

Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Smart WIFI Lamp

Trade Mark: N/A

Test Model: SQPA6005-A

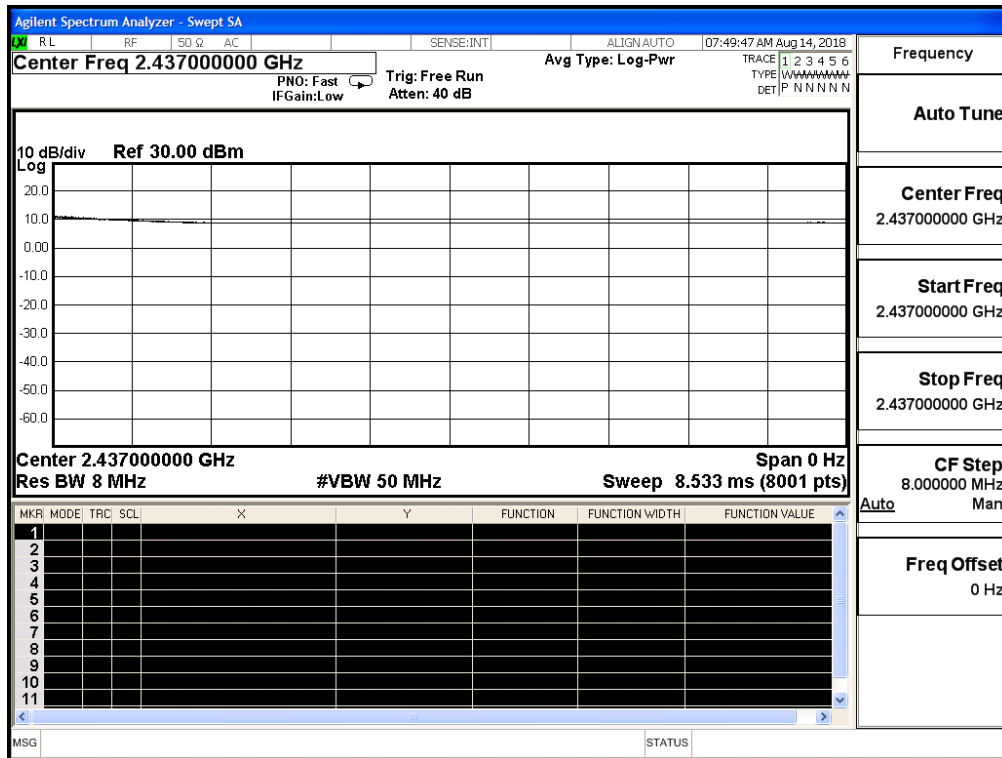
Environmental Conditions

Temperature:	23.6 ° C
Relative Humidity:	52.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Wilson hong
Supervised by:	Jayden.Zhuo

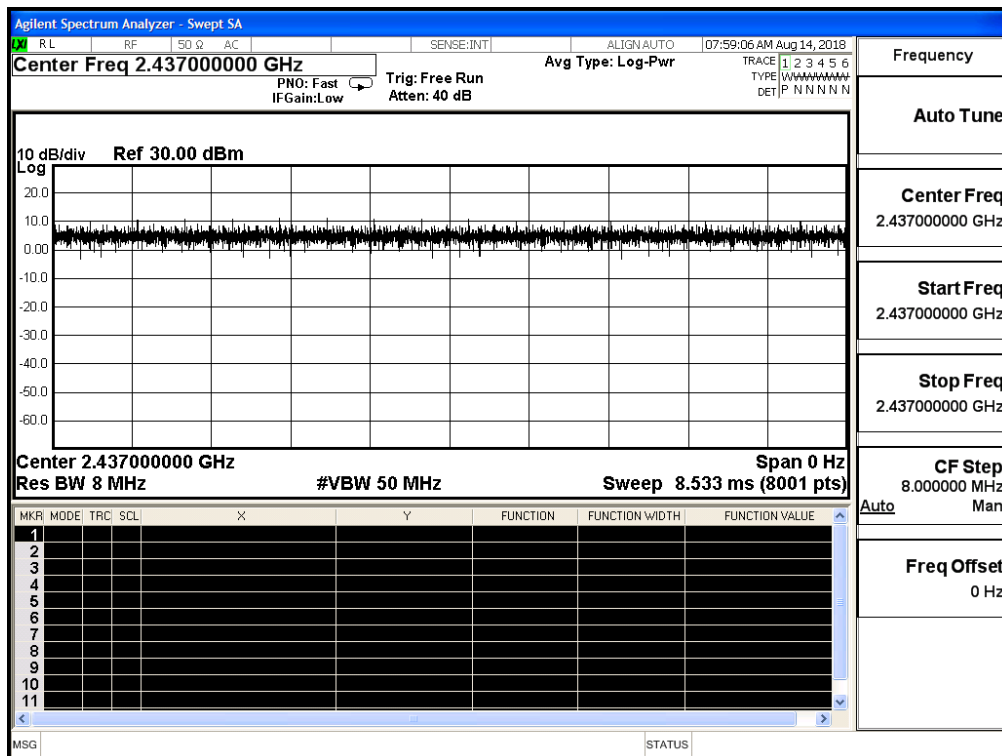
A.1 Duty Cycle

Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
11B	2437	Ant1	100	PASS
11G	2437	Ant1	100	PASS
11N20SISO	2437	Ant1	100	PASS

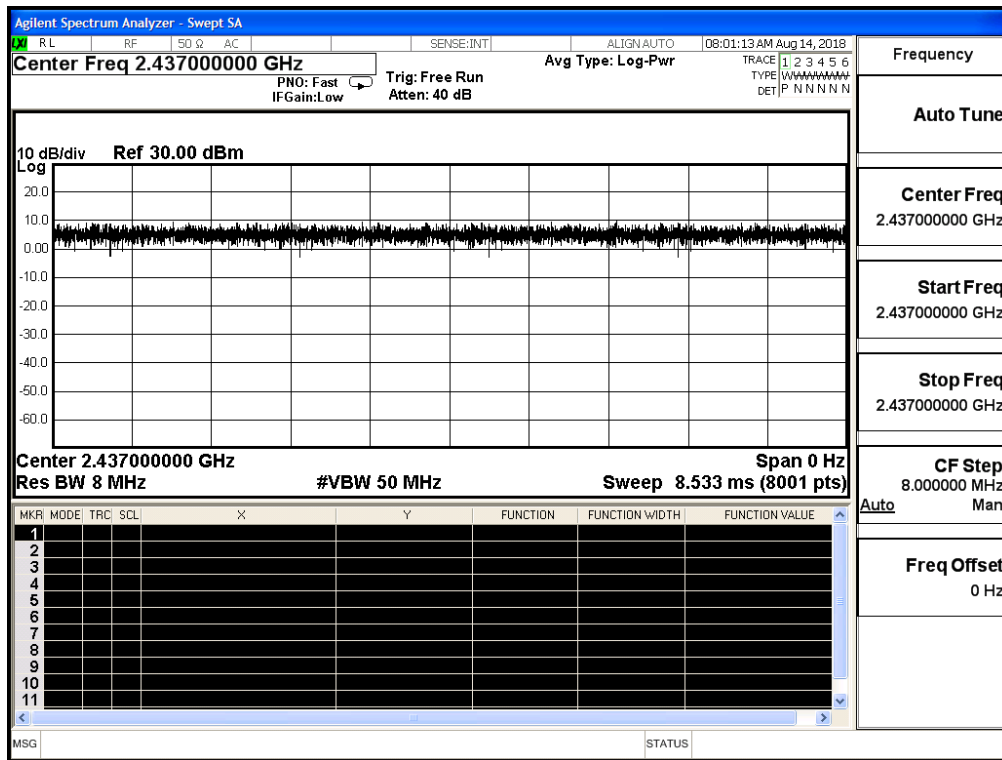
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Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1

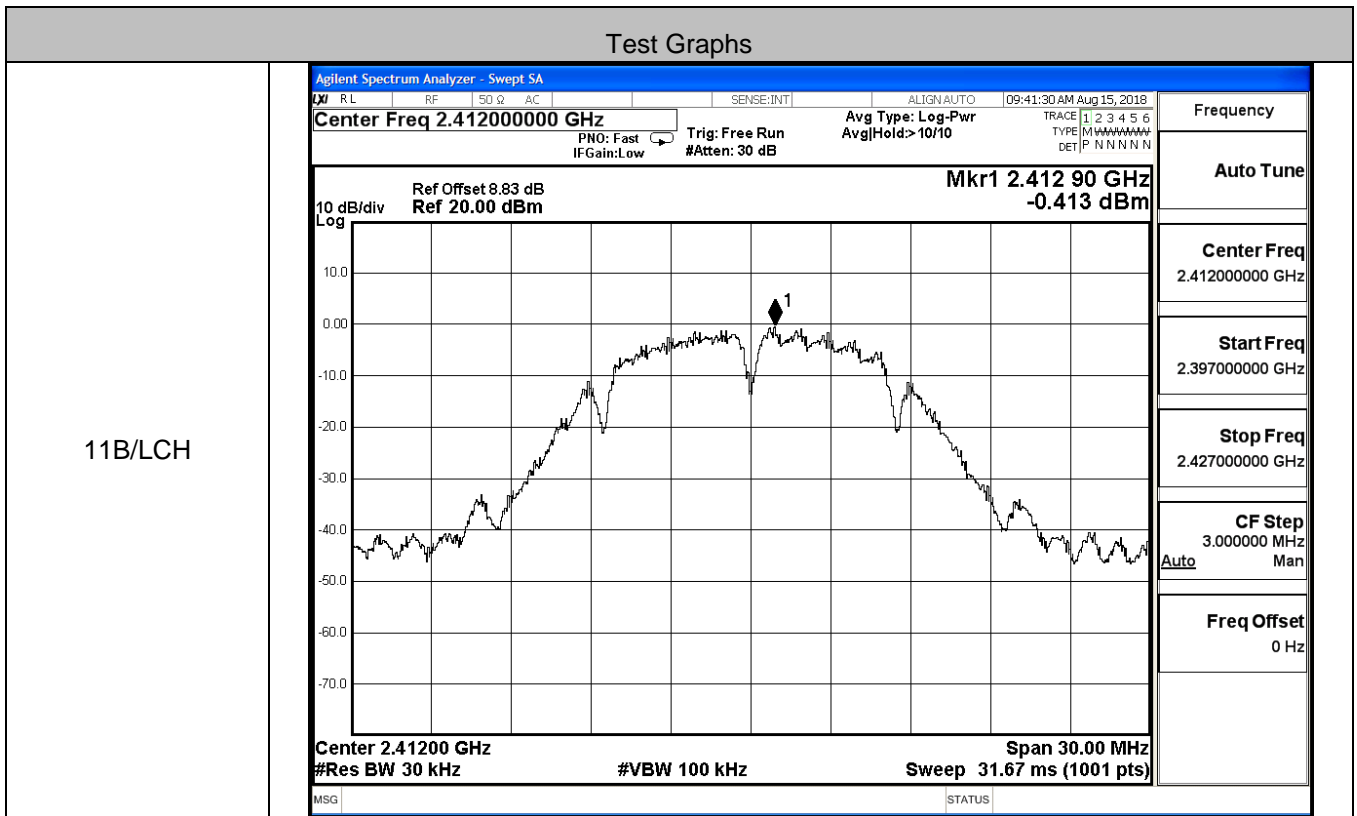


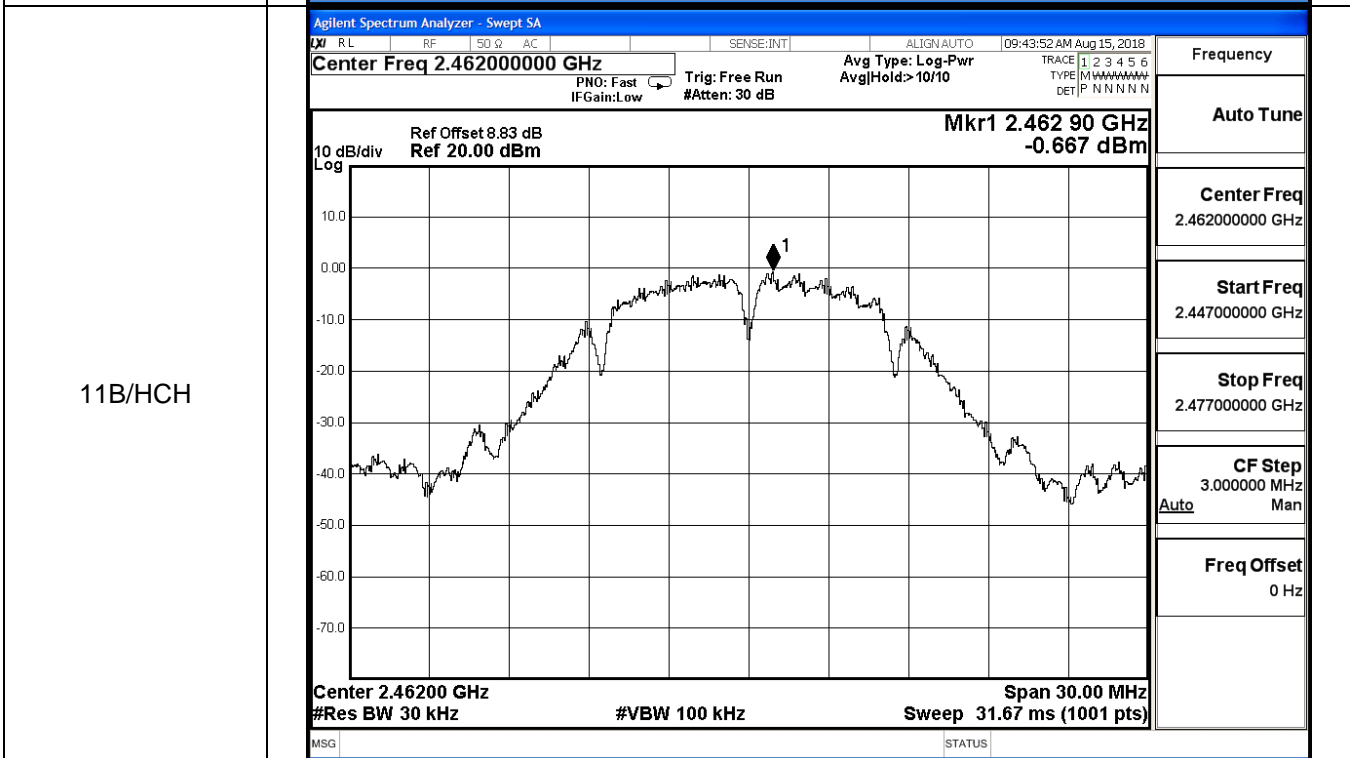
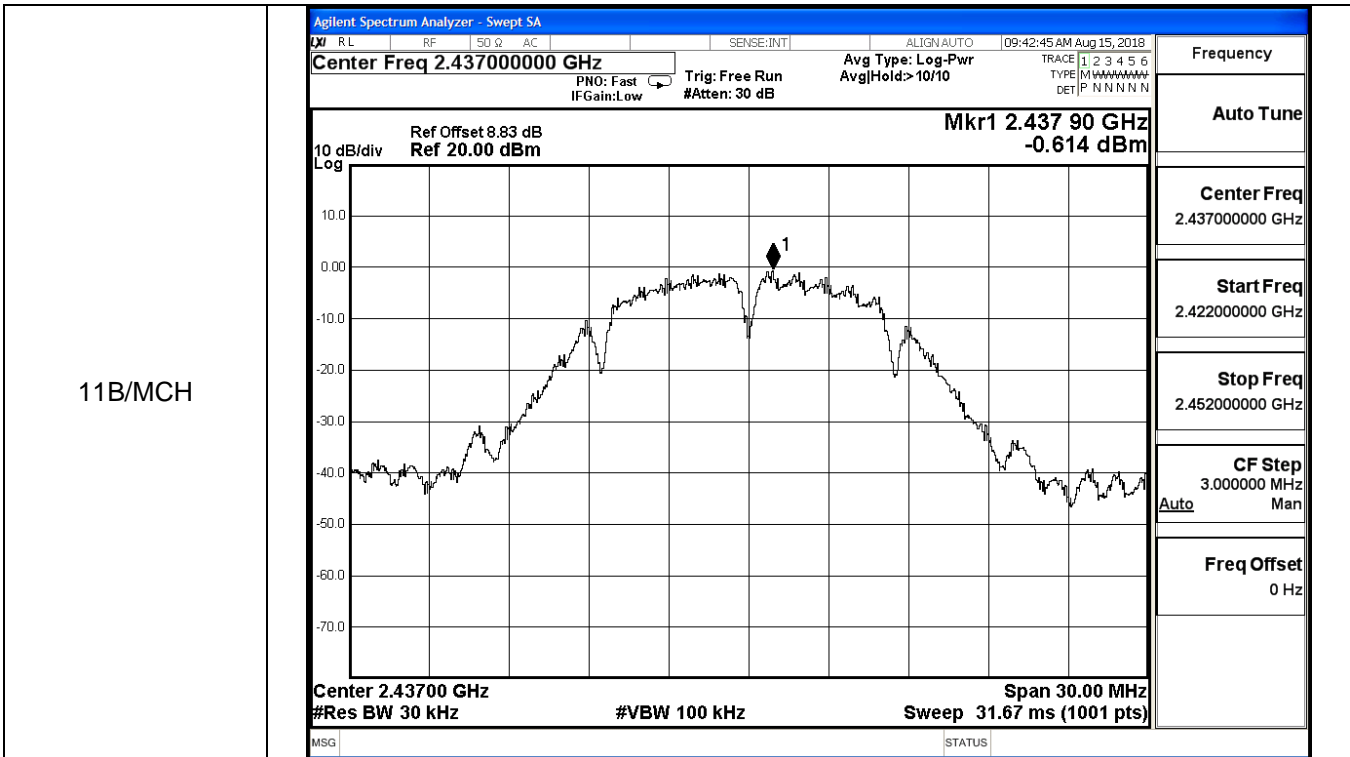
A.2 Maximum Conducted Output Power

Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	15.33	30	PASS
	MCH	15.37	30	PASS
	HCH	15.35	30	PASS
11G	LCH	11.68	30	PASS
	MCH	11.28	30	PASS
	HCH	11.19	30	PASS
11N20SISO	LCH	11.47	30	PASS
	MCH	11.16	30	PASS
	HCH	11.13	30	PASS

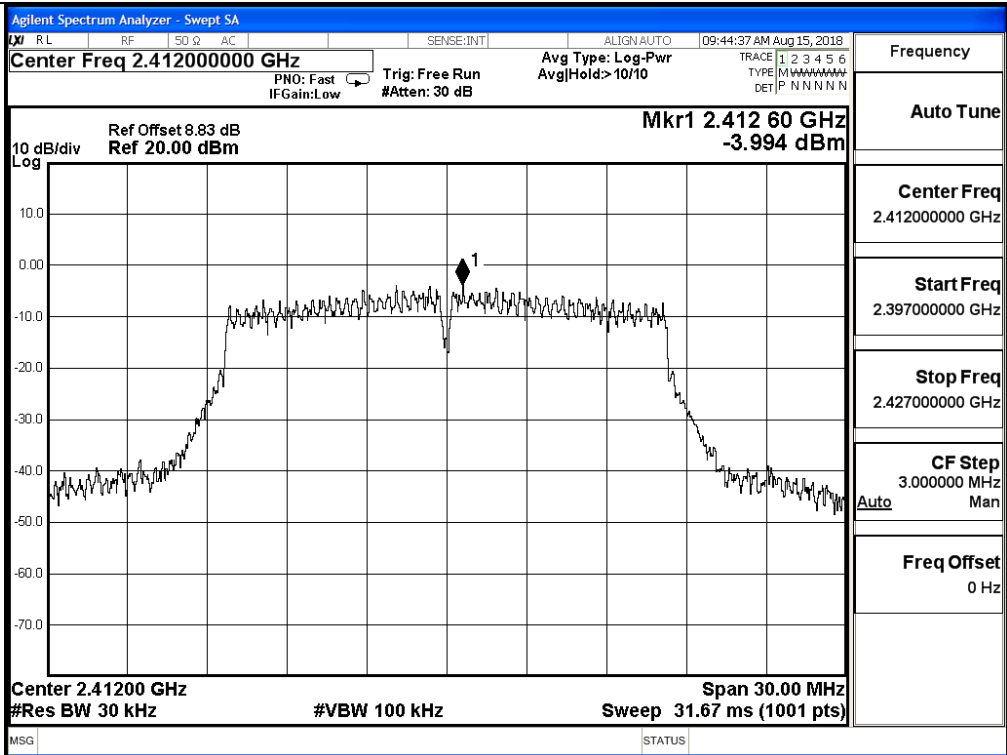
A.3 Maximum Power Spectral Density

Mode	Channel	Meas.Level [dBm/30KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-0.413	8	PASS
	MCH	-0.614	8	PASS
	HCH	-0.667	8	PASS
11G	LCH	-3.994	8	PASS
	MCH	-4.582	8	PASS
	HCH	-4.068	8	PASS
11N20SISO	LCH	-3.248	8	PASS
	MCH	-4.011	8	PASS
	HCH	-3.482	8	PASS

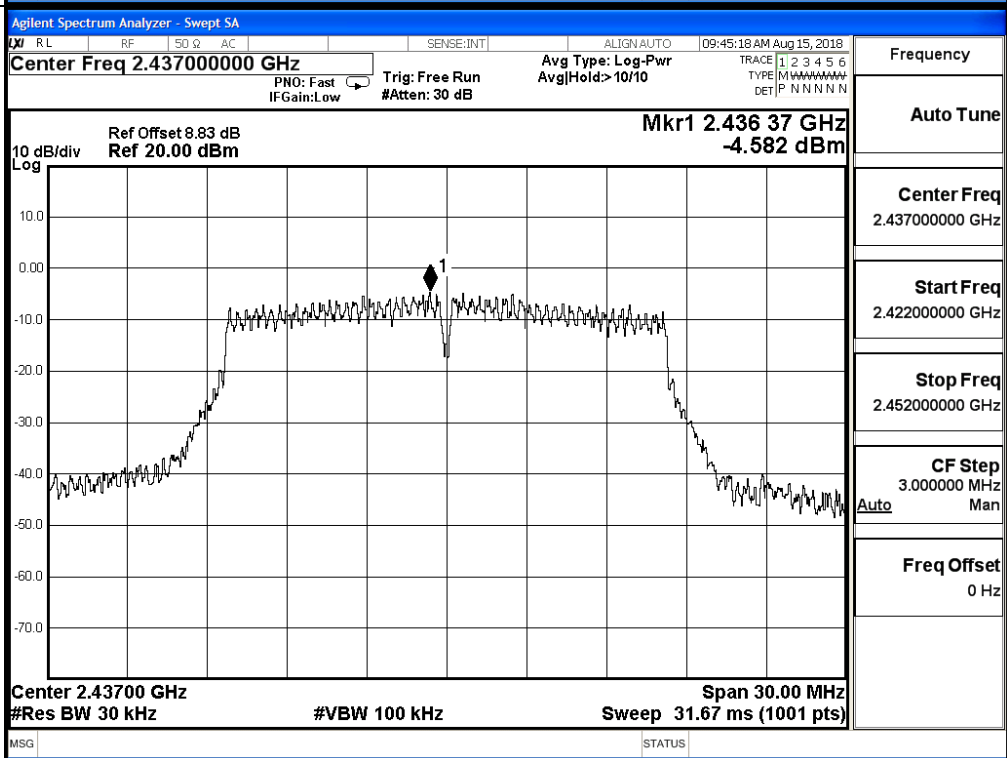




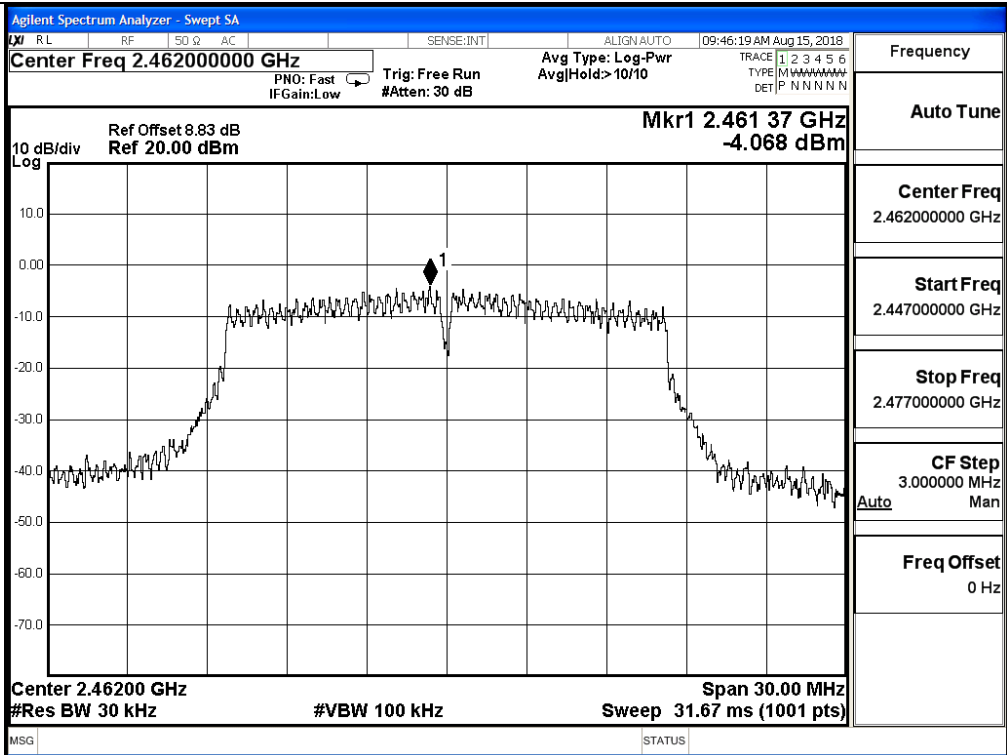
11G/LCH



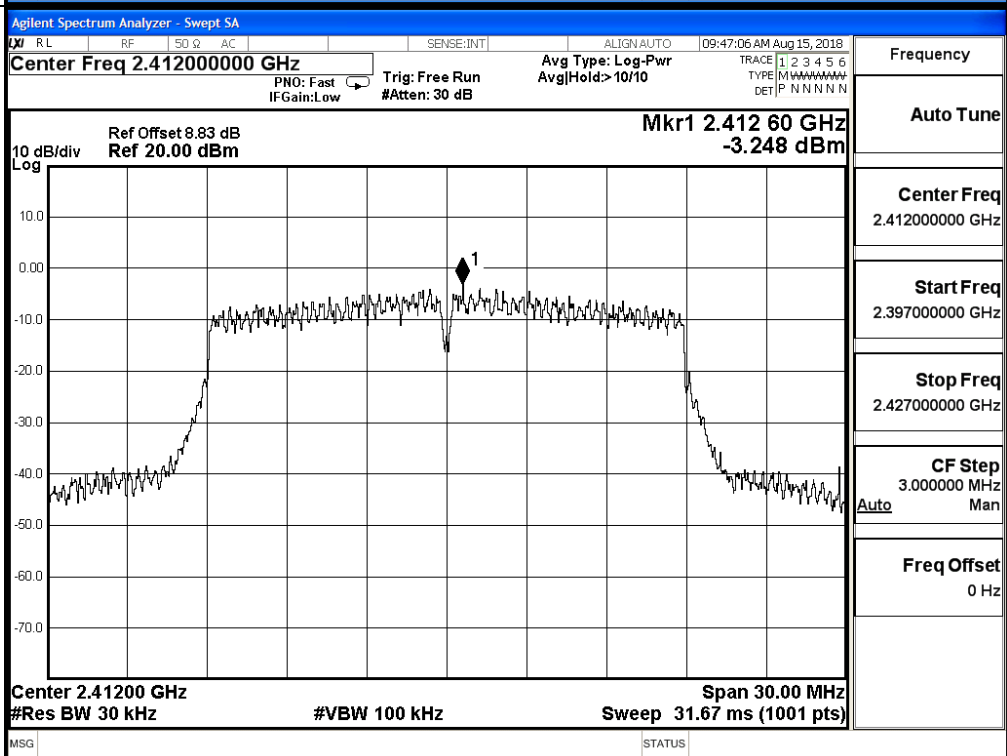
11G/MCH



11G/HCH



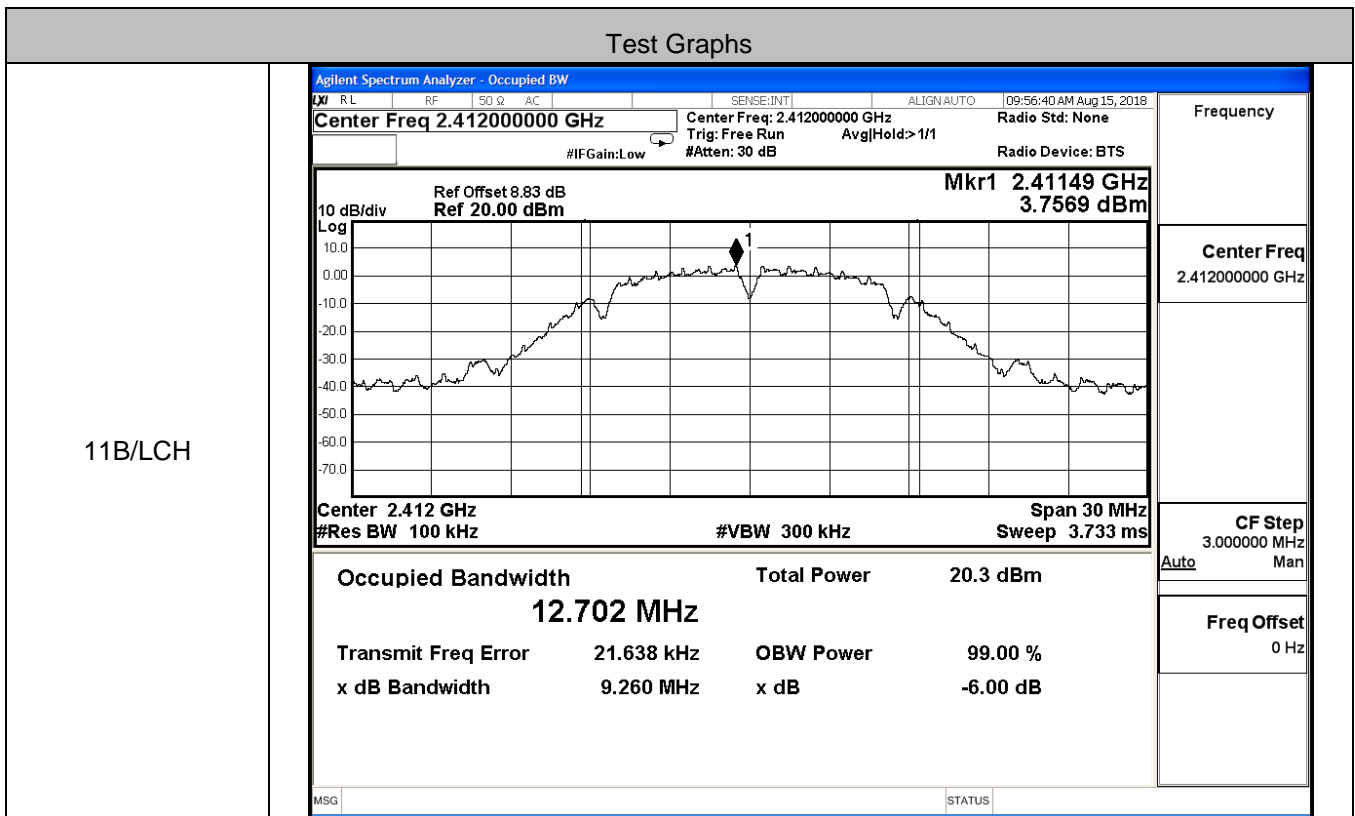
11N20SISO/LCH



<p>11N20SISO/MCH</p>		<p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.43700000 GHz</p> <p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.422000000 GHz</p> <p>Stop Freq 2.452000000 GHz</p> <p>CF Step 3.000000 MHz</p> <p>Freq Offset 0 Hz</p>
	<p>11N20SISO/HCH</p>	

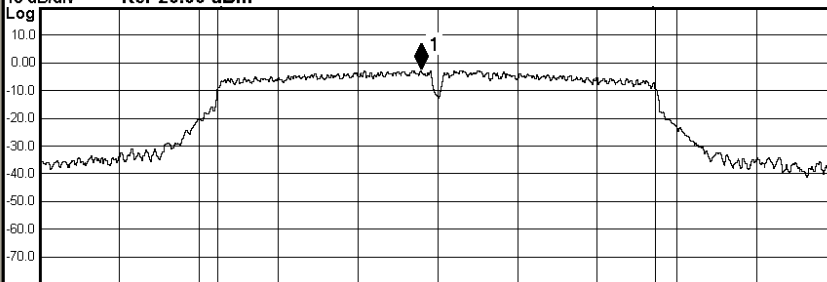
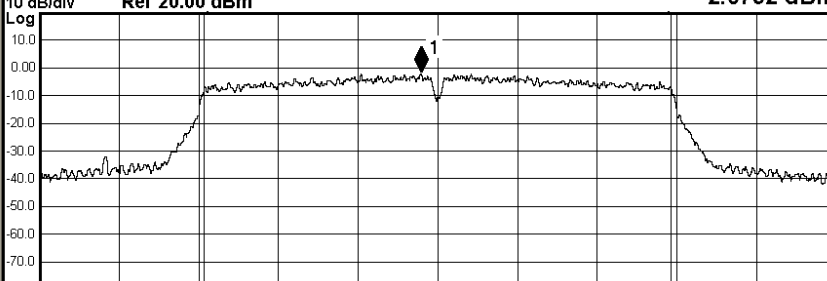
A.4 6dB Bandwidth

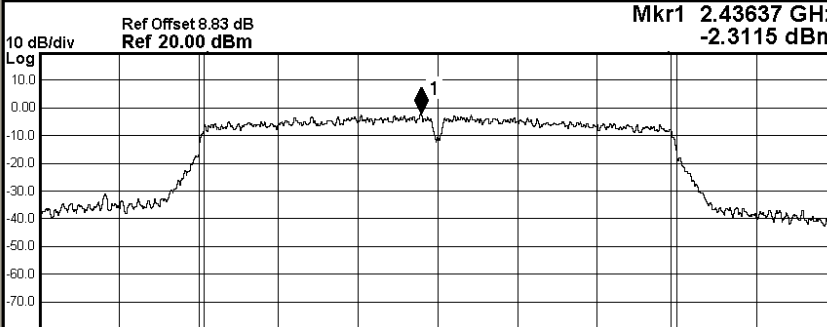
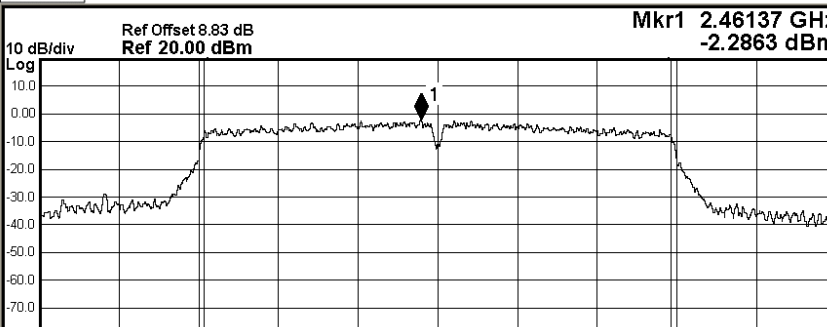
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	9.260	≥0.5	PASS
	MCH	9.484	≥0.5	PASS
	HCH	9.486	≥0.5	PASS
11G	LCH	16.38	≥0.5	PASS
	MCH	16.39	≥0.5	PASS
	HCH	16.39	≥0.5	PASS
11N20SISO	LCH	17.60	≥0.5	PASS
	MCH	17.60	≥0.5	PASS
	HCH	17.60	≥0.5	PASS



<p>11B/MCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.43700000 GHz</p> <p>Center Freq: 2.43700000 GHz</p> <p>Trig: Free Run</p> <p>Avg Hold>1/1</p> <p>#IFGain:Low</p> <p>#Atten: 30 dB</p> <p>Radio Std: None</p> <p>Radio Device: BTS</p> <p>Ref Offset 8.83 dB</p> <p>Ref 20.00 dBm</p> <p>Mkr1 2.43649 GHz</p> <p>3.8931 dBm</p> <p>Center 2.437 GHz</p> <p>#Res BW 100 kHz</p> <p>#VBW 300 kHz</p> <p>Span 30 MHz</p> <p>Sweep 3.733 ms</p> <p>Occupied Bandwidth</p> <p>12.927 MHz</p> <p>Total Power 20.5 dBm</p> <p>Transmit Freq Error -59.277 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 9.484 MHz</p> <p>x dB -6.00 dB</p> <p>MSG STATUS</p>	<p>Frequency</p> <p>Center Freq</p> <p>2.43700000 GHz</p> <p>CF Step</p> <p>3.000000 MHz</p> <p>Auto Man</p> <p>Freq Offset</p> <p>0 Hz</p>
	<p>11B/HCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.46200000 GHz</p> <p>Center Freq: 2.46200000 GHz</p> <p>Trig: Free Run</p> <p>Avg Hold>1/1</p> <p>#IFGain:Low</p> <p>#Atten: 30 dB</p> <p>Radio Std: None</p> <p>Radio Device: BTS</p> <p>Ref Offset 8.83 dB</p> <p>Ref 20.00 dBm</p> <p>Mkr1 2.46047 GHz</p> <p>3.6901 dBm</p> <p>Center 2.462 GHz</p> <p>#Res BW 100 kHz</p> <p>#VBW 300 kHz</p> <p>Span 30 MHz</p> <p>Sweep 3.733 ms</p> <p>Occupied Bandwidth</p> <p>12.967 MHz</p> <p>Total Power 20.3 dBm</p> <p>Transmit Freq Error -42.721 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 9.486 MHz</p> <p>x dB -6.00 dB</p> <p>MSG STATUS</p>

<p>11G/LCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.41200000 GHz</p> <p>Center Freq: 2.41200000 GHz</p> <p>Trig: Free Run</p> <p>Avg Hold>1/1</p> <p>#IFGain:Low</p> <p>#Atten: 30 dB</p> <p>Radio Std: None</p> <p>Radio Device: BTS</p> <p>Ref Offset 8.83 dB</p> <p>Ref 20.00 dBm</p> <p>Mkr1 2.41263 GHz</p> <p>-2.1823 dBm</p> <p>Center 2.412 GHz</p> <p>#Res BW 100 kHz</p> <p>#VBW 300 kHz</p> <p>Span 30 MHz</p> <p>Sweep 3.733 ms</p> <p>Occupied Bandwidth 16.358 MHz</p> <p>Total Power 17.2 dBm</p> <p>Transmit Freq Error -4.745 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 16.38 MHz</p> <p>x dB -6.00 dB</p>	<p>Frequency</p> <p>Center Freq 2.41200000 GHz</p> <p>CF Step 3.000000 MHz</p> <p>Auto Man</p> <p>Freq Offset 0 Hz</p>
	<p>11G/MCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.43700000 GHz</p> <p>Center Freq: 2.437000000 GHz</p> <p>Trig: Free Run</p> <p>Avg Hold>1/1</p> <p>#IFGain:Low</p> <p>#Atten: 30 dB</p> <p>Radio Std: None</p> <p>Radio Device: BTS</p> <p>Ref Offset 8.83 dB</p> <p>Ref 20.00 dBm</p> <p>Mkr1 2.4376 GHz</p> <p>-2.9433 dBm</p> <p>Center 2.437 GHz</p> <p>#Res BW 100 kHz</p> <p>#VBW 300 kHz</p> <p>Span 30 MHz</p> <p>Sweep 3.733 ms</p> <p>Occupied Bandwidth 16.375 MHz</p> <p>Total Power 16.6 dBm</p> <p>Transmit Freq Error -34.243 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 16.39 MHz</p> <p>x dB -6.00 dB</p>

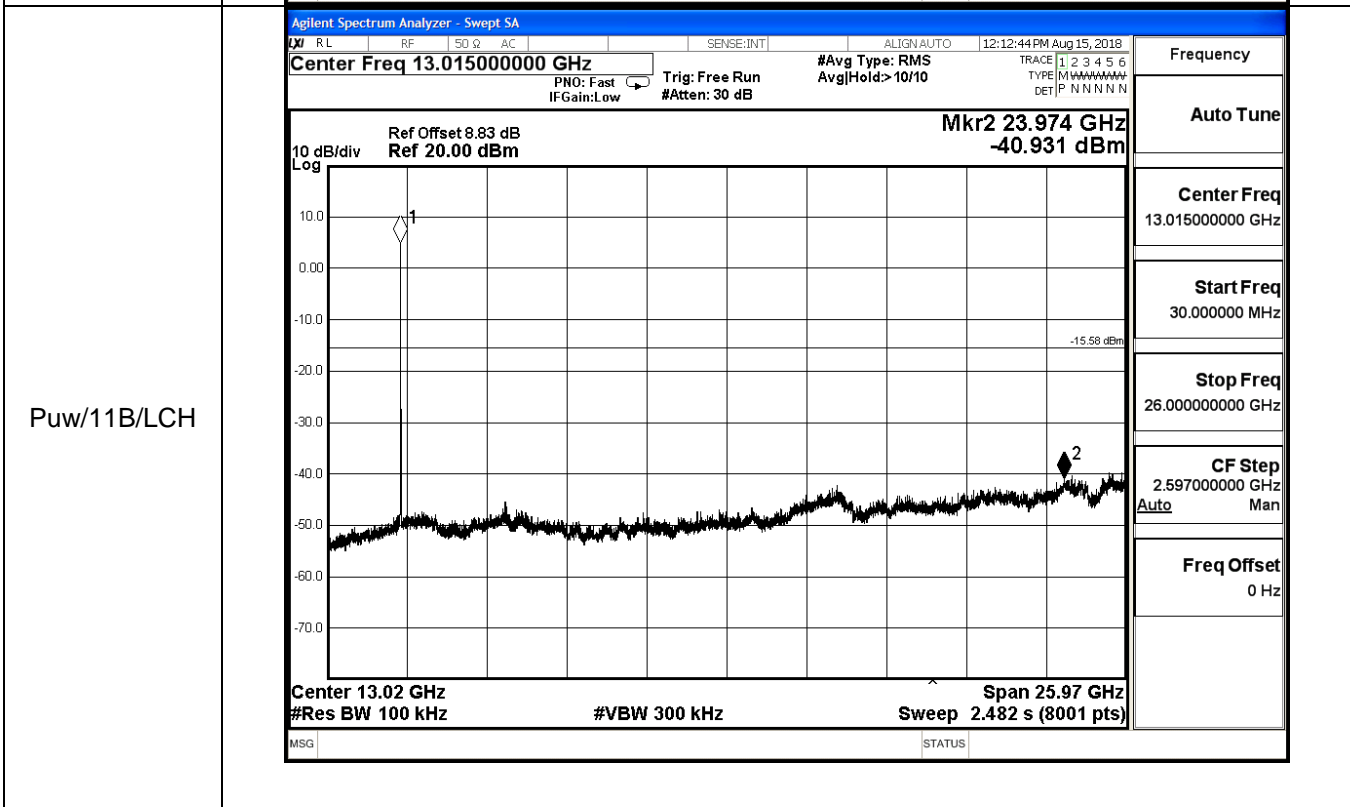
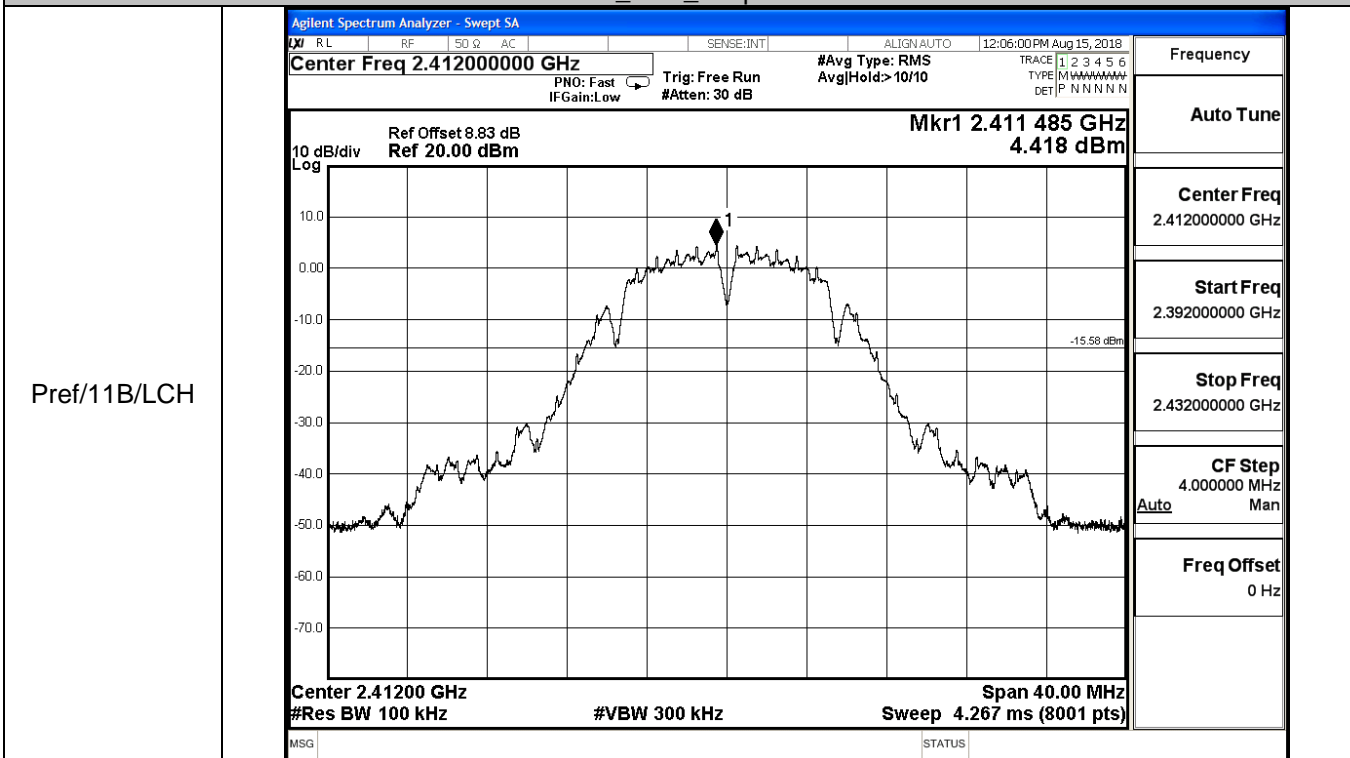
<p>11G/HCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.46200000 GHz</p> <p>Center Freq: 2.46200000 GHz</p> <p>Trig: Free Run Avg Hold>1/1</p> <p>#IFGain:Low #Atten: 30 dB</p> <p>Radio Std: None</p> <p>Radio Device: BTS</p> <p>10 dB/div Ref Offset 8.83 dB Ref 20.00 dBm Mkr1 2.46137 GHz -2.7162 dBm</p>  <p>Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 3.733 ms</p> <p>Occupied Bandwidth 16.408 MHz Total Power 16.8 dBm</p> <p>Transmit Freq Error -37.993 kHz OBW Power 99.00 %</p> <p>x dB Bandwidth 16.39 MHz x dB -6.00 dB</p>	<p>Frequency</p> <p>Center Freq 2.46200000 GHz</p> <p>CF Step 3.000000 MHz</p> <p>Freq Offset 0 Hz</p>
	<p>11N20SISO/LCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.41200000 GHz</p> <p>Center Freq: 2.41200000 GHz</p> <p>Trig: Free Run Avg Hold>1/1</p> <p>#IFGain:Low #Atten: 30 dB</p> <p>Radio Std: None</p> <p>Radio Device: BTS</p> <p>10 dB/div Ref Offset 8.83 dB Ref 20.00 dBm Mkr1 2.41137 GHz -2.0792 dBm</p>  <p>Center 2.412 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 3.733 ms</p> <p>Occupied Bandwidth 17.557 MHz Total Power 17.1 dBm</p> <p>Transmit Freq Error 5.214 kHz OBW Power 99.00 %</p> <p>x dB Bandwidth 17.60 MHz x dB -6.00 dB</p>

<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>Ref Offset 8.83 dB Ref 20.00 dBm</p>  <p>Center 2.437 GHz #Res BW 100 kHz</p> <p>#VBW 300 kHz</p> <p>Span 30 MHz Sweep 3.733 ms</p> <p>Occupied Bandwidth 17.562 MHz</p> <p>Total Power 16.8 dBm</p> <p>Transmit Freq Error -17.852 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 17.60 MHz</p> <p>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>Ref Offset 8.83 dB Ref 20.00 dBm</p>  <p>Center 2.462 GHz #Res BW 100 kHz</p> <p>#VBW 300 kHz</p> <p>Span 30 MHz Sweep 3.733 ms</p> <p>Occupied Bandwidth 17.570 MHz</p> <p>Total Power 16.9 dBm</p> <p>Transmit Freq Error -14.887 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 17.60 MHz</p> <p>x dB -6.00 dB</p>

A.5 RF Conducted Spurious Emissions

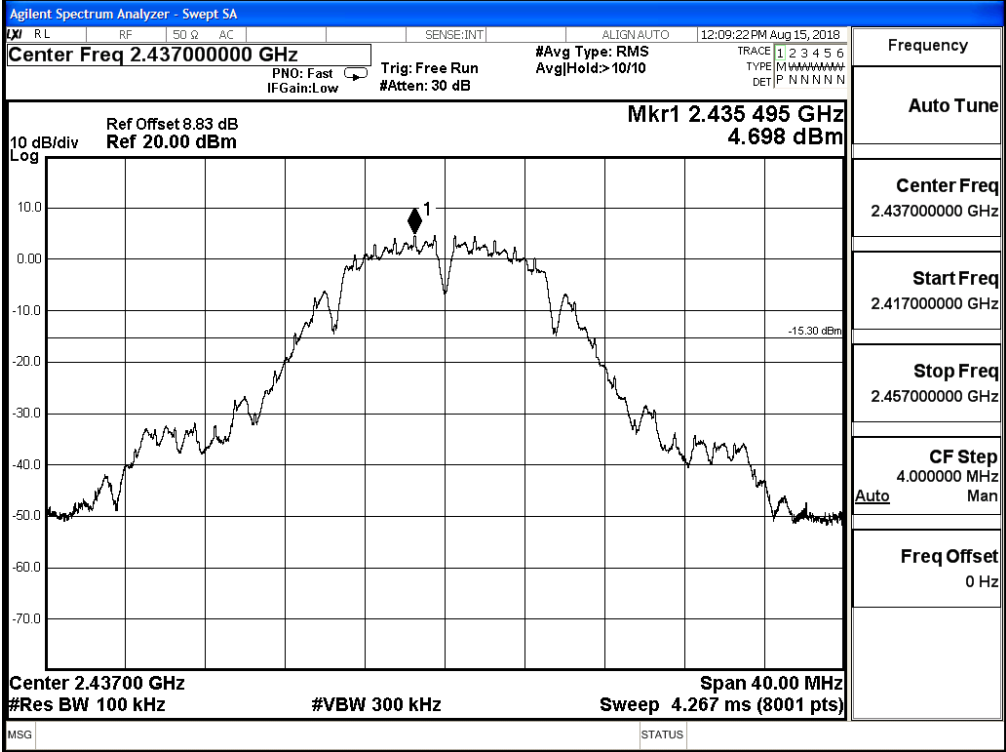
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	4.418	-40.931	-15.582	PASS
	MCH	4.698	-39.333	-15.302	PASS
	HCH	4.700	-41.393	-15.300	PASS
11G	LCH	-1.783	-41.205	-21.783	PASS
	MCH	-1.685	-40.703	-21.685	PASS
	HCH	-1.708	-40.215	-21.708	PASS
11N20 SISO	LCH	-1.254	-41.451	-21.254	PASS
	MCH	-1.535	-40.642	-21.535	PASS
	HCH	-1.694	-41.086	-21.694	PASS

11B_LCH_Graphs

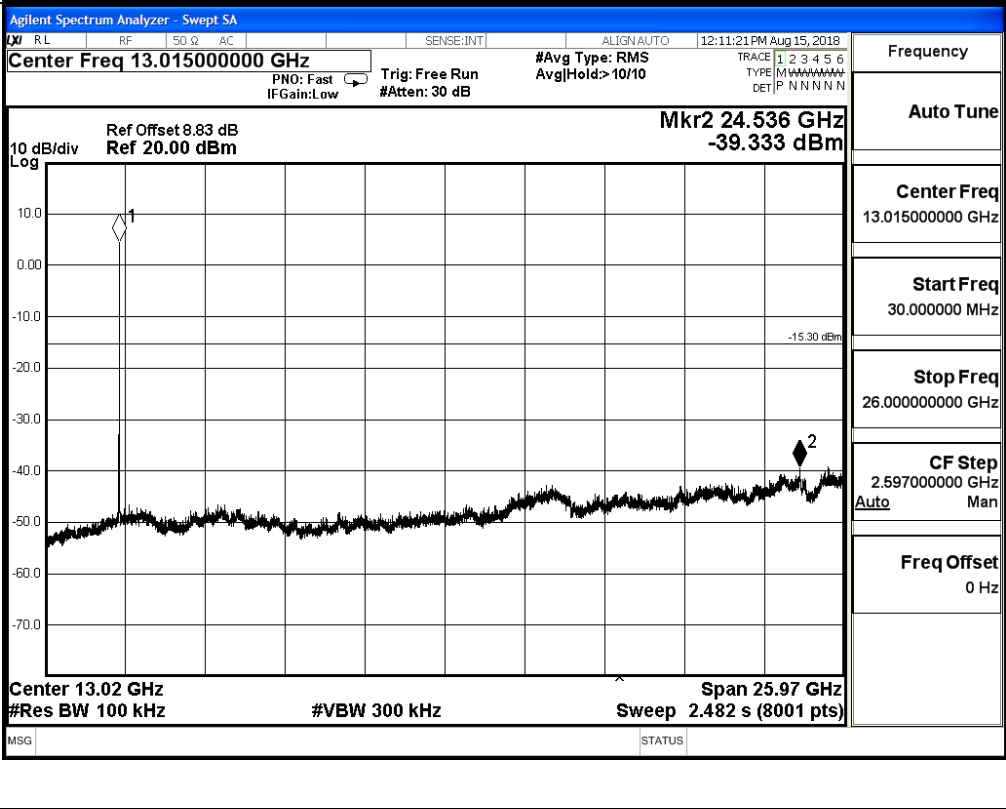


11B_MCH_Graphs

Pref/11B/MCH

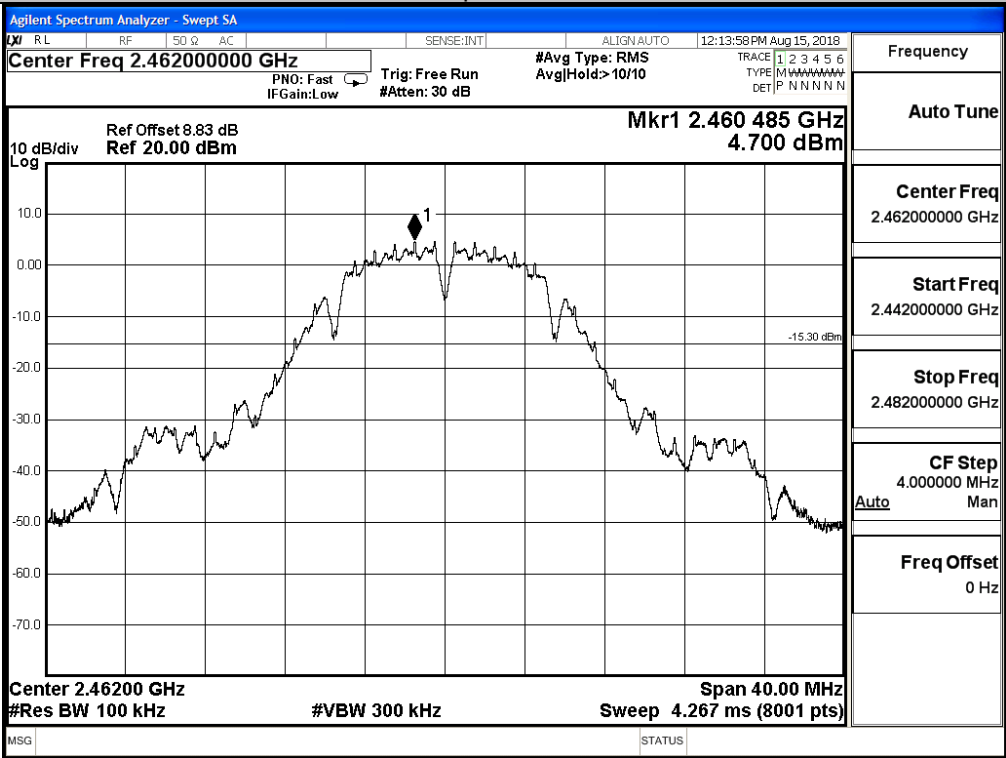


Puw/11B/MCH

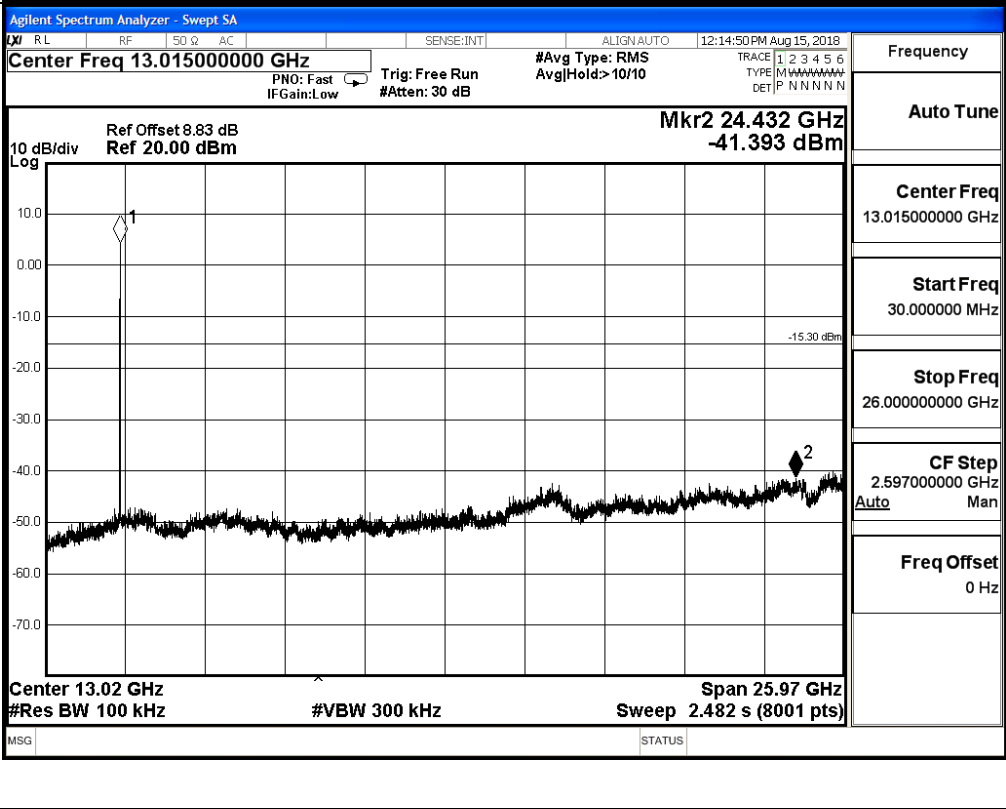


11B_HCH_Graphs

Pref/11B/HCH

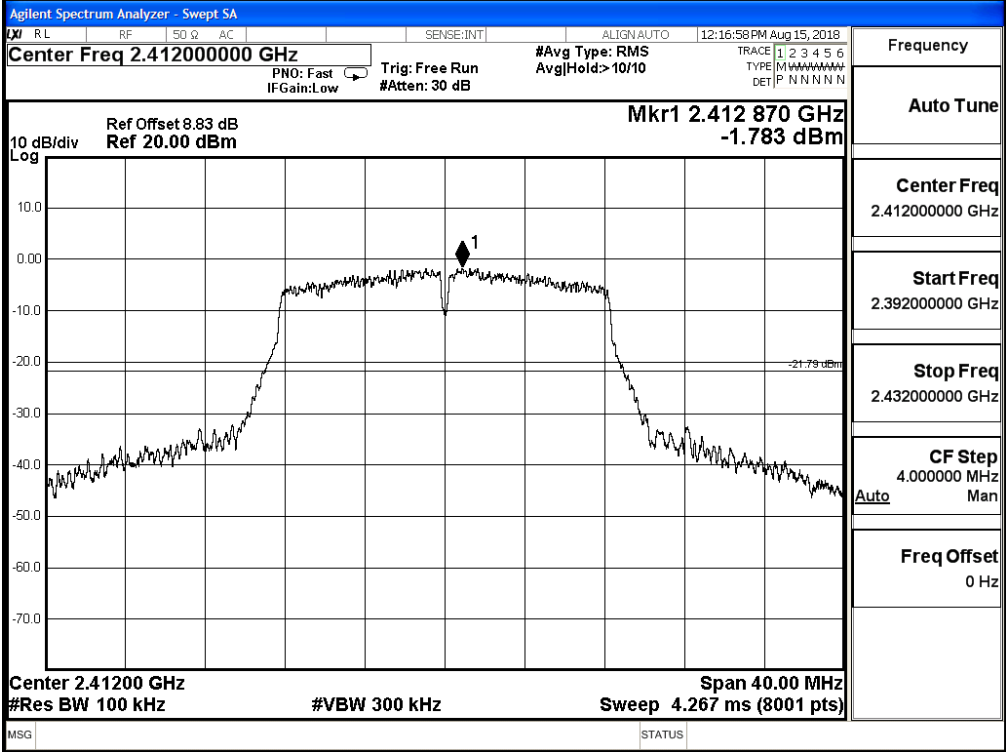


Puw/11B/HCH

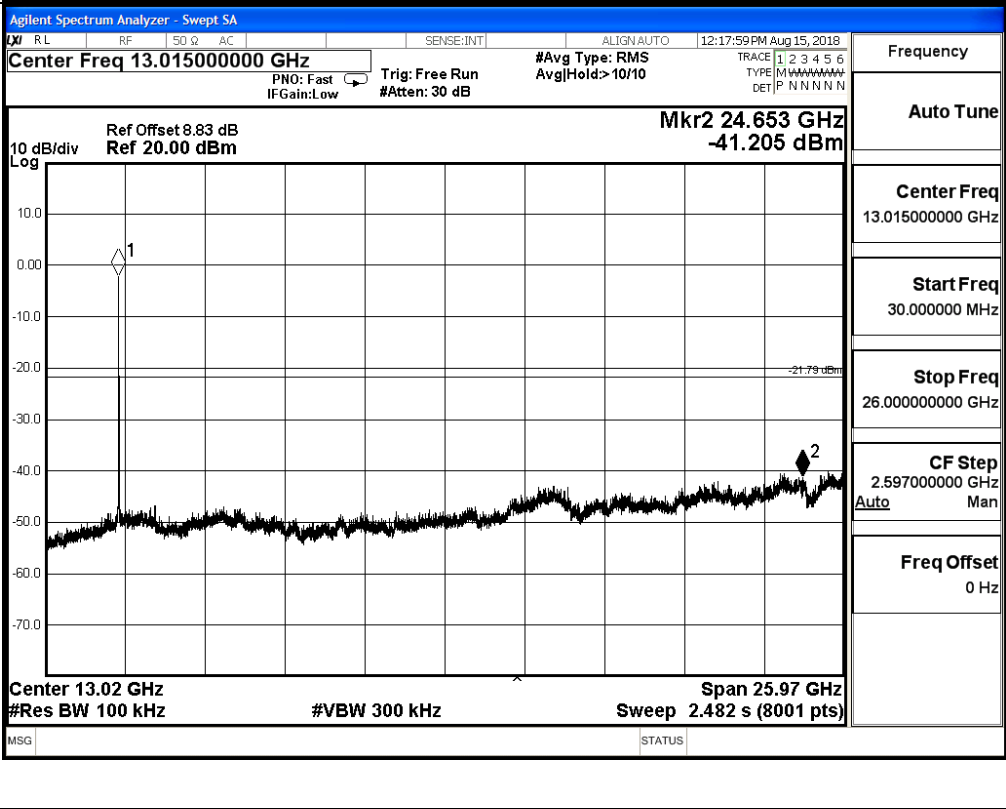


11G_LCH_Graphs

Pref/11G/LCH

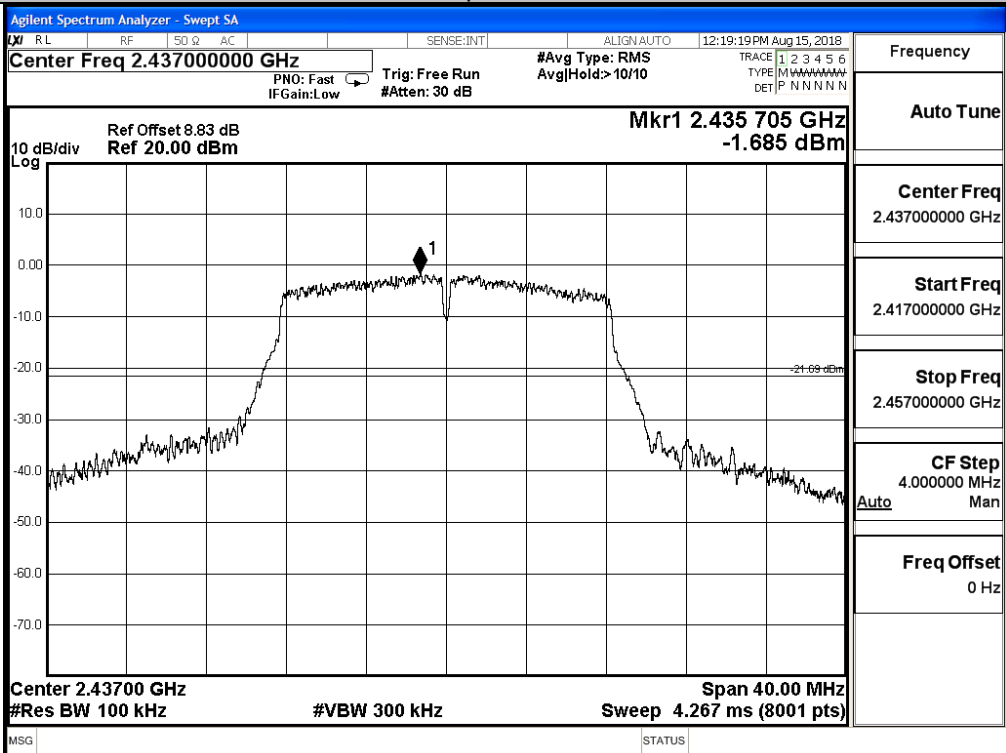


Puw/11G/LCH

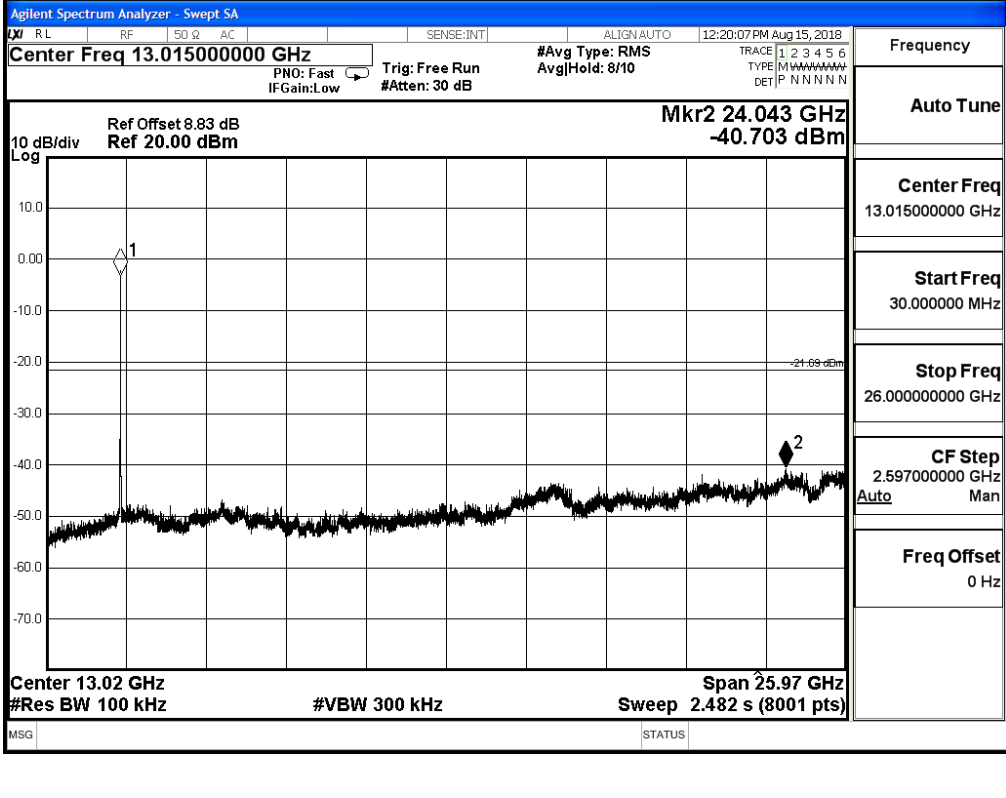


11G_MCH_Graphs

Pref/11G/MCH

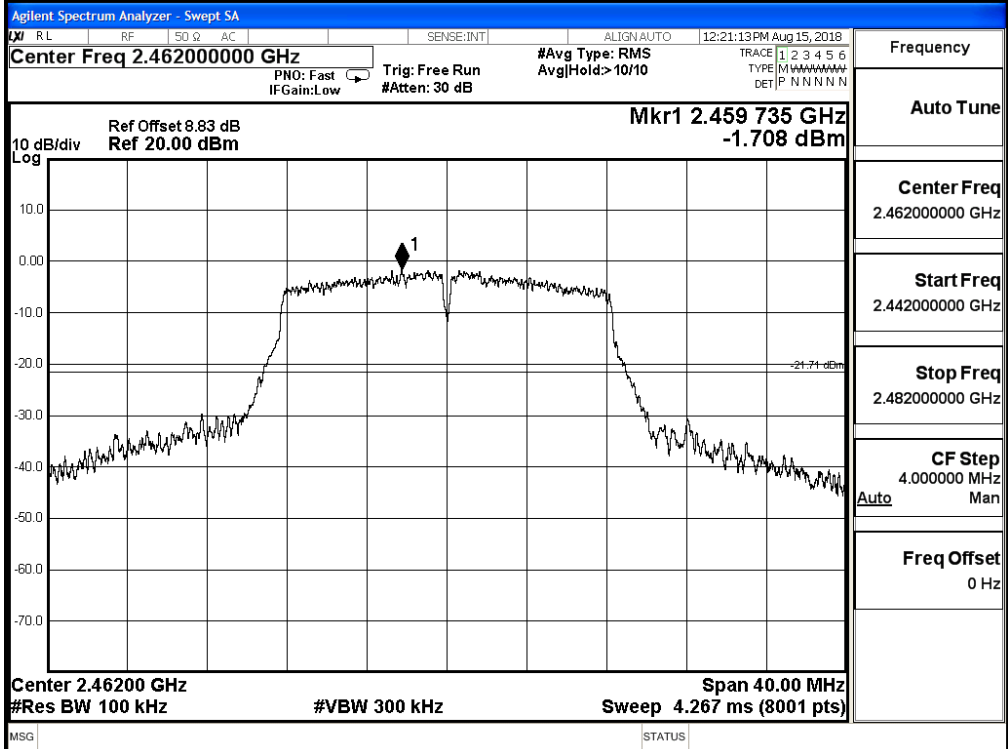


Puw/11G/MCH

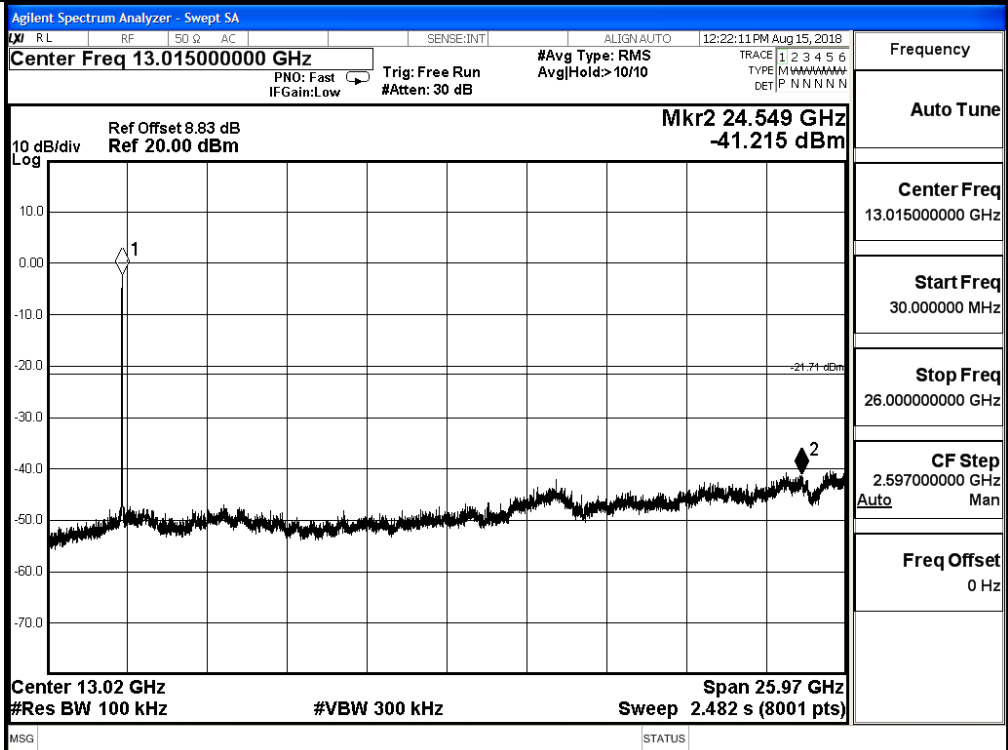


11G_HCH_Graphs

Pref/11G/HCH

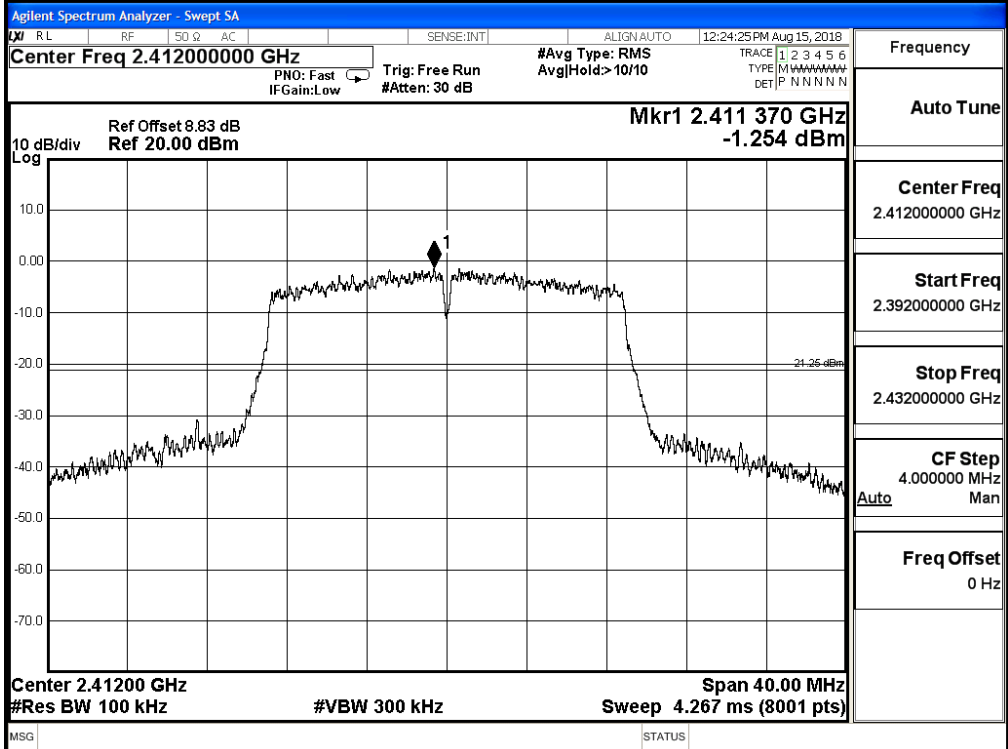


Puw/11G/HCH

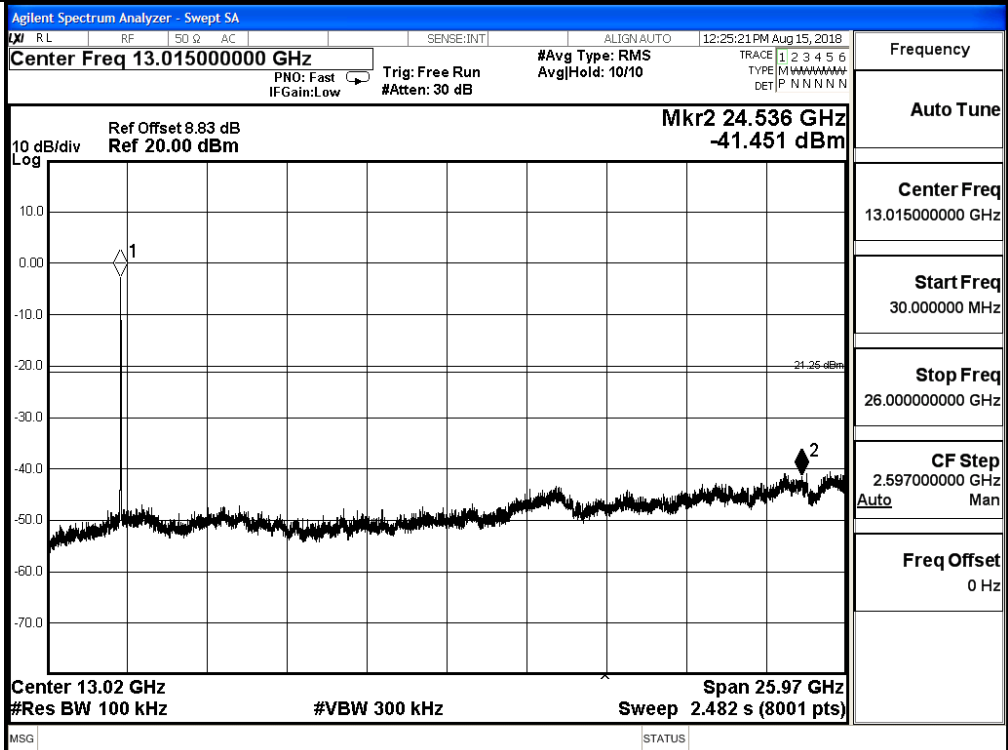


11N20SISO_LCH_Graphs

Pref/11N20SIS
O/LCH

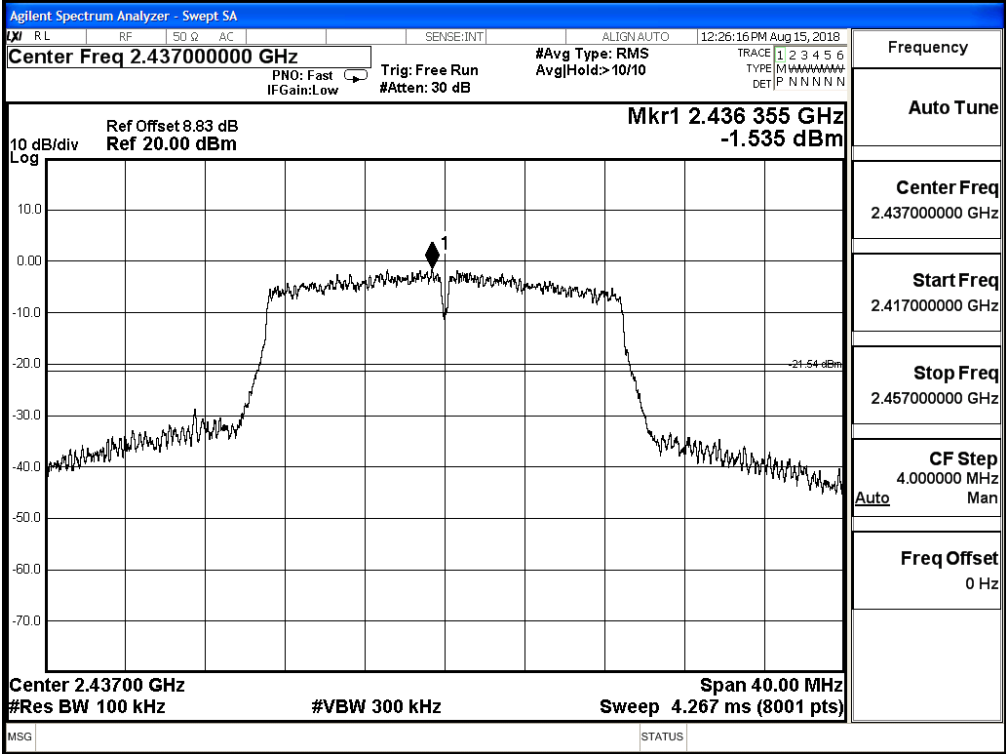


Puw/11N20
SISO/LCH

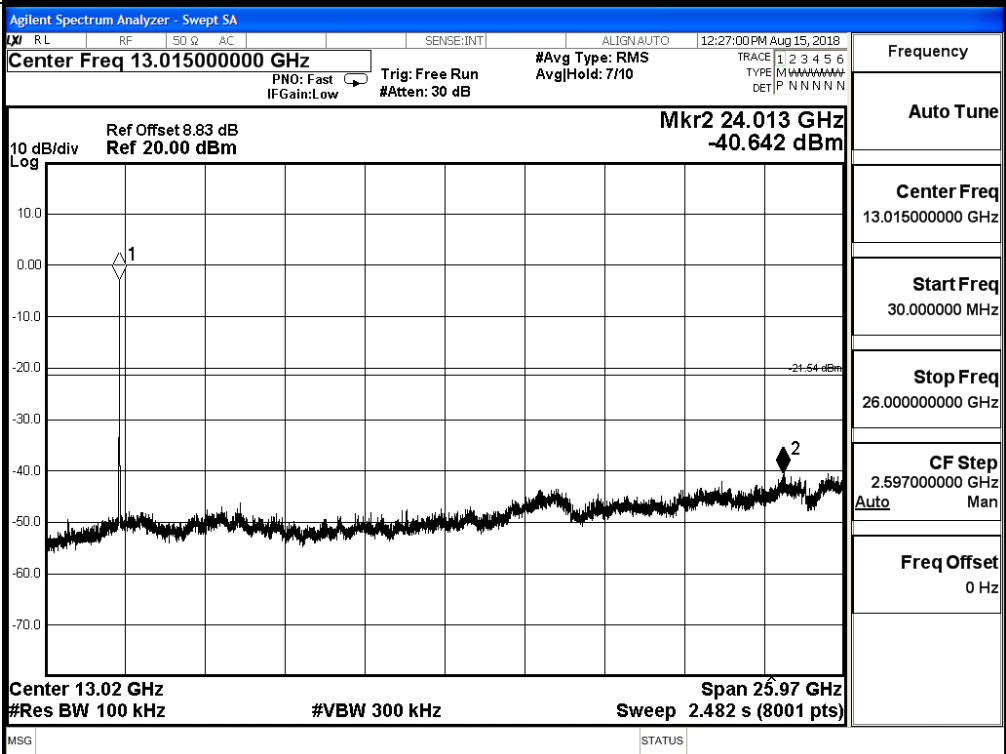


11N20SISO_MCH_Graphs

Pref/11N20
SISO/MCH

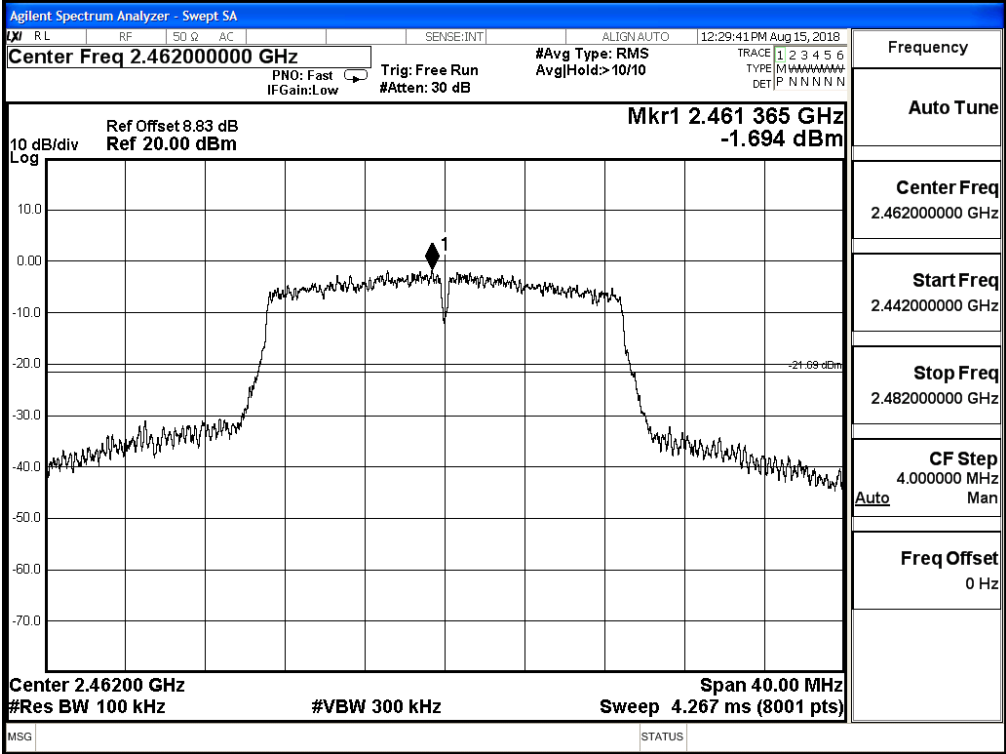


Puw/11N20
SISO/MCH

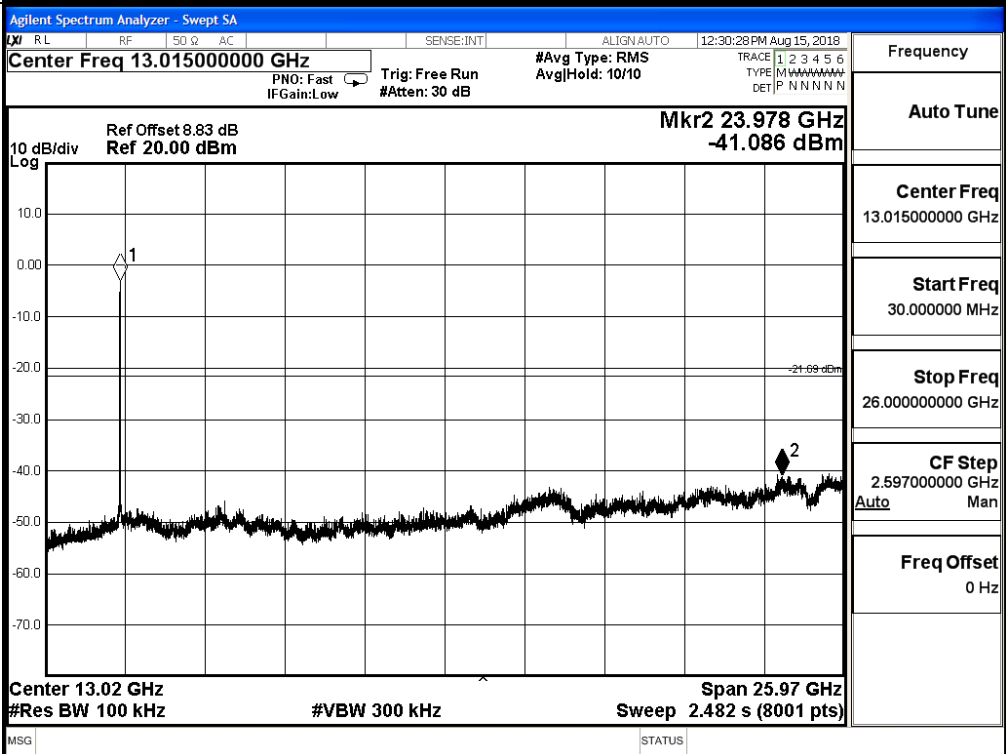


11N20SISO_HCH_Graphs

Pref/11N20
SISO/HCH

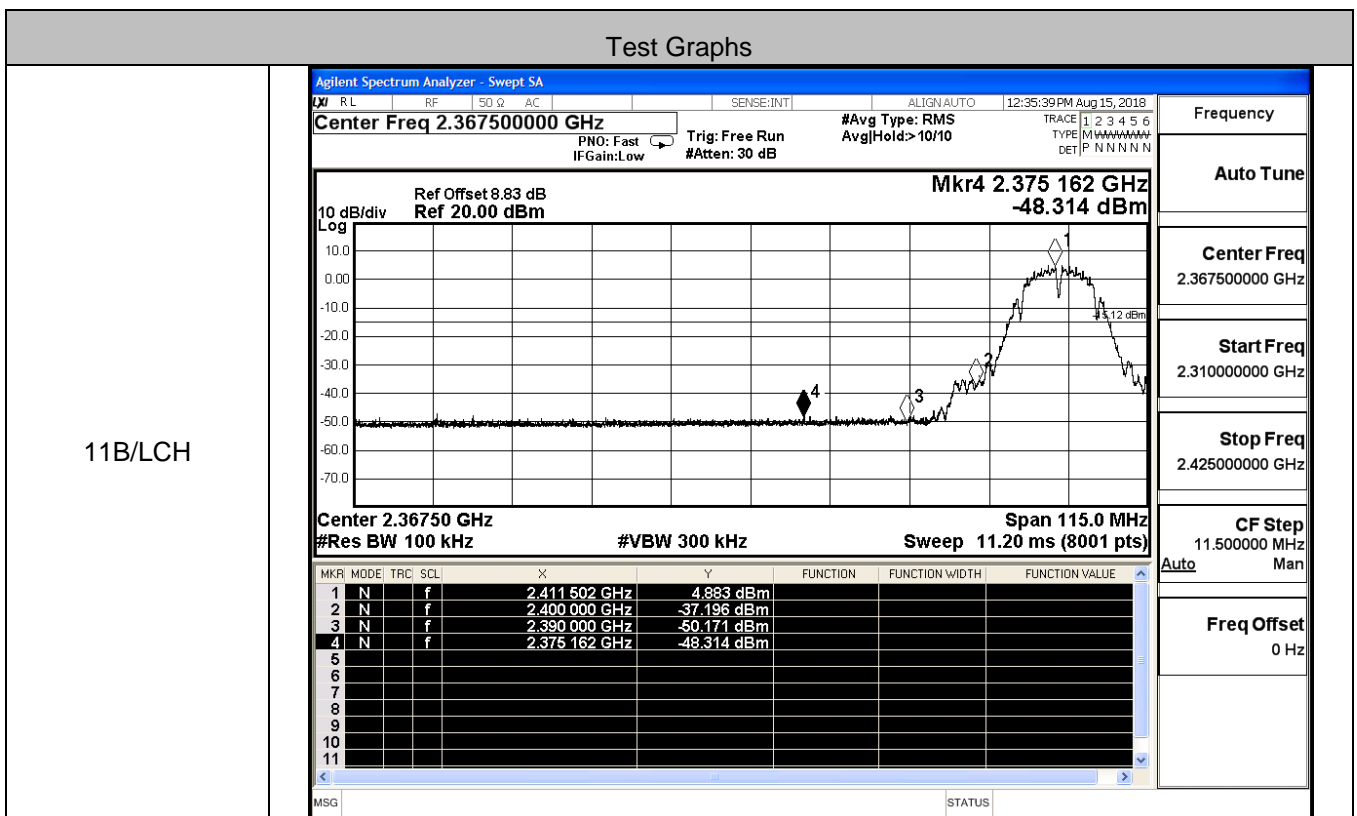


Puw/11N20
SISO/HCH

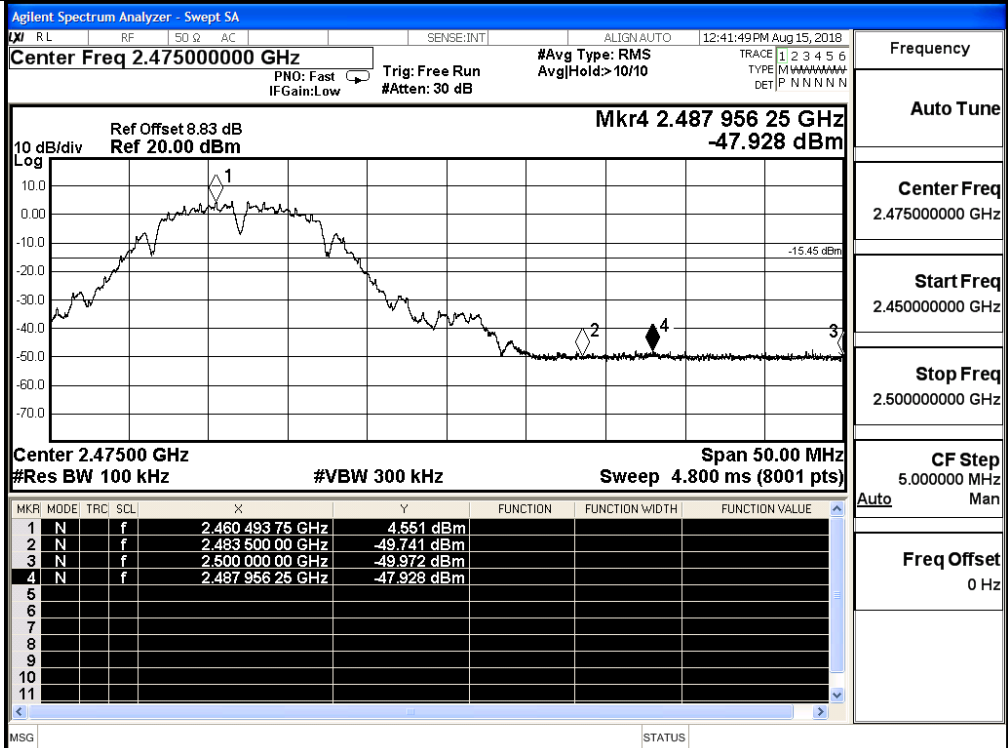


A.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	4.883	-48.314	-15.117	PASS
	HCH	4.551	-47.928	-15.449	PASS
11G	LCH	-1.501	-46.321	-21.501	PASS
	HCH	-1.257	-44.935	-21.257	PASS
11N20SISO	LCH	-1.653	-46.554	-21.653	PASS
	HCH	-1.692	-43.099	-21.692	PASS

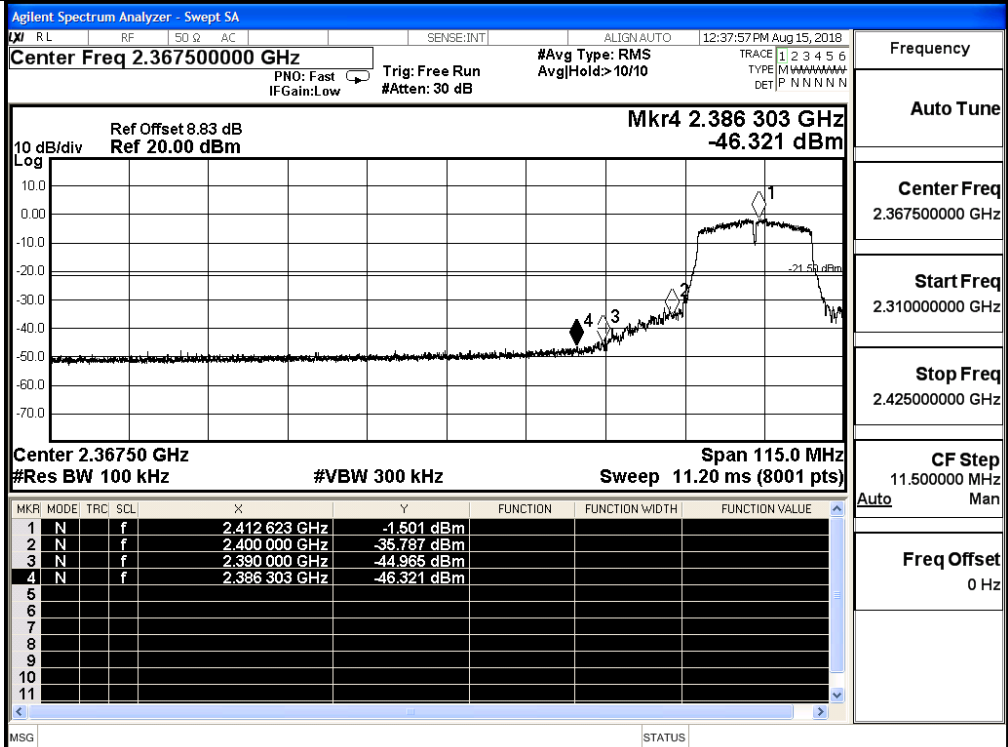


11B/HCH



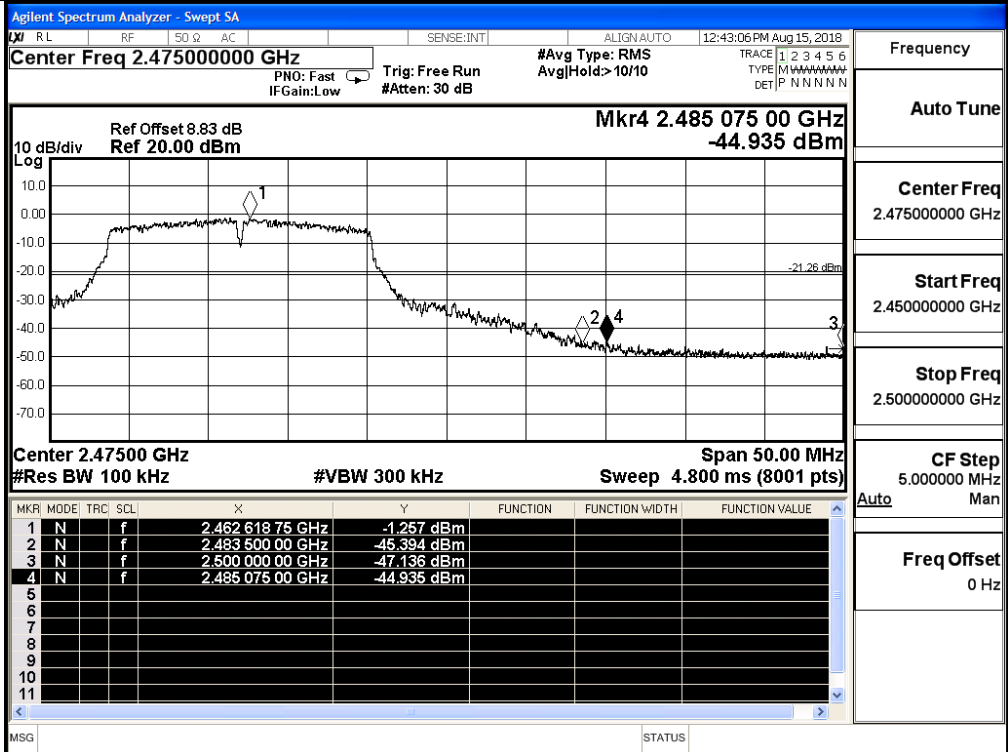
Frequency
Auto Tune
Center Freq 2.47500000 GHz
Start Freq 2.450000000 GHz
Stop Freq 2.500000000 GHz
CF Step 5.000000 MHz
Freq Offset 0 Hz

11G/LCH



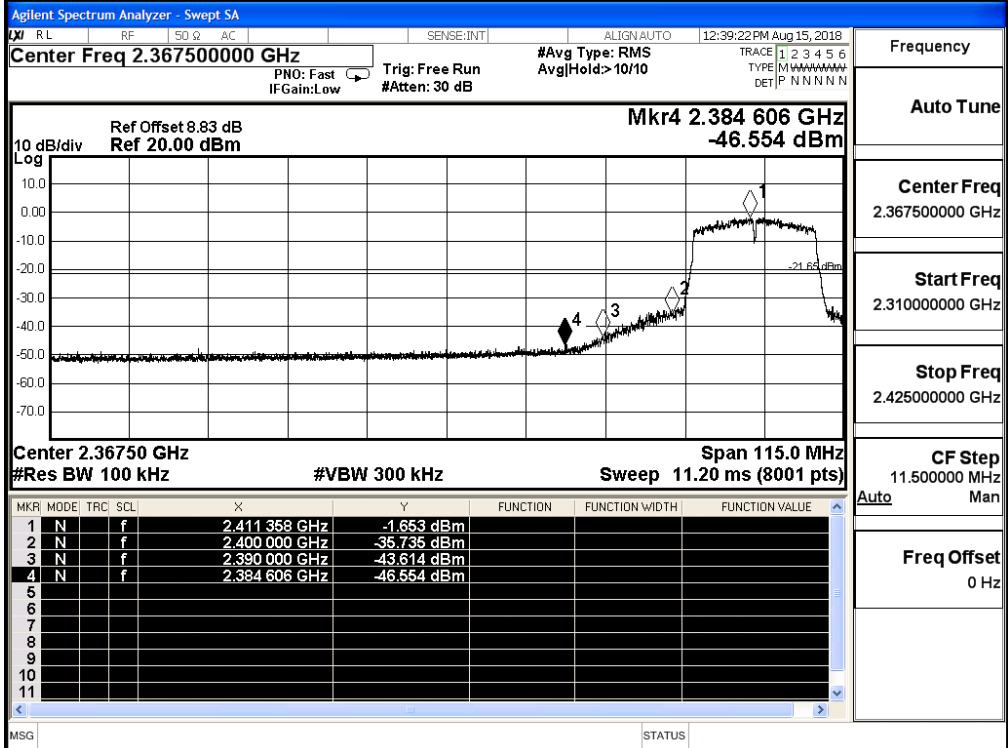
Frequency
Auto Tune
Center Freq 2.36750000 GHz
Start Freq 2.310000000 GHz
Stop Freq 2.425000000 GHz
CF Step 11.500000 MHz
Freq Offset 0 Hz

11G/HCH



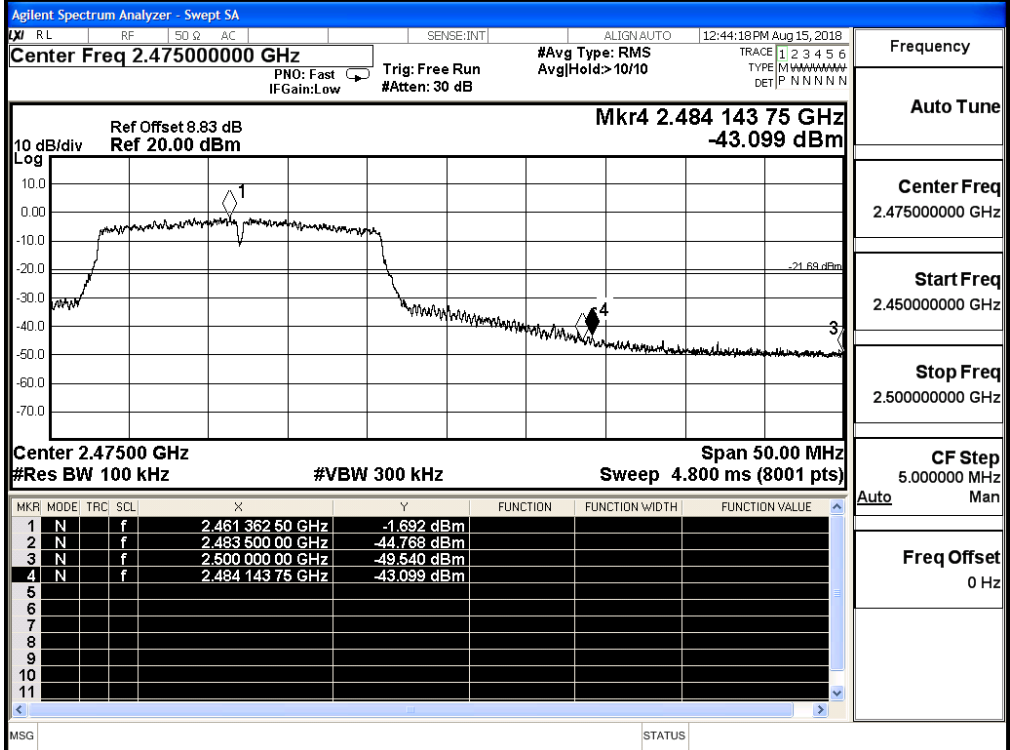
Frequency	
Auto Tune	
Center Freq	2.47500000 GHz
Start Freq	2.450000000 GHz
Stop Freq	2.500000000 GHz
CF Step	5.0000000 MHz
Freq Offset	0 Hz

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

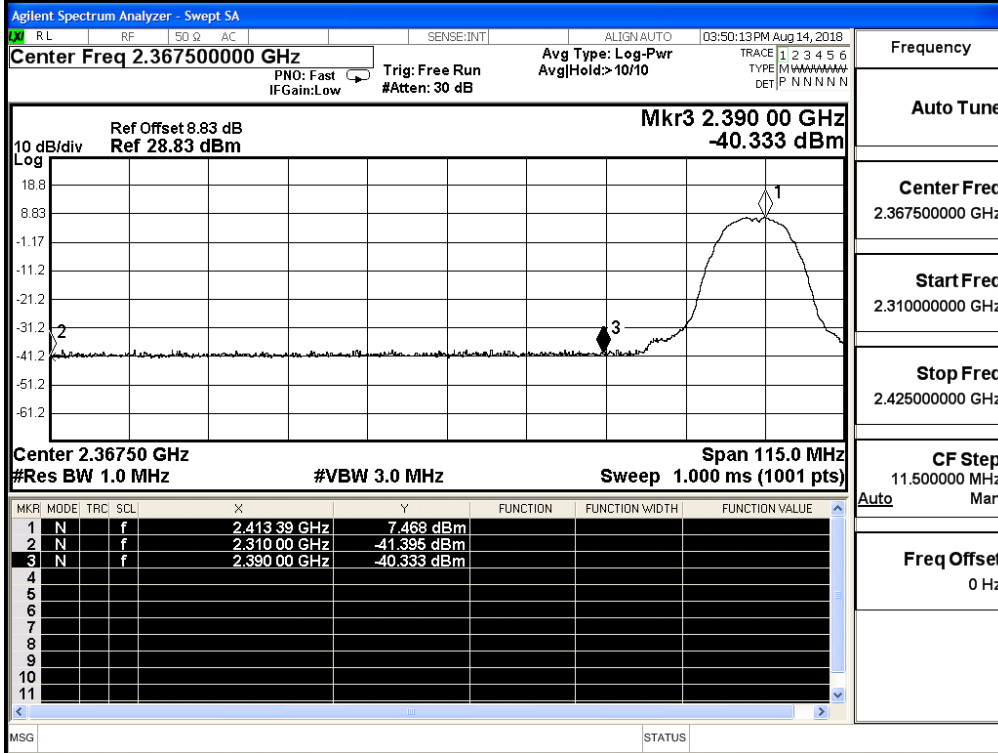


Frequency
Auto Tune
Center Freq 2.475000000 GHz
Start Freq 2.450000000 GHz
Stop Freq 2.500000000 GHz
CF Step 5.000000 MHz
Auto Man
Freq Offset 0 Hz

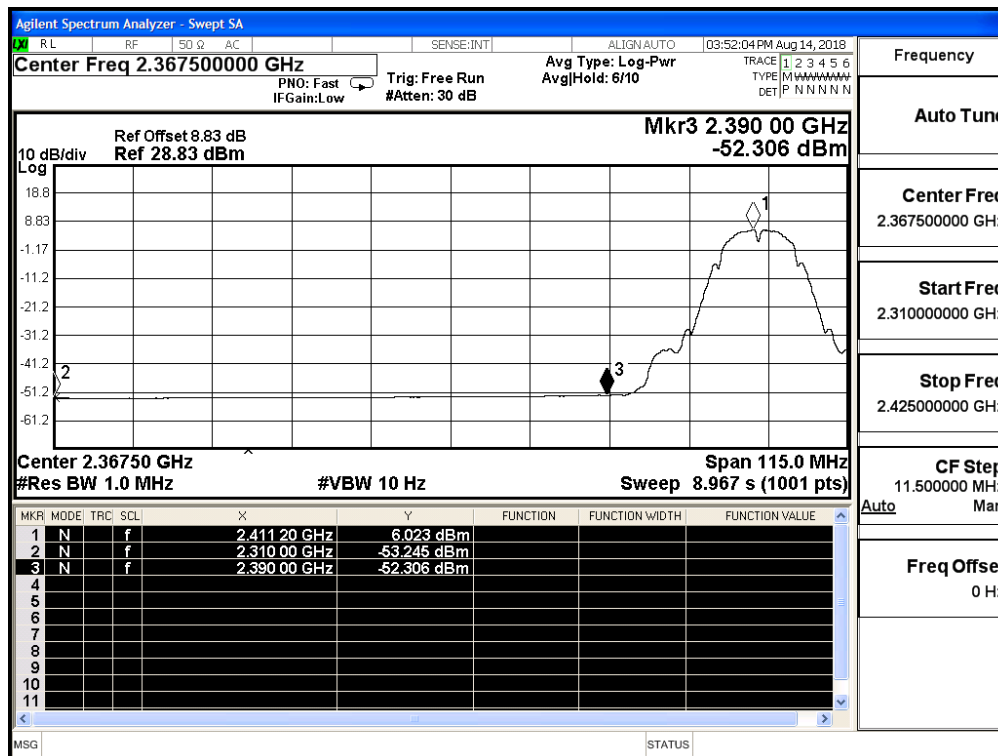
A.7 Restrict-band band-edge measurements

Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBu V/m]	Verdict
11B	2412	Ant1	2310.0	-41.395	2.0	0	55.865	PEAK	74	PASS
	2412	Ant1	2310.0	-53.245	2.0	0	44.015	AV	54	PASS
	2412	Ant1	2390.0	-40.333	2.0	0	56.927	PEAK	74	PASS
	2412	Ant1	2390.0	-52.306	2.0	0	44.954	AV	54	PASS
	2462	Ant1	2483.5	-40.574	2.0	0	56.686	PEAK	74	PASS
	2462	Ant1	2483.5	-52.217	2.0	0	45.043	AV	54	PASS
	2462	Ant1	2500.0	-41.328	2.0	0	55.932	PEAK	74	PASS
	2462	Ant1	2500.0	-52.234	2.0	0	45.026	AV	54	PASS
11G	2412	Ant1	2310.0	-41.207	2.0	0	56.053	PEAK	74	PASS
	2412	Ant1	2310.0	-53.265	2.0	0	43.995	AV	54	PASS
	2412	Ant1	2390.0	-33.269	2.0	0	63.991	PEAK	74	PASS
	2412	Ant1	2390.0	-48.332	2.0	0	48.928	AV	54	PASS
	2462	Ant1	2483.5	-30.795	2.0	0	66.465	PEAK	74	PASS
	2462	Ant1	2483.5	-47.244	2.0	0	50.016	AV	54	PASS
	2462	Ant1	2500.0	-39.011	2.0	0	58.249	PEAK	74	PASS
	2462	Ant1	2500.0	-51.472	2.0	0	45.788	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-42.351	2.0	0	54.909	PEAK	74	PASS
	2412	Ant1	2310.0	-53.292	2.0	0	43.968	AV	54	PASS
	2412	Ant1	2390.0	-28.340	2.0	0	68.920	PEAK	74	PASS
	2412	Ant1	2390.0	-46.606	2.0	0	50.654	AV	54	PASS
	2462	Ant1	2483.5	-32.383	2.0	0	64.877	PEAK	74	PASS
	2462	Ant1	2483.5	-46.248	2.0	0	51.012	AV	54	PASS
	2462	Ant1	2500.0	-40.110	2.0	0	57.150	PEAK	74	PASS
	2462	Ant1	2500.0	-51.385	2.0	0	45.875	AV	54	PASS

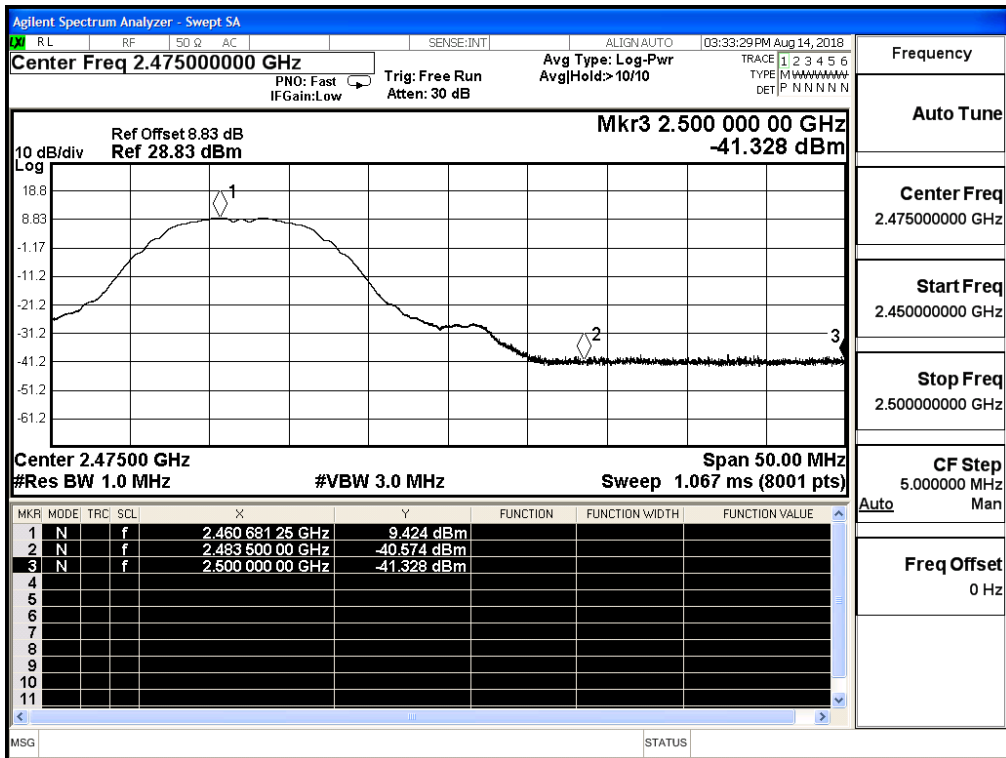
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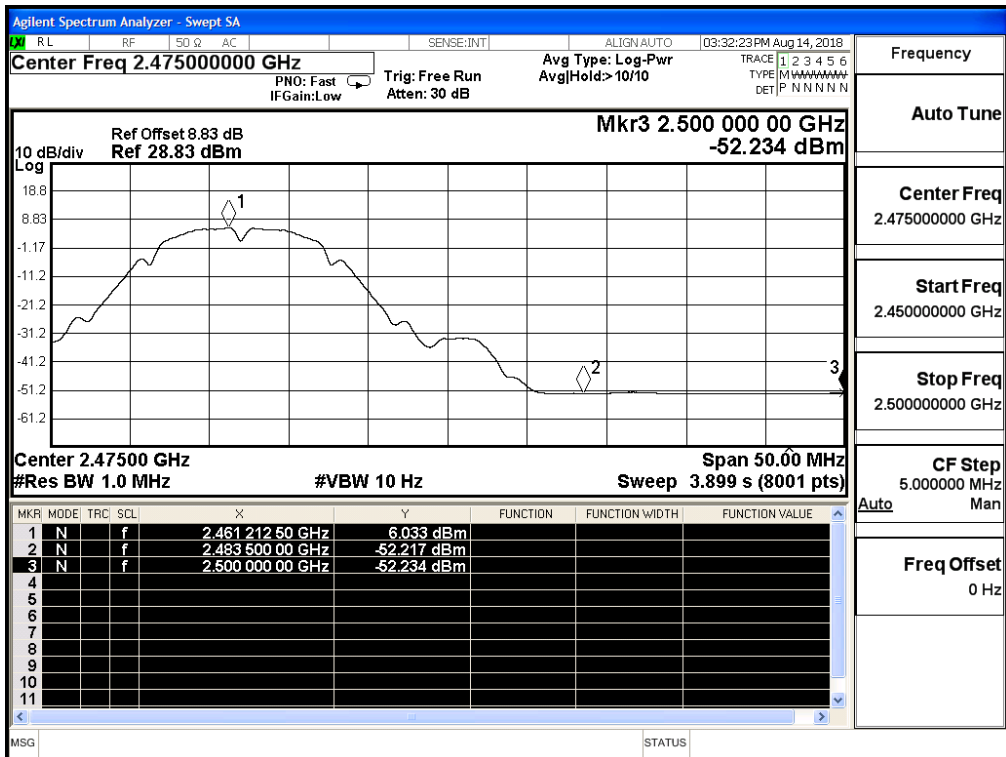
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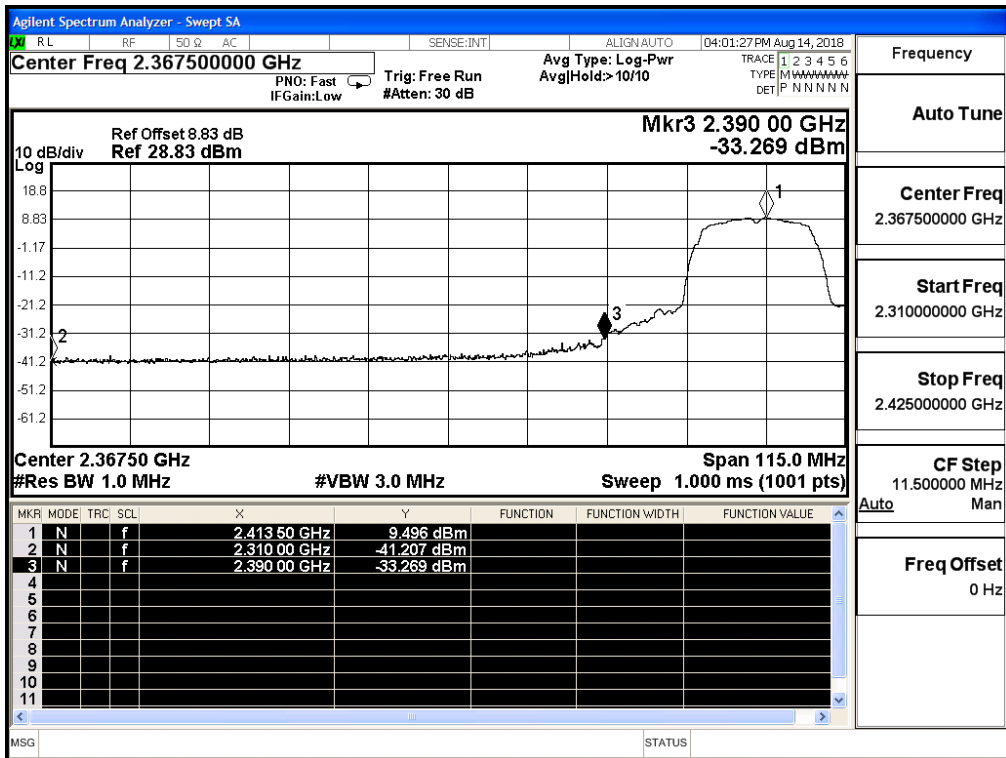
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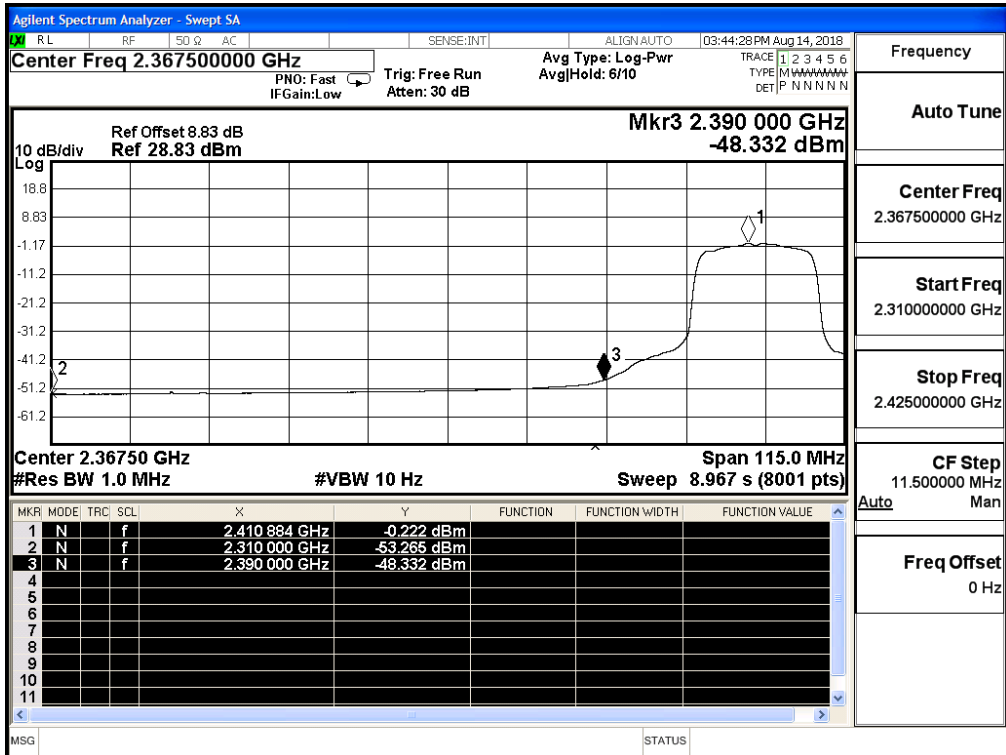
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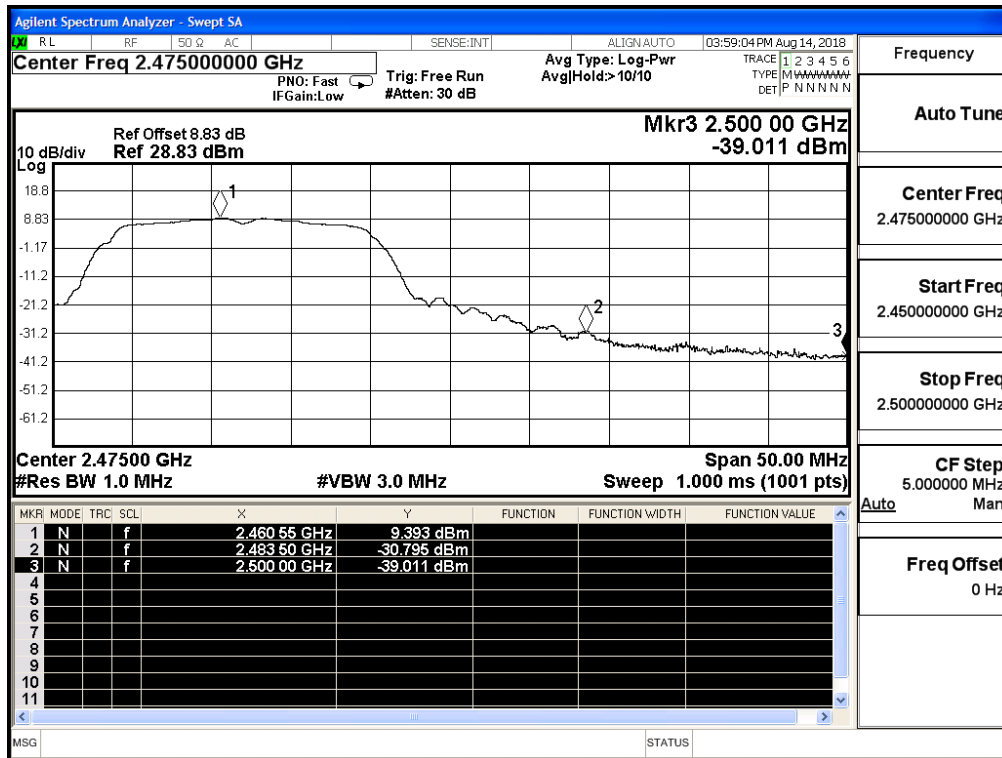
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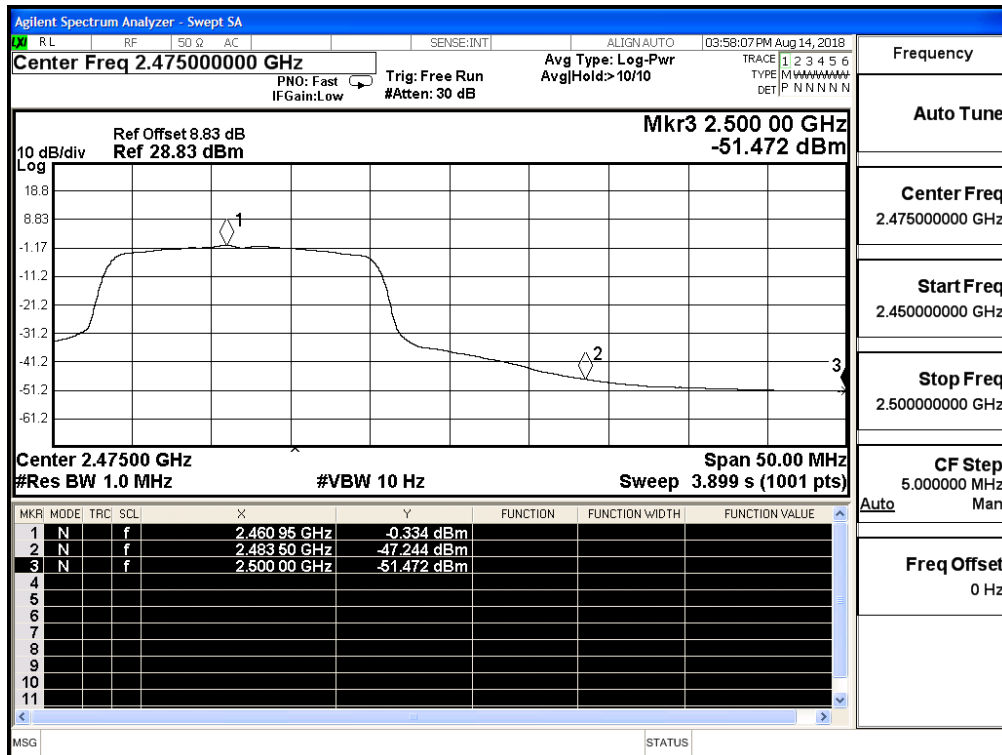
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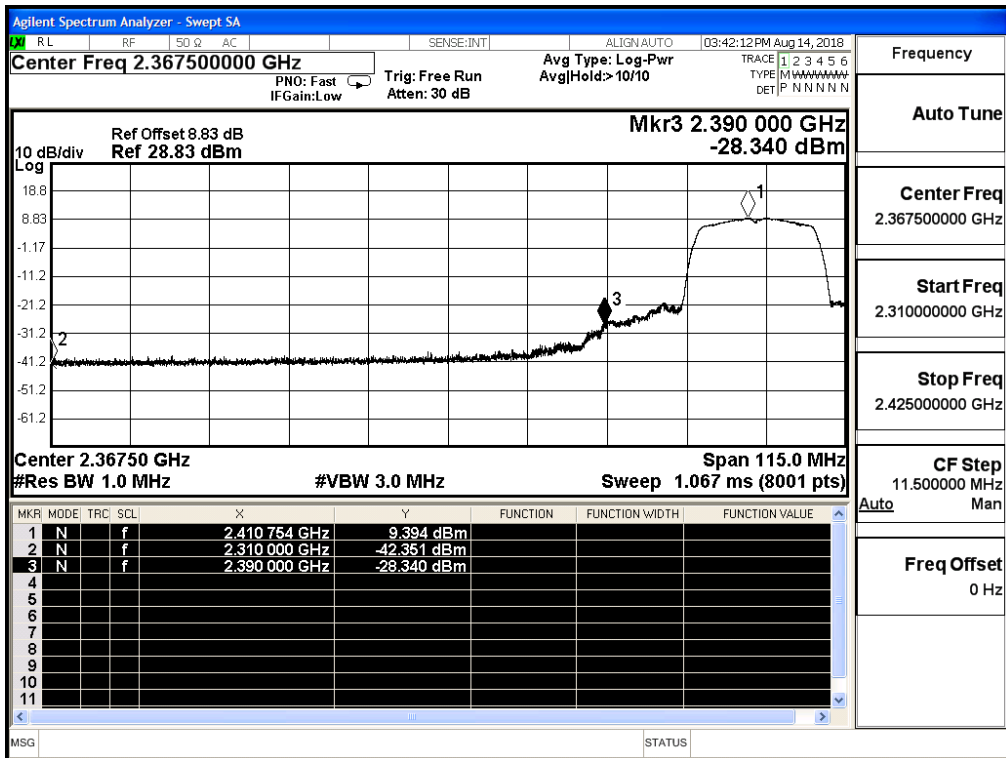
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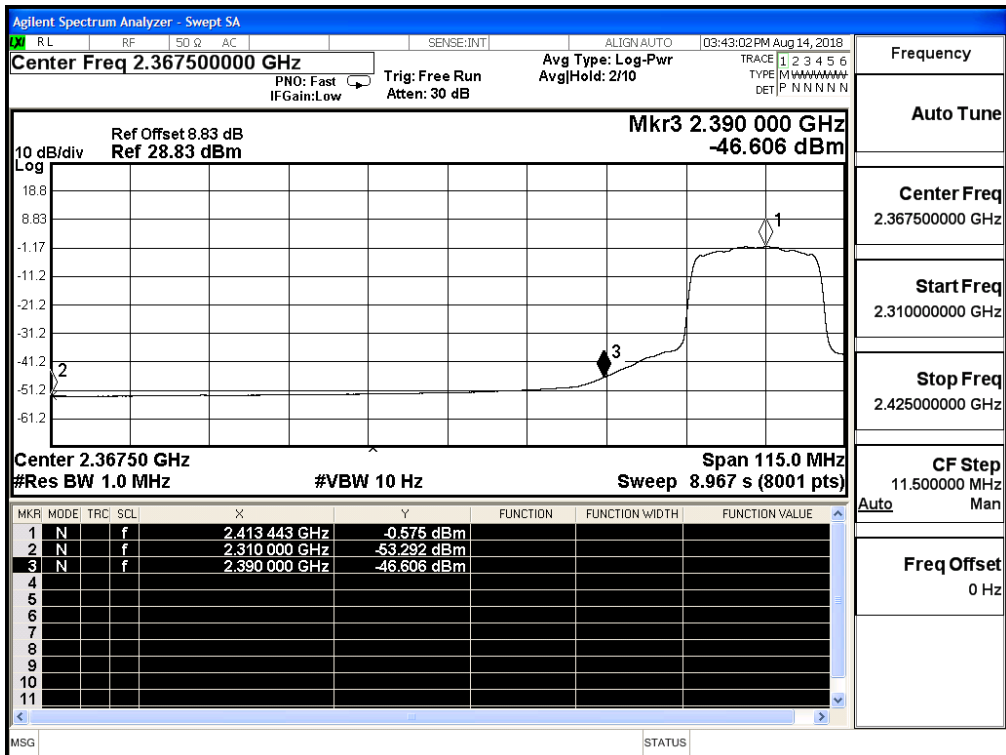
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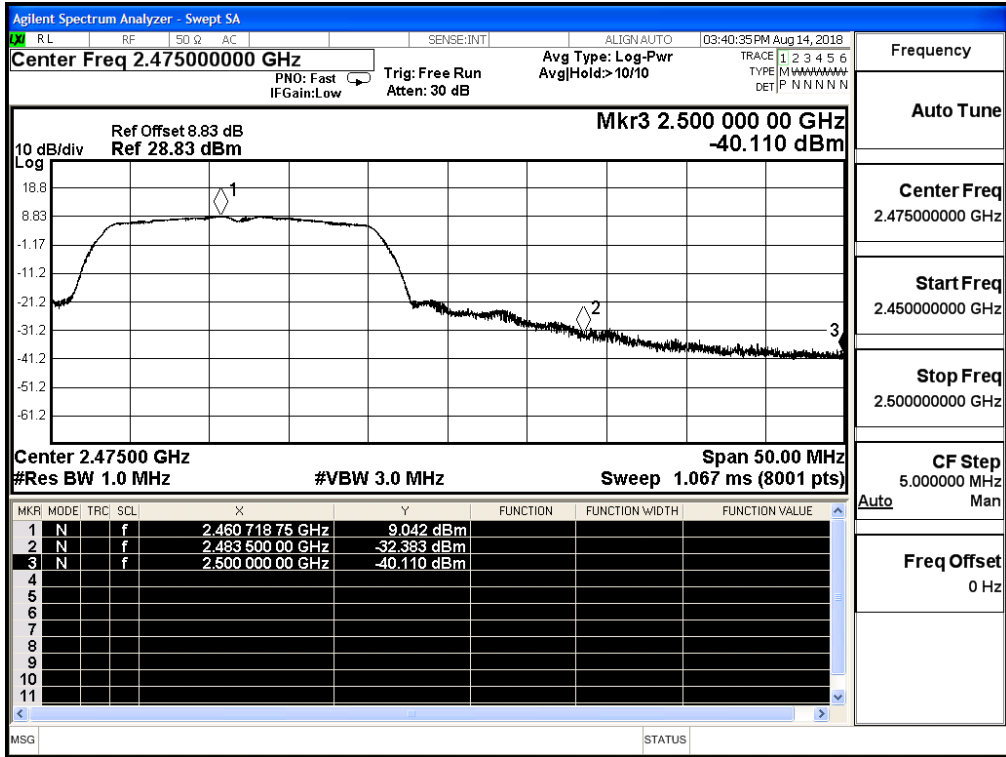
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Restrict-band band-edge measurements_11N20SISO_2412_Ant1_AV



Restrict-band band-edge measurements_11N20SISO_2462_Ant1_PEAK



Restrict-band band-edge measurements_11N20SISO_2462_Ant1_AV

