

## Appendix A

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

Product Name: WiFi Module

Trade Mark: N/A

Test Model: ESP8285

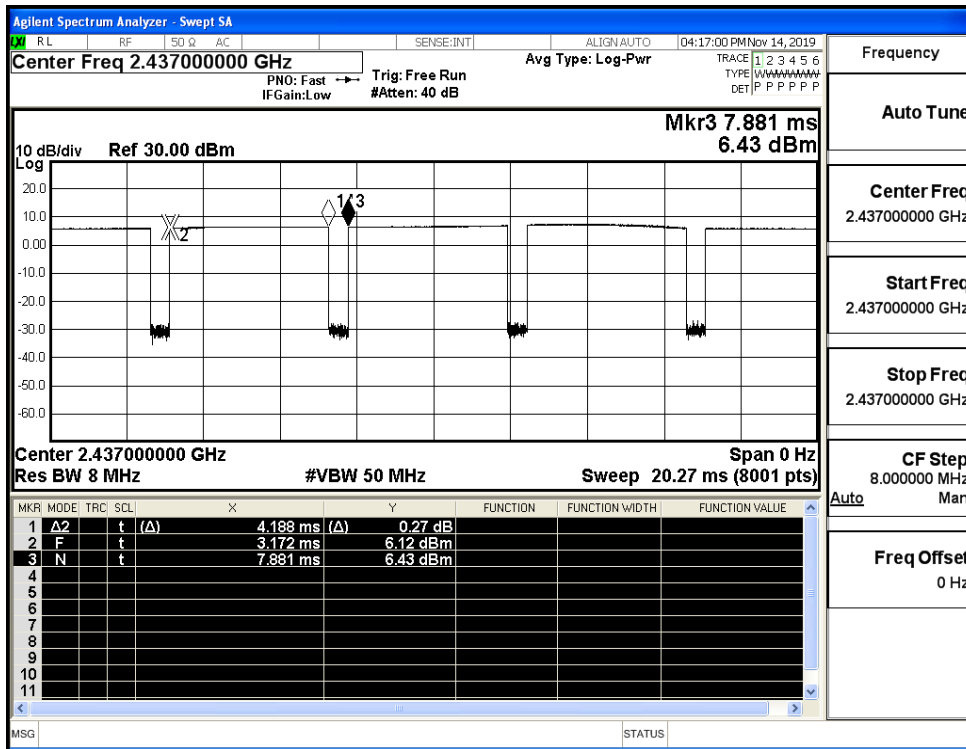
#### Environmental Conditions

Temperature:	22.8 ° C
Relative Humidity:	53.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Qu Xin
Supervised by:	Tom Liu

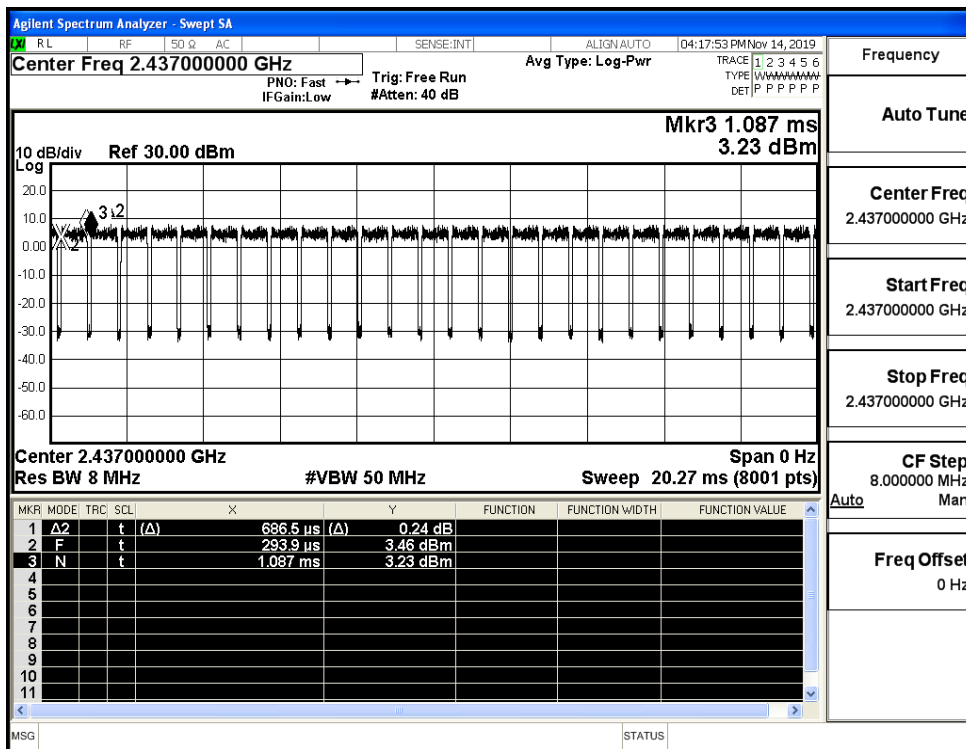
#### A.1 Duty Cycle

Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
11B	2437	Ant1	88.92	PASS
11G	2437	Ant1	86.58	PASS
11N20SISO	2437	Ant1	85.67	PASS

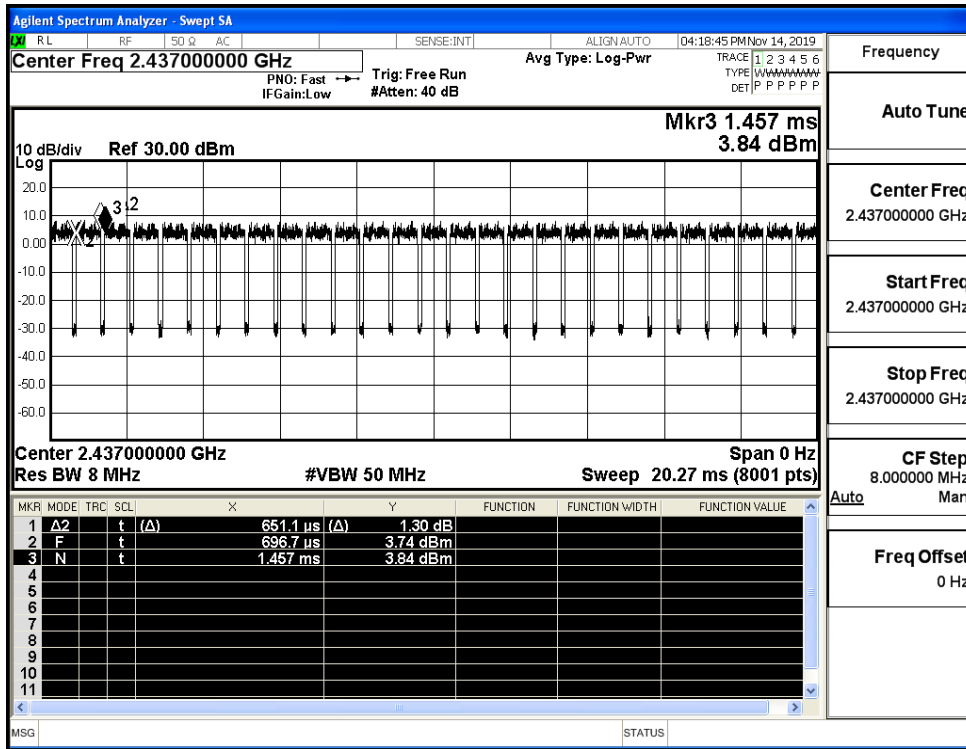
Duty Cycle\_11B\_2437\_Ant1



Duty Cycle\_11G\_2437\_Ant1



Duty Cycle\_11N20SISO\_2437\_Ant1

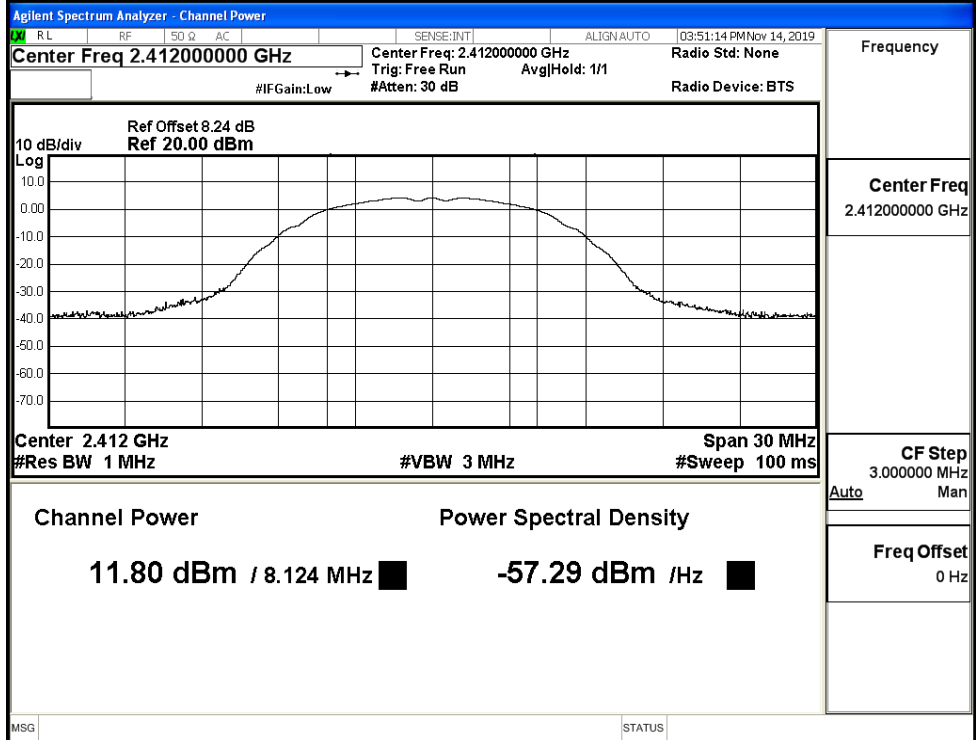


**A.2 Maximum Conducted Output Power**

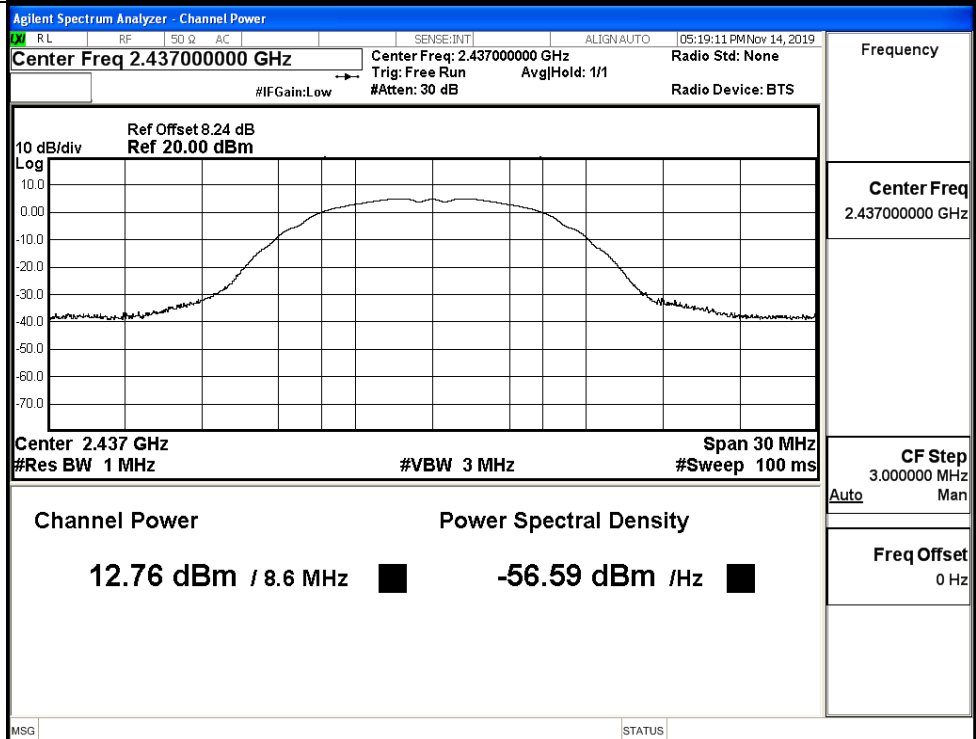
Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	11.8	30	PASS
	MCH	12.76	30	PASS
	HCH	12.67	30	PASS
11G	LCH	16.59	30	PASS
	MCH	17.28	30	PASS
	HCH	17.43	30	PASS
11N20SISO	LCH	16.72	30	PASS
	MCH	17.52	30	PASS
	HCH	17.76	30	PASS

Test Graphs

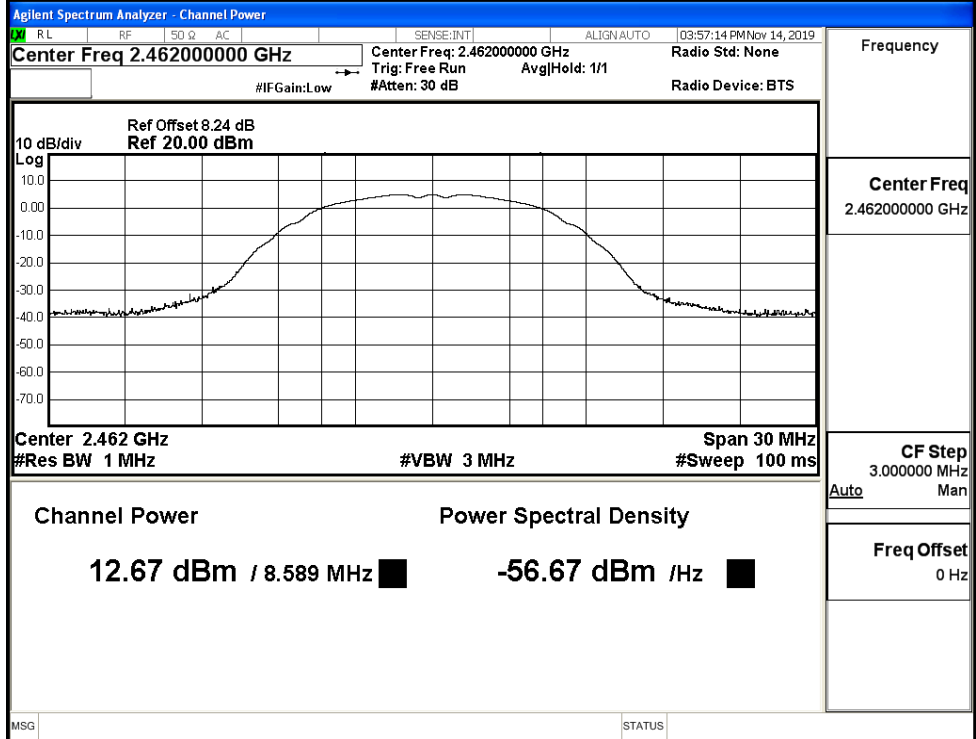
11B/LCH



11B/MCH

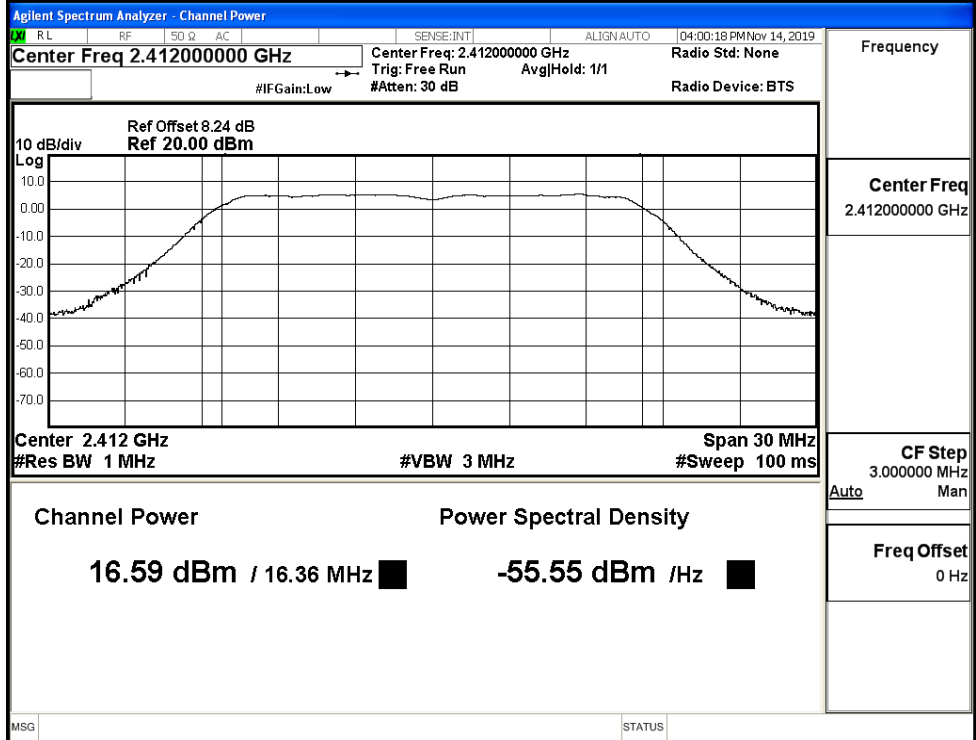


11B/HCH



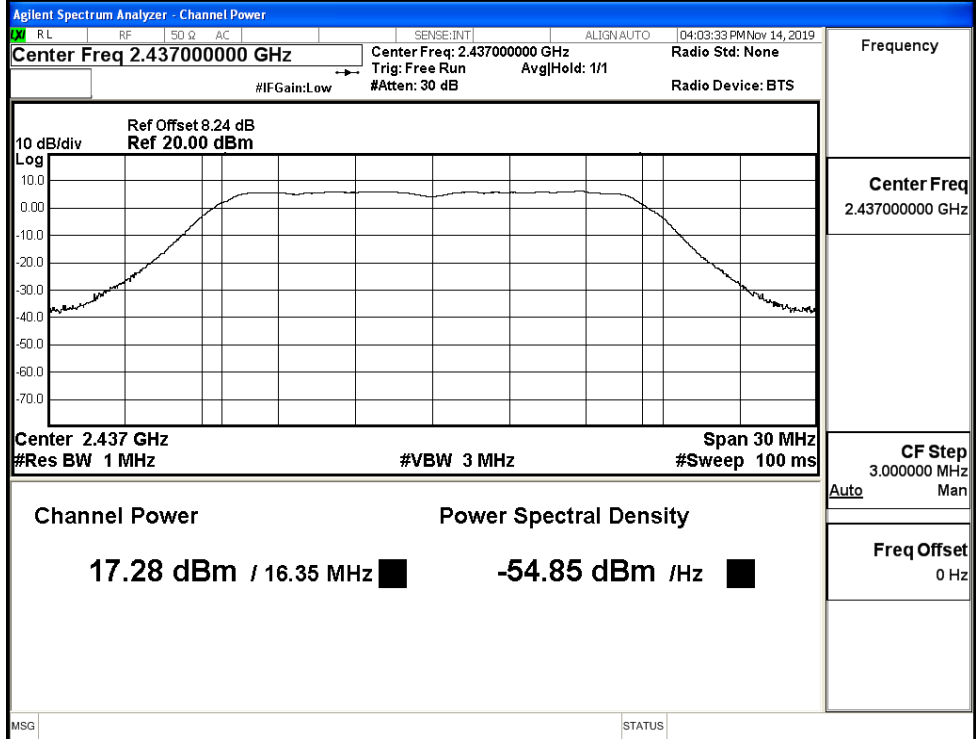
Frequency	Center Freq 2.46200000 GHz
CF Step	3.000000 MHz Auto Man
Freq Offset	0 Hz

11G/LCH

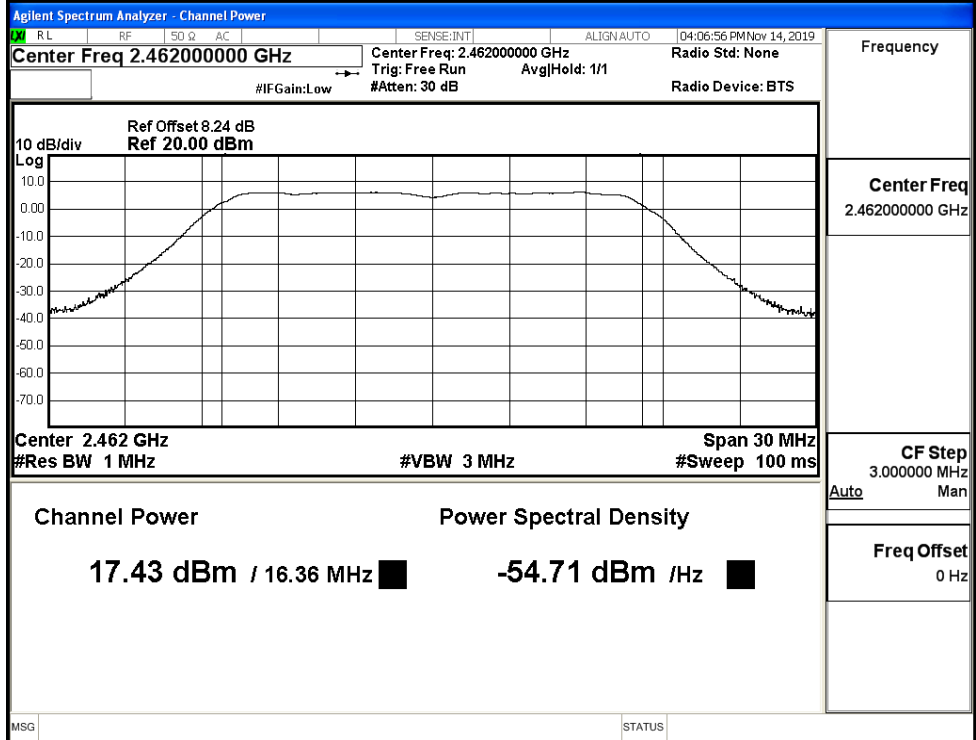


Frequency	Center Freq 2.41200000 GHz
CF Step	3.000000 MHz Auto Man
Freq Offset	0 Hz

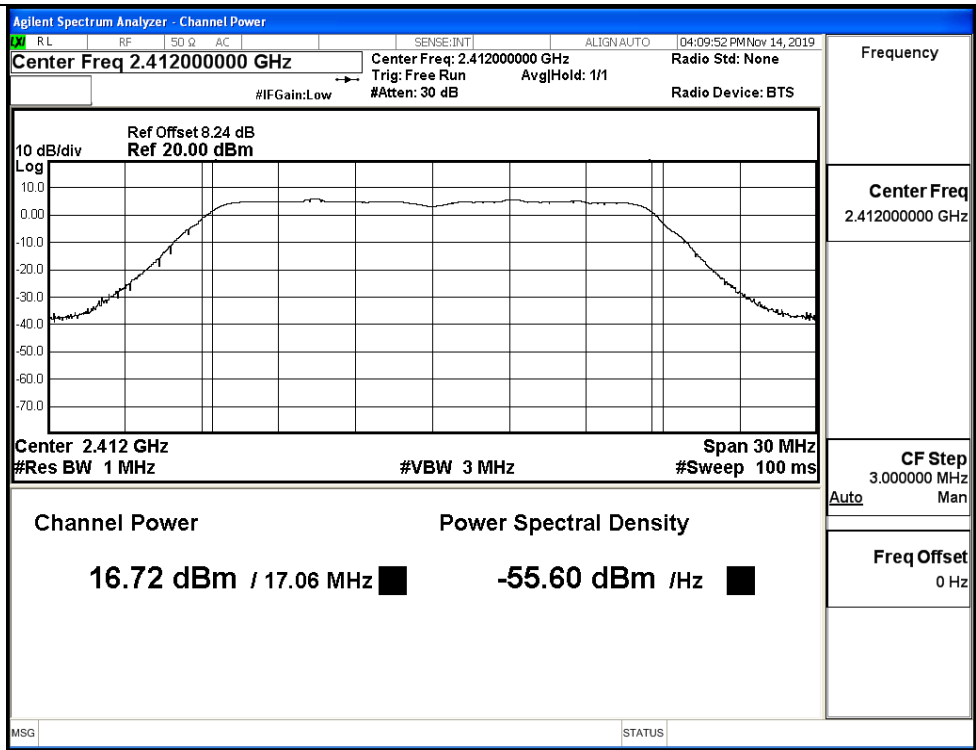
11G/MCH



11G/HCH

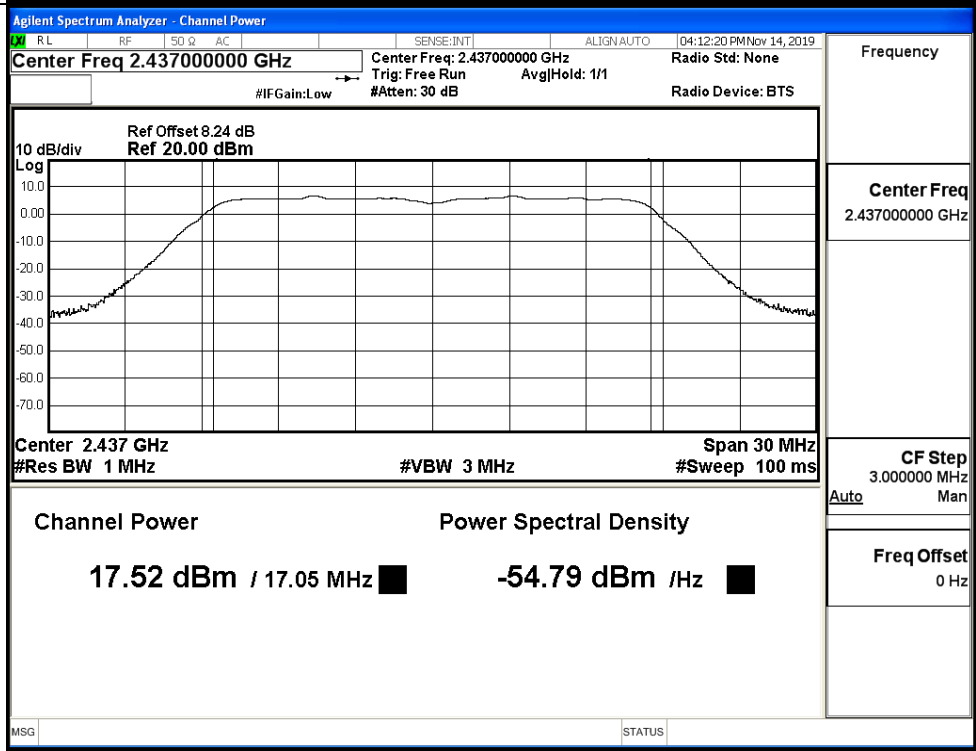


11N20SISO/LCH



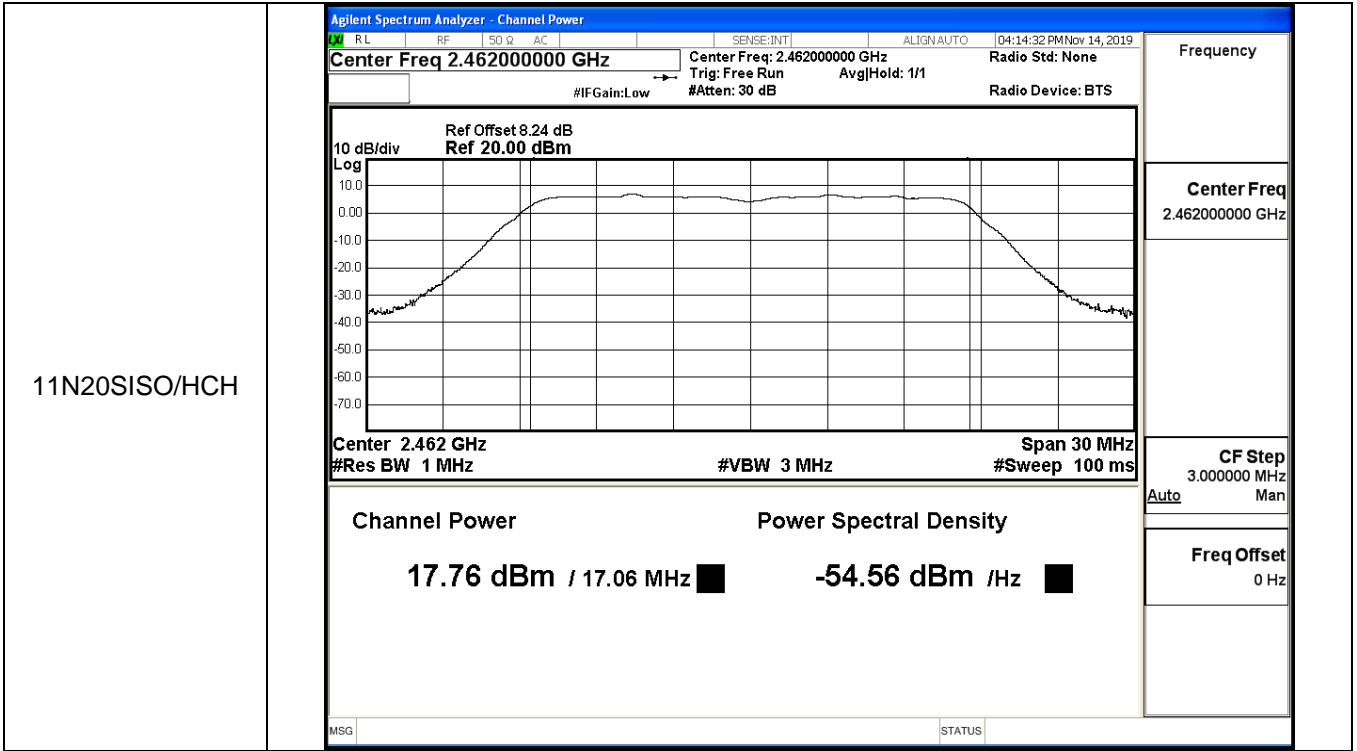
Frequency	2.41200000 GHz
Center Freq	2.41200000 GHz
CF Step	3.000000 MHz Auto Man
Freq Offset	0 Hz

11N20SISO/MCH



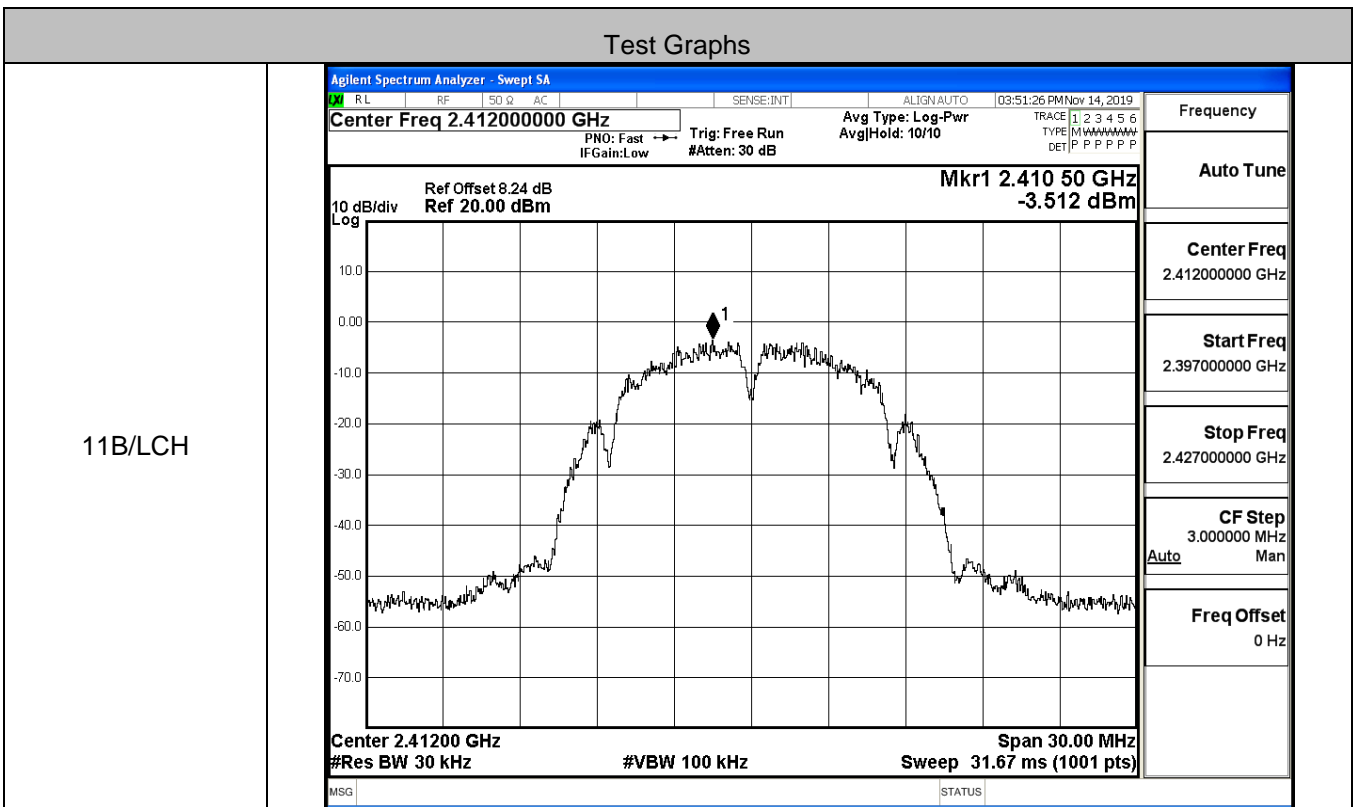
Frequency	2.43700000 GHz
Center Freq	2.43700000 GHz
CF Step	3.000000 MHz Auto Man
Freq Offset	0 Hz



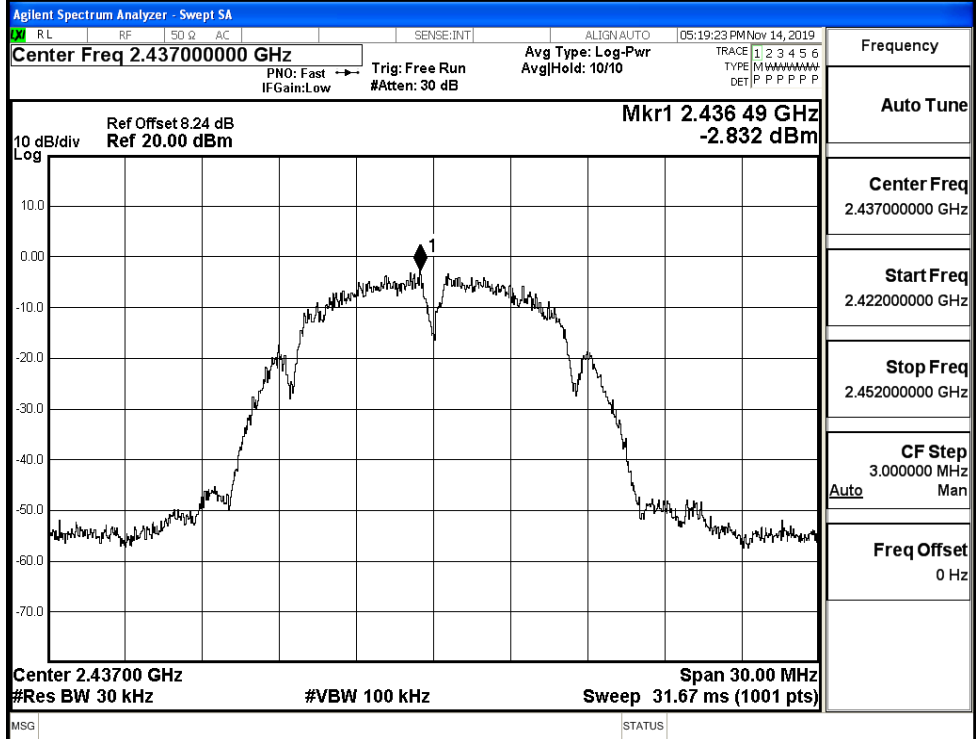


### A.3 Maximum Power Spectral Density

Mode	Channel	Meas.Level [dBm/30KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-3.512	8	PASS
	MCH	-2.832	8	PASS
	HCH	-2.923	8	PASS
11G	LCH	-7.492	8	PASS
	MCH	-6.790	8	PASS
	HCH	-6.751	8	PASS
11N20SISO	LCH	-6.615	8	PASS
	MCH	-6.409	8	PASS
	HCH	-5.779	8	PASS

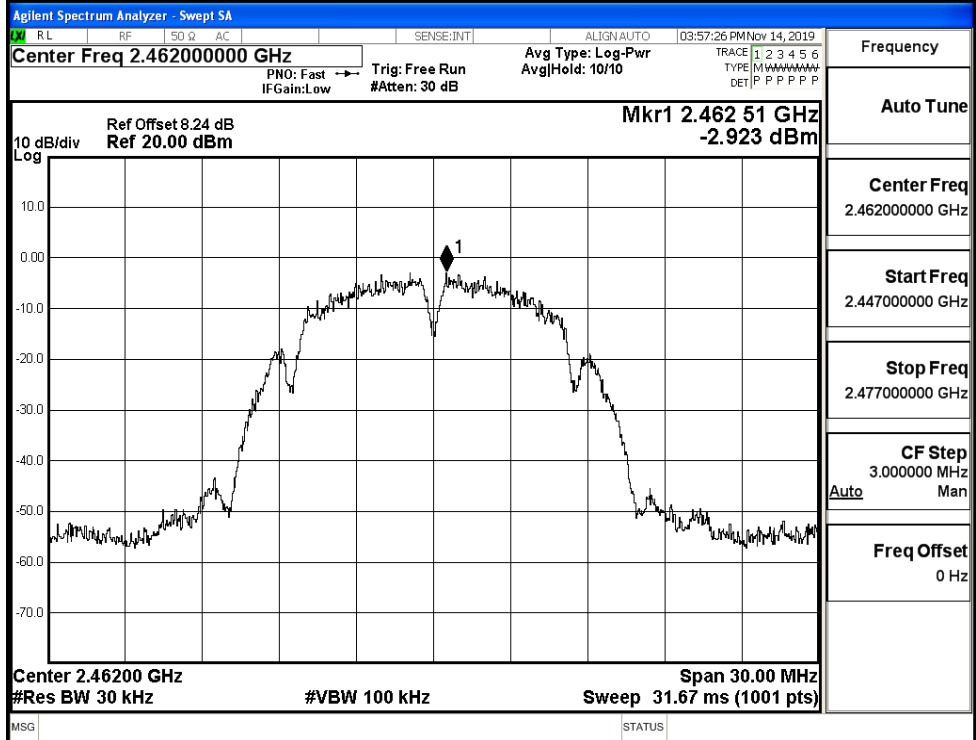


11B/MCH



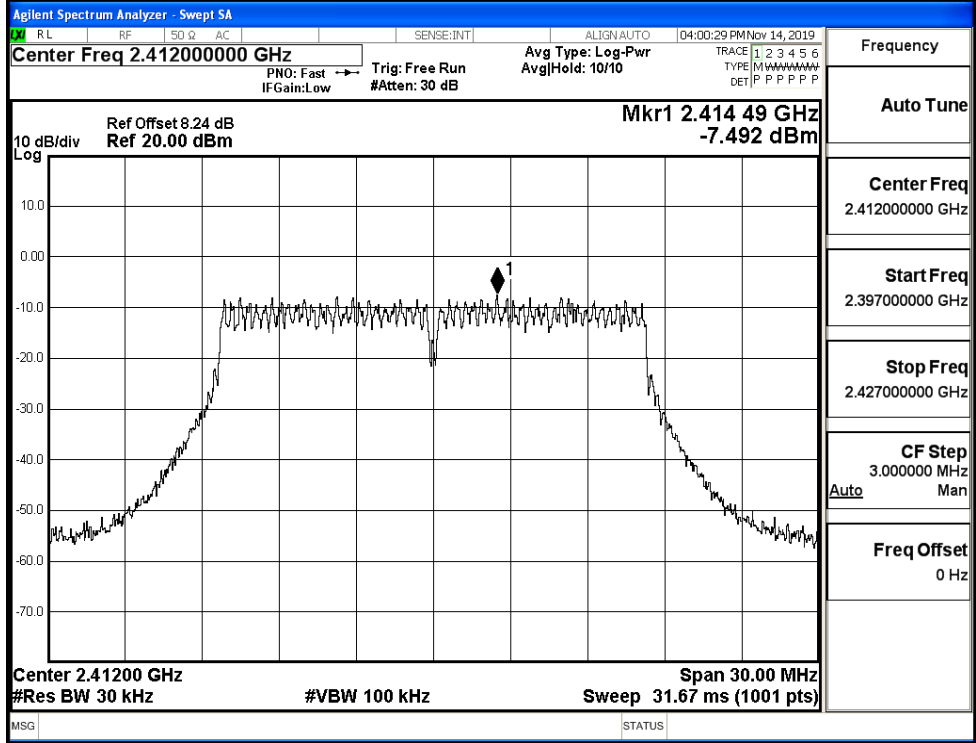
Frequency	2.437000000 GHz
Auto Tune	
Center Freq	2.437000000 GHz
Start Freq	2.422000000 GHz
Stop Freq	2.452000000 GHz
CF Step	3.000000 MHz
	Auto Man
Freq Offset	0 Hz

11B/HCH

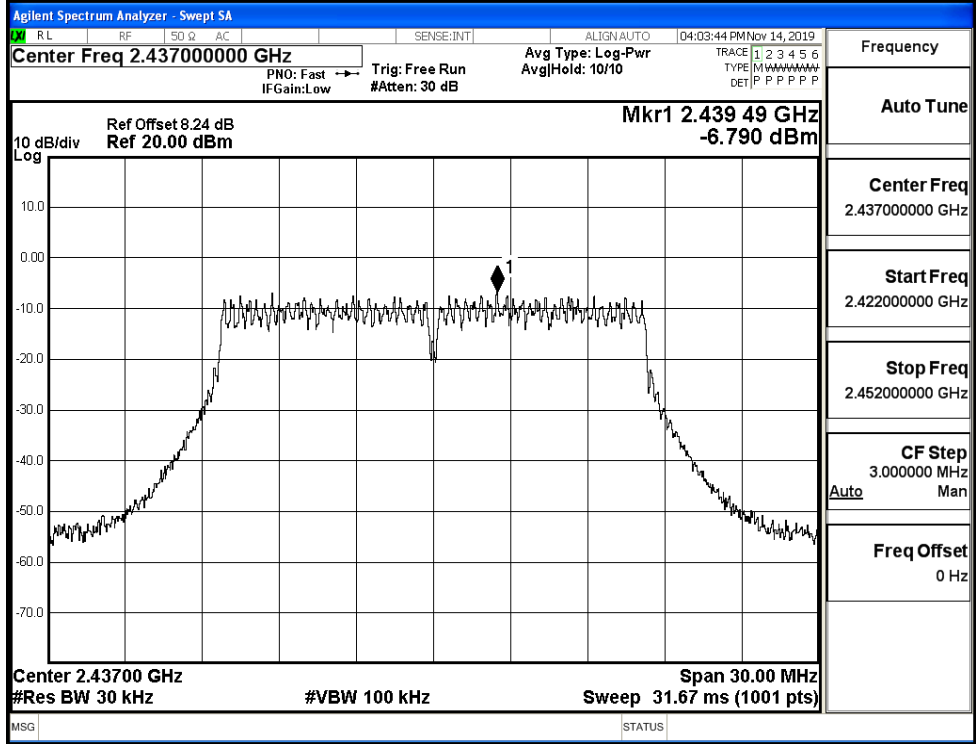


Frequency	2.462000000 GHz
Auto Tune	
Center Freq	2.462000000 GHz
Start Freq	2.447000000 GHz
Stop Freq	2.477000000 GHz
CF Step	3.000000 MHz
	Auto Man
Freq Offset	0 Hz

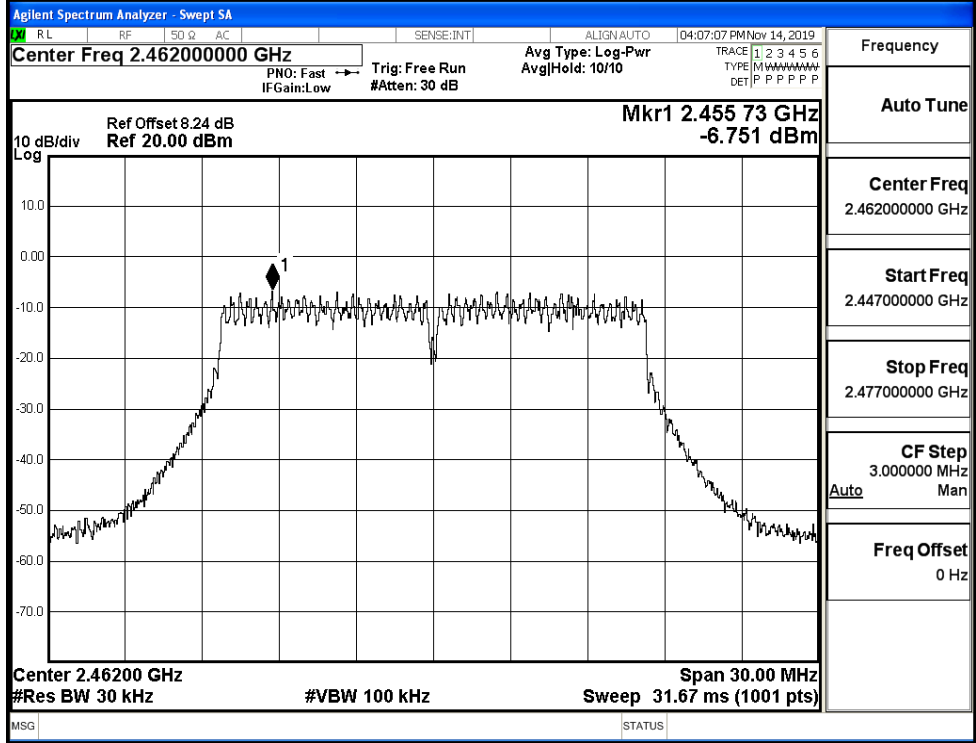
11G/LCH



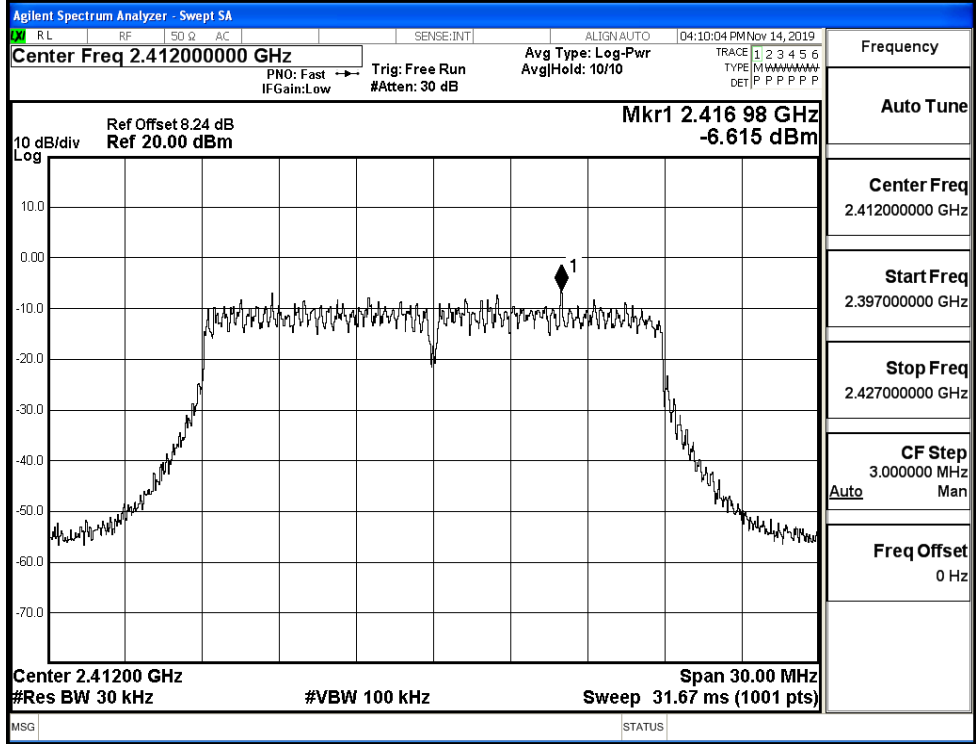
11G/MCH



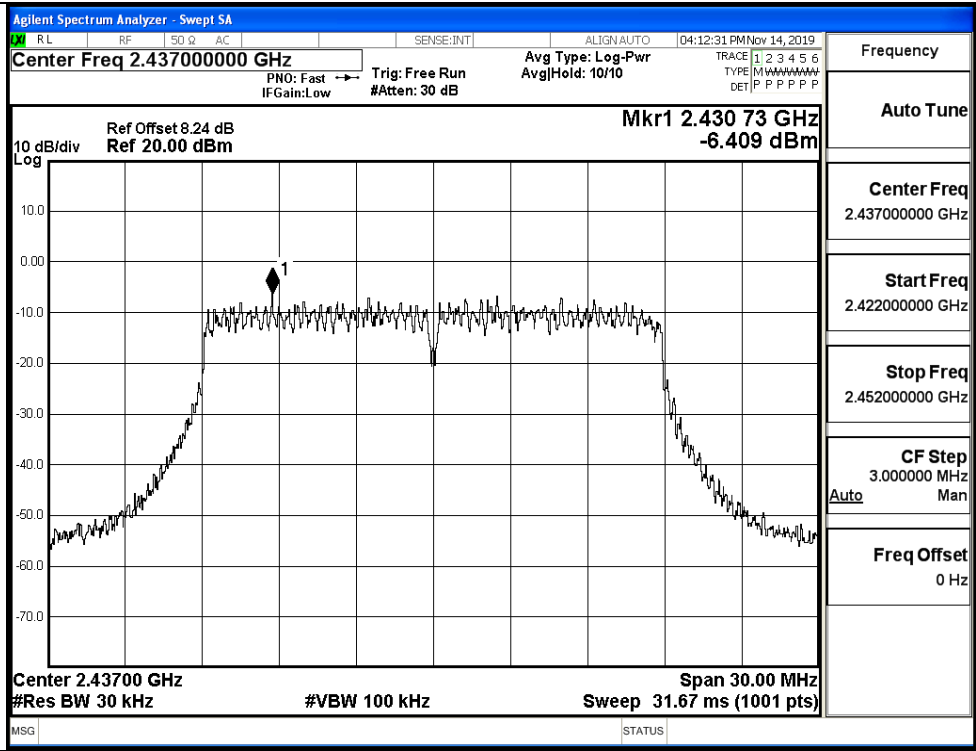
11G/HCH



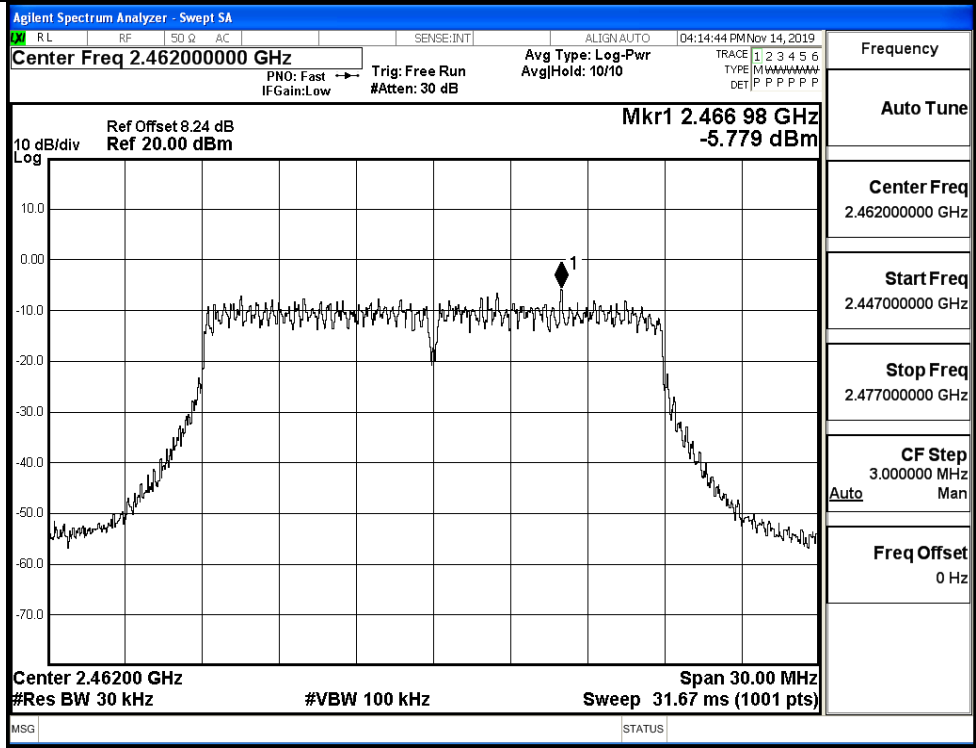
11N20SISO/LCH



11N20SISO/MCH

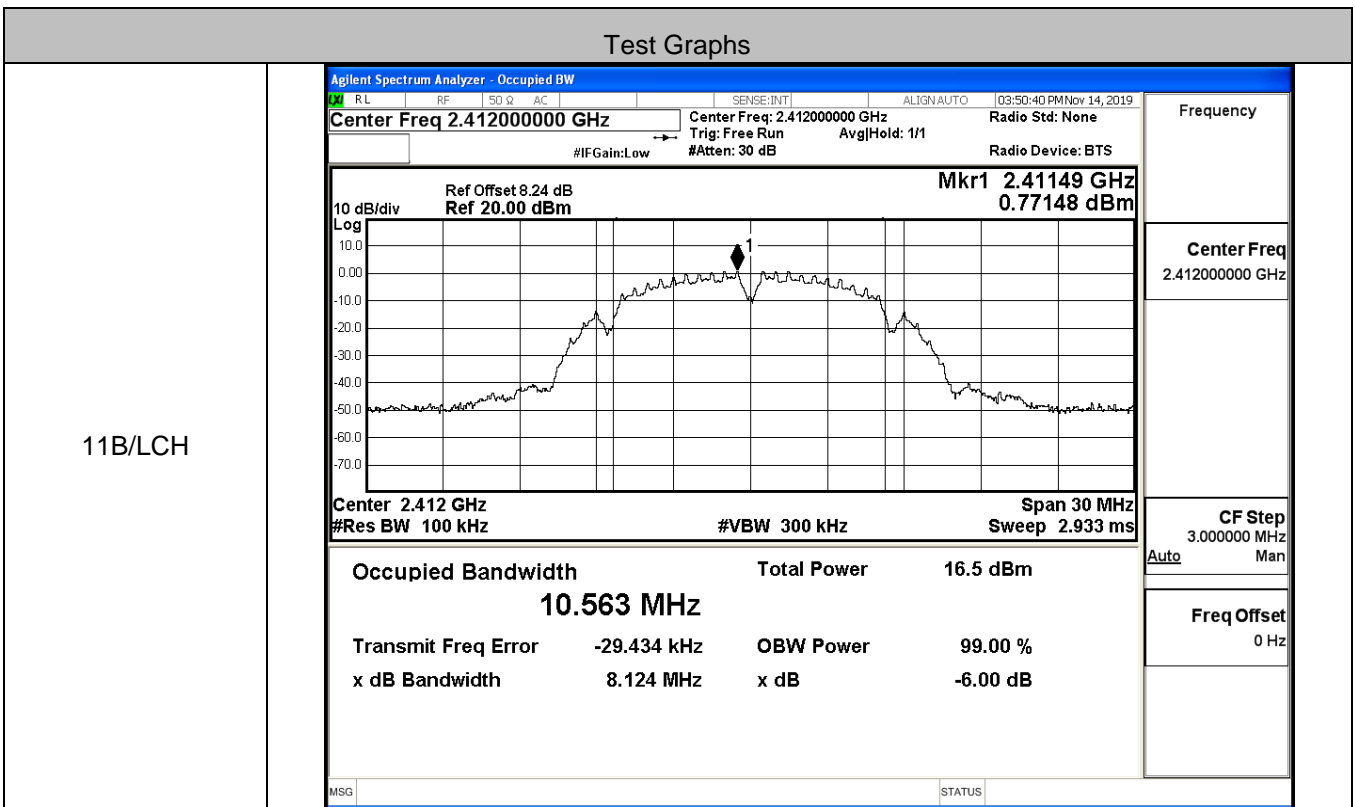


11N20SISO/HCH

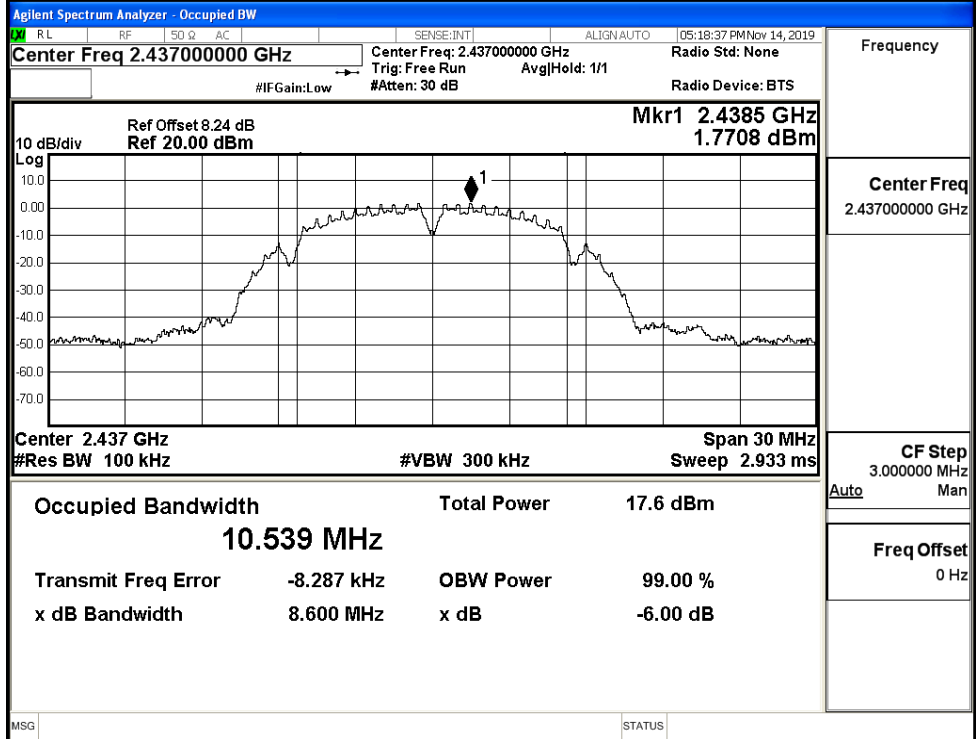


**A.4 6dB Bandwidth**

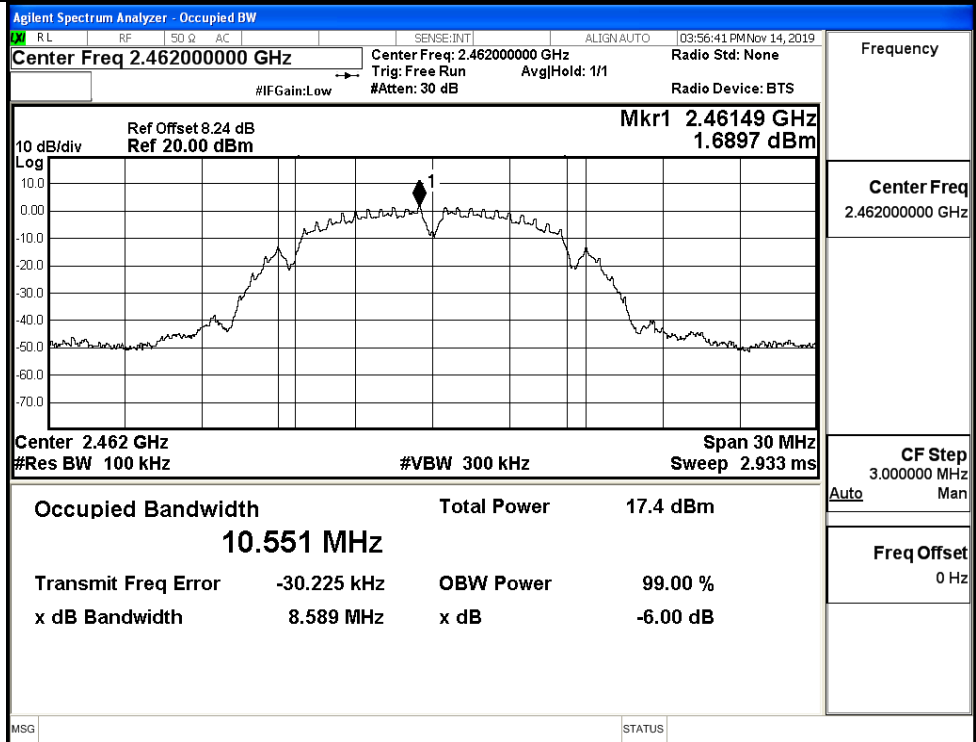
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	8.124	≥0.5	PASS
	MCH	8.600	≥0.5	PASS
	HCH	8.589	≥0.5	PASS
11G	LCH	16.36	≥0.5	PASS
	MCH	16.35	≥0.5	PASS
	HCH	16.36	≥0.5	PASS
11N20SISO	LCH	17.06	≥0.5	PASS
	MCH	17.05	≥0.5	PASS
	HCH	17.06	≥0.5	PASS



11B/MCH

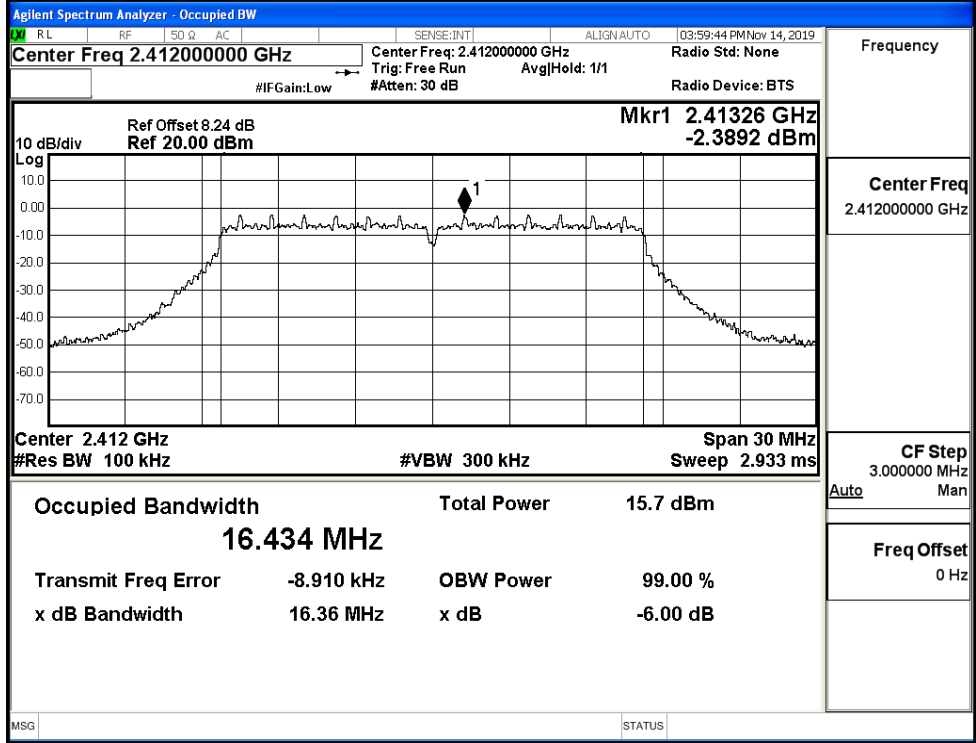


11B/HCH

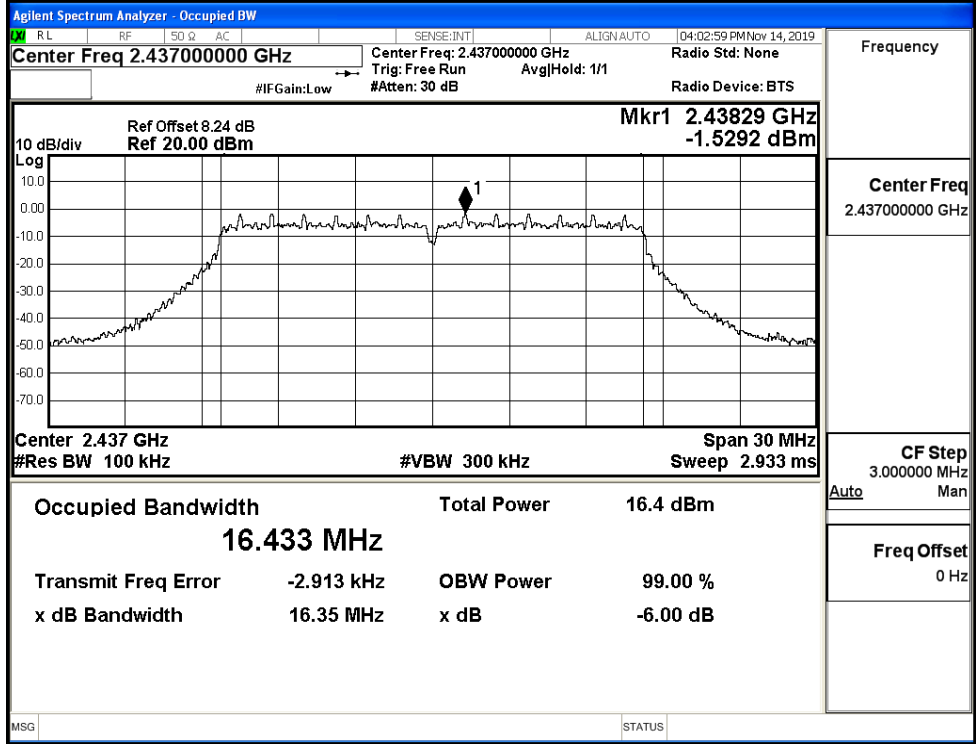




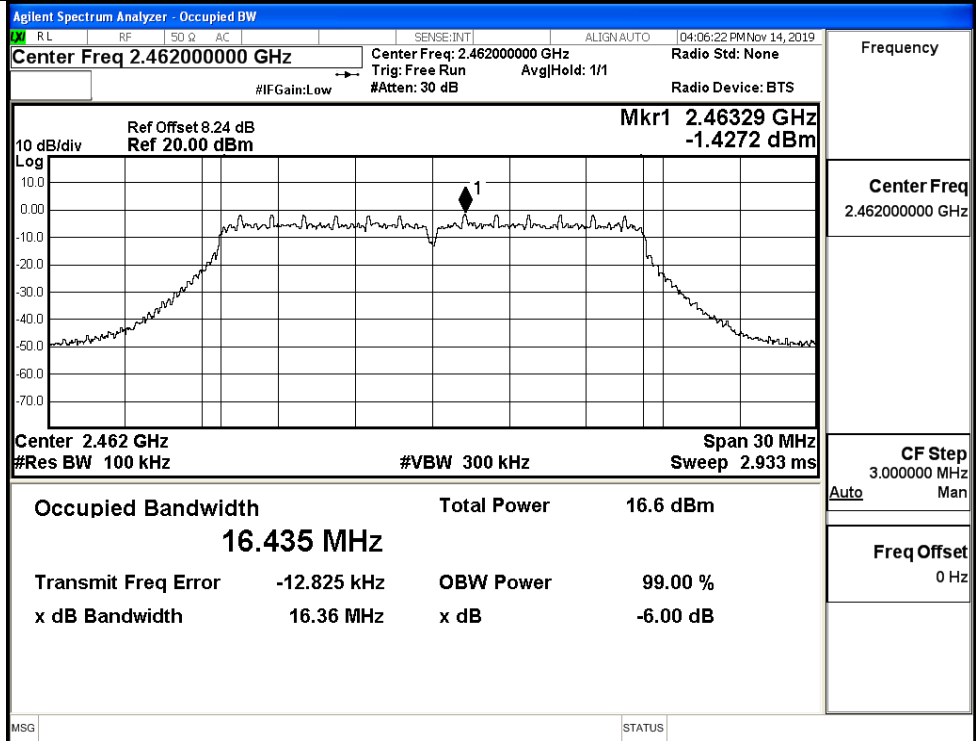
11G/LCH



11G/MCH



11G/HCH



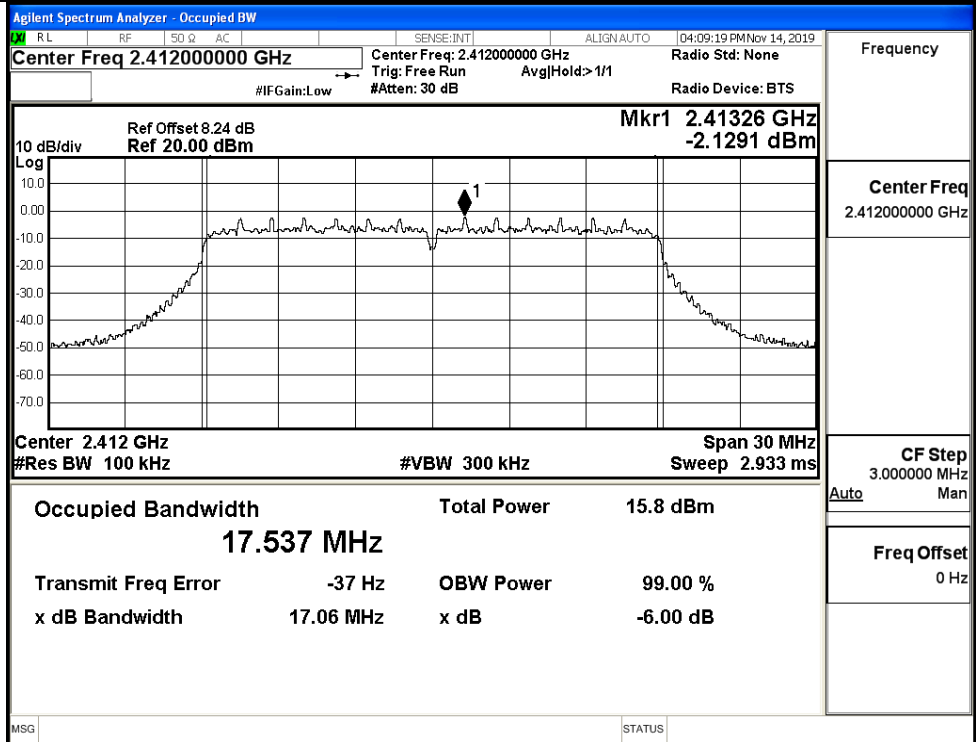
Frequency

Center Freq  
2.46200000 GHz

CF Step  
3.000000 MHz

Freq Offset  
0 Hz

11N20SISO/LCH



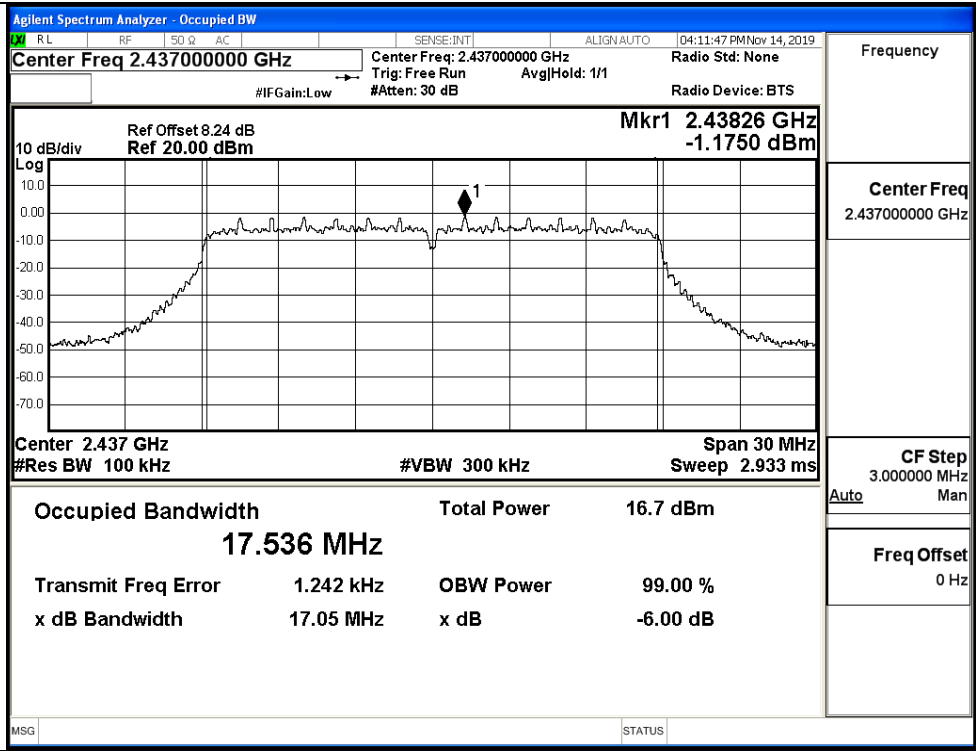
Frequency

Center Freq  
2.41200000 GHz

CF Step  
3.000000 MHz

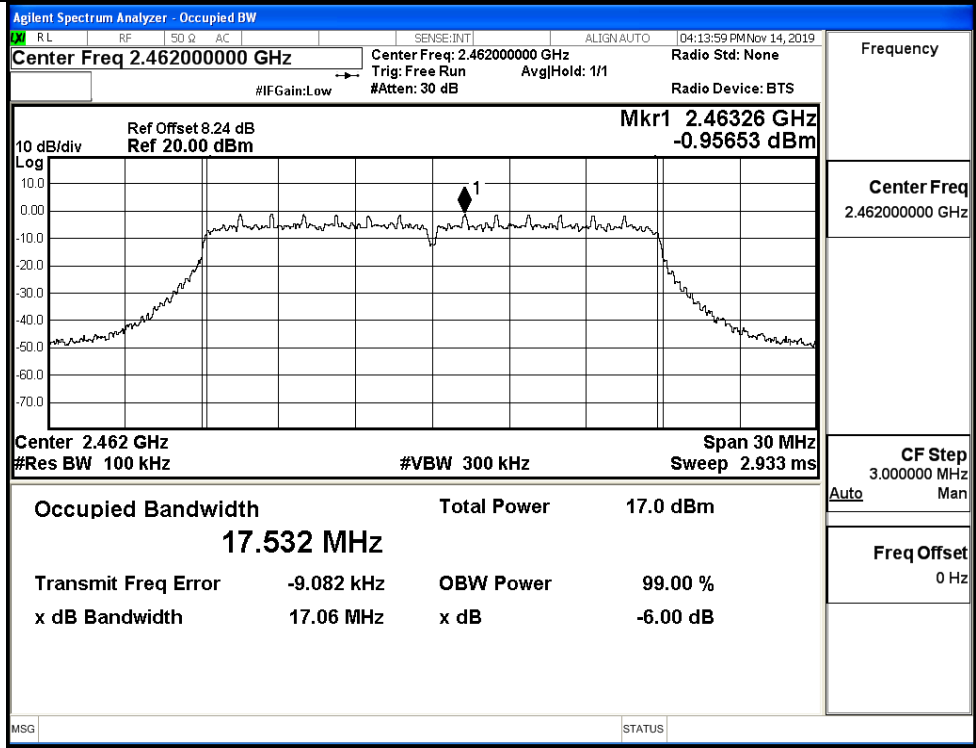
Freq Offset  
0 Hz

11N20SISO/MCH



Frequency	2.43700000 GHz
Center Freq	2.43700000 GHz
CF Step	3.000000 MHz
Auto	Man
Freq Offset	0 Hz

11N20SISO/HCH



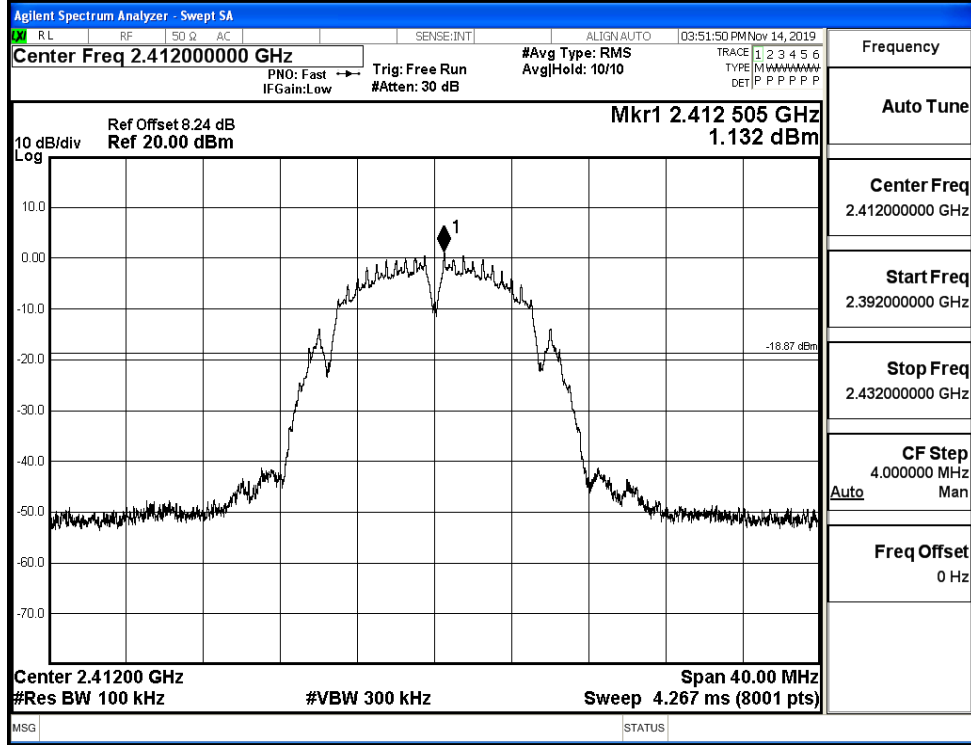
Frequency	2.46200000 GHz
Center Freq	2.46200000 GHz
CF Step	3.000000 MHz
Auto	Man
Freq Offset	0 Hz

**A.5 RF Conducted Spurious Emissions**

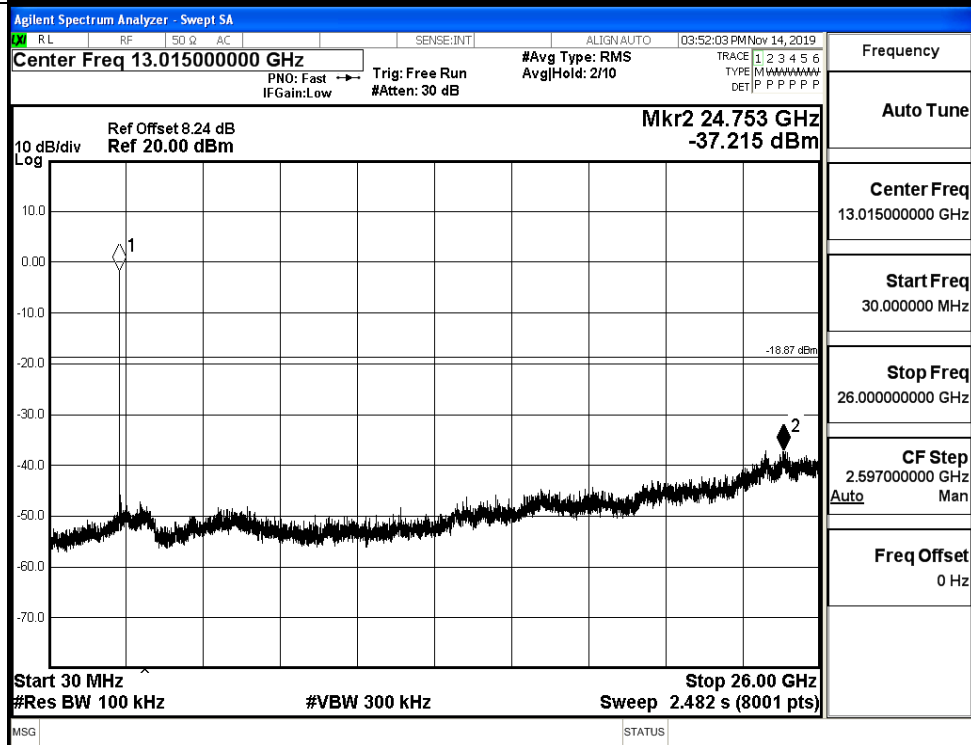
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	1.132	-37.215	-18.868	PASS
	MCH	1.644	-37.262	-18.356	PASS
	HCH	1.492	-37.568	-18.508	PASS
11G	LCH	-2.457	-37.728	-22.457	PASS
	MCH	-1.643	-37.650	-21.643	PASS
	HCH	-1.753	-37.164	-21.753	PASS
11N20 SISO	LCH	-2.386	-37.102	-22.386	PASS
	MCH	-1.85	-37.559	-21.850	PASS
	HCH	-1.53	-37.553	-21.530	PASS

11B\_LCH\_Graphs

Pref/11B/LCH

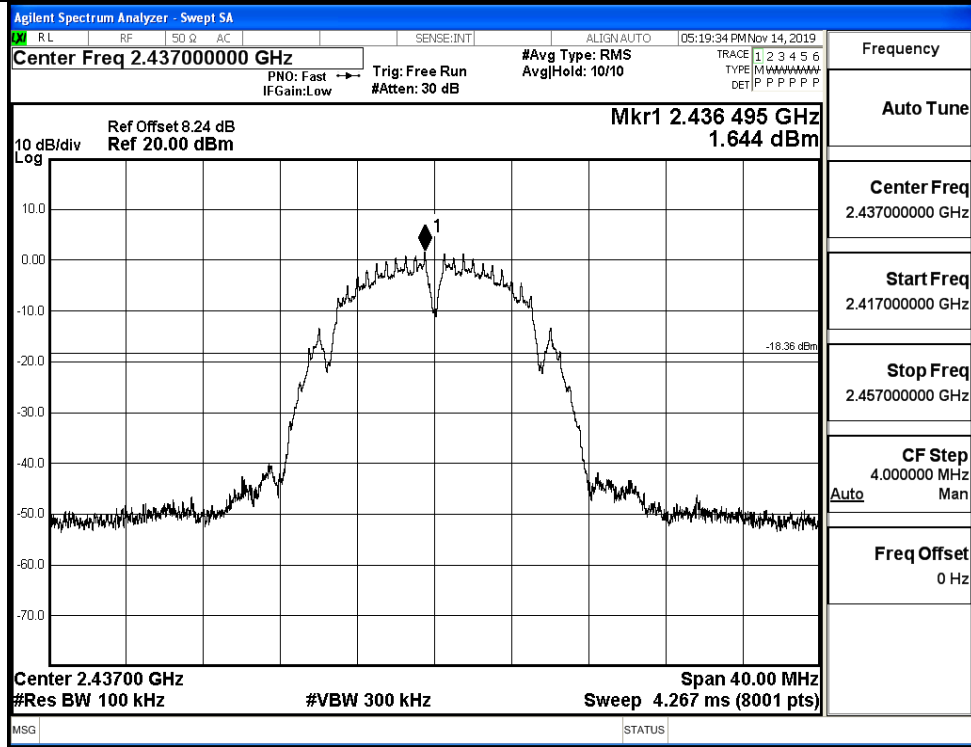


Puw/11B/LCH

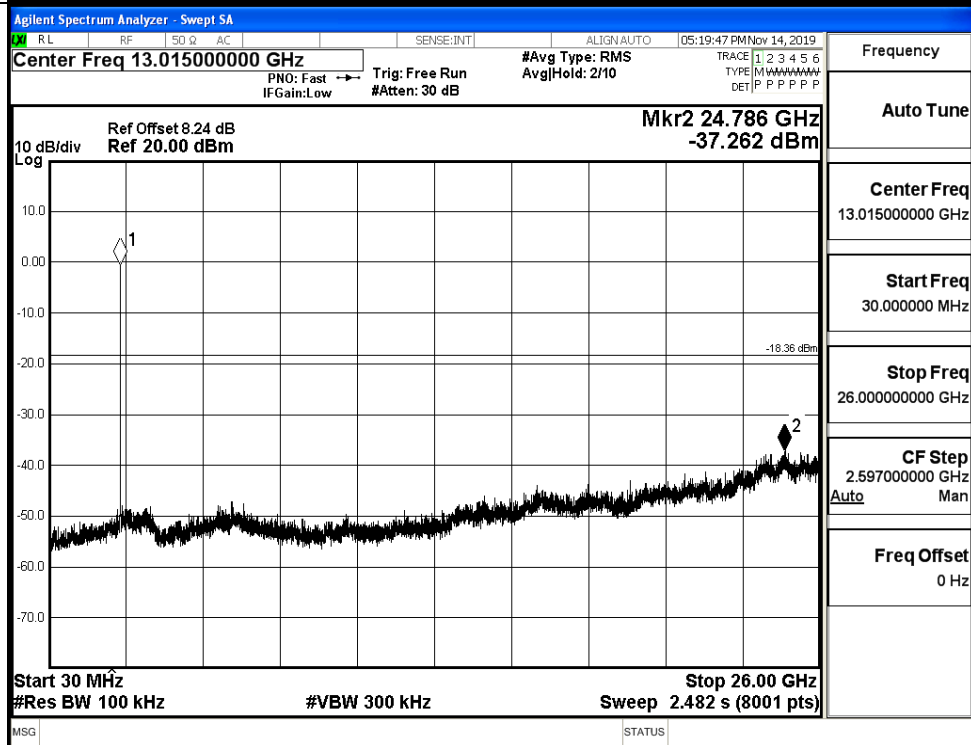


11B\_MCH\_Graphs

Pref/11B/MCH

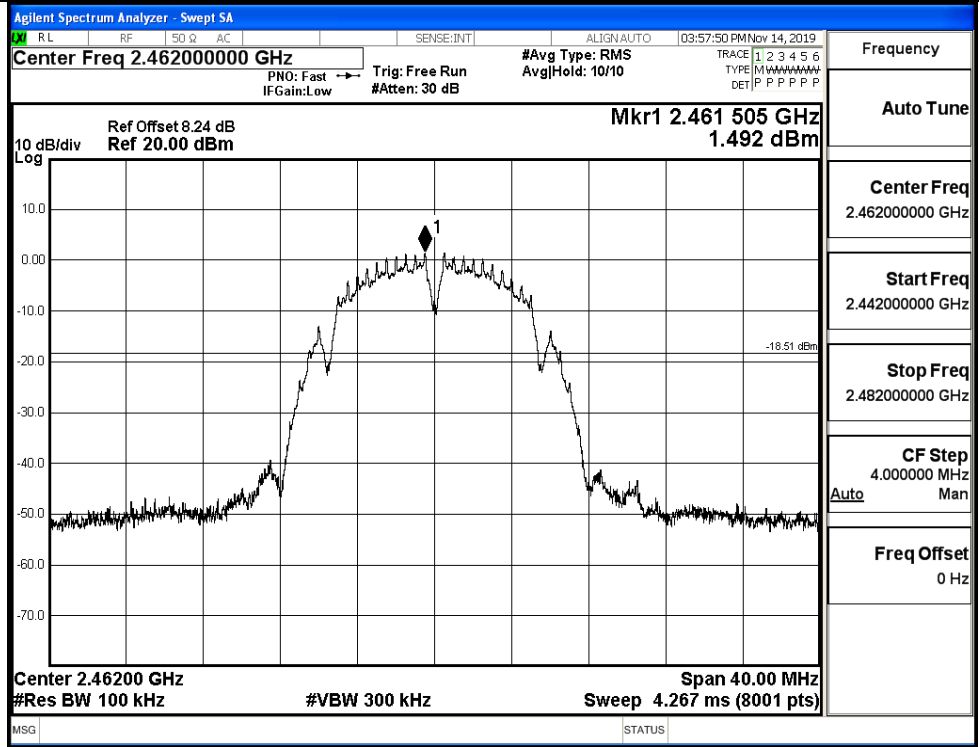


Puw/11B/MCH

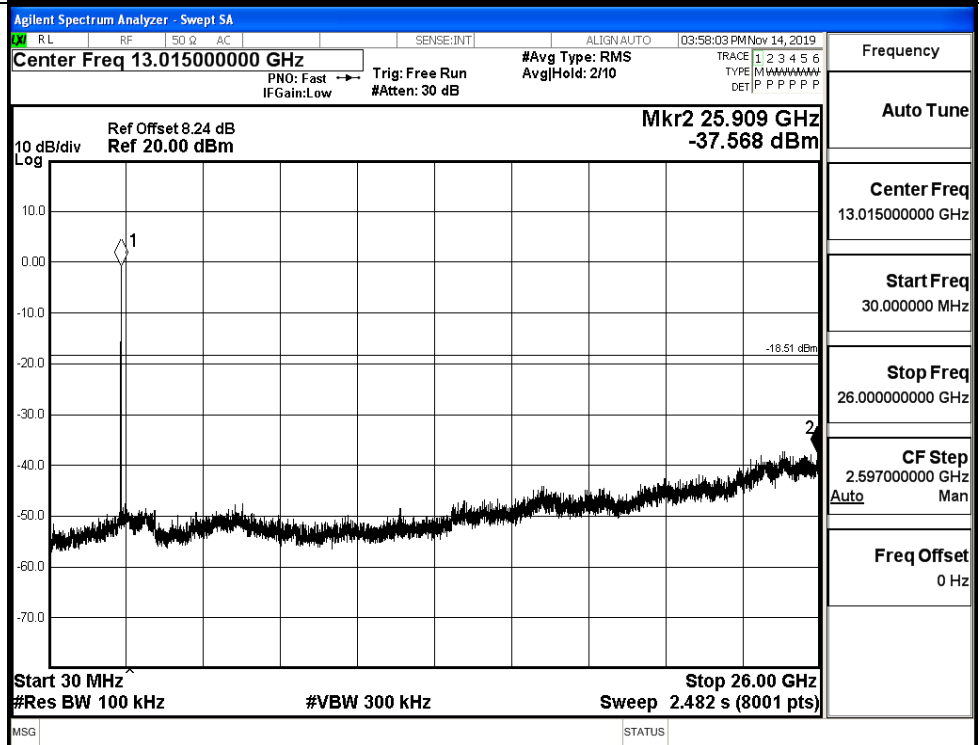


11B\_HCH\_Graphs

Pref/11B/HCH

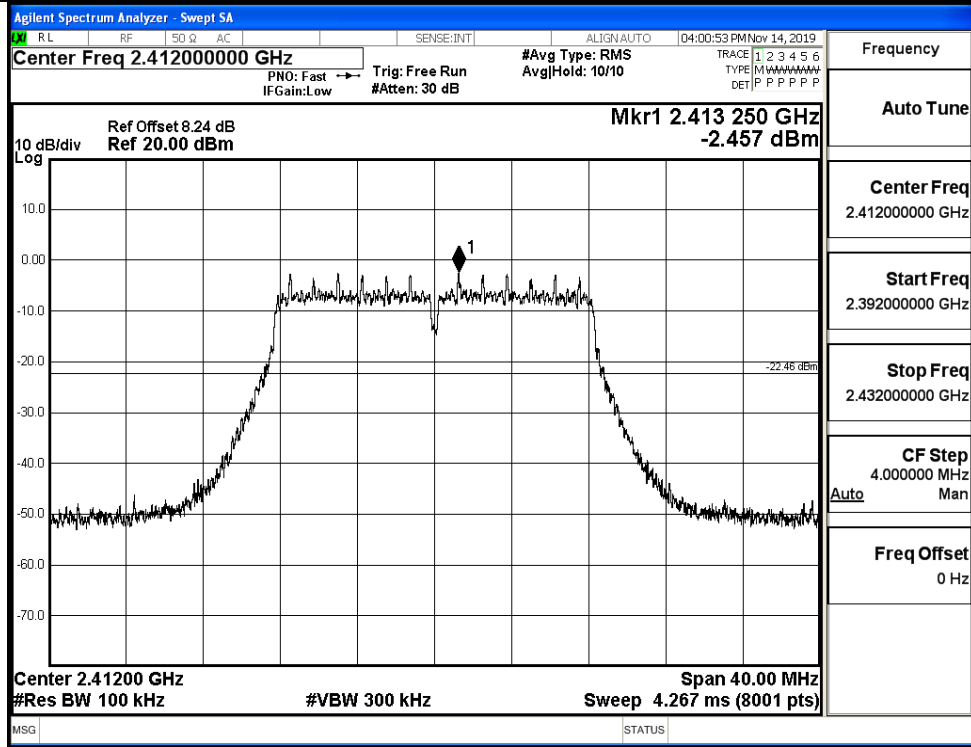


Puw/11B/HCH

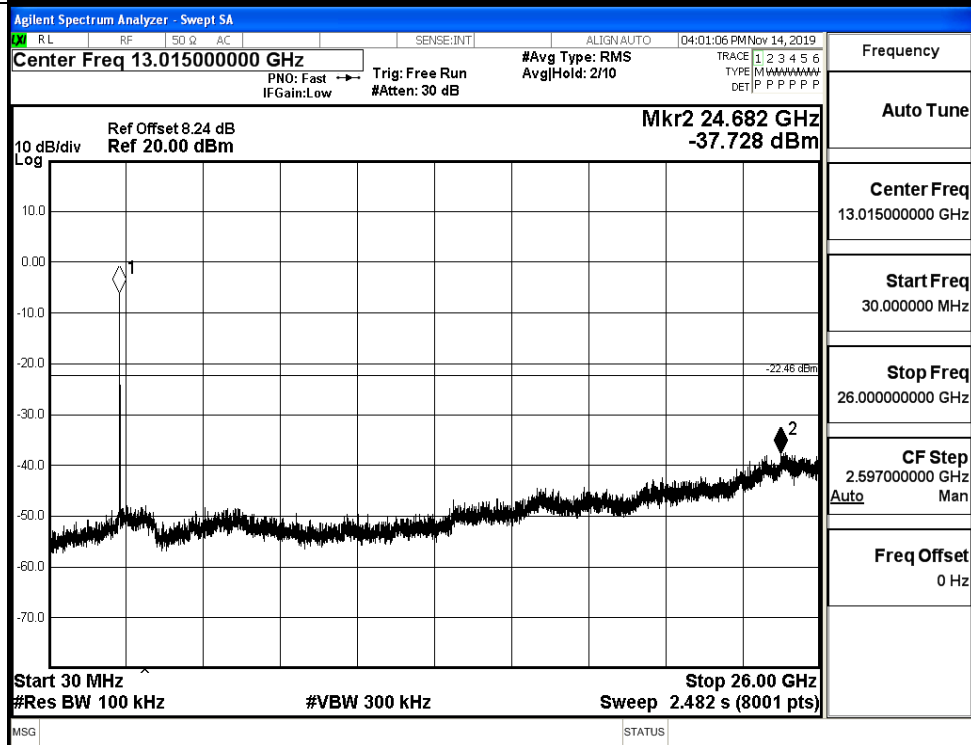


11G\_LCH\_Graphs

Pref/11G/LCH



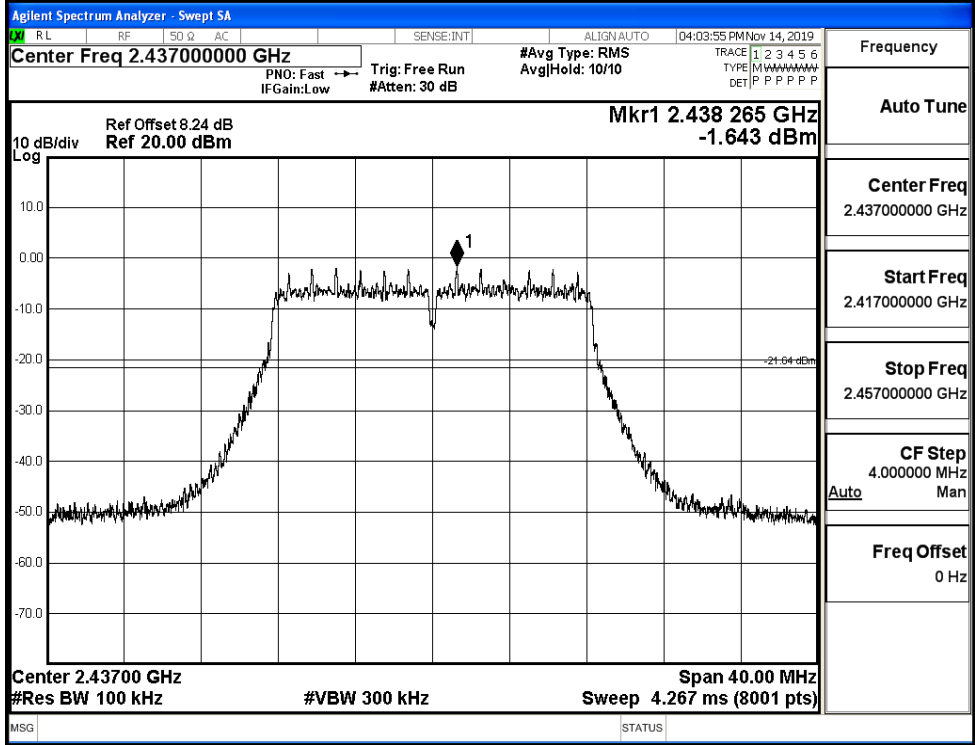
Puw/11G/LCH



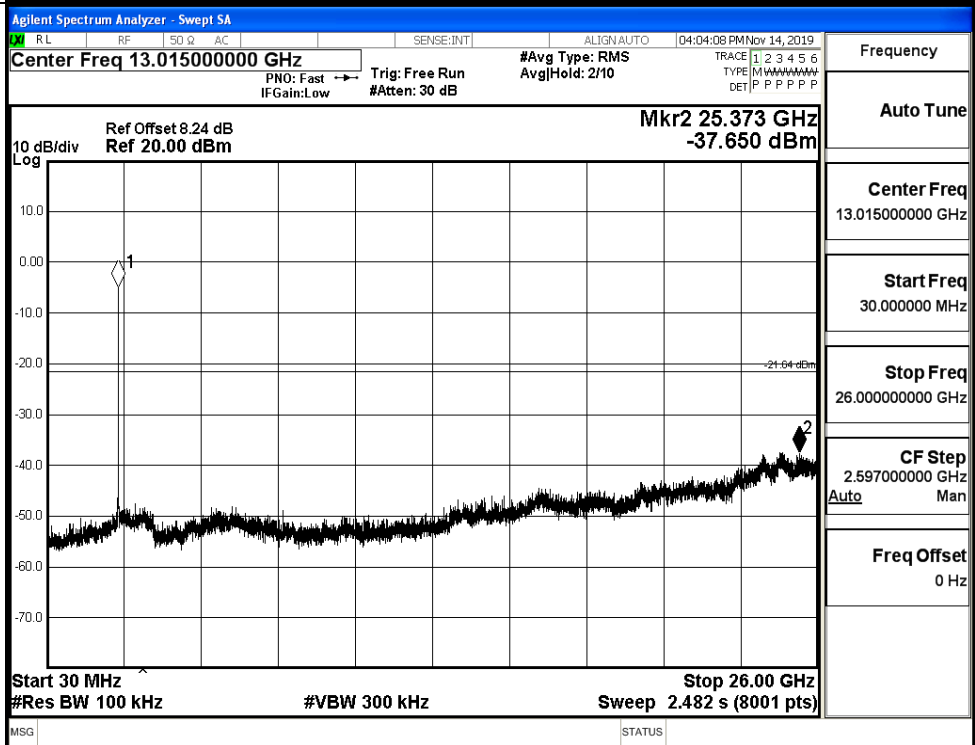


11G\_MCH\_Graphs

Pref/11G/MCH

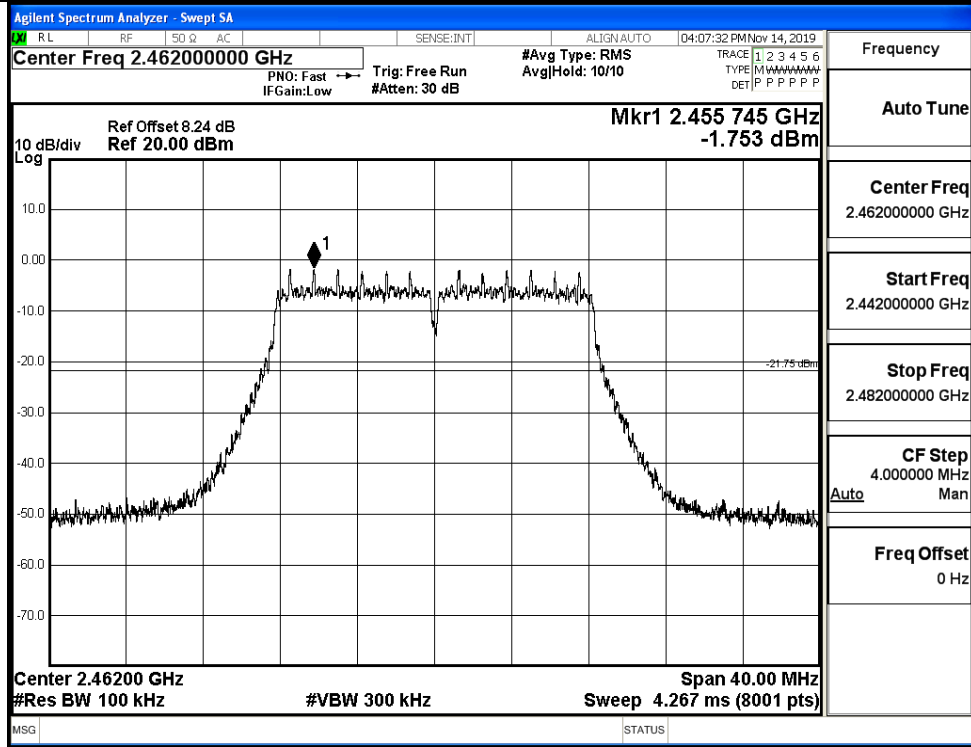


Puw/11G/MCH

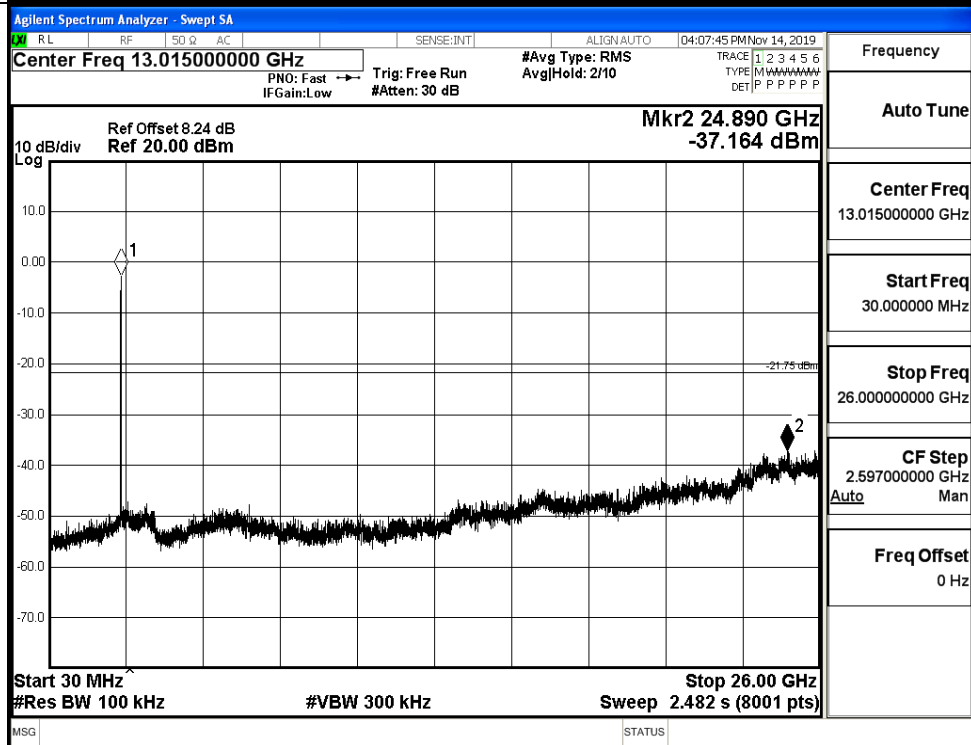


11G\_HCH\_Graphs

Pref/11G/HCH

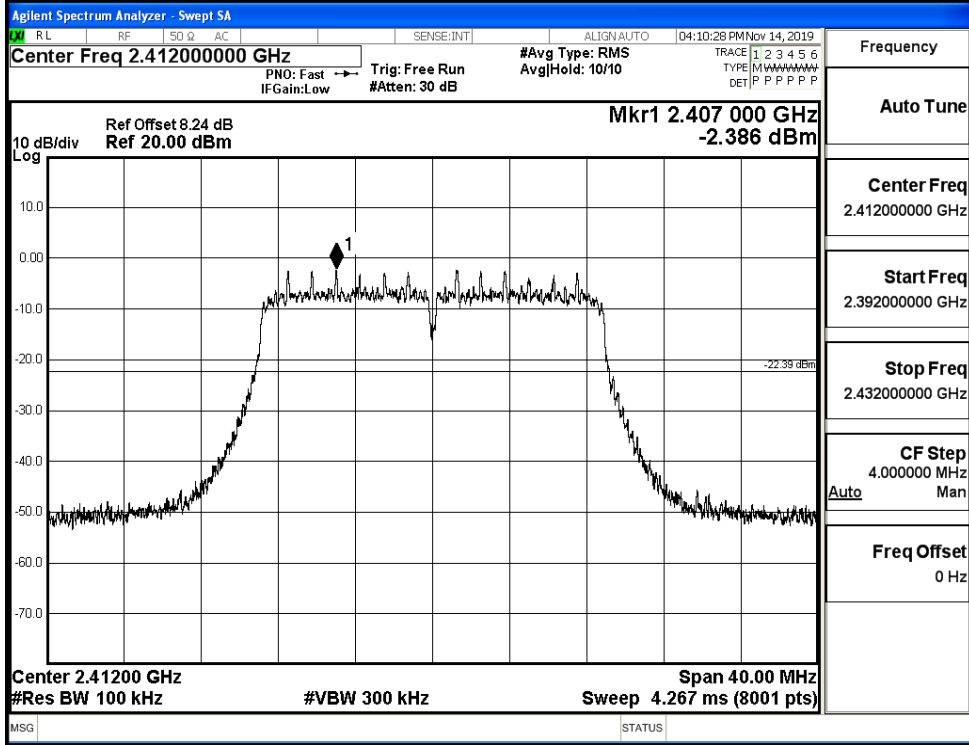


Puw/11G/HCH

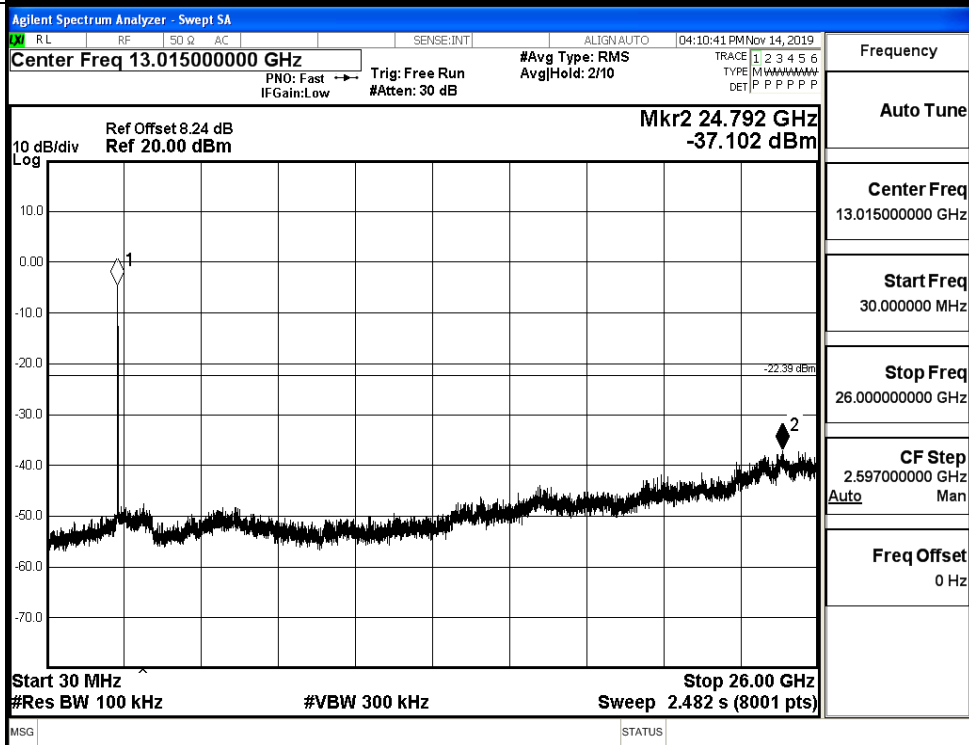


11N20SISO\_LCH\_Graphs

Pref/11N20SIS  
O/LCH

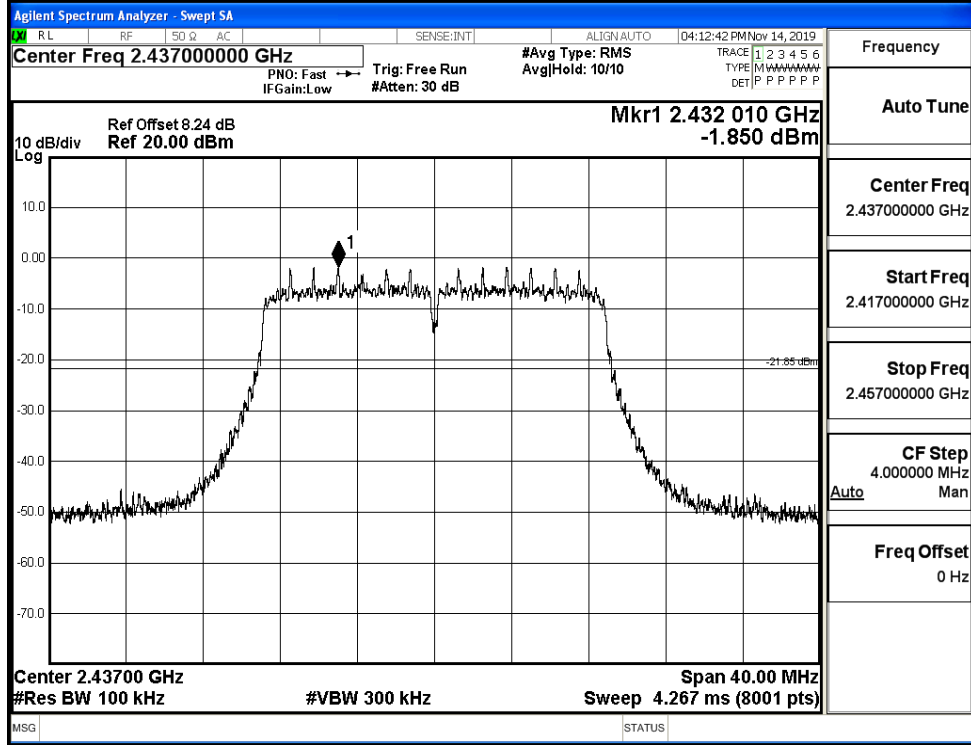


Puw/11N20  
SISO/LCH

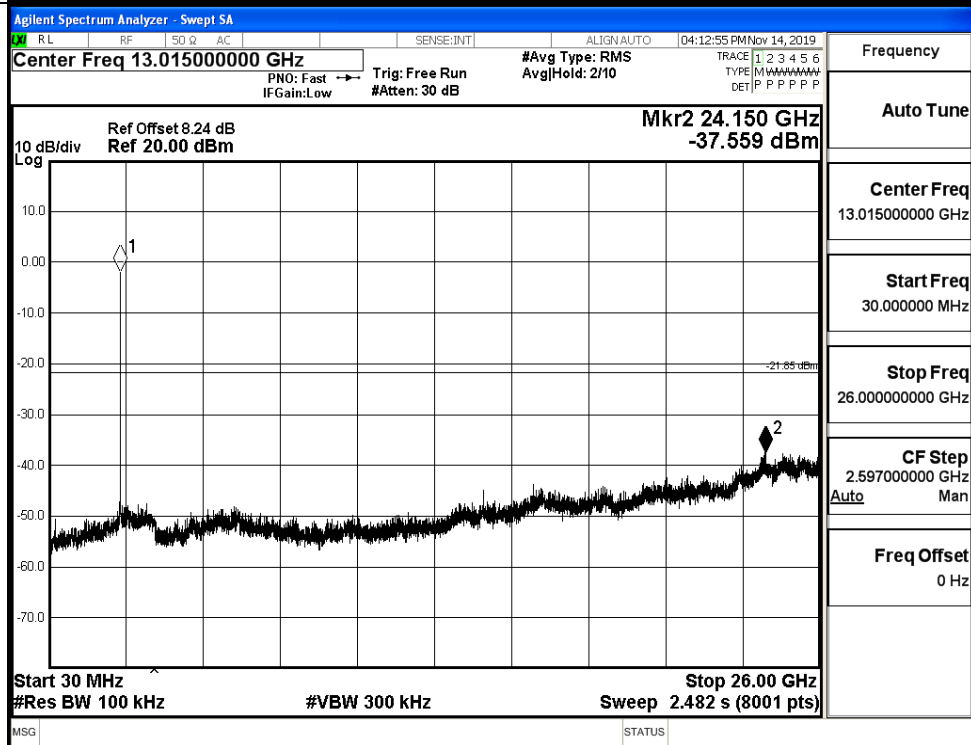


11N20SISO\_MCH\_Graphs

Pref/11N20  
SISO/MCH

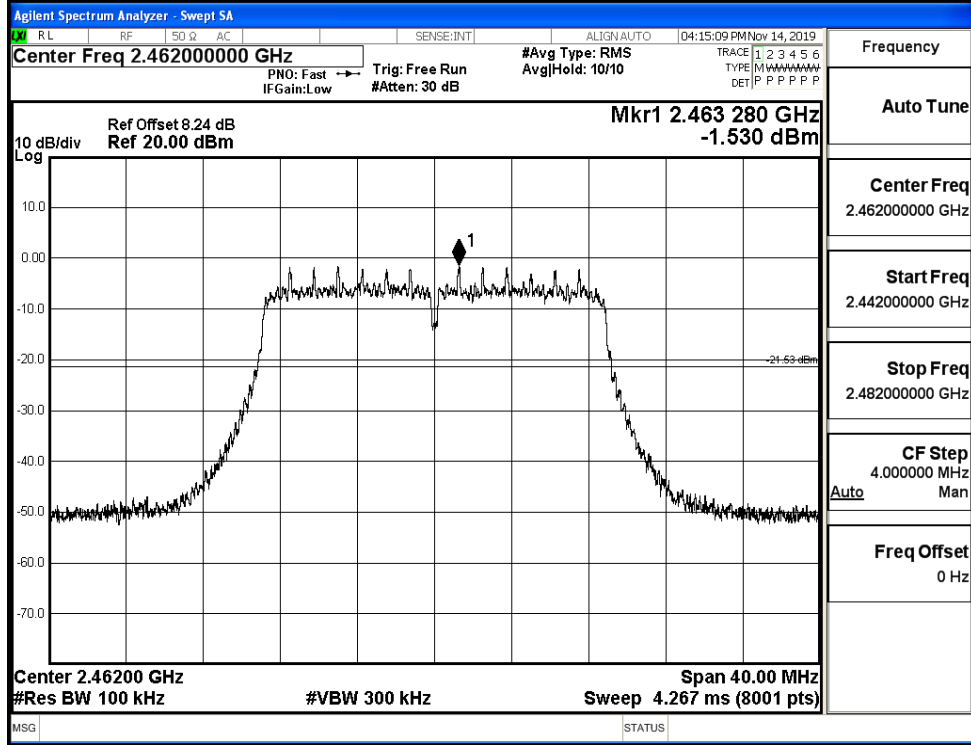


Puw/11N20  
SISO/MCH

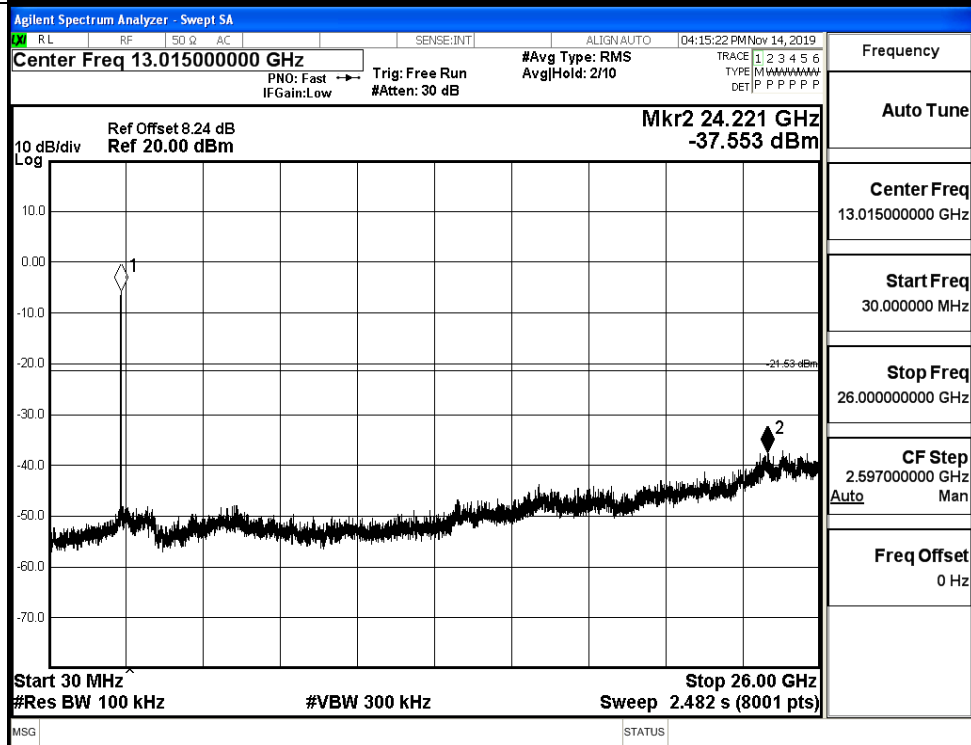


11N20SISO\_HCH\_Graphs

Pref/11N20  
SISO/HCH

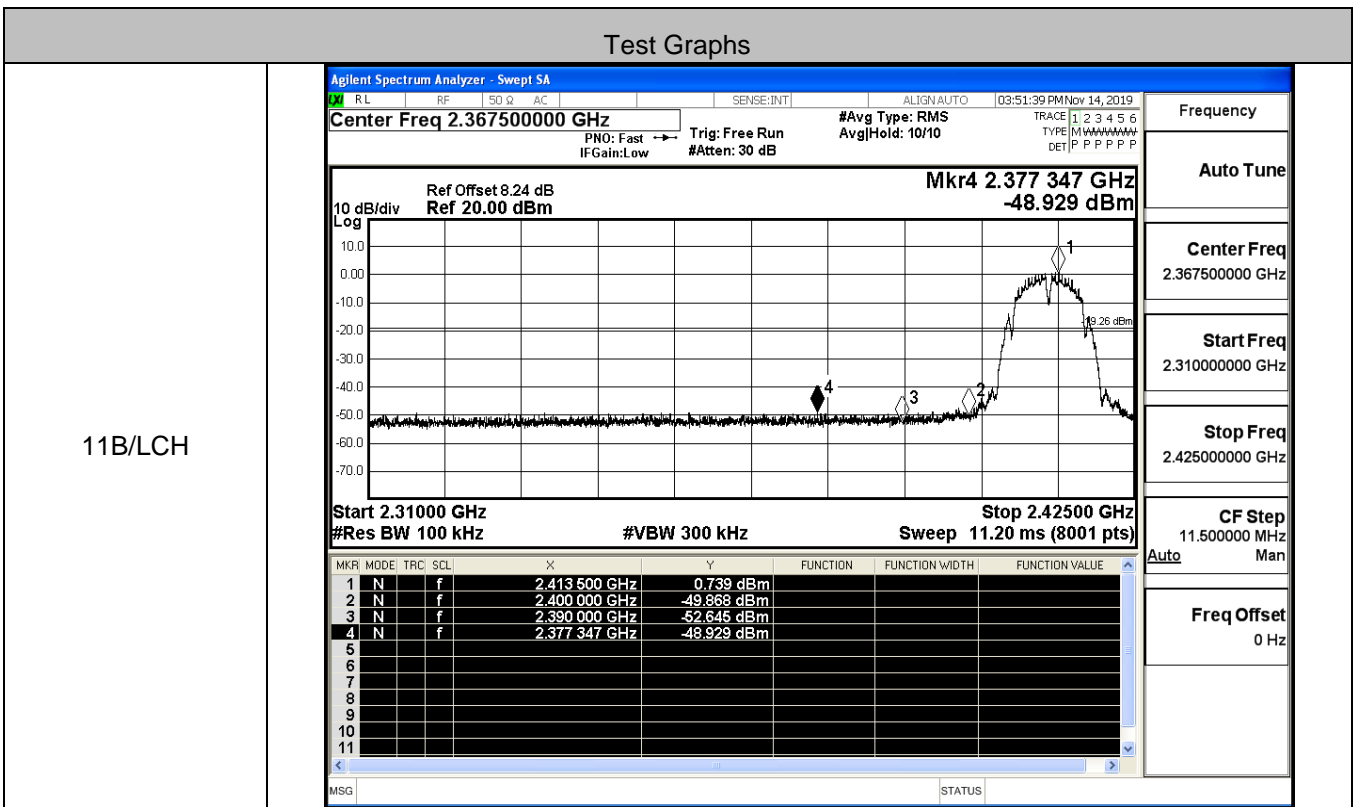


Puw/11N20  
SISO/HCH

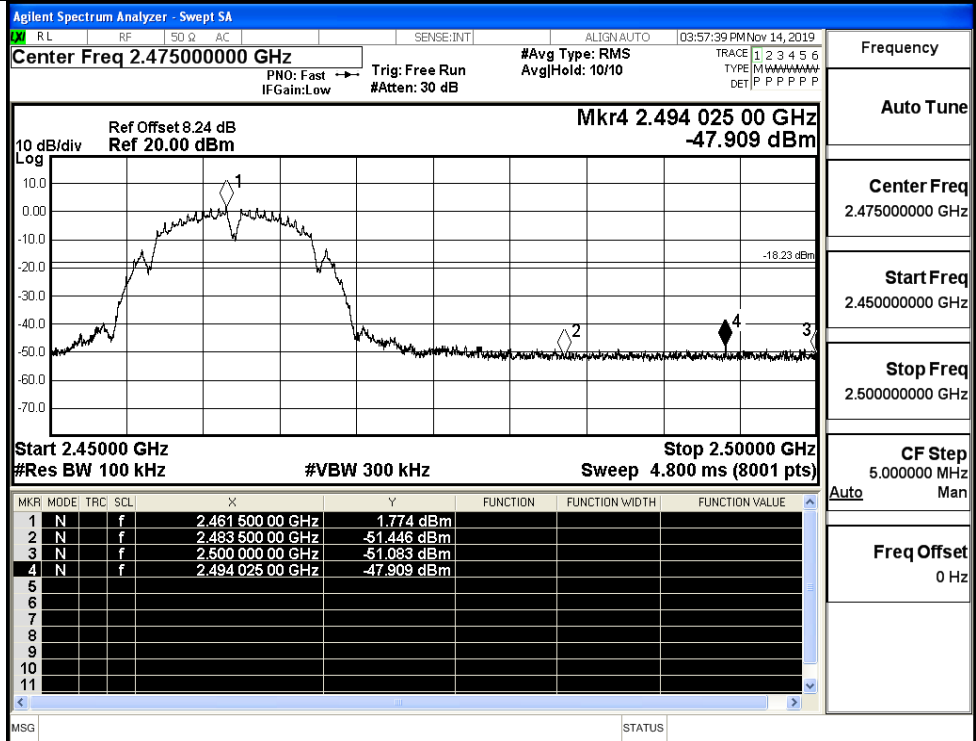


### A.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	0.739	-48.929	-19.26	PASS
	HCH	1.774	-47.909	-18.23	PASS
11G	LCH	-2.520	-48.655	-22.52	PASS
	HCH	-1.500	-48.461	-21.5	PASS
11N20SISO	LCH	-2.406	-49.101	-22.41	PASS
	HCH	-1.295	-48.019	-21.3	PASS

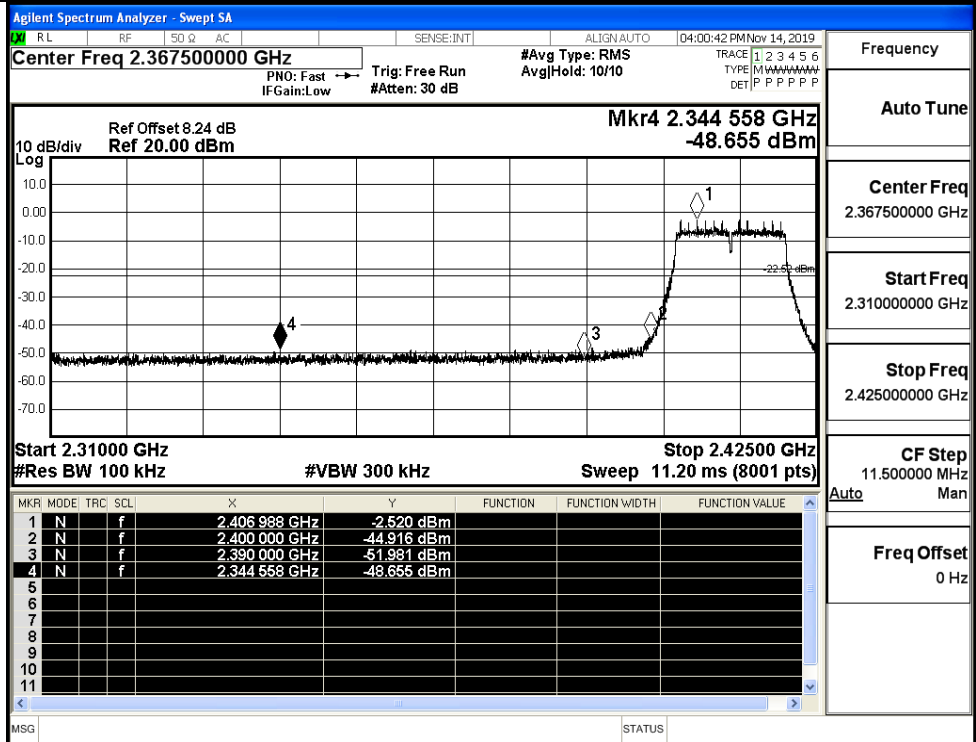


11B/HCH



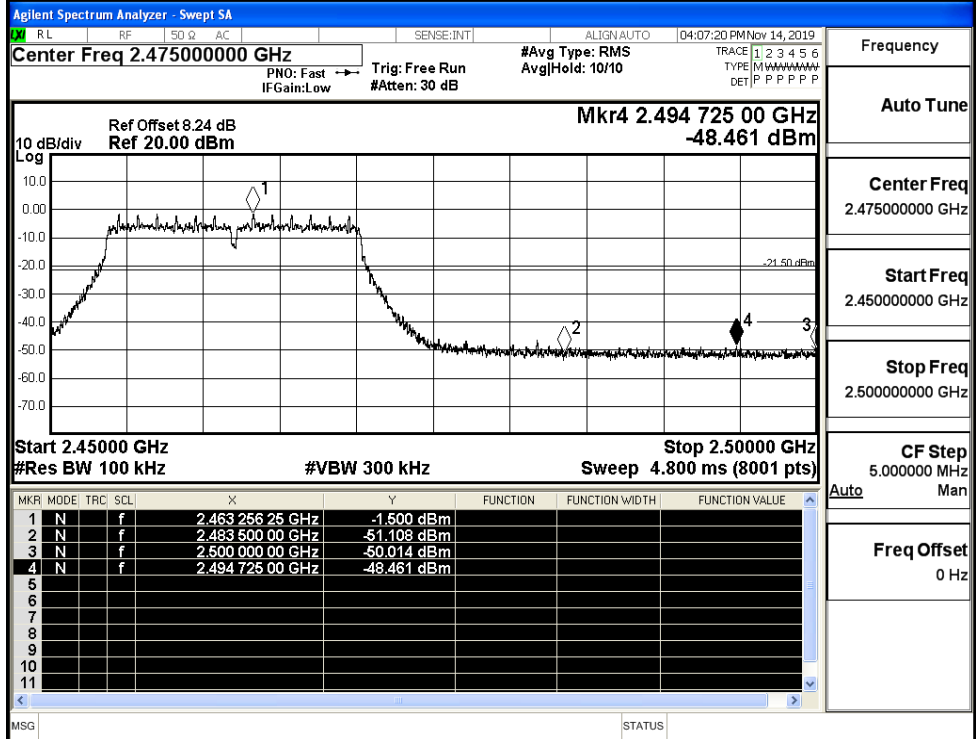
Frequency	2.47500000 GHz
Auto Tune	
Center Freq	2.47500000 GHz
Start Freq	2.45000000 GHz
Stop Freq	2.50000000 GHz
CF Step	5.000000 MHz
Freq Offset	0 Hz

11G/LCH



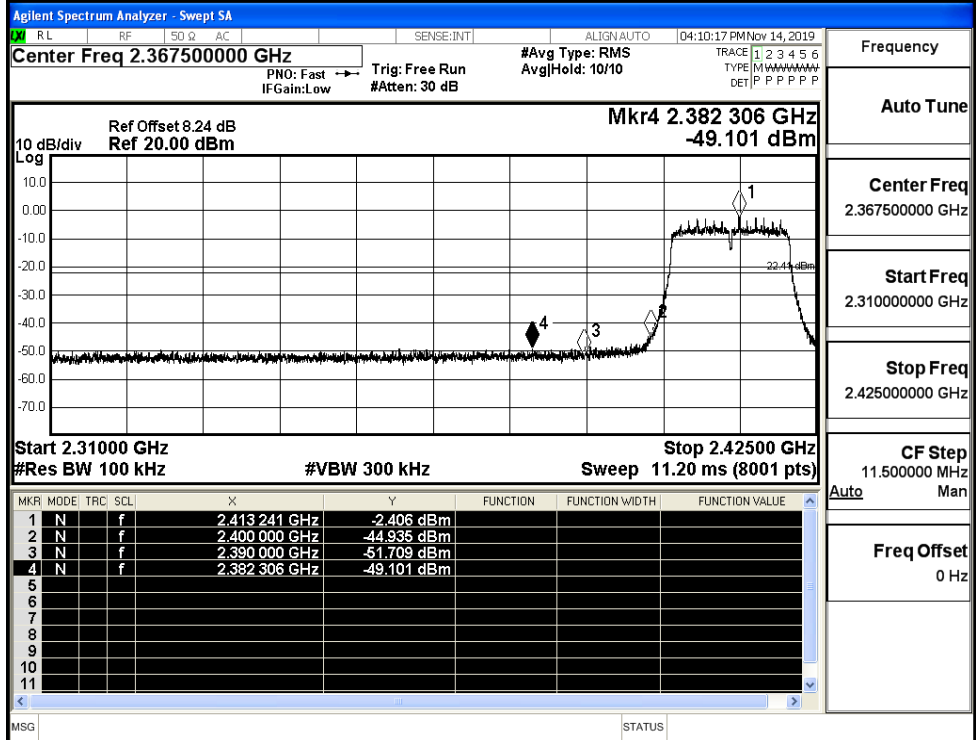
Frequency	2.36750000 GHz
Auto Tune	
Center Freq	2.36750000 GHz
Start Freq	2.31000000 GHz
Stop Freq	2.42500000 GHz
CF Step	11.500000 MHz
Freq Offset	0 Hz

11G/HCH



Frequency	2.47500000 GHz
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

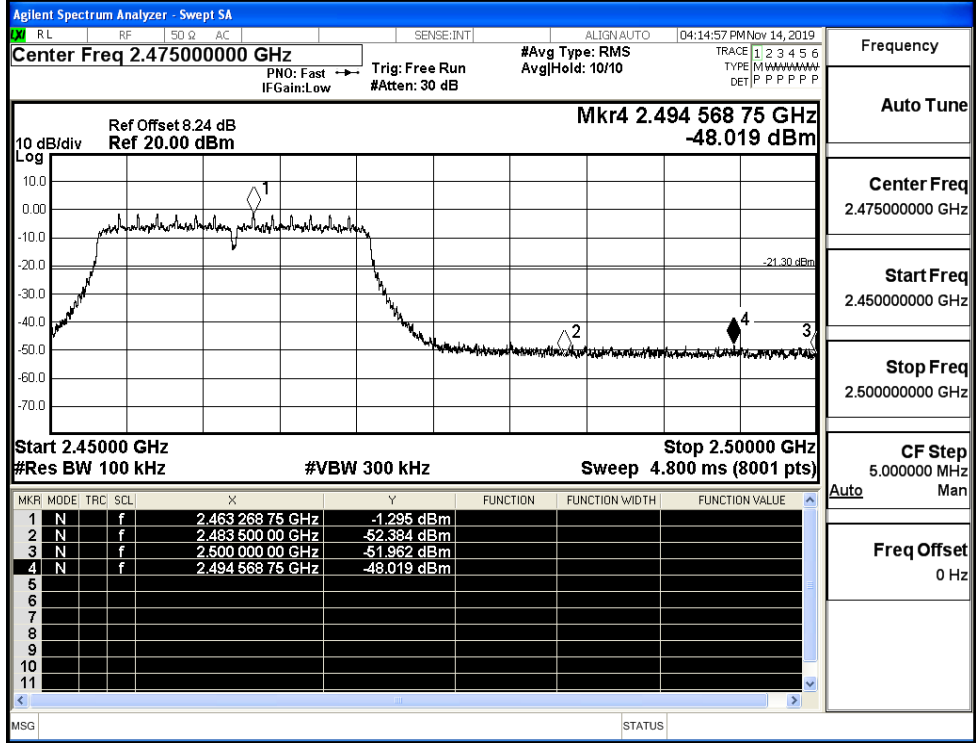
11N20SISO/LCH



Frequency	2.36750000 GHz
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



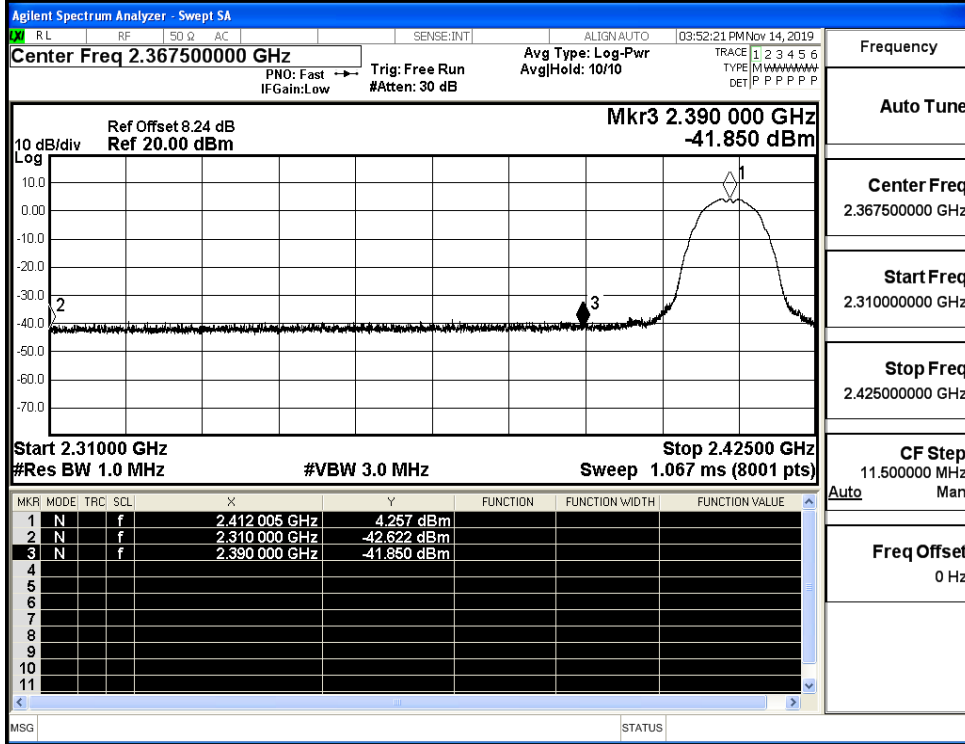
11N20SISO/HCH



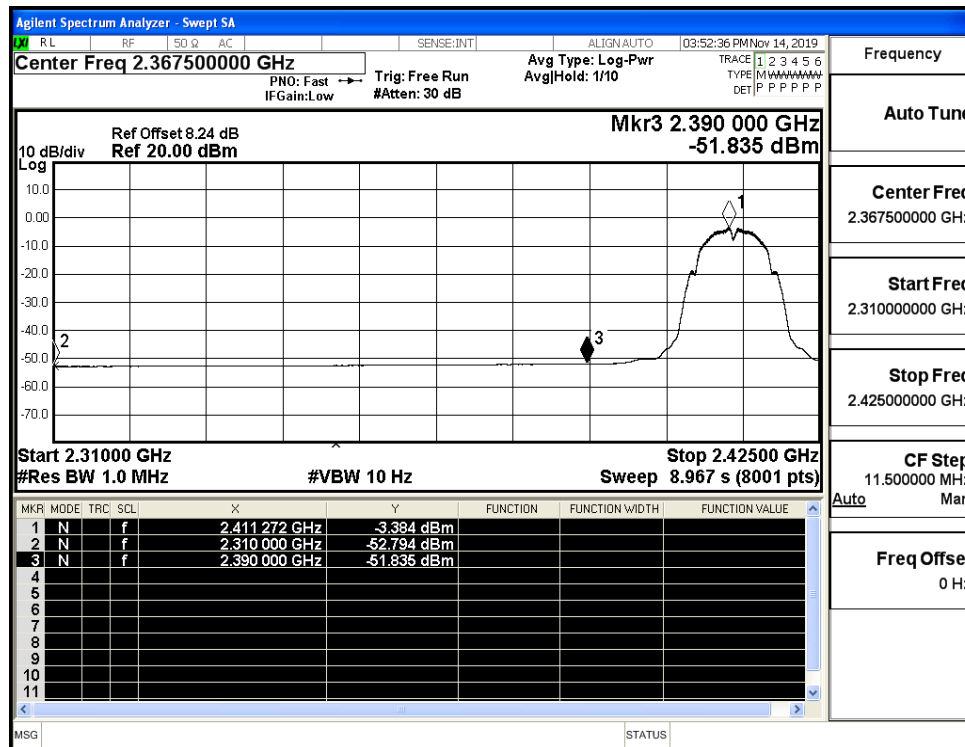
## A.7 Restrict-band band-edge measurements

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	-42.62	0	0	52.64	PEAK	74	PASS
	2412	Ant1	2310.0	-52.79	0	0	42.46	AV	54	PASS
	2412	Ant1	2390.0	-41.85	0	0	53.41	PEAK	74	PASS
	2412	Ant1	2390.0	-51.84	0	0	43.42	AV	54	PASS
	2462	Ant1	2483.5	-40.85	0	0	54.40	PEAK	74	PASS
	2462	Ant1	2483.5	-51.62	0	0	43.64	AV	54	PASS
	2462	Ant1	2500.0	-41.20	0	0	54.06	PEAK	74	PASS
	2462	Ant1	2500.0	-51.63	0	0	43.63	AV	54	PASS
11G	2412	Ant1	2310.0	-42.27	0	0	52.99	PEAK	74	PASS
	2412	Ant1	2310.0	-52.81	0	0	42.45	AV	54	PASS
	2412	Ant1	2390.0	-41.33	0	0	53.93	PEAK	74	PASS
	2412	Ant1	2390.0	-51.67	0	0	43.59	AV	54	PASS
	2462	Ant1	2483.5	-40.65	0	0	54.61	PEAK	74	PASS
	2462	Ant1	2483.5	-51.36	0	0	43.90	AV	54	PASS
	2462	Ant1	2500.0	-40.10	0	0	55.16	PEAK	74	PASS
	2462	Ant1	2500.0	-51.61	0	0	43.65	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-43.29	0	0	51.97	PEAK	74	PASS
	2412	Ant1	2310.0	-52.81	0	0	42.45	AV	54	PASS
	2412	Ant1	2390.0	-41.38	0	0	53.88	PEAK	74	PASS
	2412	Ant1	2390.0	-51.56	0	0	43.70	AV	54	PASS
	2462	Ant1	2483.5	-40.46	0	0	54.80	PEAK	74	PASS
	2462	Ant1	2483.5	-51.28	0	0	43.98	AV	54	PASS
	2462	Ant1	2500.0	-41.09	0	0	54.16	PEAK	74	PASS
	2462	Ant1	2500.0	-51.60	0	0	43.66	AV	54	PASS

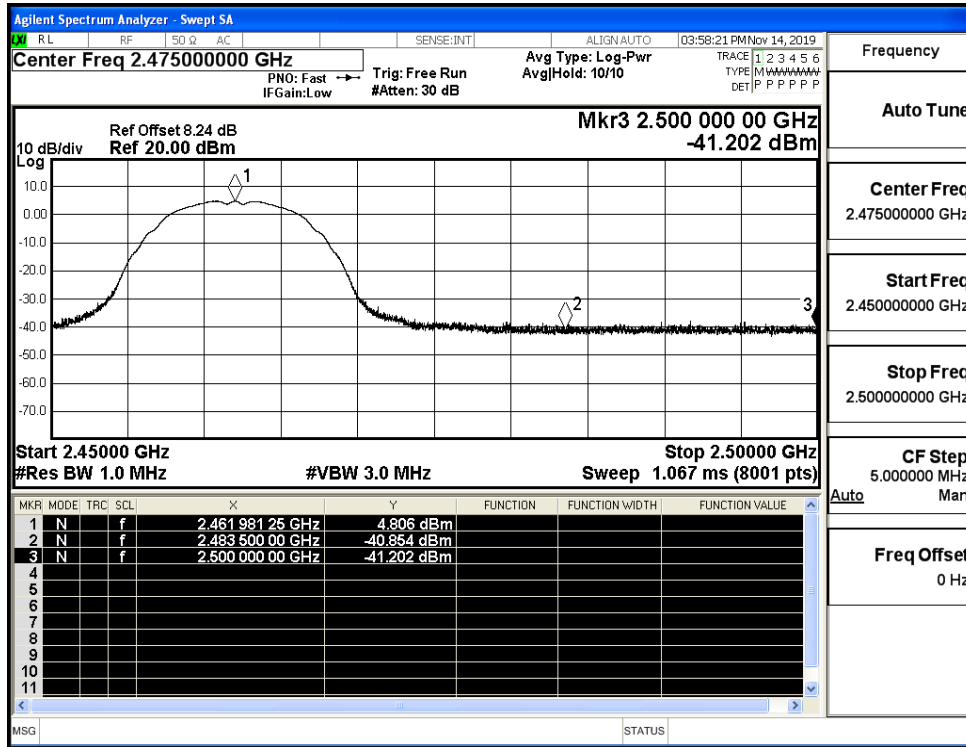
Restrict-band band-edge measurements\_11B\_2412\_Ant1\_PEAK



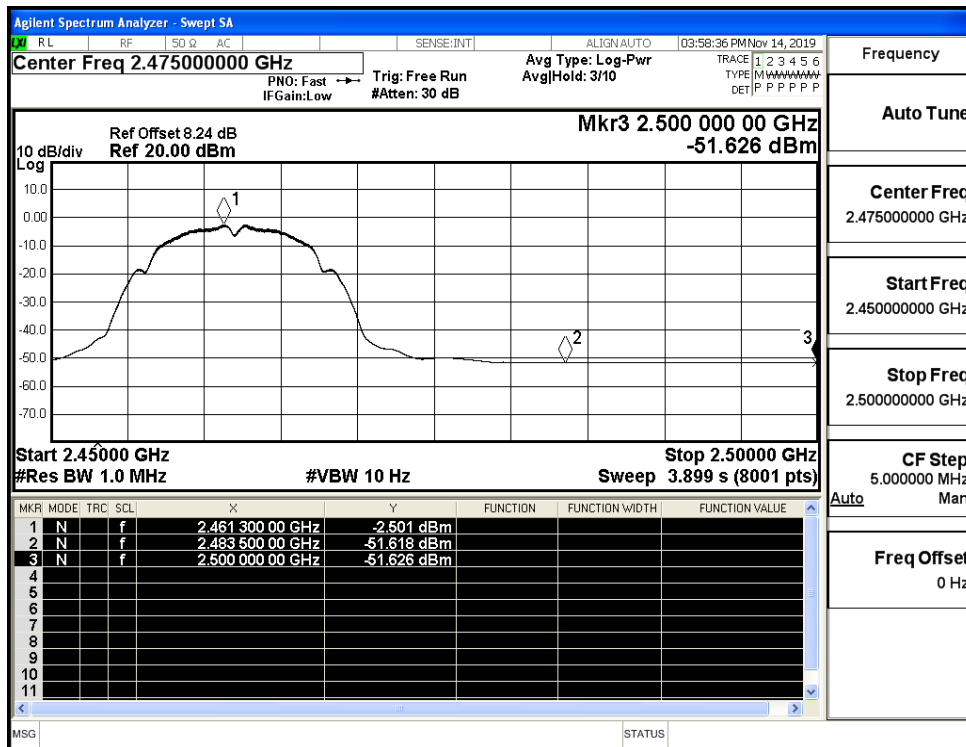
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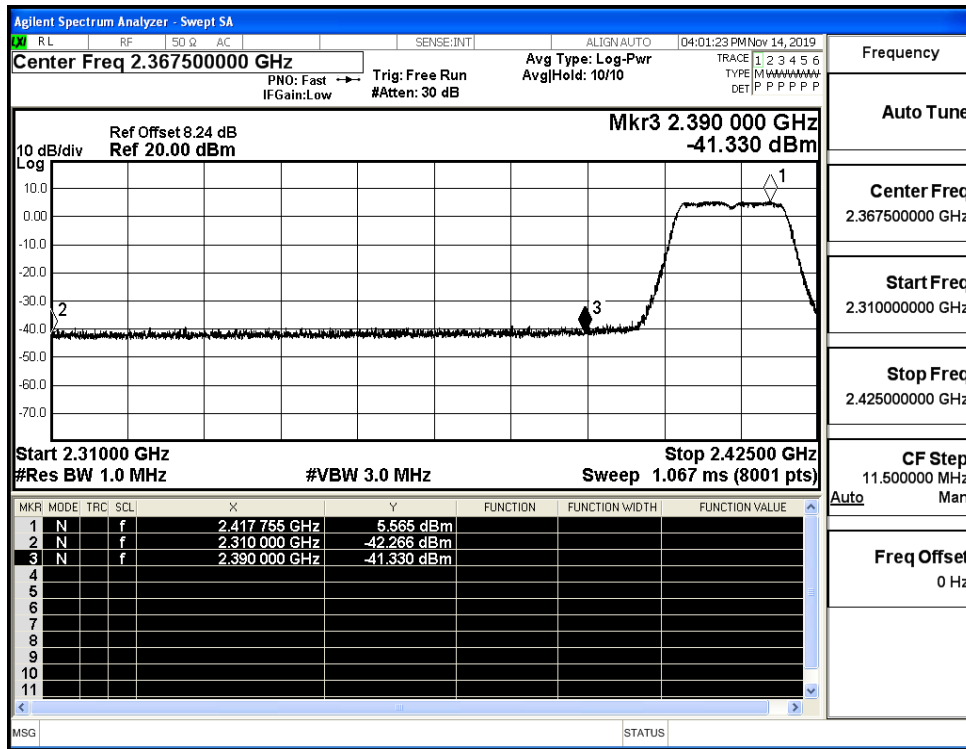
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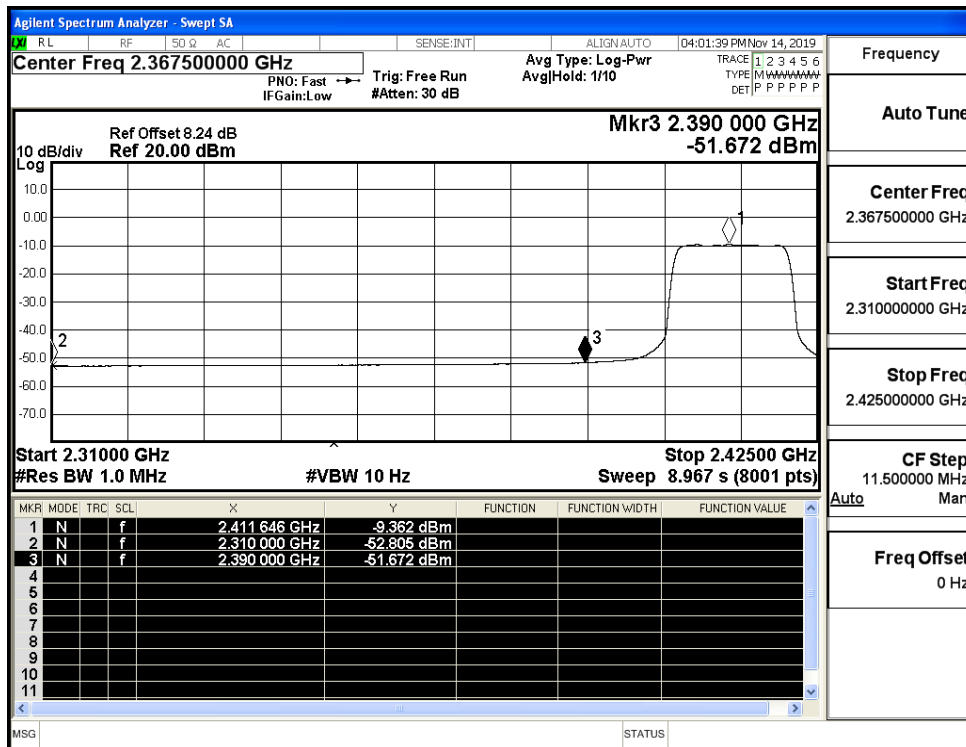
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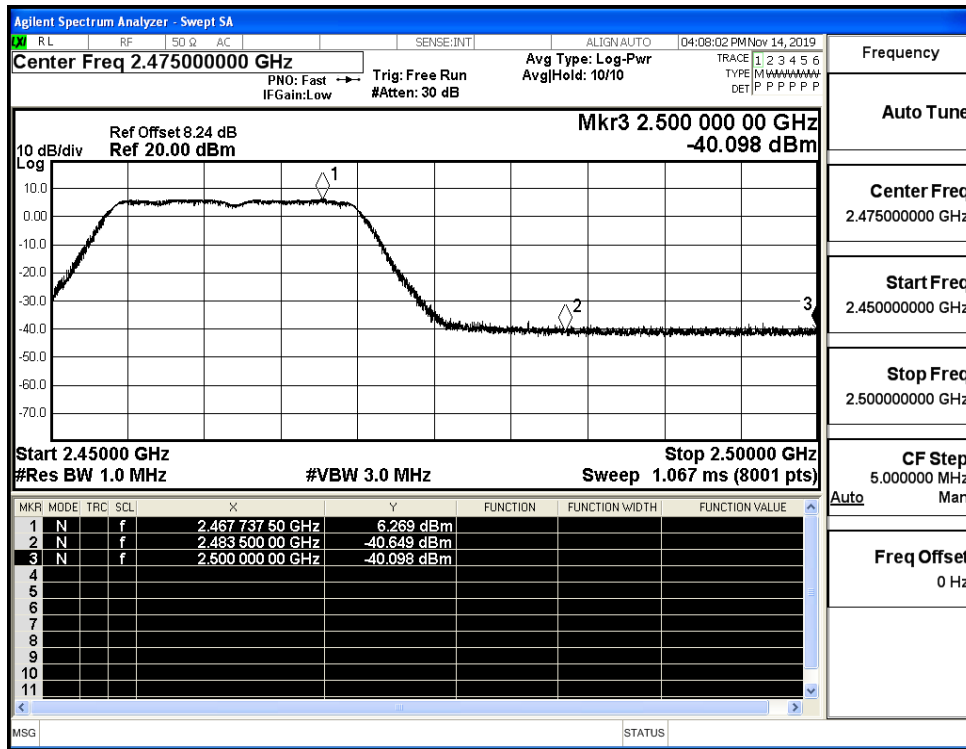
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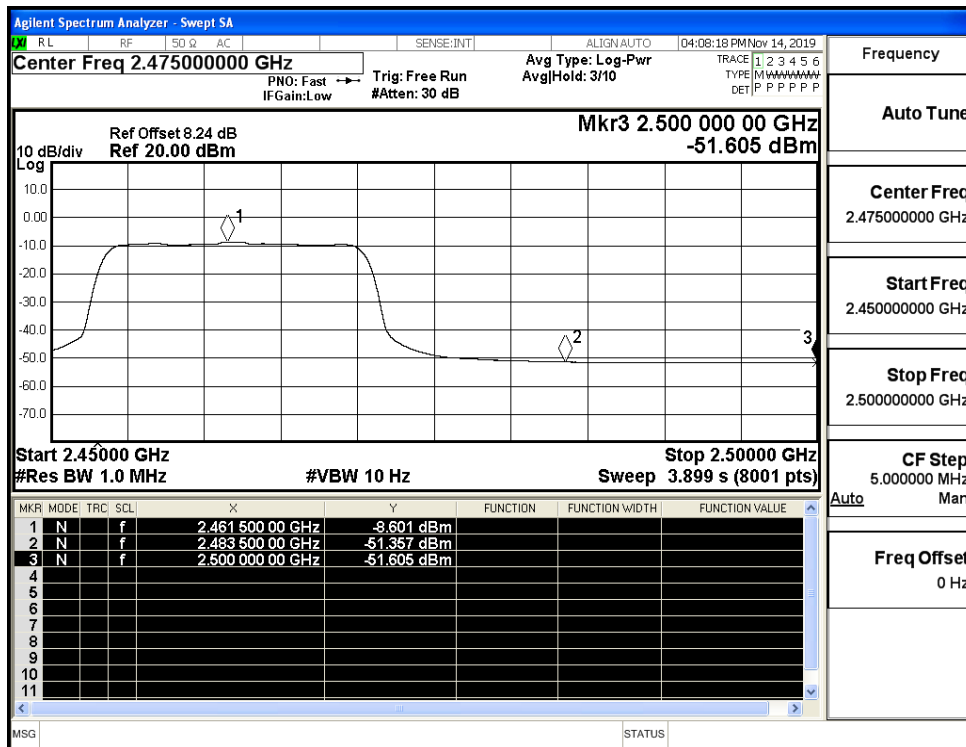
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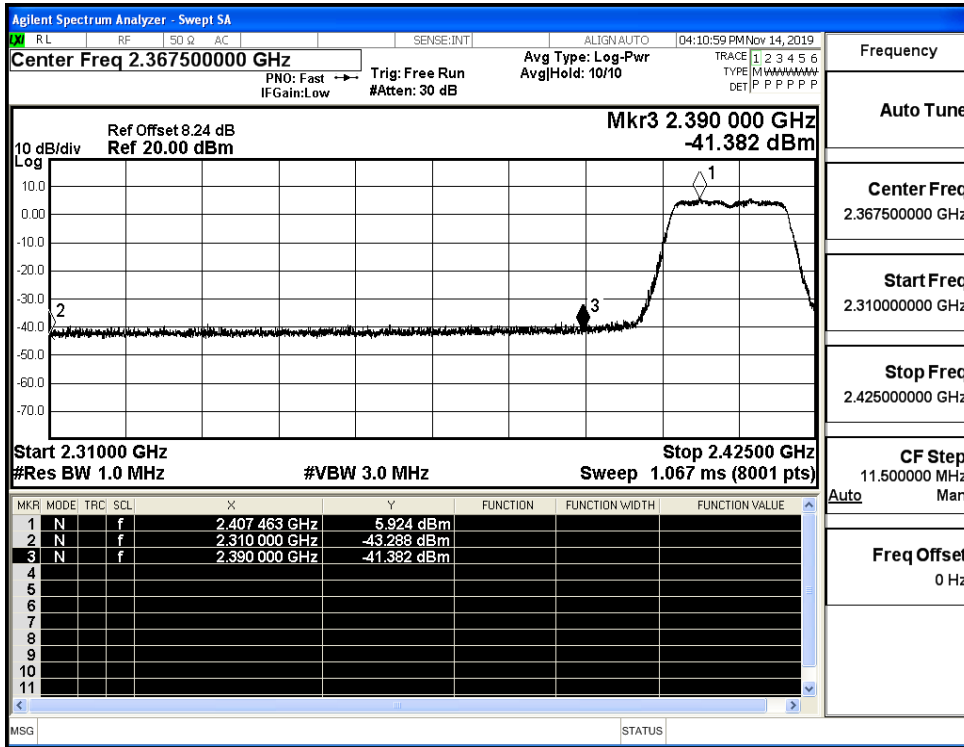
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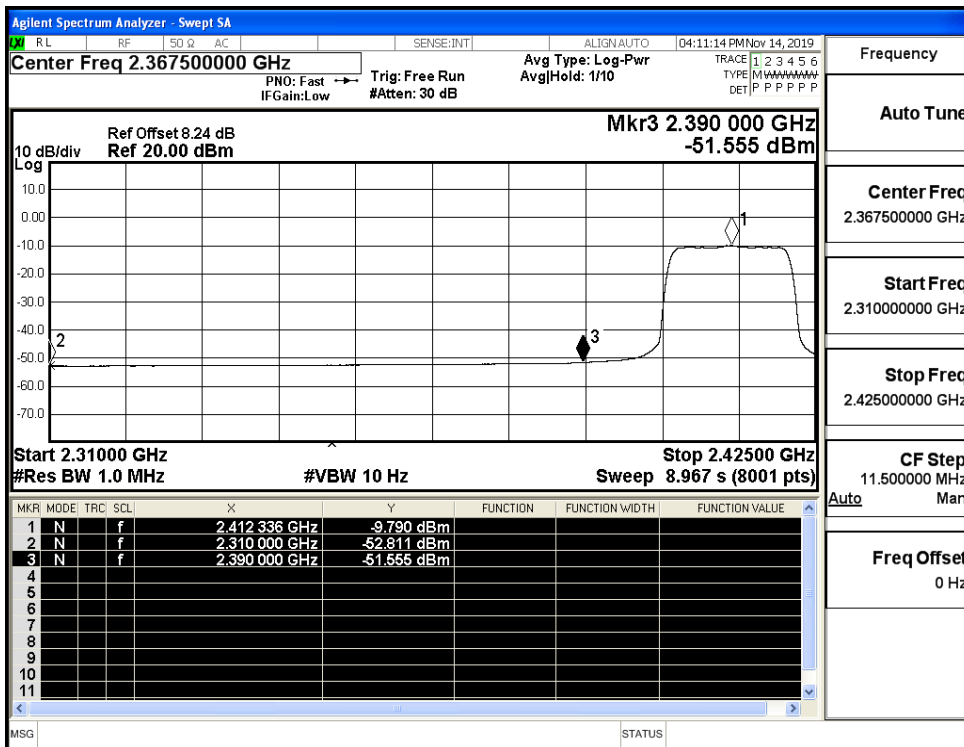
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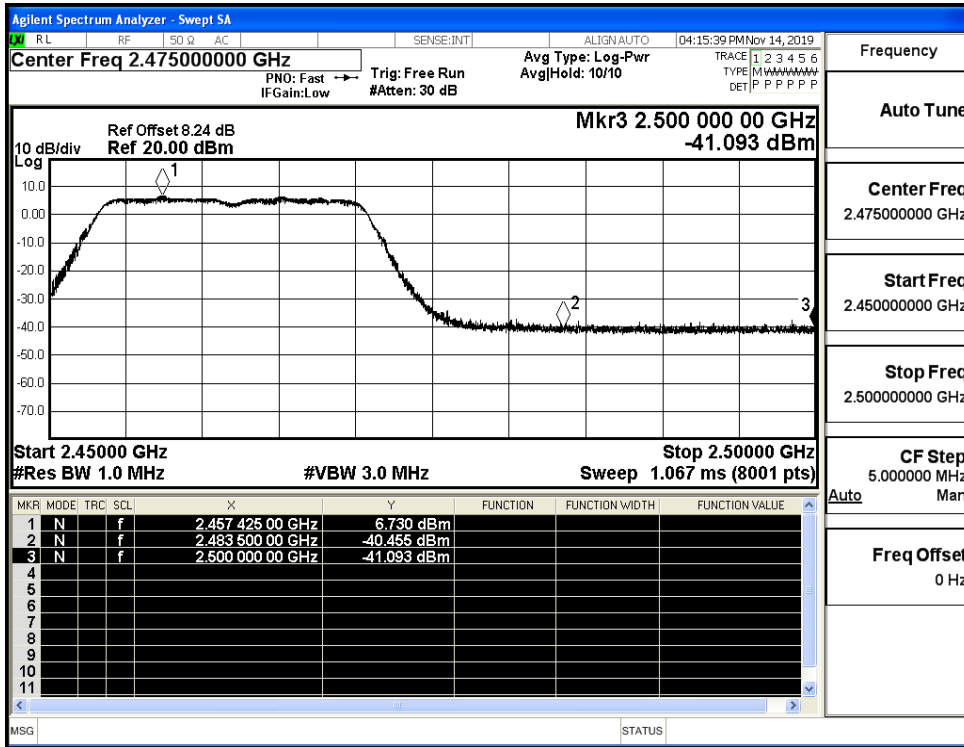
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Restrict-band band-edge measurements\_11N20SISO\_2412\_Ant1\_AV



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



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

