

## Appendix A

### RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: **VIDEO DOORBELL**

Trade Mark: **ELINKSMART, ULTRA-LINK, QUANTA, GMINI, TRUST, ILUMEN**

Test Model: **COMET-13K**

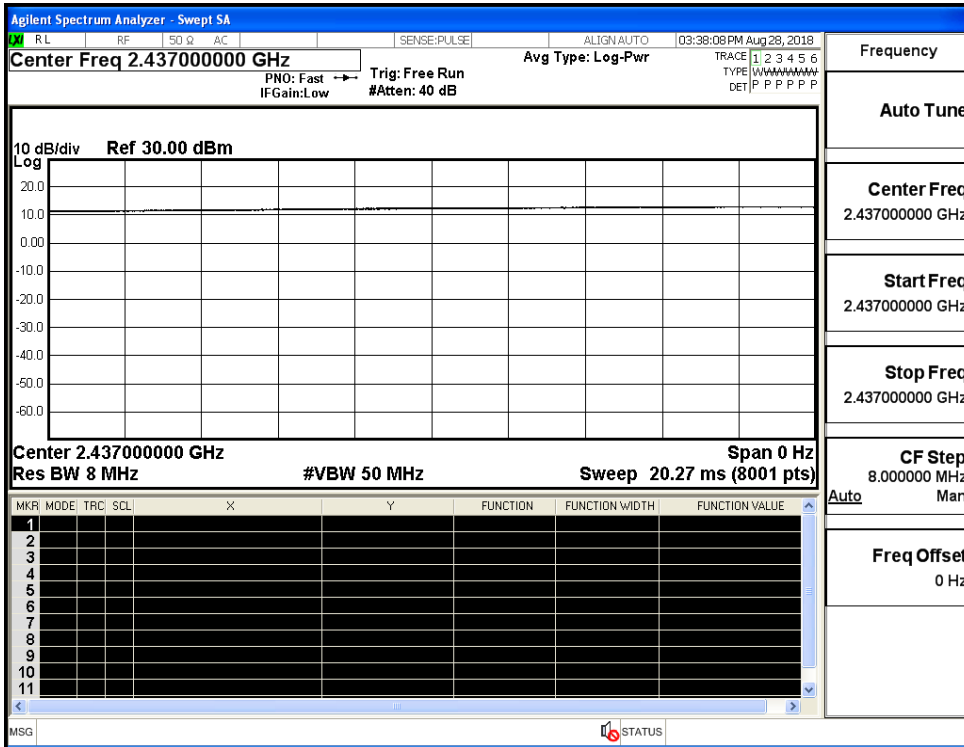
#### Environmental Conditions

Temperature:	24.4 ° C
Relative Humidity:	52.8%
ATM Pressure:	100.0 kPa
Test Engineer:	WangChuang
Supervised by:	Jayden.Zhuo

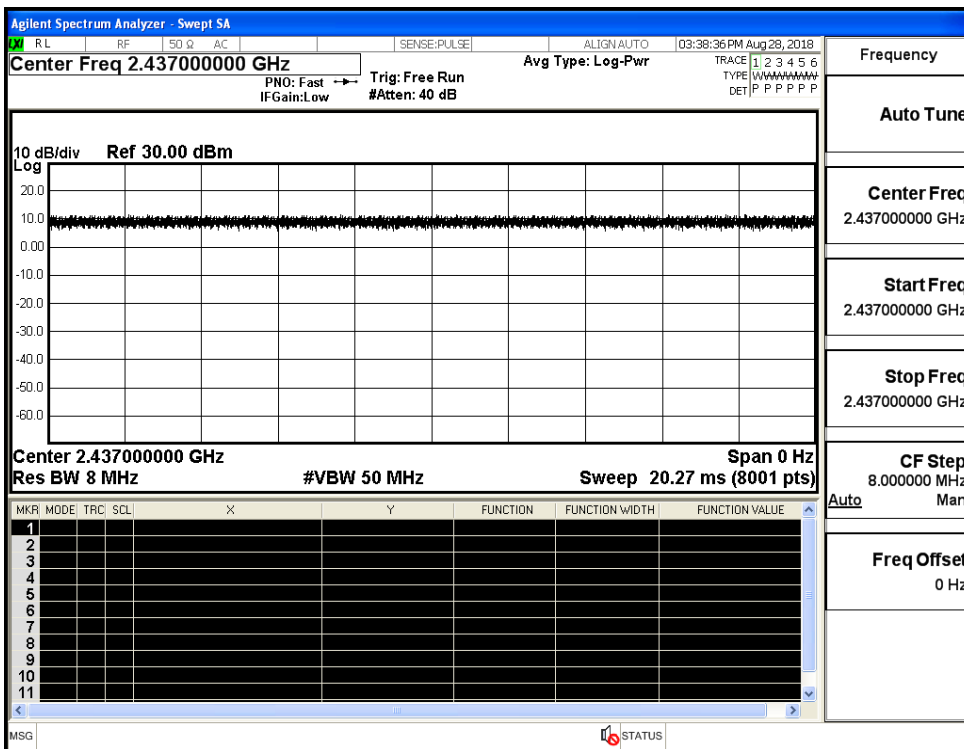
#### A.1 Duty Cycle

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

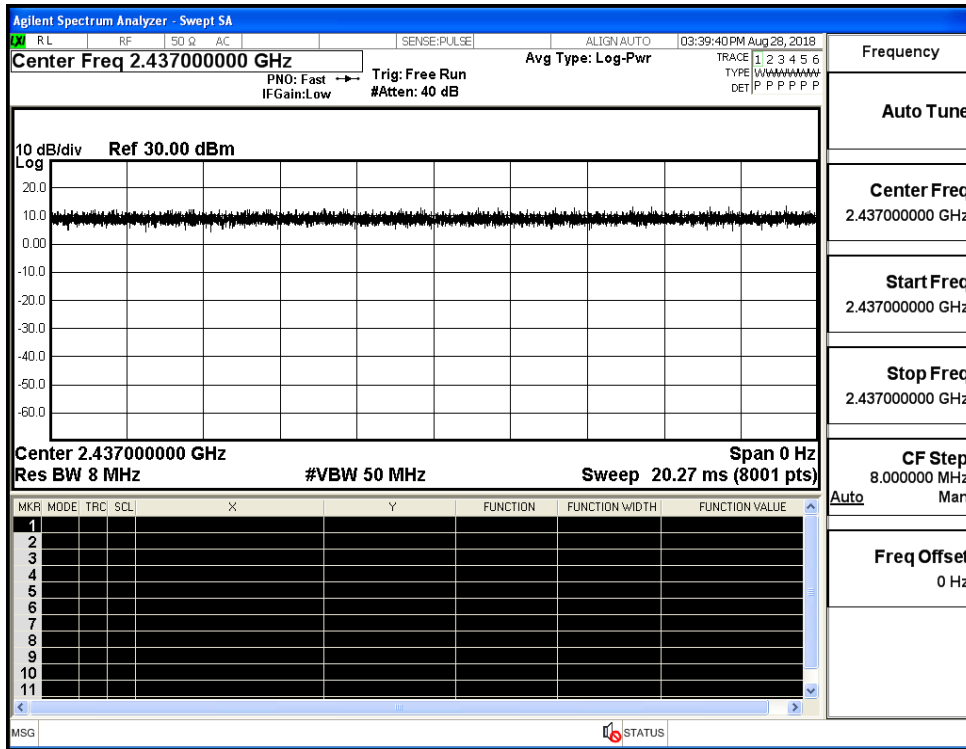
Duty Cycle\_11B\_2437\_Ant1



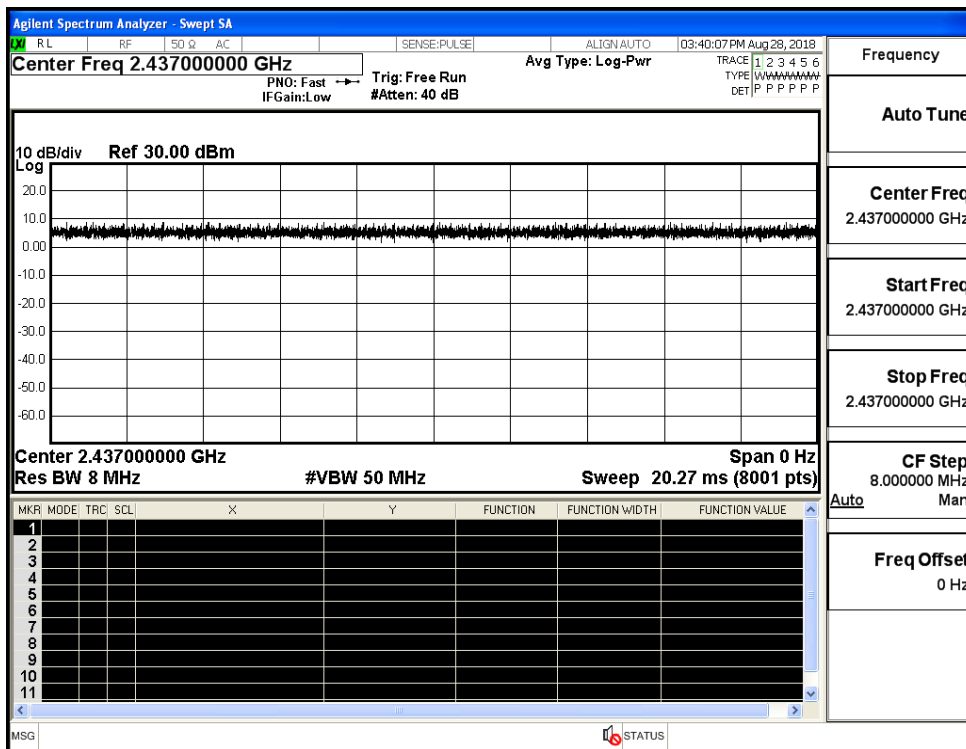
Duty Cycle\_11G\_2437\_Ant1



Duty Cycle\_11N20SISO\_2437\_Ant1



Duty Cycle\_11N40SISO\_2437\_Ant1

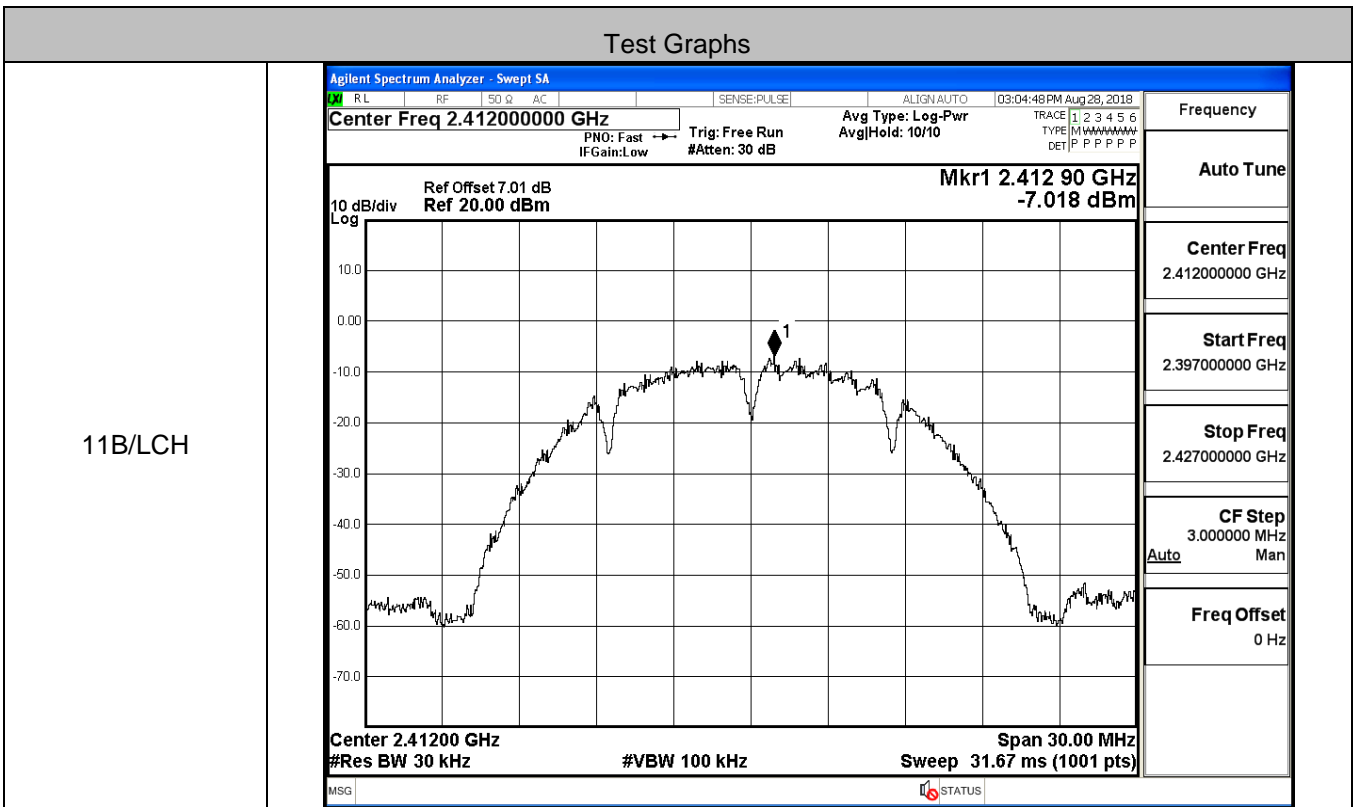


## A.2 Maximum Conducted Output Power

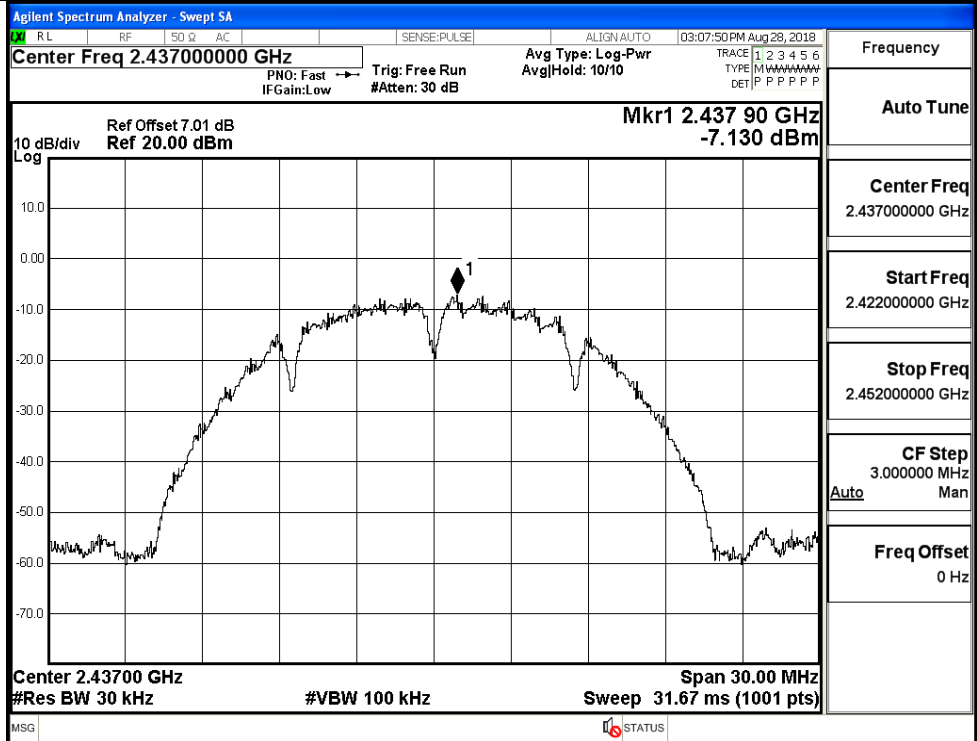
Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	11.18	30	PASS
	MCH	11.13	30	PASS
	HCH	10.82	30	PASS
11G	LCH	10.79	30	PASS
	MCH	10.48	30	PASS
	HCH	10.18	30	PASS
11N20SISO	LCH	10.97	30	PASS
	MCH	10.95	30	PASS
	HCH	10.32	30	PASS
11N40SISO	LCH	11.13	30	PASS
	MCH	11.01	30	PASS
	HCH	11.15	30	PASS

### A.3 Maximum Power Spectral Density

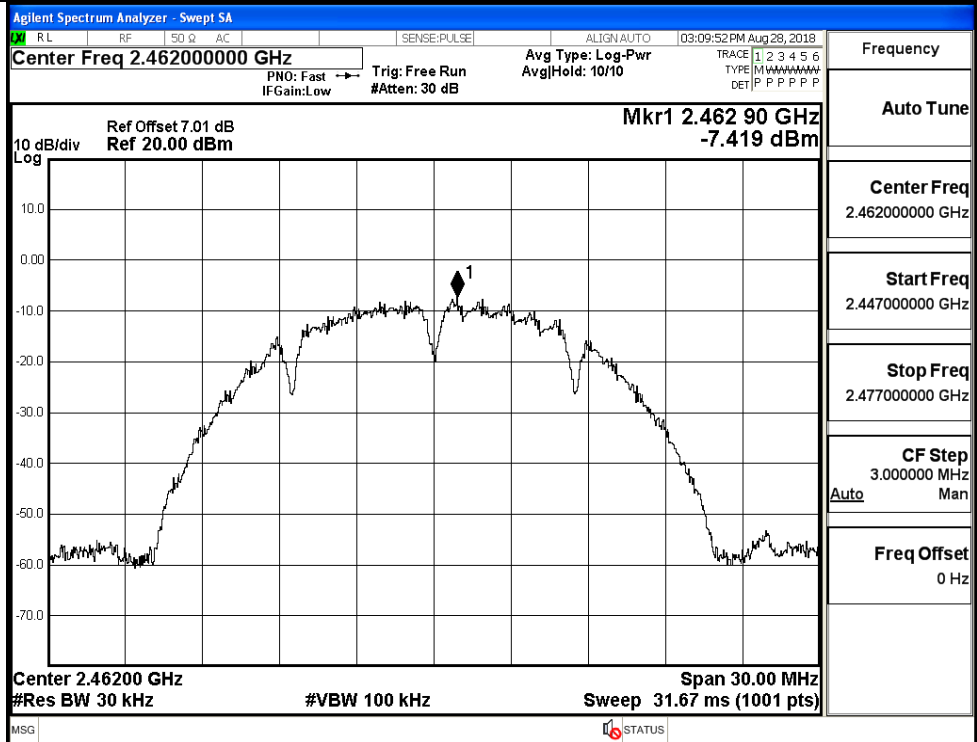
Mode	Channel	Meas.Level [dBm/30KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-7.018	8	PASS
	MCH	-7.130	8	PASS
	HCH	-7.419	8	PASS
11G	LCH	-14.261	8	PASS
	MCH	-14.059	8	PASS
	HCH	-14.658	8	PASS
11N20SISO	LCH	-14.032	8	PASS
	MCH	-13.666	8	PASS
	HCH	-14.094	8	PASS
11N40SISO	LCH	-16.960	8	PASS
	MCH	-17.401	8	PASS
	HCH	-16.957	8	PASS



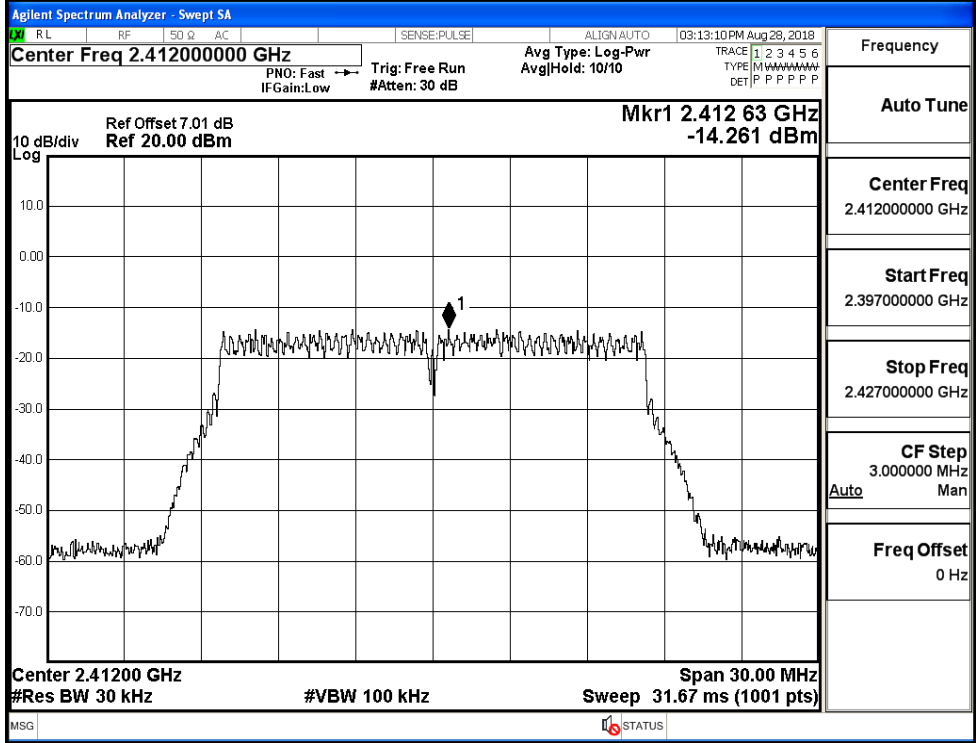
11B/MCH



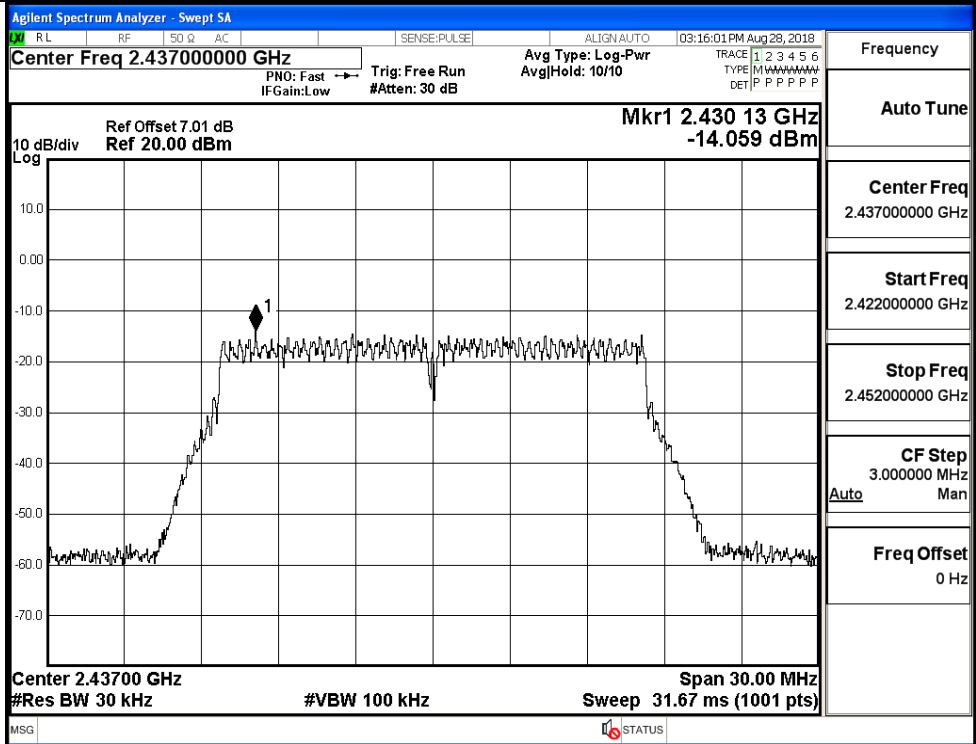
11B/HCH



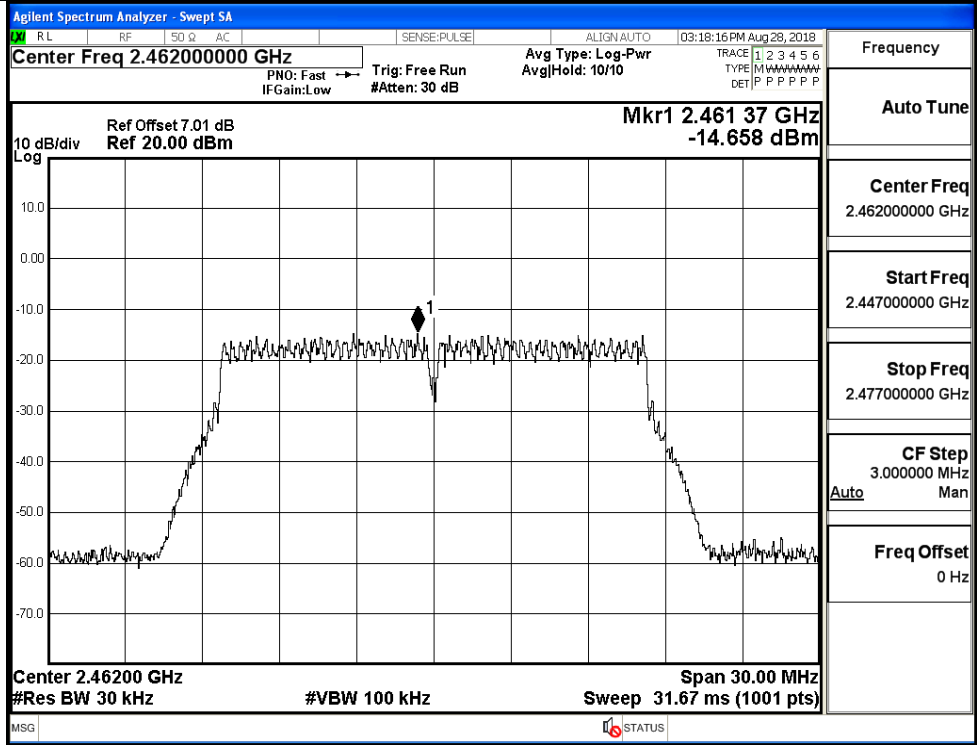
11G/LCH



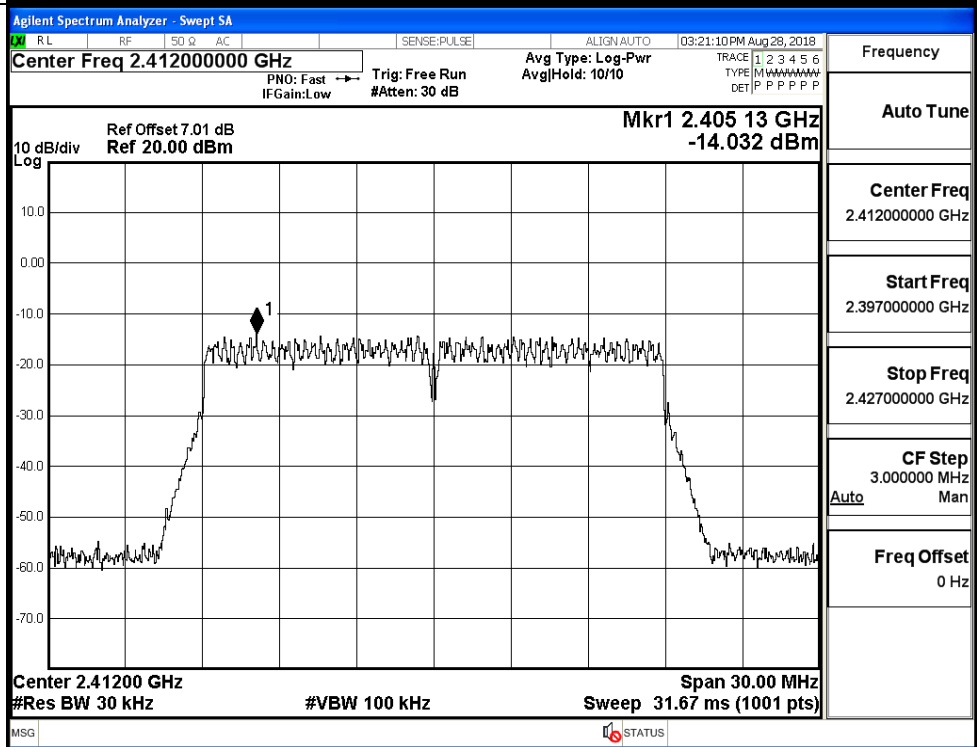
11G/MCH



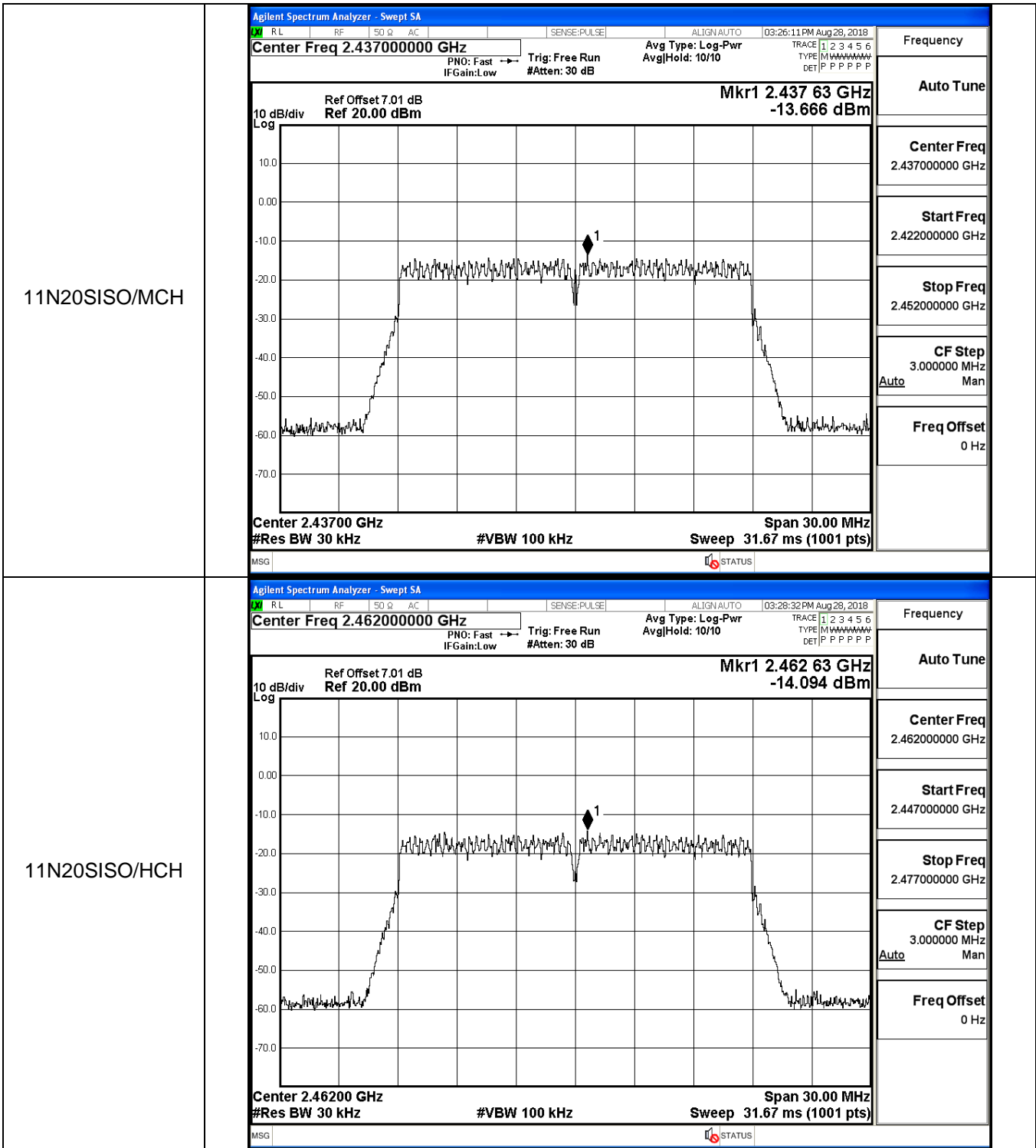
11G/HCH



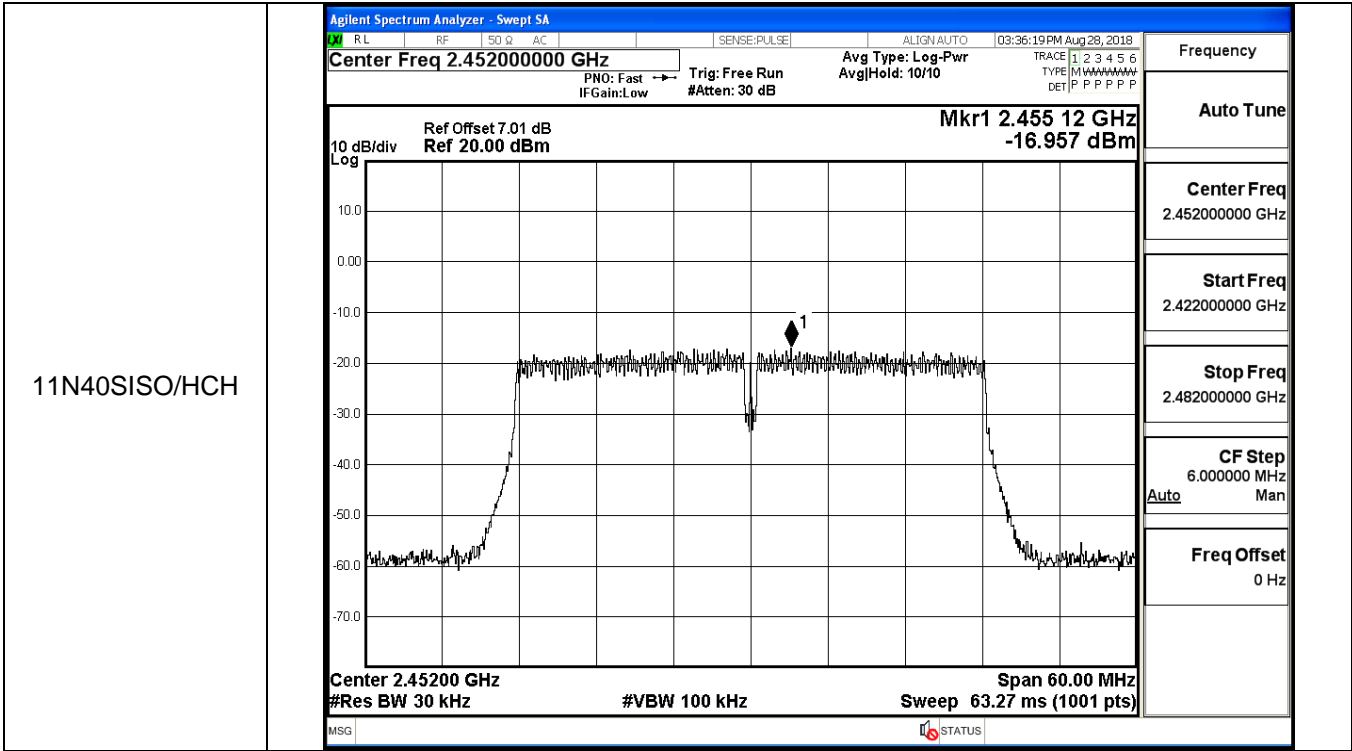
11N20SISO/LCH





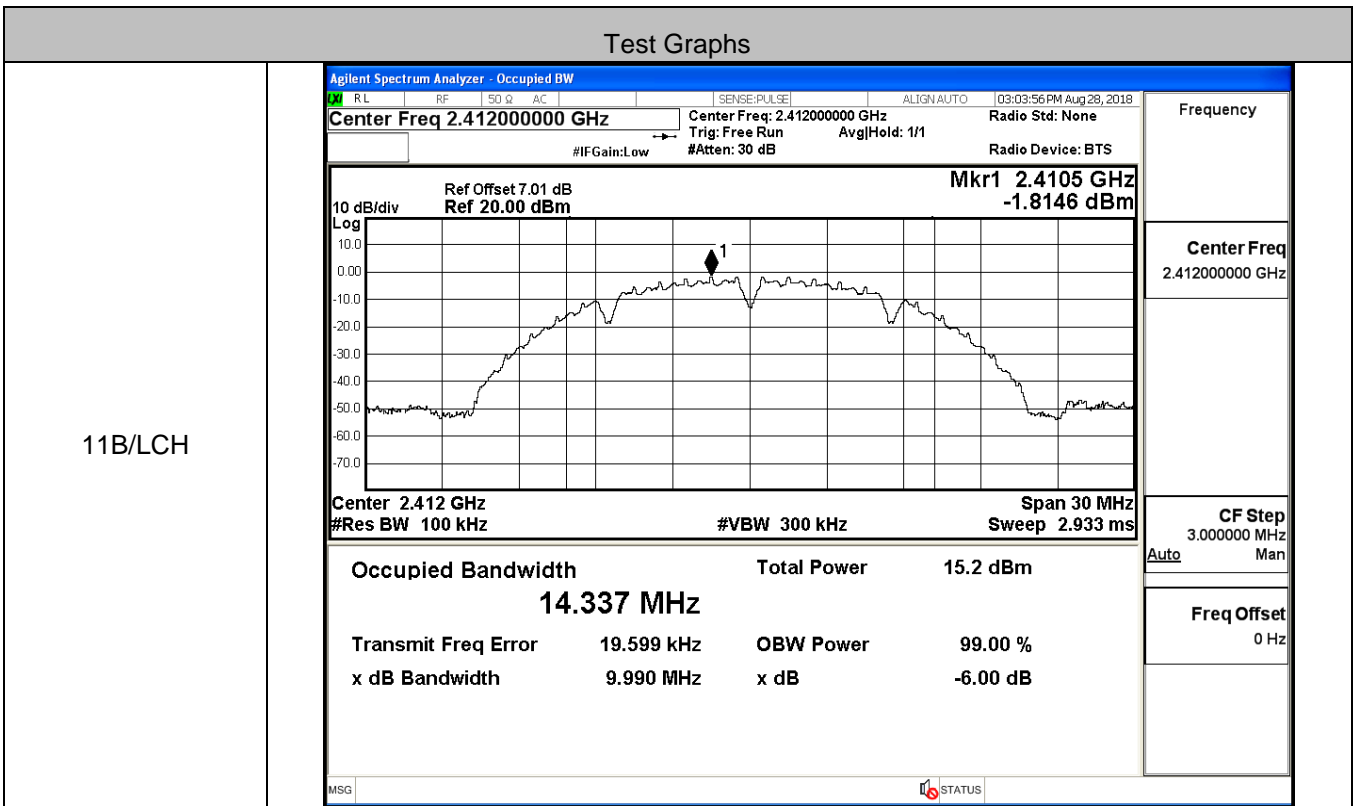


<p>11N40SISO/LCH</p>	<p>Agilent Spectrum Analyzer - Swept SA                  Center Freq 2.42200000 GHz                  Ref Offset 7.01 dB                  Ref 20.00 dBm                  Mkr1 2.430 16 GHz                  -16.960 dBm                  10 dB/div                  Log                  Center 2.42200 GHz                  #Res BW 30 kHz                  #VBW 100 kHz                  Span 60.00 MHz                  Sweep 63.27 ms (1001 pts)</p>	<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.42200000 GHz</p> <p>Start Freq 2.392000000 GHz</p> <p>Stop Freq 2.452000000 GHz</p> <p>CF Step 6.000000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>
<p>11N40SISO/MCH</p>	<p>Agilent Spectrum Analyzer - Swept SA                  Center Freq 2.43700000 GHz                  Ref Offset 7.01 dB                  Ref 20.00 dBm                  Mkr1 2.446 60 GHz                  -17.401 dBm                  10 dB/div                  Log                  Center 2.43700 GHz                  #Res BW 30 kHz                  #VBW 100 kHz                  Span 60.00 MHz                  Sweep 63.27 ms (1001 pts)</p>	<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.407000000 GHz</p> <p>Stop Freq 2.467000000 GHz</p> <p>CF Step 6.000000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>

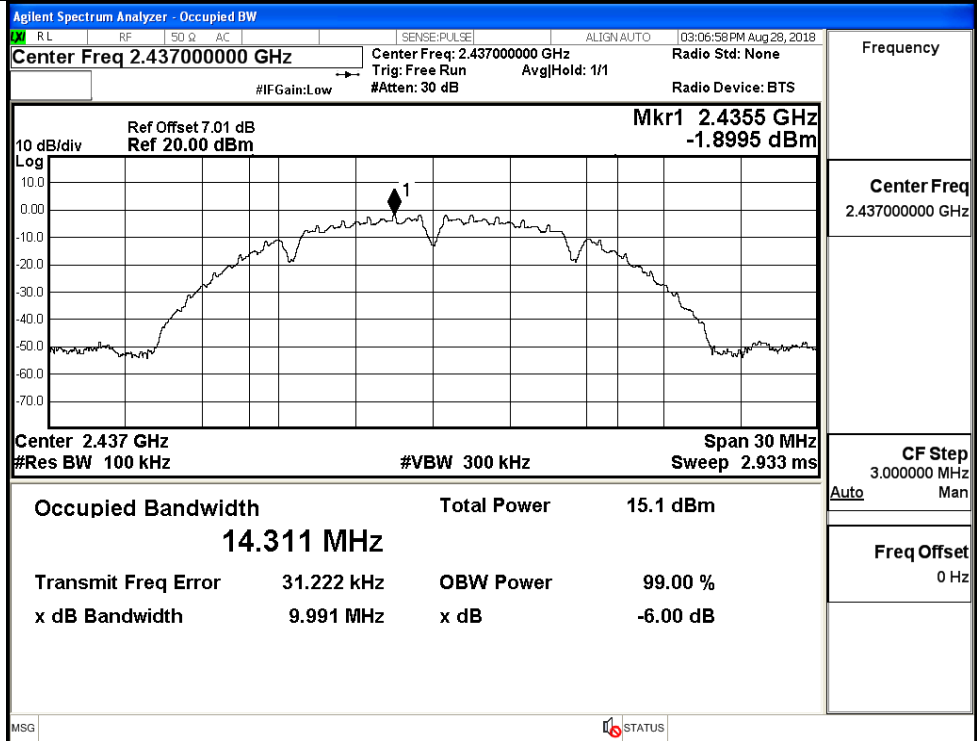


**A.4 6dB Bandwidth**

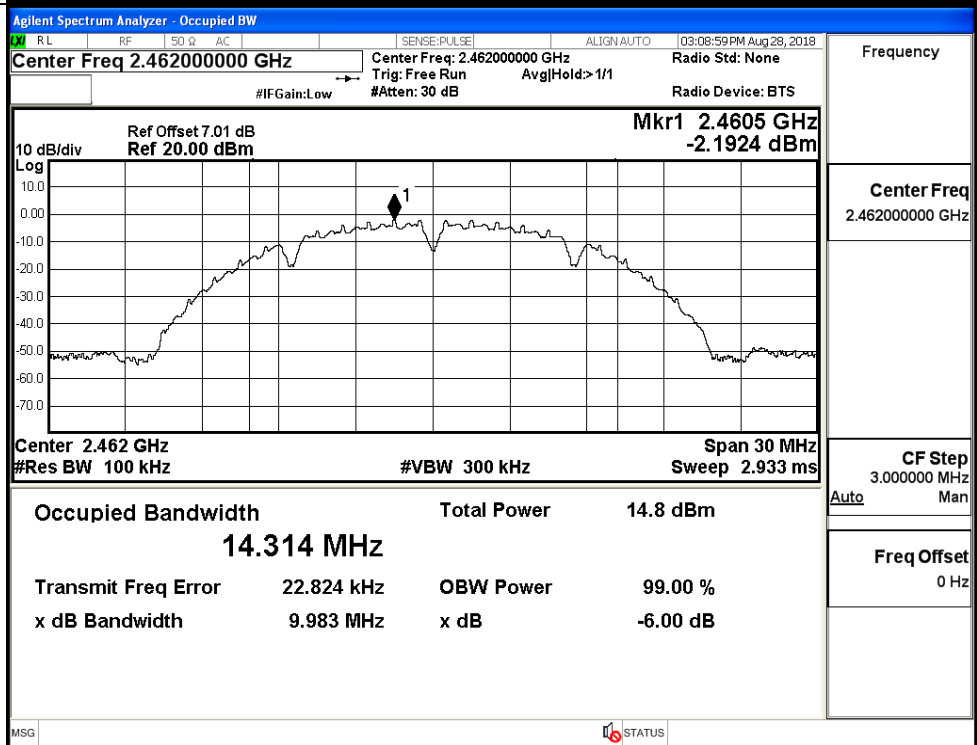
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	9.990	≥0.5	PASS
	MCH	9.991	≥0.5	PASS
	HCH	9.983	≥0.5	PASS
11G	LCH	16.61	≥0.5	PASS
	MCH	16.61	≥0.5	PASS
	HCH	16.61	≥0.5	PASS
11N20SISO	LCH	17.84	≥0.5	PASS
	MCH	17.83	≥0.5	PASS
	HCH	17.82	≥0.5	PASS
11N40SISO	LCH	36.49	≥0.5	PASS
	MCH	36.49	≥0.5	PASS
	HCH	36.51	≥0.5	PASS



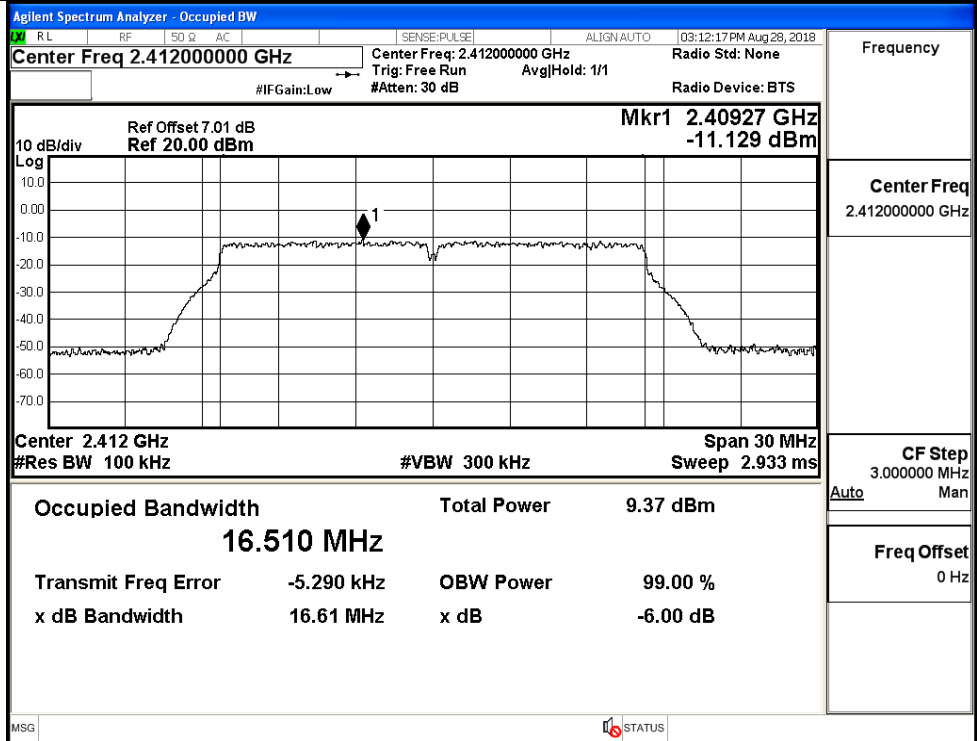
11B/MCH



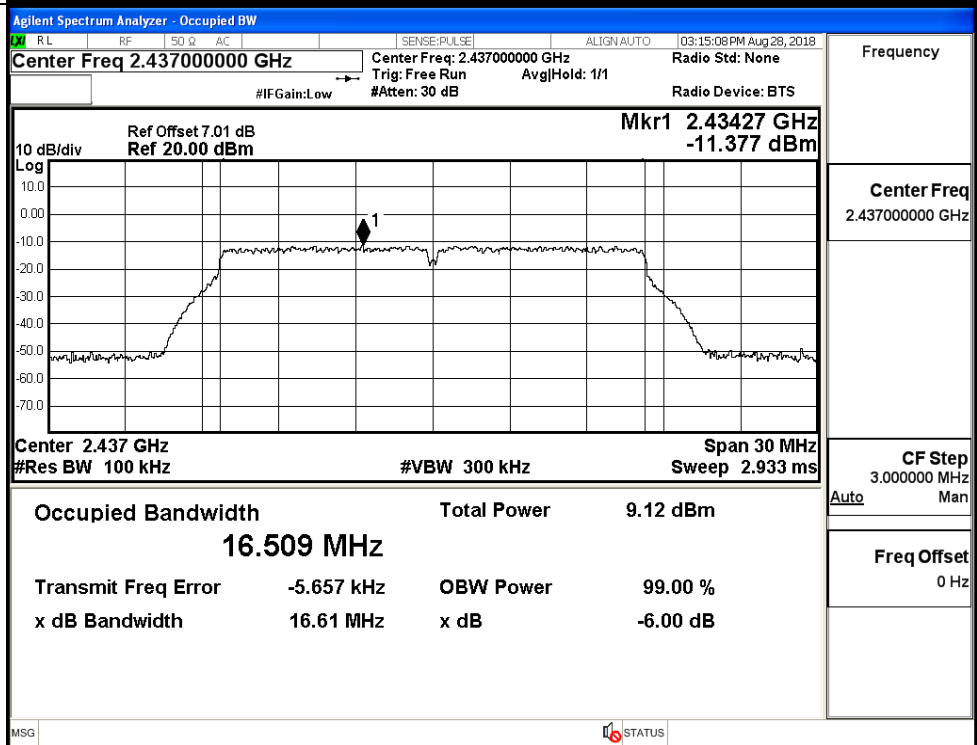
11B/HCH



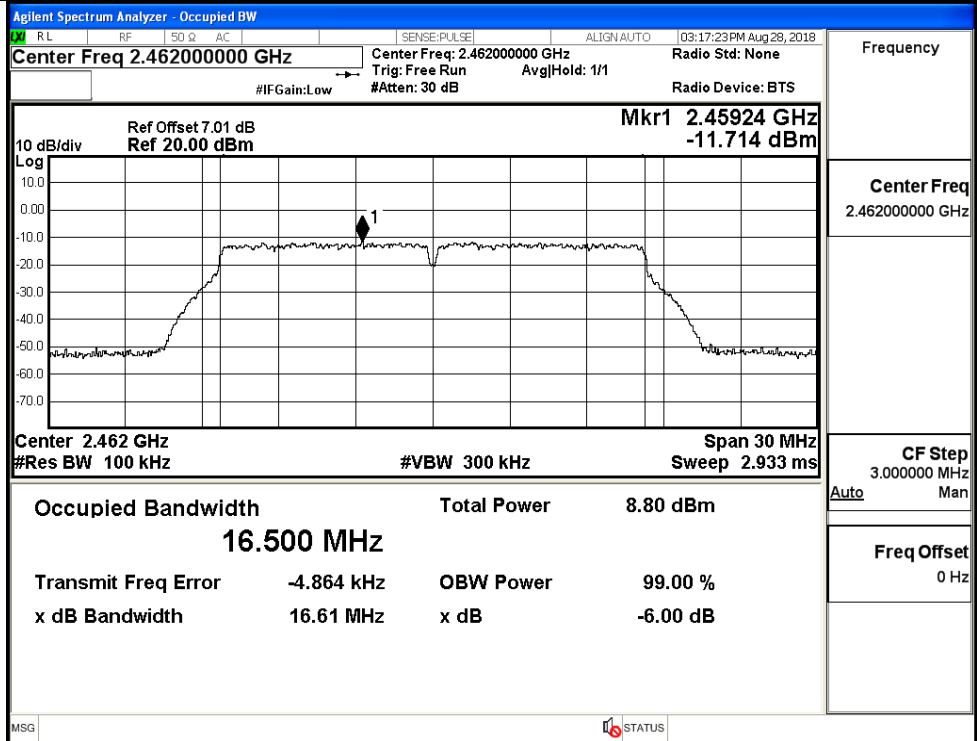
11G/LCH



11G/MCH

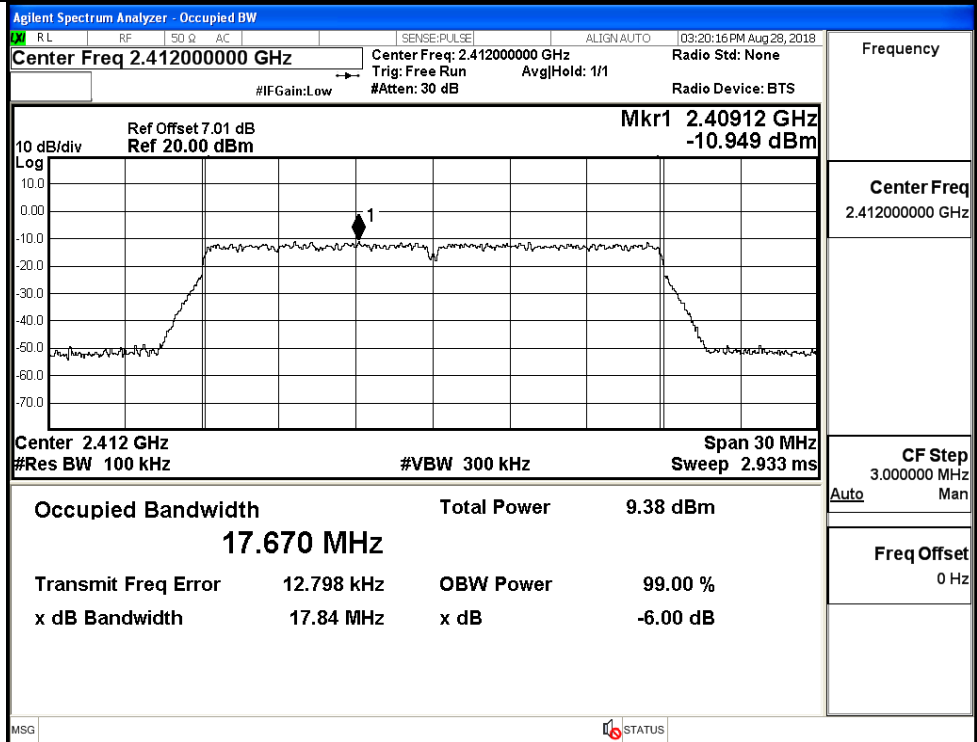


11G/HCH



Frequency	2.46200000 GHz
Center Freq	2.46200000 GHz
CF Step	3.000000 MHz
Auto	Man
Freq Offset	0 Hz

11N20SISO/LCH

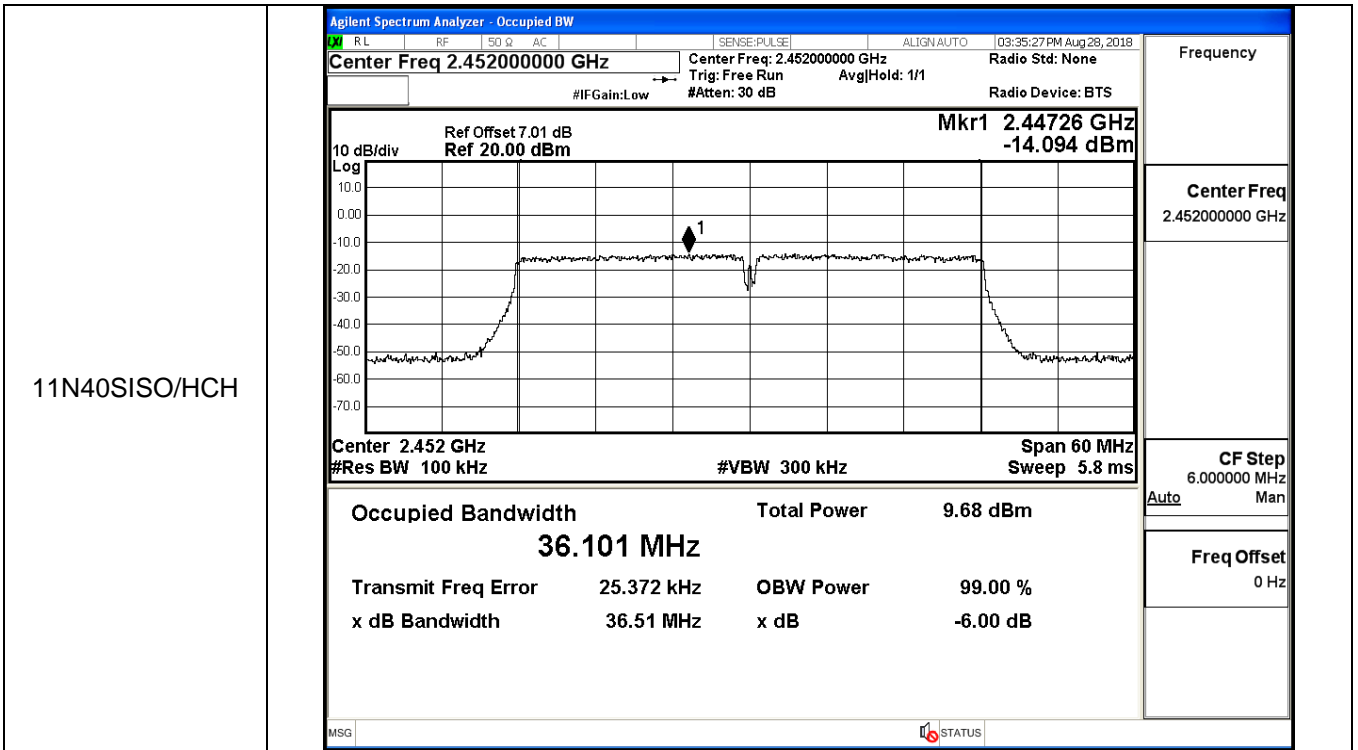


Frequency	2.41200000 GHz
Center Freq	2.41200000 GHz
CF Step	3.000000 MHz
Auto	Man
Freq Offset	0 Hz

<p>11N20SISO/MCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.43700000 GHz</p> <p>Center Freq: 2.43700000 GHz Trig: Free Run #IFGain: Low #Atten: 30 dB</p> <p>Radio Std: None AvglHold: 1/1 Radio Device: BTS</p> <p>10 dB/div Ref Offset 7.01 dB Ref 20.00 dBm</p> <p>Mkr1 2.43412 GHz -10.874 dBm</p> <p>Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms</p> <p>Occupied Bandwidth 17.677 MHz Total Power 9.36 dBm</p> <p>Transmit Freq Error 16.788 kHz OBW Power 99.00 % x dB Bandwidth 17.83 MHz x dB -6.00 dB</p>	<p>Frequency</p> <p>Center Freq 2.43700000 GHz</p> <p>CF Step 3.000000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>
<p>11N20SISO/HCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.46200000 GHz</p> <p>Center Freq: 2.46200000 GHz Trig: Free Run #IFGain: Low #Atten: 30 dB</p> <p>Radio Std: None AvglHold: 1/1 Radio Device: BTS</p> <p>10 dB/div Ref Offset 7.01 dB Ref 20.00 dBm</p> <p>Mkr1 2.45912 GHz -11.302 dBm</p> <p>Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms</p> <p>Occupied Bandwidth 17.678 MHz Total Power 8.77 dBm</p> <p>Transmit Freq Error 17.222 kHz OBW Power 99.00 % x dB Bandwidth 17.82 MHz x dB -6.00 dB</p>	<p>Frequency</p> <p>Center Freq 2.46200000 GHz</p> <p>CF Step 3.000000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>



<p>11N40SISO/LCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.42200000 GHz</p> <p>Mkr1 2.4241 GHz -13.914 dBm</p> <p>Center 2.422 GHz #Res BW 100 kHz</p> <p>Occupied Bandwidth 36.096 MHz</p> <p>Total Power 9.67 dBm</p> <p>Transmit Freq Error 24.054 kHz</p> <p>x dB Bandwidth 36.49 MHz</p> <p>OBW Power 99.00 %</p> <p>x dB -6.00 dB</p>	<p>Frequency</p> <p>Center Freq 2.42200000 GHz</p> <p>CF Step 6.000000 MHz</p> <p>Freq Offset 0 Hz</p>
<p>11N40SISO/MCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.43700000 GHz</p> <p>Mkr1 2.4391 GHz -13.980 dBm</p> <p>Center 2.437 GHz #Res BW 100 kHz</p> <p>Occupied Bandwidth 36.082 MHz</p> <p>Total Power 9.58 dBm</p> <p>Transmit Freq Error 24.167 kHz</p> <p>x dB Bandwidth 36.49 MHz</p> <p>OBW Power 99.00 %</p> <p>x dB -6.00 dB</p>	<p>Frequency</p> <p>Center Freq 2.43700000 GHz</p> <p>CF Step 6.000000 MHz</p> <p>Freq Offset 0 Hz</p>

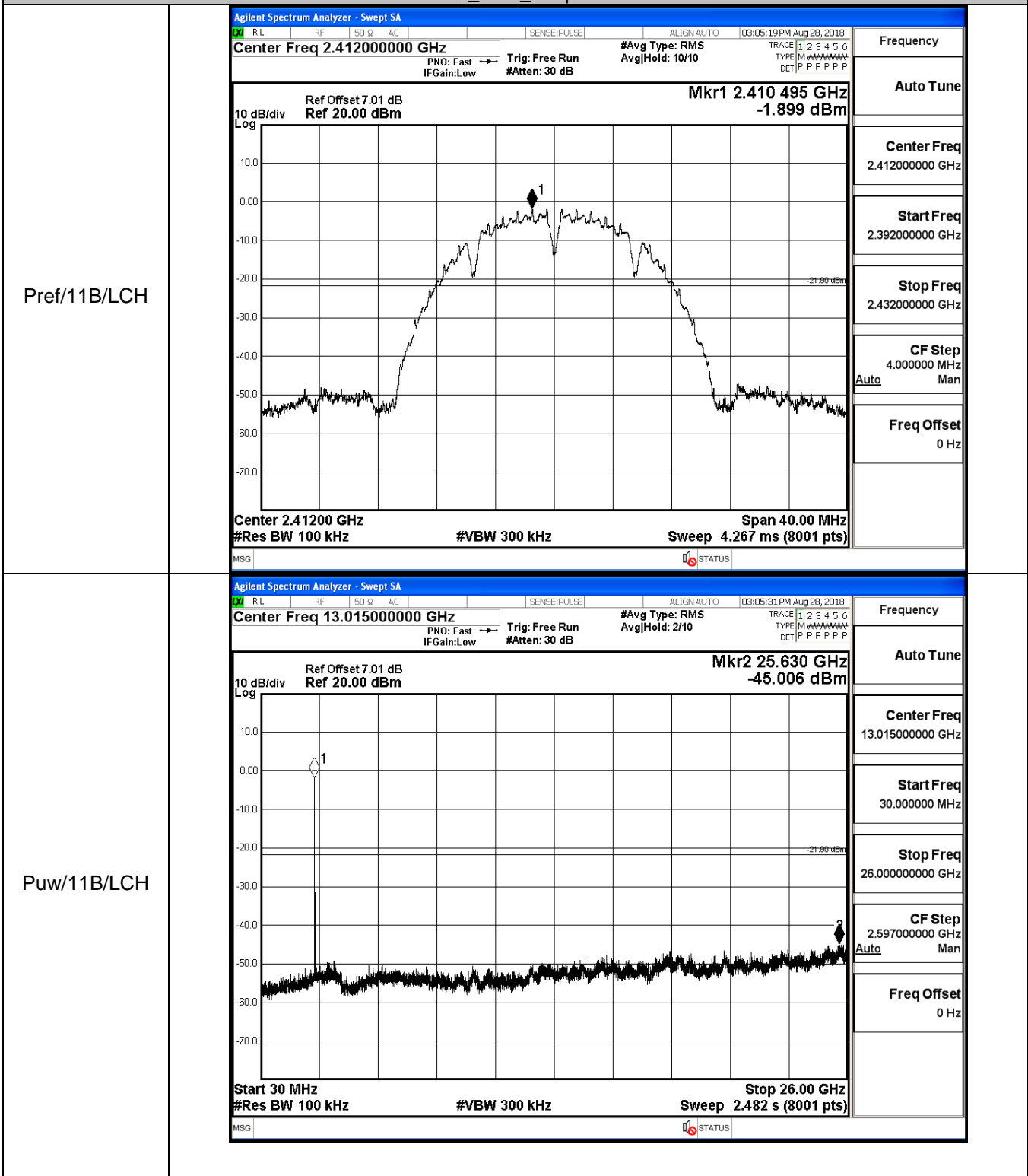


### A.5 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdic
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					t
11B	LCH	-1.899	-45.006	-21.899	PASS
	MCH	-1.963	-45.219	-21.963	PASS
	HCH	-2.261	-44.417	-22.261	PASS
11G	LCH	-11.31	-44.660	-31.310	PASS
	MCH	-11.411	-44.728	-31.411	PASS
	HCH	-11.684	-44.994	-31.684	PASS
11N20 SISO	LCH	-10.933	-44.692	-30.933	PASS
	MCH	-11.134	-44.564	-31.134	PASS
	HCH	-11.321	-43.890	-31.321	PASS
11N40 SISO	LCH	-14.19	-43.493	-34.190	PASS
	MCH	-14.187	-44.851	-34.187	PASS
	HCH	-13.843	-44.799	-33.843	PASS

11B\_LCH\_Graphs



11B\_MCH\_Graphs

<p>Pref/11B/MCH</p>	<p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.43700000 GHz</p> <p>Mkr1 2.436 495 GHz -1.963 dBm</p> <p>10 dB/div Log</p> <p>Ref Offset 7.01 dB Ref 20.00 dBm</p> <p>Center 2.43700 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 4.267 ms (8001 pts)</p> <p>Span 40.00 MHz</p>	<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.437000000 GHz</p> <p>Start Freq 2.417000000 GHz</p> <p>Stop Freq 2.457000000 GHz</p> <p>CF Step 4.000000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>
	<p>Puw/11B/MCH</p>	<p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 13.01500000 GHz</p> <p>Mkr2 25.630 GHz -45.219 dBm</p> <p>10 dB/div Log</p> <p>Ref Offset 7.01 dB Ref 20.00 dBm</p> <p>Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.482 s (8001 pts)</p> <p>Stop 26.00 GHz</p>

11B\_HCH\_Graphs

<p>Pref/11B/HCH</p>	<p>Agilent Spectrum Analyzer - Swept SA          Center Freq 2.46200000 GHz          Ref Offset 7.01 dB          Ref 20.00 dBm          Mkr1 2.460 505 GHz          -2.261 dBm          10 dB/div          Log          Center 2.46200 GHz          #Res BW 100 kHz          #VBW 300 kHz          Span 40.00 MHz          Sweep 4.267 ms (8001 pts)</p>	<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.462000000 GHz</p> <p>Start Freq 2.442000000 GHz</p> <p>Stop Freq 2.482000000 GHz</p> <p>CF Step 4.000000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>
	<p>Puw/11B/HCH</p>	<p>Agilent Spectrum Analyzer - Swept SA          Center Freq 13.01500000 GHz          Ref Offset 7.01 dB          Ref 20.00 dBm          Mkr2 25.653 GHz          -44.417 dBm          10 dB/div          Log          Start 30 MHz          #Res BW 100 kHz          #VBW 300 kHz          Stop 26.00 GHz          Sweep 2.482 s (8001 pts)</p>

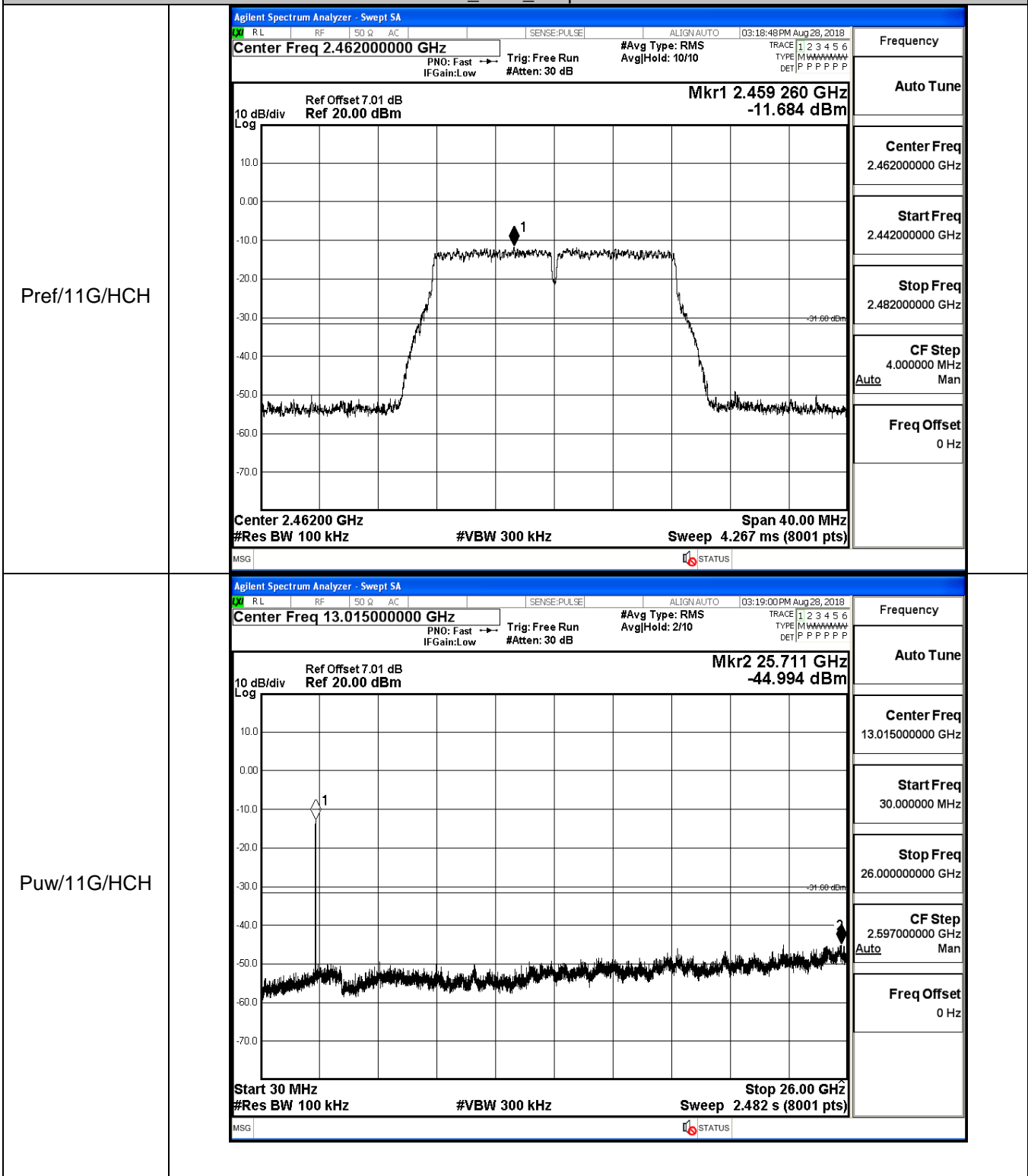
11G\_LCH\_Graphs

<p>Pref/11G/LCH</p>	<p>Agilent Spectrum Analyzer - Swept SA          Center Freq 2.41200000 GHz          #Res BW 100 kHz #VBW 300 kHz Sweep 4.267 ms (8001 pts)          Mkr1 2.409 245 GHz -11.310 dBm          Ref Offset 7.01 dB Ref 20.00 dBm          10 dB/div Log</p>	<p>Frequency          Auto Tune          Center Freq 2.412000000 GHz          Start Freq 2.392000000 GHz          Stop Freq 2.432000000 GHz          CF Step 4.000000 MHz          Freq Offset 0 Hz</p>
<p>Puw/11G/LCH</p>	<p>Agilent Spectrum Analyzer - Swept SA          Center Freq 13.01500000 GHz          #Res BW 100 kHz #VBW 300 kHz Sweep 2.482 s (8001 pts)          Mkr2 25.724 GHz -44.660 dBm          Ref Offset 7.01 dB Ref 20.00 dBm          10 dB/div Log</p>	<p>Frequency          Auto Tune          Center Freq 13.015000000 GHz          Start Freq 30.000000 MHz          Stop Freq 26.000000000 GHz          CF Step 2.597000000 GHz          Freq Offset 0 Hz</p>

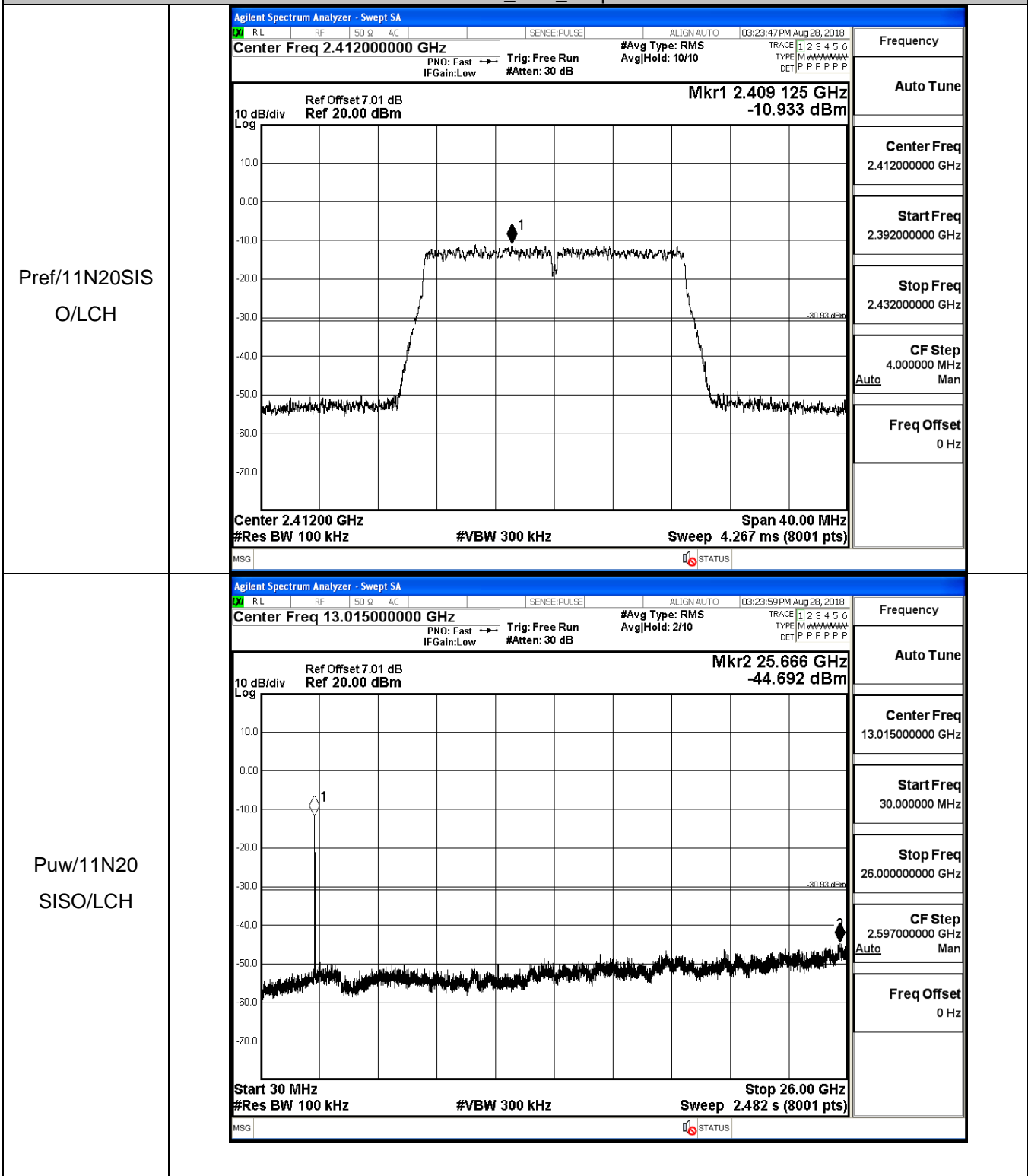




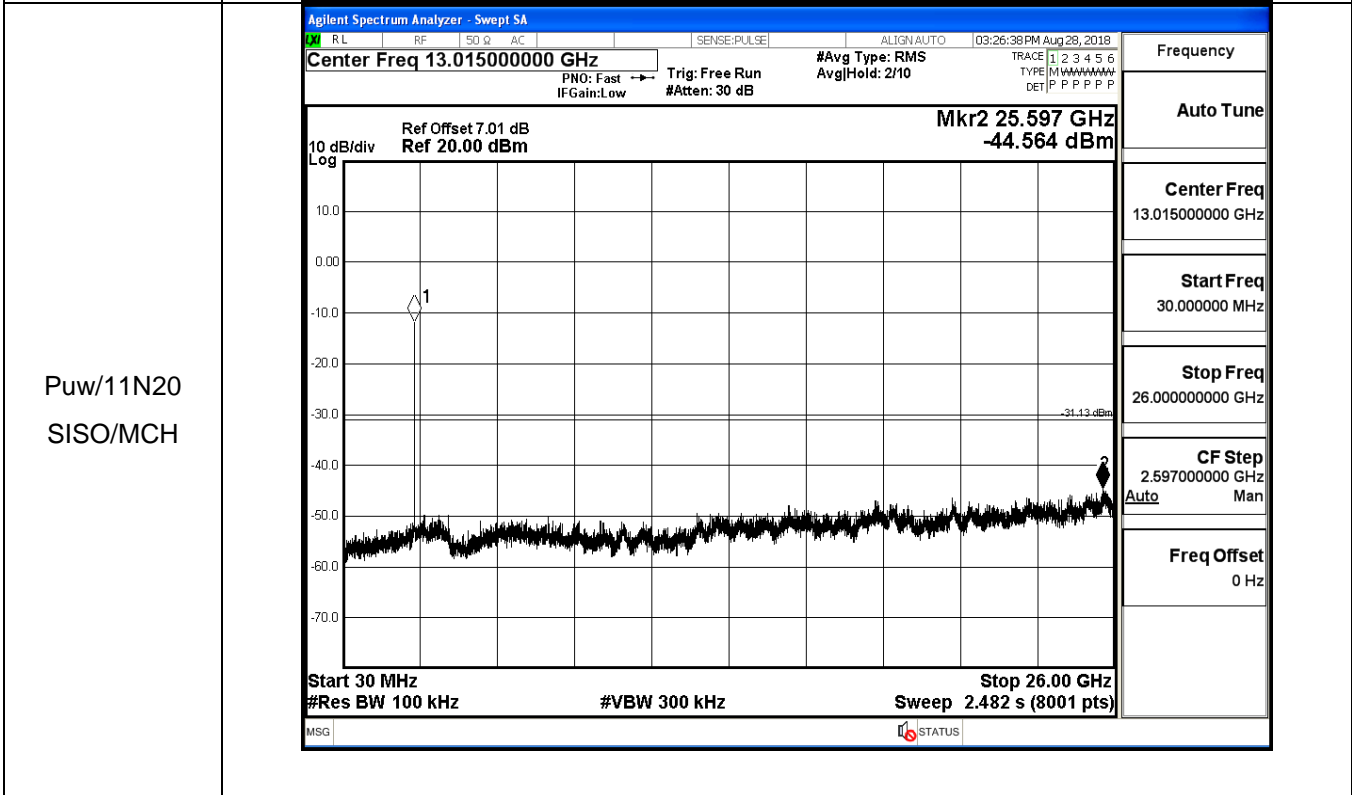
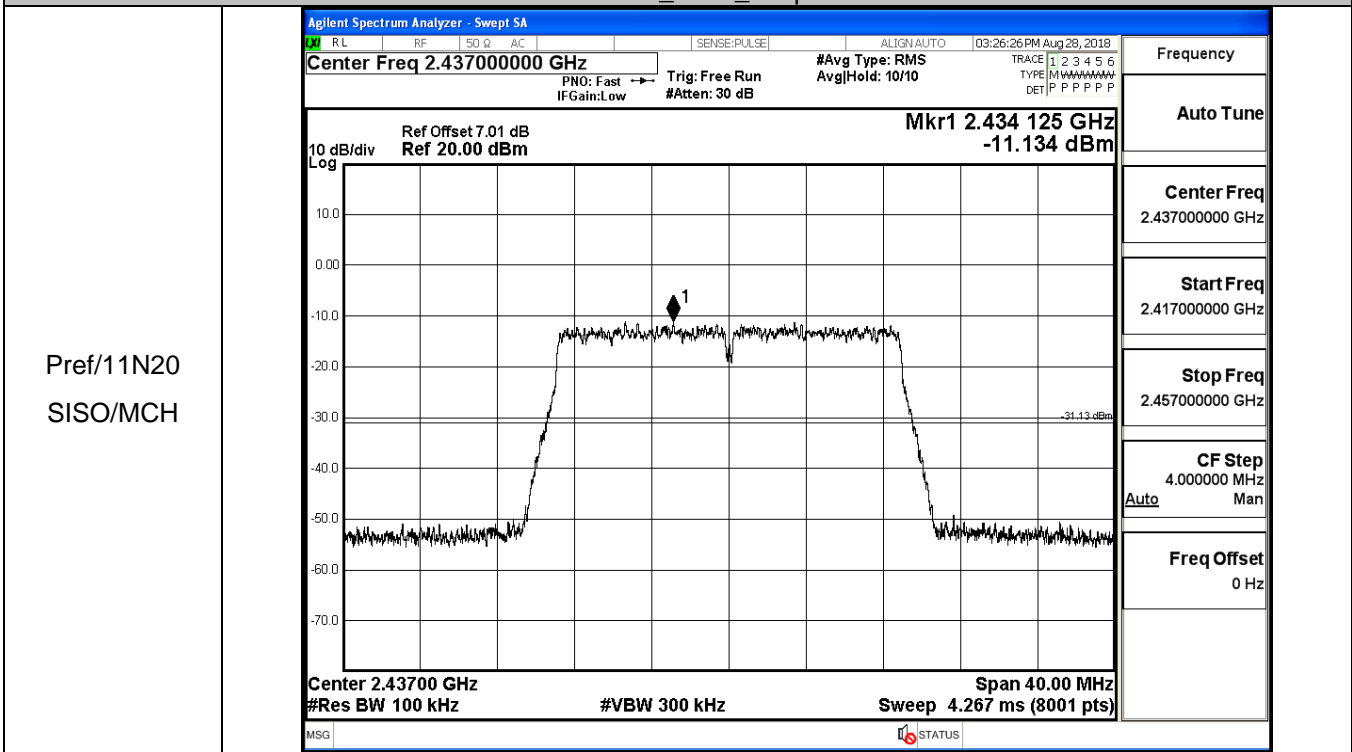
11G\_HCH\_Graphs



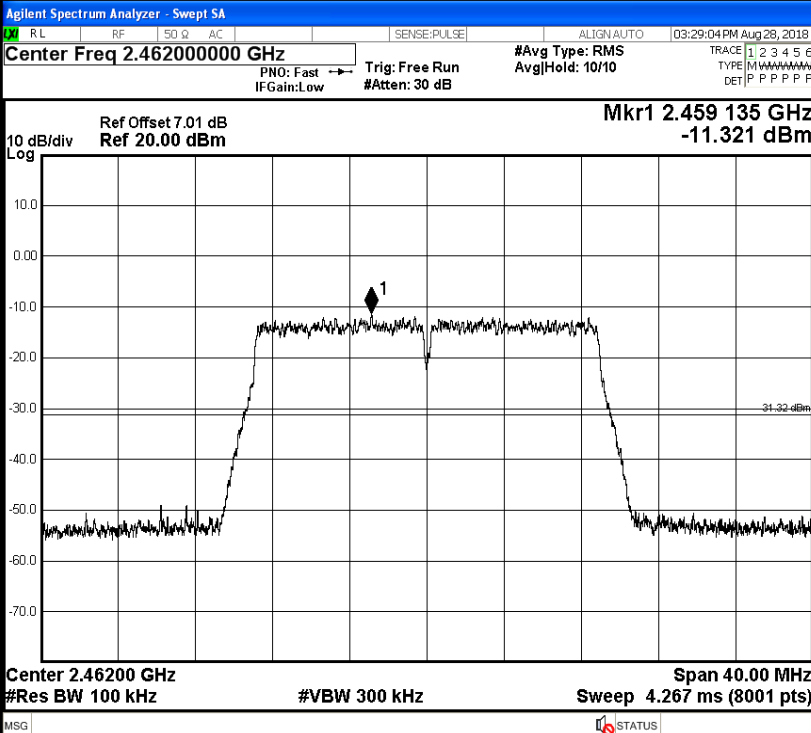
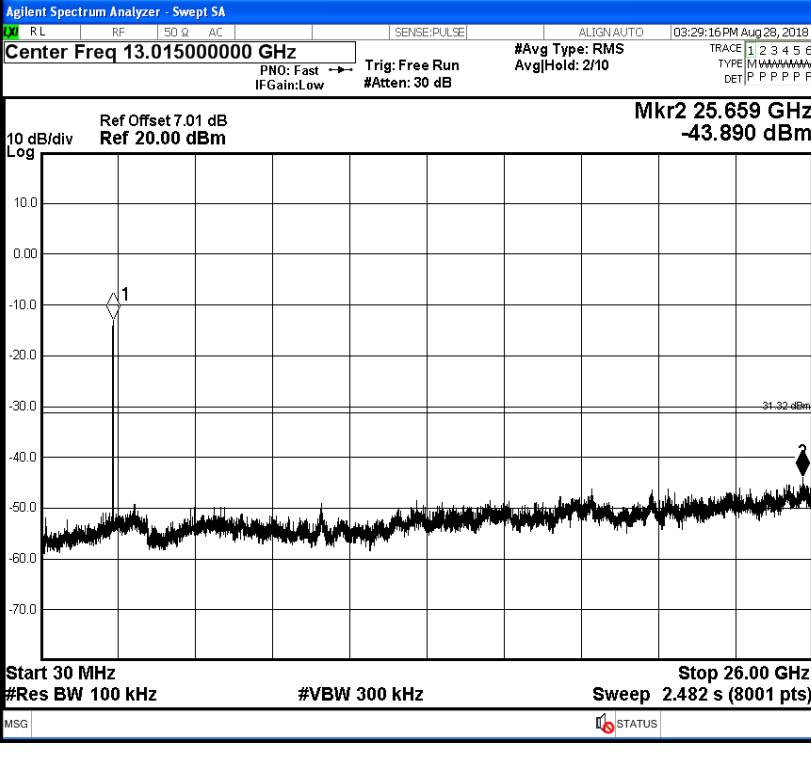
11N20SISO\_LCH\_Graphs



11N20SISO\_MCH\_Graphs

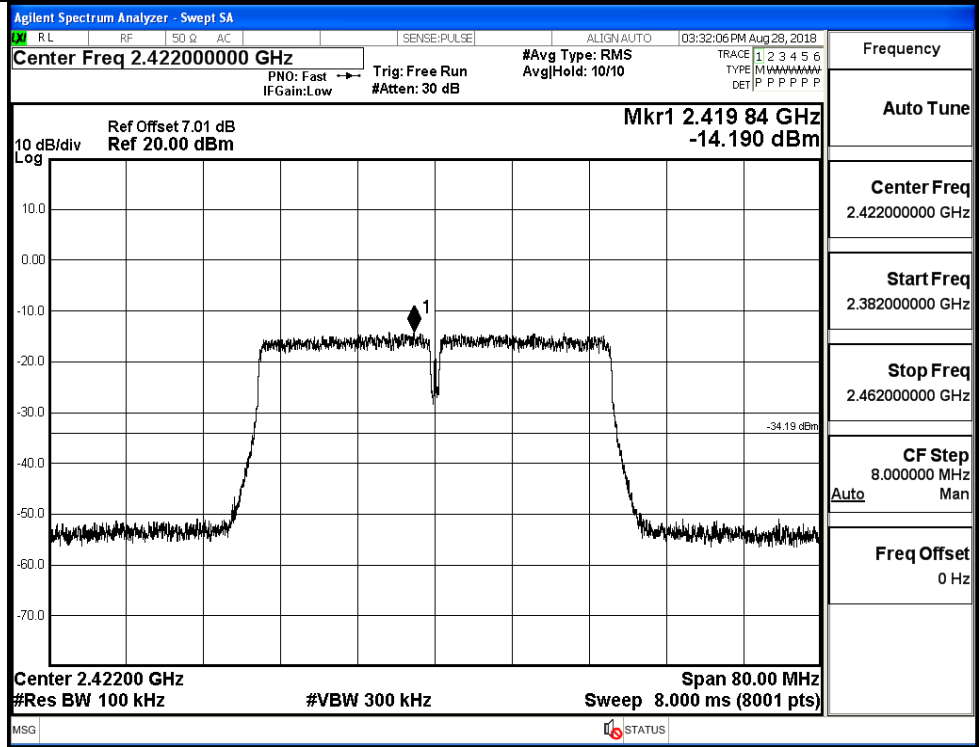


11N20SISO\_HCH\_Graphs

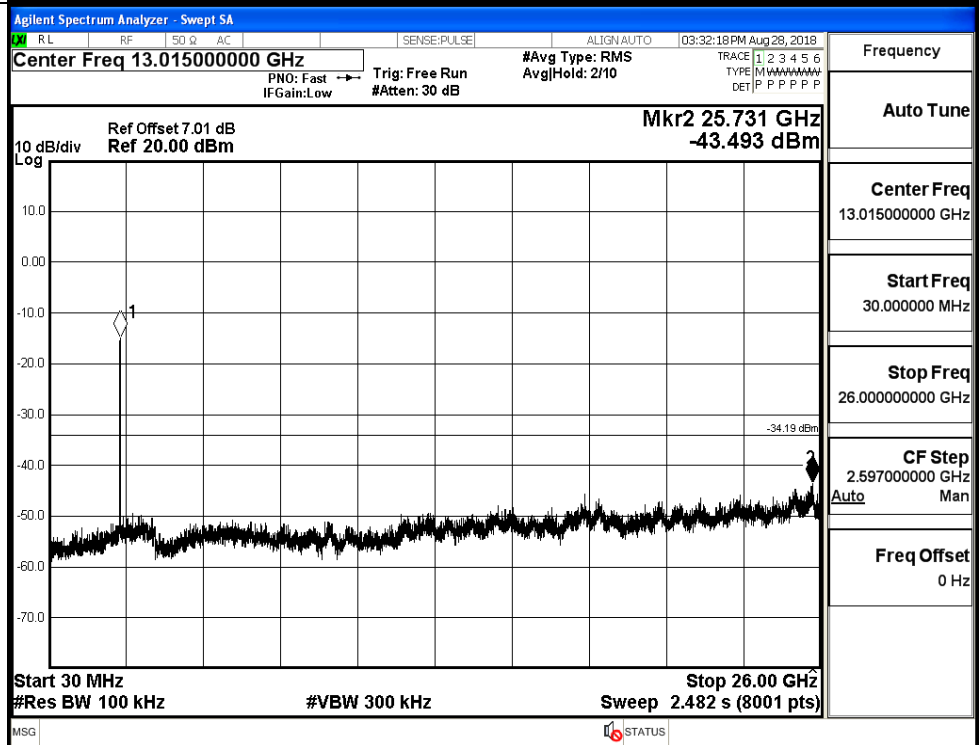
<p>Pref/11N20 SISO/HCH</p>	 <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.46200000 GHz</p> <p>Mkr1 2.459 135 GHz -11.321 dBm</p> <p>Center 2.46200 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 4.267 ms (8001 pts)</p>	<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.462000000 GHz</p> <p>Start Freq 2.442000000 GHz</p> <p>Stop Freq 2.482000000 GHz</p> <p>CF Step 4.000000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>
	<p>Puw/11N20 SISO/HCH</p>	 <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 13.01500000 GHz</p> <p>Mkr2 25.659 GHz -43.890 dBm</p> <p>Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.482 s (8001 pts)</p>

11N40SISO\_LCH\_Graphs

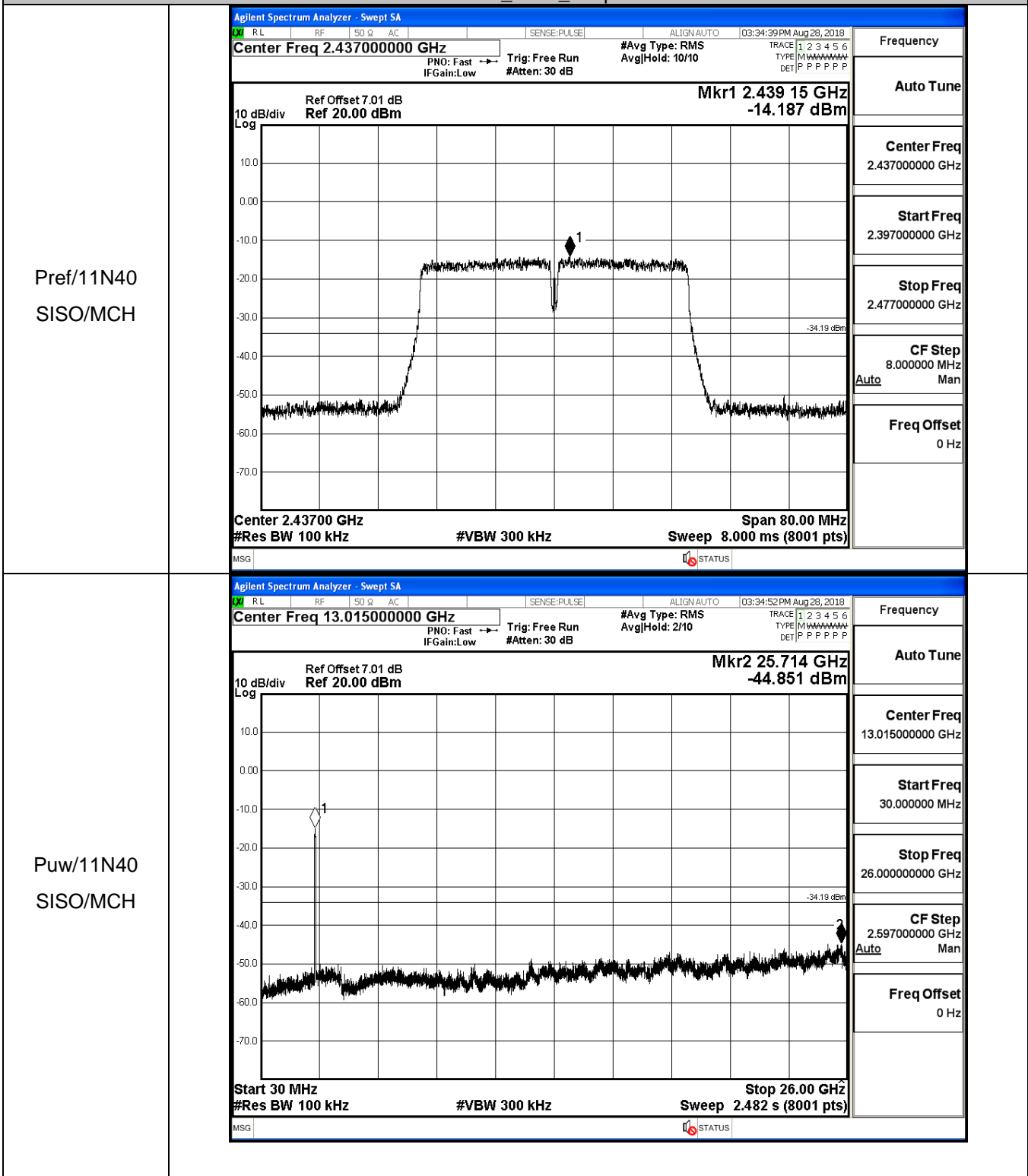
Pref/11N40  
SISO/LCH



Puw/11N40  
SISO/LCH



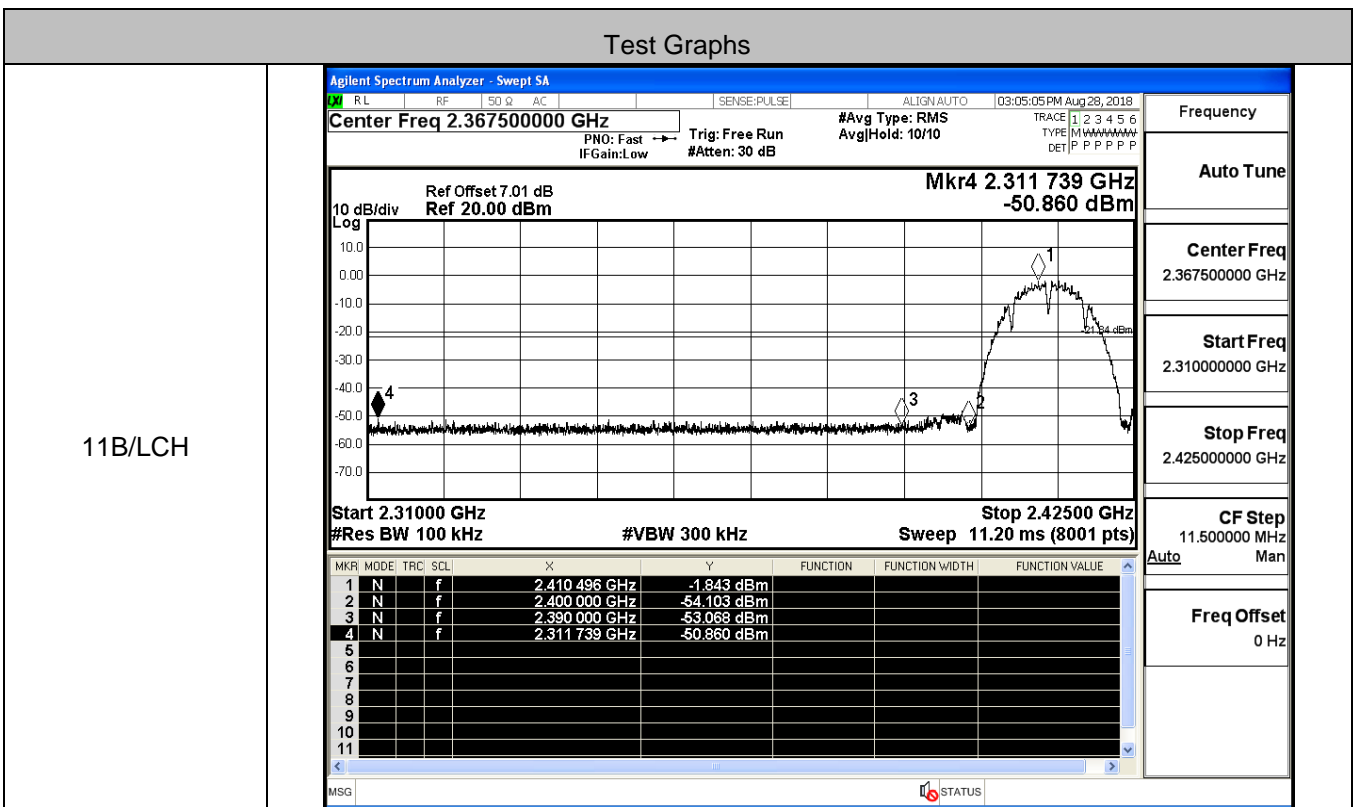
11N40SISO\_MCH\_Graphs





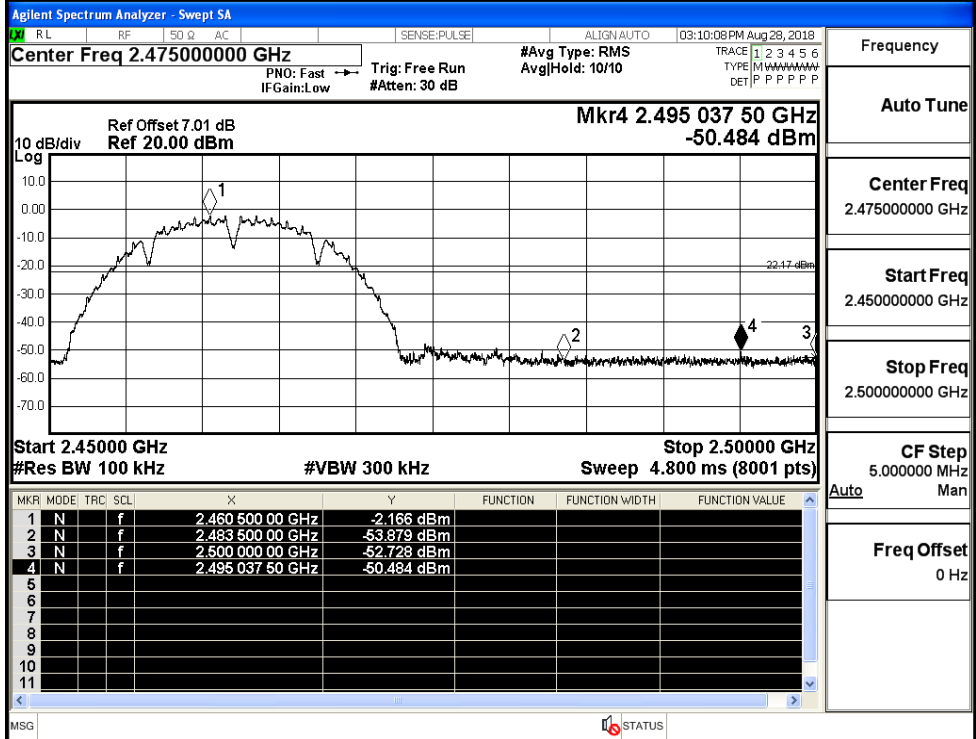
### A.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-1.843	-50.860	-21.84	PASS
	HCH	-2.166	-50.484	-22.17	PASS
11G	LCH	-11.217	-49.627	-31.22	PASS
	HCH	-11.689	-50.654	-31.69	PASS
11N20SISO	LCH	-11.044	-51.059	-31.04	PASS
	HCH	-11.329	-50.763	-31.33	PASS
11N40SISO	LCH	-14.201	-50.633	-34.2	PASS
	HCH	-14.015	-50.199	-34.02	PASS



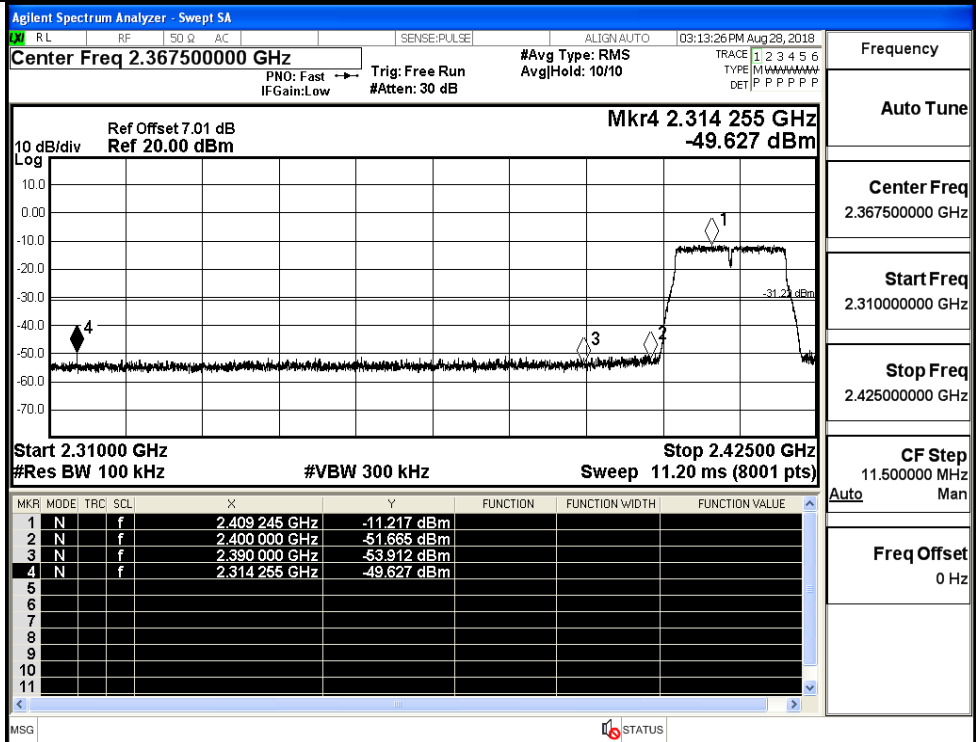


11B/HCH



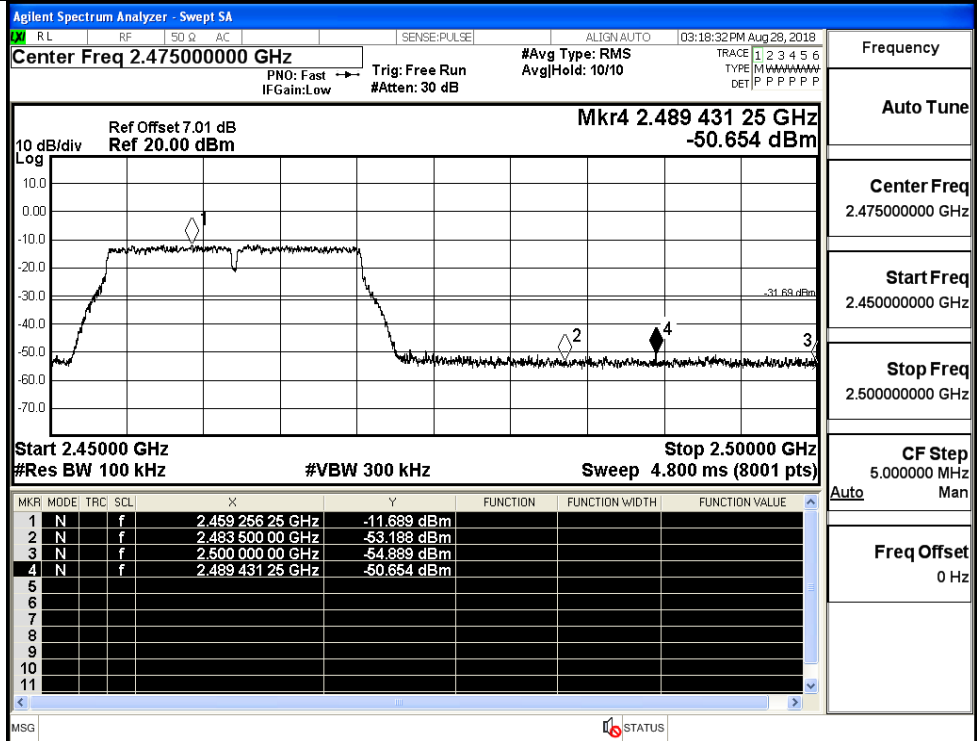
Frequency  
Auto Tune  
Center Freq  
2.47500000 GHz  
Start Freq  
2.45000000 GHz  
Stop Freq  
2.50000000 GHz  
CF Step  
5.000000 MHz  
Auto  
Man  
Freq Offset  
0 Hz

11G/LCH



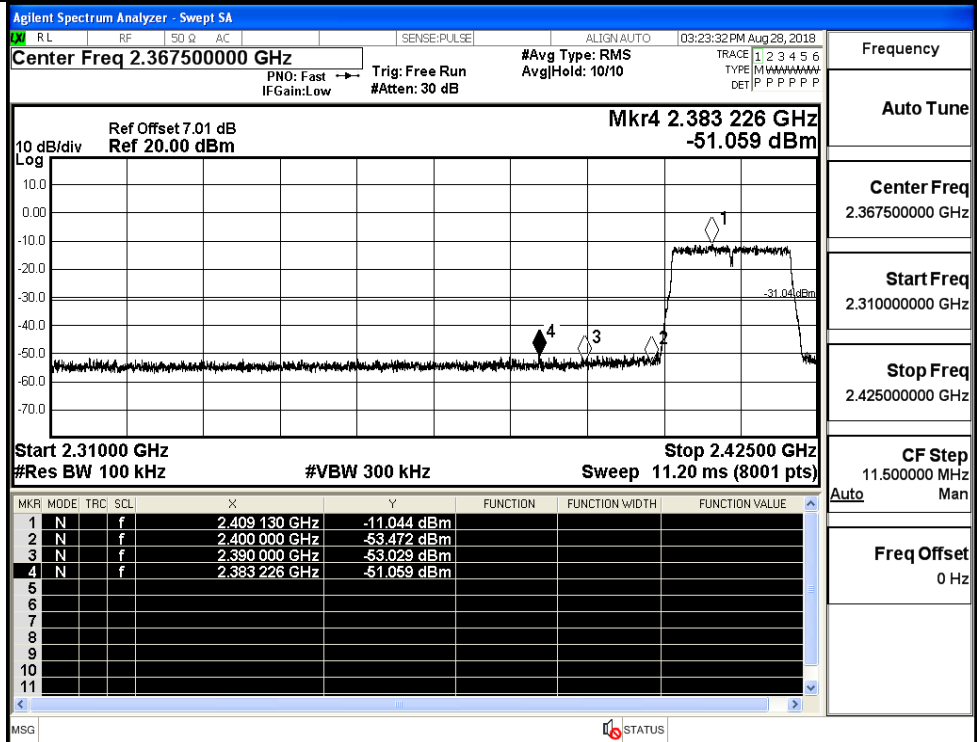
Frequency  
Auto Tune  
Center Freq  
2.36750000 GHz  
Start Freq  
2.31000000 GHz  
Stop Freq  
2.42500000 GHz  
CF Step  
11.500000 MHz  
Auto  
Man  
Freq Offset  
0 Hz

11G/HCH



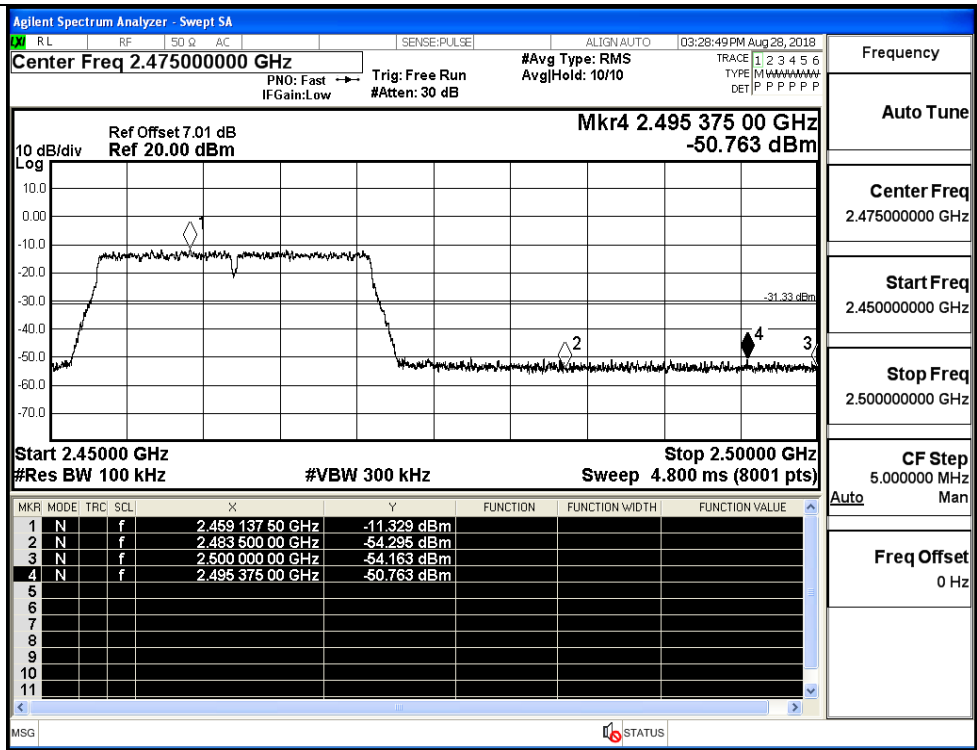
Frequency	
Auto Tune	
Center Freq	2.47500000 GHz
Start Freq	2.45000000 GHz
Stop Freq	2.50000000 GHz
CF Step	5.000000 MHz
Freq Offset	0 Hz

11N20SISO/LCH

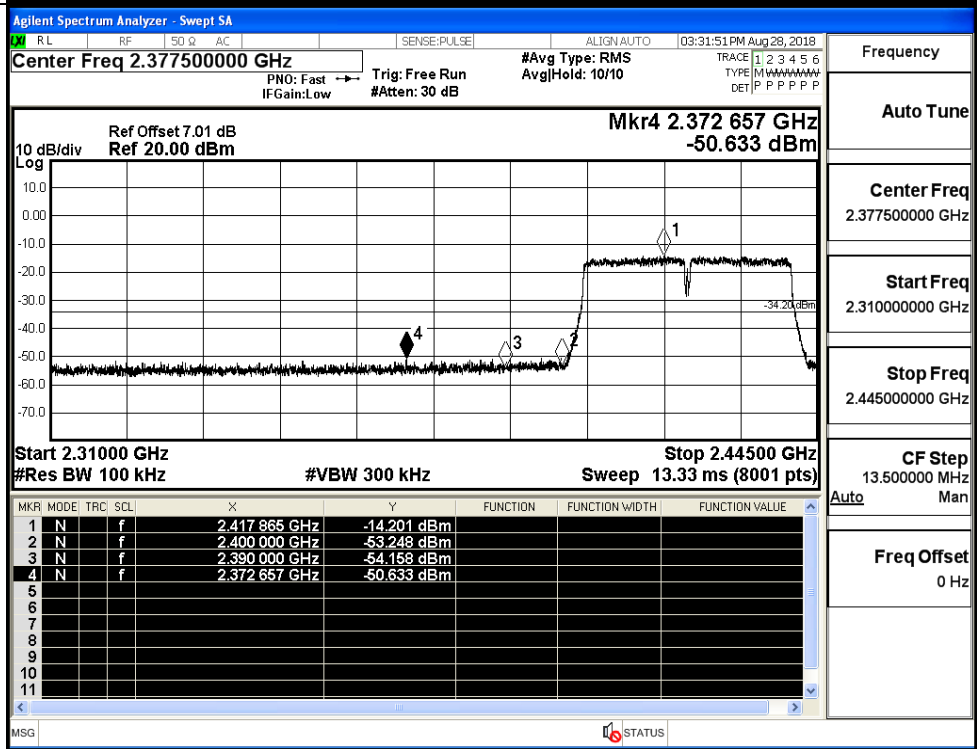


Frequency	
Auto Tune	
Center Freq	2.36750000 GHz
Start Freq	2.31000000 GHz
Stop Freq	2.42500000 GHz
CF Step	11.500000 MHz
Freq Offset	0 Hz

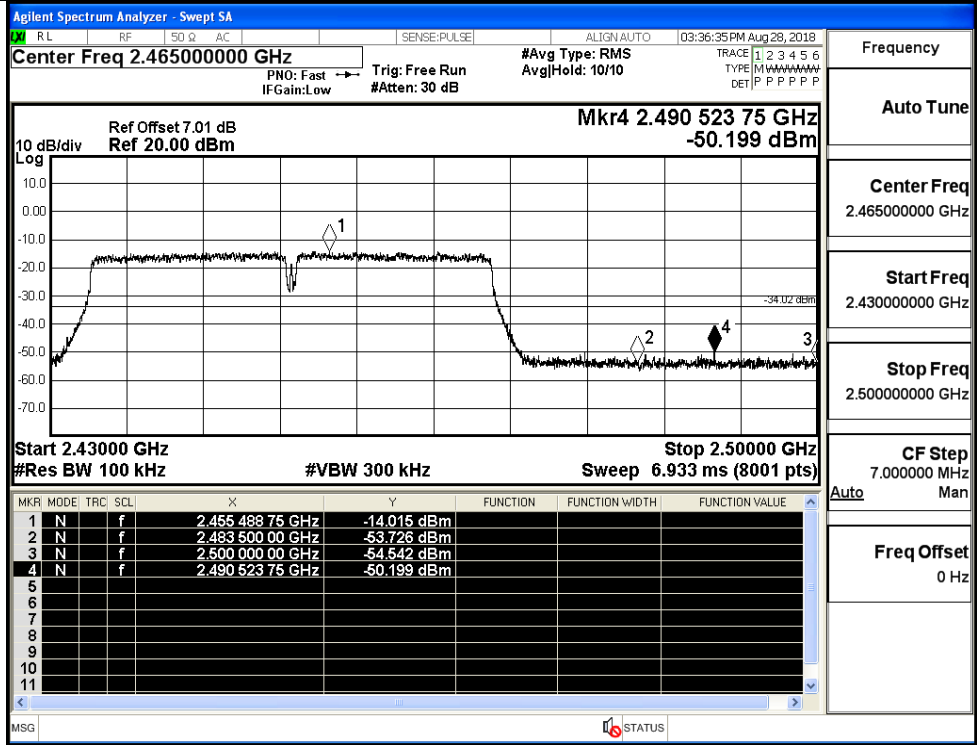
11N20SISO/HCH



11N40SISO/LCH



11N40SISO/HCH

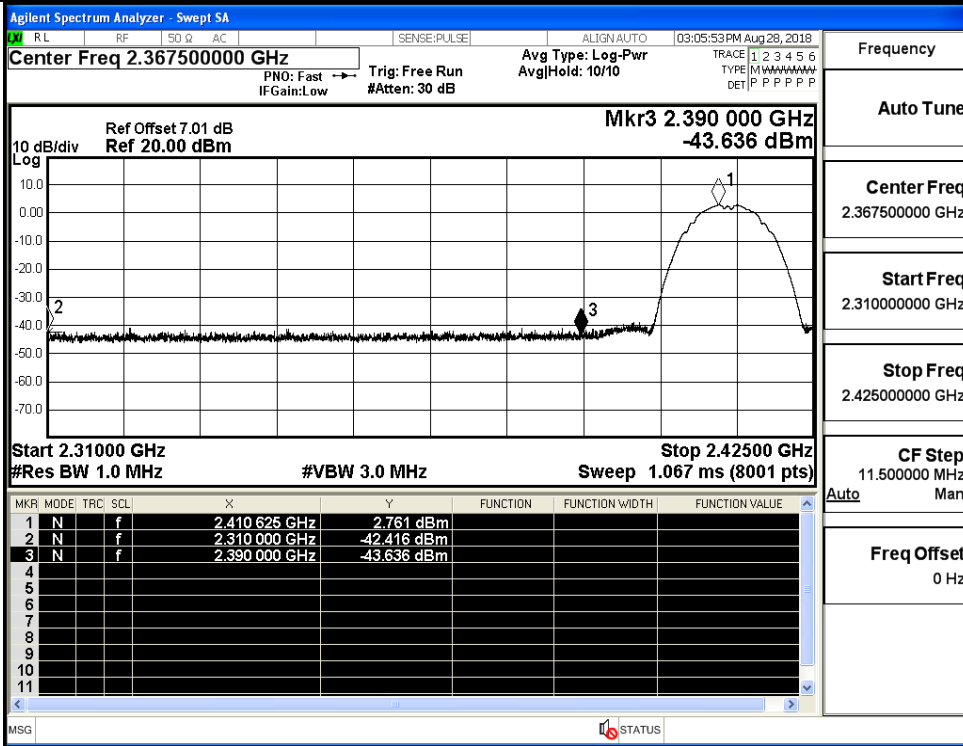


### A.7 Restrict-band band-edge measurements

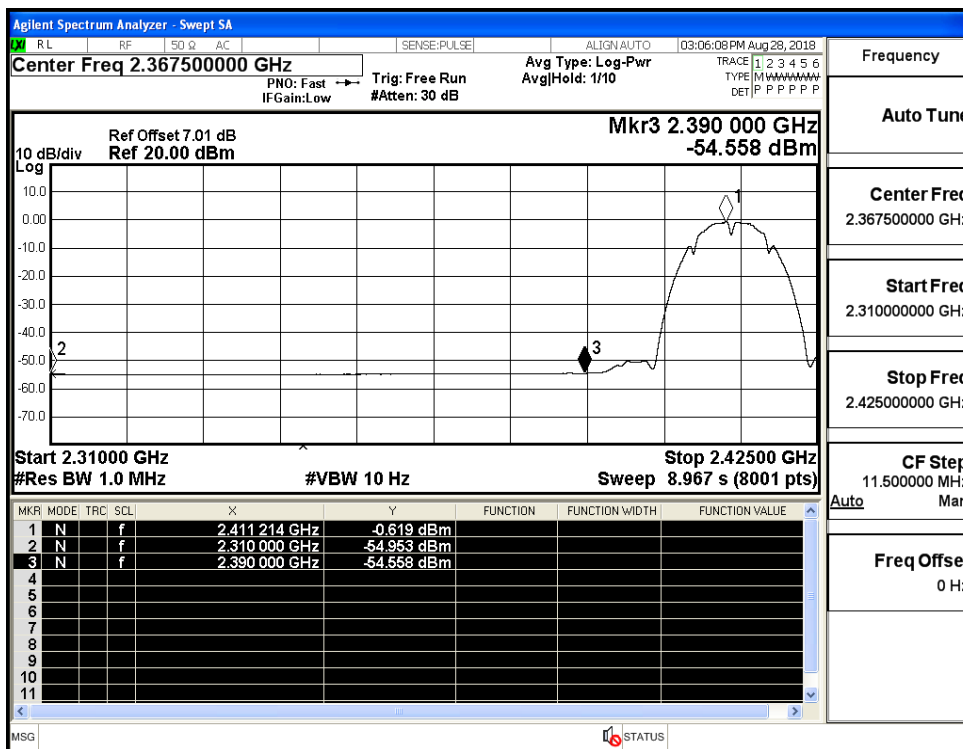
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBu V/m]	Verdict
11B	2412	Ant1	2310.0	-42.42	2.0	0	54.84	PEAK	74	PASS
	2412	Ant1	2310.0	-54.95	2.0	0	42.30	AV	54	PASS
	2412	Ant1	2390.0	-43.64	2.0	0	53.62	PEAK	74	PASS
	2412	Ant1	2390.0	-54.56	2.0	0	42.70	AV	54	PASS
	2462	Ant1	2483.5	-44.09	2.0	0	53.17	PEAK	74	PASS
	2462	Ant1	2483.5	-54.29	2.0	0	42.96	AV	54	PASS
	2462	Ant1	2500.0	-43.43	2.0	0	53.83	PEAK	74	PASS
	2462	Ant1	2500.0	-54.22	2.0	0	43.04	AV	54	PASS
11G	2412	Ant1	2310.0	-44.42	2.0	0	52.84	PEAK	74	PASS
	2412	Ant1	2310.0	-54.97	2.0	0	42.29	AV	54	PASS
	2412	Ant1	2390.0	-43.05	2.0	0	54.21	PEAK	74	PASS
	2412	Ant1	2390.0	-54.19	2.0	0	43.07	AV	54	PASS
	2462	Ant1	2483.5	-43.78	2.0	0	53.48	PEAK	74	PASS
	2462	Ant1	2483.5	-54.11	2.0	0	43.15	AV	54	PASS
	2462	Ant1	2500.0	-43.13	2.0	0	54.13	PEAK	74	PASS
	2462	Ant1	2500.0	-54.12	2.0	0	43.14	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-43.54	2.0	0	53.72	PEAK	74	PASS
	2412	Ant1	2310.0	-54.93	2.0	0	42.32	AV	54	PASS
	2412	Ant1	2390.0	-43.92	2.0	0	53.34	PEAK	74	PASS
	2412	Ant1	2390.0	-54.05	2.0	0	43.21	AV	54	PASS
	2462	Ant1	2483.5	-44.01	2.0	0	53.25	PEAK	74	PASS
	2462	Ant1	2483.5	-54.07	2.0	0	43.19	AV	54	PASS
	2462	Ant1	2500.0	-43.43	2.0	0	53.83	PEAK	74	PASS
	2462	Ant1	2500.0	-54.09	2.0	0	43.17	AV	54	PASS
11N40 SISO	2422	Ant1	2310.0	-45.42	2.0	0	51.84	PEAK	74	PASS
	2422	Ant1	2310.0	-54.93	2.0	0	42.33	AV	54	PASS

	2422	Ant1	2390.0	-43.63	2.0	0	53.62	PEAK	74	PASS
	2422	Ant1	2390.0	-53.77	2.0	0	43.49	AV	54	PASS
	2452	Ant1	2483.5	-42.16	2.0	0	55.10	PEAK	74	PASS
	2452	Ant1	2483.5	-53.90	2.0	0	43.36	AV	54	PASS
	2452	Ant1	2500.0	-44.06	2.0	0	53.19	PEAK	74	PASS
	2452	Ant1	2500.0	-54.07	2.0	0	43.19	AV	54	PASS

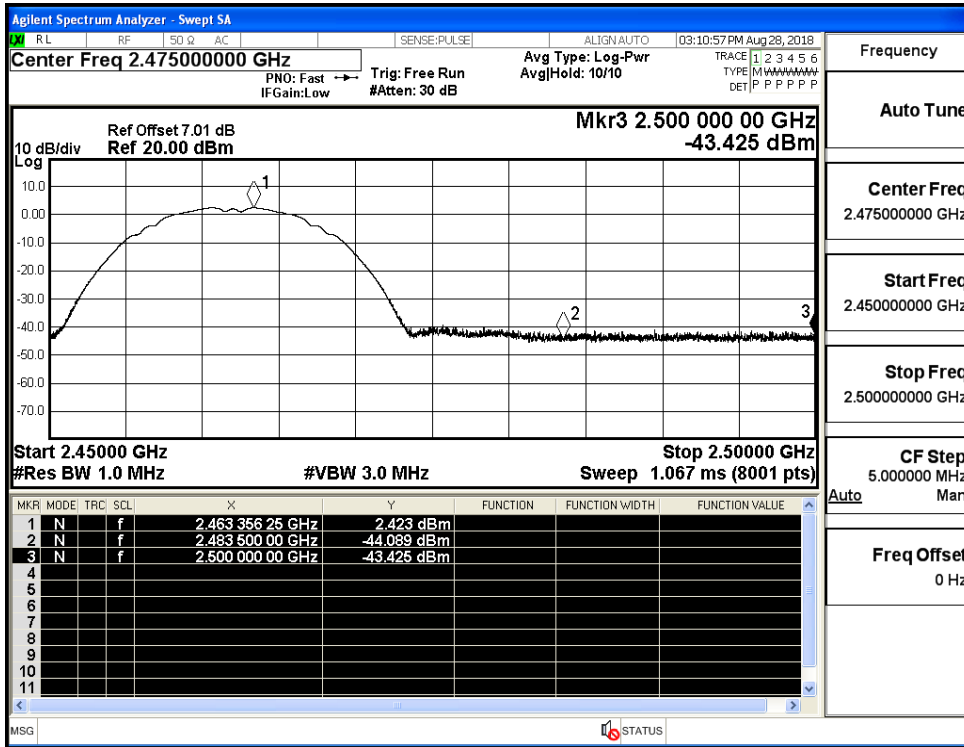
Restrict-band band-edge measurements\_11B\_2412\_Ant1\_PEAK



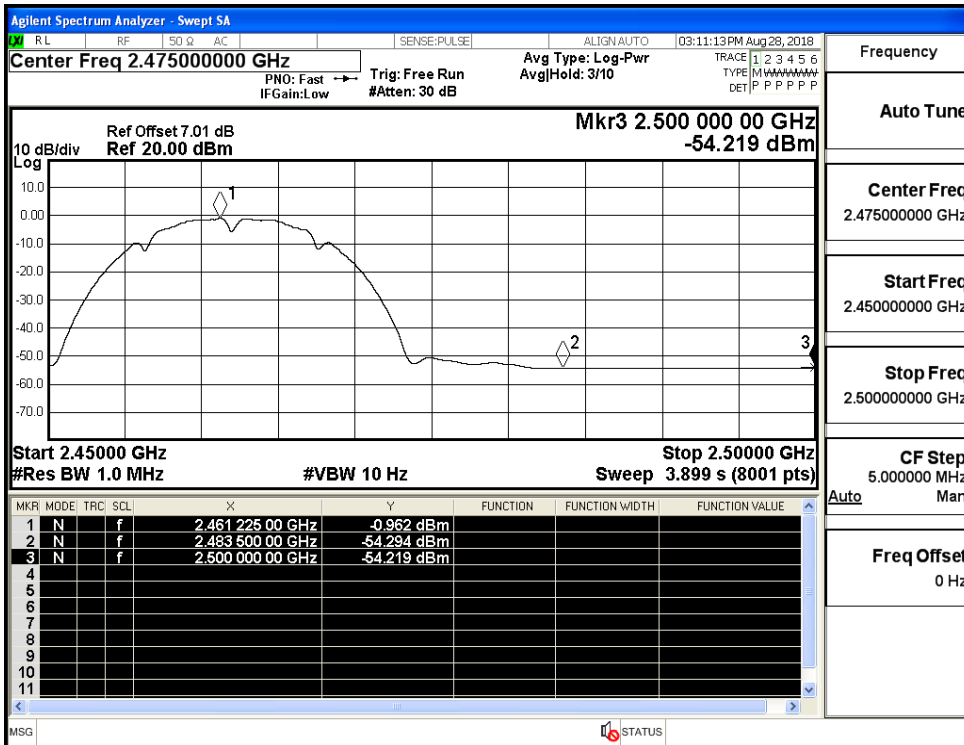
Restrict-band band-edge measurements\_11B\_2412\_Ant1\_AV



Restrict-band band-edge measurements\_11B\_2462\_Ant1\_PEAK

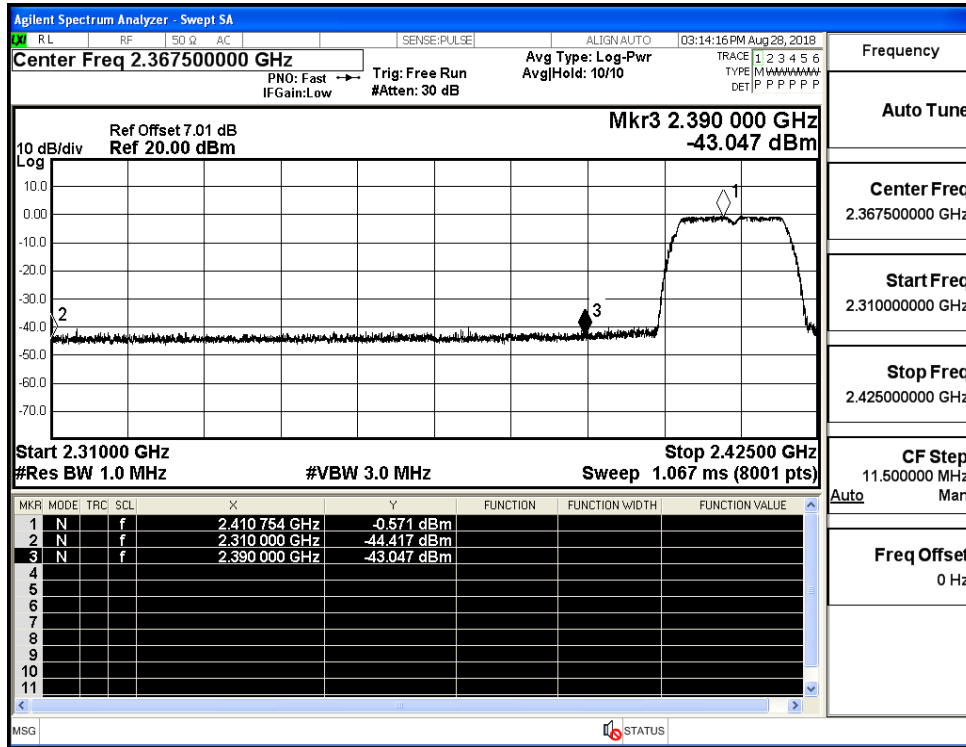


Restrict-band band-edge measurements\_11B\_2462\_Ant1\_AV

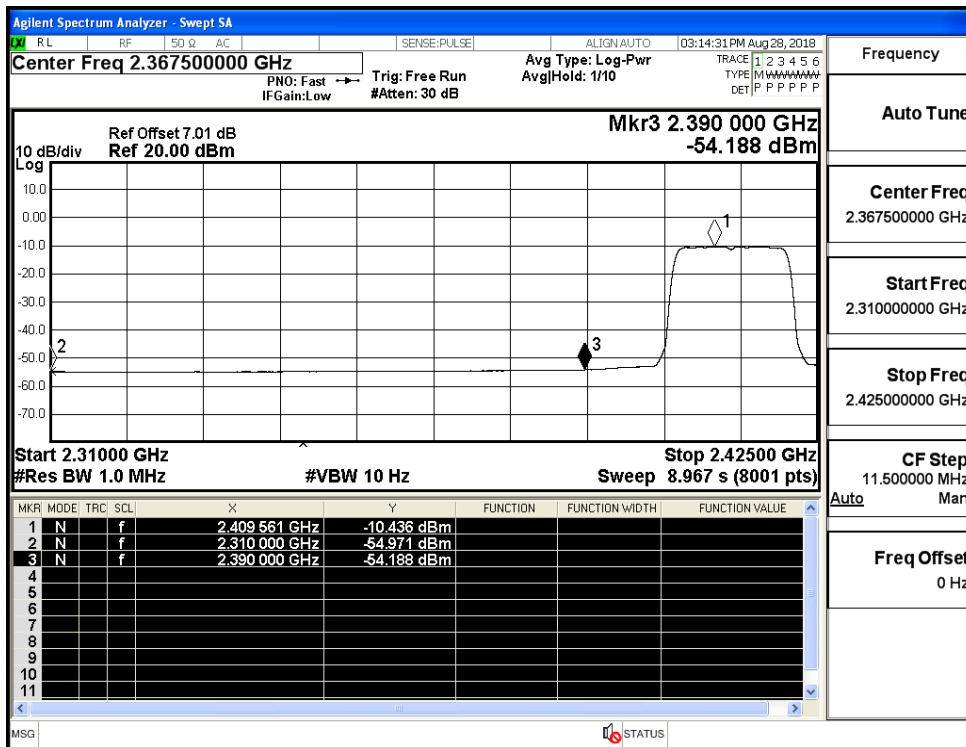




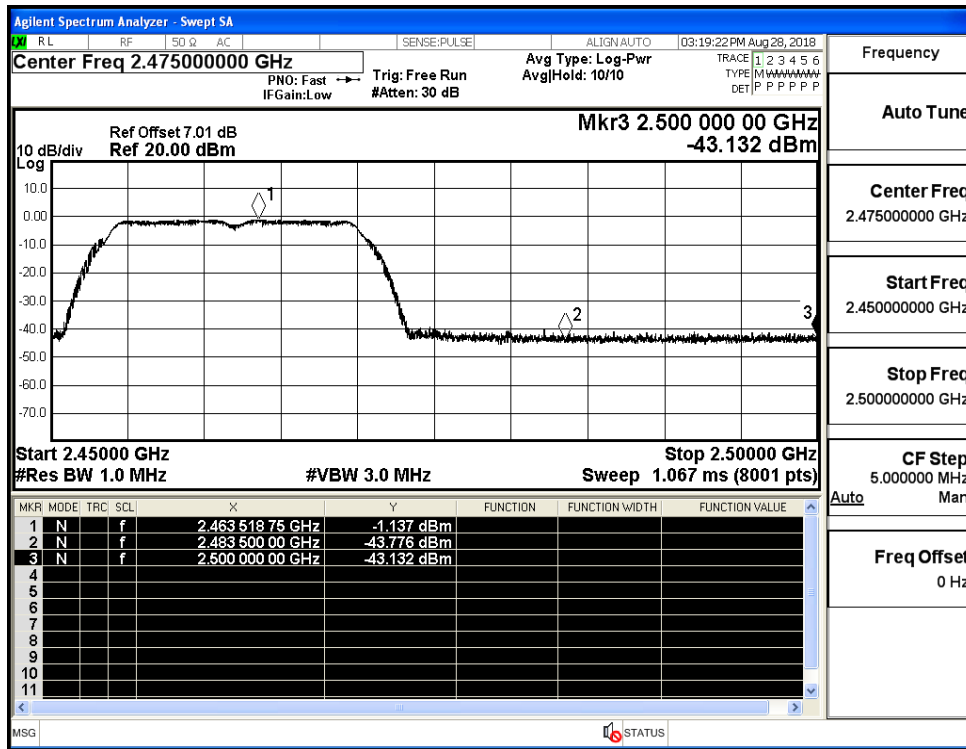
Restrict-band band-edge measurements\_11G\_2412\_Ant1\_PEAK



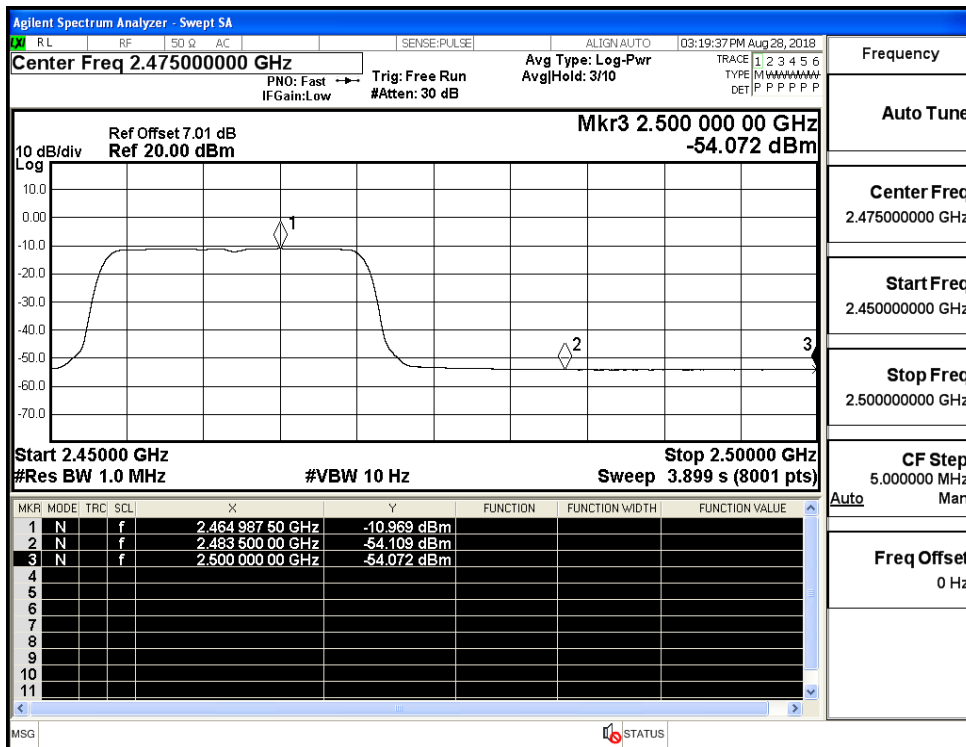
Restrict-band band-edge measurements\_11G\_2412\_Ant1\_AV



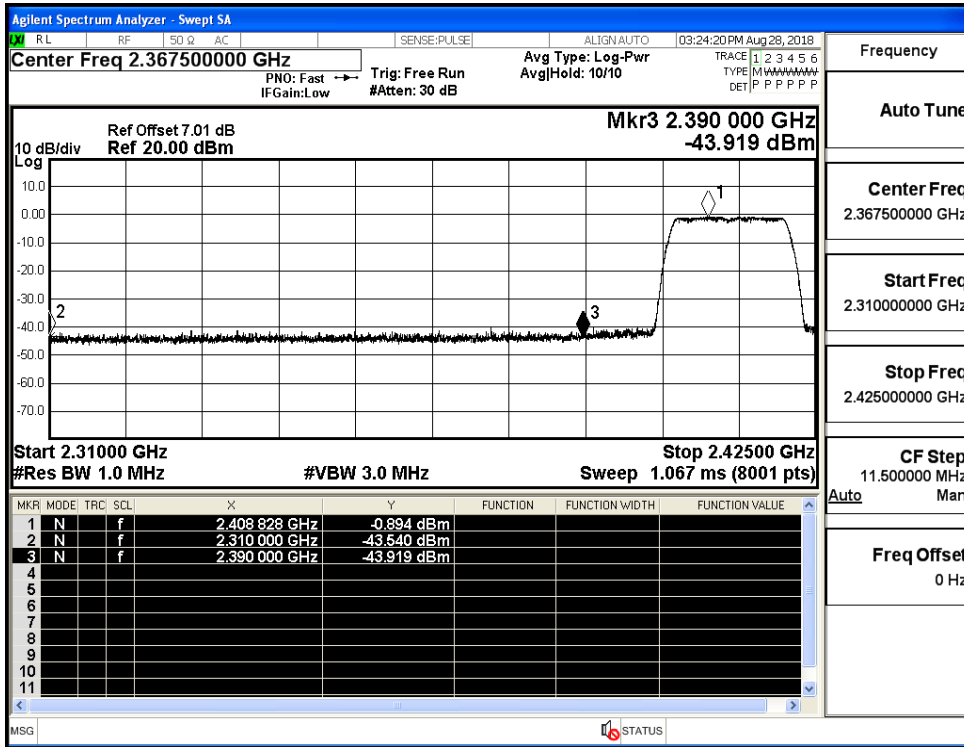
Restrict-band band-edge measurements\_11G\_2462\_Ant1\_PEAK



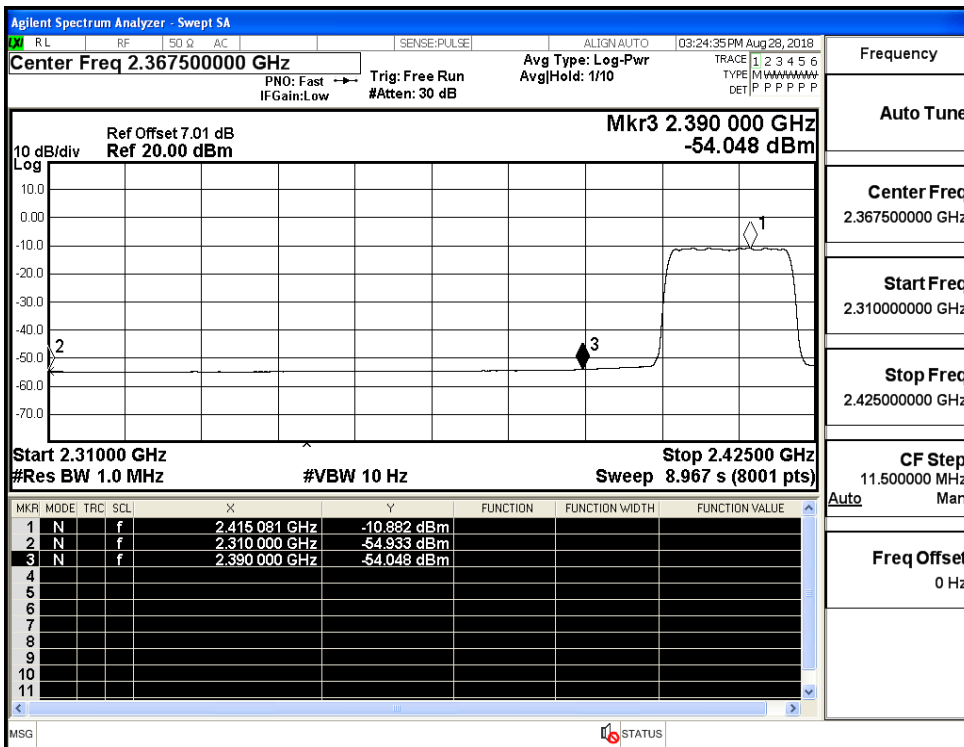
Restrict-band band-edge measurements\_11G\_2462\_Ant1\_AV



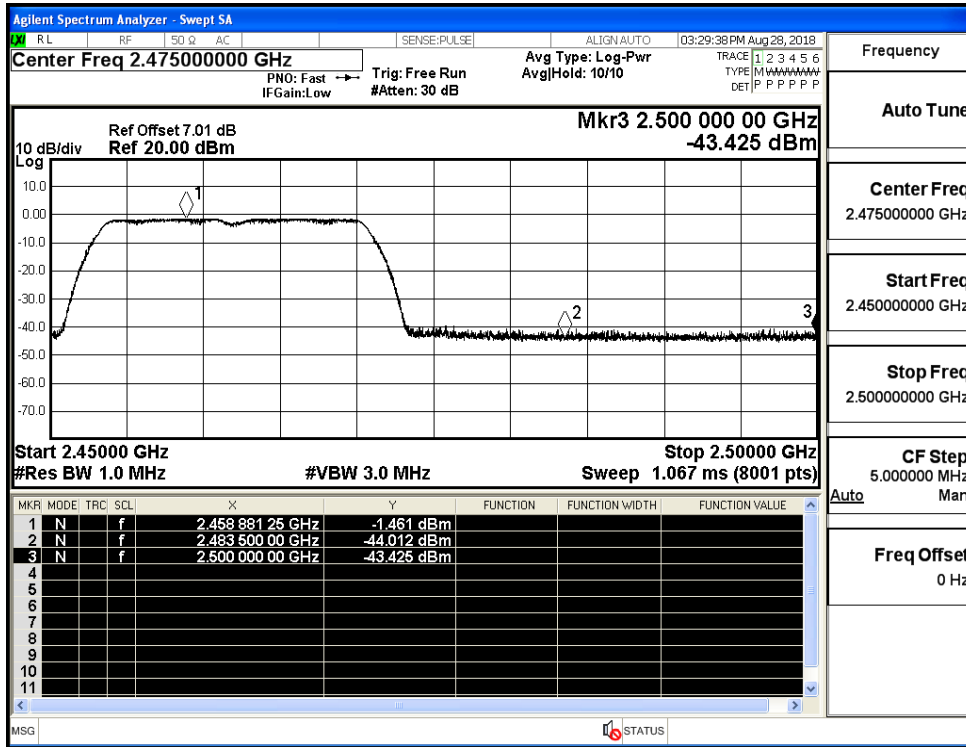
Restrict-band band-edge measurements\_11N20SISO\_2412\_Ant1\_PEAK



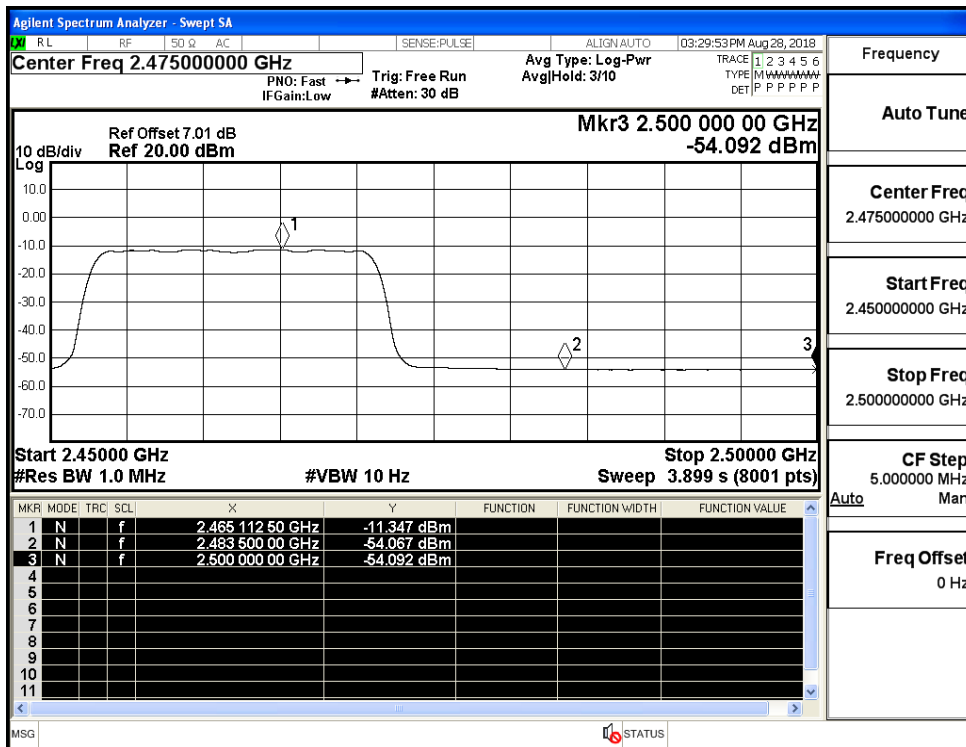
Restrict-band band-edge measurements\_11N20SISO\_2412\_Ant1\_AV



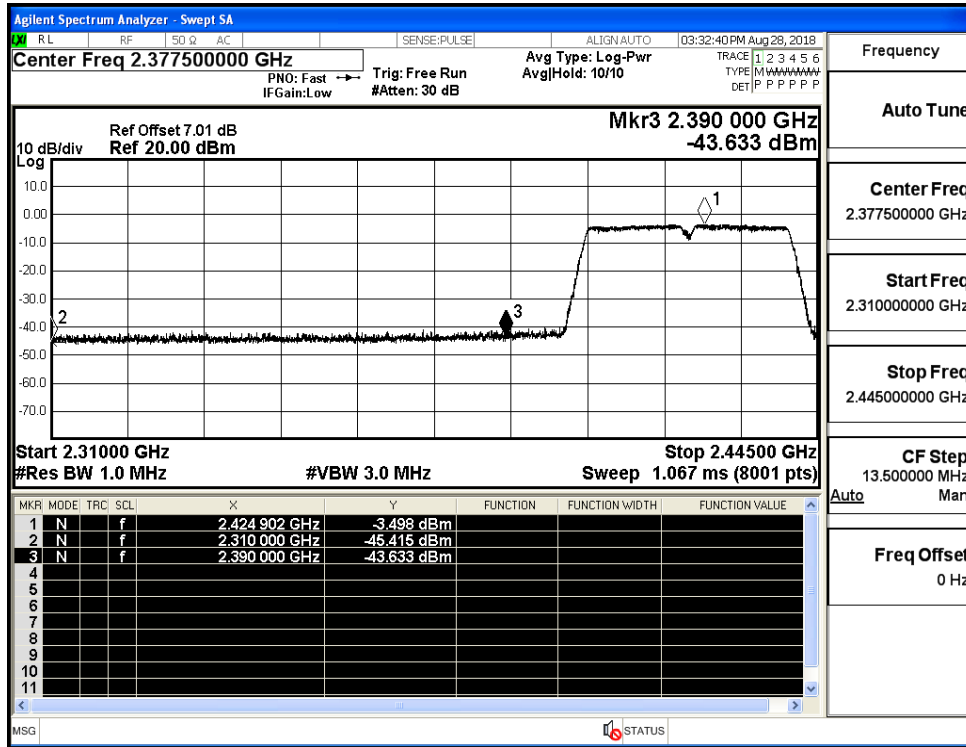
Restrict-band band-edge measurements\_11N20SISO\_2462\_Ant1\_PEAK



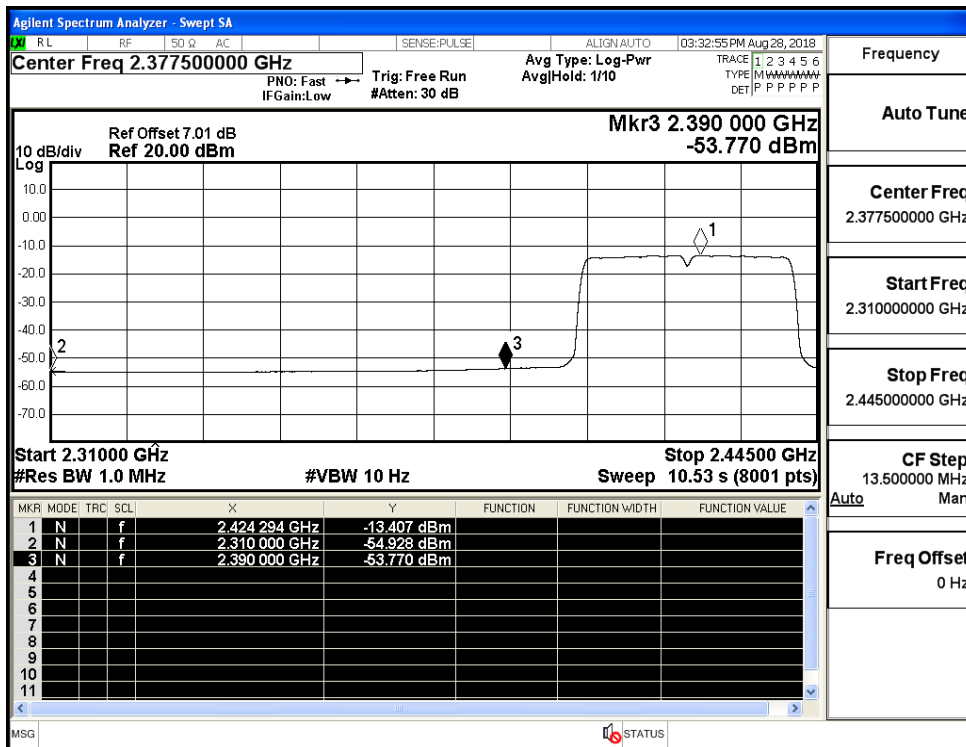
Restrict-band band-edge measurements\_11N20SISO\_2462\_Ant1\_AV



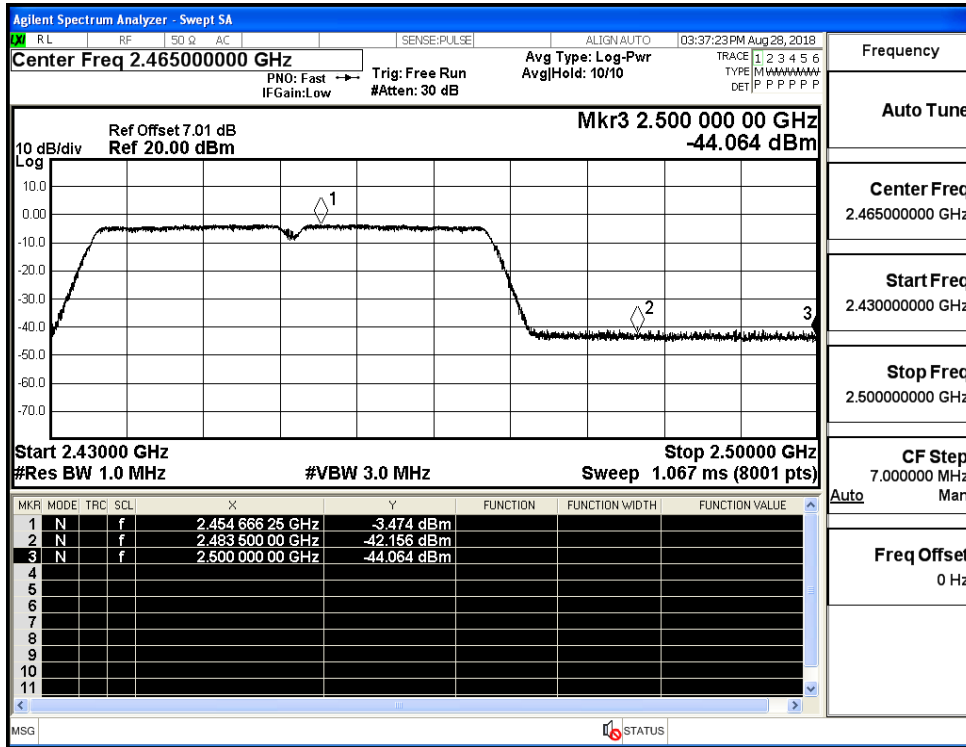
Restrict-band band-edge measurements\_11N40SISO\_2422\_Ant1\_PEAK



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

