

Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Wi-Fi Wireless IP Security Camera

Trade Mark: 

Test Model: GK-200MP2-B

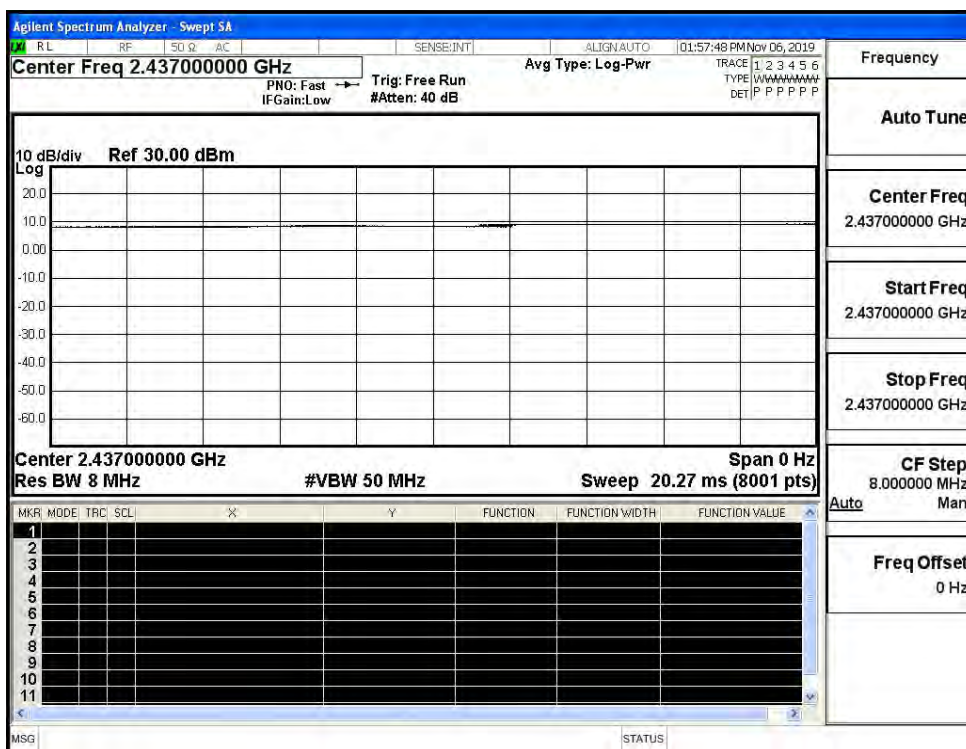
Environmental Conditions

Temperature:	23.9 ° C
Relative Humidity:	52.9%
ATM Pressure:	100.0 kPa
Test Engineer:	David Luo
Supervised by:	Tom.Liu

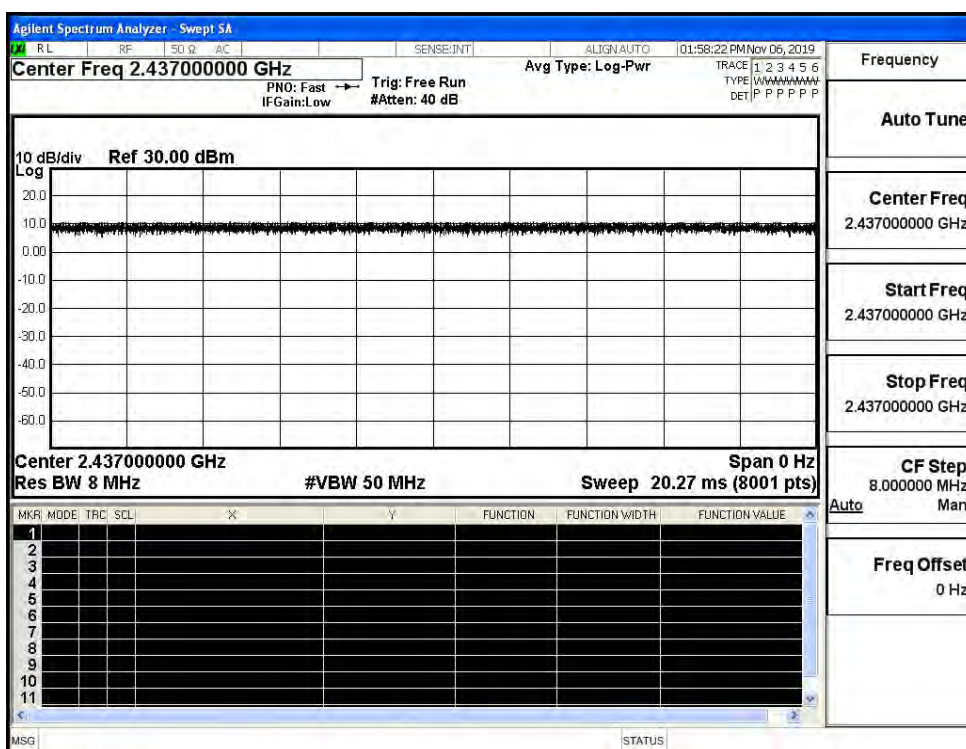
A.1 Duty Cycle

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

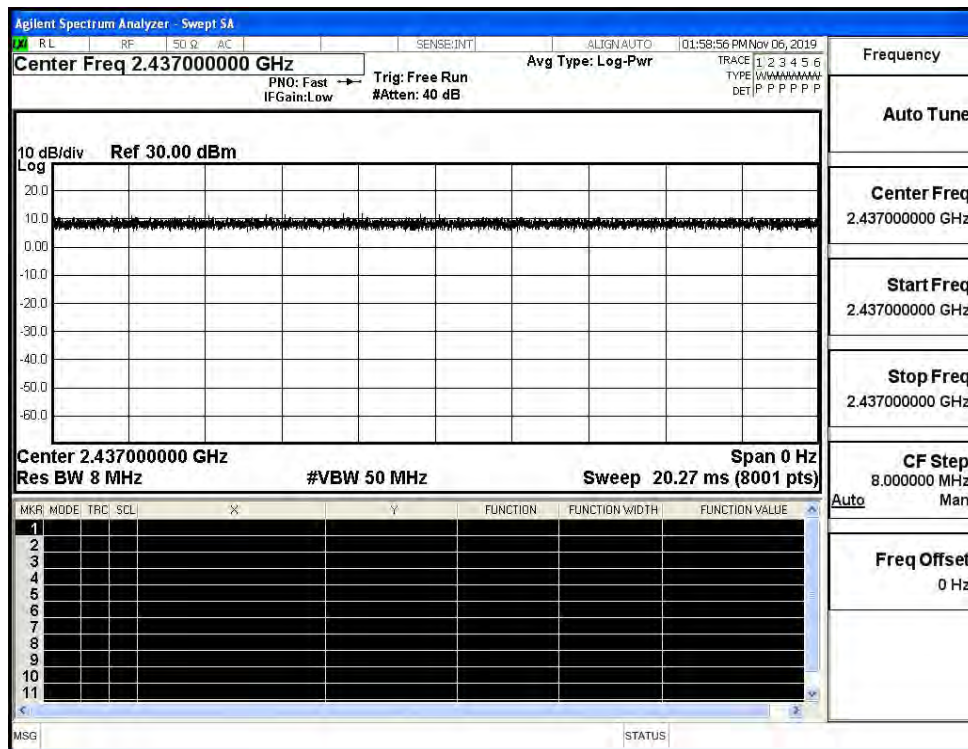
Duty Cycle_11B_2437_Ant1



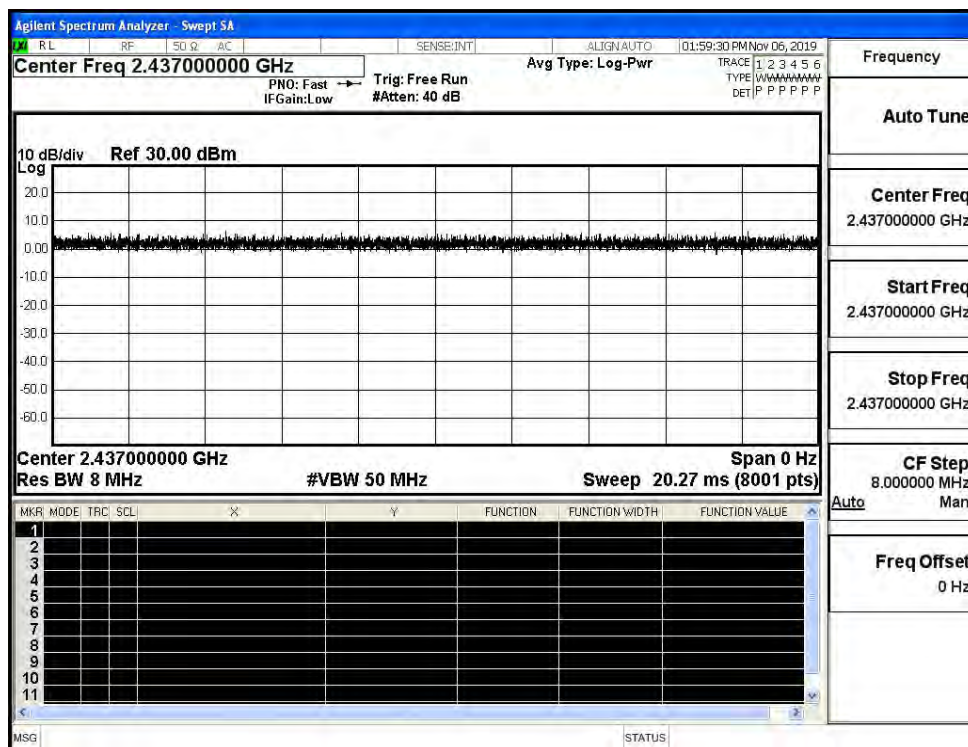
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



Duty Cycle_11N40SISO_2437_Ant1

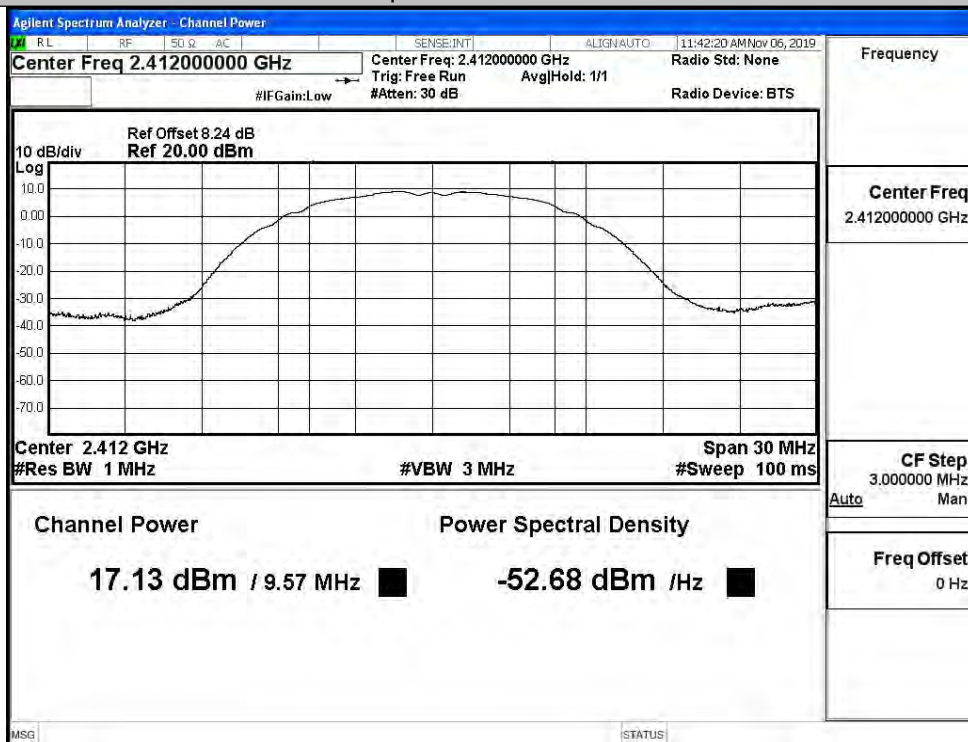


A.2 Maximum Conducted Output Power

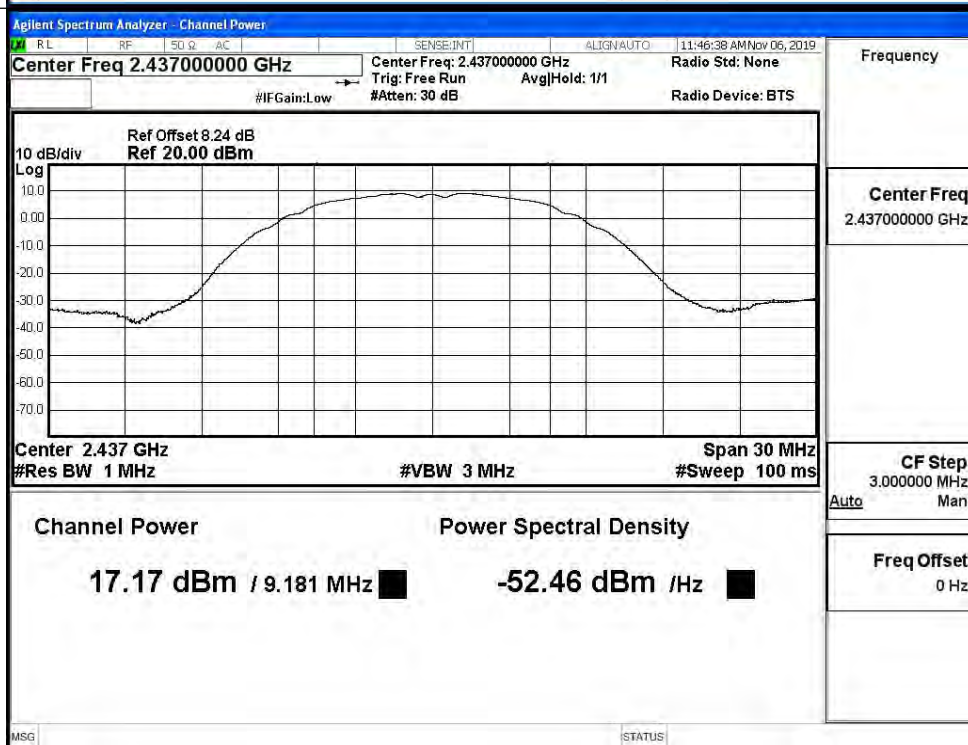
Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	17.13	30	PASS
	MCH	17.17	30	PASS
	HCH	16.82	30	PASS
11G	LCH	20.14	30	PASS
	MCH	22.84	30	PASS
	HCH	19.15	30	PASS
11N20SISO	LCH	20.02	30	PASS
	MCH	22.63	30	PASS
	HCH	18.47	30	PASS
11N40SISO	LCH	19.41	30	PASS
	MCH	22.83	30	PASS
	HCH	18.65	30	PASS

Test Graphs

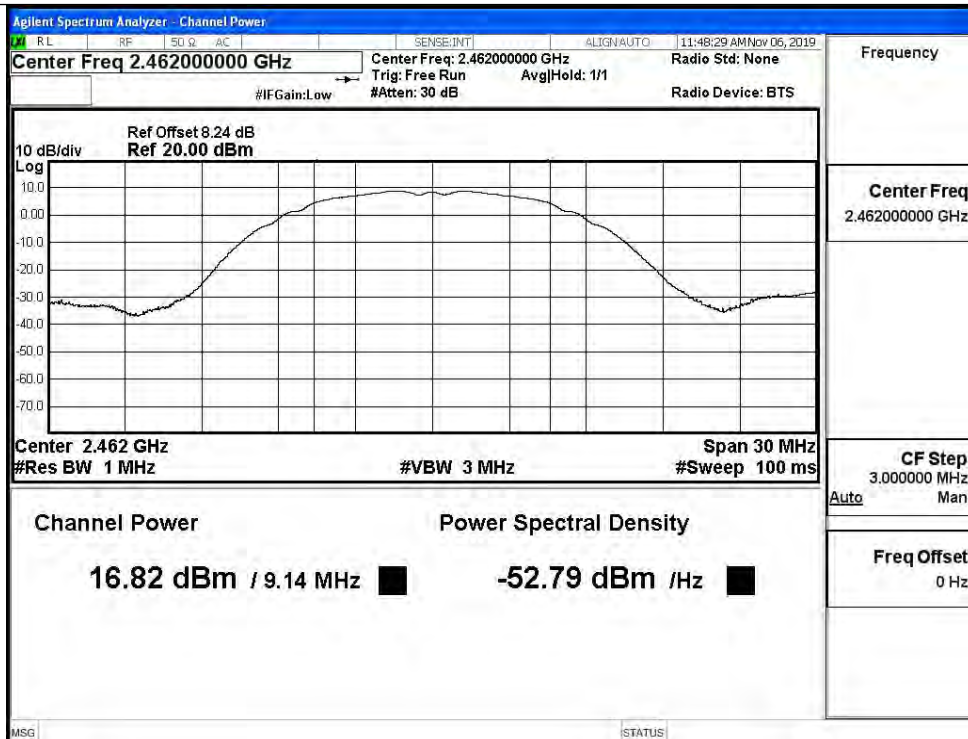
11B/LCH



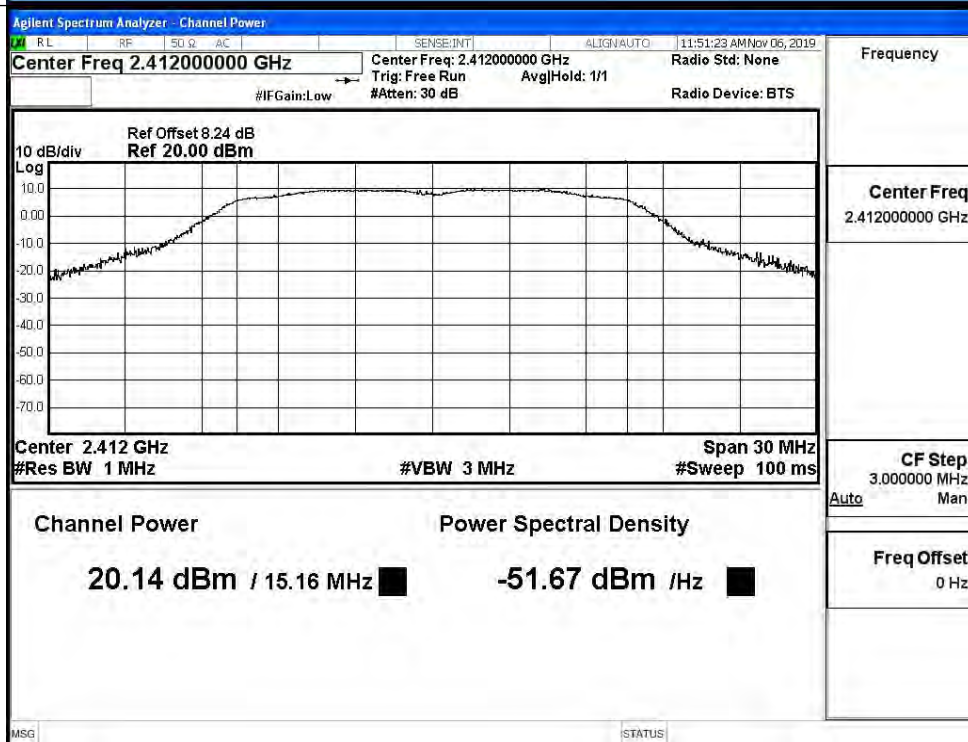
11B/MCH



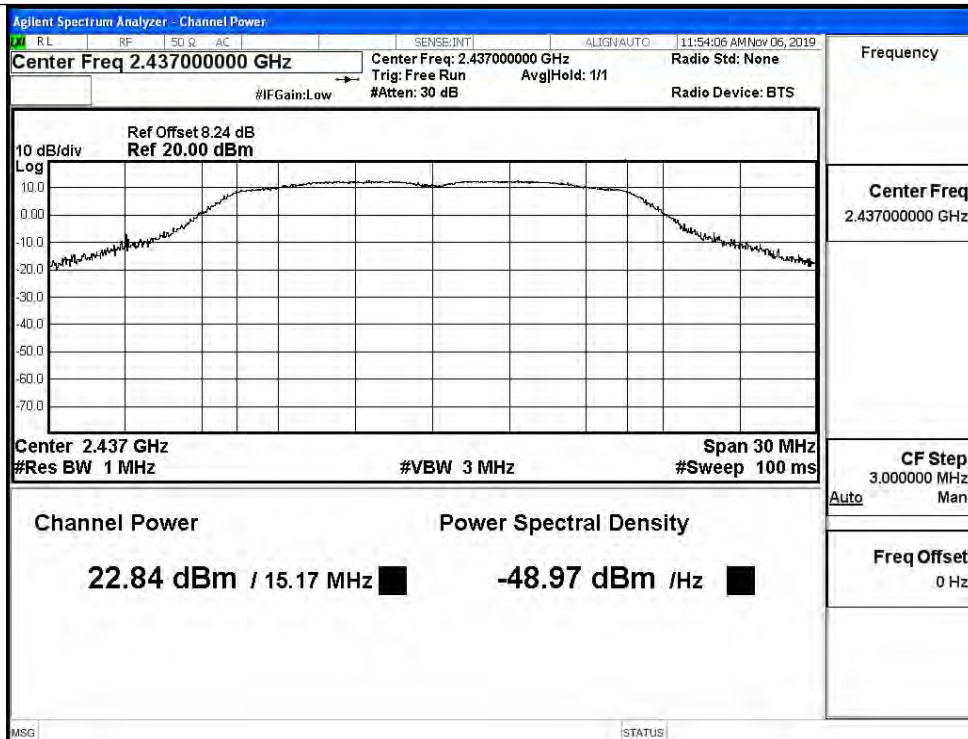
11B/HCH



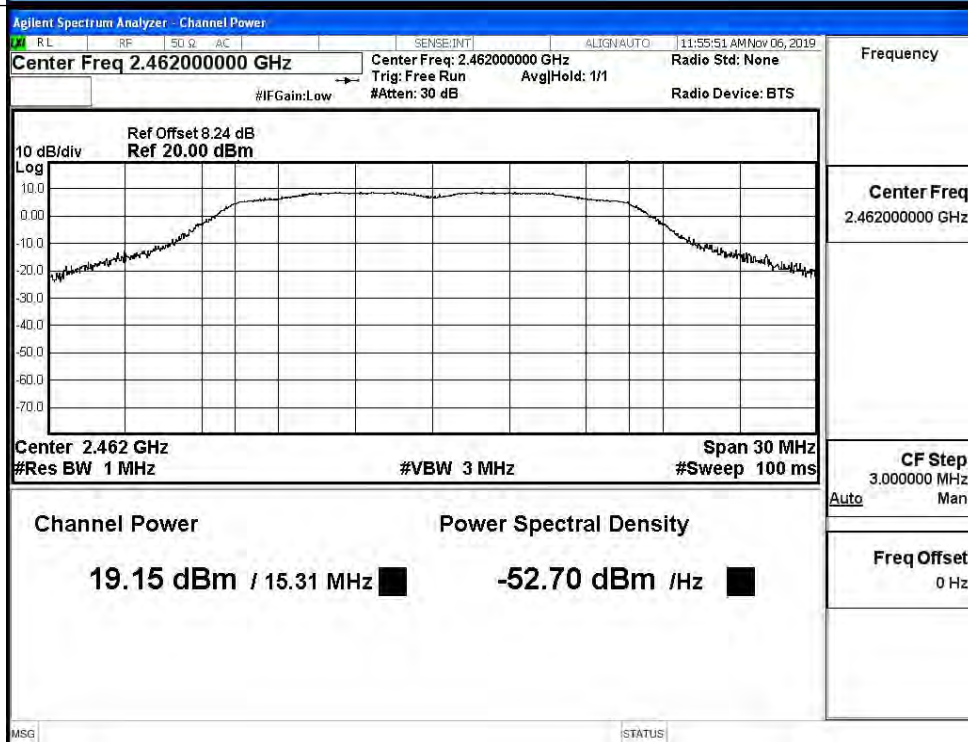
11G/LCH



11G/MCH



11G/HCH



11N20SISO/LCH	Agilent Spectrum Analyzer - Channel Power RL RF 50 Ω AC SENSE:INT ALIGN: AUTO 01:31:21 PM Nov 06, 2019 Center Freq 2.412000000 GHz Center Freq: 2.412000000 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 8.24 dB Ref 20.00 dBm Log Center 2.412 GHz #Res BW 1 MHz #VBW 3 MHz Span 30 MHz #Sweep 100 ms Channel Power Power Spectral Density 20.02 dBm / 15.63 MHz -51.92 dBm /Hz MSG STATUS Frequency Center Freq 2.412000000 GHz CF Step 3.000000 MHz Auto Man Freq Offset 0 Hz
11N20SISO/MCH	Agilent Spectrum Analyzer - Channel Power RL RF 50 Ω AC SENSE:INT ALIGN: AUTO 01:34:31 PM Nov 06, 2019 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 8.24 dB Ref 20.00 dBm Log Center 2.437 GHz #Res BW 1 MHz #VBW 3 MHz Span 30 MHz #Sweep 100 ms Channel Power Power Spectral Density 22.63 dBm / 15.13 MHz -49.17 dBm /Hz MSG STATUS

Frequency

Center Freq

2.437000000 GHz

CF Step

3.000000 MHz

Auto

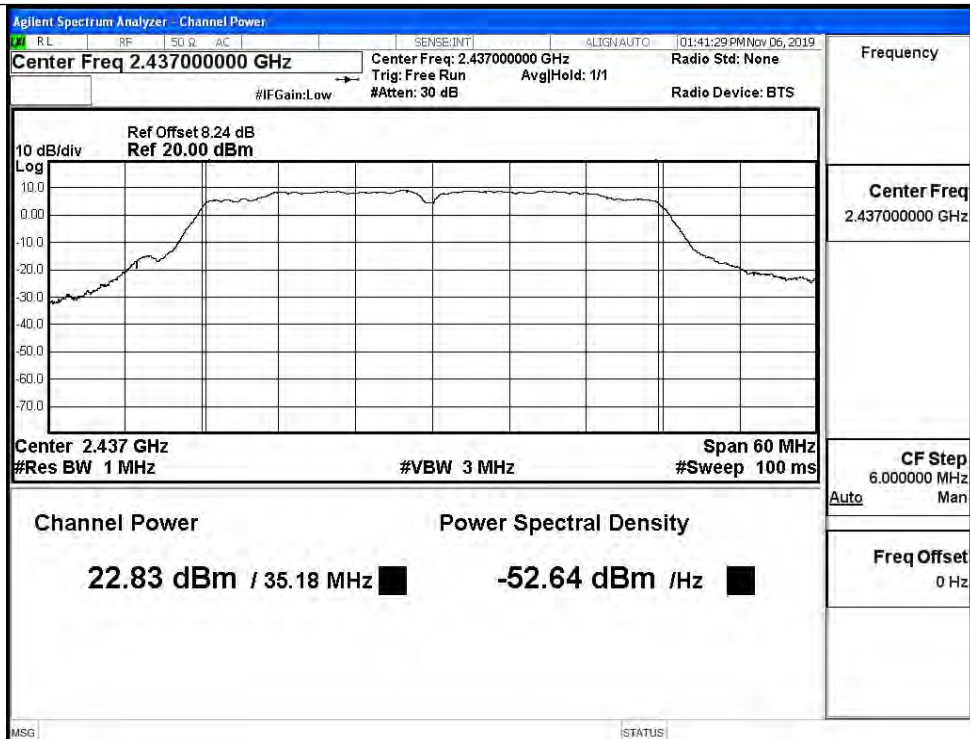
Man

Freq Offset

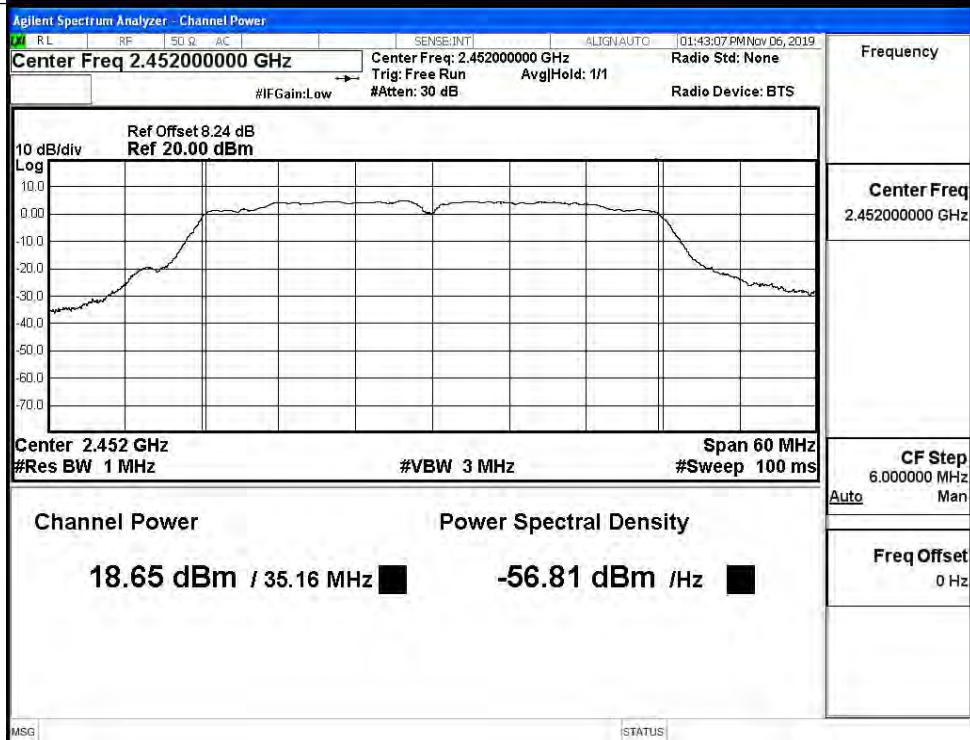
0 Hz

11N20SISO/HCH	Agilent Spectrum Analyzer - Channel Power RL RF 50 Ω AC SENSE:INT ALIGN: AUTO 01:36:12 PM Nov 06, 2019 Center Freq 2.462000000 GHz Center Freq: 2.462000000 GHz Trig: Free Run Avg Hold: 1/1 Radio Std: None #IFGain: Low #Atten: 30 dB Radio Device: BTS 10 dB/div Ref Offset 8.24 dB Ref 20.00 dBm Log Center 2.462 GHz #Res BW 1 MHz #VBW 3 MHz Span 30 MHz #Sweep 100 ms Channel Power Power Spectral Density 18.47 dBm / 15.13 MHz -53.32 dBm /Hz MSG STATUS	Frequency Center Freq 2.462000000 GHz CF Step 3.000000 MHz Auto Man Freq Offset 0 Hz
11N40SISO/LCH	Agilent Spectrum Analyzer - Channel Power RL RF 50 Ω AC SENSE:INT ALIGN: AUTO 01:39:03 PM Nov 06, 2019 Center Freq 2.422000000 GHz Center Freq: 2.422000000 GHz Trig: Free Run Avg Hold: 1/1 Radio Std: None #IFGain: Low #Atten: 30 dB Radio Device: BTS 10 dB/div Ref Offset 8.24 dB Ref 20.00 dBm Log Center 2.422 GHz #Res BW 1 MHz #VBW 3 MHz Span 60 MHz #Sweep 100 ms Channel Power Power Spectral Density 19.41 dBm / 35.17 MHz -56.05 dBm /Hz MSG STATUS	Frequency Center Freq 2.422000000 GHz CF Step 6.000000 MHz Auto Man Freq Offset 0 Hz

11N40SISO/MCH



11N40SISO/HCH

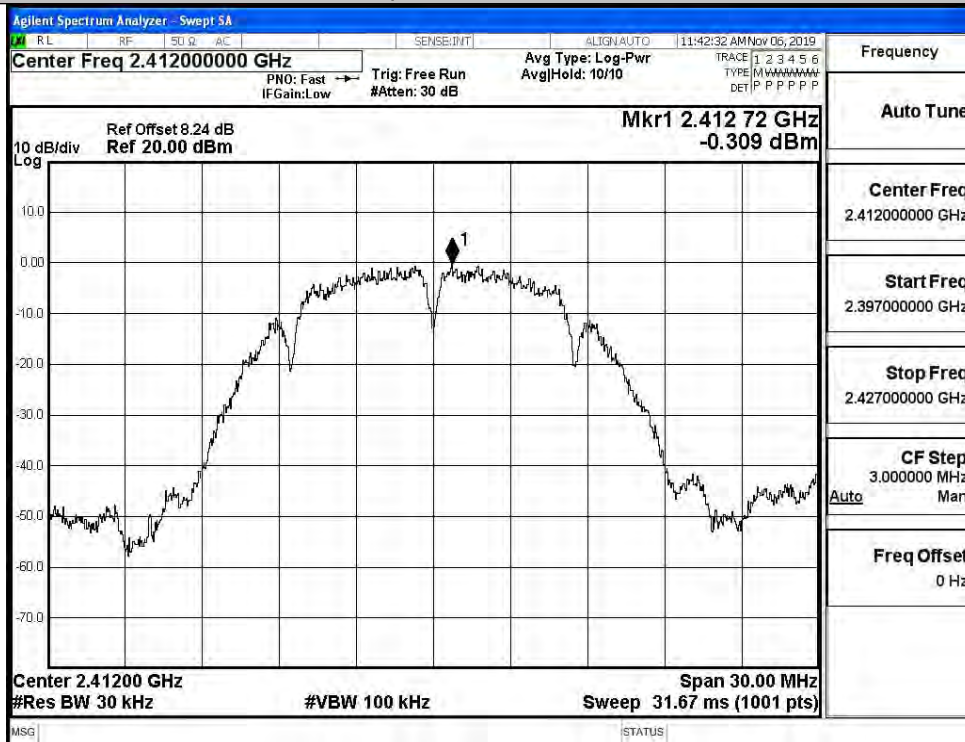


A.3 Maximum Power Spectral Density

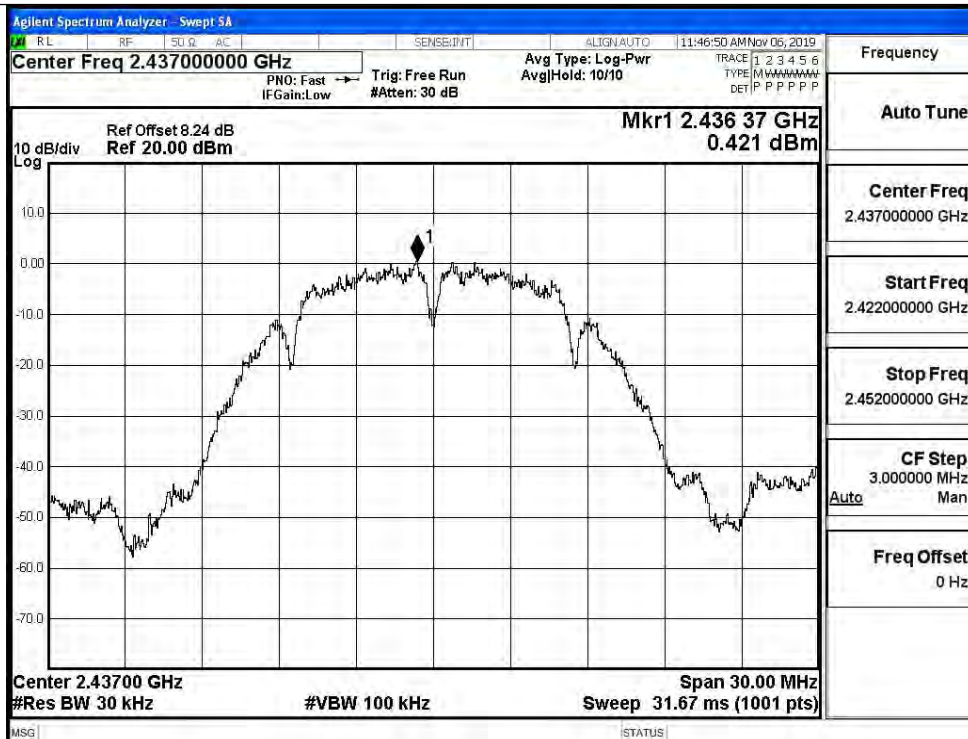
Mode	Channel	Meas.Level [dBm/30KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-0.309	8	PASS
	MCH	0.421	8	PASS
	HCH	0.500	8	PASS
11G	LCH	-3.347	8	PASS
	MCH	0.204	8	PASS
	HCH	-4.339	8	PASS
11N20SISO	LCH	-2.943	8	PASS
	MCH	-0.258	8	PASS
	HCH	-4.516	8	PASS
11N40SISO	LCH	-6.792	8	PASS
	MCH	-4.301	8	PASS
	HCH	-7.581	8	PASS

Test Graphs

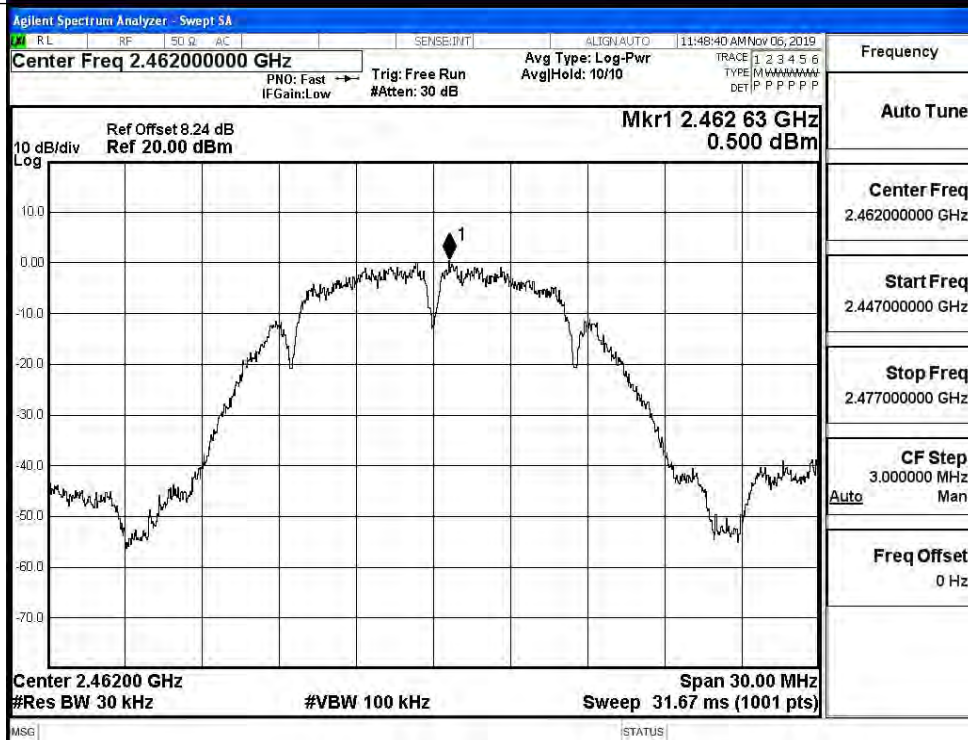
11B/LCH



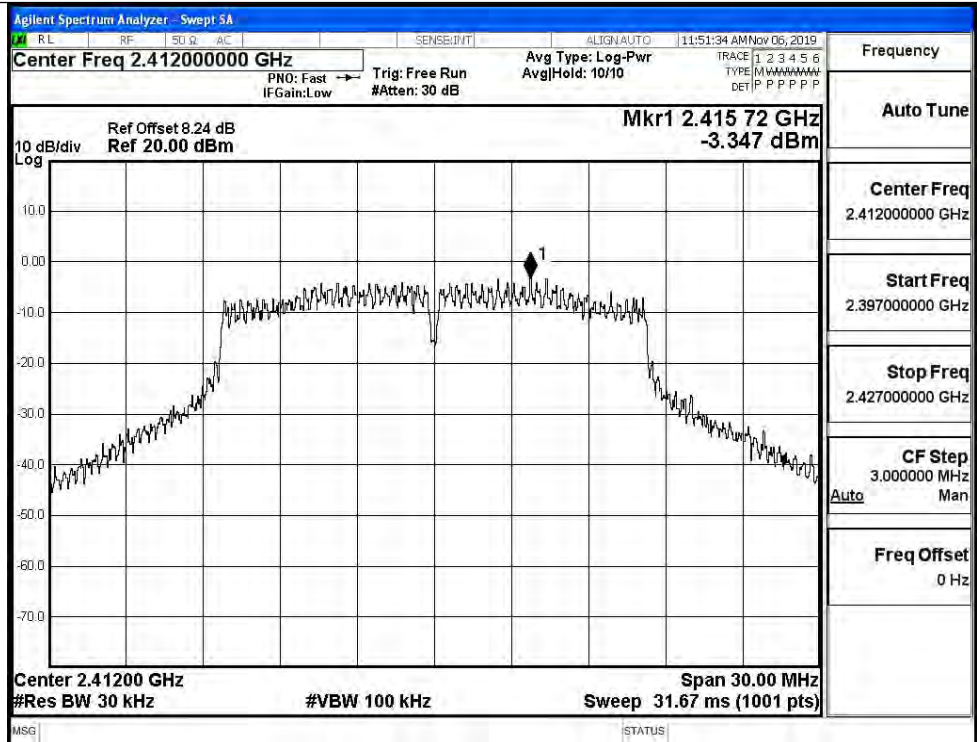
11B/MCH



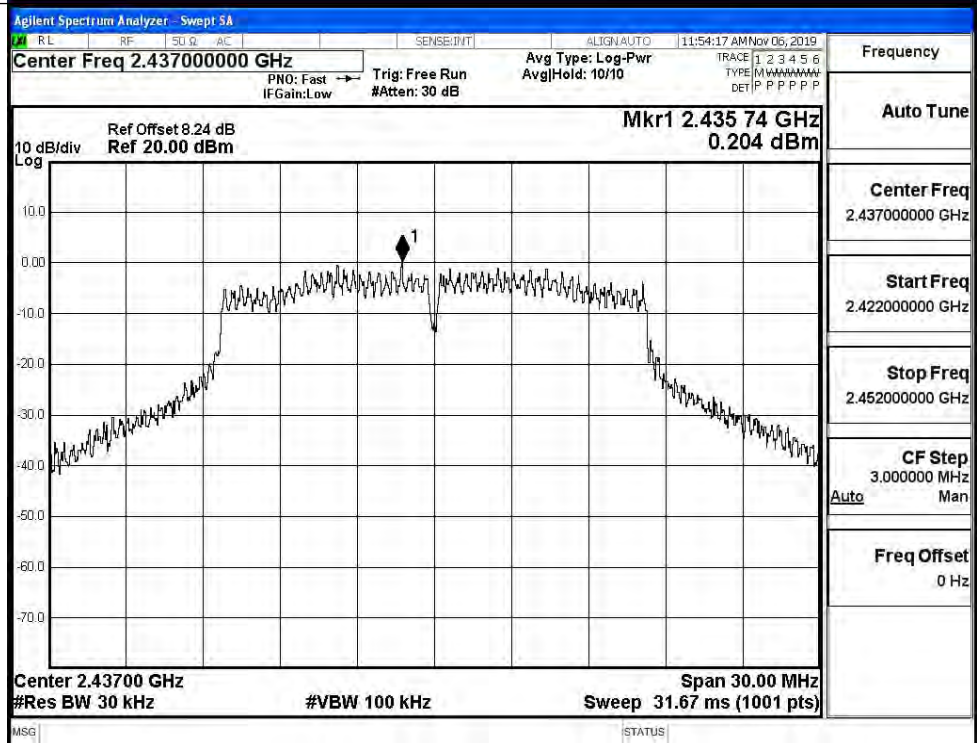
11B/HCH



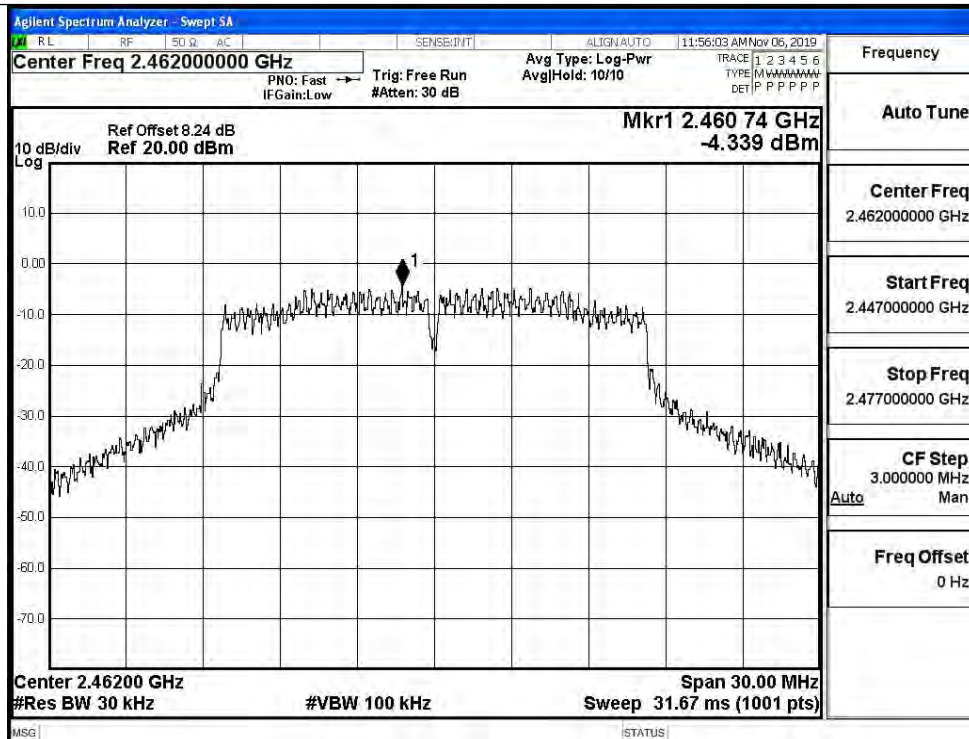
11G/LCH



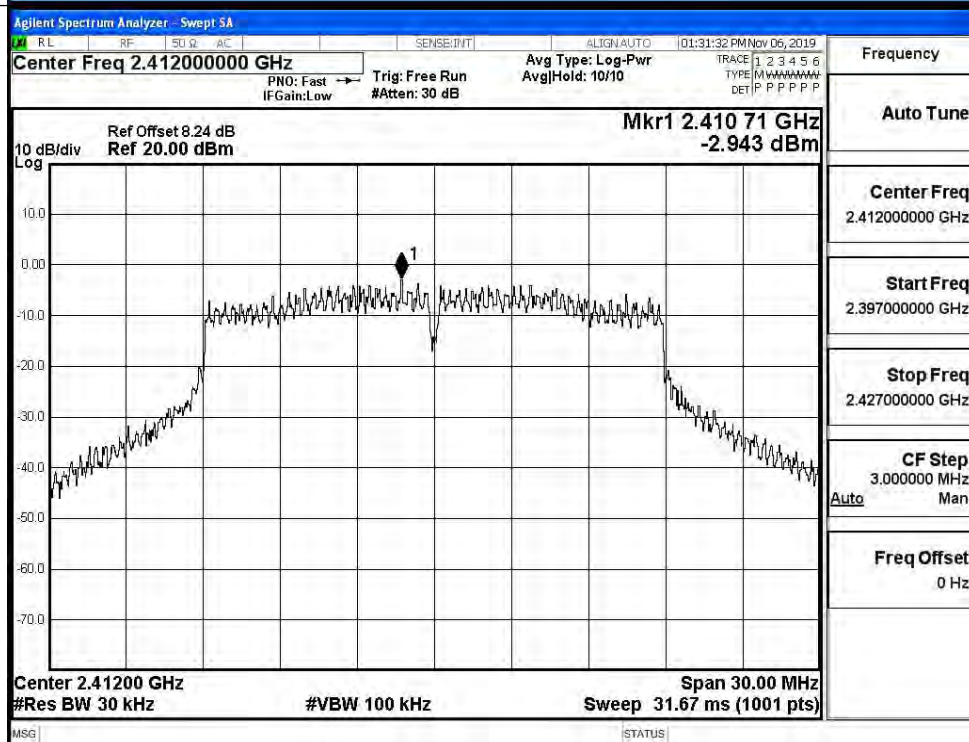
11G/MCH

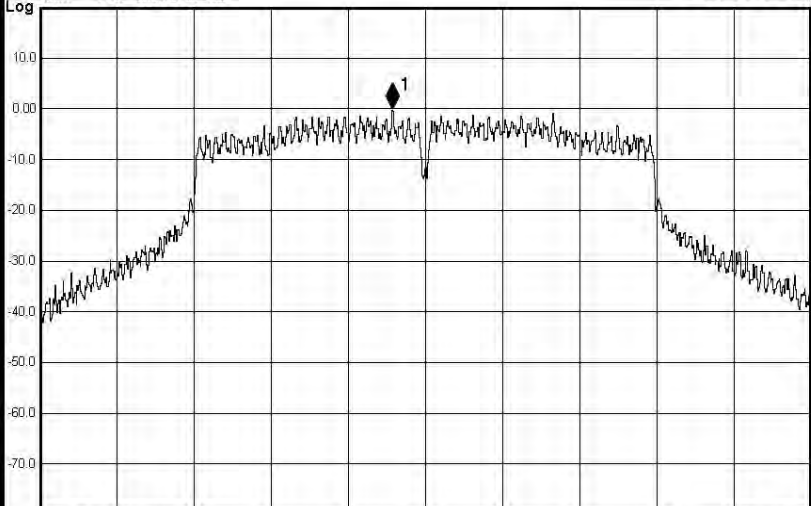
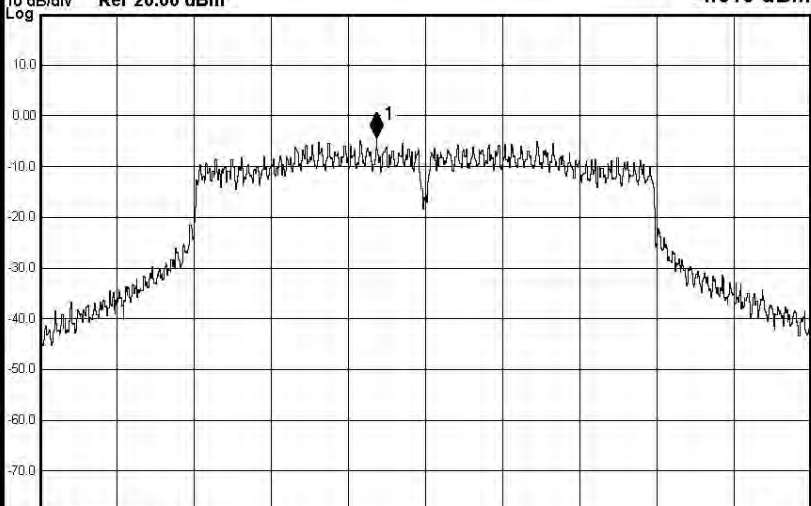


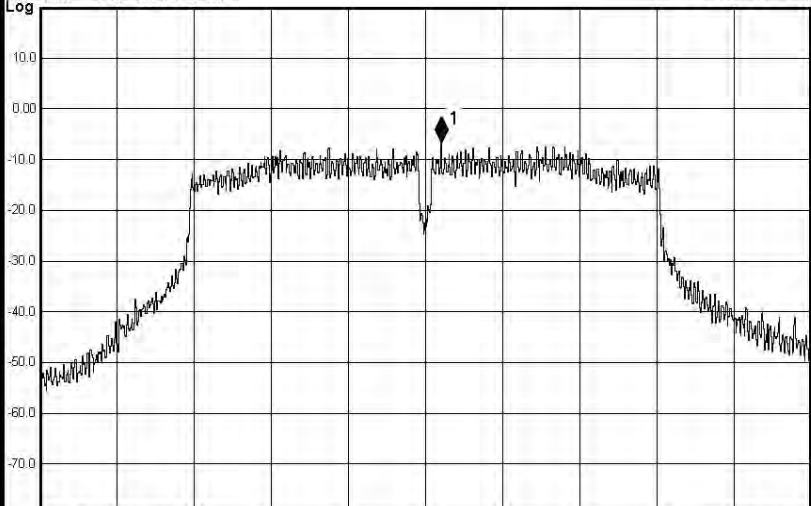
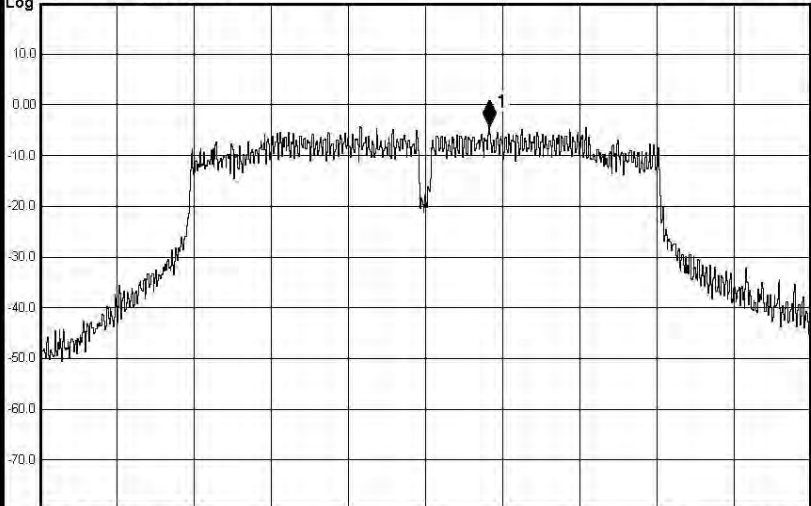
11G/HCH



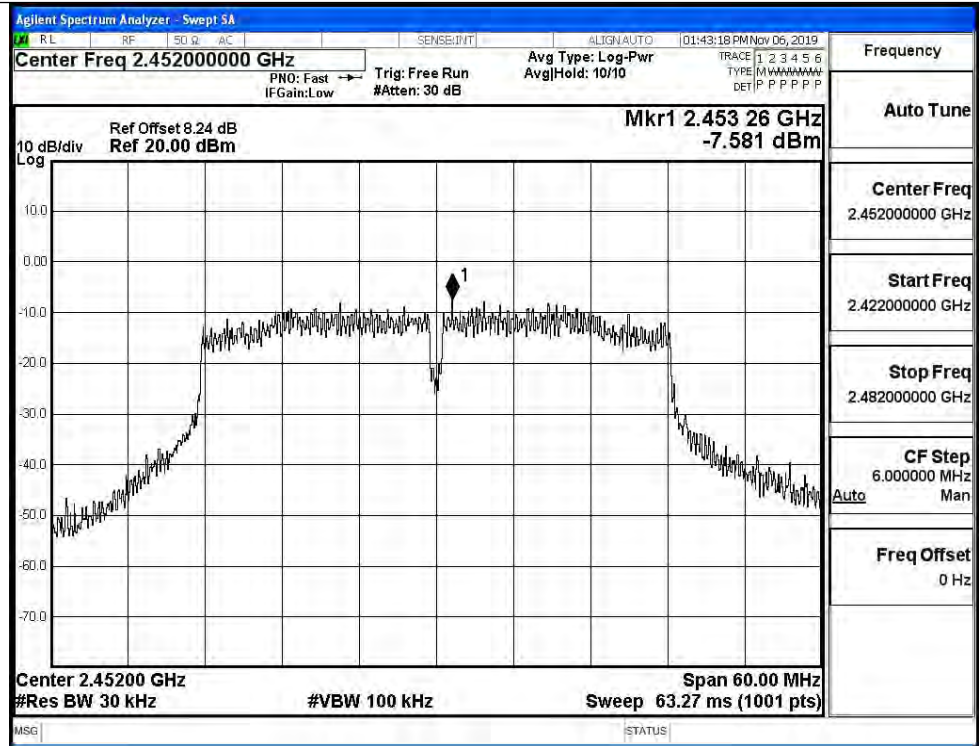
11N20SISO/LCH



11N20SISO/MCH	Agilent Spectrum Analyzer - Swept SA RL RF 50 Ω AC SENSE: [V/T] ALIGN: AUTO 01:34:43 PM Nov 06, 2019 Center Freq 2.437000000 GHz PNO: Fast IF Gain: Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr AvgHold: 10/10 Ref Offset 8.24 dB Ref 20.00 dBm Mkr1 2.435 71 GHz -0.258 dBm 10 dB/div Log  Center 2.43700 GHz #Res BW 30 kHz #VBW 100 kHz Span 30.00 MHz Sweep 31.67 ms (1001 pts) MSG STATUS Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.422000000 GHz Stop Freq 2.452000000 GHz CF Step 3.000000 MHz Auto Man Freq Offset 0 Hz
11N20SISO/HCH	Agilent Spectrum Analyzer - Swept SA RL RF 50 Ω AC SENSE: [V/T] ALIGN: AUTO 01:36:24 PM Nov 06, 2019 Center Freq 2.462000000 GHz PNO: Fast IF Gain: Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr AvgHold: 10/10 Ref Offset 8.24 dB Ref 20.00 dBm Mkr1 2.460 11 GHz -4.516 dBm 10 dB/div Log  Center 2.46200 GHz #Res BW 30 kHz #VBW 100 kHz Span 30.00 MHz Sweep 31.67 ms (1001 pts) MSG STATUS Frequency Auto Tune Center Freq 2.462000000 GHz Start Freq 2.447000000 GHz Stop Freq 2.477000000 GHz CF Step 3.000000 MHz Auto Man Freq Offset 0 Hz

11N40SISO/LCH	Agilent Spectrum Analyzer - Swept SA RL RF 50 Ω AC SENSE: [V/T] ALIGN: AUTO 01:39:15 PM Nov 06, 2019 Center Freq 2.422000000 GHz PNO: Fast IF Gain: Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr AvgHold: 10/10 Ref Offset 8.24 dB Ref 20.00 dBm Mkr1 2.423 26 GHz -6.792 dBm 10 dB/div Log  Center 2.42200 GHz Span 60.00 MHz #Res BW 30 kHz #VBW 100 kHz Sweep 63.27 ms (1001 pts) Frequency Auto Tune Center Freq 2.422000000 GHz Start Freq 2.392000000 GHz Stop Freq 2.452000000 GHz CF Step 6.000000 MHz Auto Man Freq Offset 0 Hz
11N40SISO/MCH	Agilent Spectrum Analyzer - Swept SA RL RF 50 Ω AC SENSE: [V/T] ALIGN: AUTO 01:41:40 PM Nov 06, 2019 Center Freq 2.437000000 GHz PNO: Fast IF Gain: Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr AvgHold: 10/10 Ref Offset 8.24 dB Ref 20.00 dBm Mkr1 2.441 98 GHz -4.301 dBm 10 dB/div Log  Center 2.43700 GHz Span 60.00 MHz #Res BW 30 kHz #VBW 100 kHz Sweep 63.27 ms (1001 pts) Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.407000000 GHz Stop Freq 2.467000000 GHz CF Step 6.000000 MHz Auto Man Freq Offset 0 Hz

11N40SISO/HCH

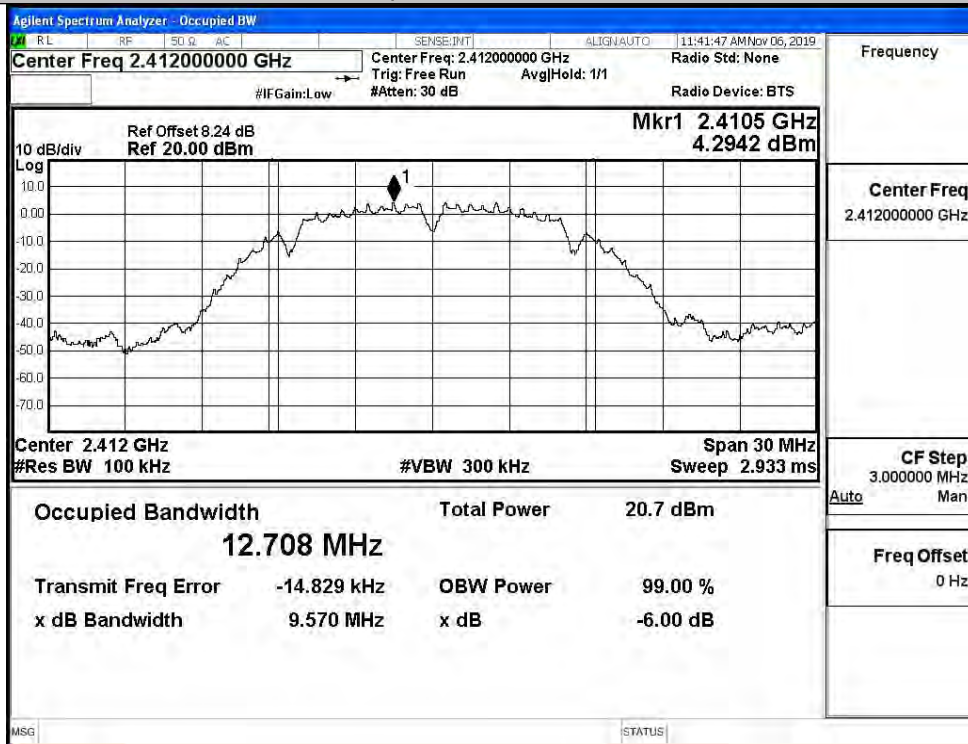


A.4 6dB Bandwidth

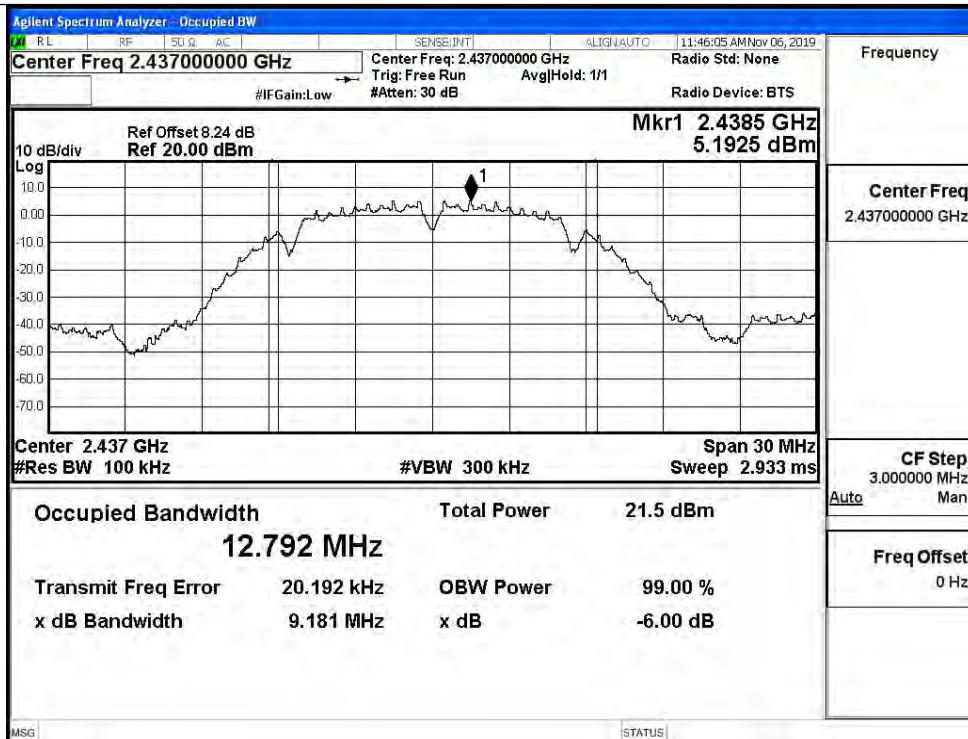
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	9.570	≥ 0.5	PASS
	MCH	9.181	≥ 0.5	PASS
	HCH	9.140	≥ 0.5	PASS
11G	LCH	15.16	≥ 0.5	PASS
	MCH	15.17	≥ 0.5	PASS
	HCH	15.31	≥ 0.5	PASS
11N20SISO	LCH	15.63	≥ 0.5	PASS
	MCH	15.13	≥ 0.5	PASS
	HCH	15.13	≥ 0.5	PASS
11N40SISO	LCH	35.17	≥ 0.5	PASS
	MCH	35.18	≥ 0.5	PASS
	HCH	35.16	≥ 0.5	PASS

Test Graphs

11B/LCH



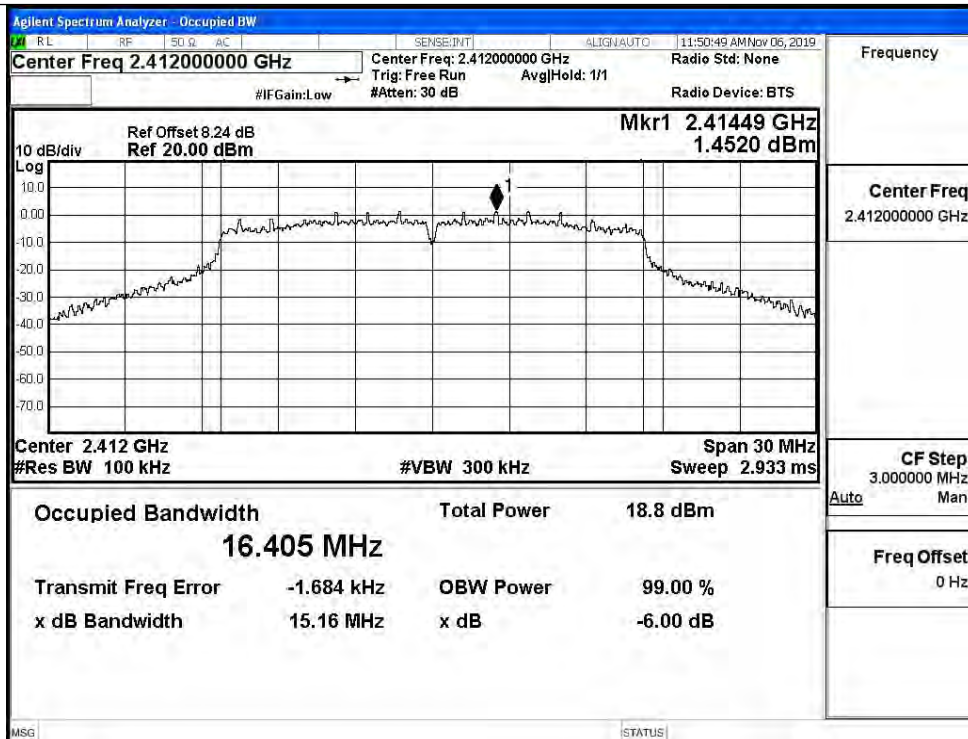
11B/MCH



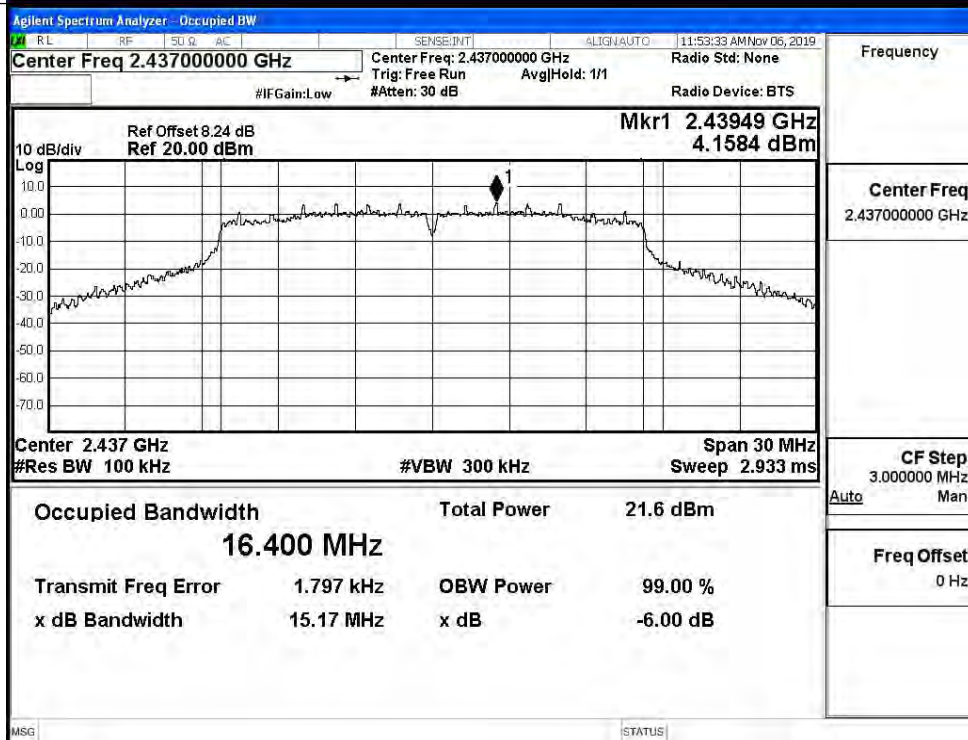
11B/HCH



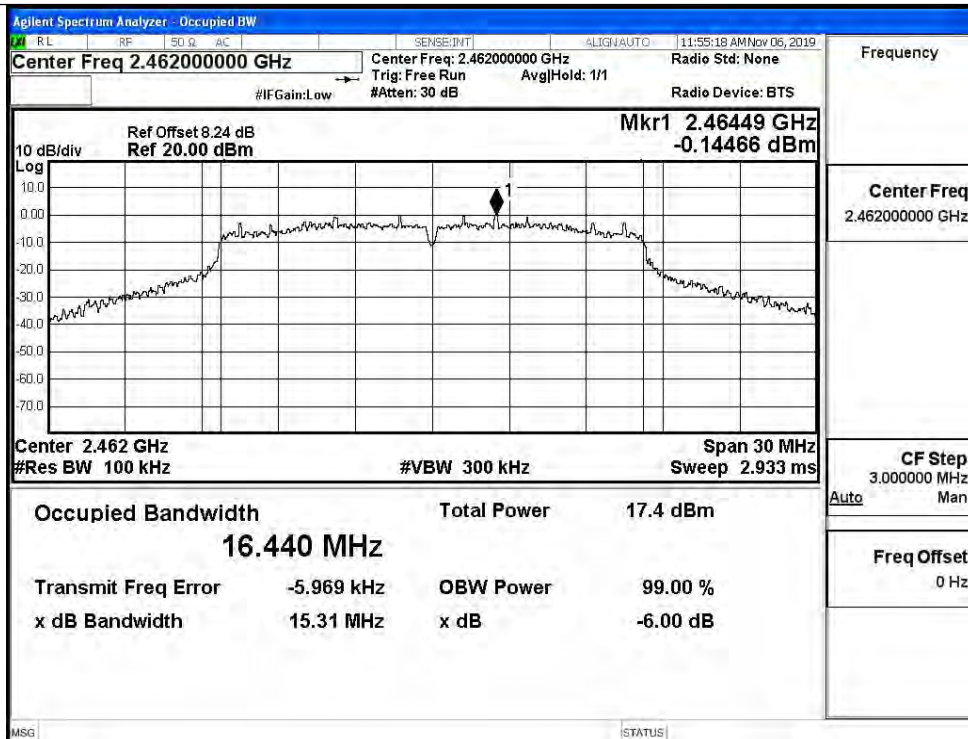
11G/LCH



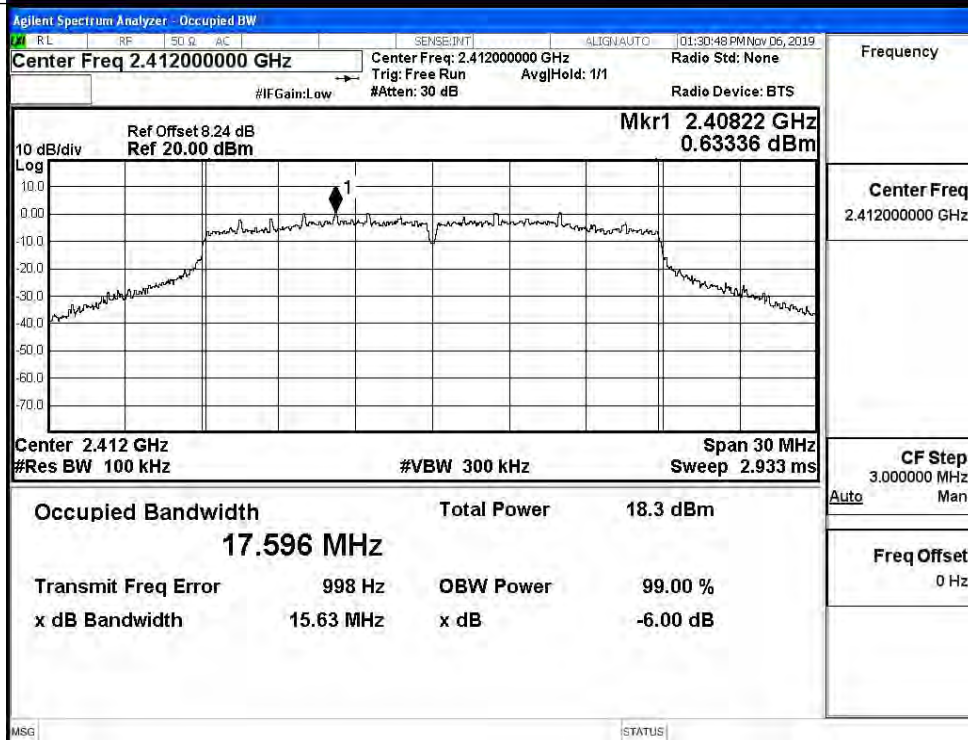
11G/MCH



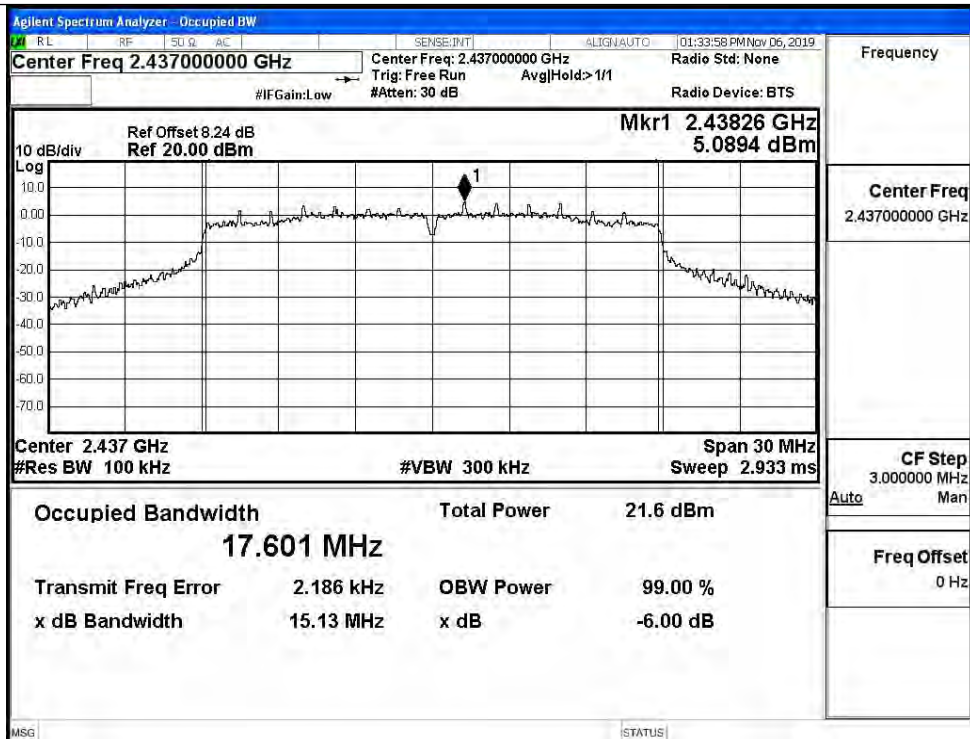
11G/HCH



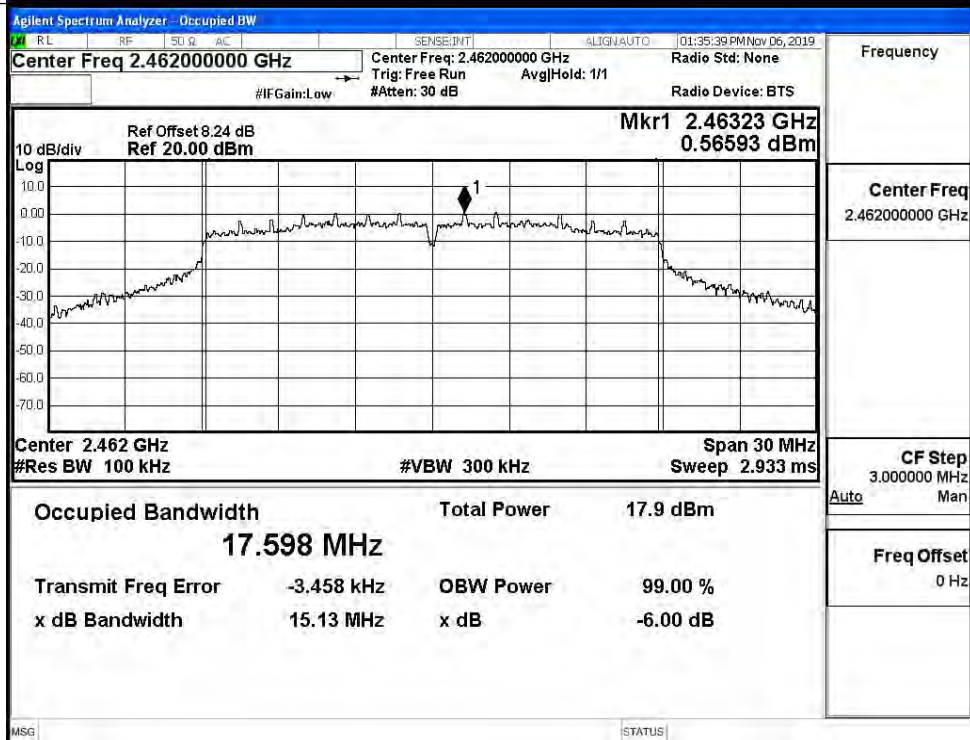
11N20SISO/LCH



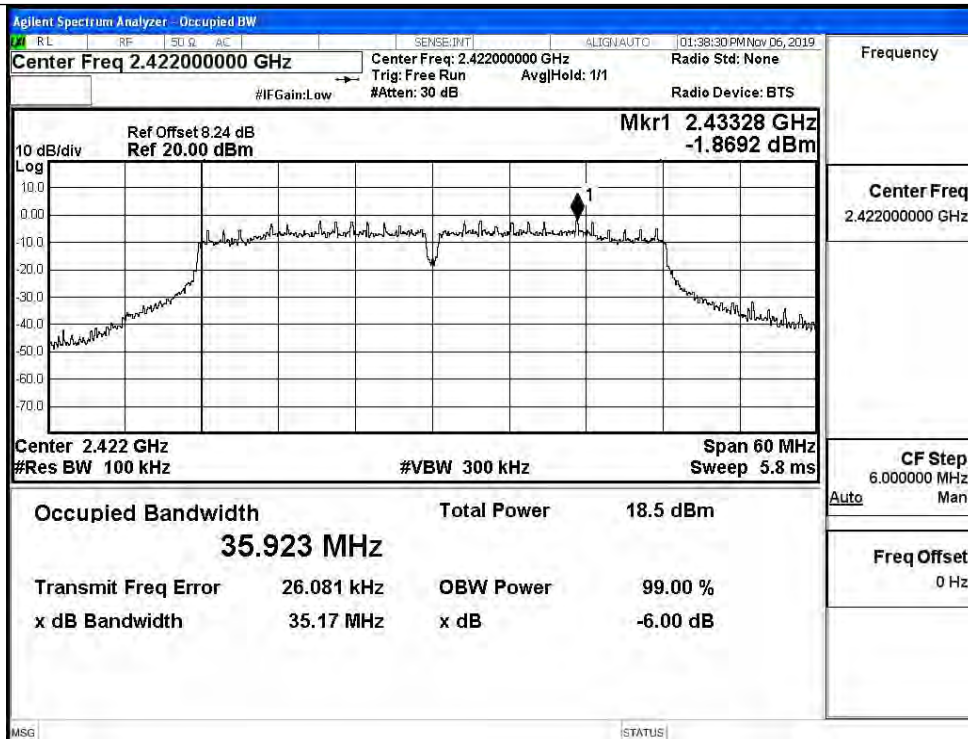
11N20SISO/MCH



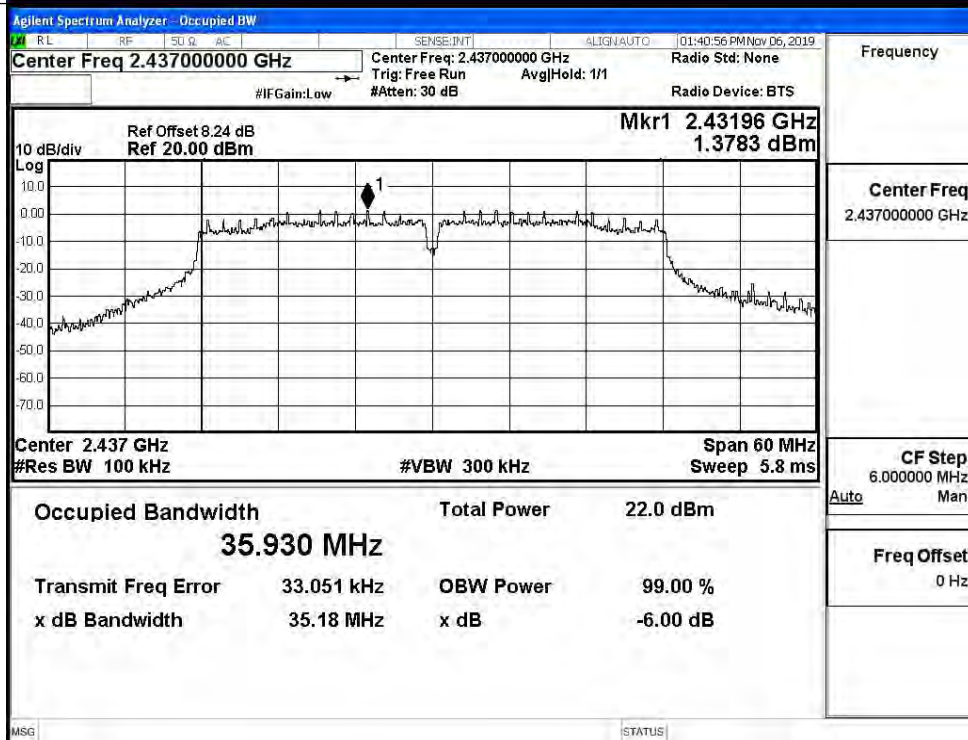
11N20SISO/HCH



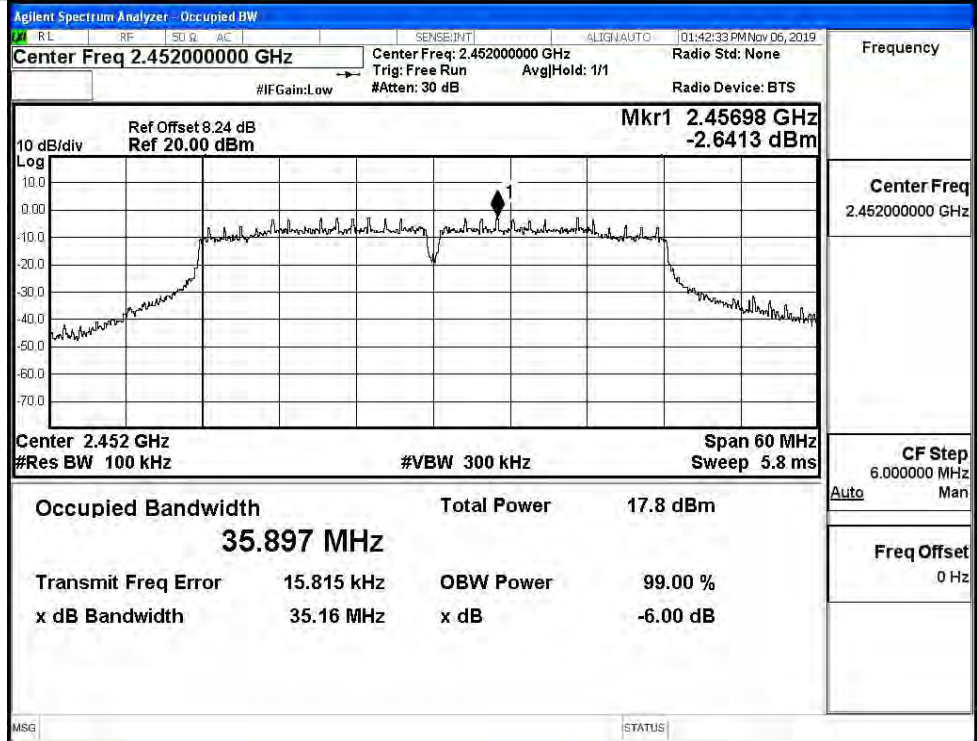
11N40SISO/LCH



11N40SISO/MCH



11N40SISO/HCH

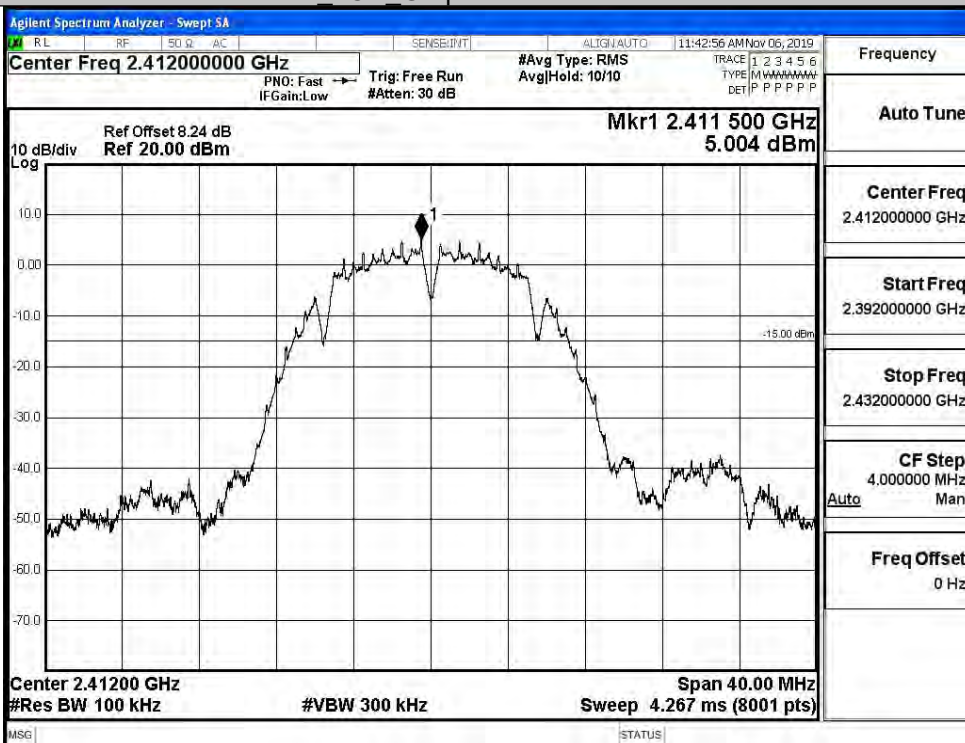


A.5 RF Conducted Spurious Emissions

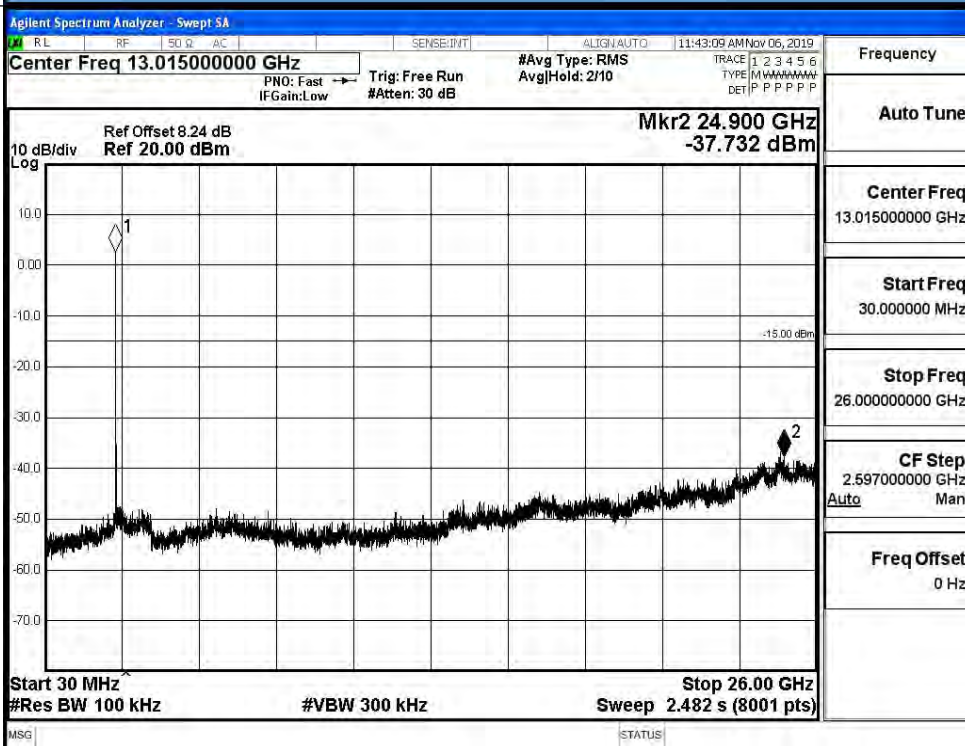
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	5.004	-37.732	-14.996	PASS
	MCH	4.984	-38.034	-15.016	PASS
	HCH	5.02	-37.760	-14.980	PASS
11G	LCH	2.009	-38.268	-17.991	PASS
	MCH	4.54	-37.079	-15.460	PASS
	HCH	0.782	-38.280	-19.218	PASS
11N20 SISO	LCH	1.474	-37.478	-18.526	PASS
	MCH	4.96	-38.070	-15.040	PASS
	HCH	0.758	-37.698	-19.242	PASS
11N40 SISO	LCH	-2.134	-37.788	-22.134	PASS
	MCH	1.439	-37.119	-18.561	PASS
	HCH	-2.797	-37.353	-22.797	PASS

11B LCH Graphs

Pref/11B/LCH

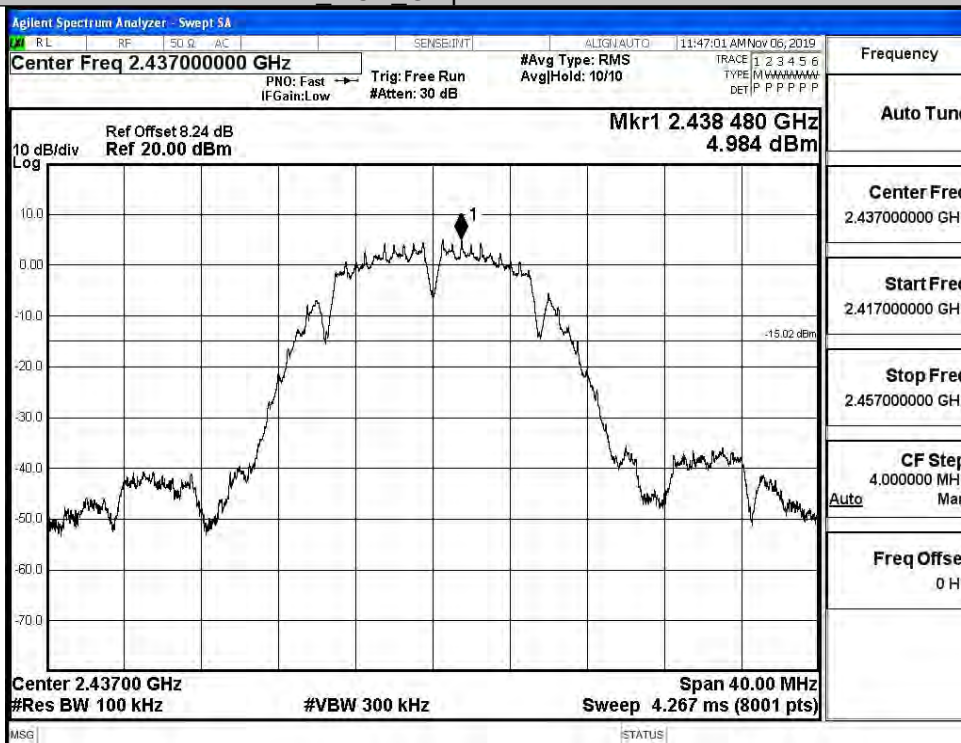


Puw/11B/LCH

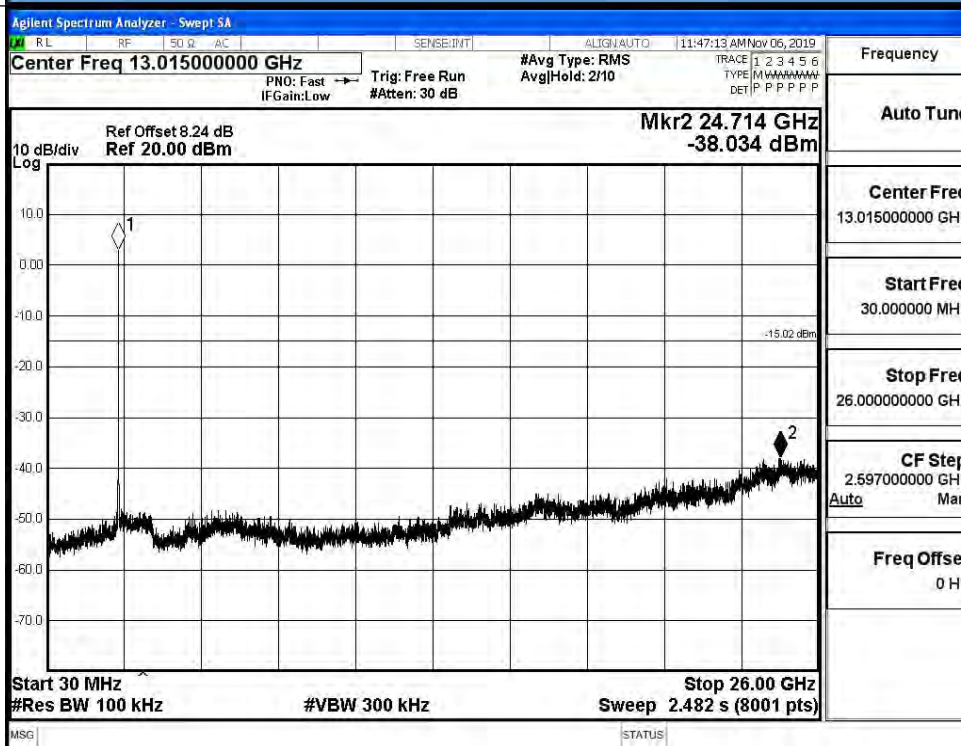


11B MCH Graphs

Pref/11B/MCH

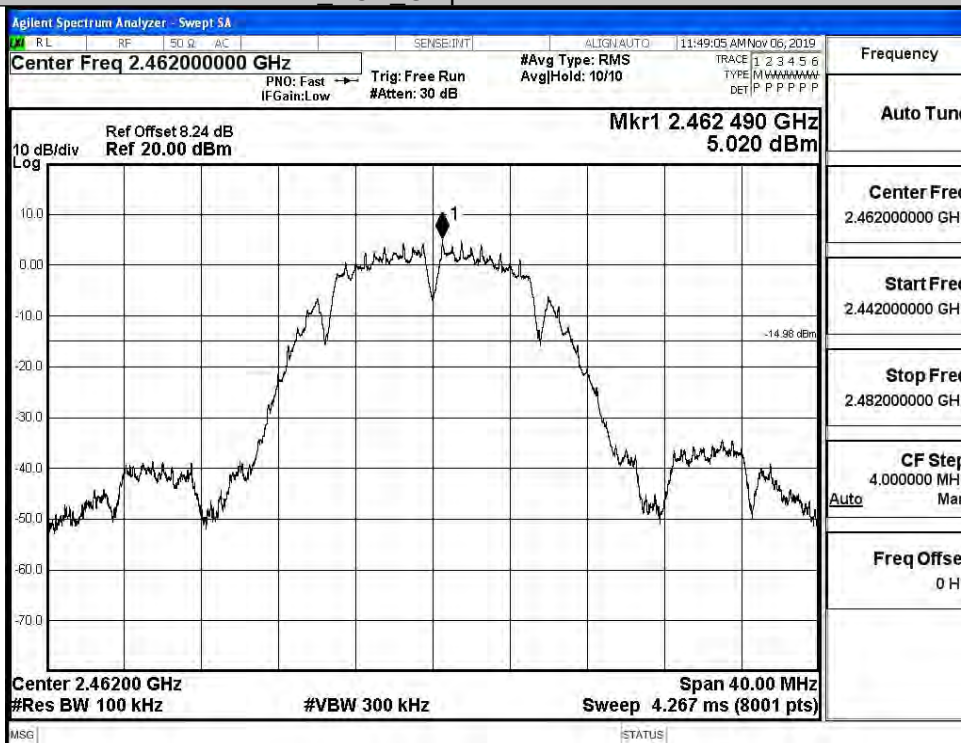


Puw/11B/MCH

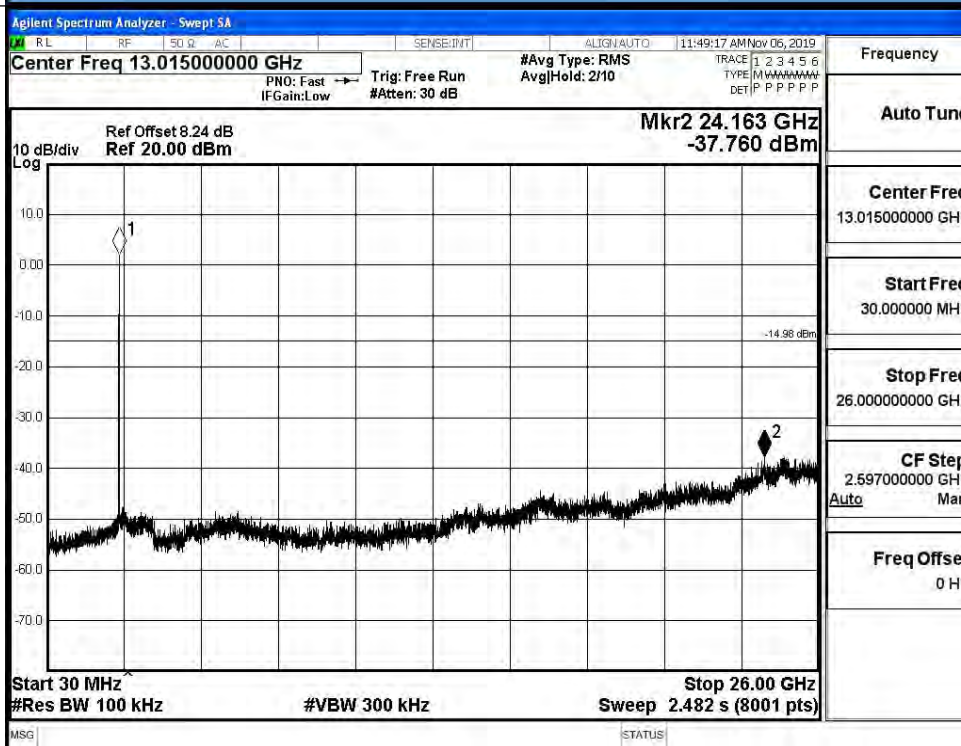


11B HCH Graphs

Pref/11B/HCH

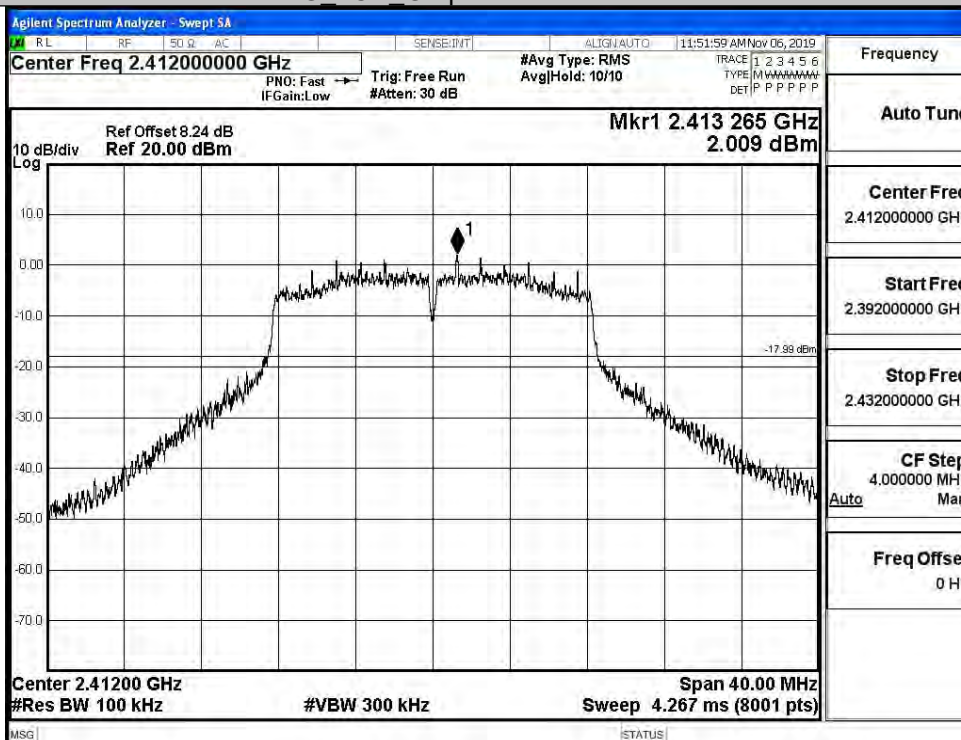


Puw/11B/HCH

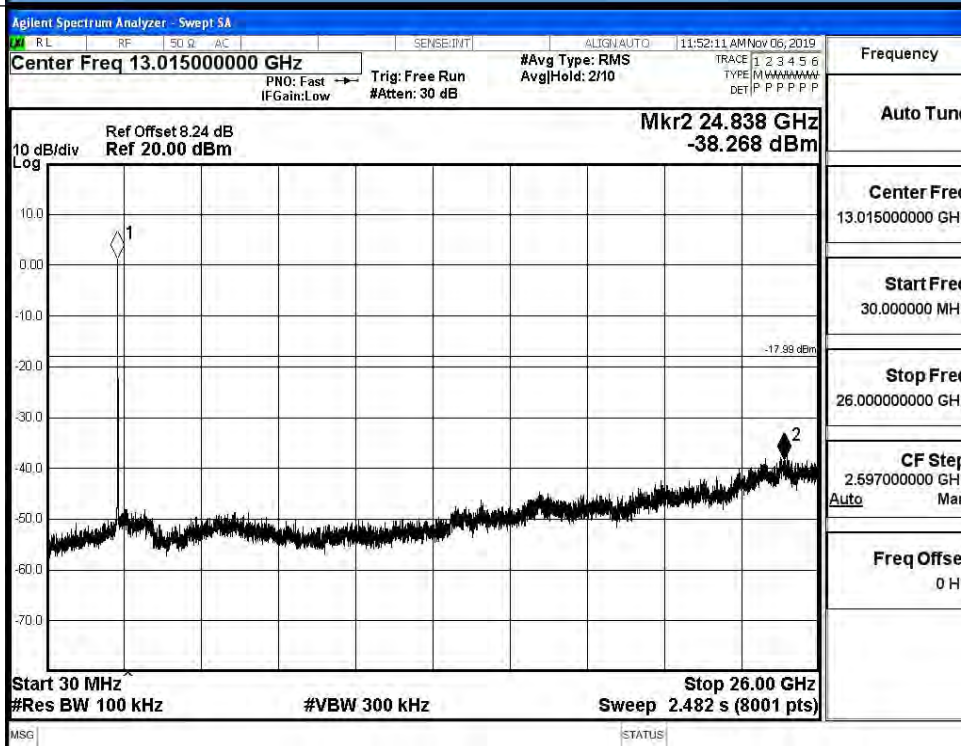


11G LCH Graphs

Pref/11G/LCH

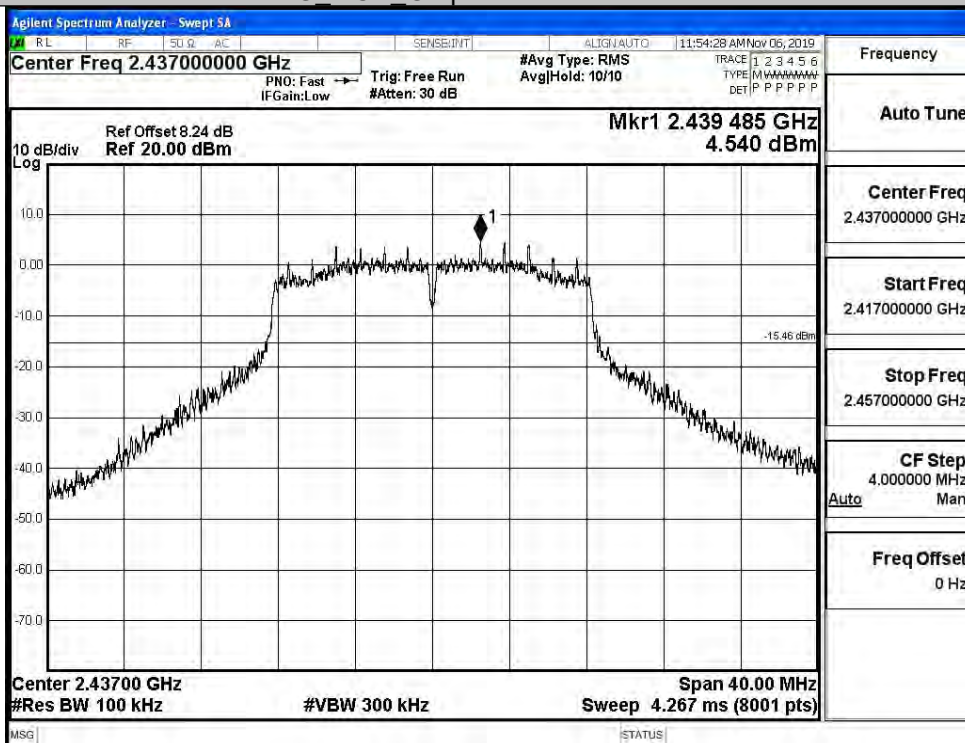


Puw/11G/LCH

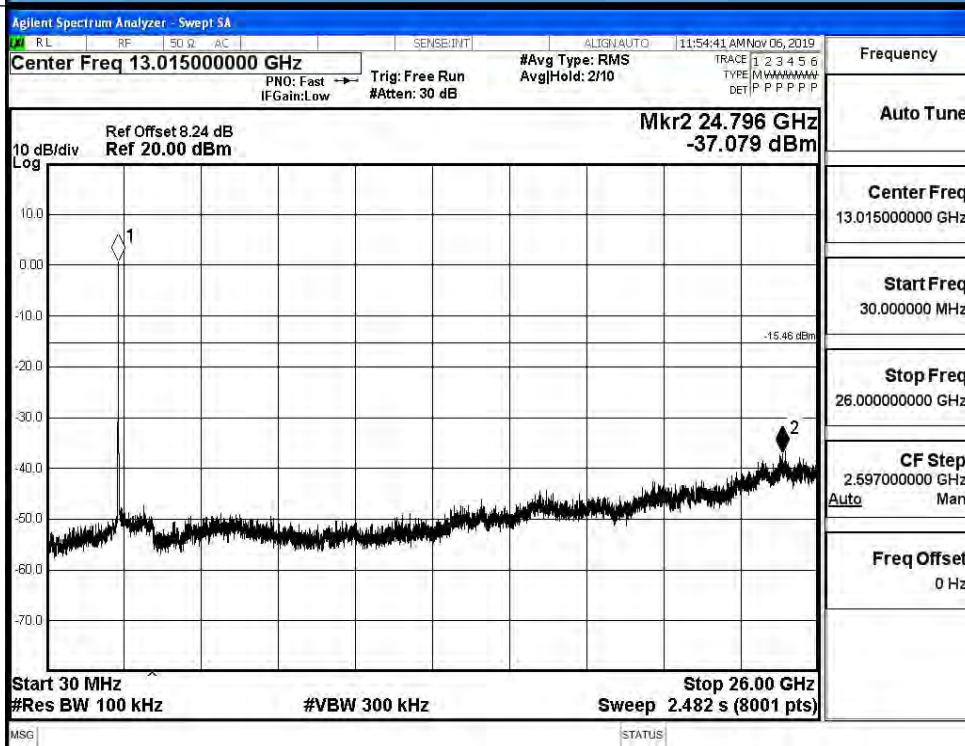


11G MCH Graphs

Pref/11G/MCH

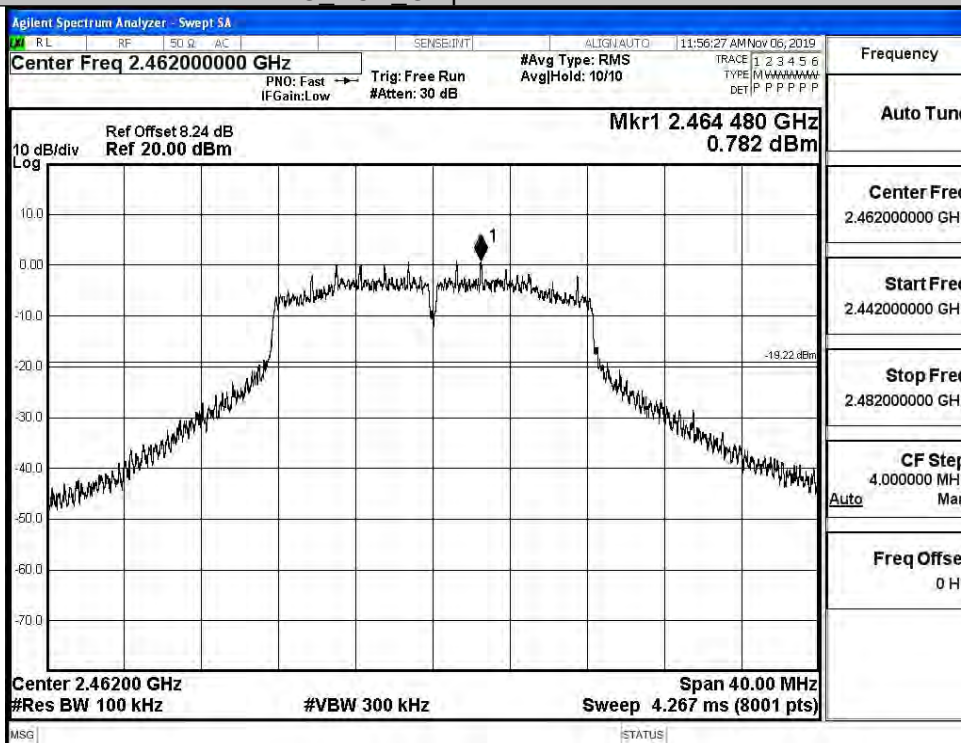


Puw/11G/MCH

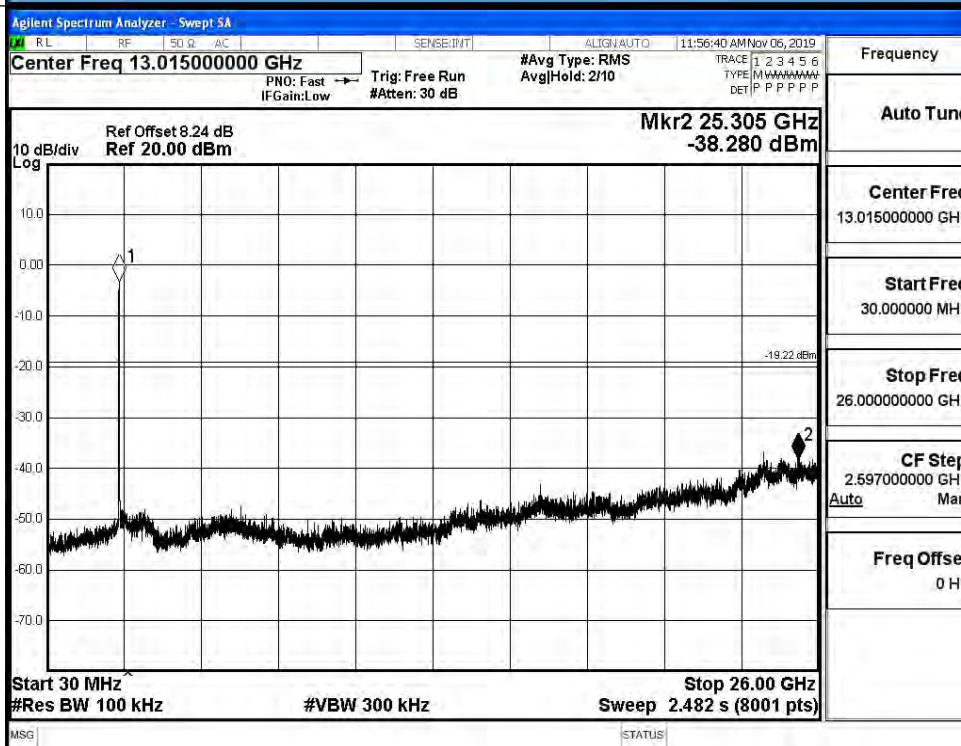


11G HCH Graphs

Pref/11G/HCH

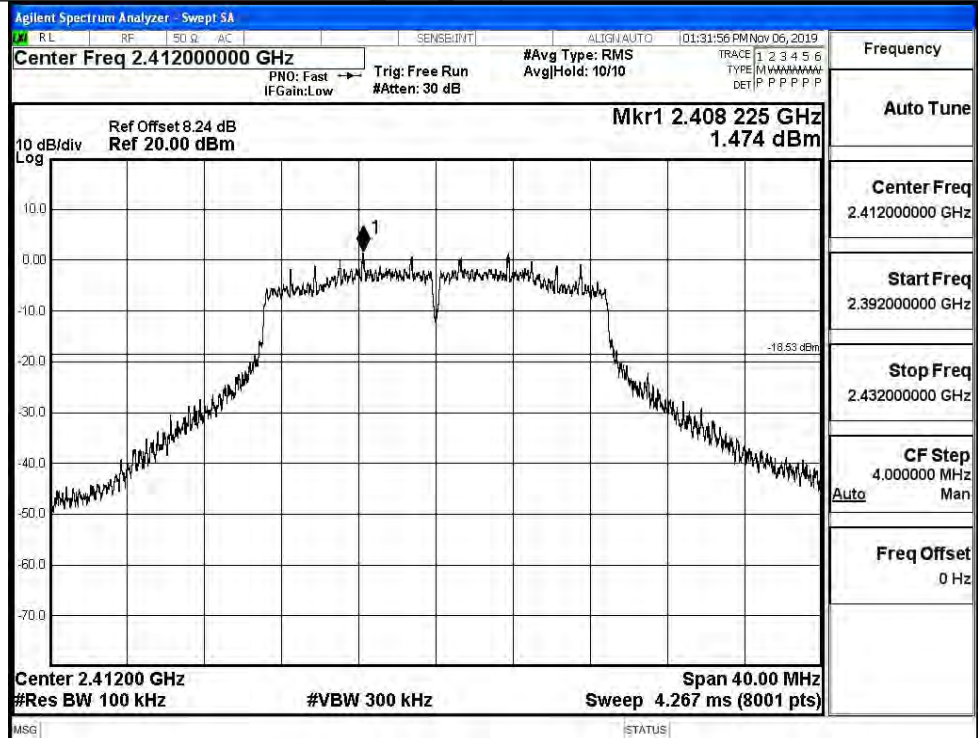


Puw/11G/HCH

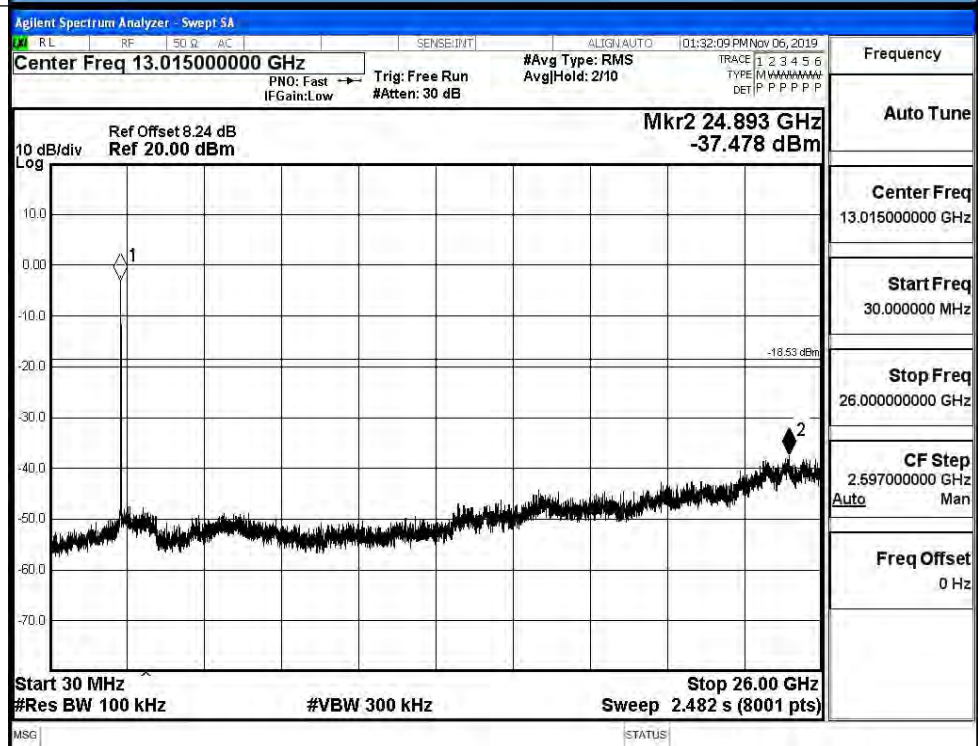


11N20SISO LCH Graphs

Pref/11N20SIS
O/LCH

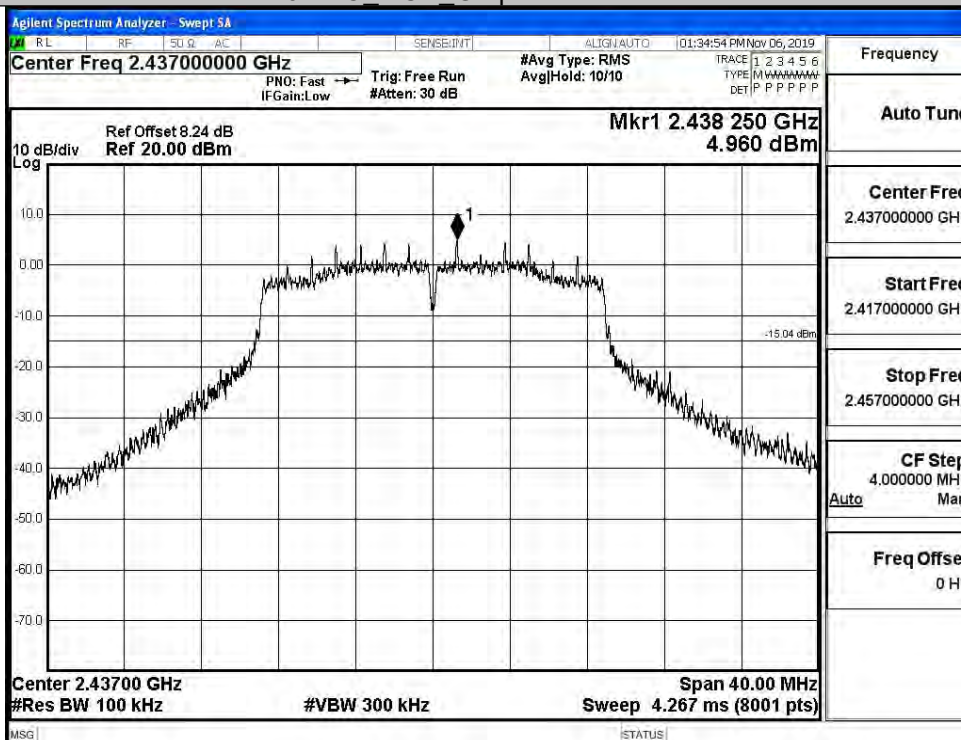


Puw/11N20
SISO/LCH

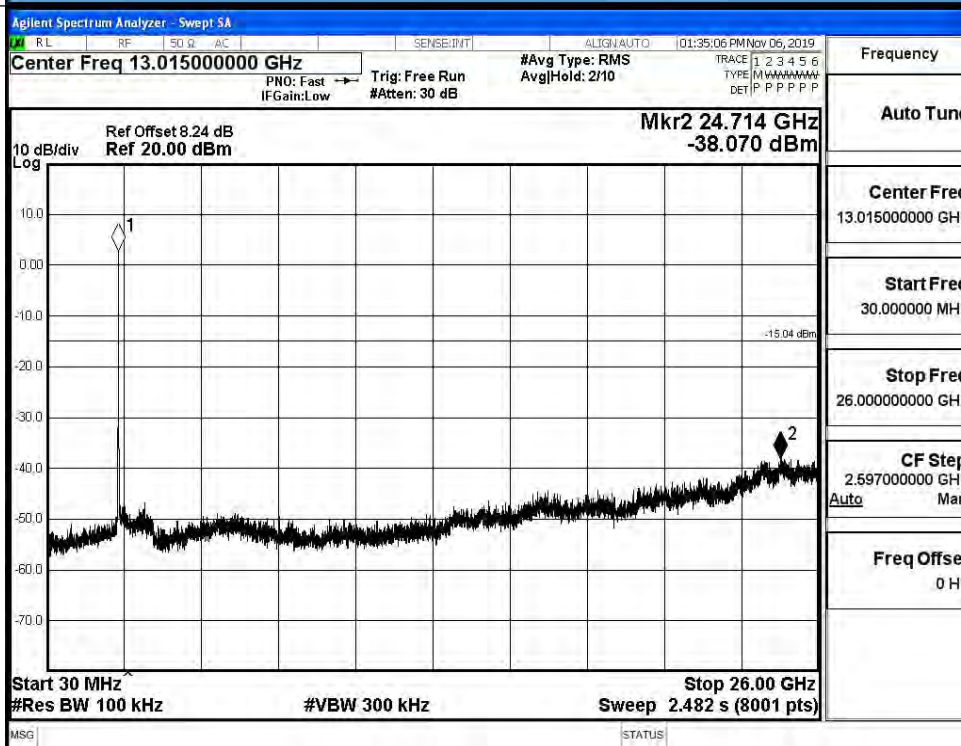


11N20SISO MCH Graphs

Pref/11N20
SISO/MCH

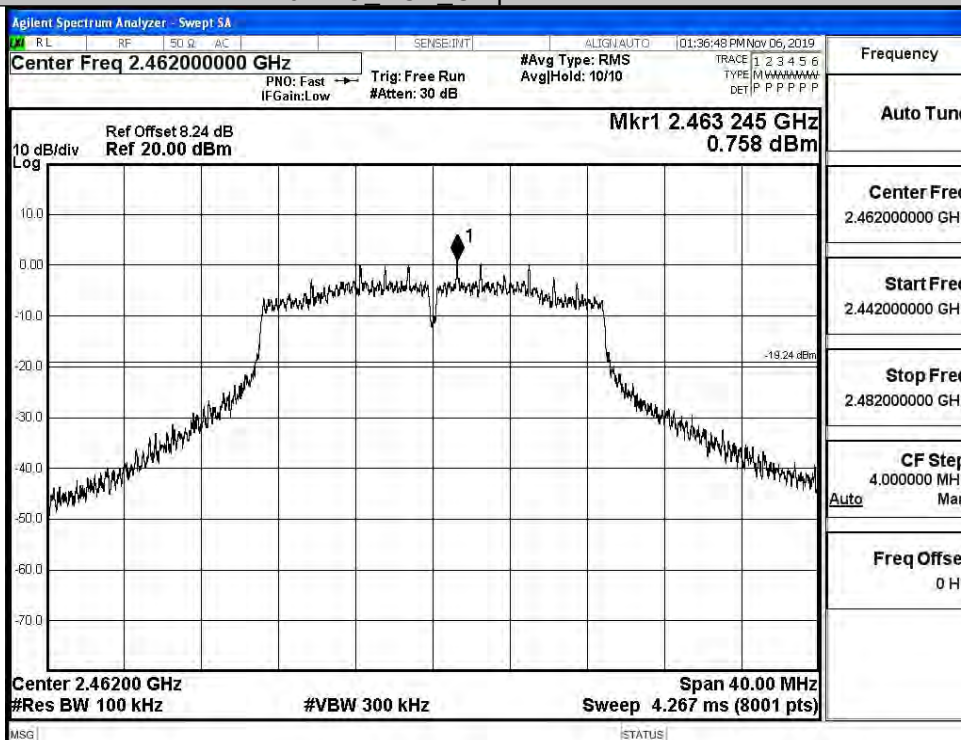


Puw/11N20
SISO/MCH

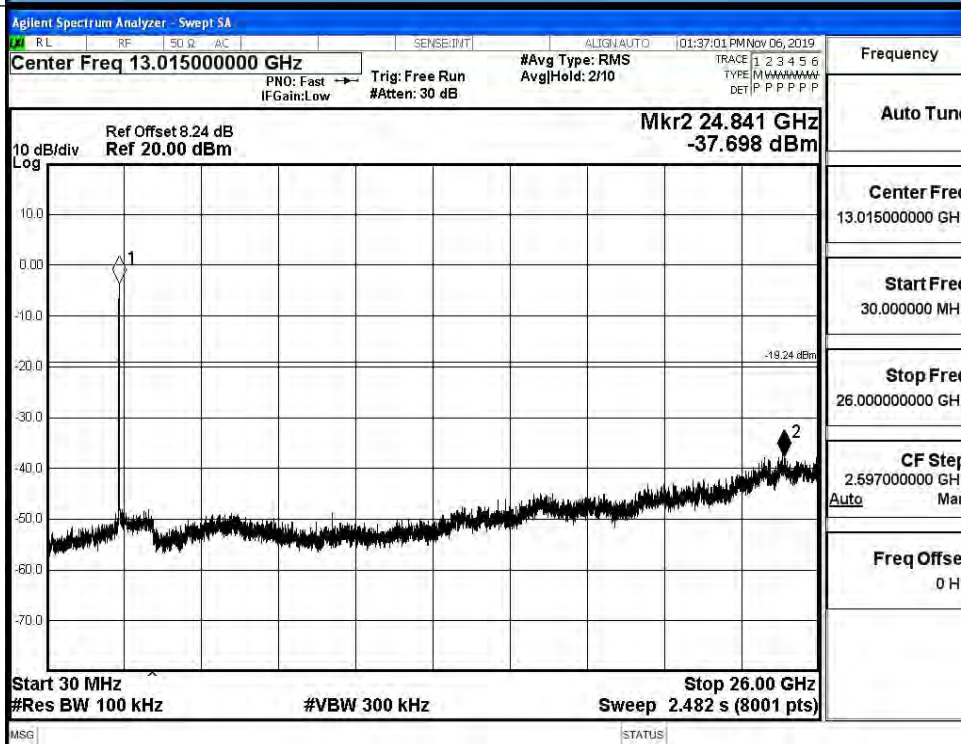


11N20SISO HCH Graphs

Pref/11N20
SISO/HCH

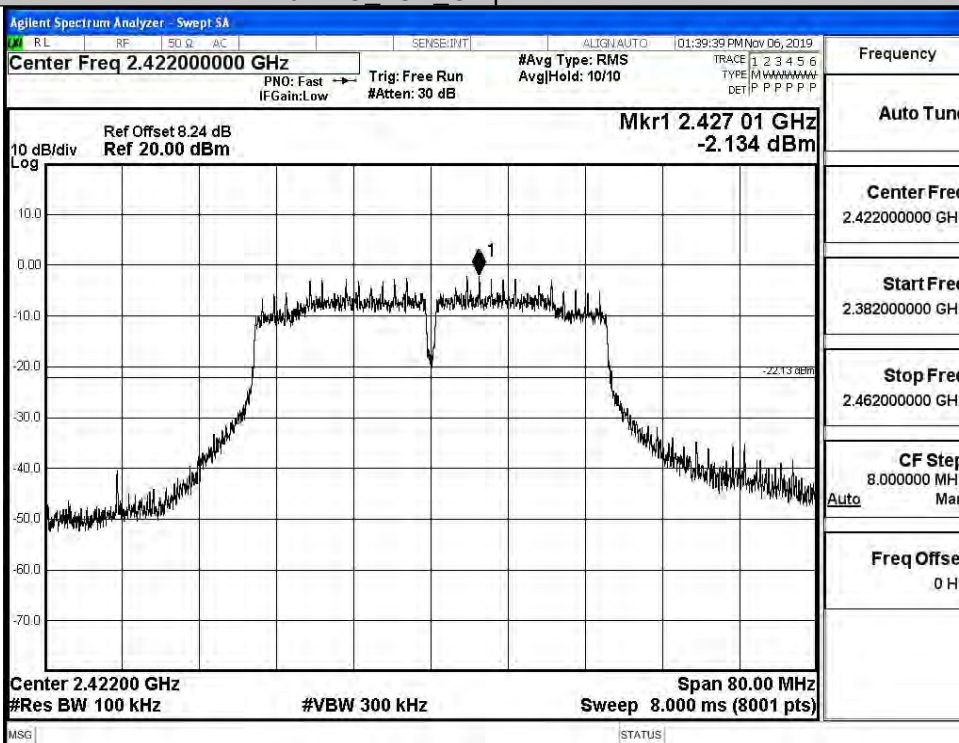


Puw/11N20
SISO/HCH

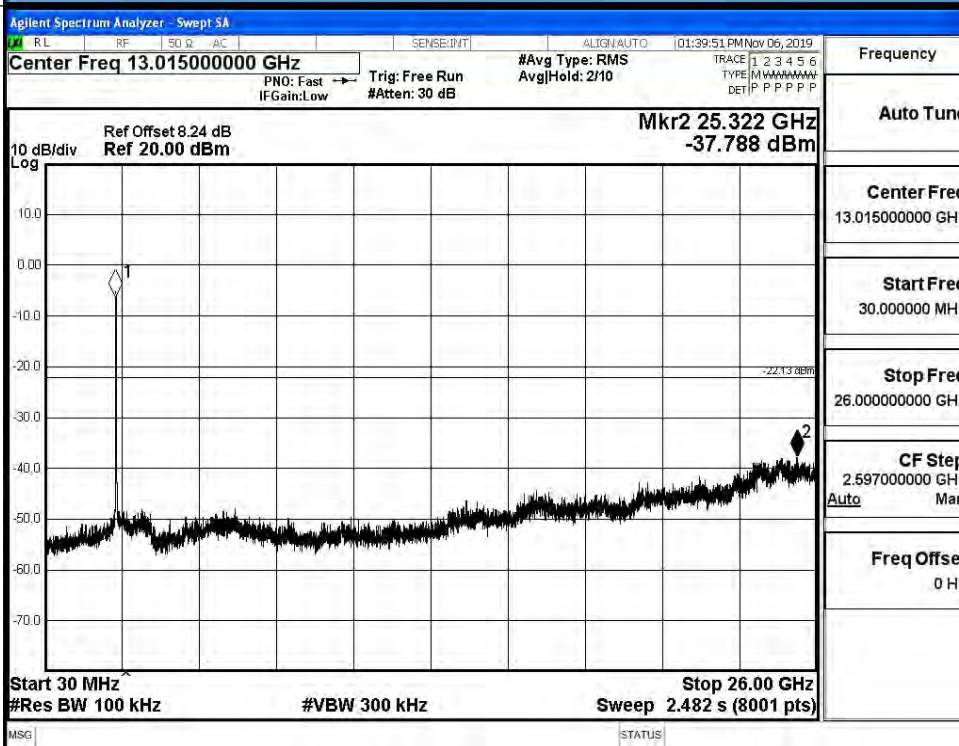


11N40SISO LCH Graphs

Pref/11N40
SISO/LCH

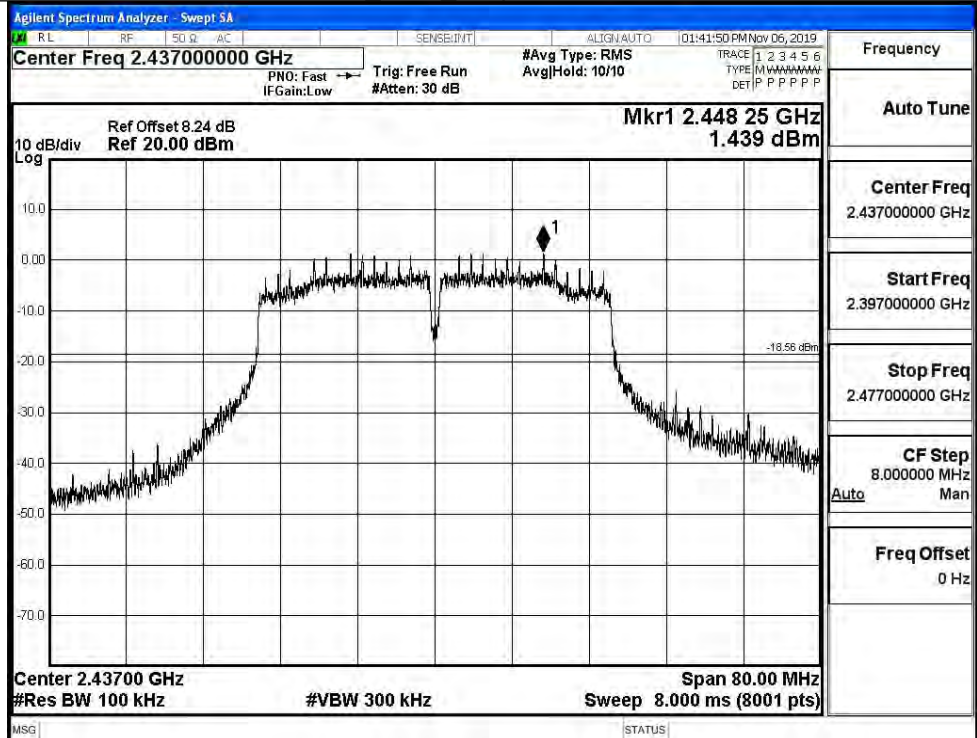


Puw/11N40
SISO/LCH

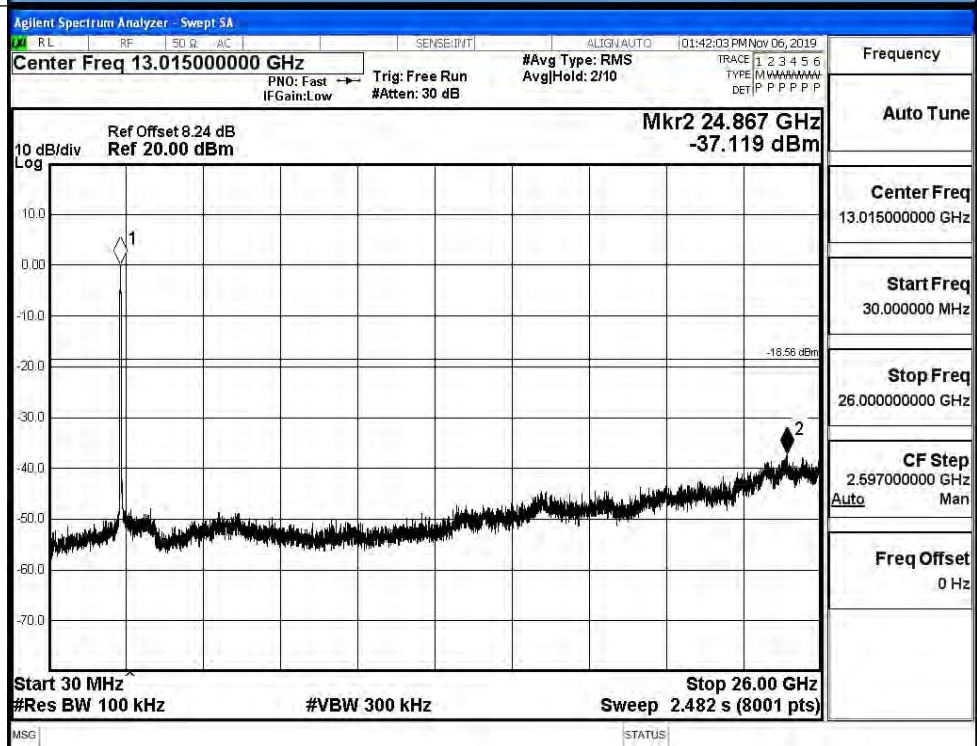


11N40SISO MCH Graphs

Pref/11N40
SISO/MCH

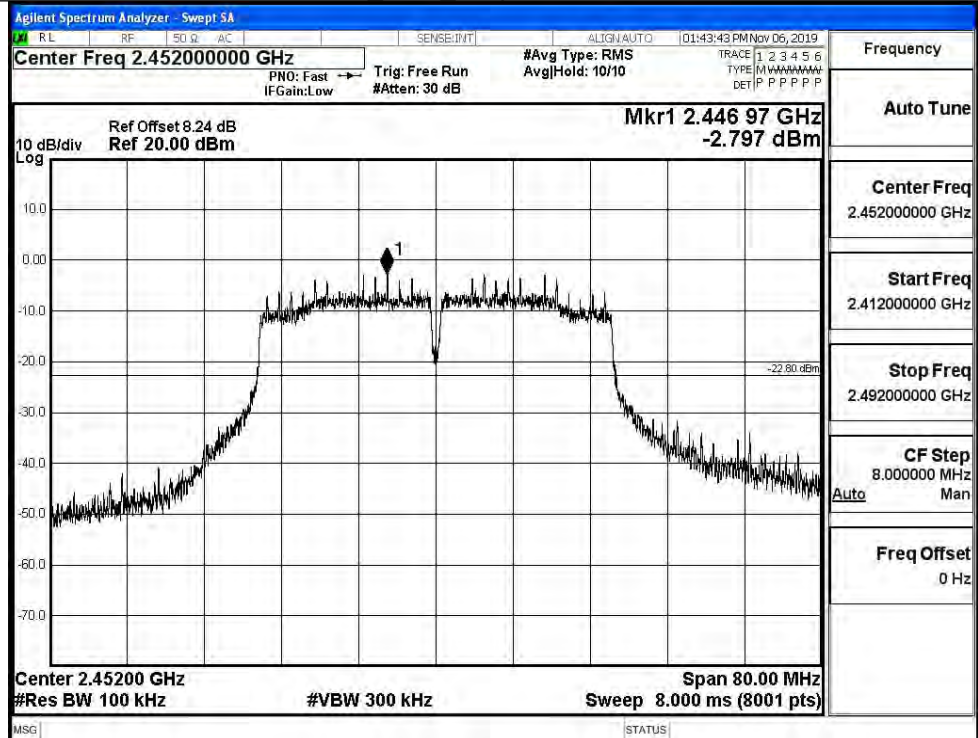


Puw/11N40
SISO/MCH

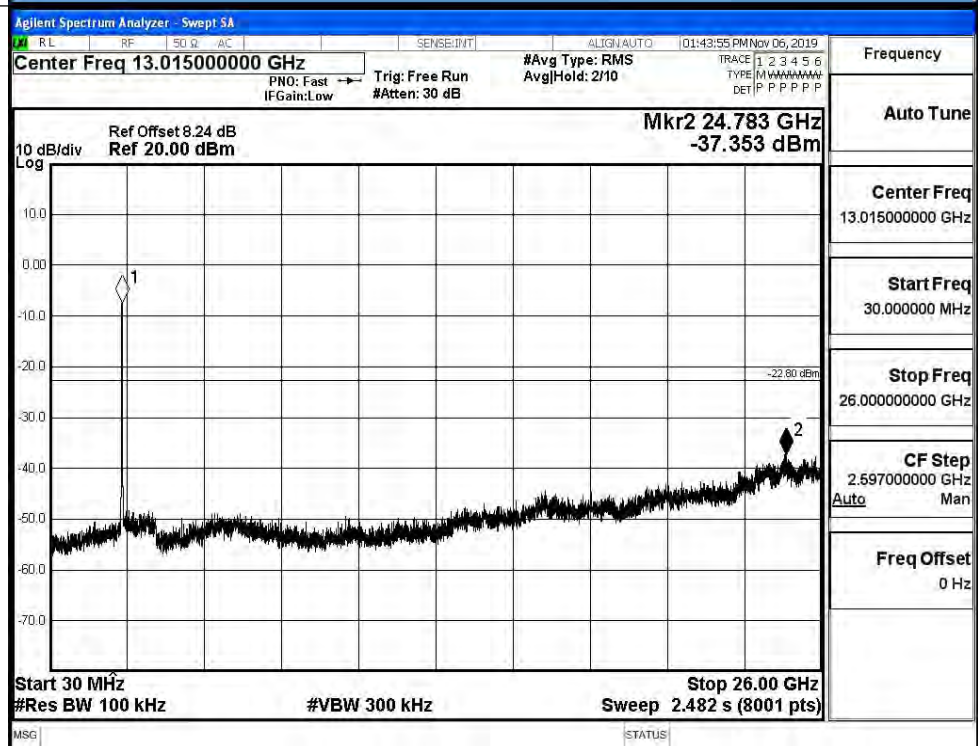


11N40SISO HCH Graphs

Pref/11N40
SISO/HCH



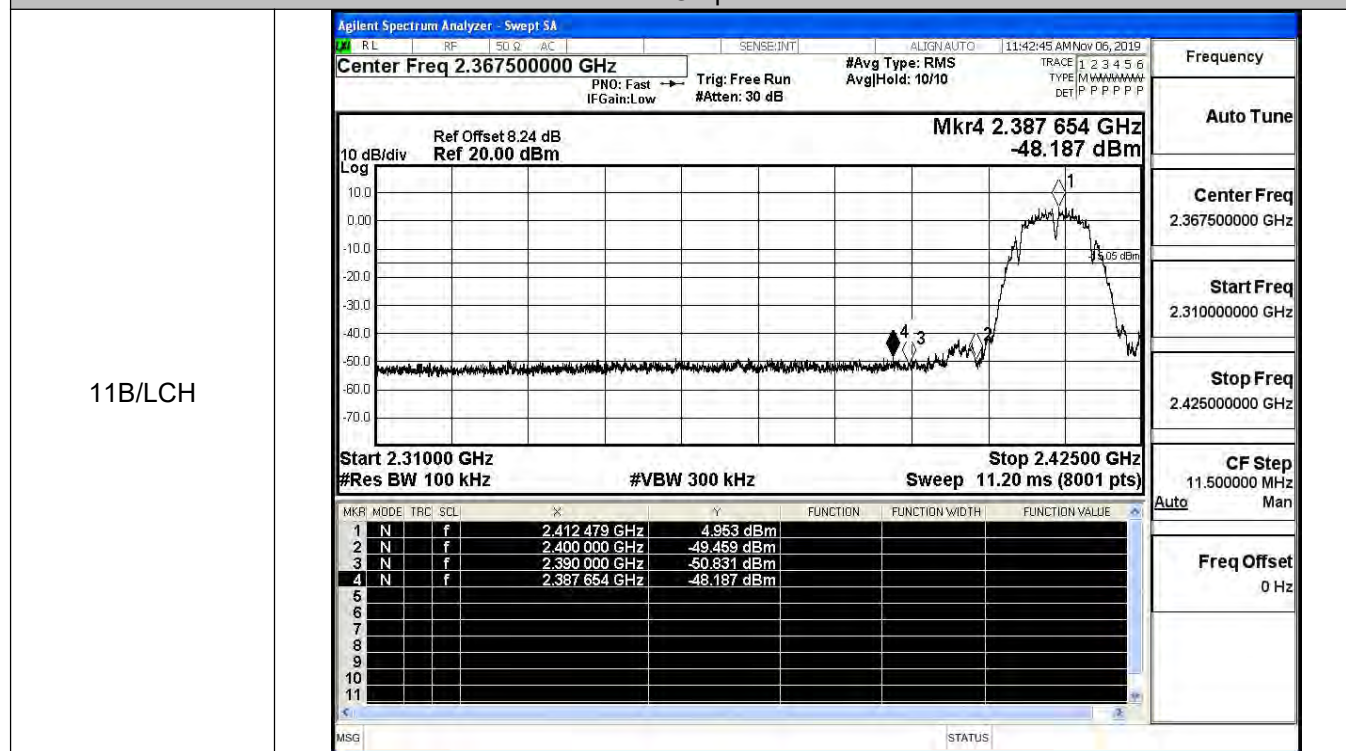
Puw/11N40
SISO/HCH



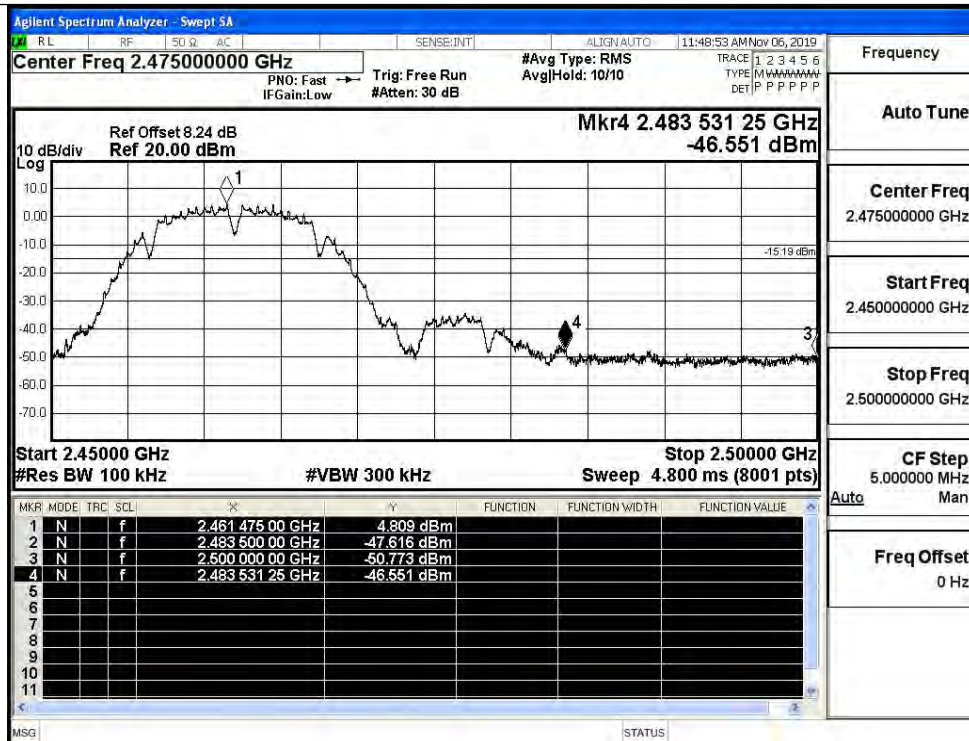
A.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	4.953	-48.187	-15.05	PASS
	HCH	4.809	-46.551	-15.19	PASS
11G	LCH	1.332	-47.262	-18.67	PASS
	HCH	1.188	-43.015	-18.81	PASS
11N20SISO	LCH	1.277	-47.205	-18.72	PASS
	HCH	0.856	-42.784	-19.14	PASS
11N40SISO	LCH	-1.985	-40.910	-21.99	PASS
	HCH	-3.037	-34.035	-23.04	PASS

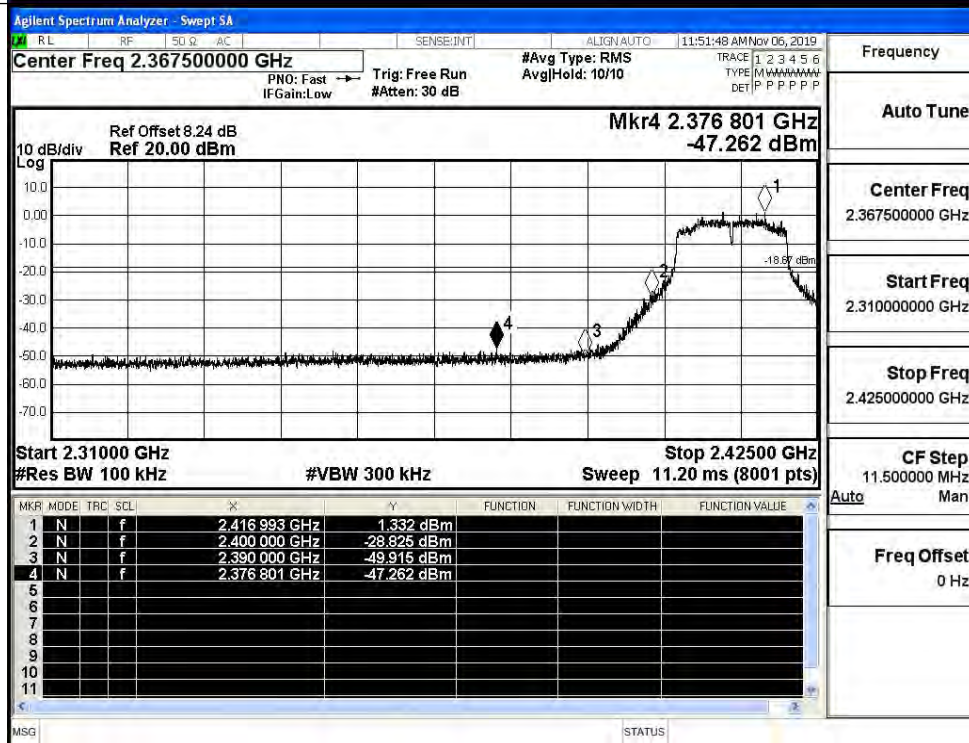
Test Graphs



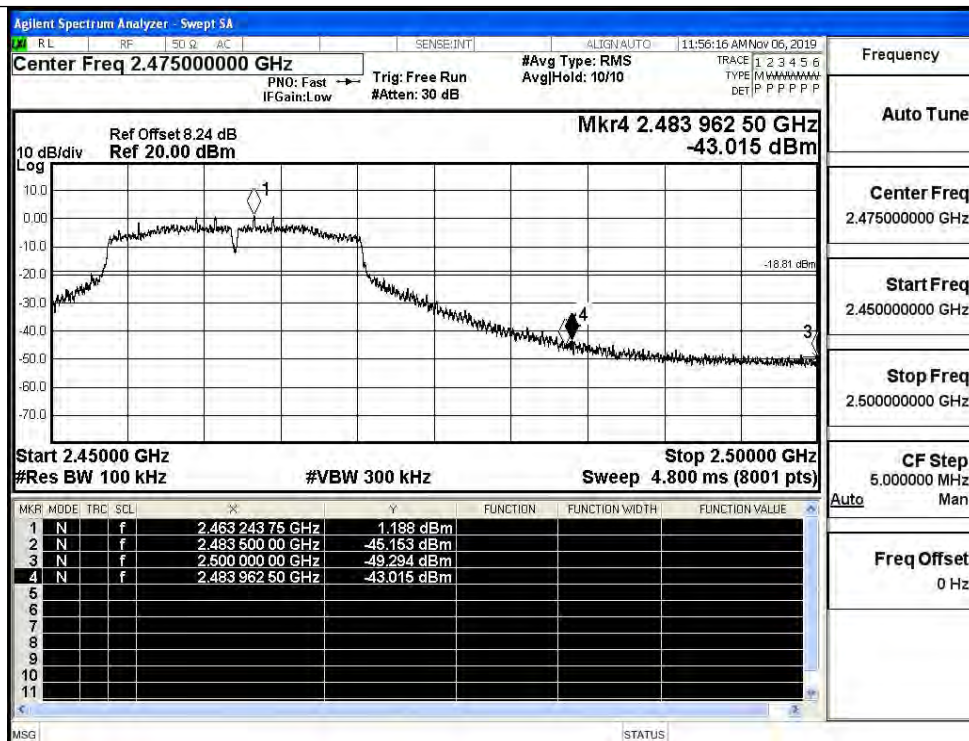
11B/HCH



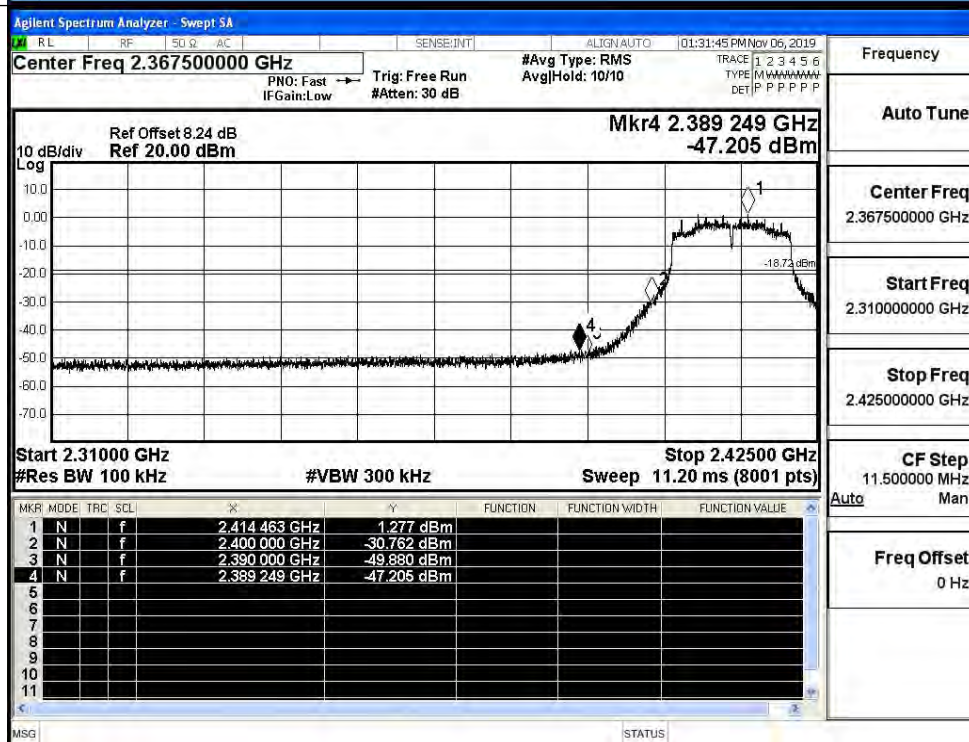
11G/LCH



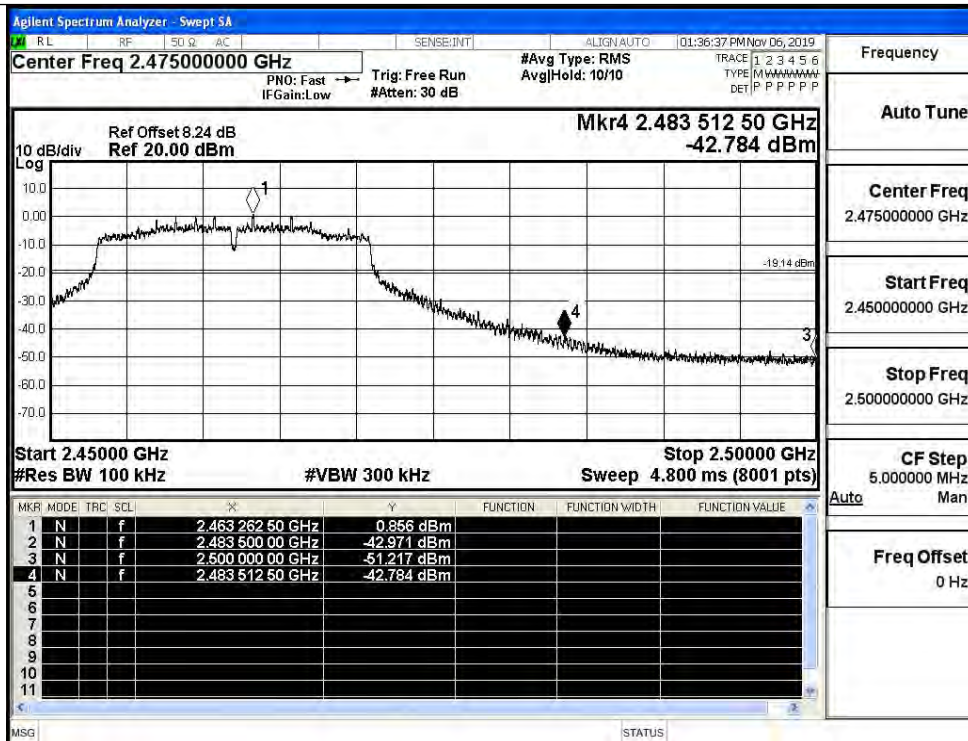
11G/HCH



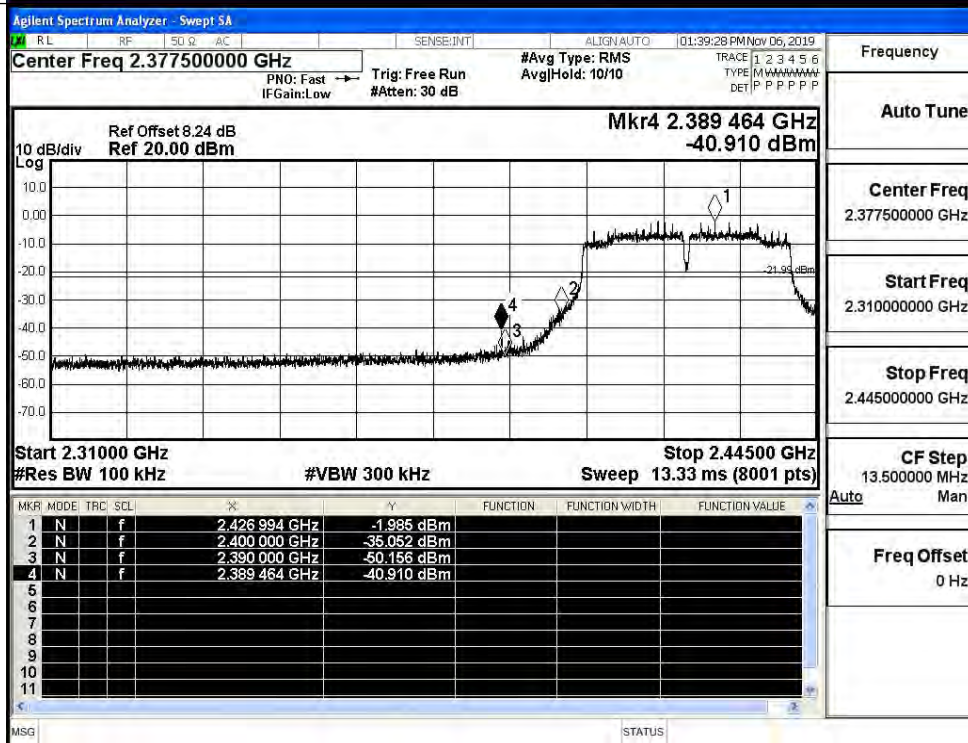
11N20SISO/LCH



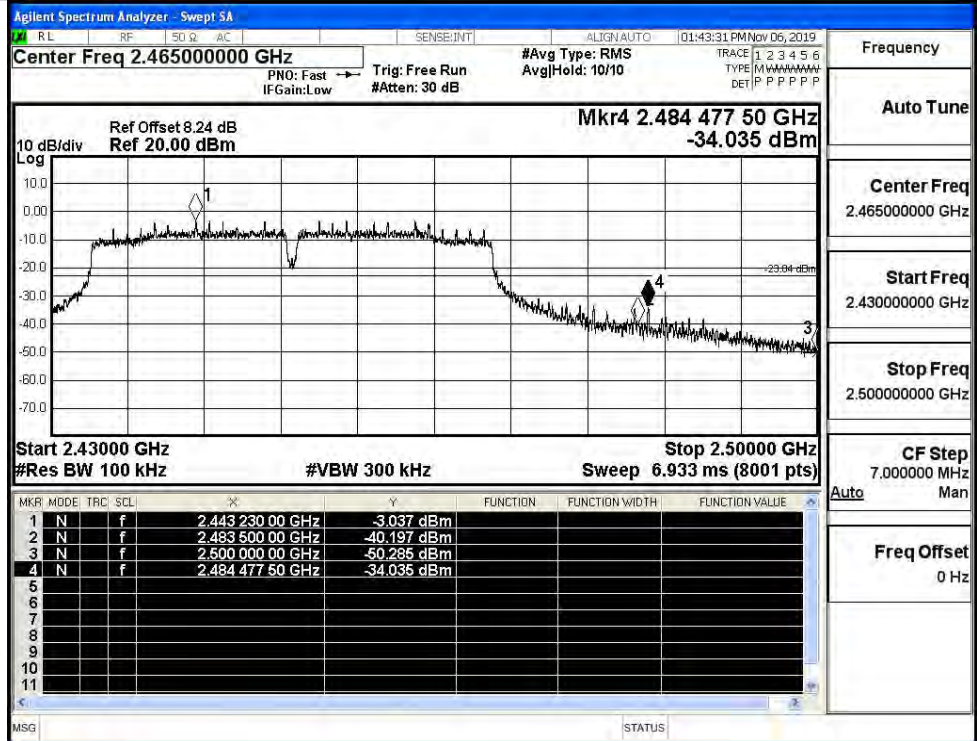
11N20SISO/HCH



11N40SISO/LCH



11N40SISO/HCH

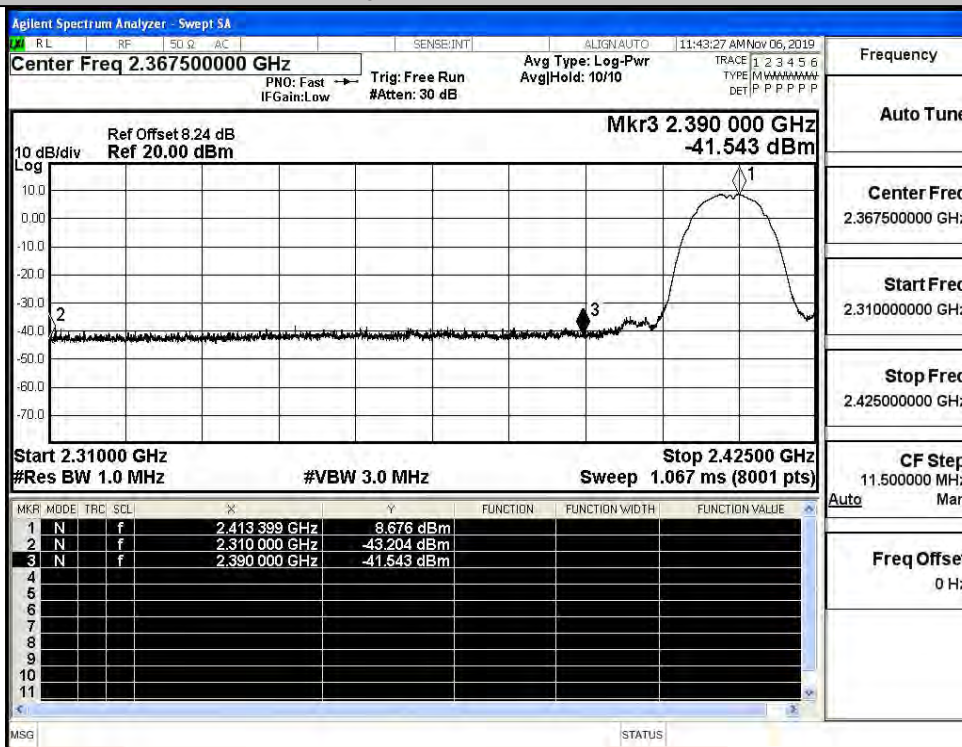


A.7 Restrict-band band-edge measurements

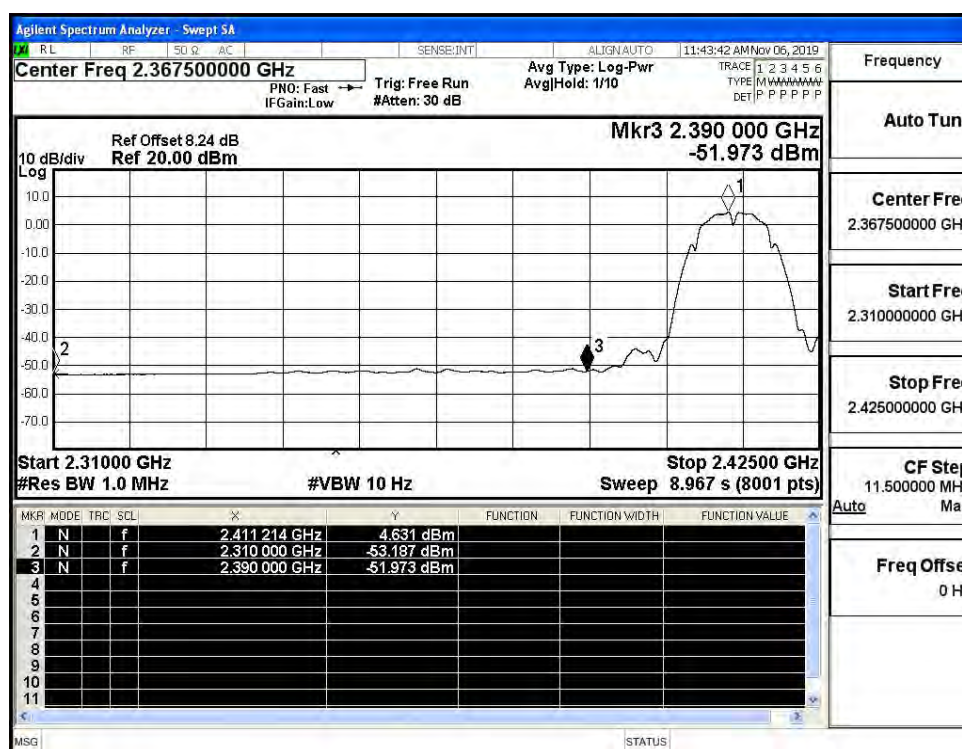
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
11B	2412	Ant1	2310.0	-43.20	3.0	0	54.05	PEAK	74	PASS
	2412	Ant1	2310.0	-53.19	3.0	0	44.07	AV	54	PASS
	2412	Ant1	2390.0	-41.54	3.0	0	55.71	PEAK	74	PASS
	2412	Ant1	2390.0	-51.97	3.0	0	45.28	AV	54	PASS
	2462	Ant1	2483.5	-38.74	3.0	0	58.52	PEAK	74	PASS
	2462	Ant1	2483.5	-48.25	3.0	0	49.01	AV	54	PASS
	2462	Ant1	2500.0	-41.91	3.0	0	55.35	PEAK	74	PASS
	2462	Ant1	2500.0	-51.26	3.0	0	46.00	AV	54	PASS
11G	2412	Ant1	2310.0	-42.86	3.0	0	54.40	PEAK	74	PASS
	2412	Ant1	2310.0	-52.90	3.0	0	44.35	AV	54	PASS
	2412	Ant1	2390.0	-39.22	3.0	0	58.04	PEAK	74	PASS
	2412	Ant1	2390.0	-49.69	3.0	0	47.57	AV	54	PASS
	2462	Ant1	2483.5	-31.77	3.0	0	65.49	PEAK	74	PASS
	2462	Ant1	2483.5	-45.94	3.0	0	51.32	AV	54	PASS
	2462	Ant1	2500.0	-40.34	3.0	0	56.92	PEAK	74	PASS
	2462	Ant1	2500.0	-51.34	3.0	0	45.92	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-41.53	3.0	0	55.72	PEAK	74	PASS
	2412	Ant1	2310.0	-52.86	3.0	0	44.40	AV	54	PASS
	2412	Ant1	2390.0	-39.59	3.0	0	57.67	PEAK	74	PASS
	2412	Ant1	2390.0	-49.25	3.0	0	48.01	AV	54	PASS
	2462	Ant1	2483.5	-32.98	3.0	0	64.28	PEAK	74	PASS
	2462	Ant1	2483.5	-45.91	3.0	0	51.35	AV	54	PASS
	2462	Ant1	2500.0	-41.19	3.0	0	56.07	PEAK	74	PASS
	2462	Ant1	2500.0	-51.30	3.0	0	45.96	AV	54	PASS
11N40 SISO	2422	Ant1	2310.0	-42.78	3.0	0	54.47	PEAK	74	PASS
	2422	Ant1	2310.0	-52.94	3.0	0	44.32	AV	54	PASS

	2422	Ant1	2390.0	-36.86	3.0	0	60.40	PEAK	74	PASS
	2422	Ant1	2390.0	-48.84	3.0	0	48.42	AV	54	PASS
	2452	Ant1	2483.5	-32.98	3.0	0	64.27	PEAK	74	PASS
	2452	Ant1	2483.5	-44.25	3.0	0	53.00	AV	54	PASS
	2452	Ant1	2500.0	-40.08	3.0	0	57.18	PEAK	74	PASS
	2452	Ant1	2500.0	-50.54	3.0	0	46.72	AV	54	PASS

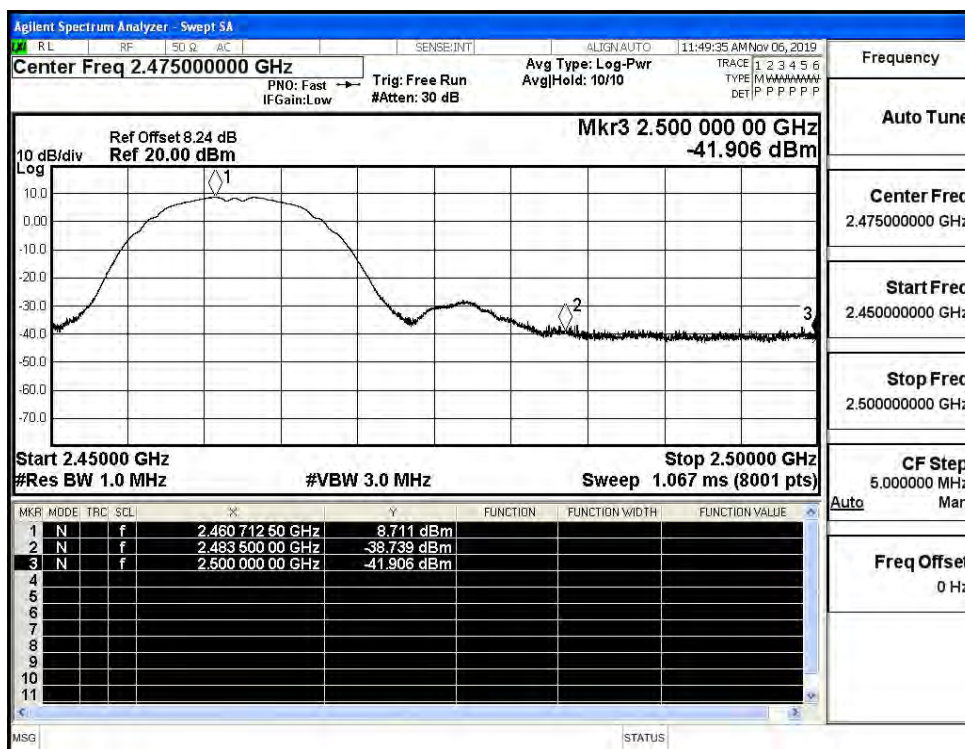
Restrict-band band-edge measurements_11B_2412_Ant1_PEAK



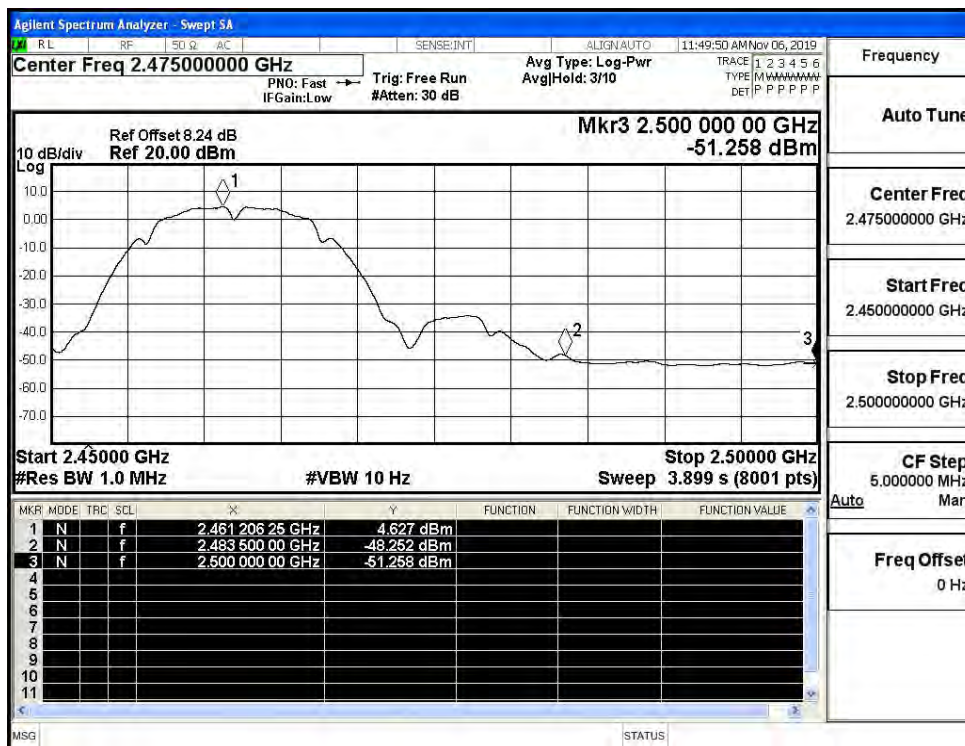
Restrict-band band-edge measurements_11B_2412_Ant1_AV



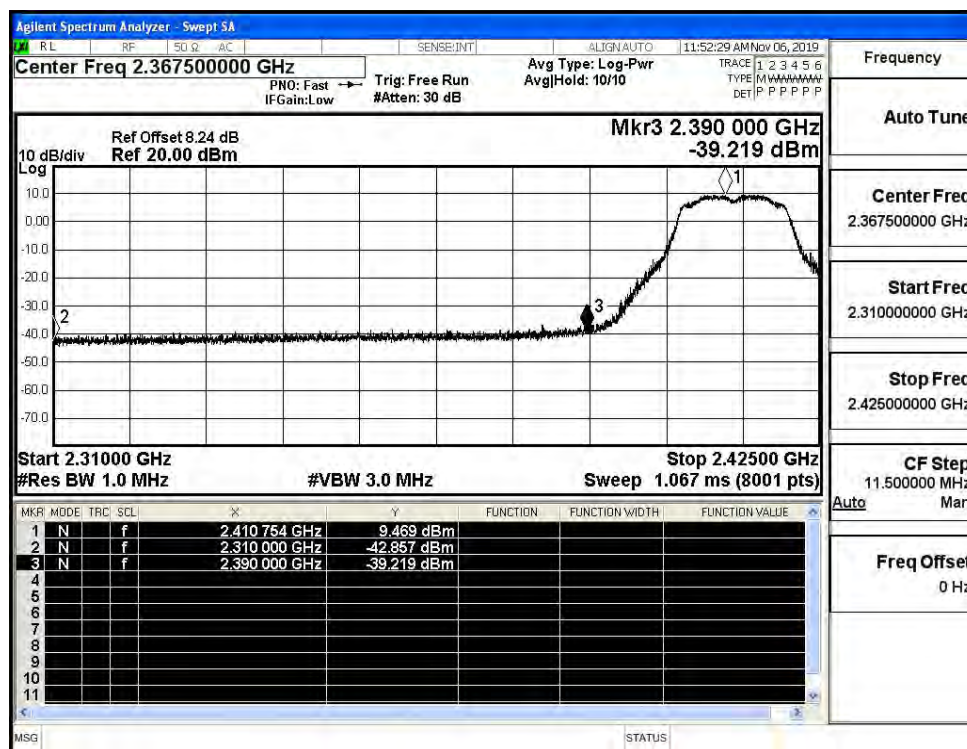
Restrict-band band-edge measurements_11B_2462_Ant1_PEAK



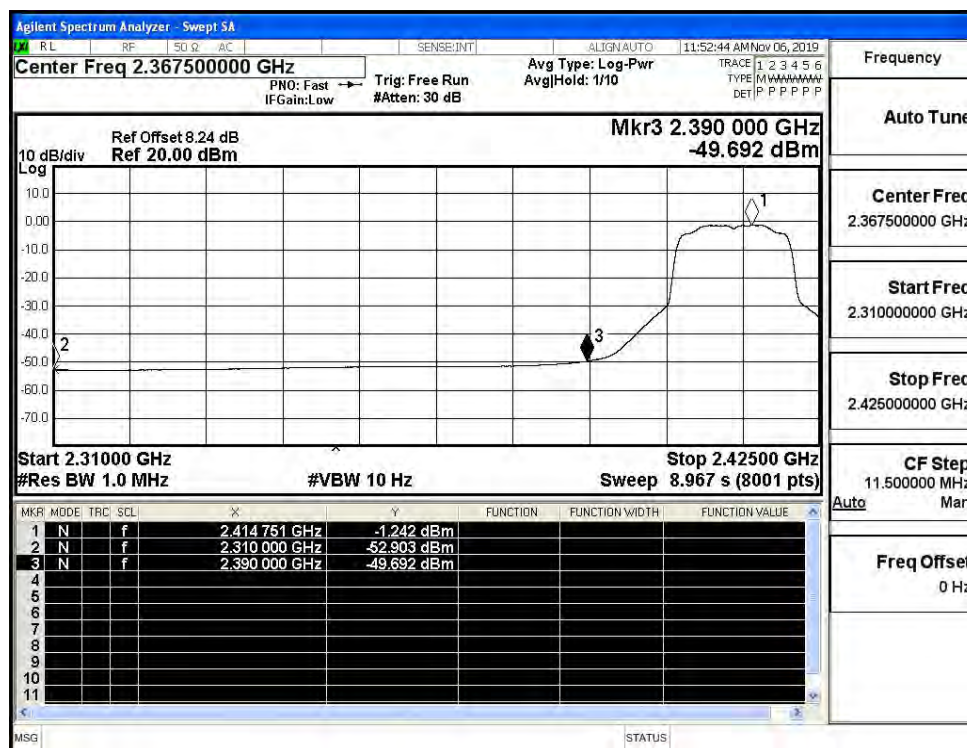
Restrict-band band-edge measurements_11B_2462_Ant1_AV



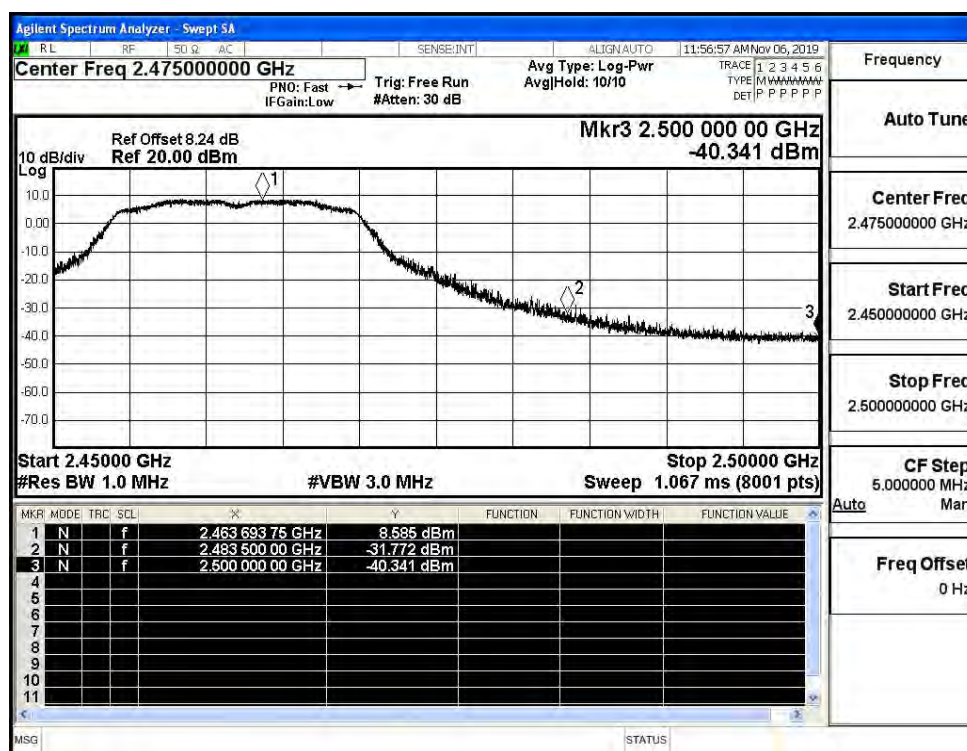
Restrict-band band-edge measurements_11G_2412_Ant1_PEAK



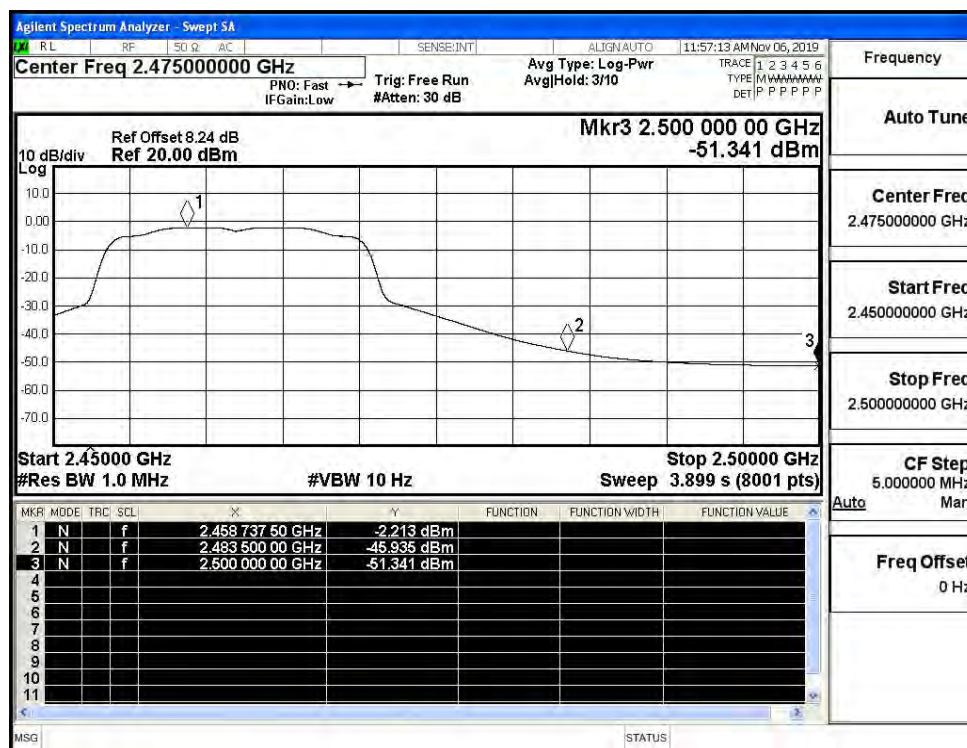
Restrict-band band-edge measurements_11G_2412_Ant1_AV



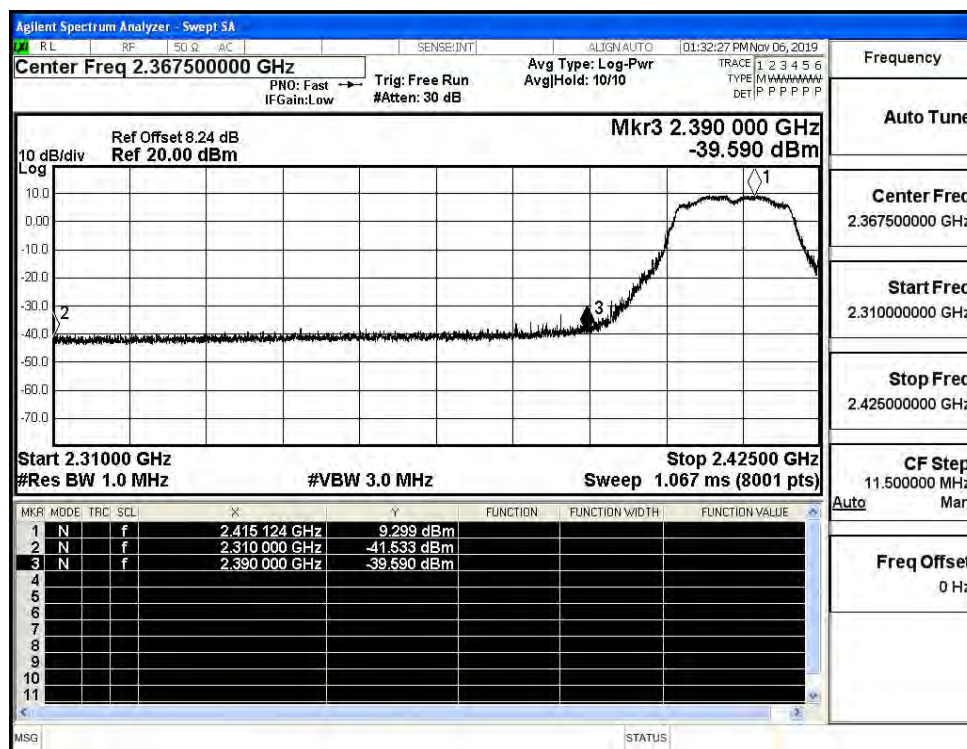
Restrict-band band-edge measurements_11G_2462_Ant1_PEAK



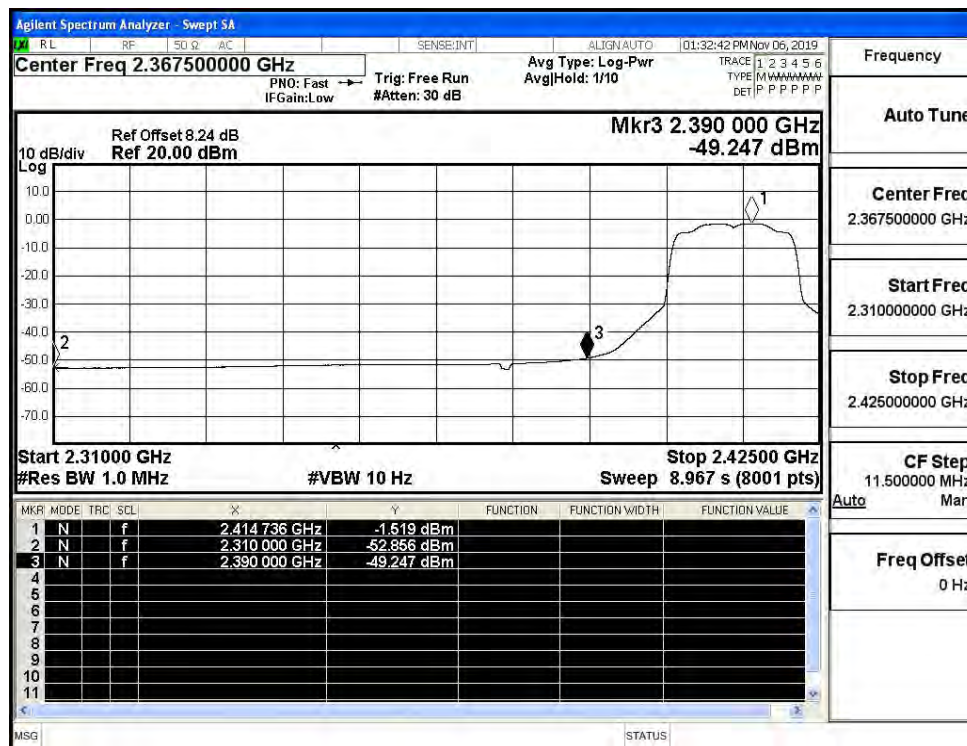
Restrict-band band-edge measurements_11G_2462_Ant1_AV



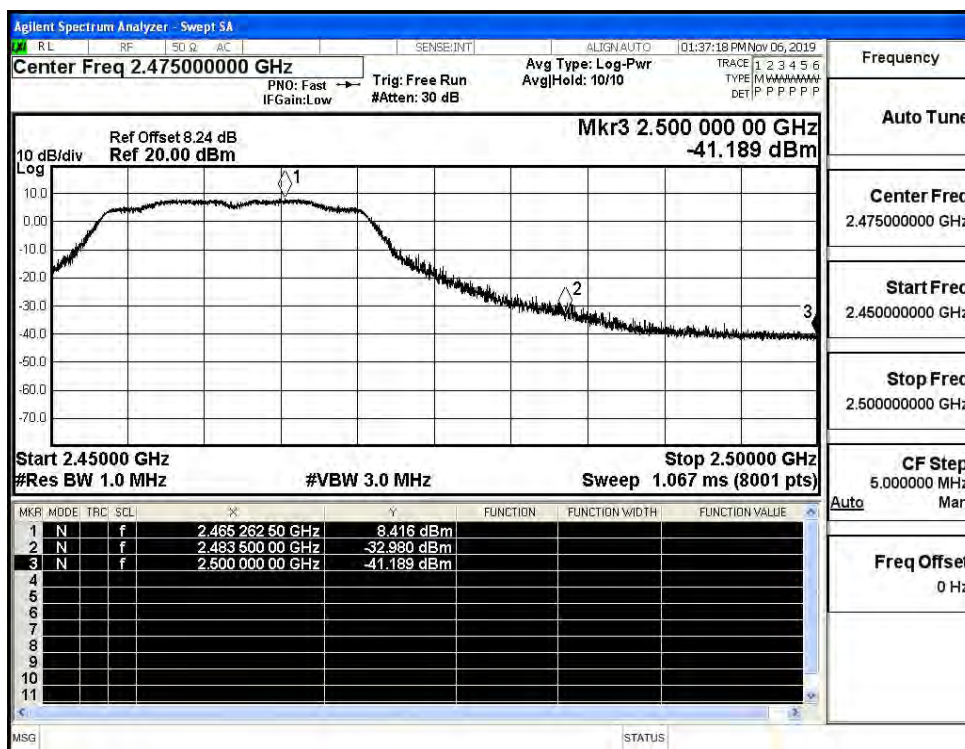
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_PEAK



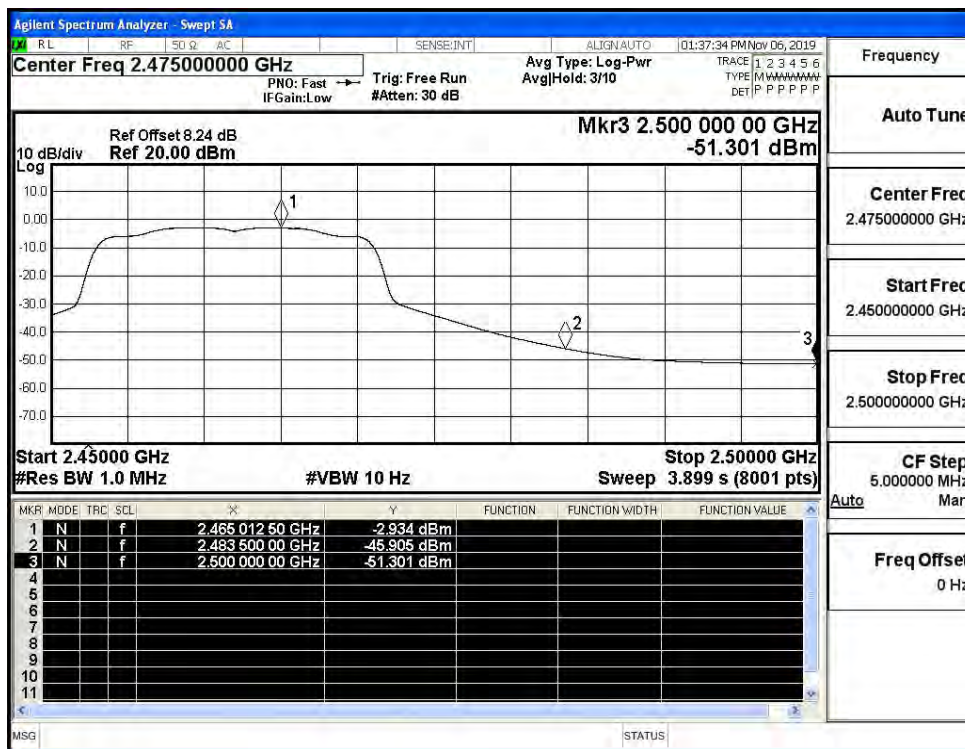
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_AV



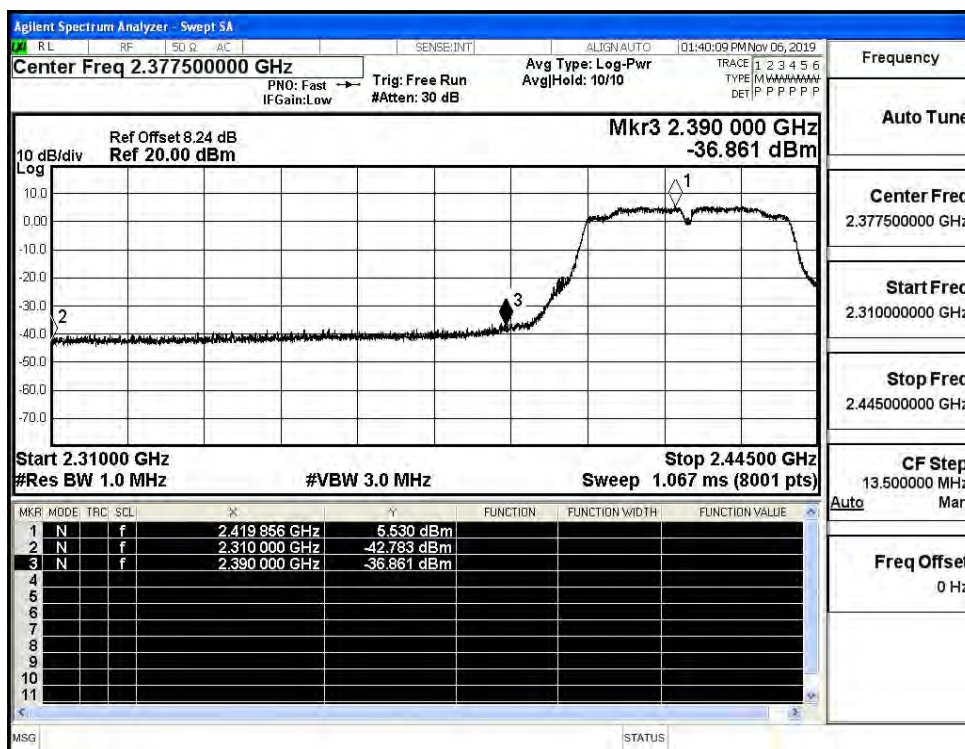
Restrict-band band-edge measurements_11N20SISO_2462_Ant1_PEAK



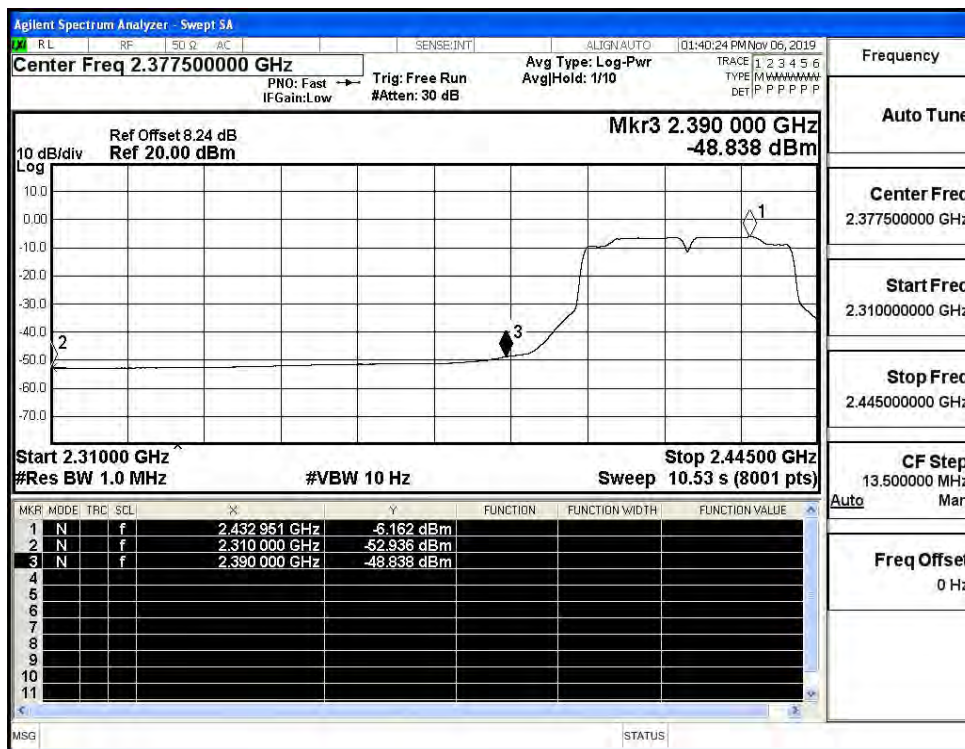
Restrict-band band-edge measurements_11N20SISO_2462_Ant1_AV



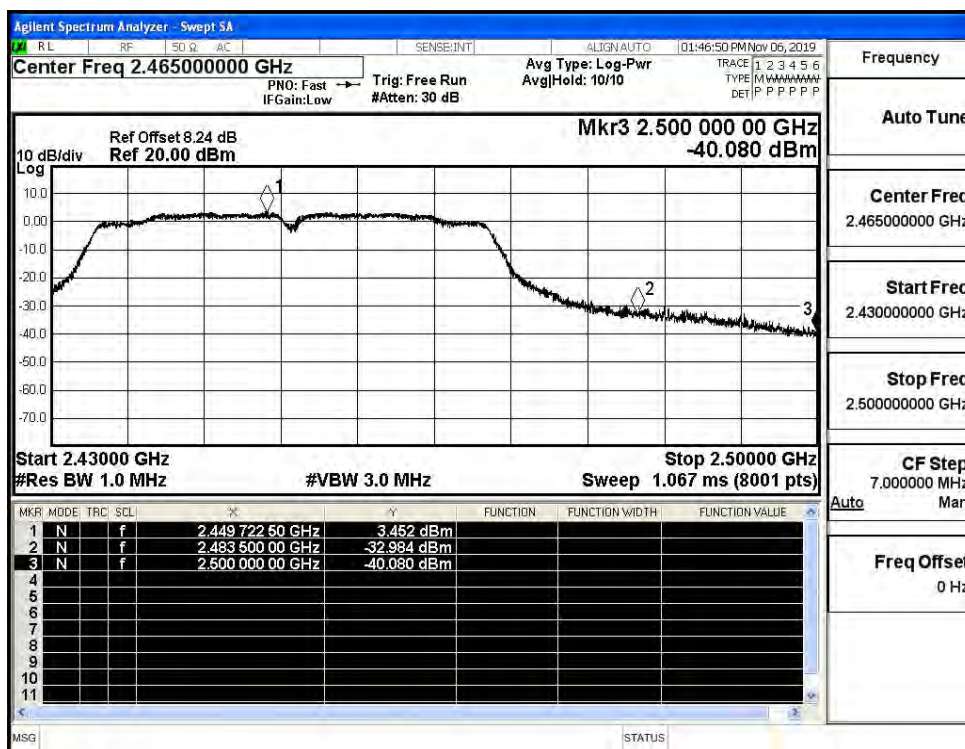
Restrict-band band-edge measurements_11N40SISO_2422_Ant1_PEAK



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

