

Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Visual ear spoon

Trade Mark: E-enjoy

Test Model: E-enjoy P30

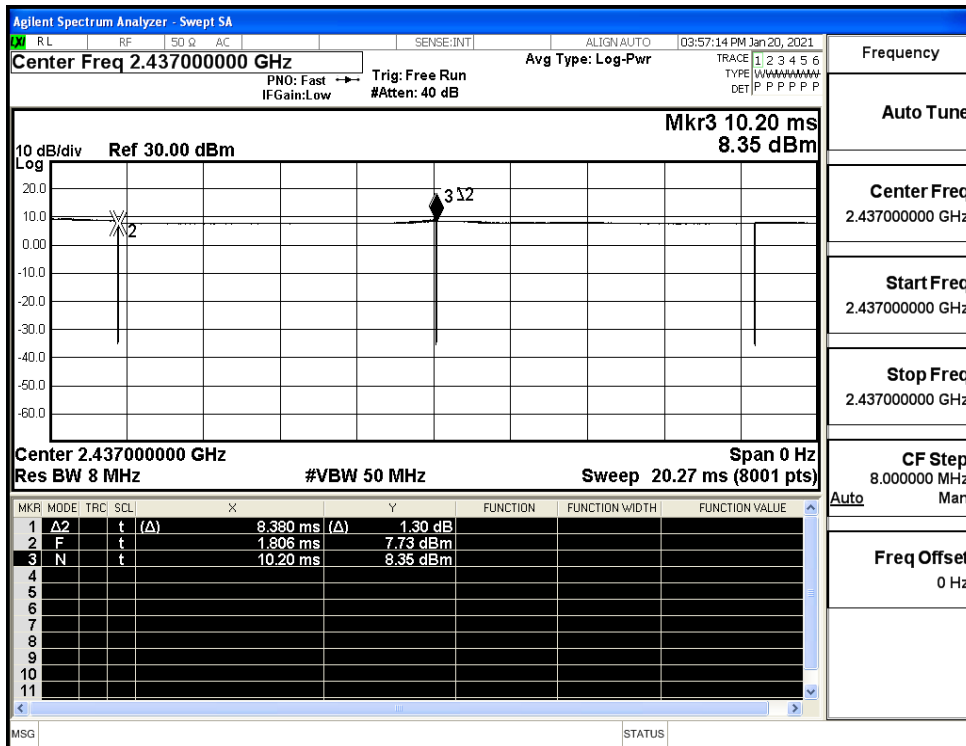
Environmental Conditions

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

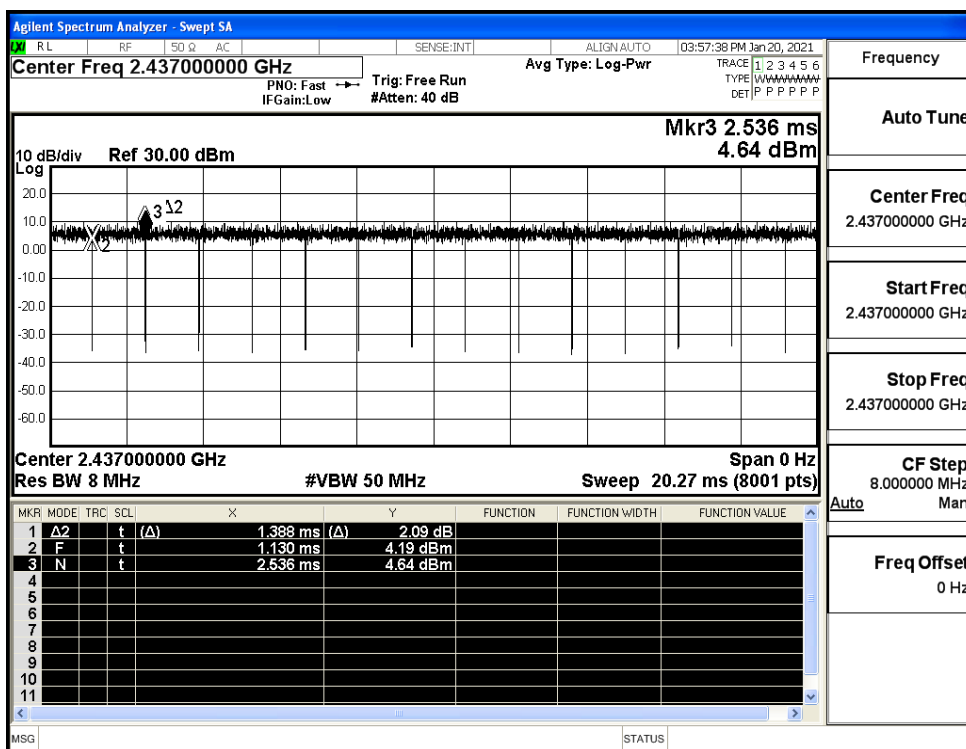
A.1 Duty Cycle

Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
11B	2437	Ant1	99.79	PASS
11G	2437	Ant1	98.74	PASS
11N20SISO	2437	Ant1	98.46	PASS
11N40SISO	2437	Ant1	98.07	PASS

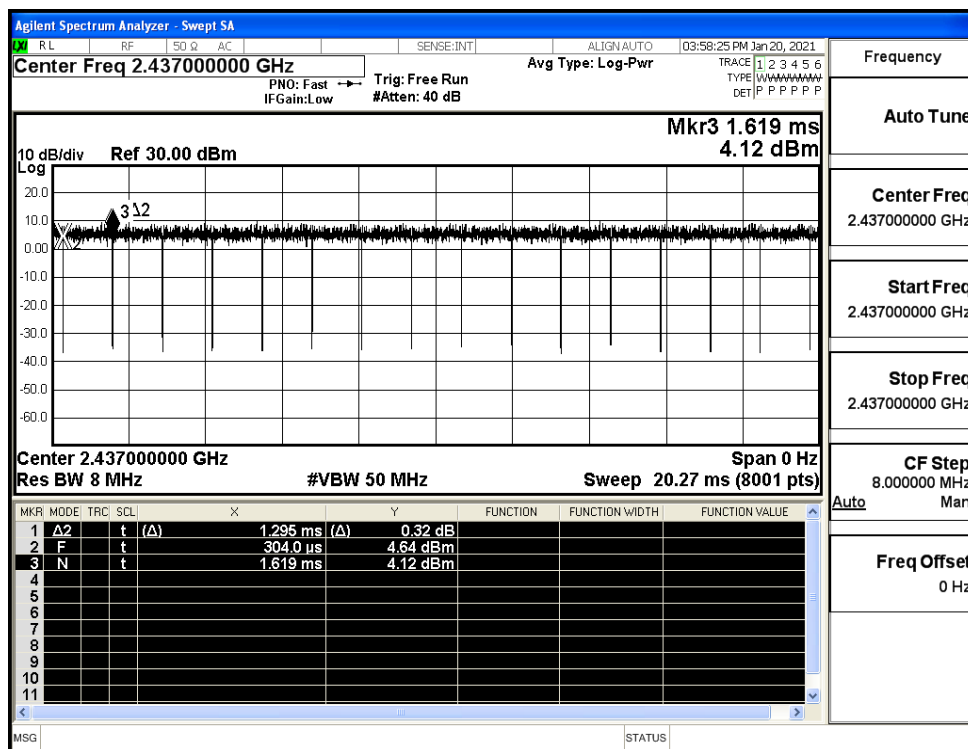
Duty Cycle_11B_2437_Ant1



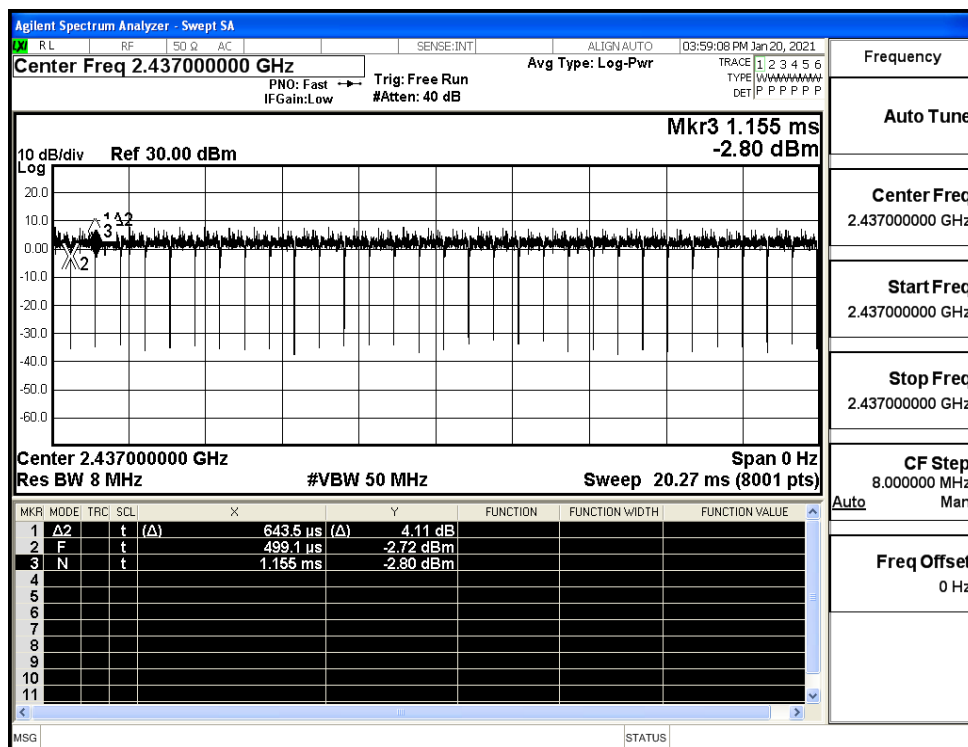
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



Duty Cycle_11N40SISO_2437_Ant1



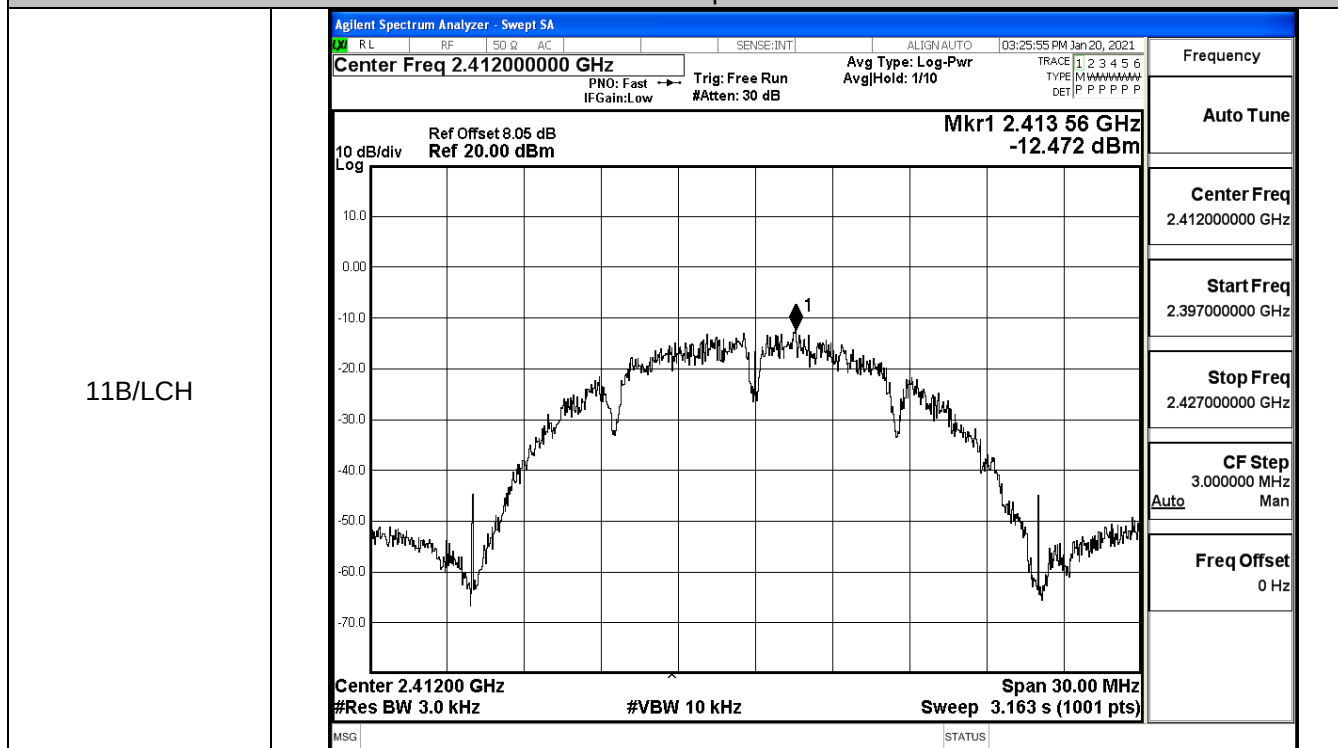
A.2 Maximum Conducted Output Power

Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	8.12	30	PASS
	MCH	8.8	30	PASS
	HCH	7.22	30	PASS
11G	LCH	8.79	30	PASS
	MCH	7.99	30	PASS
	HCH	8.14	30	PASS
11N20SISO	LCH	7.25	30	PASS
	MCH	8.09	30	PASS
	HCH	8.48	30	PASS
11N40SISO	LCH	7.74	30	PASS
	MCH	8.1	30	PASS
	HCH	7.2	30	PASS

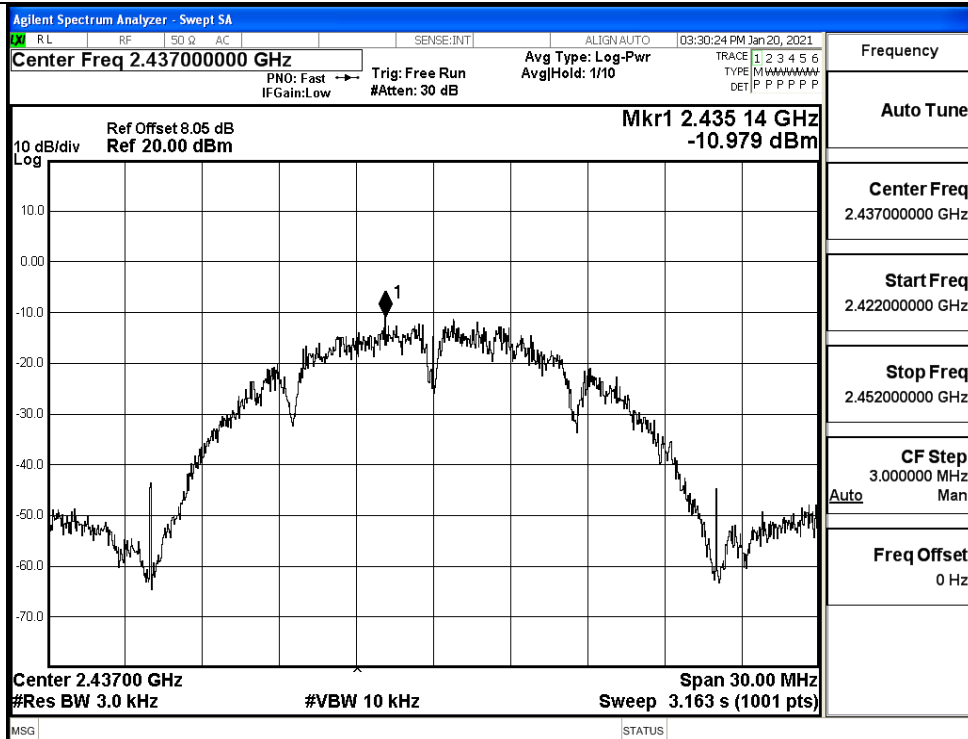
A.3 Maximum Power Spectral Density

Mode	Channel	Meas.Level [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-12.472	8	PASS
	MCH	-10.979	8	PASS
	HCH	-11.319	8	PASS
11G	LCH	-16.523	8	PASS
	MCH	-14.879	8	PASS
	HCH	-14.654	8	PASS
11N20SISO	LCH	-16.762	8	PASS
	MCH	-15.790	8	PASS
	HCH	-15.286	8	PASS
11N40SISO	LCH	-18.257	8	PASS
	MCH	-17.655	8	PASS
	HCH	-16.713	8	PASS

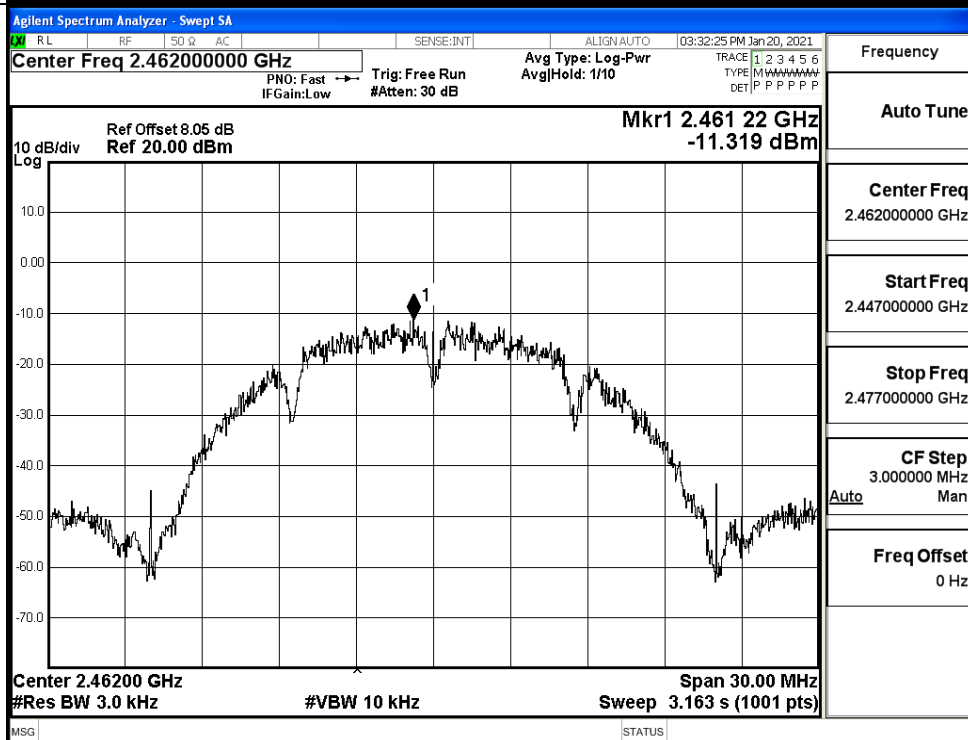
Test Graphs



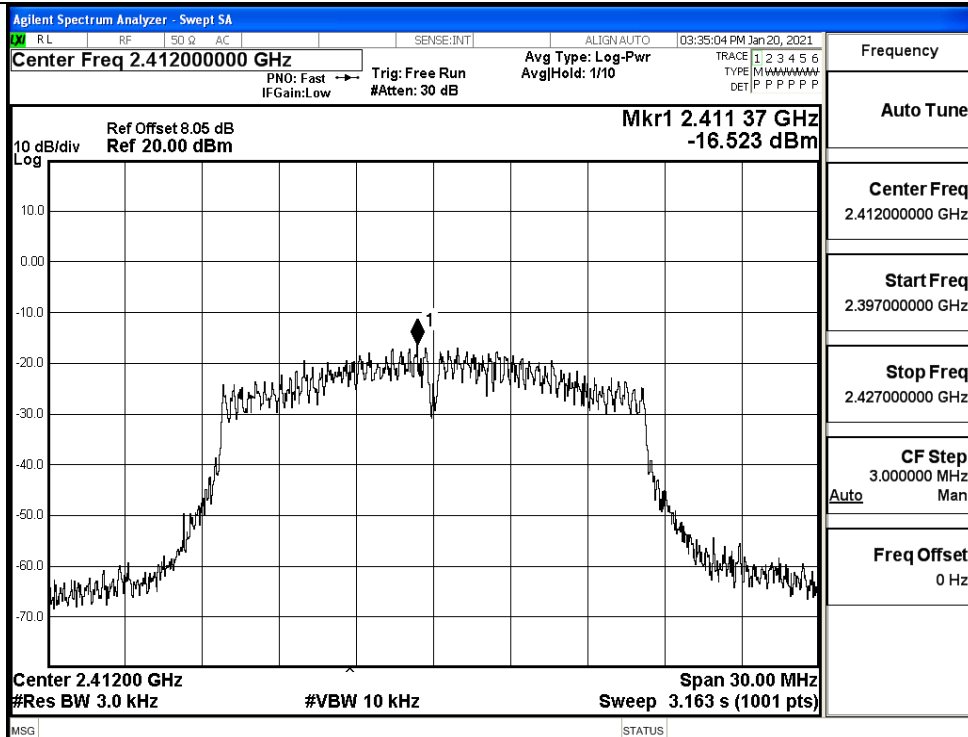
11B/MCH



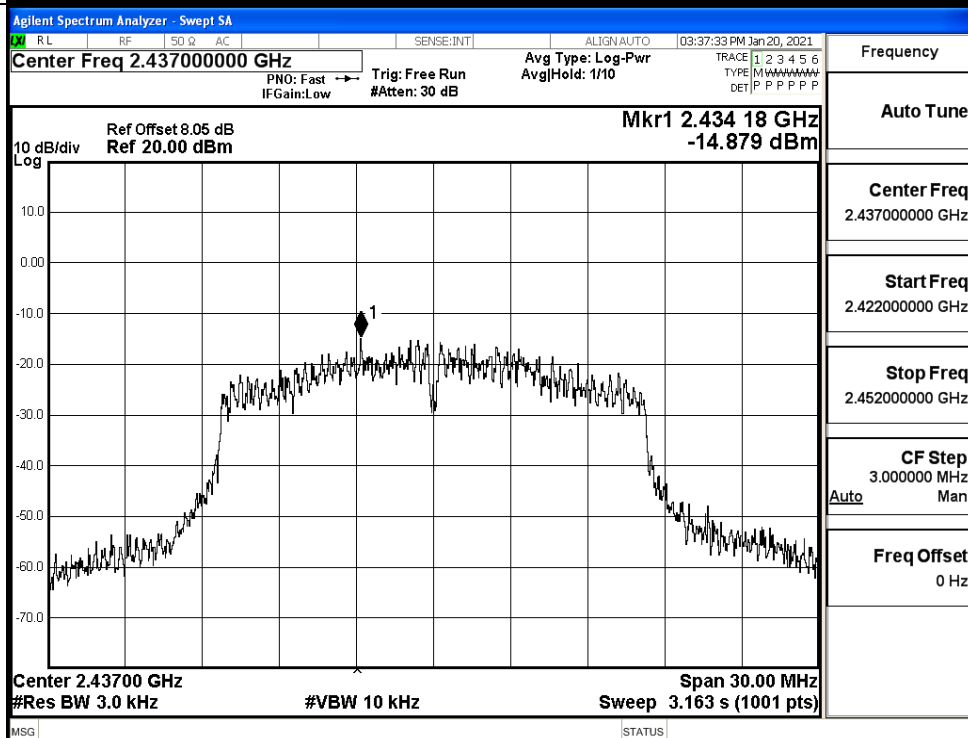
11B/HCH



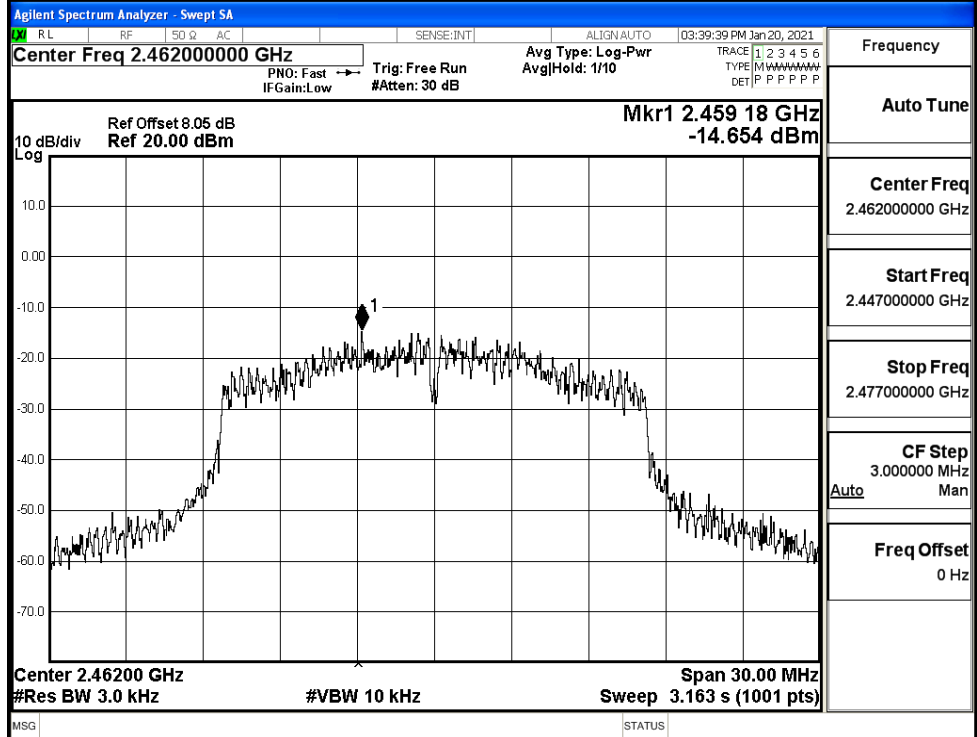
11G/LCH



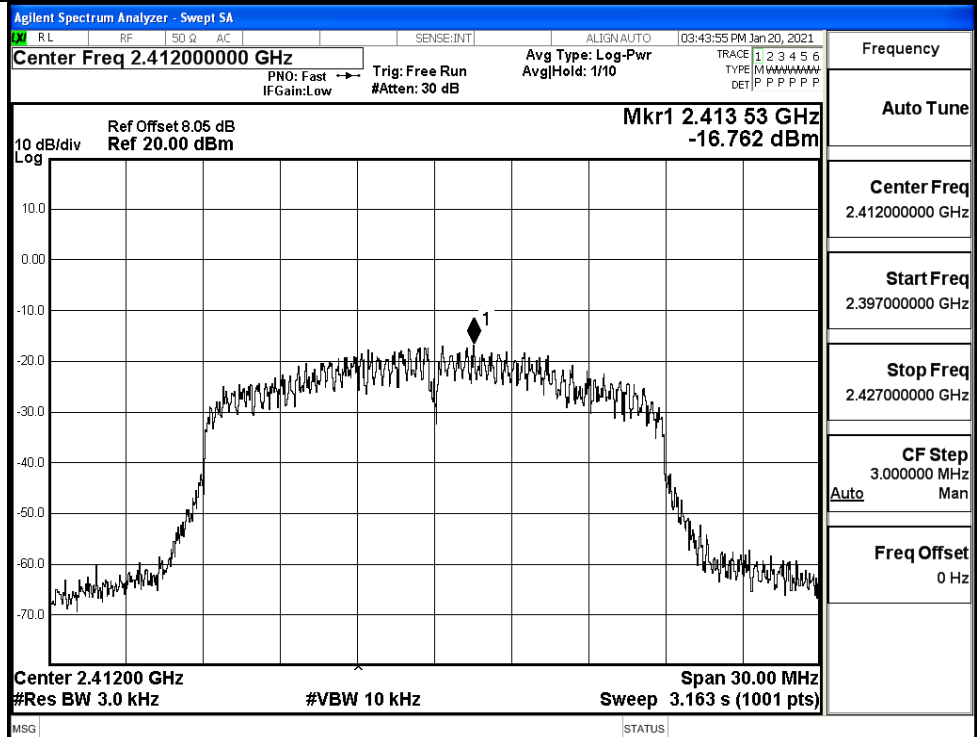
11G/MCH

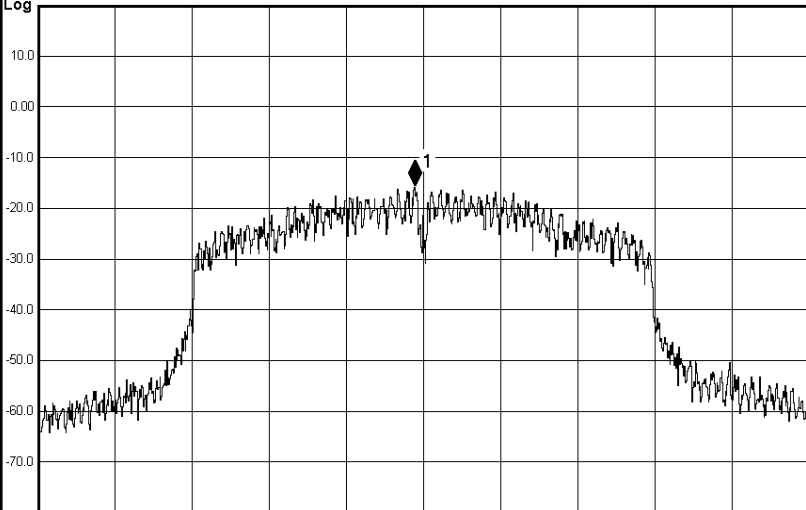
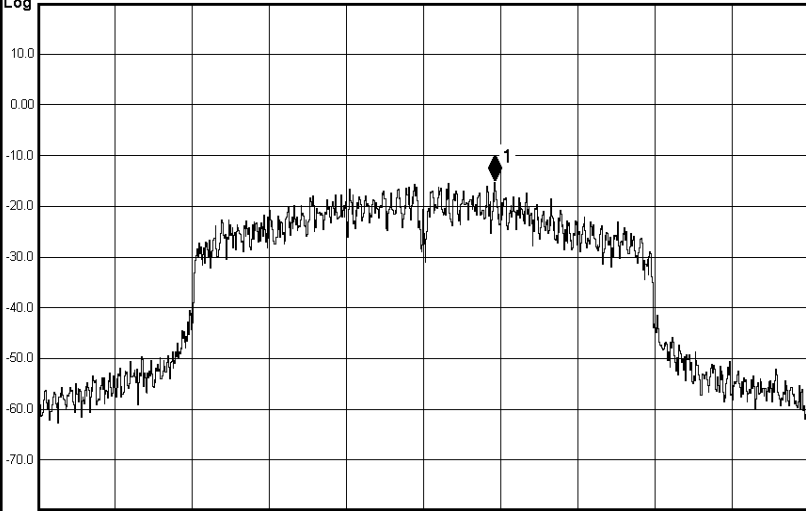


11G/HCH



11N20SISO/LCH



11N20SISO/MCH	Agilent Spectrum Analyzer - Swept SA Center Freq 2.437000000 GHz Ref Offset 8.05 dB Ref 20.00 dBm 10 dB/div Log  Center 2.43700 GHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 3.163 s (1001 pts) Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.422000000 GHz Stop Freq 2.452000000 GHz CF Step 3.000000 MHz Auto Man Freq Offset 0 Hz
11N20SISO/HCH	Agilent Spectrum Analyzer - Swept SA Center Freq 2.462000000 GHz Ref Offset 8.05 dB Ref 20.00 dBm 10 dB/div Log  Center 2.46200 GHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 3.163 s (1001 pts) Frequency Auto Tune Center Freq 2.462000000 GHz Start Freq 2.447000000 GHz Stop Freq 2.477000000 GHz CF Step 3.000000 MHz Auto Man Freq Offset 0 Hz

11N40SISO/LCH	Agilent Spectrum Analyzer - Swept SA RL RF SO Q AC SENSE:INT ALIGN:Auto 04:43:37 PM Jan 20, 2021 Center Freq 2.422000000 GHz PNO: Fast IFGain:Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr AvgHld: -10 TRACE 1 2 3 4 5 6 TYPE: M W W W W W W W DET: P P P P P P Ref Offset 8.05 dB Ref 20.00 dBm Mkr1 2.419 54 GHz -18.257 dBm Center 2.42200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 60.00 MHz Sweep 6.326 s (1001 pts) MSG STATUS Frequency Auto Tune Center Freq 2.422000000 GHz Start Freq 2.392000000 GHz Stop Freq 2.452000000 GHz CF Step 6.000000 MHz Auto Man Freq Offset 0 Hz
11N40SISO/MCH	Agilent Spectrum Analyzer - Swept SA RL RF SO Q AC SENSE:INT ALIGN:Auto 03:53:21 PM Jan 20, 2021 Center Freq 2.437000000 GHz PNO: Fast IFGain:Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr AvgHld: -10 TRACE 1 2 3 4 5 6 TYPE: M W W W W W W W DET: P P P P P P Ref Offset 8.05 dB Ref 20.00 dBm Mkr1 2.434 54 GHz -17.655 dBm Center 2.43700 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 60.00 MHz Sweep 6.326 s (1001 pts) MSG STATUS

Frequency

Auto Tune

Center Freq
2.437000000 GHz

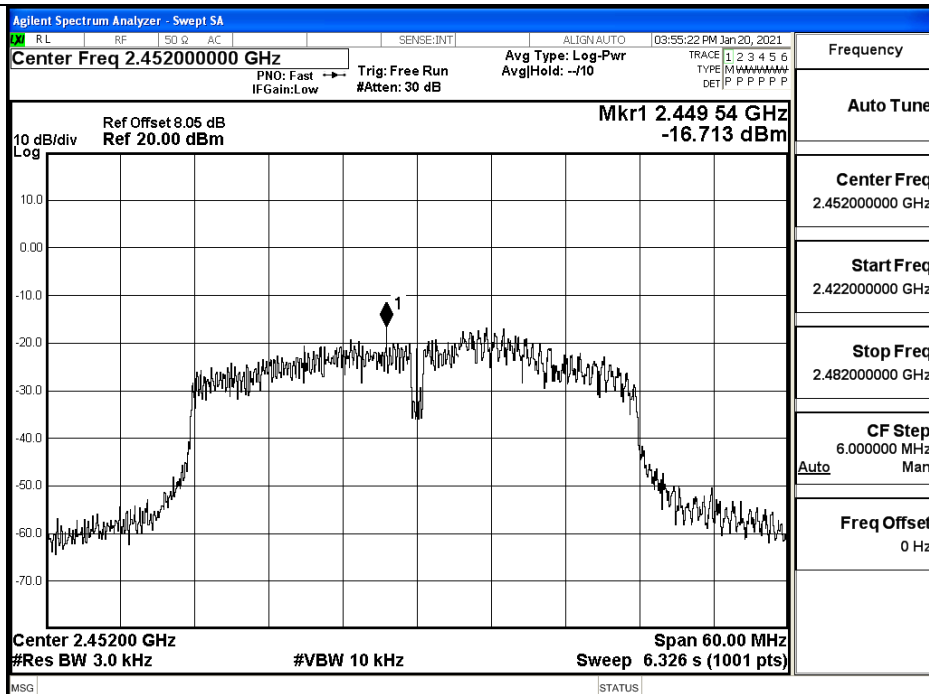
Start Freq
2.407000000 GHz

Stop Freq
2.467000000 GHz

CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

11N40SISO/HCH

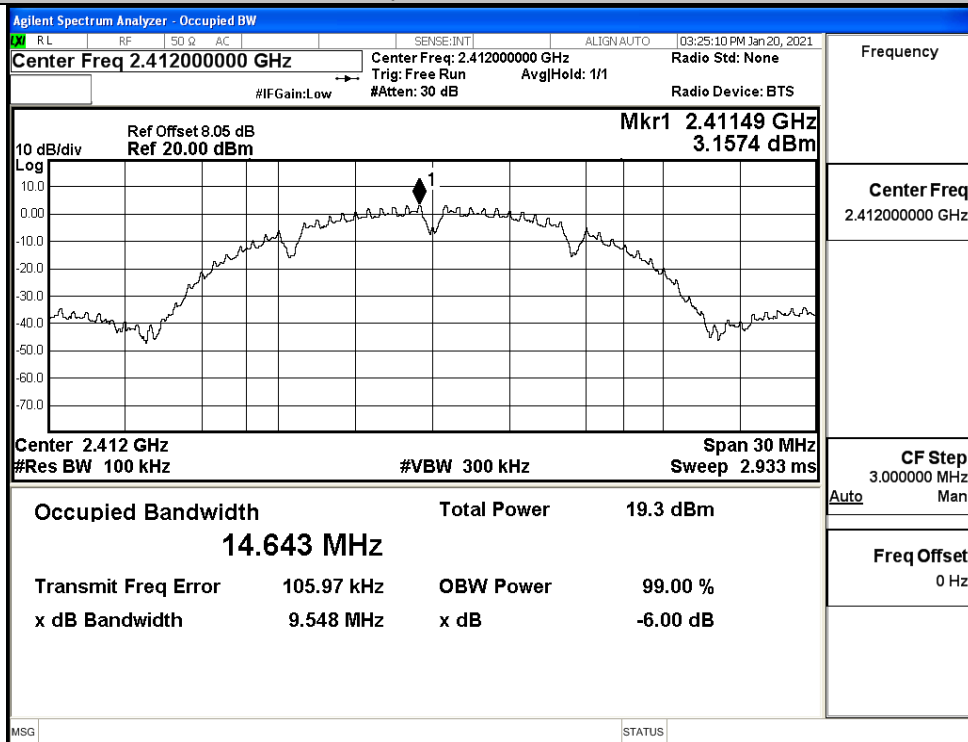


A.4 6dB Bandwidth

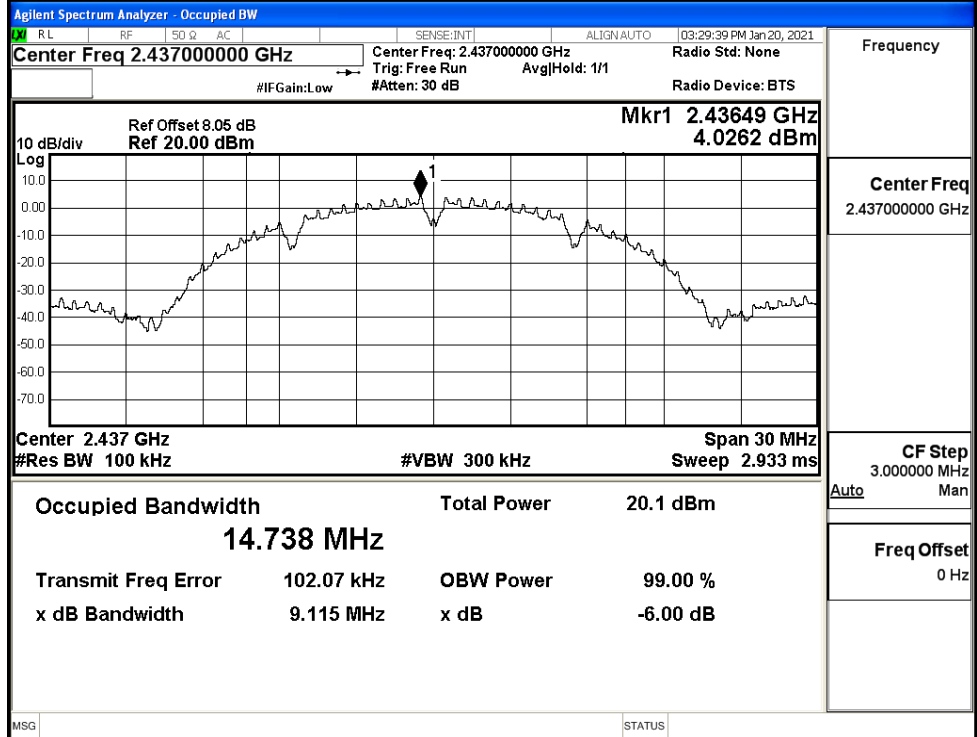
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	9.548	≥ 0.5	PASS
	MCH	9.115	≥ 0.5	PASS
	HCH	9.118	≥ 0.5	PASS
11G	LCH	10.10	≥ 0.5	PASS
	MCH	12.56	≥ 0.5	PASS
	HCH	11.30	≥ 0.5	PASS
11N20SISO	LCH	10.11	≥ 0.5	PASS
	MCH	10.10	≥ 0.5	PASS
	HCH	11.32	≥ 0.5	PASS
11N40SISO	LCH	33.81	≥ 0.5	PASS
	MCH	33.80	≥ 0.5	PASS
	HCH	32.55	≥ 0.5	PASS

Test Graphs

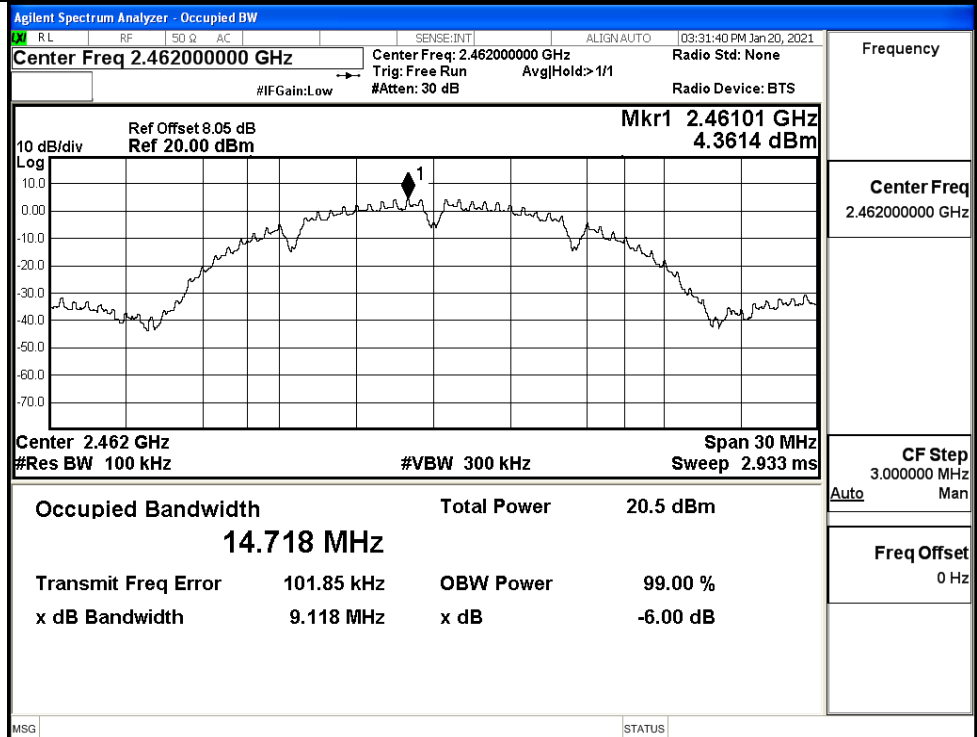
11B/LCH



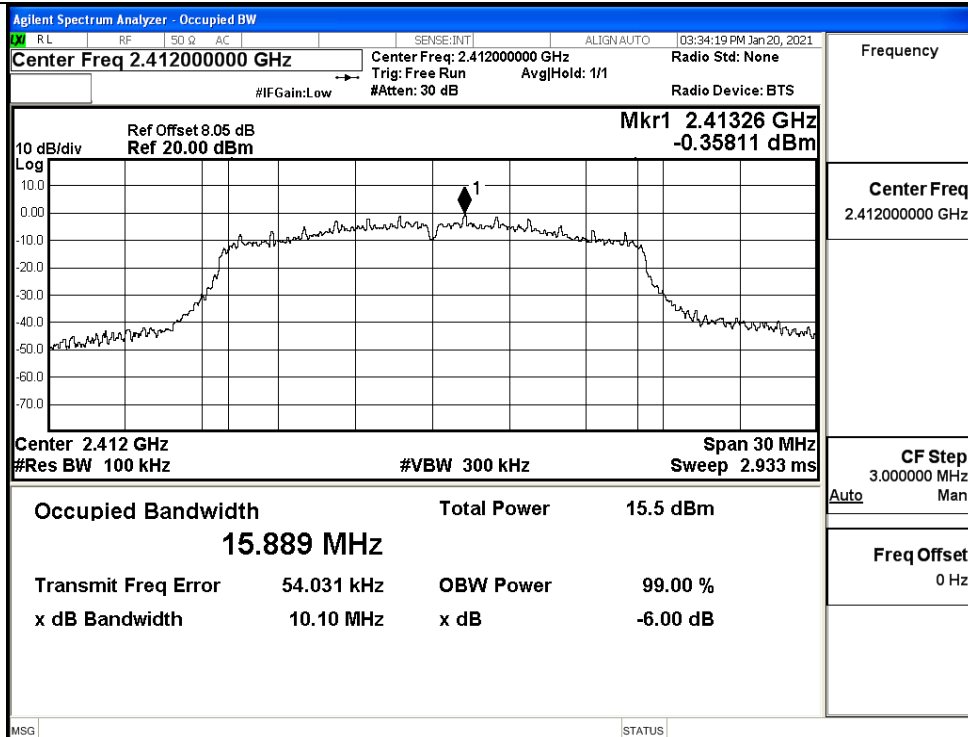
11B/MCH



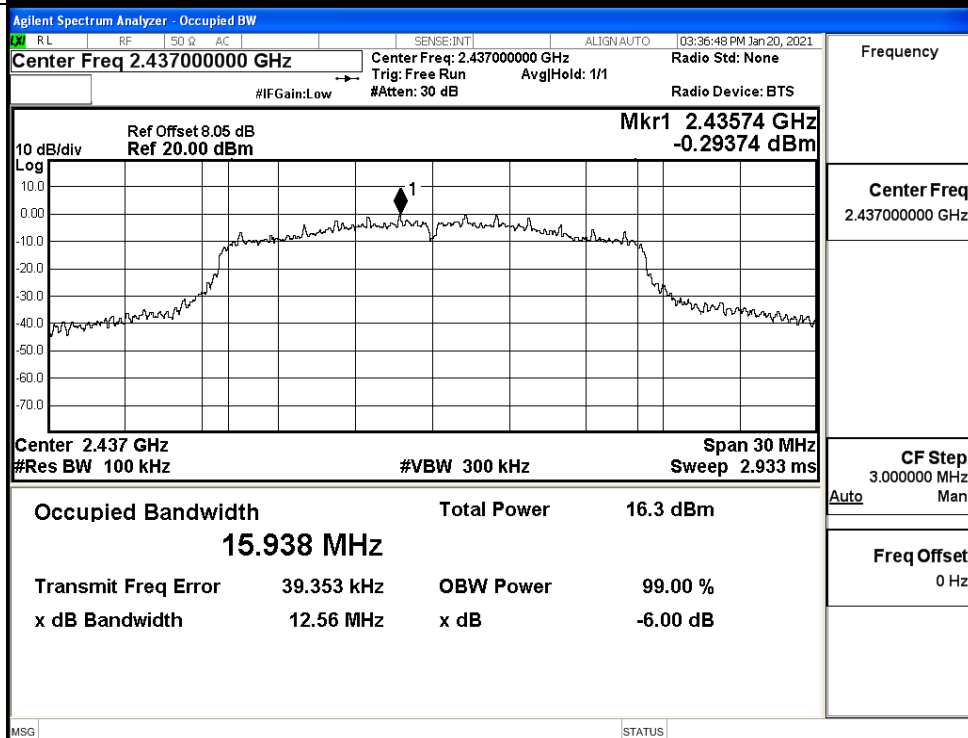
11B/HCH



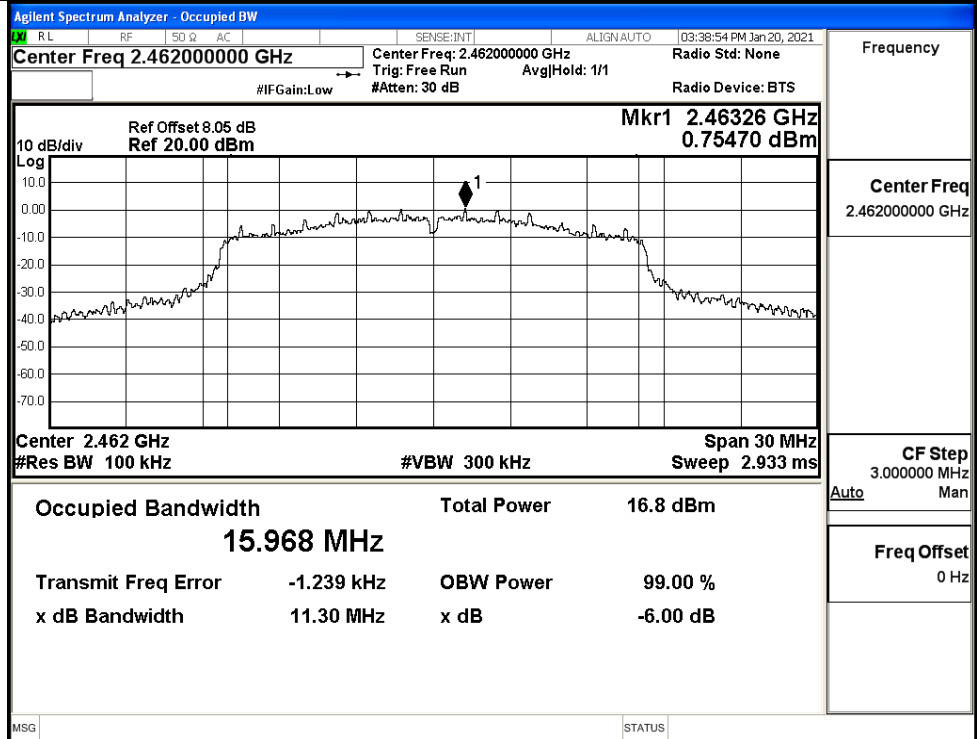
11G/LCH



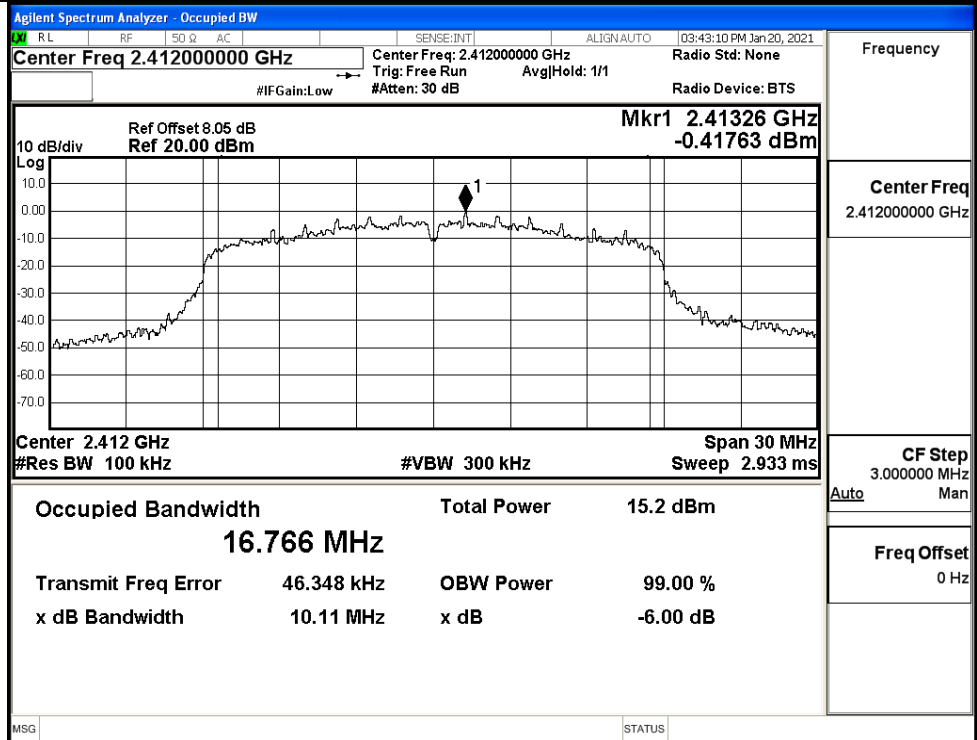
11G/MCH



11G/HCH

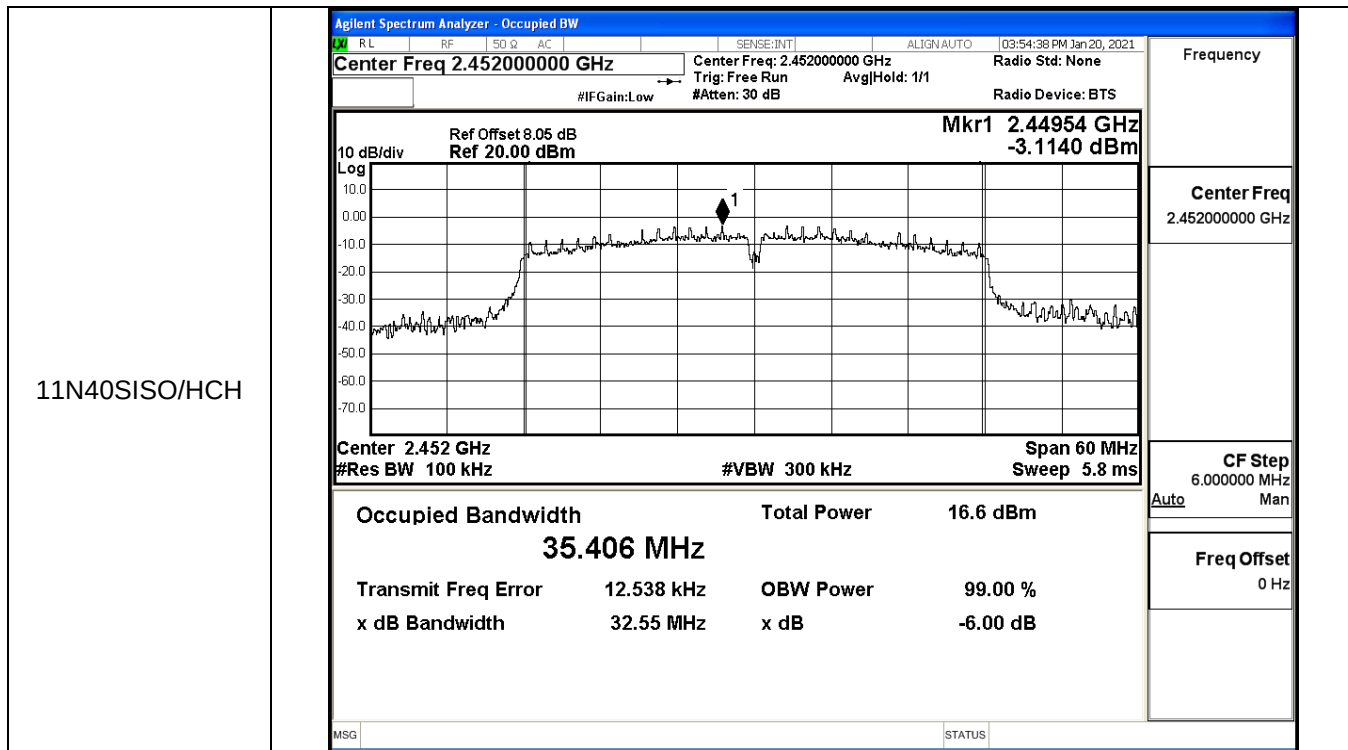


11N20SISO/LCH



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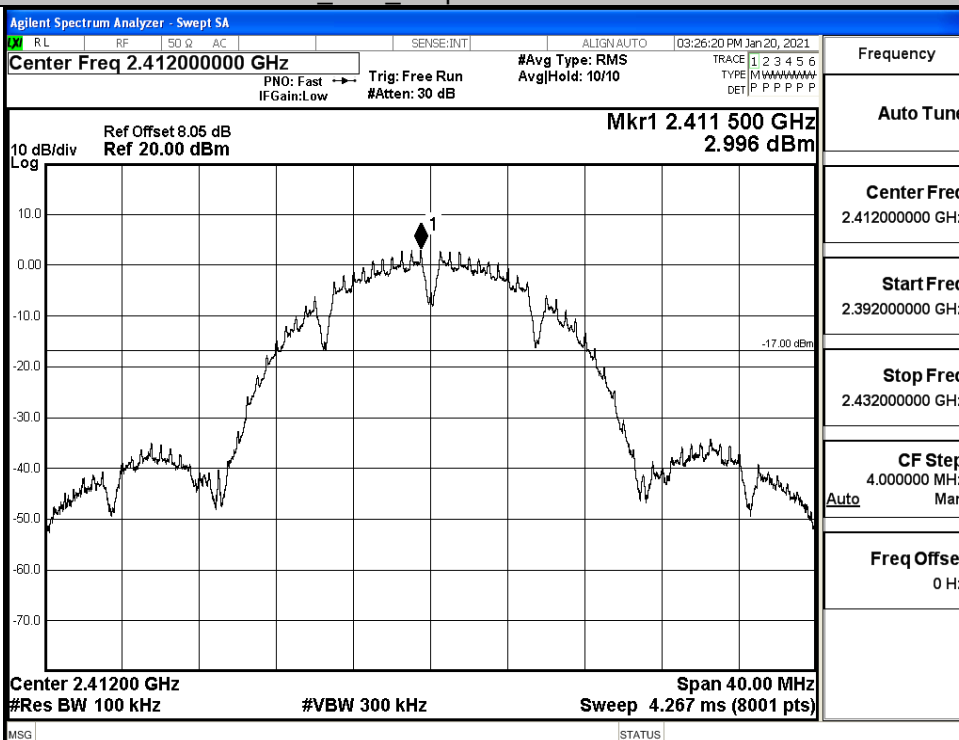


A.5 RF Conducted Spurious Emissions

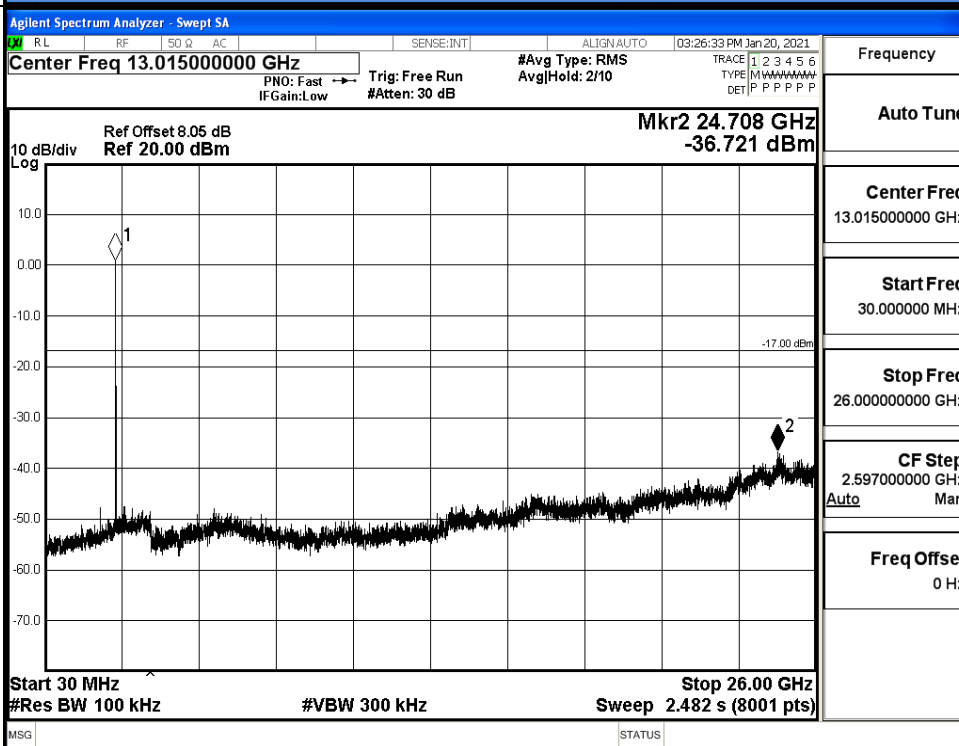
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	2.996	-36.721	-17.004	PASS
	MCH	3.791	-36.984	-16.209	PASS
	HCH	4.171	-37.766	-15.829	PASS
11G	LCH	-0.66	-37.836	-20.660	PASS
	MCH	-1.642	-37.569	-21.642	PASS
	HCH	-0.595	-37.928	-20.595	PASS
11N20 SISO	LCH	-1.12	-38.021	-21.120	PASS
	MCH	-0.645	-37.695	-20.645	PASS
	HCH	0.118	-37.294	-19.882	PASS
11N40 SISO	LCH	-4.048	-37.391	-24.048	PASS
	MCH	-3.424	-37.508	-23.424	PASS
	HCH	-3.314	-37.780	-23.314	PASS

11B LCH Graphs

Pref/11B/LCH

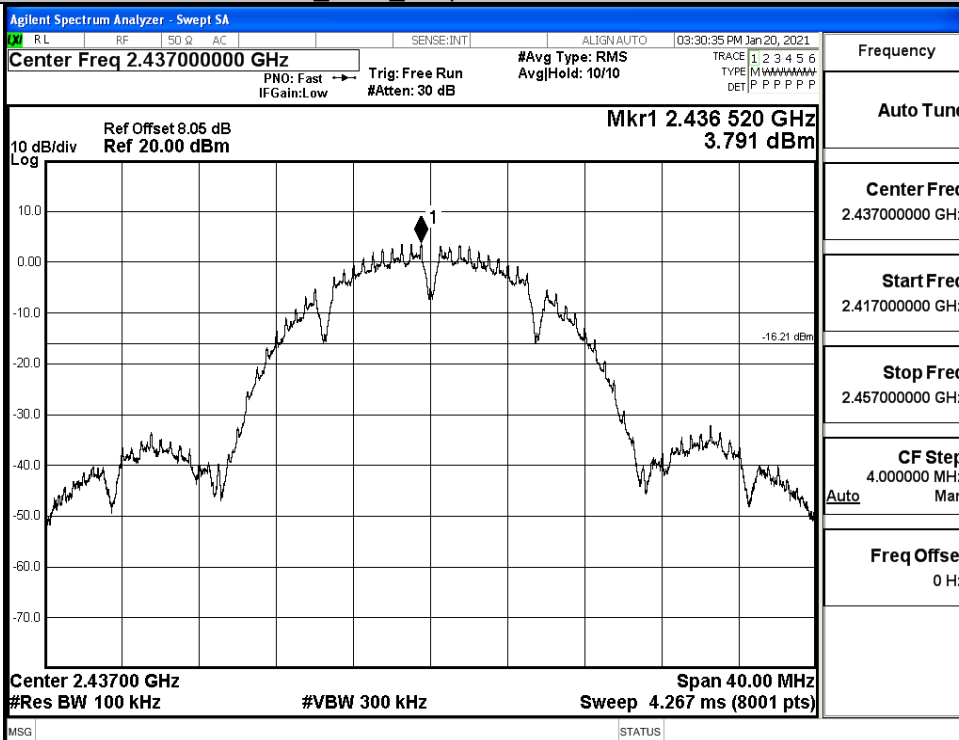


Puw/11B/LCH

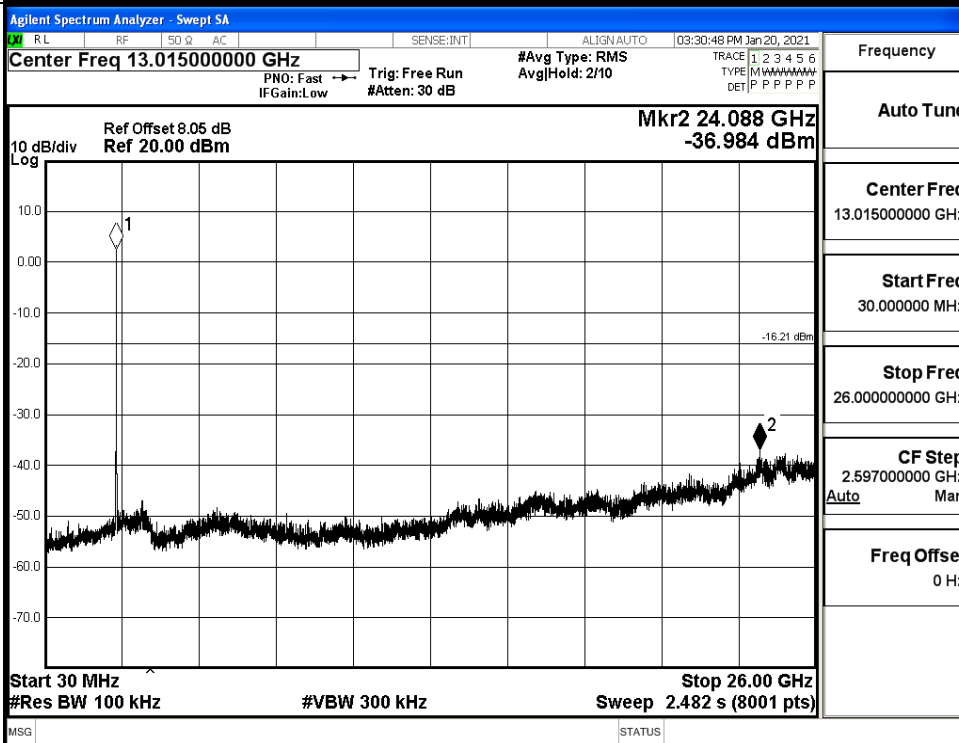


11B MCH Graphs

Pref/11B/MCH

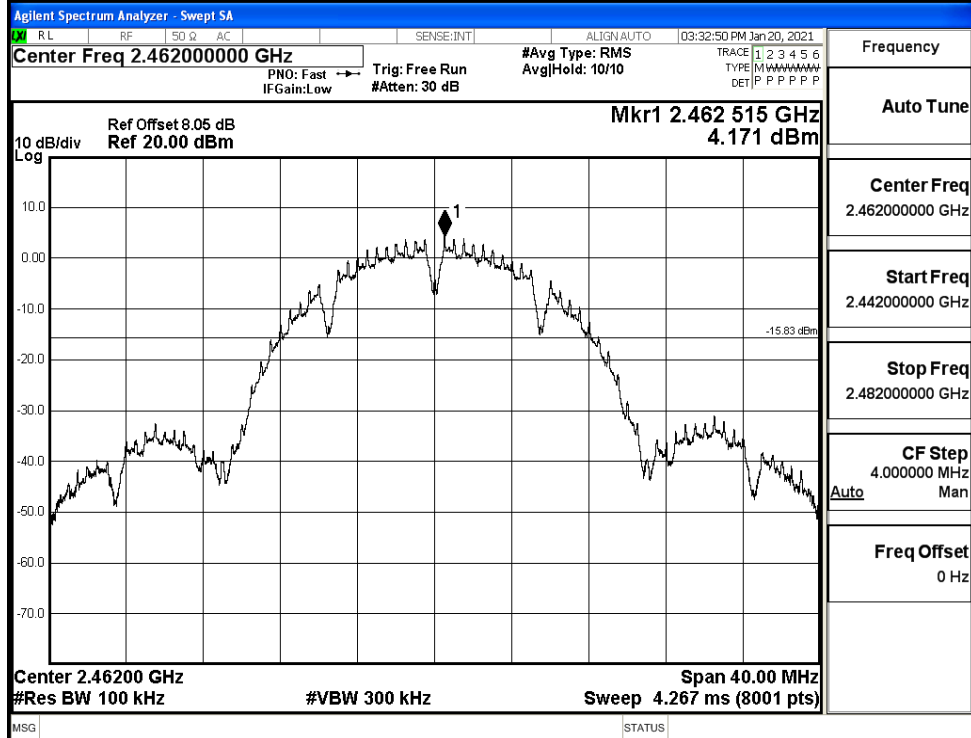


Puw/11B/MCH

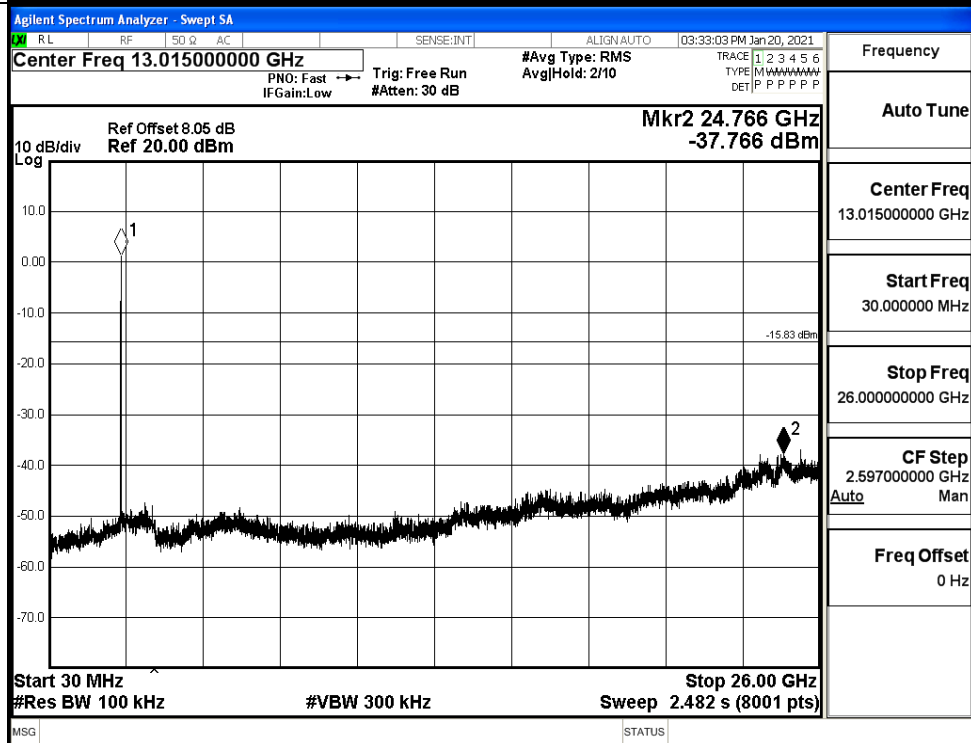


11B HCH Graphs

Pref/11B/HCH

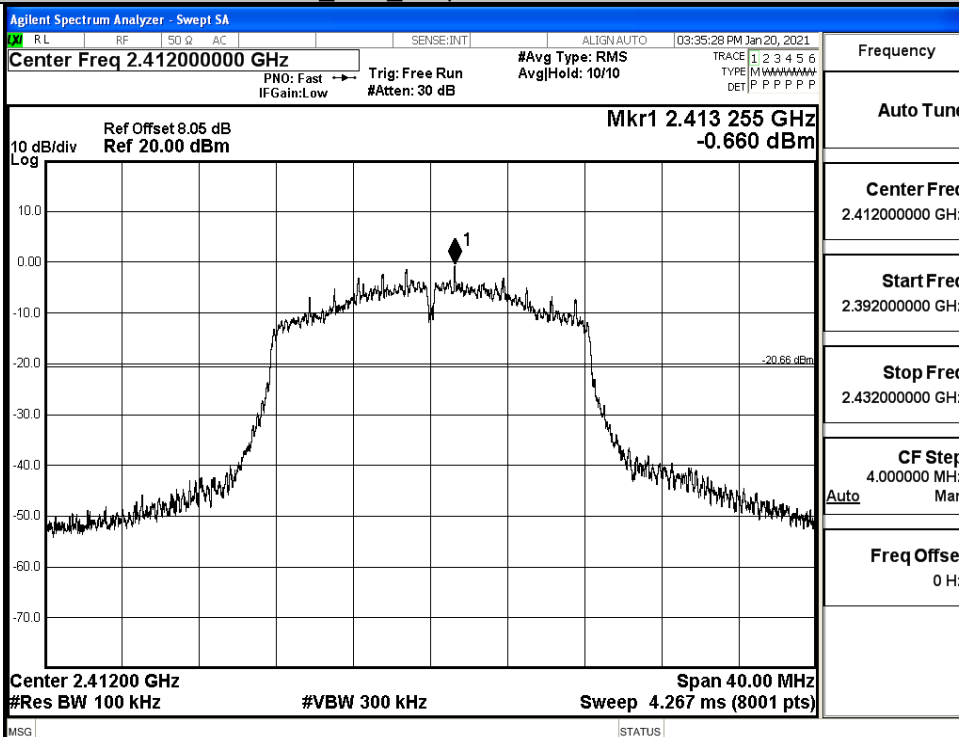


Puw/11B/HCH

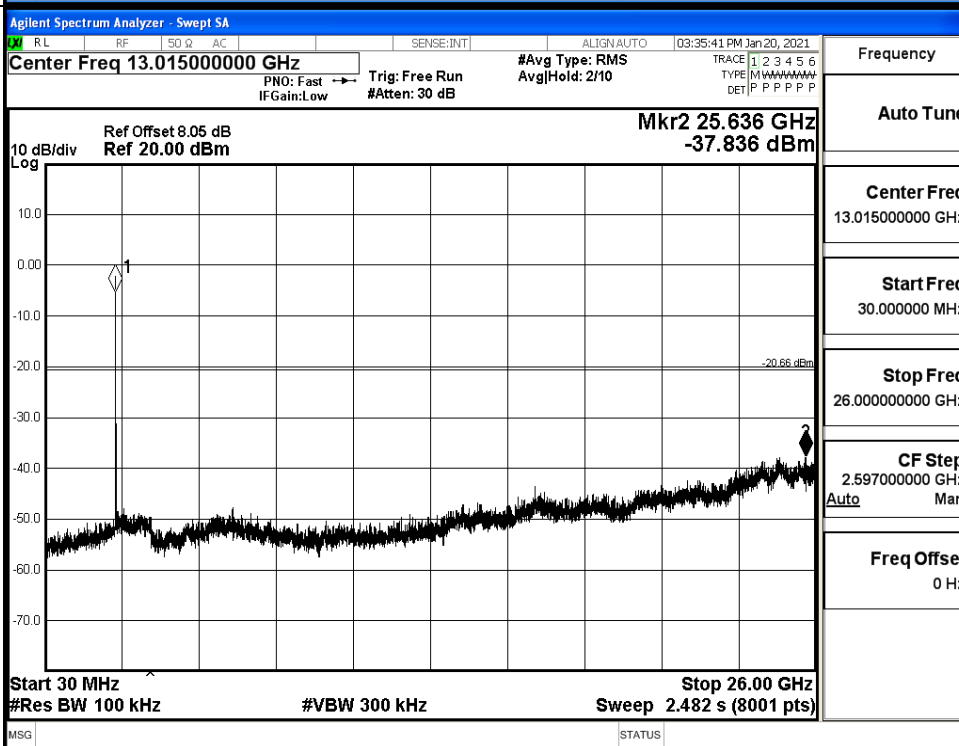


11G LCH Graphs

Pref/11G/LCH

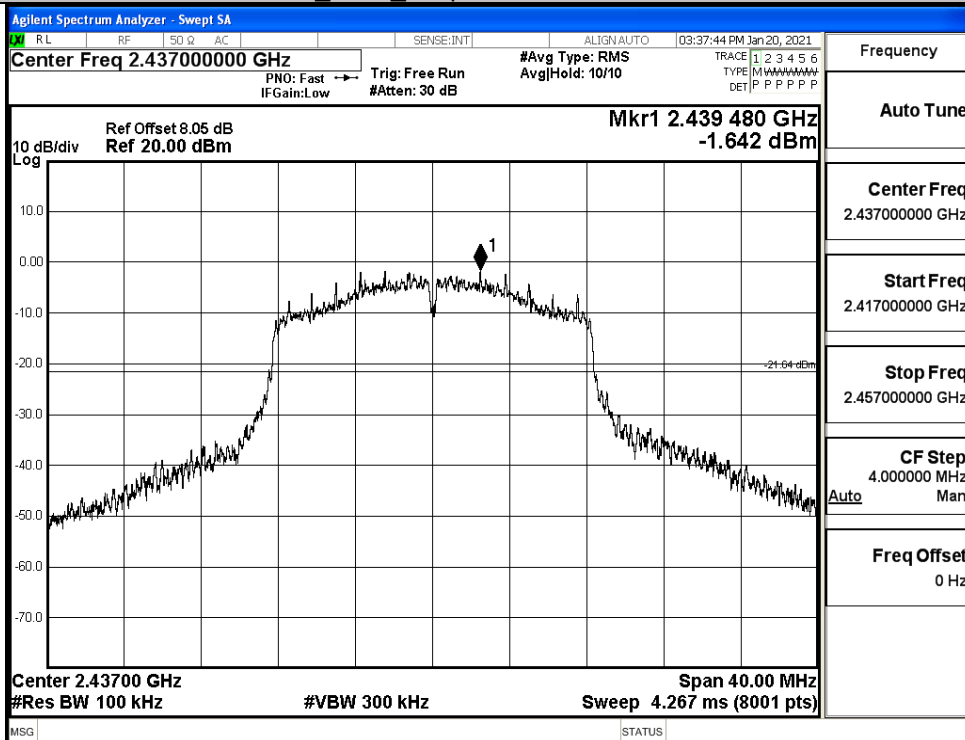


Puw/11G/LCH

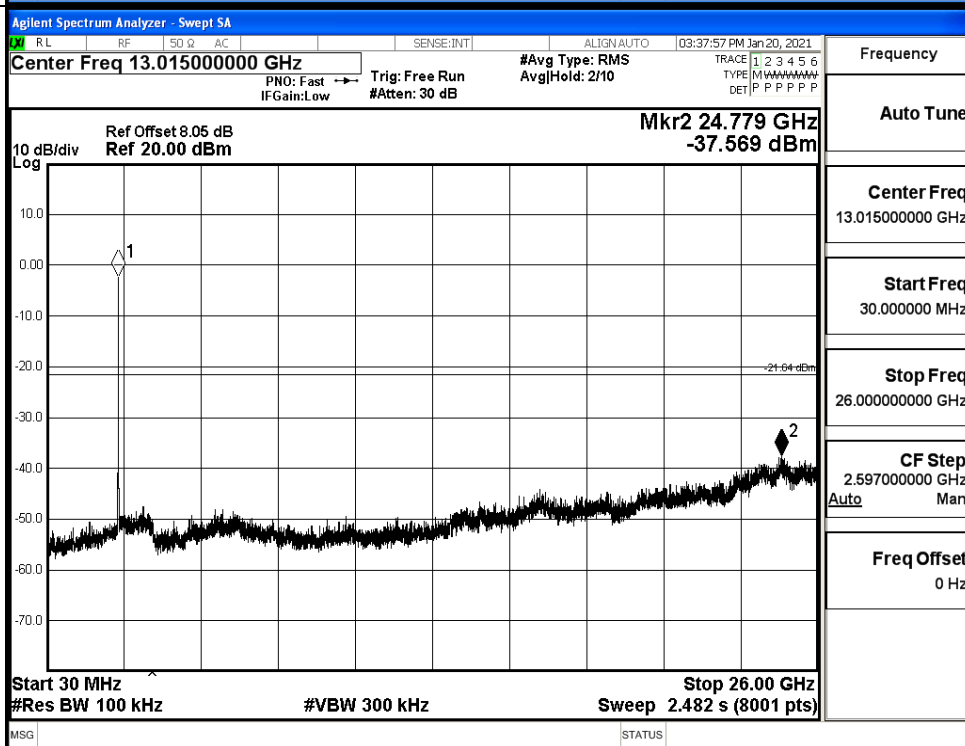


11G MCH Graphs

Pref/11G/MCH

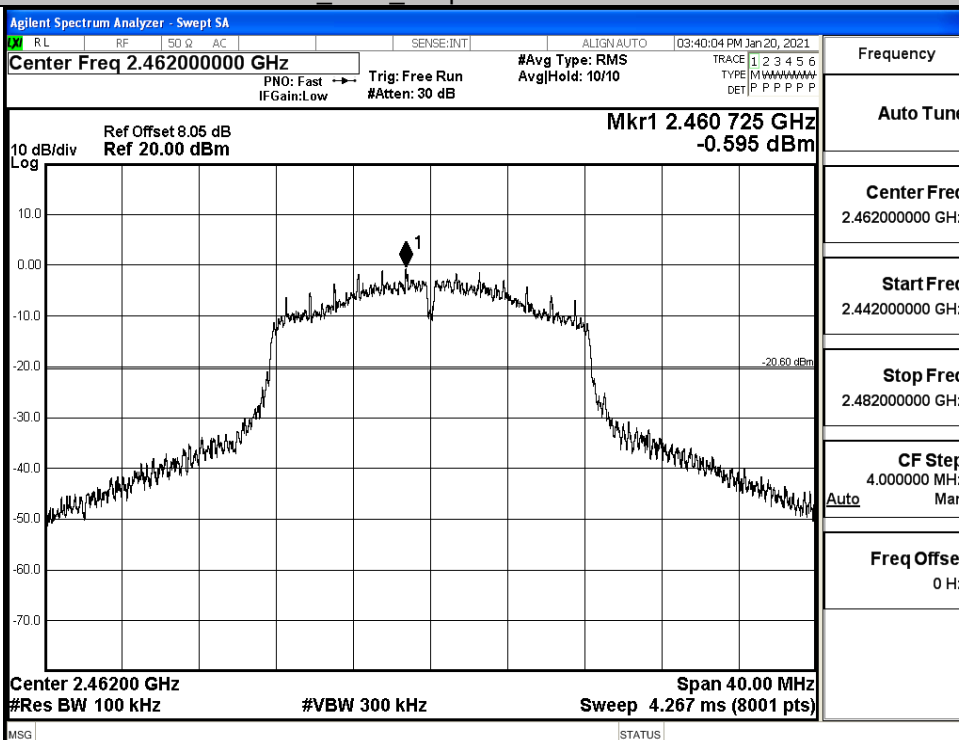


Puw/11G/MCH

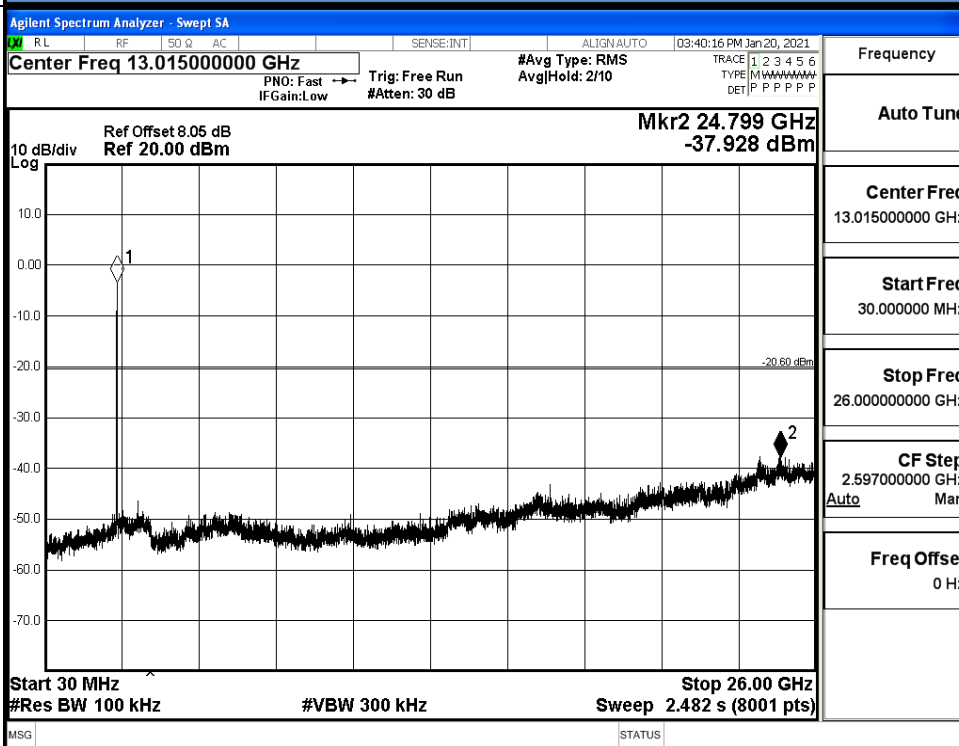


11G HCH Graphs

Pref/11G/HCH

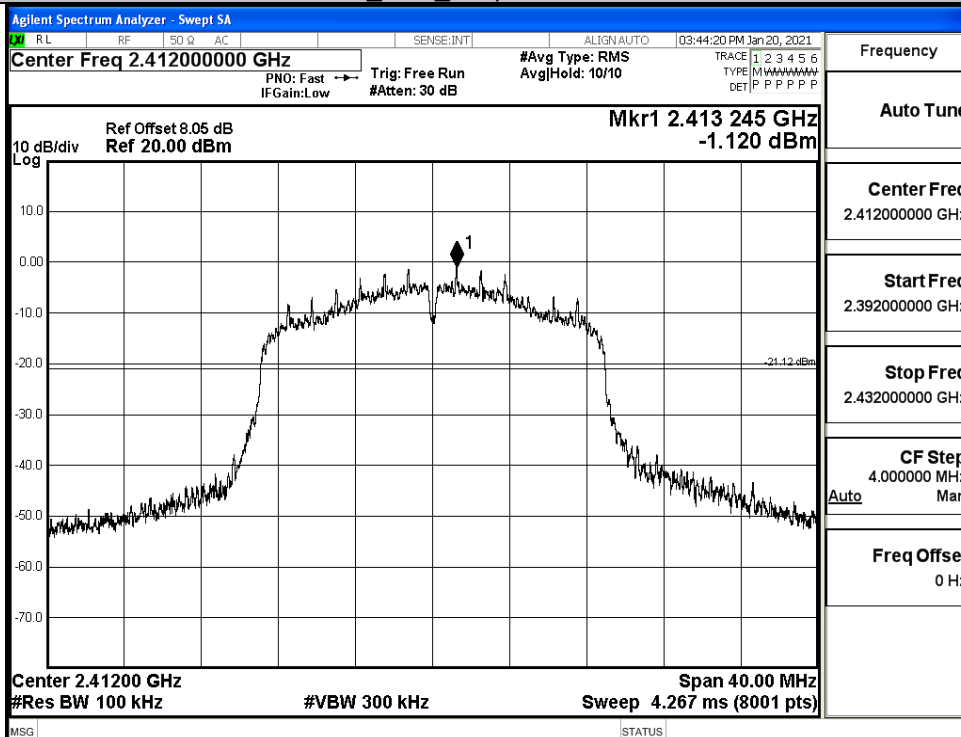


Puw/11G/HCH

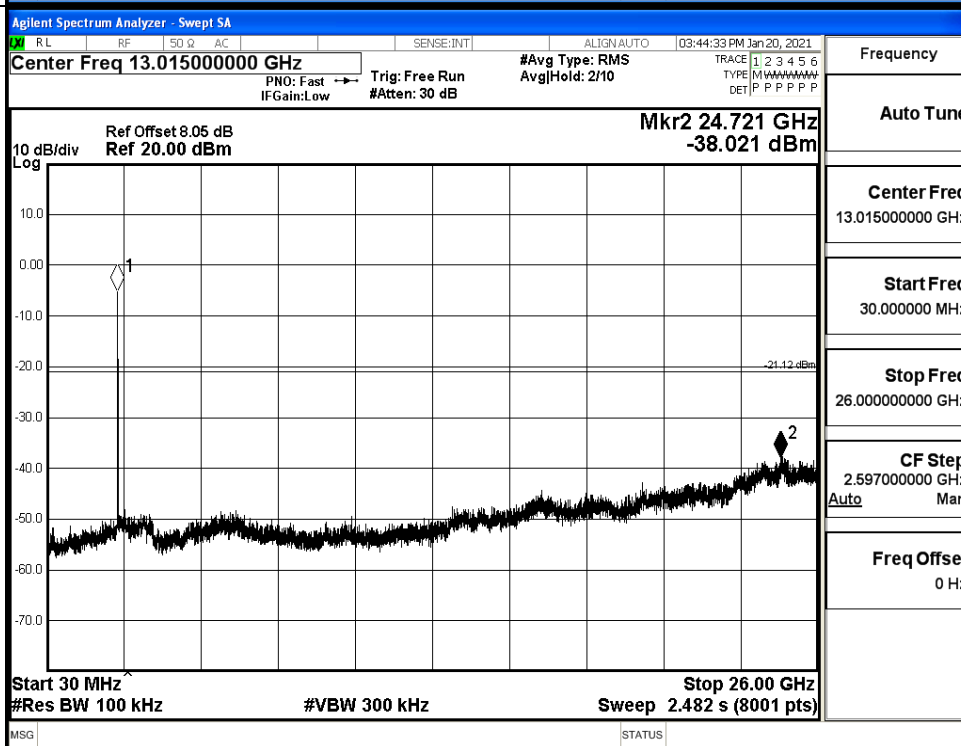


11N20SISO LCH Graphs

Pref/11N20SIS
O/LCH

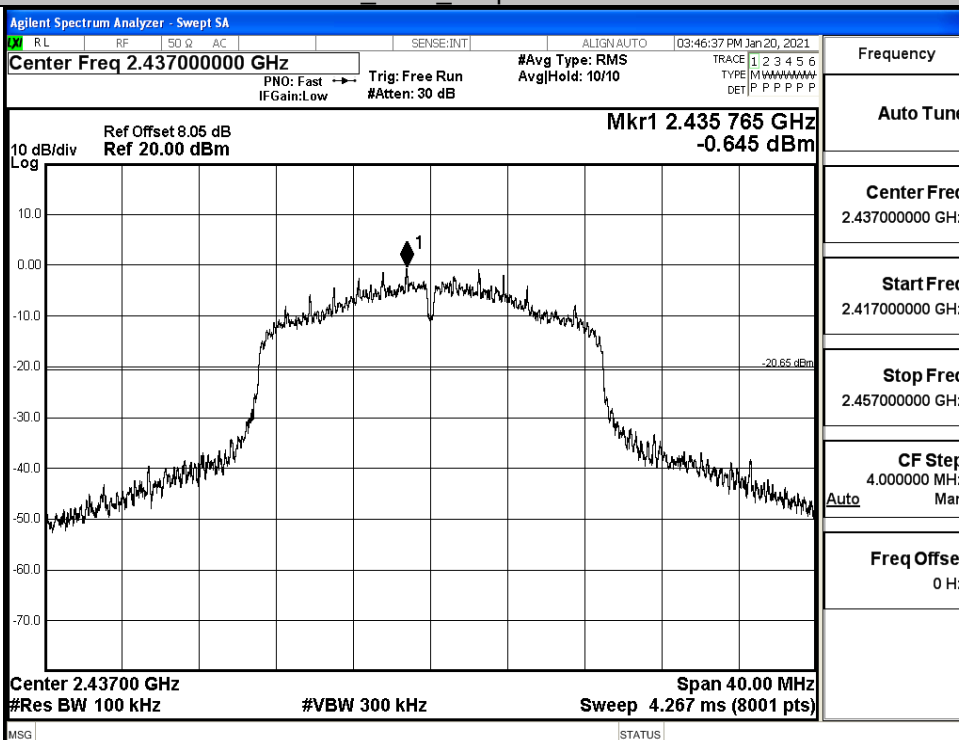


Puw/11N20
SISO/LCH

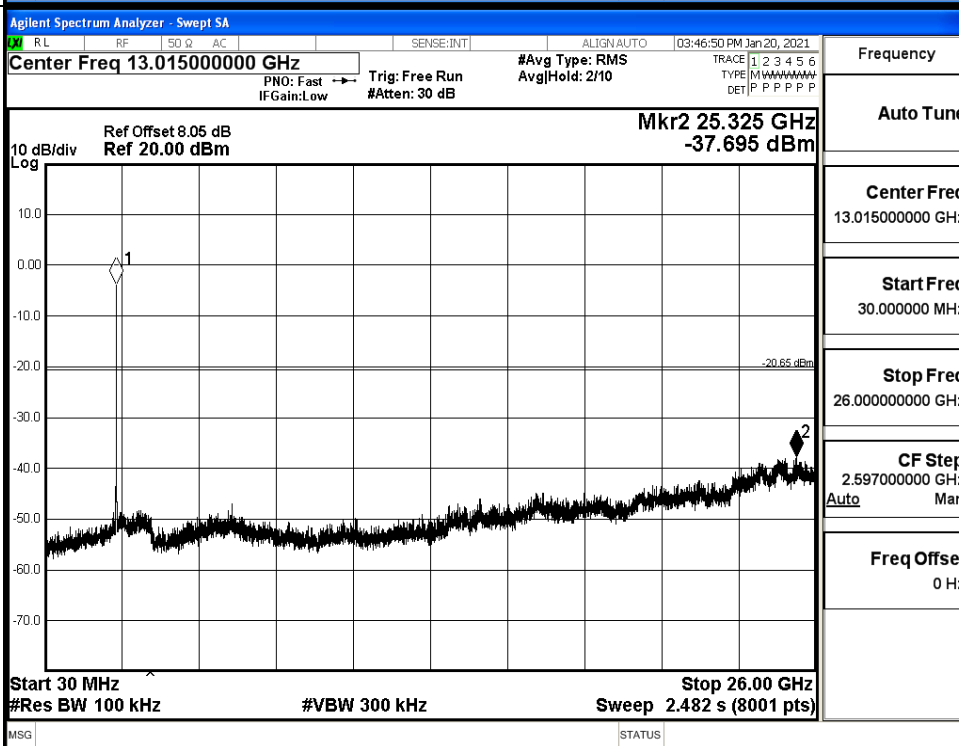


11N20SISO_MCH_Graphs

Pref/11N20
SISO/MCH

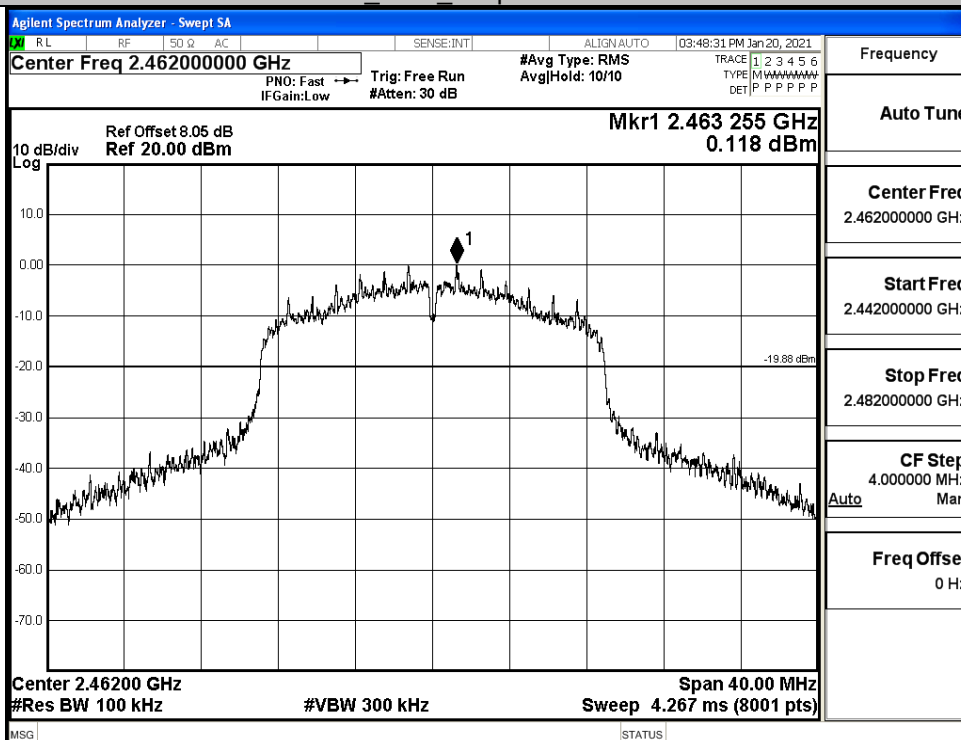


Puw/11N20
SISO/MCH

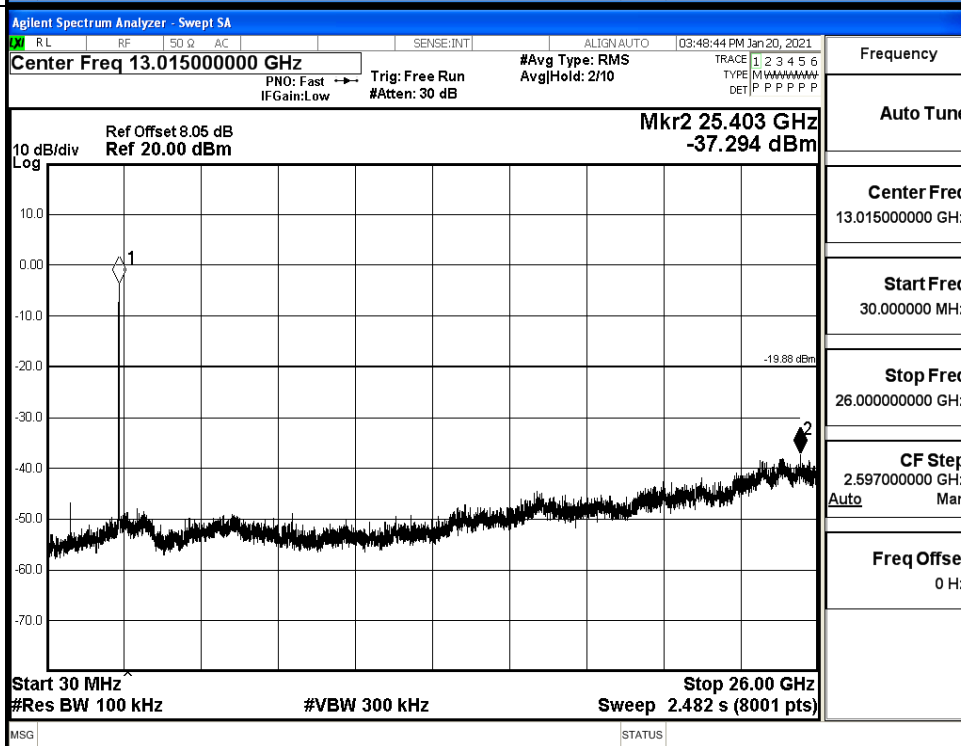


11N20SISO HCH Graphs

Pref/11N20
SISO/HCH

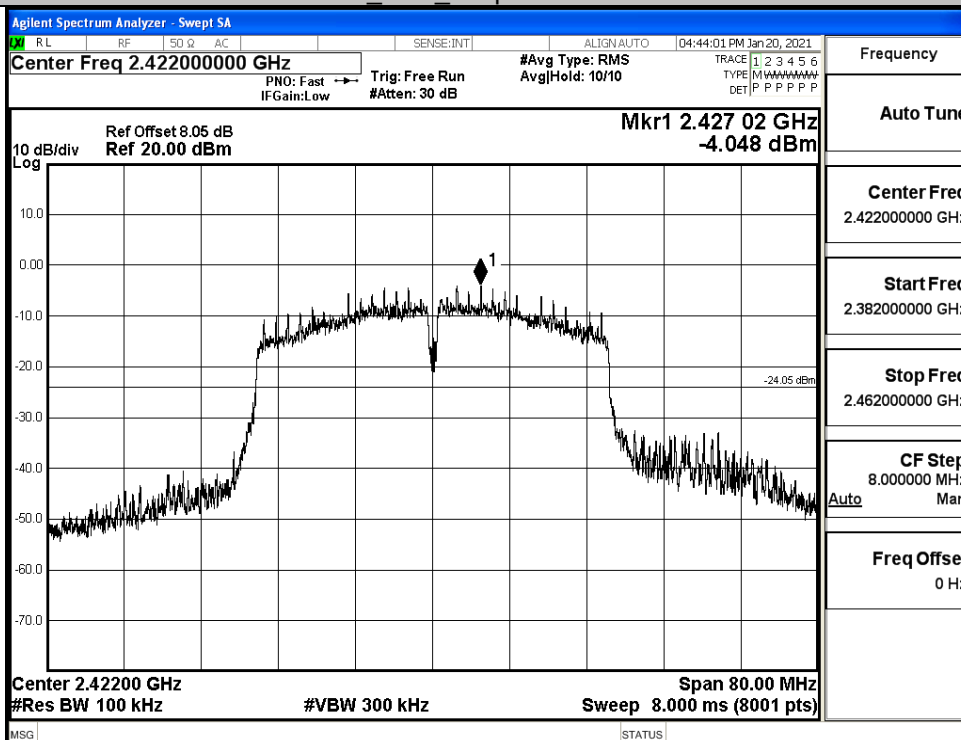


Puw/11N20
SISO/HCH

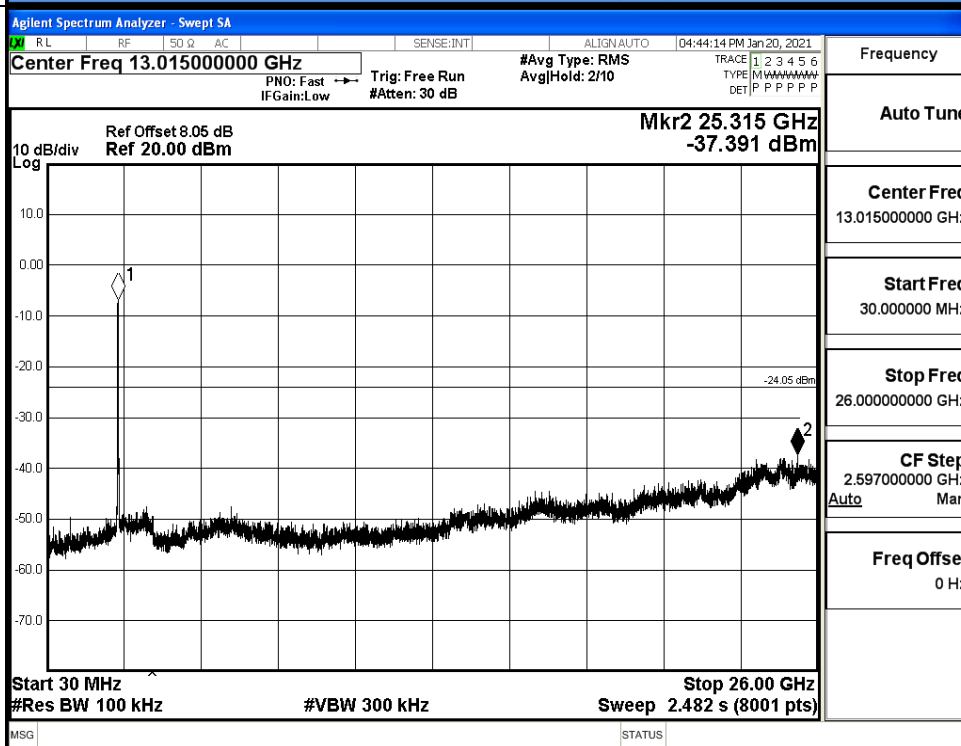


11N40SISO LCH Graphs

Pref/11N40
SISO/LCH

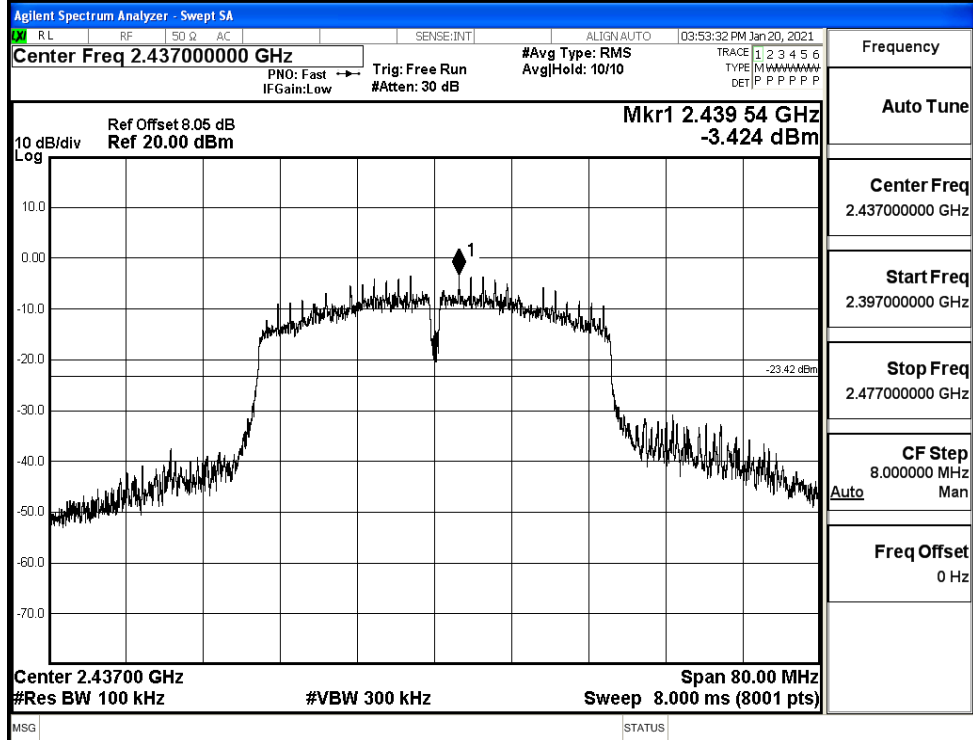


Puw/11N40
SISO/LCH

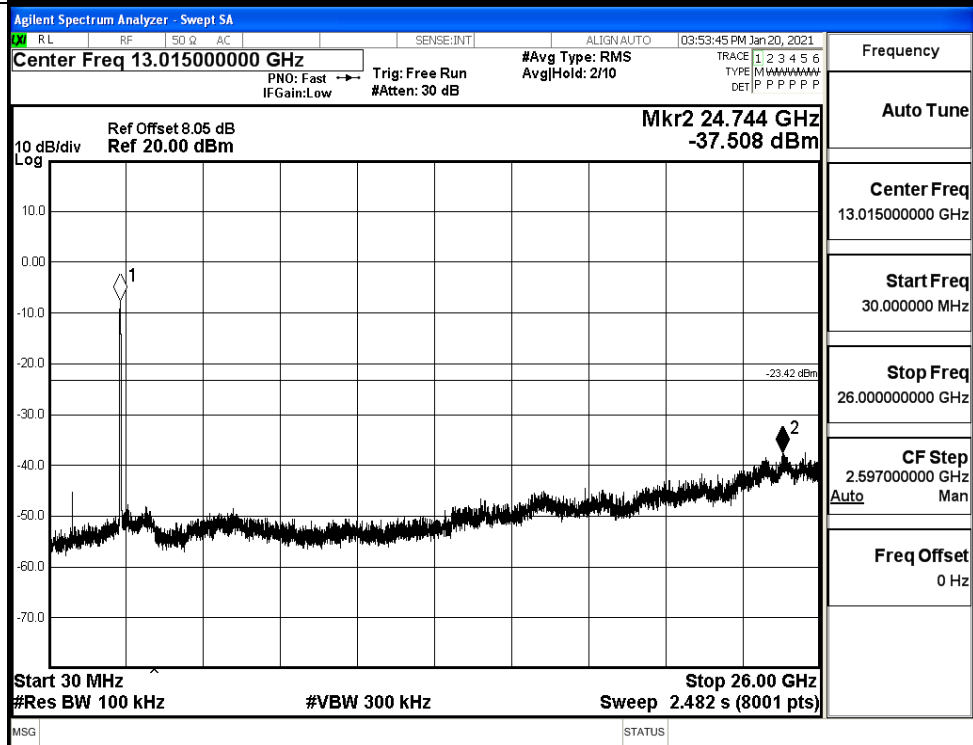


11N40SISO_MCH_Graphs

Pref/11N40
SISO/MCH

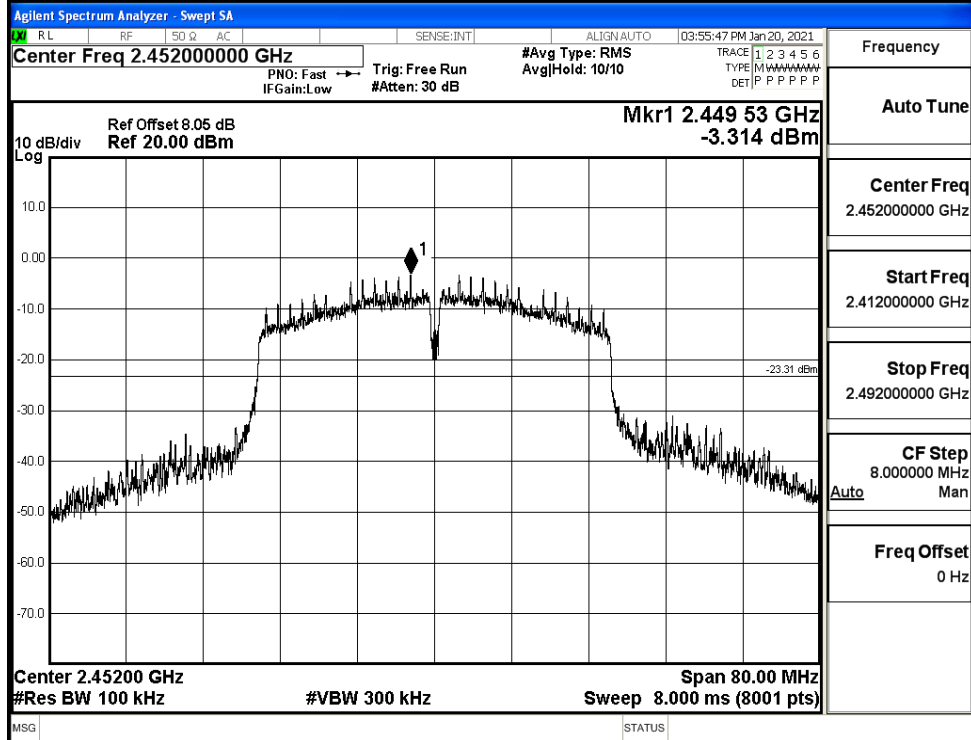


Puw/11N40
SISO/MCH

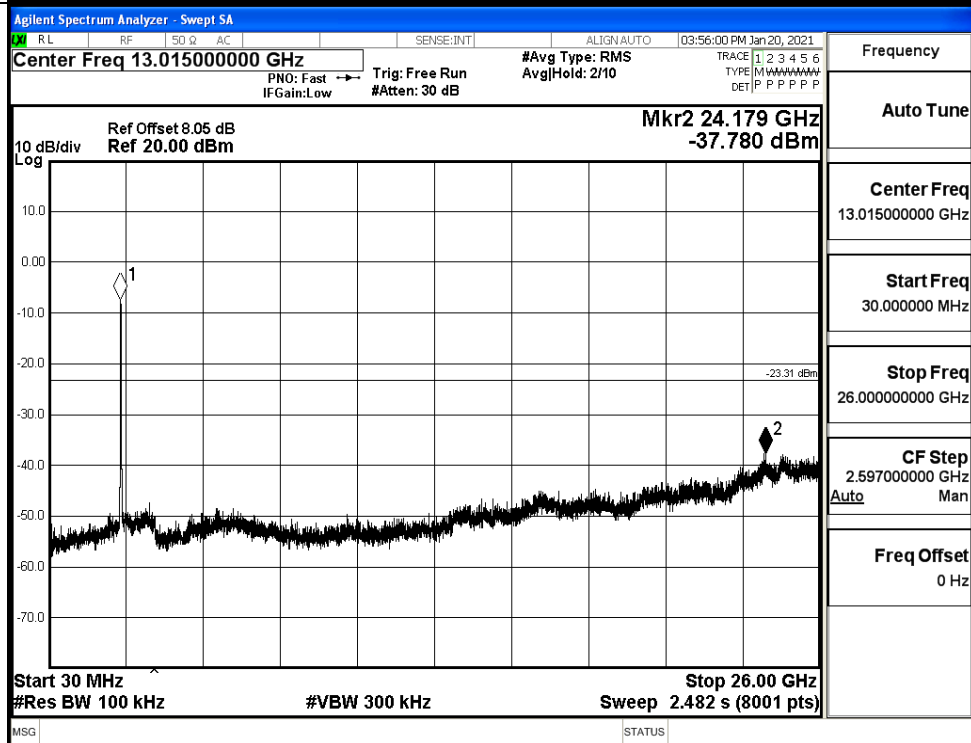


11N40SISO HCH Graphs

Pref/11N40
SISO/HCH

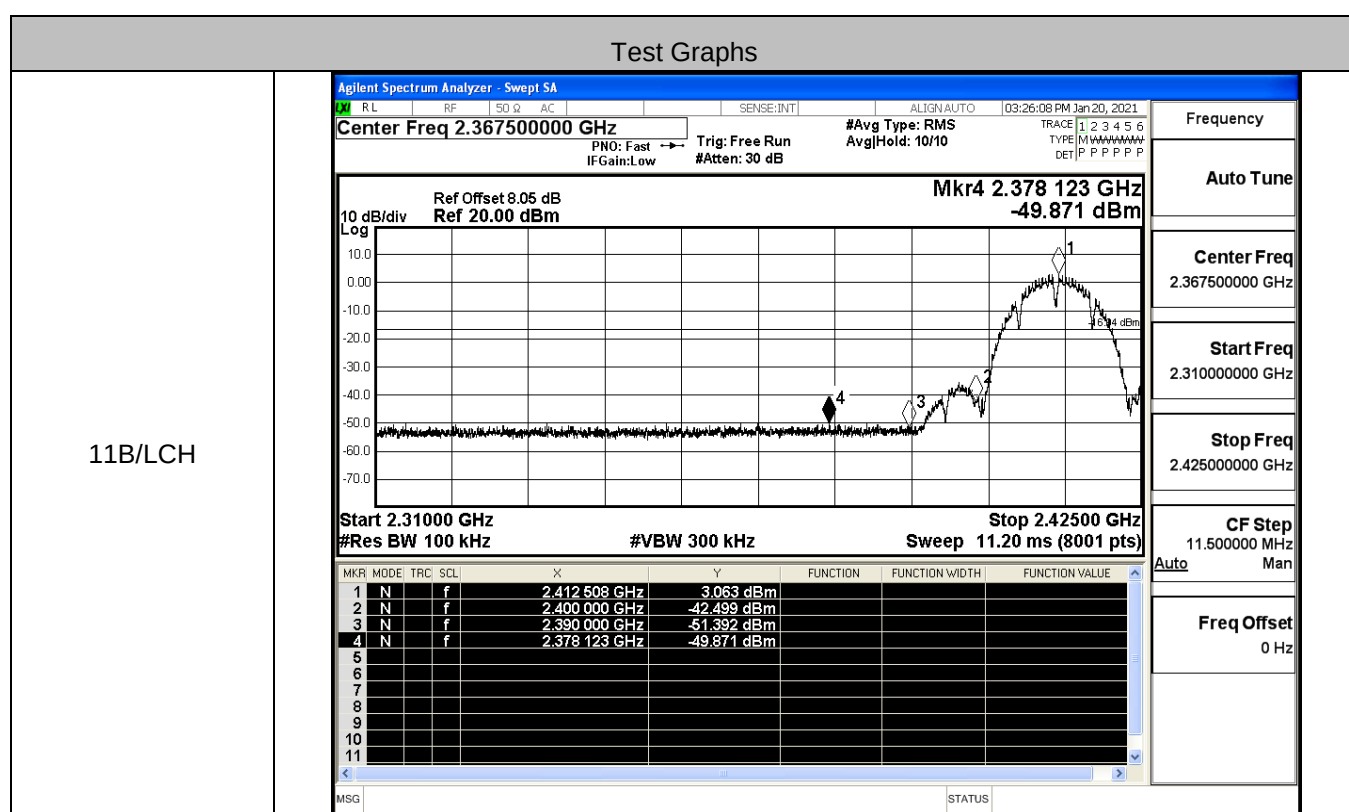


Puw/11N40
SISO/HCH

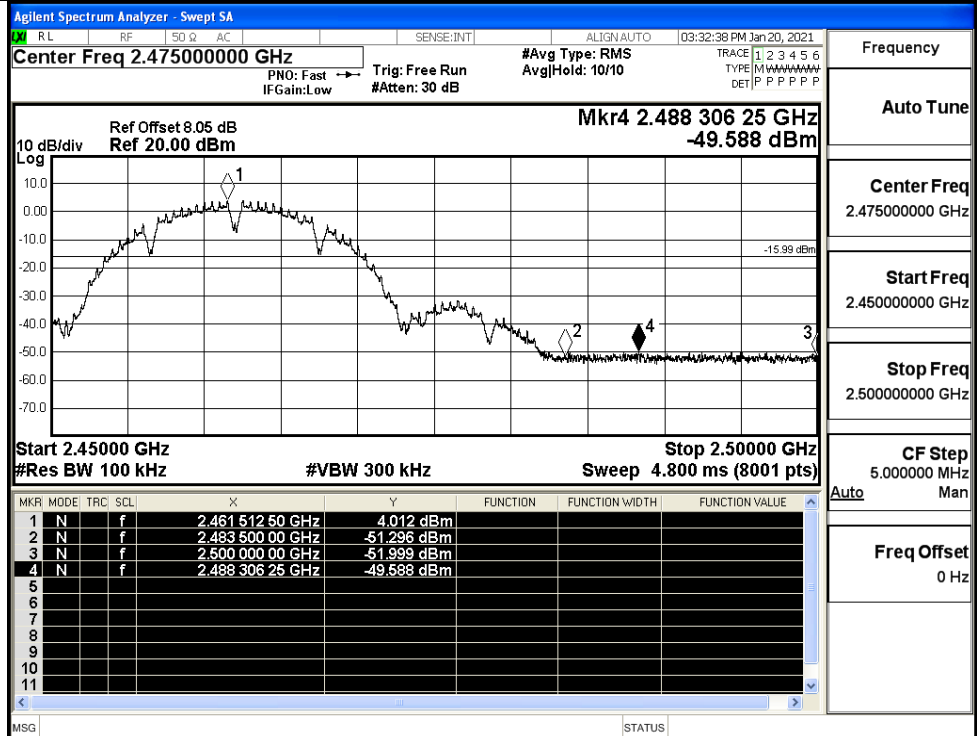


A.6 Band-edge for RF Conducted Emissions

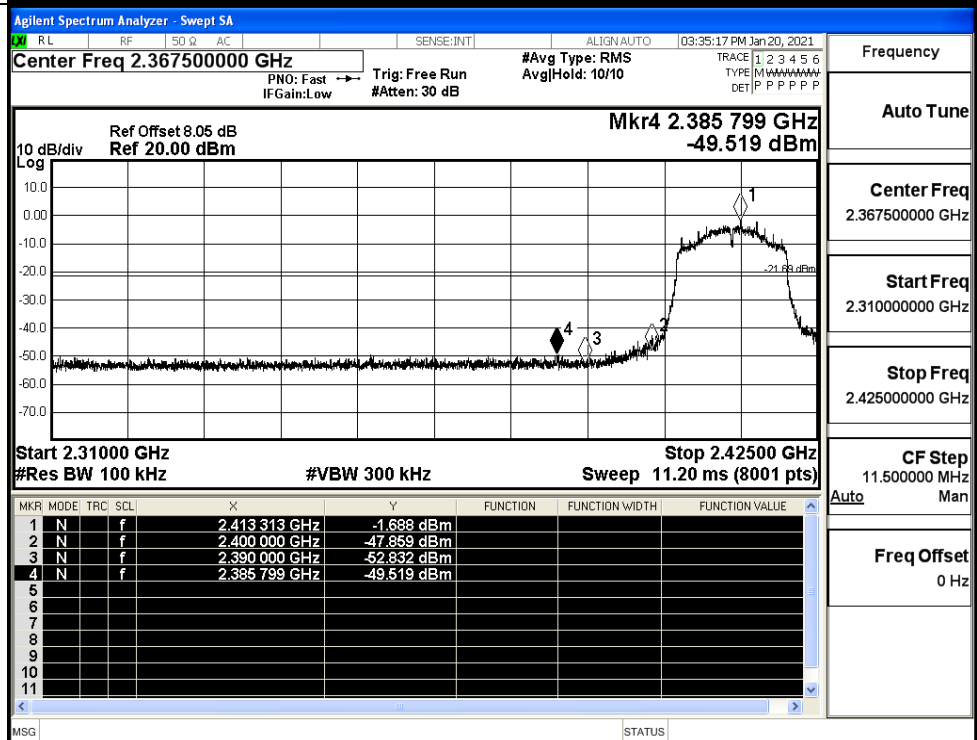
Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	3.063	-49.871	-16.94	PASS
	HCH	4.012	-49.588	-15.99	PASS
11G	LCH	-1.688	-49.519	-21.69	PASS
	HCH	-0.154	-47.582	-20.15	PASS
11N20SISO	LCH	-0.695	-48.459	-20.7	PASS
	HCH	0.138	-47.238	-19.86	PASS
11N40SISO	LCH	-4.039	-46.168	-24.04	PASS
	HCH	-3.314	-36.695	-23.31	PASS



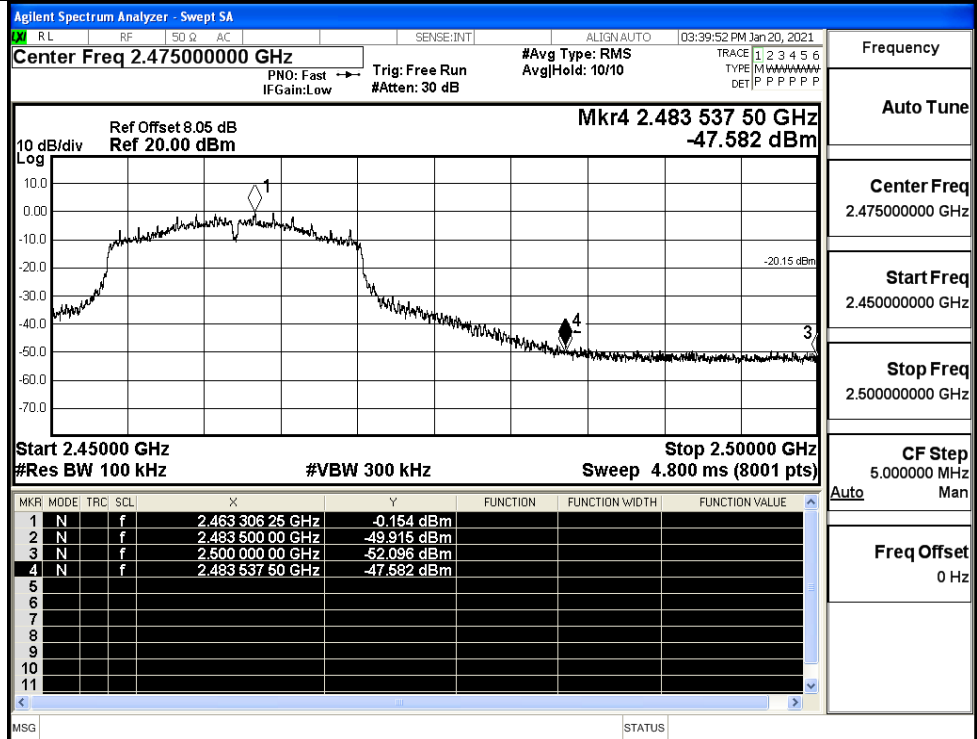
11B/HCH



11G/LCH



11G/HCH



Frequency

Auto Tune

Center Freq
2.475000000 GHz

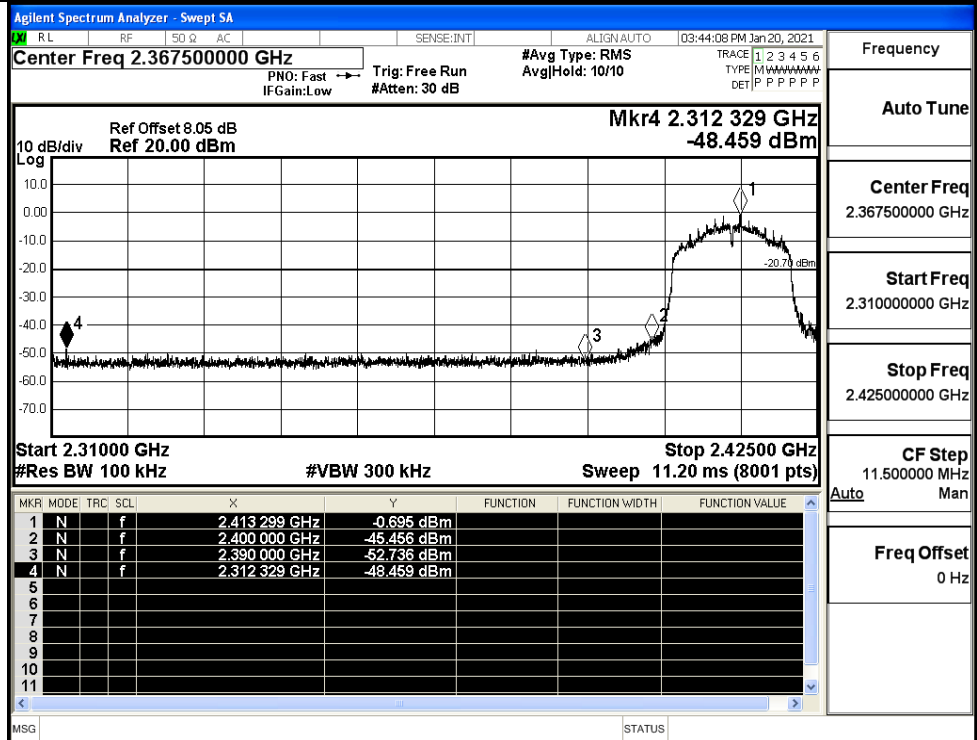
Start Freq
2.450000000 GHz

Stop Freq
2.500000000 GHz

CF Step
5.000000 MHz

Freq Offset
0 Hz

11N20SISO/LCH



Frequency

Auto Tune

Center Freq
2.367500000 GHz

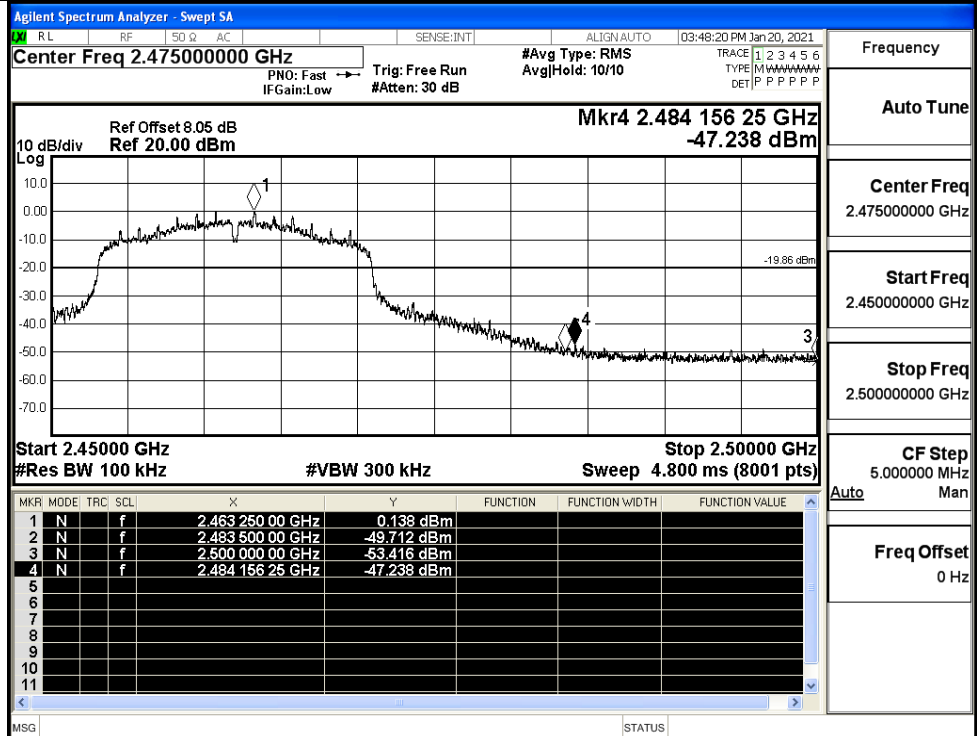
Start Freq
2.310000000 GHz

Stop Freq
2.425000000 GHz

CF Step
11.500000 MHz

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

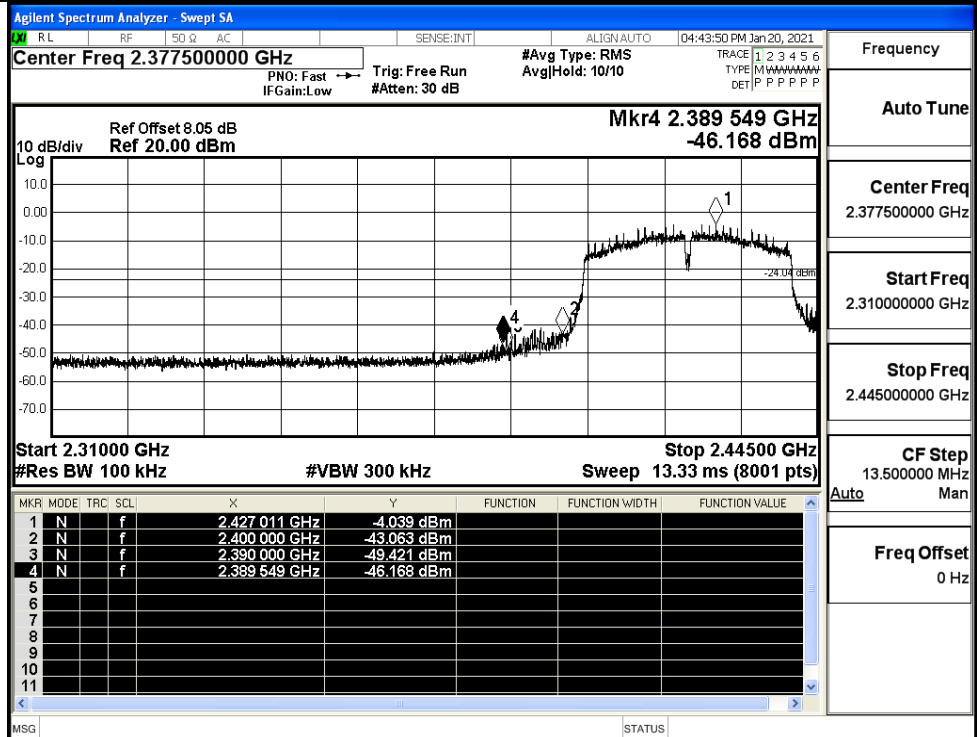
5.000000 MHz

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

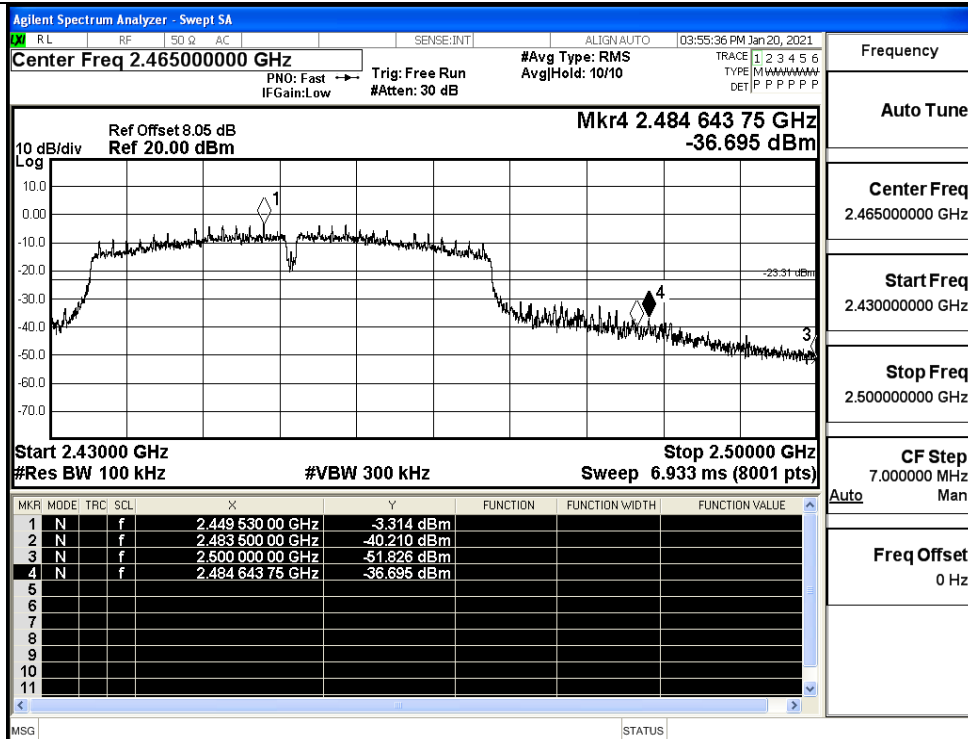
13.500000 MHz

Auto

Freq Offset

0 Hz

11N40SISO/HCH



Frequency

Auto Tune

Center Freq
2.465000000 GHz

Start Freq
2.430000000 GHz

Stop Freq
2.500000000 GHz

CF Step
7.000000 MHz

Auto Man

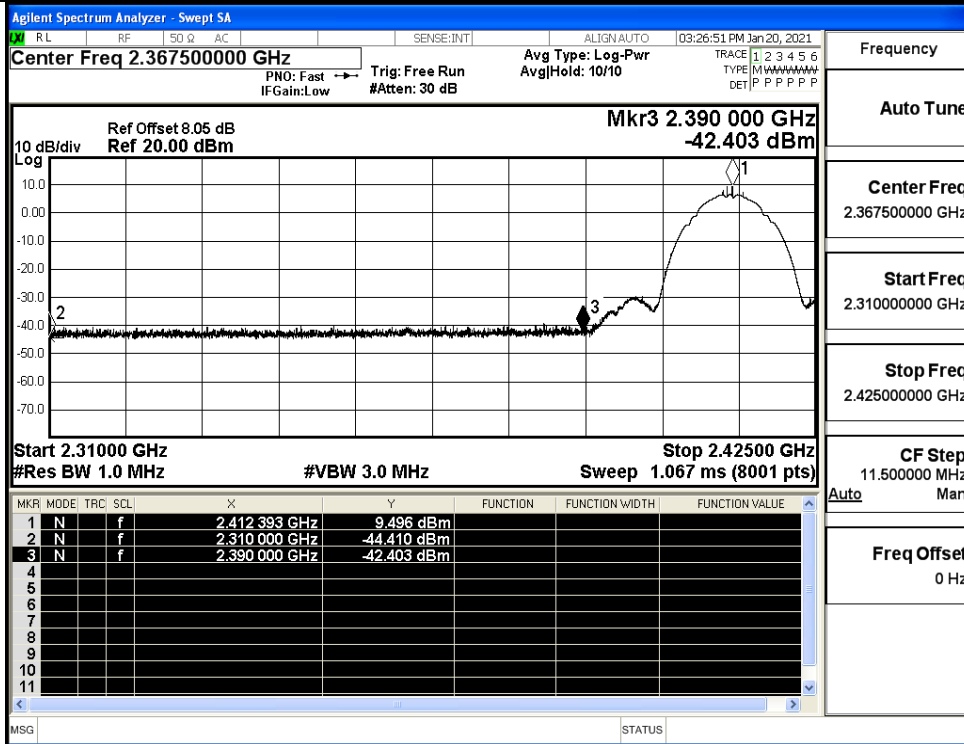
Freq Offset
0 Hz

A.7 Restrict-band band-edge measurements

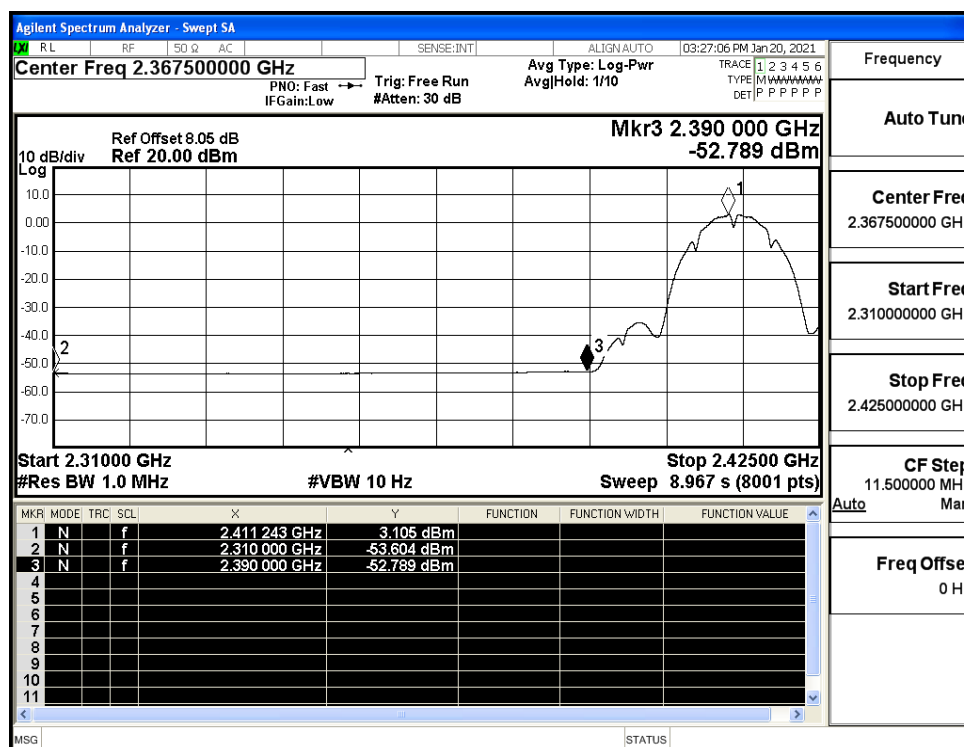
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
11B	2412	Ant1	2310.0	-44.41	2.0	0	52.85	PEAK	74	PASS
	2412	Ant1	2310.0	-53.60	2.0	0	43.65	AV	54	PASS
	2412	Ant1	2390.0	-42.40	2.0	0	54.85	PEAK	74	PASS
	2412	Ant1	2390.0	-52.79	2.0	0	44.47	AV	54	PASS
	2462	Ant1	2483.5	-41.55	2.0	0	55.71	PEAK	74	PASS
	2462	Ant1	2483.5	-52.32	2.0	0	44.94	AV	54	PASS
	2462	Ant1	2500.0	-42.18	2.0	0	55.08	PEAK	74	PASS
	2462	Ant1	2500.0	-52.39	2.0	0	44.86	AV	54	PASS
11G	2412	Ant1	2310.0	-42.79	2.0	0	54.47	PEAK	74	PASS
	2412	Ant1	2310.0	-53.54	2.0	0	43.72	AV	54	PASS
	2412	Ant1	2390.0	-41.96	2.0	0	55.3	PEAK	74	PASS
	2412	Ant1	2390.0	-52.79	2.0	0	44.47	AV	54	PASS
	2462	Ant1	2483.5	-37.22	2.0	0	60.04	PEAK	74	PASS
	2462	Ant1	2483.5	-50.65	2.0	0	46.61	AV	54	PASS
	2462	Ant1	2500.0	-41.46	2.0	0	55.79	PEAK	74	PASS
	2462	Ant1	2500.0	-52.36	2.0	0	44.9	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-43.59	2.0	0	53.67	PEAK	74	PASS
	2412	Ant1	2310.0	-53.56	2.0	0	43.7	AV	54	PASS
	2412	Ant1	2390.0	-43.22	2.0	0	54.04	PEAK	74	PASS
	2412	Ant1	2390.0	-52.81	2.0	0	44.44	AV	54	PASS
	2462	Ant1	2483.5	-38.96	2.0	0	58.3	PEAK	74	PASS
	2462	Ant1	2483.5	-50.51	2.0	0	46.75	AV	54	PASS
	2462	Ant1	2500.0	-40.75	2.0	0	56.51	PEAK	74	PASS
	2462	Ant1	2500.0	-52.35	2.0	0	44.91	AV	54	PASS
11N40 SISO	2422	Ant1	2310.0	-43.23	2.0	0	54.03	PEAK	74	PASS
	2422	Ant1	2310.0	-53.52	2.0	0	43.74	AV	54	PASS

	2422	Ant1	2390.0	-37.77	2.0	0	59.49	PEAK	74	PASS
	2422	Ant1	2390.0	-50.33	2.0	0	46.93	AV	54	PASS
	2452	Ant1	2483.5	-28.29	2.0	0	68.97	PEAK	74	PASS
	2452	Ant1	2483.5	-42.85	2.0	0	54.41	AV	54	PASS
	2452	Ant1	2500.0	-39.92	2.0	0	57.34	PEAK	74	PASS
	2452	Ant1	2500.0	-51.10	2.0	0	46.15	AV	54	PASS

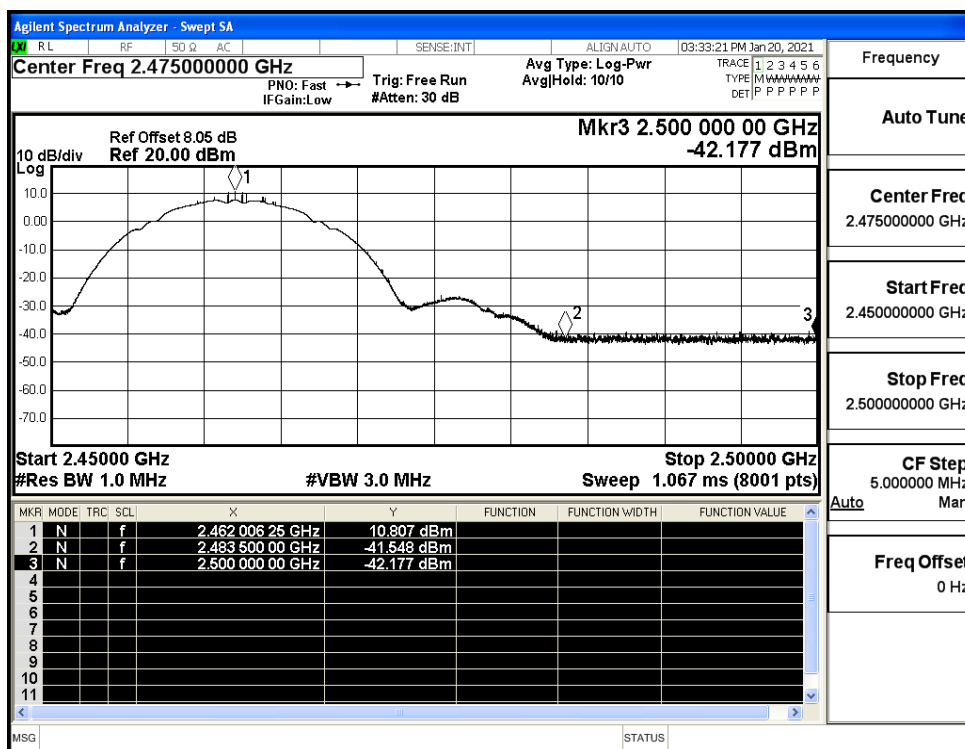
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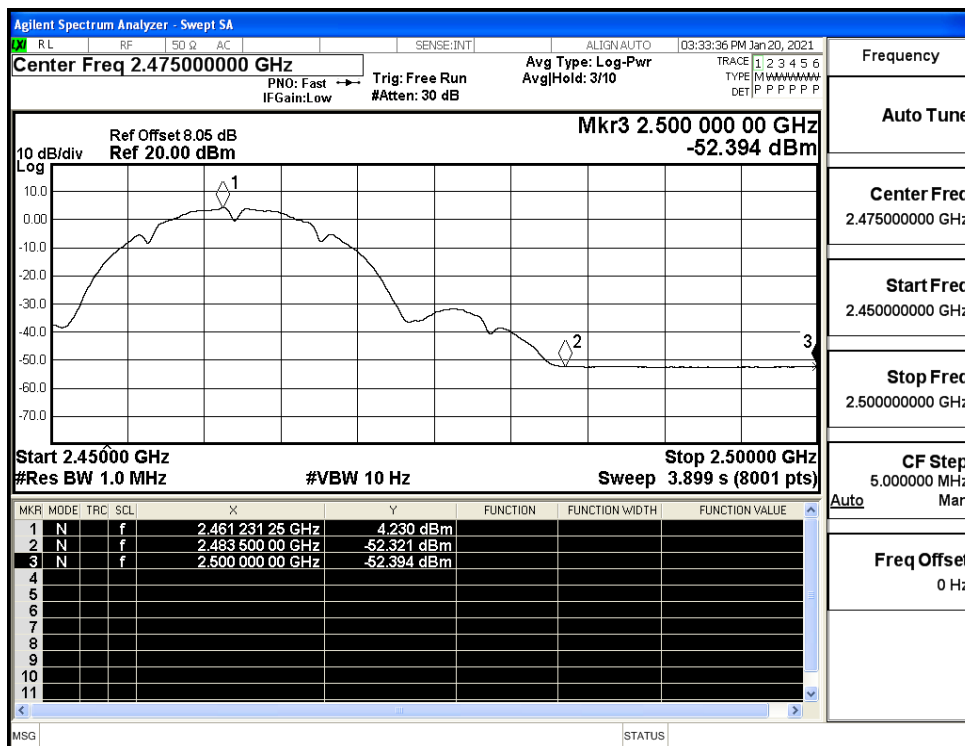
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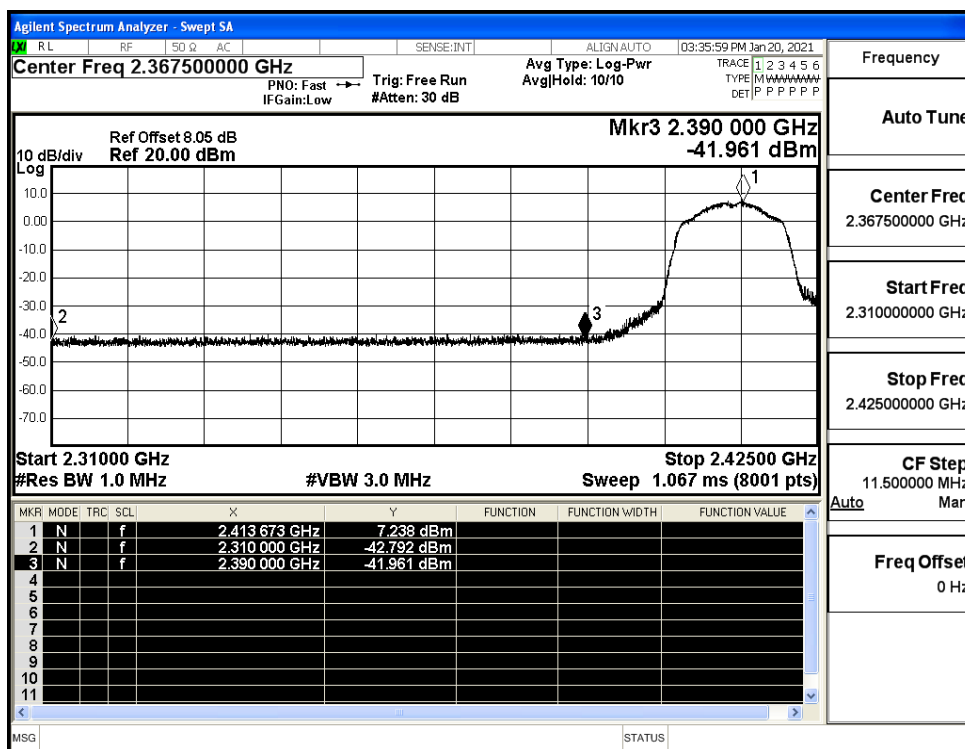
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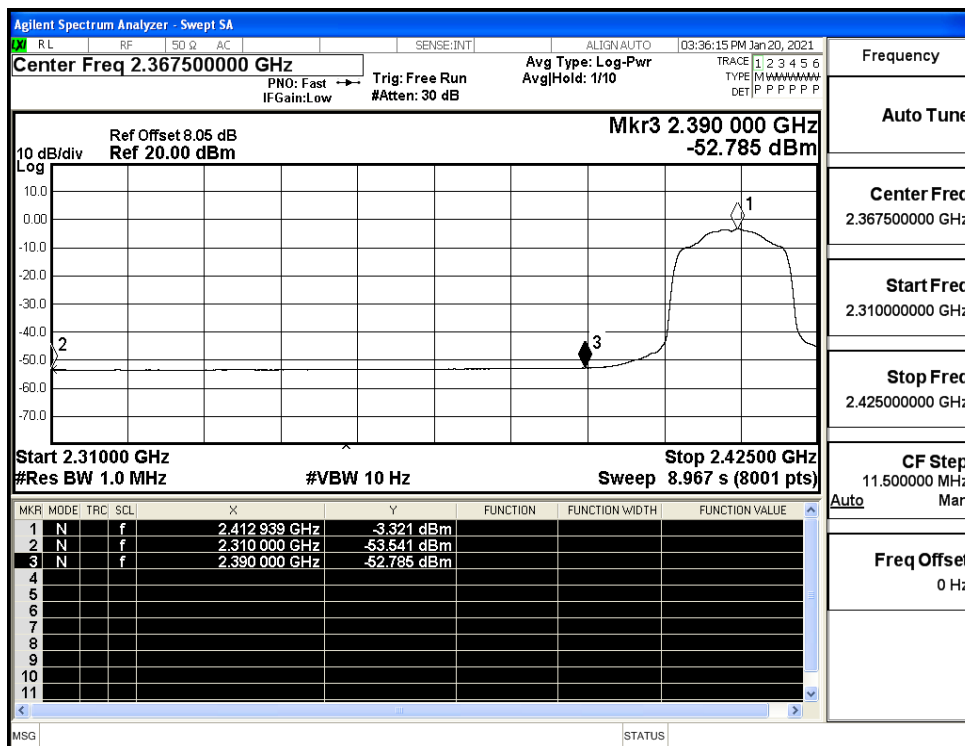
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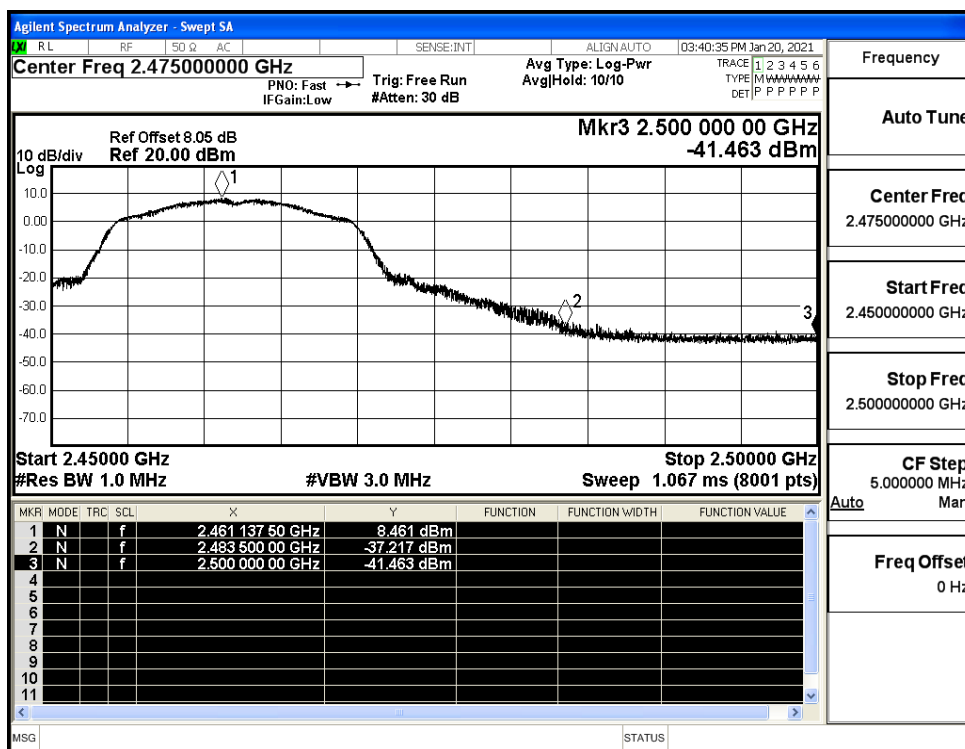
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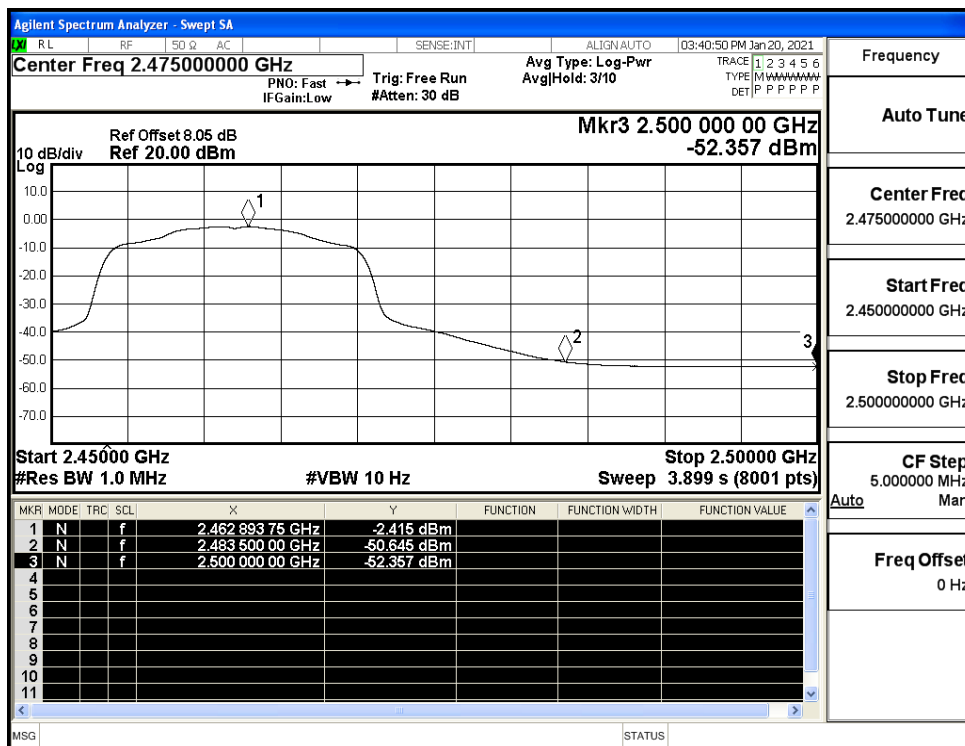
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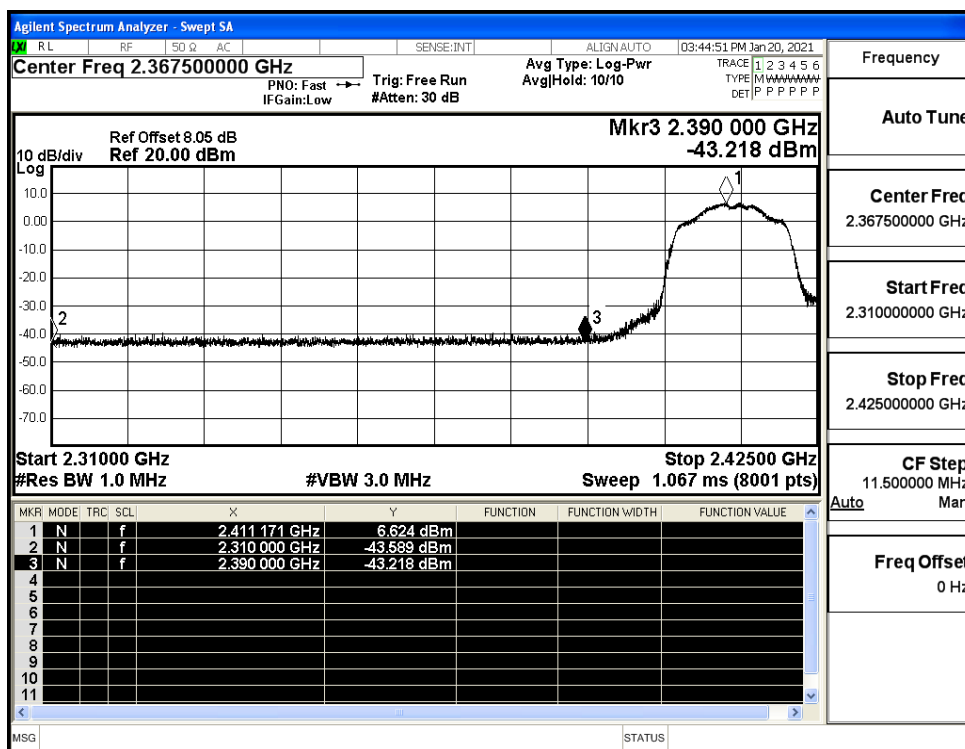
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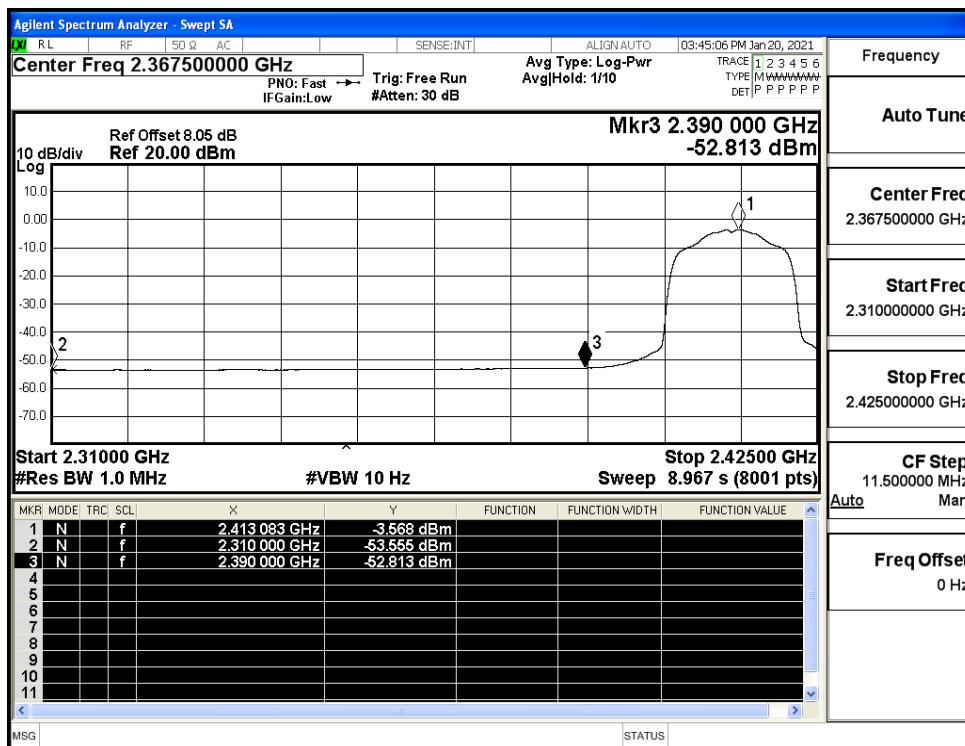
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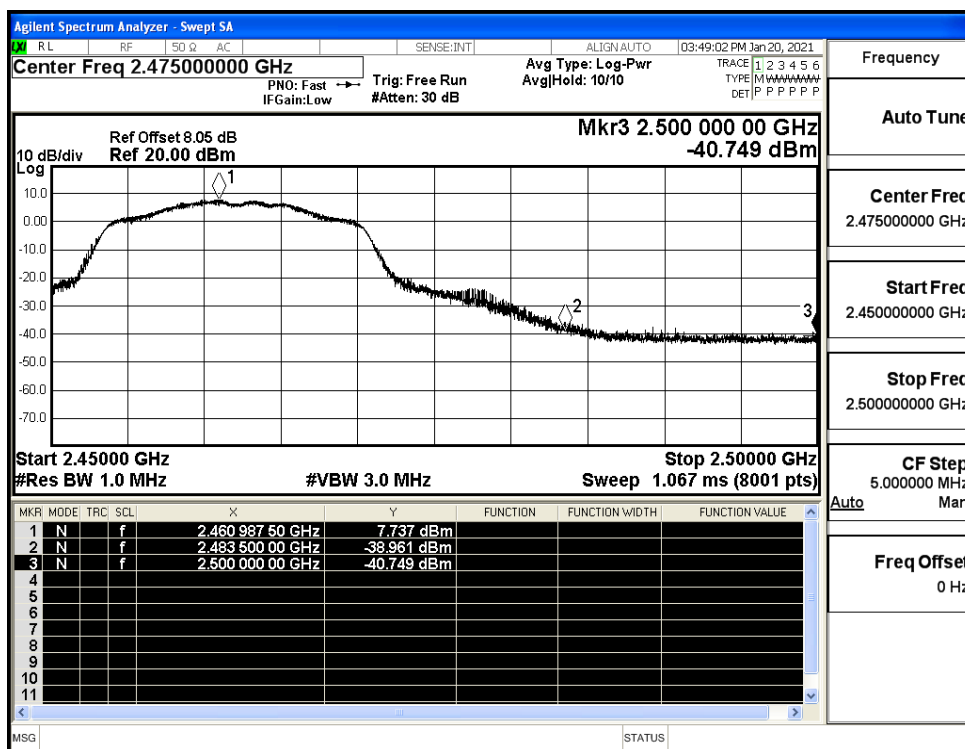
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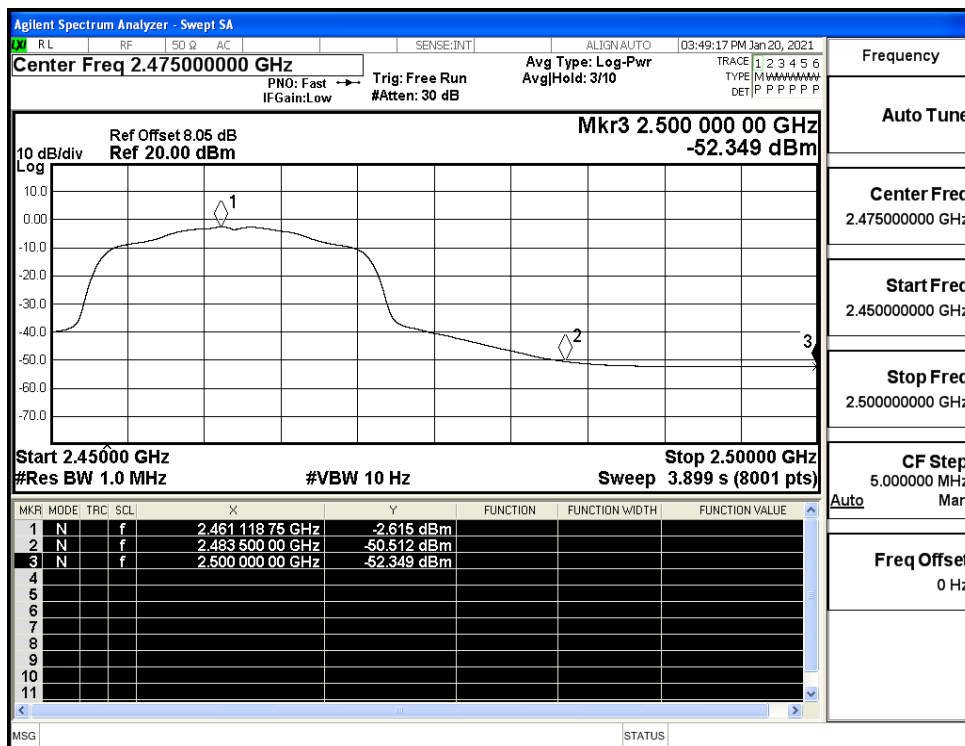
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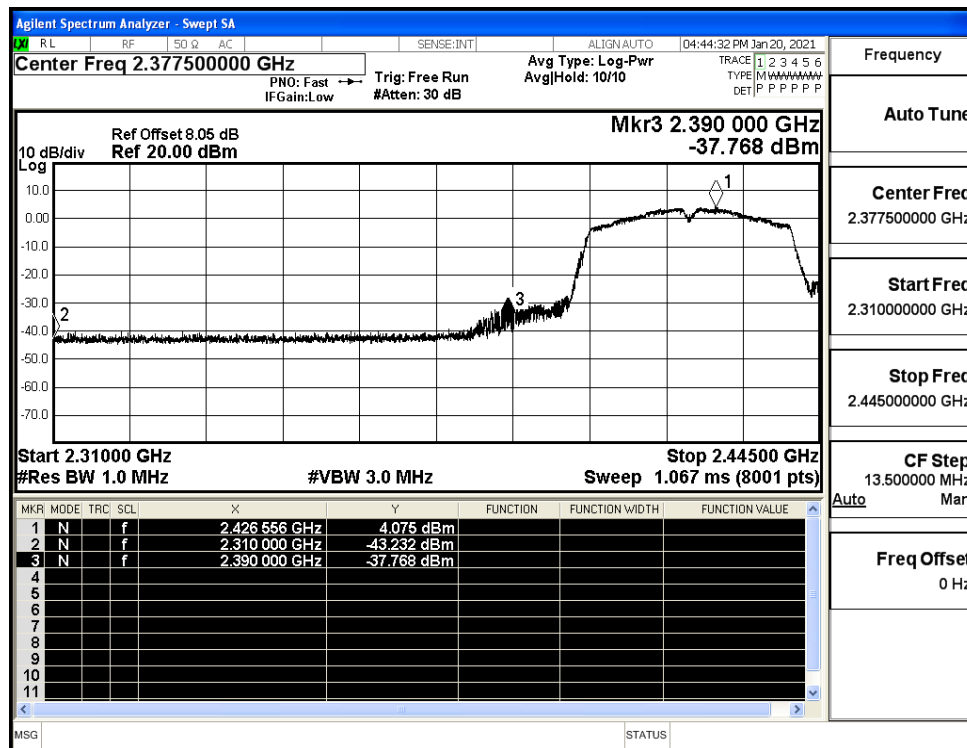
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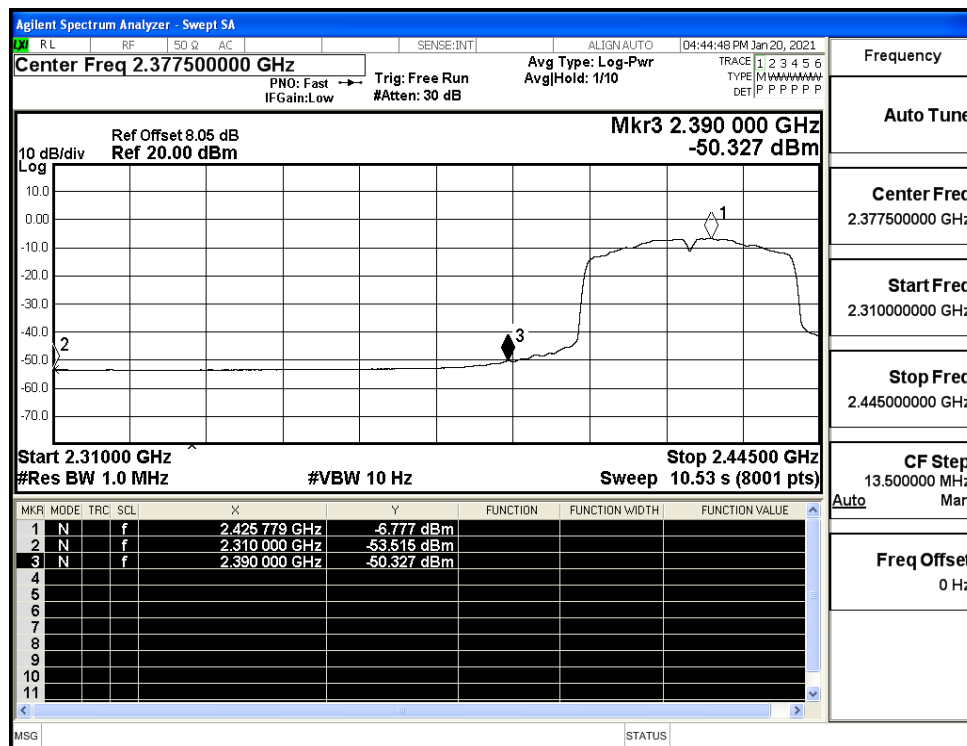
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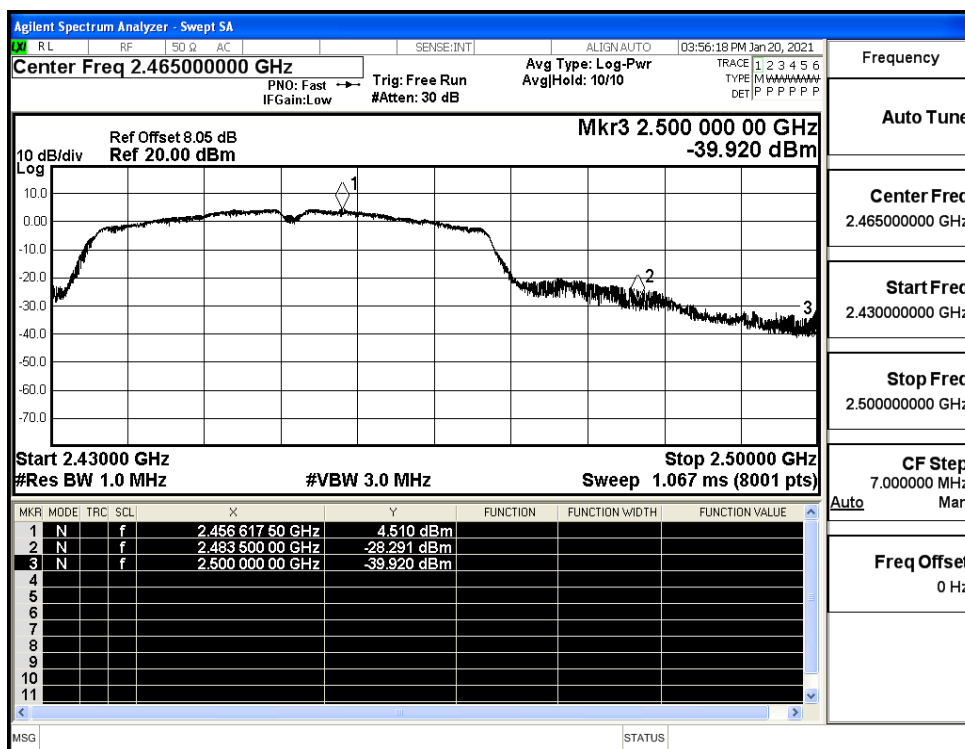
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Restrict-band band-edge measurements_11N40SISO_2422_Ant1_AV



Restrict-band band-edge measurements_11N40SISO_2452_Ant1_PEAK



Restrict-band band-edge measurements_11N40SISO_2452_Ant1_AV

