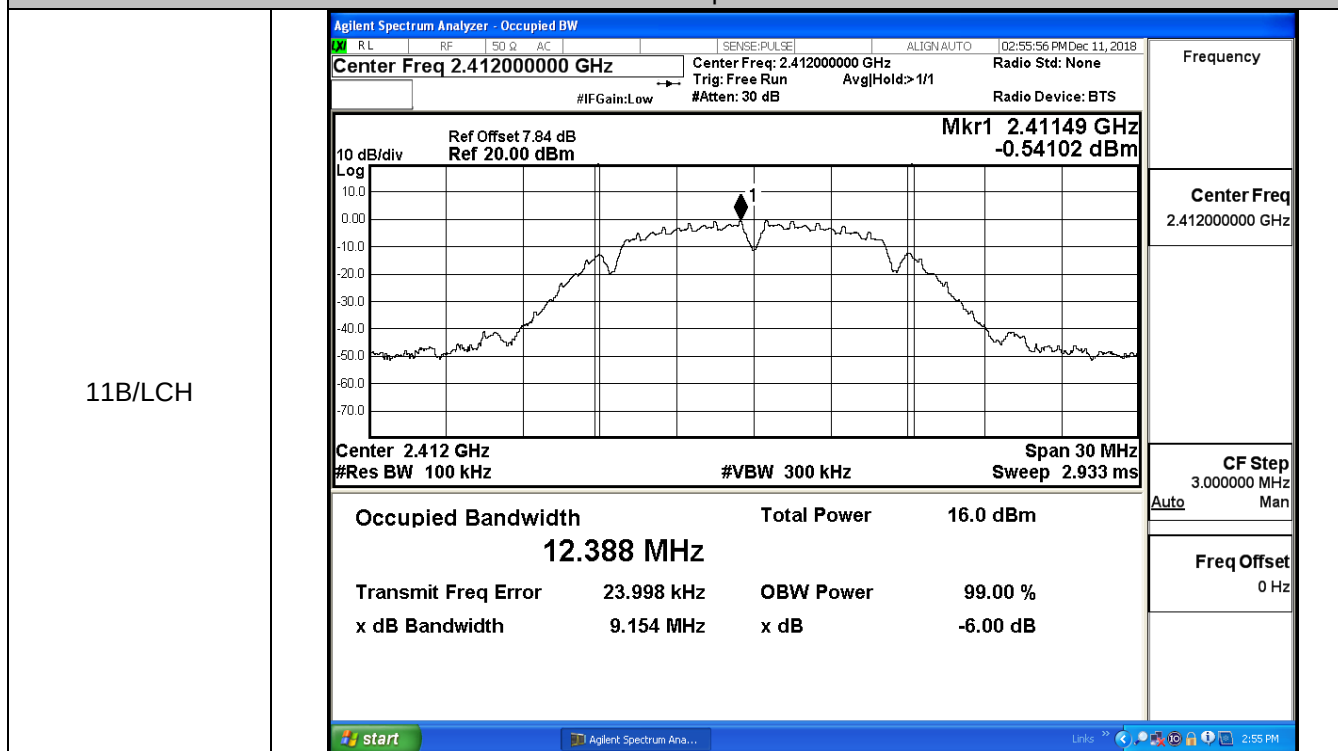




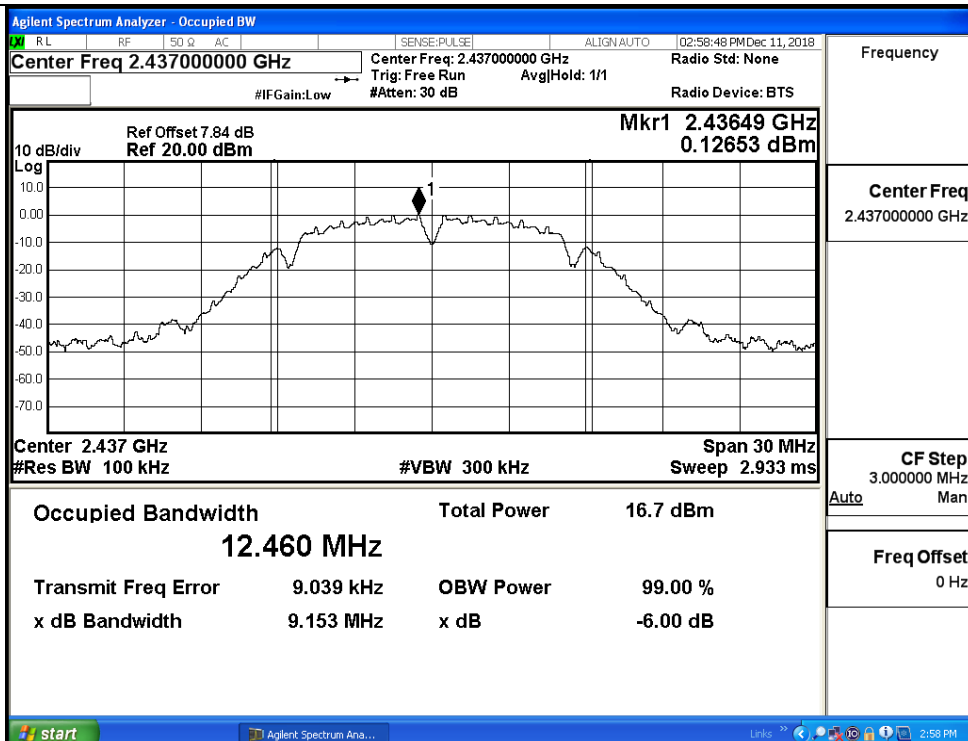
A.4 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	9.154	≥ 0.5	PASS
	MCH	9.153	≥ 0.5	PASS
	HCH	9.155	≥ 0.5	PASS
11G	LCH	16.60	≥ 0.5	PASS
	MCH	16.61	≥ 0.5	PASS
	HCH	16.61	≥ 0.5	PASS
11N20SISO	LCH	17.83	≥ 0.5	PASS
	MCH	17.82	≥ 0.5	PASS
	HCH	17.82	≥ 0.5	PASS

Test Graphs



11B/MCH



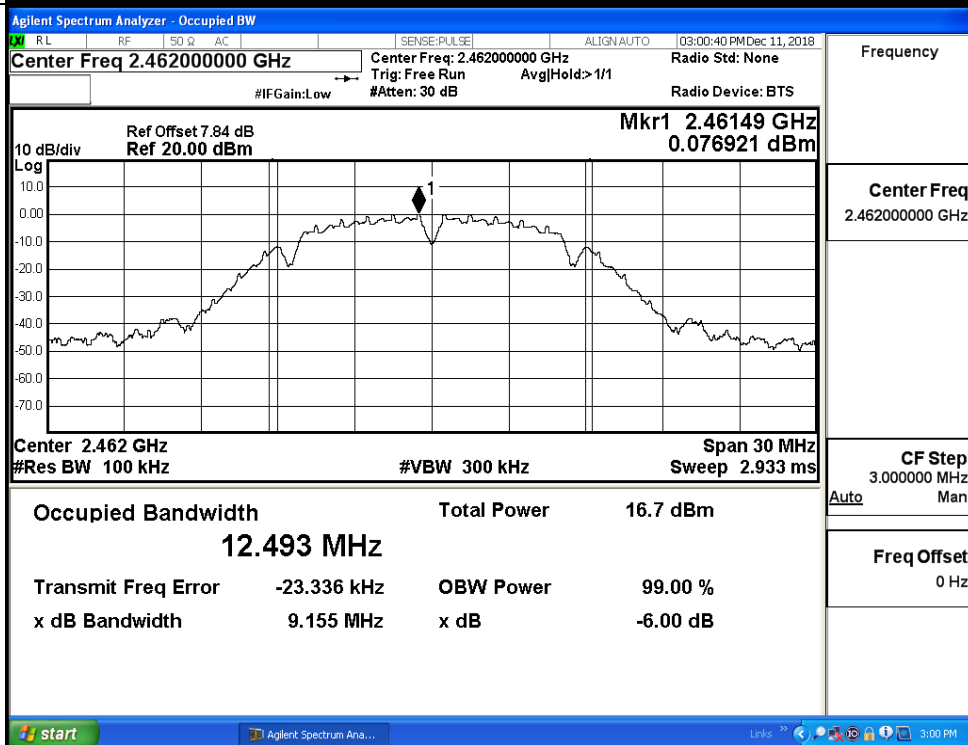
Frequency

Center Freq
2.437000000 GHz

CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

11B/HCH



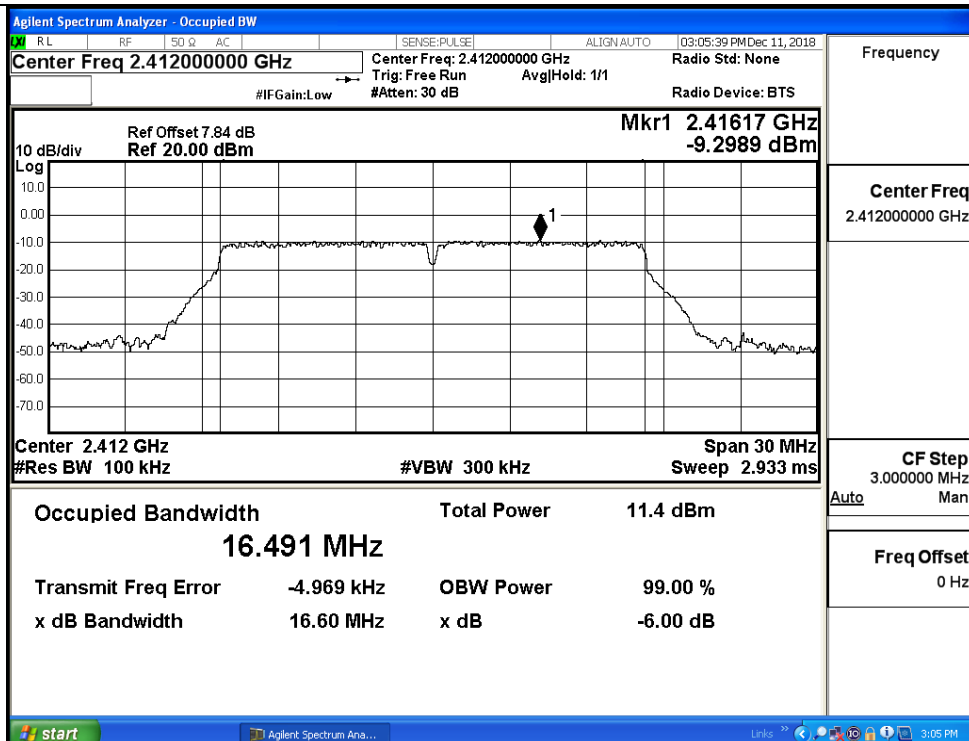
Frequency

Center Freq
2.462000000 GHz

CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

11G/LCH



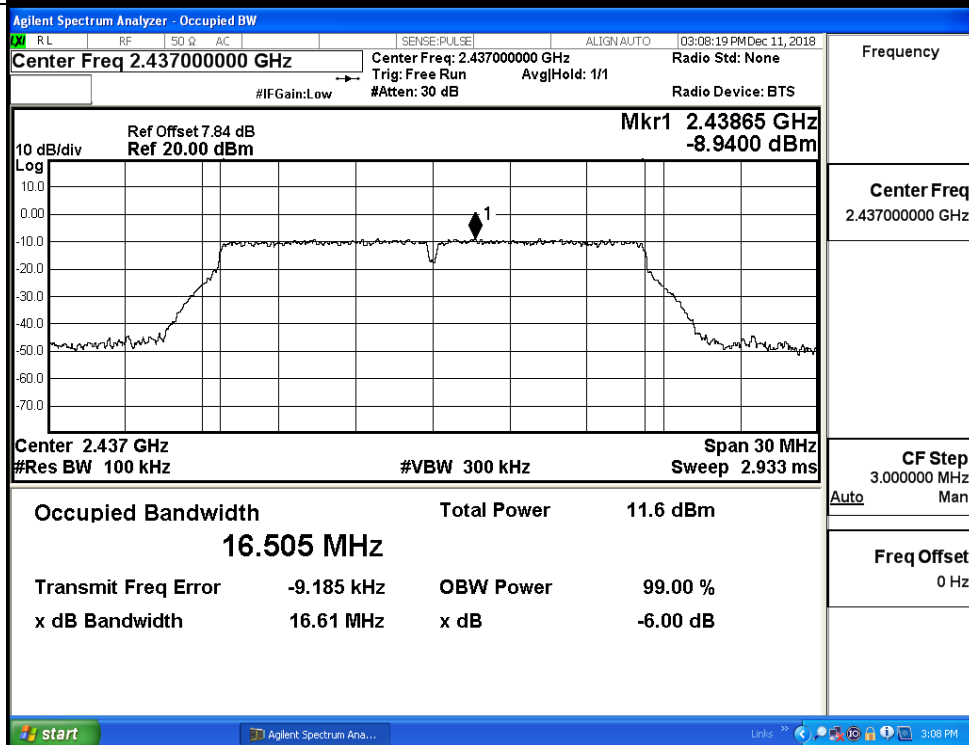
Frequency

Center Freq
2.41200000 GHz

CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

11G/MCH



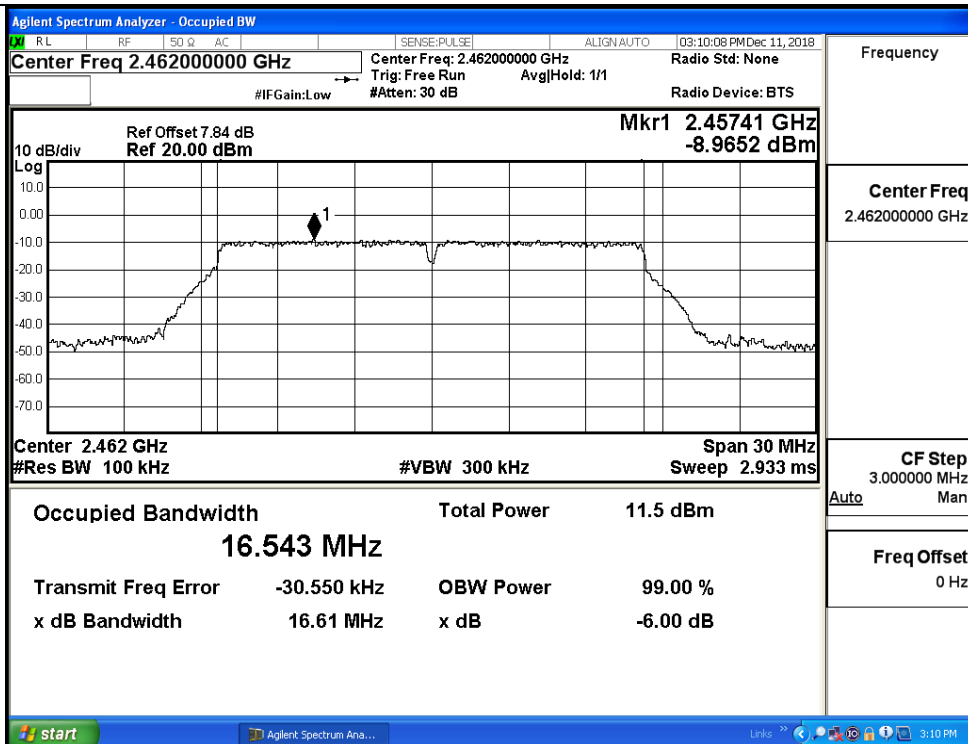
Frequency

Center Freq
2.43700000 GHz

CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

11G/HCH



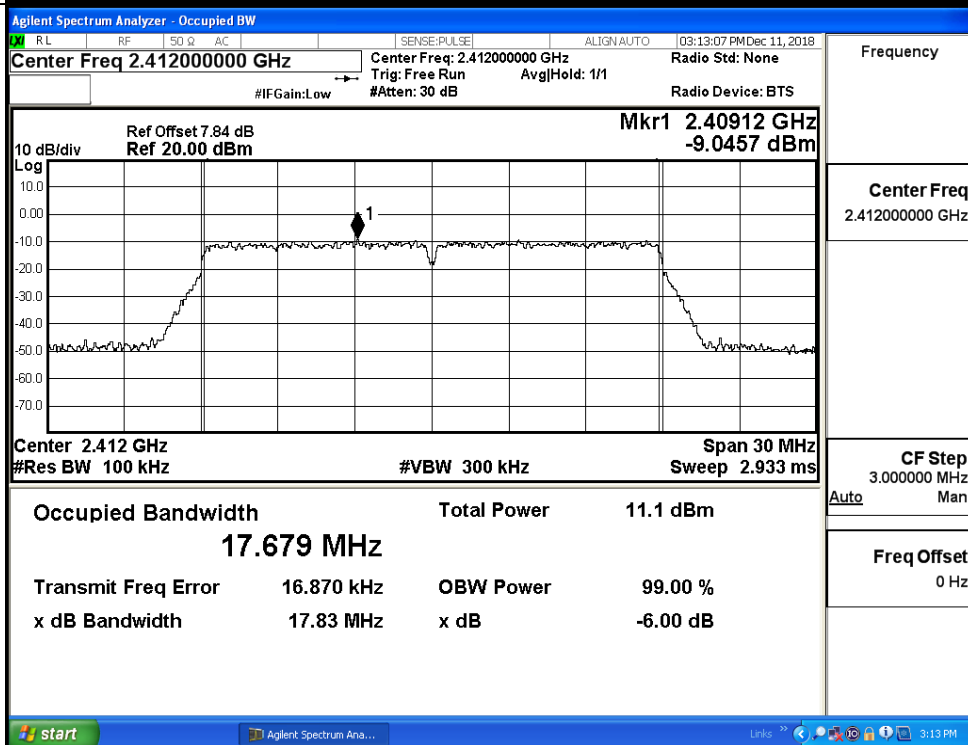
Frequency

Center Freq
2.462000000 GHz

CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

11N20SISO/LCH

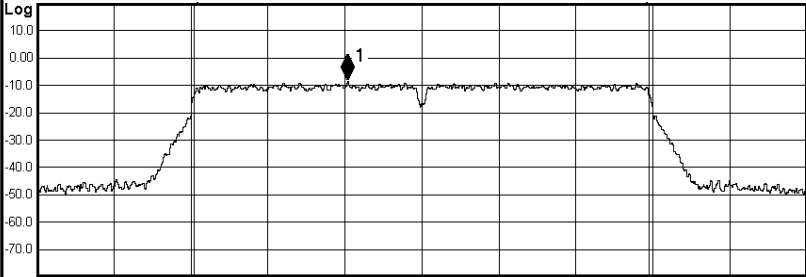
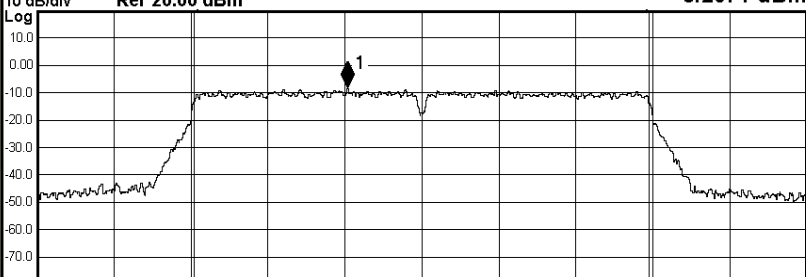


Frequency

Center Freq
2.412000000 GHz

CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

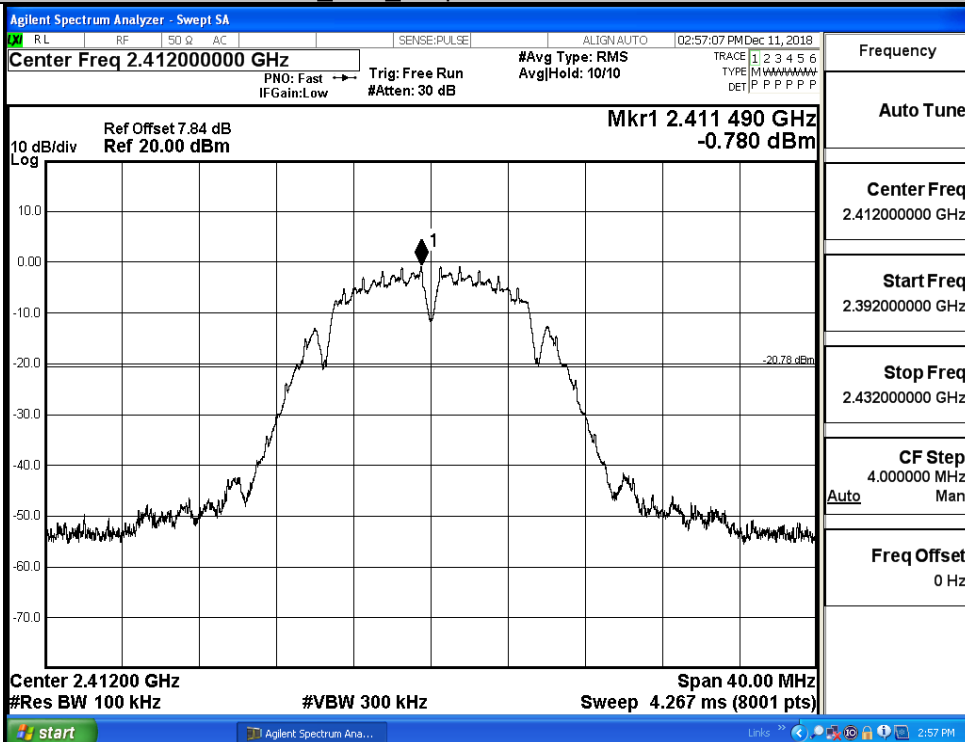
11N20SISO/MCH	Agilent Spectrum Analyzer - Occupied BW RL RF 50 Ω AC SENSE:PULSE ALIGN: AUTO 03:15:50 PM Dec 11, 2018 Center Freq 2.437000000 GHz Center Freq: 2.437000000 GHz Trig: Free Run Avg Hold: 1/1 Radio Std: None #IF Gain: Low #Atten: 30 dB Radio Device: BTS 10 dB/div Ref Offset 7.84 dB Ref 20.00 dBm Mkr1 2.43412 GHz -8.4583 dBm  Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.670 MHz Total Power 11.6 dBm Transmit Freq Error 6.248 kHz OBW Power 99.00 % x dB Bandwidth 17.82 MHz x dB -6.00 dB	Frequency Center Freq 2.437000000 GHz CF Step 3.000000 MHz Auto Man Freq Offset 0 Hz
11N20SISO/HCH	Agilent Spectrum Analyzer - Occupied BW RL RF 50 Ω AC SENSE:PULSE ALIGN: AUTO 03:17:57 PM Dec 11, 2018 Center Freq 2.462000000 GHz Center Freq: 2.462000000 GHz Trig: Free Run Avg Hold: 1/1 Radio Std: None #IF Gain: Low #Atten: 30 dB Radio Device: BTS 10 dB/div Ref Offset 7.84 dB Ref 20.00 dBm Mkr1 2.45912 GHz -8.2671 dBm  Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.677 MHz Total Power 11.6 dBm Transmit Freq Error -343 Hz OBW Power 99.00 % x dB Bandwidth 17.82 MHz x dB -6.00 dB	Frequency Center Freq 2.462000000 GHz CF Step 3.000000 MHz Auto Man Freq Offset 0 Hz

A.5 RF Conducted Spurious Emissions

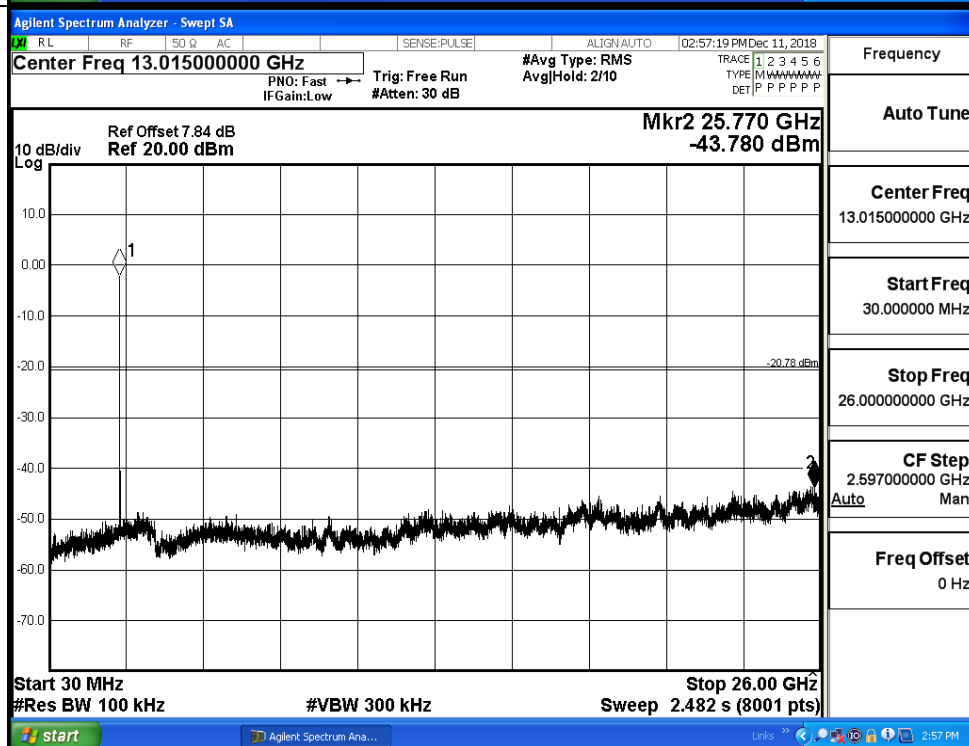
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-0.78	-43.780	-20.780	PASS
	MCH	-0.057	-43.101	-20.057	PASS
	HCH	-0.055	-43.433	-20.055	PASS
11G	LCH	-9.367	-43.683	-29.367	PASS
	MCH	-9.083	-42.778	-29.083	PASS
	HCH	-9.186	-43.598	-29.186	PASS
11N20SISO	LCH	-9.287	-43.666	-29.287	PASS
	MCH	-8.84	-43.856	-28.840	PASS
	HCH	-9.062	-42.861	-29.062	PASS

11B LCH Graphs

Pref/11B/LCH

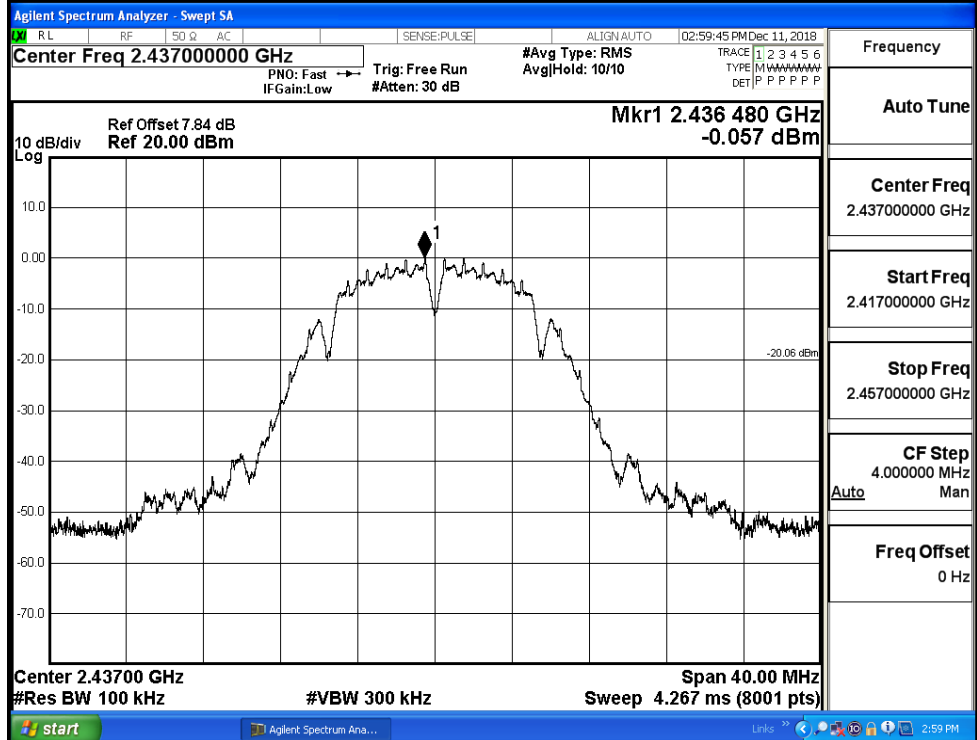


Puw/11B/LCH

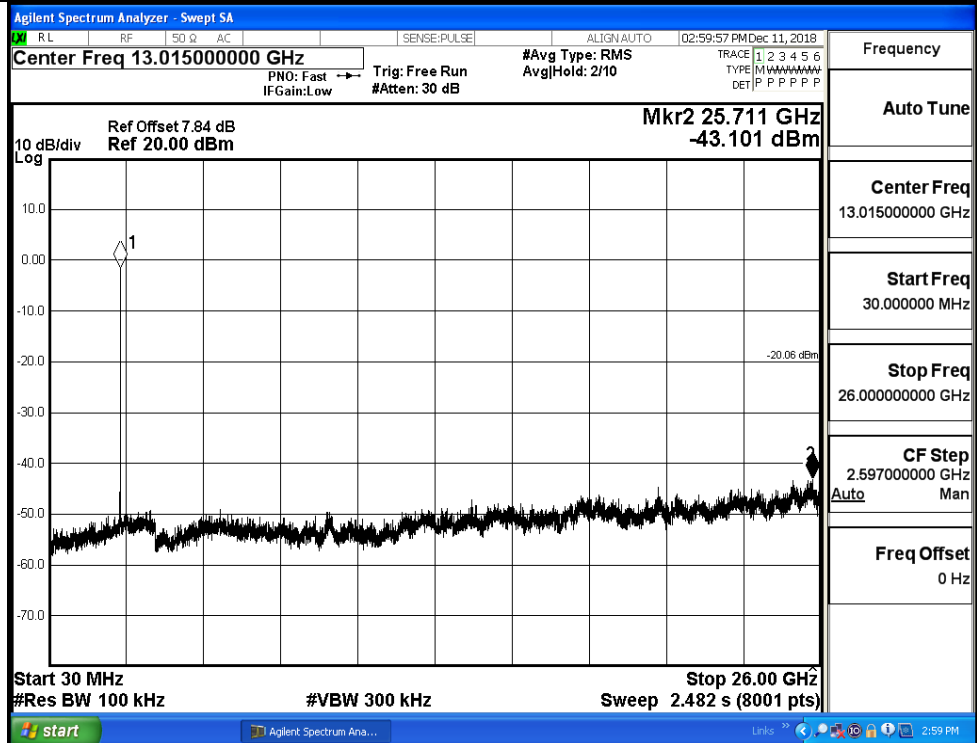


11B MCH Graphs

Pref/11B/MCH

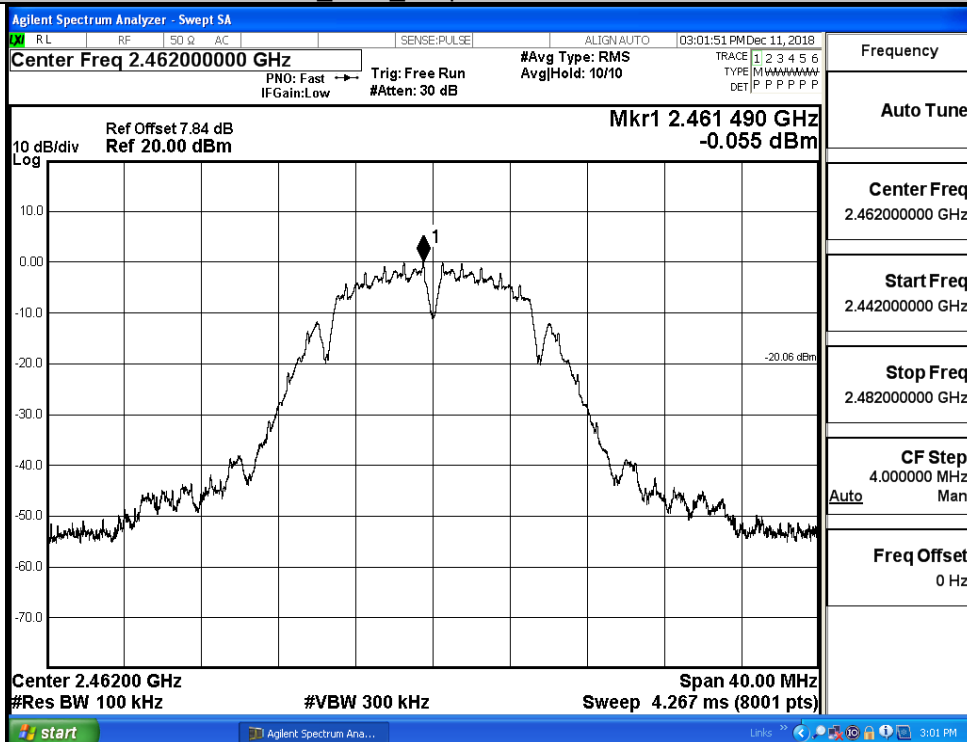


Puw/11B/MCH

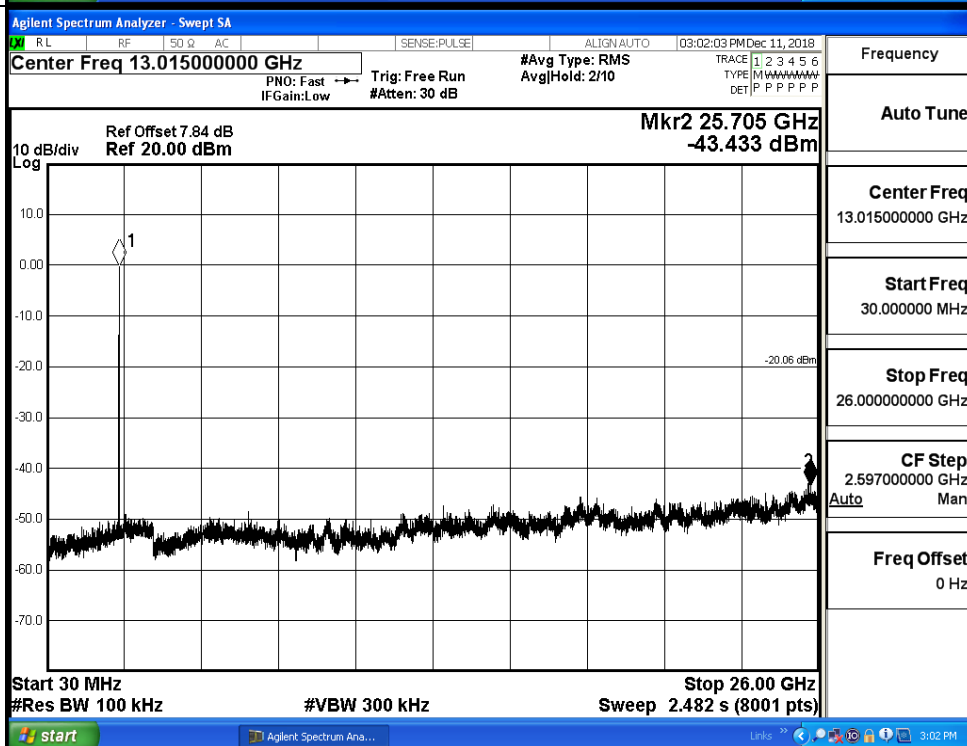


11B HCH Graphs

Pref/11B/HCH

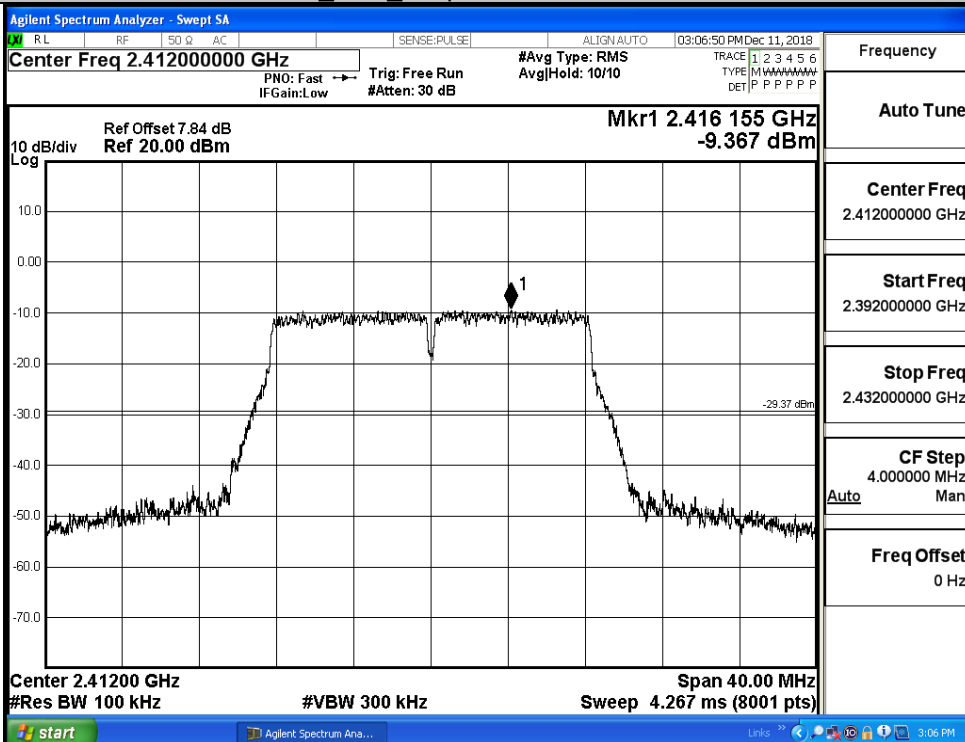


Puw/11B/HCH

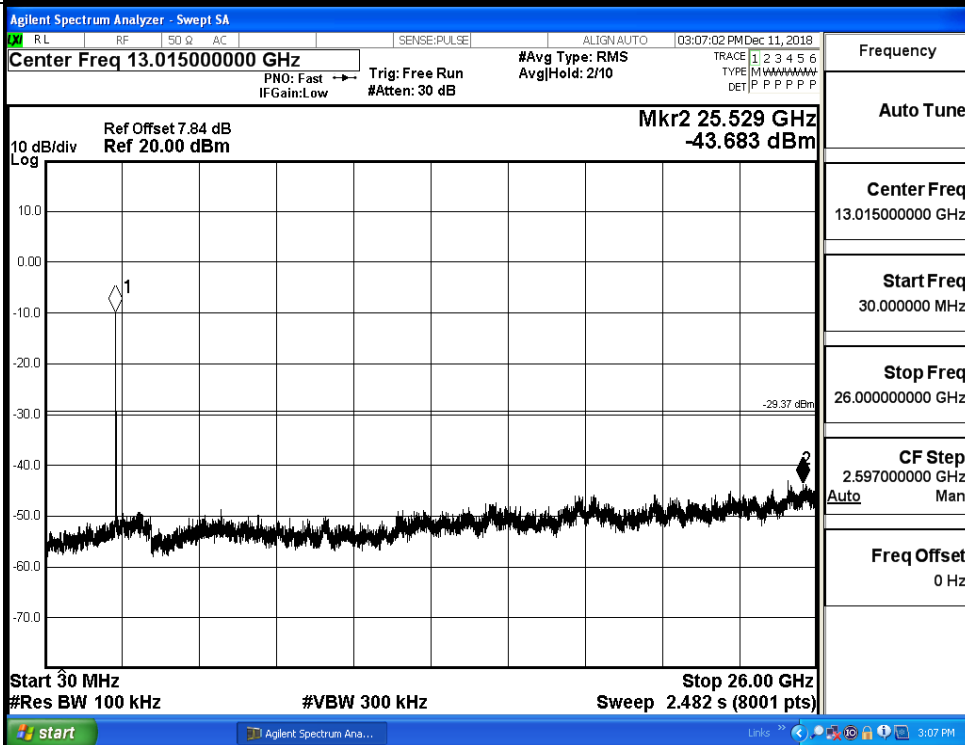


11G LCH Graphs

Pref/11G/LCH

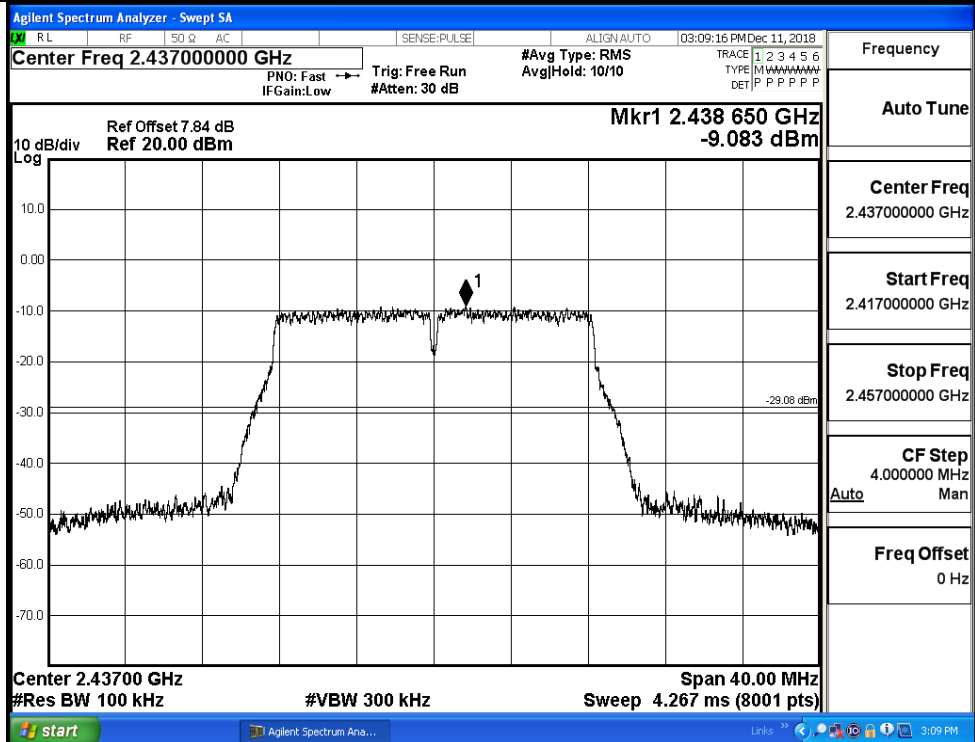


Puw/11G/LCH

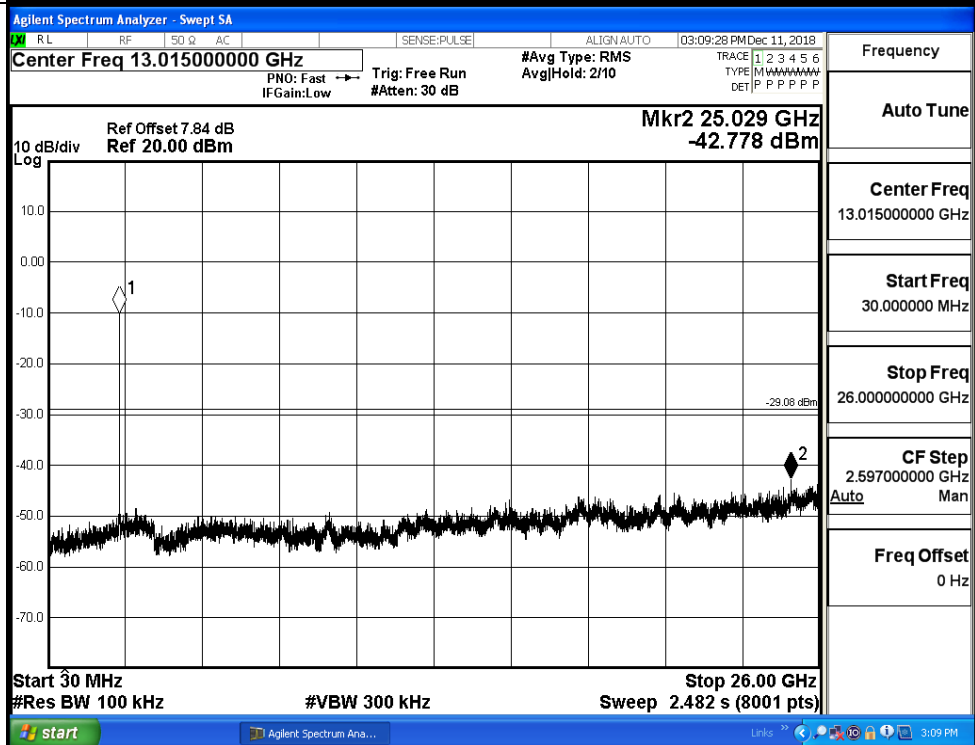


11G MCH Graphs

Pref/11G/MCH

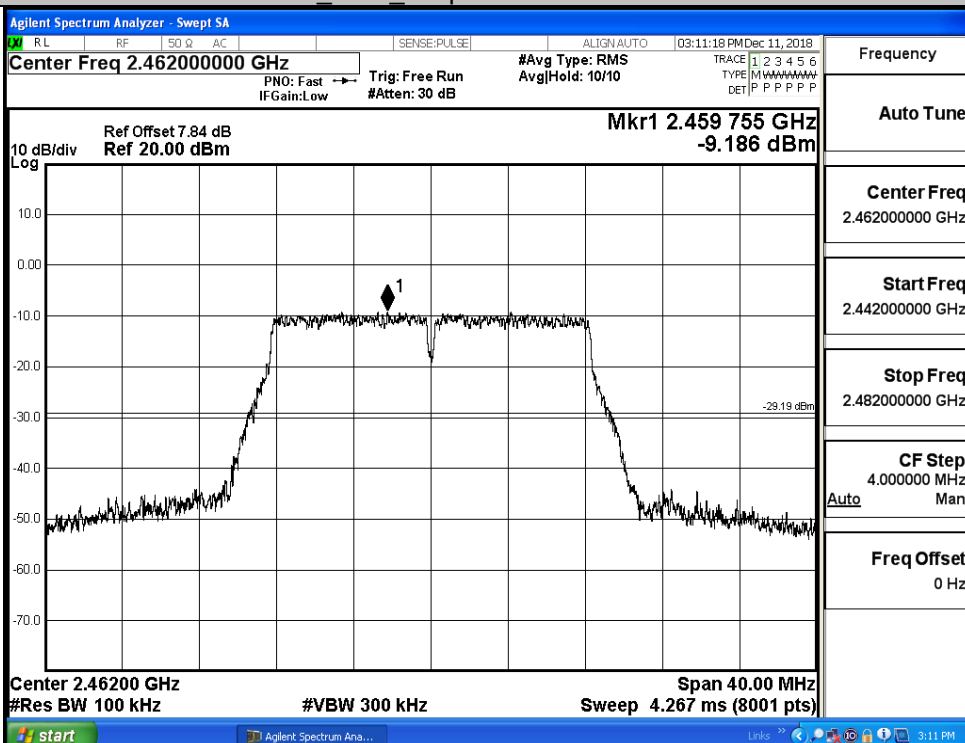


Puw/11G/MCH

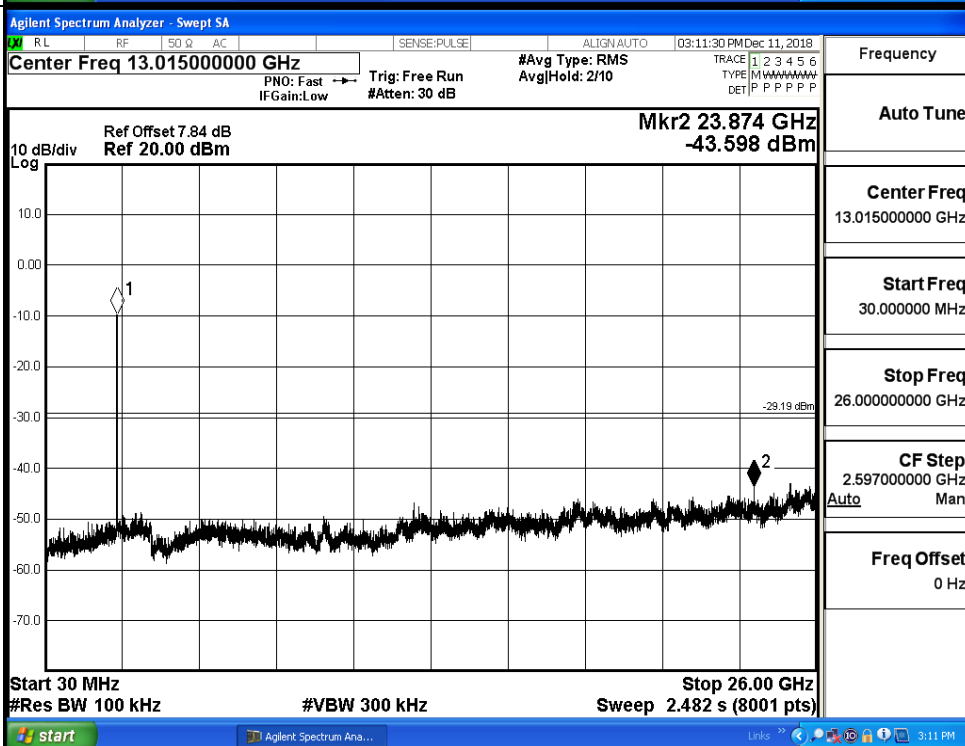


11G HCH Graphs

Pref/11G/HCH

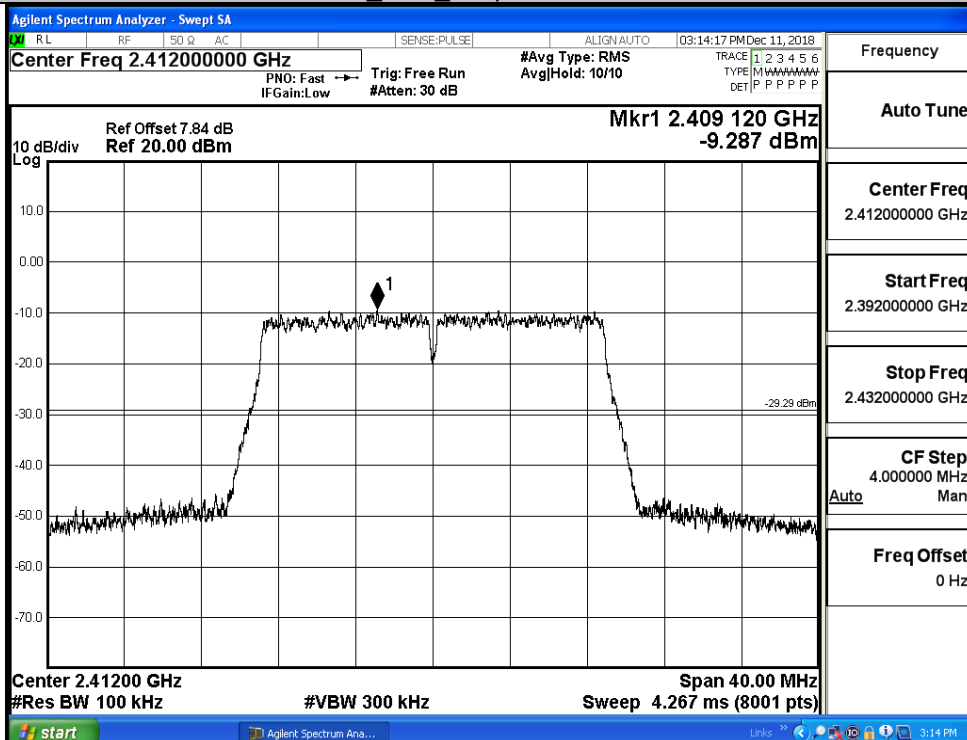


Puw/11G/HCH

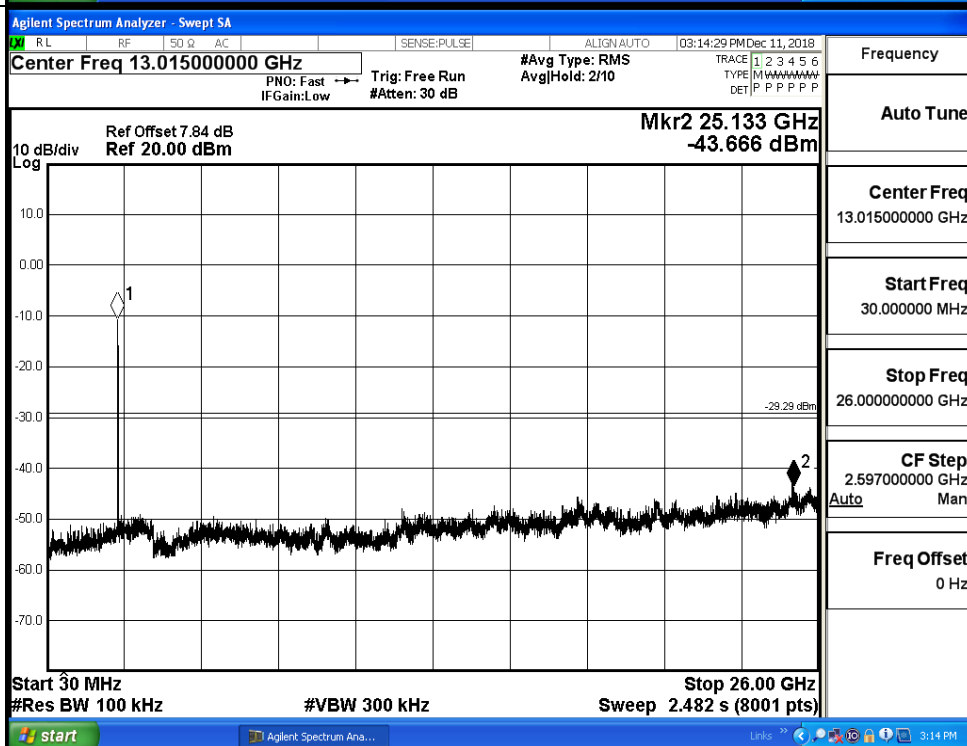


11N20SISO LCH Graphs

Pref/11N20SIS
O/LCH

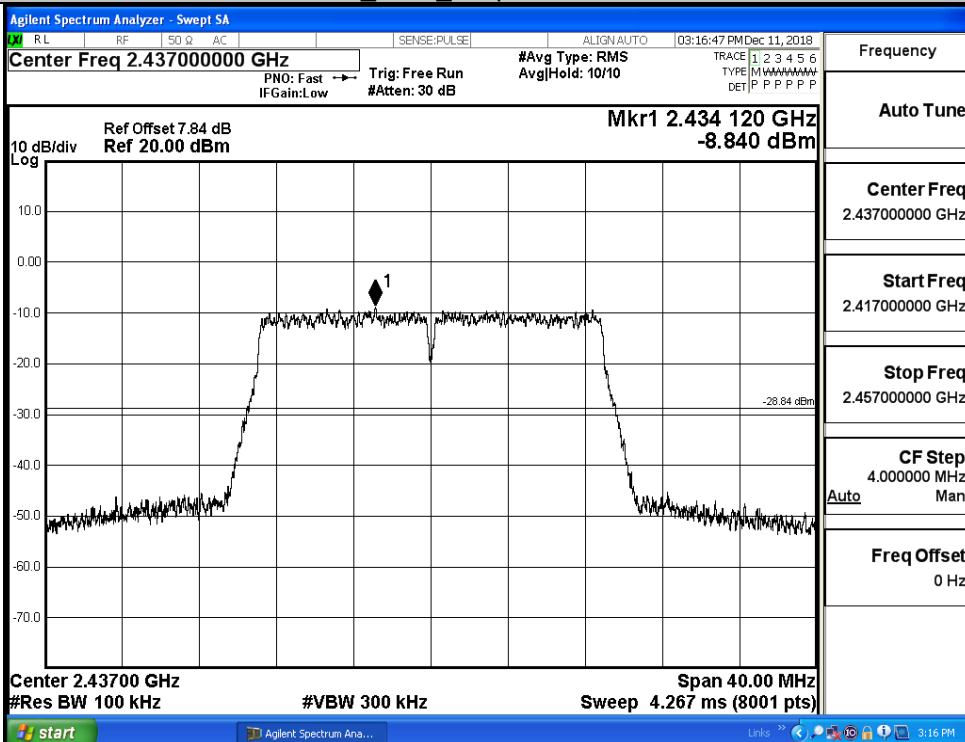


Puw/11N20
SISO/LCH

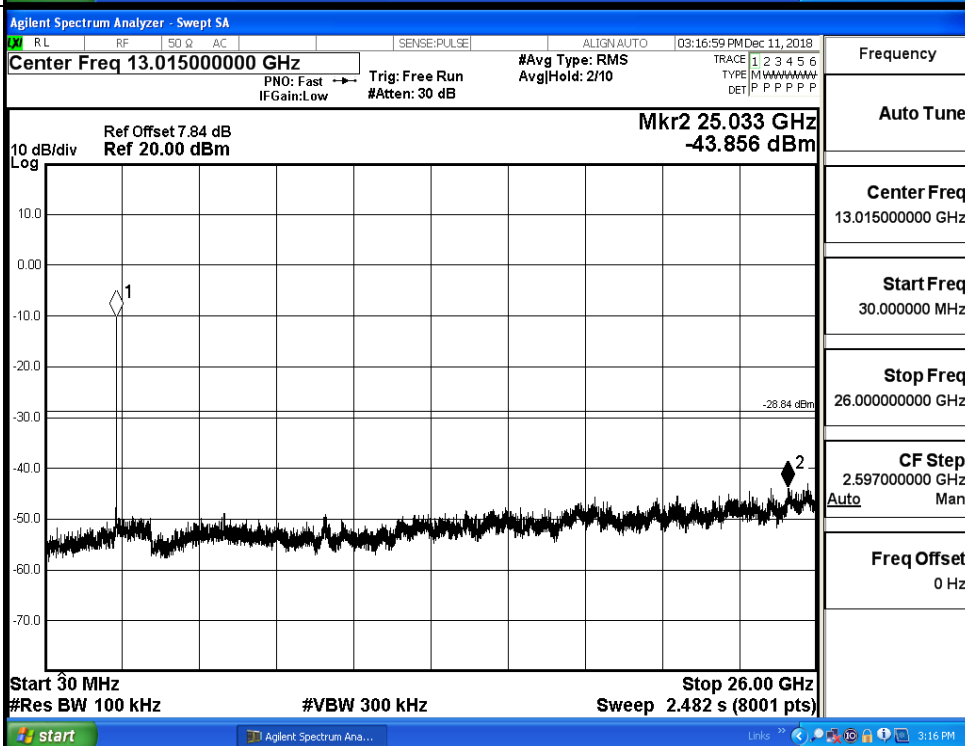


11N20SISO_MCH_Graphs

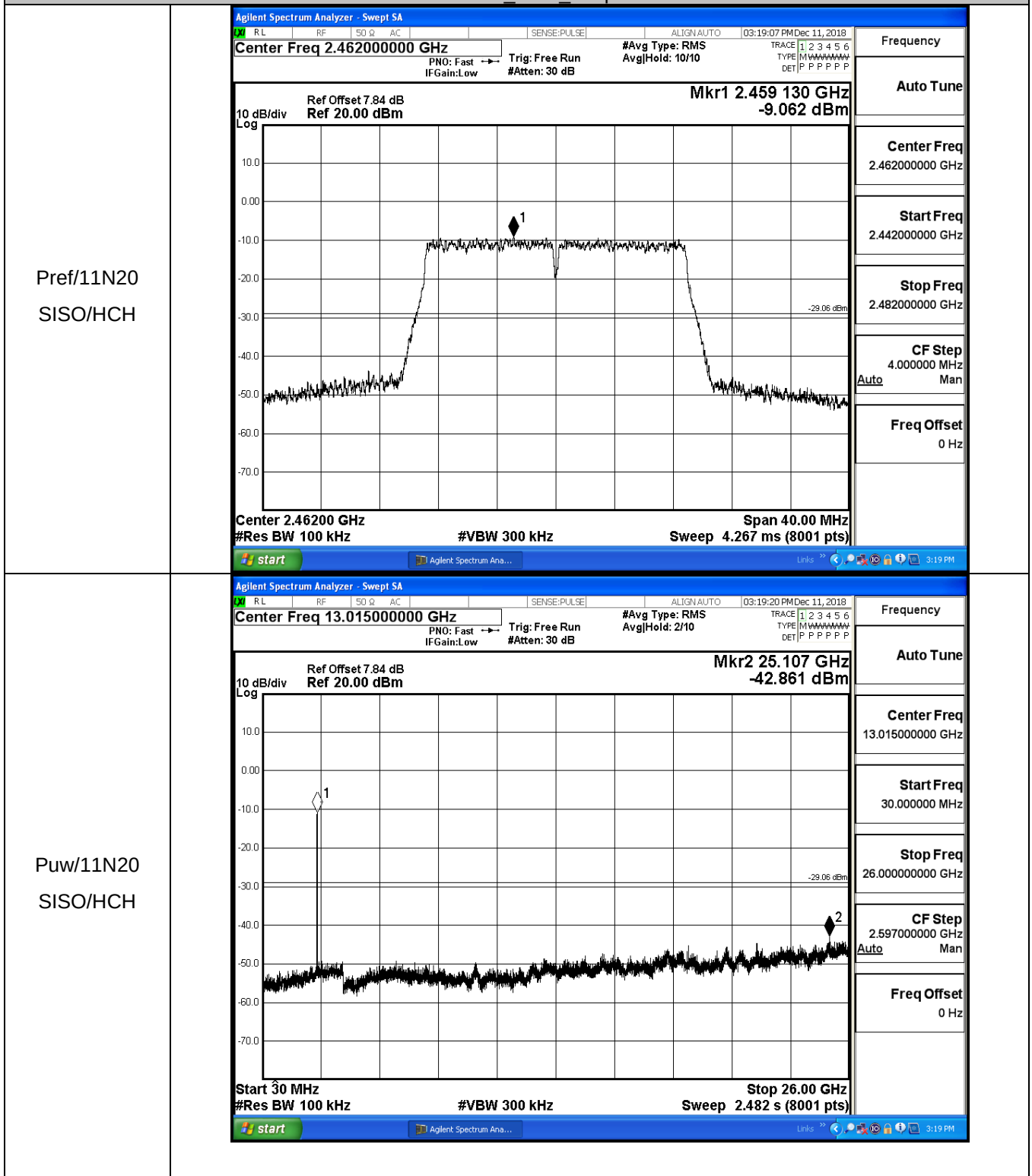
Pref/11N20
SISO/MCH



Puw/11N20
SISO/MCH

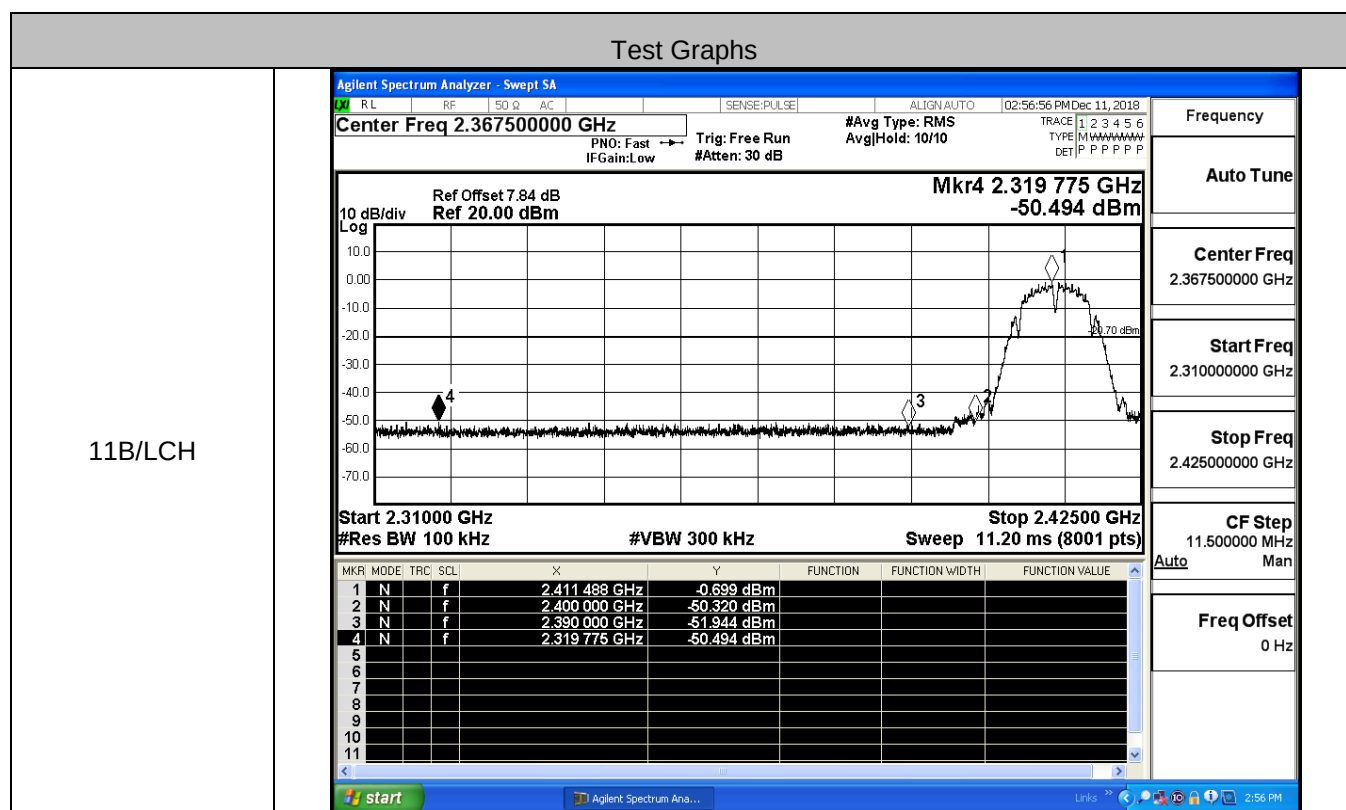


11N20SISO HCH Graphs

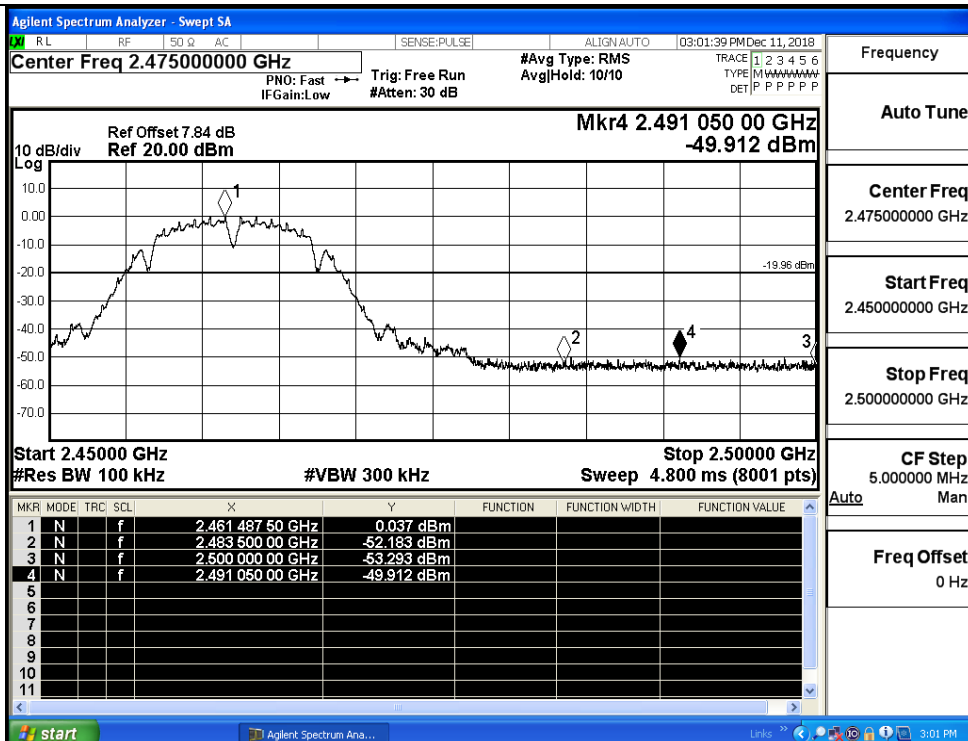


A.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-0.699	-50.494	-20.7	PASS
	HCH	0.037	-49.912	-19.96	PASS
11G	LCH	-9.386	-49.867	-29.39	PASS
	HCH	-9.114	-48.852	-29.11	PASS
11N20SISO	LCH	-9.267	-50.005	-29.27	PASS
	HCH	-8.630	-49.750	-28.63	PASS



11B/HCH



Frequency

Auto Tune

Center Freq
2.475000000 GHz

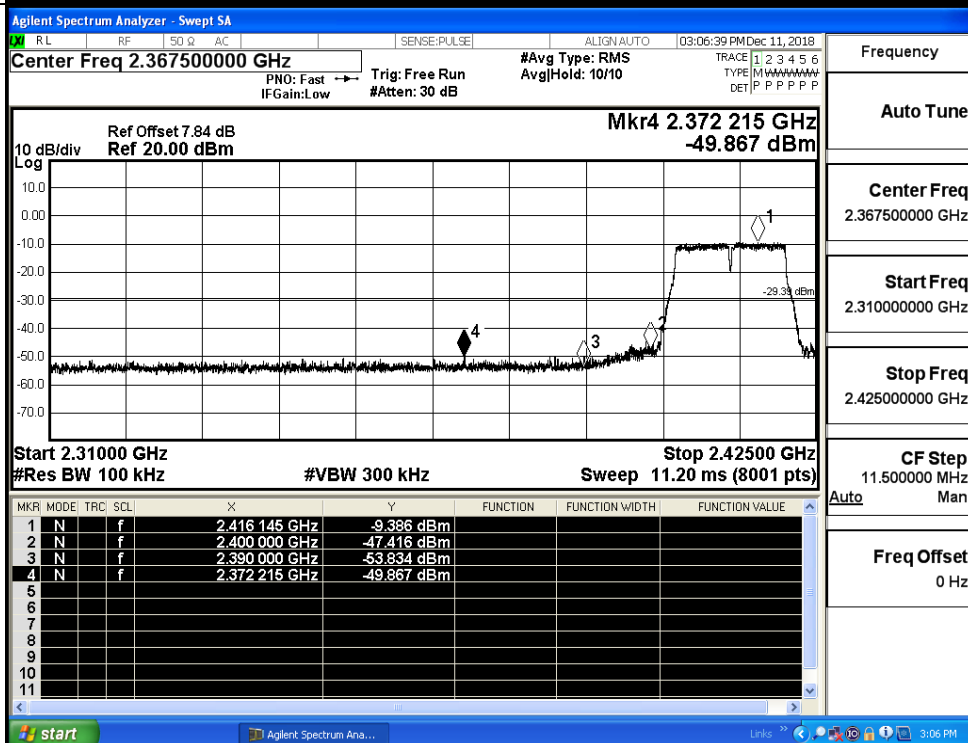
Start Freq
2.450000000 GHz

Stop Freq
2.500000000 GHz

CF Step
5.000000 MHz

Freq Offset
0 Hz

11G/LCH



Frequency

Auto Tune

Center Freq
2.367500000 GHz

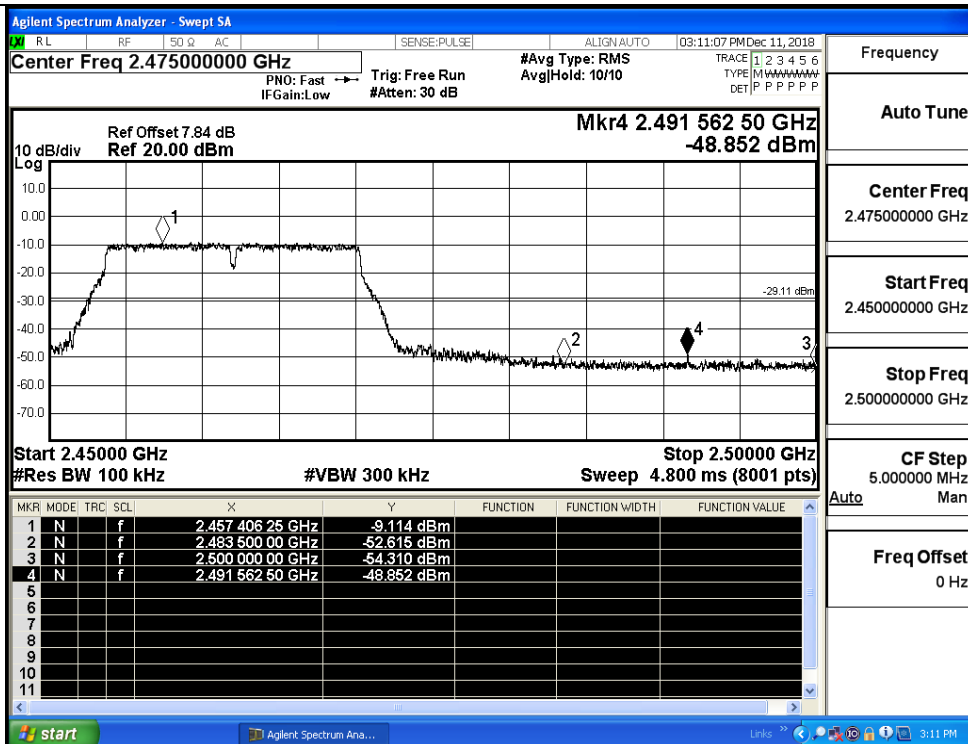
Start Freq
2.310000000 GHz

Stop Freq
2.425000000 GHz

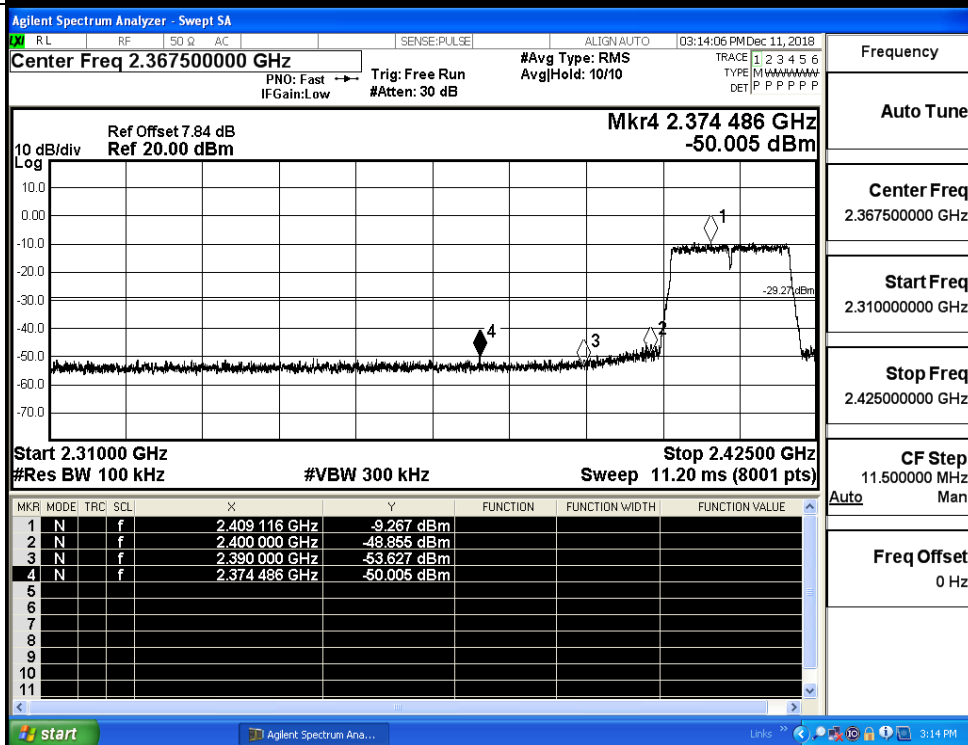
CF Step
11.500000 MHz

Freq Offset
0 Hz

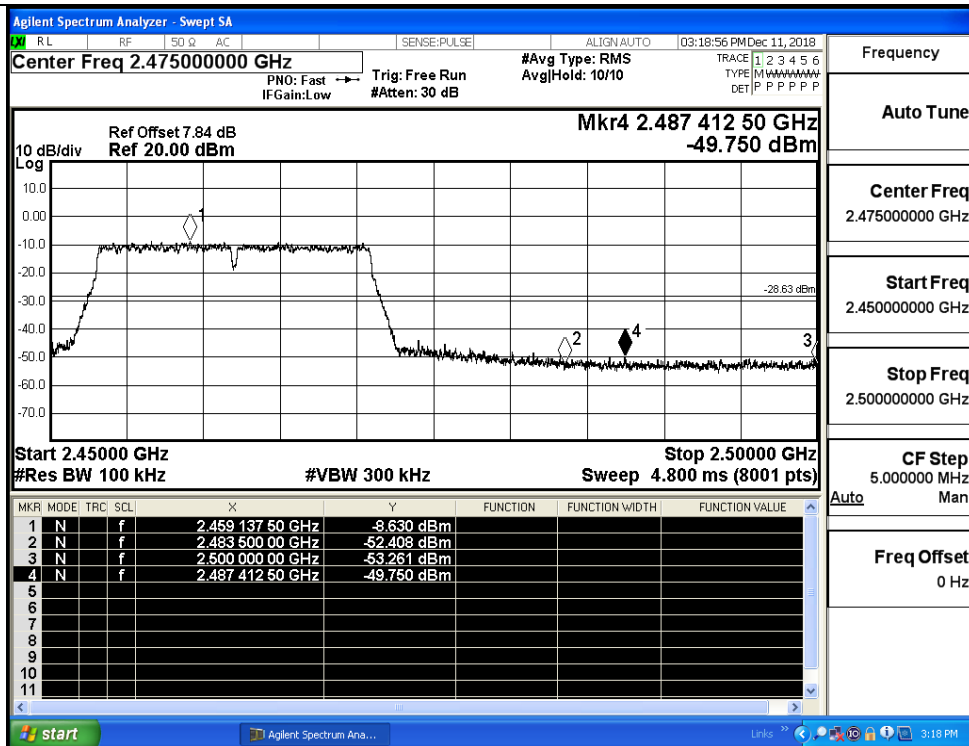
11G/HCH



11N20SISO/LCH



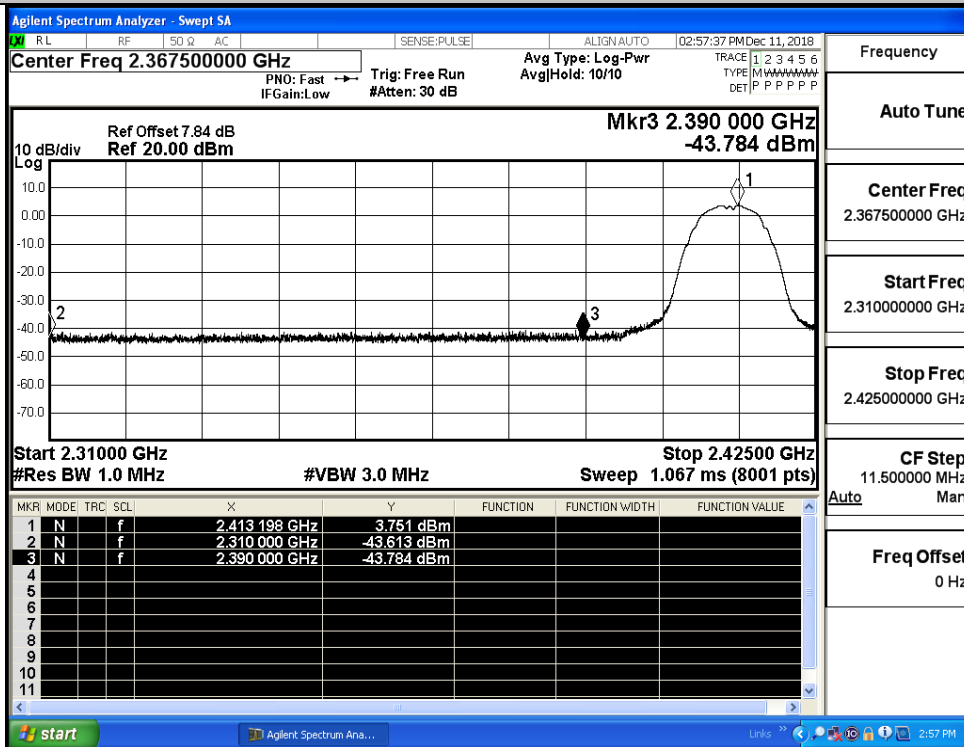
11N20SISO/HCH



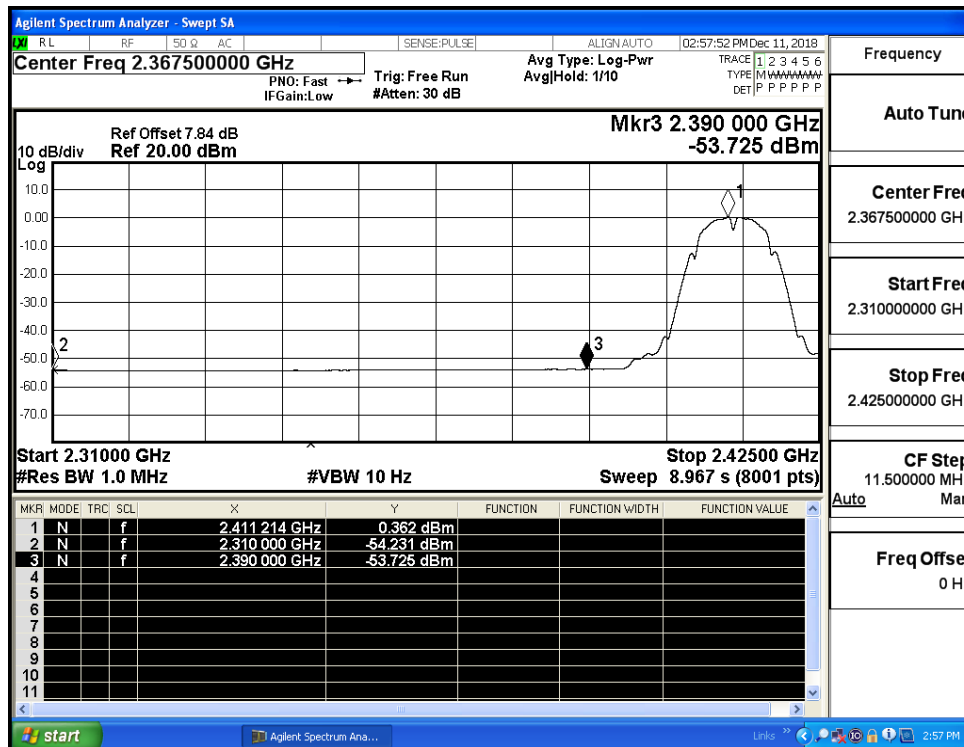
A.7 Restrict-band band-edge measurements

Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
11B	2412	Ant1	2310.0	-43.613	3.00	0	54.615	PEAK	74	PASS
	2412	Ant1	2310.0	-54.231	3.00	0	43.997	AV	54	PASS
	2412	Ant1	2390.0	-43.784	3.00	0	54.444	PEAK	74	PASS
	2412	Ant1	2390.0	-53.725	3.00	0	44.503	AV	54	PASS
	2462	Ant1	2483.5	-42.568	3.00	0	55.660	PEAK	74	PASS
	2462	Ant1	2483.5	-53.312	3.00	0	44.916	AV	54	PASS
	2462	Ant1	2500.0	-42.819	3.00	0	55.409	PEAK	74	PASS
	2462	Ant1	2500.0	-53.462	3.00	0	44.766	AV	54	PASS
11G	2412	Ant1	2310.0	-42.792	3.00	0	55.436	PEAK	74	PASS
	2412	Ant1	2310.0	-54.267	3.00	0	43.961	AV	54	PASS
	2412	Ant1	2390.0	-41.561	3.00	0	56.667	PEAK	74	PASS
	2412	Ant1	2390.0	-53.223	3.00	0	45.005	AV	54	PASS
	2462	Ant1	2483.5	-42.467	3.00	0	55.761	PEAK	74	PASS
	2462	Ant1	2483.5	-52.921	3.00	0	45.307	AV	54	PASS
	2462	Ant1	2500.0	-41.993	3.00	0	56.235	PEAK	74	PASS
	2462	Ant1	2500.0	-53.307	3.00	0	44.921	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-44.432	3.00	0	53.796	PEAK	74	PASS
	2412	Ant1	2310.0	-54.255	3.00	0	43.973	AV	54	PASS
	2412	Ant1	2390.0	-41.535	3.00	0	56.693	PEAK	74	PASS
	2412	Ant1	2390.0	-53.048	3.00	0	45.180	AV	54	PASS
	2462	Ant1	2483.5	-42.224	3.00	0	56.004	PEAK	74	PASS
	2462	Ant1	2483.5	-52.705	3.00	0	45.523	AV	54	PASS
	2462	Ant1	2500.0	-43.117	3.00	0	55.111	PEAK	74	PASS
	2462	Ant1	2500.0	-53.316	3.00	0	44.912	AV	54	PASS

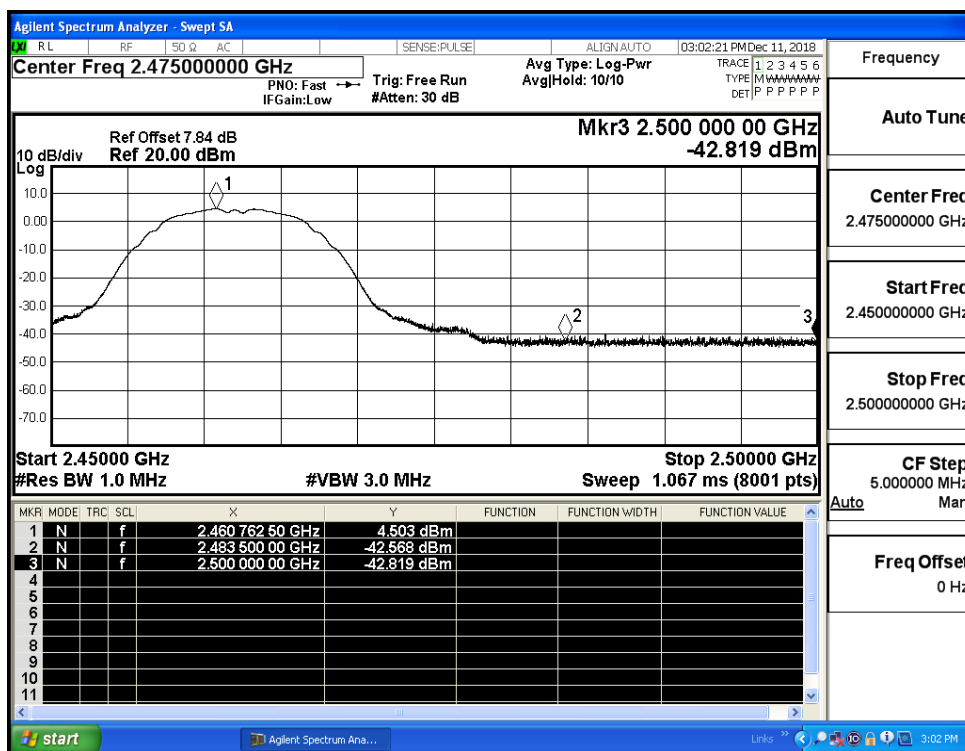
Restrict-band band-edge measurements_11B_2412_Ant1_PEAK



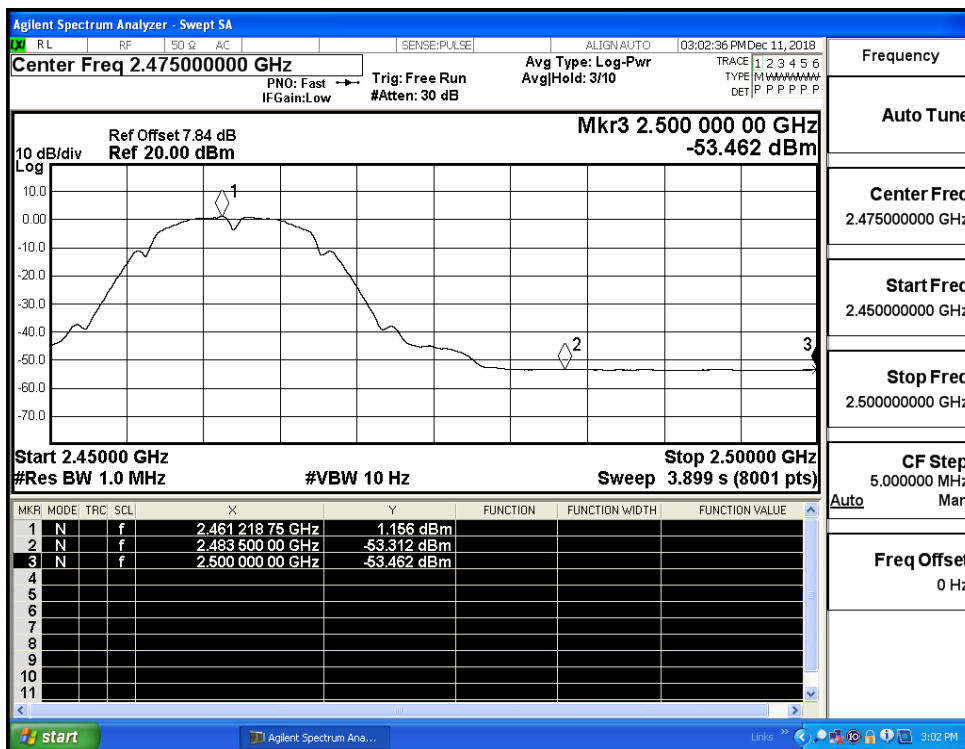
Restrict-band band-edge measurements_11B_2412_Ant1_AV



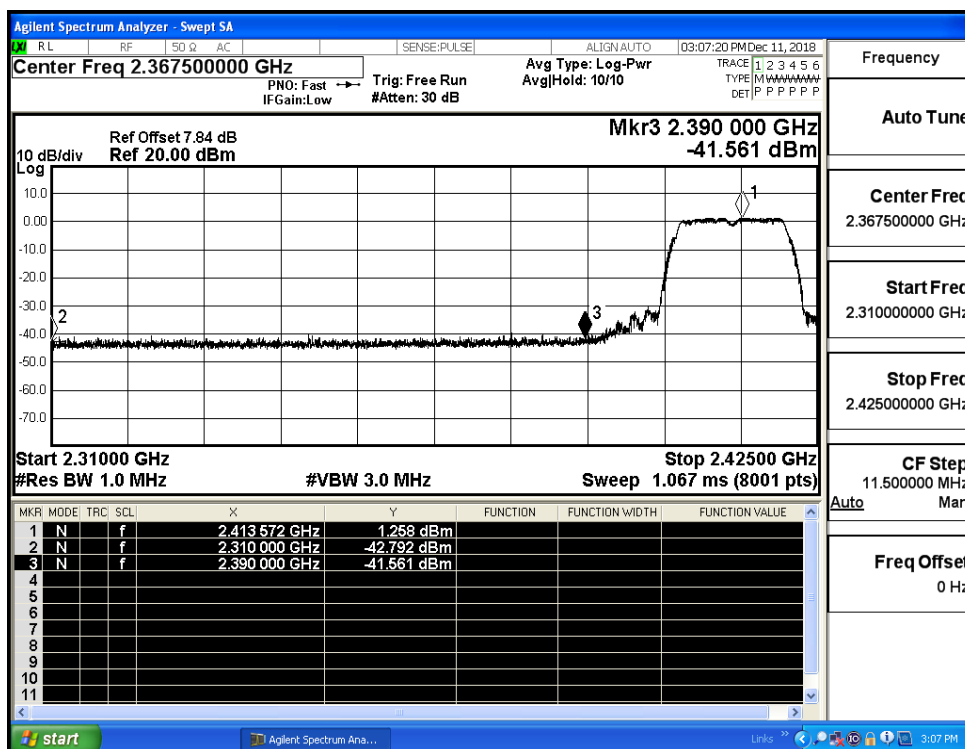
Restrict-band band-edge measurements_11B_2462_Ant1_PEAK



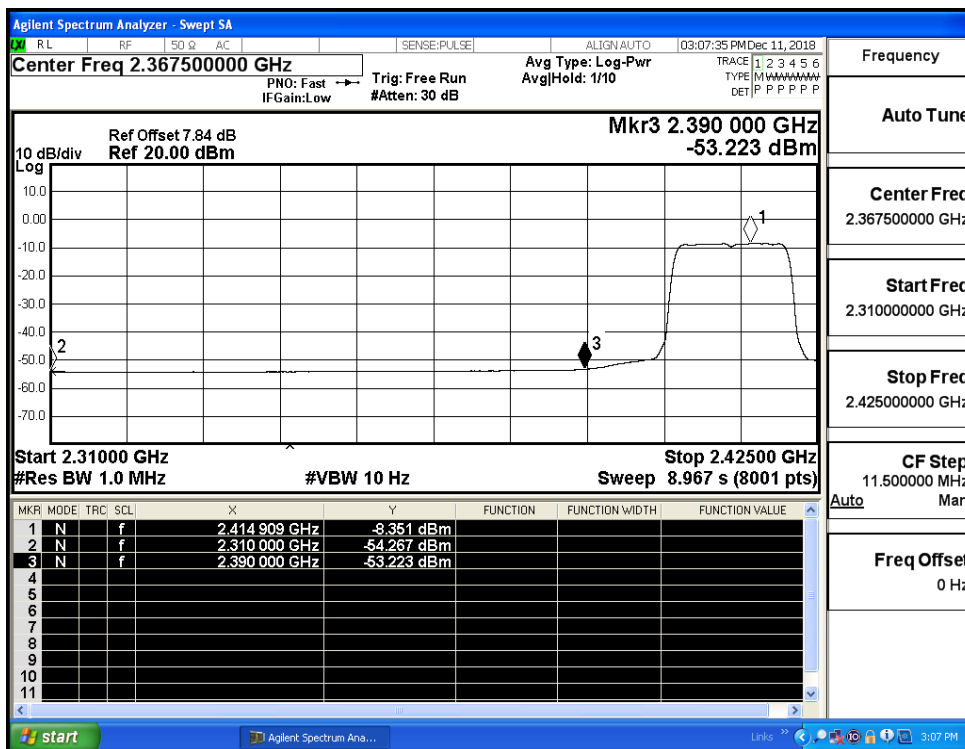
Restrict-band band-edge measurements_11B_2462_Ant1_AV



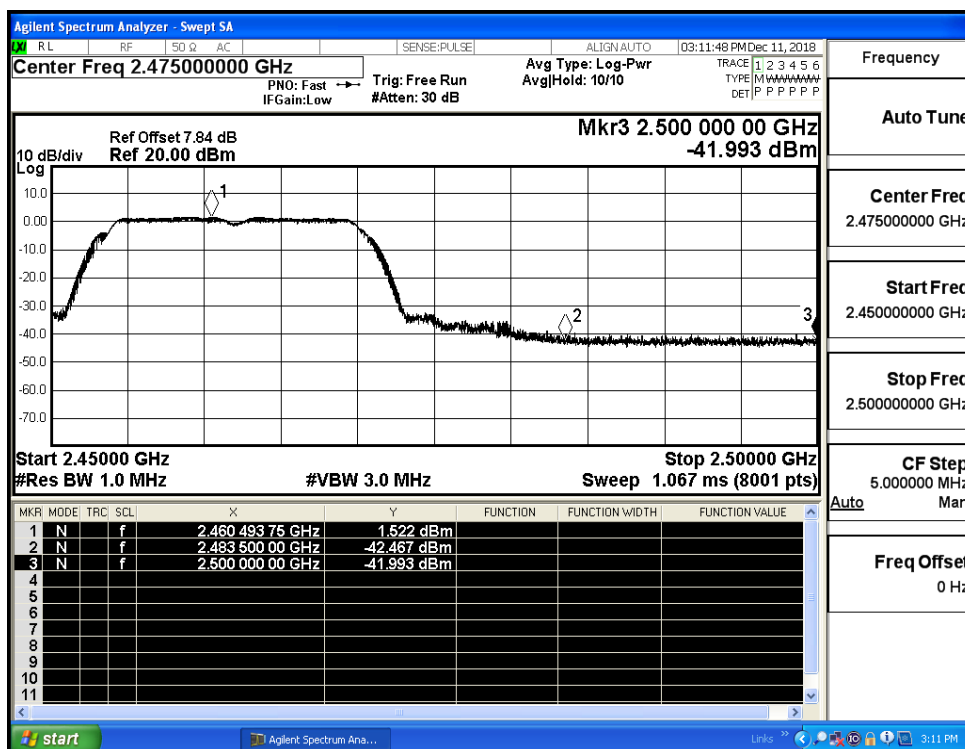
Restrict-band band-edge measurements_11G_2412_Ant1_PEAK



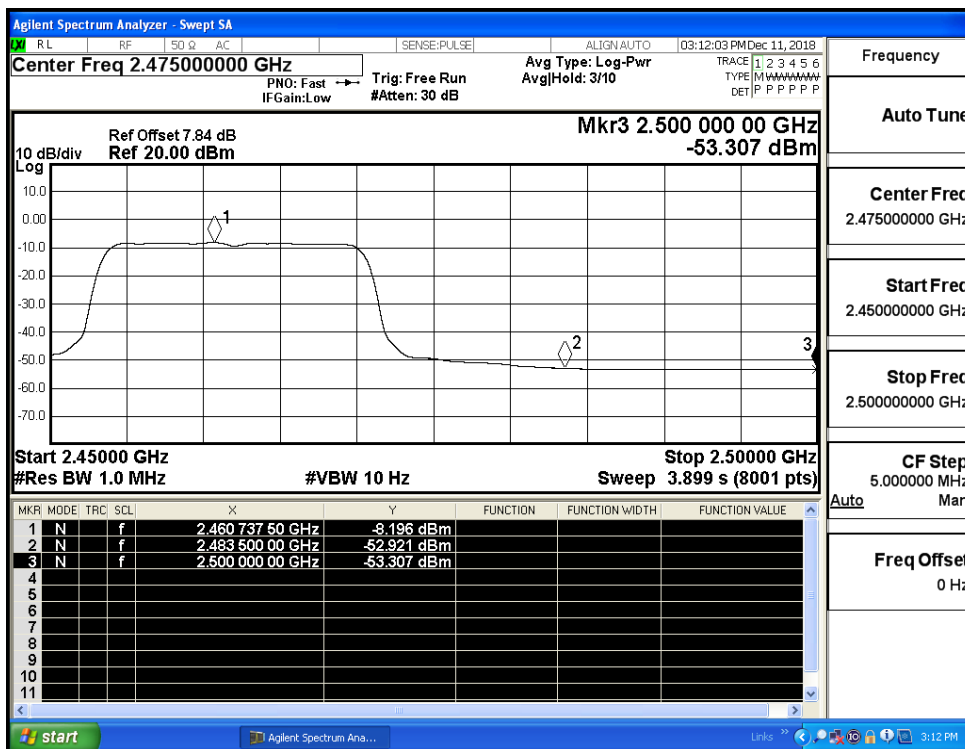
Restrict-band band-edge measurements_11G_2412_Ant1_AV



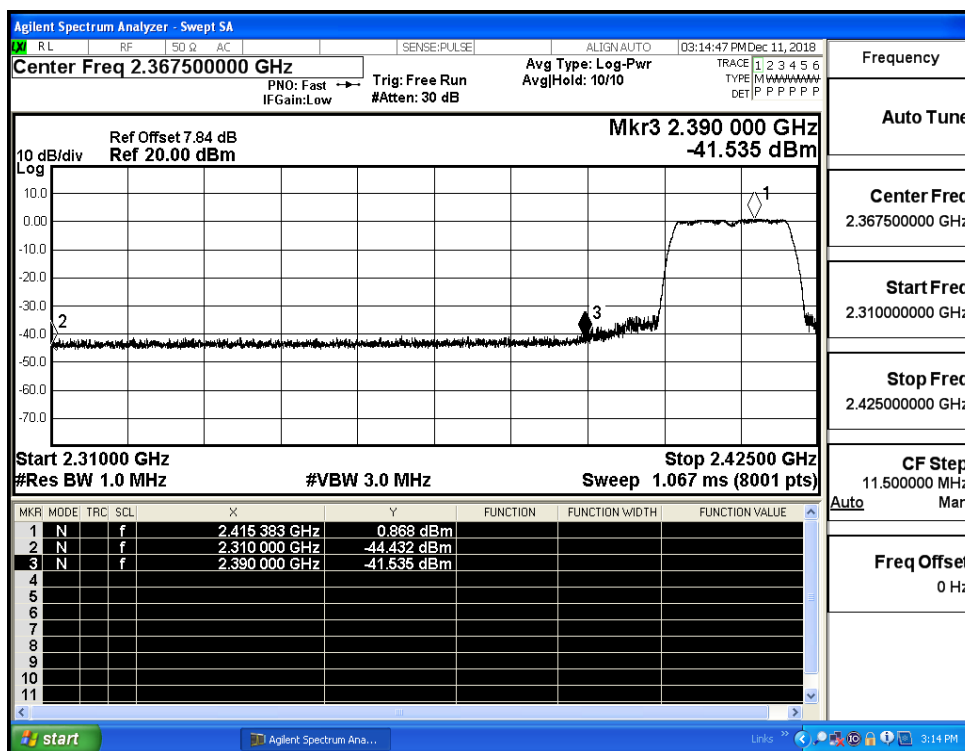
Restrict-band band-edge measurements_11G_2462_Ant1_PEAK



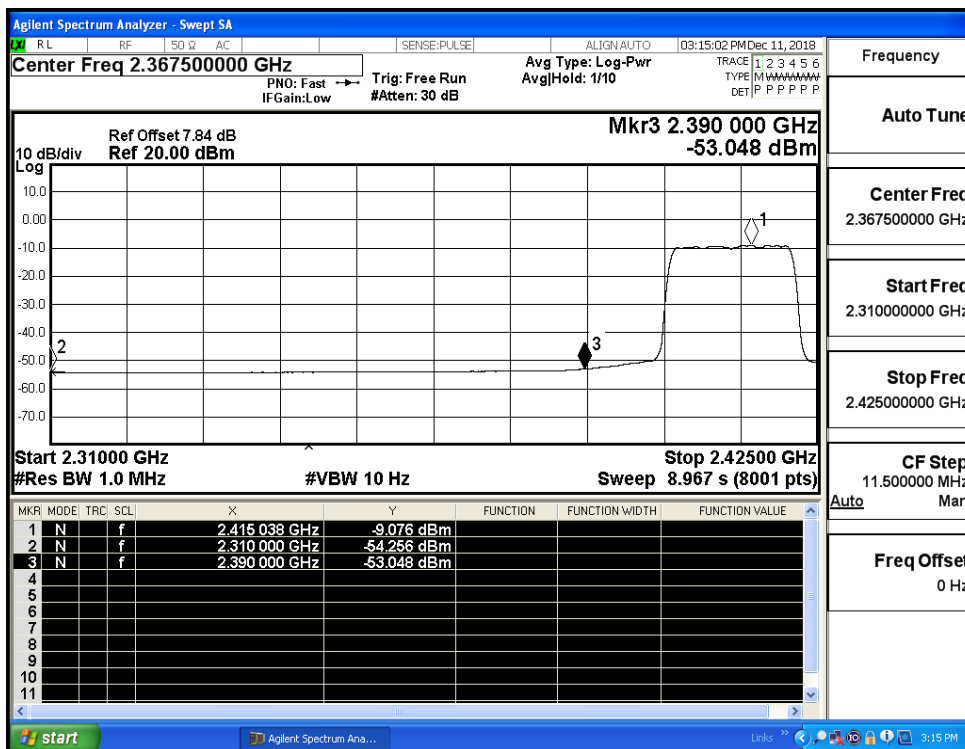
Restrict-band band-edge measurements_11G_2462_Ant1_AV



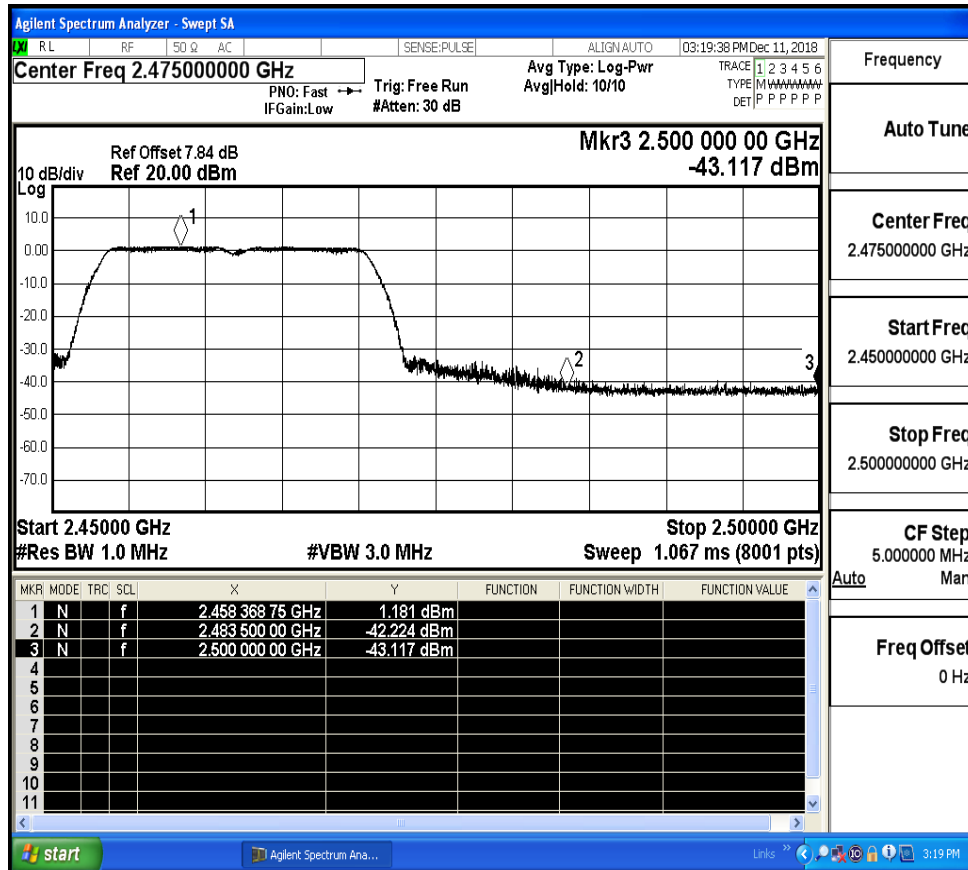
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_PEAK



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

