Appendix A

RF Test Data for BT V4.2 (BDR/EDR) (Conducted Measurement)

Product Name: CD MINI STEREO SYSTEM

Trade Mark: onn™

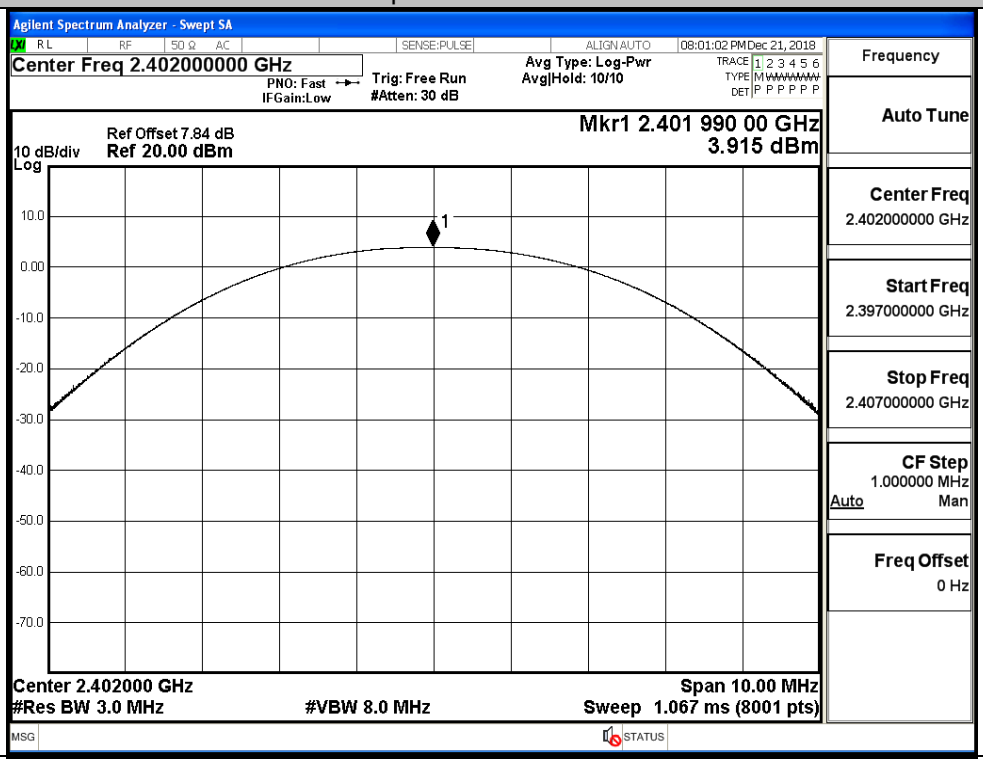
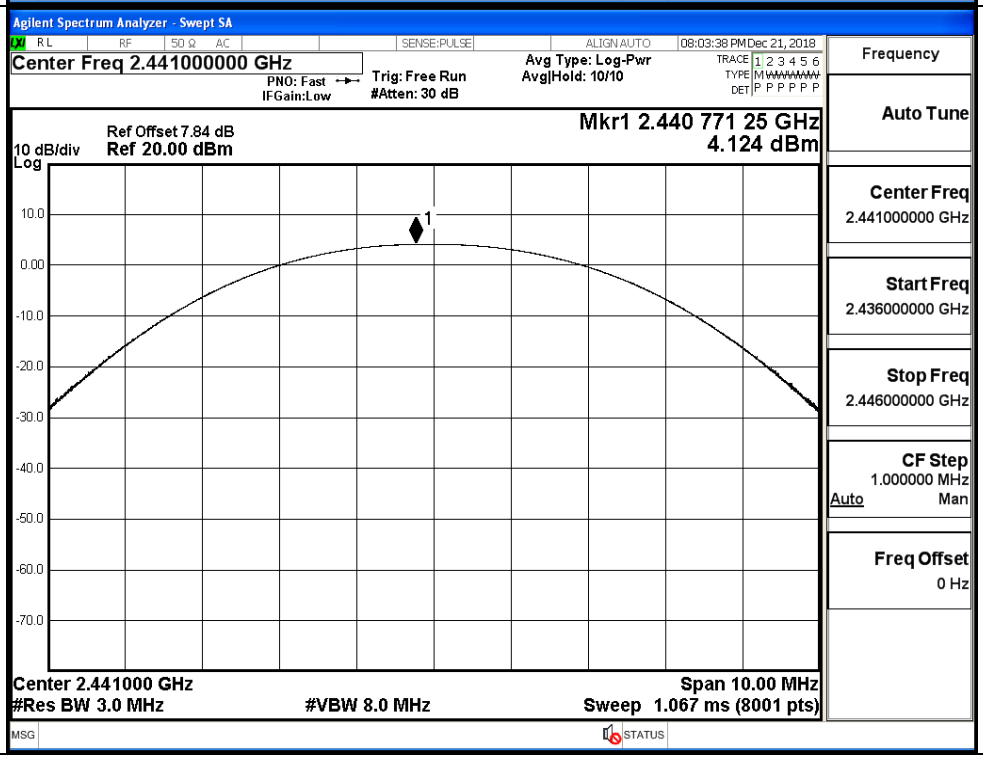
Test Model: OND19AAA12

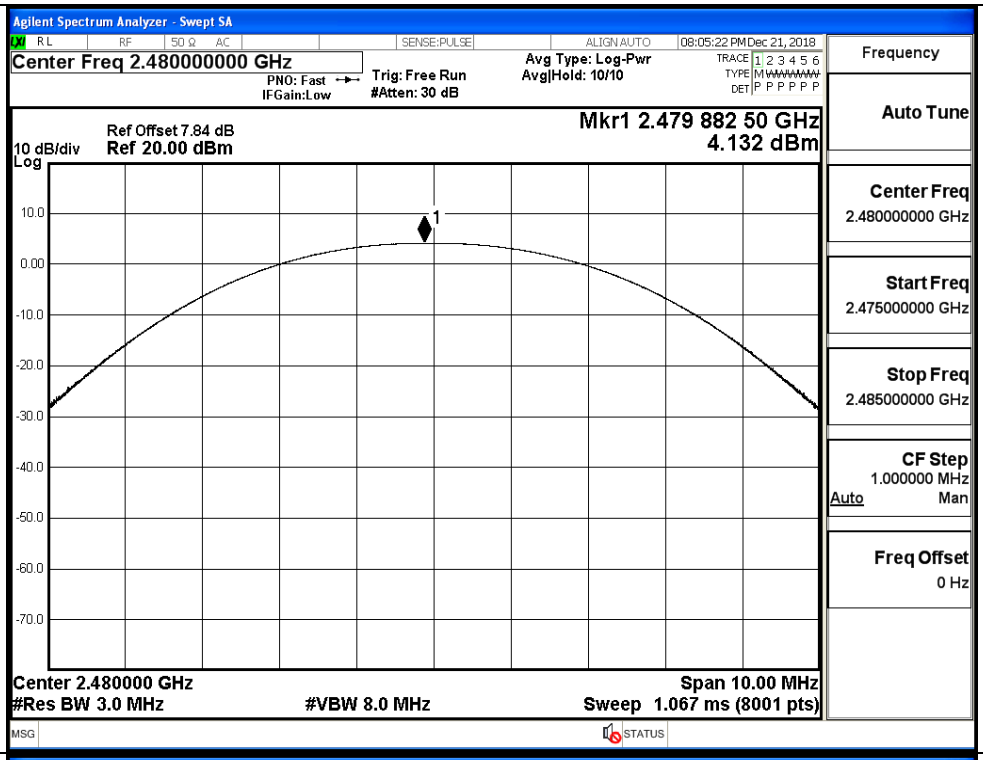
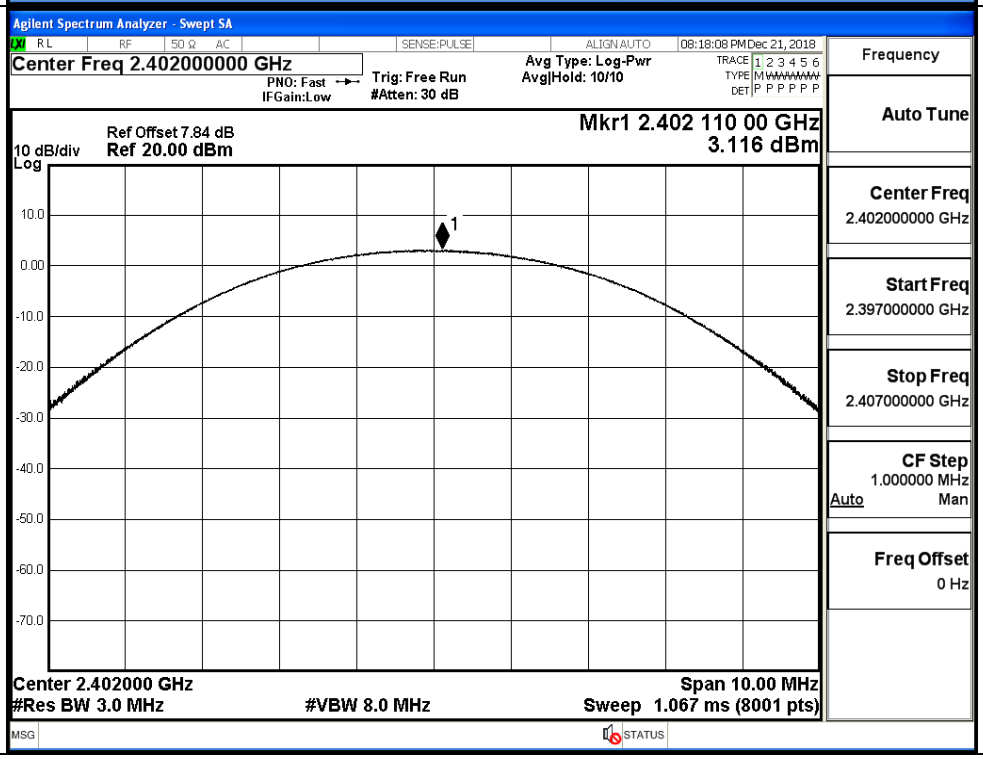
Environmental Conditions

Temperature:	24.3 ° C
Relative Humidity:	53.1%
ATM Pressure:	100.0 kPa
Test Engineer:	JERRY.Zeng
Supervised by:	Jayden.Zhuo

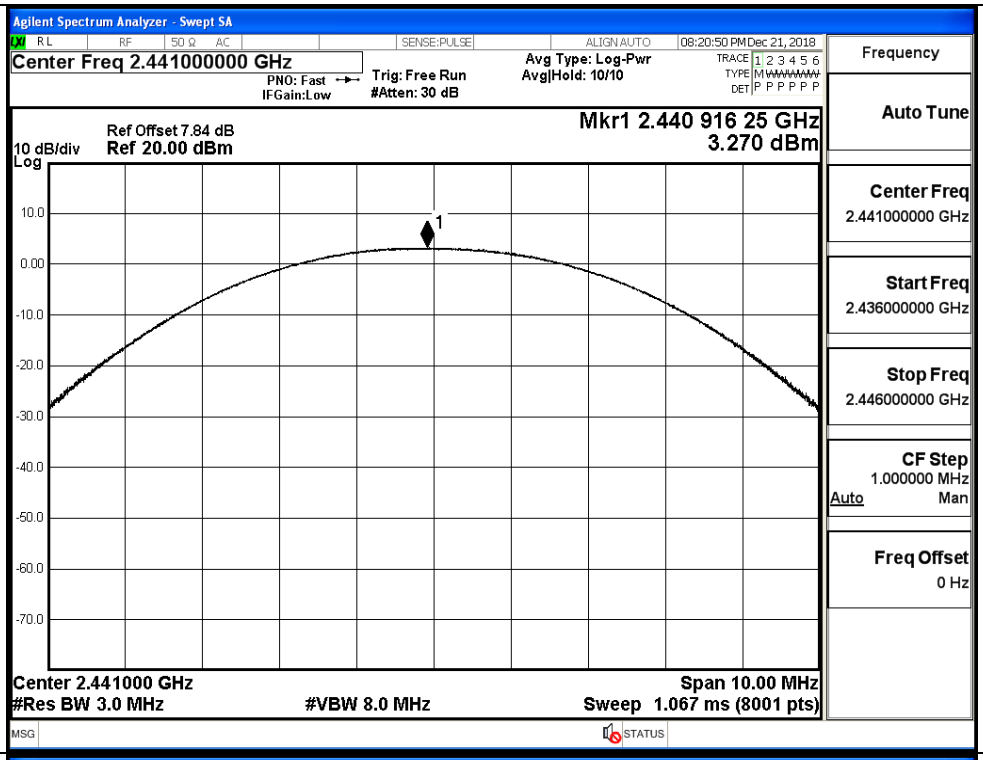
A.1 Maximum Conducted Peak Output Power

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	3.915	21	PASS
	MCH	4.124	21	PASS
	HCH	4.132	21	PASS
π/4DQPSK	LCH	3.116	21	PASS
	MCH	3.270	21	PASS
	HCH	3.289	21	PASS
8DPSK	LCH	3.259	21	PASS
	MCH	3.434	21	PASS
	HCH	3.421	21	PASS

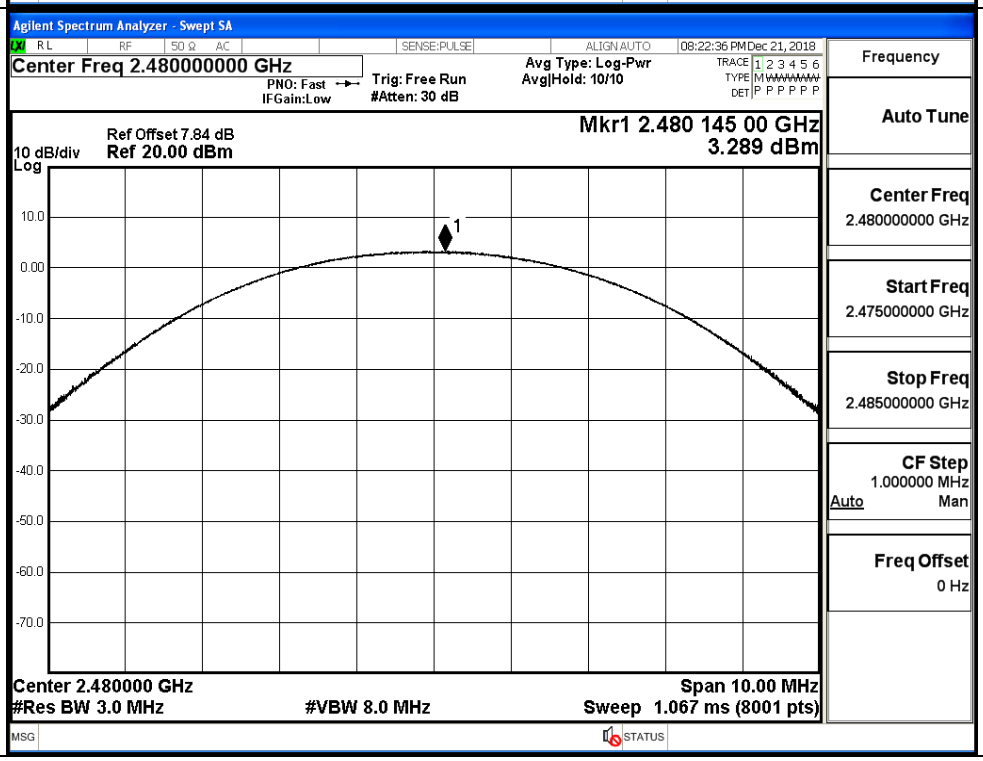
Test Graphs		
GFSK/LCH		
GFSK/MCH		

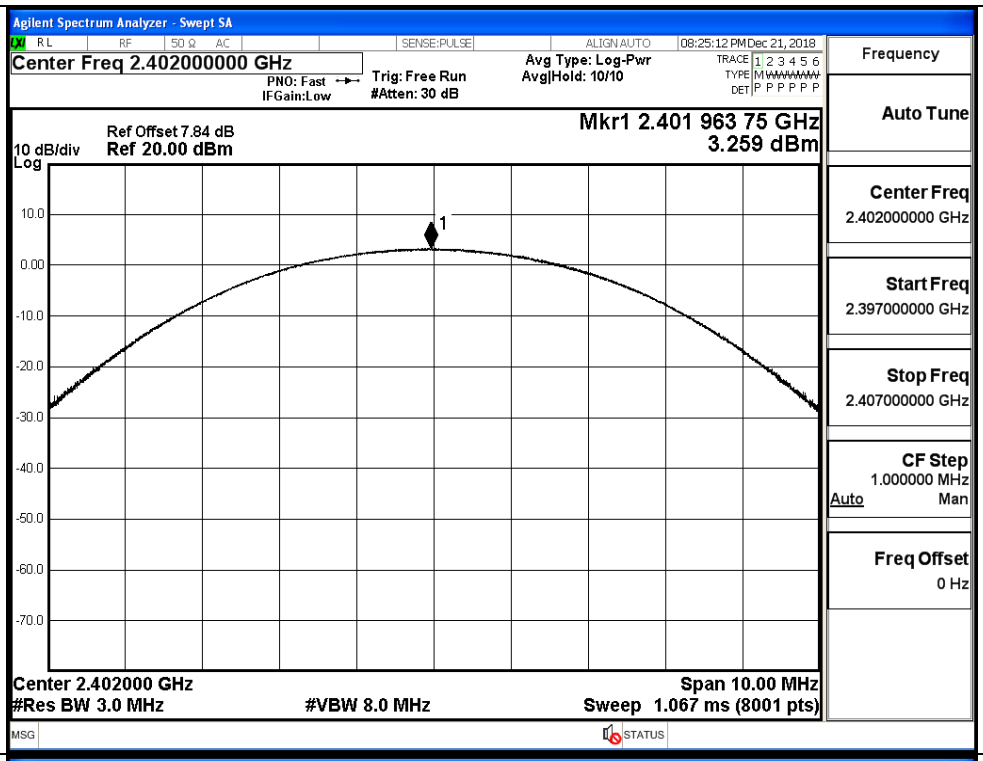
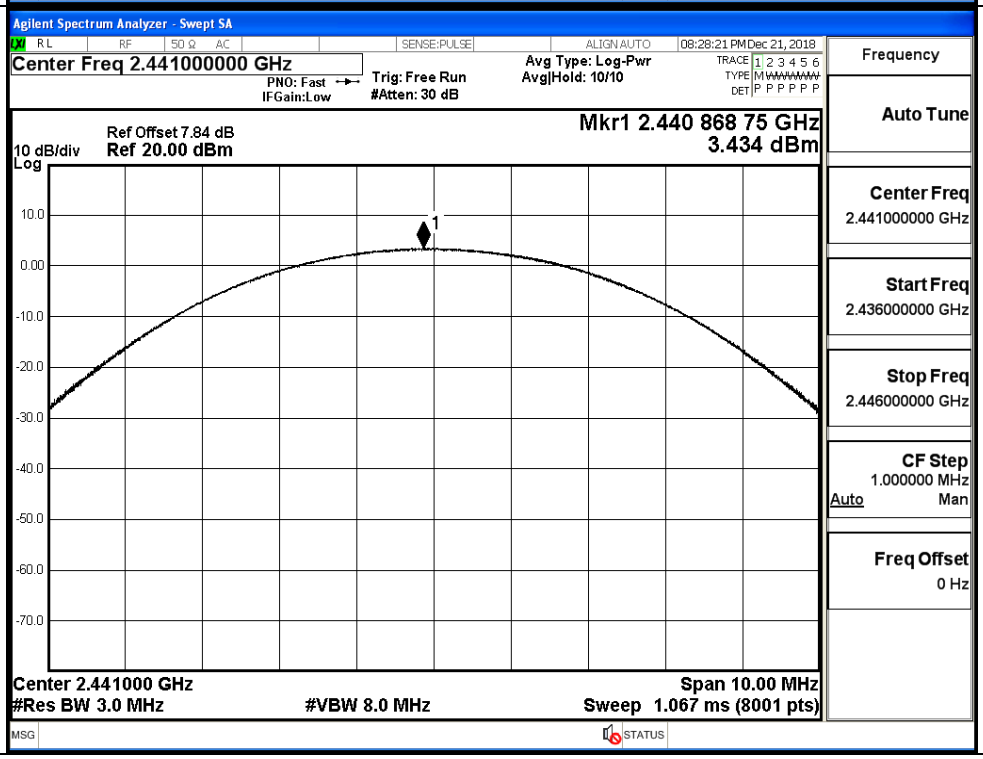
GFSK/HCH	
π/4DQPSK/LCH	

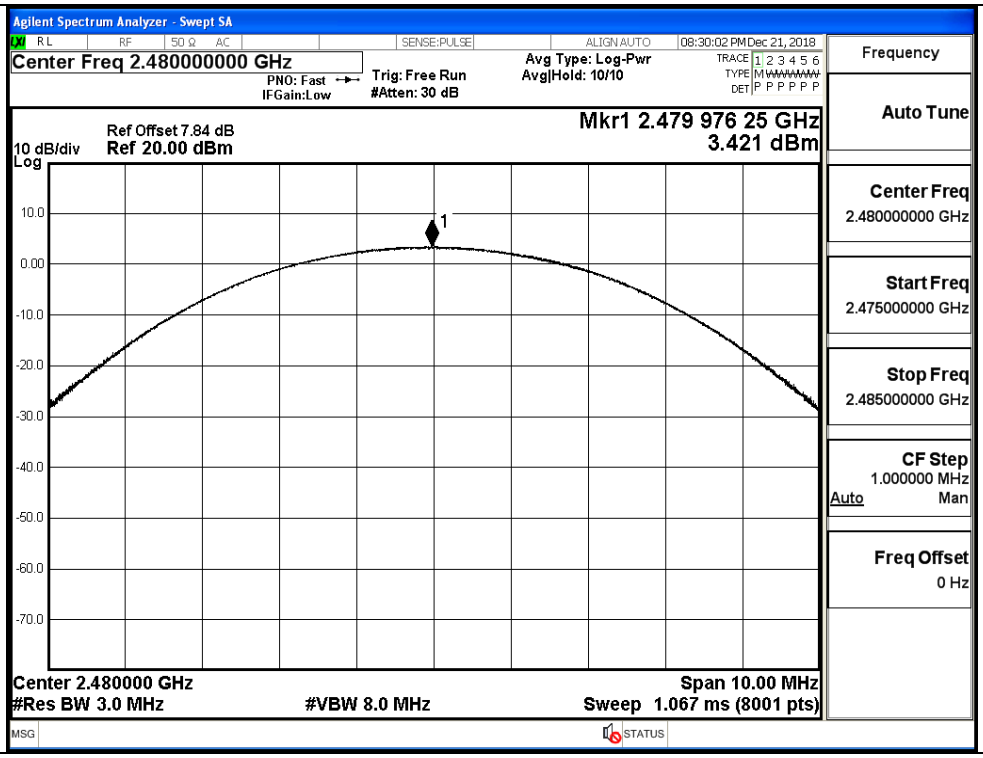
π/4DQPSK/MCH



π/4DQPSK/HCH



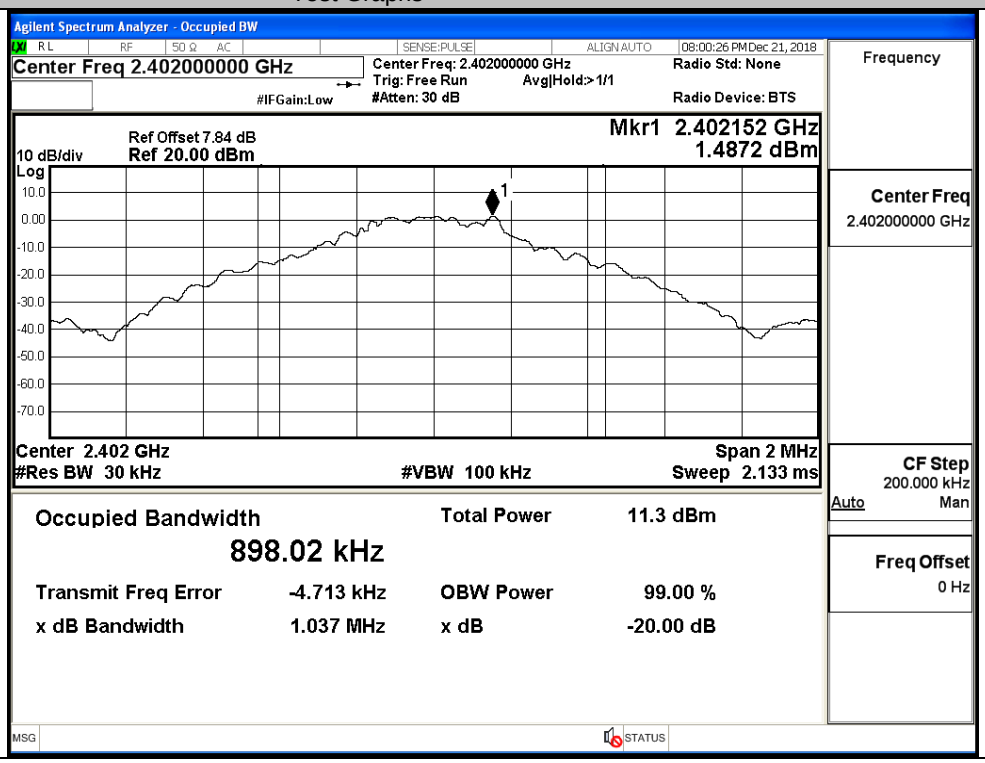
8DPSK/LCH	
8DPSK/MCH	

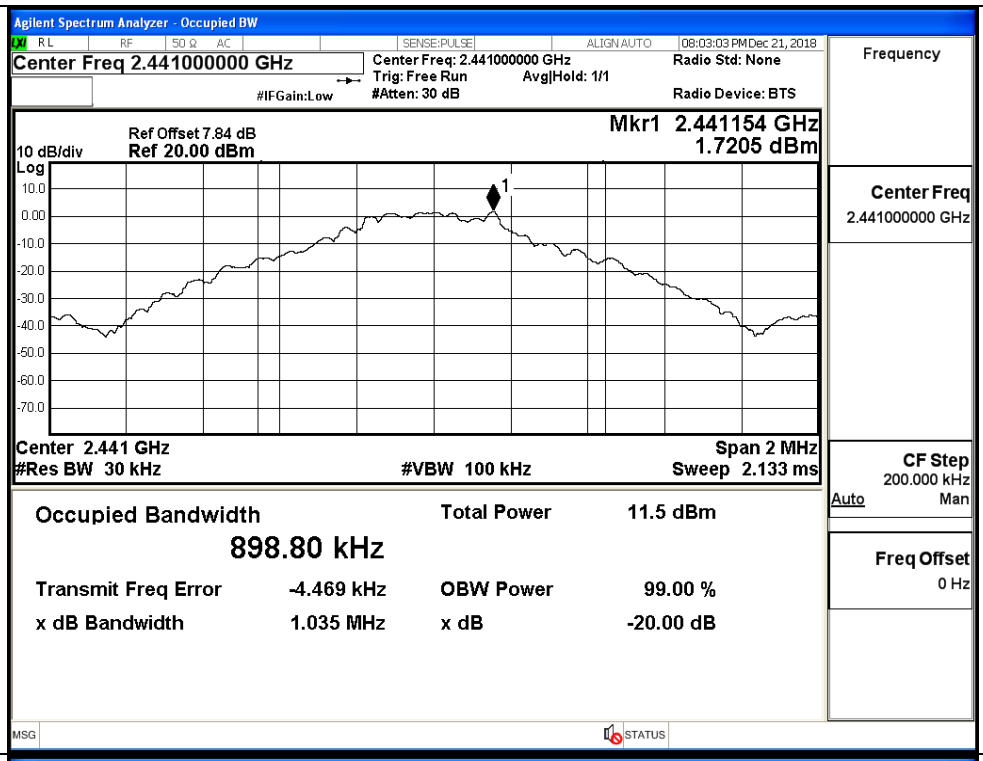
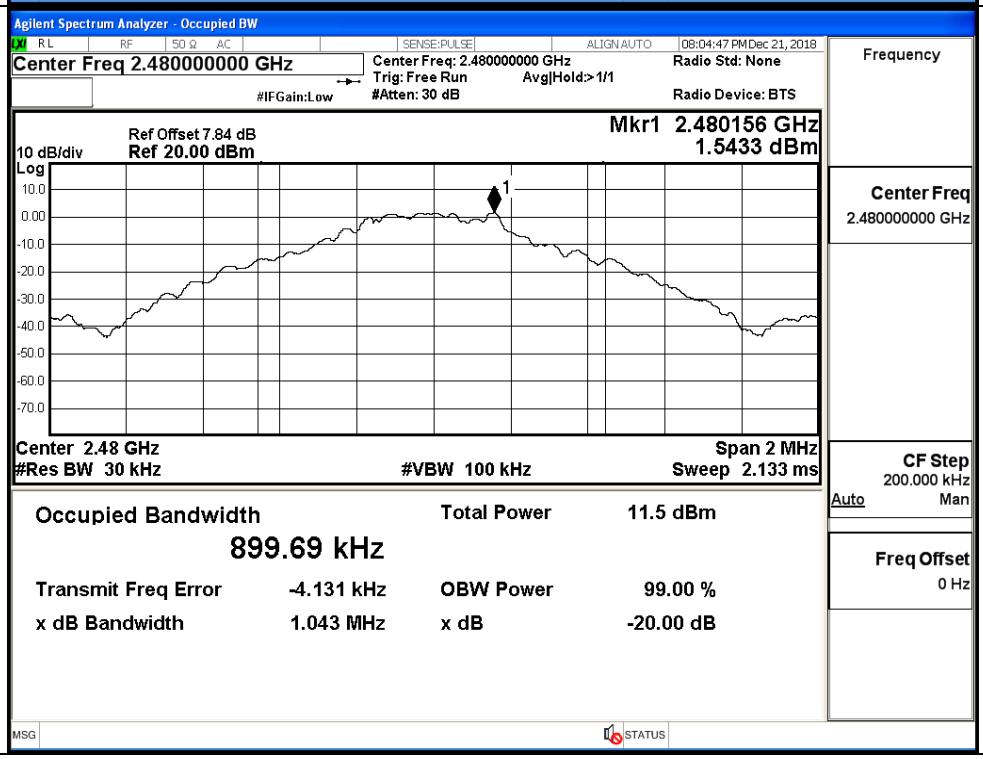
8DPSK/HCH	

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 10/10
08:30:02 PM Dec 21, 2018
Ref Offset 7.84 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.479 976 25 GHz
3.421 dBm
Center 2.480000 GHz
#Res BW 3.0 MHz
#VBW 8.0 MHz
Span 10.00 MHz
Sweep 1.067 ms (8001 pts)
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.475000000 GHz
Stop Freq
2.485000000 GHz
CF Step
1.000000 MHz
Auto
Man
Freq Offset
0 Hz

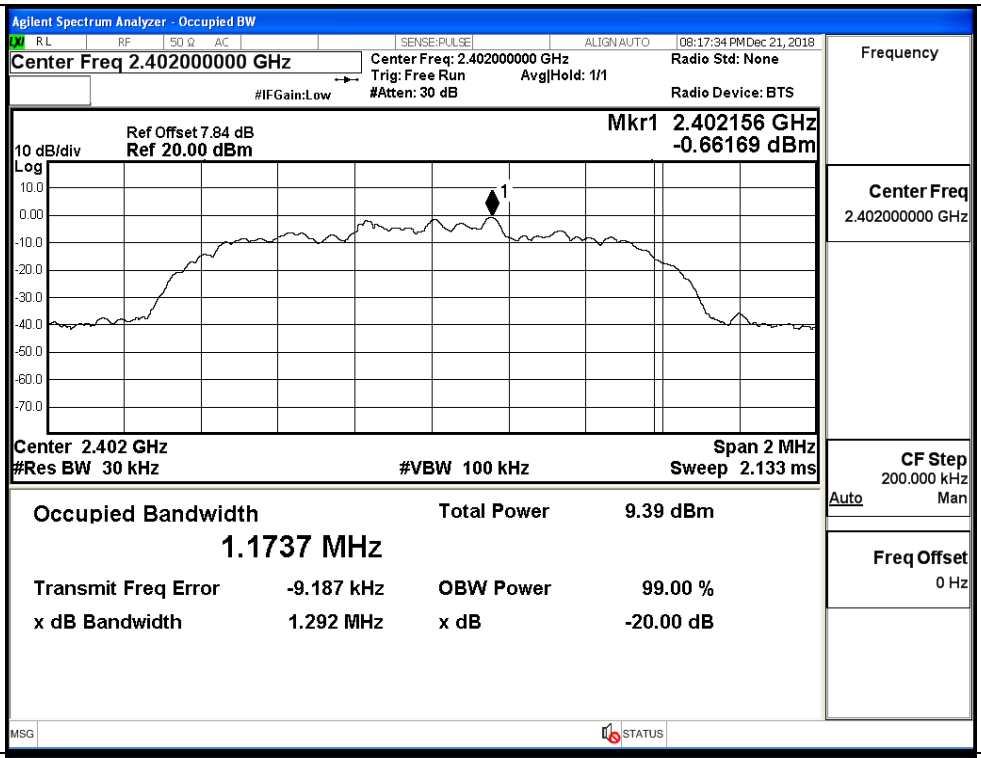
A.2 99% and 20dB Bandwidth

Mode	Channel.	99% Bandwidth [MHz]	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.89802	1.037	Not Specified	PASS
	MCH	0.89880	1.035	Not Specified	PASS
	HCH	0.89969	1.043	Not Specified	PASS
π/4DQPSK	LCH	1.1737	1.292	Not Specified	PASS
	MCH	1.1717	1.290	Not Specified	PASS
	HCH	1.1697	1.289	Not Specified	PASS
8DPSK	LCH	1.1811	1.294	Not Specified	PASS
	MCH	1.1802	1.295	Not Specified	PASS
	HCH	1.1795	1.294	Not Specified	PASS

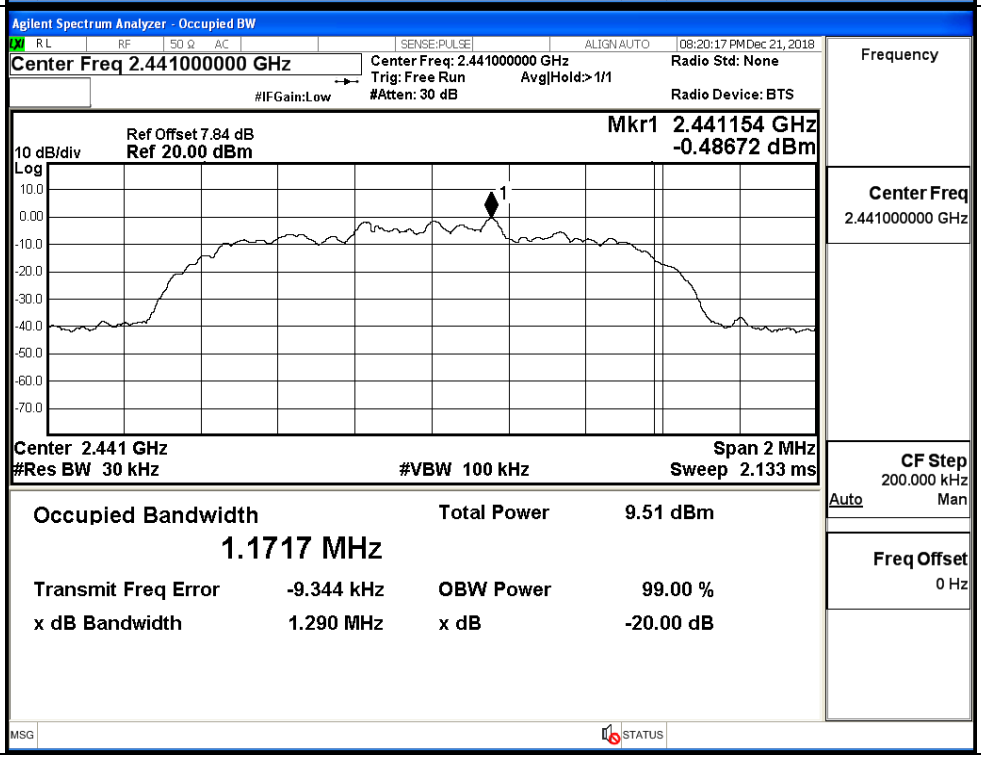
Test Graphs		
GFSK/LCH		

GFSK/MCH	
GFSK/HCH	

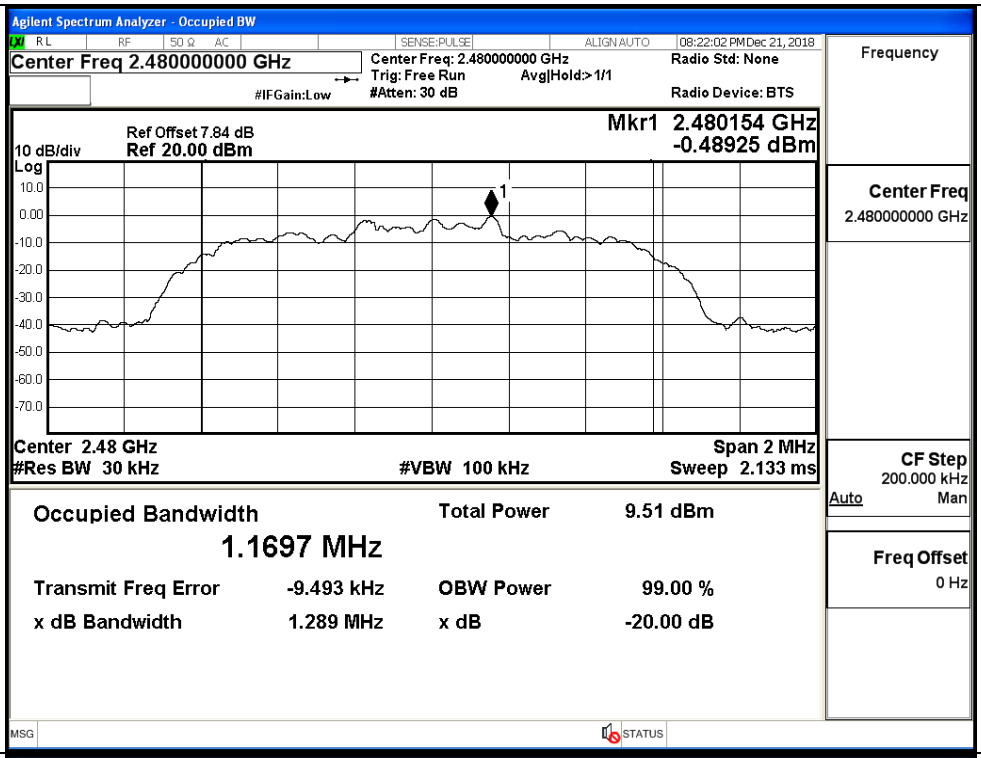
π/4DQPSK/LCH



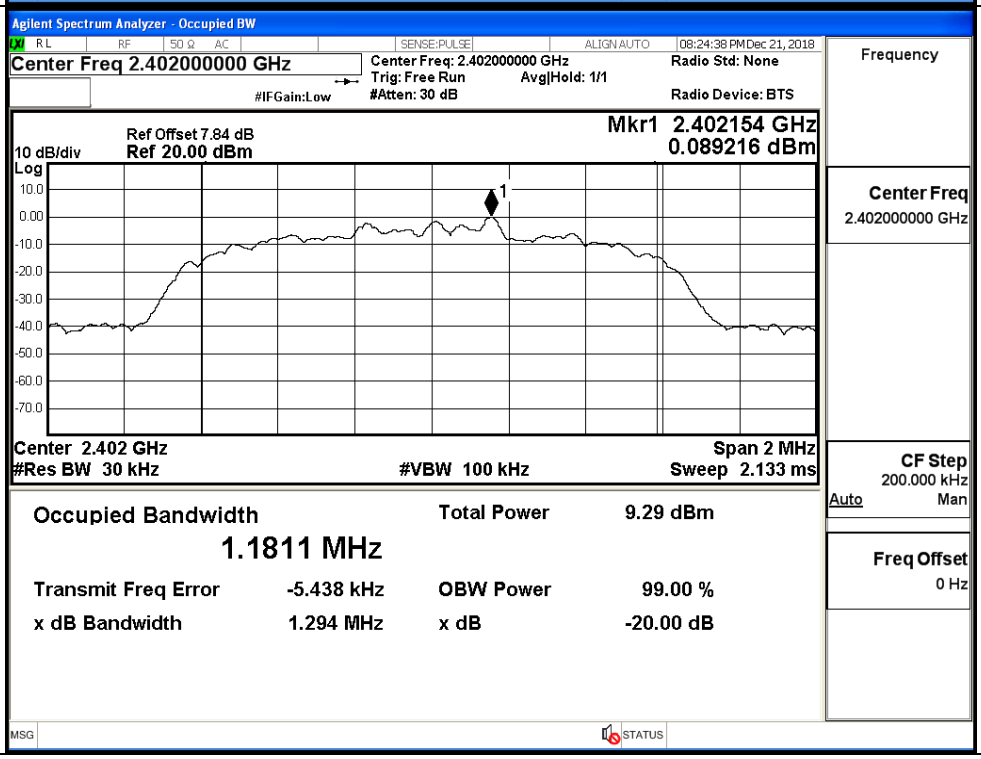
π/4DQPSK/MCH



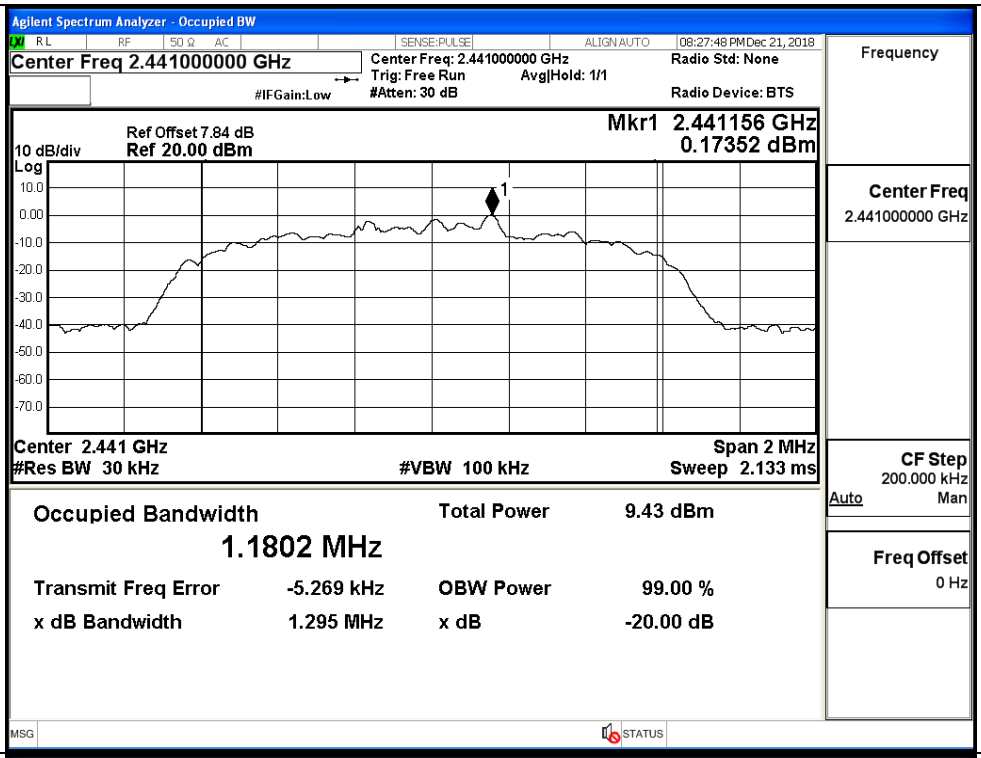
π/4DQPSK/HCH



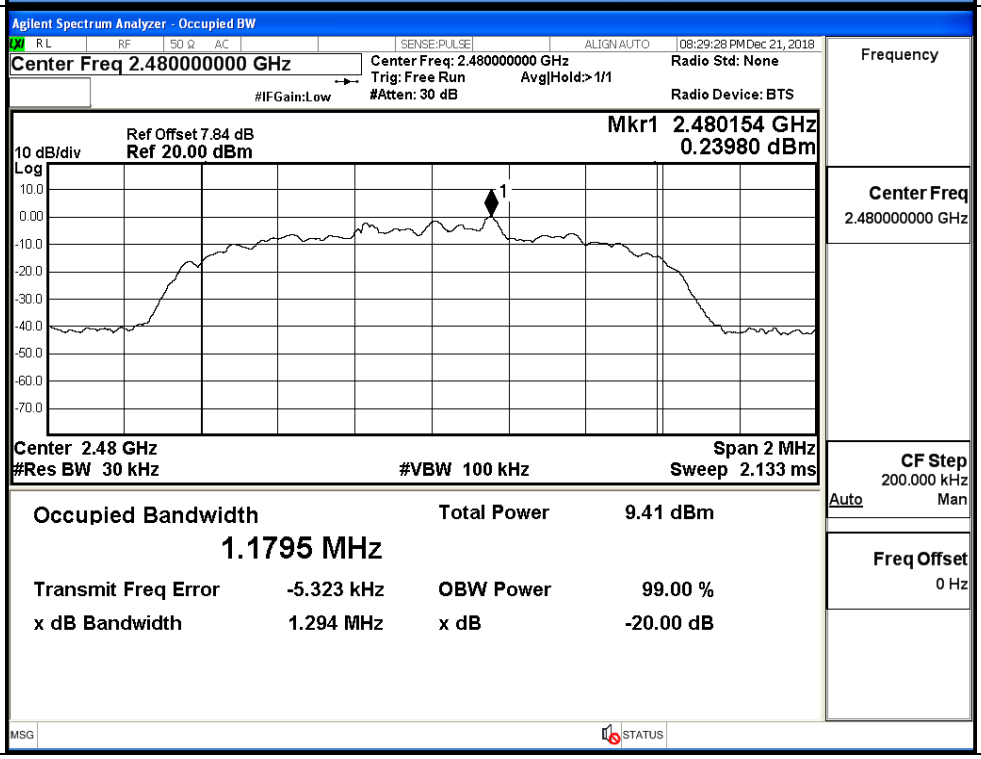
8DPSK/LCH



8DPSK/MCH

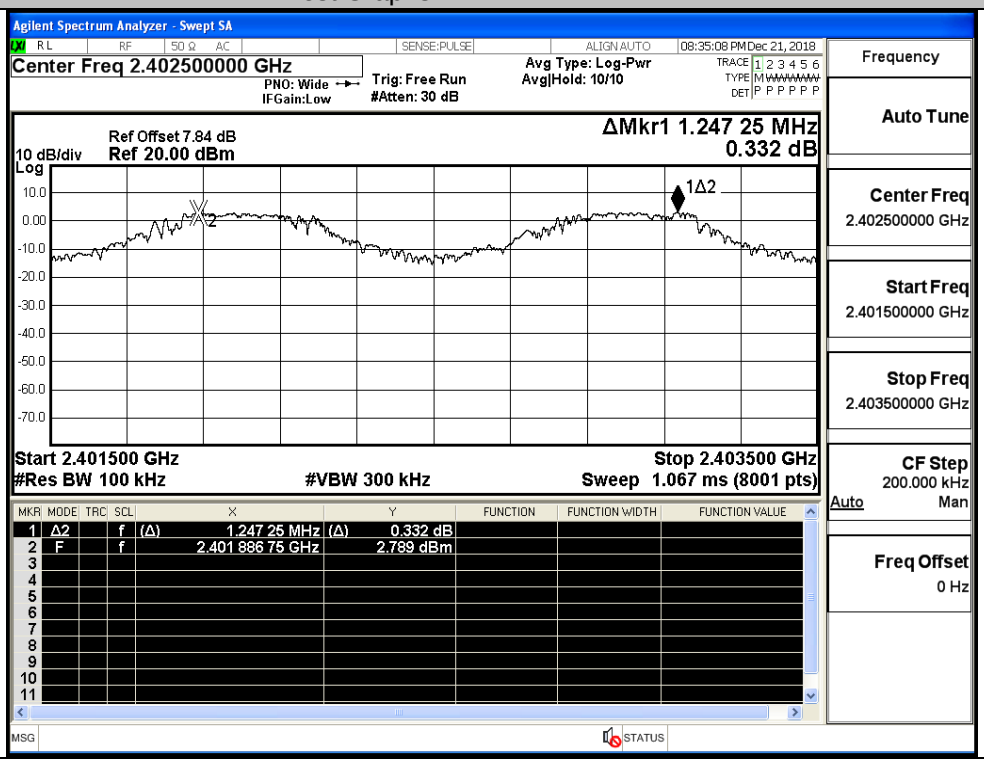


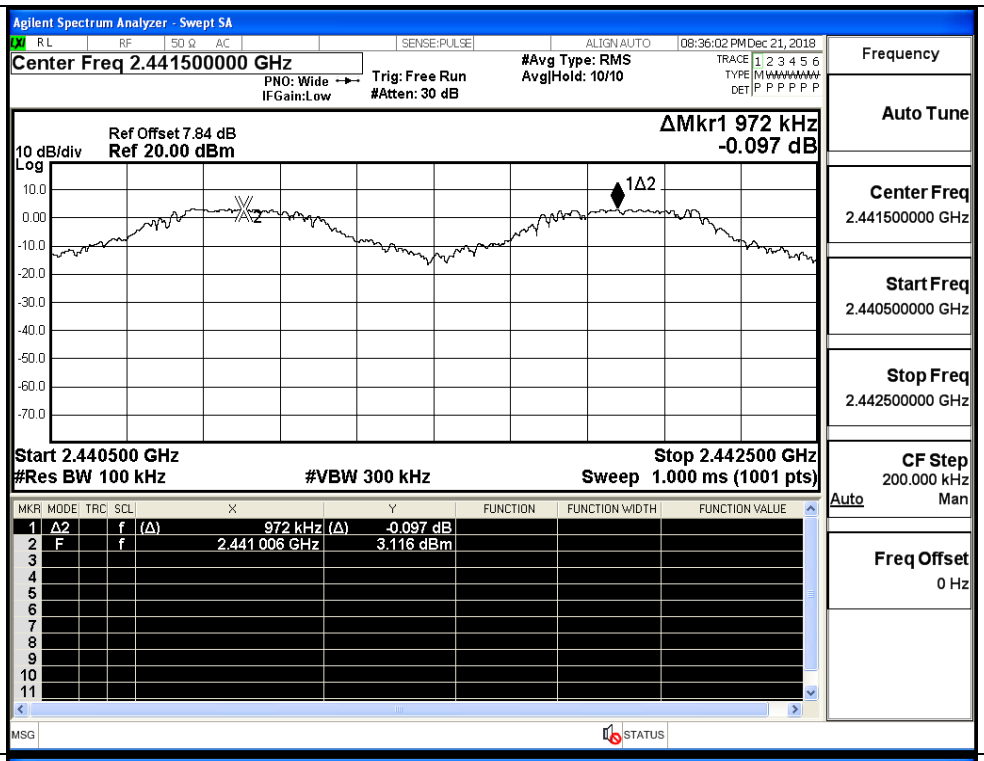
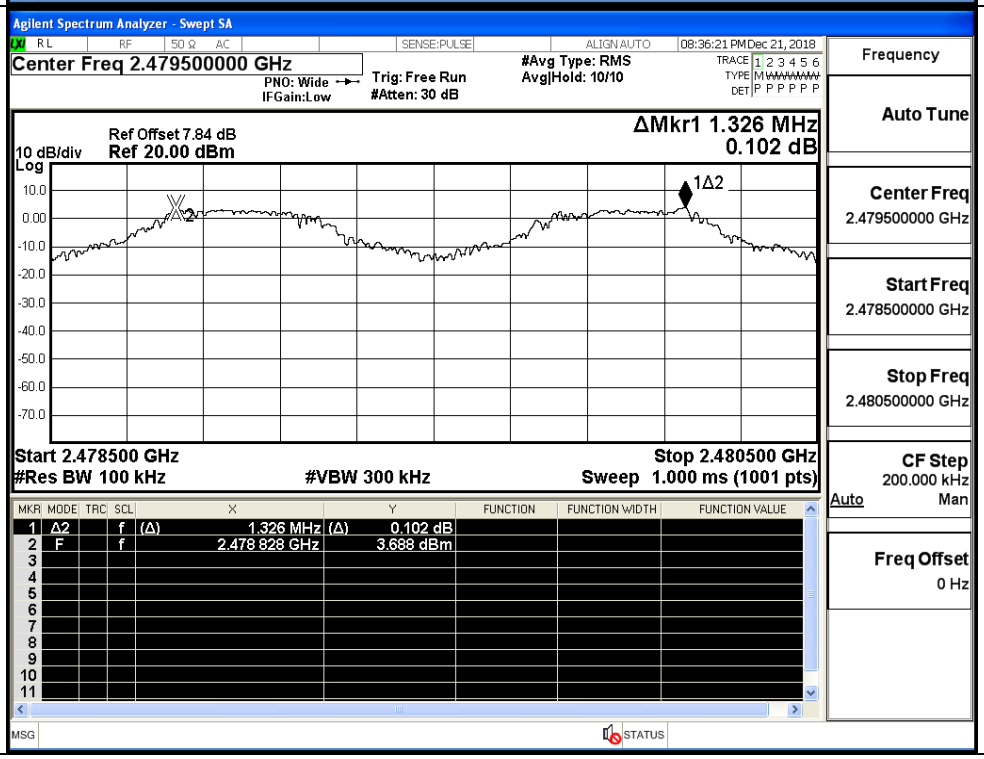
8DPSK/HCH



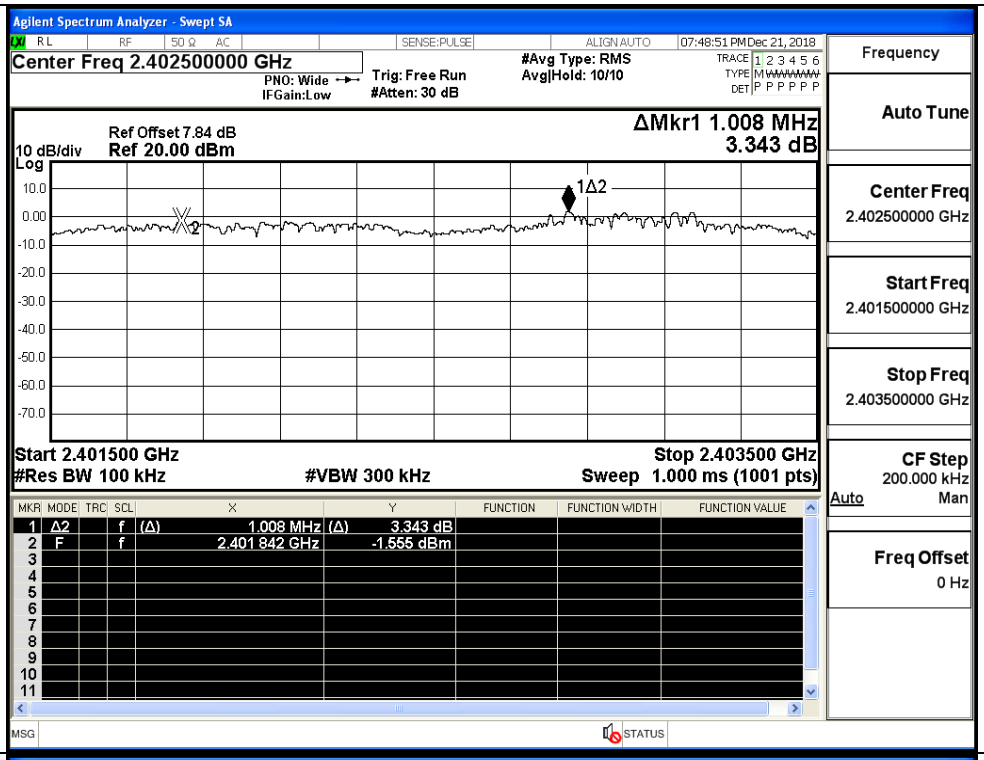
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.247	0.695	PASS
	MCH	0.972	0.695	PASS
	HCH	1.326	0.695	PASS
π/4DQPSK	LCH	1.008	0.861	PASS
	MCH	1.016	0.861	PASS
	HCH	0.990	0.861	PASS
8DPSK	LCH	0.980	0.863	PASS
	MCH	0.884	0.863	PASS
	HCH	0.878	0.863	PASS

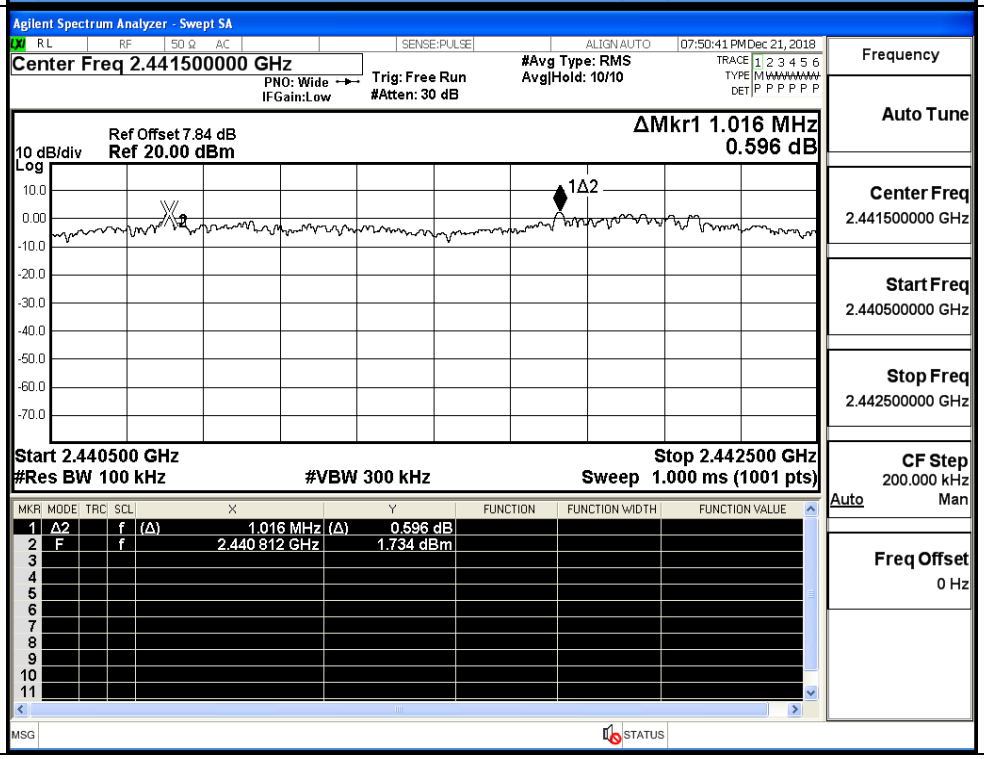
Test Graphs	
GFSK/LCH	

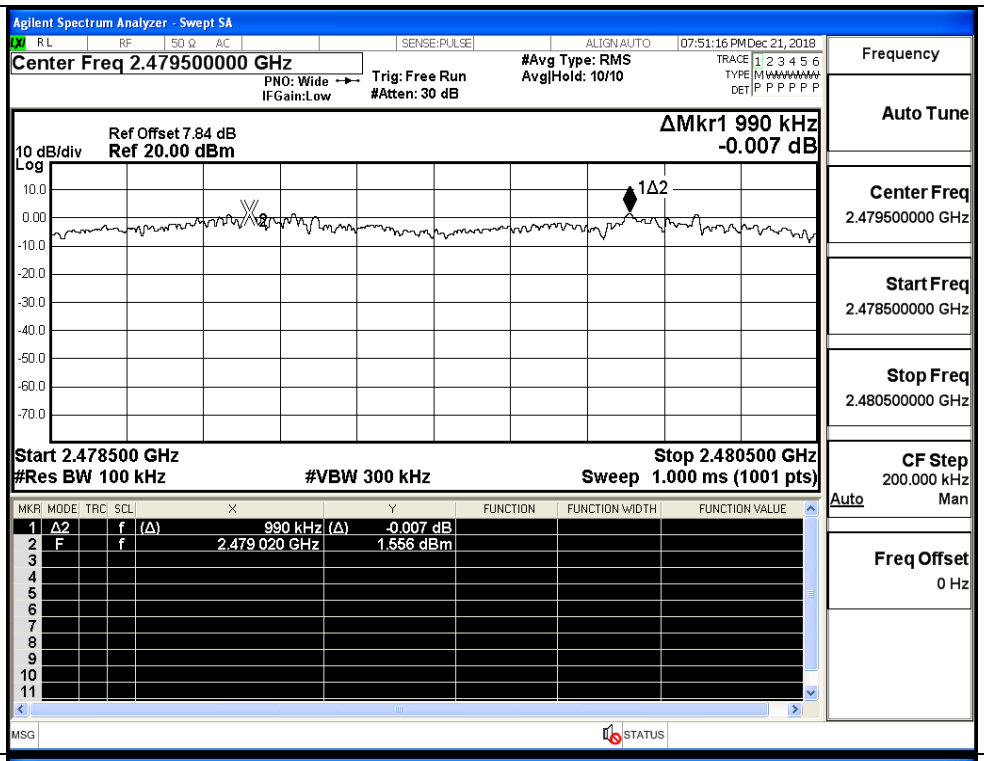
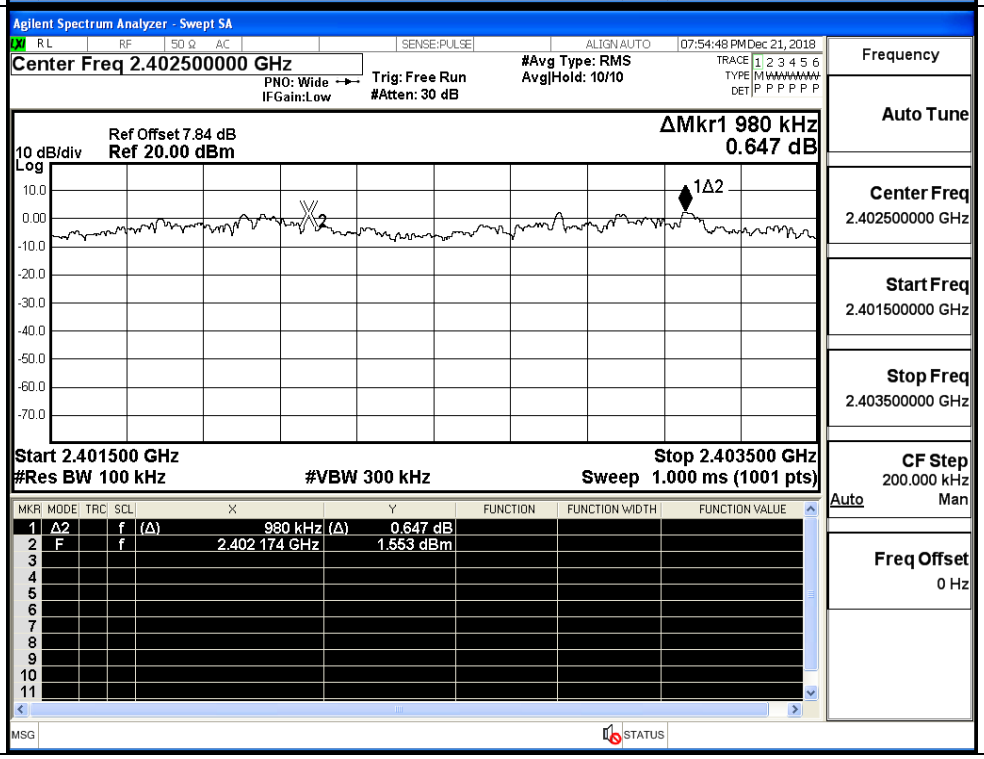
GFSK/MCH	
GFSK/HCH	

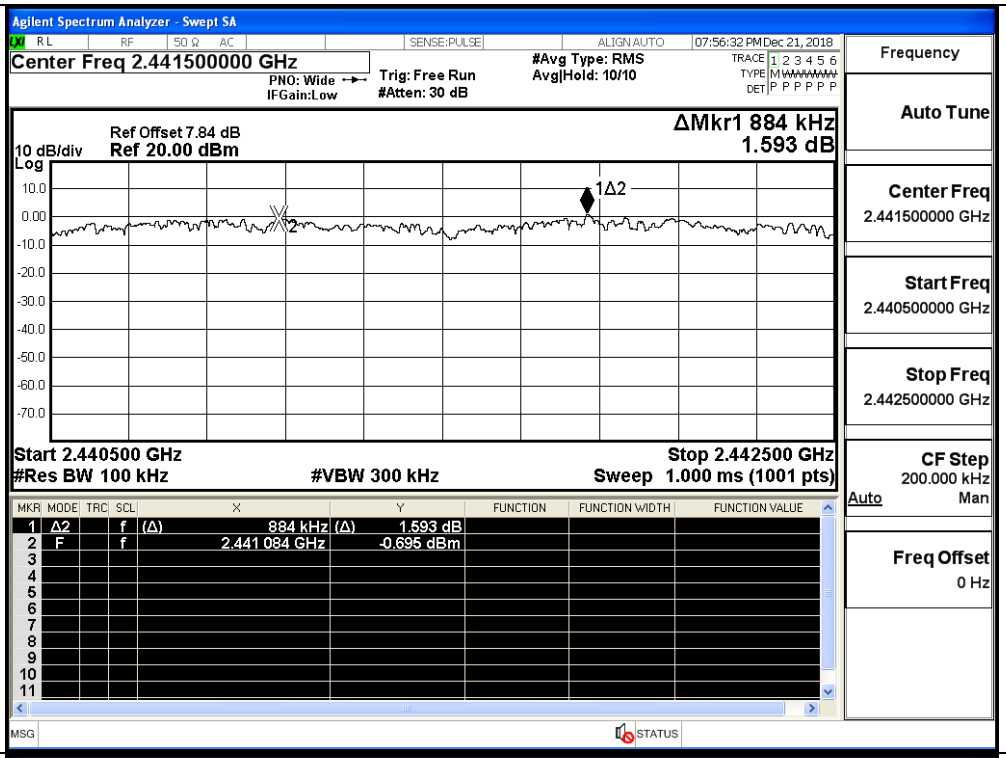
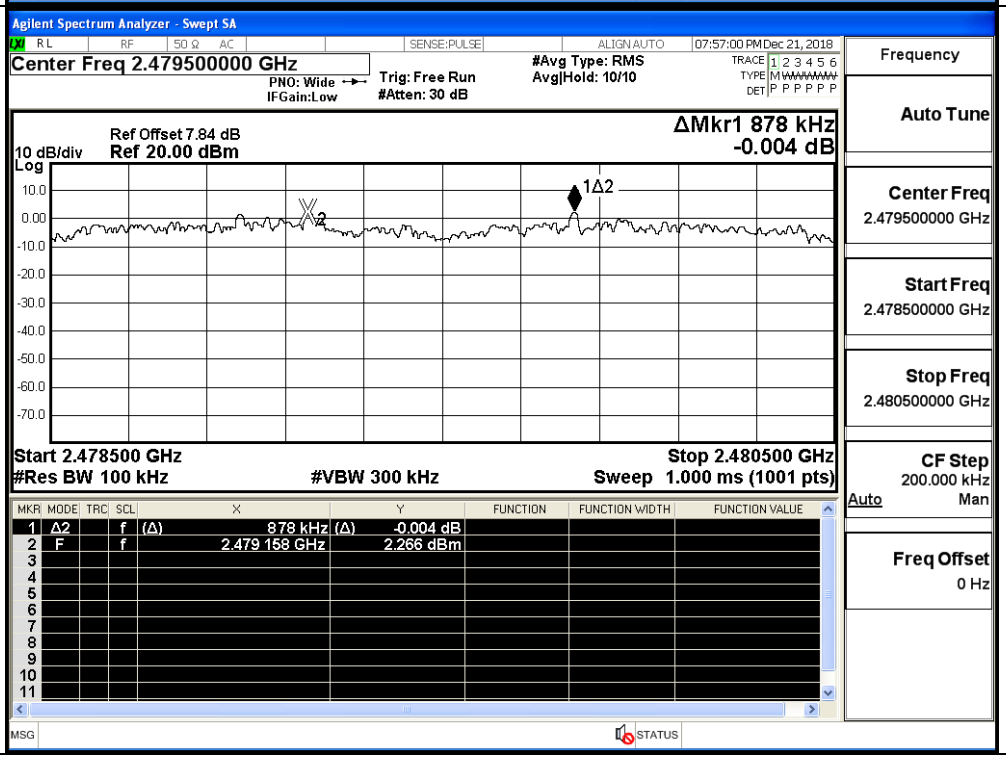
π/4DQPSK/LCH



π/4DQPSK/MCH

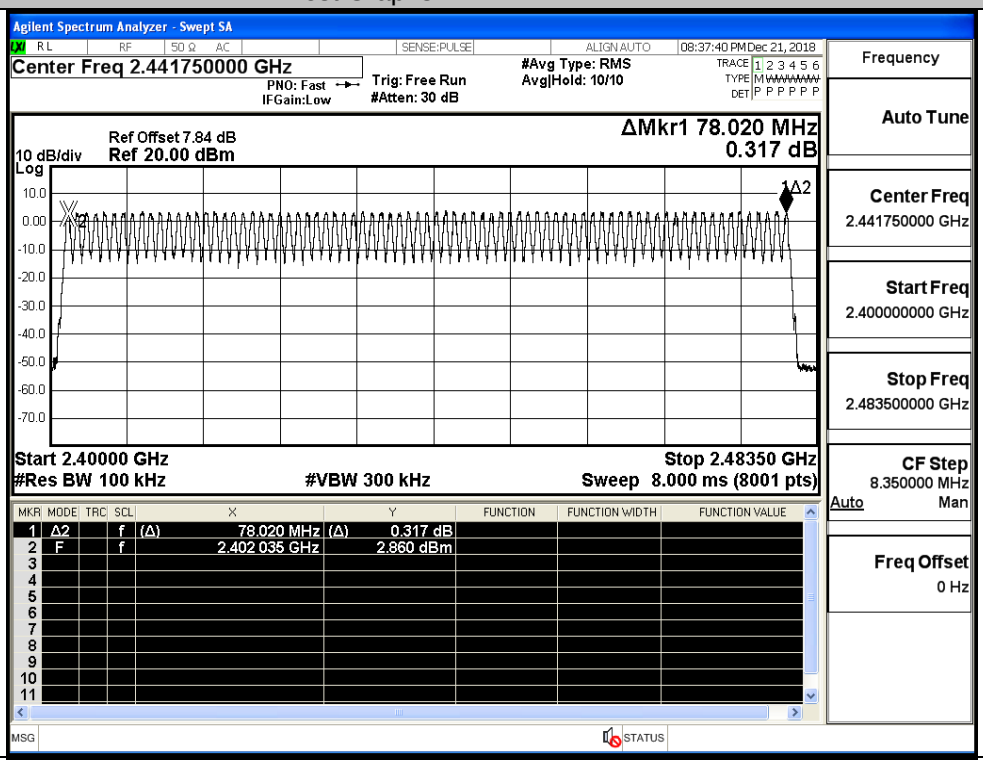
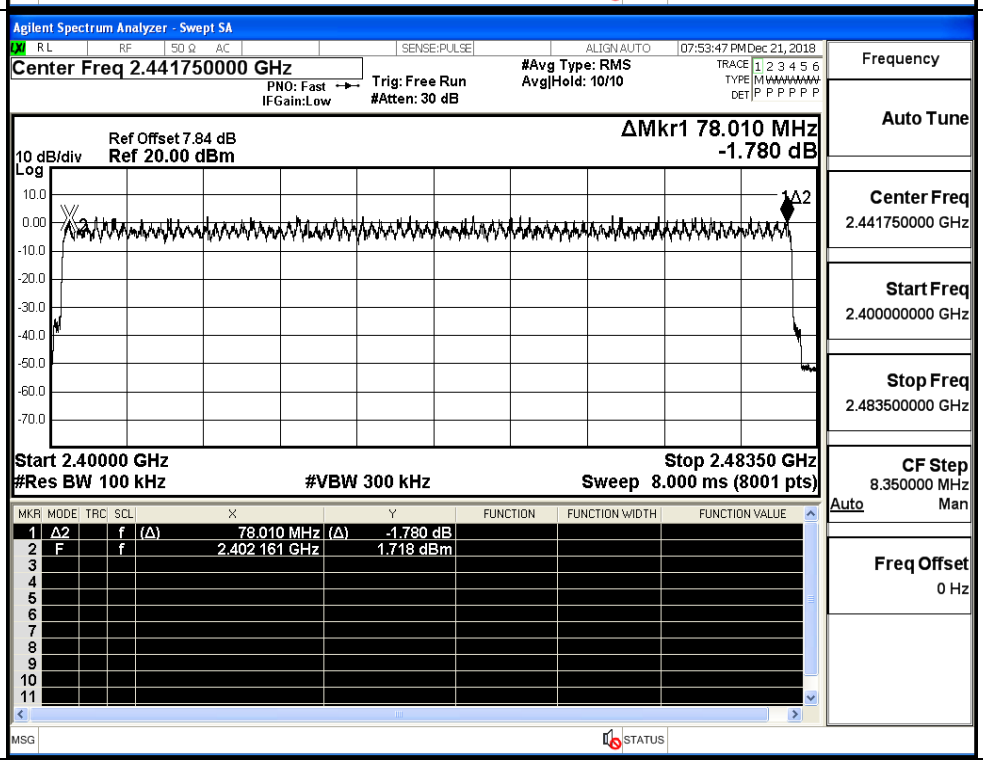


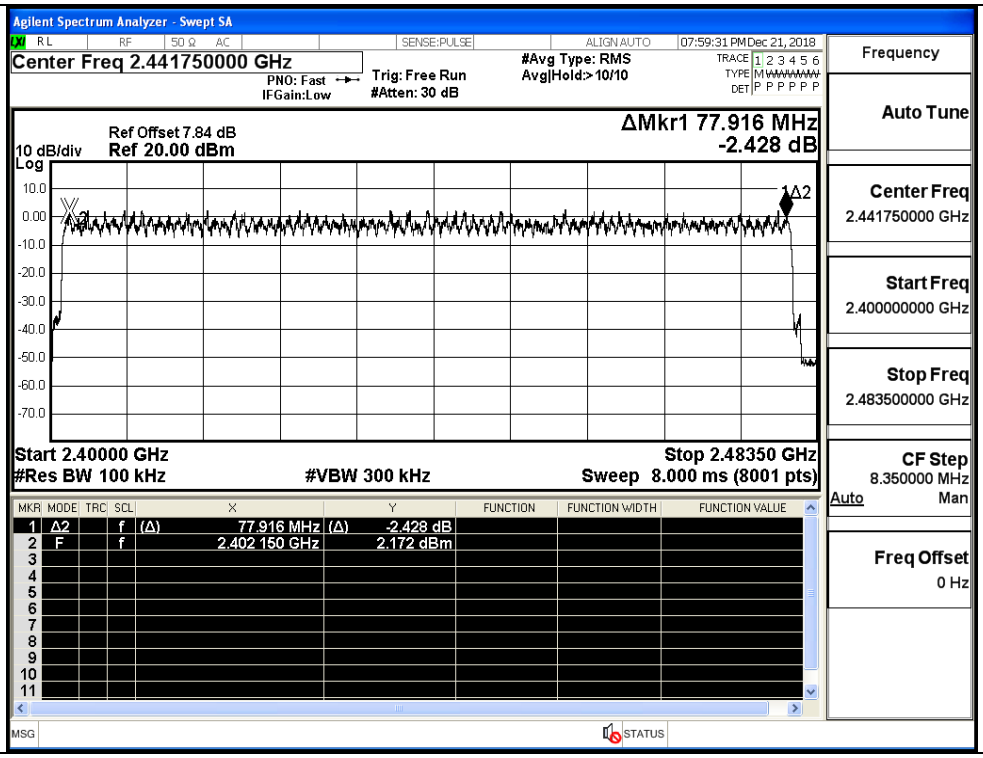
π/4DQPSK/HCH		
8DPSK/LCH		

8DPSK/MCH	
8DPSK/HCH	

A.4 Hopping Channel Number

Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
π/4DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

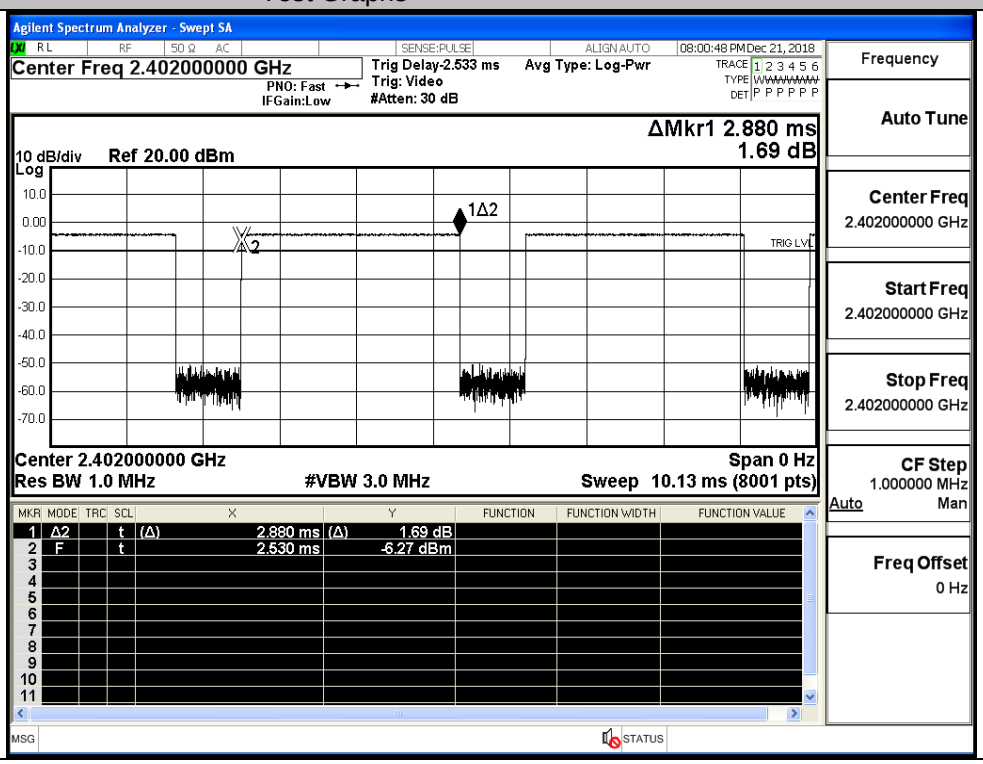
Test Graphs	
GFSK/Hop	
π/4DQPSK/Hop	

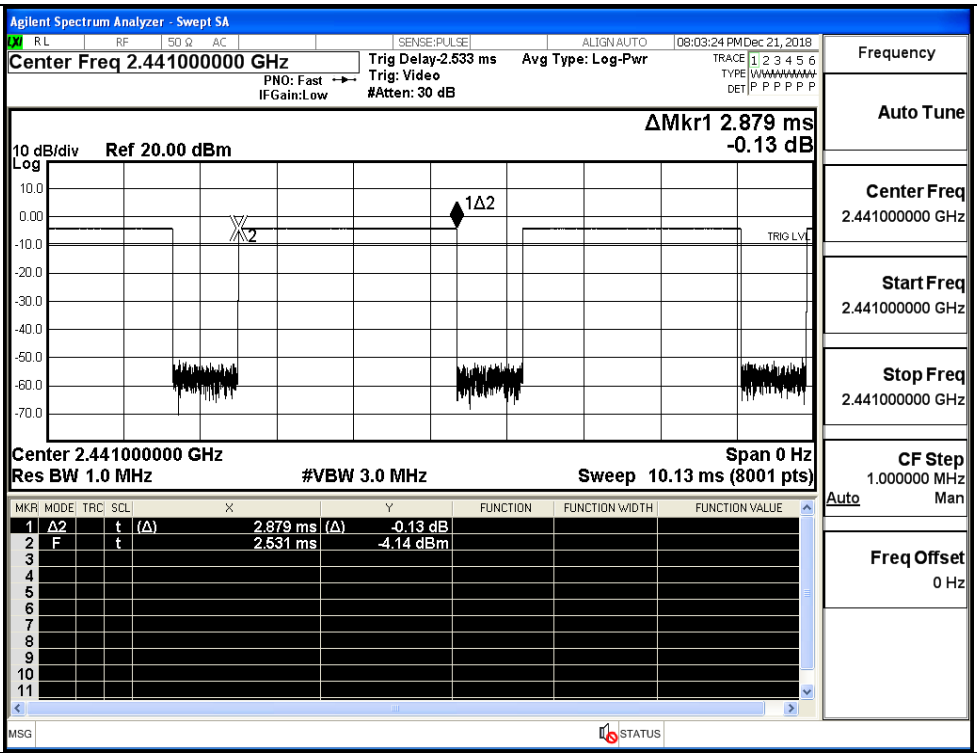
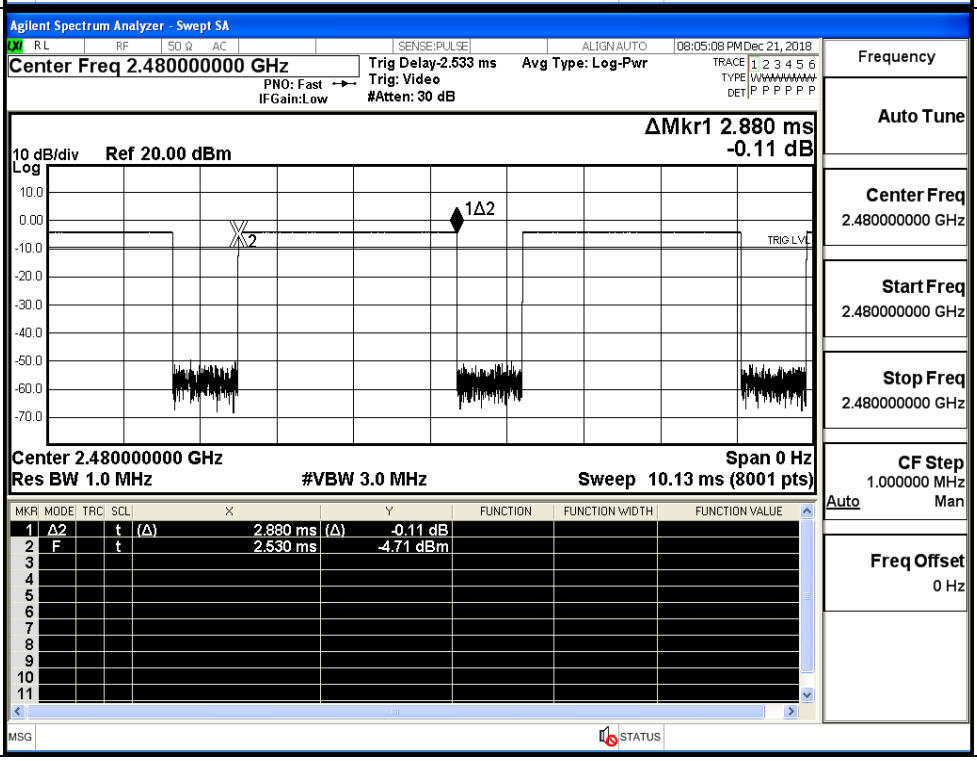
8DPSK/Hop		

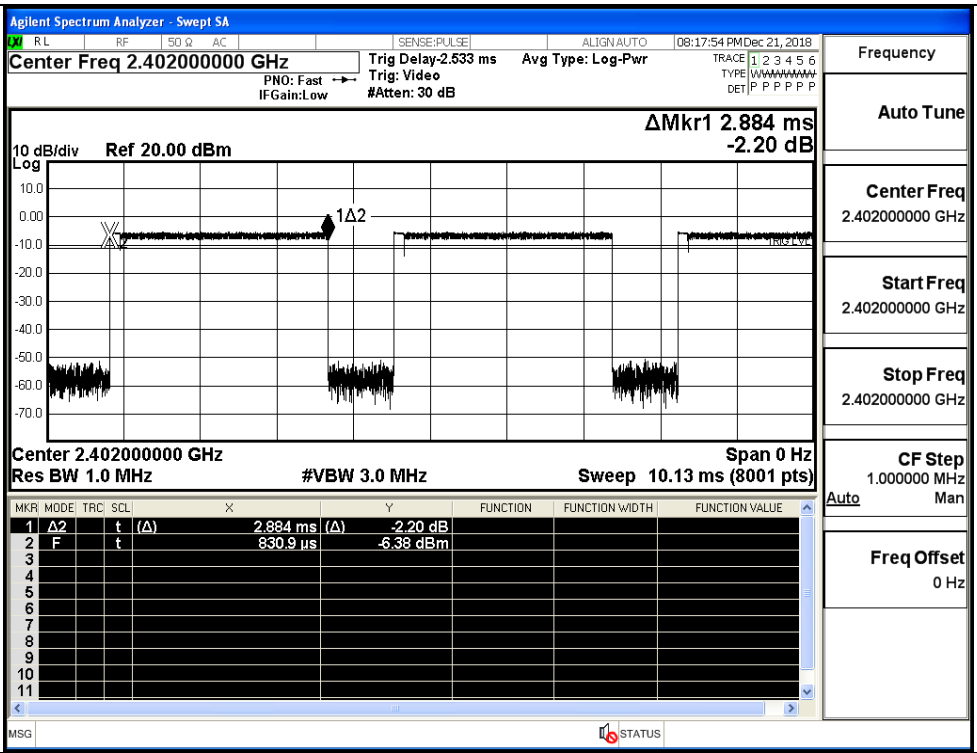
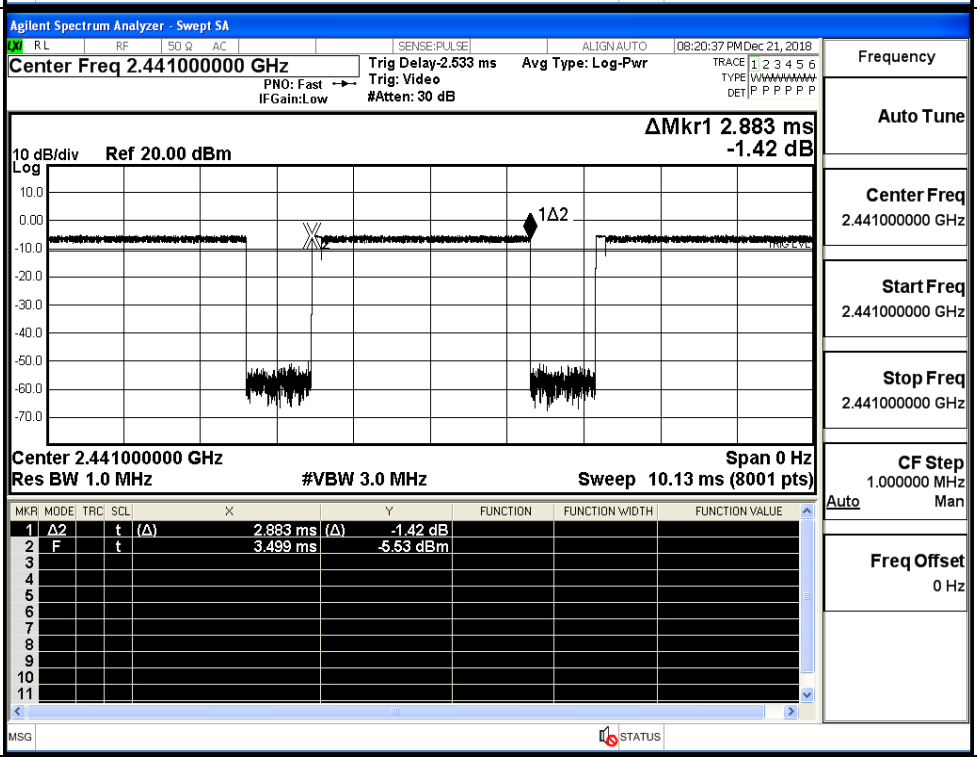
Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441750000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold:>10/10
07:59:31 PM Dec 21, 2018
Ref Offset 7.84 dB
10 dB/div
Ref 20.00 dBm
ΔMkr1 77.916 MHz
-2.428 dB
Start 2.40000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.48350 GHz
Sweep 8.000 ms (8001 pts)
1 Δ2 f (Δ) 77.916 MHz (Δ) -2.428 dB
2 F f 2.402 150 GHz 2.172 dBm
Frequency
Auto Tune
Center Freq 2.441750000 GHz
Start Freq 2.400000000 GHz
Stop Freq 2.483500000 GHz
CF Step 8.350000 MHz
Auto Man
Freq Offset 0 Hz

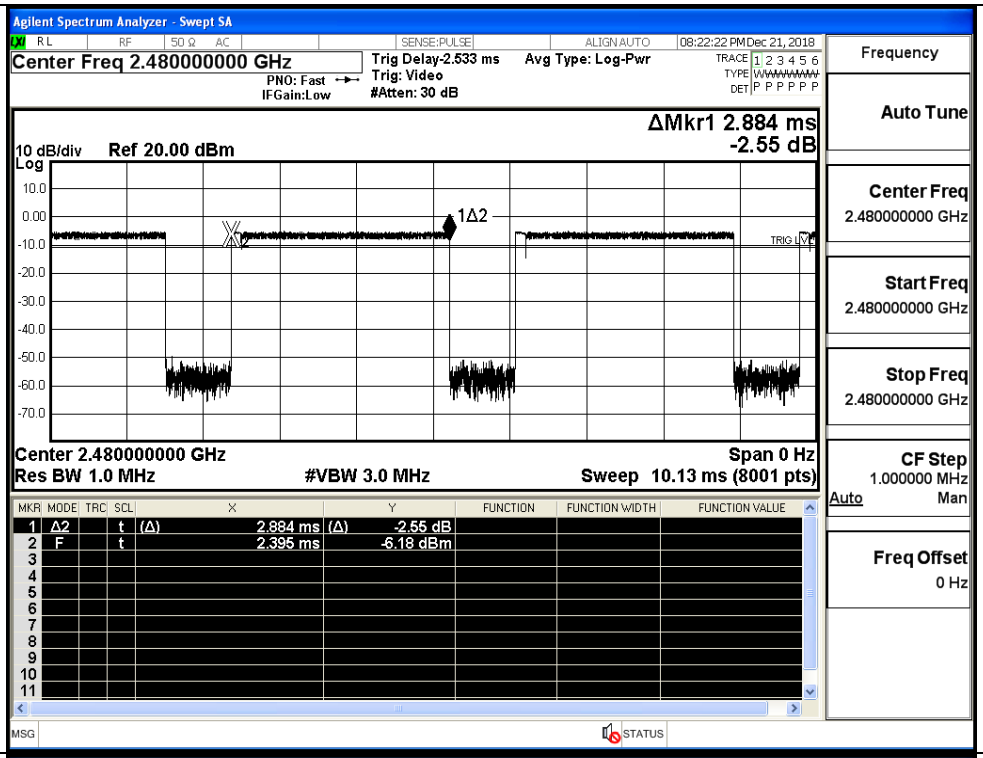
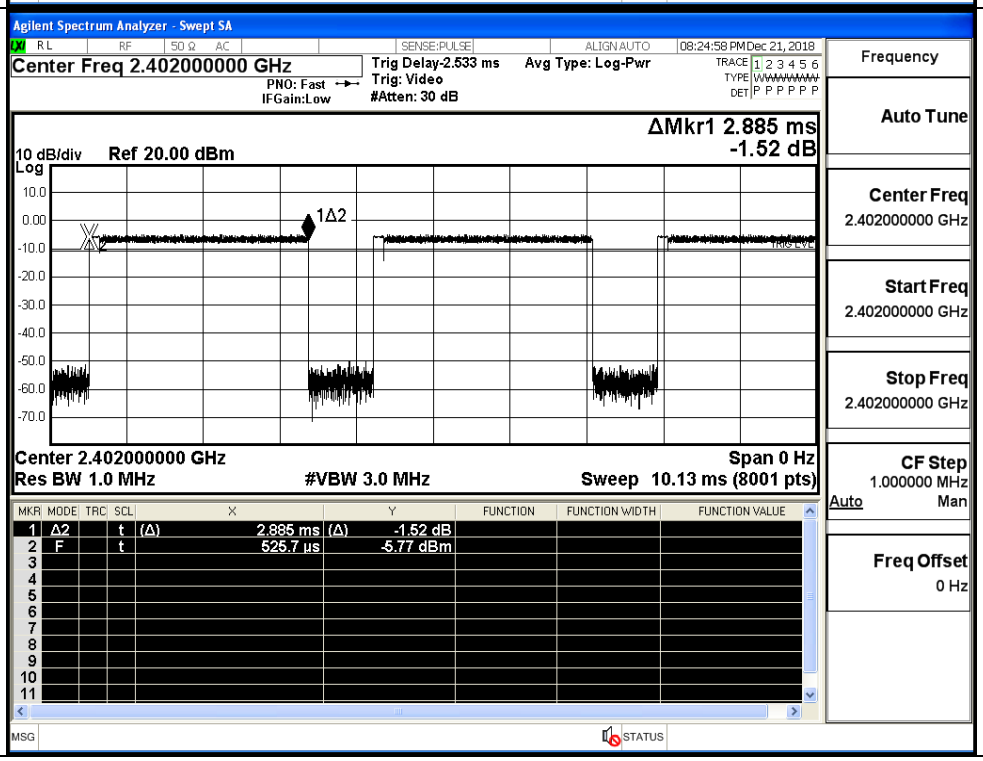
A.5 Dwell Time

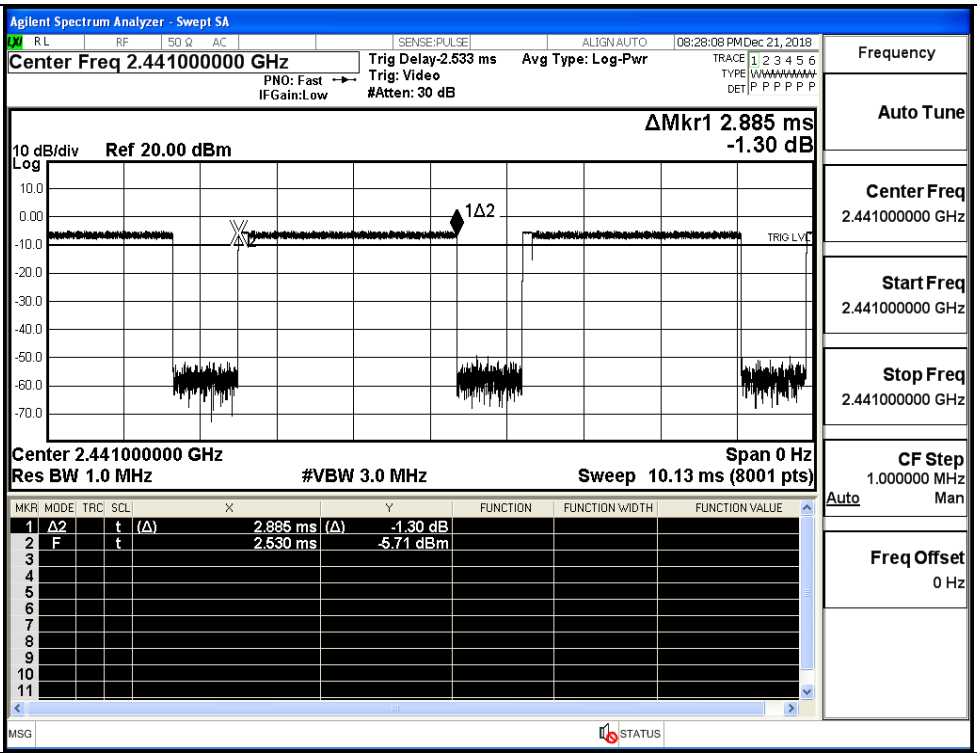
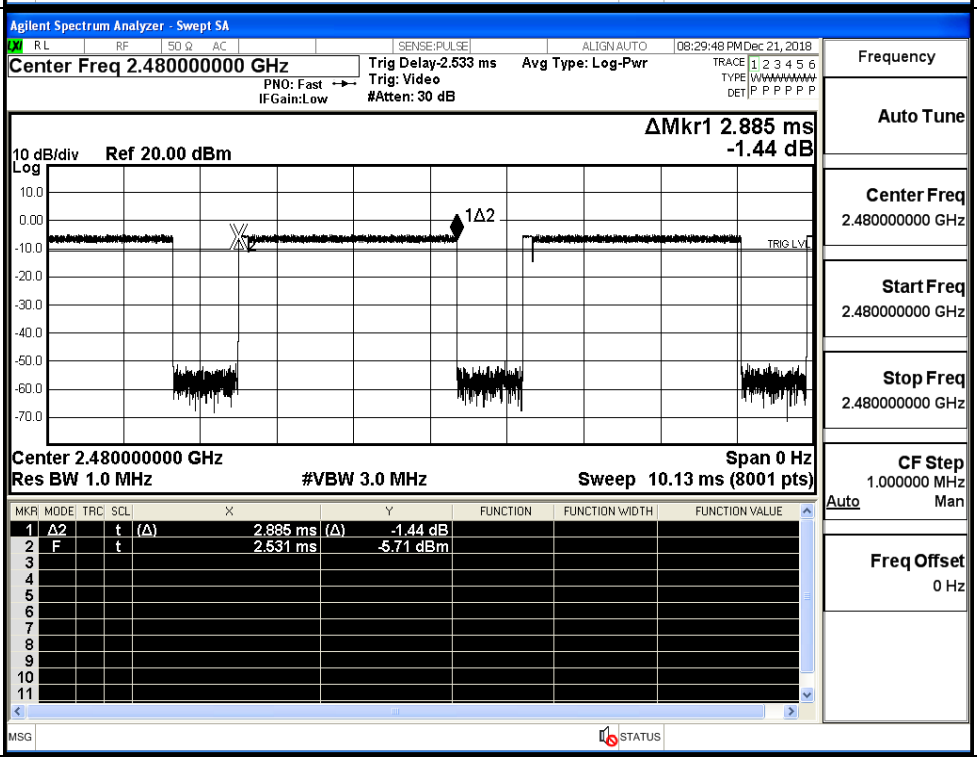
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
π/4DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7	0.307	0.4	PASS
8DPSK	3DH5	LCH	2.89	106.7	0.308	0.4	PASS
	3DH5	MCH	2.89	106.7	0.308	0.4	PASS
	3DH5	HCH	2.89	106.7	0.308	0.4	PASS

Test Graphs	
GFSK_DH5/LCH	

GFSK_DH5/MCH	
GFSK_DH5/HCH	

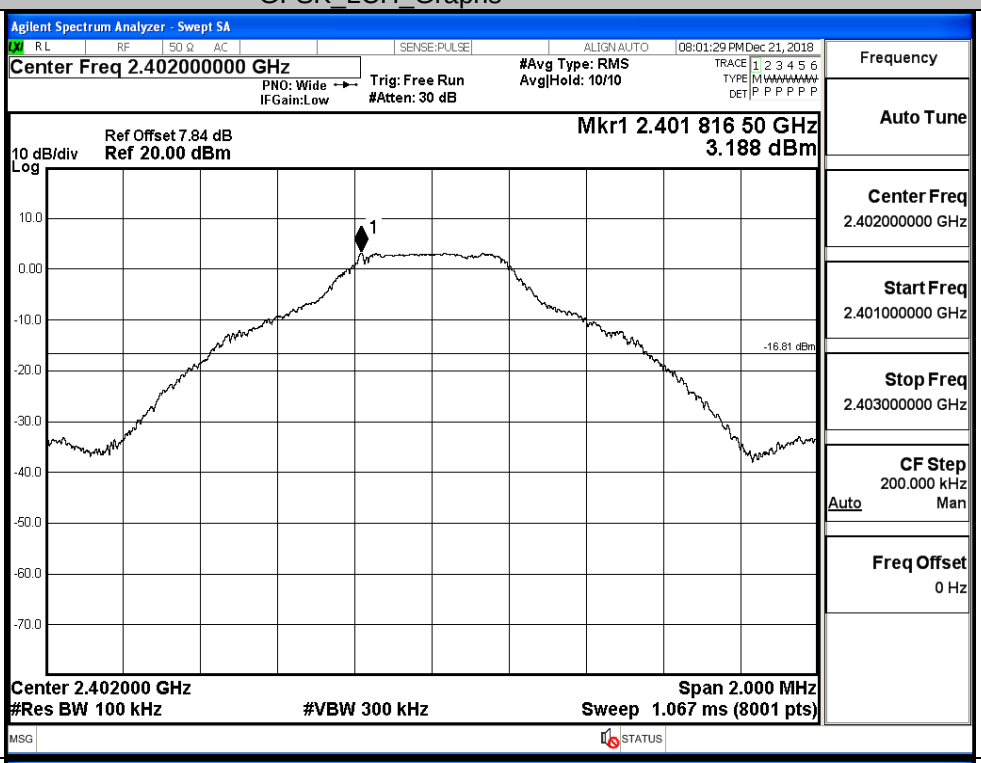
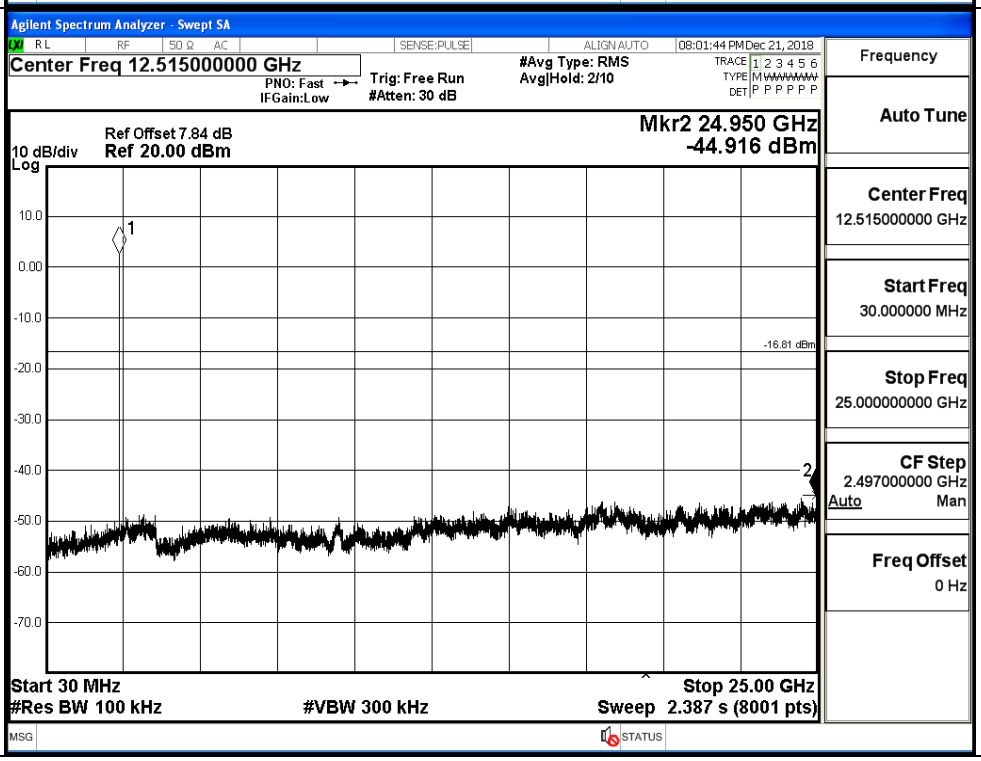
π/4DQPSK _2DH5/LCH	
π/4DQPSK _2DH5/MCH	

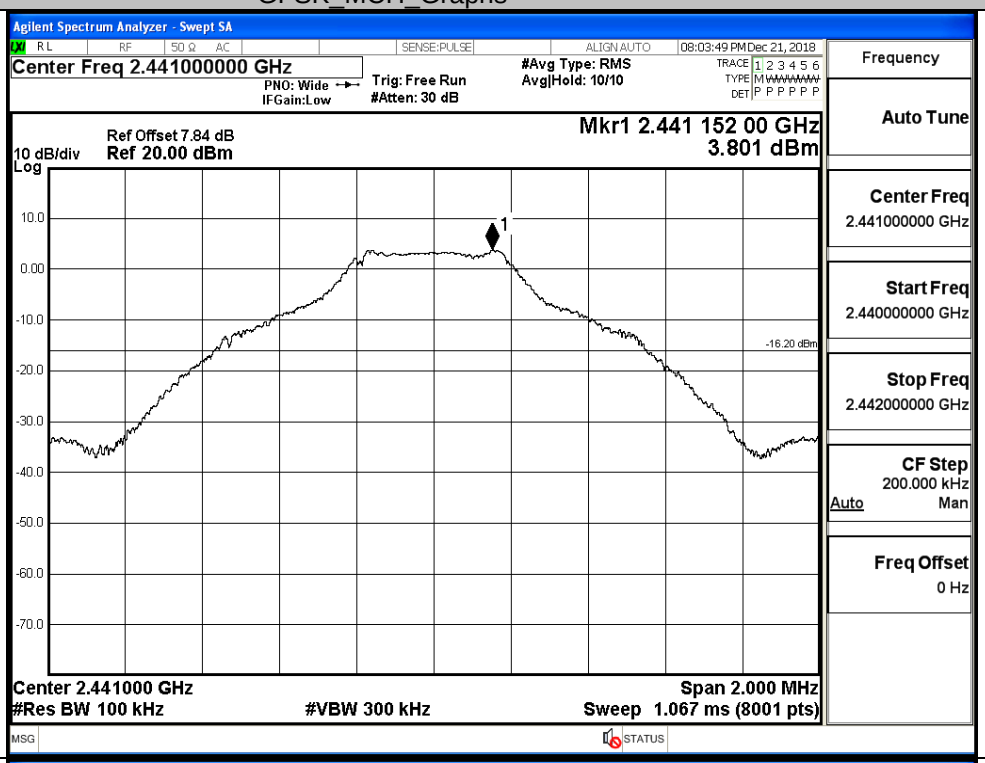
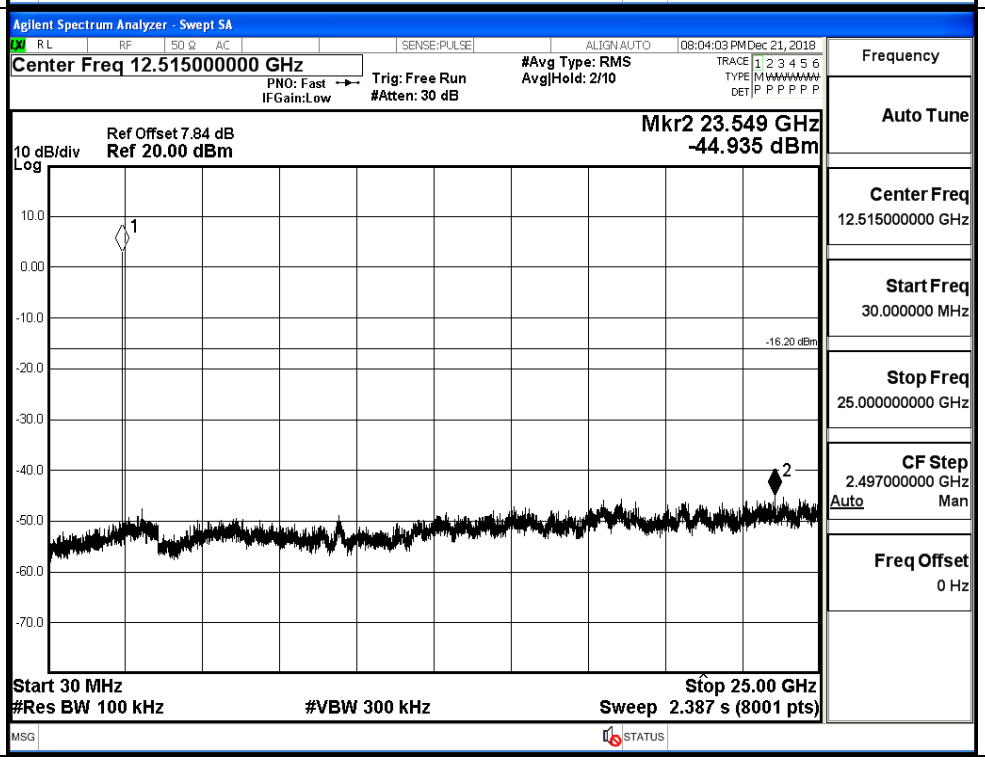
π/4DQPSK _2DH5/HCH	
8DPSK _3DH5/LCH	

8DPSK _3DH5/MCH	
8DPSK _3DH5/HCH	

A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	3.188	-44.916	-16.812	PASS
	MCH	3.801	-44.935	-16.199	PASS
	HCH	3.765	-45.051	-16.235	PASS
π/4DQPSK	LCH	2.06	-44.292	-17.940	PASS
	MCH	2.133	-45.118	-17.867	PASS
	HCH	1.927	-44.778	-18.073	PASS
8DPSK	LCH	2.078	-45.196	-17.922	PASS
	MCH	2.317	-45.050	-17.683	PASS
	HCH	2.294	-44.546	-17.706	PASS

GFSK_LCH_Graphs		
Pref		
Puw		

GFSK_MCH_Graphs		
Pref		
Puw		

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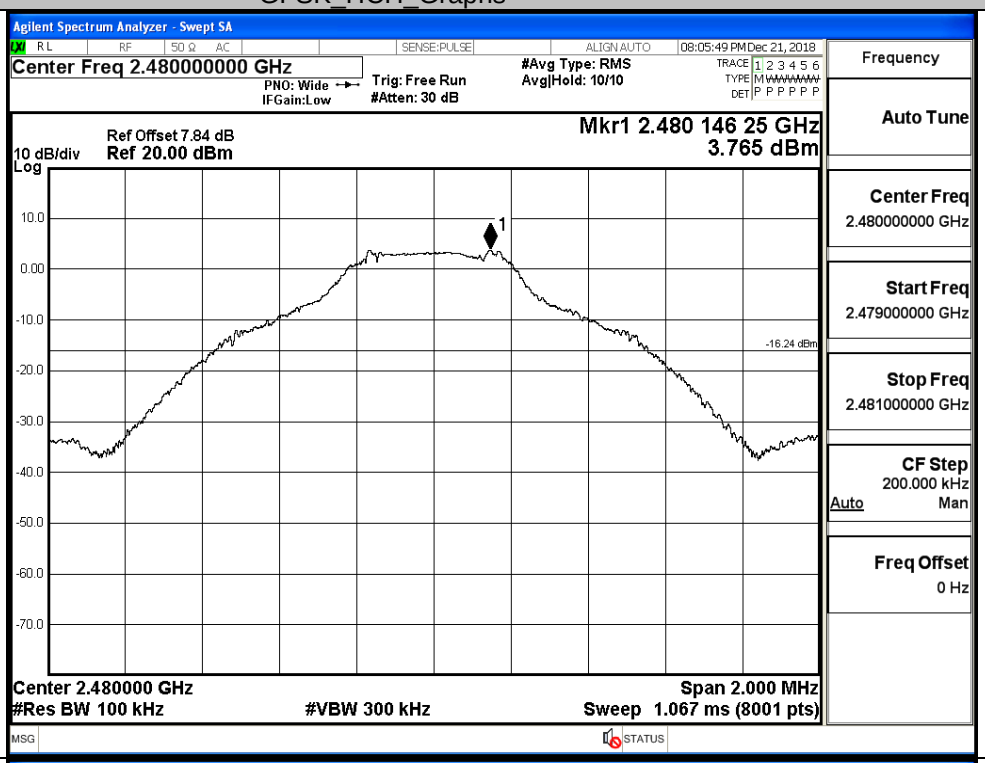
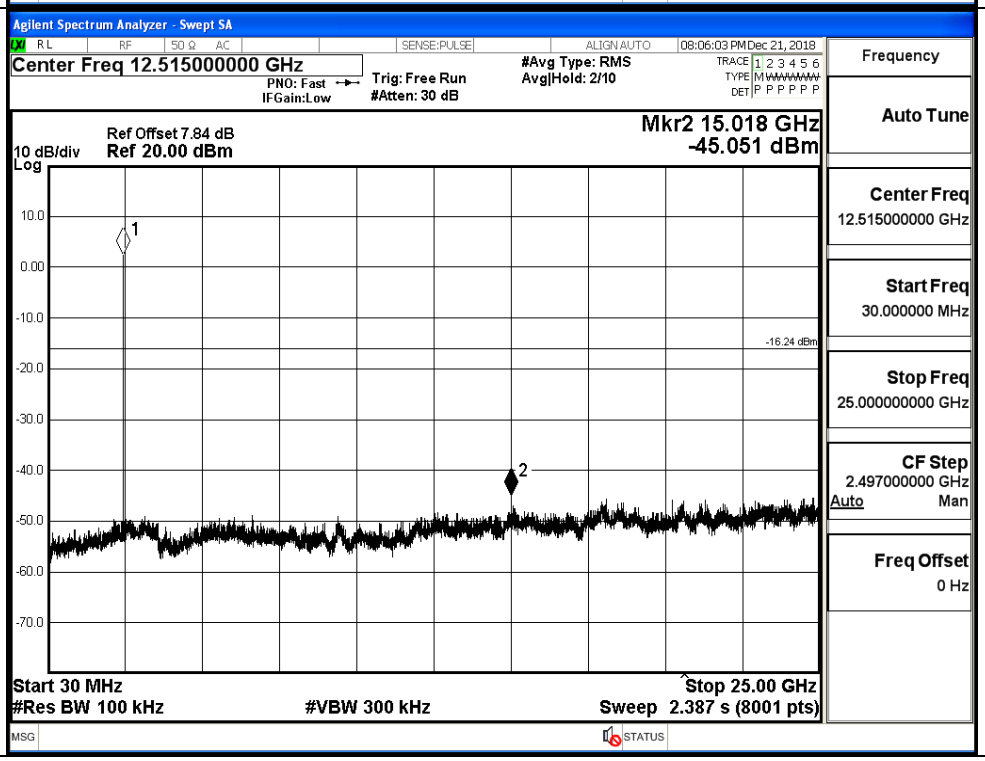
Pref		
Puw		

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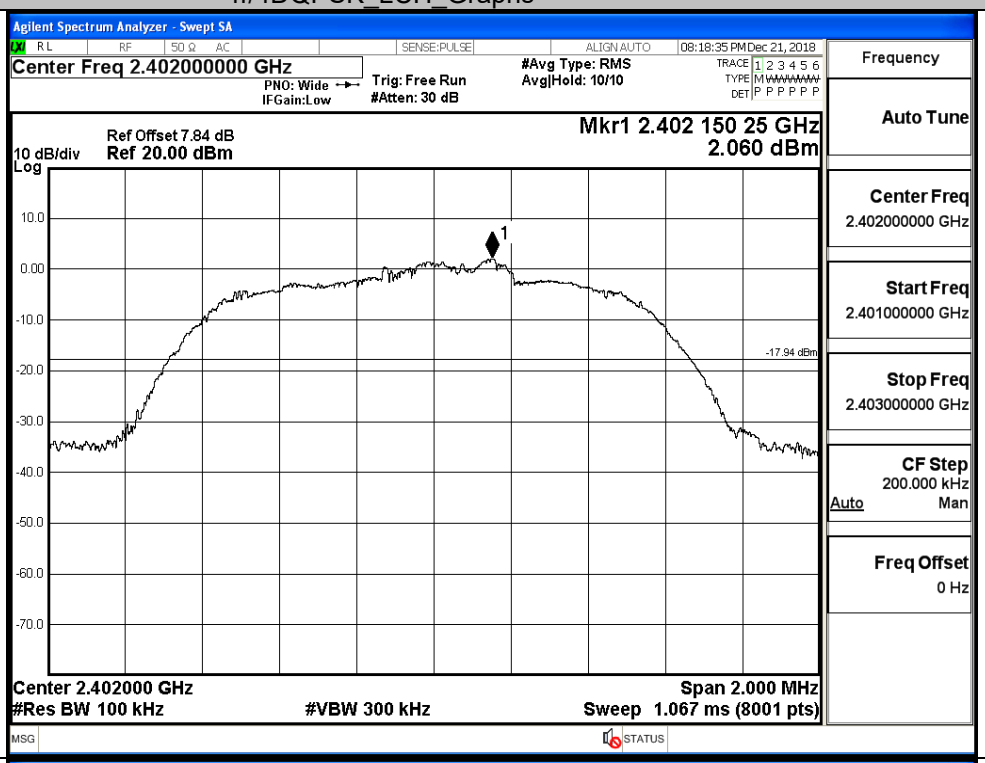
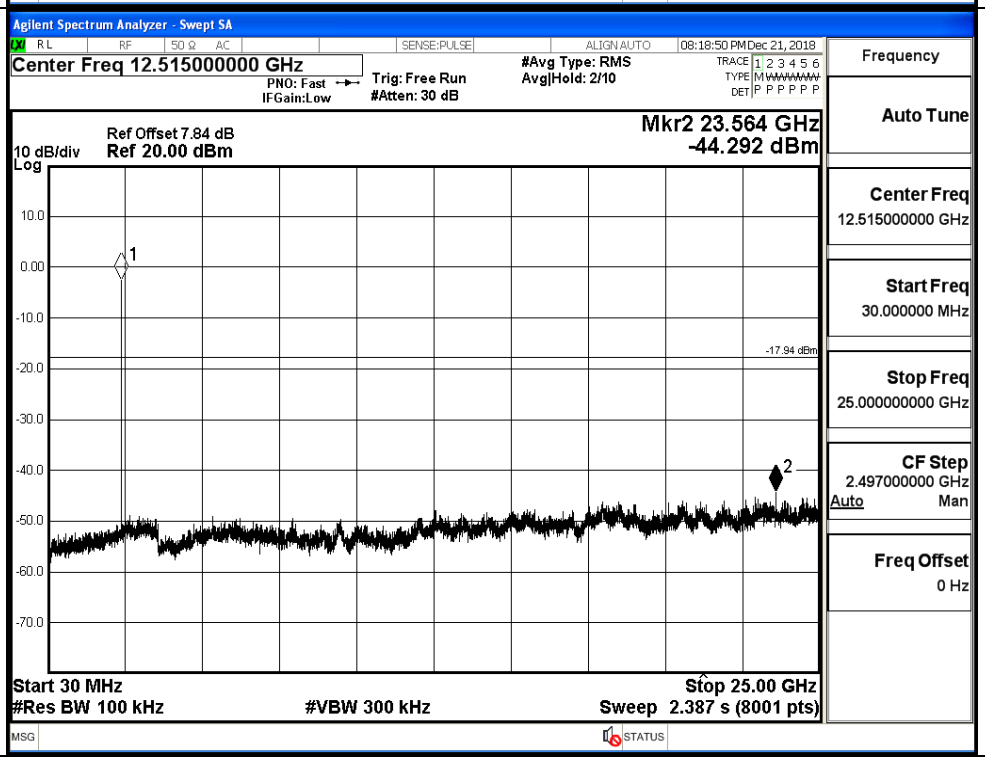
Pref		
Puw		

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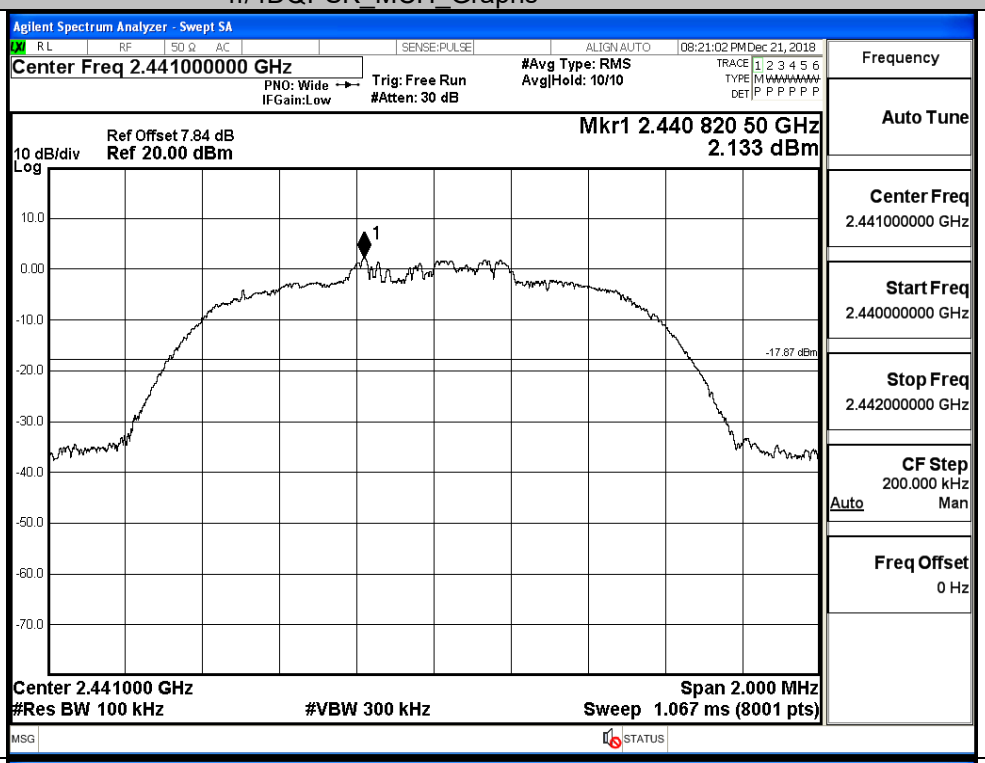
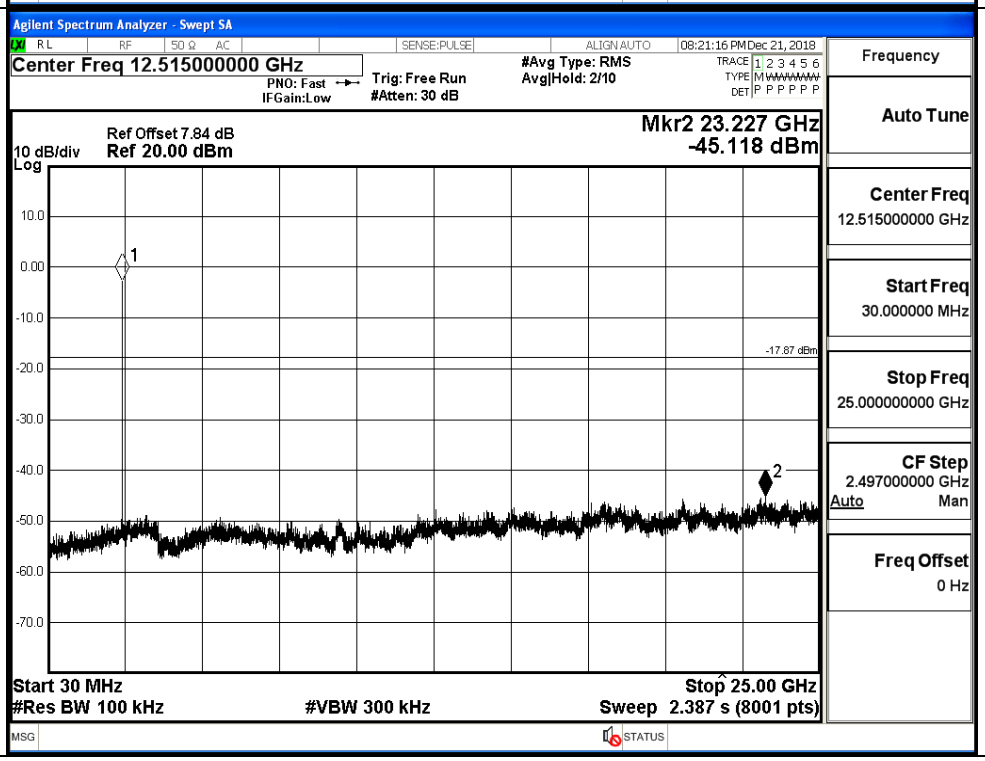
Pref		
Puw		

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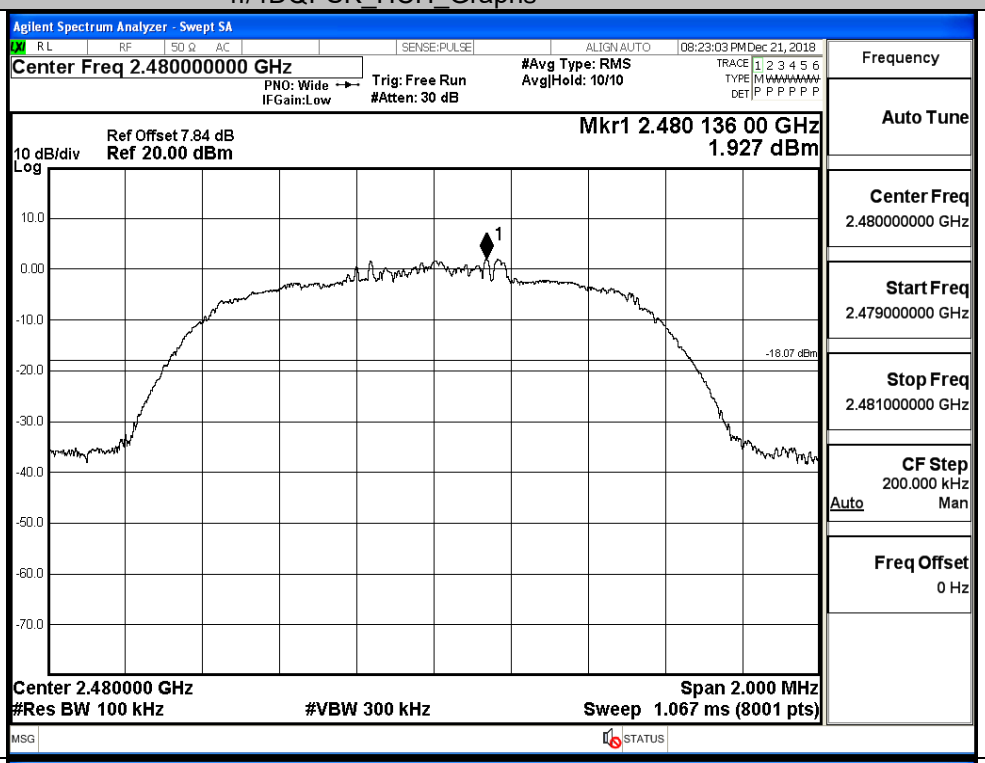
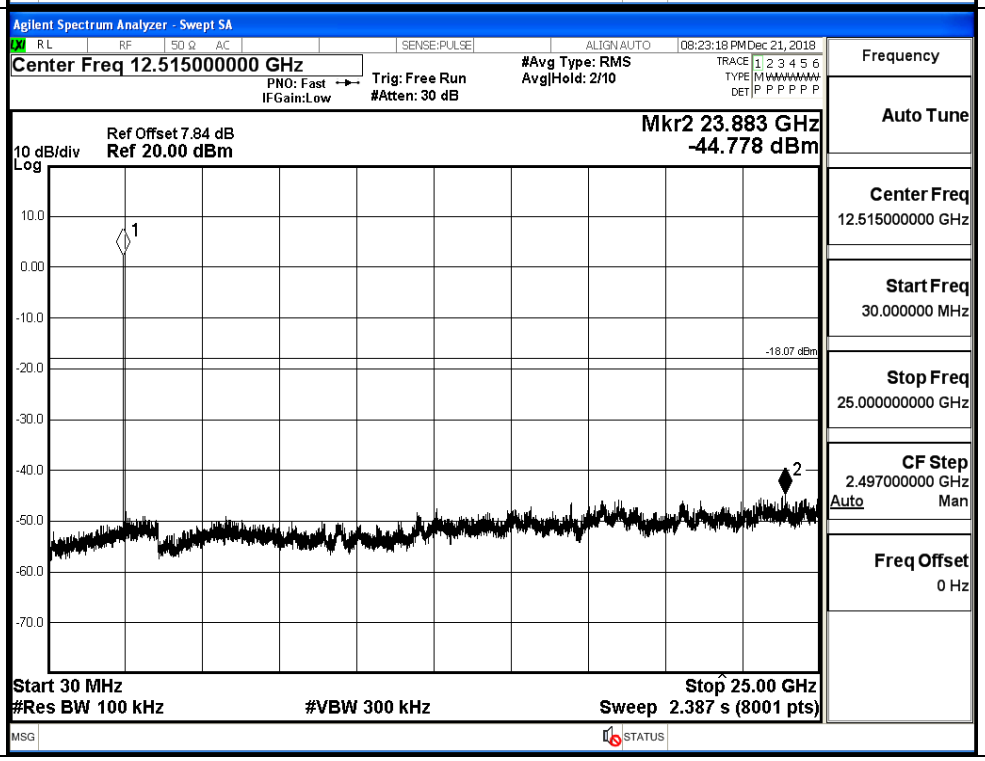
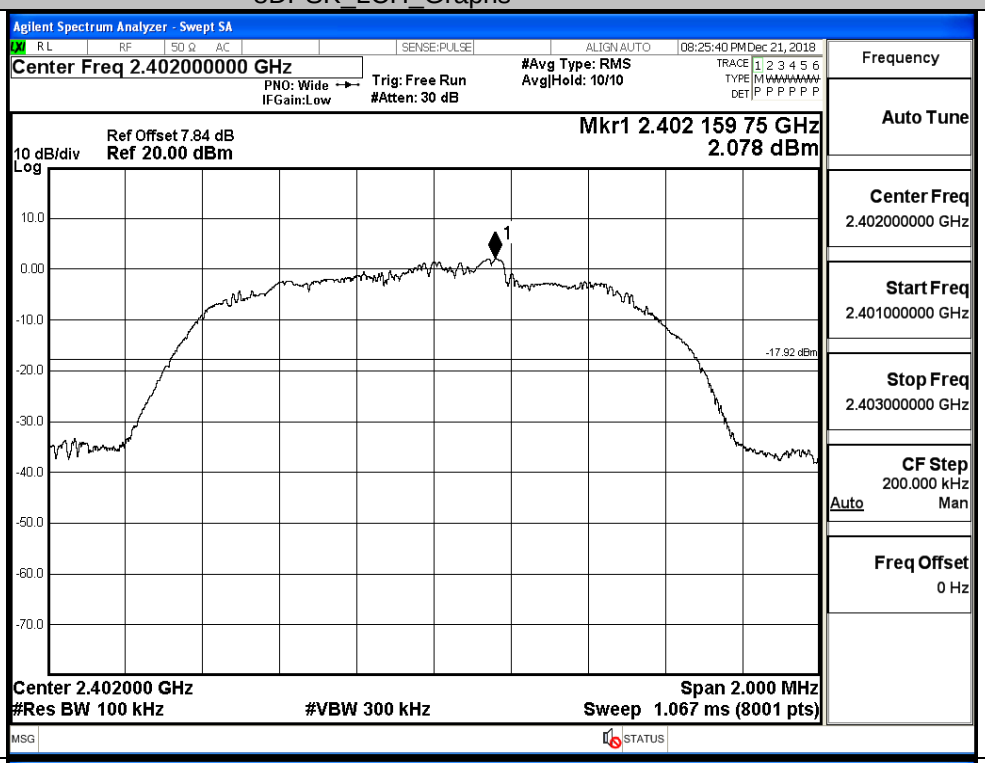
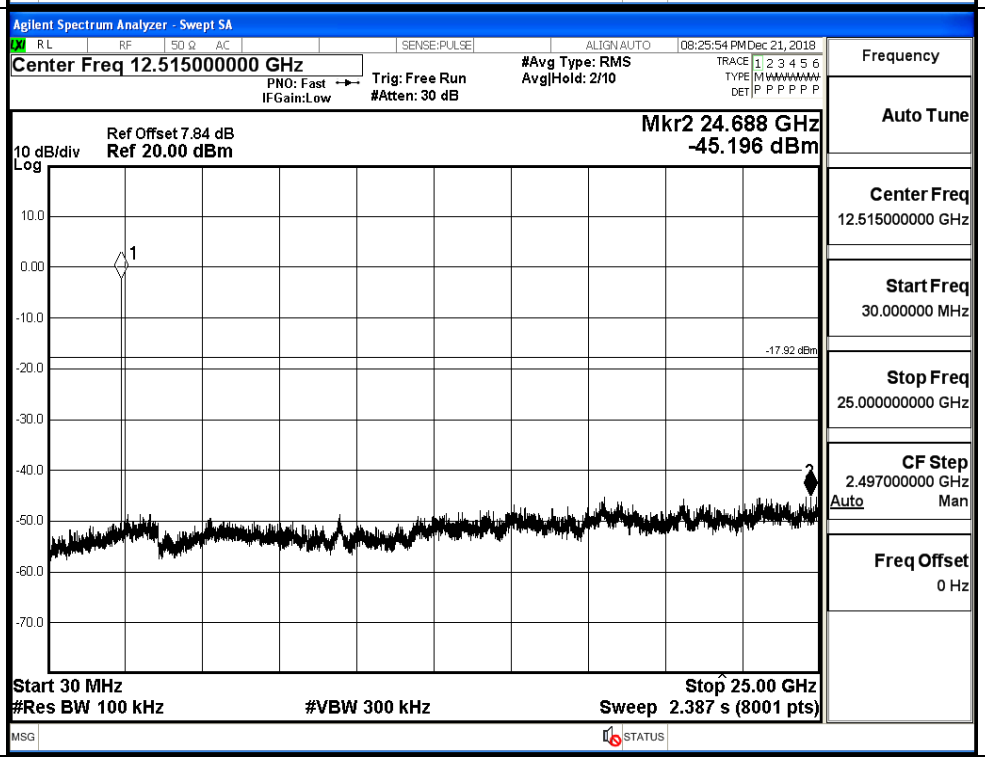
Pref		
Puw		

8DPSK_LCH_Graphs		
Pref		
Puw		

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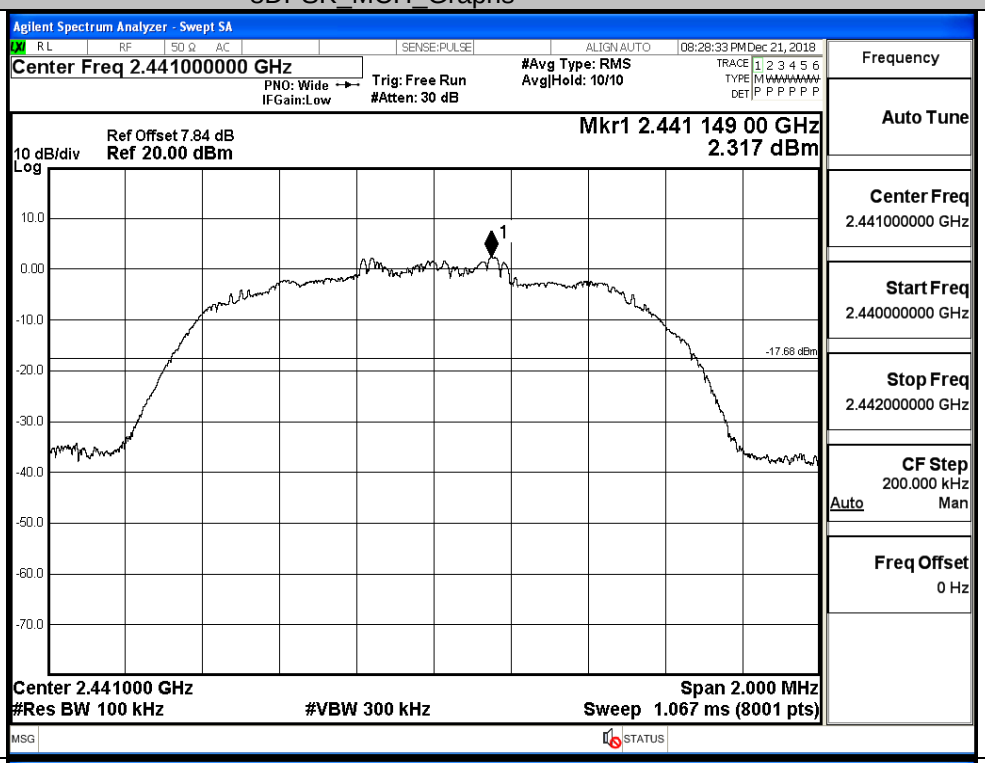
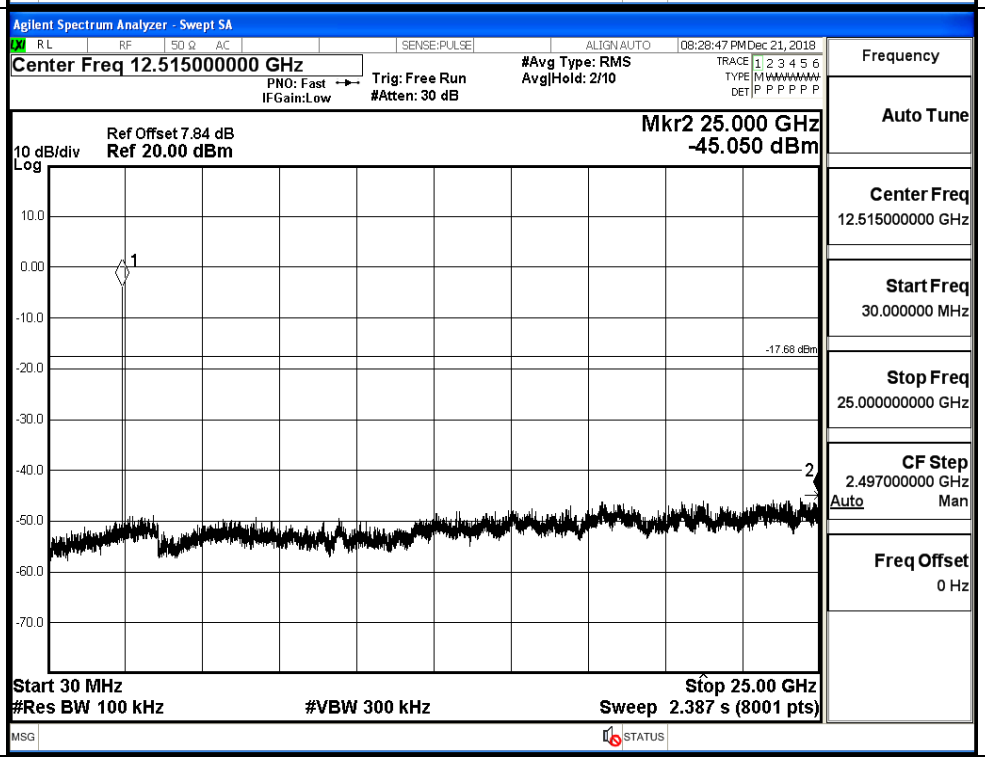
Pref		
Puw		

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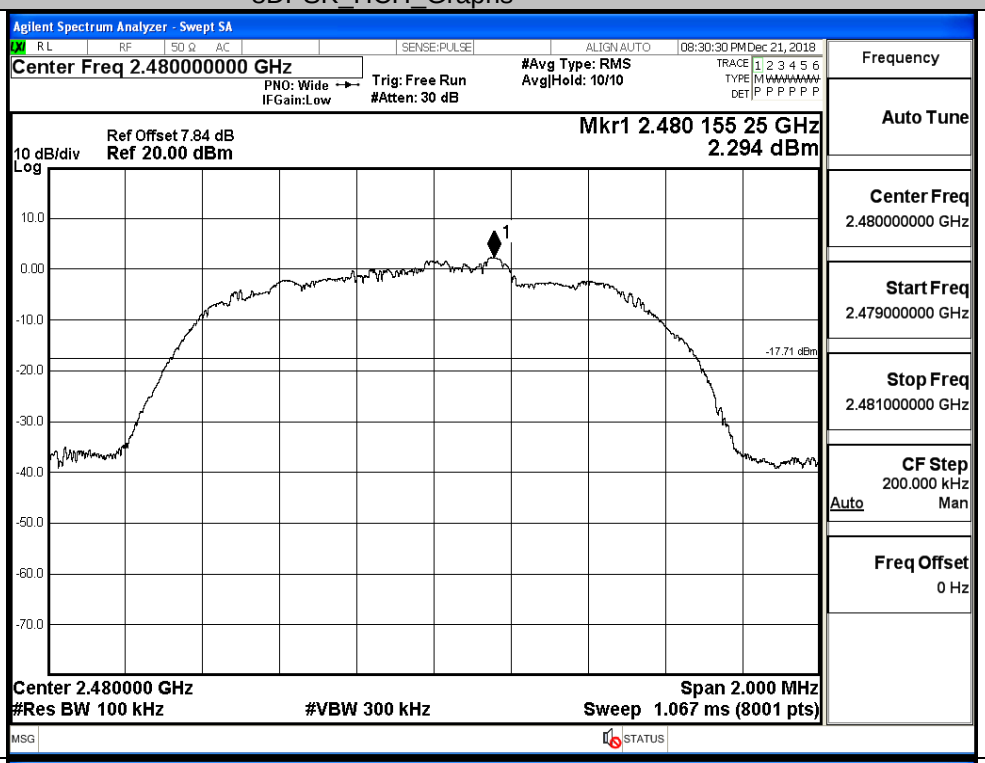
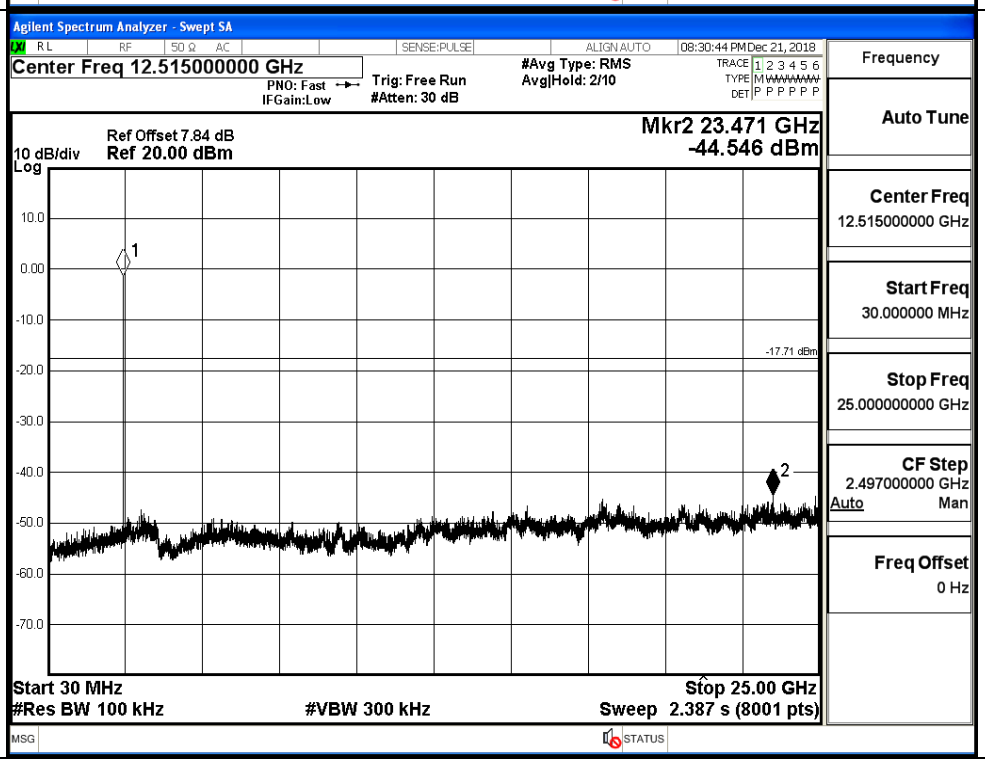
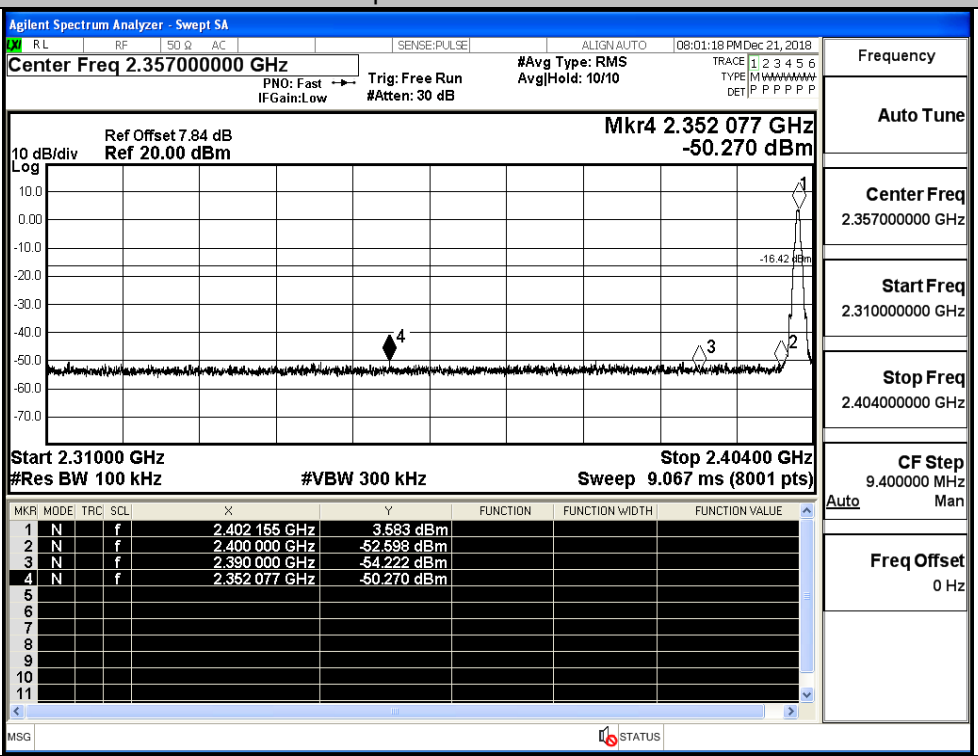
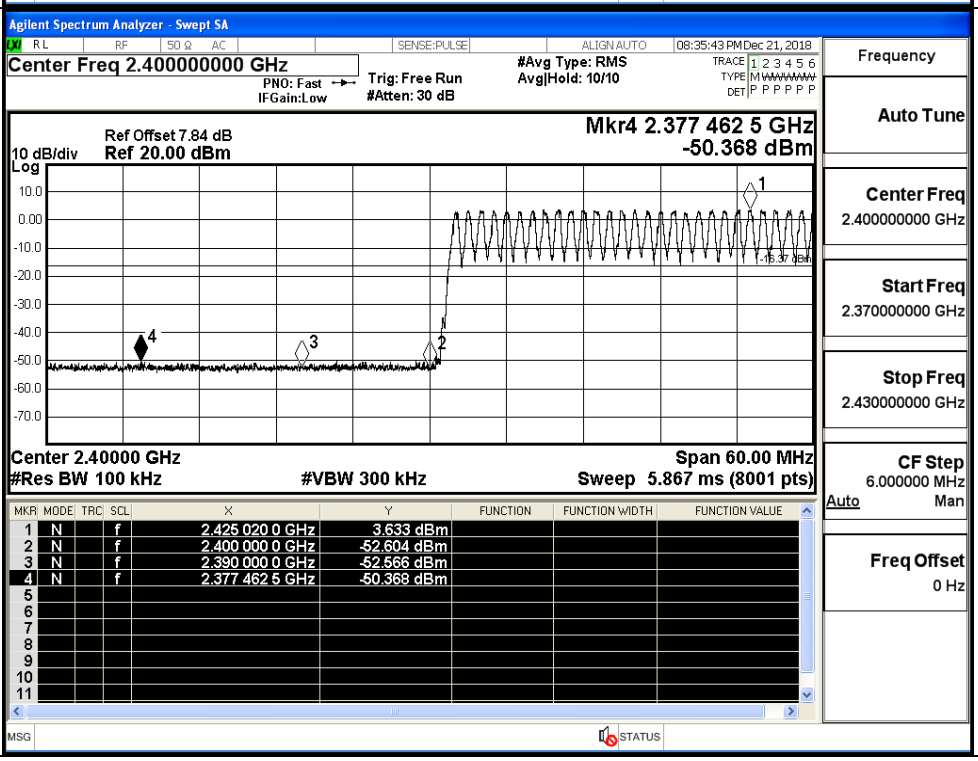
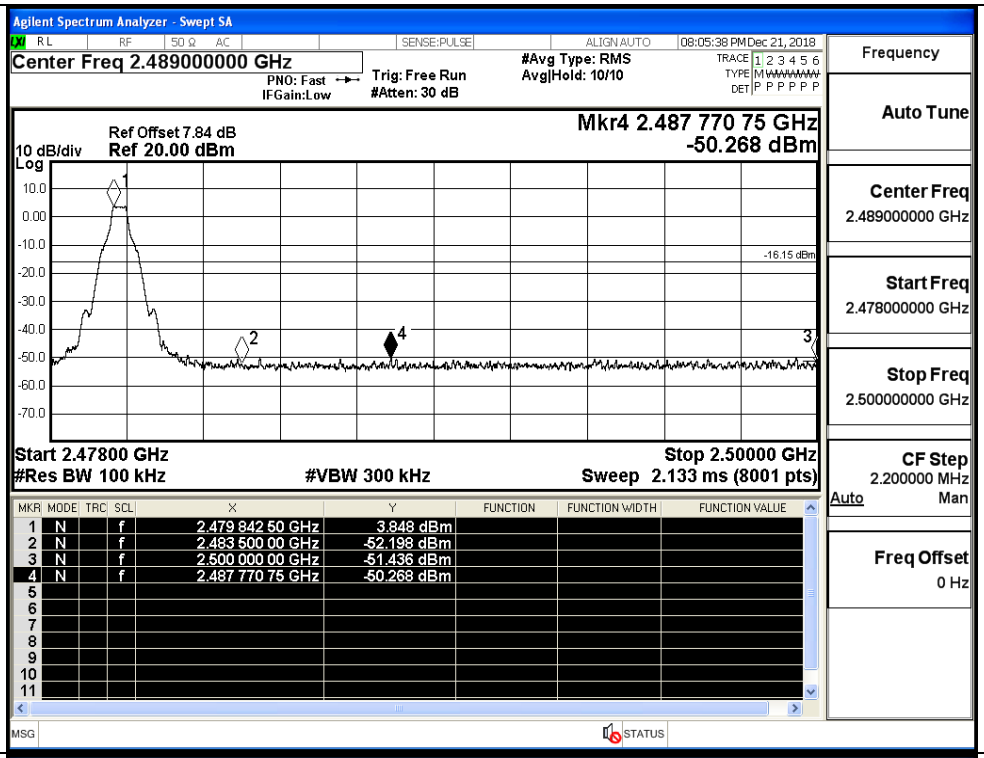
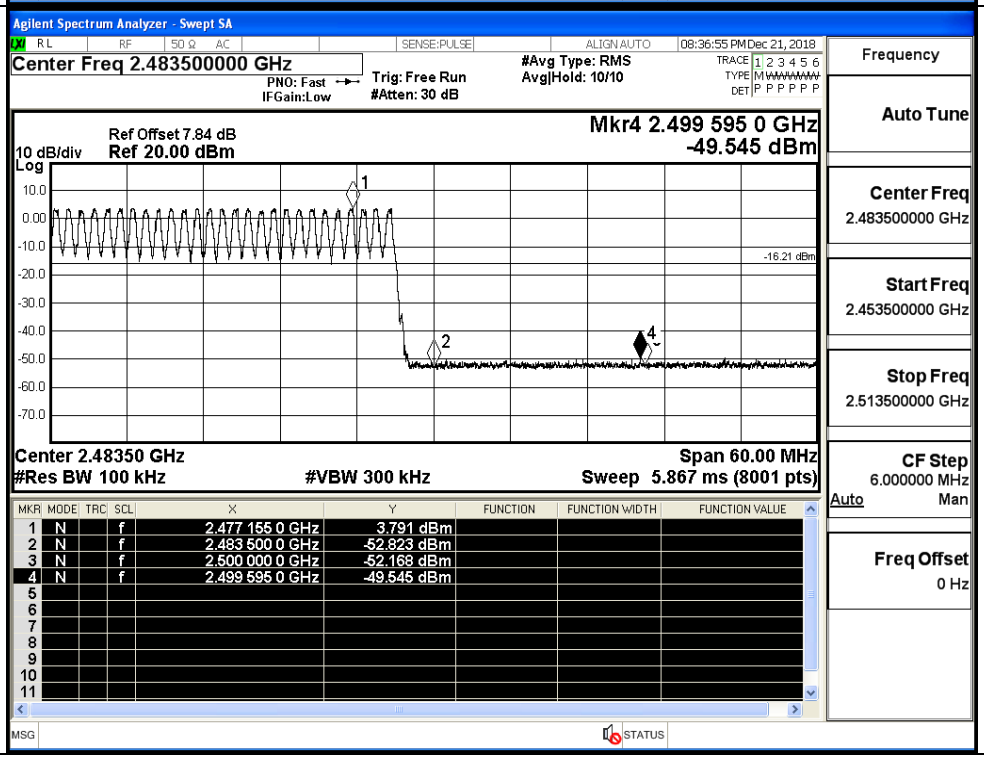
Pref		
Puw		

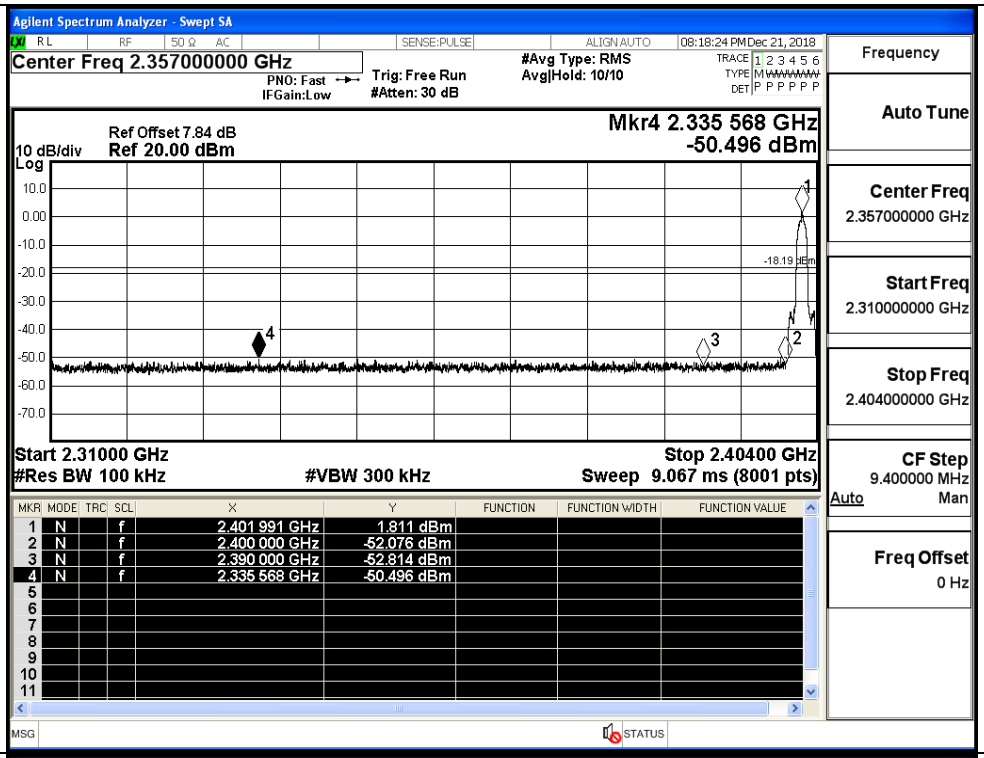
A.7 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	3.583	Off	-50.270	-16.42	PASS
			3.633	On	-50.368	-16.37	PASS
	HCH	2480	3.848	Off	-50.268	-16.15	PASS
			3.791	On	-49.545	-16.21	PASS
π/4DQPSK	LCH	2402	1.811	Off	-50.496	-18.19	PASS
			2.283	On	-48.980	-17.72	PASS
	HCH	2480	2.402	Off	-50.240	-17.6	PASS
			2.401	On	-50.077	-17.6	PASS
8DPSK	LCH	2402	2.178	Off	-50.122	-17.82	PASS
			2.315	On	-49.424	-17.69	PASS
	HCH	2480	2.356	Off	-50.331	-17.64	PASS
			2.395	On	-49.281	-17.61	PASS

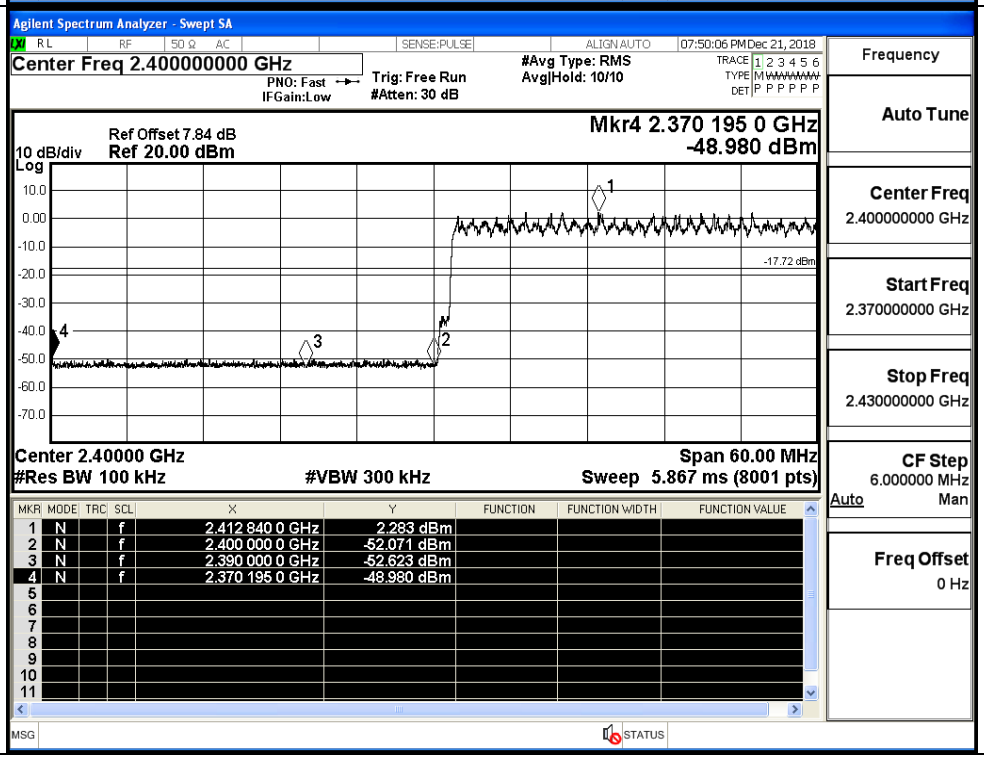
Test Graphs	
GFSK/LCH/No Hop	
GFSK/LCH/Hop	

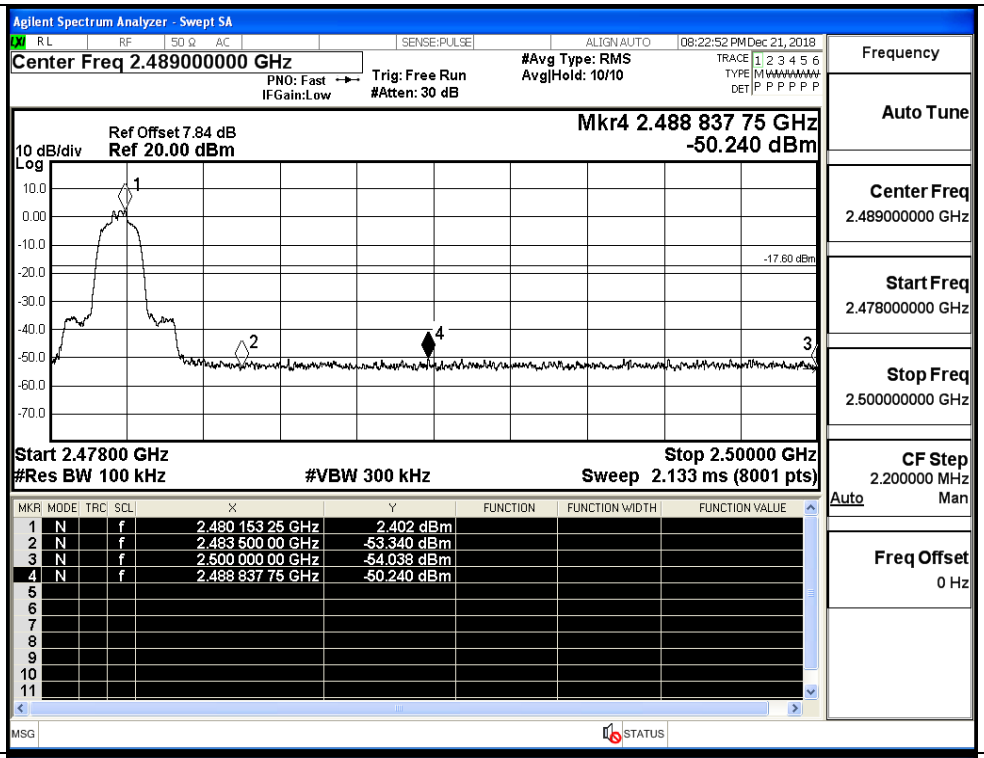
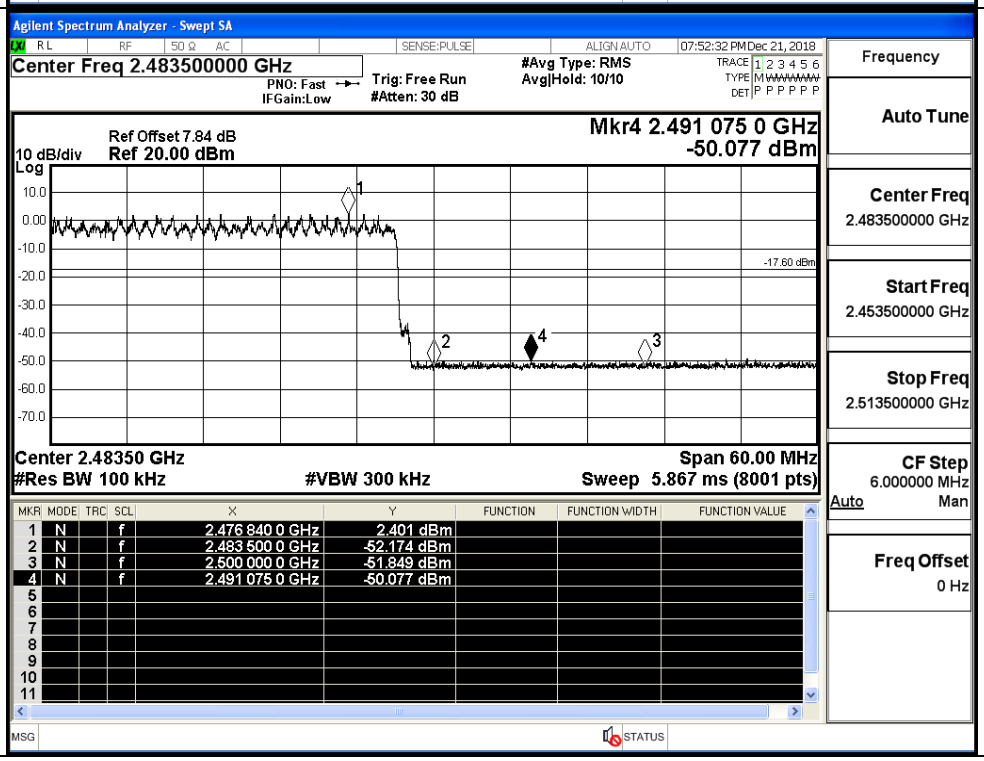
GFSK/HCH/No Hop	
GFSK/HCH/Hop	

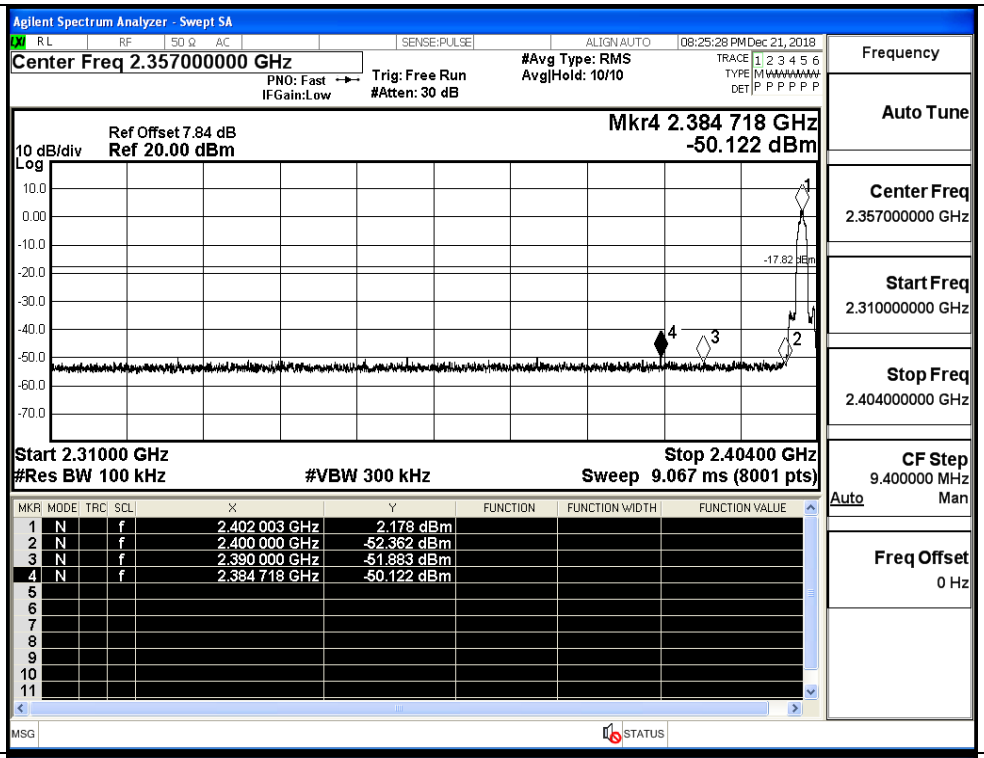
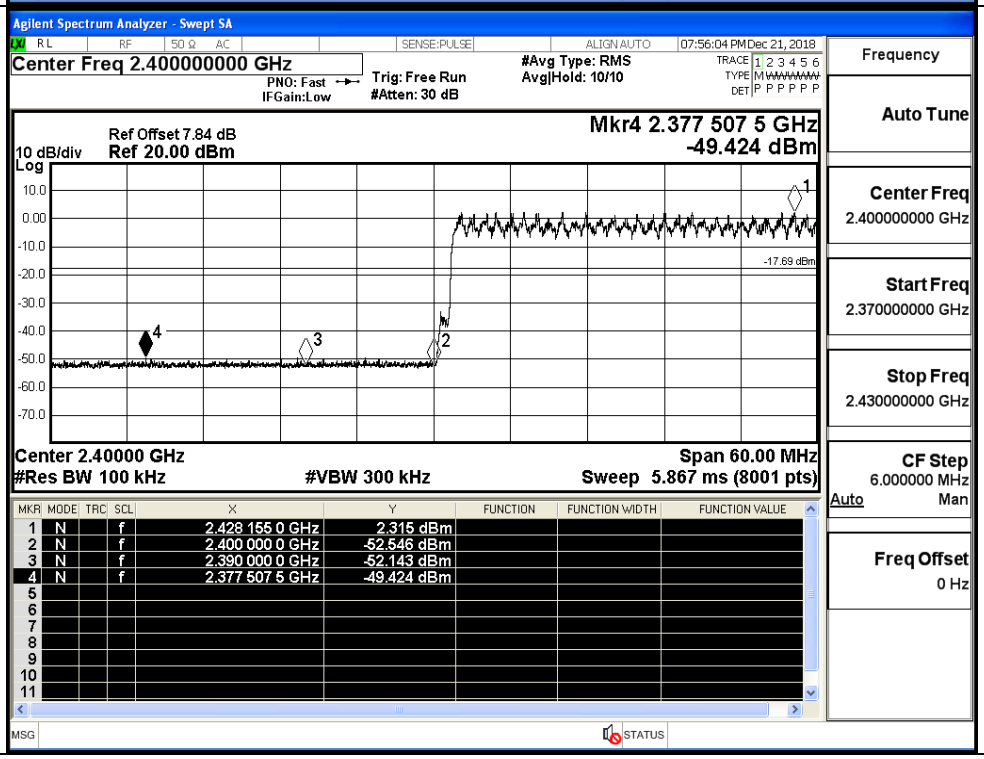
π/4DQPSK/LCH/No Hop

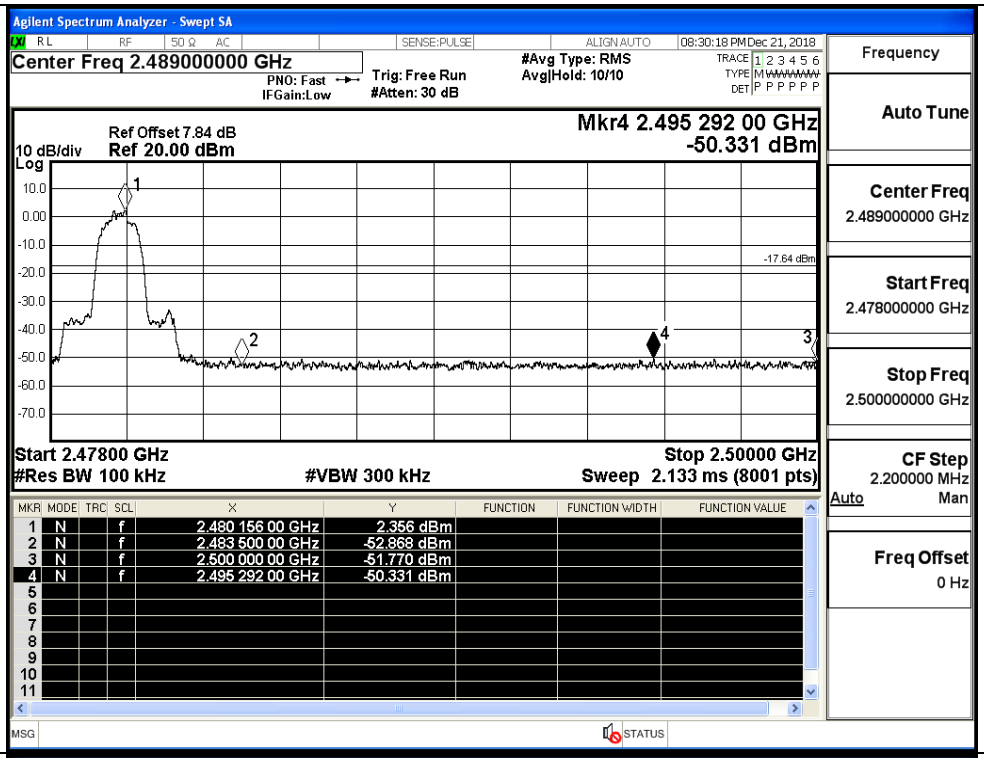
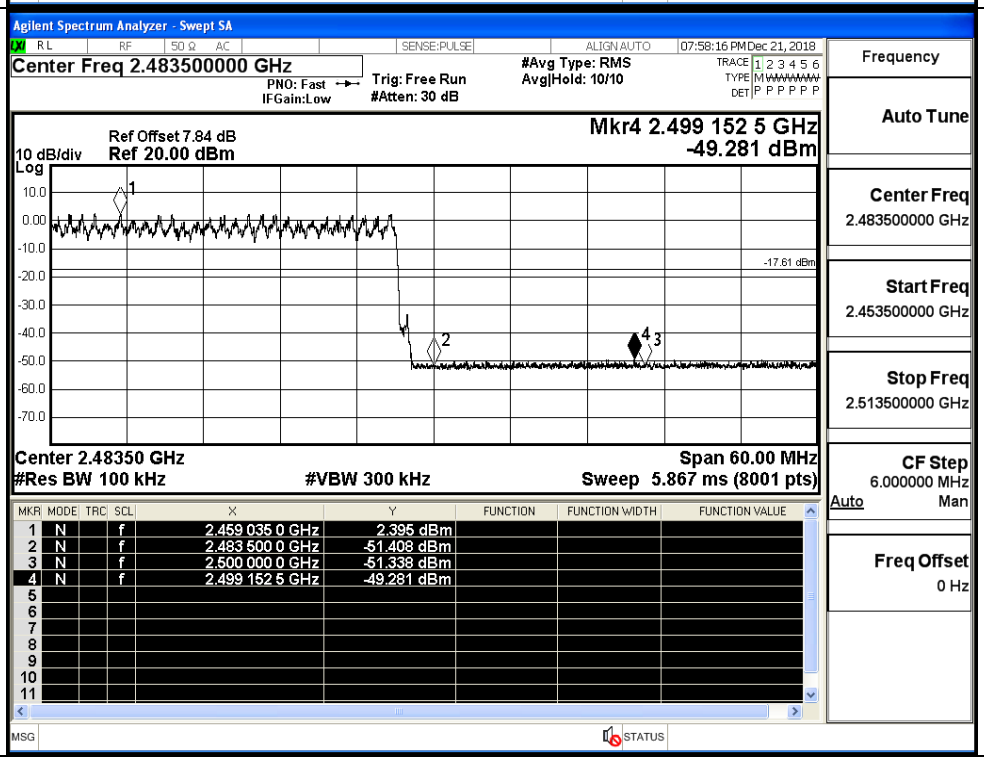


π/4DQPSK/LCH/Hop



π/4DQPSK/HCH/No Hop	
π/4DQPSK/HCH/Hop	

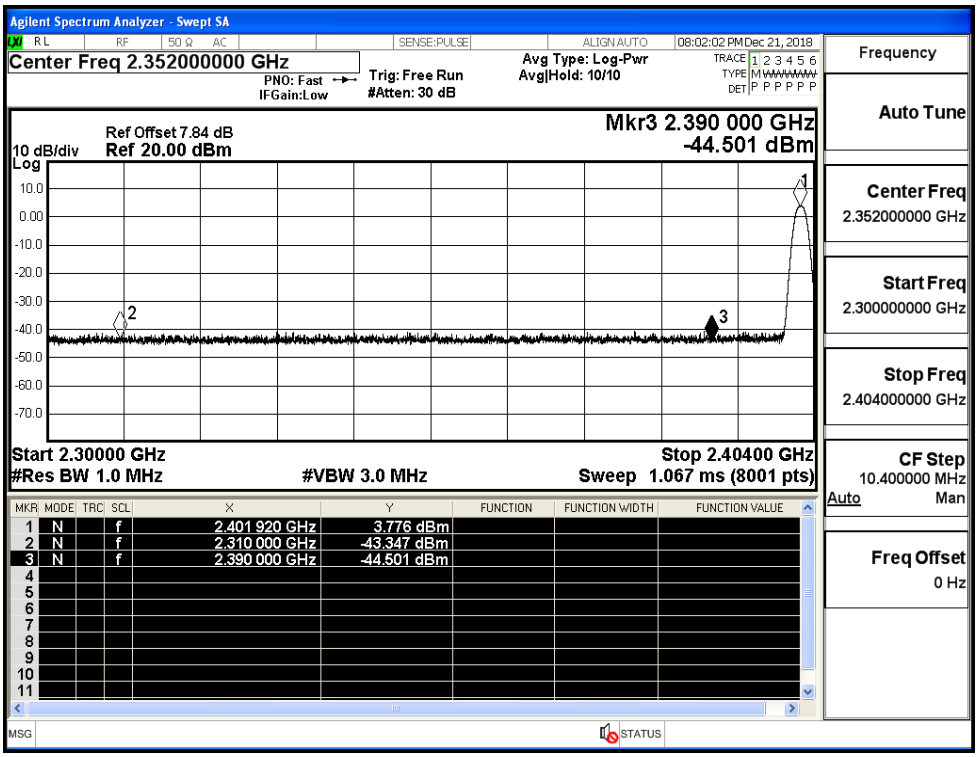
8DPSK/LCH/No Hop	
8DPSK/LCH/Hop	

8DPSK/HCH/No Hop	
8DPSK/HCH/Hop	

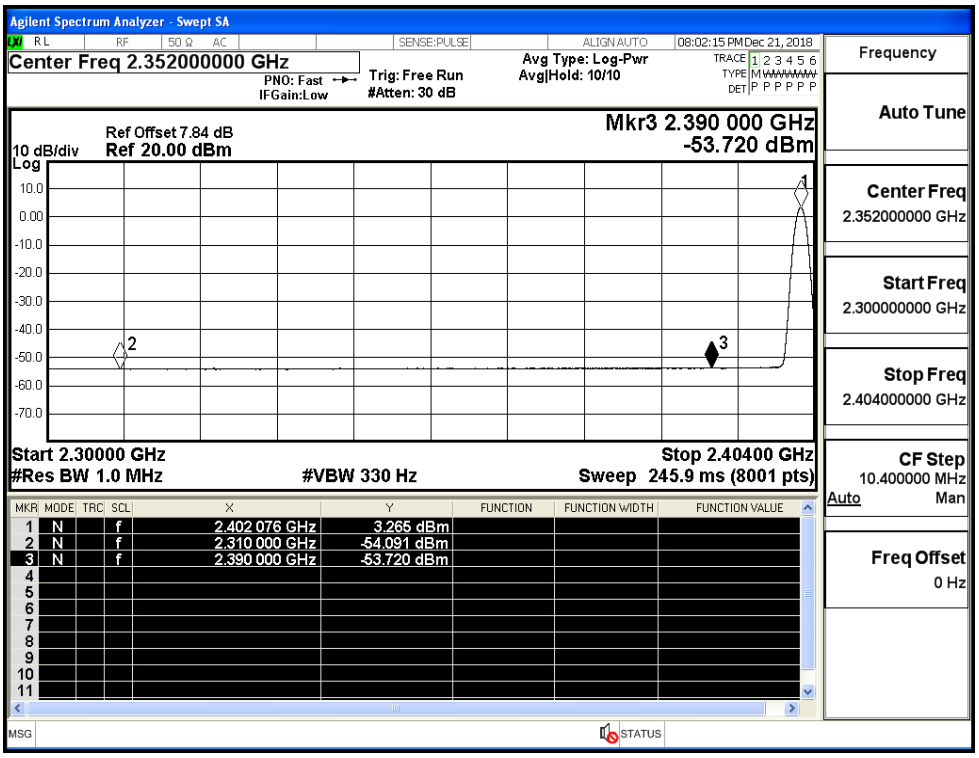
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.35	2.0	0	53.91	PEAK	74	PASS
	Off	2310.0	-54.09	2.0	0	43.17	AV	54	PASS
	Off	2390.0	-44.50	2.0	0	52.76	PEAK	74	PASS
	Off	2390.0	-53.72	2.0	0	43.54	AV	54	PASS
	Off	2483.5	-43.96	2.0	0	53.30	PEAK	74	PASS
	Off	2483.5	-53.11	2.0	0	44.15	AV	54	PASS
	Off	2500.0	-41.79	2.0	0	55.47	PEAK	74	PASS
	Off	2500.0	-53.33	2.0	0	43.93	AV	54	PASS
π/4DQPSK	Off	2310.0	-44.33	2.0	0	52.93	PEAK	74	PASS
	Off	2310.0	-54.11	2.0	0	43.14	AV	54	PASS
	Off	2390.0	-42.95	2.0	0	54.31	PEAK	74	PASS
	Off	2390.0	-53.75	2.0	0	43.50	AV	54	PASS
	Off	2483.5	-42.24	2.0	0	55.02	PEAK	74	PASS
	Off	2483.5	-53.26	2.0	0	43.99	AV	54	PASS
	Off	2500.0	-43.35	2.0	0	53.90	PEAK	74	PASS
	Off	2500.0	-53.33	2.0	0	43.92	AV	54	PASS
8DPSK	Off	2310.0	-43.91	2.0	0	53.35	PEAK	74	PASS
	Off	2310.0	-54.07	2.0	0	43.19	AV	54	PASS
	Off	2390.0	-43.36	2.0	0	53.90	PEAK	74	PASS
	Off	2390.0	-53.78	2.0	0	43.48	AV	54	PASS
	Off	2483.5	-43.73	2.0	0	53.52	PEAK	74	PASS
	Off	2483.5	-53.26	2.0	0	44.00	AV	54	PASS
	Off	2500.0	-43.36	2.0	0	53.90	PEAK	74	PASS
	Off	2500.0	-53.37	2.0	0	43.89	AV	54	PASS

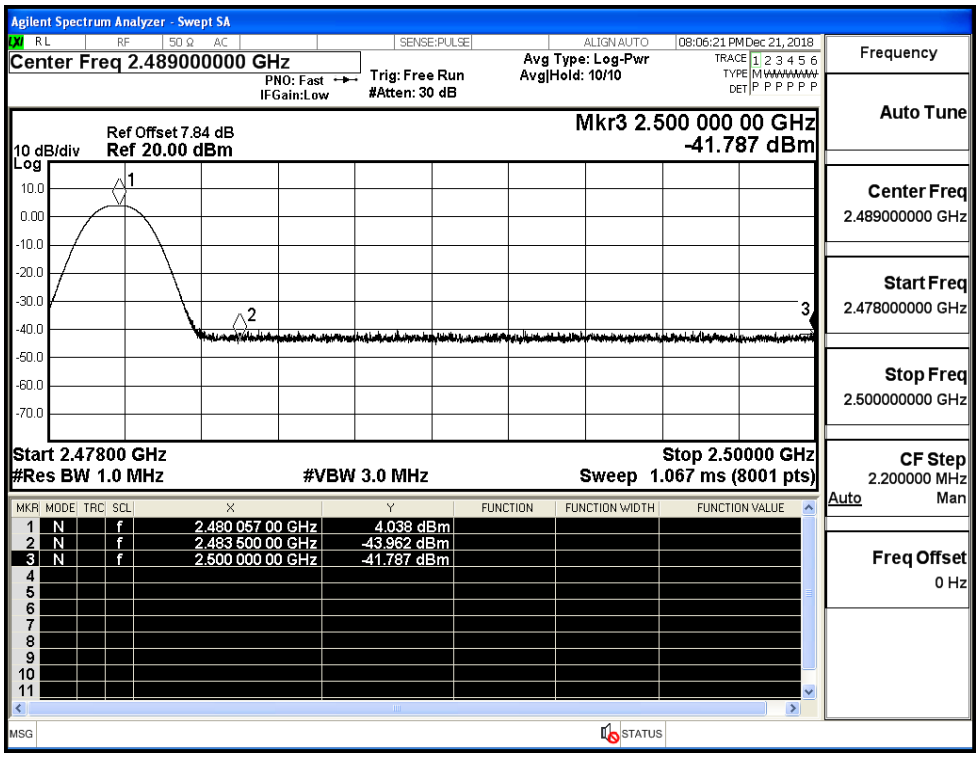
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



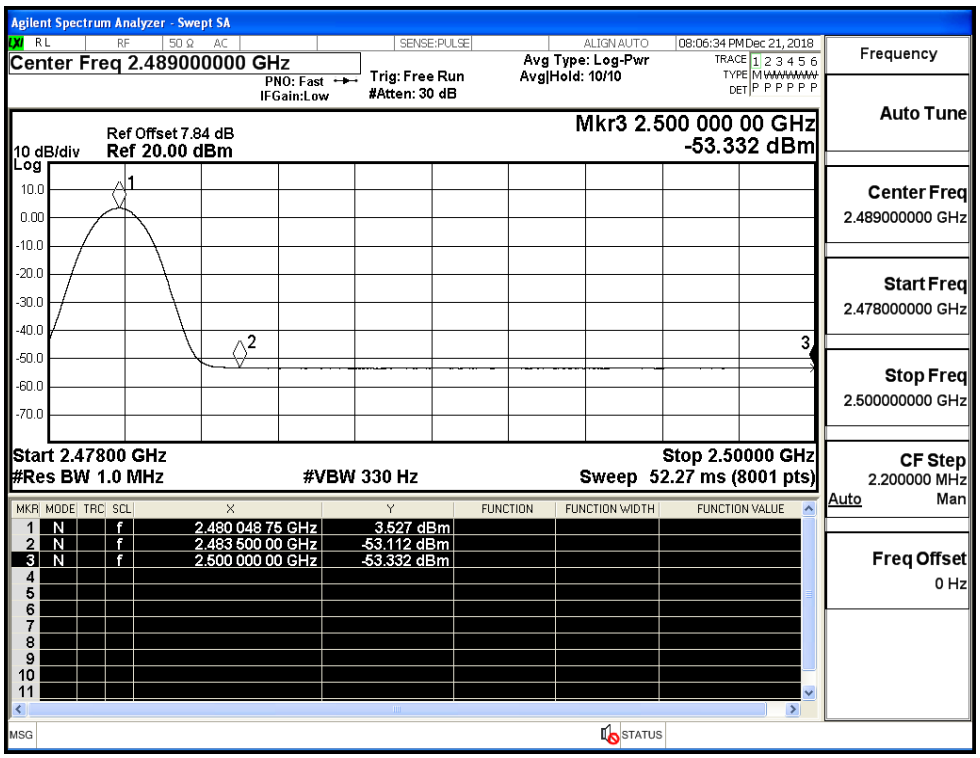
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)



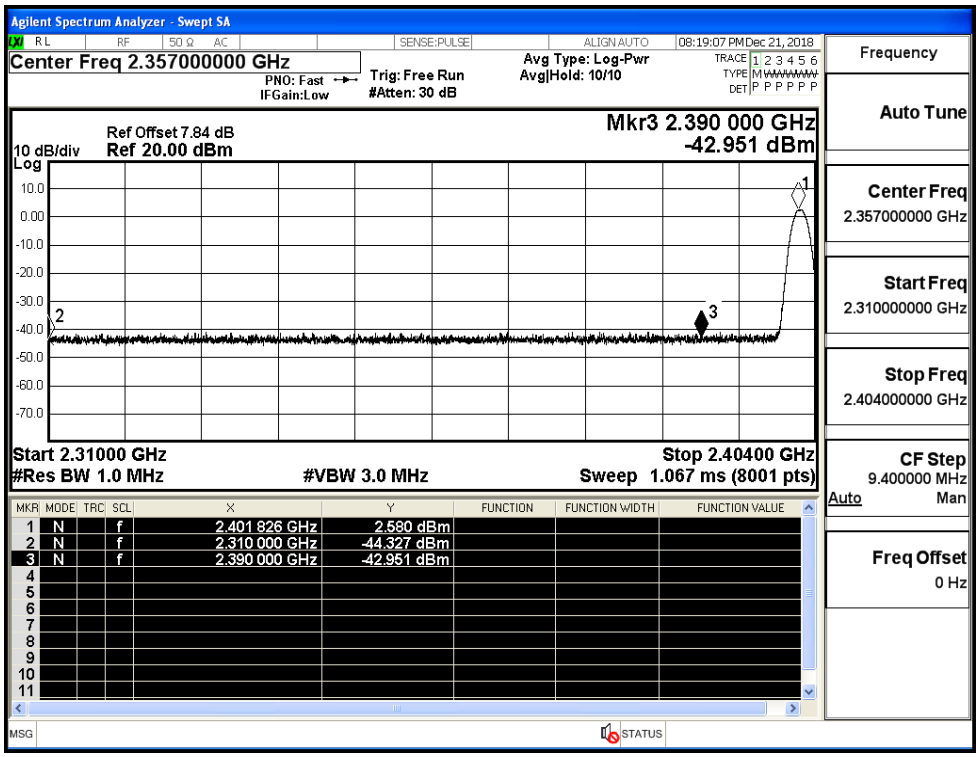
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



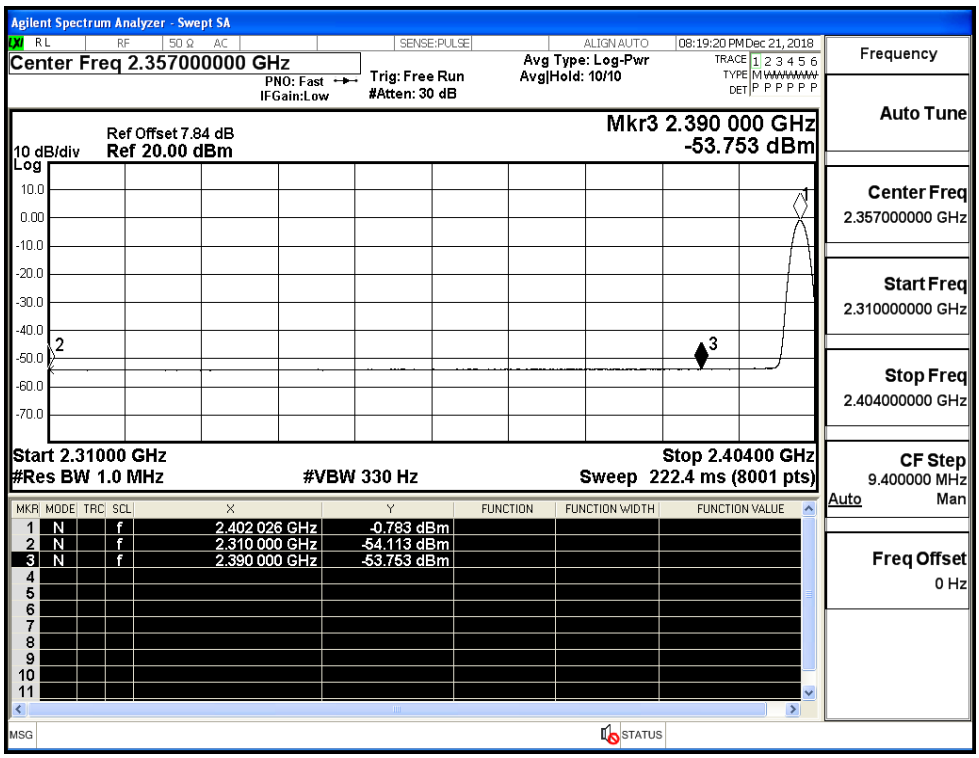
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



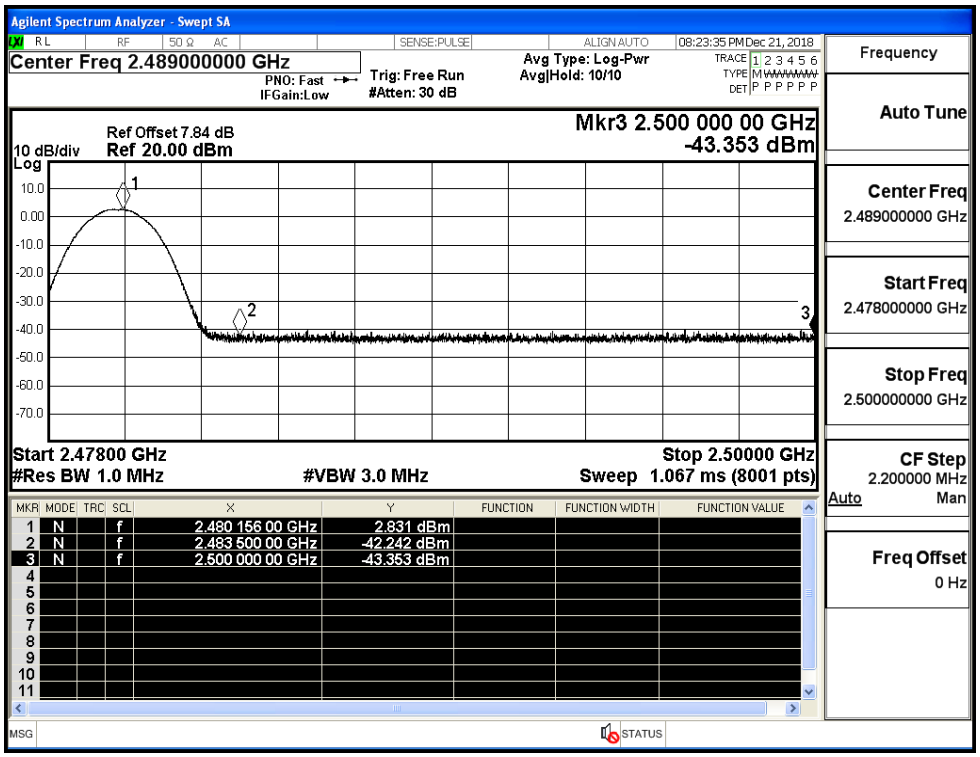
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



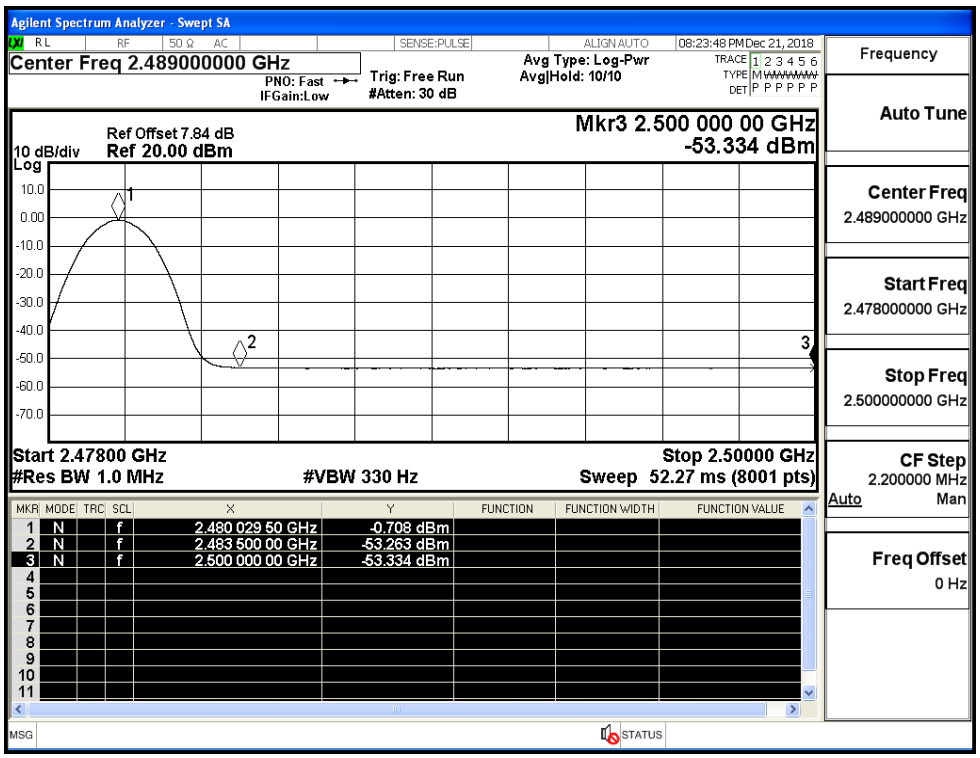
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



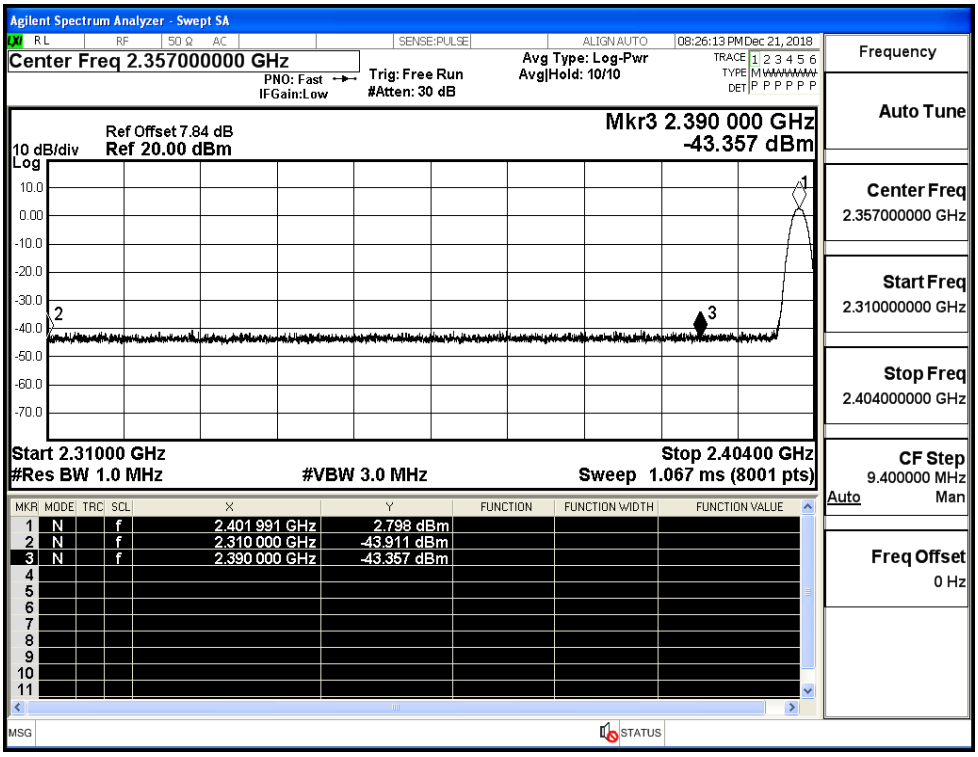
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



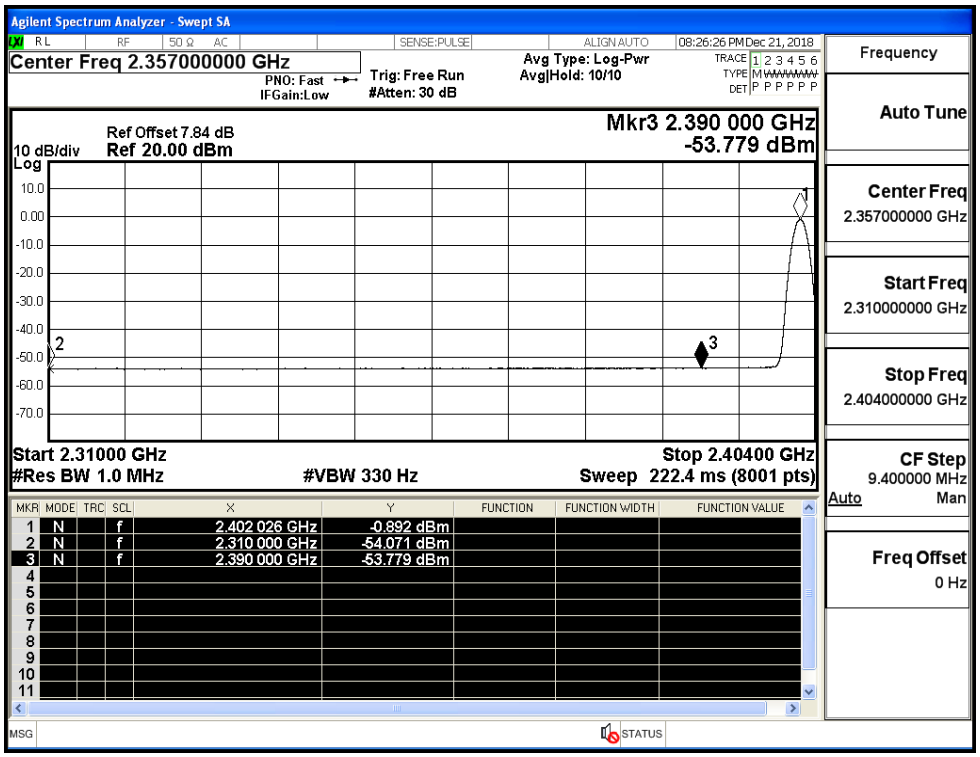
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



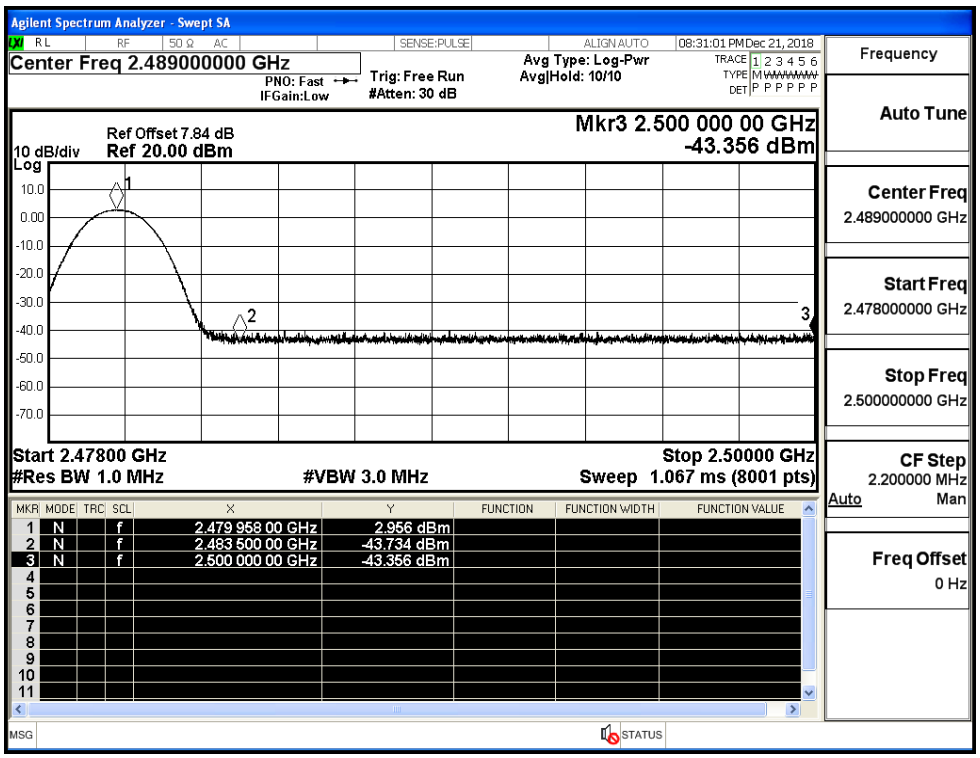
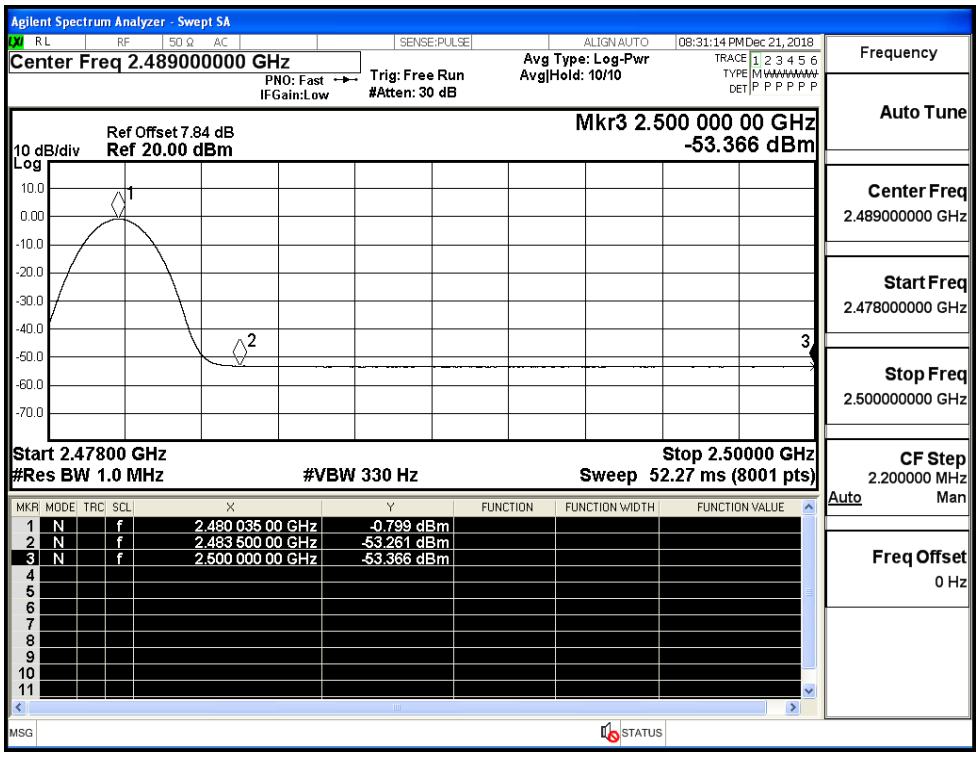
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



Restrict-band band-edge measurements_Hopping Off_8DPSK_Average (Low Channel)



Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (High Channel)



Restrict-band band-edge measurements_Hopping Off_8DPSK_Average (High Channel)