

Appendix B

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Wireless Smart Gateway

Trade Mark: 

Test Model: W-BG001

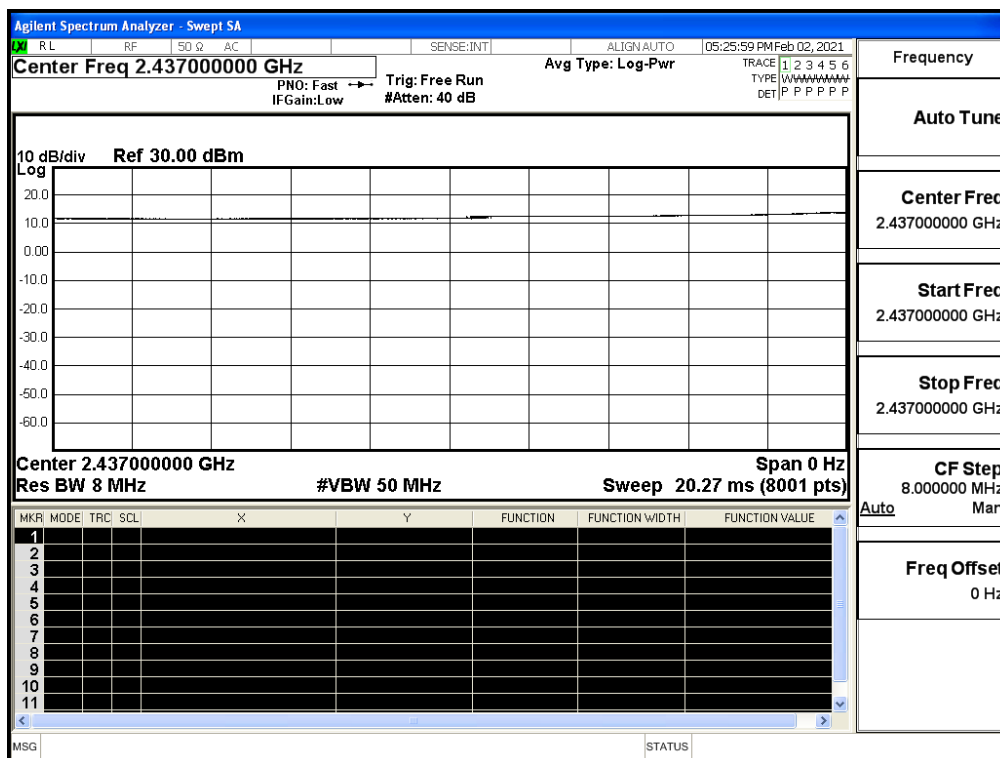
Environmental Conditions

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

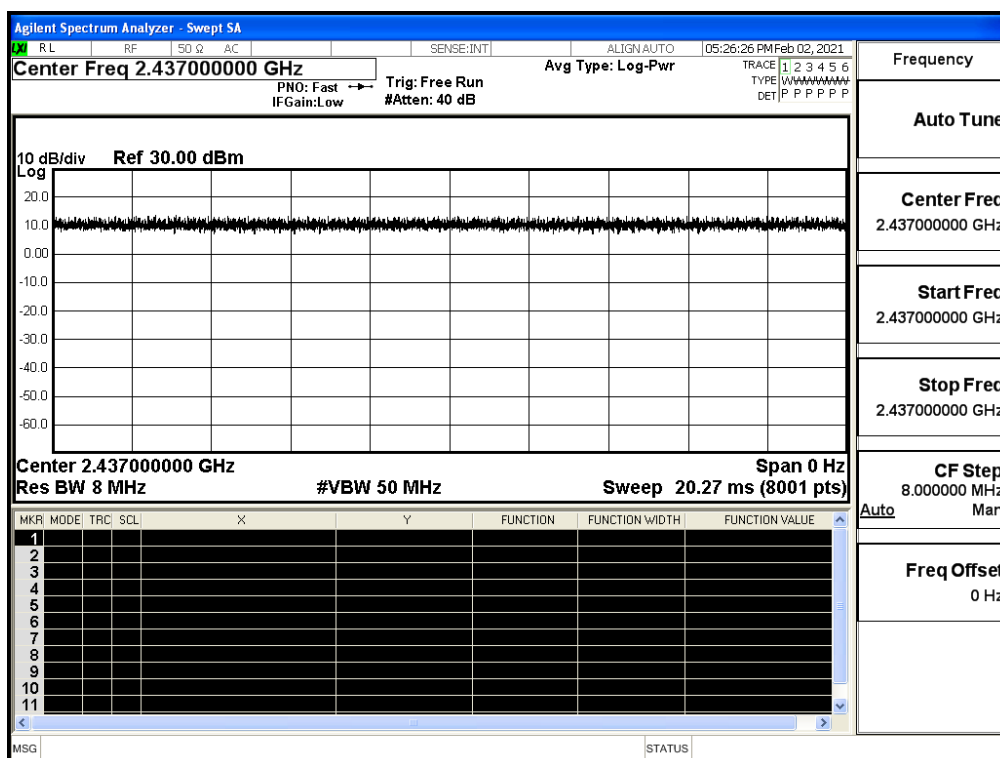
B.1 Duty Cycle

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

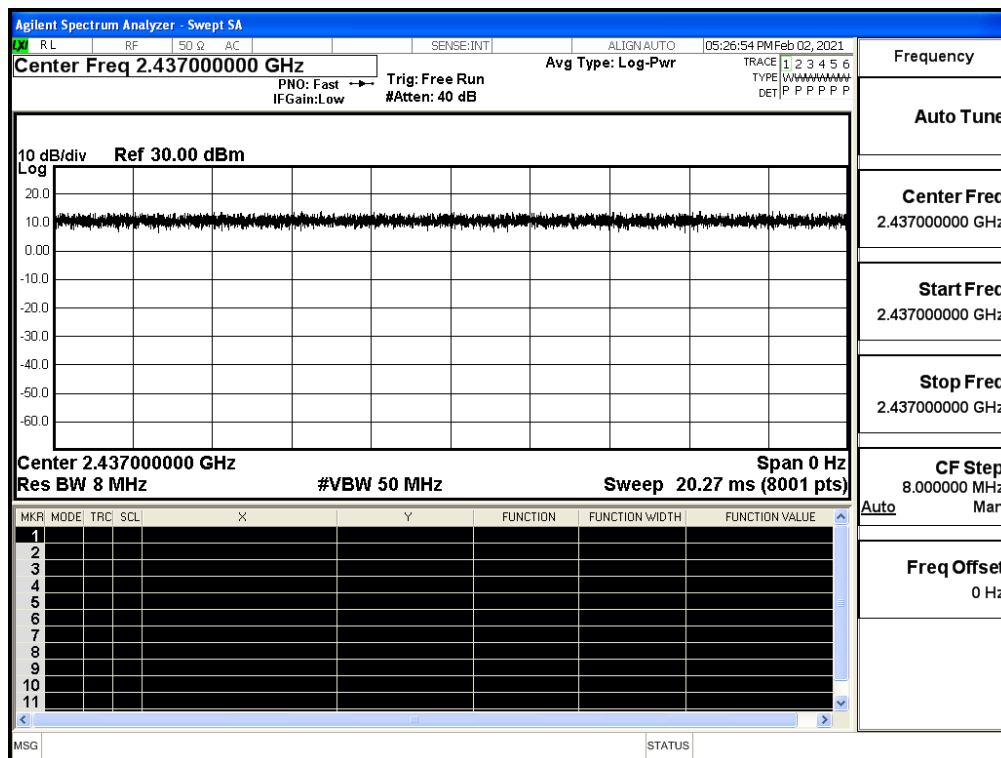
Duty Cycle_11B_2437_Ant1



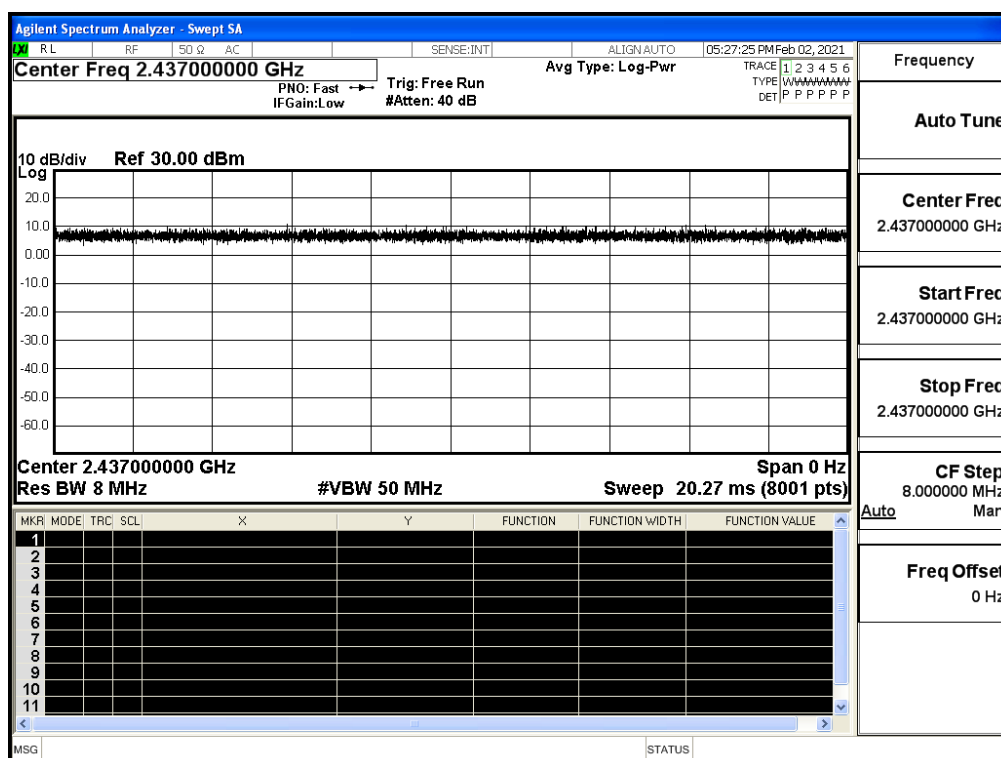
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



Duty Cycle_11N40SISO_2437_Ant1



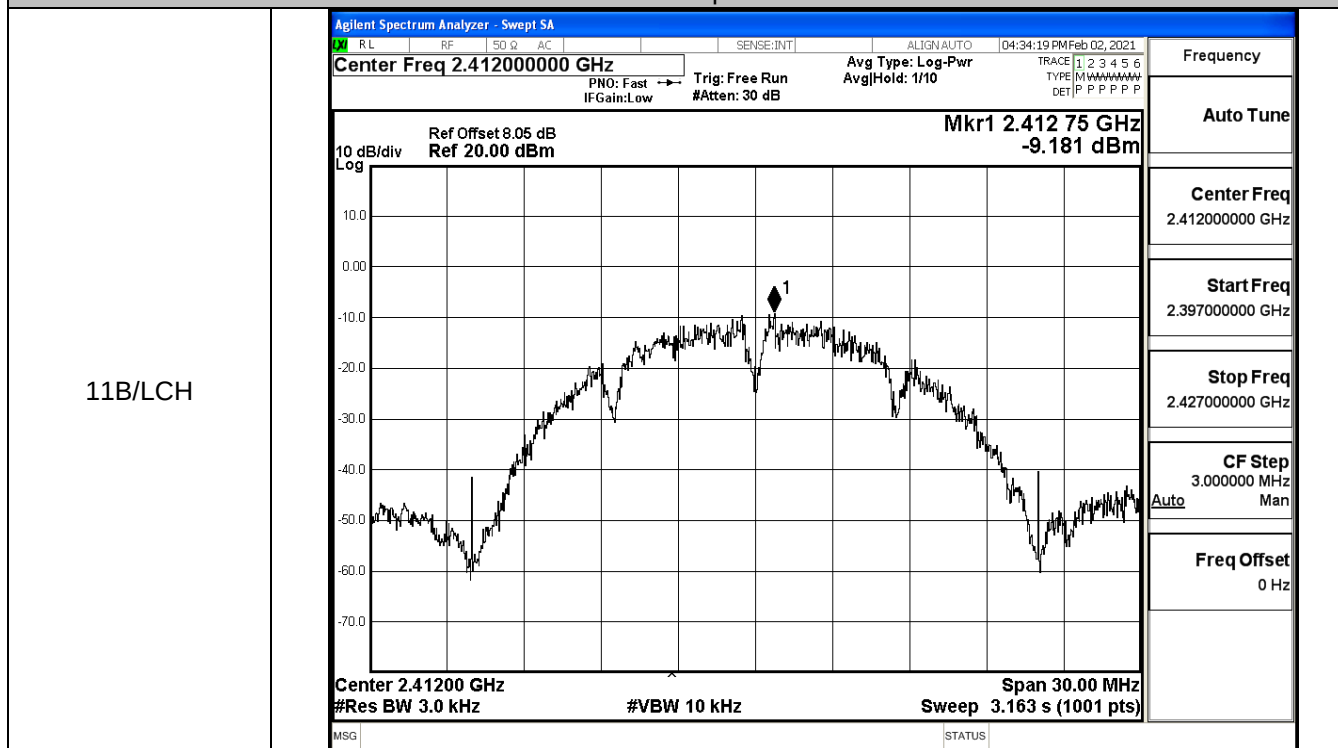
B.2 Maximum Conducted Output Power

Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	17.72	30	PASS
	MCH	18.32	30	PASS
	HCH	18.16	30	PASS
11G	LCH	18.95	30	PASS
	MCH	19.17	30	PASS
	HCH	18.36	30	PASS
11N20SISO	LCH	16.83	30	PASS
	MCH	18.27	30	PASS
	HCH	17.6	30	PASS
11N40SISO	LCH	20.36	30	PASS
	MCH	21.15	30	PASS
	HCH	20.66	30	PASS

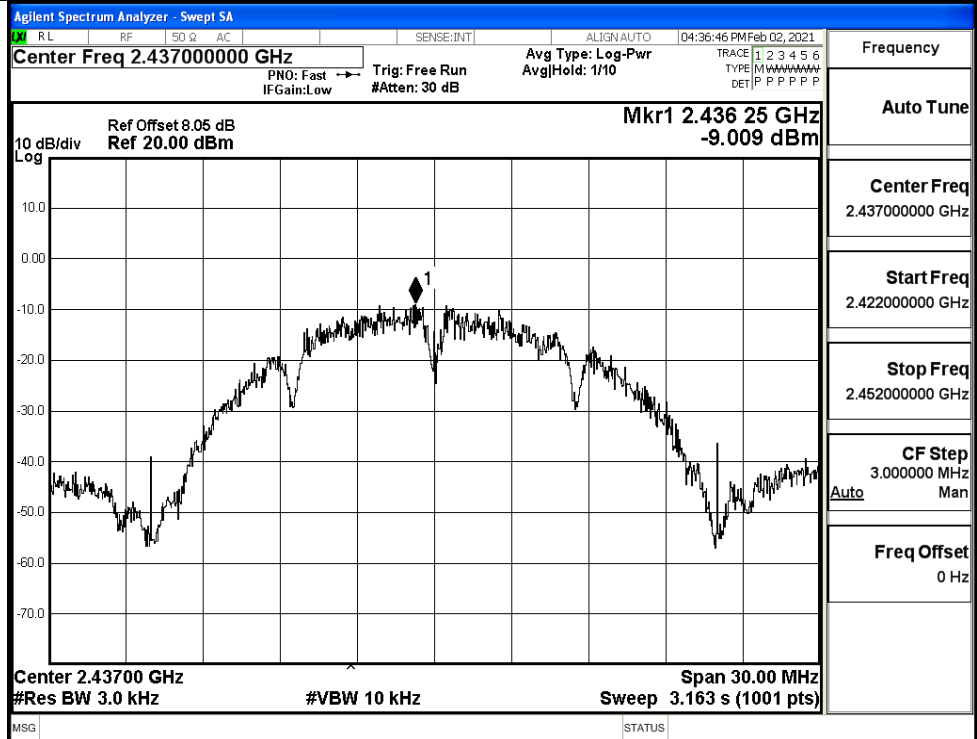
B.3 Maximum Power Spectral Density

Mode	Channel	Meas.Level [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-9.181	8	PASS
	MCH	-9.009	8	PASS
	HCH	-9.261	8	PASS
11G	LCH	-14.323	8	PASS
	MCH	-12.828	8	PASS
	HCH	-13.632	8	PASS
11N20SISO	LCH	-14.873	8	PASS
	MCH	-13.470	8	PASS
	HCH	-13.099	8	PASS
11N40SISO	LCH	-12.791	8	PASS
	MCH	-12.450	8	PASS
	HCH	-12.630	8	PASS

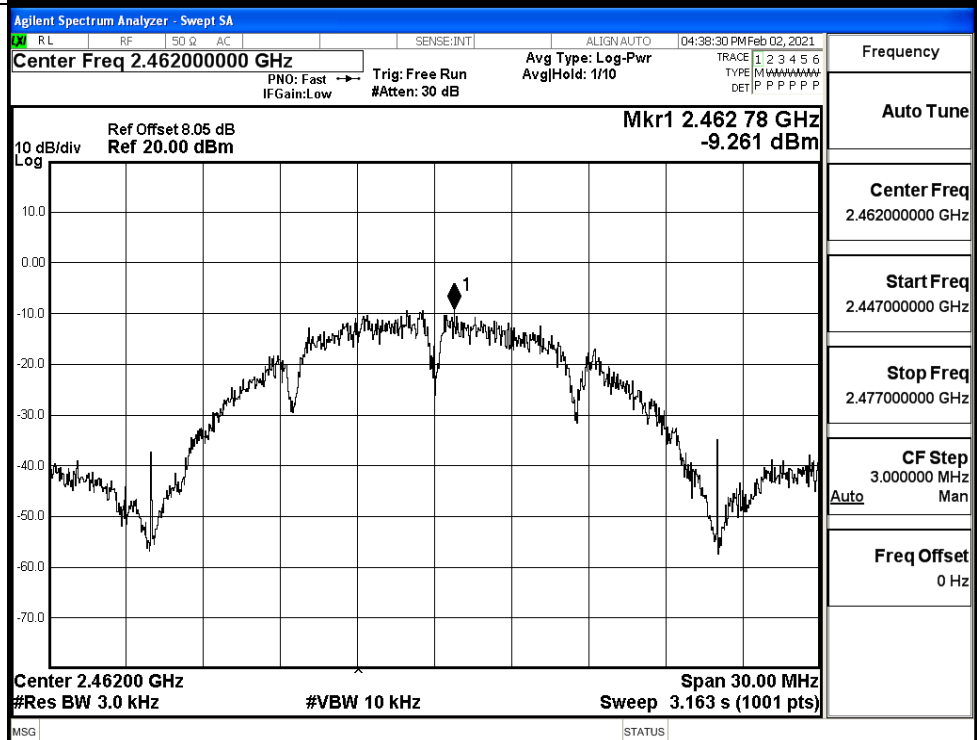
Test Graphs

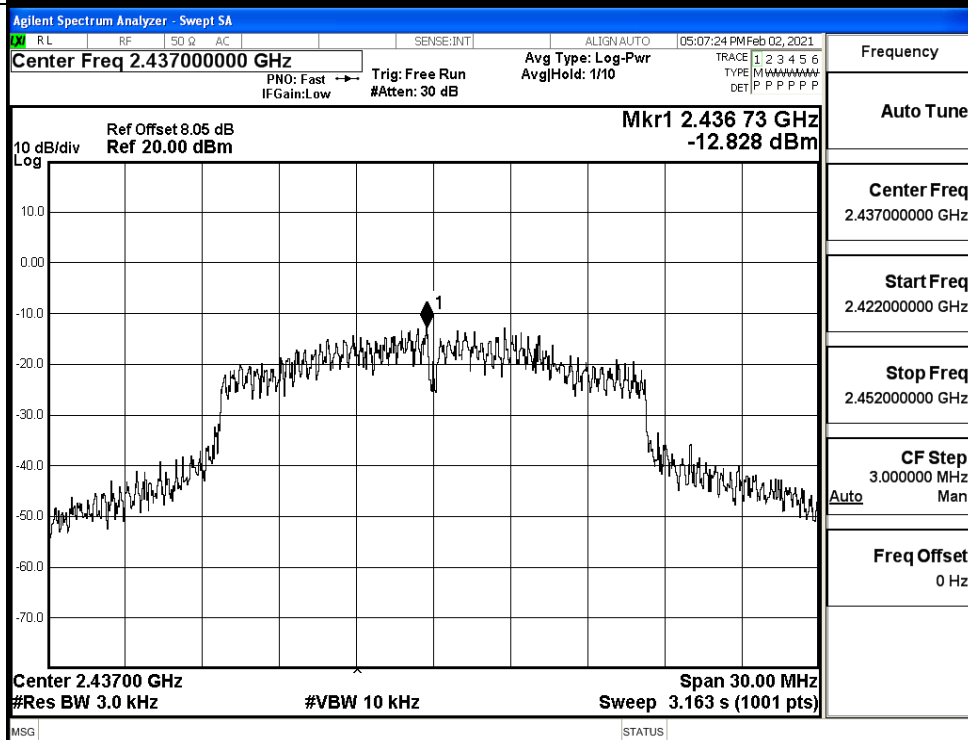
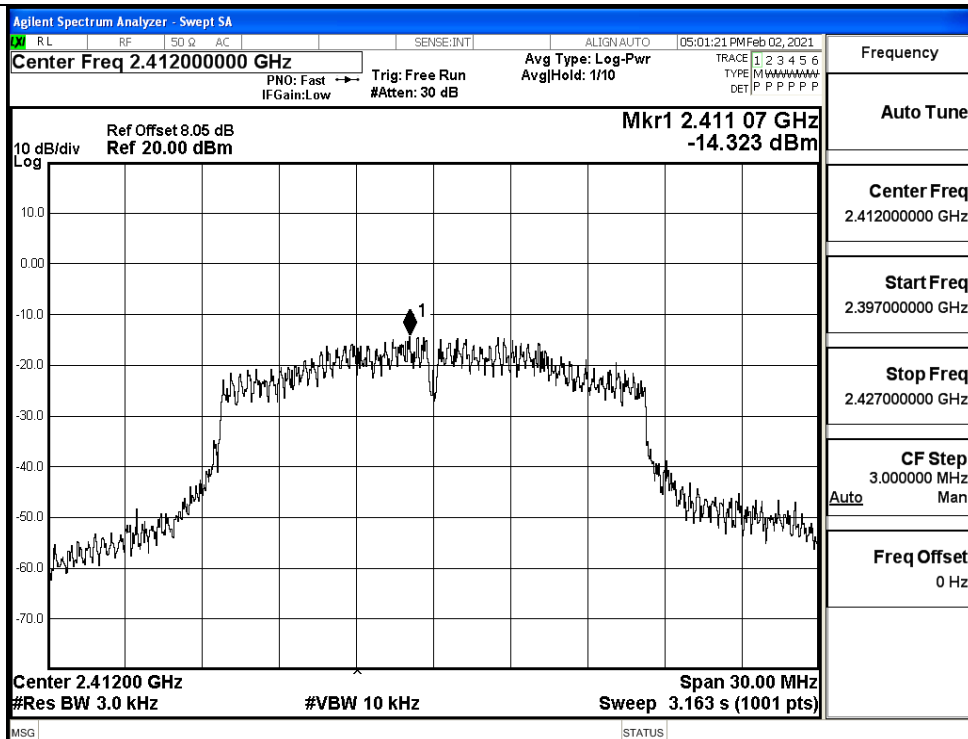


11B/MCH



11B/HCH

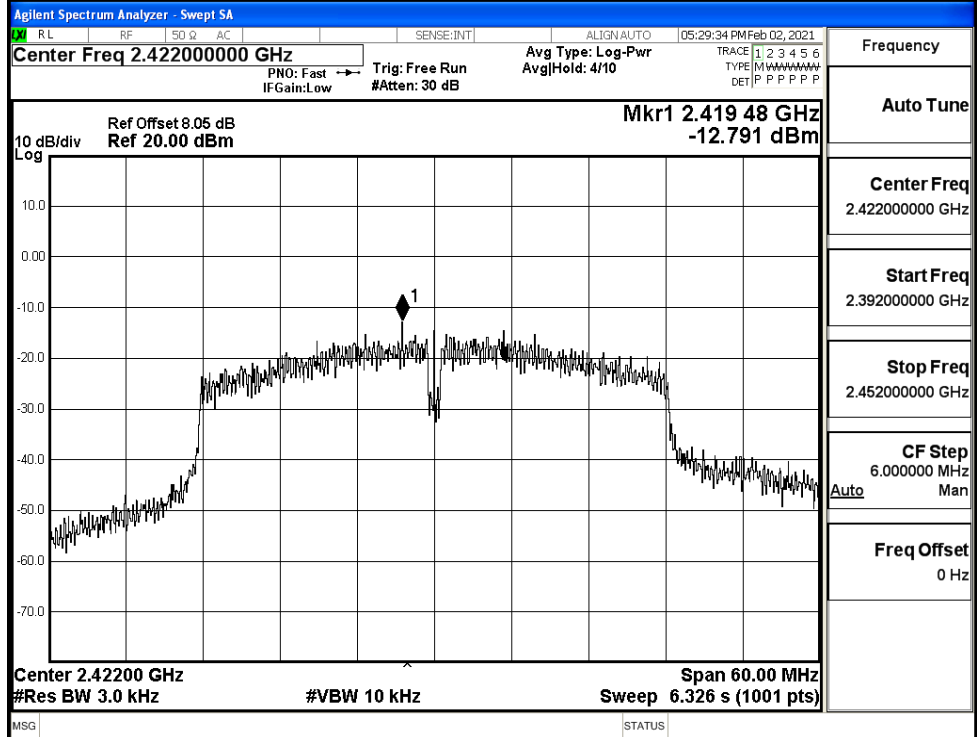




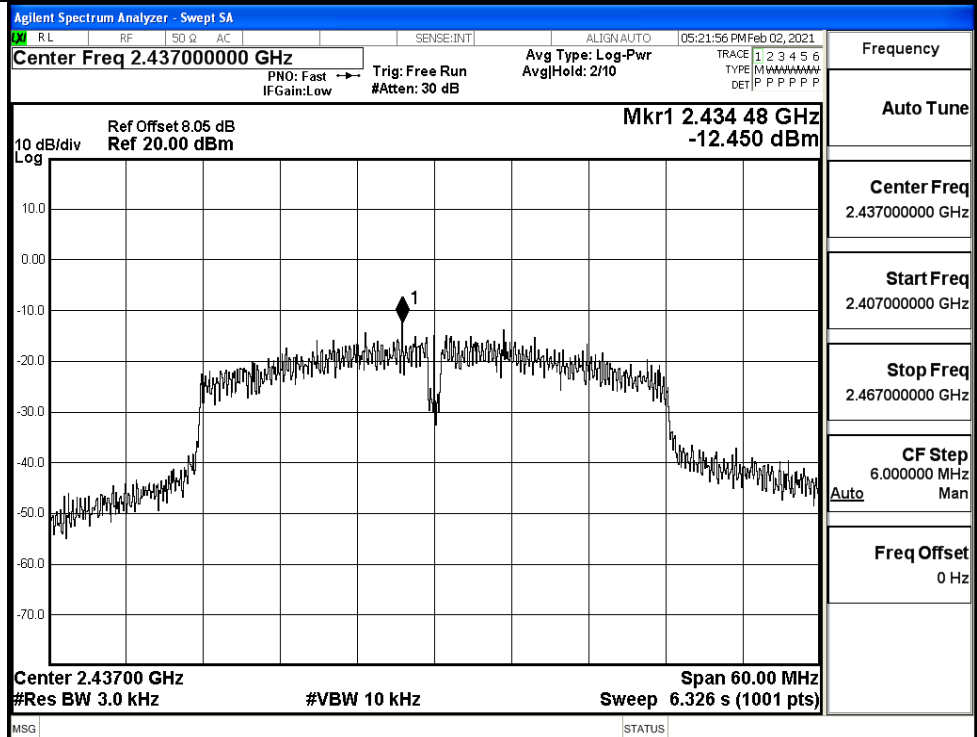
	11G/HCH	11N20SISO/LCH
	Agilent Spectrum Analyzer - Swept SA Center Freq 2.46200000 GHz Mkr1 2.46107 GHz -13.632 dBm 10 dB/div Log Ref Offset 8.05 dB Ref 20.00 dBm Center 2.46200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 30.00 MHz Sweep 3.163 s (1001 pts)	Agilent Spectrum Analyzer - Swept SA Center Freq 2.41200000 GHz Mkr1 2.41080 GHz -14.873 dBm 10 dB/div Log Ref Offset 8.05 dB Ref 20.00 dBm Center 2.41200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 30.00 MHz Sweep 3.163 s (1001 pts)

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11N40SISO/LCH



11N40SISO/MCH



Agilent Spectrum Analyzer - Swept SA

Center Freq 2.452000000 GHz

Ref Offset 8.05 dB
Ref 20.00 dBm

Mkr1 2.449 48 GHz
-12.630 dBm

10 dB/div
Log

Center Freq 2.45200 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 60.00 MHz
Sweep 6.326 s (1001 pts)

Frequency

Auto Tune

Center Freq
2.452000000 GHz

Start Freq
2.422000000 GHz

Stop Freq
2.482000000 GHz

CF Step
6.000000 MHz
Auto Man

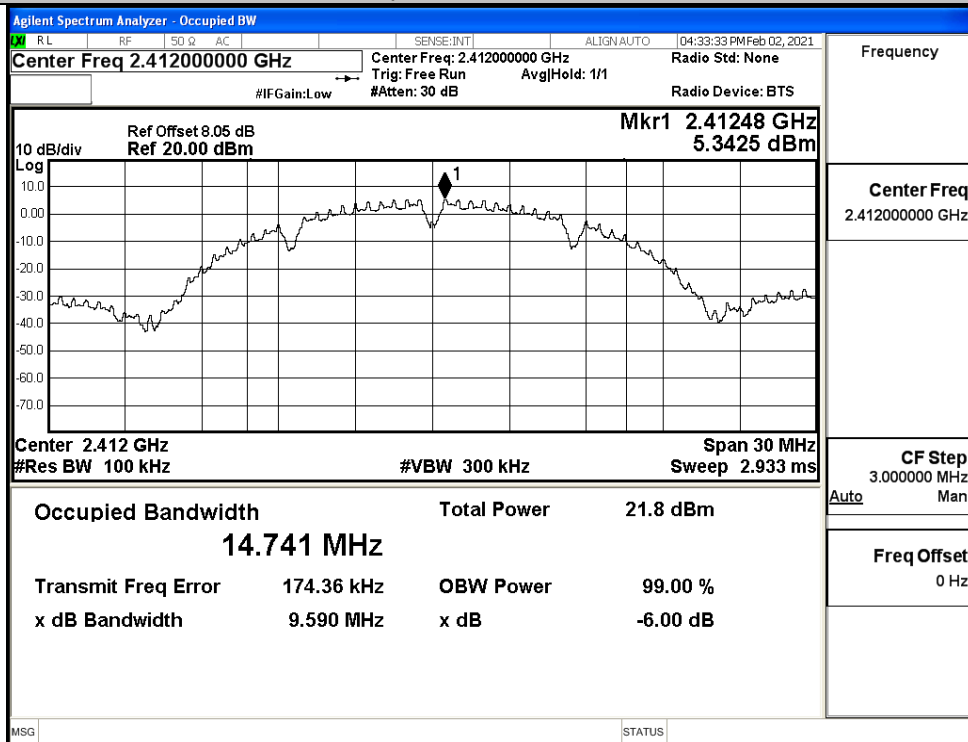
Freq Offset
0 Hz

B.4 6dB Bandwidth

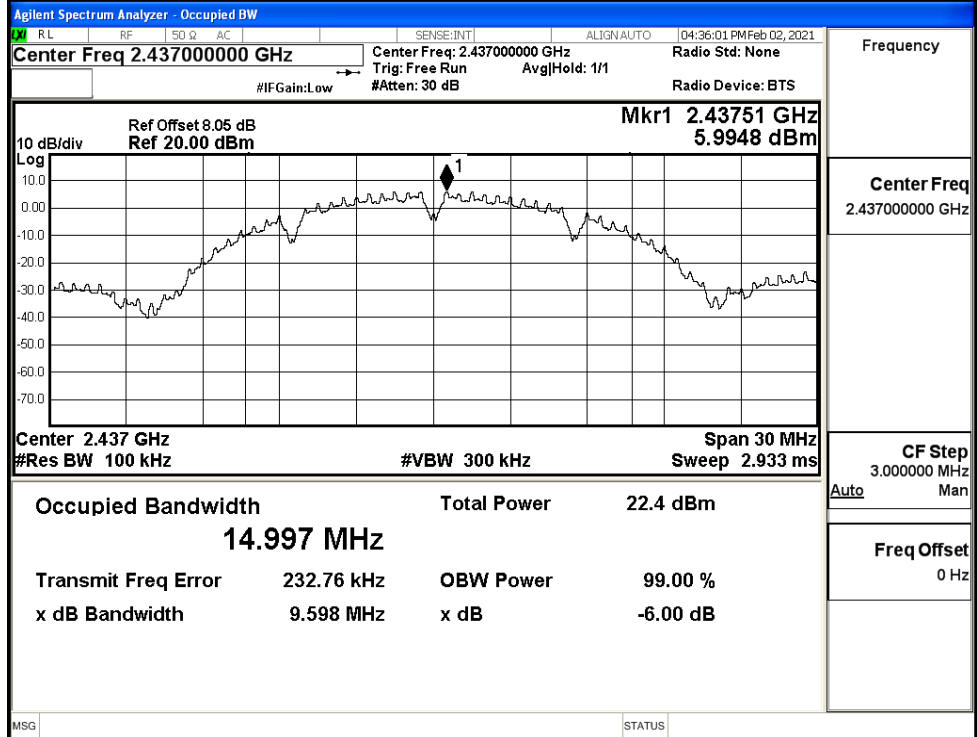
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	9.590	≥ 0.5	PASS
	MCH	9.598	≥ 0.5	PASS
	HCH	9.585	≥ 0.5	PASS
11G	LCH	13.75	≥ 0.5	PASS
	MCH	10.11	≥ 0.5	PASS
	HCH	11.32	≥ 0.5	PASS
11N20SISO	LCH	10.11	≥ 0.5	PASS
	MCH	10.11	≥ 0.5	PASS
	HCH	10.11	≥ 0.5	PASS
11N40SISO	LCH	31.34	≥ 0.5	PASS
	MCH	31.35	≥ 0.5	PASS
	HCH	30.10	≥ 0.5	PASS

Test Graphs

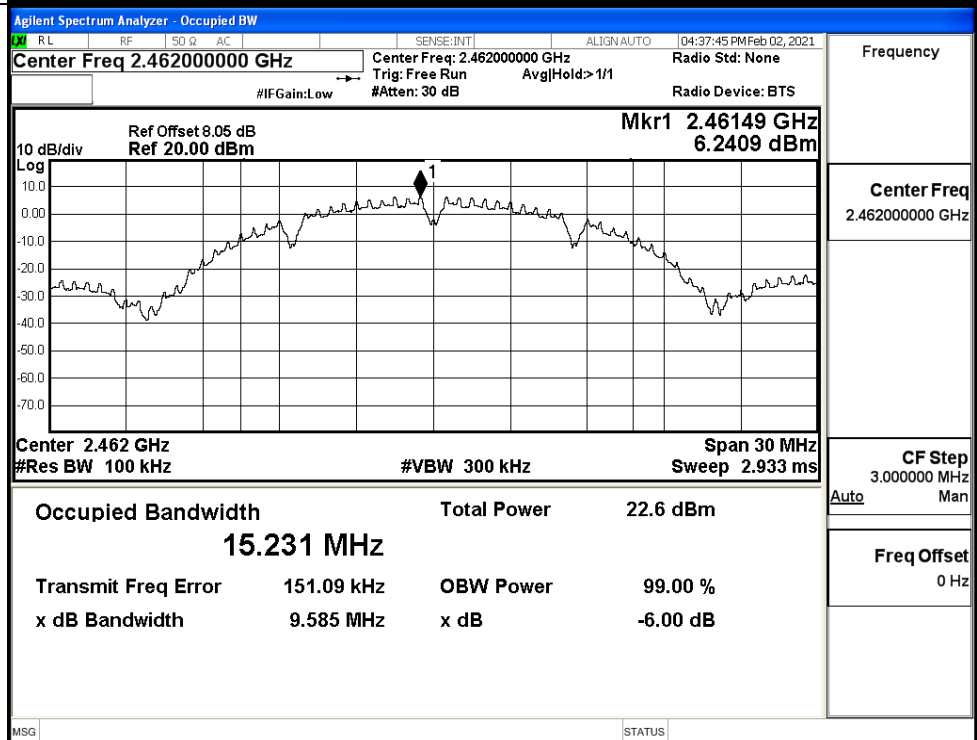
11B/LCH



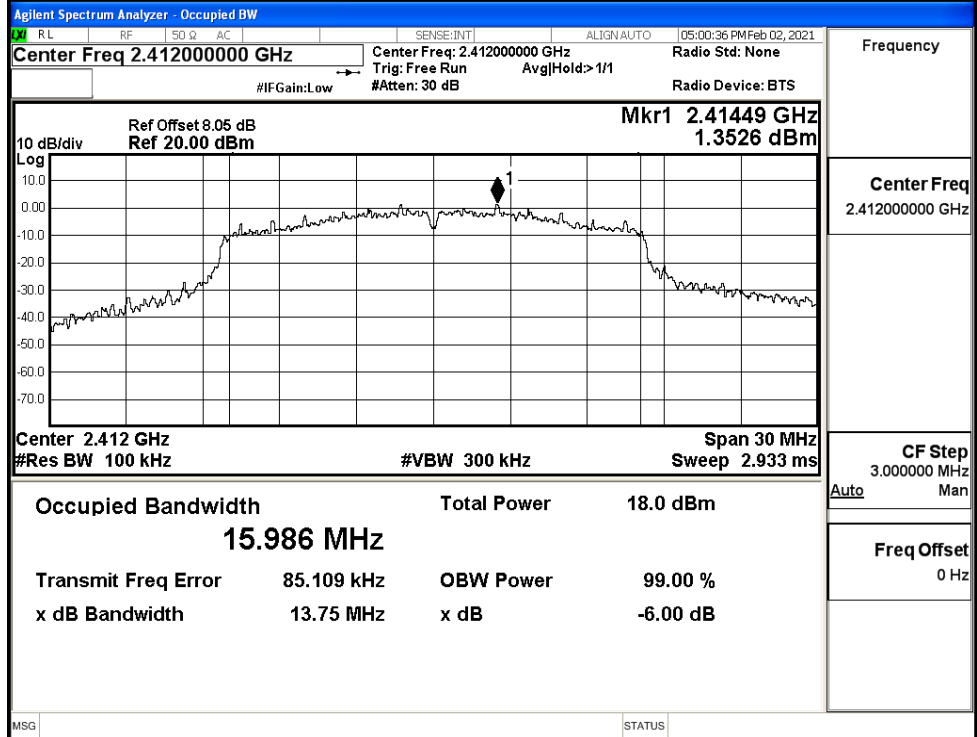
11B/MCH



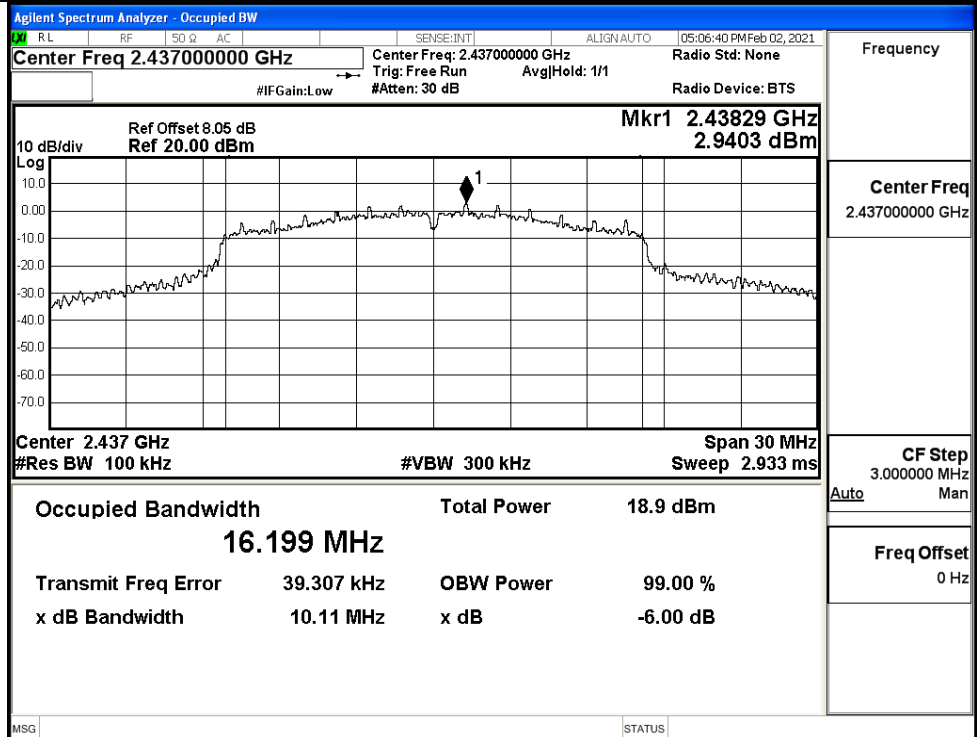
11B/HCH



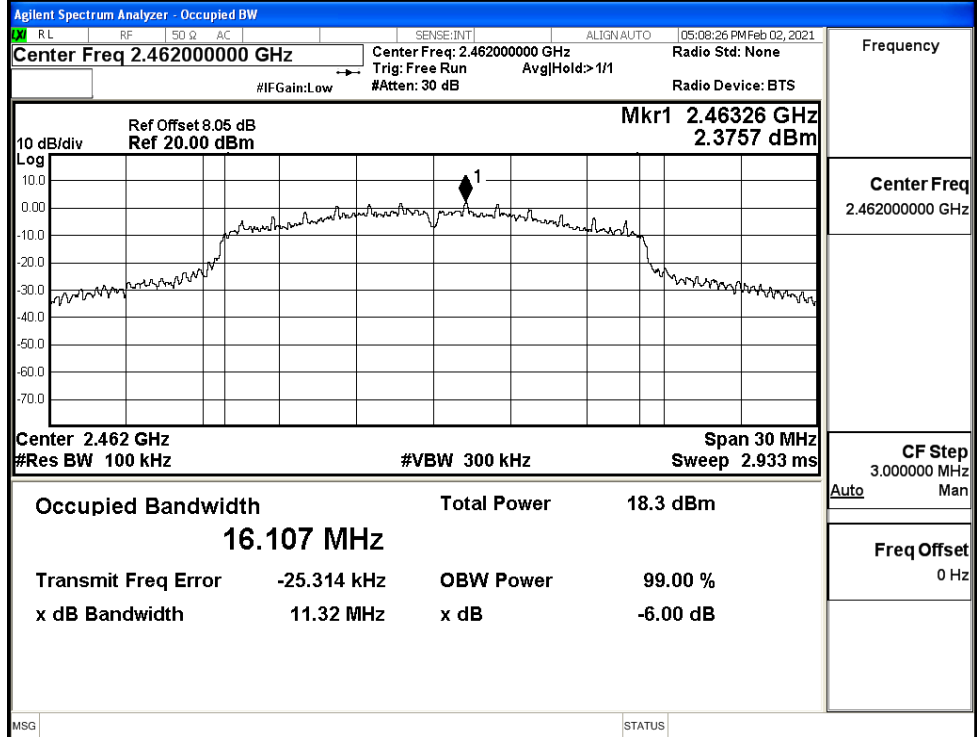
11G/LCH



11G/MCH



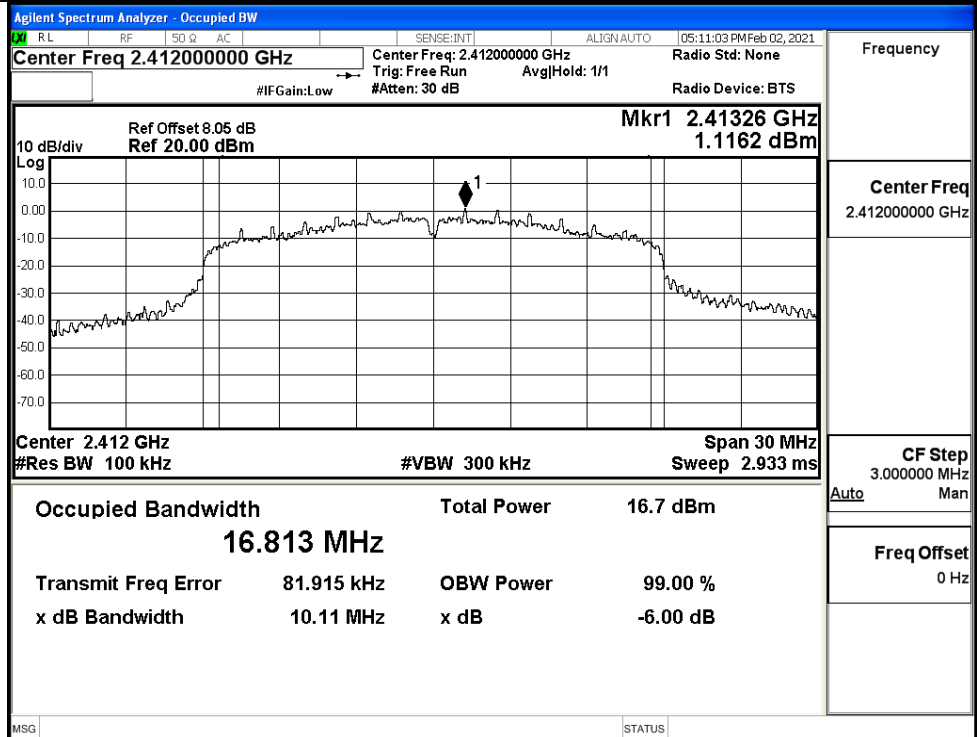
11G/HCH



Frequency

Center Freq
2.462000000 GHzCF Step
3.000000 MHz
Auto ManFreq Offset
0 Hz

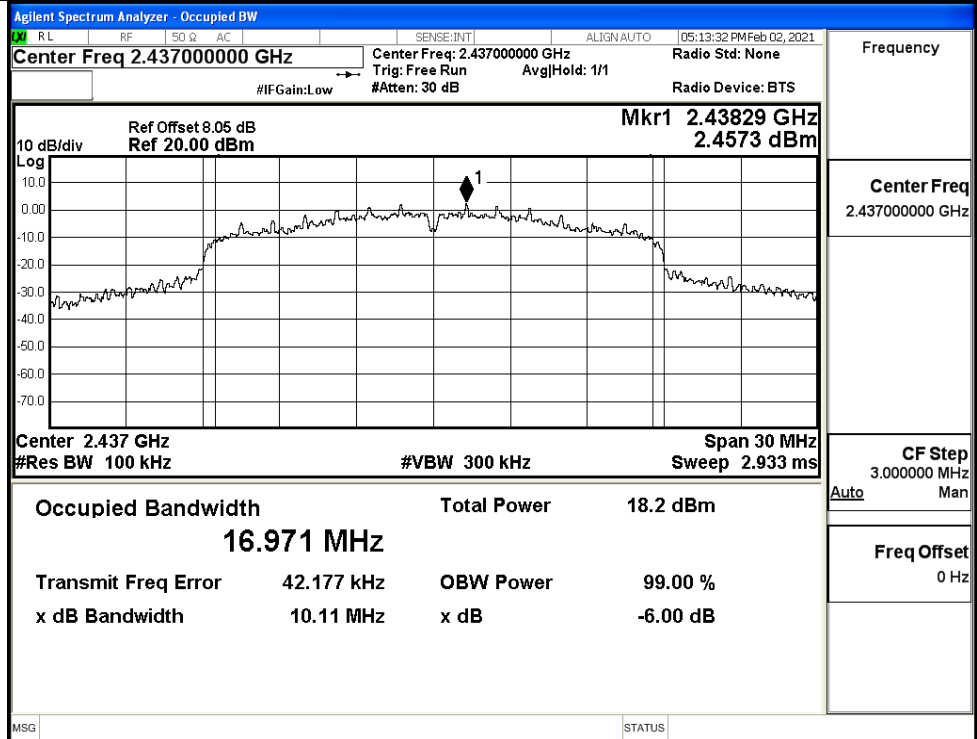
11N20SISO/LCH



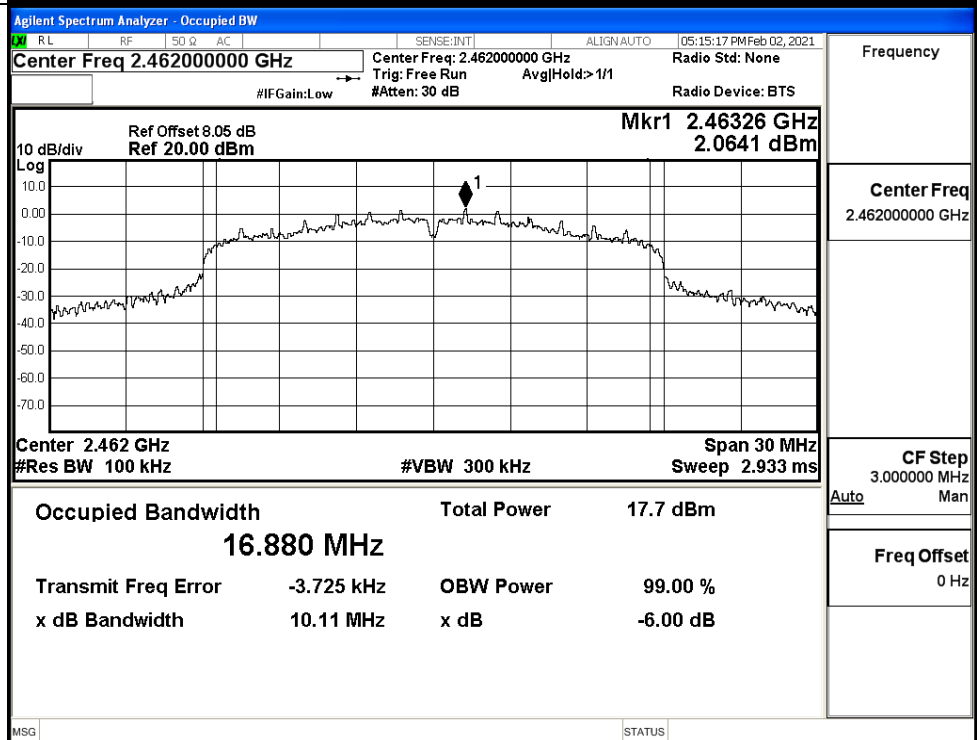
Frequency

Center Freq
2.412000000 GHzCF Step
3.000000 MHz
Auto ManFreq Offset
0 Hz

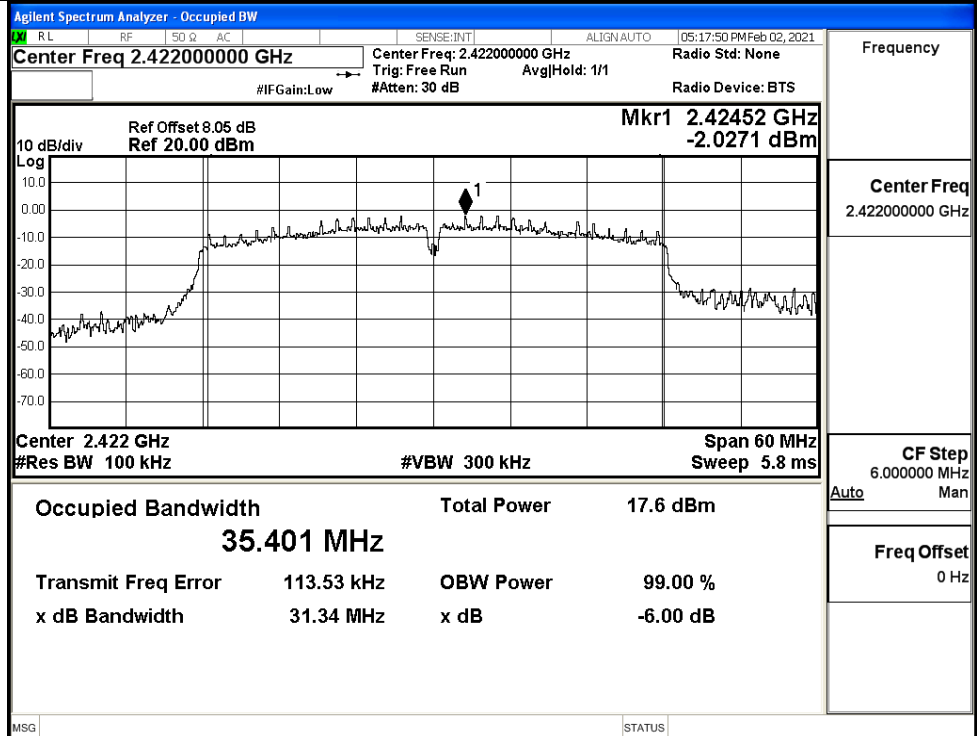
11N20SISO/MCH



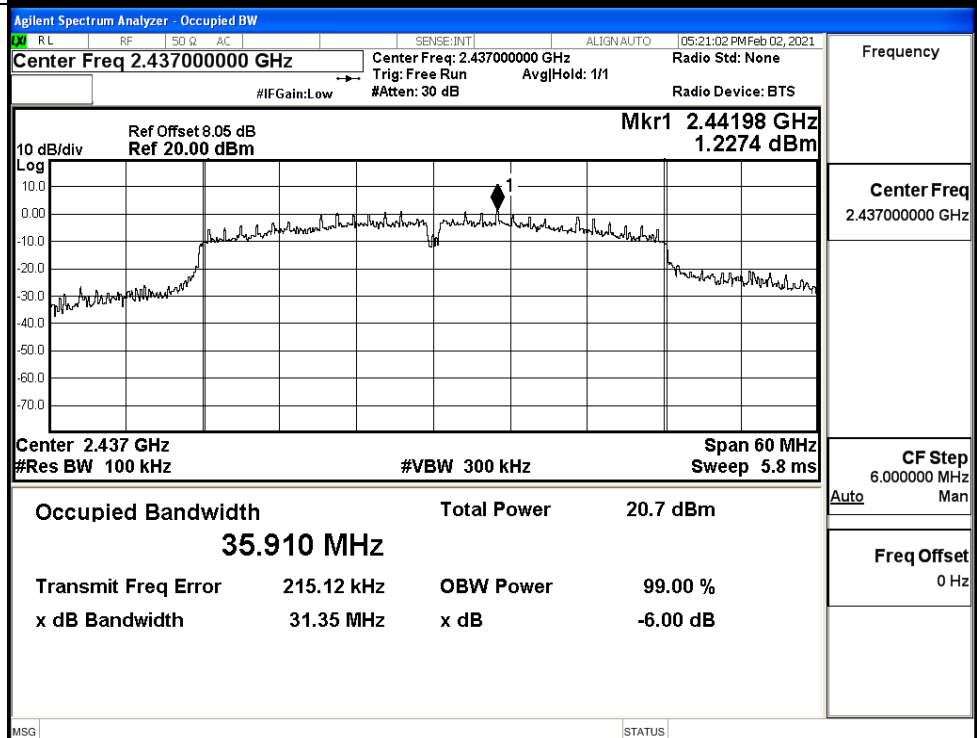
11N20SISO/HCH



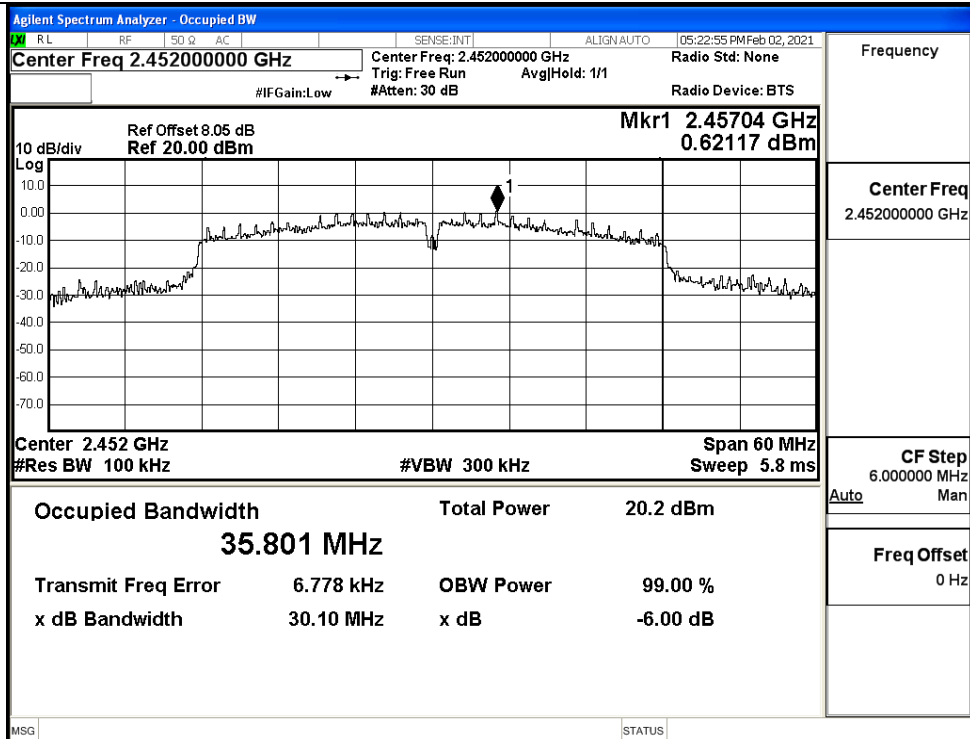
11N40SISO/LCH



11N40SISO/MCH



11N40SISO/HCH

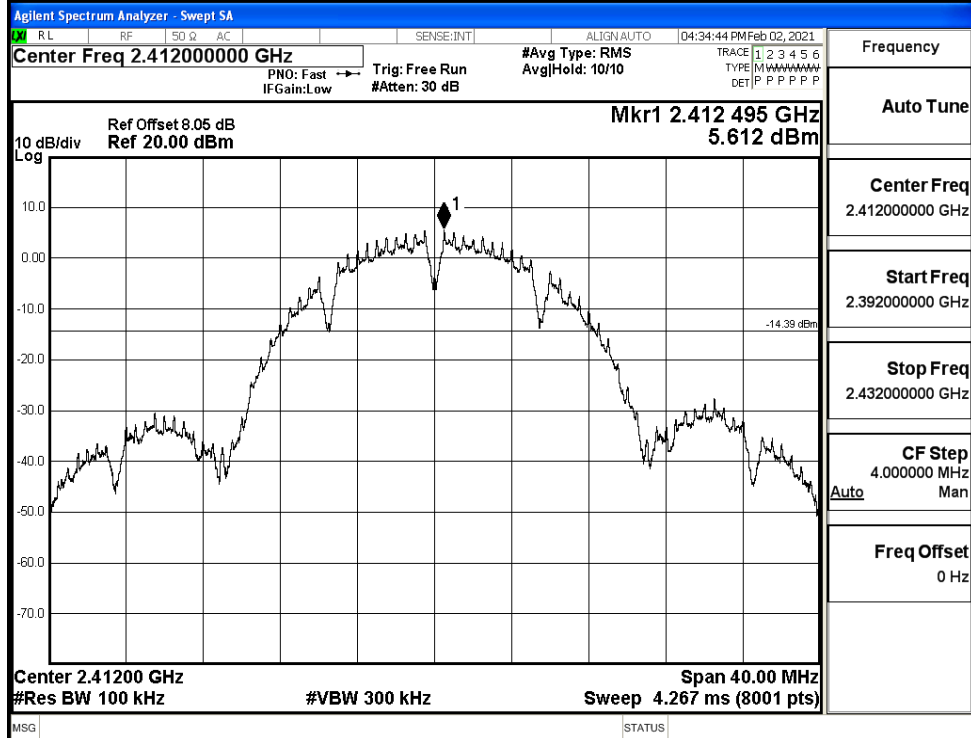


B.5 RF Conducted Spurious Emissions

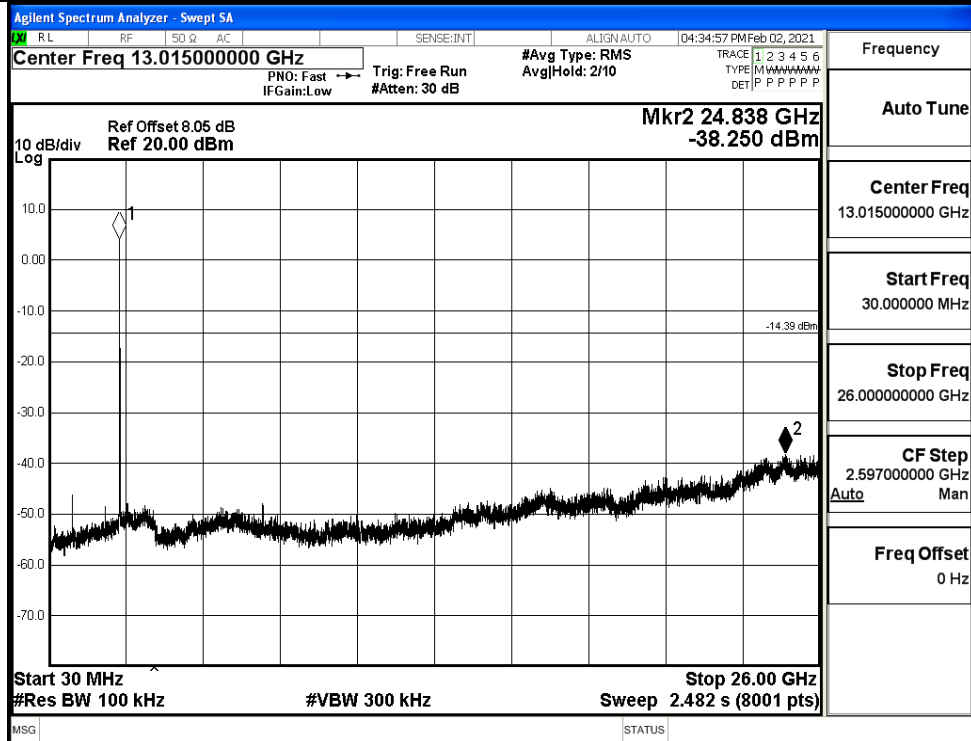
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	5.612	-38.250	-14.388	PASS
	MCH	6.648	-38.546	-13.352	PASS
	HCH	6.066	-37.293	-13.934	PASS
11G	LCH	1.844	-37.994	-18.156	PASS
	MCH	2.577	-38.182	-17.423	PASS
	HCH	1.785	-37.311	-18.215	PASS
11N20 SISO	LCH	0.475	-37.806	-19.525	PASS
	MCH	2.246	-37.429	-17.754	PASS
	HCH	1.79	-37.507	-18.210	PASS
11N40 SISO	LCH	0.304	-37.764	-19.696	PASS
	MCH	0.497	-37.943	-19.503	PASS
	HCH	0.205	-36.806	-19.795	PASS

11B LCH Graphs

Pref/11B/LCH

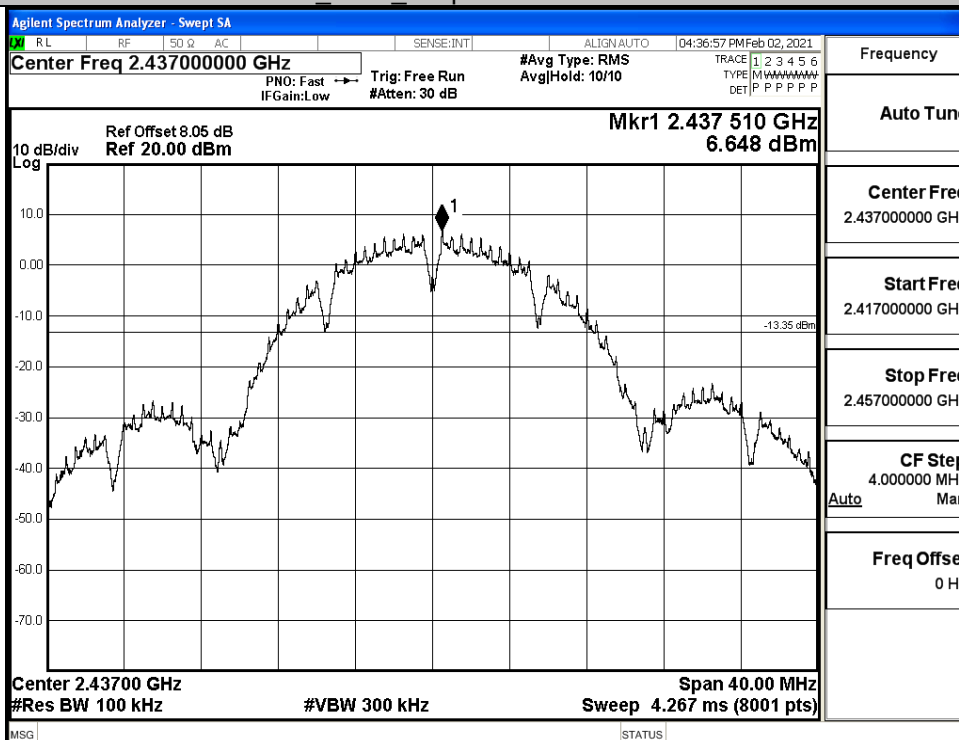


Puw/11B/LCH

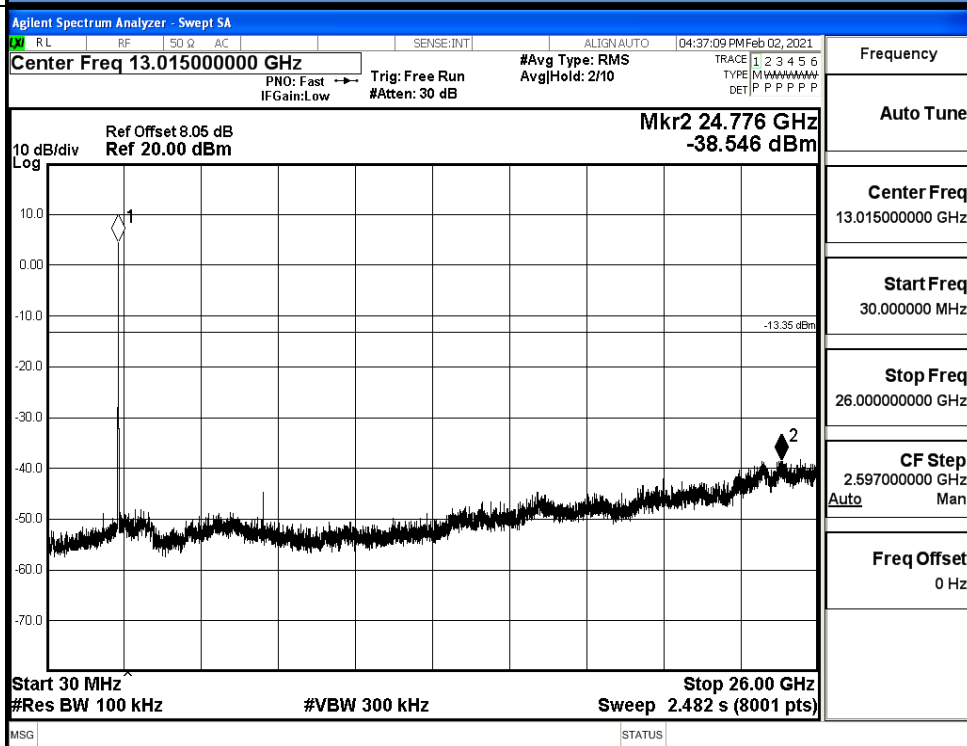


11B MCH Graphs

Pref/11B/MCH

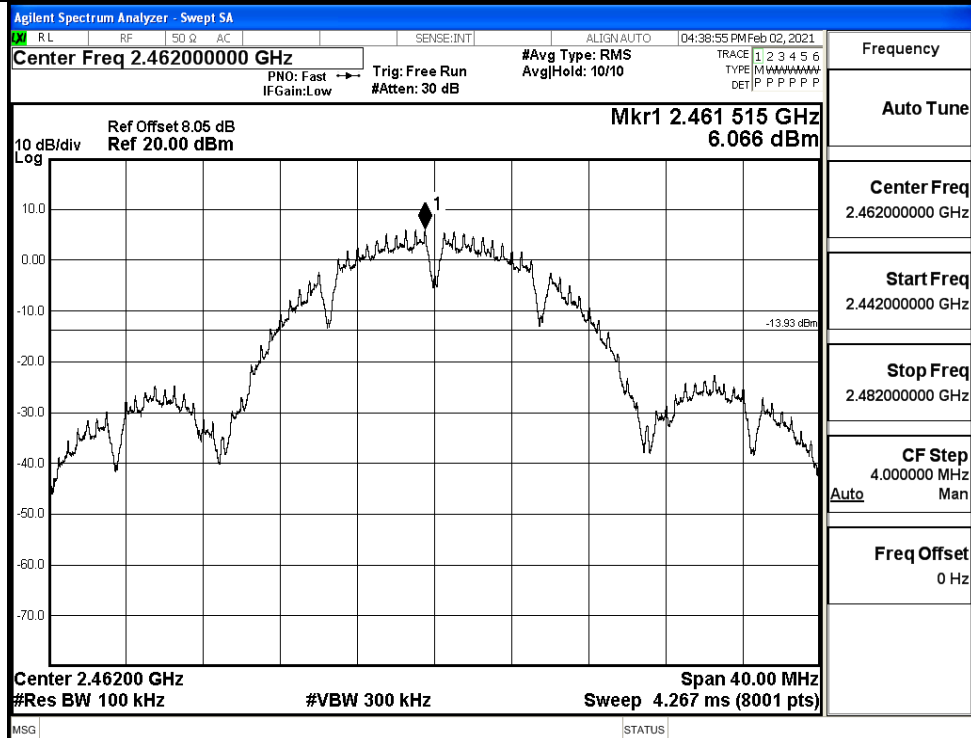


Puw/11B/MCH

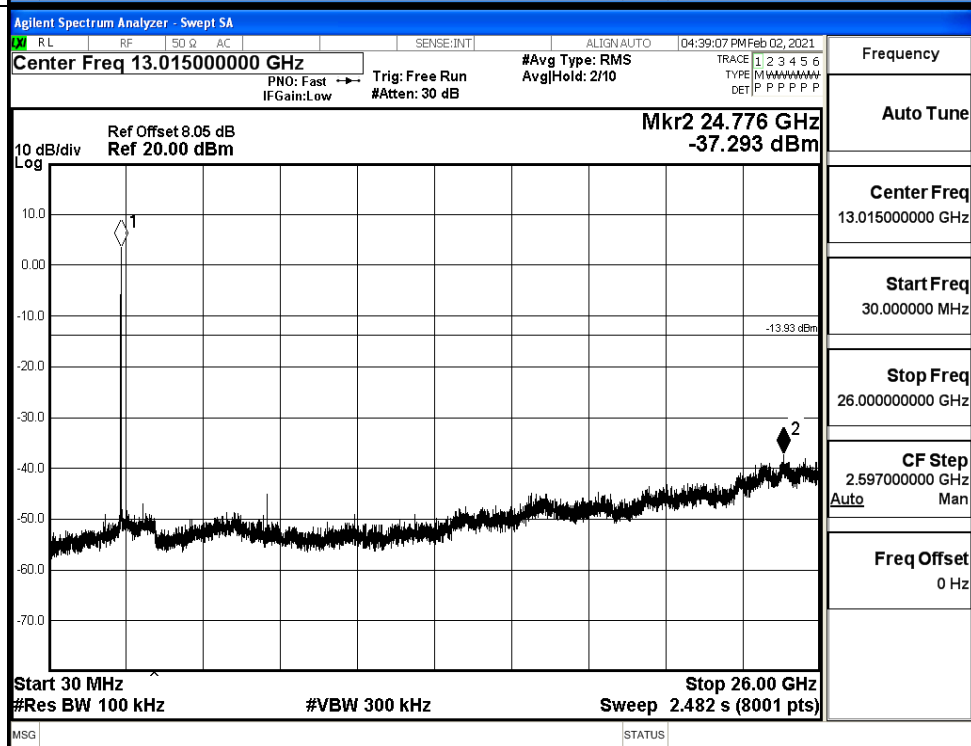


11B HCH Graphs

Pref/11B/HCH

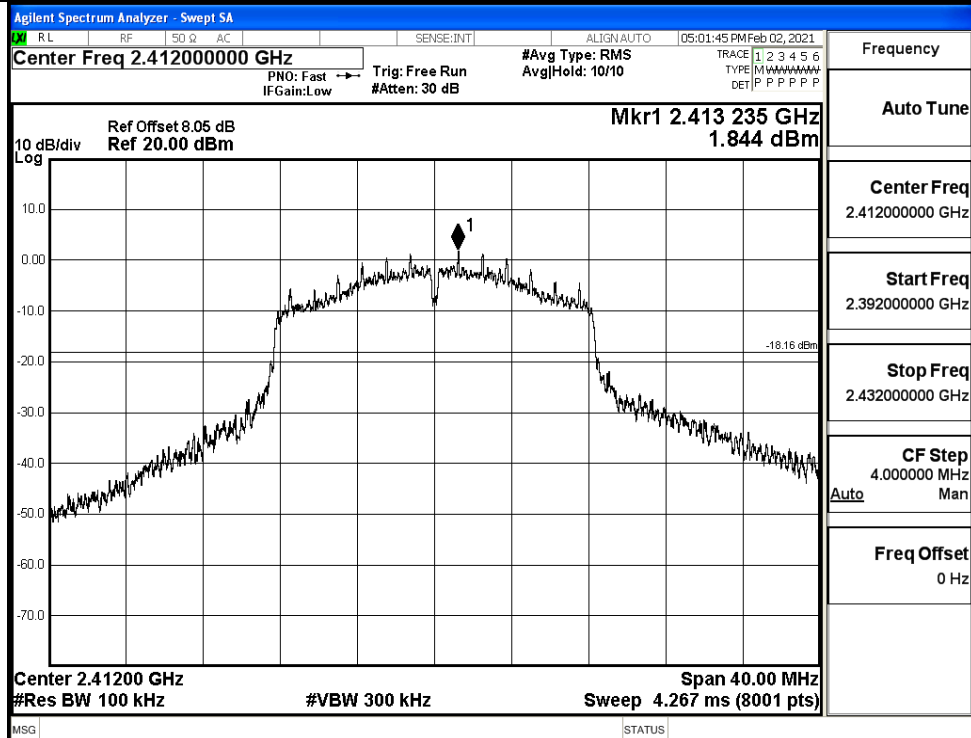


Puw/11B/HCH

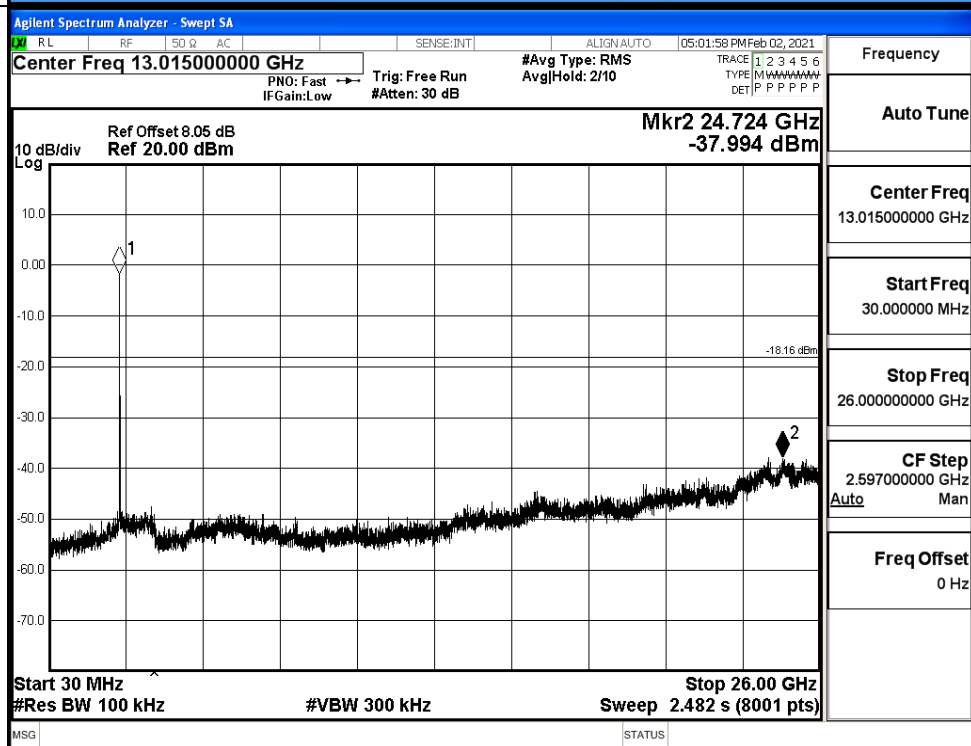


11G LCH Graphs

Pref/11G/LCH

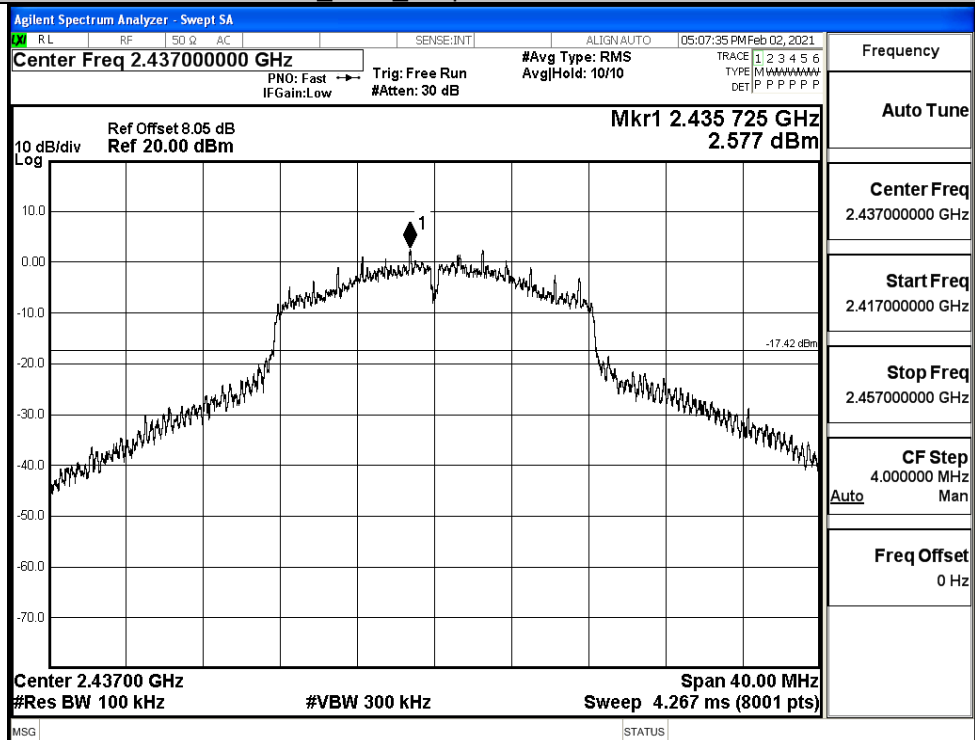


Puw/11G/LCH

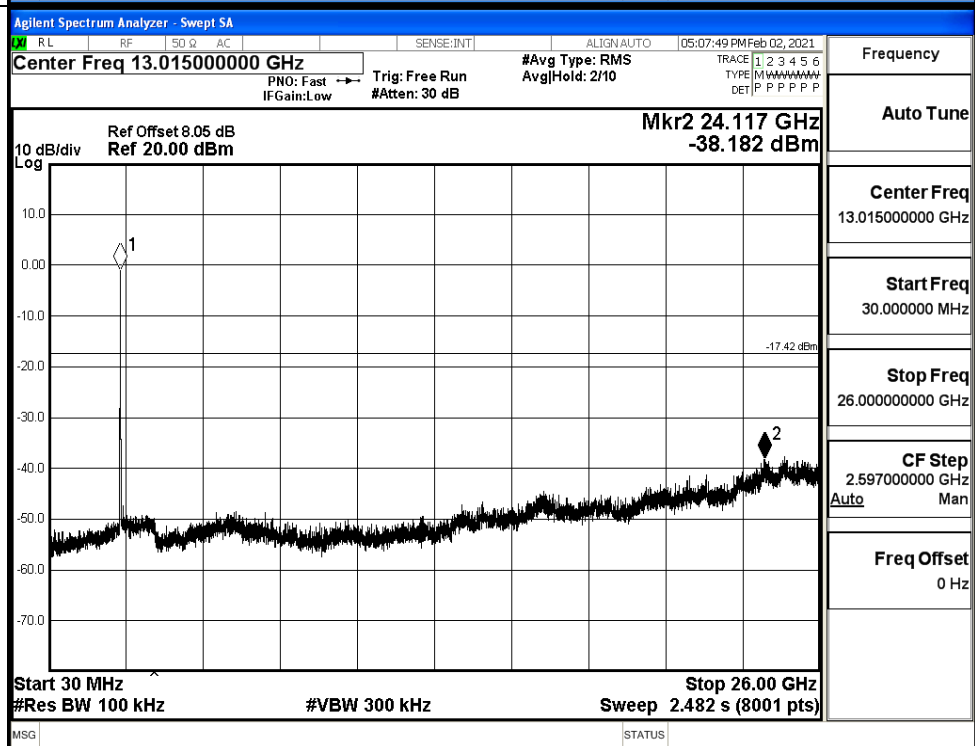


11G MCH Graphs

Pref/11G/MCH

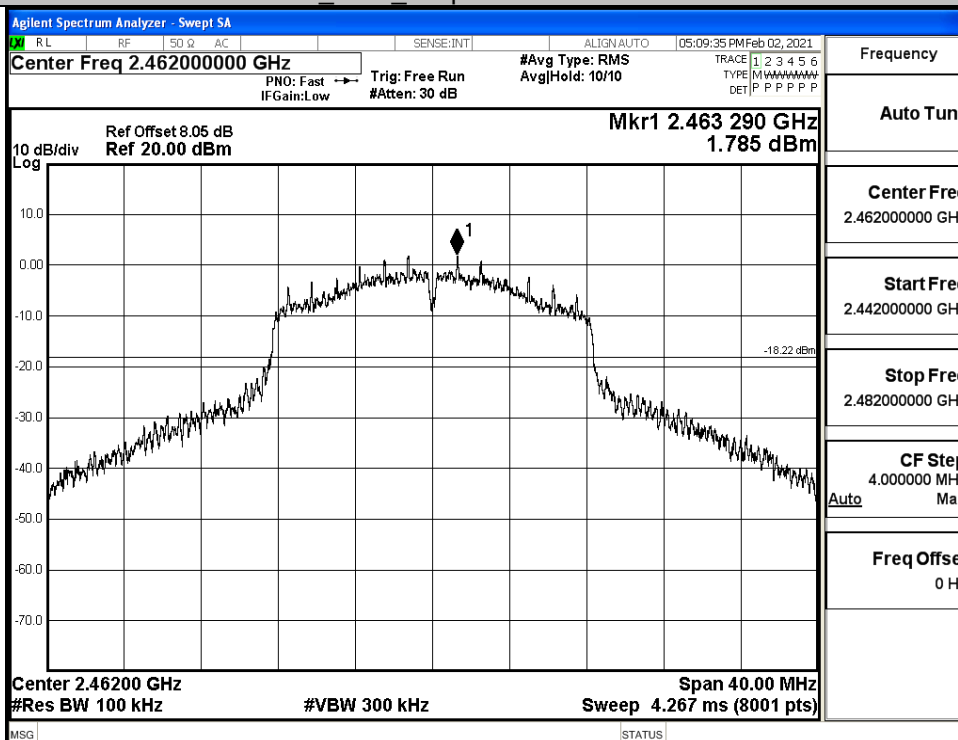


Puw/11G/MCH

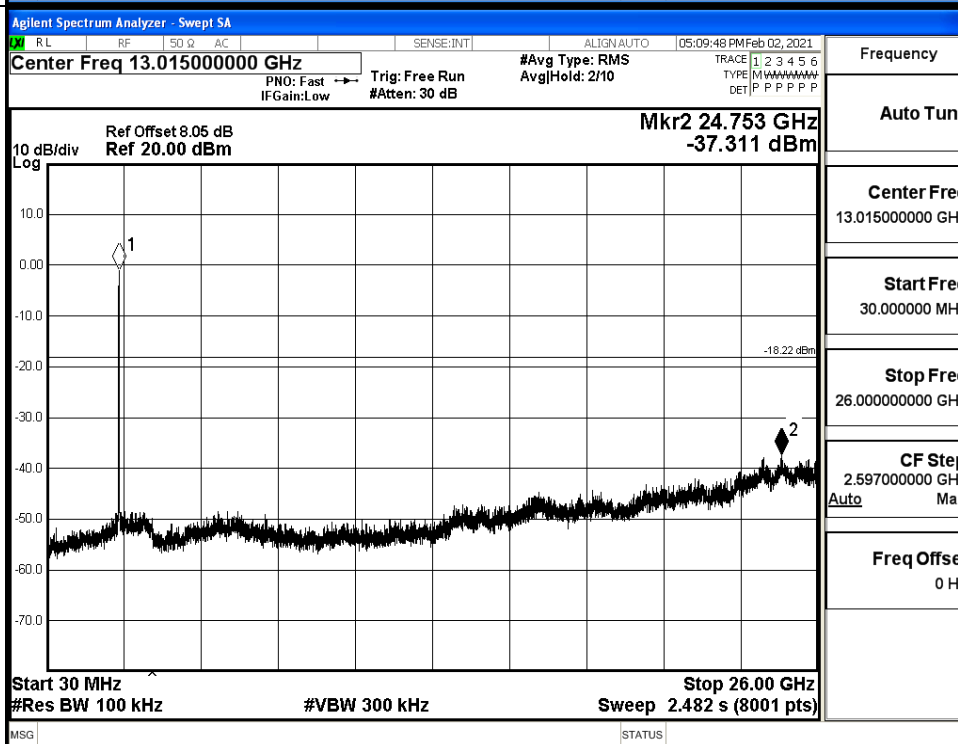


11G HCH Graphs

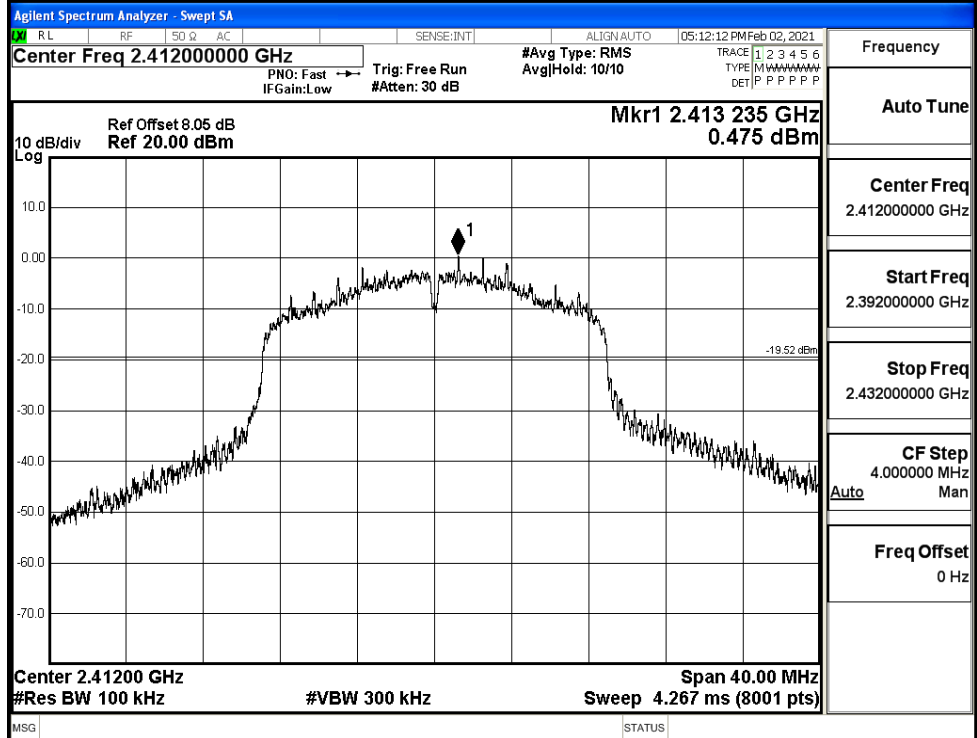
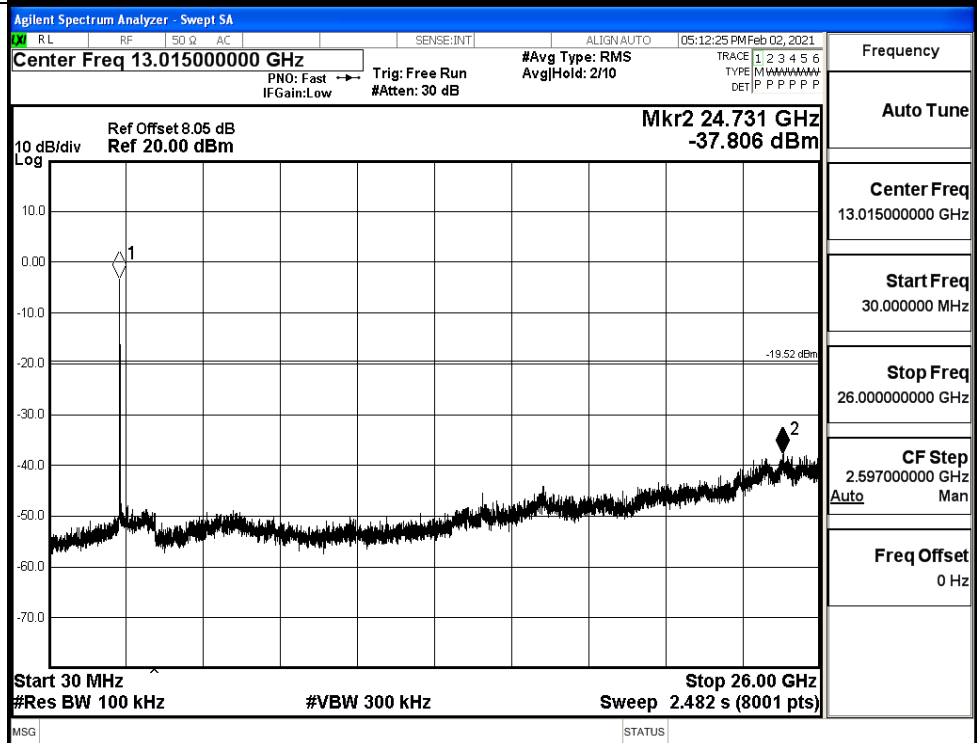
Pref/11G/HCH



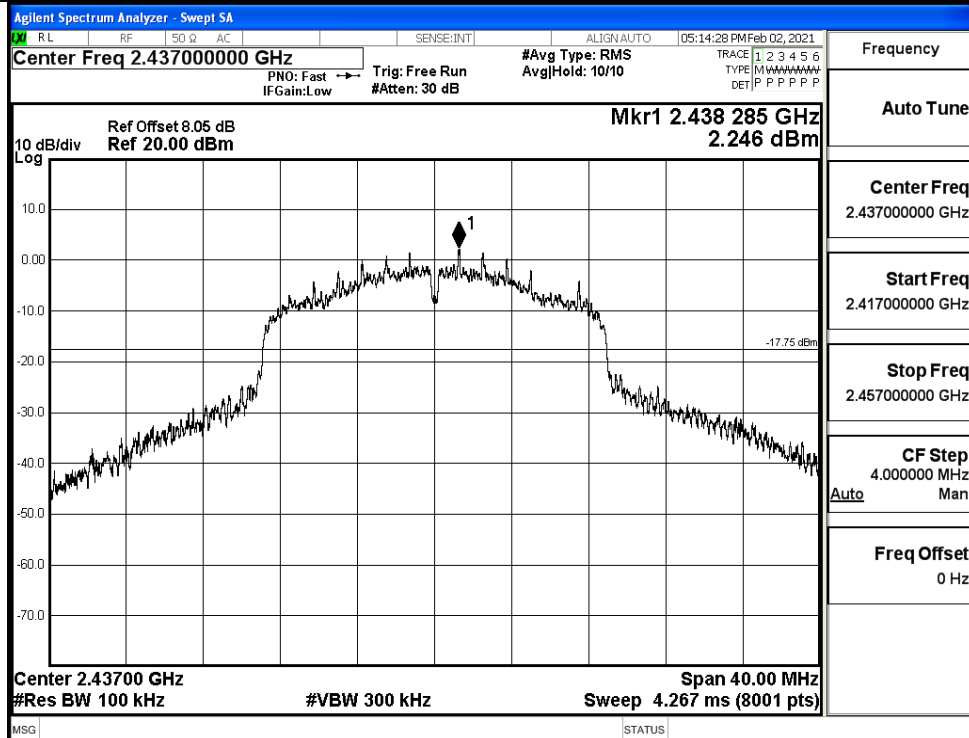
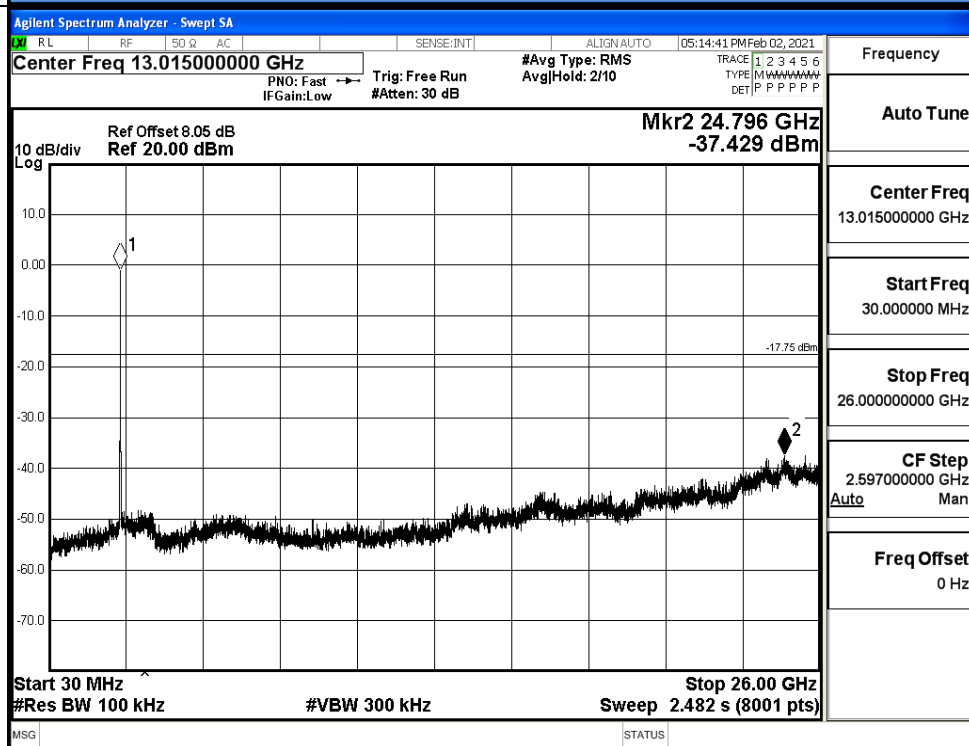
Puw/11G/HCH



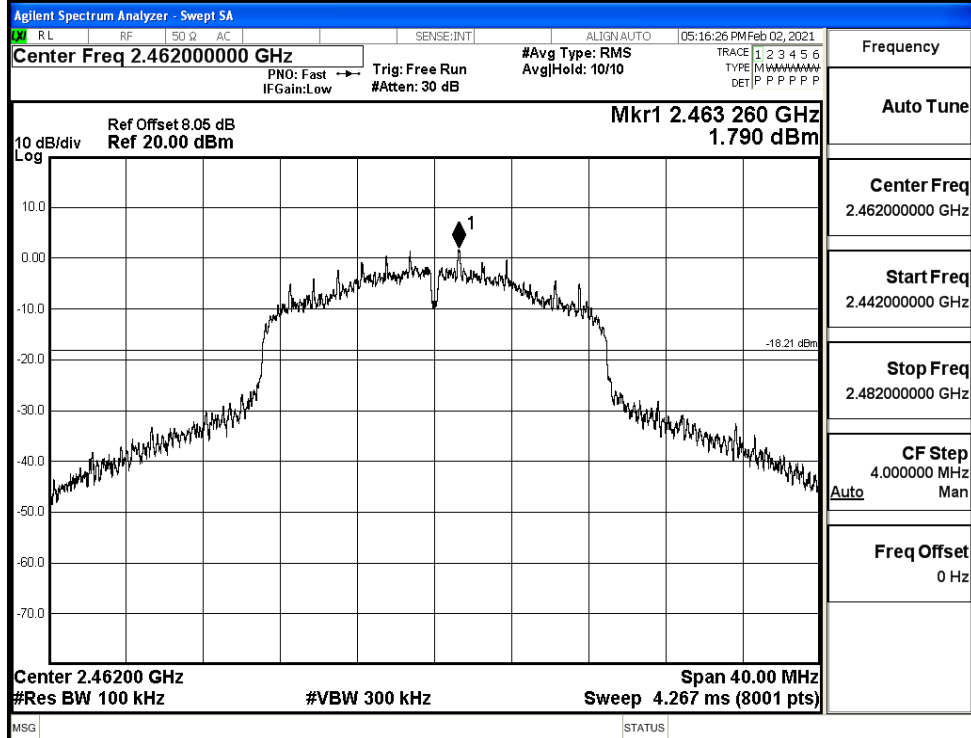
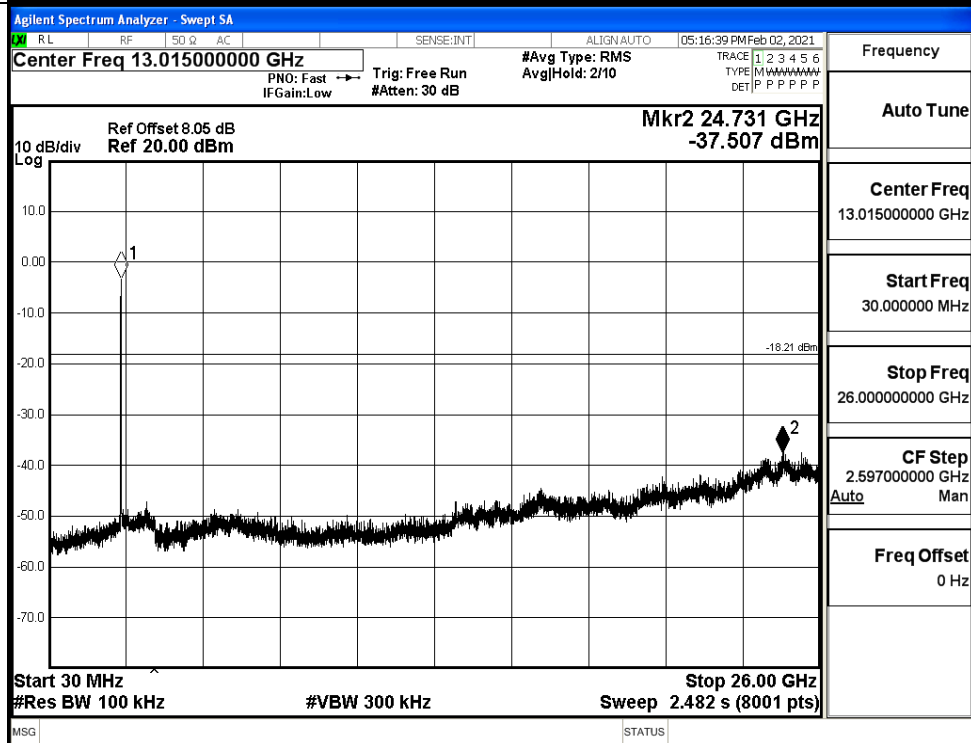
11N20SISO LCH Graphs

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

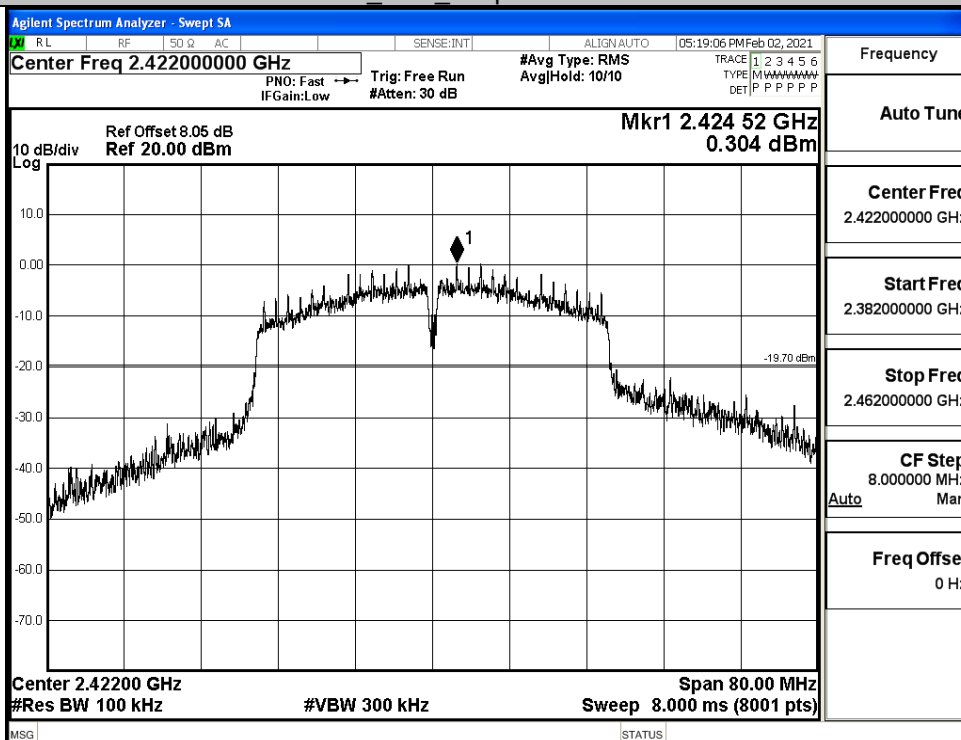
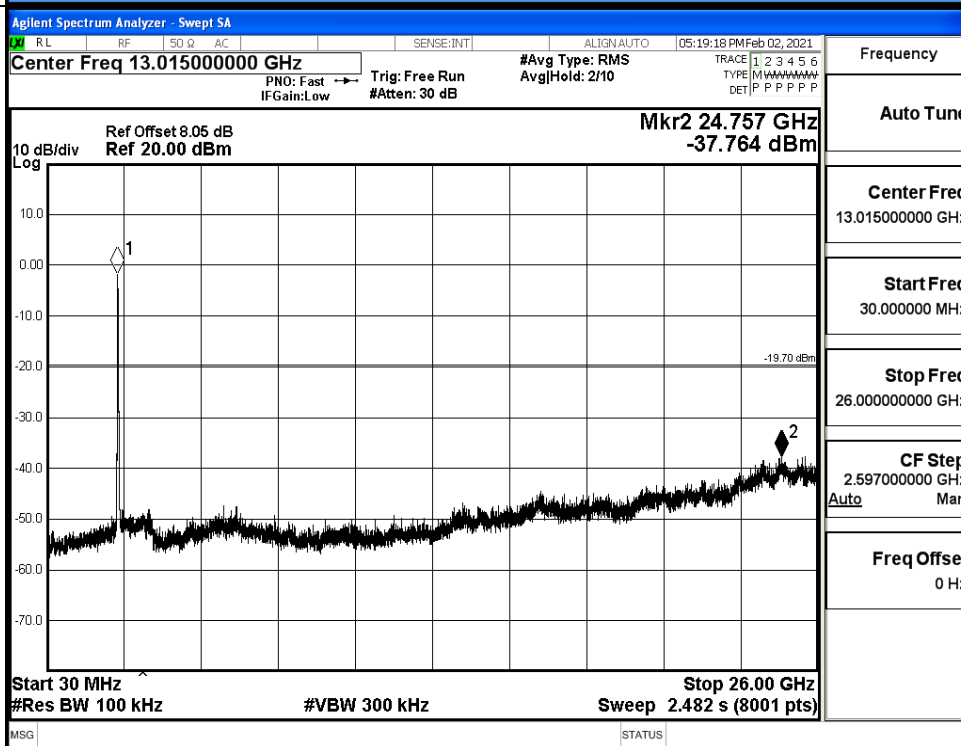
11N20SISO_MCH_Graphs

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

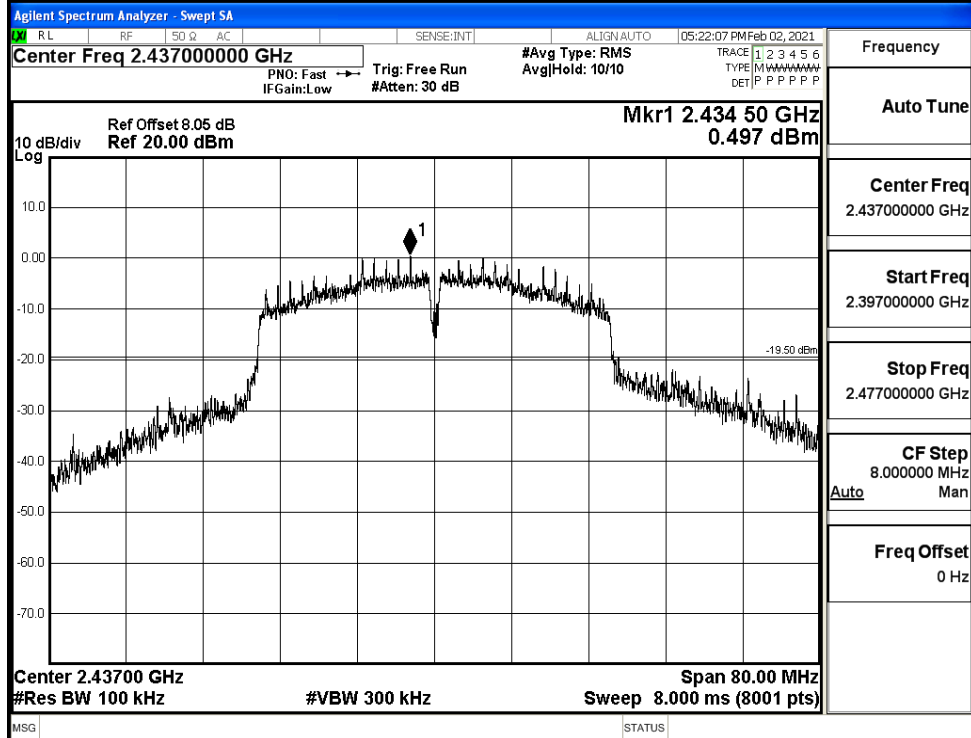
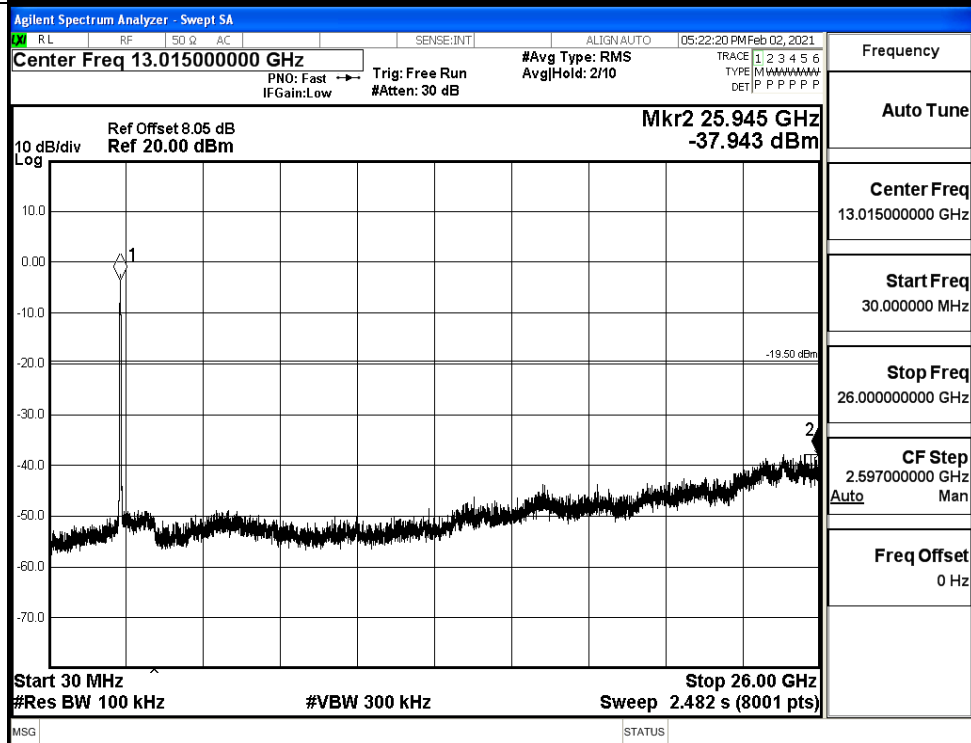
11N20SISO HCH Graphs

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

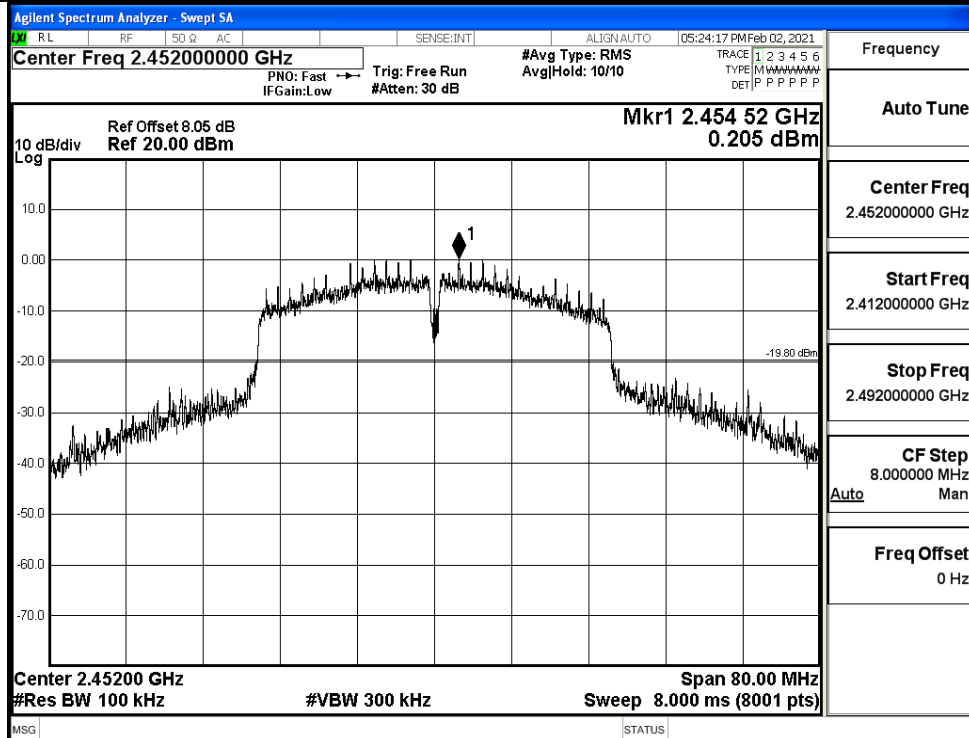
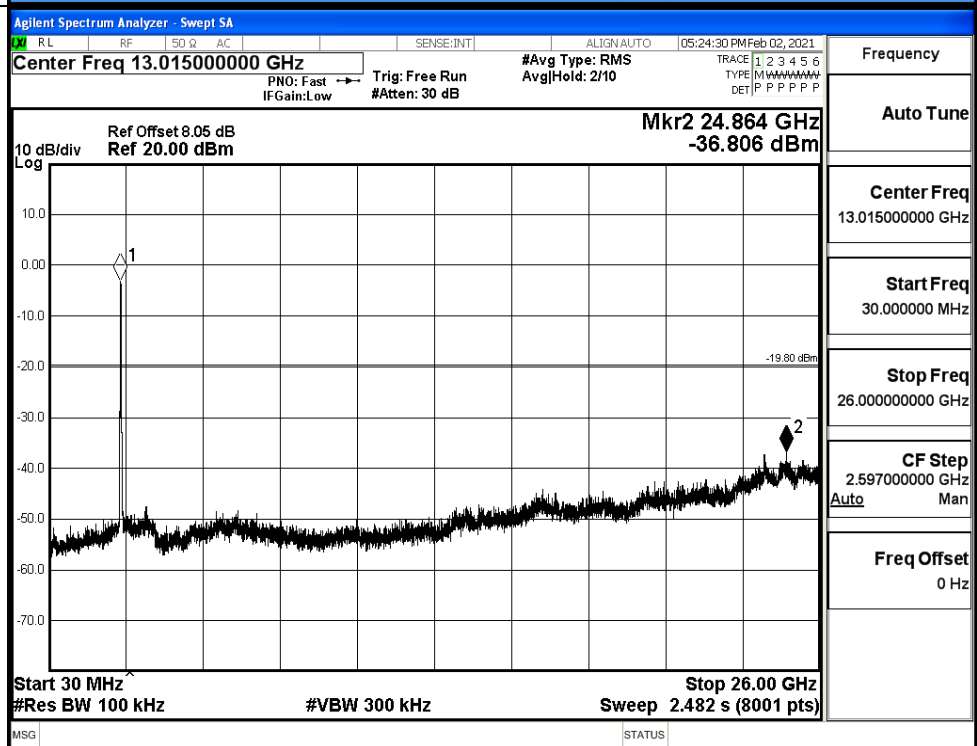
11N40SISO LCH Graphs

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

11N40SISO_MCH_Graphs

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

11N40SISO HCH Graphs

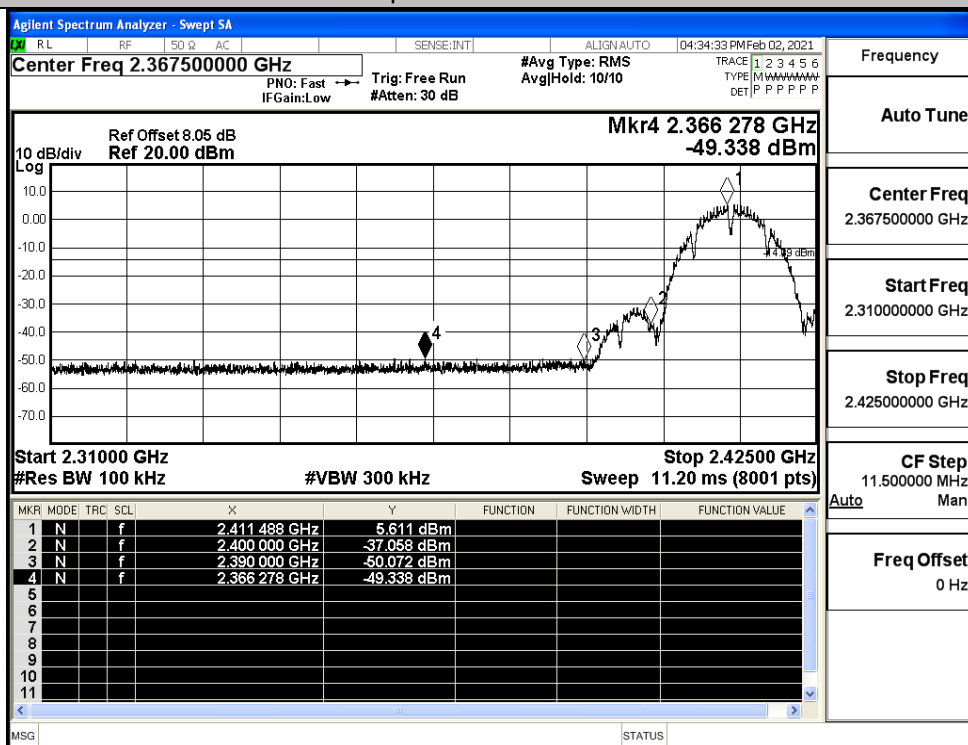
Pref/11N40
SISO/HCHPuw/11N40
SISO/HCH

B.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	5.611	-49.338	-14.39	PASS
	HCH	5.962	-44.976	-14.04	PASS
11G	LCH	1.645	-47.040	-18.36	PASS
	HCH	2.282	-43.352	-17.72	PASS
11N20SISO	LCH	0.767	-48.993	-19.23	PASS
	HCH	1.825	-44.634	-18.18	PASS
11N40SISO	LCH	0.180	-39.459	-19.82	PASS
	HCH	0.475	-25.809	-19.53	PASS

Test Graphs

11B/LCH

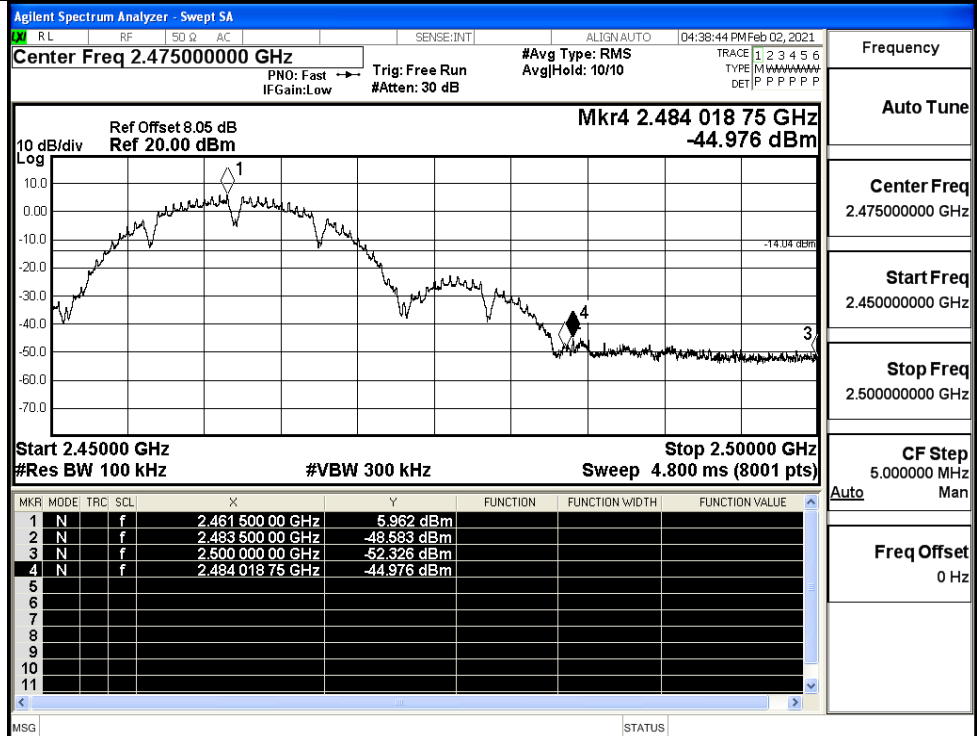


Frequency

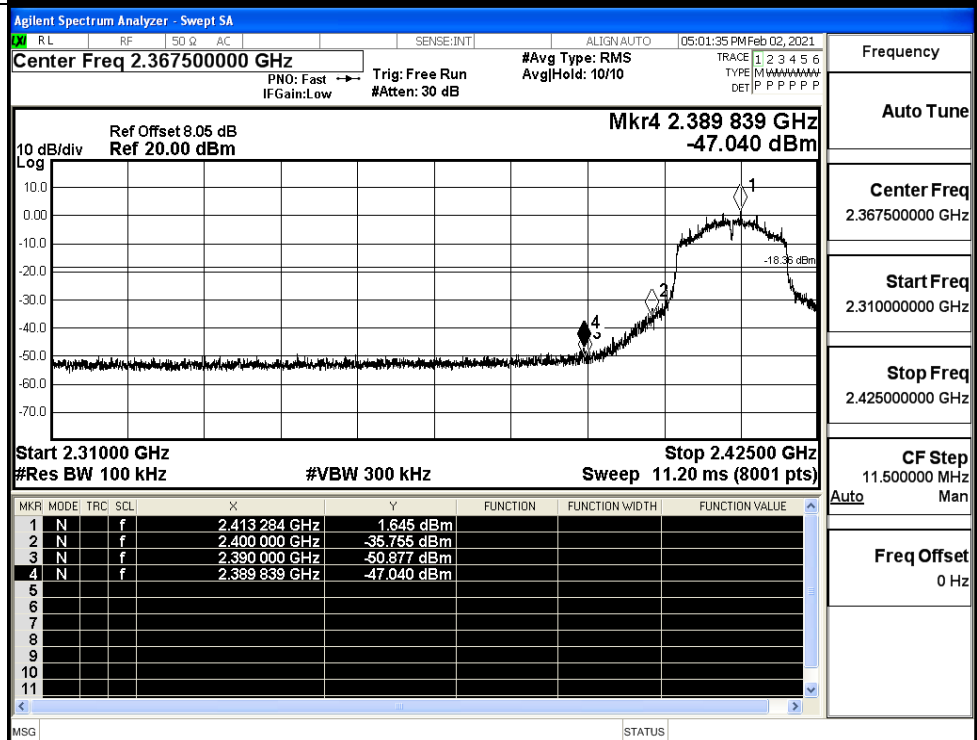
Auto Tune

Center Freq
2.367500000 GHzStart Freq
2.310000000 GHzStop Freq
2.425000000 GHzCF Step
11.500000 MHzFreq Offset
0 Hz

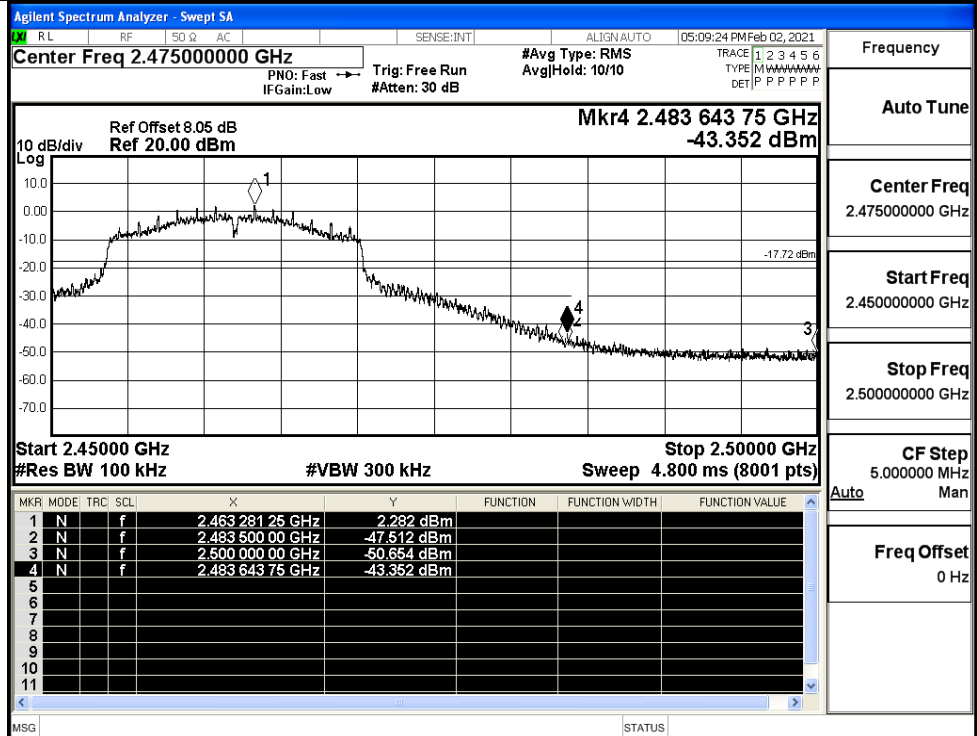
11B/HCH



11G/LCH



11G/HCH

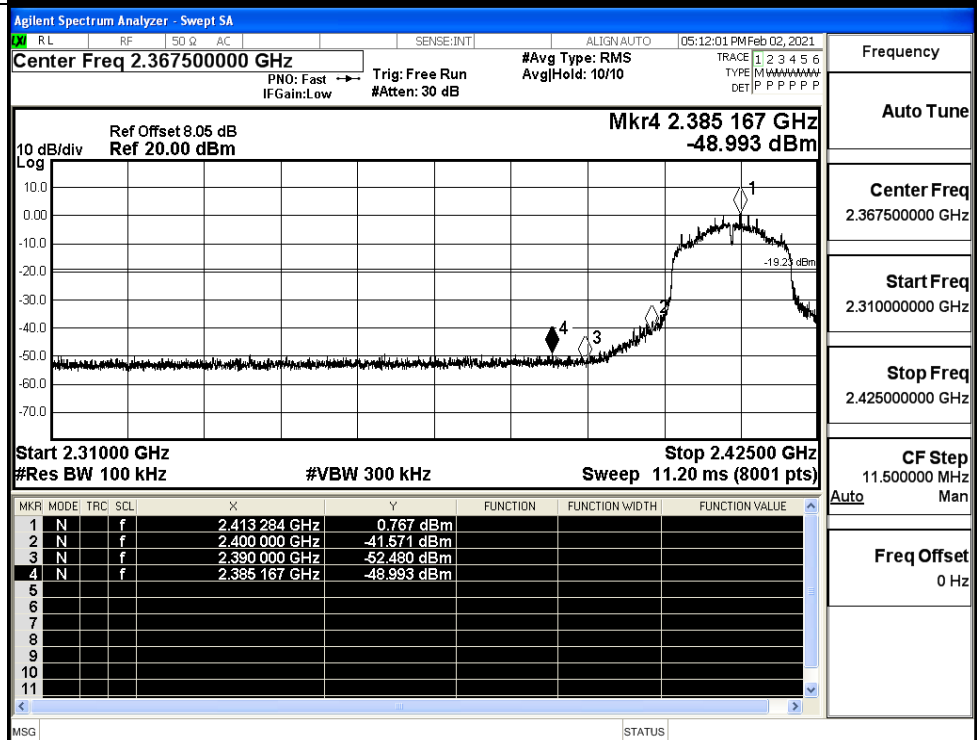


Frequency

Auto Tune

Center Freq
2.475000000 GHzStart Freq
2.450000000 GHzStop Freq
2.500000000 GHzCF Step
5.000000 MHz
Auto ManFreq Offset
0 Hz

11N20SISO/LCH

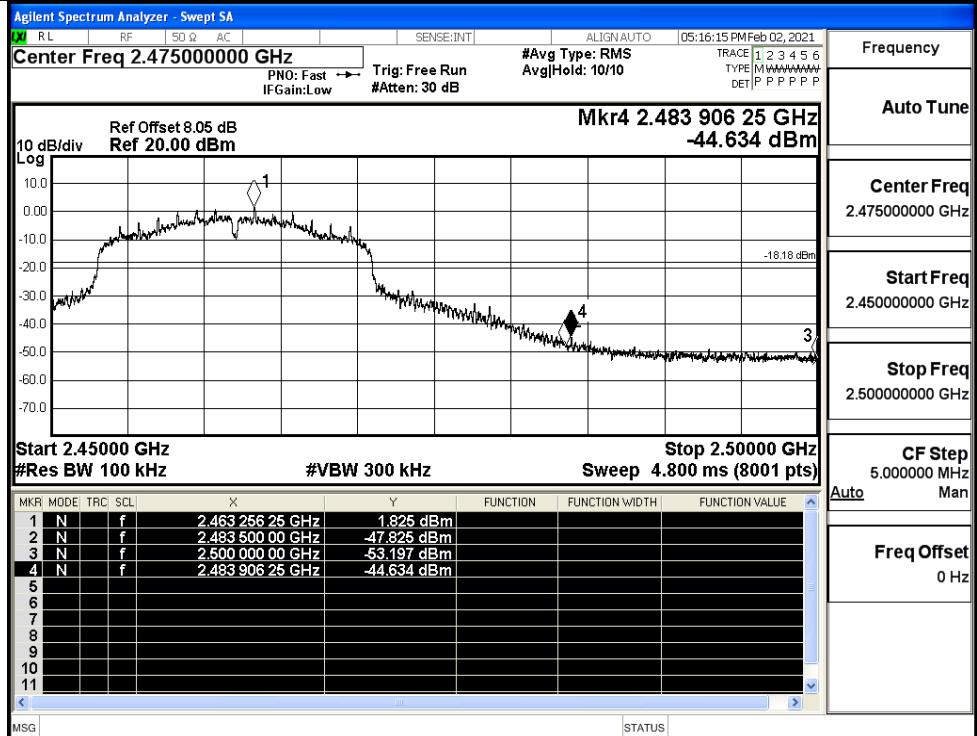


Frequency

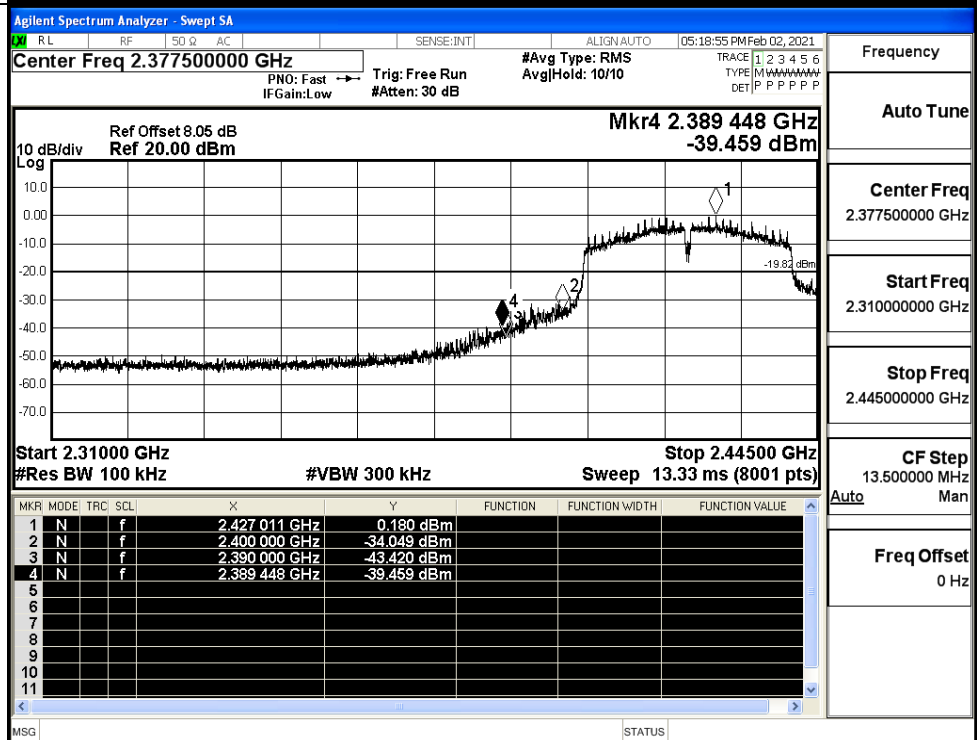
Auto Tune

Center Freq
2.367500000 GHzStart Freq
2.310000000 GHzStop Freq
2.425000000 GHzCF Step
11.500000 MHz
Auto ManFreq Offset
0 Hz

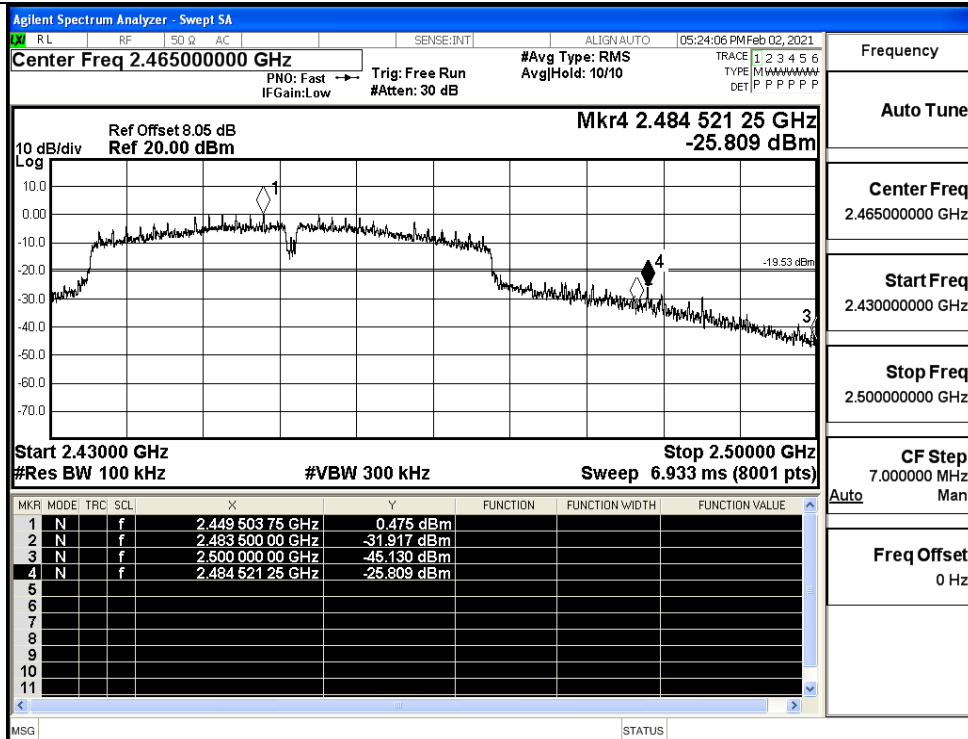
11N20SISO/HCH



11N40SISO/LCH



11N40SISO/HCH

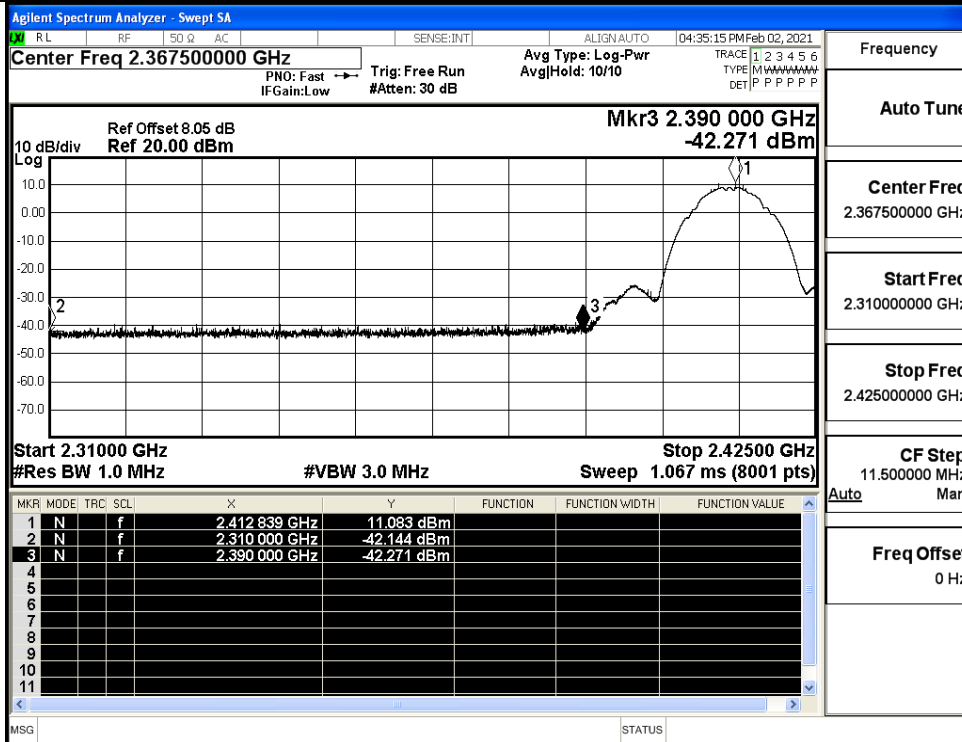


B.7 Restrict-band band-edge measurements

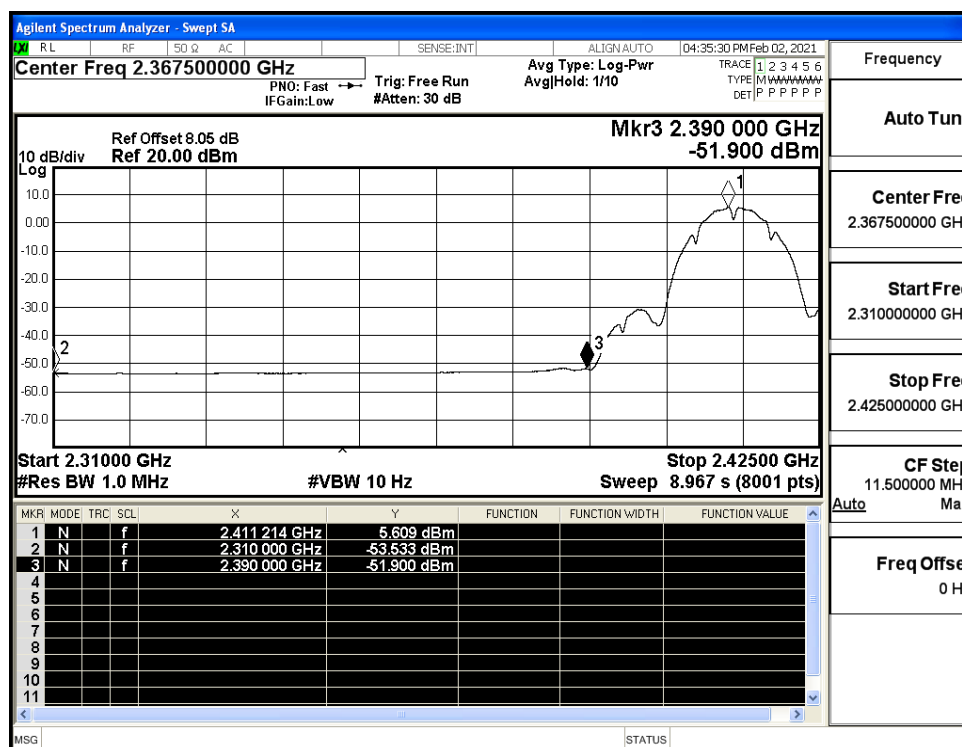
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
11B	2412	Ant1	2310.0	-42.14	2.98	0	56.07	PEAK	74	PASS
	2412	Ant1	2310.0	-53.53	2.98	0	44.68	AV	54	PASS
	2412	Ant1	2390.0	-42.27	2.98	0	55.94	PEAK	74	PASS
	2412	Ant1	2390.0	-51.90	2.98	0	46.31	AV	54	PASS
	2462	Ant1	2483.5	-39.58	2.98	0	58.63	PEAK	74	PASS
	2462	Ant1	2483.5	-48.54	2.98	0	49.67	AV	54	PASS
	2462	Ant1	2500.0	-41.11	2.98	0	57.10	PEAK	74	PASS
	2462	Ant1	2500.0	-52.26	2.98	0	45.95	AV	54	PASS
11G	2412	Ant1	2310.0	-41.69	2.98	0	56.52	PEAK	74	PASS
	2412	Ant1	2310.0	-53.33	2.98	0	44.88	AV	54	PASS
	2412	Ant1	2390.0	-38.93	2.98	0	59.28	PEAK	74	PASS
	2412	Ant1	2390.0	-51.49	2.98	0	46.72	AV	54	PASS
	2462	Ant1	2483.5	-32.58	2.98	0	65.63	PEAK	74	PASS
	2462	Ant1	2483.5	-46.06	2.98	0	52.15	AV	54	PASS
	2462	Ant1	2500.0	-42.17	2.98	0	56.04	PEAK	74	PASS
	2462	Ant1	2500.0	-51.80	2.98	0	46.41	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-44.44	2.98	0	53.77	PEAK	74	PASS
	2412	Ant1	2310.0	-53.34	2.98	0	44.87	AV	54	PASS
	2412	Ant1	2390.0	-41.69	2.98	0	56.52	PEAK	74	PASS
	2412	Ant1	2390.0	-52.02	2.98	0	46.19	AV	54	PASS
	2462	Ant1	2483.5	-35.13	2.98	0	63.08	PEAK	74	PASS
	2462	Ant1	2483.5	-48.17	2.98	0	50.04	AV	54	PASS
	2462	Ant1	2500.0	-40.67	2.98	0	57.54	PEAK	74	PASS
	2462	Ant1	2500.0	-52.28	2.98	0	45.93	AV	54	PASS
11N40 SISO	2422	Ant1	2310.0	-43.71	2.98	0	54.50	PEAK	74	PASS
	2422	Ant1	2310.0	-53.32	2.98	0	44.89	AV	54	PASS

	2422	Ant1	2390.0	-28.39	2.98	0	69.82	PEAK	74	PASS
	2422	Ant1	2390.0	-45.19	2.98	0	53.02	AV	54	PASS
	2452	Ant1	2483.5	-25.10	2.98	0	73.11	PEAK	74	PASS
	2452	Ant1	2483.5	-45.12	2.98	0	53.09	AV	54	PASS
	2452	Ant1	2500.0	-34.26	2.98	0	63.95	PEAK	74	PASS
	2452	Ant1	2500.0	-50.84	2.98	0	47.37	AV	54	PASS

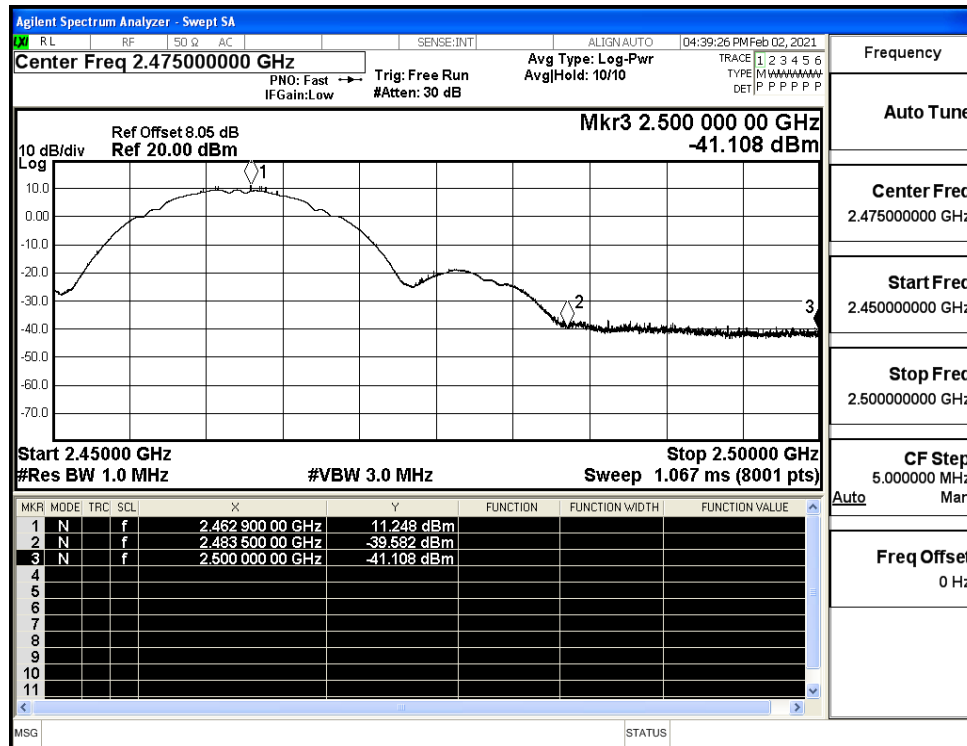
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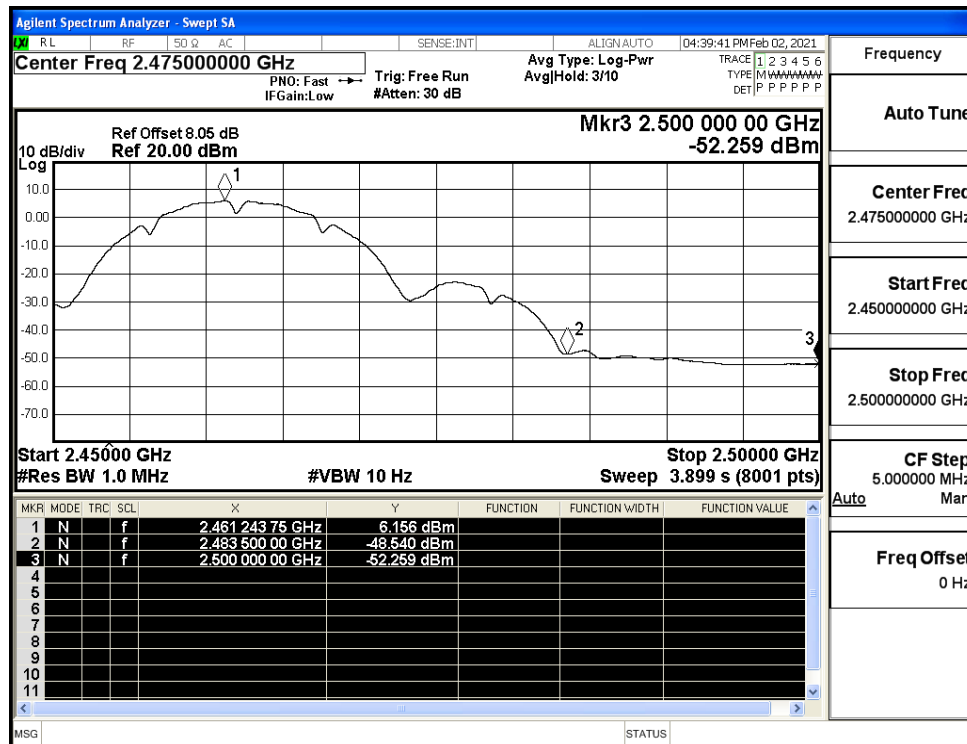
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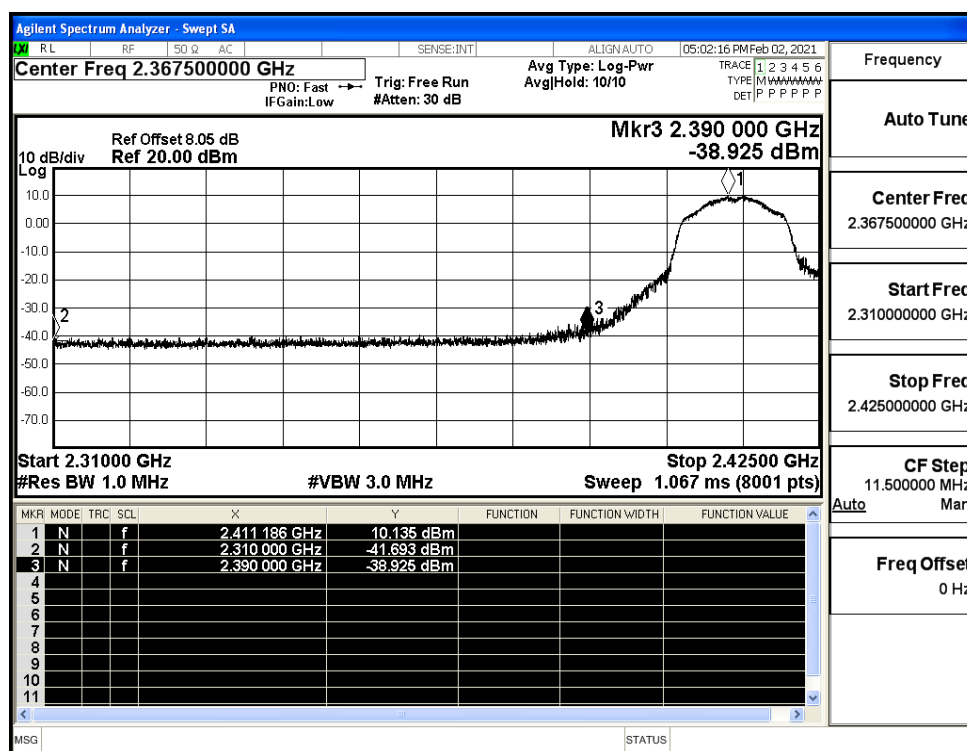
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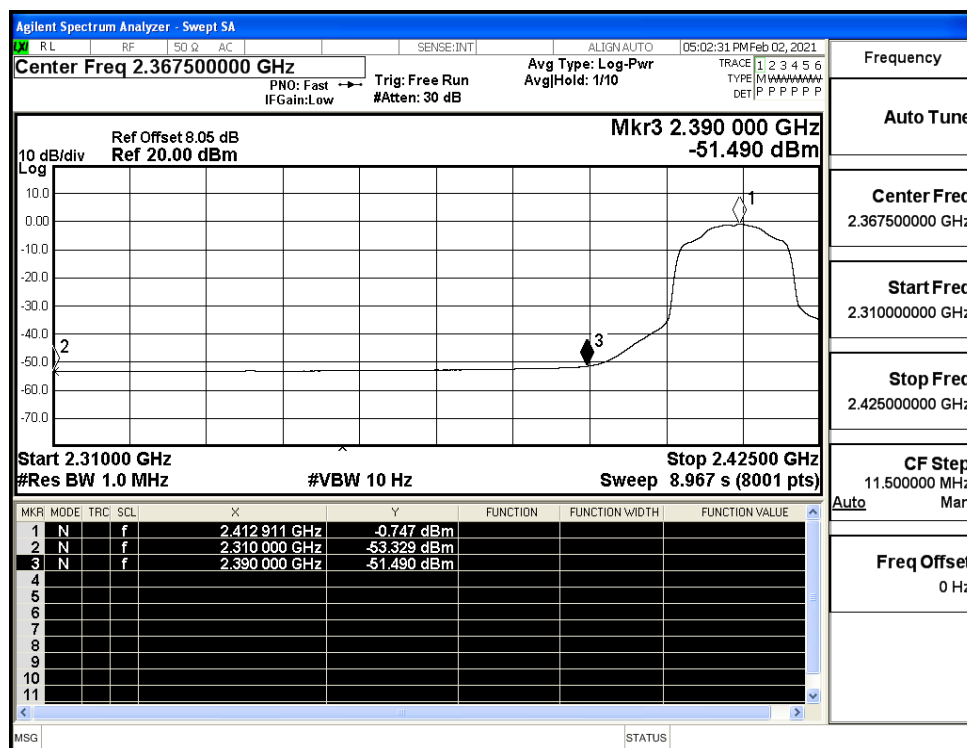
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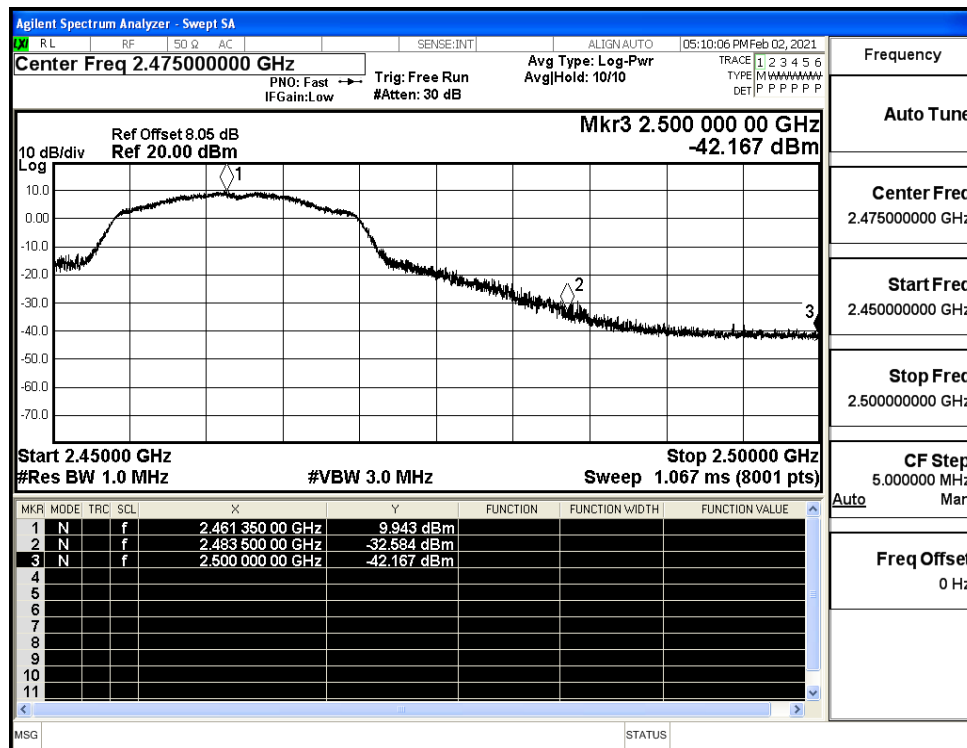
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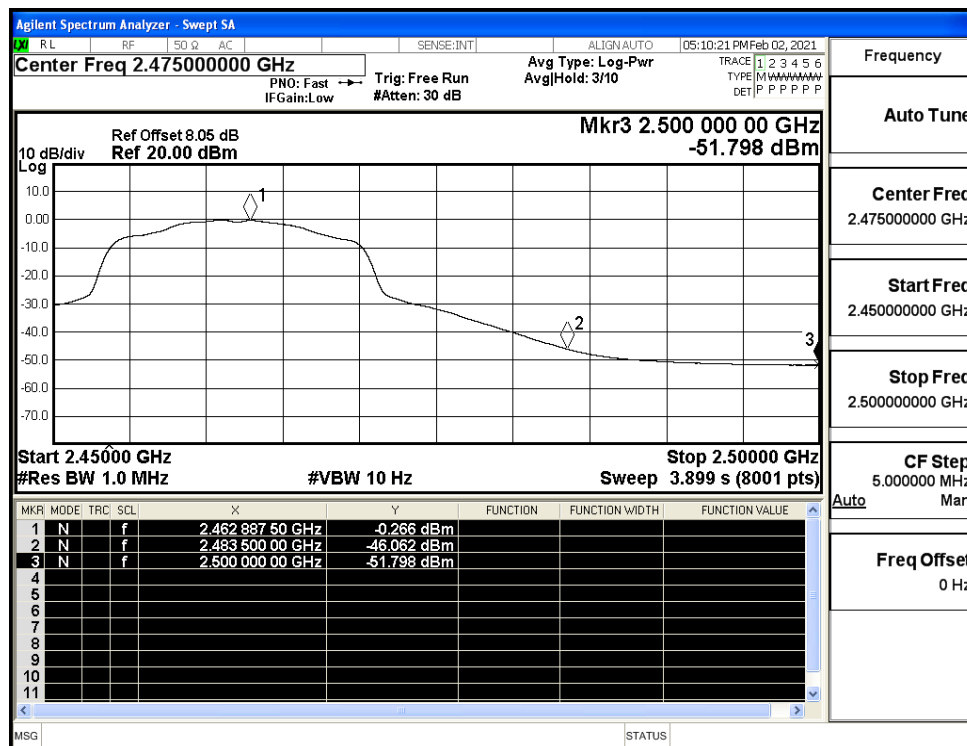
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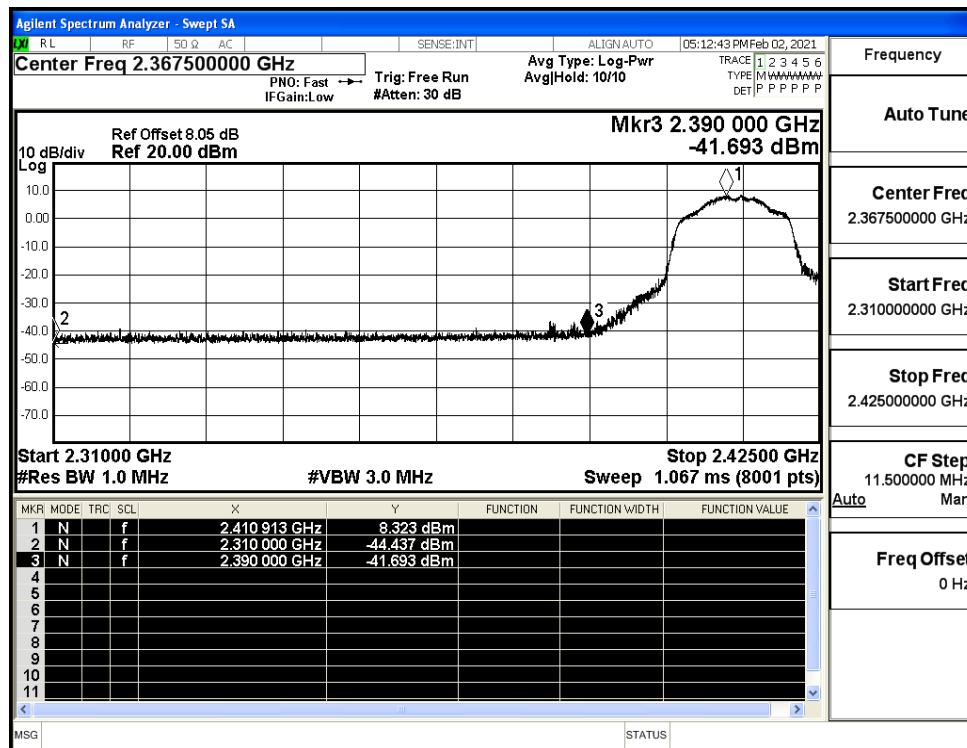
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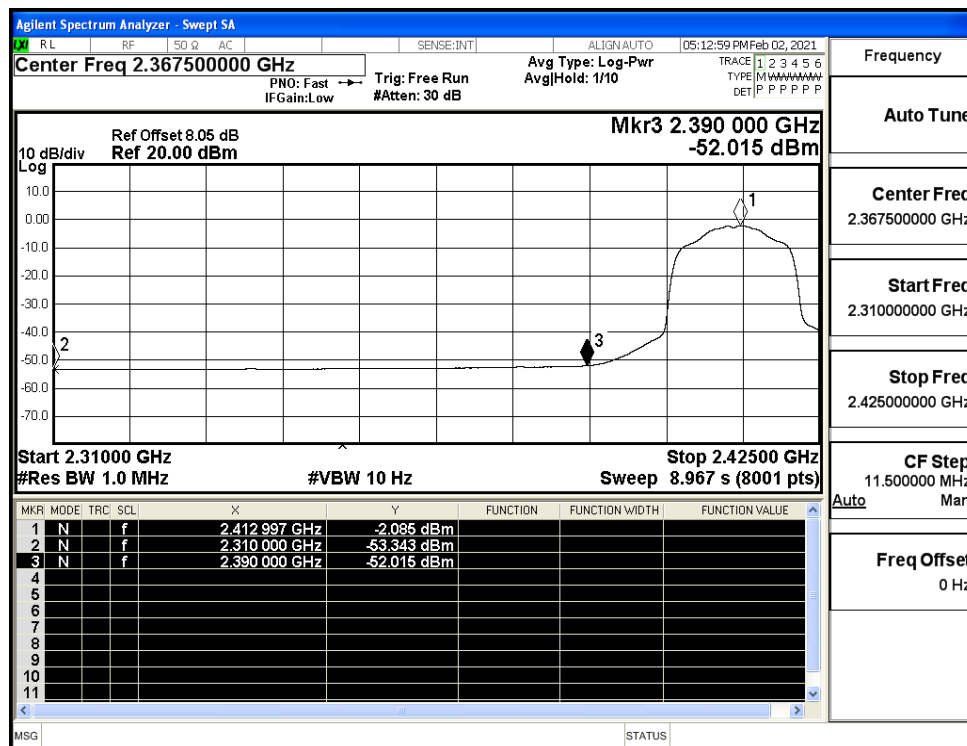
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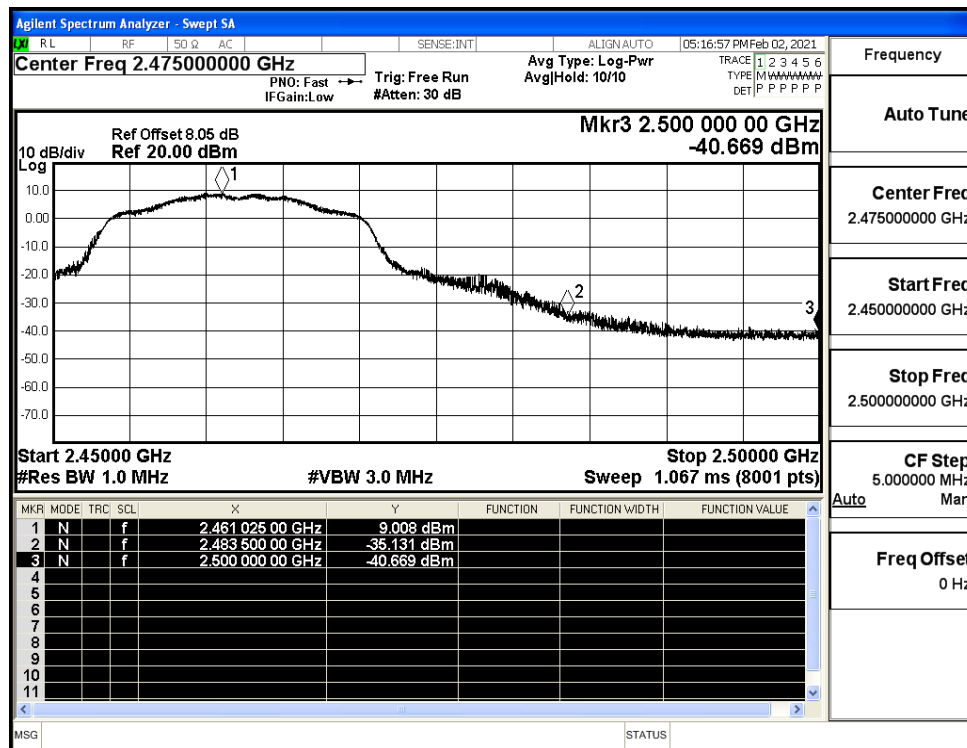
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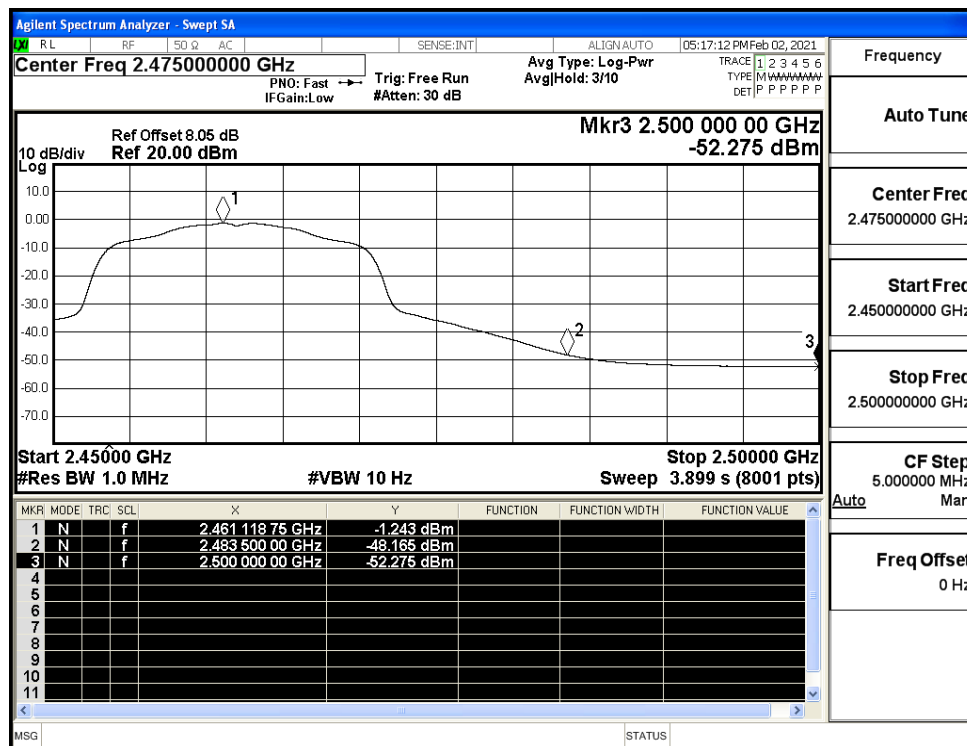
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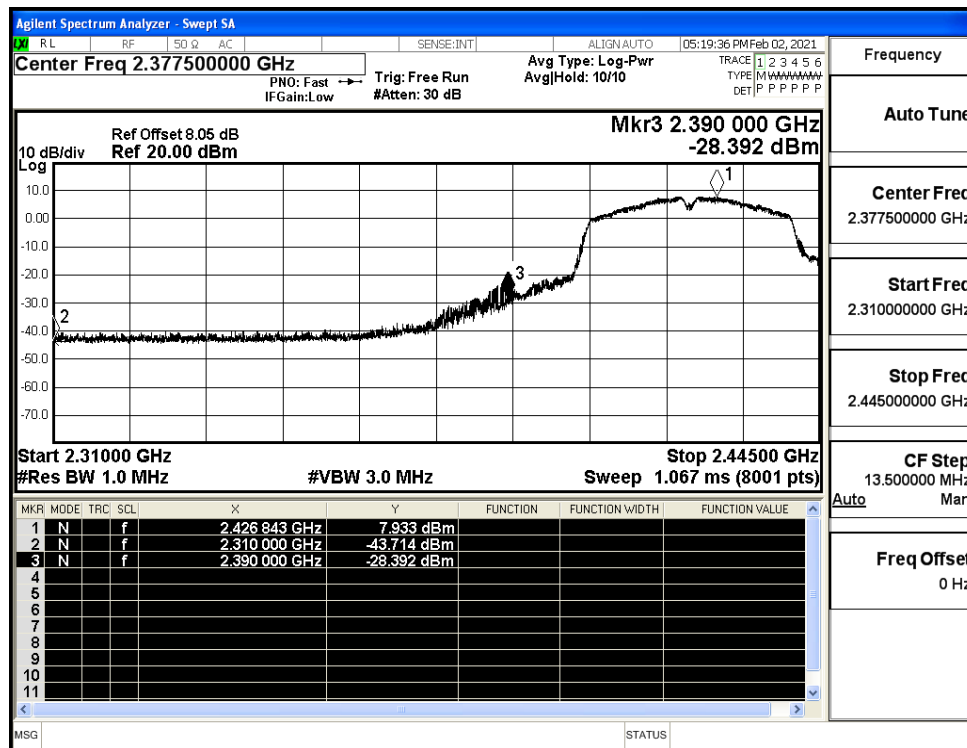
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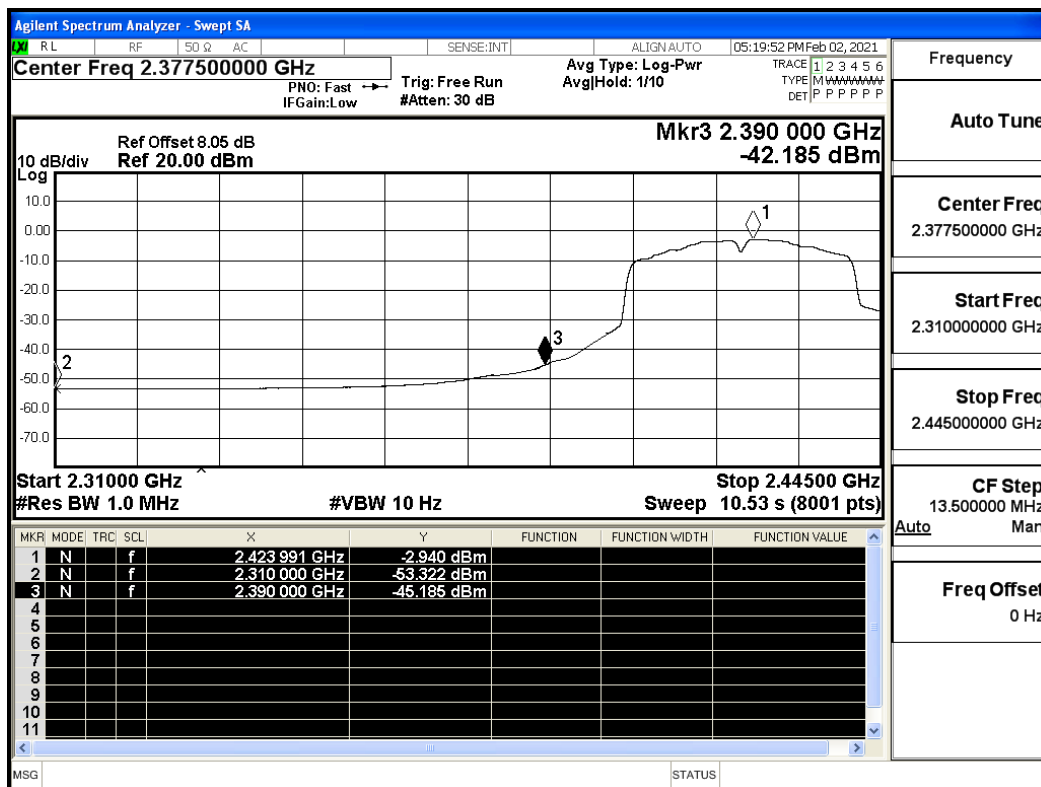
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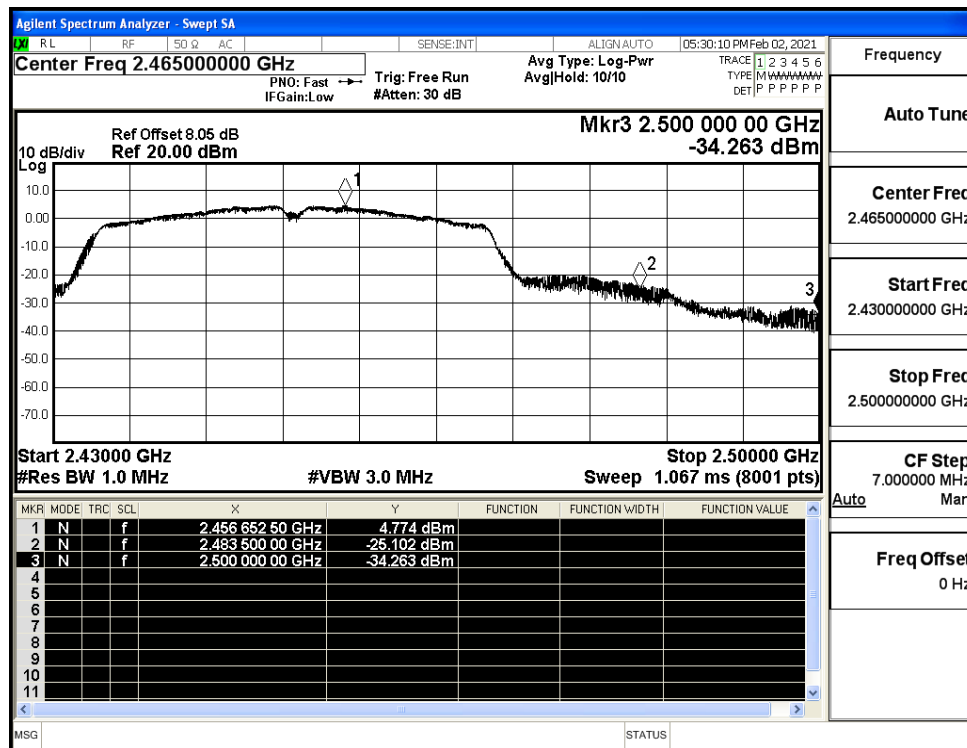
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Restrict-band band-edge measurements_11N40SISO_2422_Ant1_AV



Restrict-band band-edge measurements_11N40SISO_2452_Ant1_PEAK



Restrict-band band-edge measurements_11N40SISO_2452_Ant1_AV

