

Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: WIFI Camera

Trade Mark: NIGHTOWL

Test Model: WNIP-2LTA-BS

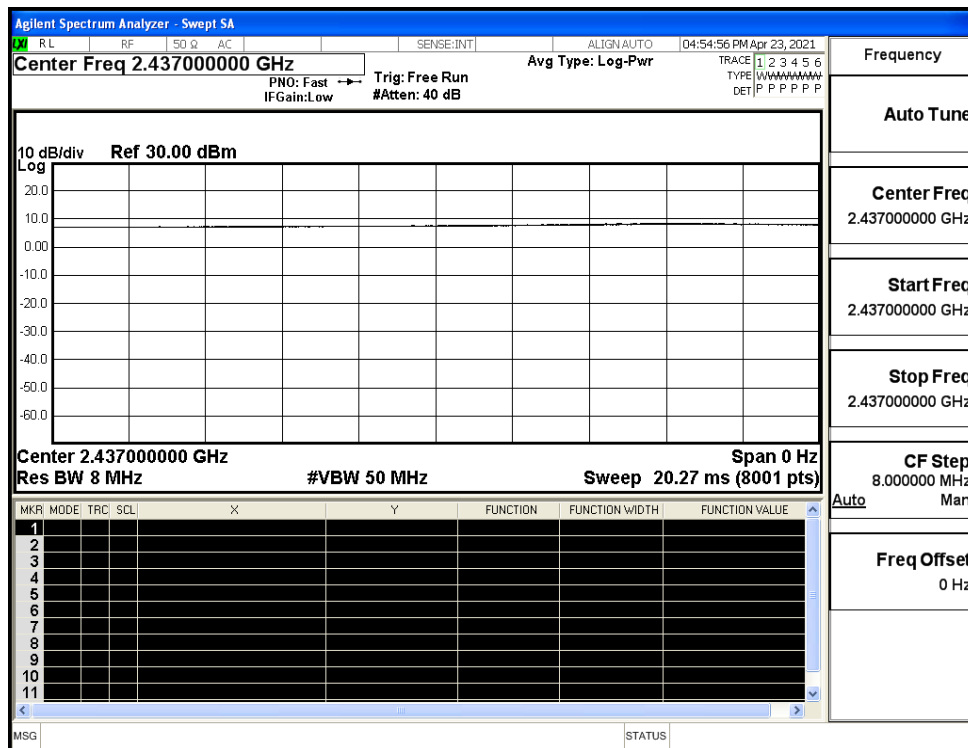
Environmental Conditions

Temperature:	24.6° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Li
Supervised by:	Li Huan

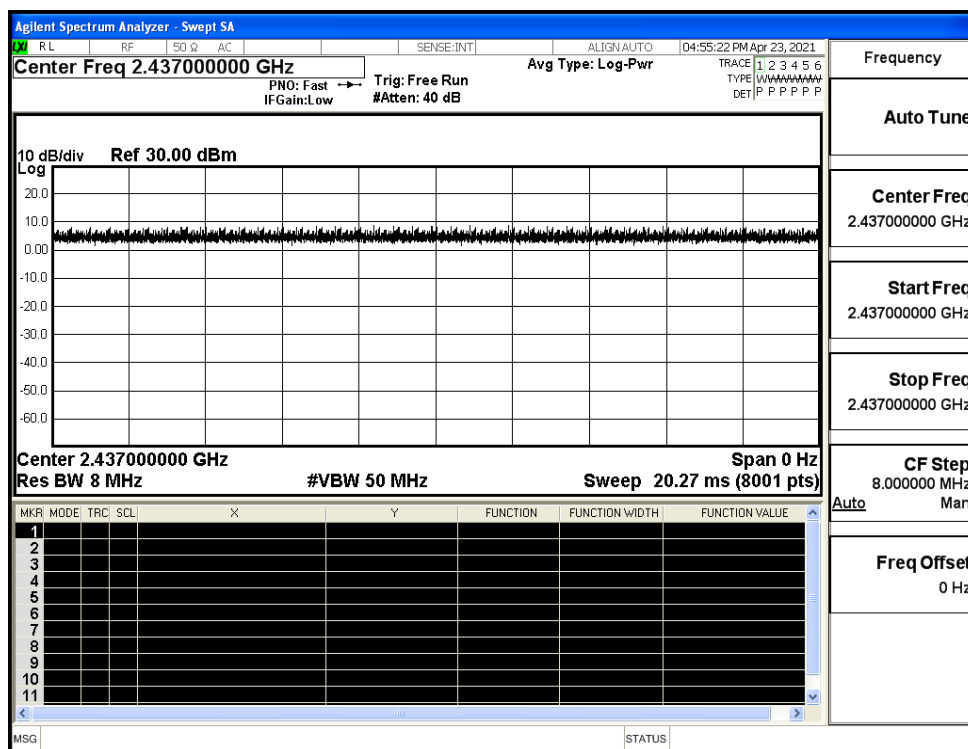
A.1 Duty Cycle

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

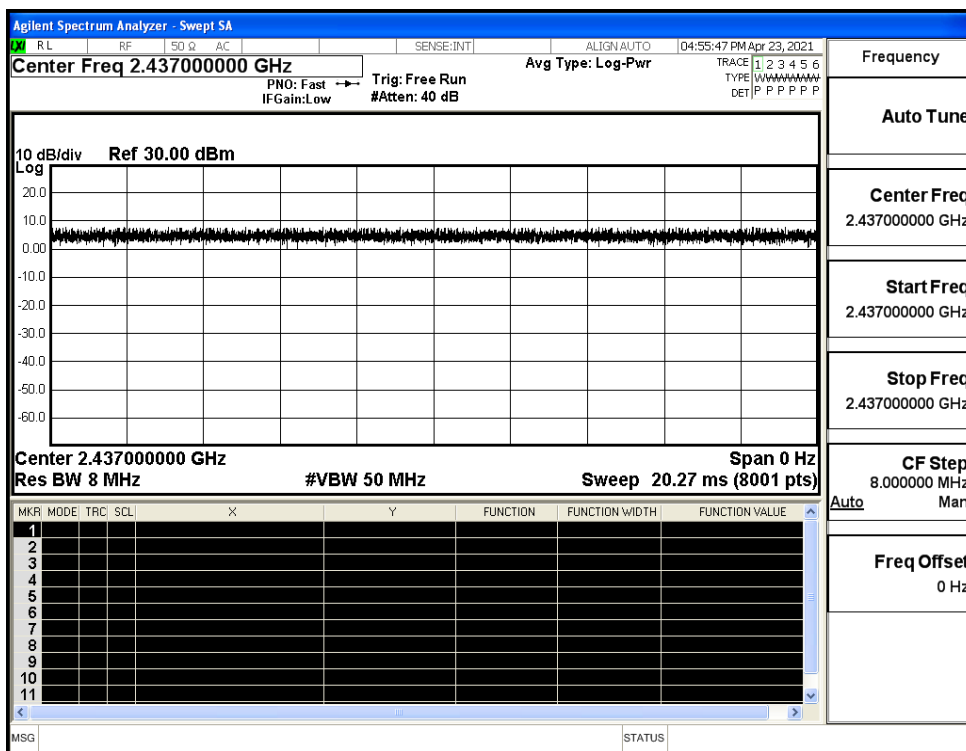
Duty Cycle_11B_2437_Ant1



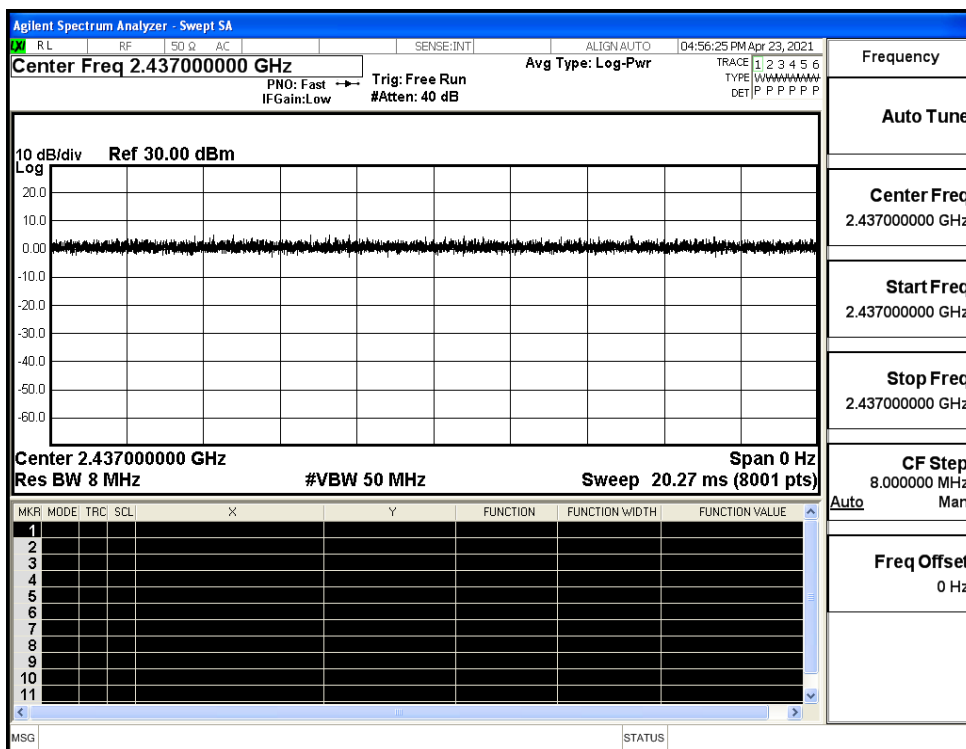
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



Duty Cycle_11N40SISO_2437_Ant1

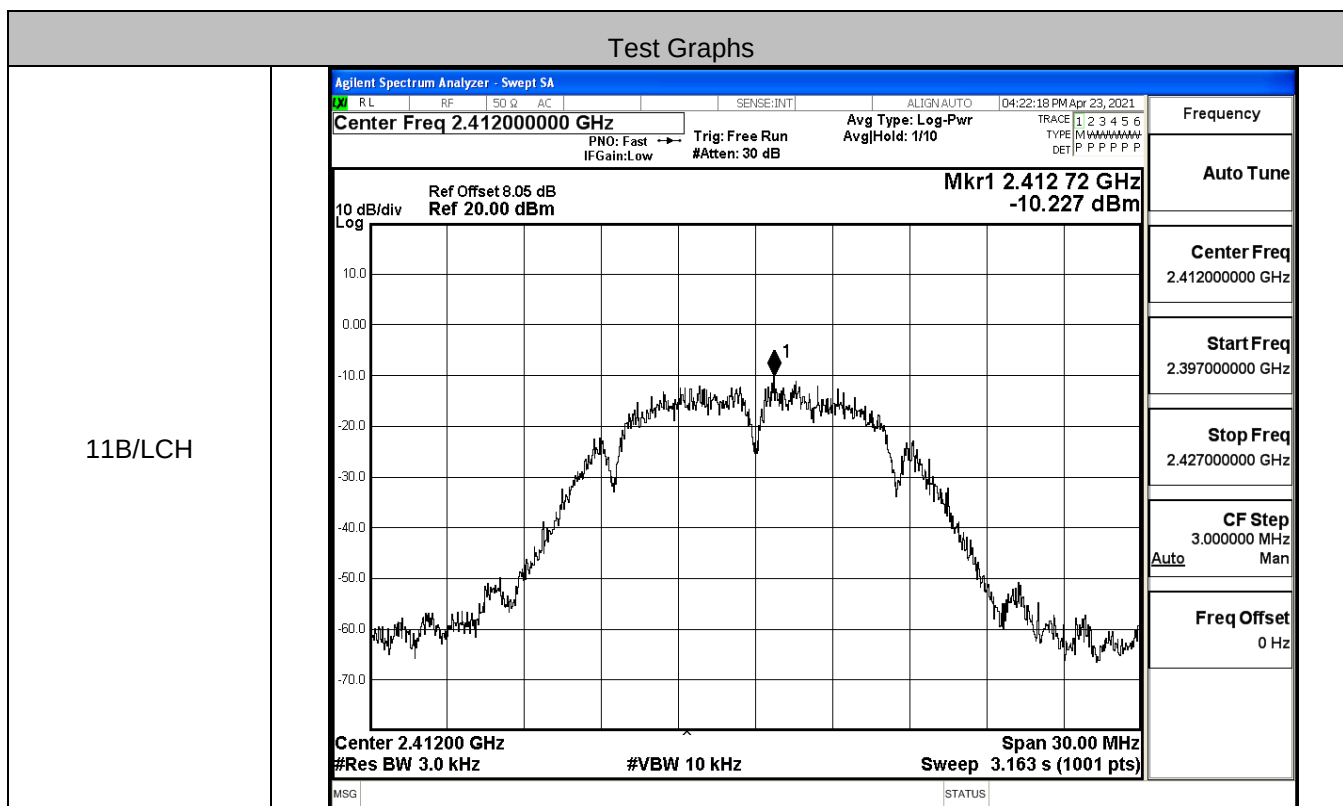


A.2 Maximum Conducted Peak Output Power

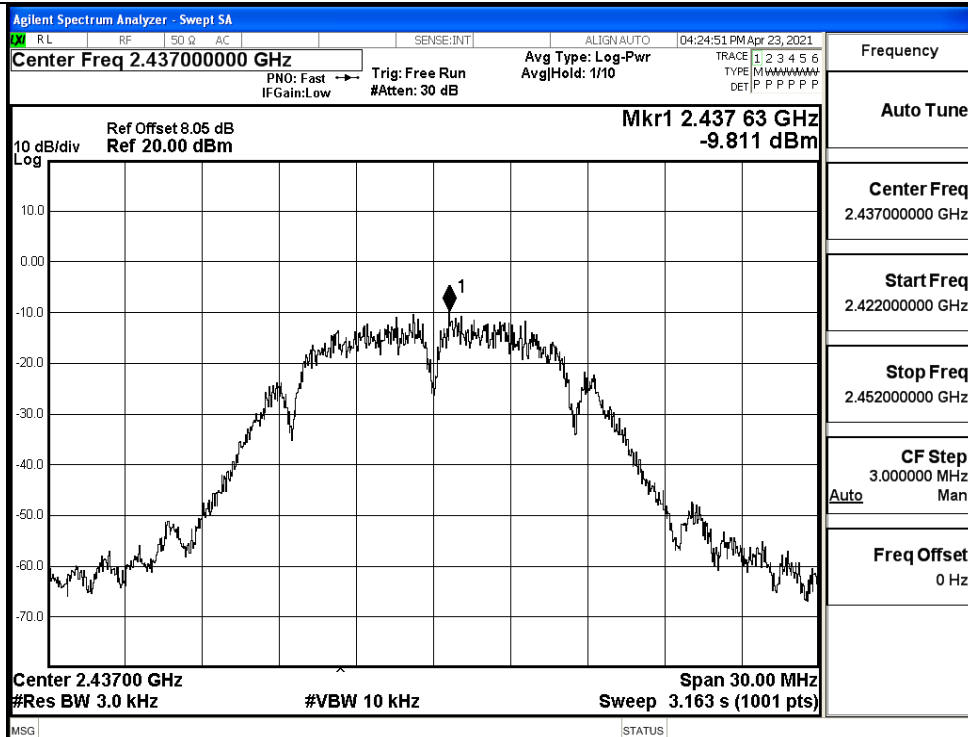
Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	15.76	30	PASS
	MCH	16.32	30	PASS
	HCH	15.44	30	PASS
11G	LCH	17.12	30	PASS
	MCH	19.41	30	PASS
	HCH	18.36	30	PASS
11N20SISO	LCH	16.86	30	PASS
	MCH	16.47	30	PASS
	HCH	15.72	30	PASS
11N40SISO	LCH	16.42	30	PASS
	MCH	16.48	30	PASS
	HCH	16.20	30	PASS

A.3 Maximum Power Spectral Density

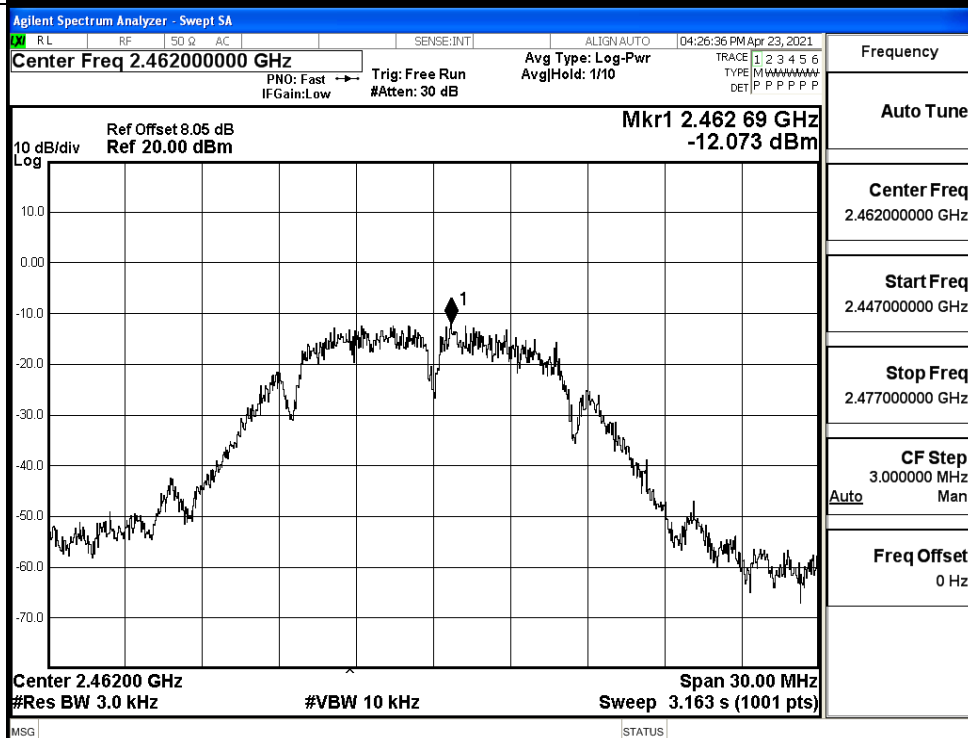
Mode	Channel	Meas.Level [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-10.227	8	PASS
	MCH	-9.811	8	PASS
	HCH	-12.073	8	PASS
11G	LCH	-16.260	8	PASS
	MCH	-13.940	8	PASS
	HCH	-14.948	8	PASS
11N20SISO	LCH	-13.692	8	PASS
	MCH	-13.867	8	PASS
	HCH	-16.713	8	PASS
11N40SISO	LCH	-19.834	8	PASS
	MCH	-19.538	8	PASS
	HCH	-18.301	8	PASS



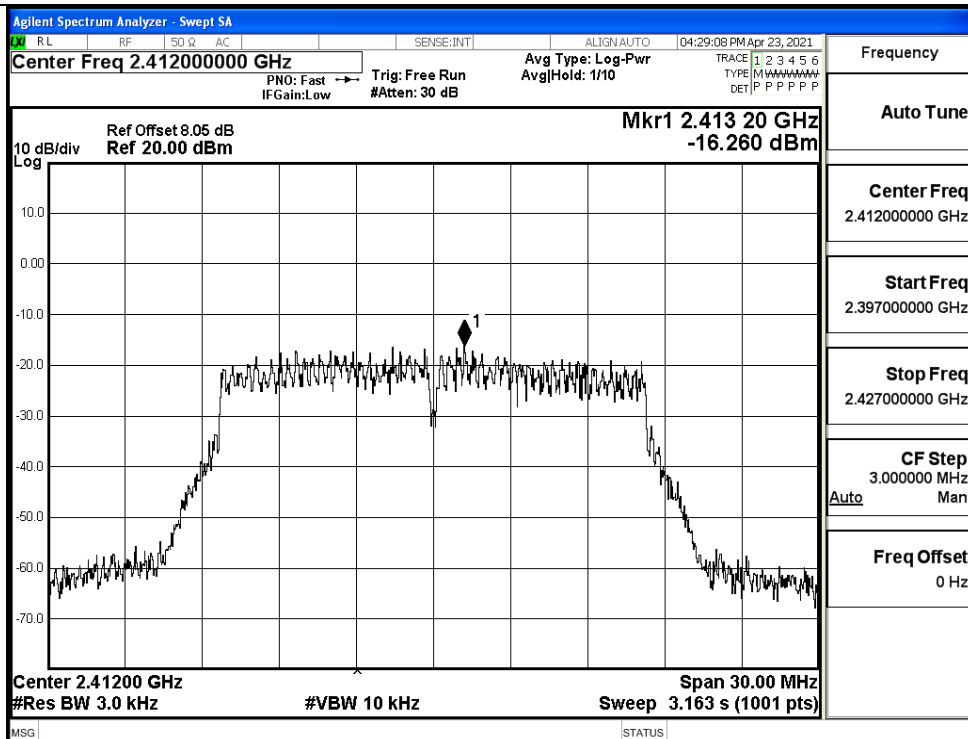
11B/MCH



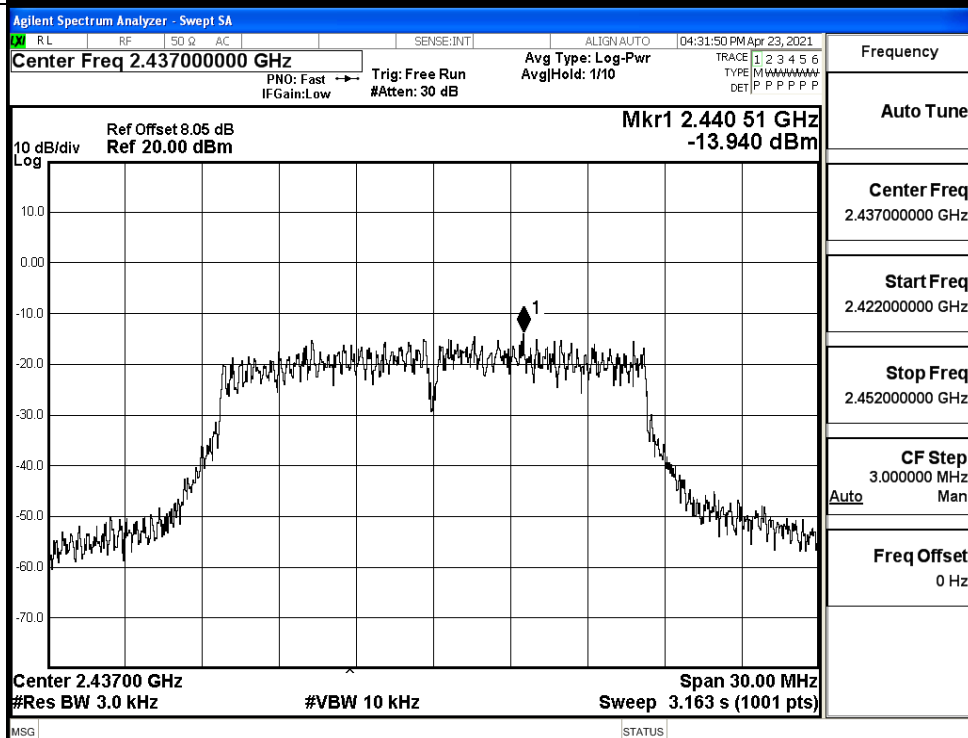
11B/HCH



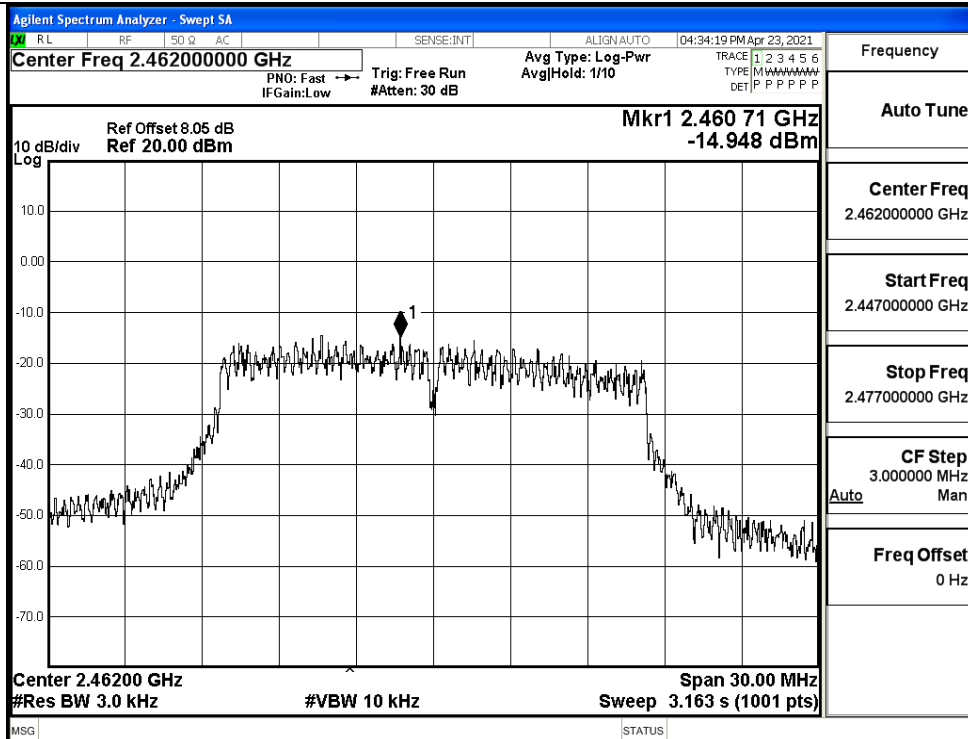
11G/LCH



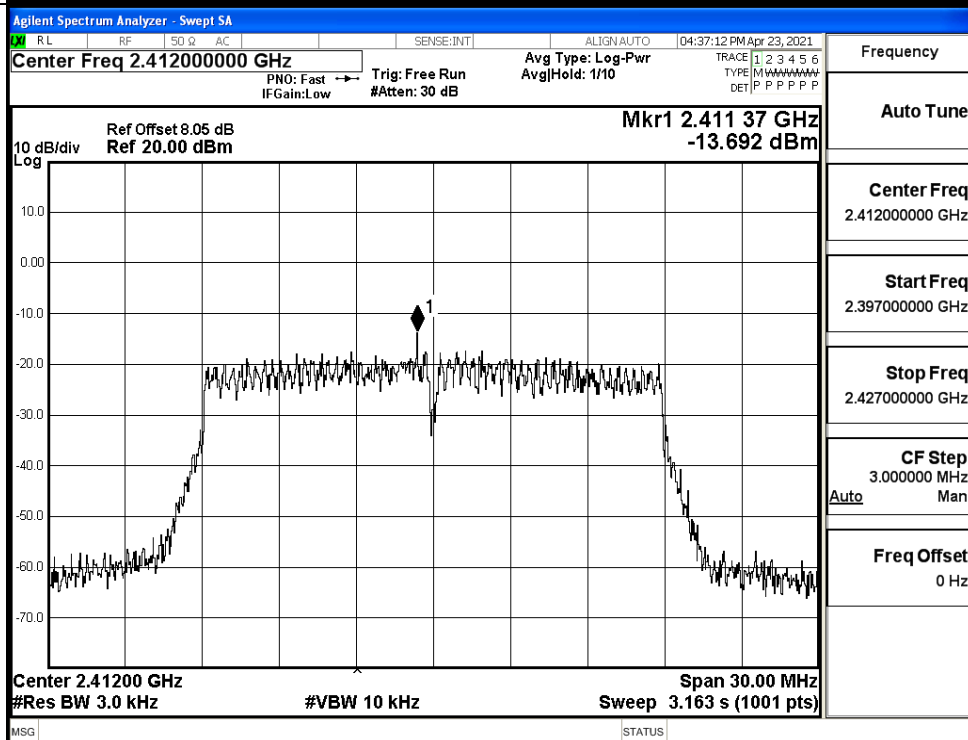
11G/MCH



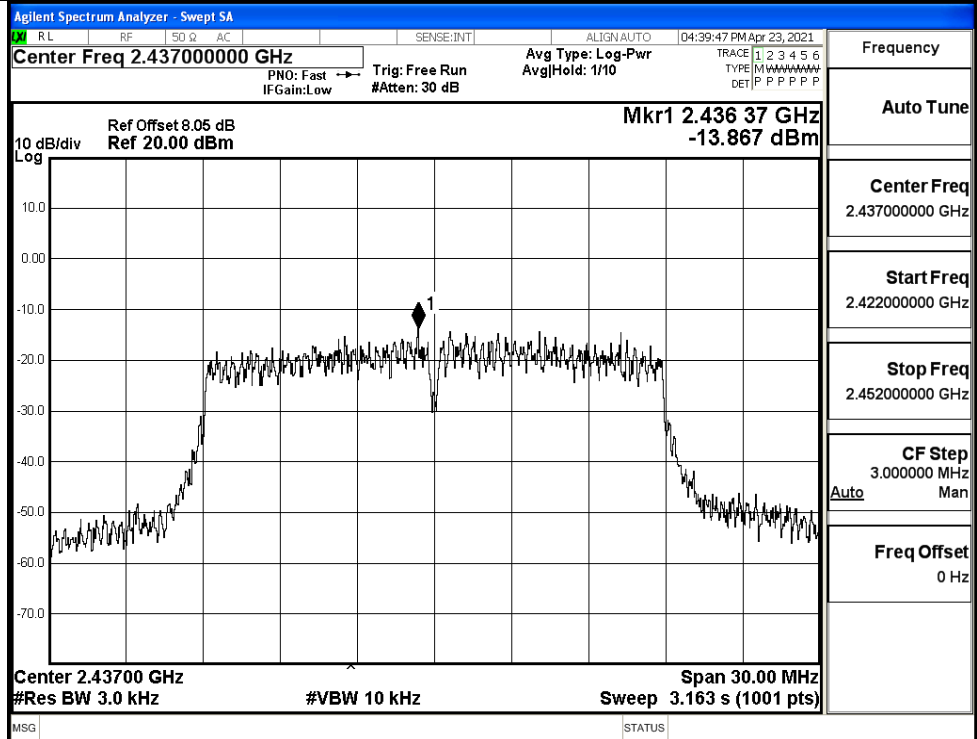
11G/HCH



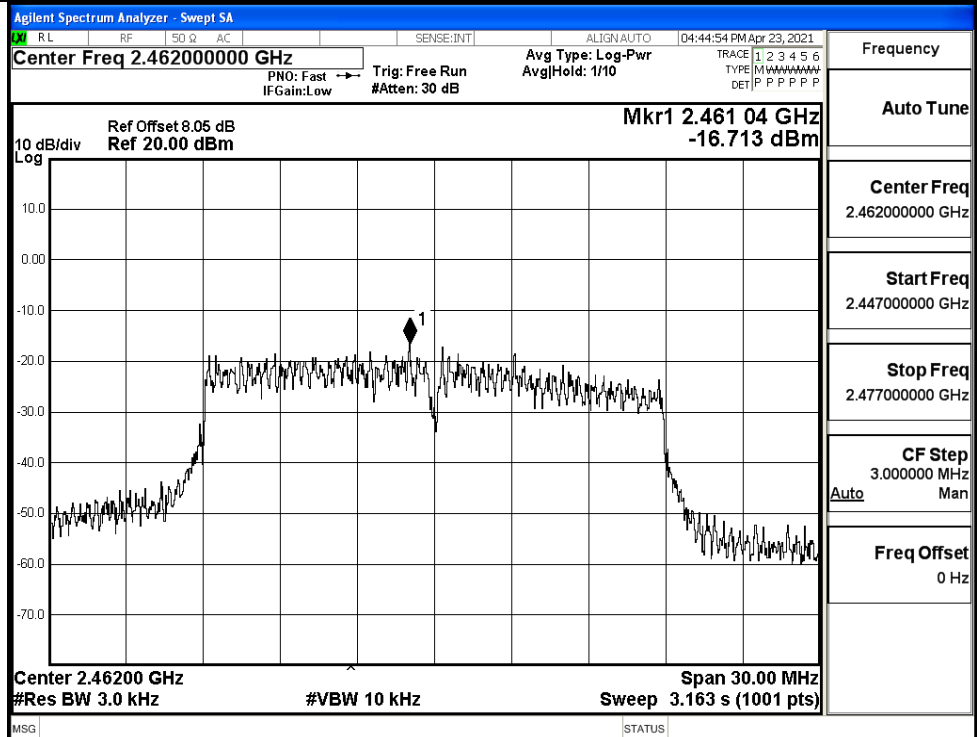
11N20SISO/LCH



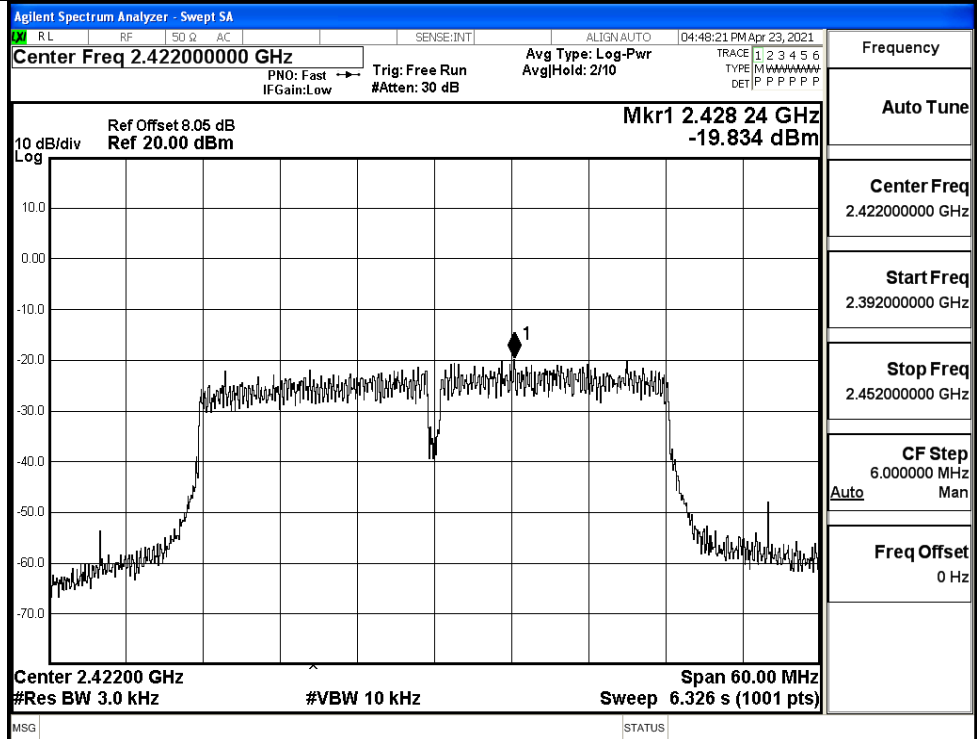
11N20SISO/MCH



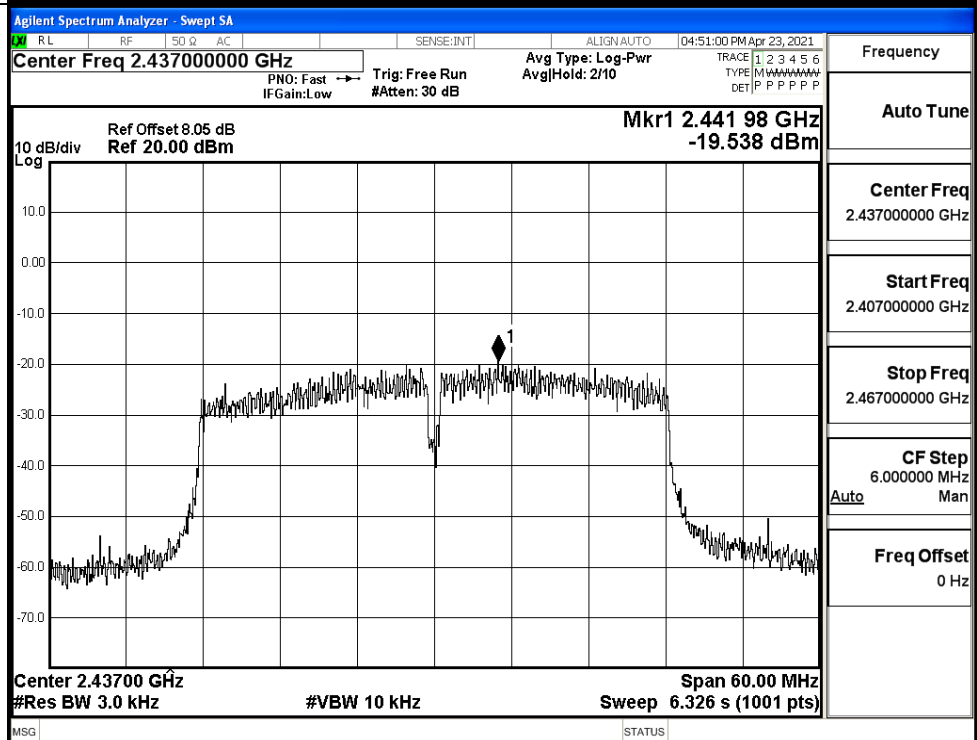
11N20SISO/HCH

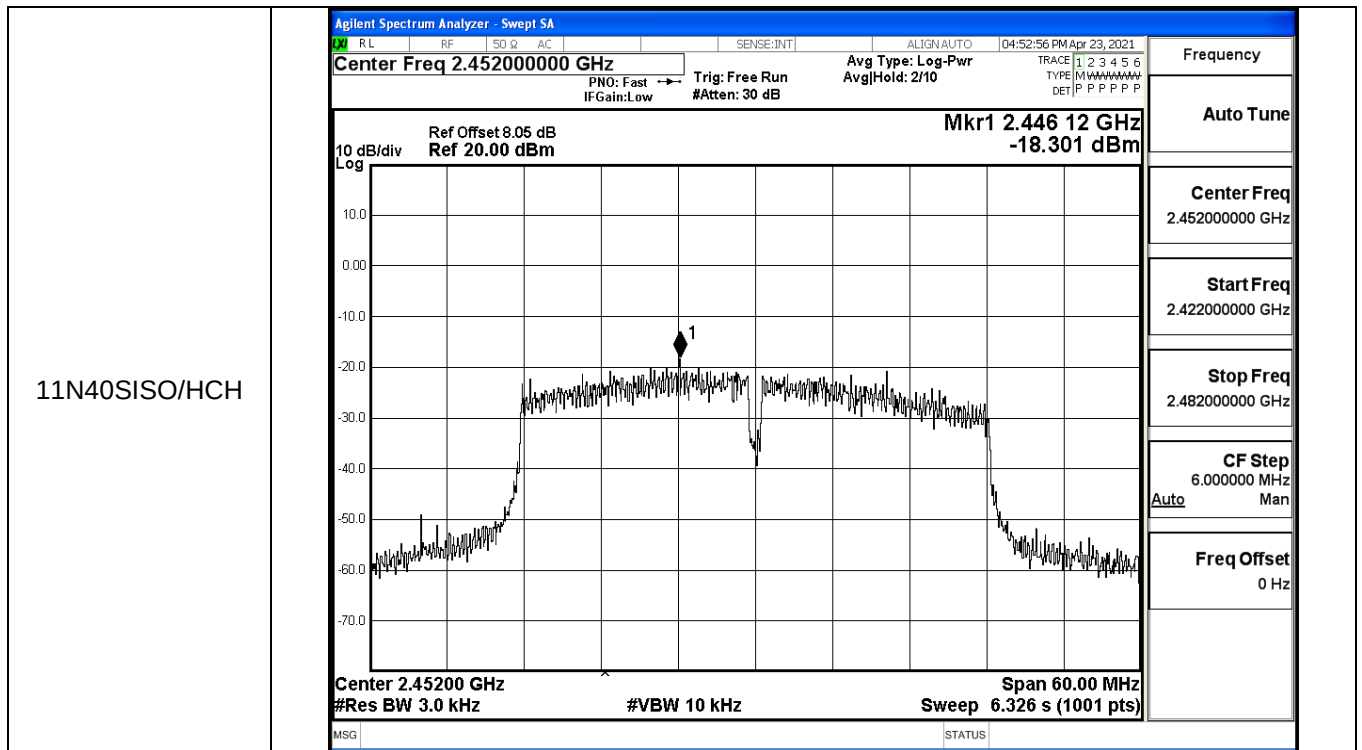


11N40SISO/LCH



11N40SISO/MCH



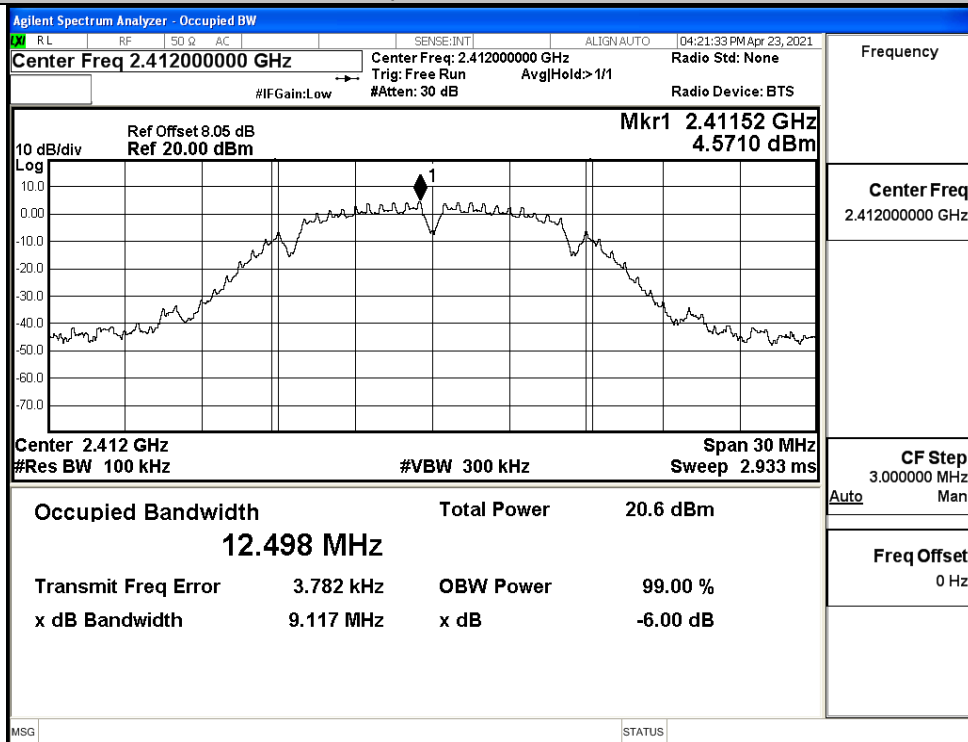


A.4 6dB Bandwidth

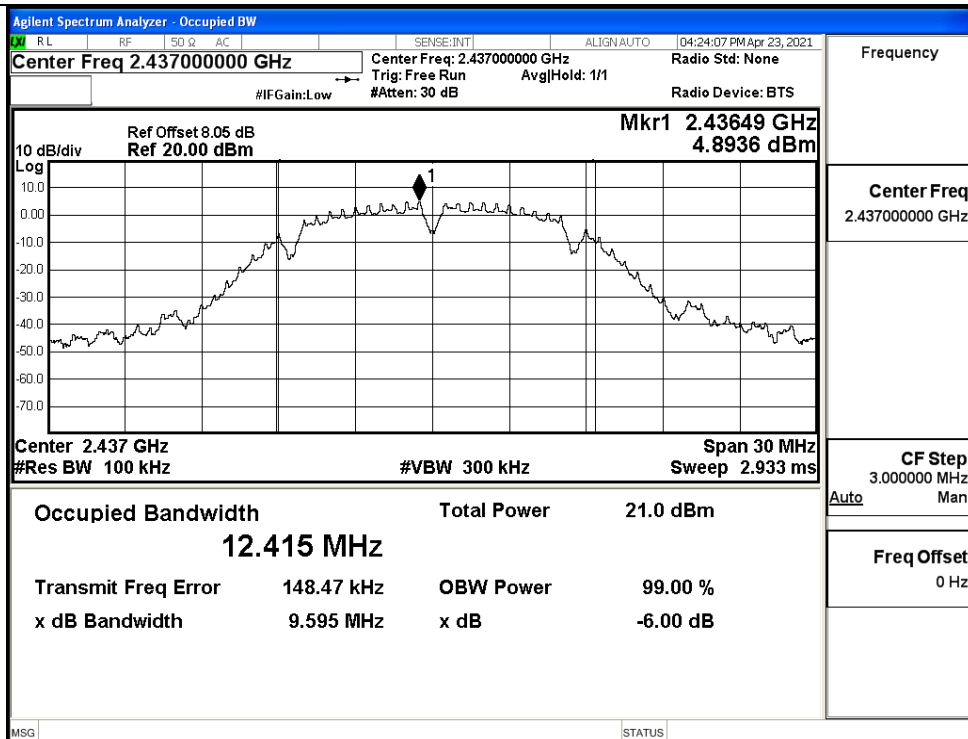
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	9.117	≥ 0.5	PASS
	MCH	9.595	≥ 0.5	PASS
	HCH	9.555	≥ 0.5	PASS
11G	LCH	15.70	≥ 0.5	PASS
	MCH	15.29	≥ 0.5	PASS
	HCH	15.75	≥ 0.5	PASS
11N20SISO	LCH	15.13	≥ 0.5	PASS
	MCH	16.05	≥ 0.5	PASS
	HCH	16.36	≥ 0.5	PASS
11N40SISO	LCH	35.53	≥ 0.5	PASS
	MCH	35.18	≥ 0.5	PASS
	HCH	33.88	≥ 0.5	PASS

Test Graphs

11B/LCH



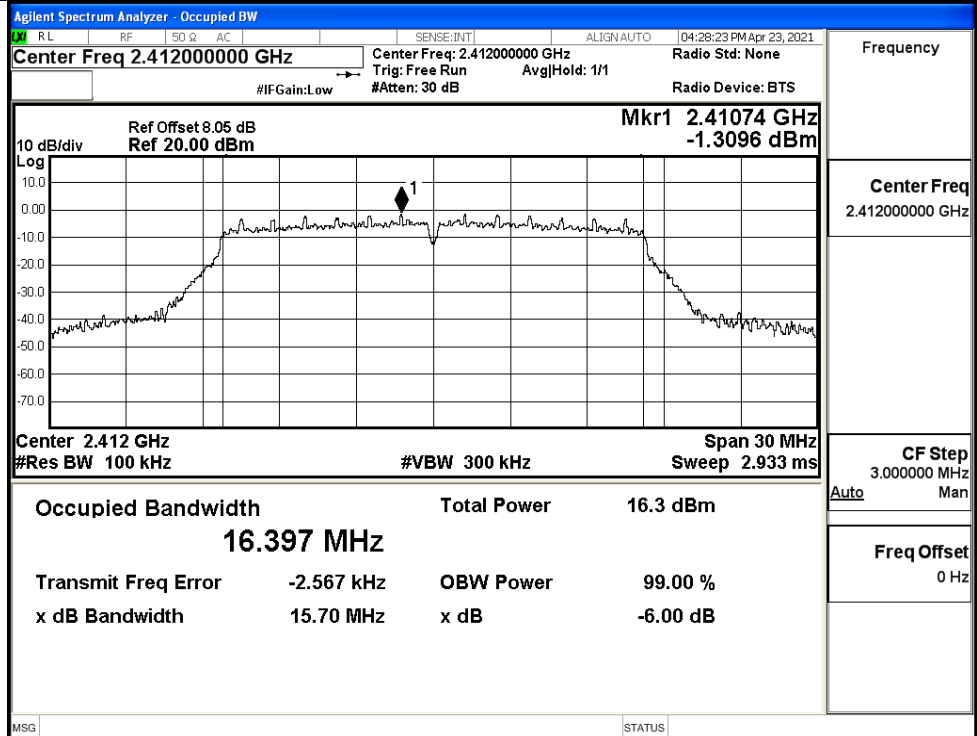
11B/MCH



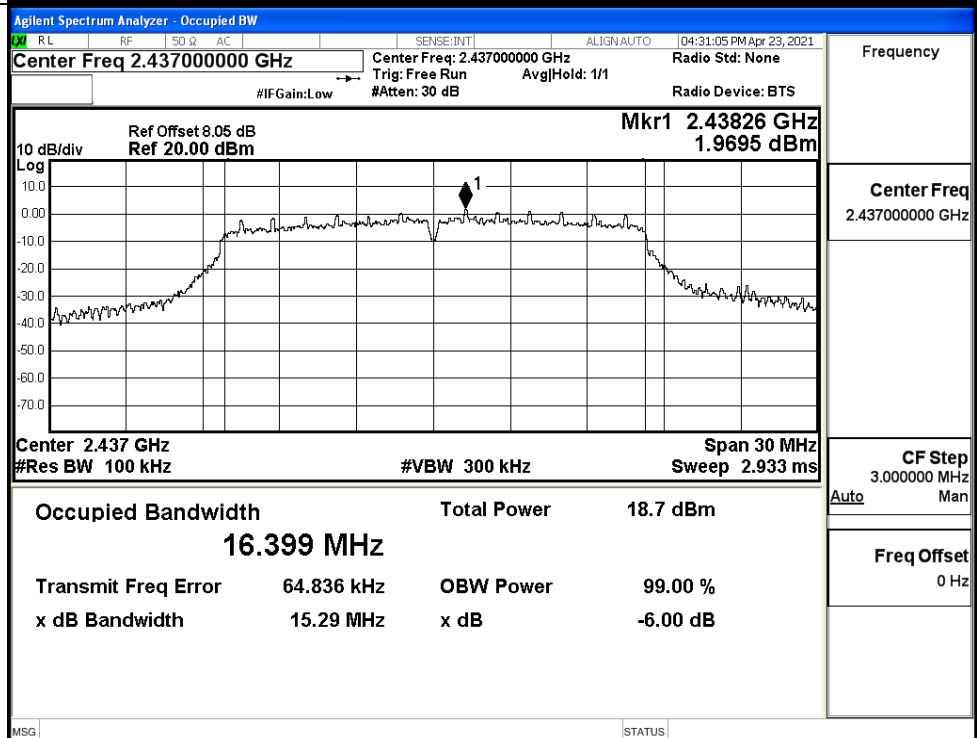
11B/HCH



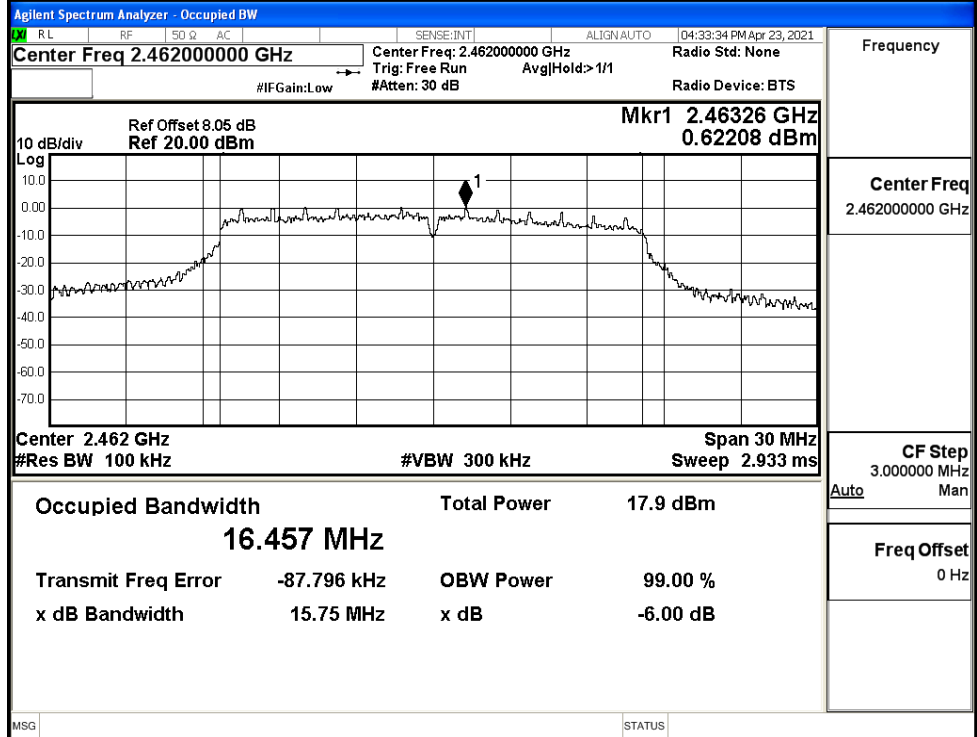
11G/LCH



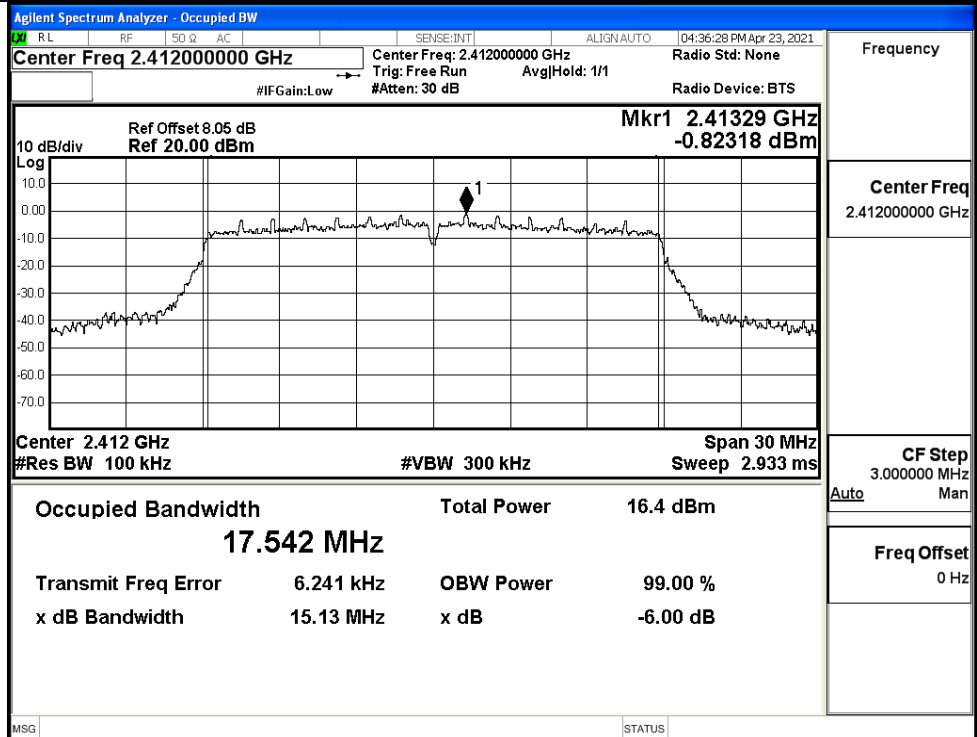
11G/MCH



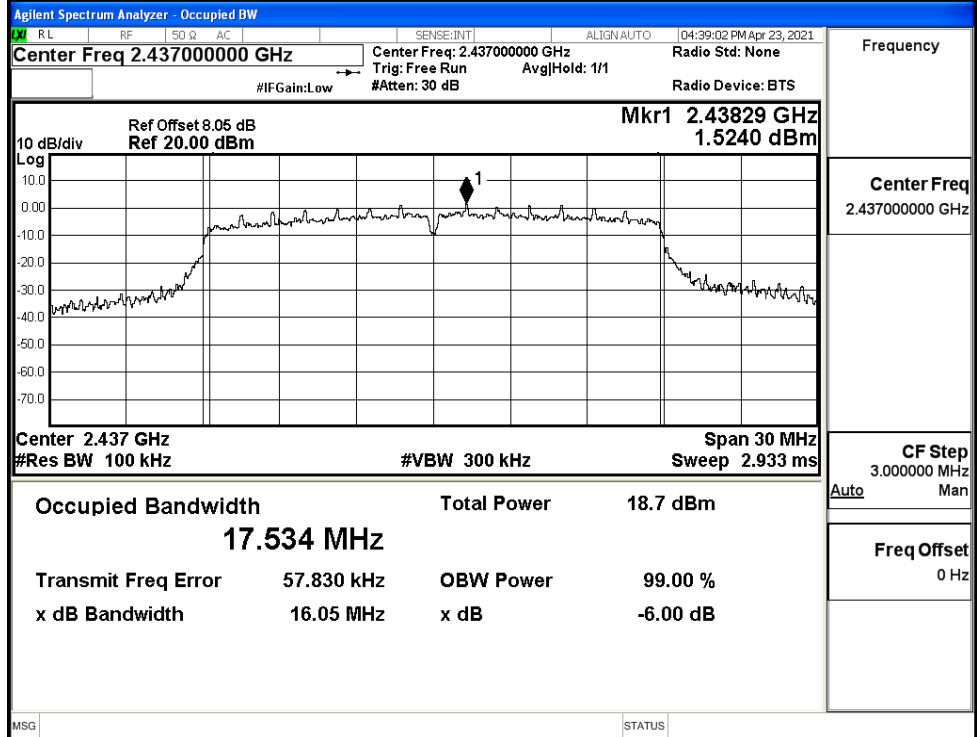
11G/HCH



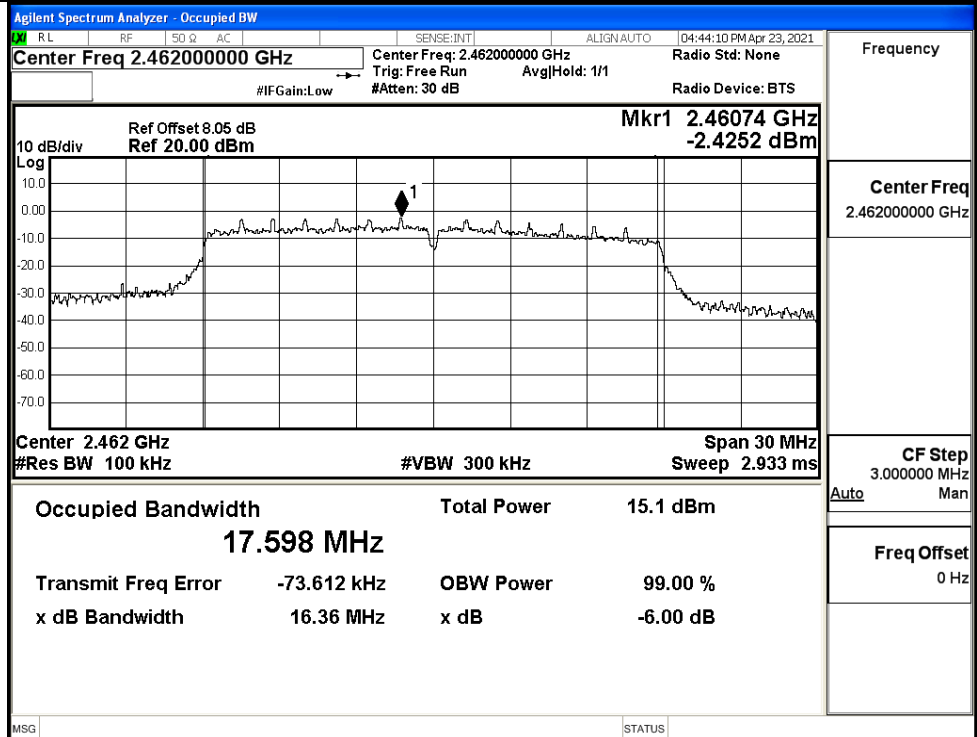
11N20SISO/LCH

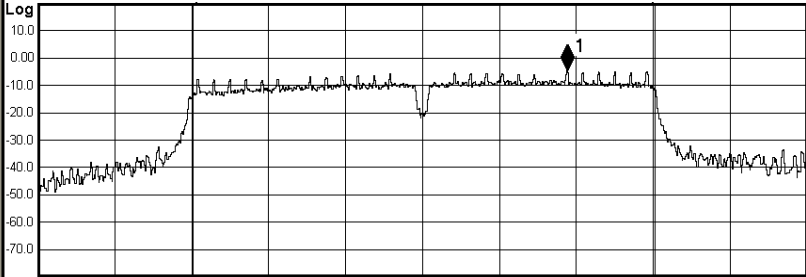
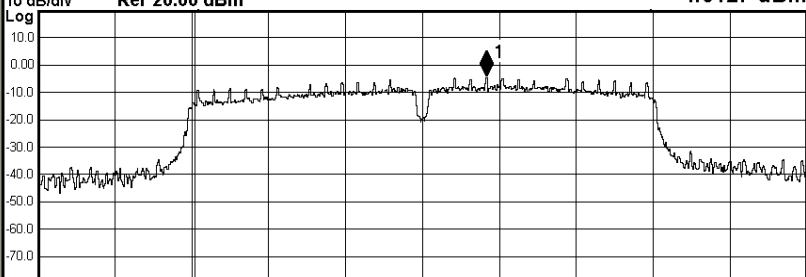


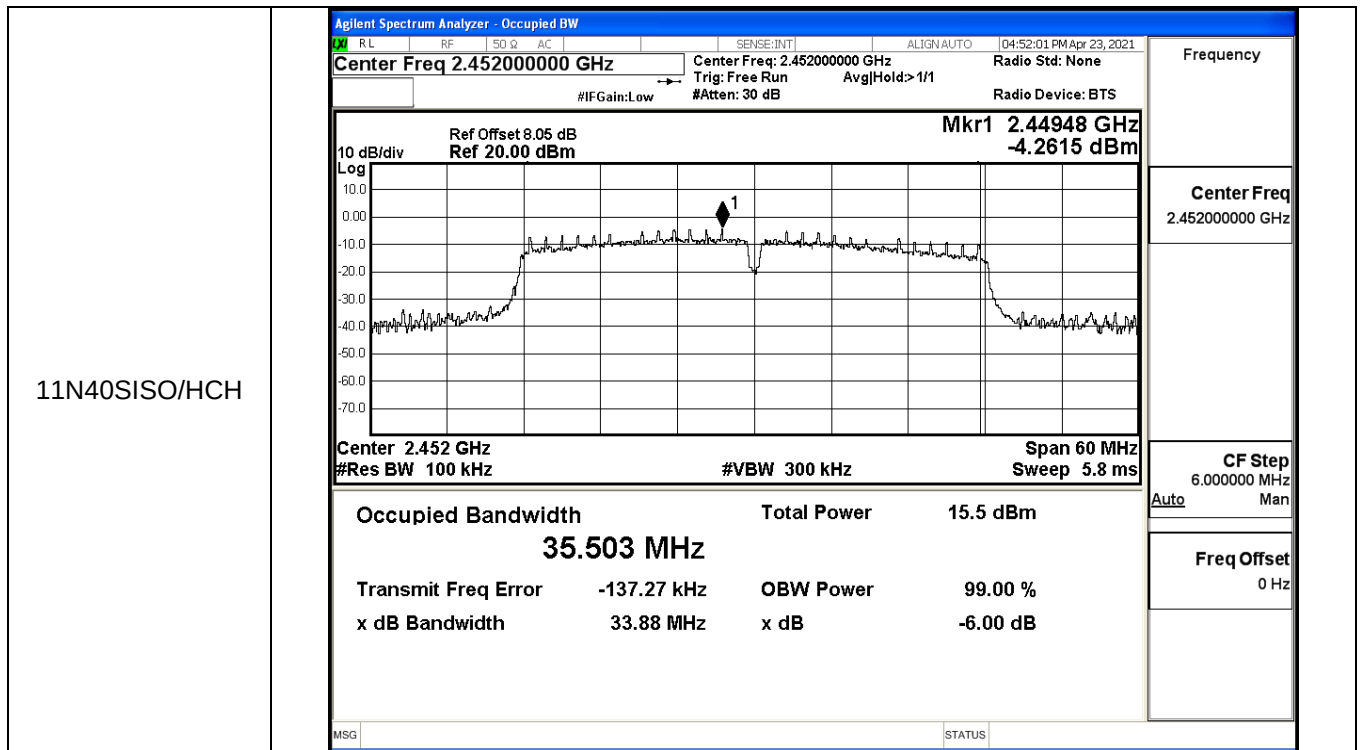
11N20SISO/MCH



11N20SISO/HCH



11N40SISO/LCH	Agilent Spectrum Analyzer - Occupied BW RL RF 50 Ω AC SENSE:INT ALIGN AUTO 04:47:25 PM Apr 23, 2021 Center Freq 2.422000000 GHz Center Freq: 2.422000000 GHz Trig: Free Run Avg/Hold: 1/1 Radio Std: None Radio Device: BTS #IF Gain: Low #Atten: 30 dB Ref Offset 8.05 dB Ref 20.00 dBm Mkr1 2.43328 GHz -4.8182 dBm  Center 2.422 GHz #Res BW 100 kHz #VBW 300 kHz Span 60 MHz Sweep 5.8 ms Occupied Bandwidth 35.917 MHz Total Power 15.7 dBm Transmit Freq Error 123.52 kHz OBW Power 99.00 % x dB Bandwidth 35.53 MHz x dB -6.00 dB MSG STATUS	Frequency Center Freq 2.422000000 GHz CF Step 6.000000 MHz Auto Man Freq Offset 0 Hz
11N40SISO/MCH	Agilent Spectrum Analyzer - Occupied BW RL RF 50 Ω AC SENSE:INT ALIGN AUTO 04:50:06 PM Apr 23, 2021 Center Freq 2.437000000 GHz Center Freq: 2.437000000 GHz Trig: Free Run Avg/Hold: 1/1 Radio Std: None Radio Device: BTS #IF Gain: Low #Atten: 30 dB Ref Offset 8.05 dB Ref 20.00 dBm Mkr1 2.44198 GHz -4.5127 dBm  Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 60 MHz Sweep 5.8 ms Occupied Bandwidth 35.643 MHz Total Power 15.8 dBm Transmit Freq Error 121.19 kHz OBW Power 99.00 % x dB Bandwidth 35.18 MHz x dB -6.00 dB MSG STATUS	Frequency Center Freq 2.437000000 GHz CF Step 6.000000 MHz Auto Man Freq Offset 0 Hz

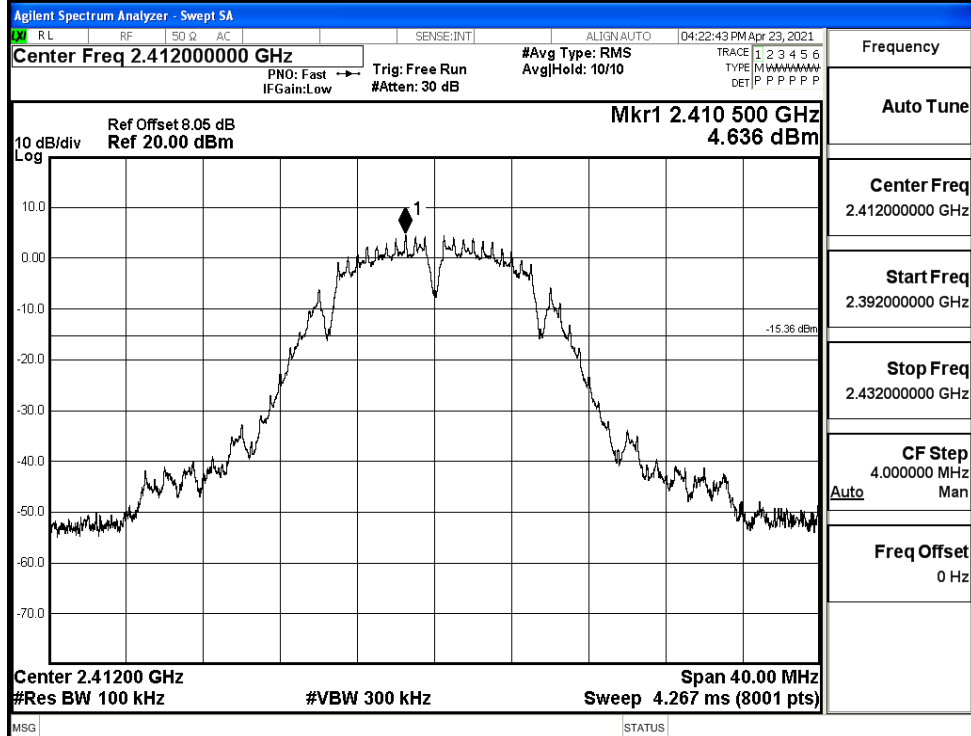


A.5 RF Conducted Spurious Emissions

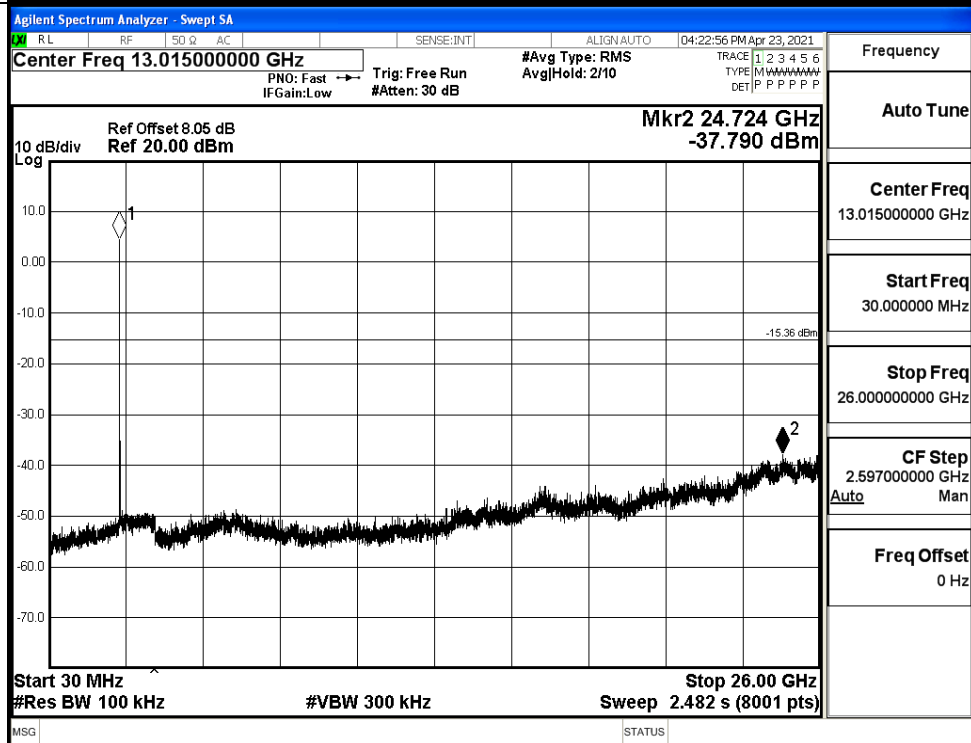
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	4.636	-37.790	-15.364	PASS
	MCH	4.723	-38.320	-15.277	PASS
	HCH	4.214	-37.244	-15.786	PASS
11G	LCH	-0.895	-37.684	-20.895	PASS
	MCH	1.636	-37.390	-18.364	PASS
	HCH	0.484	-38.414	-19.516	PASS
11N20 SISO	LCH	-1.05	-37.500	-21.050	PASS
	MCH	1.763	-38.302	-18.237	PASS
	HCH	-2.541	-38.074	-22.541	PASS
11N40 SISO	LCH	-4.813	-37.857	-24.813	PASS
	MCH	-4.873	-38.529	-24.873	PASS
	HCH	-4.685	-38.357	-24.685	PASS

11B LCH Graphs

Pref/11B/LCH

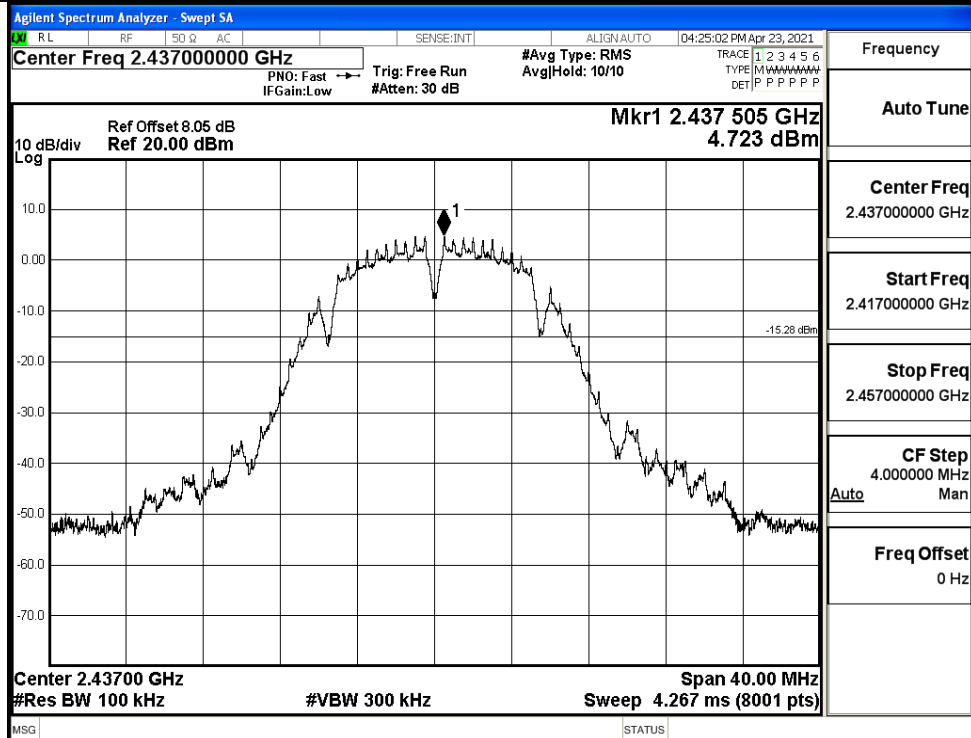


Puw/11B/LCH

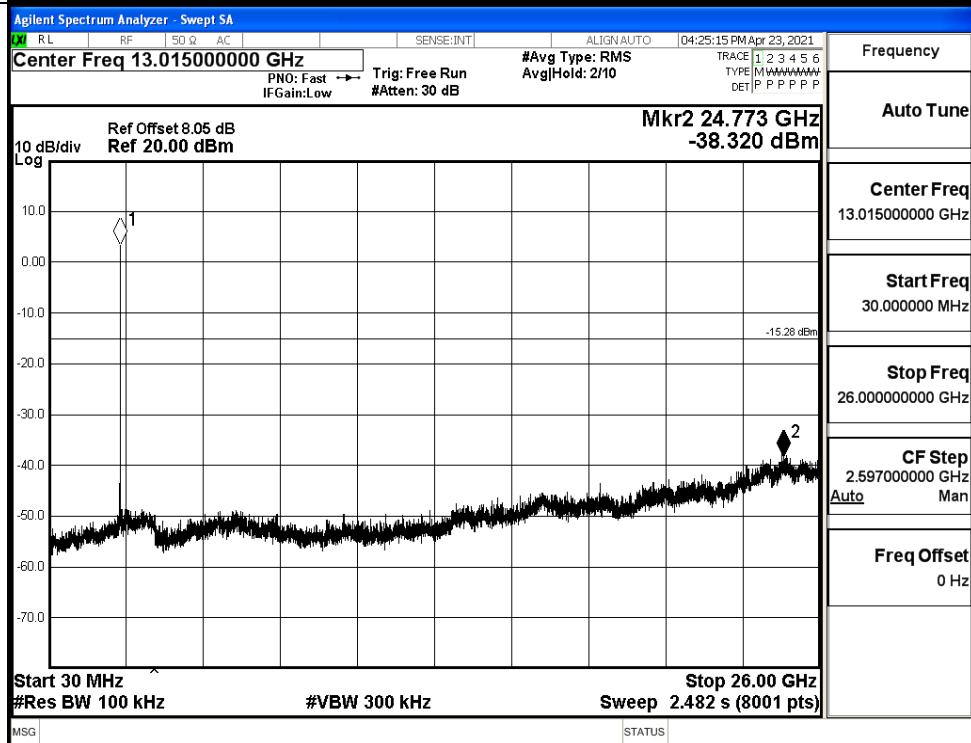


11B MCH Graphs

Pref/11B/MCH

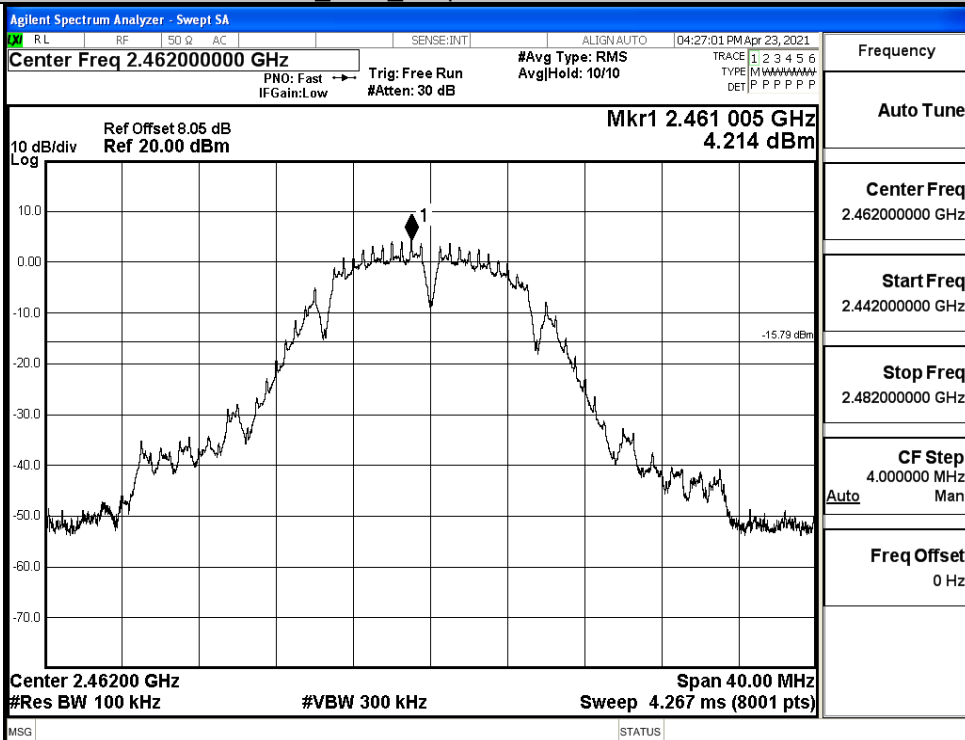


Puw/11B/MCH

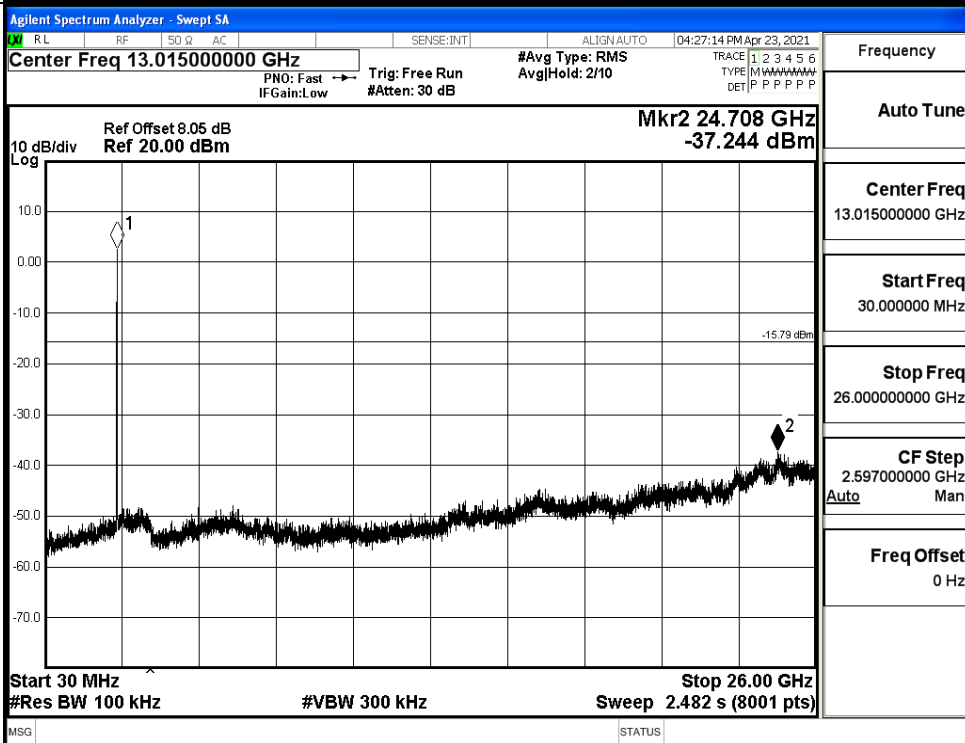


11B HCH Graphs

Pref/11B/HCH

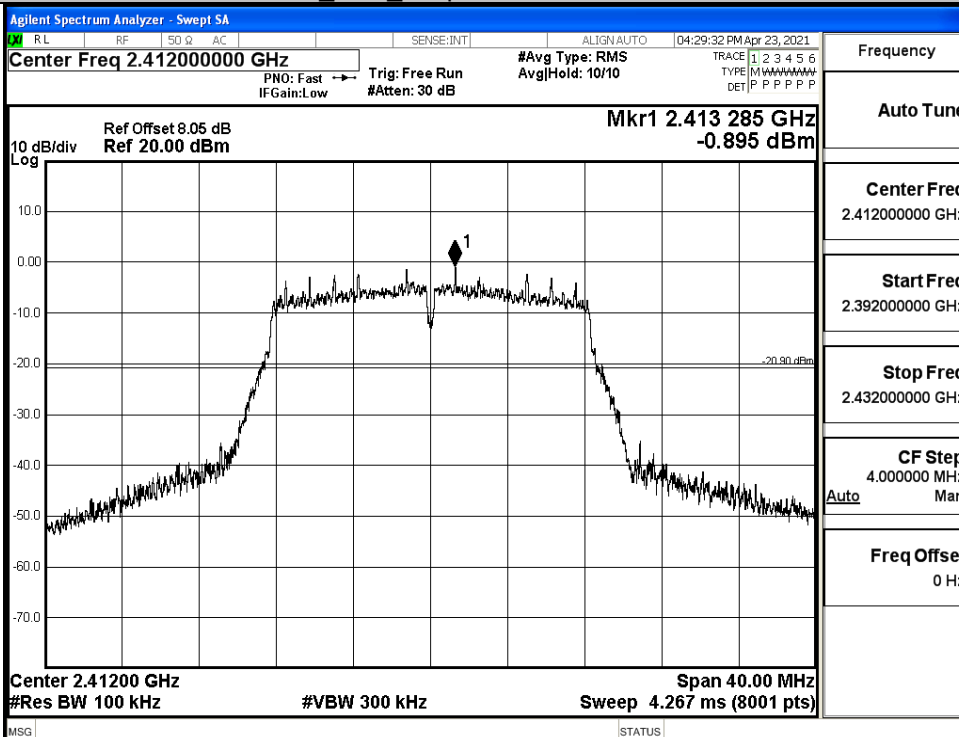


Puw/11B/HCH

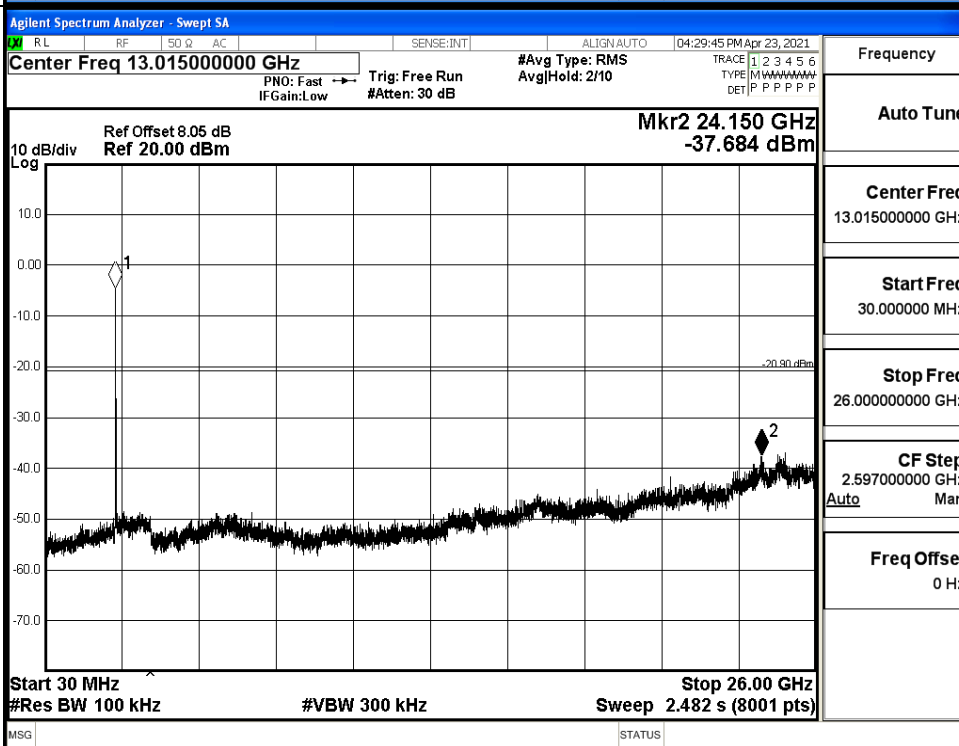


11G LCH Graphs

Pref/11G/LCH

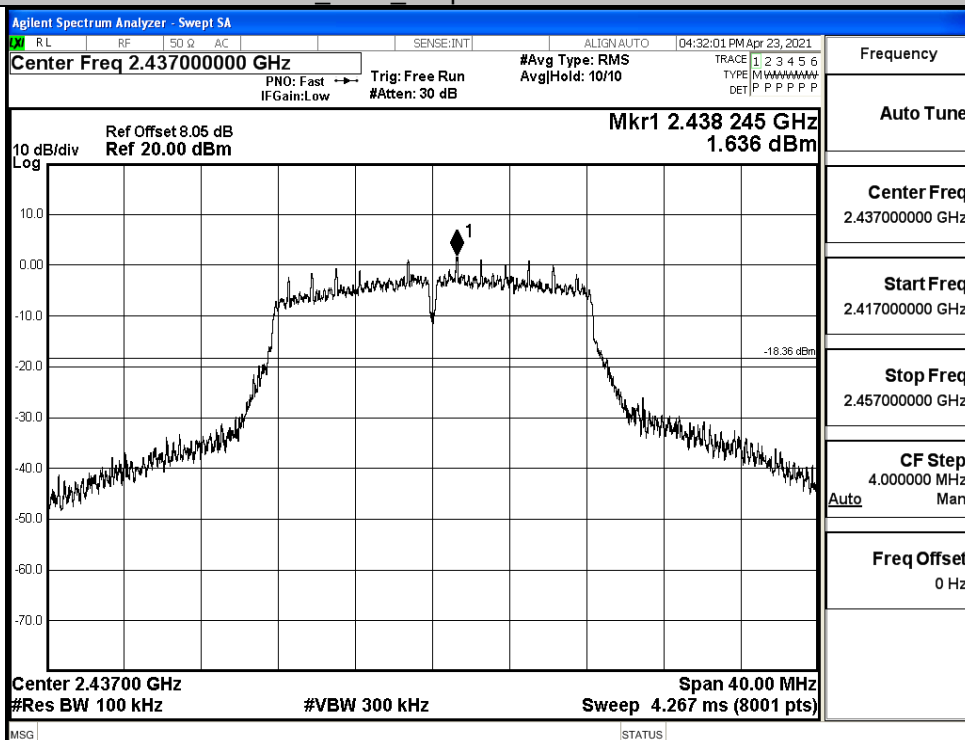


Puw/11G/LCH

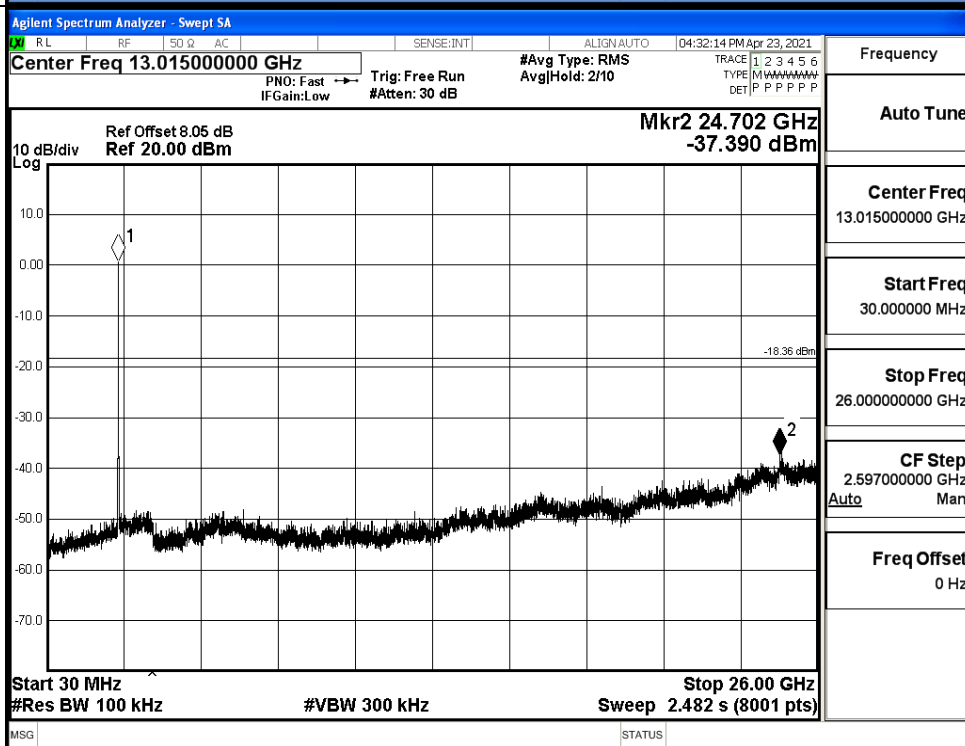


11G MCH Graphs

Pref/11G/MCH

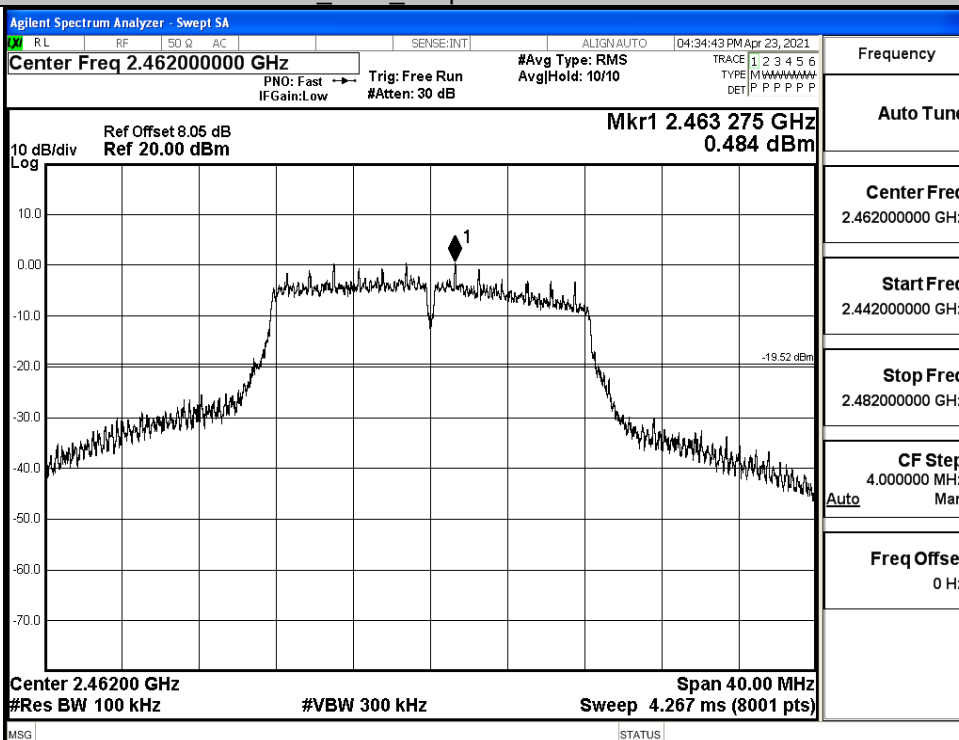


Puw/11G/MCH

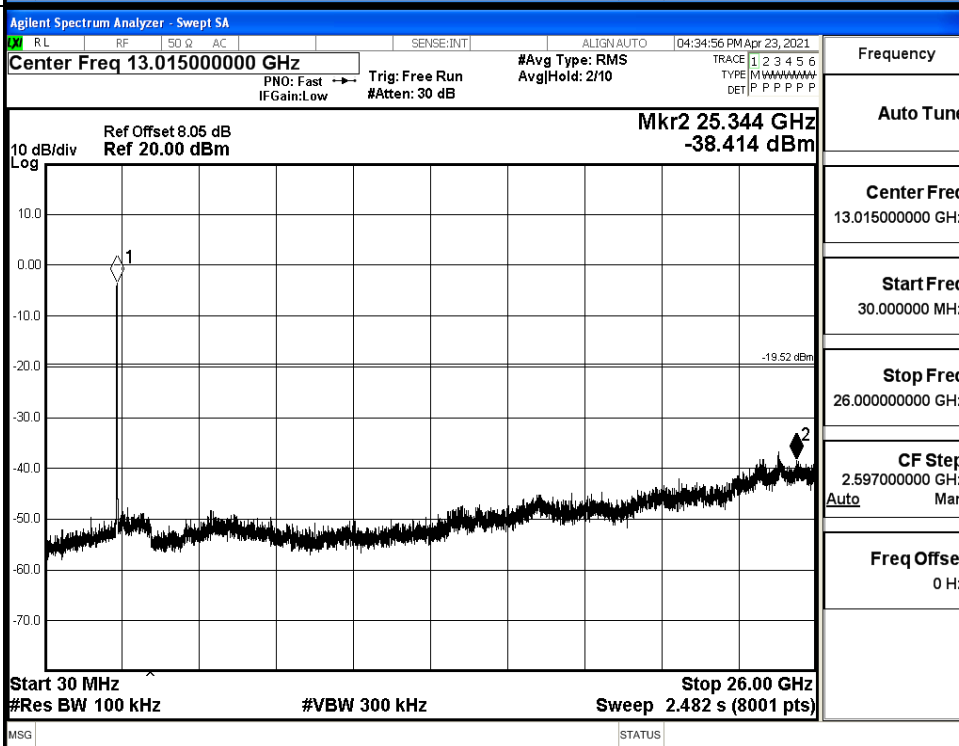


11G HCH Graphs

Pref/11G/HCH

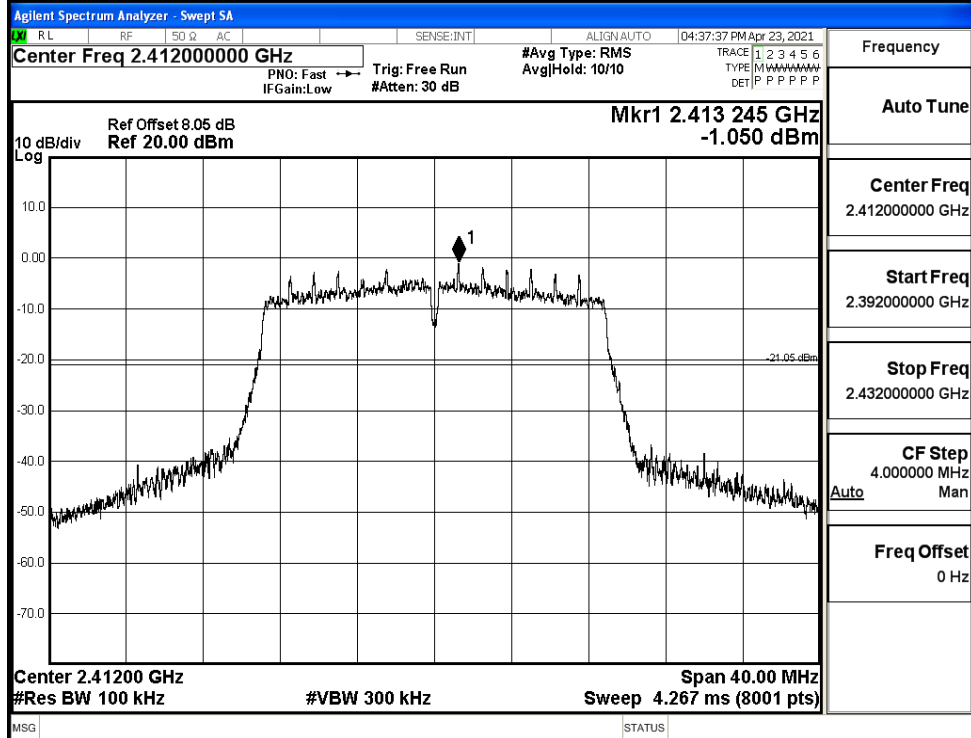


Puw/11G/HCH

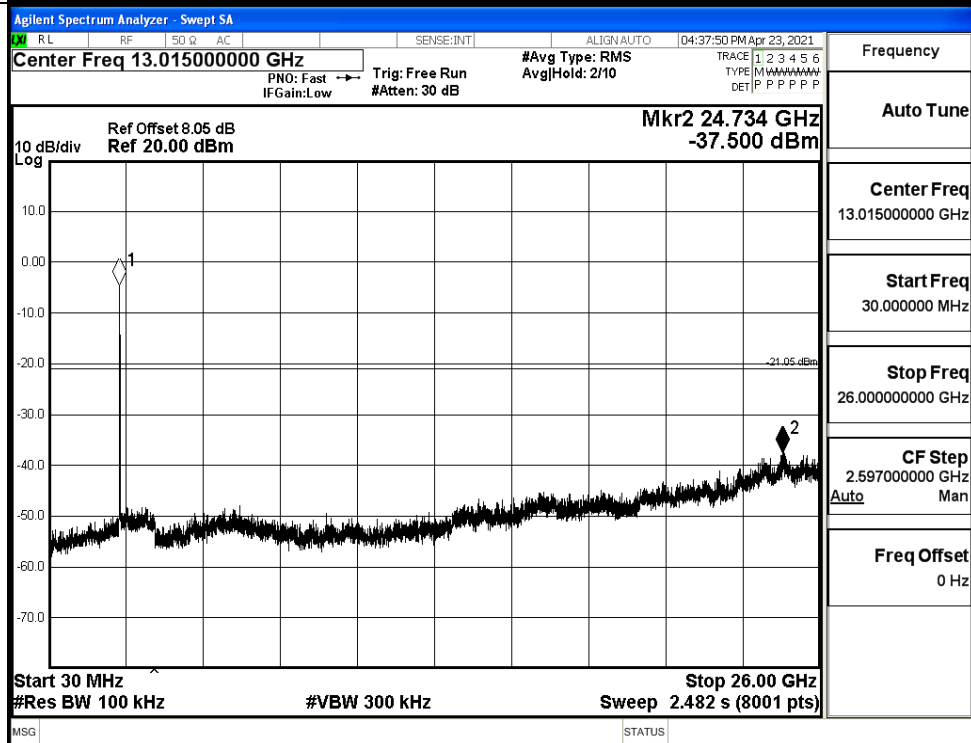


11N20SISO LCH Graphs

Pref/11N20SIS
O/LCH

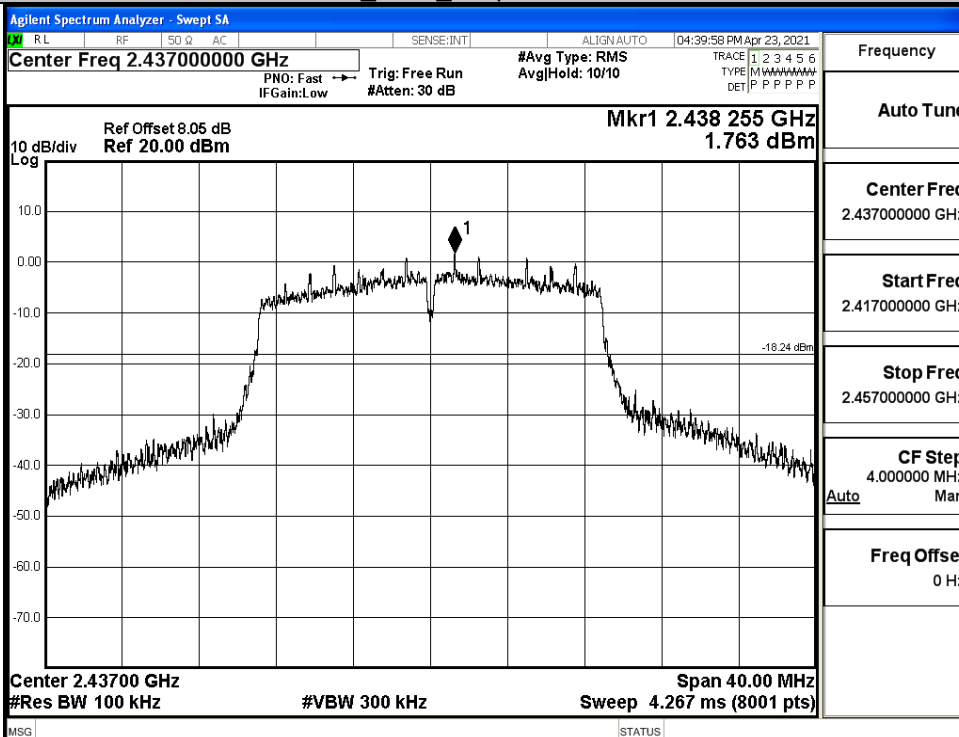


Puw/11N20
SISO/LCH

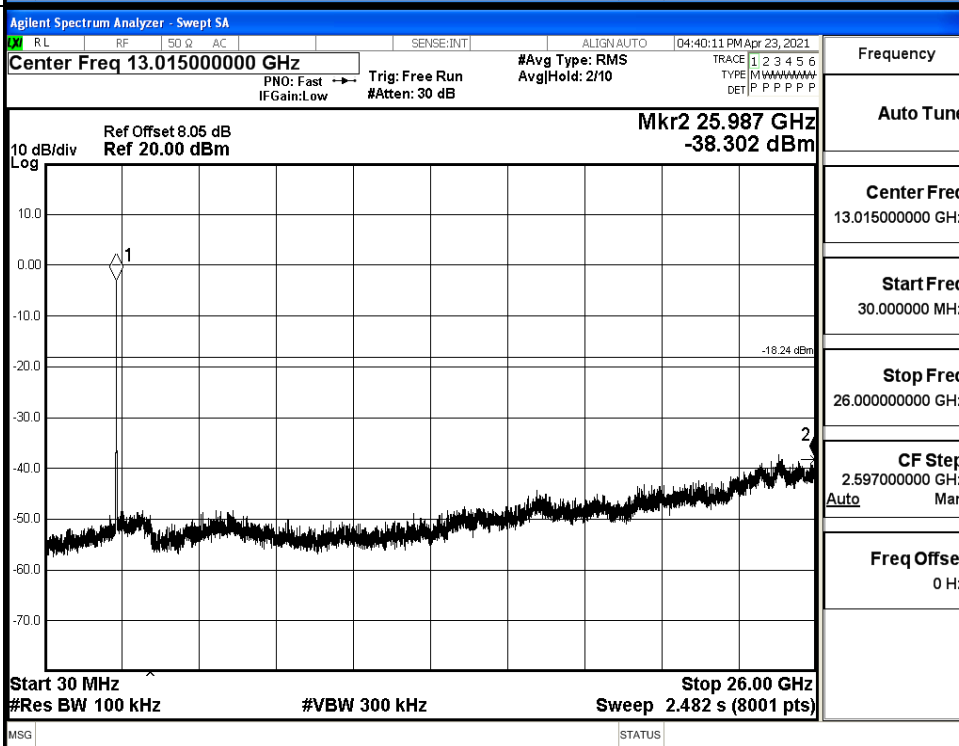


11N20SISO_MCH_Graphs

Pref/11N20
SISO/MCH

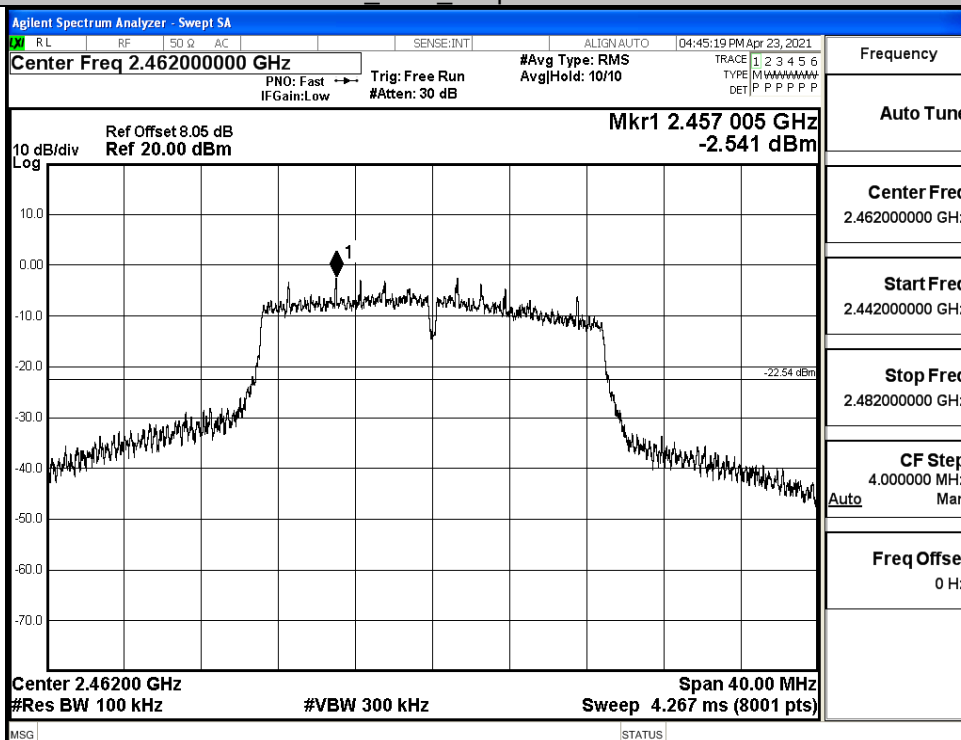


Puw/11N20
SISO/MCH

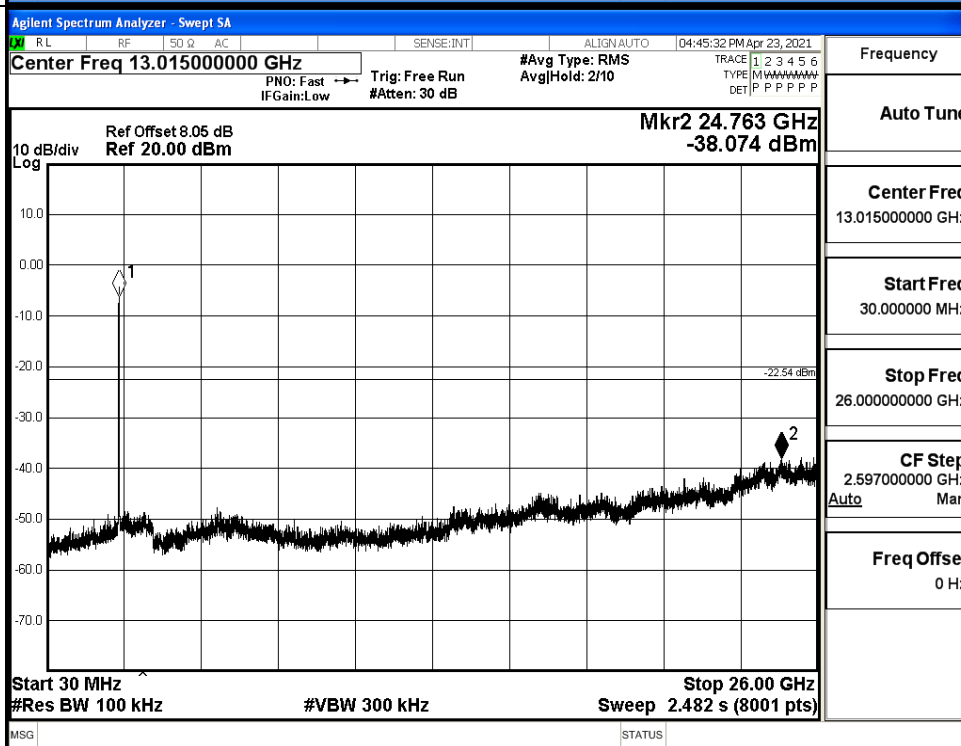


11N20SISO HCH Graphs

Pref/11N20
SISO/HCH

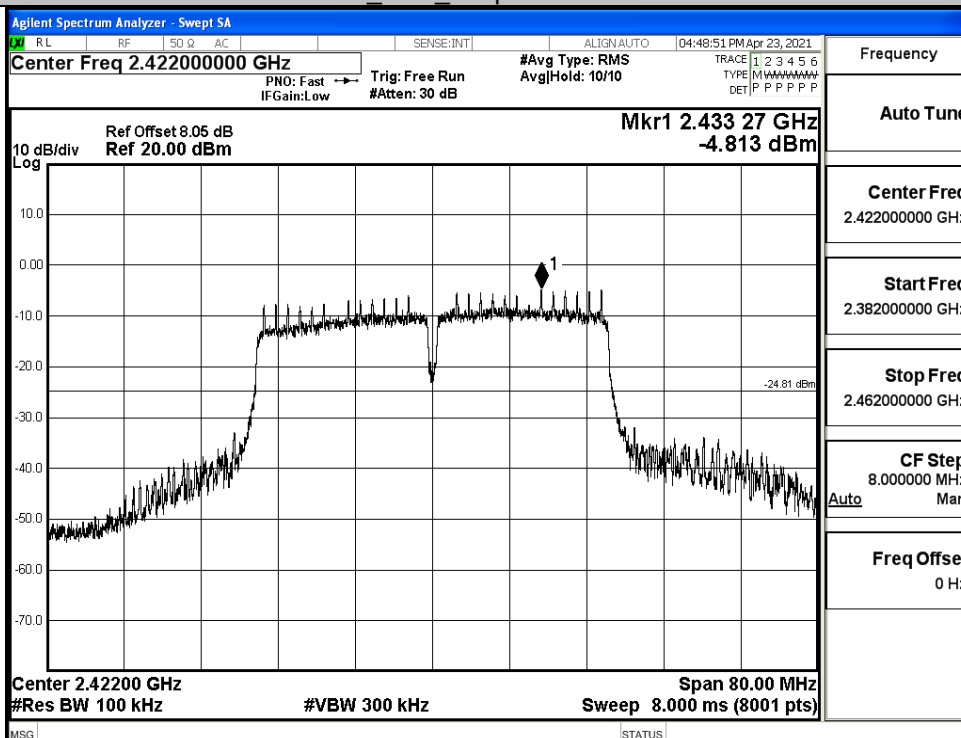


Puw/11N20
SISO/HCH

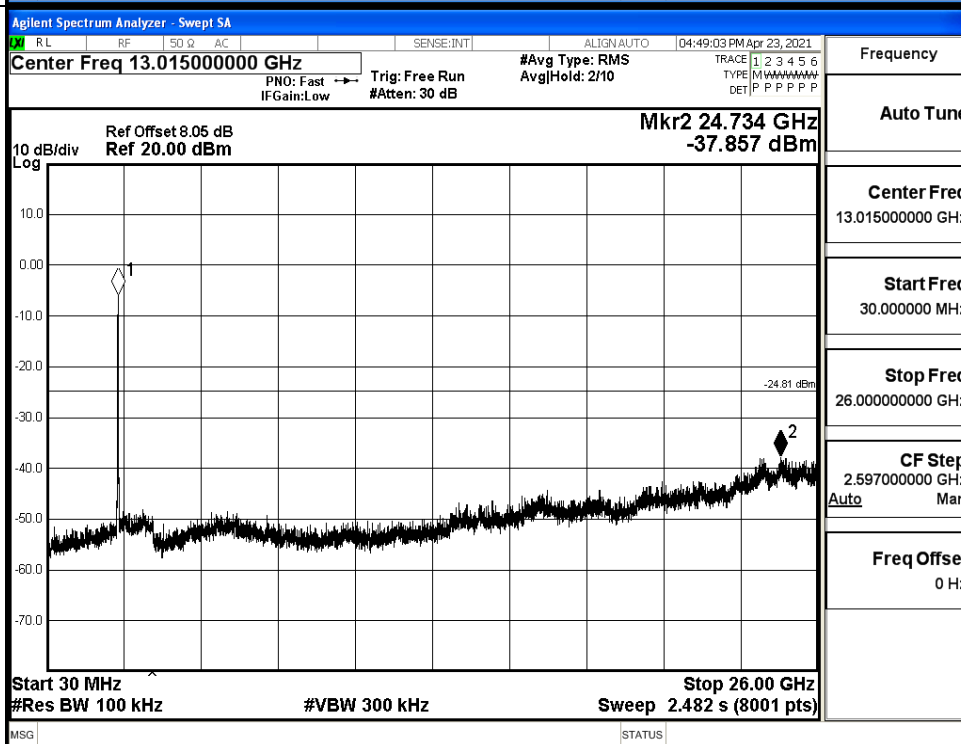


11N40SISO LCH Graphs

Pref/11N40
SISO/LCH

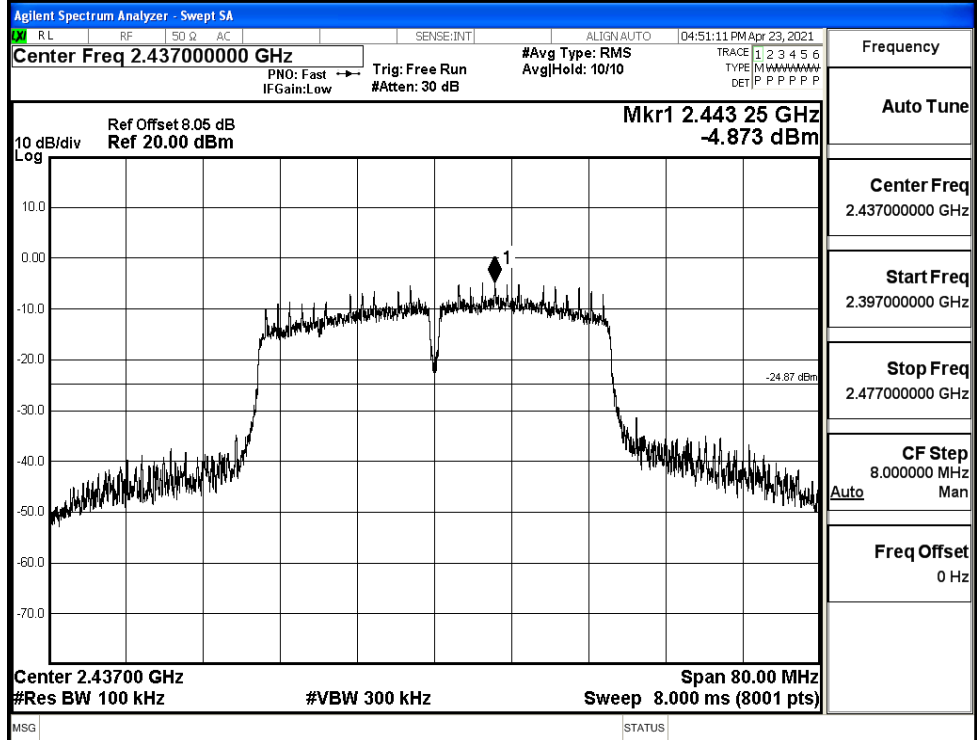


Puw/11N40
SISO/LCH

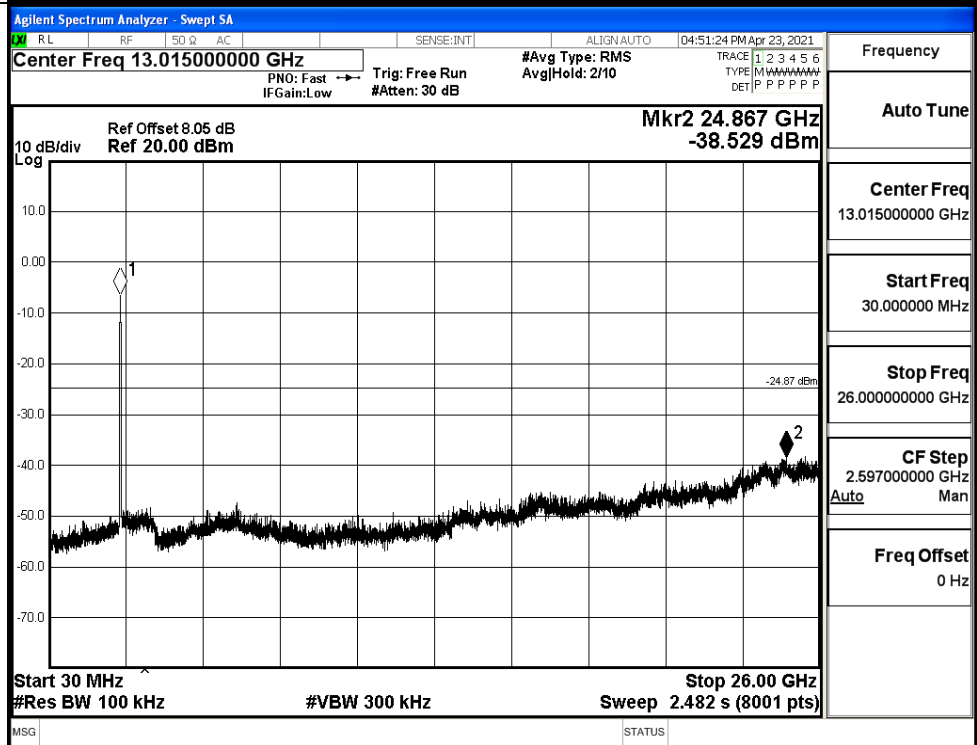


11N40SISO_MCH_Graphs

Pref/11N40
SISO/MCH

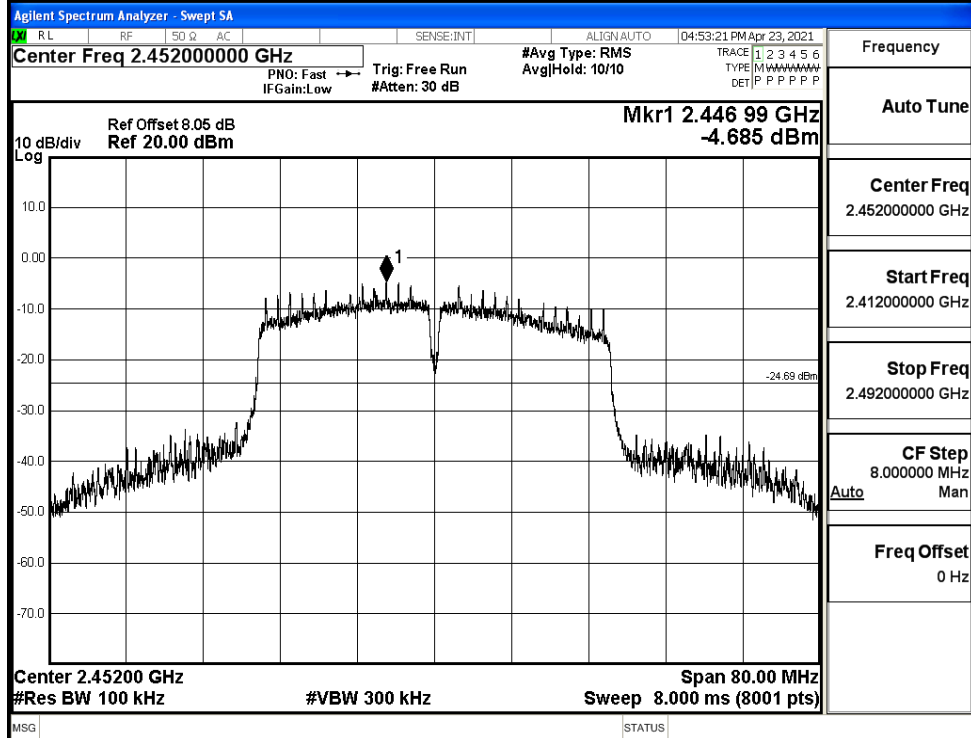


Puw/11N40
SISO/MCH

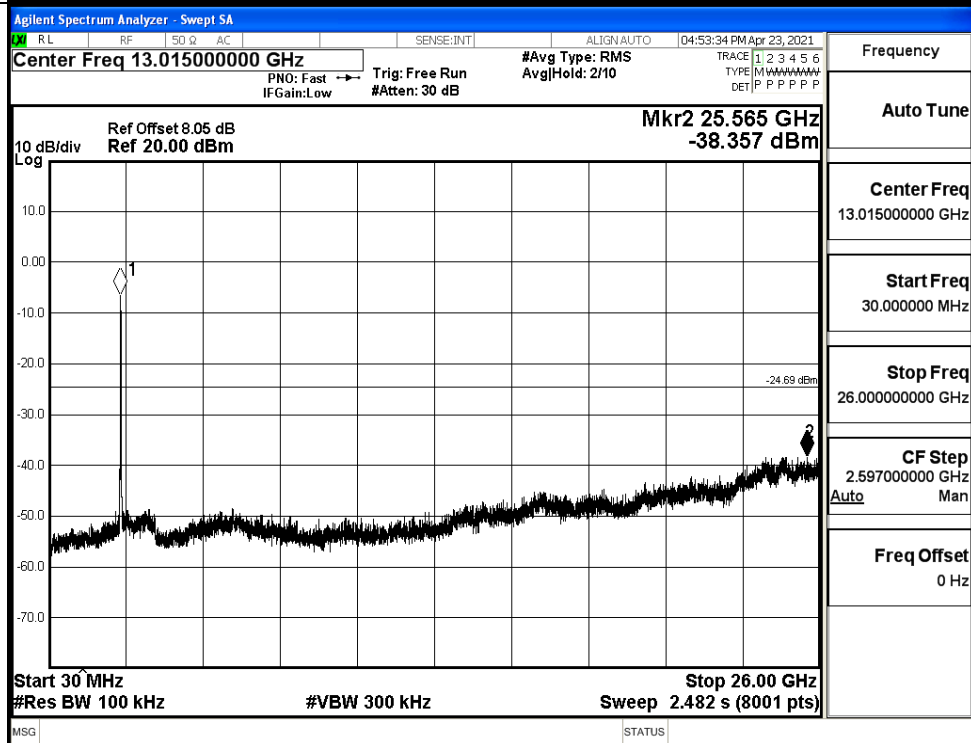


11N40SISO HCH Graphs

Pref/11N40
SISO/HCH



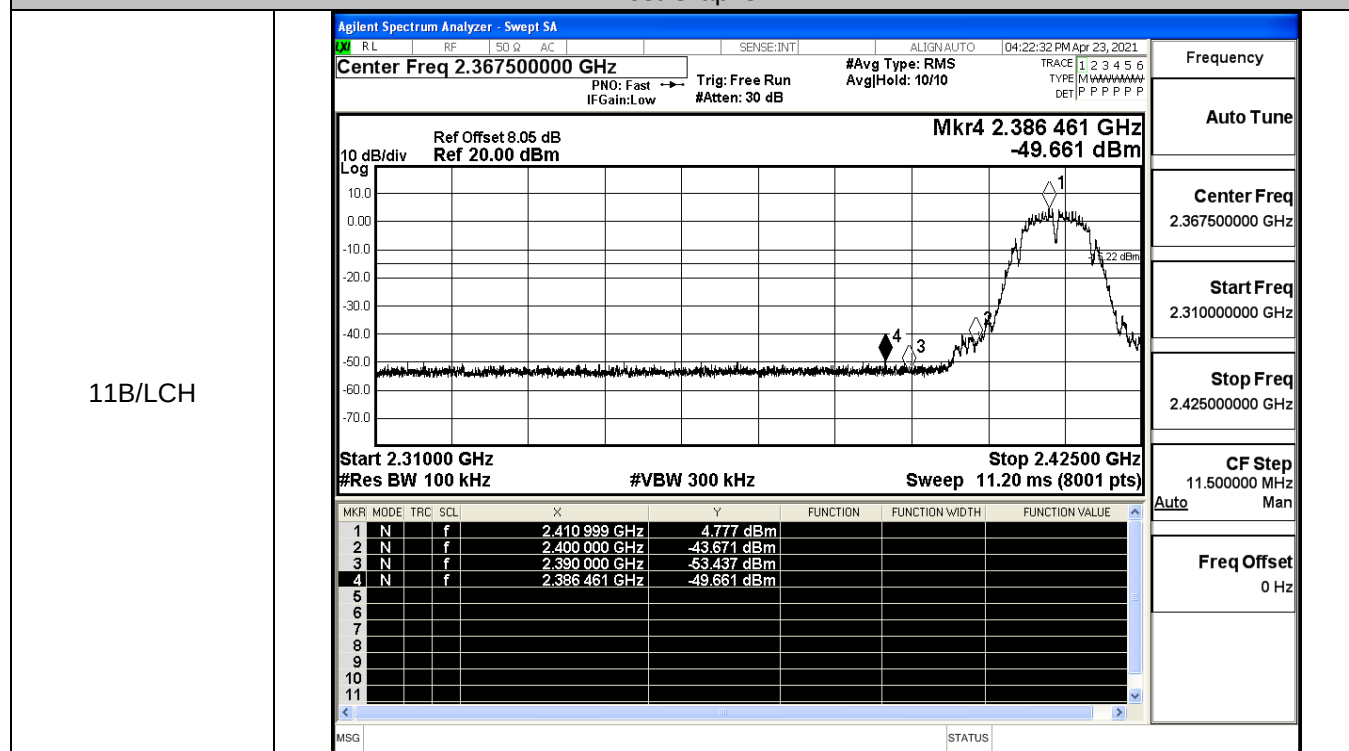
Puw/11N40
SISO/HCH



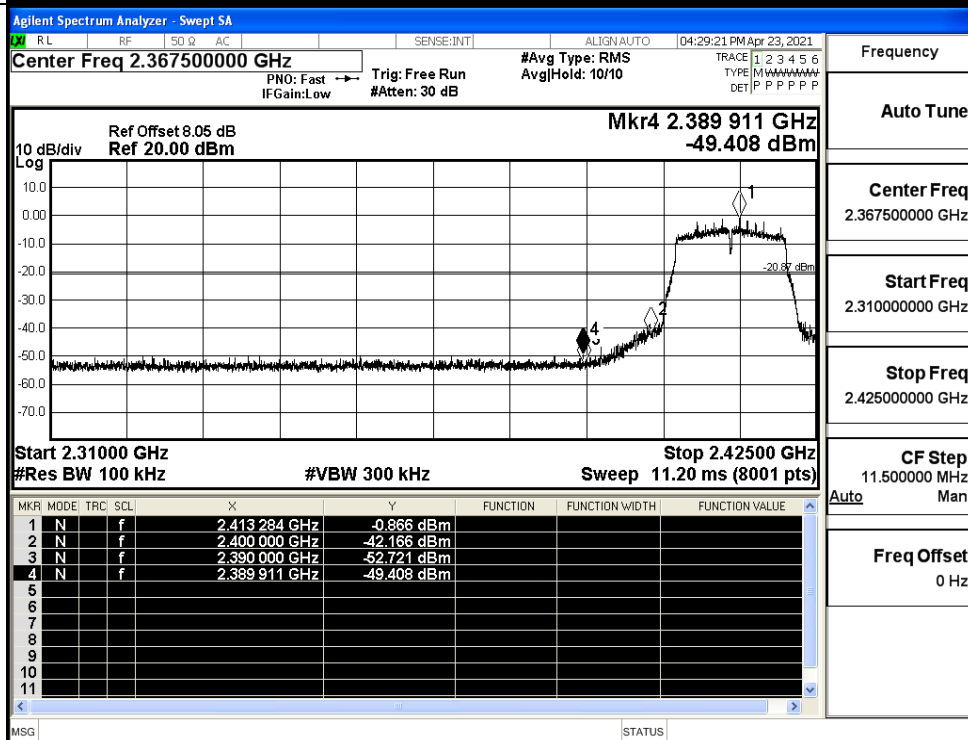
A.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	4.777	-49.661	-15.22	PASS
	HCH	3.923	-45.790	-16.08	PASS
11G	LCH	-0.866	-49.408	-20.87	PASS
	HCH	0.560	-43.789	-19.44	PASS
11N20SISO	LCH	-2.121	-49.424	-22.12	PASS
	HCH	-2.263	-44.385	-22.26	PASS
11N40SISO	LCH	-5.003	-48.294	-25.00	PASS
	HCH	-4.334	-37.028	-24.33	PASS

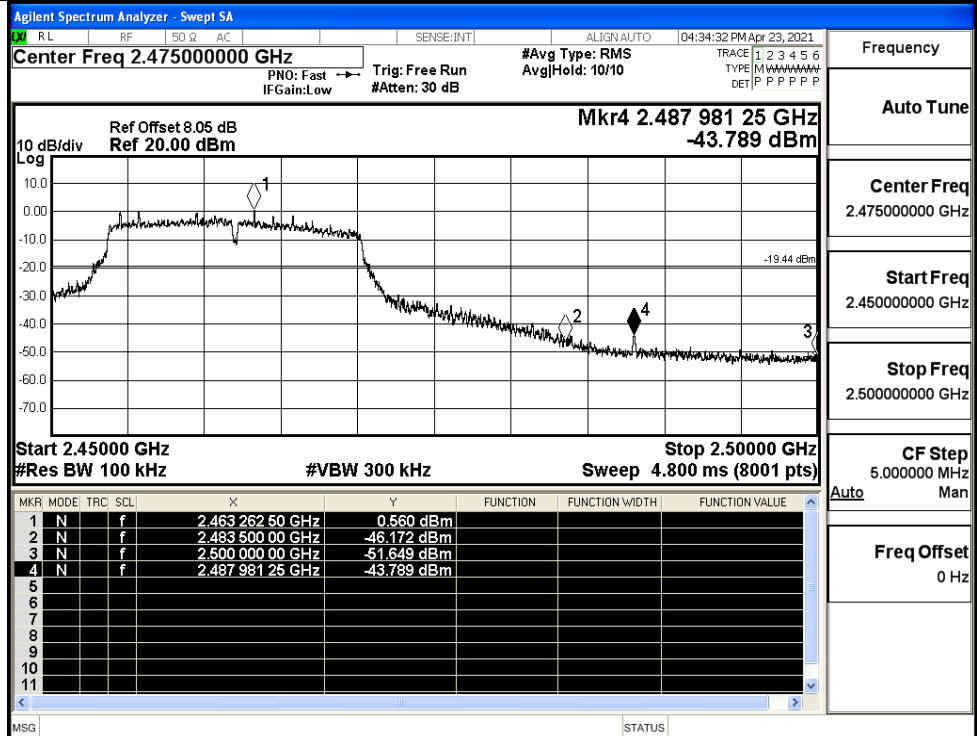
Test Graphs



11G/LCH



11G/HCH



Frequency

Auto Tune

Center Freq

2.475000000 GHz

Start Freq

2.450000000 GHz

Stop Freq

2.500000000 GHz

CF Step

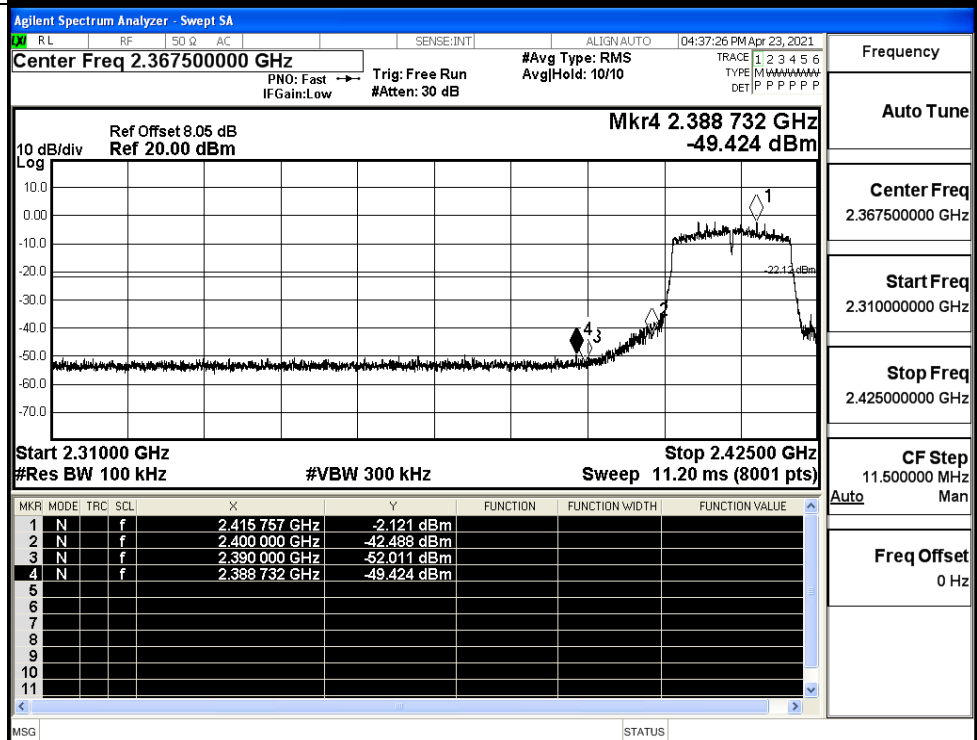
5.000000 MHz

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

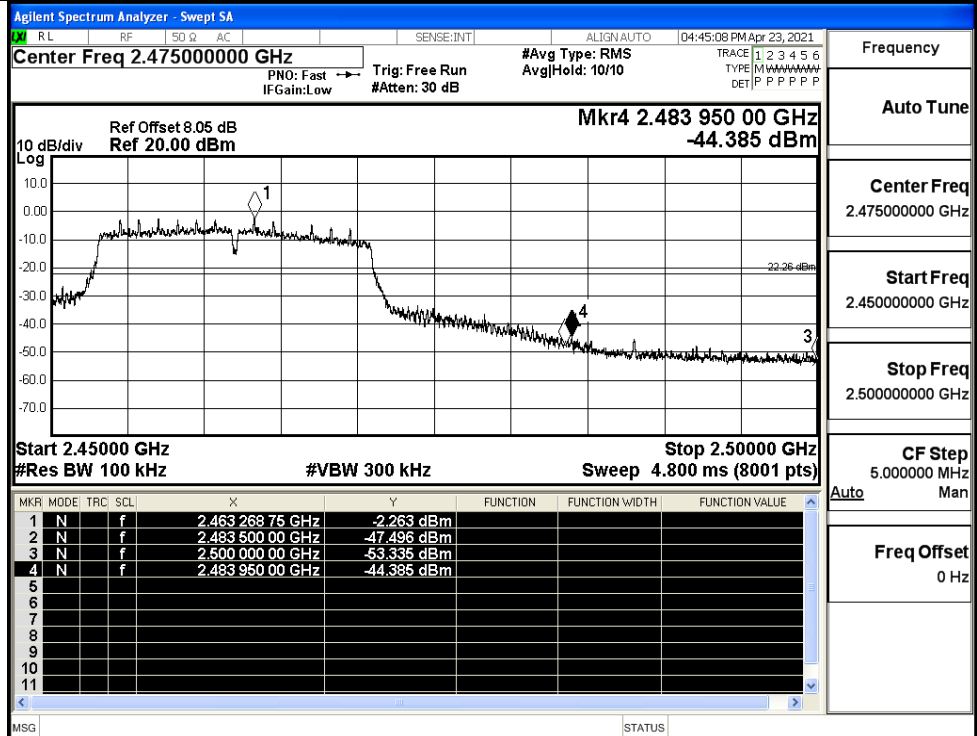
11.500000 MHz

Auto

Freq Offset

0 Hz

11N20SISO/HCH



Frequency

Auto Tune

Center Freq

2.475000000 GHz

Start Freq

2.450000000 GHz

Stop Freq

2.500000000 GHz

CF Step

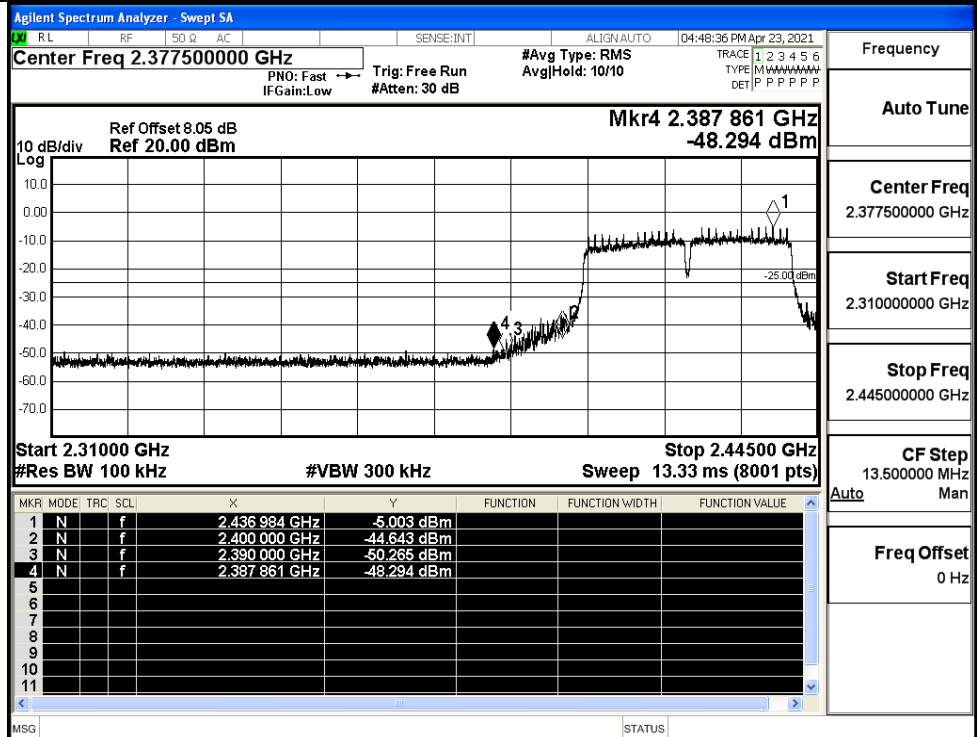
5.000000 MHz

Auto Man

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

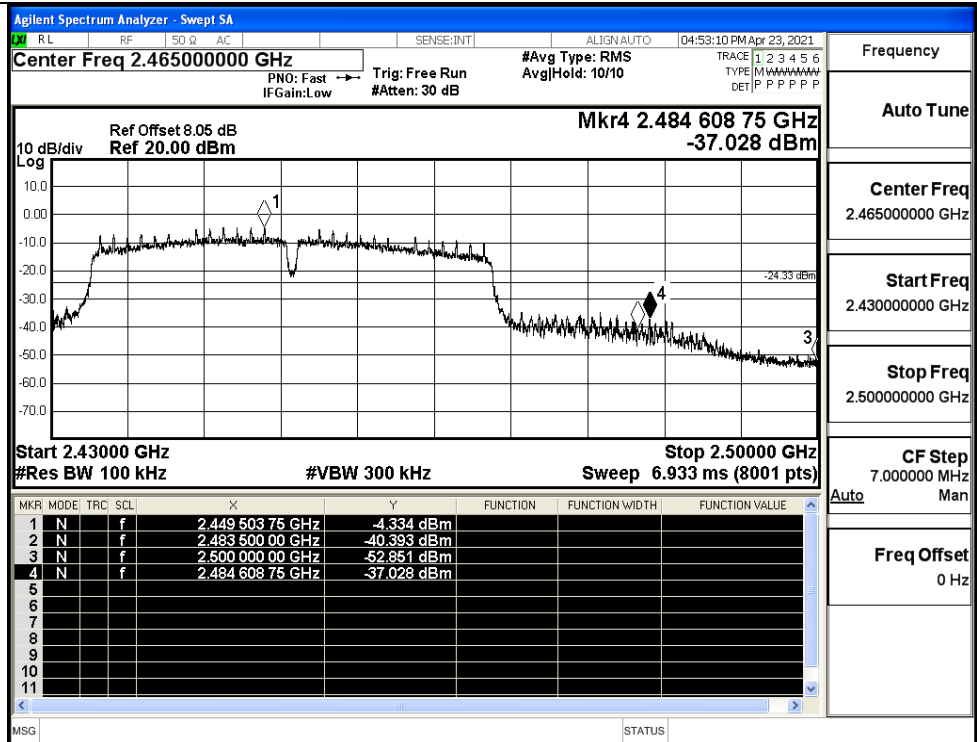
13.500000 MHz

Auto Man

Freq Offset

0 Hz

11N40SISO/HCH

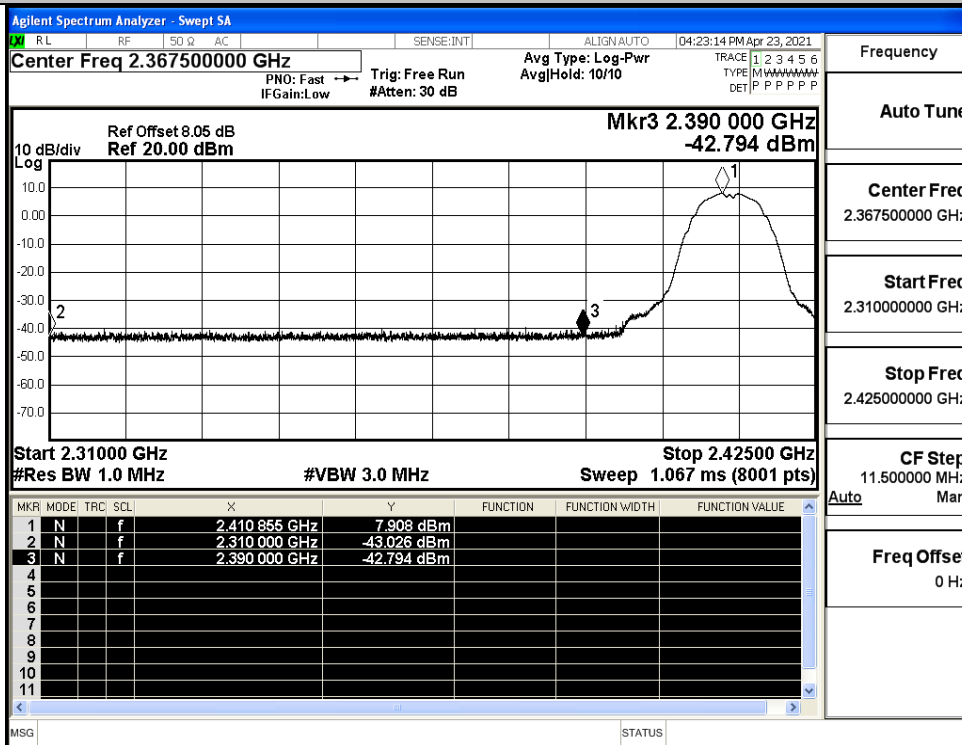


A.7 Restrict-band band-edge measurements

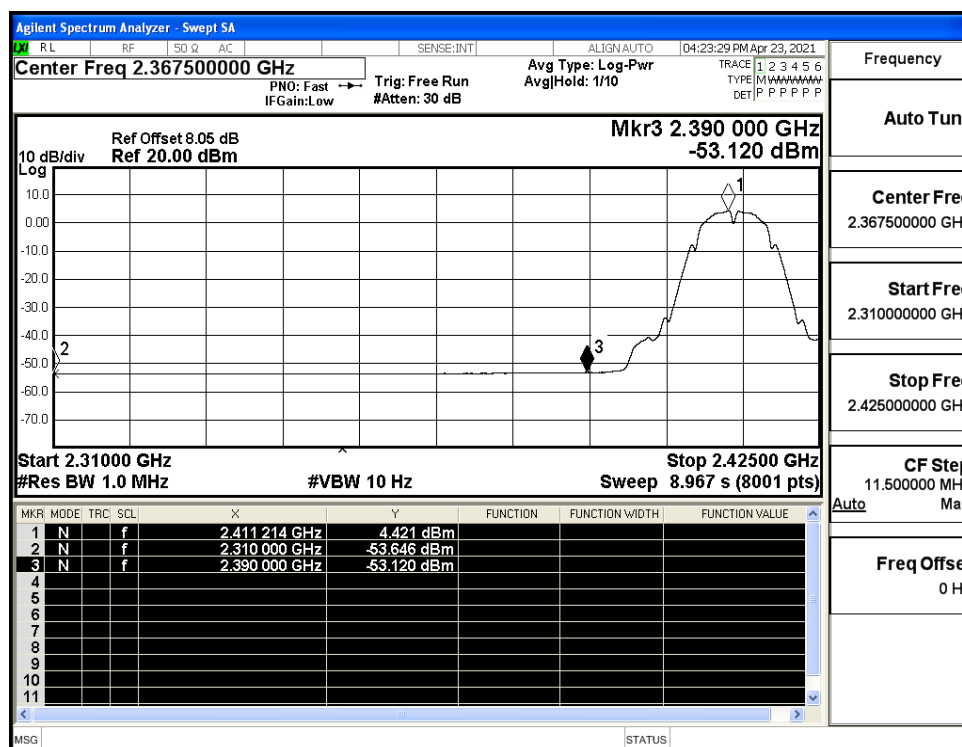
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
11B	2412	Ant1	2310.0	-43.03	5.0	0	57.23	PEAK	74	PASS
	2412	Ant1	2310.0	-53.65	5.0	0	46.61	AV	54	PASS
	2412	Ant1	2390.0	-42.79	5.0	0	57.46	PEAK	74	PASS
	2412	Ant1	2390.0	-53.12	5.0	0	47.14	AV	54	PASS
	2462	Ant1	2483.5	-41.07	5.0	0	59.19	PEAK	74	PASS
	2462	Ant1	2483.5	-51.18	5.0	0	49.08	AV	54	PASS
	2462	Ant1	2500.0	-42.04	5.0	0	58.22	PEAK	74	PASS
	2462	Ant1	2500.0	-52.72	5.0	0	47.54	AV	54	PASS
11G	2412	Ant1	2310.0	-43.75	5.0	0	56.51	PEAK	74	PASS
	2412	Ant1	2310.0	-53.71	5.0	0	46.54	AV	54	PASS
	2412	Ant1	2390.0	-42.48	5.0	0	57.78	PEAK	74	PASS
	2412	Ant1	2390.0	-52.97	5.0	0	47.28	AV	54	PASS
	2462	Ant1	2483.5	-35.55	5.0	0	64.71	PEAK	74	PASS
	2462	Ant1	2483.5	-47.99	5.0	0	52.27	AV	54	PASS
	2462	Ant1	2500.0	-40.51	5.0	0	59.75	PEAK	74	PASS
	2462	Ant1	2500.0	-52.71	5.0	0	47.55	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-42.71	5.0	0	57.55	PEAK	74	PASS
	2412	Ant1	2310.0	-53.71	5.0	0	46.55	AV	54	PASS
	2412	Ant1	2390.0	-40.31	5.0	0	59.94	PEAK	74	PASS
	2412	Ant1	2390.0	-52.88	5.0	0	47.38	AV	54	PASS
	2462	Ant1	2483.5	-34.03	5.0	0	66.23	PEAK	74	PASS
	2462	Ant1	2483.5	-48.48	5.0	0	51.78	AV	54	PASS
	2462	Ant1	2500.0	-43.55	5.0	0	56.71	PEAK	74	PASS
	2462	Ant1	2500.0	-52.72	5.0	0	47.53	AV	54	PASS
11N40 SISO	2422	Ant1	2310.0	-42.04	5.0	0	58.21	PEAK	74	PASS
	2422	Ant1	2310.0	-53.67	5.0	0	46.59	AV	54	PASS

	2422	Ant1	2390.0	-38.49	5.0	0	61.77	PEAK	74	PASS
	2422	Ant1	2390.0	-51.66	5.0	0	48.60	AV	54	PASS
	2452	Ant1	2483.5	-27.50	5.0	0	72.75	PEAK	74	PASS
	2452	Ant1	2483.5	-45.10	5.0	0	53.16	AV	54	PASS
	2452	Ant1	2500.0	-42.57	5.0	0	57.69	PEAK	74	PASS
	2452	Ant1	2500.0	-52.69	5.0	0	47.57	AV	54	PASS

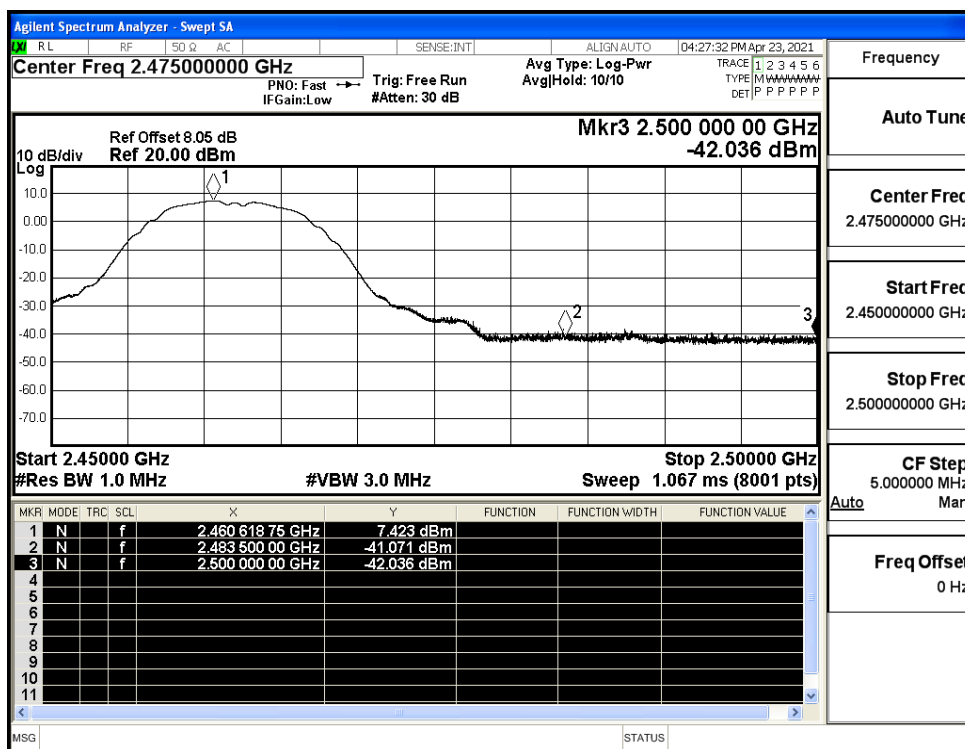
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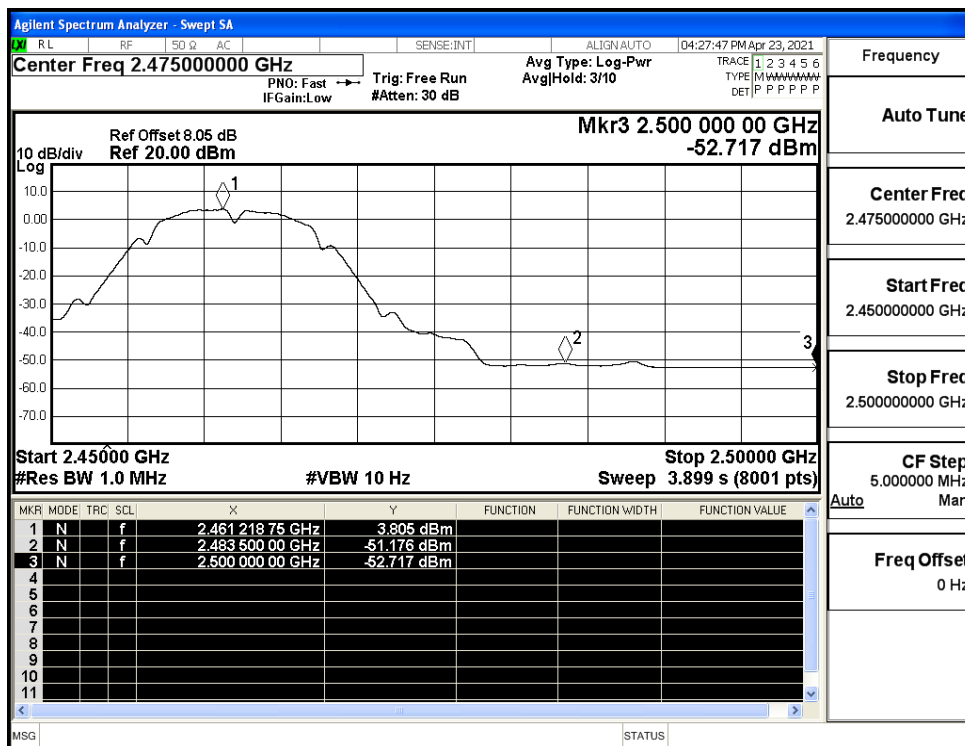
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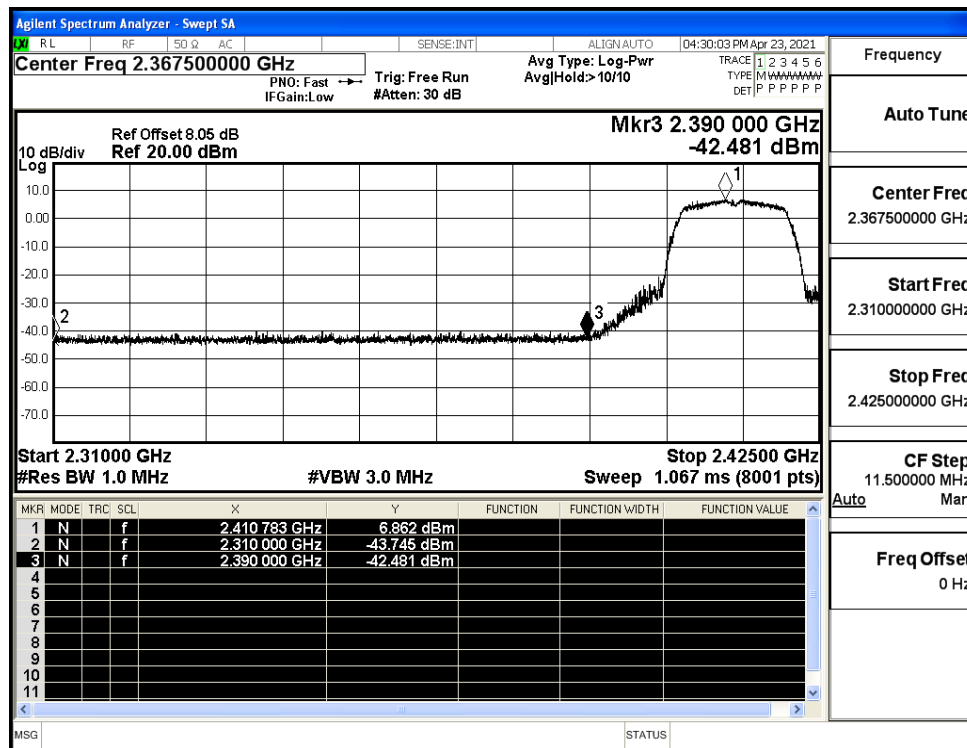
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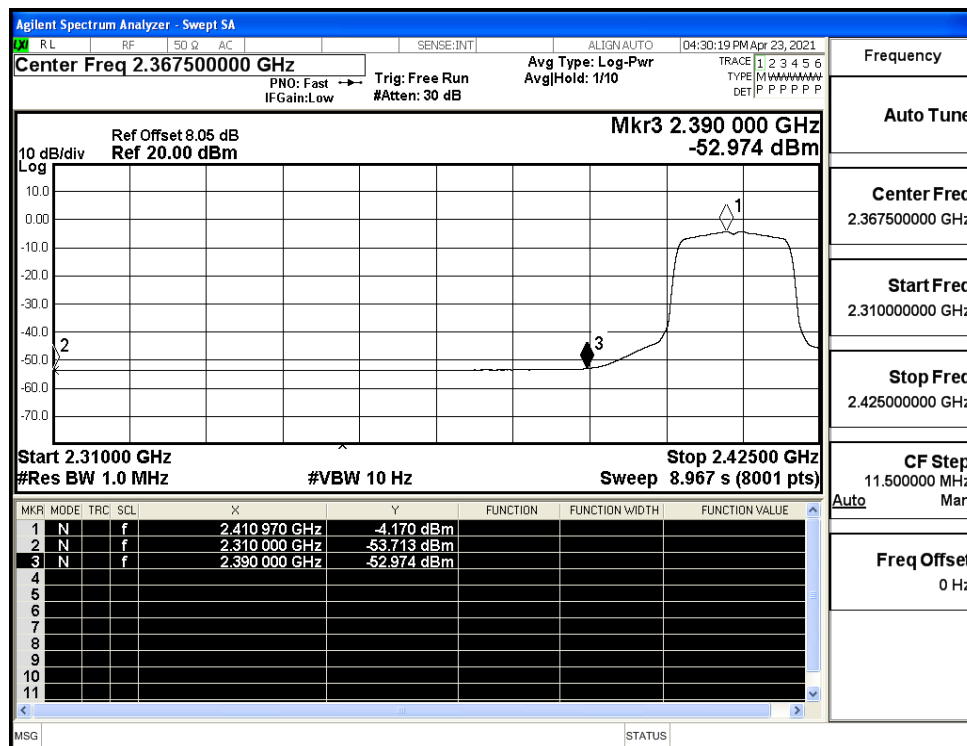
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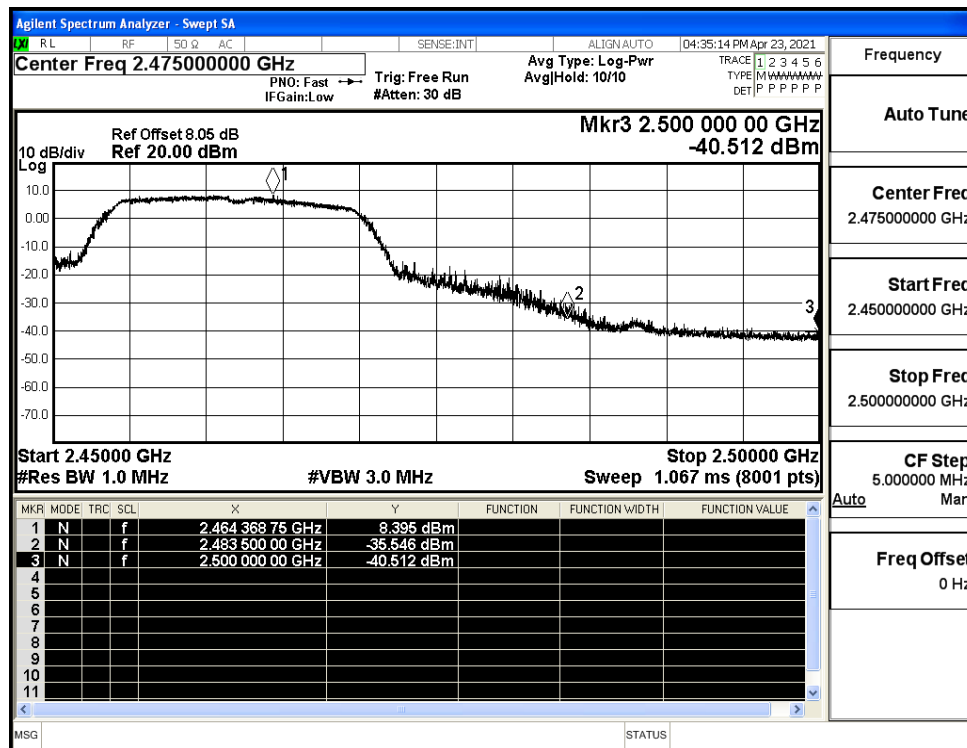
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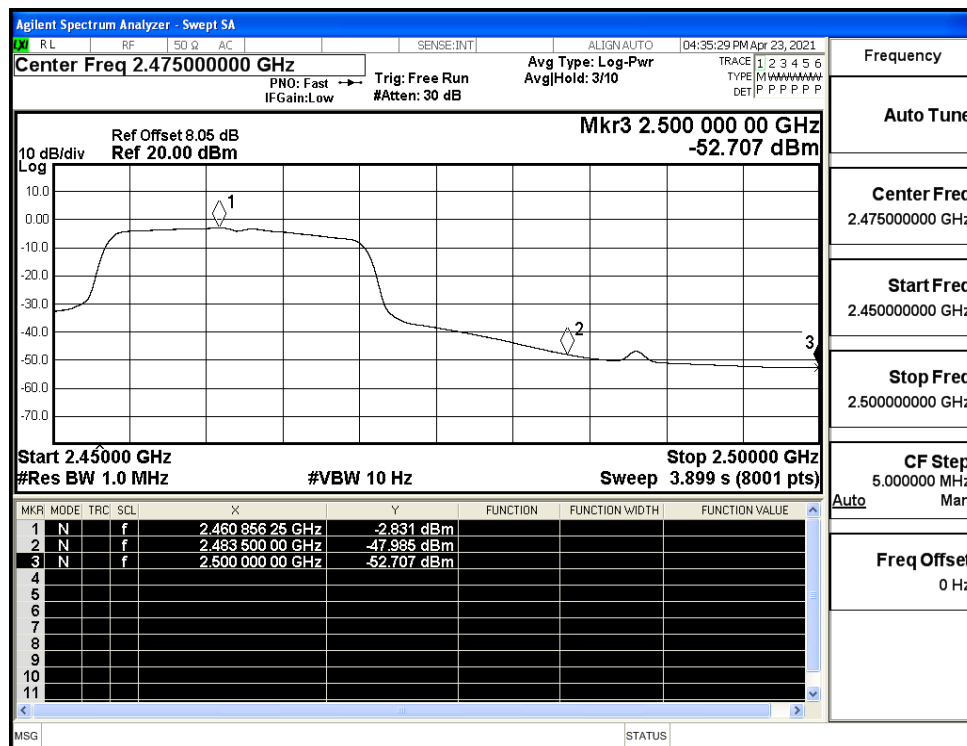
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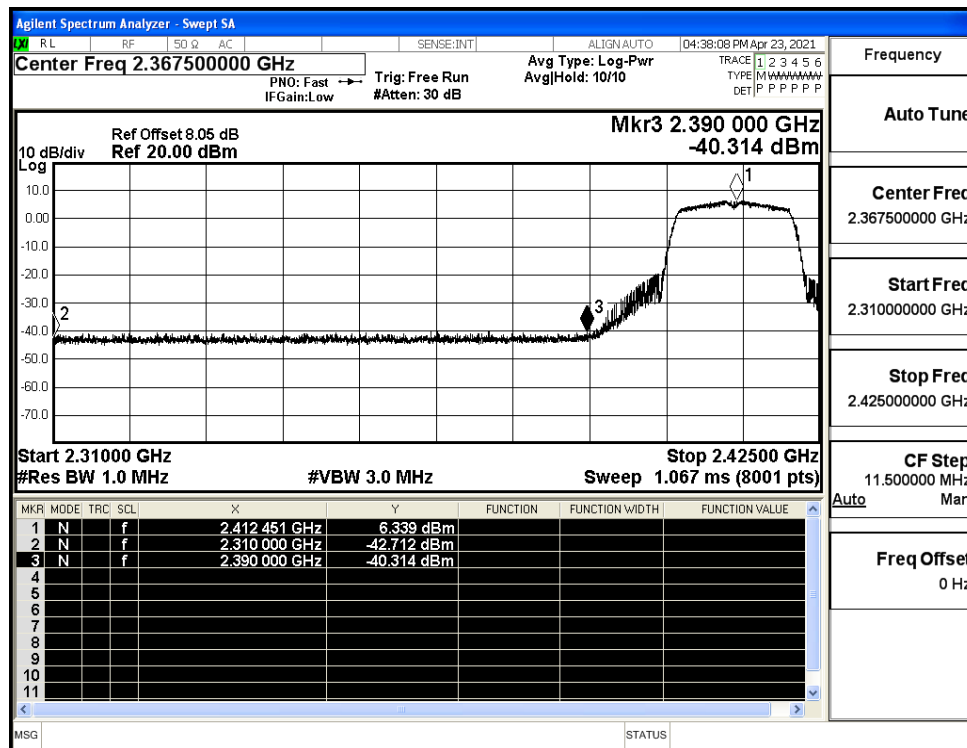
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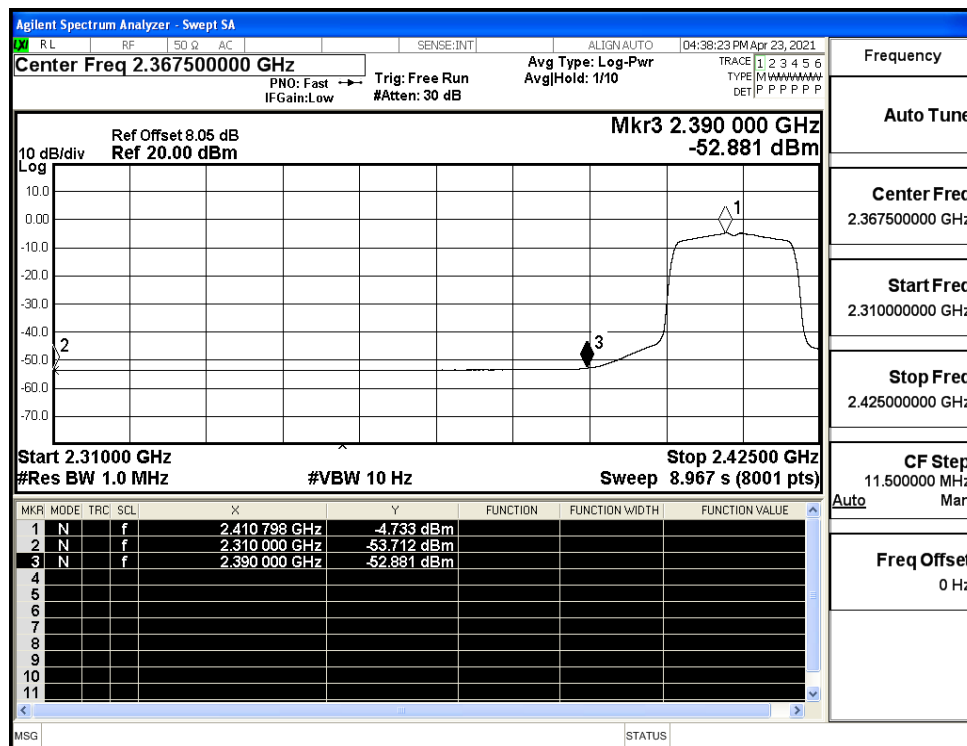
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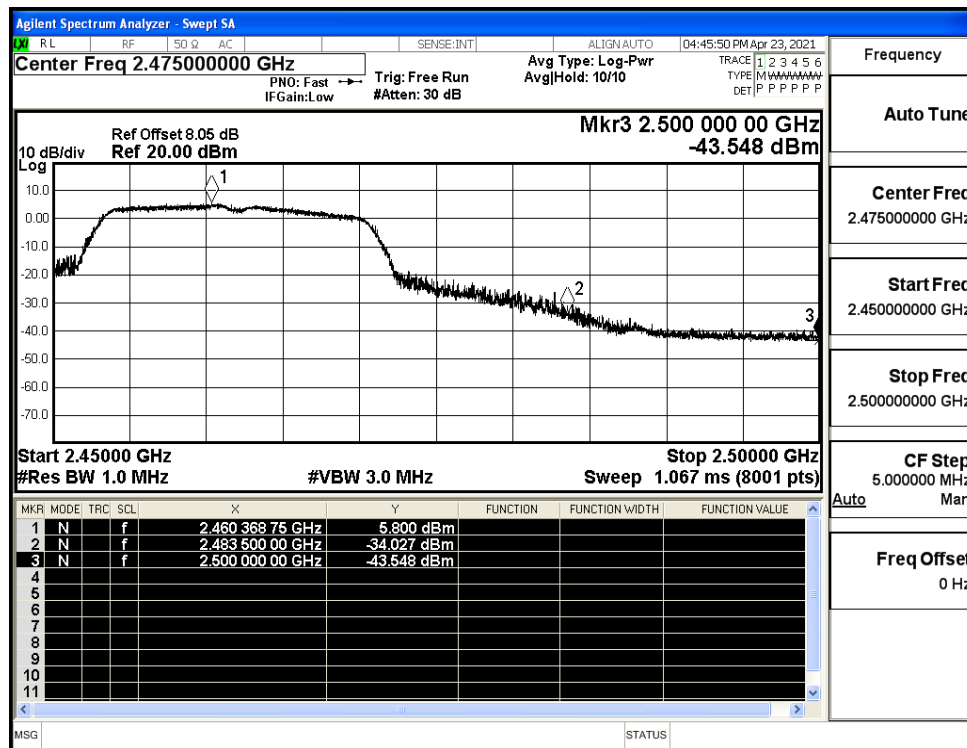
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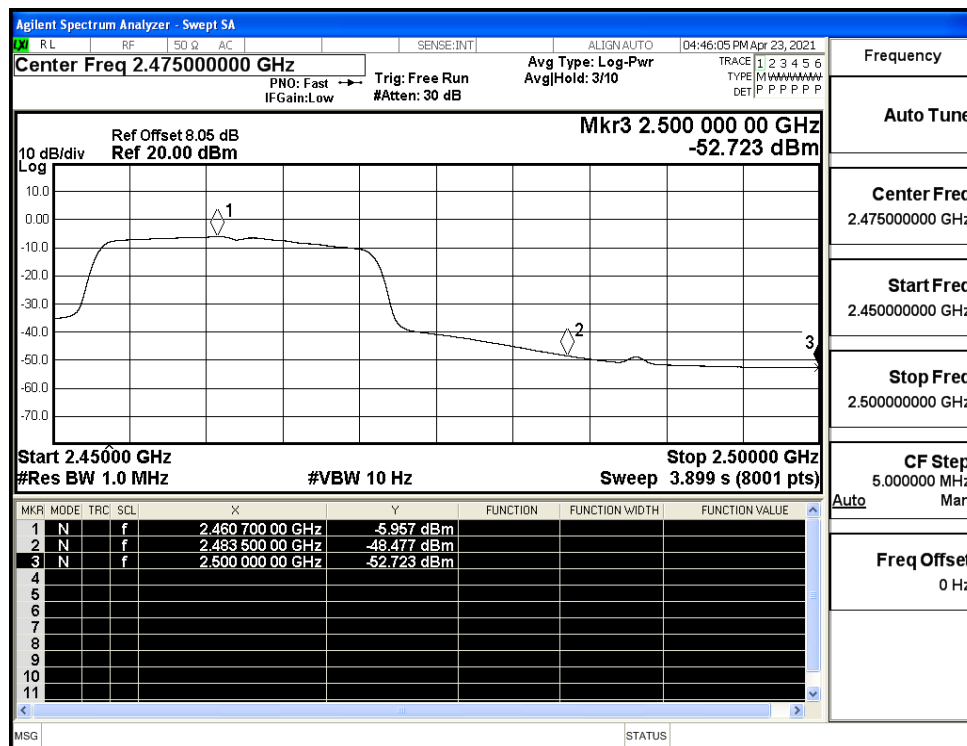
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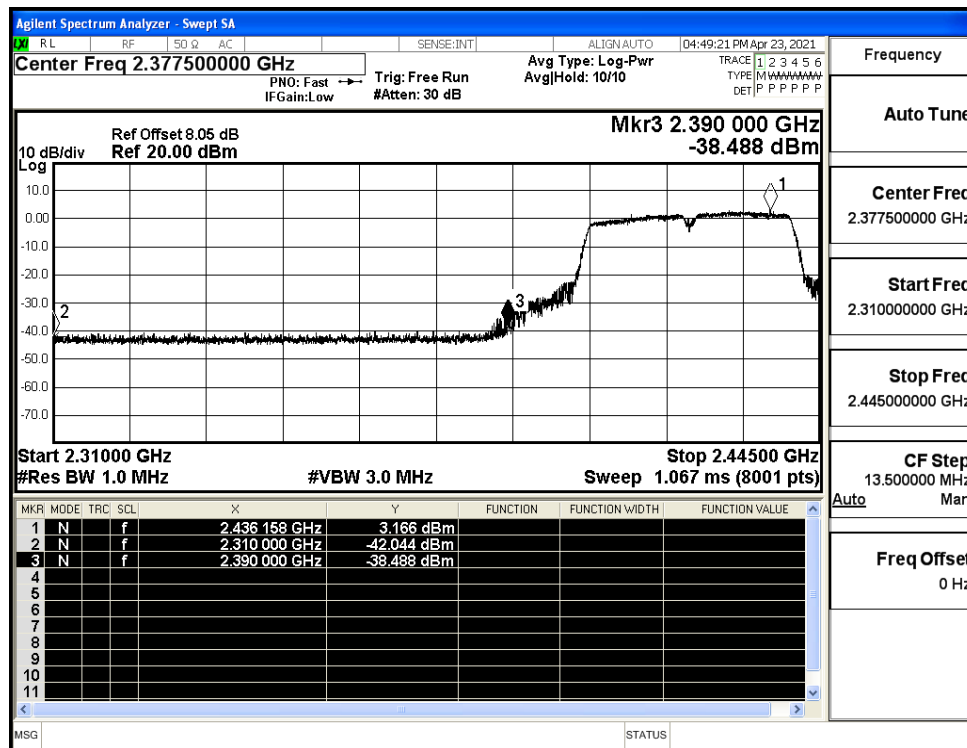
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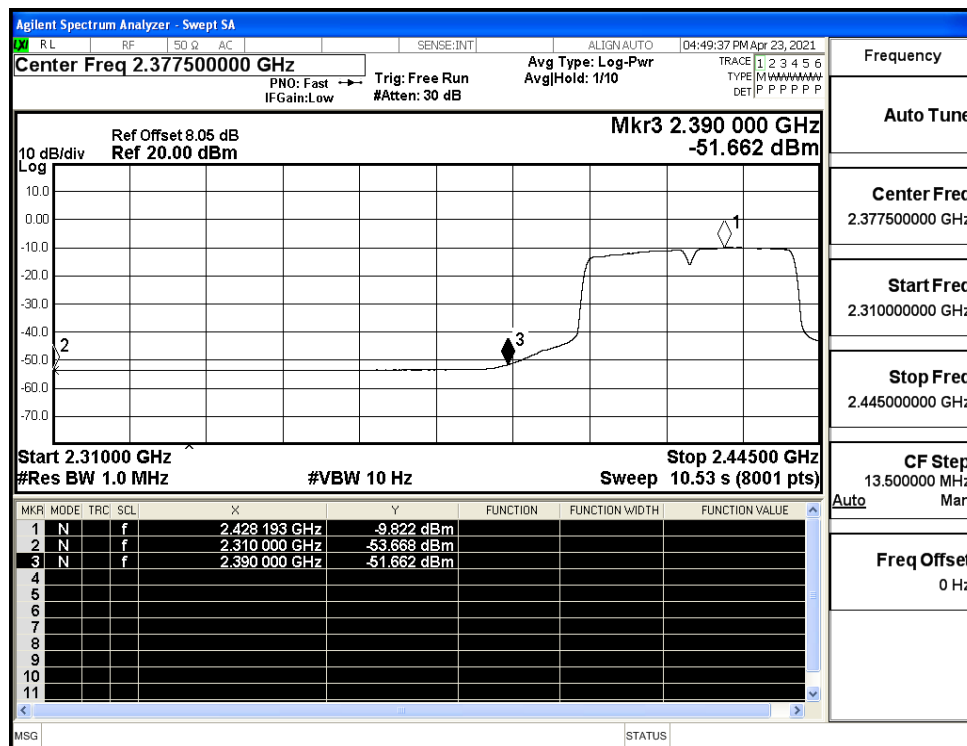
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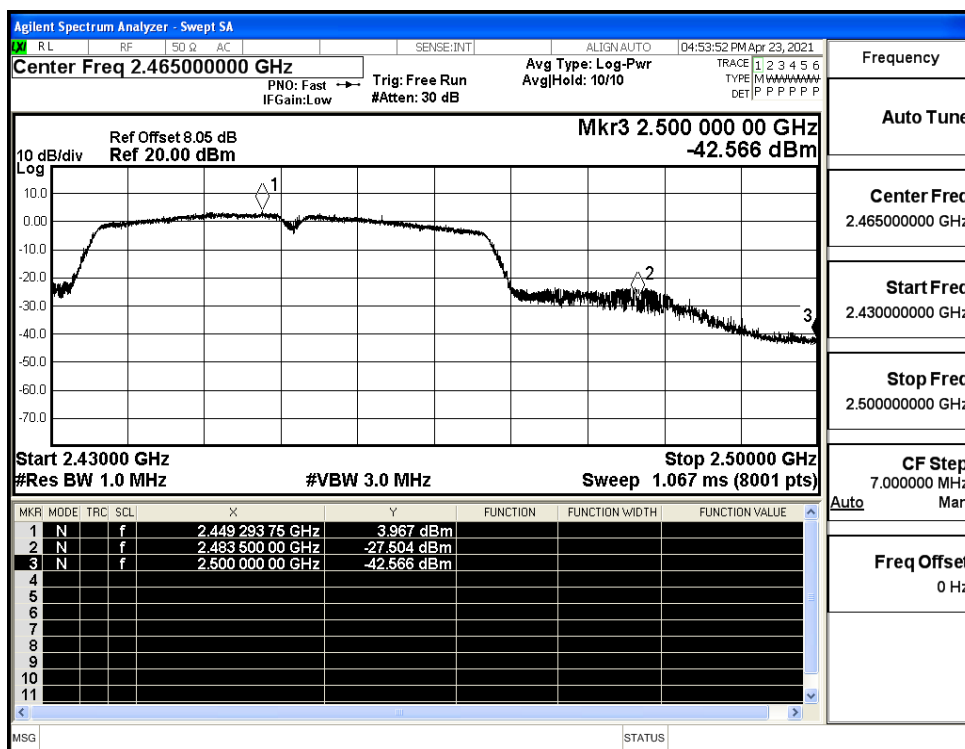
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Restrict-band band-edge measurements_11N40SISO_2422_Ant1_AV



Restrict-band band-edge measurements_11N40SISO_2452_Ant1_PEAK



Restrict-band band-edge measurements_11N40SISO_2452_Ant1_AV

