

Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Smart Outdoor Plug

Trade Mark: Atomi

Test Model: AT1320

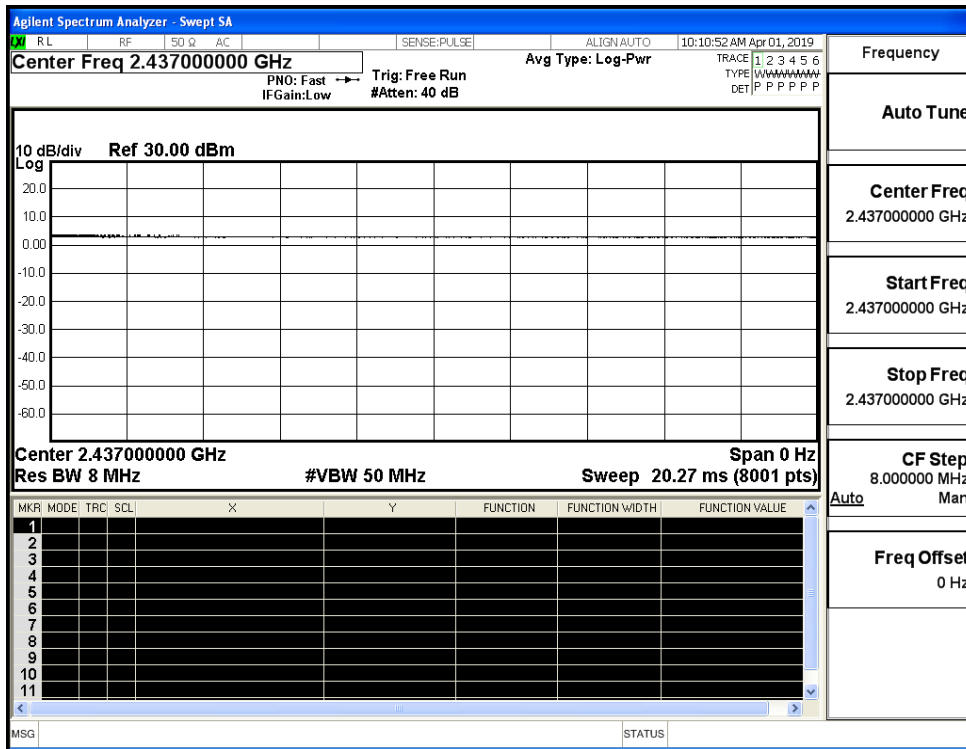
Environmental Conditions

Temperature:	24.4 ° C
Relative Humidity:	53.4%
ATM Pressure:	100.0 kPa
Test Engineer:	JERRY.Zeng
Supervised by:	Tom.Liu

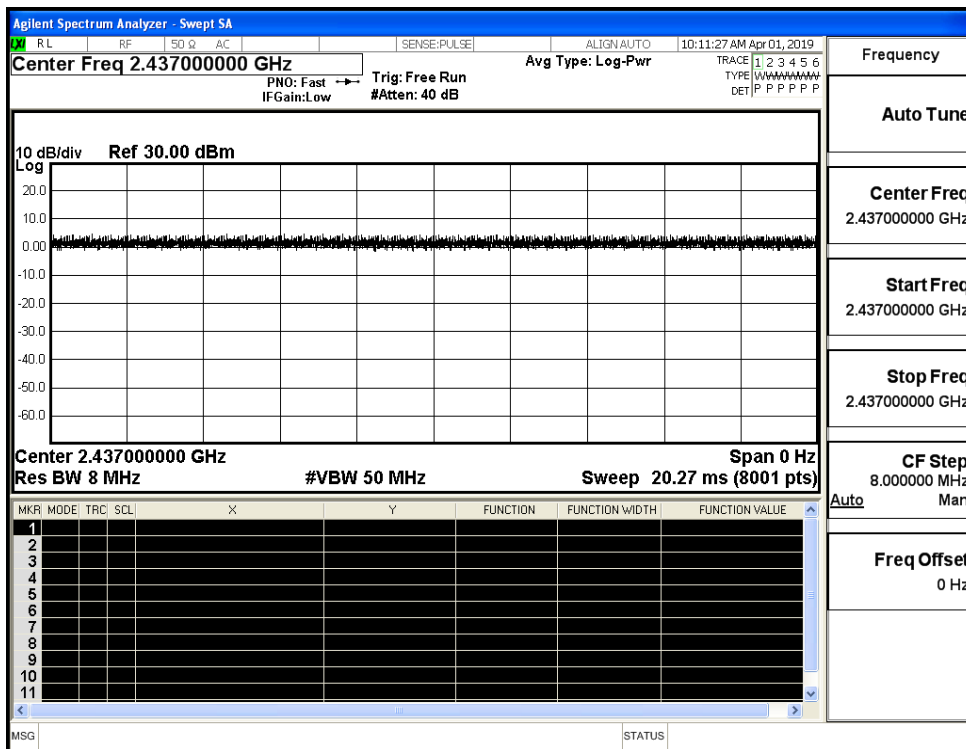
A.1 Duty Cycle

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

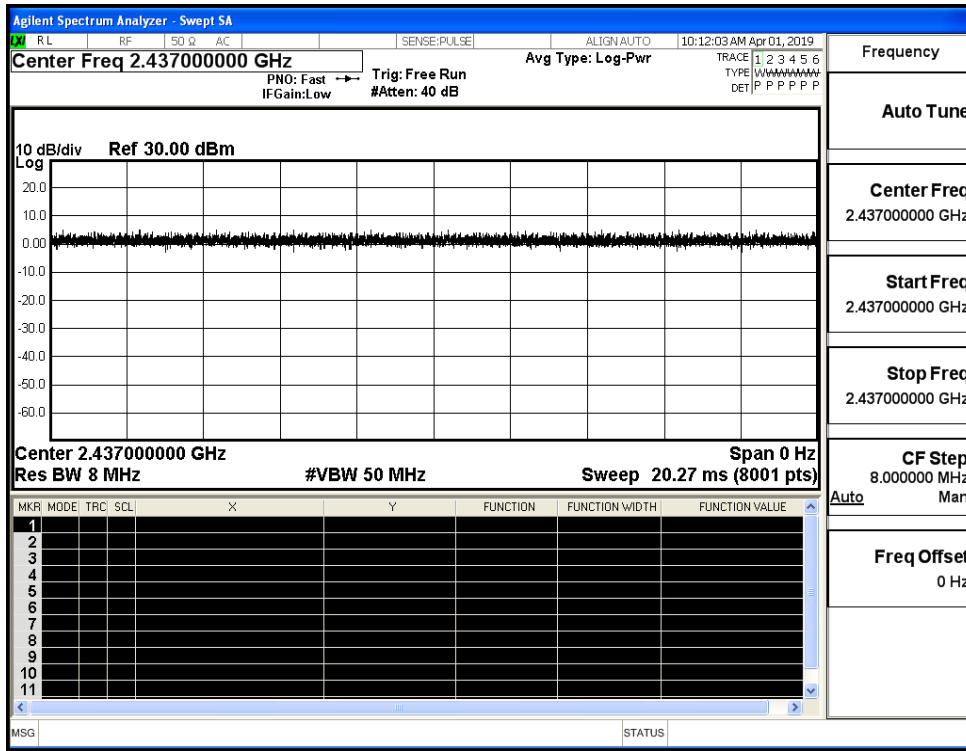
Duty Cycle_11B_2437_Ant1



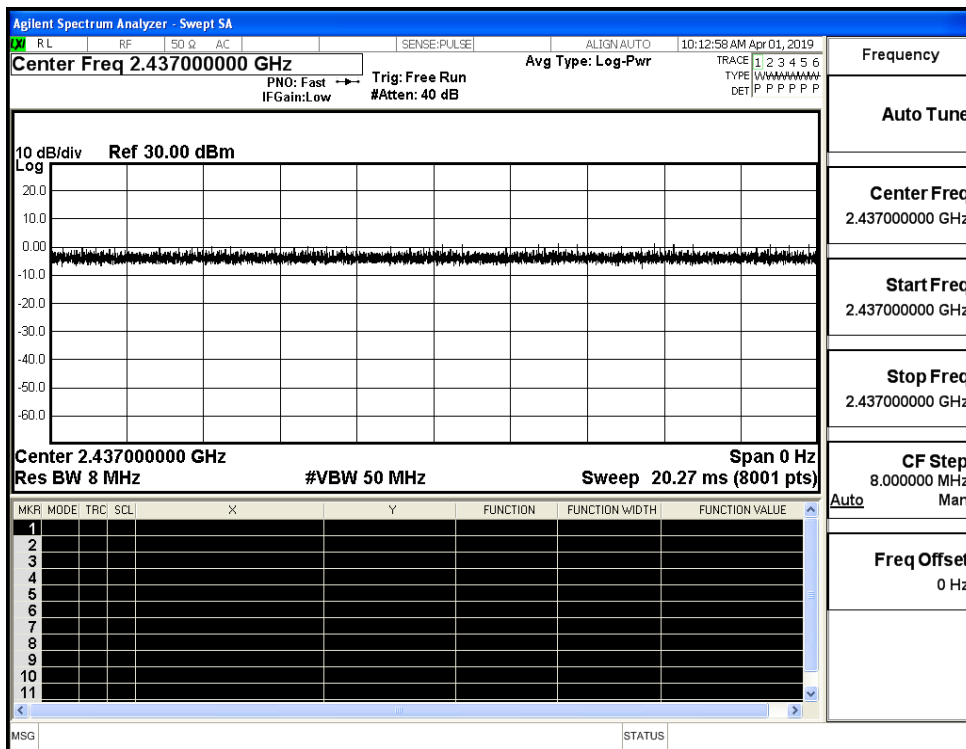
Duty Cycle_11G_2437_Ant1



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	12.87	30	PASS
	MCH	13.03	30	PASS
	HCH	12.42	30	PASS
11G	LCH	14.14	30	PASS
	MCH	14.06	30	PASS
	HCH	13.48	30	PASS
11N20SISO	LCH	13.28	30	PASS
	MCH	13.45	30	PASS
	HCH	13.55	30	PASS
11N40SISO	LCH	14.24	30	PASS
	MCH	13.72	30	PASS
	HCH	13.85	30	PASS

A.3 Maximum Power Spectral Density

Mode	Channel	Meas.Level [dBm/30KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-4.736	8	PASS
	MCH	-4.999	8	PASS
	HCH	-5.561	8	PASS
11G	LCH	-9.180	8	PASS
	MCH	-10.204	8	PASS
	HCH	-9.593	8	PASS
11N20SISO	LCH	-9.160	8	PASS
	MCH	-9.753	8	PASS
	HCH	-9.486	8	PASS
11N40SISO	LCH	-11.614	8	PASS
	MCH	-13.330	8	PASS
	HCH	-11.211	8	PASS

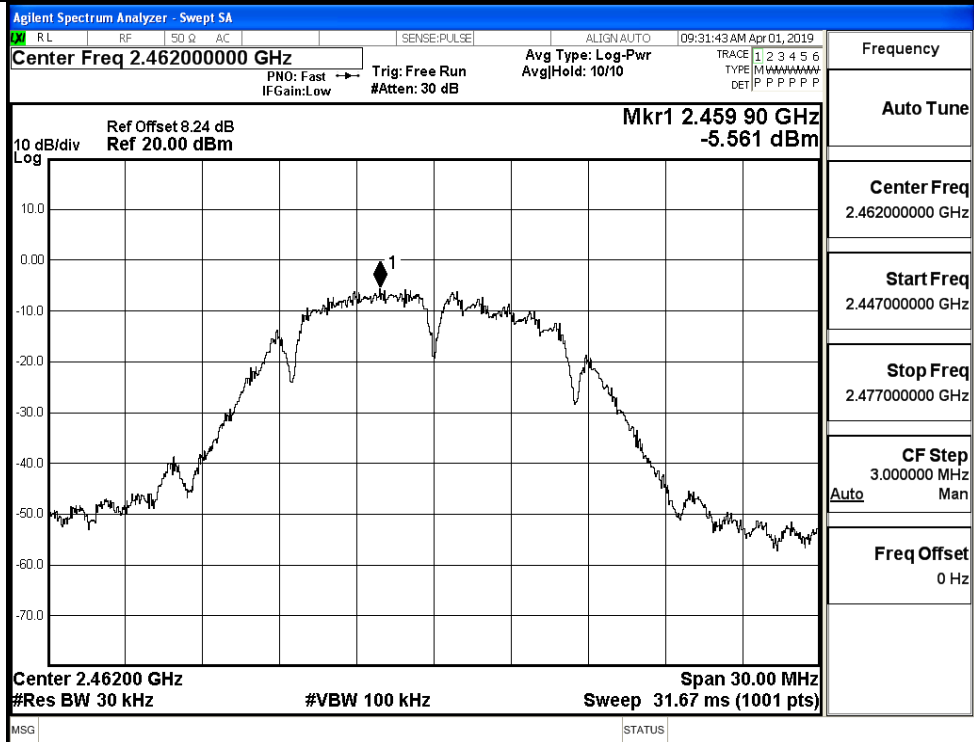
Test Graphs



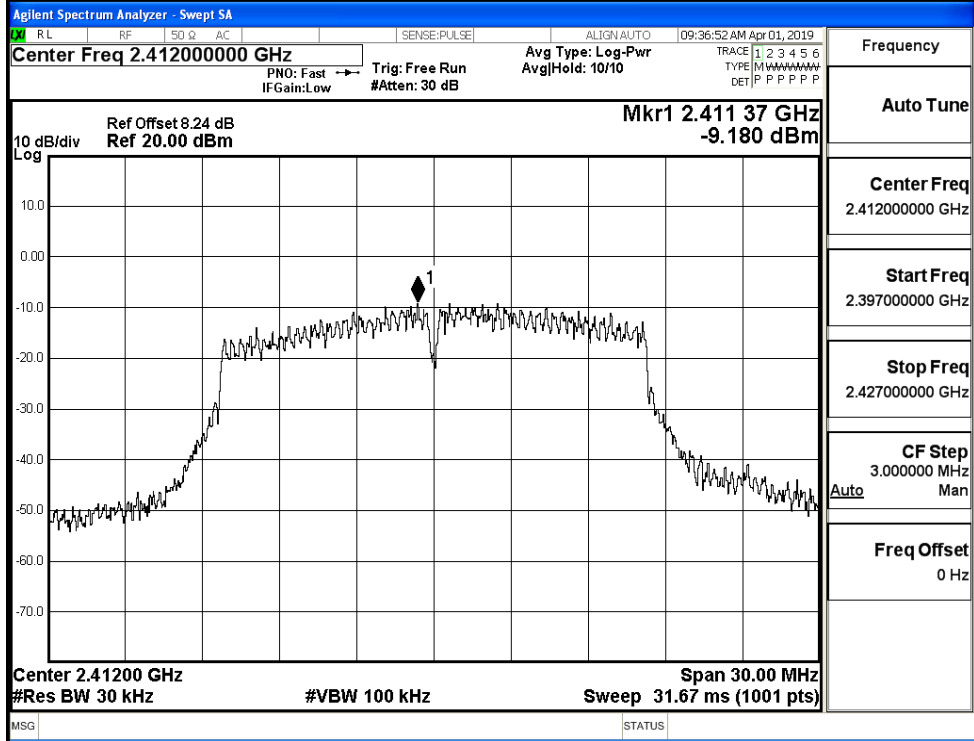
11B/MCH



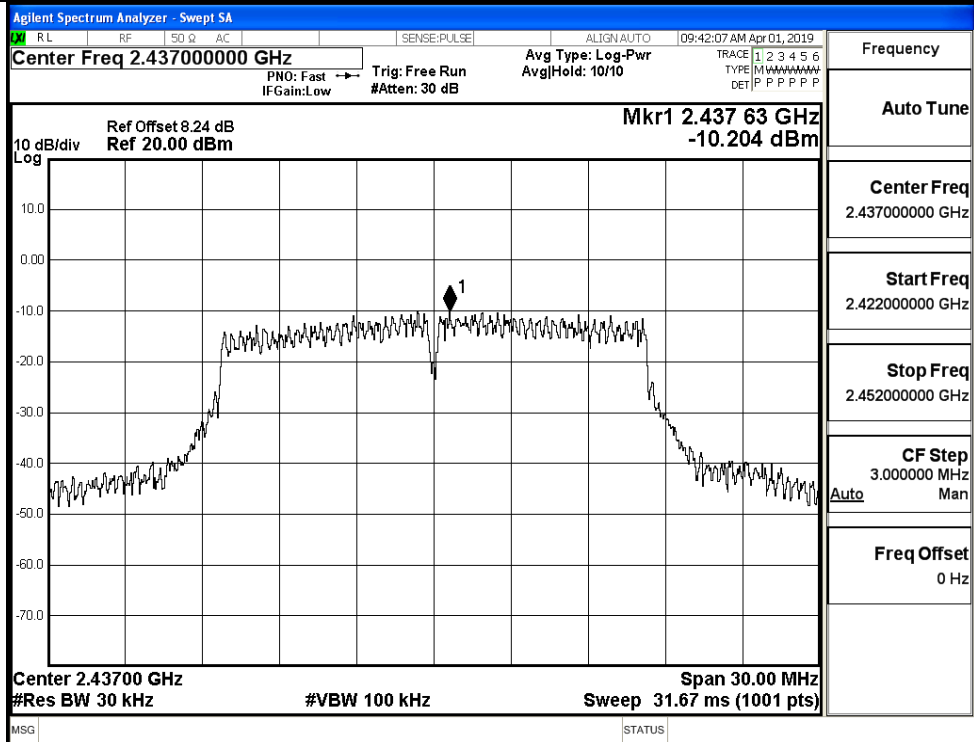
11B/HCH



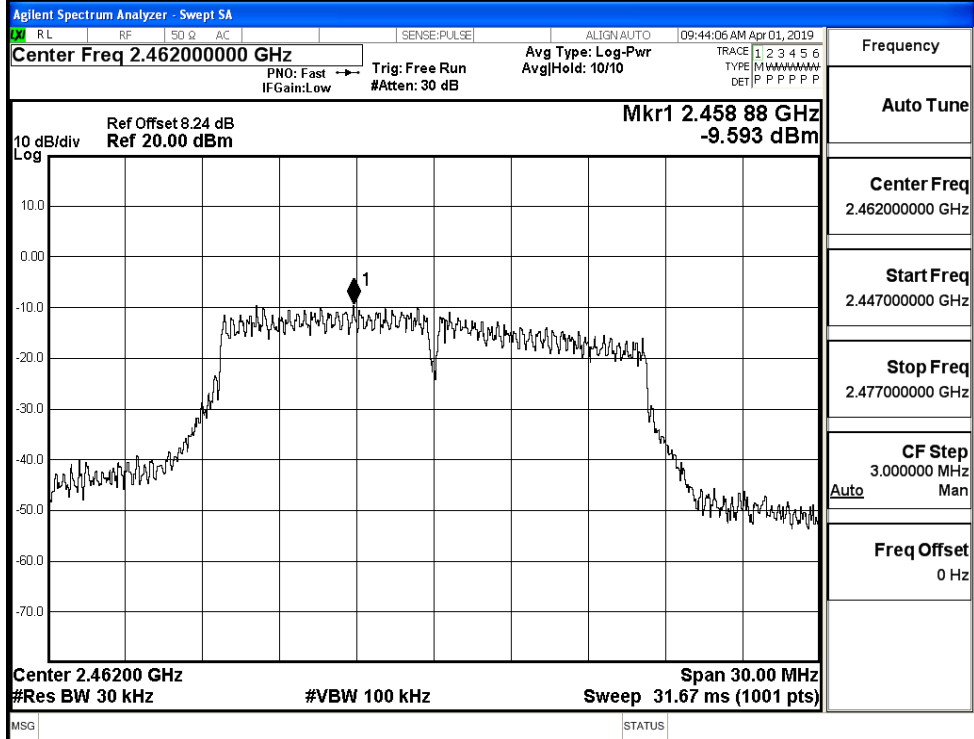
11G/LCH



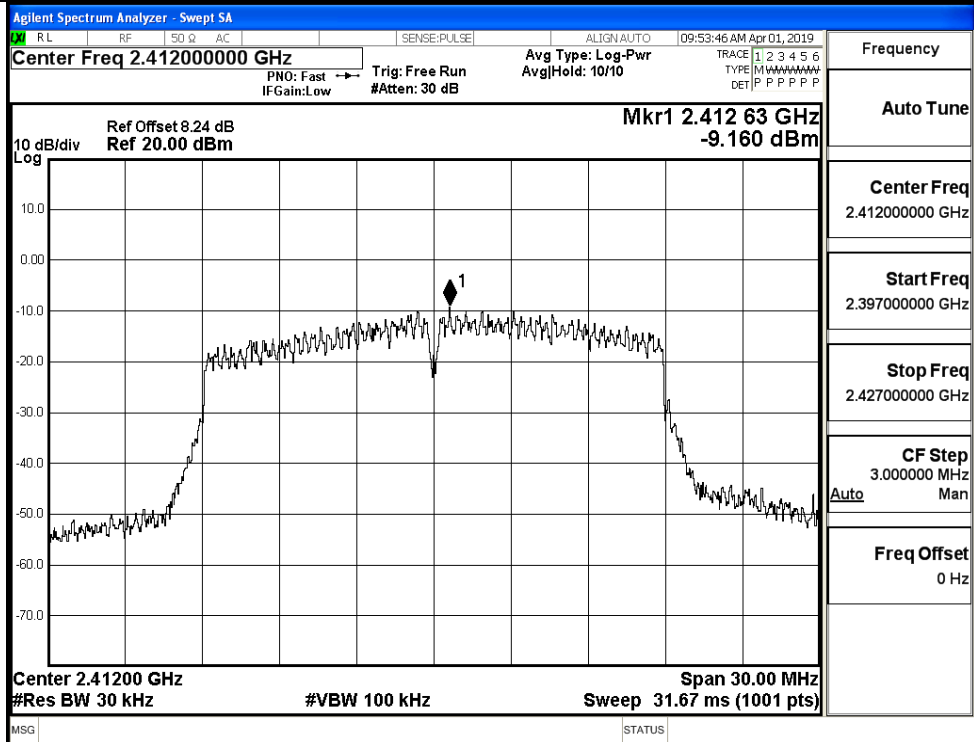
11G/MCH



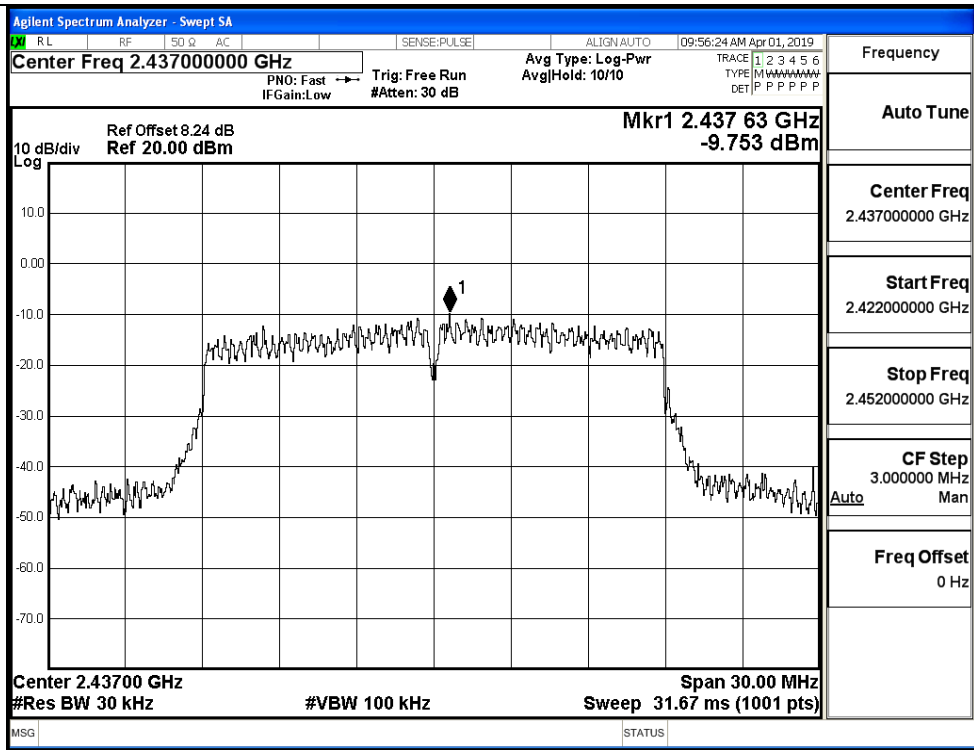
11G/HCH



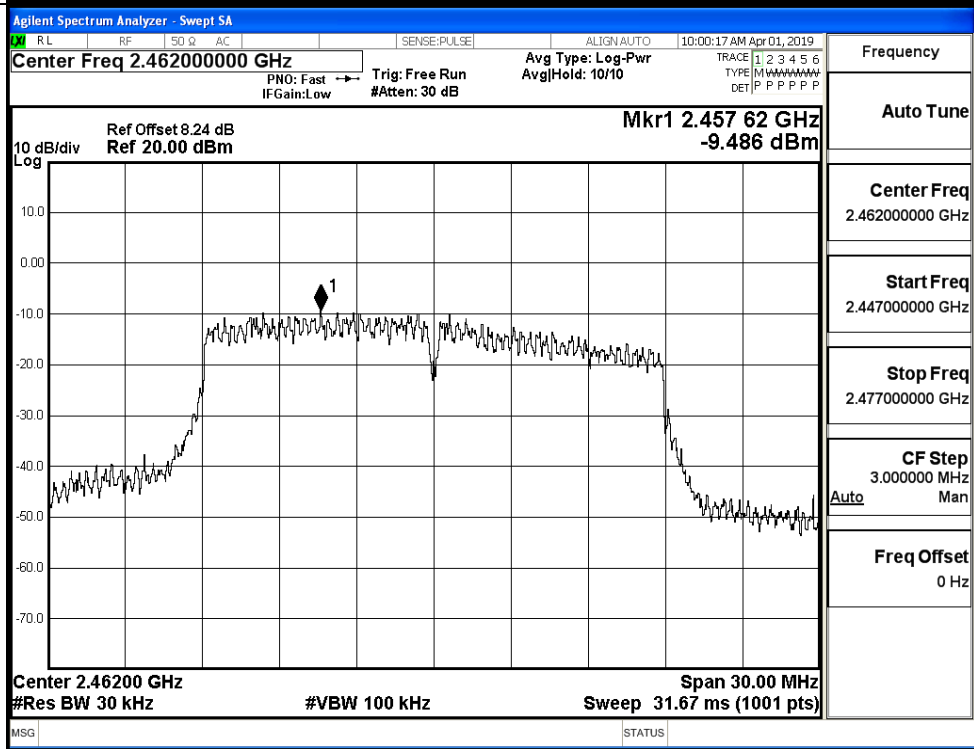
11N20SISO/LCH



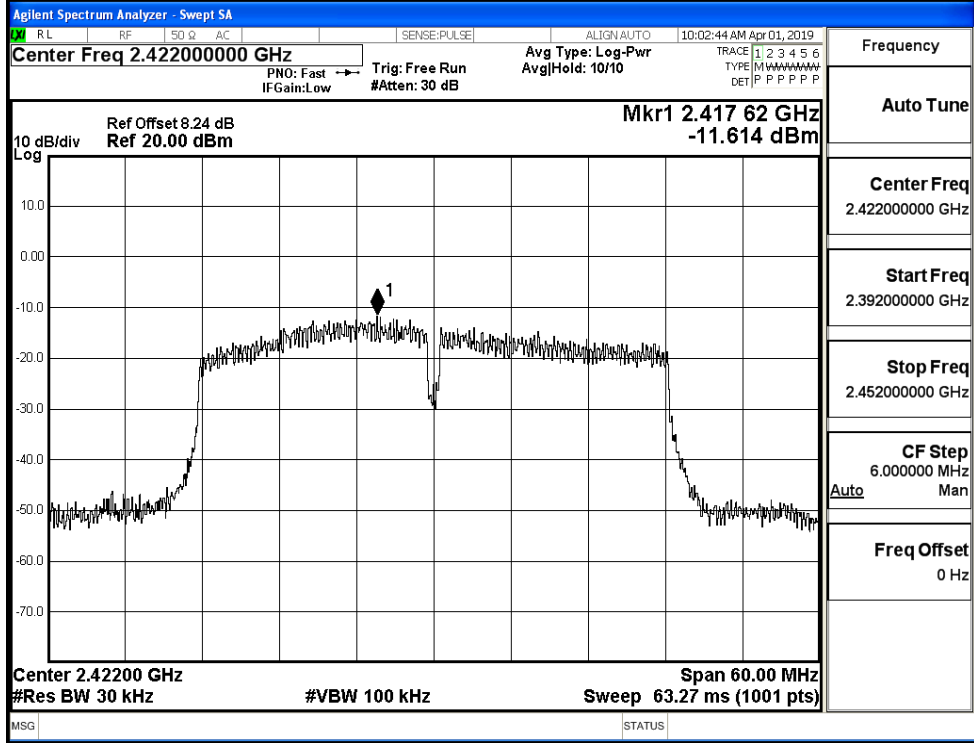
11N20SISO/MCH



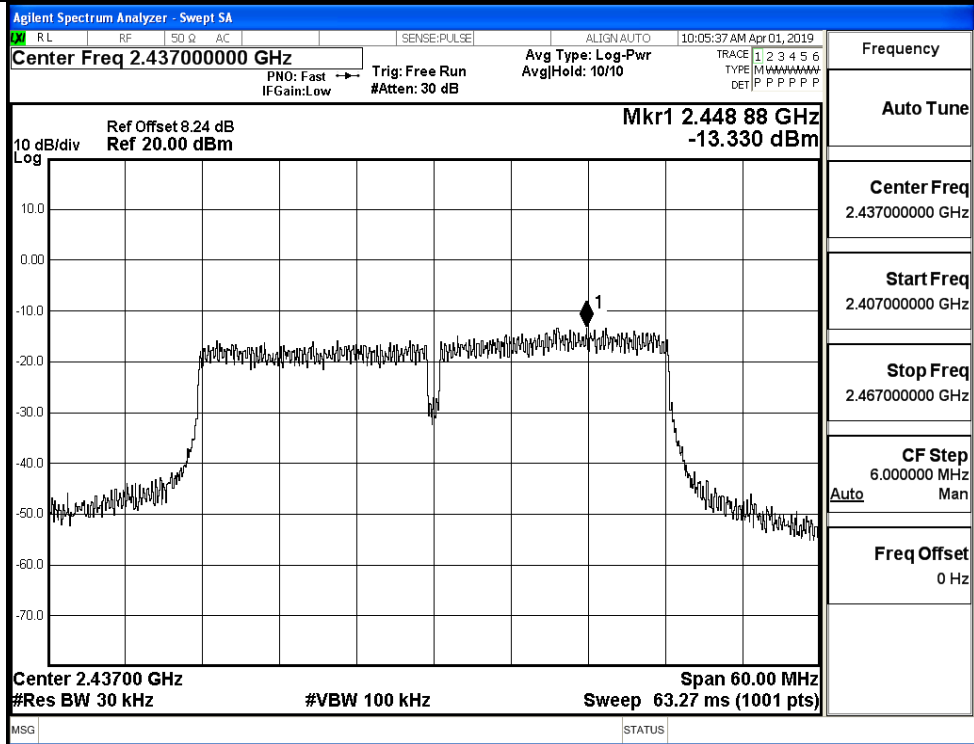
11N20SISO/HCH



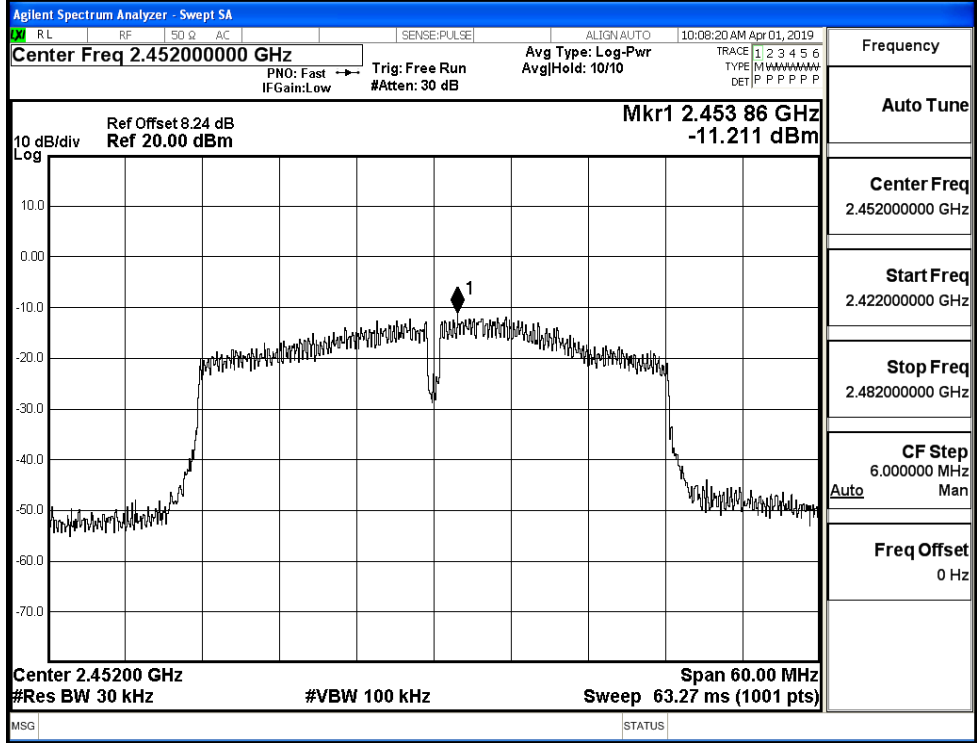
11N40SISO/LCH



11N40SISO/MCH

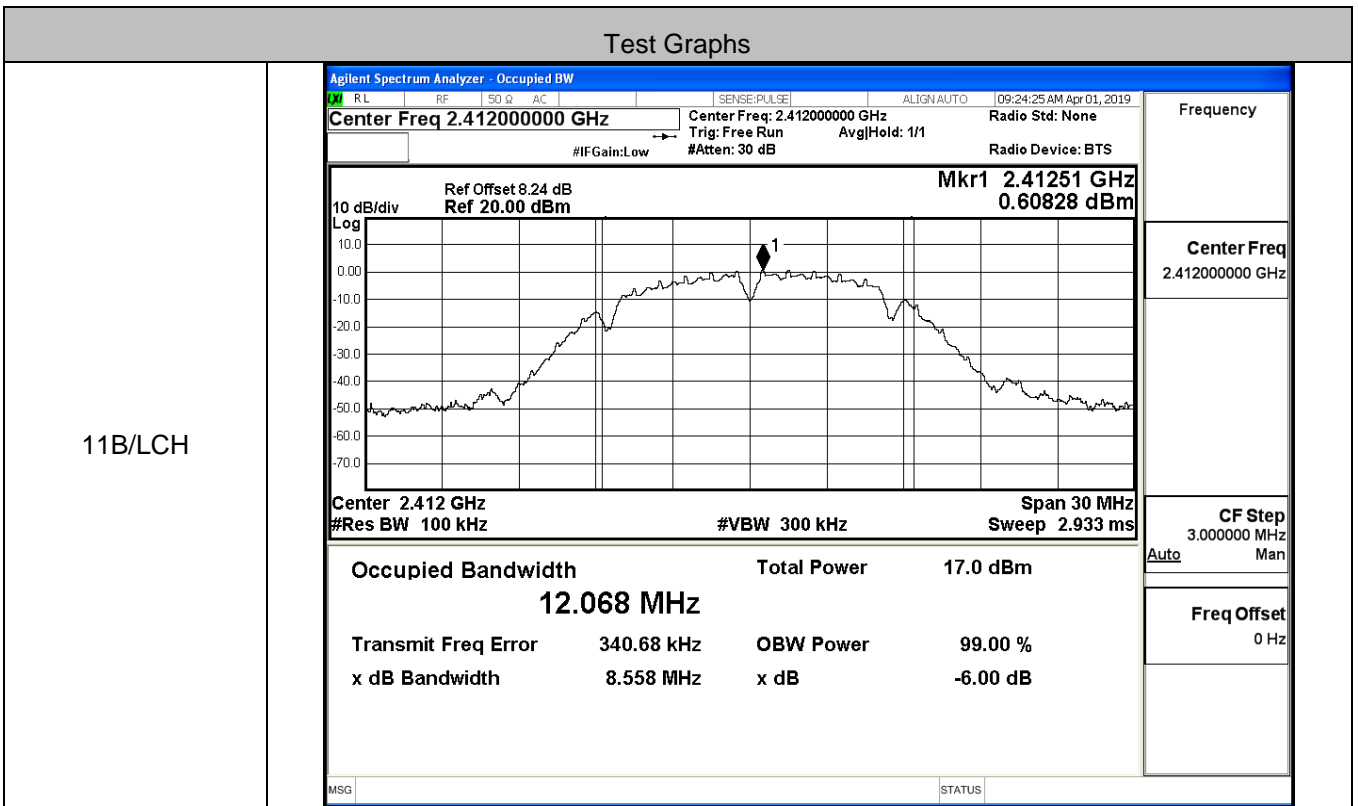


11N40SISO/HCH

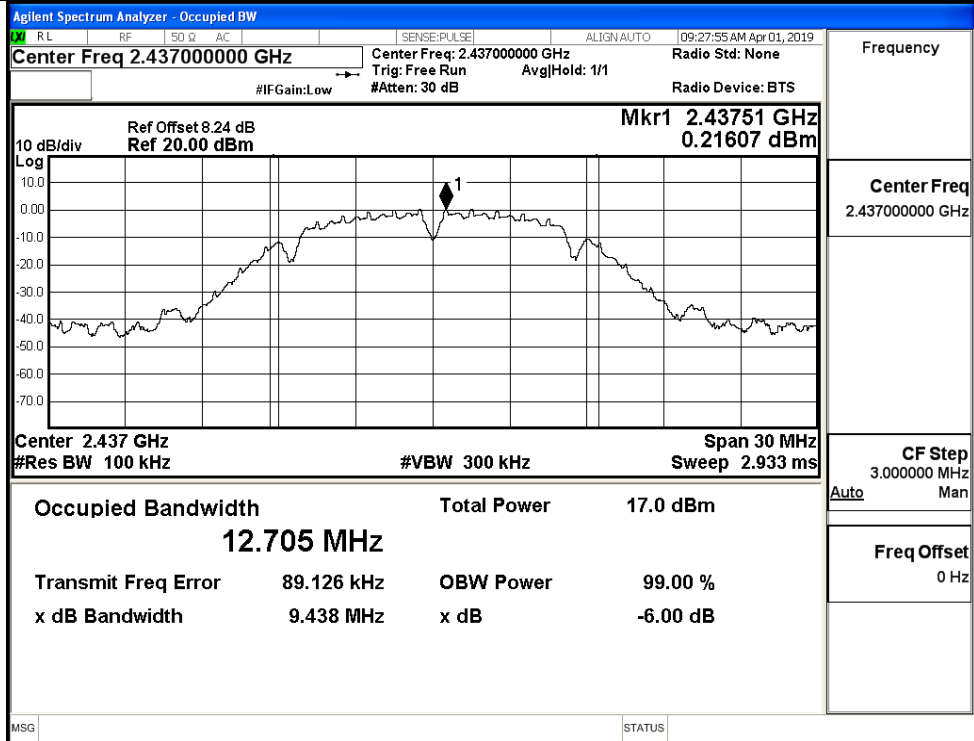


A.4 6dB Bandwidth

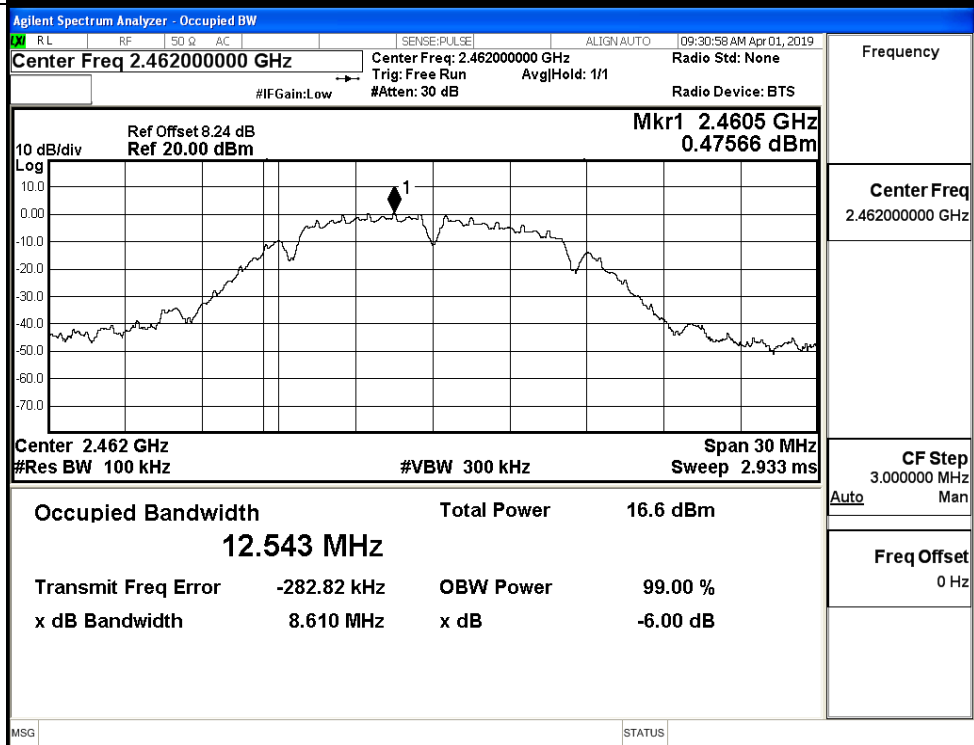
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	8.558	≥0.5	PASS
	MCH	9.438	≥0.5	PASS
	HCH	8.610	≥0.5	PASS
11G	LCH	15.08	≥0.5	PASS
	MCH	16.47	≥0.5	PASS
	HCH	15.20	≥0.5	PASS
11N20SISO	LCH	15.47	≥0.5	PASS
	MCH	17.73	≥0.5	PASS
	HCH	14.50	≥0.5	PASS
11N40SISO	LCH	32.99	≥0.5	PASS
	MCH	36.48	≥0.5	PASS
	HCH	25.96	≥0.5	PASS



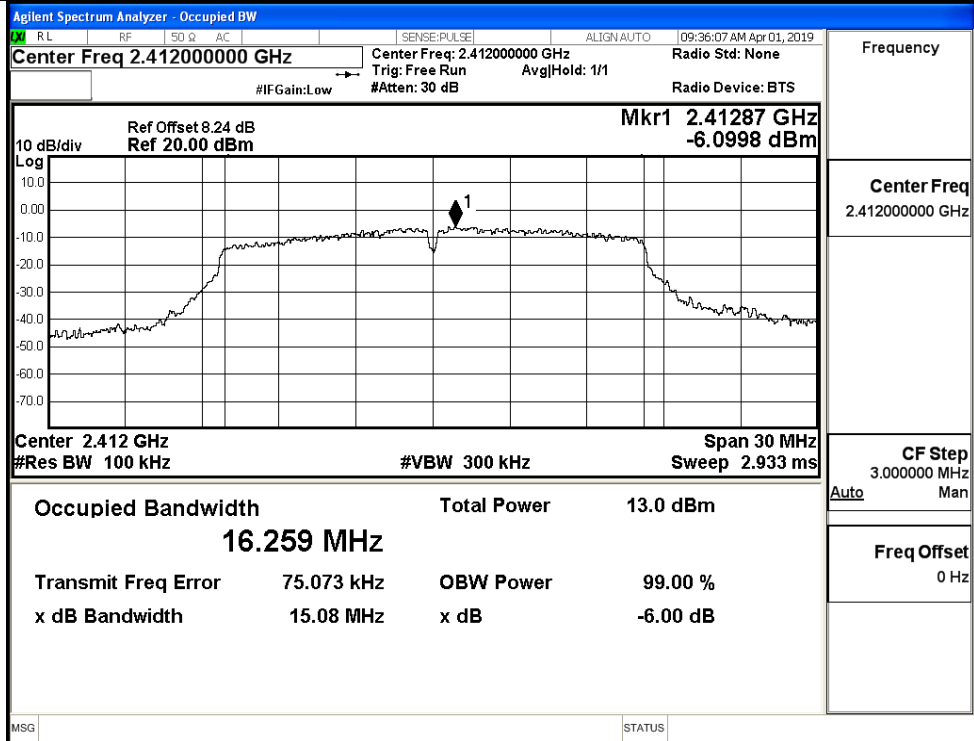
11B/MCH



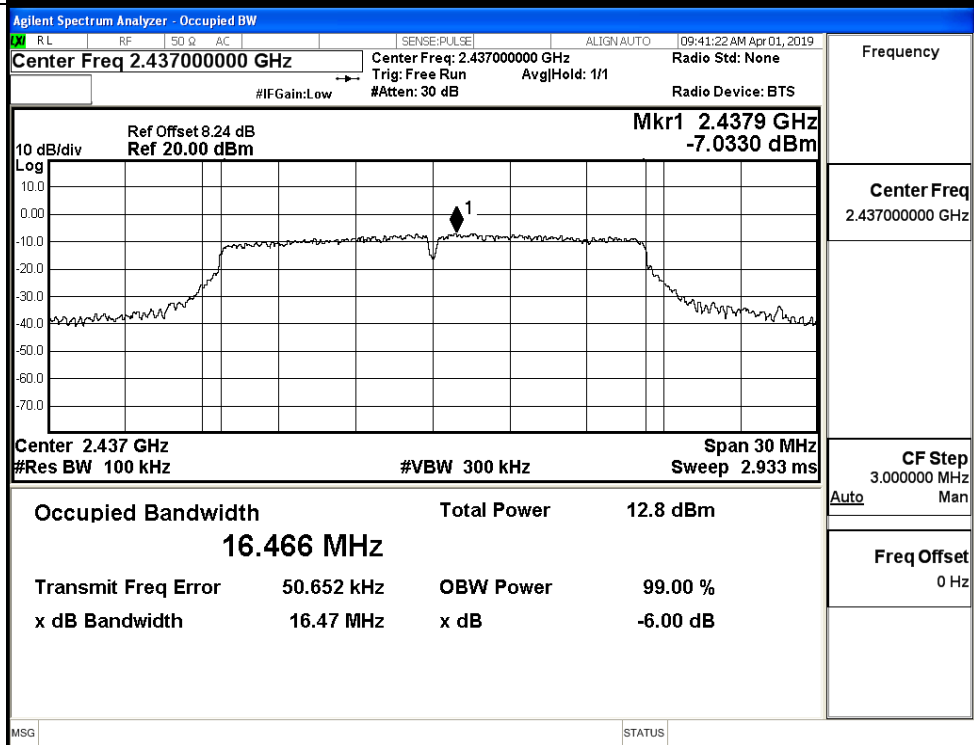
11B/HCH



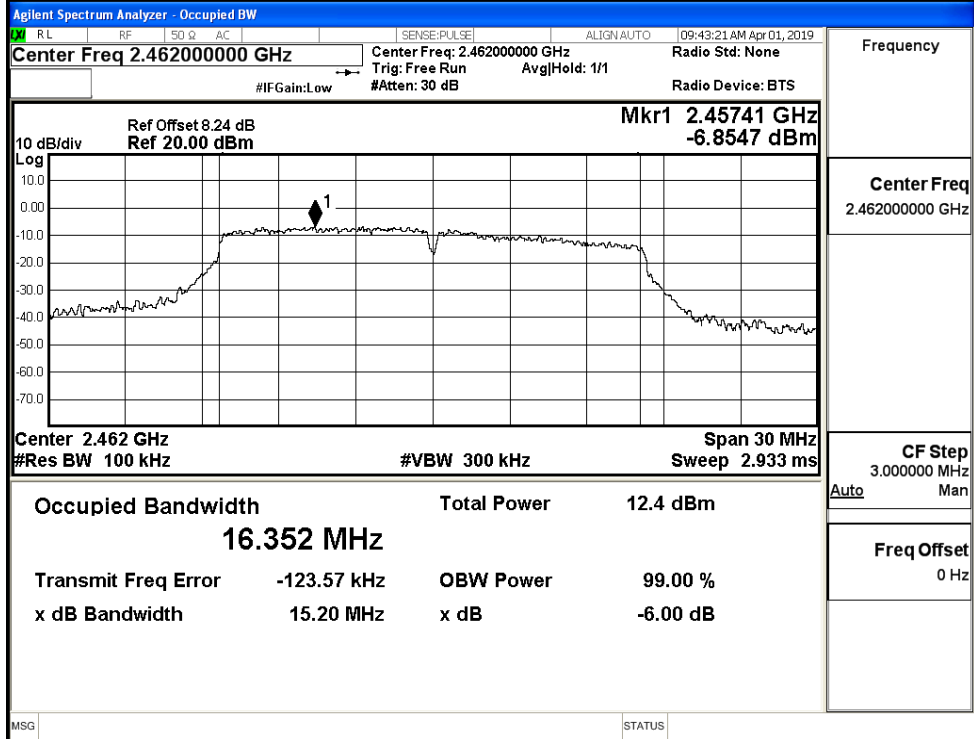
11G/LCH



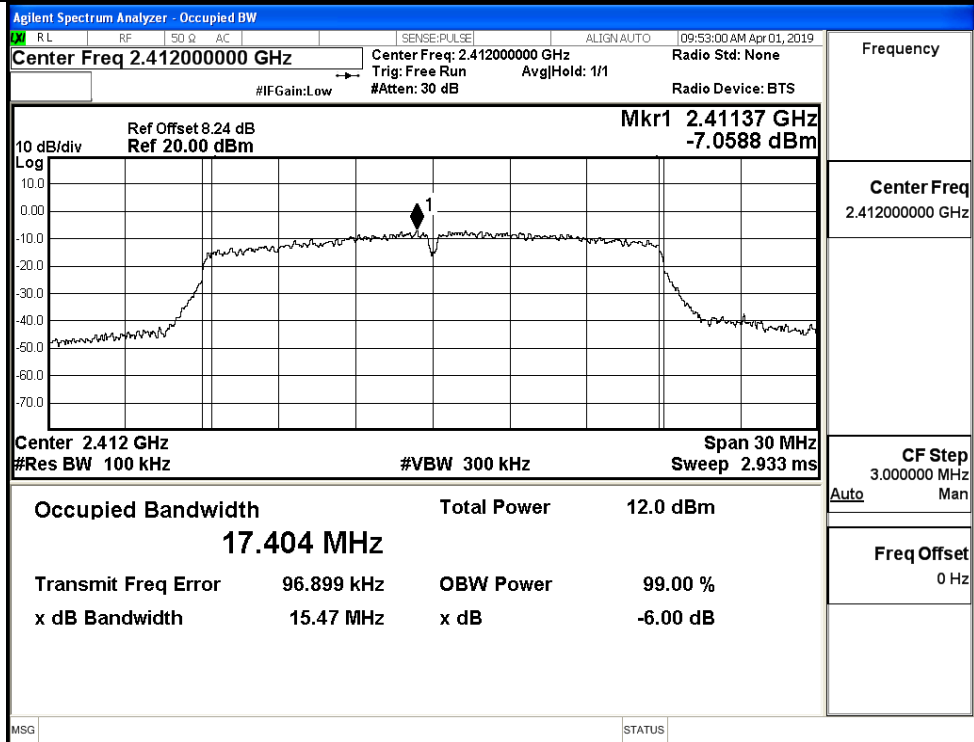
11G/MCH



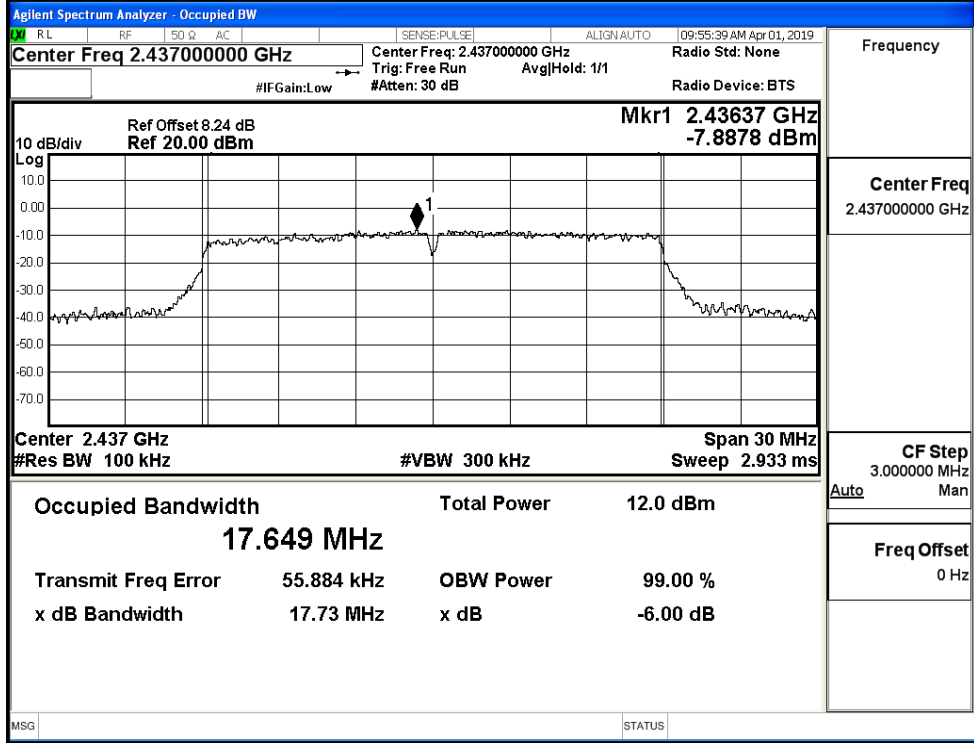
11G/HCH



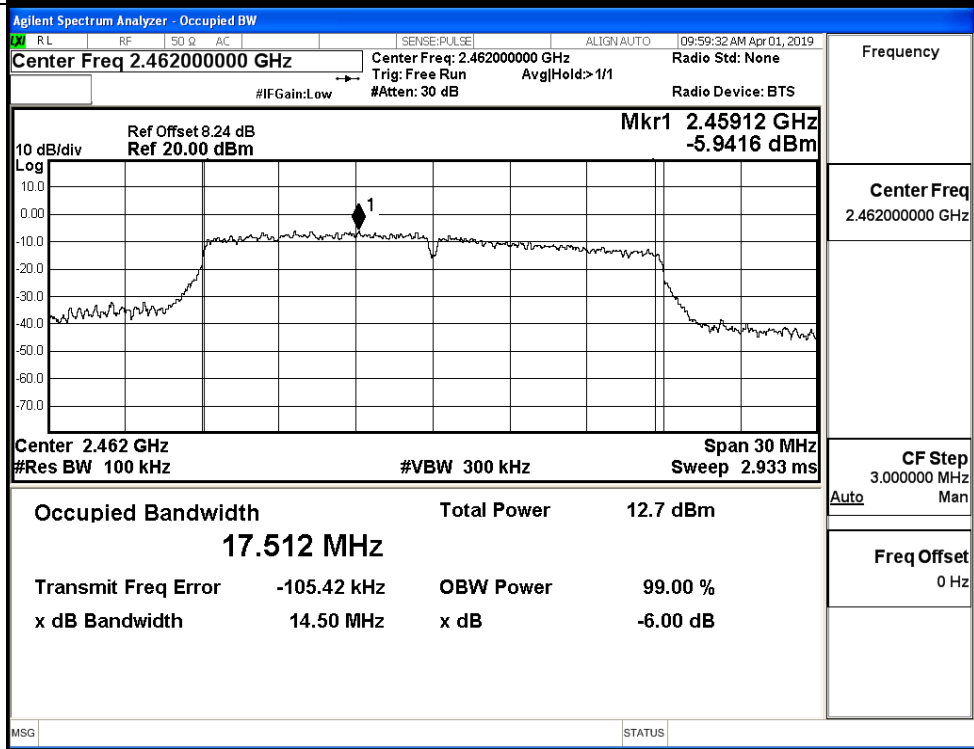
11N20SISO/LCH



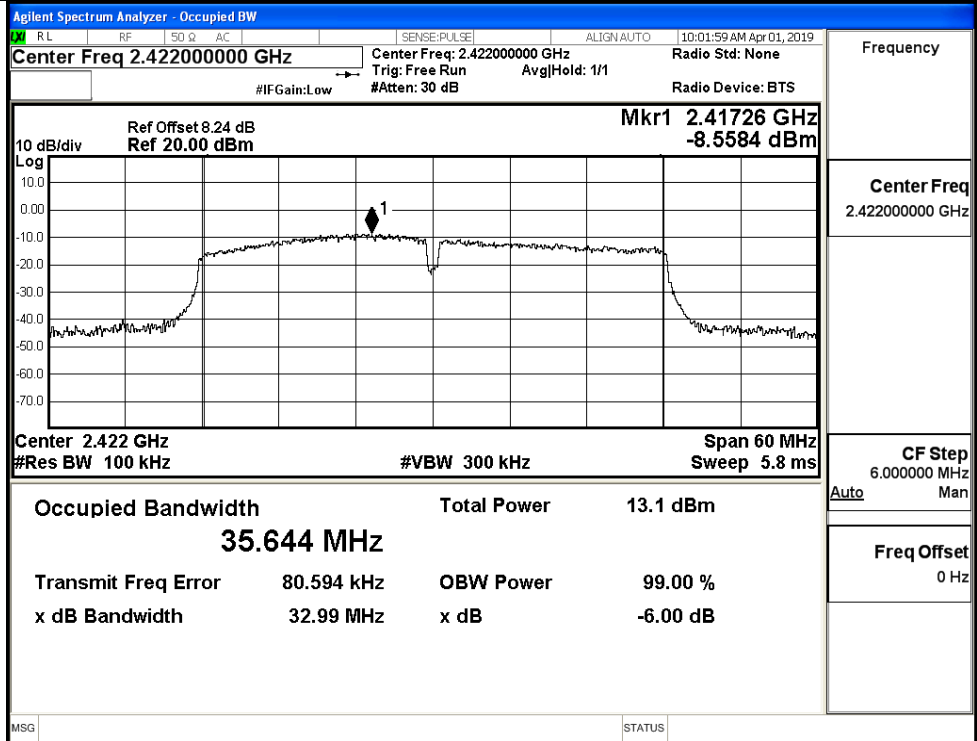
11N20SISO/MCH



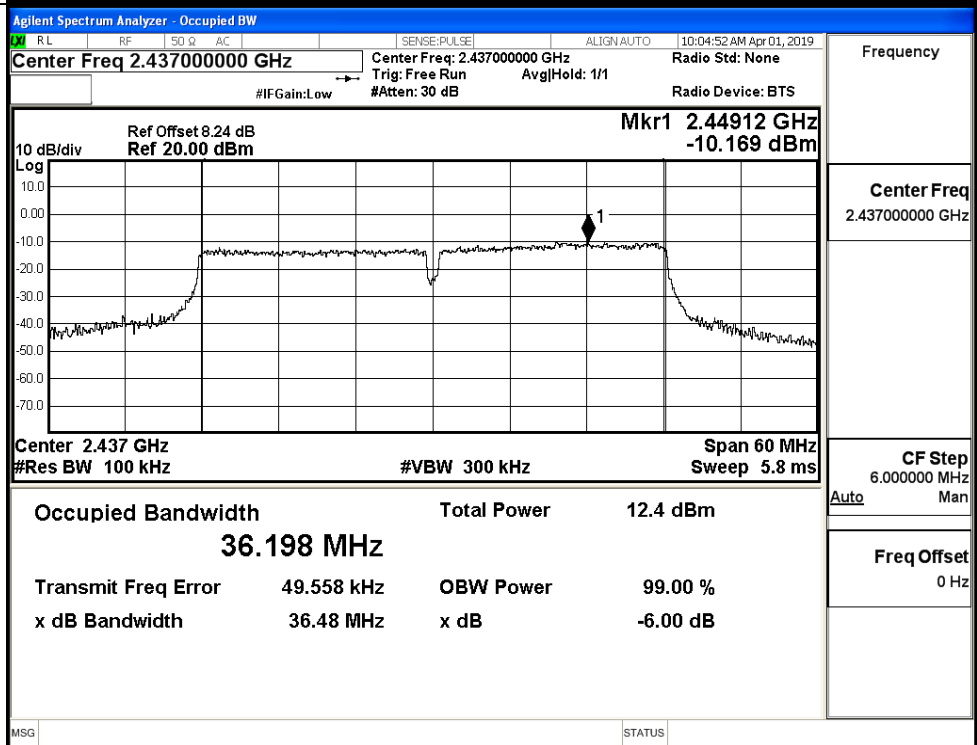
11N20SISO/HCH



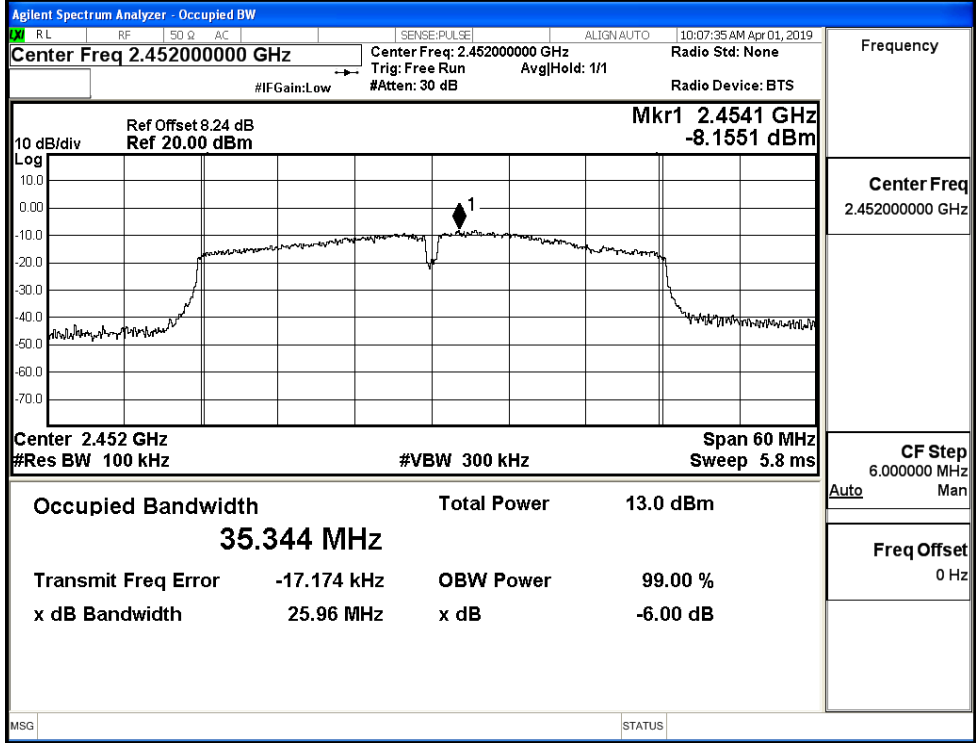
11N40SISO/LCH



11N40SISO/MCH



11N40SISO/HCH

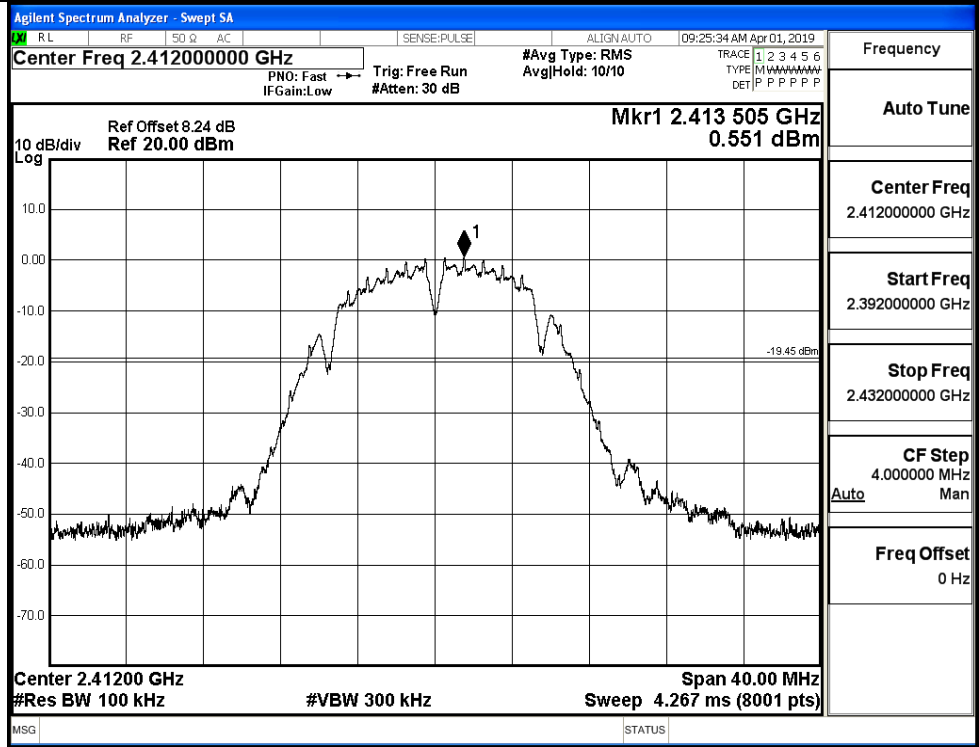


A.5 RF Conducted Spurious Emissions

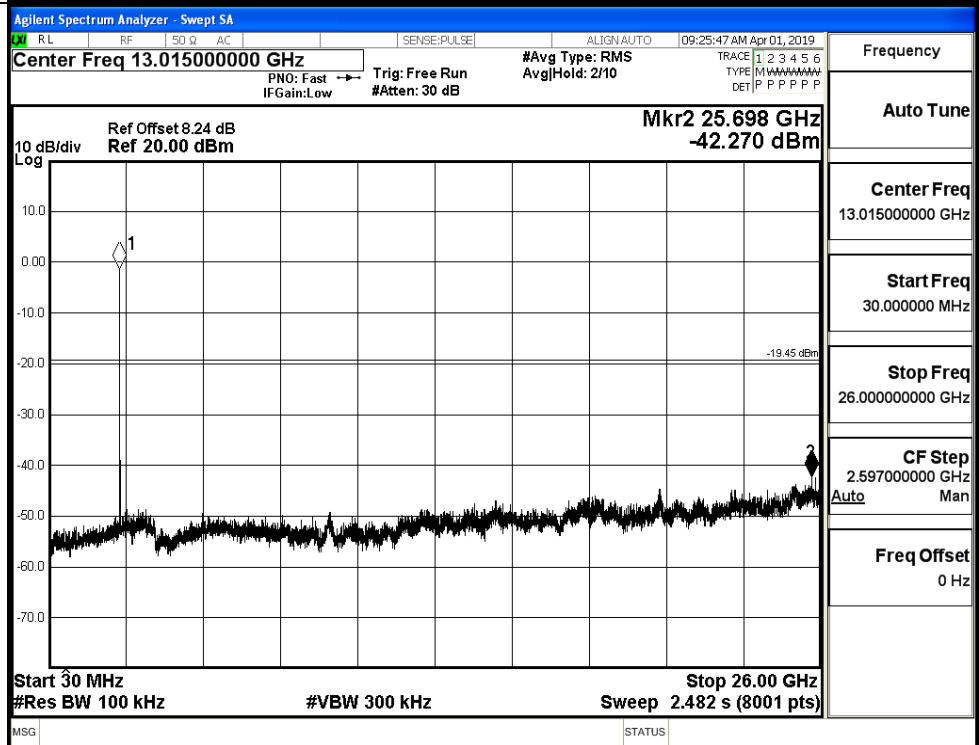
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	0.551	-42.270	-19.449	PASS
	MCH	0.172	-43.598	-19.828	PASS
	HCH	0.248	-43.554	-19.752	PASS
11G	LCH	-6.138	-43.496	-26.138	PASS
	MCH	-7.1	-42.587	-27.100	PASS
	HCH	-6.929	-43.128	-26.929	PASS
11N20 SISO	LCH	-7.205	-43.760	-27.205	PASS
	MCH	-7.962	-43.606	-27.962	PASS
	HCH	-6.241	-43.888	-26.241	PASS
11N40 SISO	LCH	-9.078	-43.020	-29.078	PASS
	MCH	-10.25	-43.277	-30.250	PASS
	HCH	-8.292	-44.042	-28.292	PASS

11B_LCH_Graphs

Pref/11B/LCH

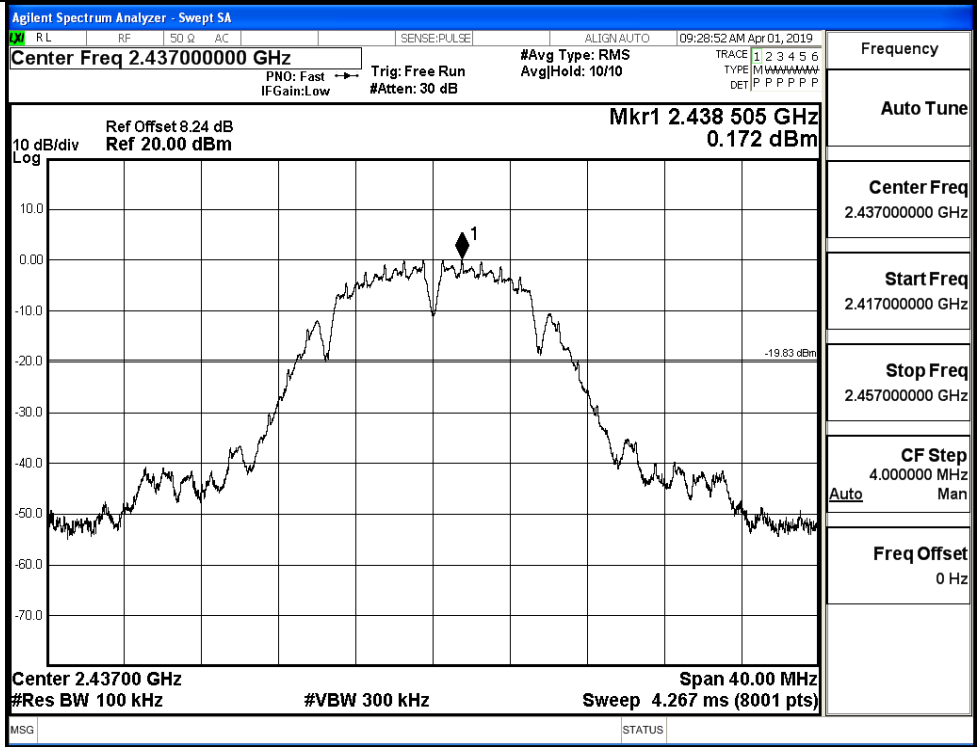


Puw/11B/LCH

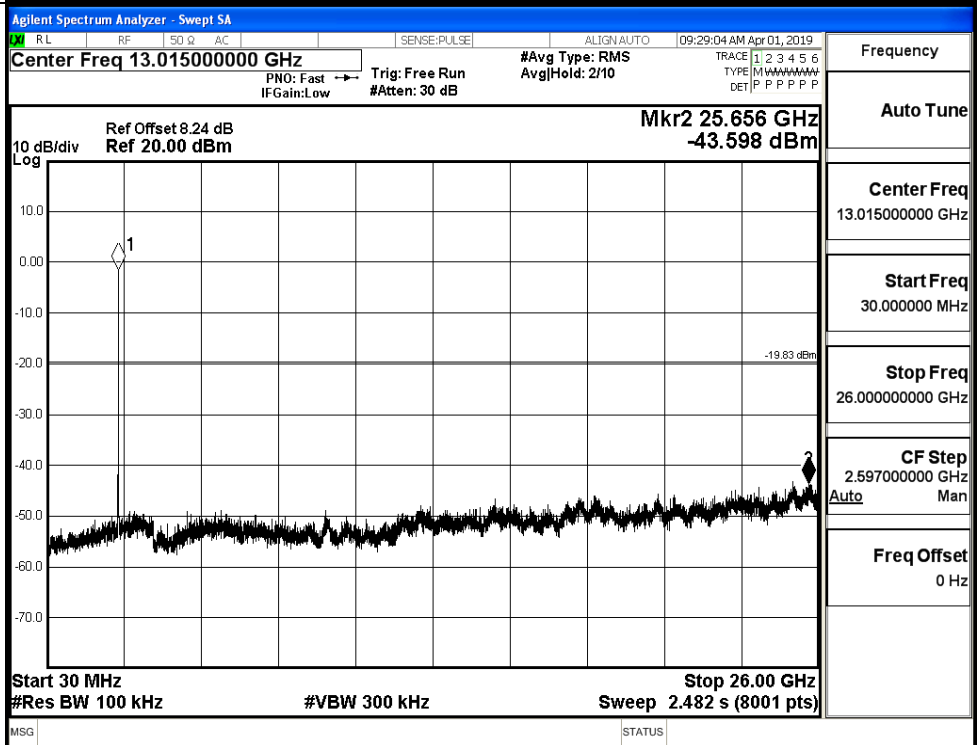


11B_MCH_Graphs

Pref/11B/MCH

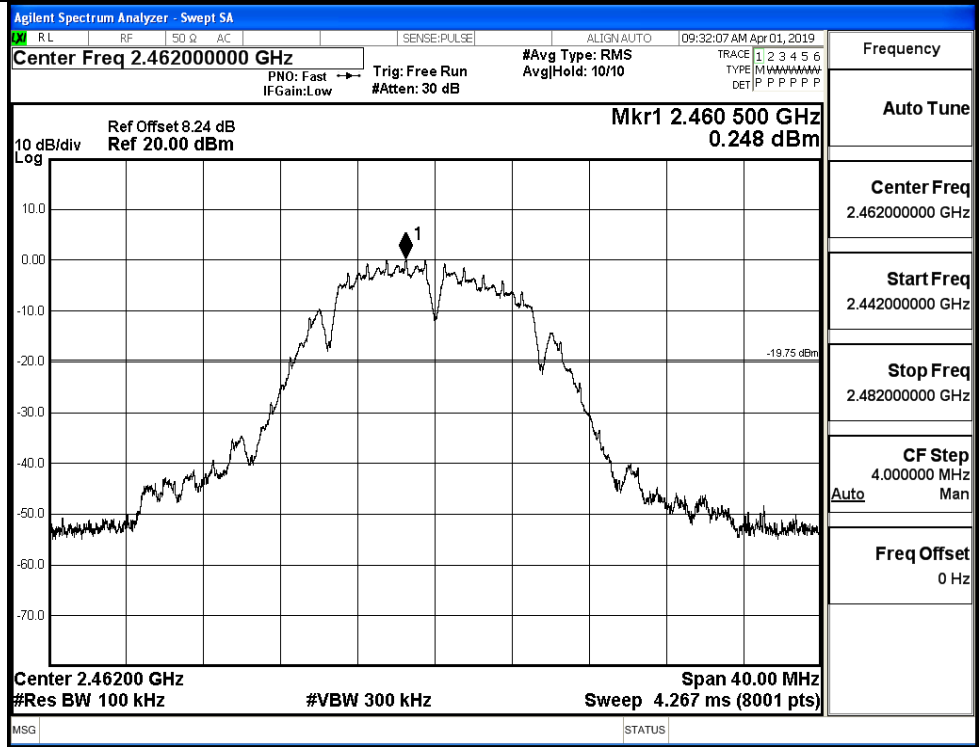


Puw/11B/MCH

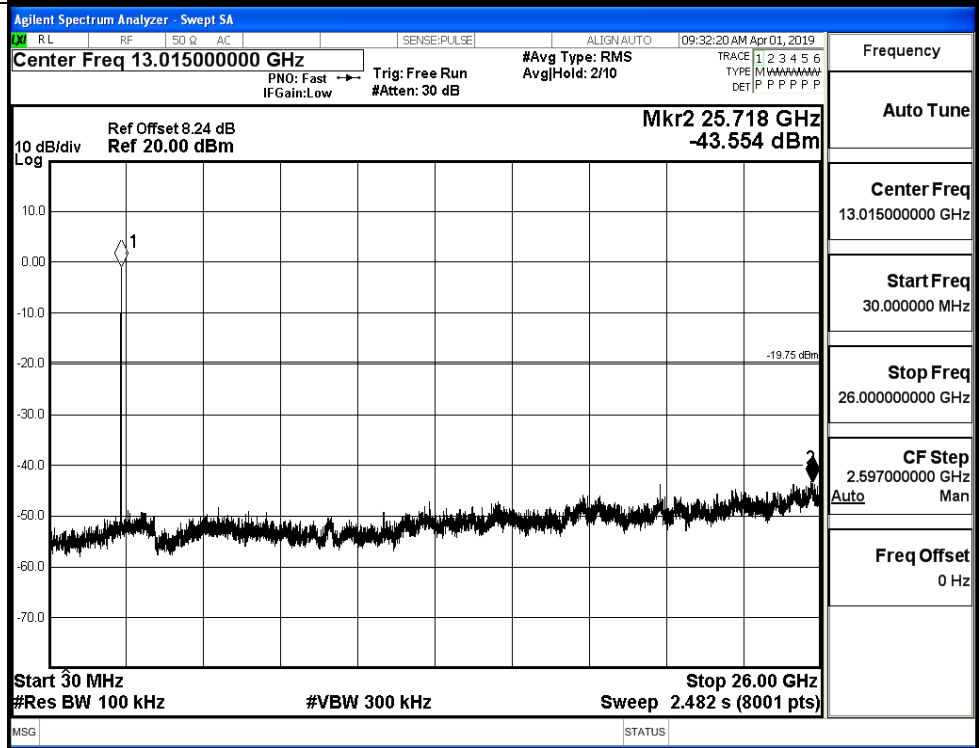


11B_HCH_Graphs

Pref/11B/HCH

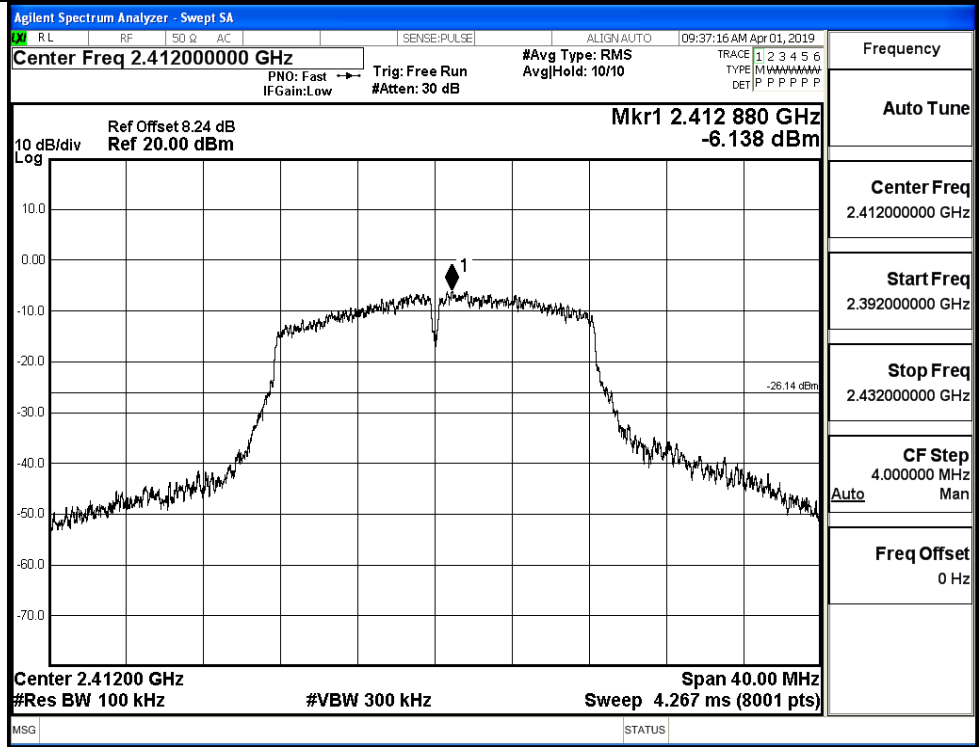


Puw/11B/HCH

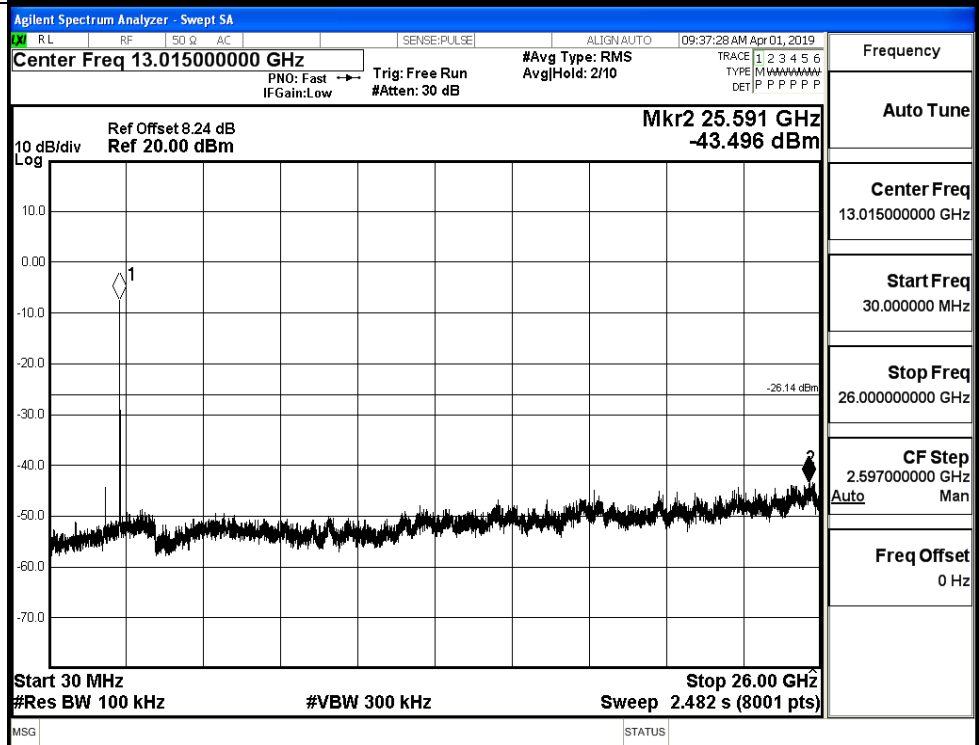


11G_LCH_Graphs

Pref/11G/LCH

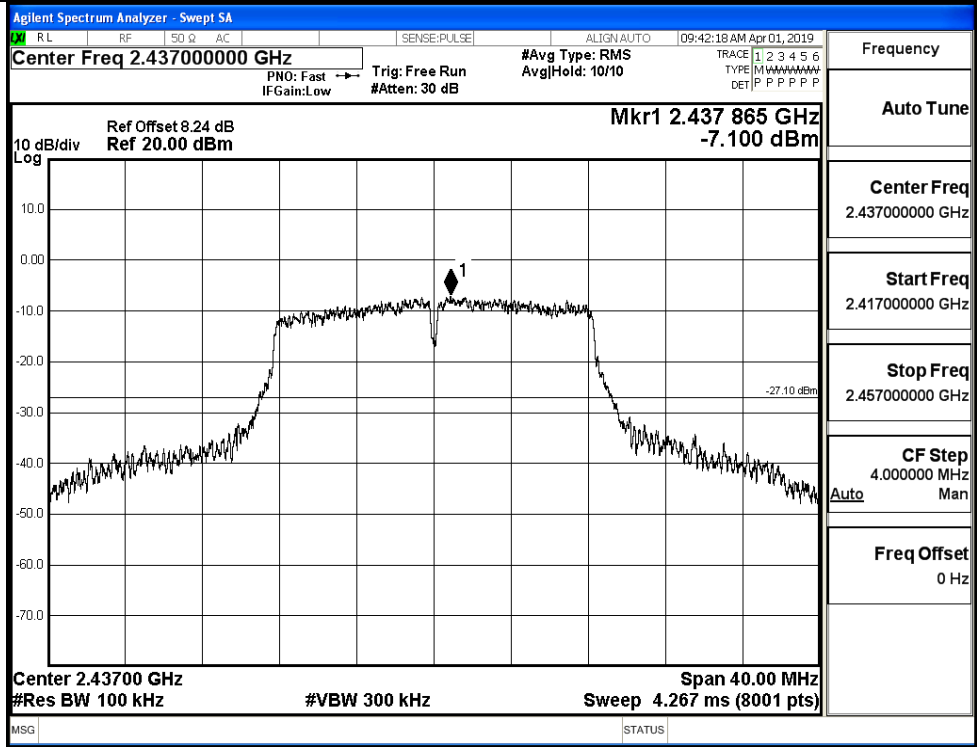


Puw/11G/LCH

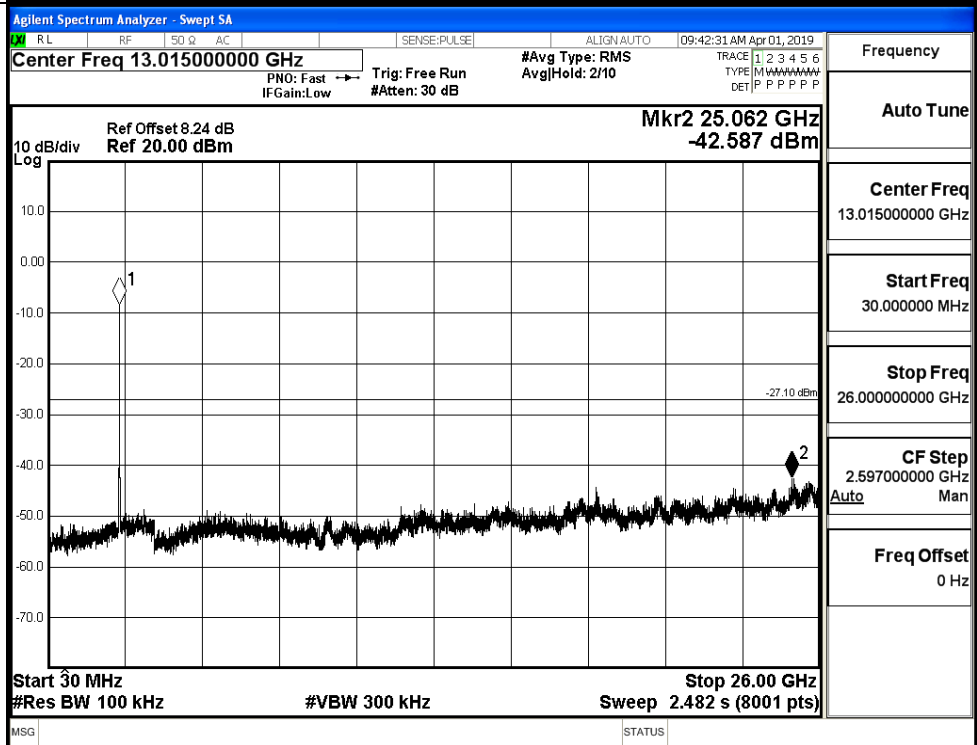


11G_MCH_Graphs

Pref/11G/MCH

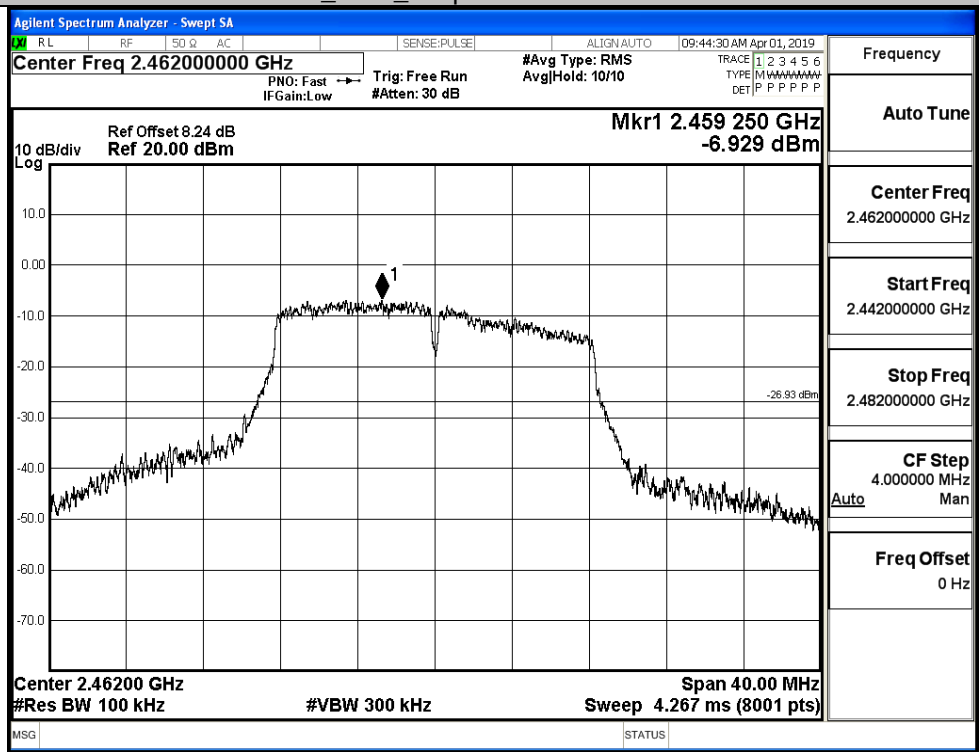


Puw/11G/MCH

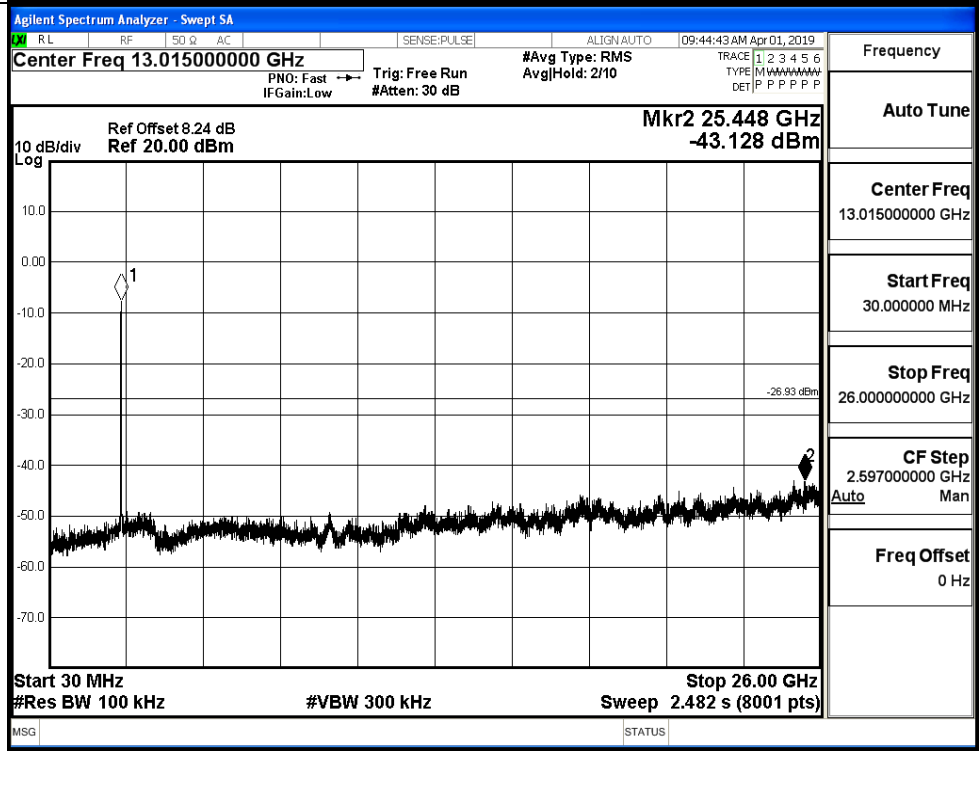


11G_HCH_Graphs

Pref/11G/HCH

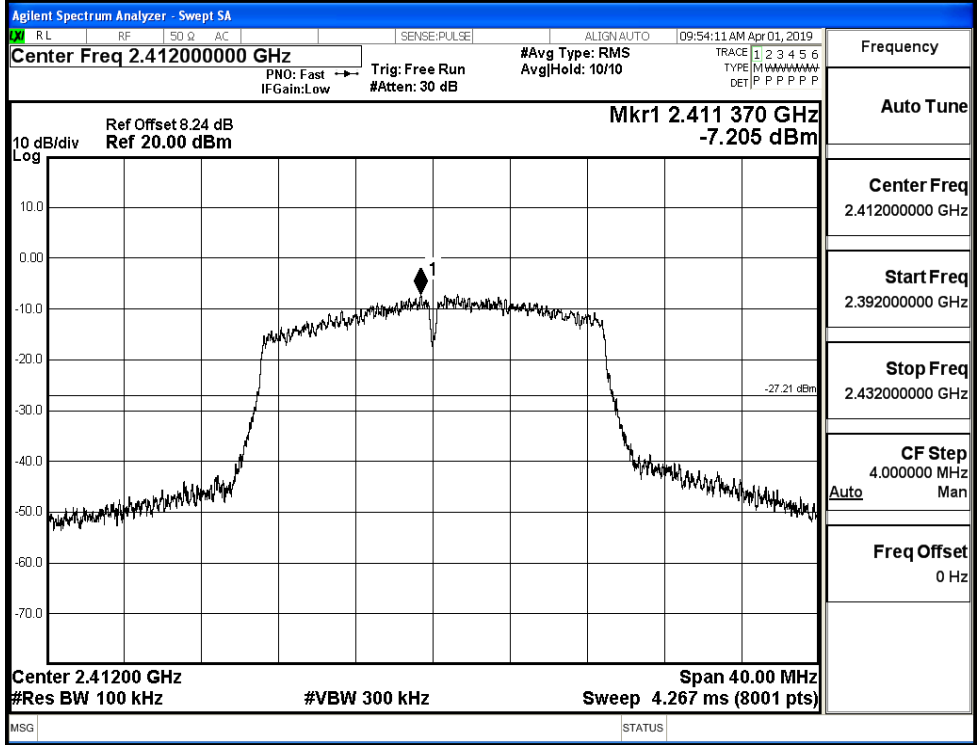


Puw/11G/HCH

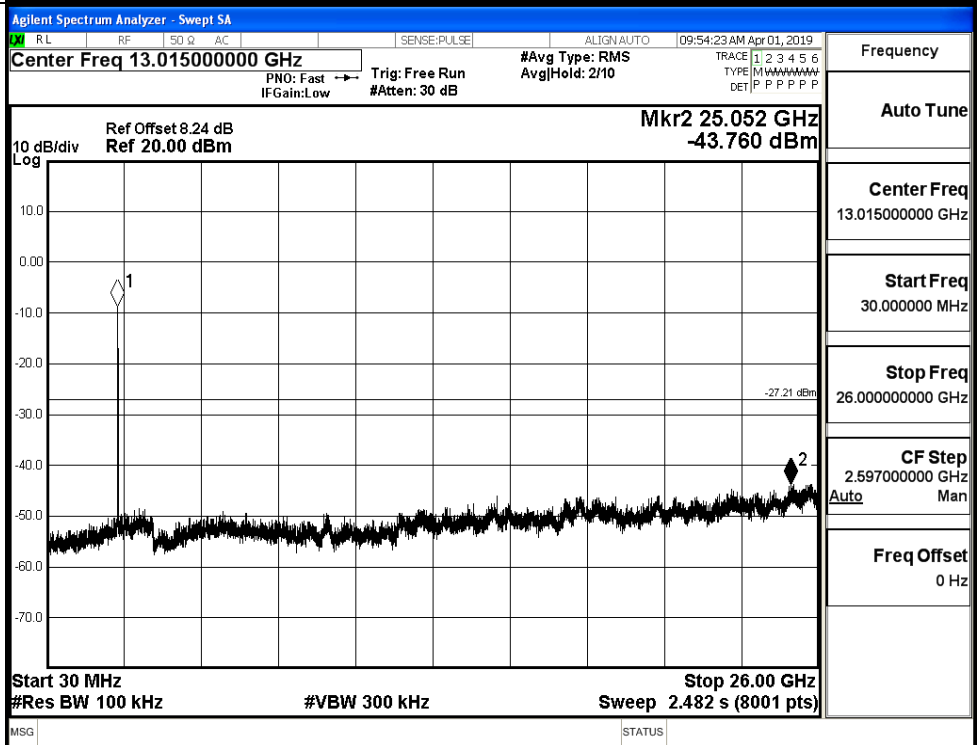


11N20SISO_LCH_Graphs

Pref/11N20SIS
O/LCH

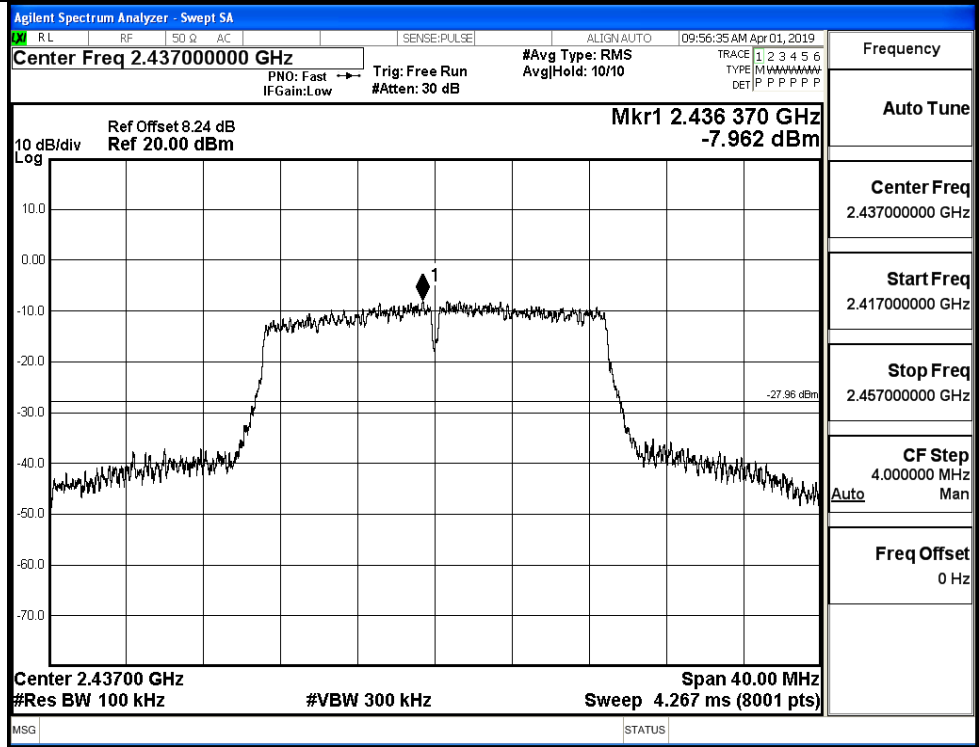


Puw/11N20
SISO/LCH

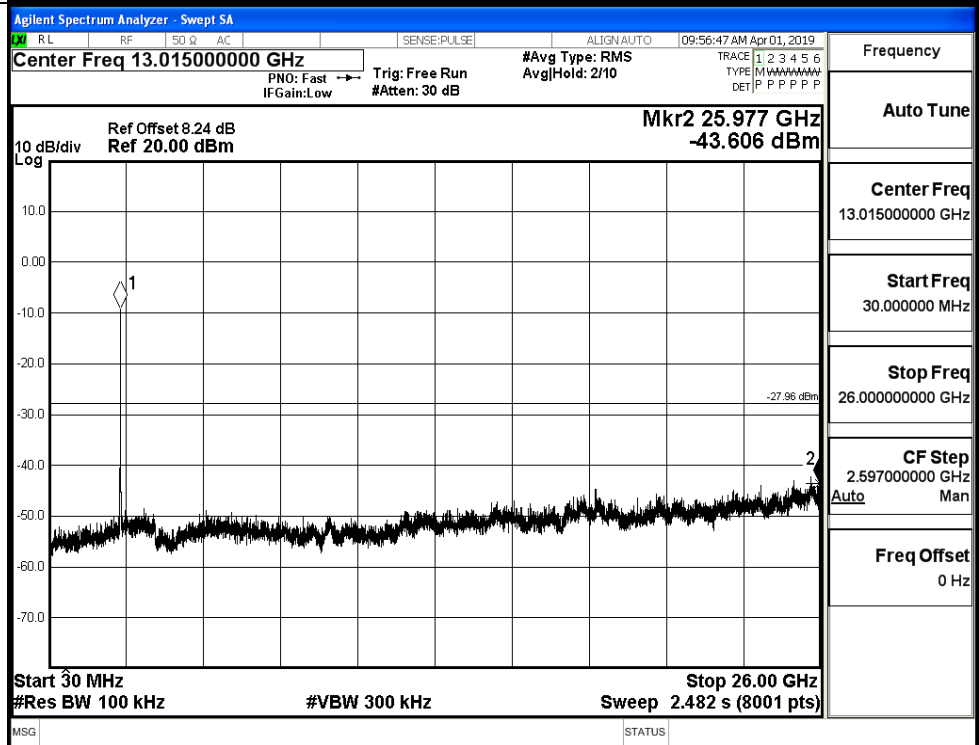


11N20SISO_MCH_Graphs

Pref/11N20
SISO/MCH

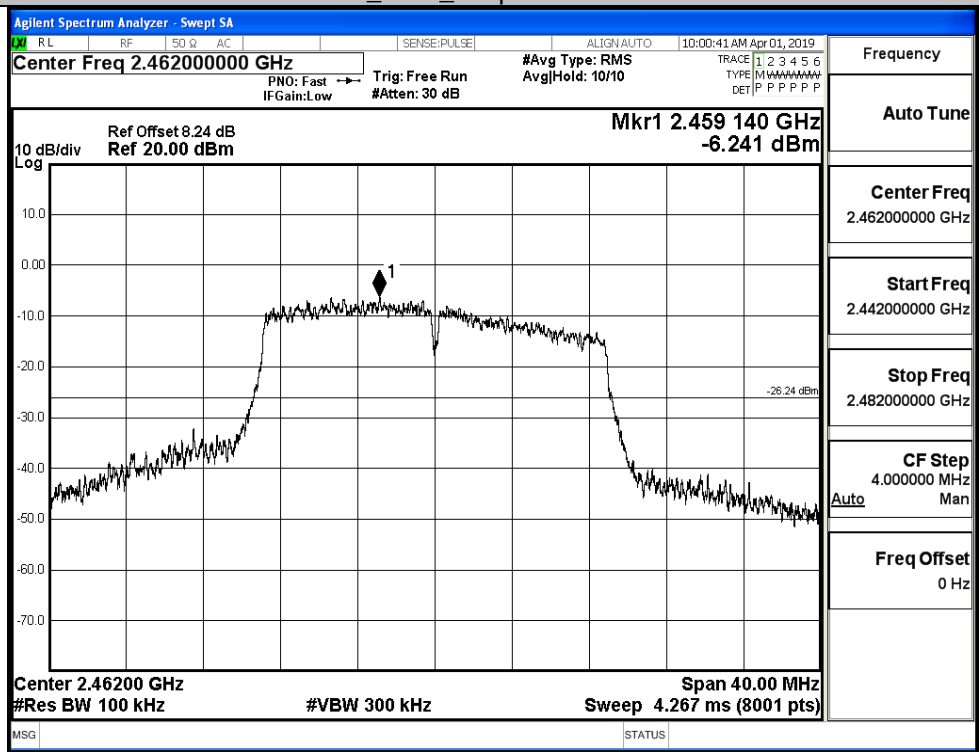


Puw/11N20
SISO/MCH

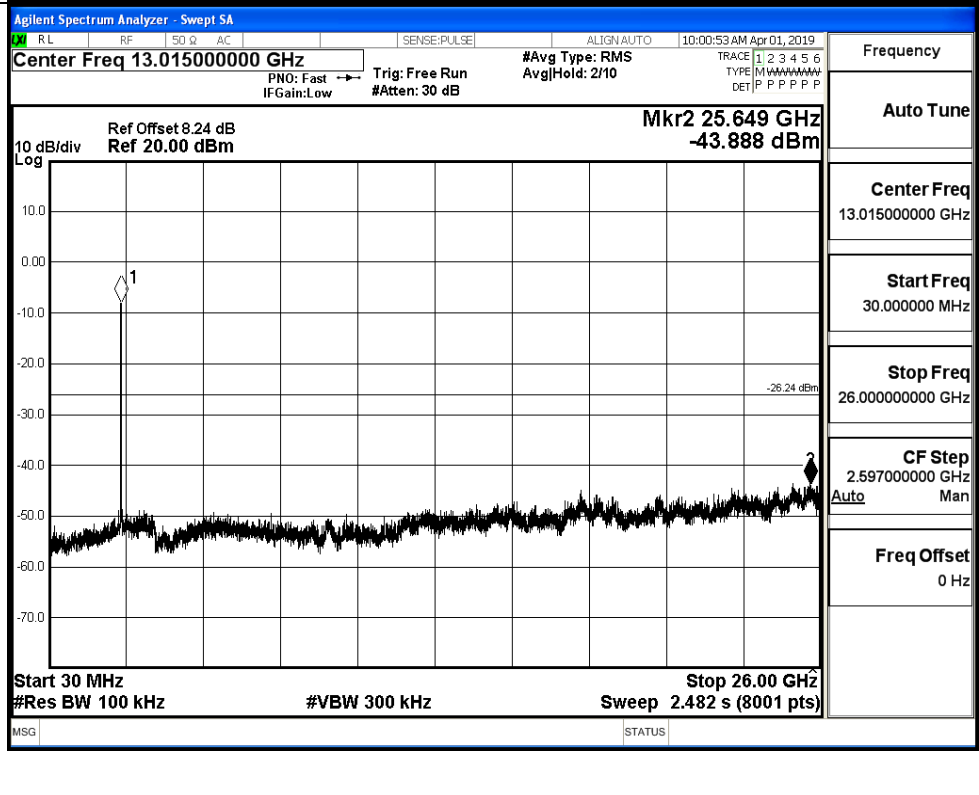


11N20SISO_HCH_Graphs

Pref/11N20
SISO/HCH

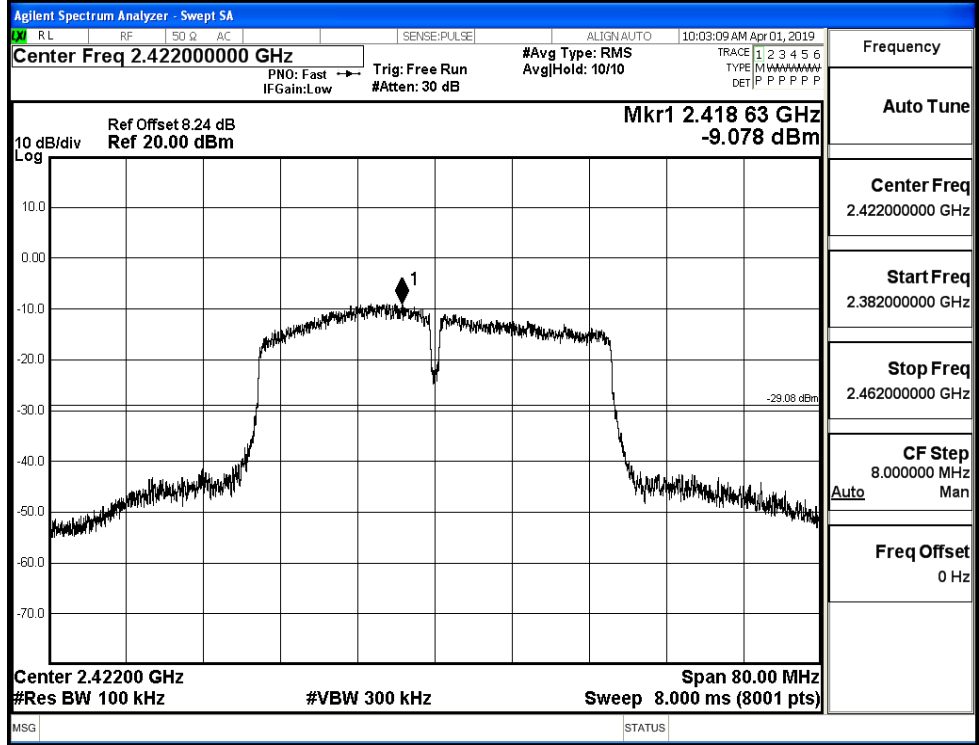


Puw/11N20
SISO/HCH

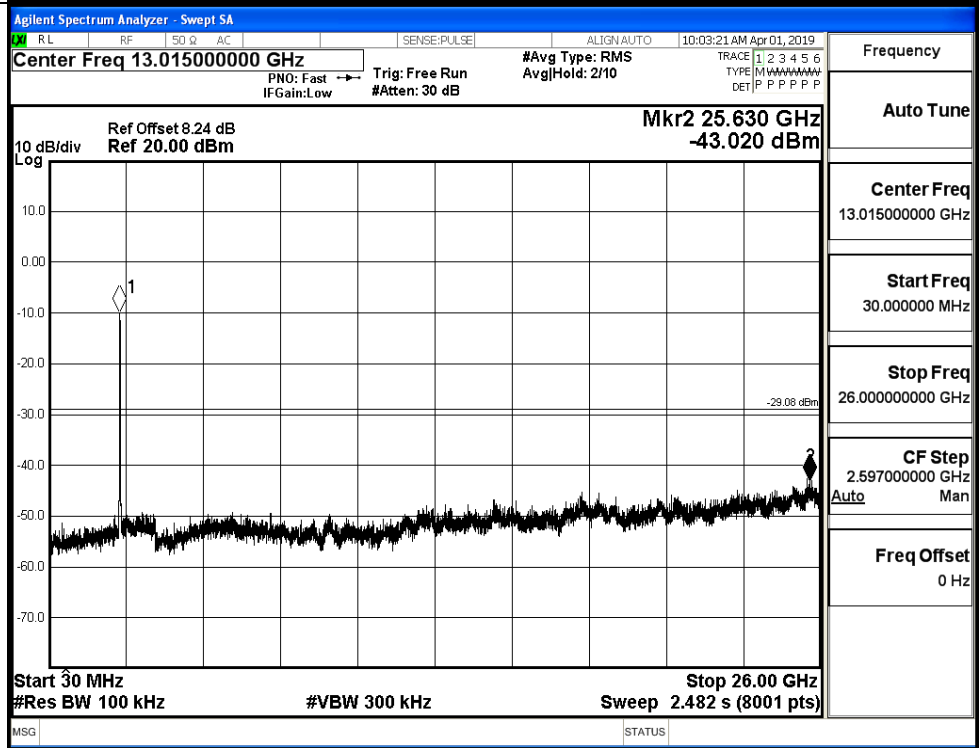


11N40SISO_LCH_Graphs

Pref/11N40
SISO/LCH

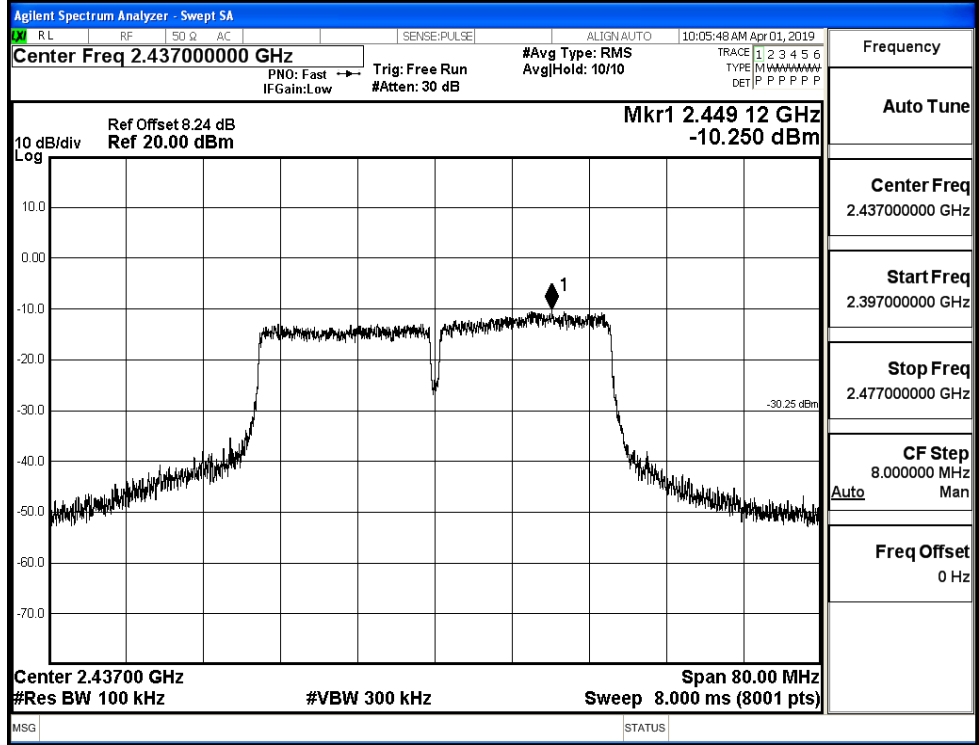


Puw/11N40
SISO/LCH

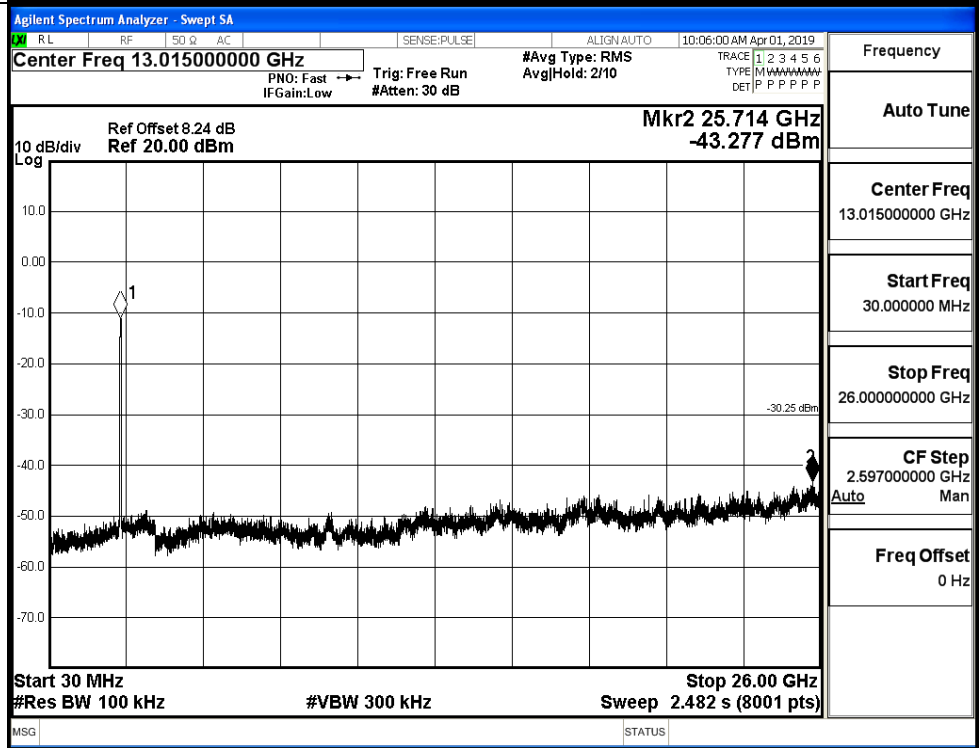


11N40SISO_MCH_Graphs

Pref/11N40
SISO/MCH

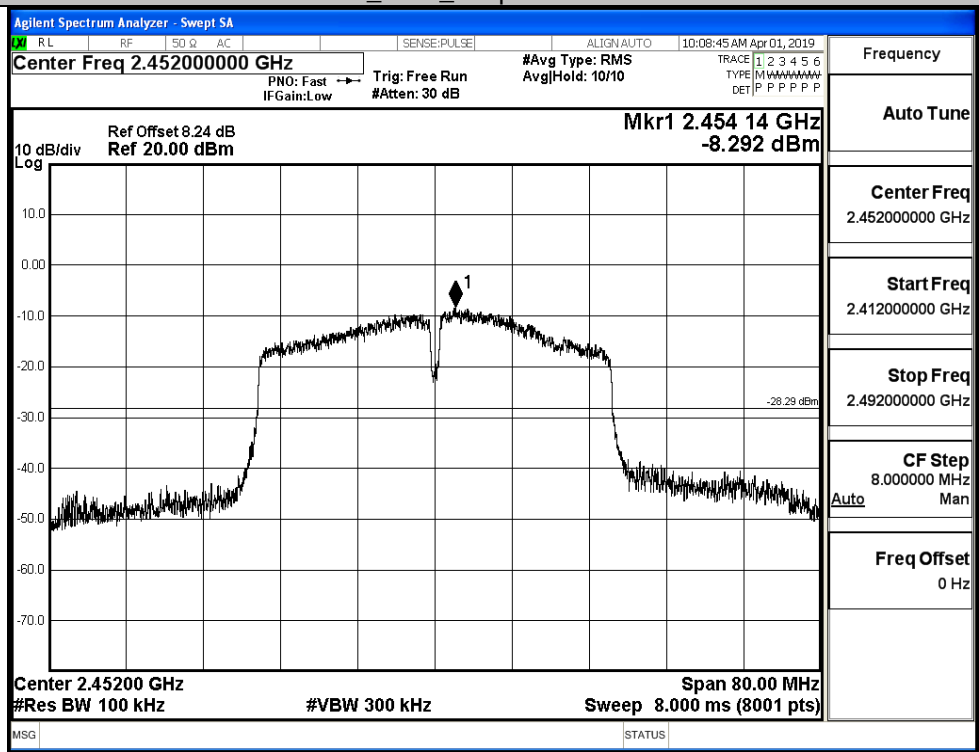


Puw/11N40
SISO/MCH

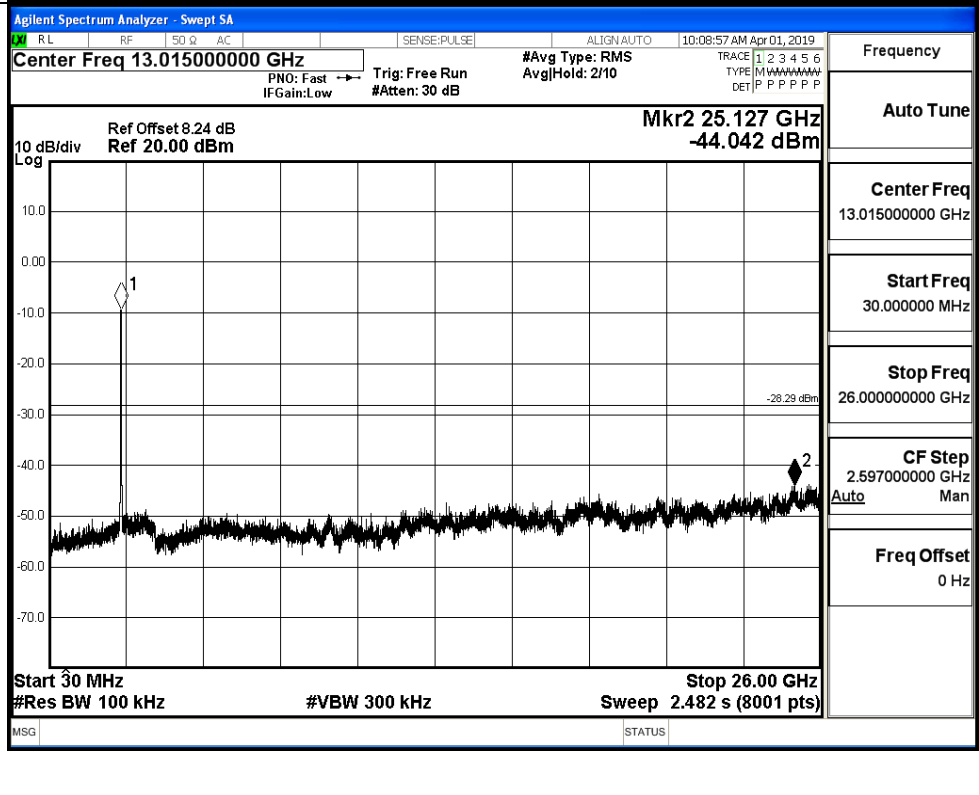


11N40SISO_HCH_Graphs

Pref/11N40
SISO/HCH

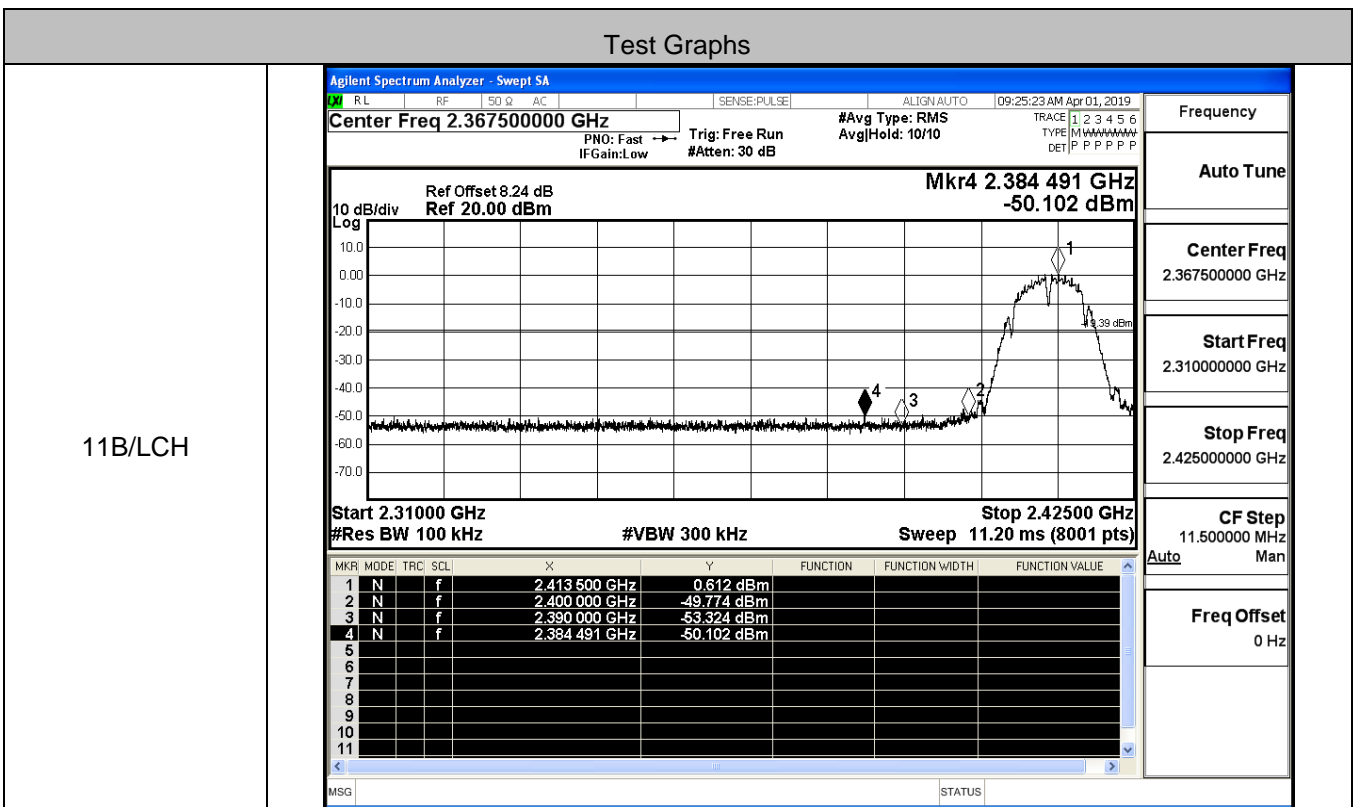


Puw/11N40
SISO/HCH

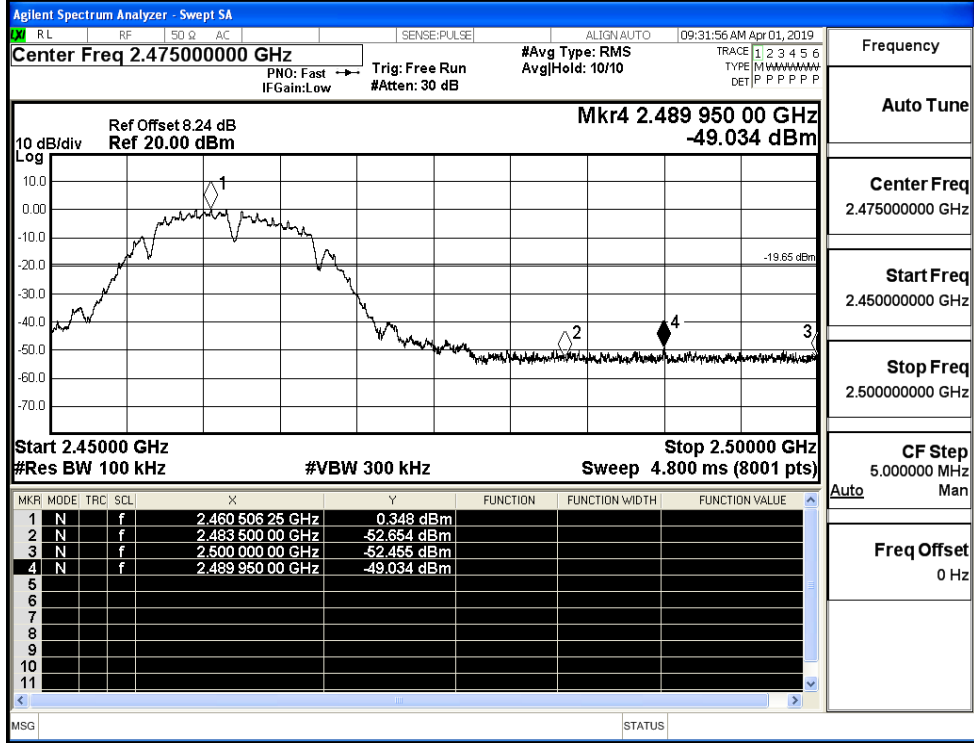


A.6 Band-edge for RF Conducted Emissions

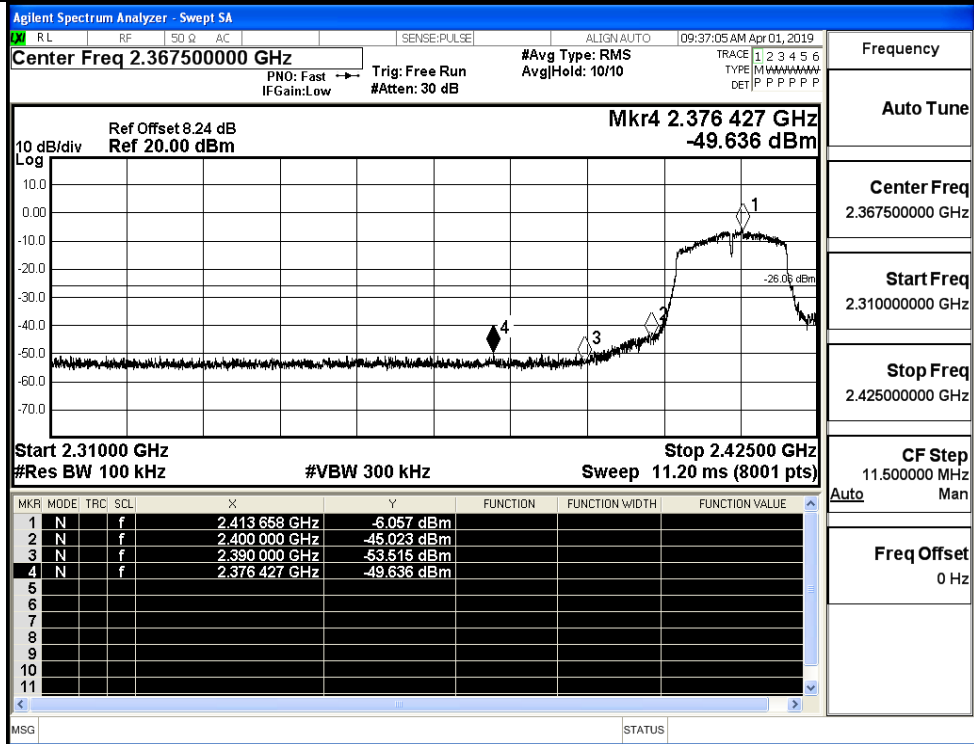
Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	0.612	-50.102	-19.39	PASS
	HCH	0.348	-49.034	-19.65	PASS
11G	LCH	-6.057	-49.636	-26.06	PASS
	HCH	-6.969	-49.331	-26.97	PASS
11N20SISO	LCH	-6.984	-49.898	-26.98	PASS
	HCH	-6.309	-47.534	-26.31	PASS
11N40SISO	LCH	-9.069	-46.829	-29.07	PASS
	HCH	-8.155	-40.008	-28.16	PASS



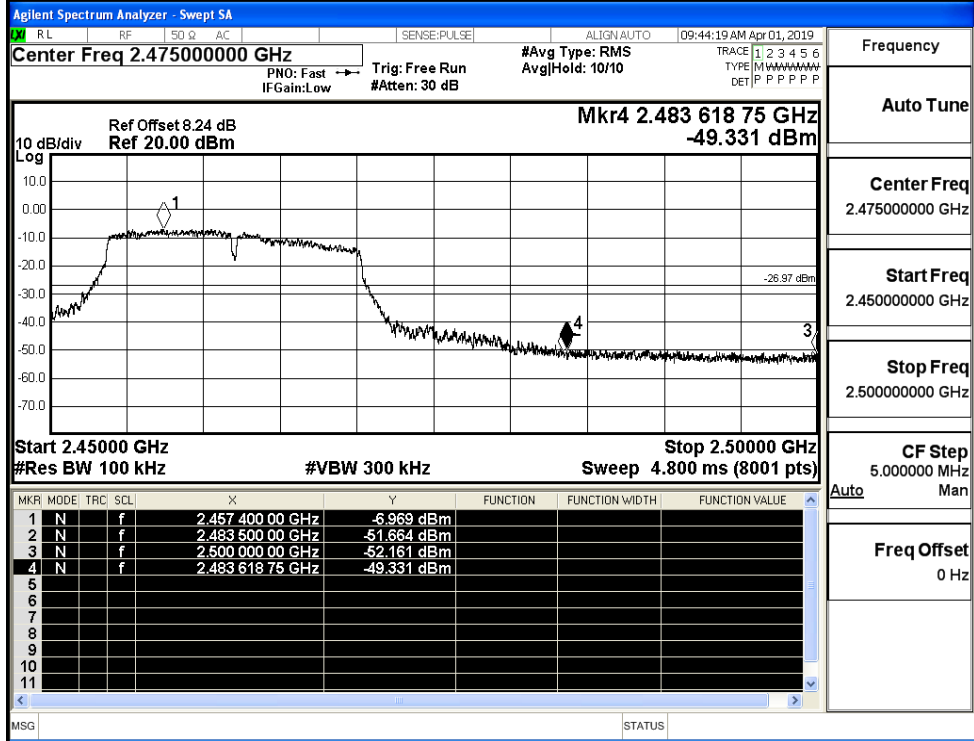
11B/HCH



11G/LCH

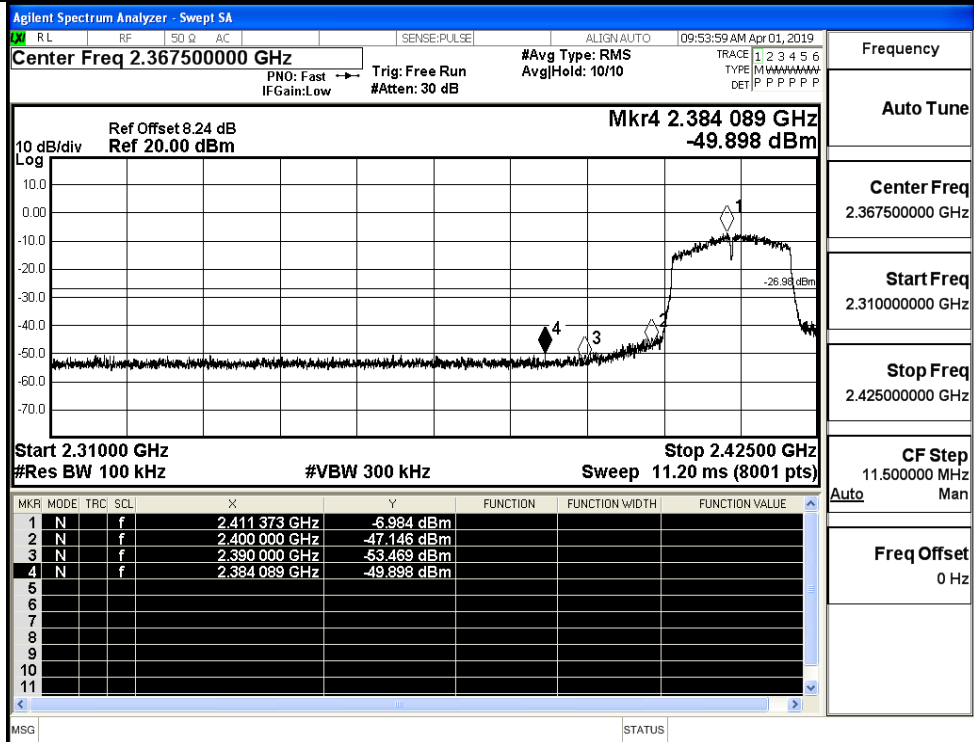


11G/HCH



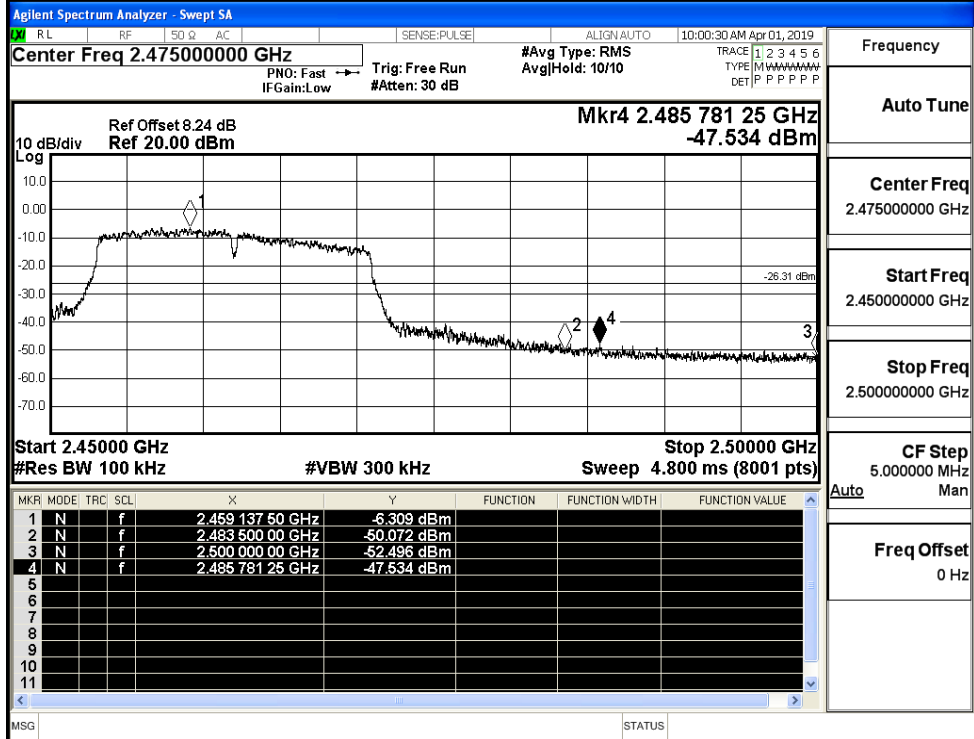
Frequency	
Auto Tune	
Center Freq	2.47500000 GHz
Start Freq	2.45000000 GHz
Stop Freq	2.50000000 GHz
CF Step	5.000000 MHz
Freq Offset	0 Hz

11N20SISO/LCH



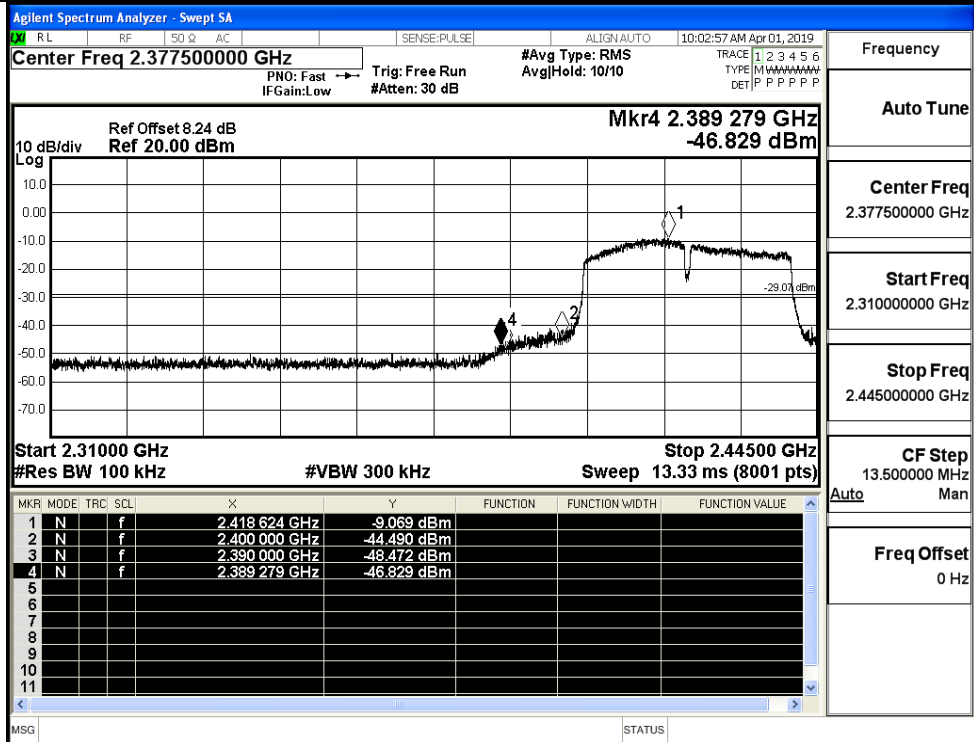
Frequency	
Auto Tune	
Center Freq	2.36750000 GHz
Start Freq	2.31000000 GHz
Stop Freq	2.42500000 GHz
CF Step	11.500000 MHz
Freq Offset	0 Hz

11N20SISO/HCH



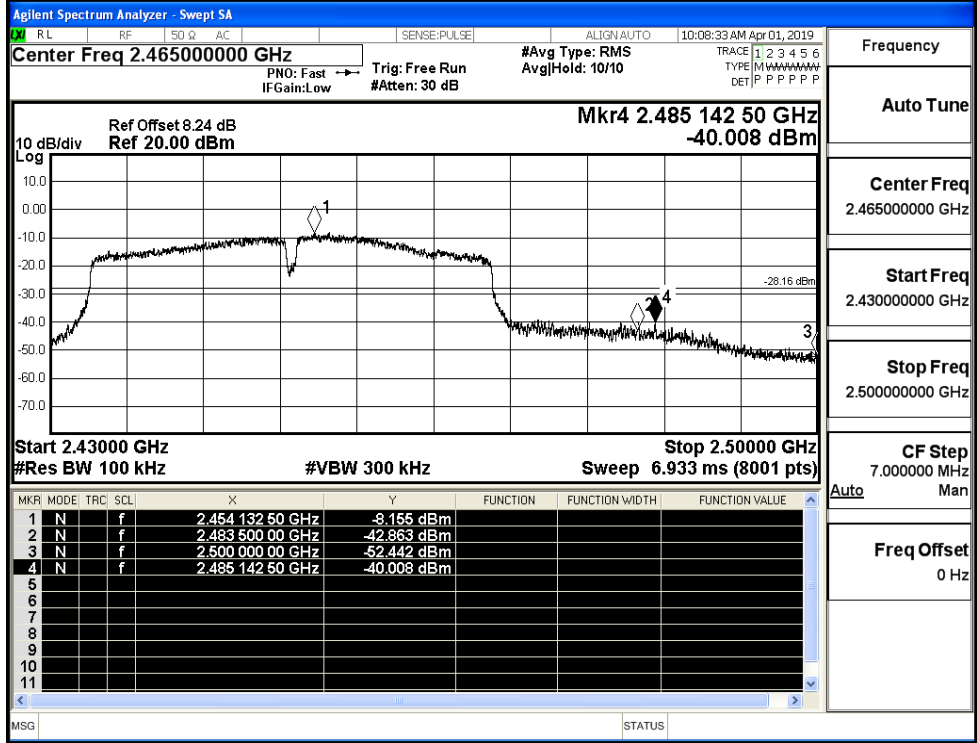
Frequency	
Auto Tune	
Center Freq	2.475000000 GHz
Start Freq	2.450000000 GHz
Stop Freq	2.500000000 GHz
CF Step	5.000000 MHz
Freq Offset	0 Hz

11N40SISO/LCH



Frequency	
Auto Tune	
Center Freq	2.377500000 GHz
Start Freq	2.310000000 GHz
Stop Freq	2.445000000 GHz
CF Step	13.500000 MHz
Freq Offset	0 Hz

11N40SISO/HCH

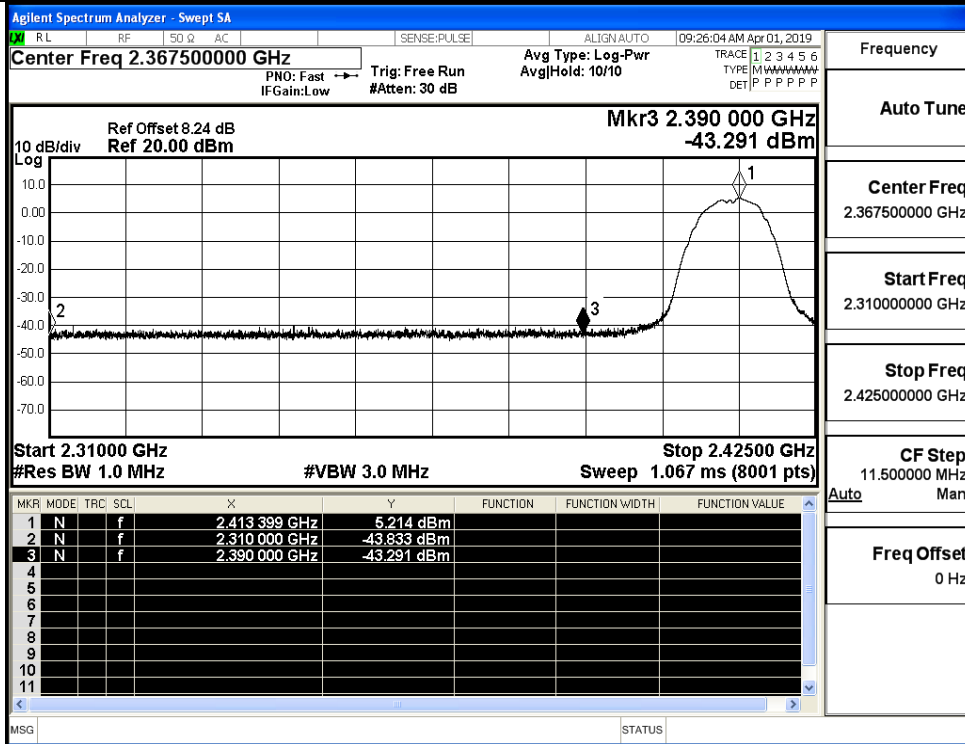


A.7 Restrict-band band-edge measurements

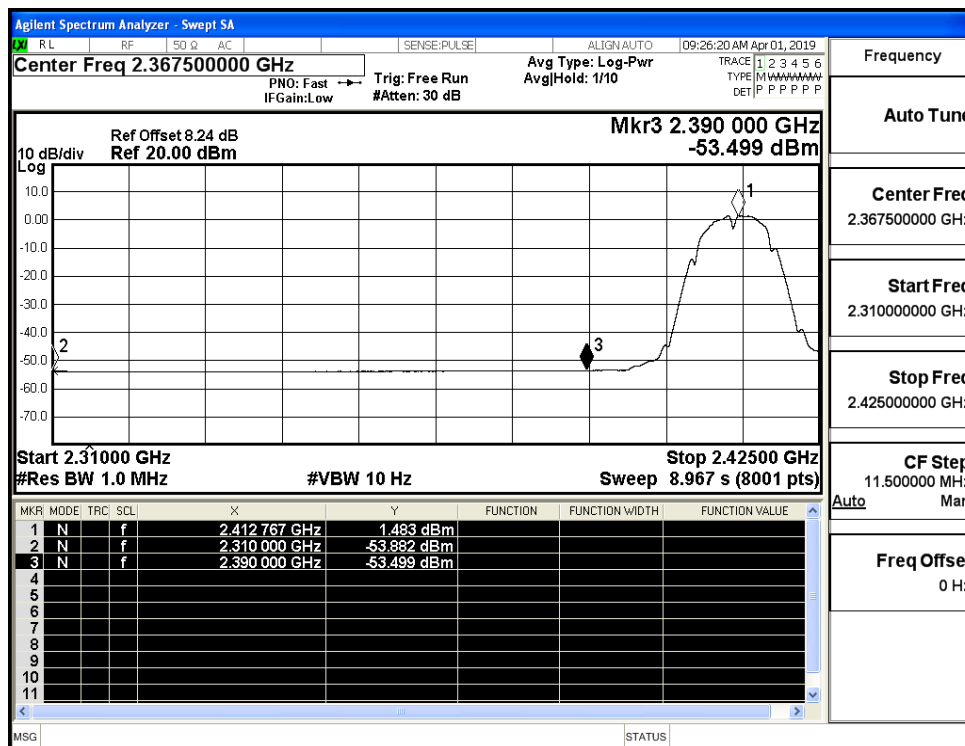
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBu V/m]	Verdict
11B	2412	Ant1	2310.0	-43.83	3.0	0	54.37	PEAK	74	PASS
	2412	Ant1	2310.0	-53.88	3.0	0	44.32	AV	54	PASS
	2412	Ant1	2390.0	-43.29	3.0	0	54.91	PEAK	74	PASS
	2412	Ant1	2390.0	-53.50	3.0	0	44.70	AV	54	PASS
	2462	Ant1	2483.5	-41.90	3.0	0	56.30	PEAK	74	PASS
	2462	Ant1	2483.5	-52.83	3.0	0	45.37	AV	54	PASS
	2462	Ant1	2500.0	-41.88	3.0	0	56.32	PEAK	74	PASS
	2462	Ant1	2500.0	-53.19	3.0	0	45.01	AV	54	PASS
11G	2412	Ant1	2310.0	-43.80	3.0	0	54.40	PEAK	74	PASS
	2412	Ant1	2310.0	-53.86	3.0	0	44.34	AV	54	PASS
	2412	Ant1	2390.0	-42.80	3.0	0	55.40	PEAK	74	PASS
	2412	Ant1	2390.0	-52.91	3.0	0	45.29	AV	54	PASS
	2462	Ant1	2483.5	-39.10	3.0	0	59.10	PEAK	74	PASS
	2462	Ant1	2483.5	-51.43	3.0	0	46.77	AV	54	PASS
	2462	Ant1	2500.0	-41.69	3.0	0	56.51	PEAK	74	PASS
	2462	Ant1	2500.0	-53.01	3.0	0	45.19	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-43.59	3.0	0	54.61	PEAK	74	PASS
	2412	Ant1	2310.0	-53.77	3.0	0	44.43	AV	54	PASS
	2412	Ant1	2390.0	-41.93	3.0	0	56.27	PEAK	74	PASS
	2412	Ant1	2390.0	-52.86	3.0	0	45.34	AV	54	PASS
	2462	Ant1	2483.5	-39.89	3.0	0	58.31	PEAK	74	PASS
	2462	Ant1	2483.5	-50.47	3.0	0	47.73	AV	54	PASS
	2462	Ant1	2500.0	-42.47	3.0	0	55.73	PEAK	74	PASS
	2462	Ant1	2500.0	-52.98	3.0	0	45.22	AV	54	PASS
11N40 SISO	2422	Ant1	2310.0	-44.15	3.0	0	54.05	PEAK	74	PASS
	2422	Ant1	2310.0	-53.79	3.0	0	44.41	AV	54	PASS

	2422	Ant1	2390.0	-37.15	3.0	0	61.05	PEAK	74	PASS
	2422	Ant1	2390.0	-48.27	3.0	0	49.93	AV	54	PASS
	2452	Ant1	2483.5	-30.55	3.0	0	67.65	PEAK	74	PASS
	2452	Ant1	2483.5	-44.83	3.0	0	53.37	AV	54	PASS
	2452	Ant1	2500.0	-41.63	3.0	0	56.57	PEAK	74	PASS
	2452	Ant1	2500.0	-52.69	3.0	0	45.51	AV	54	PASS

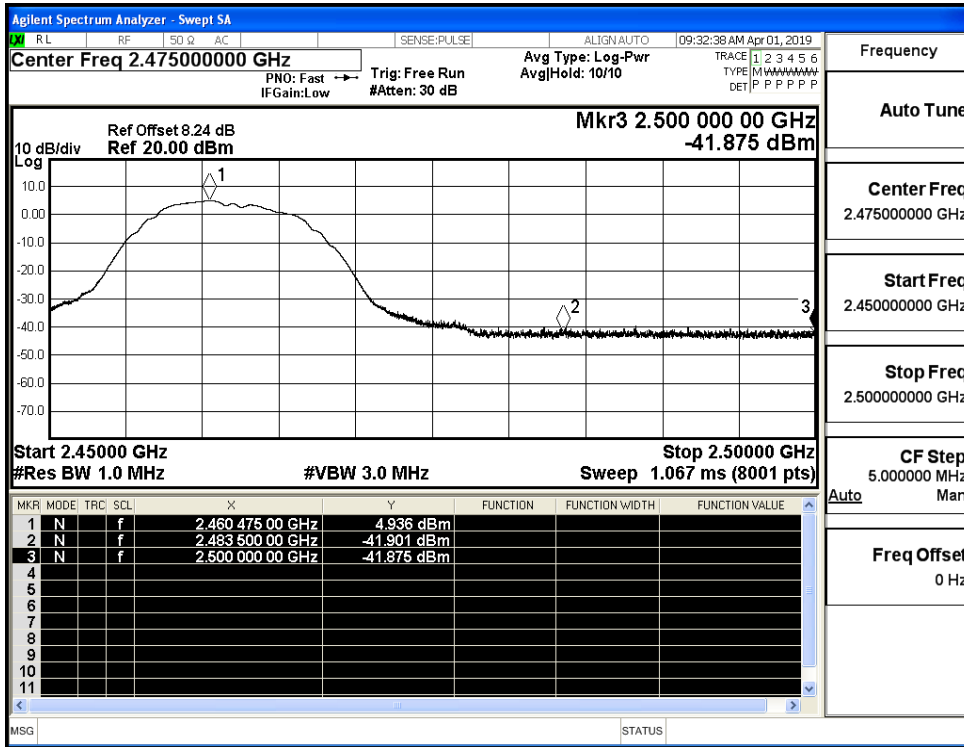
Restrict-band band-edge measurements_11B_2412_Ant1_PEAK



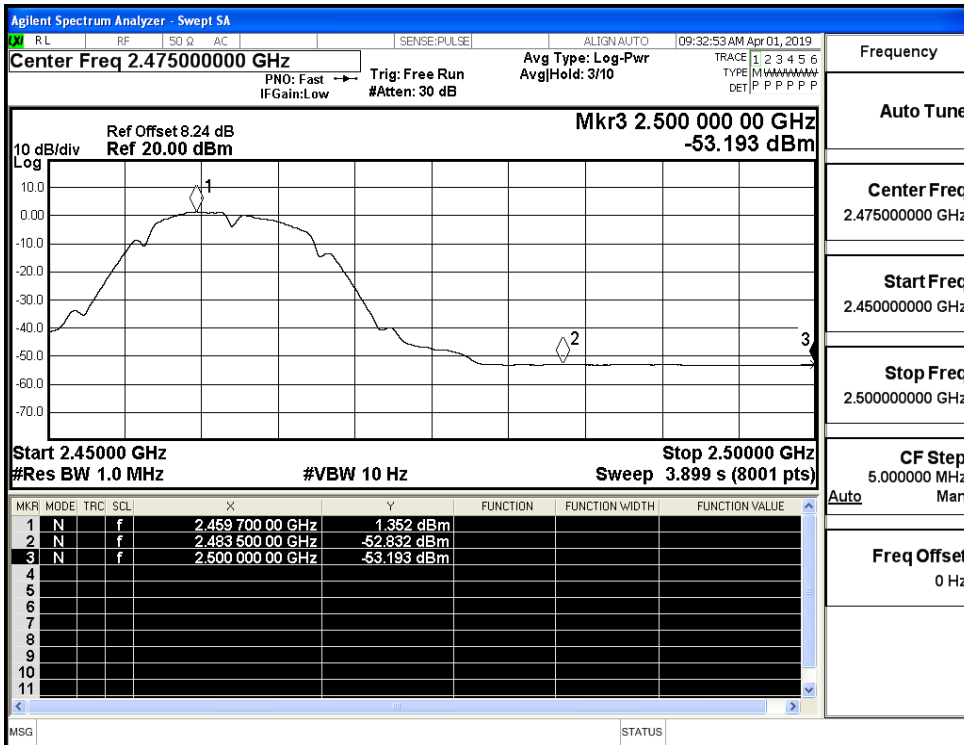
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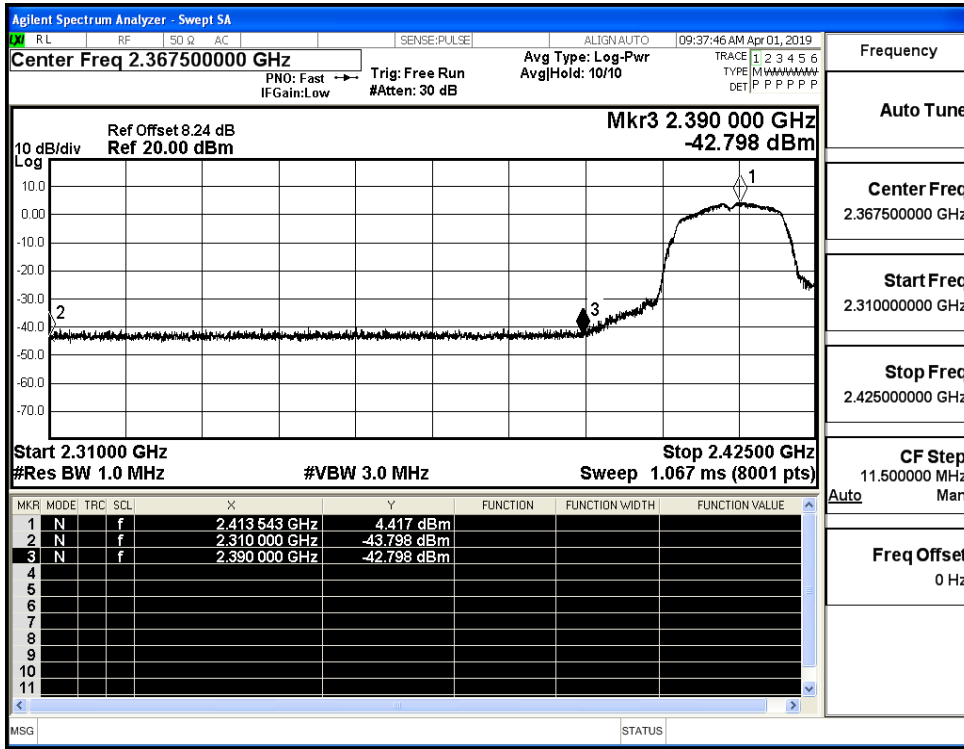
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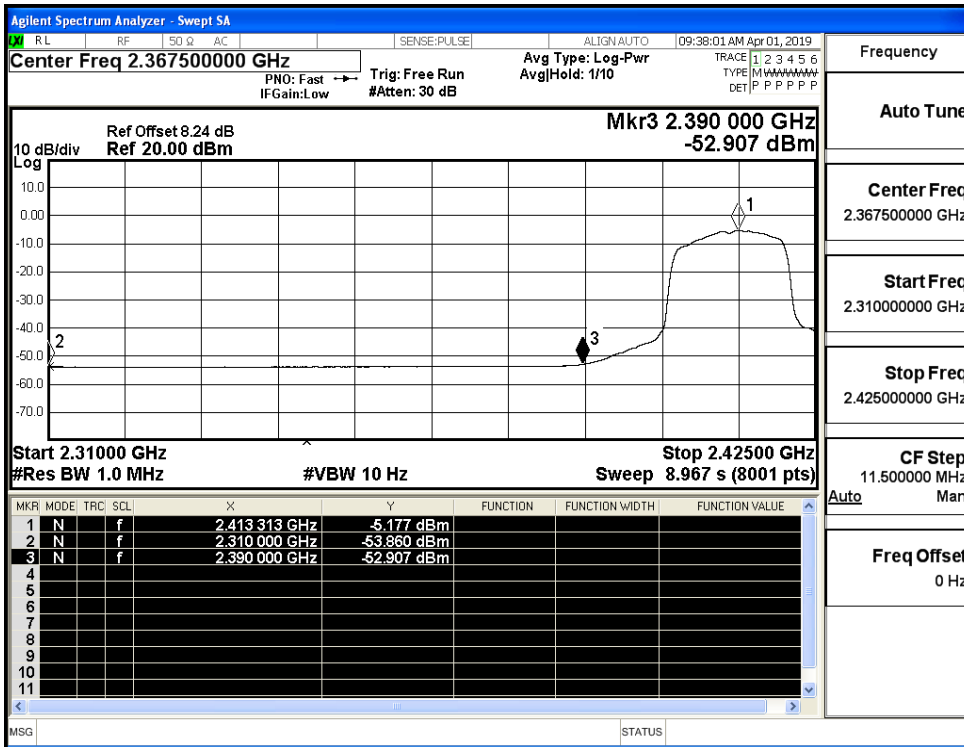
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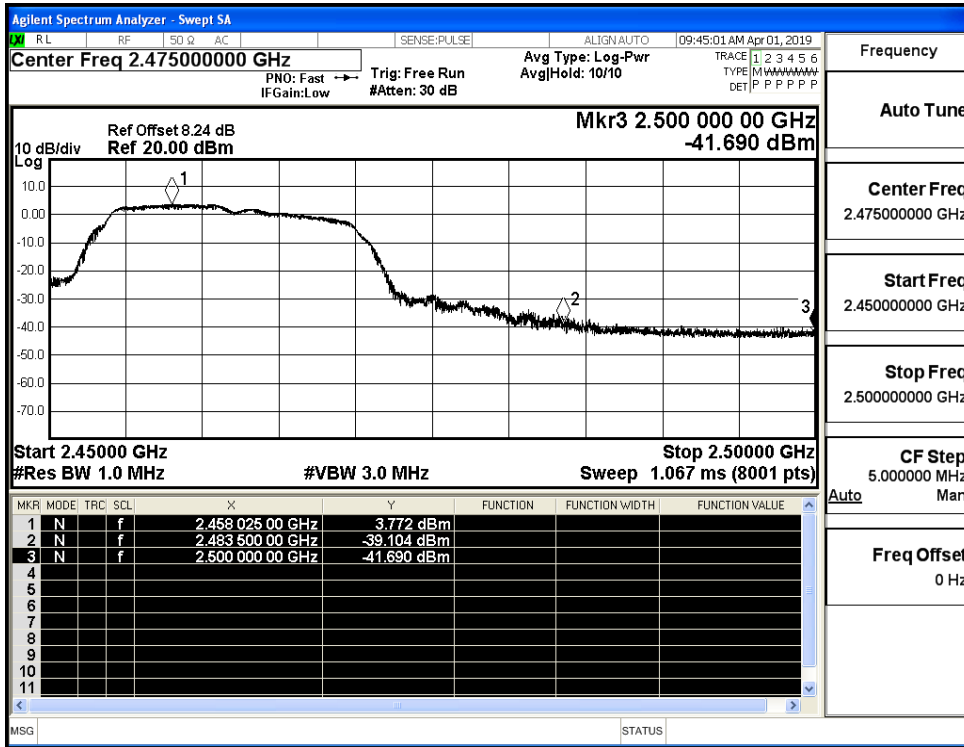
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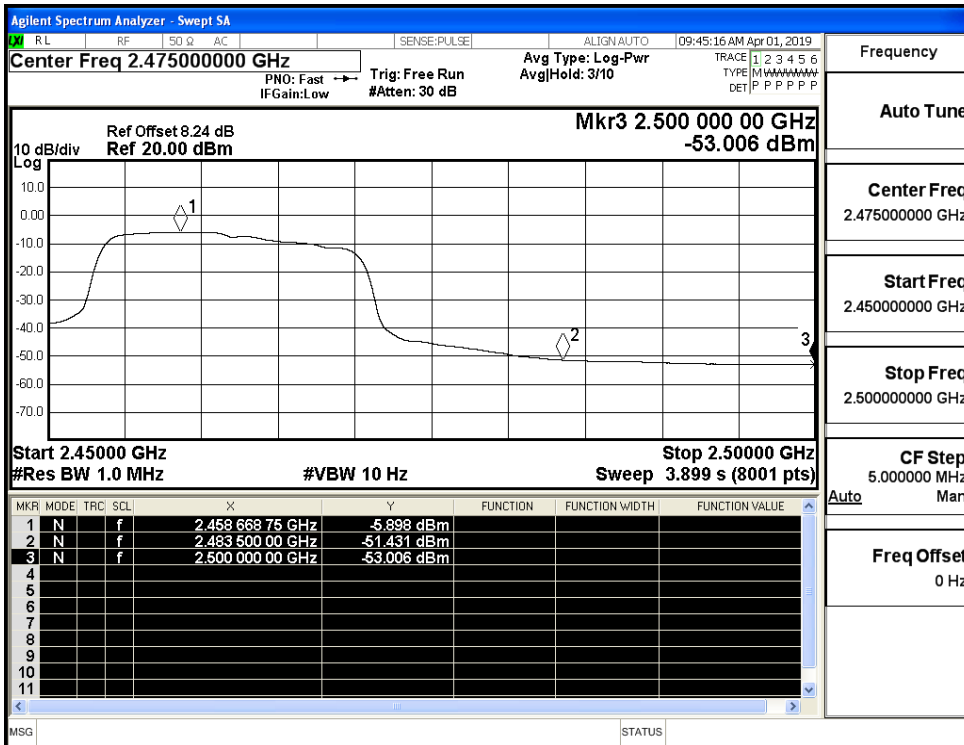
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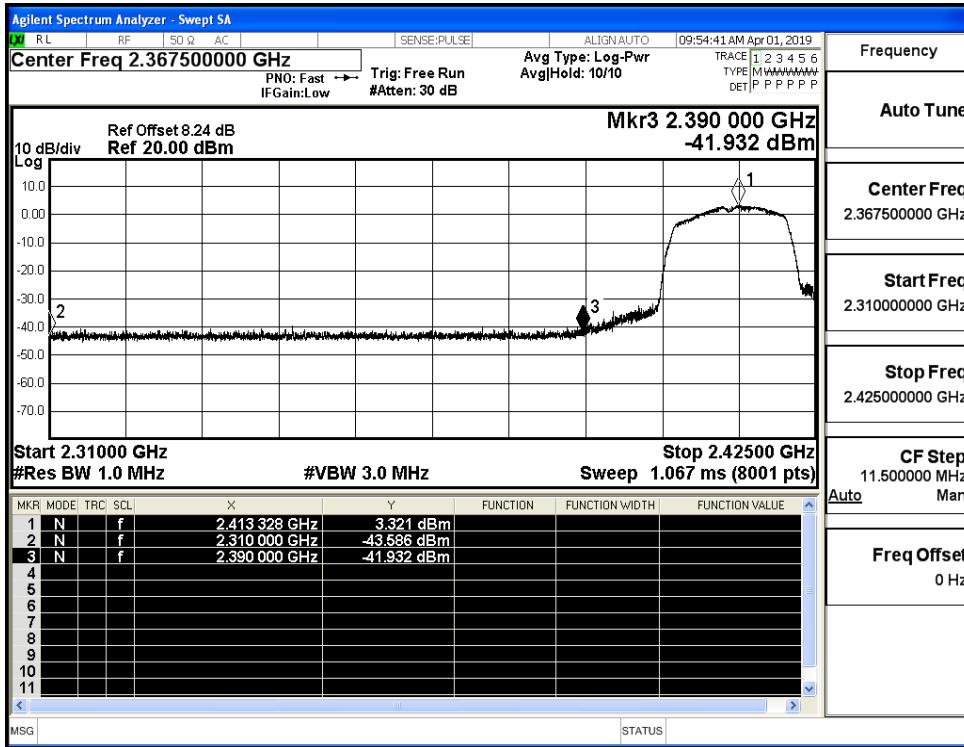
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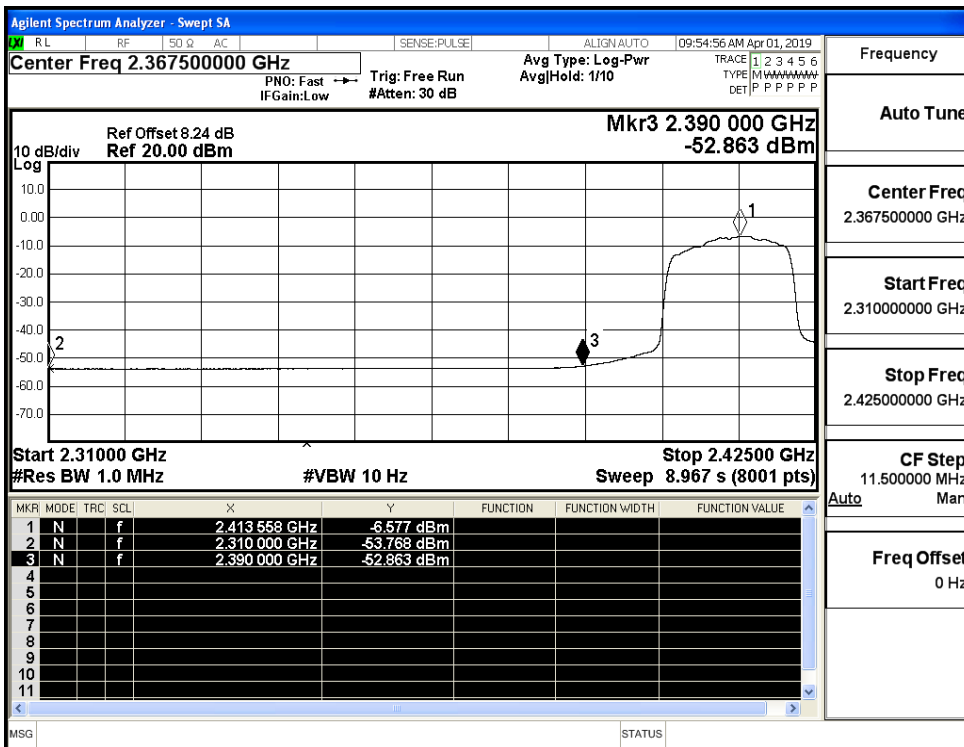
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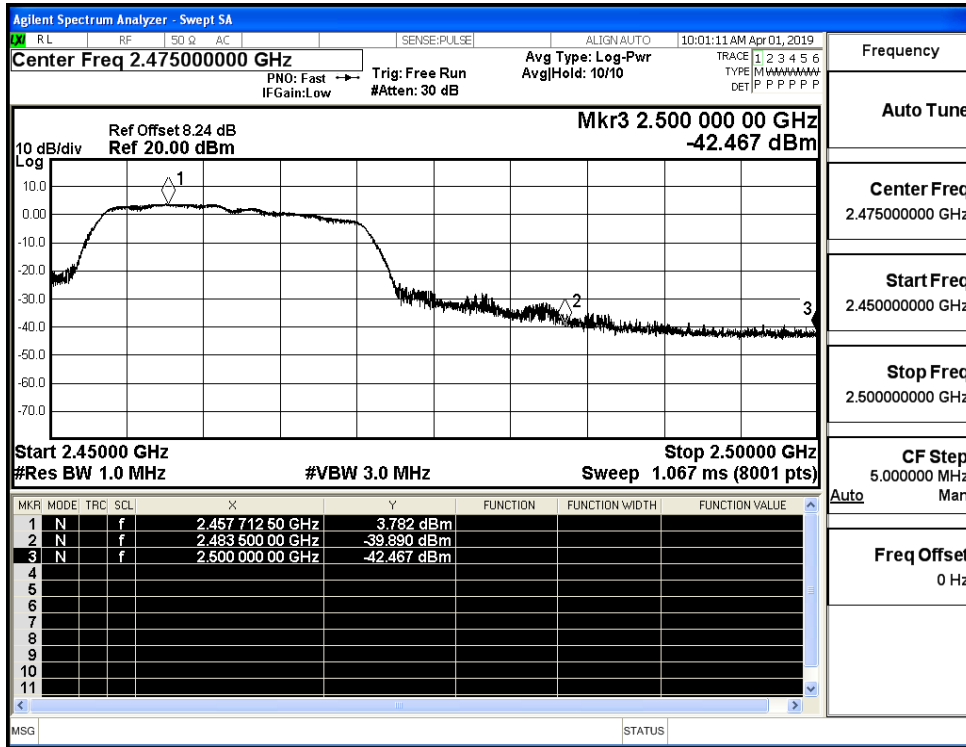
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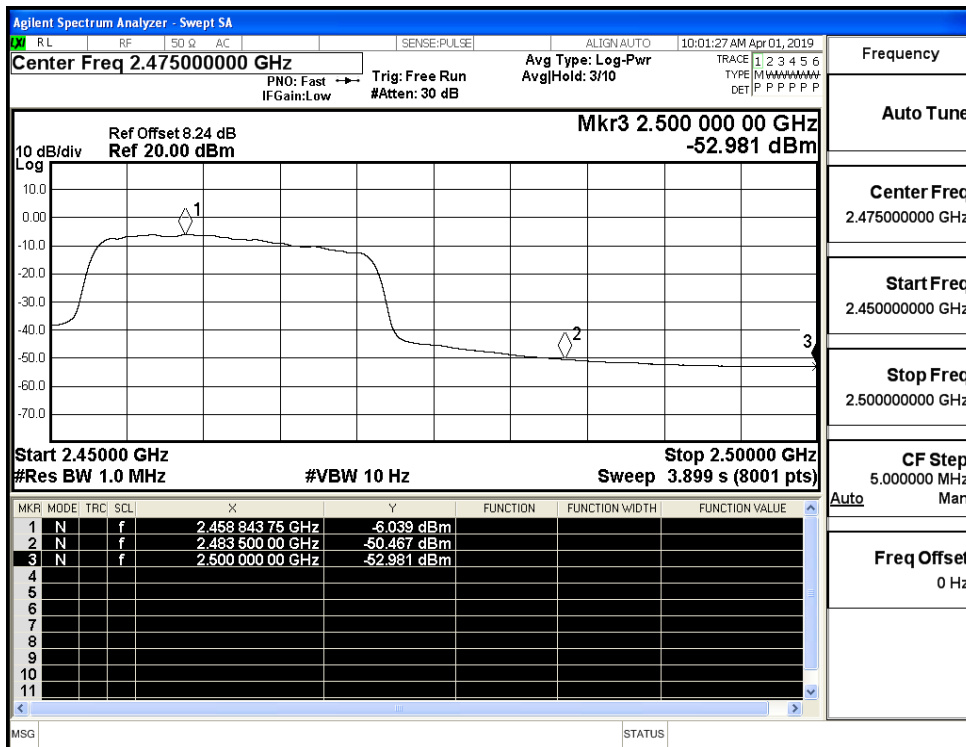
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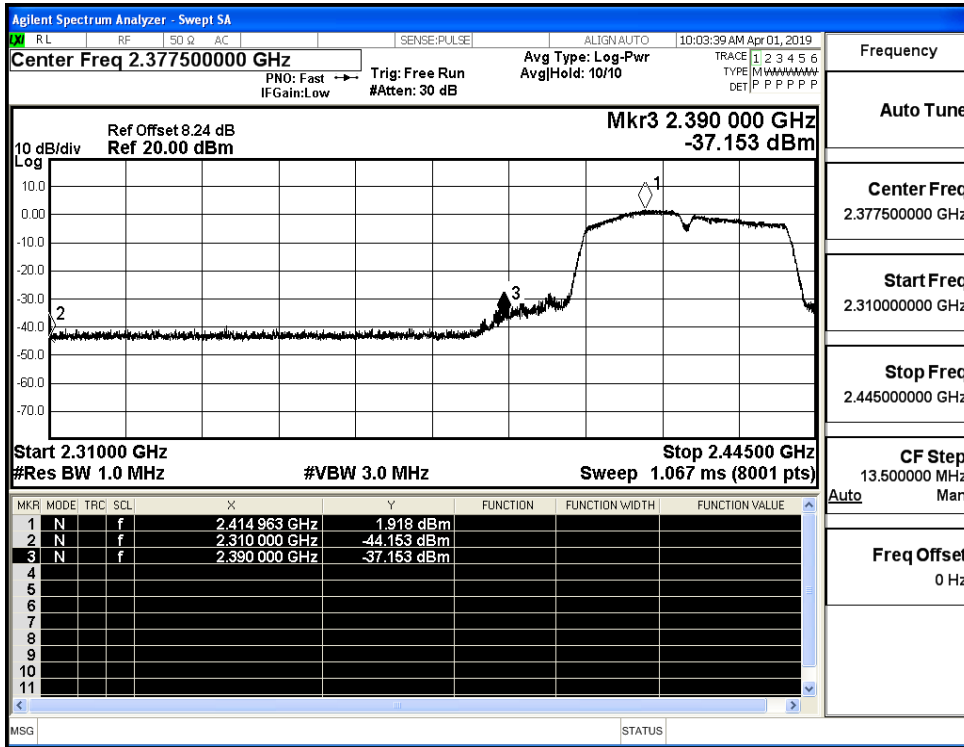
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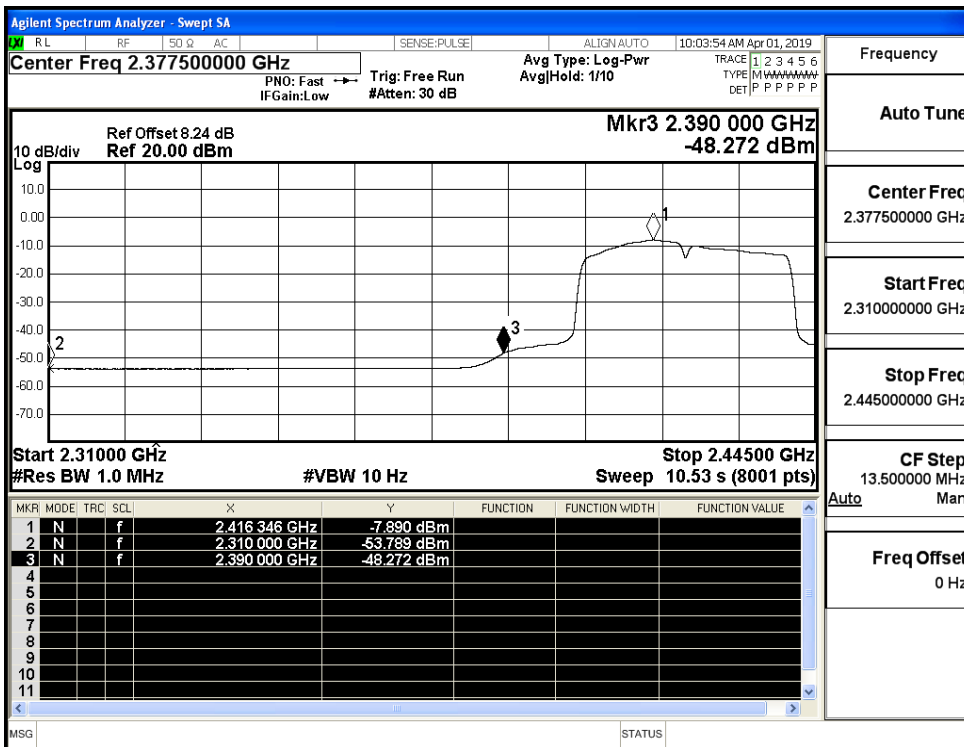
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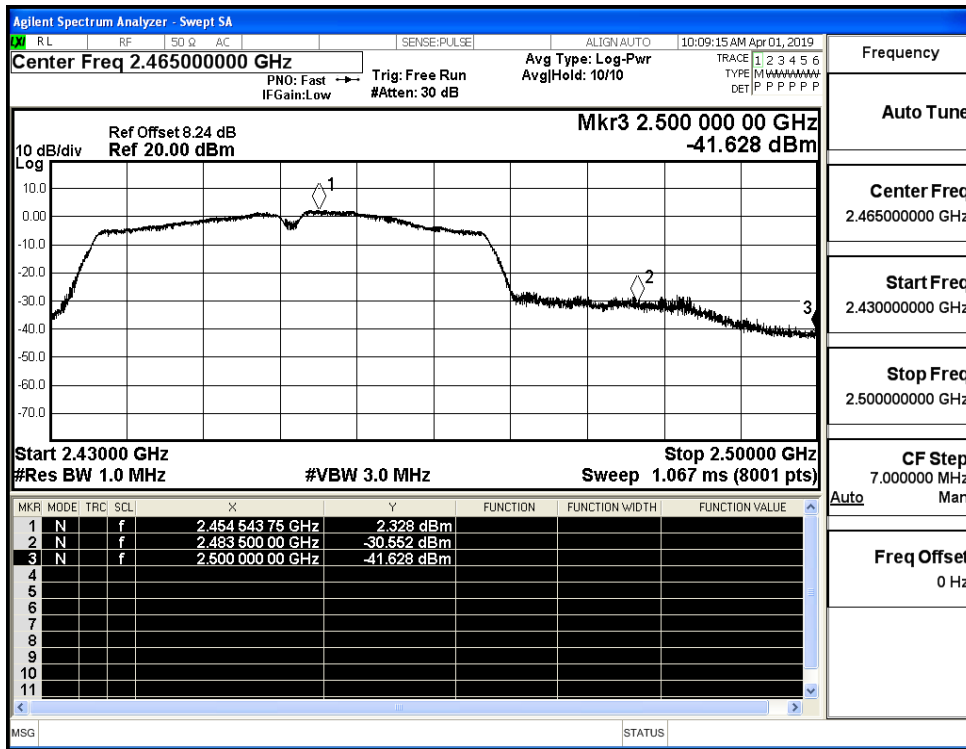
Restrict-band band-edge measurements_11N40SISO_2422_Ant1_PEAK



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

