

Appendix B

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Wi-Fi & Bluetooth Module

Trade Mark: Dialog

Test Model: DA16600MOD-AAE4WA32

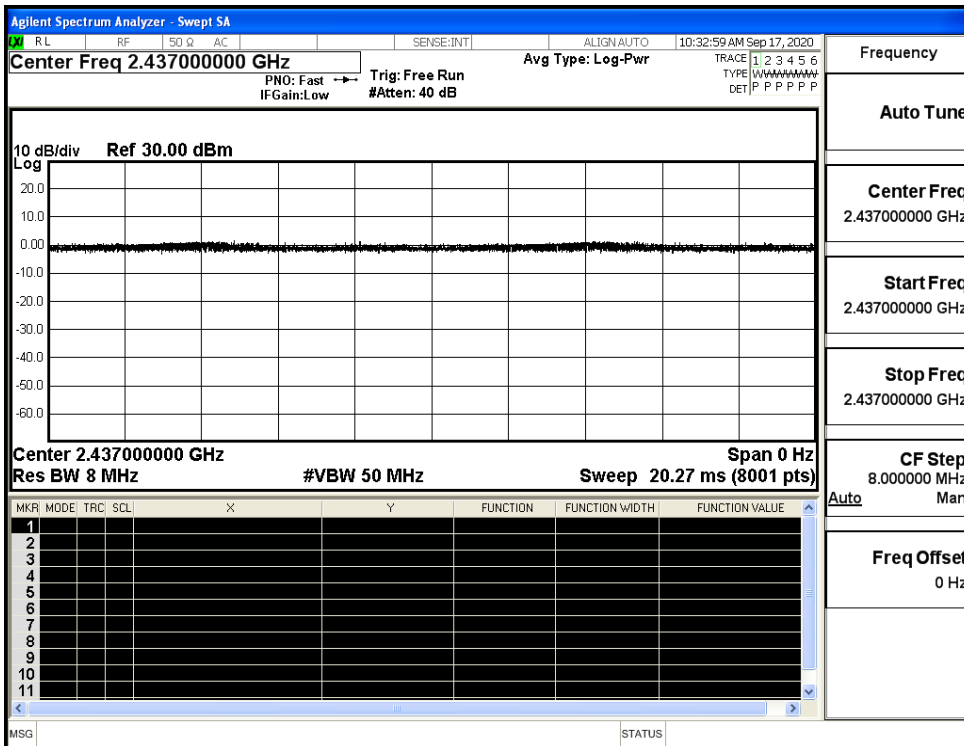
Environmental Conditions

Temperature:	22.8 ° C
Relative Humidity:	53.5%
ATM Pressure:	100.0 kPa
Test Engineer:	Carl Fu
Supervised by:	Li Huan

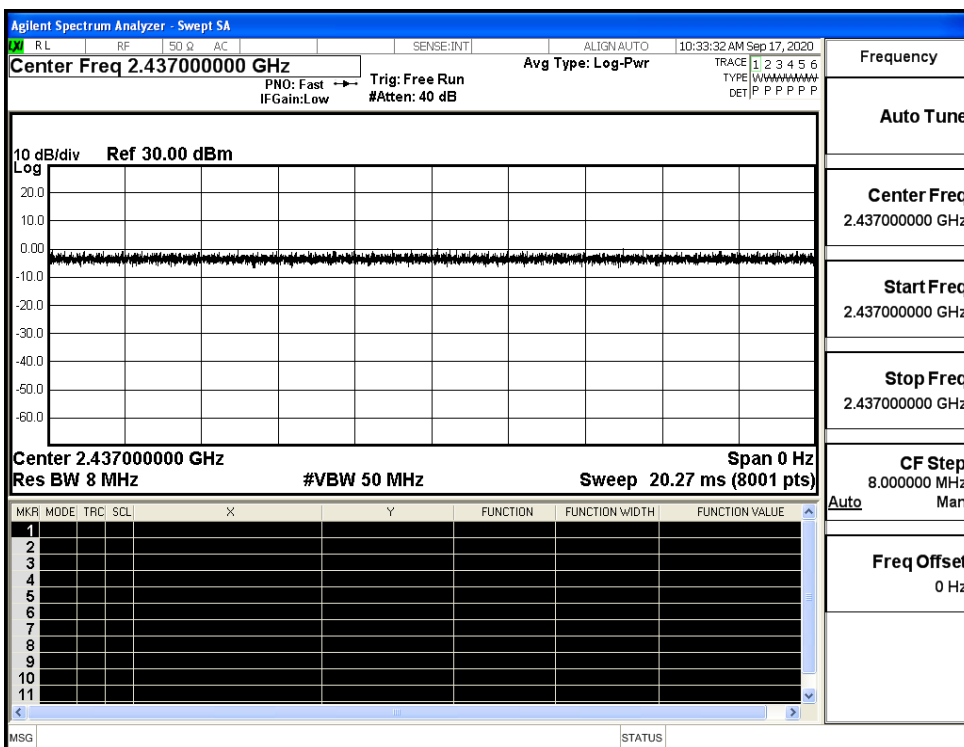
B.1 Duty Cycle

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

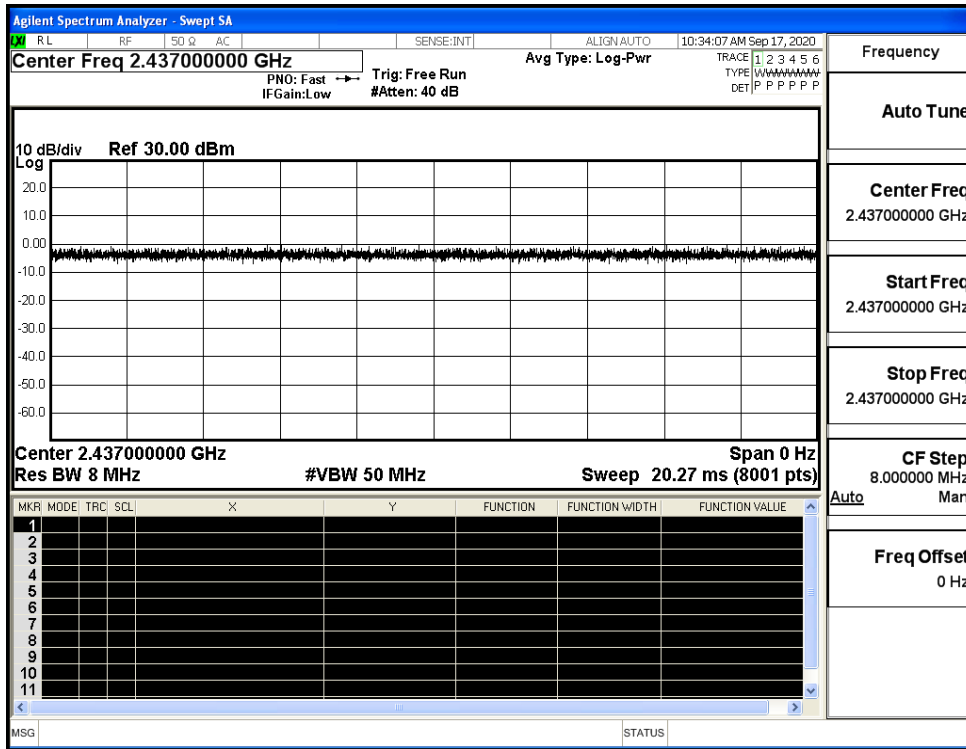
Duty Cycle_11B_2437_Ant1



Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1

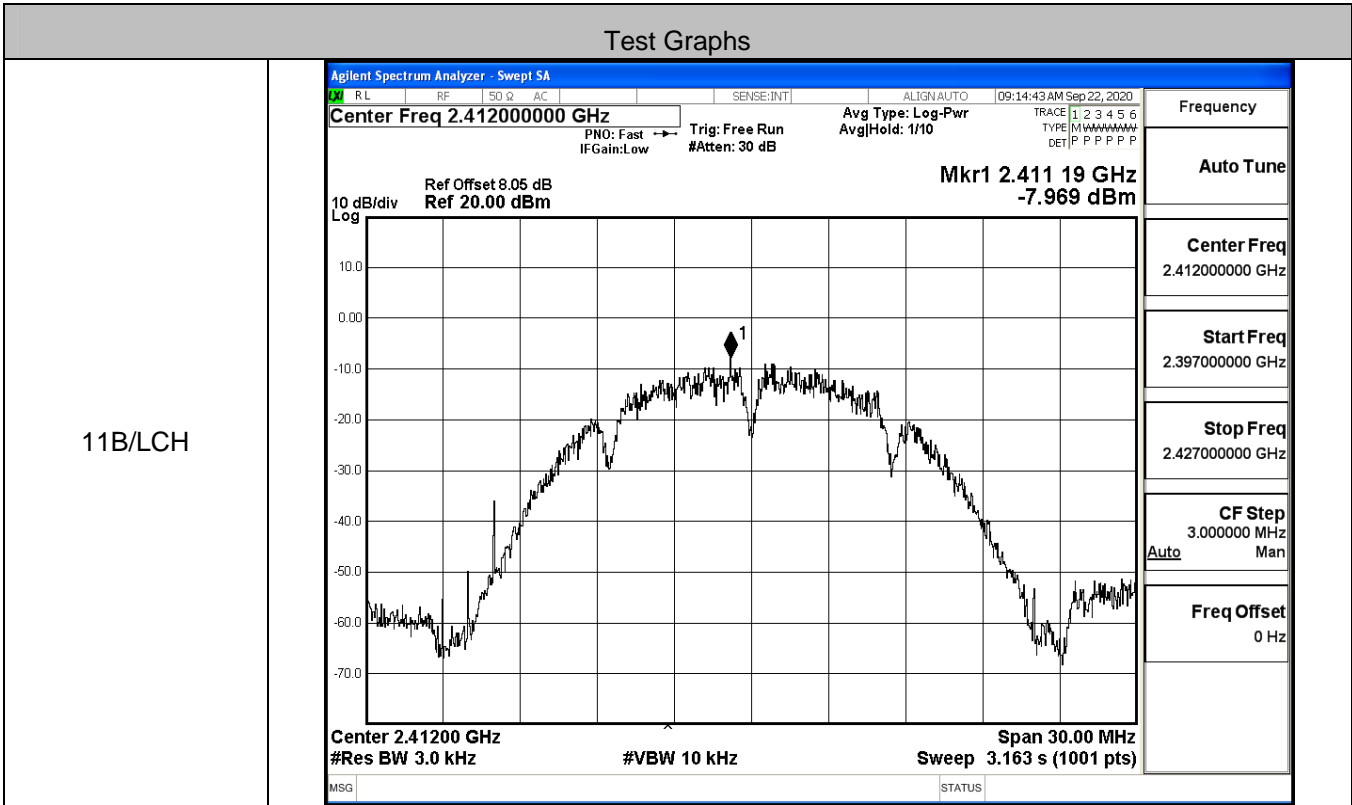


B.2 Maximum Conducted Output Power

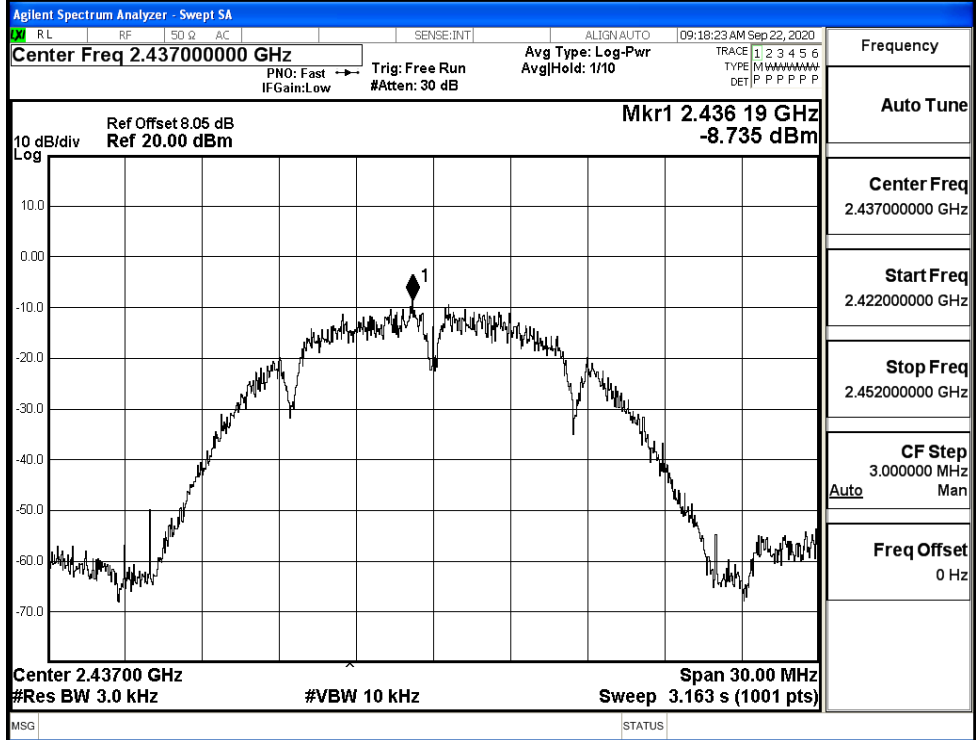
Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	19.92	30	PASS
	MCH	19.73	30	PASS
	HCH	19.82	30	PASS
11G	LCH	22.67	30	PASS
	MCH	22.48	30	PASS
	HCH	22.36	30	PASS
11N20SISO	LCH	22.41	30	PASS
	MCH	22.23	30	PASS
	HCH	22.09	30	PASS

B.3 Maximum Power Spectral Density

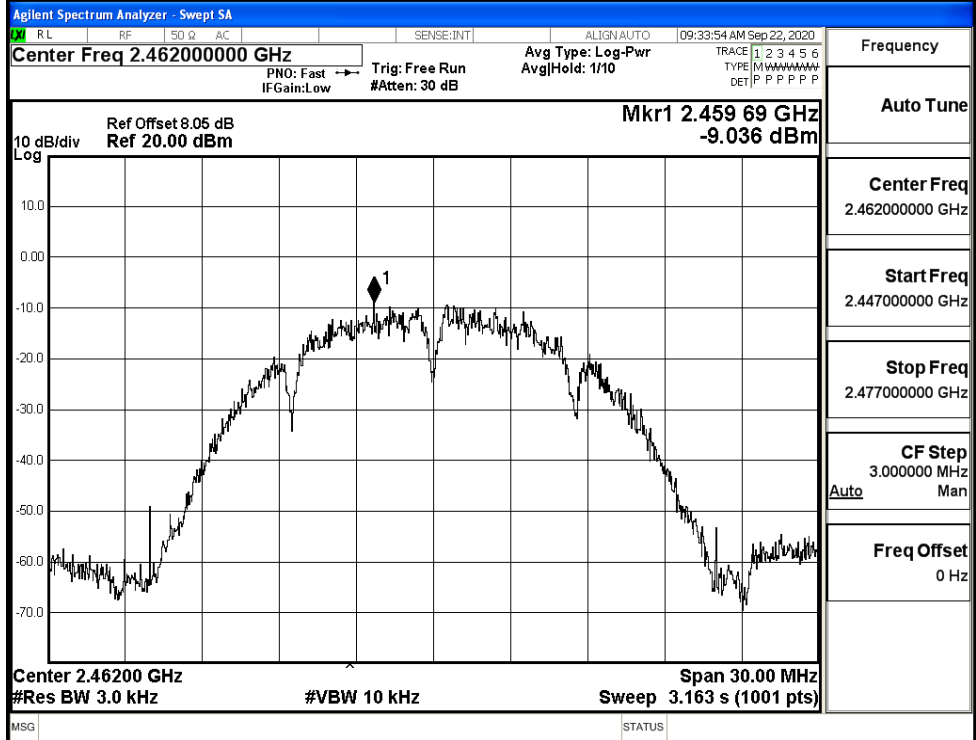
Mode	Channel	Meas.Level [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-7.969	8	PASS
	MCH	-8.735	8	PASS
	HCH	-9.036	8	PASS
11G	LCH	-10.268	8	PASS
	MCH	-10.055	8	PASS
	HCH	-11.780	8	PASS
11N20SISO	LCH	-11.152	8	PASS
	MCH	-11.304	8	PASS
	HCH	-11.645	8	PASS



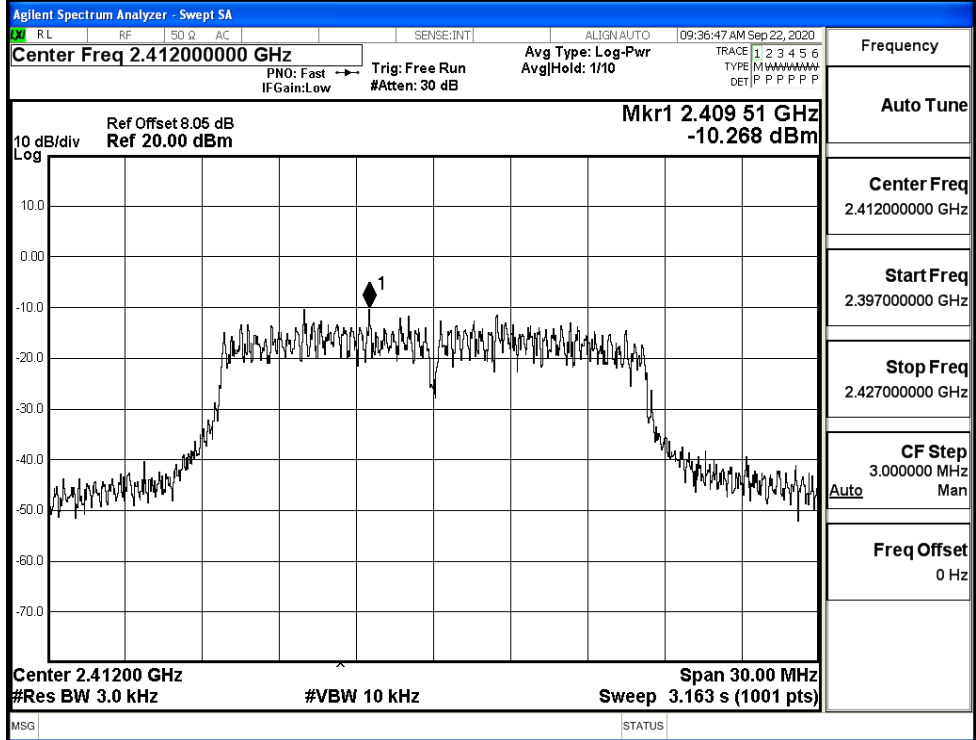
11B/MCH



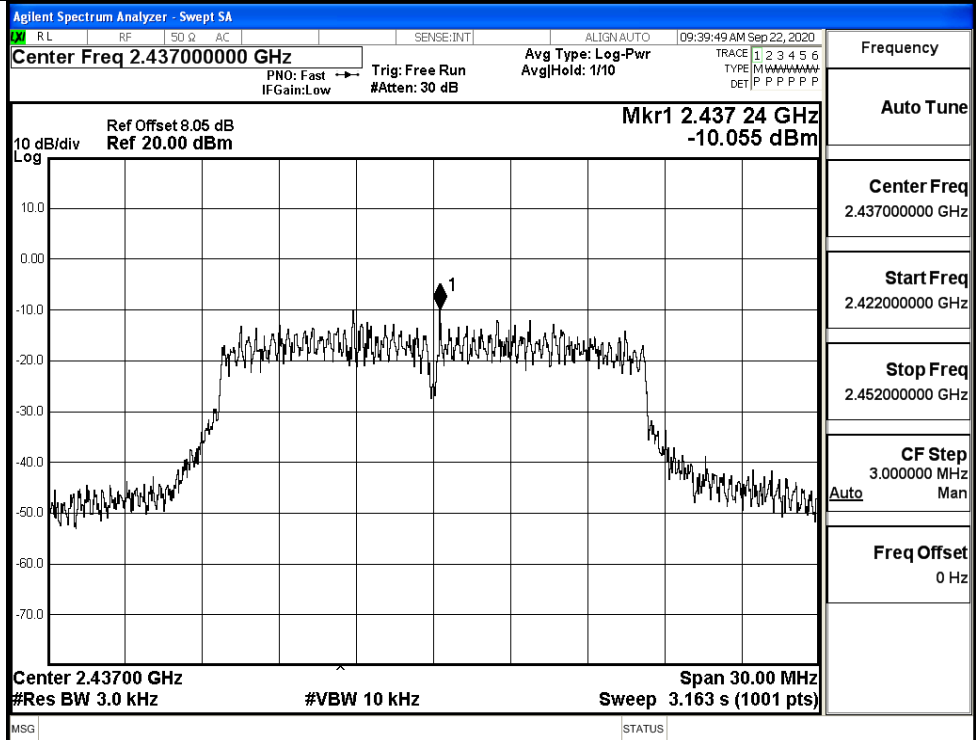
11B/HCH



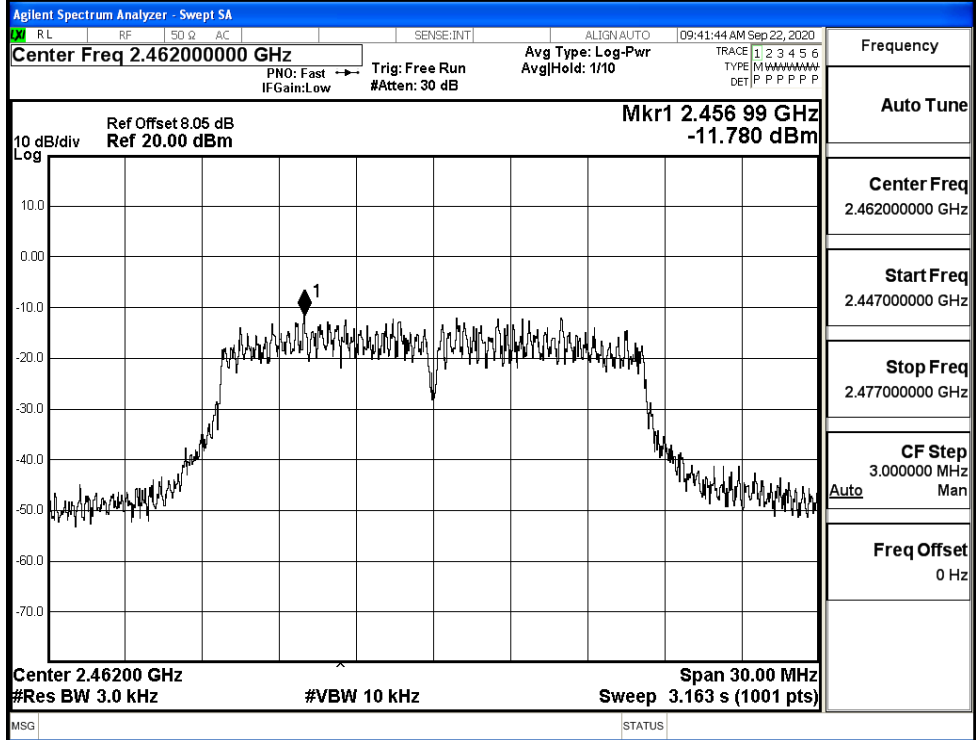
11G/LCH



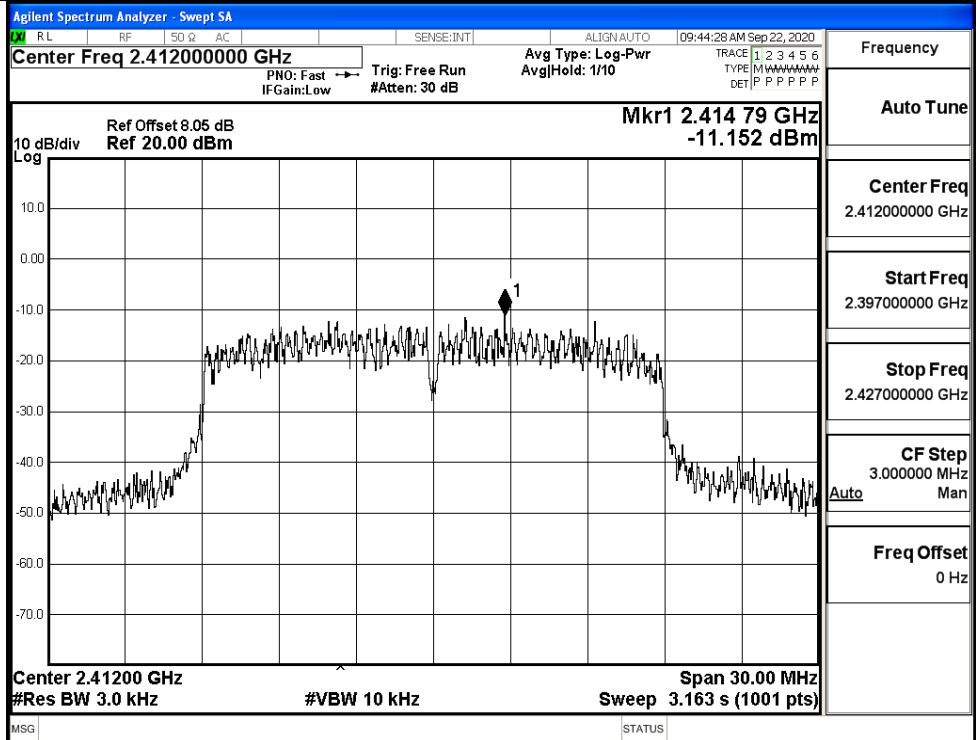
11G/MCH



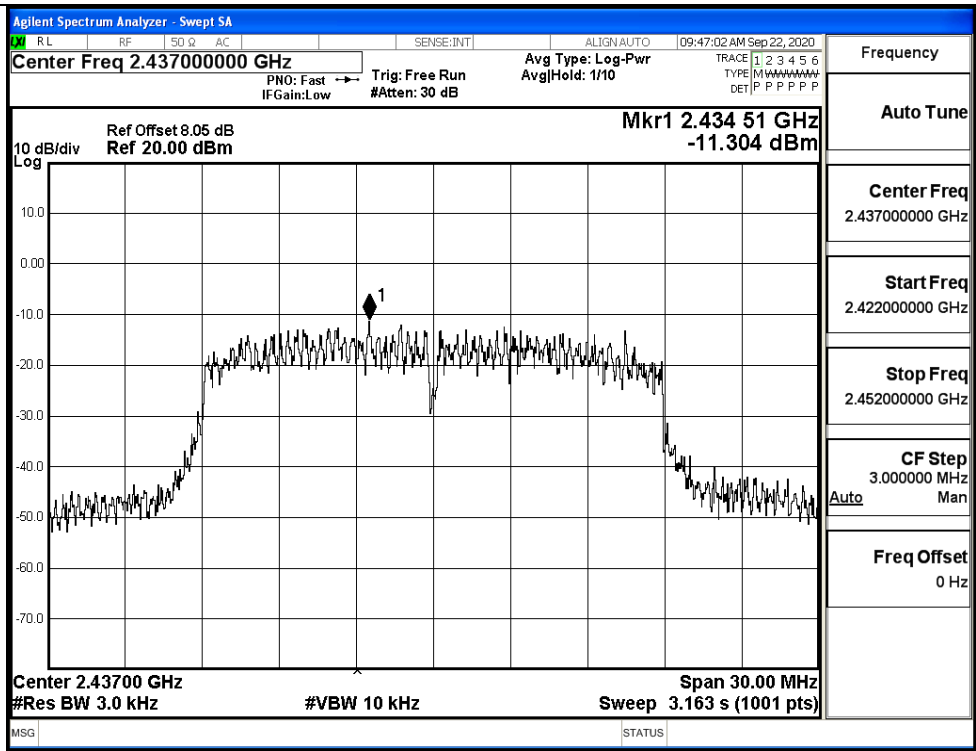
11G/HCH



11N20SISO/LCH

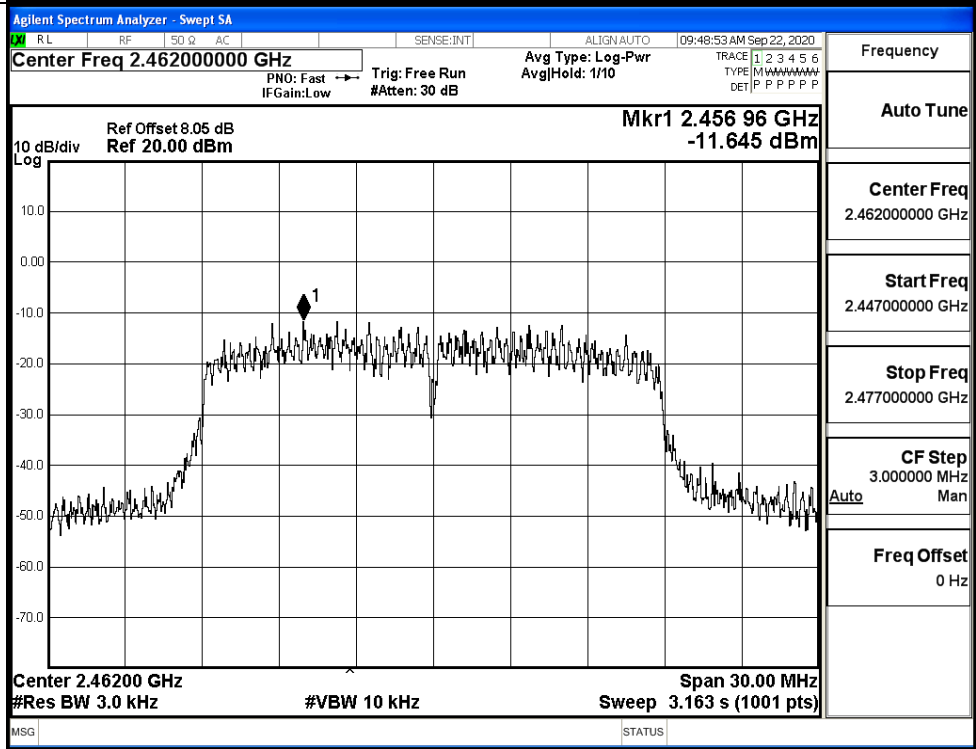


11N20SISO/MCH



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

11N20SISO/HCH

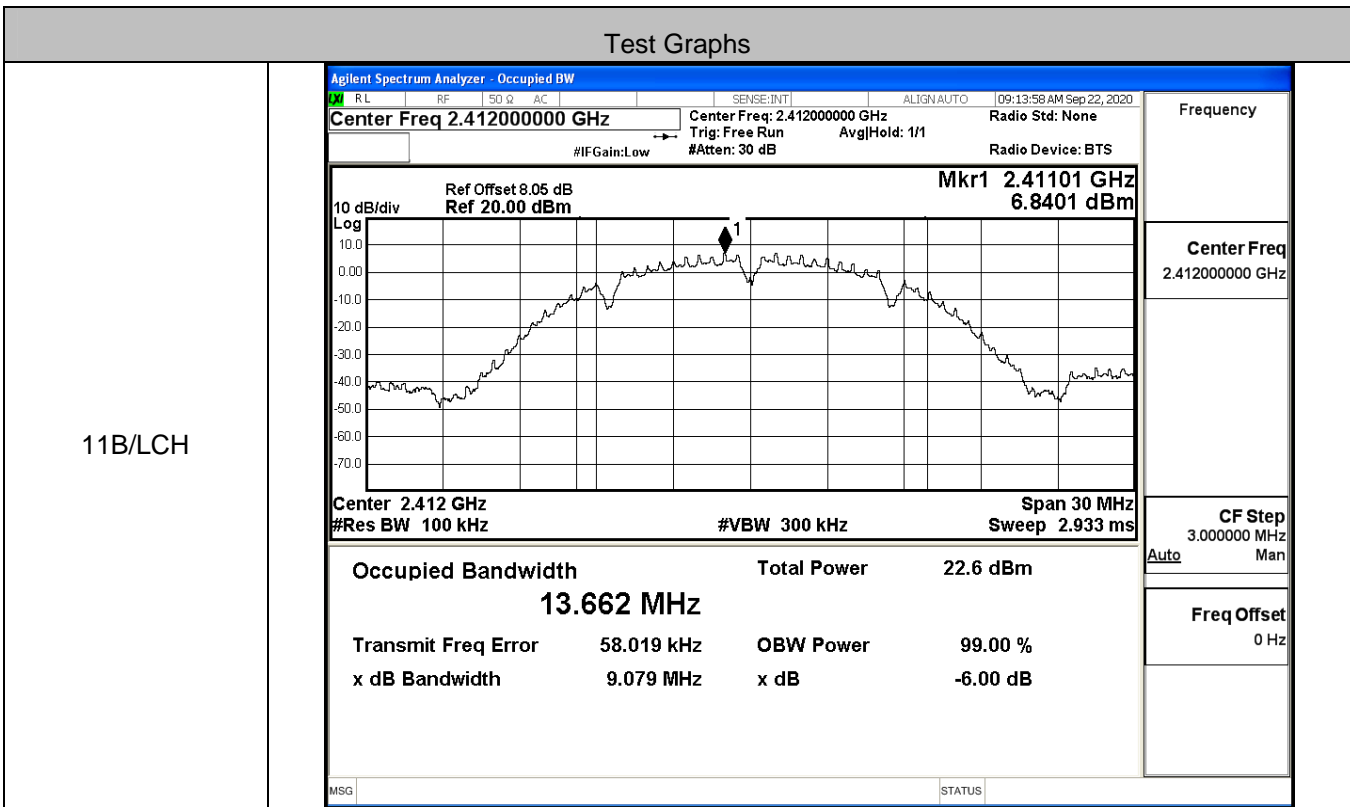


Frequency
Auto Tune
Center Freq 2.46200000 GHz
Start Freq 2.447000000 GHz
Stop Freq 2.477000000 GHz
CF Step 3.000000 MHz Auto Man
Freq Offset 0 Hz

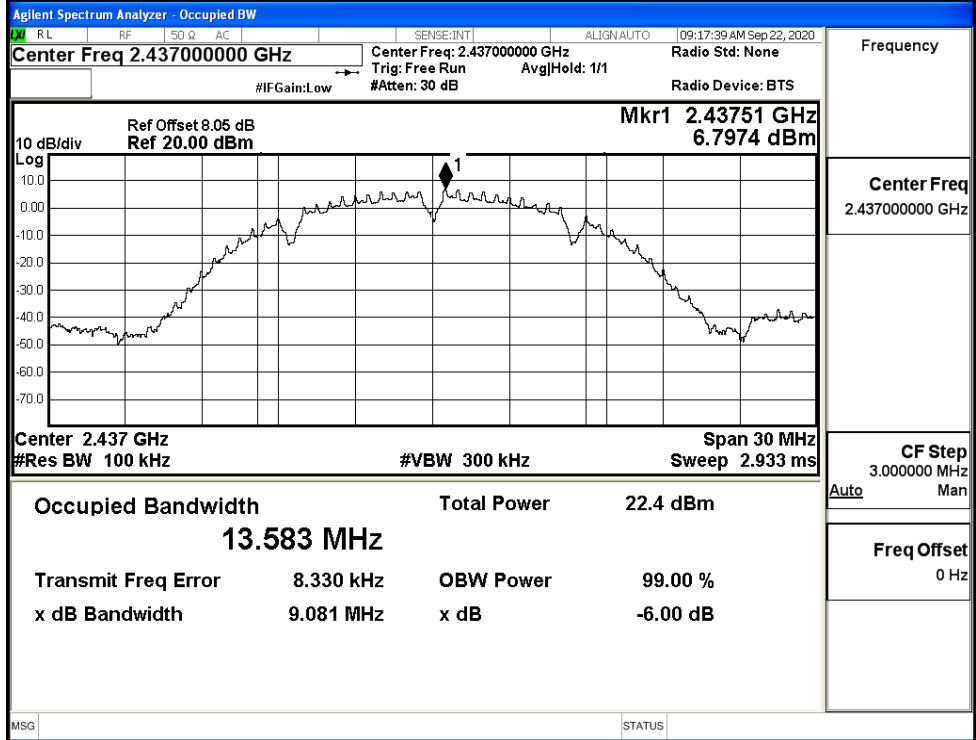
B.4 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	9.079	≥0.5	PASS
	MCH	9.081	≥0.5	PASS
	HCH	9.040	≥0.5	PASS
11G	LCH	15.17	≥0.5	PASS
	MCH	15.17	≥0.5	PASS
	HCH	15.17	≥0.5	PASS
11N20SISO	LCH	15.45	≥0.5	PASS
	MCH	15.35	≥0.5	PASS
	HCH	15.17	≥0.5	PASS

Test Graphs



11B/MCH



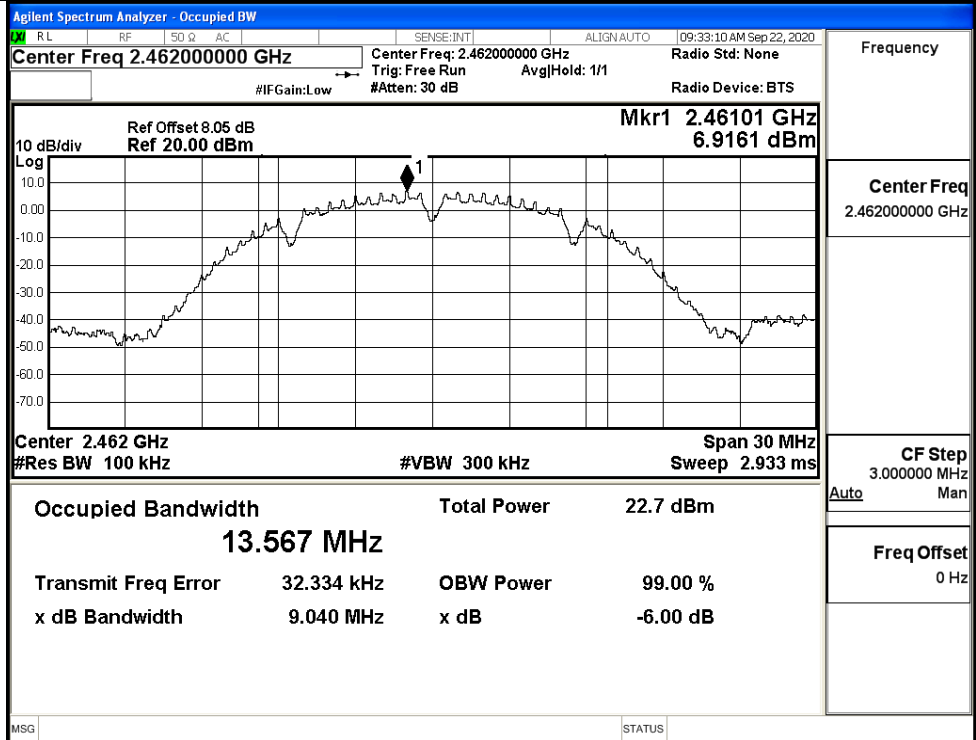
Frequency
2.43700000 GHz

Center Freq
2.43700000 GHz

CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

11B/HCH



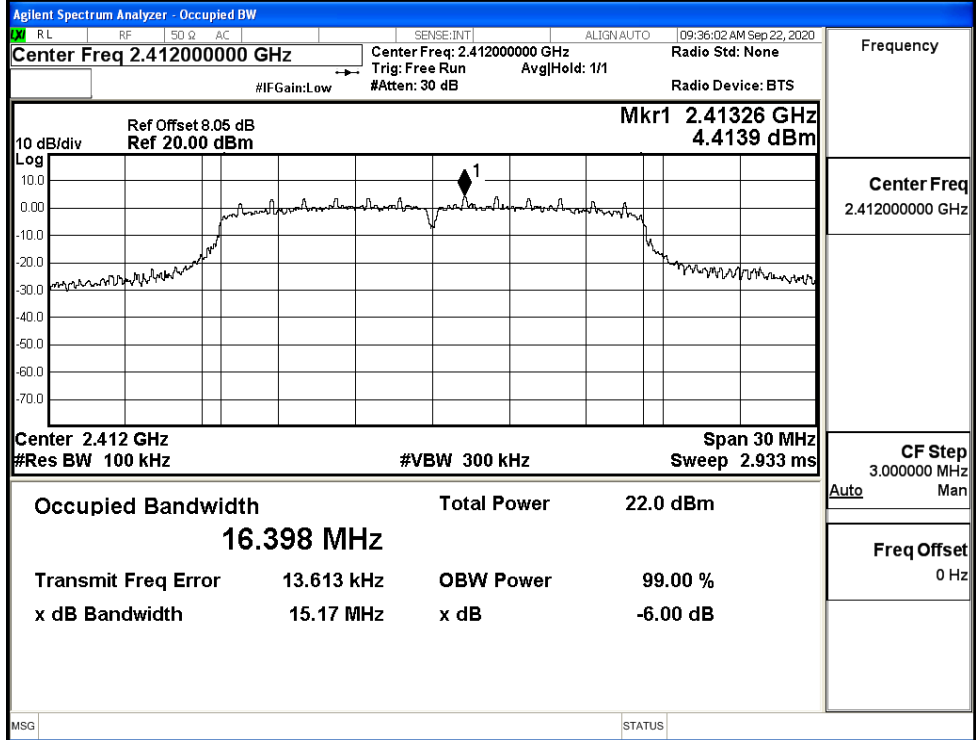
Frequency
2.46200000 GHz

Center Freq
2.46200000 GHz

CF Step
3.000000 MHz
Auto Man

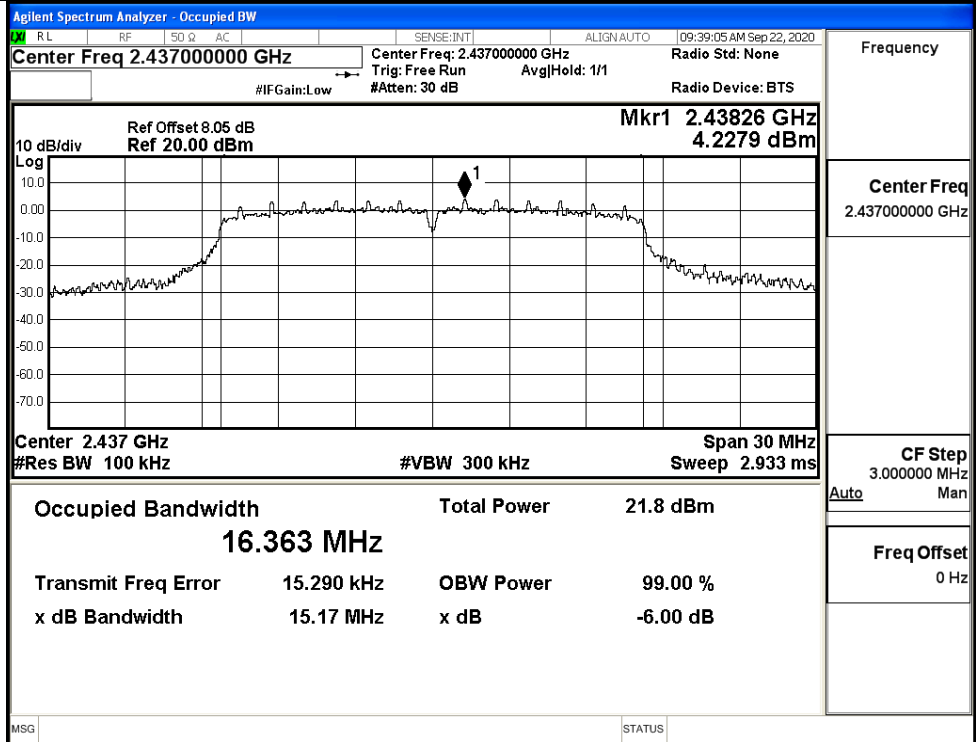
Freq Offset
0 Hz

11G/LCH



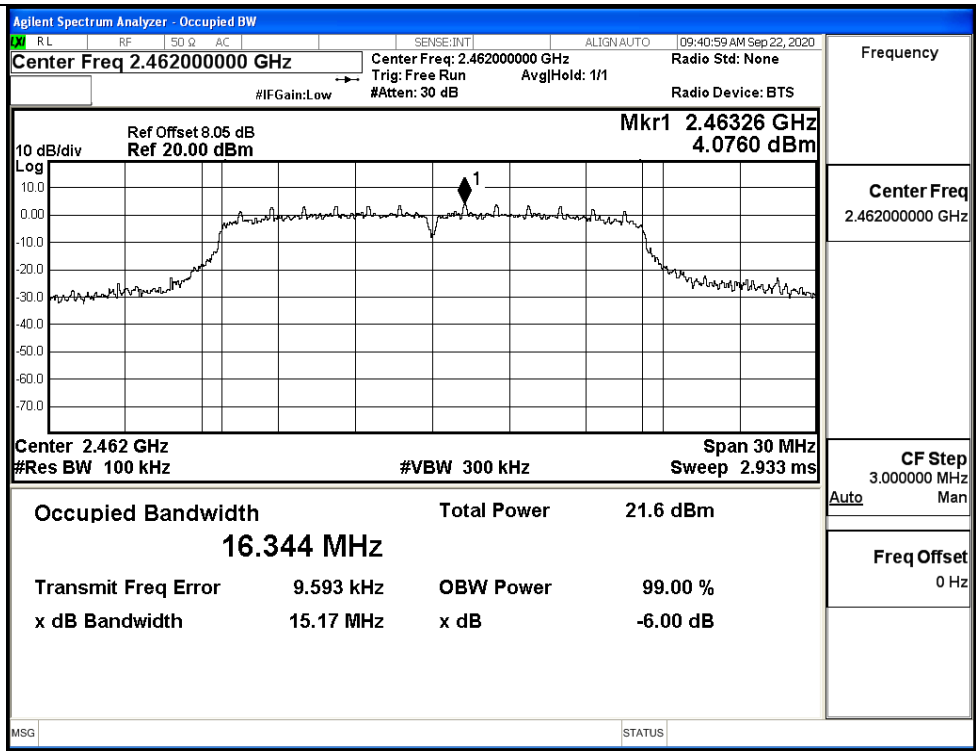
Frequency	2.41200000 GHz
Center Freq	2.41200000 GHz
CF Step	3.000000 MHz
Auto	Man
Freq Offset	0 Hz

11G/MCH

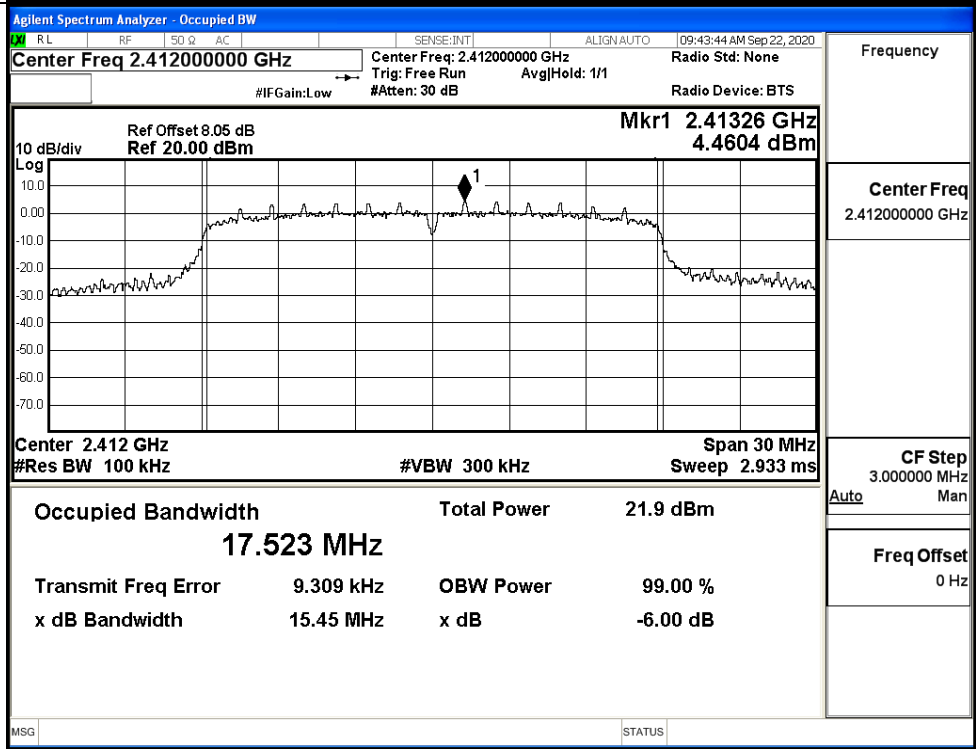


Frequency	2.43700000 GHz
Center Freq	2.43700000 GHz
CF Step	3.000000 MHz
Auto	Man
Freq Offset	0 Hz

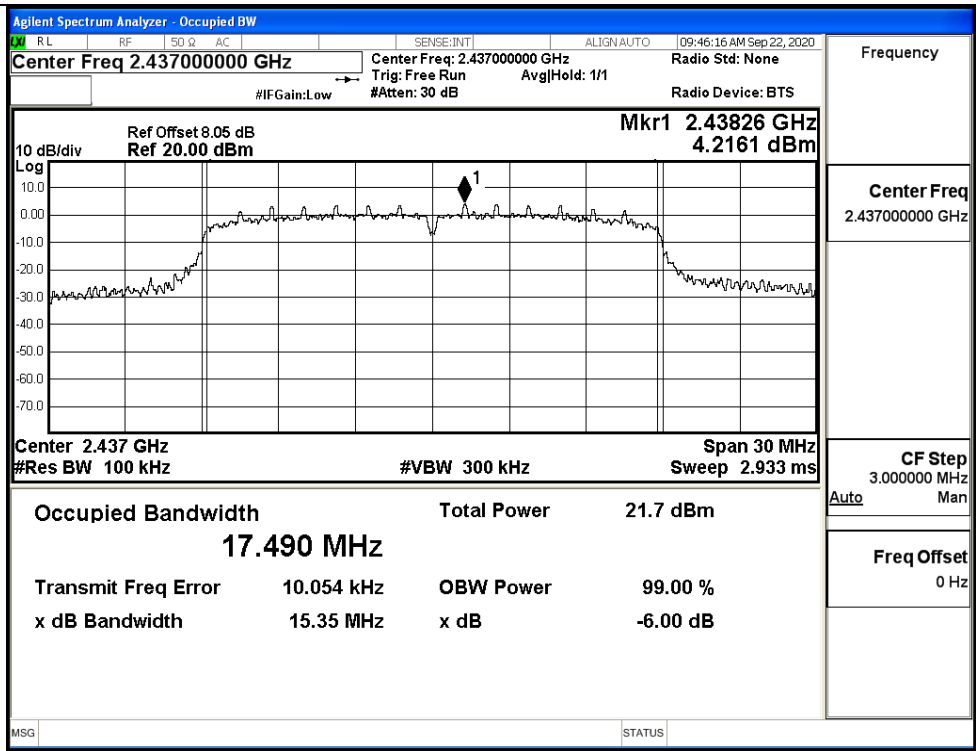
11G/HCH



11N20SISO/LCH



11N20SISO/MCH

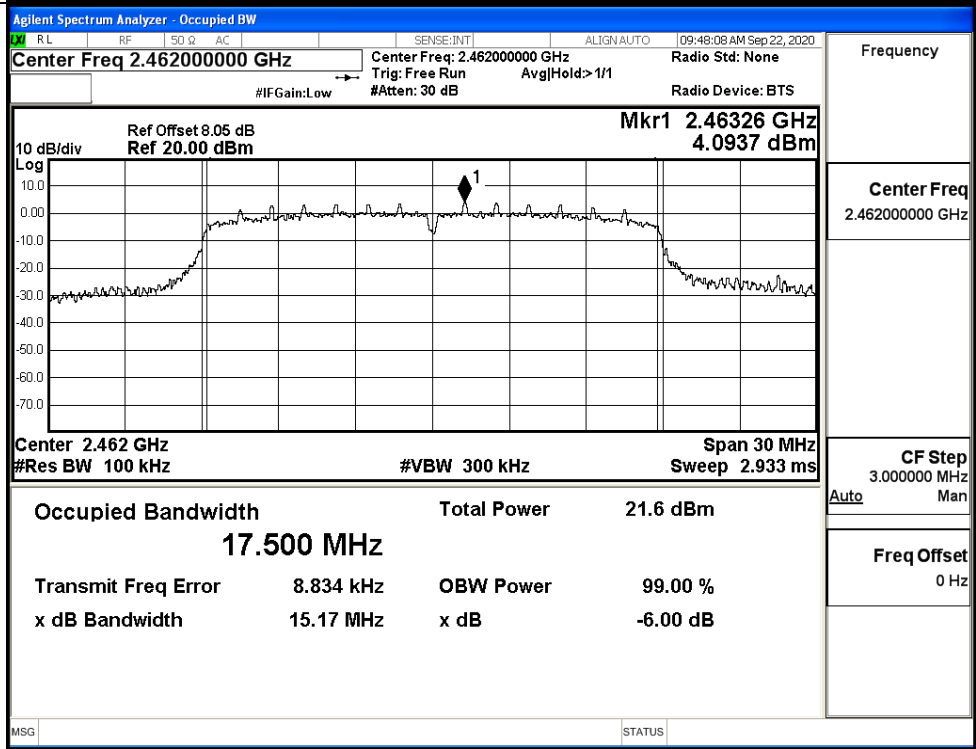


Frequency
Center Freq
2.43700000 GHz

CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

11N20SISO/HCH



Frequency
Center Freq
2.46200000 GHz

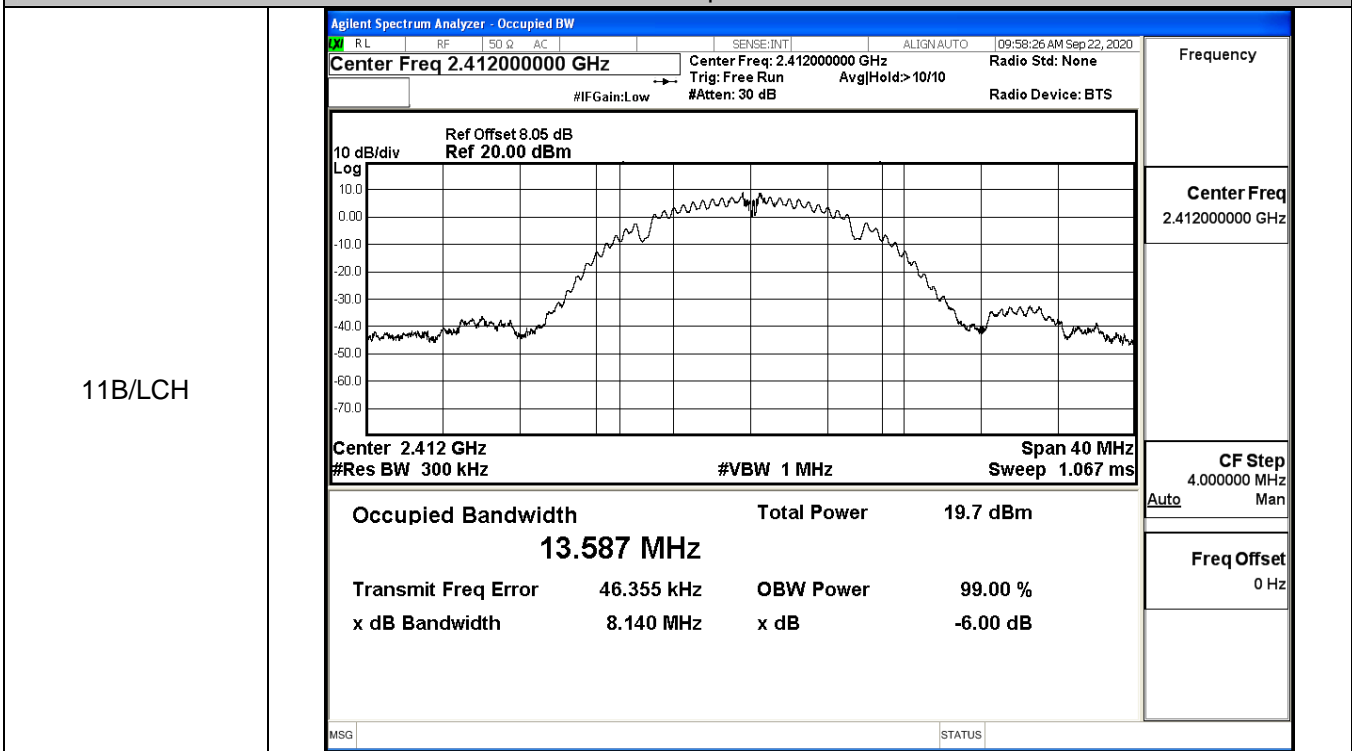
CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

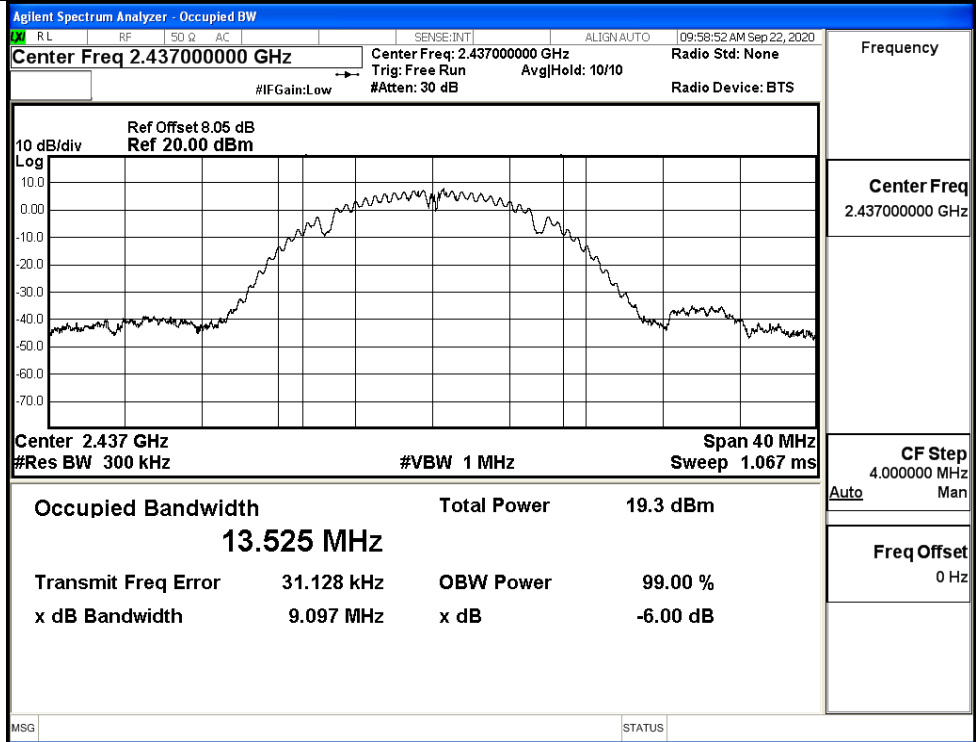
B.5 Occupied Bandwidth

Mode	Channel	Occupied Bandwidth [MHz]	Verdict
11B	LCH	13.587	PASS
	MCH	13.525	PASS
	HCH	13.450	PASS
11G	LCH	16.695	PASS
	MCH	16.615	PASS
	HCH	16.543	PASS
11N20SISO	LCH	17.667	PASS
	MCH	17.645	PASS
	HCH	17.610	PASS

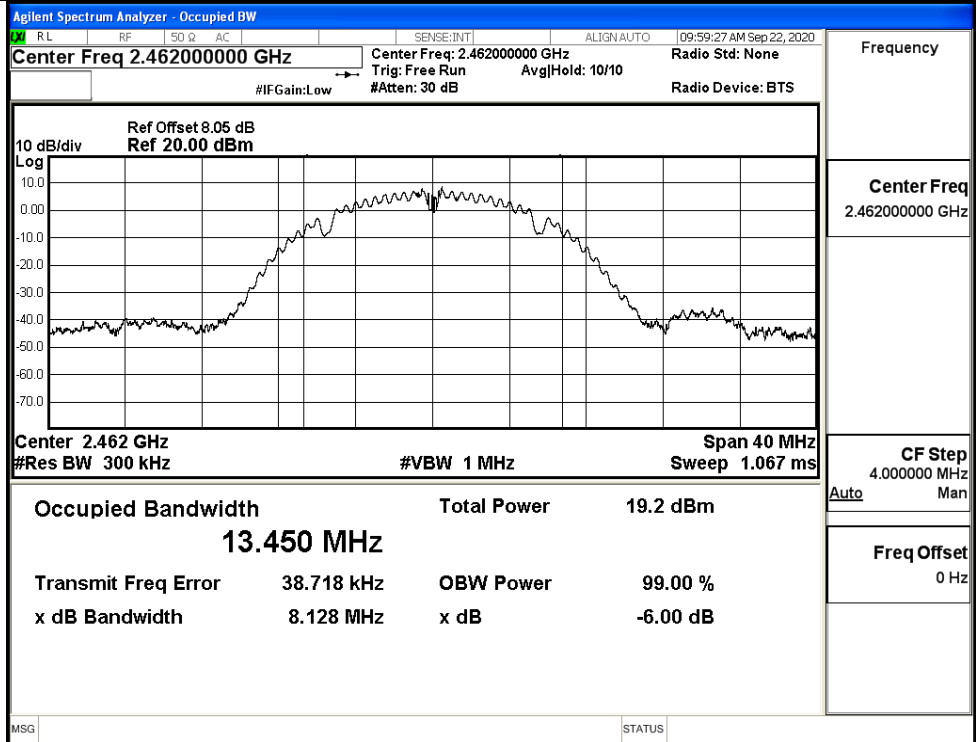
Test Graphs



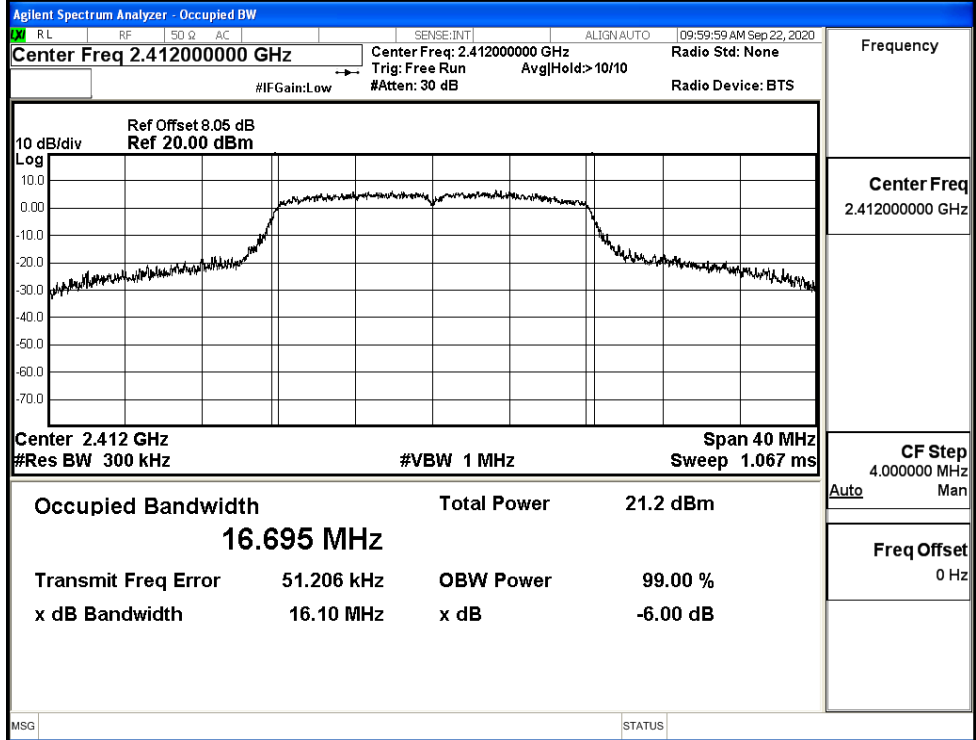
11B/MCH



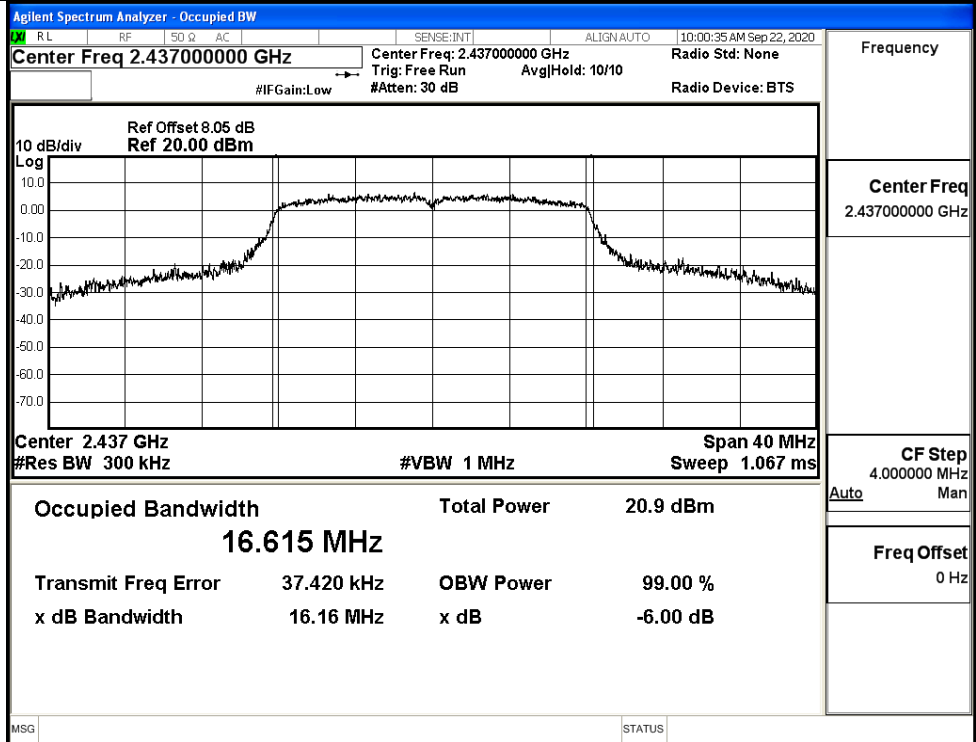
11B/HCH



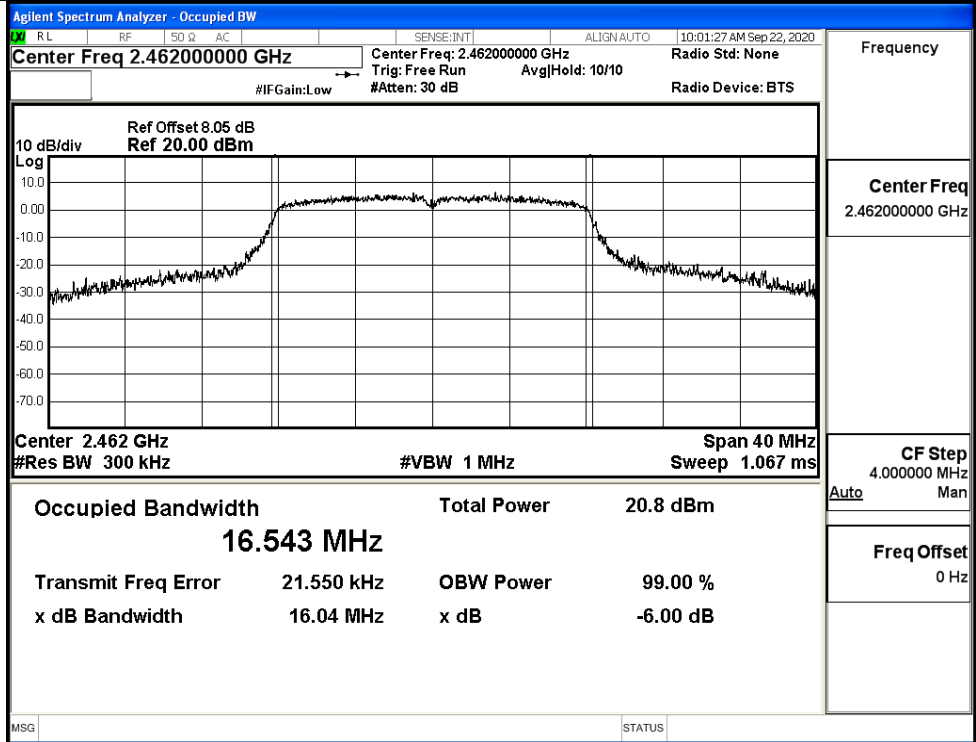
11G/LCH



11G/MCH

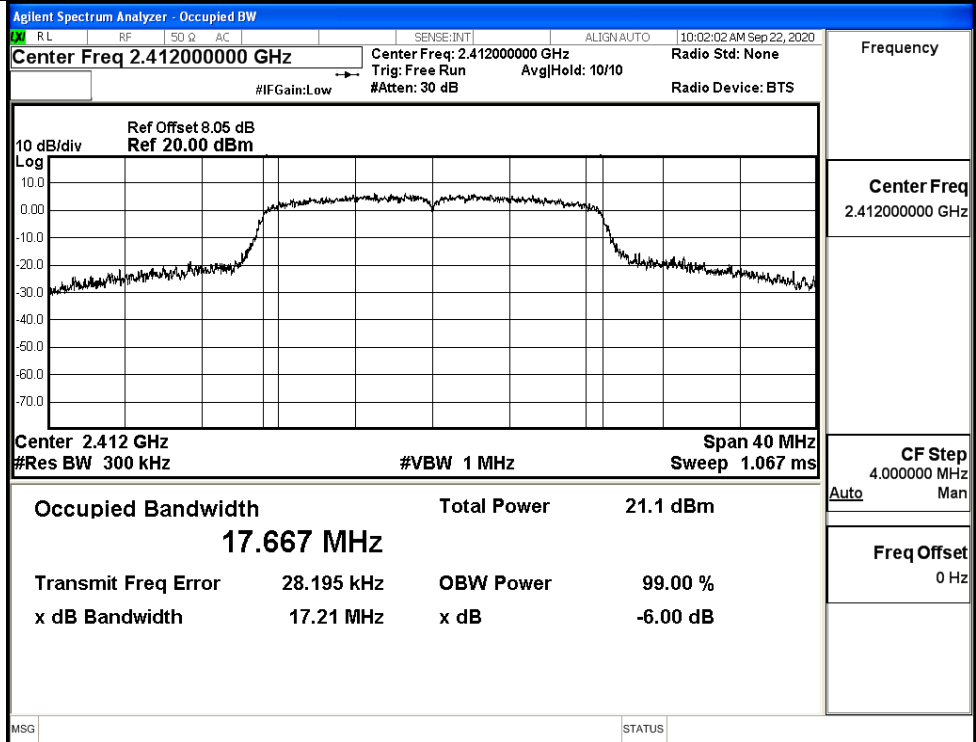


11G/HCH

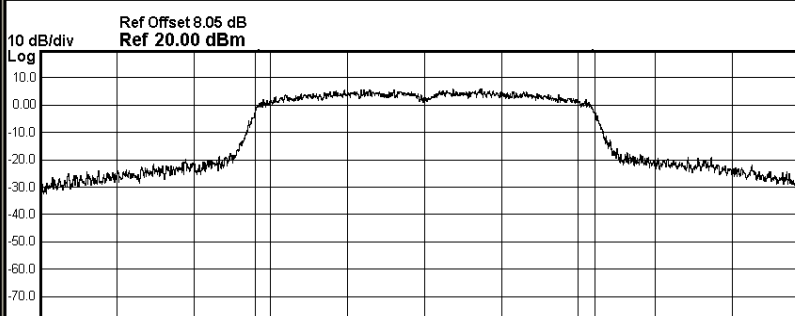
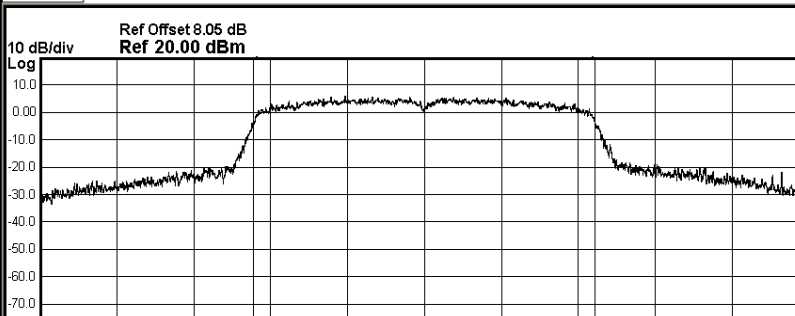


Frequency	Center Freq 2.46200000 GHz
CF Step	4.000000 MHz Auto Man
Freq Offset	0 Hz

11N20SISO/LCH



Frequency	Center Freq 2.41200000 GHz
CF Step	4.000000 MHz Auto Man
Freq Offset	0 Hz

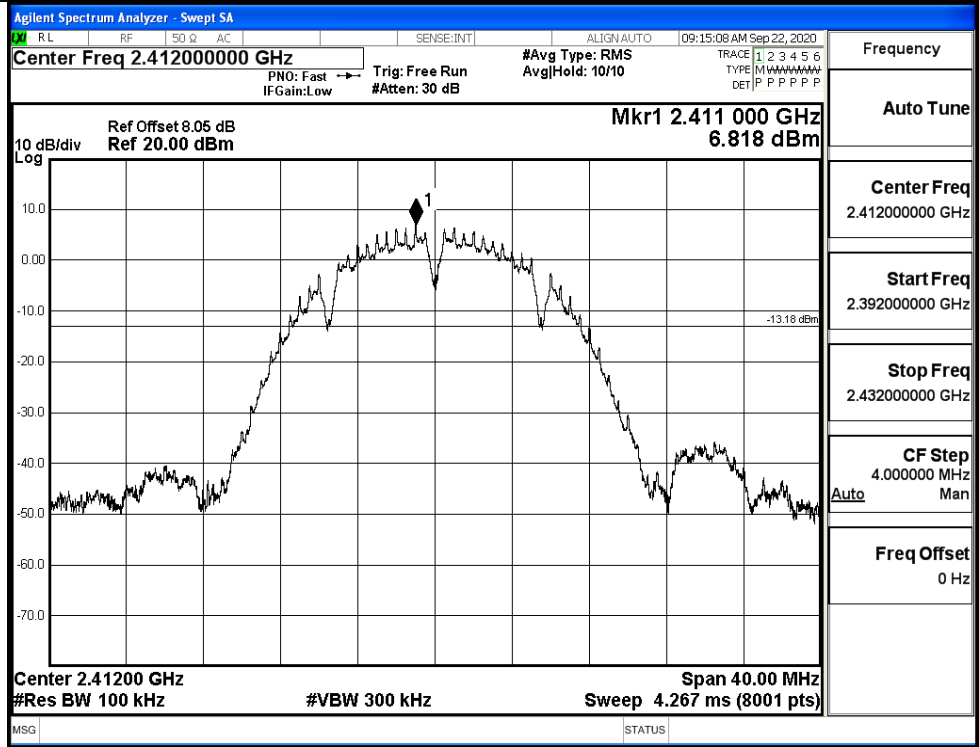
<p>11N20SISO/MCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>RL RF SO Q AC SENSE:INT ALIGN AUTO 10:02:35 AM Sep 22, 2020</p> <p>Center Freq 2.43700000 GHz Center Freq: 2.43700000 GHz Radio Std: None Trig: Free Run AvgHold> 10/10 #IFGain:Low #Atten: 30 dB Radio Device: BTS</p>  <p>10 dB/div Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>Center 2.437 GHz Span 40 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 1.067 ms</p> <p>Occupied Bandwidth 17.645 MHz Total Power 20.8 dBm</p> <p>Transmit Freq Error 24.864 kHz OBW Power 99.00 % x dB Bandwidth 17.29 MHz x dB -6.00 dB</p> <p>MSG STATUS</p>	<p>Frequency</p> <p>Center Freq 2.43700000 GHz</p> <p>CF Step 4.000000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>
	<p>11N20SISO/HCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>RL RF SO Q AC SENSE:INT ALIGN AUTO 10:03:10 AM Sep 22, 2020</p> <p>Center Freq 2.46200000 GHz Center Freq: 2.46200000 GHz Radio Std: None Trig: Free Run AvgHold> 10/10 #IFGain:Low #Atten: 30 dB Radio Device: BTS</p>  <p>10 dB/div Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>Center 2.462 GHz Span 40 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 1.067 ms</p> <p>Occupied Bandwidth 17.610 MHz Total Power 20.7 dBm</p> <p>Transmit Freq Error 22.650 kHz OBW Power 99.00 % x dB Bandwidth 17.24 MHz x dB -6.00 dB</p> <p>MSG STATUS</p>

B.6 RF Conducted Spurious Emissions

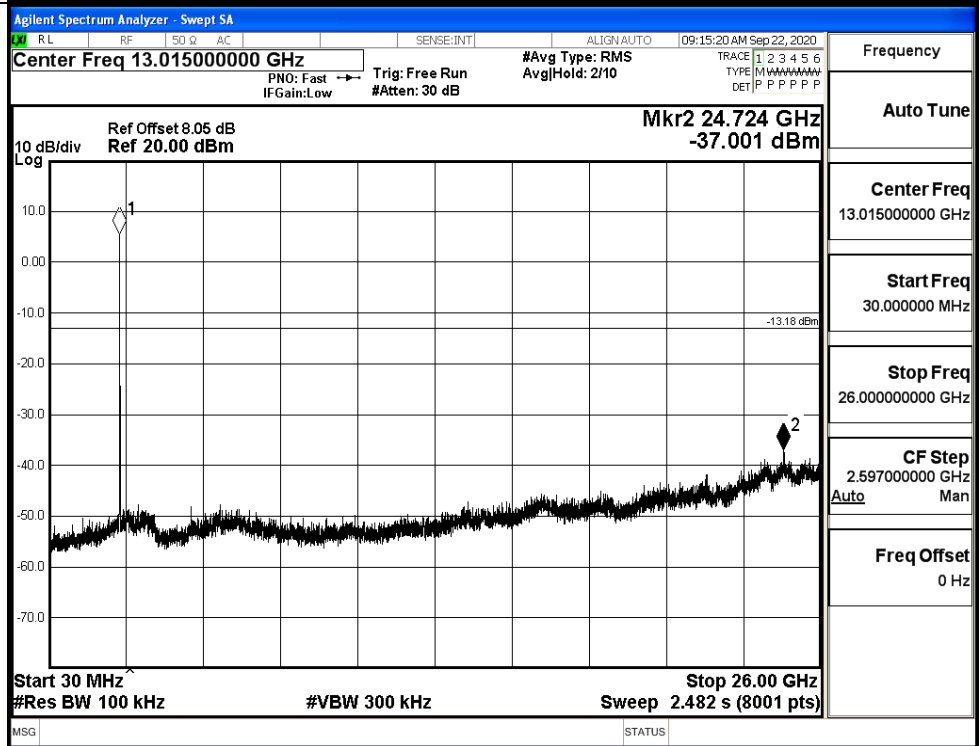
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	6.818	-37.001	-13.182	PASS
	MCH	6.625	-38.153	-13.375	PASS
	HCH	6.782	-37.887	-13.218	PASS
11G	LCH	4.348	-38.747	-15.652	PASS
	MCH	4.1	-37.758	-15.900	PASS
	HCH	4.007	-38.990	-15.993	PASS
11N20 SISO	LCH	4.348	-38.609	-15.652	PASS
	MCH	3.976	-38.770	-16.024	PASS
	HCH	3.987	-37.394	-16.013	PASS

11B_LCH_Graphs

Pref/11B/LCH

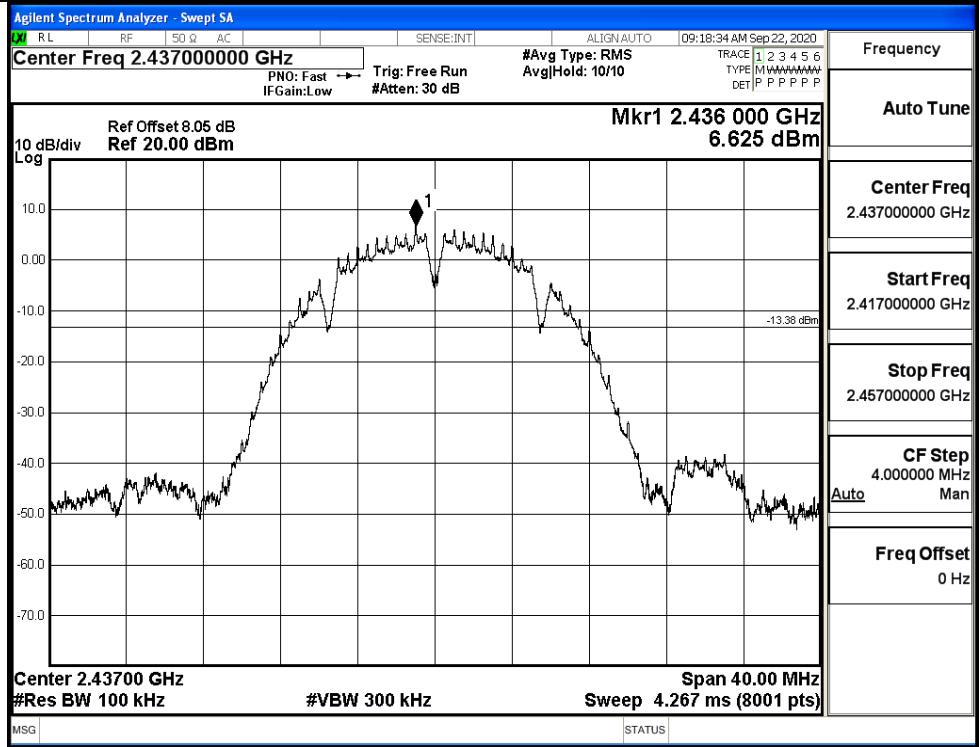


Puw/11B/LCH

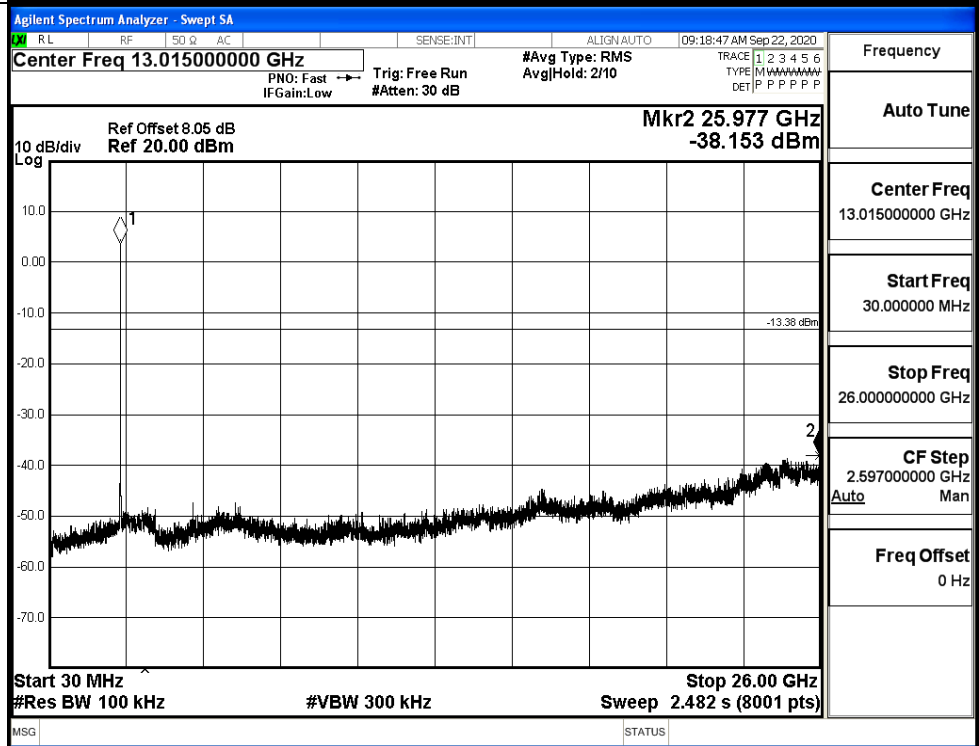


11B_MCH_Graphs

Pref/11B/MCH

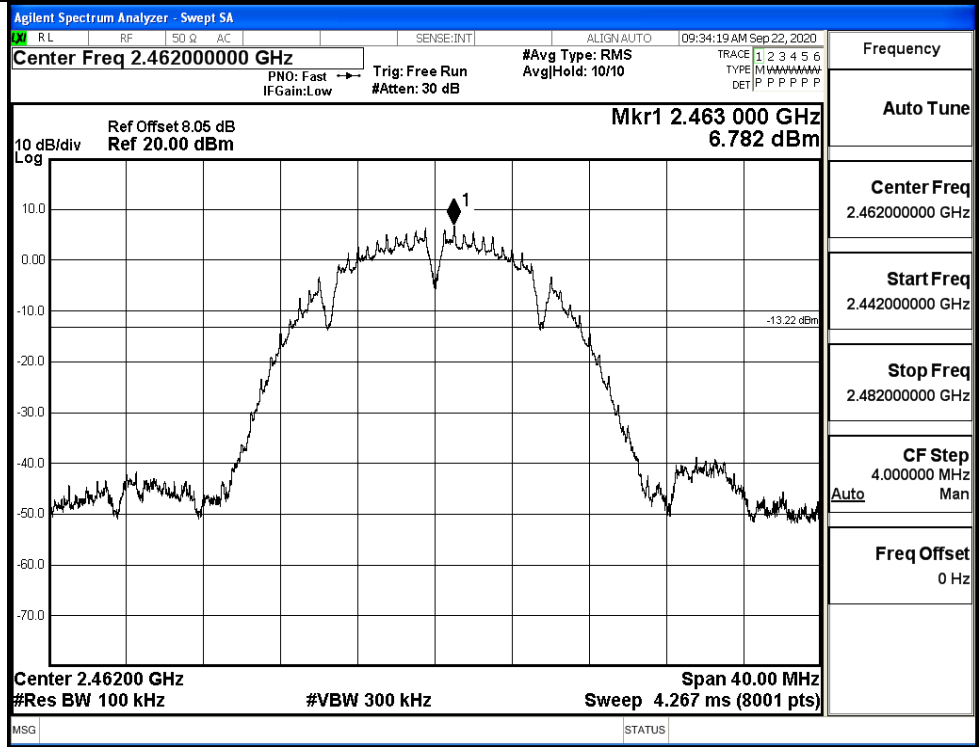


Puw/11B/MCH

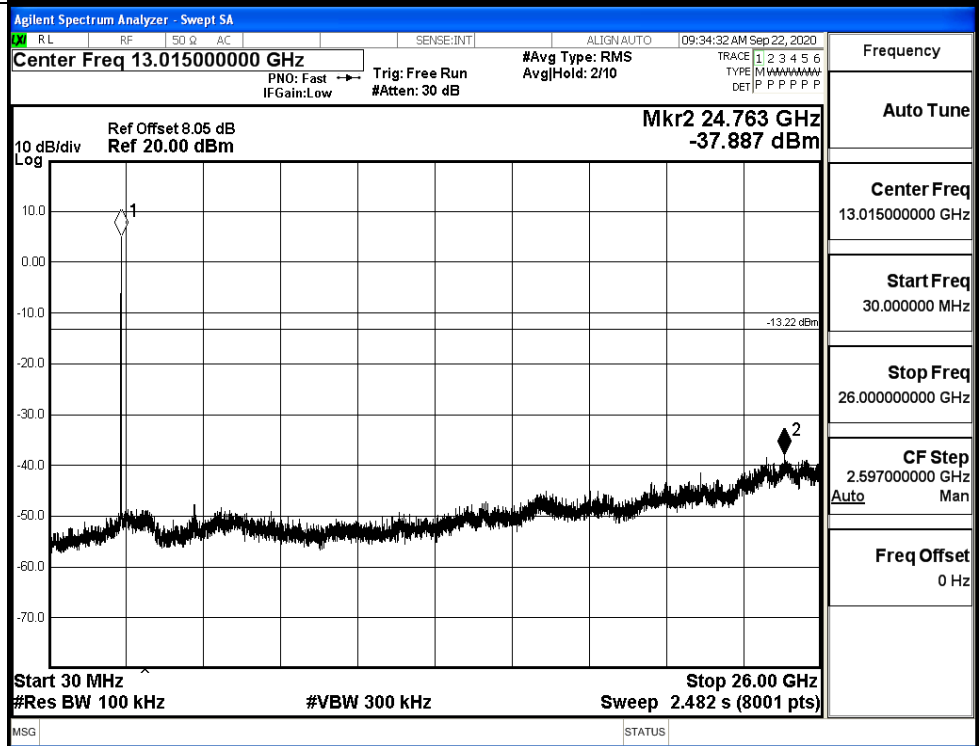


11B_HCH_Graphs

Pref/11B/HCH

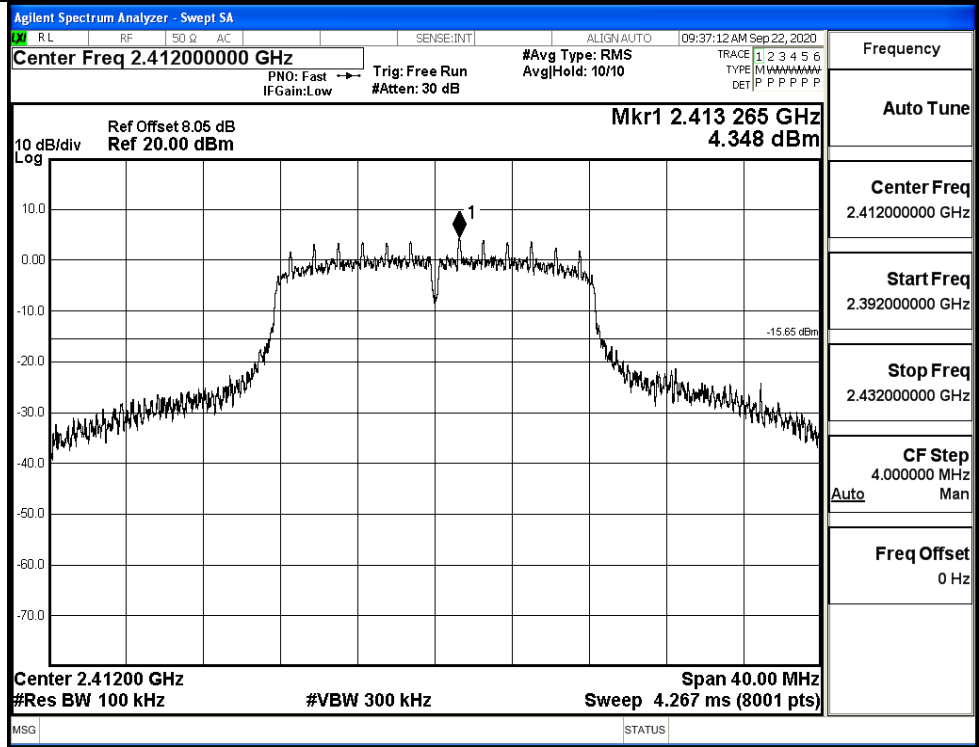


Puw/11B/HCH

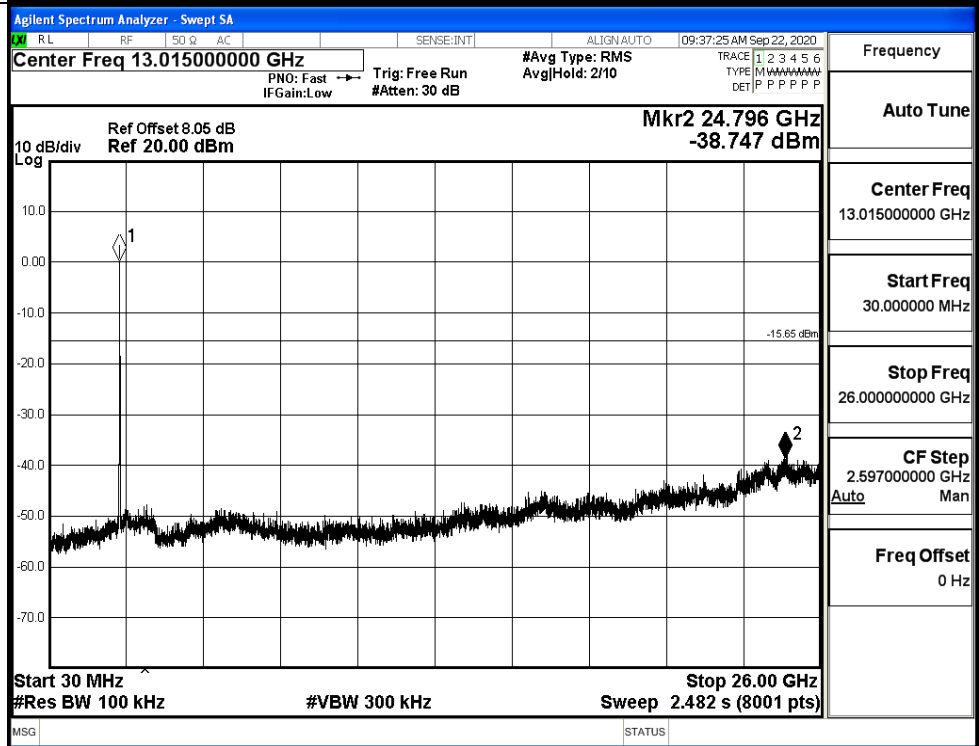


11G_LCH_Graphs

Pref/11G/LCH

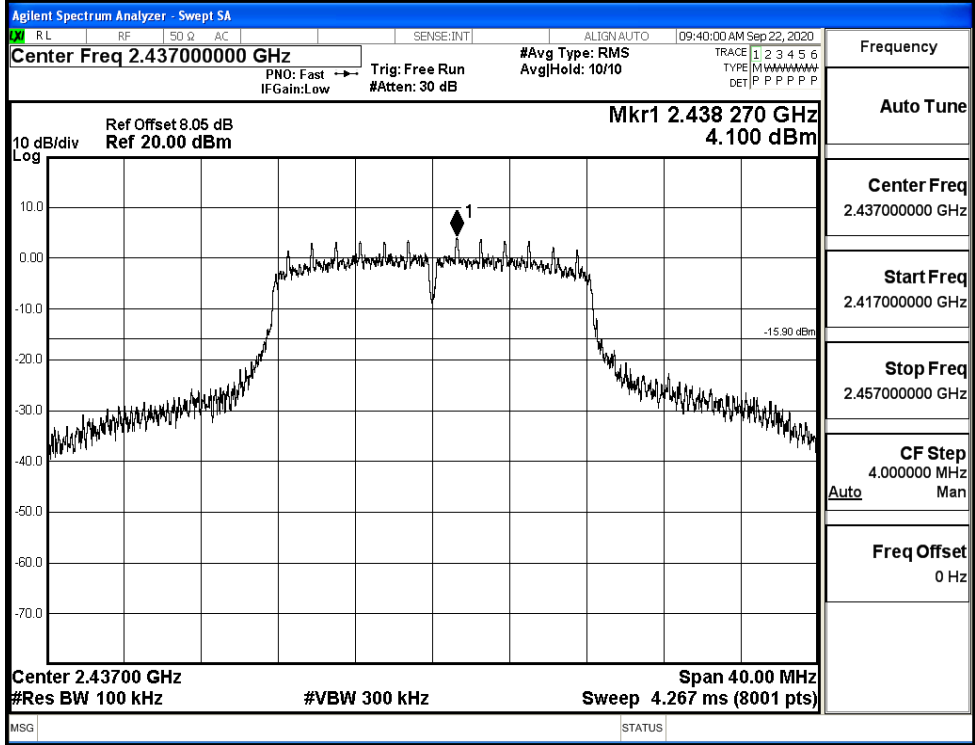


Puw/11G/LCH

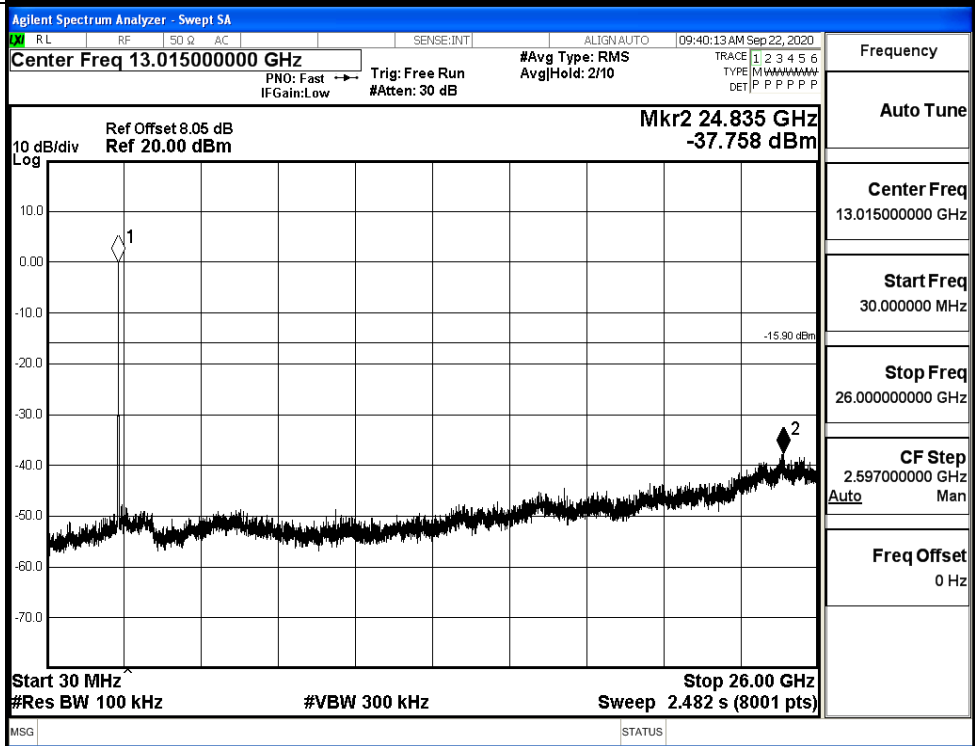


11G_MCH_Graphs

Pref/11G/MCH

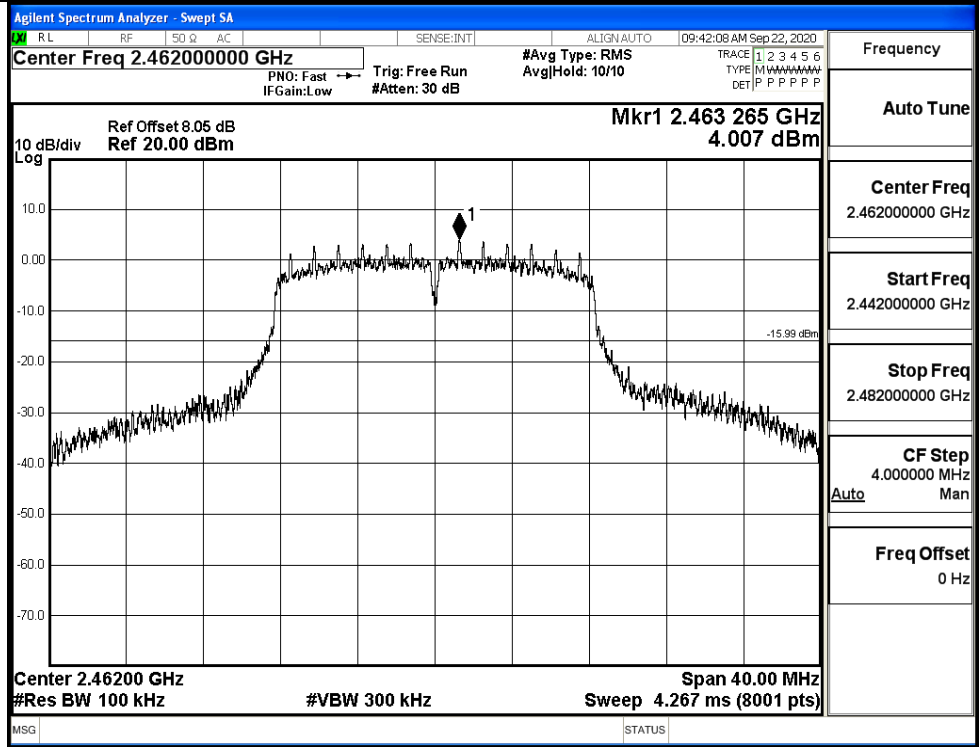


Puw/11G/MCH

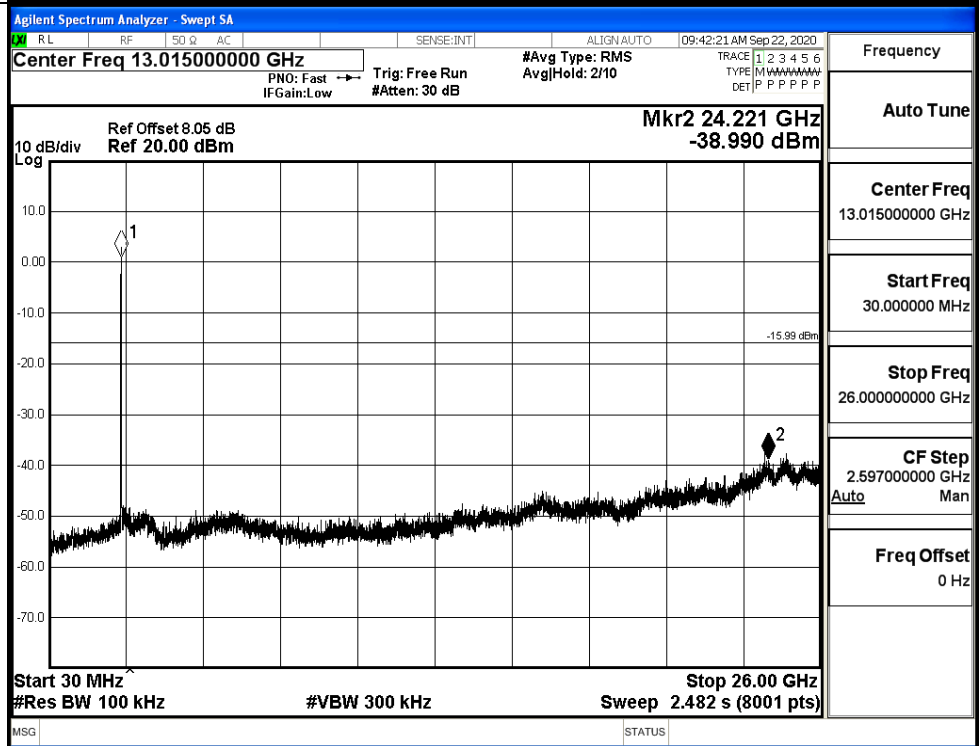


11G_HCH_Graphs

Pref/11G/HCH

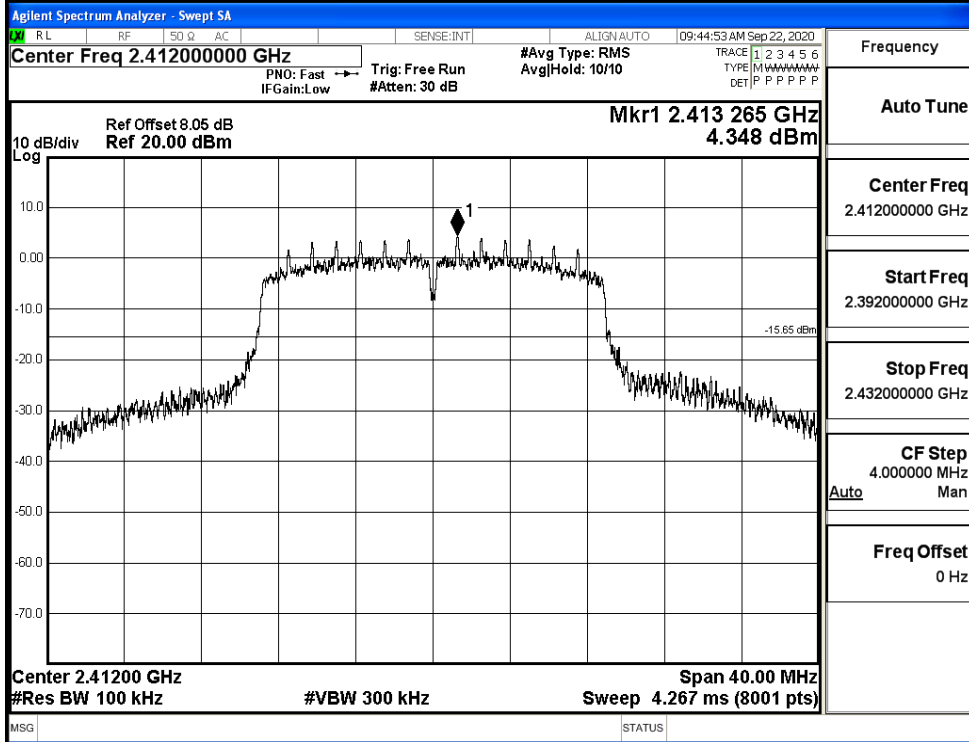


Puw/11G/HCH

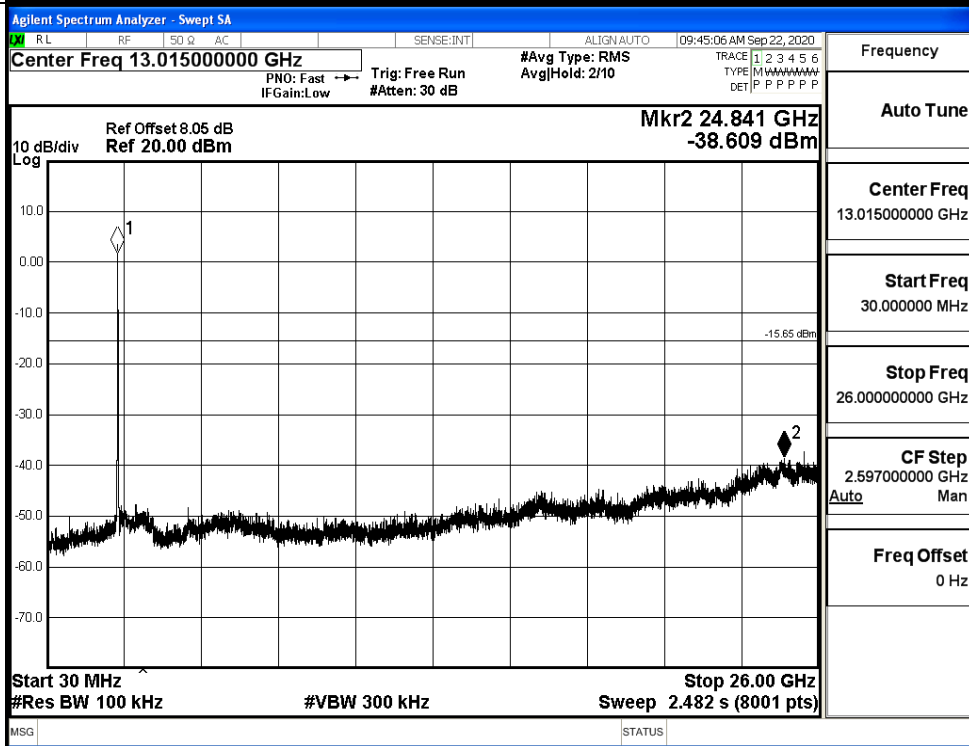


11N20SISO_LCH_Graphs

Pref/11N20SIS
O/LCH

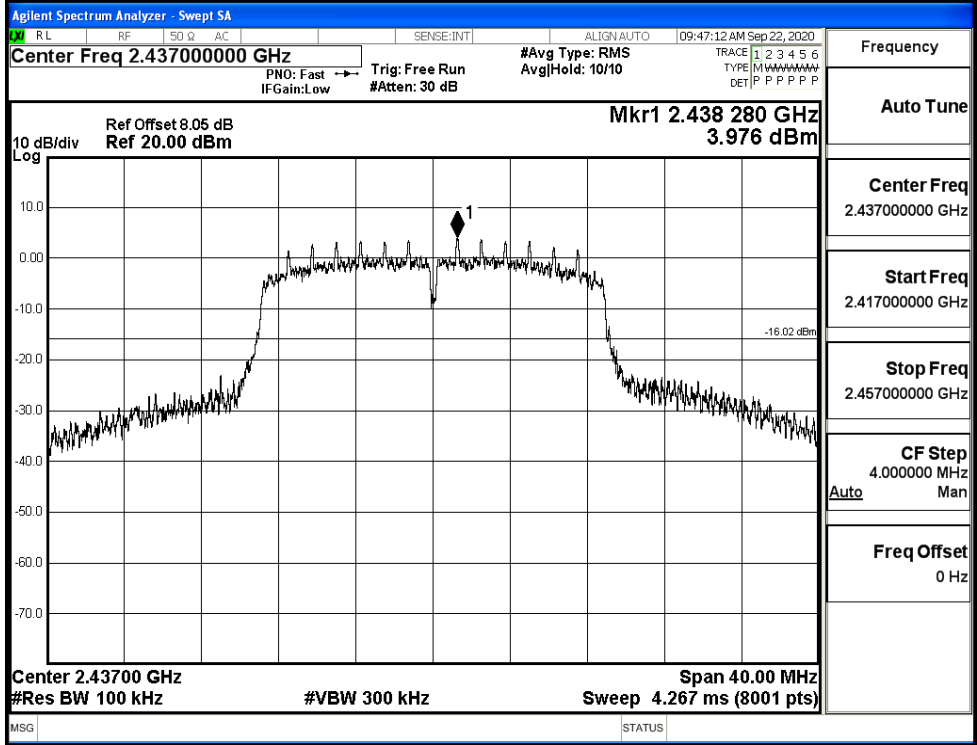


Puw/11N20
SISO/LCH

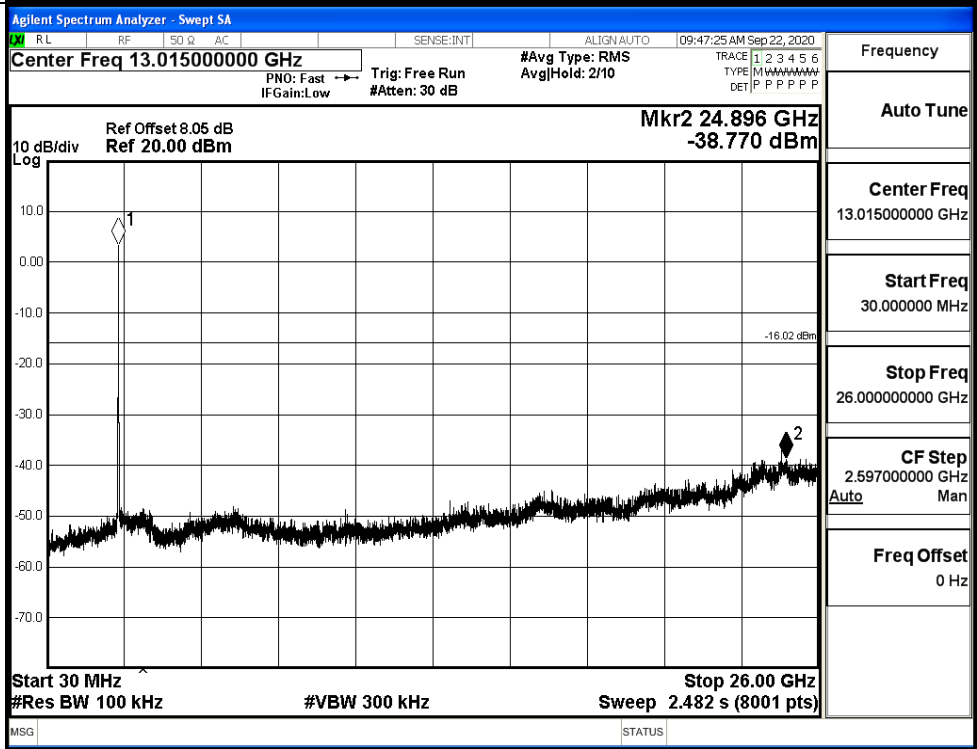


11N20SISO_MCH_Graphs

Pref/11N20
SISO/MCH

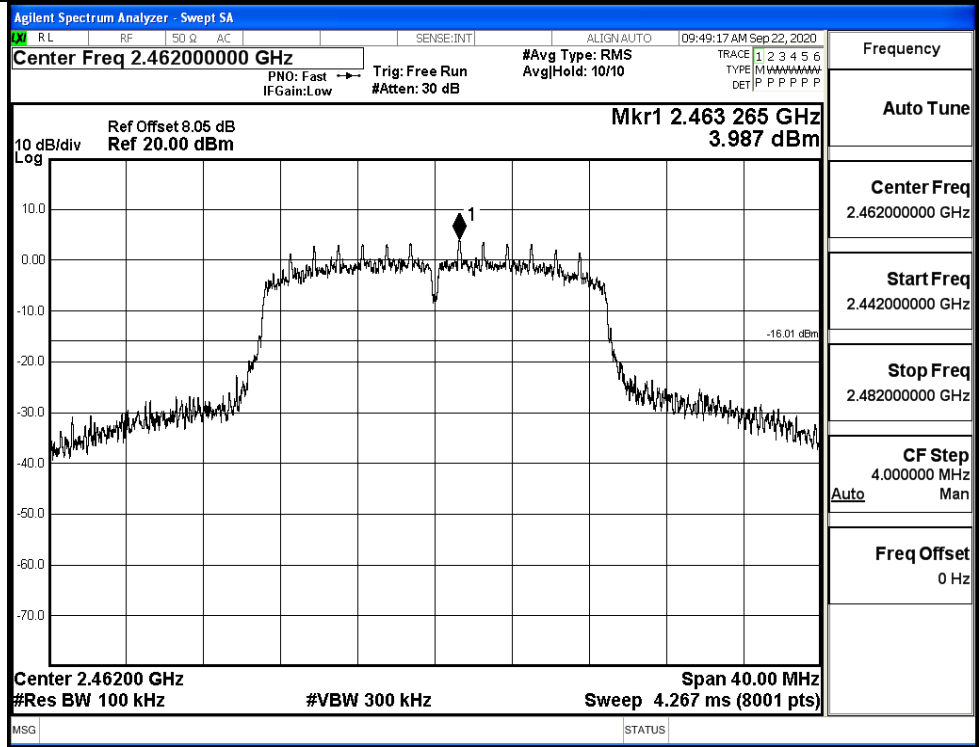


Puw/11N20
SISO/MCH

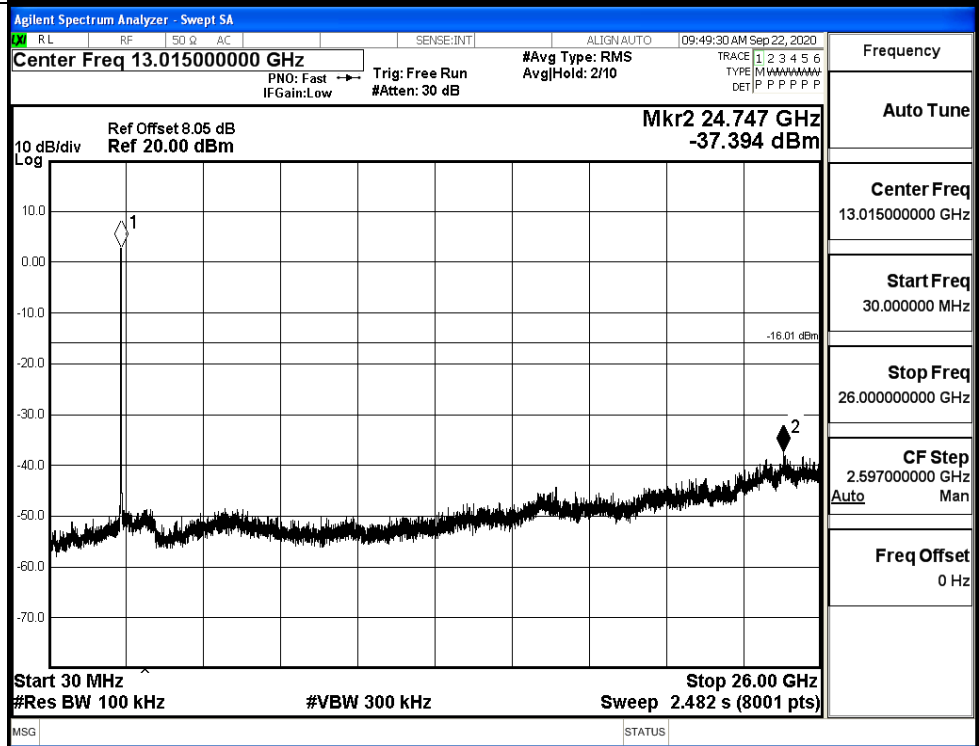


11N20SISO_HCH_Graphs

Pref/11N20
SISO/HCH

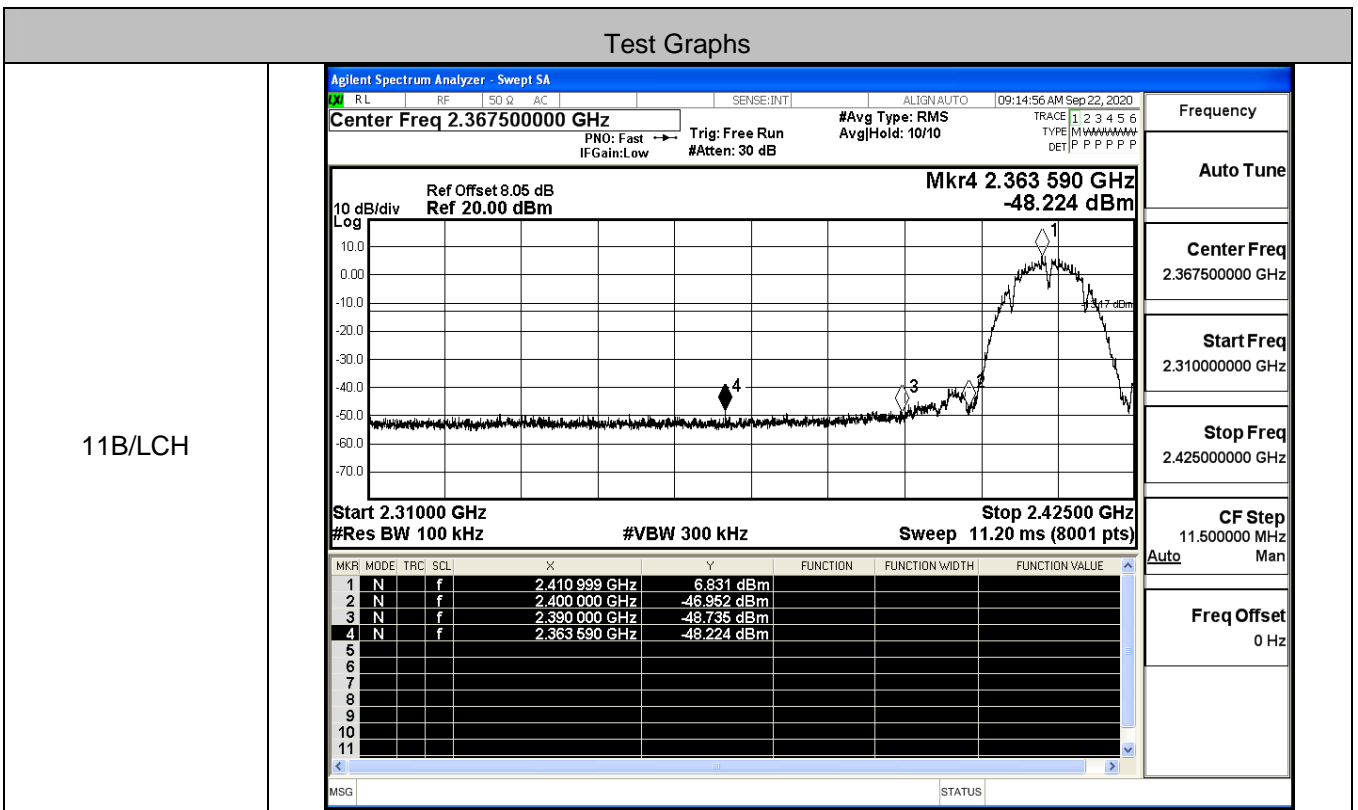


Puw/11N20
SISO/HCH

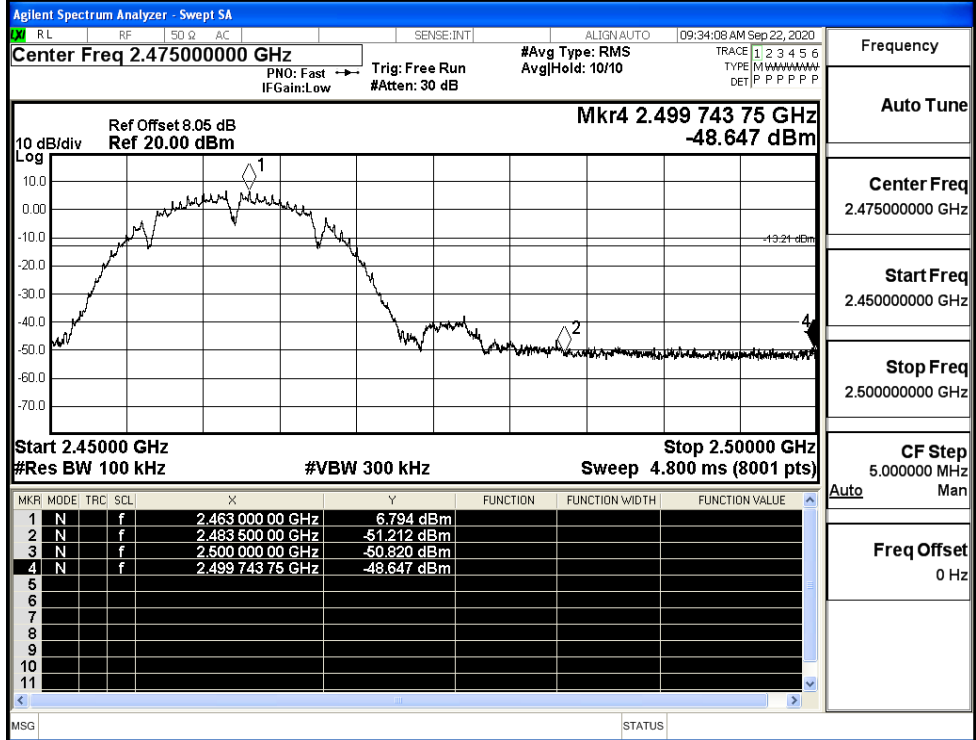


B.7 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	6.831	-48.224	-13.17	PASS
	HCH	6.794	-48.647	-13.21	PASS
11G	LCH	4.420	-39.004	-15.58	PASS
	HCH	4.079	-37.394	-15.92	PASS
11N20SISO	LCH	4.419	-36.850	-15.58	PASS
	HCH	4.086	-33.904	-15.91	PASS



11B/HCH



Frequency

Auto Tune

Center Freq
2.47500000 GHz

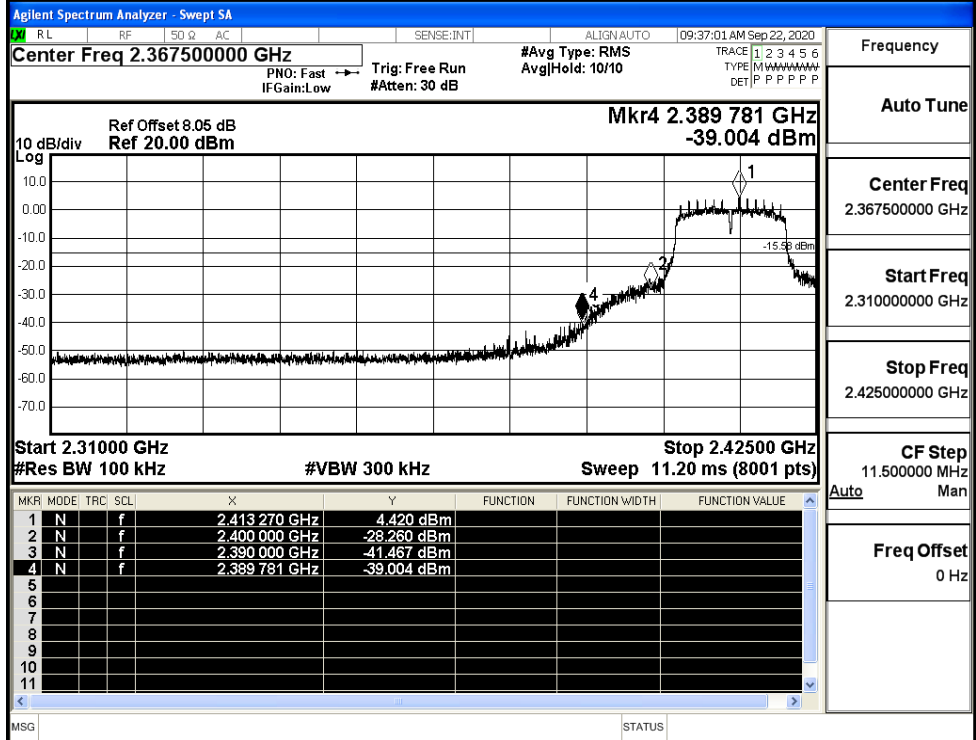
Start Freq
2.45000000 GHz

Stop Freq
2.50000000 GHz

CF Step
5.000000 MHz

Freq Offset
0 Hz

11G/LCH



Frequency

Auto Tune

Center Freq
2.36750000 GHz

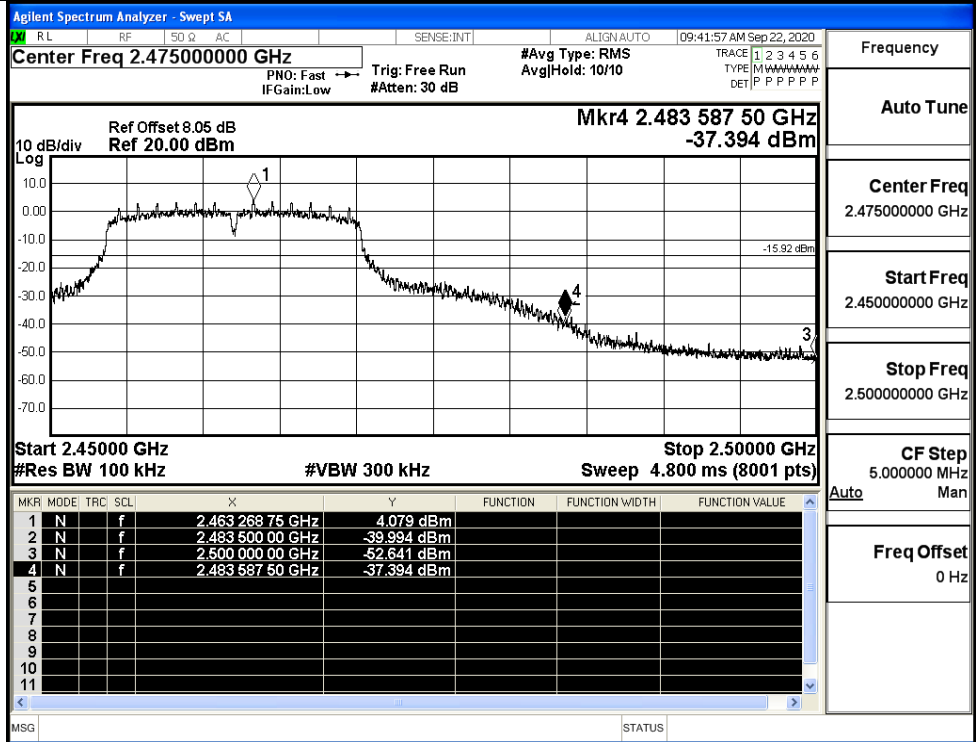
Start Freq
2.31000000 GHz

Stop Freq
2.42500000 GHz

CF Step
11.500000 MHz

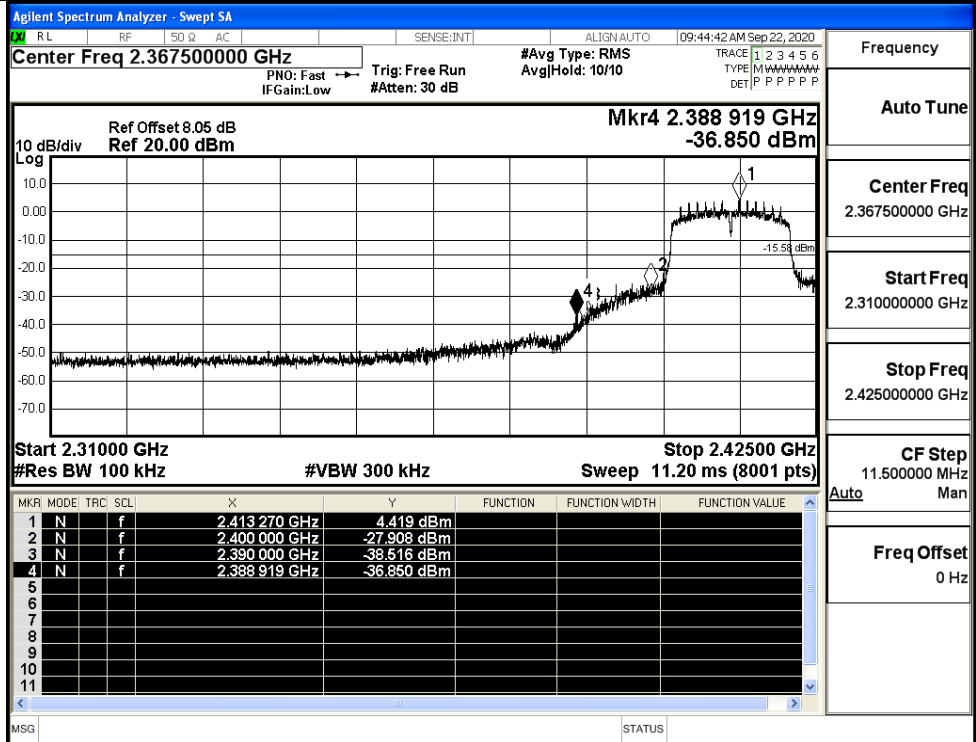
Freq Offset
0 Hz

11G/HCH



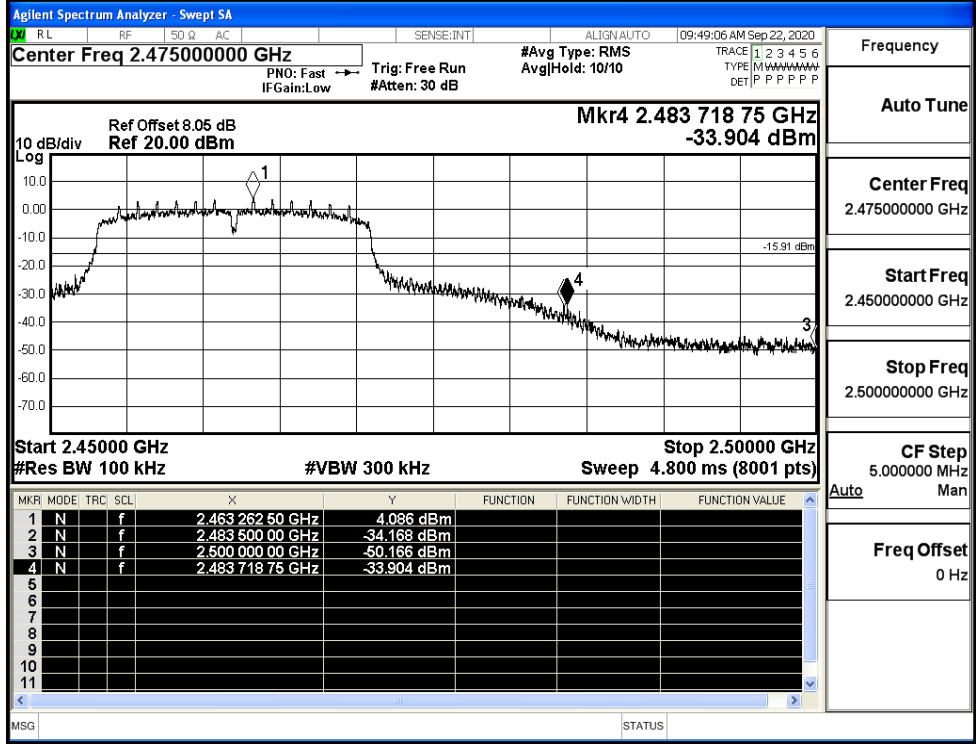
Frequency	2.47500000 GHz
Auto Tune	
Center Freq	2.47500000 GHz
Start Freq	2.45000000 GHz
Stop Freq	2.50000000 GHz
CF Step	5.000000 MHz
Freq Offset	0 Hz

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

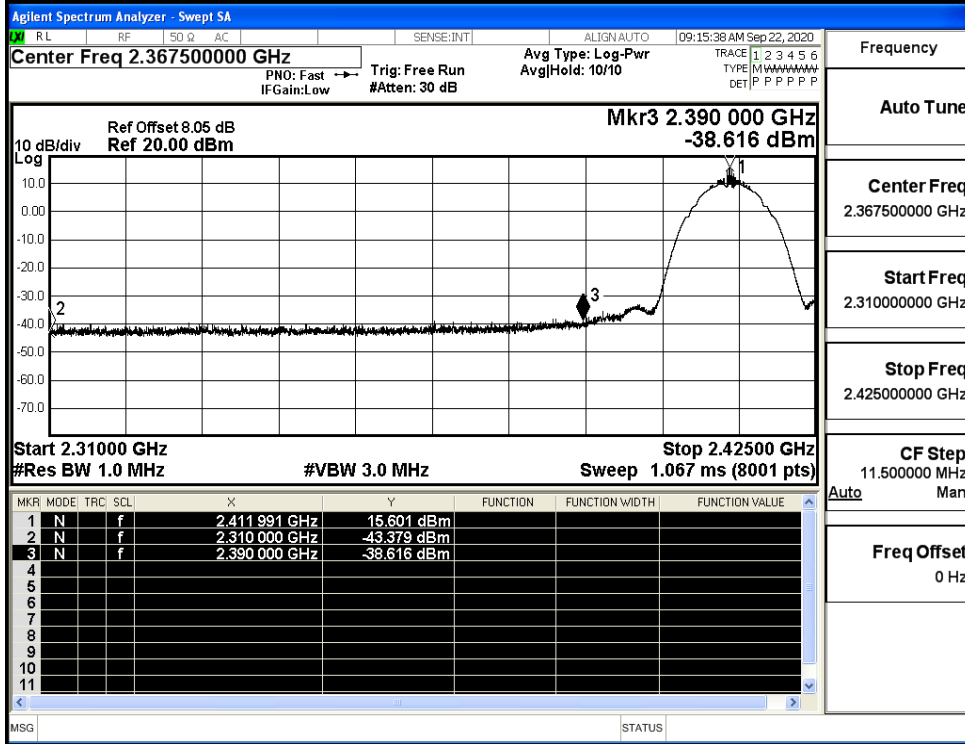
11N20SISO/HCH



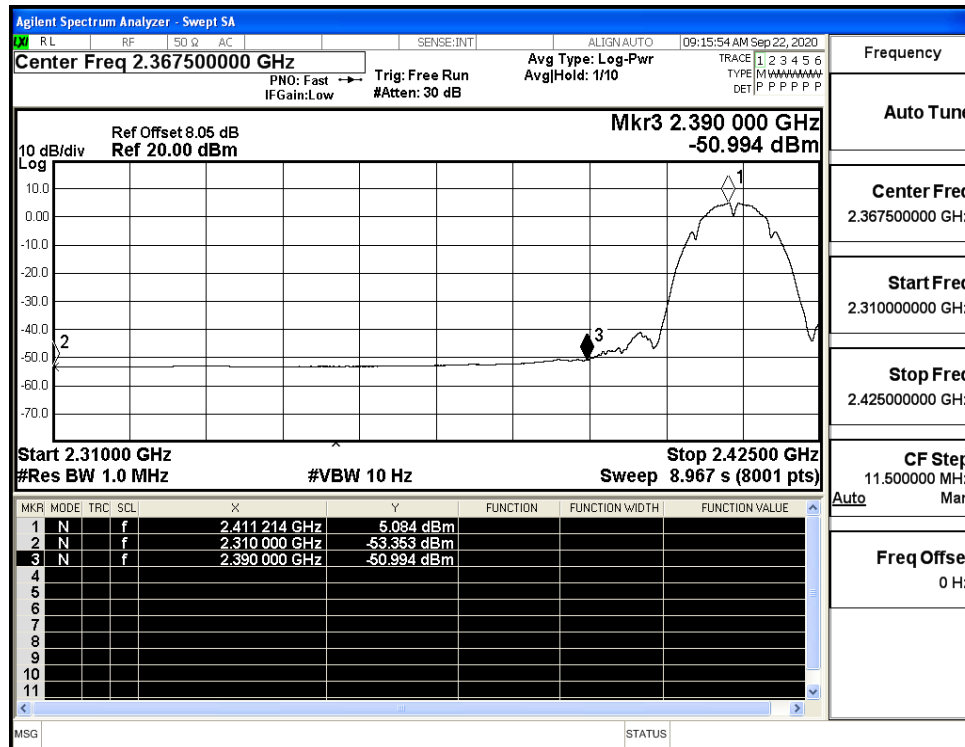
B.8 Restrict-band band-edge measurements

Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
11B	2412	Ant1	2310.0	-43.38	2.0	0	53.85	PEAK	74	PASS
	2412	Ant1	2310.0	-53.35	2.0	0	43.88	AV	54	PASS
	2412	Ant1	2390.0	-38.62	2.0	0	58.61	PEAK	74	PASS
	2412	Ant1	2390.0	-50.99	2.0	0	46.24	AV	54	PASS
	2462	Ant1	2483.5	-39.29	2.0	0	57.94	PEAK	74	PASS
	2462	Ant1	2483.5	-50.63	2.0	0	46.60	AV	54	PASS
	2462	Ant1	2500.0	-40.00	2.0	0	57.23	PEAK	74	PASS
	2462	Ant1	2500.0	-51.88	2.0	0	45.35	AV	54	PASS
11G	2412	Ant1	2310.0	-42.45	2.0	0	54.78	PEAK	74	PASS
	2412	Ant1	2310.0	-53.40	2.0	0	43.83	AV	54	PASS
	2412	Ant1	2390.0	-25.34	2.0	0	71.89	PEAK	74	PASS
	2412	Ant1	2390.0	-45.29	2.0	0	51.94	AV	54	PASS
	2462	Ant1	2483.5	-23.58	2.0	0	73.65	PEAK	74	PASS
	2462	Ant1	2483.5	-44.34	2.0	0	52.89	AV	54	PASS
	2462	Ant1	2500.0	-40.18	2.0	0	57.05	PEAK	74	PASS
	2462	Ant1	2500.0	-52.04	2.0	0	45.19	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-42.96	2.0	0	54.27	PEAK	74	PASS
	2412	Ant1	2310.0	-53.42	2.0	0	43.81	AV	54	PASS
	2412	Ant1	2390.0	-22.53	2.0	0	74.70	PEAK	74	PASS
	2412	Ant1	2390.0	-43.98	2.0	0	53.25	AV	54	PASS
	2462	Ant1	2483.5	-24.07	2.0	0	73.16	PEAK	74	PASS
	2462	Ant1	2483.5	-43.42	2.0	0	53.81	AV	54	PASS
	2462	Ant1	2500.0	-33.63	2.0	0	63.60	PEAK	74	PASS
	2462	Ant1	2500.0	-51.96	2.0	0	45.27	AV	54	PASS

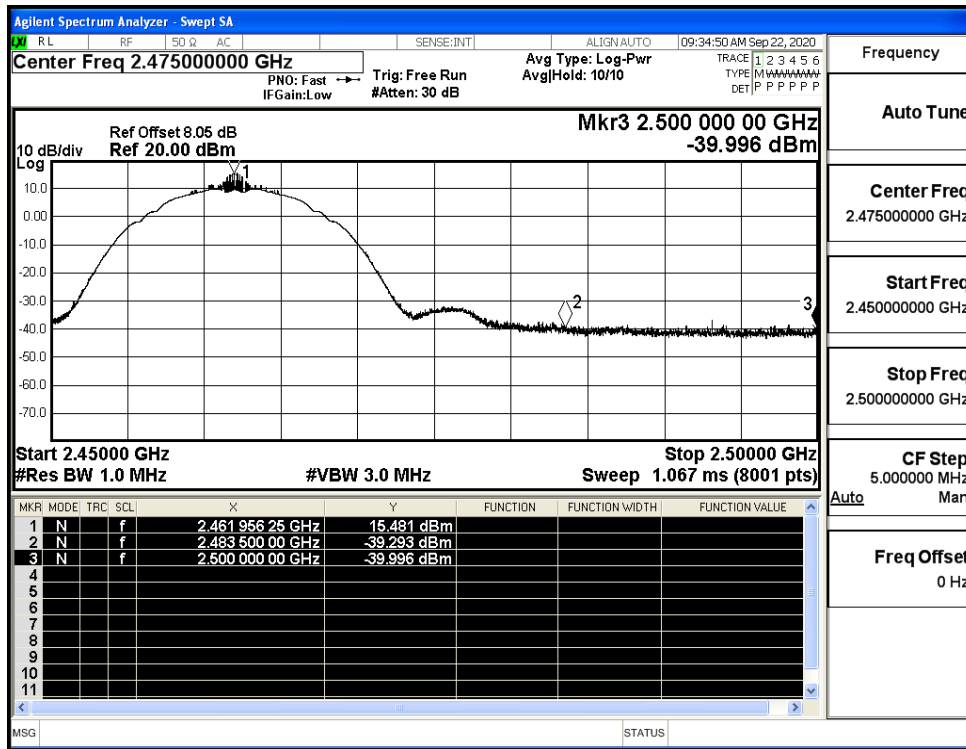
Restrict-band band-edge measurements_11B_2412_Ant1_PEAK



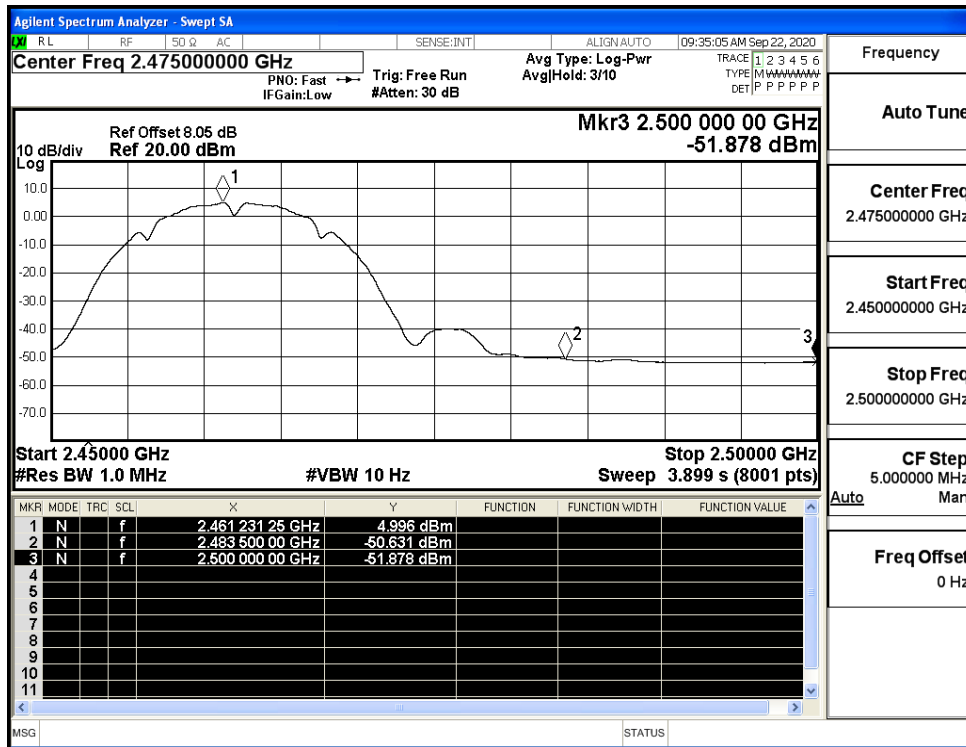
Restrict-band band-edge measurements_11B_2412_Ant1_AV



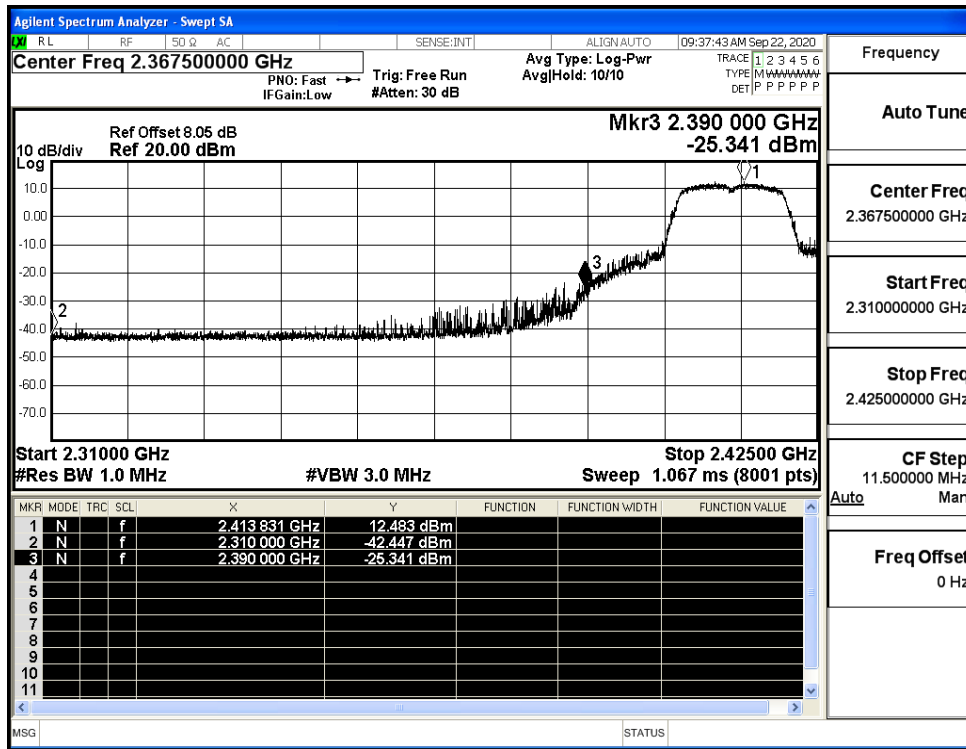
Restrict-band band-edge measurements_11B_2462_Ant1_PEAK



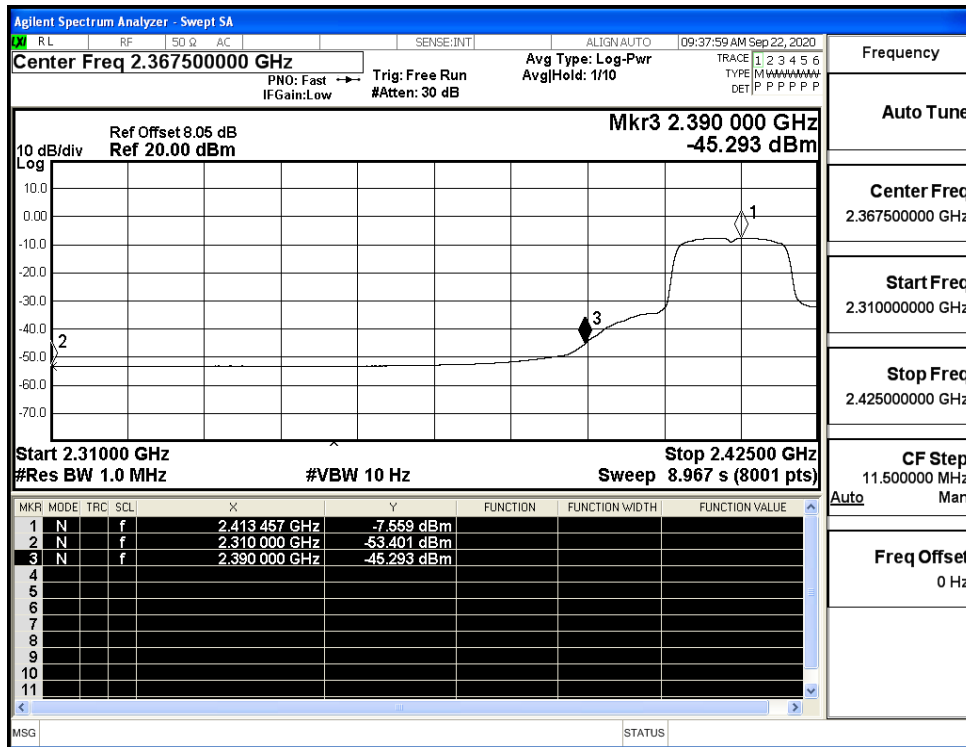
Restrict-band band-edge measurements_11B_2462_Ant1_AV



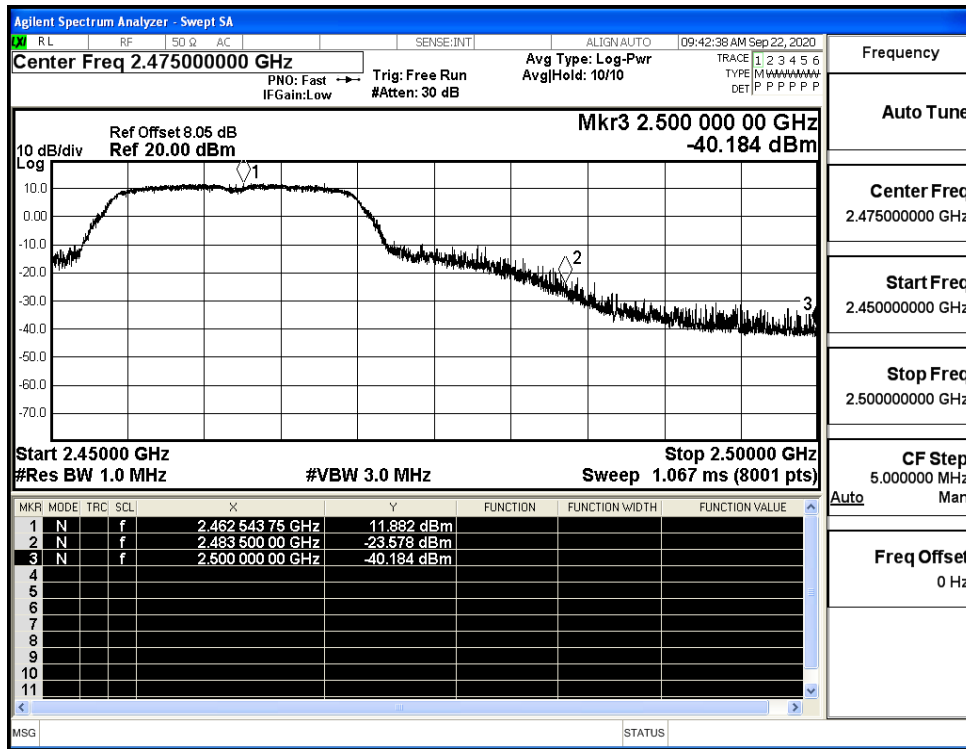
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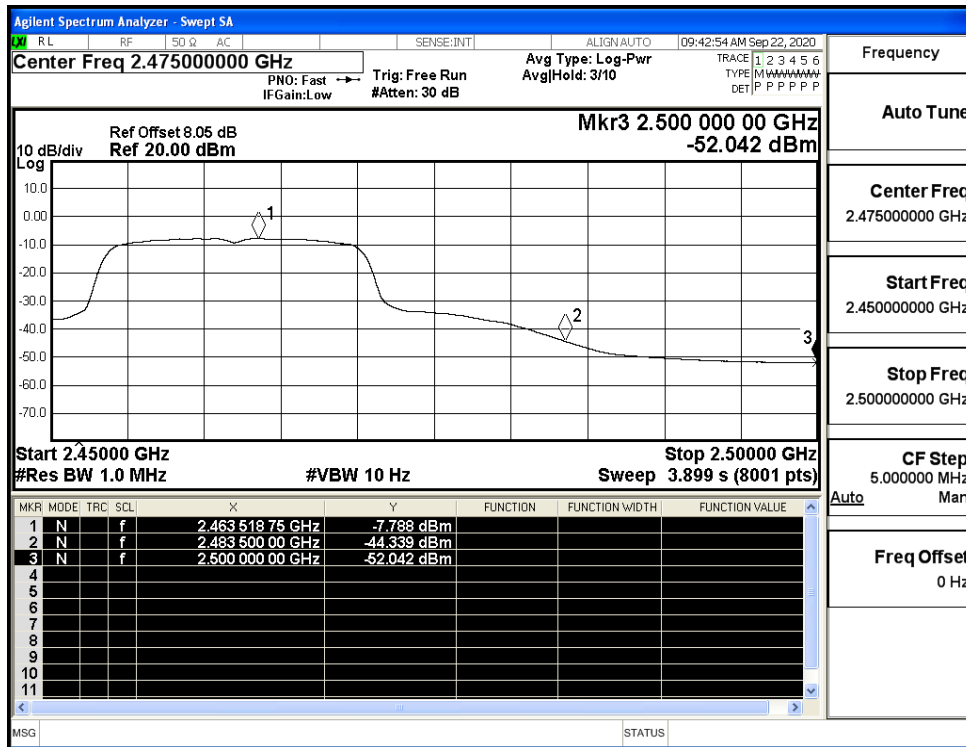
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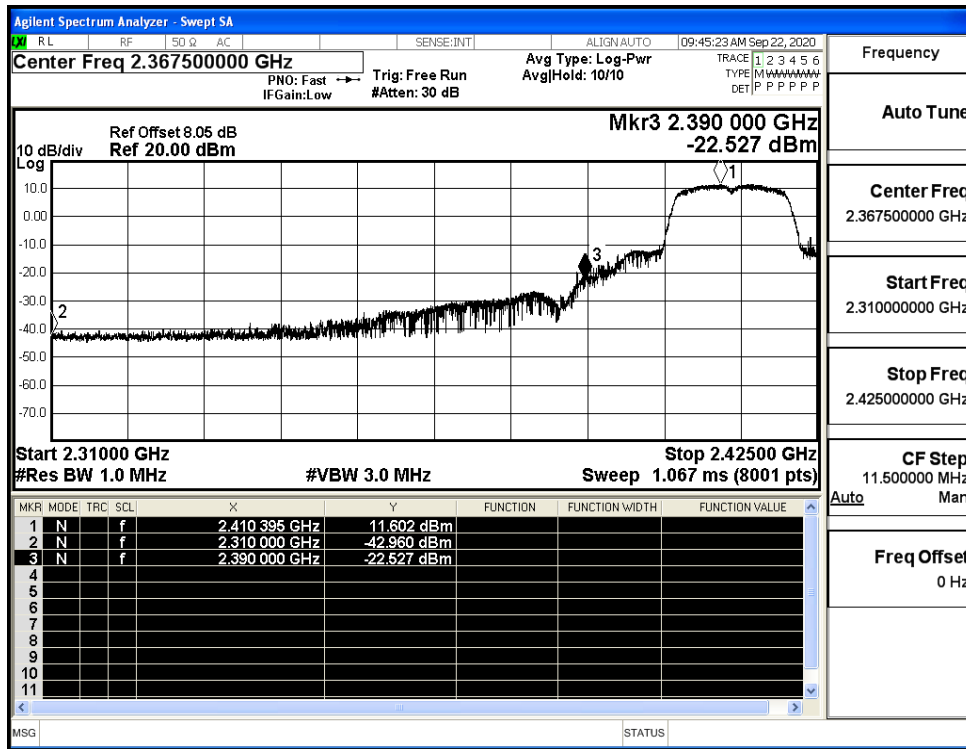
Restrict-band band-edge measurements_11G_2462_Ant1_PEAK



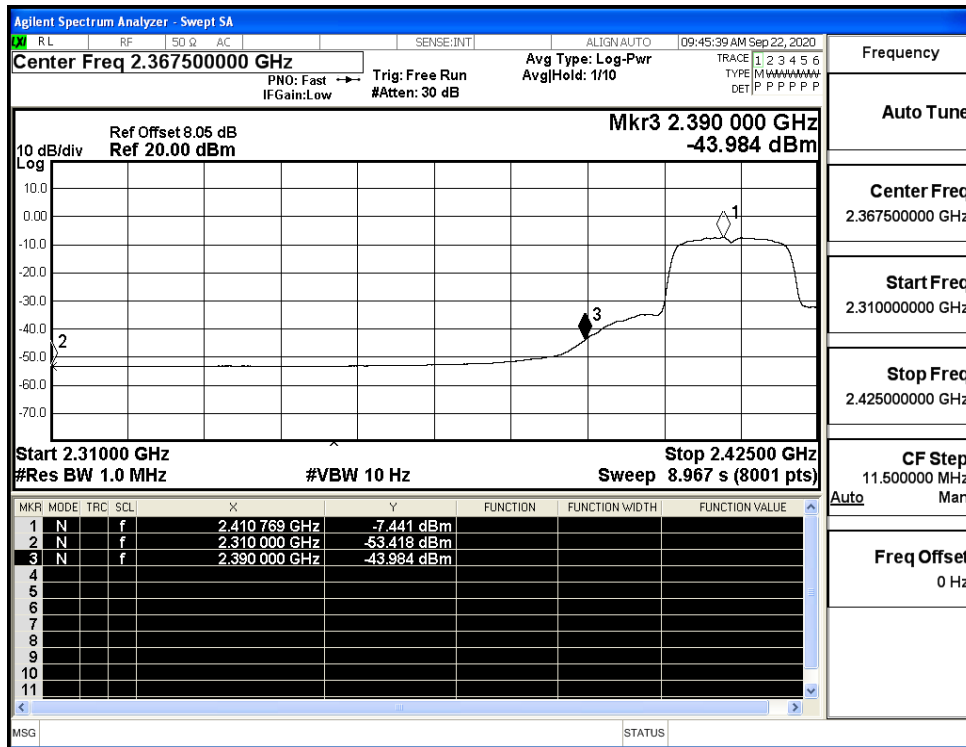
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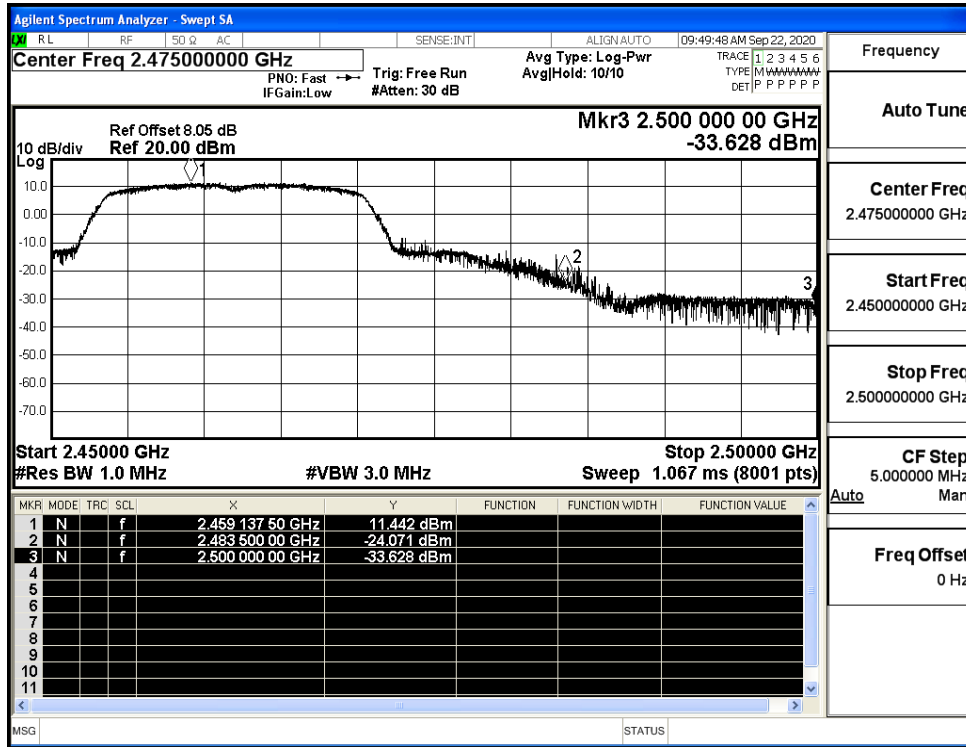
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Restrict-band band-edge measurements_11N20SISO_2412_Ant1_AV



Restrict-band band-edge measurements_11N20SISO_2462_Ant1_PEAK



Restrict-band band-edge measurements_11N20SISO_2462_Ant1_AV

