

Appendix C

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Ruggedized In-vehicle Tablet

Test Model: APOLLO 10L

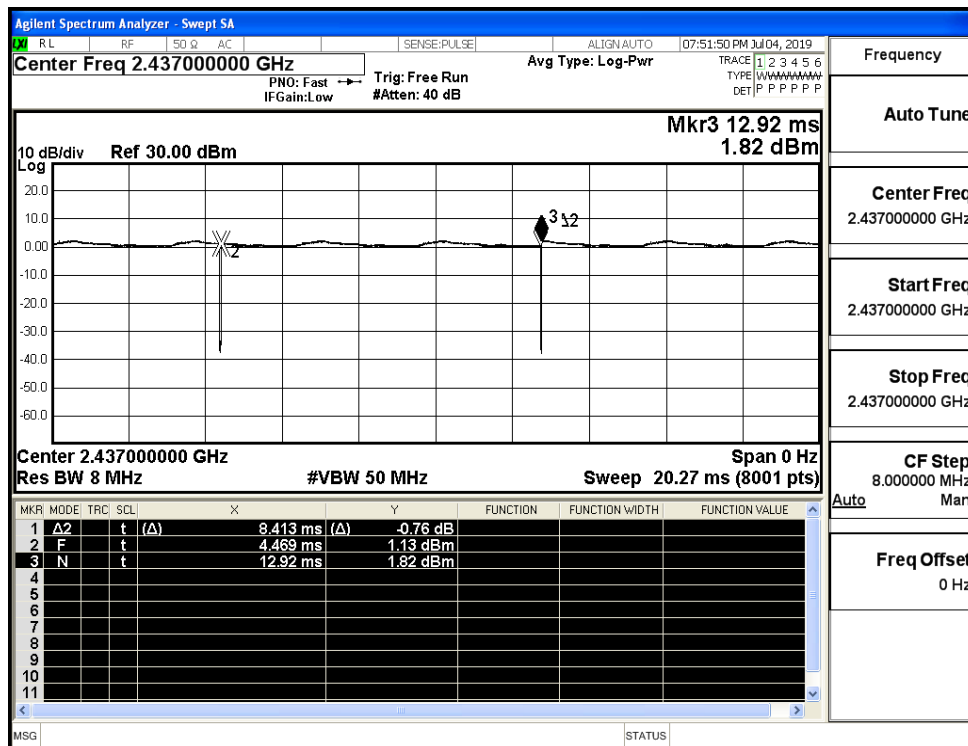
Environmental Conditions

Temperature:	23.8 ° C
Relative Humidity:	53.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Tom Liu
Supervised by:	Aking Jin

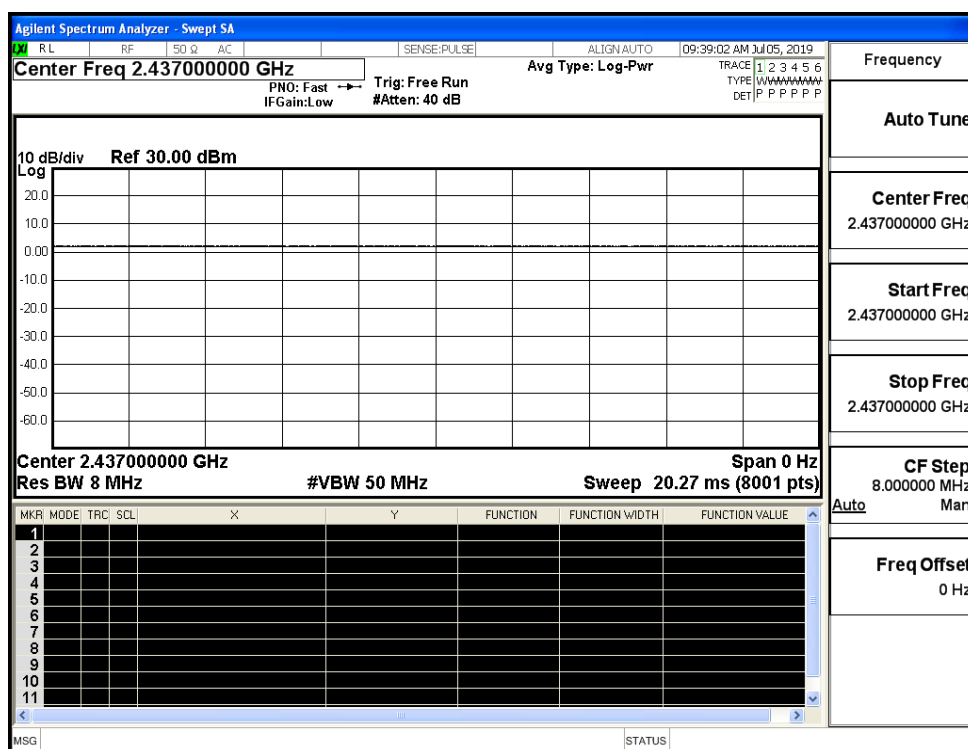
C.1 Duty Cycle

Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
11B	2437	Ant1	99.52	PASS
11G	2437	Ant1	100	PASS
11N20SISO	2437	Ant1	100	PASS

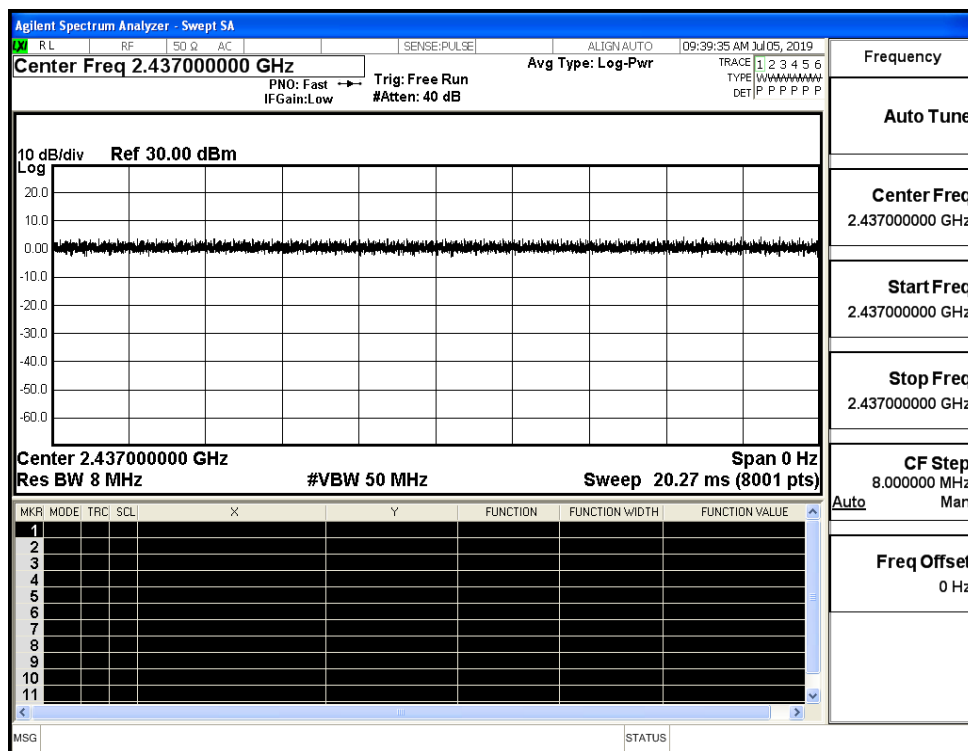
Duty Cycle_11B_2437_Ant1



Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



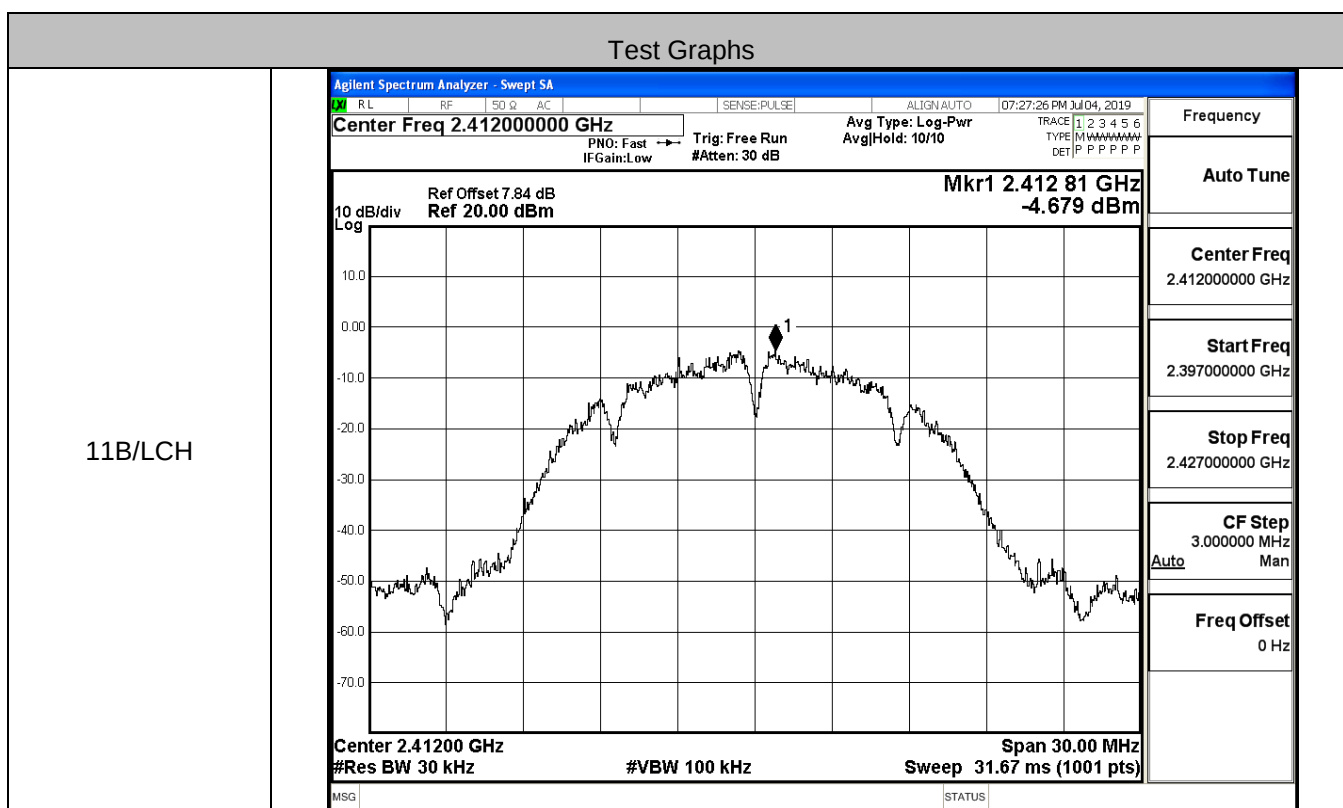
C.2 Maximum Conducted Output Power

Mode	Channel	Meas. Peak Level [dBm]	Meas. Average Level [dBm]	Limit [dBm]	Verdict
11B	LCH	11.16	8.96	30	PASS
	MCH	10.59	8.44	30	PASS
	HCH	10.48	8.32	30	PASS
11G	LCH	13.45	10.09	30	PASS
	MCH	13.49	10.05	30	PASS
	HCH	13.13	9.65	30	PASS
11N20SISO	LCH	13.13	9.76	30	PASS
	MCH	13.04	9.57	30	PASS
	HCH	12.76	9.25	30	PASS

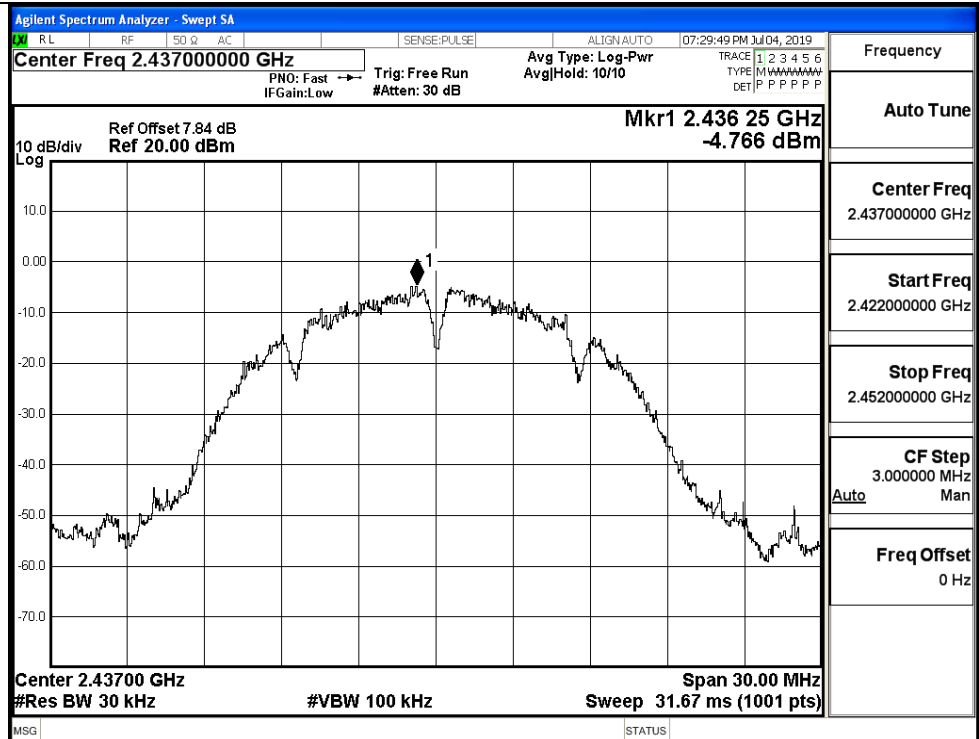
C.3 Maximum Power Spectral Density

Mode	Channel	Meas.Level [dBm/30KHz]	Convert Factor	Result [dBm/30KHz]	Limit [dBm/30KHz]	Verdict
11B	LCH	-4.679	-10	-14.679	8	PASS
	MCH	-4.766	-10	-14.766	8	PASS
	HCH	-3.586	-10	-13.586	8	PASS
11G	LCH	-9.669	-10	-19.669	8	PASS
	MCH	-9.052	-10	-19.052	8	PASS
	HCH	-10.515	-10	-20.515	8	PASS
11N20SISO	LCH	-9.681	-10	-19.681	8	PASS
	MCH	-9.496	-10	-19.496	8	PASS
	HCH	-10.916	-10	-20.916	8	PASS

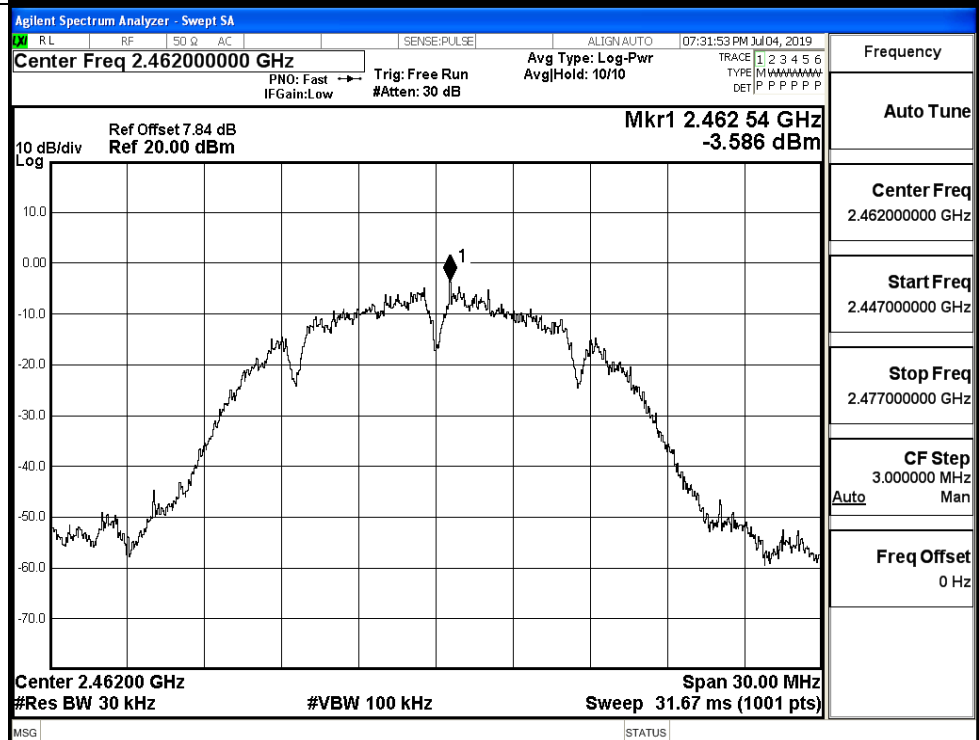
***Note: The Convert Factor = $10 \cdot \log(3\text{KHz}/30\text{KHz}) = -10$



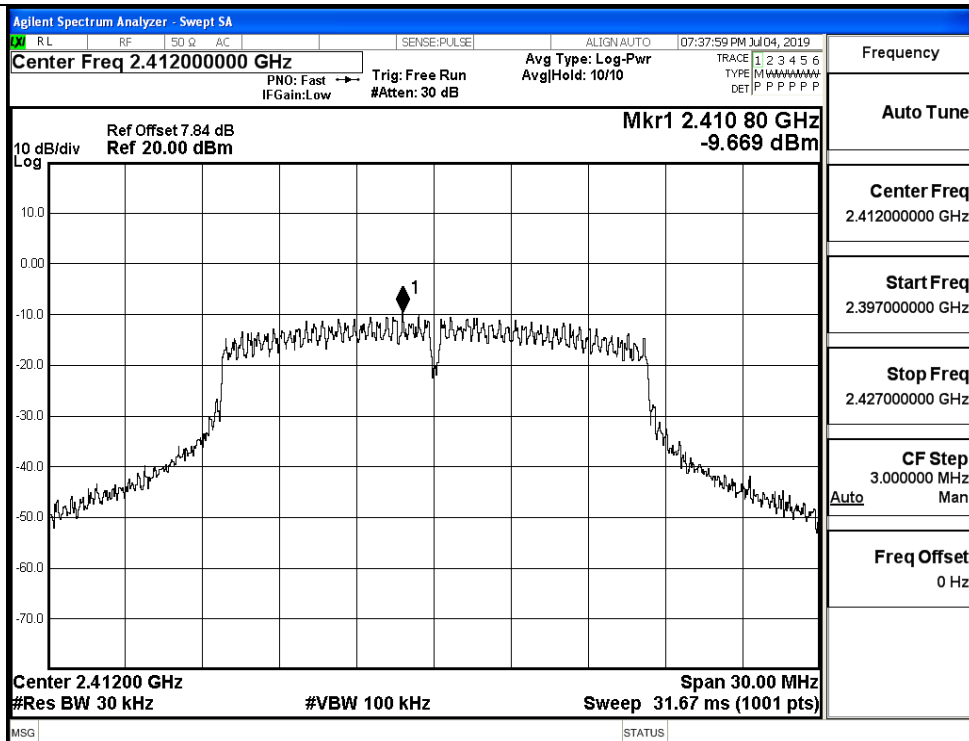
11B/MCH



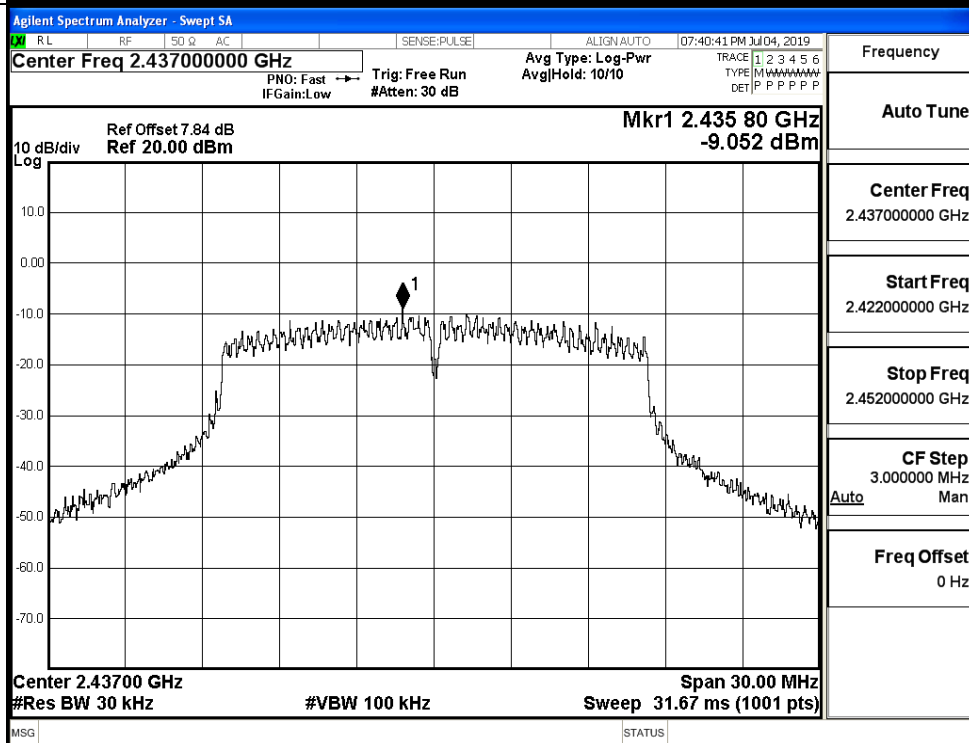
11B/HCH



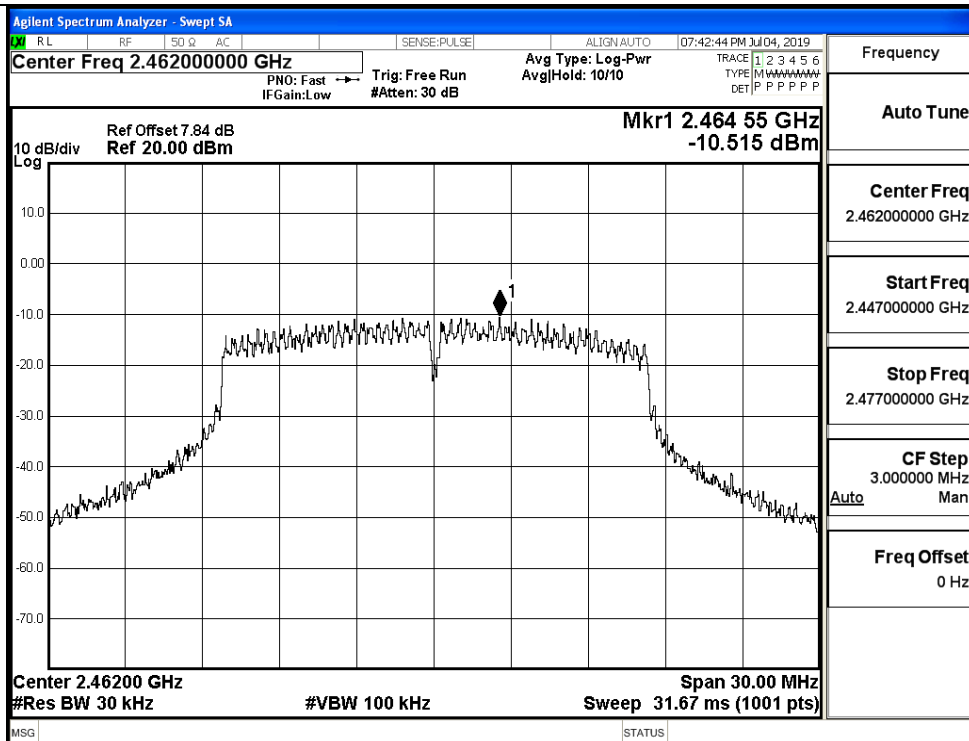
11G/LCH



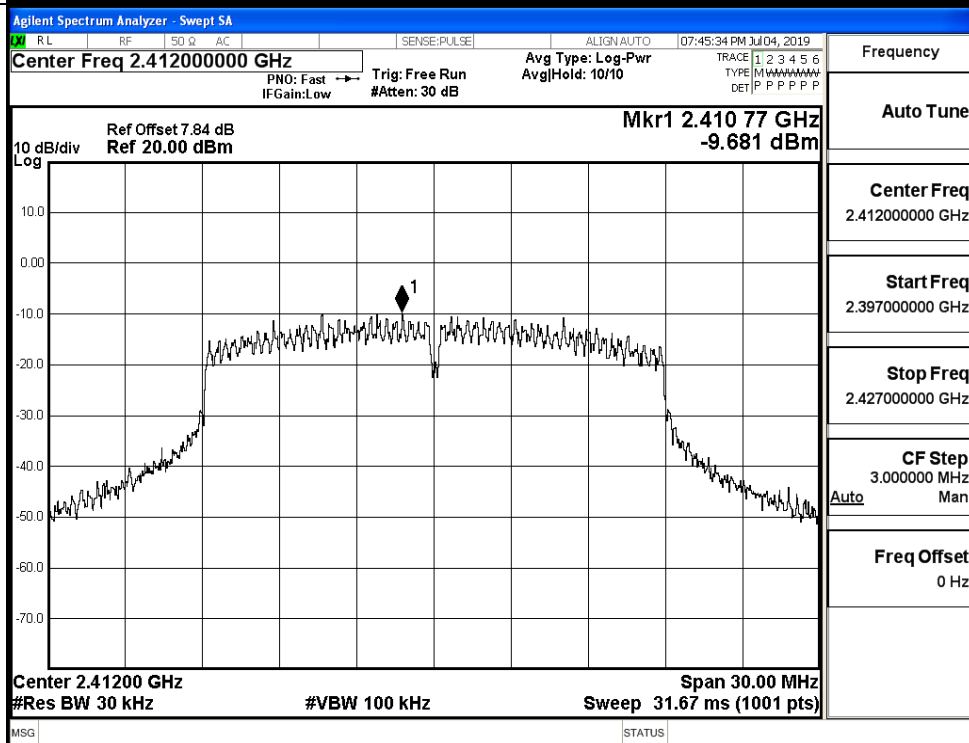
11G/MCH



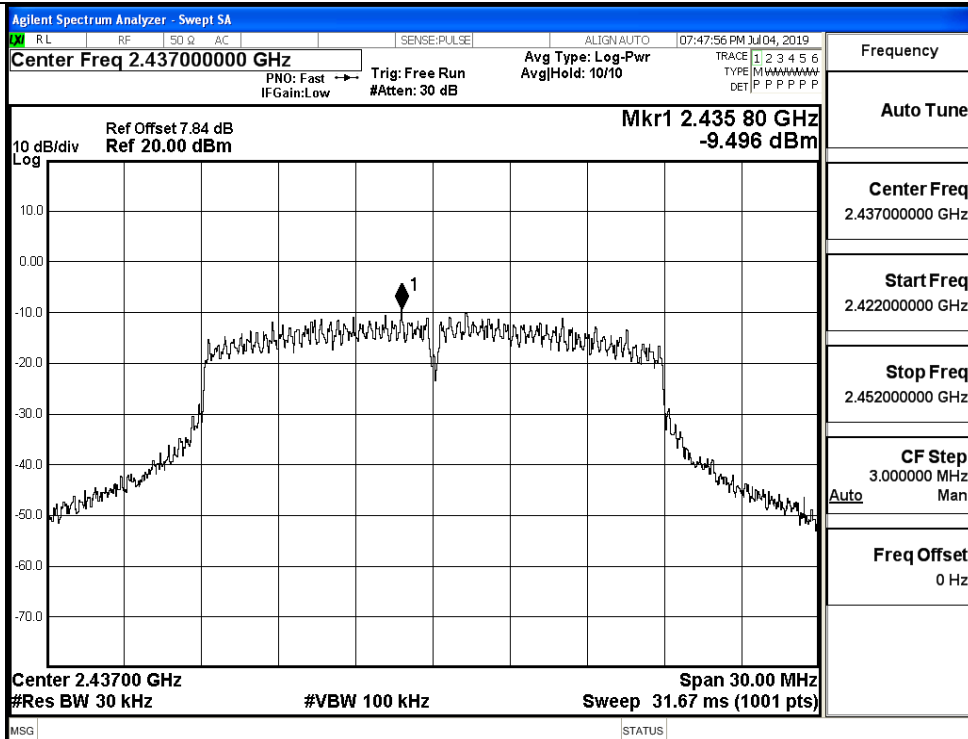
11G/HCH



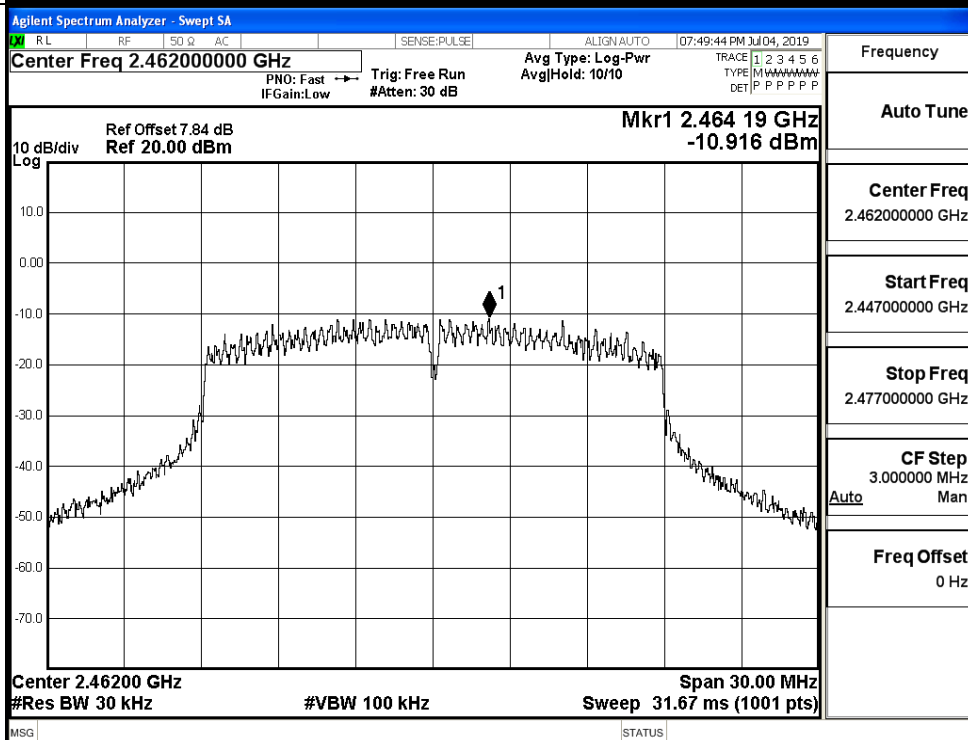
11N20SISO/LCH



11N20SISO/MCH



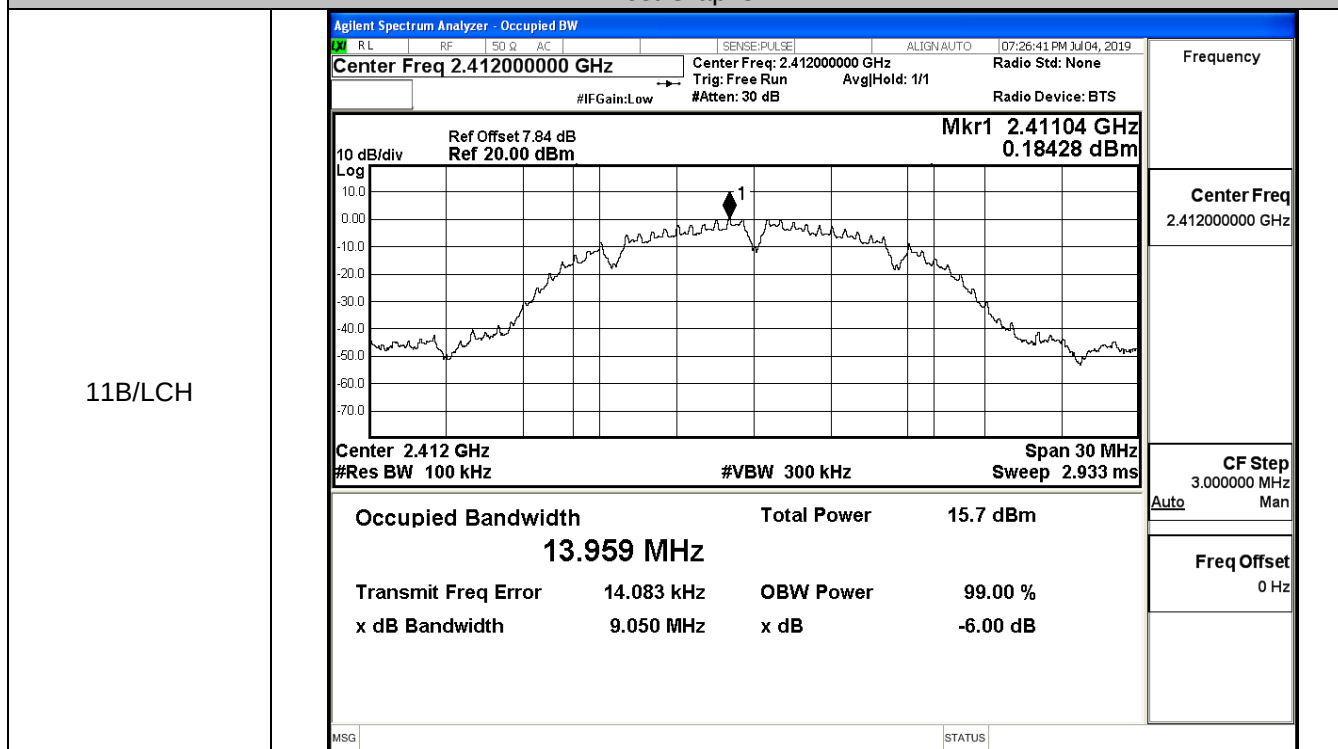
11N20SISO/HCH



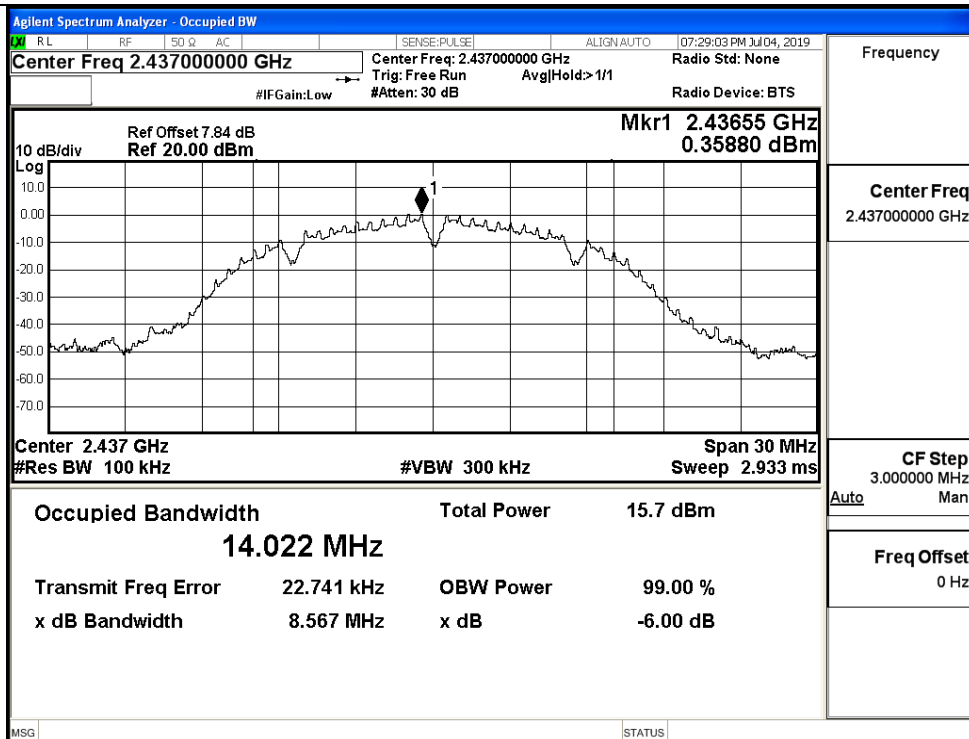
C.4 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	9.050	≥ 0.5	PASS
	MCH	8.567	≥ 0.5	PASS
	HCH	9.074	≥ 0.5	PASS
11G	LCH	15.10	≥ 0.5	PASS
	MCH	15.12	≥ 0.5	PASS
	HCH	15.13	≥ 0.5	PASS
11N20SISO	LCH	15.10	≥ 0.5	PASS
	MCH	15.14	≥ 0.5	PASS
	HCH	15.15	≥ 0.5	PASS

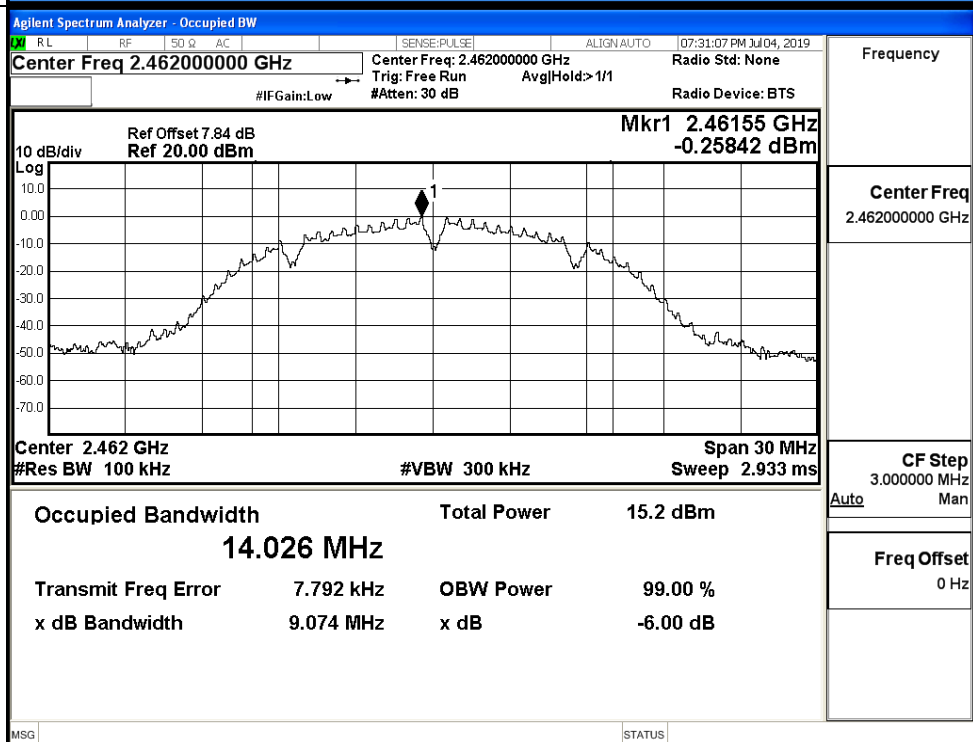
Test Graphs



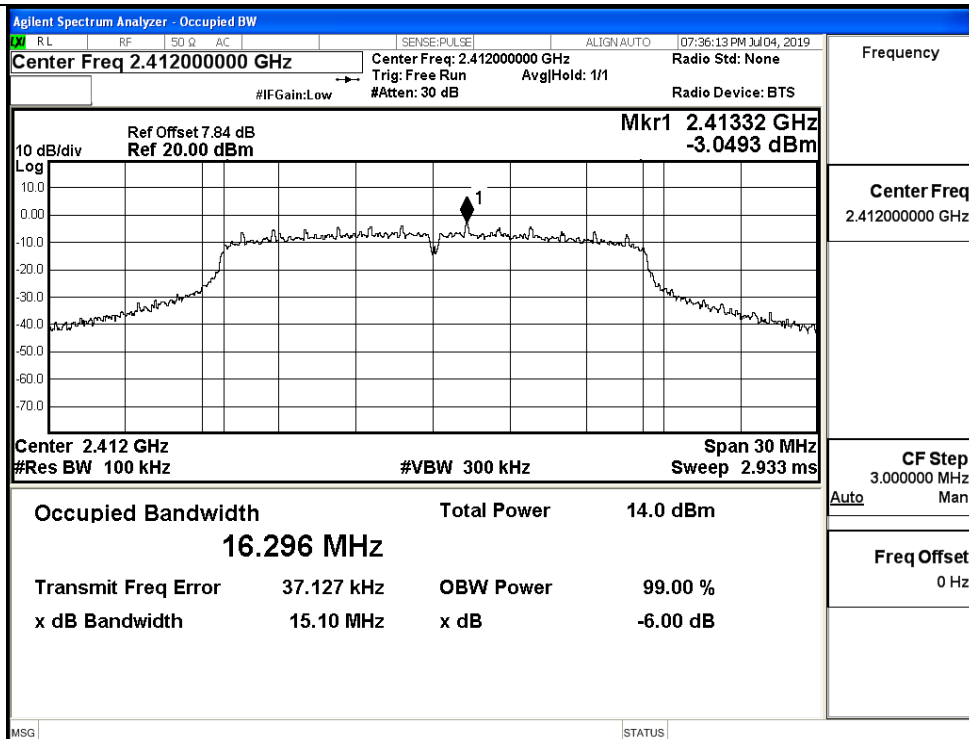
11B/MCH



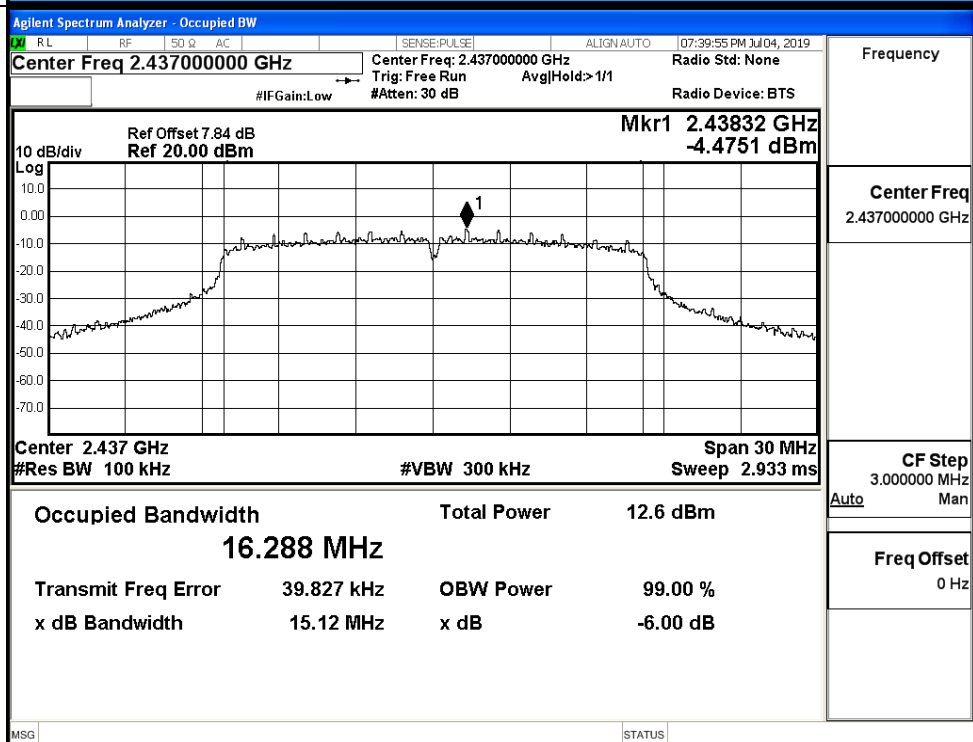
11B/HCH



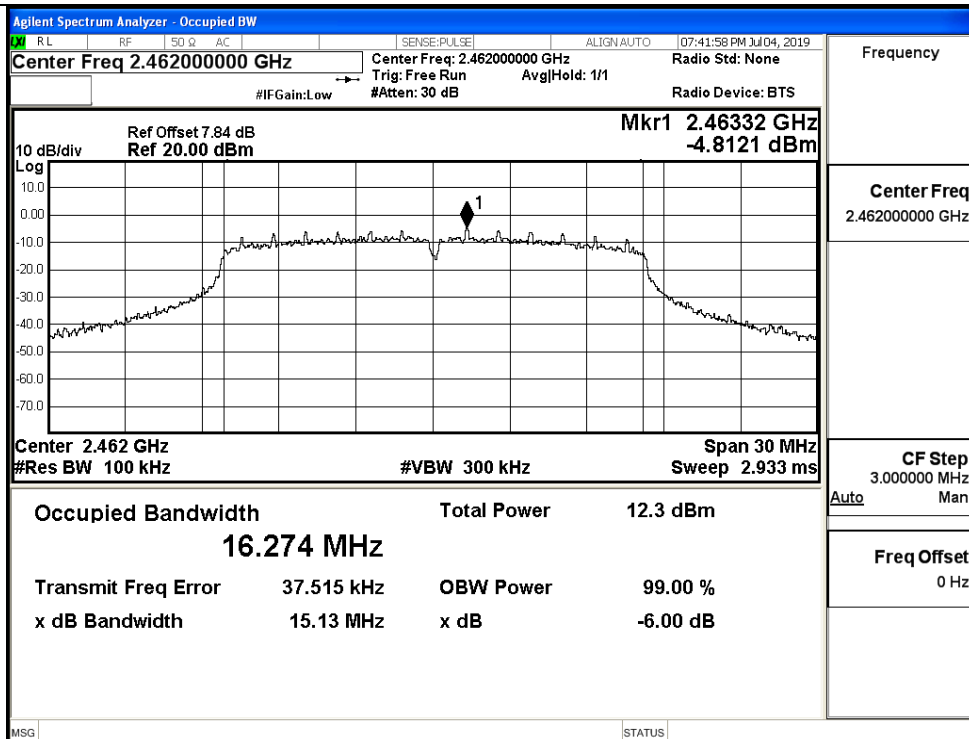
11G/LCH



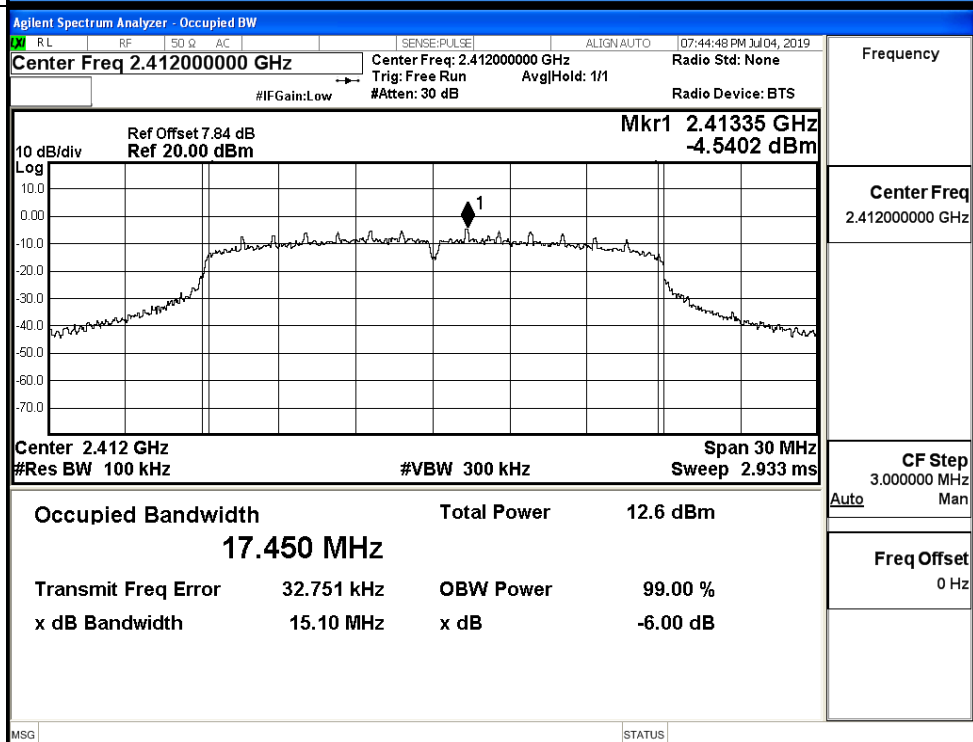
11G/MCH



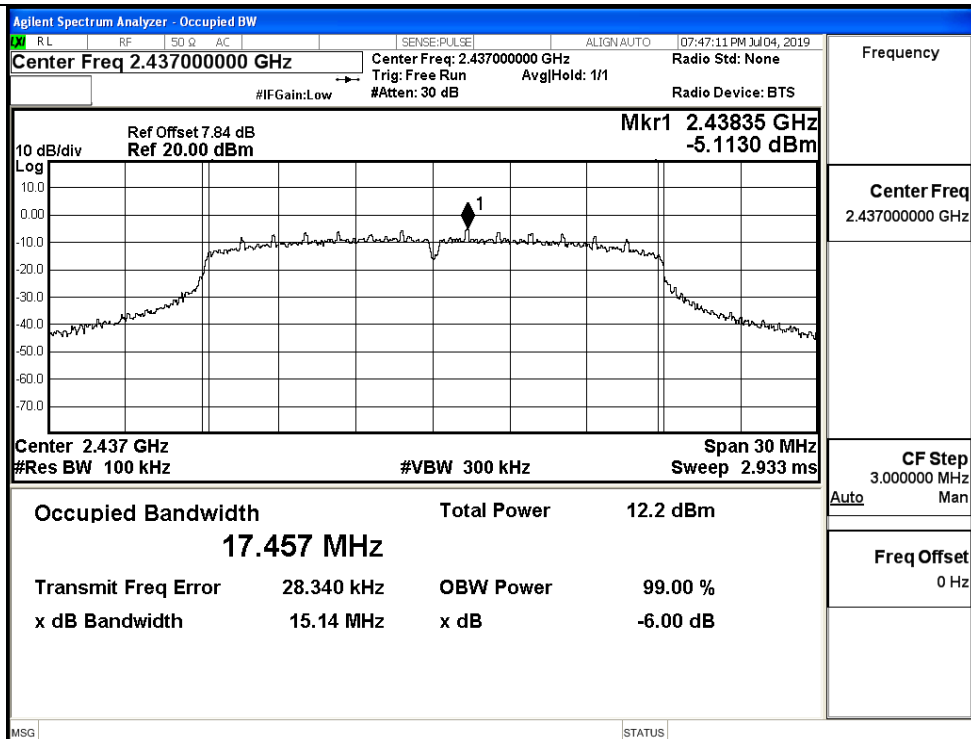
11G/HCH



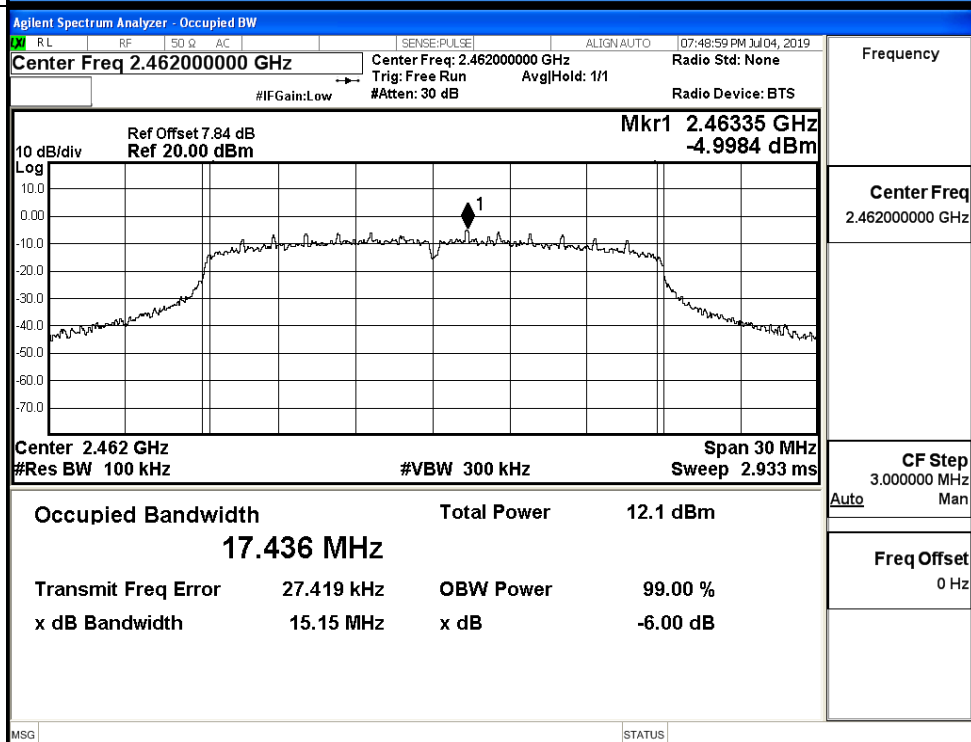
11N20SISO/LCH



11N20SISO/MCH



11N20SISO/HCH

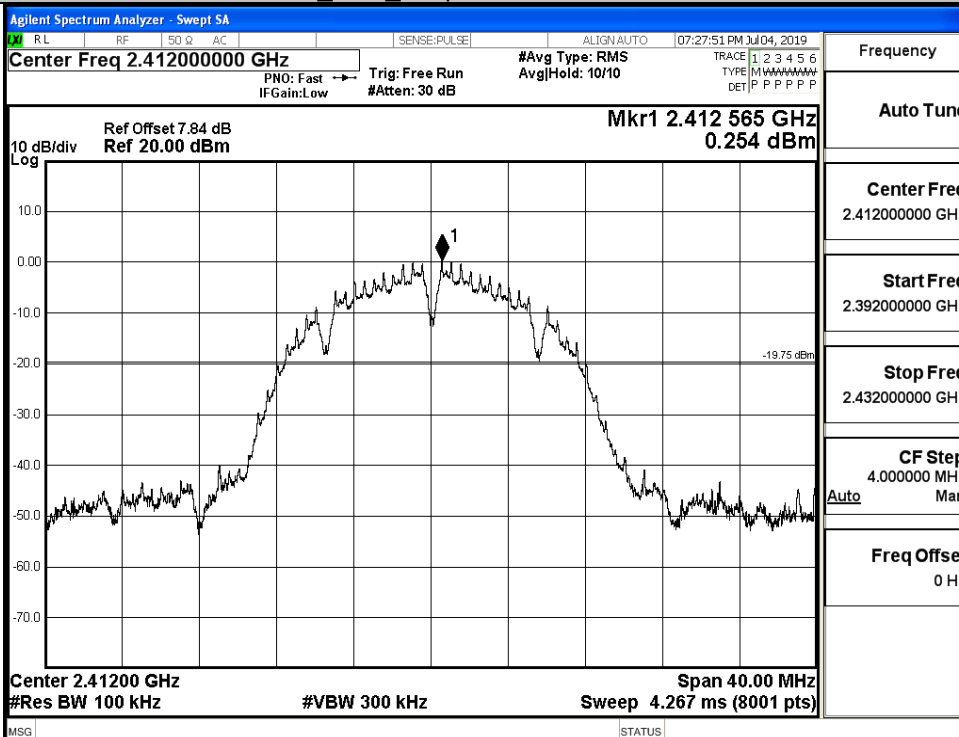


C.5 RF Conducted Spurious Emissions

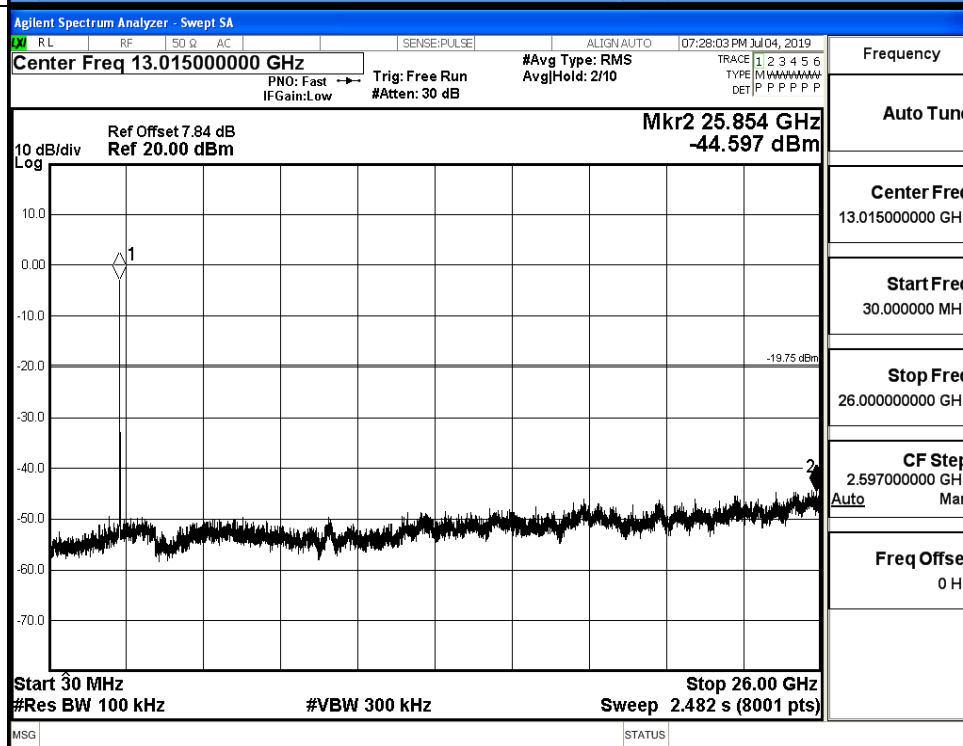
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	0.254	-44.597	-19.746	PASS
	MCH	0.388	-44.558	-19.612	PASS
	HCH	-0.229	-44.020	-20.229	PASS
11G	LCH	-4.758	-44.605	-24.758	PASS
	MCH	-4.525	-42.817	-24.525	PASS
	HCH	-4.976	-43.384	-24.976	PASS
11N20 SISO	LCH	-4.868	-44.640	-24.868	PASS
	MCH	-5.2	-44.180	-25.200	PASS
	HCH	-5.018	-43.970	-25.018	PASS

11B LCH Graphs

Pref/11B/LCH

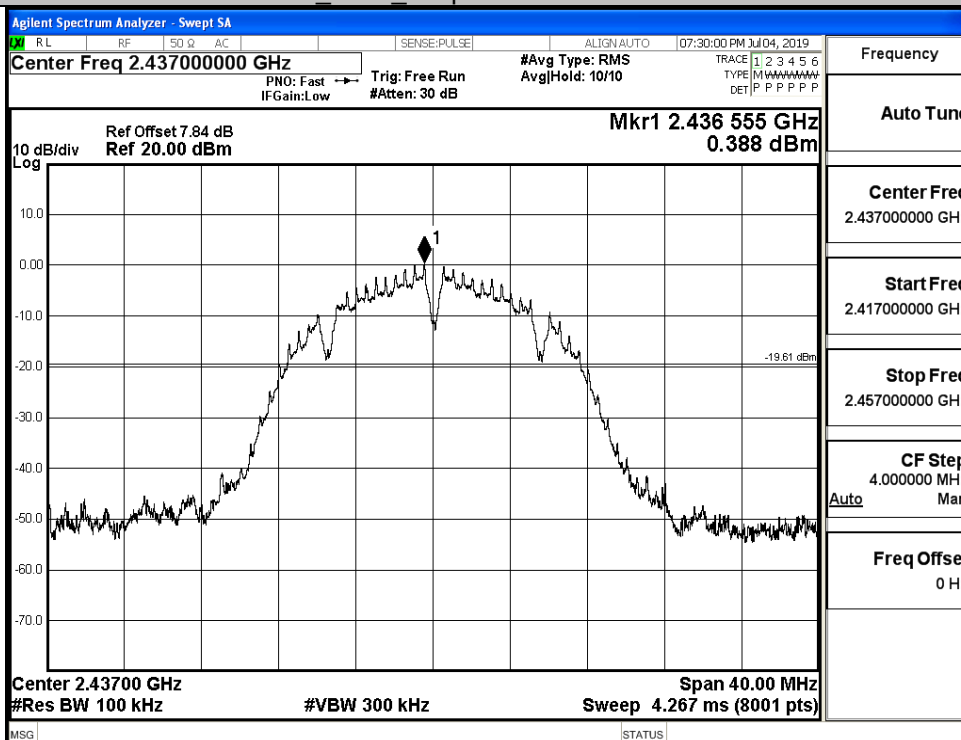


Puw/11B/LCH

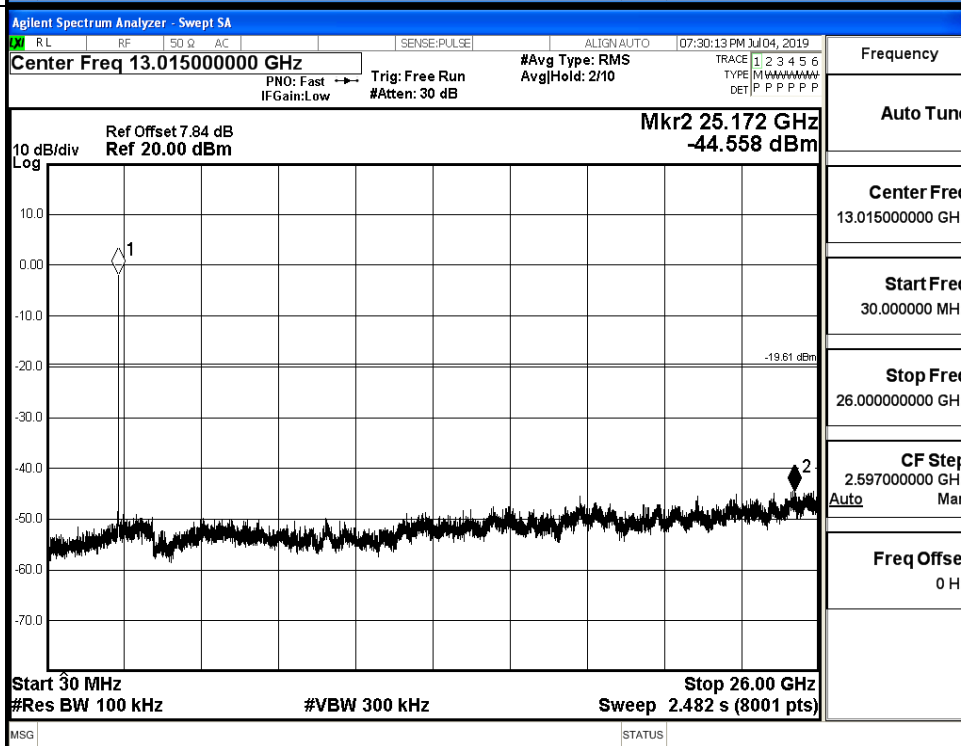


11B MCH Graphs

Pref/11B/MCH

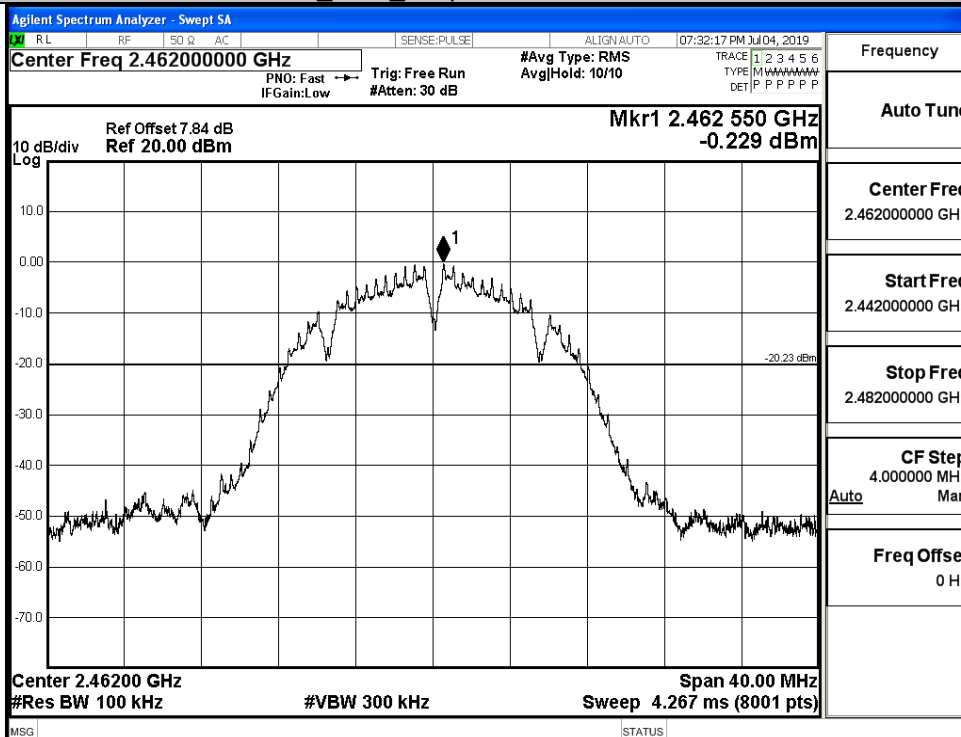


Puw/11B/MCH

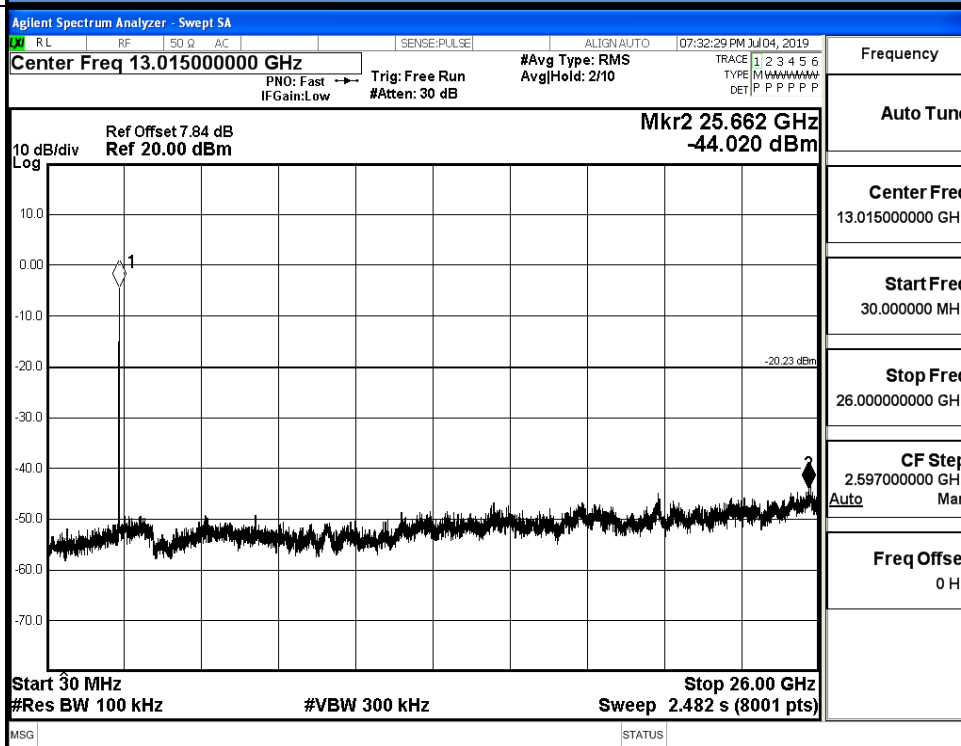


11B HCH Graphs

Pref/11B/HCH

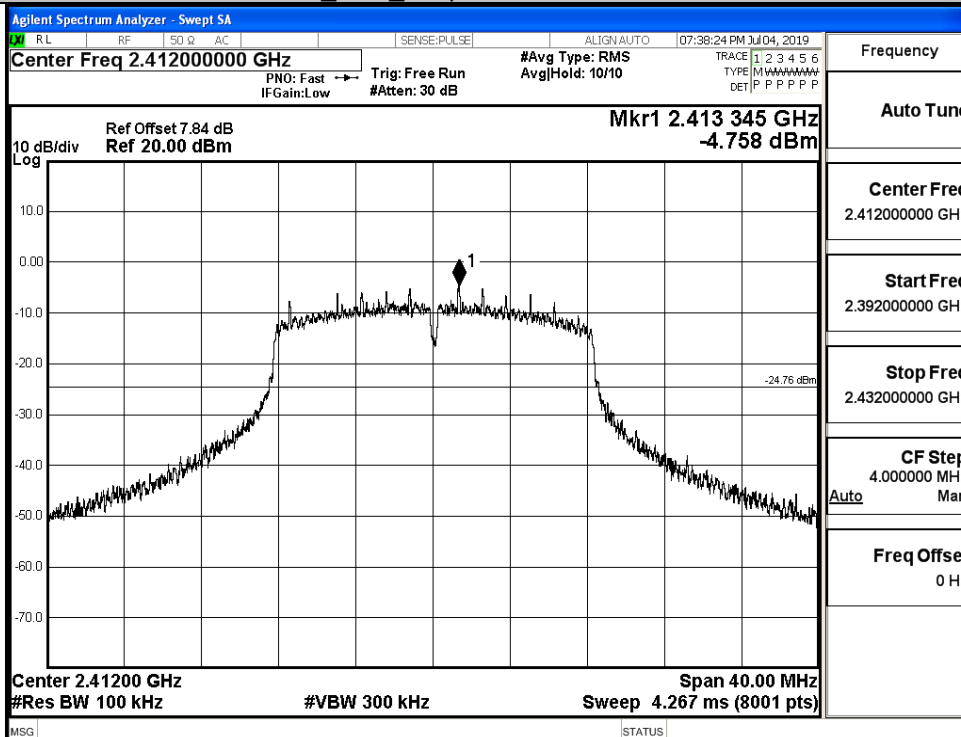


Puw/11B/HCH

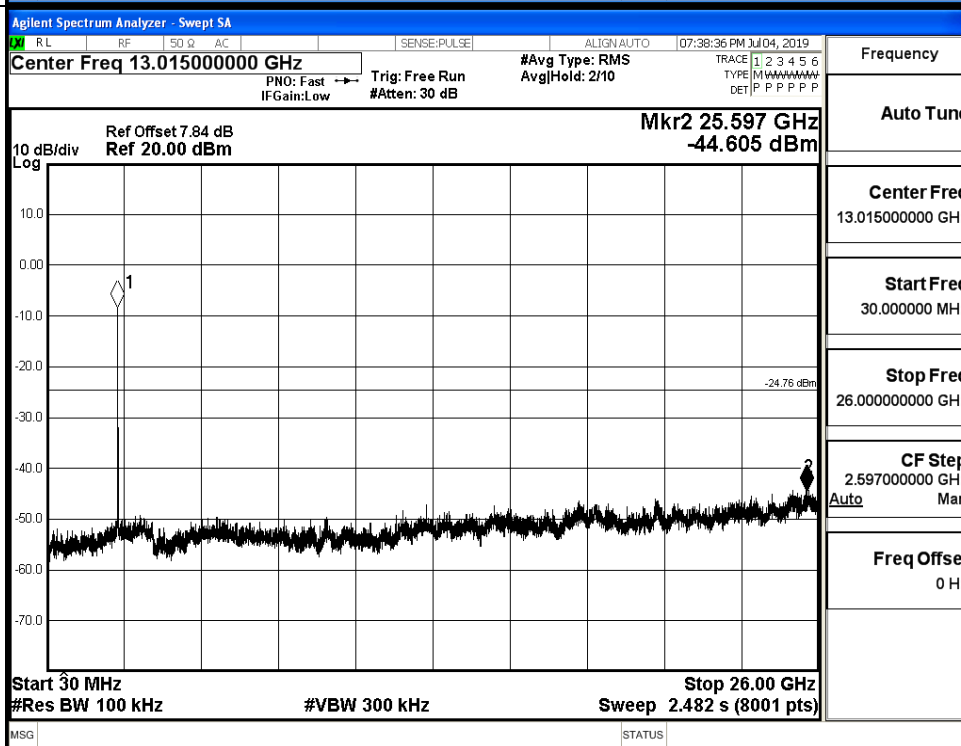


11G_LCH_Graphs

Pref/11G/LCH

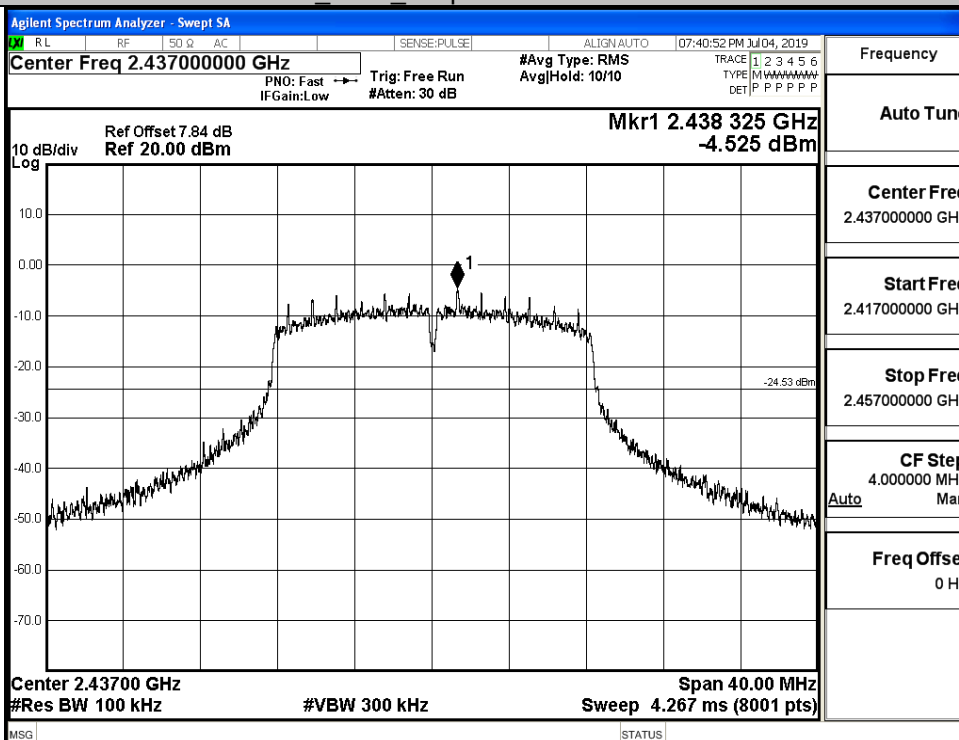


Puw/11G/LCH

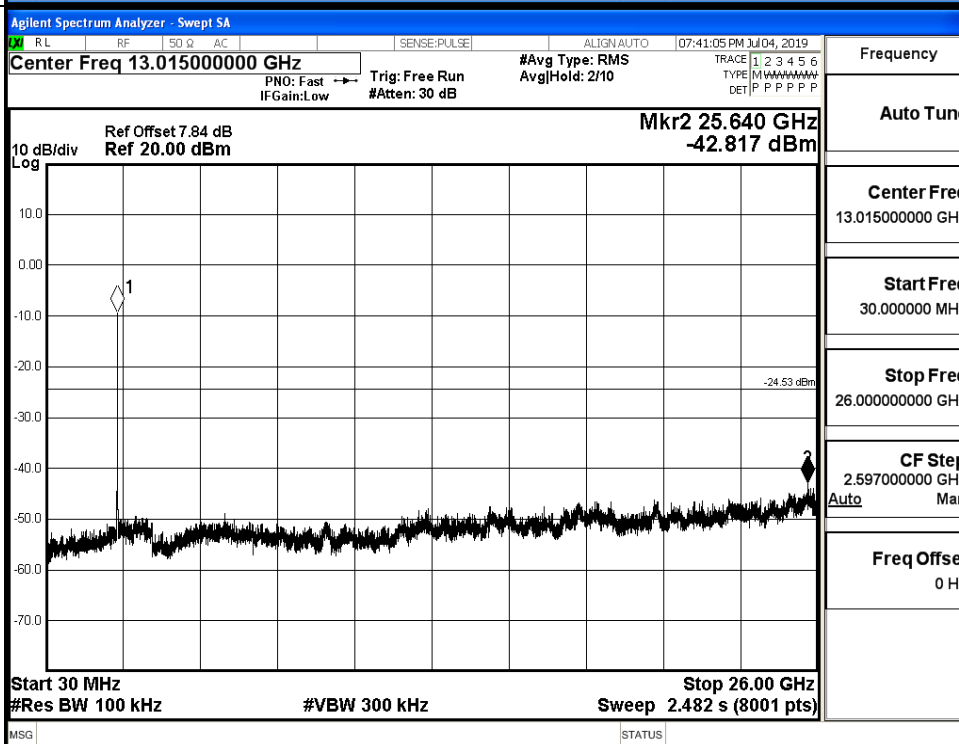


11G MCH Graphs

Pref/11G/MCH

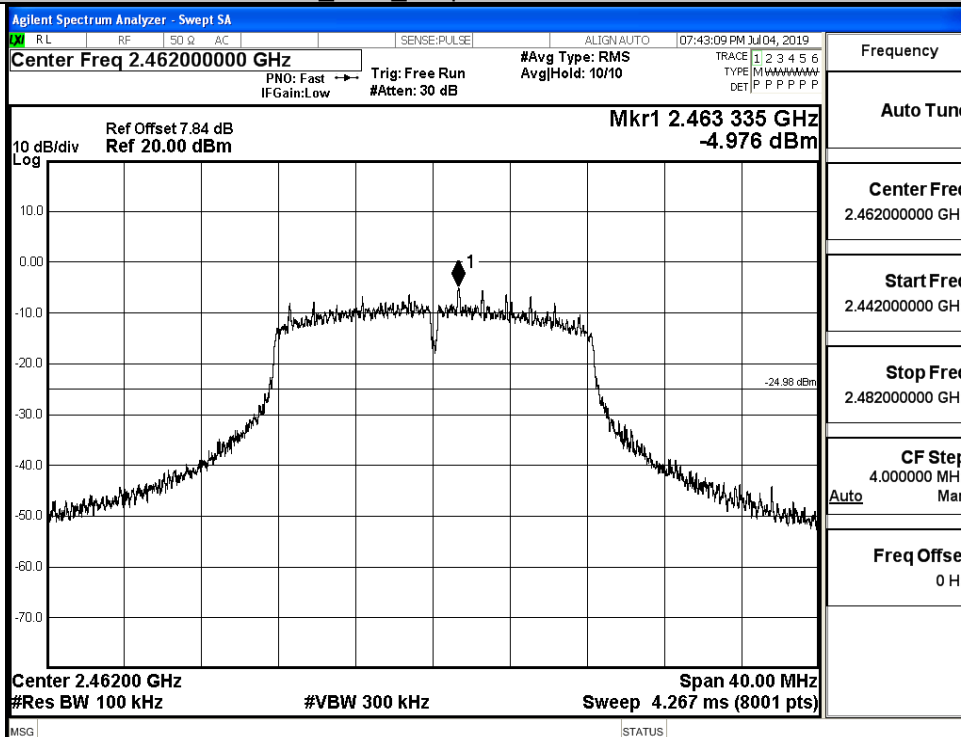


Puw/11G/MCH

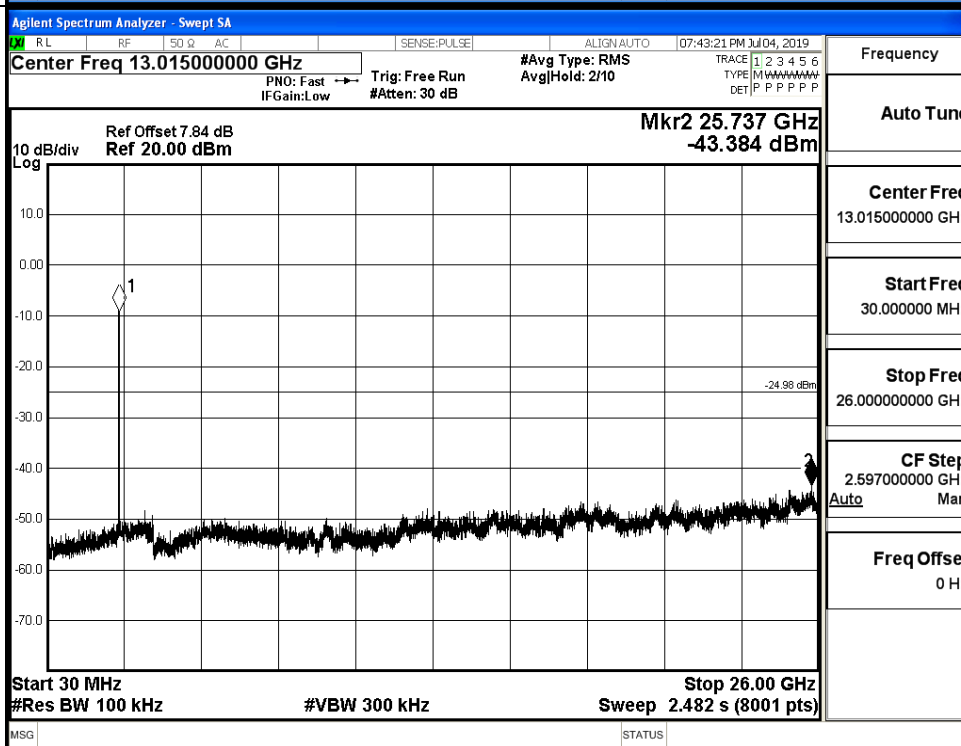


11G HCH Graphs

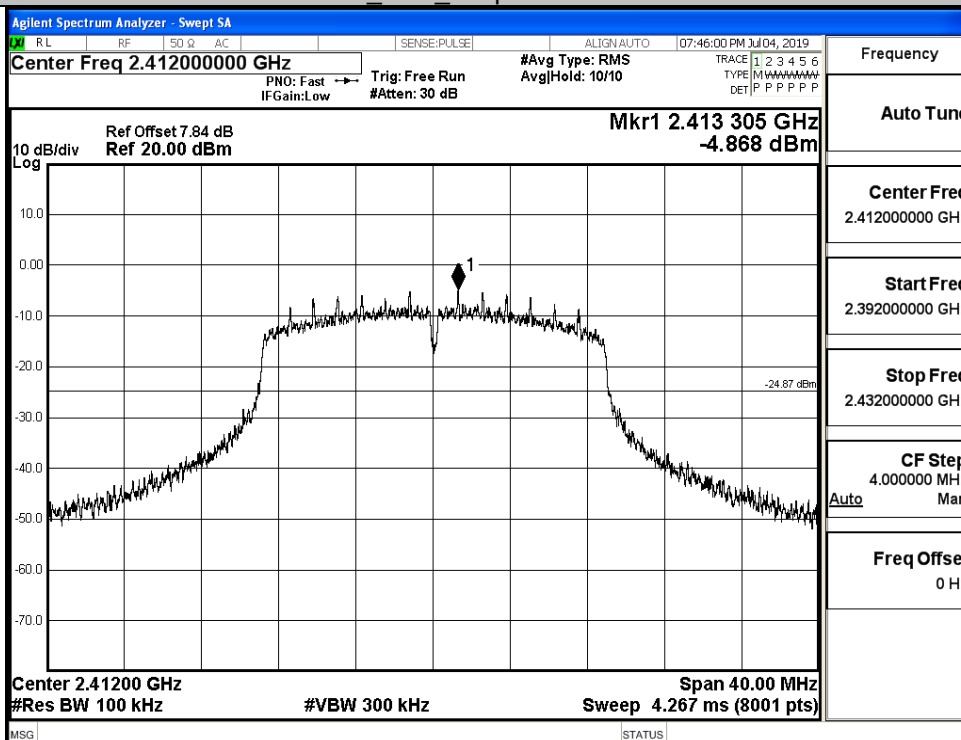
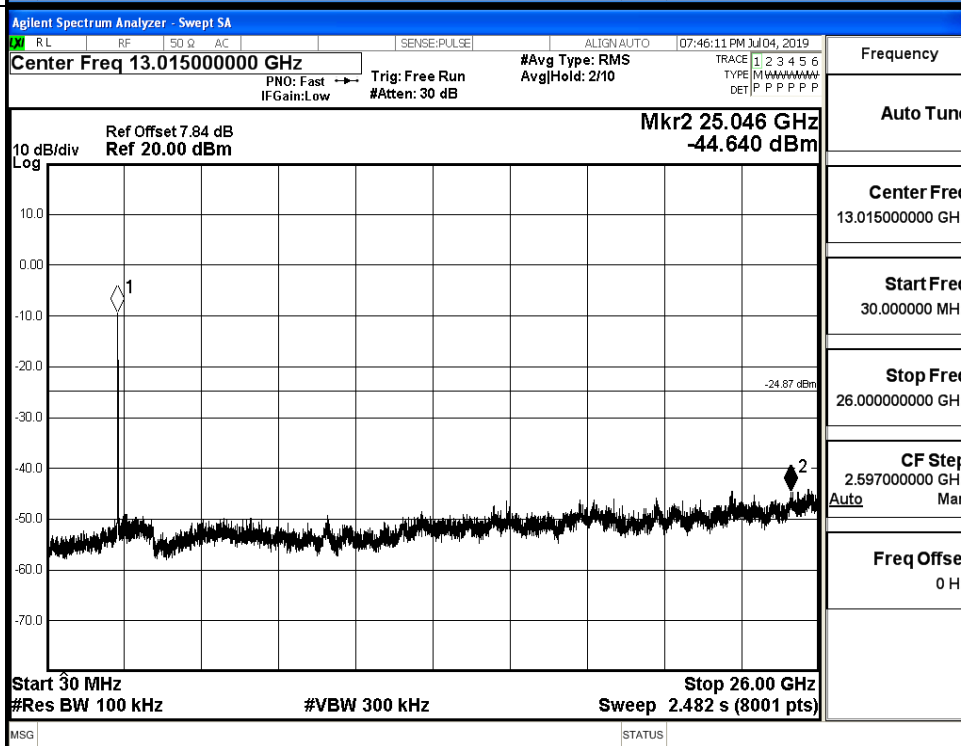
Pref/11G/HCH



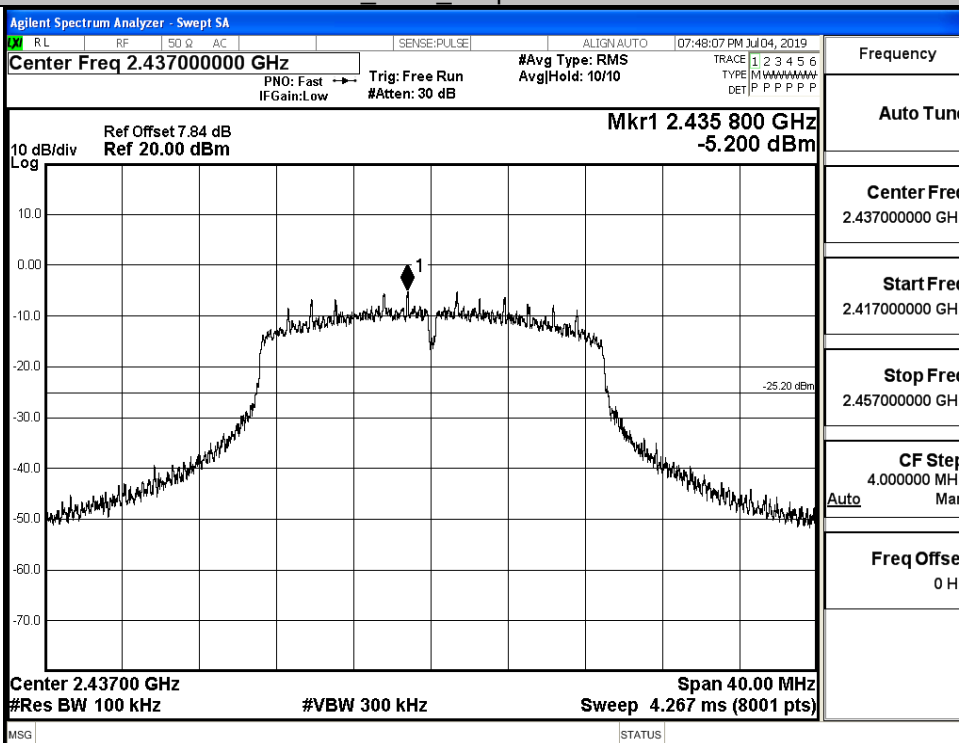
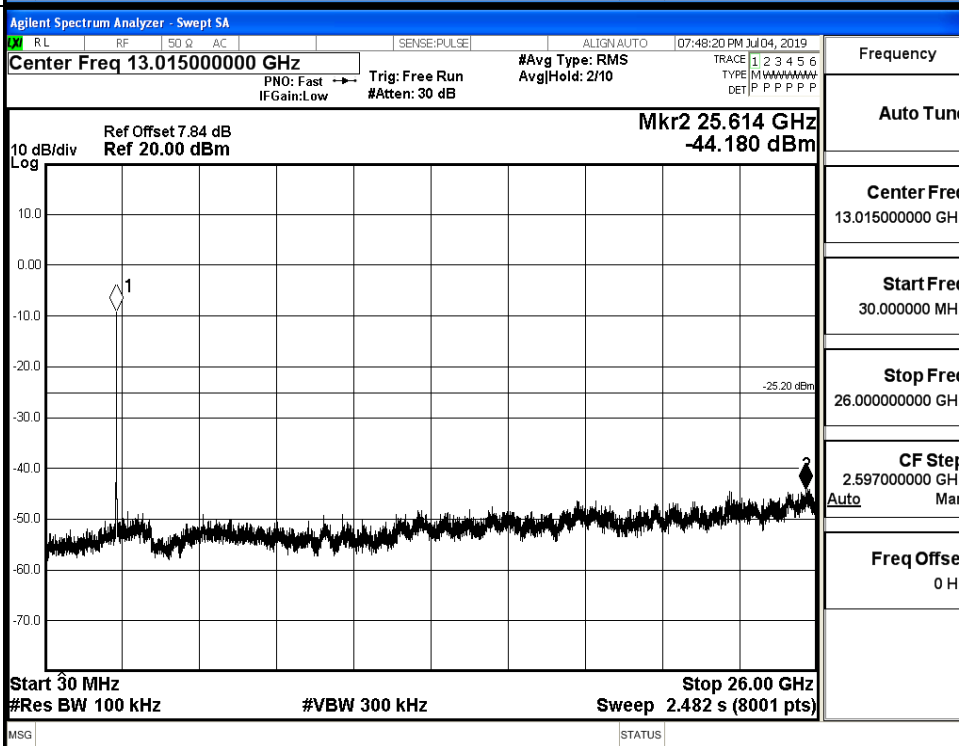
Puw/11G/HCH



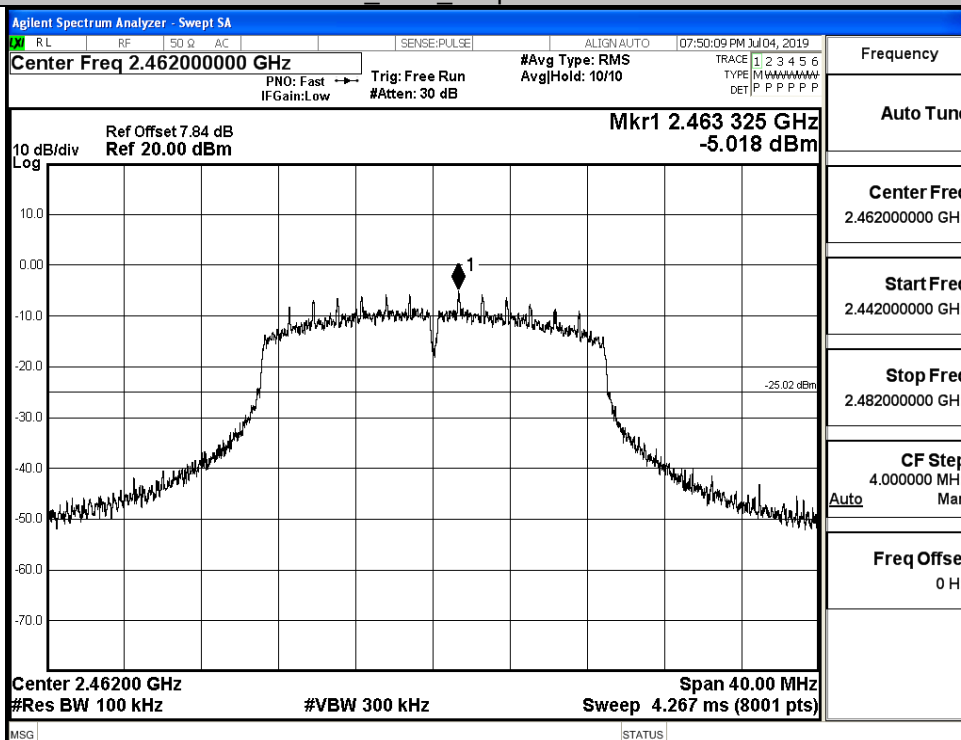
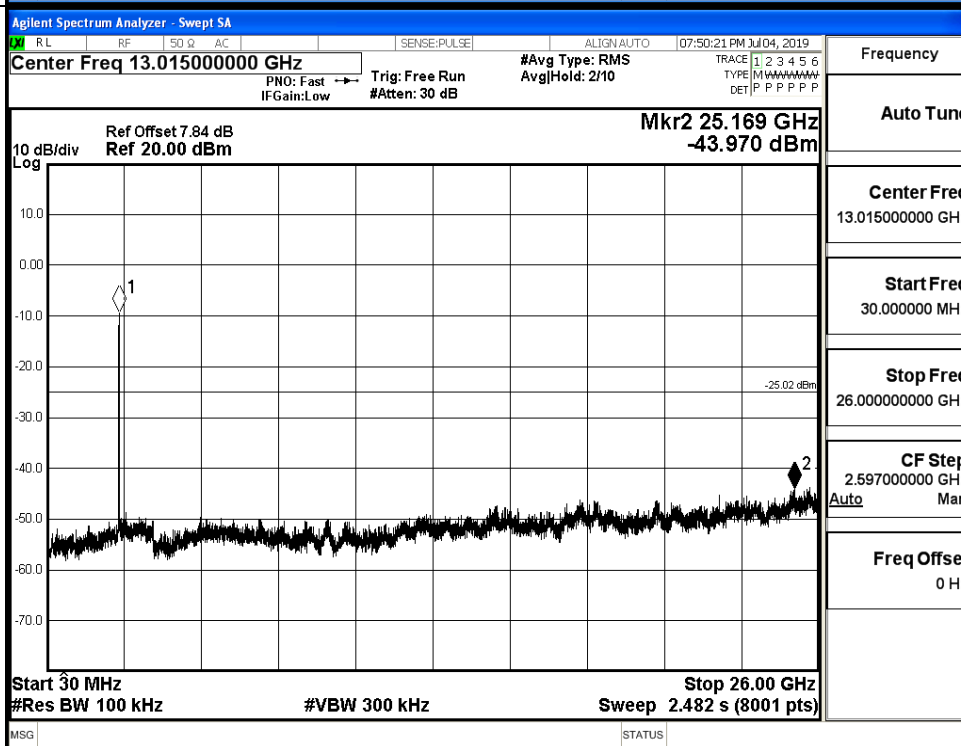
11N20SISO LCH Graphs

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

11N20SISO_MCH_Graphs

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

11N20SISO HCH Graphs

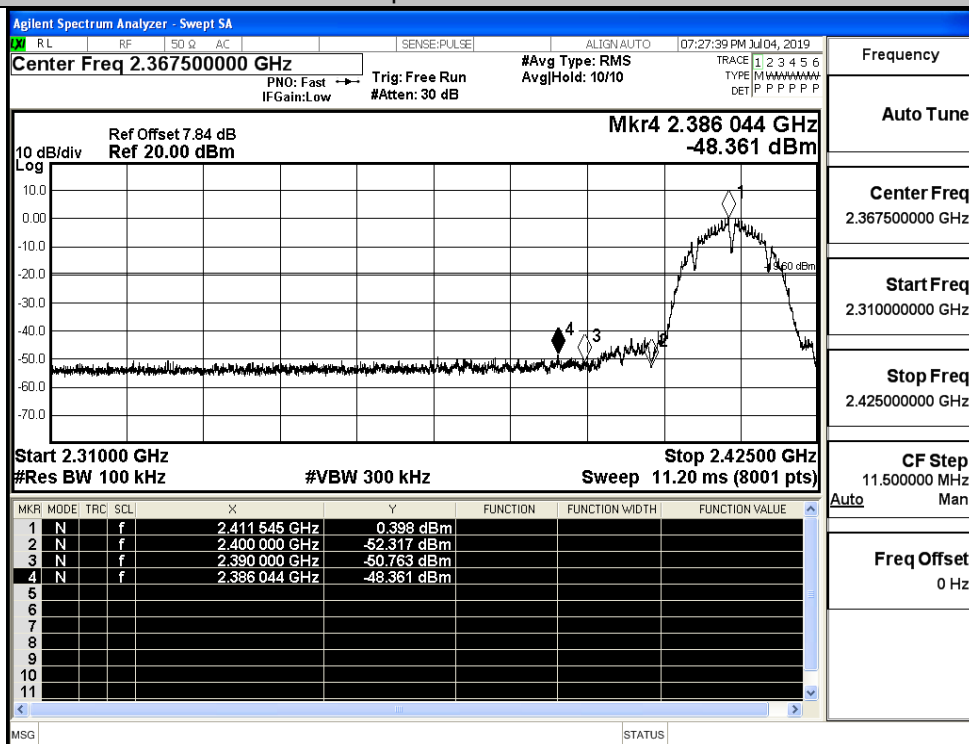
Pref/11N20
SISO/HCHPuw/11N20
SISO/HCH

C.6 Band-edge for RF Conducted Emissions

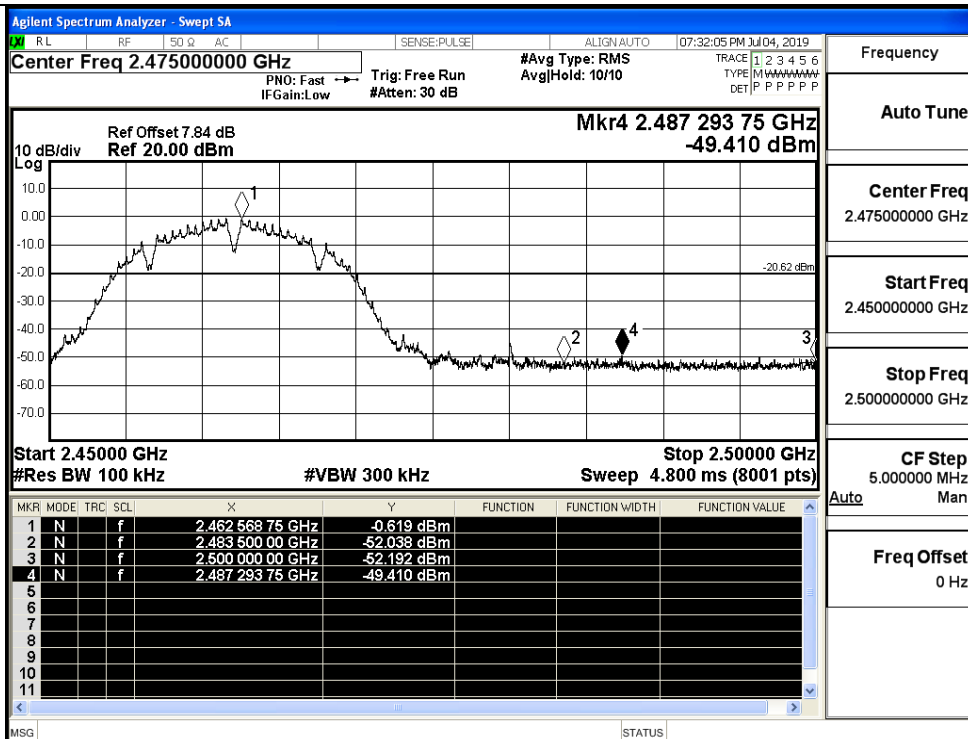
Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	0.398	-48.361	-19.6	PASS
	HCH	-0.619	-49.410	-20.62	PASS
11G	LCH	-4.617	-49.362	-24.62	PASS
	HCH	-4.908	-48.460	-24.91	PASS
11N20SISO	LCH	-4.875	-49.114	-24.88	PASS
	HCH	-5.086	-49.200	-25.09	PASS

Test Graphs

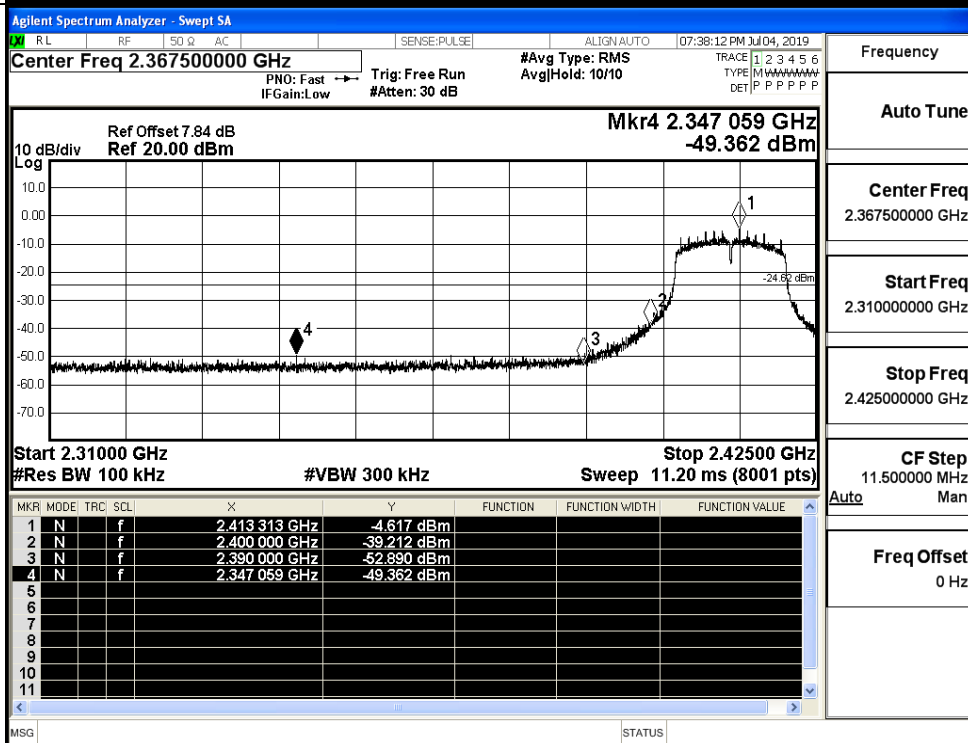
11B/LCH



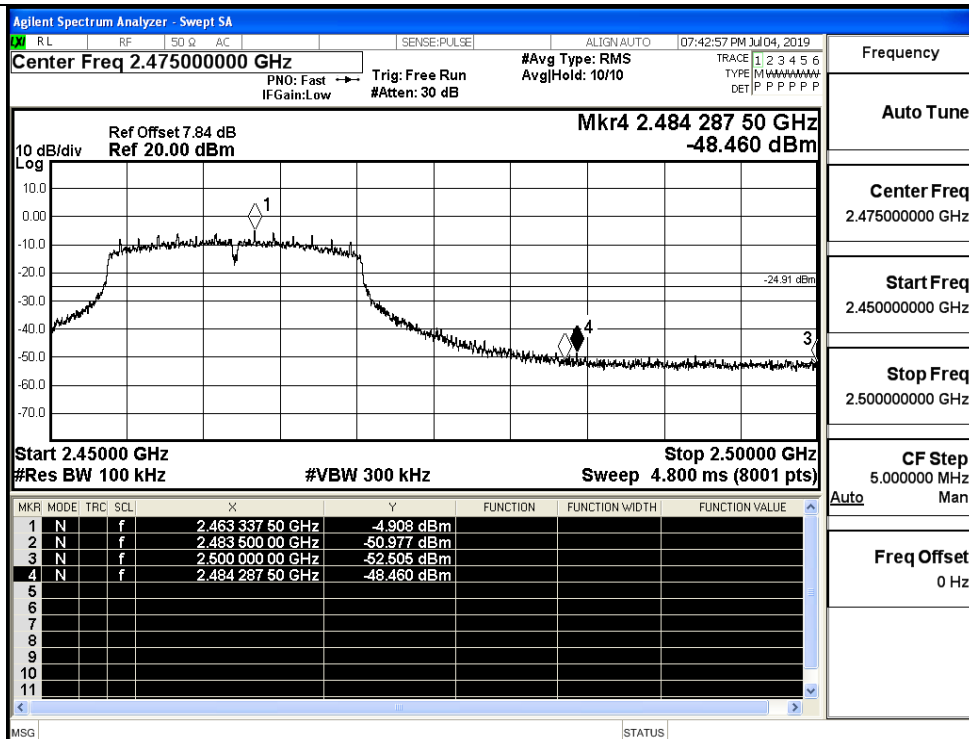
11B/HCH



11G/LCH



11G/HCH



Frequency

Auto Tune

Center Freq

2.475000000 GHz

Start Freq

2.450000000 GHz

Stop Freq

2.500000000 GHz

CF Step

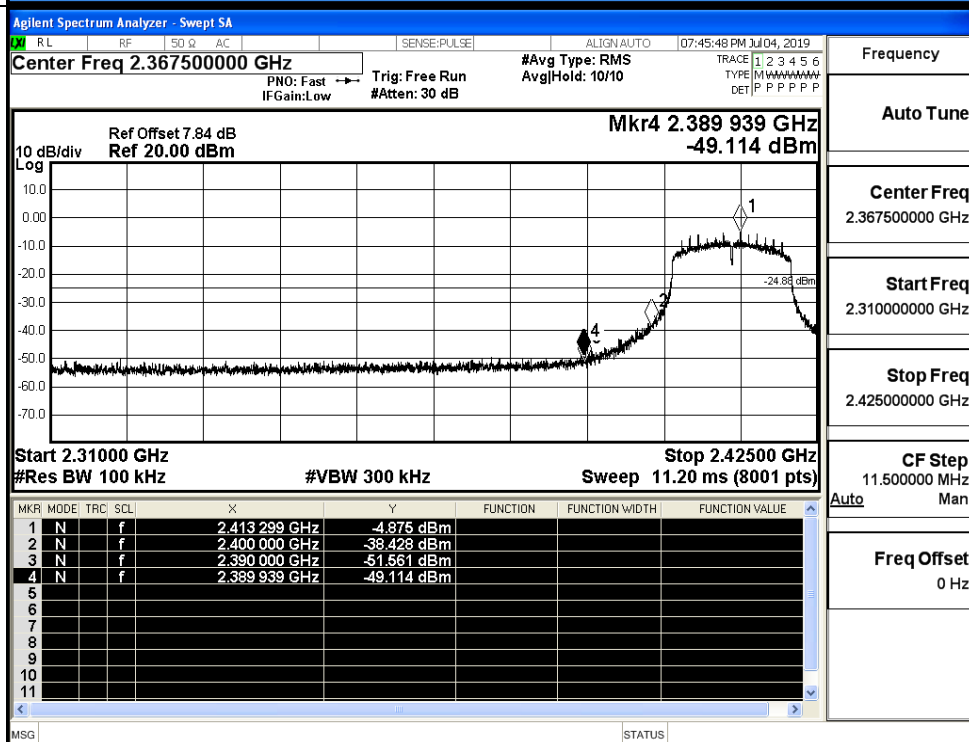
5.000000 MHz

Auto

Freq Offset

0 Hz

11N20SISO/LCH



Frequency

Auto Tune

Center Freq

2.367500000 GHz

Start Freq

2.310000000 GHz

Stop Freq

2.425000000 GHz

CF Step

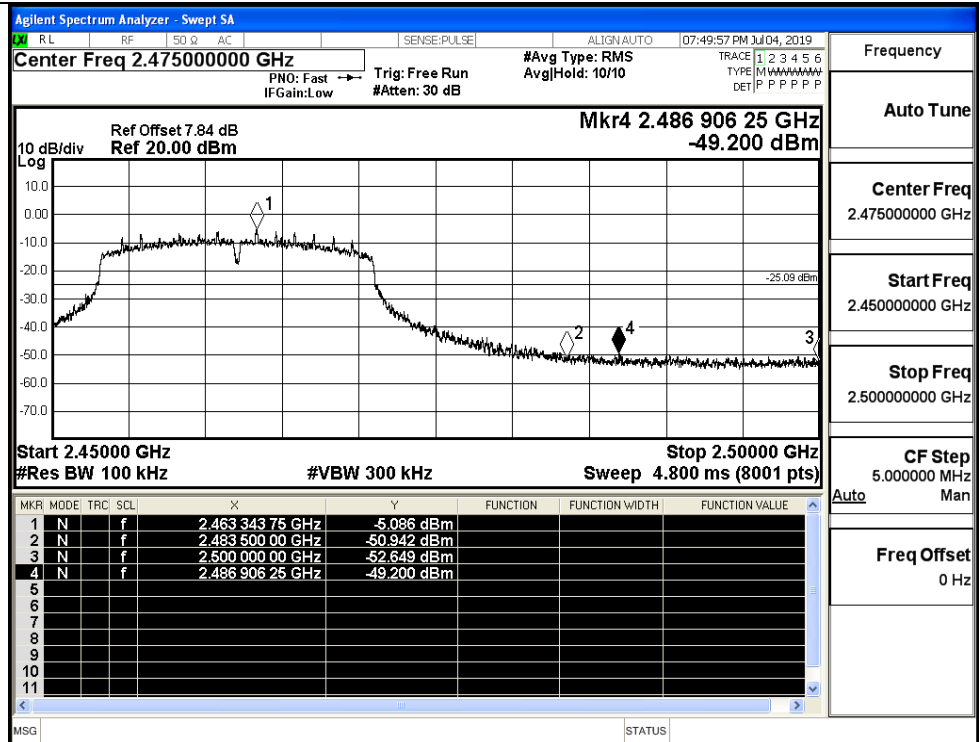
11.500000 MHz

Auto

Freq Offset

0 Hz

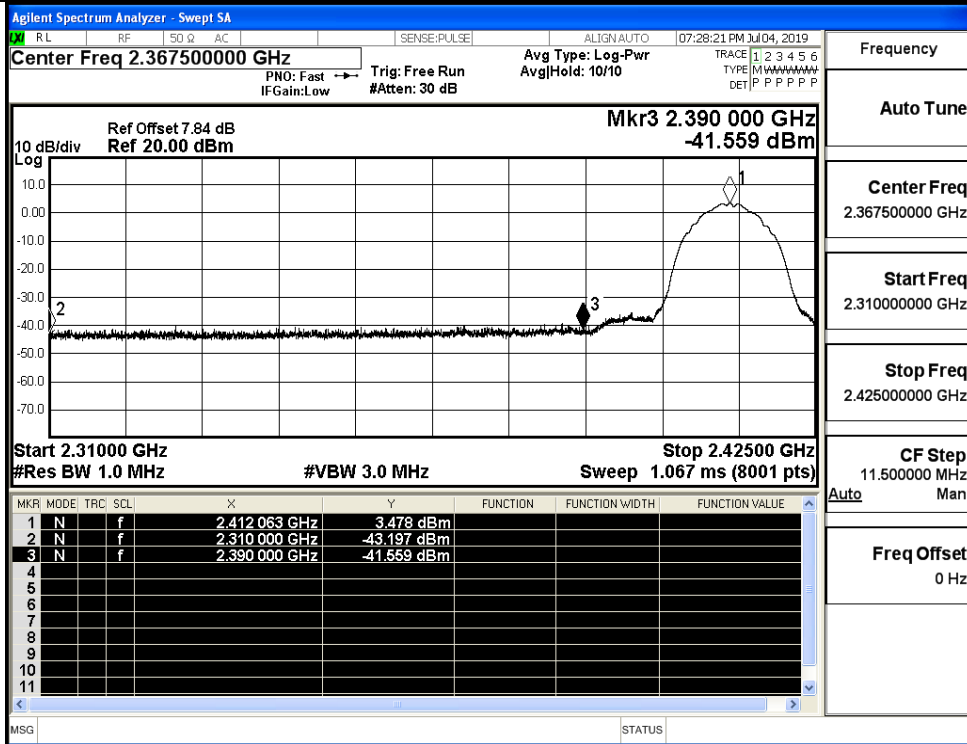
11N20SISO/HCH



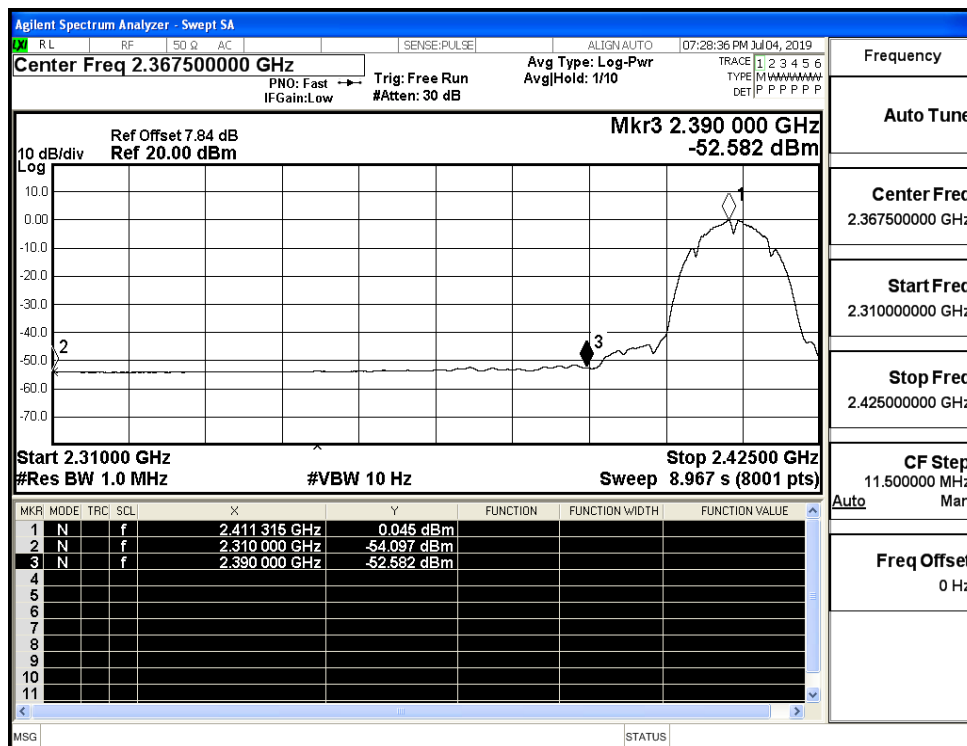
C.7 Restrict-band band-edge measurements

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	2.0	0	54.06	PEAK	74	PASS
	2412	Ant1	2310.0	-54.10	2.0	0	43.16	AV	54	PASS
	2412	Ant1	2390.0	-41.56	2.0	0	55.70	PEAK	74	PASS
	2412	Ant1	2390.0	-52.58	2.0	0	44.68	AV	54	PASS
	2462	Ant1	2483.5	-42.65	2.0	0	54.61	PEAK	74	PASS
	2462	Ant1	2483.5	-53.26	2.0	0	44.00	AV	54	PASS
	2462	Ant1	2500.0	-42.49	2.0	0	54.76	PEAK	74	PASS
	2462	Ant1	2500.0	-53.30	2.0	0	43.96	AV	54	PASS
11G	2412	Ant1	2310.0	-43.59	2.0	0	53.67	PEAK	74	PASS
	2412	Ant1	2310.0	-54.12	2.0	0	43.13	AV	54	PASS
	2412	Ant1	2390.0	-40.12	2.0	0	57.14	PEAK	74	PASS
	2412	Ant1	2390.0	-51.64	2.0	0	45.62	AV	54	PASS
	2462	Ant1	2483.5	-41.12	2.0	0	56.14	PEAK	74	PASS
	2462	Ant1	2483.5	-51.88	2.0	0	45.38	AV	54	PASS
	2462	Ant1	2500.0	-42.20	2.0	0	55.06	PEAK	74	PASS
	2462	Ant1	2500.0	-53.26	2.0	0	44.00	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-41.42	2.0	0	55.84	PEAK	74	PASS
	2412	Ant1	2310.0	-54.11	2.0	0	43.15	AV	54	PASS
	2412	Ant1	2390.0	-40.57	2.0	0	56.69	PEAK	74	PASS
	2412	Ant1	2390.0	-51.21	2.0	0	46.05	AV	54	PASS
	2462	Ant1	2483.5	-39.83	2.0	0	57.43	PEAK	74	PASS
	2462	Ant1	2483.5	-51.65	2.0	0	45.61	AV	54	PASS
	2462	Ant1	2500.0	-43.40	2.0	0	53.85	PEAK	74	PASS
	2462	Ant1	2500.0	-53.22	2.0	0	44.04	AV	54	PASS

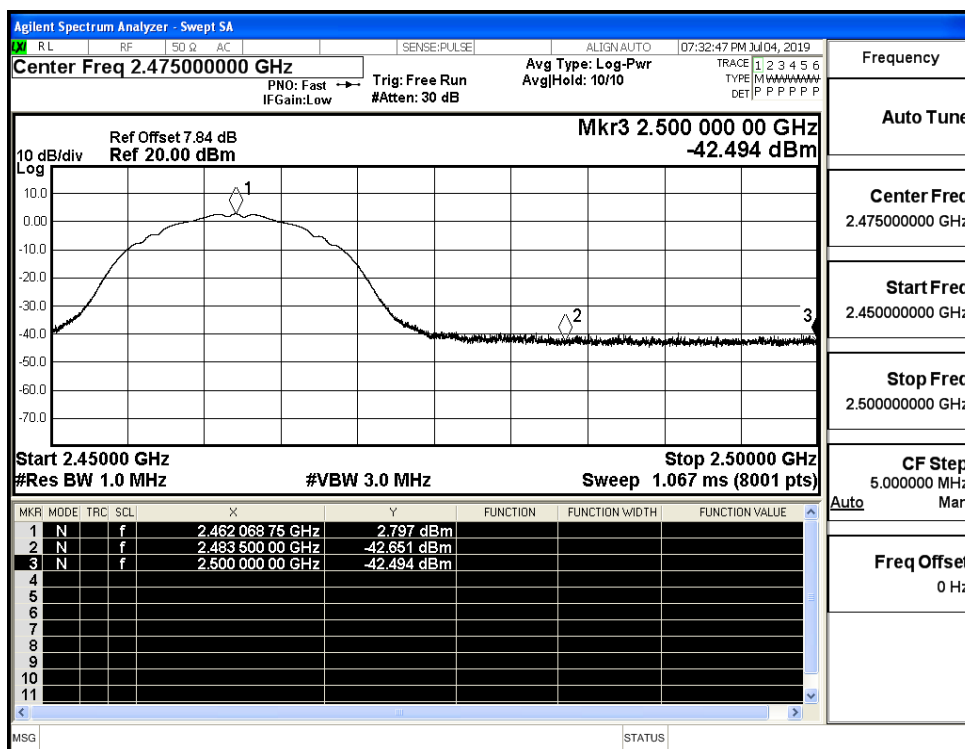
Restrict-band band-edge measurements_11B_2412_Ant1_PEAK



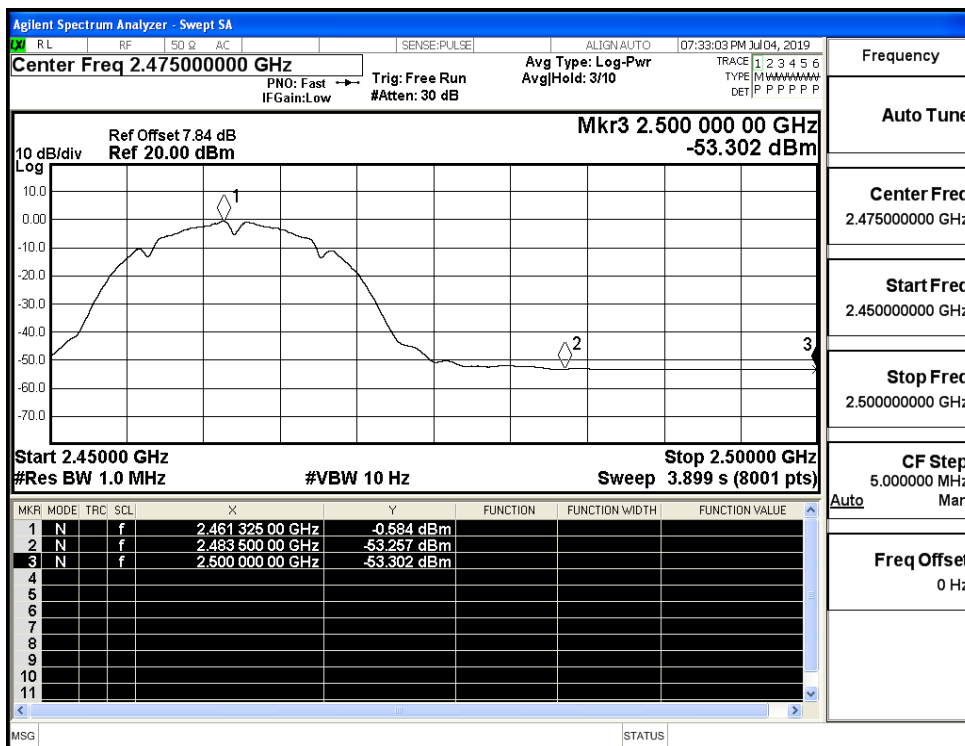
Restrict-band band-edge measurements_11B_2412_Ant1_AV



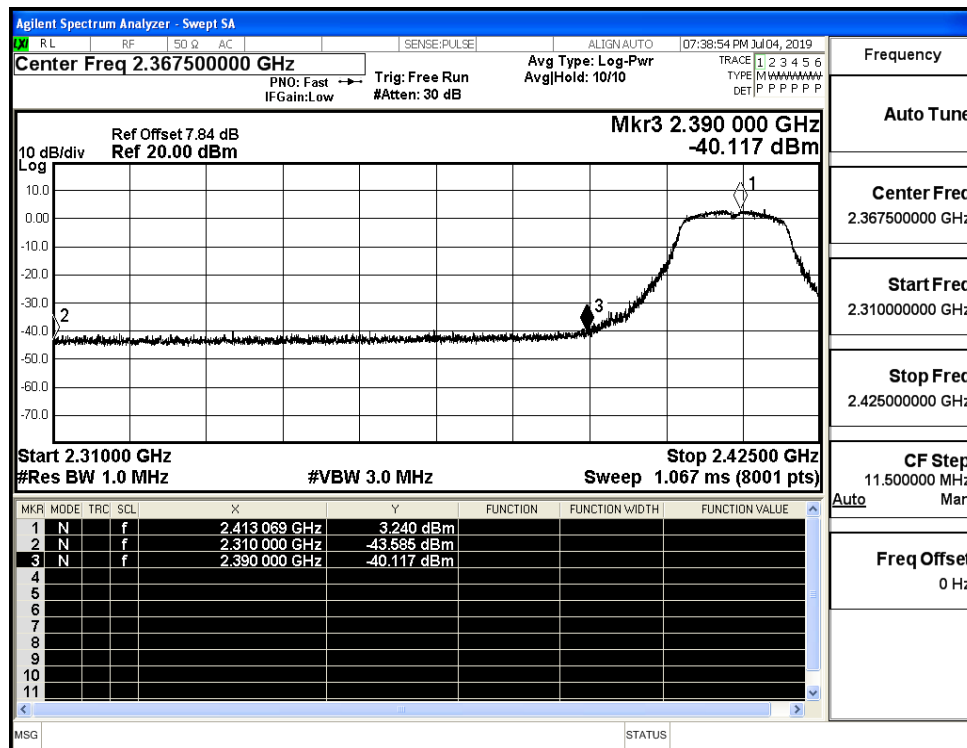
Restrict-band band-edge measurements_11B_2462_Ant1_PEAK



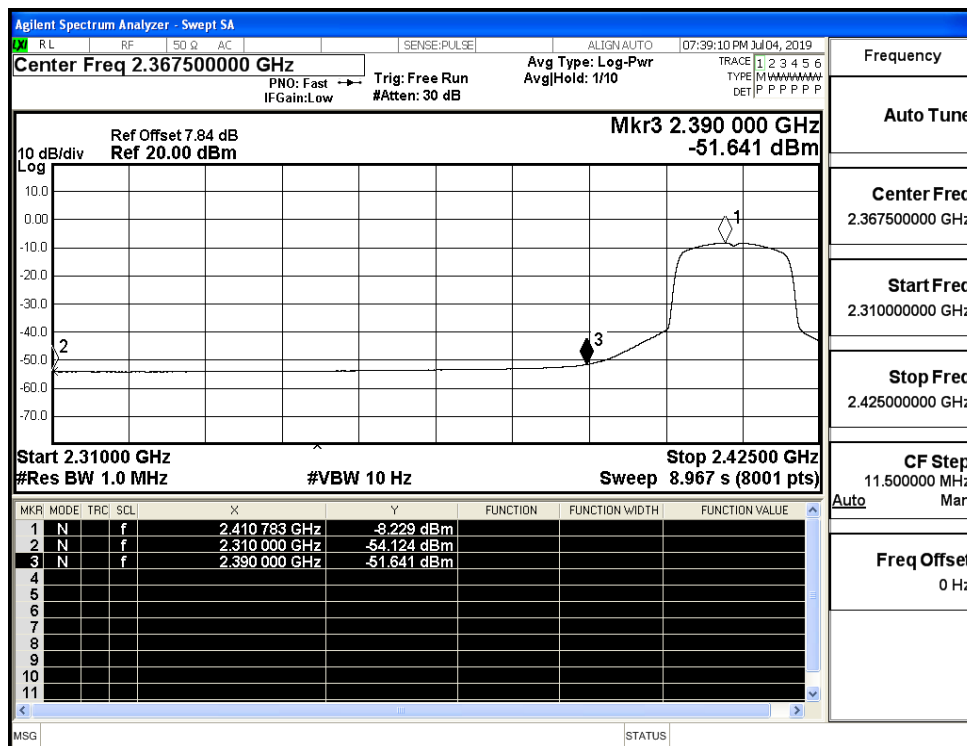
Restrict-band band-edge measurements_11B_2462_Ant1_AV



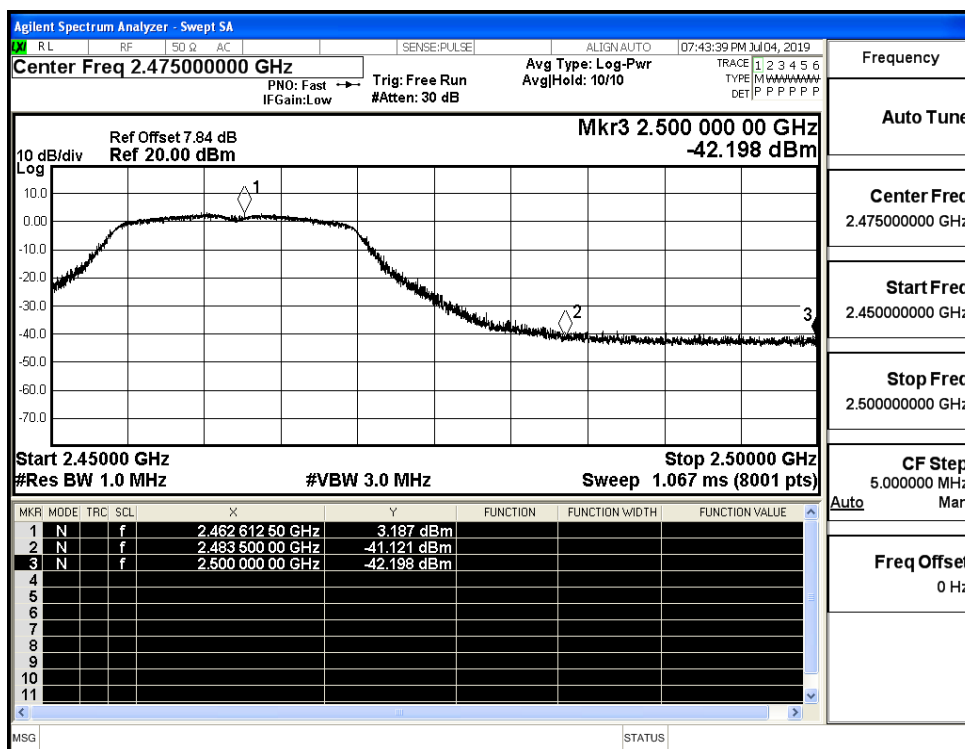
Restrict-band band-edge measurements_11G_2412_Ant1_PEAK



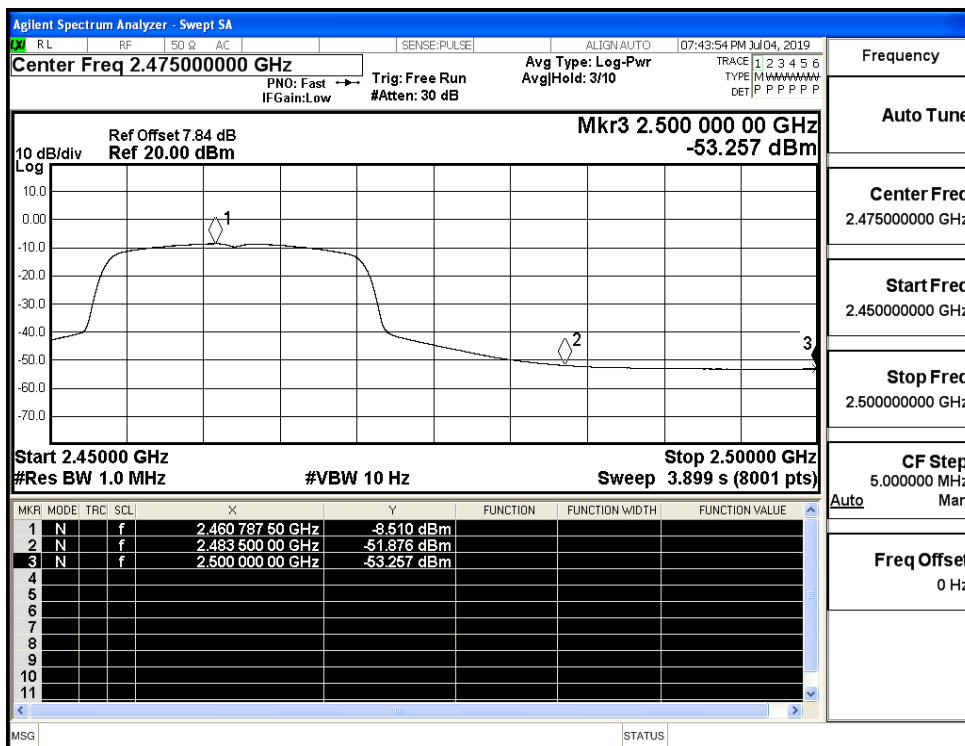
Restrict-band band-edge measurements_11G_2412_Ant1_AV



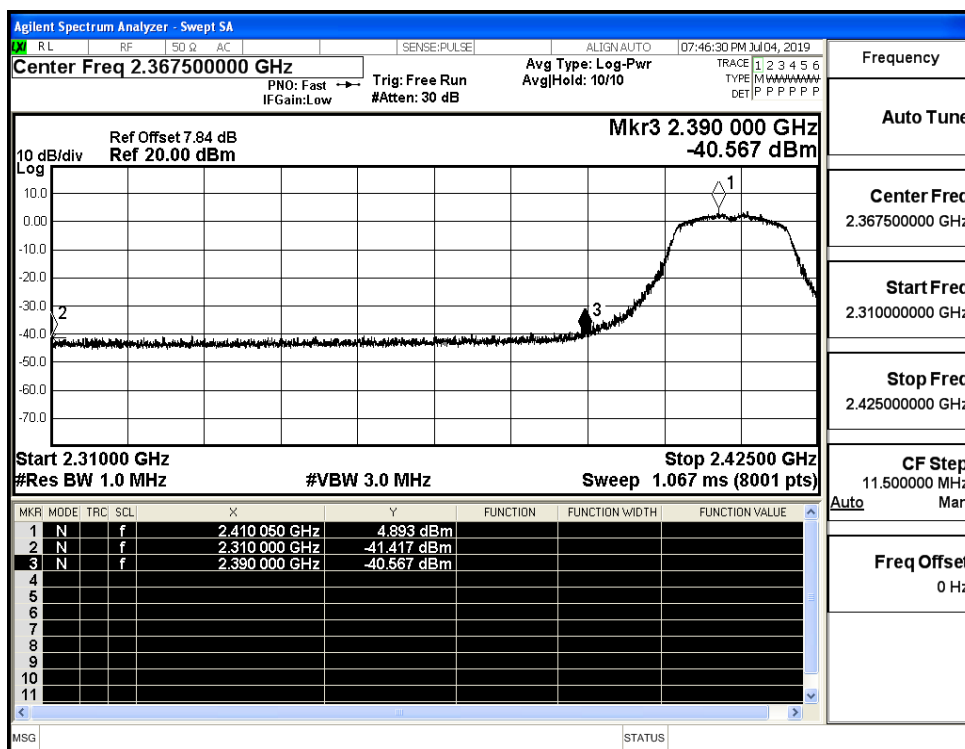
Restrict-band band-edge measurements_11G_2462_Ant1_PEAK



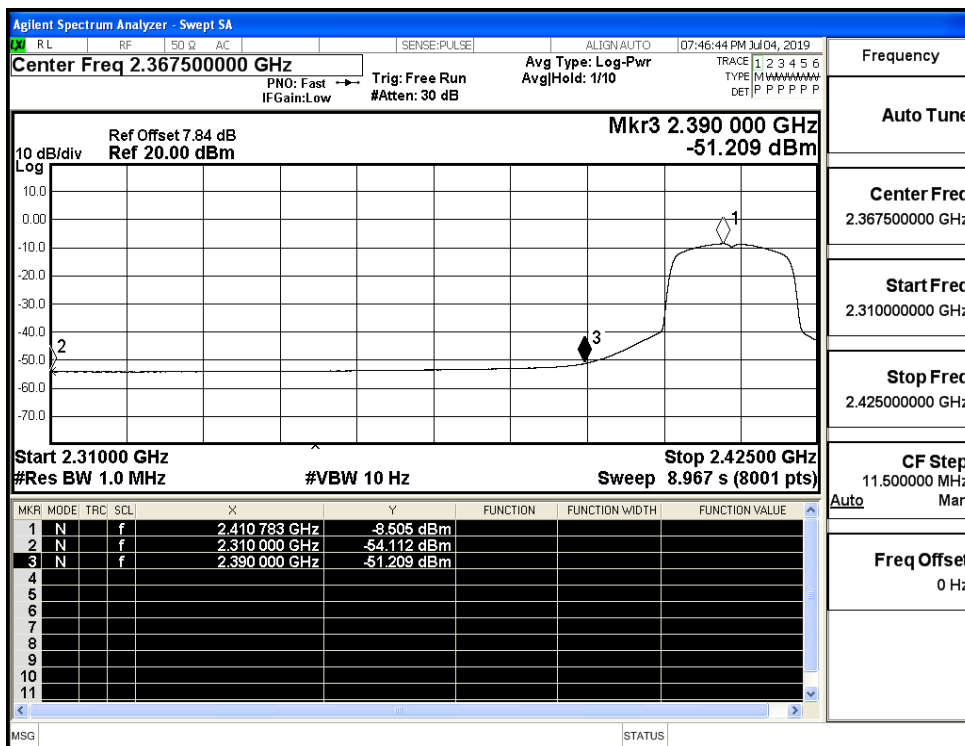
Restrict-band band-edge measurements_11G_2462_Ant1_AV



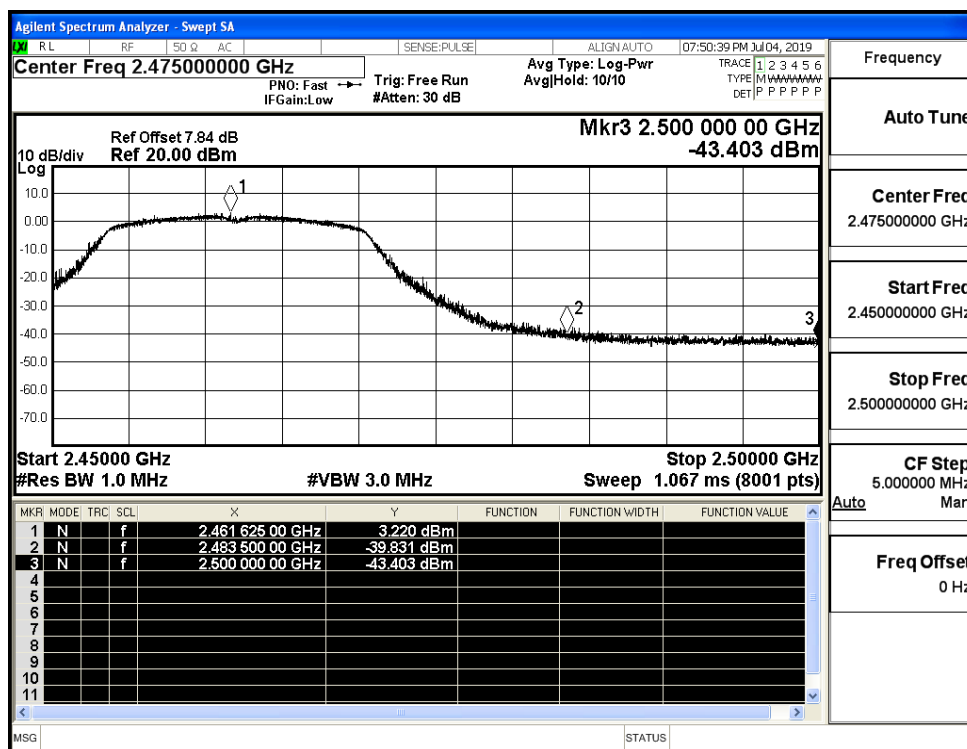
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_PEAK



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

