

Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Formuler Z+ NEO

Trade Mark: Formuler

Test Model: Z+ NEO

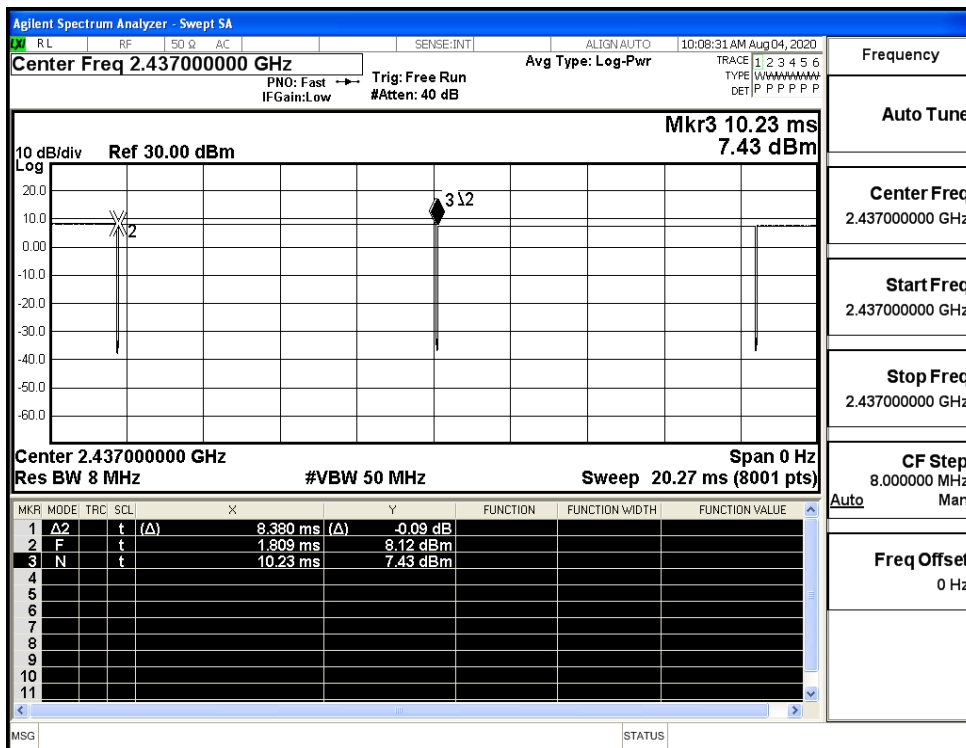
Environmental Conditions

Temperature:	23.2 ° C
Relative Humidity:	54.5%
ATM Pressure:	100.0 kPa
Test Engineer:	Jam Zheng
Supervised by:	Li Huan

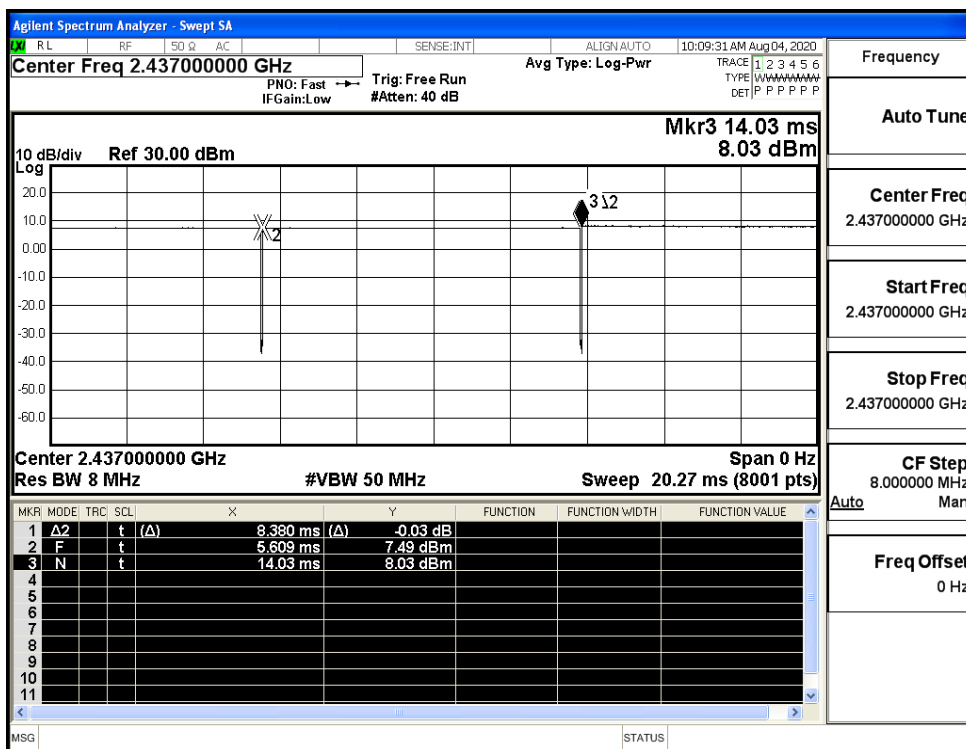
A.1 Duty Cycle

Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
11B	2437	Ant1	99.49	PASS
11G	2437	Ant1	99.49	PASS
11N20SISO	2437	Ant1	98.42	PASS
11N40SISO	2437	Ant1	100.00	PASS

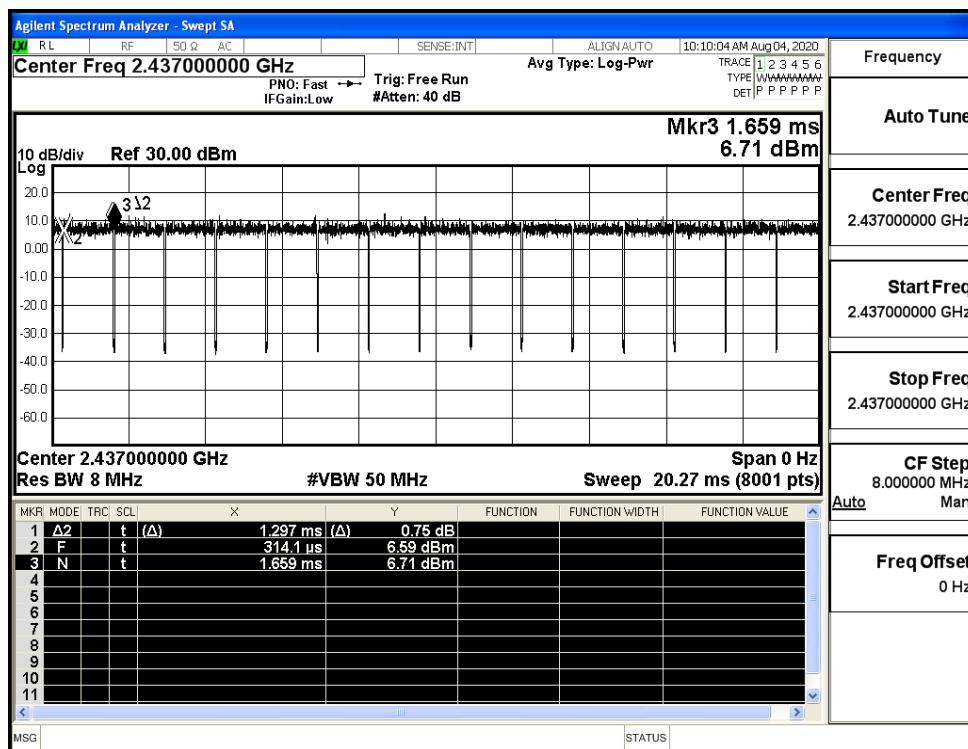
Duty Cycle_11B_2437_Ant1



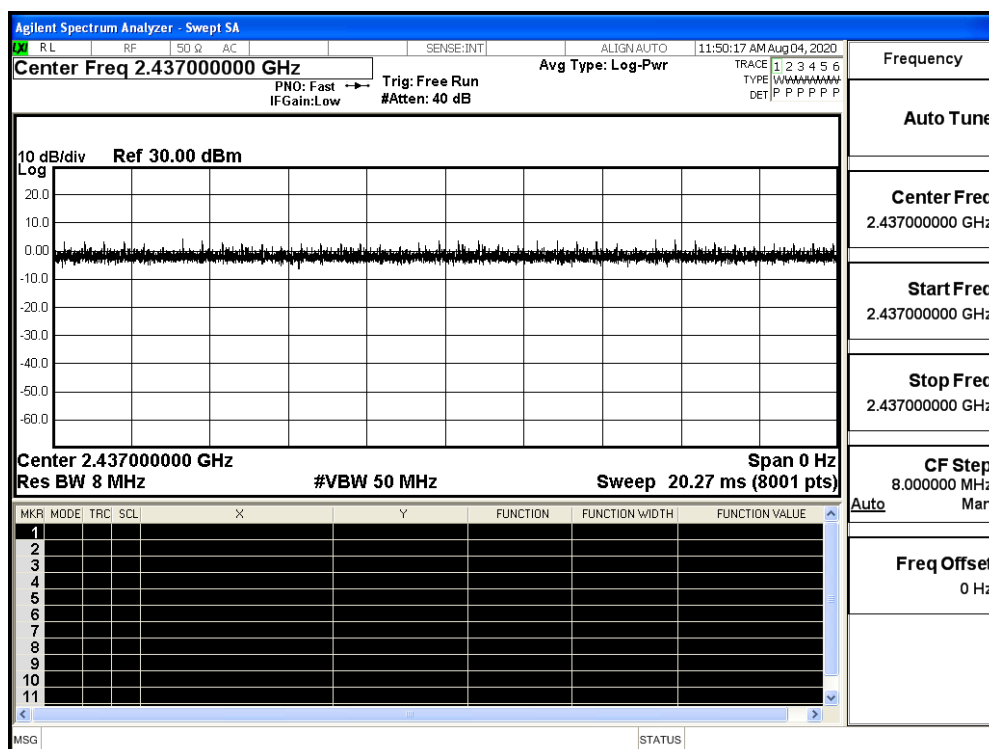
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



Duty Cycle_11N40SISO_2437_Ant1



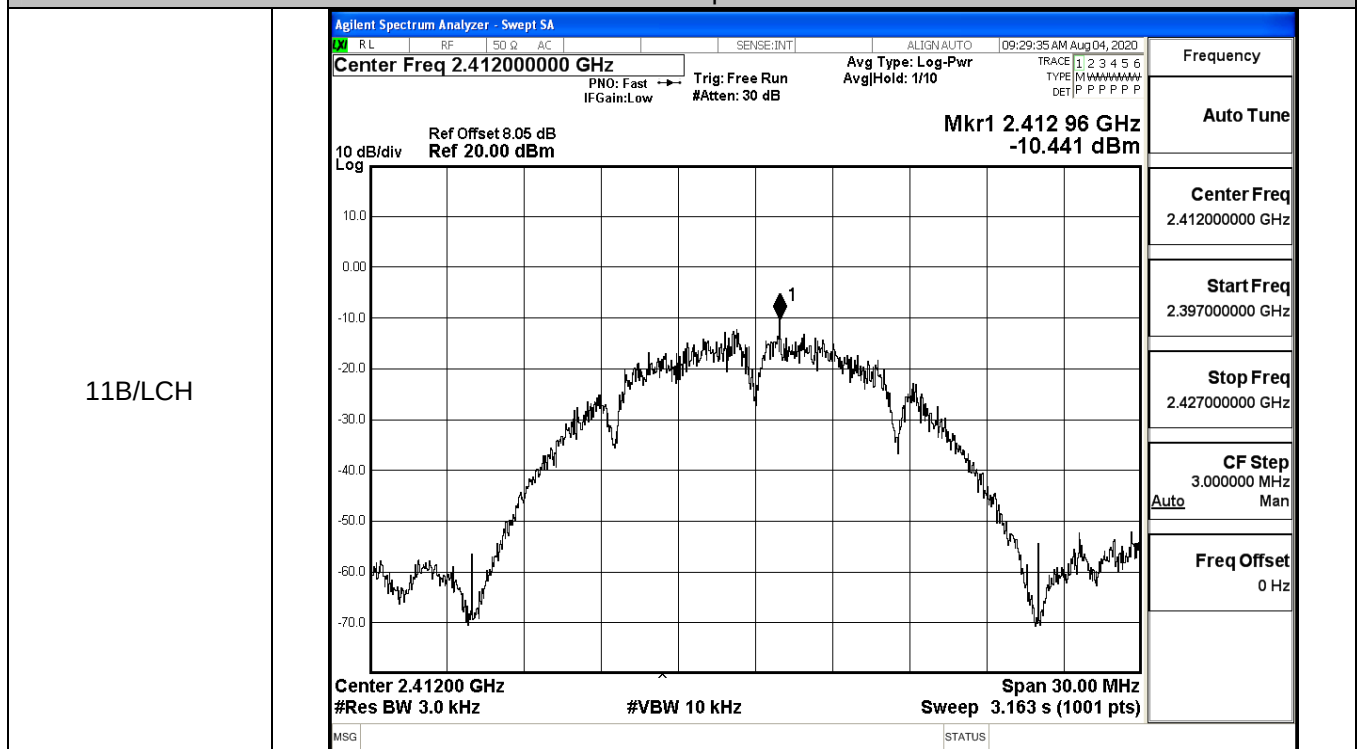
A.2 Maximum Conducted Output Power

Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	13.74	30	PASS
	MCH	14.78	30	PASS
	HCH	14.02	30	PASS
11G	LCH	19.53	30	PASS
	MCH	20.01	30	PASS
	HCH	21.35	30	PASS
11N20SISO	LCH	19.17	30	PASS
	MCH	19.91	30	PASS
	HCH	19.25	30	PASS
11N40SISO	LCH	19.77	30	PASS
	MCH	19.81	30	PASS
	HCH	19.71	30	PASS

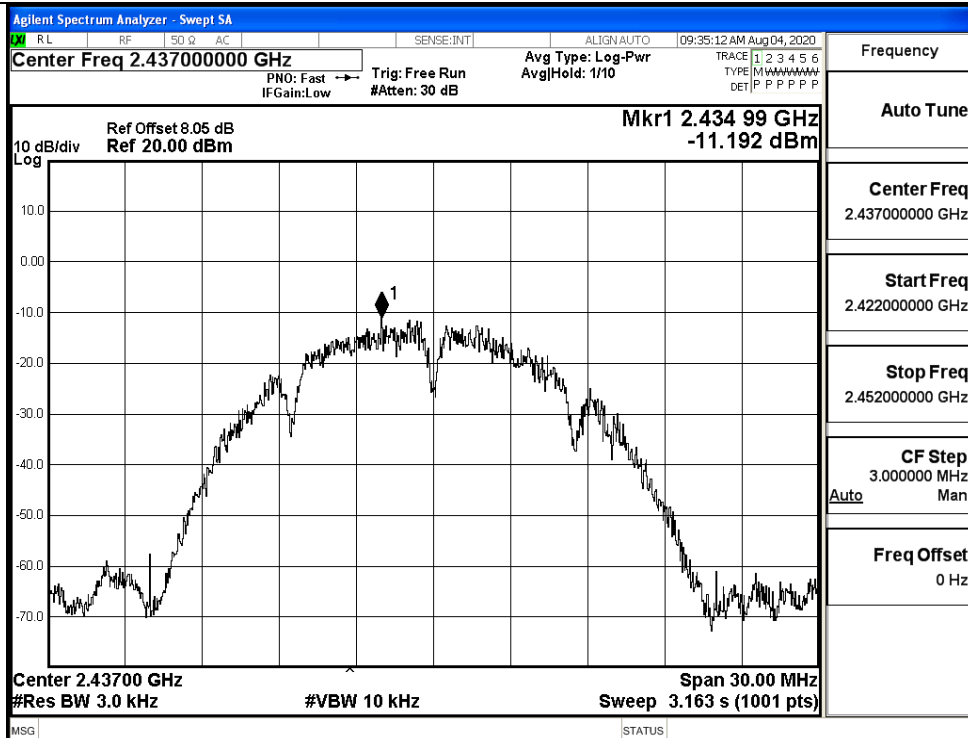
A.3 Maximum Power Spectral Density

Mode	Channel	Meas.Level [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-10.441	8	PASS
	MCH	-11.192	8	PASS
	HCH	-12.262	8	PASS
11G	LCH	-12.621	8	PASS
	MCH	-12.787	8	PASS
	HCH	-9.864	8	PASS
11N20SISO	LCH	-14.206	8	PASS
	MCH	-14.134	8	PASS
	HCH	-12.930	8	PASS
11N40SISO	LCH	-15.358	8	PASS
	MCH	-14.468	8	PASS
	HCH	-17.586	8	PASS

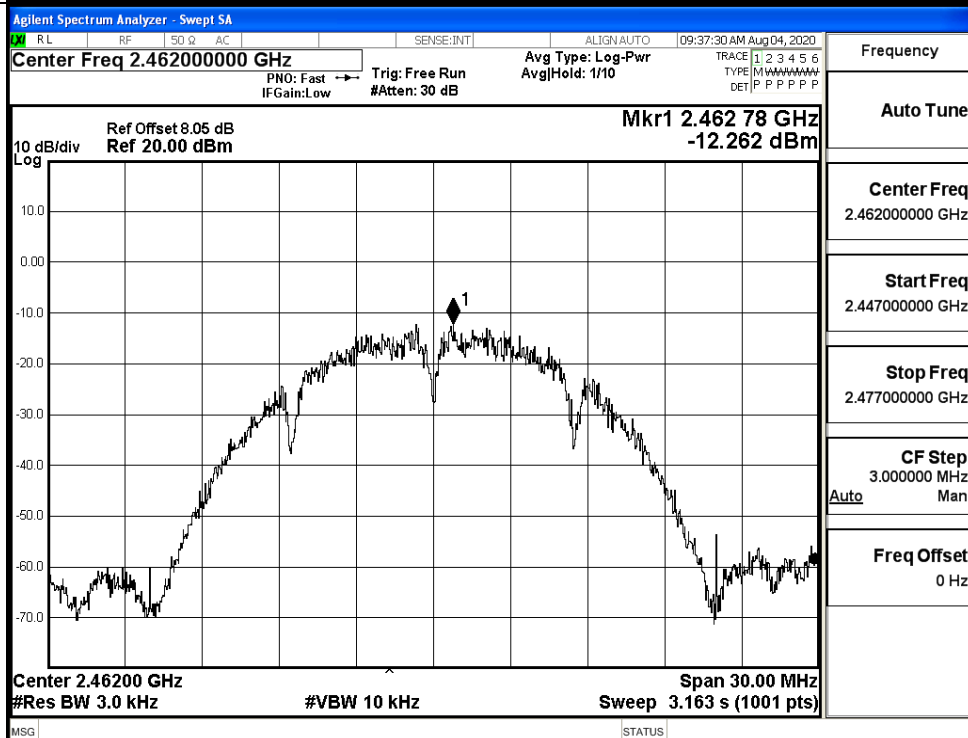
Test Graphs



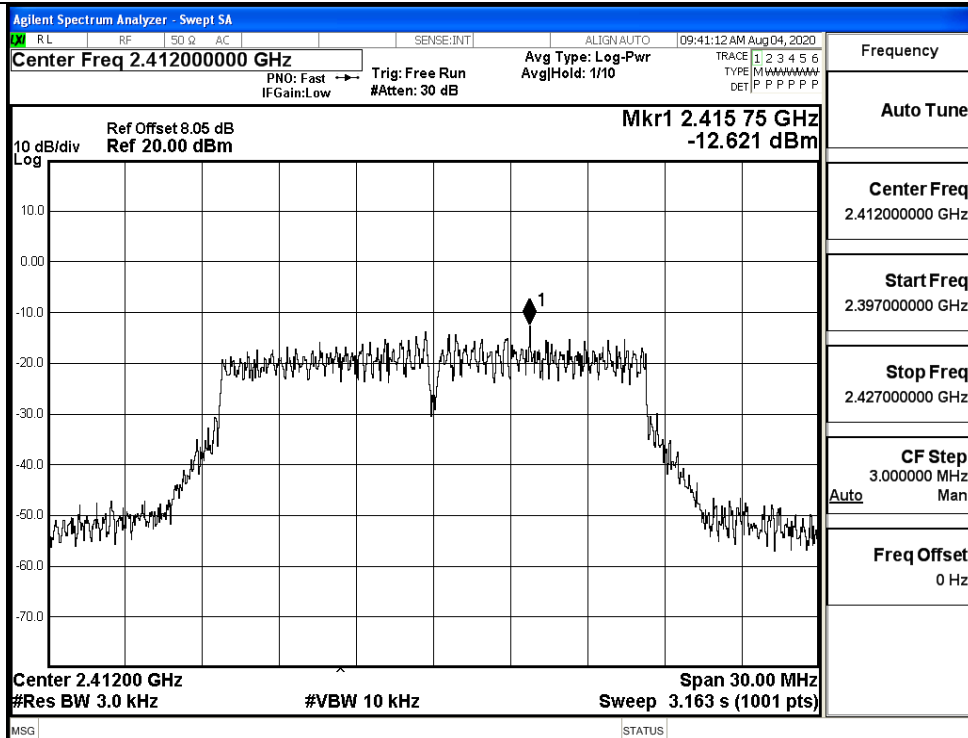
11B/MCH



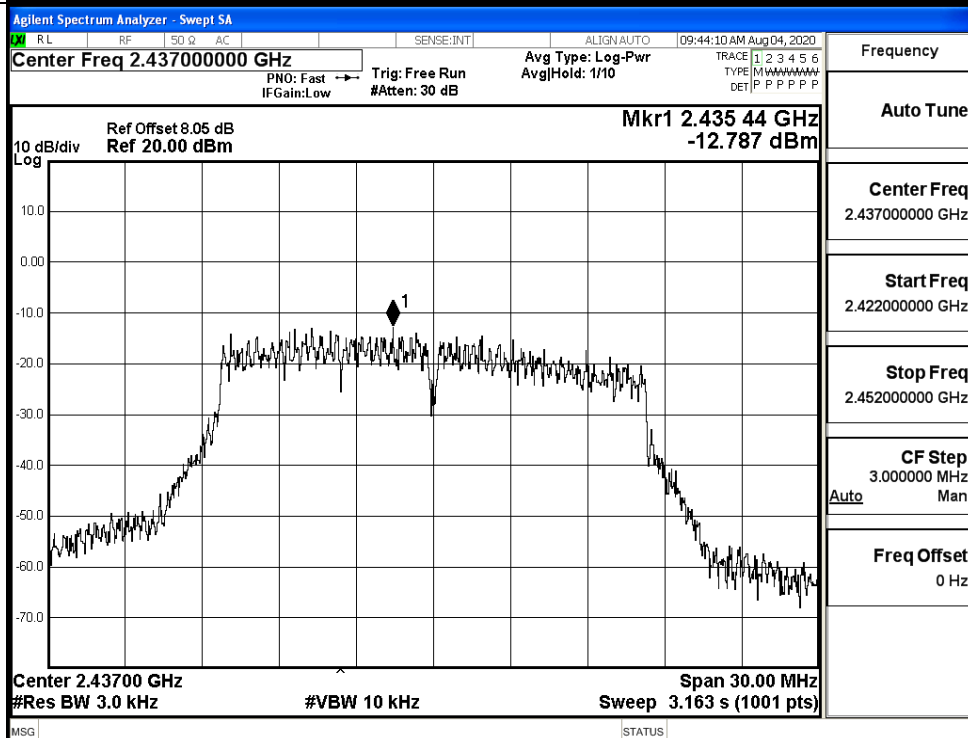
11B/HCH



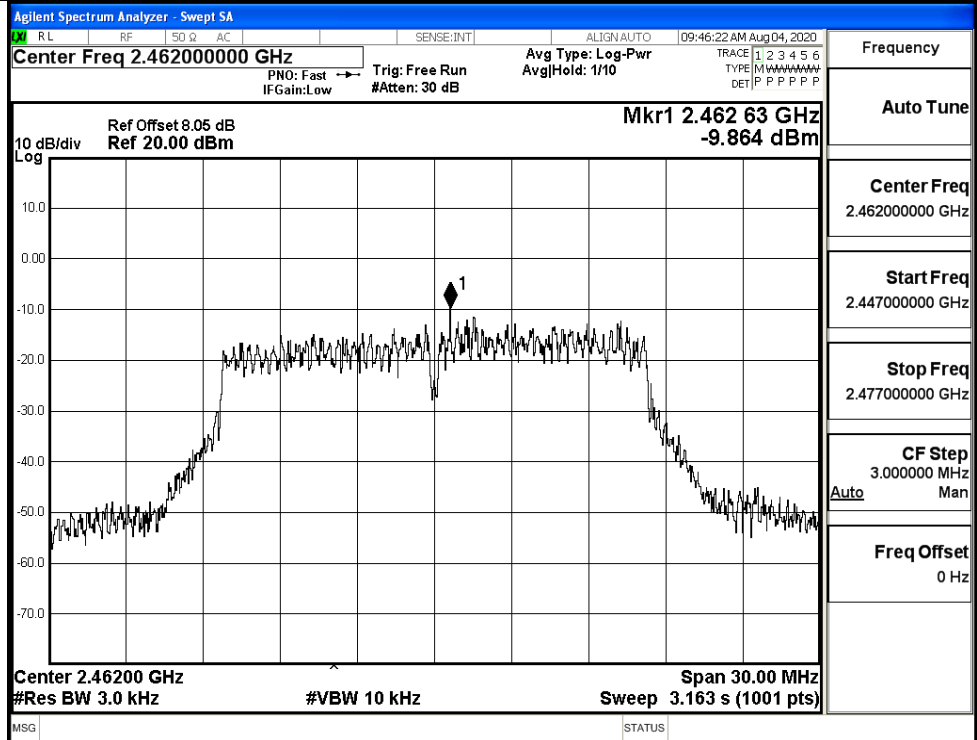
11G/LCH



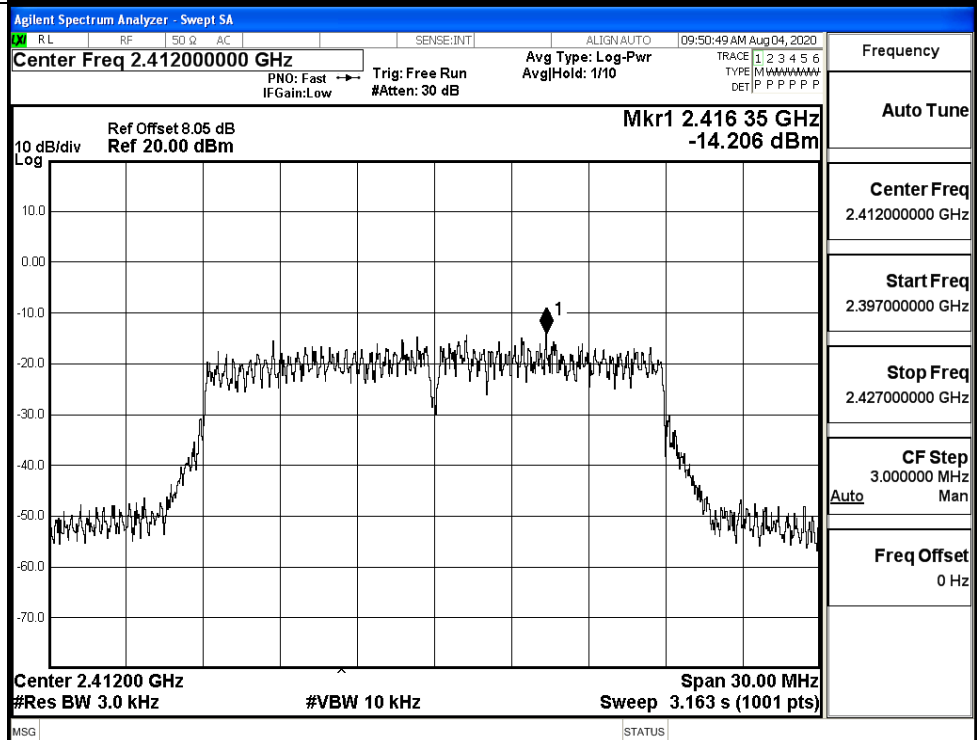
11G/MCH



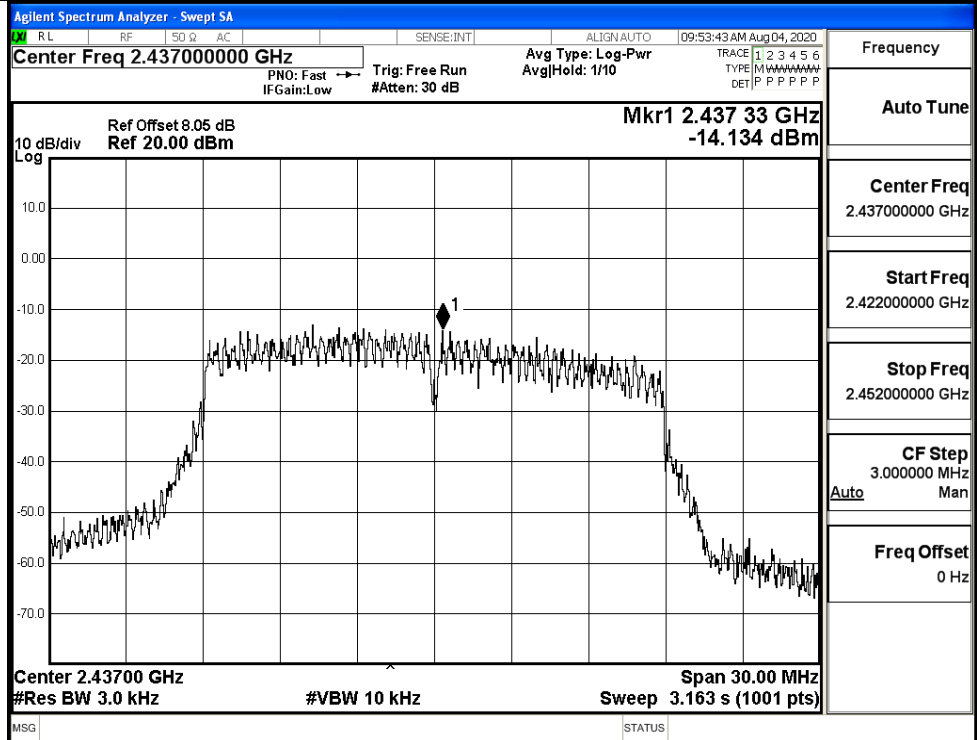
11G/HCH



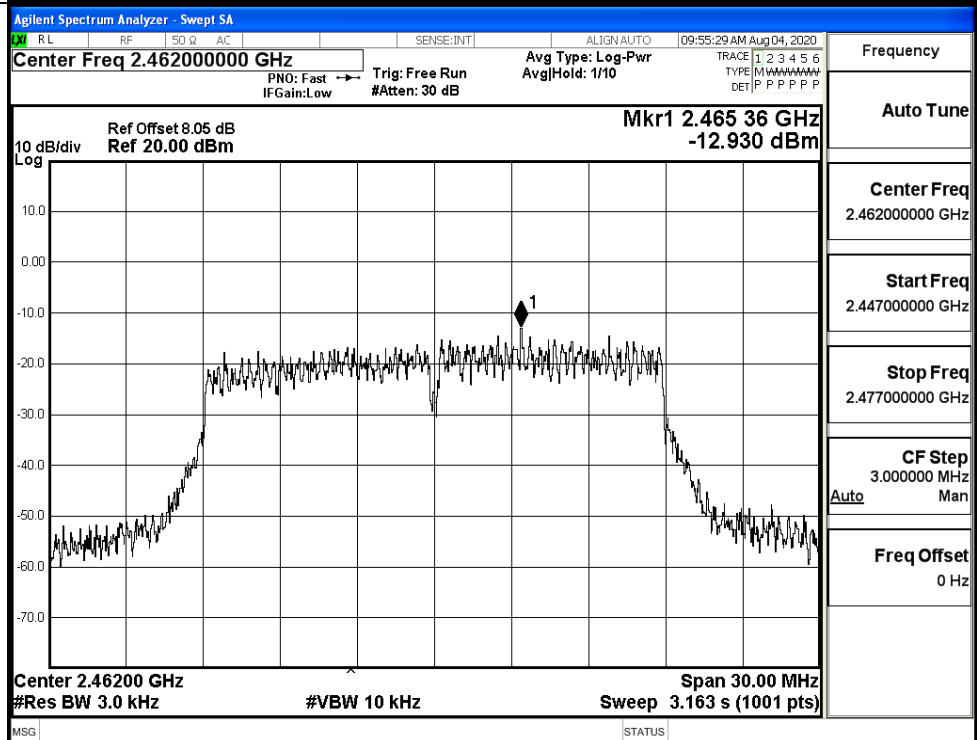
11N20SISO/LCH



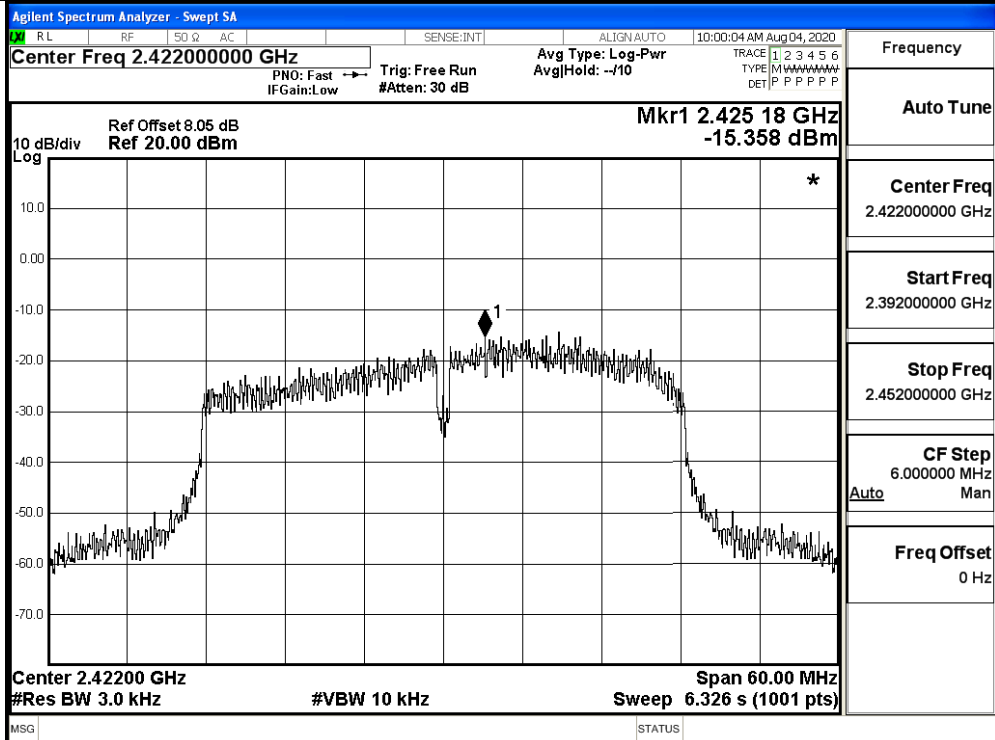
11N20SISO/MCH



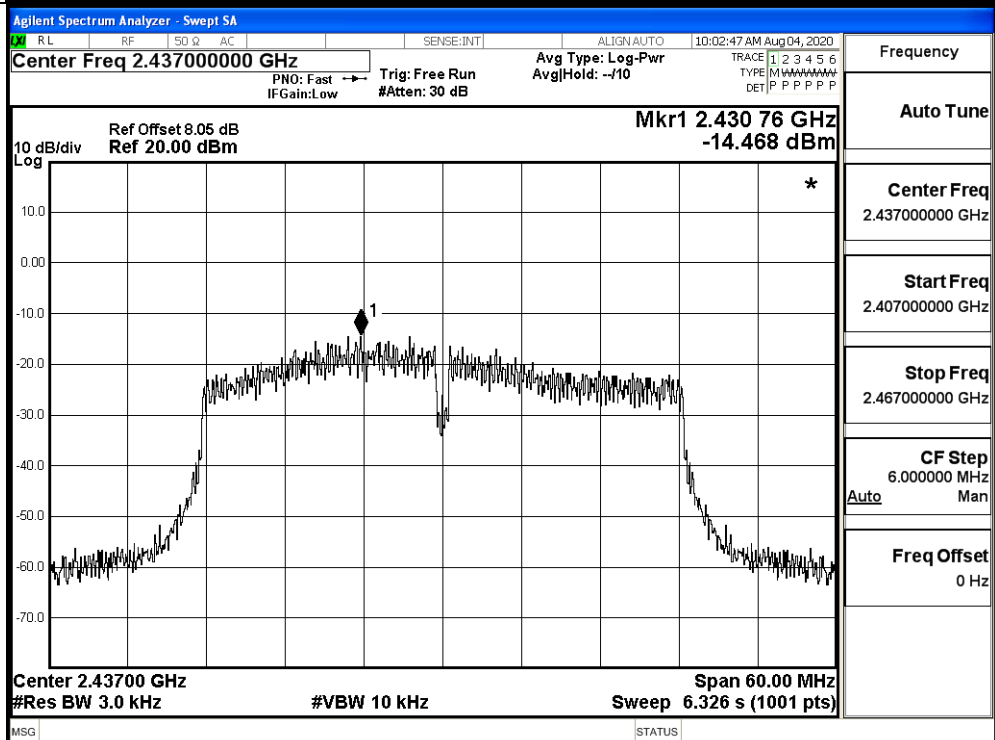
11N20SISO/HCH



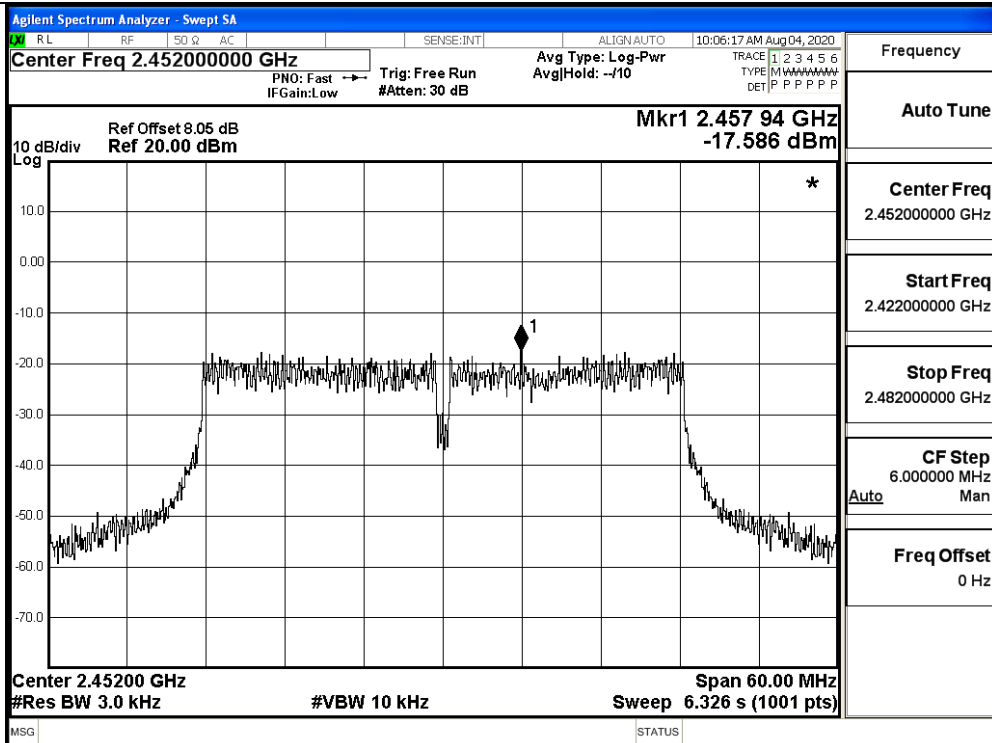
11N40SISO/LCH



11N40SISO/MCH



11N40SISO/HCH

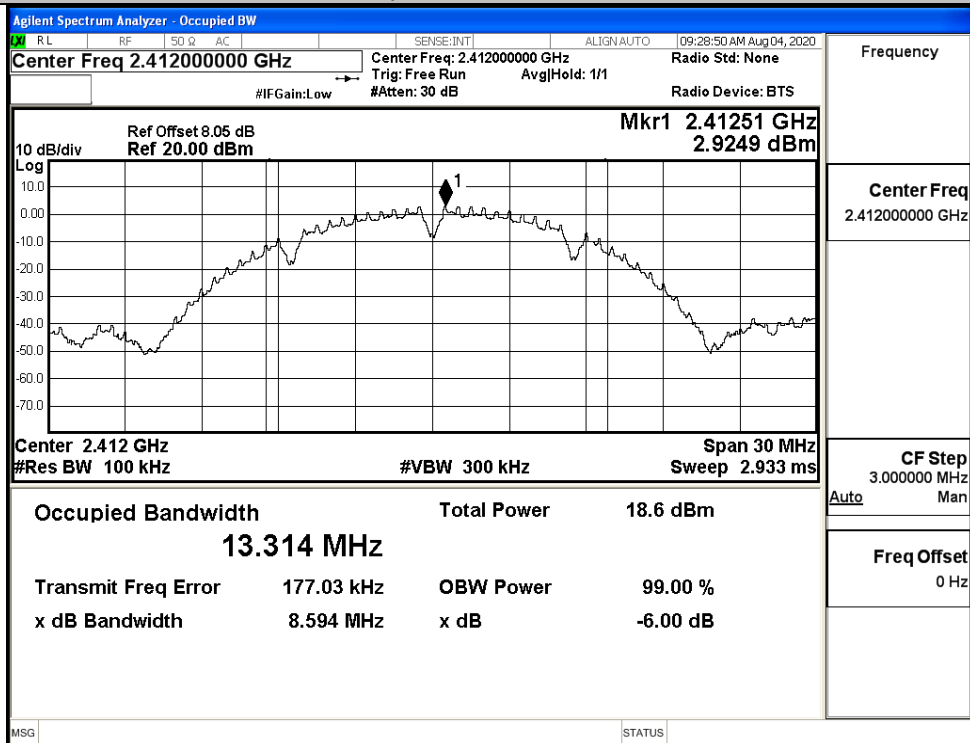


A.4 6dB Bandwidth

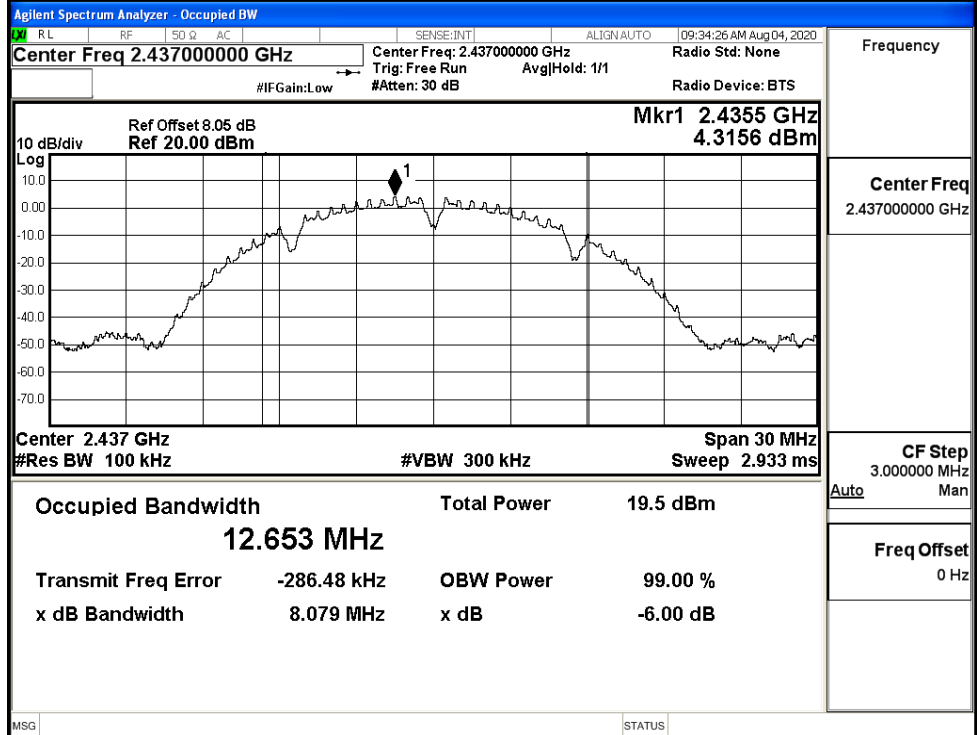
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	8.594	≥ 0.5	PASS
	MCH	8.079	≥ 0.5	PASS
	HCH	8.585	≥ 0.5	PASS
11G	LCH	15.72	≥ 0.5	PASS
	MCH	15.46	≥ 0.5	PASS
	HCH	15.74	≥ 0.5	PASS
11N20SISO	LCH	16.35	≥ 0.5	PASS
	MCH	15.95	≥ 0.5	PASS
	HCH	16.35	≥ 0.5	PASS
11N40SISO	LCH	26.31	≥ 0.5	PASS
	MCH	23.83	≥ 0.5	PASS
	HCH	36.42	≥ 0.5	PASS

Test Graphs

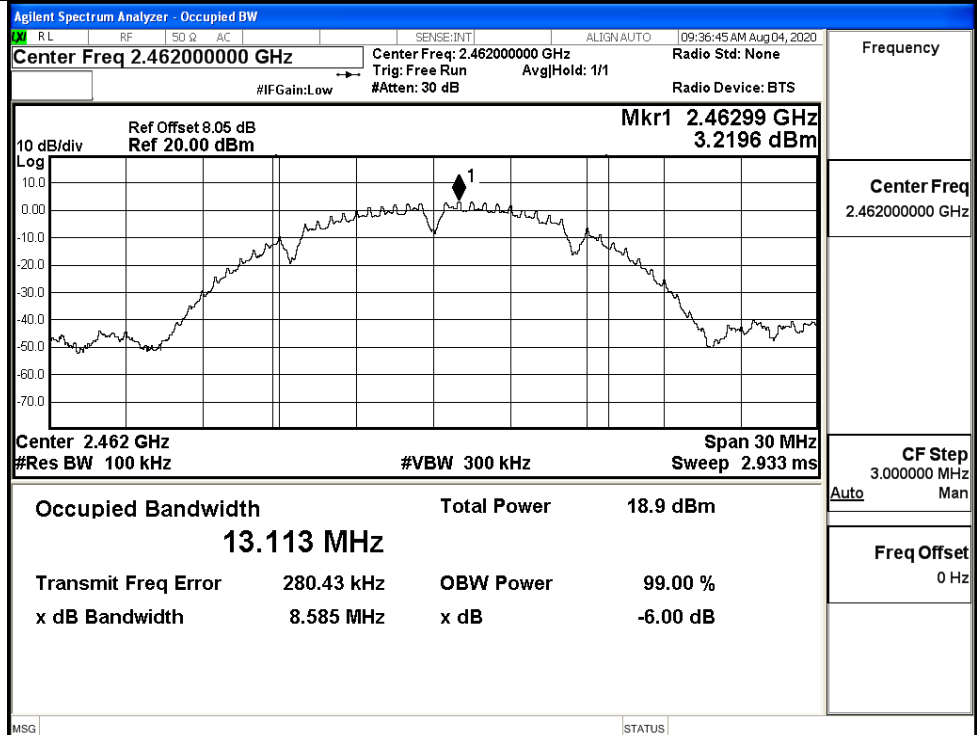
11B/LCH



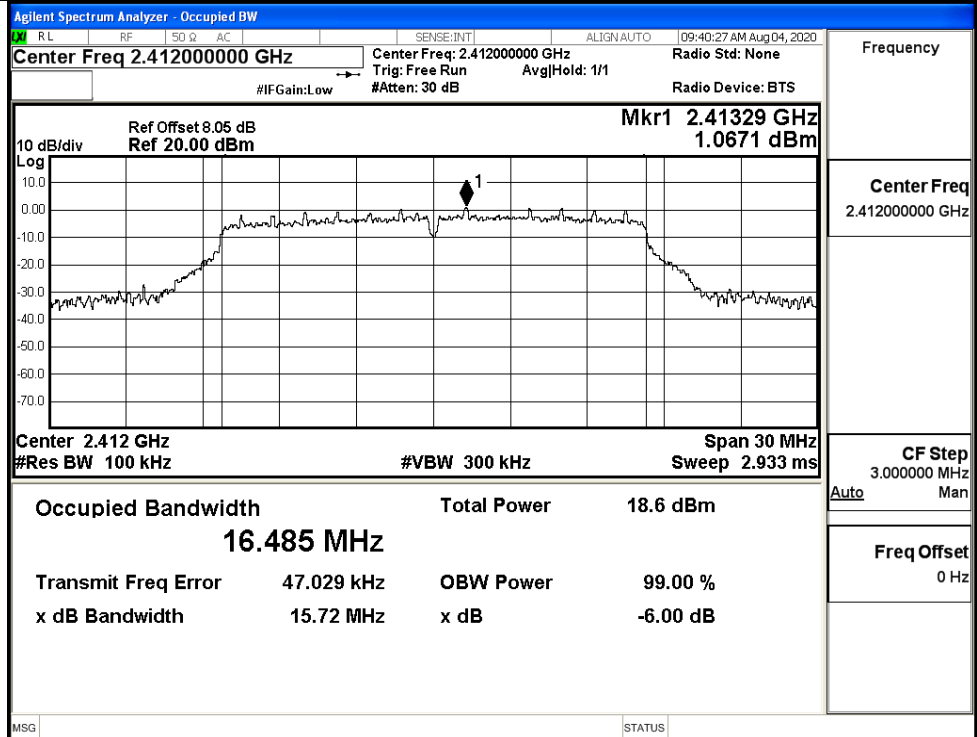
11B/MCH



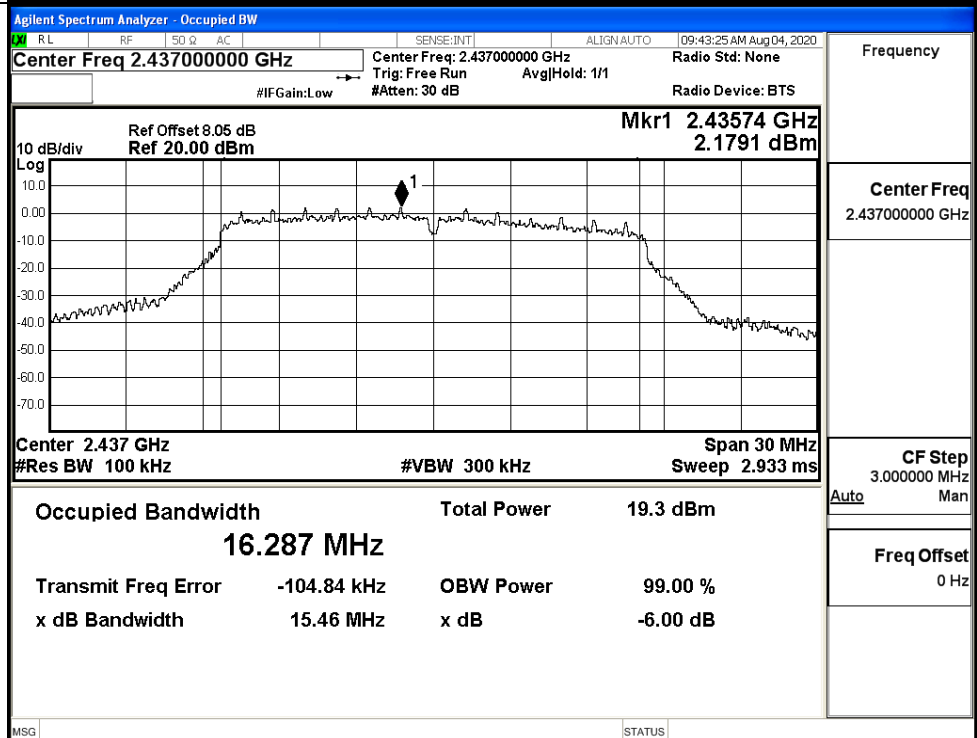
11B/HCH



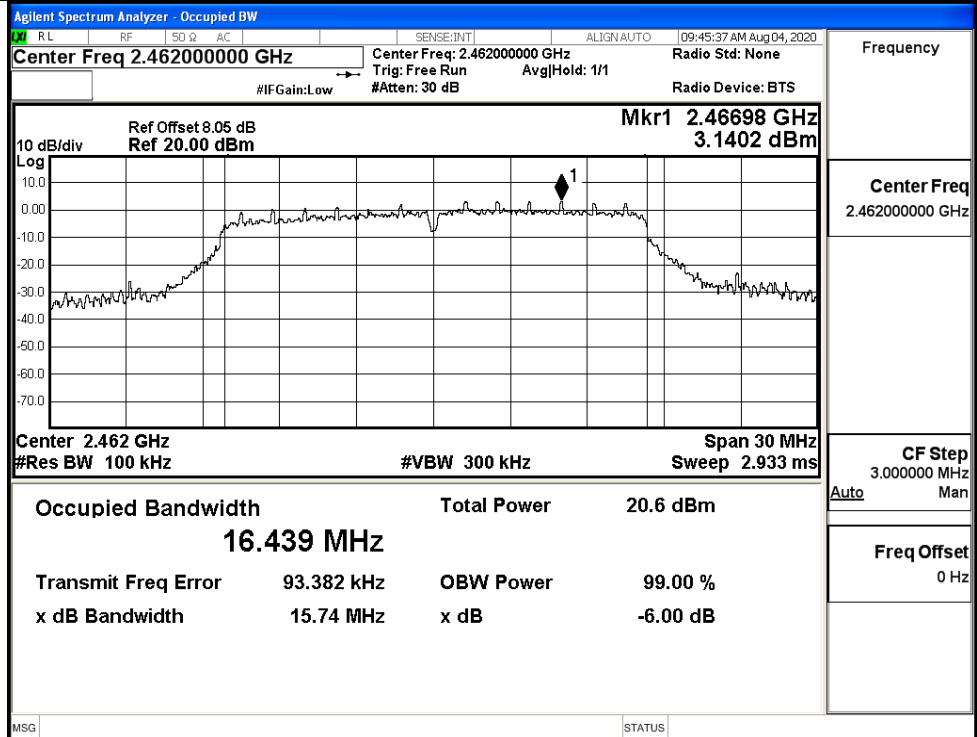
11G/LCH



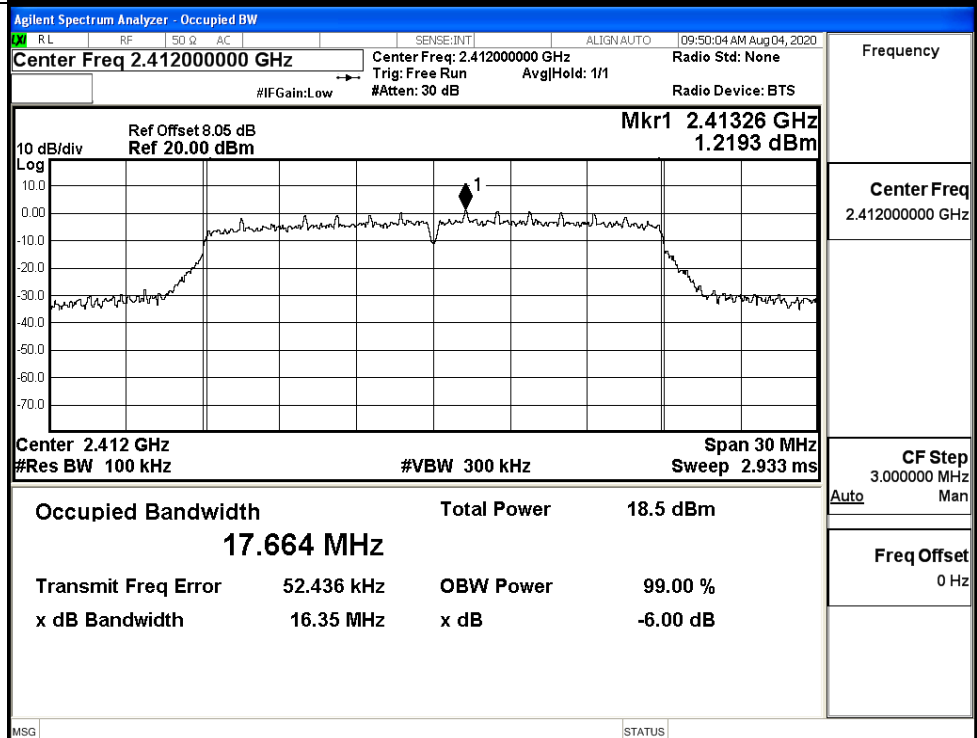
11G/MCH



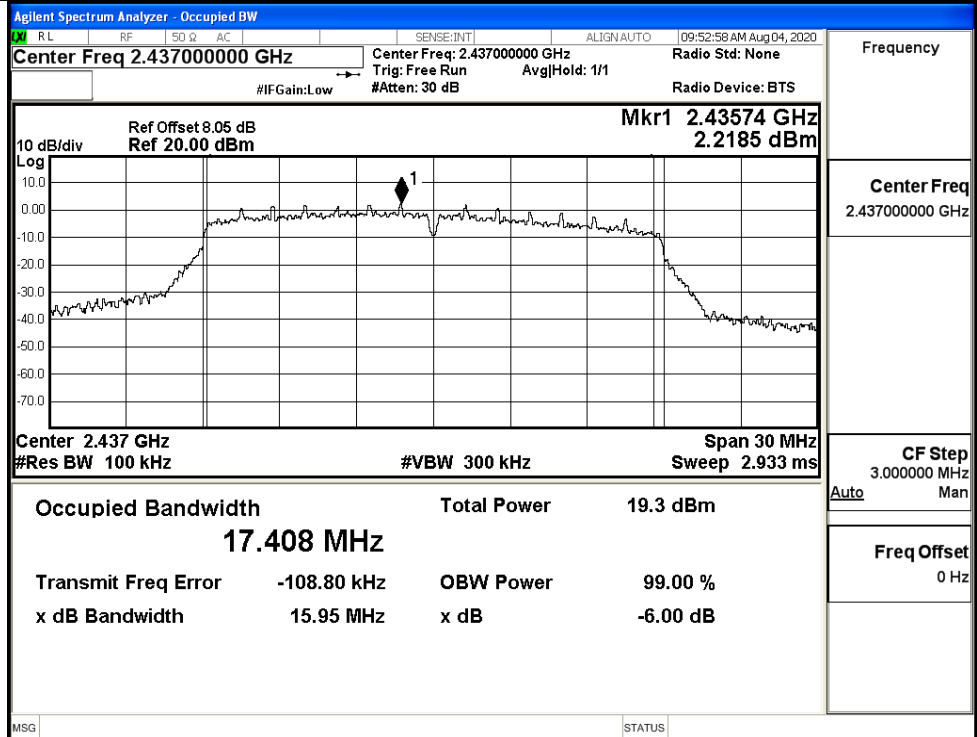
11G/HCH



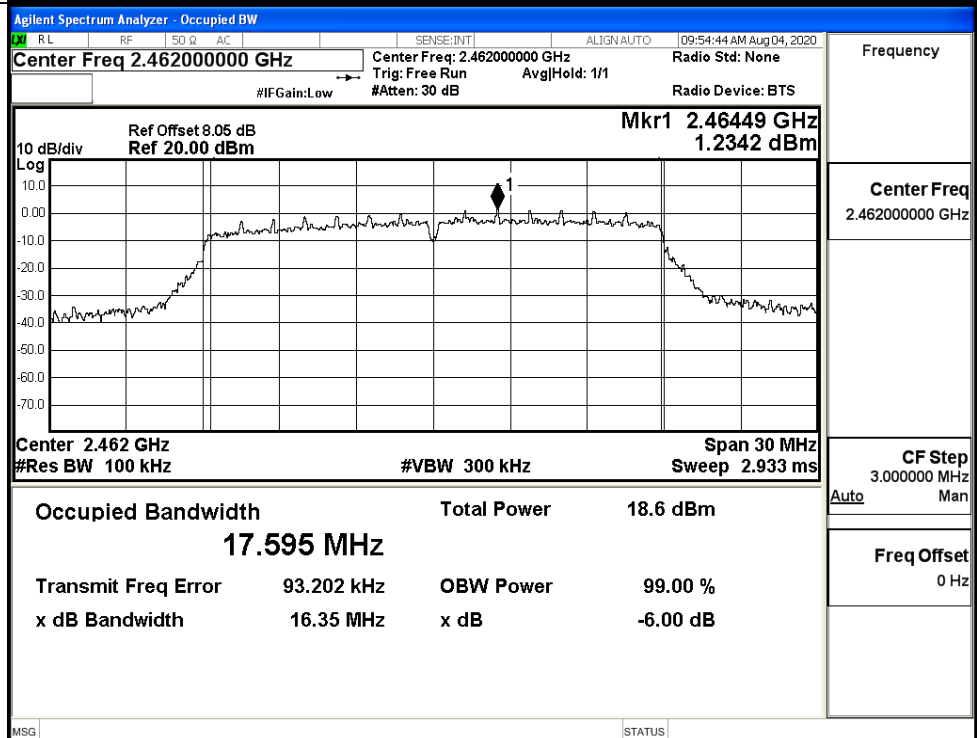
11N20SISO/LCH

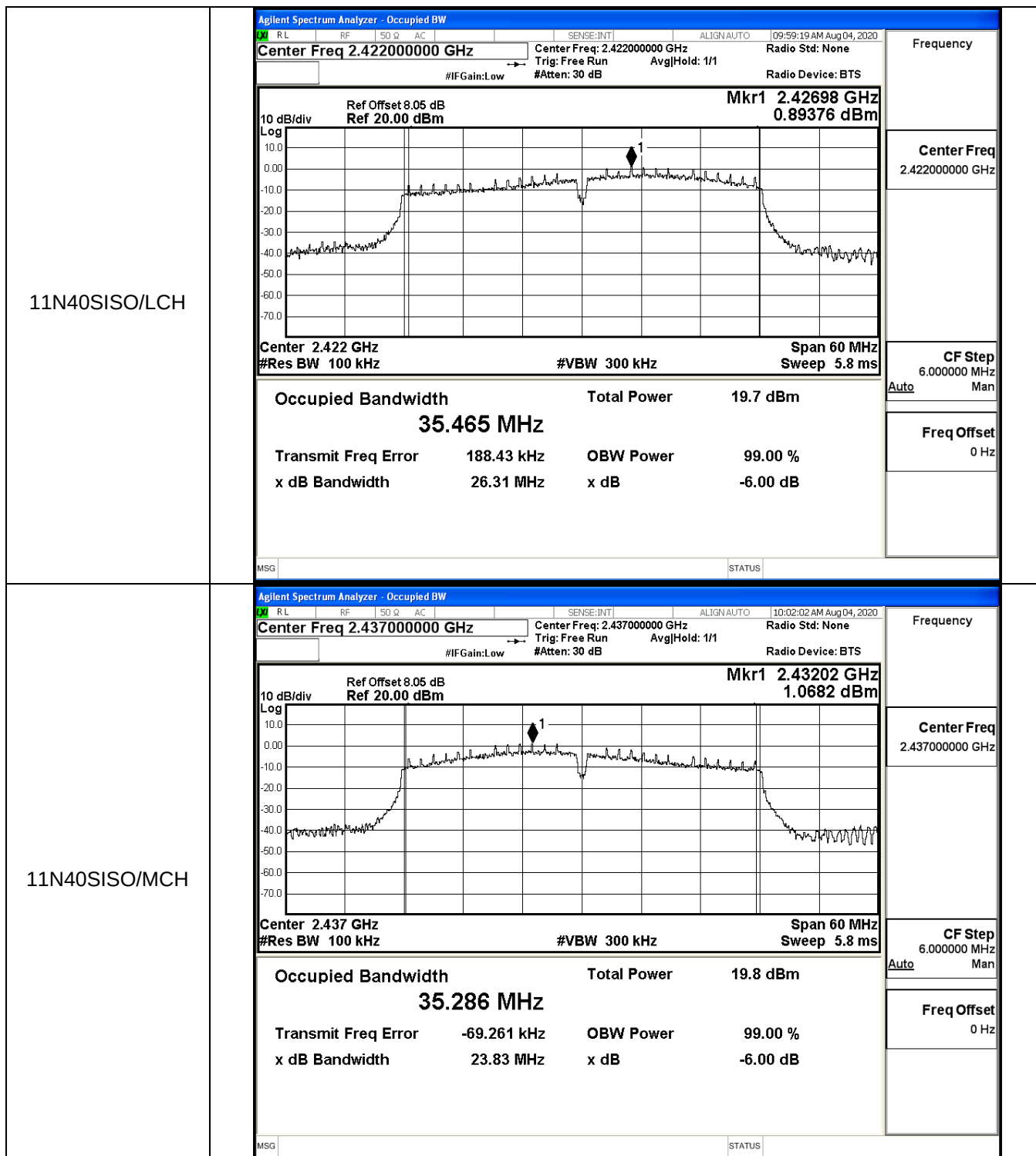


11N20SISO/MCH

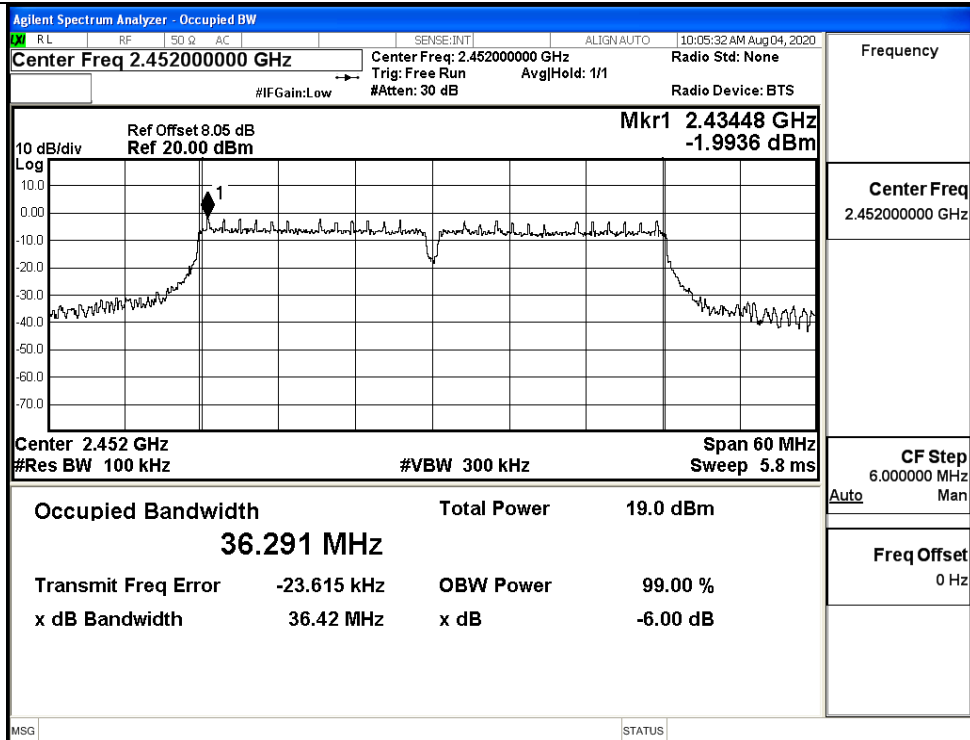


11N20SISO/HCH





11N40SISO/HCH

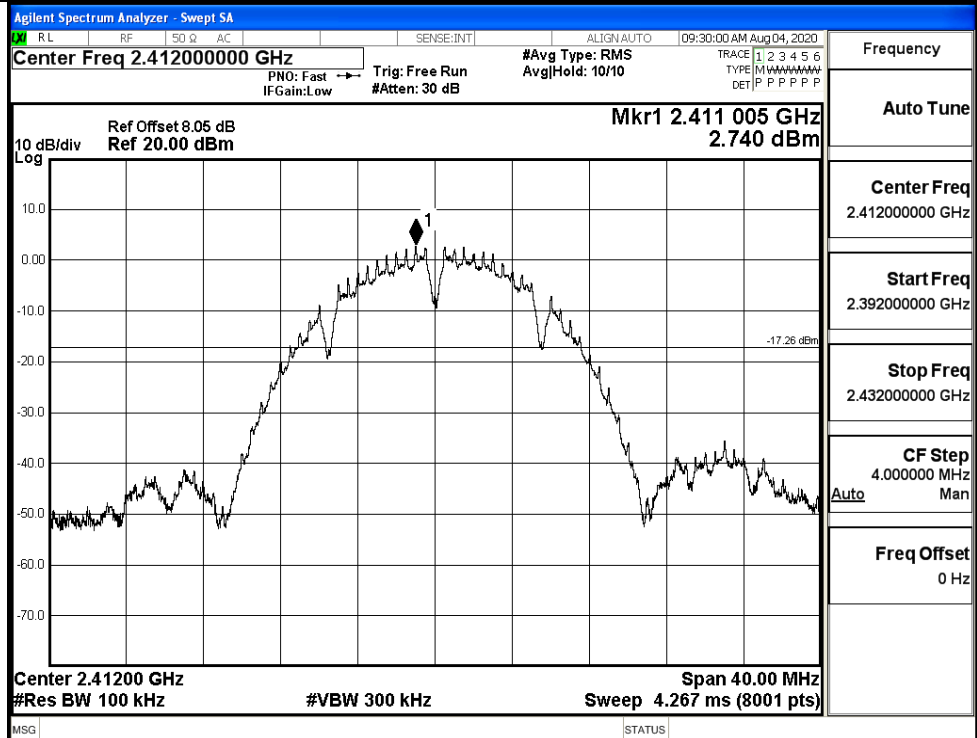


A.5 RF Conducted Spurious Emissions

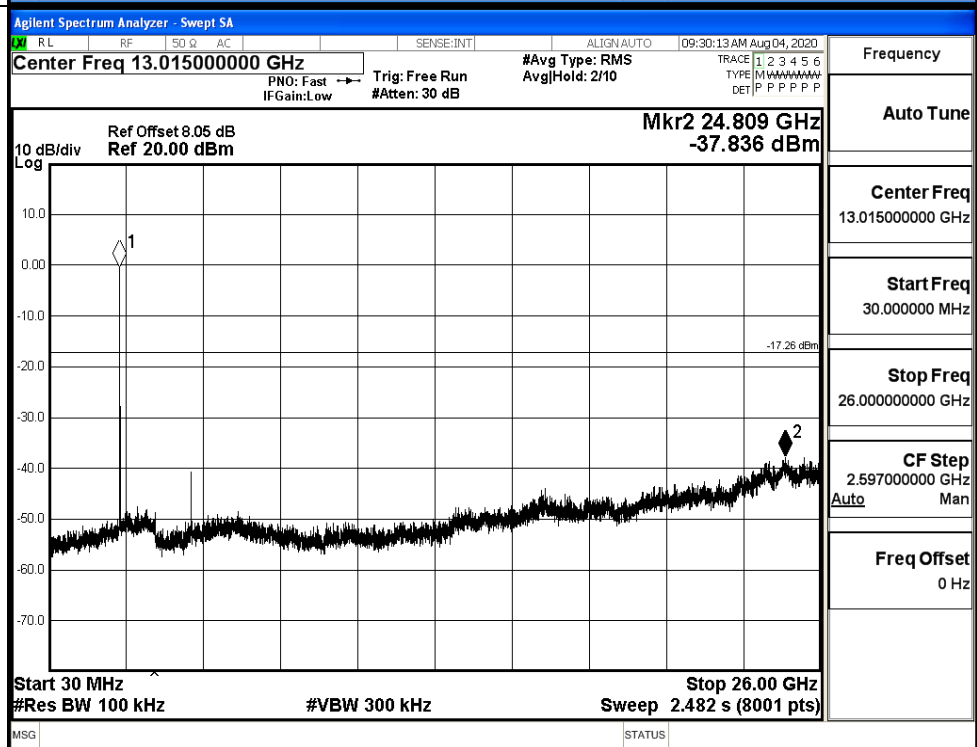
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	2.74	-37.836	-17.260	PASS
	MCH	4.272	-38.286	-15.728	PASS
	HCH	3.255	-38.559	-16.745	PASS
11G	LCH	1.408	-37.941	-18.592	PASS
	MCH	1.97	-37.187	-18.030	PASS
	HCH	3.475	-37.587	-16.525	PASS
11N20 SISO	LCH	0.759	-38.282	-19.241	PASS
	MCH	2.058	-38.514	-17.942	PASS
	HCH	1.527	-38.410	-18.473	PASS
11N40 SISO	LCH	0.622	-37.327	-19.378	PASS
	MCH	0.977	-38.467	-19.023	PASS
	HCH	-2.031	-38.529	-22.031	PASS

11B LCH Graphs

Pref/11B/LCH

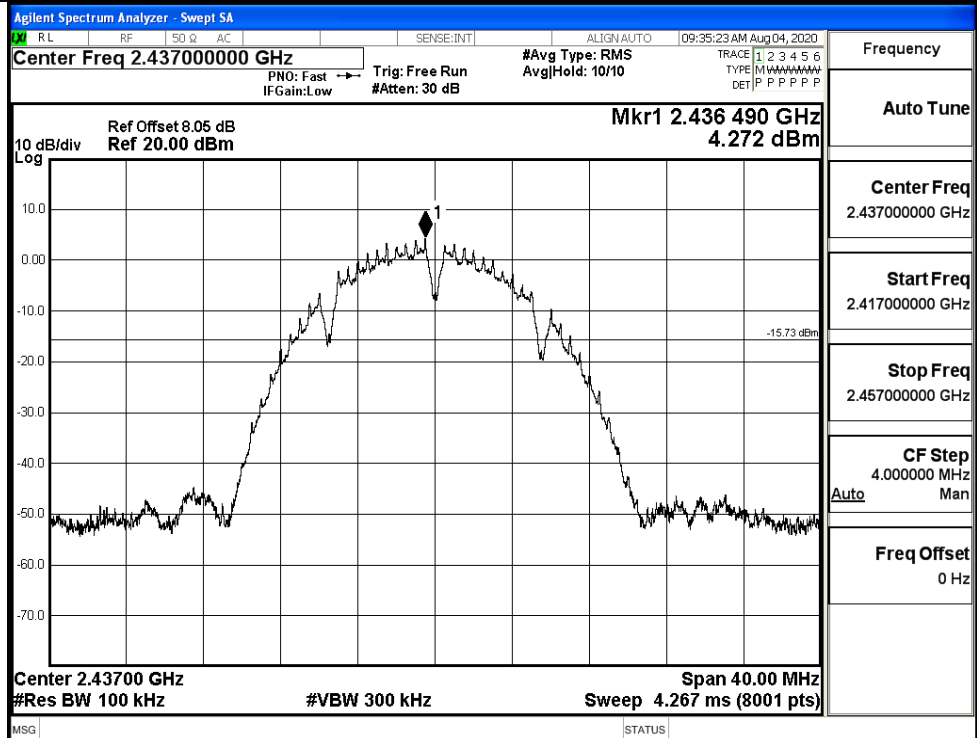


Puw/11B/LCH

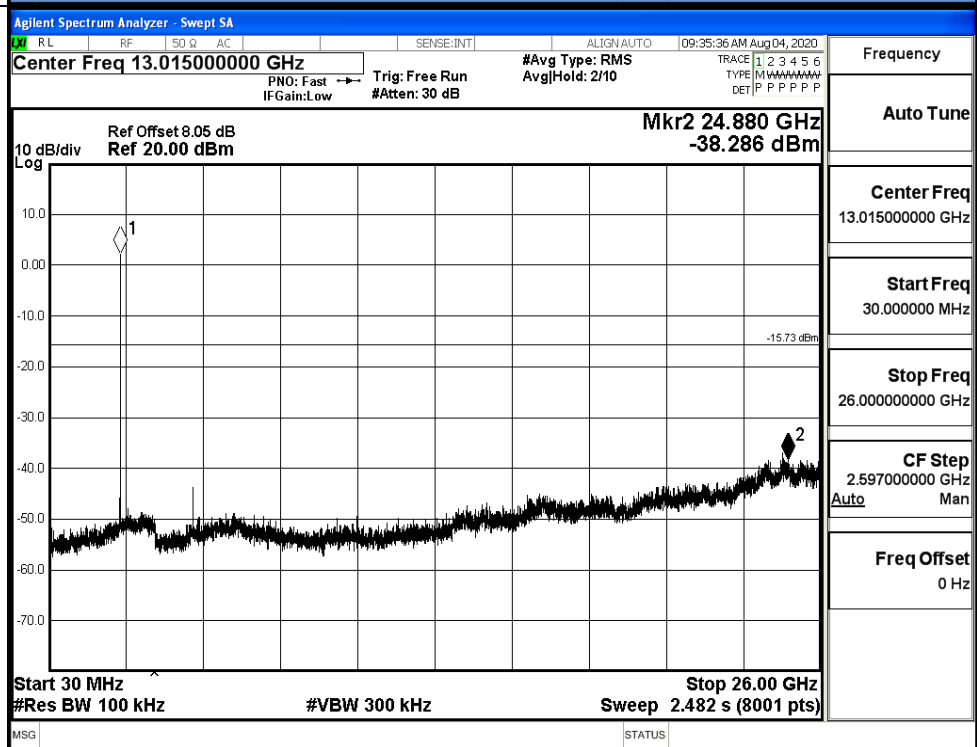


11B MCH Graphs

Pref/11B/MCH

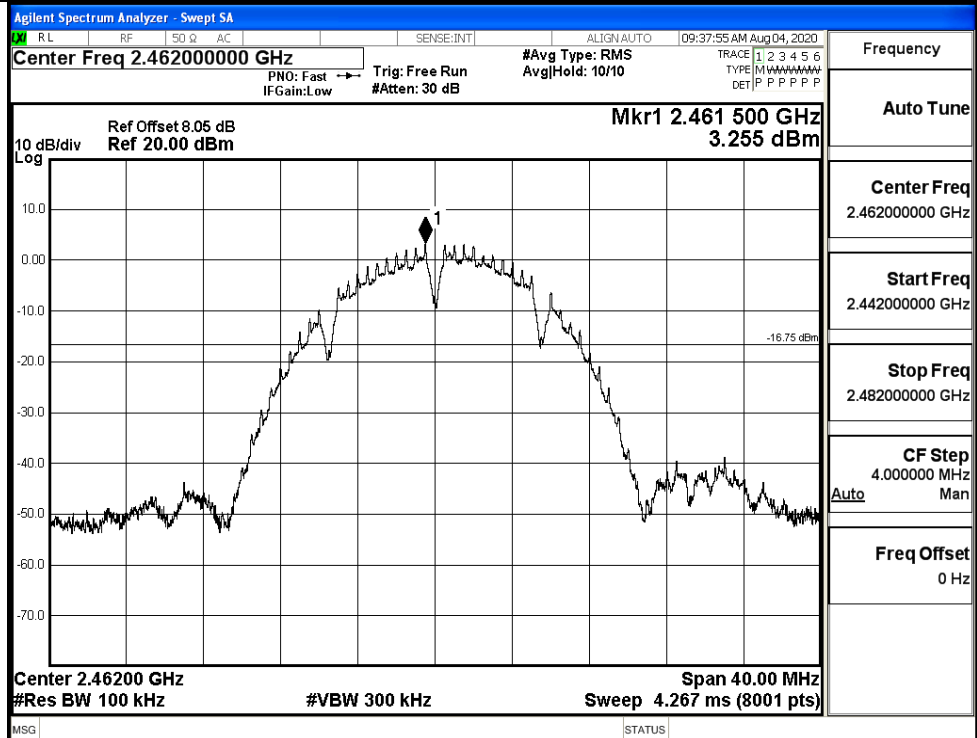


Puw/11B/MCH

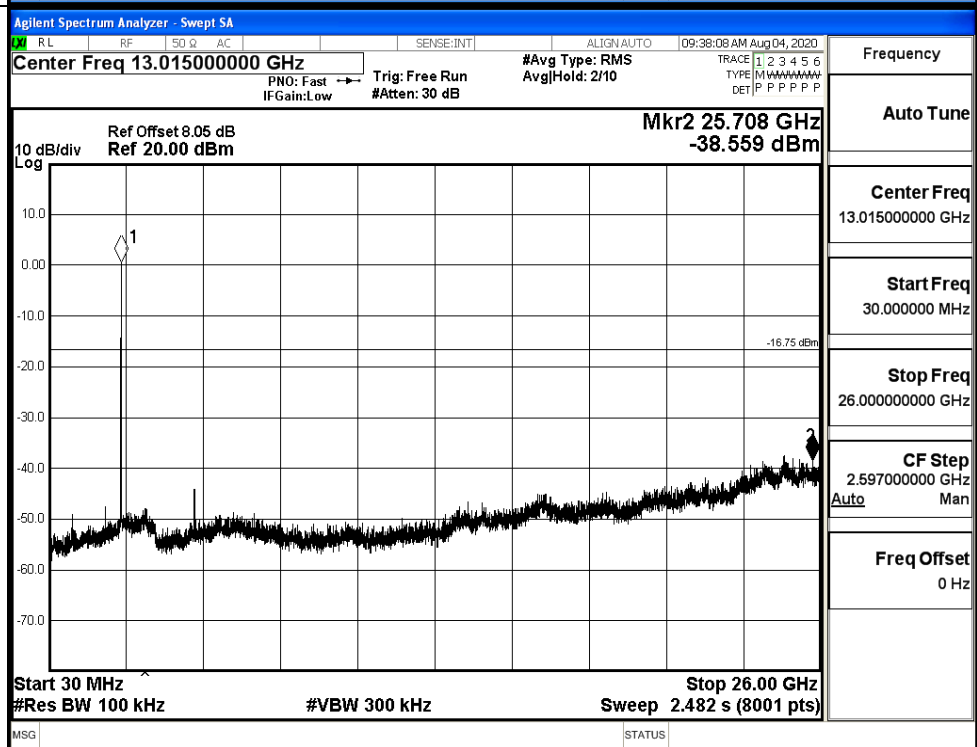


11B HCH Graphs

Pref/11B/HCH

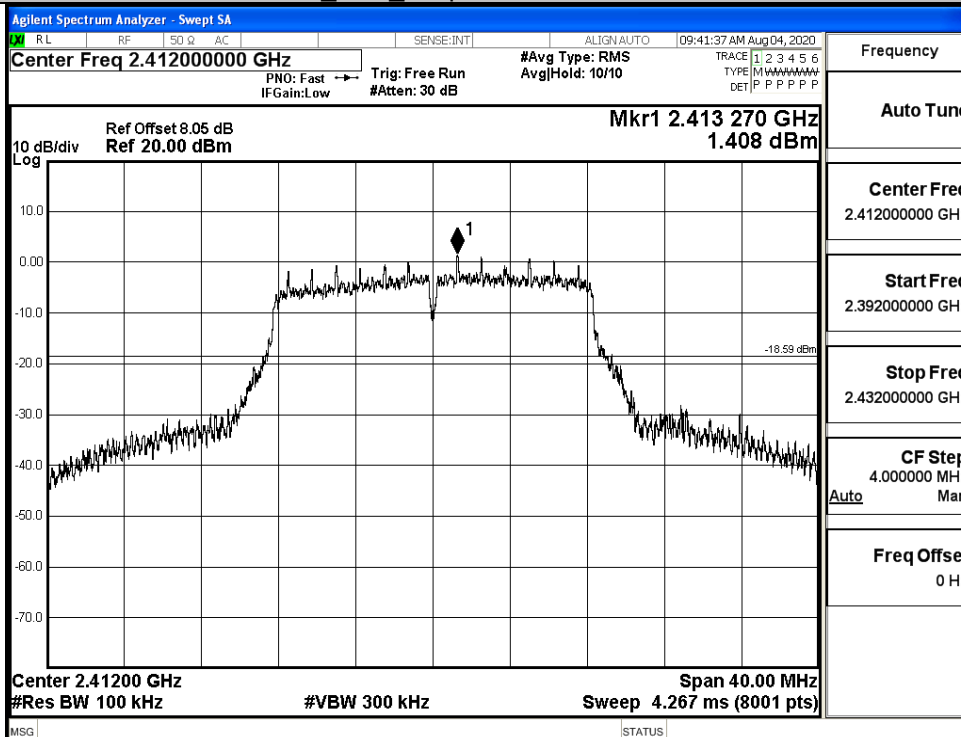


Puw/11B/HCH

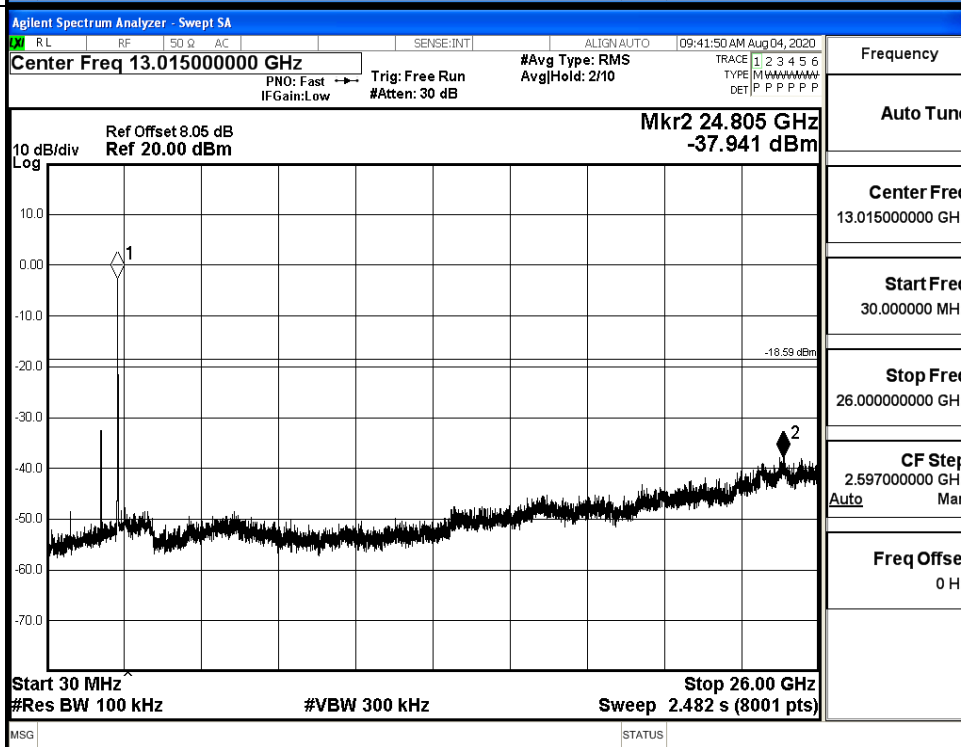


11G LCH Graphs

Pref/11G/LCH

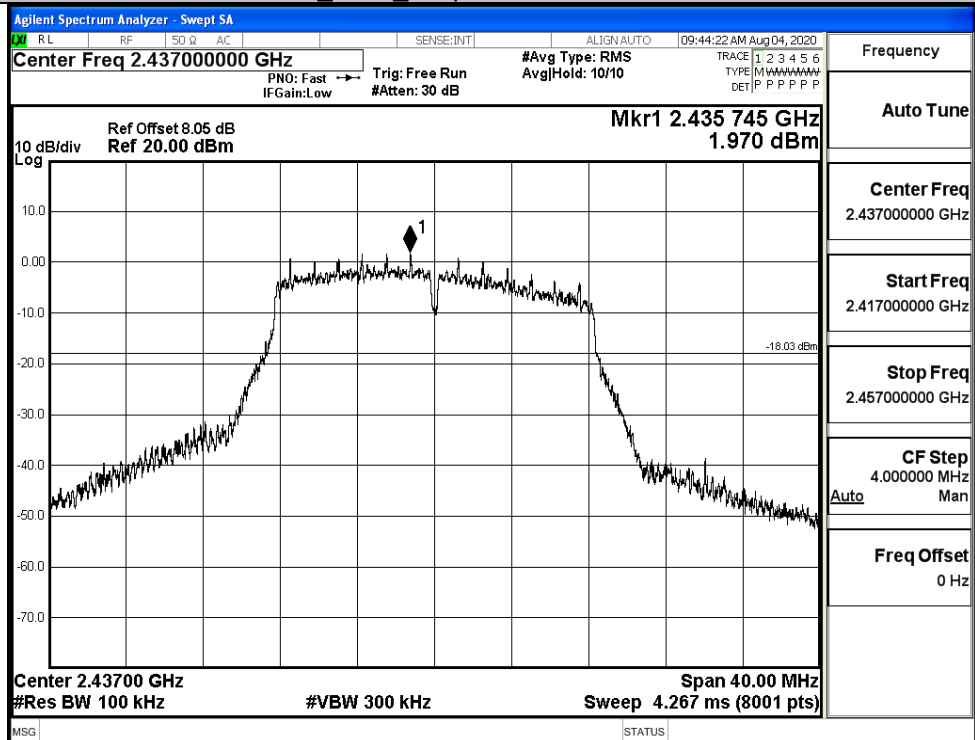


Puw/11G/LCH

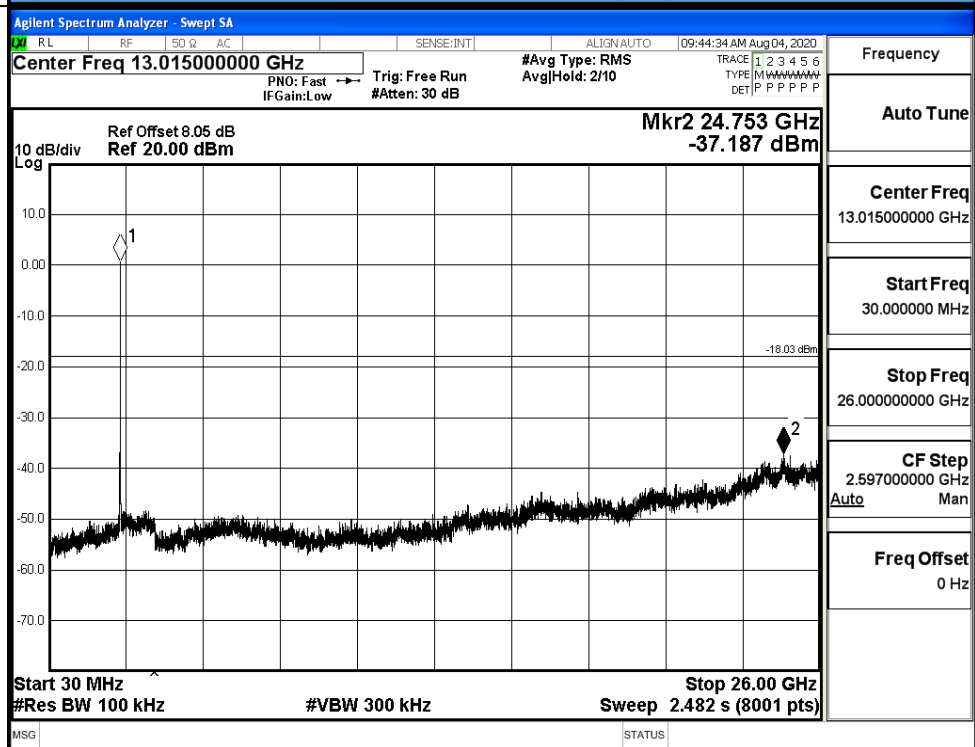


11G MCH Graphs

Pref/11G/MCH

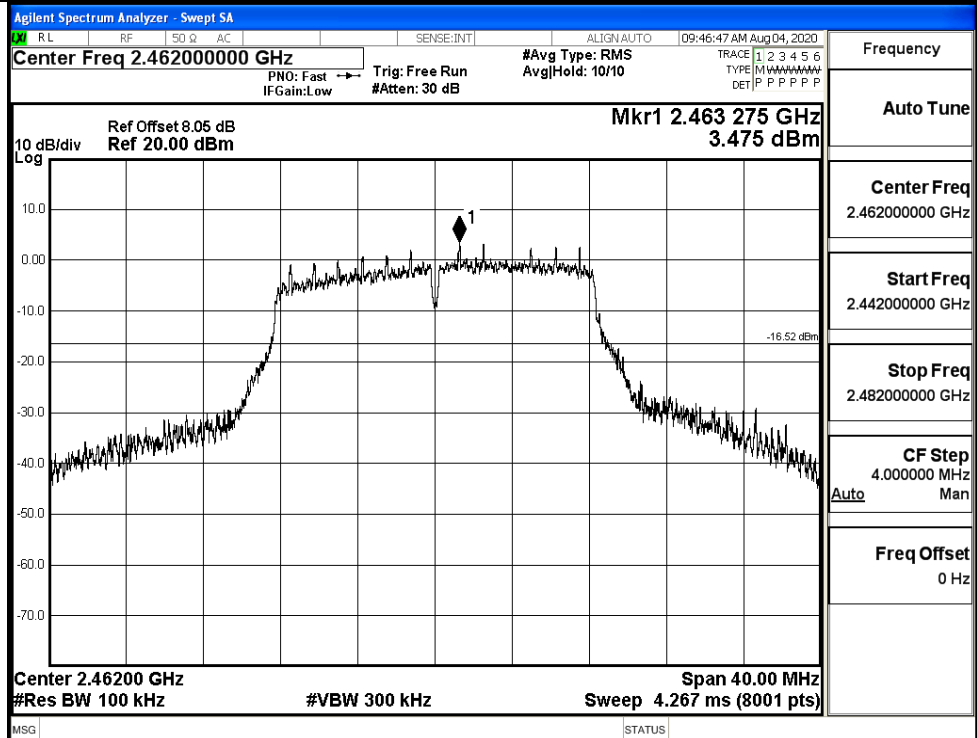


Puw/11G/MCH

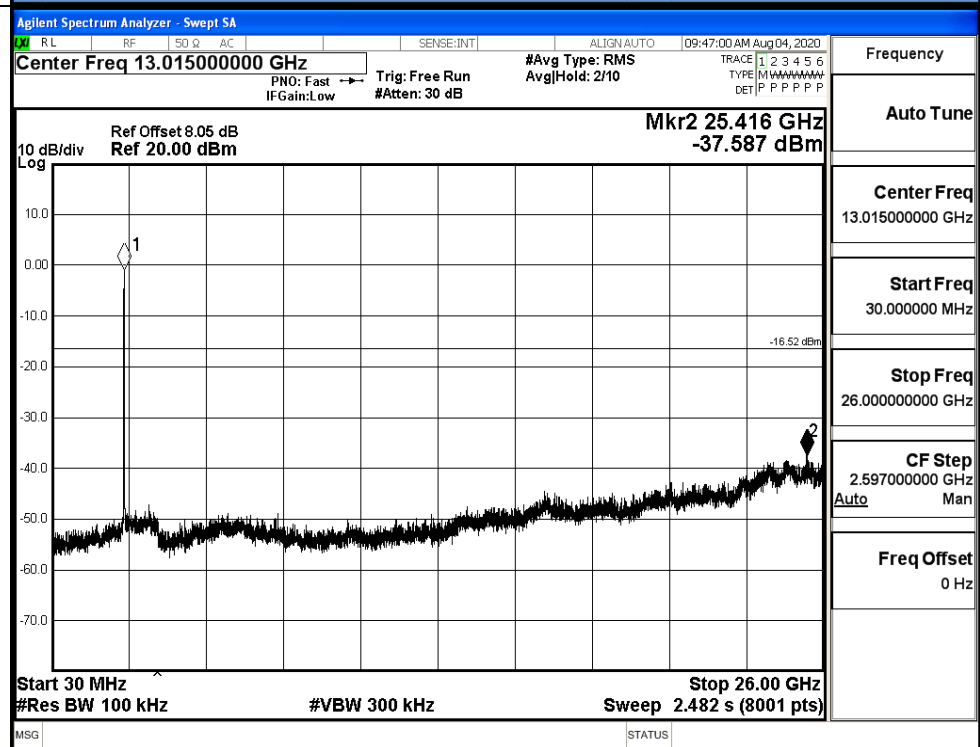


11G HCH Graphs

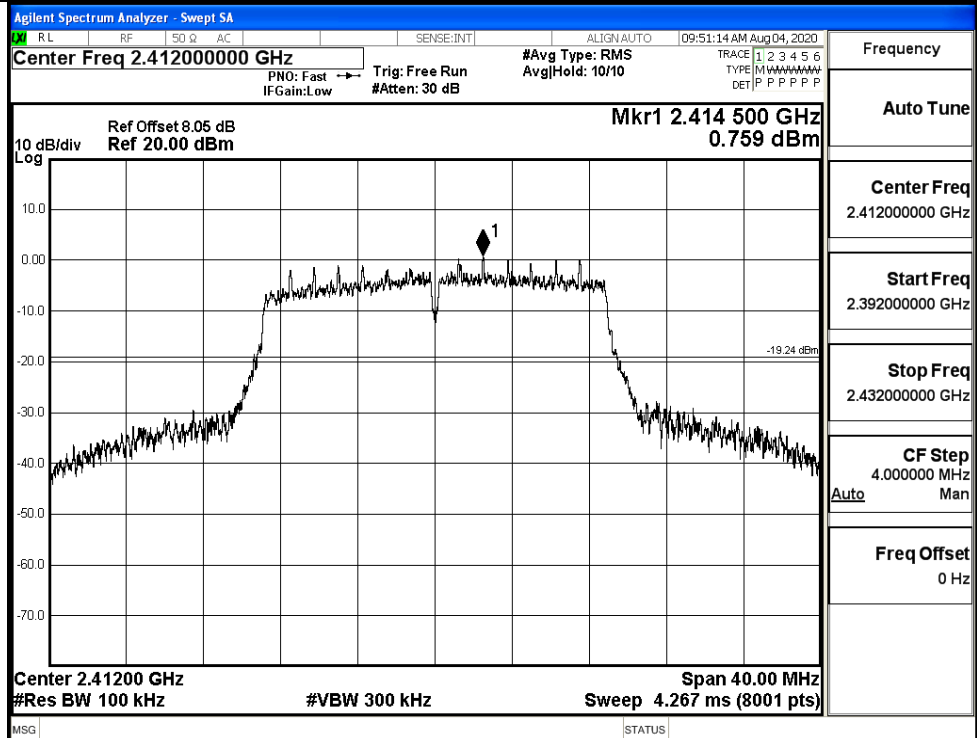
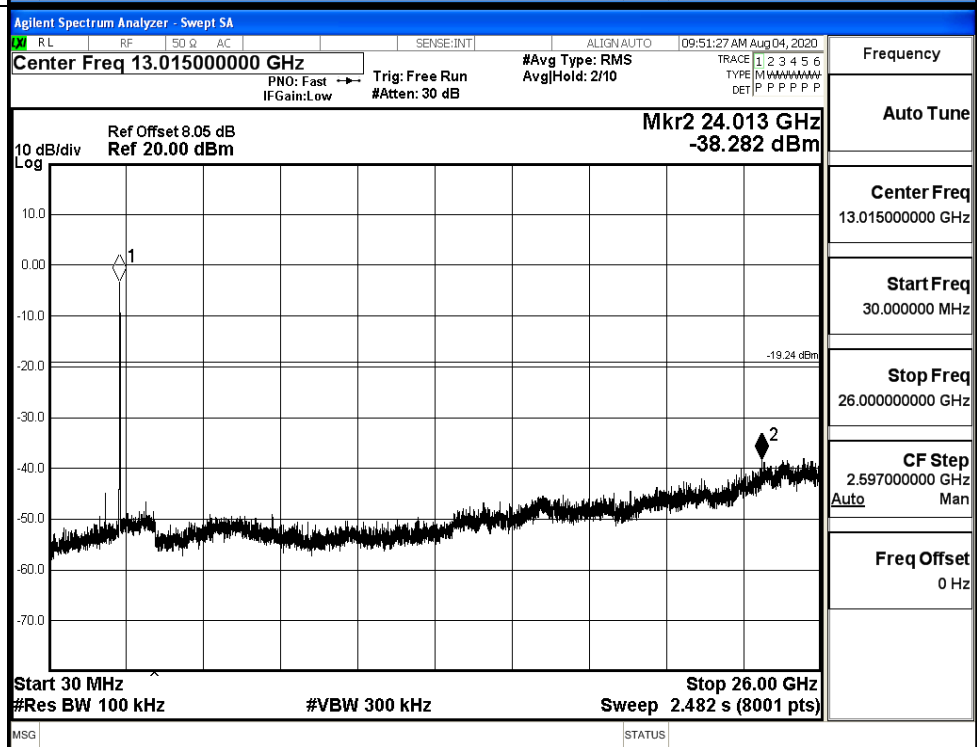
Pref/11G/HCH



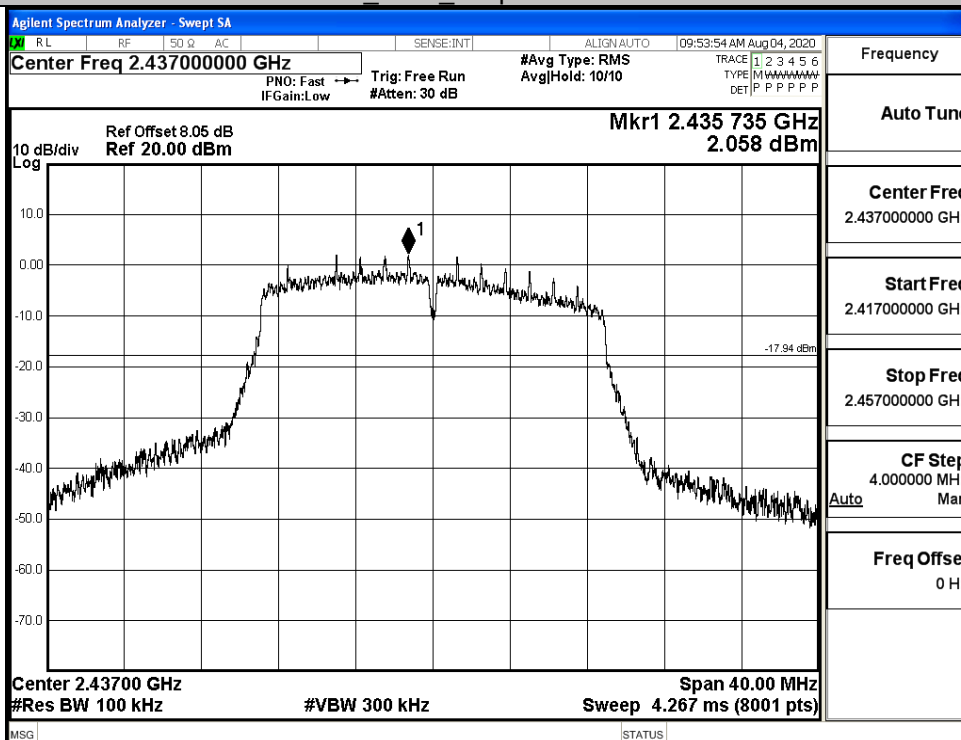
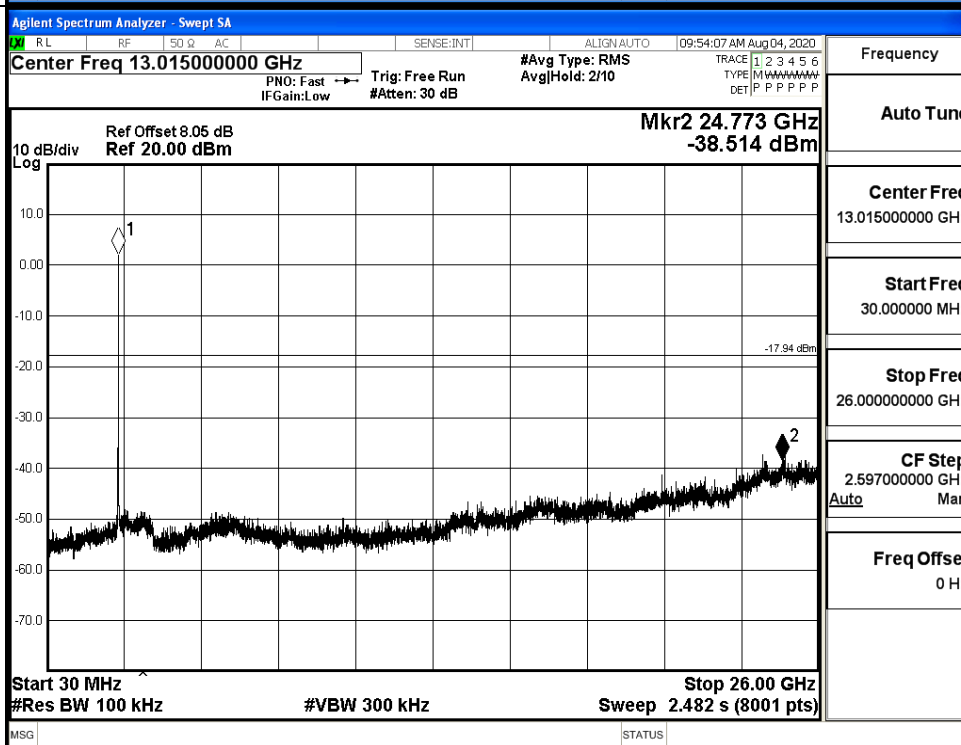
Puw/11G/HCH



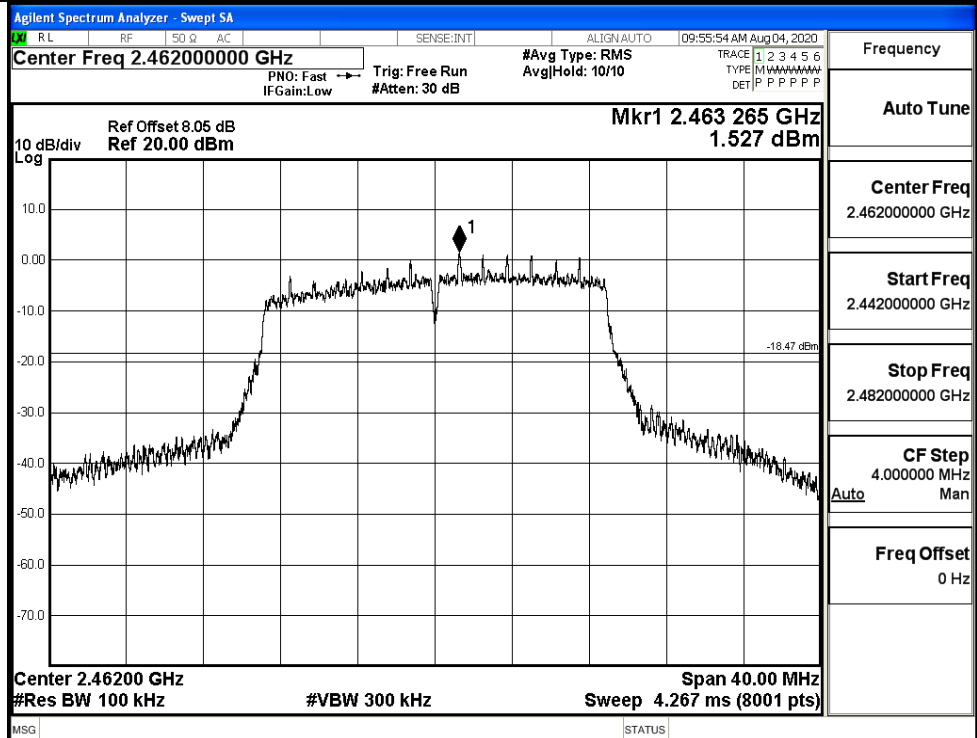
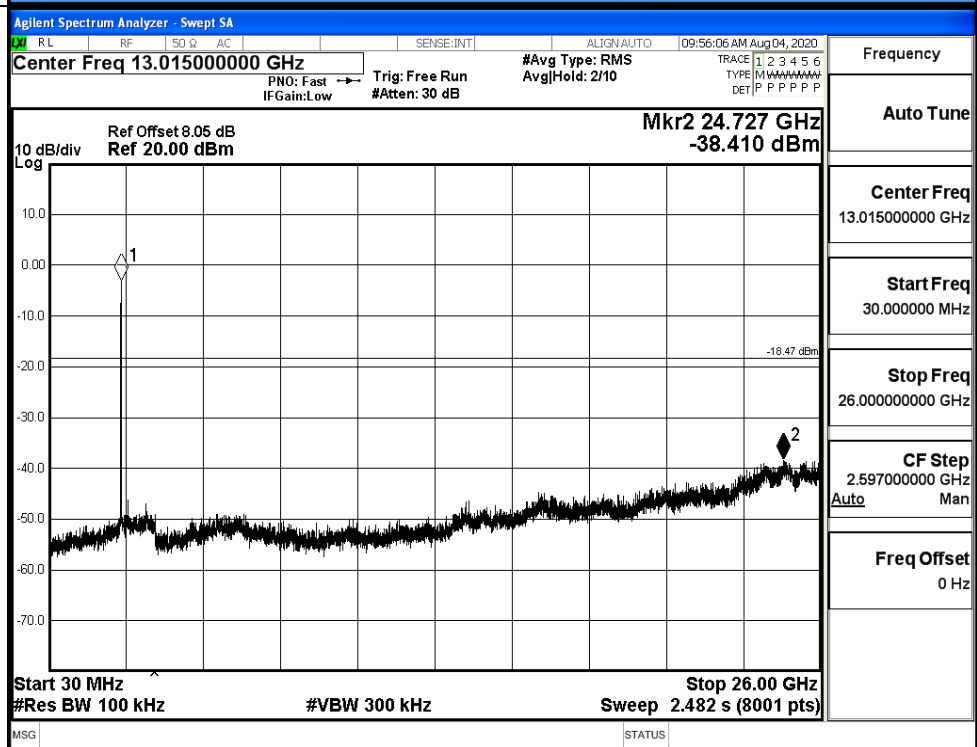
11N20SISO LCH Graphs

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

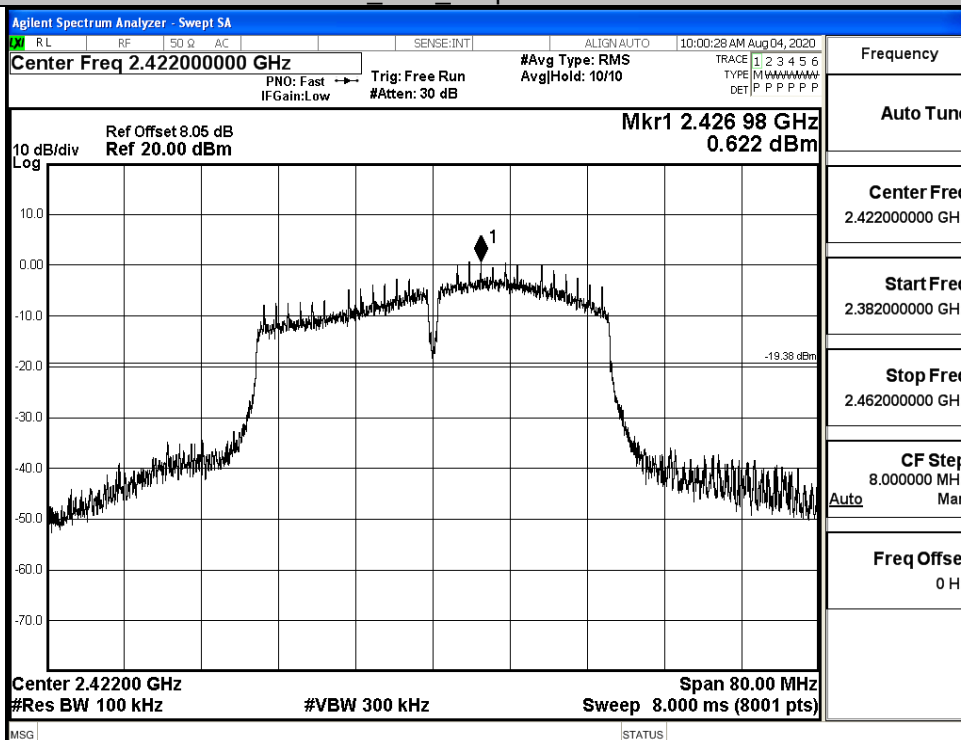
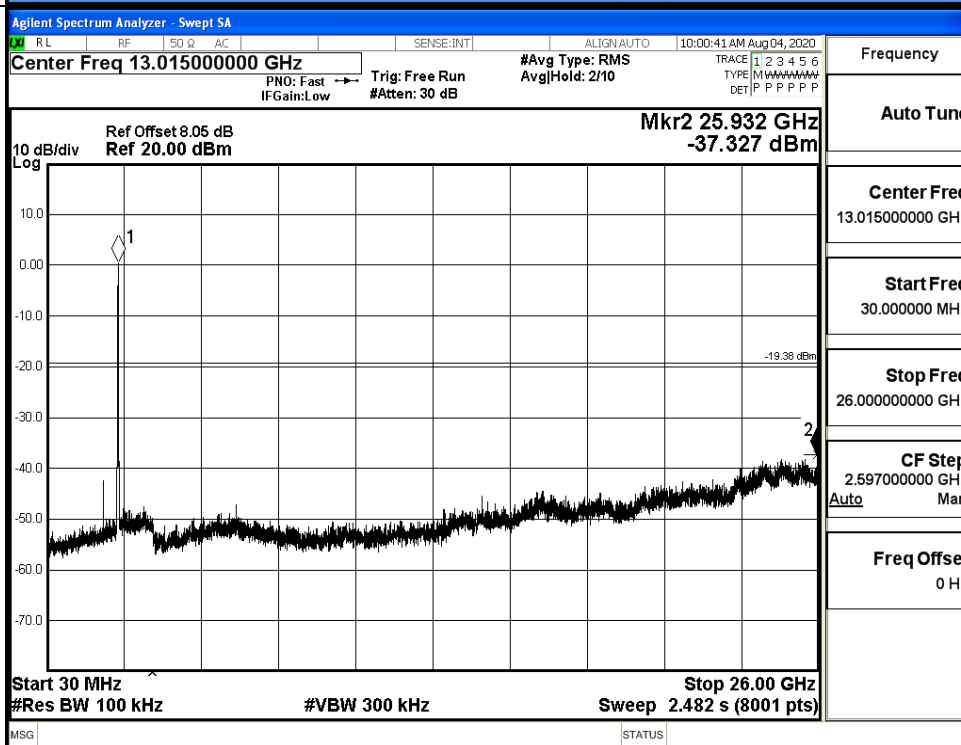
11N20SISO MCH Graphs

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

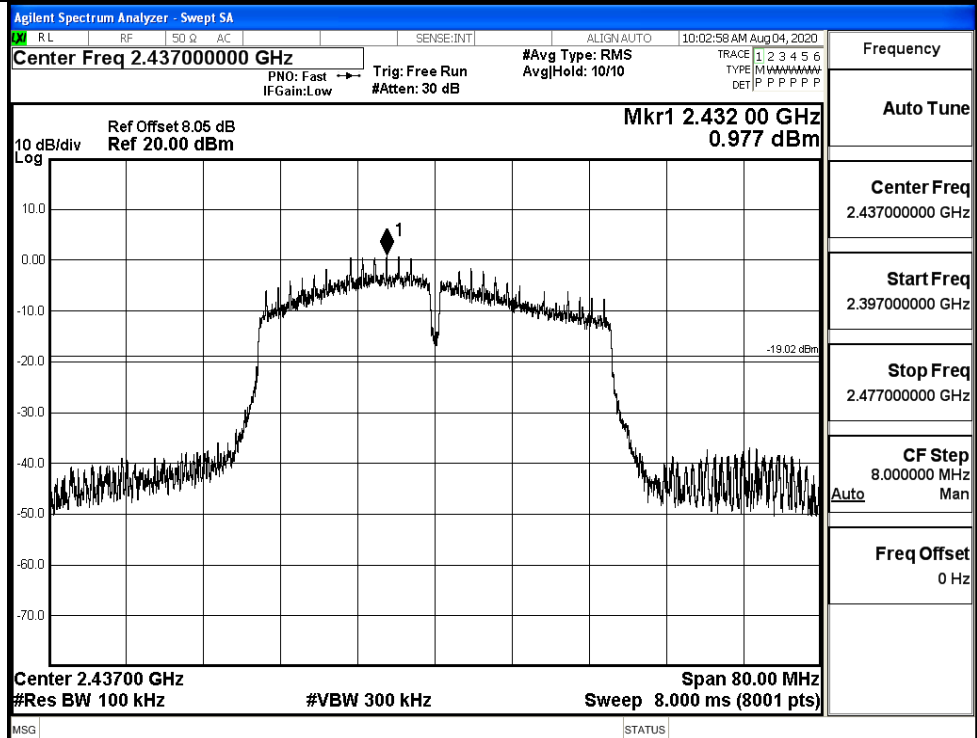
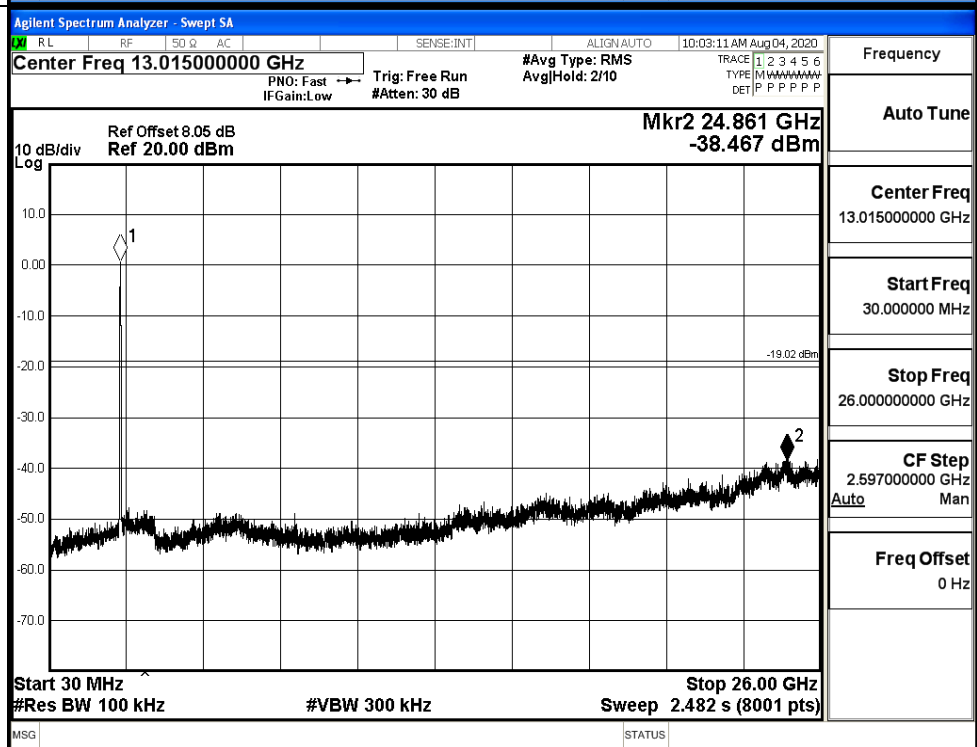
11N20SISO HCH Graphs

Pref/11N20
SISO/HCHPuW/11N20
SISO/HCH

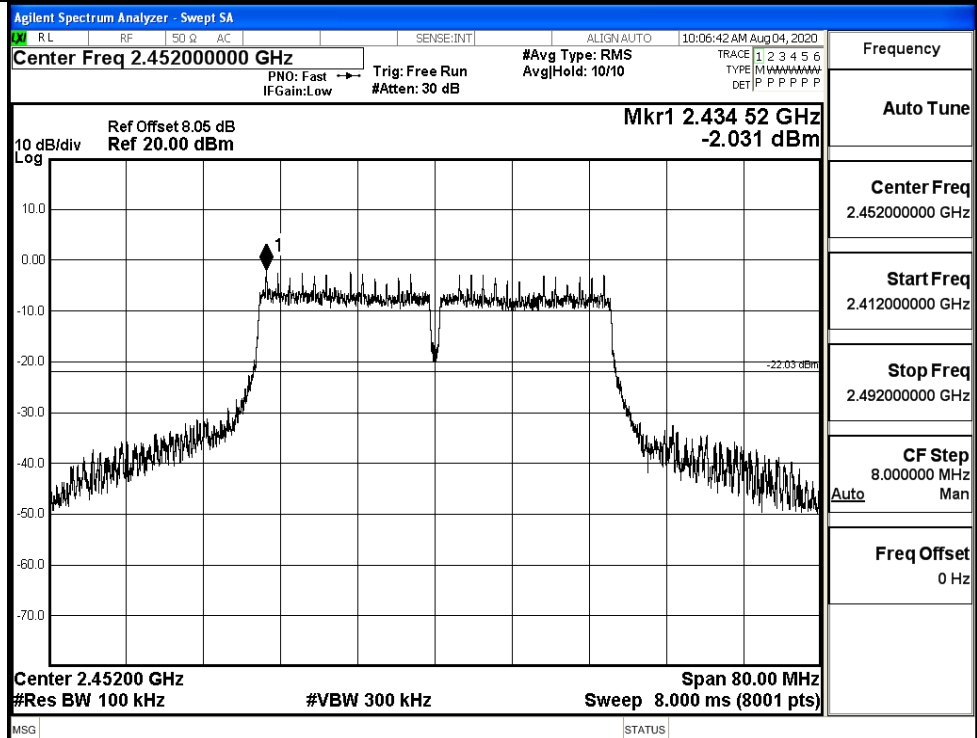
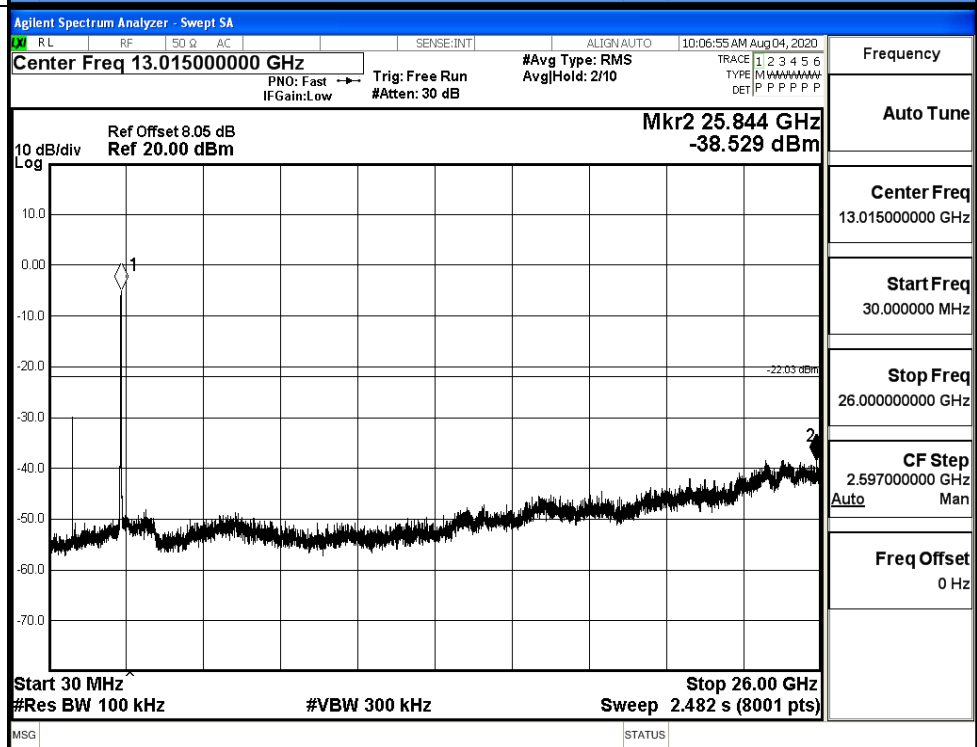
11N40SISO LCH Graphs

Pref/11N40
SISO/LCHPuw/11N40
SISO/LCH

11N40SISO MCH_Graphs

Pref/11N40
SISO/MCHPuw/11N40
SISO/MCH

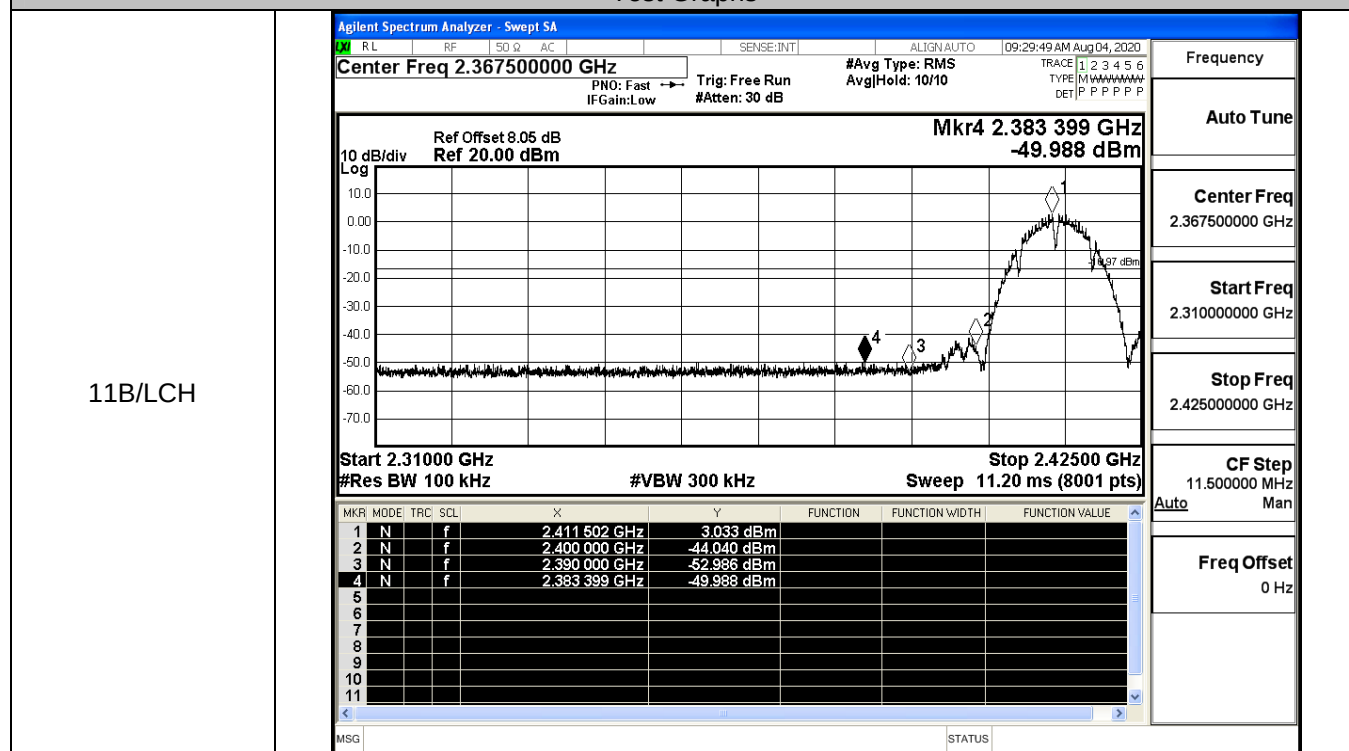
11N40SISO HCH Graphs

Pref/11N40
SISO/HCHPuw/11N40
SISO/HCH

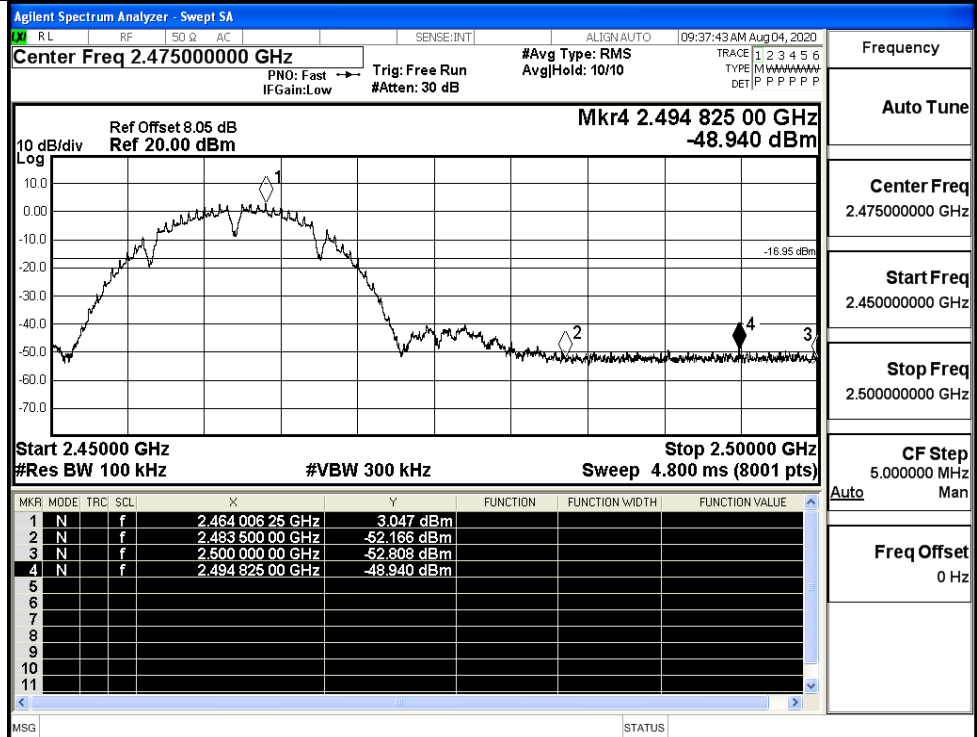
A.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	3.033	-49.988	-16.97	PASS
	HCH	3.047	-48.940	-16.95	PASS
11G	LCH	1.012	-43.856	-18.99	PASS
	HCH	3.461	-40.981	-16.54	PASS
11N20SISO	LCH	1.262	-44.782	-18.74	PASS
	HCH	1.209	-44.860	-18.79	PASS
11N40SISO	LCH	0.966	-40.205	-19.03	PASS
	HCH	-2.136	-37.379	-22.14	PASS

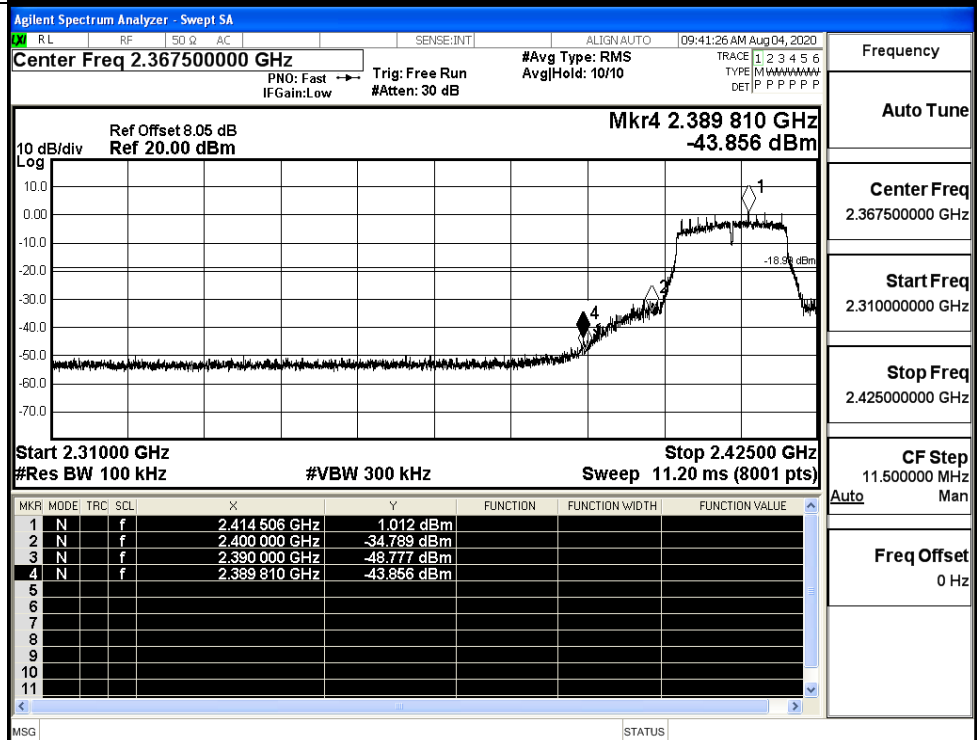
Test Graphs



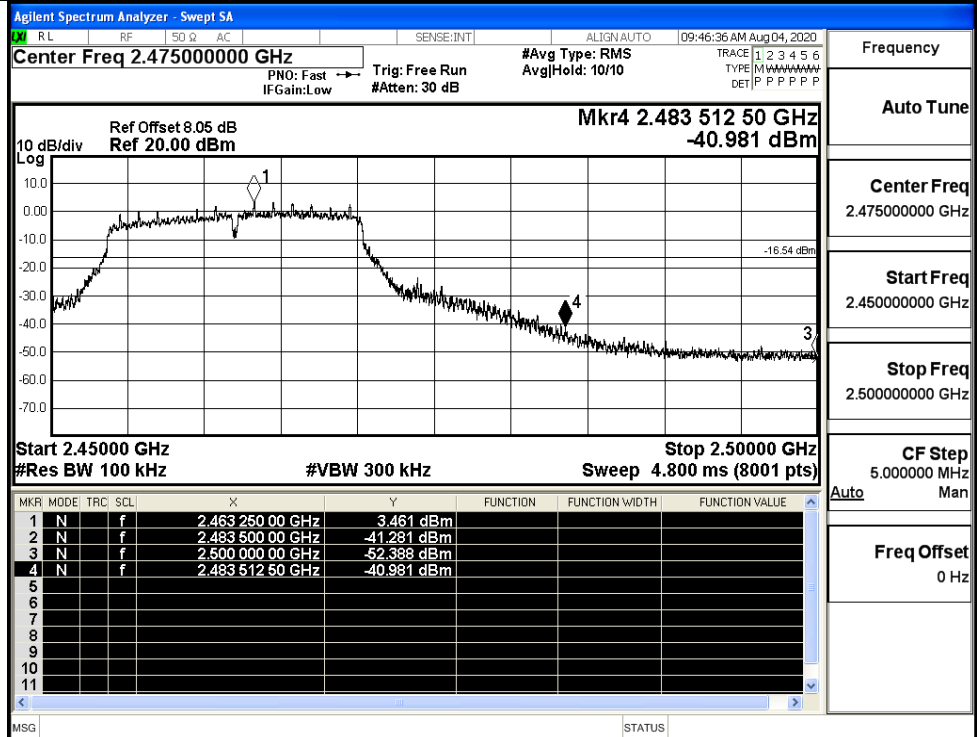
11B/HCH



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

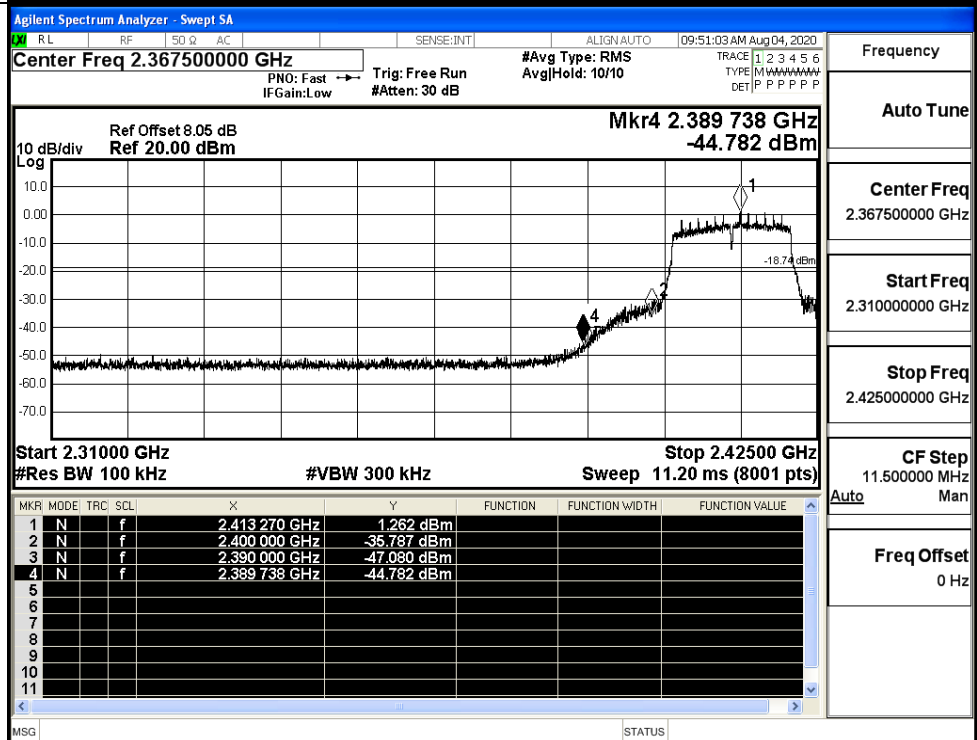
Auto

Man

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

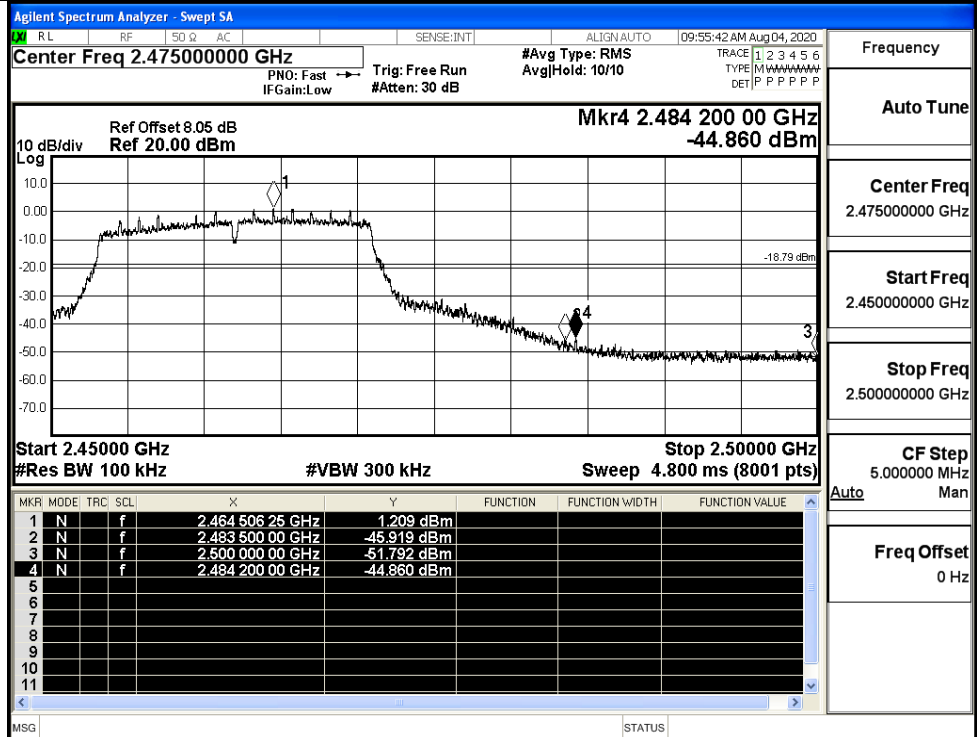
Auto

Man

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

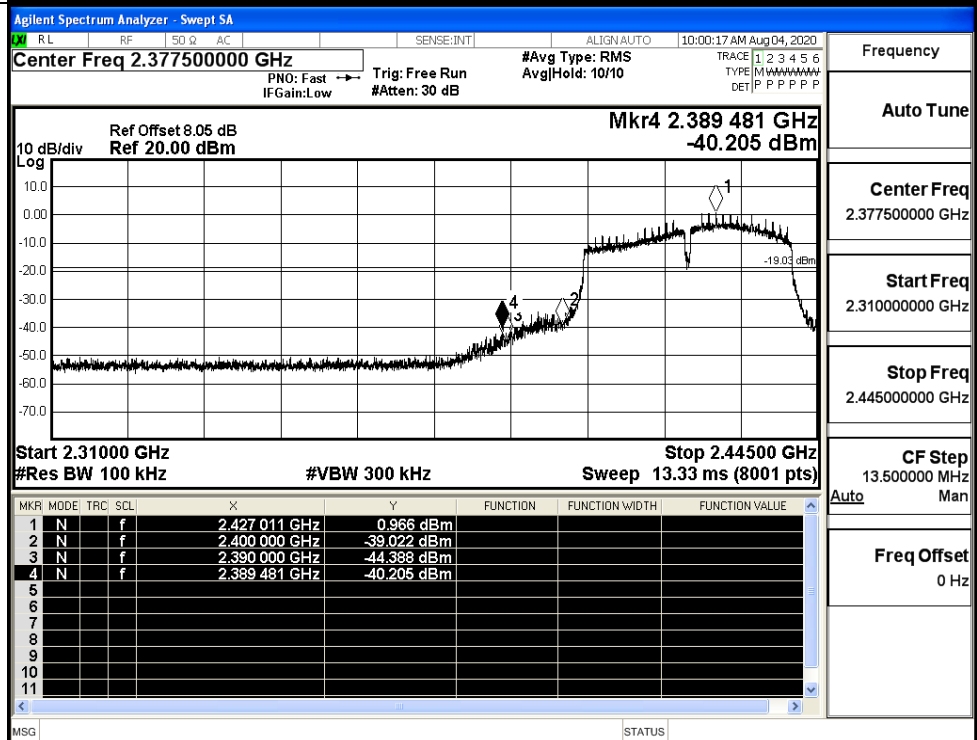
5.000000 MHz

Auto

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

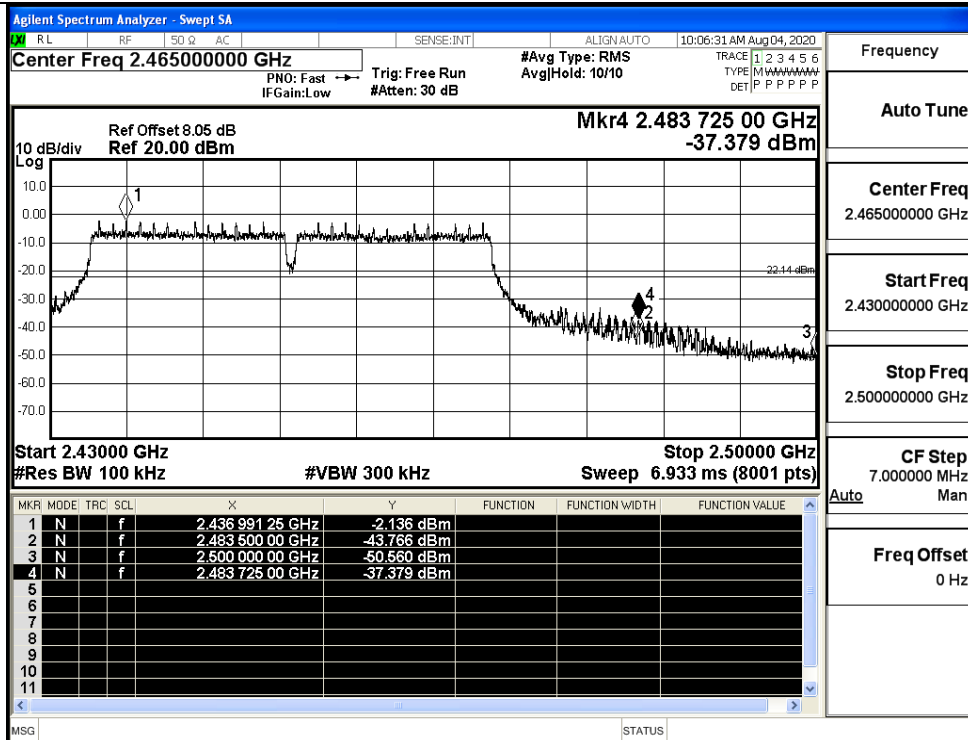
13.500000 MHz

Auto

Freq Offset

0 Hz

11N40SISO/HCH

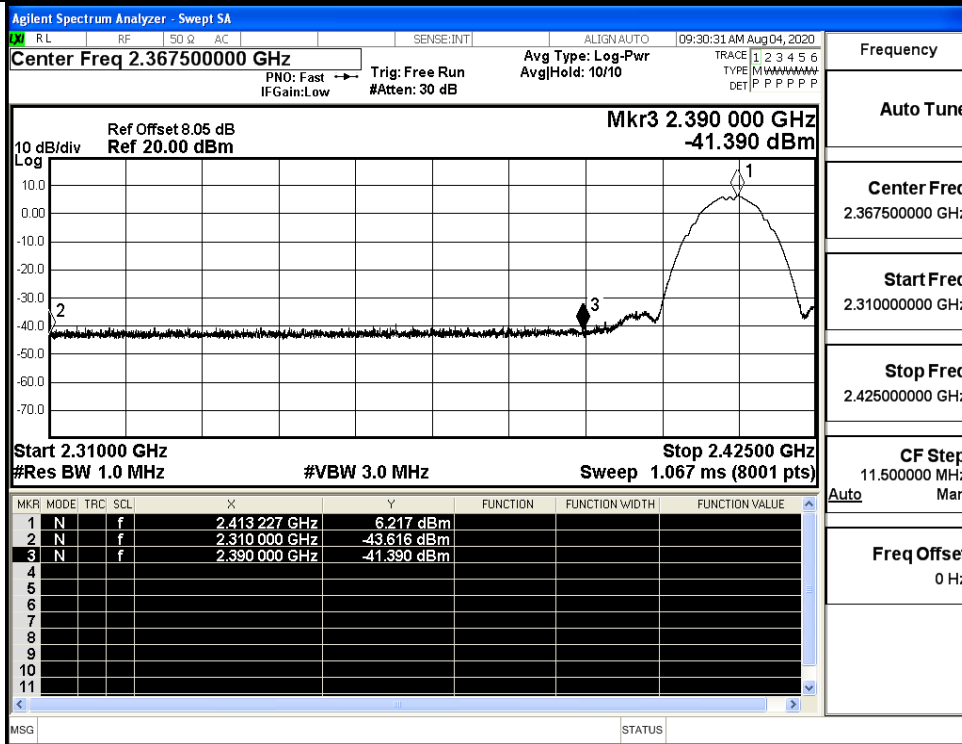


A.7 Restrict-band band-edge measurements

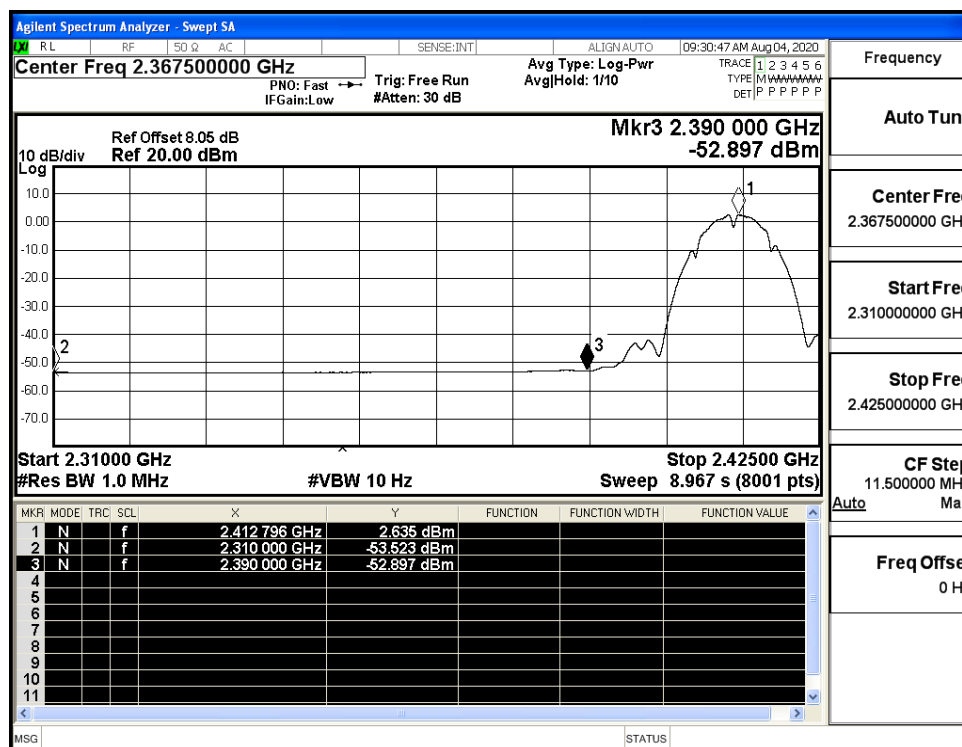
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
11B	2412	Ant1	2310.0	-43.62	2.0	0	51.64	PEAK	74	PASS
	2412	Ant1	2310.0	-53.52	2.0	0	41.73	AV	54	PASS
	2412	Ant1	2390.0	-41.39	2.0	0	53.87	PEAK	74	PASS
	2412	Ant1	2390.0	-52.90	2.0	0	42.36	AV	54	PASS
	2462	Ant1	2483.5	-40.56	2.0	0	54.69	PEAK	74	PASS
	2462	Ant1	2483.5	-52.33	2.0	0	42.92	AV	54	PASS
	2462	Ant1	2500.0	-41.41	2.0	0	53.84	PEAK	74	PASS
	2462	Ant1	2500.0	-52.30	2.0	0	42.96	AV	54	PASS
11G	2412	Ant1	2310.0	-42.24	2.0	0	53.01	PEAK	74	PASS
	2412	Ant1	2310.0	-53.51	2.0	0	41.75	AV	54	PASS
	2412	Ant1	2390.0	-36.58	2.0	0	58.68	PEAK	74	PASS
	2412	Ant1	2390.0	-48.65	2.0	0	46.60	AV	54	PASS
	2462	Ant1	2483.5	-23.89	2.0	0	71.37	PEAK	74	PASS
	2462	Ant1	2483.5	-46.59	2.0	0	48.66	AV	54	PASS
	2462	Ant1	2500.0	-40.32	2.0	0	54.94	PEAK	74	PASS
	2462	Ant1	2500.0	-51.65	2.0	0	43.61	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-43.15	2.0	0	52.11	PEAK	74	PASS
	2412	Ant1	2310.0	-53.49	2.0	0	41.76	AV	54	PASS
	2412	Ant1	2390.0	-34.33	2.0	0	60.92	PEAK	74	PASS
	2412	Ant1	2390.0	-47.41	2.0	0	47.84	AV	54	PASS
	2462	Ant1	2483.5	-32.09	2.0	0	63.16	PEAK	74	PASS
	2462	Ant1	2483.5	-48.31	2.0	0	46.95	AV	54	PASS
	2462	Ant1	2500.0	-41.81	2.0	0	53.45	PEAK	74	PASS
	2462	Ant1	2500.0	-51.87	2.0	0	43.38	AV	54	PASS
11N40 SISO	2422	Ant1	2310.0	-42.80	2.0	0	52.45	PEAK	74	PASS
	2422	Ant1	2310.0	-53.51	2.0	0	41.75	AV	54	PASS

	2422	Ant1	2390.0	-29.94	2.0	0	65.32	PEAK	74	PASS
	2422	Ant1	2390.0	-45.39	2.0	0	49.87	AV	54	PASS
	2452	Ant1	2483.5	-21.67	2.0	0	73.59	PEAK	74	PASS
	2452	Ant1	2483.5	-45.81	2.0	0	49.45	AV	54	PASS
	2452	Ant1	2500.0	-36.73	2.0	0	58.53	PEAK	74	PASS
	2452	Ant1	2500.0	-50.75	2.0	0	44.51	AV	54	PASS

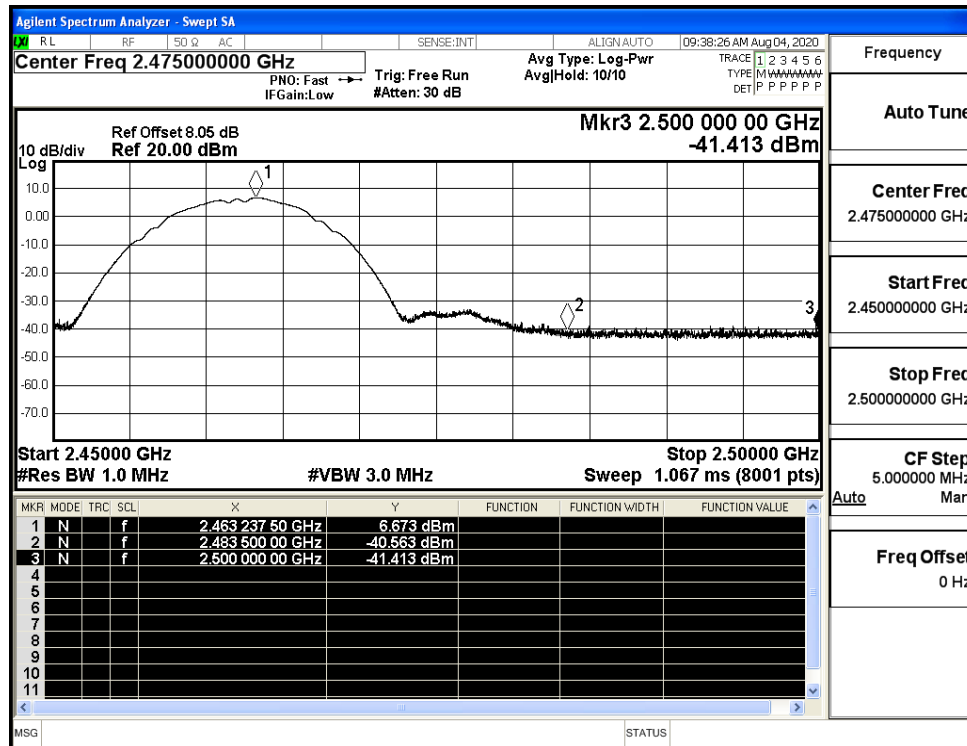
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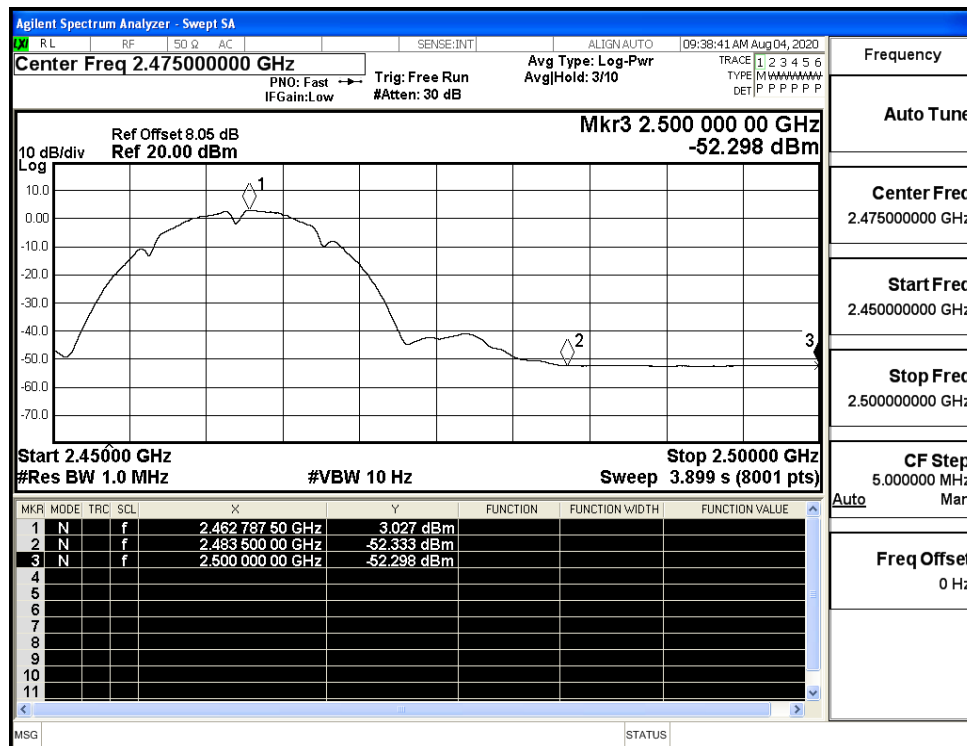
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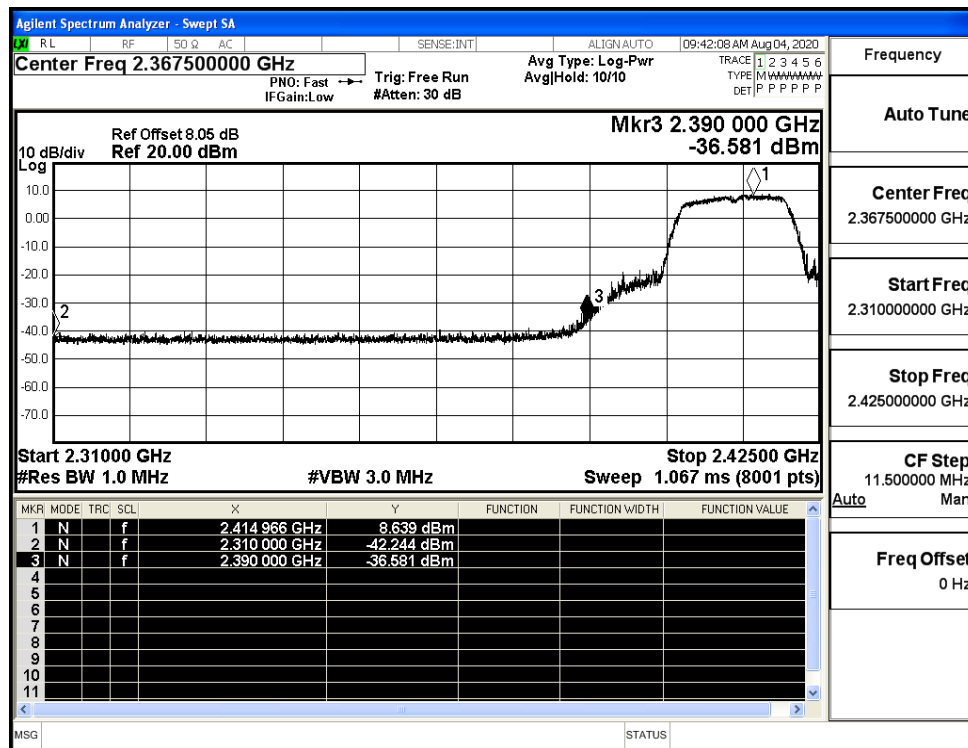
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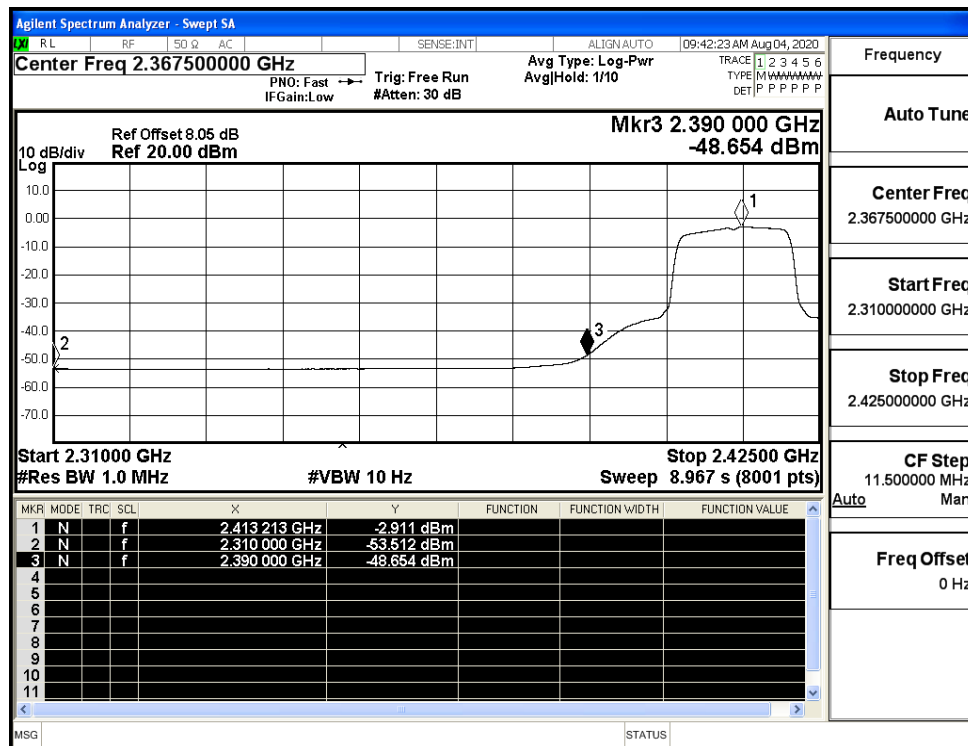
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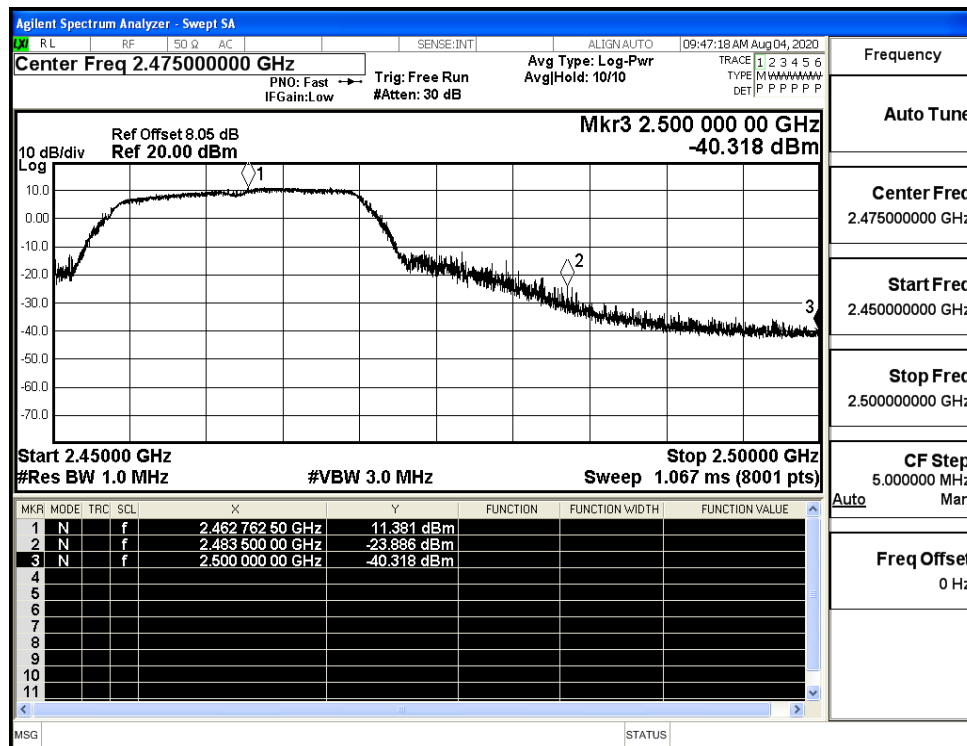
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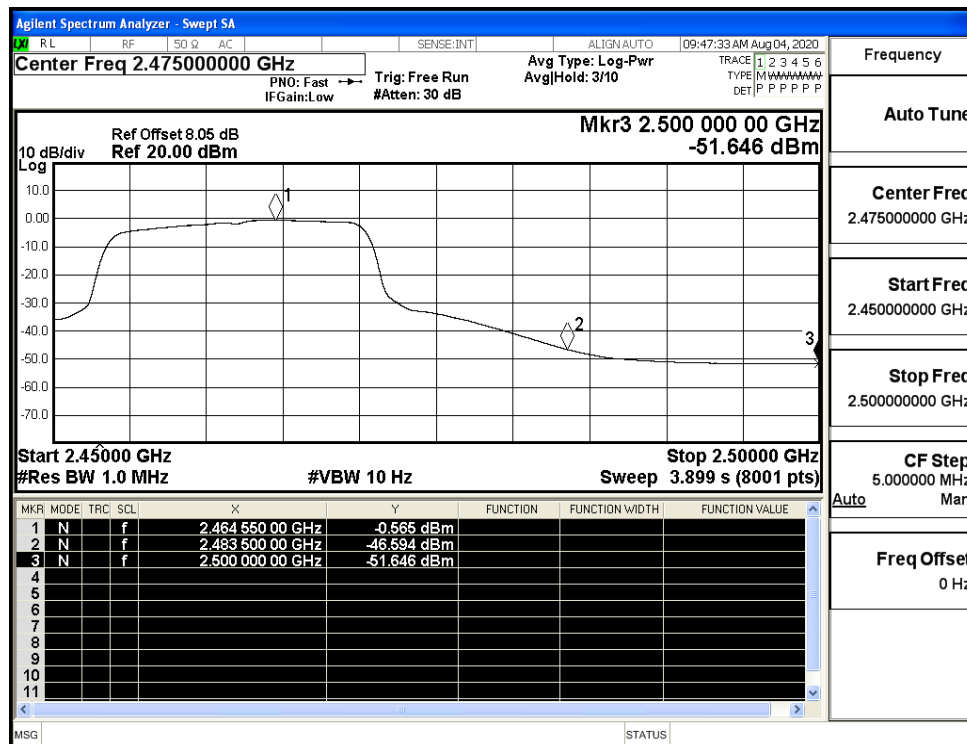
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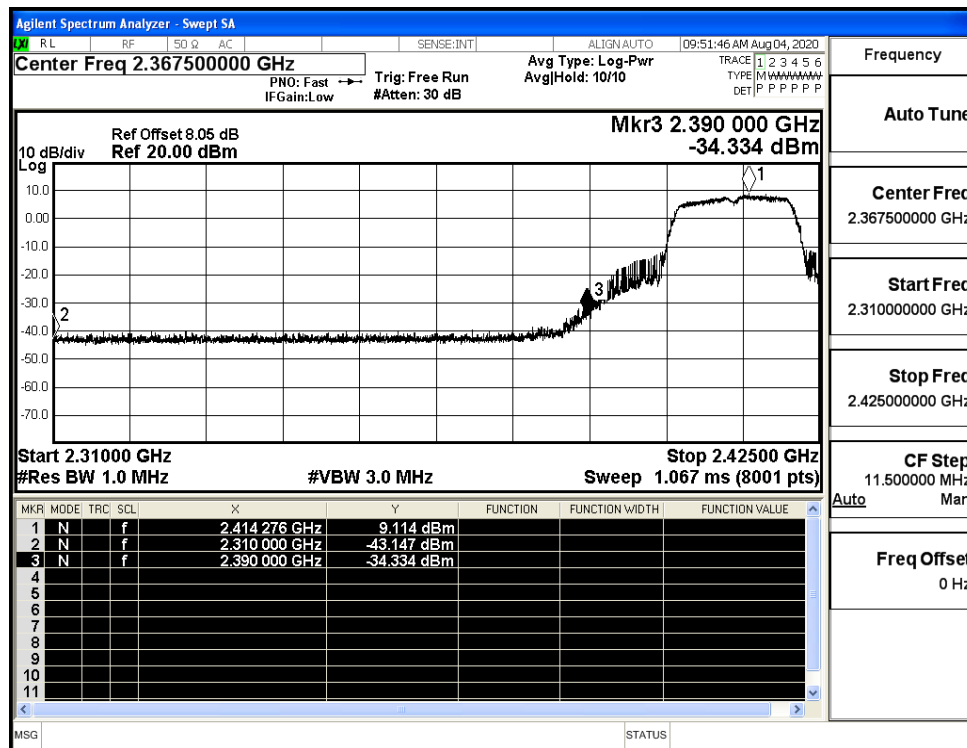
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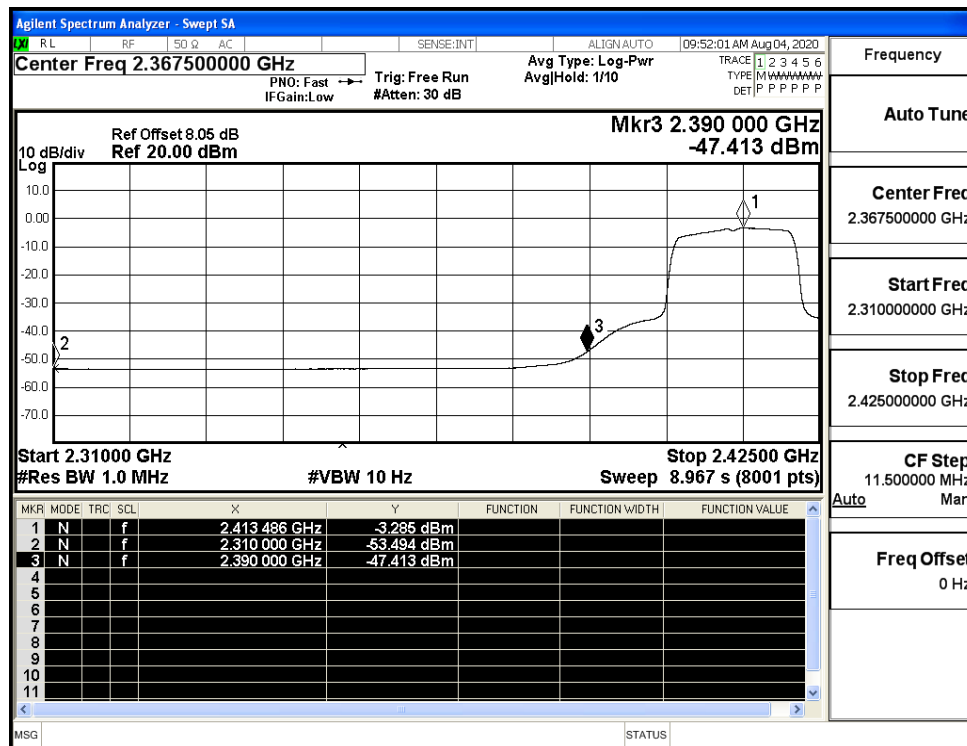
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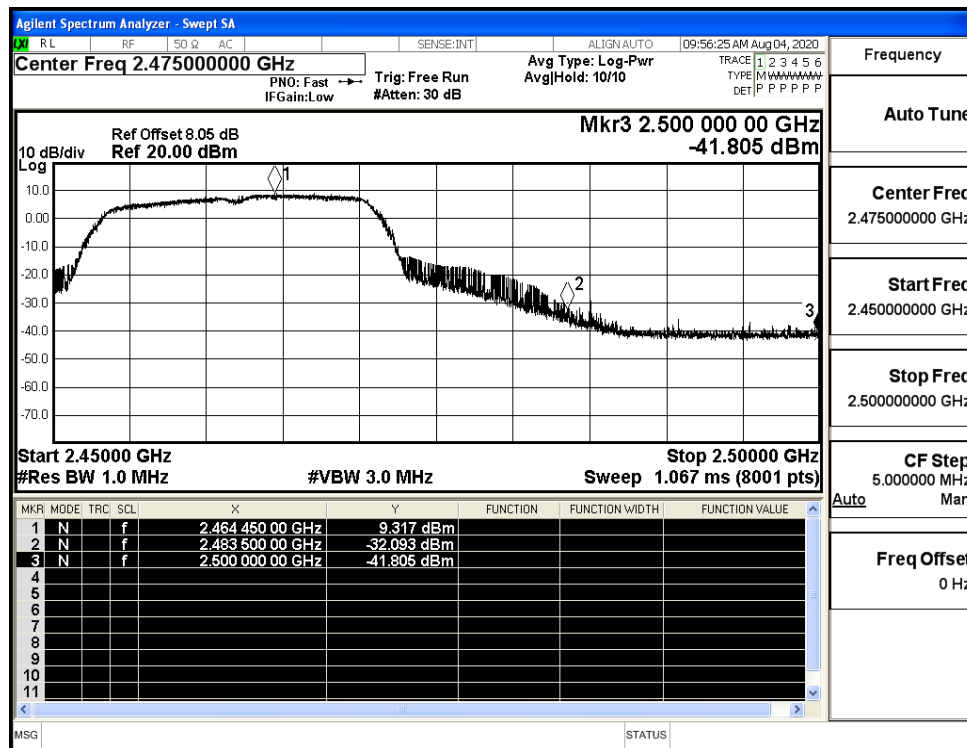
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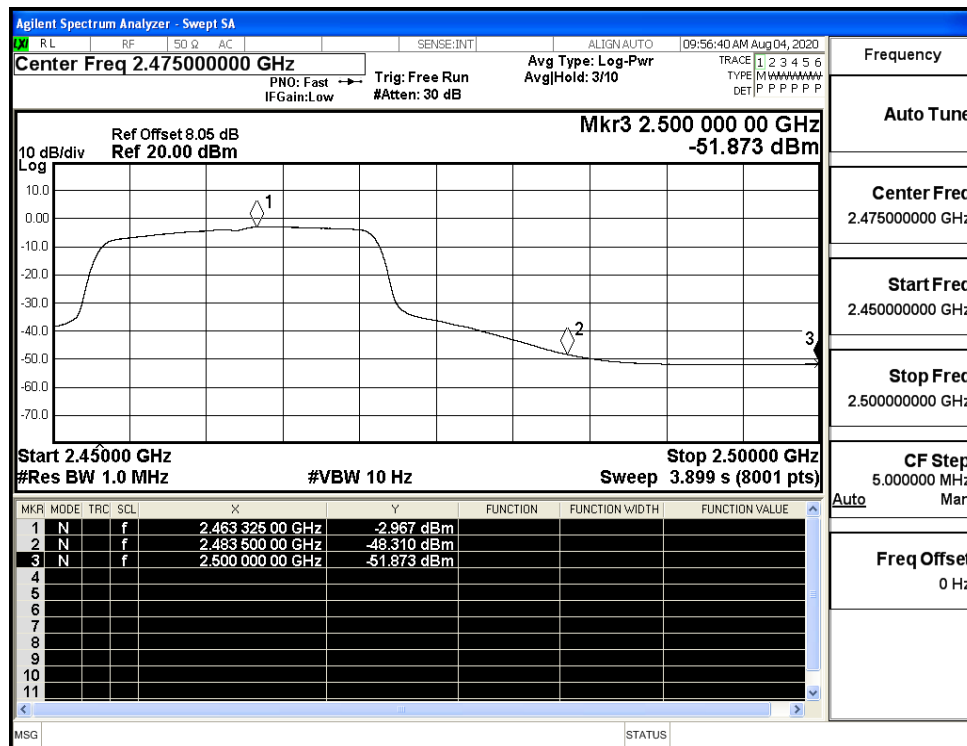
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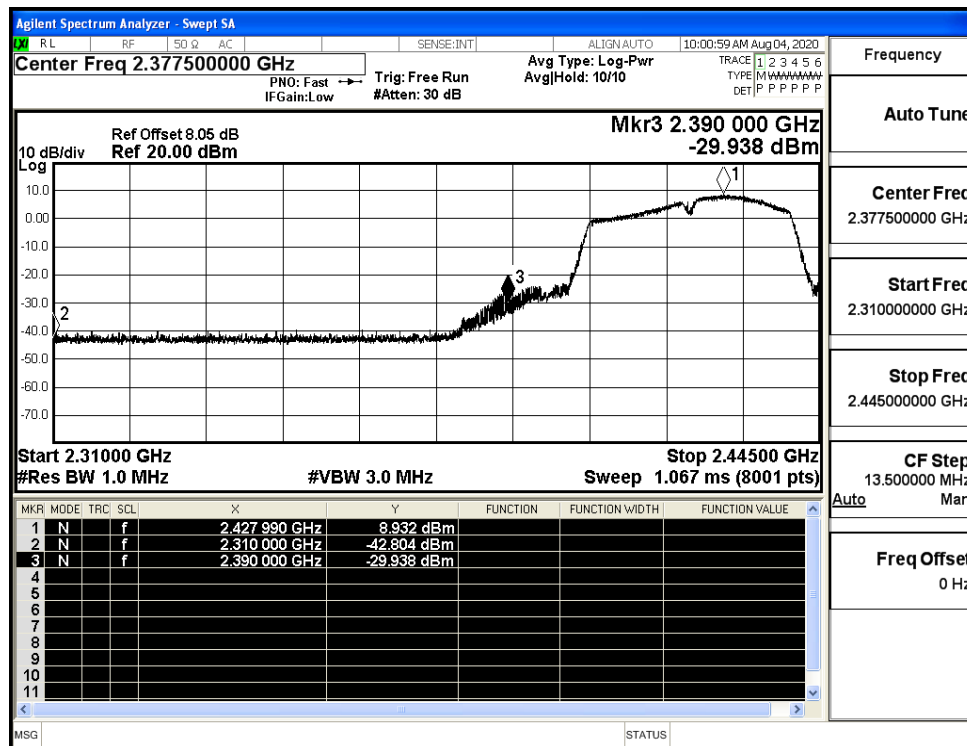
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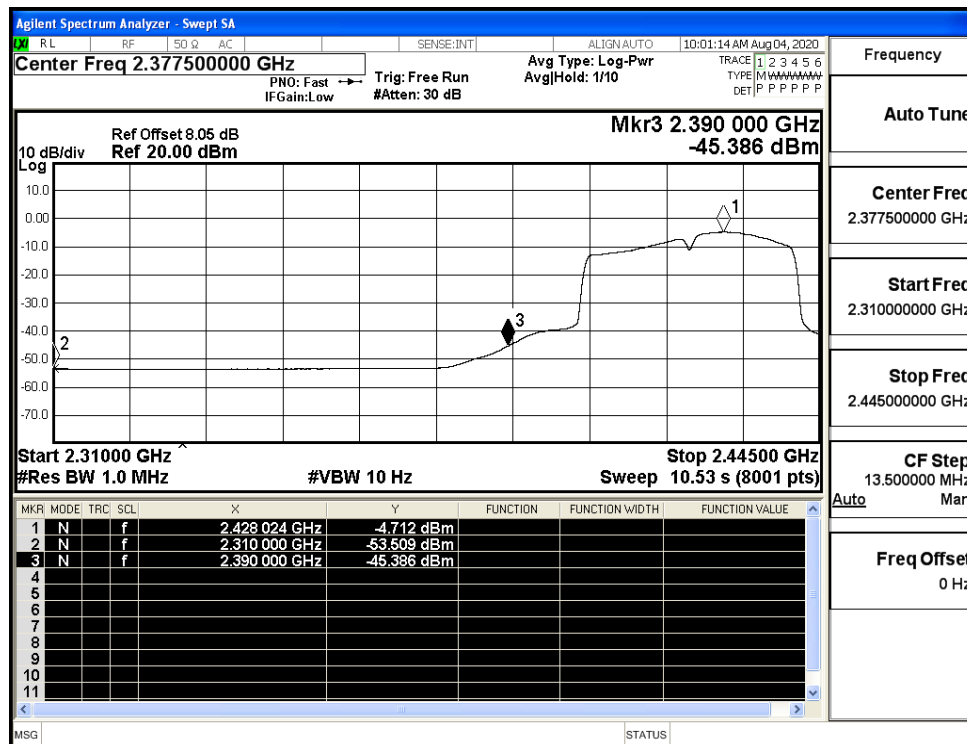
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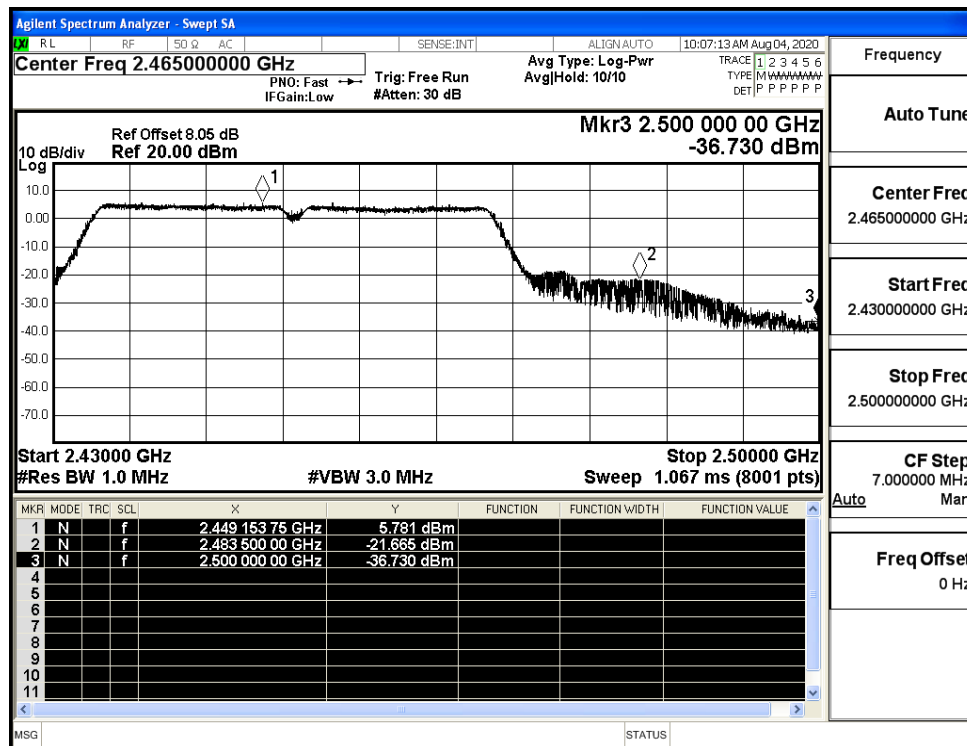
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Restrict-band band-edge measurements_11N40SISO_2422_Ant1_AV



Restrict-band band-edge measurements_11N40SISO_2452_Ant1_PEAK



Restrict-band band-edge measurements_11N40SISO_2452_Ant1_AV

