

Appendix C

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: 4G PHONE

Trade Mark: KAPSYS

Test Model: MiniVision2

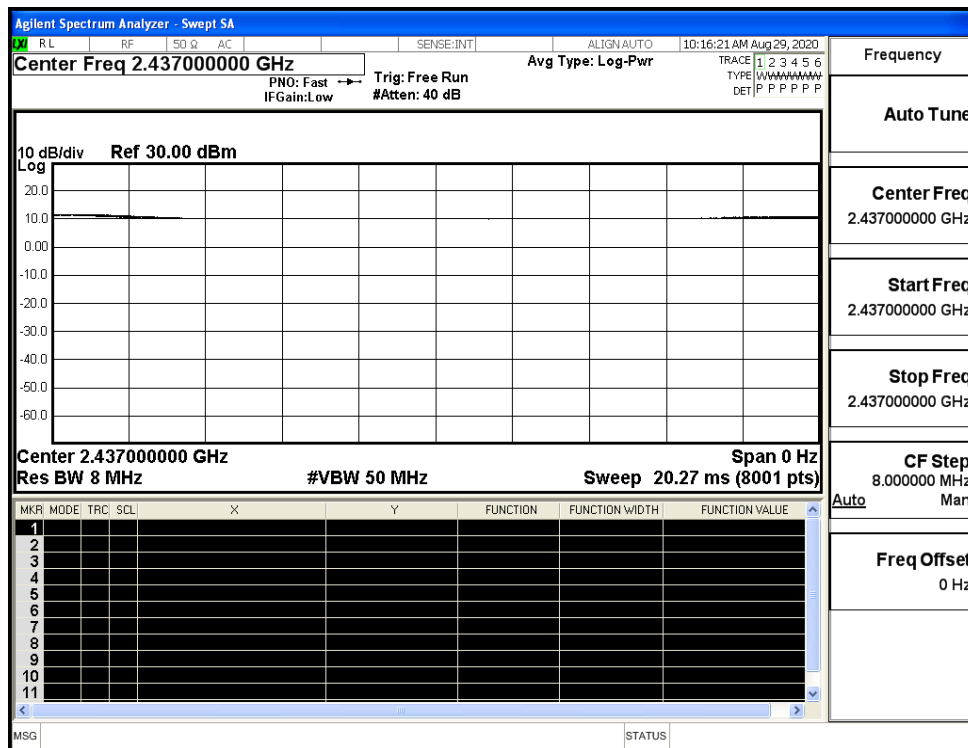
Environmental Conditions

Temperature:	23.6 ° C
Relative Humidity:	54.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond Lu
Supervised by:	Li Huan

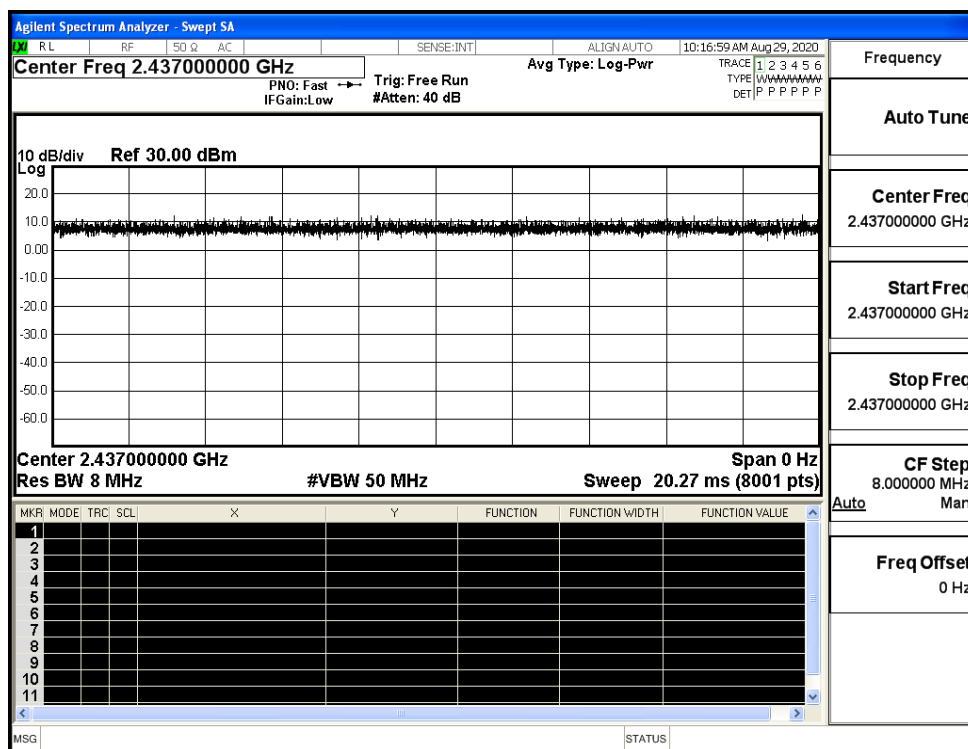
C.1 Duty Cycle

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

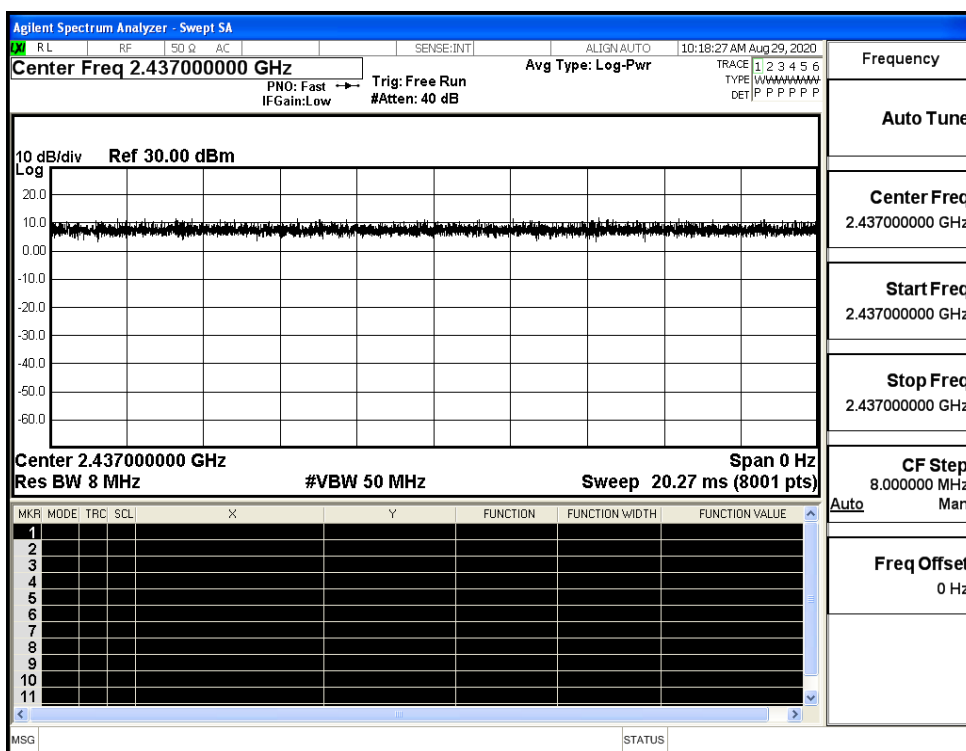
Duty Cycle_11B_2437_Ant1



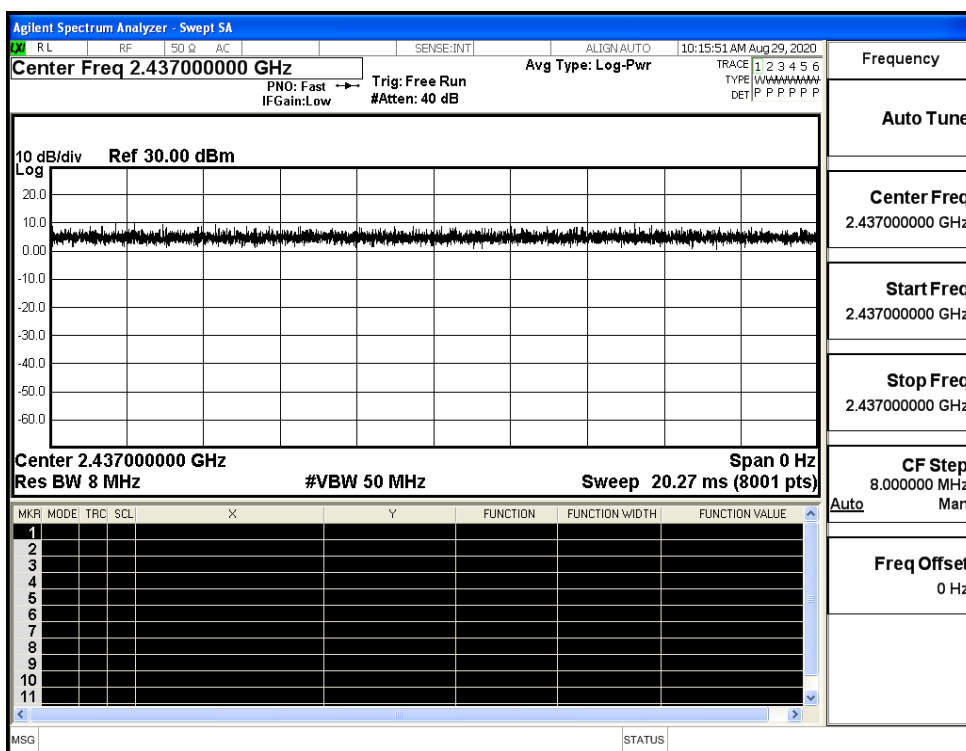
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



Duty Cycle_11N40SISO_2437_Ant1



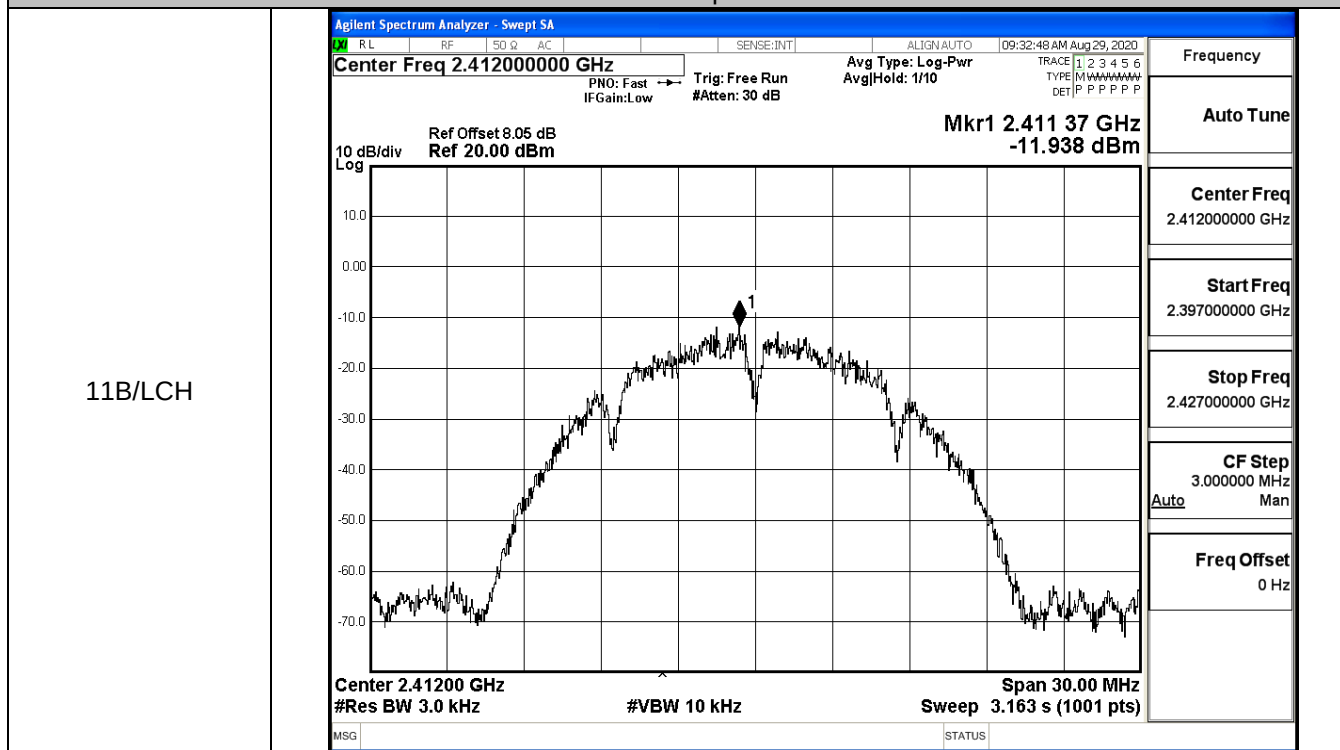
C.2 Maximum Conducted Output Power

Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	13.55	30	PASS
	MCH	13.66	30	PASS
	HCH	13.45	30	PASS
11G	LCH	13.37	30	PASS
	MCH	13.95	30	PASS
	HCH	13.87	30	PASS
11N20SISO	LCH	13.61	30	PASS
	MCH	13.46	30	PASS
	HCH	13.82	30	PASS
11N40SISO	LCH	13.96	30	PASS
	MCH	14.14	30	PASS
	HCH	13.92	30	PASS

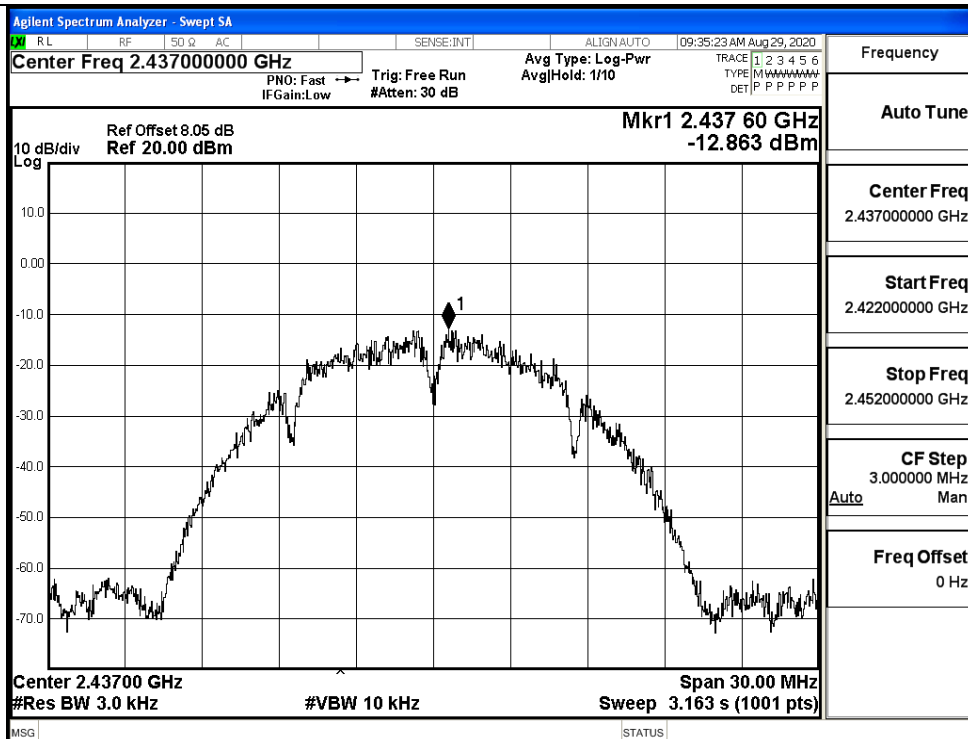
C.3 Maximum Power Spectral Density

Mode	Channel	Meas.Level [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-11.938	8	PASS
	MCH	-12.863	8	PASS
	HCH	-11.957	8	PASS
11G	LCH	-21.098	8	PASS
	MCH	-20.870	8	PASS
	HCH	-21.177	8	PASS
11N20SISO	LCH	-20.006	8	PASS
	MCH	-21.450	8	PASS
	HCH	-21.395	8	PASS
11N40SISO	LCH	-22.929	8	PASS
	MCH	-22.930	8	PASS
	HCH	-22.463	8	PASS

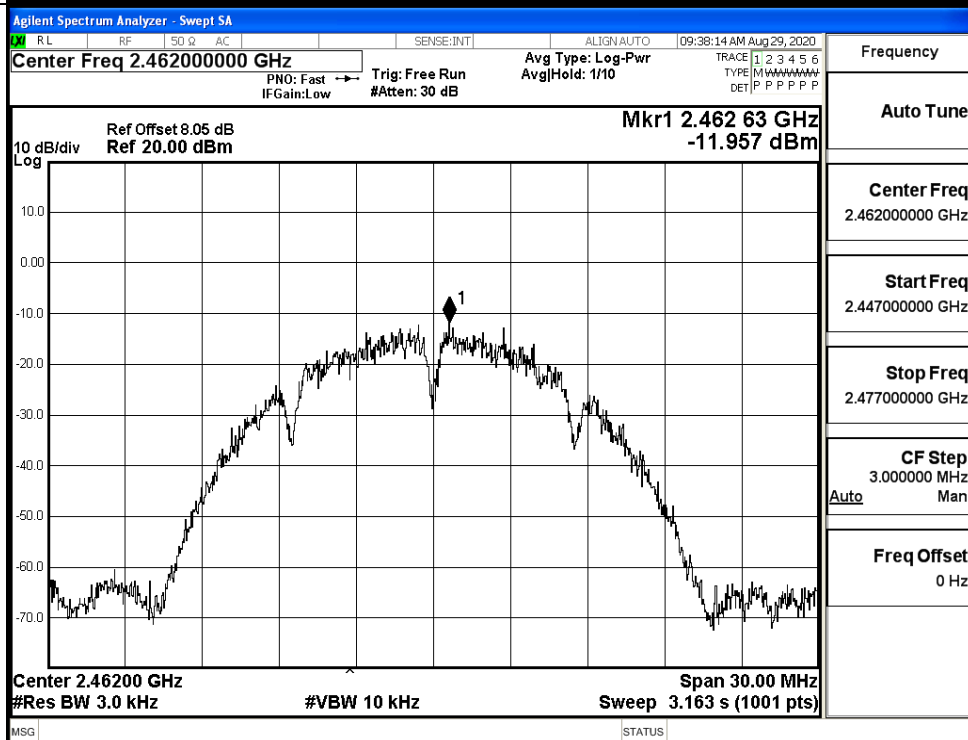
Test Graphs



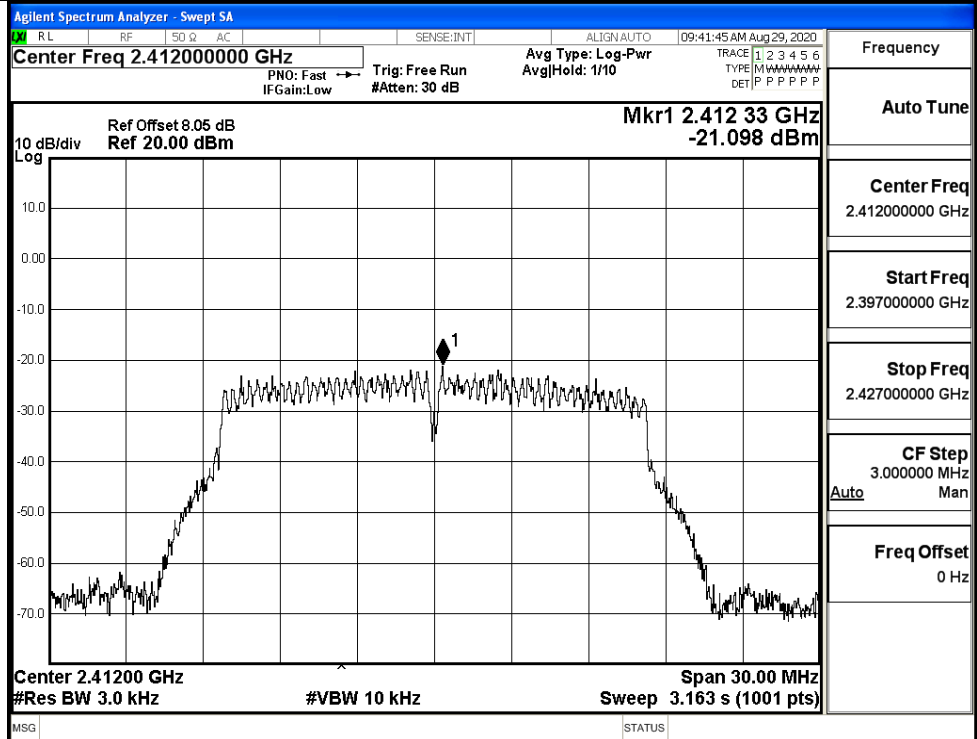
11B/MCH



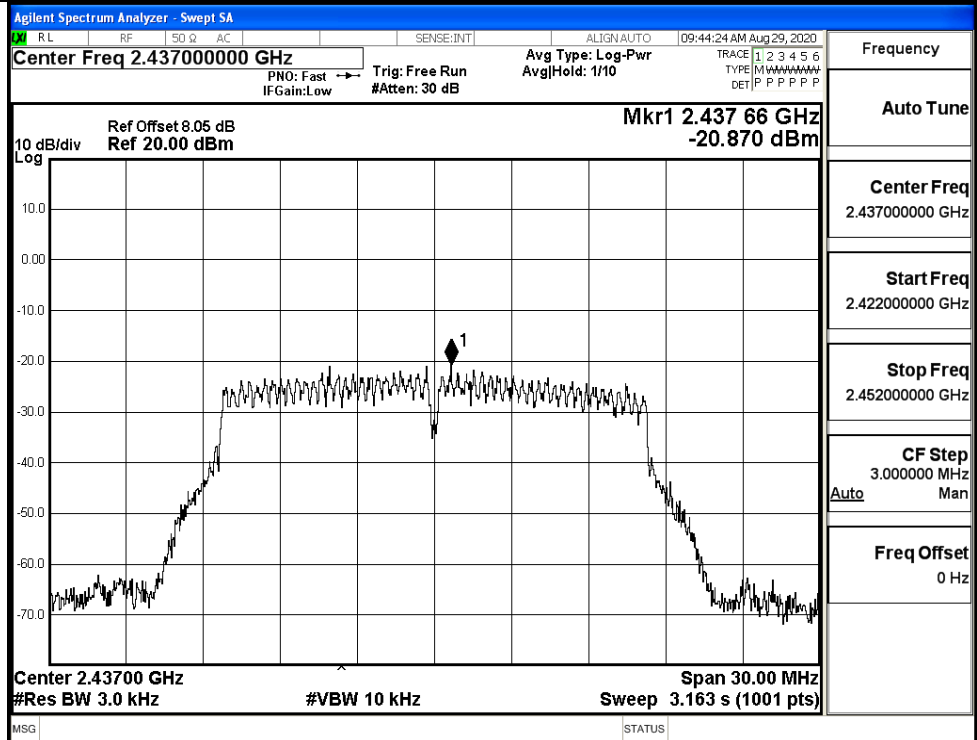
11B/HCH



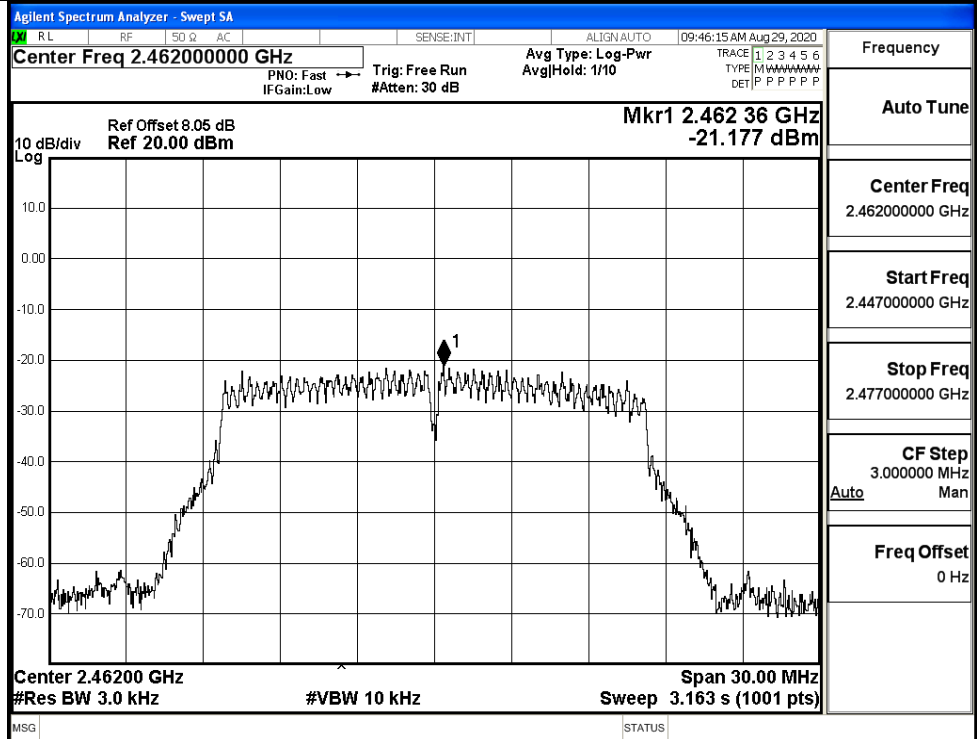
11G/LCH



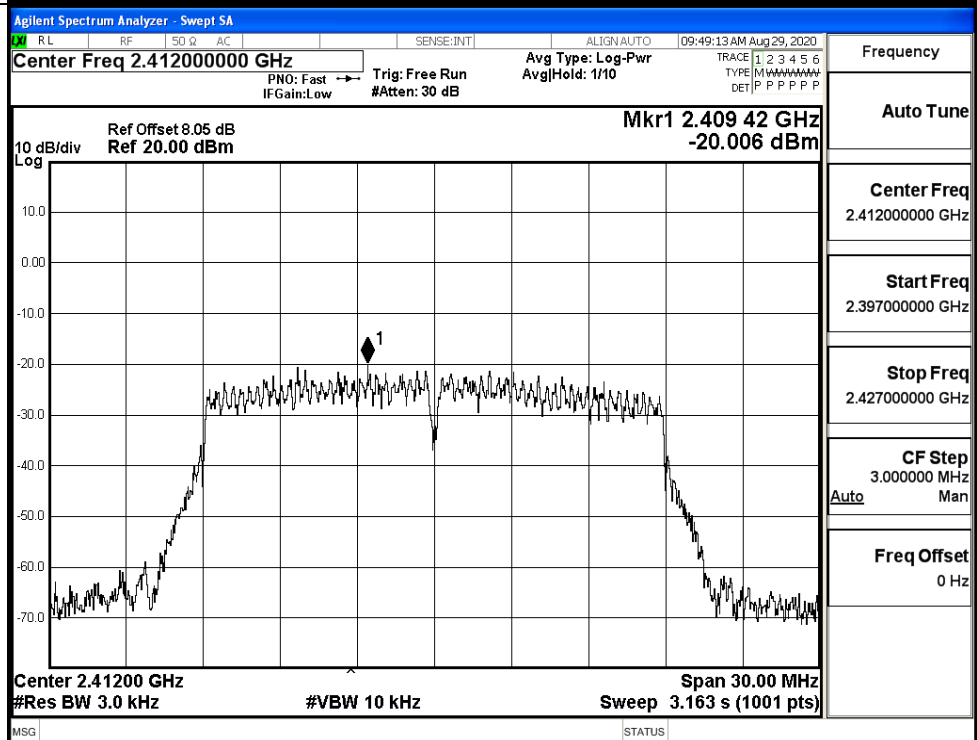
11G/MCH

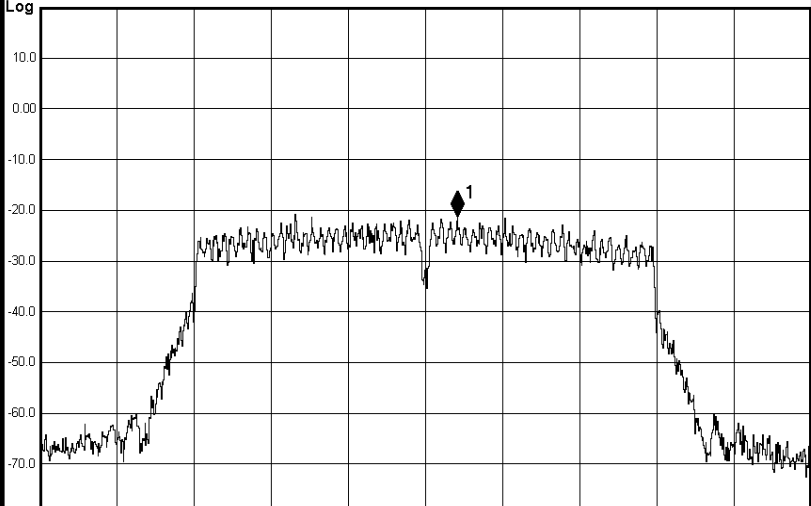
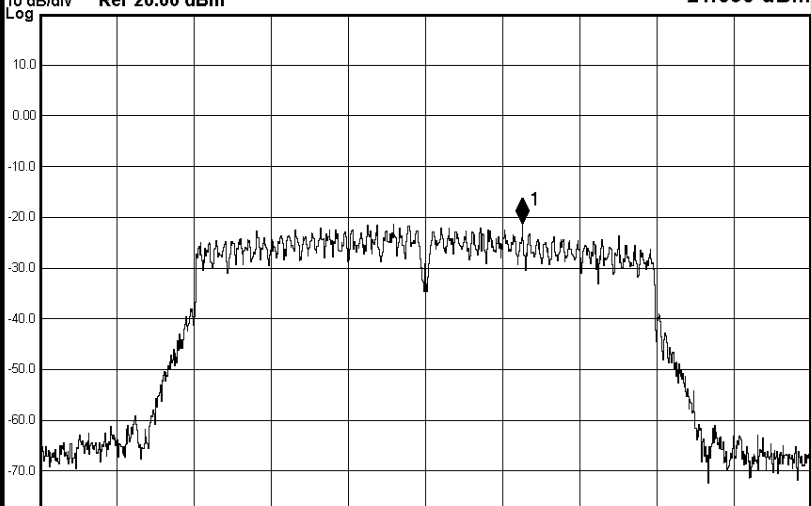


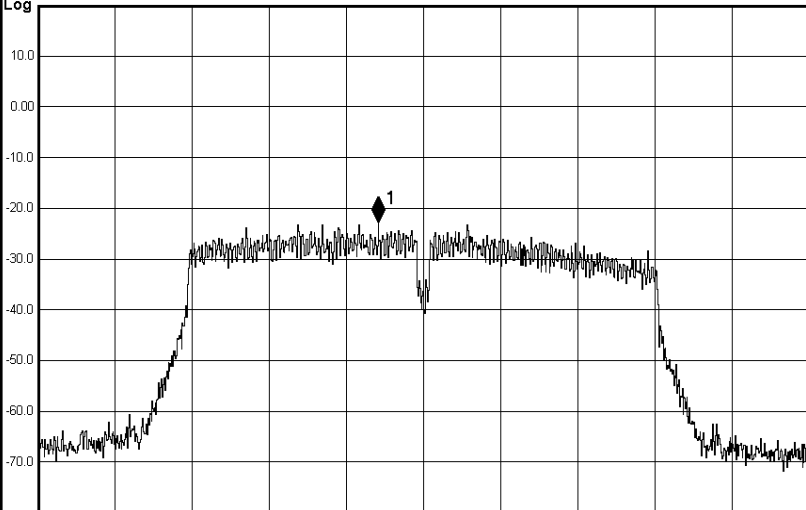
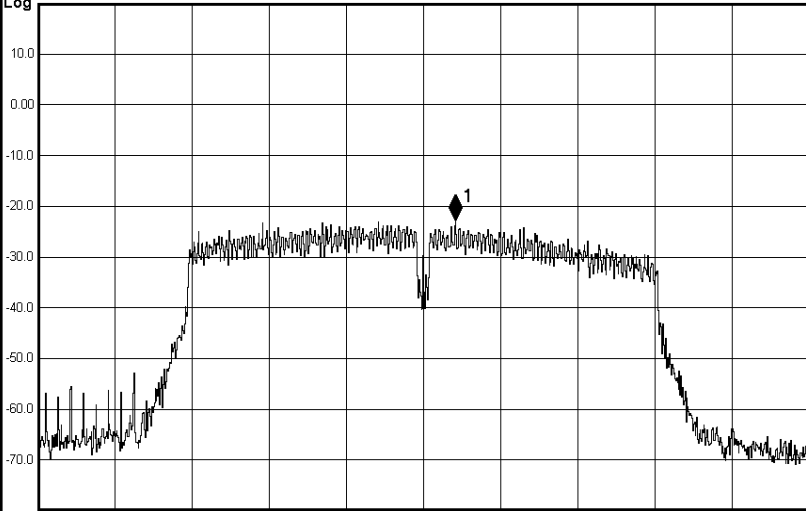
11G/HCH



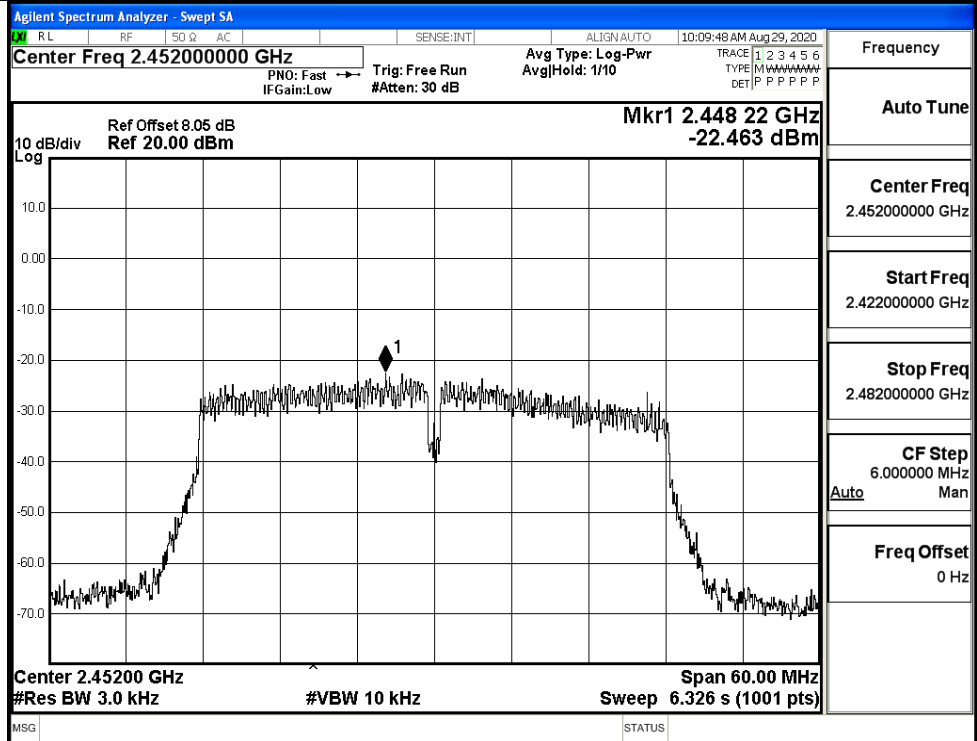
11N20SISO/LCH



11N20SISO/MCH	Agilent Spectrum Analyzer - Swept SA RL RF 50 Ω AC SENSE:INT ALIGN: AUTO 09:51:43 AM Aug 29, 2020 Center Freq 2.437000000 GHz PNO: Fast IF Gain: Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr Avg Hold: 1/10 Ref Offset 8.05 dB Ref 20.00 dBm Mkr1 2.438 26 GHz -21.450 dBm 10 dB/div Log  Center 2.43700 GHz Span 30.00 MHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 3.163 s (1001 pts) MSG STATUS Frequency 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
11N20SISO/HCH	Agilent Spectrum Analyzer - Swept SA RL RF 50 Ω AC SENSE:INT ALIGN: AUTO 10:01:41 AM Aug 29, 2020 Center Freq 2.462000000 GHz PNO: Fast IF Gain: Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr Avg Hold: 1/10 Ref Offset 8.05 dB Ref 20.00 dBm Mkr1 2.465 78 GHz -21.395 dBm 10 dB/div Log  Center 2.46200 GHz Span 30.00 MHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 3.163 s (1001 pts) MSG STATUS Frequency 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

11N40SISO/LCH	Agilent Spectrum Analyzer - Swept SA Center Freq 2.422000000 GHz Ref Offset 8.05 dB Ref 20.00 dBm 10 dB/div Log  Center 2.42200 GHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 6.326 s (1001 pts) Frequency Auto Tune Center Freq 2.422000000 GHz Start Freq 2.392000000 GHz Stop Freq 2.452000000 GHz CF Step 6.000000 MHz Auto Man Freq Offset 0 Hz
11N40SISO/MCH	Agilent Spectrum Analyzer - Swept SA Center Freq 2.437000000 GHz Ref Offset 8.05 dB Ref 20.00 dBm 10 dB/div Log  Center 2.43700 GHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 6.326 s (1001 pts) Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.407000000 GHz Stop Freq 2.467000000 GHz CF Step 6.000000 MHz Auto Man Freq Offset 0 Hz

11N40SISO/HCH

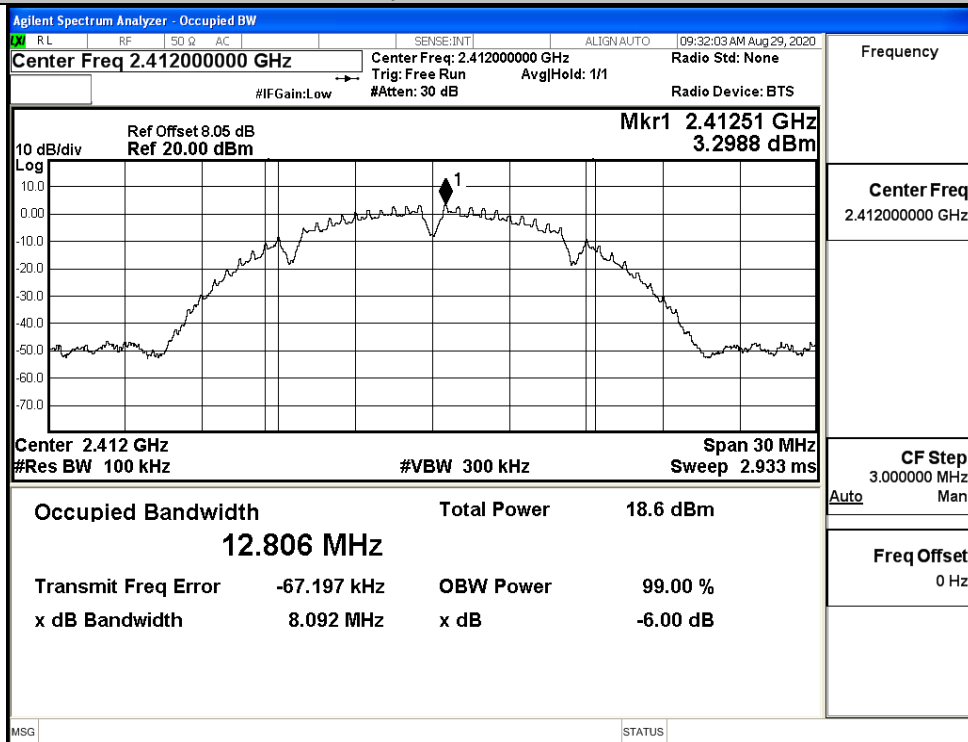


C.4 6dB Bandwidth

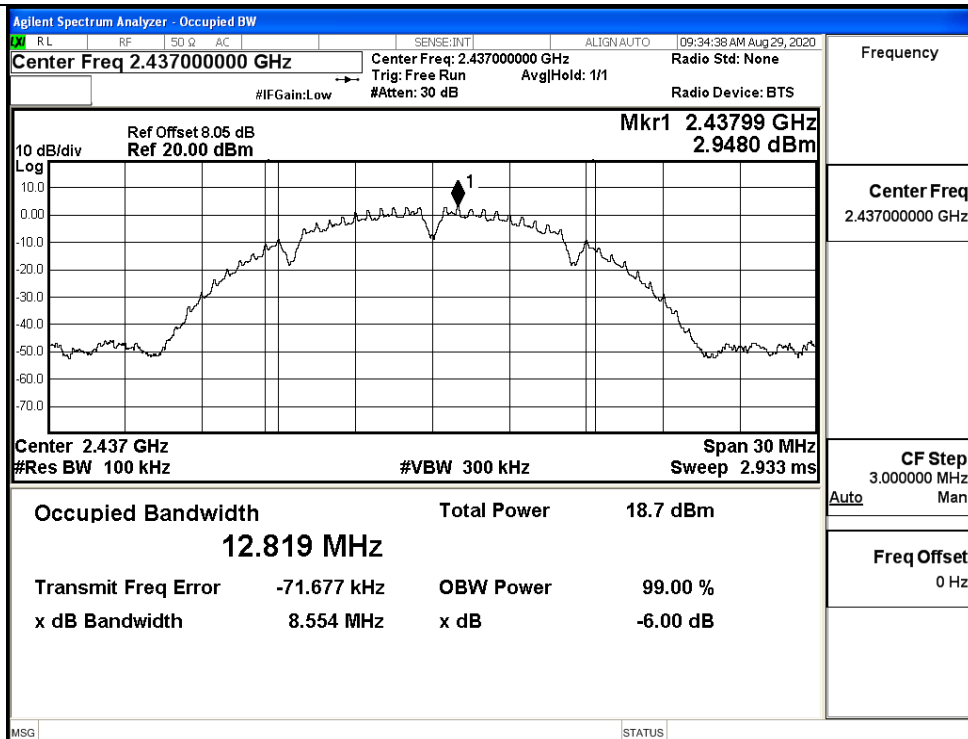
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	8.092	≥ 0.5	PASS
	MCH	8.554	≥ 0.5	PASS
	HCH	8.055	≥ 0.5	PASS
11G	LCH	15.11	≥ 0.5	PASS
	MCH	15.46	≥ 0.5	PASS
	HCH	15.15	≥ 0.5	PASS
11N20SISO	LCH	15.47	≥ 0.5	PASS
	MCH	15.46	≥ 0.5	PASS
	HCH	15.47	≥ 0.5	PASS
11N40SISO	LCH	35.12	≥ 0.5	PASS
	MCH	35.15	≥ 0.5	PASS
	HCH	33.88	≥ 0.5	PASS

Test Graphs

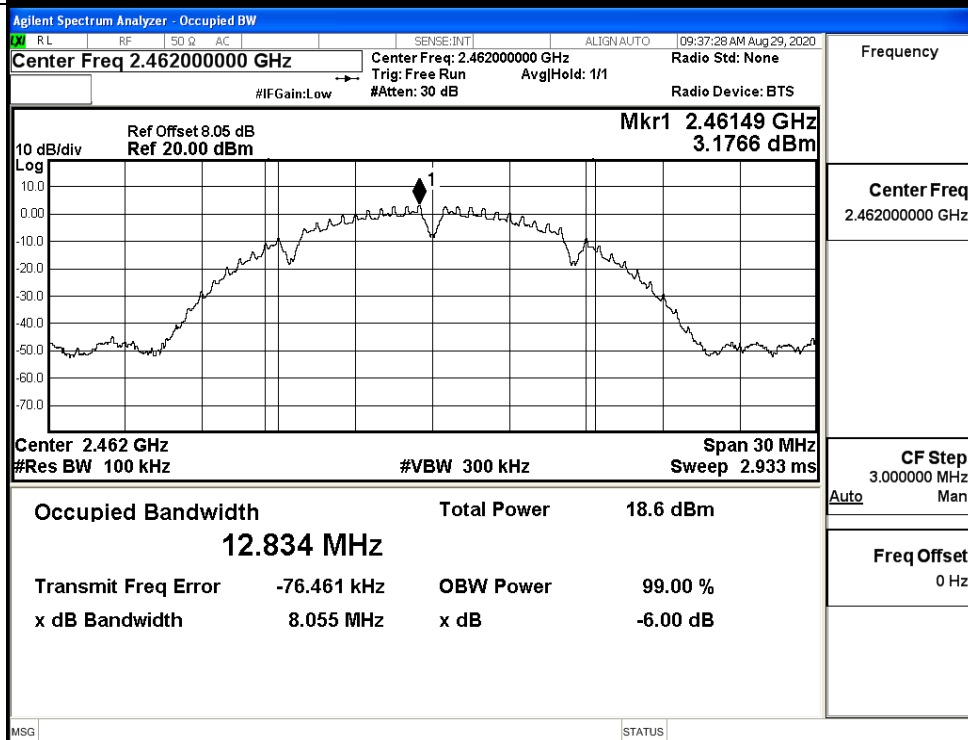
11B/LCH



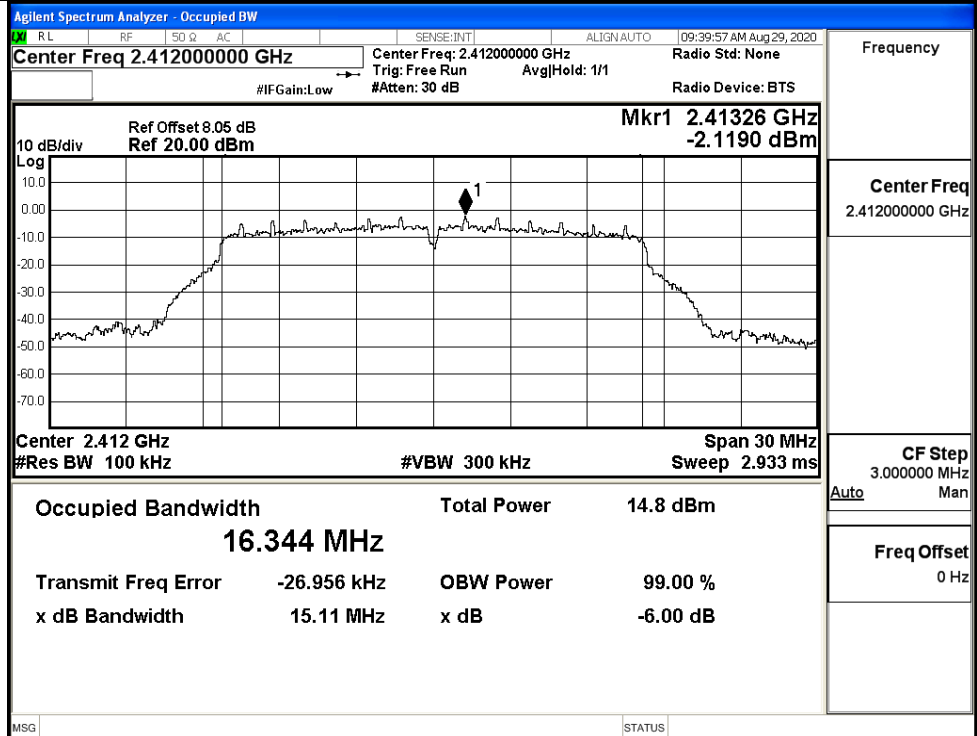
11B/MCH



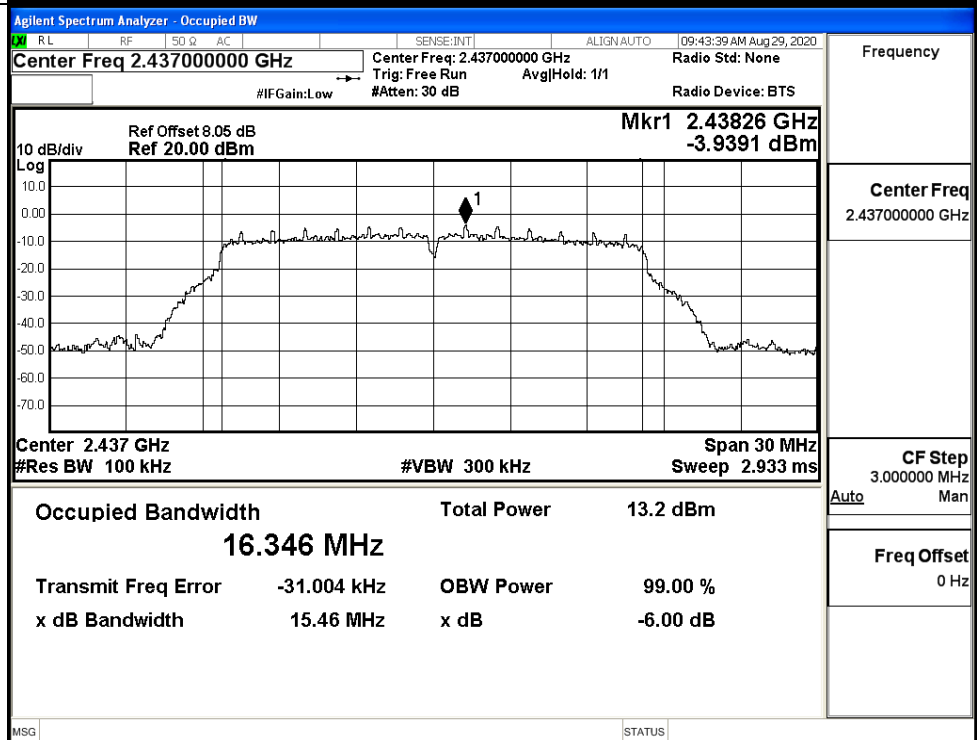
11B/HCH



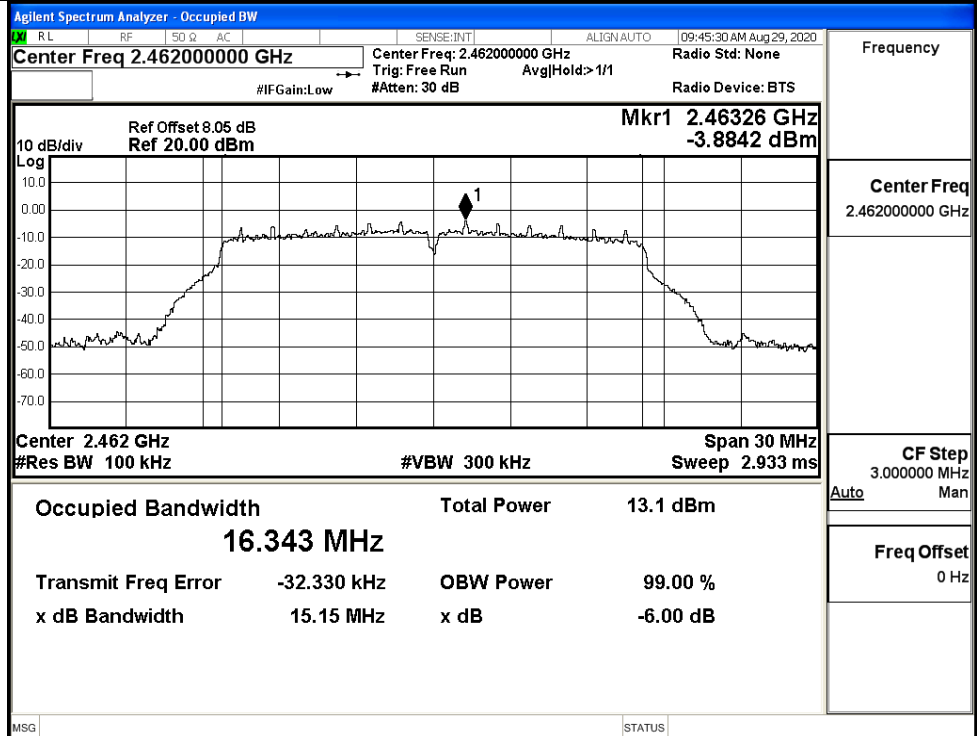
11G/LCH



11G/MCH



11G/HCH



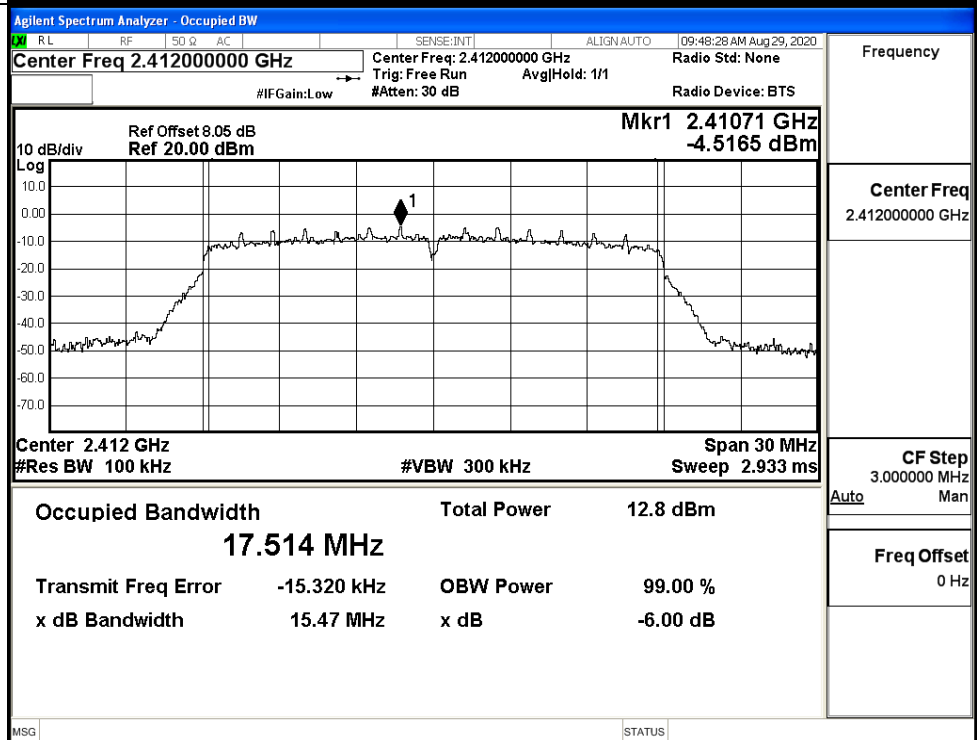
Frequency

Center Freq
2.46200000 GHz

CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

11N20SISO/LCH

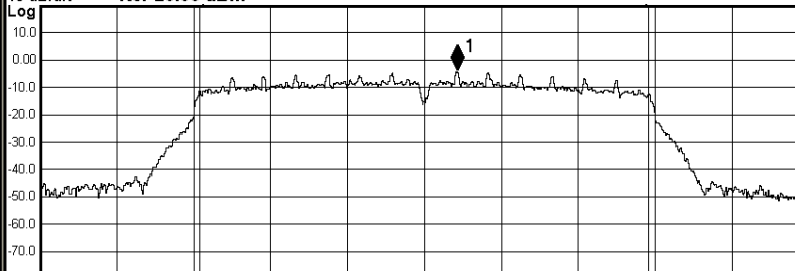
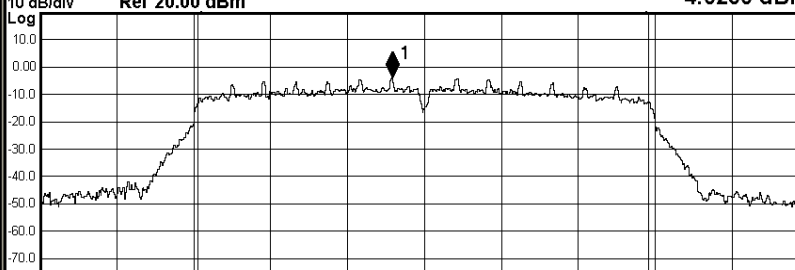


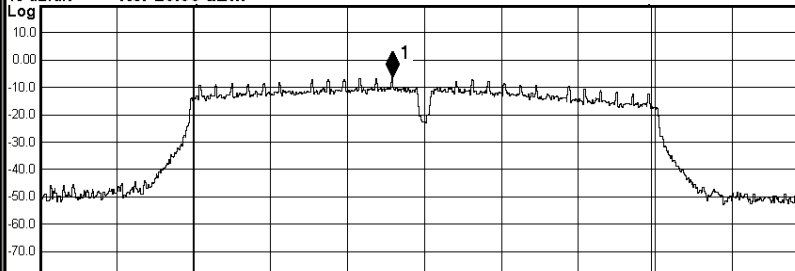
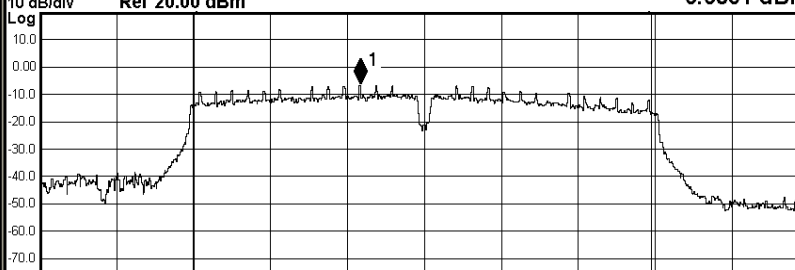
Frequency

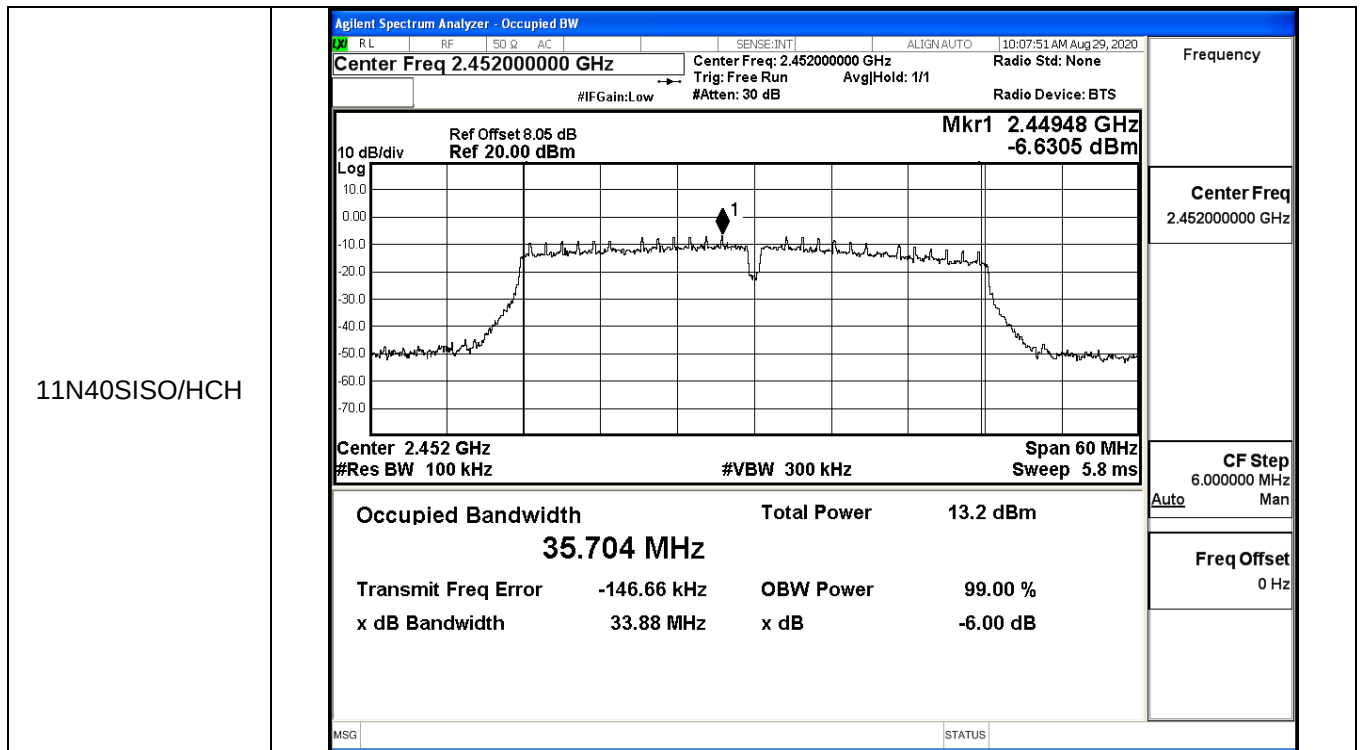
Center Freq
2.41200000 GHz

CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

11N20SISO/MCH	Agilent Spectrum Analyzer - Occupied BW RL RF 50 Ω AC SENSE:INT ALIGN AUTO 09:50:58 AM Aug 29, 2020 Center Freq 2.437000000 GHz Center Freq: 2.437000000 GHz Trig: Free Run Avg Hold: 1/1 Radio Std: None Radio Device: BTS #IF Gain: Low #Atten: 30 dB Ref Offset 8.05 dB Ref 20.00 dBm Mkr1 2.43829 GHz -4.2109 dBm  Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.515 MHz Total Power 13.1 dBm Transmit Freq Error -14.707 kHz OBW Power 99.00 % x dB Bandwidth 15.46 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:INT ALIGN AUTO 10:00:57 AM Aug 29, 2020 Center Freq 2.462000000 GHz Center Freq: 2.462000000 GHz Trig: Free Run Avg Hold: 1/1 Radio Std: None Radio Device: BTS #IF Gain: Low #Atten: 30 dB Ref Offset 8.05 dB Ref 20.00 dBm Mkr1 2.46074 GHz -4.0250 dBm  Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.510 MHz Total Power 13.2 dBm Transmit Freq Error -18.484 kHz OBW Power 99.00 % x dB Bandwidth 15.47 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

11N40SISO/LCH	Agilent Spectrum Analyzer - Occupied BW RL RF 50 Ω AC SENSE:INT ALIGN: AUTO 10:03:28 AM Aug 29, 2020 Center Freq 2.422000000 GHz Center Freq: 2.422000000 GHz Trig: Free Run Avg/Hold: 1/1 Radio Std: None #IF Gain: Low #Atten: 30 dB Radio Device: BTS 10 dB/div Ref Offset 8.05 dB Ref 20.00 dBm Mkr1 2.41948 GHz -6.5167 dBm  Center 2.422 GHz #Res BW 100 kHz #VBW 300 kHz Span 60 MHz Sweep 5.8 ms Occupied Bandwidth 35.677 MHz Total Power 13.5 dBm Transmit Freq Error -173.74 kHz OBW Power 99.00 % x dB Bandwidth 35.12 MHz x dB -6.00 dB MSG STATUS	Frequency Center Freq 2.422000000 GHz CF Step 6.000000 MHz Auto Man Freq Offset 0 Hz
11N40SISO/MCH	Agilent Spectrum Analyzer - Occupied BW RL RF 50 Ω AC SENSE:INT ALIGN: AUTO 10:06:00 AM Aug 29, 2020 Center Freq 2.437000000 GHz Center Freq: 2.437000000 GHz Trig: Free Run Avg/Hold: 1/1 Radio Std: None #IF Gain: Low #Atten: 30 dB Radio Device: BTS 10 dB/div Ref Offset 8.05 dB Ref 20.00 dBm Mkr1 2.43202 GHz -6.6851 dBm  Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 60 MHz Sweep 5.8 ms Occupied Bandwidth 35.725 MHz Total Power 13.5 dBm Transmit Freq Error -159.63 kHz OBW Power 99.00 % x dB Bandwidth 35.15 MHz x dB -6.00 dB MSG STATUS	Frequency Center Freq 2.437000000 GHz CF Step 6.000000 MHz Auto Man Freq Offset 0 Hz

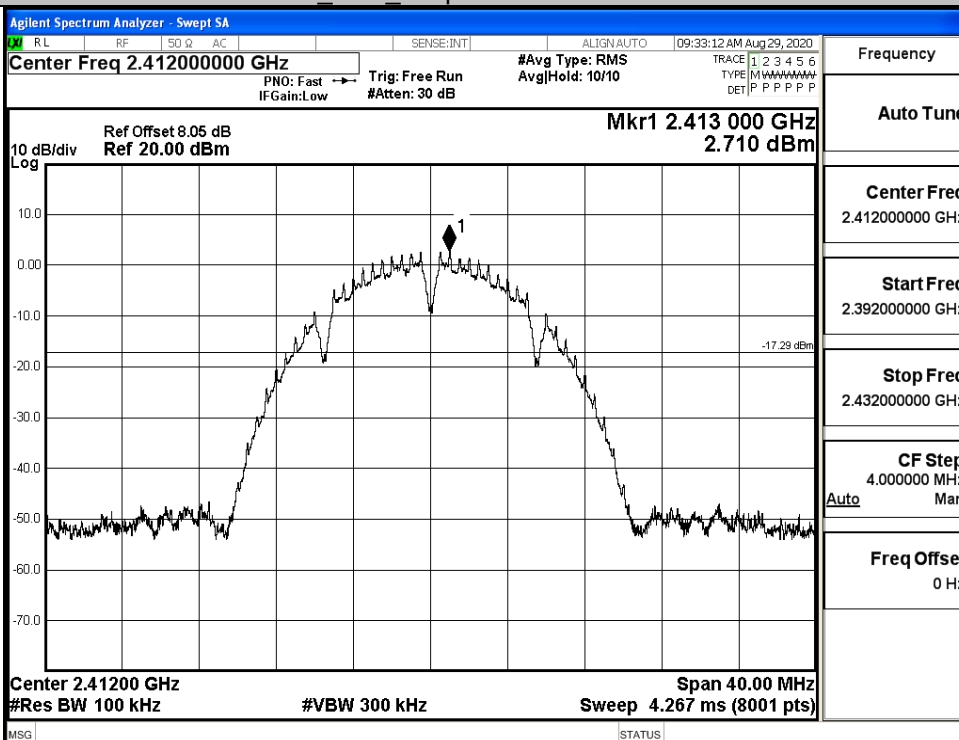


C.5 RF Conducted Spurious Emissions

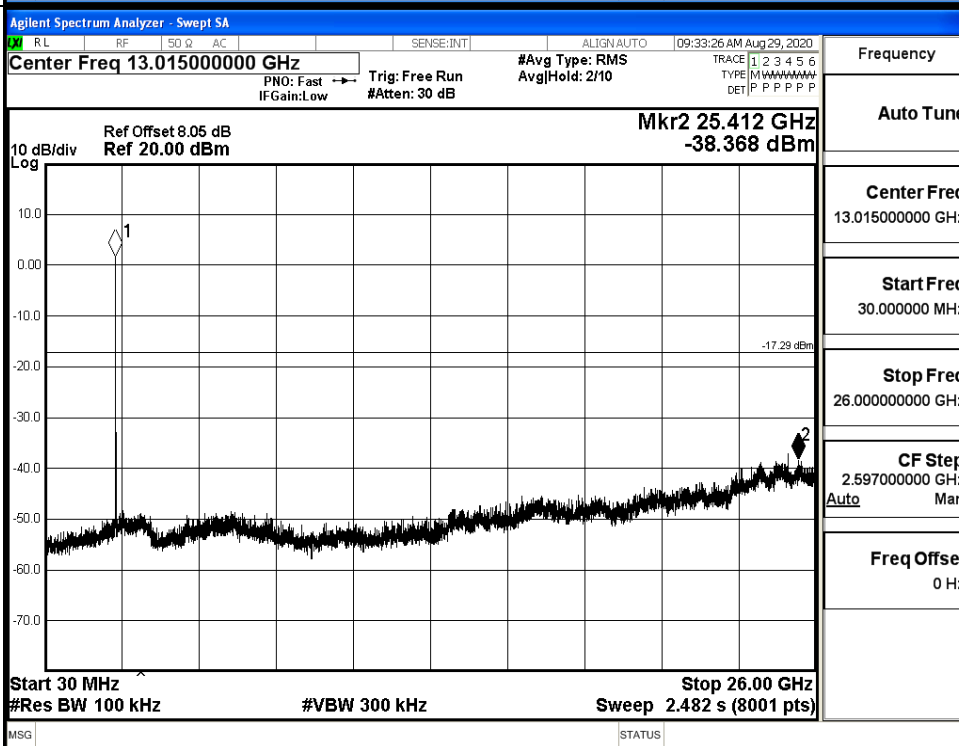
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	2.71	-38.368	-17.290	PASS
	MCH	2.756	-37.520	-17.244	PASS
	HCH	2.796	-38.404	-17.204	PASS
11G	LCH	-4.4	-37.914	-24.400	PASS
	MCH	-4.624	-37.205	-24.624	PASS
	HCH	-4.061	-38.121	-24.061	PASS
11N20 SISO	LCH	-4.365	-37.649	-24.365	PASS
	MCH	-3.938	-37.885	-23.938	PASS
	HCH	-3.762	-37.792	-23.762	PASS
11N40 SISO	LCH	-6.675	-38.322	-26.675	PASS
	MCH	-6.603	-37.899	-26.603	PASS
	HCH	-7.006	-37.390	-27.006	PASS

11B LCH Graphs

Pref/11B/LCH

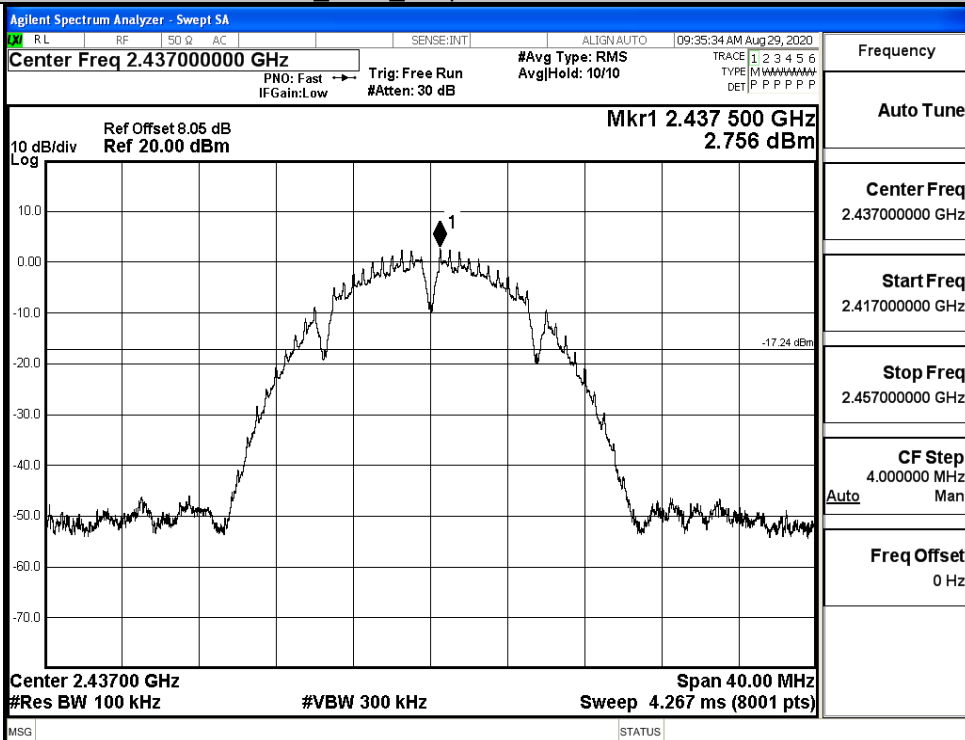


Puw/11B/LCH

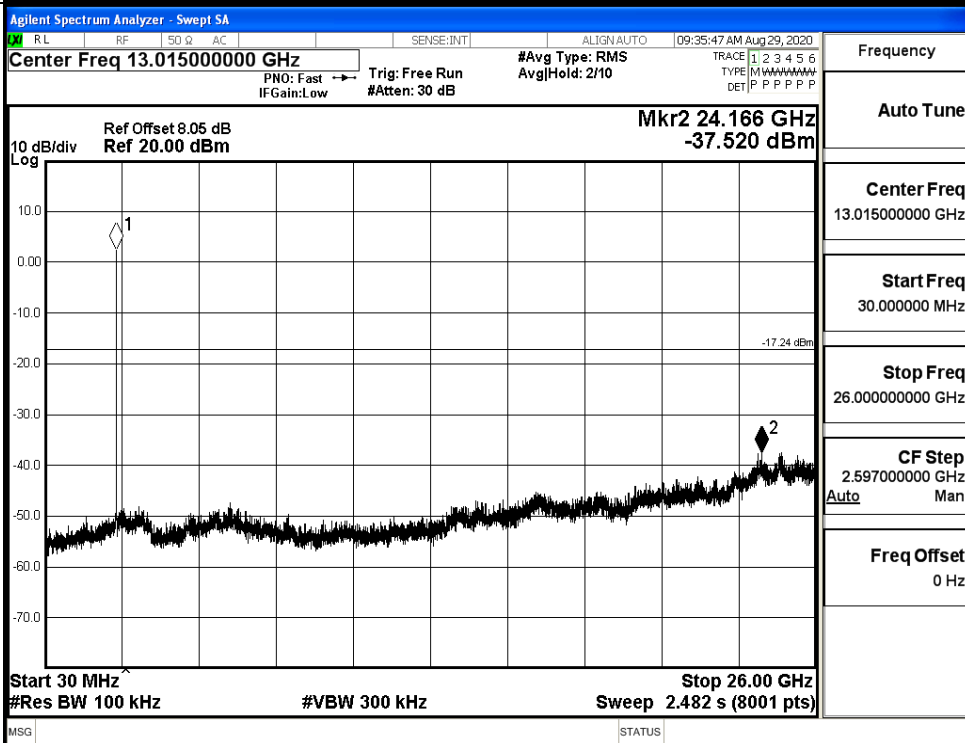


11B MCH Graphs

Pref/11B/MCH

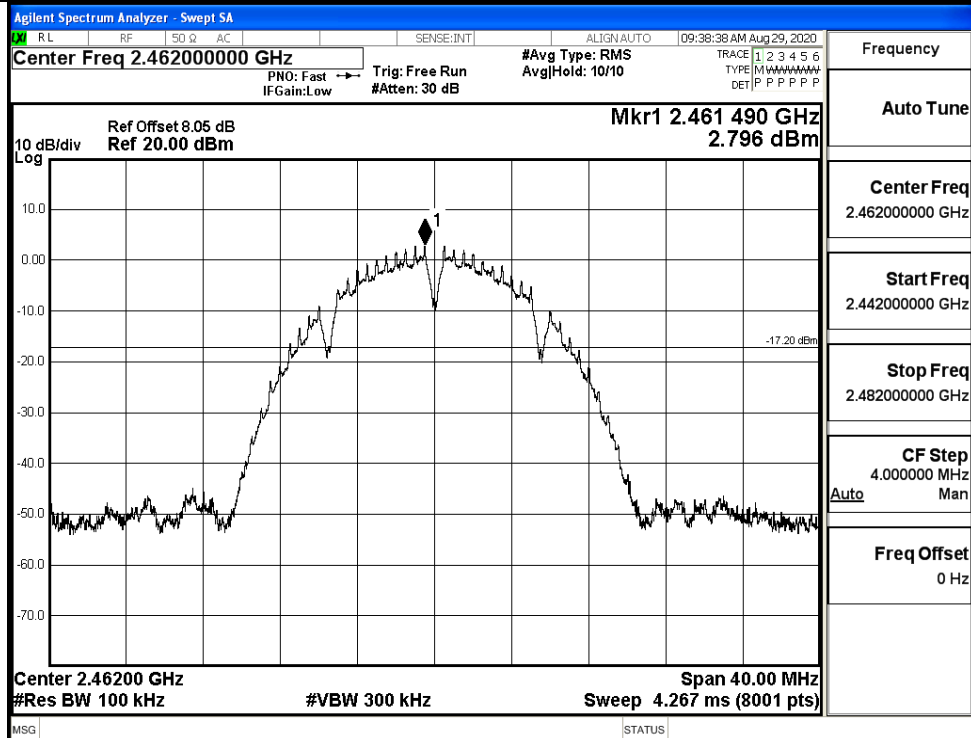


Puw/11B/MCH

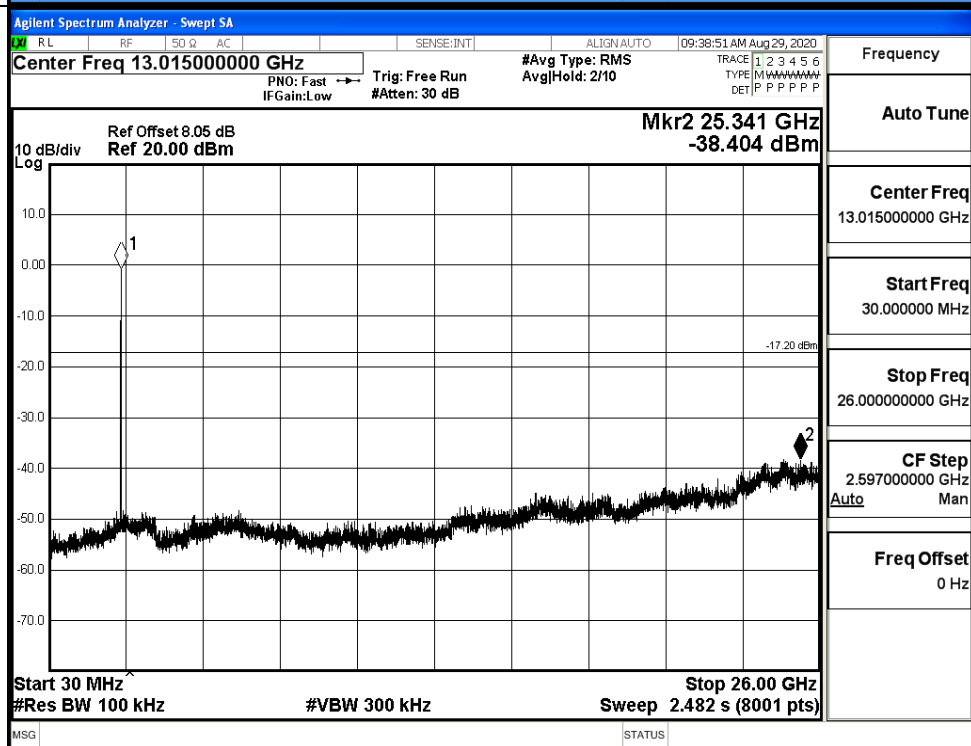


11B HCH Graphs

Pref/11B/HCH

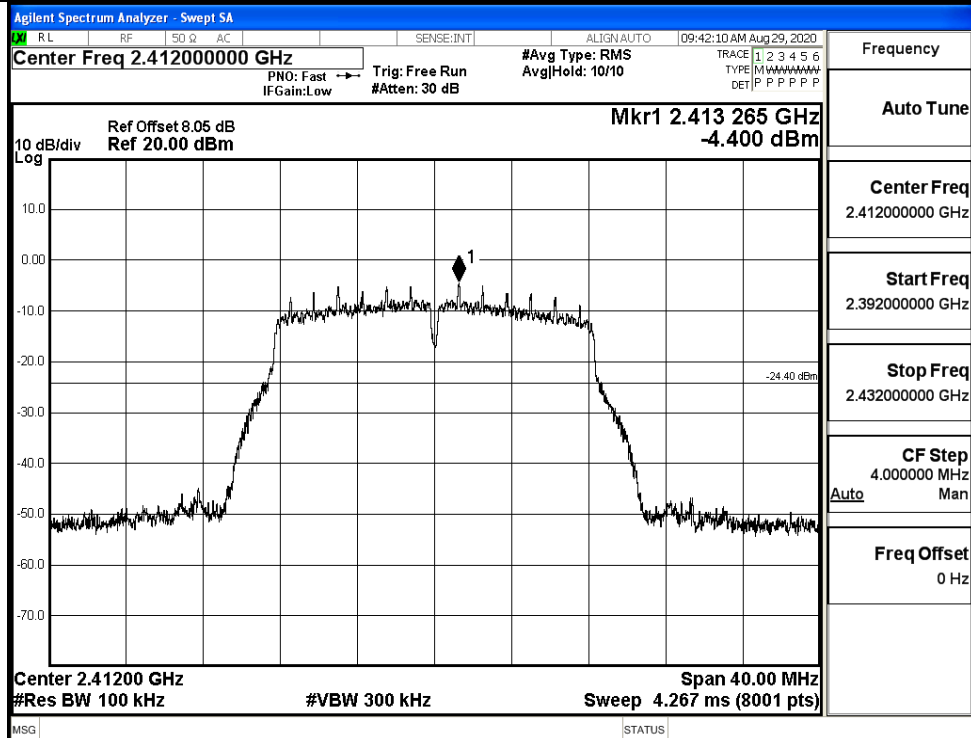


Puw/11B/HCH

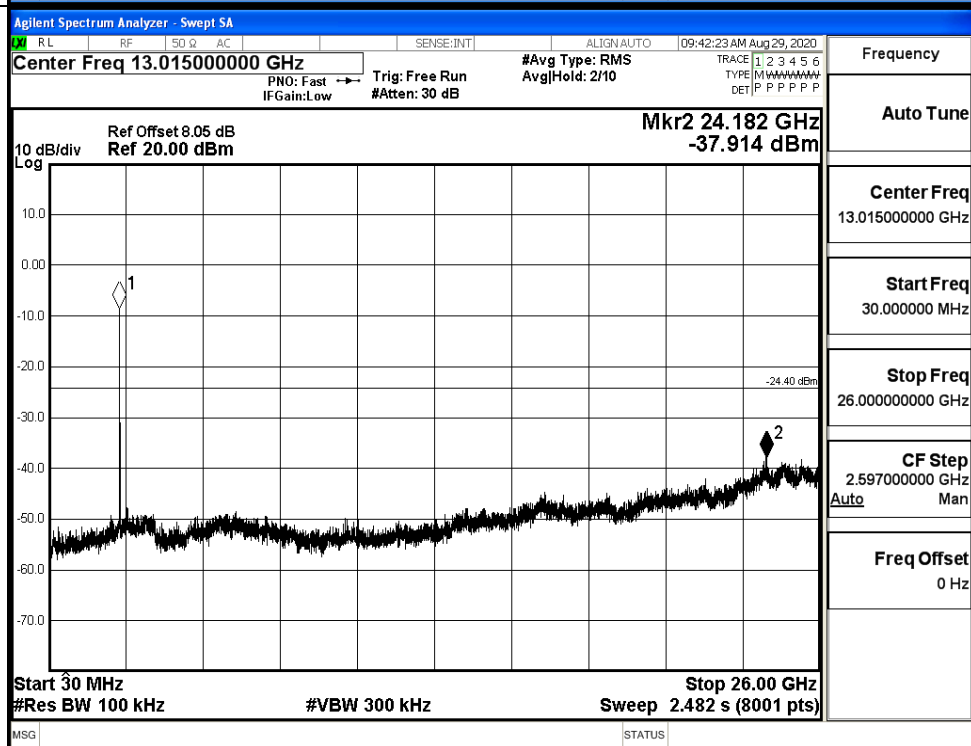


11G LCH Graphs

Pref/11G/LCH

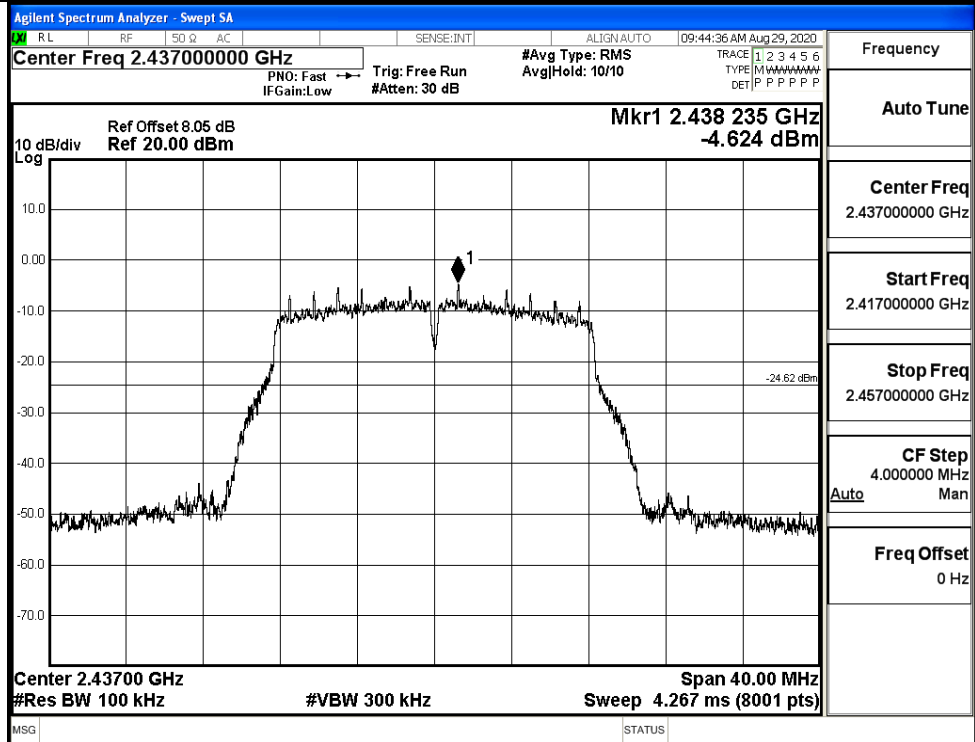


Puw/11G/LCH

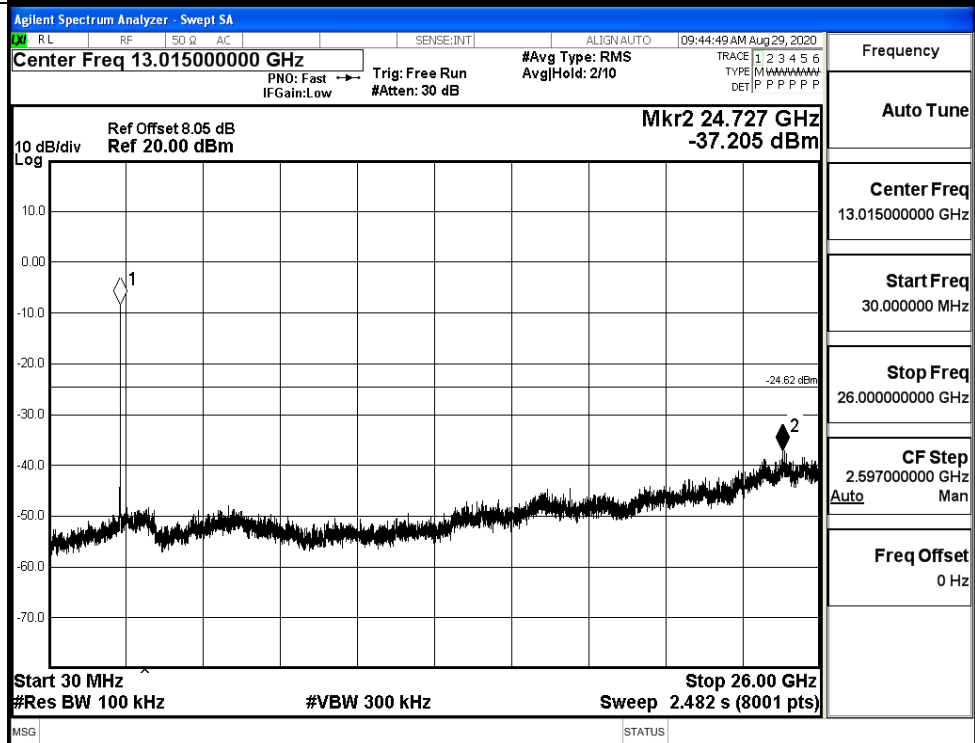


11G MCH Graphs

Pref/11G/MCH

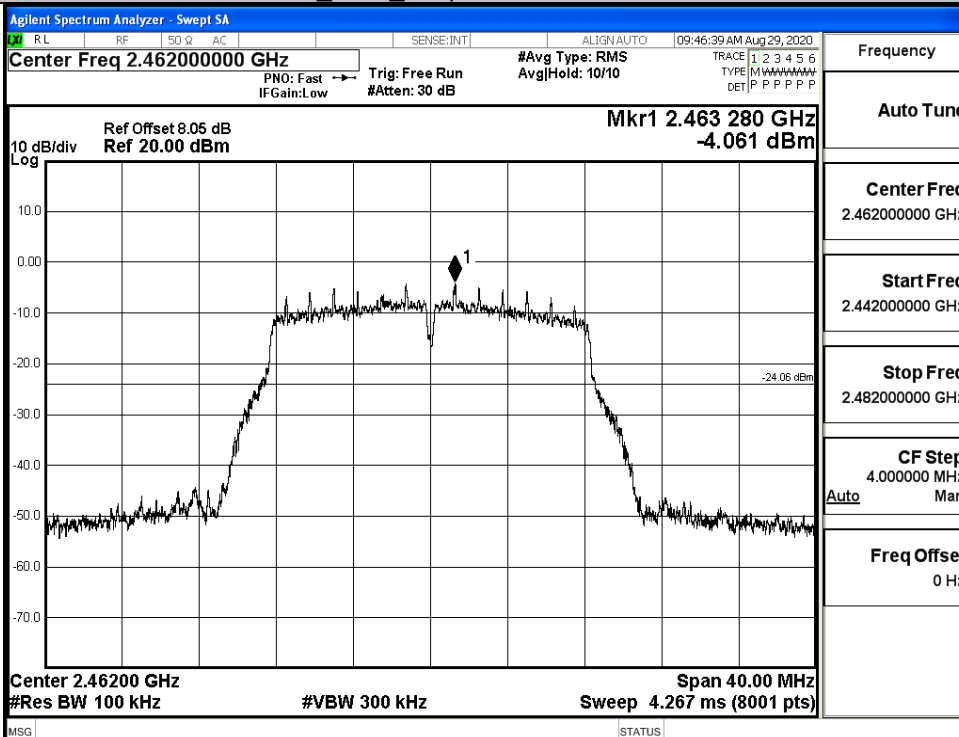


Puw/11G/MCH

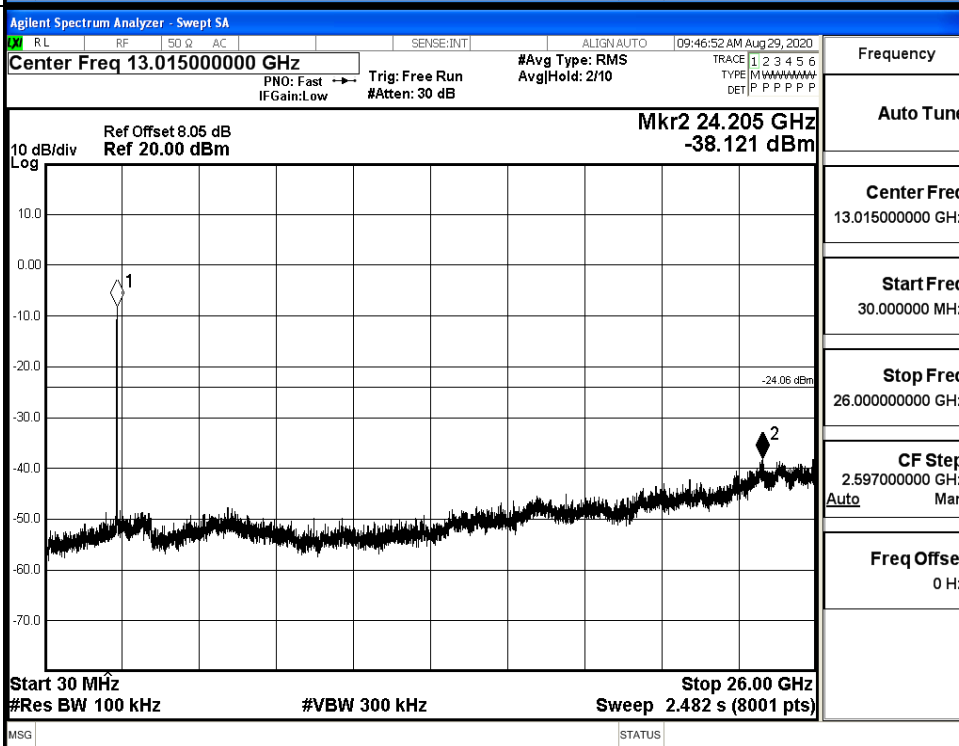


11G HCH Graphs

Pref/11G/HCH

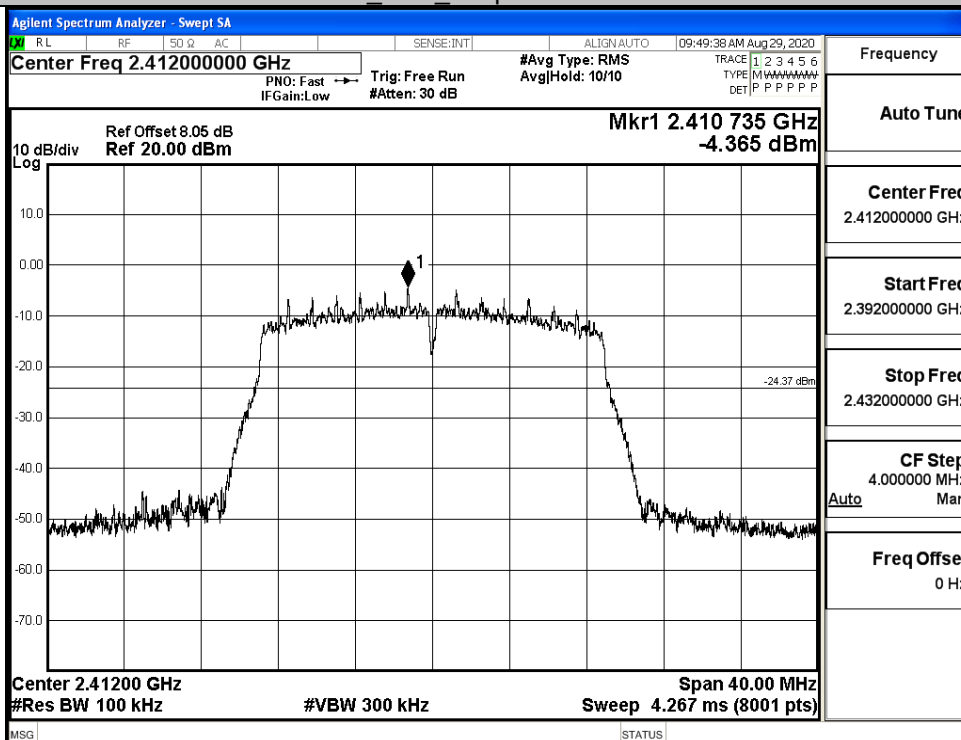


Puw/11G/HCH

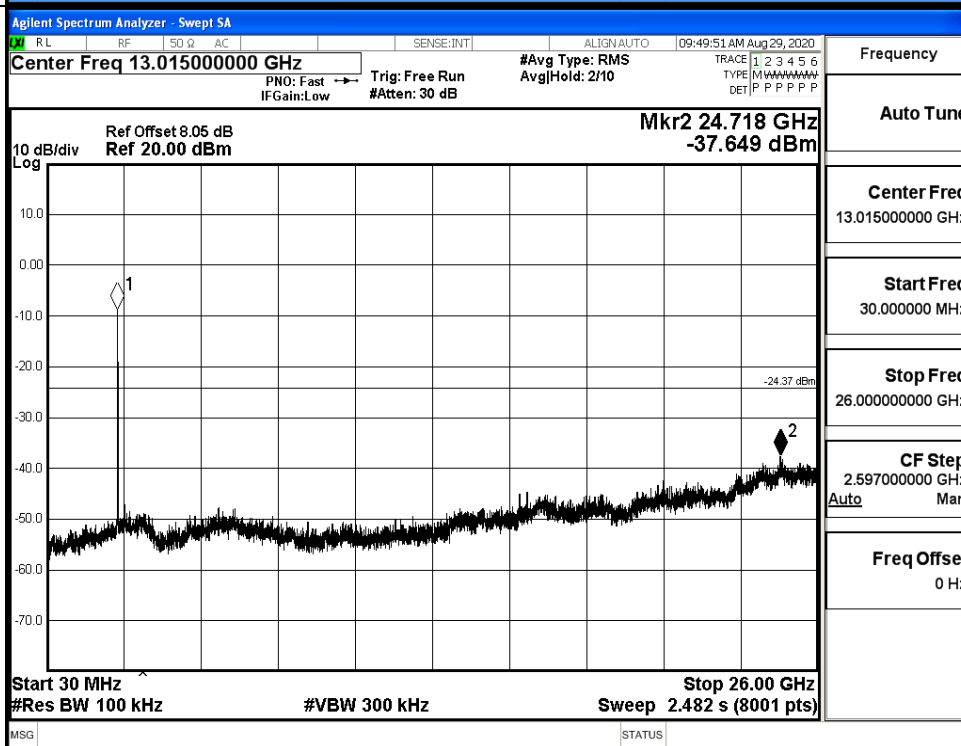


11N20SISO LCH Graphs

Pref/11N20SIS
O/LCH

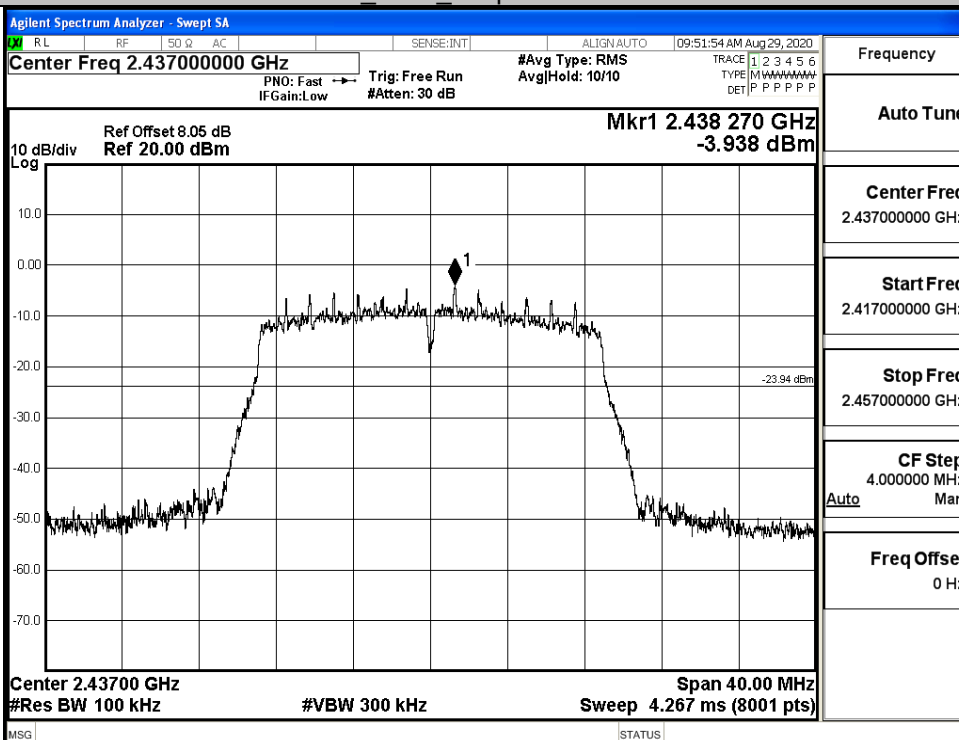


Puw/11N20
SISO/LCH

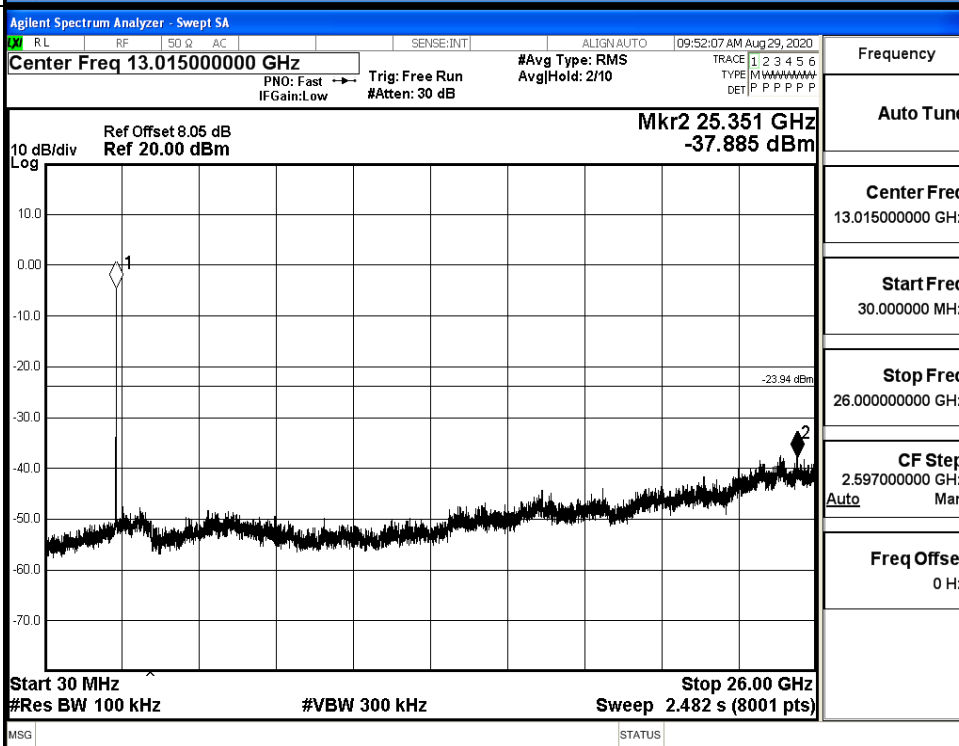


11N20SISO_MCH_Graphs

Pref/11N20
SISO/MCH

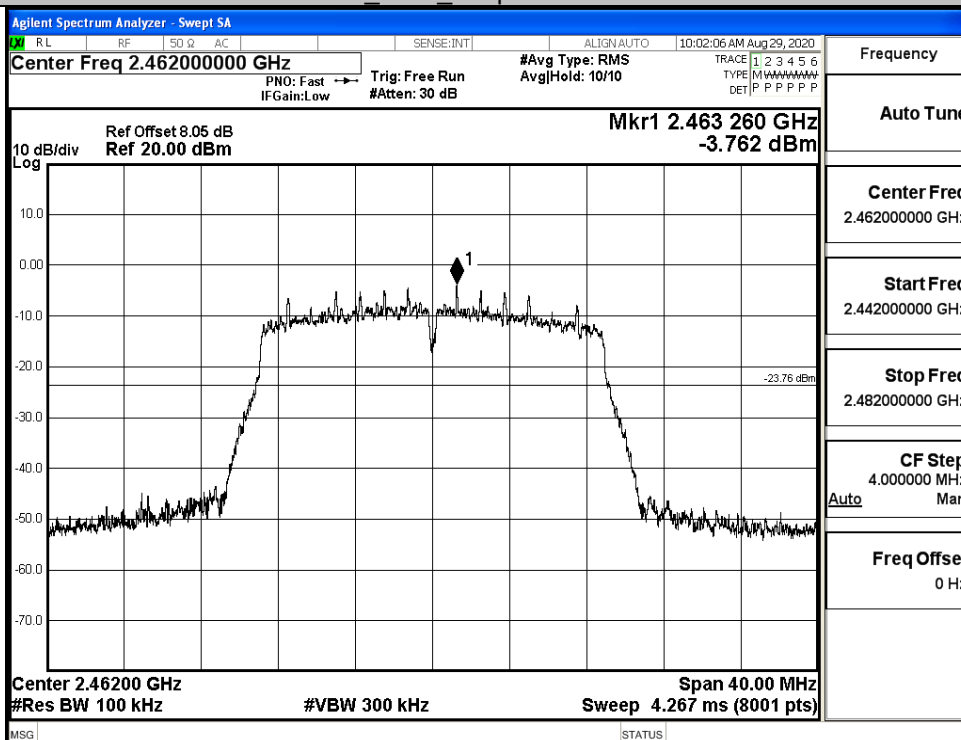


Puw/11N20
SISO/MCH

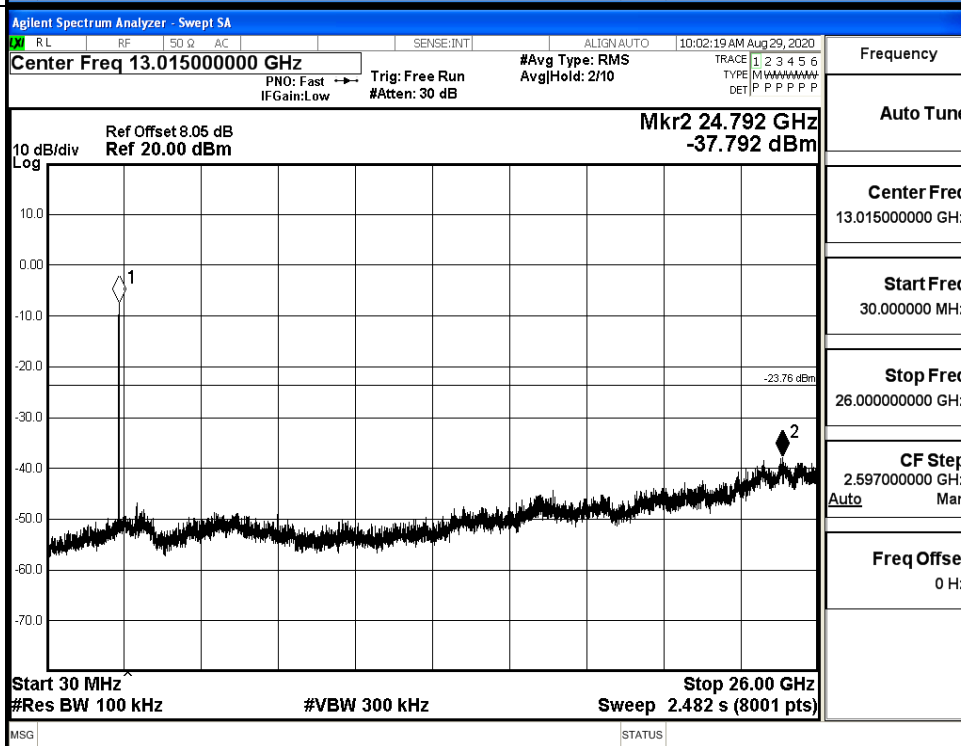


11N20SISO HCH Graphs

Pref/11N20
SISO/HCH

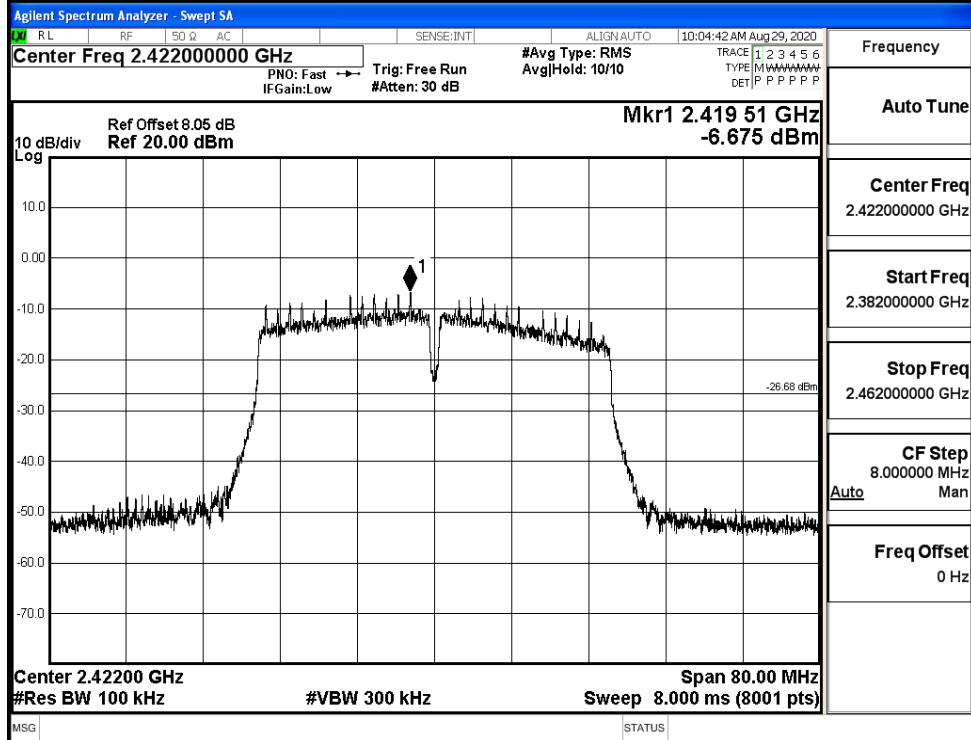


Puw/11N20
SISO/HCH

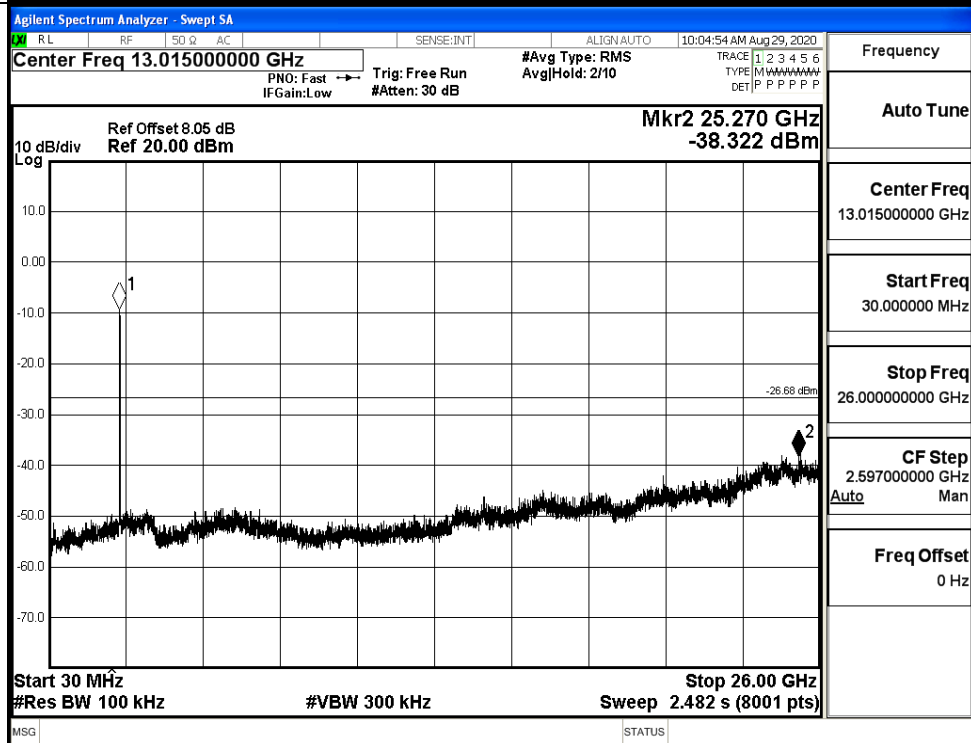


11N40SISO LCH Graphs

Pref/11N40
SISO/LCH

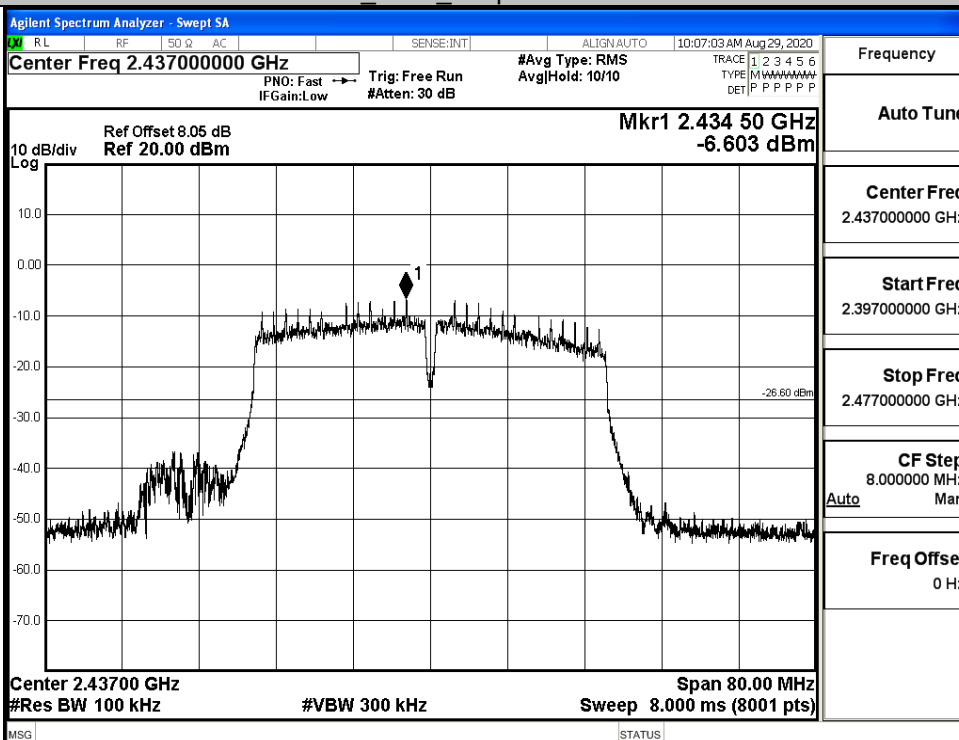


Puw/11N40
SISO/LCH

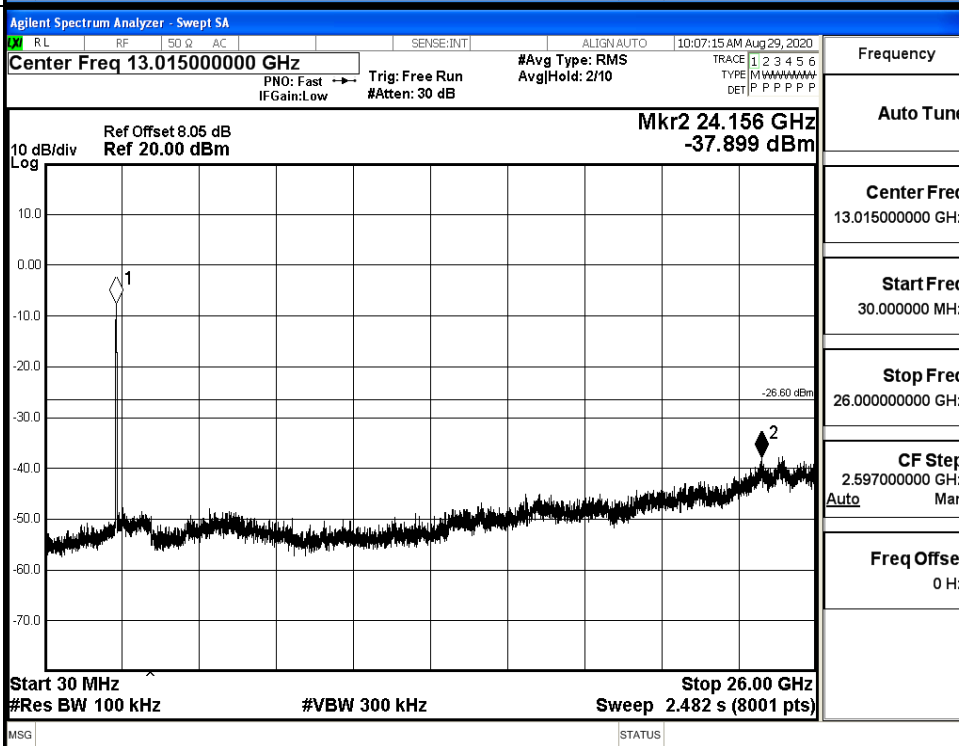


11N40SISO_MCH_Graphs

Pref/11N40
SISO/MCH

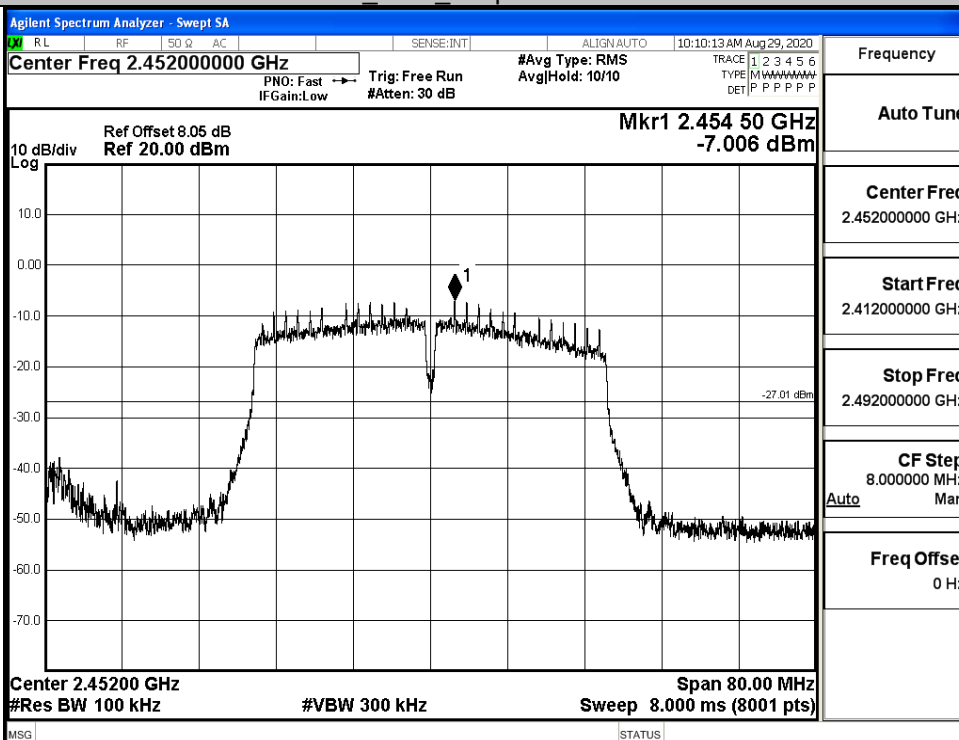


Puw/11N40
SISO/MCH

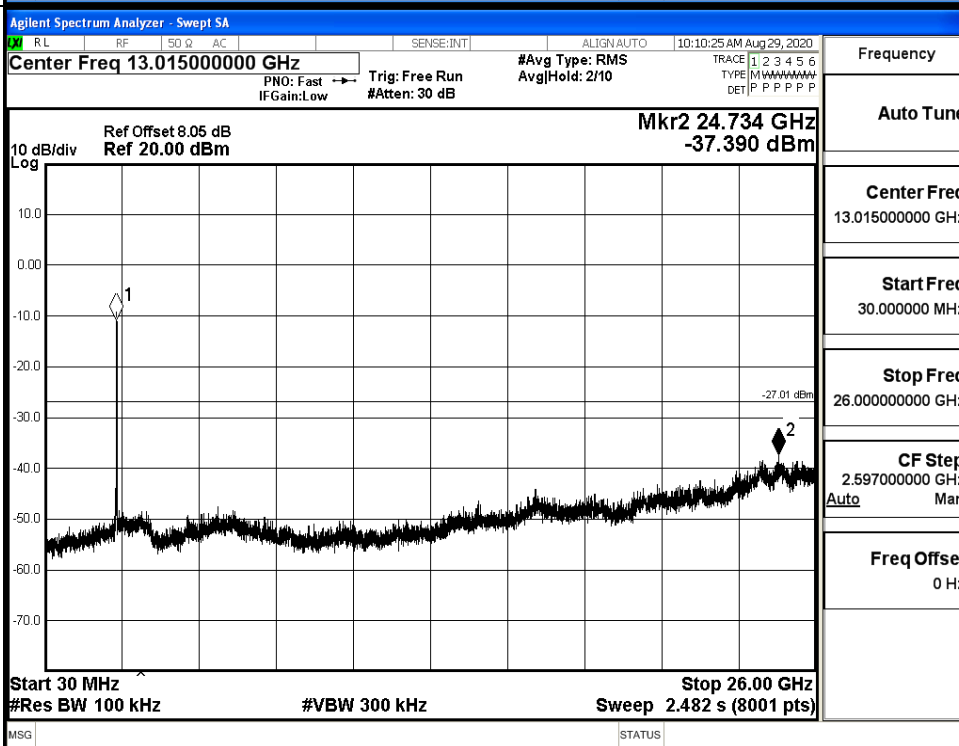


11N40SISO HCH Graphs

Pref/11N40
SISO/HCH



Puw/11N40
SISO/HCH

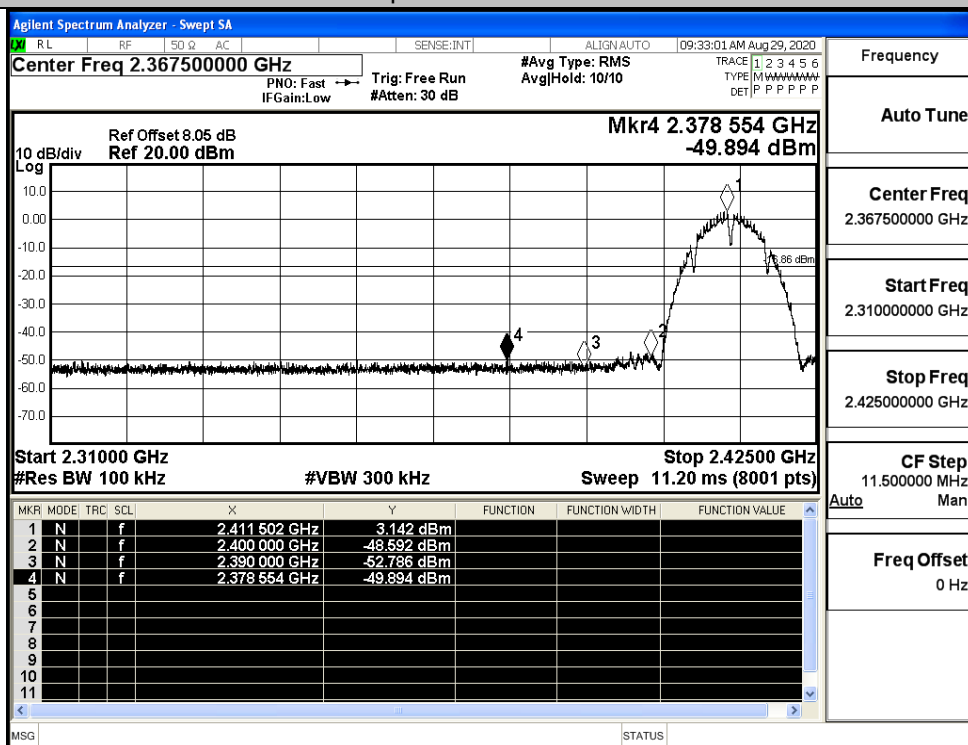


C.6 Band-edge for RF Conducted Emissions

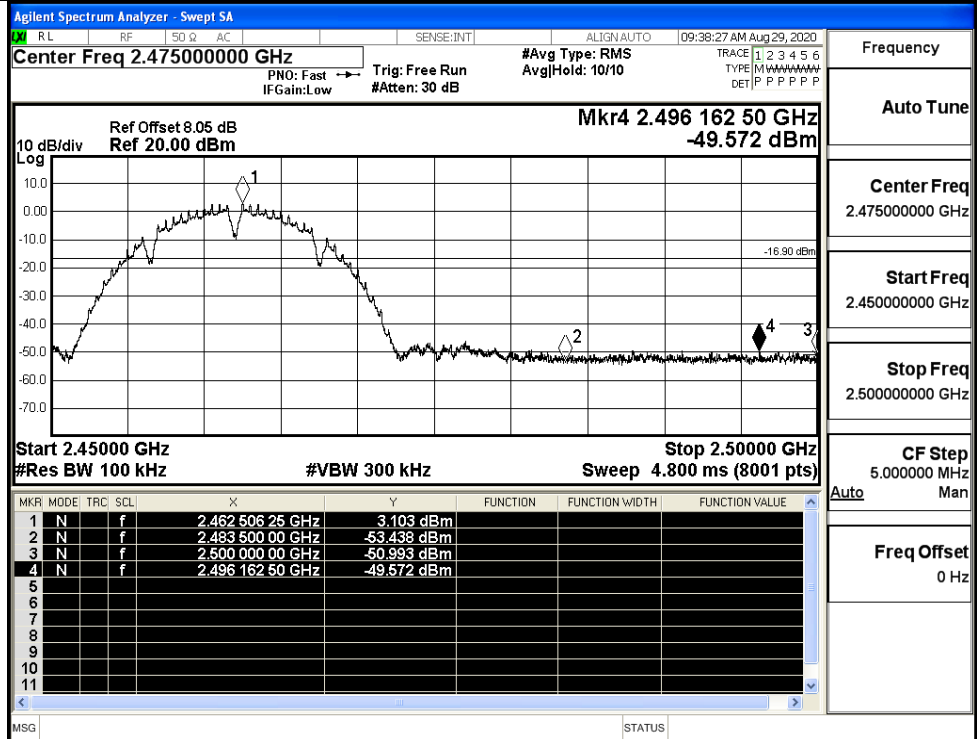
Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	3.142	-49.894	-16.86	PASS
	HCH	3.103	-49.572	-16.9	PASS
11G	LCH	-4.859	-49.325	-24.86	PASS
	HCH	-4.158	-48.937	-24.16	PASS
11N20SISO	LCH	-4.129	-49.243	-24.13	PASS
	HCH	-4.357	-49.112	-24.36	PASS
11N40SISO	LCH	-6.922	-48.264	-26.92	PASS
	HCH	-6.332	-49.585	-26.33	PASS

Test Graphs

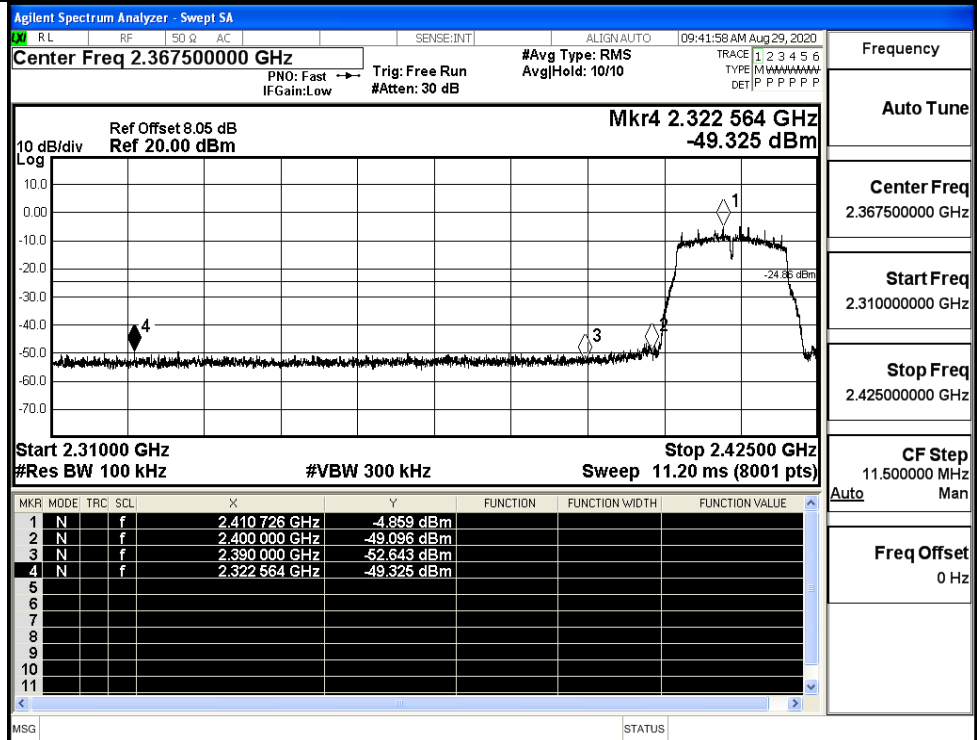
11B/LCH



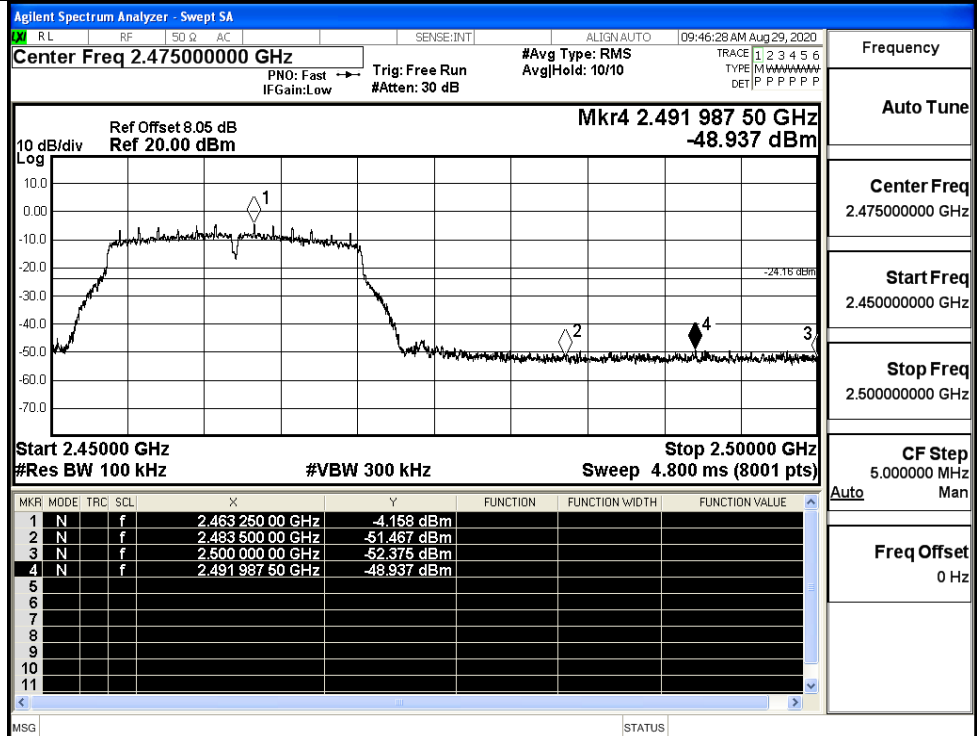
11B/HCH



11G/LCH



11G/HCH



Frequency

Auto Tune

Center Freq
2.475000000 GHz

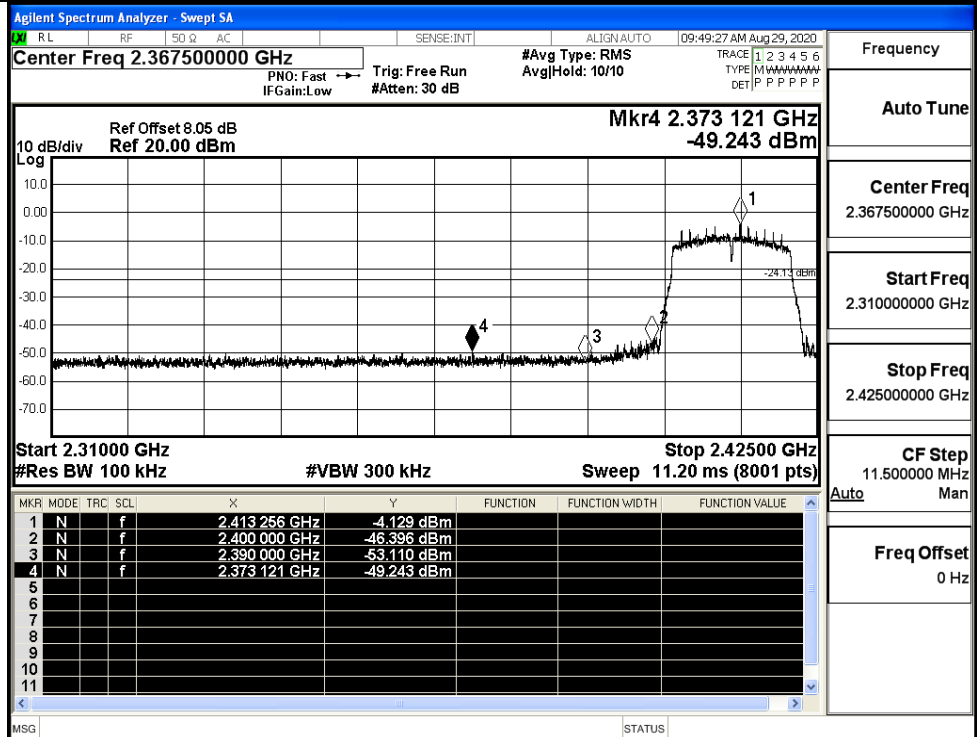
Start Freq
2.450000000 GHz

Stop Freq
2.500000000 GHz

CF Step
5.000000 MHz

Freq Offset
0 Hz

11N20SISO/LCH



Frequency

Auto Tune

Center Freq
2.367500000 GHz

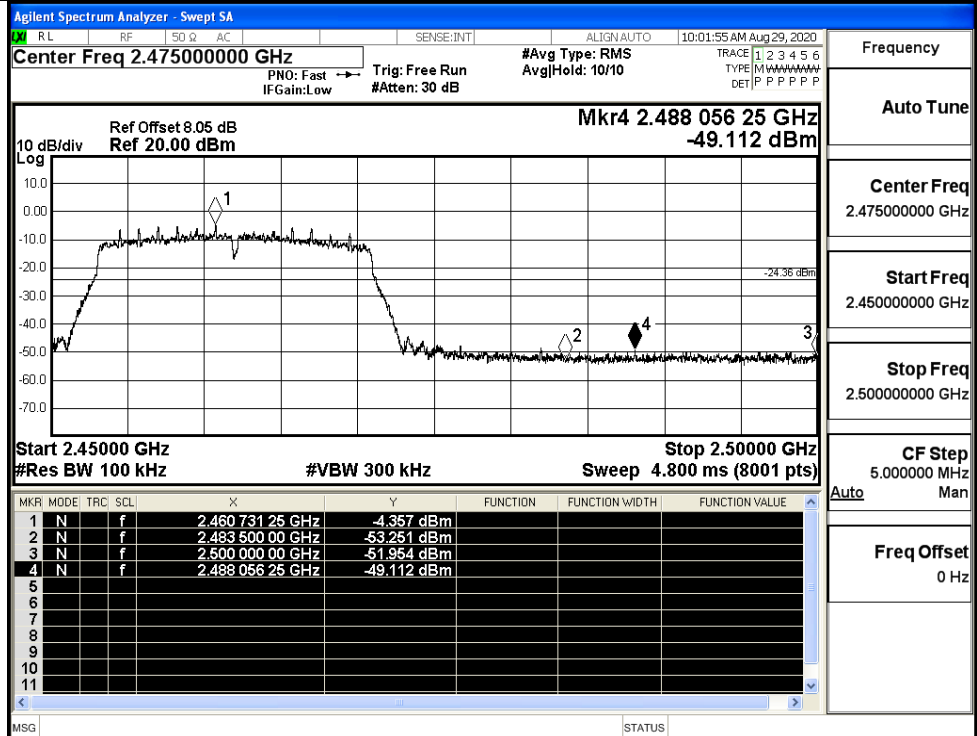
Start Freq
2.310000000 GHz

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

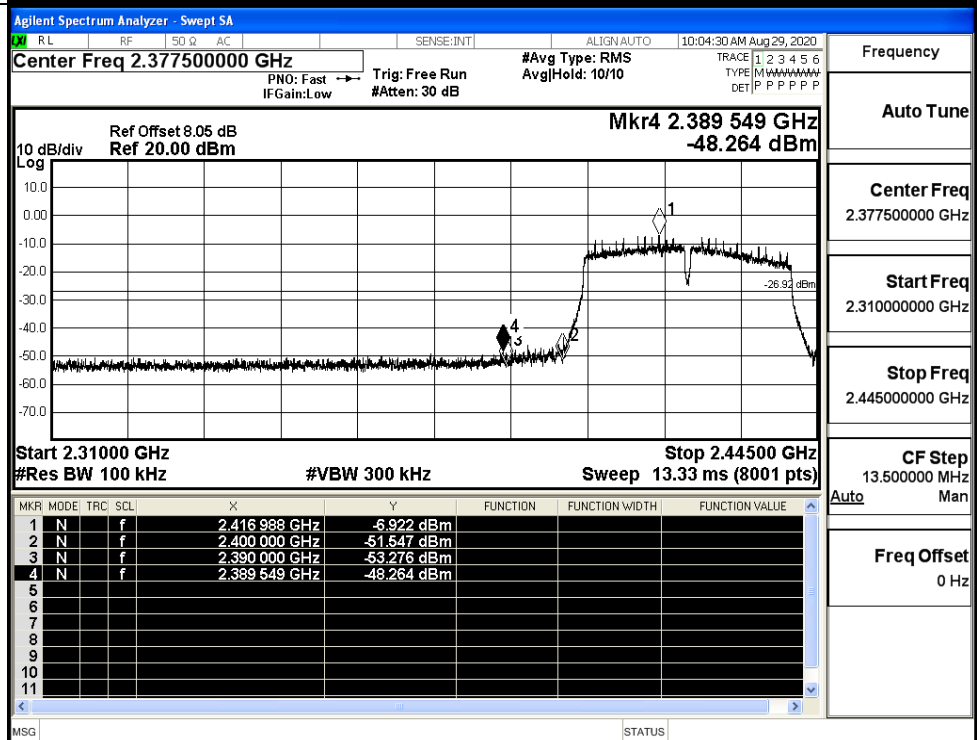
5.000000 MHz

Auto

Freq Offset

0 Hz

11N40SISO/LCH



Frequency

Auto Tune

Center Freq

2.377500000 GHz

Start Freq

2.310000000 GHz

Stop Freq

2.445000000 GHz

CF Step

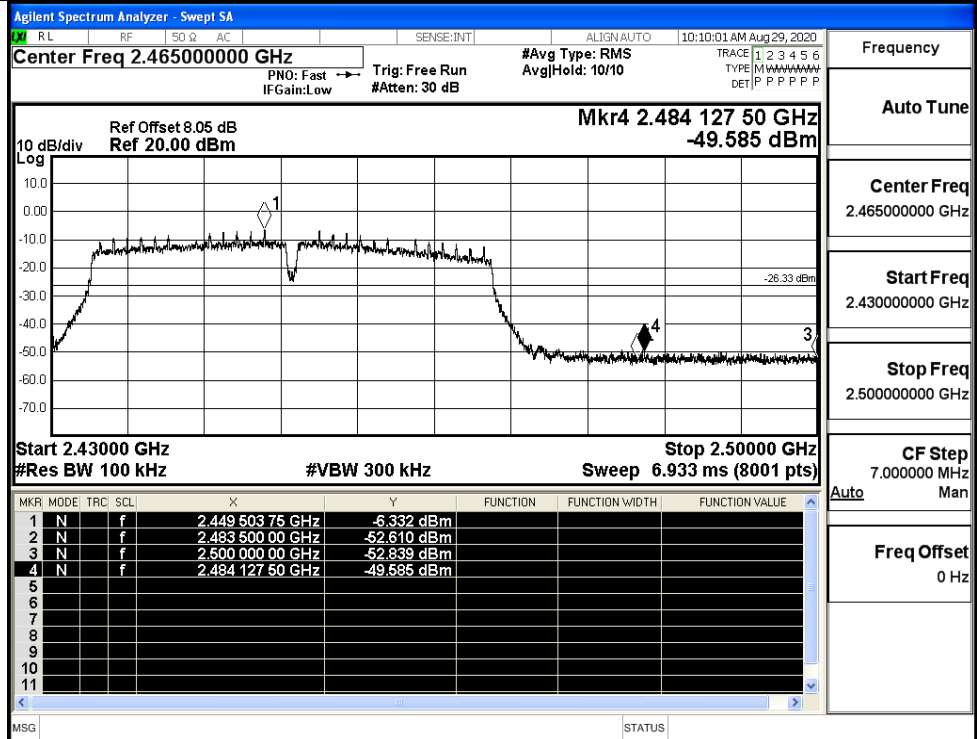
13.500000 MHz

Auto

Freq Offset

0 Hz

11N40SISO/HCH

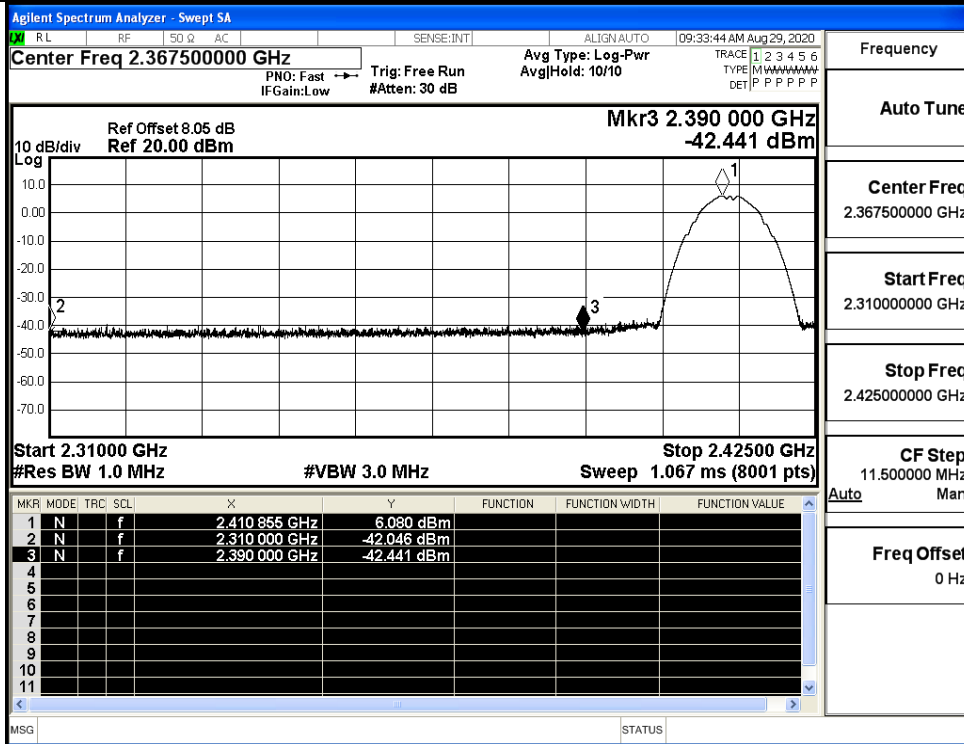


C.7 Restrict-band band-edge measurements

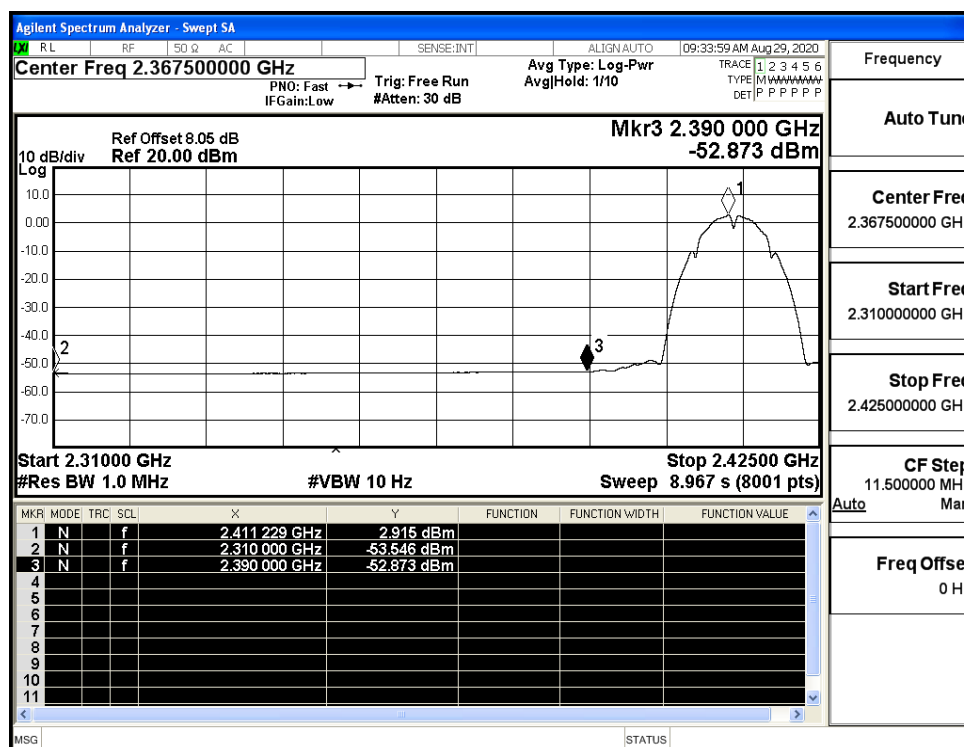
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
11B	2412	Ant1	2310.0	-42.05	2.0	0	55.18	PEAK	74	PASS
	2412	Ant1	2310.0	-53.55	2.0	0	43.68	AV	54	PASS
	2412	Ant1	2390.0	-42.44	2.0	0	54.79	PEAK	74	PASS
	2412	Ant1	2390.0	-52.87	2.0	0	44.36	AV	54	PASS
	2462	Ant1	2483.5	-40.88	2.0	0	56.35	PEAK	74	PASS
	2462	Ant1	2483.5	-52.64	2.0	0	44.59	AV	54	PASS
	2462	Ant1	2500.0	-42.17	2.0	0	55.06	PEAK	74	PASS
	2462	Ant1	2500.0	-52.50	2.0	0	44.73	AV	54	PASS
11G	2412	Ant1	2310.0	-43.74	2.0	0	53.49	PEAK	74	PASS
	2412	Ant1	2310.0	-53.58	2.0	0	43.65	AV	54	PASS
	2412	Ant1	2390.0	-42.59	2.0	0	54.64	PEAK	74	PASS
	2412	Ant1	2390.0	-52.59	2.0	0	44.64	AV	54	PASS
	2462	Ant1	2483.5	-41.69	2.0	0	55.54	PEAK	74	PASS
	2462	Ant1	2483.5	-52.57	2.0	0	44.66	AV	54	PASS
	2462	Ant1	2500.0	-41.70	2.0	0	55.53	PEAK	74	PASS
	2462	Ant1	2500.0	-52.47	2.0	0	44.76	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-42.64	2.0	0	54.59	PEAK	74	PASS
	2412	Ant1	2310.0	-53.57	2.0	0	43.66	AV	54	PASS
	2412	Ant1	2390.0	-42.48	2.0	0	54.75	PEAK	74	PASS
	2412	Ant1	2390.0	-52.71	2.0	0	44.52	AV	54	PASS
	2462	Ant1	2483.5	-41.73	2.0	0	55.50	PEAK	74	PASS
	2462	Ant1	2483.5	-52.54	2.0	0	44.69	AV	54	PASS
	2462	Ant1	2500.0	-41.82	2.0	0	55.41	PEAK	74	PASS
	2462	Ant1	2500.0	-52.47	2.0	0	44.76	AV	54	PASS
11N40 SISO	2422	Ant1	2310.0	-42.99	2.0	0	54.24	PEAK	74	PASS
	2422	Ant1	2310.0	-53.55	2.0	0	43.68	AV	54	PASS

	2422	Ant1	2390.0	-40.17	2.0	0	57.06	PEAK	74	PASS
	2422	Ant1	2390.0	-52.04	2.0	0	45.19	AV	54	PASS
	2452	Ant1	2483.5	-41.83	2.0	0	55.40	PEAK	74	PASS
	2452	Ant1	2483.5	-52.40	2.0	0	44.83	AV	54	PASS
	2452	Ant1	2500.0	-41.94	2.0	0	55.29	PEAK	74	PASS
	2452	Ant1	2500.0	-52.44	2.0	0	44.79	AV	54	PASS

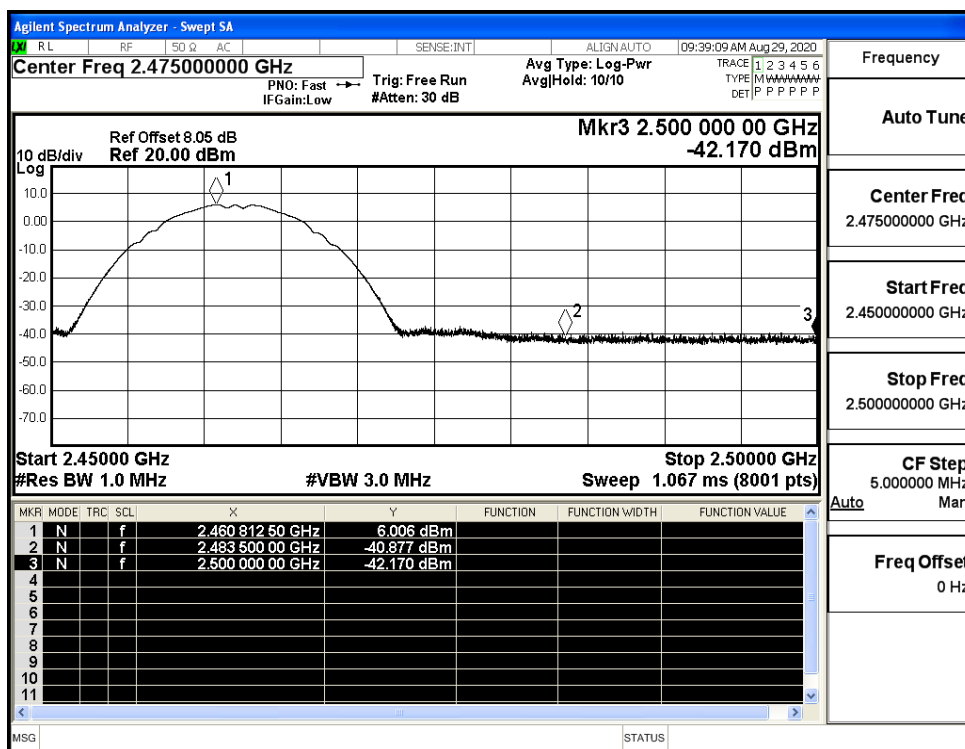
Restrict-band band-edge measurements_11B_2412_Ant1_PEAK



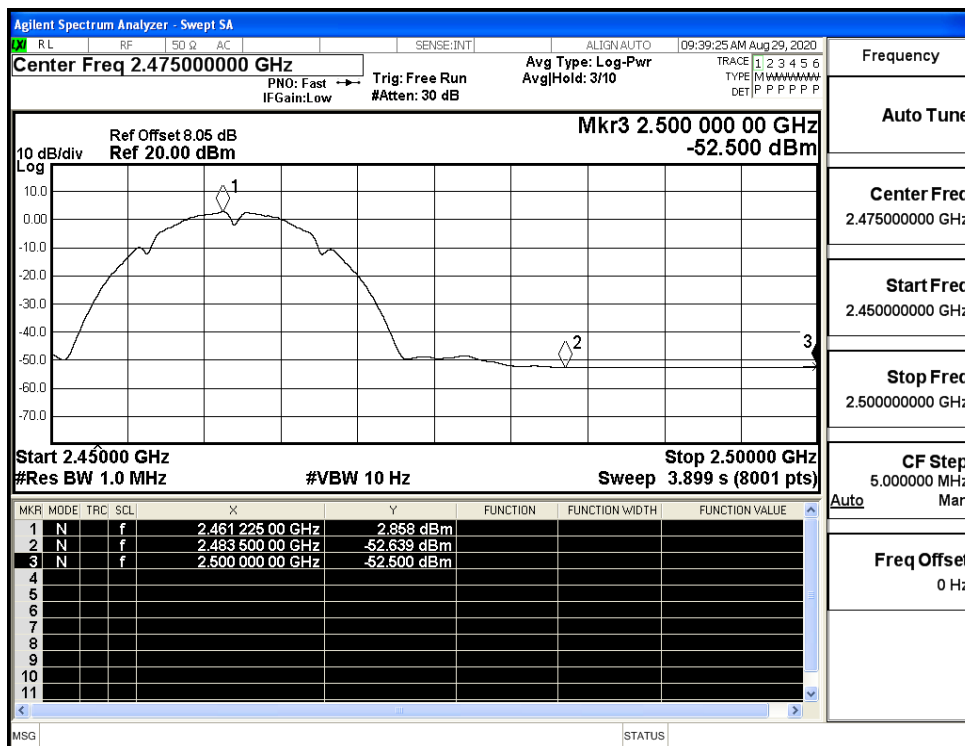
Restrict-band band-edge measurements_11B_2412_Ant1_AV



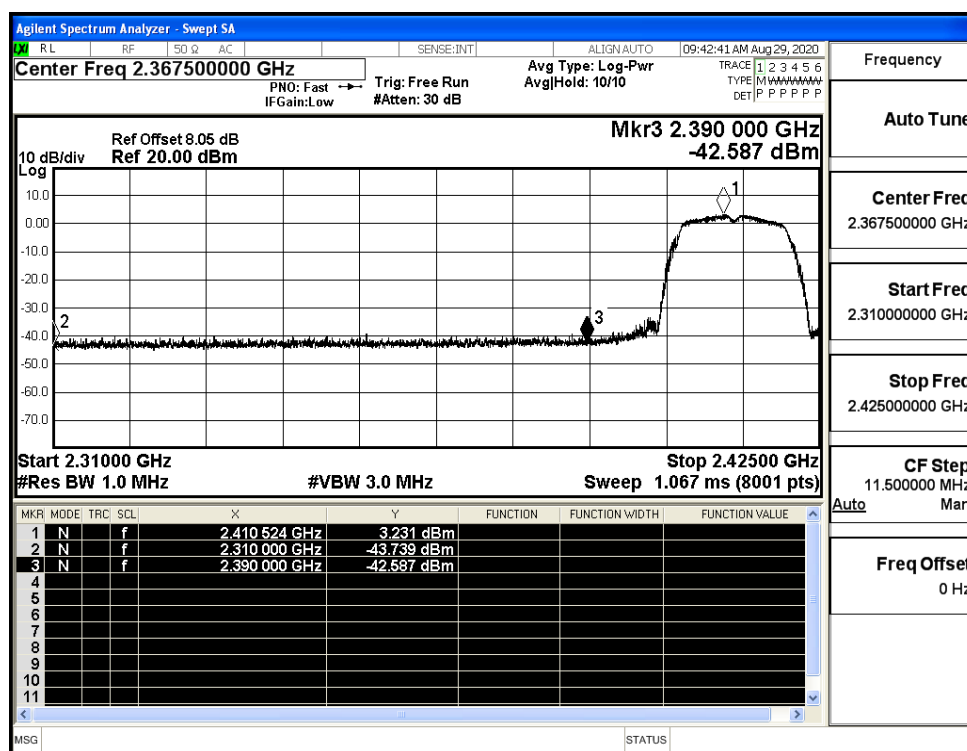
Restrict-band band-edge measurements_11B_2462_Ant1_PEAK



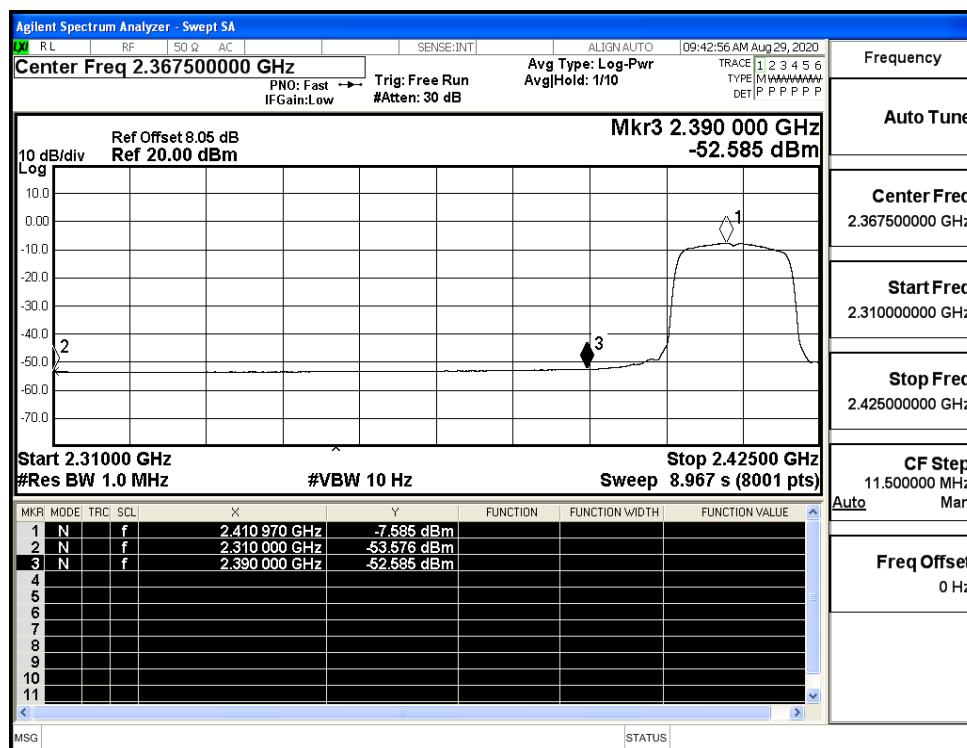
Restrict-band band-edge measurements_11B_2462_Ant1_AV



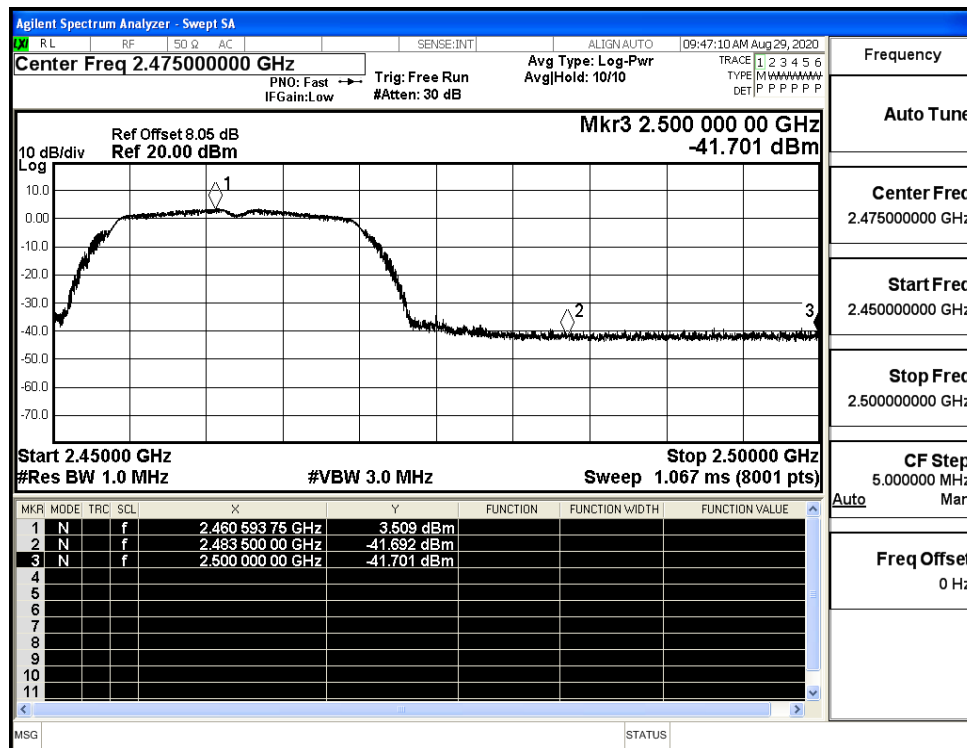
Restrict-band band-edge measurements_11G_2412_Ant1_PEAK



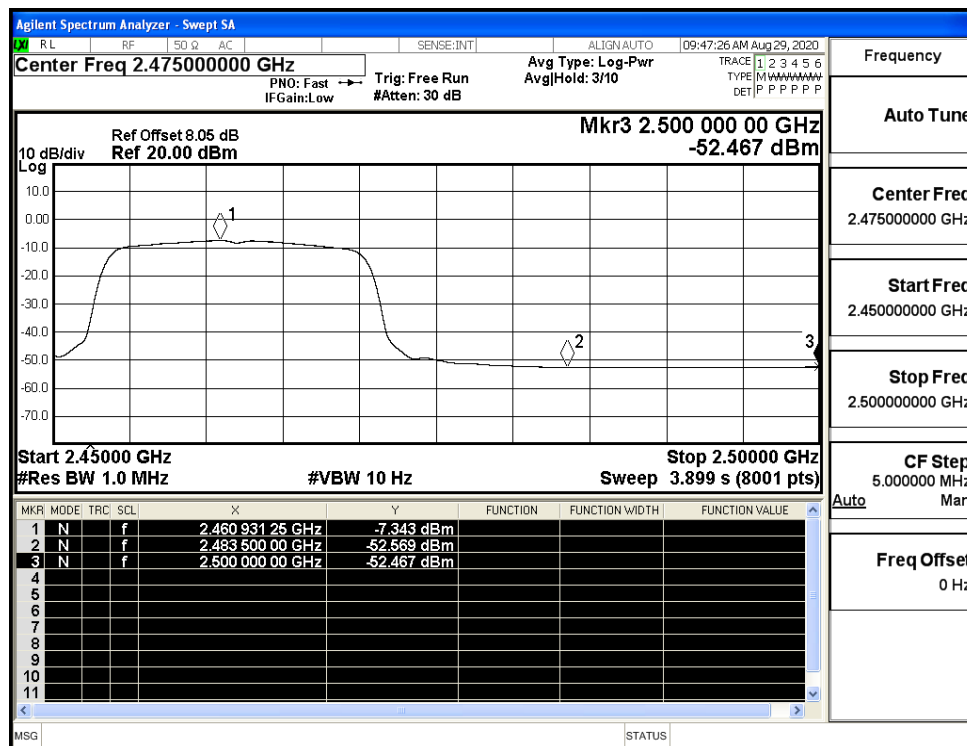
Restrict-band band-edge measurements_11G_2412_Ant1_AV



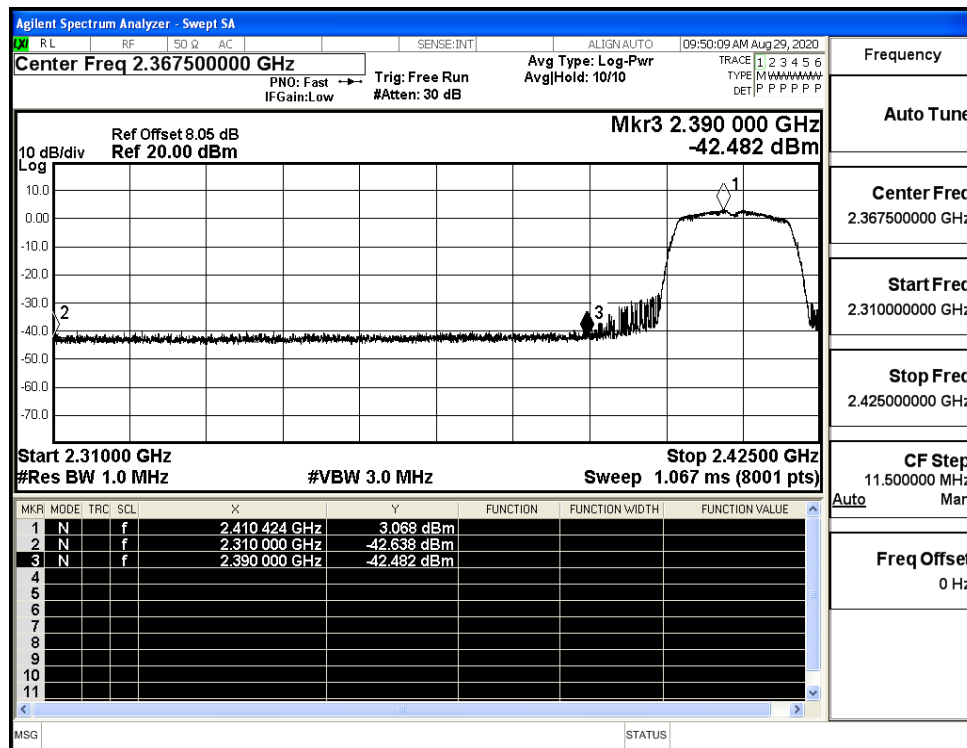
Restrict-band band-edge measurements_11G_2462_Ant1_PEAK



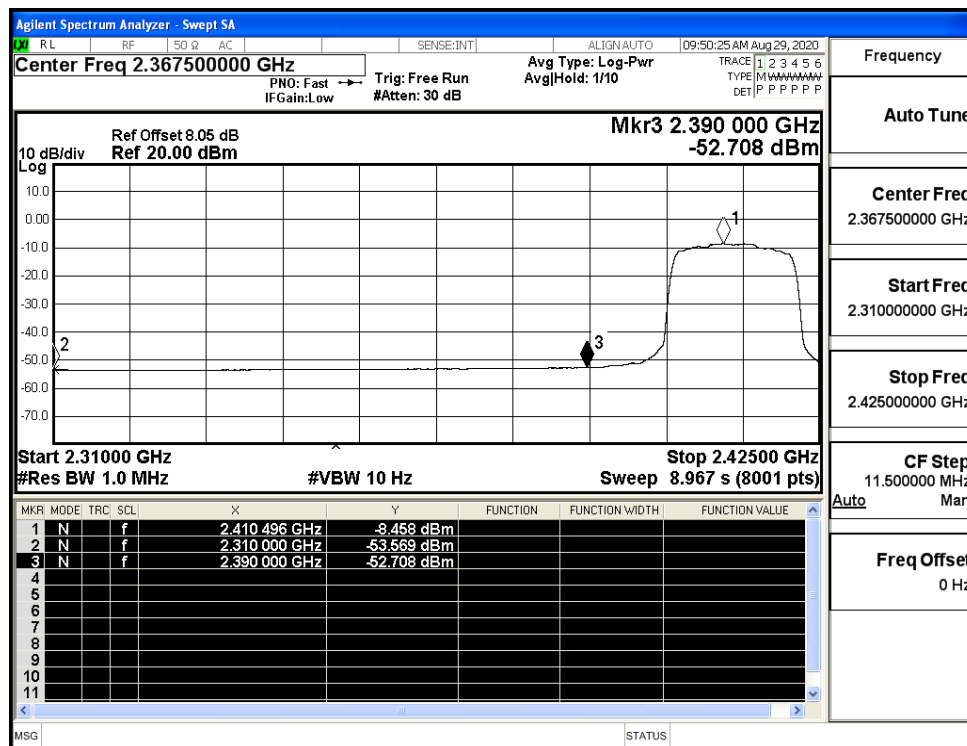
Restrict-band band-edge measurements_11G_2462_Ant1_AV



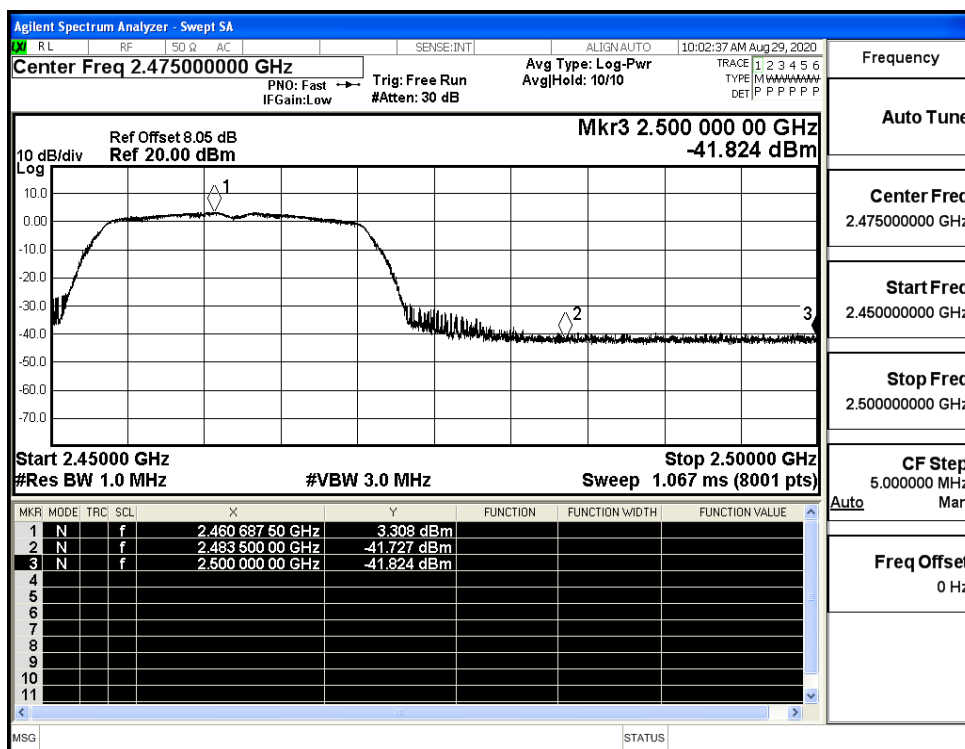
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_PEAK



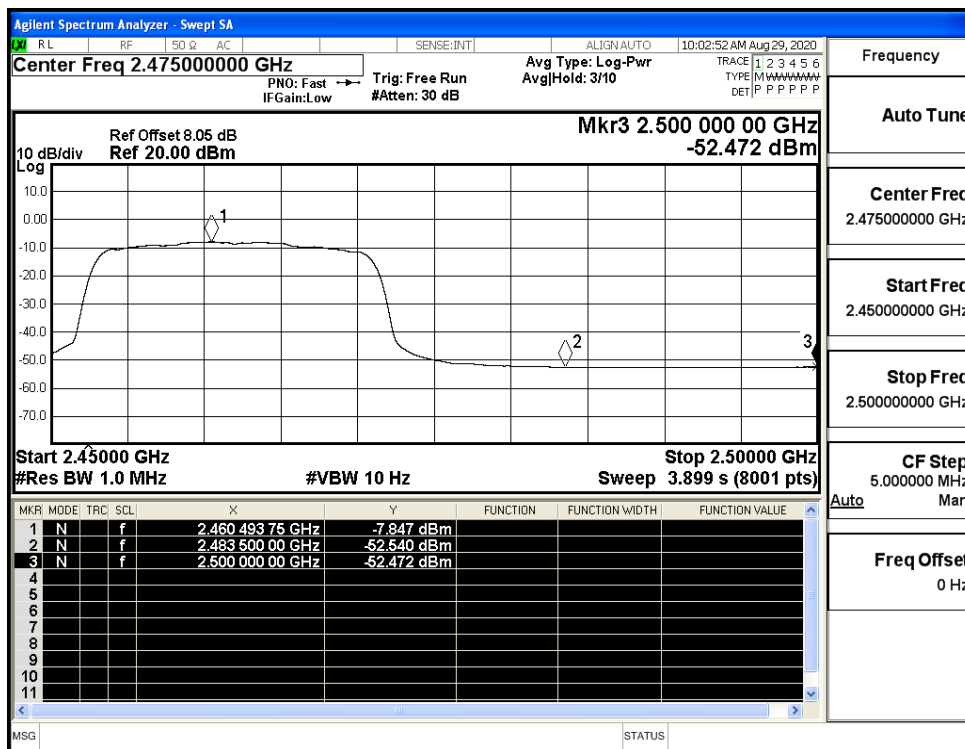
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_AV



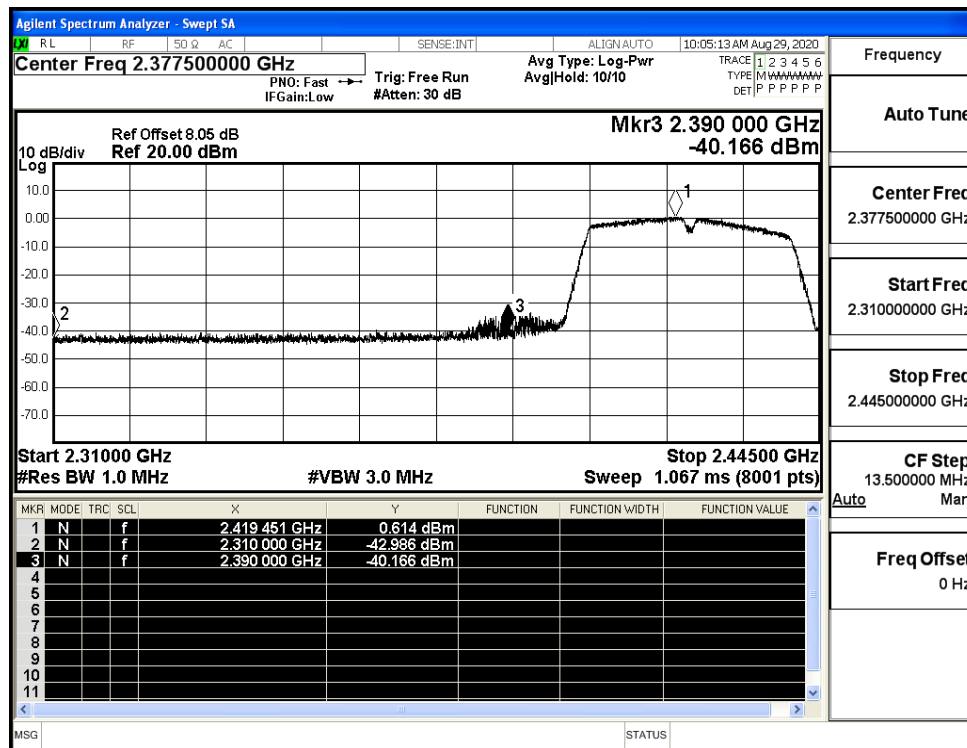
Restrict-band band-edge measurements_11N20SISO_2462_Ant1_PEAK



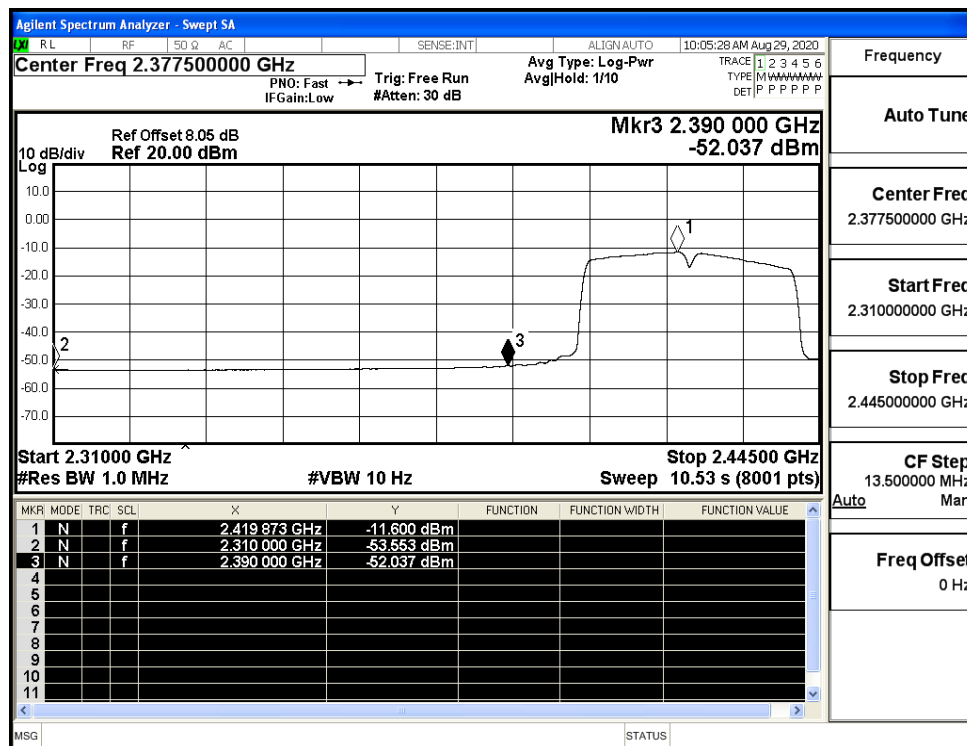
Restrict-band band-edge measurements_11N20SISO_2462_Ant1_AV



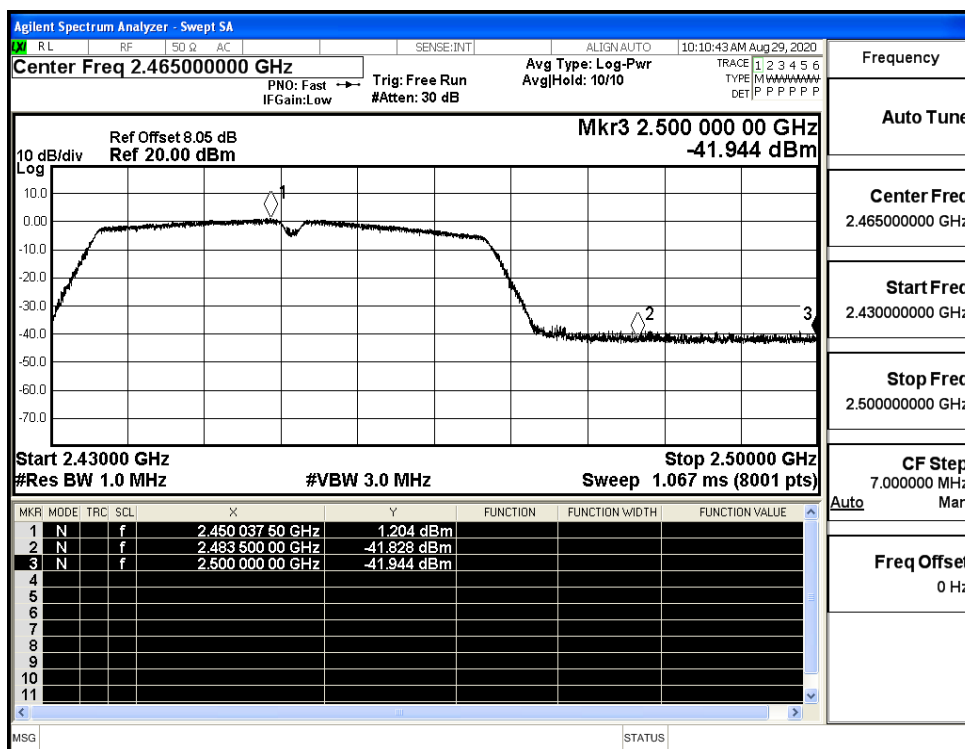
Restrict-band band-edge measurements_11N40SISO_2422_Ant1_PEAK



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

