

Appendix C

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Personal Mobile Alarm System

Trade Mark: N/A

Test Model: EV-07BX-LTE

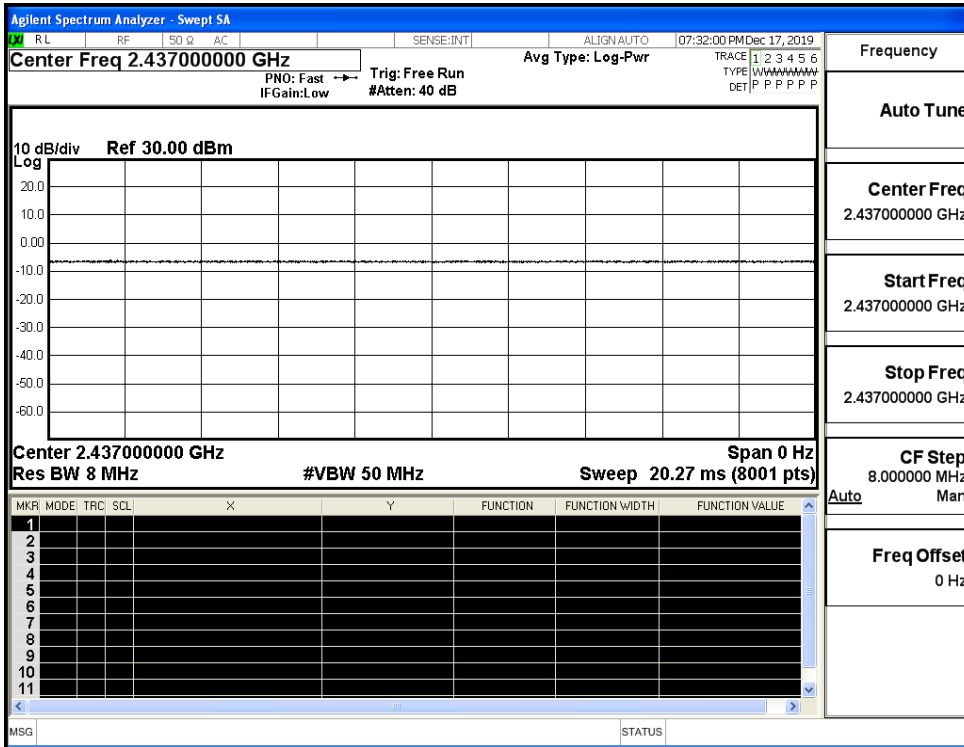
Environmental Conditions

Temperature:	24.3 ° C
Relative Humidity:	53.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Alisa Huang
Supervised by:	Wang.Chuang

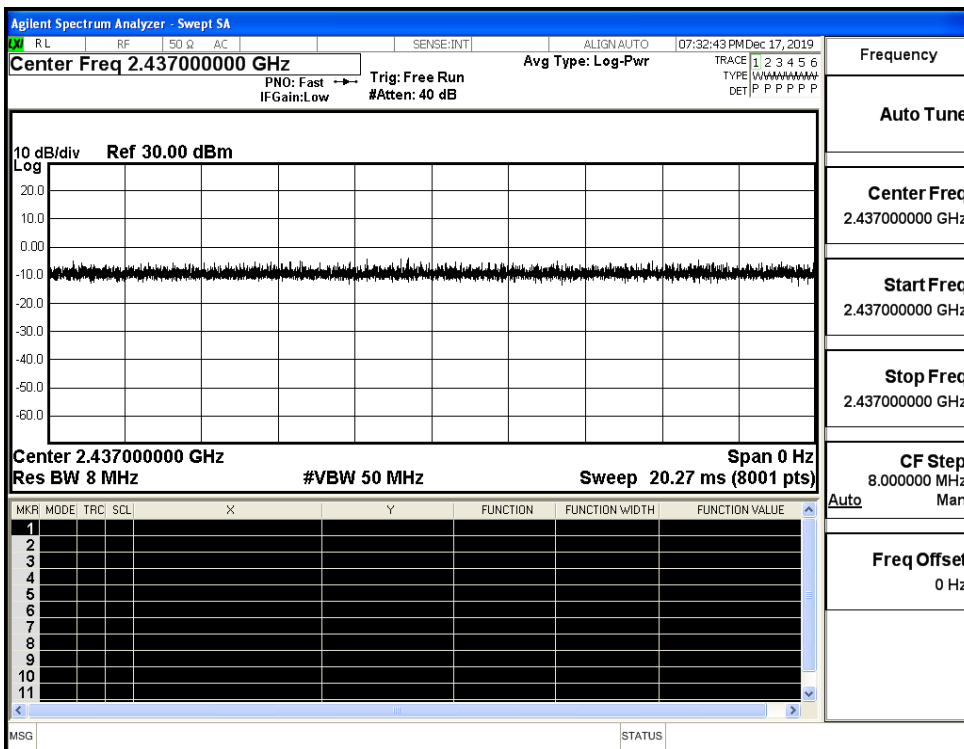
C.1 Duty Cycle

Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
11B	2437	Ant1	100	PASS
11G	2437	Ant1	100	PASS
11N20SISO	2437	Ant1	100	PASS

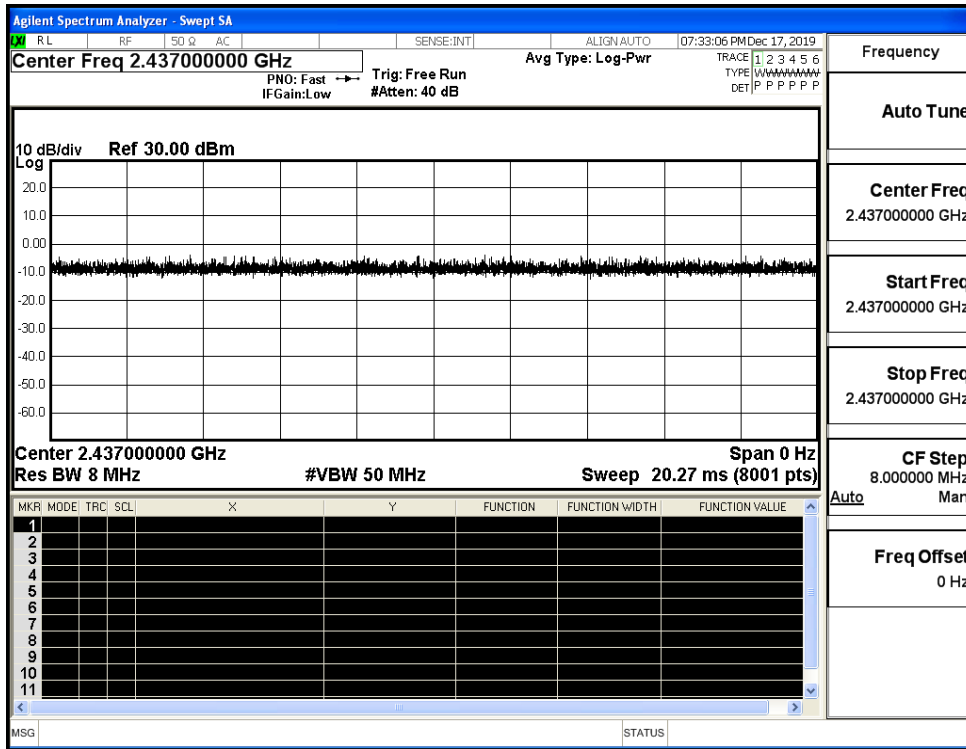
Duty Cycle_11B_2437_Ant1



Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1

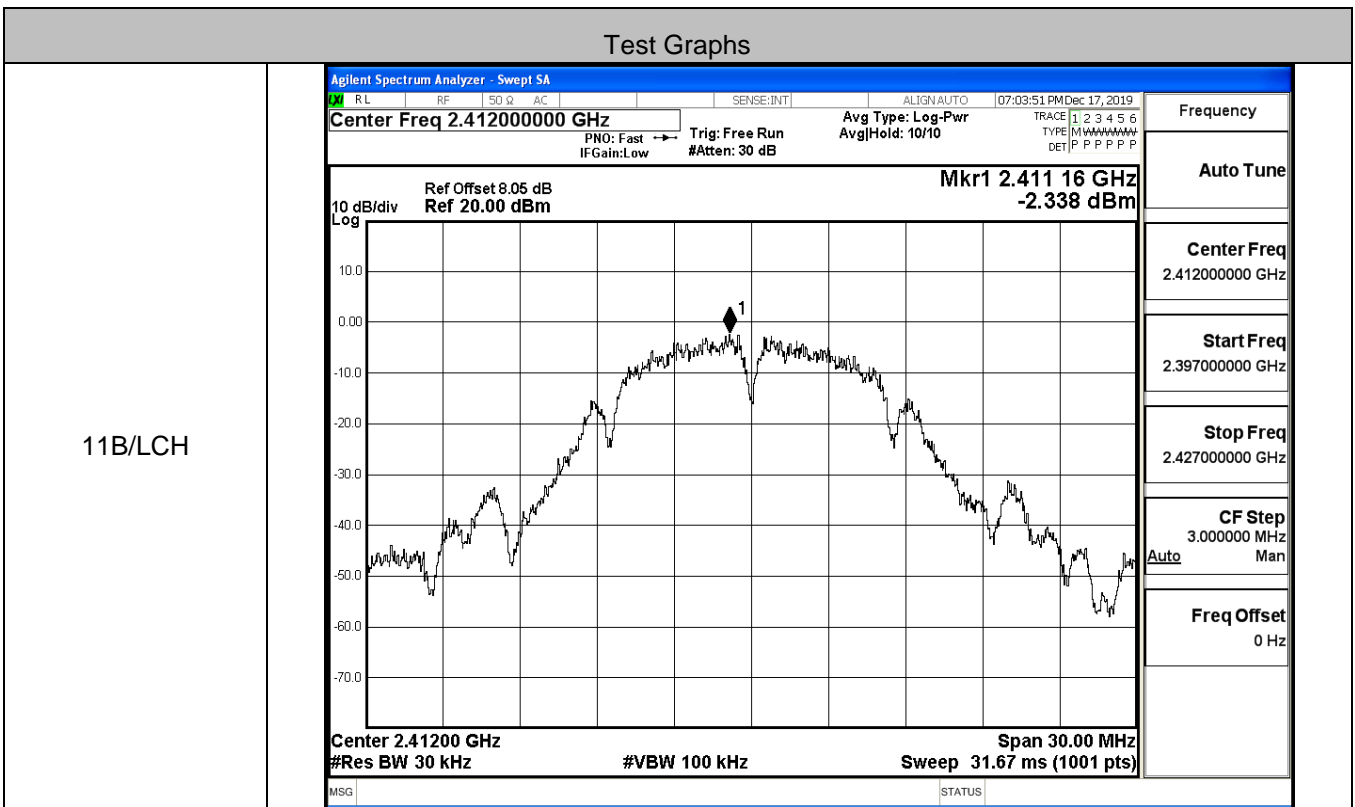


C.2 Maximum Conducted Output Power

Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	12.93	30	PASS
	MCH	11.9	30	PASS
	HCH	11.78	30	PASS
11G	LCH	12.87	30	PASS
	MCH	11.81	30	PASS
	HCH	11.74	30	PASS
11N20SISO	LCH	12.8	30	PASS
	MCH	11.66	30	PASS
	HCH	11.58	30	PASS

C.3 Maximum Power Spectral Density

Mode	Channel	Meas.Level [dBm/30KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-2.338	8	PASS
	MCH	-3.207	8	PASS
	HCH	-3.454	8	PASS
11G	LCH	-11.190	8	PASS
	MCH	-12.098	8	PASS
	HCH	-12.270	8	PASS
11N20SISO	LCH	-10.583	8	PASS
	MCH	-12.033	8	PASS
	HCH	-11.993	8	PASS

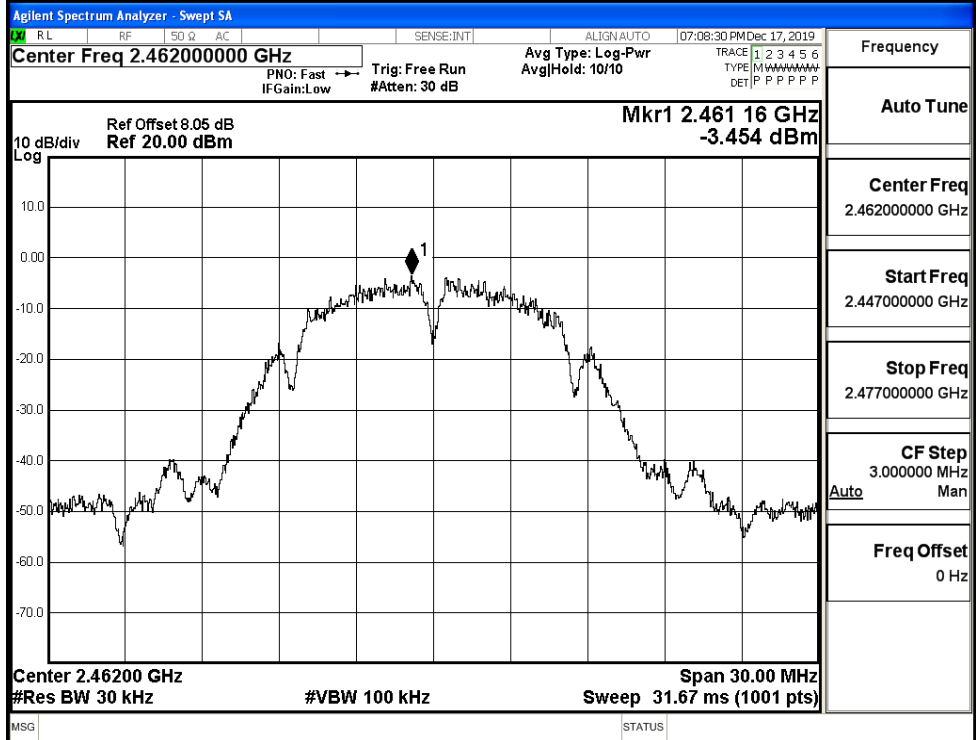


11B/MCH



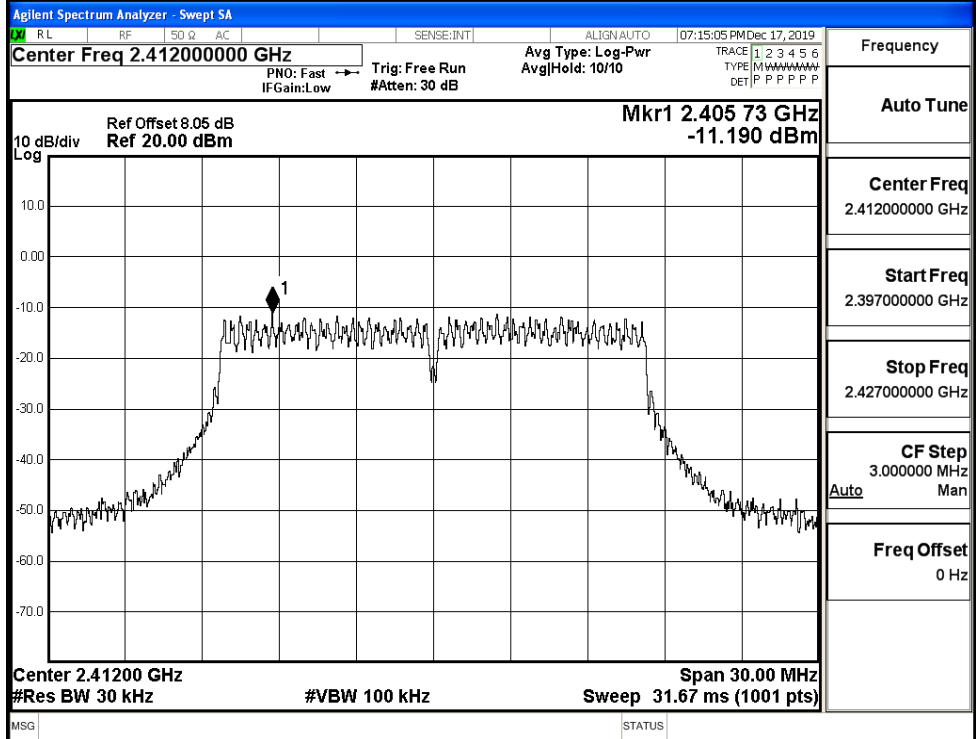
Frequency
Auto Tune
Center Freq 2.43700000 GHz
Start Freq 2.422000000 GHz
Stop Freq 2.452000000 GHz
CF Step 3.000000 MHz Auto Man
Freq Offset 0 Hz

11B/HCH

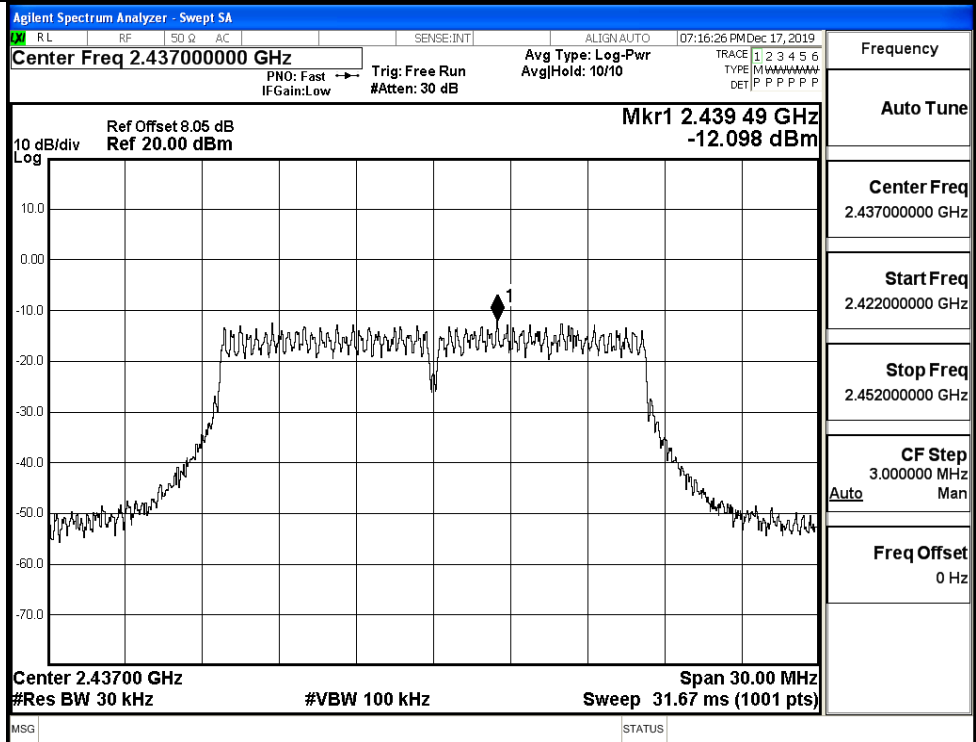


Frequency
Auto Tune
Center Freq 2.46200000 GHz
Start Freq 2.447000000 GHz
Stop Freq 2.477000000 GHz
CF Step 3.000000 MHz Auto Man
Freq Offset 0 Hz

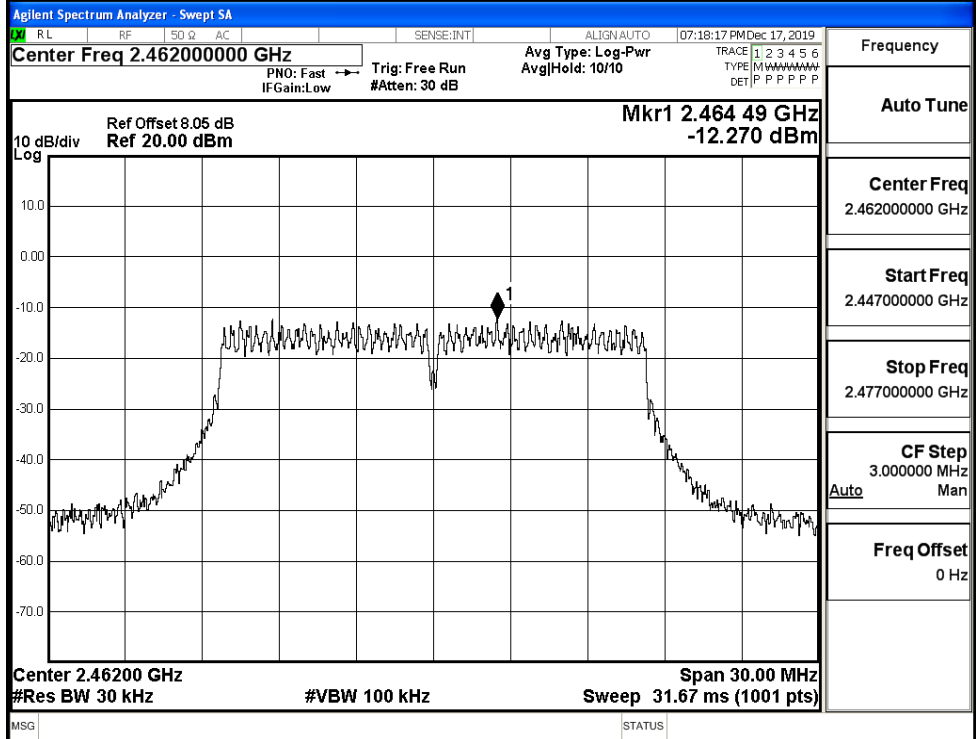
11G/LCH



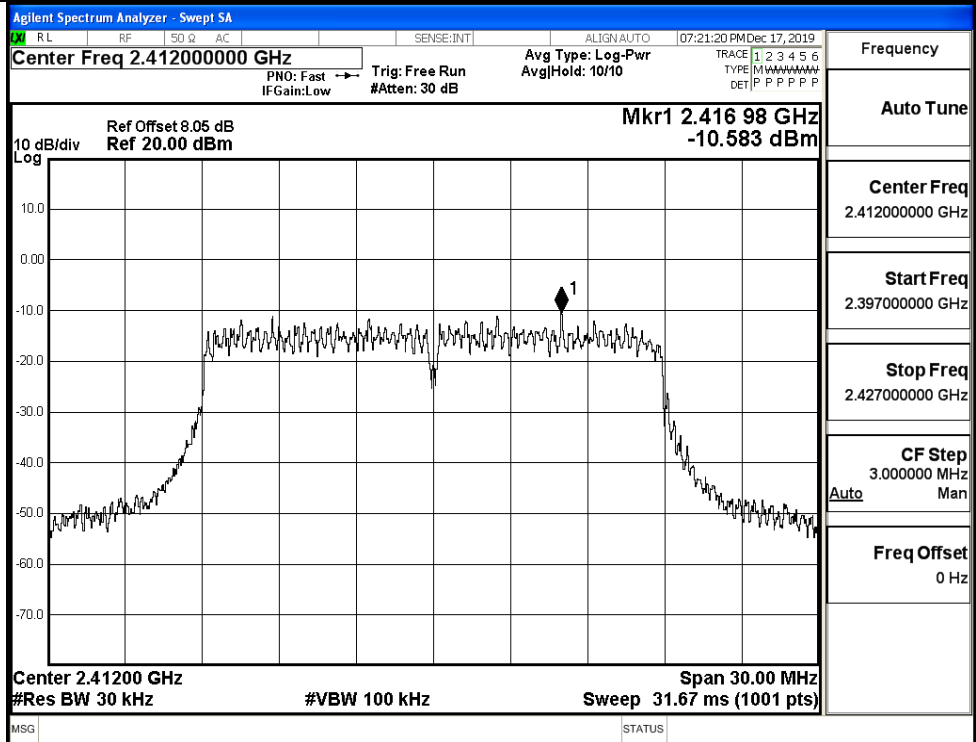
11G/MCH

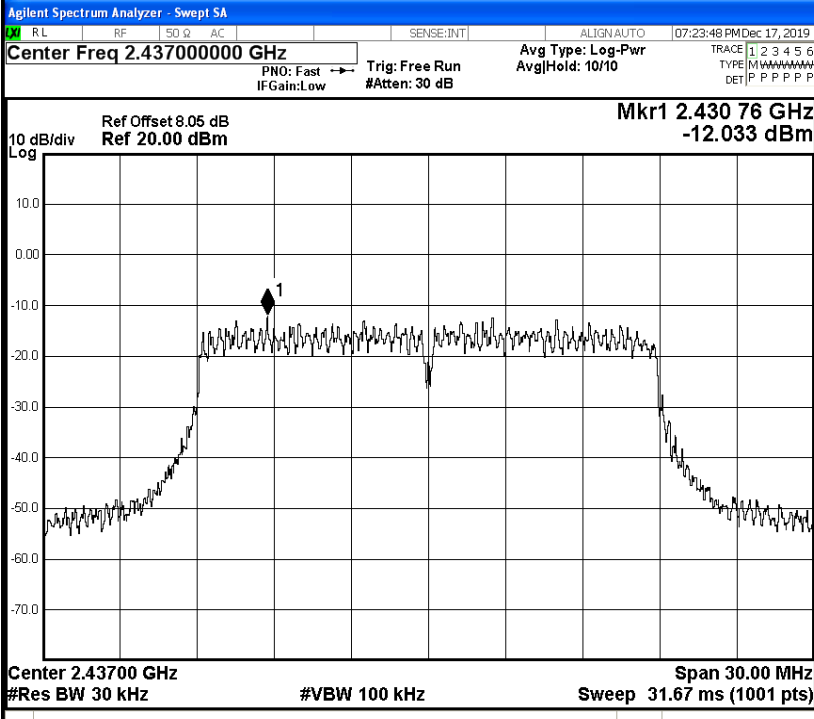
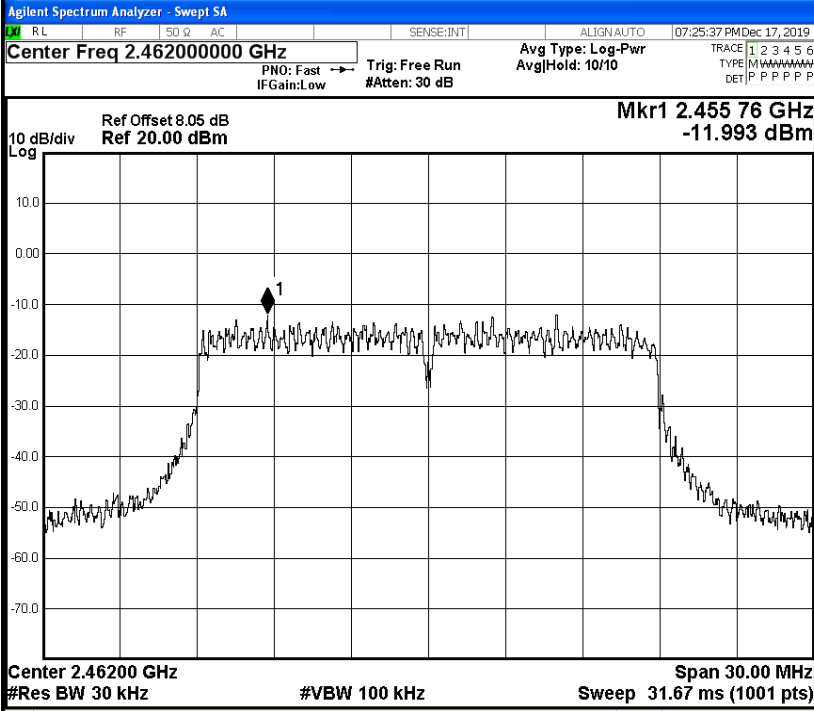


11G/HCH



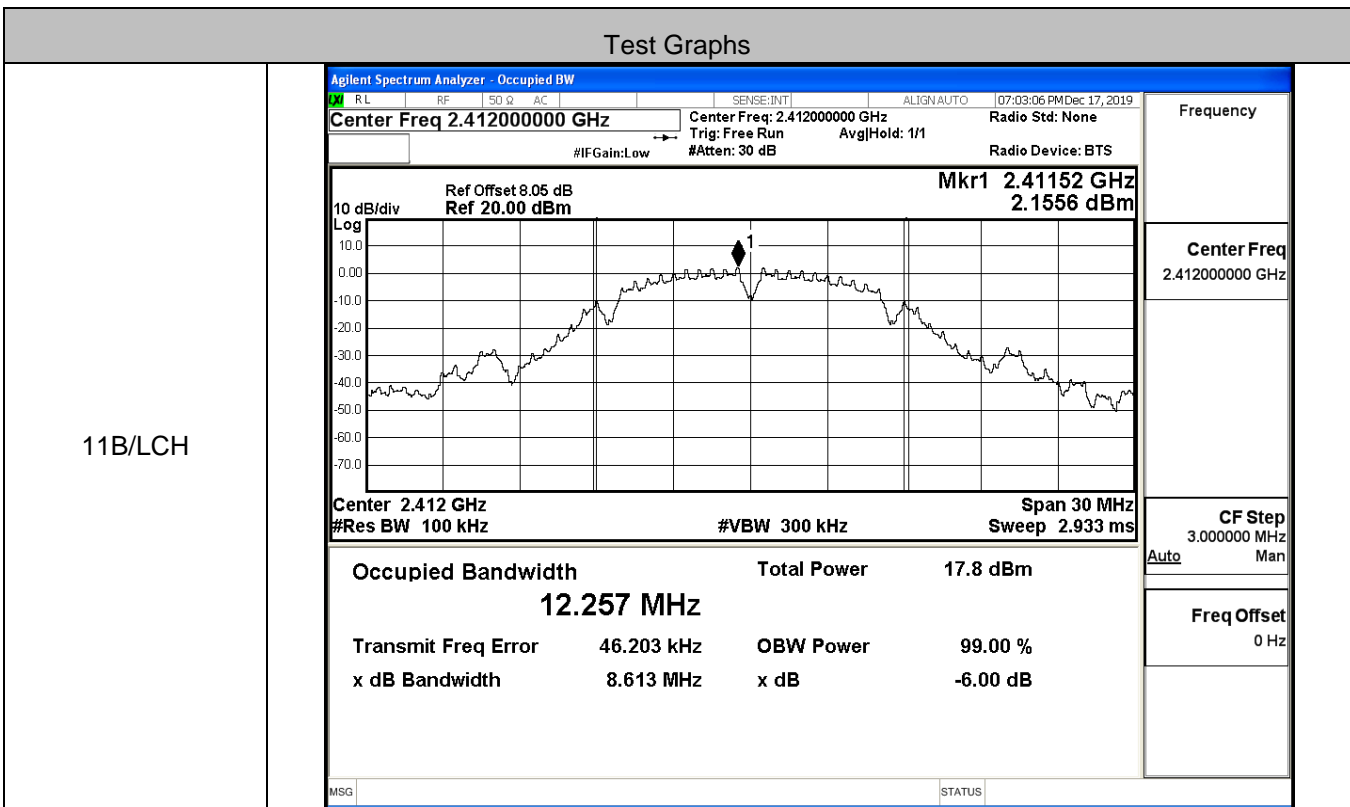
11N20SISO/LCH

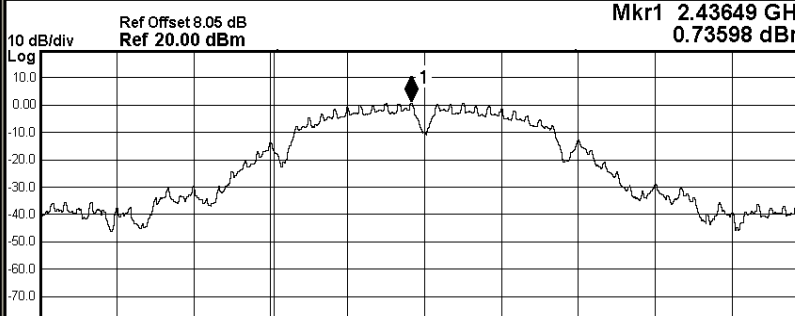
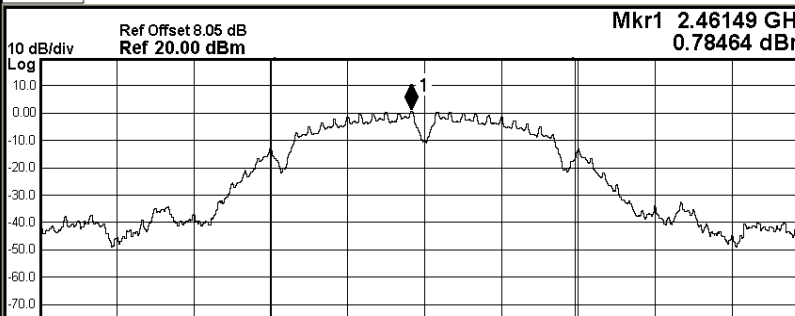


<p>11N20SISO/MCH</p>	 <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.43700000 GHz</p> <p>Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>Mkr1 2.43076 GHz -12.033 dBm</p> <p>10 dB/div Log</p> <p>Center 2.43700 GHz #Res BW 30 kHz #VBW 100 kHz Sweep 31.67 ms (1001 pts)</p> <p>Span 30.00 MHz</p>	<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.422000000 GHz</p> <p>Stop Freq 2.452000000 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 - Swept SA</p> <p>Center Freq 2.46200000 GHz</p> <p>Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>Mkr1 2.45576 GHz -11.993 dBm</p> <p>10 dB/div Log</p> <p>Center 2.46200 GHz #Res BW 30 kHz #VBW 100 kHz Sweep 31.67 ms (1001 pts)</p> <p>Span 30.00 MHz</p>	<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.46200000 GHz</p> <p>Start Freq 2.447000000 GHz</p> <p>Stop Freq 2.477000000 GHz</p> <p>CF Step 3.000000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>

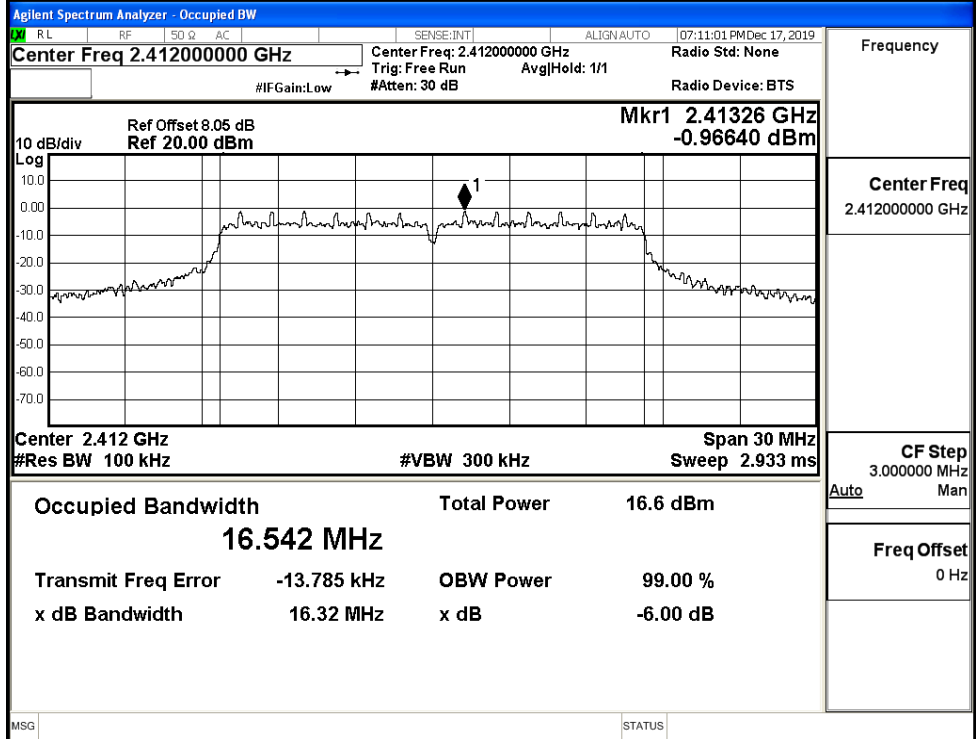
C.4 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	8.613	≥0.5	PASS
	MCH	8.594	≥0.5	PASS
	HCH	9.049	≥0.5	PASS
11G	LCH	16.32	≥0.5	PASS
	MCH	16.35	≥0.5	PASS
	HCH	16.33	≥0.5	PASS
11N20SISO	LCH	16.97	≥0.5	PASS
	MCH	17.04	≥0.5	PASS
	HCH	16.97	≥0.5	PASS

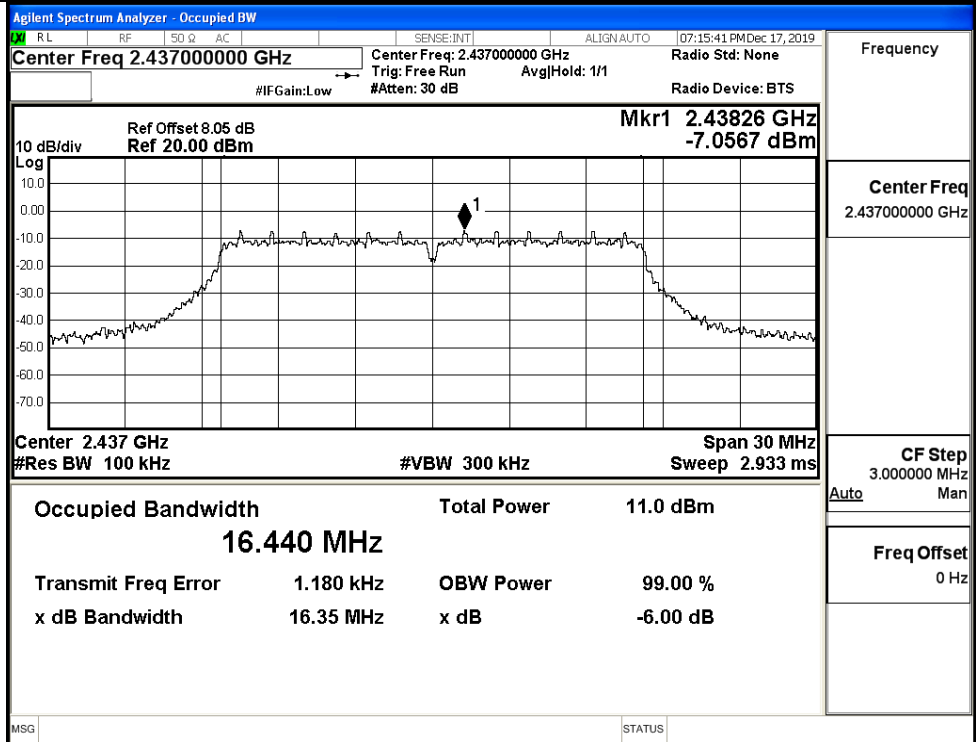


<p>11B/MCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>RL RF SQ AC SENSE:INT ALIGN AUTO 07:05:43 PM Dec 17, 2019</p> <p>Center Freq 2.43700000 GHz Center Freq: 2.43700000 GHz Radio Std: None Trig: Free Run AvgHold: 1/1 Radio Device: BTS #IFGain:Low #Atten: 30 dB</p>  <p>10 dB/div Ref Offset 8.05 dB Mkr1 2.43649 GHz Ref 20.00 dB 0.73598 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 16.6 dBm 11.793 MHz</p> <p>Transmit Freq Error 74.447 kHz OBW Power 99.00 % x dB Bandwidth 8.594 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>11B/HCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>RL RF SQ AC SENSE:INT ALIGN AUTO 07:07:45 PM Dec 17, 2019</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 8.05 dB Mkr1 2.46149 GHz Ref 20.00 dB 0.78464 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 16.4 dBm 11.804 MHz</p> <p>Transmit Freq Error -33.069 kHz OBW Power 99.00 % x dB Bandwidth 9.049 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>

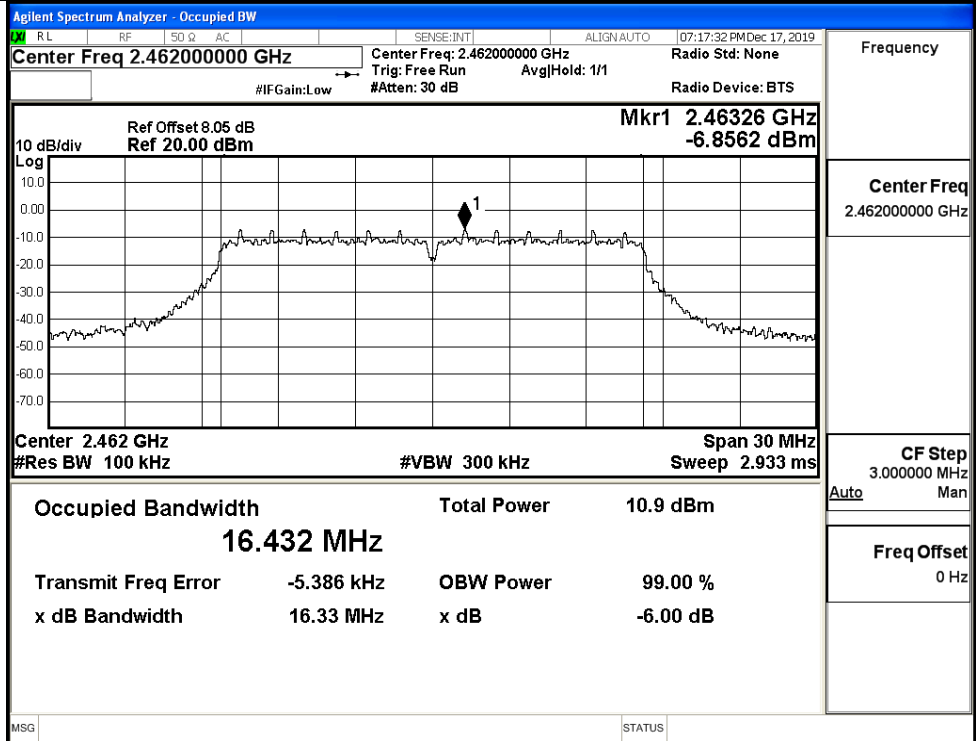
11G/LCH



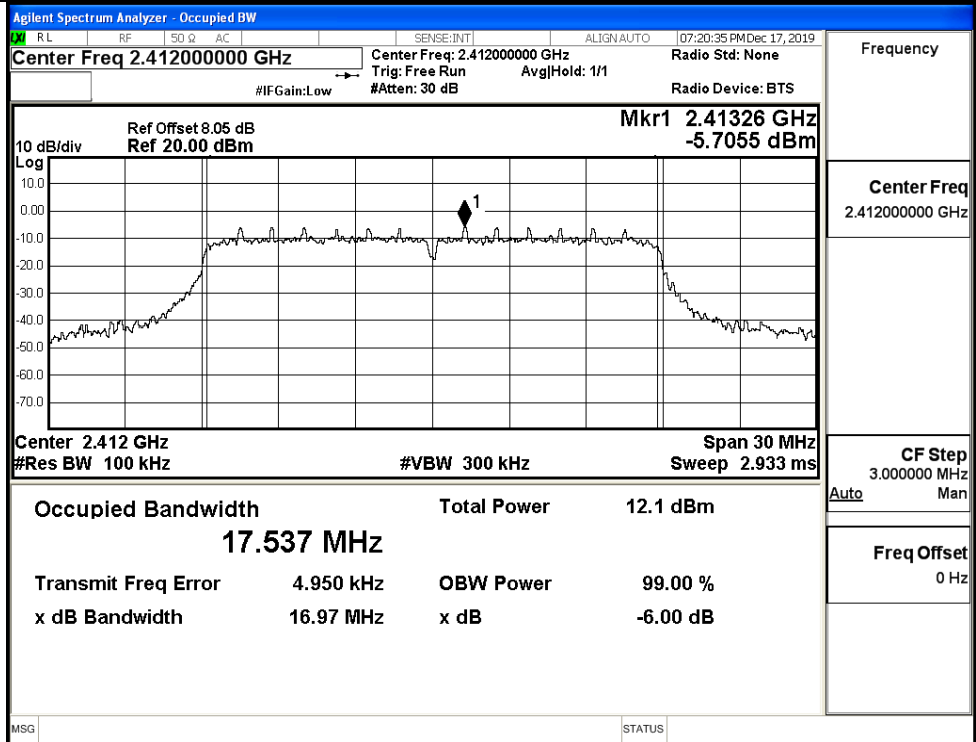
11G/MCH



11G/HCH



11N20SISO/LCH



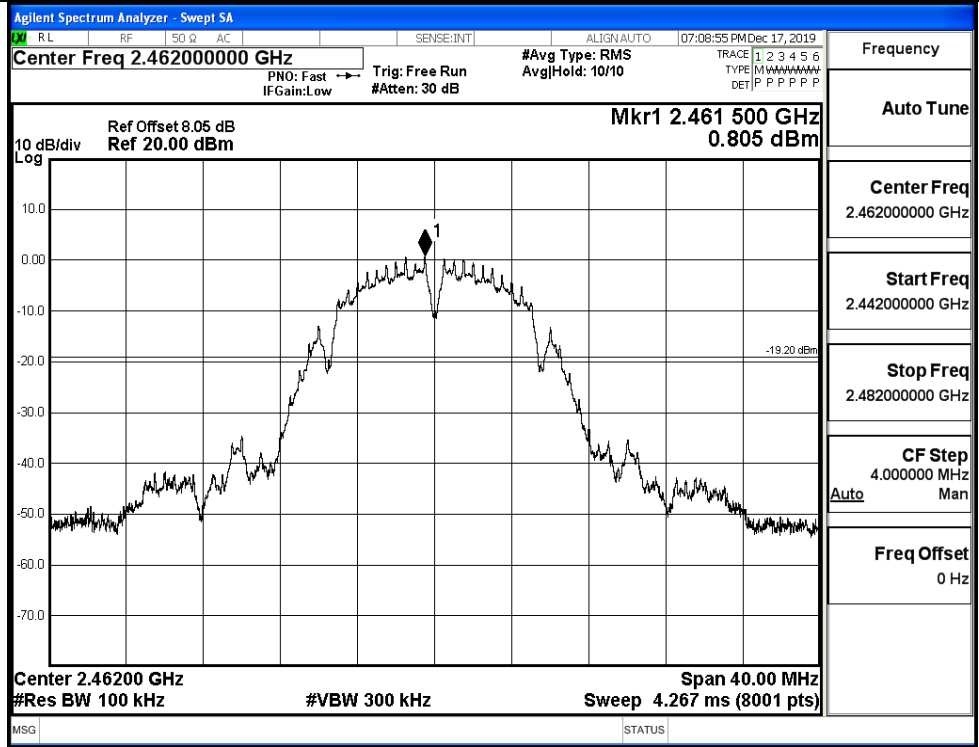
<p>11N20SISO/MCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.43700000 GHz</p> <p>Mkr1 2.43829 GHz</p> <p>Center 2.437 GHz</p> <p>Occupied Bandwidth 17.535 MHz</p> <p>Total Power 10.9 dBm</p> <p>Transmit Freq Error 10.449 kHz</p> <p>x dB Bandwidth 17.04 MHz</p> <p>OBW Power 99.00 %</p> <p>x dB -6.00 dB</p>	<p>Frequency</p> <p>Center Freq 2.43700000 GHz</p> <p>CF Step 3.000000 MHz</p> <p>Freq Offset 0 Hz</p>
<p>11N20SISO/HCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.46200000 GHz</p> <p>Mkr1 2.46326 GHz</p> <p>Center 2.462 GHz</p> <p>Occupied Bandwidth 17.535 MHz</p> <p>Total Power 10.8 dBm</p> <p>Transmit Freq Error 4.890 kHz</p> <p>x dB Bandwidth 16.97 MHz</p> <p>OBW Power 99.00 %</p> <p>x dB -6.00 dB</p>	<p>Frequency</p> <p>Center Freq 2.46200000 GHz</p> <p>CF Step 3.000000 MHz</p> <p>Freq Offset 0 Hz</p>

C.5 RF Conducted Spurious Emissions

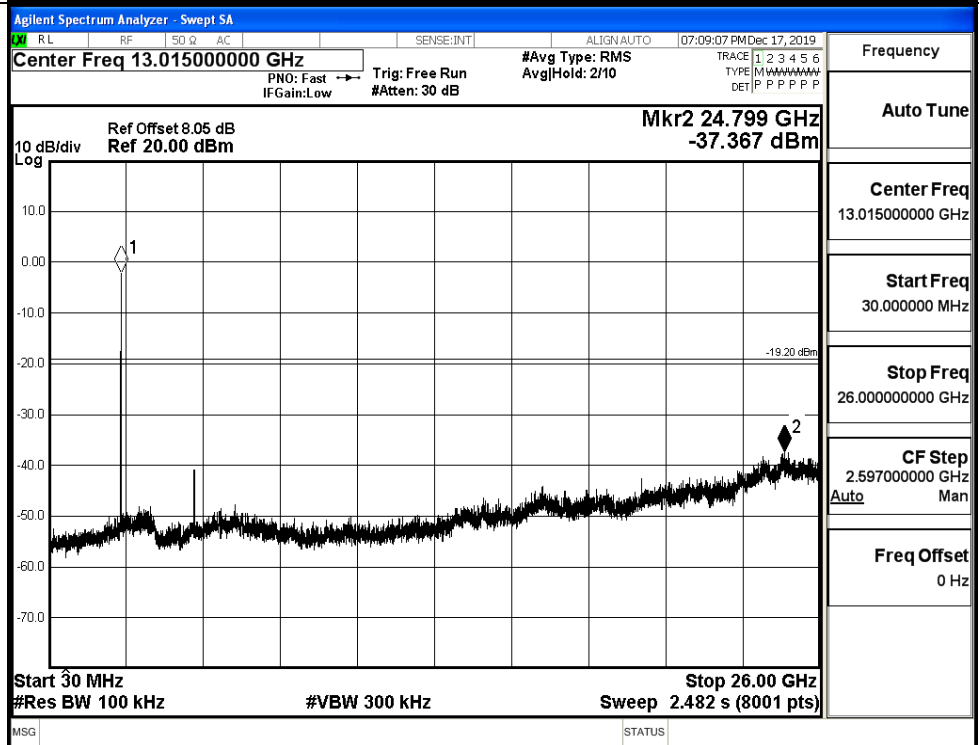
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	1.721	-36.970	-18.279	PASS
	MCH	0.382	-38.738	-19.618	PASS
	HCH	0.805	-37.367	-19.195	PASS
11G	LCH	-1.128	-37.916	-21.128	PASS
	MCH	-7.237	-37.440	-27.237	PASS
	HCH	-7.134	-37.897	-27.134	PASS
11N20 SISO	LCH	-6.129	-37.415	-26.129	PASS
	MCH	-7.092	-37.934	-27.092	PASS
	HCH	-7.068	-37.516	-27.068	PASS

11B_HCH_Graphs

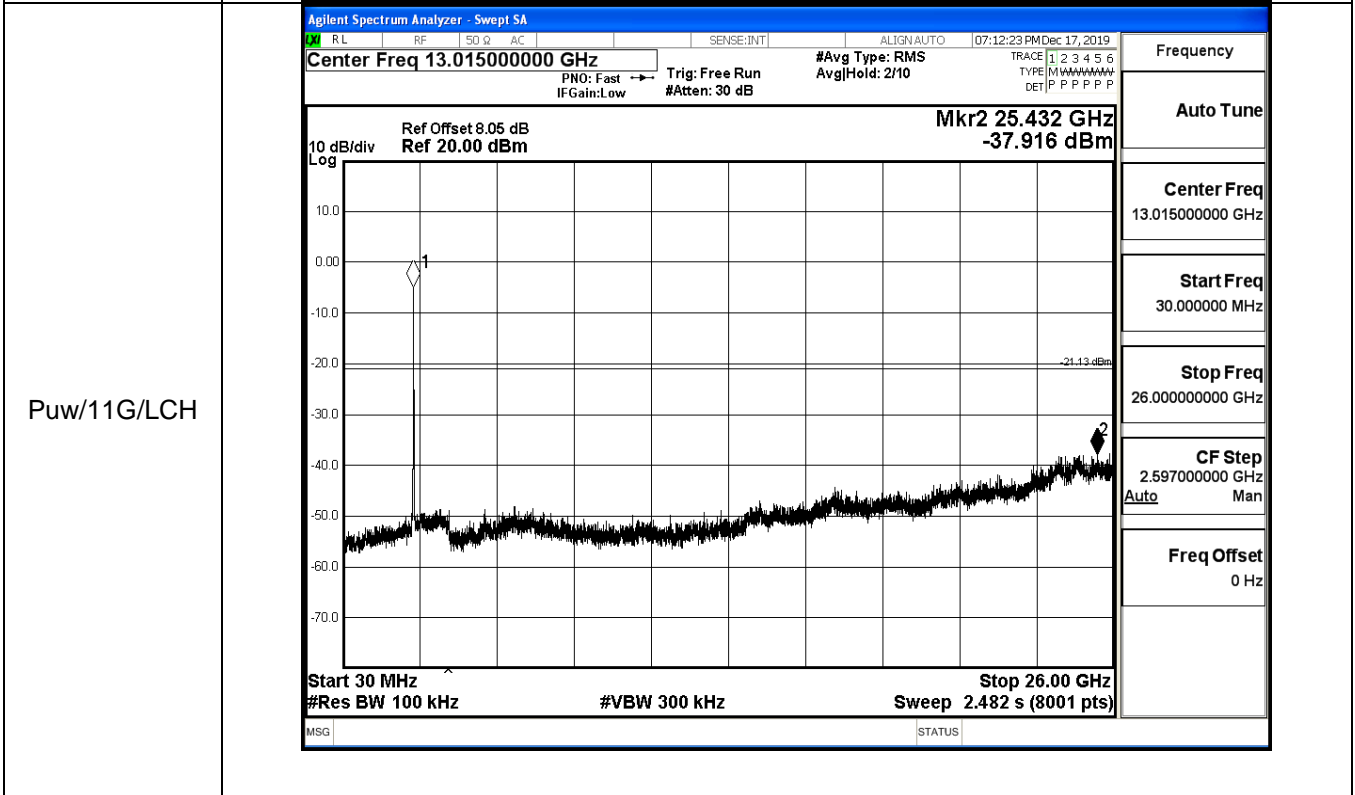
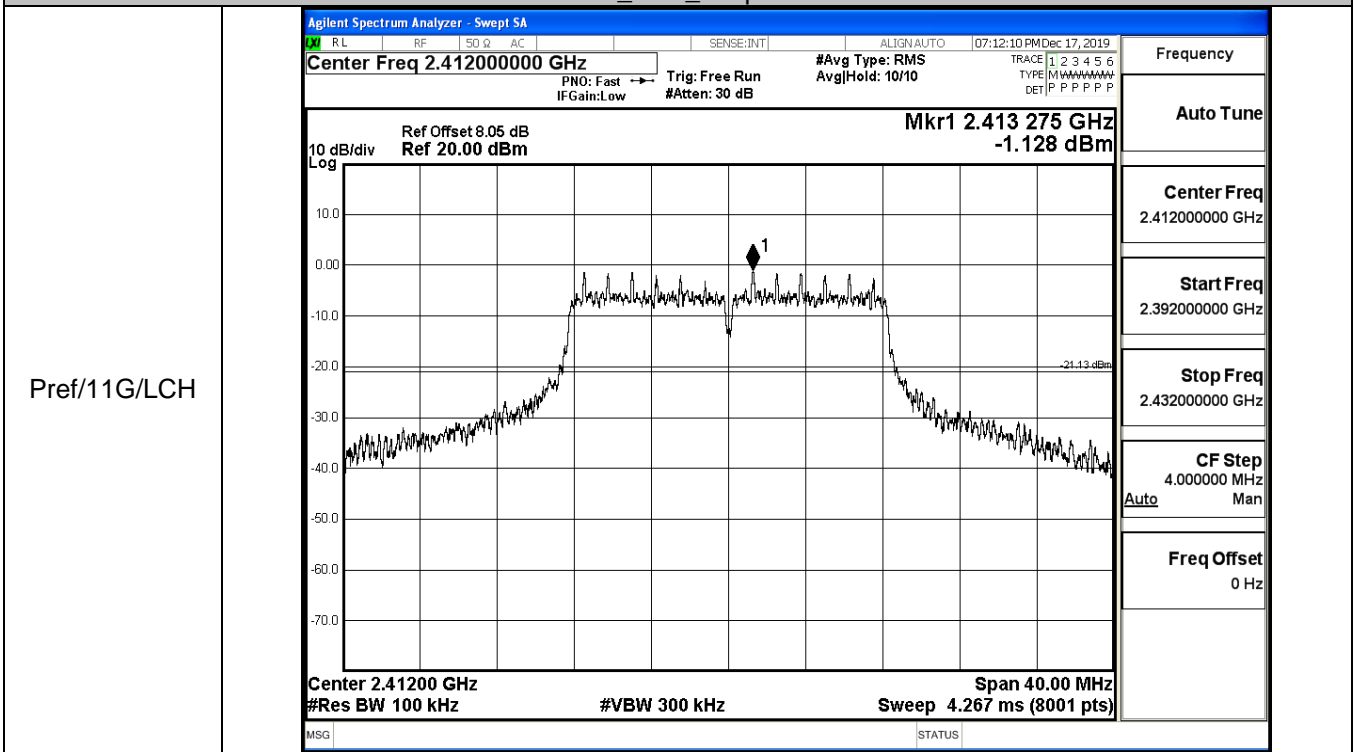
Pref/11B/HCH



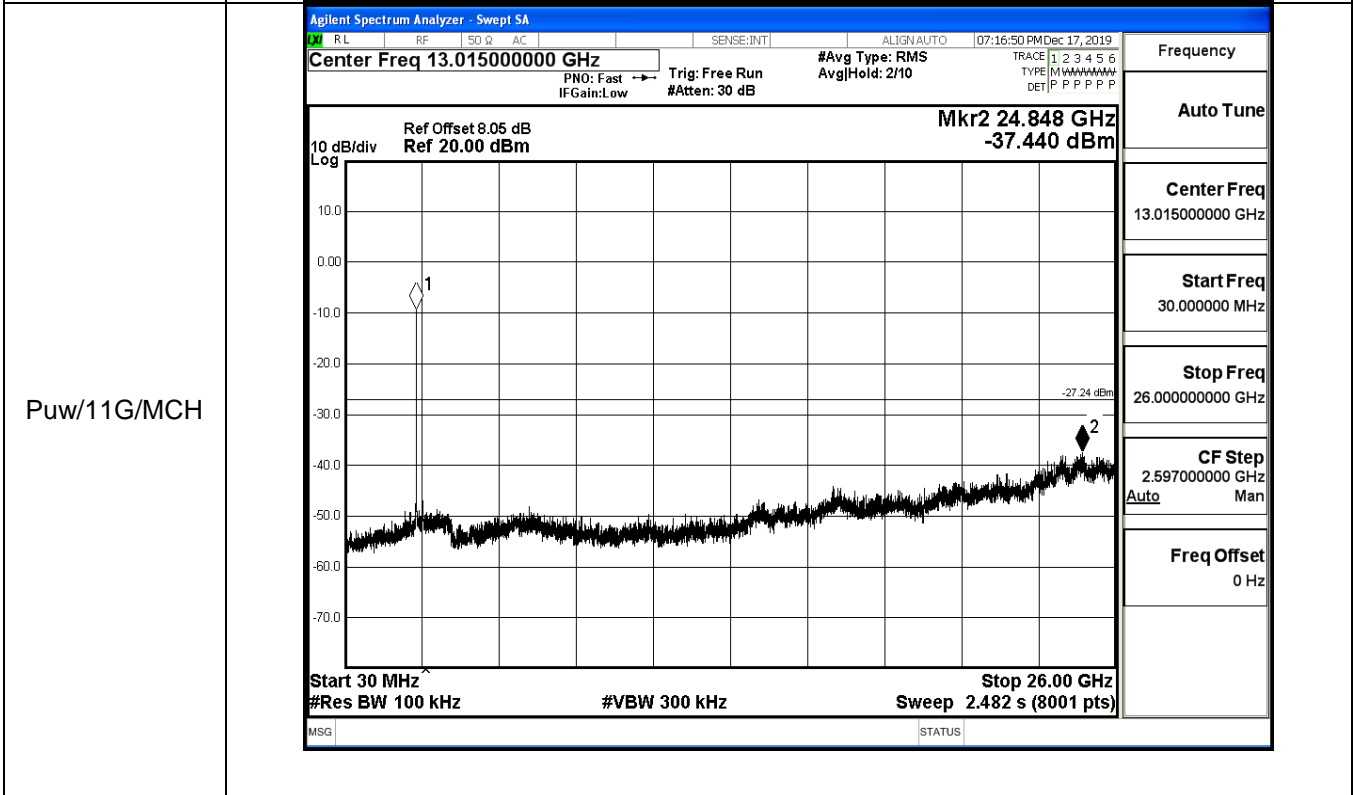
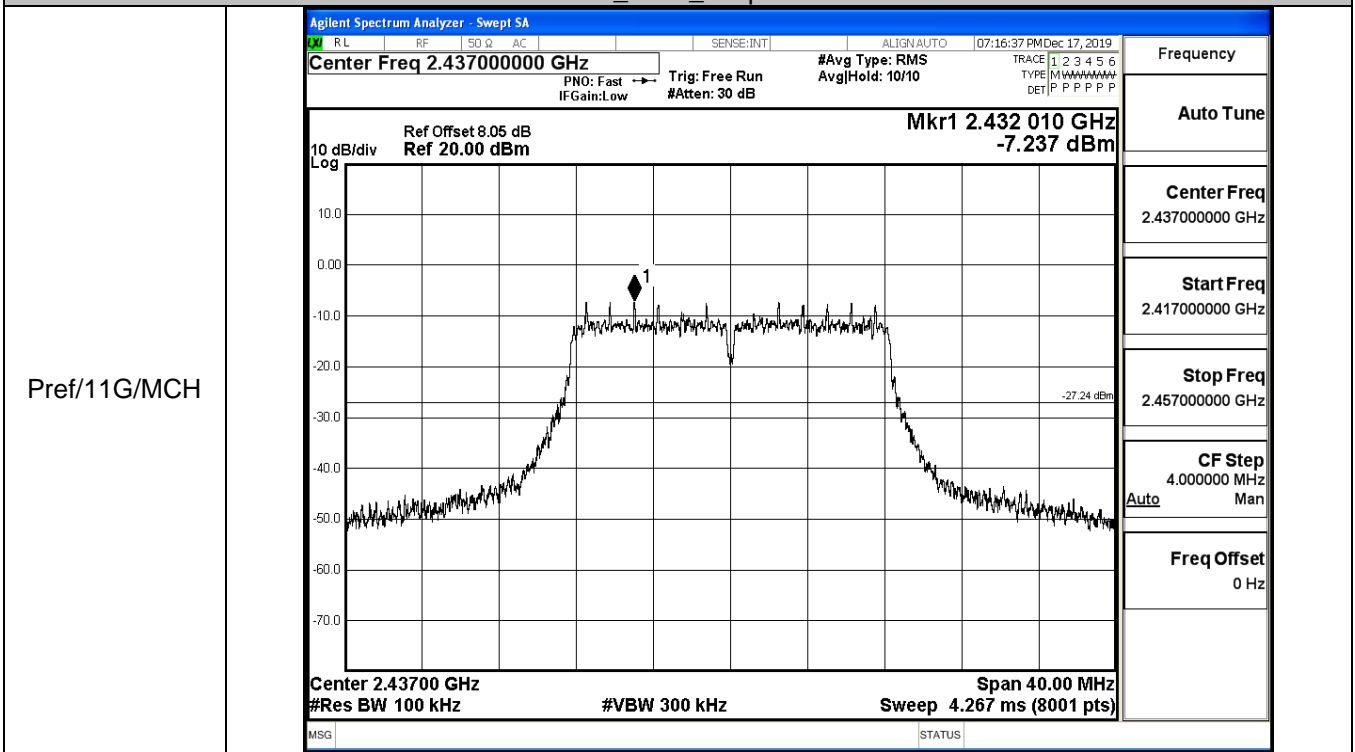
Puw/11B/HCH



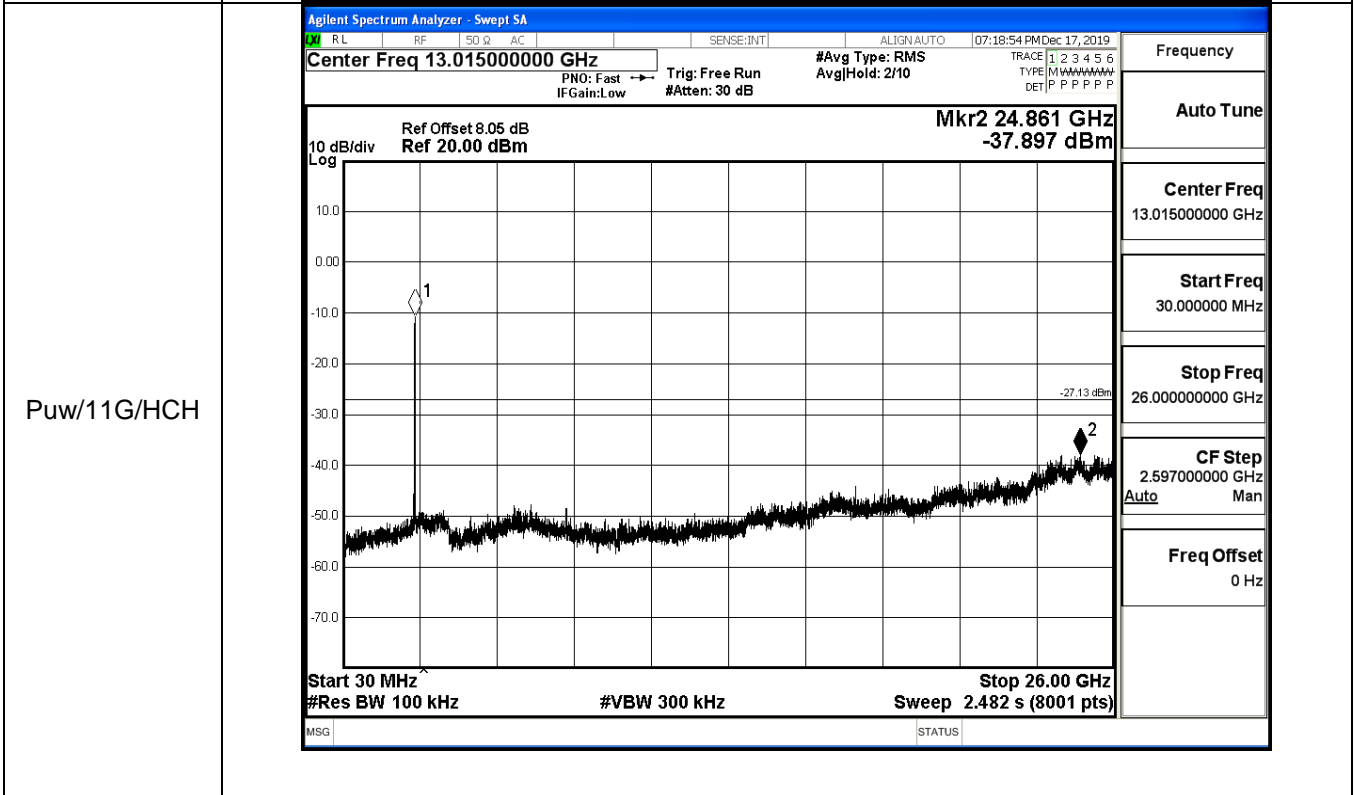
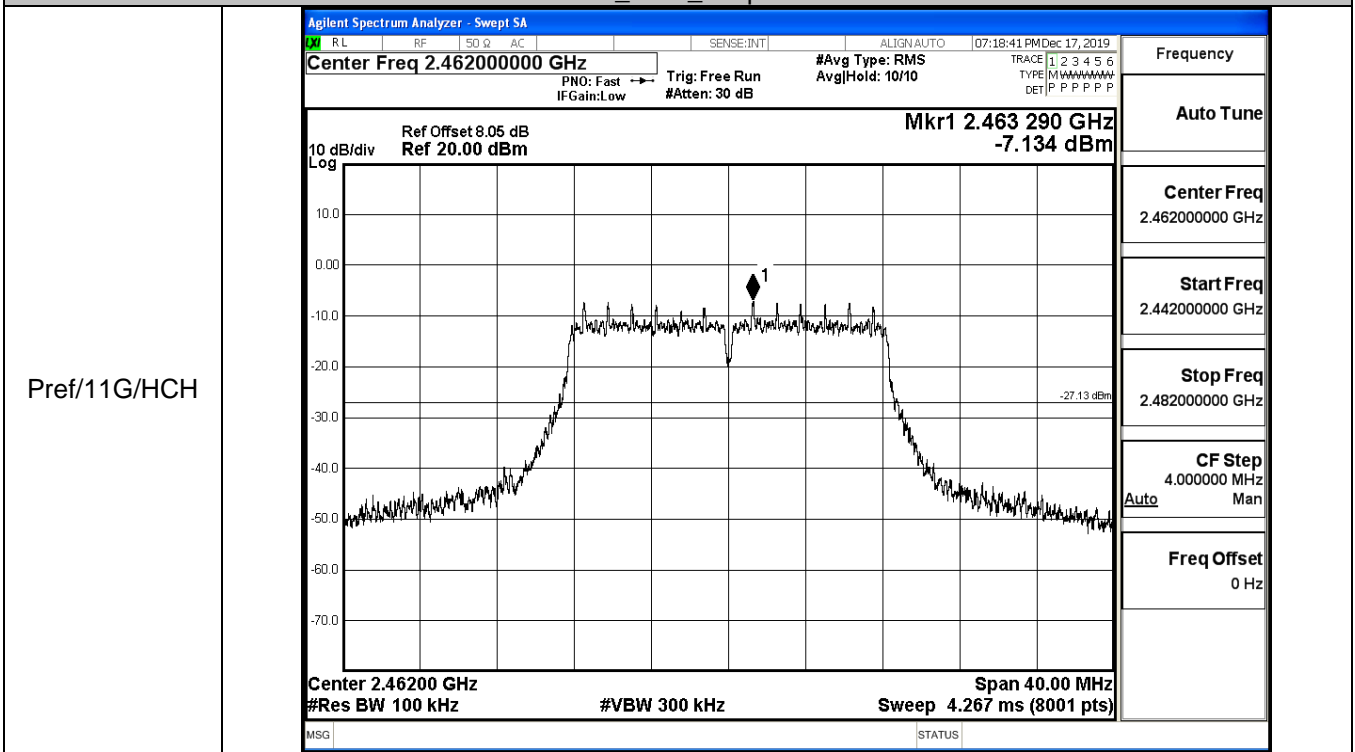
11G_LCH_Graphs



11G_MCH_Graphs

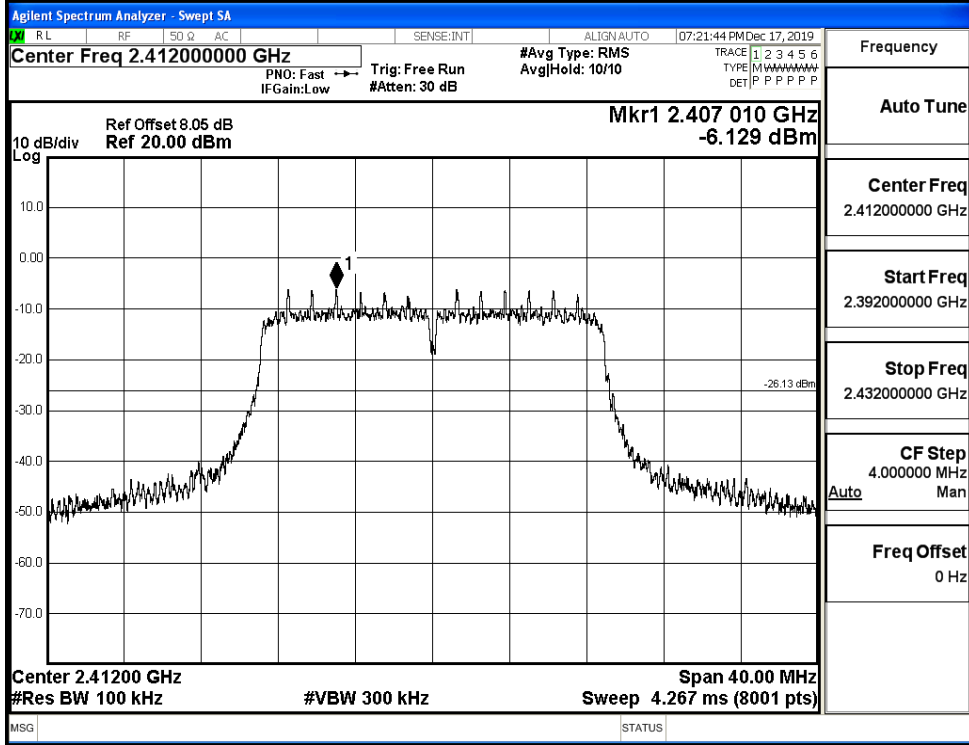


11G_HCH_Graphs

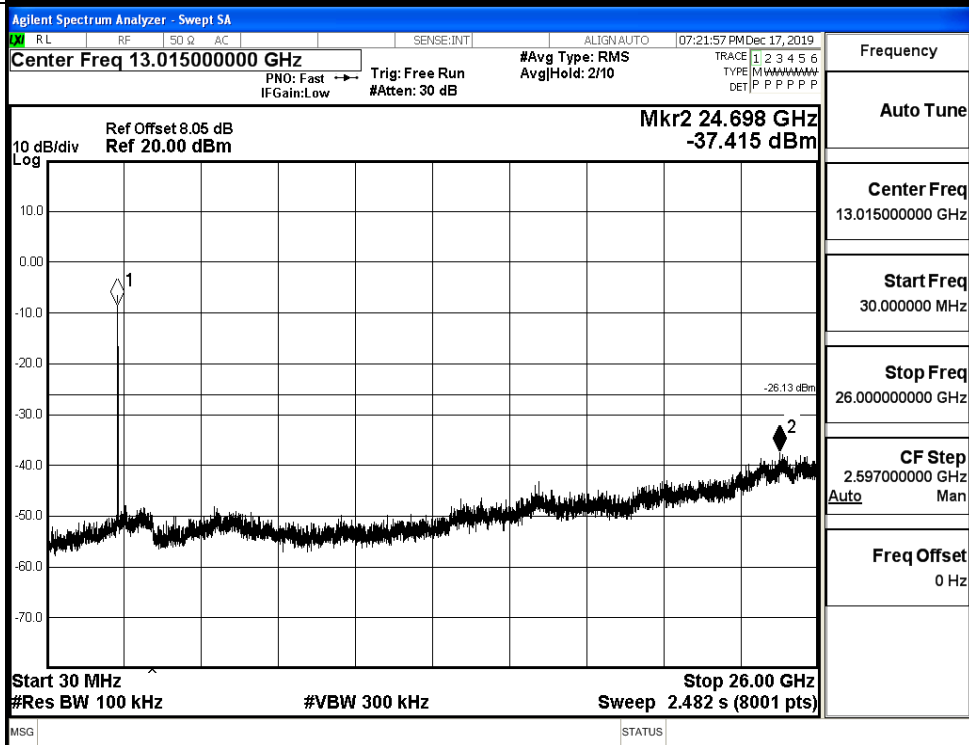


11N20SISO_LCH_Graphs

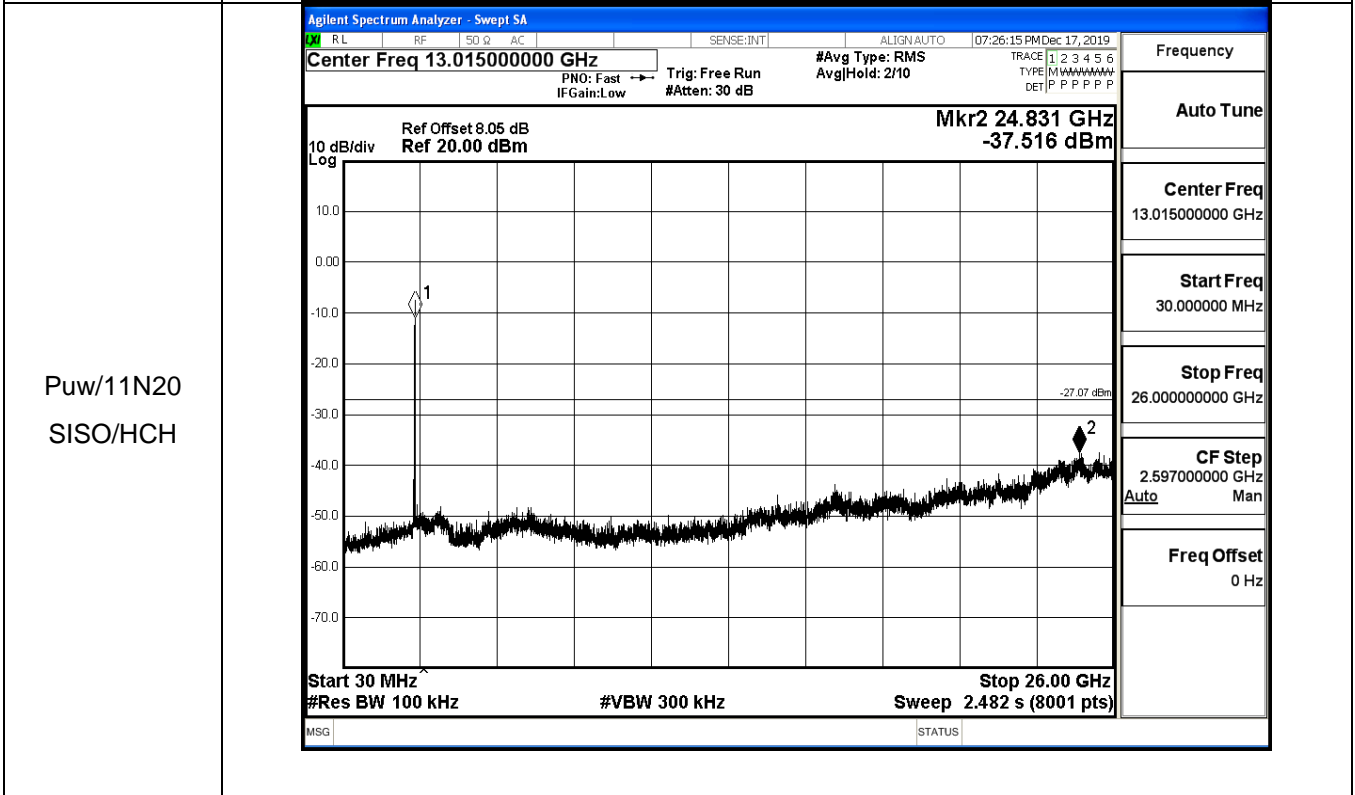
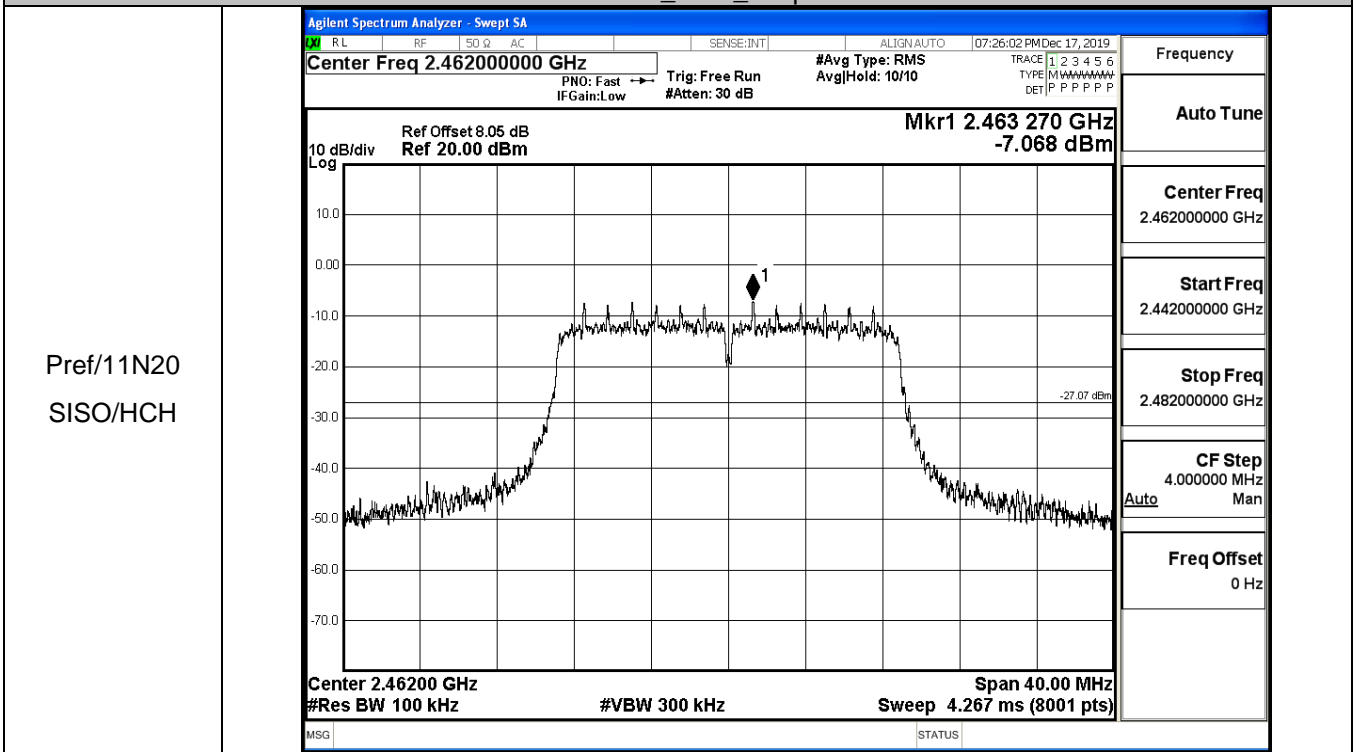
Pref/11N20SIS
O/LCH



Puw/11N20
SISO/LCH

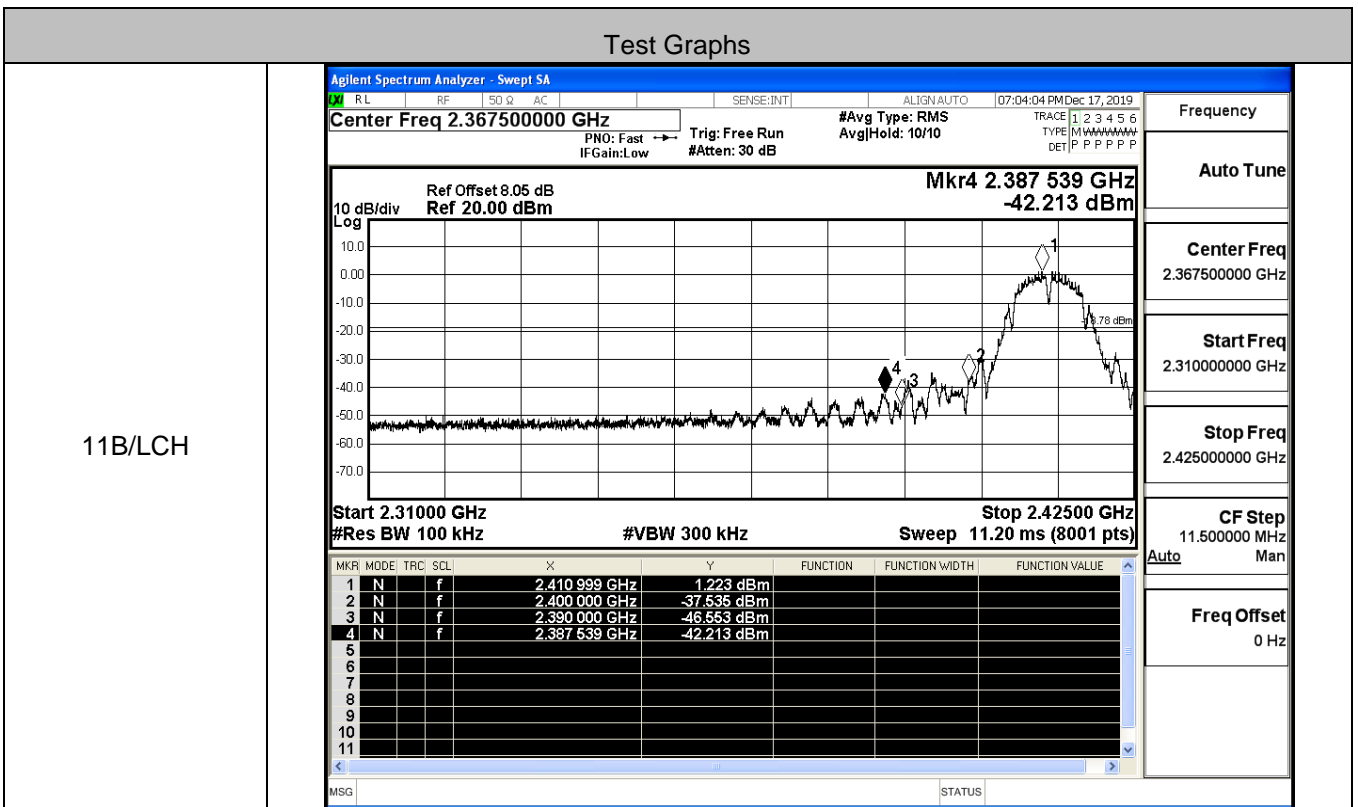


11N20SISO_HCH_Graphs

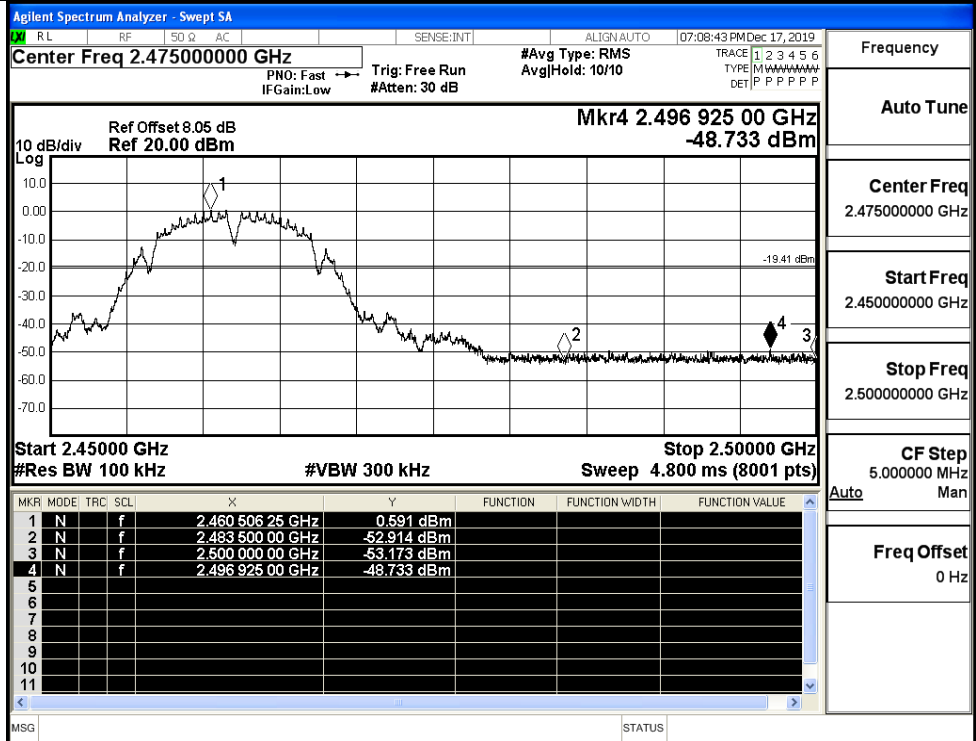


C.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	1.223	-42.213	-18.78	PASS
	HCH	0.591	-48.733	-19.41	PASS
11G	LCH	-1.125	-40.335	-21.13	PASS
	HCH	-6.900	-49.296	-26.9	PASS
11N20SISO	LCH	-6.508	-49.603	-26.51	PASS
	HCH	-7.098	-48.052	-27.1	PASS

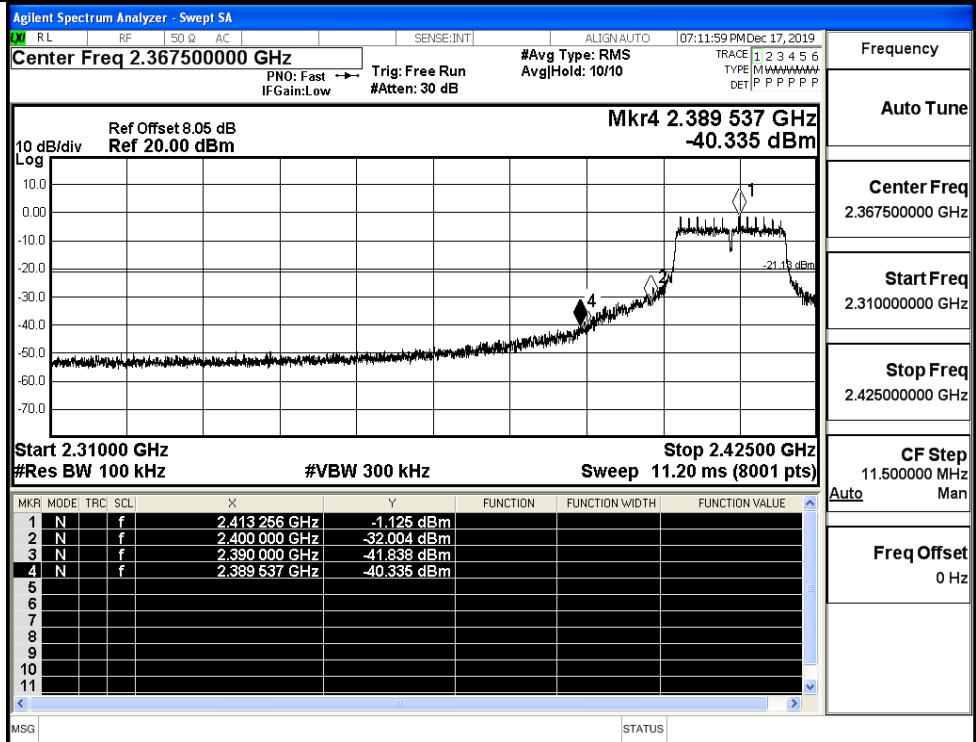


11B/HCH



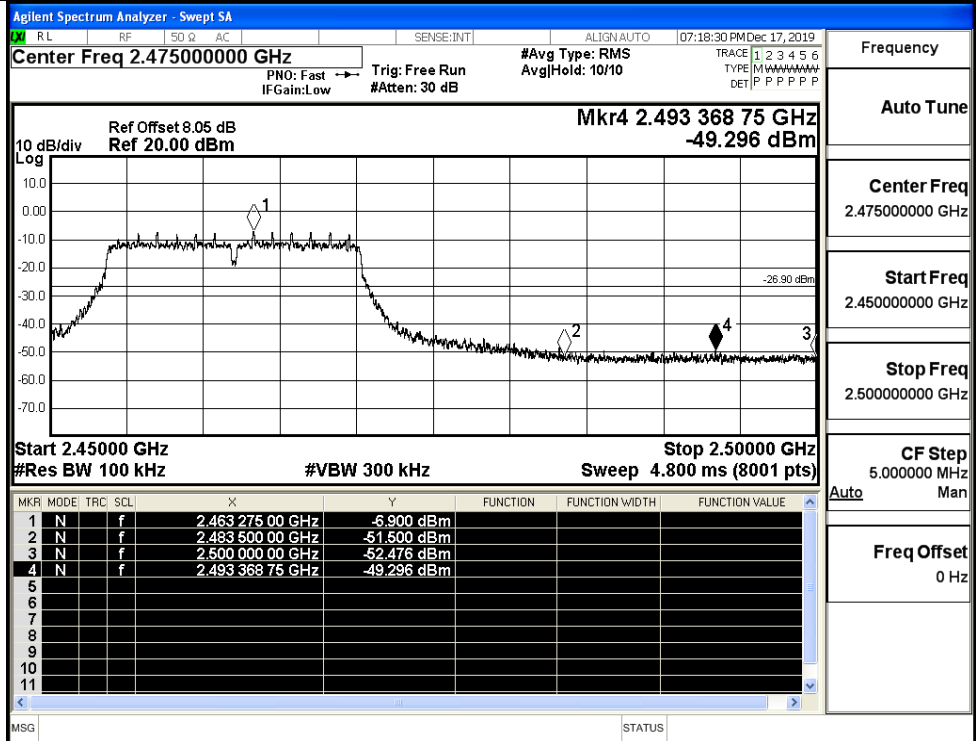
Frequency	2.475000000 GHz
Auto Tune	
Center Freq	2.475000000 GHz
Start Freq	2.450000000 GHz
Stop Freq	2.500000000 GHz
CF Step	5.000000 MHz
Freq Offset	0 Hz

11G/LCH



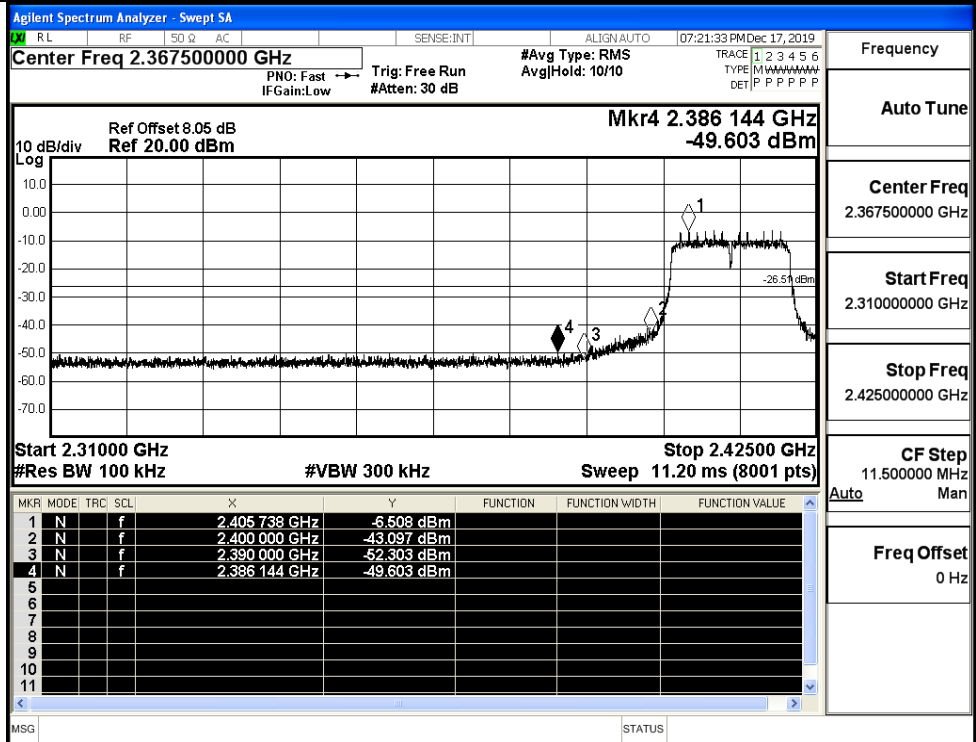
Frequency	2.367500000 GHz
Auto Tune	
Center Freq	2.367500000 GHz
Start Freq	2.310000000 GHz
Stop Freq	2.425000000 GHz
CF Step	11.500000 MHz
Freq Offset	0 Hz

11G/HCH



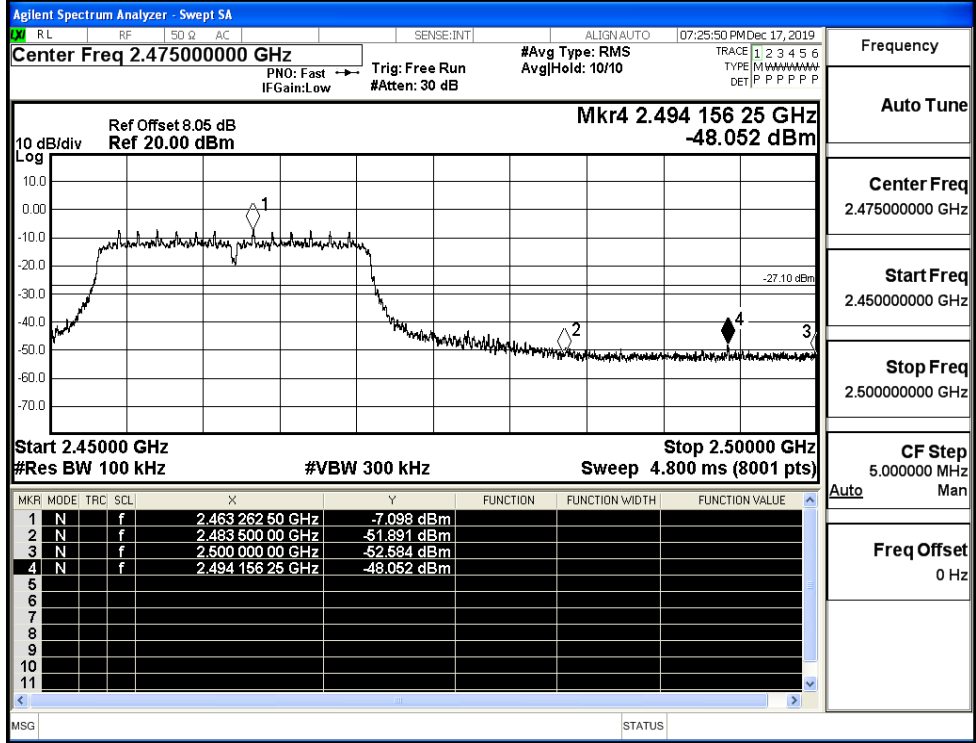
Frequency	2.47500000 GHz
Auto Tune	
Center Freq	2.47500000 GHz
Start Freq	2.45000000 GHz
Stop Freq	2.50000000 GHz
CF Step	5.000000 MHz
Freq Offset	0 Hz

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

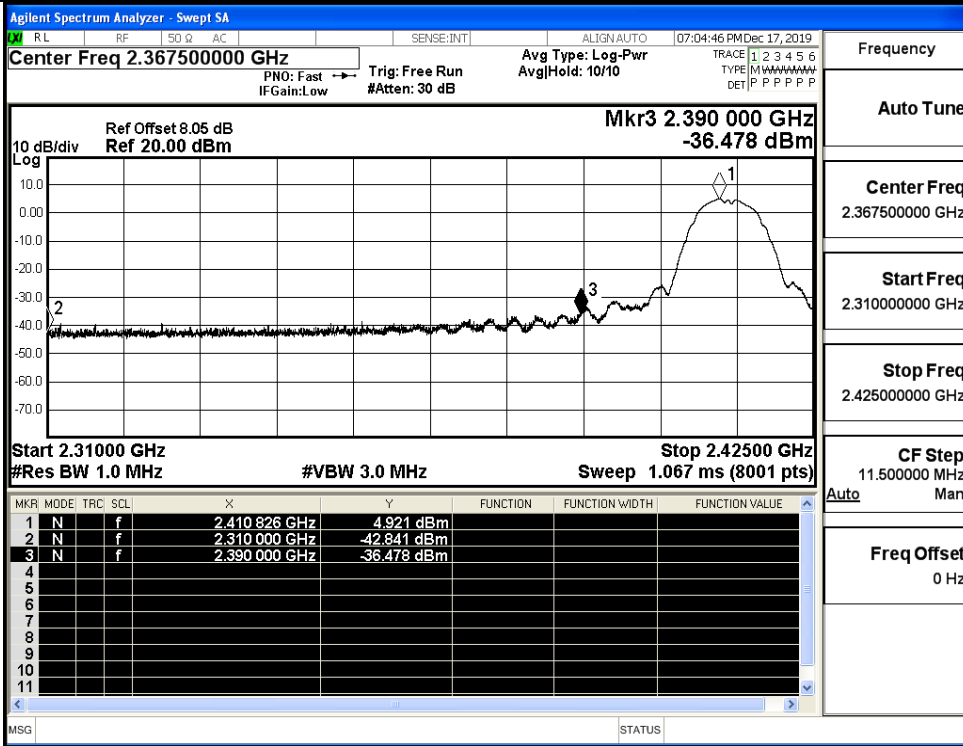
11N20SISO/HCH



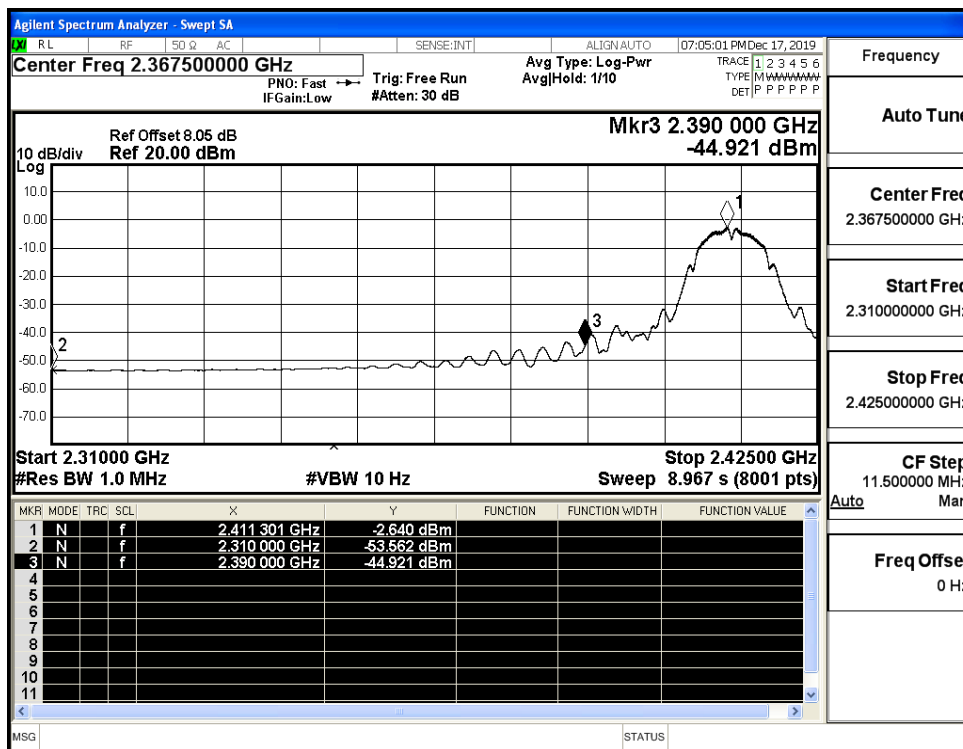
C.7 Restrict-band band-edge measurements

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	-42.84	2.0	0	54.42	PEAK	74	PASS
	2412	Ant1	2310.0	-53.56	2.0	0	43.70	AV	54	PASS
	2412	Ant1	2390.0	-36.48	2.0	0	60.78	PEAK	74	PASS
	2412	Ant1	2390.0	-44.92	2.0	0	52.34	AV	54	PASS
	2462	Ant1	2483.5	-42.07	2.0	0	55.19	PEAK	74	PASS
	2462	Ant1	2483.5	-52.72	2.0	0	44.53	AV	54	PASS
	2462	Ant1	2500.0	-41.43	2.0	0	55.83	PEAK	74	PASS
	2462	Ant1	2500.0	-52.56	2.0	0	44.70	AV	54	PASS
11G	2412	Ant1	2310.0	-42.48	2.0	0	54.78	PEAK	74	PASS
	2412	Ant1	2310.0	-53.55	2.0	0	43.71	AV	54	PASS
	2412	Ant1	2390.0	-30.17	2.0	0	67.09	PEAK	74	PASS
	2412	Ant1	2390.0	-43.75	2.0	0	53.51	AV	54	PASS
	2462	Ant1	2483.5	-41.23	2.0	0	56.03	PEAK	74	PASS
	2462	Ant1	2483.5	-52.05	2.0	0	45.21	AV	54	PASS
	2462	Ant1	2500.0	-43.15	2.0	0	54.11	PEAK	74	PASS
	2462	Ant1	2500.0	-52.58	2.0	0	44.68	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-44.41	2.0	0	52.85	PEAK	74	PASS
	2412	Ant1	2310.0	-53.62	2.0	0	43.63	AV	54	PASS
	2412	Ant1	2390.0	-38.97	2.0	0	58.28	PEAK	74	PASS
	2412	Ant1	2390.0	-51.92	2.0	0	45.34	AV	54	PASS
	2462	Ant1	2483.5	-40.73	2.0	0	56.52	PEAK	74	PASS
	2462	Ant1	2483.5	-51.75	2.0	0	45.51	AV	54	PASS
	2462	Ant1	2500.0	-42.21	2.0	0	55.05	PEAK	74	PASS
	2462	Ant1	2500.0	-52.58	2.0	0	44.68	AV	54	PASS

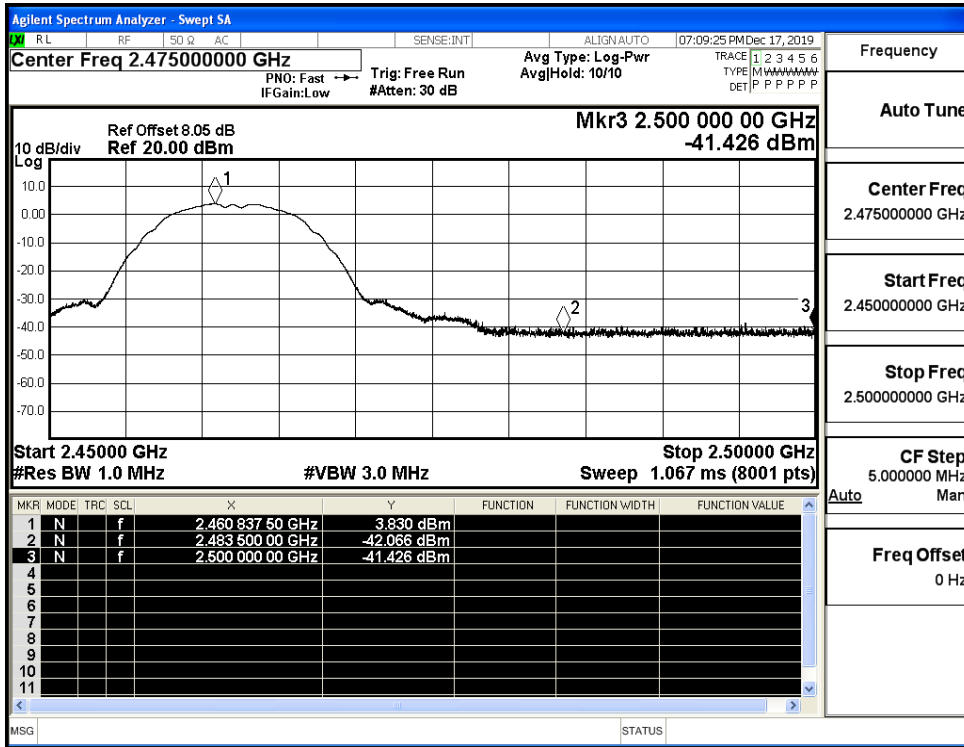
Restrict-band band-edge measurements_11B_2412_Ant1_PEAK



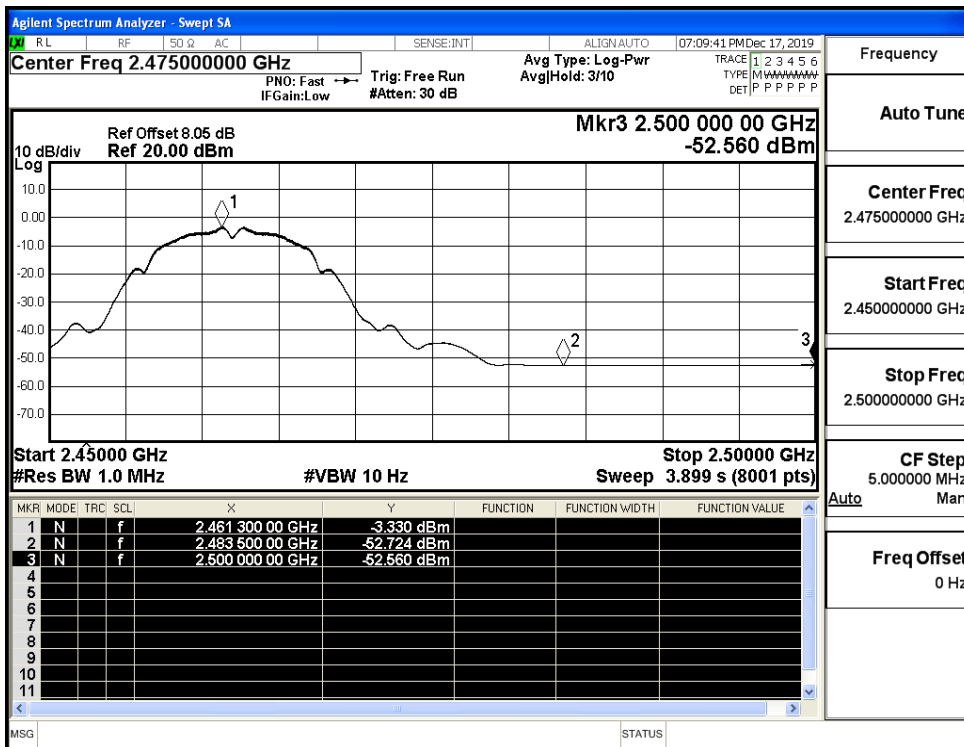
Restrict-band band-edge measurements_11B_2412_Ant1_AV



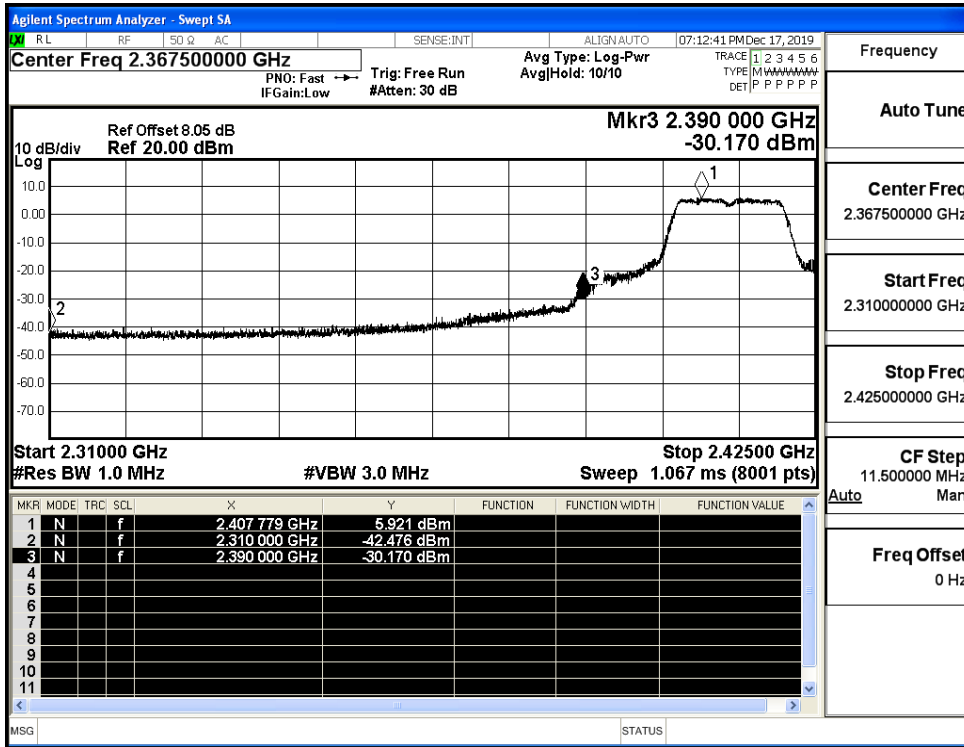
Restrict-band band-edge measurements_11B_2462_Ant1_PEAK



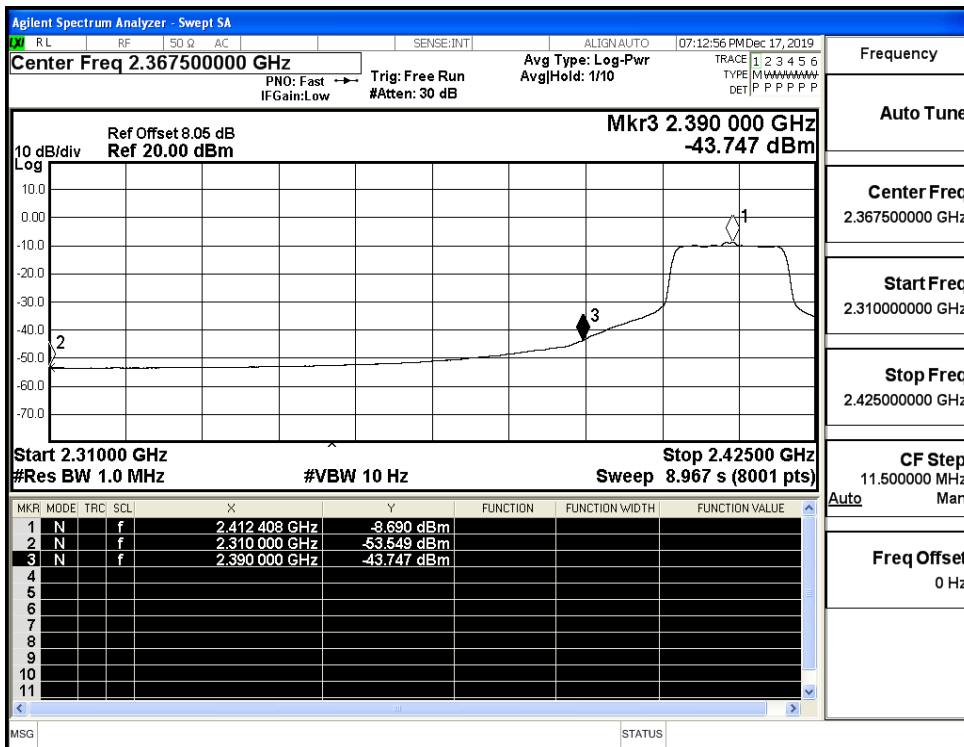
Restrict-band band-edge measurements_11B_2462_Ant1_AV



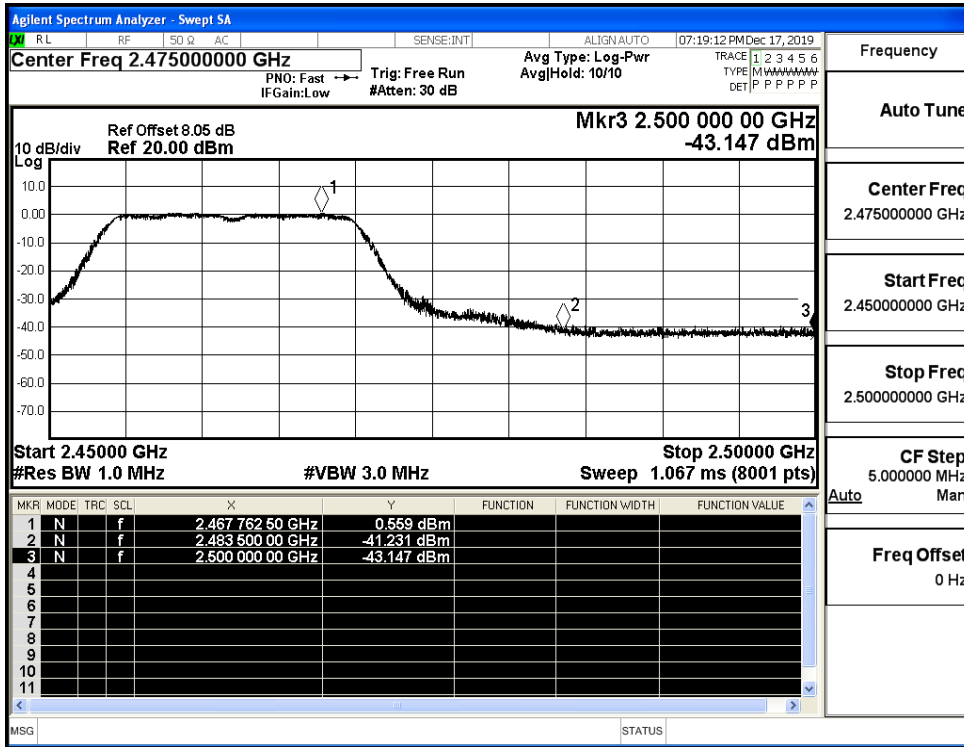
Restrict-band band-edge measurements_11G_2412_Ant1_PEAK



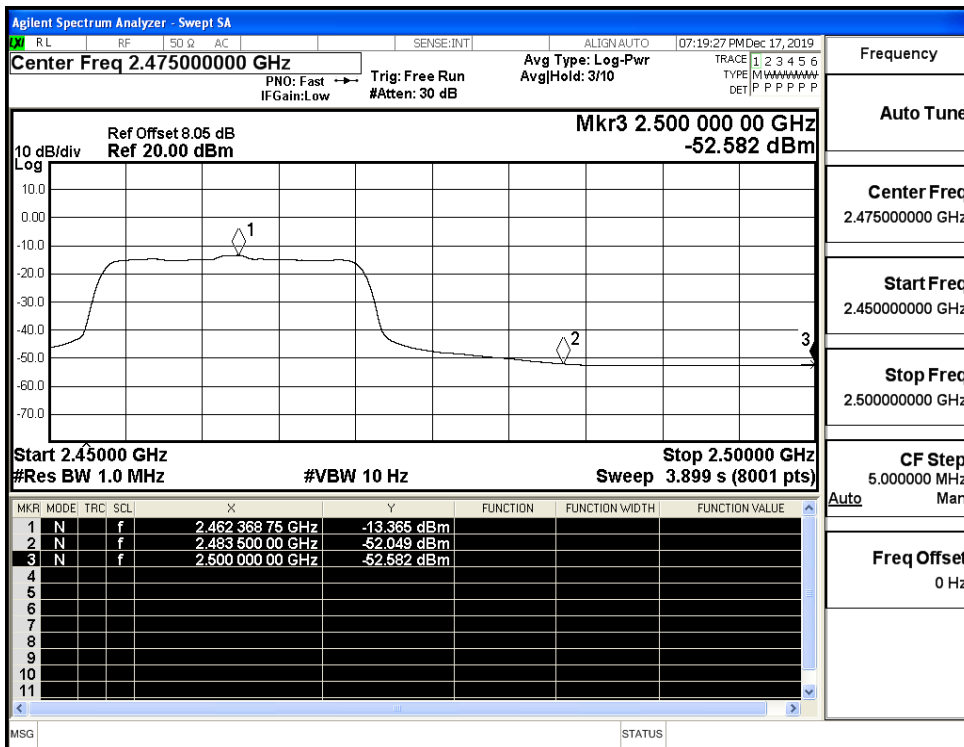
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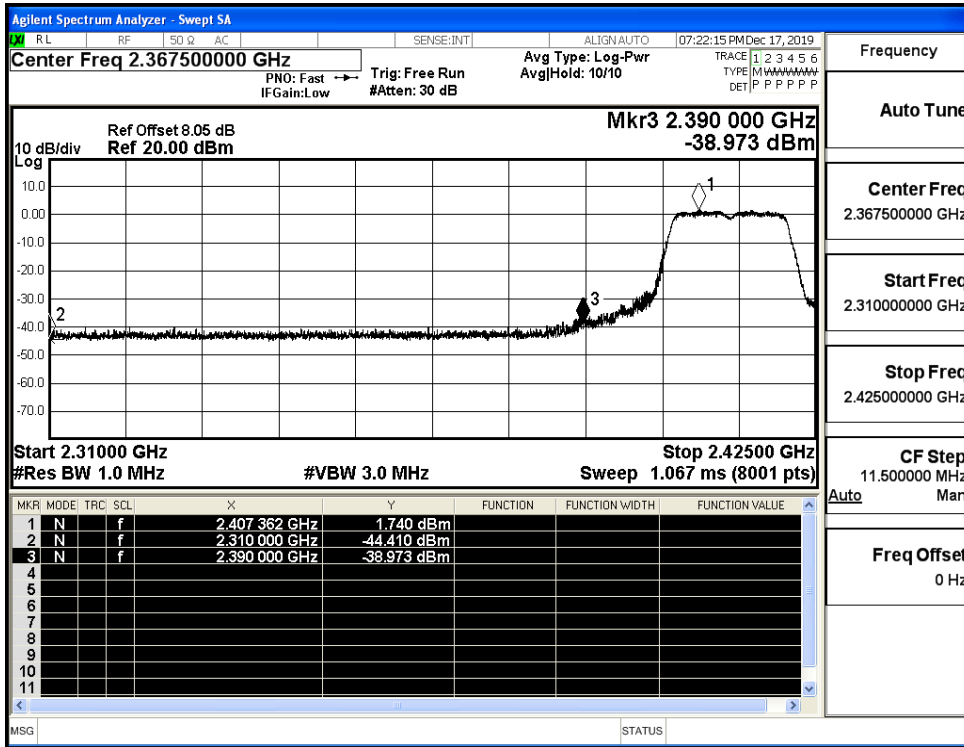
Restrict-band band-edge measurements_11G_2462_Ant1_PEAK



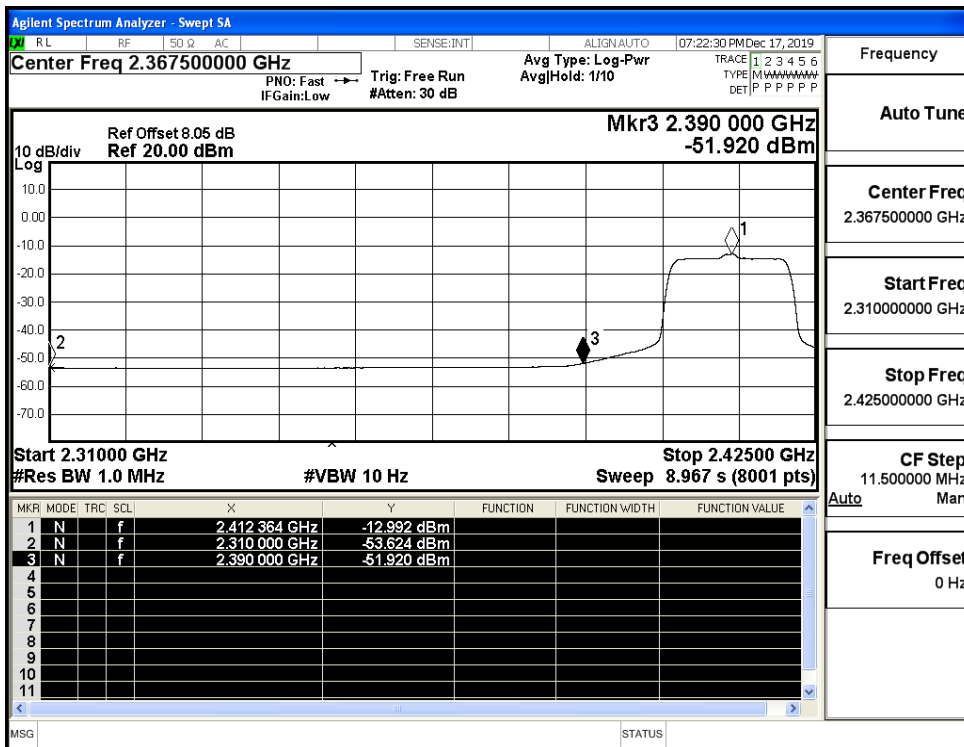
Restrict-band band-edge measurements_11G_2462_Ant1_AV



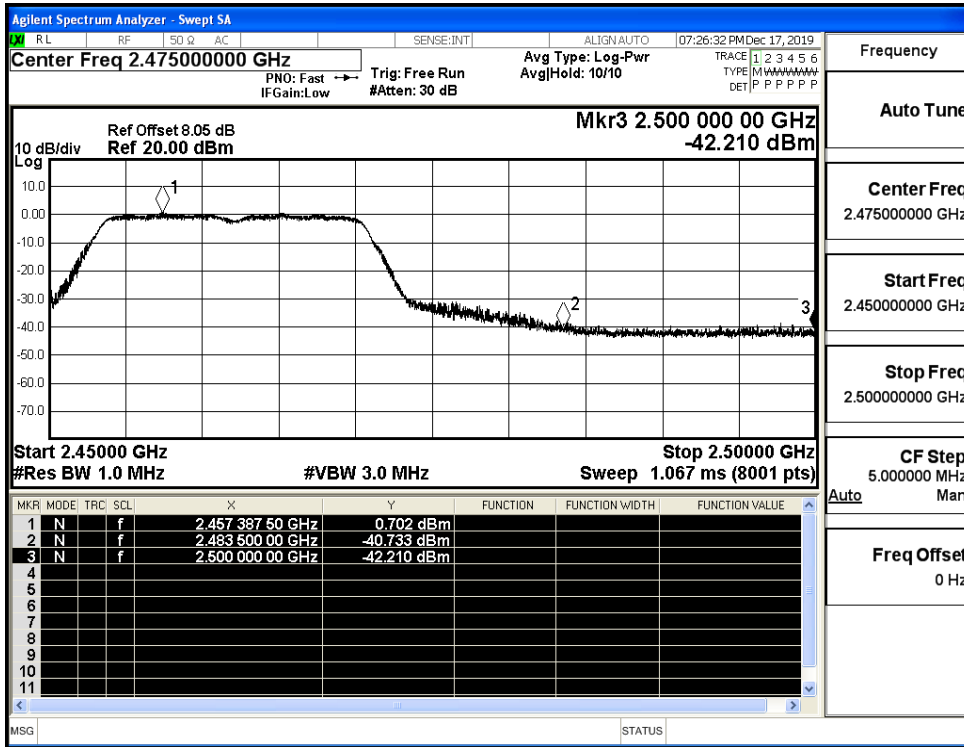
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_PEAK



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

