

Appendix C

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Smart Phone

Test Model: Eluga Ray 810

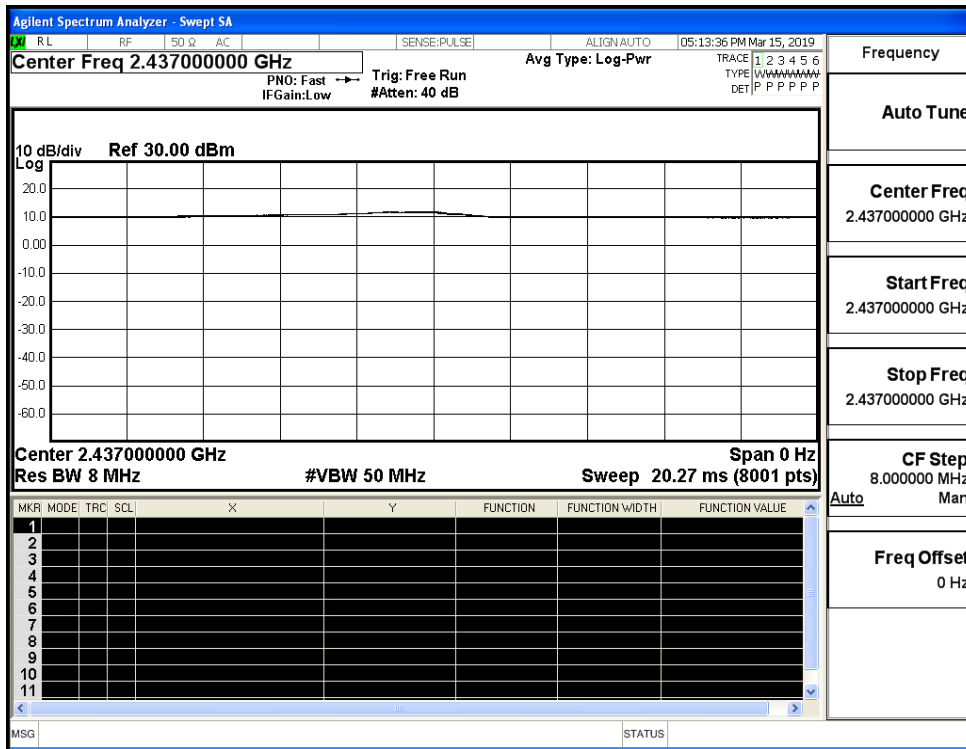
Environmental Conditions

Temperature:	21.8 ° C
Relative Humidity:	52.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Wang Chuang
Supervised by:	Tom Liu

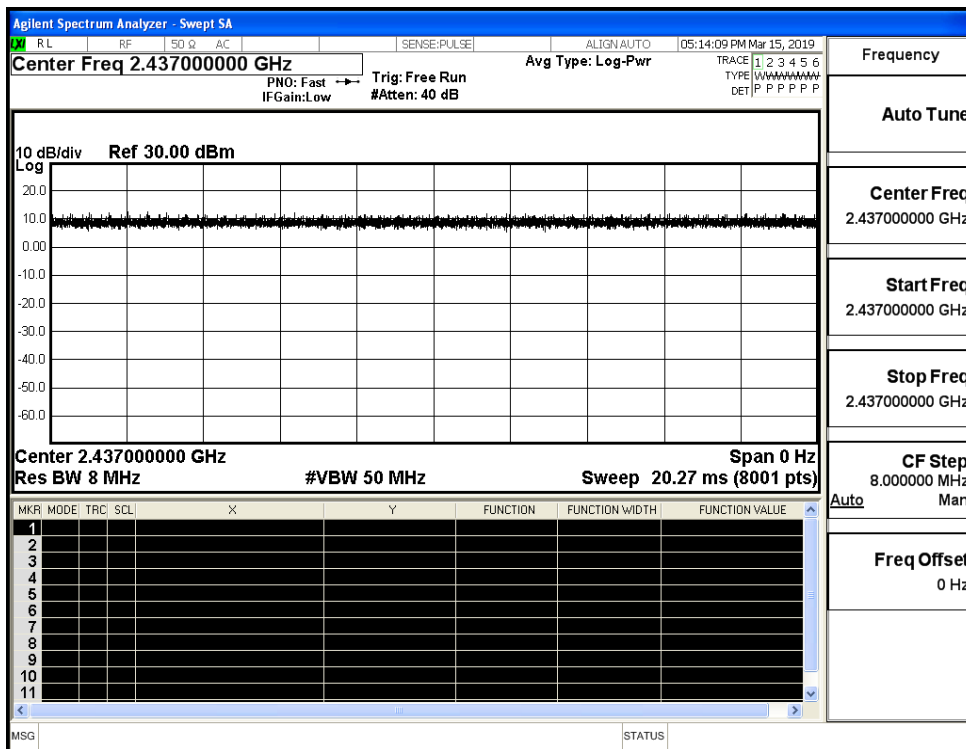
C.1 Duty Cycle

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

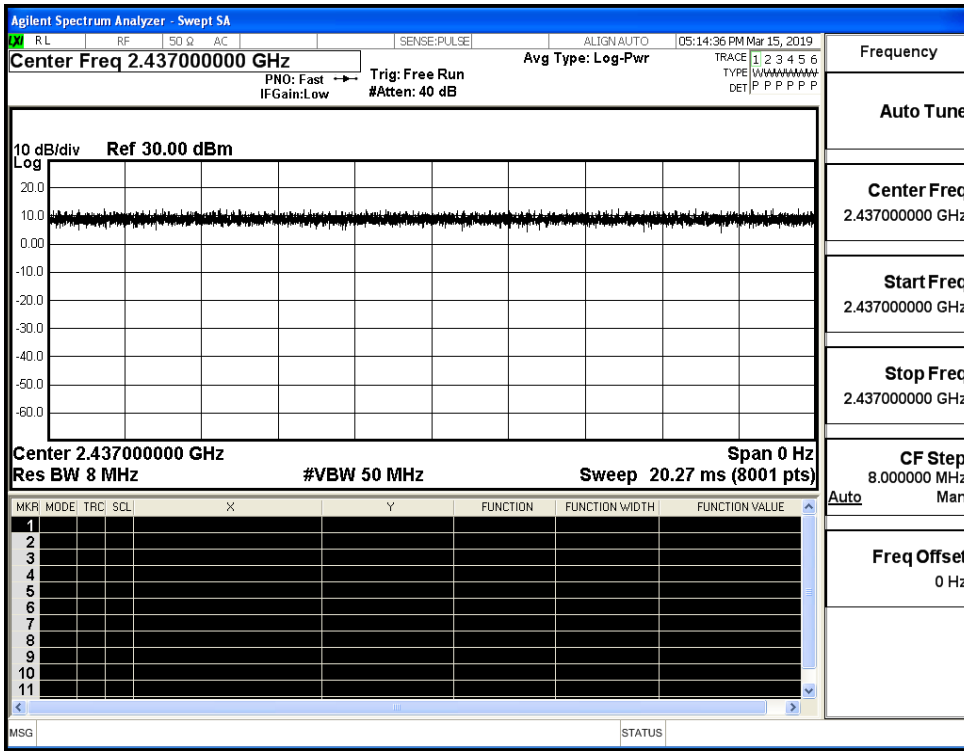
Duty Cycle_11B_2437_Ant1



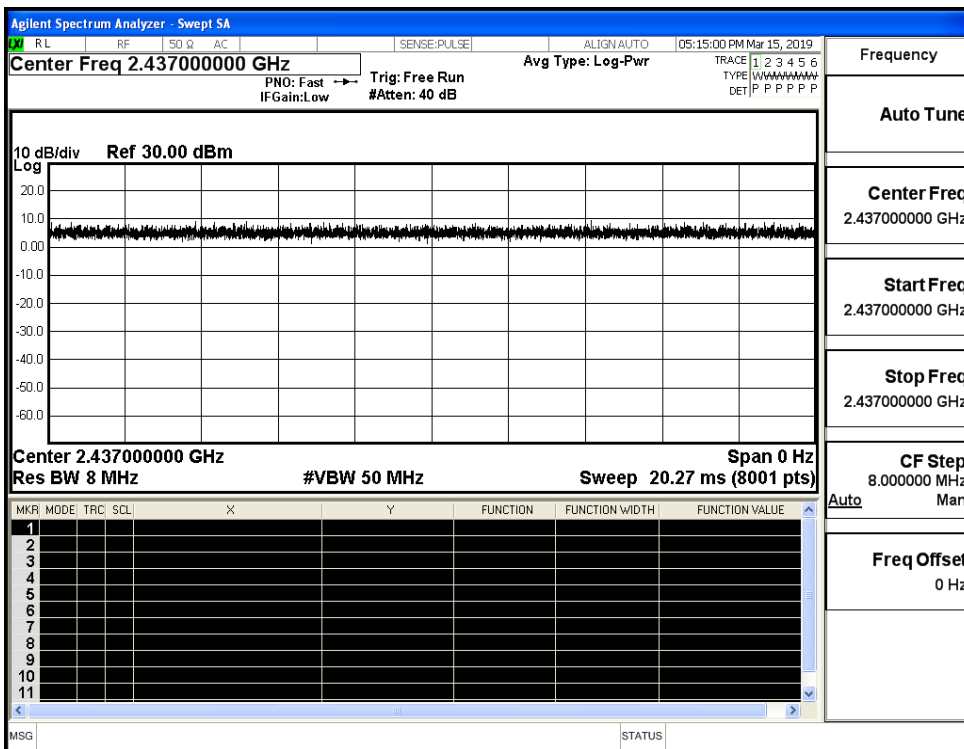
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



Duty Cycle_11N40SISO_2437_Ant1



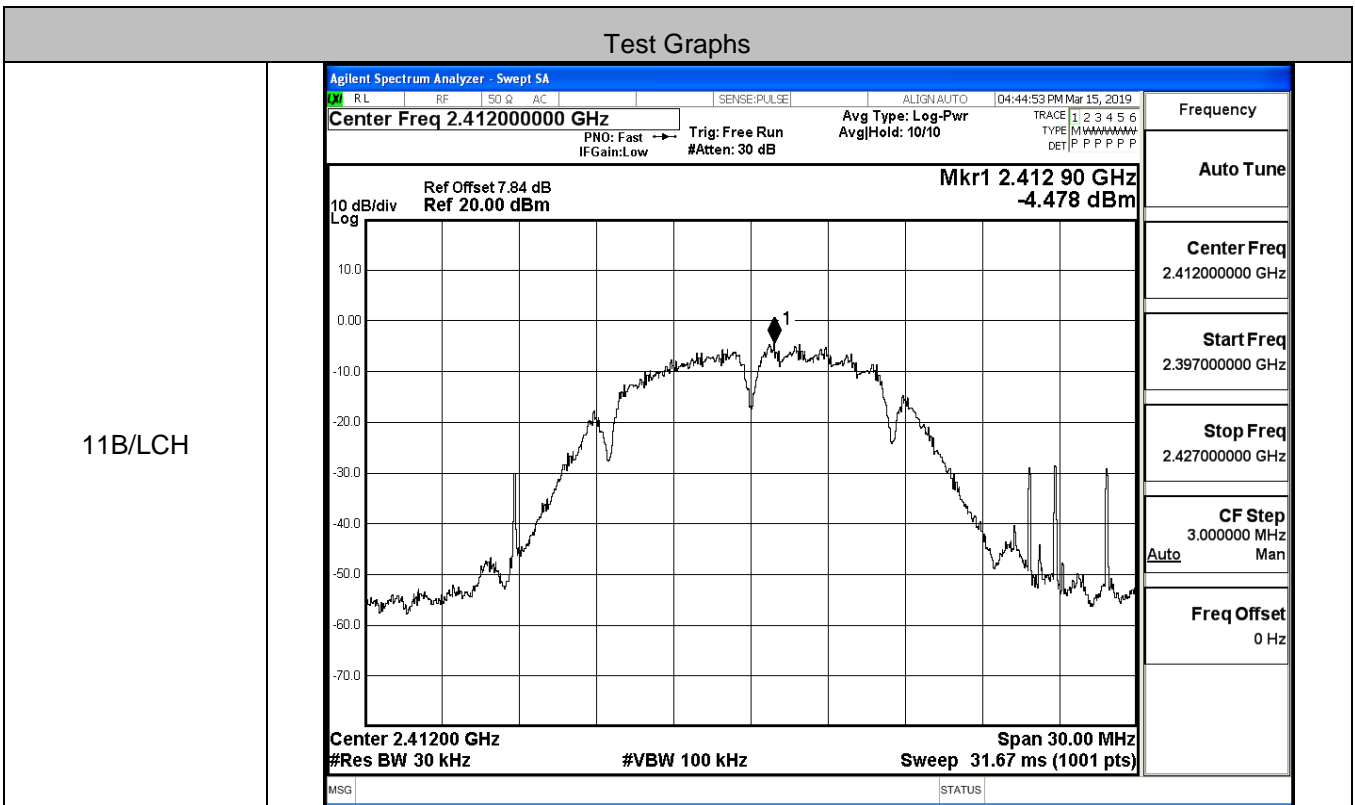
C.2 Maximum Conducted Output Power

Mode	Channel	Meas. Peak Level [dBm]	Meas. Average Level [dBm]	Limit [dBm]	Verdict
11B	LCH	8.73	6.45	30	PASS
	MCH	8.64	6.40	30	PASS
	HCH	8.70	6.49	30	PASS
11G	LCH	12.89	9.44	30	PASS
	MCH	12.62	9.17	30	PASS
	HCH	11.96	8.52	30	PASS
11N20SISO	LCH	12.16	8.79	30	PASS
	MCH	11.96	8.46	30	PASS
	HCH	12.26	8.69	30	PASS
11N40SISO	LCH	12.96	7.61	30	PASS
	MCH	12.18	6.86	30	PASS
	HCH	12.71	7.32	30	PASS

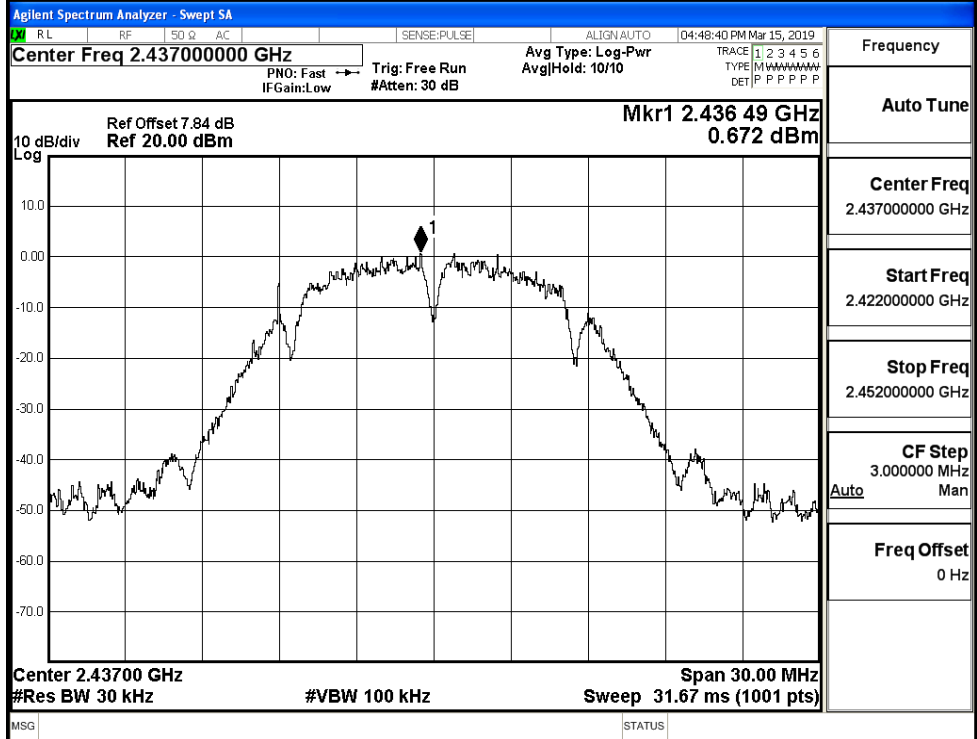
C.3 Maximum Power Spectral Density

Mode	Channel	Meas.Level [dBm/30KHz]	Convert Factor	Result [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-4.478	-10	-14.478	8	PASS
	MCH	0.672	-10	-9.328	8	PASS
	HCH	1.179	-10	-8.821	8	PASS
11G	LCH	-4.637	-10	-14.637	8	PASS
	MCH	-2.879	-10	-12.879	8	PASS
	HCH	-2.548	-10	-12.548	8	PASS
11N20SISO	LCH	-1.795	-10	-11.795	8	PASS
	MCH	-1.737	-10	-11.737	8	PASS
	HCH	-1.325	-10	-11.325	8	PASS
11N40SISO	LCH	-6.218	-10	-16.218	8	PASS
	MCH	-6.502	-10	-16.502	8	PASS
	HCH	-5.983	-10	-15.983	8	PASS

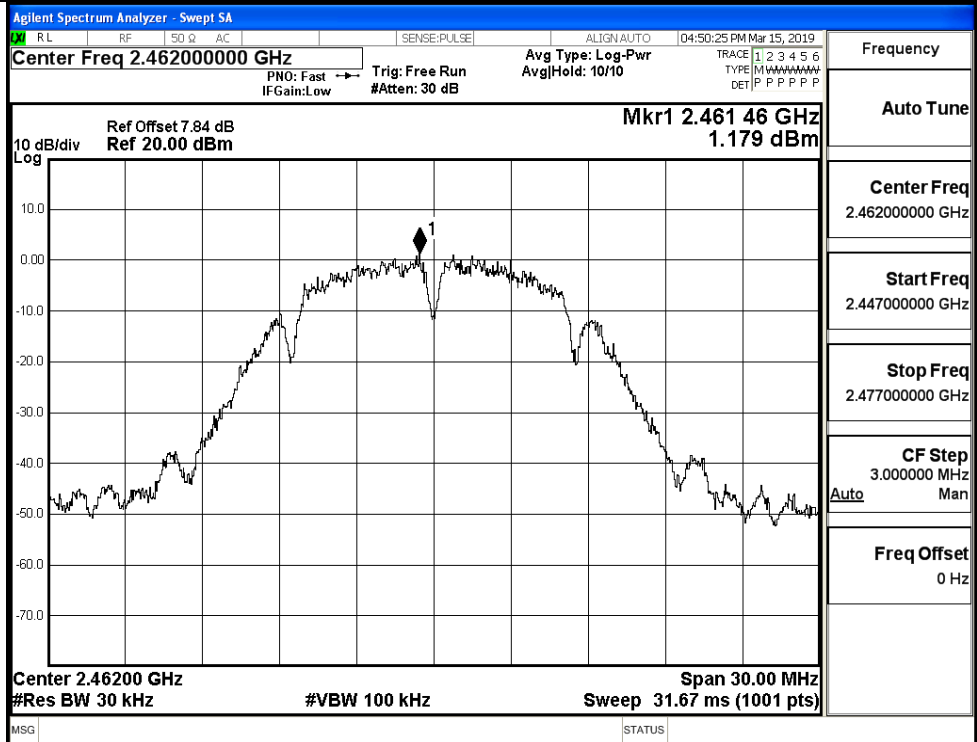
***Note: The Convert Factor = $10 \cdot \log(3\text{KHz}/30\text{KHz}) = -10$



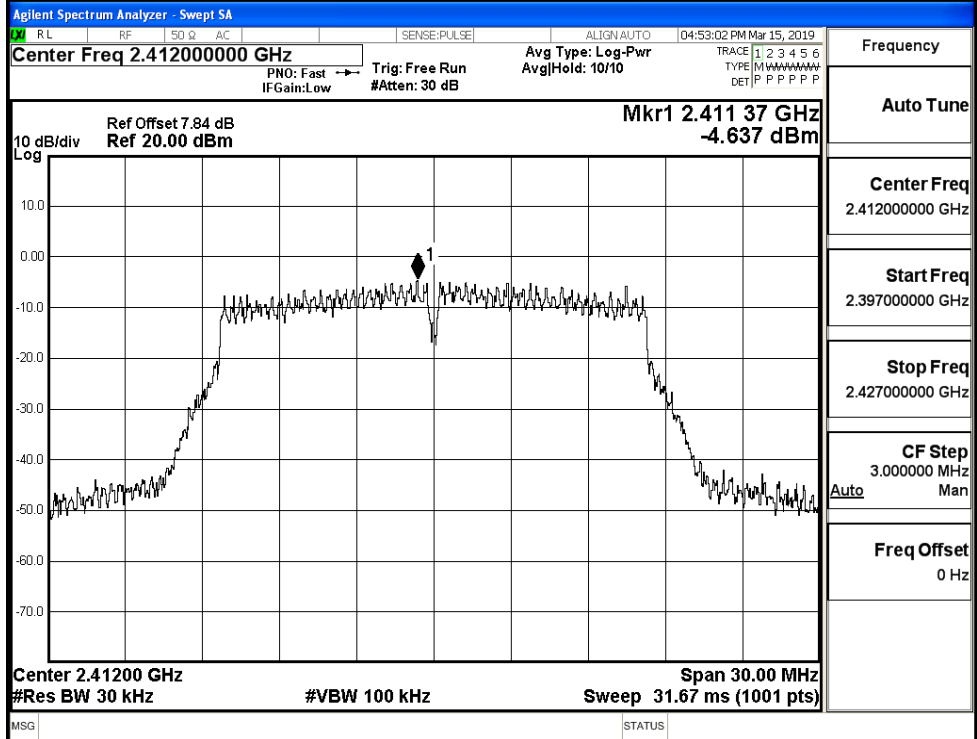
11B/MCH



11B/HCH

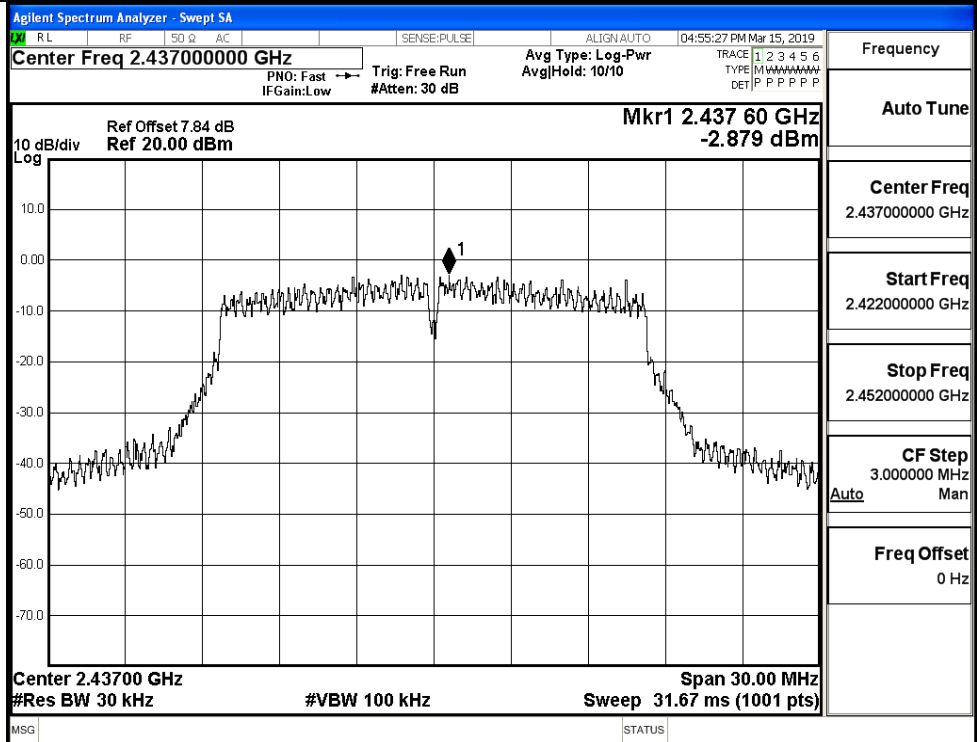


11G/LCH



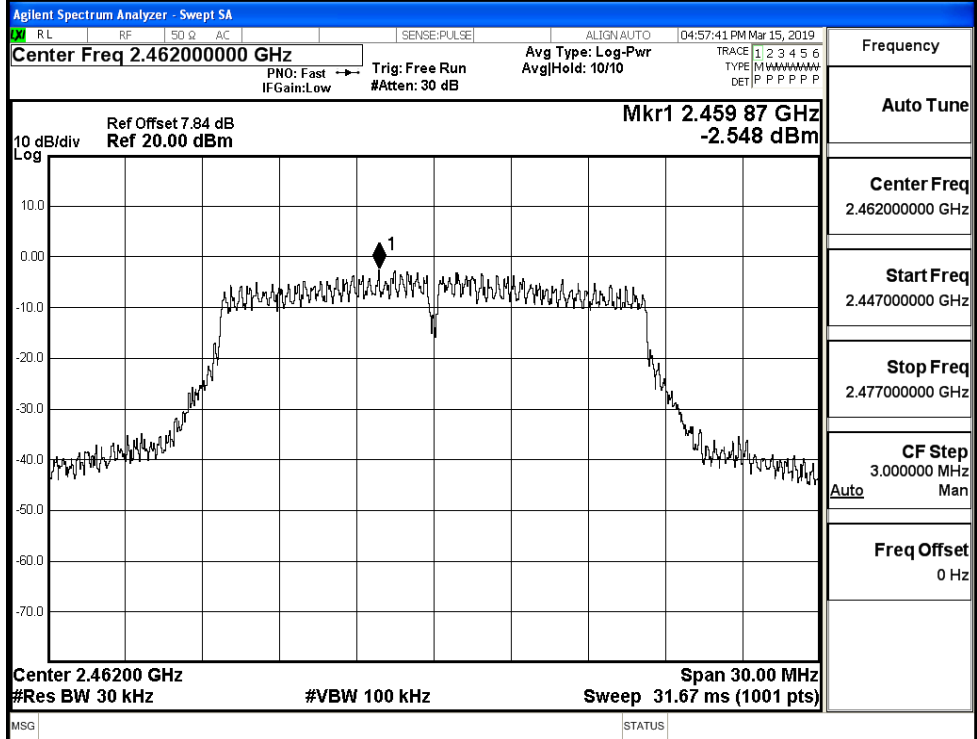
Frequency
Auto Tune
Center Freq 2.41200000 GHz
Start Freq 2.397000000 GHz
Stop Freq 2.427000000 GHz
CF Step 3.000000 MHz Auto Man
Freq Offset 0 Hz

11G/MCH

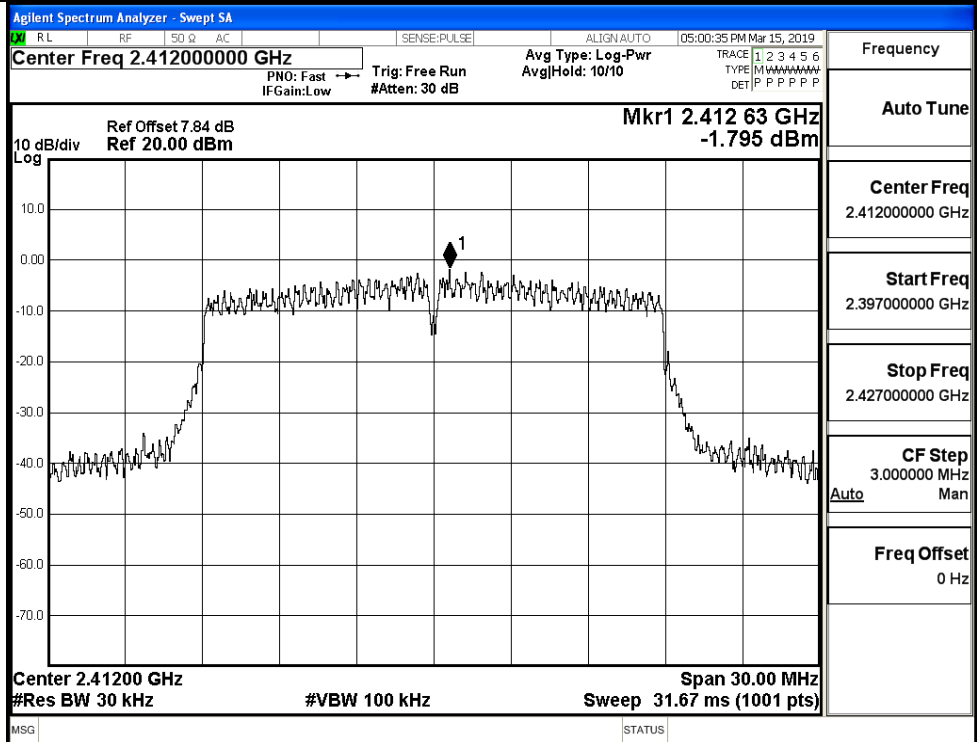


Frequency
Auto Tune
Center Freq 2.43700000 GHz
Start Freq 2.422000000 GHz
Stop Freq 2.452000000 GHz
CF Step 3.000000 MHz Auto Man
Freq Offset 0 Hz

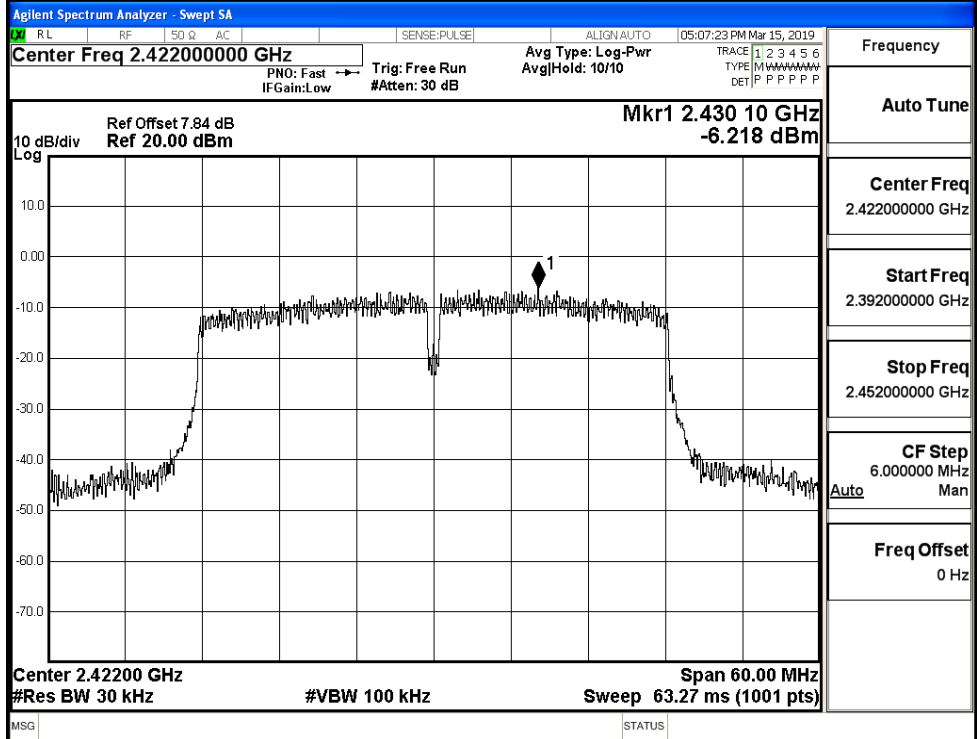
11G/HCH



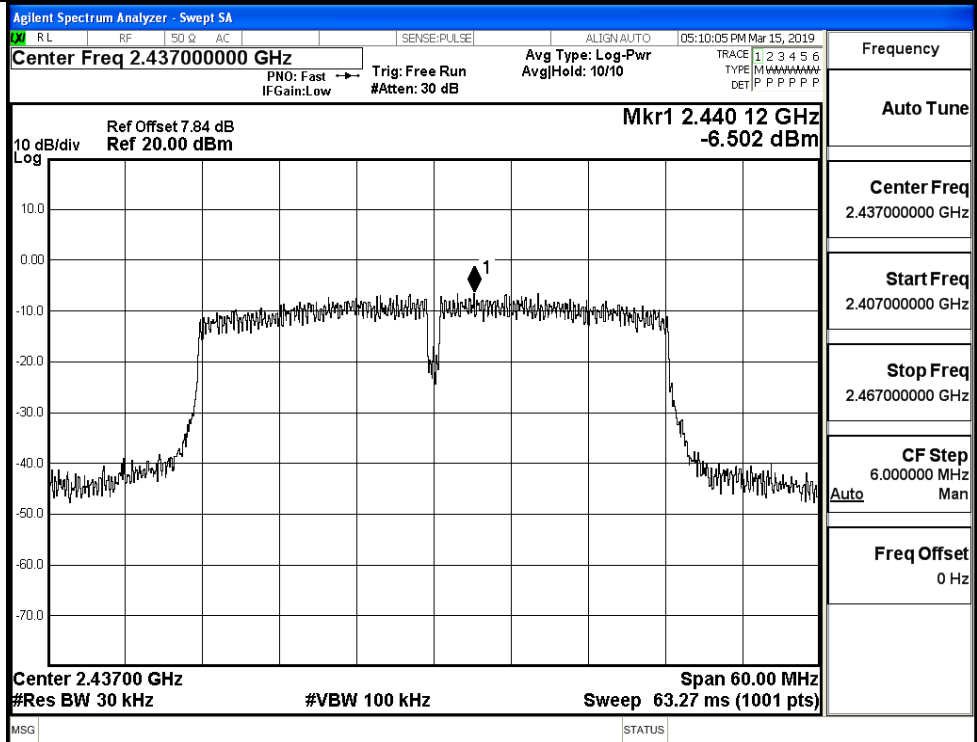
11N20SISO/LCH



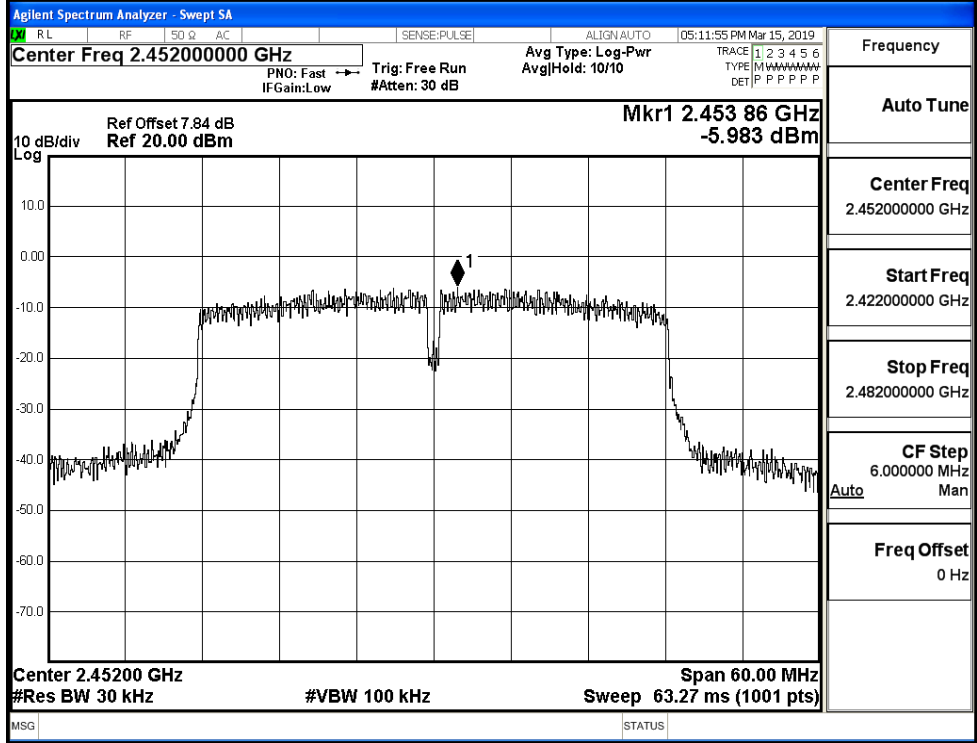
11N40SISO/LCH



11N40SISO/MCH

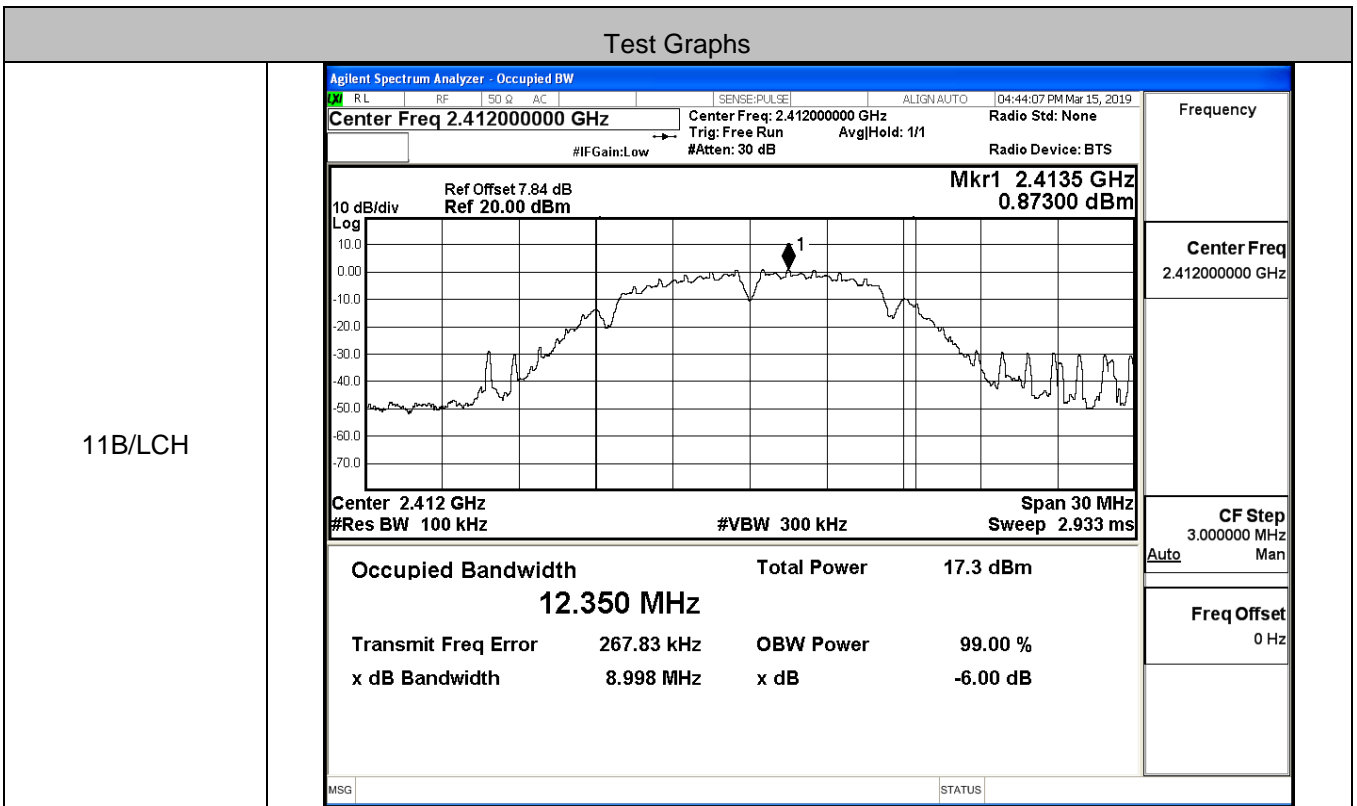


11N40SISO/HCH

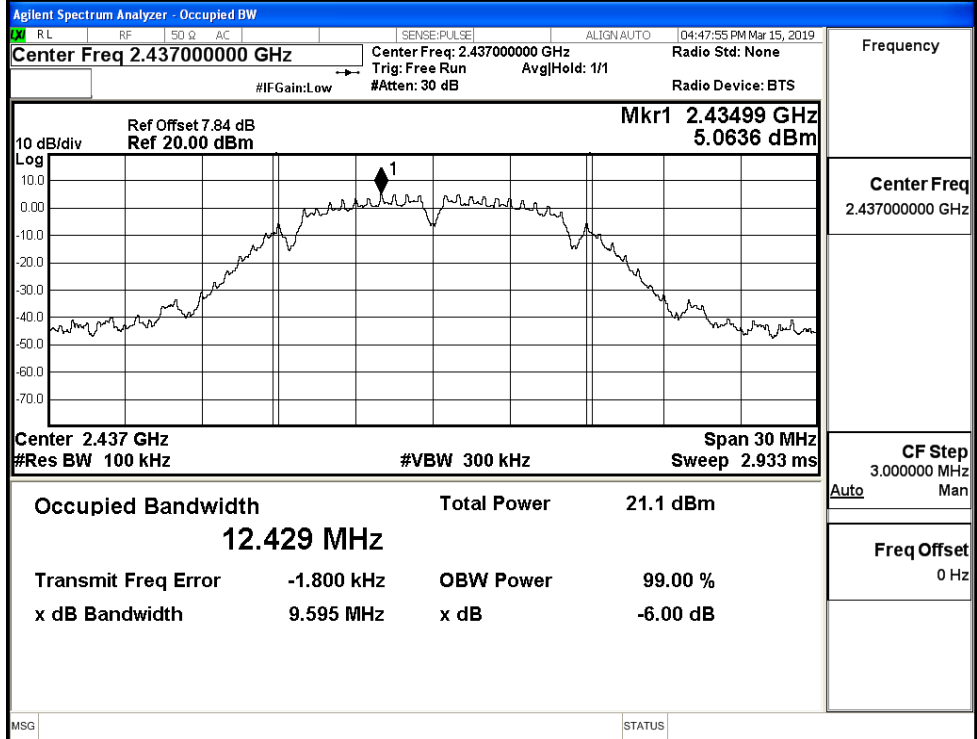


C.4 6dB Bandwidth

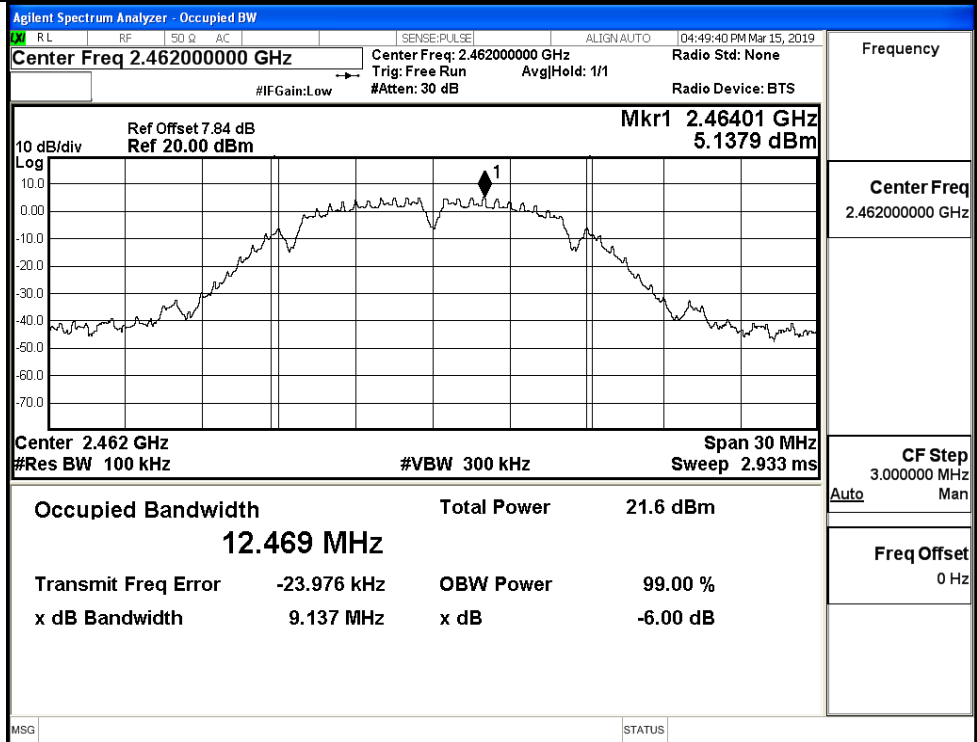
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	8.998	≥0.5	PASS
	MCH	9.595	≥0.5	PASS
	HCH	9.137	≥0.5	PASS
11G	LCH	15.15	≥0.5	PASS
	MCH	15.15	≥0.5	PASS
	HCH	15.16	≥0.5	PASS
11N20SISO	LCH	17.63	≥0.5	PASS
	MCH	17.63	≥0.5	PASS
	HCH	17.63	≥0.5	PASS
11N40SISO	LCH	36.40	≥0.5	PASS
	MCH	36.36	≥0.5	PASS
	HCH	36.34	≥0.5	PASS



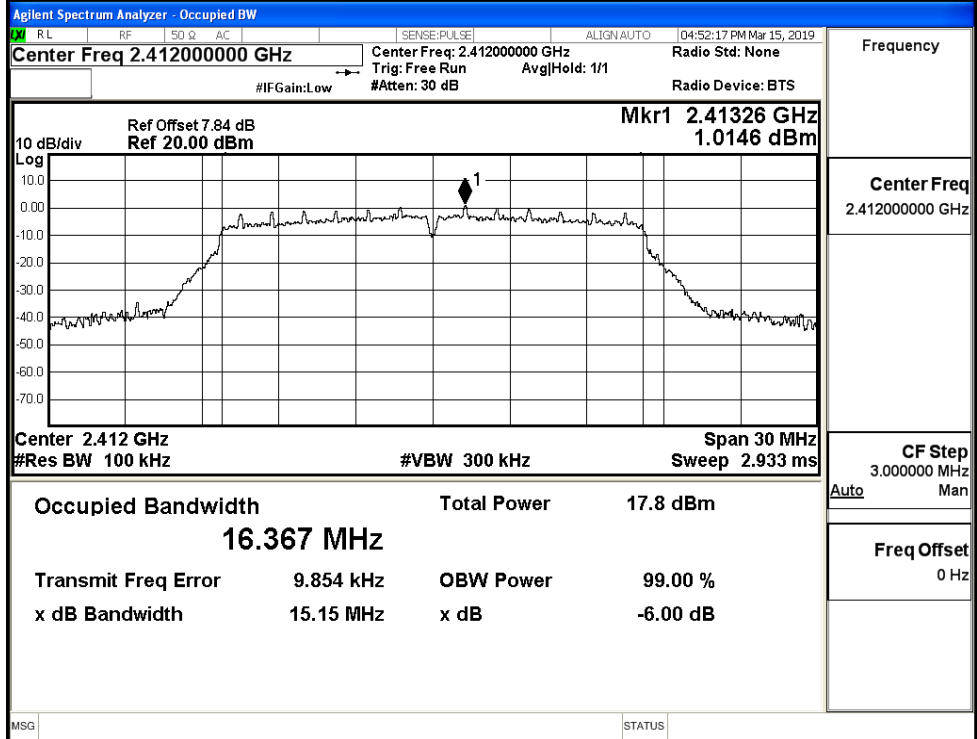
11B/MCH



11B/HCH



11G/LCH



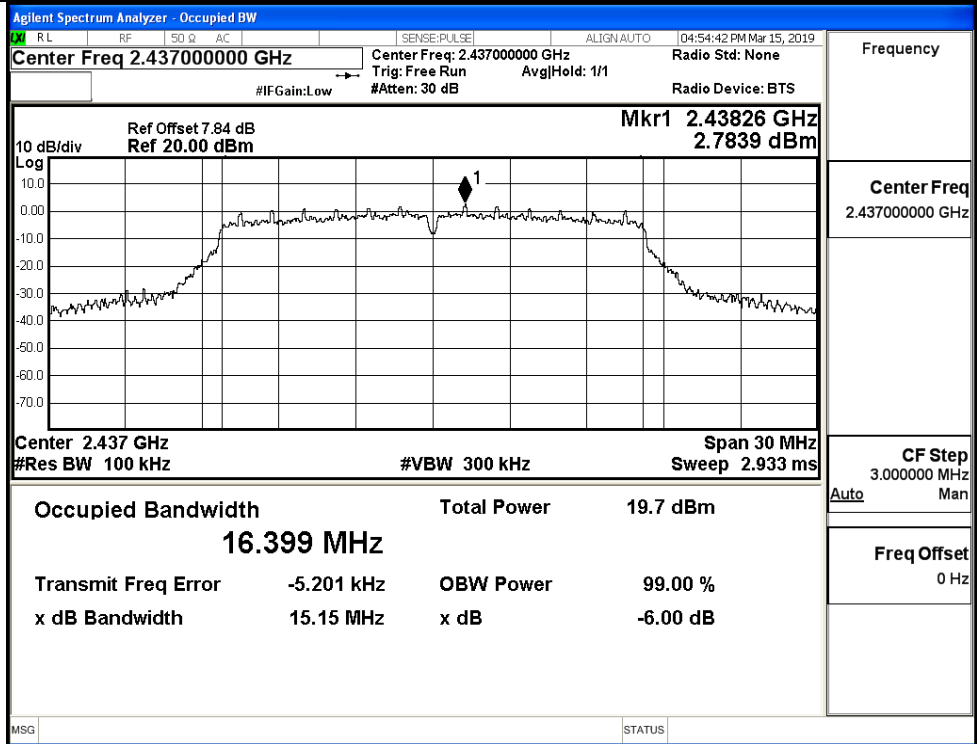
Frequency

Center Freq
2.41200000 GHz

CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

11G/MCH



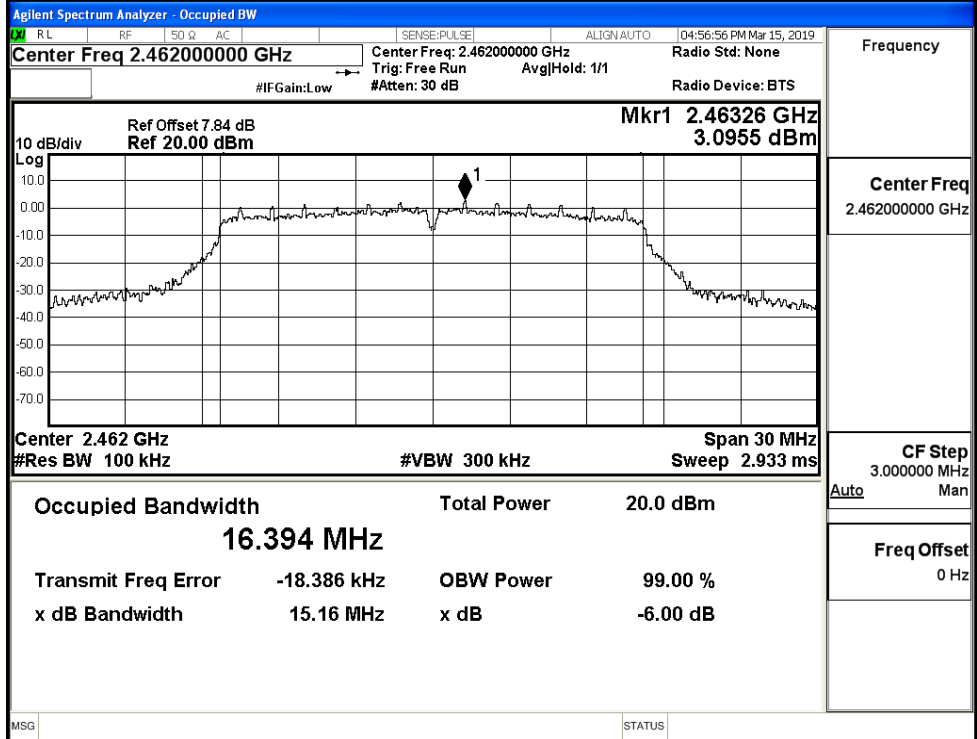
Frequency

Center Freq
2.43700000 GHz

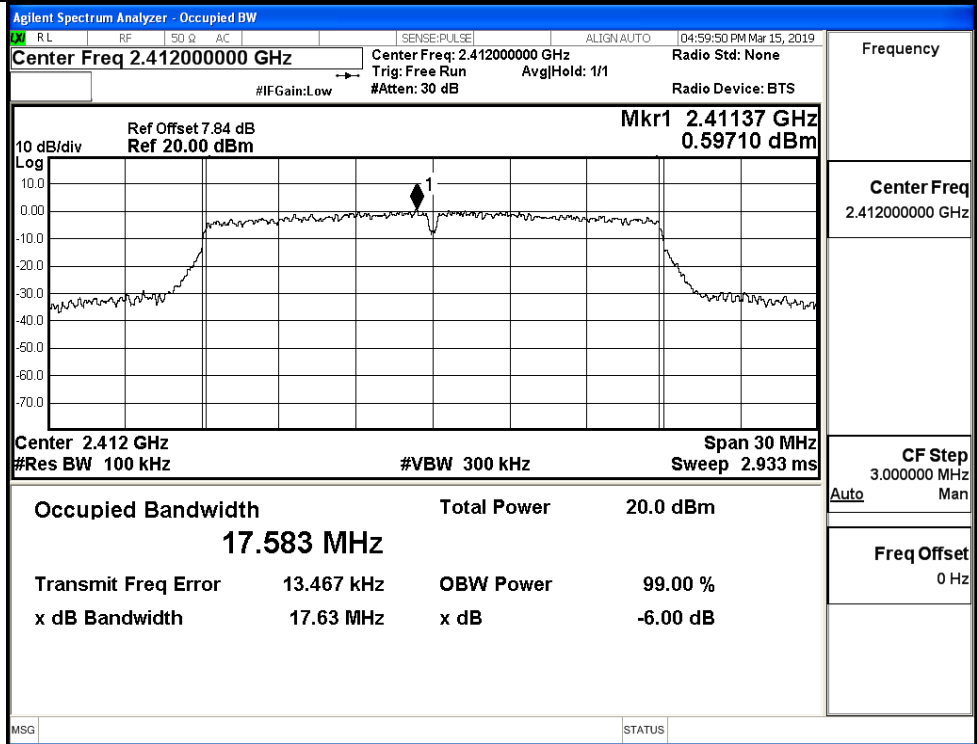
CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

11G/HCH

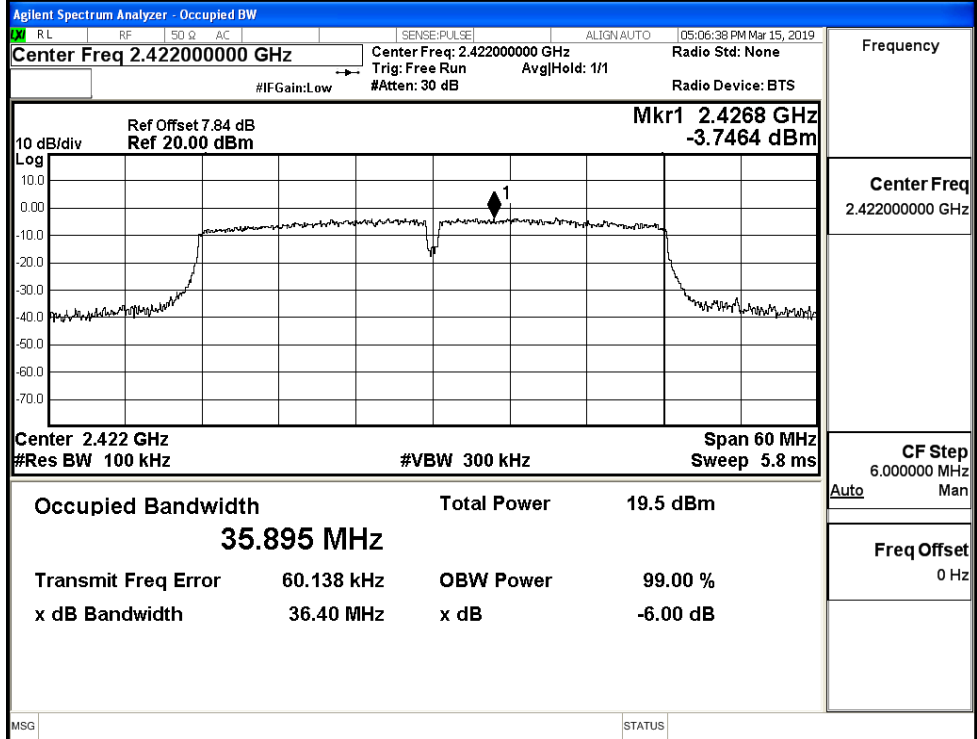


11N20SISO/LCH

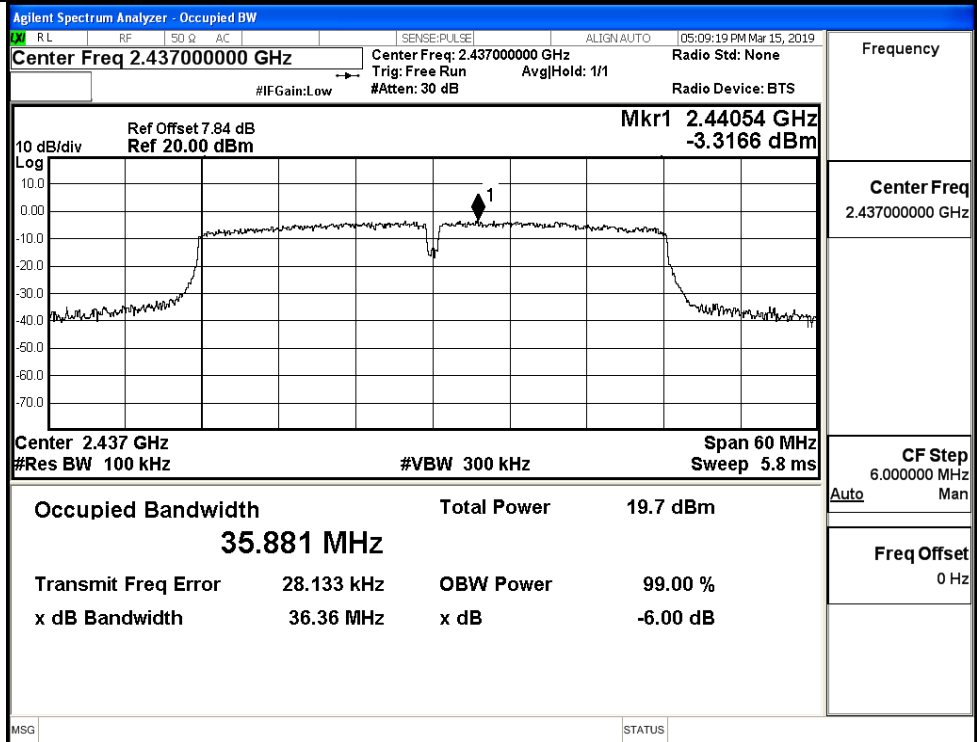


<p>11N20SISO/MCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.43700000 GHz Center Freq: 2.43700000 GHz Radio Std: None Trig: Free Run AvgHold: 1/1 Radio Device: BTS #IFGain:Low #Atten: 30 dB</p> <p>10 dB/div Ref Offset 7.84 dB Mkr1 2.43637 GHz Ref 20.00 dBm 0.53222 dBm</p> <p>Center 2.437 GHz Span 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.933 ms</p> <p>Occupied Bandwidth Total Power 20.2 dBm 17.581 MHz</p> <p>Transmit Freq Error 5.801 kHz OBW Power 99.00 % x dB Bandwidth 17.63 MHz x dB -6.00 dB</p> <p>MSG STATUS</p>	<p>Frequency</p> <p>Center Freq 2.43700000 GHz</p> <p>CF Step 3.000000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>
<p>11N20SISO/HCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.46200000 GHz Center Freq: 2.46200000 GHz Radio Std: None Trig: Free Run AvgHold: 1/1 Radio Device: BTS #IFGain:Low #Atten: 30 dB</p> <p>10 dB/div Ref Offset 7.84 dB Mkr1 2.46137 GHz Ref 20.00 dBm 0.62904 dBm</p> <p>Center 2.462 GHz Span 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.933 ms</p> <p>Occupied Bandwidth Total Power 20.2 dBm 17.588 MHz</p> <p>Transmit Freq Error -6.465 kHz OBW Power 99.00 % x dB Bandwidth 17.63 MHz x dB -6.00 dB</p> <p>MSG STATUS</p>	<p>Frequency</p> <p>Center Freq 2.46200000 GHz</p> <p>CF Step 3.000000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>

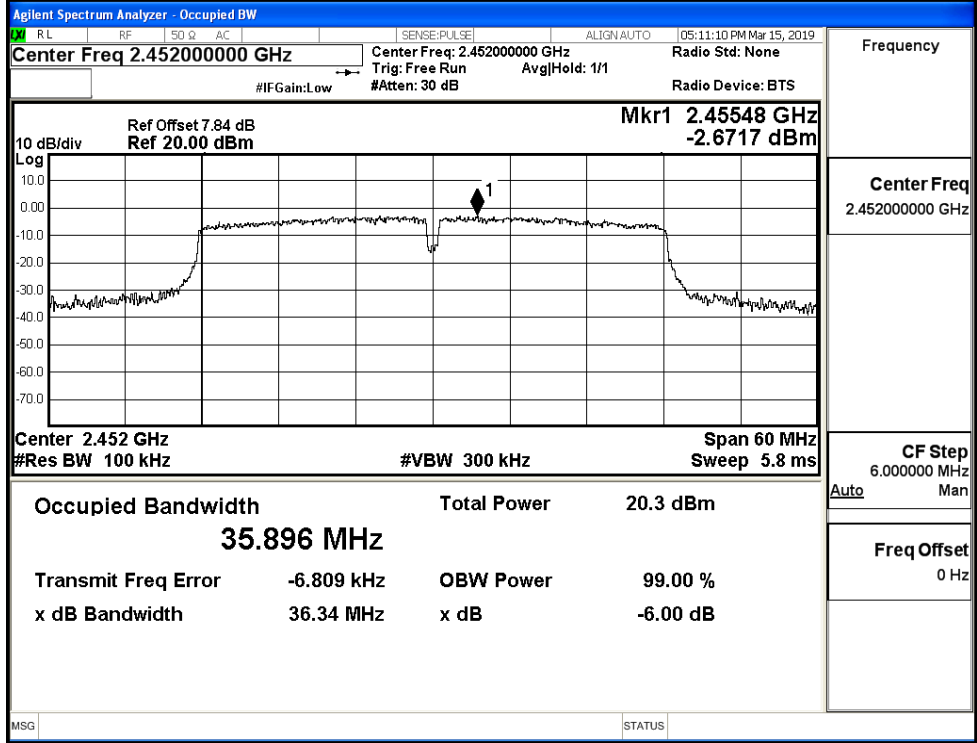
11N40SISO/LCH



11N40SISO/MCH



11N40SISO/HCH

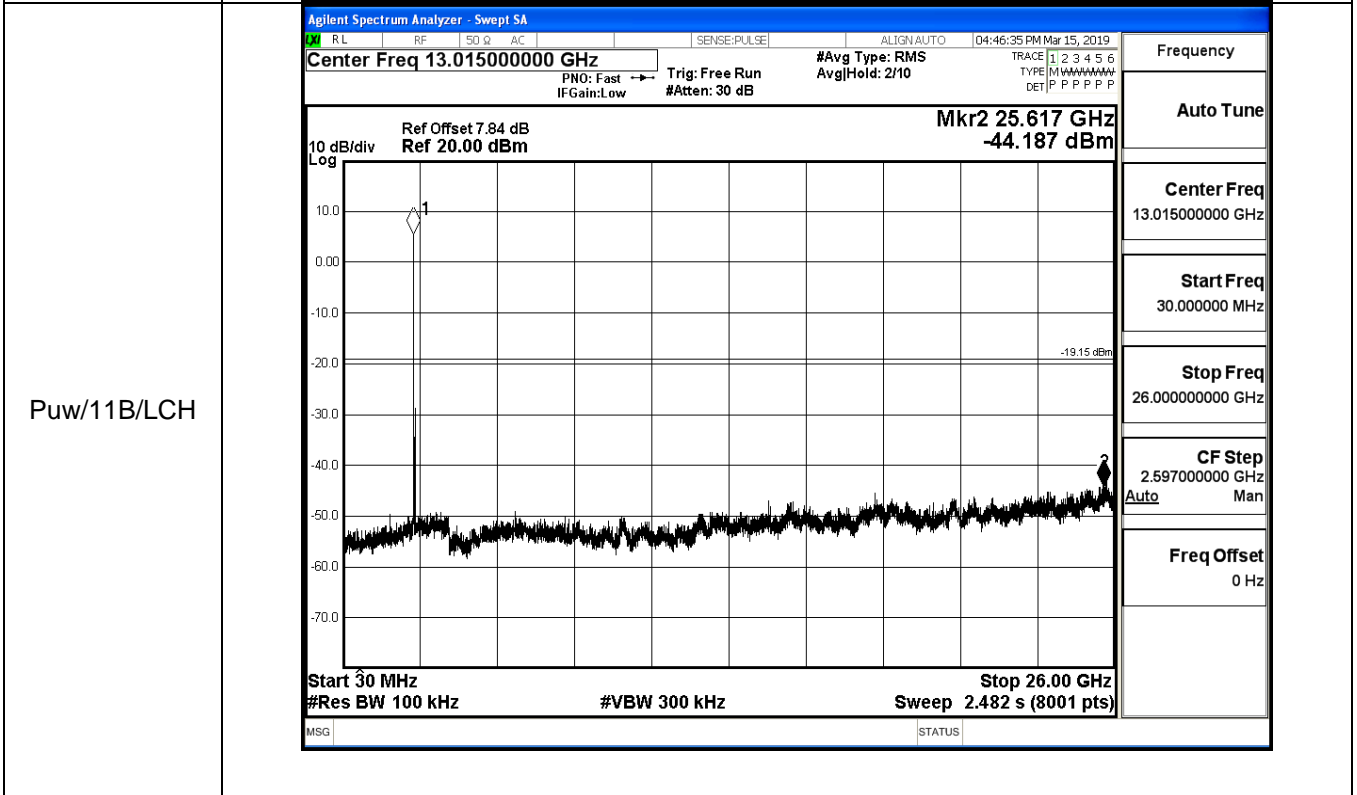
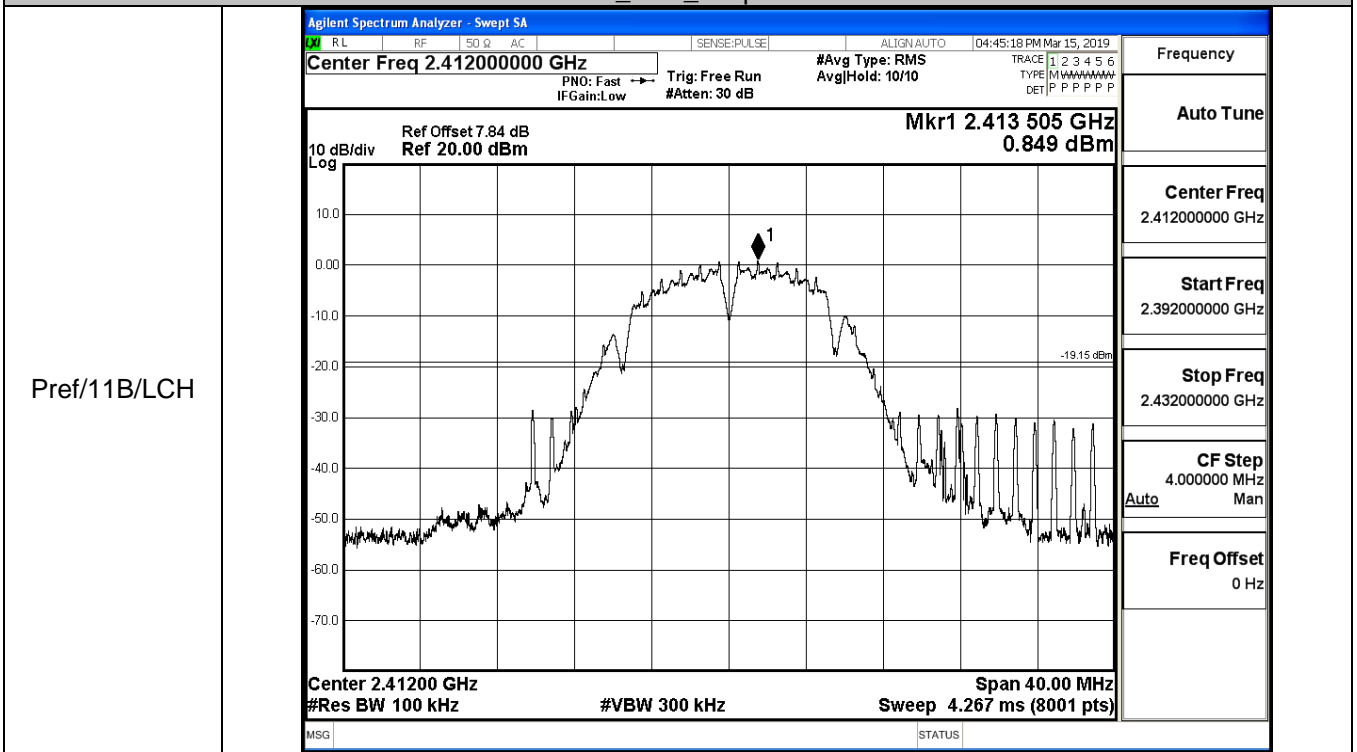


Frequency	Center Freq 2.45200000 GHz
CF Step	6.000000 MHz Auto Man
Freq Offset	0 Hz

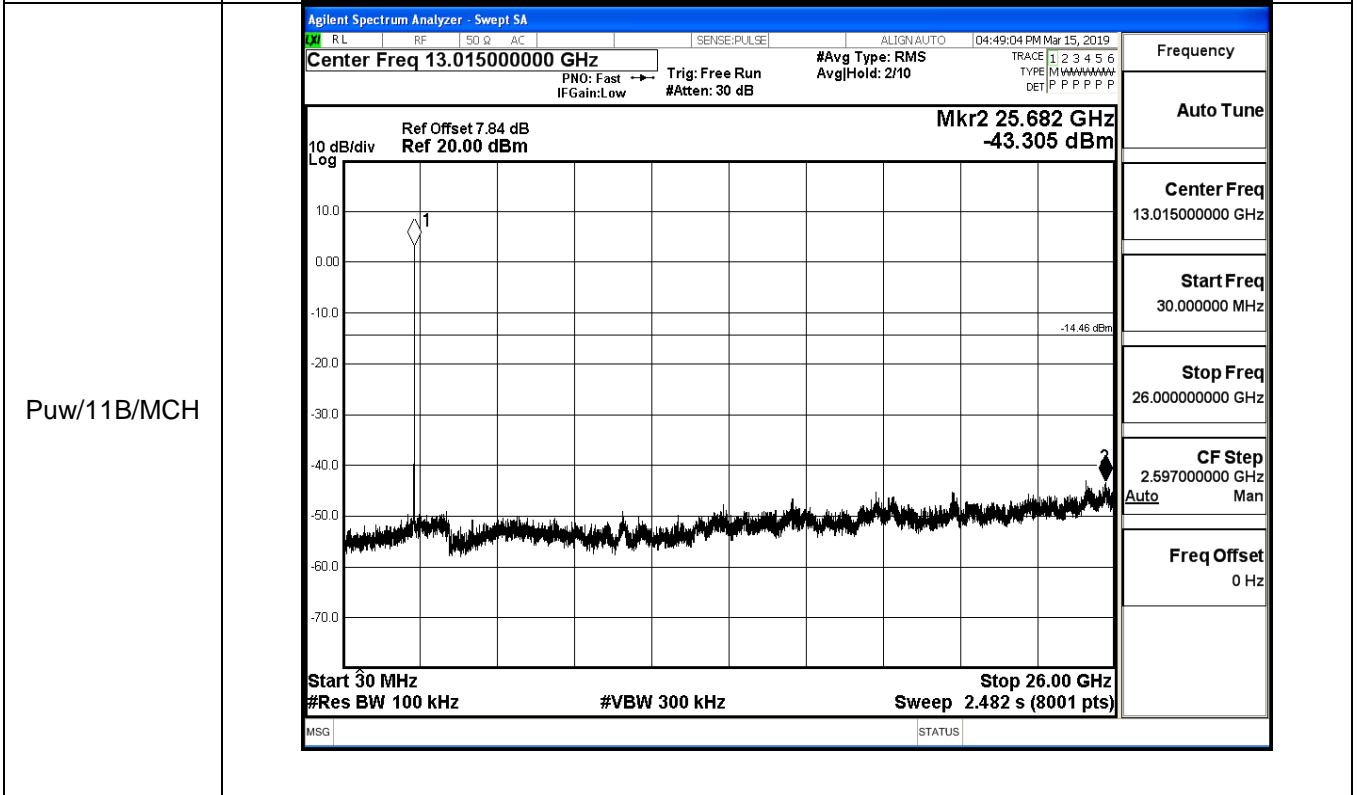
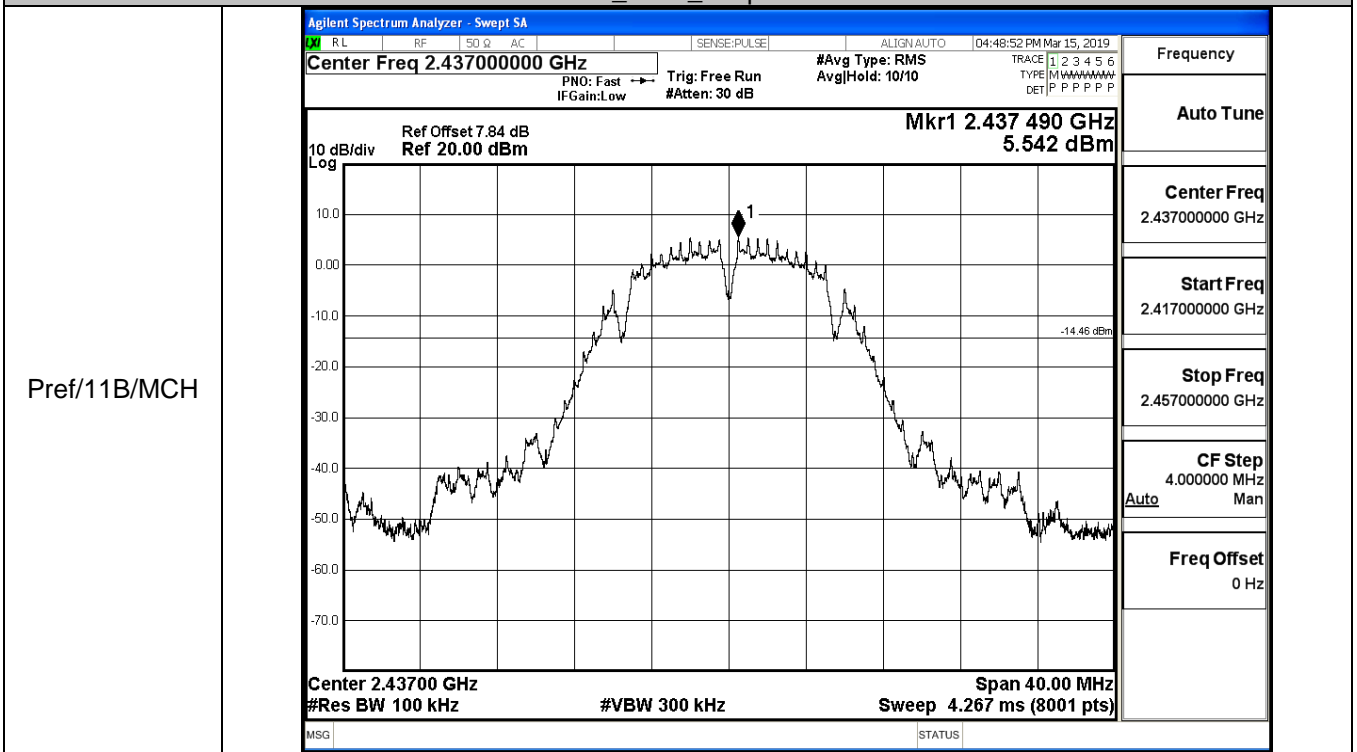
C.5 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	0.849	-44.187	-19.151	PASS
	MCH	5.542	-43.305	-14.458	PASS
	HCH	5.693	-42.507	-14.307	PASS
11G	LCH	1.255	-43.738	-18.745	PASS
	MCH	2.195	-44.049	-17.805	PASS
	HCH	2.81	-43.391	-17.190	PASS
11N20 SISO	LCH	0.399	-42.976	-19.601	PASS
	MCH	0.741	-43.628	-19.259	PASS
	HCH	0.536	-43.309	-19.464	PASS
11N40 SISO	LCH	-3.778	-43.299	-23.778	PASS
	MCH	-3.272	-43.370	-23.272	PASS
	HCH	-2.954	-43.698	-22.954	PASS

11B_LCH_Graphs

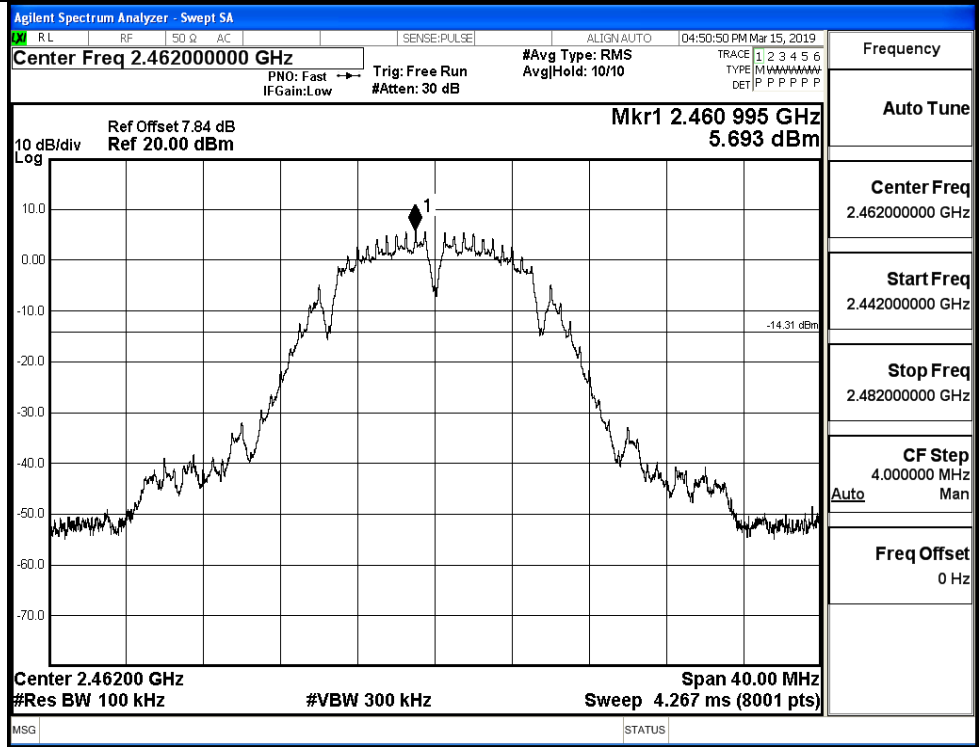


11B_MCH_Graphs

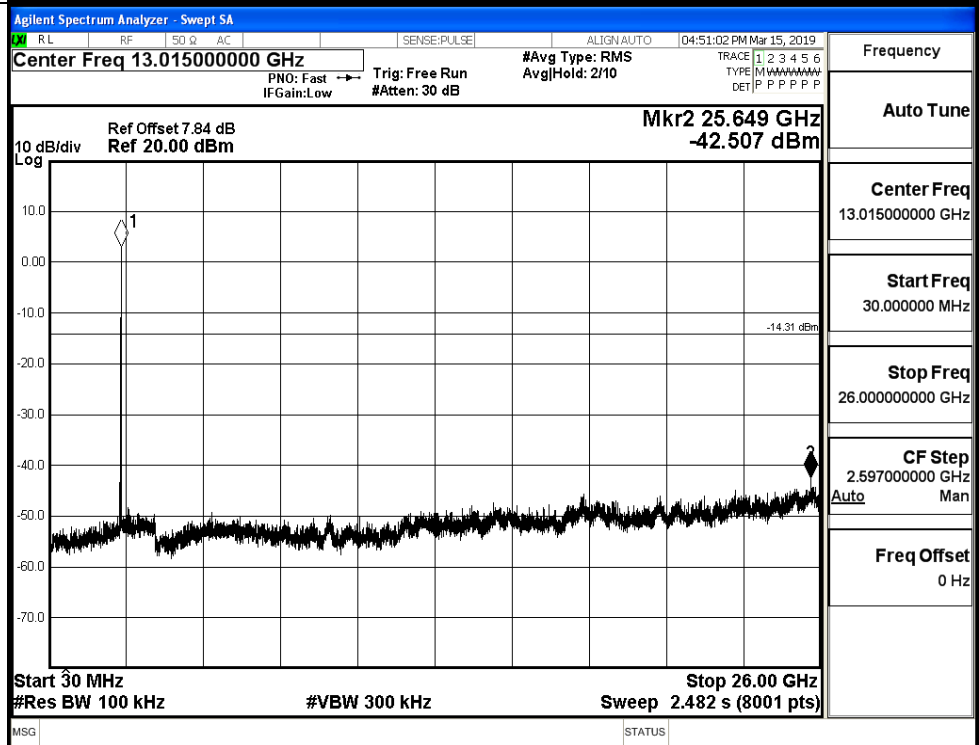


11B_HCH_Graphs

Pref/11B/HCH

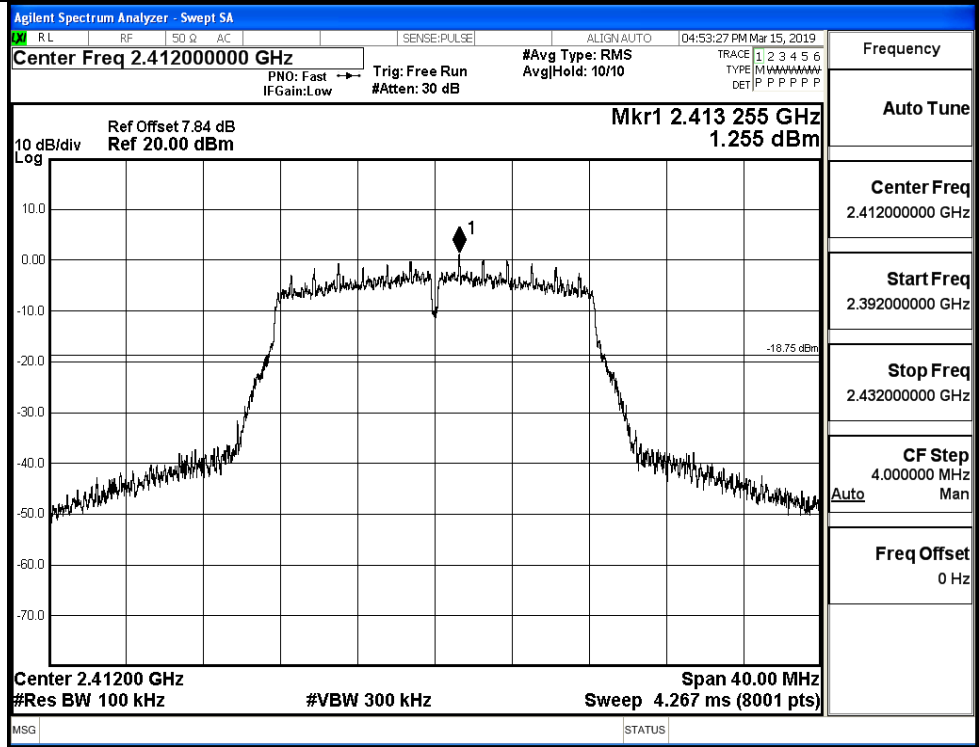


Puw/11B/HCH

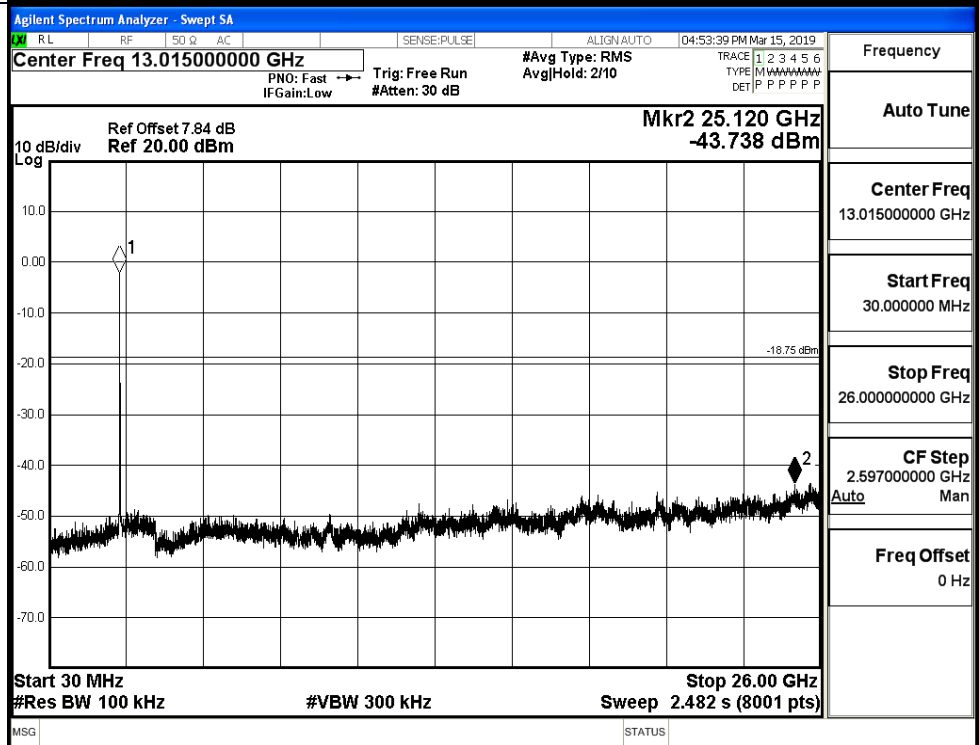


11G_LCH_Graphs

Pref/11G/LCH

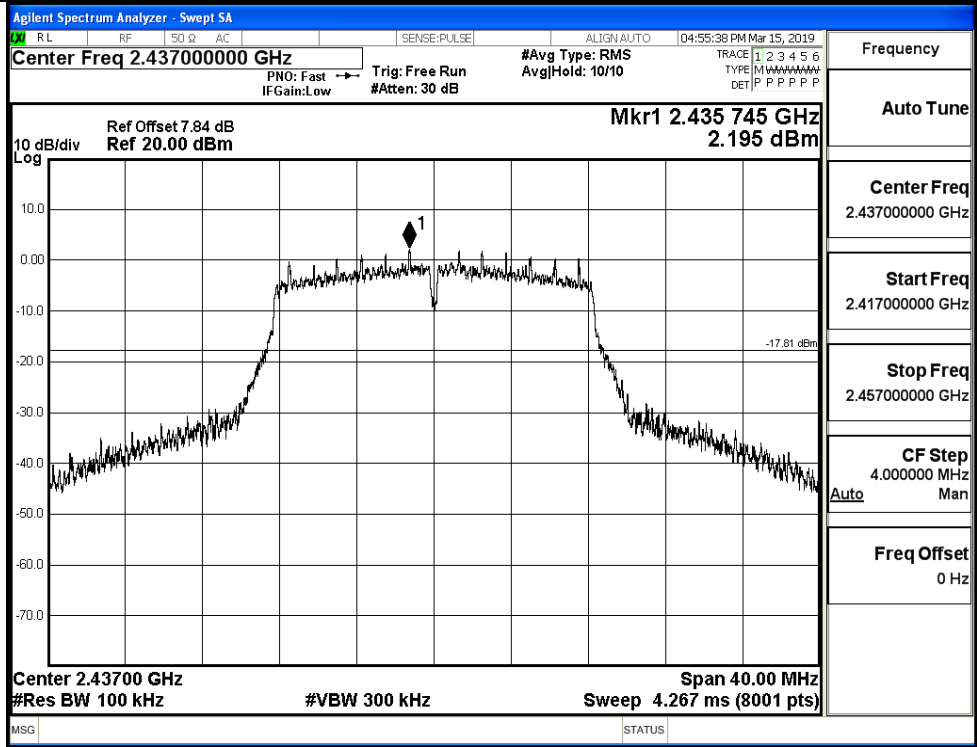


Puw/11G/LCH

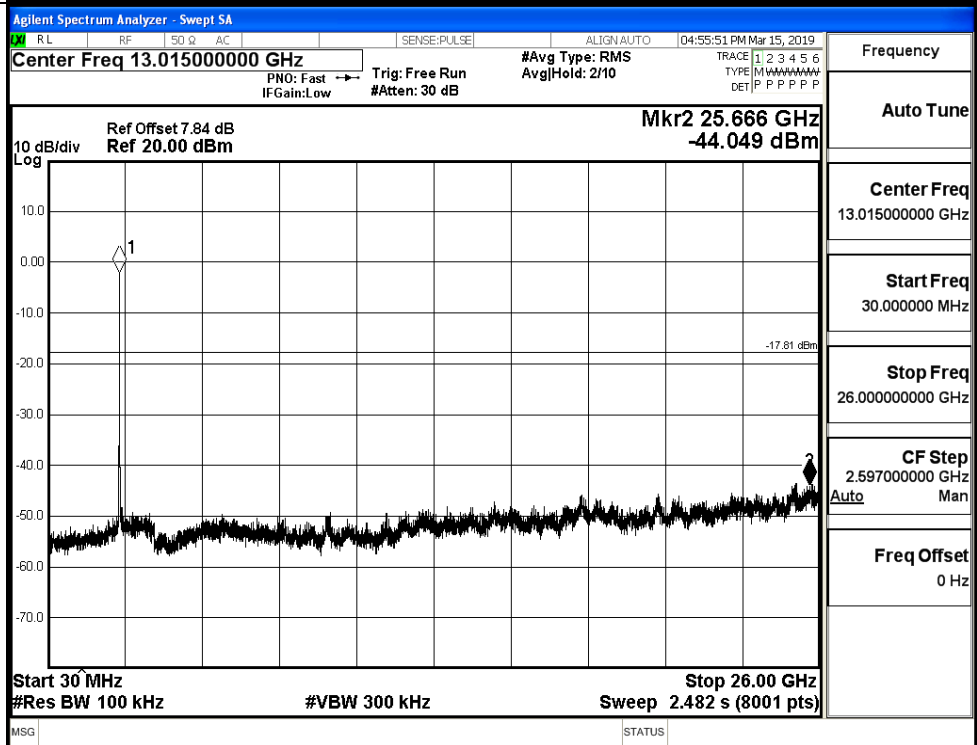


11G_MCH_Graphs

Pref/11G/MCH

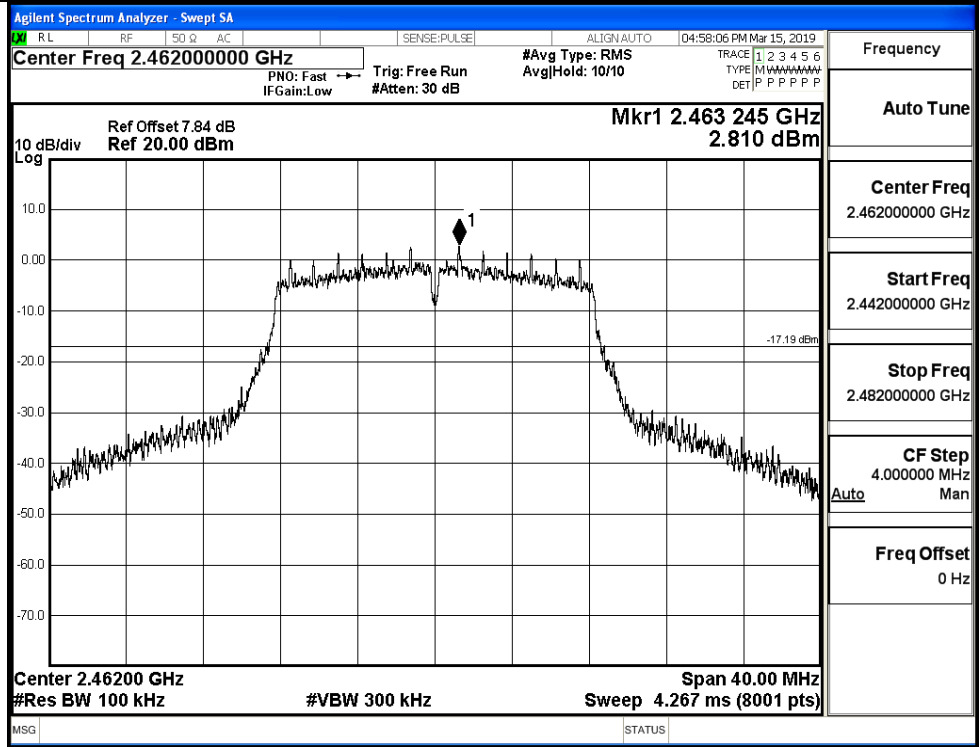


Puw/11G/MCH

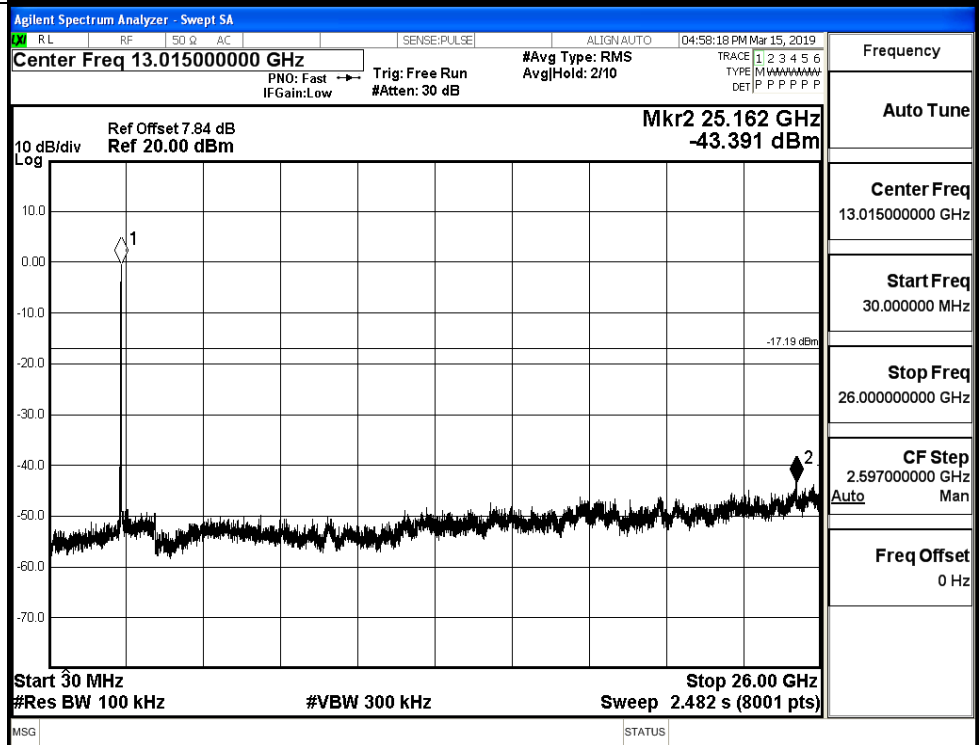


11G_HCH_Graphs

Pref/11G/HCH

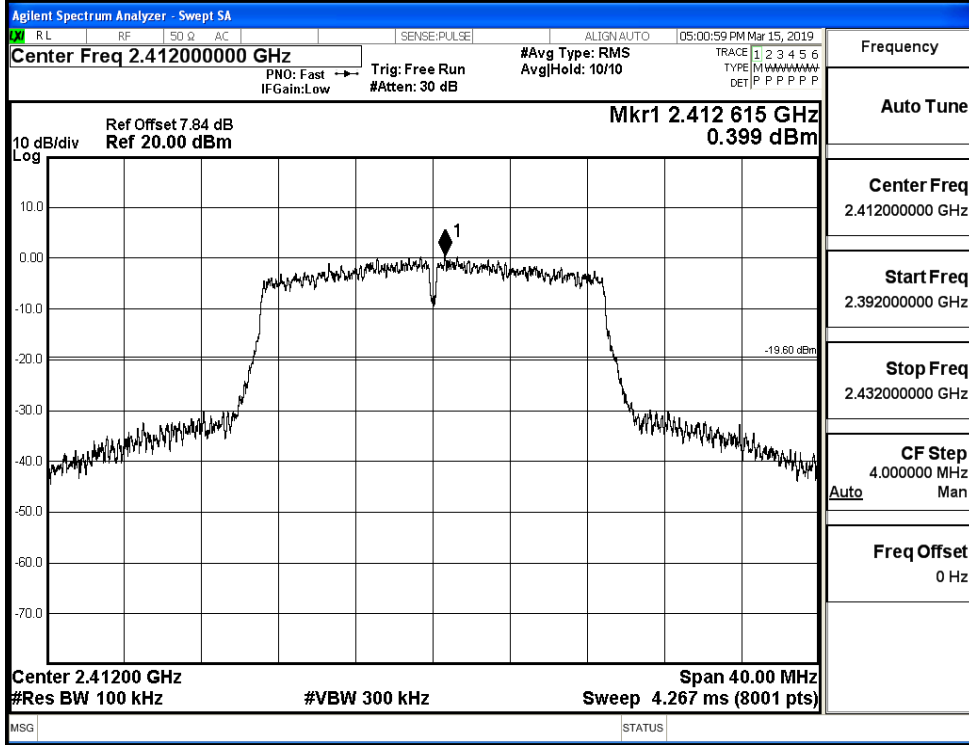


Puw/11G/HCH

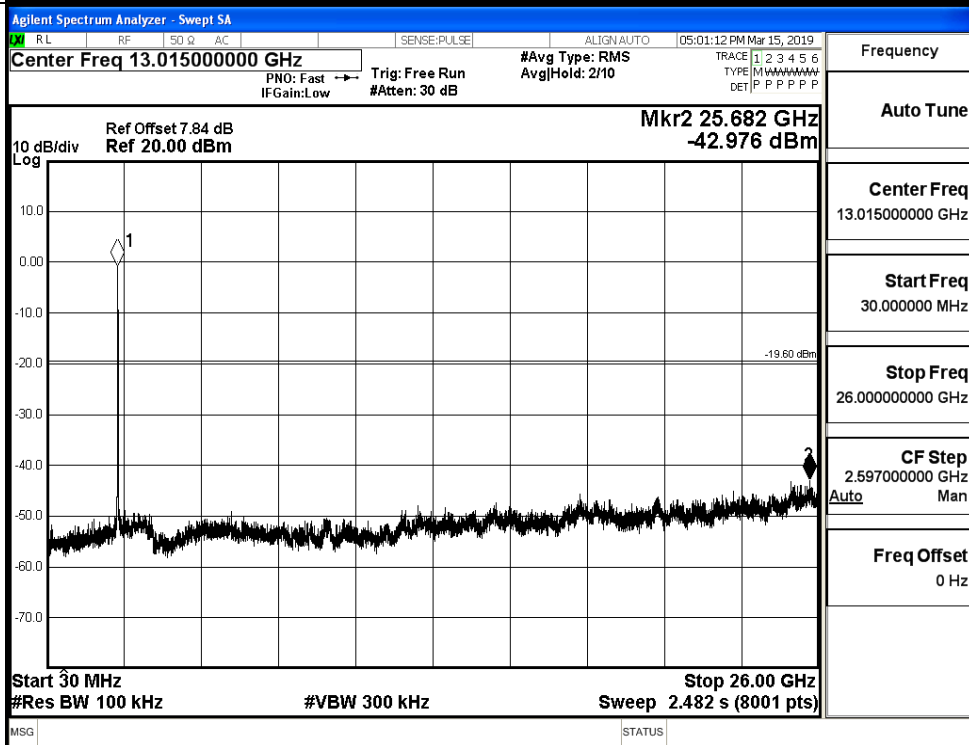


11N20SISO_LCH_Graphs

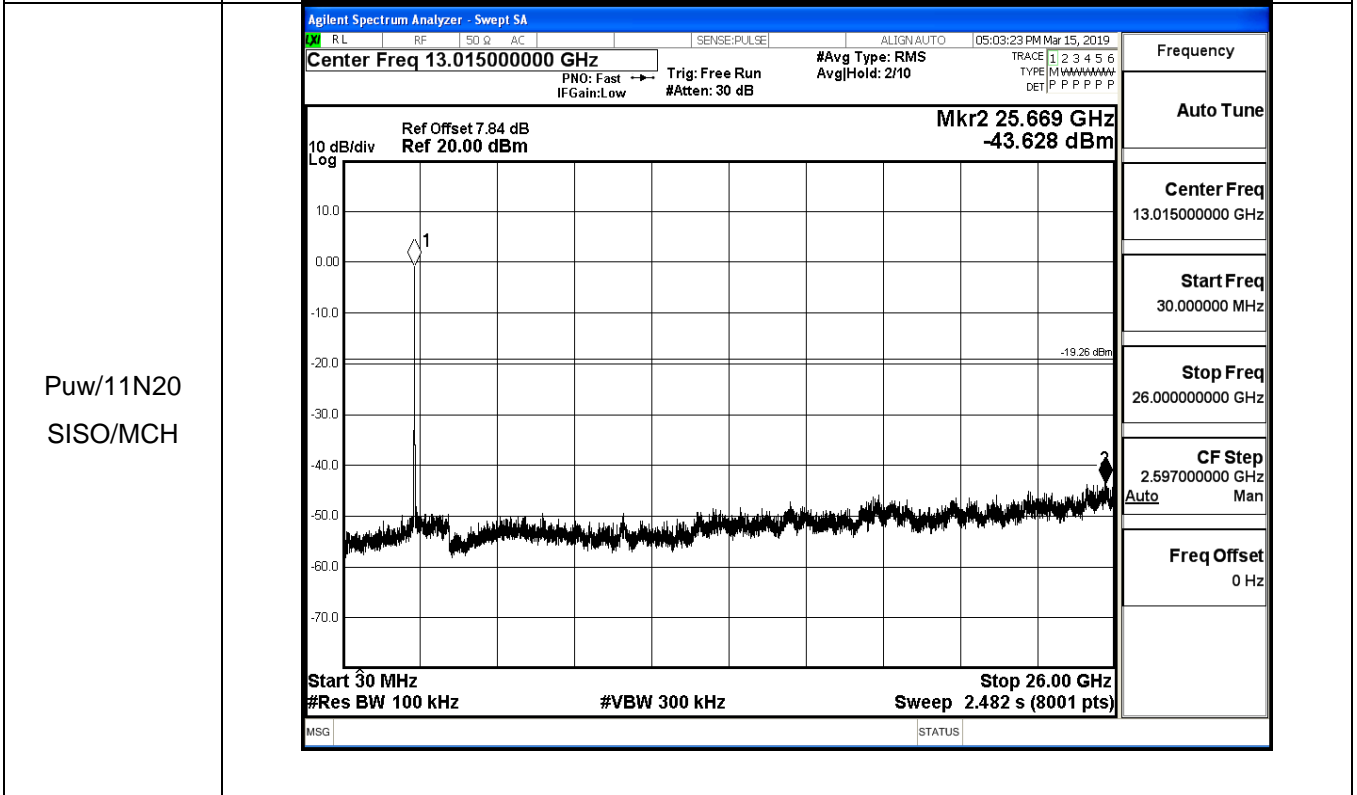
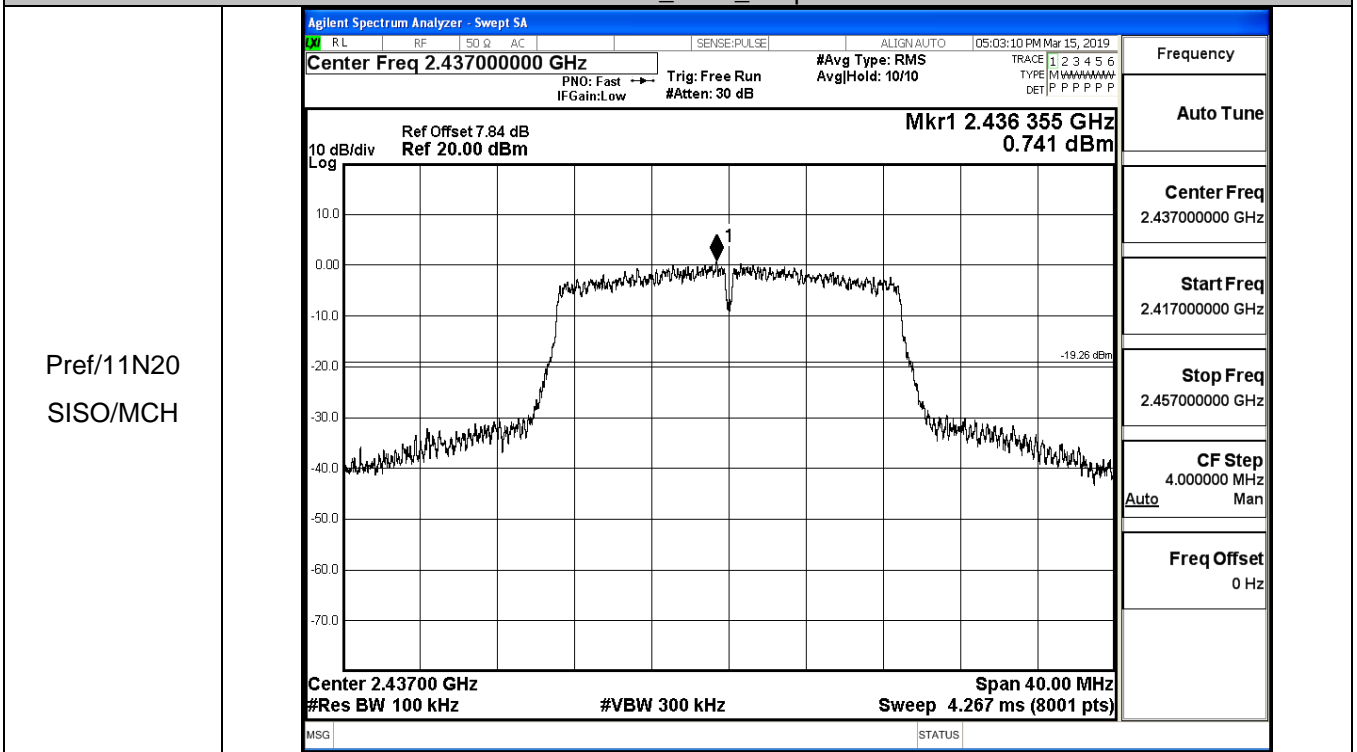
Pref/11N20SIS
O/LCH



Puw/11N20
SISO/LCH

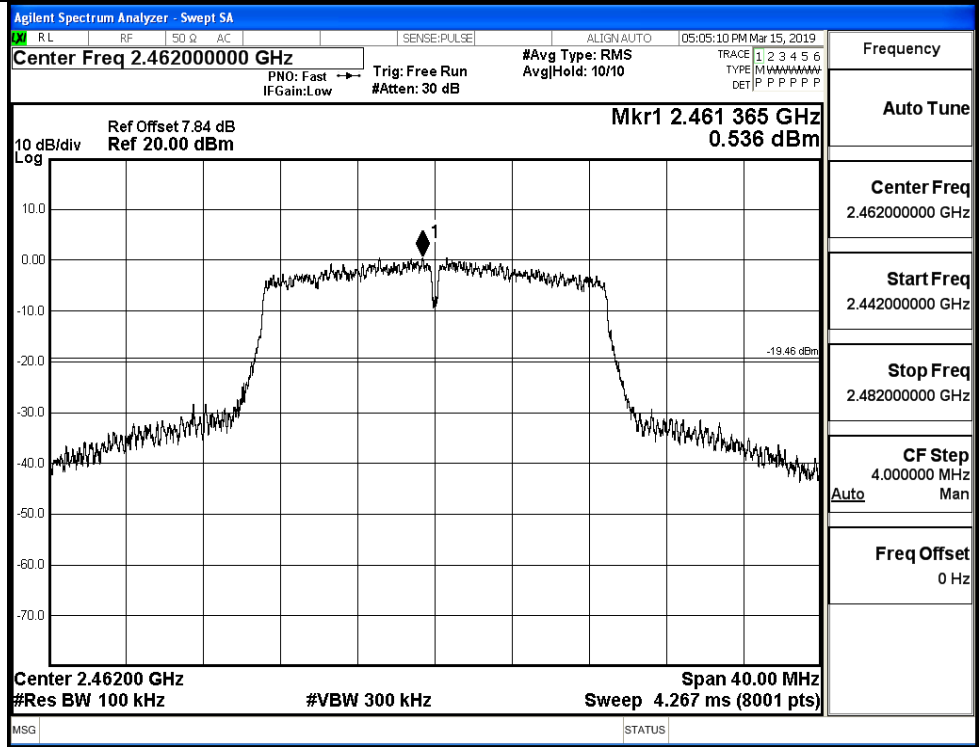


11N20SISO_MCH_Graphs

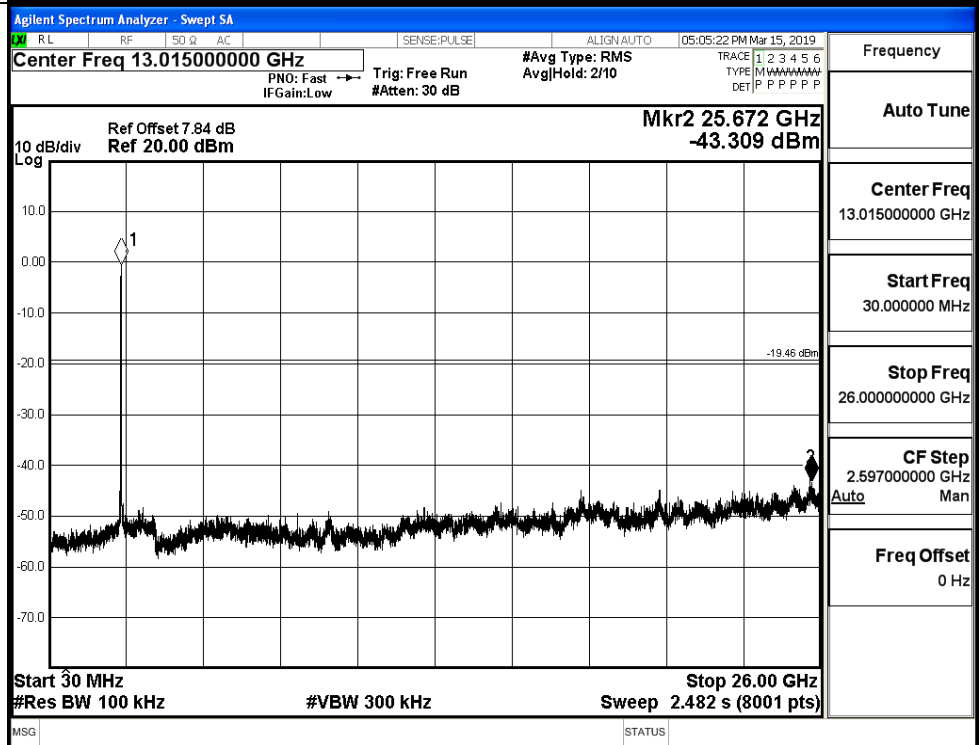


11N20SISO_HCH_Graphs

Pref/11N20
SISO/HCH

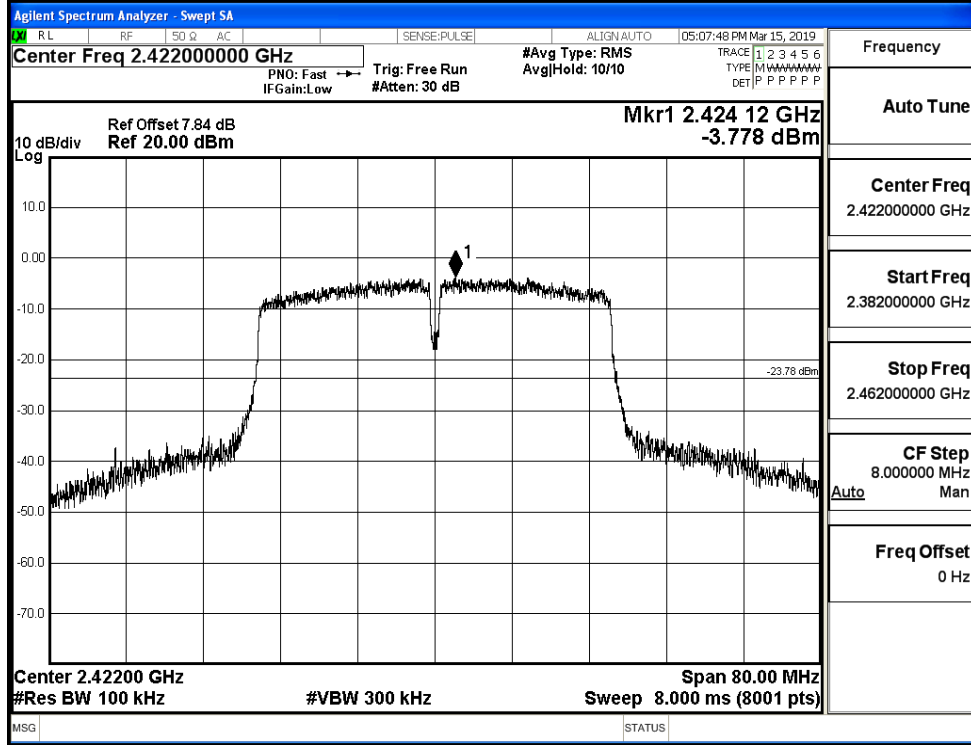


Puw/11N20
SISO/HCH

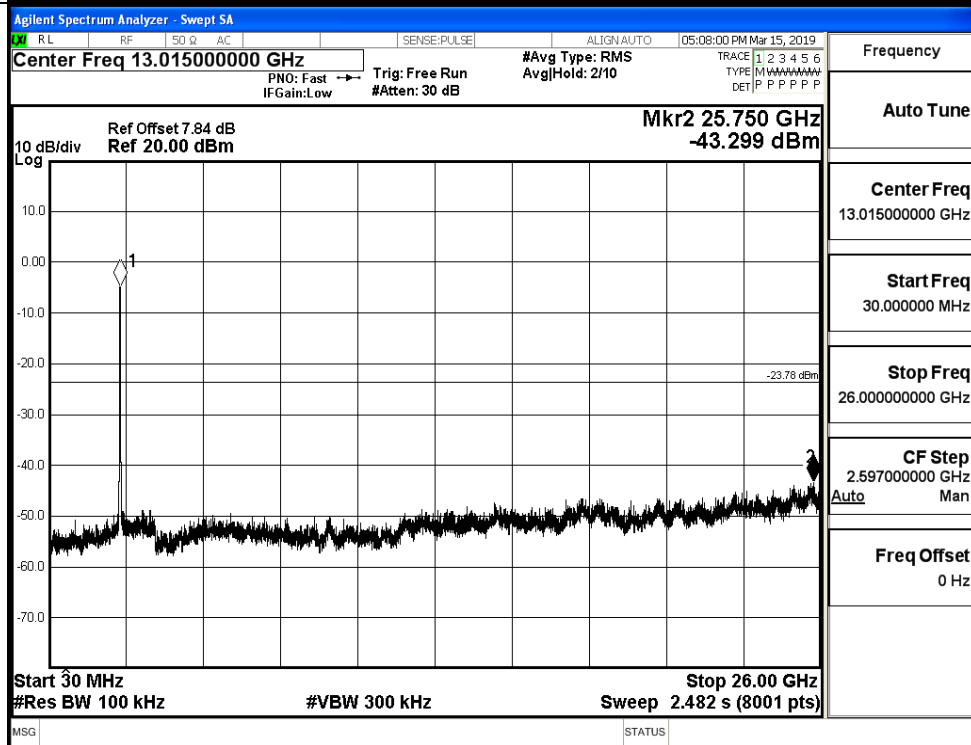


11N40SISO_LCH_Graphs

Pref/11N40
SISO/LCH

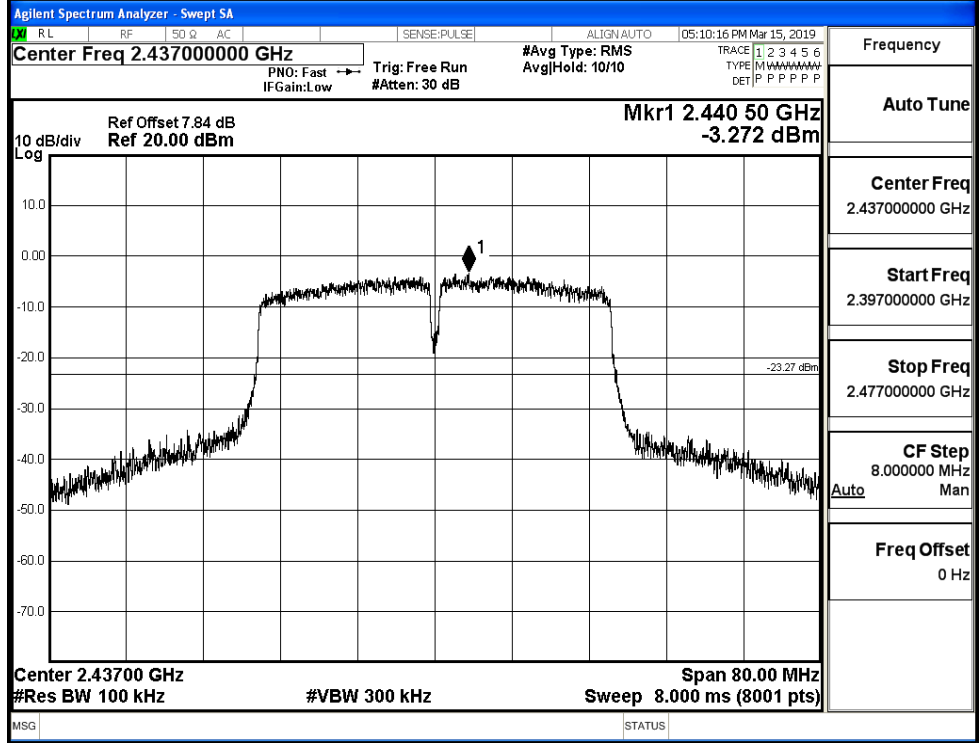


Puw/11N40
SISO/LCH

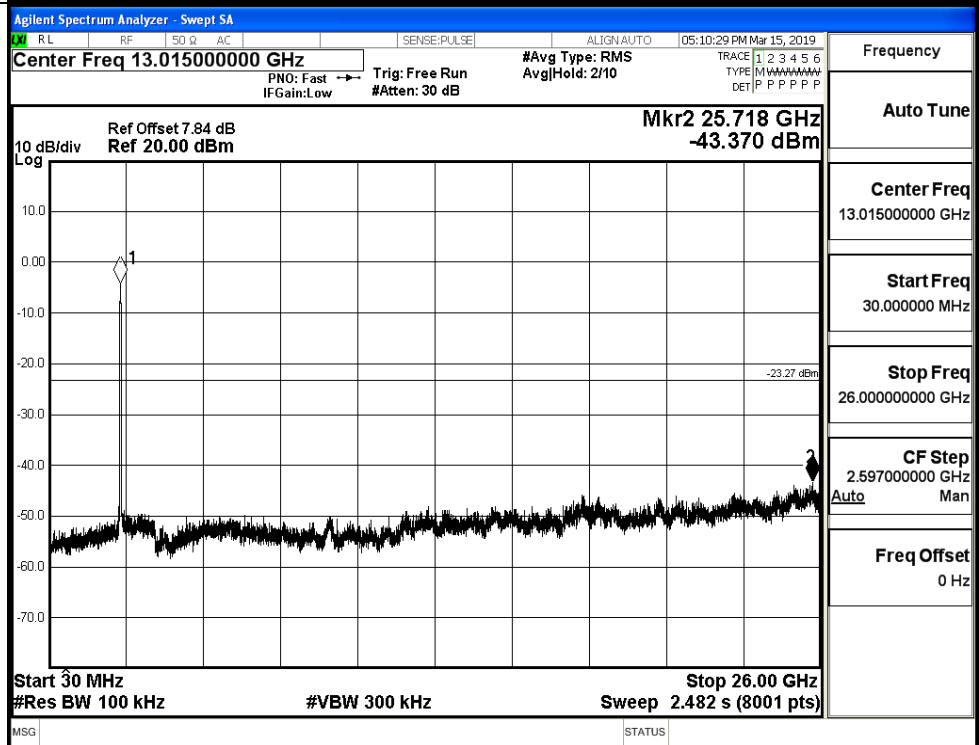


11N40SISO_MCH_Graphs

Pref/11N40
SISO/MCH

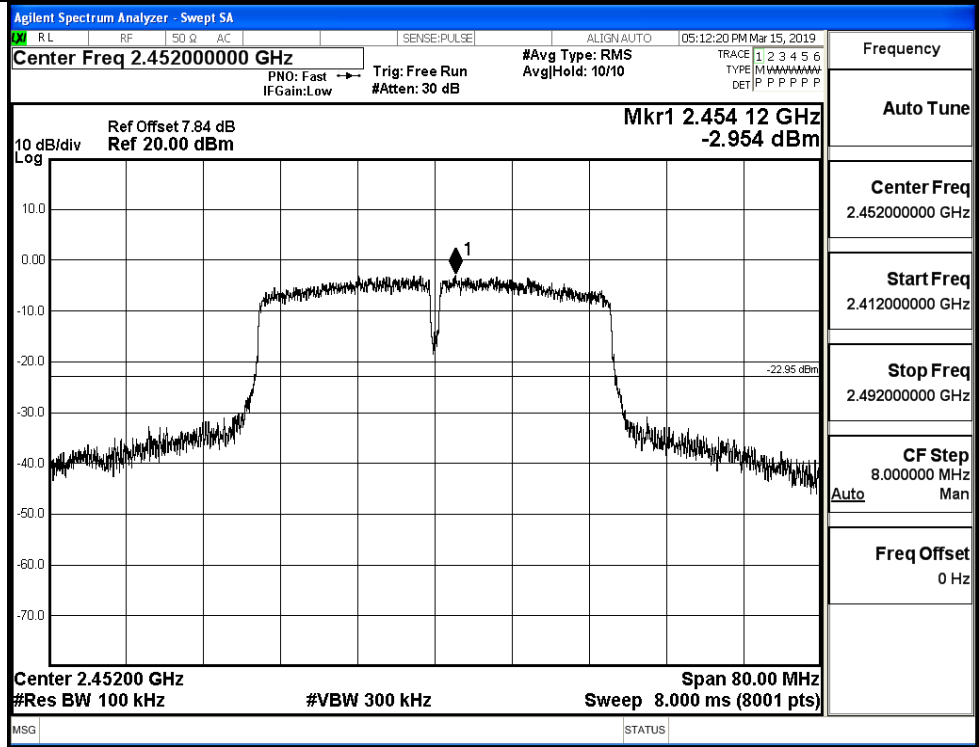


Puw/11N40
SISO/MCH

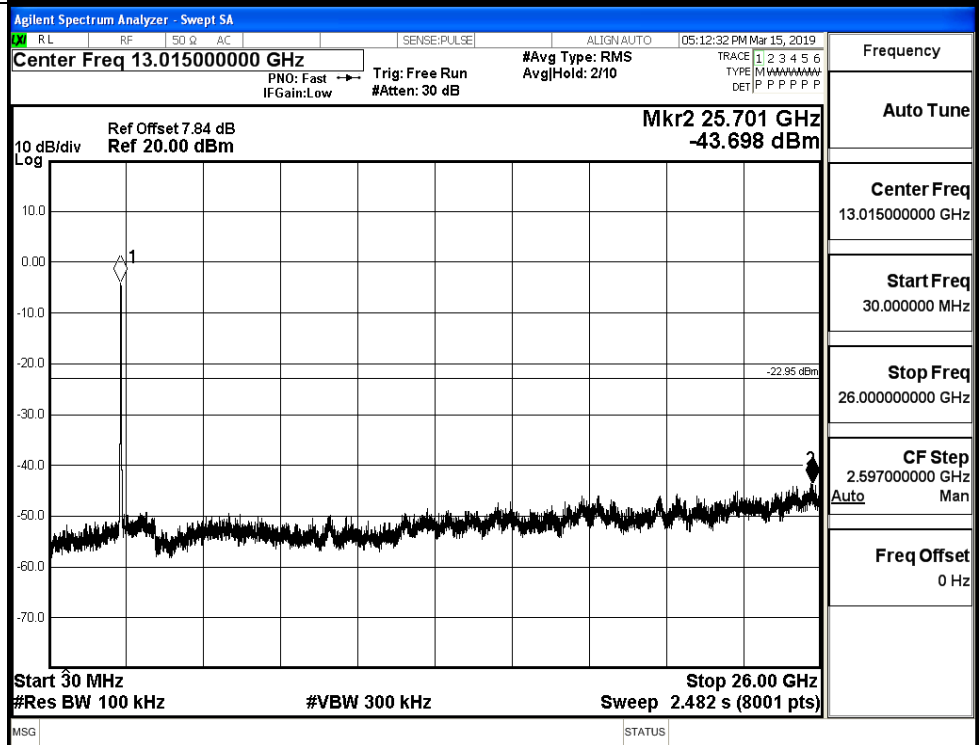


11N40SISO_HCH_Graphs

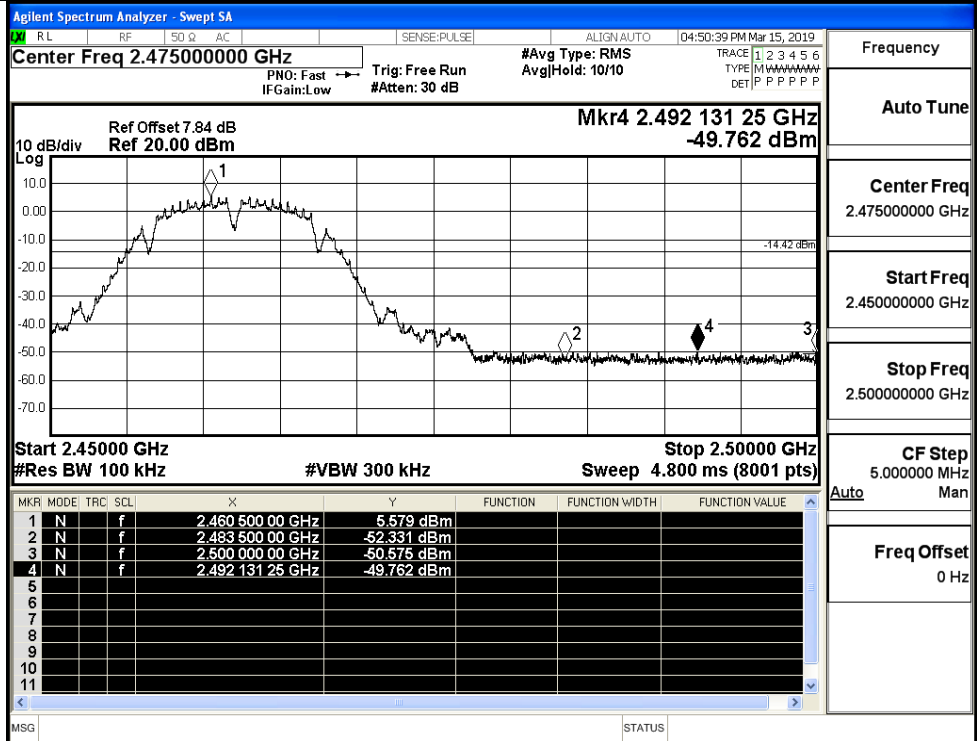
Pref/11N40
SISO/HCH



Puw/11N40
SISO/HCH

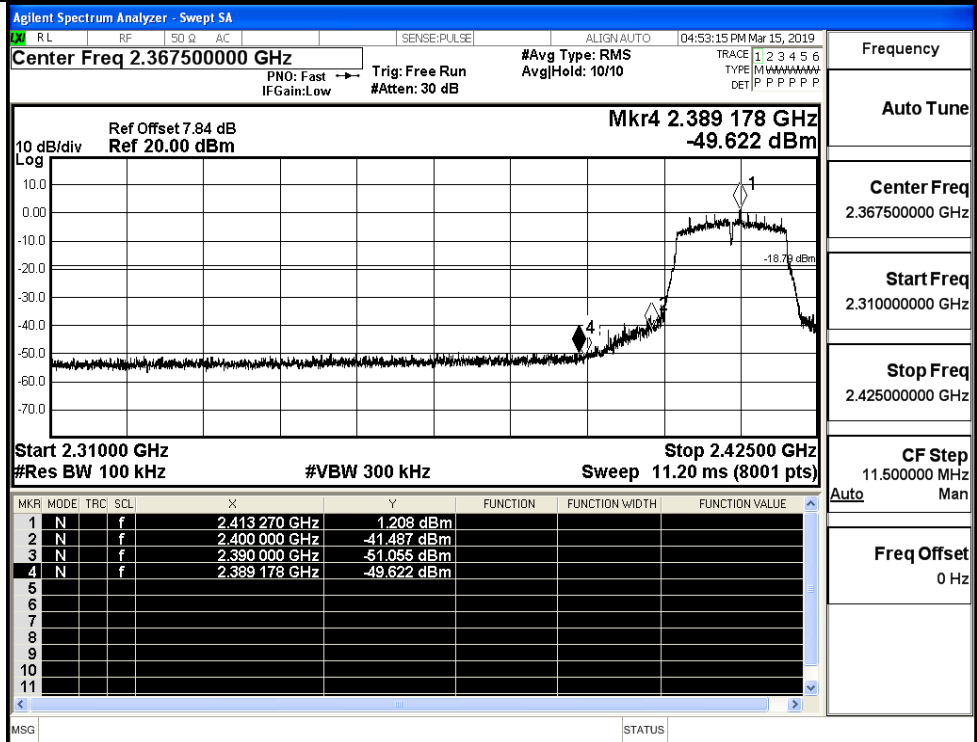


11B/HCH



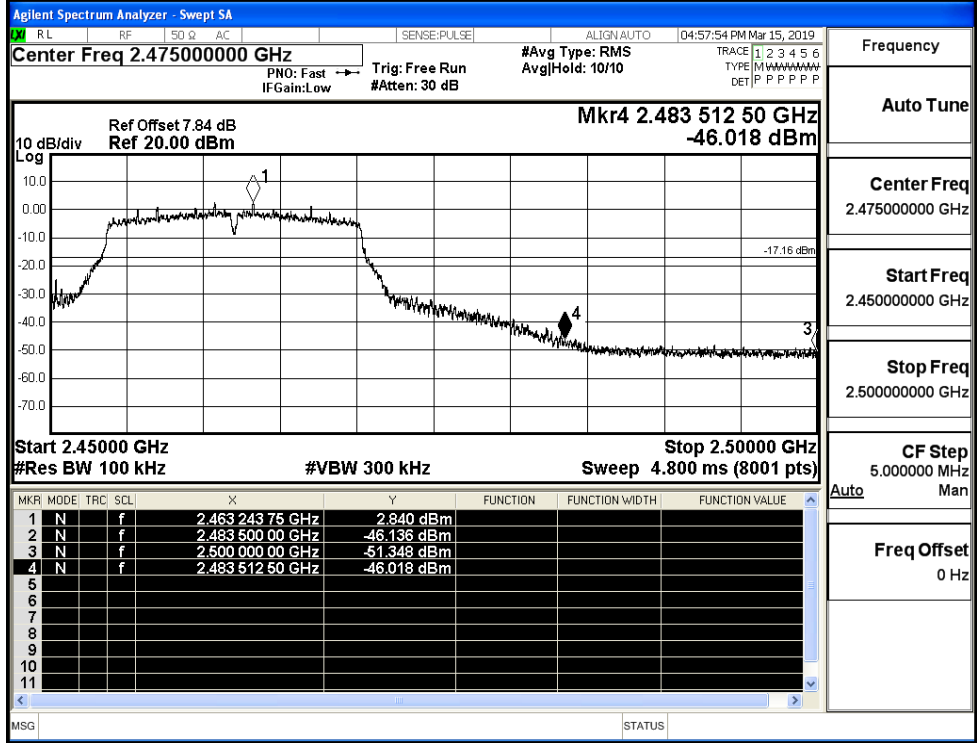
Frequency	
Auto Tune	
Center Freq	2.47500000 GHz
Start Freq	2.45000000 GHz
Stop Freq	2.50000000 GHz
CF Step	5.000000 MHz
Freq Offset	0 Hz

11G/LCH



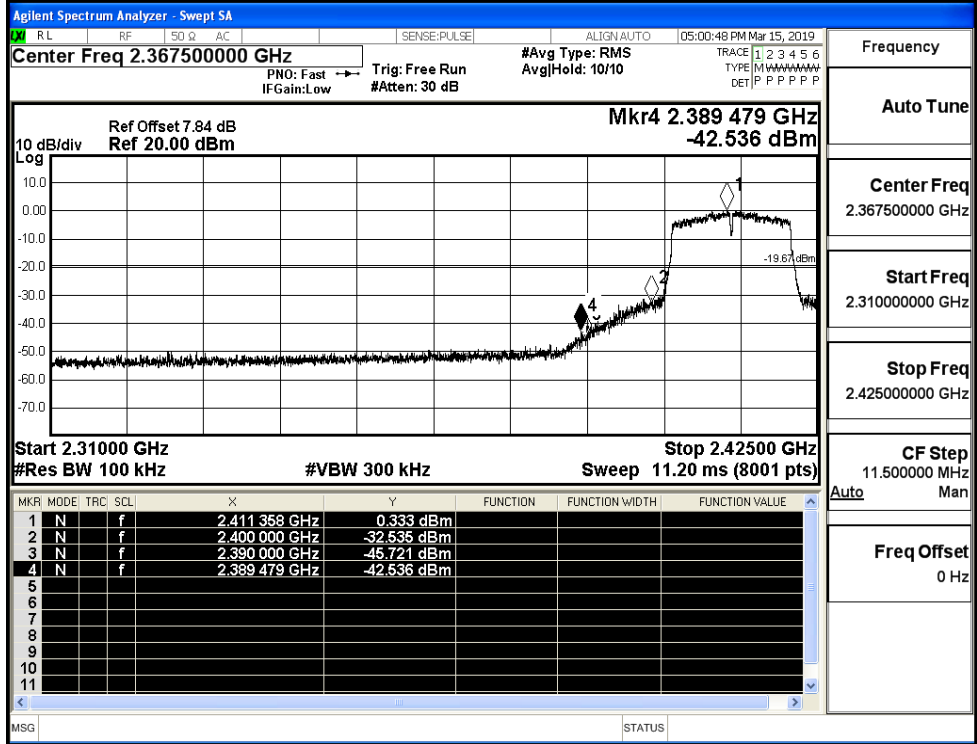
Frequency	
Auto Tune	
Center Freq	2.36750000 GHz
Start Freq	2.31000000 GHz
Stop Freq	2.42500000 GHz
CF Step	11.500000 MHz
Freq Offset	0 Hz

11G/HCH



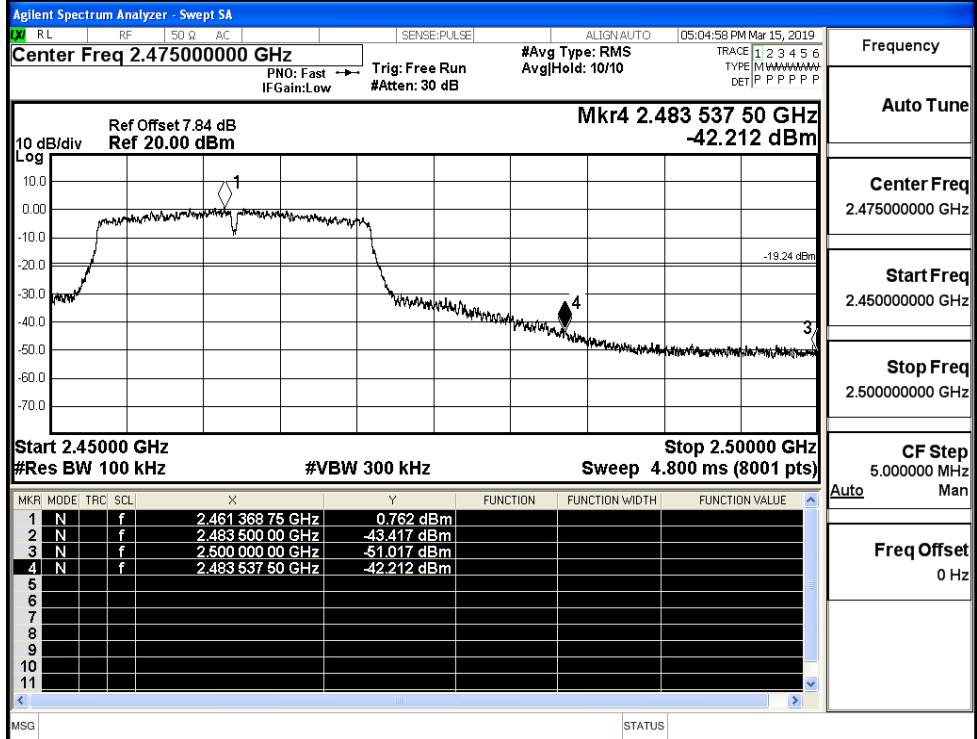
Frequency	2.47500000 GHz
Auto Tune	
Center Freq	2.47500000 GHz
Start Freq	2.45000000 GHz
Stop Freq	2.50000000 GHz
CF Step	5.000000 MHz
Freq Offset	0 Hz

11N20SISO/LCH



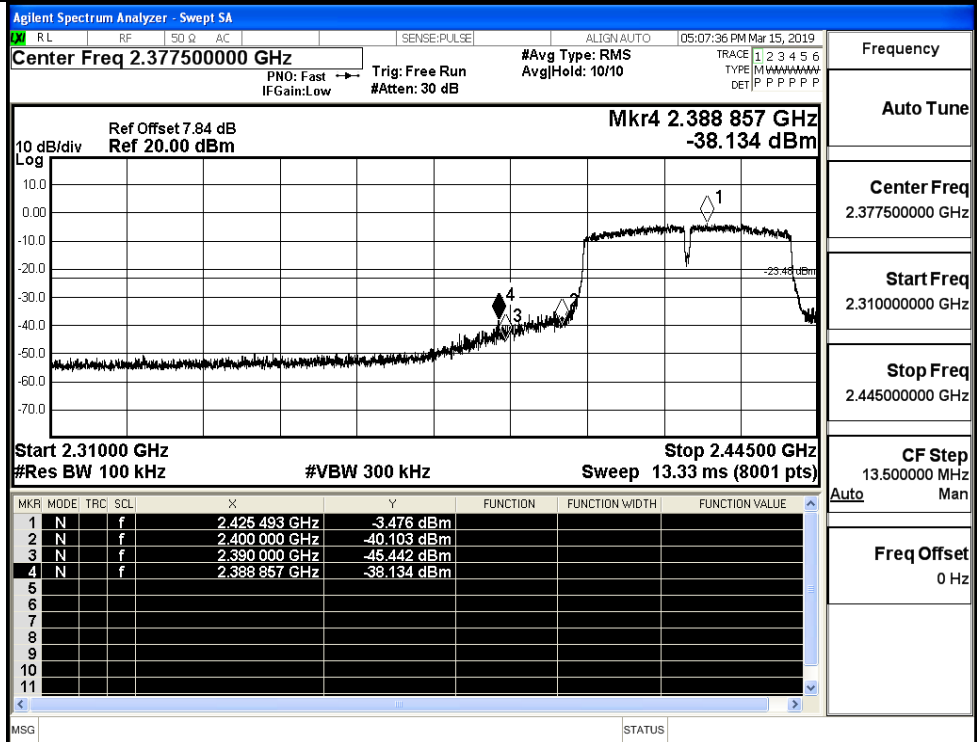
Frequency	2.36750000 GHz
Auto Tune	
Center Freq	2.36750000 GHz
Start Freq	2.31000000 GHz
Stop Freq	2.42500000 GHz
CF Step	11.500000 MHz
Freq Offset	0 Hz

11N20SISO/HCH



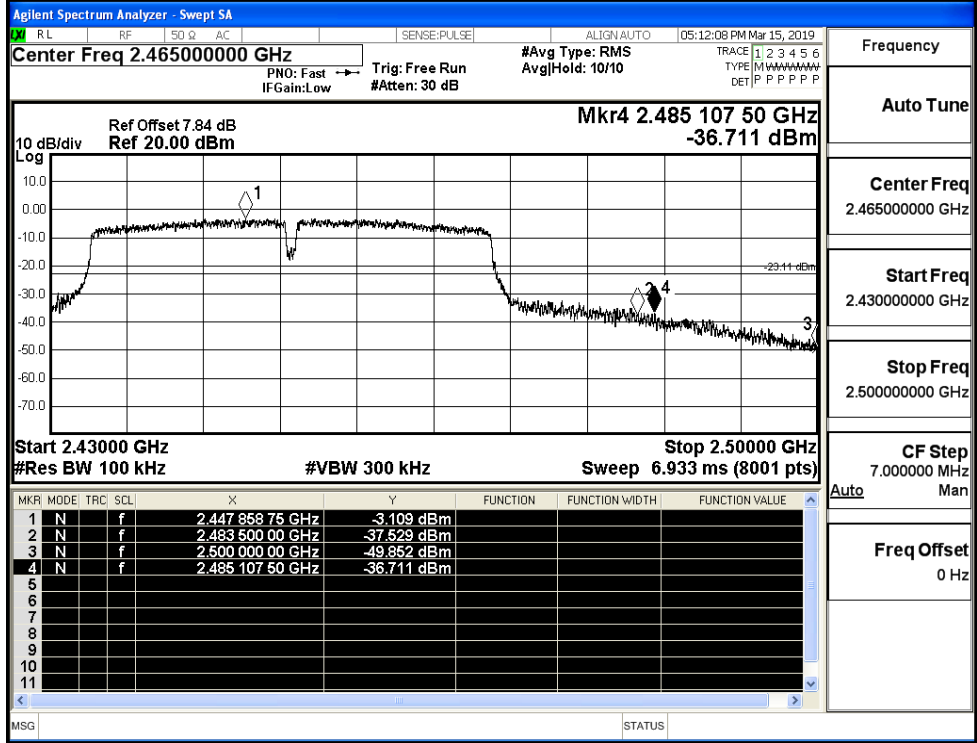
Frequency	
Auto Tune	
Center Freq	2.47500000 GHz
Start Freq	2.45000000 GHz
Stop Freq	2.50000000 GHz
CF Step	5.000000 MHz
Freq Offset	0 Hz

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

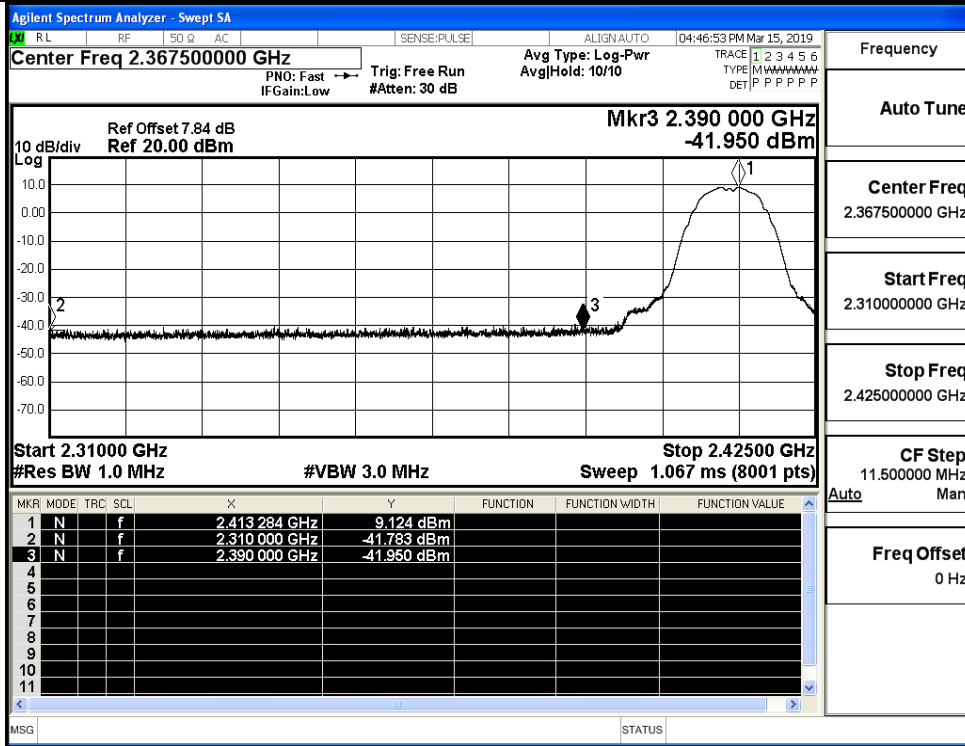


C.7 Restrict-band band-edge measurements

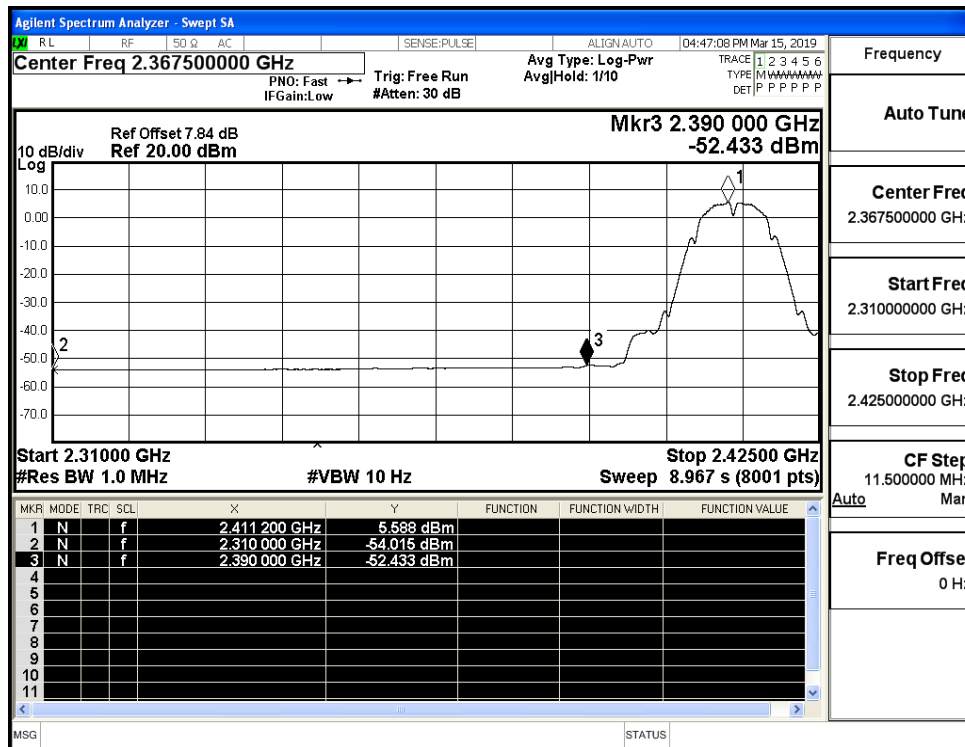
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBu V/m]	Verdict
11B	2412	Ant1	2310.0	-41.78	2.0	0	53.47	PEAK	74	PASS
	2412	Ant1	2310.0	-54.02	2.0	0	41.24	AV	54	PASS
	2412	Ant1	2390.0	-41.95	2.0	0	53.31	PEAK	74	PASS
	2412	Ant1	2390.0	-52.43	2.0	0	42.82	AV	54	PASS
	2462	Ant1	2483.5	-42.34	2.0	0	52.92	PEAK	74	PASS
	2462	Ant1	2483.5	-52.54	2.0	0	42.72	AV	54	PASS
	2462	Ant1	2500.0	-42.19	2.0	0	53.07	PEAK	74	PASS
	2462	Ant1	2500.0	-52.67	2.0	0	42.59	AV	54	PASS
11G	2412	Ant1	2310.0	-42.38	2.0	0	52.88	PEAK	74	PASS
	2412	Ant1	2310.0	-54.07	2.0	0	41.19	AV	54	PASS
	2412	Ant1	2390.0	-40.05	2.0	0	55.21	PEAK	74	PASS
	2412	Ant1	2390.0	-51.53	2.0	0	43.73	AV	54	PASS
	2462	Ant1	2483.5	-35.43	2.0	0	59.82	PEAK	74	PASS
	2462	Ant1	2483.5	-48.68	2.0	0	46.58	AV	54	PASS
	2462	Ant1	2500.0	-40.48	2.0	0	54.78	PEAK	74	PASS
	2462	Ant1	2500.0	-51.50	2.0	0	43.76	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-43.45	2.0	0	51.81	PEAK	74	PASS
	2412	Ant1	2310.0	-54.08	2.0	0	41.18	AV	54	PASS
	2412	Ant1	2390.0	-31.35	2.0	0	63.90	PEAK	74	PASS
	2412	Ant1	2390.0	-46.61	2.0	0	48.65	AV	54	PASS
	2462	Ant1	2483.5	-31.55	2.0	0	63.70	PEAK	74	PASS
	2462	Ant1	2483.5	-45.38	2.0	0	49.88	AV	54	PASS
	2462	Ant1	2500.0	-39.20	2.0	0	56.06	PEAK	74	PASS
	2462	Ant1	2500.0	-51.32	2.0	0	43.93	AV	54	PASS
11N40 SISO	2422	Ant1	2310.0	-42.98	2.0	0	52.28	PEAK	74	PASS
	2422	Ant1	2310.0	-54.12	2.0	0	41.14	AV	54	PASS

	2422	Ant1	2390.0	-31.83	2.0	0	63.43	PEAK	74	PASS
	2422	Ant1	2390.0	-44.16	2.0	0	51.09	AV	54	PASS
	2452	Ant1	2483.5	-38.41	2.0	0	56.85	PEAK	74	PASS
	2452	Ant1	2483.5	-49.70	2.0	0	45.56	AV	54	PASS
	2452	Ant1	2500.0	-42.01	2.0	0	53.24	PEAK	74	PASS
	2452	Ant1	2500.0	-52.38	2.0	0	42.88	AV	54	PASS

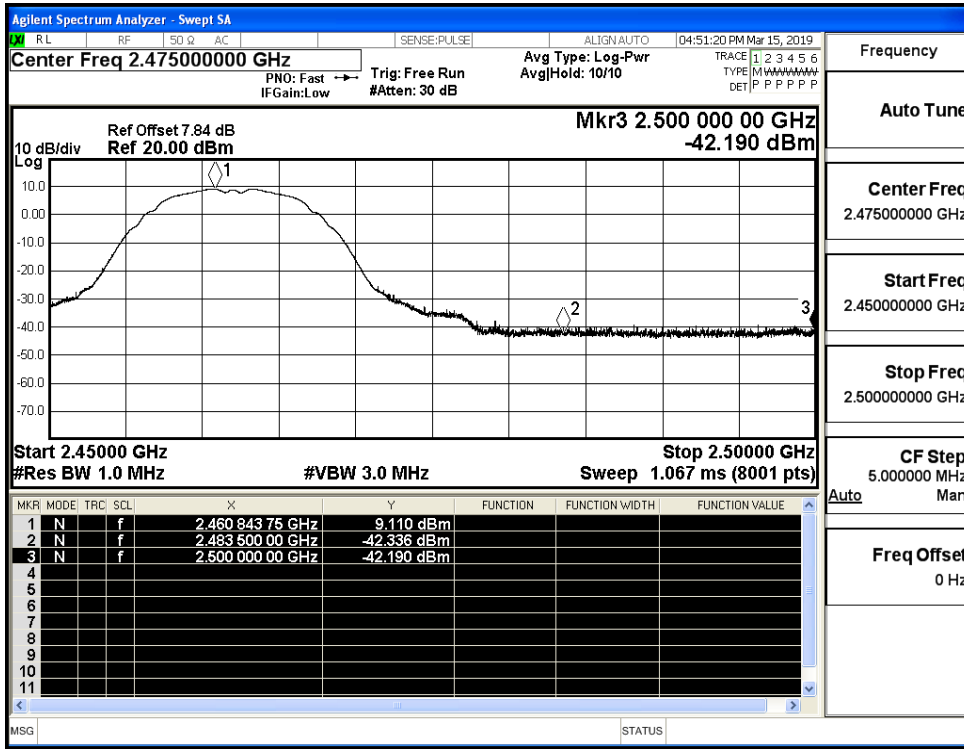
Restrict-band band-edge measurements_11B_2412_Ant1_PEAK



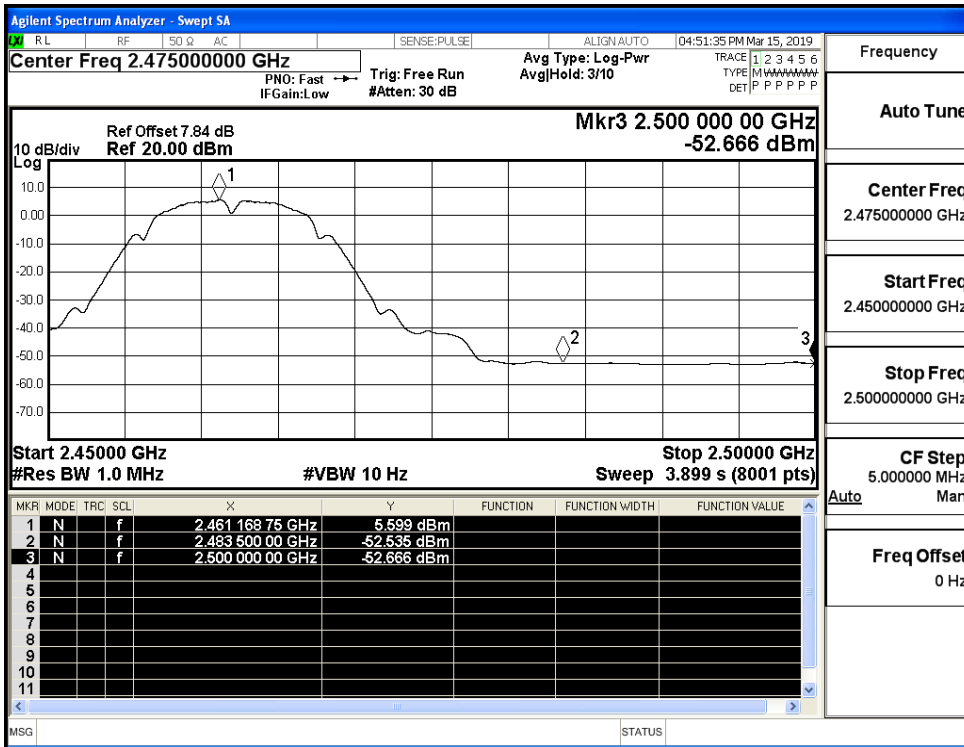
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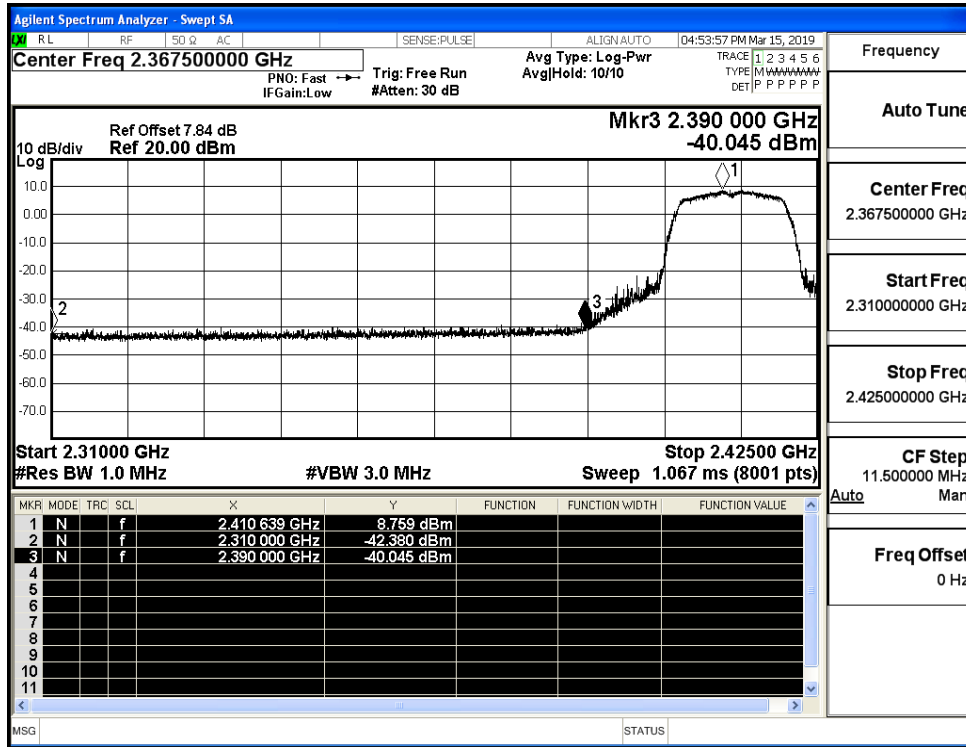
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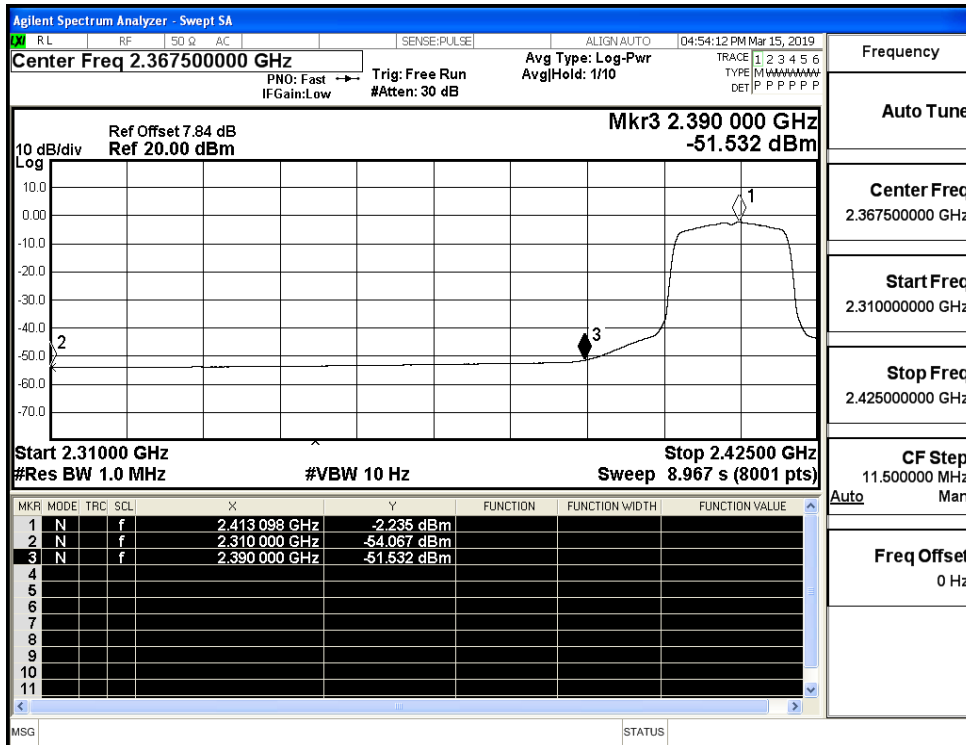
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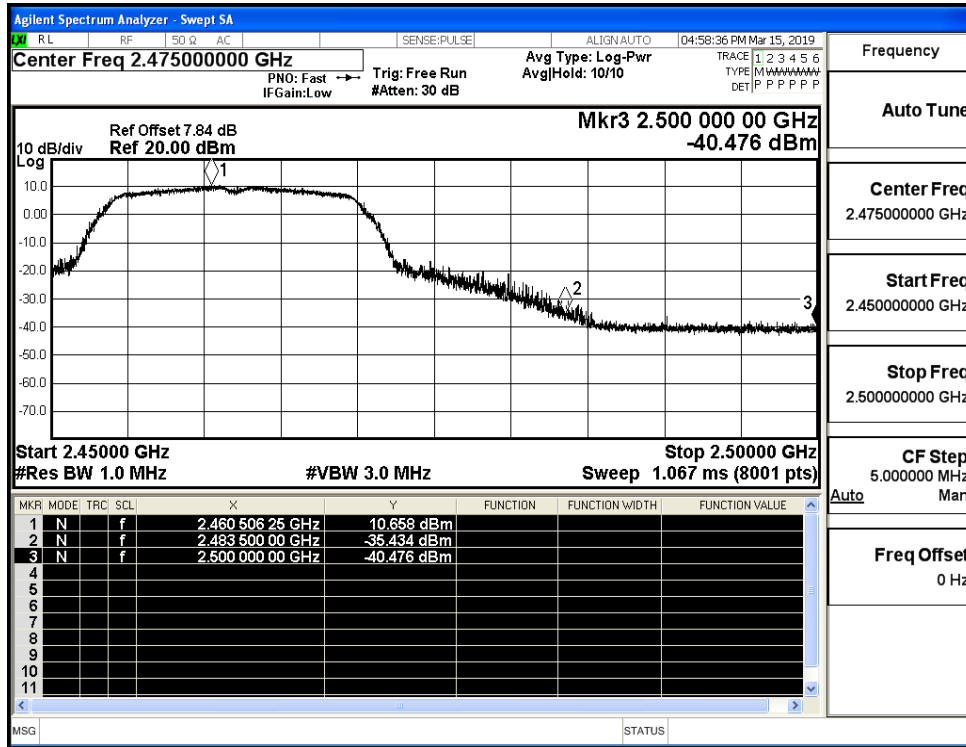
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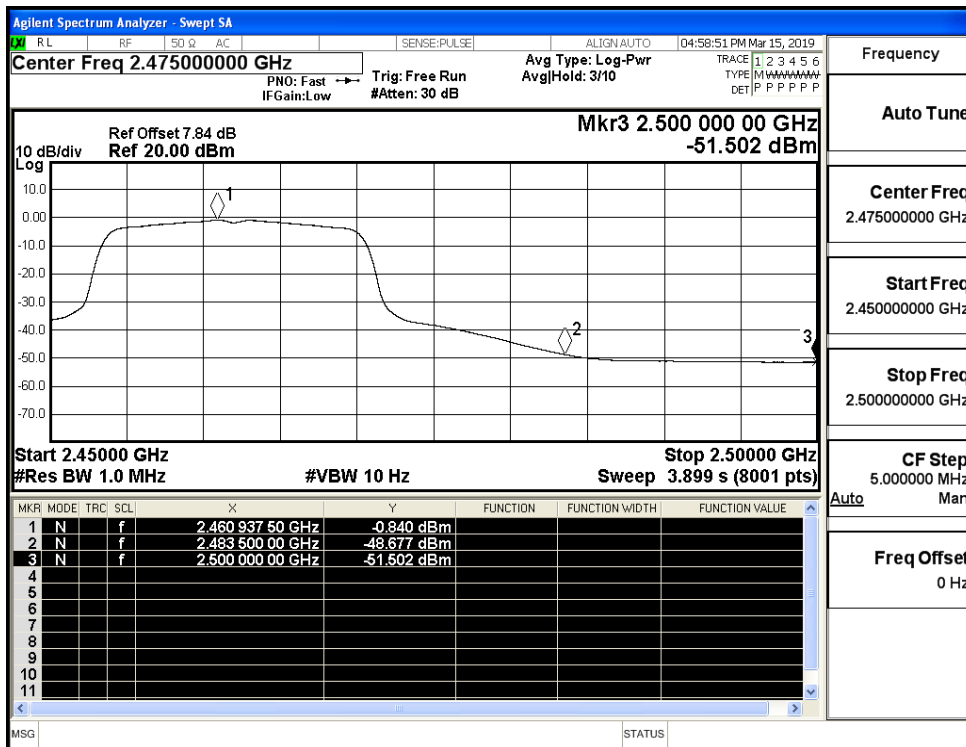
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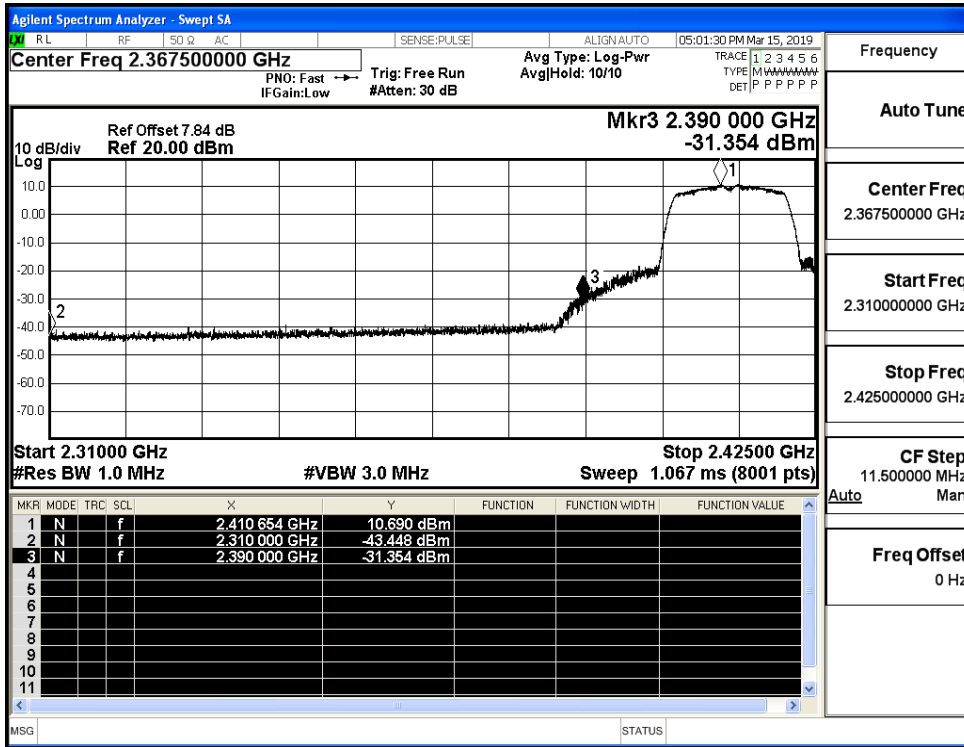
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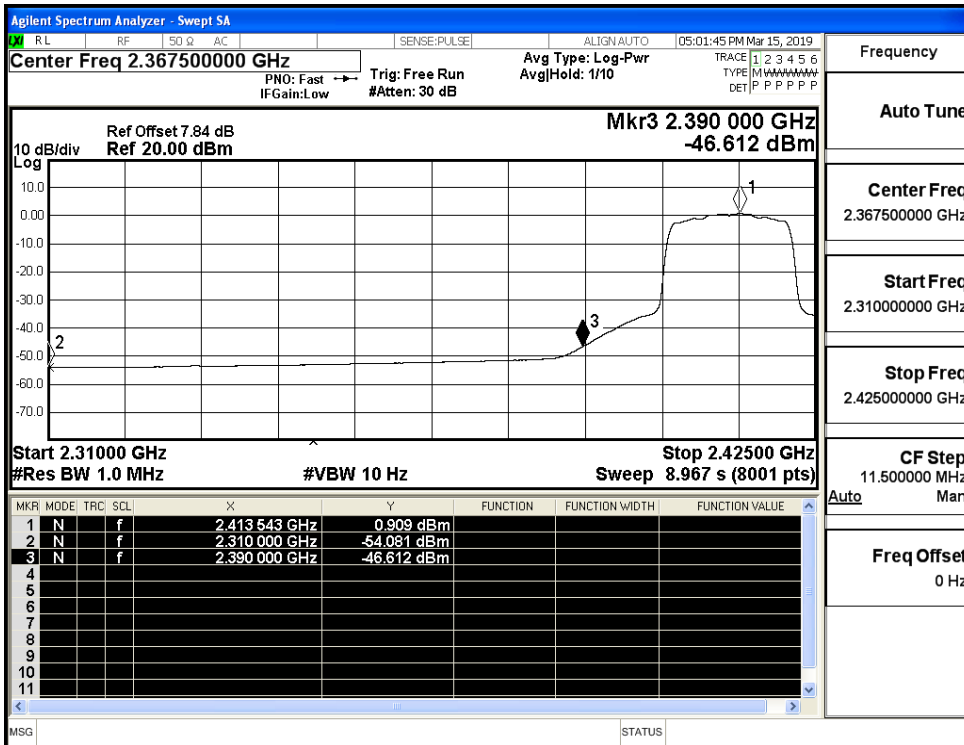
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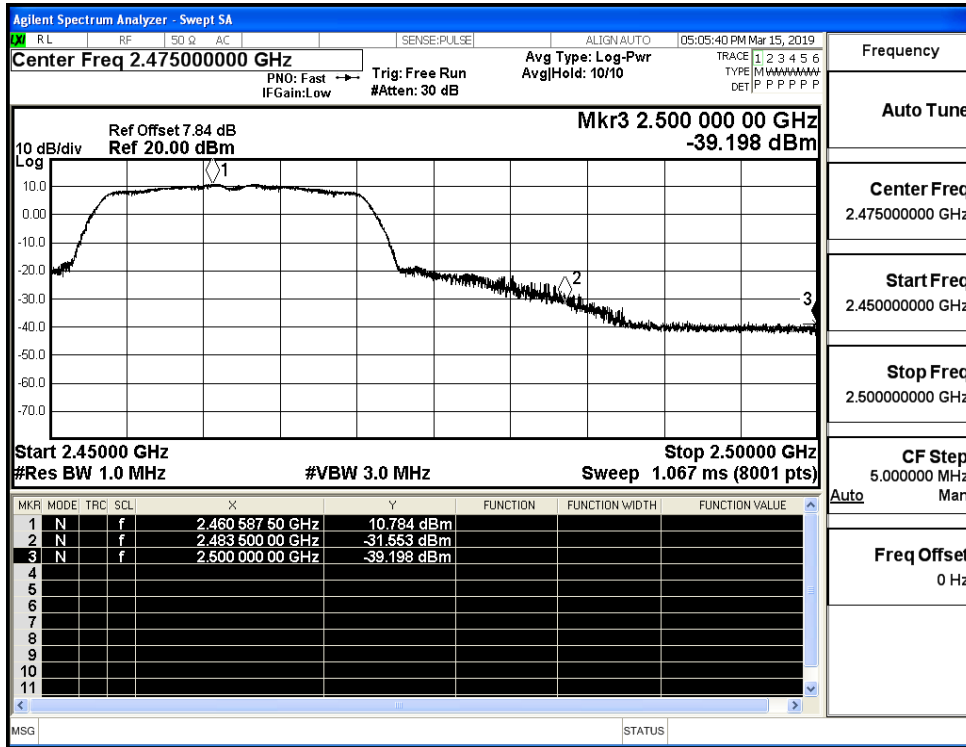
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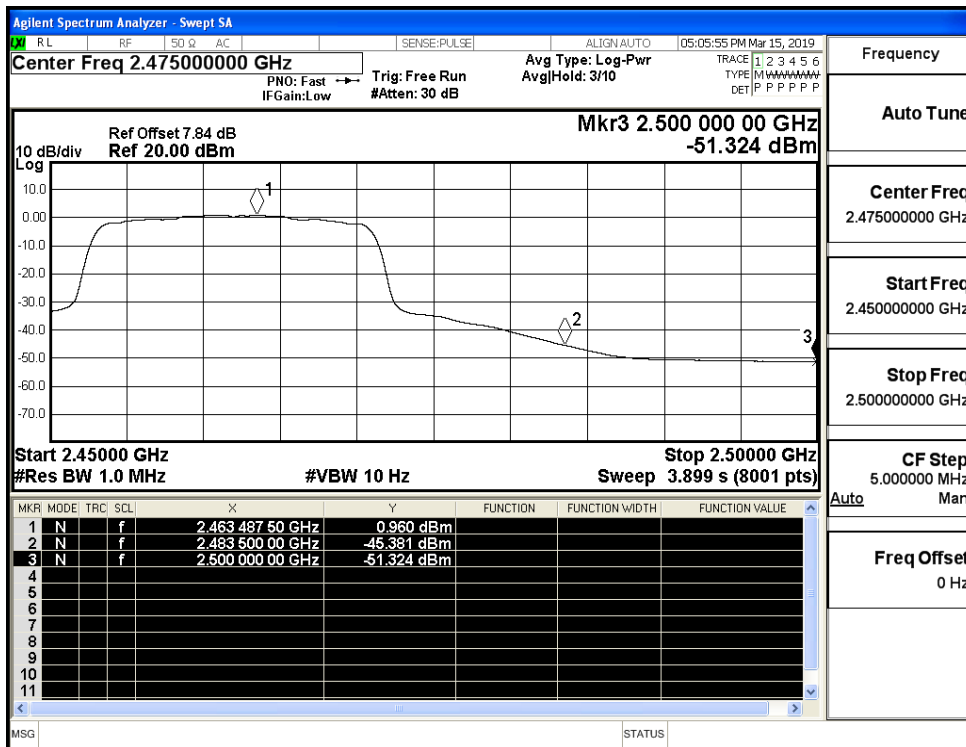
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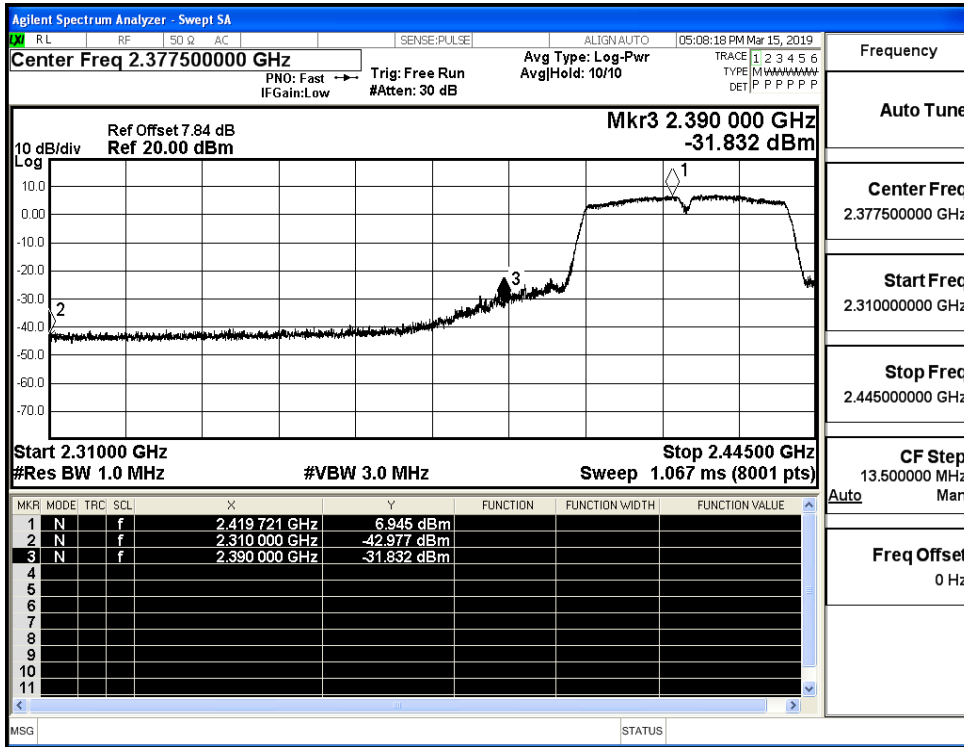
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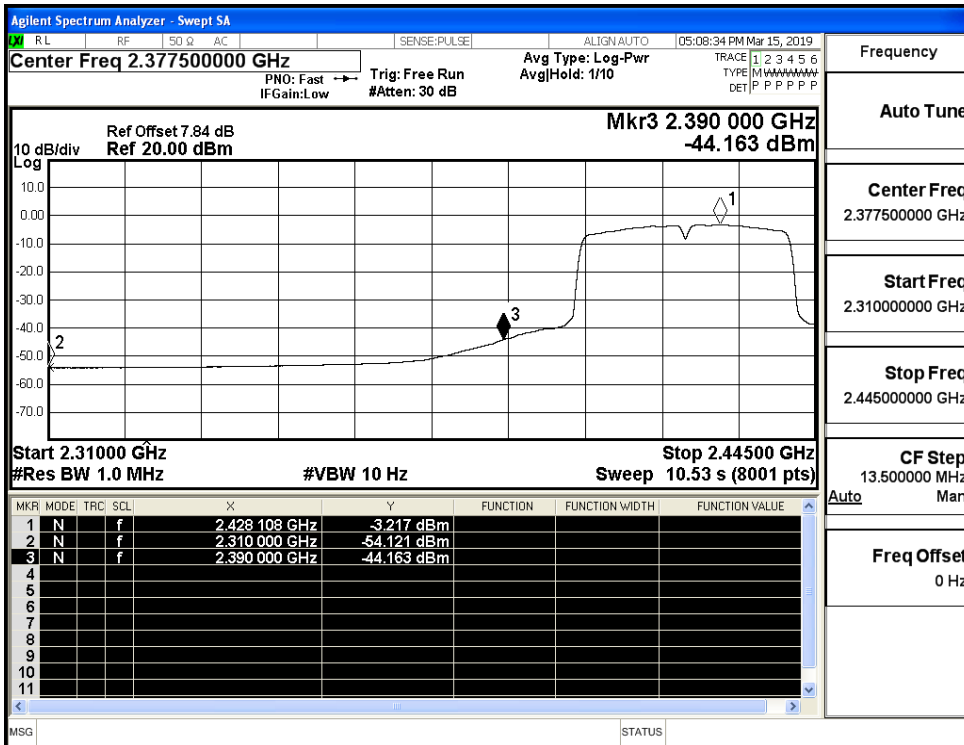
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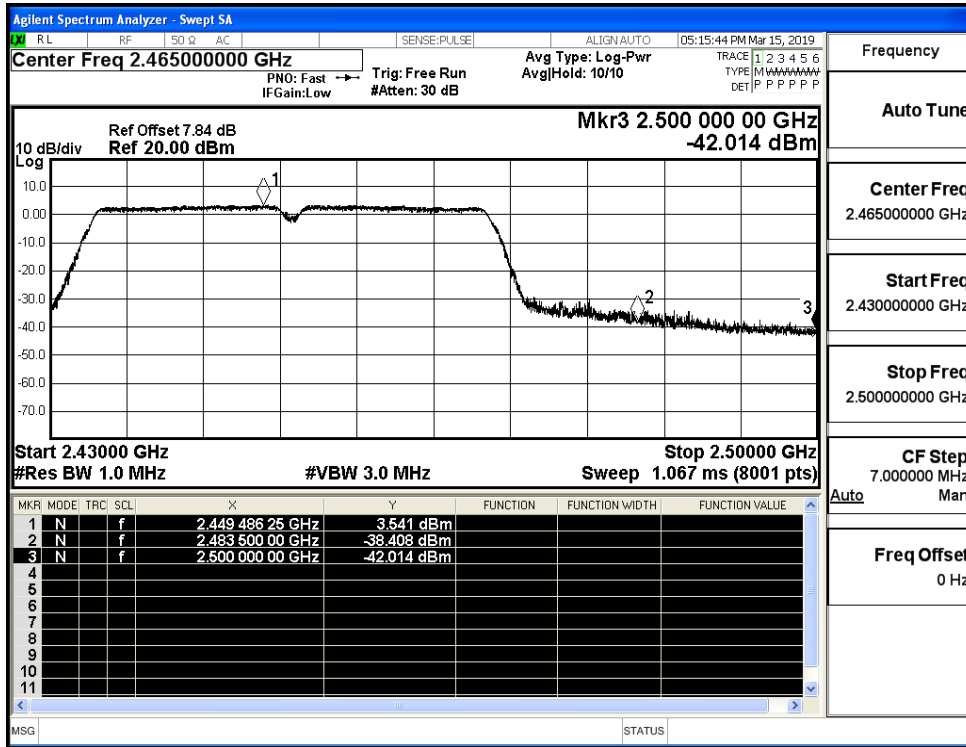
Restrict-band band-edge measurements_11N40SISO_2422_Ant1_PEAK



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

