

Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Smart Plug

Trade Mark: N/A

Test Model: PMA1002T

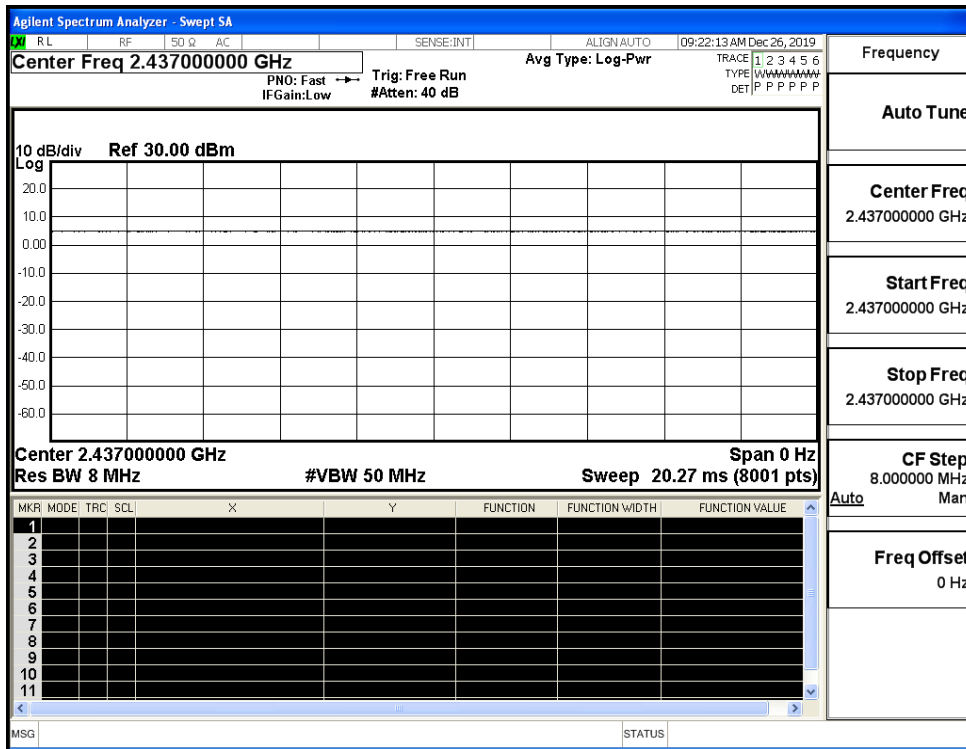
Environmental Conditions

Temperature:	22.5 ° C
Relative Humidity:	53.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Zhuo Zhuo
Supervised by:	WANG CHUANG

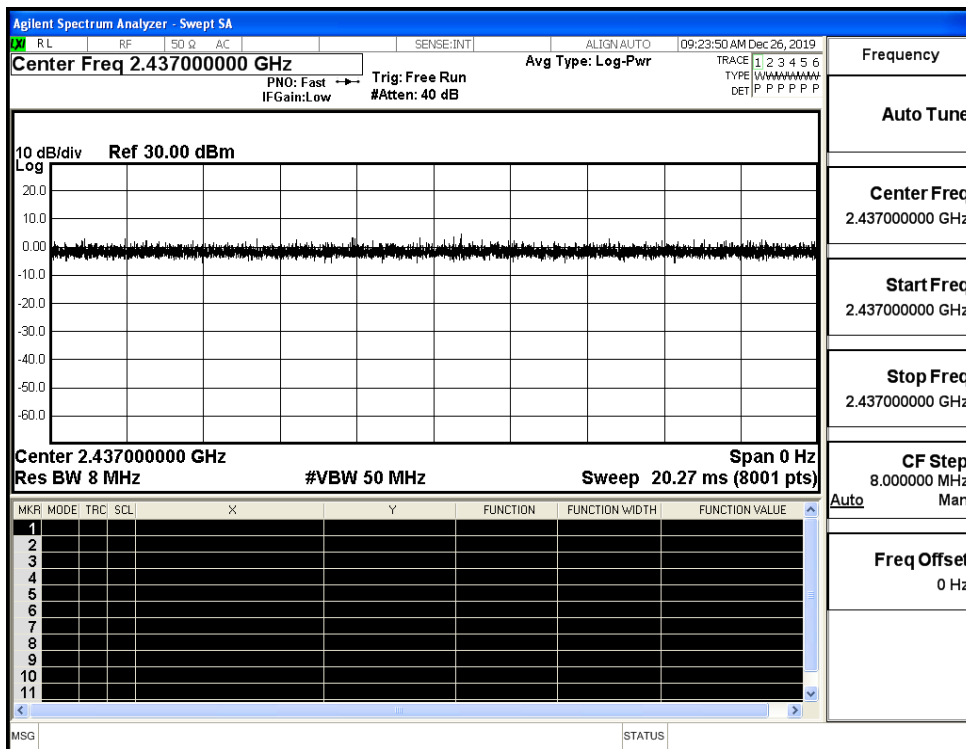
A.1 Duty Cycle

Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
11B	2437	Ant1	100	PASS
11G	2437	Ant1	100	PASS
11N20SISO	2437	Ant1	100	PASS
11N40SISO	2437	Ant1	100	PASS

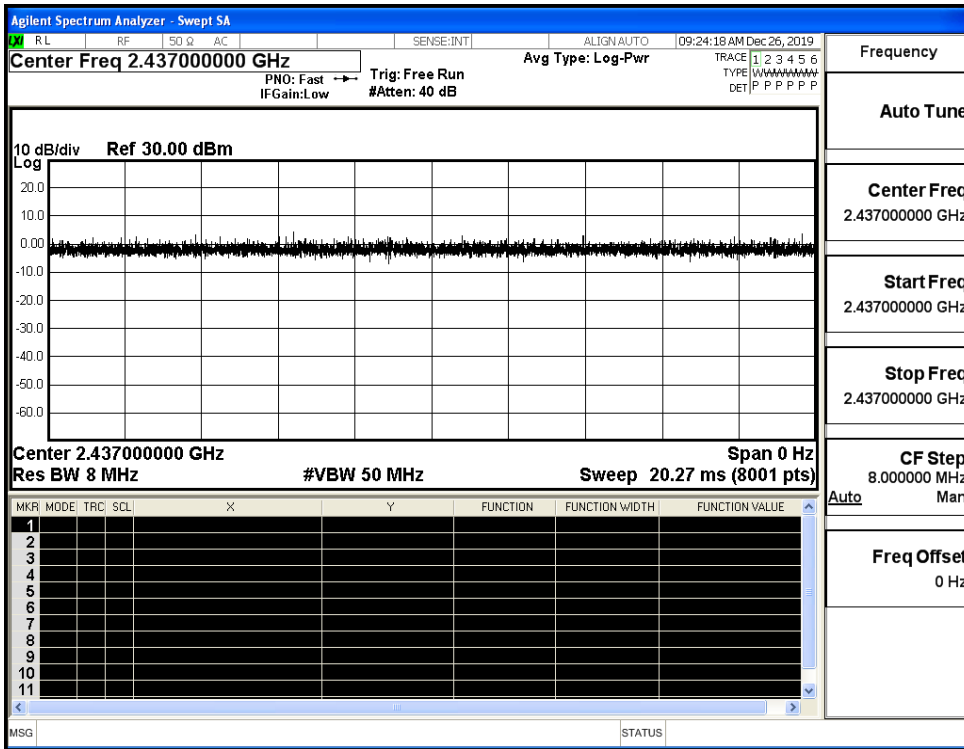
Duty Cycle_11B_2437_Ant1



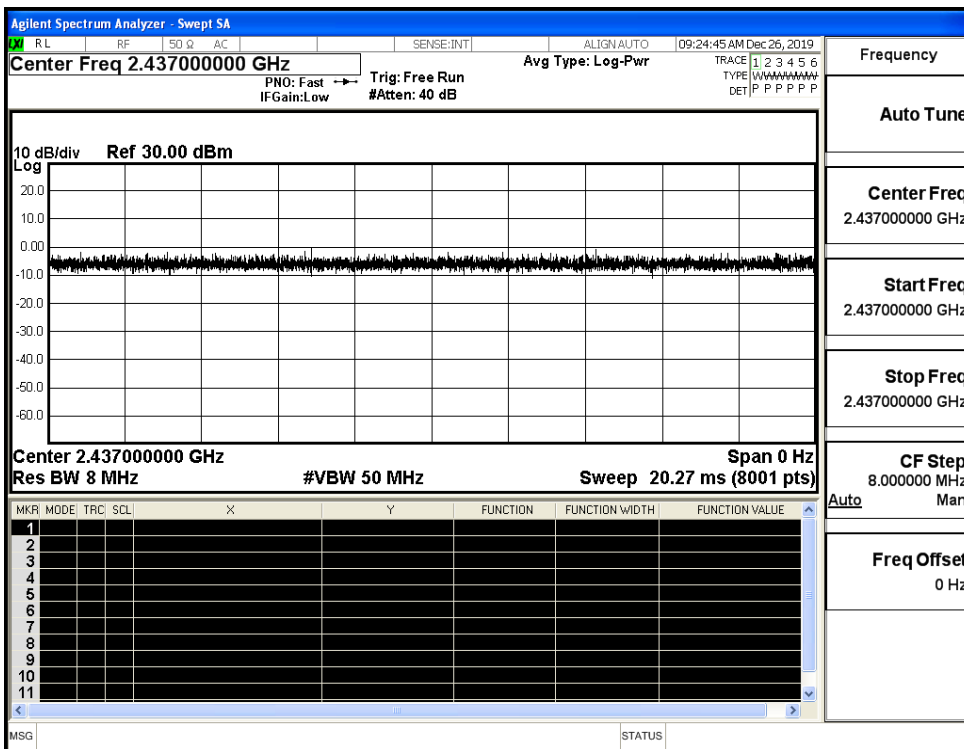
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



Duty Cycle_11N40SISO_2437_Ant1



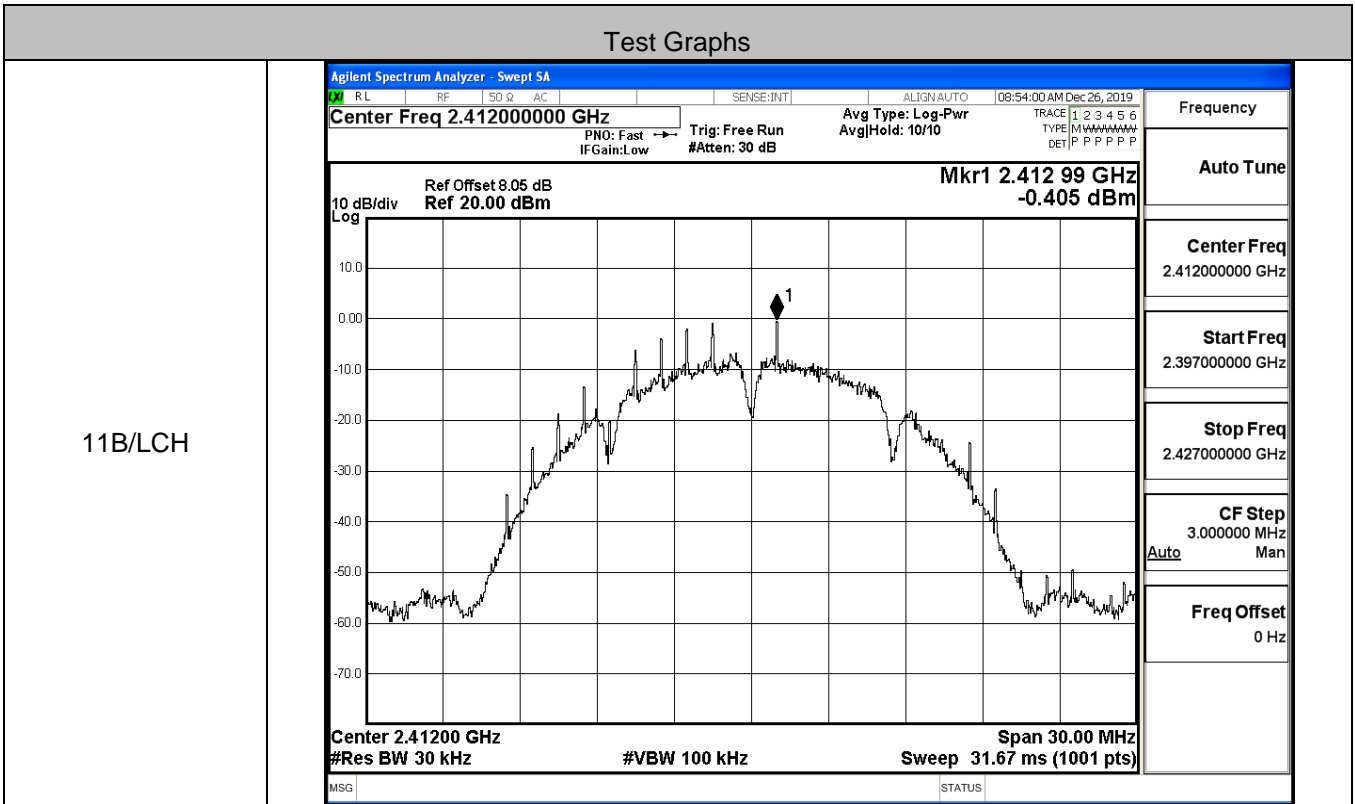
A.2 Maximum Conducted Output Power

Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	10.47	30	PASS
	MCH	10.24	30	PASS
	HCH	10.74	30	PASS
11G	LCH	12.51	30	PASS
	MCH	12.41	30	PASS
	HCH	12.78	30	PASS
11N20SISO	LCH	12.41	30	PASS
	MCH	12.36	30	PASS
	HCH	12.65	30	PASS
11N40SISO	LCH	11.56	30	PASS
	MCH	11.75	30	PASS
	HCH	11.88	30	PASS

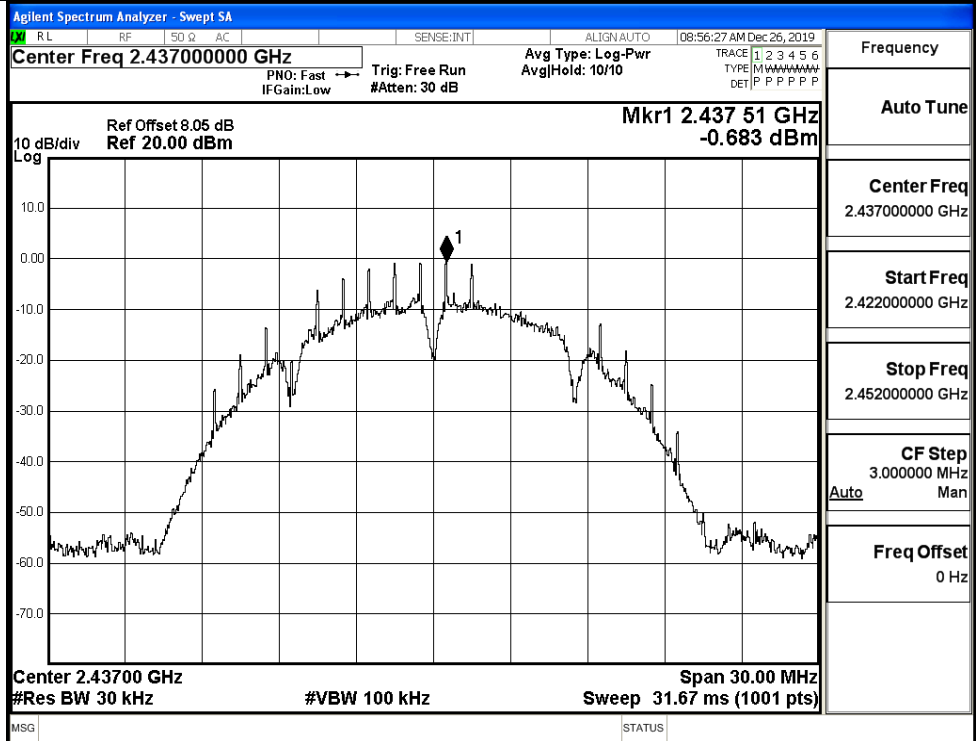
A.3 Maximum Power Spectral Density

Mode	Channel	Meas.Level [dBm/30KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-0.405	8	PASS
	MCH	-0.683	8	PASS
	HCH	-1.700	8	PASS
11G	LCH	-11.521	8	PASS
	MCH	-11.562	8	PASS
	HCH	-11.146	8	PASS
11N20SISO	LCH	-11.062	8	PASS
	MCH	-10.688	8	PASS
	HCH	-11.211	8	PASS
11N40SISO	LCH	-15.935	8	PASS
	MCH	-14.770	8	PASS
	HCH	-14.795	8	PASS

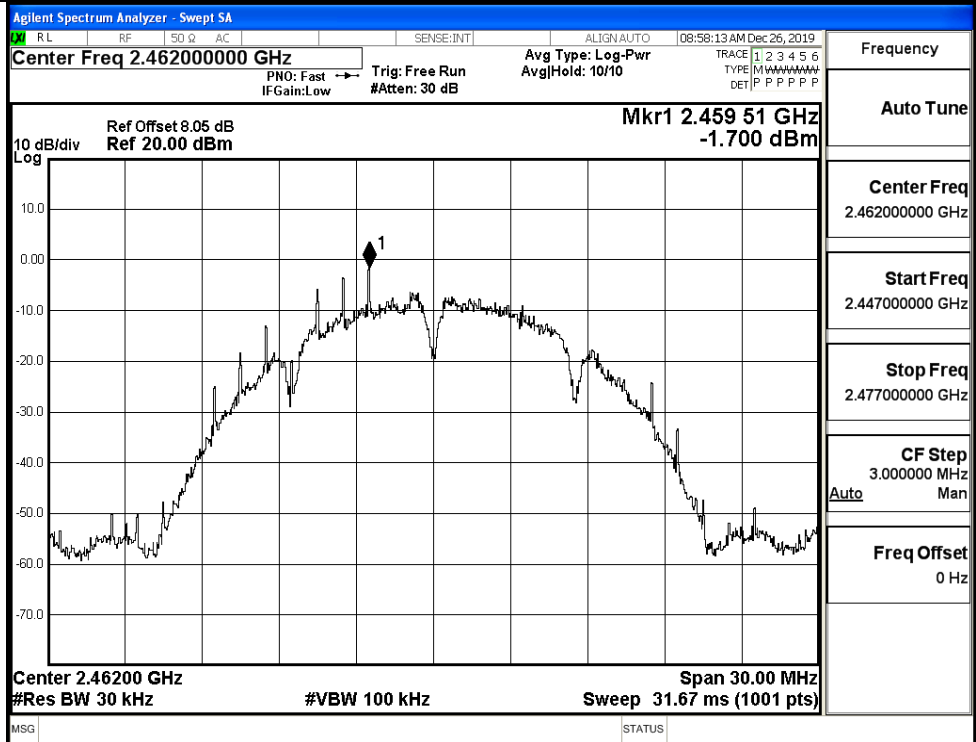
Test Graphs



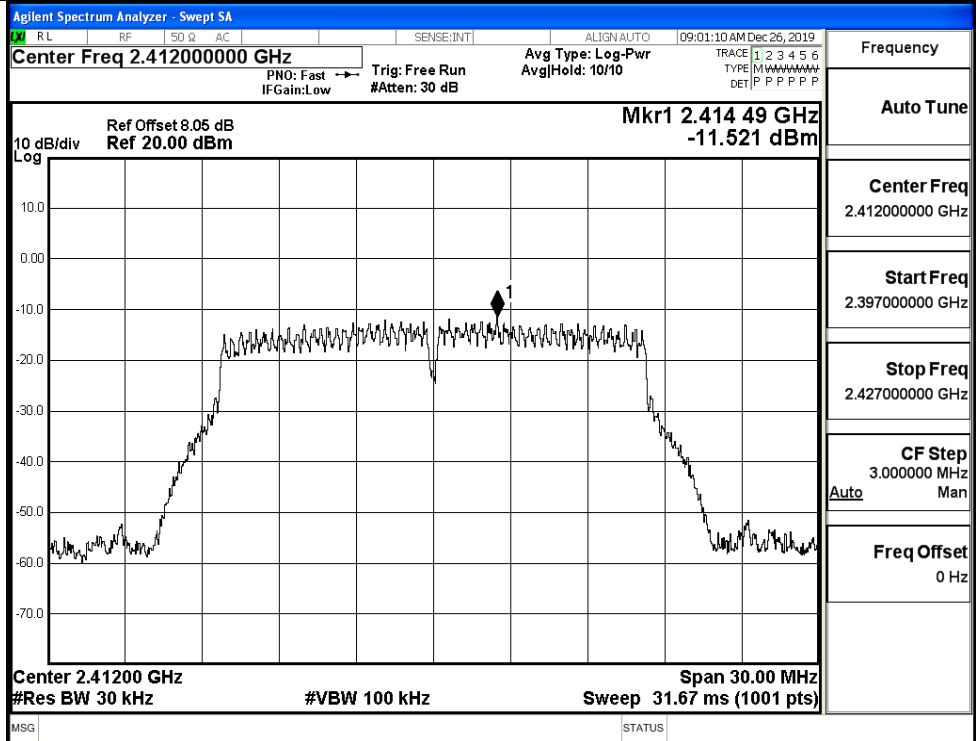
11B/MCH



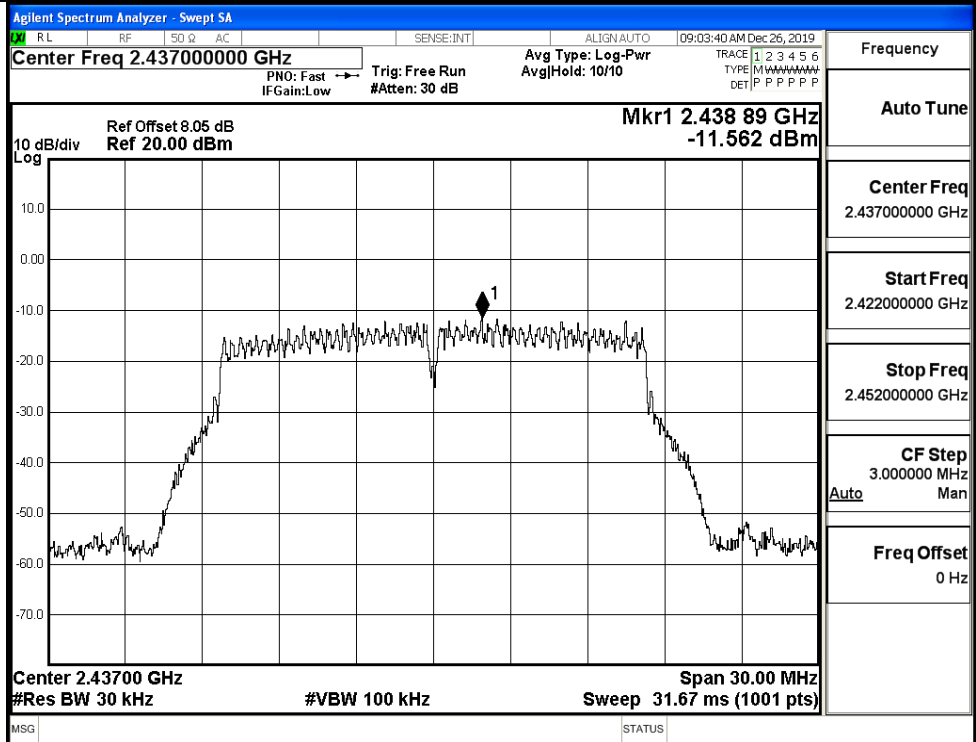
11B/HCH



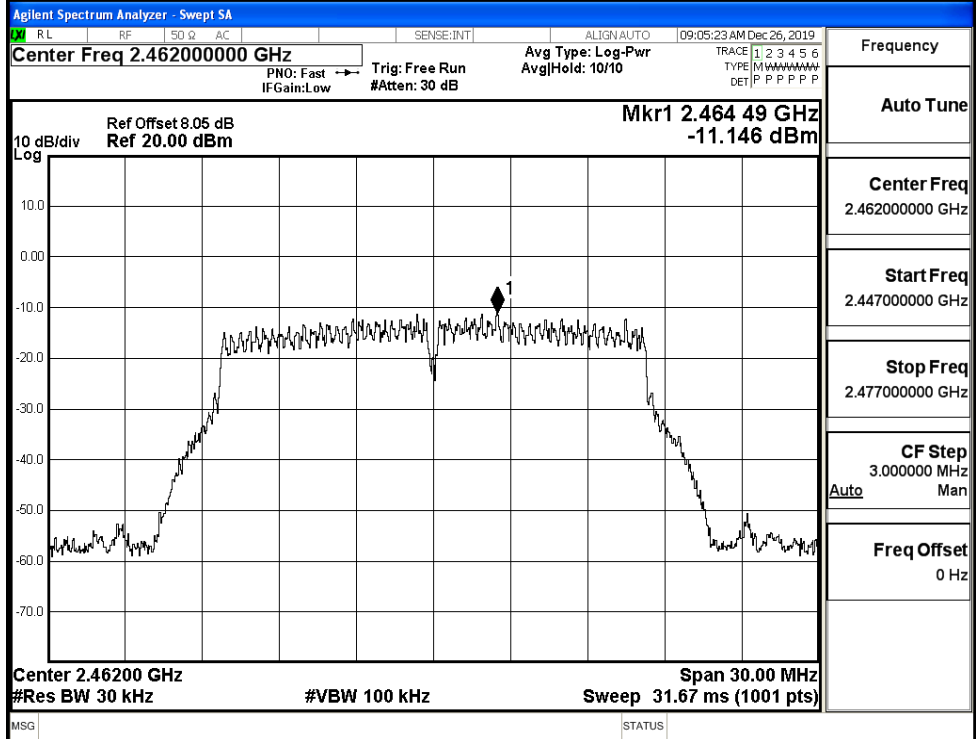
11G/LCH



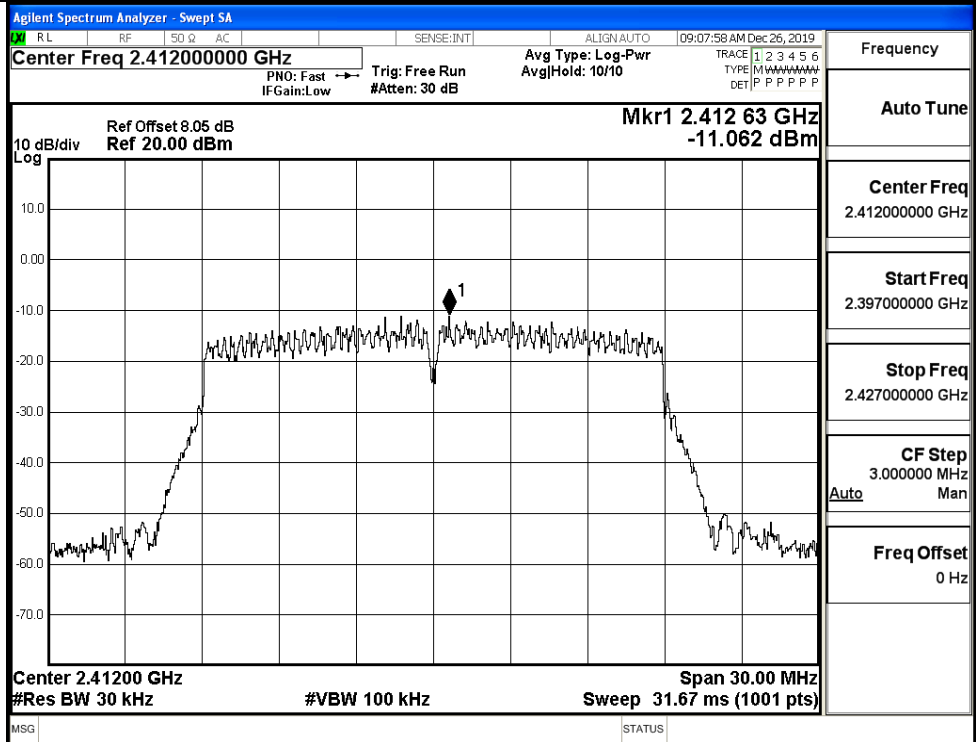
11G/MCH



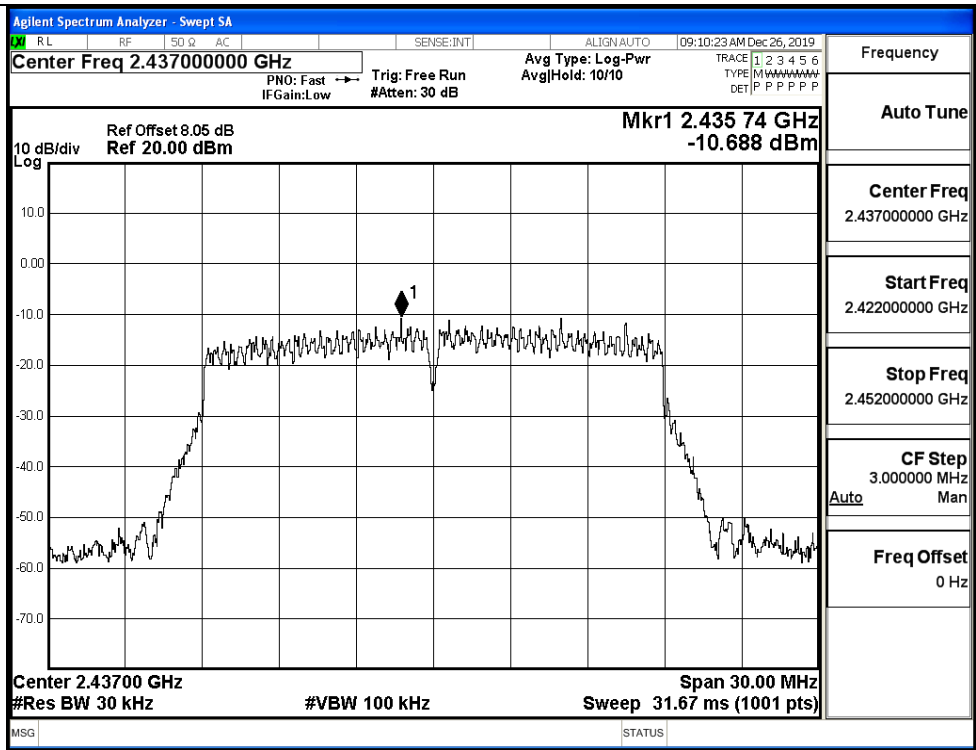
11G/HCH



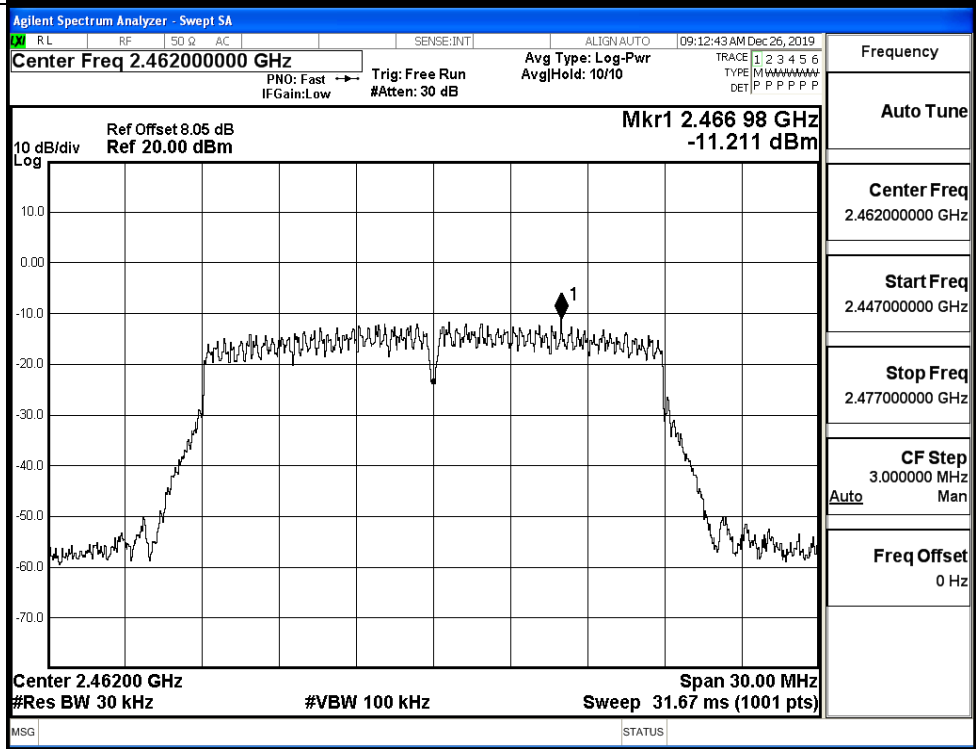
11N20SISO/LCH



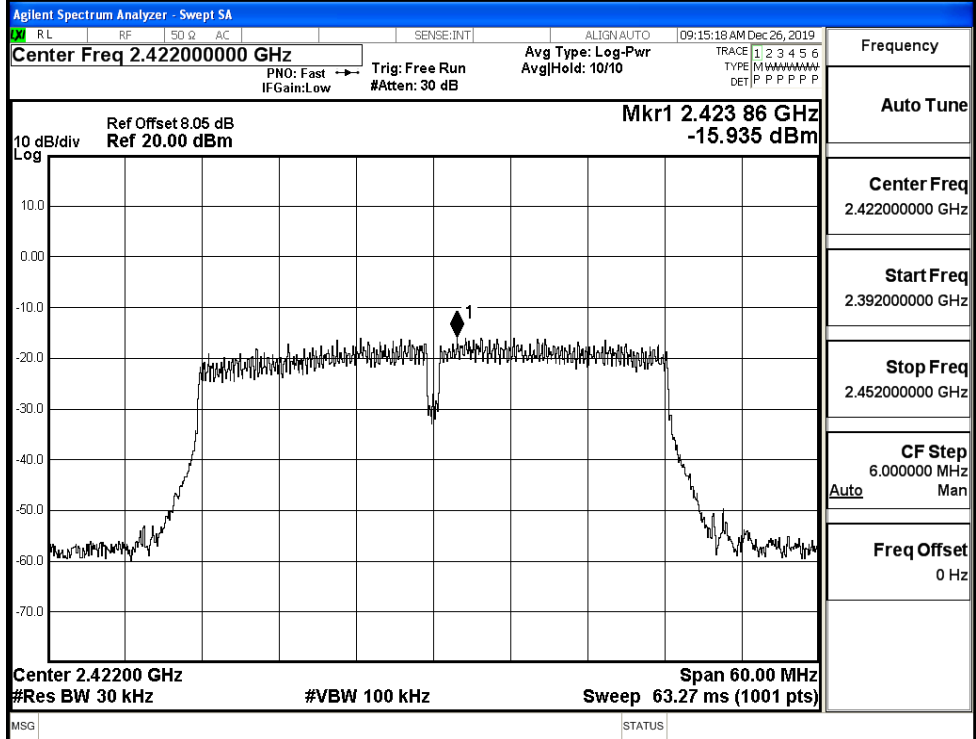
11N20SISO/MCH



11N20SISO/HCH

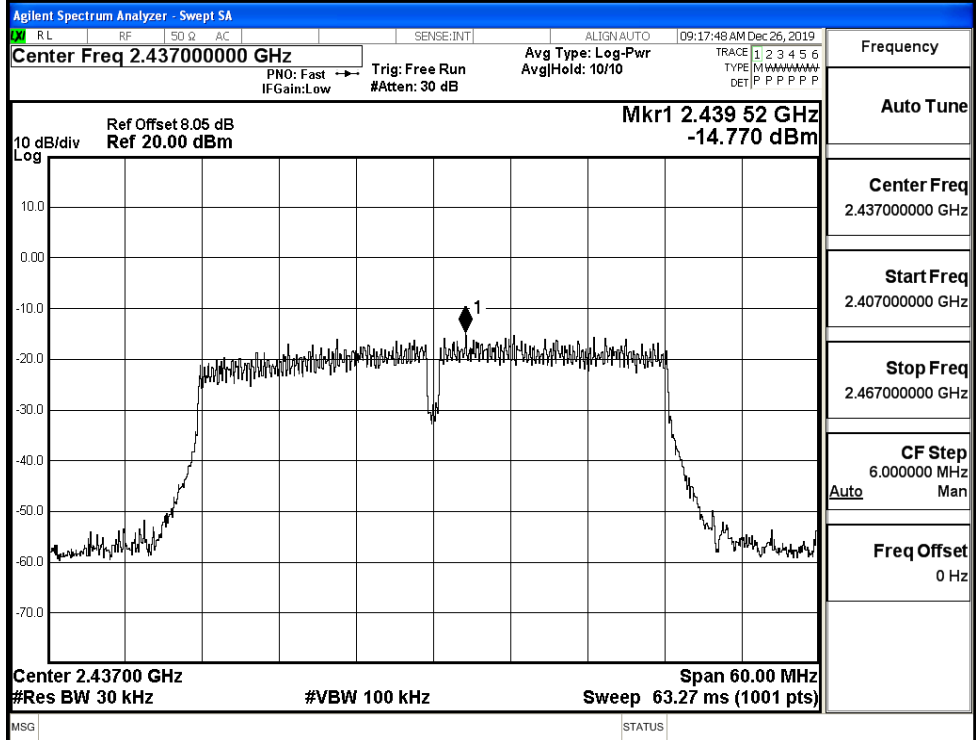


11N40SISO/LCH



Frequency	2.42200000 GHz
Auto Tune	
Center Freq	2.42200000 GHz
Start Freq	2.39200000 GHz
Stop Freq	2.45200000 GHz
CF Step	6.000000 MHz Auto Man
Freq Offset	0 Hz

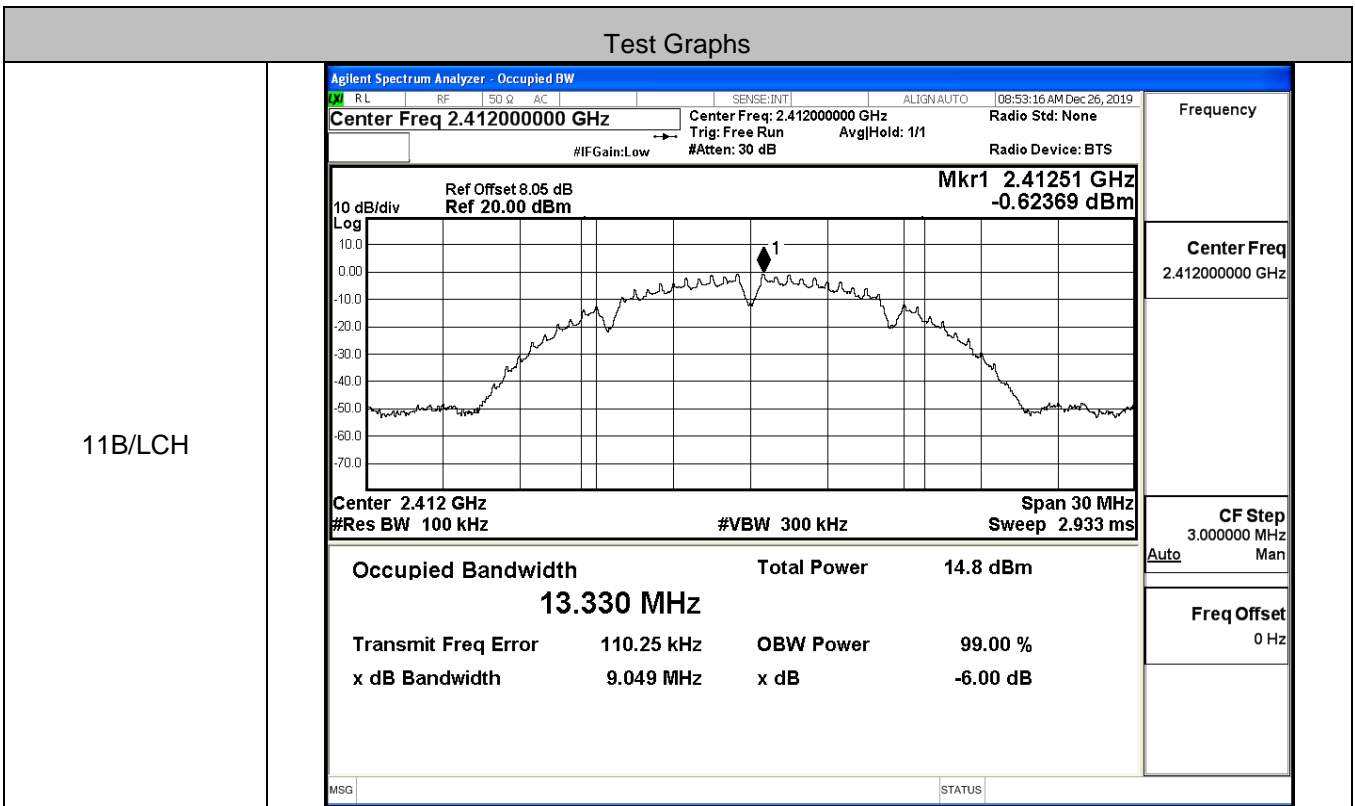
11N40SISO/MCH



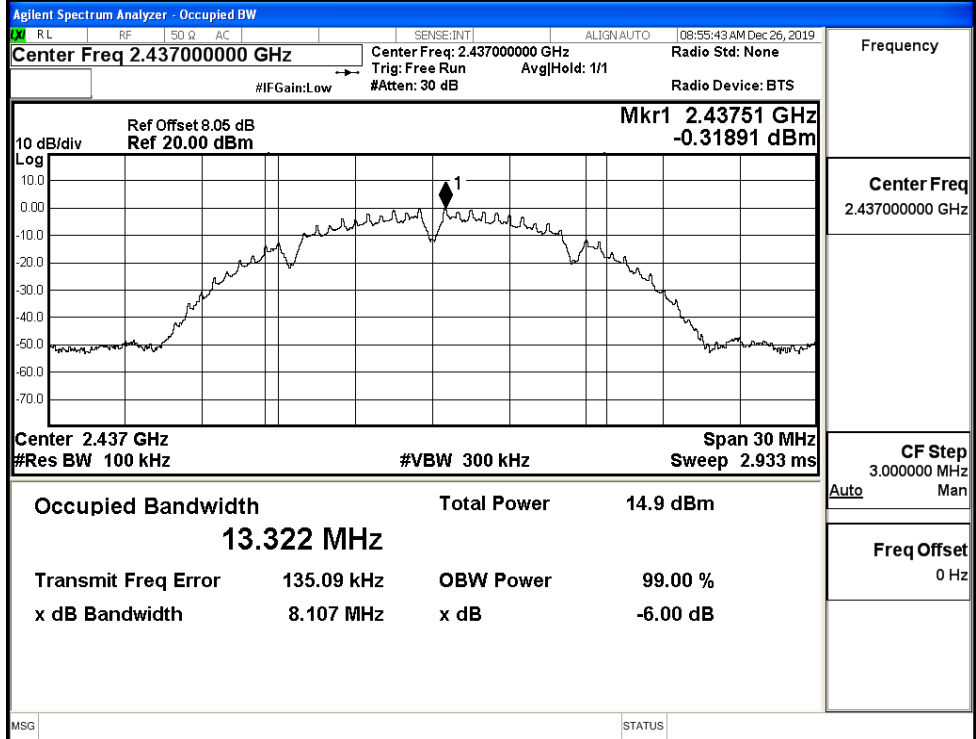
Frequency	2.43700000 GHz
Auto Tune	
Center Freq	2.43700000 GHz
Start Freq	2.40700000 GHz
Stop Freq	2.46700000 GHz
CF Step	6.000000 MHz Auto Man
Freq Offset	0 Hz

A.4 6dB Bandwidth

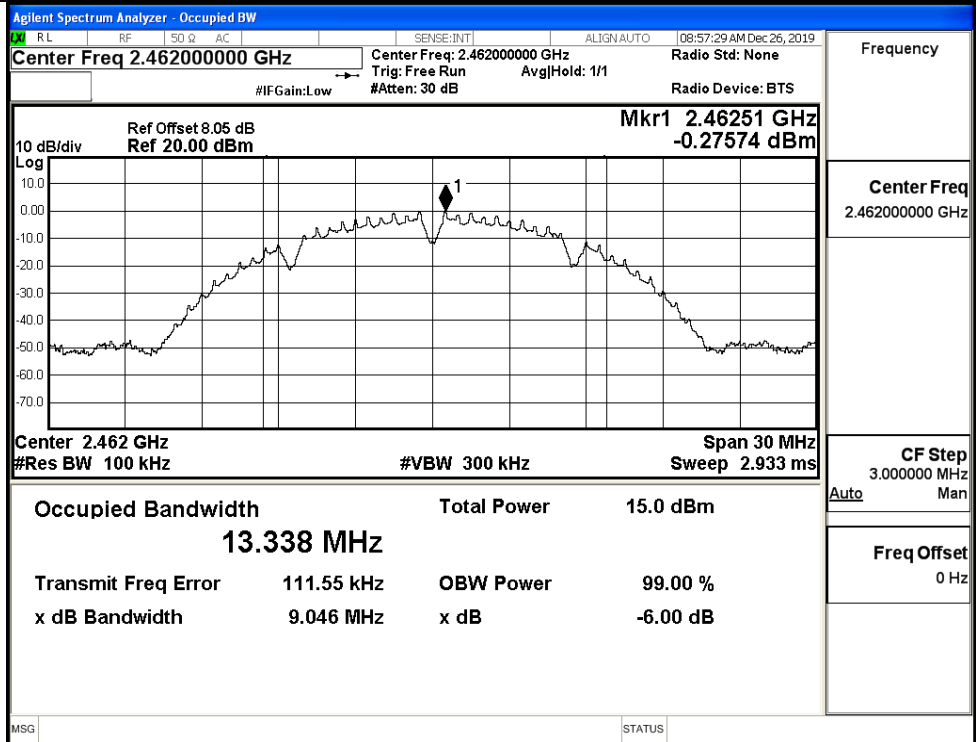
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	9.049	≥0.5	PASS
	MCH	8.107	≥0.5	PASS
	HCH	9.046	≥0.5	PASS
11G	LCH	15.91	≥0.5	PASS
	MCH	15.51	≥0.5	PASS
	HCH	15.69	≥0.5	PASS
11N20SISO	LCH	16.00	≥0.5	PASS
	MCH	16.02	≥0.5	PASS
	HCH	15.97	≥0.5	PASS
11N40SISO	LCH	35.47	≥0.5	PASS
	MCH	35.72	≥0.5	PASS
	HCH	35.18	≥0.5	PASS



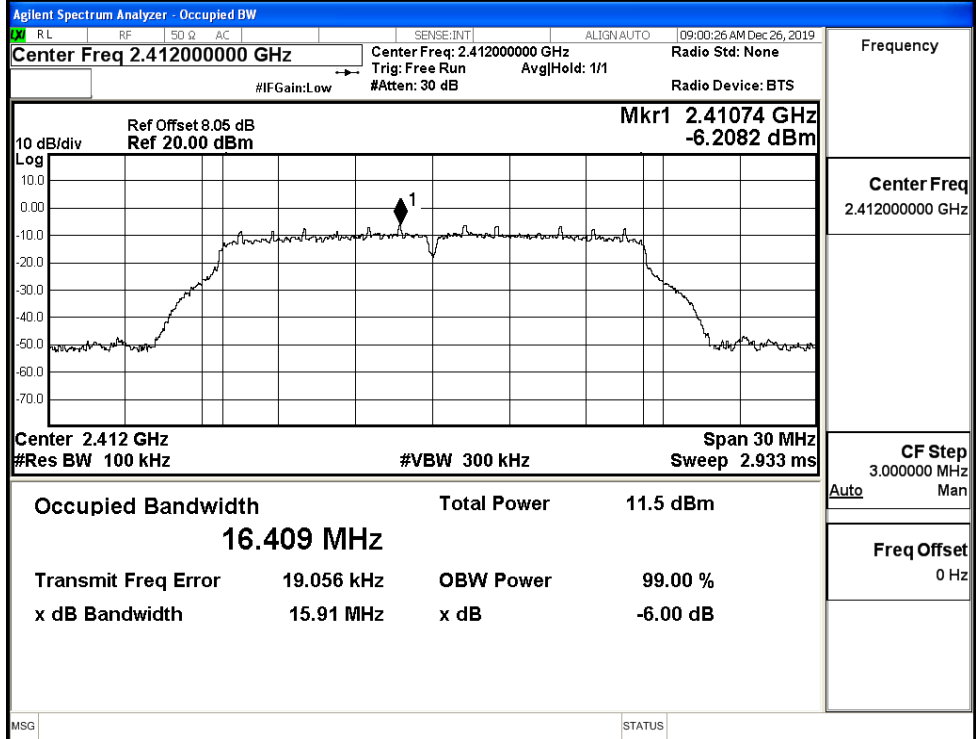
11B/MCH



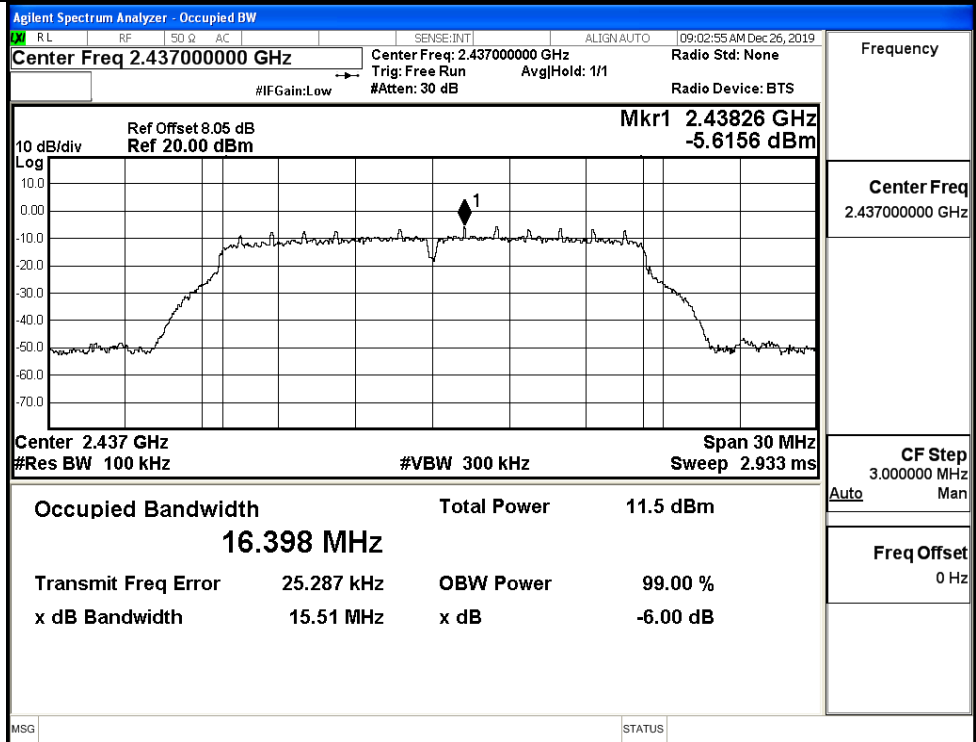
11B/HCH



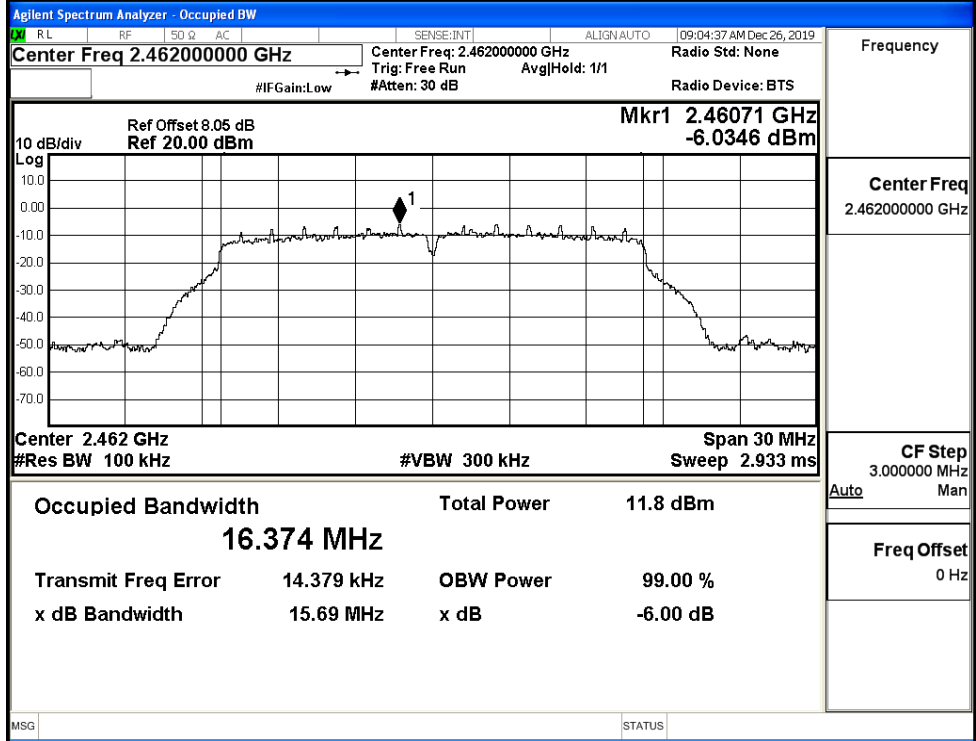
11G/LCH



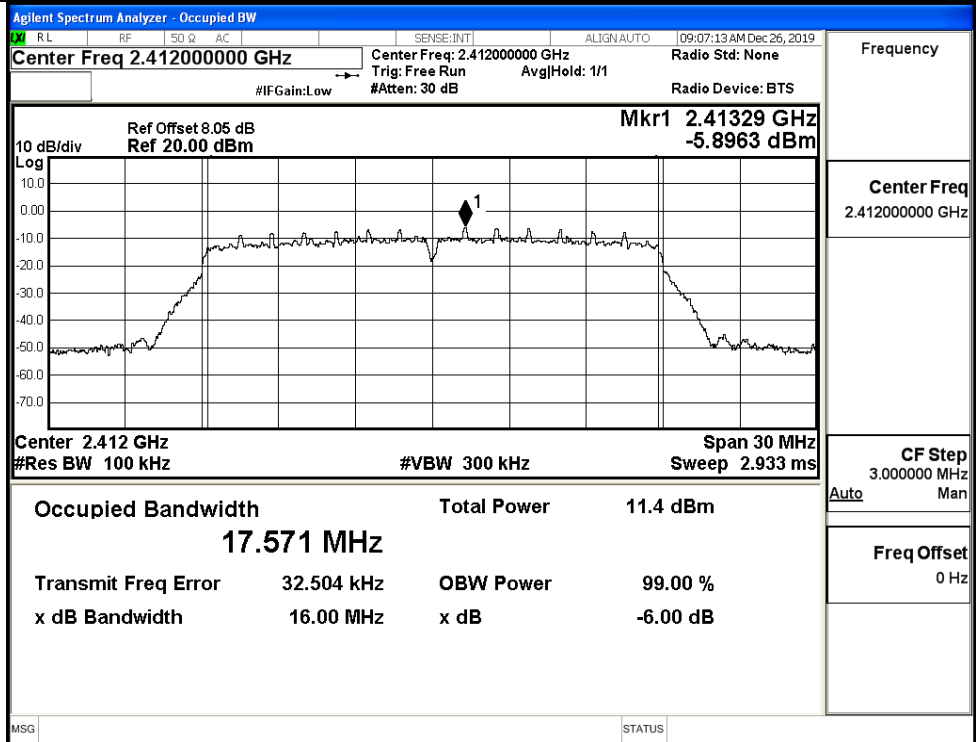
11G/MCH



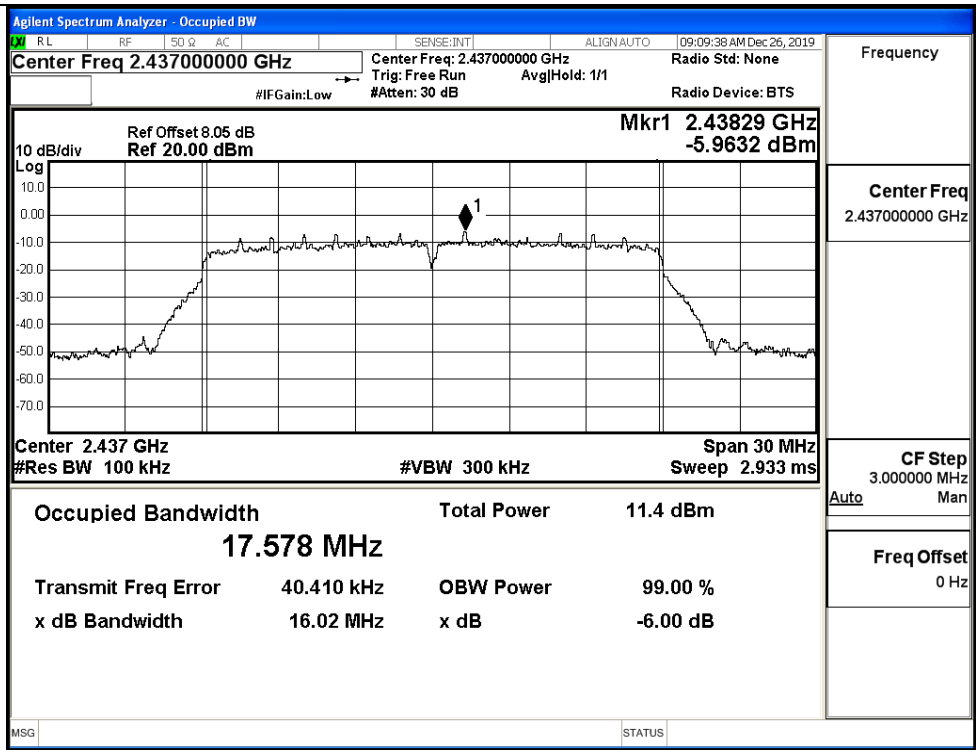
11G/HCH



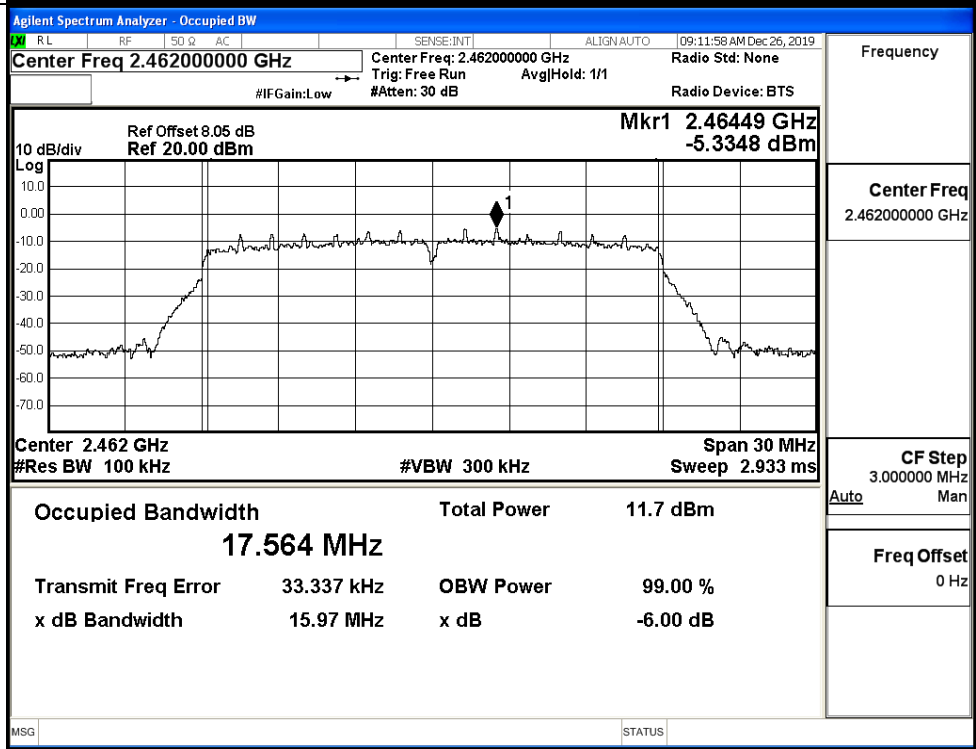
11N20SISO/LCH



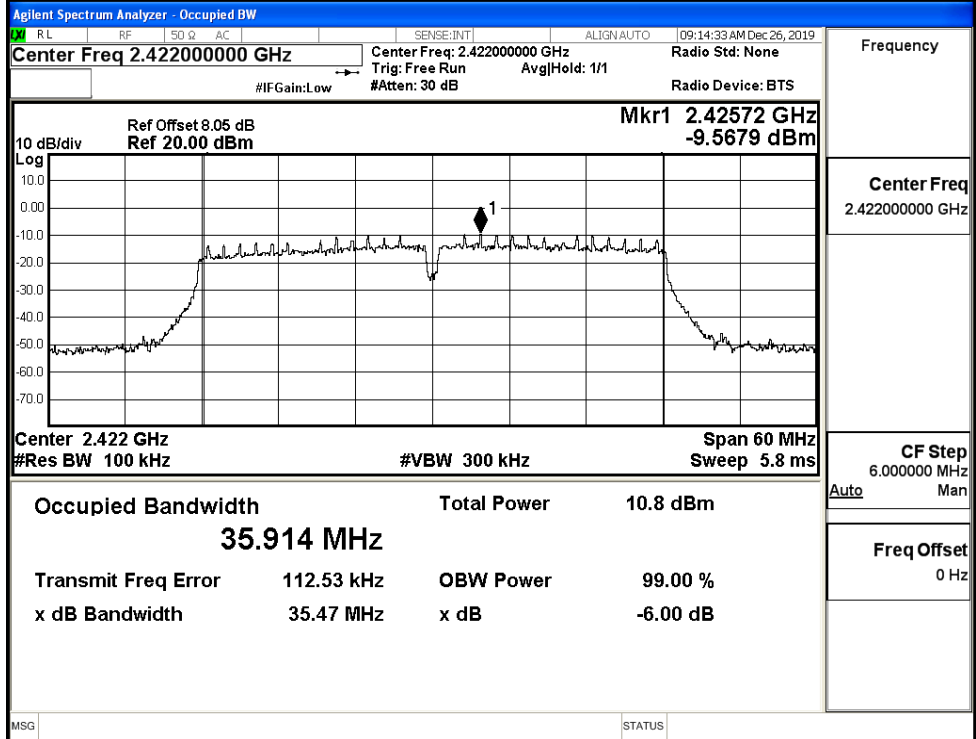
11N20SISO/MCH



11N20SISO/HCH

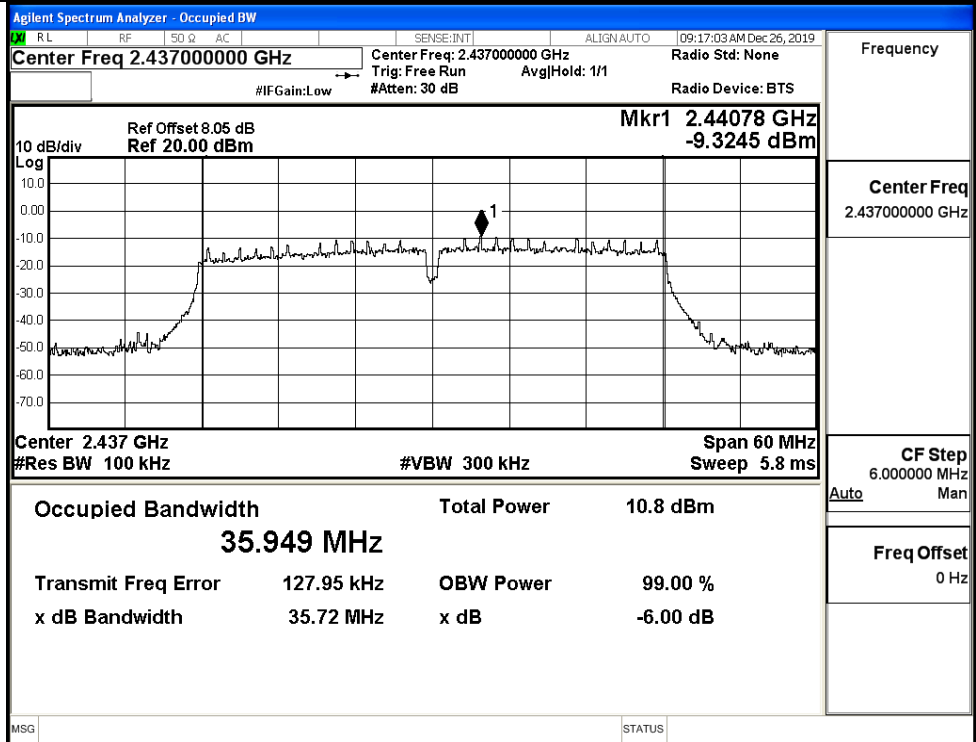


11N40SISO/LCH



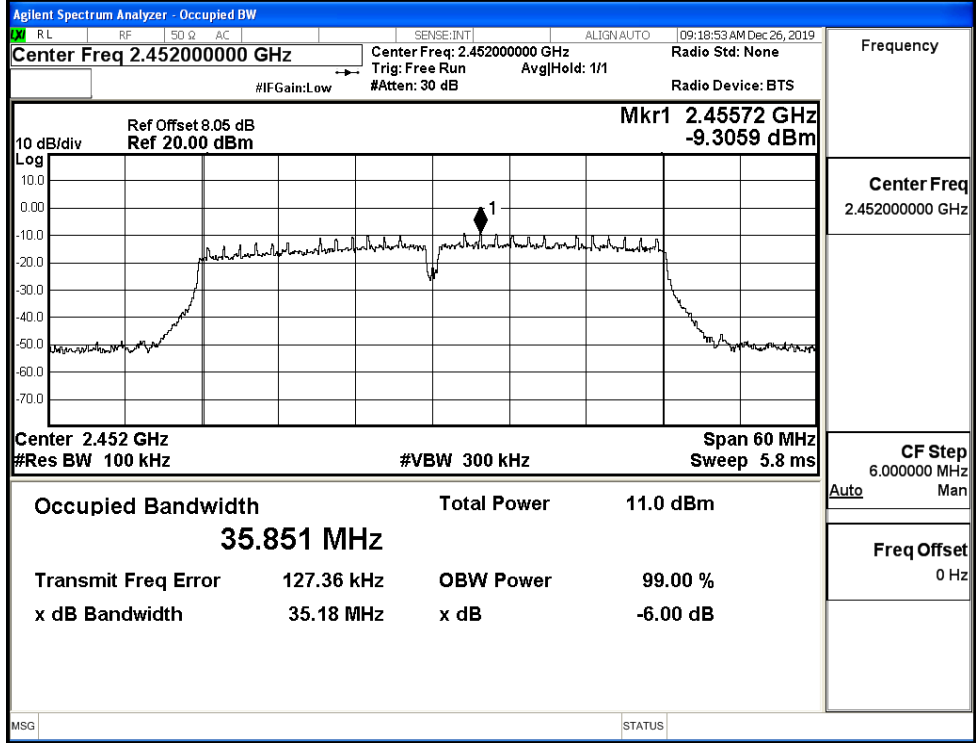
Frequency	2.42200000 GHz
Center Freq	2.42200000 GHz
CF Step	6.000000 MHz Auto Man
Freq Offset	0 Hz

11N40SISO/MCH



Frequency	2.43700000 GHz
Center Freq	2.43700000 GHz
CF Step	6.000000 MHz Auto Man
Freq Offset	0 Hz

11N40SISO/HCH



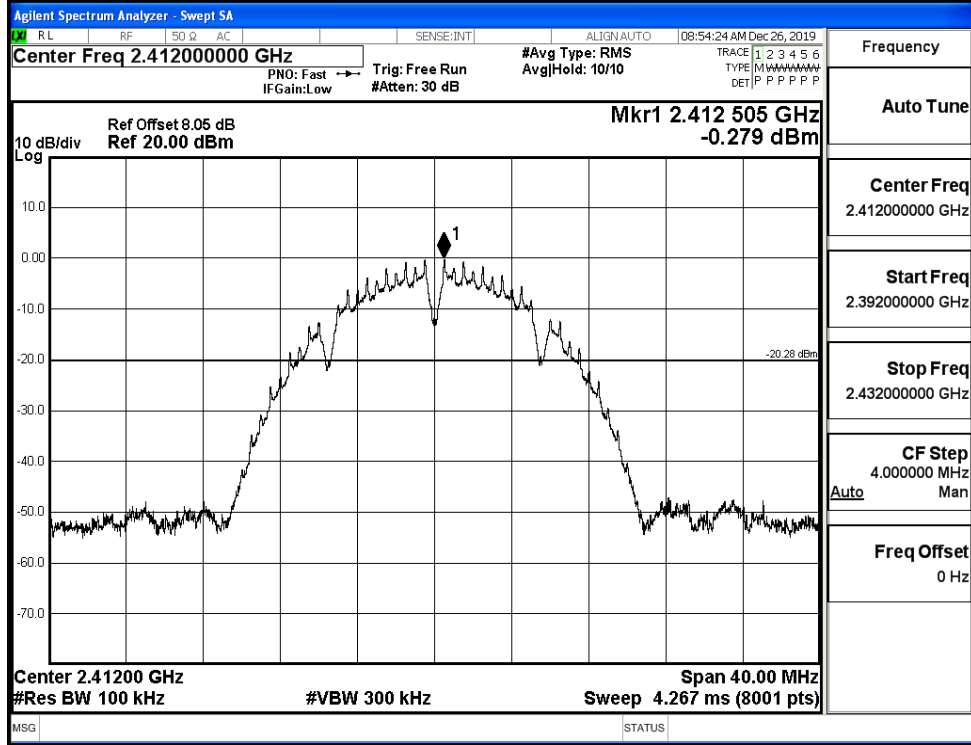
Frequency	Center Freq 2.45200000 GHz
CF Step	6.000000 MHz Auto Man
Freq Offset	0 Hz

A.5 RF Conducted Spurious Emissions

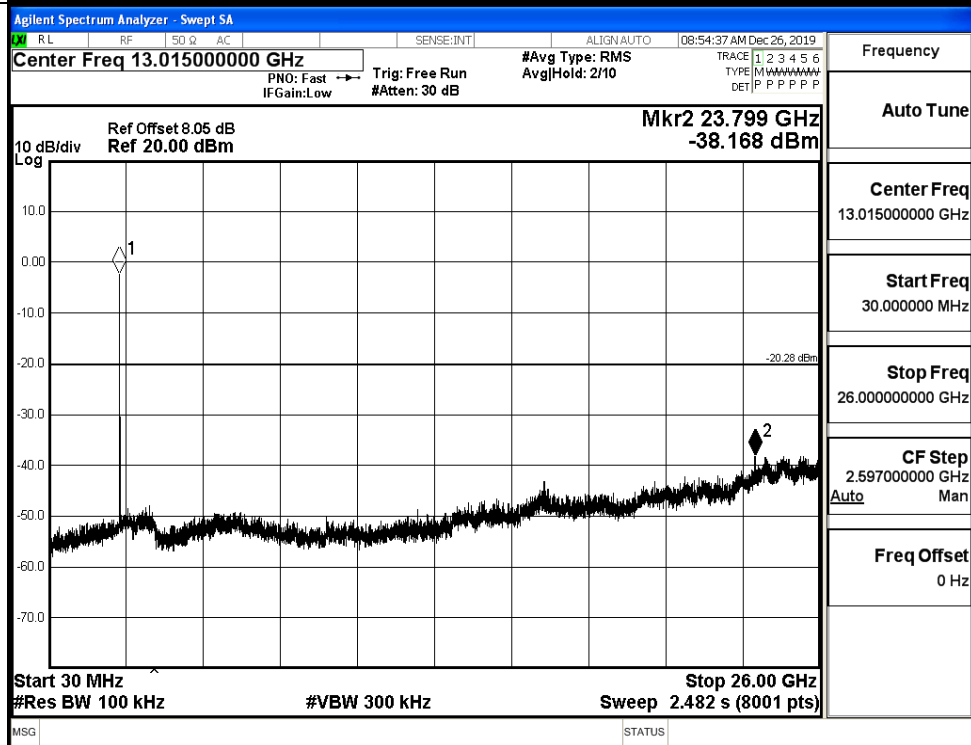
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-0.279	-38.168	-20.279	PASS
	MCH	-0.656	-37.375	-20.656	PASS
	HCH	-0.165	-36.683	-20.165	PASS
11G	LCH	-6.459	-37.884	-26.459	PASS
	MCH	-6.459	-37.077	-26.459	PASS
	HCH	-5.705	-38.026	-25.705	PASS
11N20 SISO	LCH	-6.169	-38.387	-26.169	PASS
	MCH	-5.572	-37.835	-25.572	PASS
	HCH	-6.363	-38.003	-26.363	PASS
11N40 SISO	LCH	-9.608	-37.883	-29.608	PASS
	MCH	-9.447	-38.145	-29.447	PASS
	HCH	-9.704	-38.063	-29.704	PASS

11B_LCH_Graphs

Pref/11B/LCH

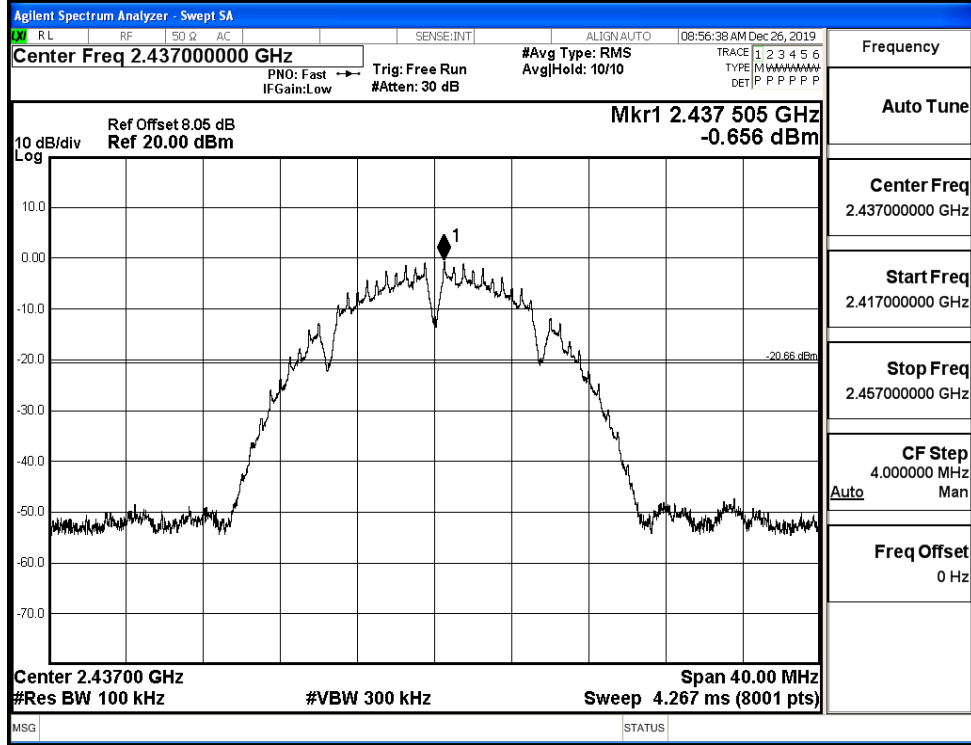


Puw/11B/LCH

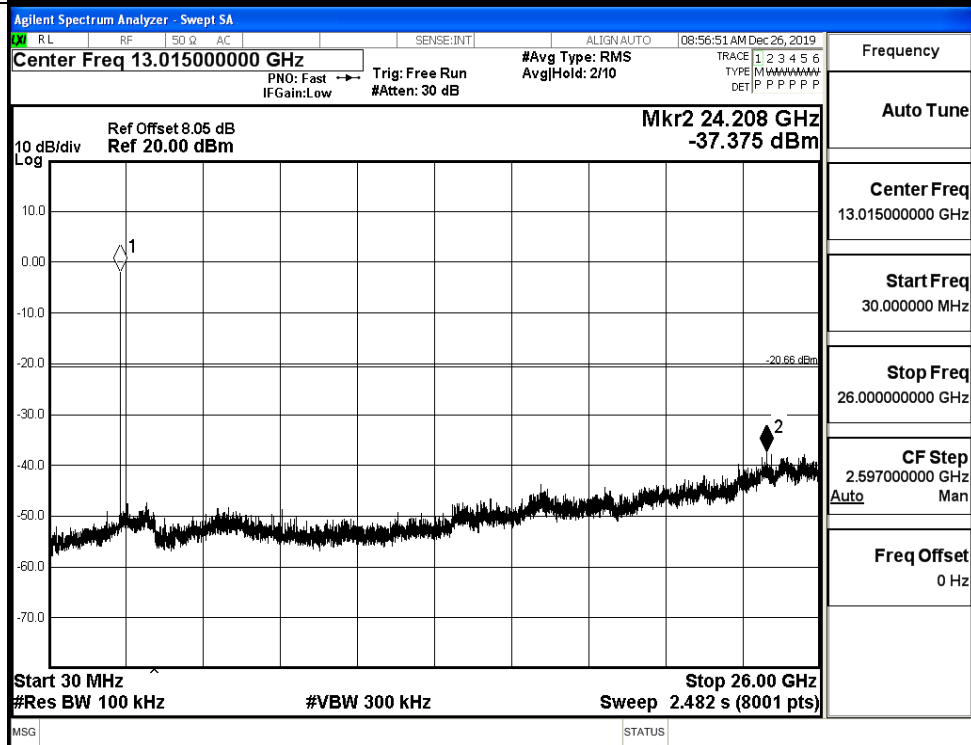


11B_MCH_Graphs

Pref/11B/MCH

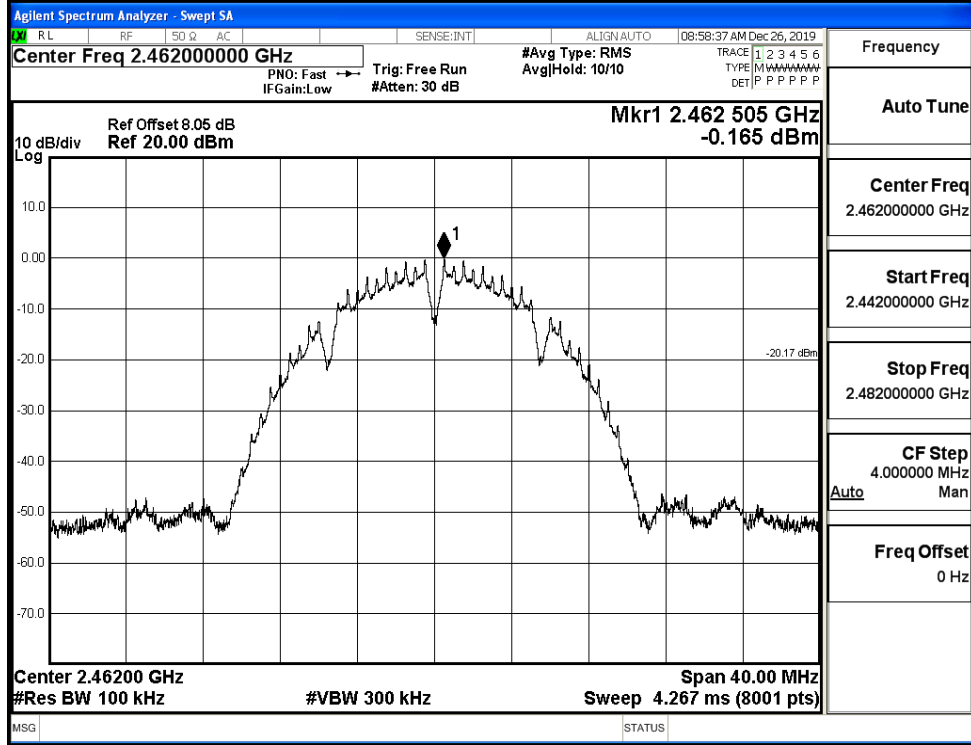


Puw/11B/MCH

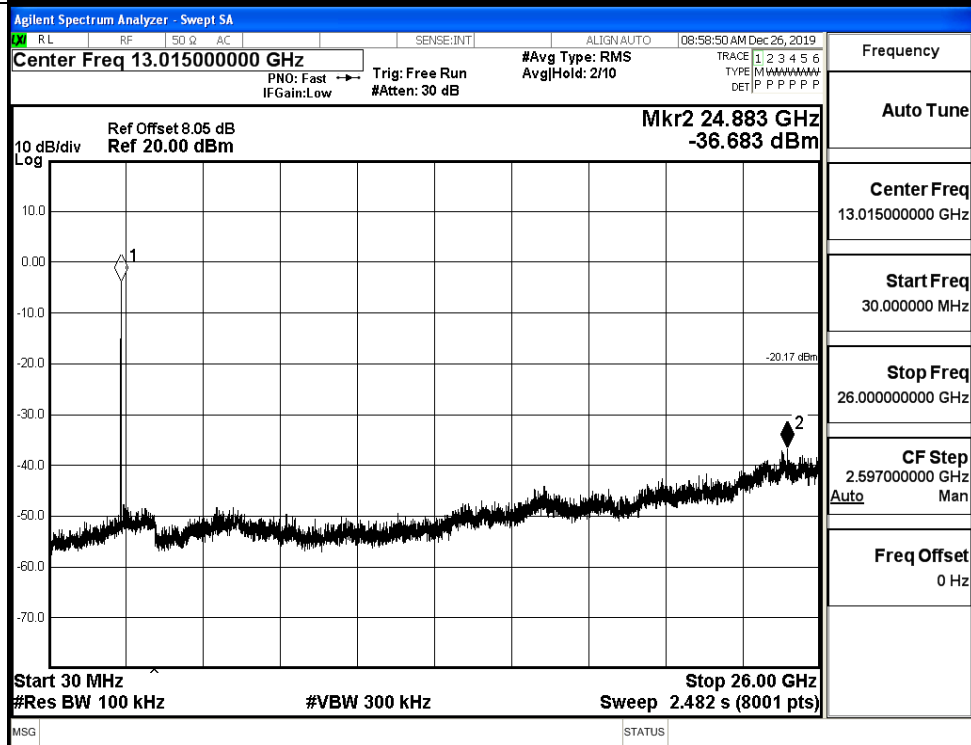


11B_HCH_Graphs

Pref/11B/HCH

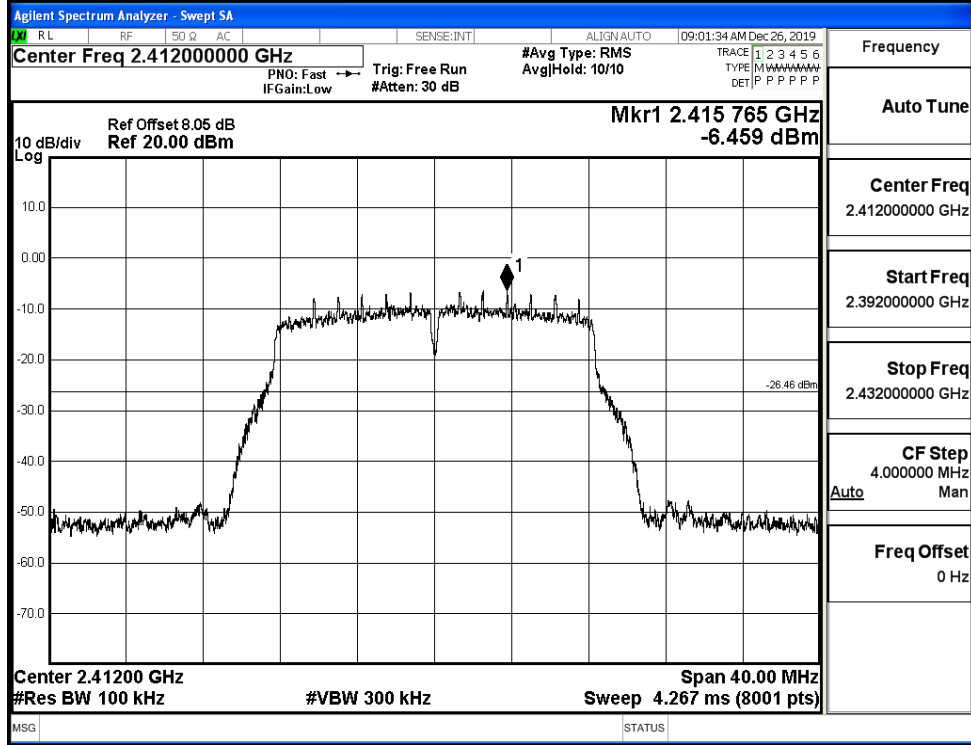


Puw/11B/HCH

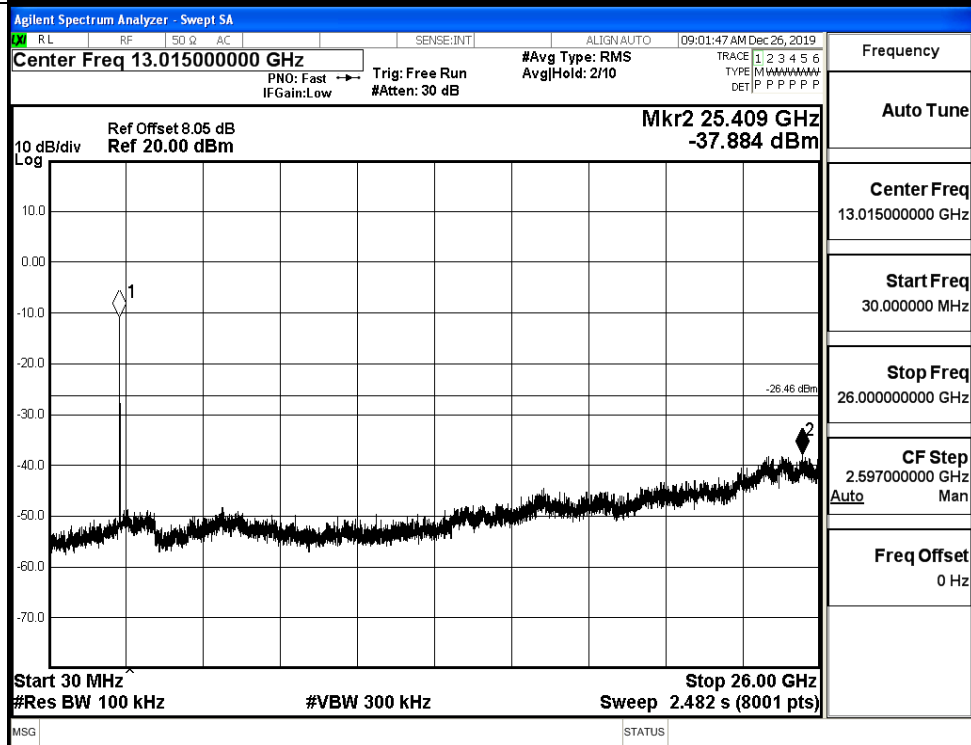


11G_LCH_Graphs

Pref/11G/LCH

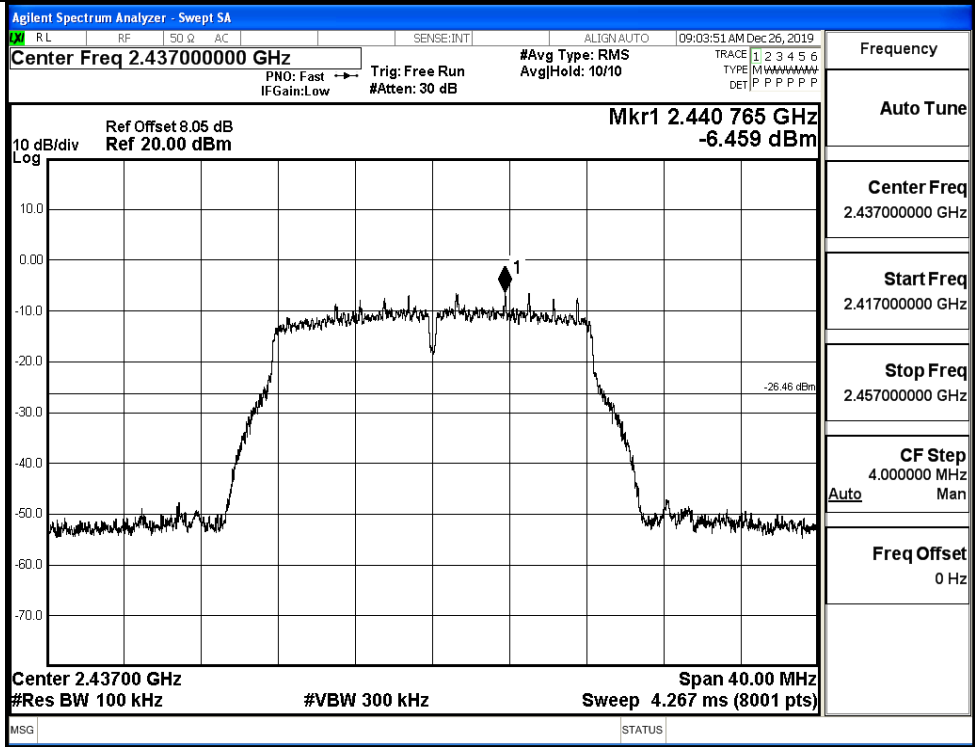


Puw/11G/LCH

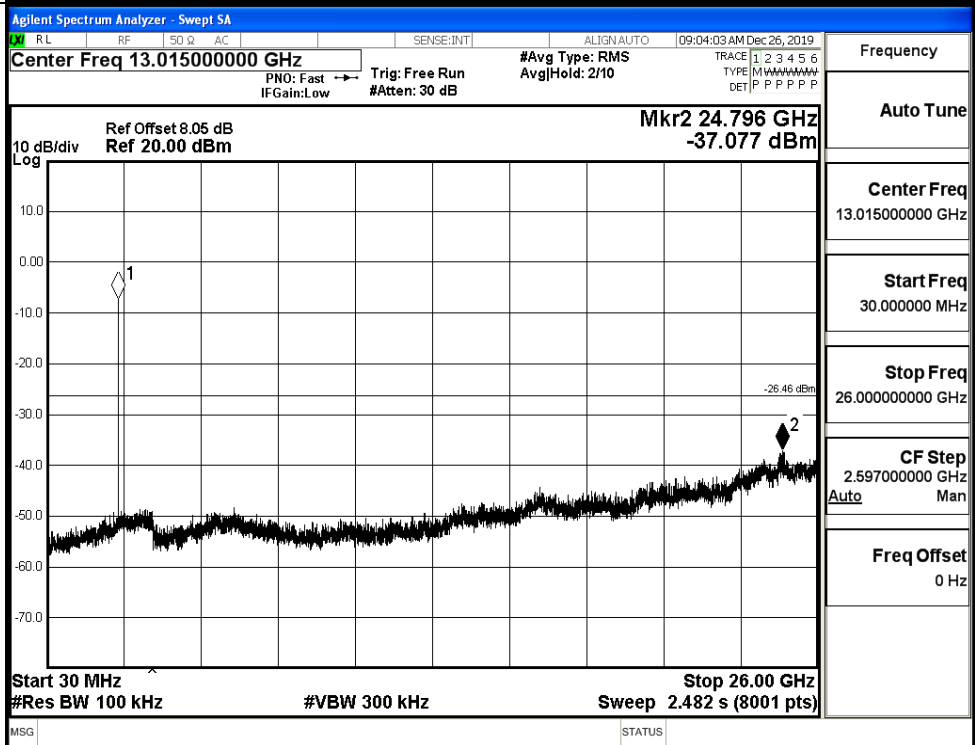


11G_MCH_Graphs

Pref/11G/MCH

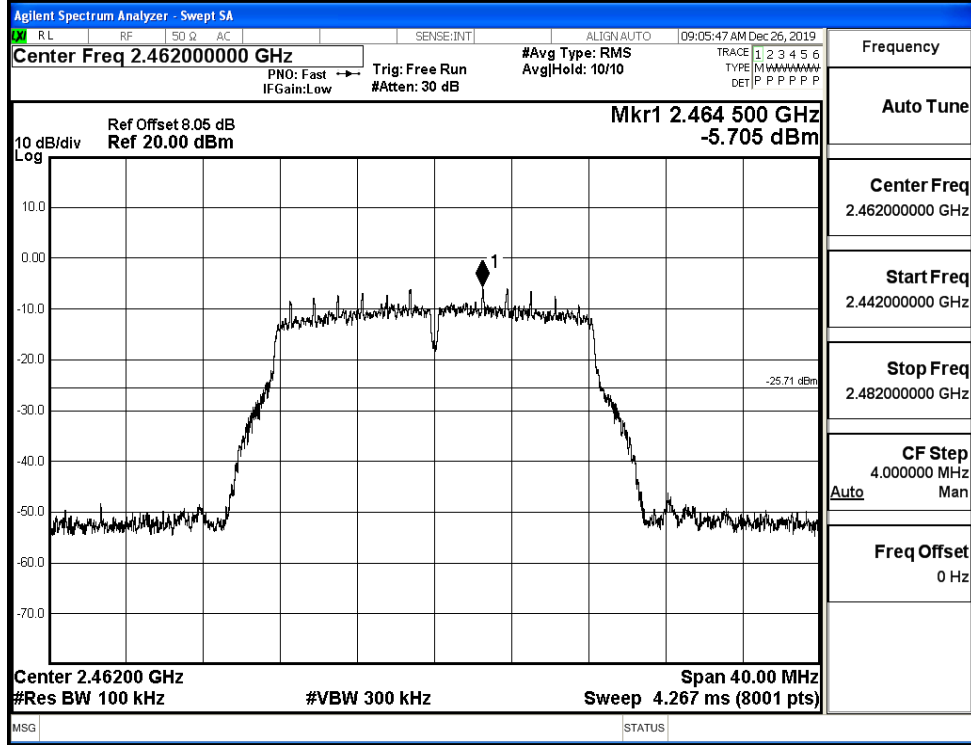


Puw/11G/MCH

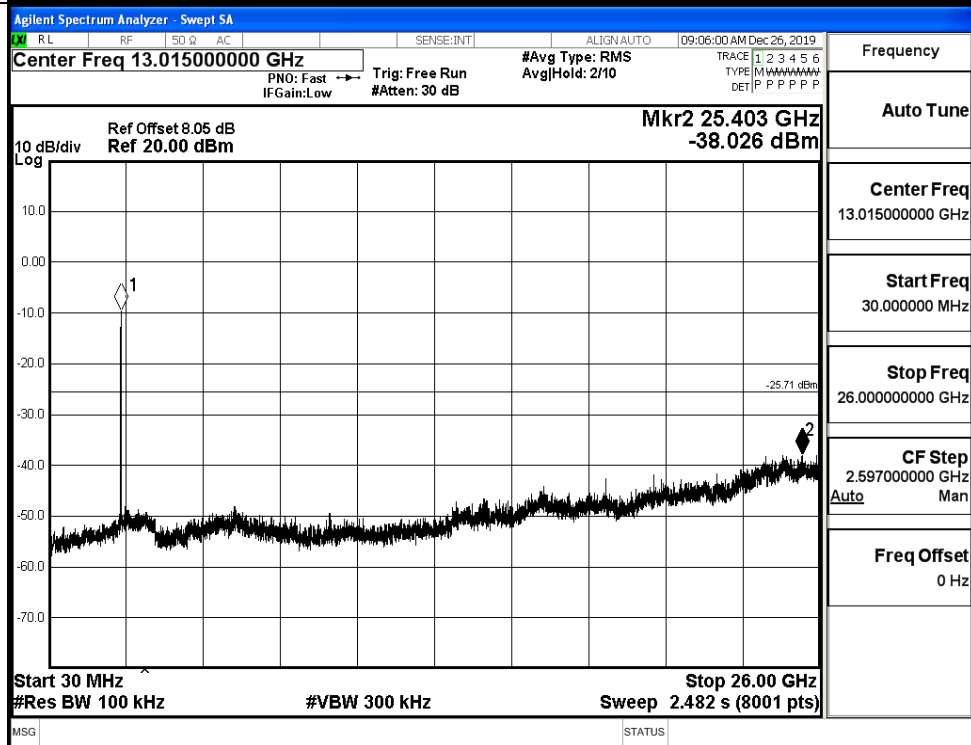


11G_HCH_Graphs

Pref/11G/HCH

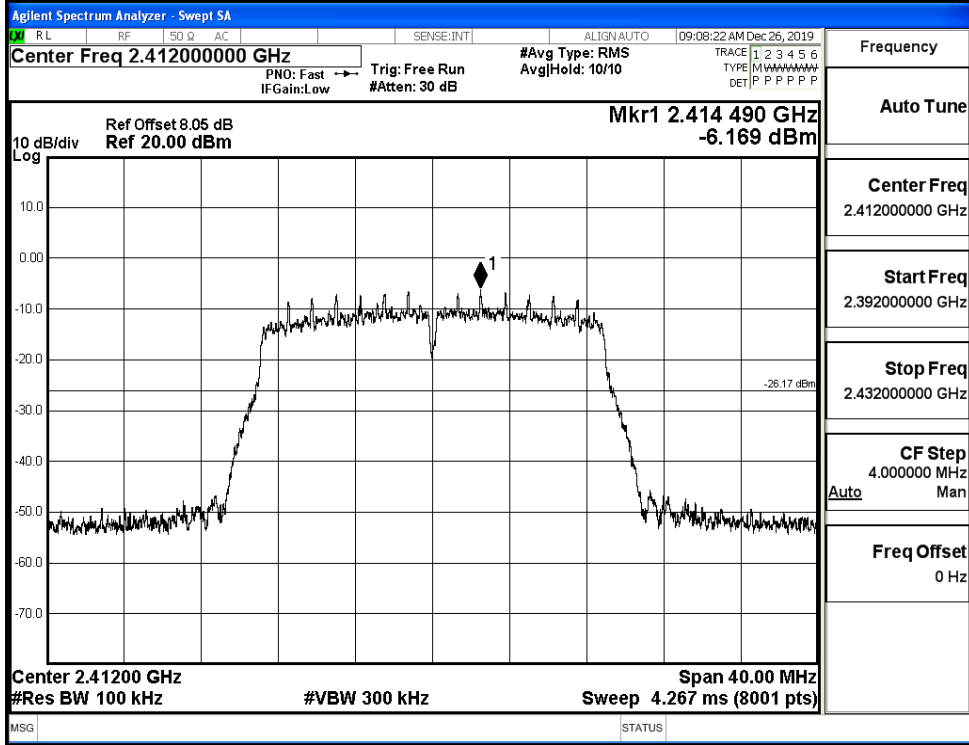


Puw/11G/HCH

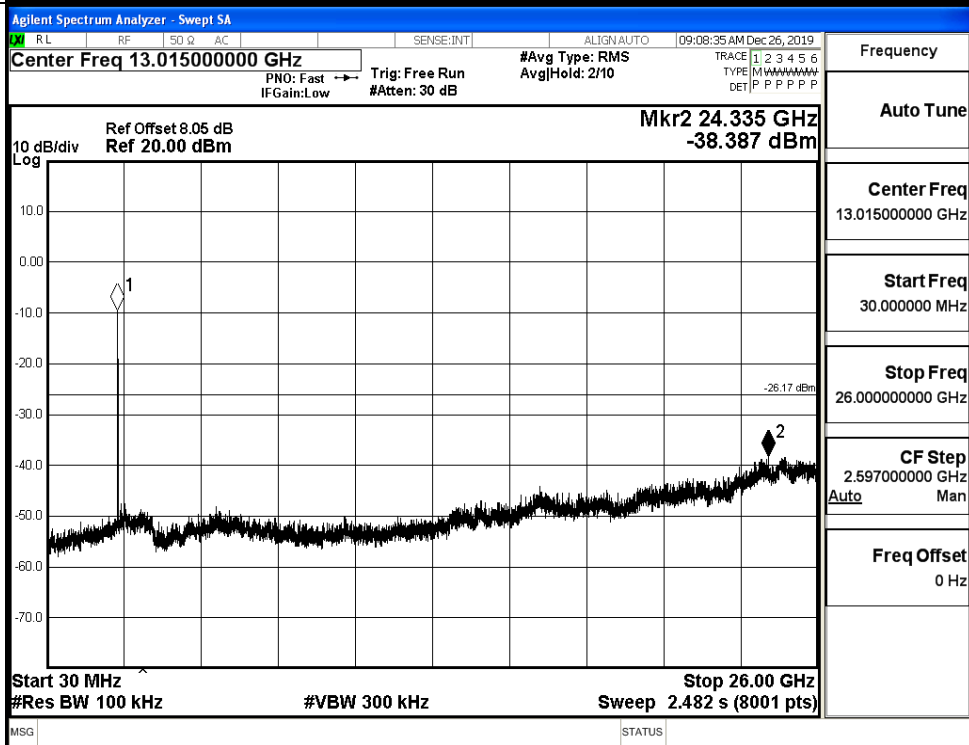


11N20SISO_LCH_Graphs

Pref/11N20SIS
O/LCH

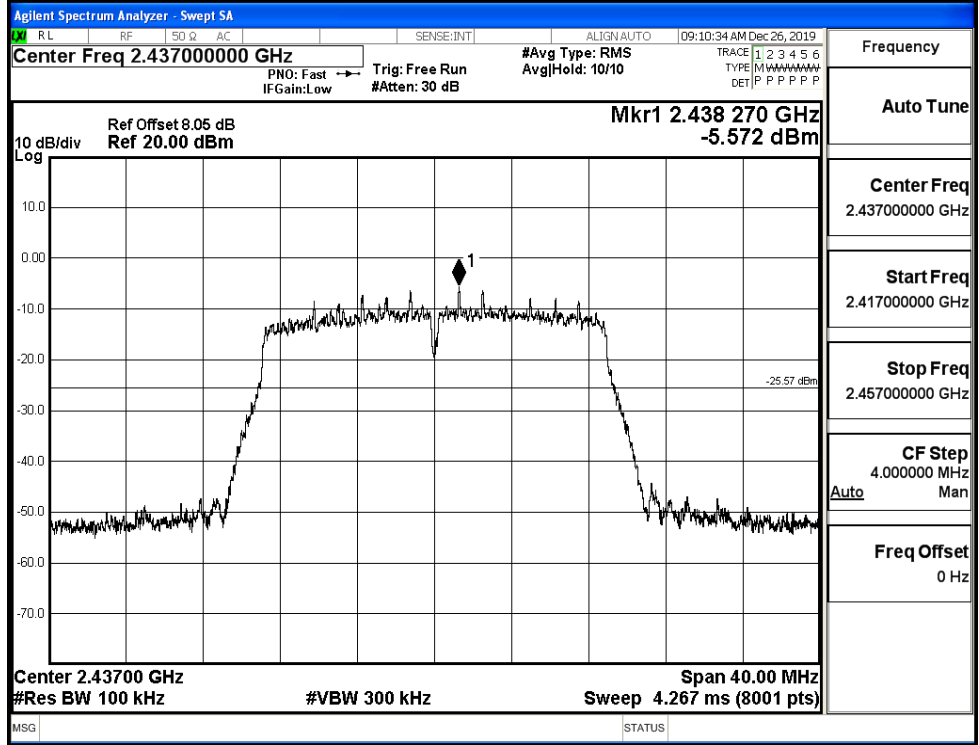


Puw/11N20
SISO/LCH

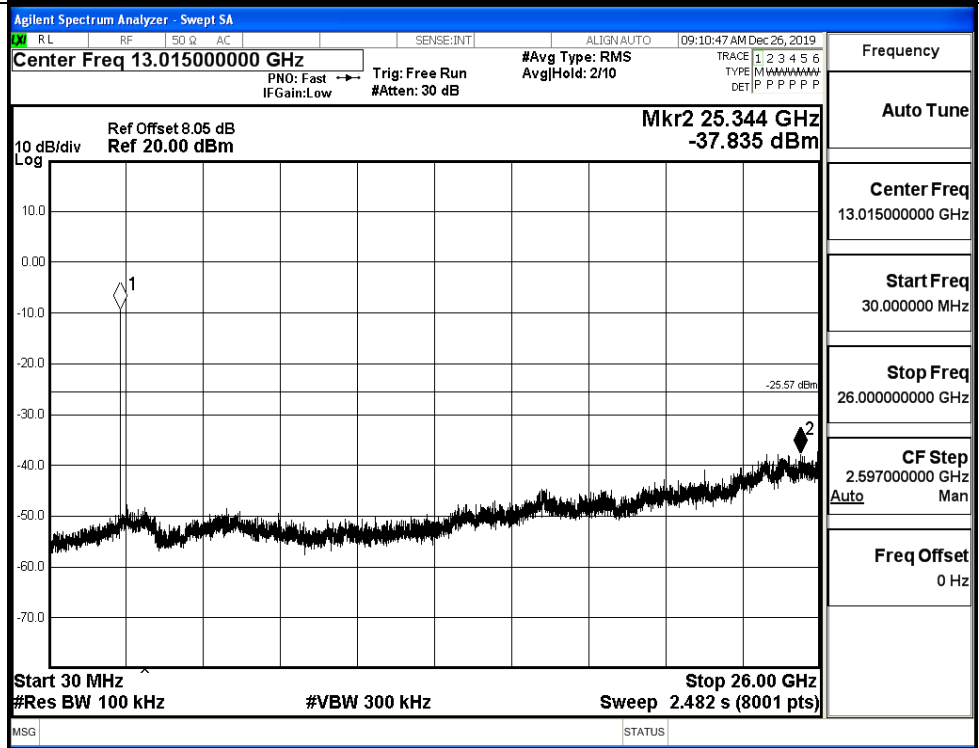


11N20SISO_MCH_Graphs

Pref/11N20
SISO/MCH

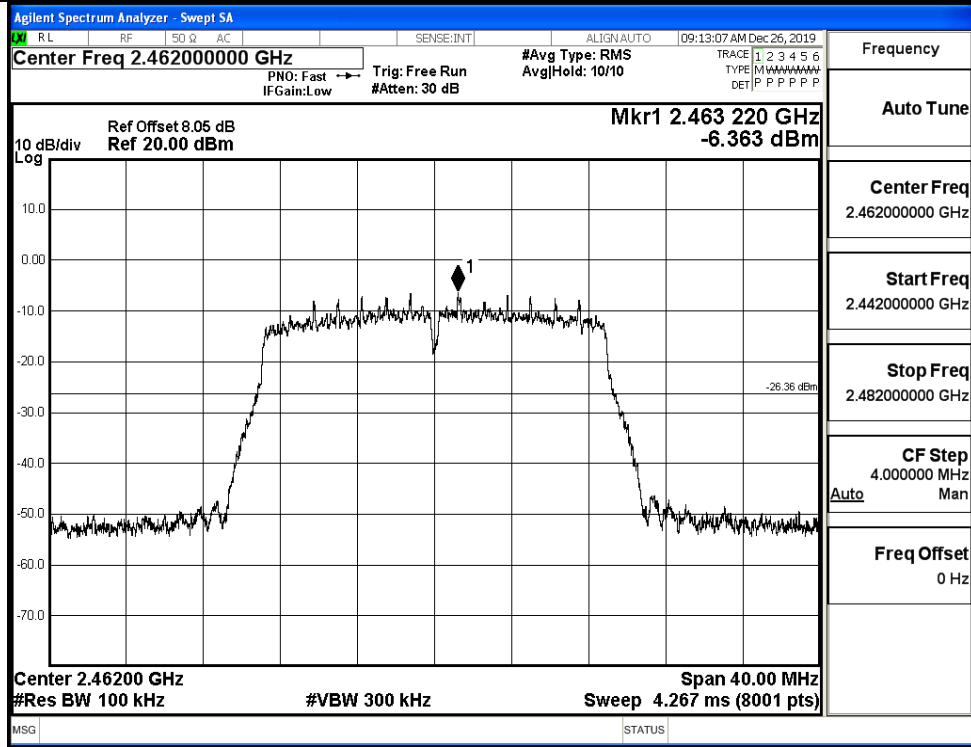


Puw/11N20
SISO/MCH

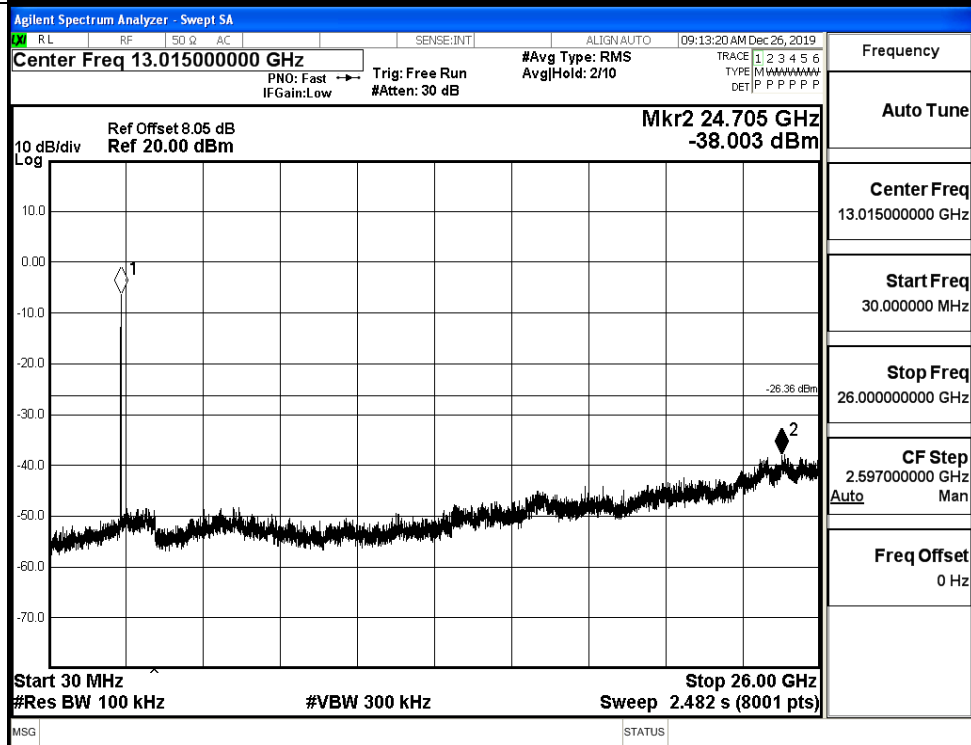


11N20SISO_HCH_Graphs

Pref/11N20
SISO/HCH

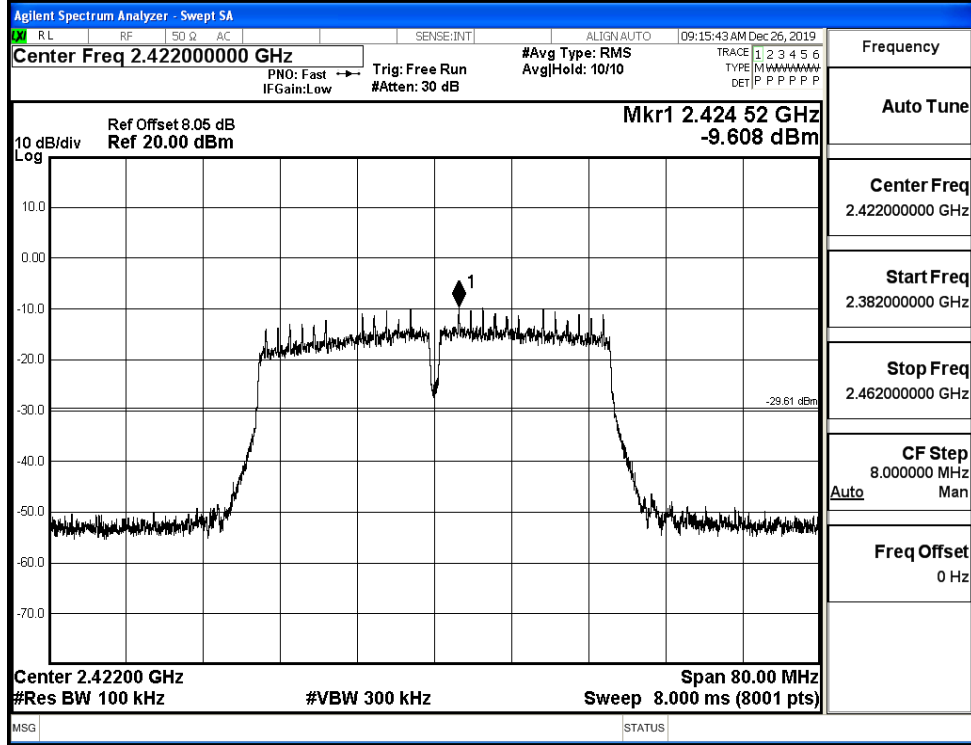


Puw/11N20
SISO/HCH

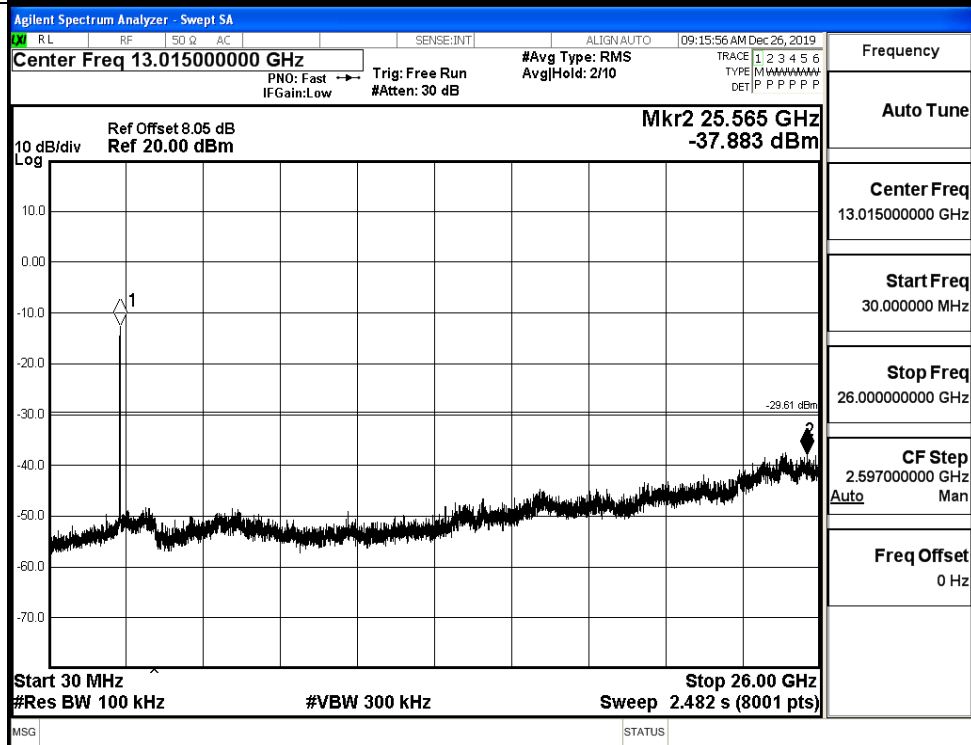


11N40SISO_LCH_Graphs

Pref/11N40
SISO/LCH

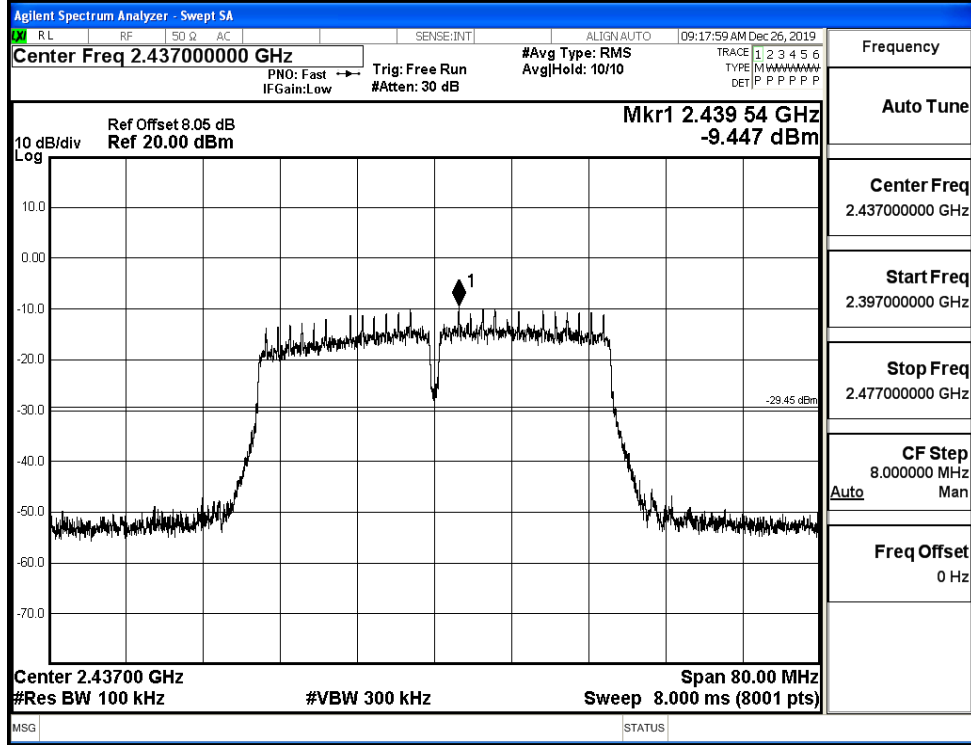


Puw/11N40
SISO/LCH

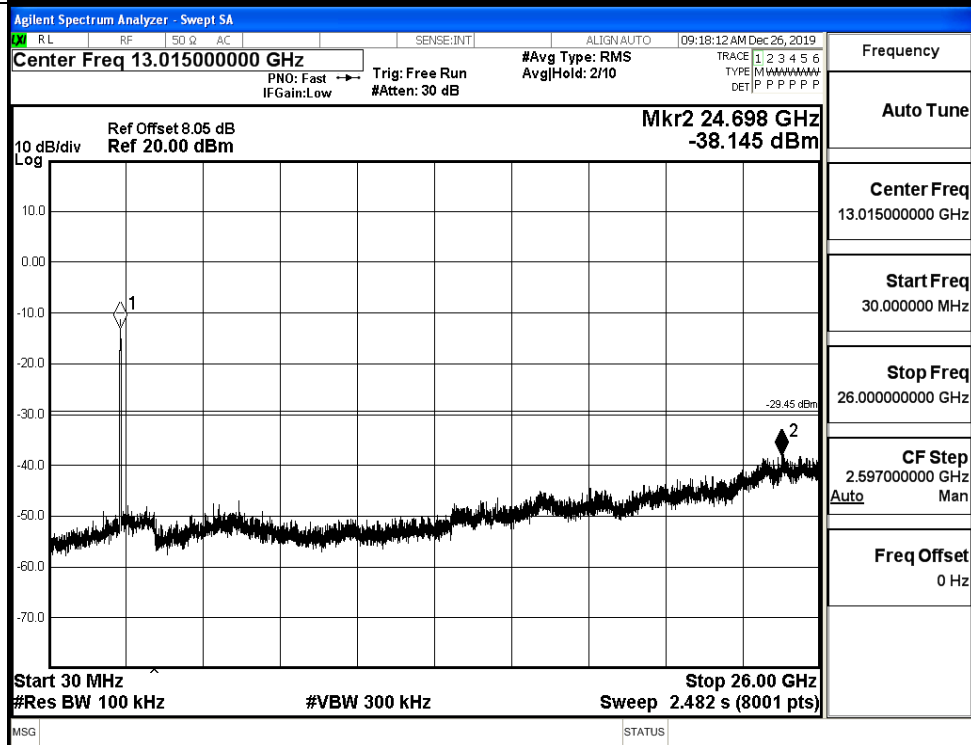


11N40SISO_MCH_Graphs

Pref/11N40
SISO/MCH

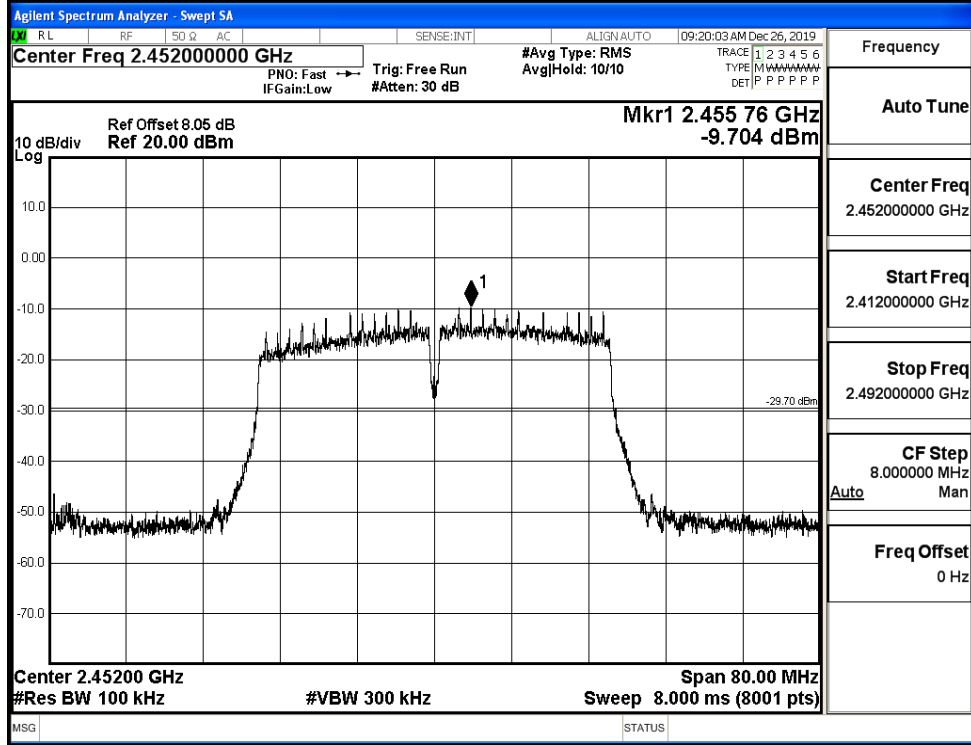


Puw/11N40
SISO/MCH

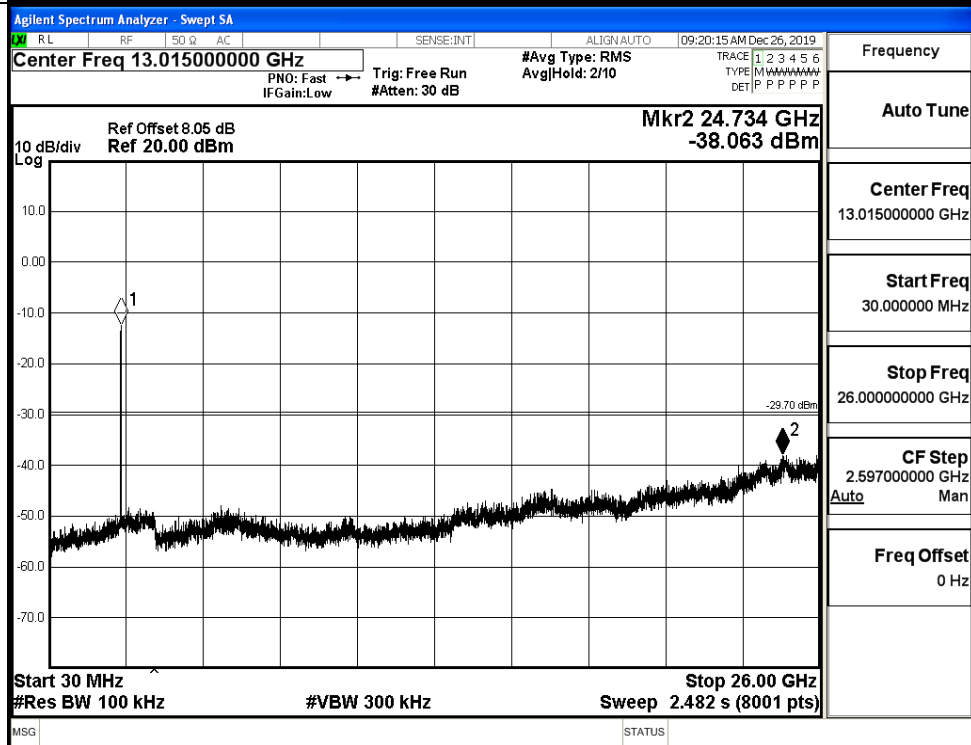


11N40SISO_HCH_Graphs

Pref/11N40
SISO/HCH

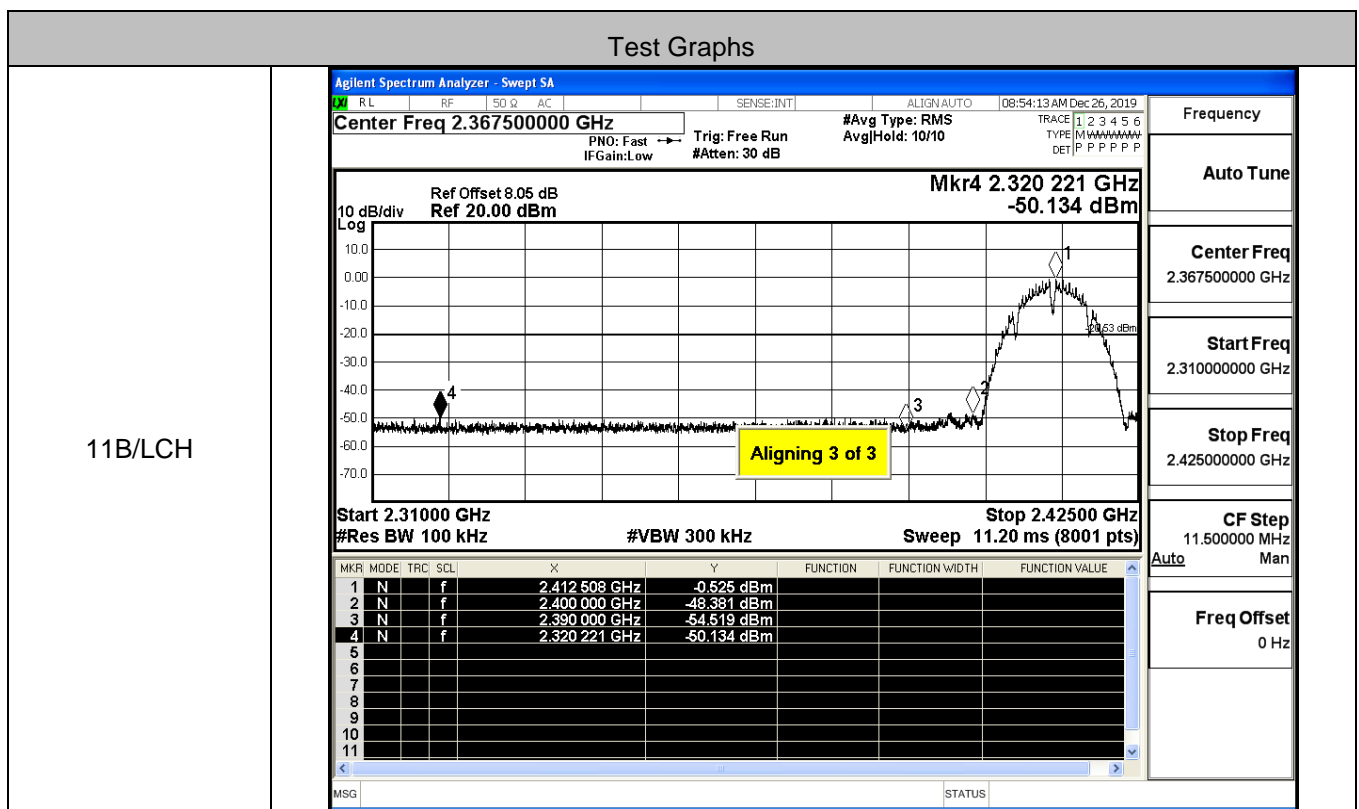


Puw/11N40
SISO/HCH

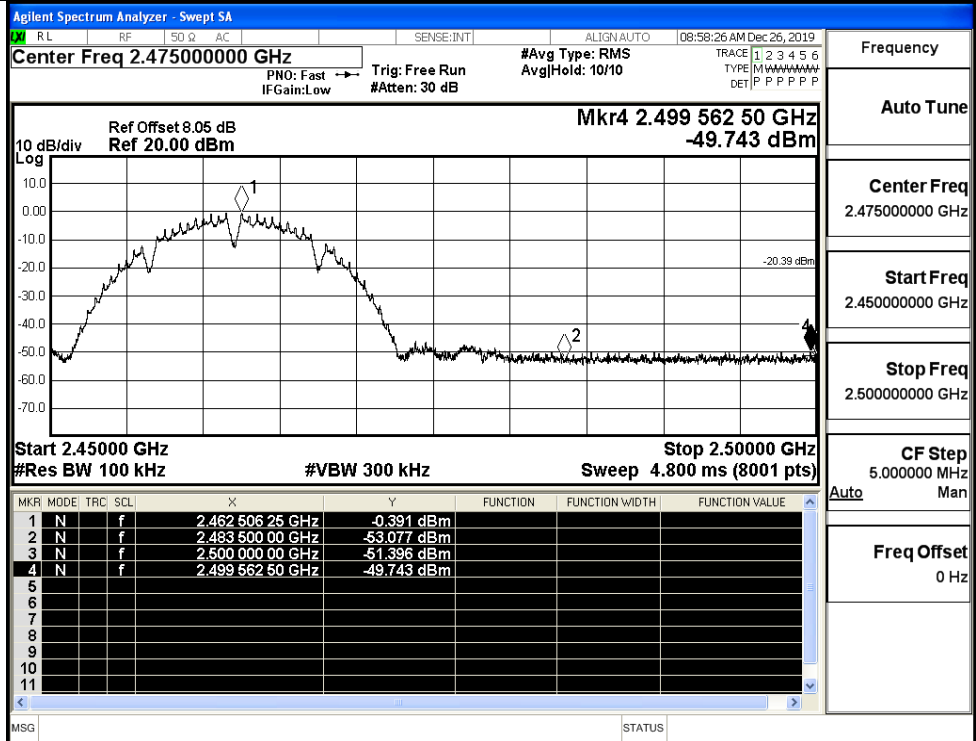


A.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-0.525	-50.134	-20.53	PASS
	HCH	-0.391	-49.743	-20.39	PASS
11G	LCH	-6.149	-49.104	-26.15	PASS
	HCH	-6.151	-48.622	-26.15	PASS
11N20SISO	LCH	-6.402	-49.977	-26.4	PASS
	HCH	-5.522	-48.958	-25.52	PASS
11N40SISO	LCH	-9.605	-49.933	-29.61	PASS
	HCH	-9.149	-49.420	-29.15	PASS



11B/HCH



Frequency

Auto Tune

Center Freq
2.47500000 GHz

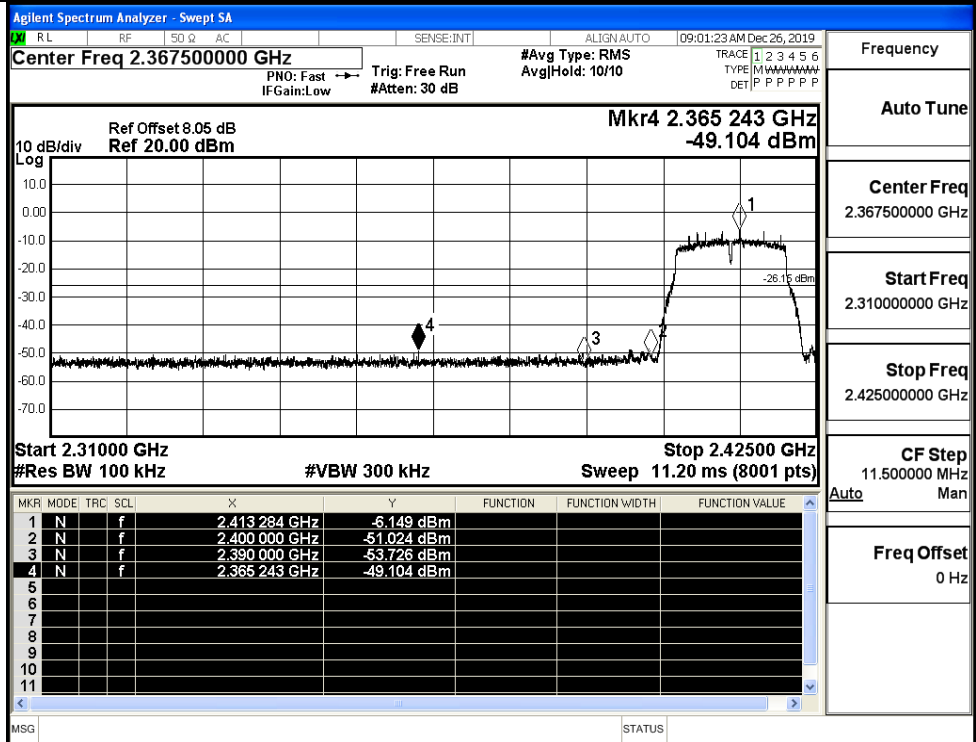
Start Freq
2.45000000 GHz

Stop Freq
2.50000000 GHz

CF Step
5.000000 MHz

Freq Offset
0 Hz

11G/LCH



Frequency

Auto Tune

Center Freq
2.36750000 GHz

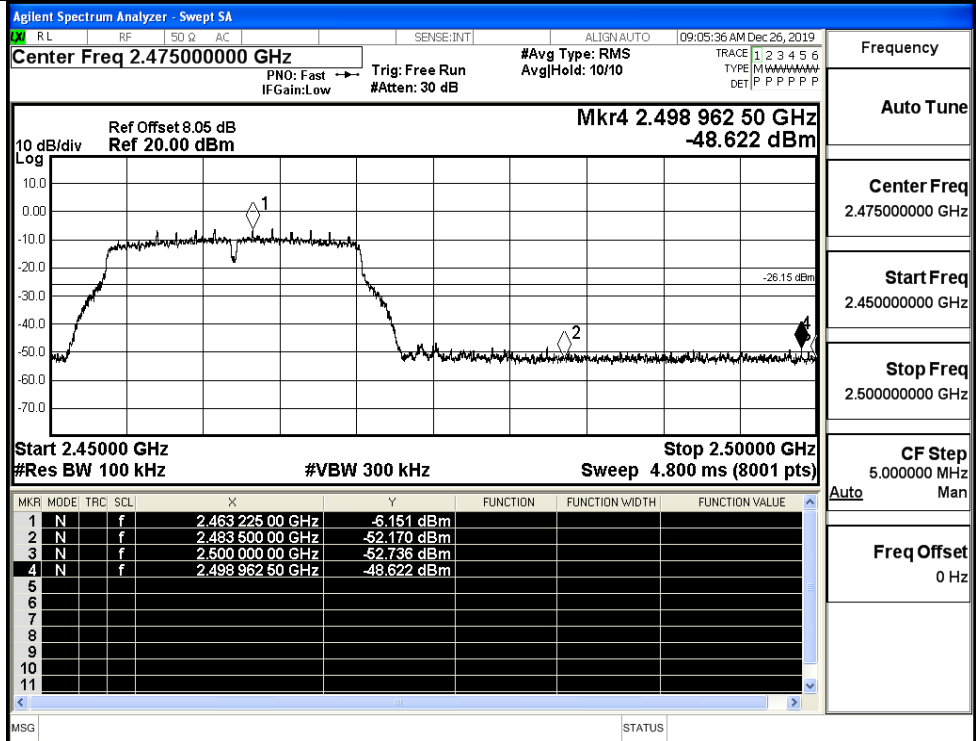
Start Freq
2.31000000 GHz

Stop Freq
2.42500000 GHz

CF Step
11.500000 MHz

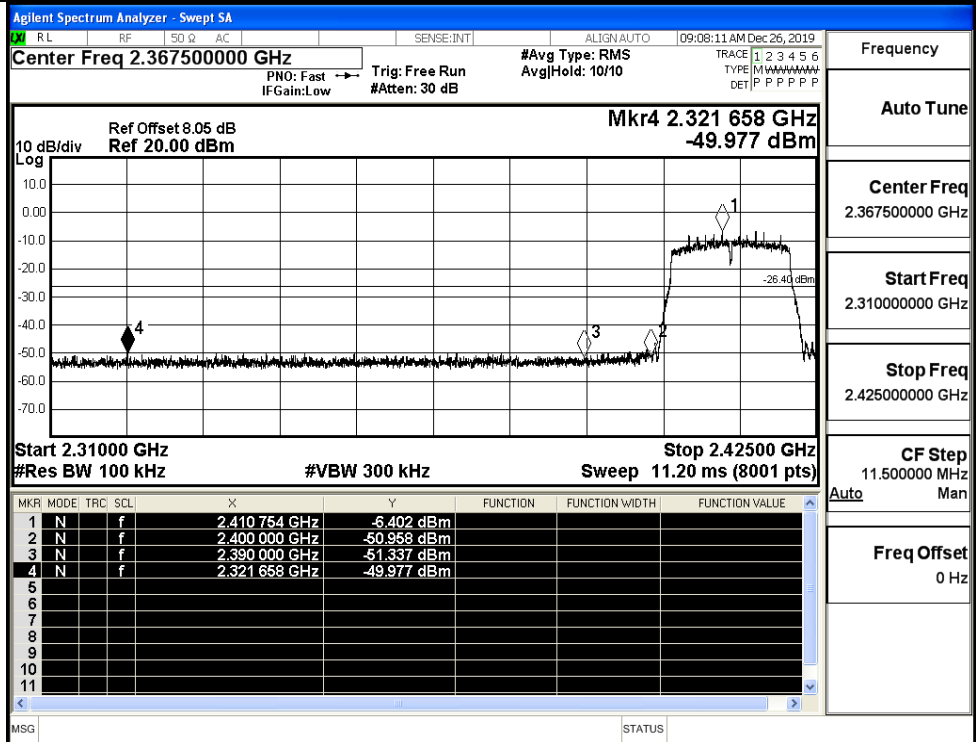
Freq Offset
0 Hz

11G/HCH



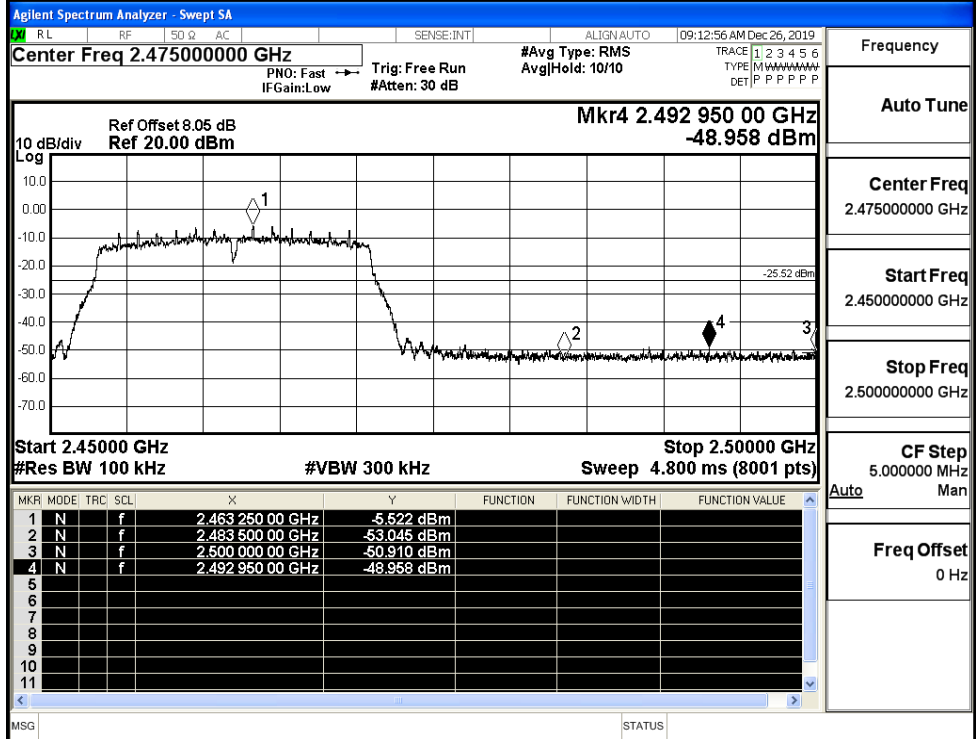
Frequency	
Auto Tune	
Center Freq	2.475000000 GHz
Start Freq	2.450000000 GHz
Stop Freq	2.500000000 GHz
CF Step	5.000000 MHz
Freq Offset	0 Hz

11N20SISO/LCH



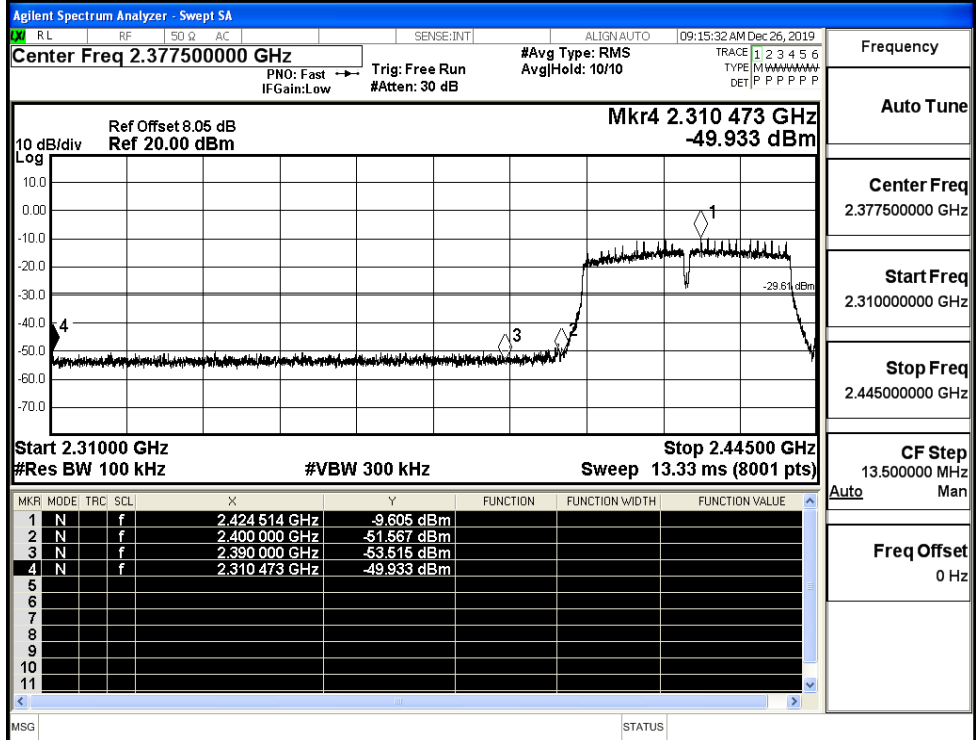
Frequency	
Auto Tune	
Center Freq	2.367500000 GHz
Start Freq	2.310000000 GHz
Stop Freq	2.425000000 GHz
CF Step	11.500000 MHz
Freq Offset	0 Hz

11N20SISO/HCH



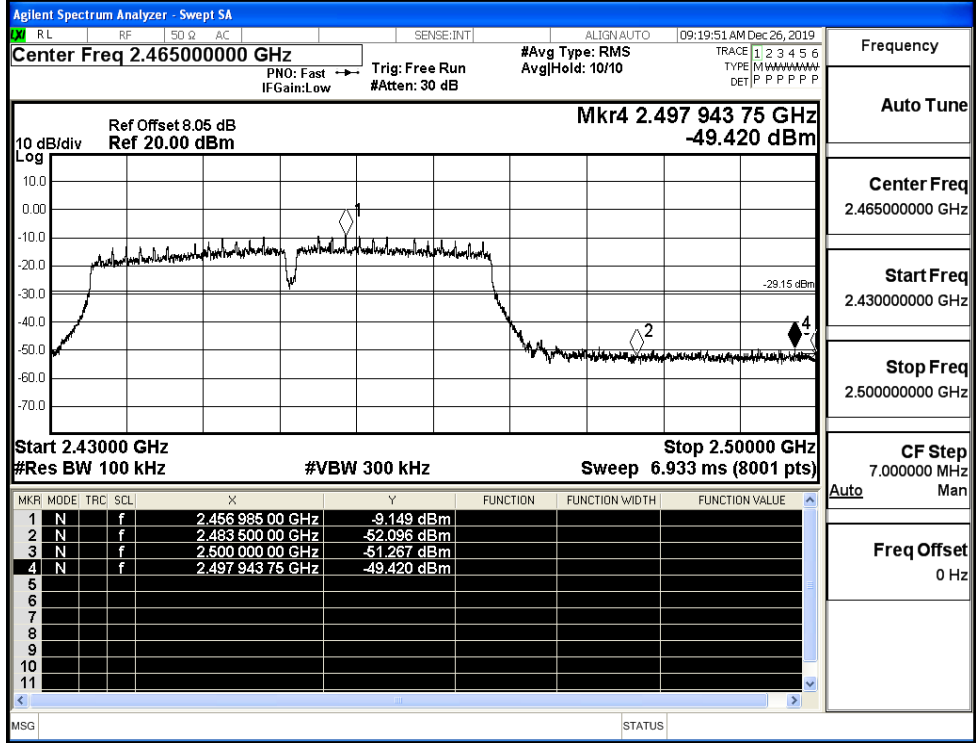
Frequency	2.475000000 GHz
Auto Tune	
Center Freq	2.475000000 GHz
Start Freq	2.450000000 GHz
Stop Freq	2.500000000 GHz
CF Step	5.000000 MHz
Freq Offset	0 Hz

11N40SISO/LCH



Frequency	2.377500000 GHz
Auto Tune	
Center Freq	2.377500000 GHz
Start Freq	2.310000000 GHz
Stop Freq	2.445000000 GHz
CF Step	13.500000 MHz
Freq Offset	0 Hz

11N40SISO/HCH

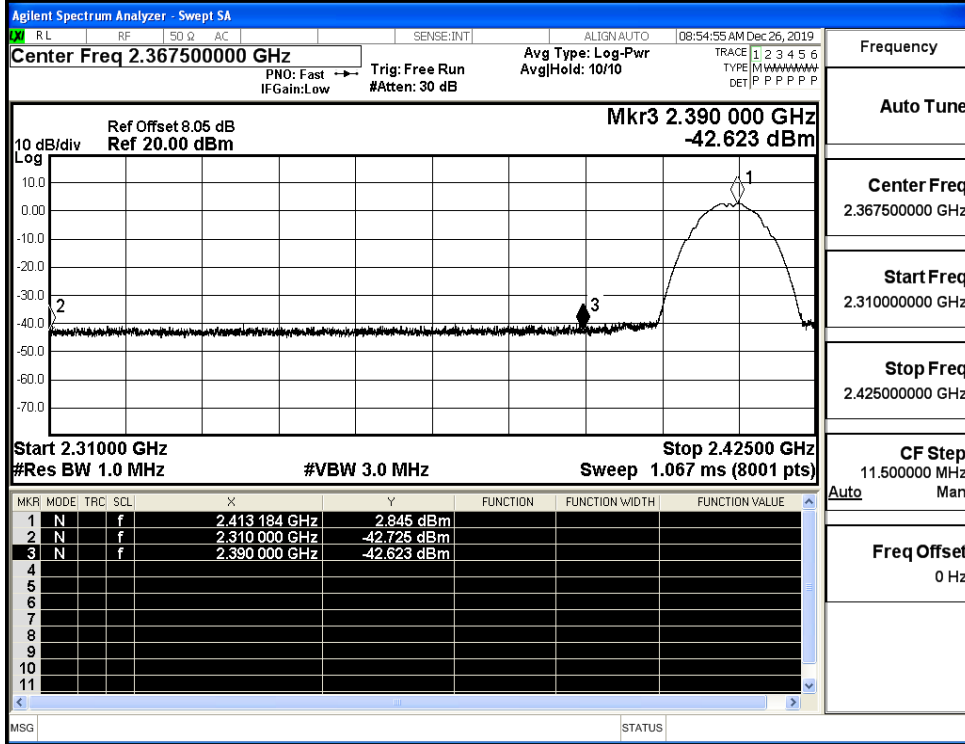


A.7 Restrict-band band-edge measurements

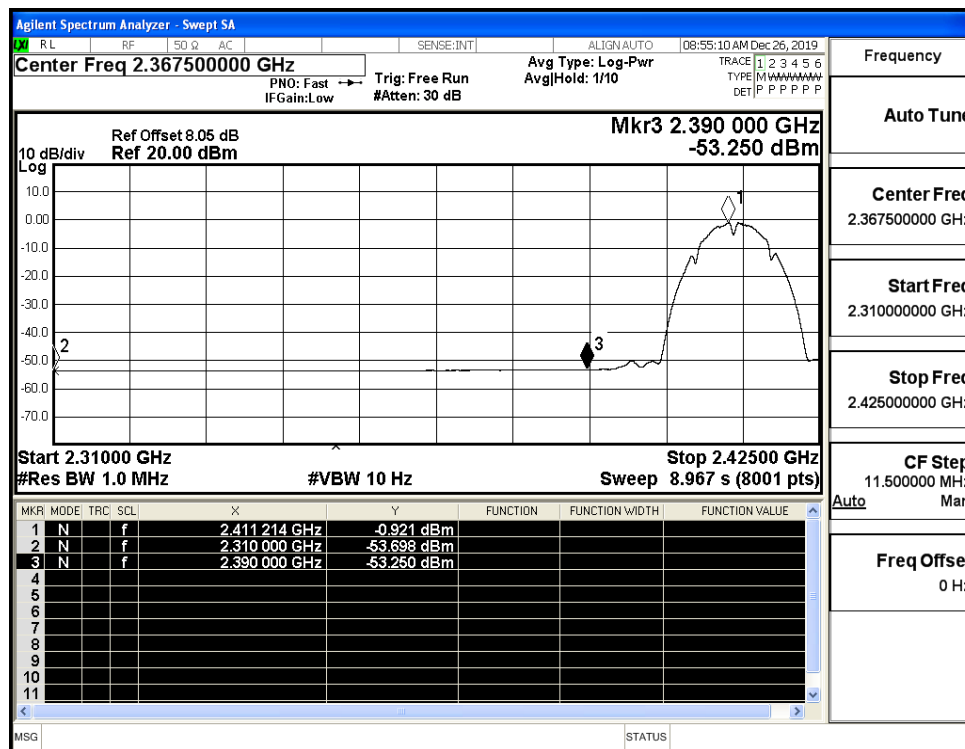
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBu V/m]	Verdict
11B	2412	Ant1	2310.0	-42.73	2.0	0	54.53	PEAK	74	PASS
	2412	Ant1	2310.0	-53.70	2.0	0	43.56	AV	54	PASS
	2412	Ant1	2390.0	-42.62	2.0	0	54.63	PEAK	74	PASS
	2412	Ant1	2390.0	-53.25	2.0	0	44.01	AV	54	PASS
	2462	Ant1	2483.5	-42.32	2.0	0	54.93	PEAK	74	PASS
	2462	Ant1	2483.5	-52.85	2.0	0	44.41	AV	54	PASS
	2462	Ant1	2500.0	-42.09	2.0	0	55.17	PEAK	74	PASS
	2462	Ant1	2500.0	-52.68	2.0	0	44.58	AV	54	PASS
11G	2412	Ant1	2310.0	-43.42	2.0	0	53.84	PEAK	74	PASS
	2412	Ant1	2310.0	-53.63	2.0	0	43.63	AV	54	PASS
	2412	Ant1	2390.0	-42.91	2.0	0	54.35	PEAK	74	PASS
	2412	Ant1	2390.0	-53.10	2.0	0	44.15	AV	54	PASS
	2462	Ant1	2483.5	-41.67	2.0	0	55.58	PEAK	74	PASS
	2462	Ant1	2483.5	-52.64	2.0	0	44.62	AV	54	PASS
	2462	Ant1	2500.0	-41.06	2.0	0	56.20	PEAK	74	PASS
	2462	Ant1	2500.0	-52.59	2.0	0	44.67	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-43.98	2.0	0	53.27	PEAK	74	PASS
	2412	Ant1	2310.0	-53.60	2.0	0	43.66	AV	54	PASS
	2412	Ant1	2390.0	-42.51	2.0	0	54.75	PEAK	74	PASS
	2412	Ant1	2390.0	-53.13	2.0	0	44.12	AV	54	PASS
	2462	Ant1	2483.5	-41.74	2.0	0	55.52	PEAK	74	PASS
	2462	Ant1	2483.5	-52.63	2.0	0	44.63	AV	54	PASS
	2462	Ant1	2500.0	-41.27	2.0	0	55.98	PEAK	74	PASS
	2462	Ant1	2500.0	-52.61	2.0	0	44.65	AV	54	PASS
11N40 SISO	2422	Ant1	2310.0	-43.51	2.0	0	53.75	PEAK	74	PASS
	2422	Ant1	2310.0	-53.66	2.0	0	43.60	AV	54	PASS

	2422	Ant1	2390.0	-42.51	2.0	0	54.75	PEAK	74	PASS
	2422	Ant1	2390.0	-53.16	2.0	0	44.10	AV	54	PASS
	2452	Ant1	2483.5	-42.24	2.0	0	55.02	PEAK	74	PASS
	2452	Ant1	2483.5	-52.53	2.0	0	44.73	AV	54	PASS
	2452	Ant1	2500.0	-41.28	2.0	0	55.98	PEAK	74	PASS
	2452	Ant1	2500.0	-52.59	2.0	0	44.67	AV	54	PASS

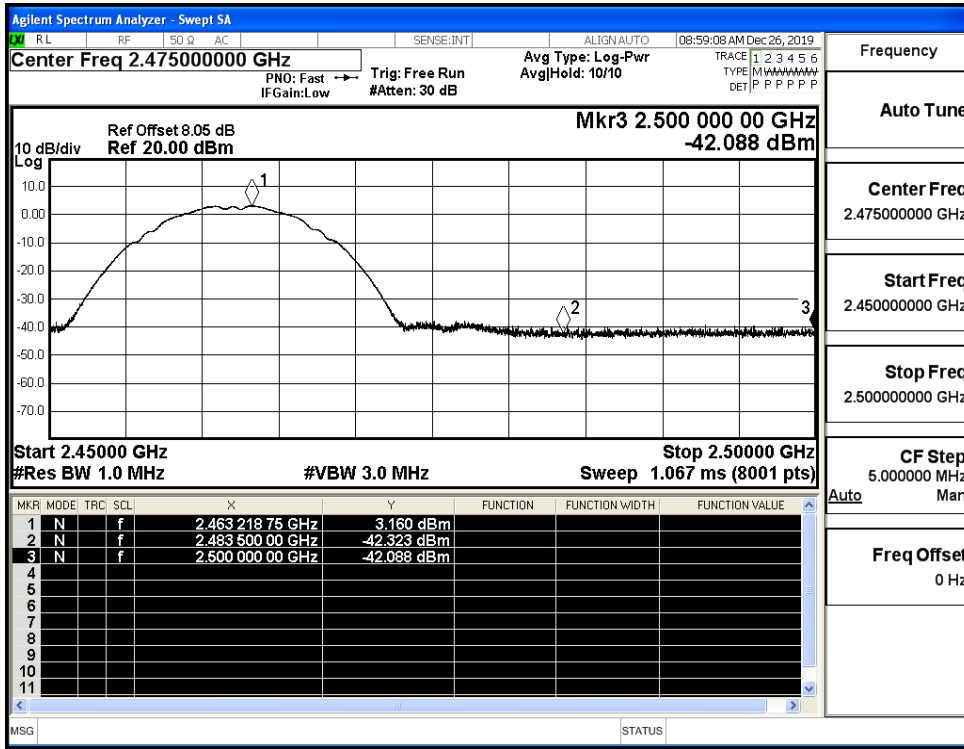
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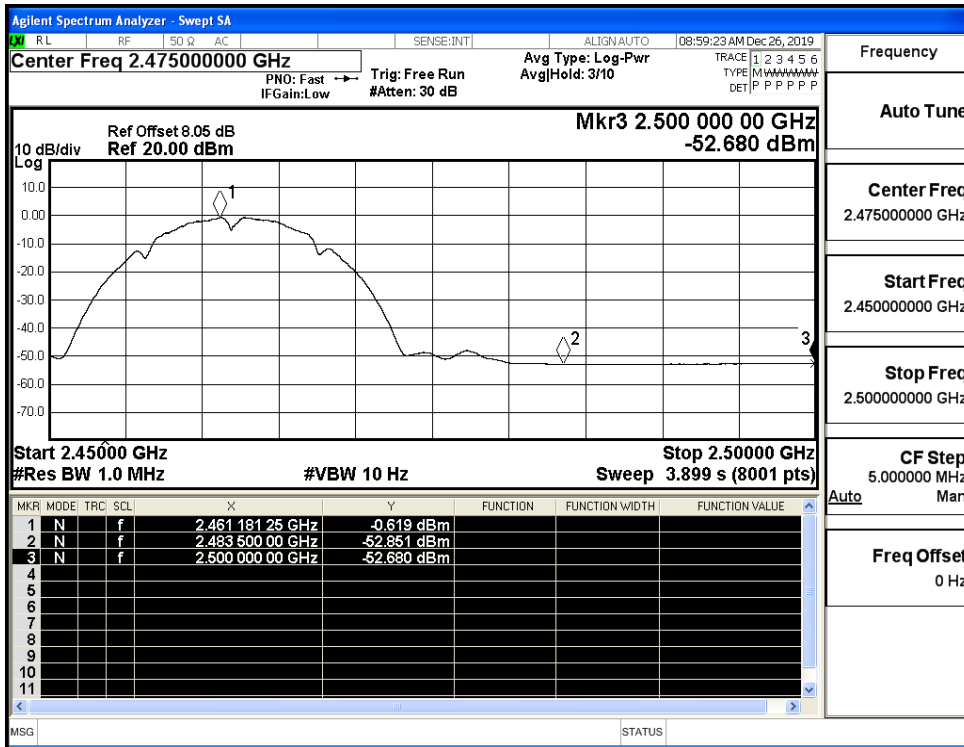
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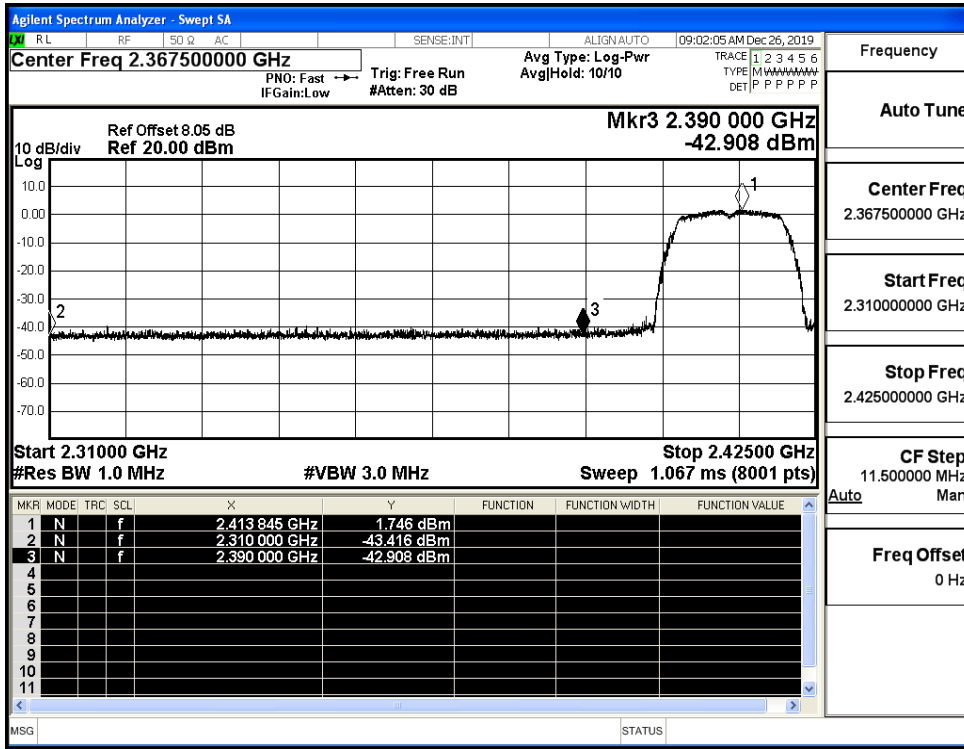
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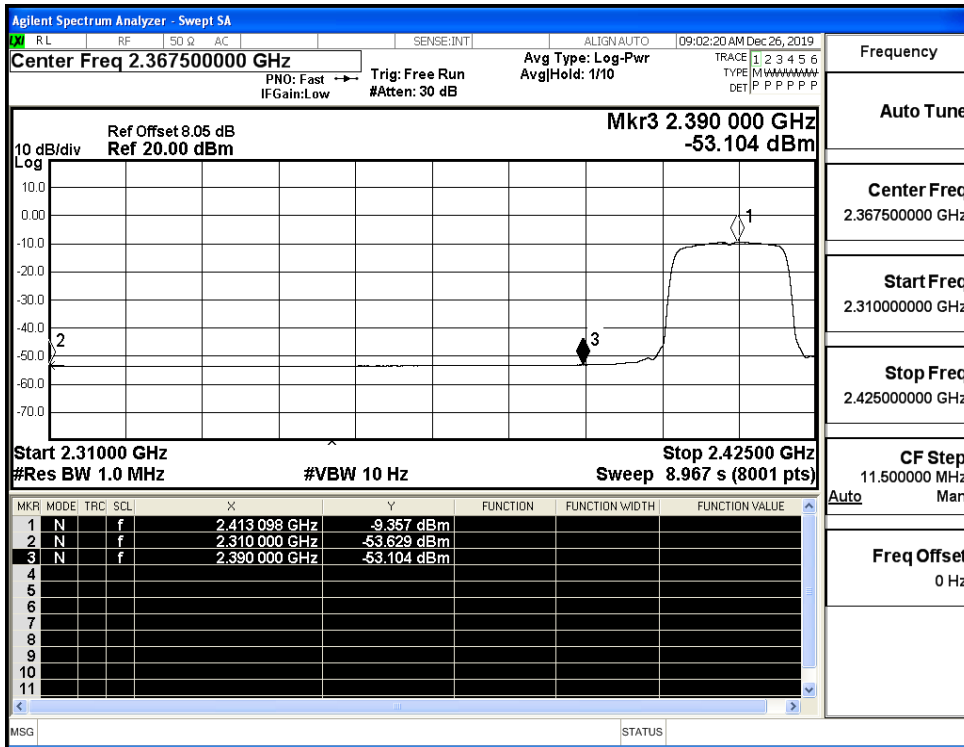
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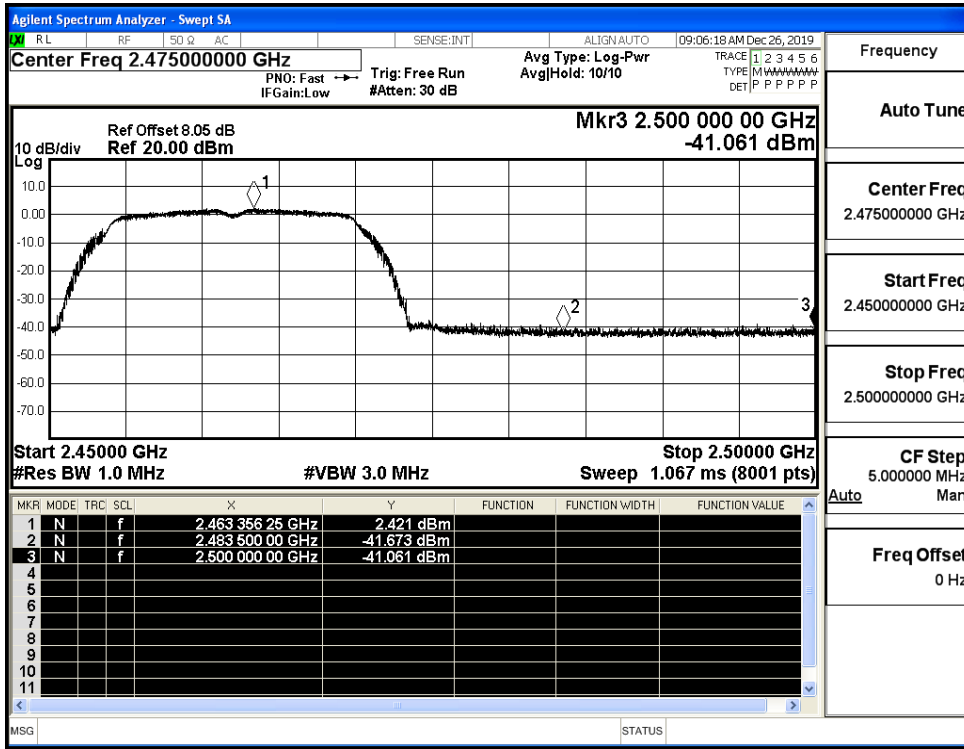
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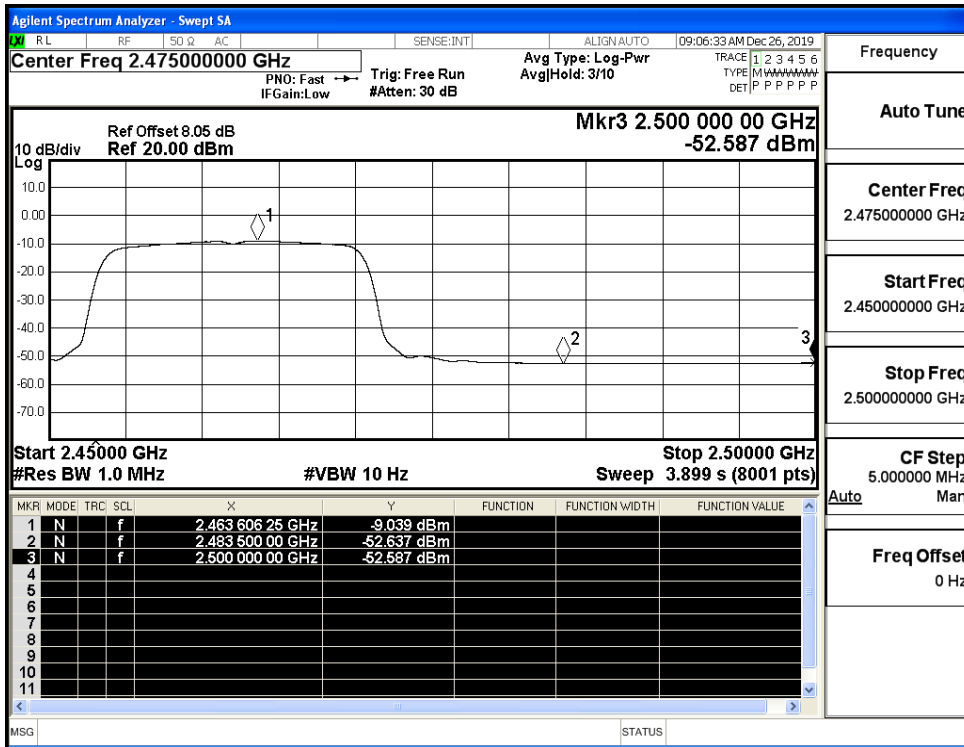
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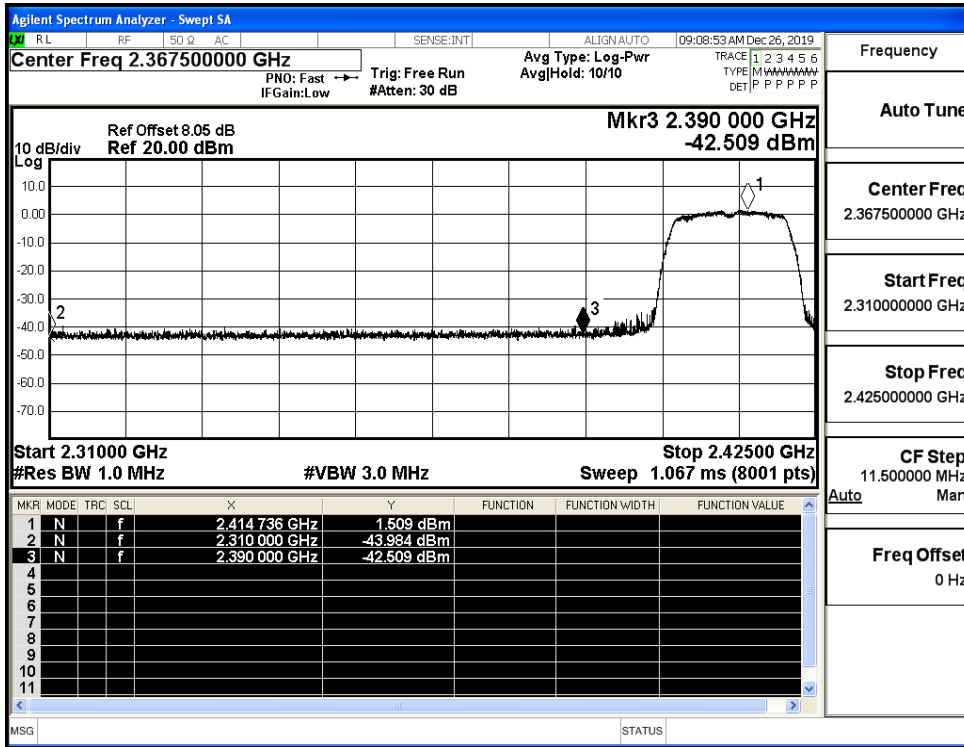
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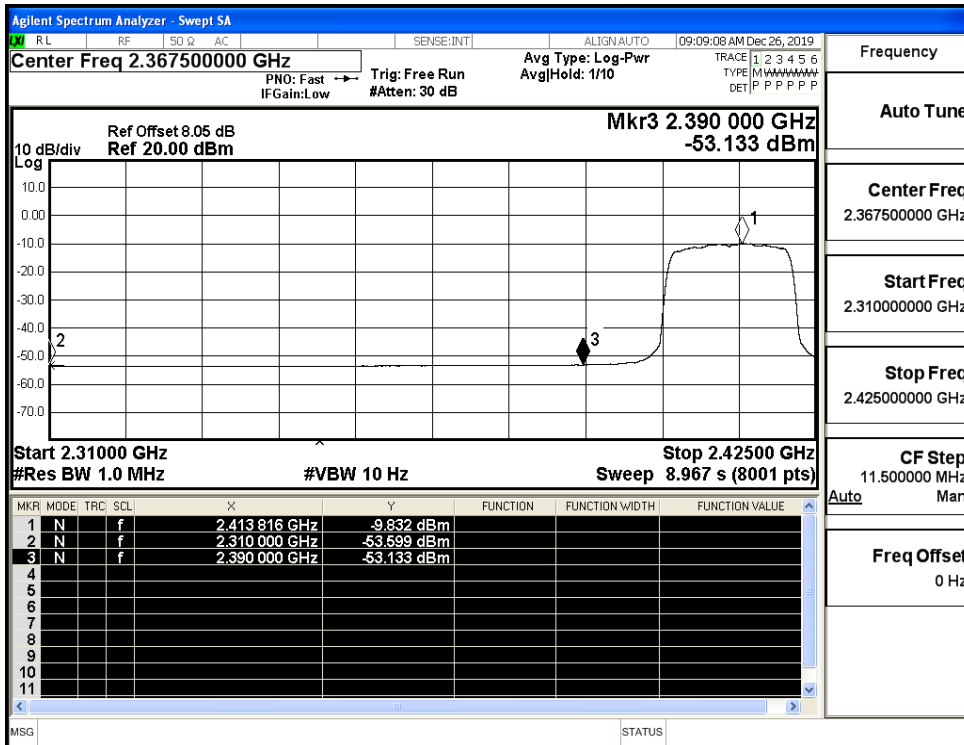
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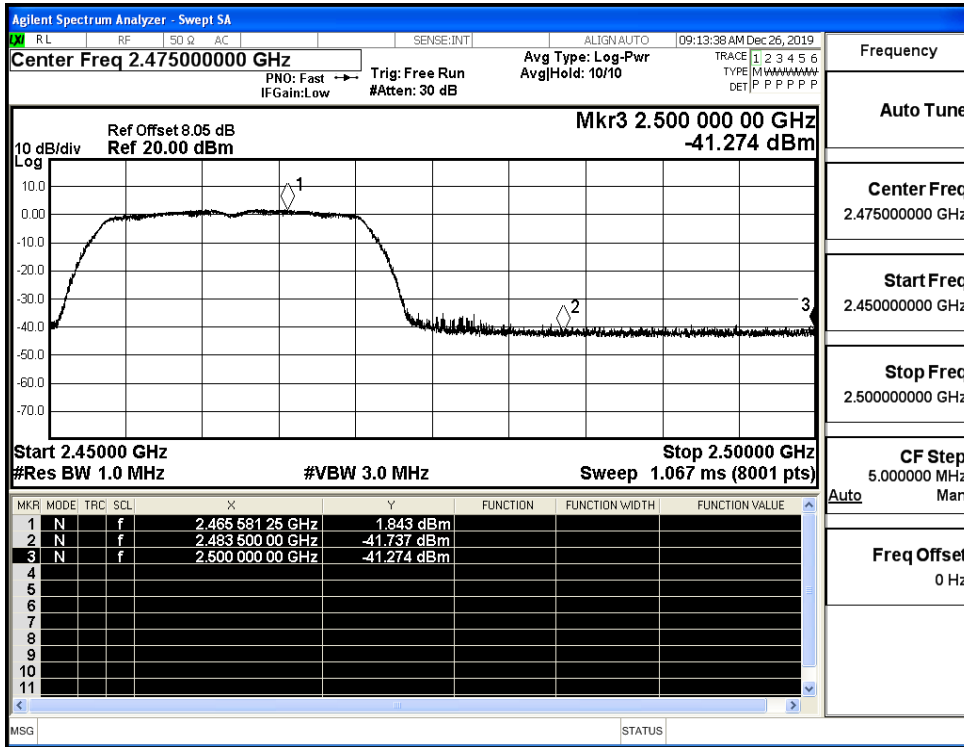
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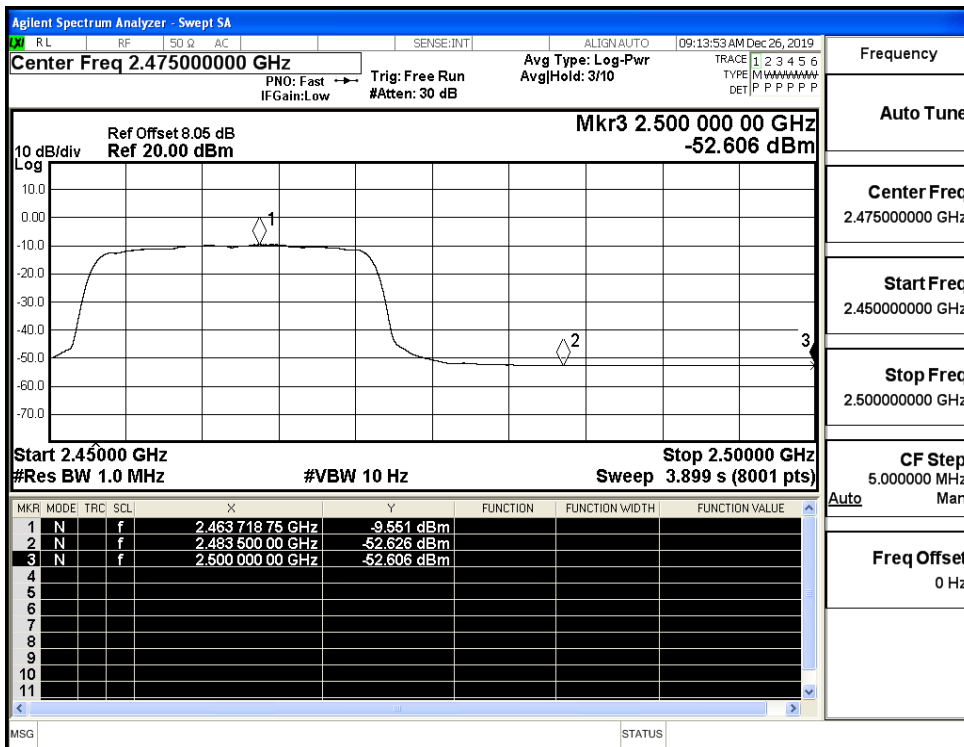
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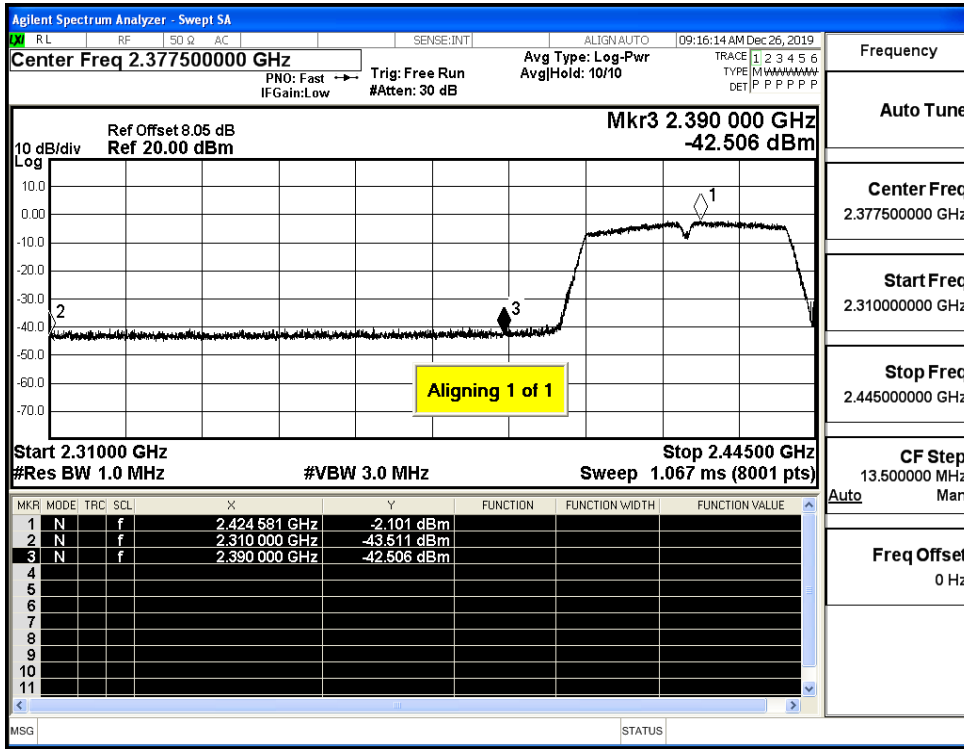
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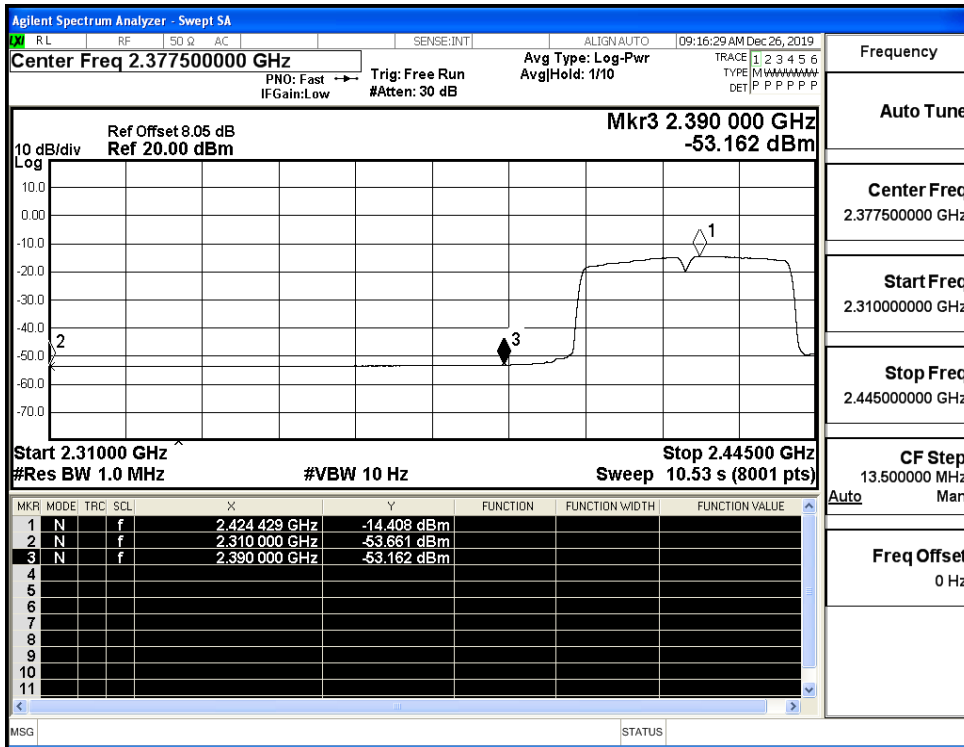
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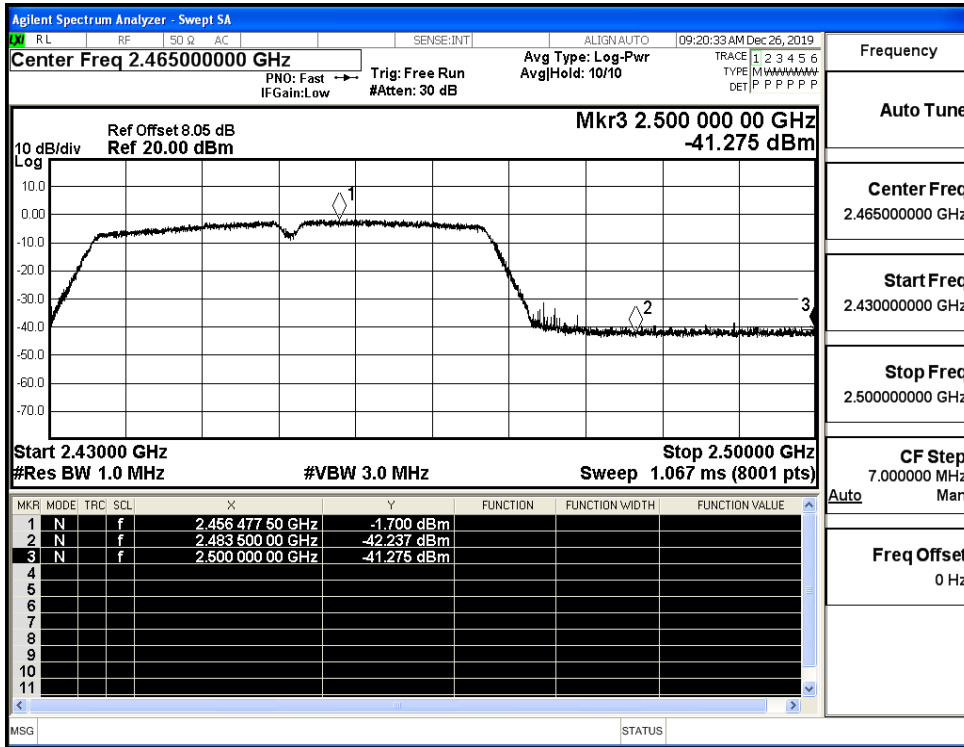
Restrict-band band-edge measurements_11N40SISO_2422_Ant1_PEAK



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

