

Appendix B

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Station

Trade Mark: N/A

Test Model: S1

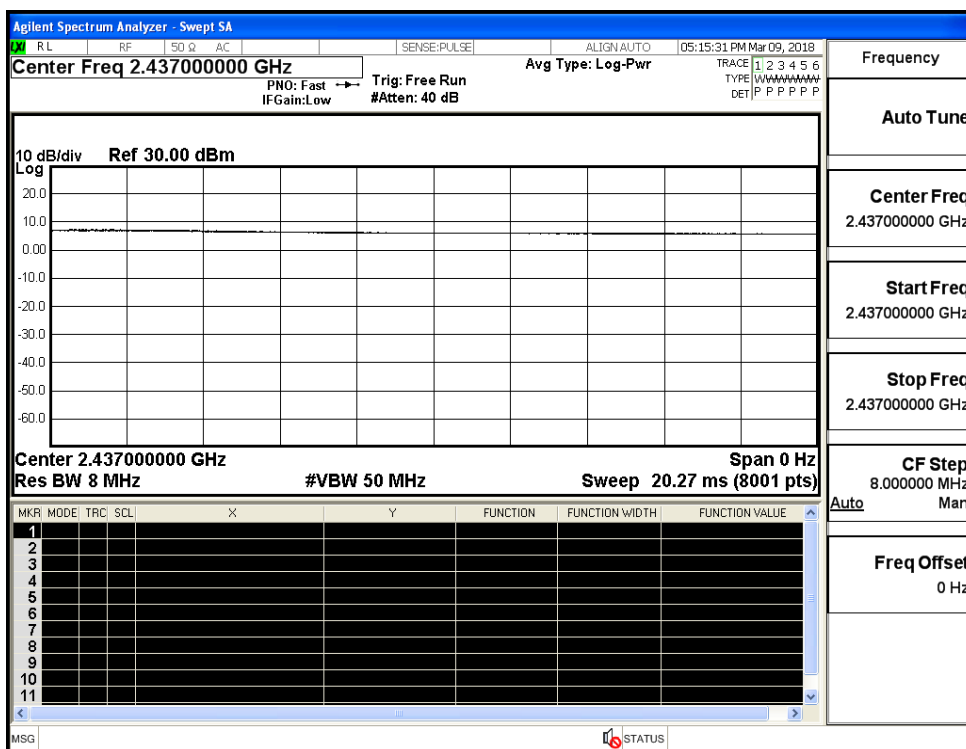
Environmental Conditions

Temperature:	22.1 ° C
Relative Humidity:	51.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Wilson Hong
Supervised by:	Jayden Zhuo

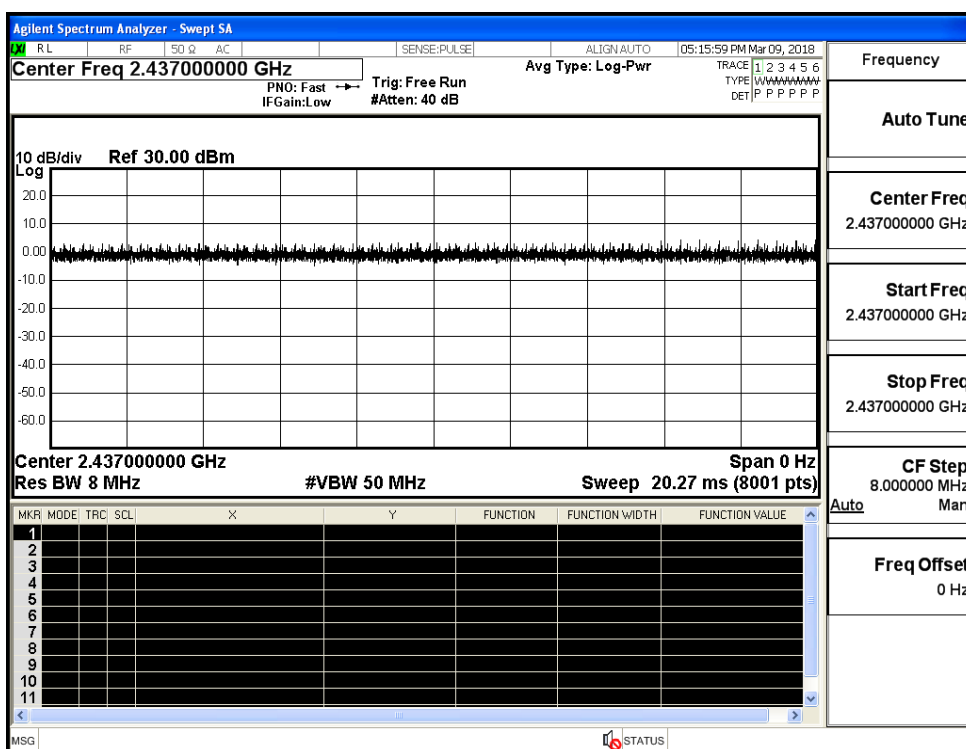
B.1 Duty Cycle

Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
11B	2437	Ant0	100	PASS
11G	2437	Ant0	100	PASS
11N20SISO	2437	Ant0	100	PASS

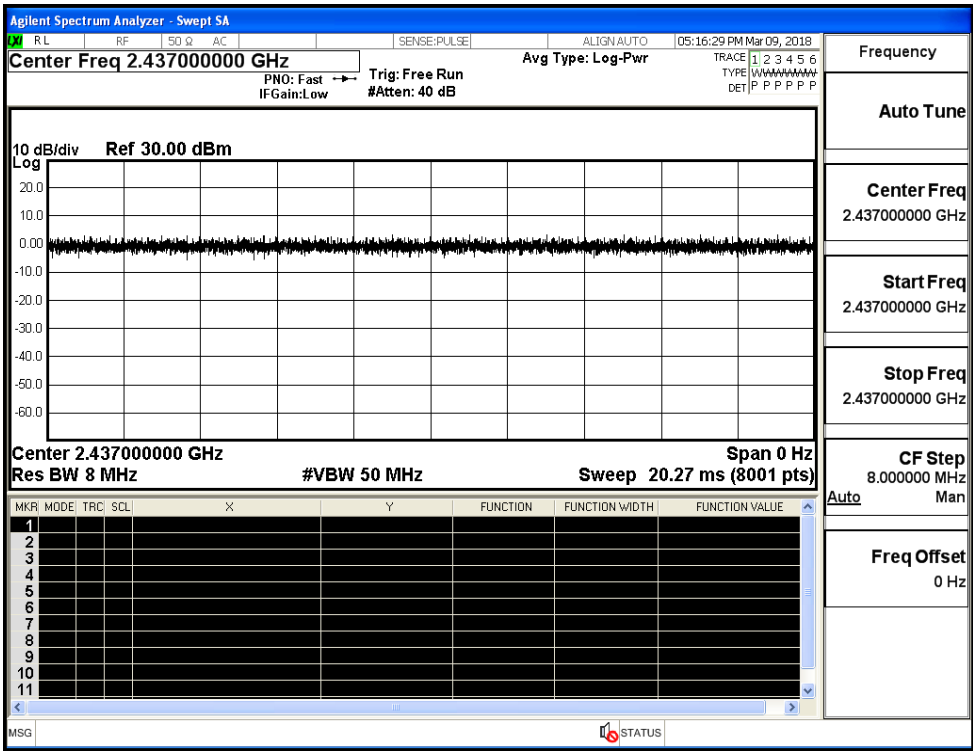
Duty Cycle_11B_2437_Ant0



Duty Cycle_11G_2437_Ant0



Duty Cycle_11N20SISO_2437_Ant0

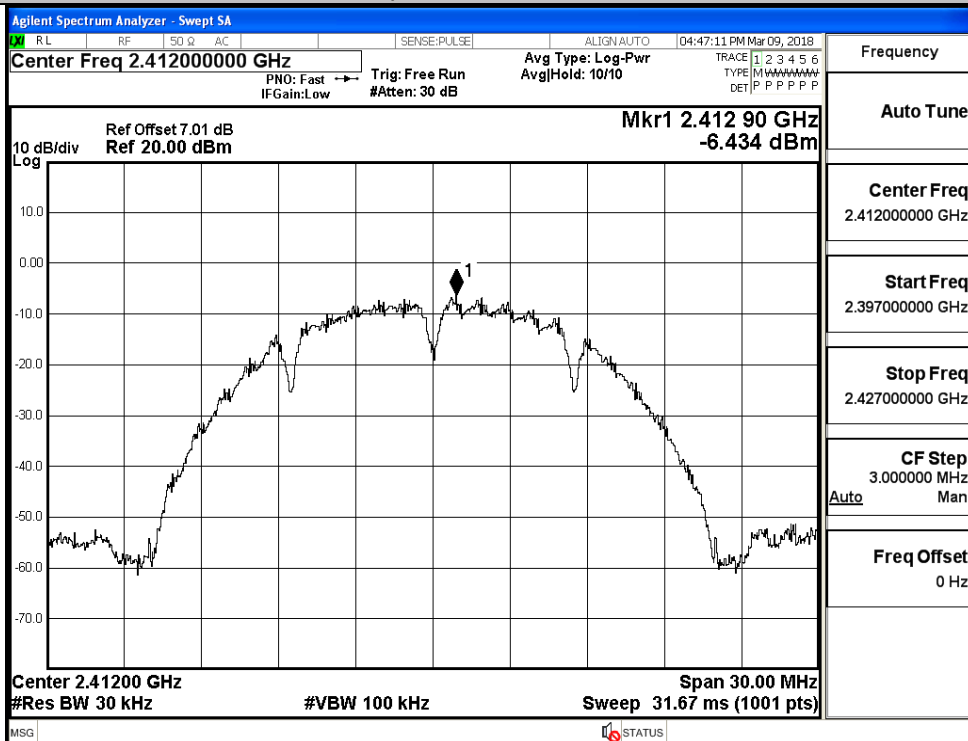


B.2 Maximum Power Spectral Density

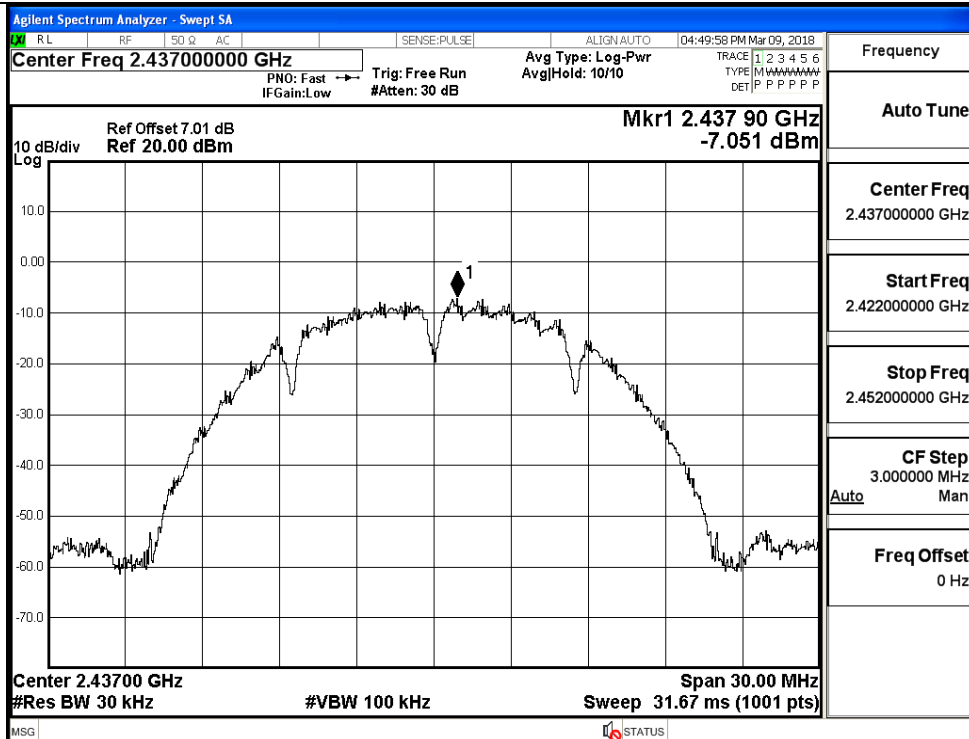
Mode	Channel	Meas.Level [dBm/30KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-6.434	8	PASS
	MCH	-7.051	8	PASS
	HCH	-7.310	8	PASS
11G	LCH	-13.245	8	PASS
	MCH	-13.812	8	PASS
	HCH	-13.754	8	PASS
11N20SISO	LCH	-12.932	8	PASS
	MCH	-13.255	8	PASS
	HCH	-13.173	8	PASS

Test Graphs

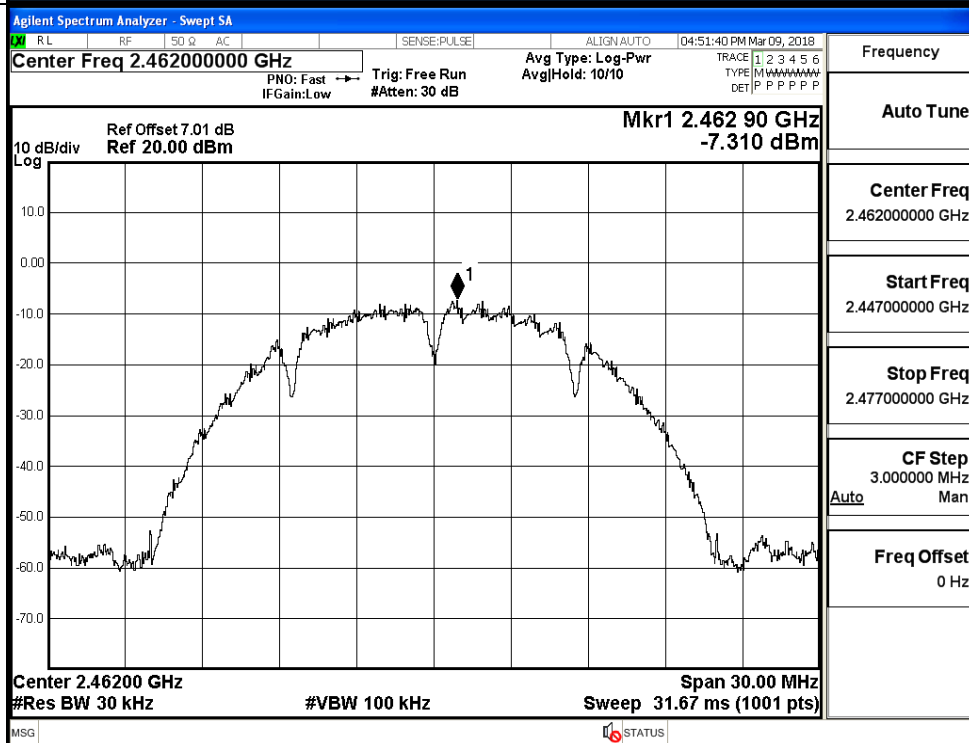
11B/LCH



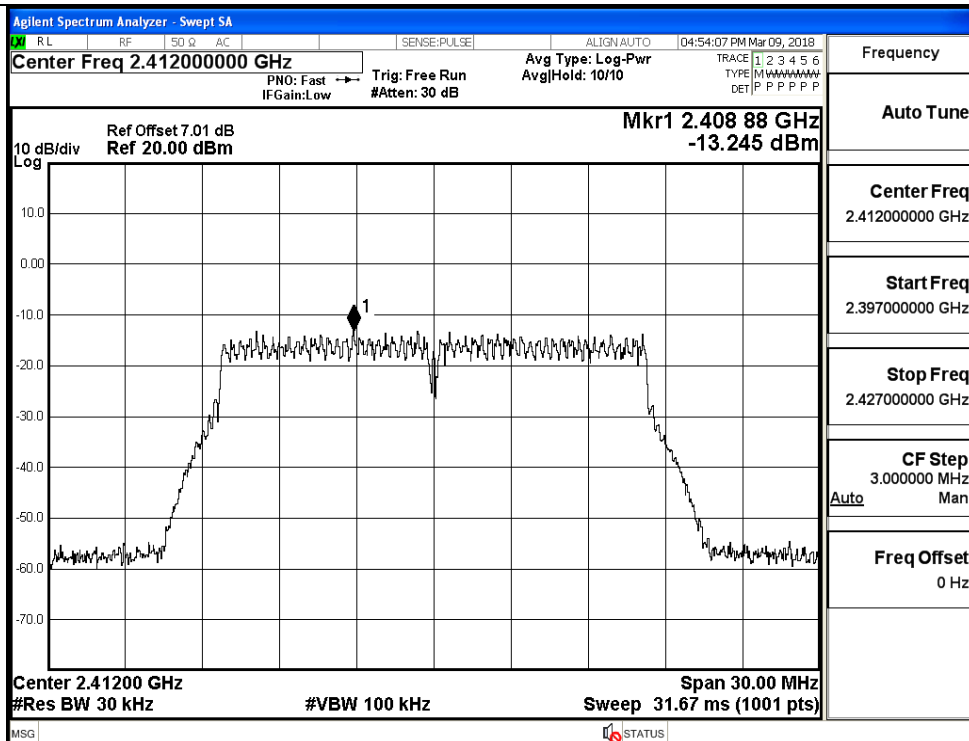
11B/MCH



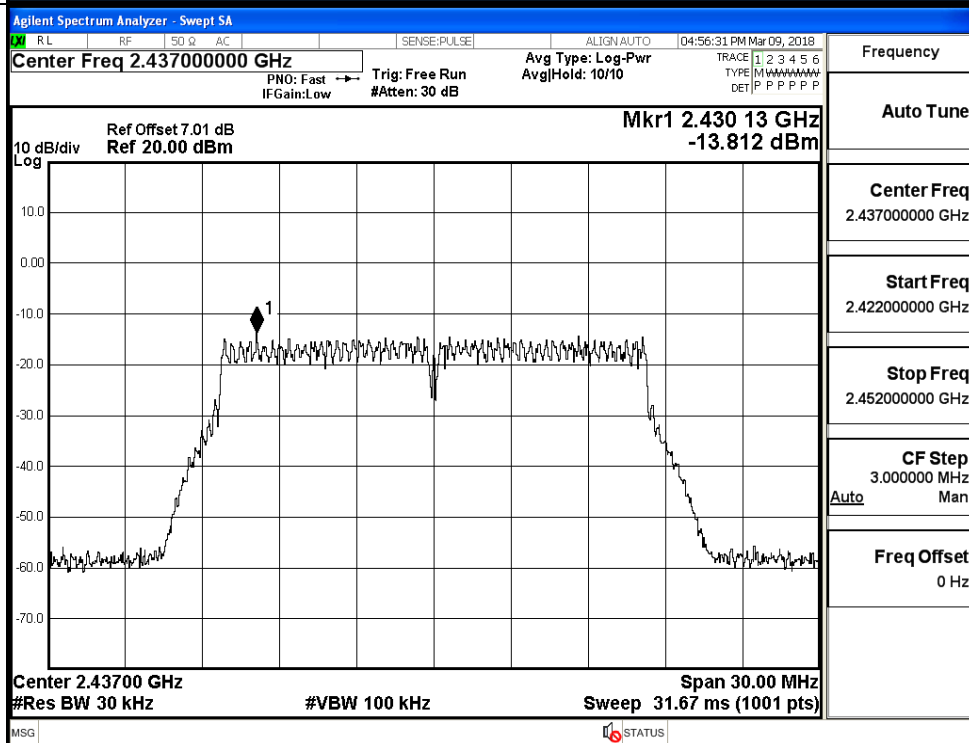
11B/HCH



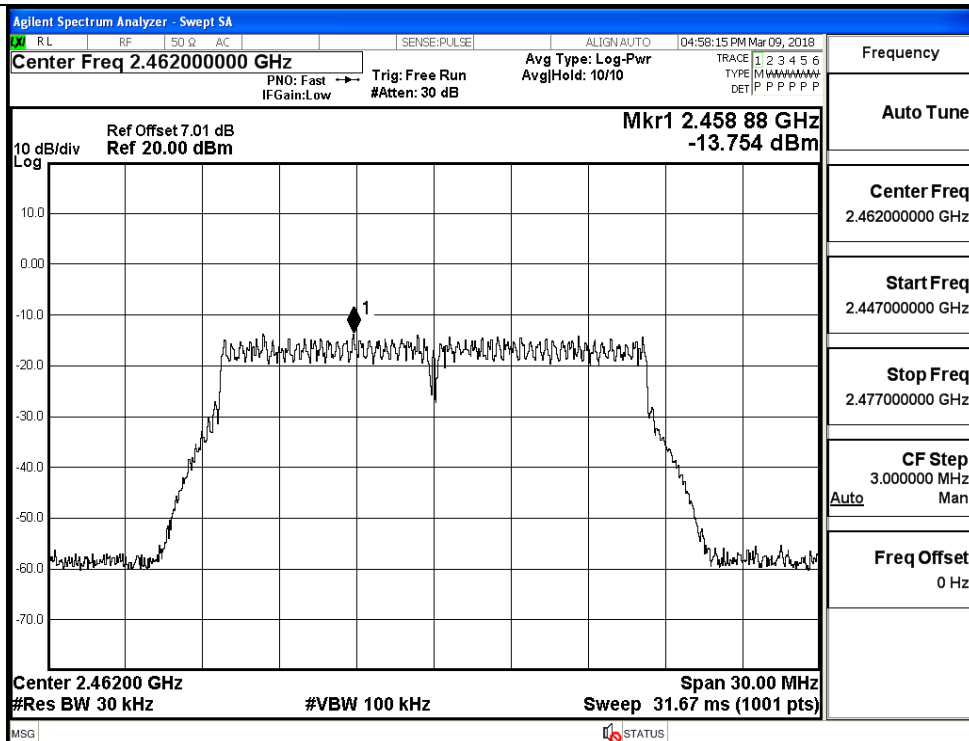
11G/LCH



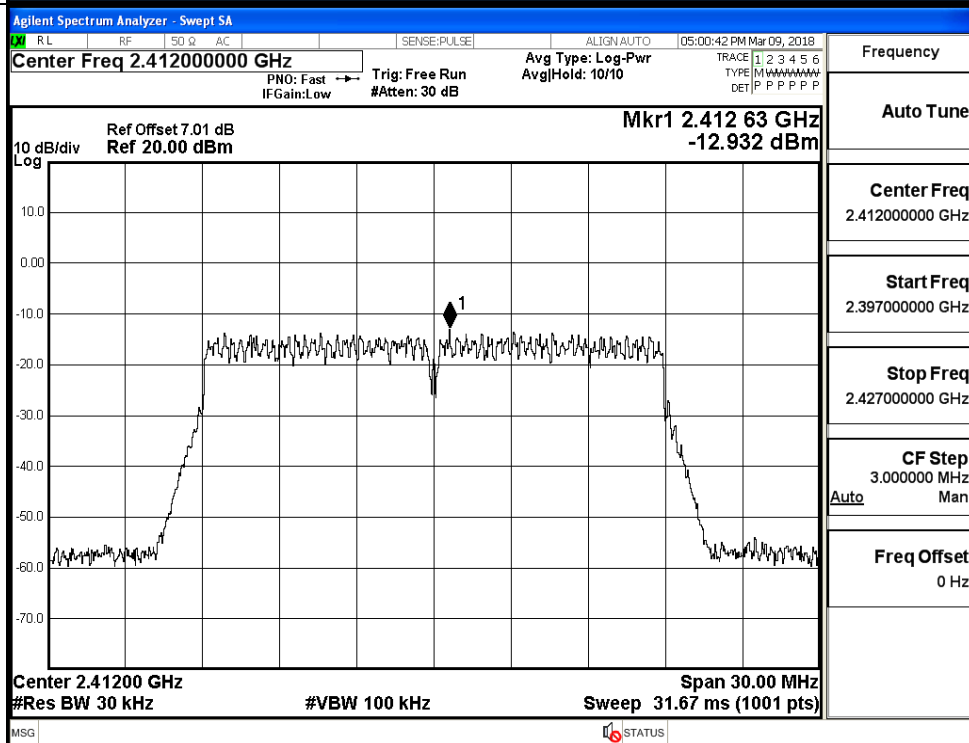
11G/MCH

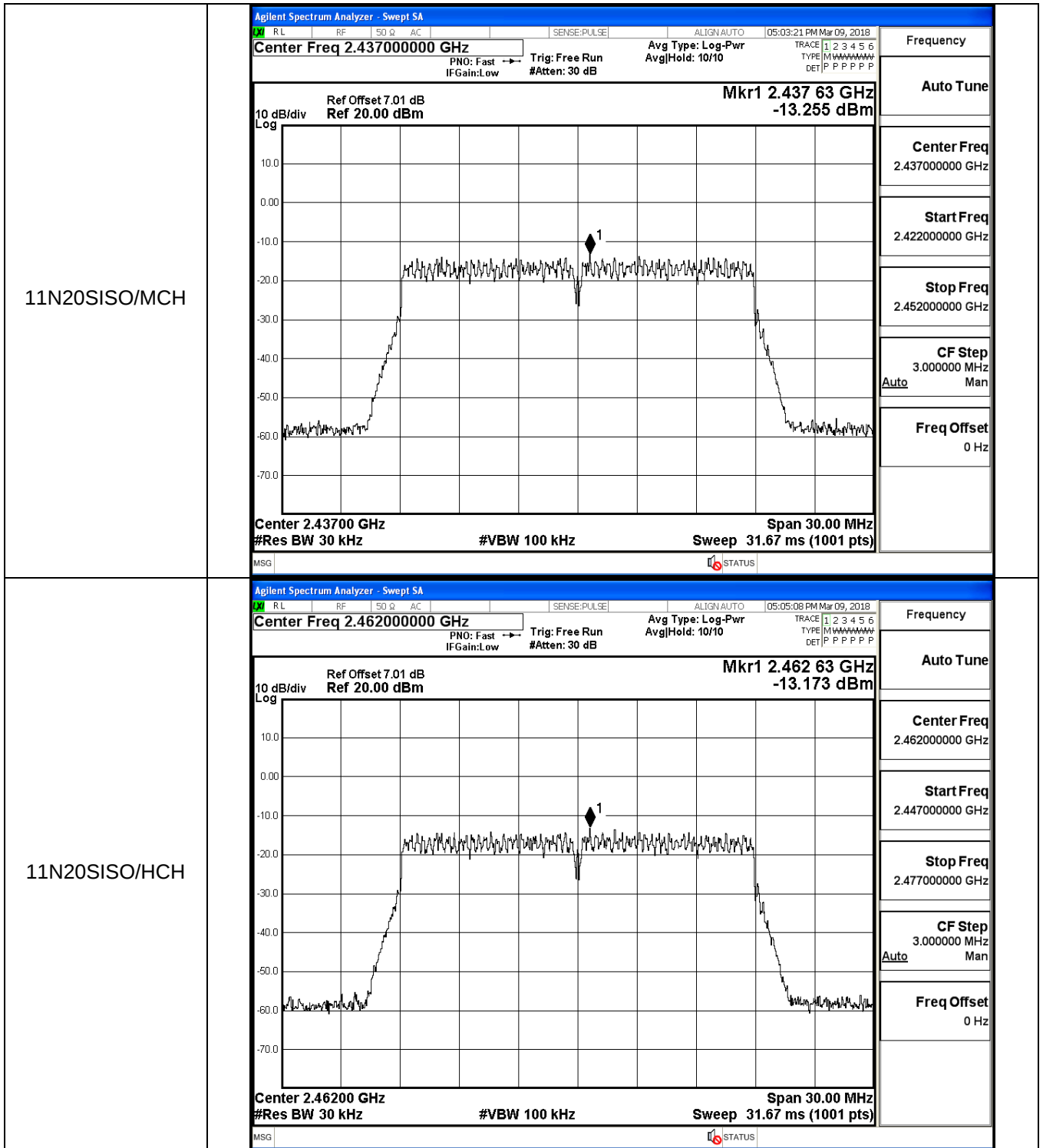


11G/HCH



11N20SISO/LCH

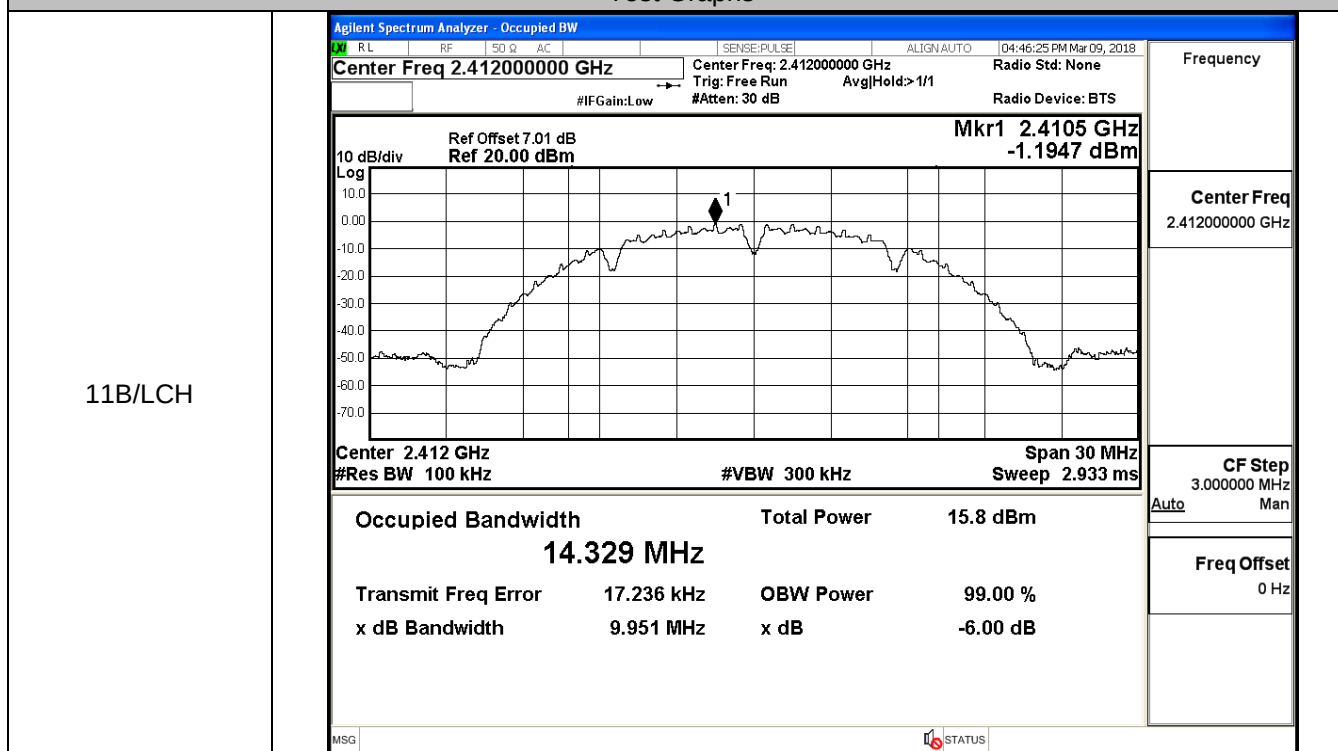




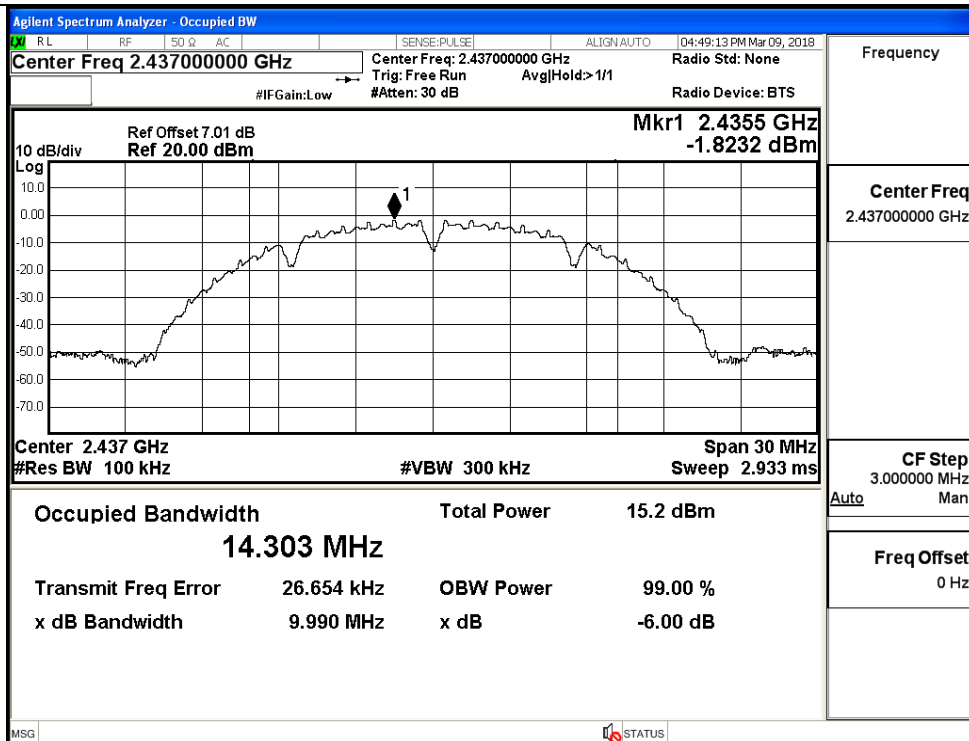
B.3 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	9.951	≥ 0.5	PASS
	MCH	9.990	≥ 0.5	PASS
	HCH	9.986	≥ 0.5	PASS
11G	LCH	16.61	≥ 0.5	PASS
	MCH	16.62	≥ 0.5	PASS
	HCH	16.62	≥ 0.5	PASS
11N20SISO	LCH	17.83	≥ 0.5	PASS
	MCH	17.84	≥ 0.5	PASS
	HCH	17.84	≥ 0.5	PASS

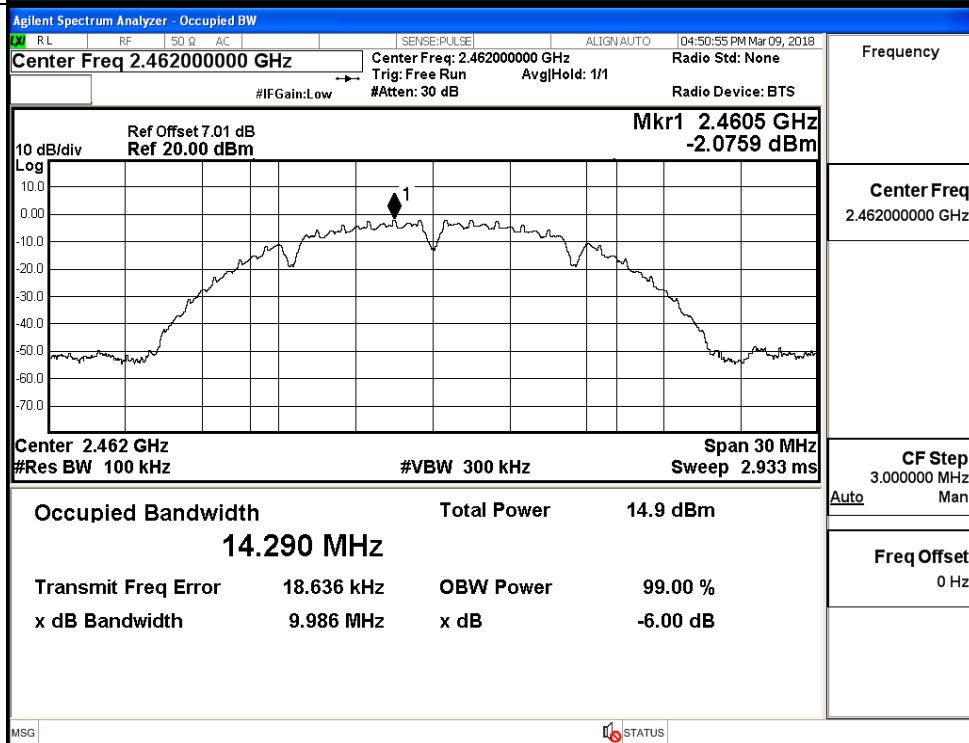
Test Graphs



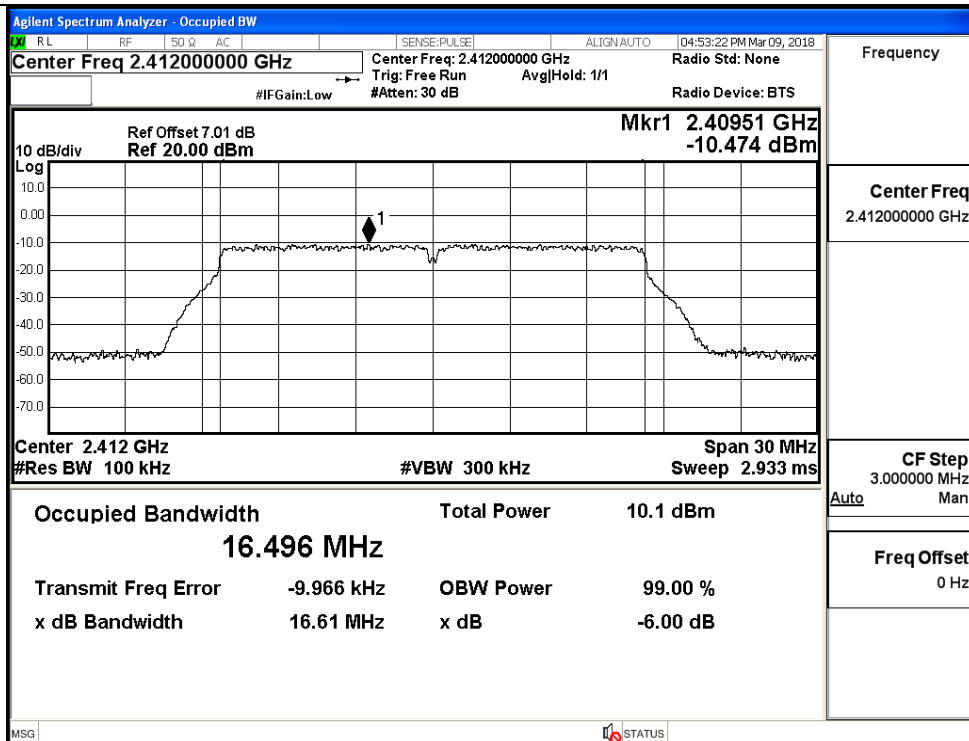
11B/MCH



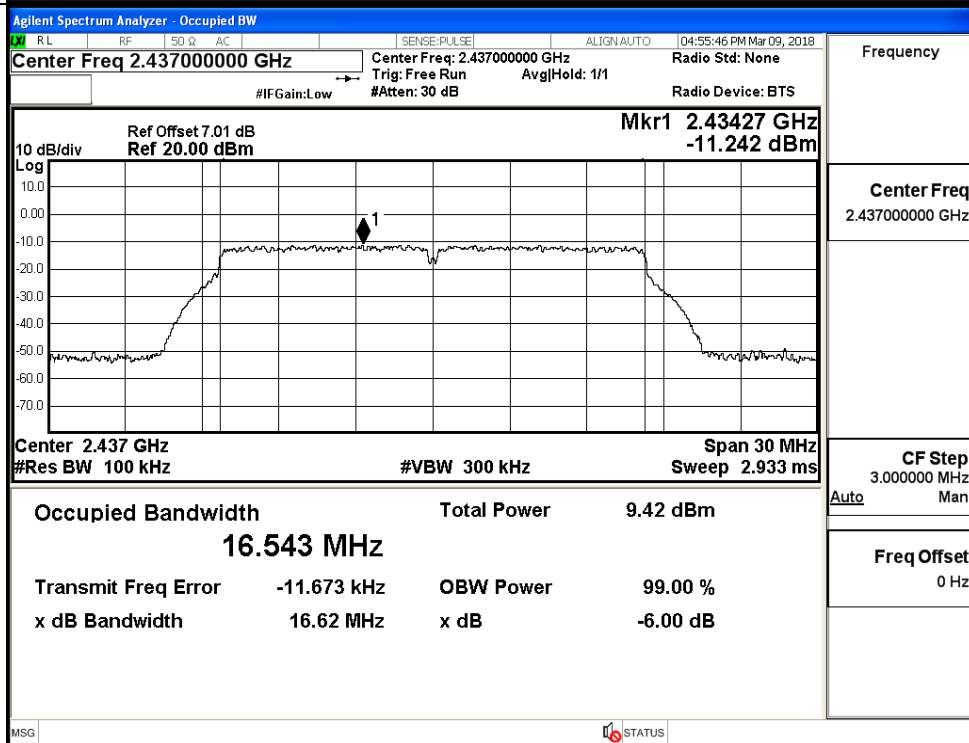
11B/HCH



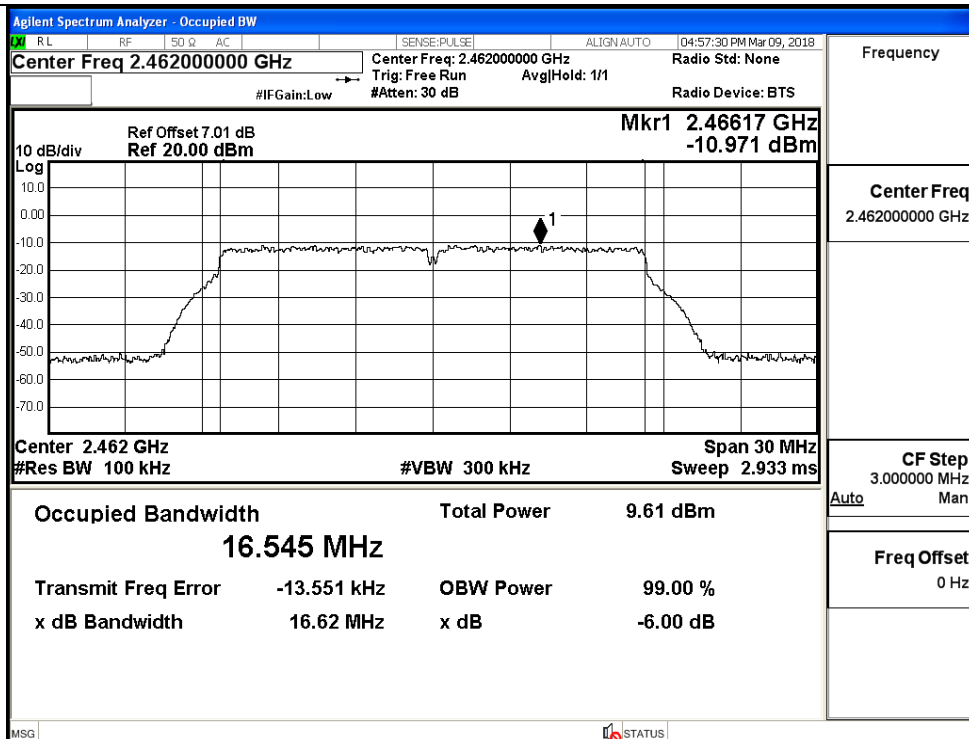
11G/LCH



11G/MCH



11G/HCH



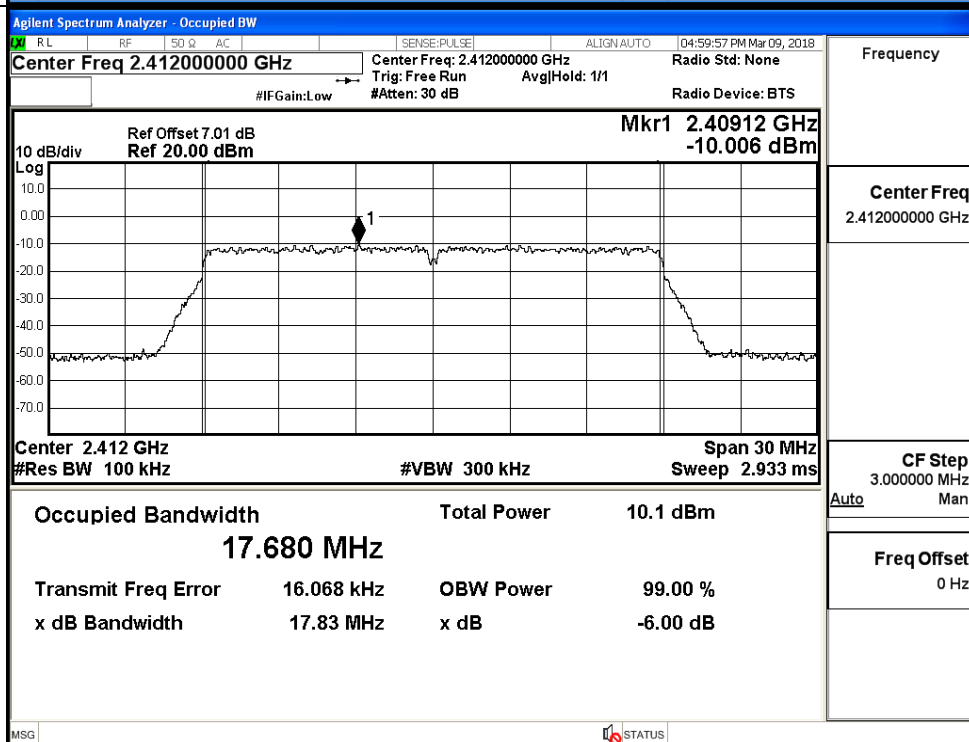
Frequency

Center Freq
2.46200000 GHz

CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

11N20SISO/LCH

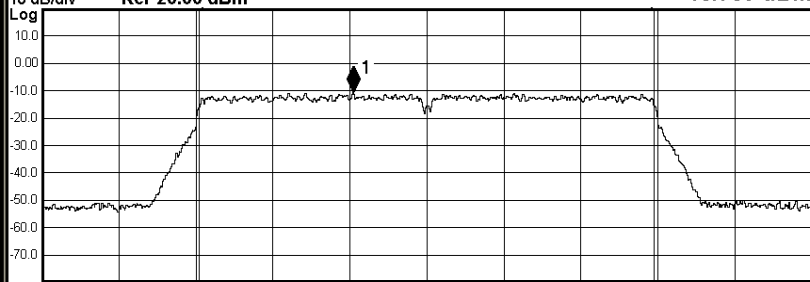


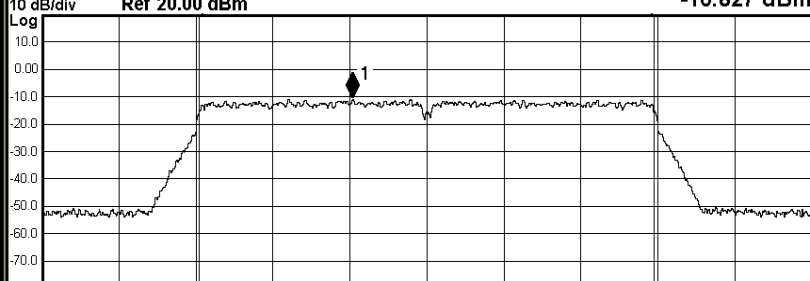
Frequency

Center Freq
2.41200000 GHz

CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

11N20SISO/MCH	Agilent Spectrum Analyzer - Occupied BW RL RF 50 Ω AC SENSE:PULSE ALIGN:AUTO 05:02:35 PM Mar 09, 2018 Center Freq 2.437000000 GHz Center Freq: 2.437000000 GHz Trig: Free Run Avg/Hold: 1/1 Radio Std: None #IFGain:Low #Atten: 30 dB Radio Device: BTS 10 dB/div Ref Offset 7.01 dB Ref 20.00 dBm Mkr1 2.43415 GHz -10.789 dBm  Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.663 MHz Total Power 9.60 dBm Transmit Freq Error 16.641 kHz OBW Power 99.00 % x dB Bandwidth 17.84 MHz x dB -6.00 dB MSG STATUS			Frequency
	Center Freq 2.437000000 GHz			
	CF Step 3.000000 MHz Auto Man			
	Freq Offset 0 Hz			

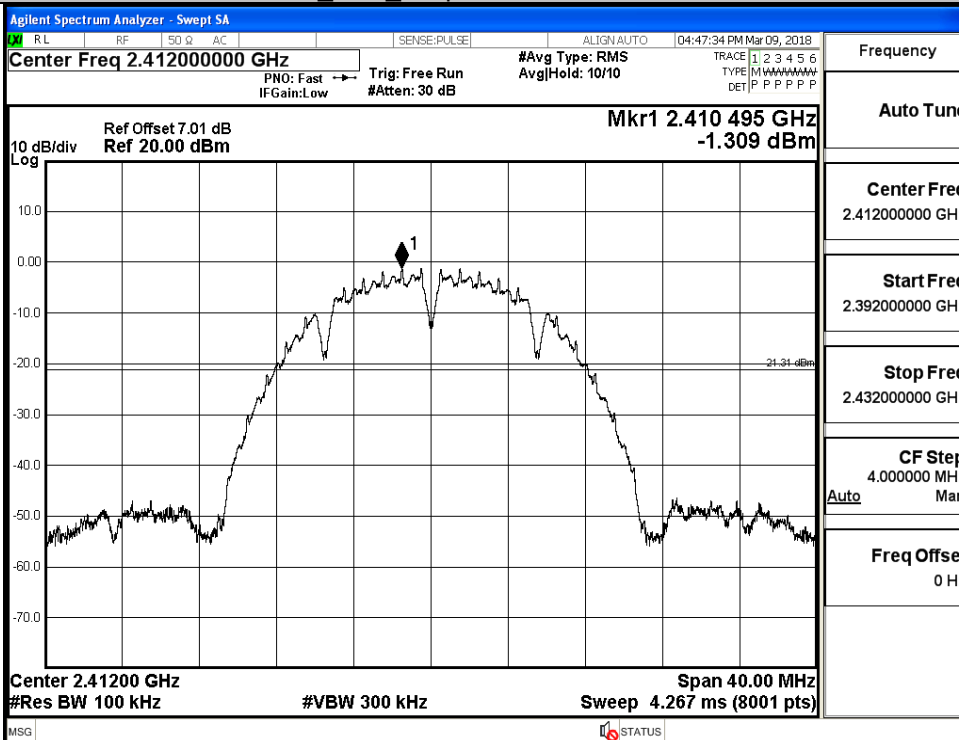
11N20SISO/HCH	Agilent Spectrum Analyzer - Occupied BW RL RF 50 Ω AC SENSE:PULSE ALIGN:AUTO 05:04:22 PM Mar 09, 2018 Center Freq 2.462000000 GHz Center Freq: 2.462000000 GHz Trig: Free Run Avg/Hold: 1/1 Radio Std: None #IFGain:Low #Atten: 30 dB Radio Device: BTS 10 dB/div Ref Offset 7.01 dB Ref 20.00 dBm Mkr1 2.45912 GHz -10.827 dBm  Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.678 MHz Total Power 9.59 dBm Transmit Freq Error 17.612 kHz OBW Power 99.00 % x dB Bandwidth 17.84 MHz x dB -6.00 dB MSG STATUS			Frequency
	Center Freq 2.462000000 GHz			
	CF Step 3.000000 MHz Auto Man			
	Freq Offset 0 Hz			

B.4 RF Conducted Spurious Emissions

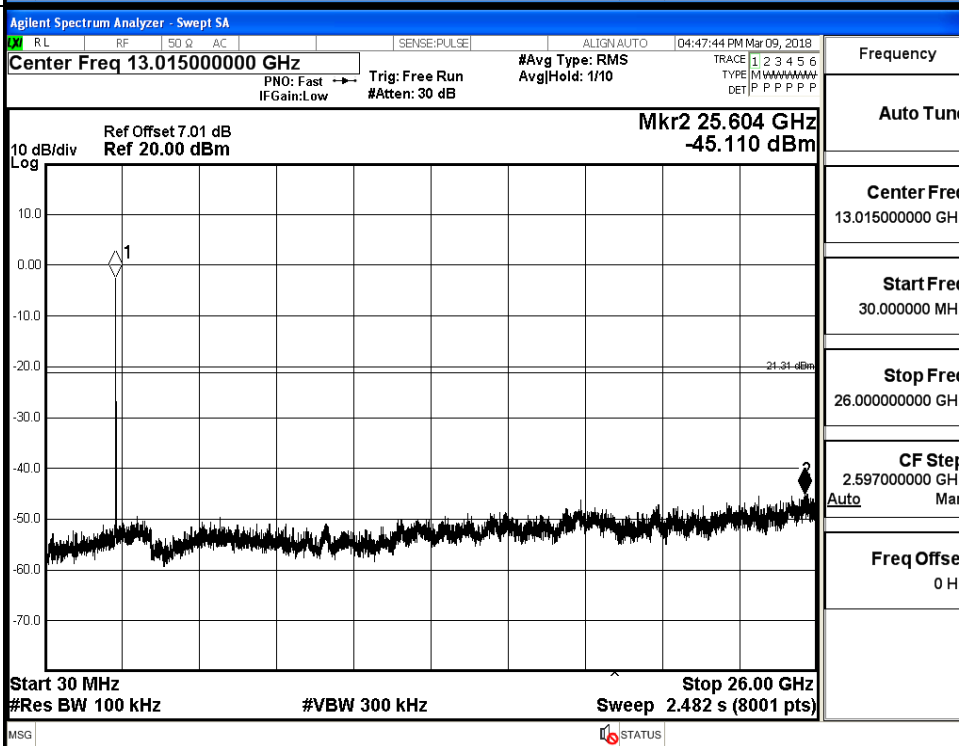
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-1.309	-45.110	-21.309	PASS
	MCH	-1.894	-45.376	-21.894	PASS
	HCH	-2.127	-44.794	-22.127	PASS
11G	LCH	-10.567	-43.554	-30.567	PASS
	MCH	-11.255	-45.097	-31.255	PASS
	HCH	-11.057	-45.155	-31.057	PASS
11N20 SISO	LCH	-10.081	-43.693	-30.081	PASS
	MCH	-10.834	-45.130	-30.834	PASS
	HCH	-10.974	-44.514	-30.974	PASS

11B LCH Graphs

Pref/11B/LCH

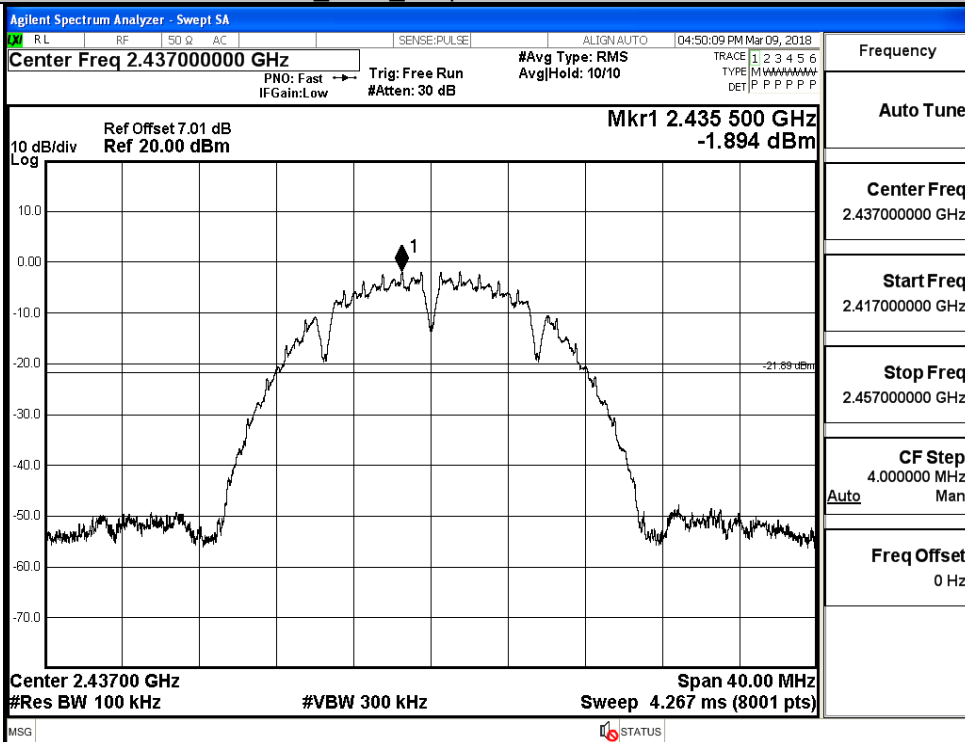


Puw/11B/LCH

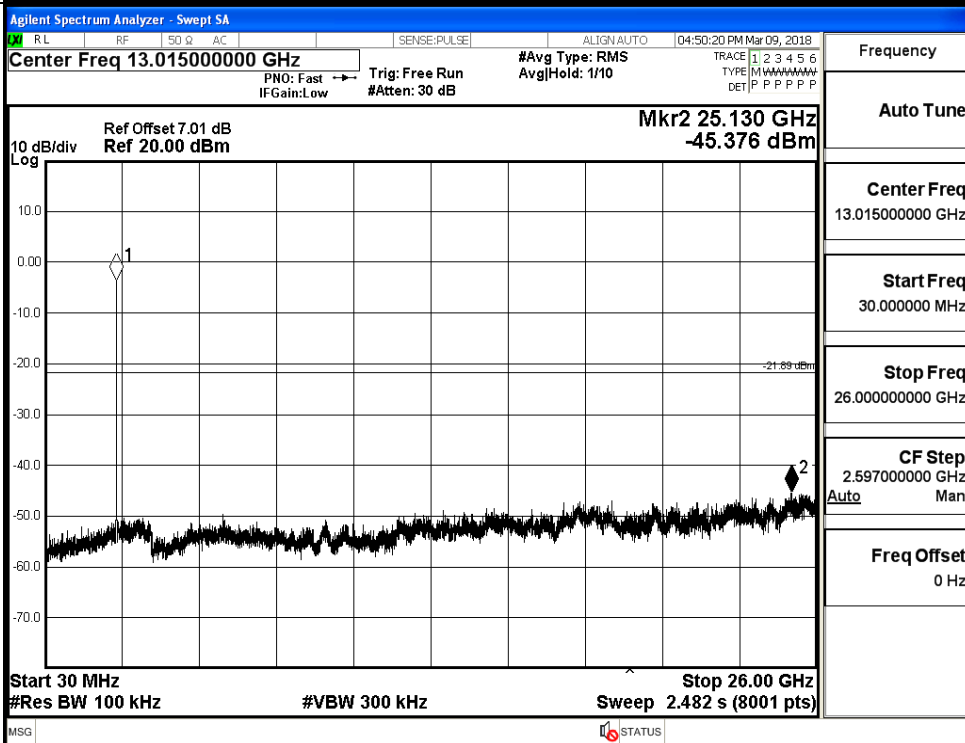


11B MCH Graphs

Pref/11B/MCH

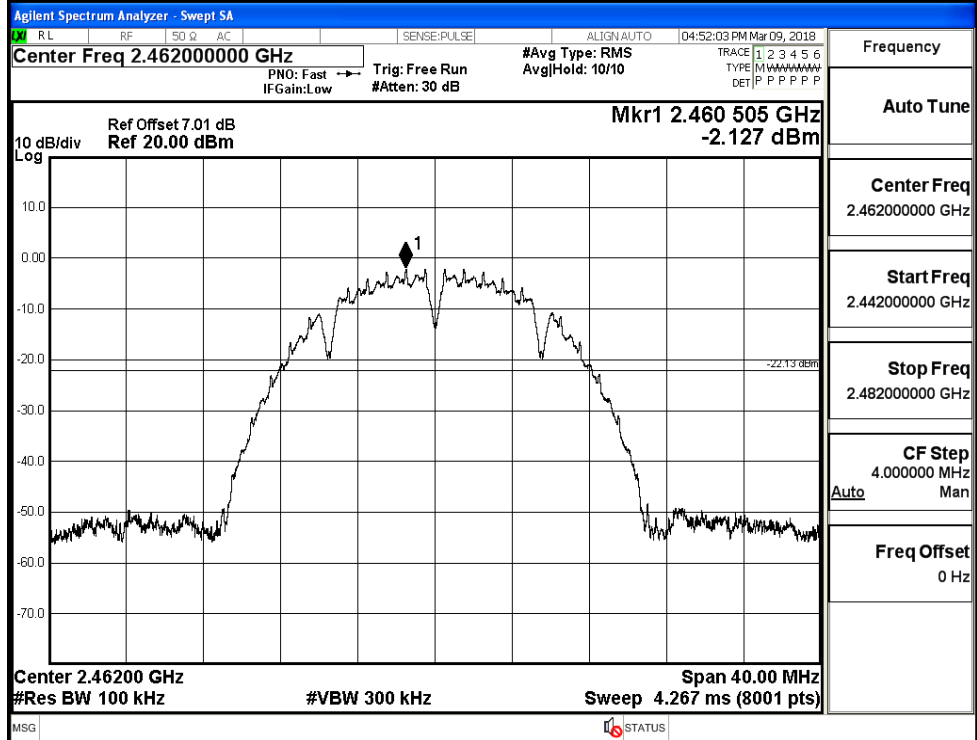


Puw/11B/MCH

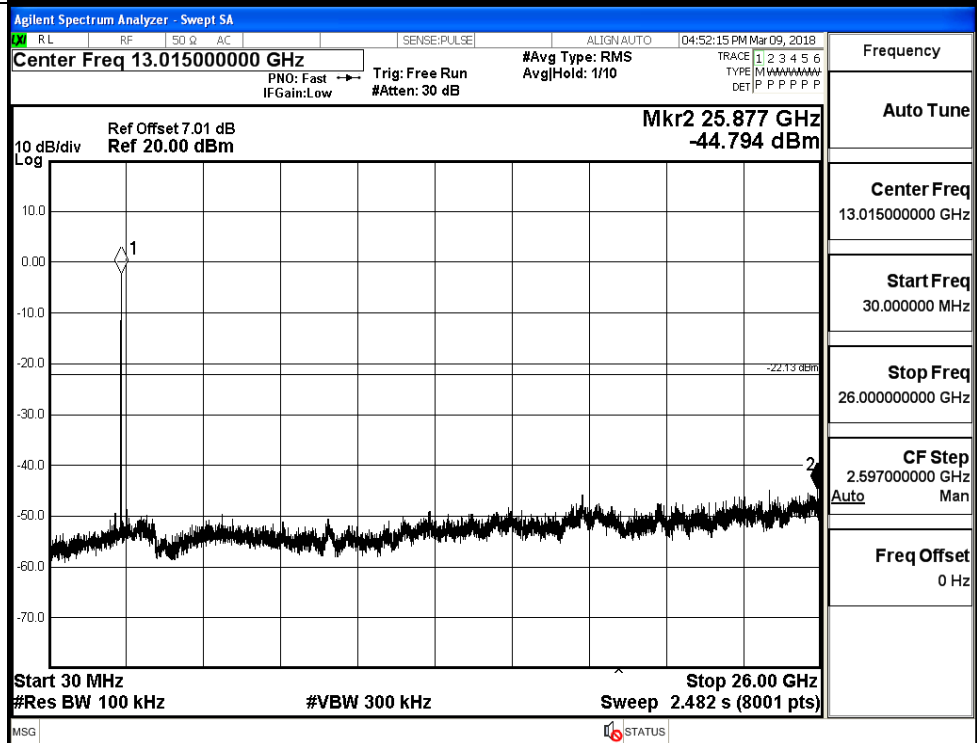


11B HCH Graphs

Pref/11B/HCH

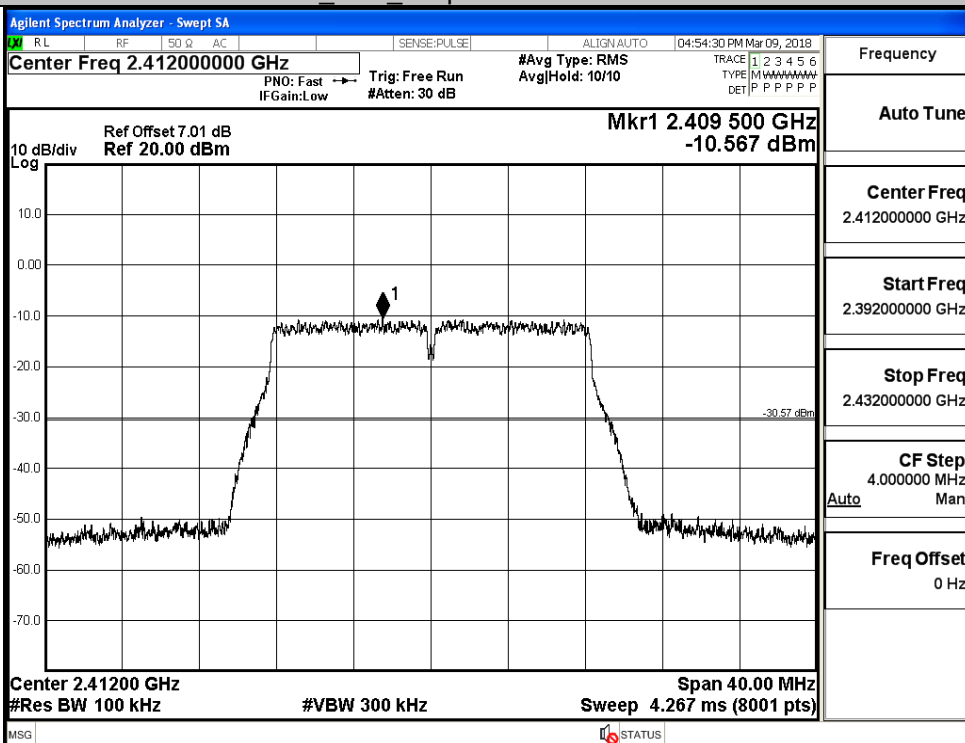


Puw/11B/HCH

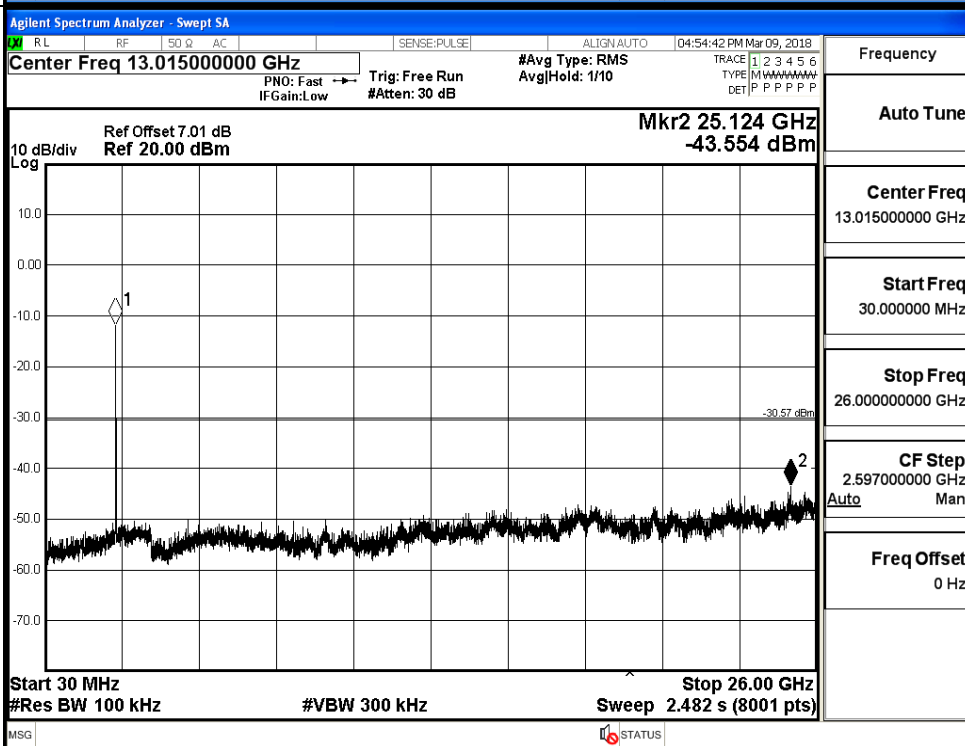


11G LCH Graphs

Pref/11G/LCH

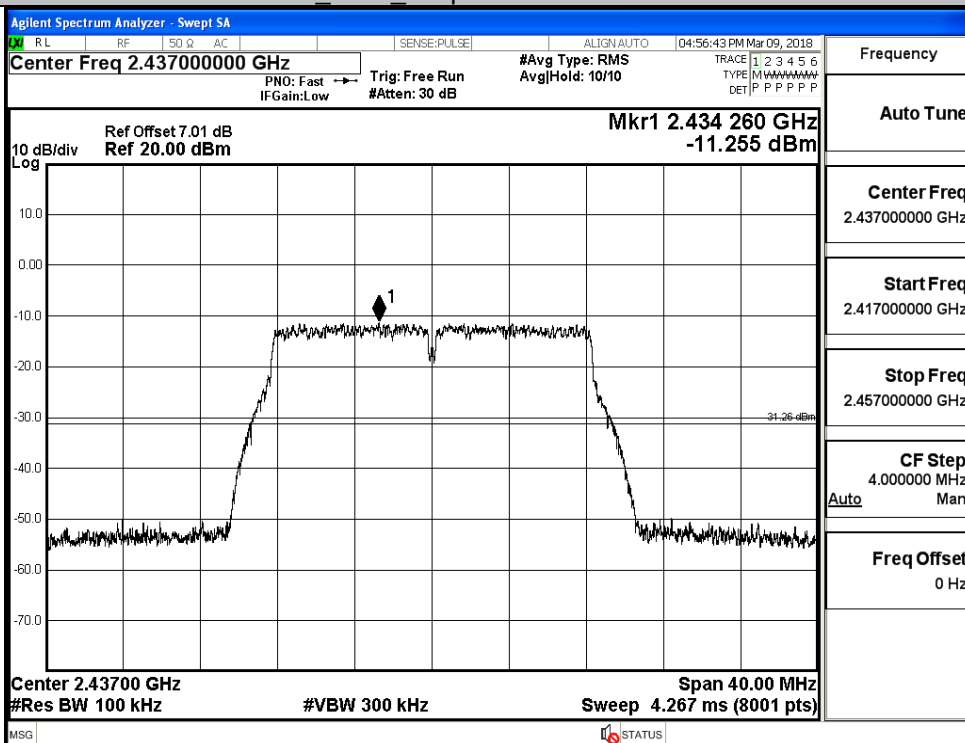


Puw/11G/LCH

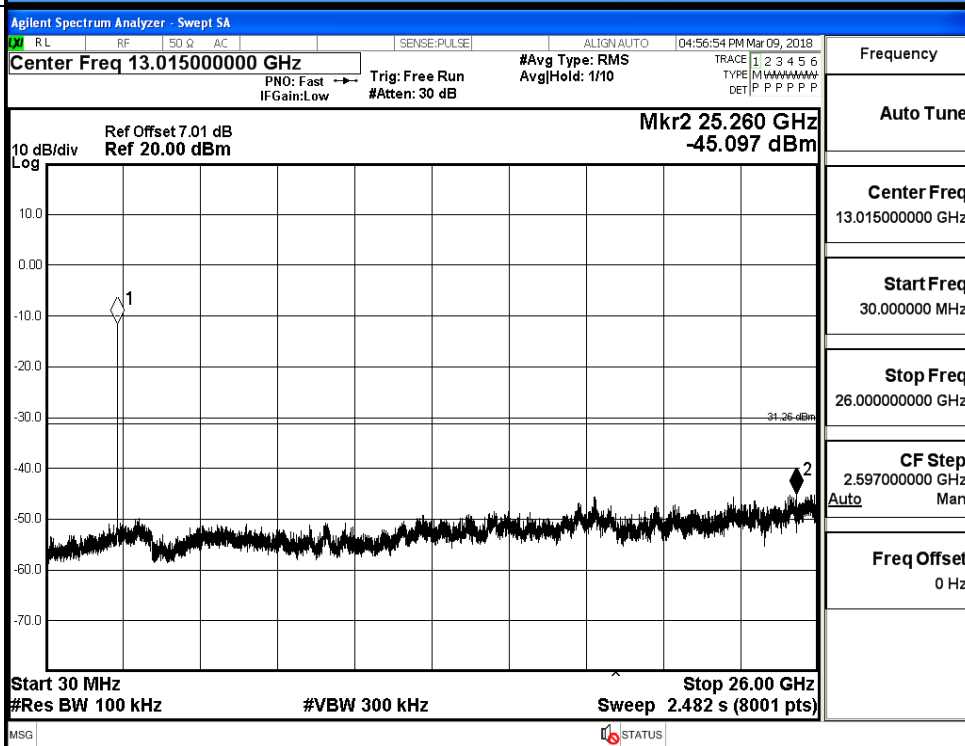


11G MCH Graphs

Pref/11G/MCH

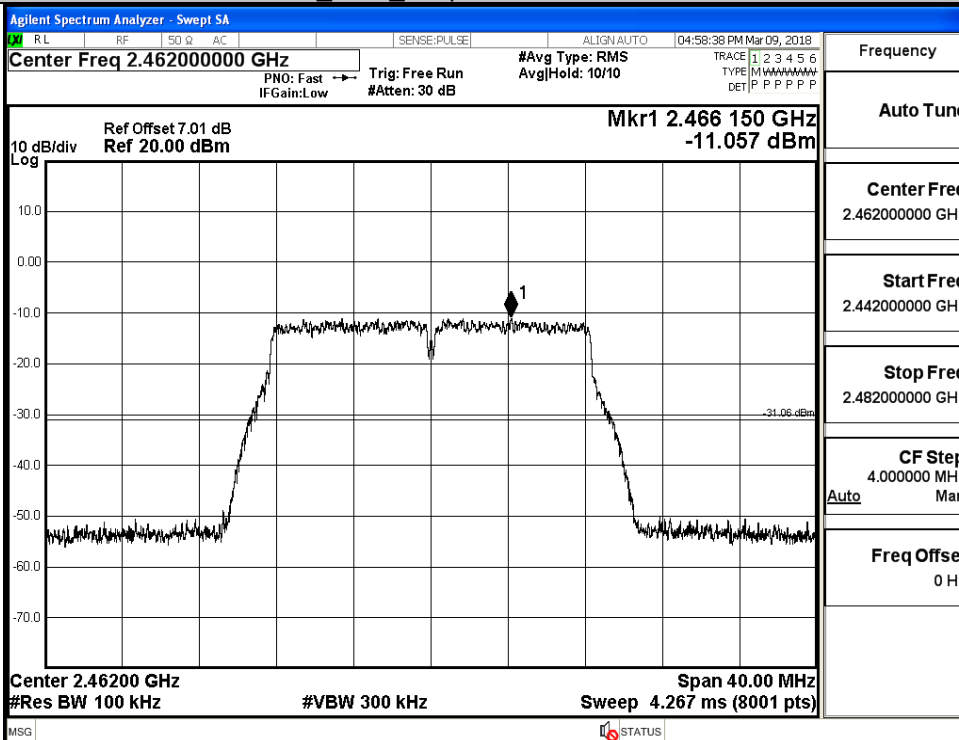


Puw/11G/MCH

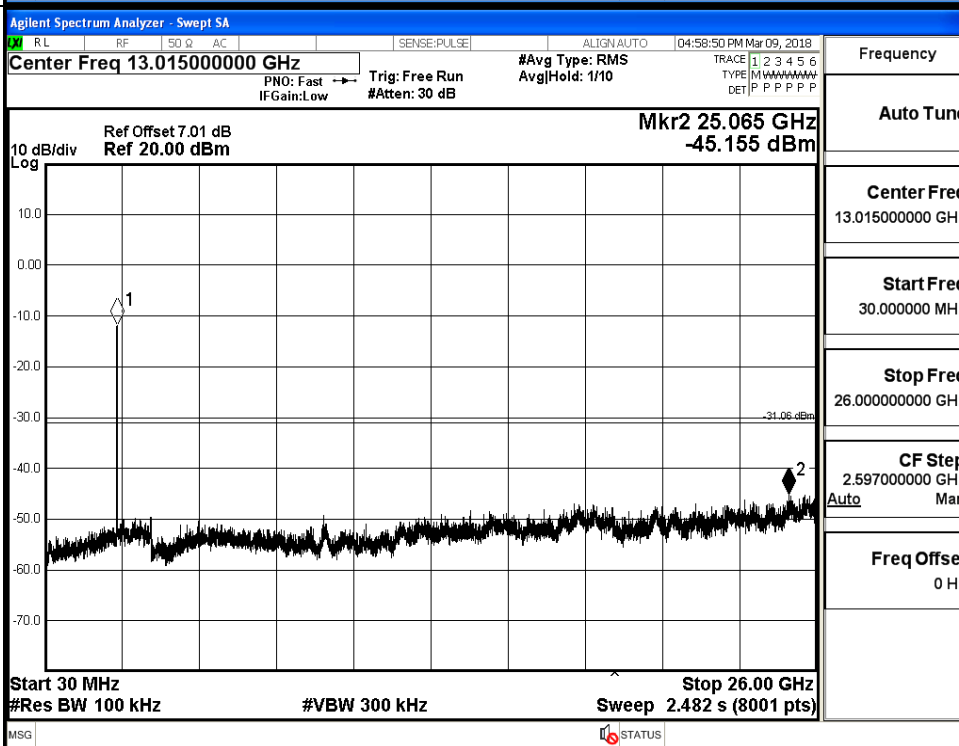


11G HCH Graphs

Pref/11G/HCH

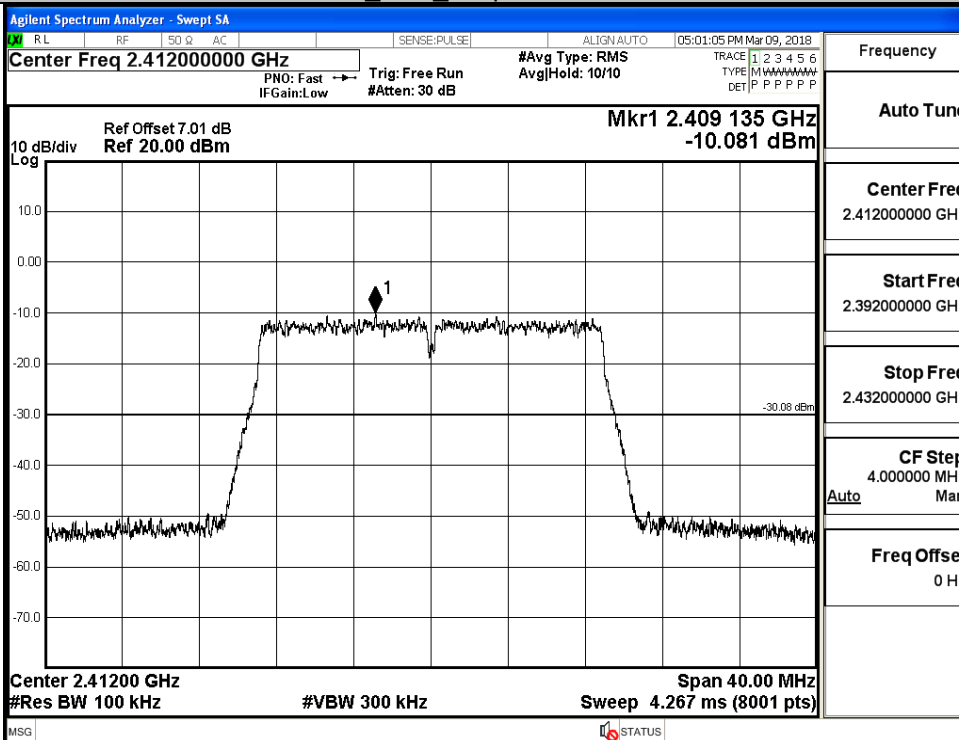


Puw/11G/HCH

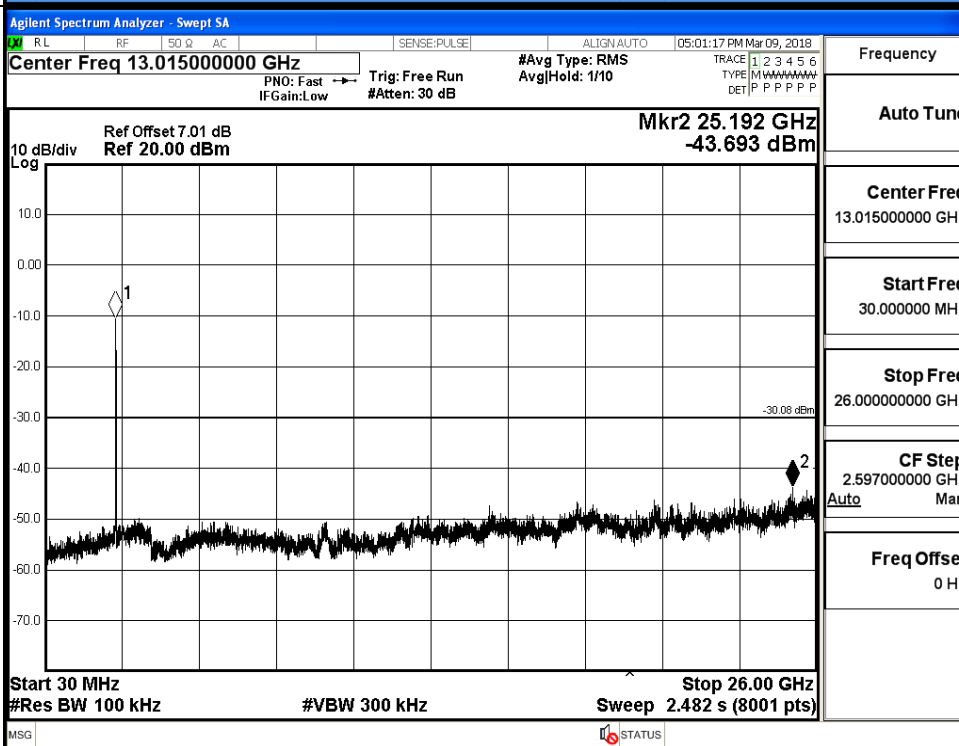


11N20SISO LCH Graphs

Pref/11N20SIS
O/LCH

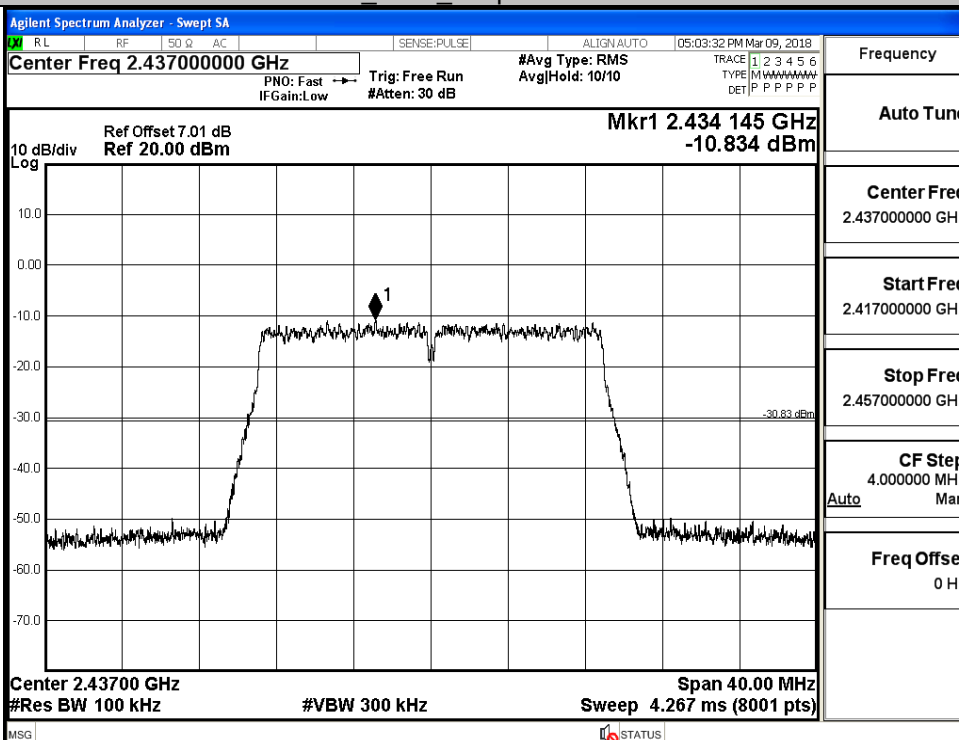


Puw/11N20
SISO/LCH

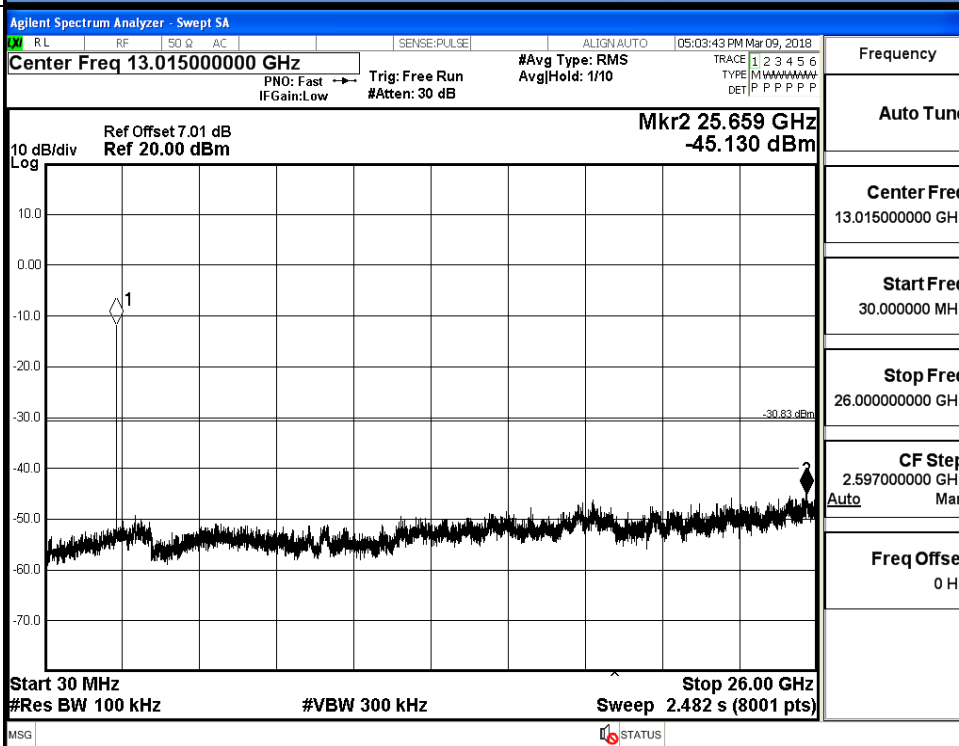


11N20SISO MCH Graphs

Pref/11N20
SISO/MCH

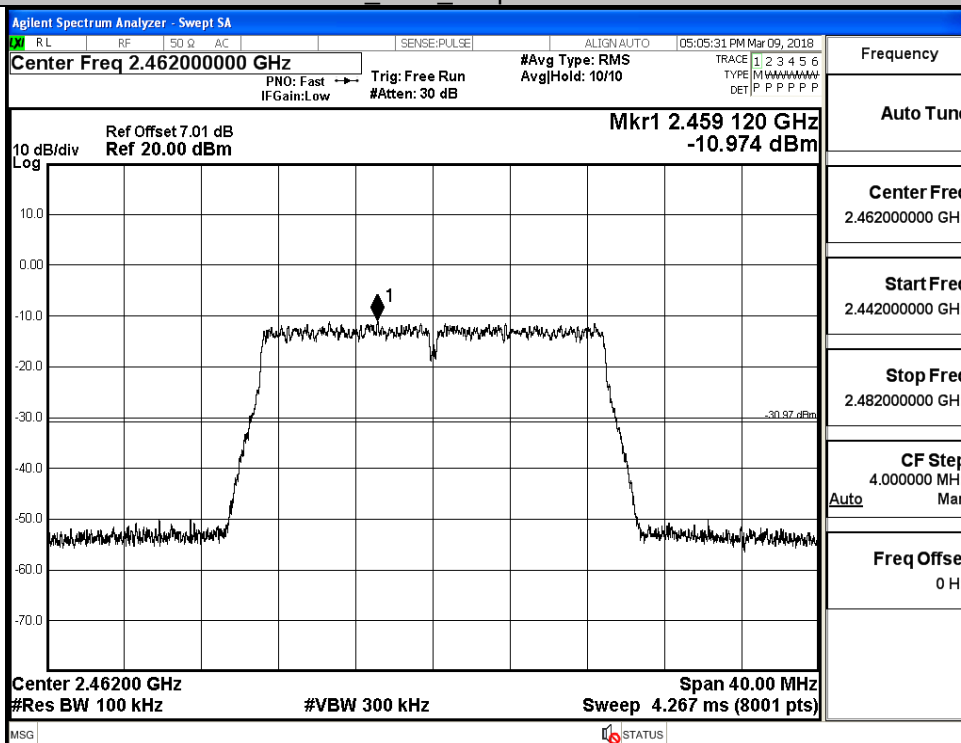


Puw/11N20
SISO/MCH

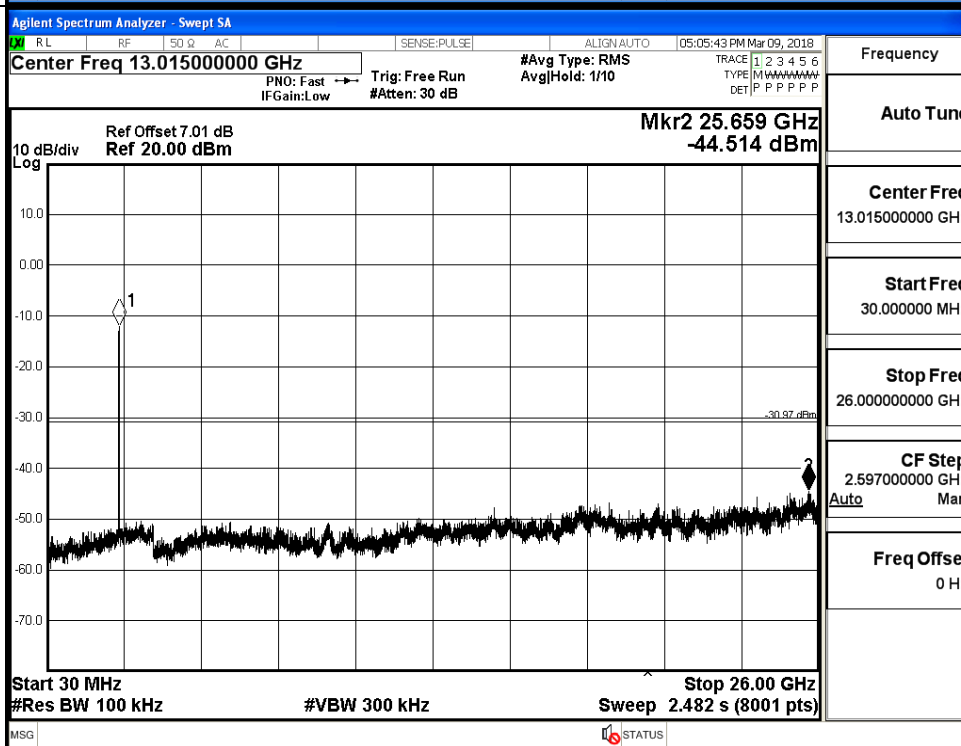


11N20SISO HCH Graphs

Pref/11N20
SISO/HCH



Puw/11N20
SISO/HCH

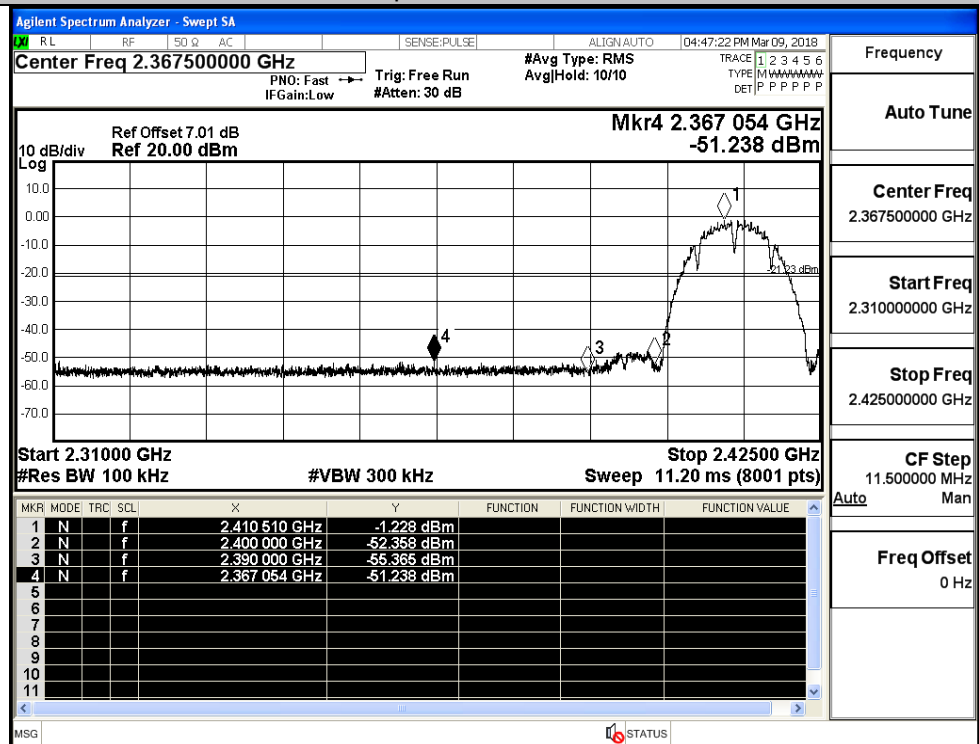


B.5 Band-edge for RF Conducted Emissions

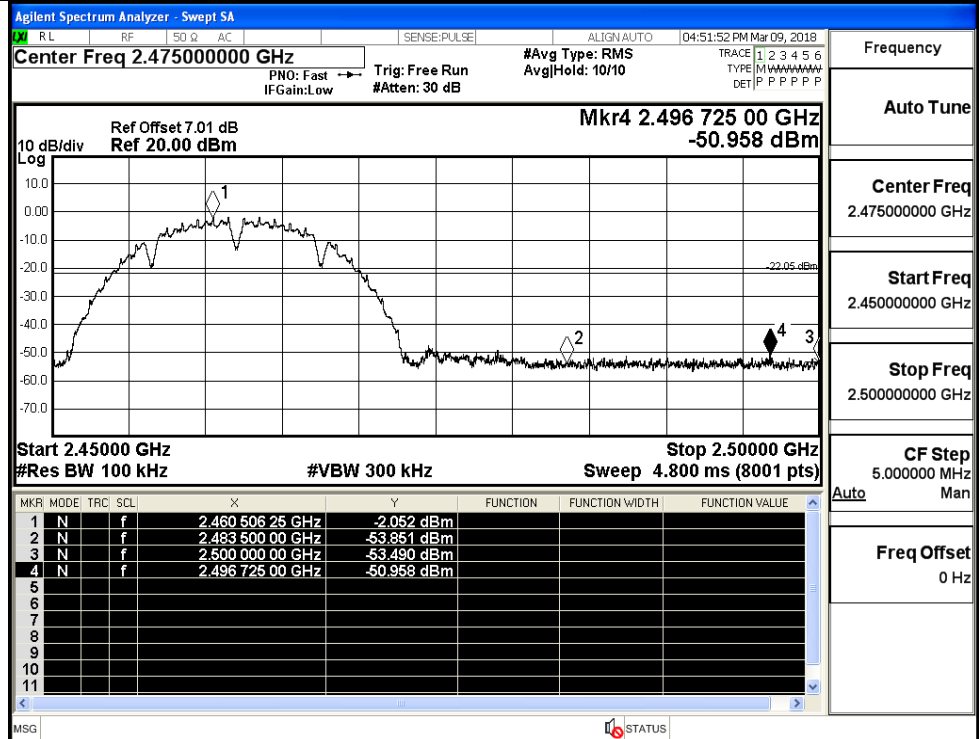
Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-1.228	-51.238	-21.23	PASS
	HCH	-2.052	-50.958	-22.05	PASS
11G	LCH	-10.692	-51.094	-30.69	PASS
	HCH	-11.046	-50.774	-31.05	PASS
11N20SISO	LCH	-10.491	-50.735	-30.49	PASS
	HCH	-10.795	-50.336	-30.8	PASS

Test Graphs

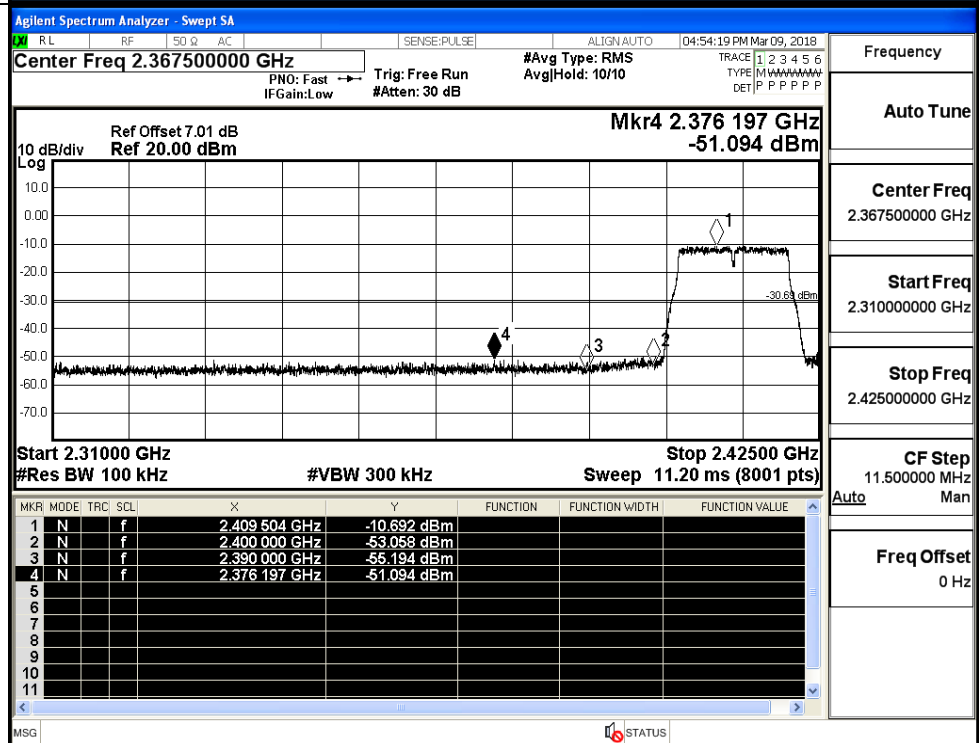
11B/LCH



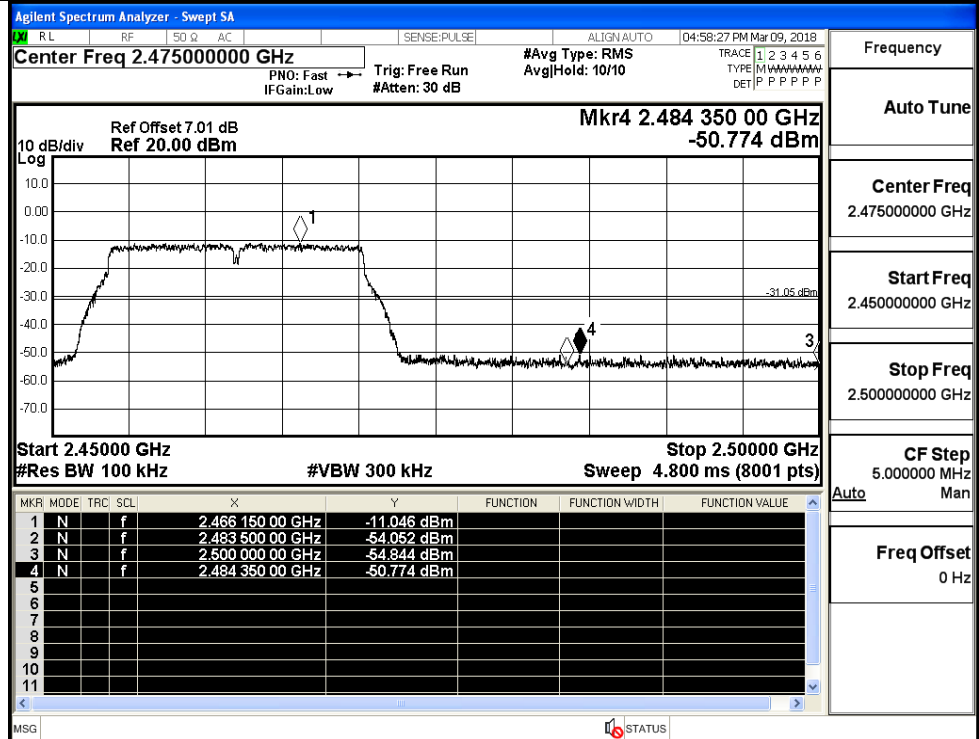
11B/HCH



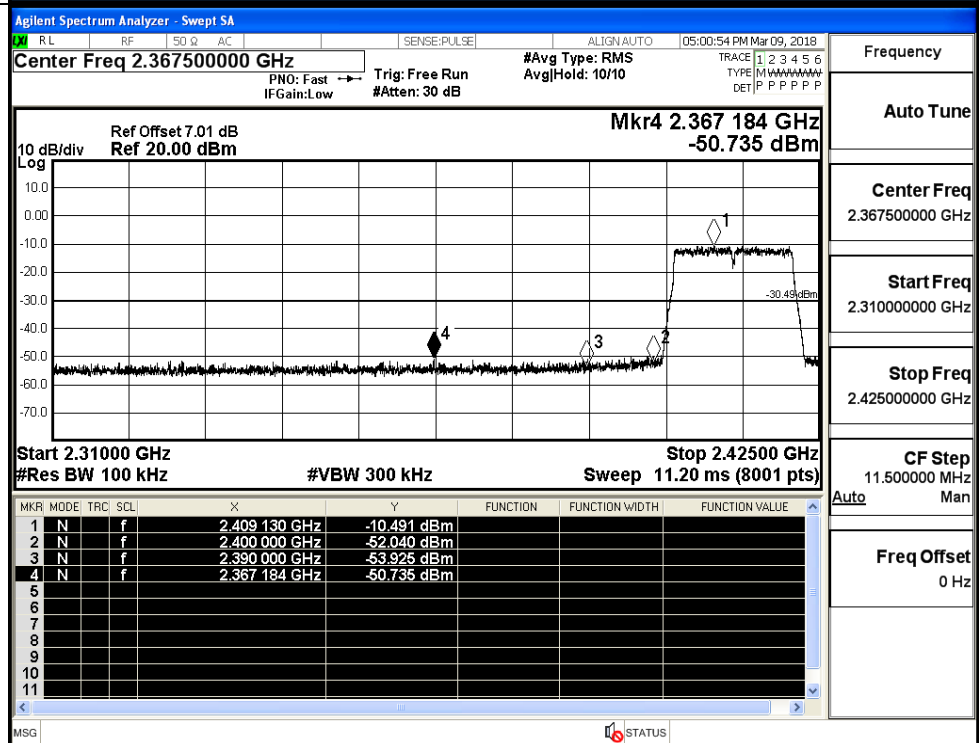
11G/LCH



11G/HCH



11N20SISO/LCH



Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:PULSE ALIGN:AUTO 05:05:20 PM Mar 09, 2018

Center Freq 2.475000000 GHz PNO: Fast Trg: Free Run Avg Type: RMS
IF Gain: Low #Atten: 30 dB Avg Hold: 10/10 TYPE: M W W W W W W W W W
DET: P P P P P P P P

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

Ref Offset 7.01 dB
Ref 20.00 dBm

Mkr 4 2.493 337 50 GHz
-50.336 dBm

Log

Start 2.45000 GHz
#Res BW 100 kHz

Stop 2.50000 GHz
Sweep 4.800 ms (8001 pts)

#VBW 300 kHz

30.80 dBm

2

4

3

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N		f	2.459 131 25 GHz	-10.795 dBm			
2	N		f	2.483 500 00 GHz	-54.391 dBm			
3	N		f	2.500 000 00 GHz	-53.227 dBm			
4	N		f	2.493 337 50 GHz	-50.336 dBm			
5								
6								
7								
8								
9								
10								
11								

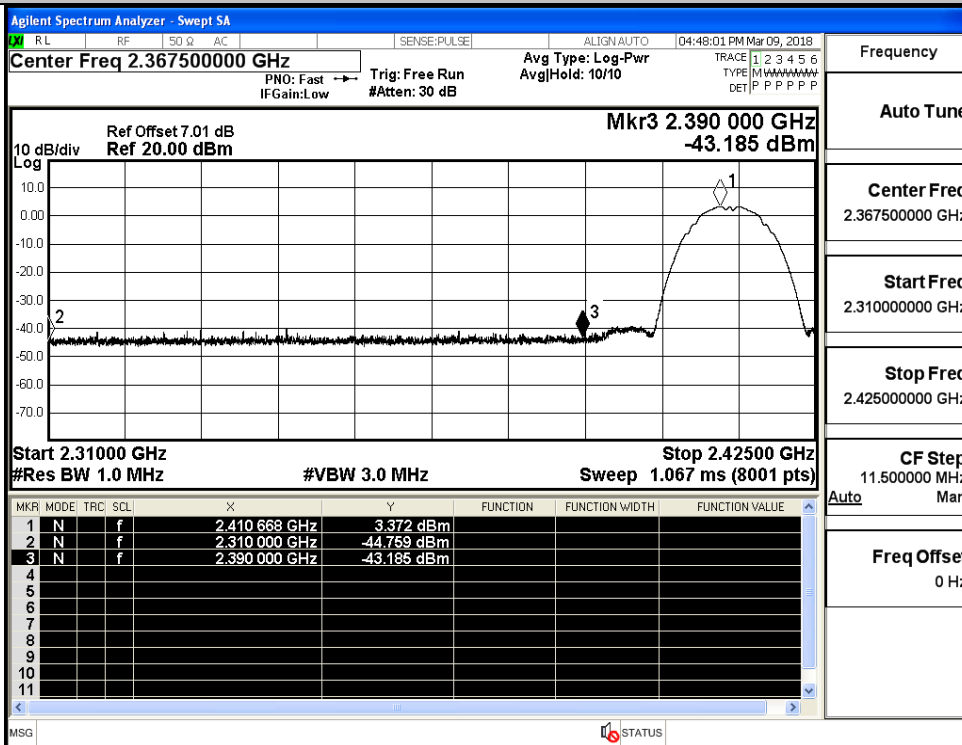
MSG

STATUS

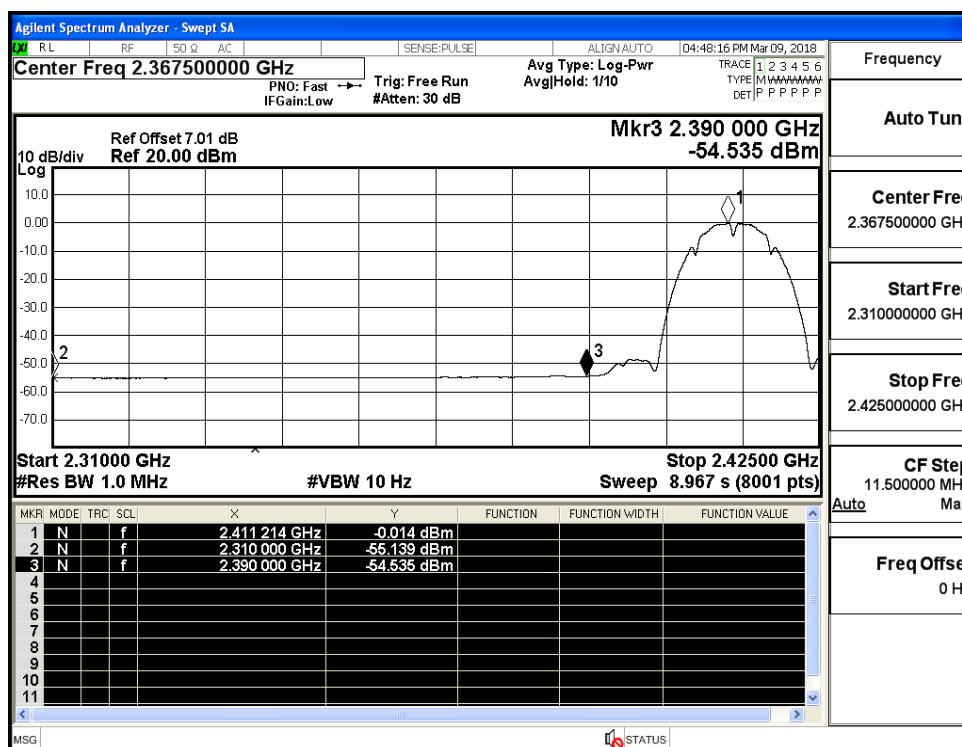
B.6 Restrict-band band-edge measurements

Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
11B	2412	Ant0	2310.0	-44.76	2.64	0	53.08	PEAK	74	PASS
	2412	Ant0	2310.0	-55.14	2.64	0	42.70	AV	54	PASS
	2412	Ant0	2390.0	-43.19	2.64	0	54.65	PEAK	74	PASS
	2412	Ant0	2390.0	-54.54	2.64	0	43.30	AV	54	PASS
	2462	Ant0	2483.5	-44.33	2.64	0	53.51	PEAK	74	PASS
	2462	Ant0	2483.5	-54.50	2.64	0	43.34	AV	54	PASS
	2462	Ant0	2500.0	-44.77	2.64	0	53.07	PEAK	74	PASS
	2462	Ant0	2500.0	-54.45	2.64	0	43.39	AV	54	PASS
11G	2412	Ant0	2310.0	-44.99	2.64	0	52.85	PEAK	74	PASS
	2412	Ant0	2310.0	-55.13	2.64	0	42.71	AV	54	PASS
	2412	Ant0	2390.0	-42.56	2.64	0	55.28	PEAK	74	PASS
	2412	Ant0	2390.0	-54.31	2.64	0	43.53	AV	54	PASS
	2462	Ant0	2483.5	-43.78	2.64	0	54.06	PEAK	74	PASS
	2462	Ant0	2483.5	-54.14	2.64	0	43.70	AV	54	PASS
	2462	Ant0	2500.0	-44.28	2.64	0	53.56	PEAK	74	PASS
	2462	Ant0	2500.0	-54.21	2.64	0	43.63	AV	54	PASS
11N20 SISO	2412	Ant0	2310.0	-45.49	2.64	0	52.35	PEAK	74	PASS
	2412	Ant0	2310.0	-55.12	2.64	0	42.72	AV	54	PASS
	2412	Ant0	2390.0	-43.04	2.64	0	54.80	PEAK	74	PASS
	2412	Ant0	2390.0	-54.10	2.64	0	43.74	AV	54	PASS
	2462	Ant0	2483.5	-44.20	2.64	0	53.64	PEAK	74	PASS
	2462	Ant0	2483.5	-54.11	2.64	0	43.73	AV	54	PASS
	2462	Ant0	2500.0	-43.74	2.64	0	54.10	PEAK	74	PASS
	2462	Ant0	2500.0	-54.22	2.64	0	43.62	AV	54	PASS

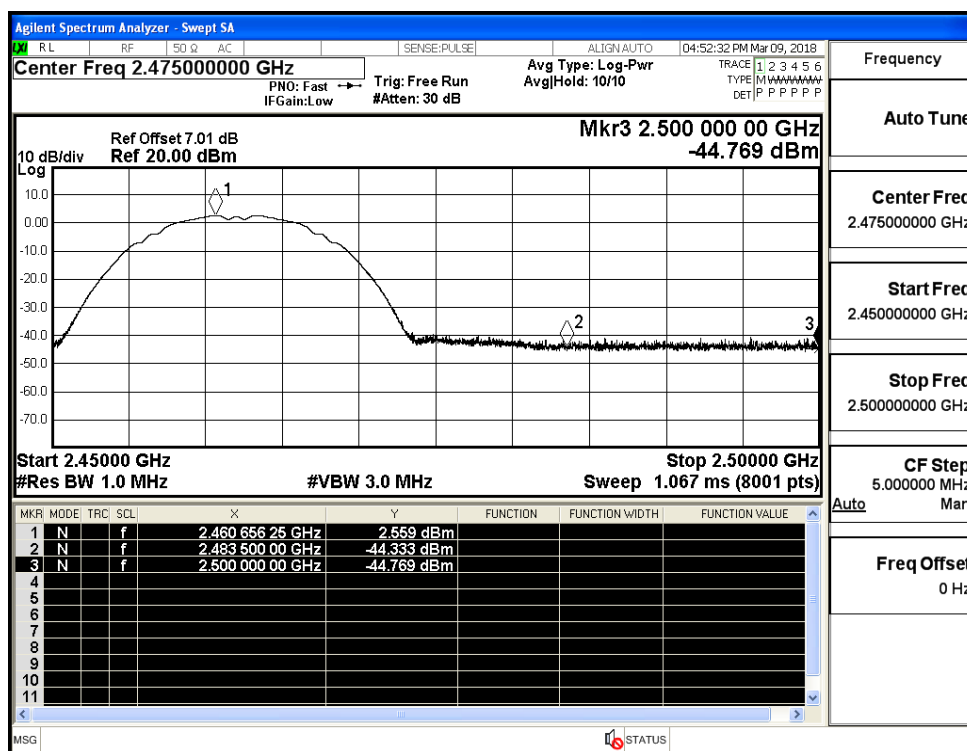
Restrict-band band-edge measurements_11B_2412_Ant0_PEAK



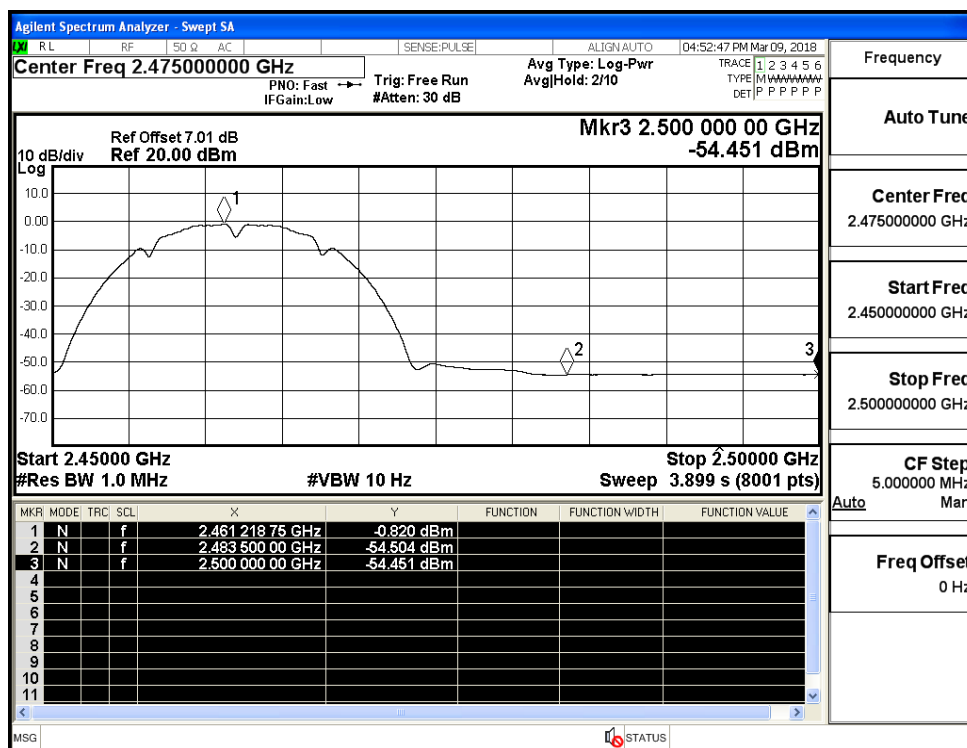
Restrict-band band-edge measurements_11B_2412_Ant0_AV



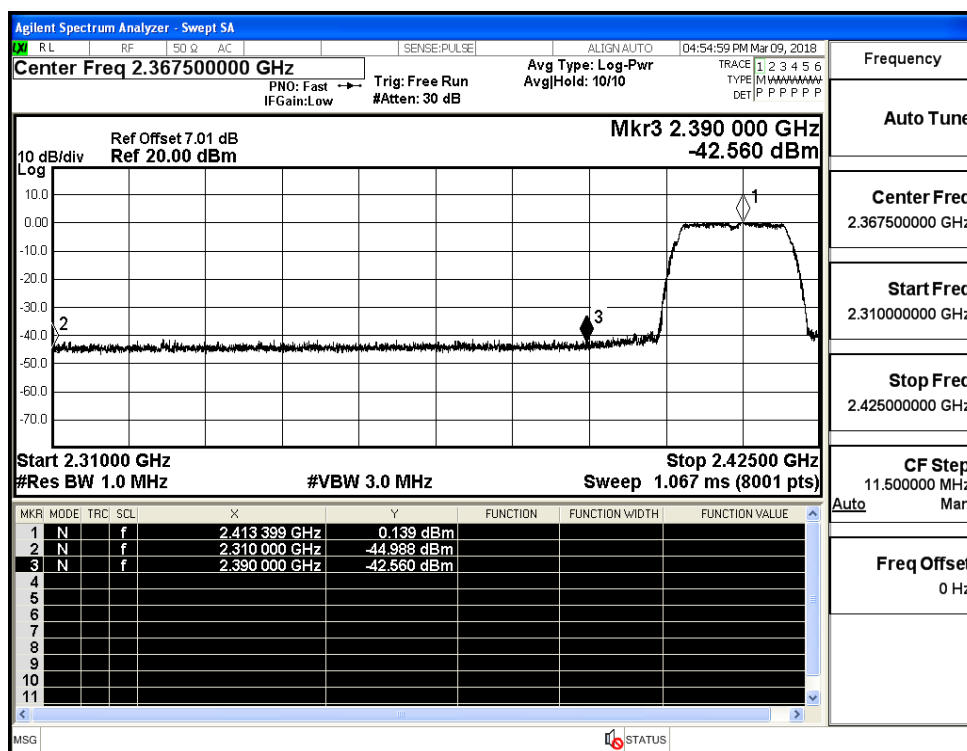
Restrict-band band-edge measurements_11B_2462_Ant0_PEAK



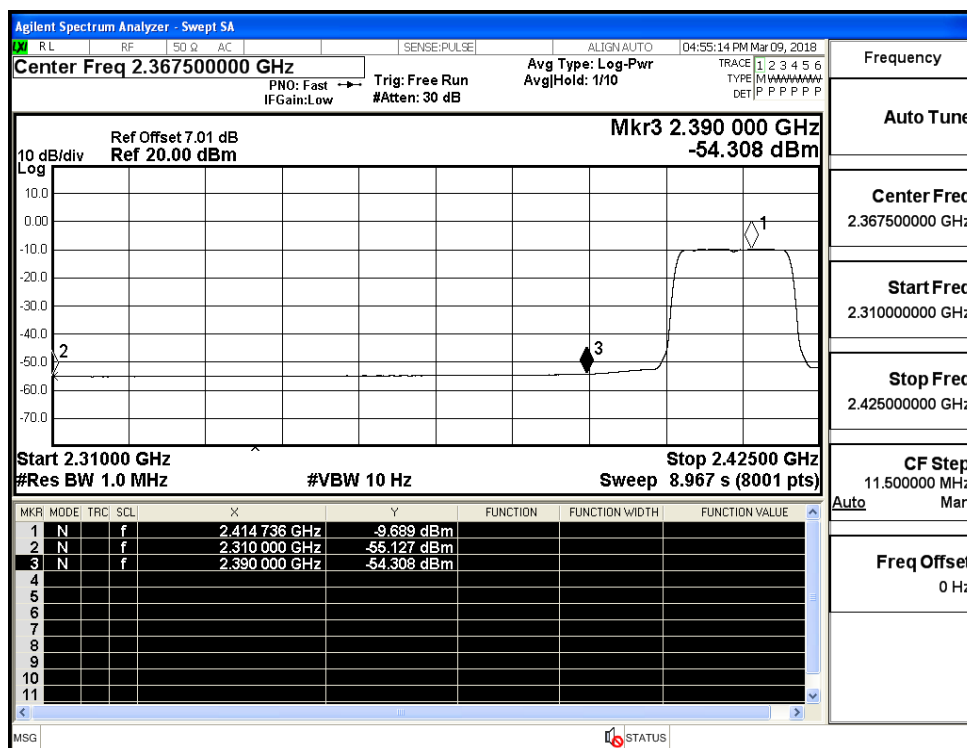
Restrict-band band-edge measurements_11B_2462_Ant0_AV



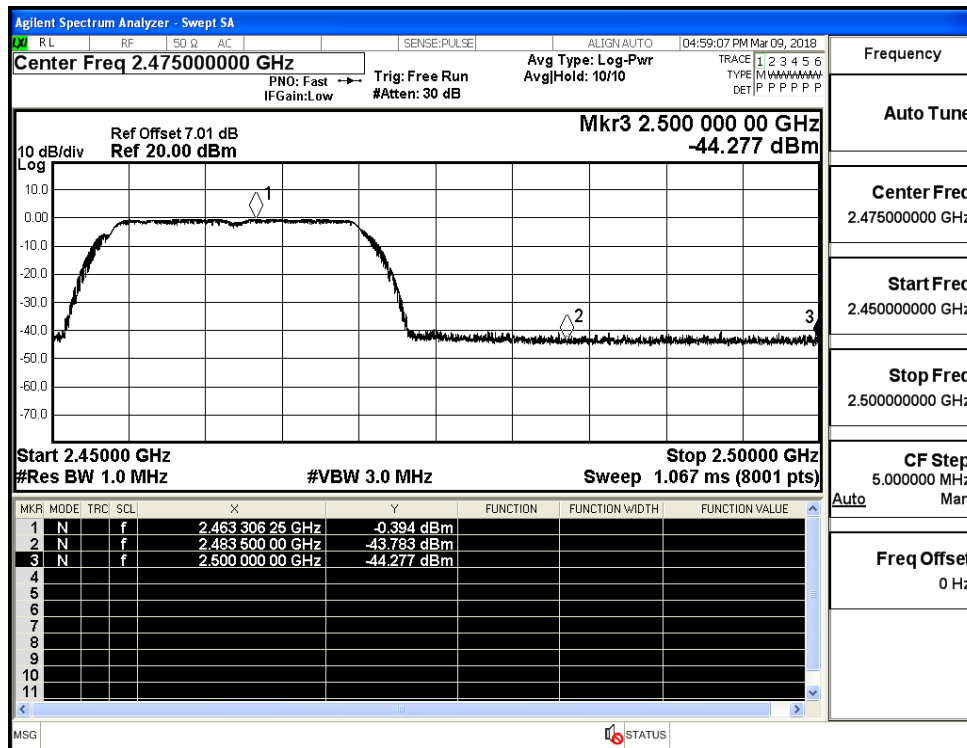
Restrict-band band-edge measurements_11G_2412_Ant0_PEAK



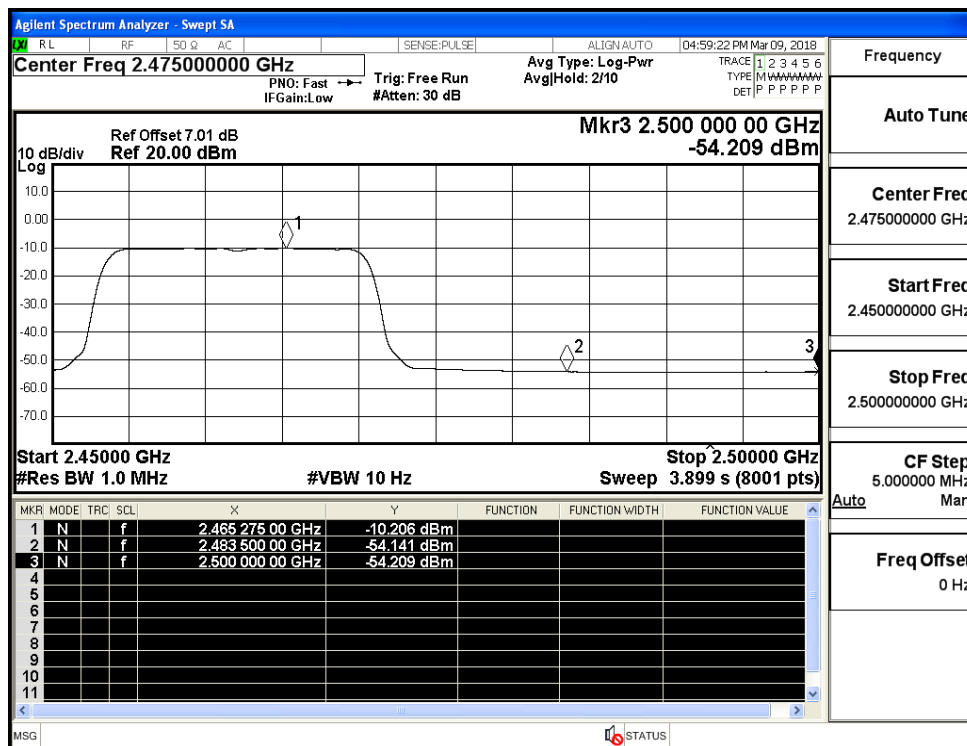
Restrict-band band-edge measurements_11G_2412_Ant0_AV



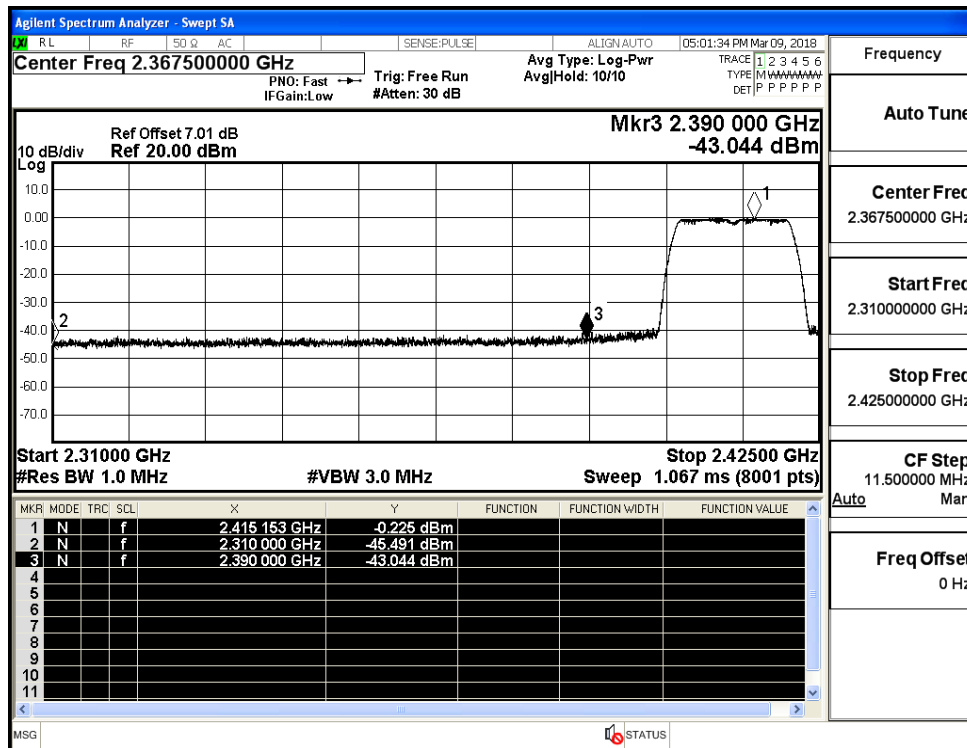
Restrict-band band-edge measurements_11G_2462_Ant0_PEAK



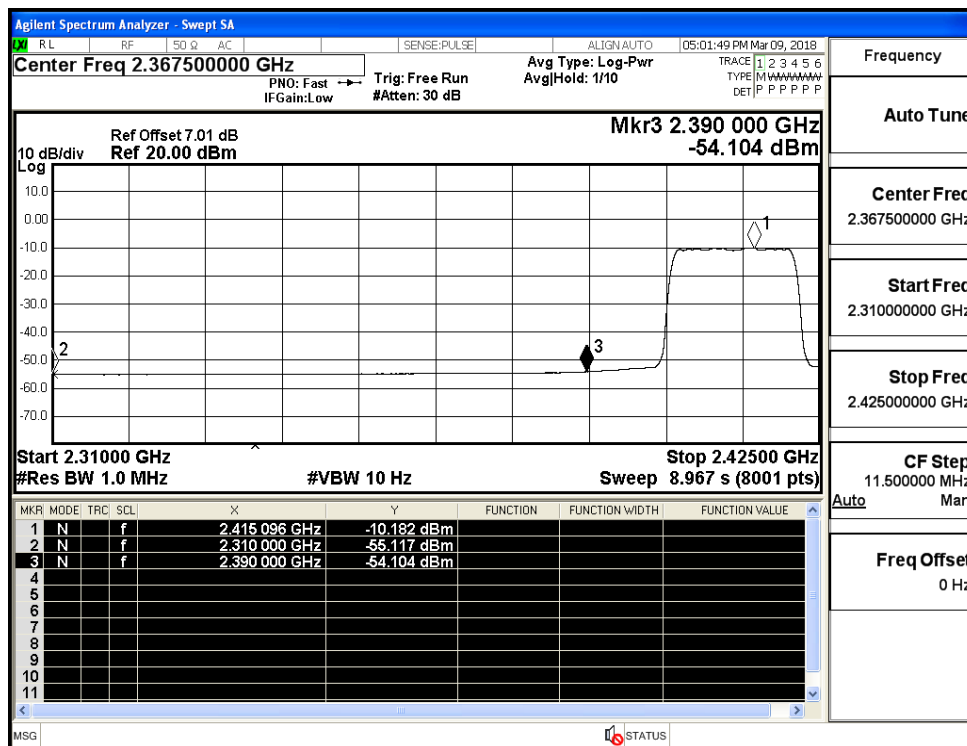
Restrict-band band-edge measurements_11G_2462_Ant0_AV



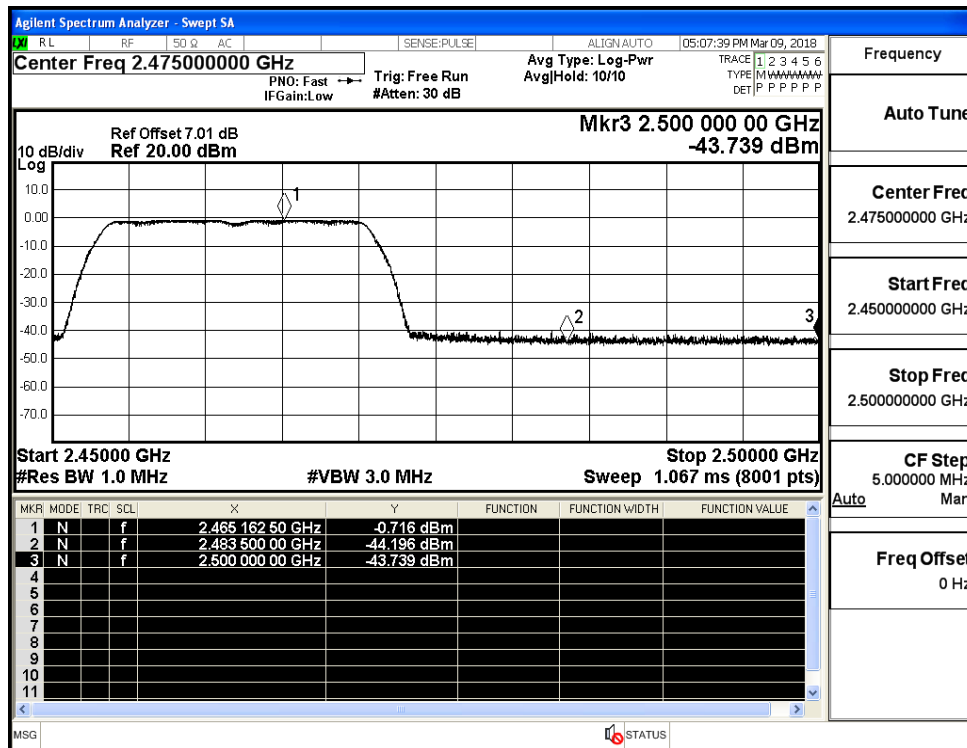
Restrict-band band-edge measurements_11N20SISO_2412_Ant0_PEAK



Restrict-band band-edge measurements_11N20SISO_2412_Ant0_AV



Restrict-band band-edge measurements_11N20SISO_2462_Ant0_PEAK



Restrict-band band-edge measurements_11N20SISO_2462_Ant0_AV

