

Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Smart Bulb

Trade Mark: Xenon/Jinvoo

Test Model: SM-R65

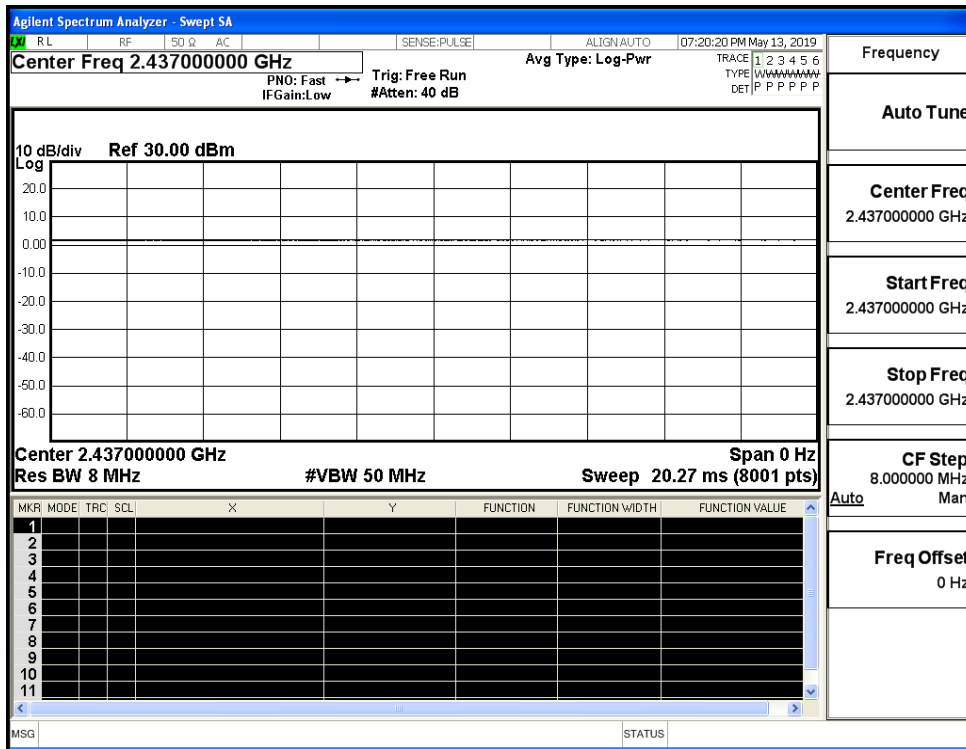
Environmental Conditions

Temperature:	23.5 ° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Jerry.Zeng
Supervised by:	Tom.Liu

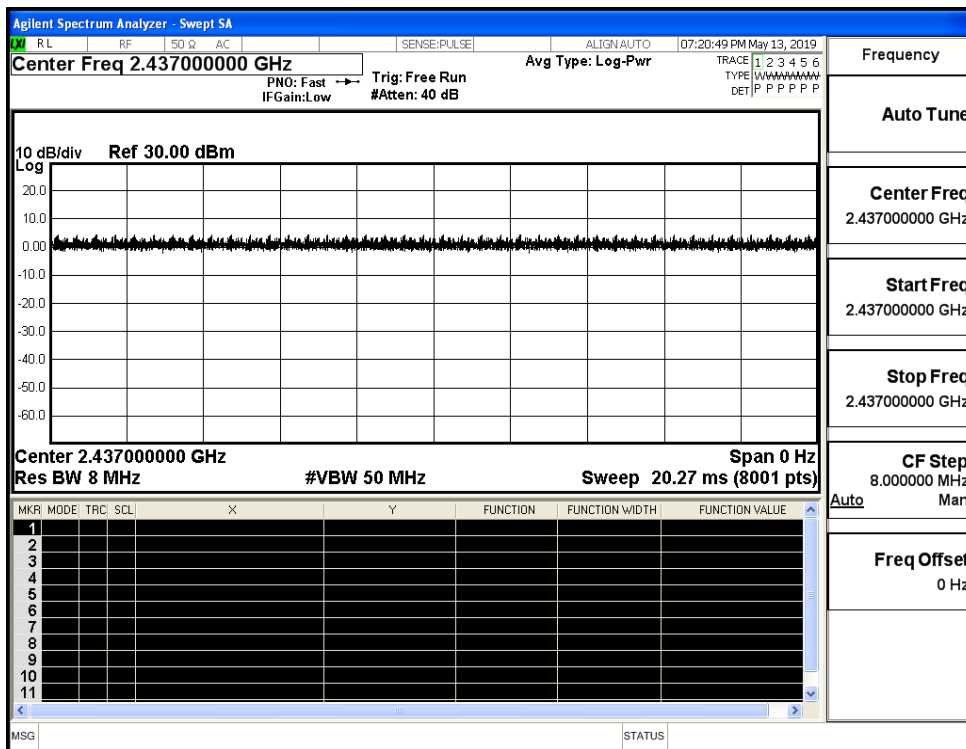
A.1 Duty Cycle

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

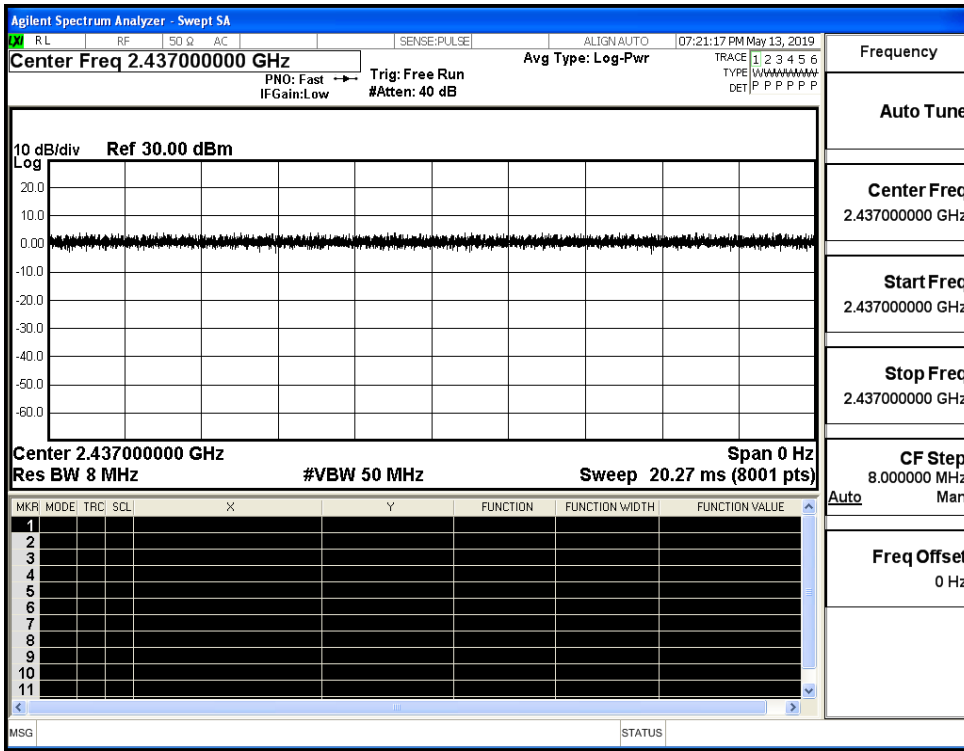
Duty Cycle_11B_2437_Ant1



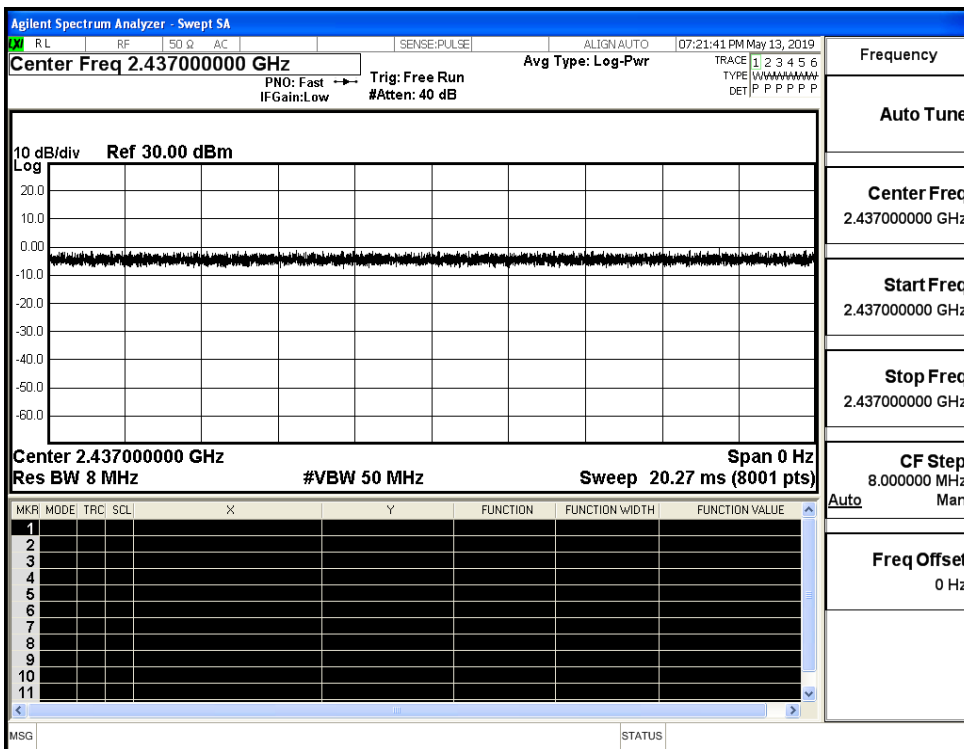
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



Duty Cycle_11N40SISO_2437_Ant1

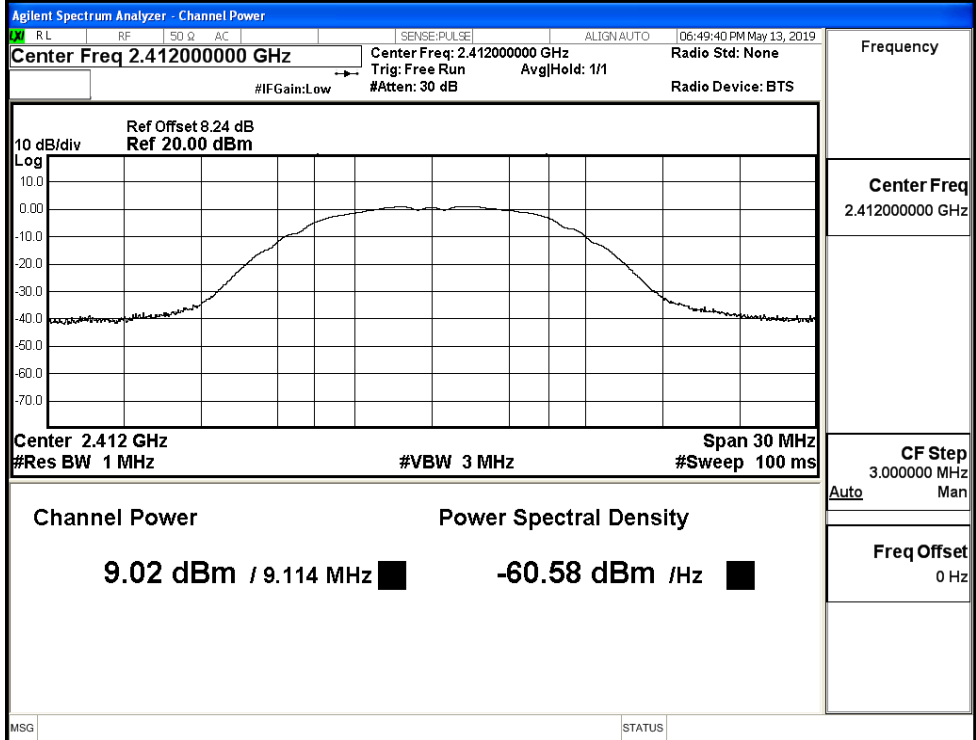


A.2 Maximum Conducted Output Power

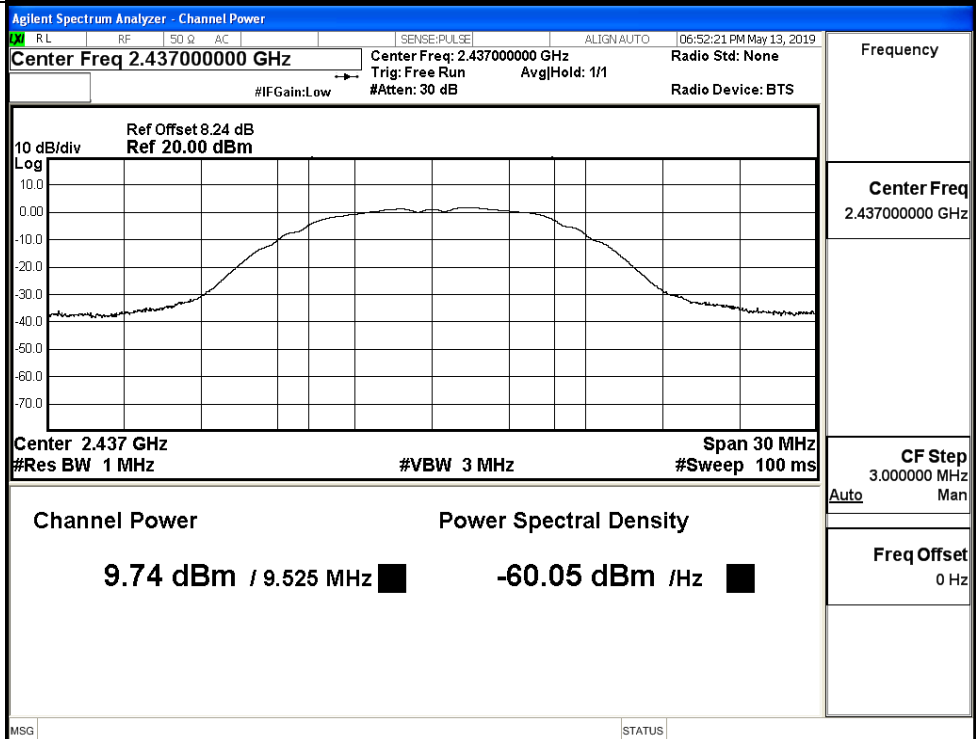
Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	9.02	30	PASS
	MCH	9.74	30	PASS
	HCH	9.15	30	PASS
11G	LCH	13.46	30	PASS
	MCH	13.88	30	PASS
	HCH	13.05	30	PASS
11N20SISO	LCH	13.39	30	PASS
	MCH	13.90	30	PASS
	HCH	13.05	30	PASS
11N40SISO	LCH	13.21	30	PASS
	MCH	13.57	30	PASS
	HCH	12.97	30	PASS

Test Graphs

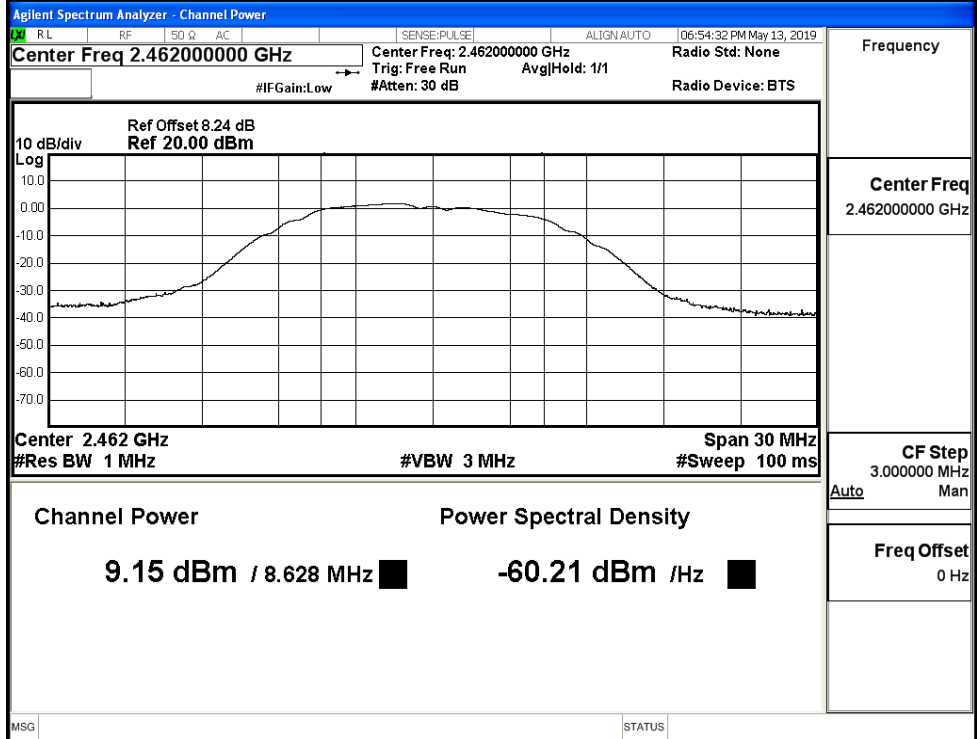
11B/LCH



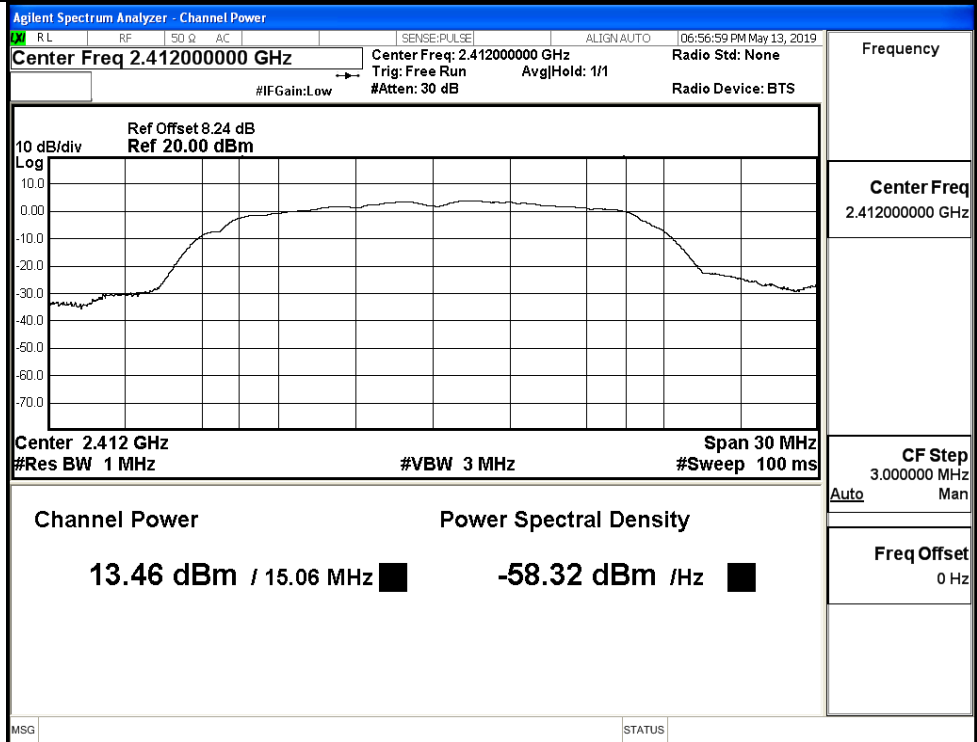
11B/MCH



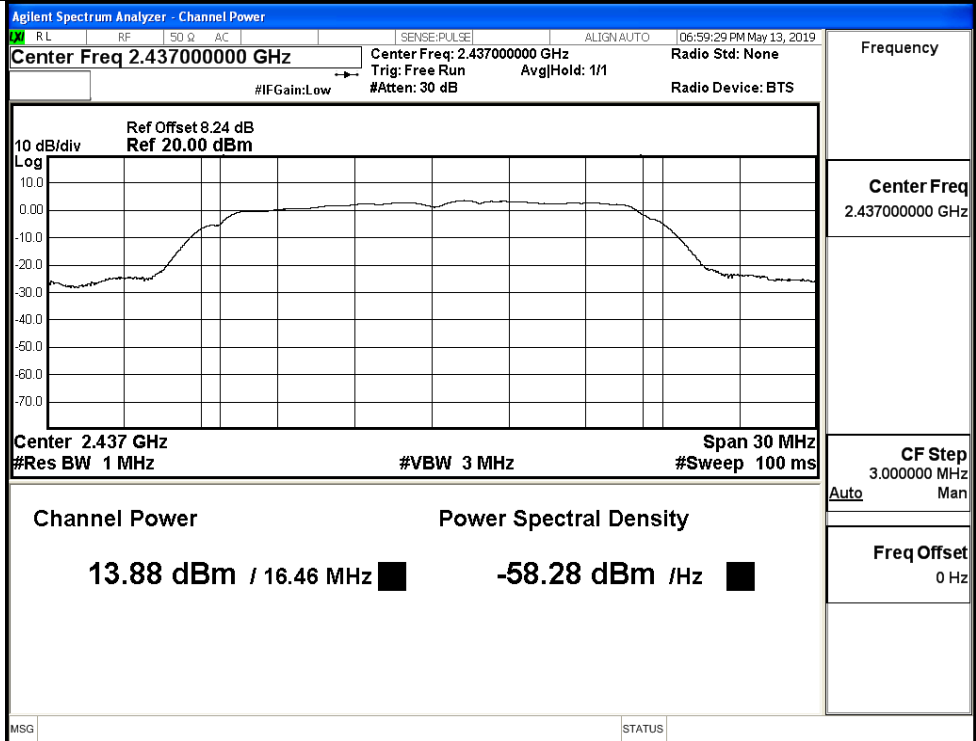
11B/HCH



11G/LCH

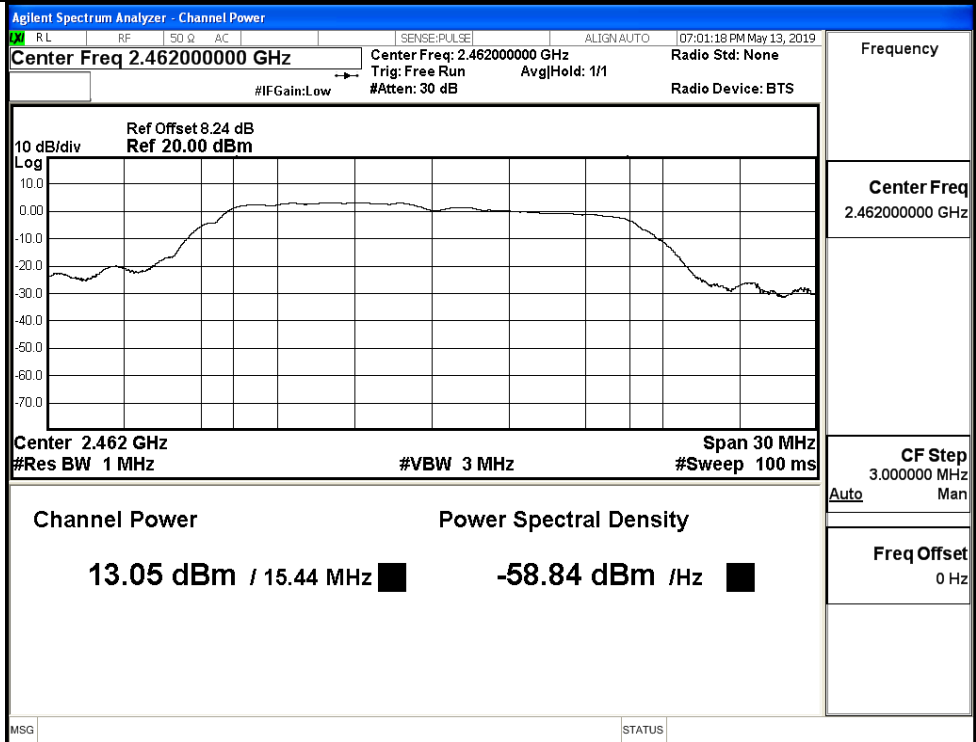


11G/MCH



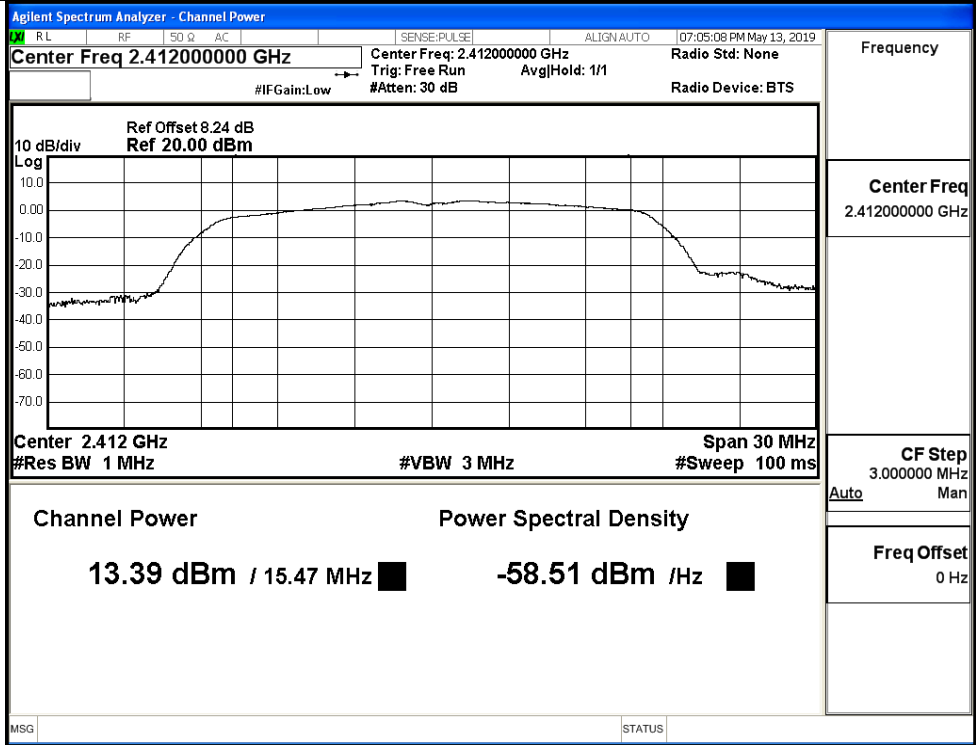
Frequency	Center Freq 2.43700000 GHz
CF Step	3.000000 MHz Auto Man
Freq Offset	0 Hz

11G/HCH



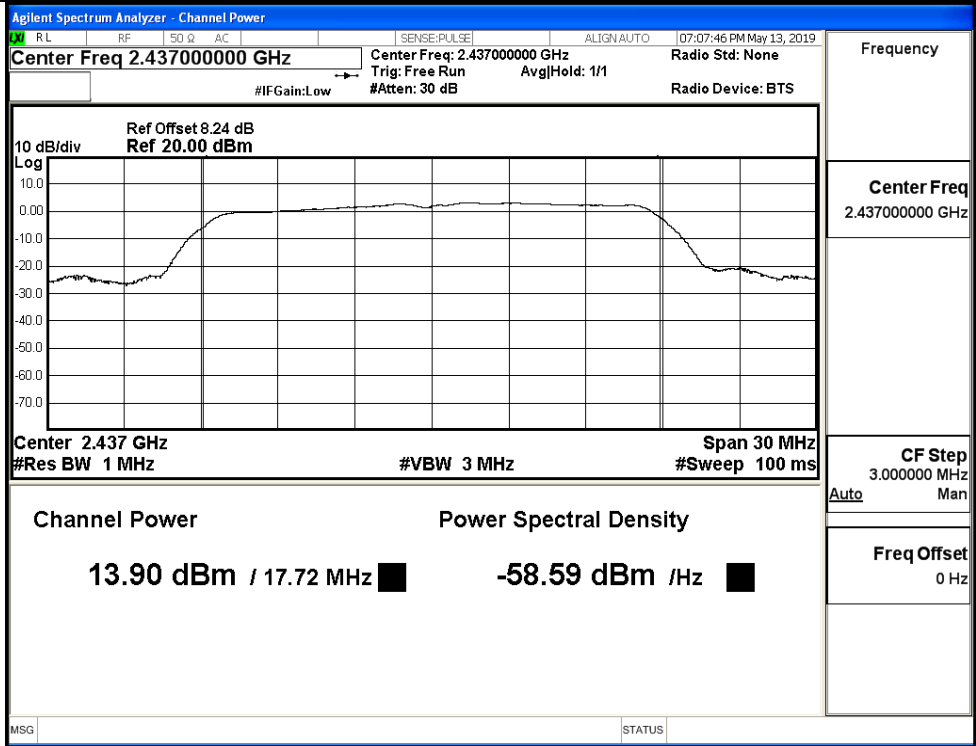
Frequency	Center Freq 2.46200000 GHz
CF Step	3.000000 MHz Auto Man
Freq Offset	0 Hz

11N20SISO/LCH



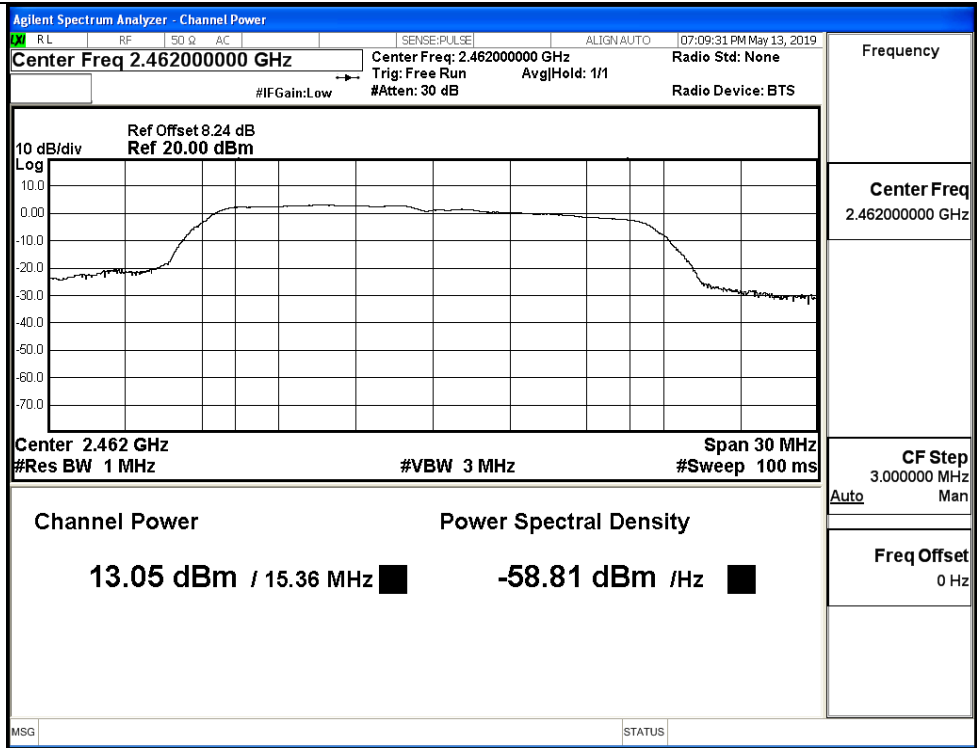
Frequency
Center Freq 2.41200000 GHz
CF Step 3.000000 MHz Auto Man
Freq Offset 0 Hz

11N20SISO/MCH

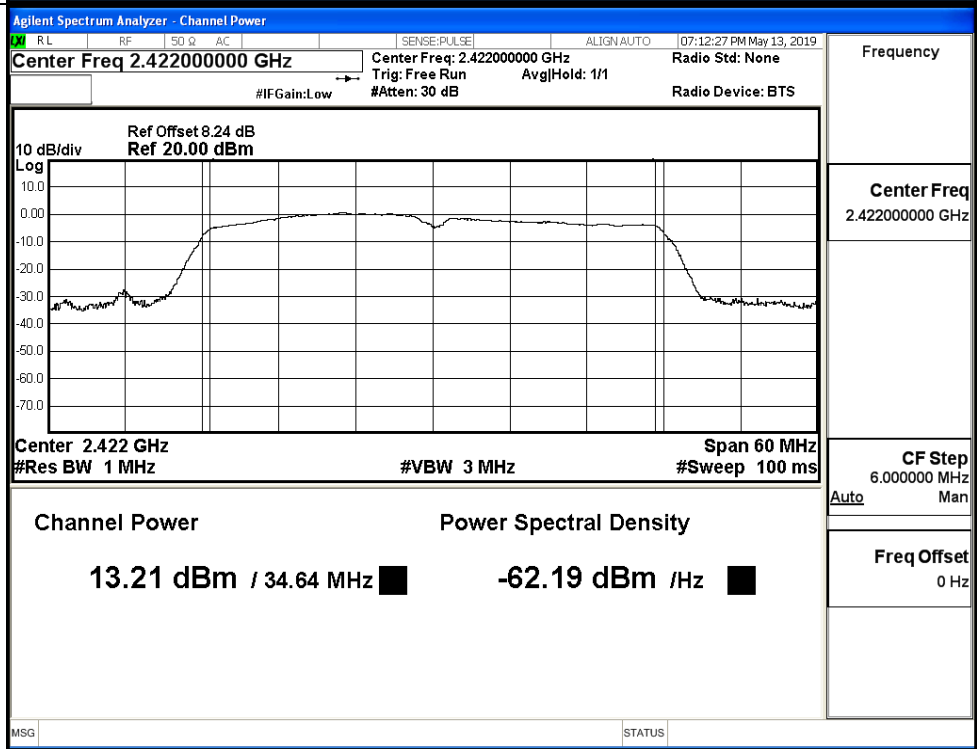


Frequency
Center Freq 2.43700000 GHz
CF Step 3.000000 MHz Auto Man
Freq Offset 0 Hz

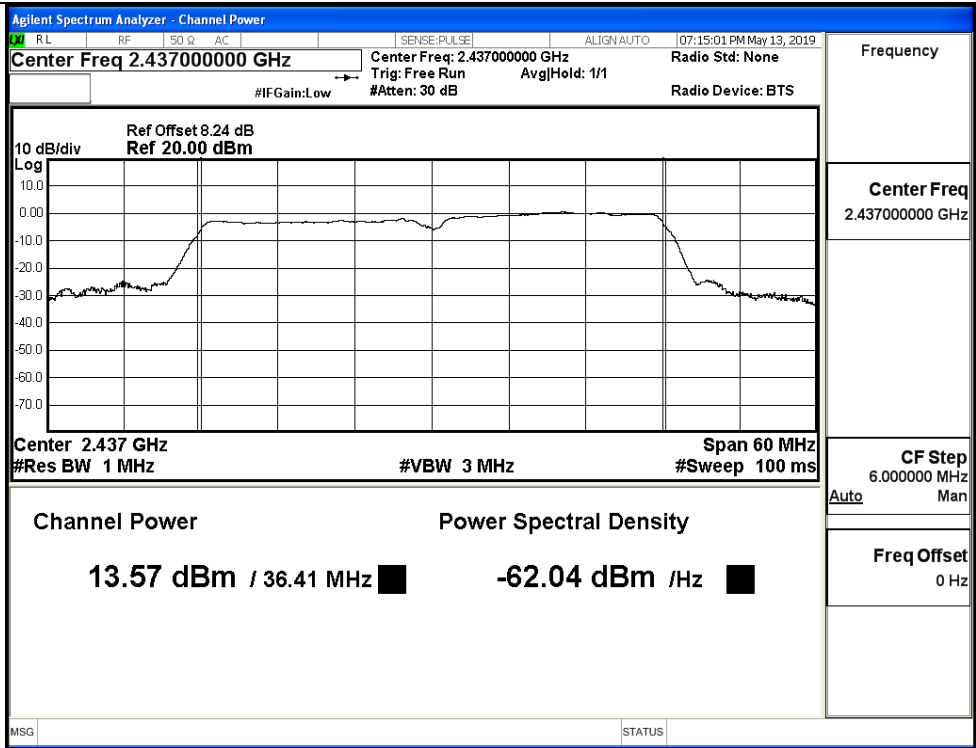
11N20SISO/HCH



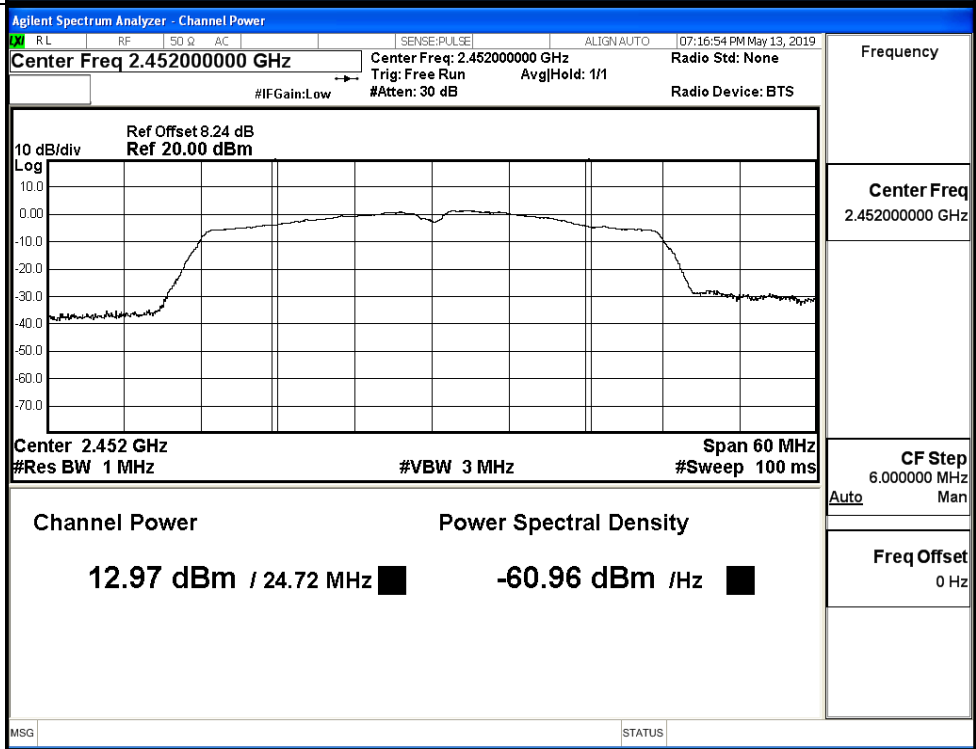
11N40SISO/LCH



11N40SISO/MCH

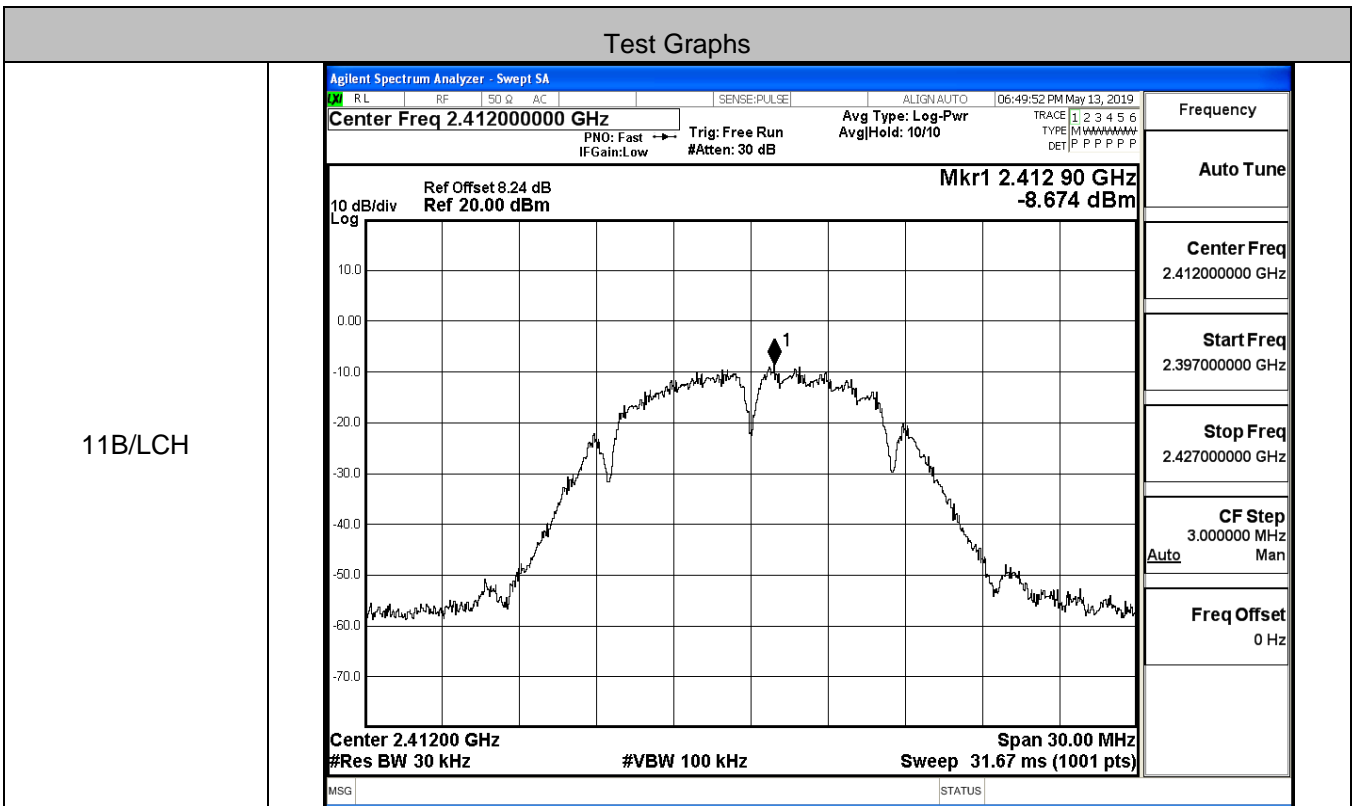


11N40SISO/HCH

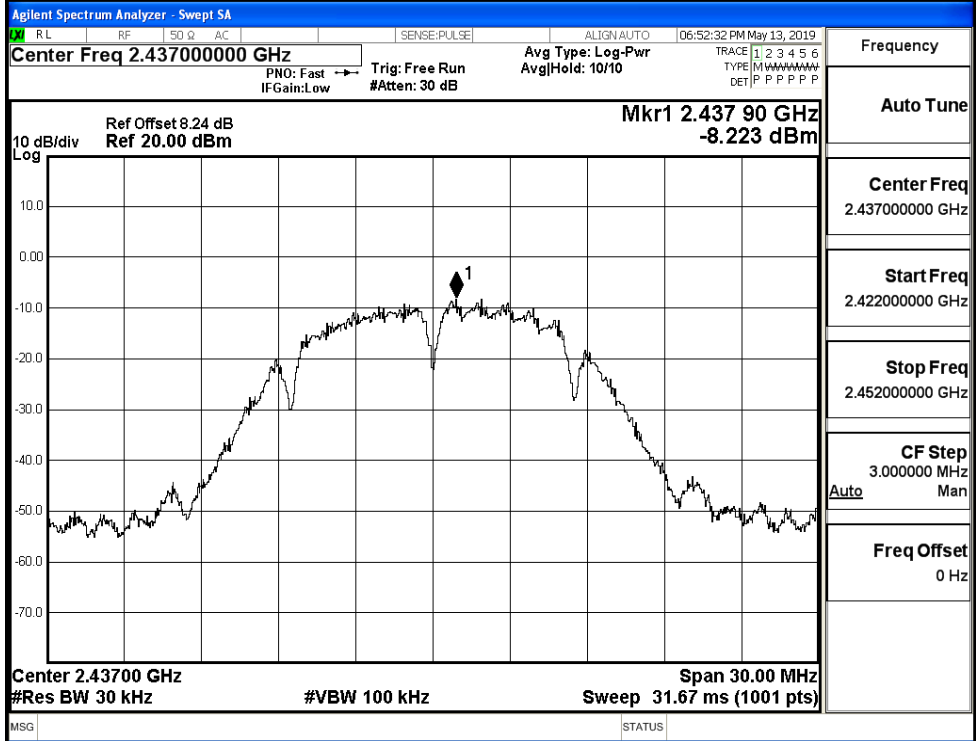


A.3 Maximum Power Spectral Density

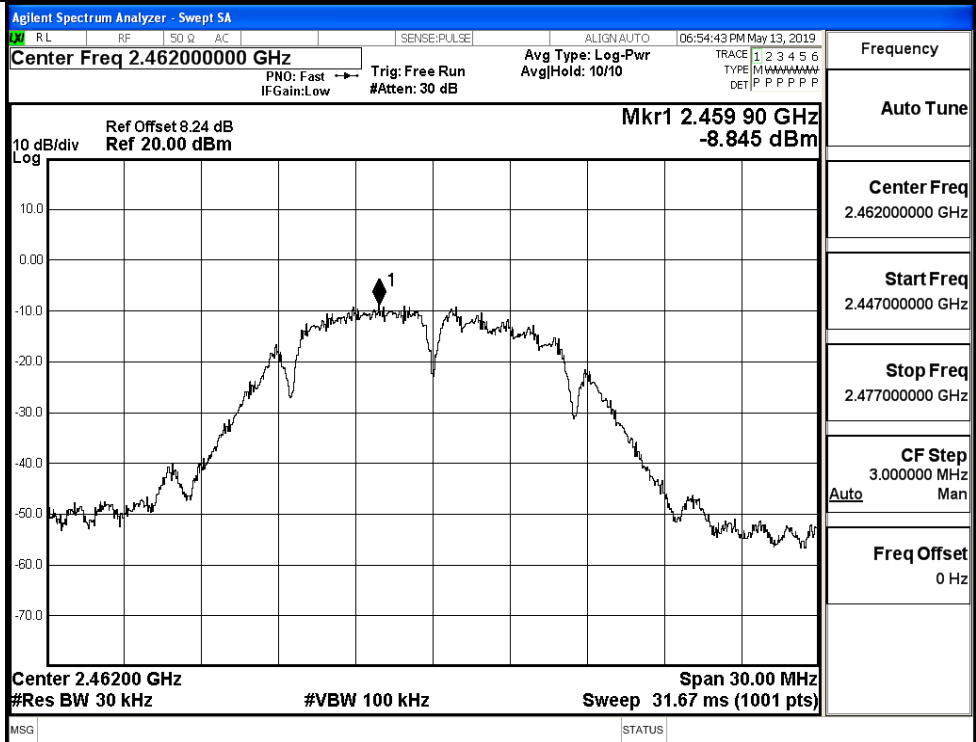
Mode	Channel	Meas.Level [dBm/30KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-8.674	8	PASS
	MCH	-8.223	8	PASS
	HCH	-8.845	8	PASS
11G	LCH	-9.676	8	PASS
	MCH	-10.017	8	PASS
	HCH	-10.483	8	PASS
11N20SISO	LCH	-8.925	8	PASS
	MCH	-9.353	8	PASS
	HCH	-10.283	8	PASS
11N40SISO	LCH	-12.930	8	PASS
	MCH	-13.093	8	PASS
	HCH	-12.096	8	PASS



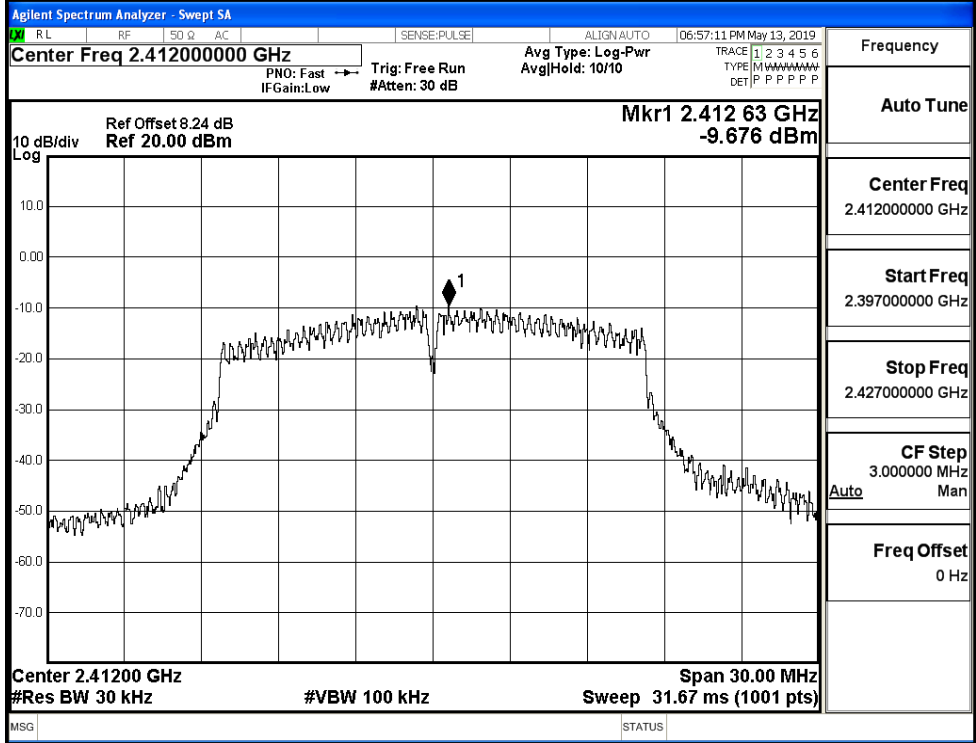
11B/MCH



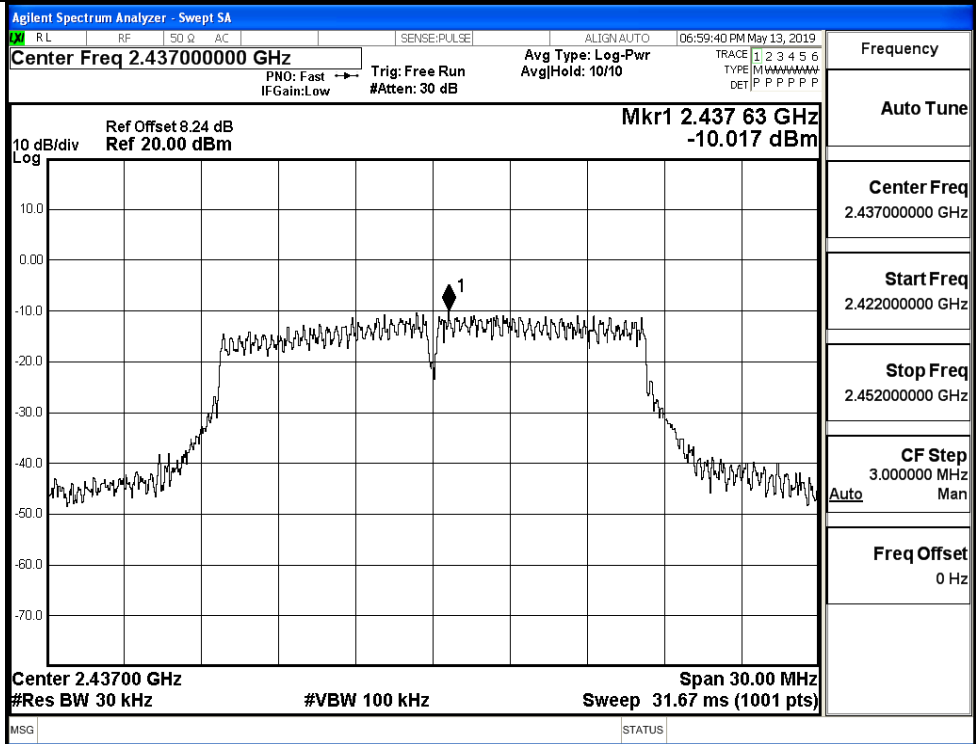
11B/HCH



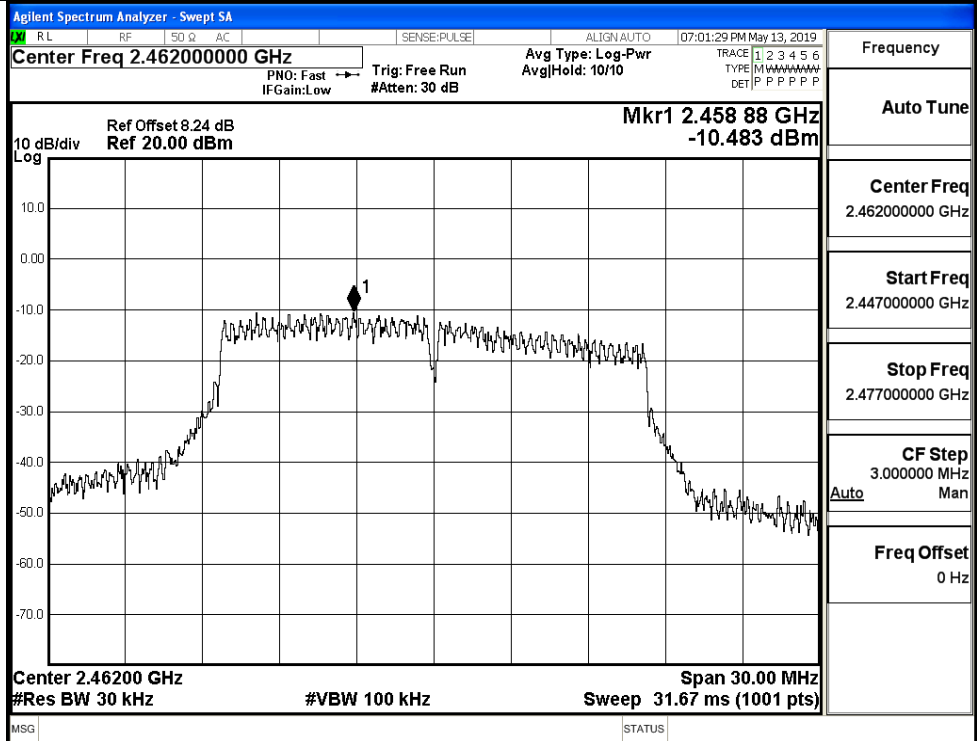
11G/LCH



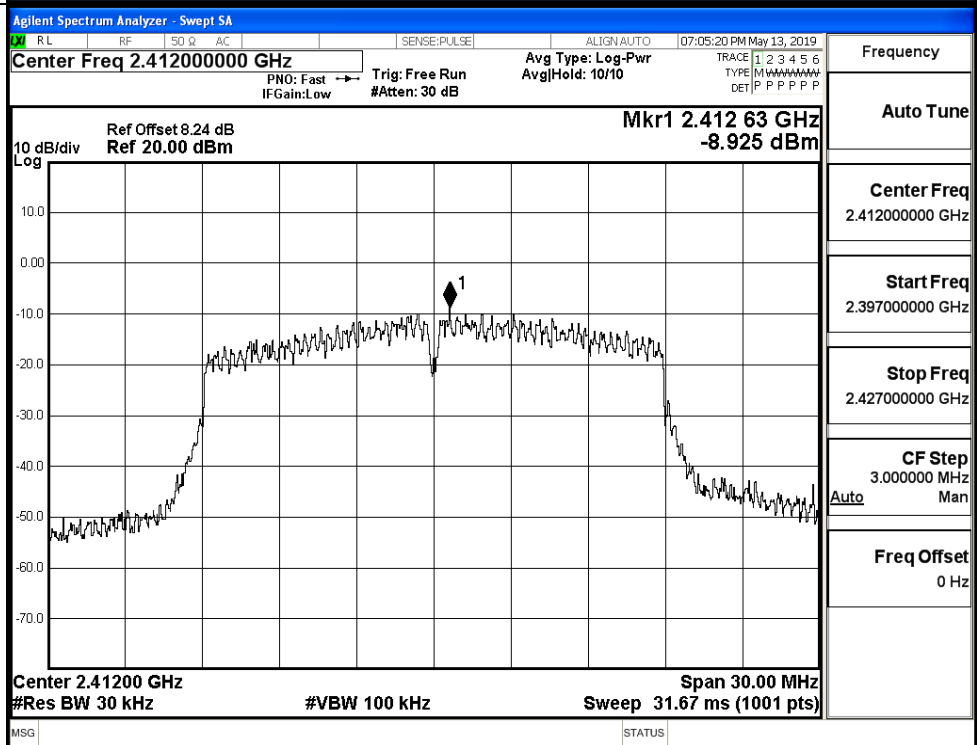
11G/MCH



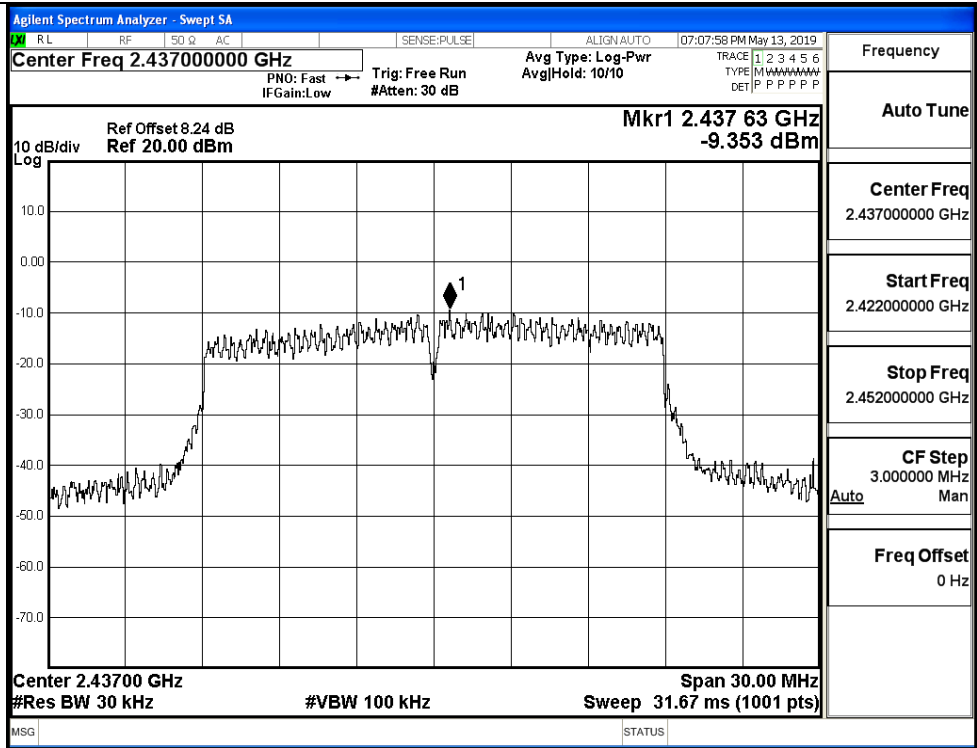
11G/HCH



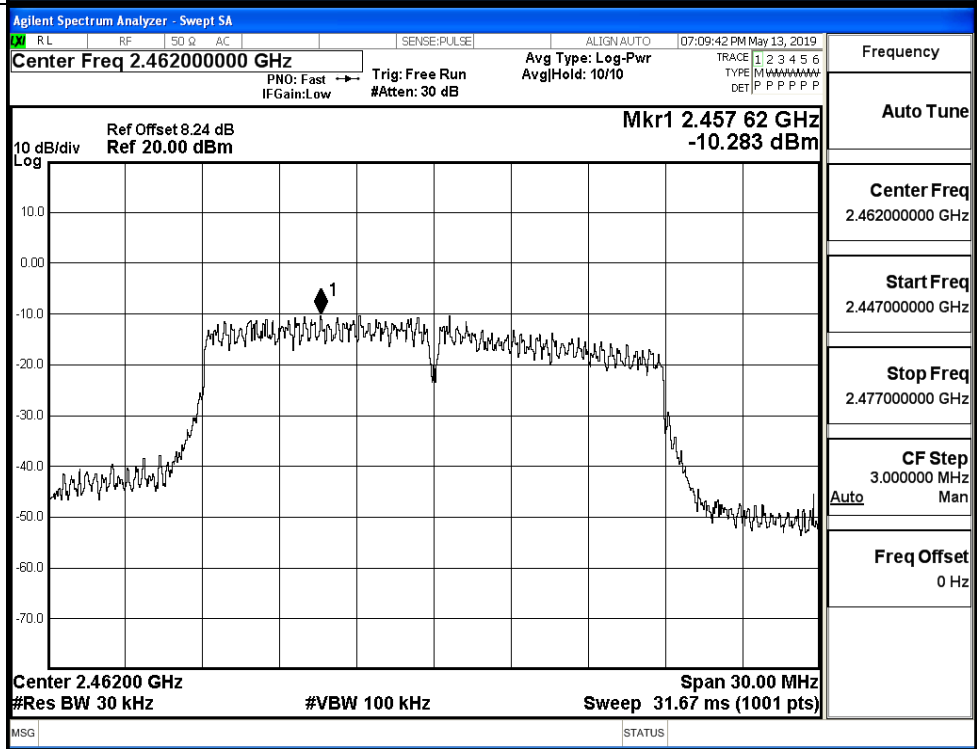
11N20SISO/LCH



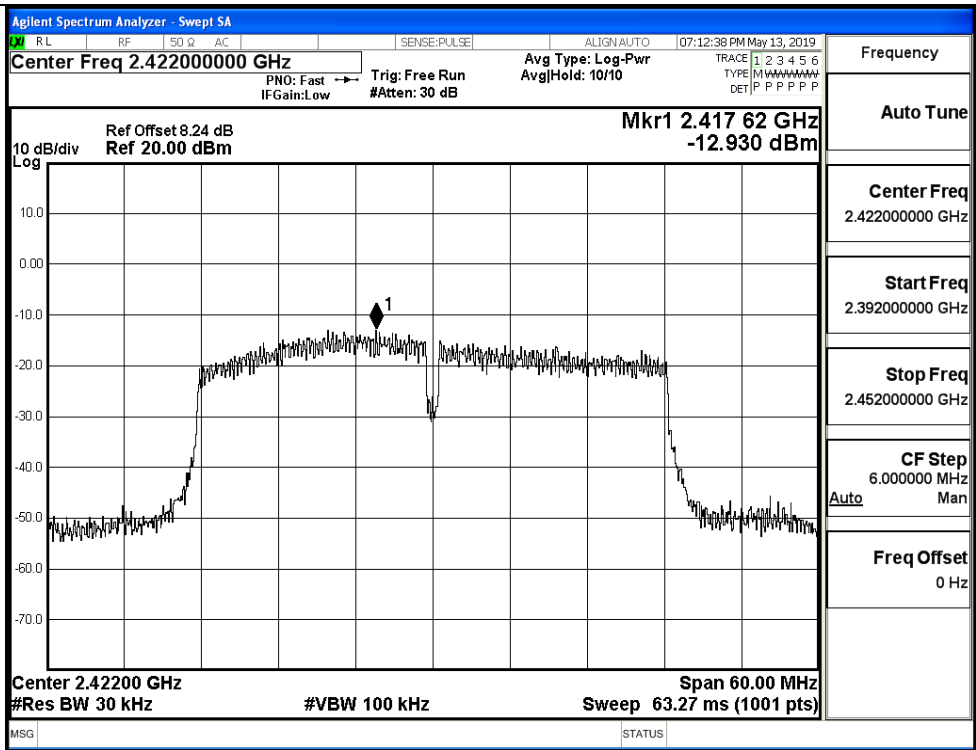
11N20SISO/MCH



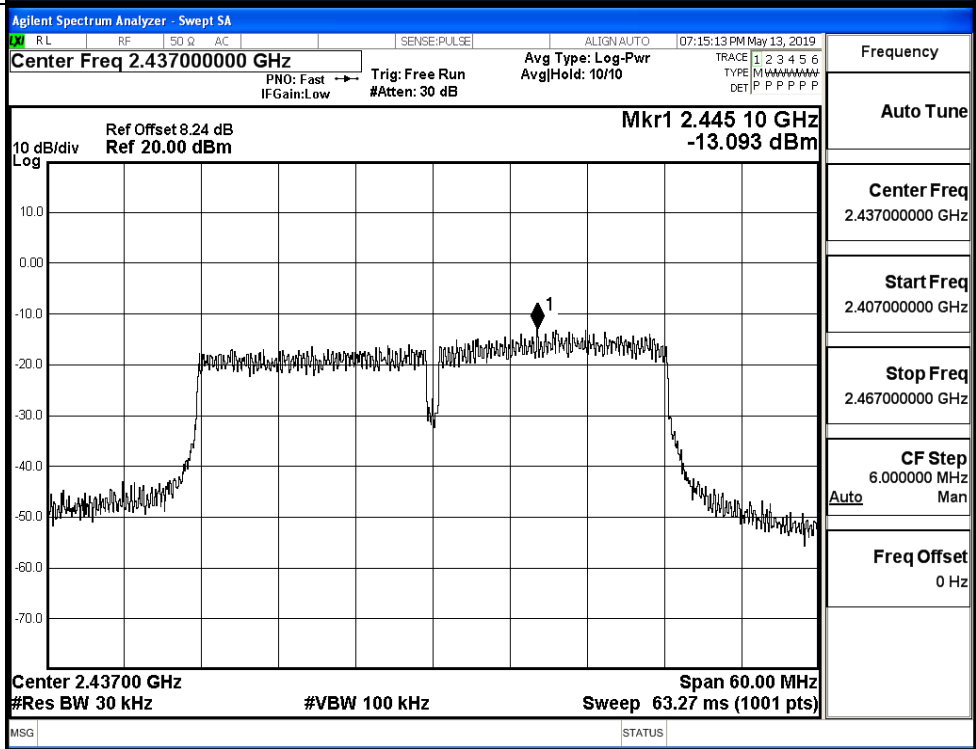
11N20SISO/HCH



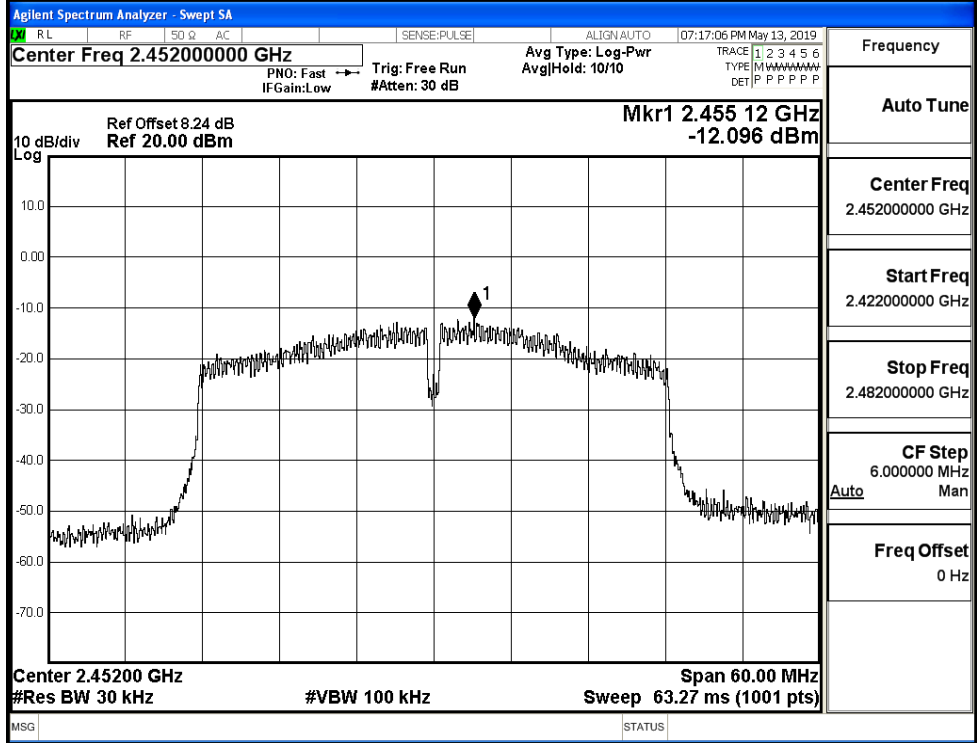
11N40SISO/LCH



11N40SISO/MCH



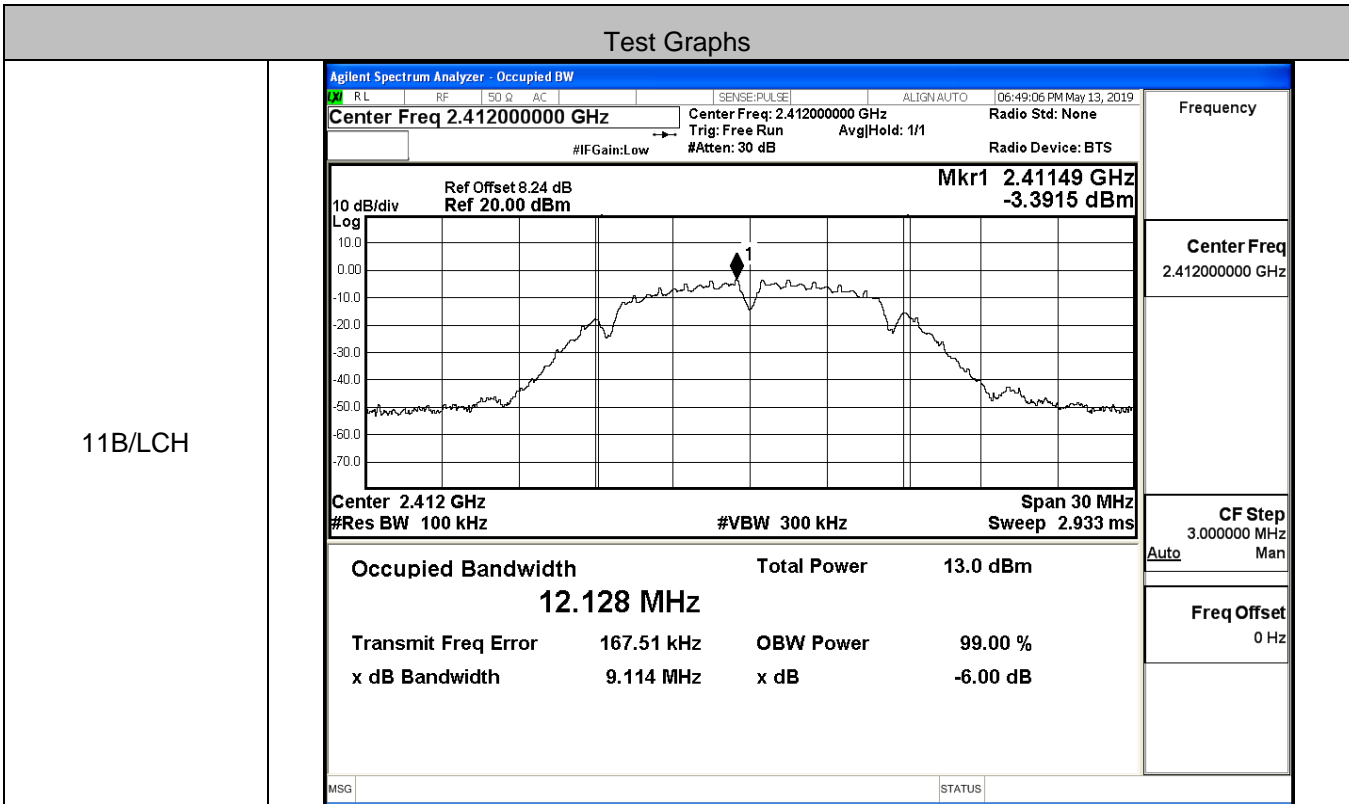
11N40SISO/HCH



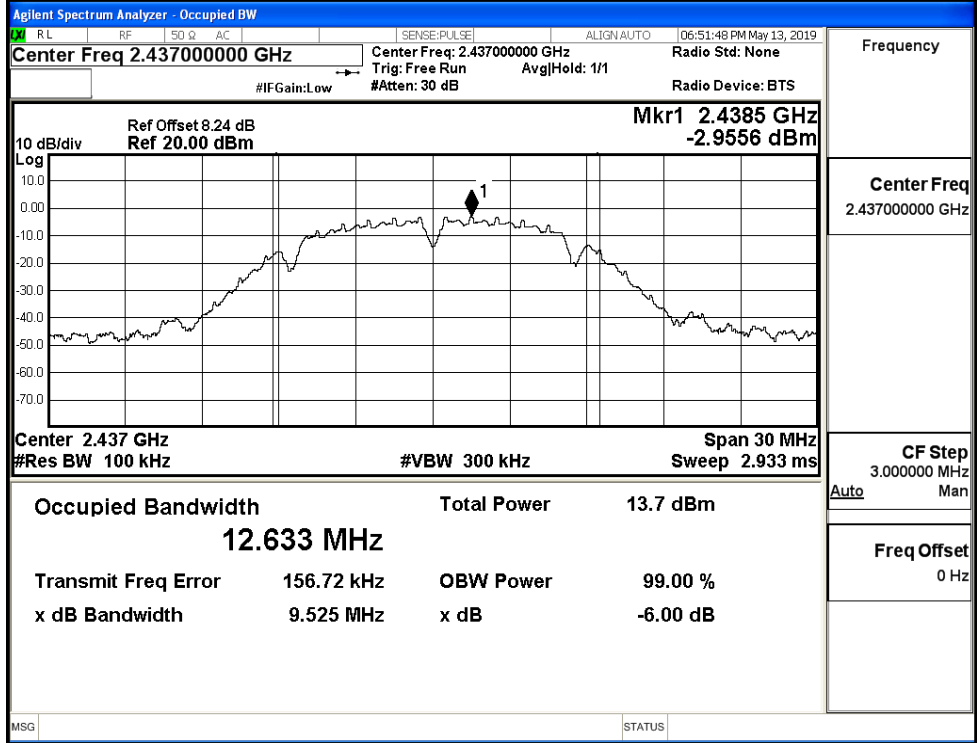
A.4 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	9.114	≥0.5	PASS
	MCH	9.525	≥0.5	PASS
	HCH	8.628	≥0.5	PASS
11G	LCH	15.06	≥0.5	PASS
	MCH	16.46	≥0.5	PASS
	HCH	15.44	≥0.5	PASS
11N20SISO	LCH	15.47	≥0.5	PASS
	MCH	17.72	≥0.5	PASS
	HCH	15.36	≥0.5	PASS
11N40SISO	LCH	34.64	≥0.5	PASS
	MCH	36.41	≥0.5	PASS
	HCH	24.72	≥0.5	PASS

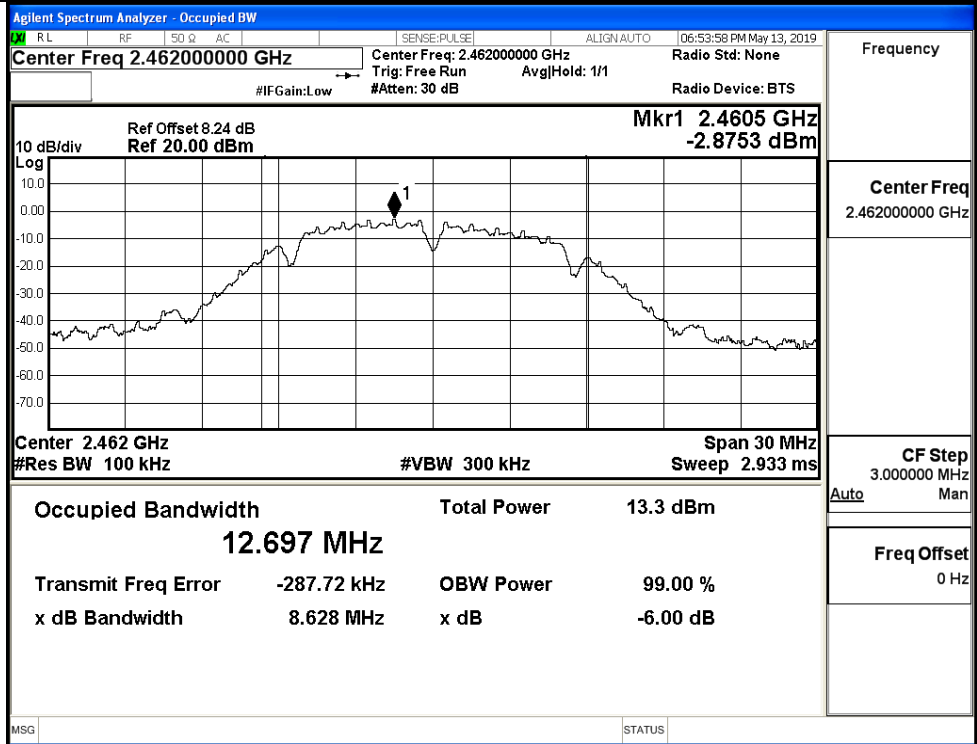
Test Graphs



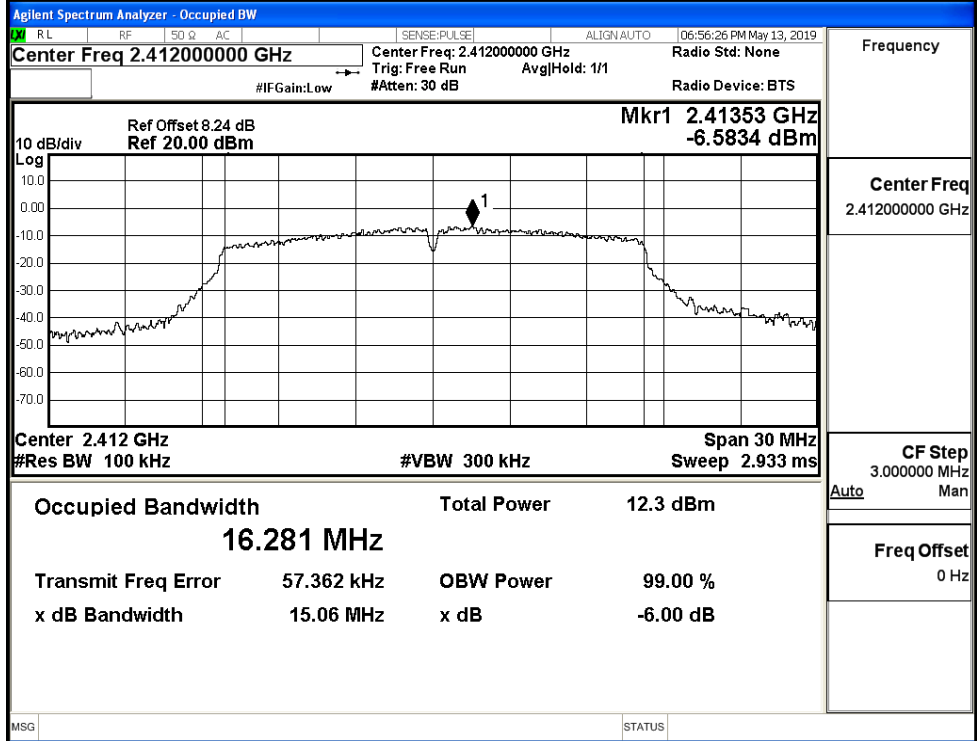
11B/MCH



11B/HCH

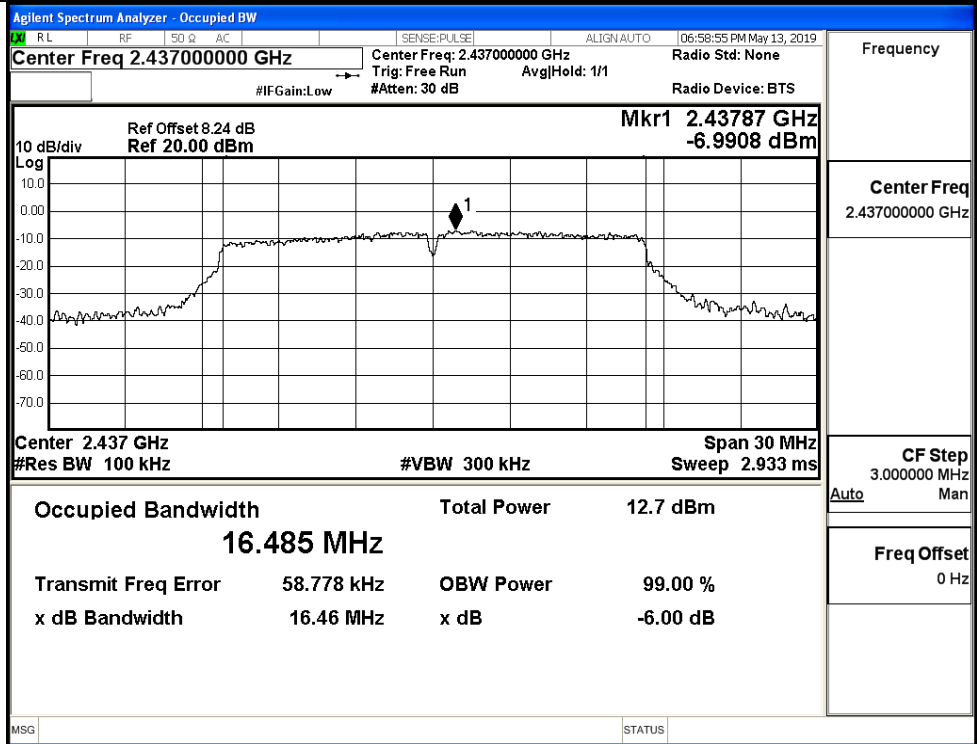


11G/LCH



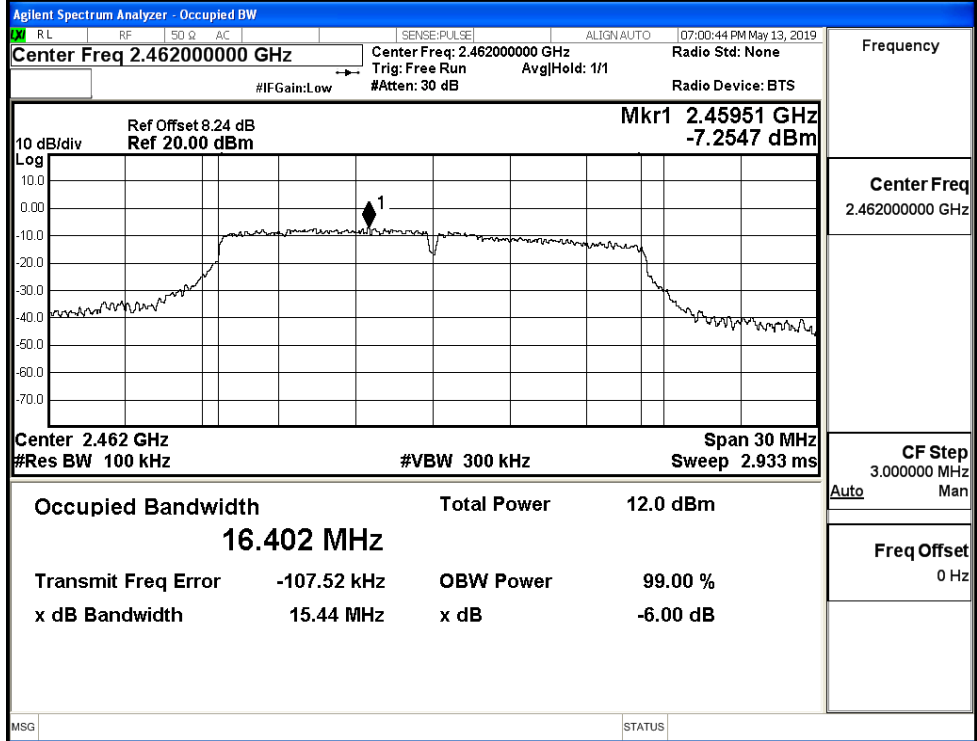
Frequency	2.41200000 GHz
Center Freq	2.41200000 GHz
CF Step	3.000000 MHz
Auto	Man
Freq Offset	0 Hz

11G/MCH

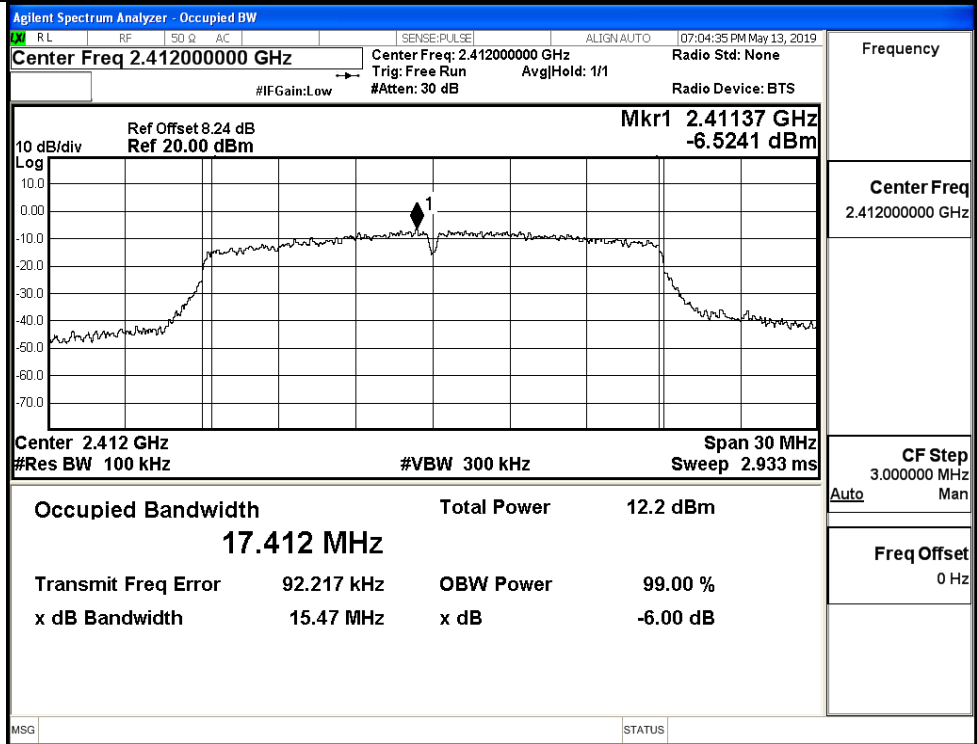


Frequency	2.43700000 GHz
Center Freq	2.43700000 GHz
CF Step	3.000000 MHz
Auto	Man
Freq Offset	0 Hz

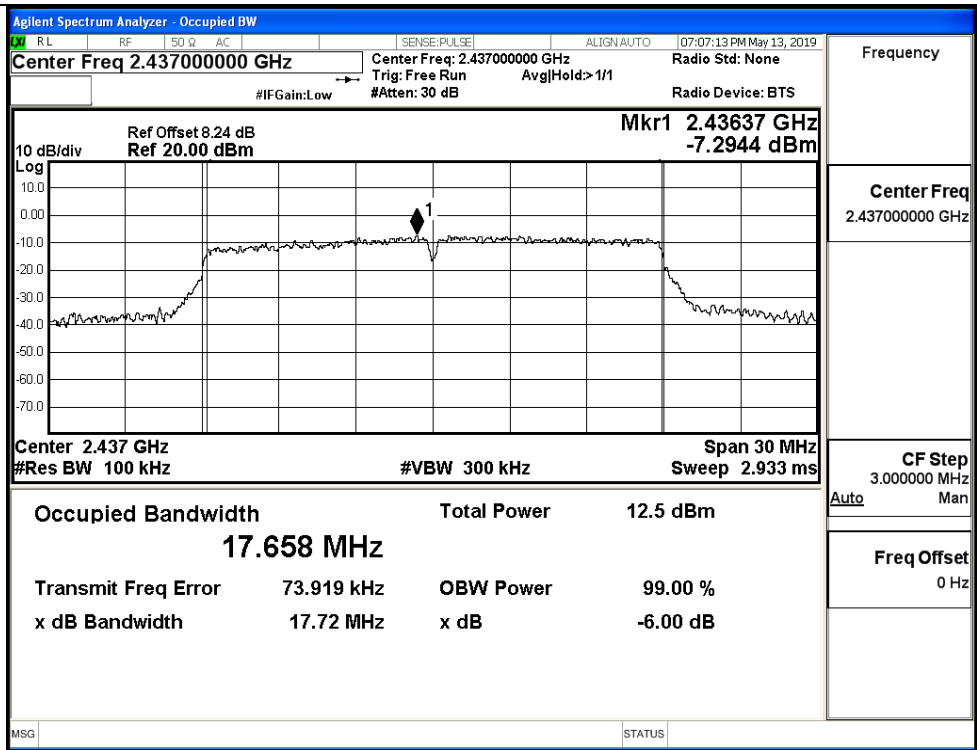
11G/HCH



11N20SISO/LCH

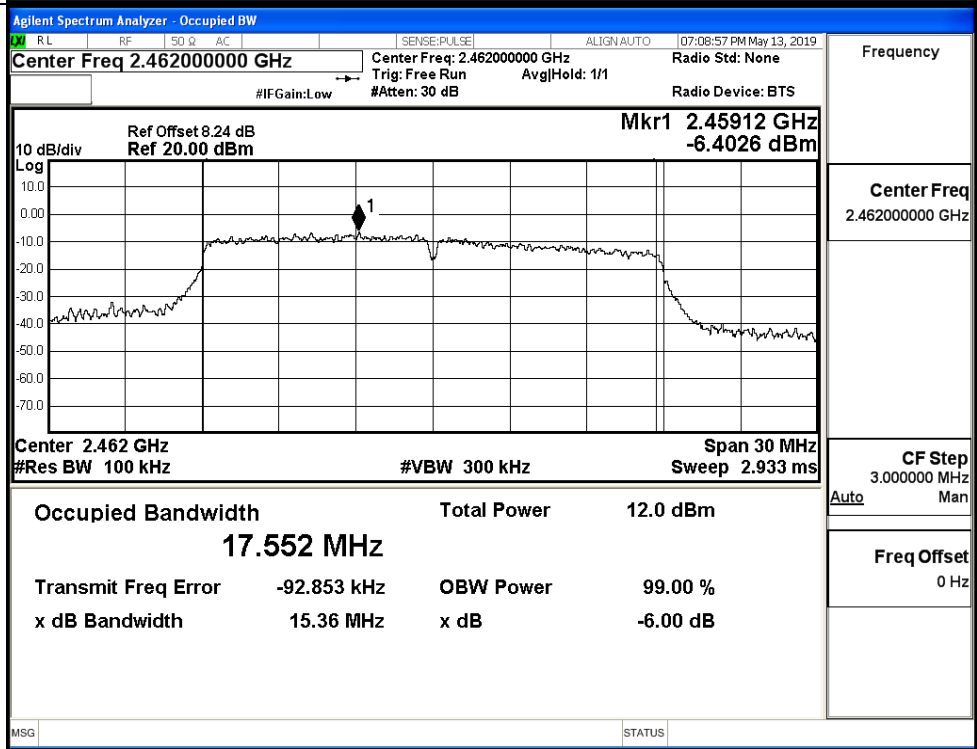


11N20SISO/MCH



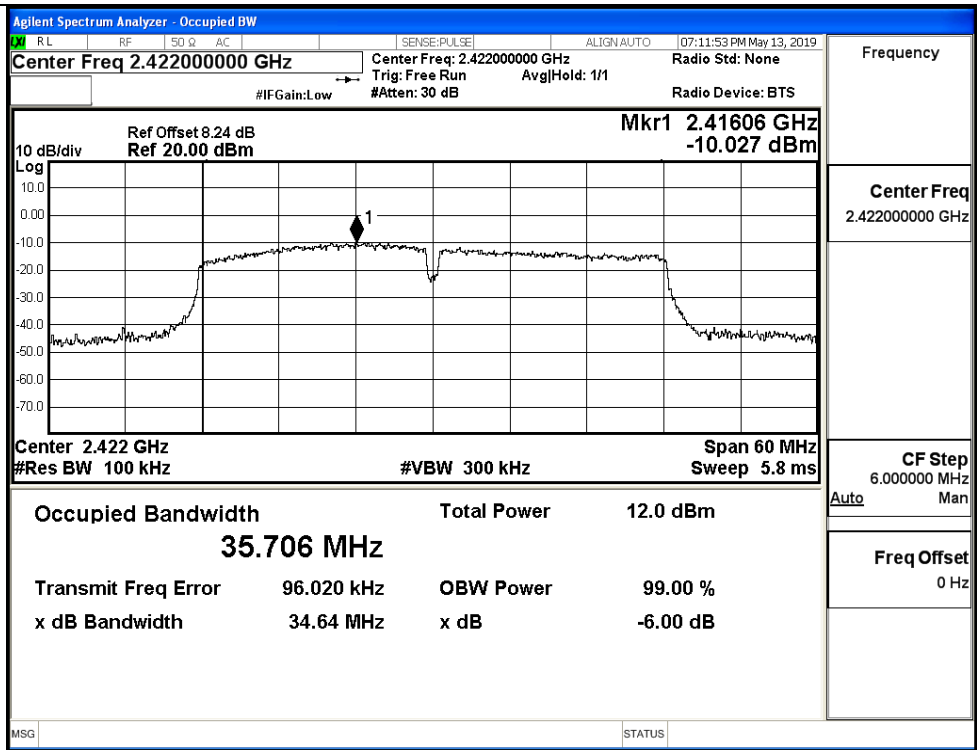
Frequency	2.43700000 GHz
Center Freq	2.43700000 GHz
CF Step	3.000000 MHz
Auto	Man
Freq Offset	0 Hz

11N20SISO/HCH

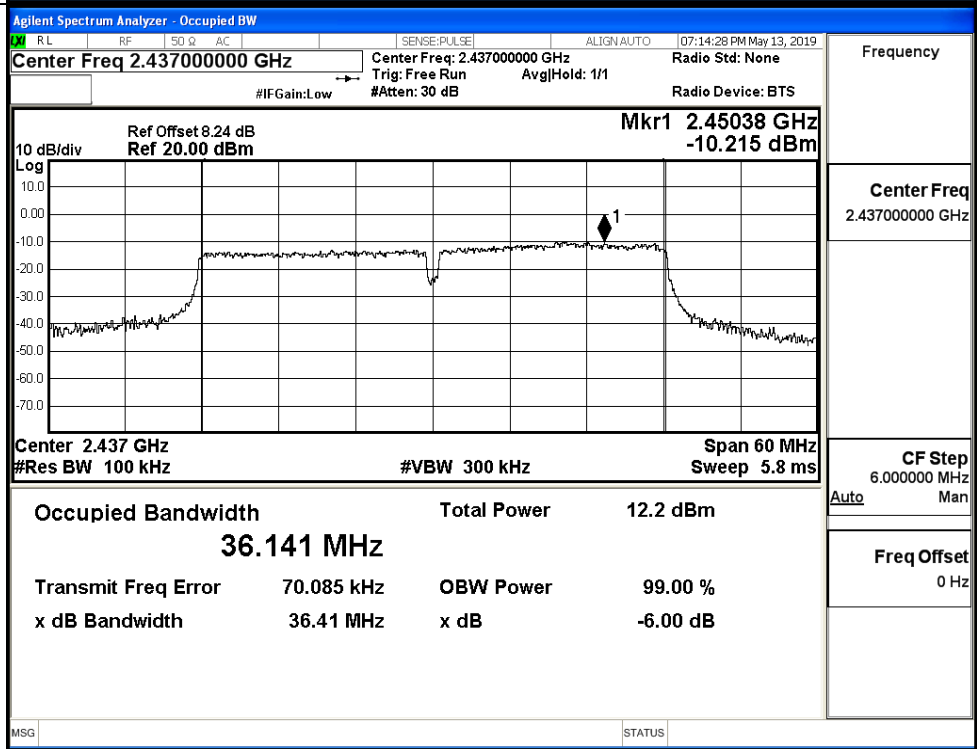


Frequency	2.46200000 GHz
Center Freq	2.46200000 GHz
CF Step	3.000000 MHz
Auto	Man
Freq Offset	0 Hz

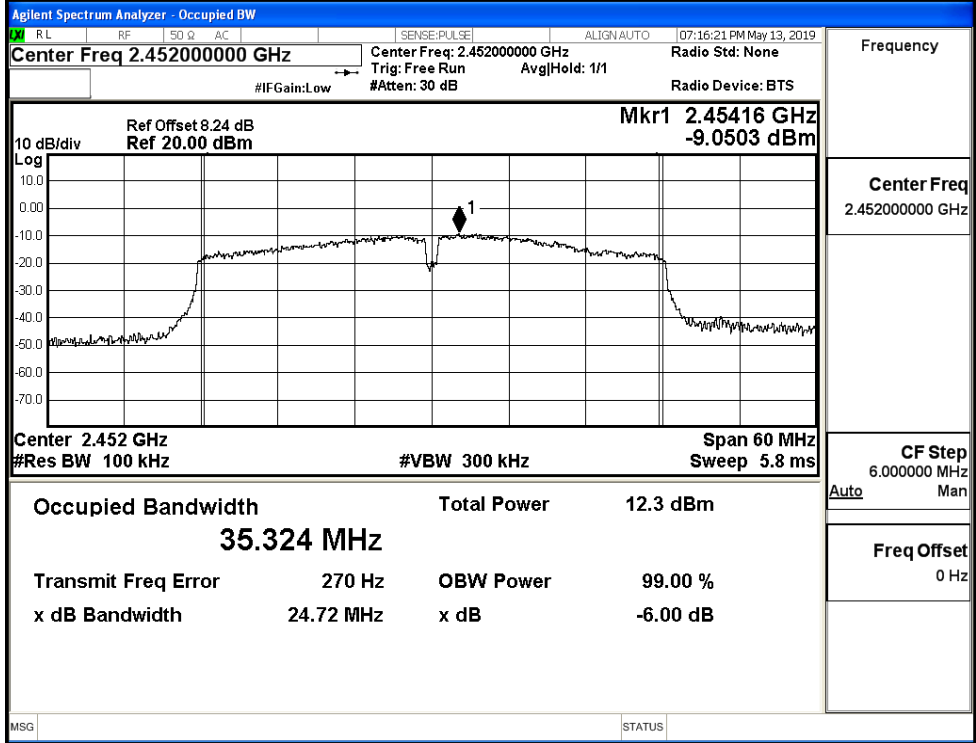
11N40SISO/LCH



11N40SISO/MCH

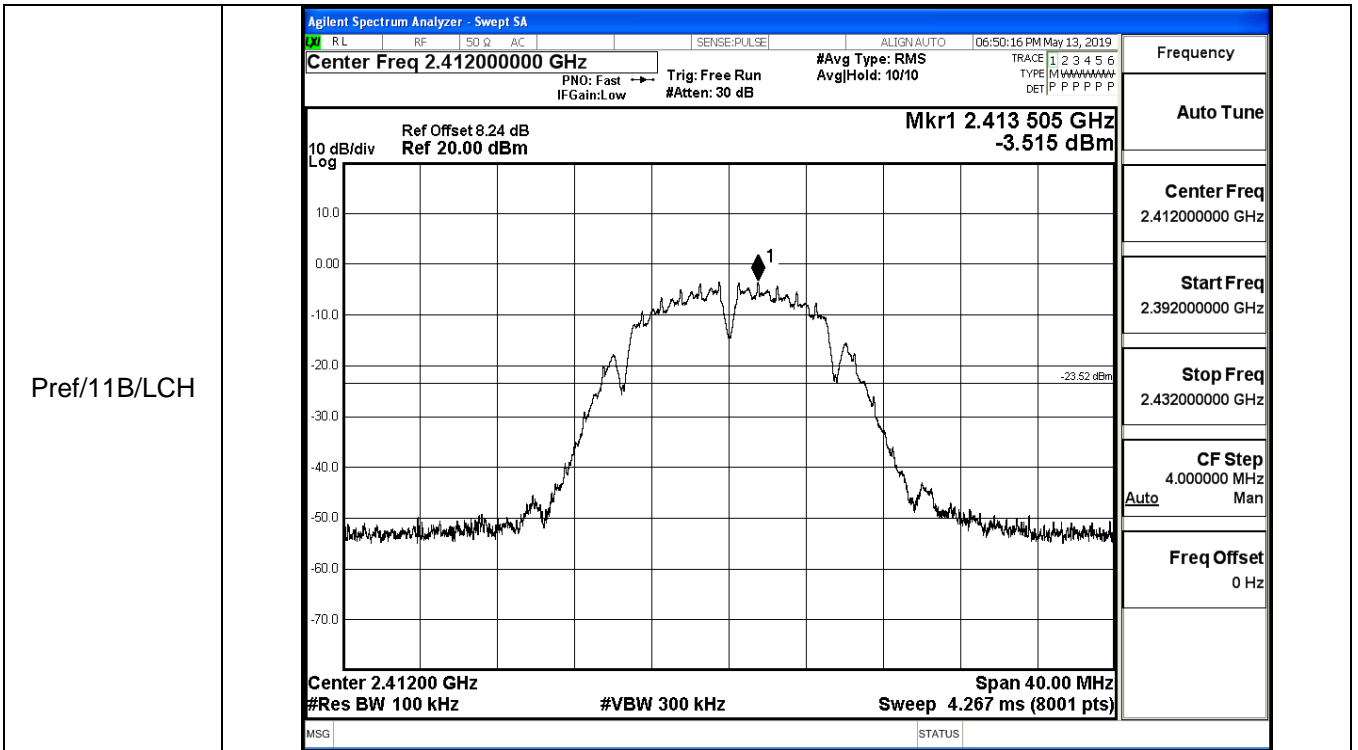


11N40SISO/HCH

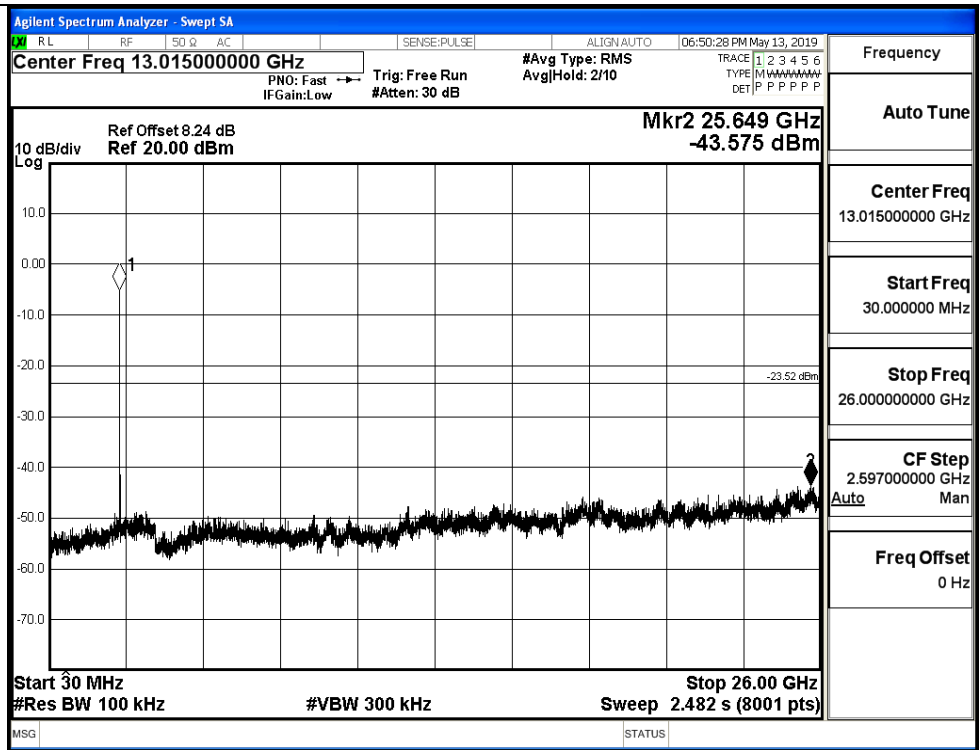


A.5 RF Conducted Spurious Emissions

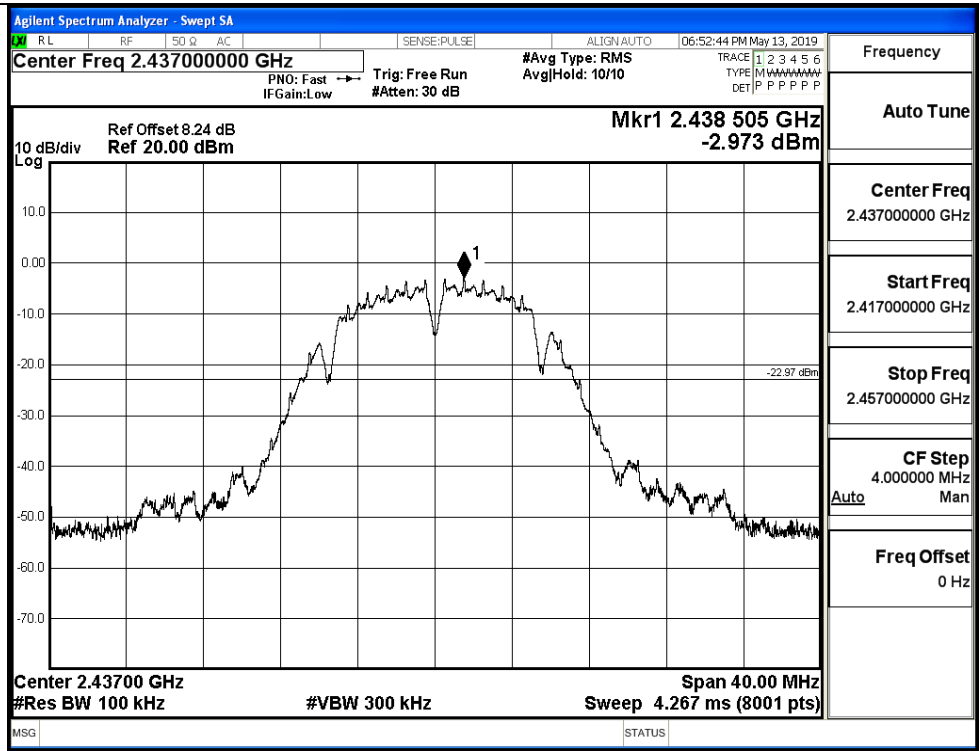
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-3.515	-43.575	-23.515	PASS
	MCH	-2.973	-41.766	-22.973	PASS
	HCH	-2.942	-42.858	-22.942	PASS
11G	LCH	-6.685	-43.877	-26.685	PASS
	MCH	-7.119	-43.324	-27.119	PASS
	HCH	-7.387	-42.333	-27.387	PASS
11N20 SISO	LCH	-6.911	-43.106	-26.911	PASS
	MCH	-7.463	-43.856	-27.463	PASS
	HCH	-6.954	-42.963	-26.954	PASS
11N40 SISO	LCH	-10.163	-43.595	-30.163	PASS
	MCH	-10.136	-42.608	-30.136	PASS
	HCH	-9.437	-43.088	-29.437	PASS



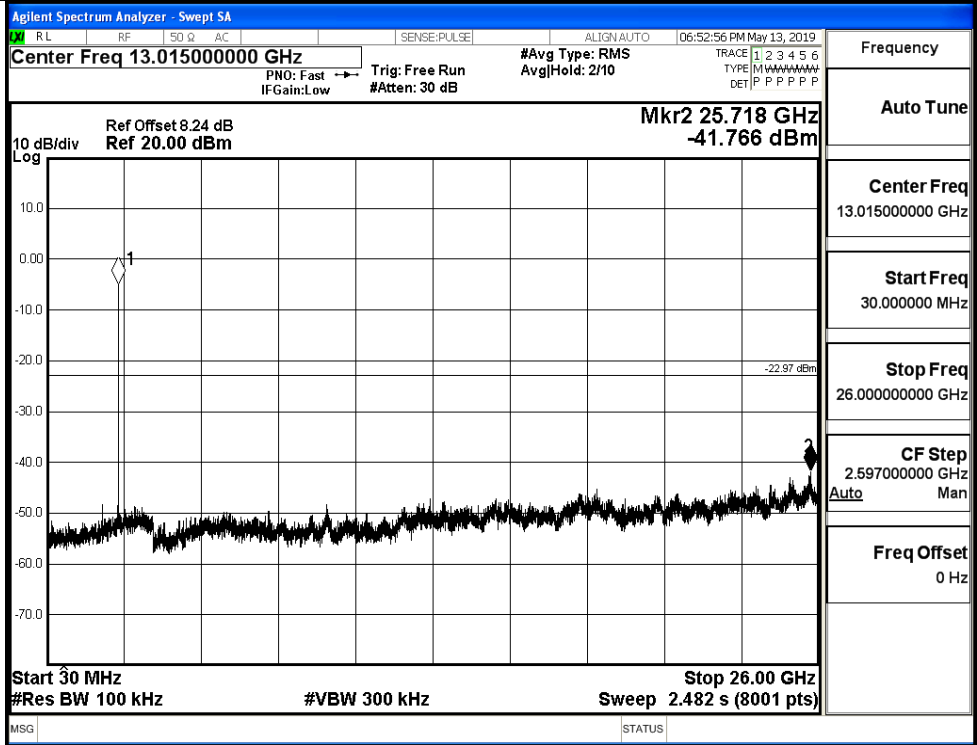
Puw/11B/LCH



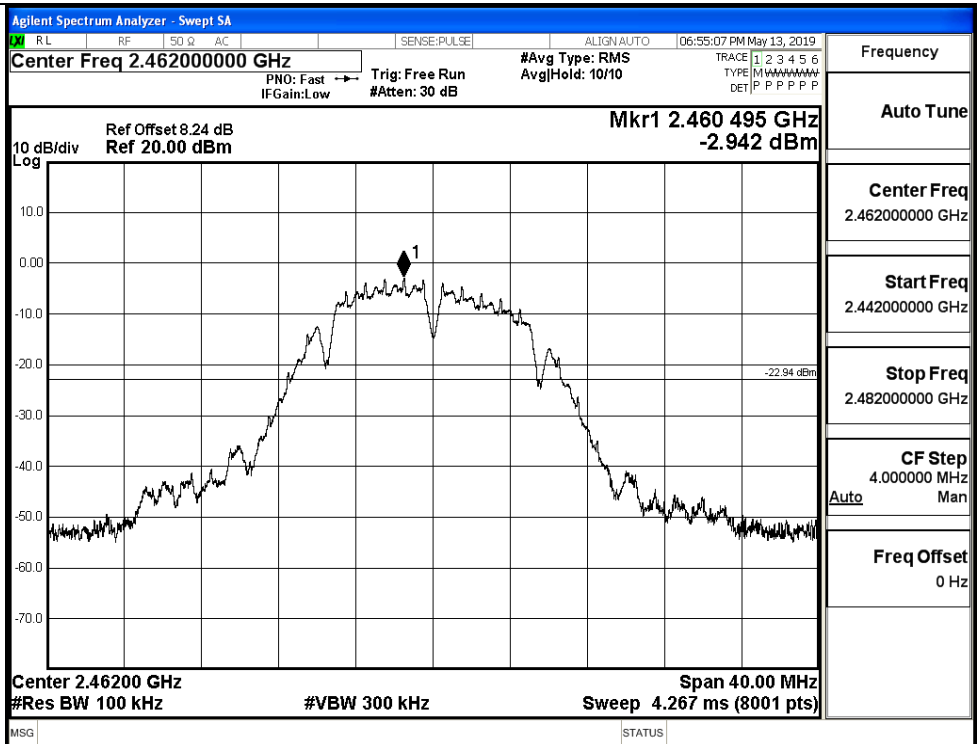
Pref/11B/MCH



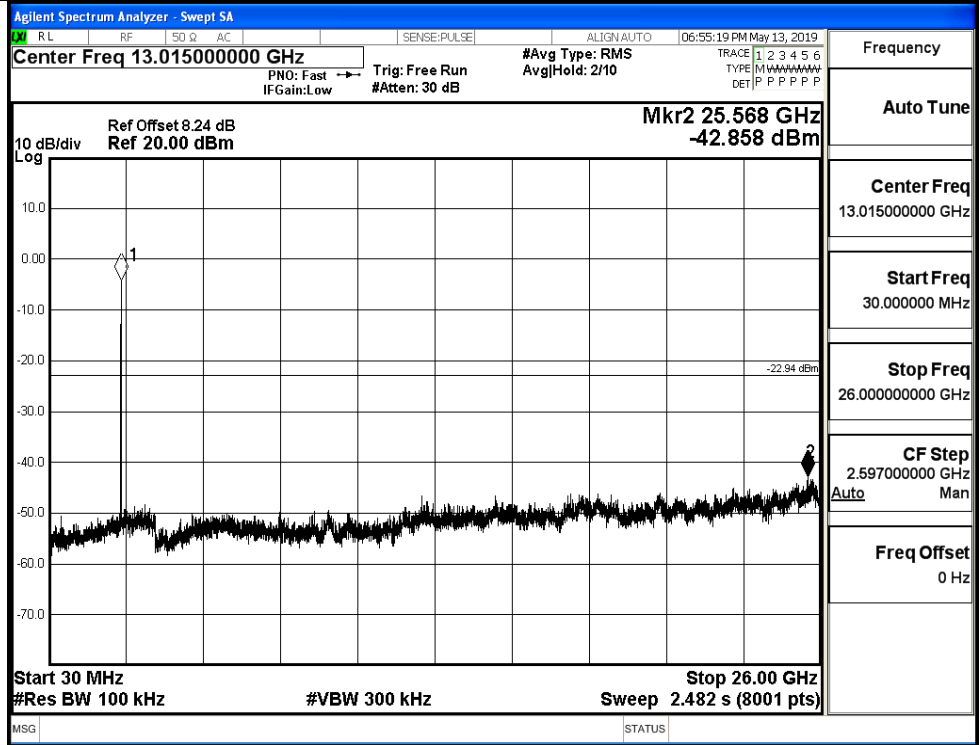
Puw/11B/MCH



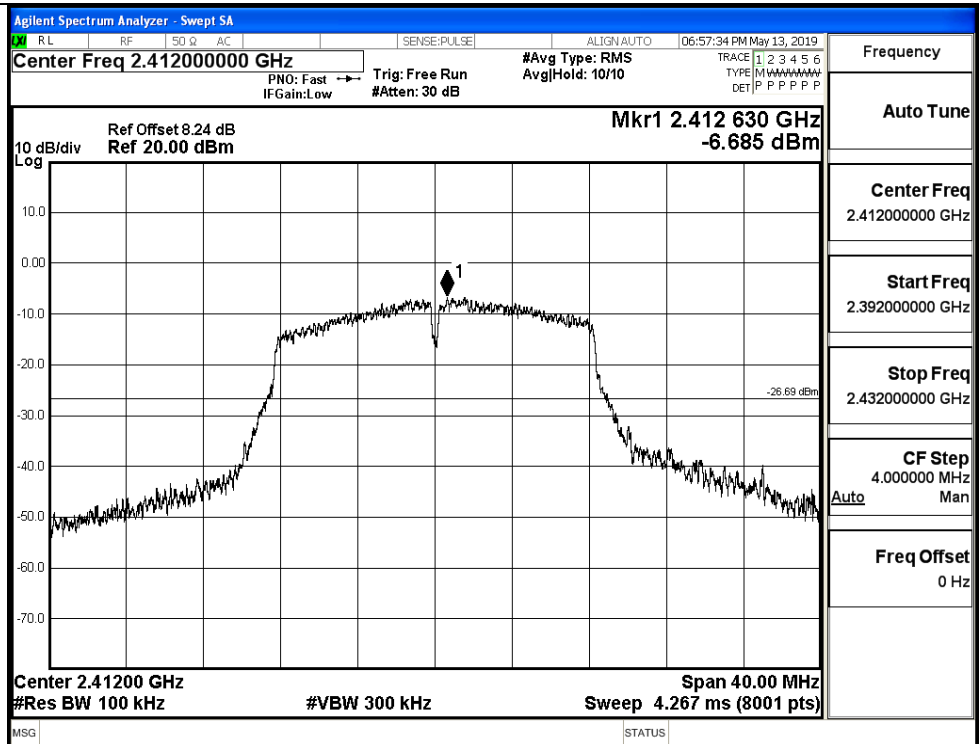
Pref/11B/HCH



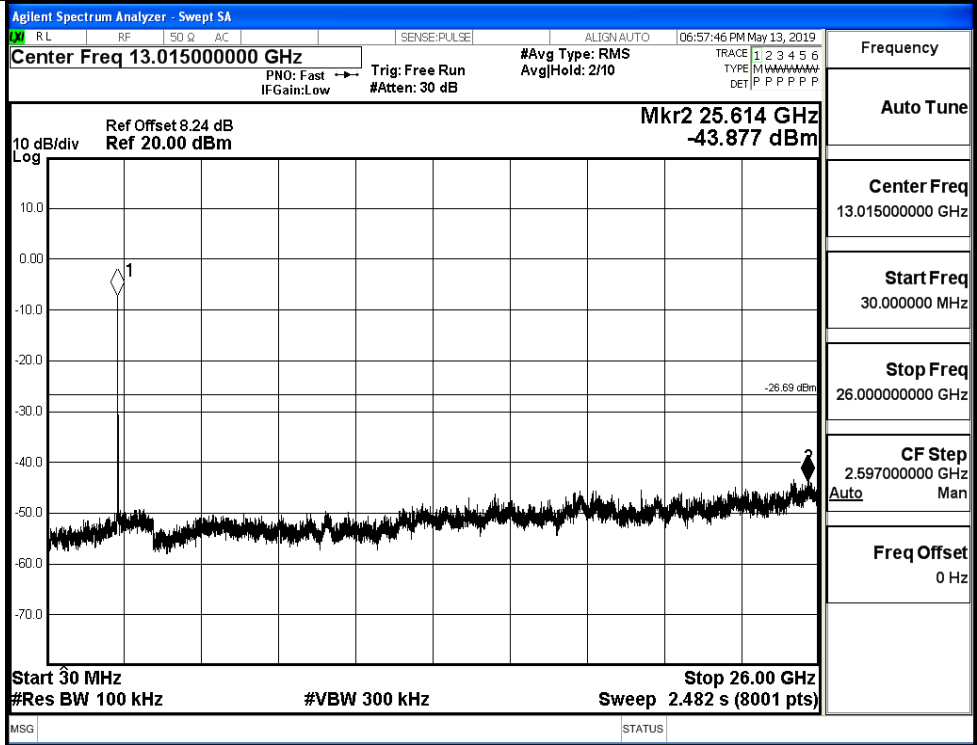
Puw/11B/HCH



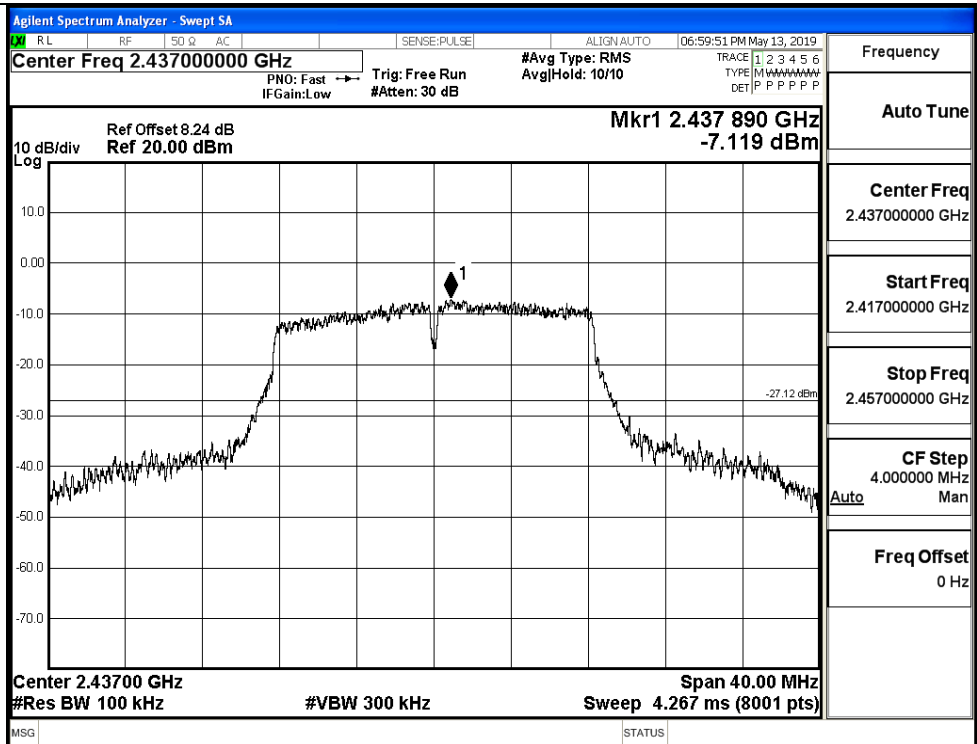
Pref/11G/LCH



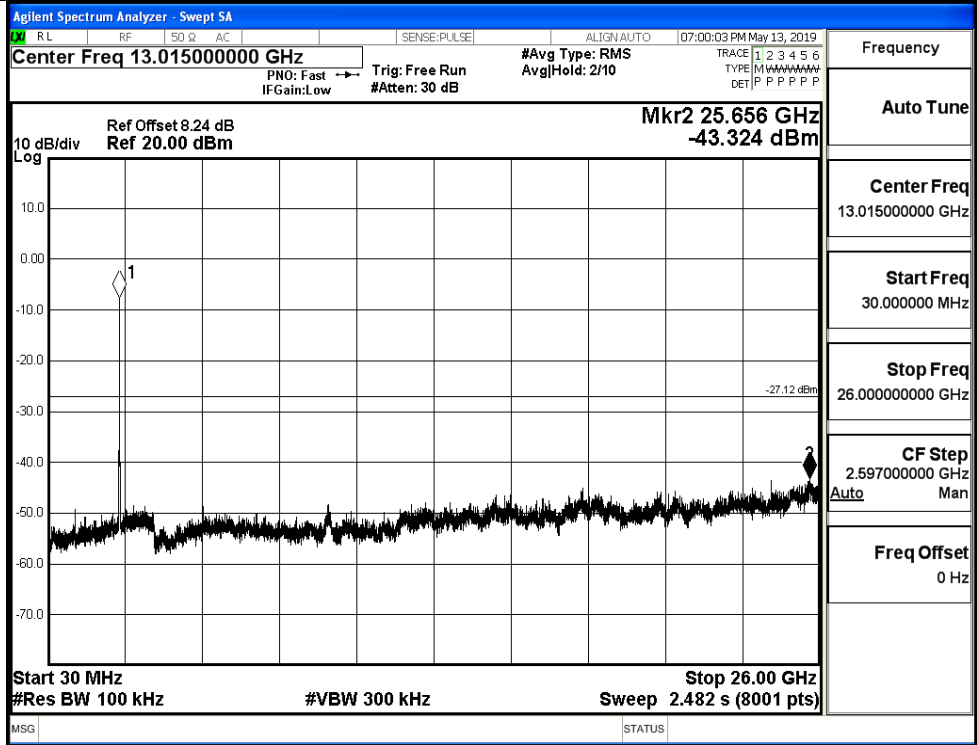
Puw/11G/LCH



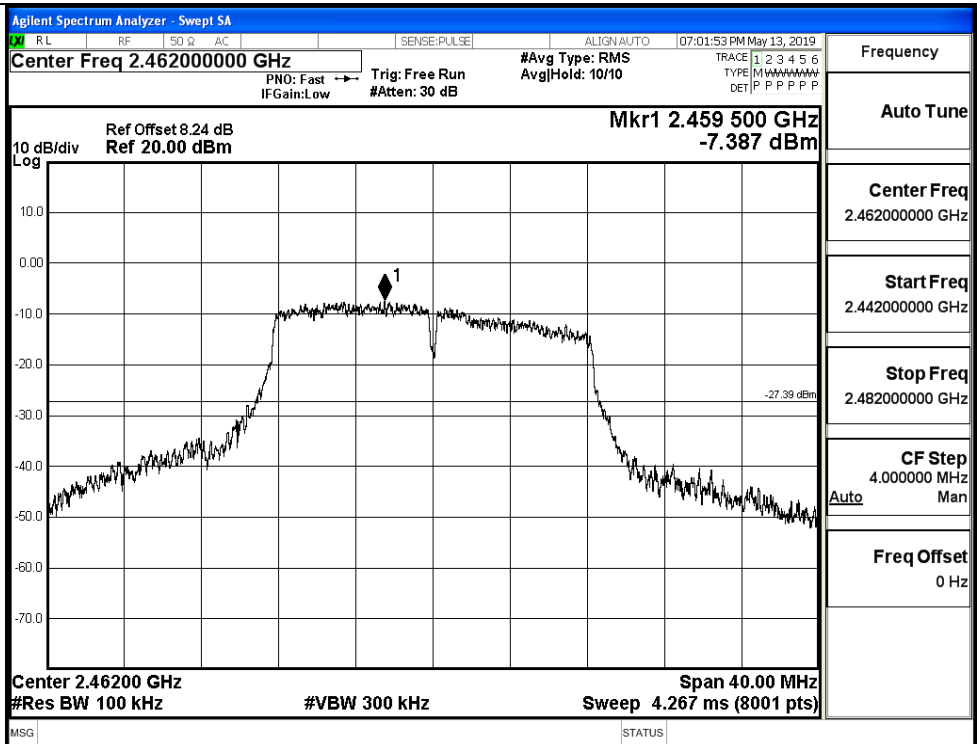
Pref/11G/MCH



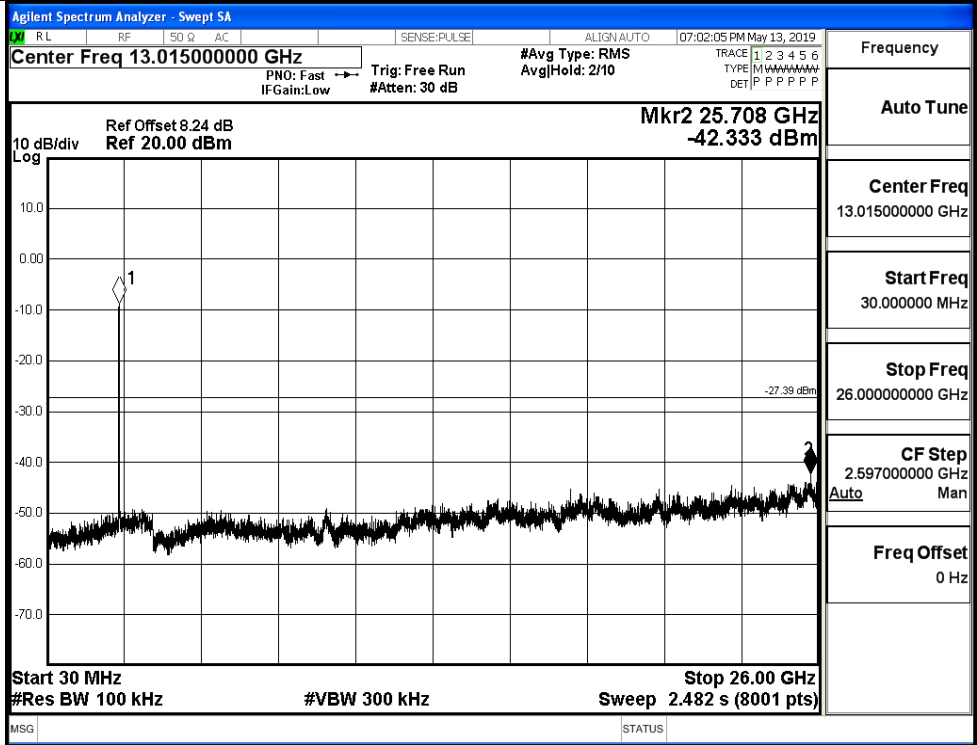
Puw/11G/MCH



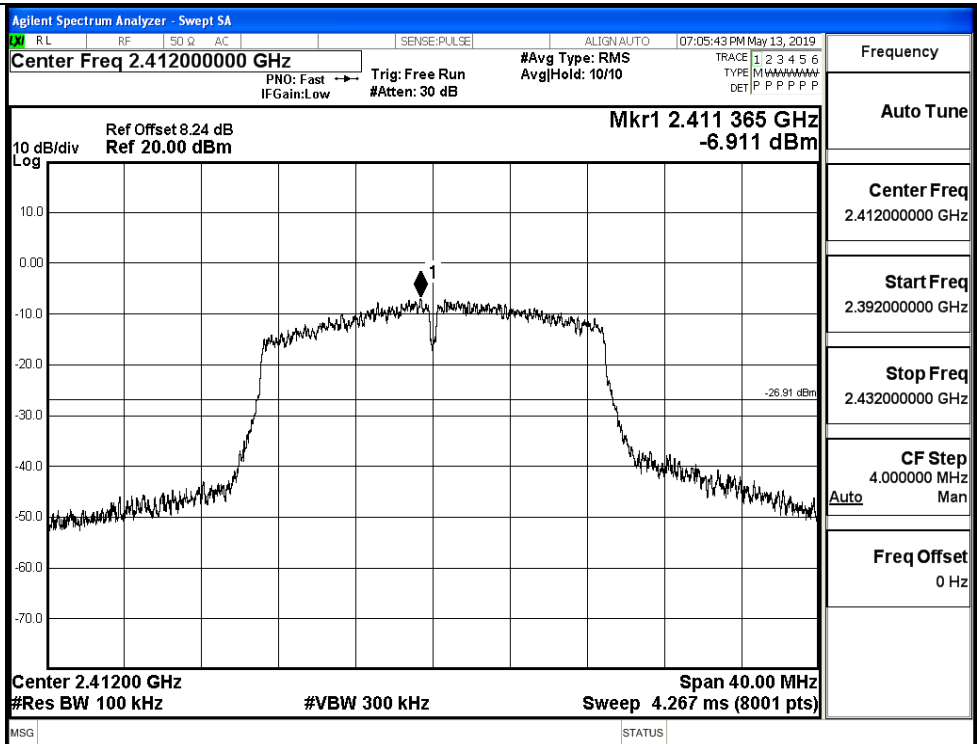
Pref/11G/HCH



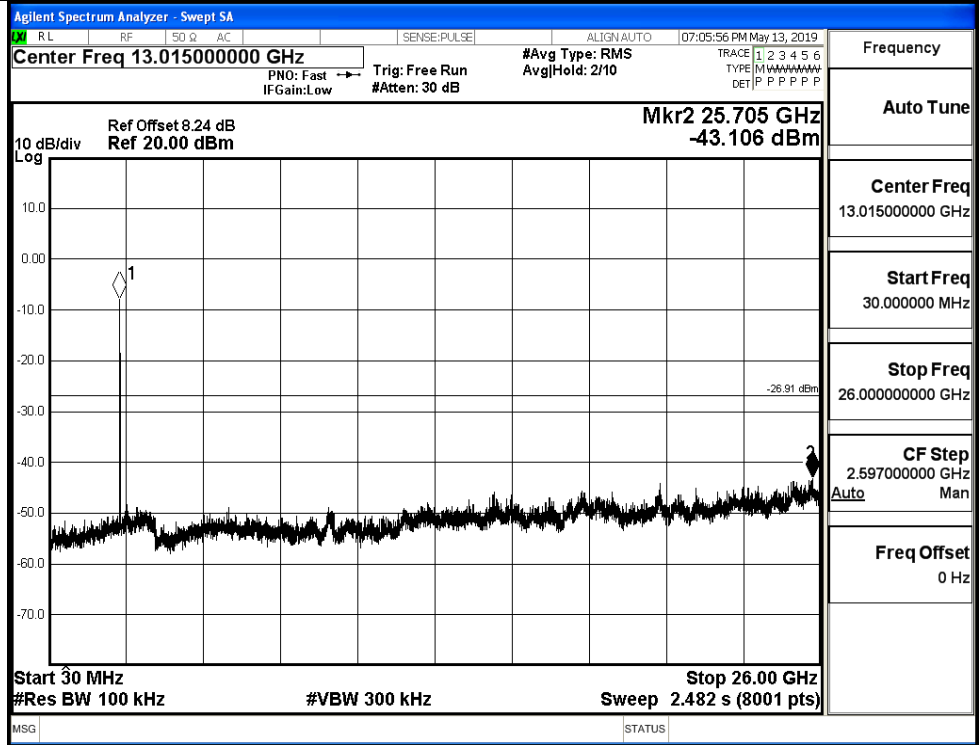
Puw/11G/HCH



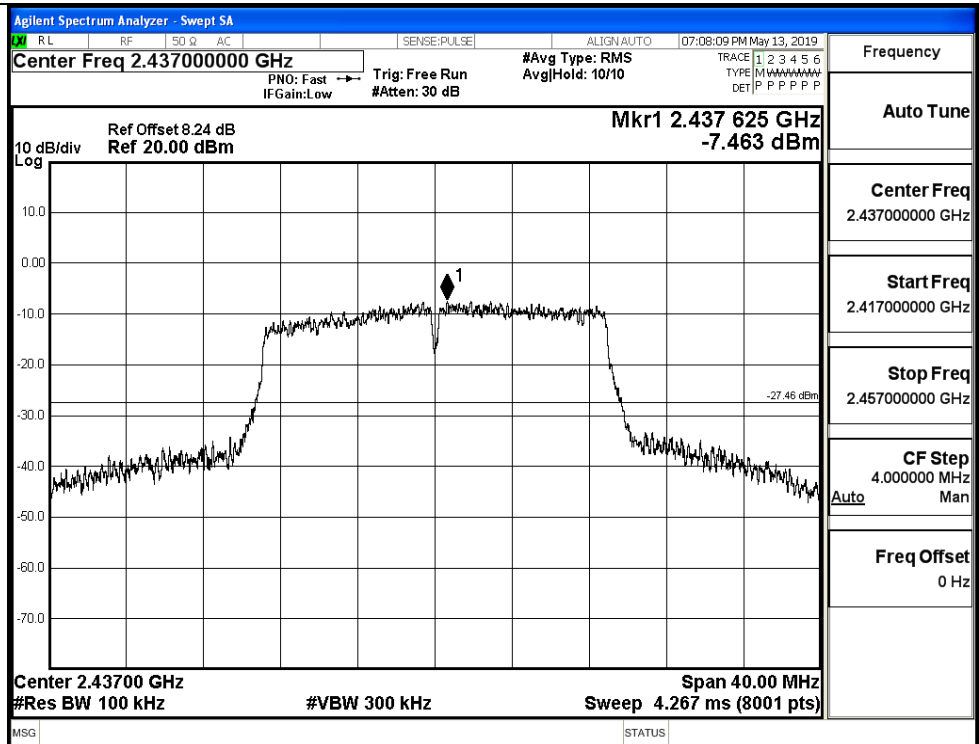
Pref/11N20SIS
O/LCH

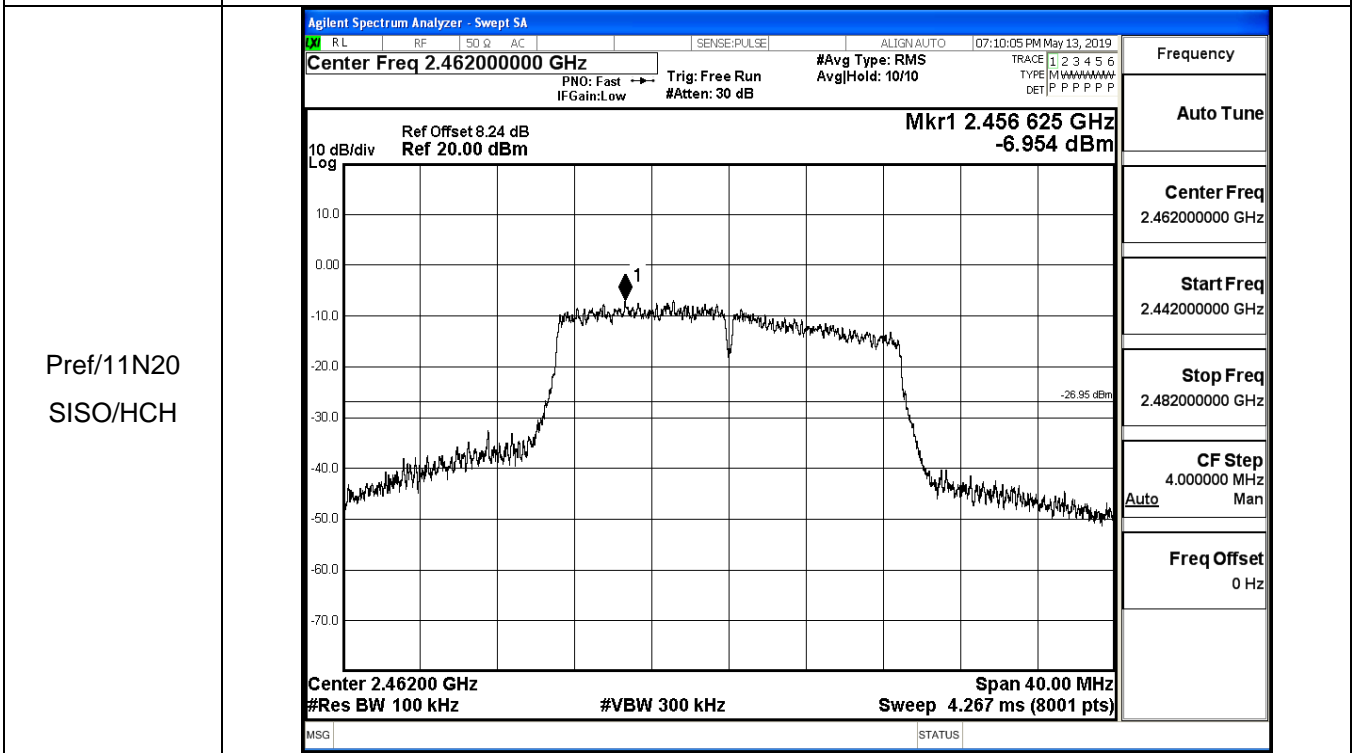
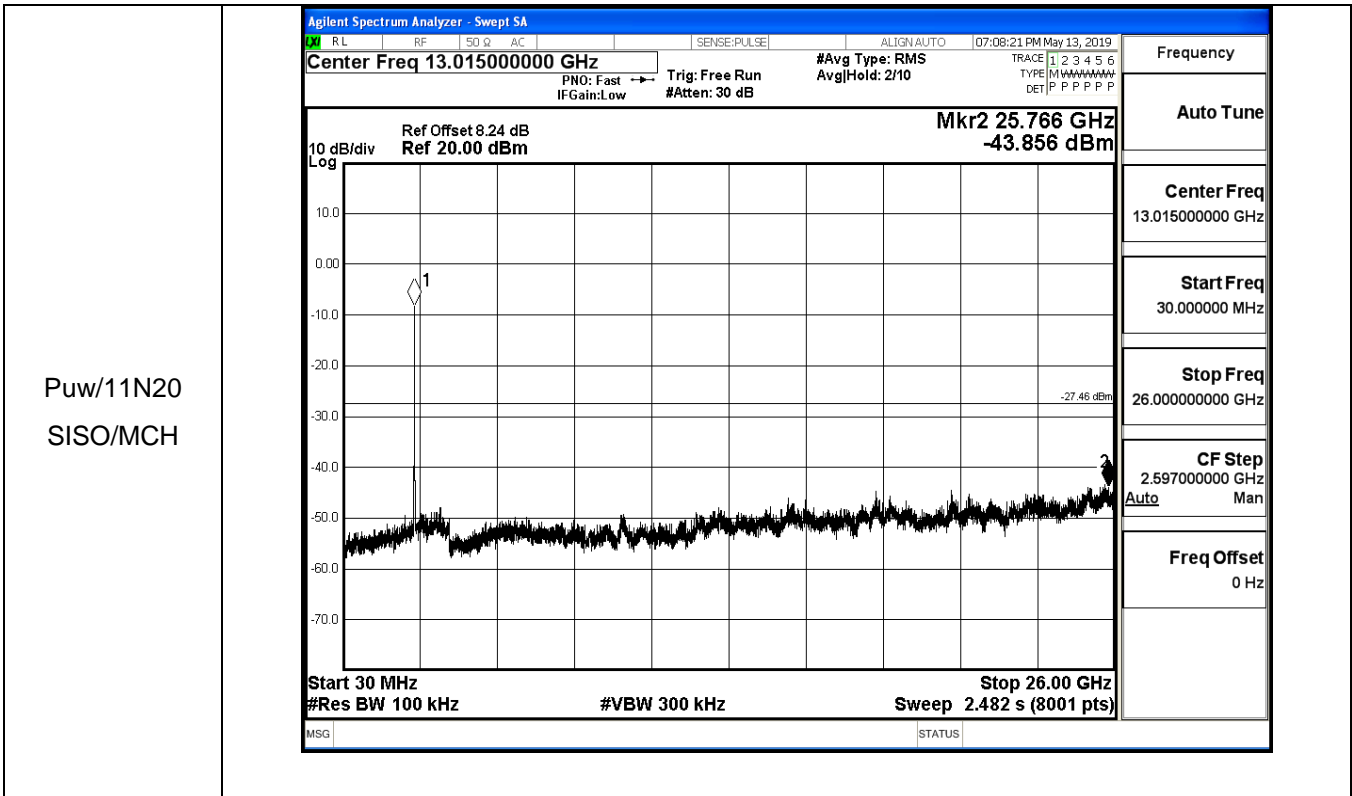


Puw/11N20
SISO/LCH

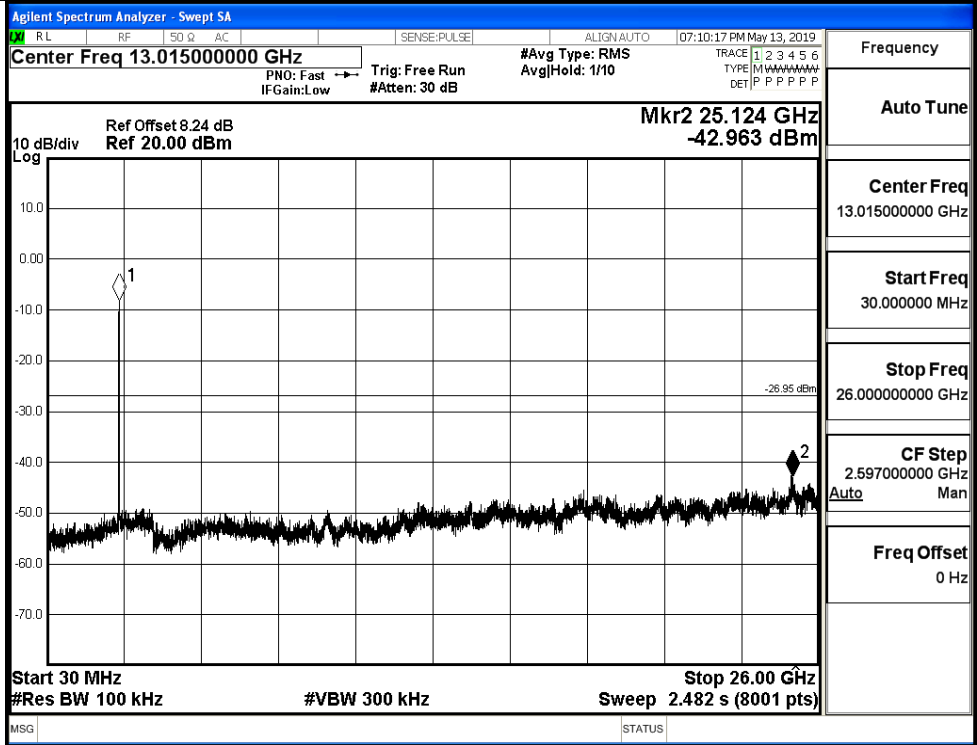


Pref/11N20
SISO/MCH

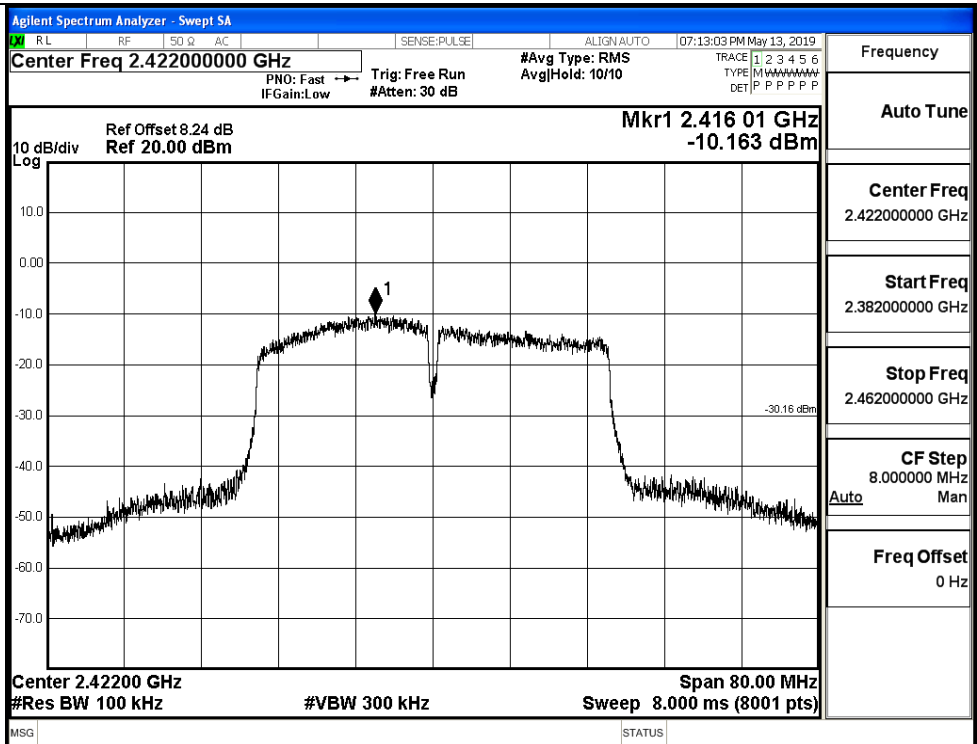




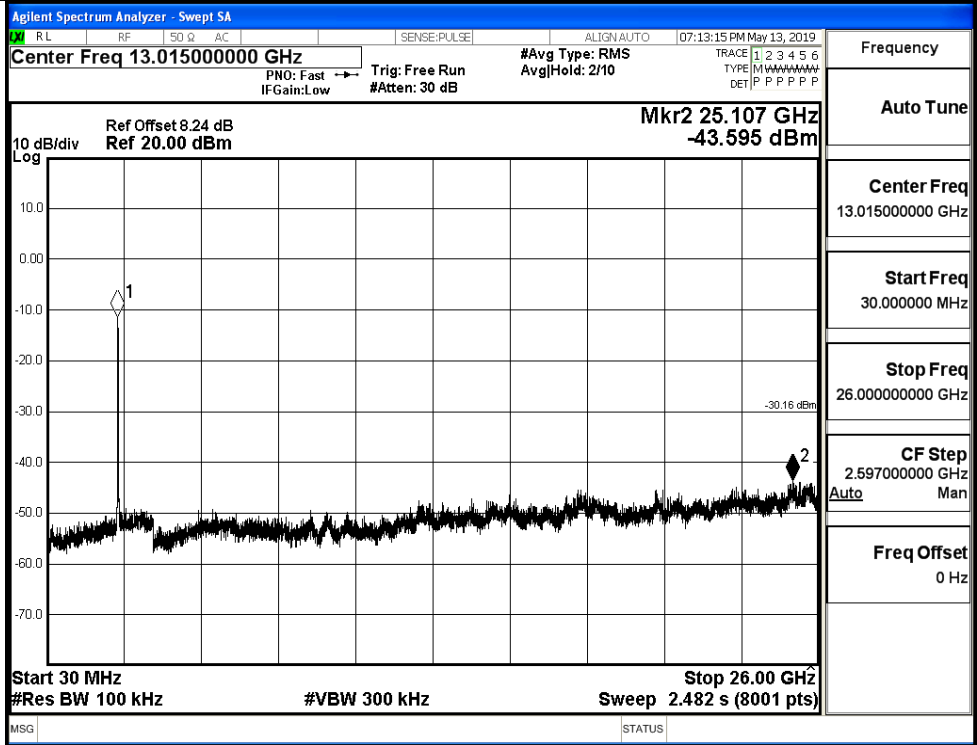
Puw/11N20
SISO/HCH



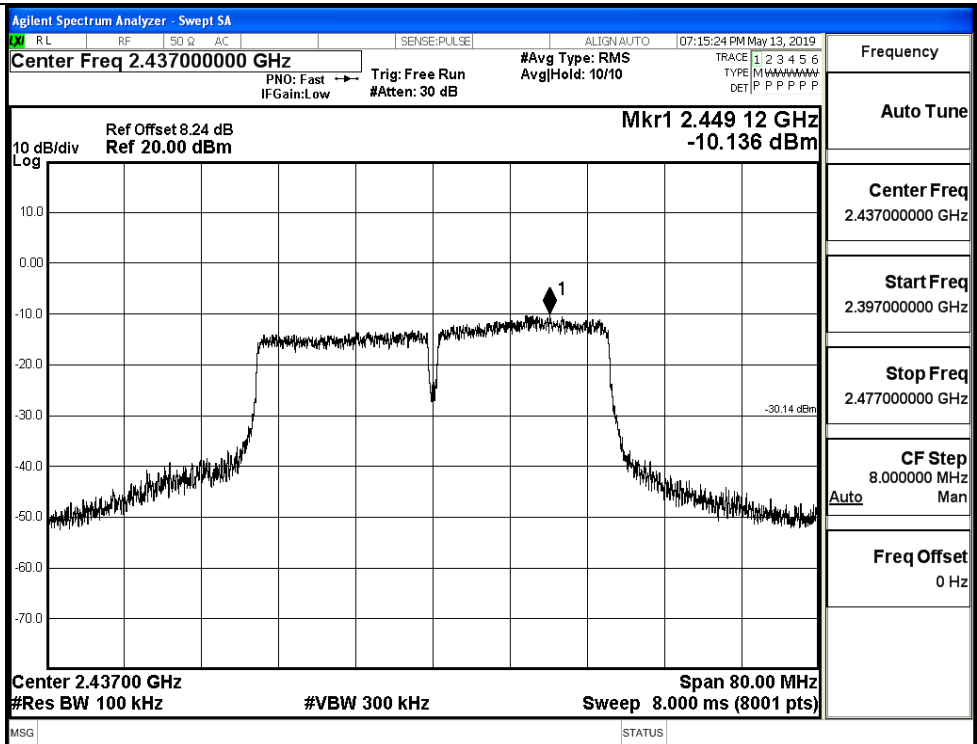
Pref/11N40
SISO/LCH

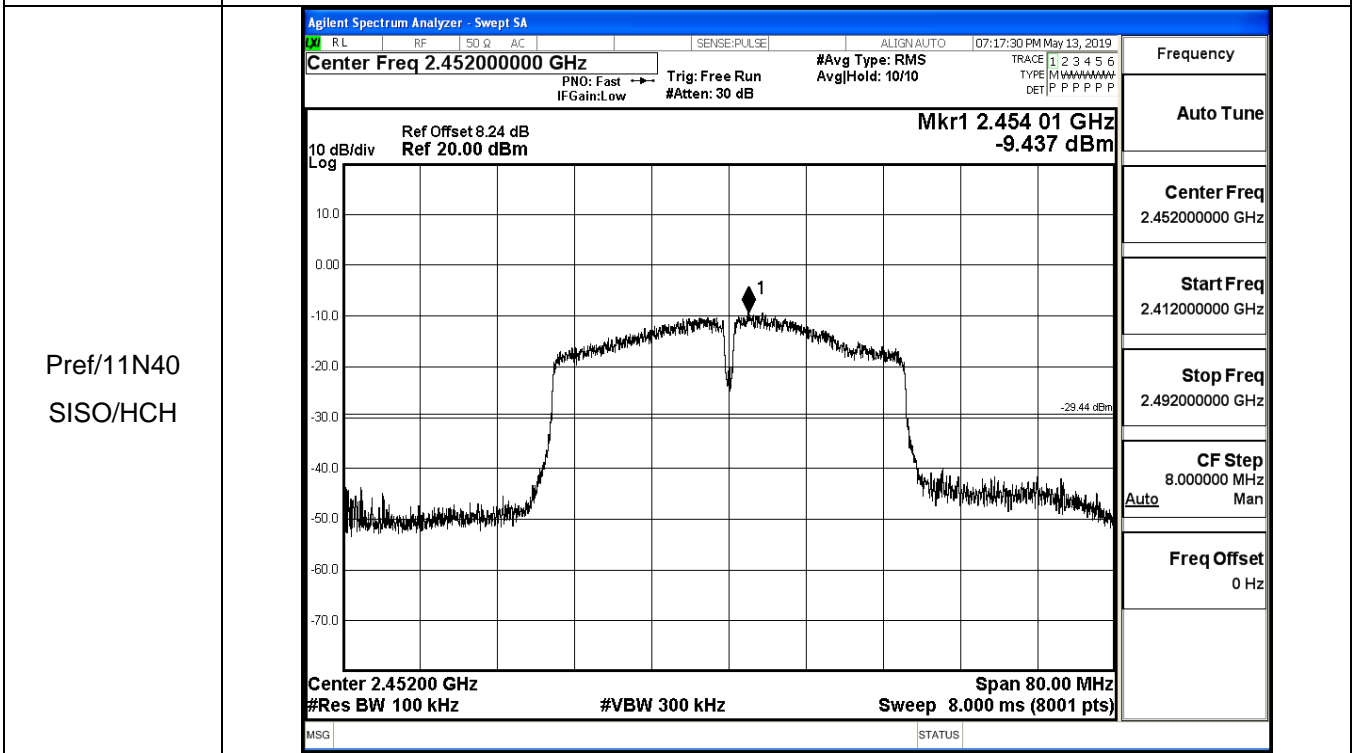
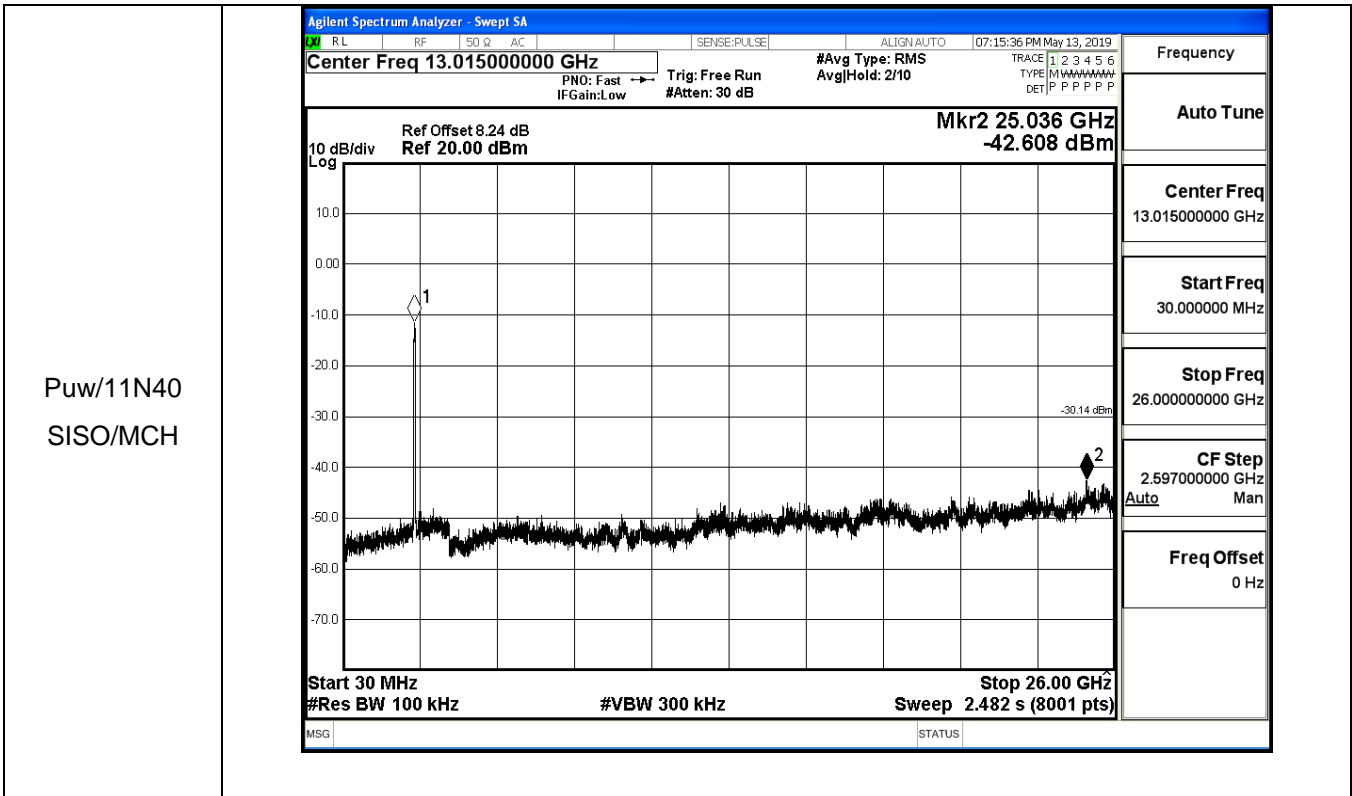


Puw/11N40
SISO/LCH



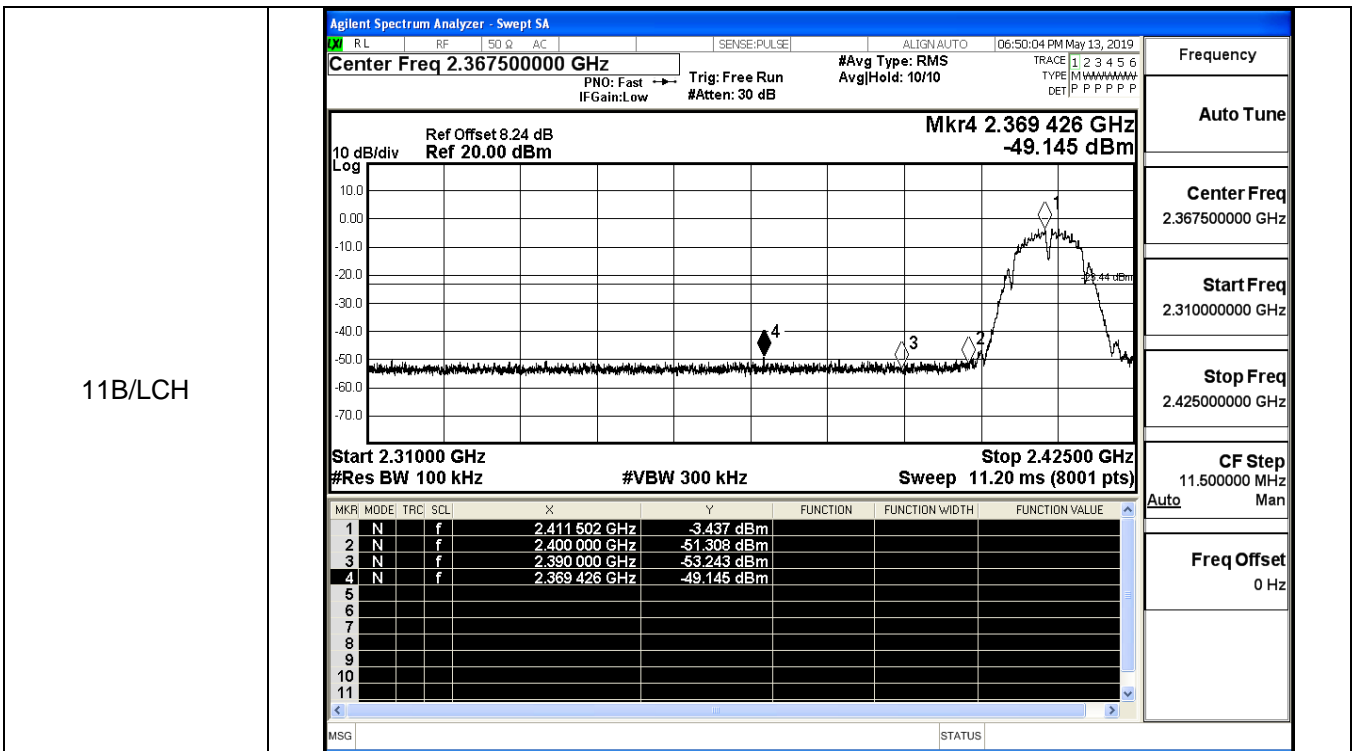
Pref/11N40
SISO/MCH



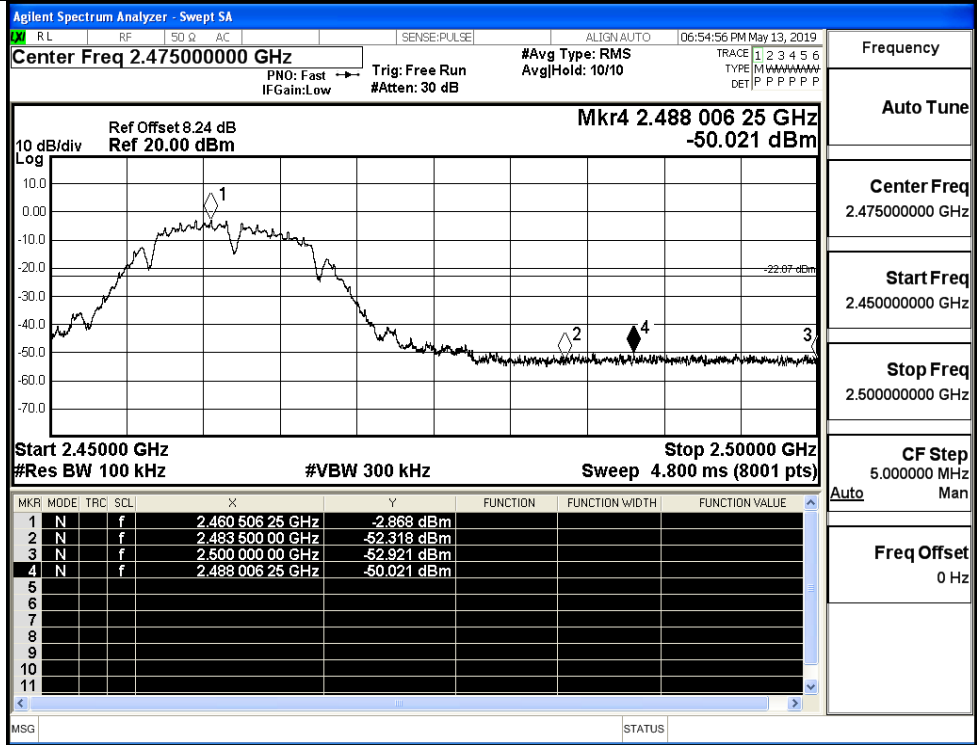


A.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-3.437	-49.145	-23.44	PASS
	HCH	-2.868	-50.021	-22.87	PASS
11G	LCH	-6.622	-49.795	-26.62	PASS
	HCH	-7.311	-49.067	-27.31	PASS
11N20SISO	LCH	-7.026	-49.981	-27.03	PASS
	HCH	-6.509	-48.022	-26.51	PASS
11N40SISO	LCH	-9.984	-46.930	-29.98	PASS
	HCH	-8.957	-41.943	-28.96	PASS



11B/HCH



Frequency

Auto Tune

Center Freq
2.47500000 GHz

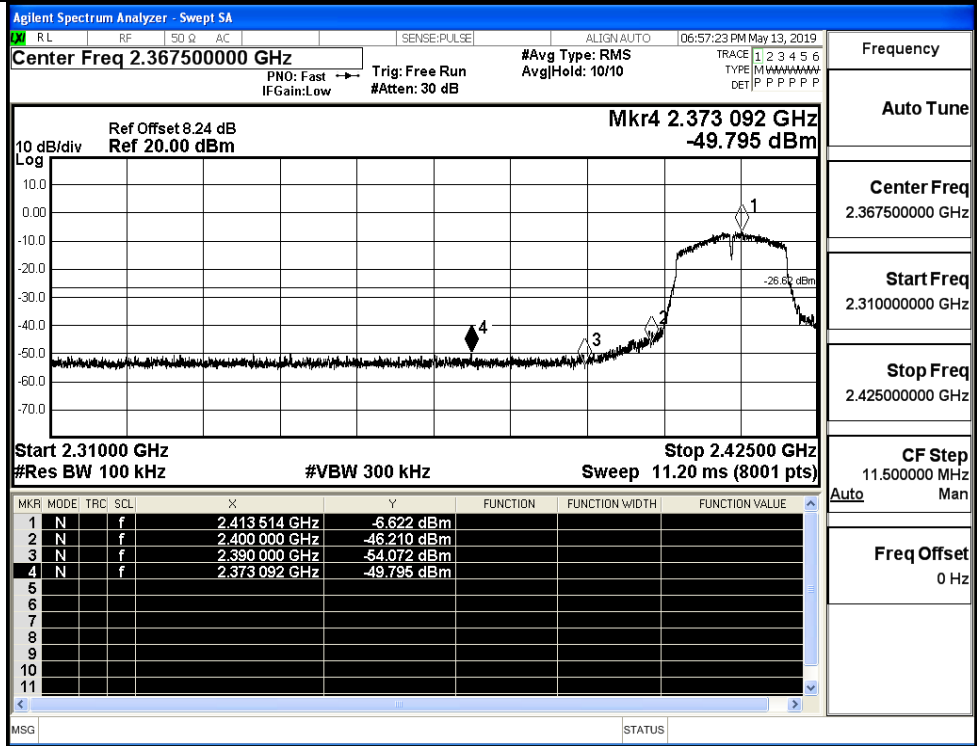
Start Freq
2.45000000 GHz

Stop Freq
2.50000000 GHz

CF Step
5.000000 MHz

Freq Offset
0 Hz

11G/LCH



Frequency

Auto Tune

Center Freq
2.36750000 GHz

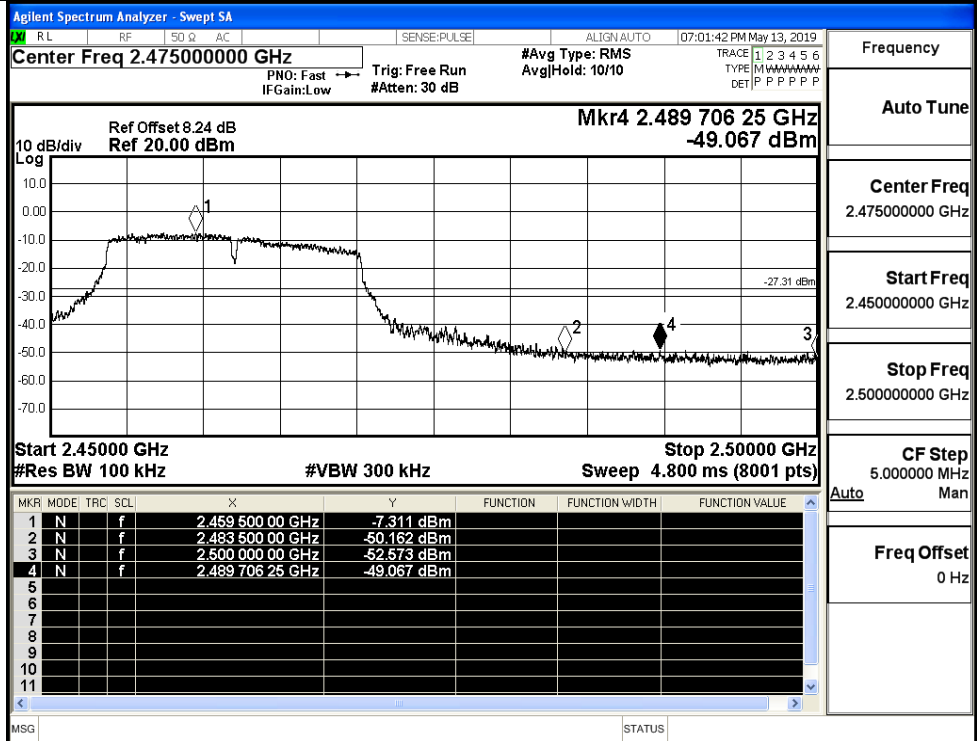
Start Freq
2.31000000 GHz

Stop Freq
2.42500000 GHz

CF Step
11.500000 MHz

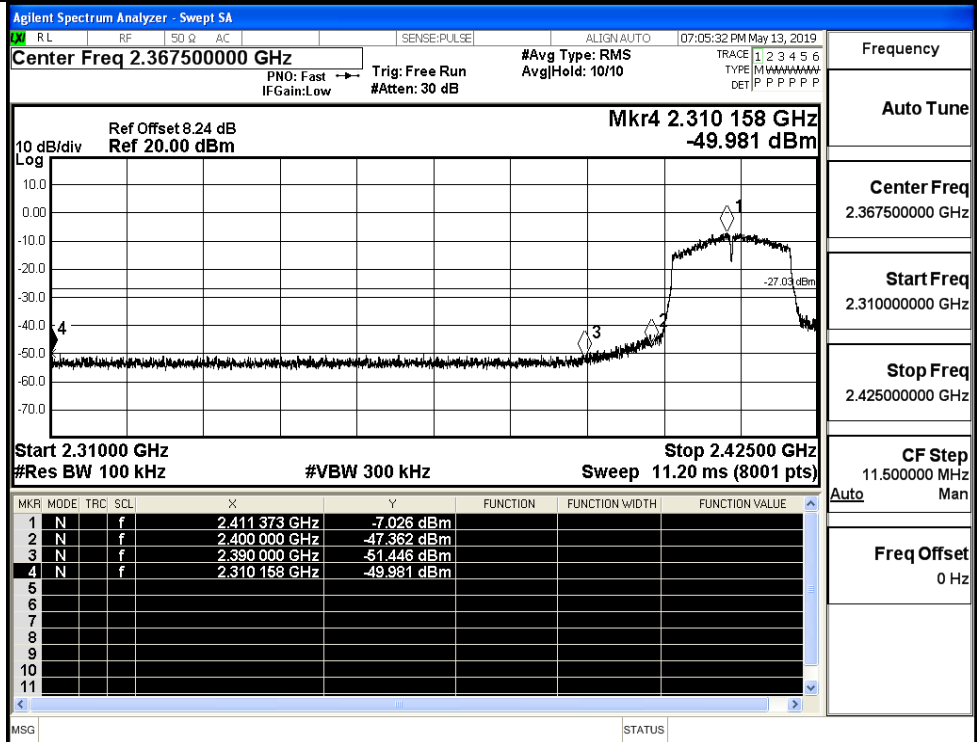
Freq Offset
0 Hz

11G/HCH



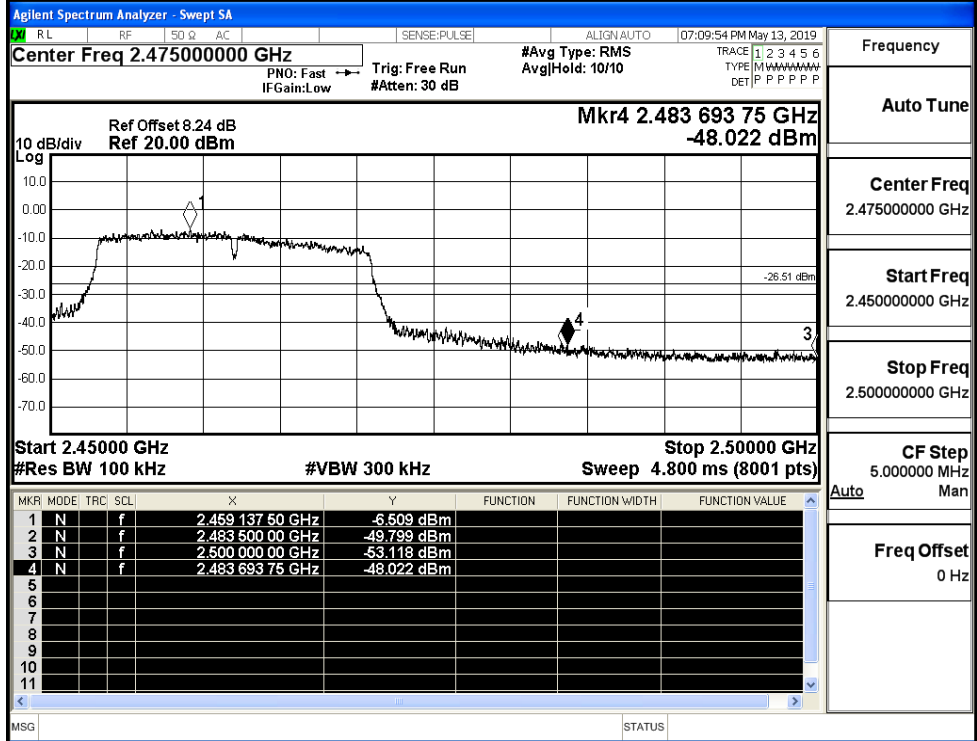
Frequency	2.47500000 GHz
Auto Tune	
Center Freq	2.47500000 GHz
Start Freq	2.45000000 GHz
Stop Freq	2.50000000 GHz
CF Step	5.000000 MHz
Freq Offset	0 Hz

11N20SISO/LCH

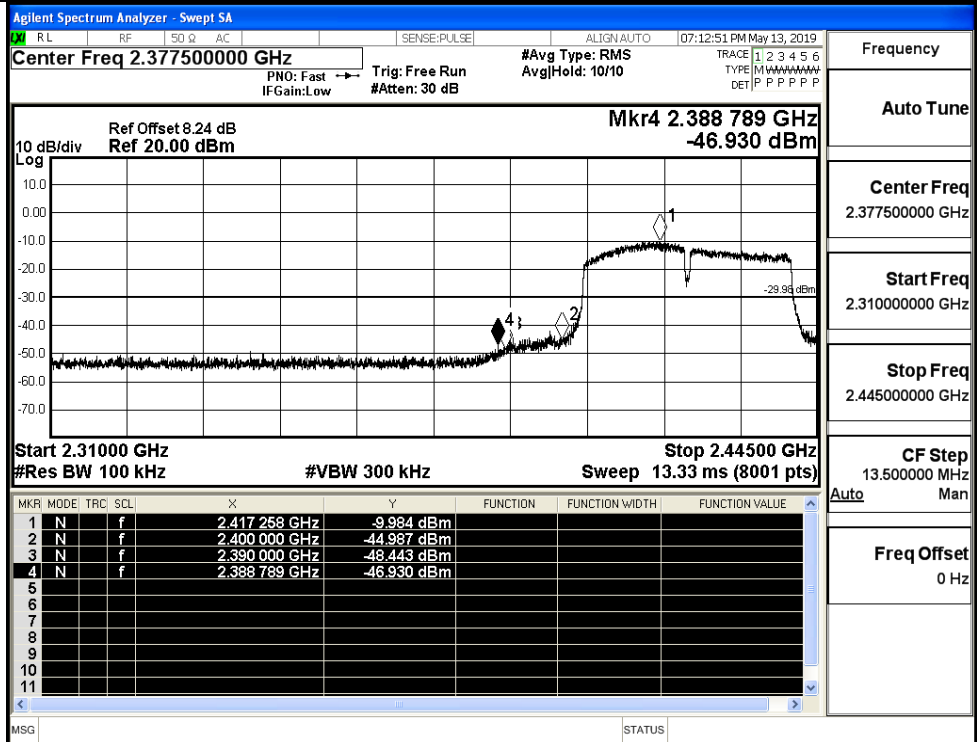


Frequency	2.36750000 GHz
Auto Tune	
Center Freq	2.36750000 GHz
Start Freq	2.31000000 GHz
Stop Freq	2.42500000 GHz
CF Step	11.500000 MHz
Freq Offset	0 Hz

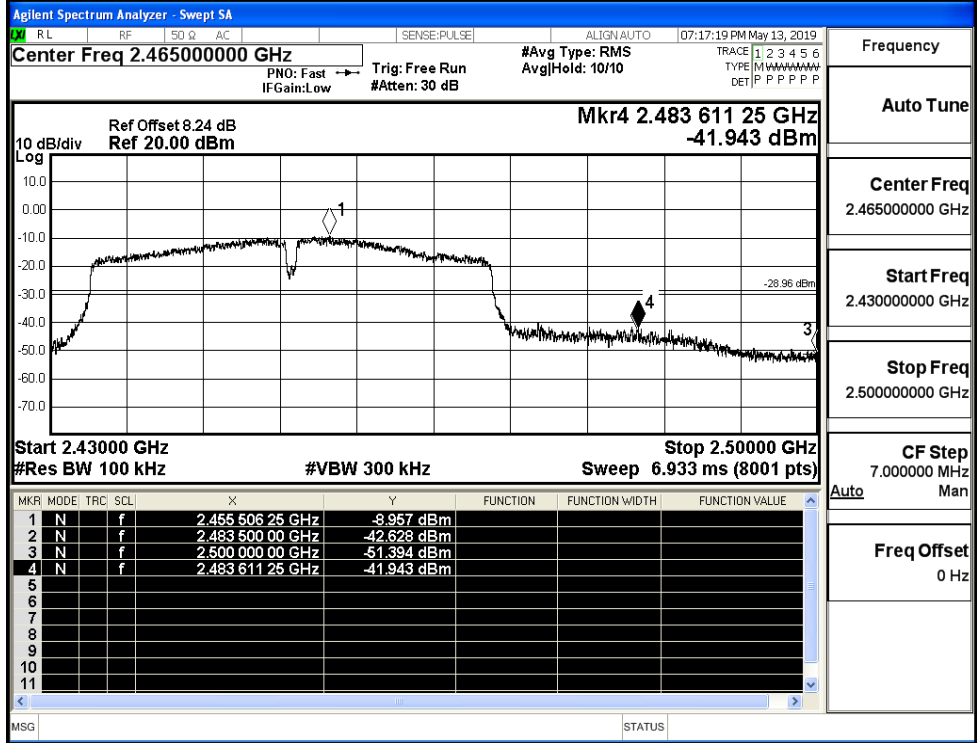
11N20SISO/HCH



11N40SISO/LCH



11N40SISO/HCH

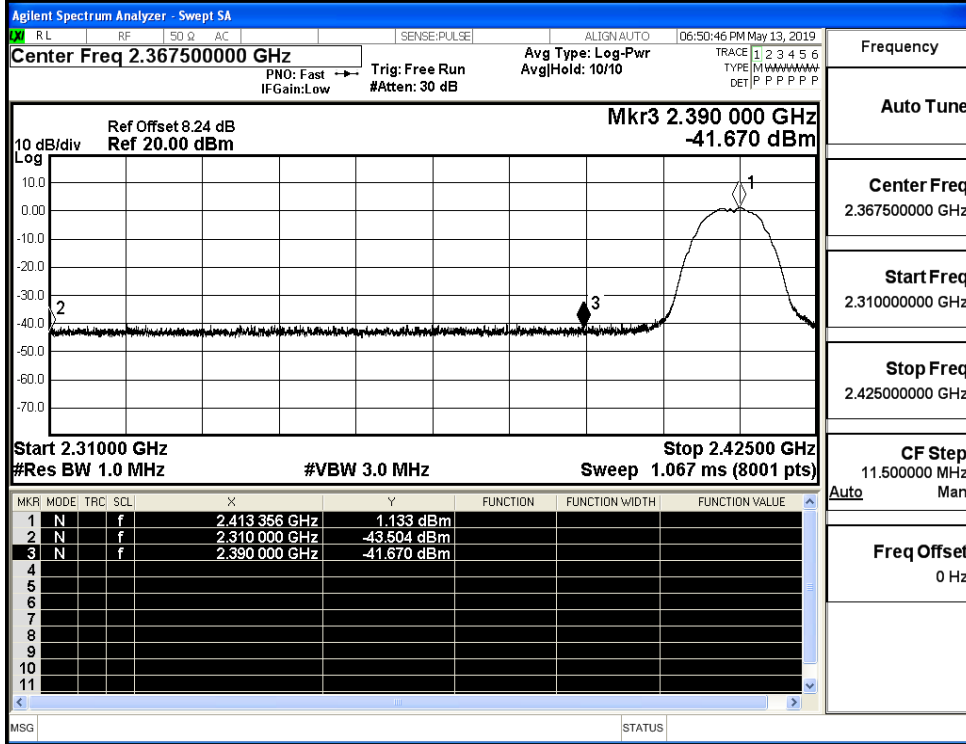


A.7 Restrict-band band-edge measurements

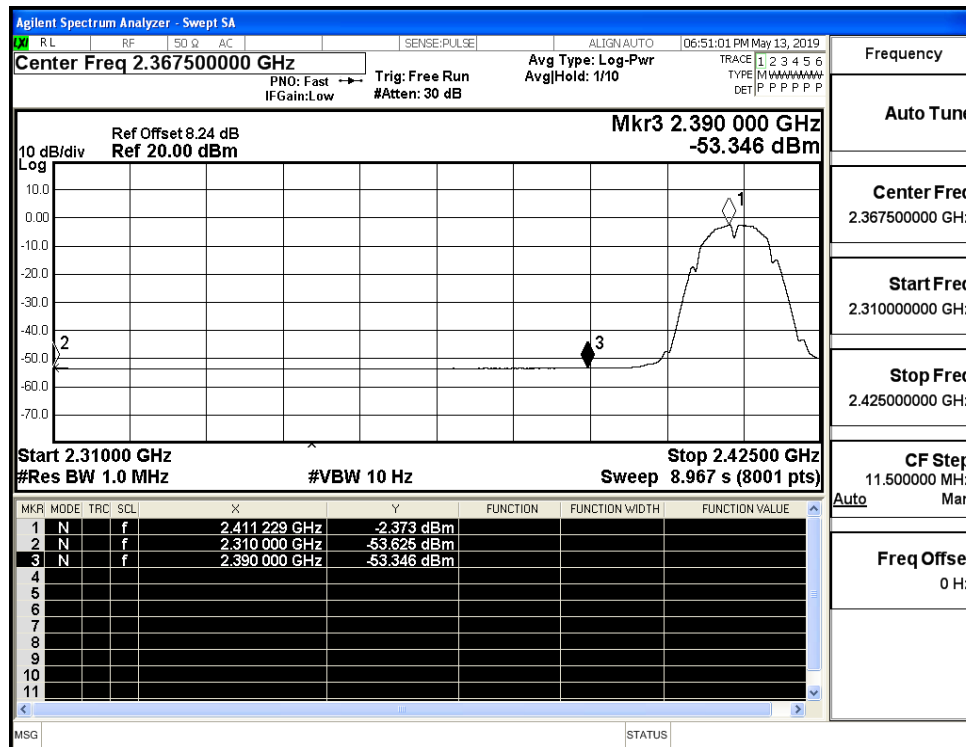
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBu V/m]	Verdict
11B	2412	Ant1	2310.0	-43.50	2.0	0	53.75	PEAK	74	PASS
	2412	Ant1	2310.0	-53.63	2.0	0	43.63	AV	54	PASS
	2412	Ant1	2390.0	-41.67	2.0	0	55.59	PEAK	74	PASS
	2412	Ant1	2390.0	-53.35	2.0	0	43.91	AV	54	PASS
	2462	Ant1	2483.5	-42.68	2.0	0	54.58	PEAK	74	PASS
	2462	Ant1	2483.5	-52.94	2.0	0	44.32	AV	54	PASS
	2462	Ant1	2500.0	-43.52	2.0	0	53.74	PEAK	74	PASS
	2462	Ant1	2500.0	-53.02	2.0	0	44.24	AV	54	PASS
11G	2412	Ant1	2310.0	-42.75	2.0	0	54.51	PEAK	74	PASS
	2412	Ant1	2310.0	-53.63	2.0	0	43.62	AV	54	PASS
	2412	Ant1	2390.0	-40.68	2.0	0	56.57	PEAK	74	PASS
	2412	Ant1	2390.0	-52.83	2.0	0	44.43	AV	54	PASS
	2462	Ant1	2483.5	-37.87	2.0	0	59.39	PEAK	74	PASS
	2462	Ant1	2483.5	-51.13	2.0	0	46.13	AV	54	PASS
	2462	Ant1	2500.0	-43.34	2.0	0	53.92	PEAK	74	PASS
	2462	Ant1	2500.0	-52.86	2.0	0	44.40	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-42.74	2.0	0	54.52	PEAK	74	PASS
	2412	Ant1	2310.0	-53.63	2.0	0	43.63	AV	54	PASS
	2412	Ant1	2390.0	-42.37	2.0	0	54.89	PEAK	74	PASS
	2412	Ant1	2390.0	-52.59	2.0	0	44.66	AV	54	PASS
	2462	Ant1	2483.5	-37.16	2.0	0	60.10	PEAK	74	PASS
	2462	Ant1	2483.5	-50.51	2.0	0	46.75	AV	54	PASS
	2462	Ant1	2500.0	-41.64	2.0	0	55.62	PEAK	74	PASS
	2462	Ant1	2500.0	-52.84	2.0	0	44.42	AV	54	PASS
11N40 SISO	2422	Ant1	2310.0	-42.69	2.0	0	54.57	PEAK	74	PASS
	2422	Ant1	2310.0	-53.63	2.0	0	43.63	AV	54	PASS

	2422	Ant1	2390.0	-38.41	2.0	0	58.85	PEAK	74	PASS
	2422	Ant1	2390.0	-49.24	2.0	0	48.02	AV	54	PASS
	2452	Ant1	2483.5	-31.94	2.0	0	65.32	PEAK	74	PASS
	2452	Ant1	2483.5	-46.08	2.0	0	51.18	AV	54	PASS
	2452	Ant1	2500.0	-42.28	2.0	0	54.98	PEAK	74	PASS
	2452	Ant1	2500.0	-52.56	2.0	0	44.69	AV	54	PASS

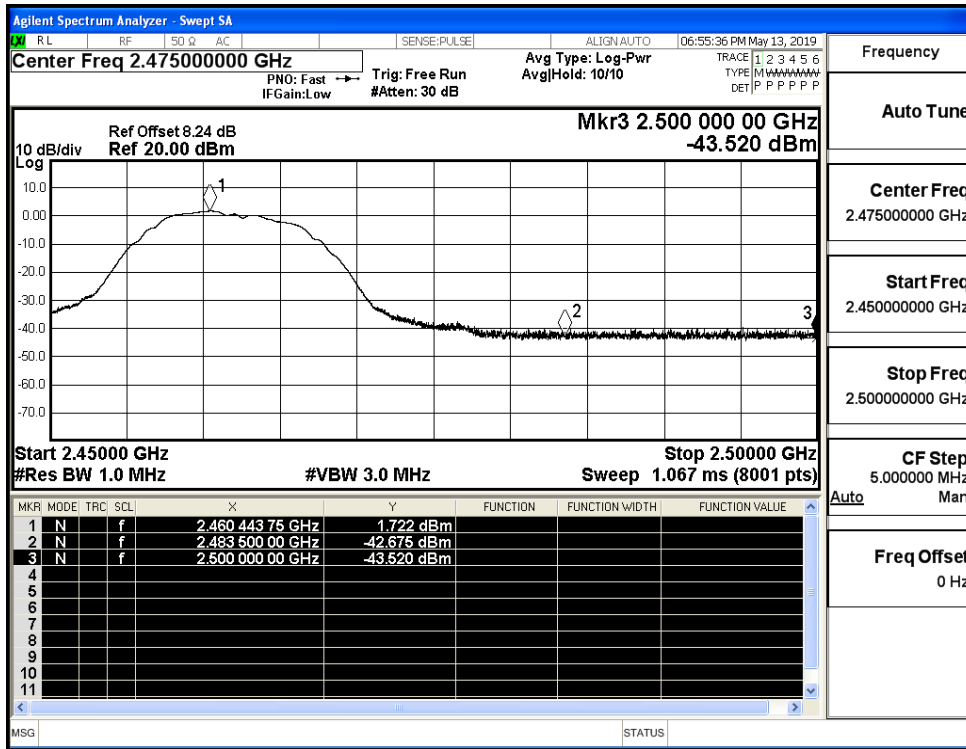
Restrict-band band-edge measurements_11B_2412_Ant1_PEAK



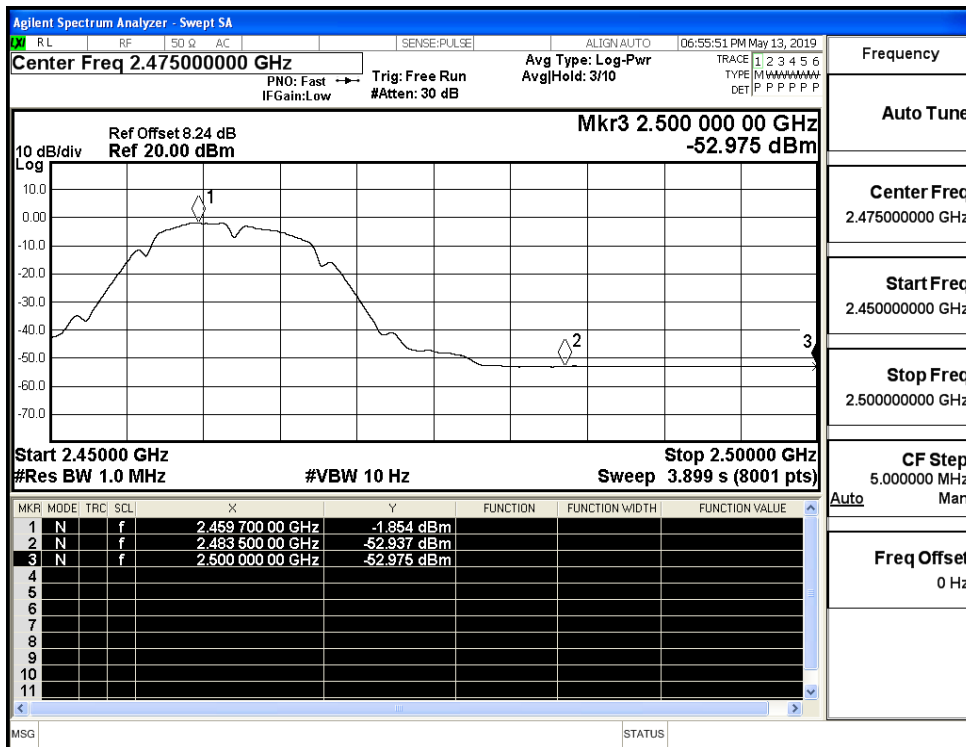
Restrict-band band-edge measurements_11B_2412_Ant1_AV



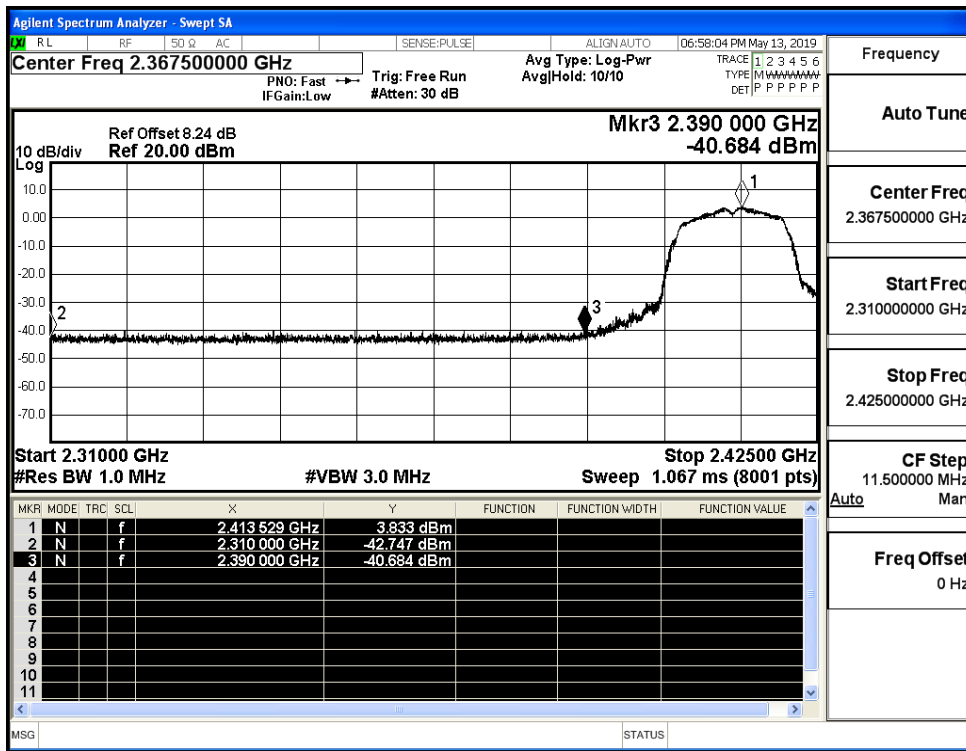
Restrict-band band-edge measurements_11B_2462_Ant1_PEAK



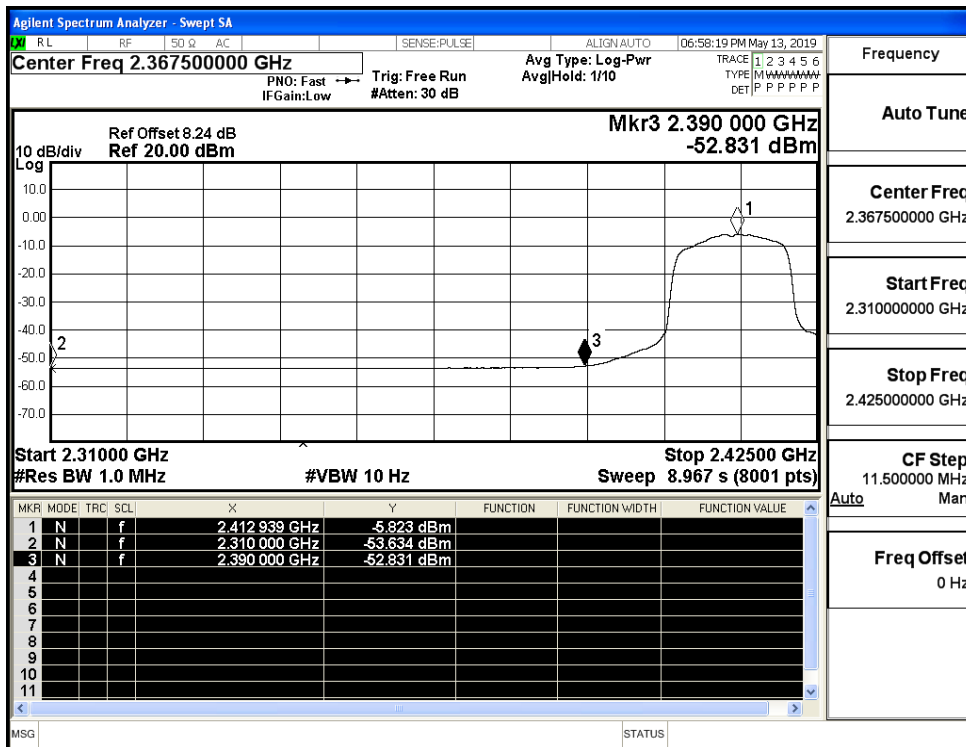
Restrict-band band-edge measurements_11B_2462_Ant1_AV



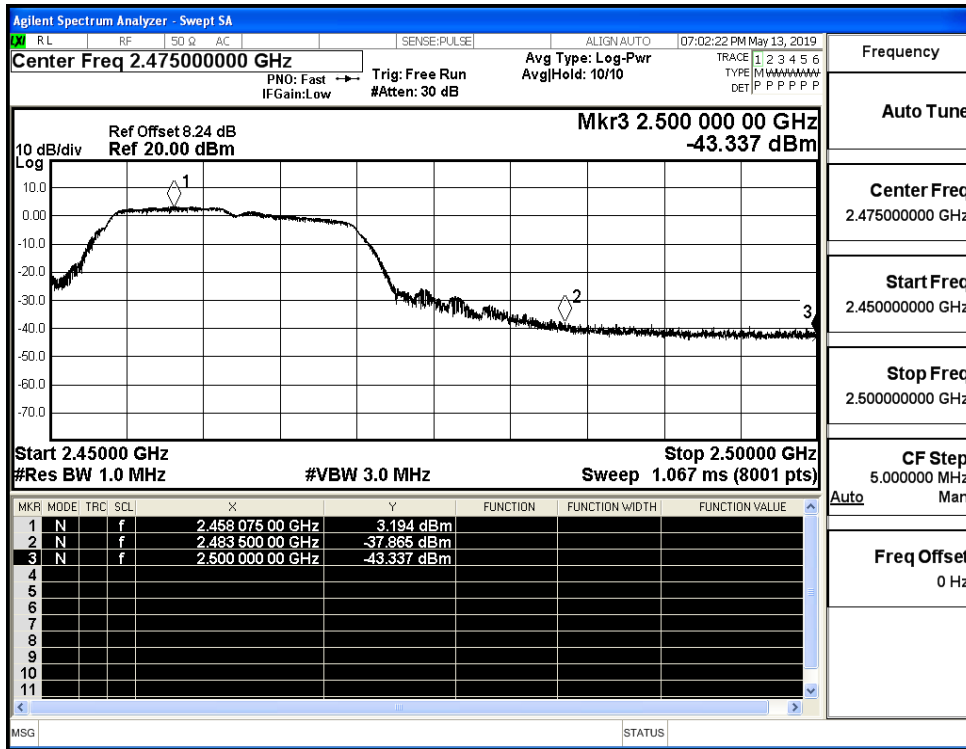
Restrict-band band-edge measurements_11G_2412_Ant1_PEAK



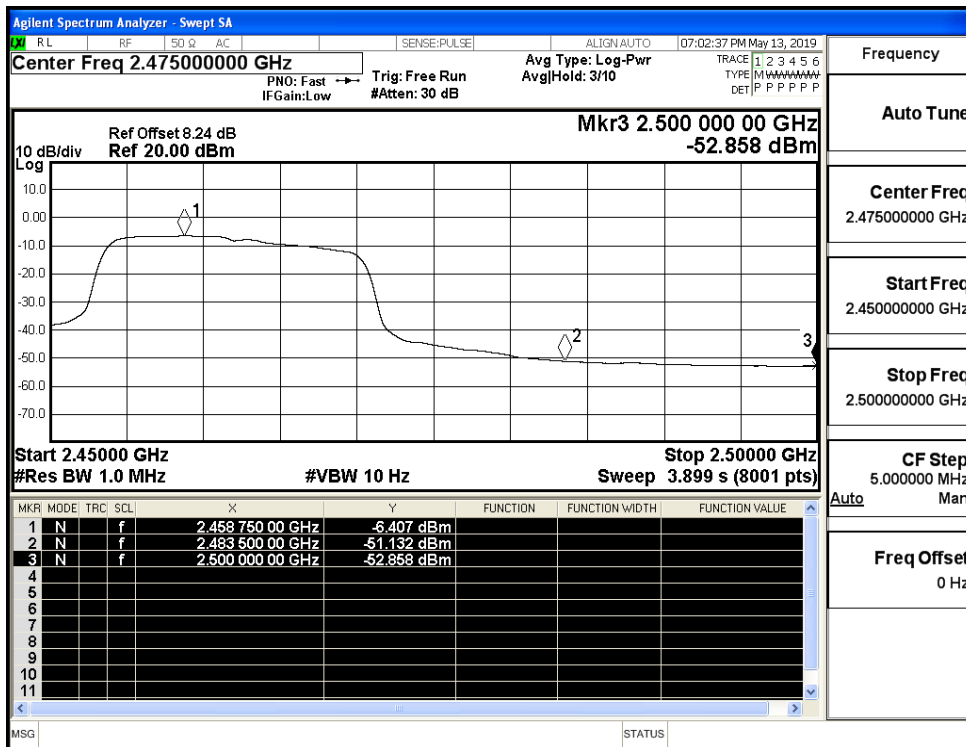
Restrict-band band-edge measurements_11G_2412_Ant1_AV



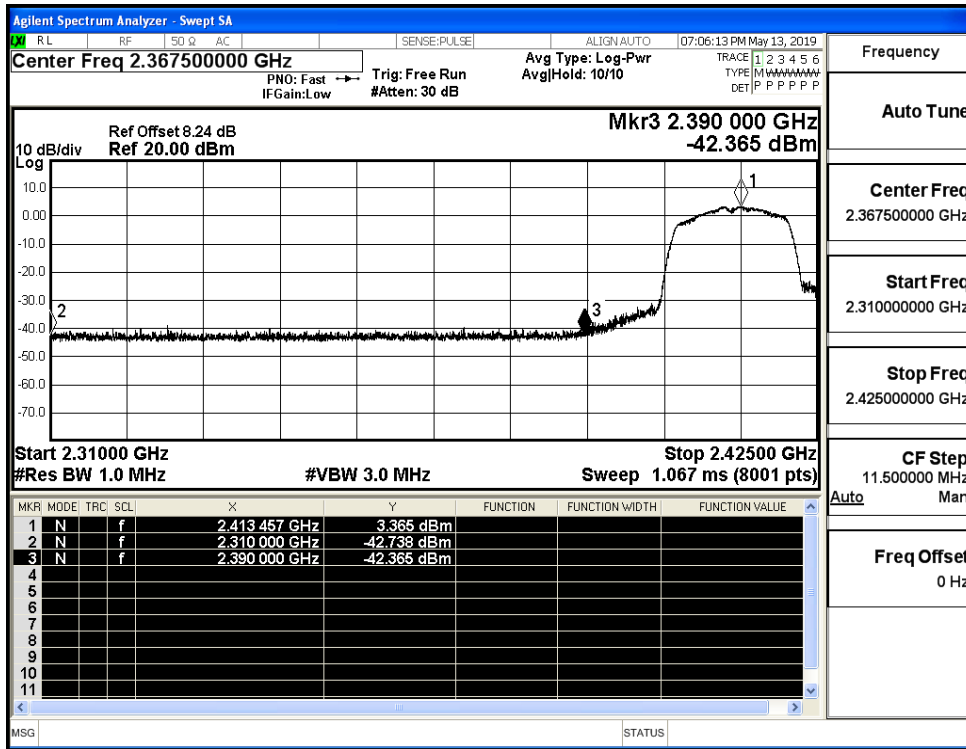
Restrict-band band-edge measurements_11G_2462_Ant1_PEAK



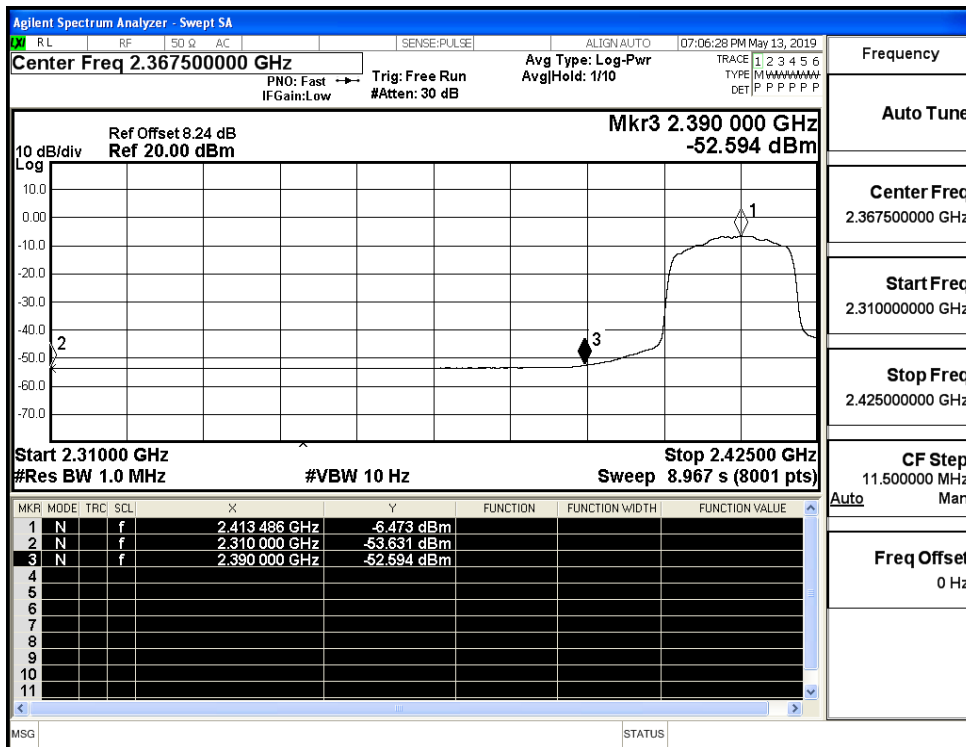
Restrict-band band-edge measurements_11G_2462_Ant1_AV



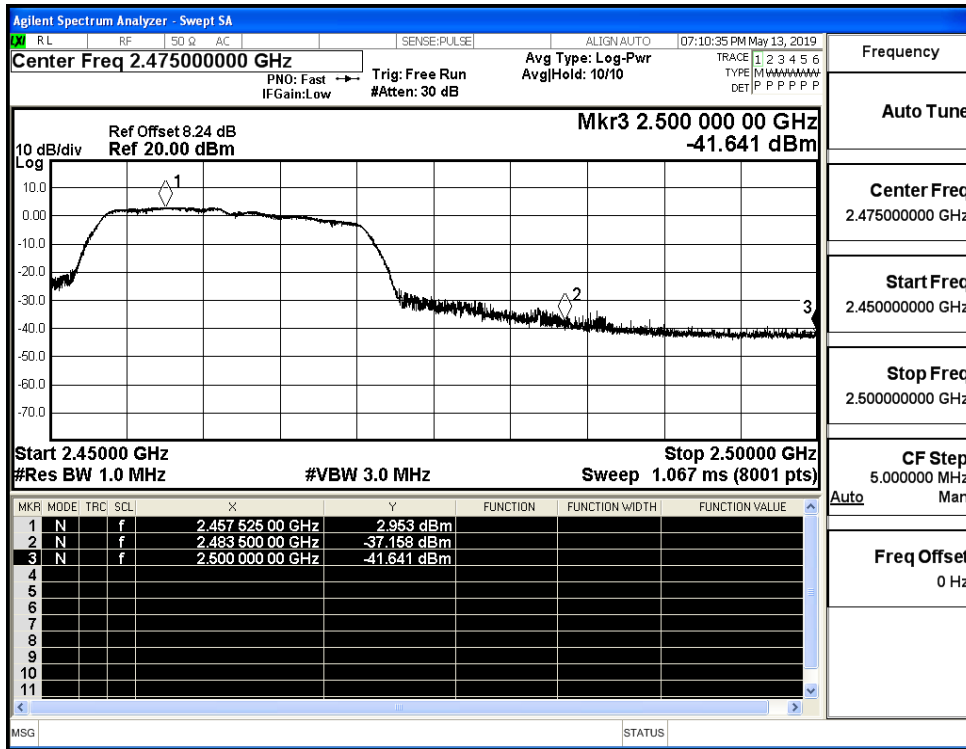
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_PEAK



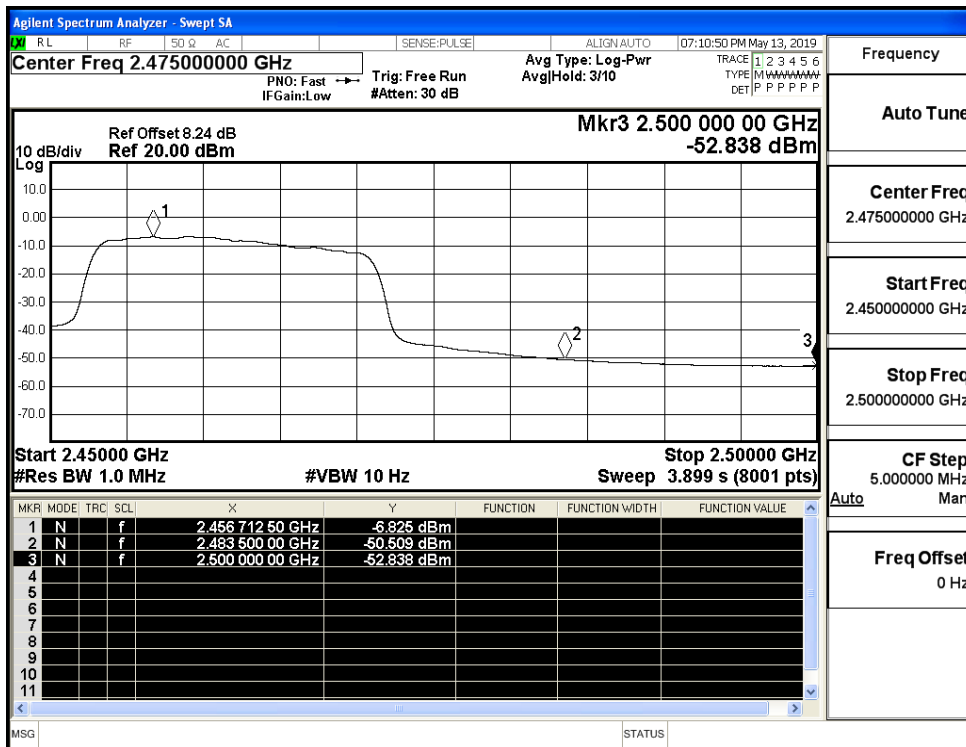
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_AV



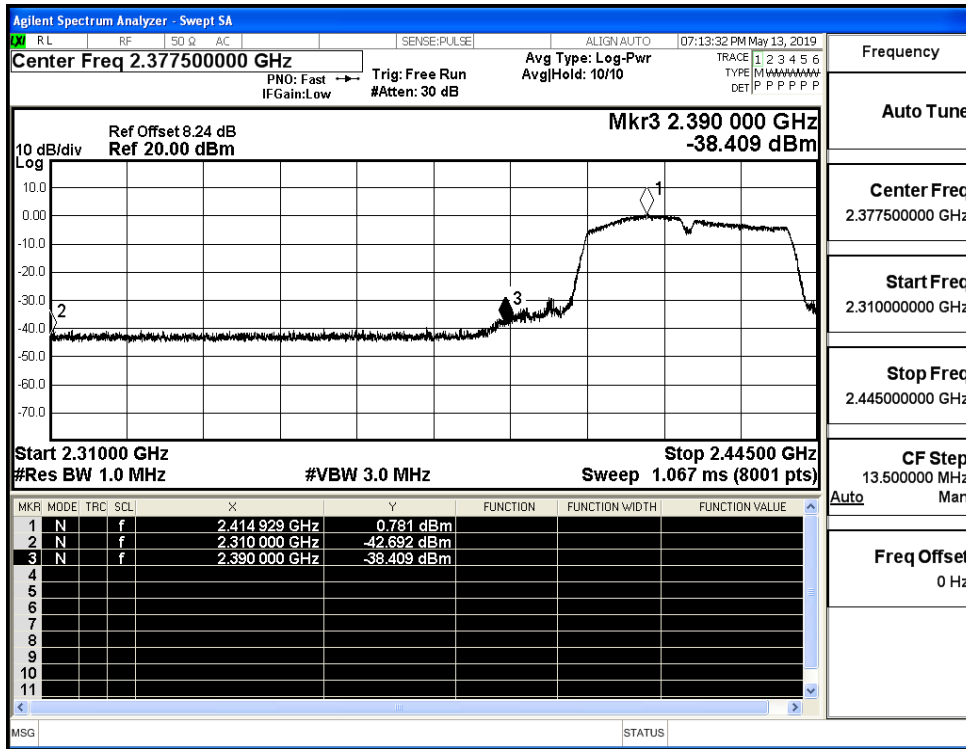
Restrict-band band-edge measurements_11N20SISO_2462_Ant1_PEAK



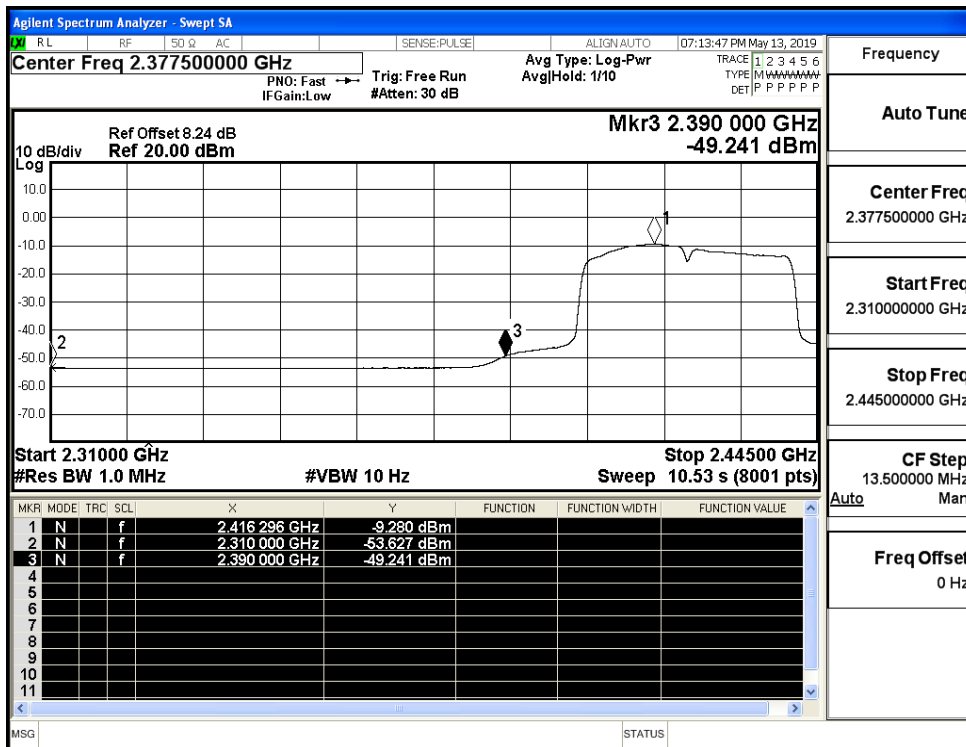
Restrict-band band-edge measurements_11N20SISO_2462_Ant1_AV



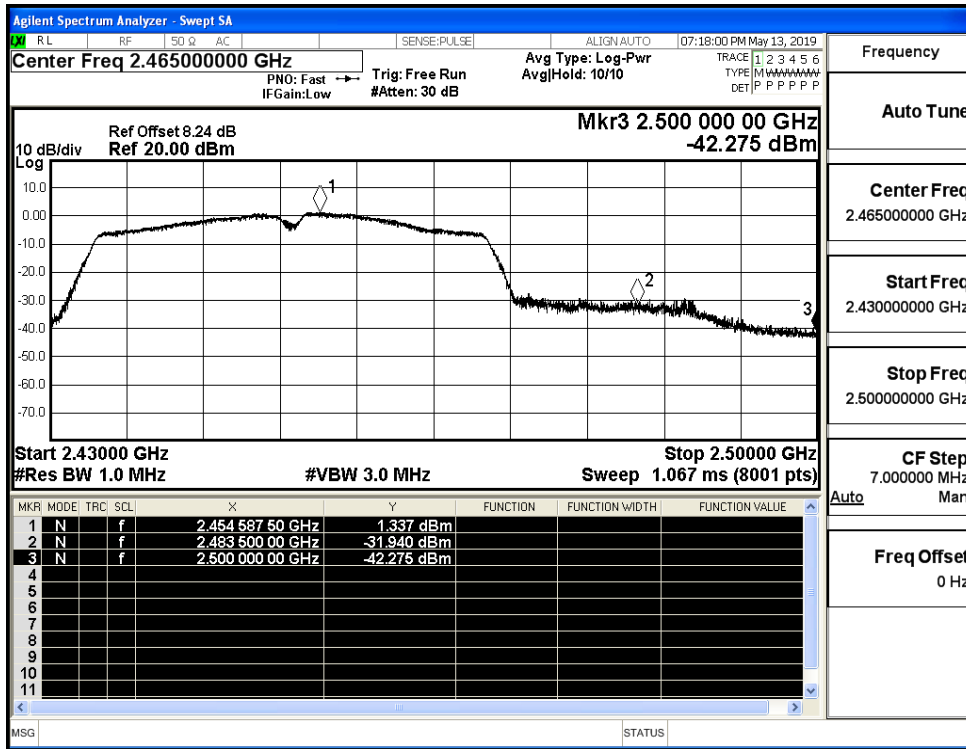
Restrict-band band-edge measurements_11N40SISO_2422_Ant1_PEAK



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

