

## Appendix A

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

Product Name: LED Lamps

Trade Mark: YAMAO

Test Model: YMDWF A19 10W 1834-RGB20-50

#### Environmental Conditions

Temperature:	24.6 ° C
Relative Humidity:	52.6%
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

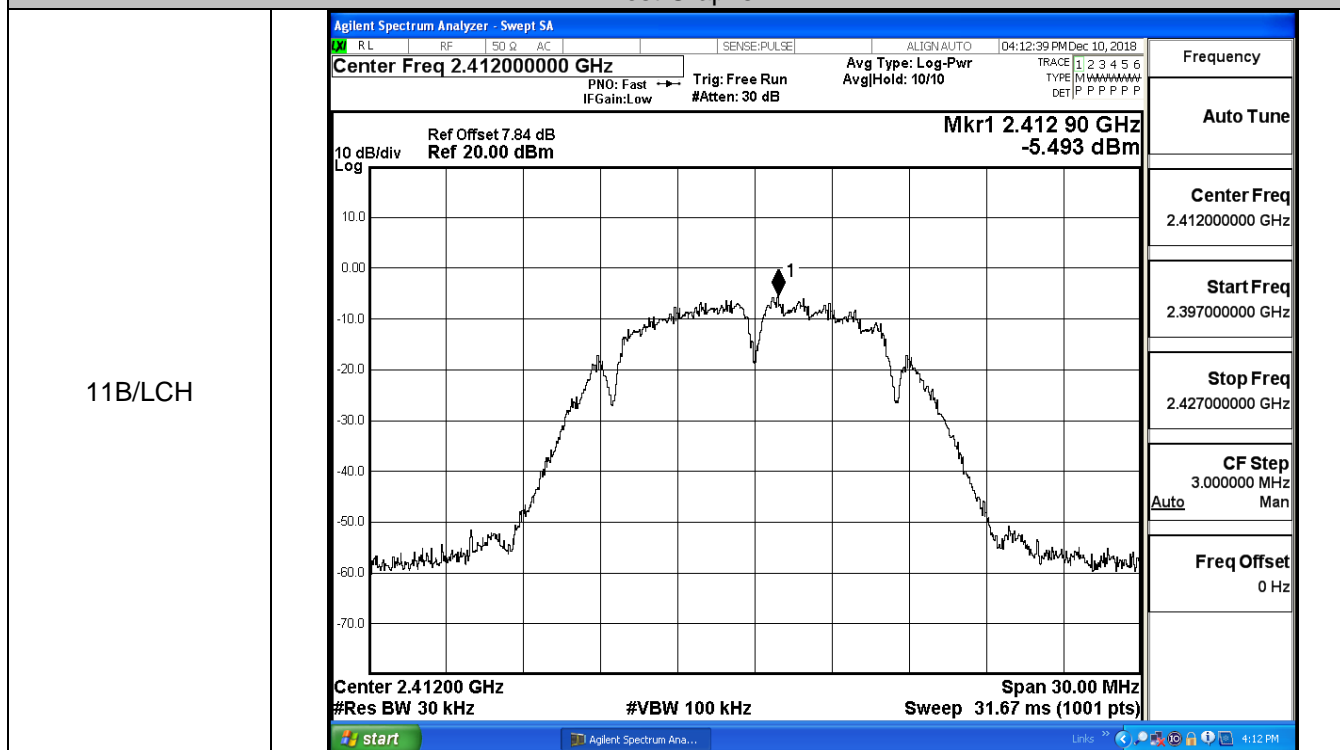
**A.2 Maximum Conducted Output Power**

Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	12.39	30	PASS
	MCH	12.66	30	PASS
	HCH	12.58	30	PASS
11G	LCH	12.49	30	PASS
	MCH	14.56	30	PASS
	HCH	14.47	30	PASS
11N20SISO	LCH	13.69	30	PASS
	MCH	13.76	30	PASS
	HCH	13.93	30	PASS

### A.3 Maximum Power Spectral Density

Mode	Channel	Meas.Level [dBm/30KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-5.493	8	PASS
	MCH	-5.210	8	PASS
	HCH	-5.255	8	PASS
11G	LCH	-12.124	8	PASS
	MCH	-9.408	8	PASS
	HCH	-9.230	8	PASS
11N20SISO	LCH	-10.992	8	PASS
	MCH	-10.553	8	PASS
	HCH	-10.575	8	PASS

Test Graphs



11B/MCH



Frequency

Auto Tune

Center Freq  
2.43700000 GHz

Start Freq  
2.422000000 GHz

Stop Freq  
2.452000000 GHz

CF Step  
3.000000 MHz  
Auto Man

Freq Offset  
0 Hz

11B/HCH



Frequency

Auto Tune

Center Freq  
2.46200000 GHz

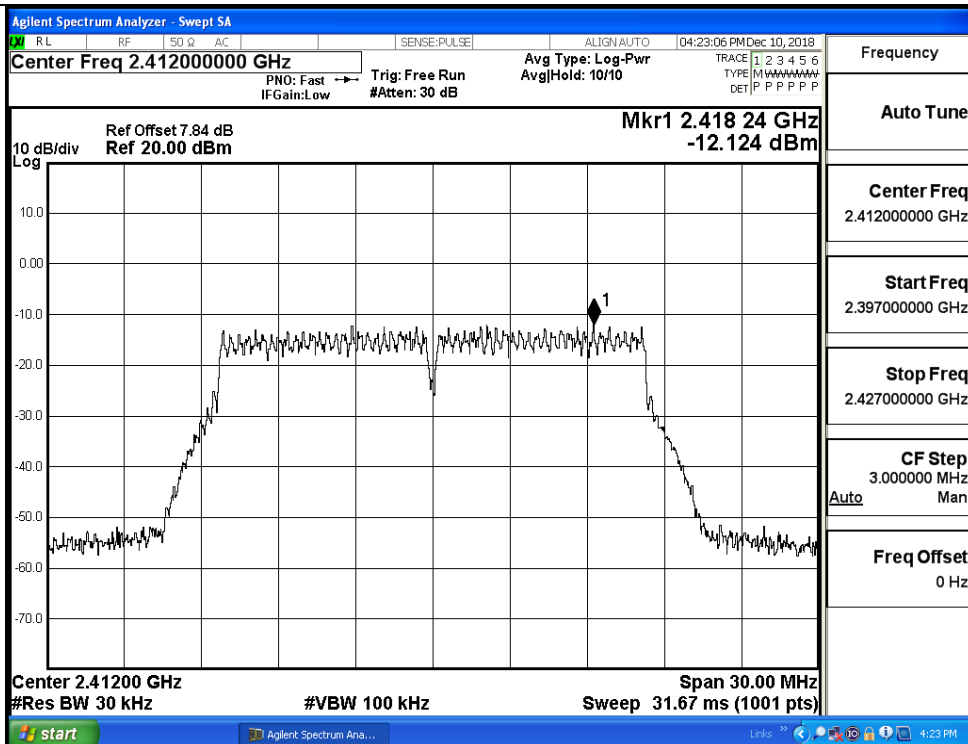
Start Freq  
2.447000000 GHz

Stop Freq  
2.477000000 GHz

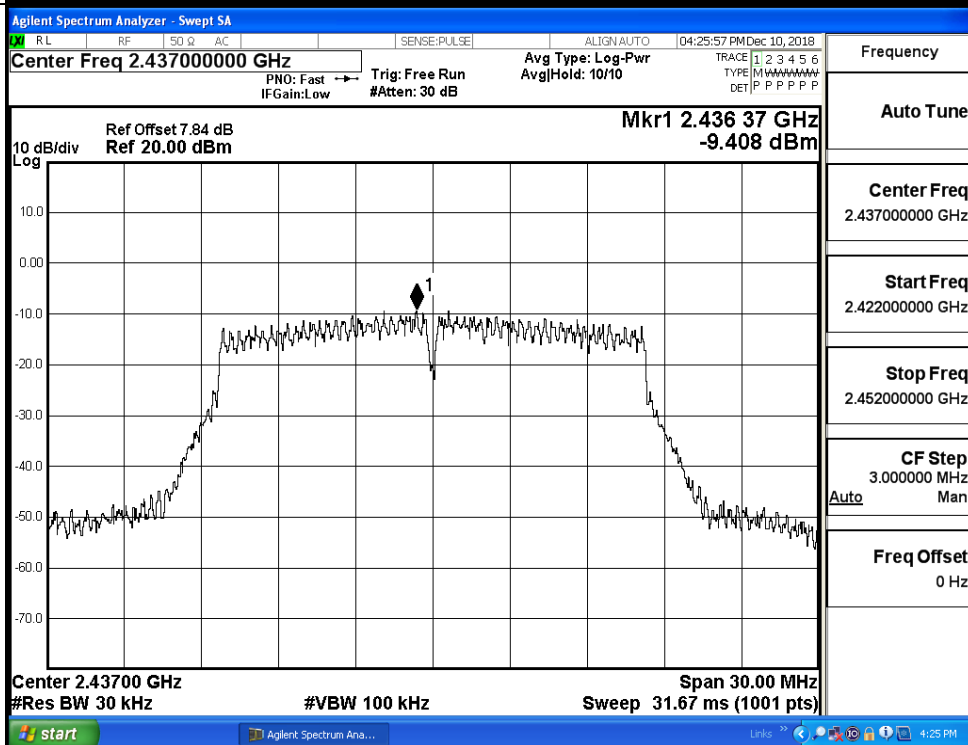
CF Step  
3.000000 MHz  
Auto Man

Freq Offset  
0 Hz

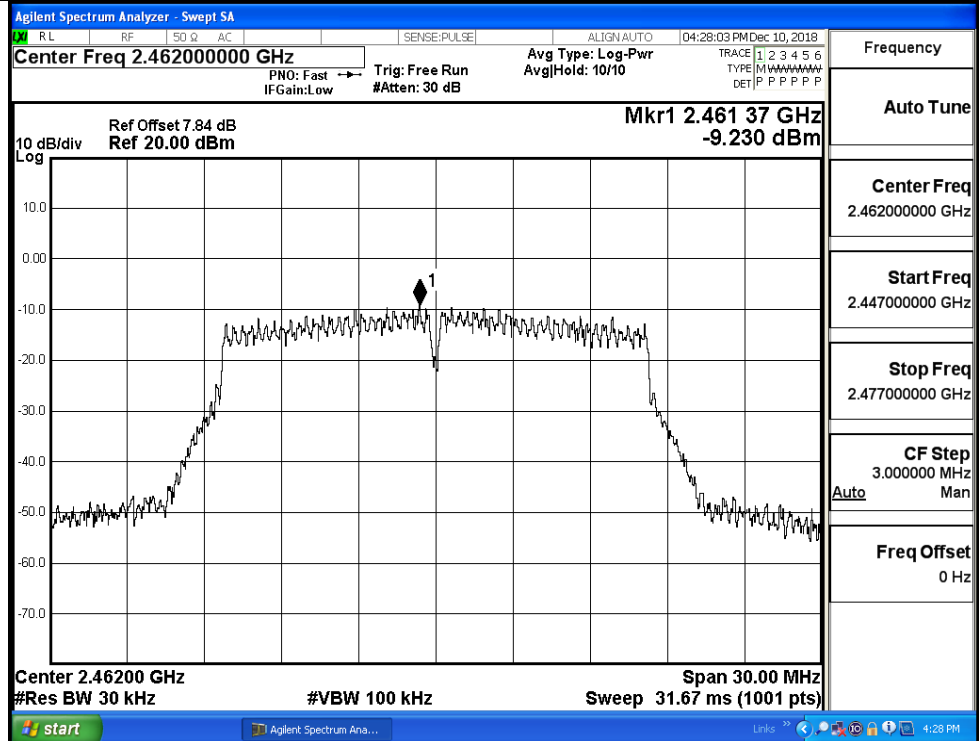
11G/LCH



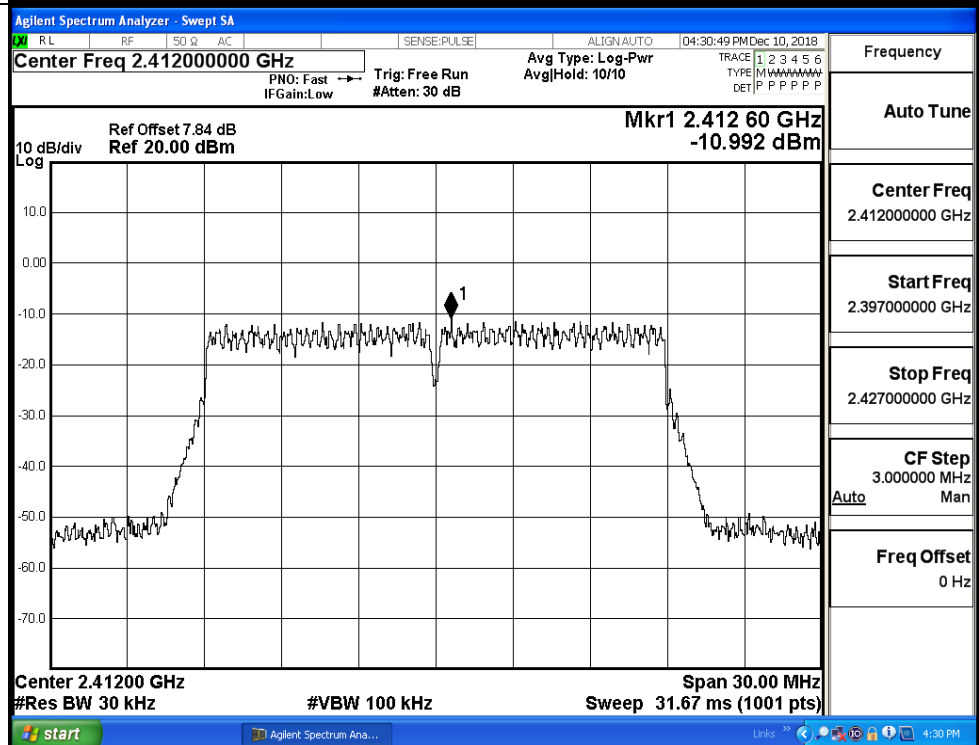
11G/MCH

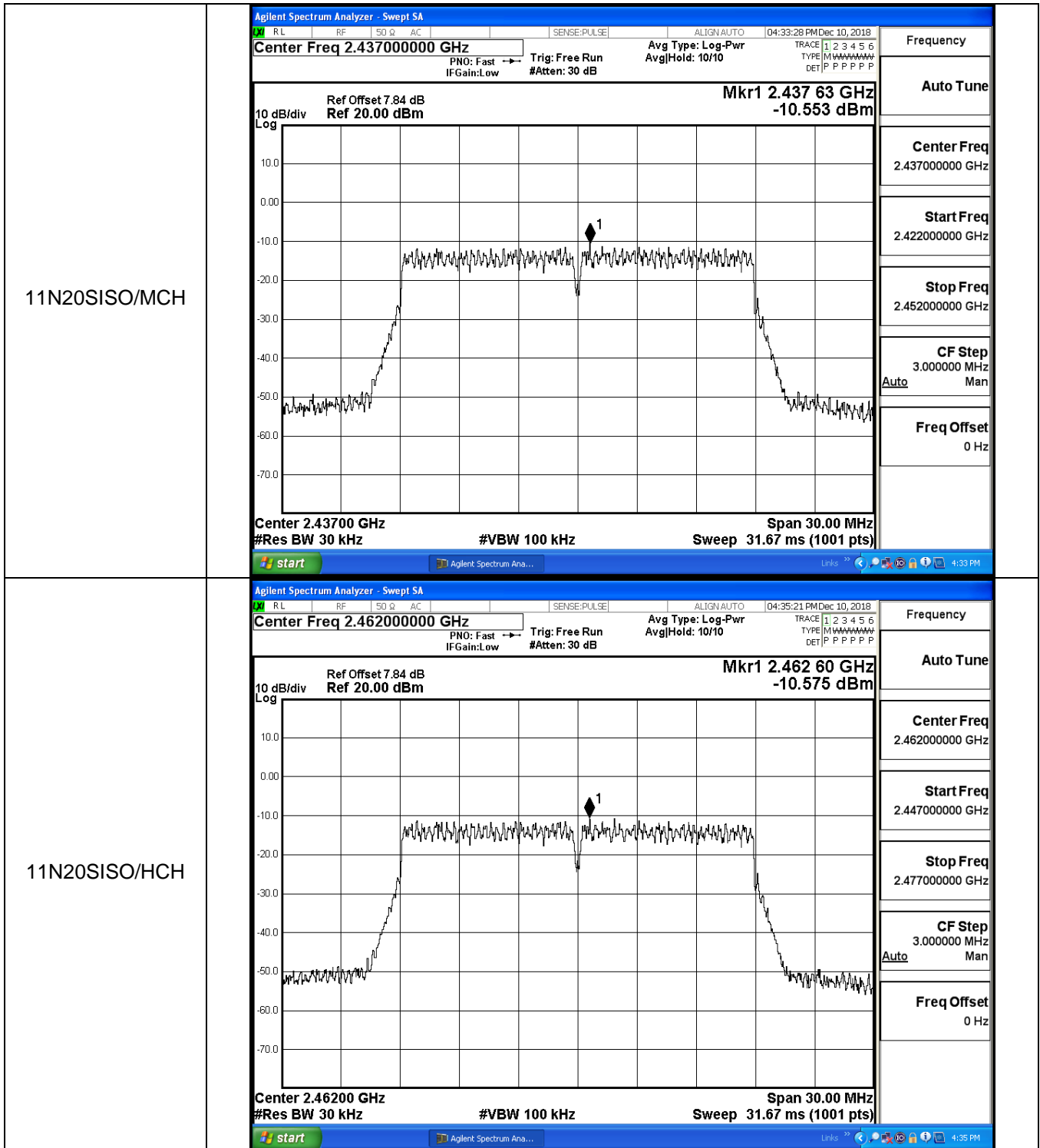


11G/HCH



11N20SISO/LCH

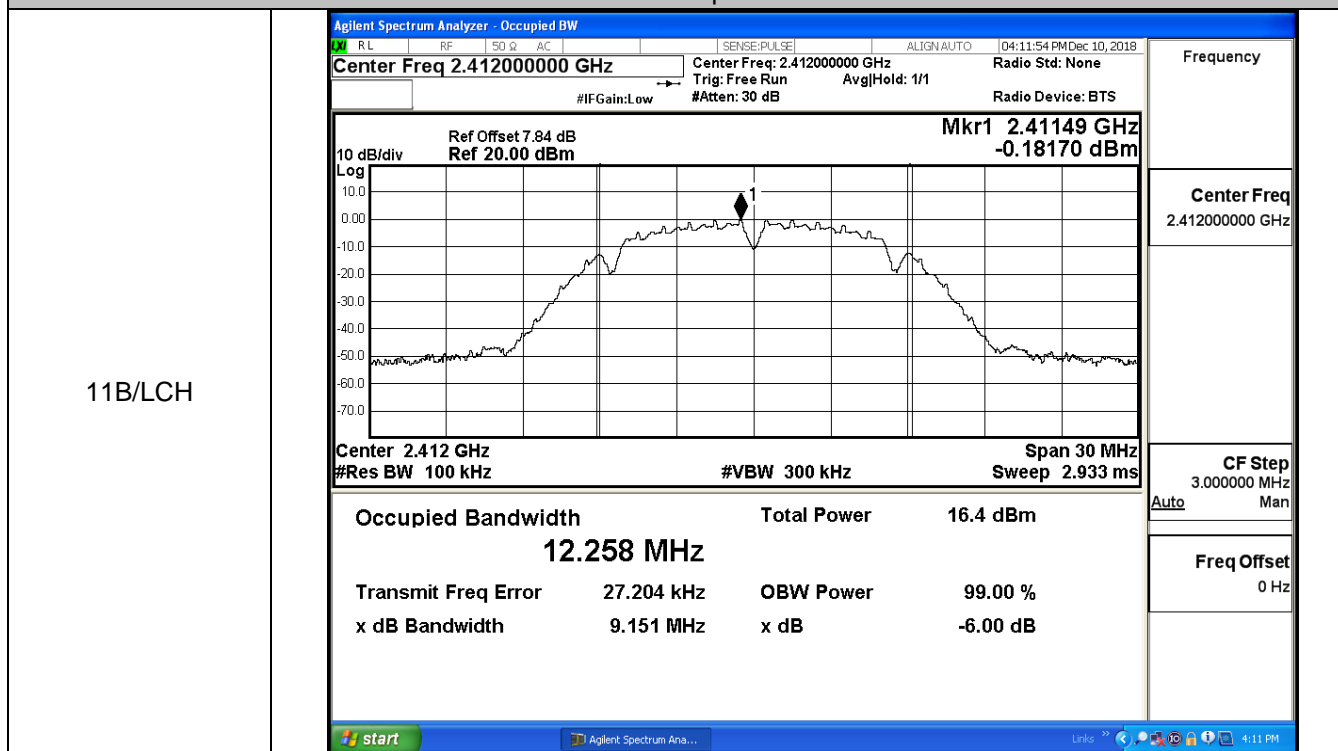




## A.4 6dB Bandwidth

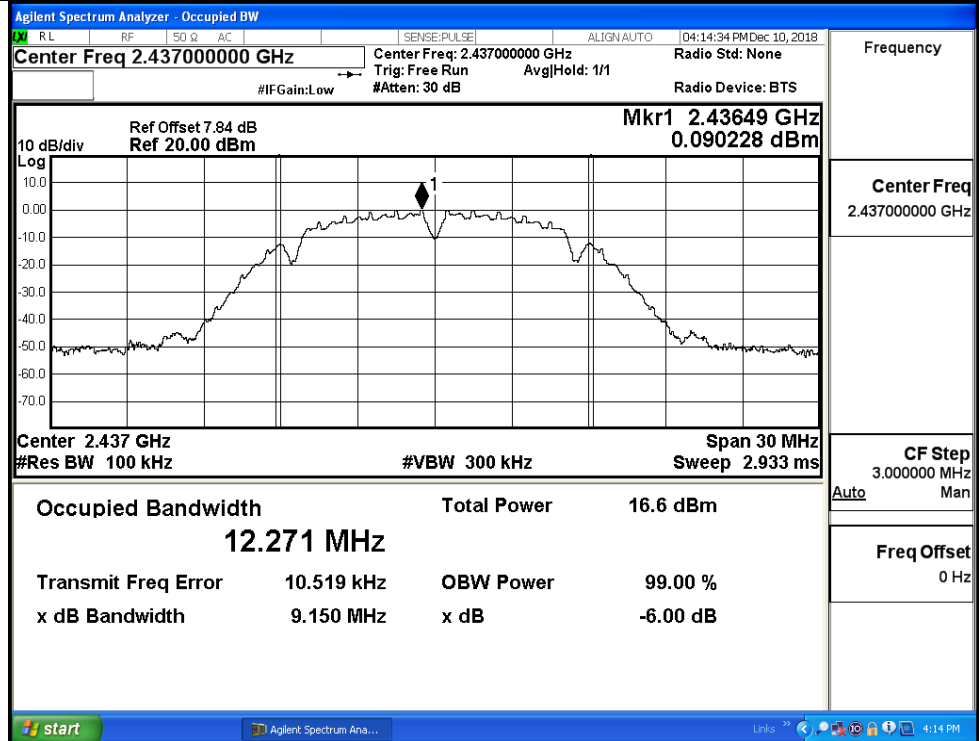
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	9.151	$\geq 0.5$	PASS
	MCH	9.150	$\geq 0.5$	PASS
	HCH	9.151	$\geq 0.5$	PASS
11G	LCH	16.61	$\geq 0.5$	PASS
	MCH	16.43	$\geq 0.5$	PASS
	HCH	16.41	$\geq 0.5$	PASS
11N20SISO	LCH	17.82	$\geq 0.5$	PASS
	MCH	17.84	$\geq 0.5$	PASS
	HCH	17.84	$\geq 0.5$	PASS

### Test Graphs





11B/MCH



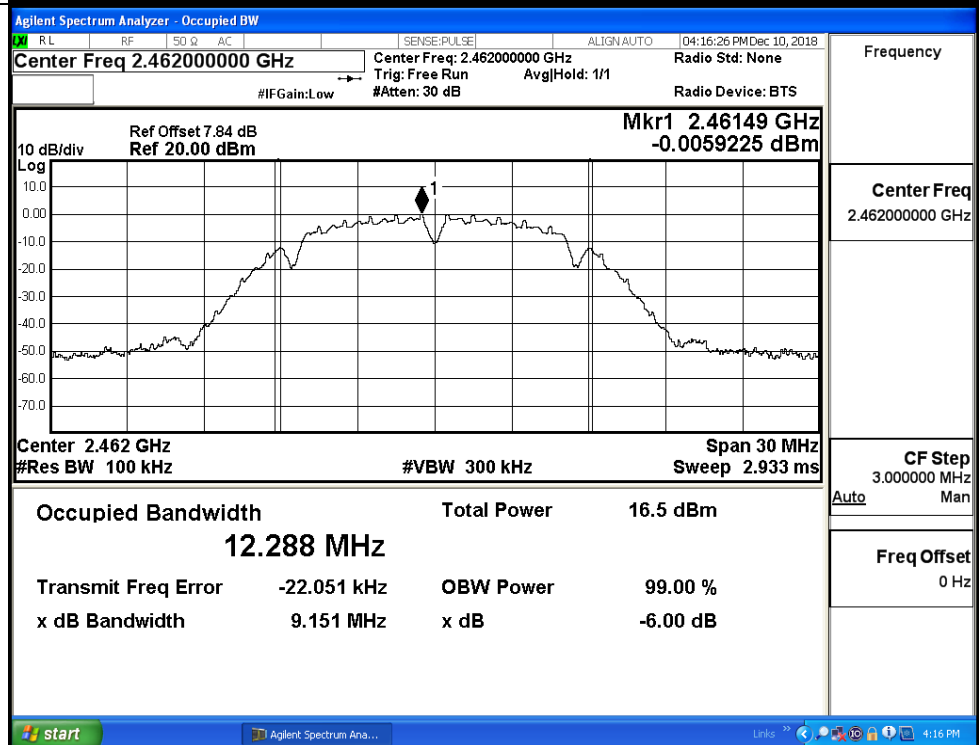
Frequency

Center Freq  
2.437000000 GHz

CF Step  
3.000000 MHz  
Auto      Man

Freq Offset  
0 Hz

11B/HCH



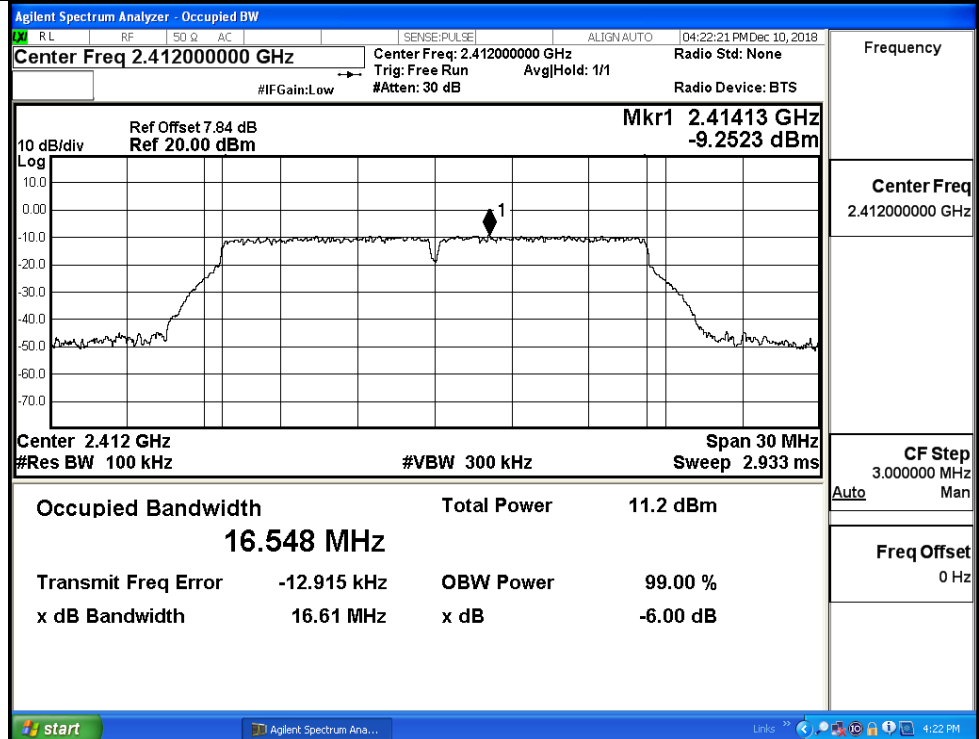
Frequency

Center Freq  
2.462000000 GHz

CF Step  
3.000000 MHz  
Auto      Man

Freq Offset  
0 Hz

11G/LCH



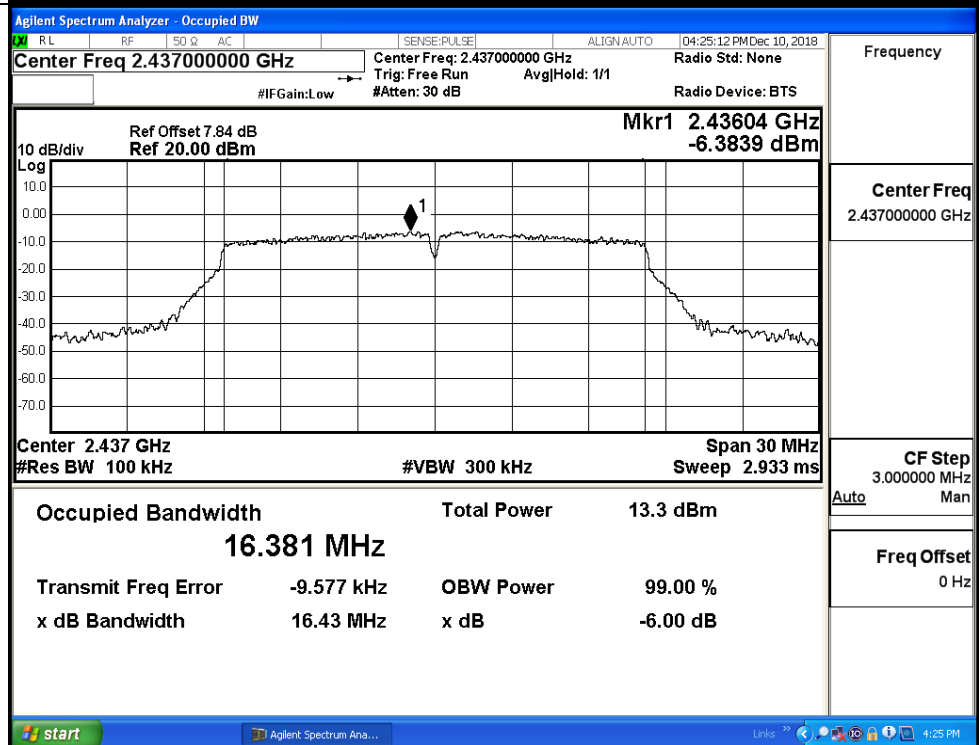
Frequency

Center Freq  
2.412000000 GHz

CF Step  
3.000000 MHz  
Auto Man

Freq Offset  
0 Hz

11G/MCH



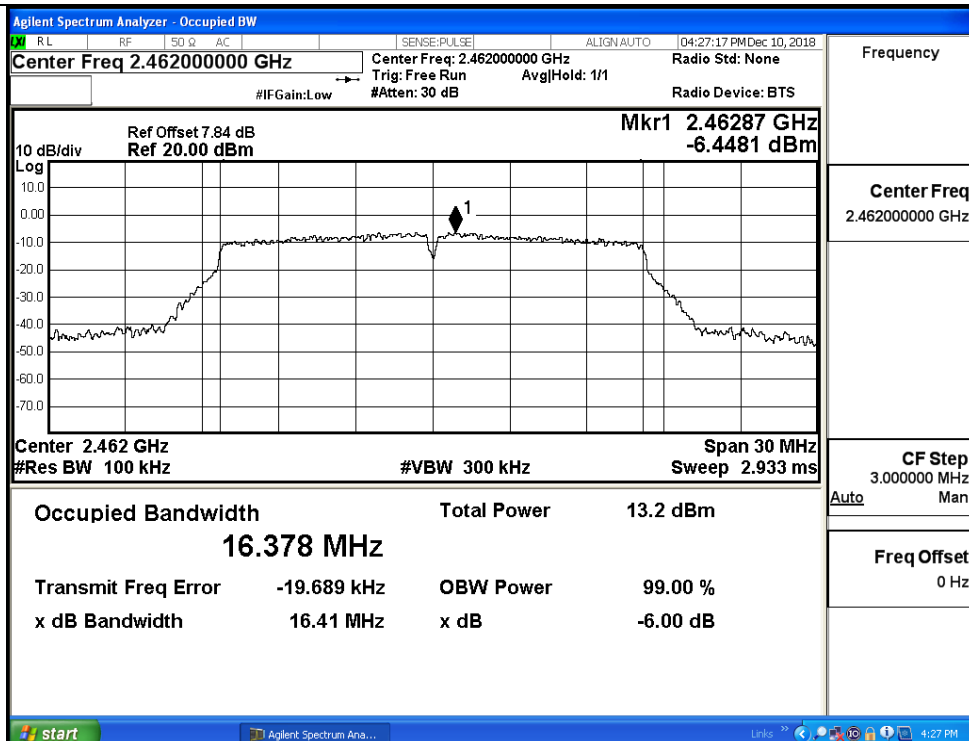
Frequency

Center Freq  
2.437000000 GHz

CF Step  
3.000000 MHz  
Auto Man

Freq Offset  
0 Hz

11G/HCH



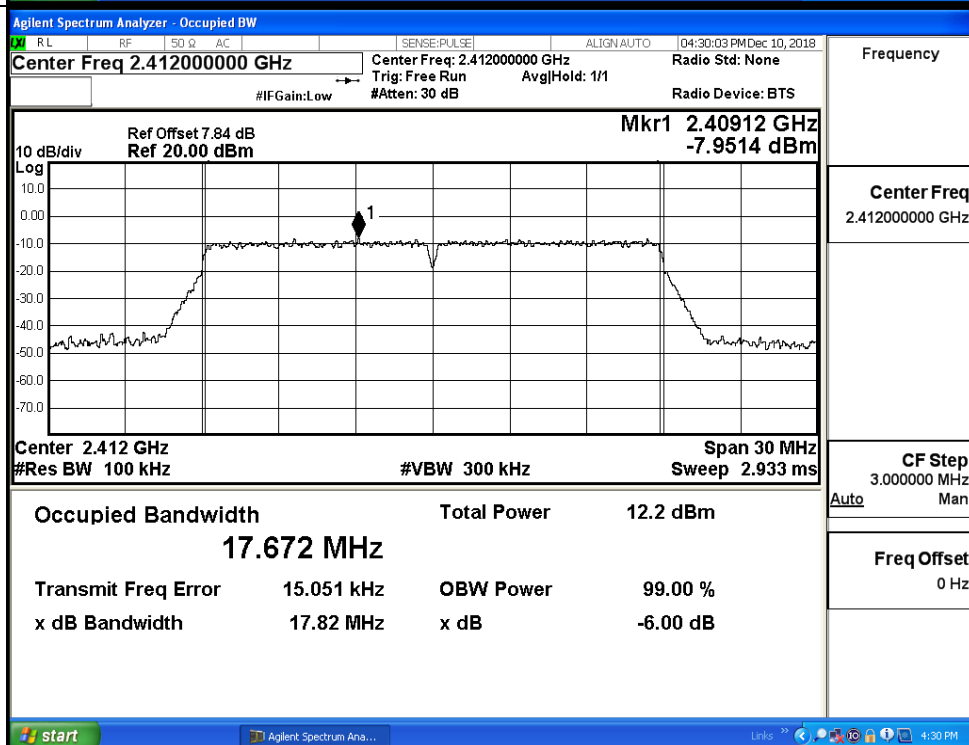
Frequency

Center Freq  
2.462000000 GHz

CF Step  
3.000000 MHz  
Auto Man

Freq Offset  
0 Hz

11N20SISO/LCH

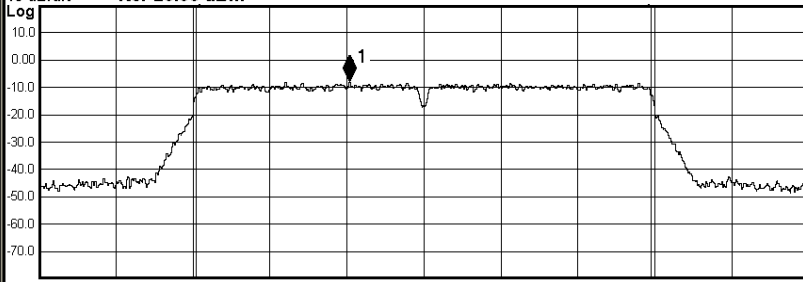
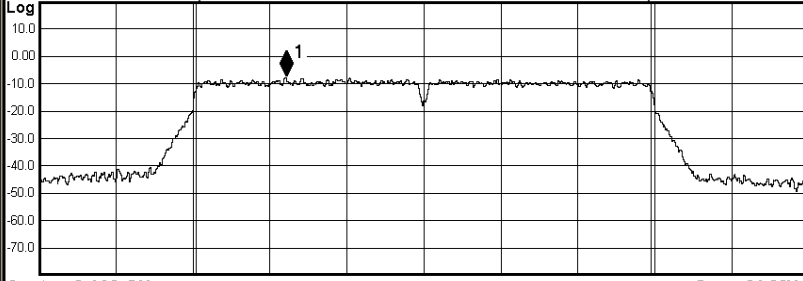


Frequency

Center Freq  
2.412000000 GHz

CF Step  
3.000000 MHz  
Auto Man

Freq Offset  
0 Hz

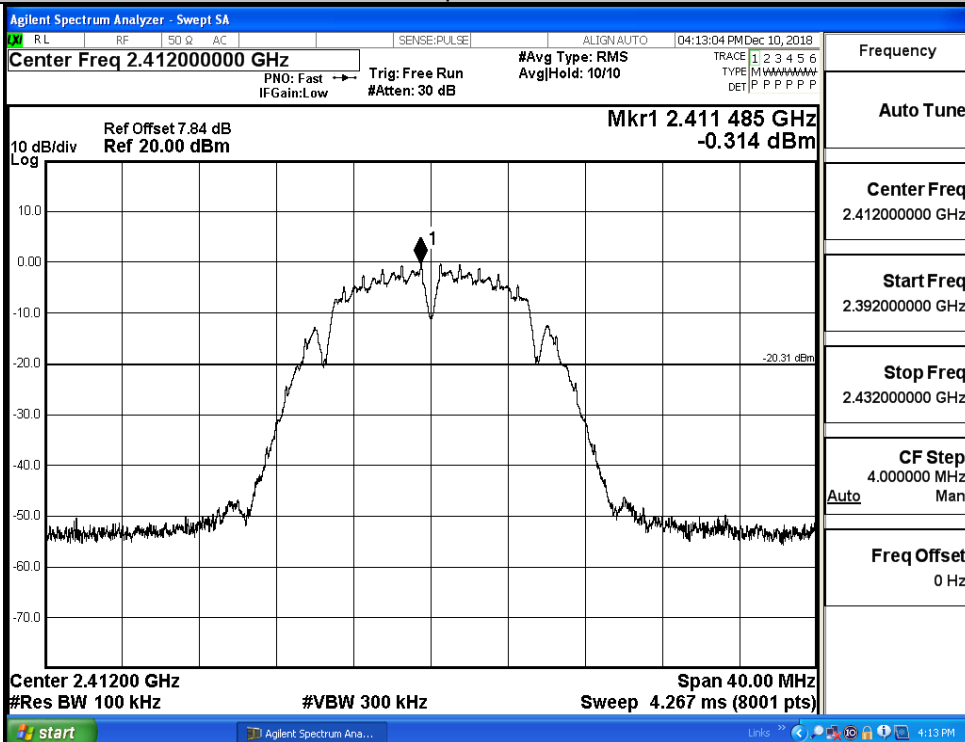
11N20SISO/MCH	<div data-bbox="443 145 1260 862"> <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.437000000 GHz</p> <p>Ref Offset 7.84 dB Ref 20.00 dBm</p> <p>Mkr1 2.43412 GHz -7.9508 dBm</p>  <p>Center 2.437 GHz #Res BW 100 kHz      #VBW 300 kHz      Span 30 MHz Sweep 2.933 ms</p> <p>Occupied Bandwidth      Total Power      12.3 dBm</p> <p><b>17.679 MHz</b></p> <p>Transmit Freq Error      9.015 kHz      OBW Power      99.00 %</p> <p>x dB Bandwidth      17.84 MHz      x dB      -6.00 dB</p> </div> <div data-bbox="1268 168 1412 840"> <p>Frequency</p> <p>Center Freq 2.437000000 GHz</p> <p>CF Step 3.000000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p> </div>
11N20SISO/HCH	<div data-bbox="443 893 1260 1610"> <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.462000000 GHz</p> <p>Ref Offset 7.84 dB Ref 20.00 dBm</p> <p>Mkr1 2.45663 GHz -7.7135 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      Total Power      12.5 dBm</p> <p><b>17.677 MHz</b></p> <p>Transmit Freq Error      -3.674 kHz      OBW Power      99.00 %</p> <p>x dB Bandwidth      17.84 MHz      x dB      -6.00 dB</p> </div> <div data-bbox="1268 925 1412 1597"> <p>Frequency</p> <p>Center Freq 2.462000000 GHz</p> <p>CF Step 3.000000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p> </div>

**A.5 RF Conducted Spurious Emissions**

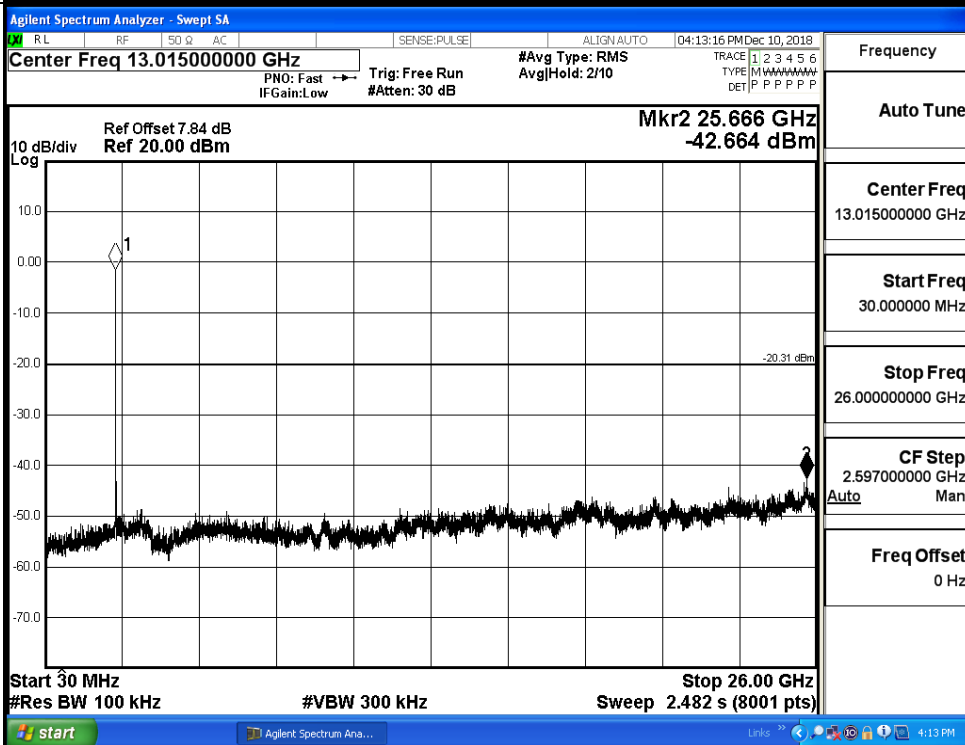
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-0.314	-42.664	-20.314	PASS
	MCH	-0.026	-42.588	-20.026	PASS
	HCH	-0.065	-43.094	-20.065	PASS
11G	LCH	-9.377	-43.850	-29.377	PASS
	MCH	-6.424	-44.172	-26.424	PASS
	HCH	-6.649	-44.497	-26.649	PASS
11N20SISO	LCH	-8.422	-42.610	-28.422	PASS
	MCH	-8.023	-43.960	-28.023	PASS
	HCH	-7.821	-44.369	-27.821	PASS

### 11B\_LCH\_Graphs

Pref/11B/LCH

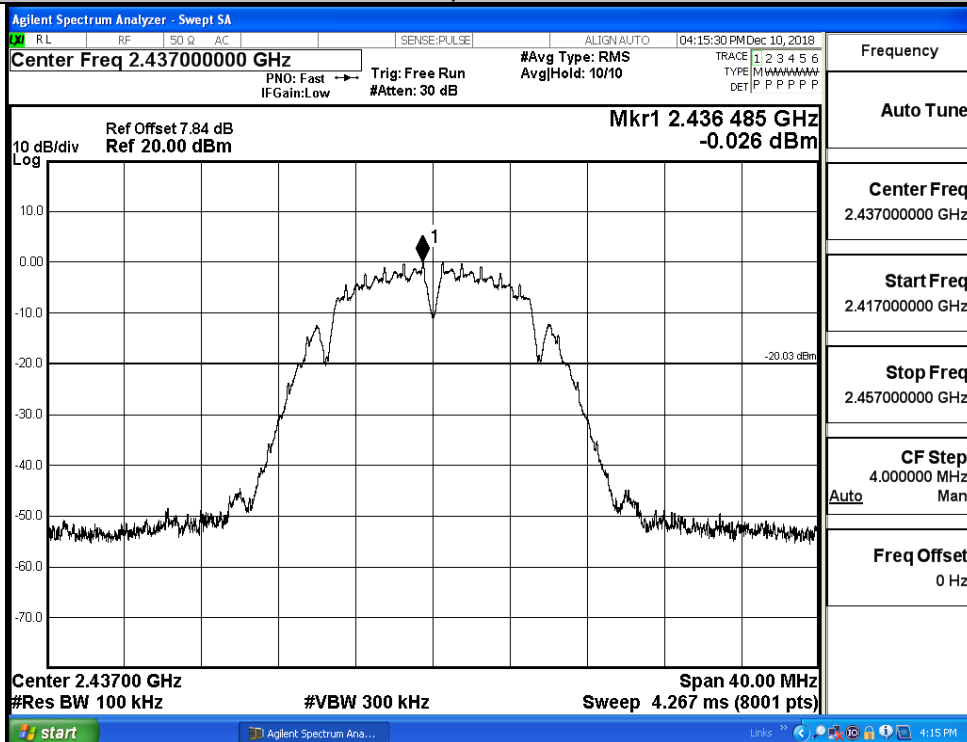


Puw/11B/LCH

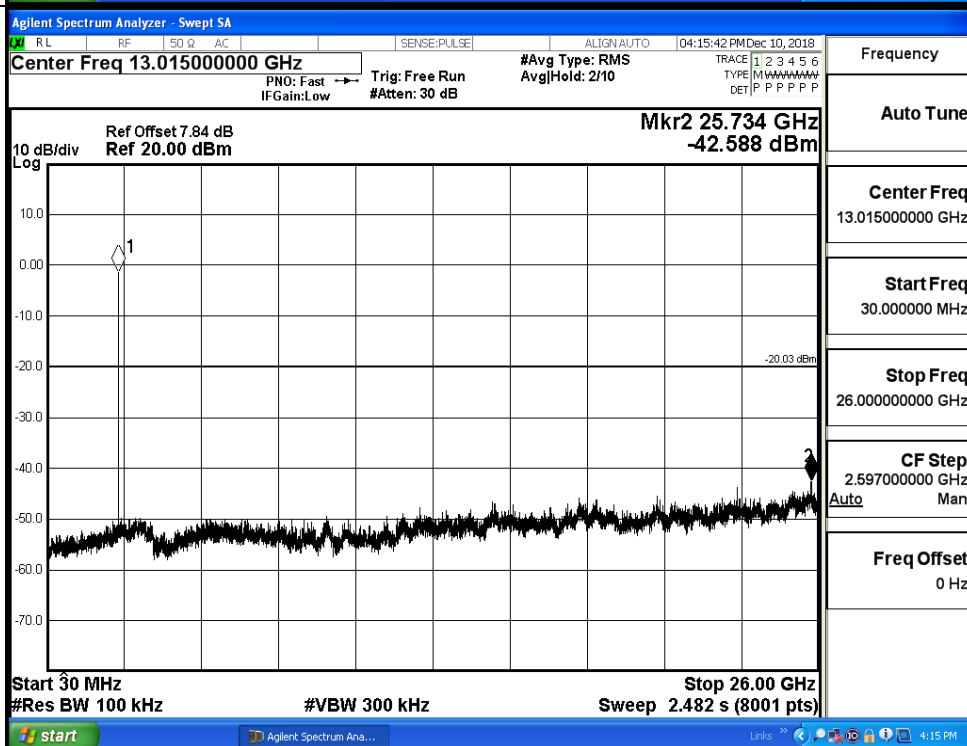


### 11B\_MCH\_Graphs

Pref/11B/MCH

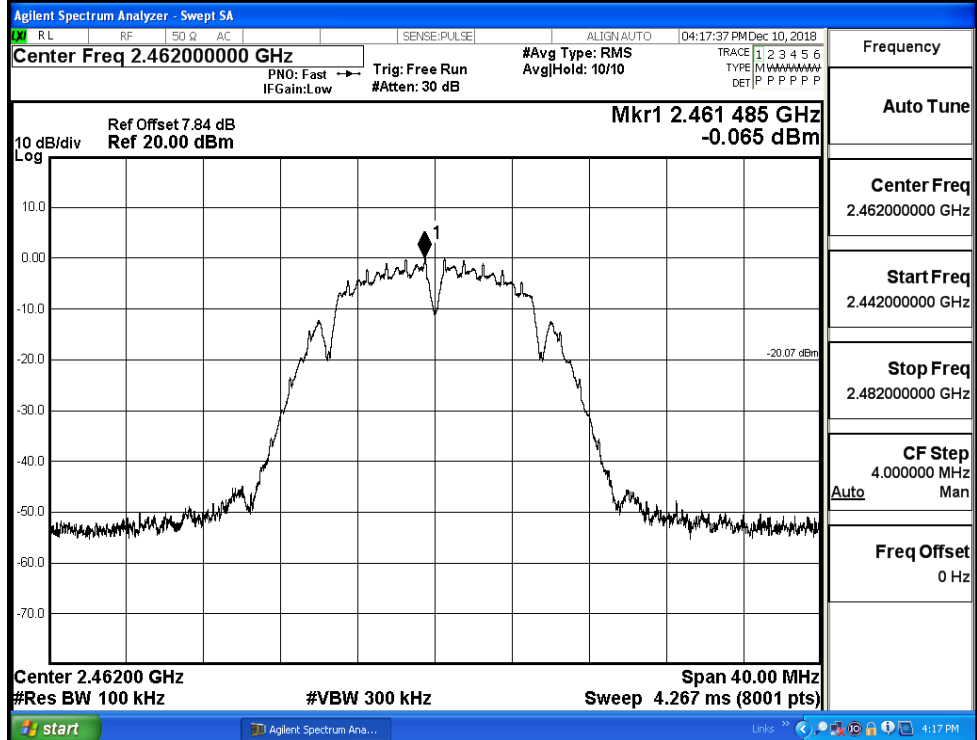


Puw/11B/MCH

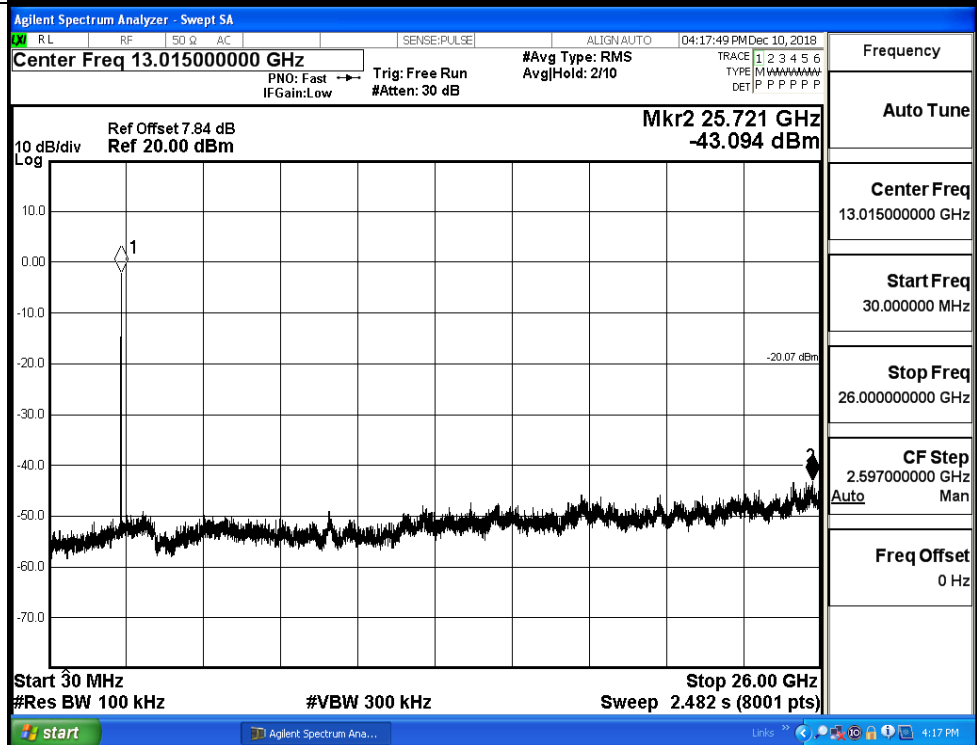


### 11B\_HCH\_Graphs

Pref/11B/HCH



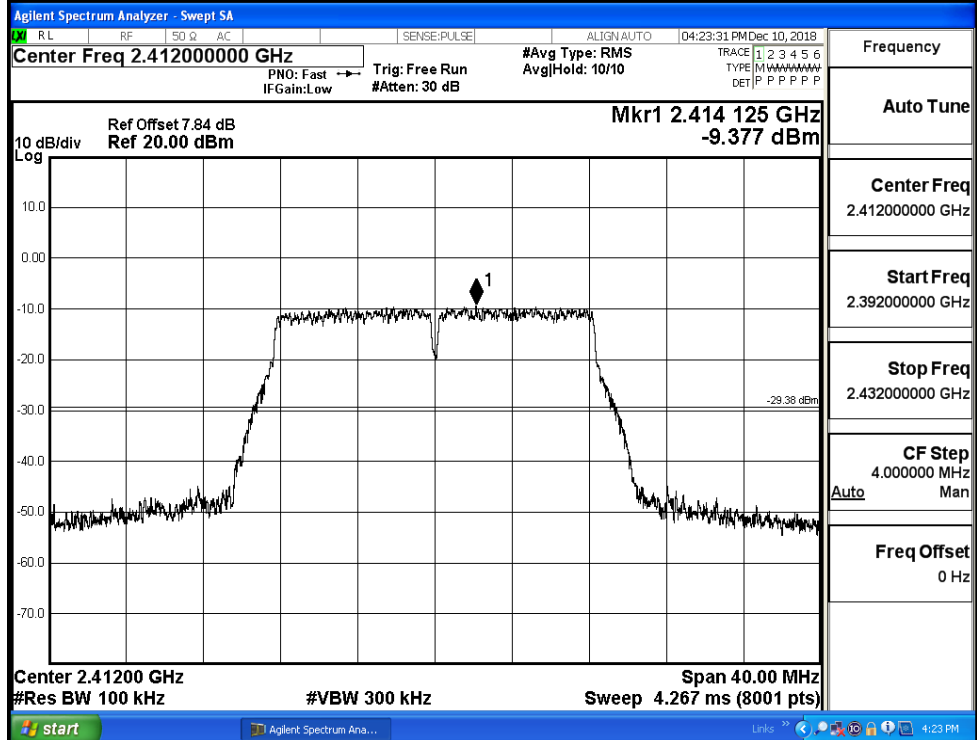
Puw/11B/HCH



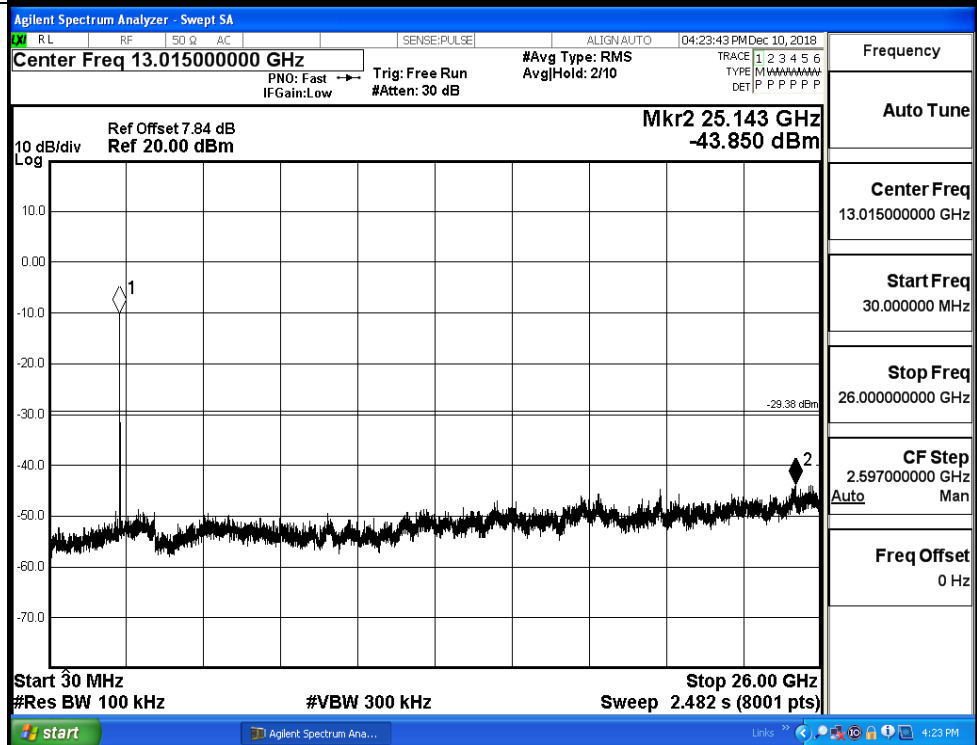


### 11G\_LCH\_Graphs

Pref/11G/LCH

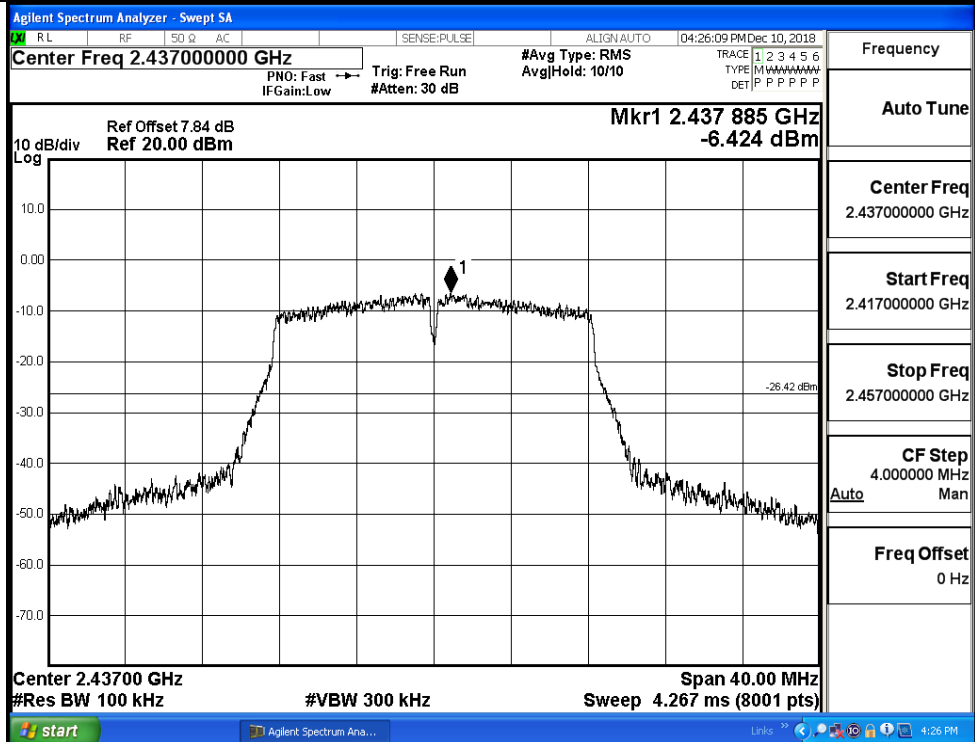


Puw/11G/LCH

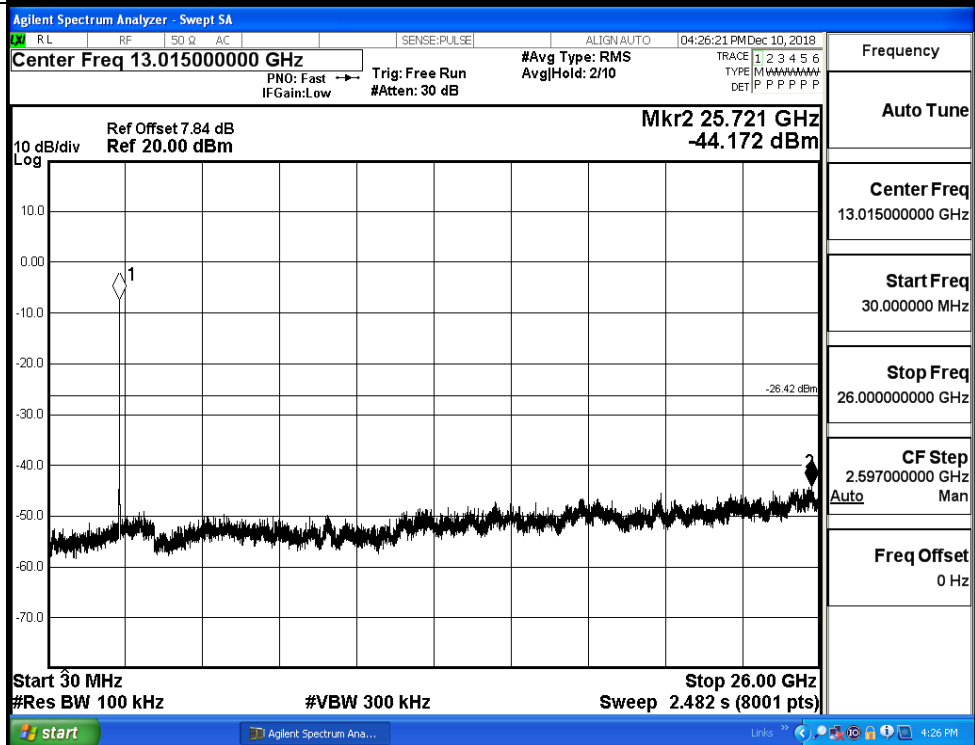


### 11G\_MCH\_Graphs

Pref/11G/MCH

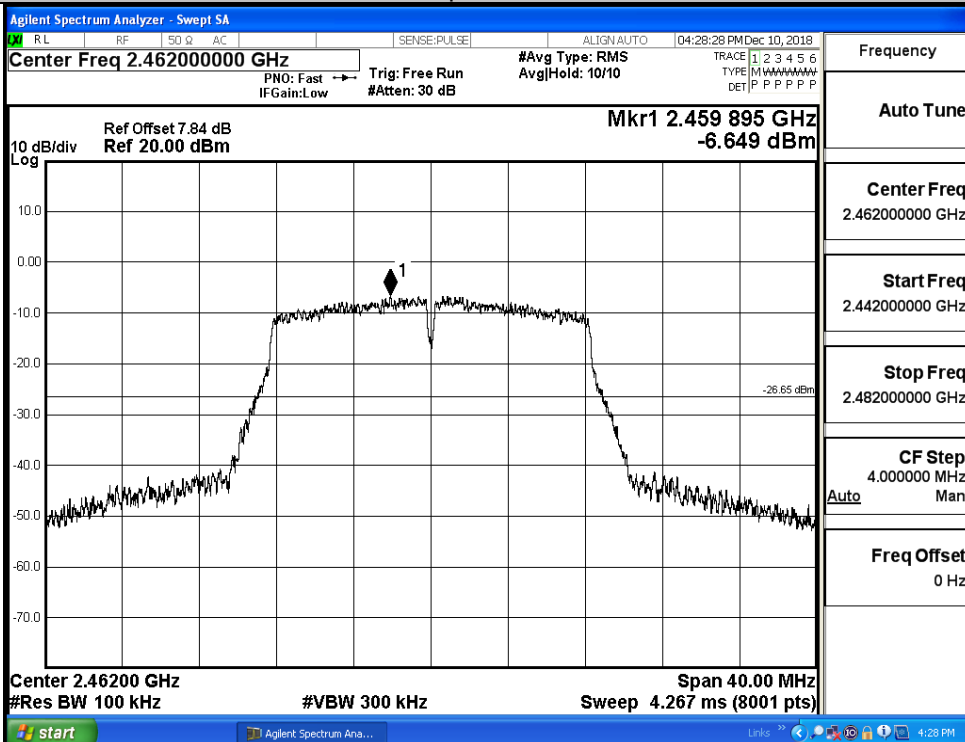


Puw/11G/MCH

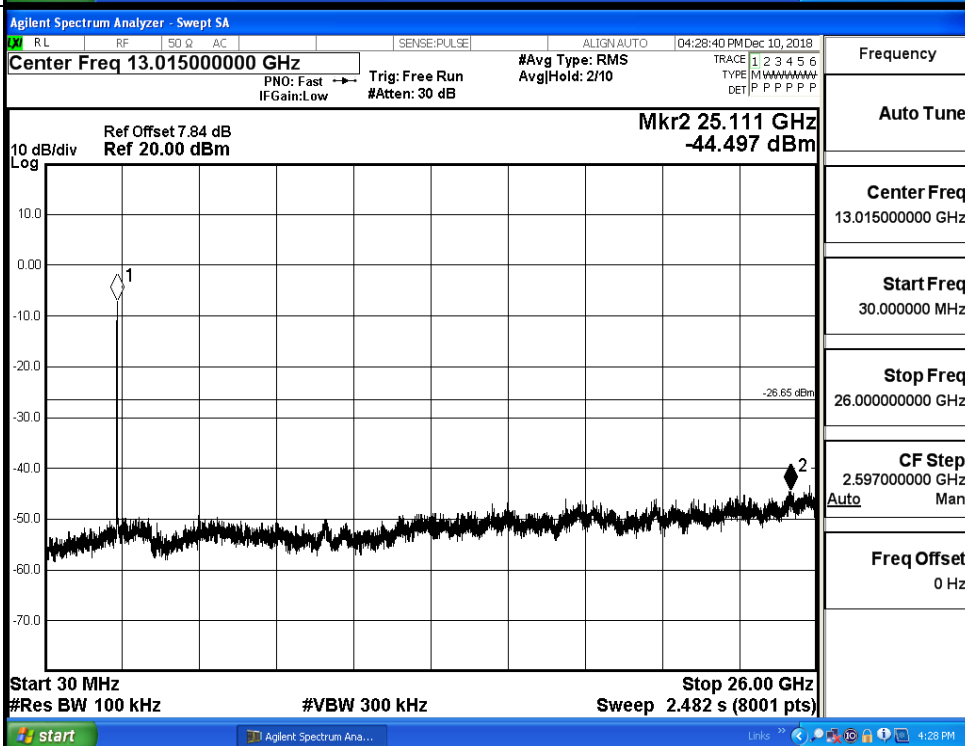


### 11G\_HCH\_Graphs

Pref/11G/HCH

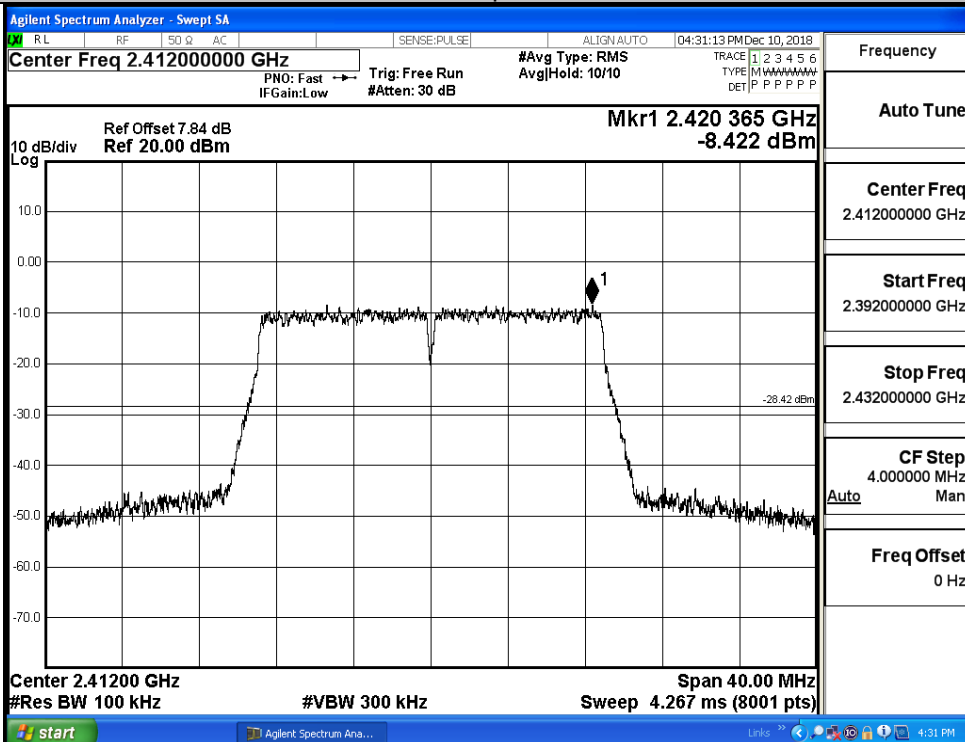


Puw/11G/HCH

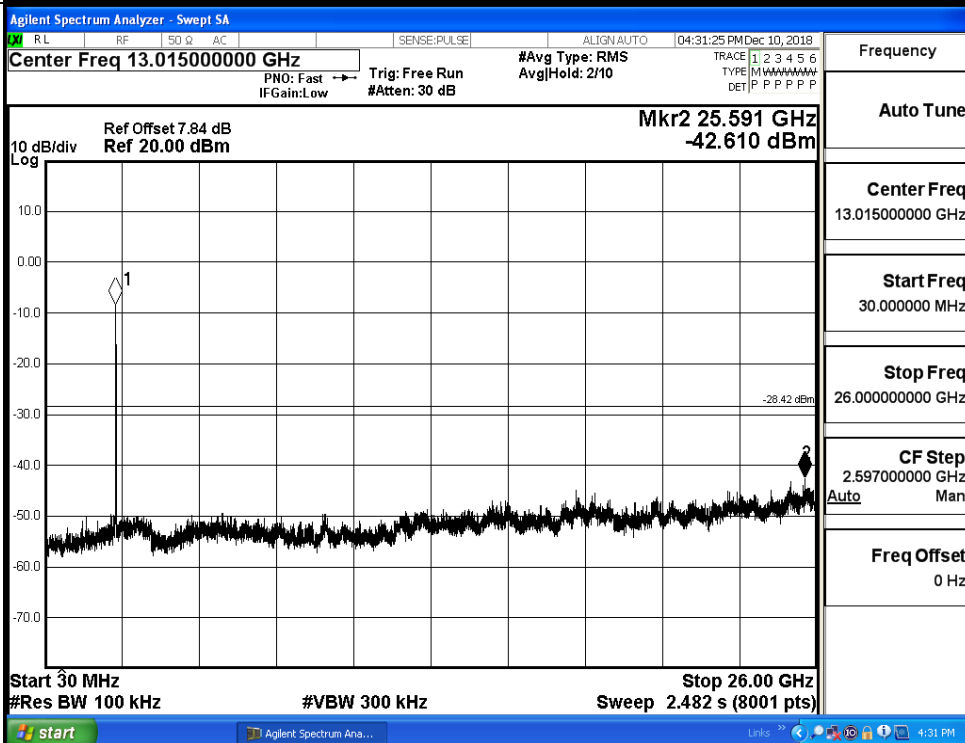


# 11N20SISO\_LCH\_Graphs

Pref/11N20SIS  
O/LCH

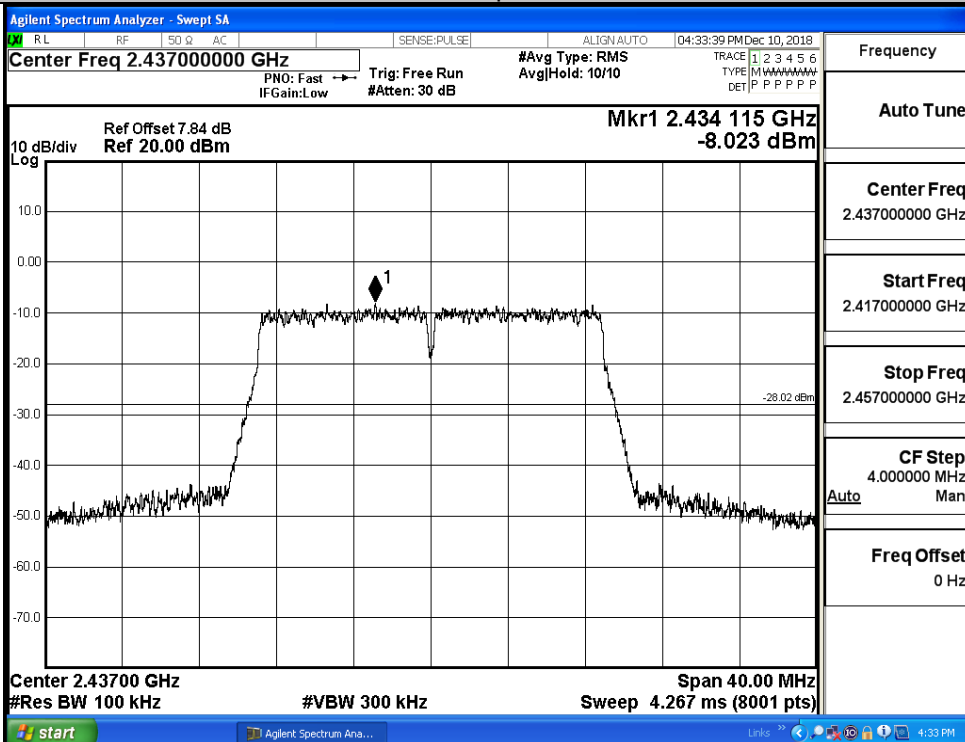


Puw/11N20  
SISO/LCH

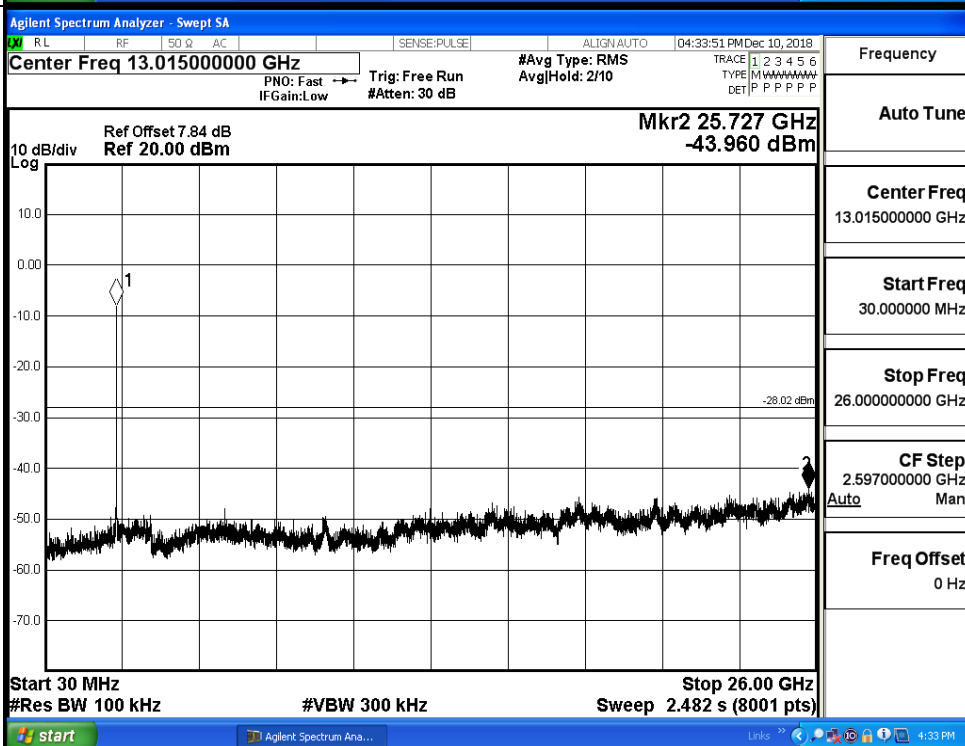


# 11N20ISO\_MCH\_Graphs

Pref/11N20  
SISO/MCH

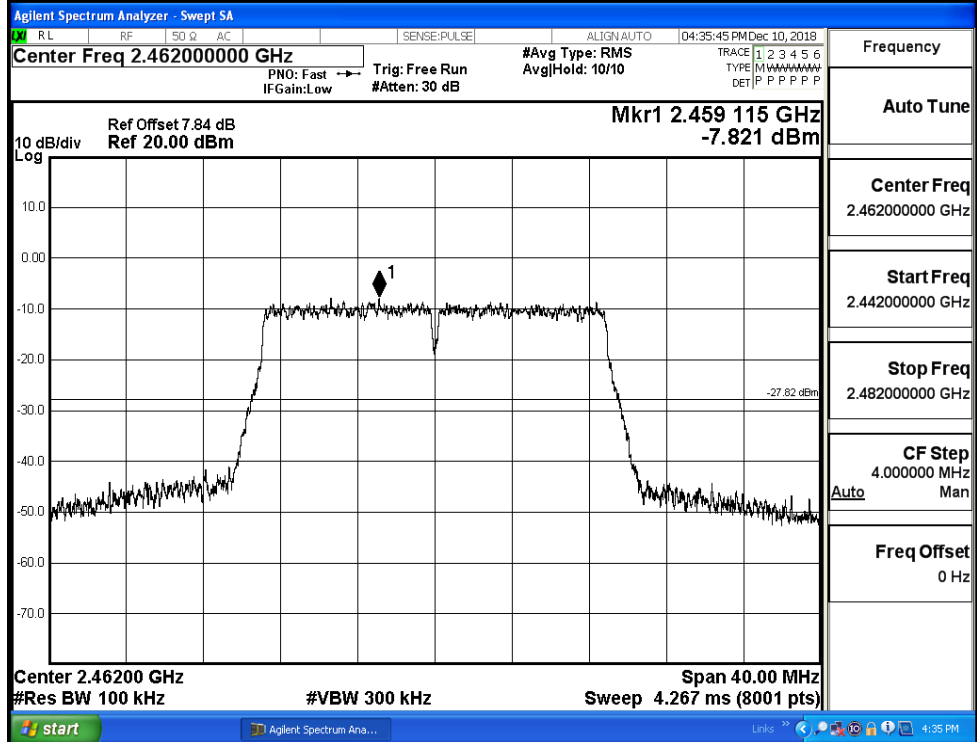


Puw/11N20  
SISO/MCH

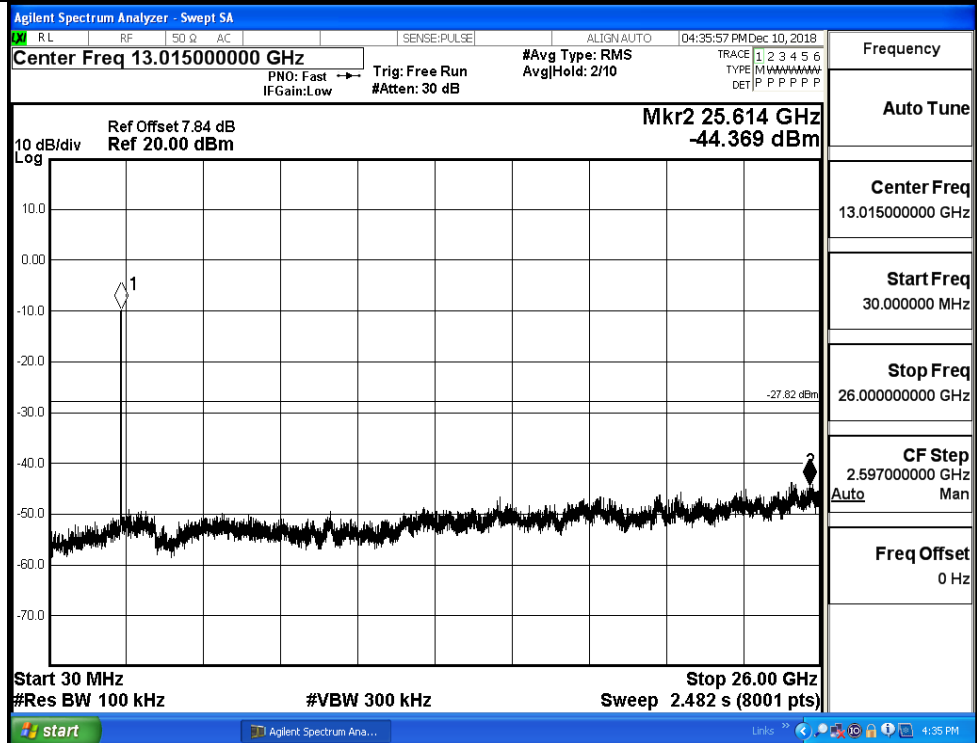


# 11N20ISO\_HCH\_Graphs

Pref/11N20  
SISO/HCH

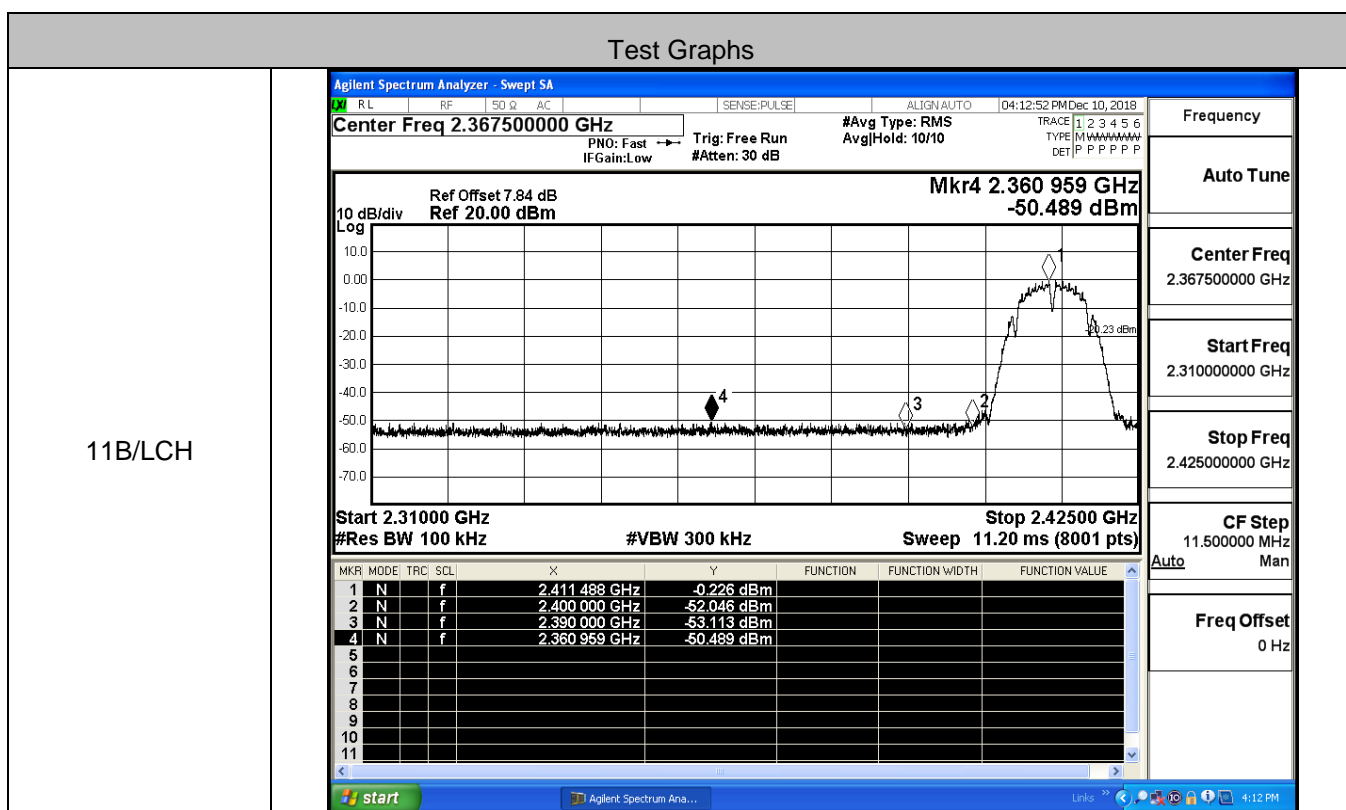


Puw/11N20  
SISO/HCH

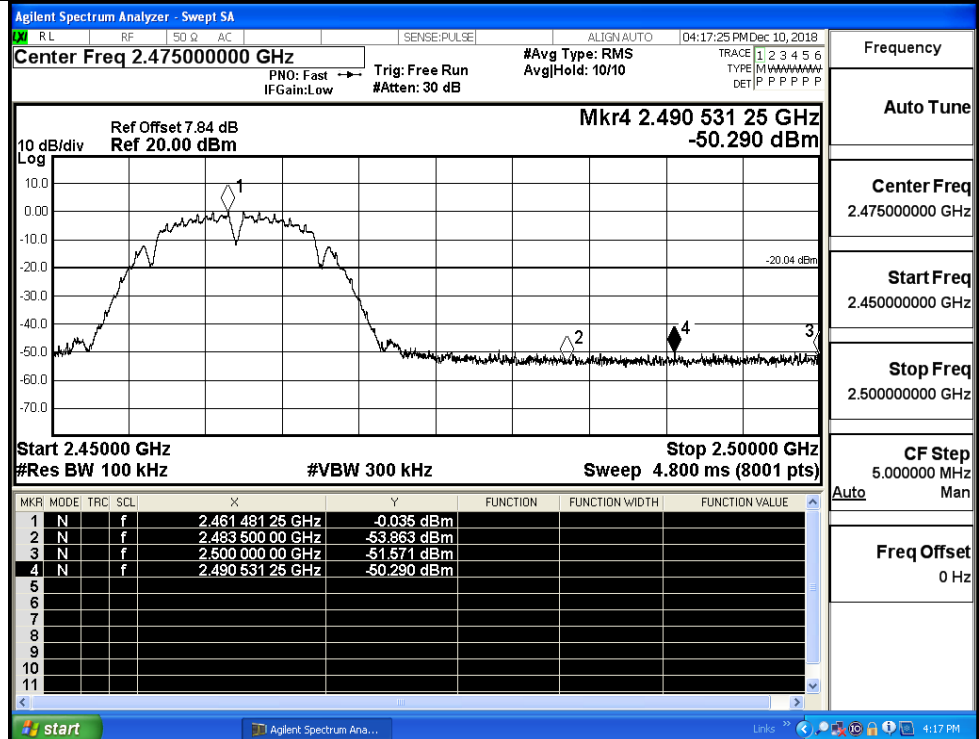


## A.6 Band-edge for RF Conducted Emissions

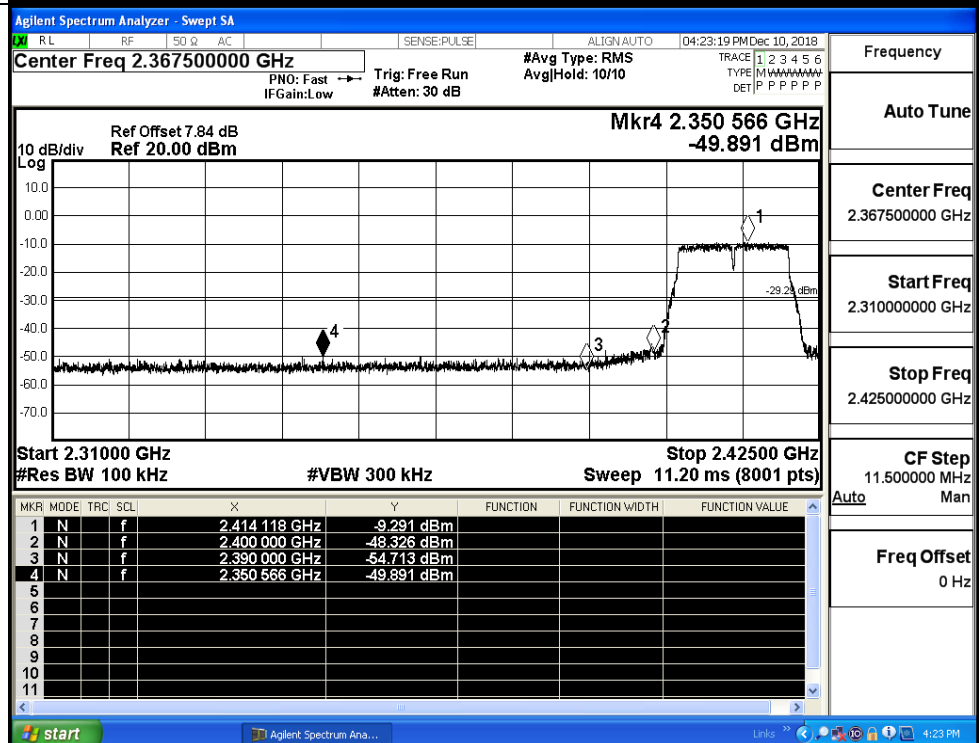
Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-0.226	-50.489	-20.23	PASS
	HCH	-0.035	-50.290	-20.04	PASS
11G	LCH	-9.291	-49.891	-29.29	PASS
	HCH	-6.537	-50.140	-26.54	PASS
11N20SISO	LCH	-8.104	-50.015	-28.1	PASS
	HCH	-7.891	-49.789	-27.89	PASS



11B/HCH

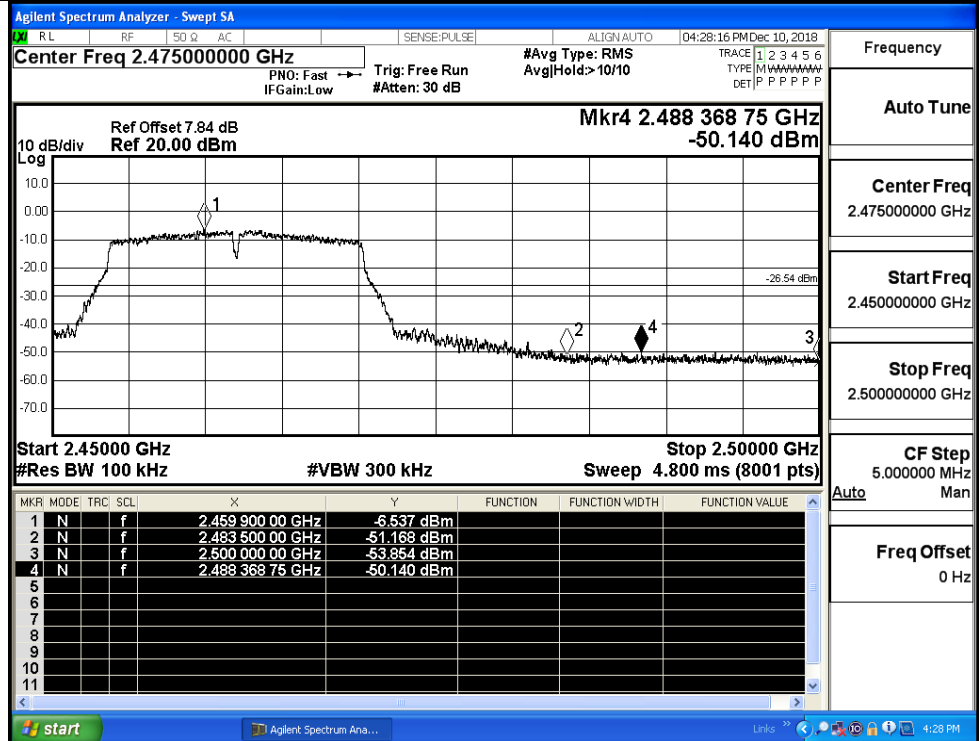


11G/LCH

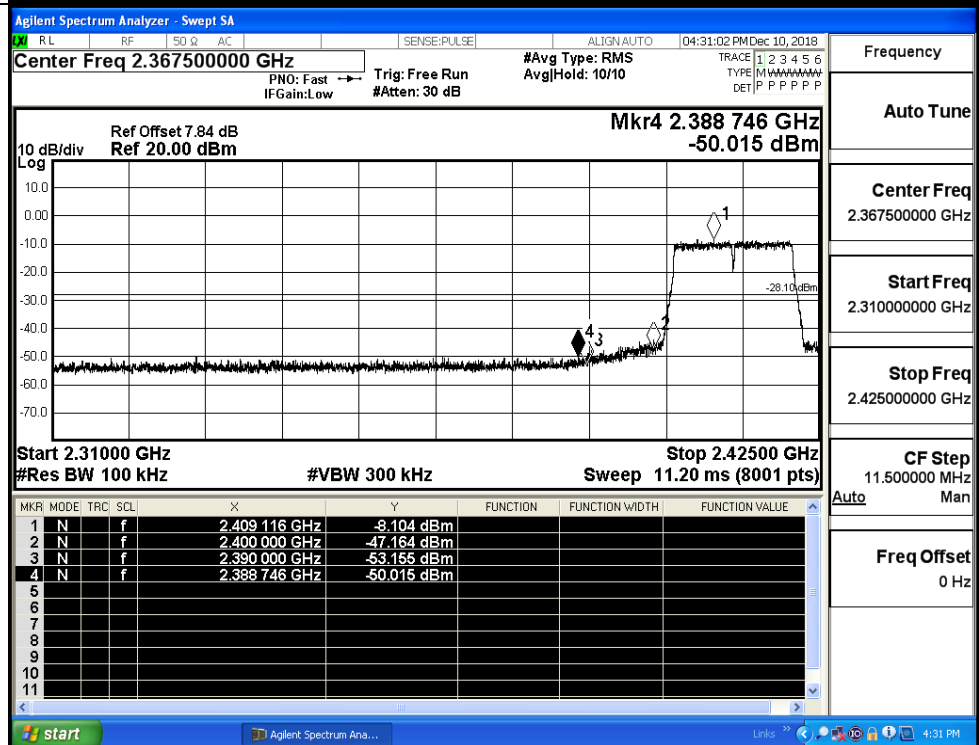




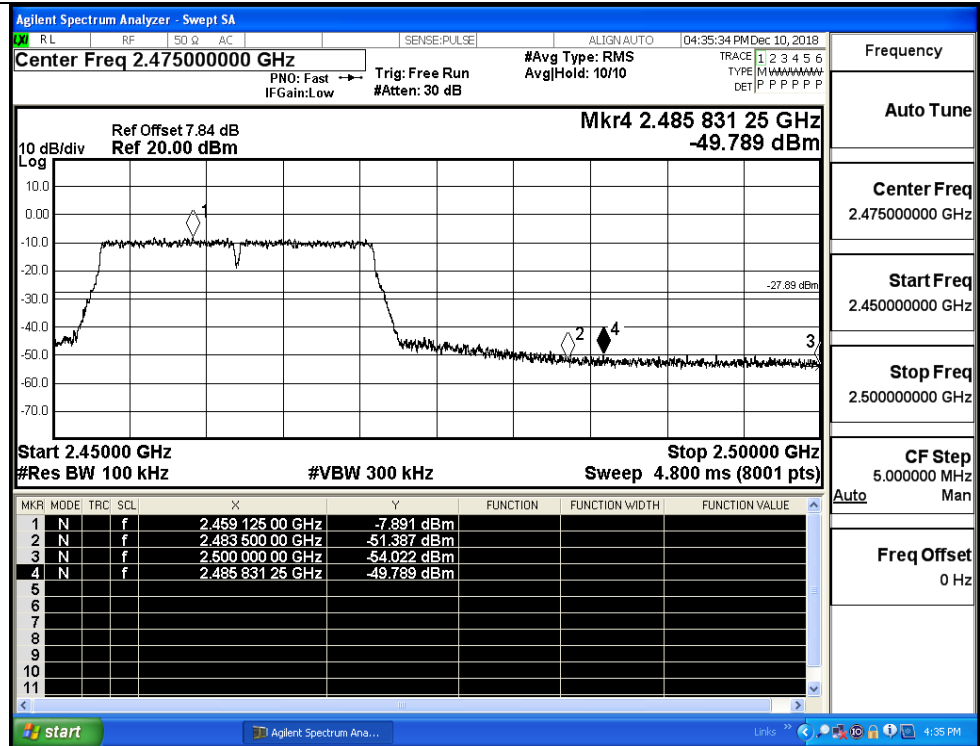
11G/HCH



11N20SISO/LCH



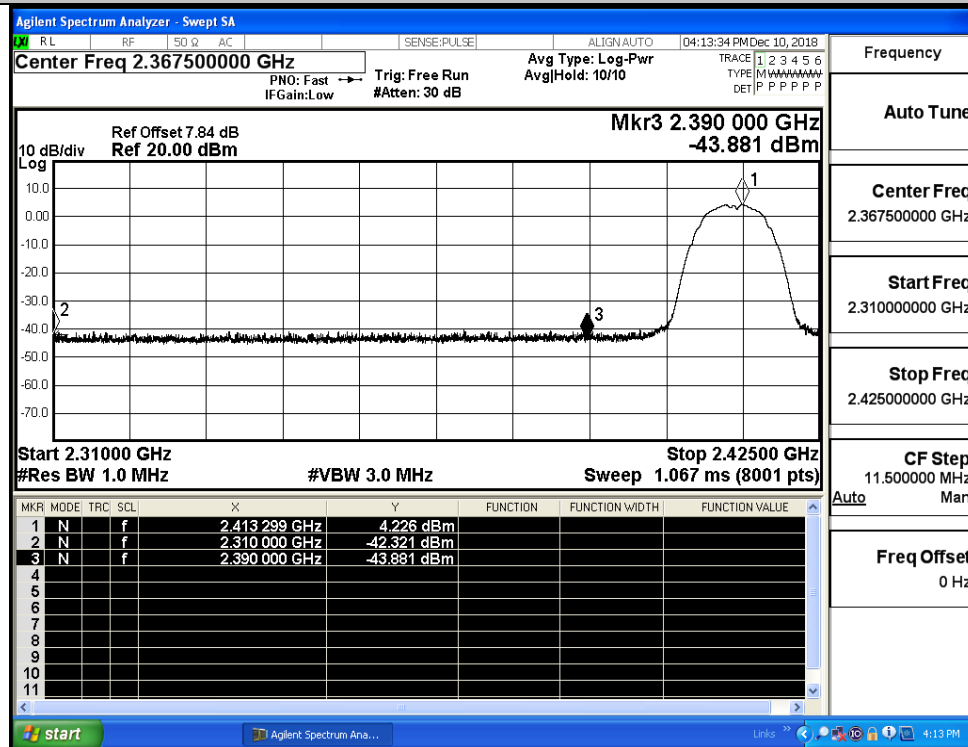
11N20SISO/HCH



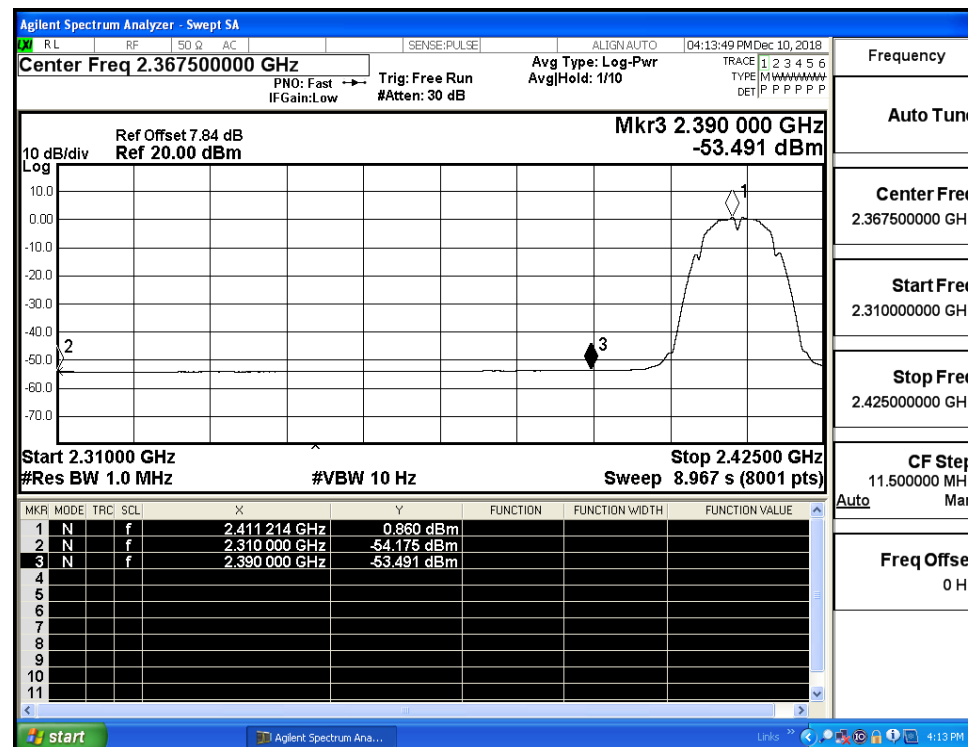
**A.7 Restrict-band band-edge measurements**

Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
11B	2412	Ant1	2310.0	-42.321	3.00	0	55.907	PEAK	74	PASS
	2412	Ant1	2310.0	-54.175	3.00	0	44.053	AV	54	PASS
	2412	Ant1	2390.0	-43.881	3.00	0	54.347	PEAK	74	PASS
	2412	Ant1	2390.0	-53.491	3.00	0	44.737	AV	54	PASS
	2462	Ant1	2483.5	-42.937	3.00	0	55.291	PEAK	74	PASS
	2462	Ant1	2483.5	-53.209	3.00	0	45.019	AV	54	PASS
	2462	Ant1	2500.0	-43.295	3.00	0	54.933	PEAK	74	PASS
	2462	Ant1	2500.0	-53.370	3.00	0	44.858	AV	54	PASS
11G	2412	Ant1	2310.0	-44.513	3.00	0	53.715	PEAK	74	PASS
	2412	Ant1	2310.0	-54.212	3.00	0	44.016	AV	54	PASS
	2412	Ant1	2390.0	-42.052	3.00	0	56.176	PEAK	74	PASS
	2412	Ant1	2390.0	-53.188	3.00	0	45.040	AV	54	PASS
	2462	Ant1	2483.5	-40.952	3.00	0	57.276	PEAK	74	PASS
	2462	Ant1	2483.5	-52.233	3.00	0	45.995	AV	54	PASS
	2462	Ant1	2500.0	-42.663	3.00	0	55.565	PEAK	74	PASS
	2462	Ant1	2500.0	-52.952	3.00	0	45.276	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-44.291	3.00	0	53.937	PEAK	74	PASS
	2412	Ant1	2310.0	-54.201	3.00	0	44.027	AV	54	PASS
	2412	Ant1	2390.0	-39.847	3.00	0	58.381	PEAK	74	PASS
	2412	Ant1	2390.0	-52.338	3.00	0	45.890	AV	54	PASS
	2462	Ant1	2483.5	-41.238	3.00	0	56.990	PEAK	74	PASS
	2462	Ant1	2483.5	-52.159	3.00	0	46.069	AV	54	PASS
	2462	Ant1	2500.0	-42.348	3.00	0	55.880	PEAK	74	PASS
	2462	Ant1	2500.0	-53.103	3.00	0	45.125	AV	54	PASS

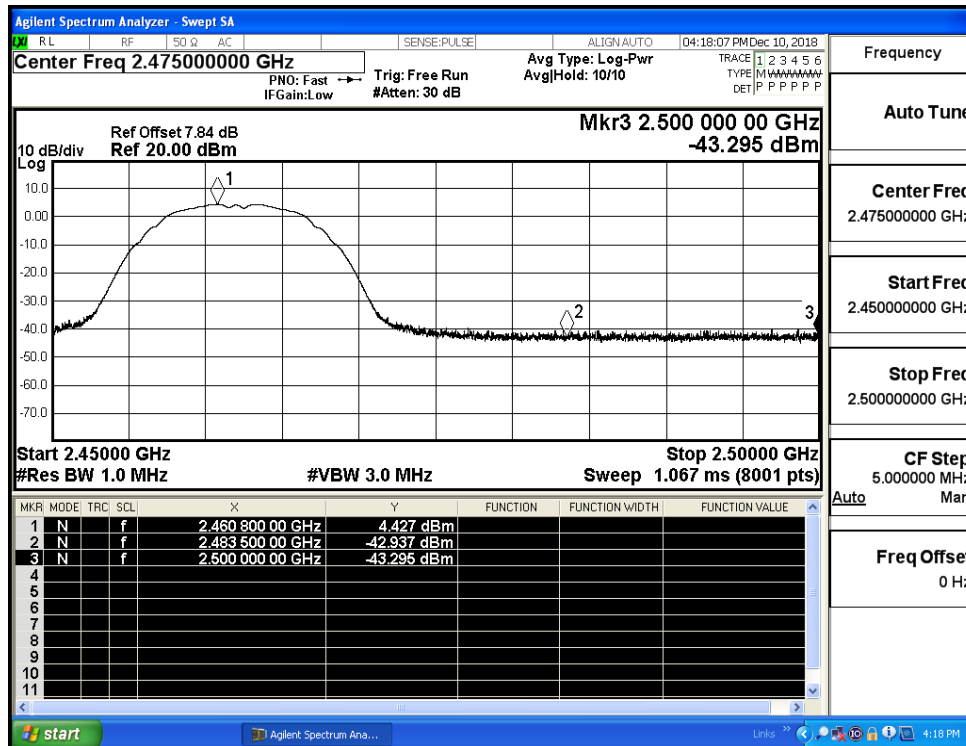
Restrict-band band-edge measurements\_11B\_2412\_Ant1\_PEAK



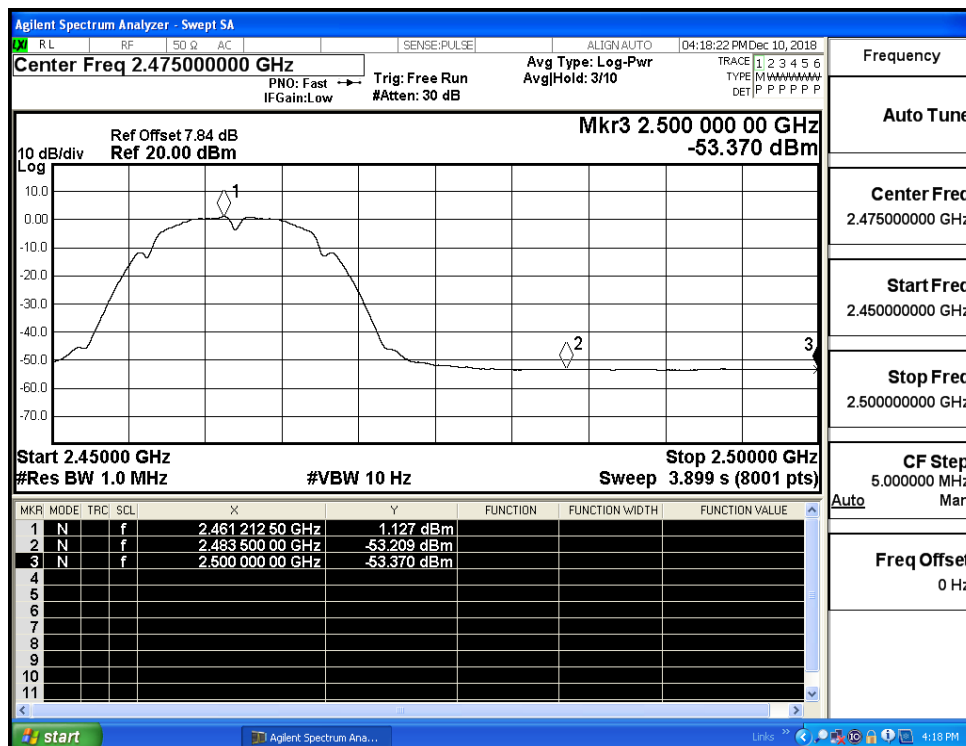
Restrict-band band-edge measurements\_11B\_2412\_Ant1\_AV



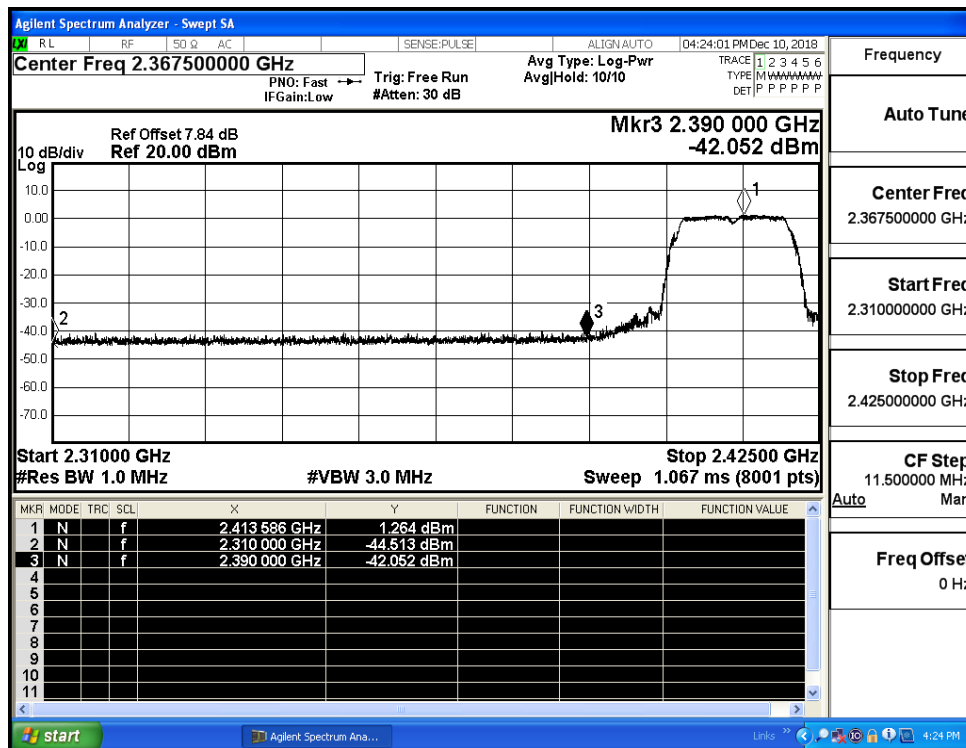
Restrict-band band-edge measurements\_11B\_2462\_Ant1\_PEAK



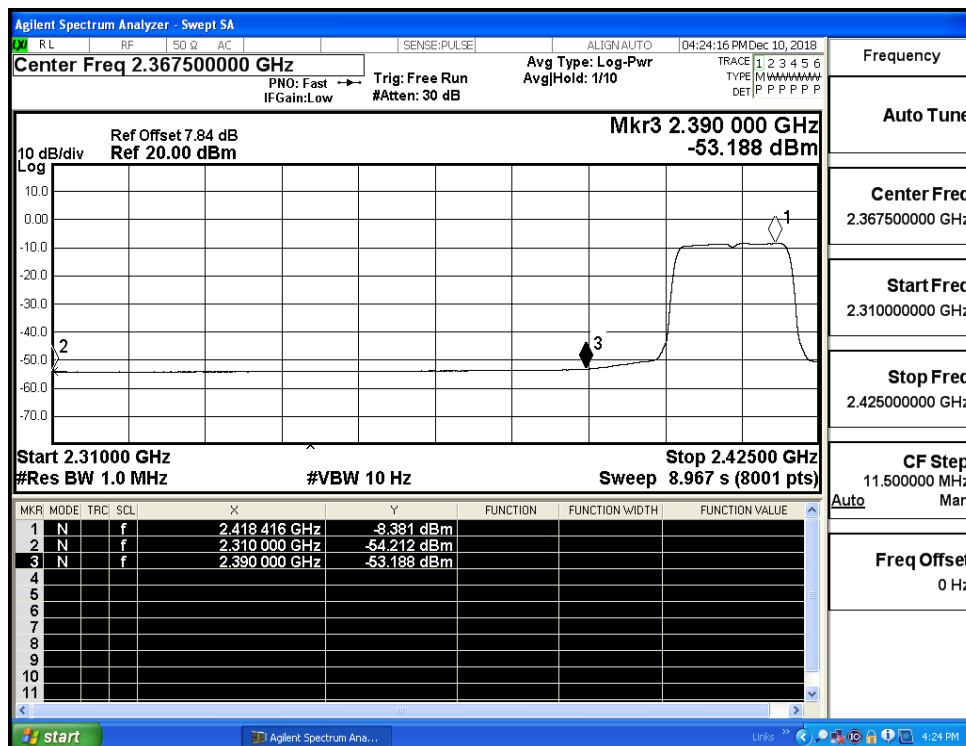
Restrict-band band-edge measurements\_11B\_2462\_Ant1\_AV



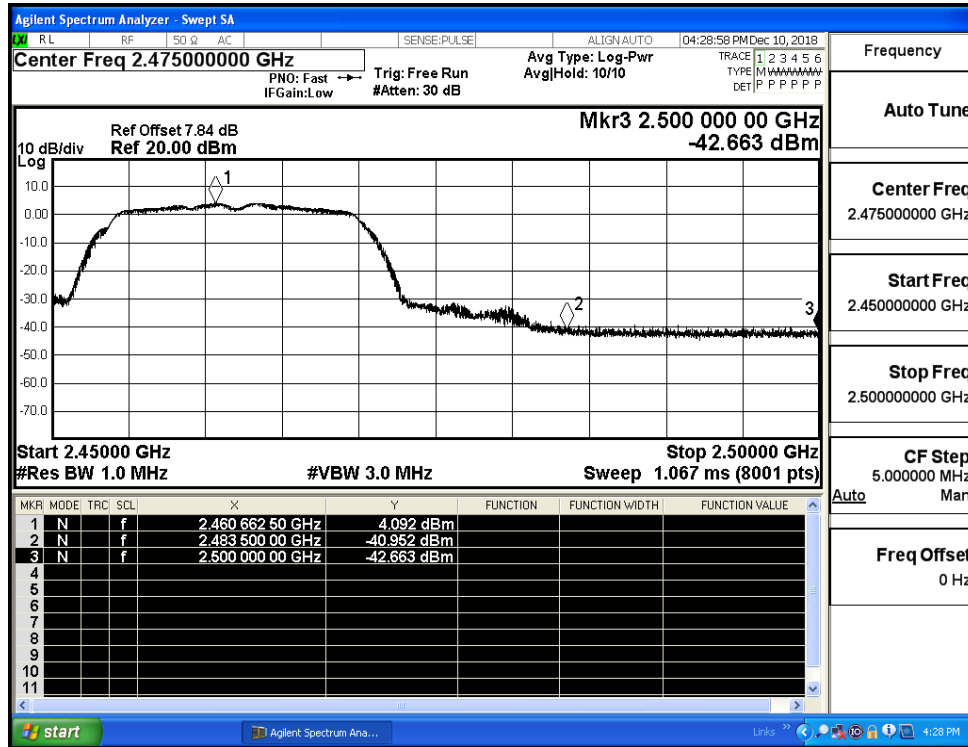
Restrict-band band-edge measurements\_11G\_2412\_Ant1\_PEAK



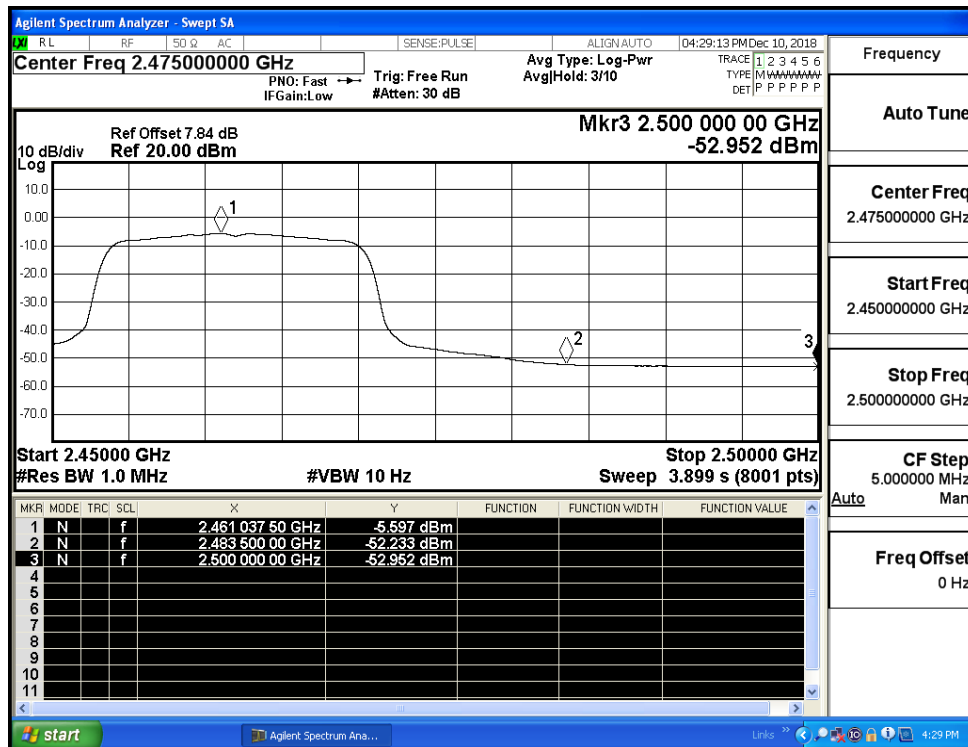
Restrict-band band-edge measurements\_11G\_2412\_Ant1\_AV



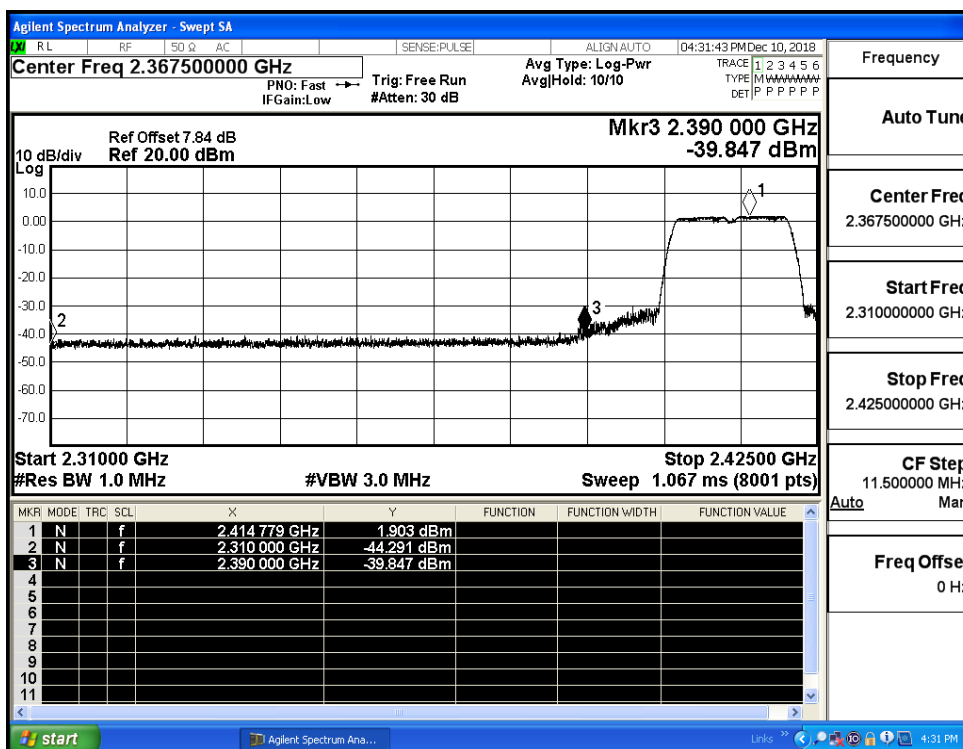
Restrict-band band-edge measurements\_11G\_2462\_Ant1\_PEAK



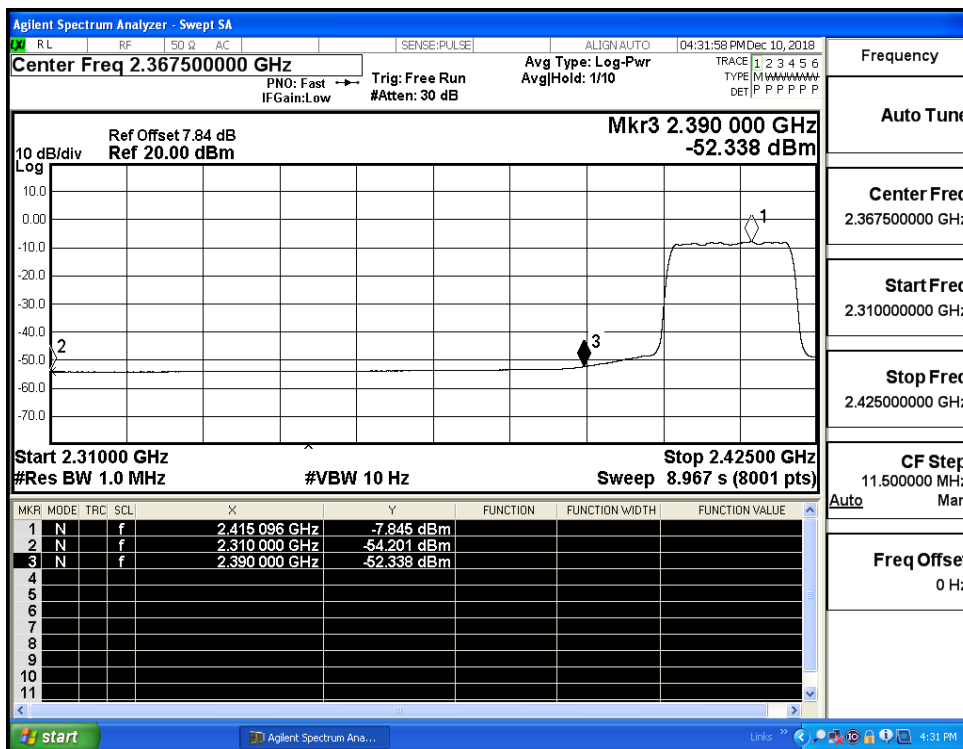
Restrict-band band-edge measurements\_11G\_2462\_Ant1\_AV



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

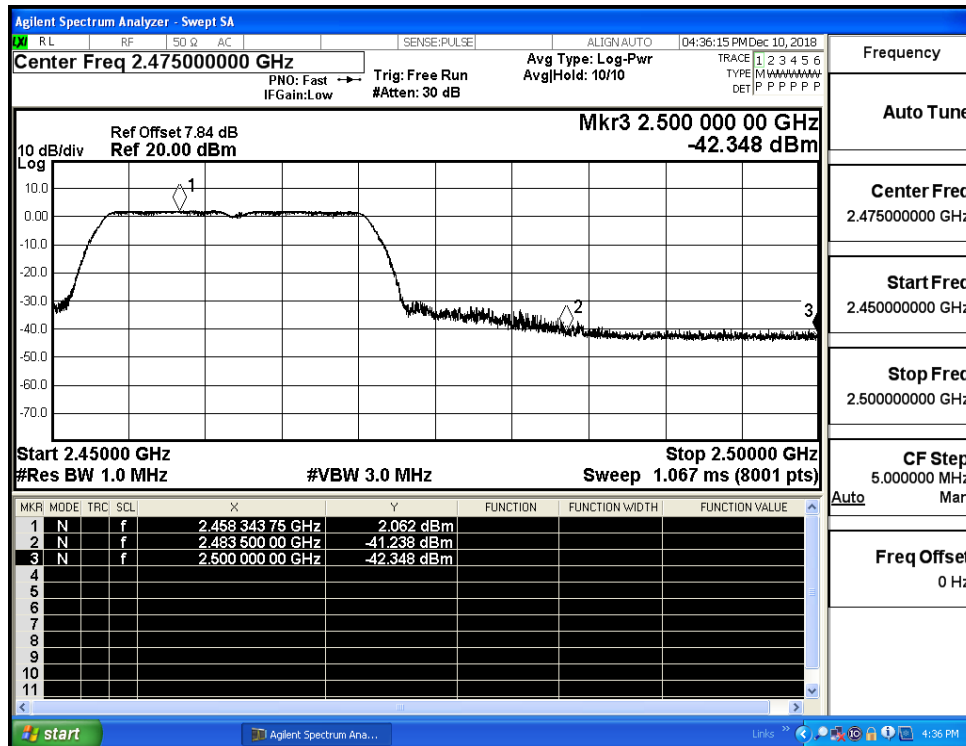


Restrict-band band-edge measurements\_11N20SISO\_2412\_Ant1\_AV





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



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

