

Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: LED Bulb
Trade Mark: N/A
Test Model: 9WA19RGB+CCT

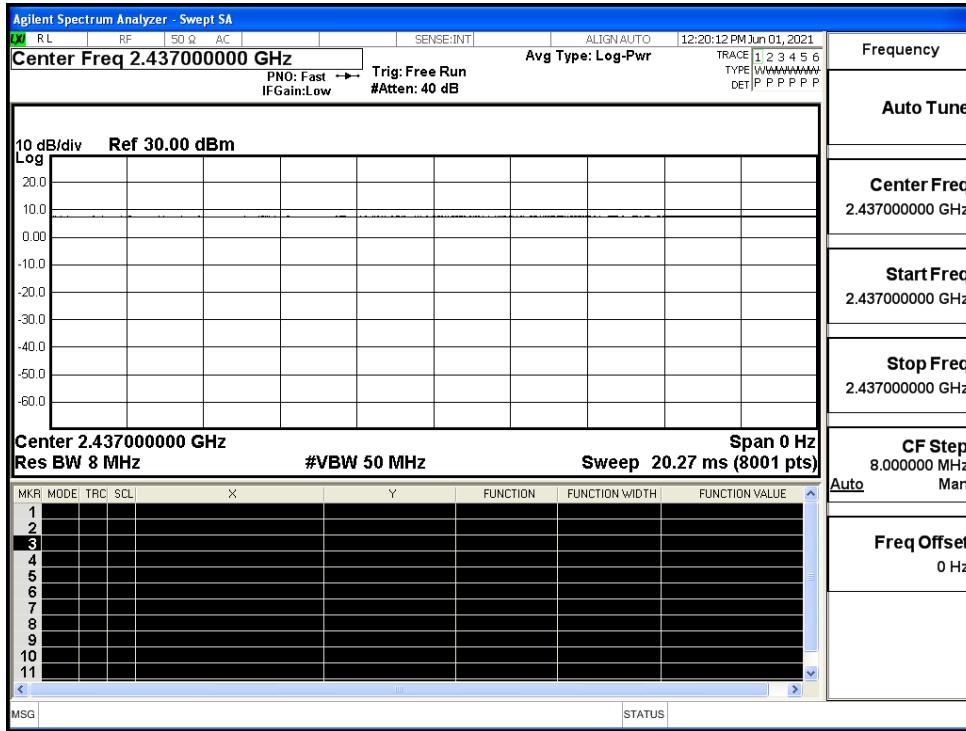
Environmental Conditions

Temperature:	23.2 ° C
Relative Humidity:	52.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Li
Supervised by:	Li Huan

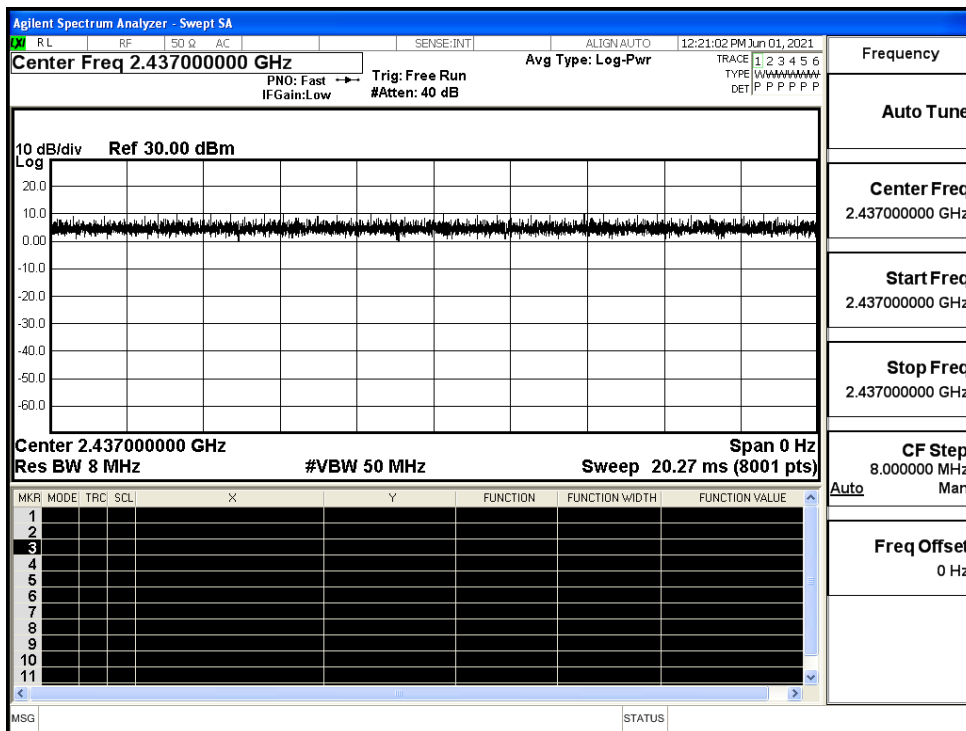
A.1 Duty Cycle

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

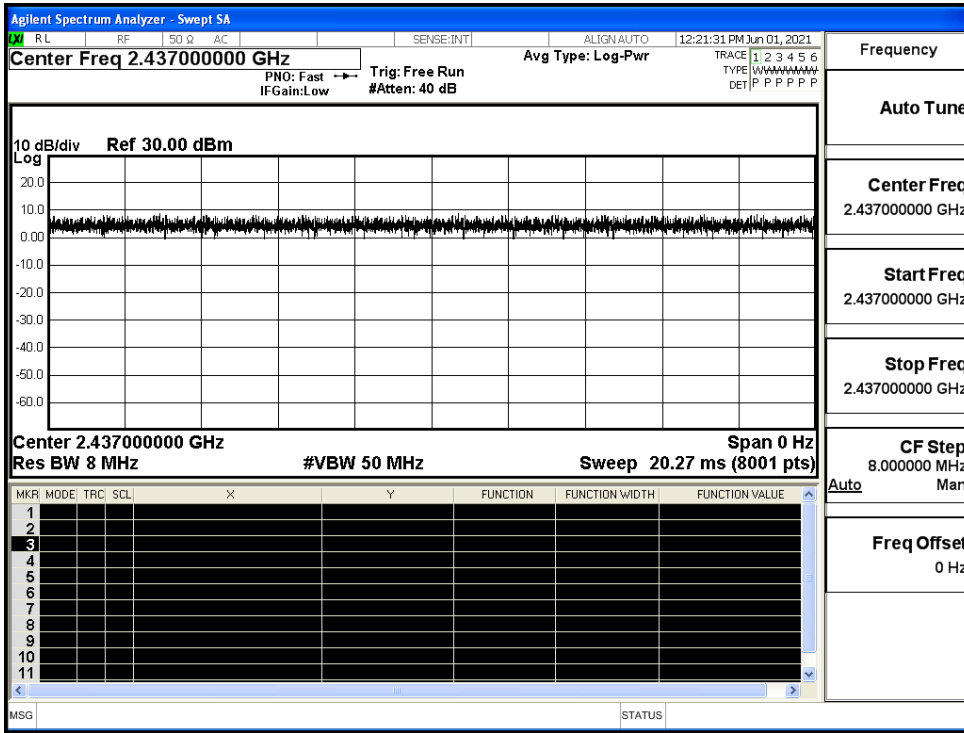
Duty Cycle_11B_2437_Ant1



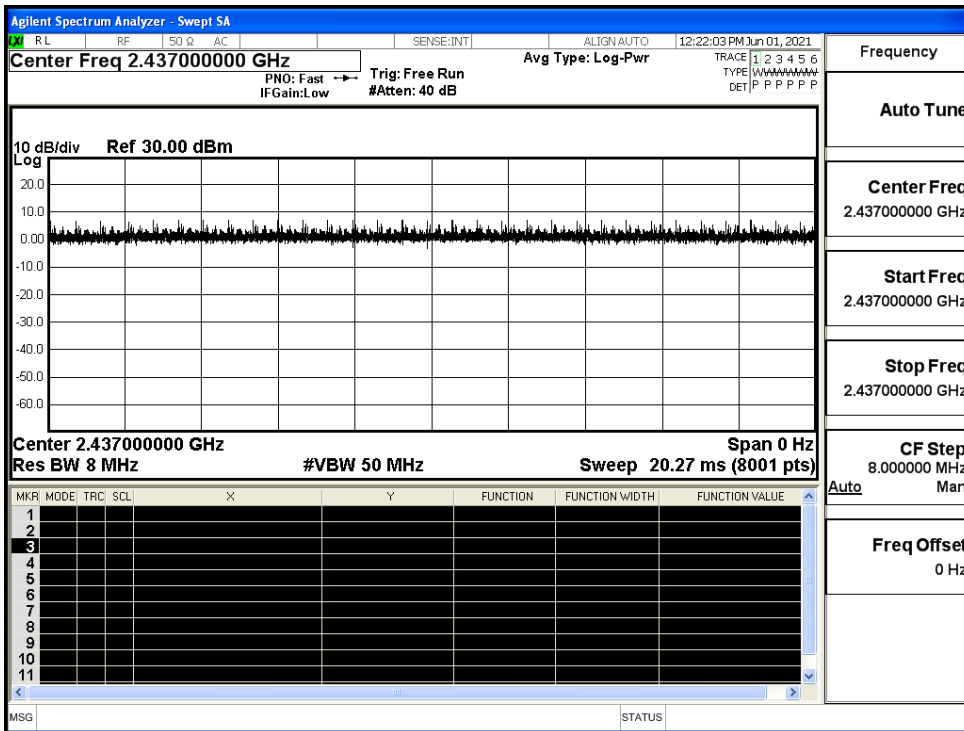
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



Duty Cycle_11N40SISO_2437_Ant1

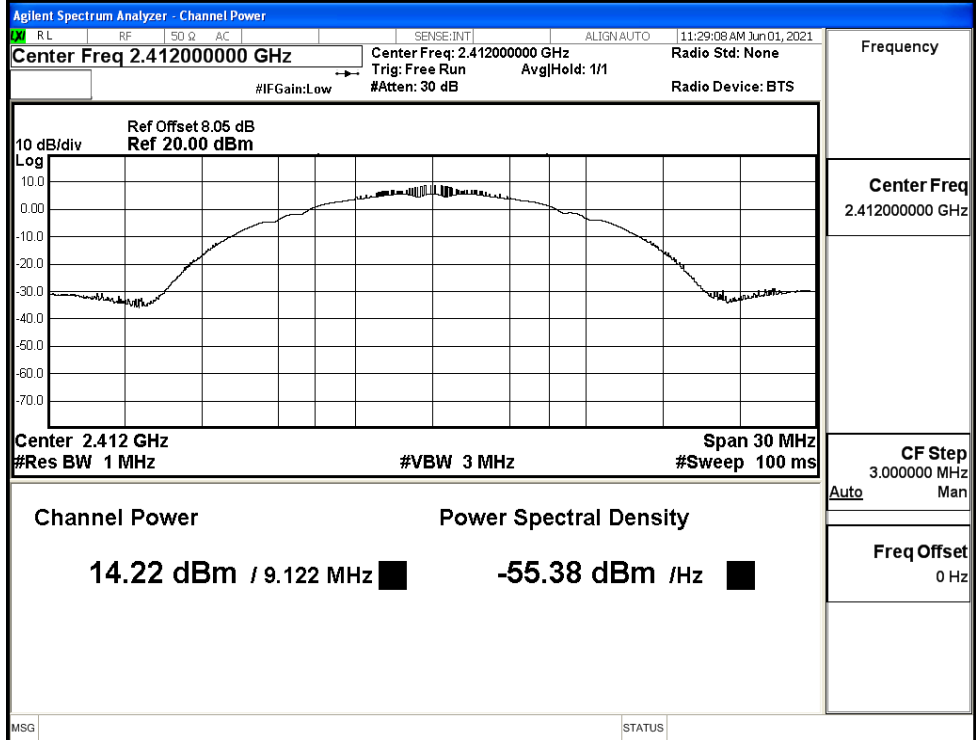


A.2 Maximum Conducted Output Power

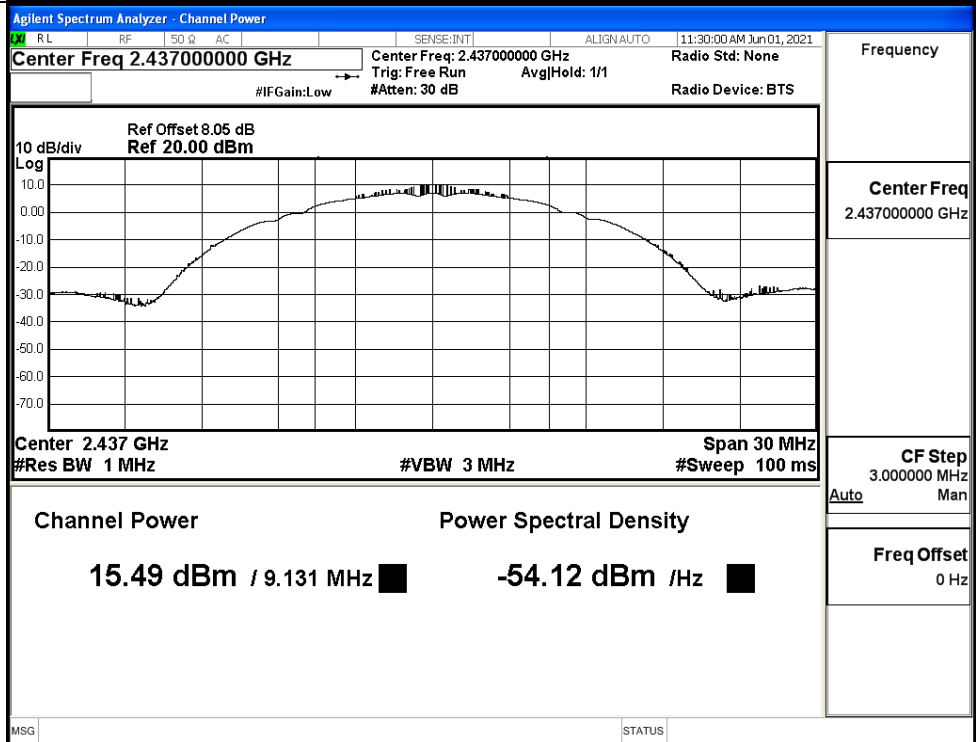
Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	14.22	30	PASS
	MCH	15.49	30	PASS
	HCH	16.10	30	PASS
11G	LCH	15.43	30	PASS
	MCH	17.49	30	PASS
	HCH	15.98	30	PASS
11N20SISO	LCH	14.99	30	PASS
	MCH	16.31	30	PASS
	HCH	17.81	30	PASS
11N40SISO	LCH	14.81	30	PASS
	MCH	15.91	30	PASS
	HCH	16.98	30	PASS

Test Graphs

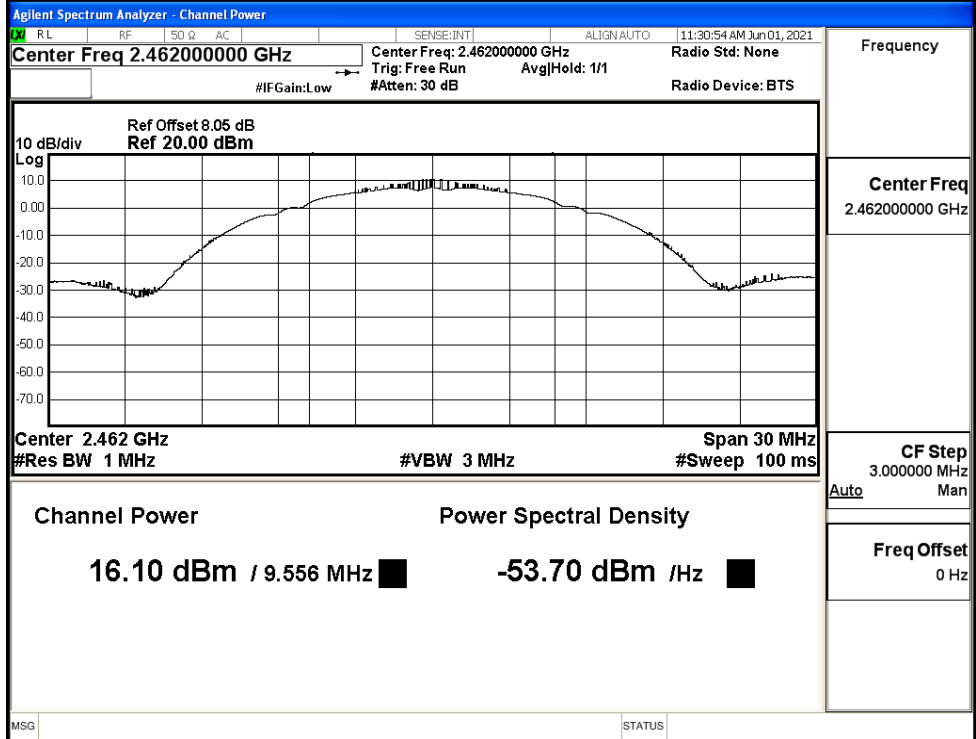
11B/LCH



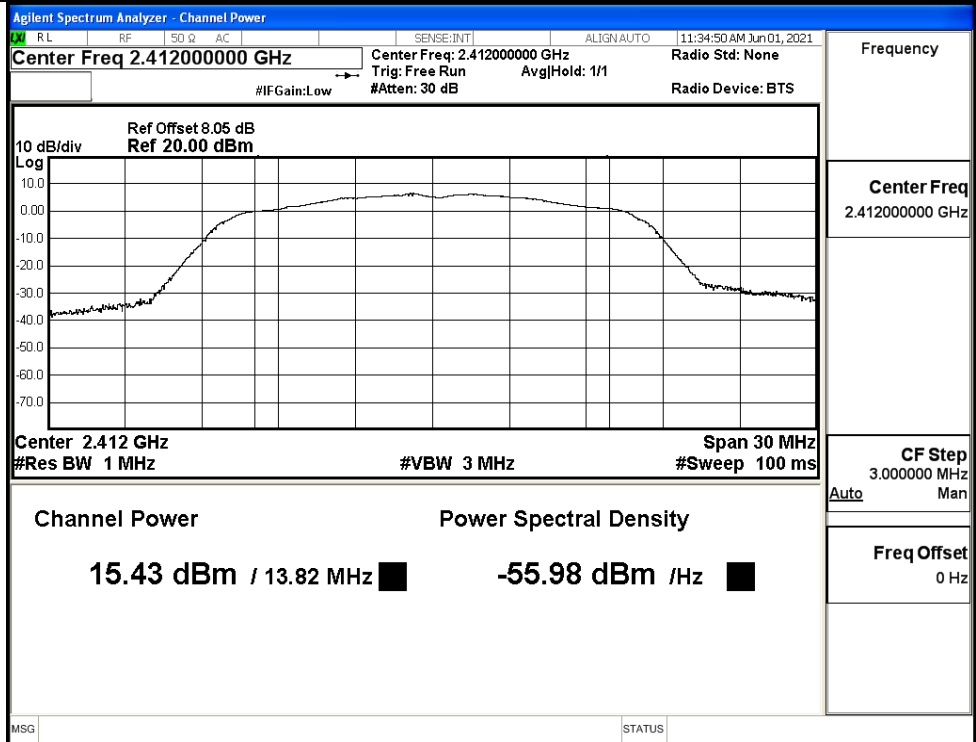
11B/MCH



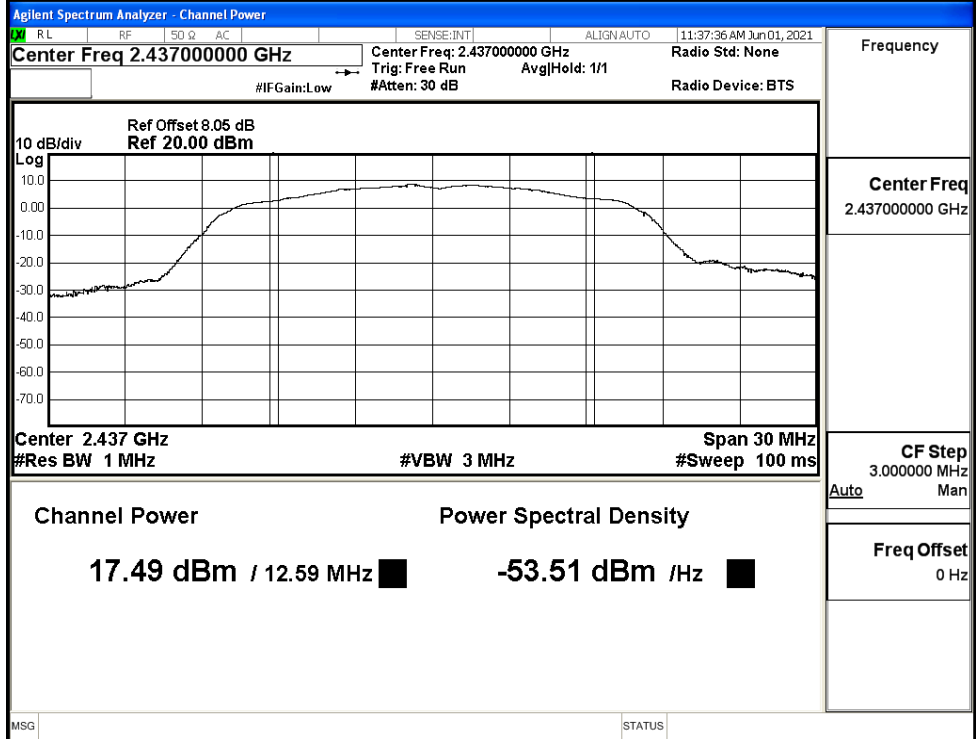
11B/HCH



11G/LCH

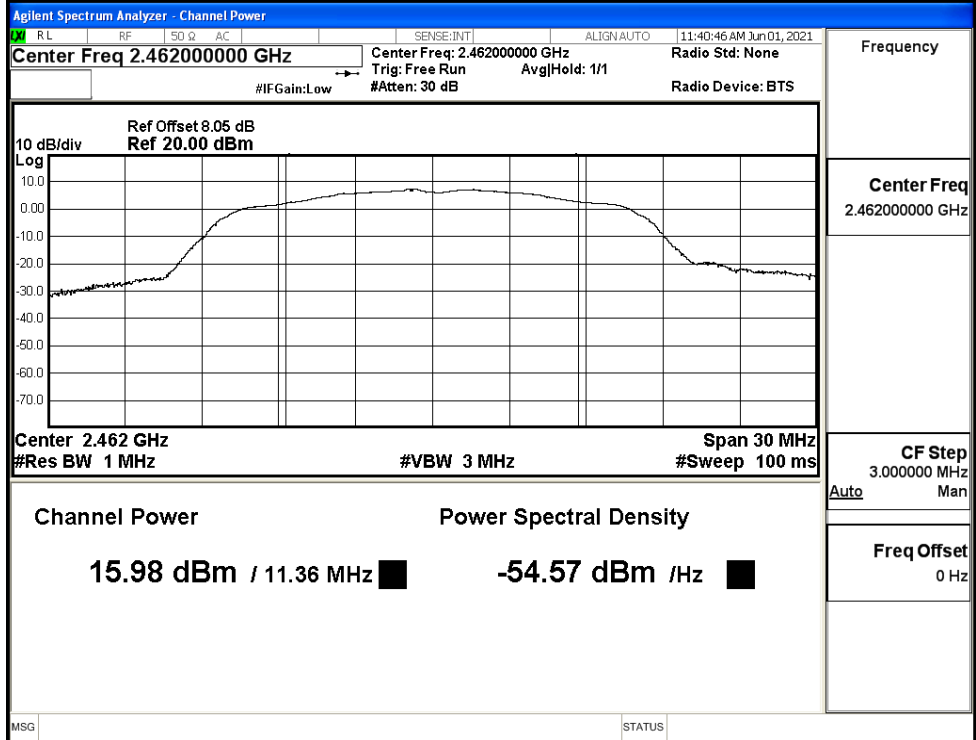


11G/MCH



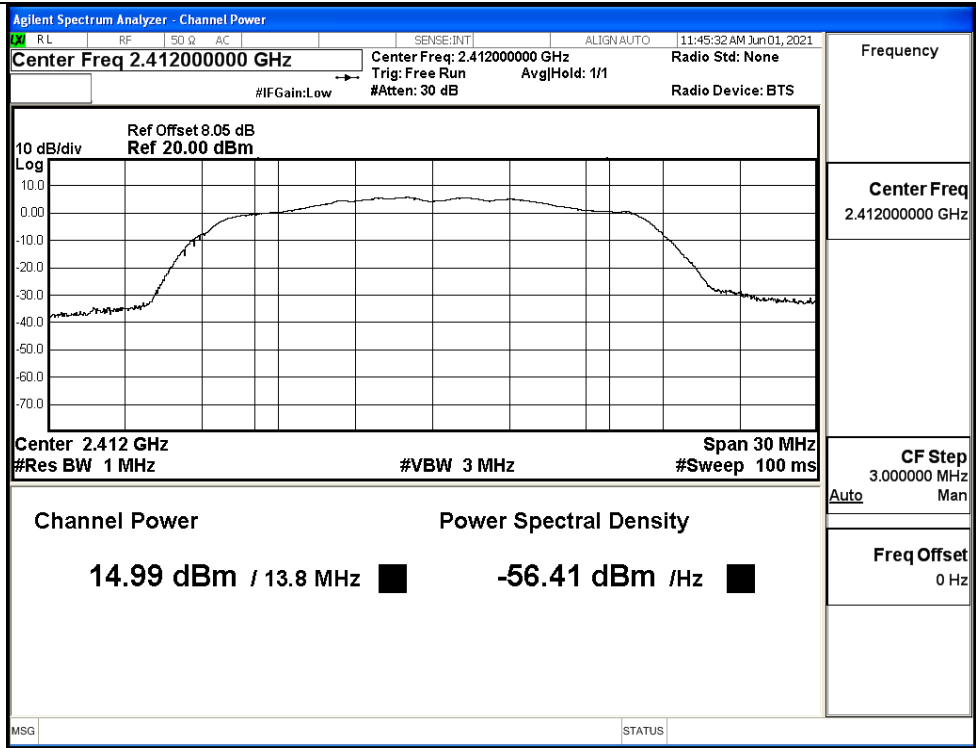
Frequency	Center Freq 2.43700000 GHz
CF Step	3.000000 MHz Auto Man
Freq Offset	0 Hz

11G/HCH



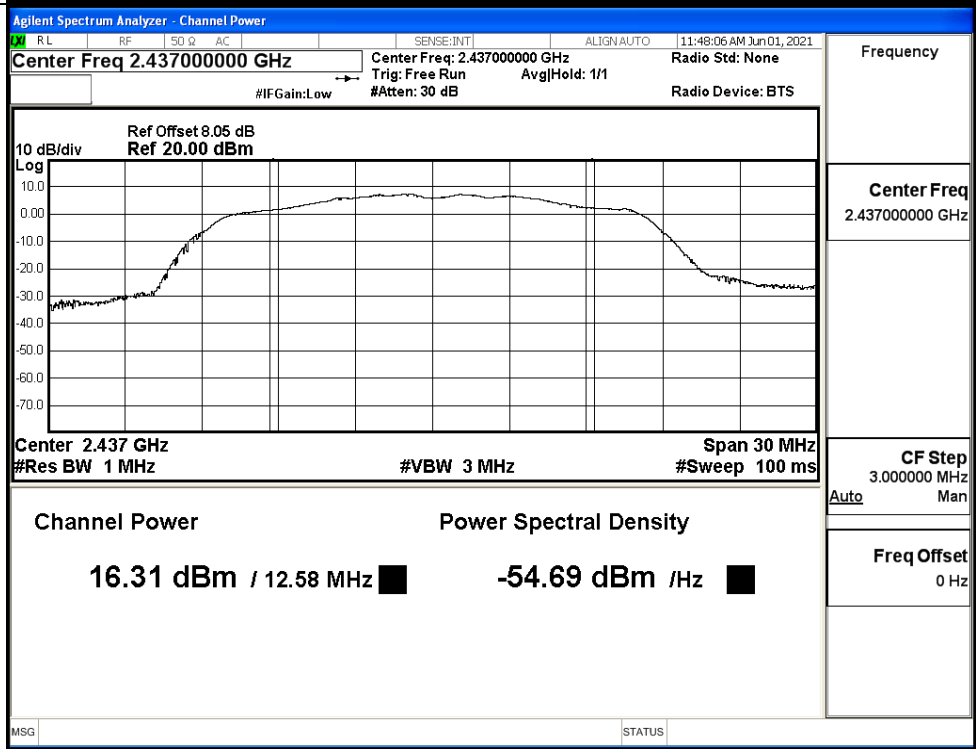
Frequency	Center Freq 2.46200000 GHz
CF Step	3.000000 MHz Auto Man
Freq Offset	0 Hz

11N20SISO/LCH



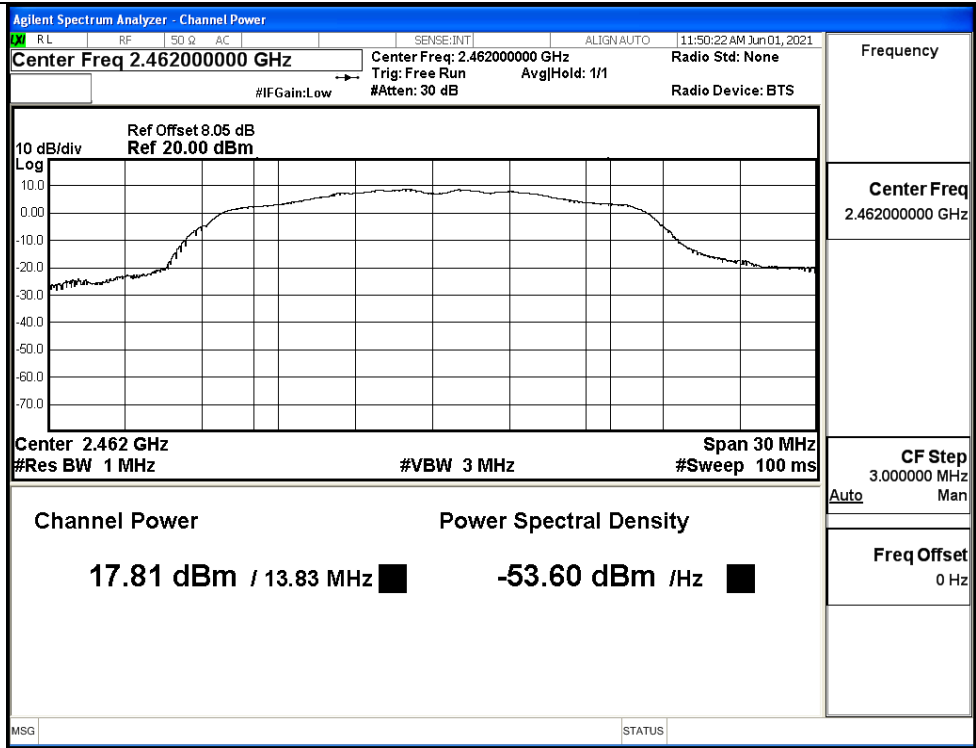
Frequency
Center Freq 2.41200000 GHz
CF Step 3.000000 MHz Auto Man
Freq Offset 0 Hz

11N20SISO/MCH



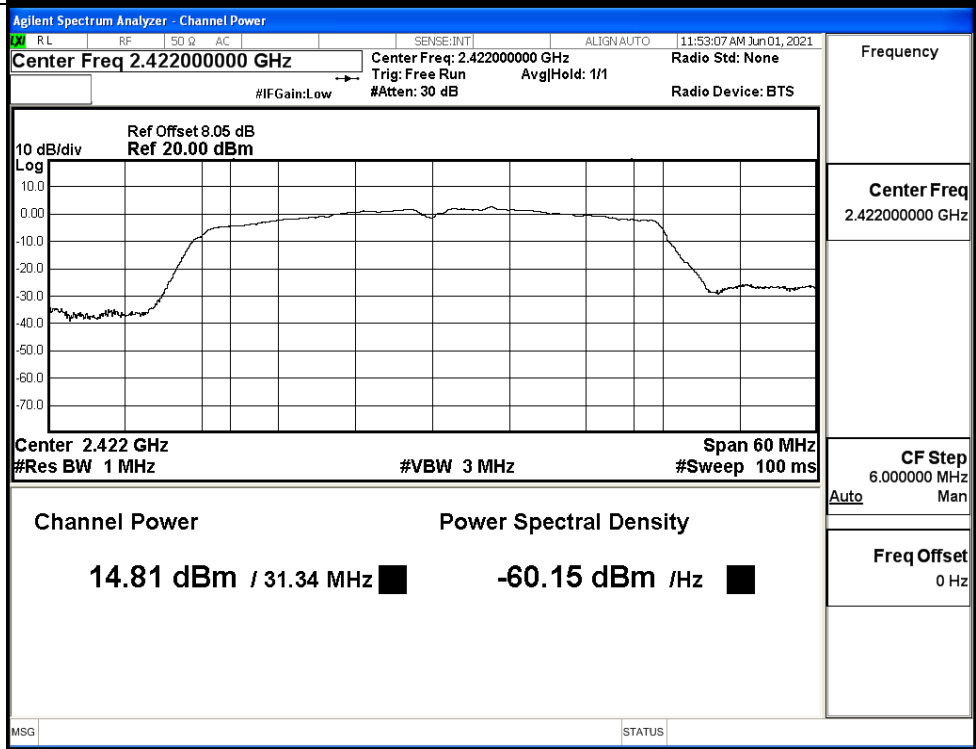
Frequency
Center Freq 2.43700000 GHz
CF Step 3.000000 MHz Auto Man
Freq Offset 0 Hz

11N20SISO/HCH



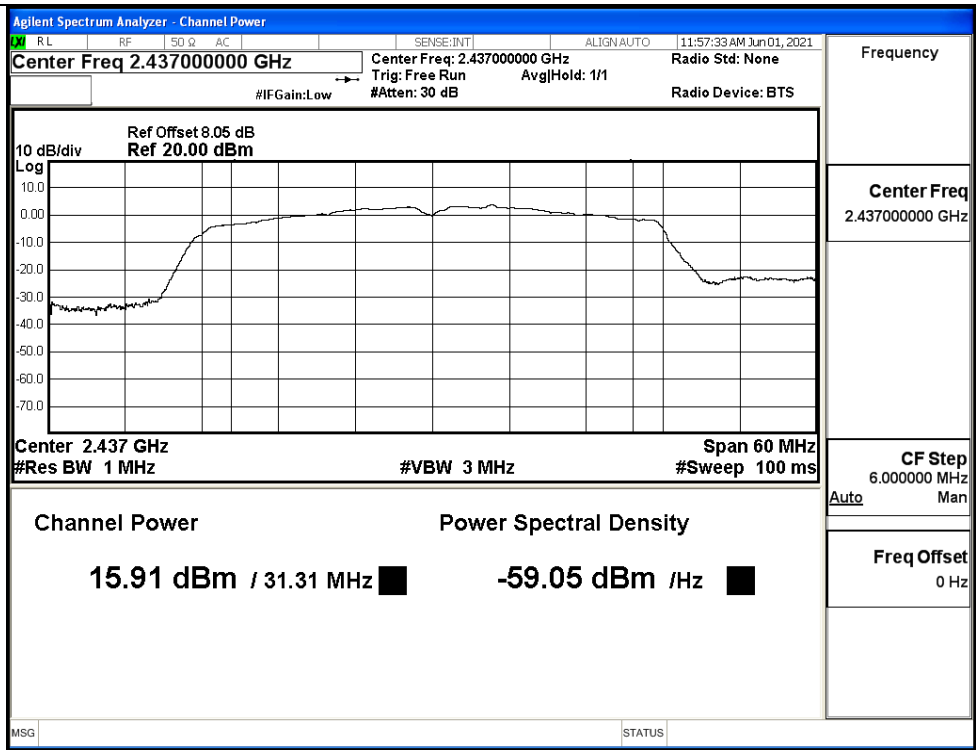
Frequency	Center Freq 2.462000000 GHz
CF Step	3.000000 MHz Auto Man
Freq Offset	0 Hz

11N40SISO/LCH



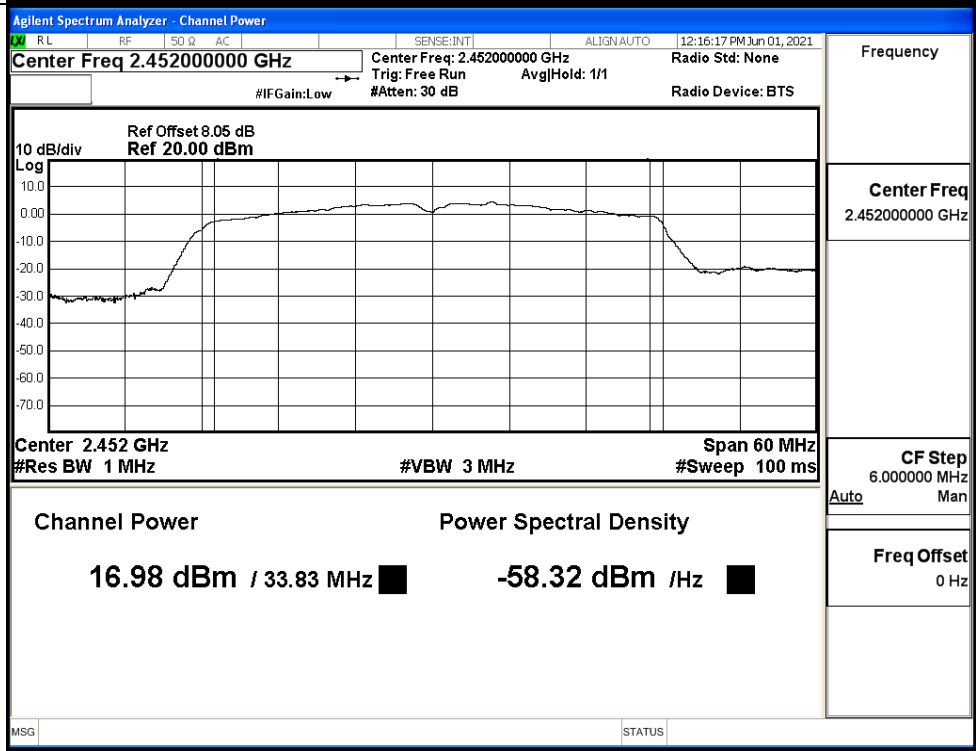
Frequency	Center Freq 2.422000000 GHz
CF Step	6.000000 MHz Auto Man
Freq Offset	0 Hz

11N40SISO/MCH



Frequency	2.437000000 GHz
Center Freq	2.437000000 GHz
CF Step	6.000000 MHz
Auto	Man
Freq Offset	0 Hz

11N40SISO/HCH

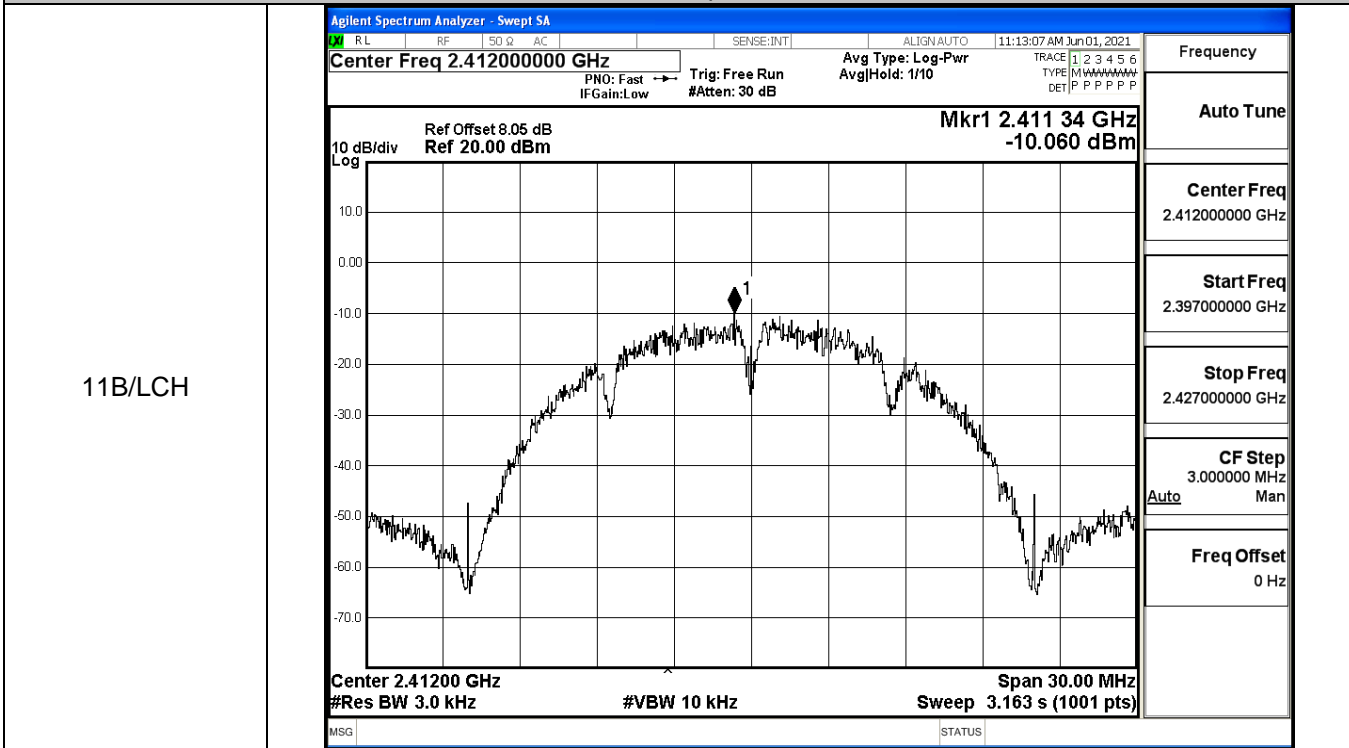


Frequency	2.452000000 GHz
Center Freq	2.452000000 GHz
CF Step	6.000000 MHz
Auto	Man
Freq Offset	0 Hz

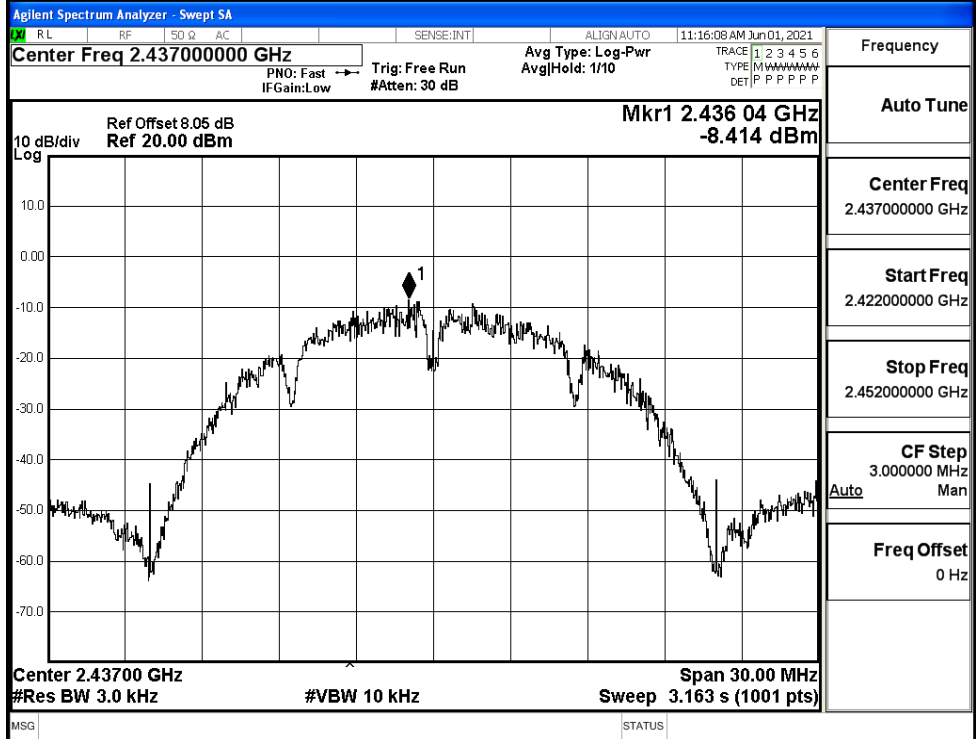
A.3 Maximum Power Spectral Density

Mode	Channel	Meas.Level [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-10.060	8	PASS
	MCH	-8.414	8	PASS
	HCH	-8.119	8	PASS
11G	LCH	-17.617	8	PASS
	MCH	-14.895	8	PASS
	HCH	-16.721	8	PASS
11N20SISO	LCH	-16.297	8	PASS
	MCH	-16.104	8	PASS
	HCH	-14.677	8	PASS
11N40SISO	LCH	-19.952	8	PASS
	MCH	-18.525	8	PASS
	HCH	-17.773	8	PASS

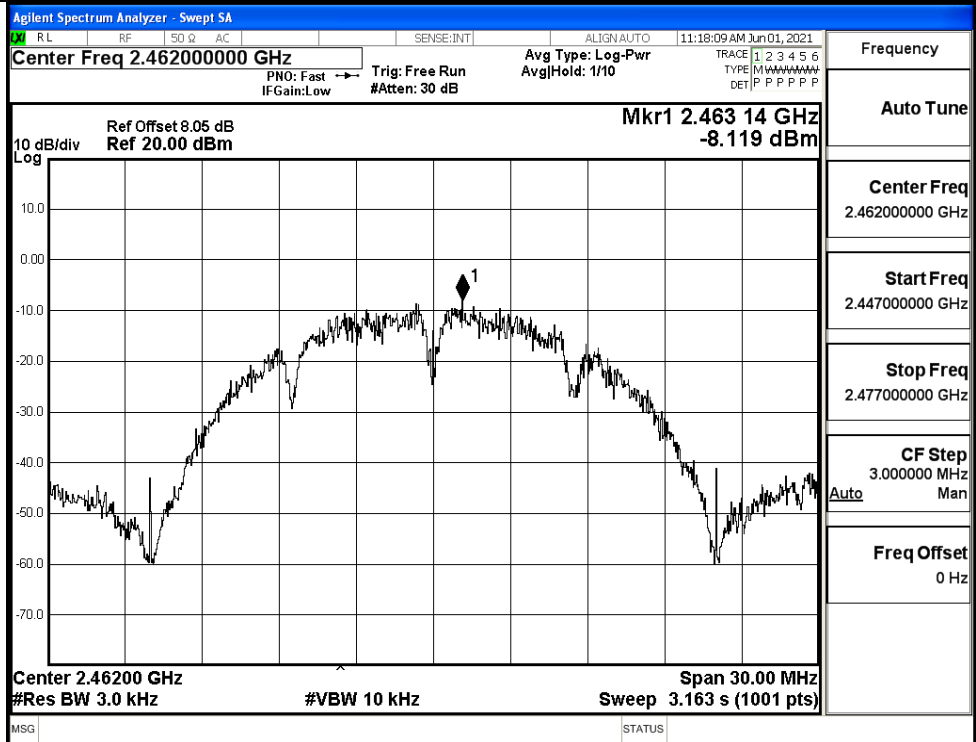
Test Graphs



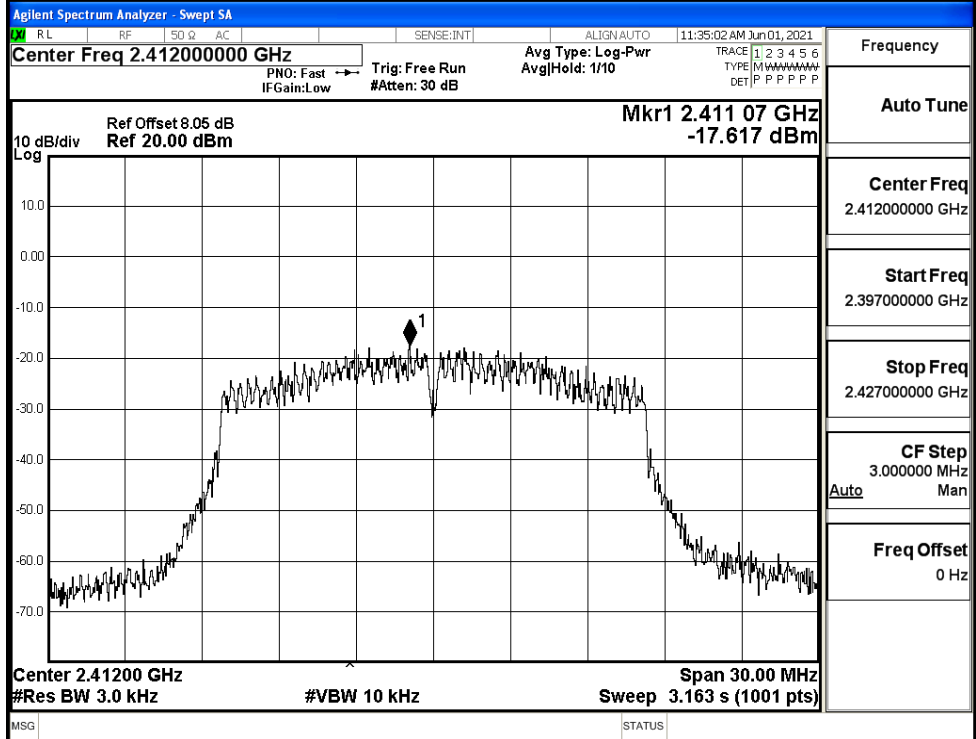
11B/MCH



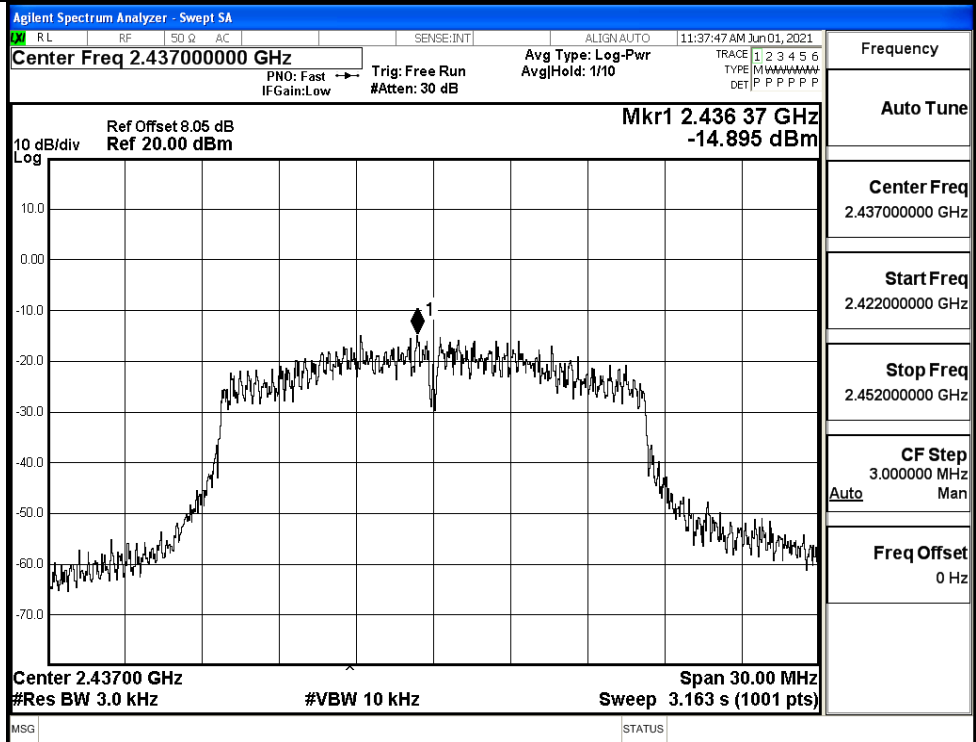
11B/HCH



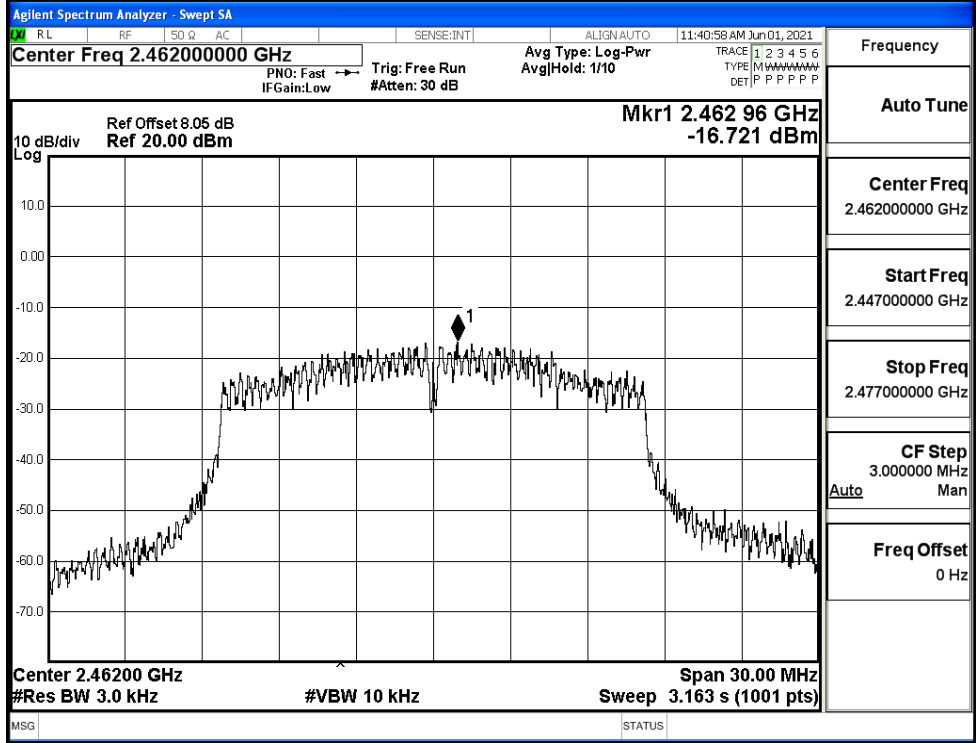
11G/LCH



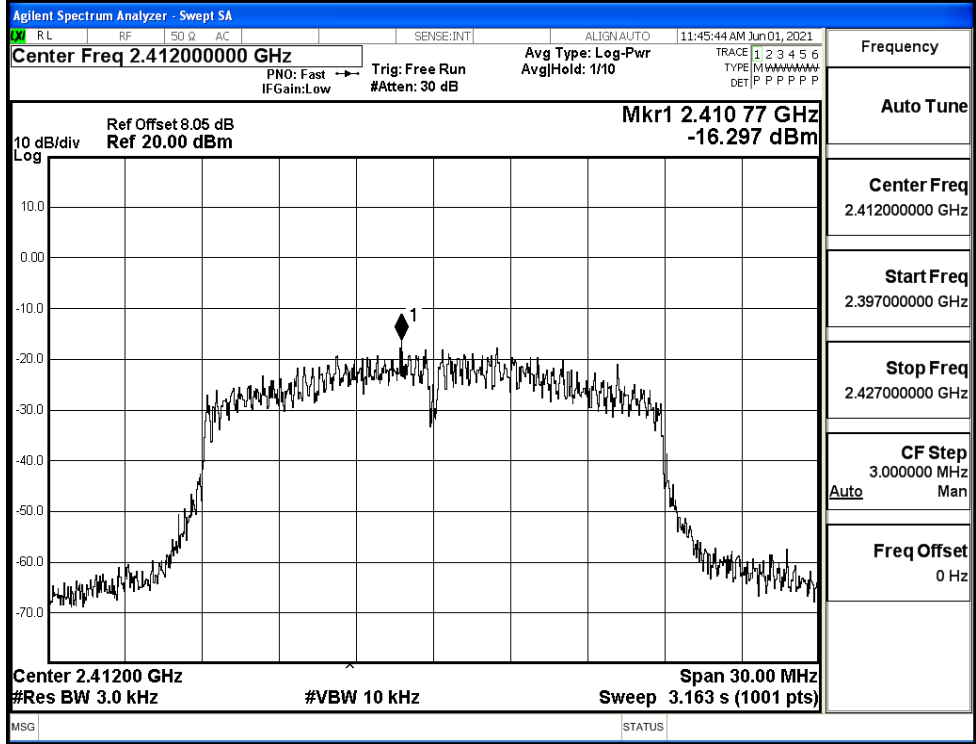
11G/MCH



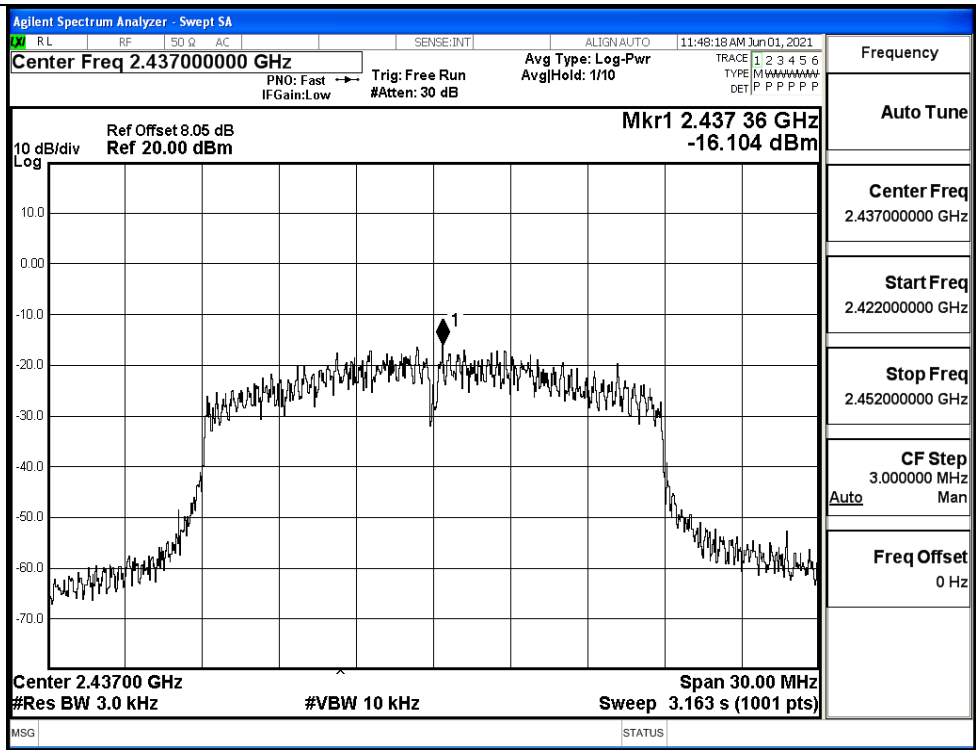
11G/HCH



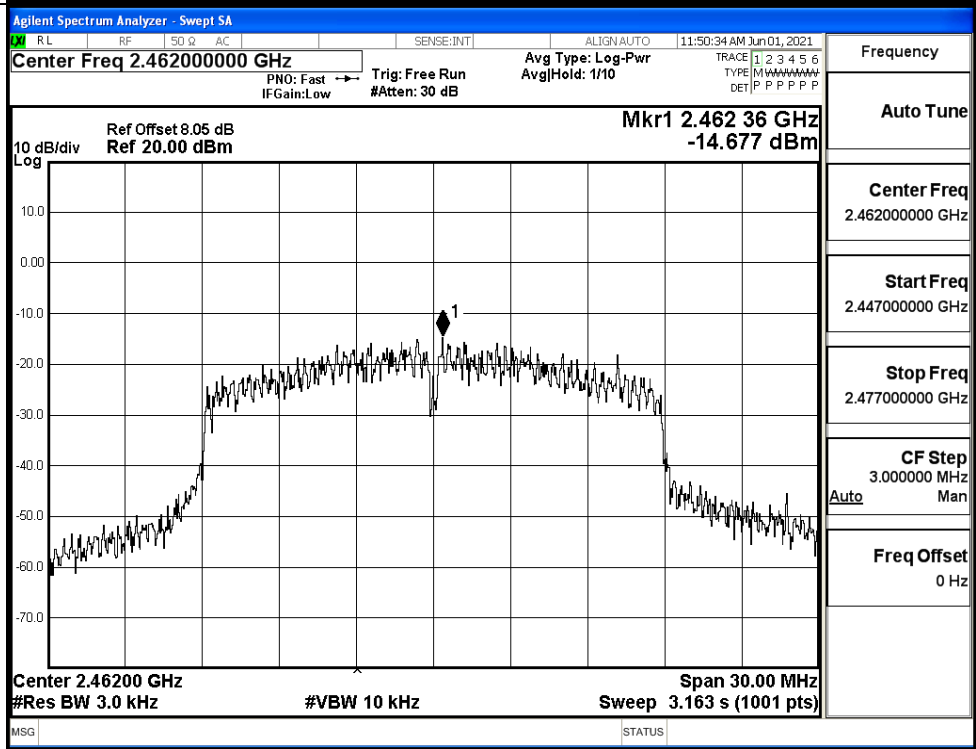
11N20SISO/LCH



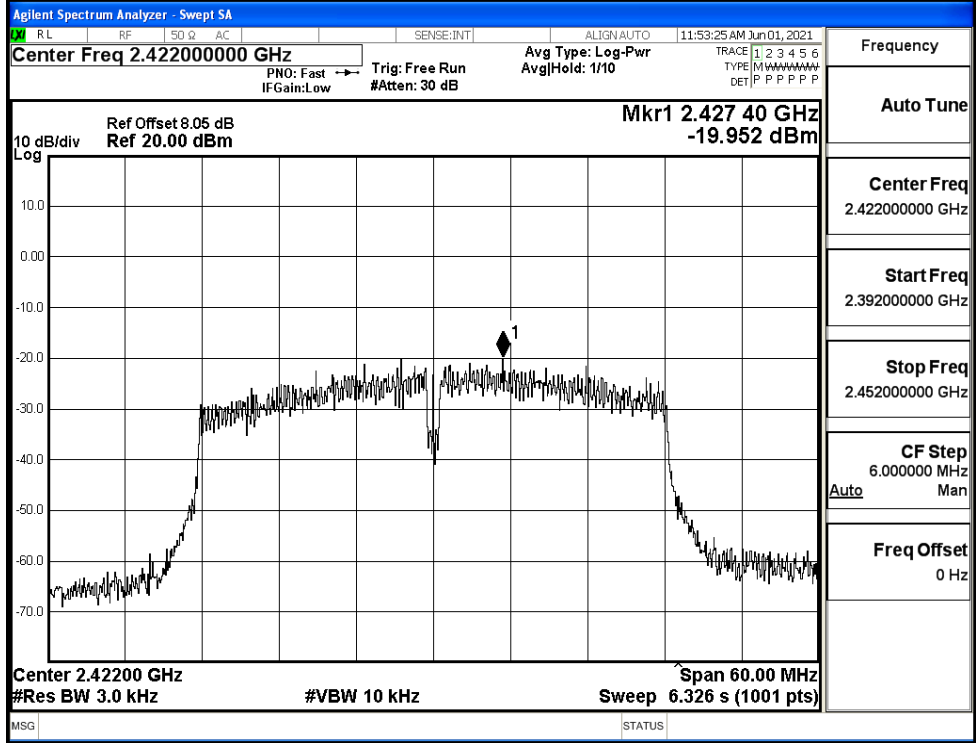
11N20SISO/MCH



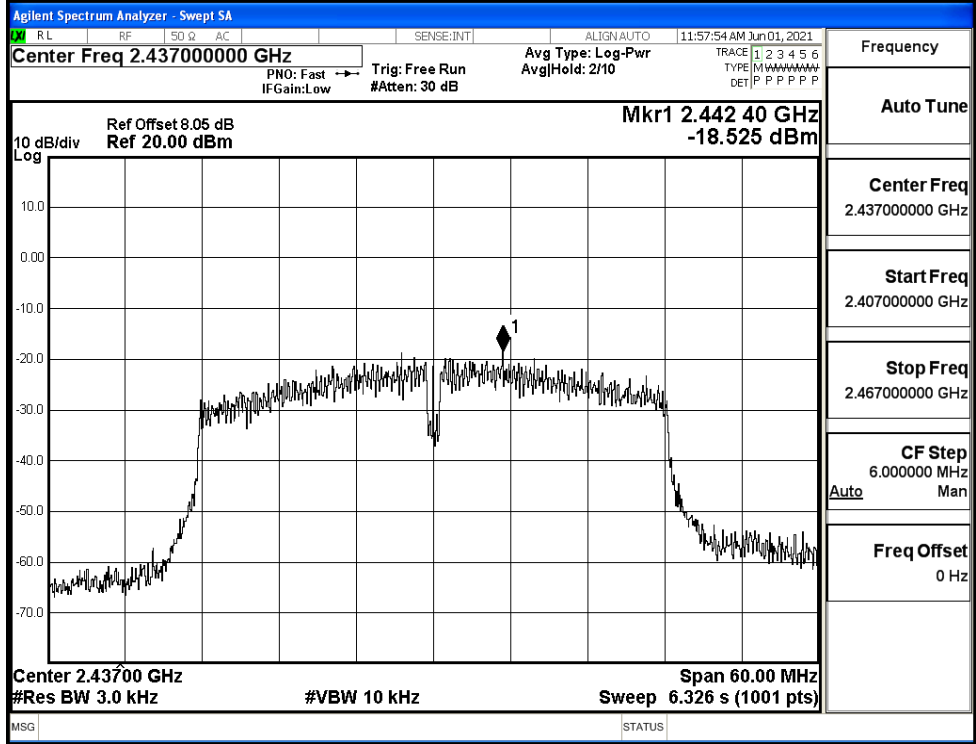
11N20SISO/HCH



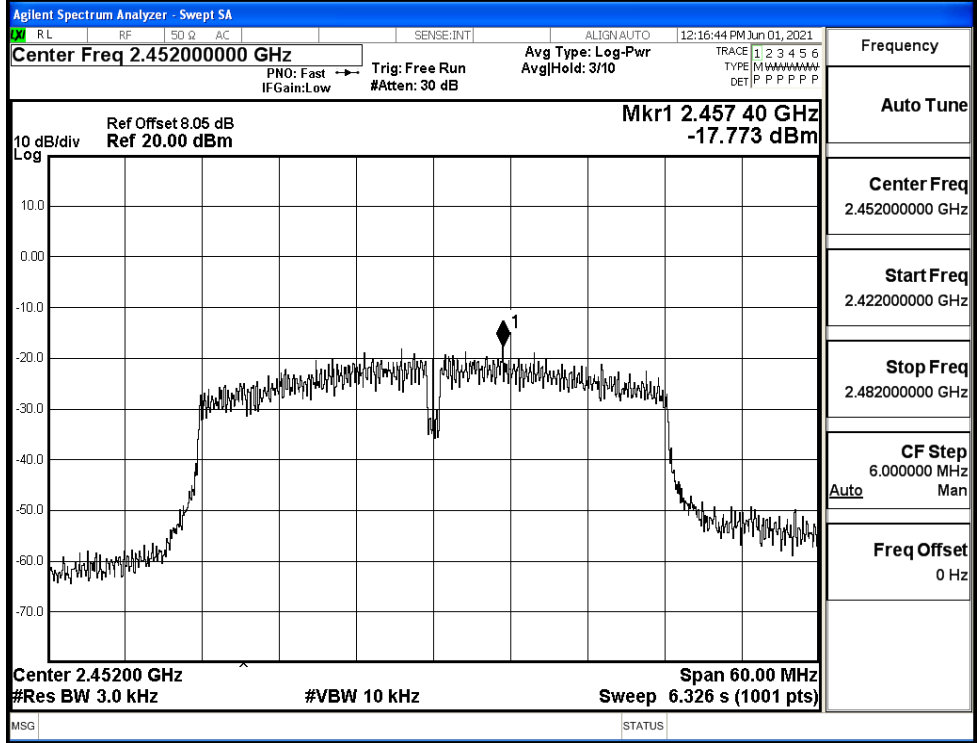
11N40SISO/LCH



11N40SISO/MCH

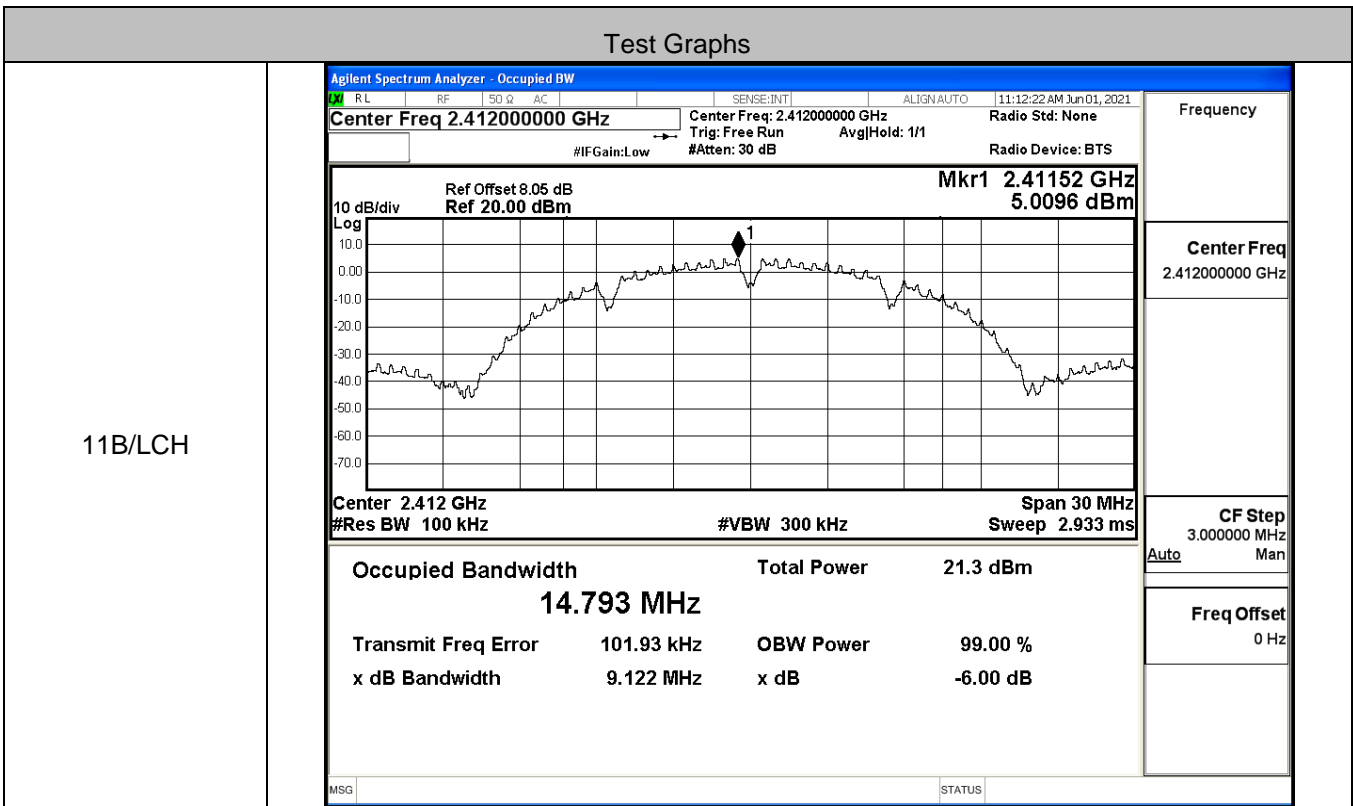


11N40SISO/HCH

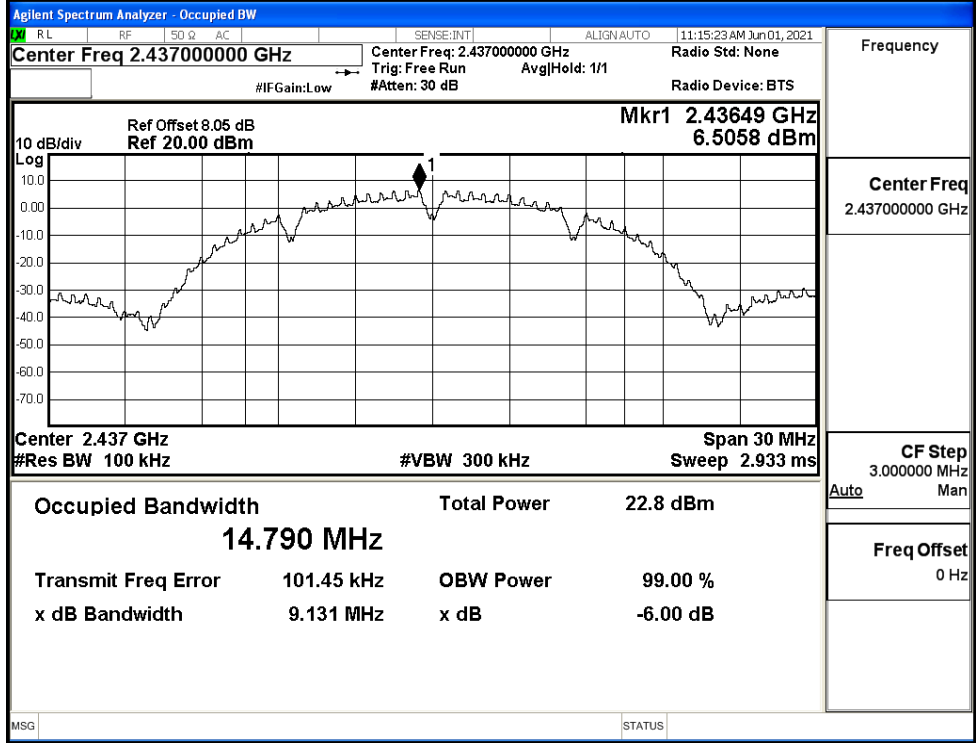


A.4 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	9.122	≥0.5	PASS
	MCH	9.131	≥0.5	PASS
	HCH	9.556	≥0.5	PASS
11G	LCH	13.82	≥0.5	PASS
	MCH	12.59	≥0.5	PASS
	HCH	11.36	≥0.5	PASS
11N20SISO	LCH	13.80	≥0.5	PASS
	MCH	12.58	≥0.5	PASS
	HCH	13.83	≥0.5	PASS
11N40SISO	LCH	31.34	≥0.5	PASS
	MCH	31.31	≥0.5	PASS
	HCH	33.83	≥0.5	PASS



11B/MCH



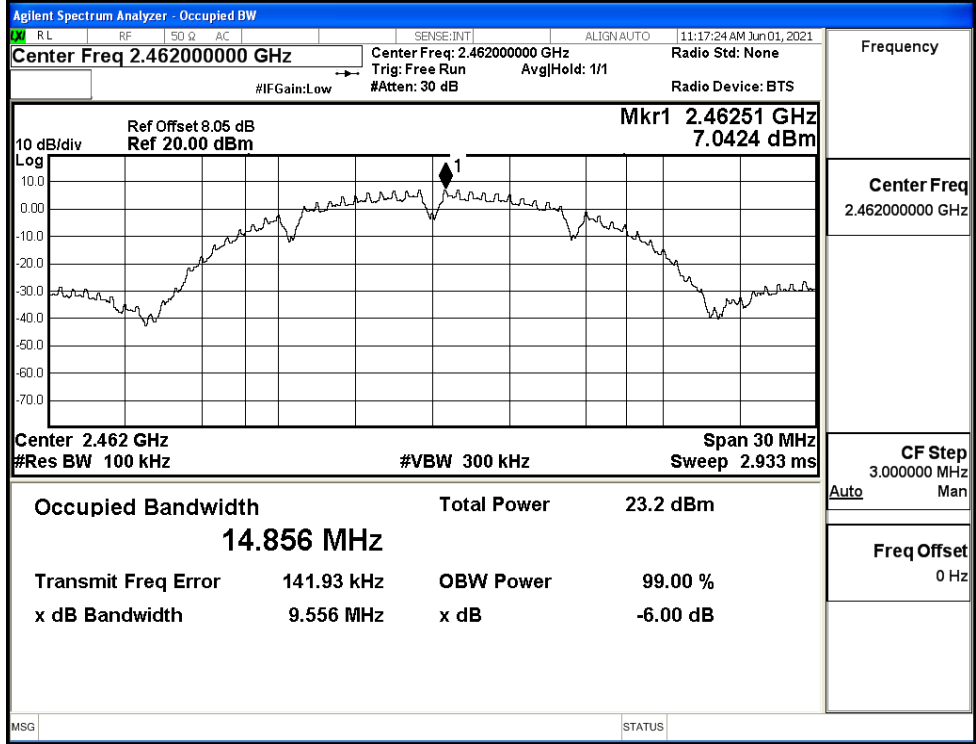
Frequency
2.43700000 GHz

Center Freq
2.43700000 GHz

CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

11B/HCH



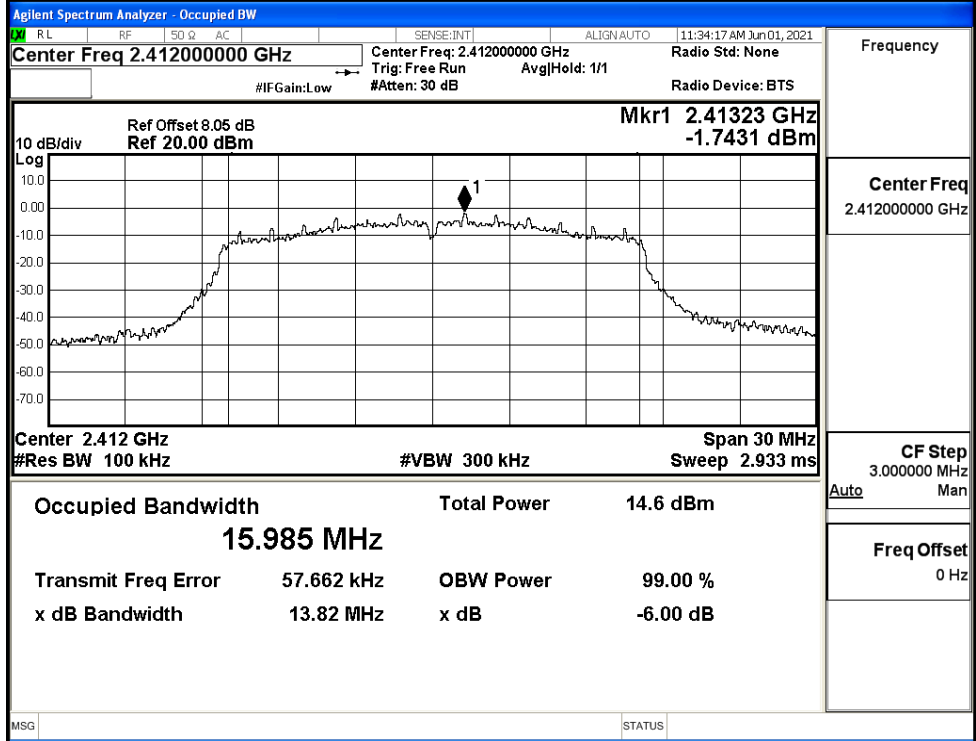
Frequency
2.46200000 GHz

Center Freq
2.46200000 GHz

CF Step
3.000000 MHz
Auto Man

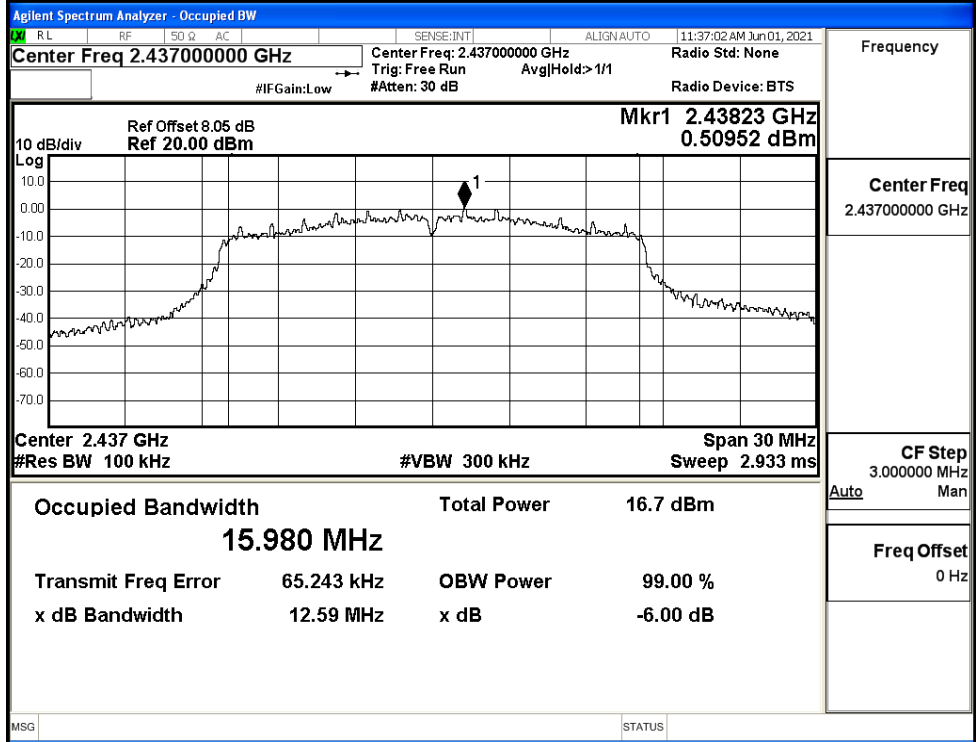
Freq Offset
0 Hz

11G/LCH



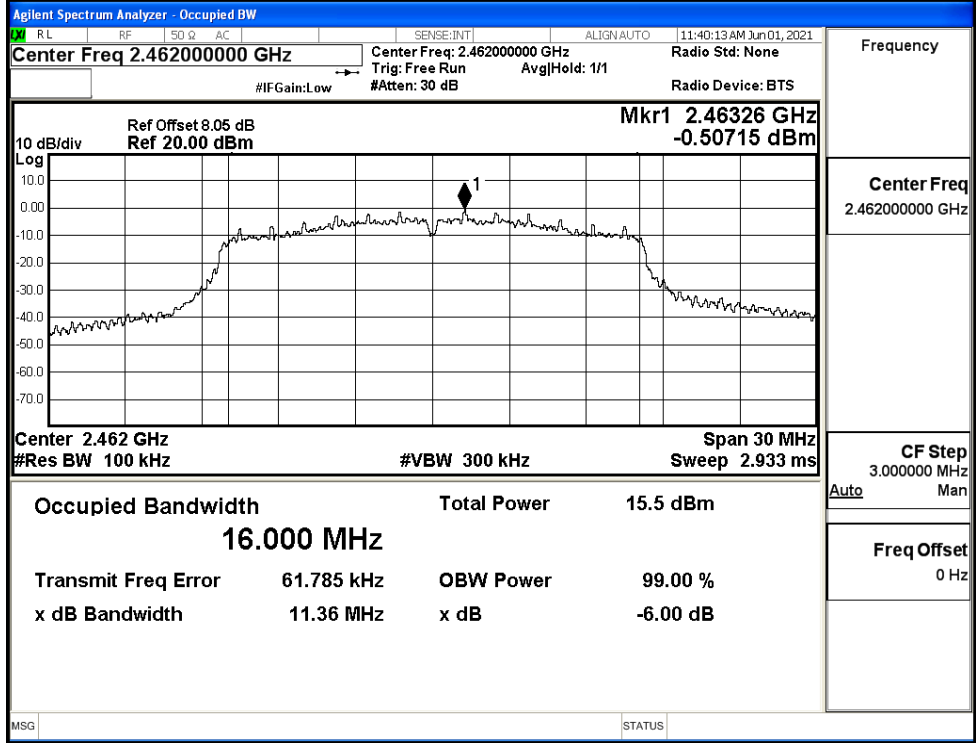
Frequency	2.41200000 GHz
Center Freq	2.41200000 GHz
CF Step	3.000000 MHz
Auto	Man
Freq Offset	0 Hz

11G/MCH

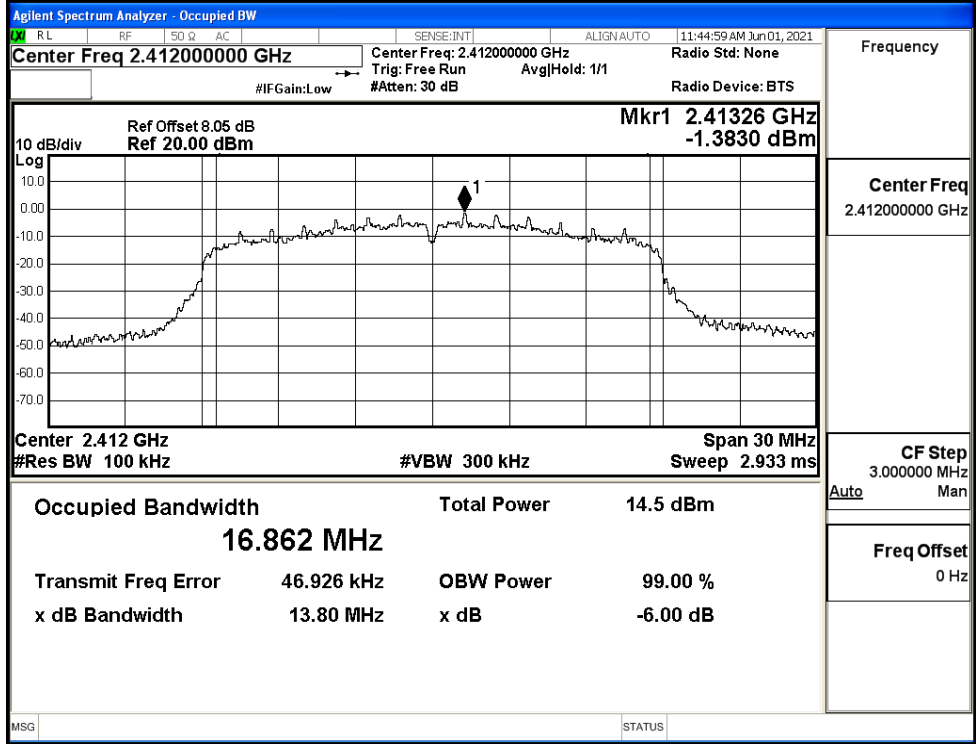


Frequency	2.43700000 GHz
Center Freq	2.43700000 GHz
CF Step	3.000000 MHz
Auto	Man
Freq Offset	0 Hz

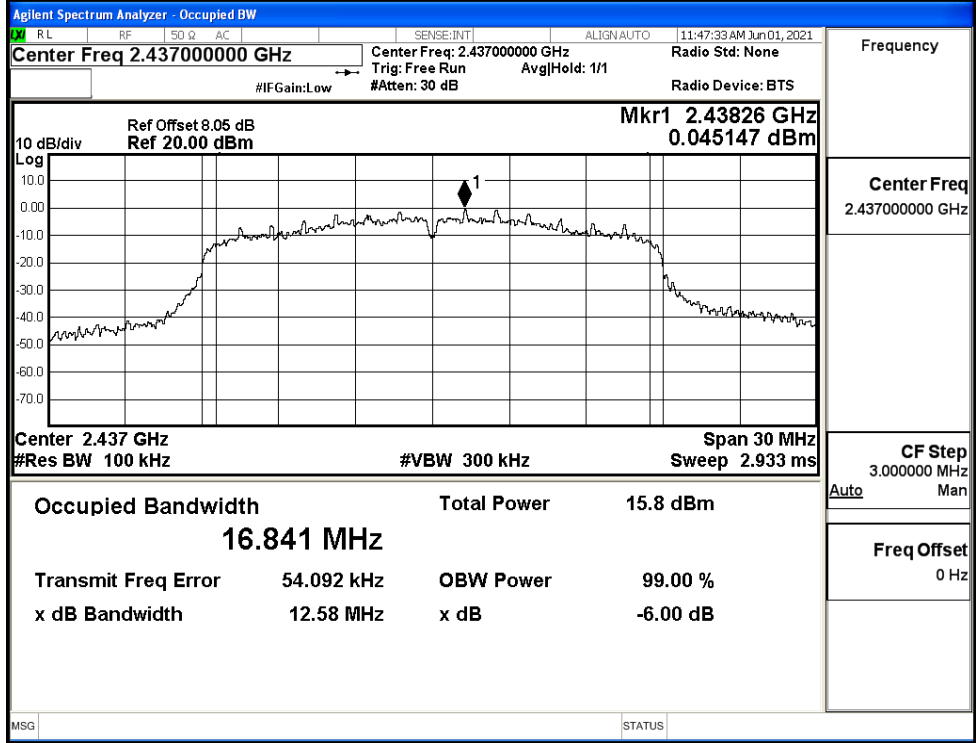
11G/HCH



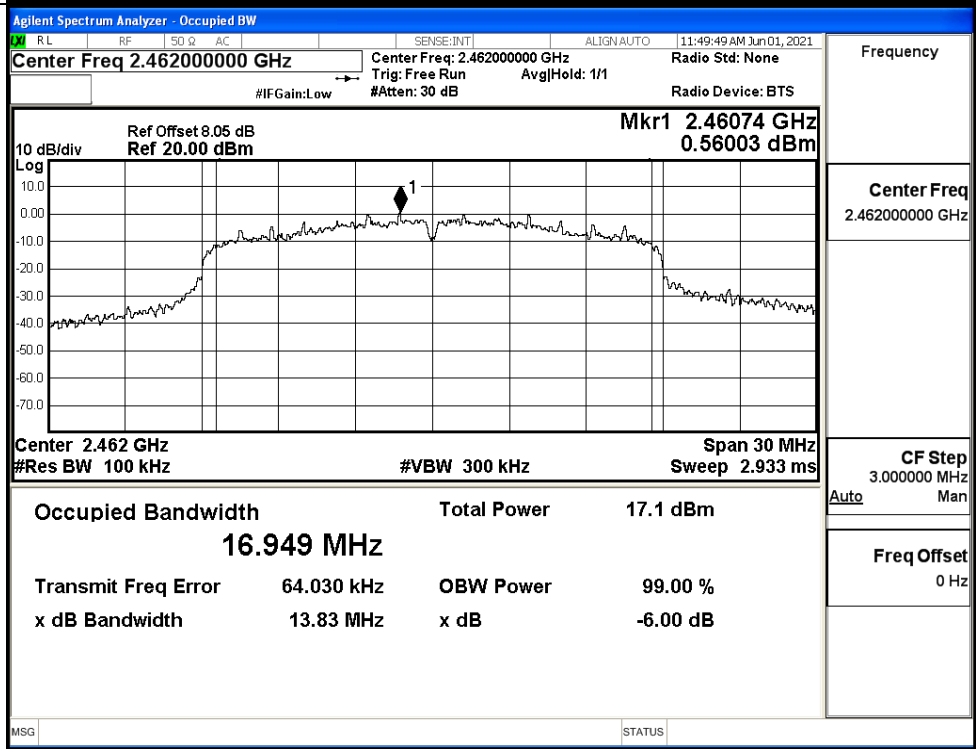
11N20SISO/LCH



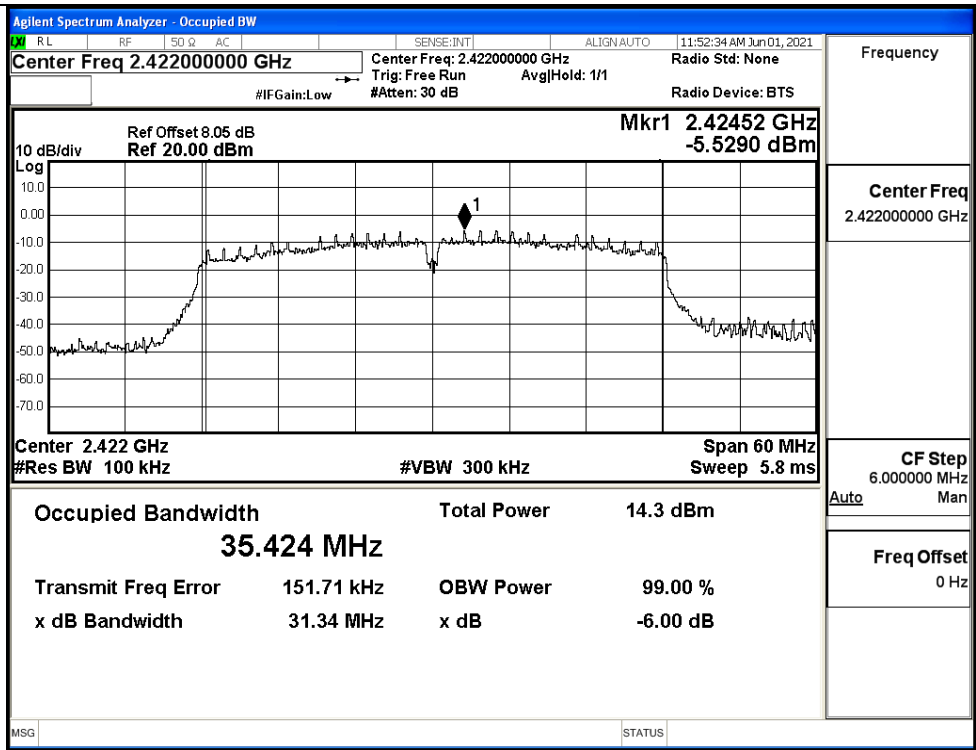
11N20SISO/MCH



11N20SISO/HCH



11N40SISO/LCH



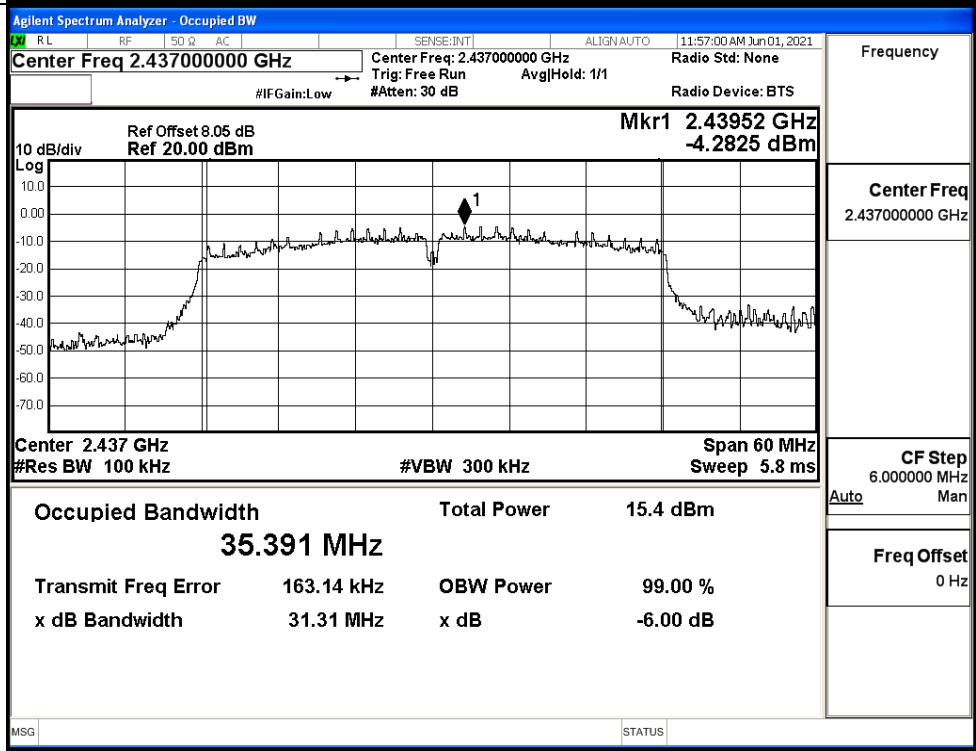
Frequency
2.42200000 GHz

Center Freq
2.42200000 GHz

CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

11N40SISO/MCH



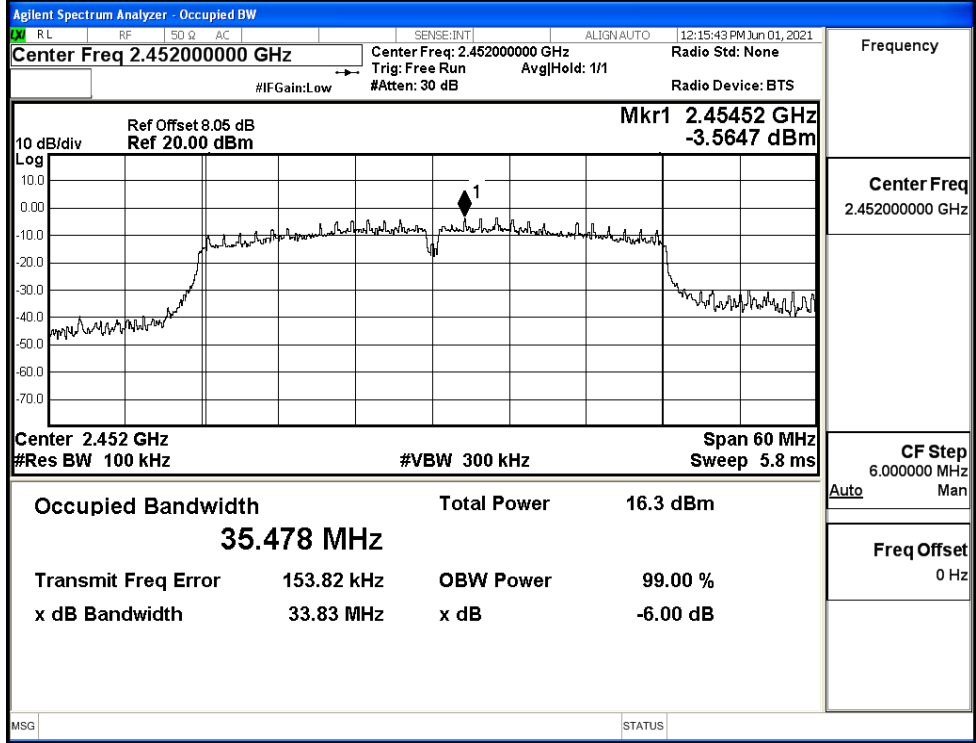
Frequency
2.43700000 GHz

Center Freq
2.43700000 GHz

CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

11N40SISO/HCH



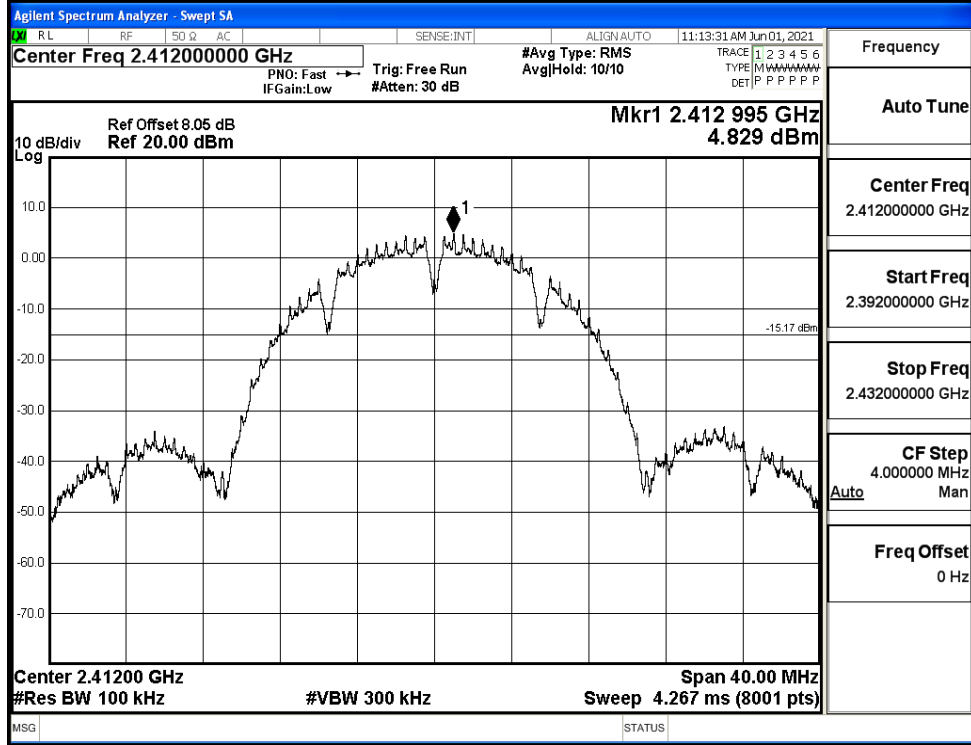
Frequency	Center Freq 2.45200000 GHz
CF Step	6.000000 MHz Auto Man
Freq Offset	0 Hz

A.5 RF Conducted Spurious Emissions

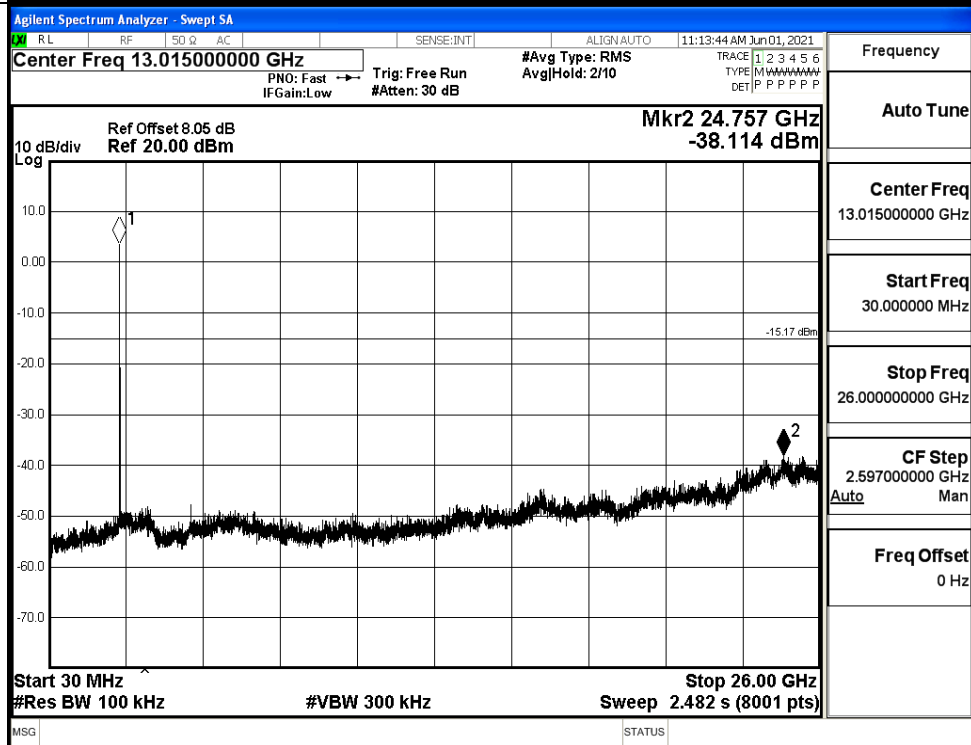
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	4.829	-38.114	-15.171	PASS
	MCH	5.96	-37.660	-14.040	PASS
	HCH	6.848	-37.388	-13.152	PASS
11G	LCH	-1.563	-38.044	-21.563	PASS
	MCH	0.389	-38.080	-19.611	PASS
	HCH	-0.624	-38.489	-20.624	PASS
11N20 SISO	LCH	-2.348	-38.041	-22.348	PASS
	MCH	-0.686	-38.495	-20.686	PASS
	HCH	0.883	-38.131	-19.117	PASS
11N40 SISO	LCH	-5.87	-38.248	-25.870	PASS
	MCH	-4.616	-38.472	-24.616	PASS
	HCH	-3.668	-38.355	-23.668	PASS

11B_LCH_Graphs

Pref/11B/LCH

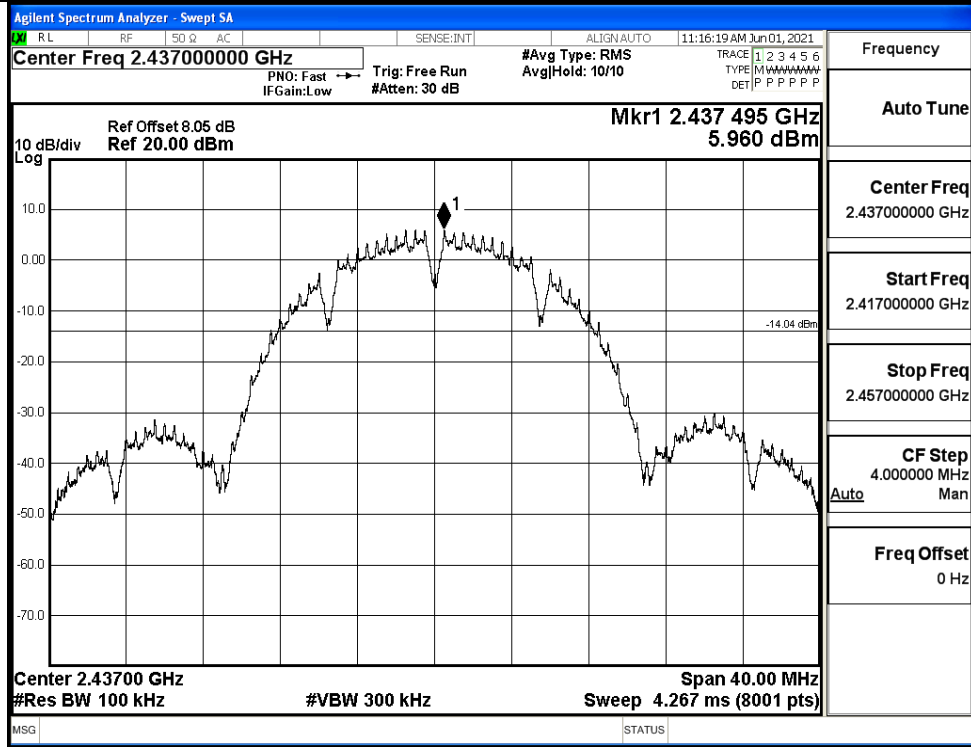


Puw/11B/LCH

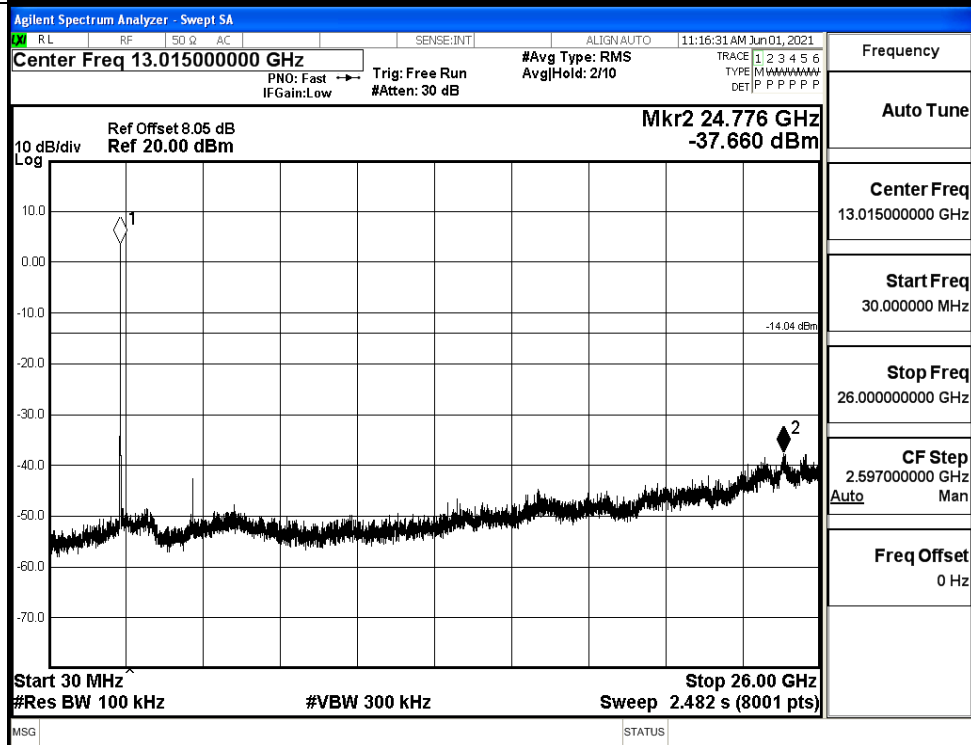


11B_MCH_Graphs

Pref/11B/MCH

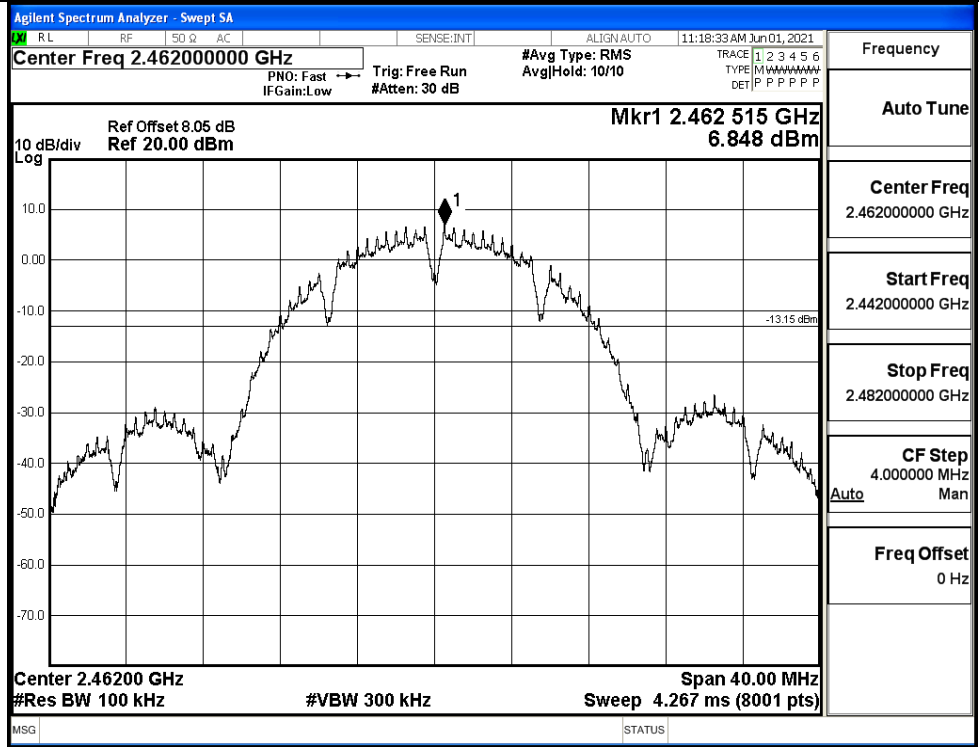


Puw/11B/MCH

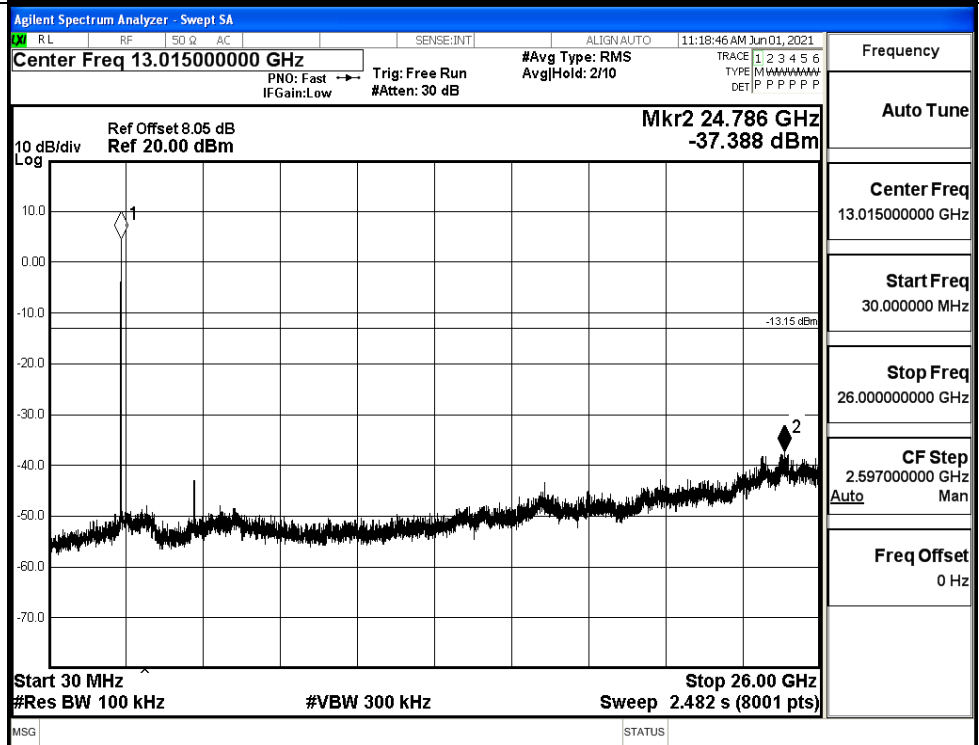


11B_HCH_Graphs

Pref/11B/HCH

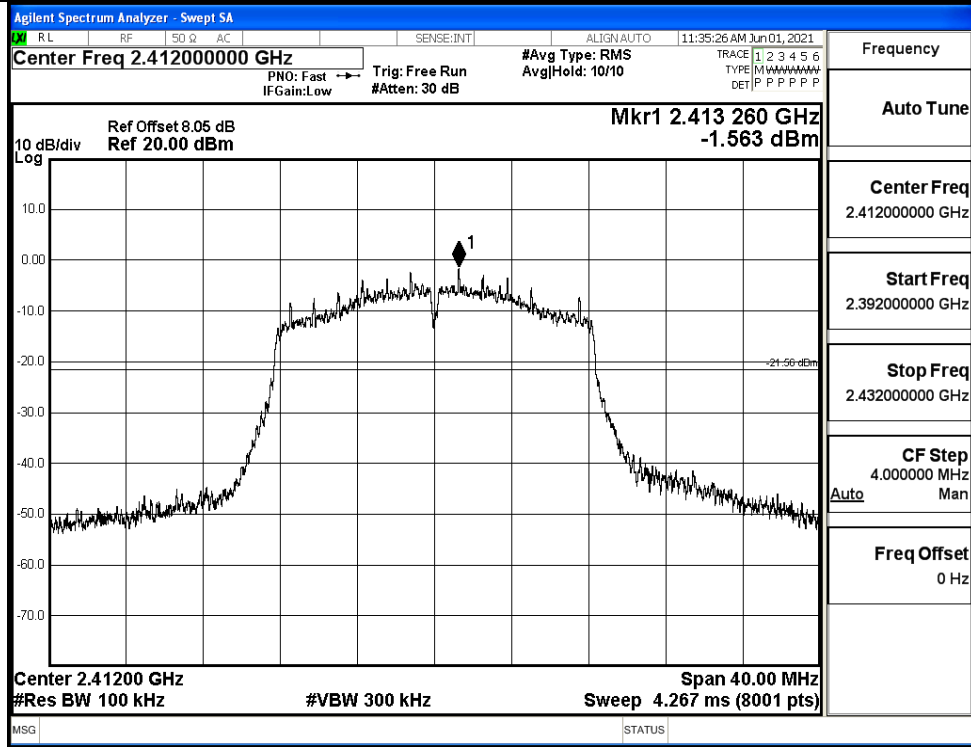


Puw/11B/HCH

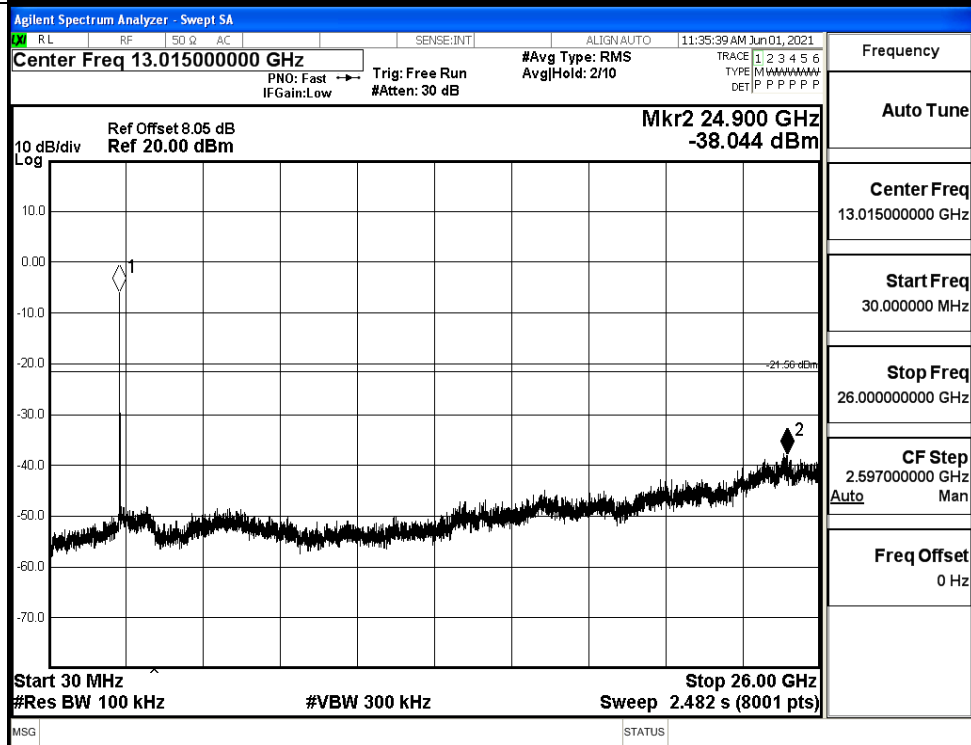


11G_LCH_Graphs

Pref/11G/LCH

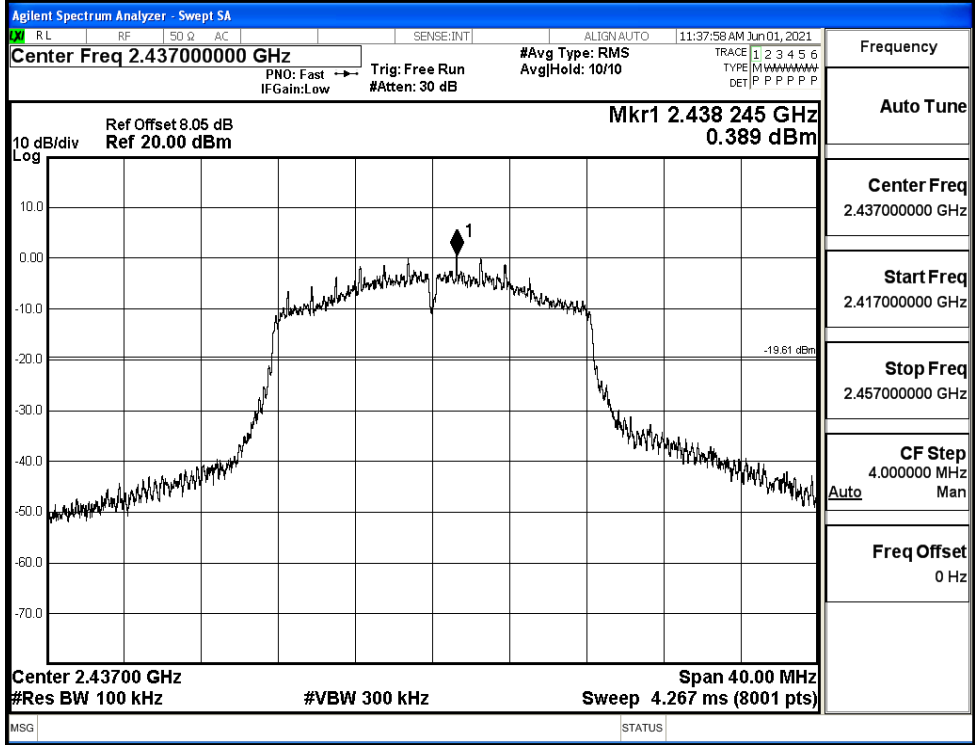


Puw/11G/LCH



11G_MCH_Graphs

Pref/11G/MCH

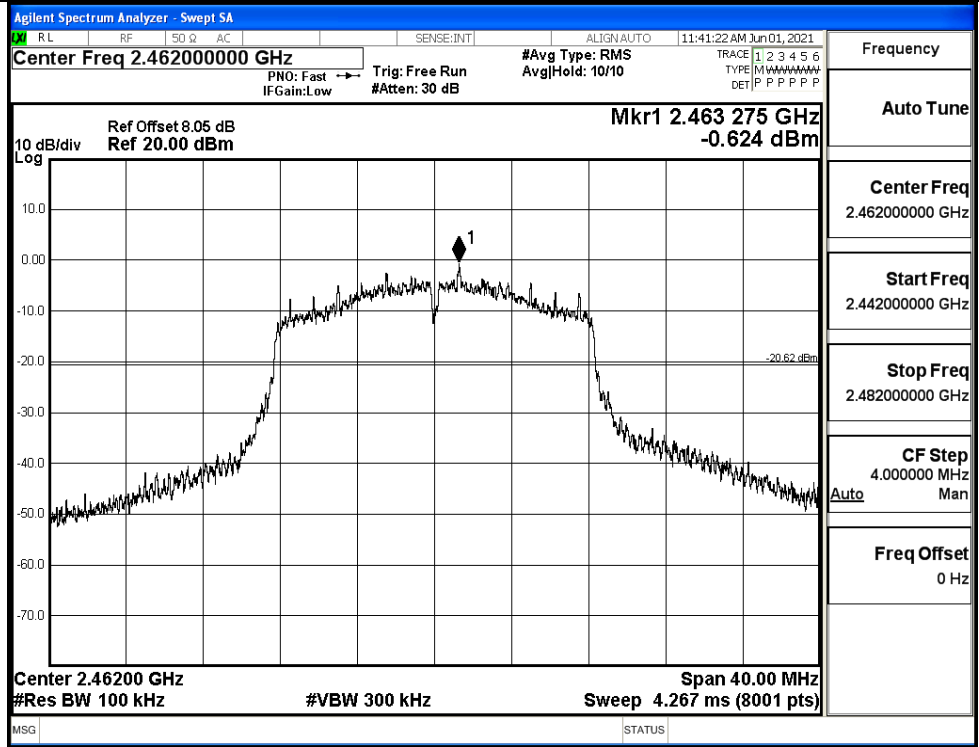


Puw/11G/MCH

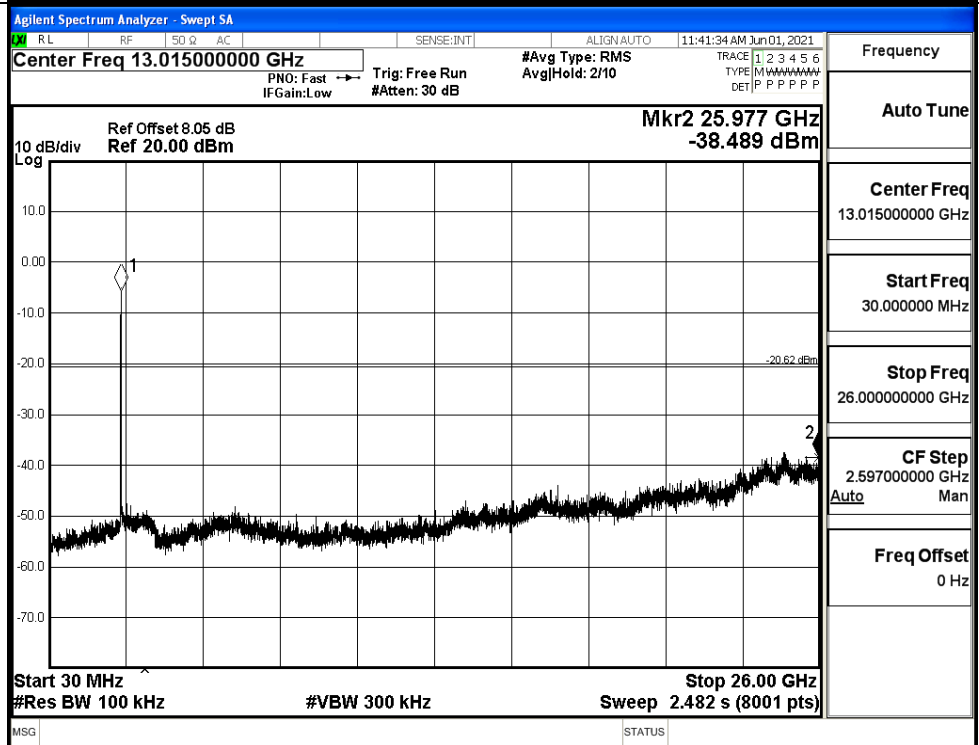


11G_HCH_Graphs

Pref/11G/HCH

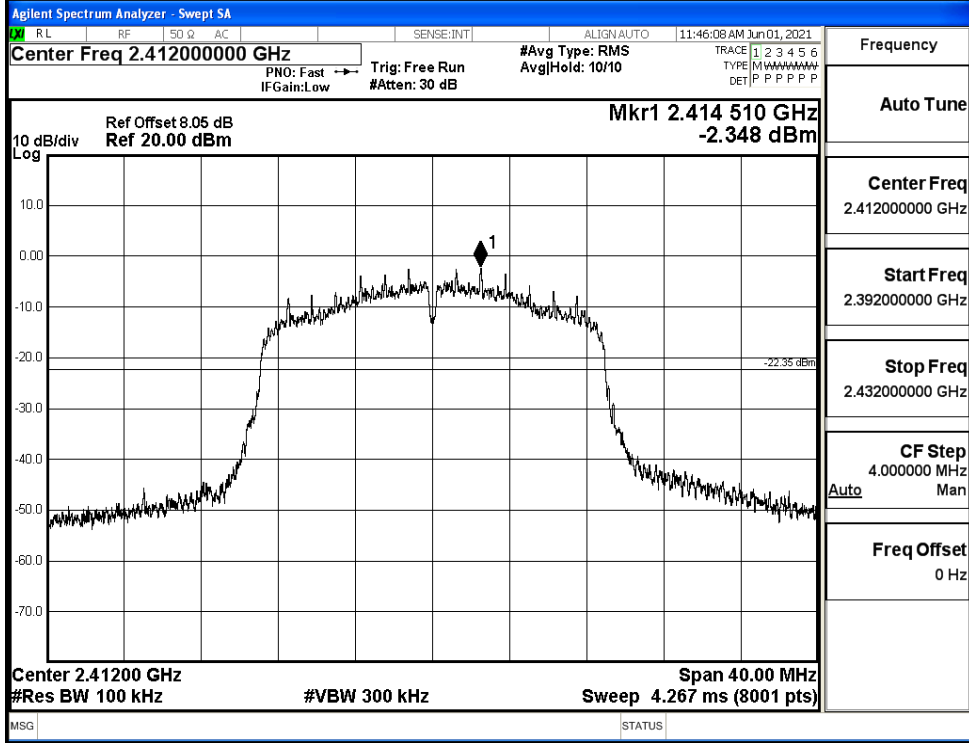


Puw/11G/HCH

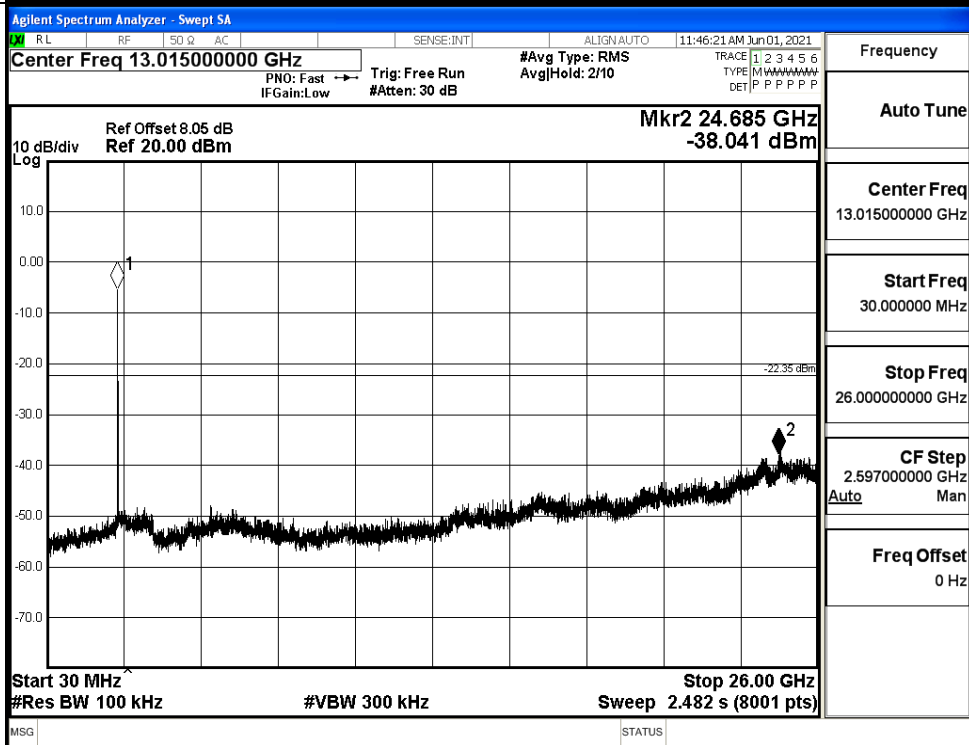


11N20SISO_LCH_Graphs

Pref/11N20SIS
O/LCH

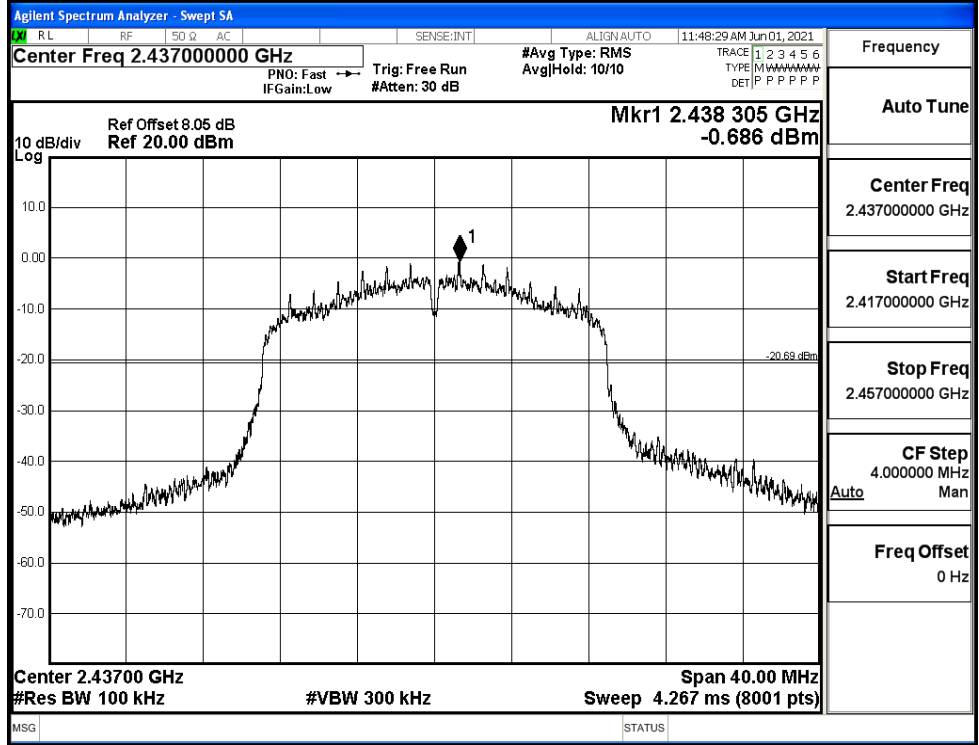


Puw/11N20
SISO/LCH

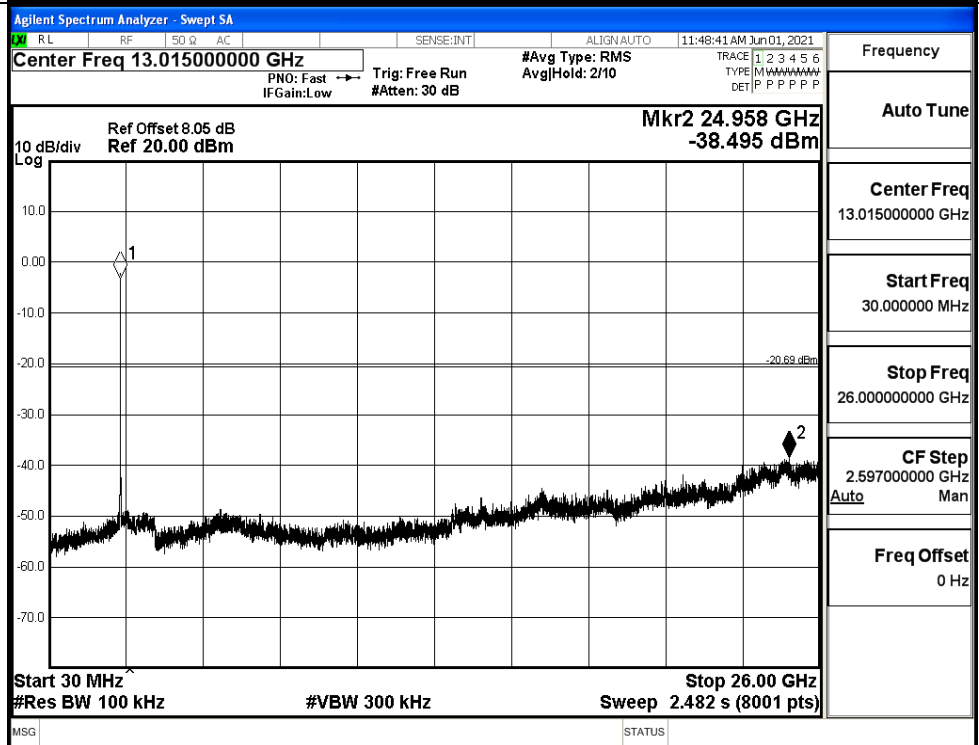


11N20SISO_MCH_Graphs

Pref/11N20
SISO/MCH

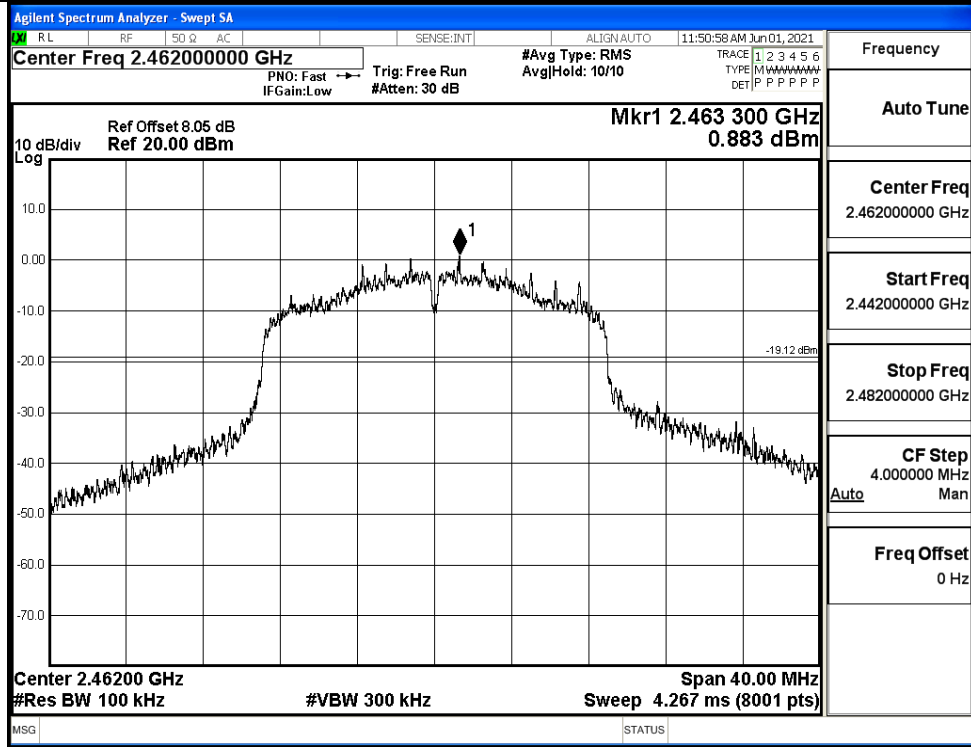


Puw/11N20
SISO/MCH

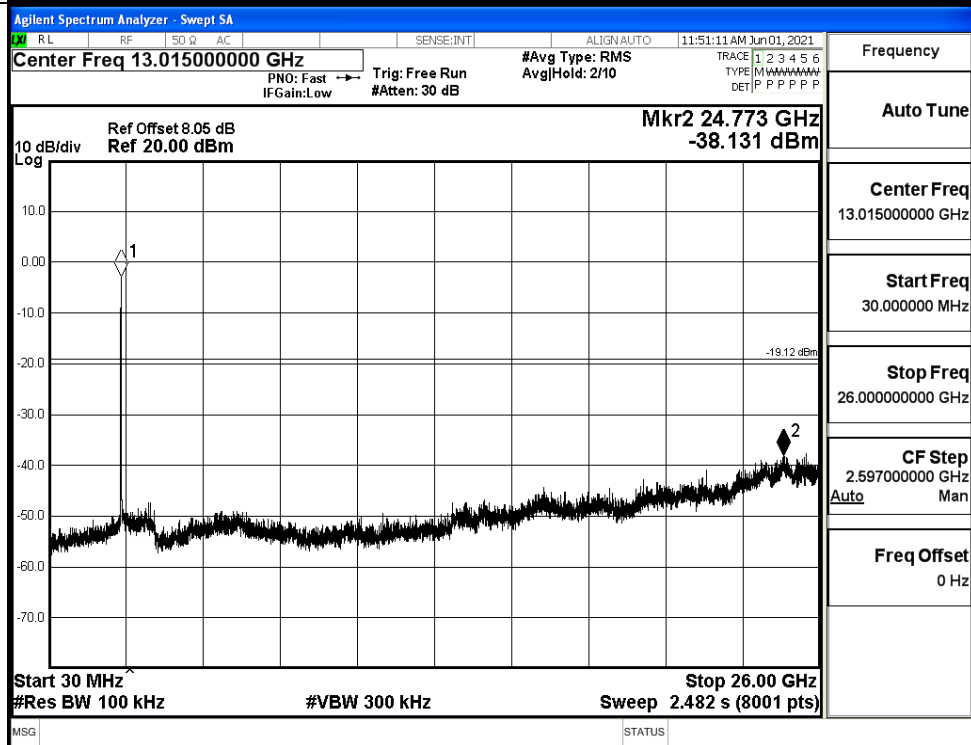


11N20SISO_HCH_Graphs

Pref/11N20
SISO/HCH

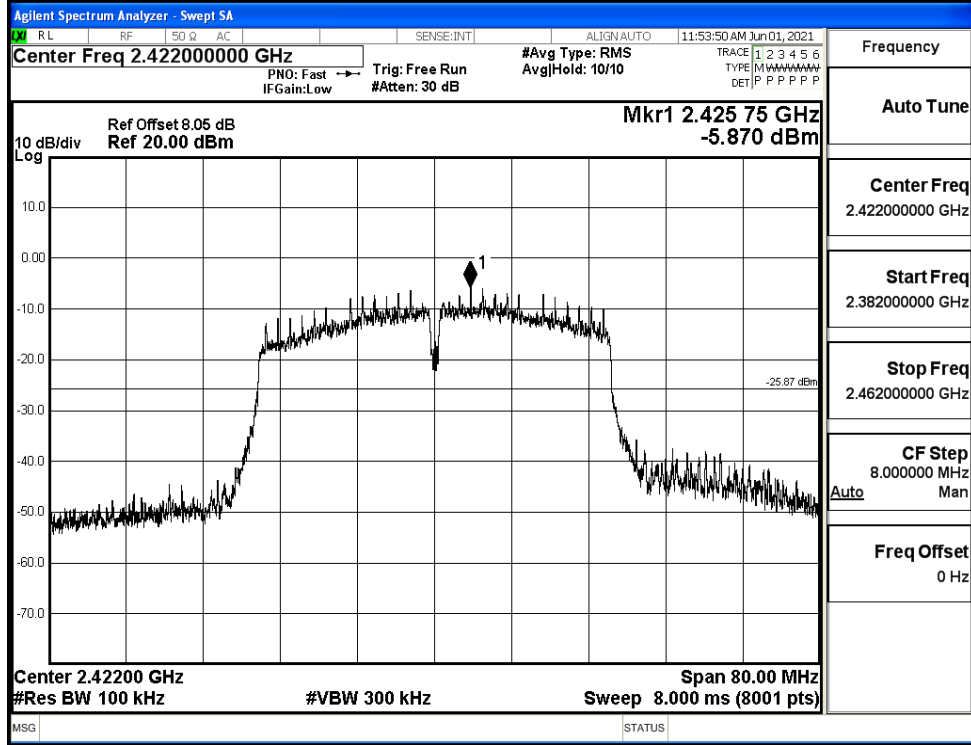


Puw/11N20
SISO/HCH

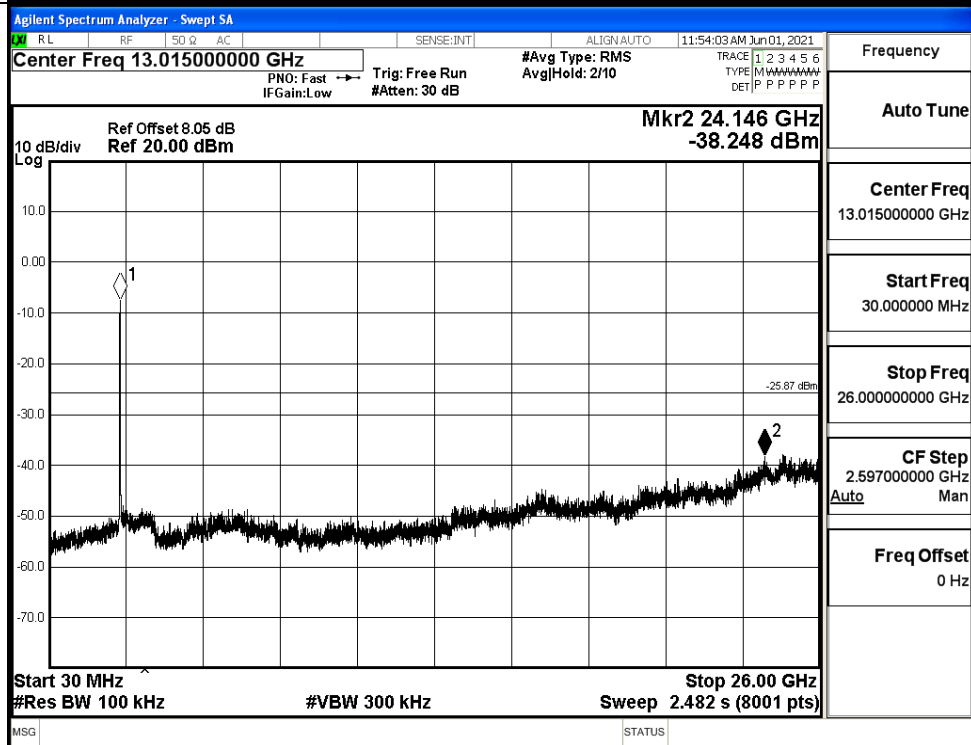


11N40SISO_LCH_Graphs

Pref/11N40
SISO/LCH

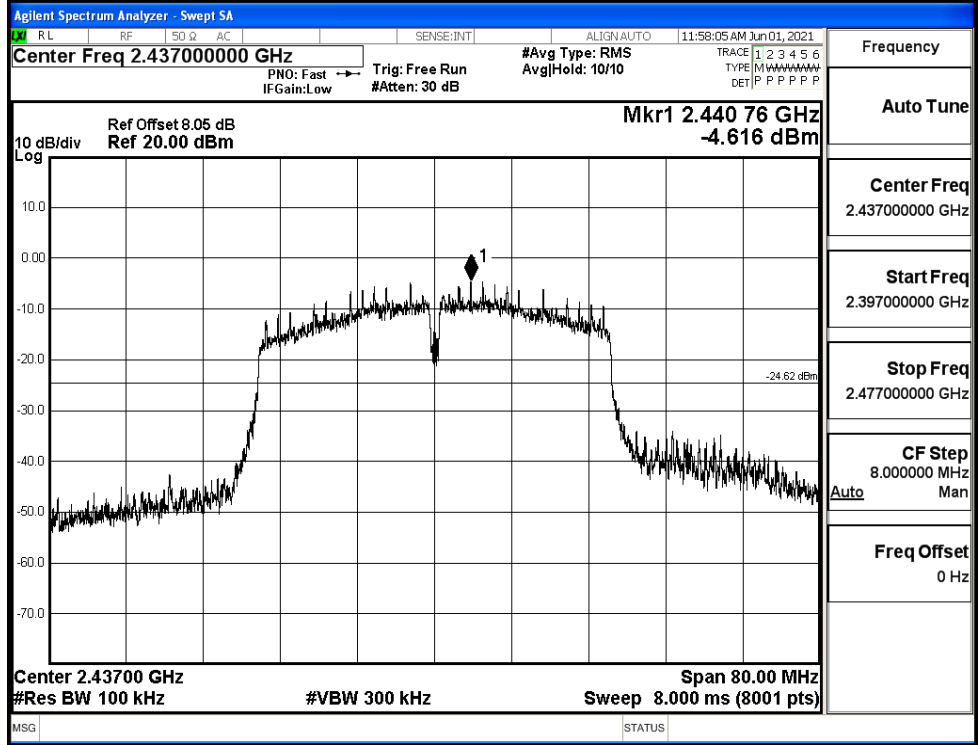


Puw/11N40
SISO/LCH

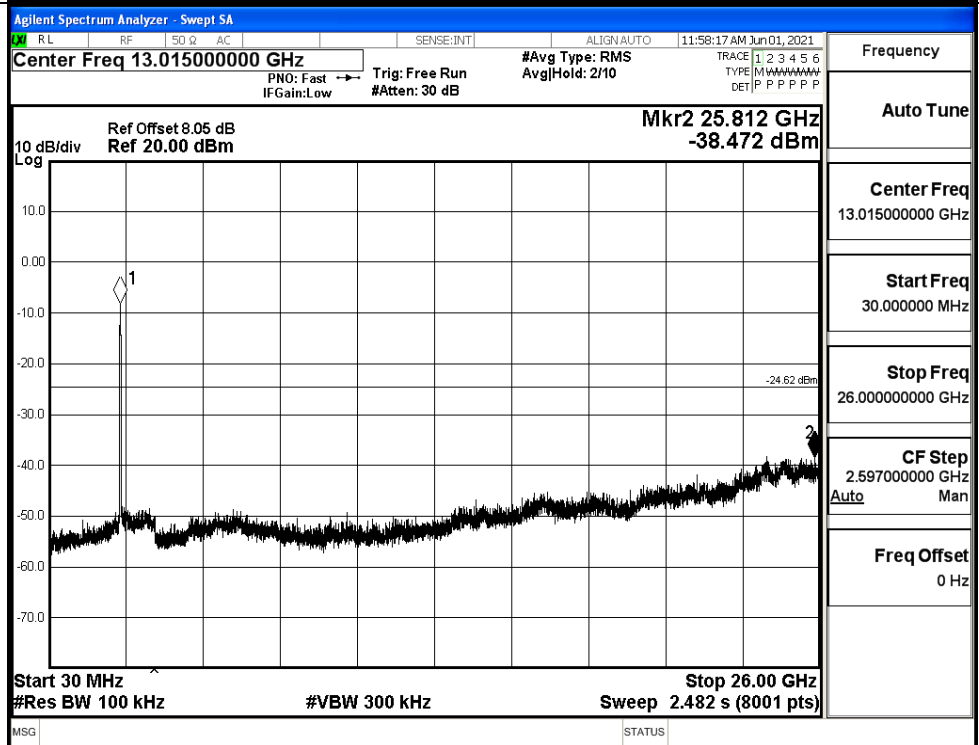


11N40SISO_MCH_Graphs

Pref/11N40
SISO/MCH

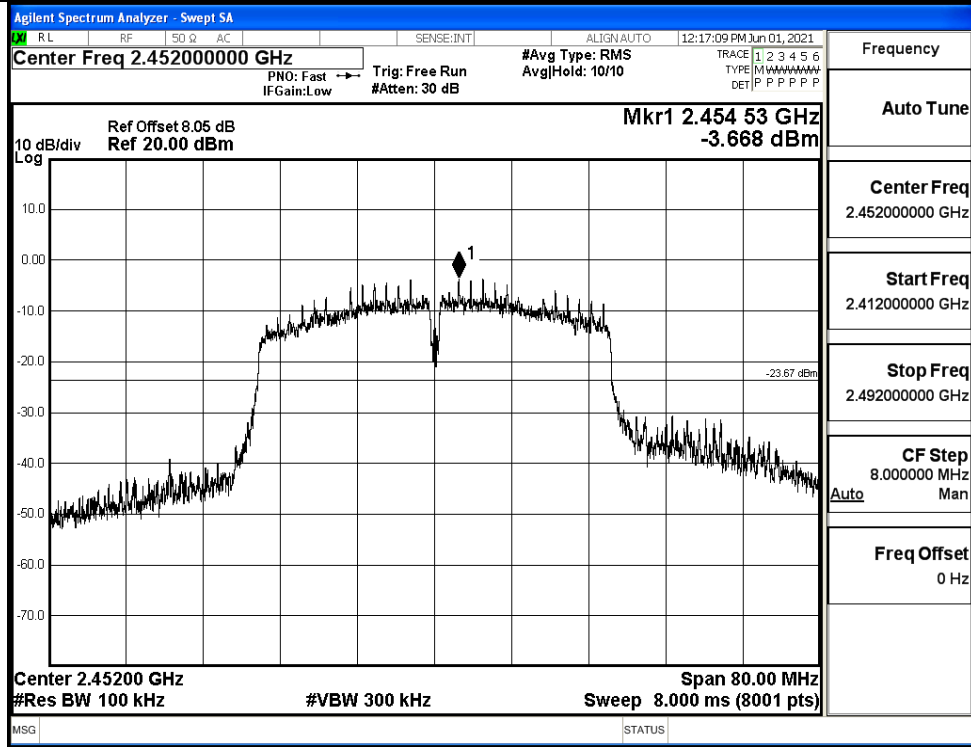


Puw/11N40
SISO/MCH

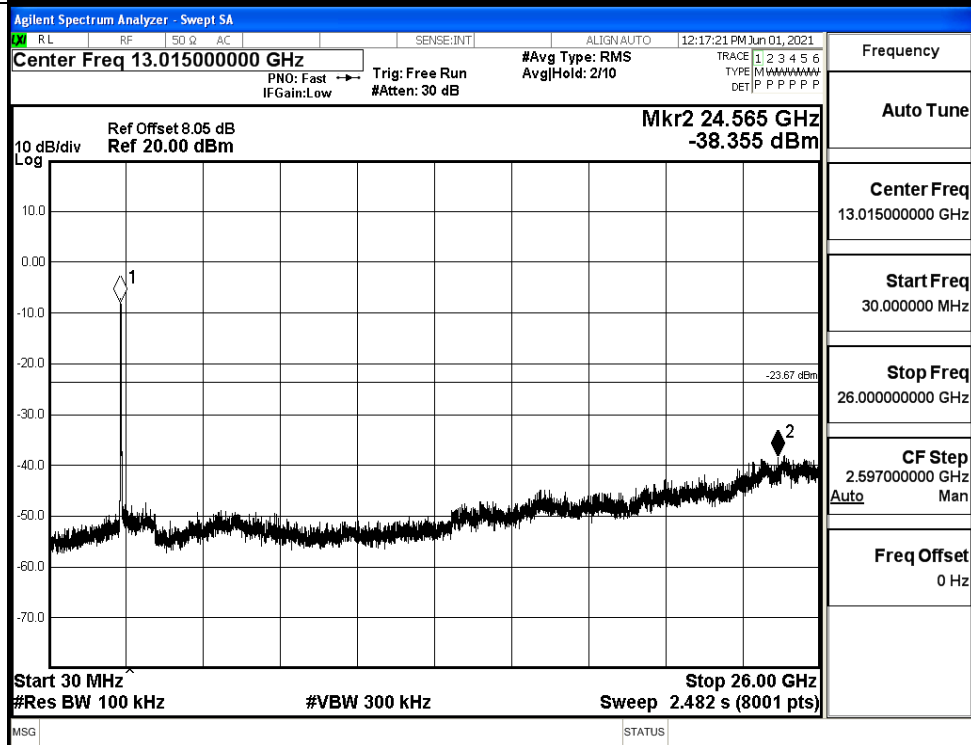


11N40SISO_HCH_Graphs

Pref/11N40
SISO/HCH

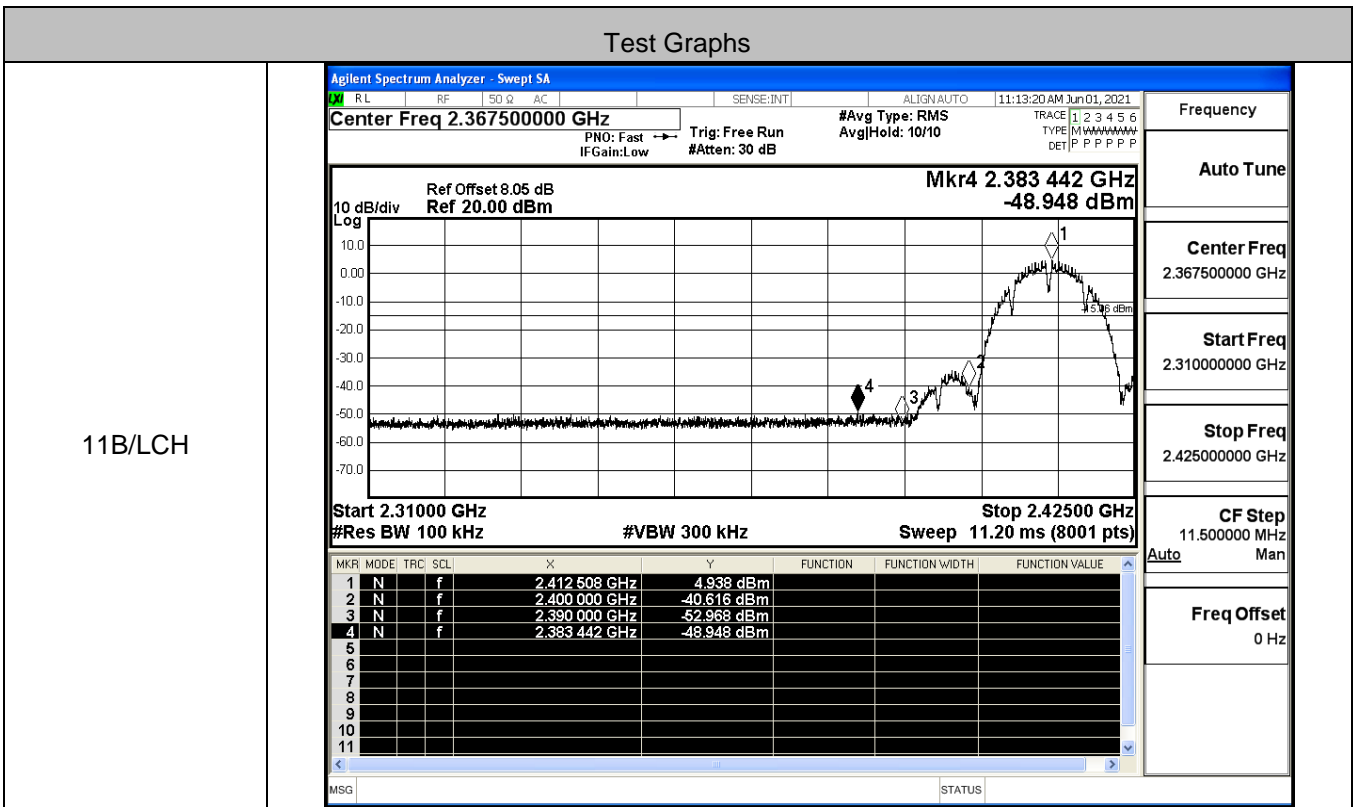


Puw/11N40
SISO/HCH

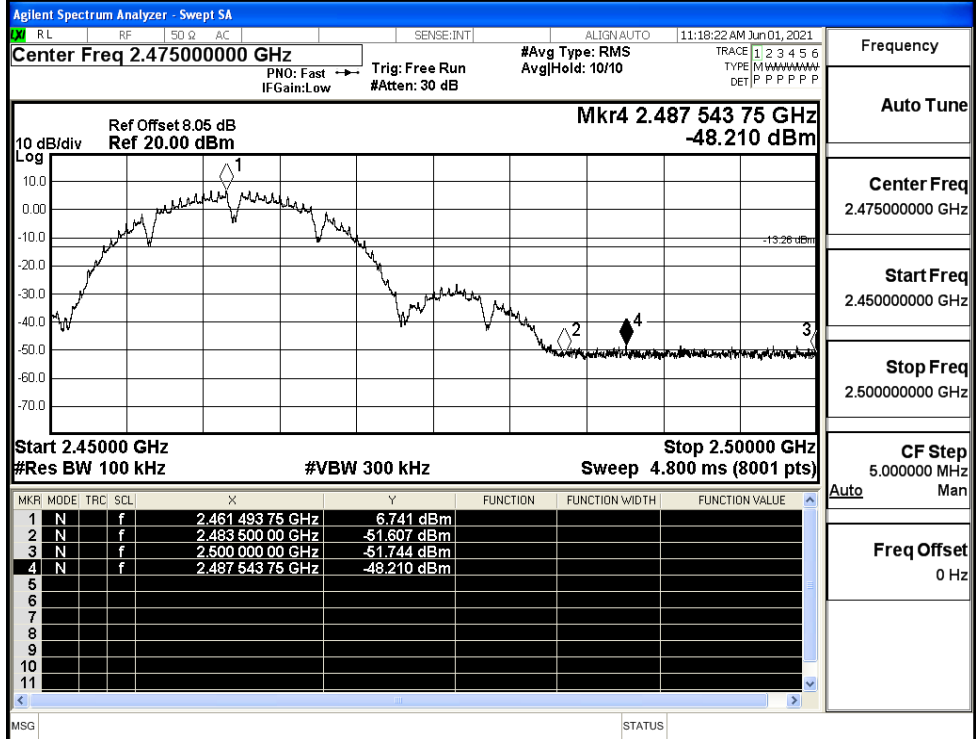


A.6 Band-edge for RF Conducted Emissions

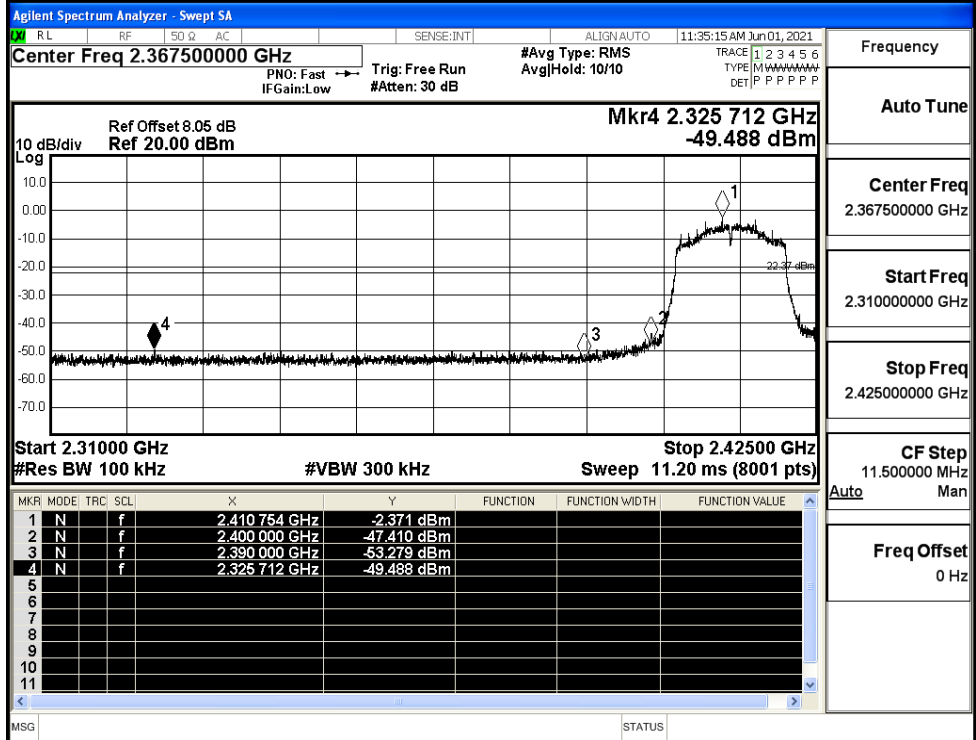
Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	4.938	-48.948	-15.06	PASS
	HCH	6.741	-48.210	-13.26	PASS
11G	LCH	-2.371	-49.488	-22.37	PASS
	HCH	-0.641	-45.849	-20.64	PASS
11N20SISO	LCH	-2.304	-49.334	-22.3	PASS
	HCH	1.378	-42.383	-18.62	PASS
11N40SISO	LCH	-5.768	-47.351	-25.77	PASS
	HCH	-3.921	-35.158	-23.92	PASS



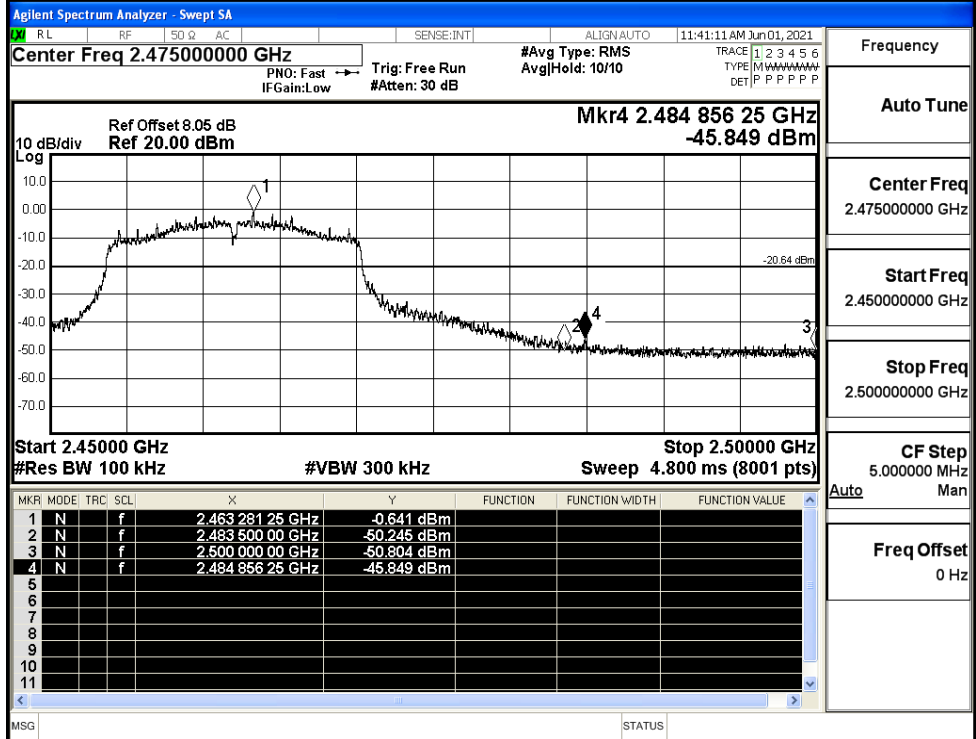
11B/HCH



11G/LCH

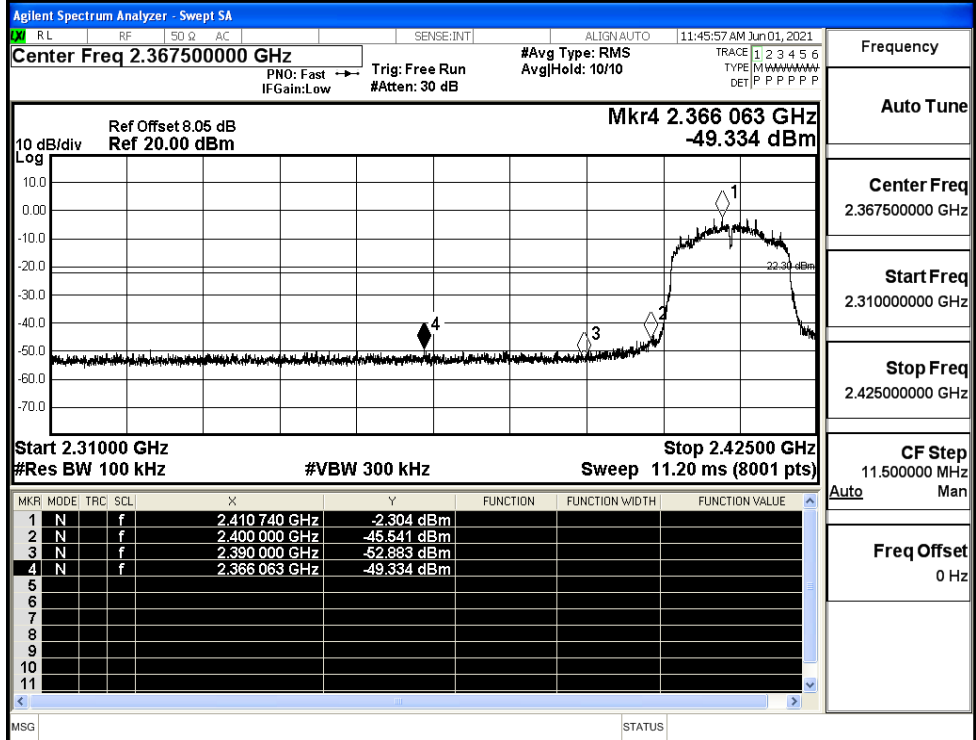


11G/HCH



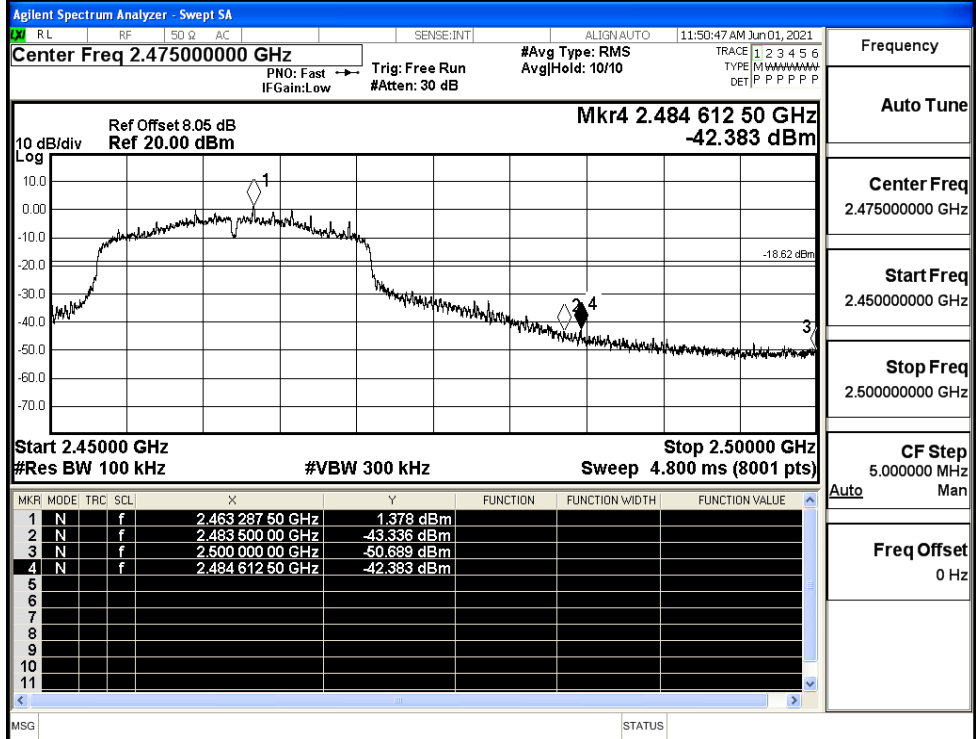
Frequency	2.47500000 GHz
Auto Tune	
Center Freq	2.47500000 GHz
Start Freq	2.45000000 GHz
Stop Freq	2.50000000 GHz
CF Step	5.000000 MHz
Freq Offset	0 Hz

11N20SISO/LCH



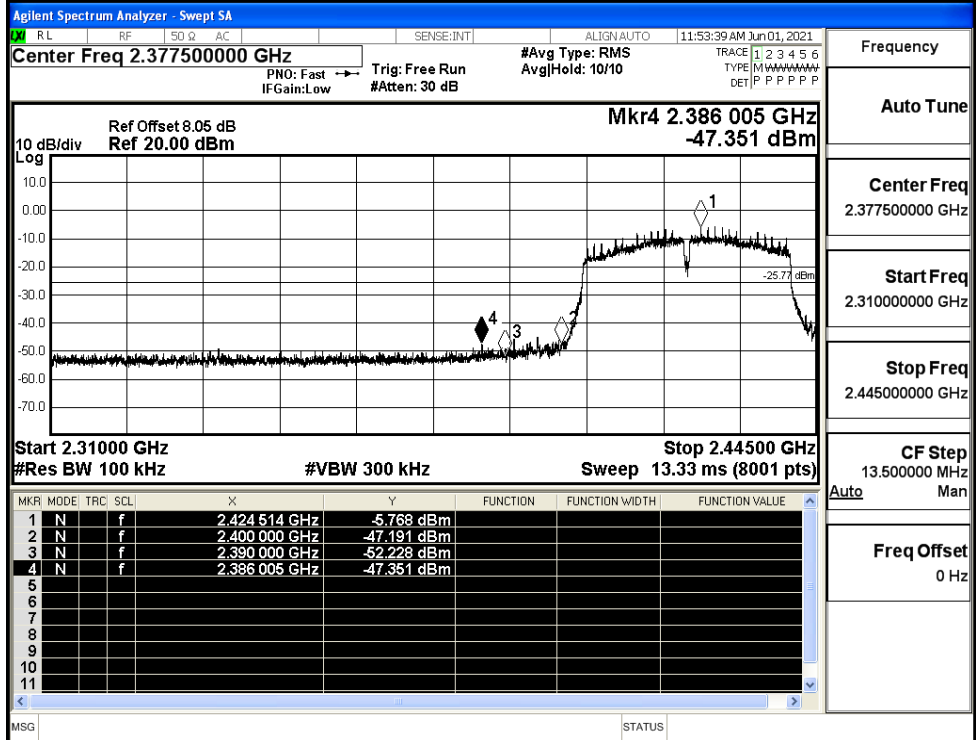
Frequency	2.36750000 GHz
Auto Tune	
Center Freq	2.36750000 GHz
Start Freq	2.31000000 GHz
Stop Freq	2.42500000 GHz
CF Step	11.500000 MHz
Freq Offset	0 Hz

11N20SISO/HCH



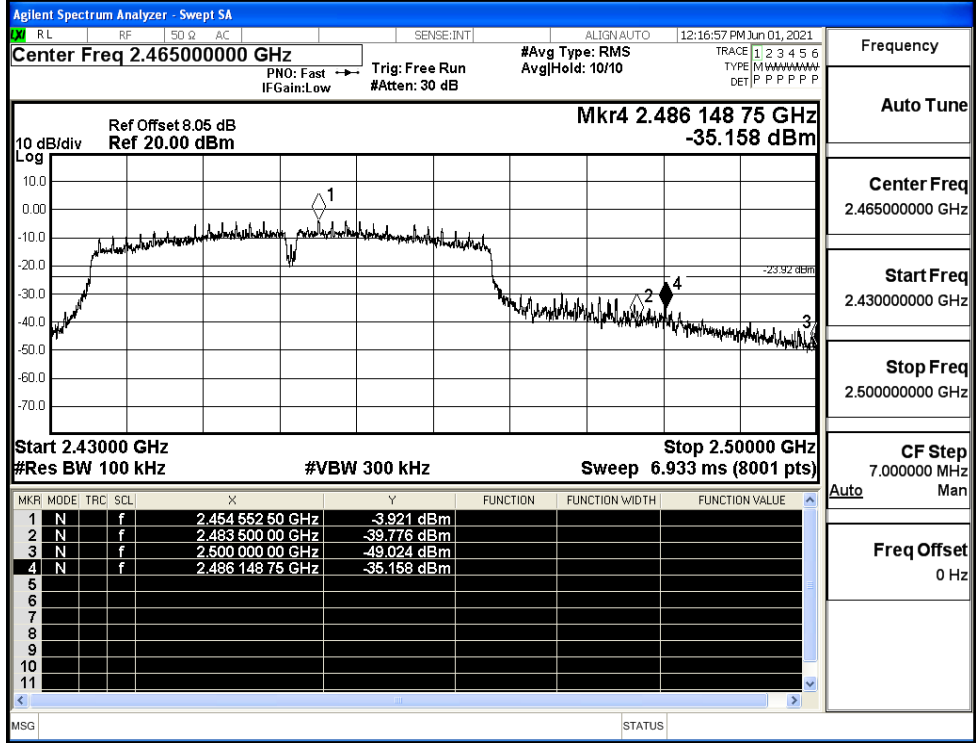
Frequency	
Auto Tune	
Center Freq	2.47500000 GHz
Start Freq	2.45000000 GHz
Stop Freq	2.50000000 GHz
CF Step	5.000000 MHz
Freq Offset	0 Hz

11N40SISO/LCH



Frequency	
Auto Tune	
Center Freq	2.37750000 GHz
Start Freq	2.31000000 GHz
Stop Freq	2.44500000 GHz
CF Step	13.500000 MHz
Freq Offset	0 Hz

11N40SISO/HCH

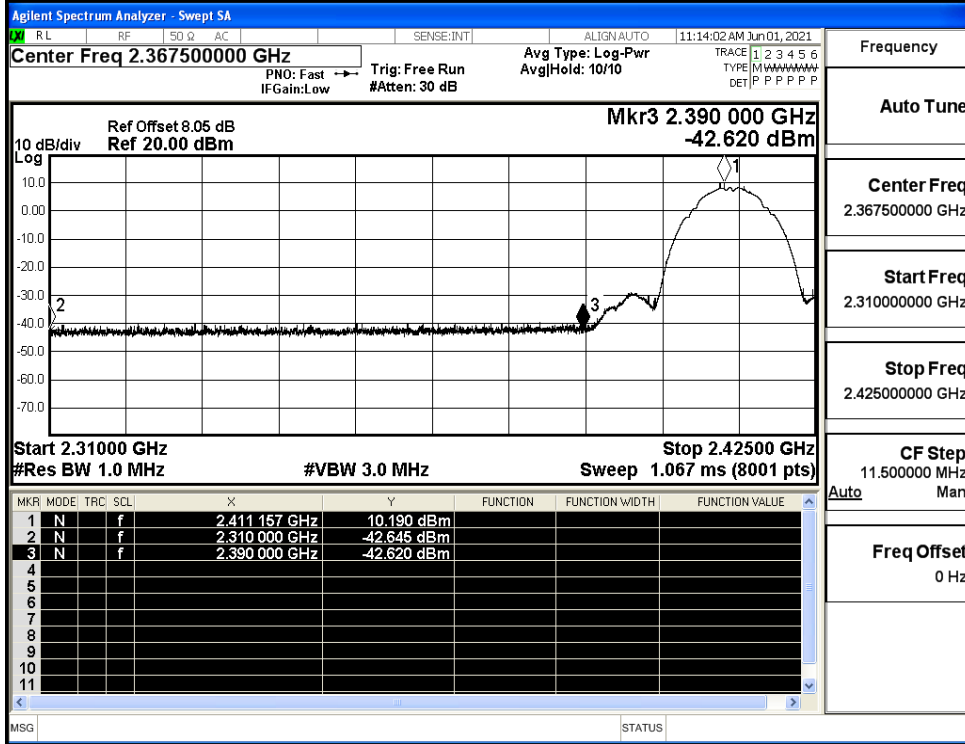


A.7 Restrict-band band-edge measurements

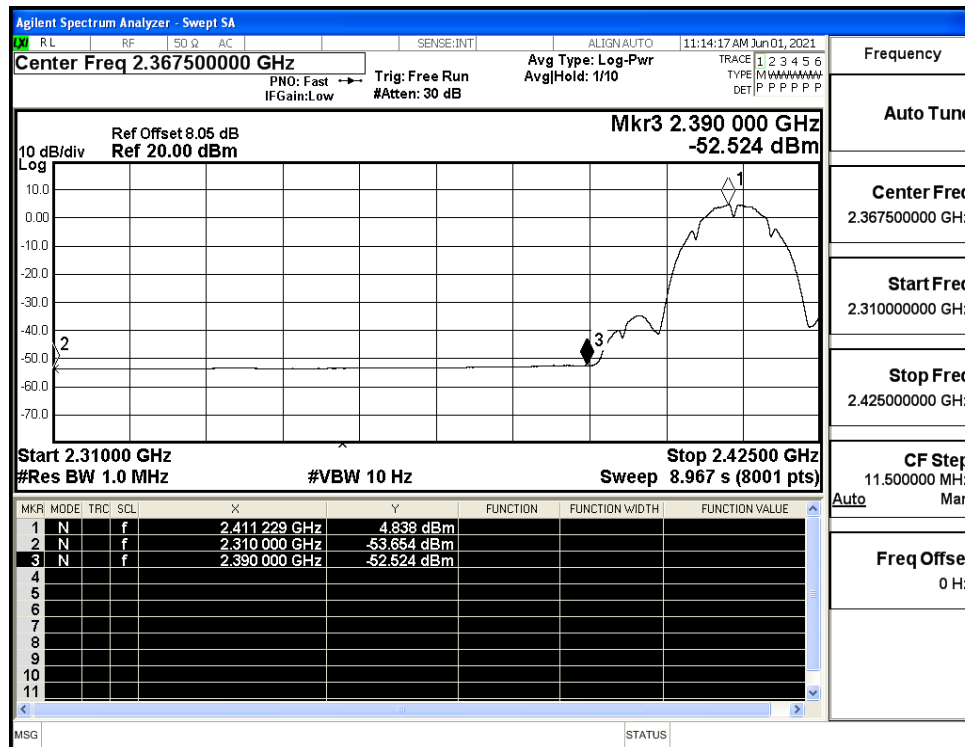
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBu V/m]	Verdict
11B	2412	Ant1	2310.0	-42.65	2.0	0	52.61	PEAK	74	PASS
	2412	Ant1	2310.0	-53.65	2.0	0	41.60	AV	54	PASS
	2412	Ant1	2390.0	-42.62	2.0	0	52.64	PEAK	74	PASS
	2412	Ant1	2390.0	-52.52	2.0	0	42.73	AV	54	PASS
	2462	Ant1	2483.5	-41.56	2.0	0	53.70	PEAK	74	PASS
	2462	Ant1	2483.5	-51.42	2.0	0	43.83	AV	54	PASS
	2462	Ant1	2500.0	-41.19	2.0	0	54.07	PEAK	74	PASS
	2462	Ant1	2500.0	-51.53	2.0	0	43.72	AV	54	PASS
11G	2412	Ant1	2310.0	-42.24	2.0	0	53.02	PEAK	74	PASS
	2412	Ant1	2310.0	-53.57	2.0	0	41.69	AV	54	PASS
	2412	Ant1	2390.0	-42.00	2.0	0	53.26	PEAK	74	PASS
	2412	Ant1	2390.0	-52.63	2.0	0	42.63	AV	54	PASS
	2462	Ant1	2483.5	-37.57	2.0	0	57.69	PEAK	74	PASS
	2462	Ant1	2483.5	-49.59	2.0	0	45.67	AV	54	PASS
	2462	Ant1	2500.0	-40.95	2.0	0	54.31	PEAK	74	PASS
	2462	Ant1	2500.0	-51.21	2.0	0	44.04	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-42.90	2.0	0	52.36	PEAK	74	PASS
	2412	Ant1	2310.0	-53.53	2.0	0	41.73	AV	54	PASS
	2412	Ant1	2390.0	-41.82	2.0	0	53.44	PEAK	74	PASS
	2412	Ant1	2390.0	-52.61	2.0	0	42.65	AV	54	PASS
	2462	Ant1	2483.5	-29.76	2.0	0	65.50	PEAK	74	PASS
	2462	Ant1	2483.5	-45.82	2.0	0	49.44	AV	54	PASS
	2462	Ant1	2500.0	-39.76	2.0	0	55.50	PEAK	74	PASS
	2462	Ant1	2500.0	-51.07	2.0	0	44.19	AV	54	PASS
11N40 SISO	2422	Ant1	2310.0	-42.77	2.0	0	52.49	PEAK	74	PASS
	2422	Ant1	2310.0	-53.49	2.0	0	41.77	AV	54	PASS

	2422	Ant1	2390.0	-39.94	2.0	0	55.32	PEAK	74	PASS
	2422	Ant1	2390.0	-51.23	2.0	0	44.03	AV	54	PASS
	2452	Ant1	2483.5	-30.70	2.0	0	64.56	PEAK	74	PASS
	2452	Ant1	2483.5	-46.69	2.0	0	48.57	AV	54	PASS
	2452	Ant1	2500.0	-40.88	2.0	0	54.38	PEAK	74	PASS
	2452	Ant1	2500.0	-51.59	2.0	0	43.66	AV	54	PASS

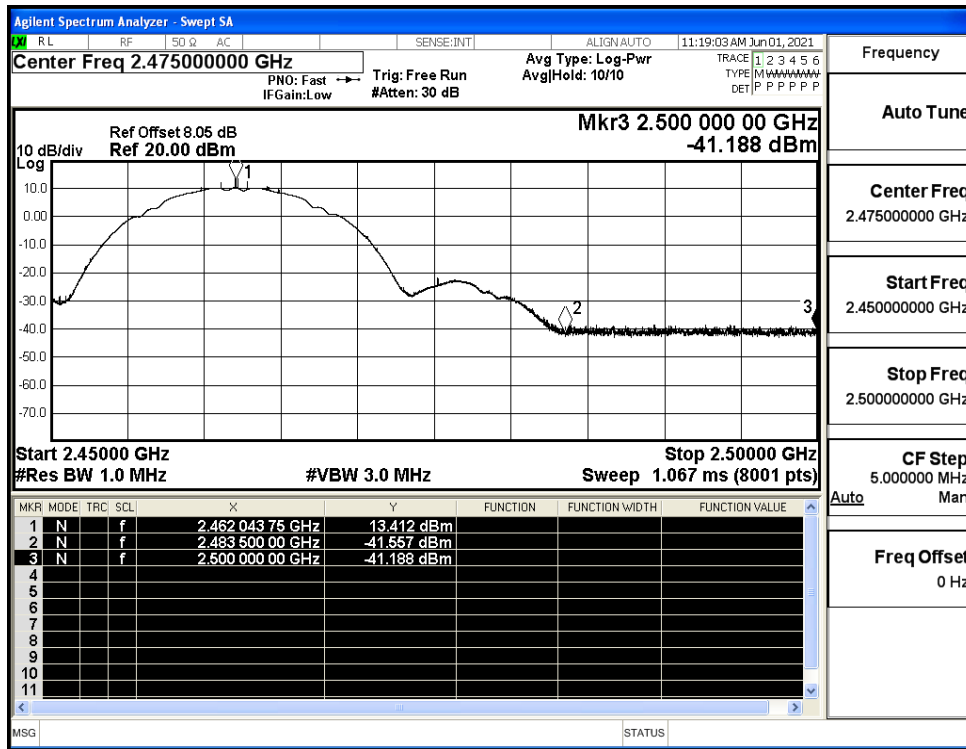
Restrict-band band-edge measurements_11B_2412_Ant1_PEAK



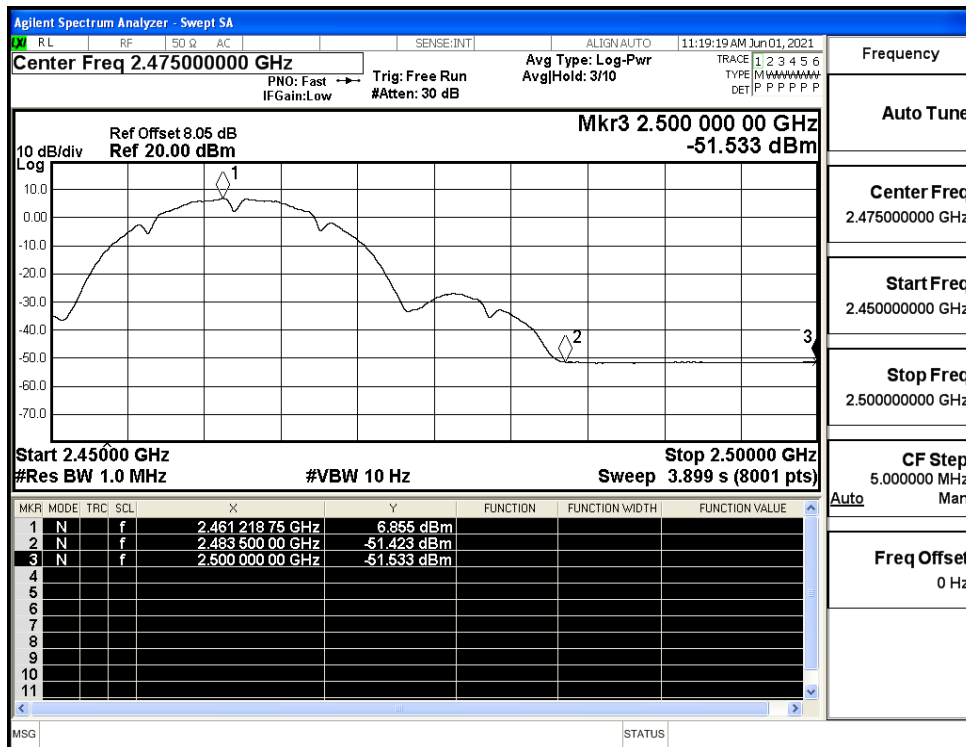
Restrict-band band-edge measurements_11B_2412_Ant1_AV



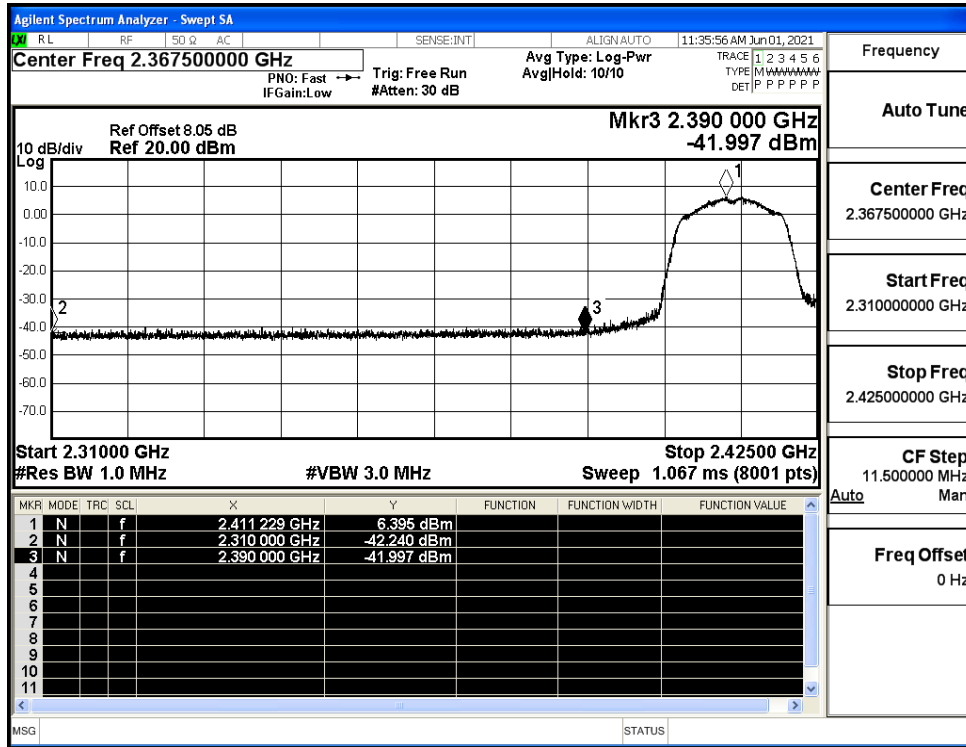
Restrict-band band-edge measurements_11B_2462_Ant1_PEAK



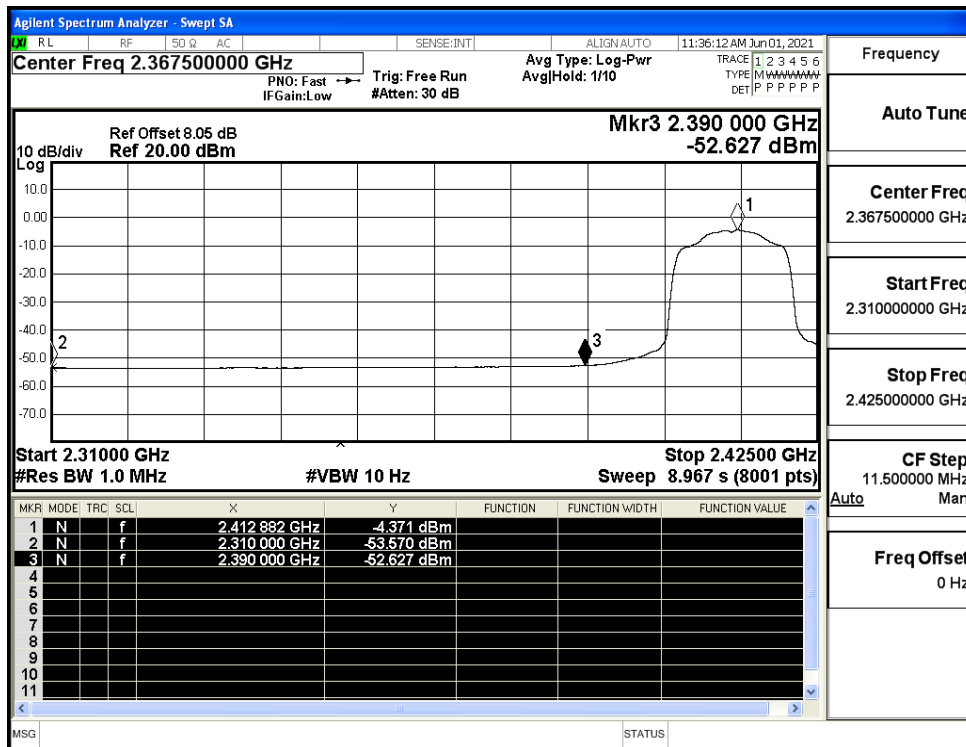
Restrict-band band-edge measurements_11B_2462_Ant1_AV



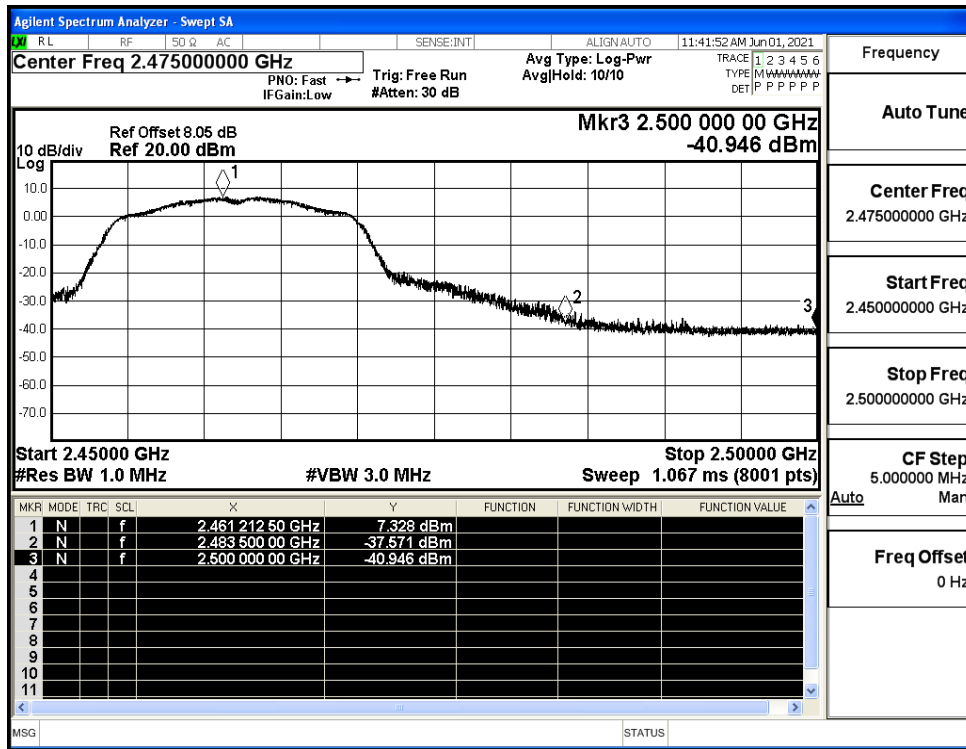
Restrict-band band-edge measurements_11G_2412_Ant1_PEAK



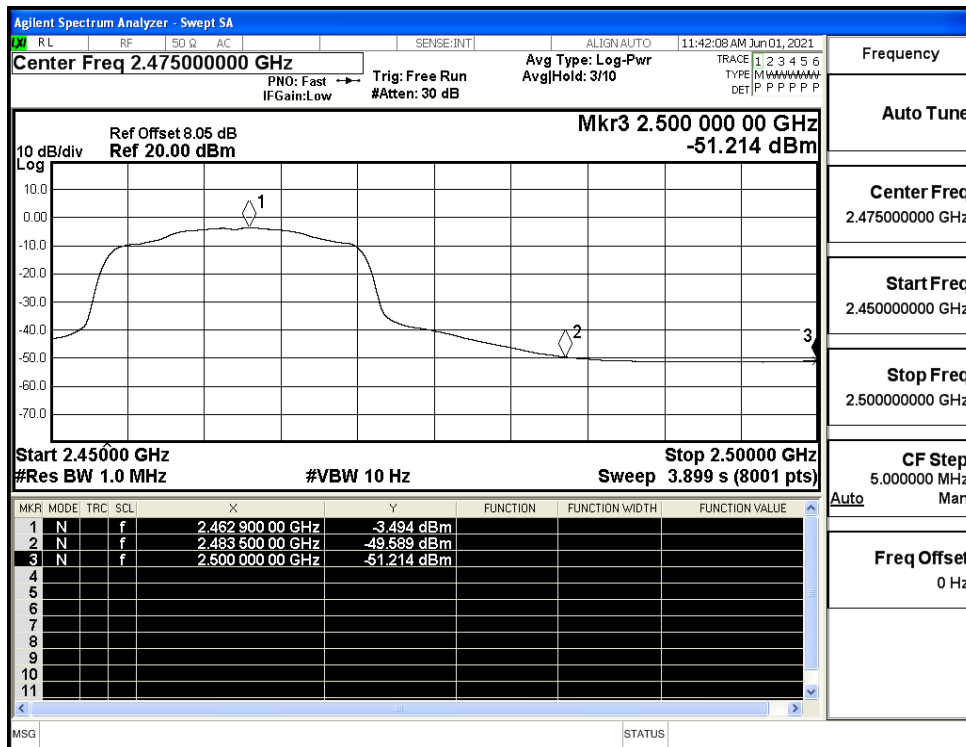
Restrict-band band-edge measurements_11G_2412_Ant1_AV



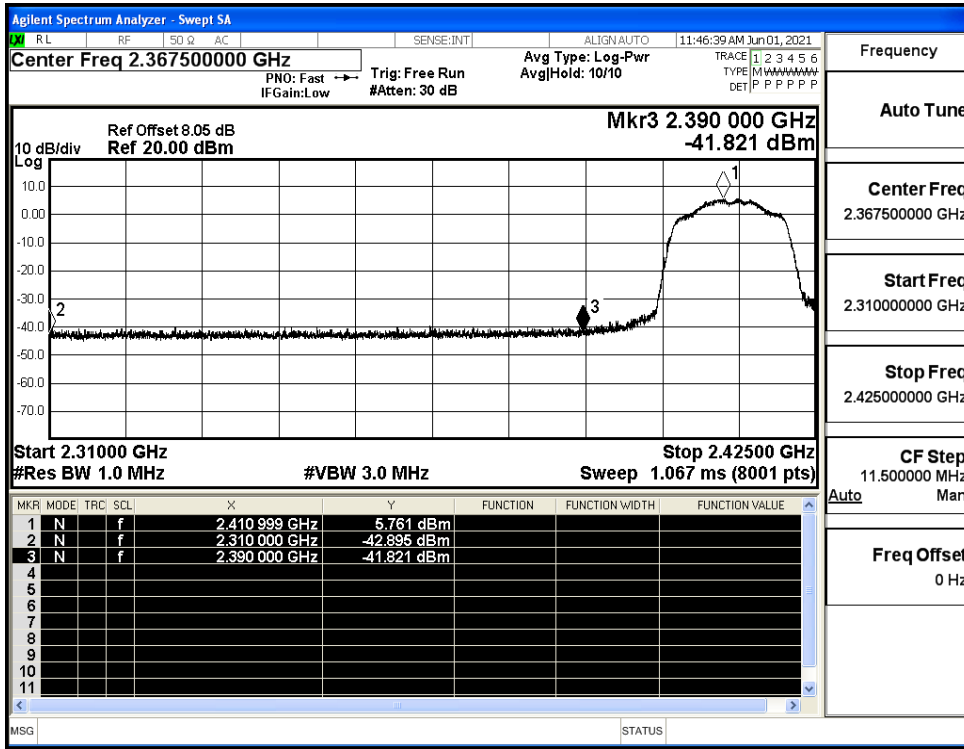
Restrict-band band-edge measurements_11G_2462_Ant1_PEAK



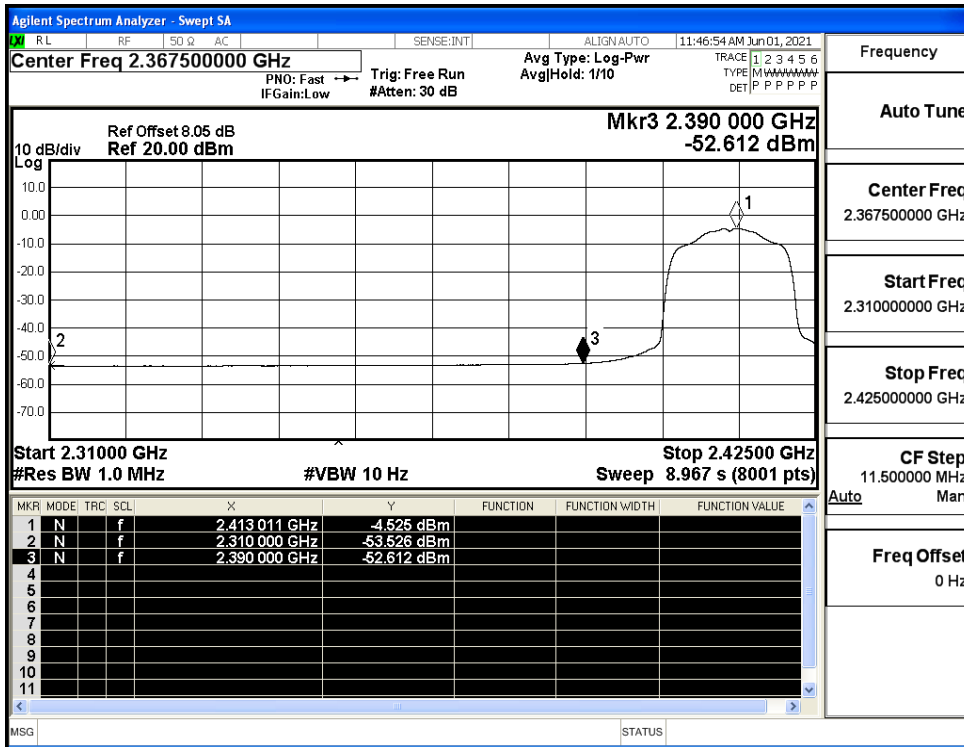
Restrict-band band-edge measurements_11G_2462_Ant1_AV



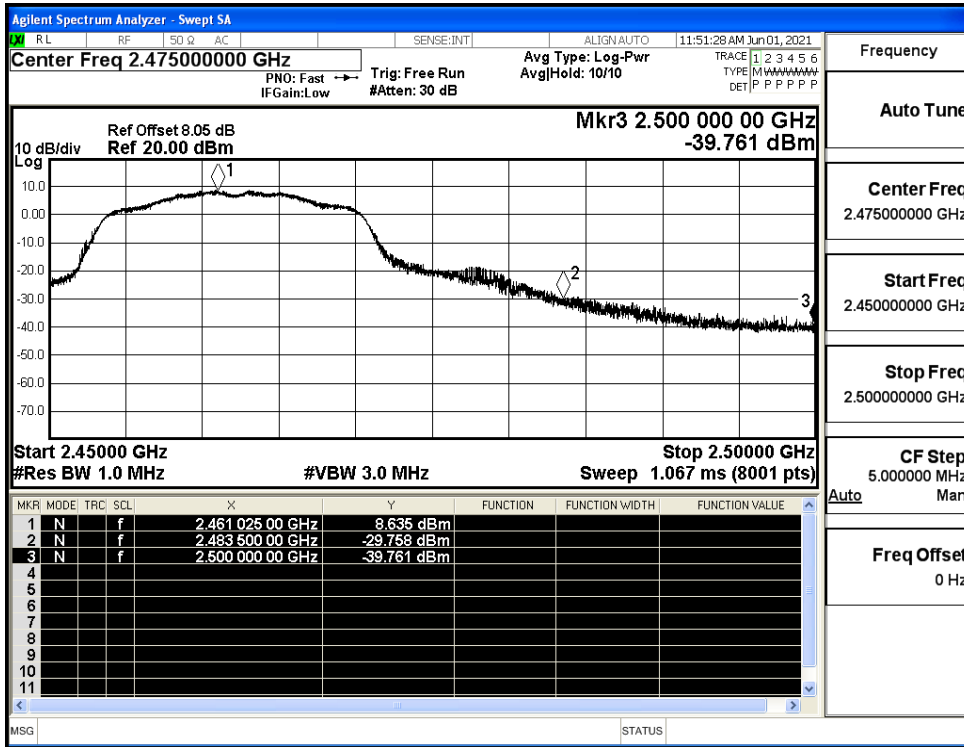
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_PEAK



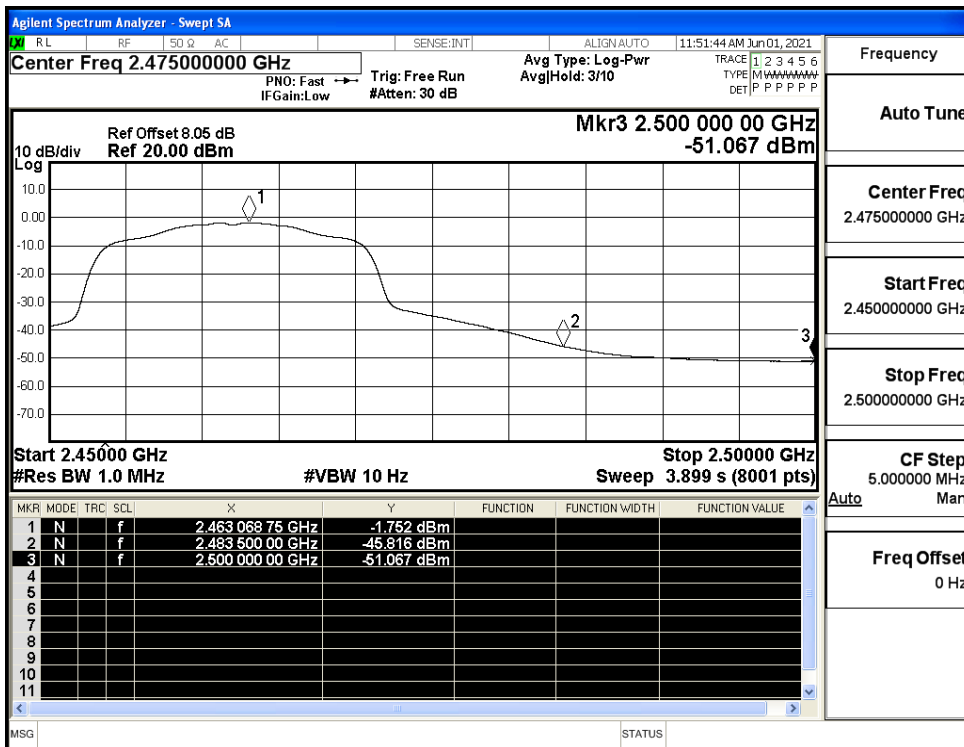
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_AV



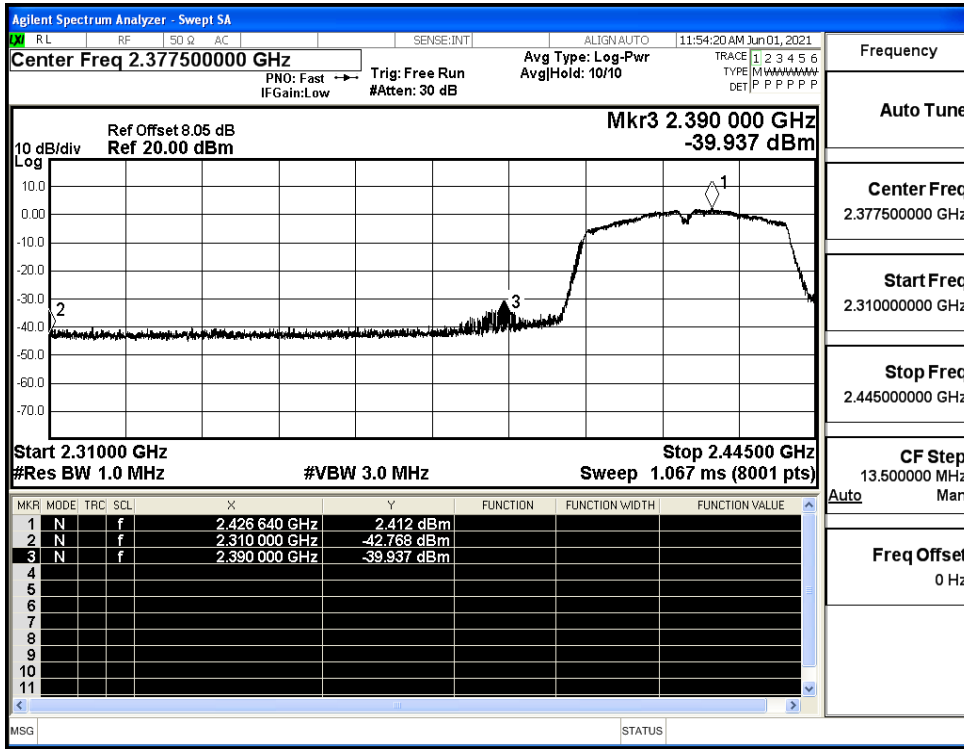
Restrict-band band-edge measurements_11N20SISO_2462_Ant1_PEAK



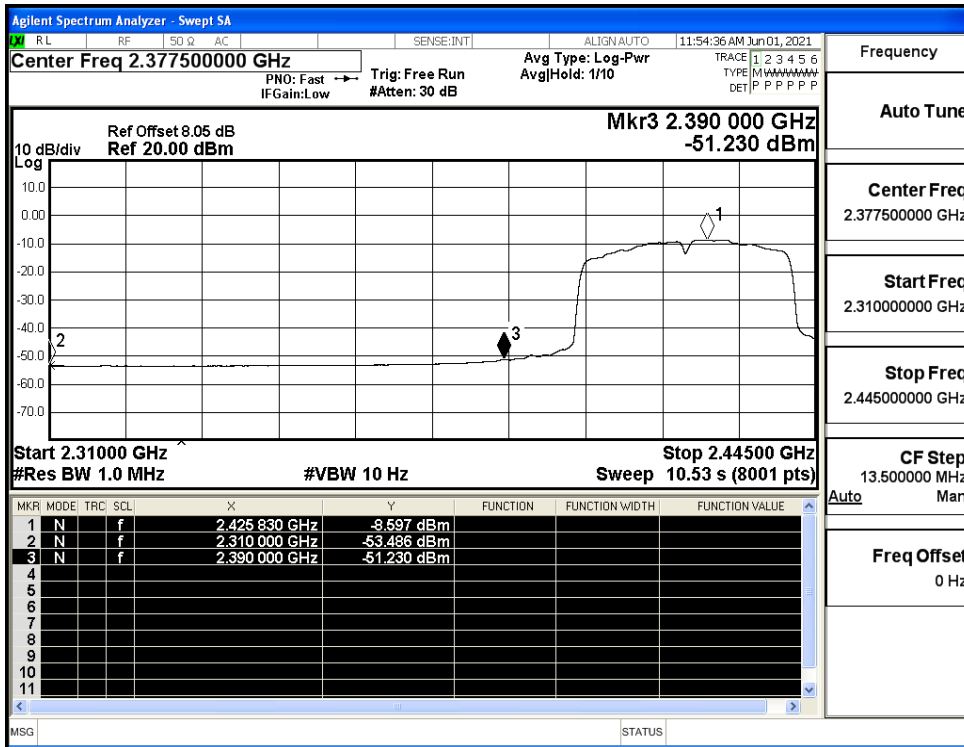
Restrict-band band-edge measurements_11N20SISO_2462_Ant1_AV



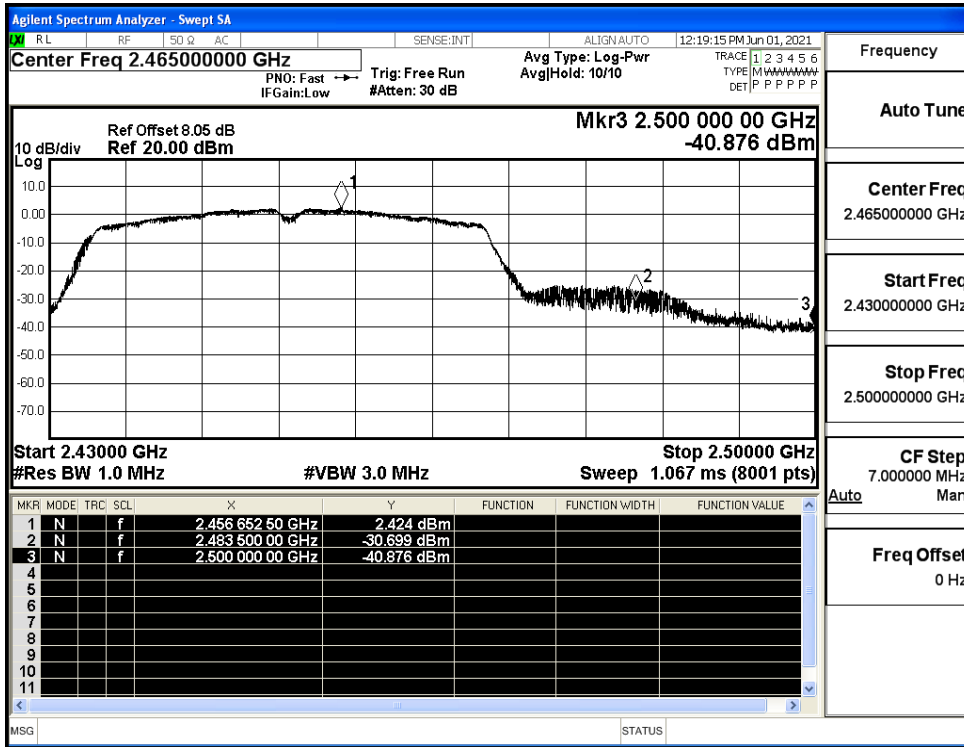
Restrict-band band-edge measurements_11N40SISO_2422_Ant1_PEAK



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

