Appendix A

RF Test Data for BT V4.0 (BDR/EDR) (Conducted Measurement)

Product Name: DUOSmart Turntable Audio Station

Trade Mark: HYM originals

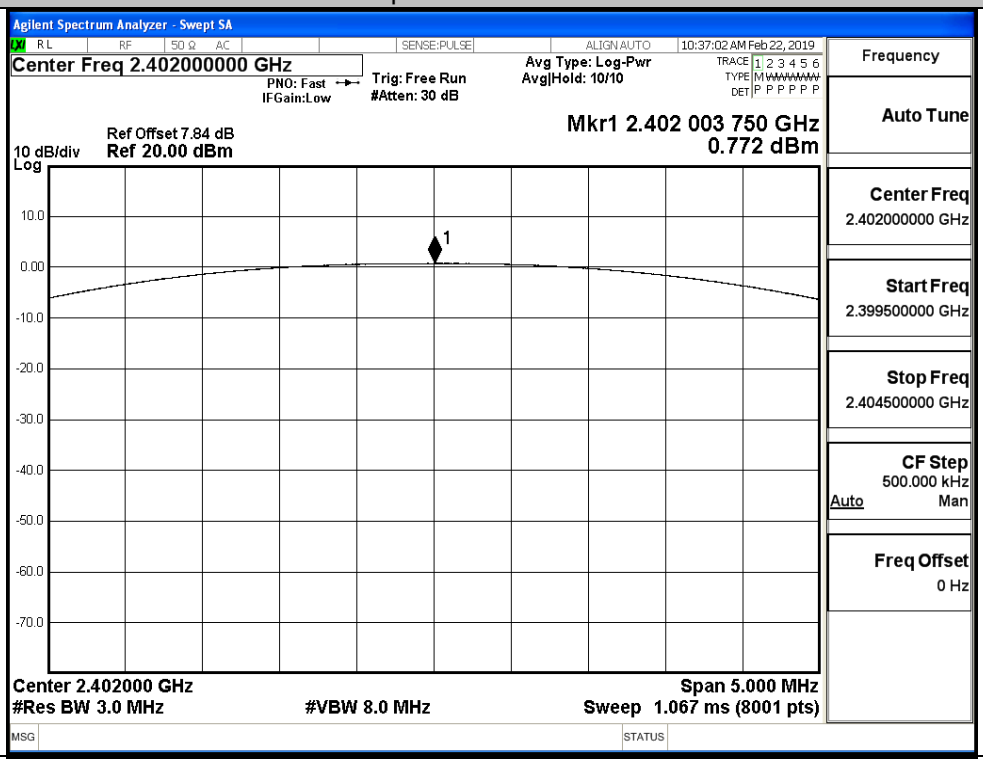
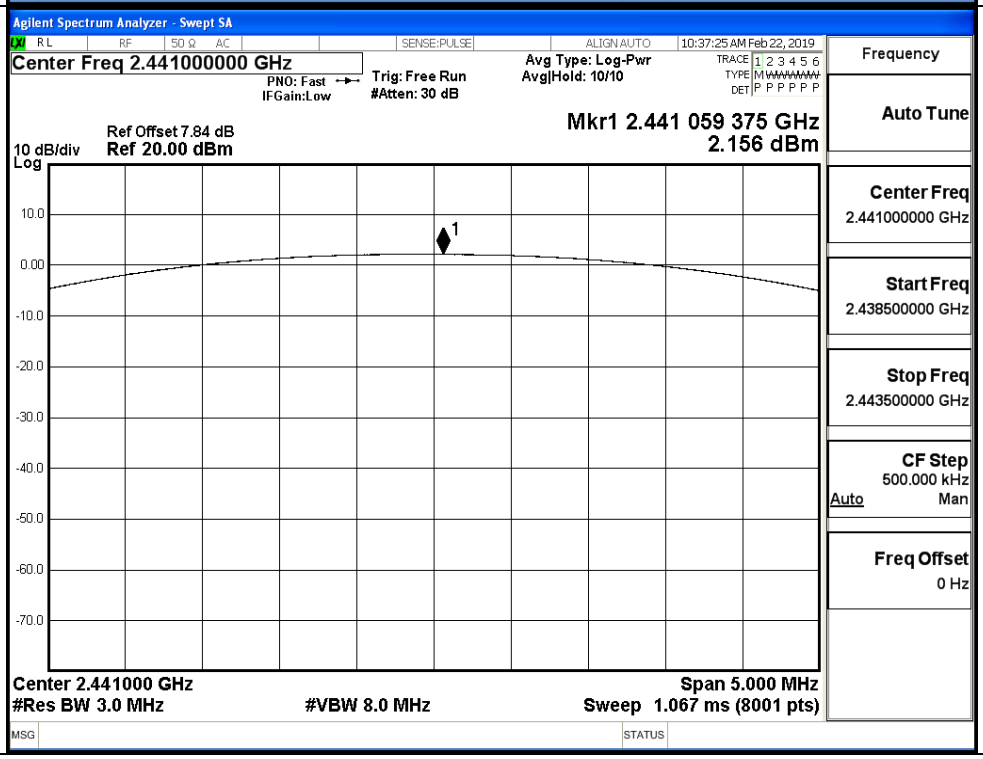
Test Model: H1-onc01

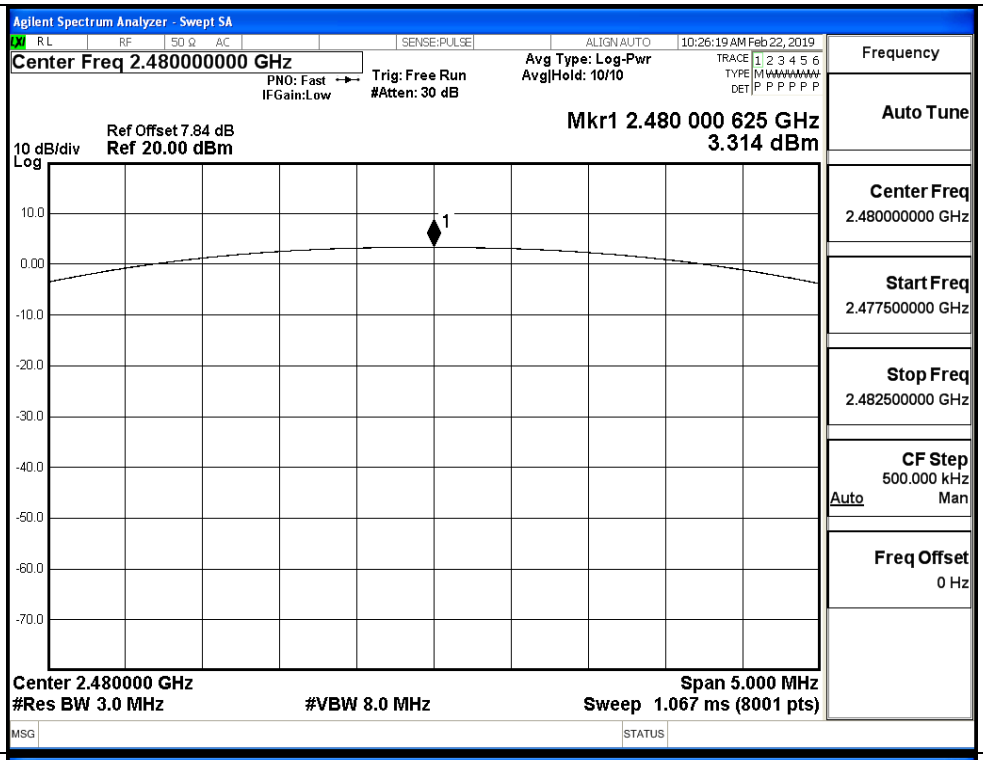
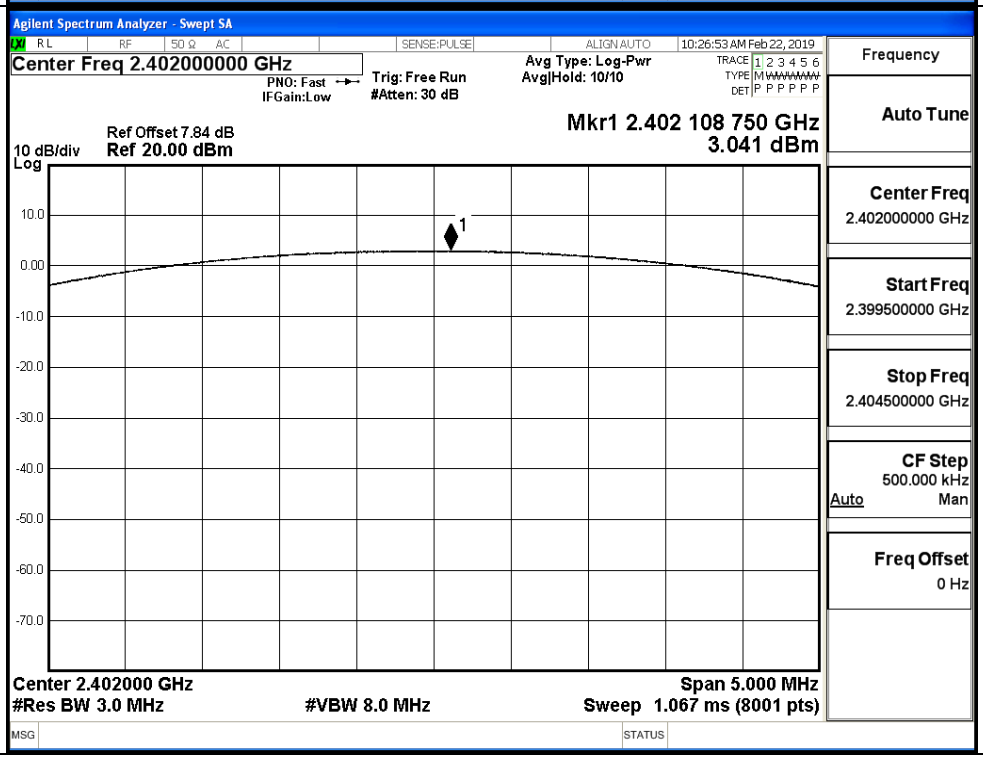
Environmental Conditions

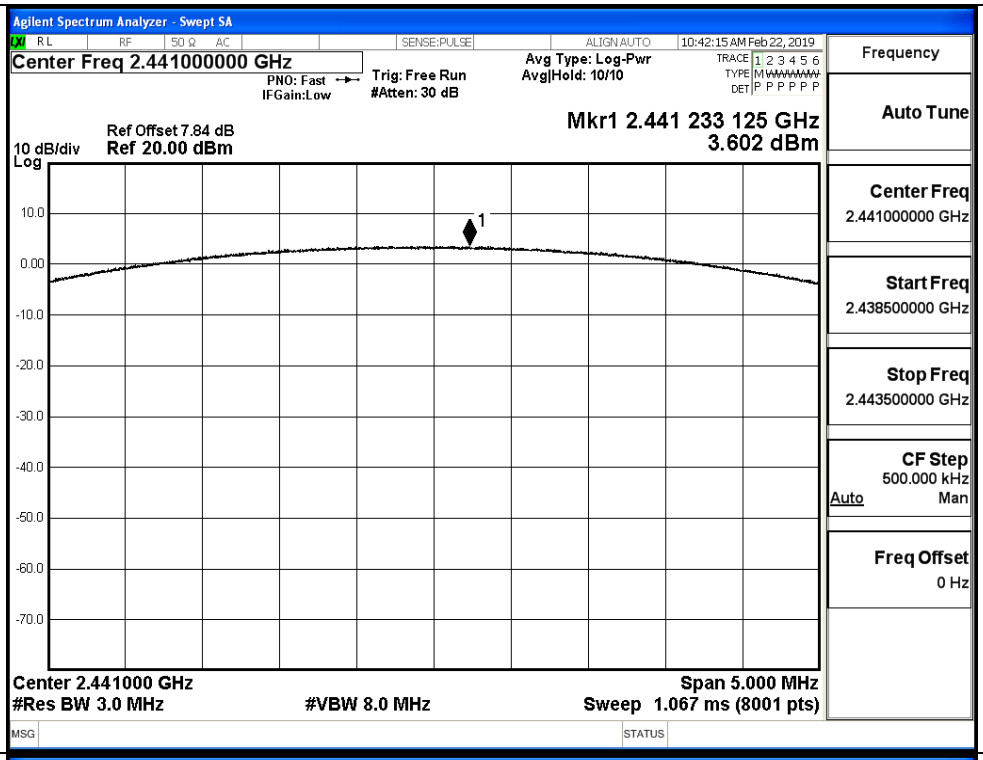
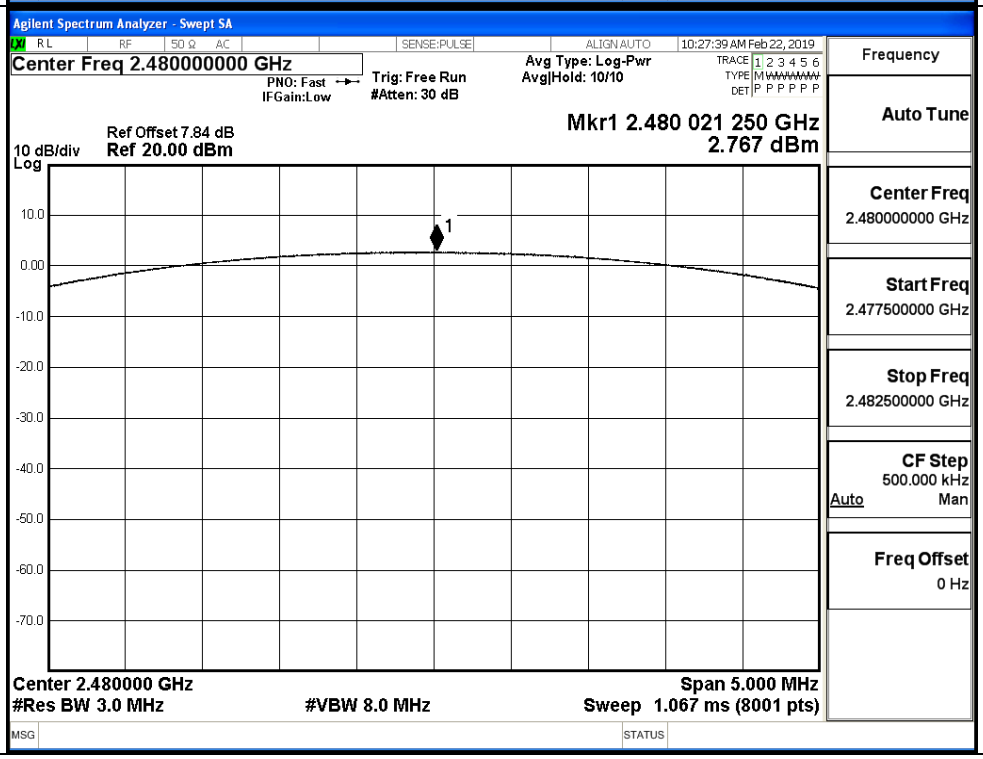
Temperature:	23.4 ° C
Relative Humidity:	52.9%
ATM Pressure:	100.0 kPa
Test Engineer:	Mina.Xu
Supervised by:	Jayden.Zhuo

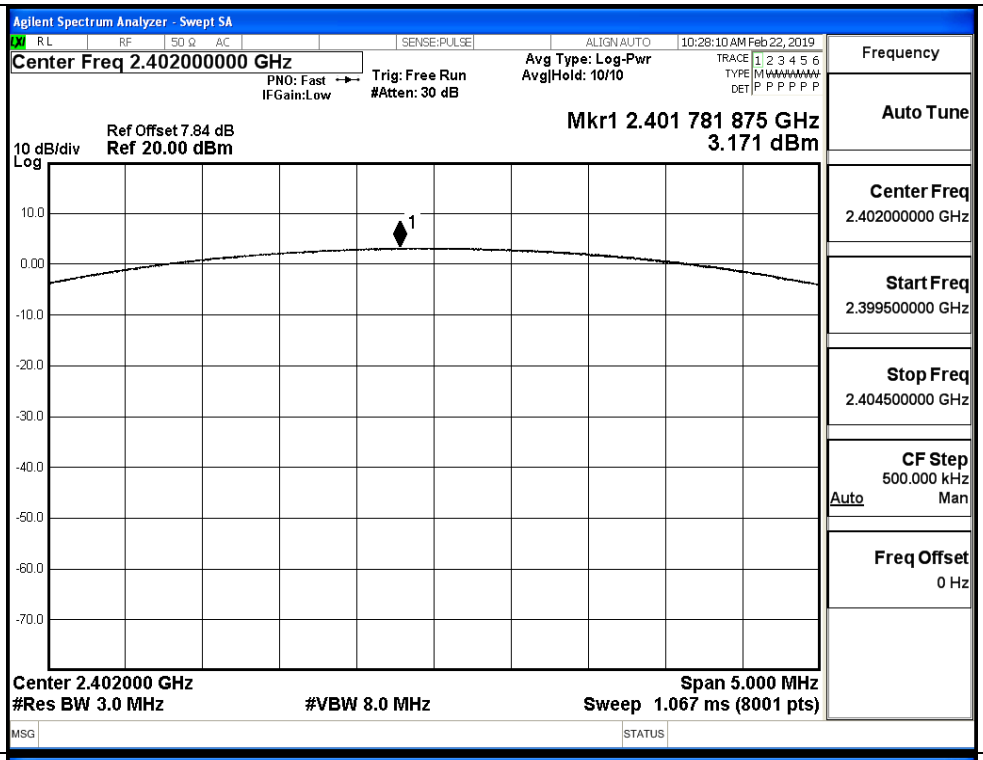
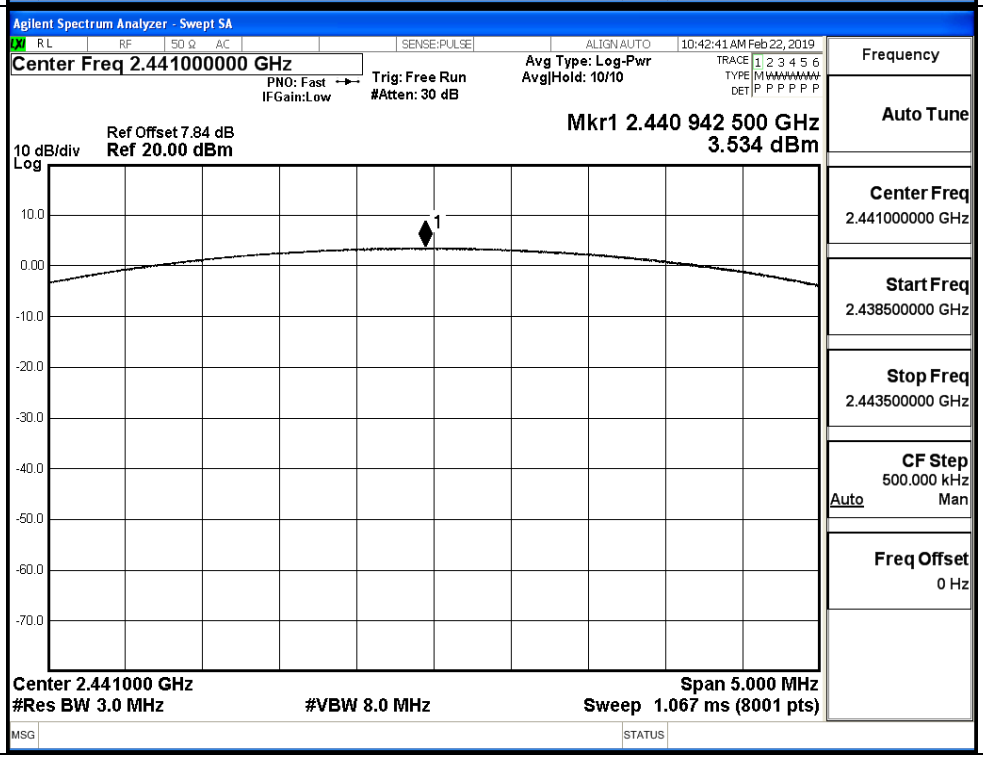
A.1 Maximum Conducted Peak Output Power

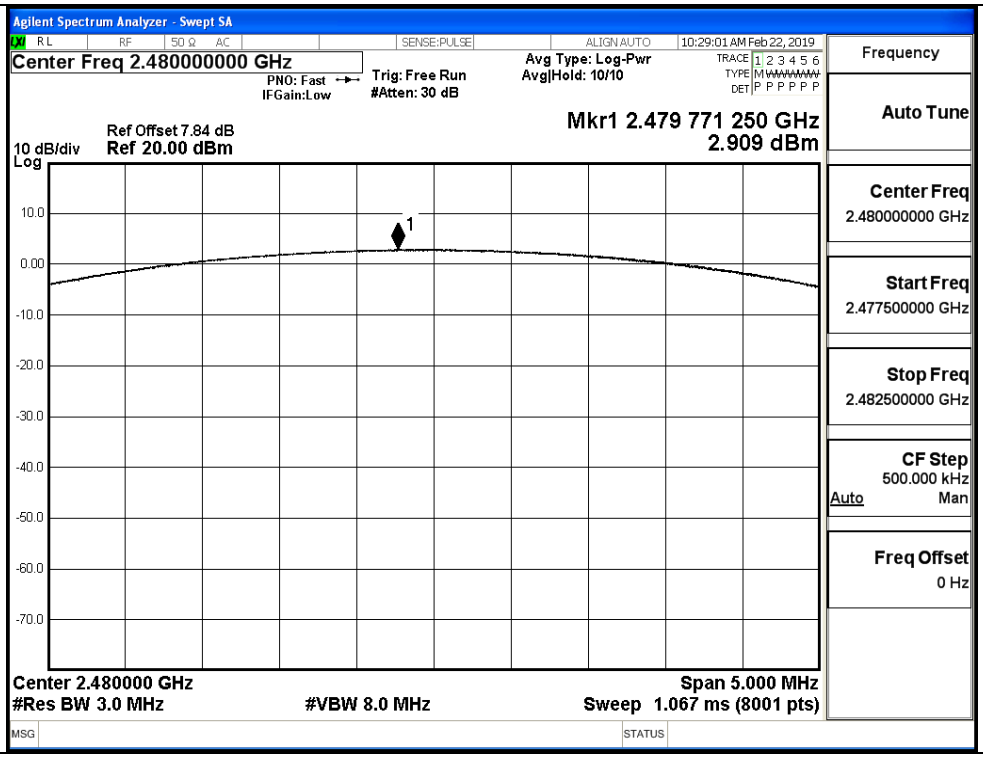
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.772	21	PASS
	MCH	2.156	21	PASS
	HCH	3.314	21	PASS
π/4DQPSK	LCH	3.041	21	PASS
	MCH	3.602	21	PASS
	HCH	2.767	21	PASS
8DPSK	LCH	3.171	21	PASS
	MCH	3.534	21	PASS
	HCH	2.909	21	PASS

Test Graphs		
GFSK/LCH		
GFSK/MCH		

GFSK/HCH		
π/4DQPSK/LCH		

π/4DQPSK/MCH		
π/4DQPSK/HCH		

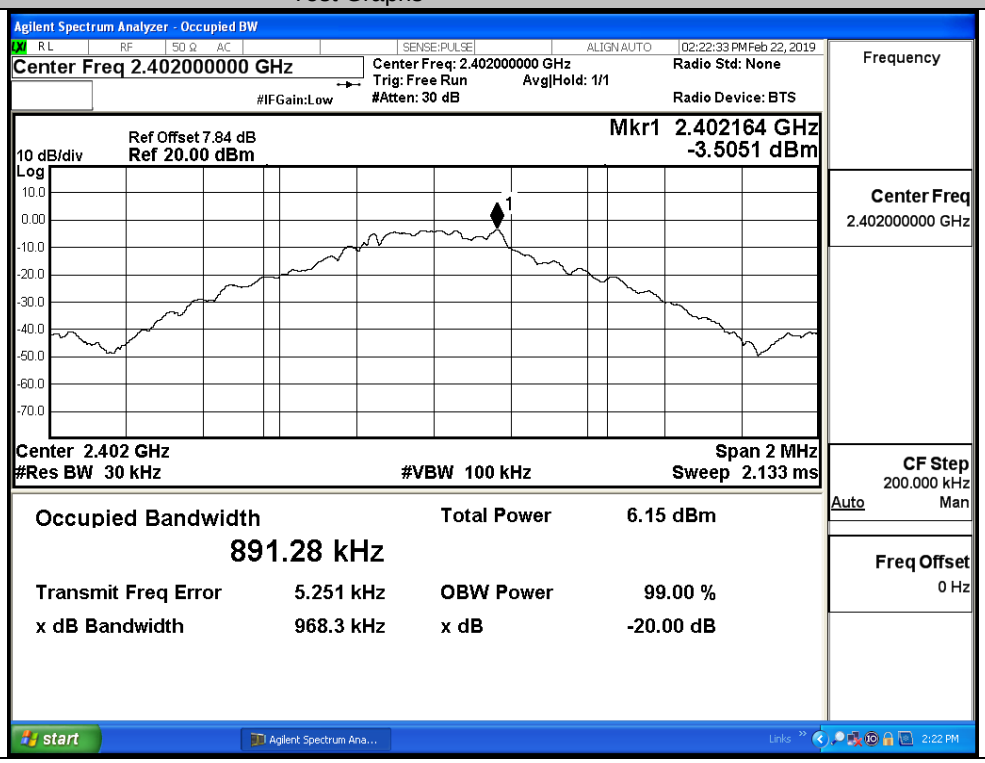
8DPSK/LCH		
8DPSK/MCH		

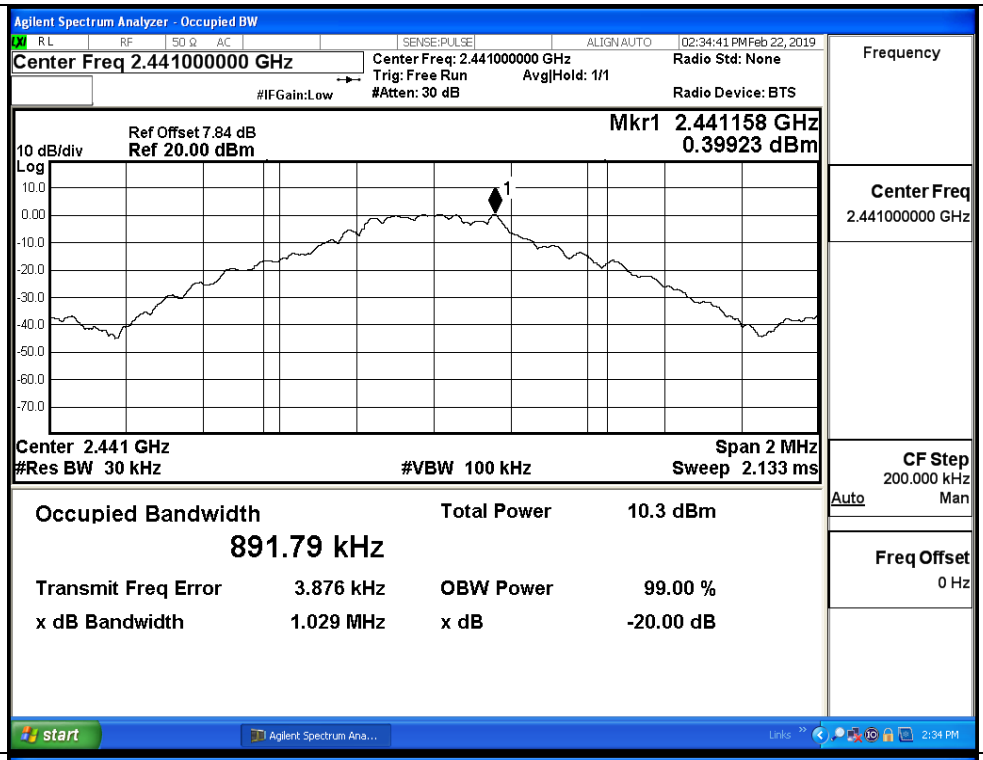
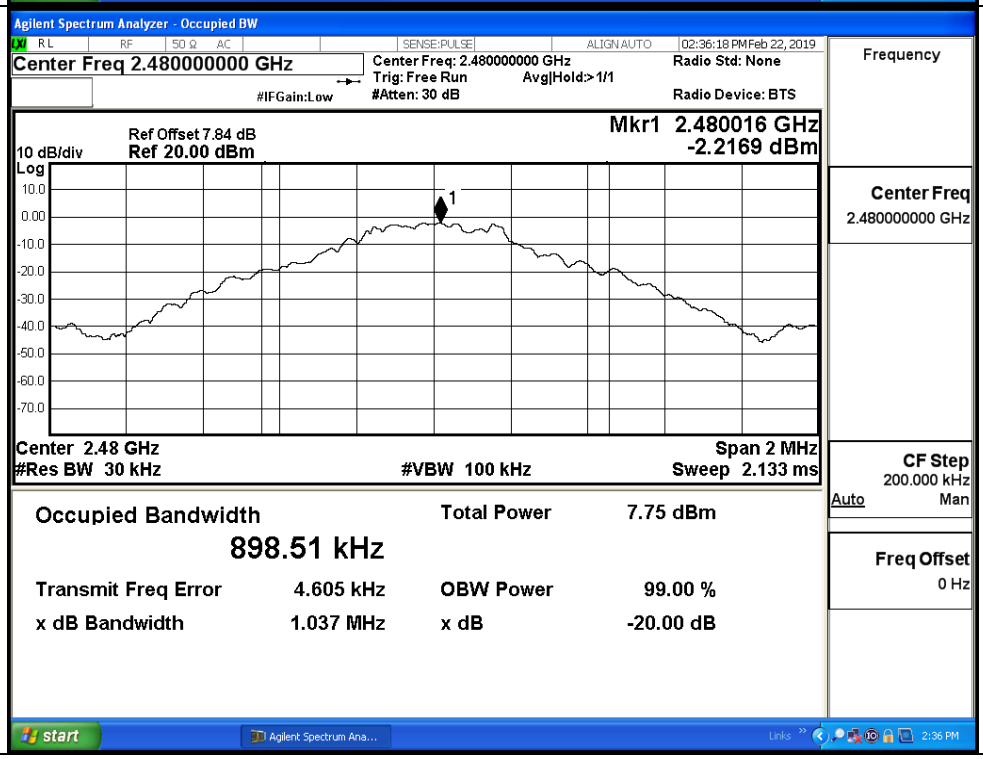
8DPSK/HCH		

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
10:29:01 AM Feb 22, 2019
Ref Offset 7.84 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.479 771 250 GHz
2.909 dBm
Center 2.480000 GHz
#Res BW 3.0 MHz
#VBW 8.0 MHz
Span 5.000 MHz
Sweep 1.067 ms (8001 pts)
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.477500000 GHz
Stop Freq
2.482500000 GHz
CF Step
500.000 kHz
Auto
Man
Freq Offset
0 Hz

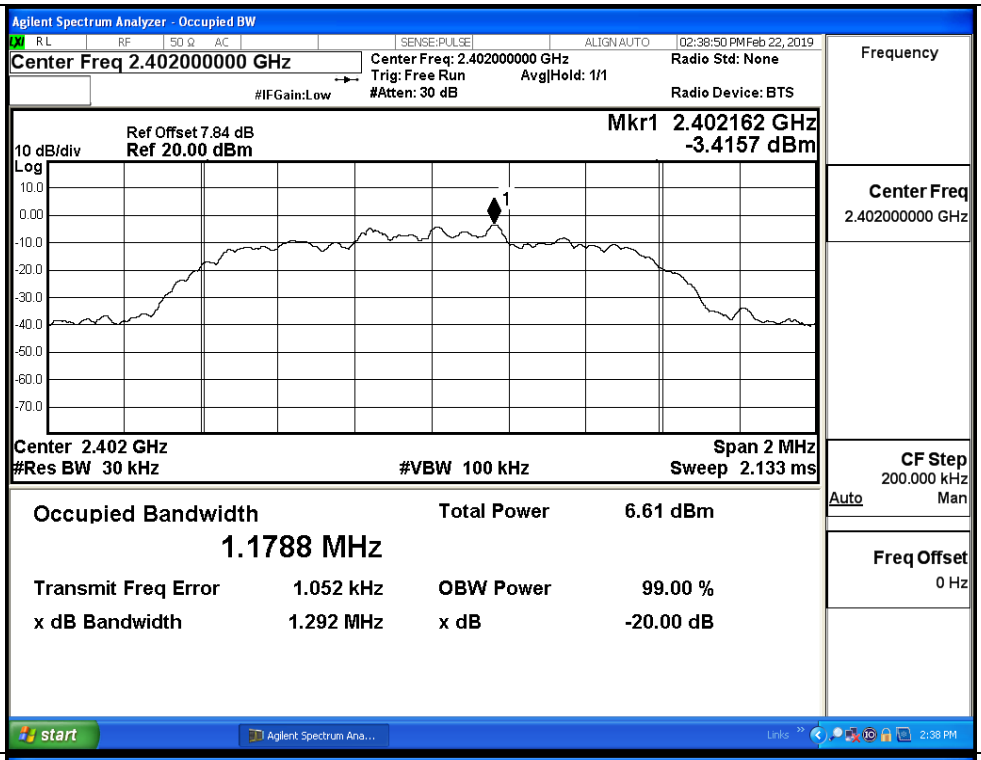
A.2 99% and 20dB Bandwidth

Mode	Channel.	99% Bandwidth [MHz]	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.89128	0.9683	Not Specified	PASS
	MCH	0.89179	1.029	Not Specified	PASS
	HCH	0.89851	1.037	Not Specified	PASS
π/4DQPSK	LCH	1.1788	1.292	Not Specified	PASS
	MCH	1.1759	1.314	Not Specified	PASS
	HCH	1.1750	1.310	Not Specified	PASS
8DPSK	LCH	1.1889	1.296	Not Specified	PASS
	MCH	1.1891	1.300	Not Specified	PASS
	HCH	1.1887	1.298	Not Specified	PASS

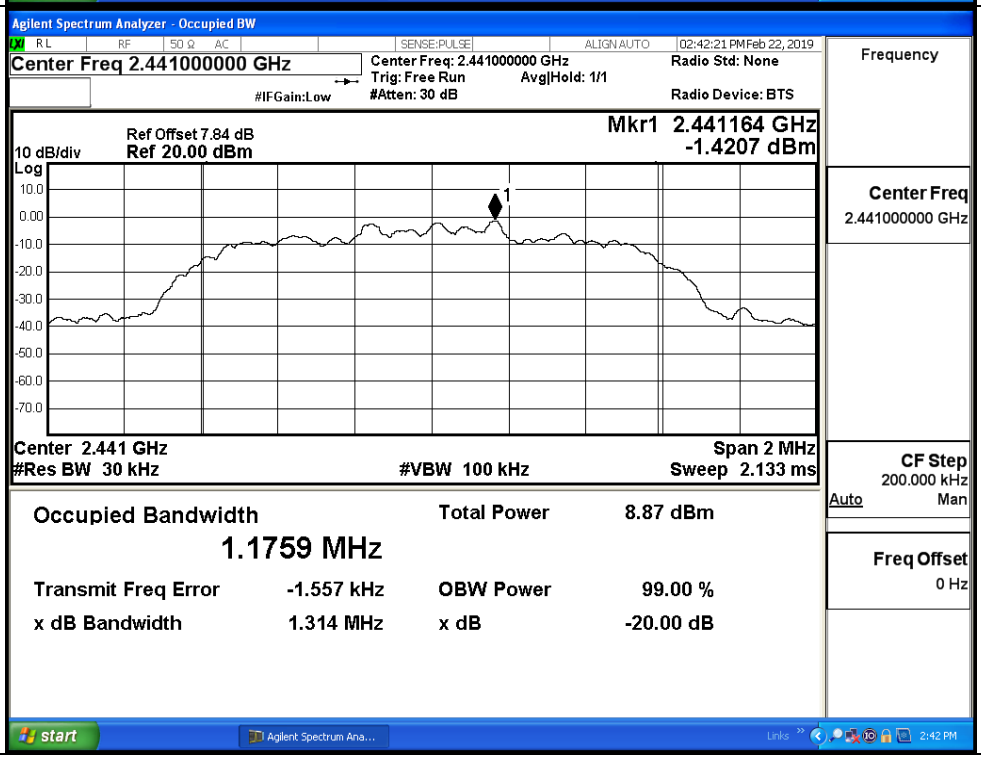
Test Graphs	
GFSK/LCH	

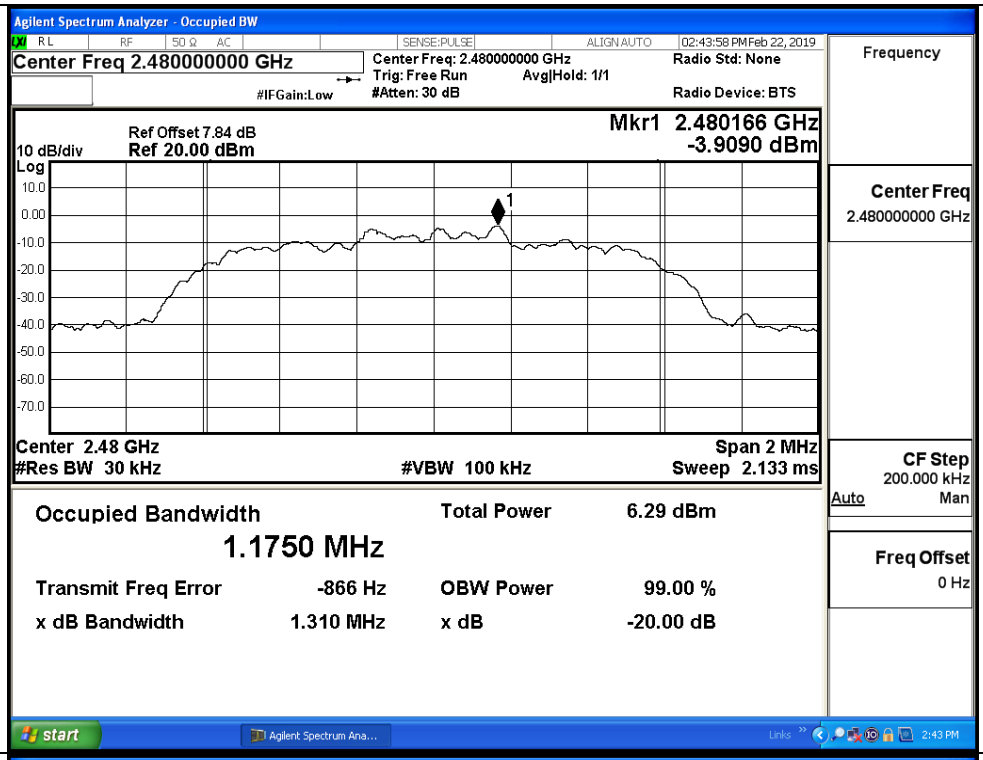
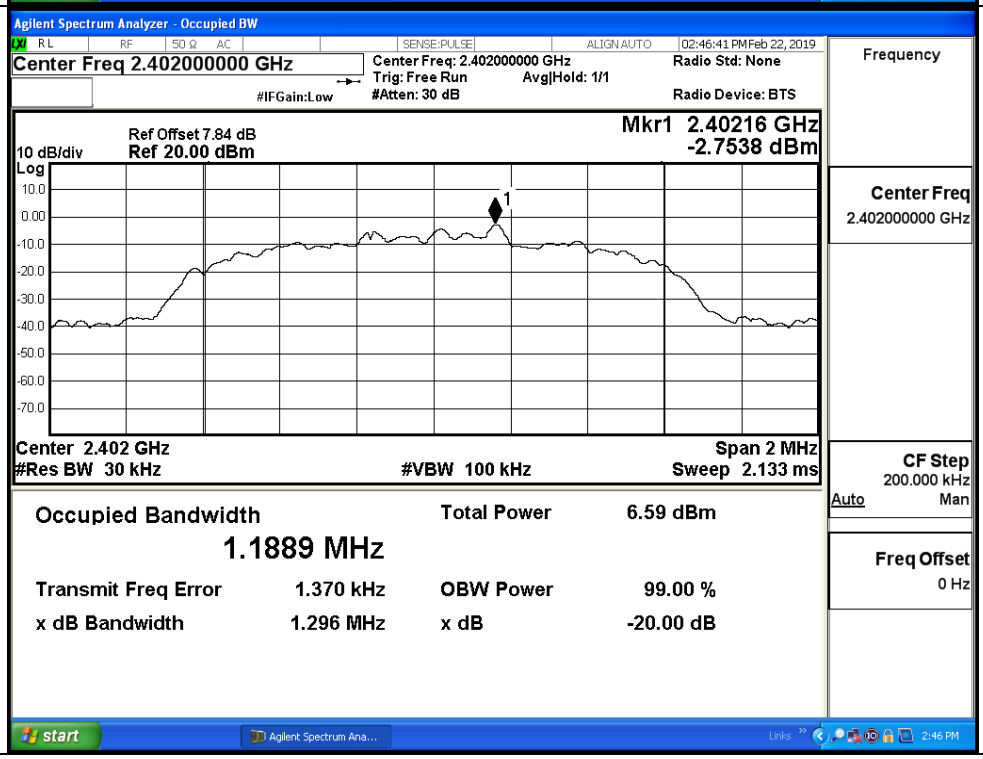
GFSK/MCH	
GFSK/HCH	

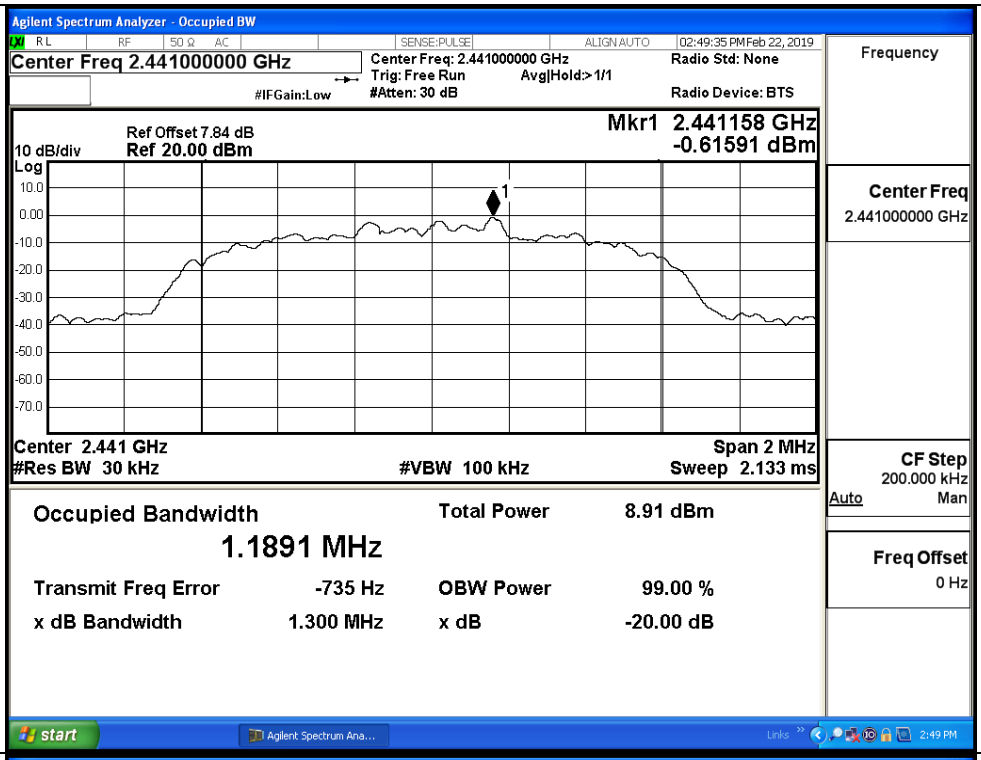
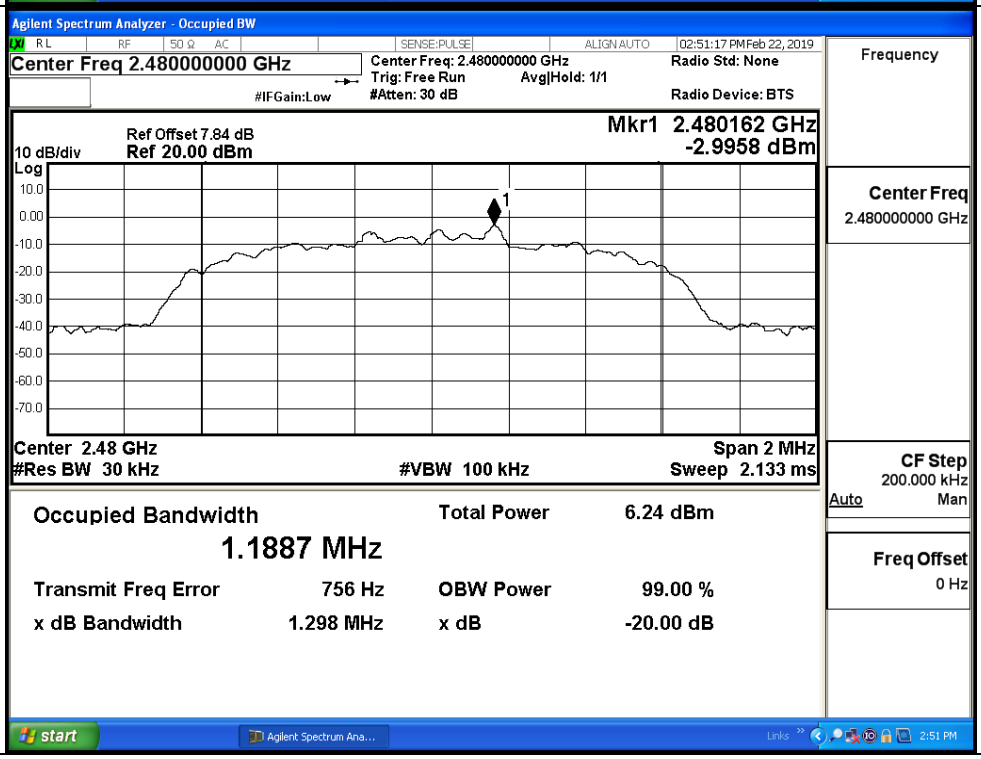
π/4DQPSK/LCH



π/4DQPSK/MCH

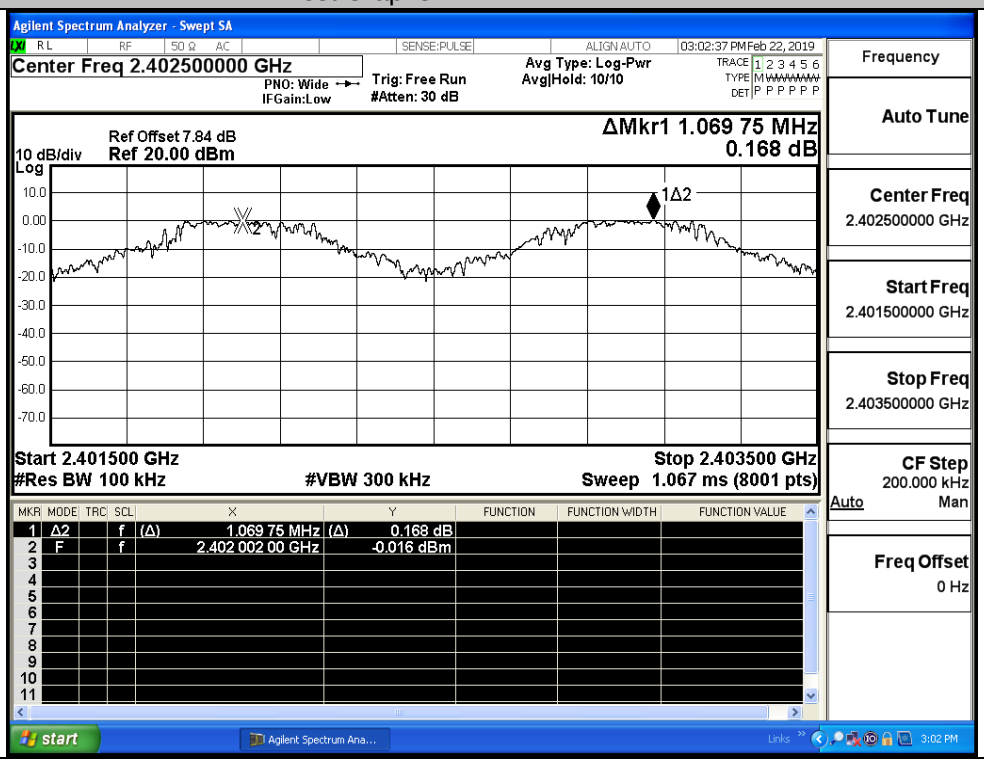


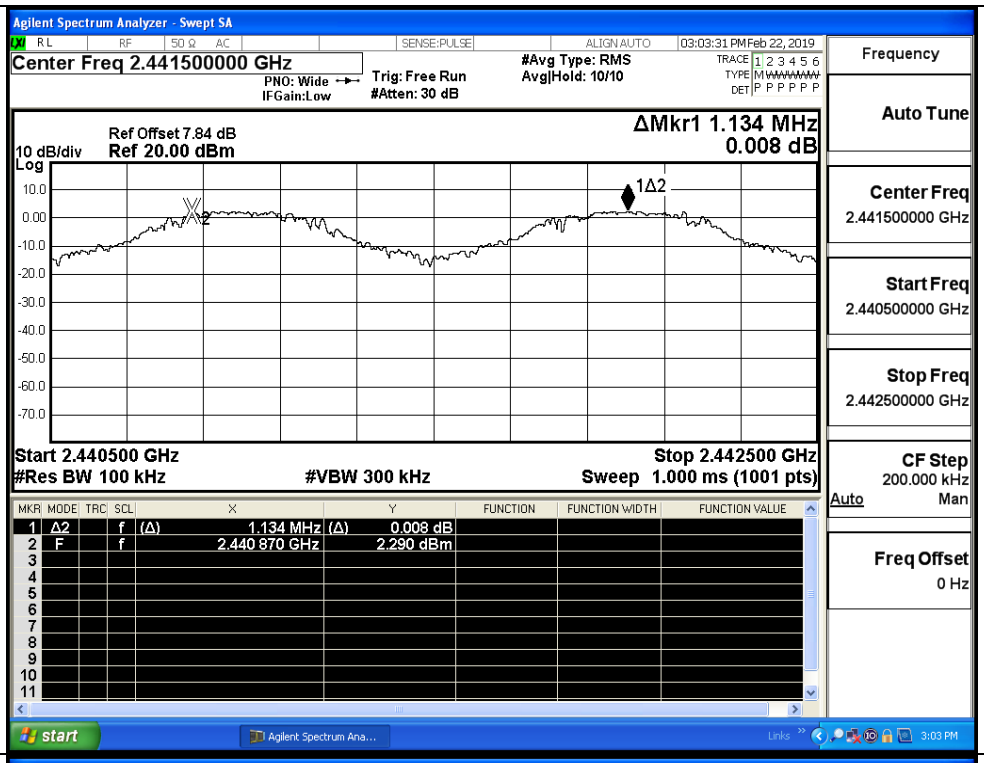
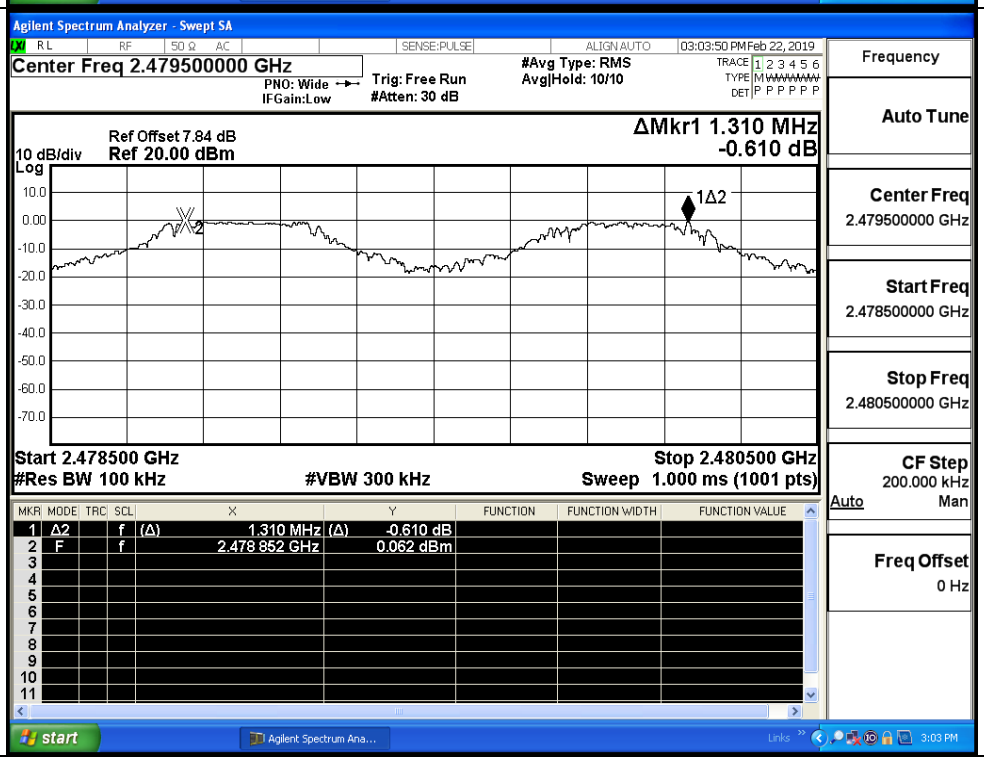
π/4DQPSK/HCH	
8DPSK/LCH	

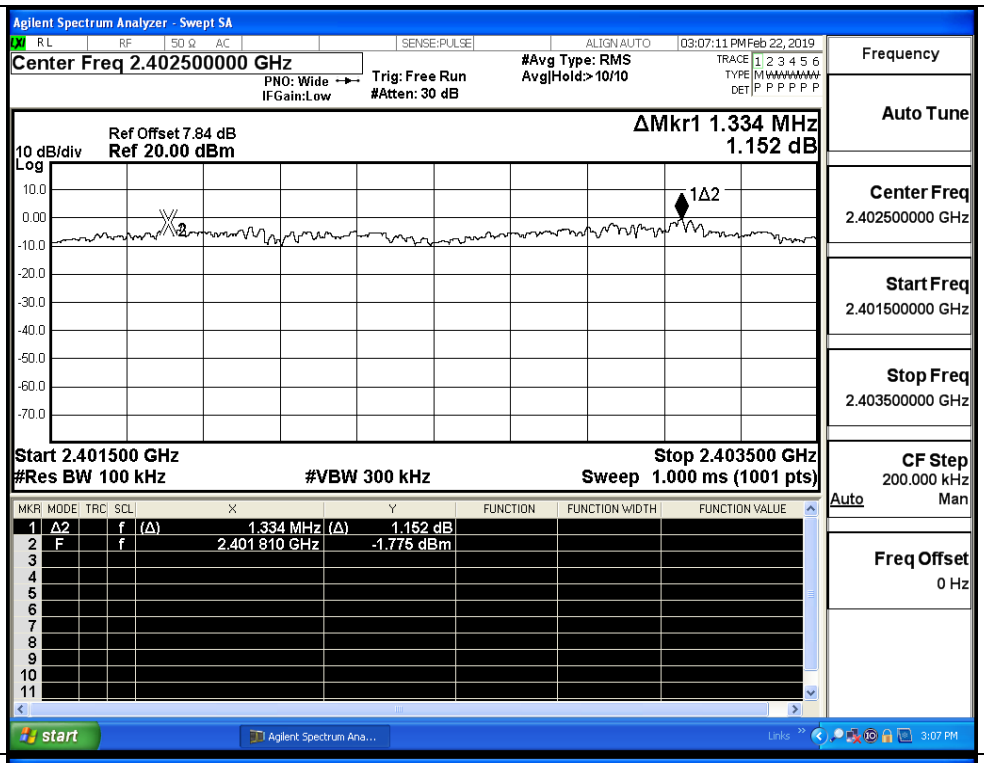
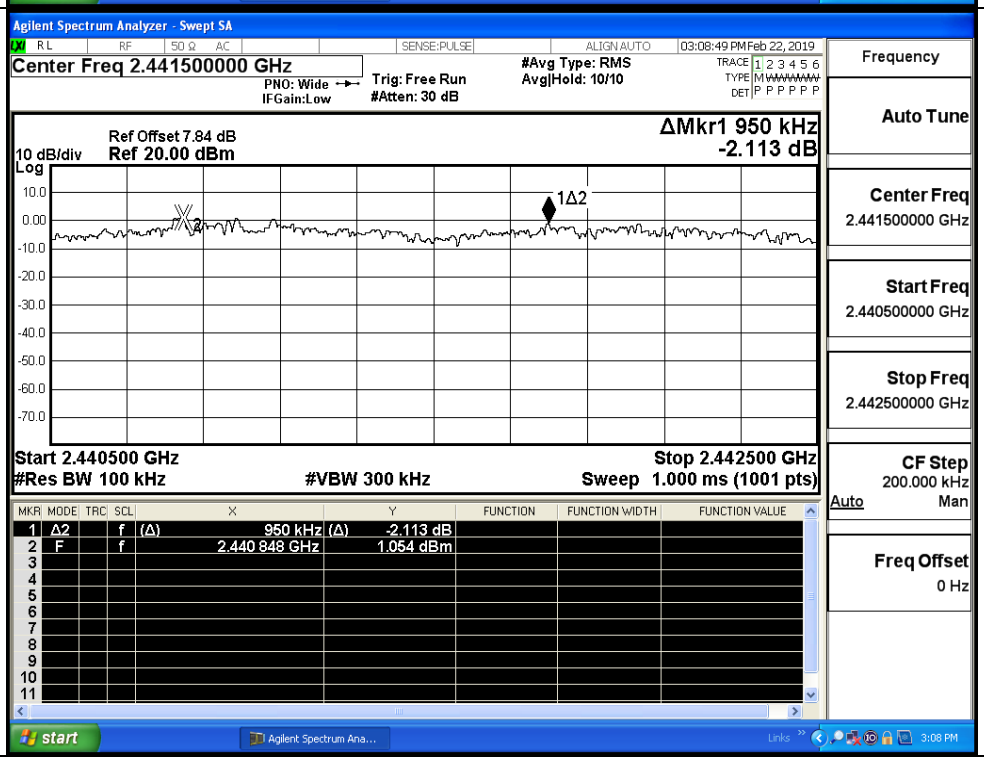
8DPSK/MCH		
8DPSK/HCH		

A.3 Carrier Frequency Separation

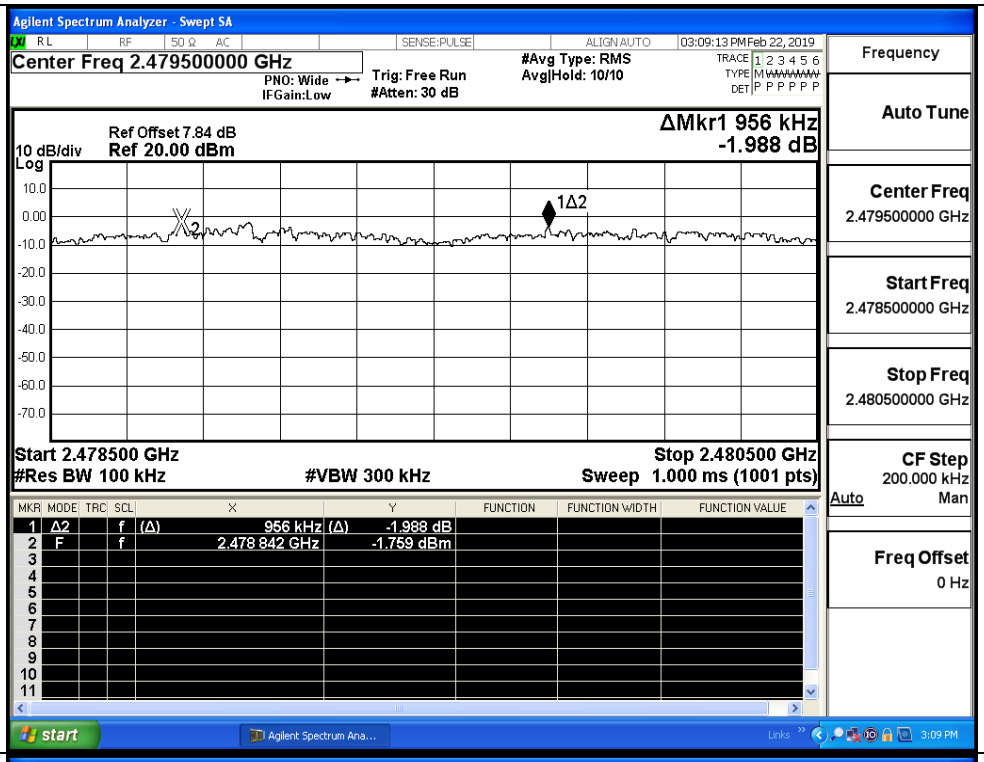
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.070	0.691	PASS
	MCH	1.134	0.691	PASS
	HCH	1.310	0.691	PASS
π/4DQPSK	LCH	1.334	0.876	PASS
	MCH	0.950	0.876	PASS
	HCH	0.956	0.876	PASS
8DPSK	LCH	1.122	0.867	PASS
	MCH	1.304	0.867	PASS
	HCH	0.944	0.867	PASS

Test Graphs	
GFSK/LCH	

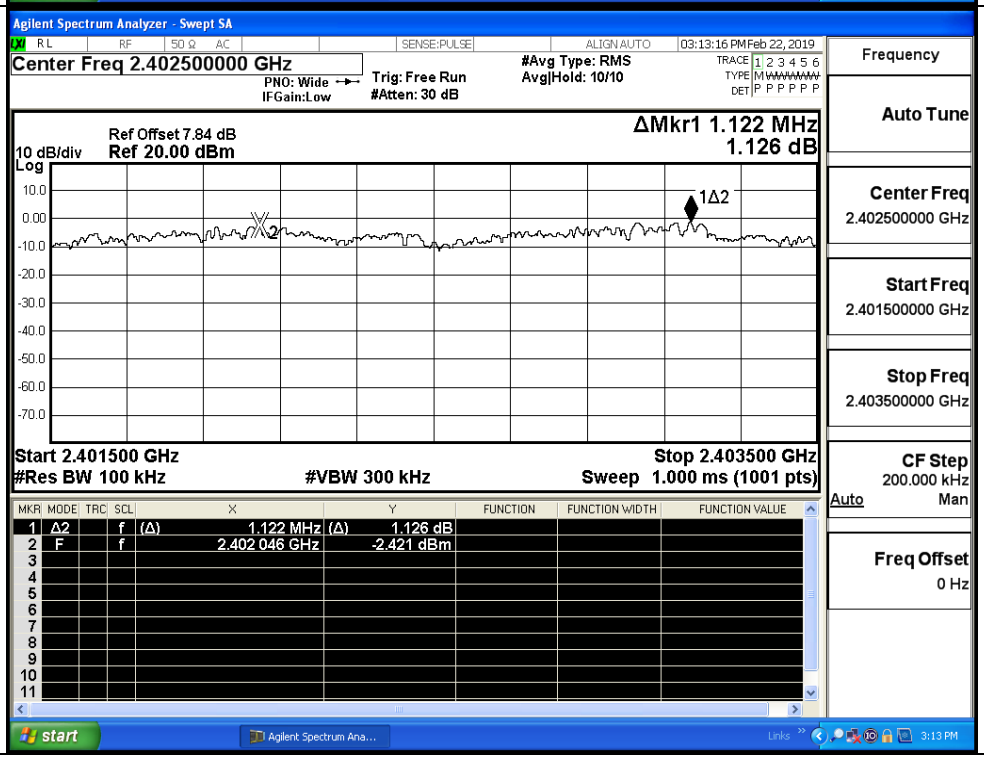
GFSK/MCH		
GFSK/HCH		

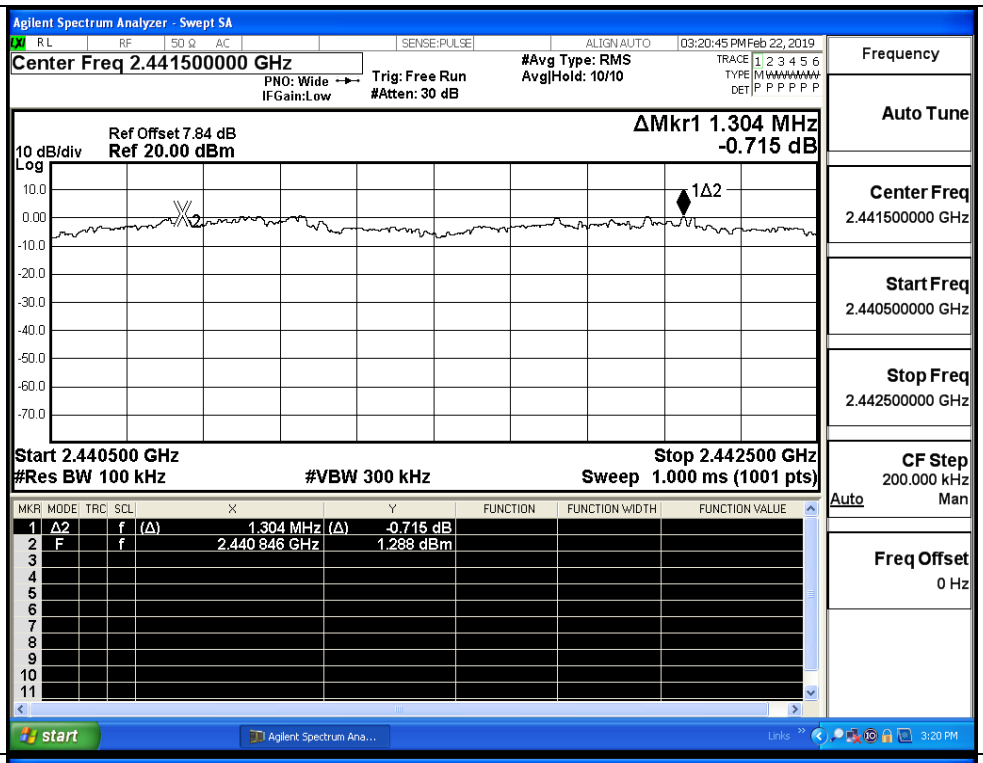
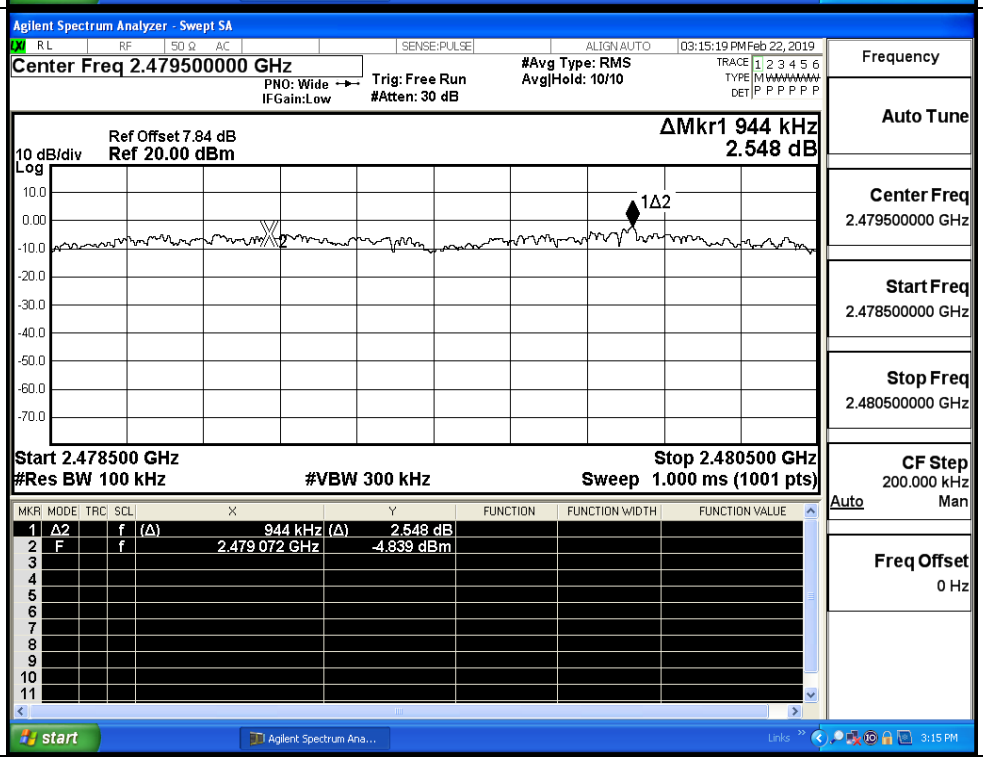
π/4DQPSK/LCH		
π/4DQPSK/MCH		

π/4DQPSK/HCH



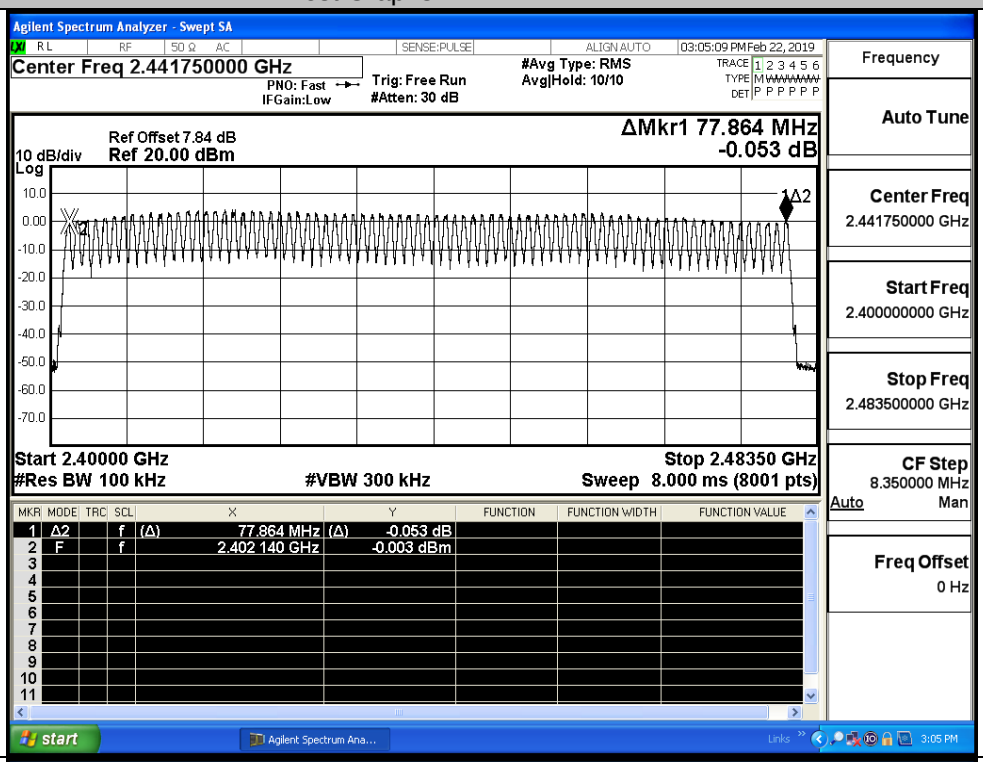
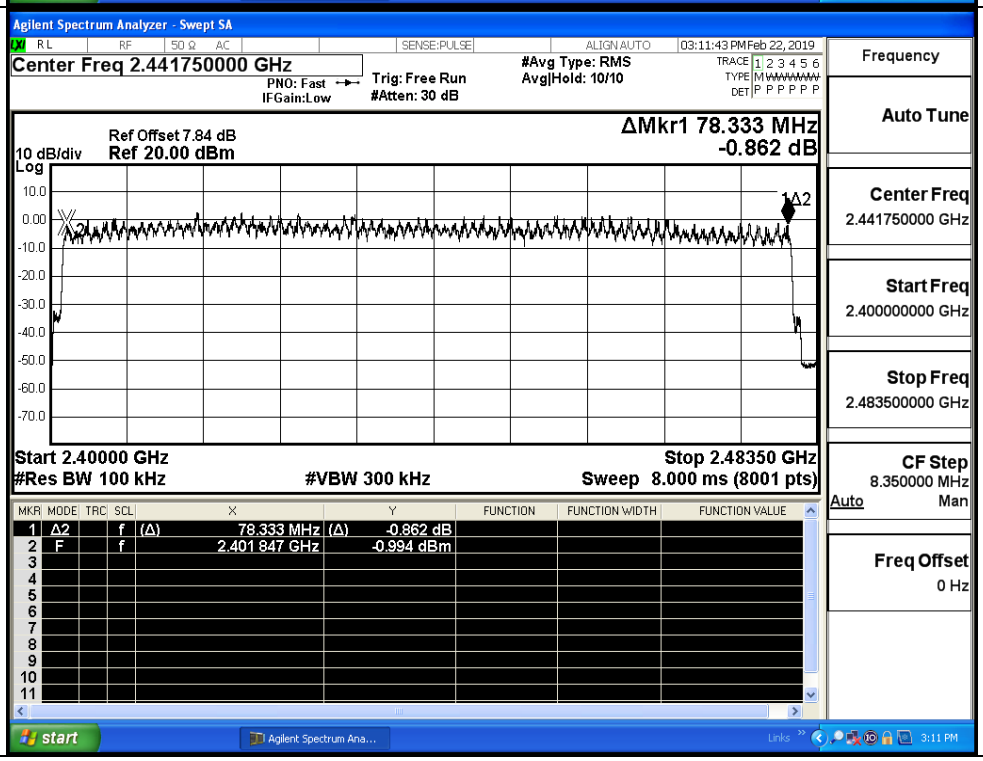
8DPSK/LCH

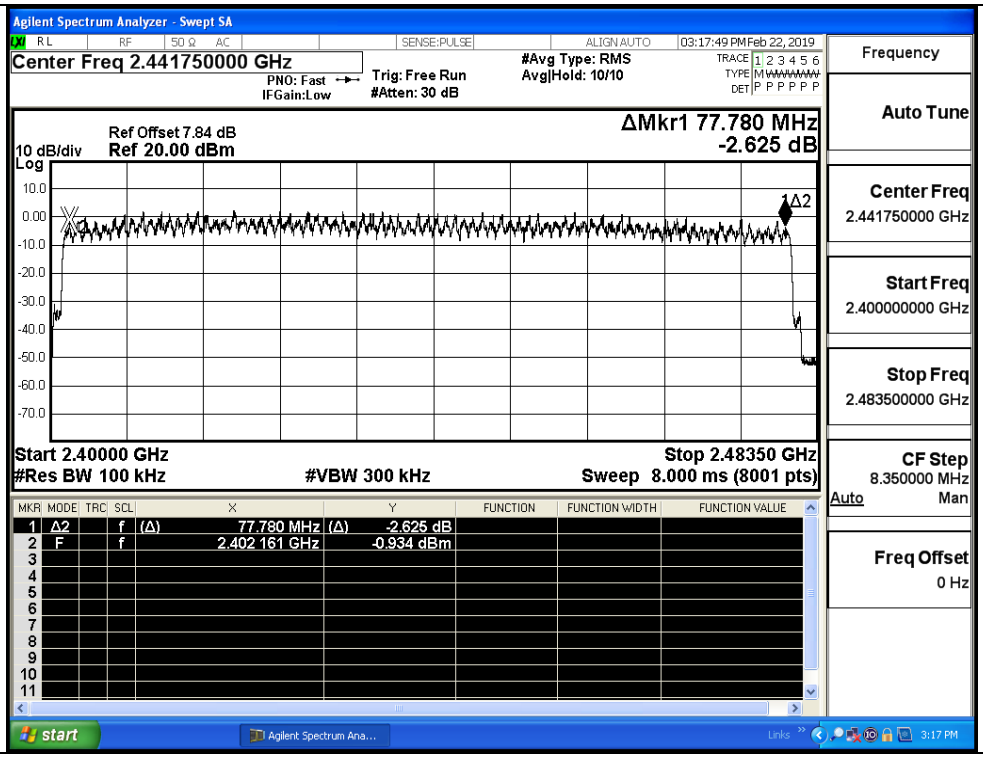


8DPSK/MCH		
8DPSK/HCH		

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

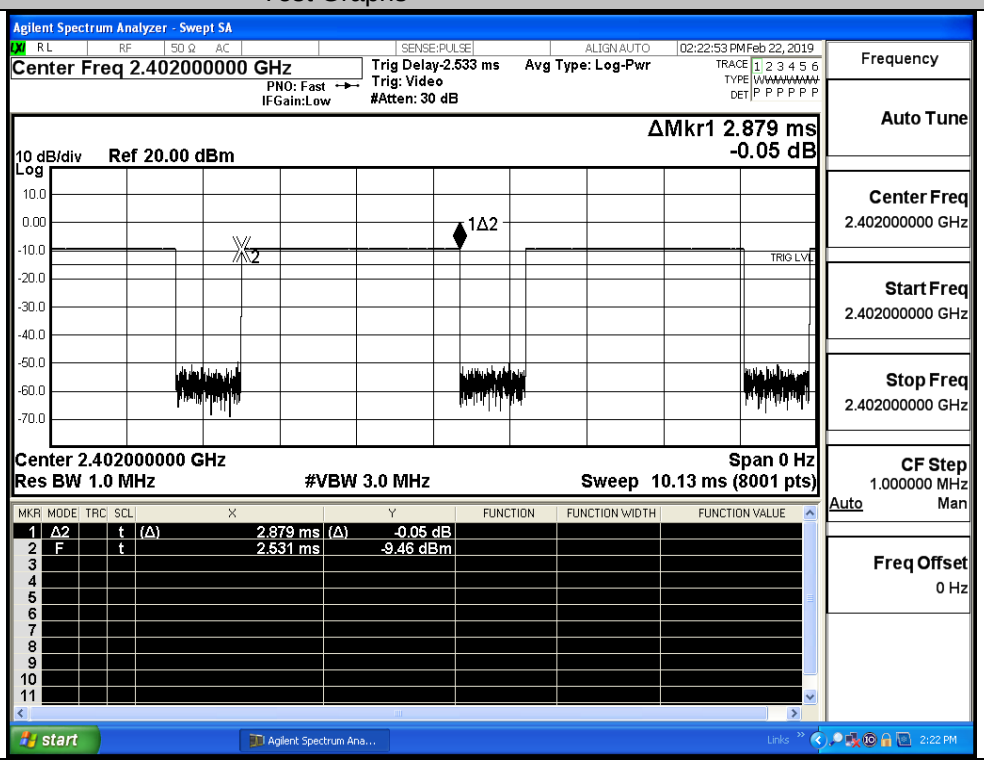
Test Graphs	
GFSK/Hop	
π/4DQPSK/Hop	

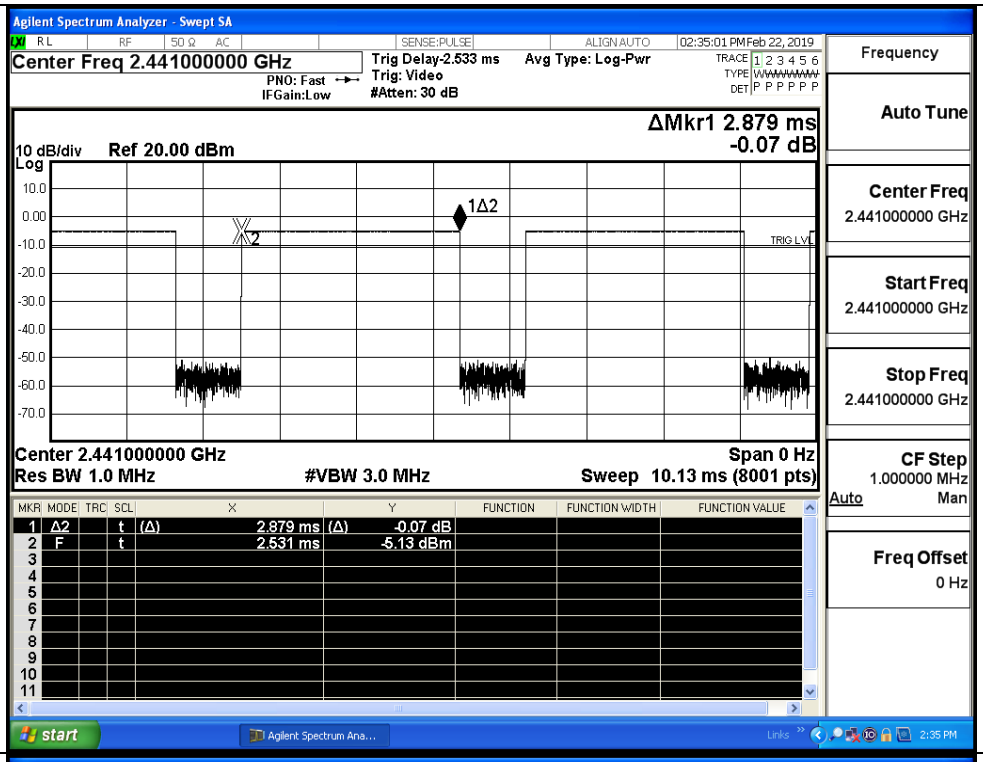
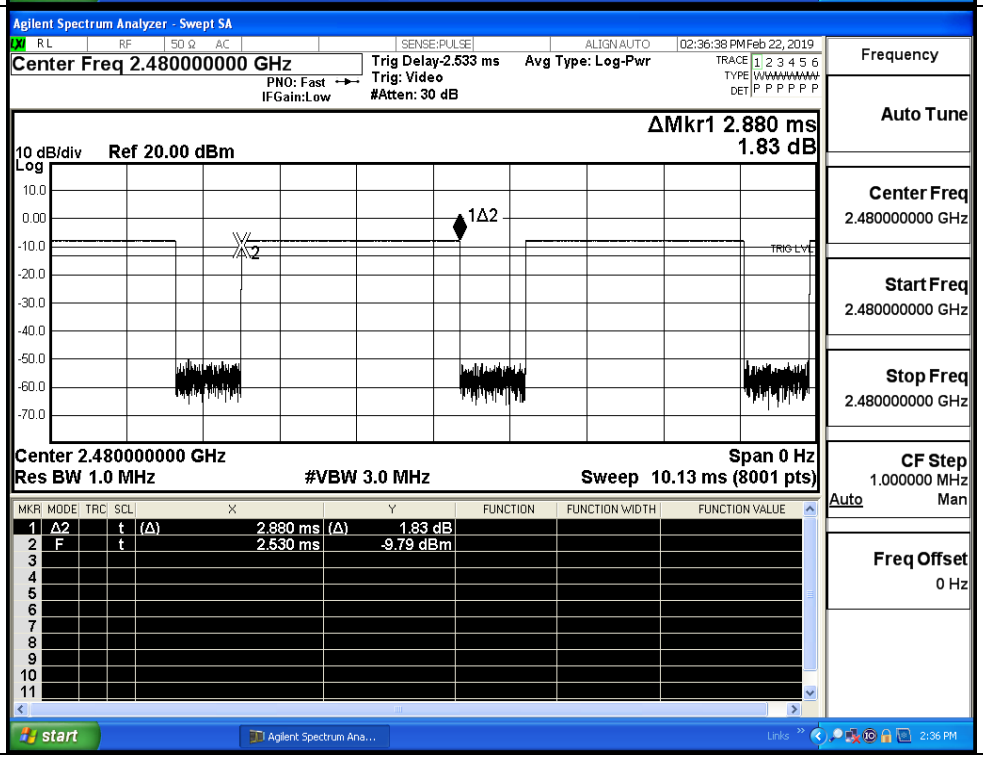
8DPSK/Hop	

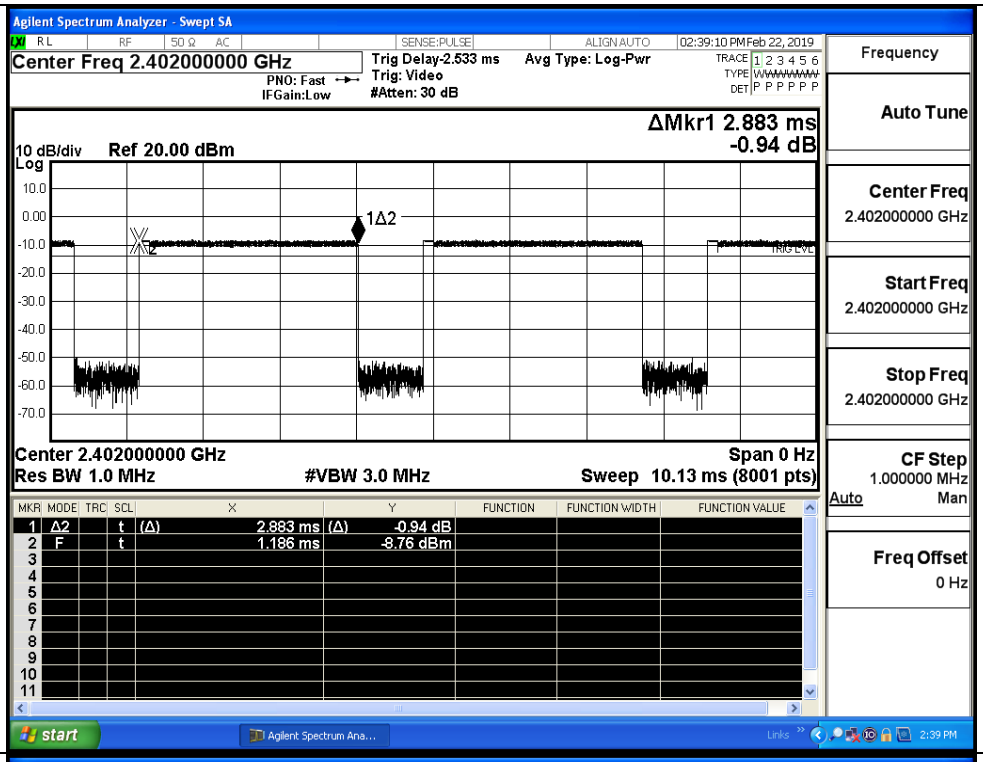
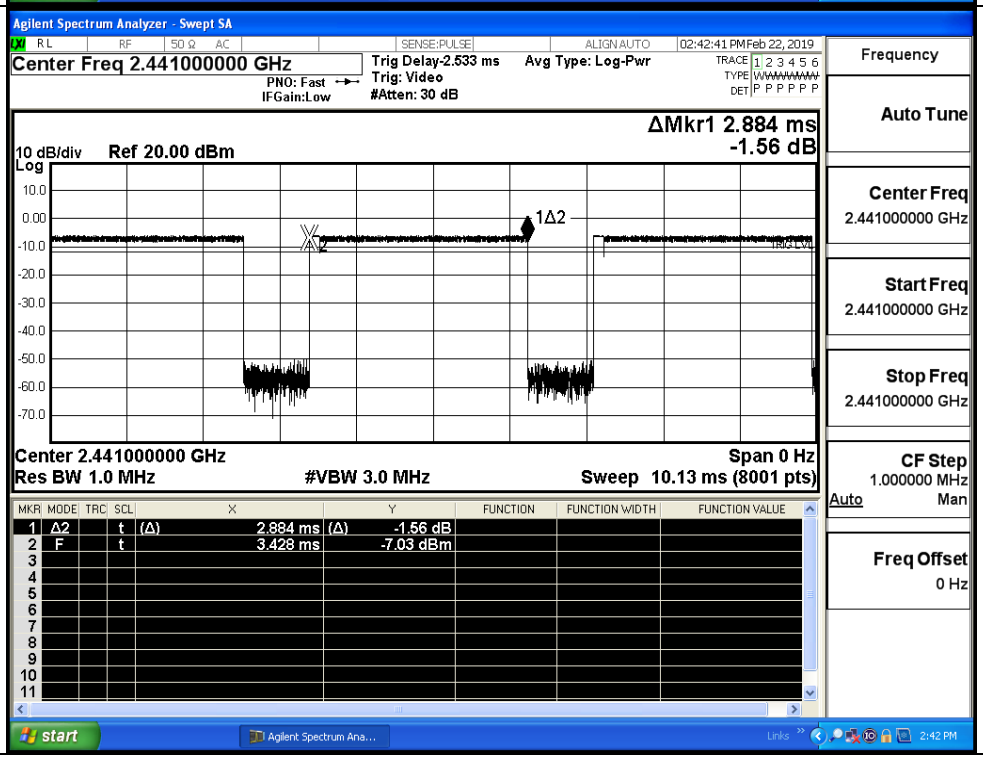
Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441750000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 10/10
03:17:49 PM Feb 22, 2019
Ref Offset 7.84 dB
10 dB/div
Ref 20.00 dBm
Log
ΔMkr1 77.780 MHz
-2.625 dB
Start 2.40000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.48350 GHz
Sweep 8.000 ms (8001 pts)
1 Δ2 f (Δ) 77.780 MHz (Δ) -2.625 dB
2 F f 2.402 161 GHz -0.934 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

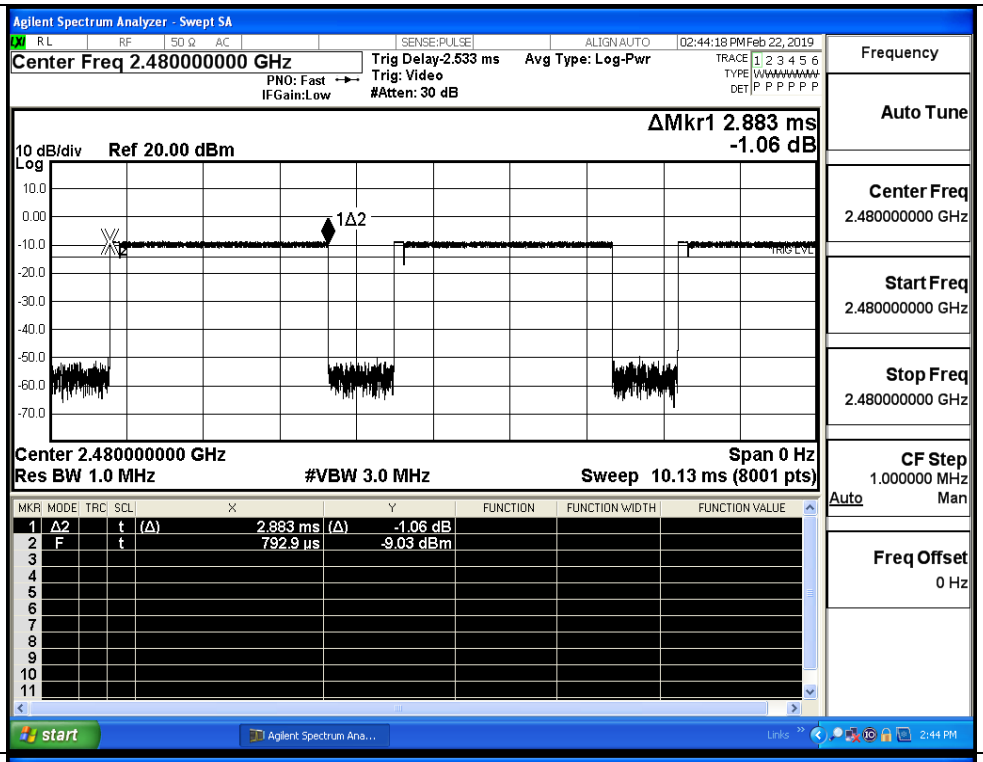
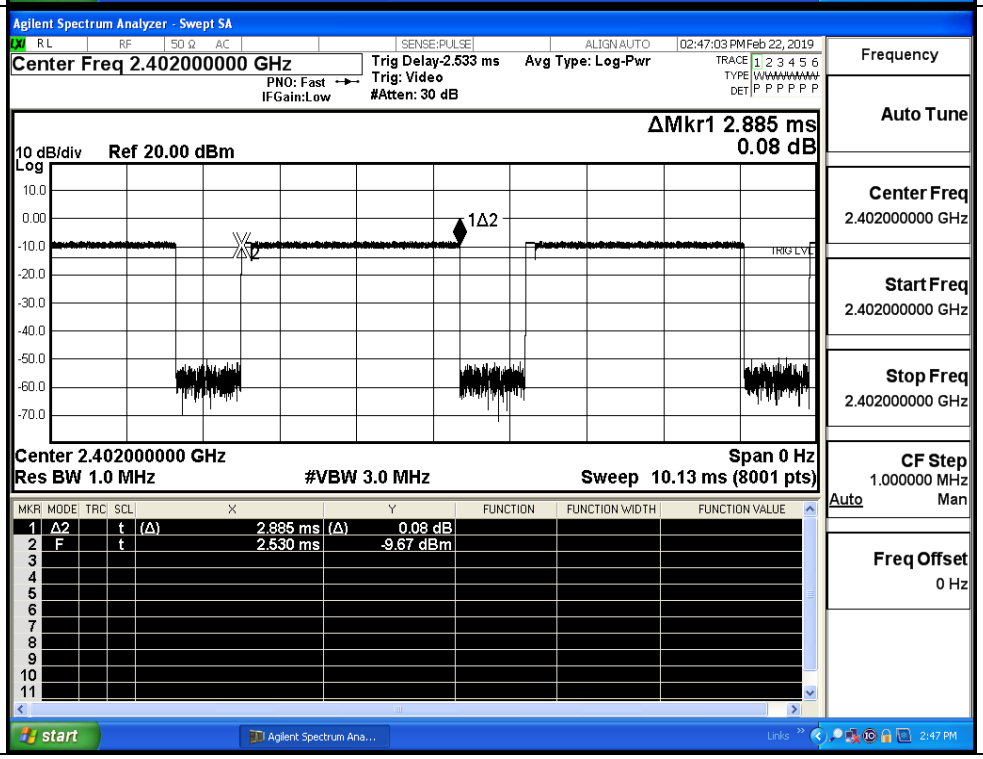
A.5 Dwell Time

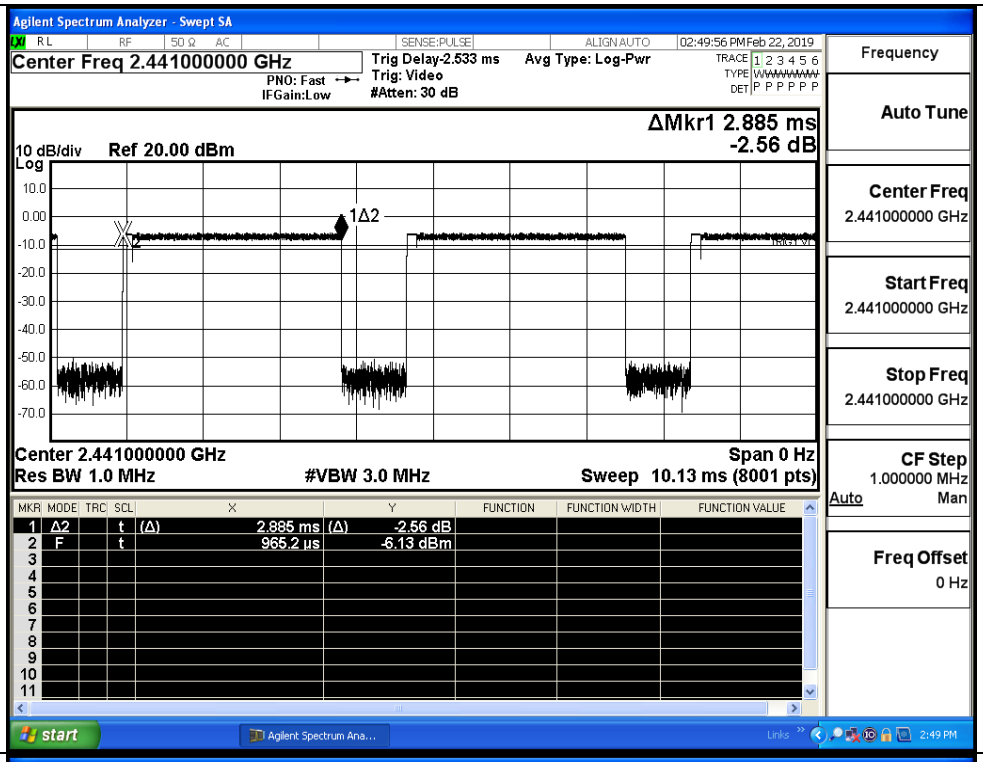
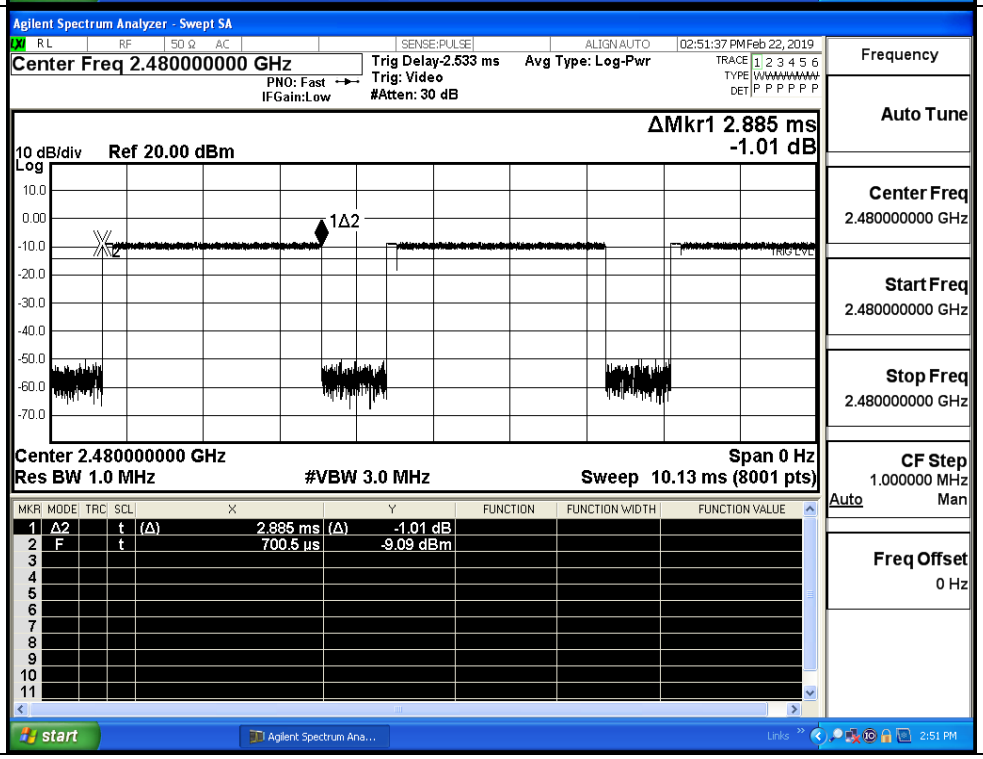
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
π/4DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7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

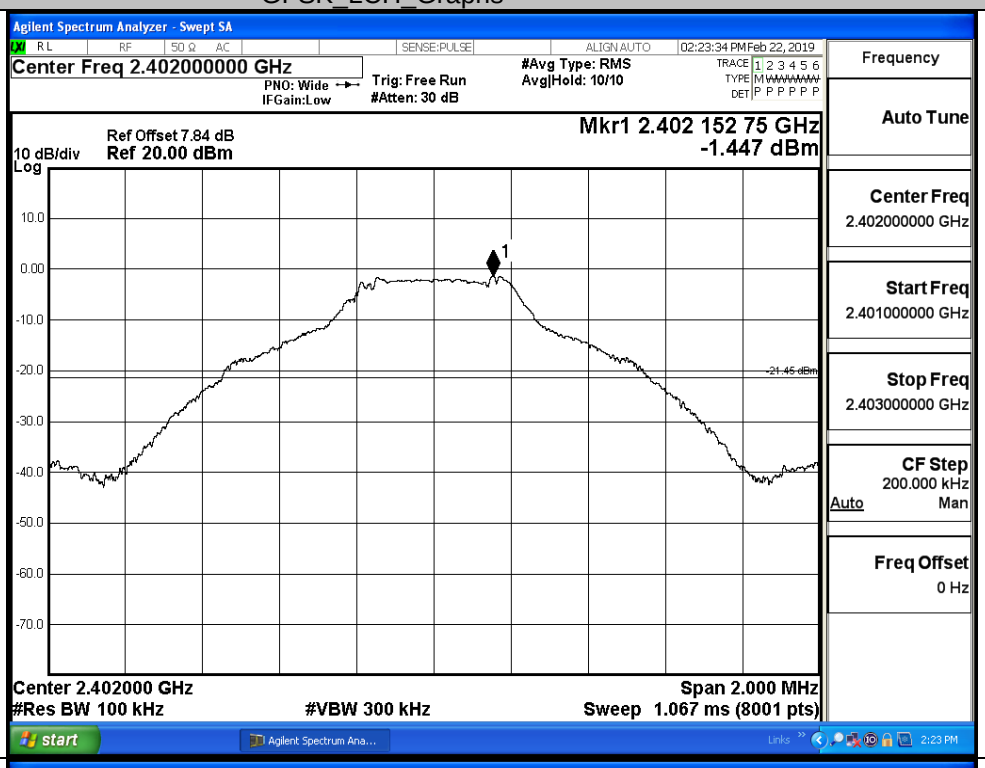
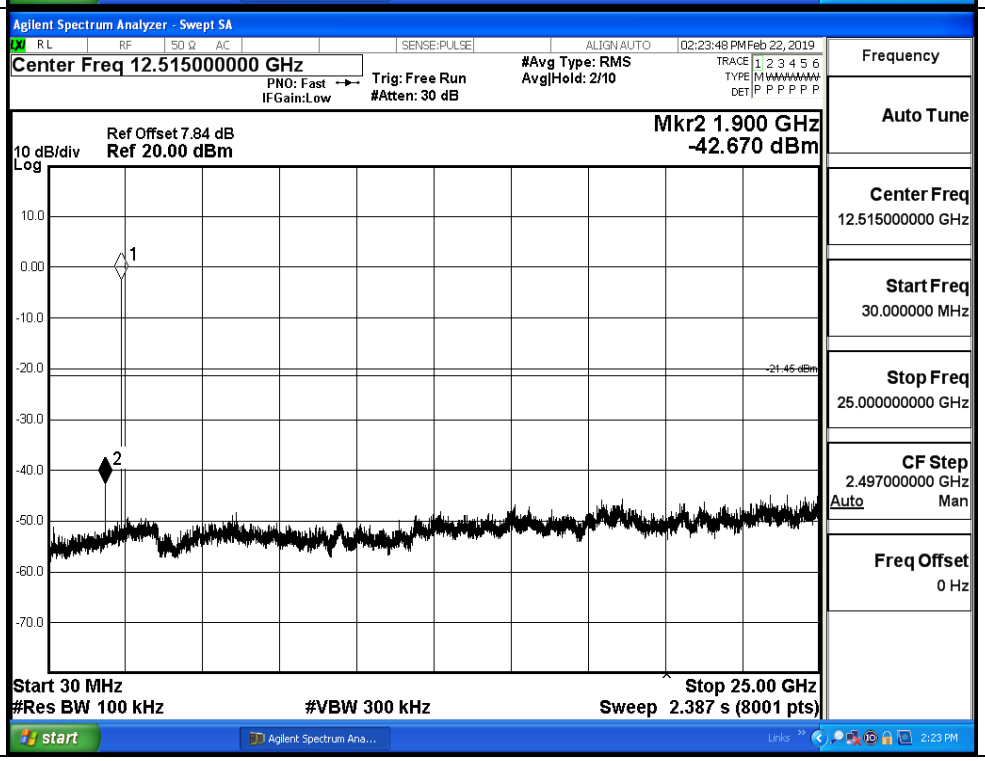
π/4DQPSK _2DH5/LCH	
π/4DQPSK _2DH5/MCH	

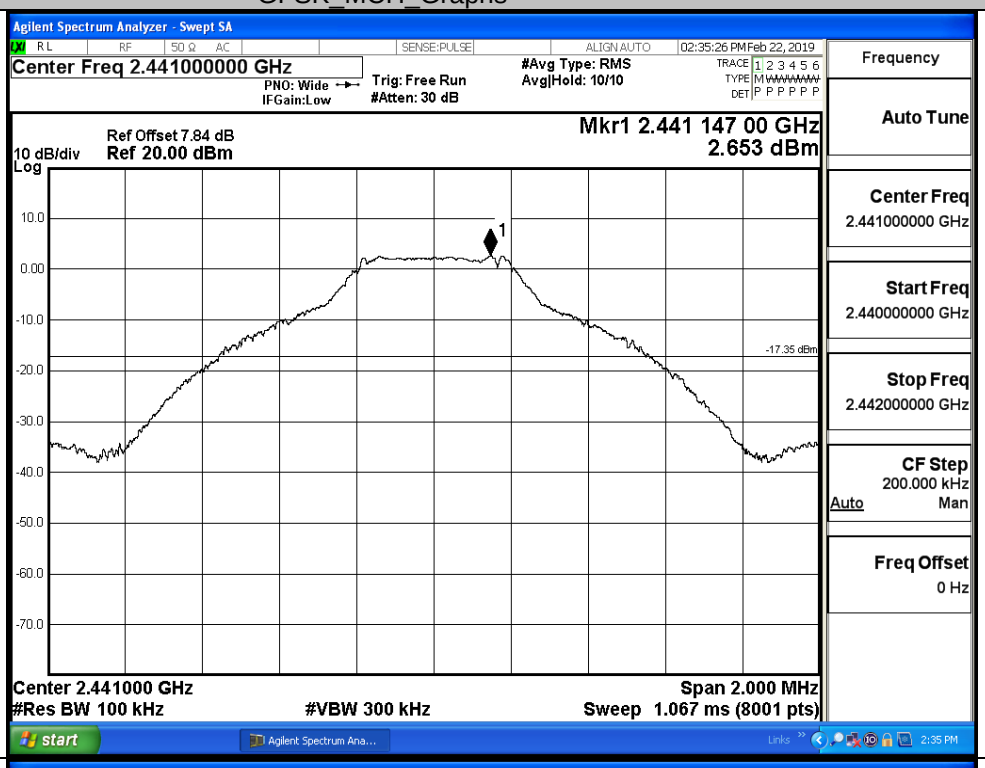
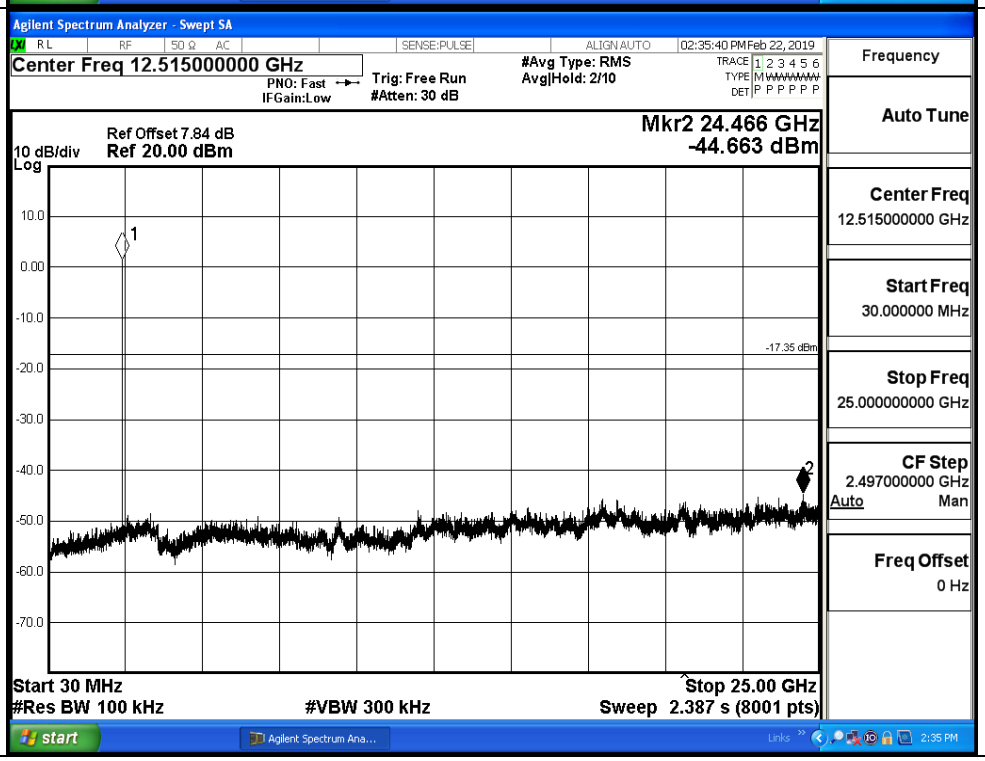
π/4DQPSK _2DH5/HCH	
8DPSK _3DH5/LCH	

8DPSK _3DH5/MCH	
8DPSK _3DH5/HCH	

A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-1.447	-42.670	-21.447	PASS
	MCH	2.653	-44.663	-17.347	PASS
	HCH	0.143	-45.666	-19.857	PASS
π/4DQPSK	LCH	-0.709	-44.585	-20.709	PASS
	MCH	1.469	-45.472	-18.531	PASS
	HCH	-1.758	-45.490	-21.758	PASS
8DPSK	LCH	-0.638	-44.708	-20.638	PASS
	MCH	1.702	-45.165	-18.298	PASS
	HCH	-1.046	-44.017	-21.046	PASS

GFSK_LCH_Graphs		
Pref		
Puw		

GFSK_MCH_Graphs			
Pref			
Puw			

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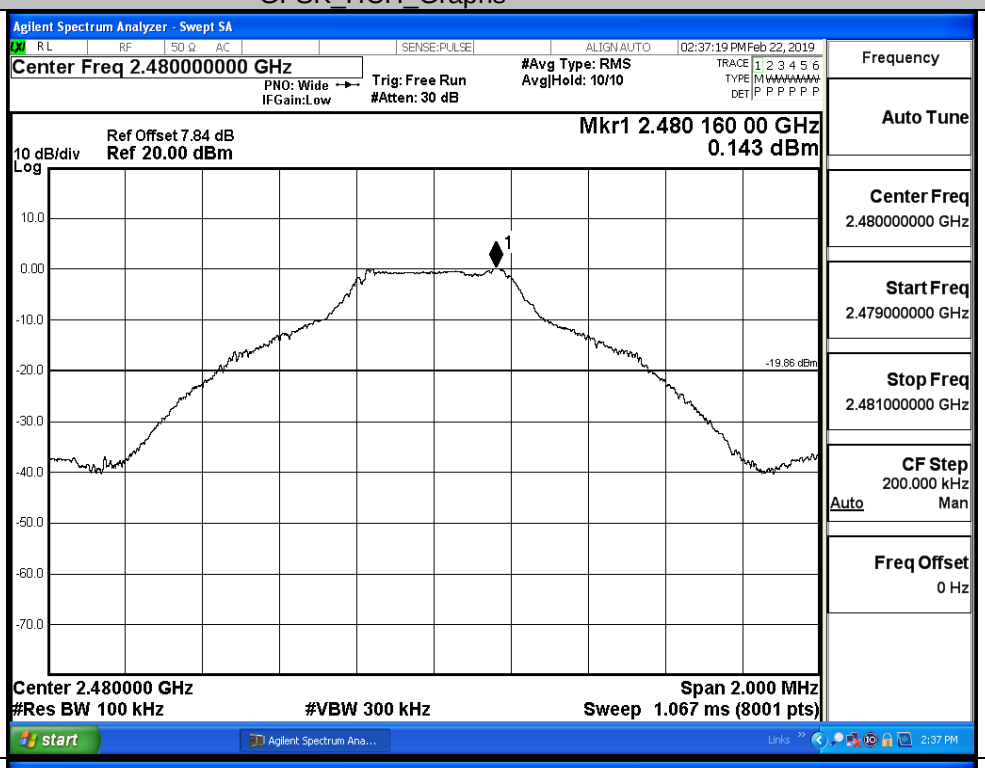
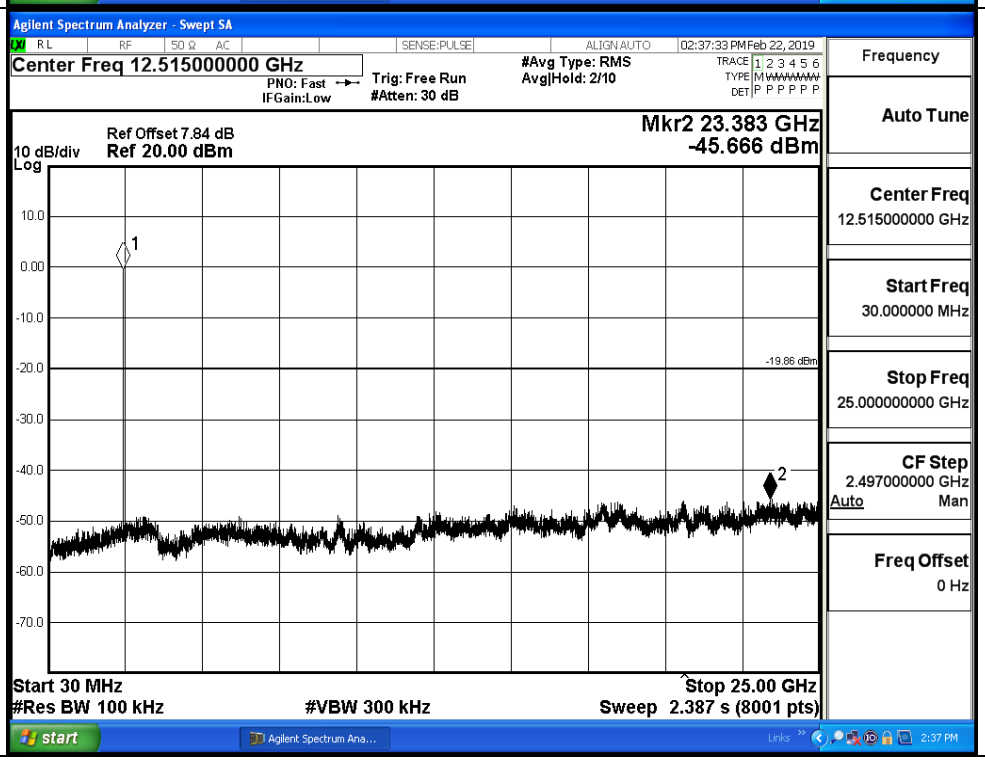
Pref		
Puw		

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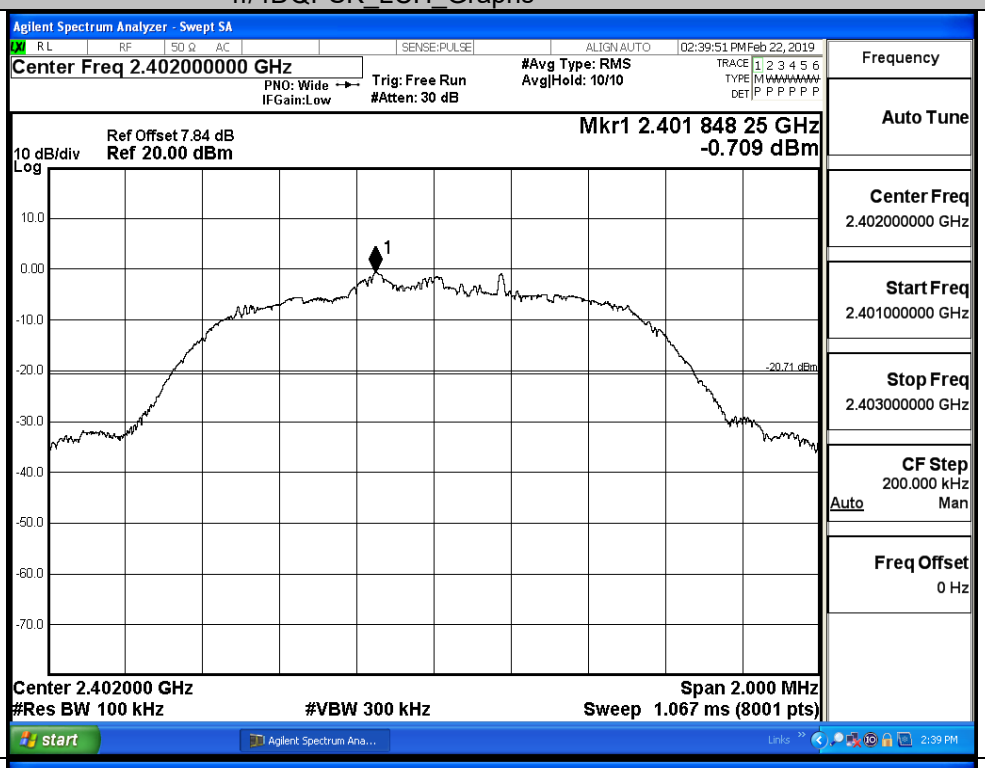
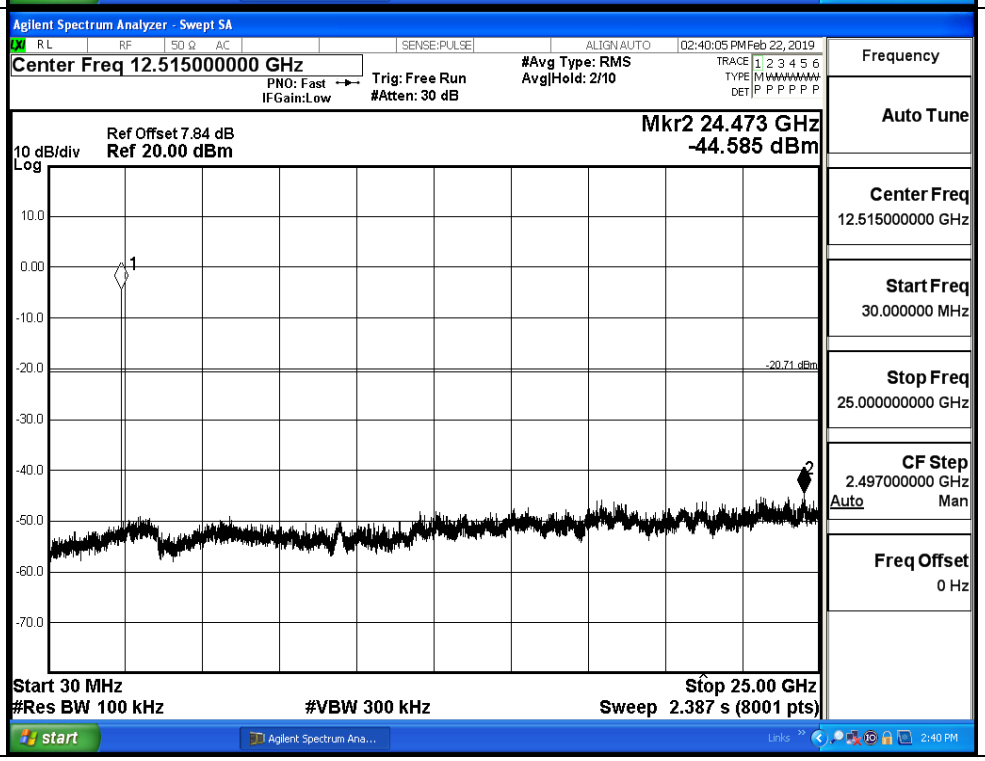
Pref		
Puw		

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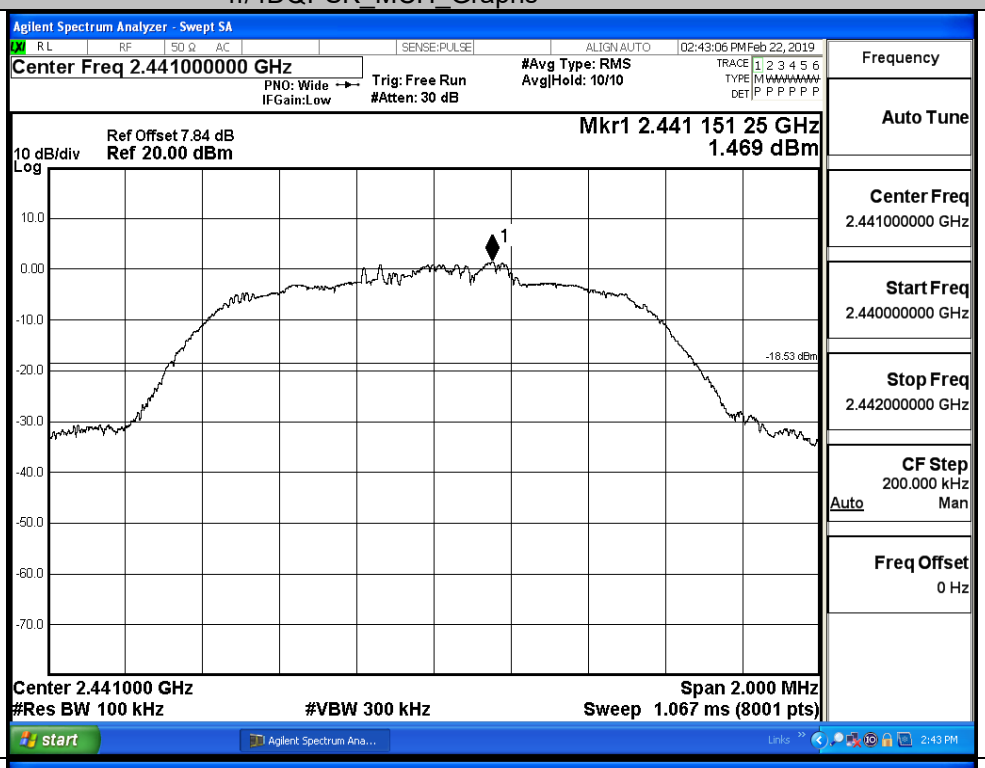
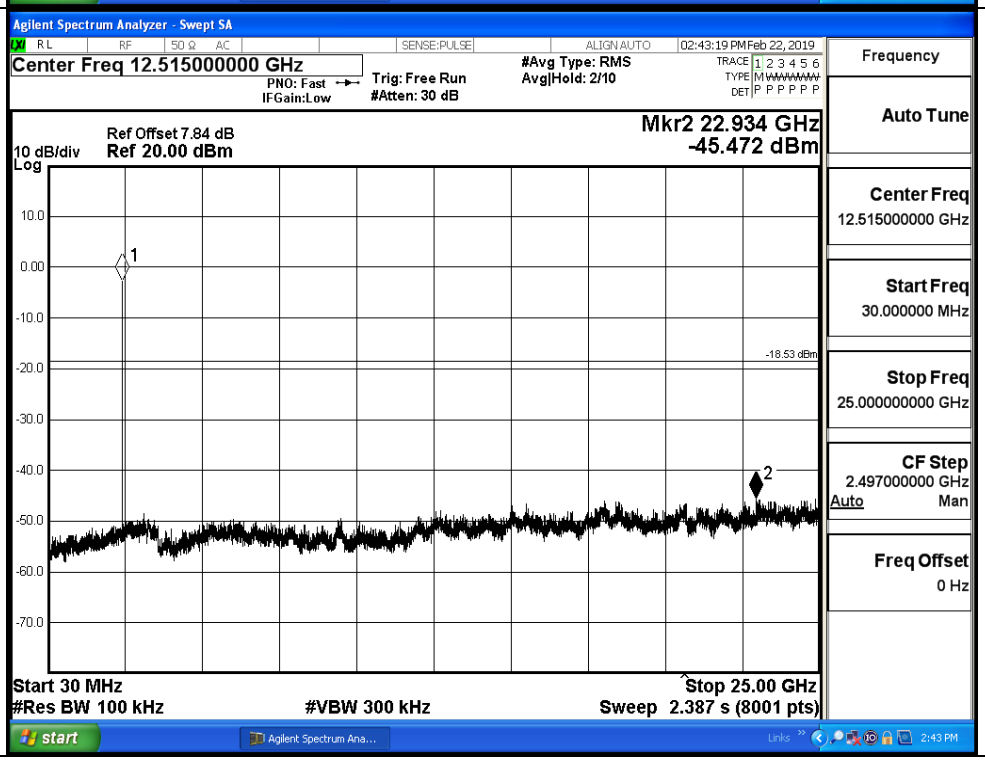
Pref		
Puw		

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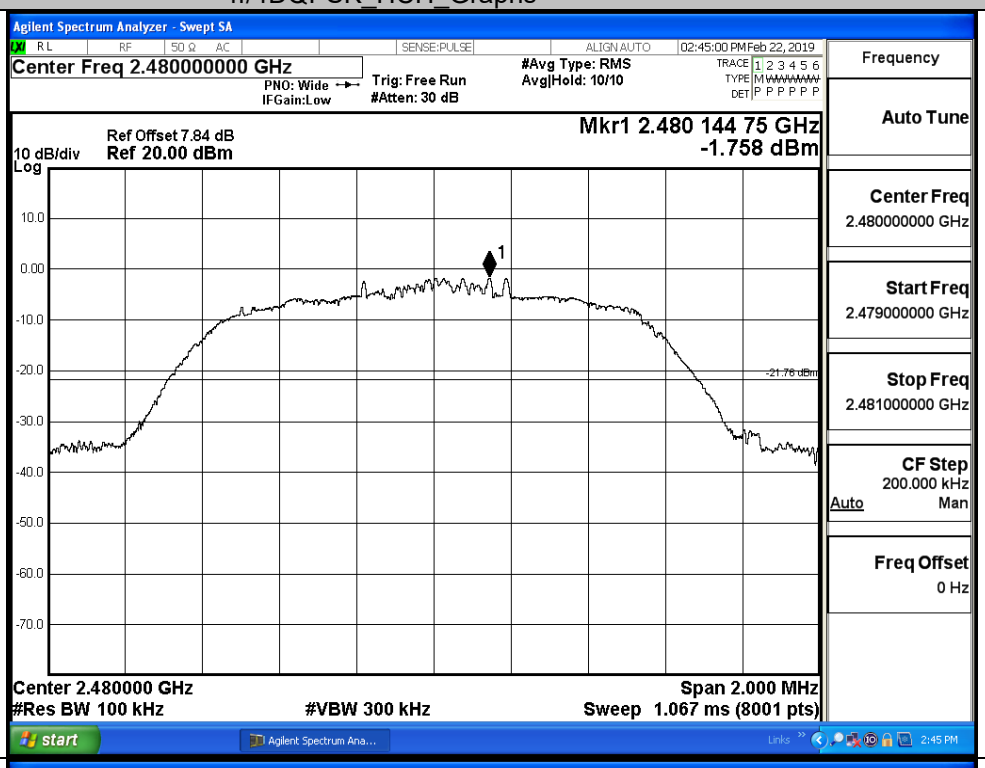
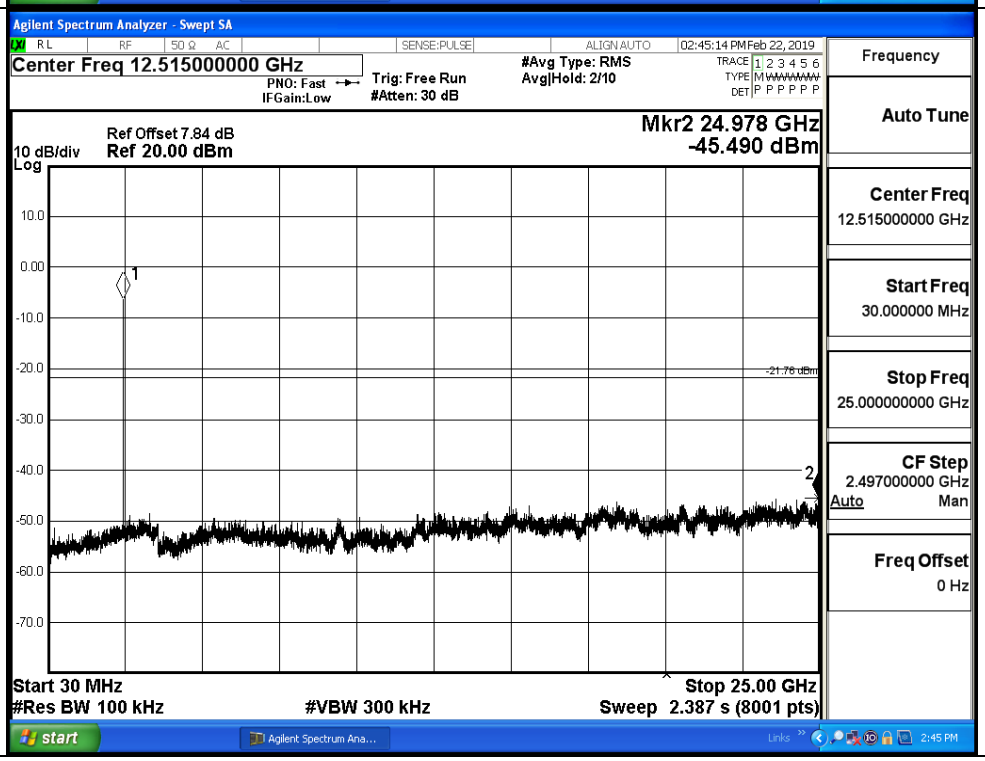
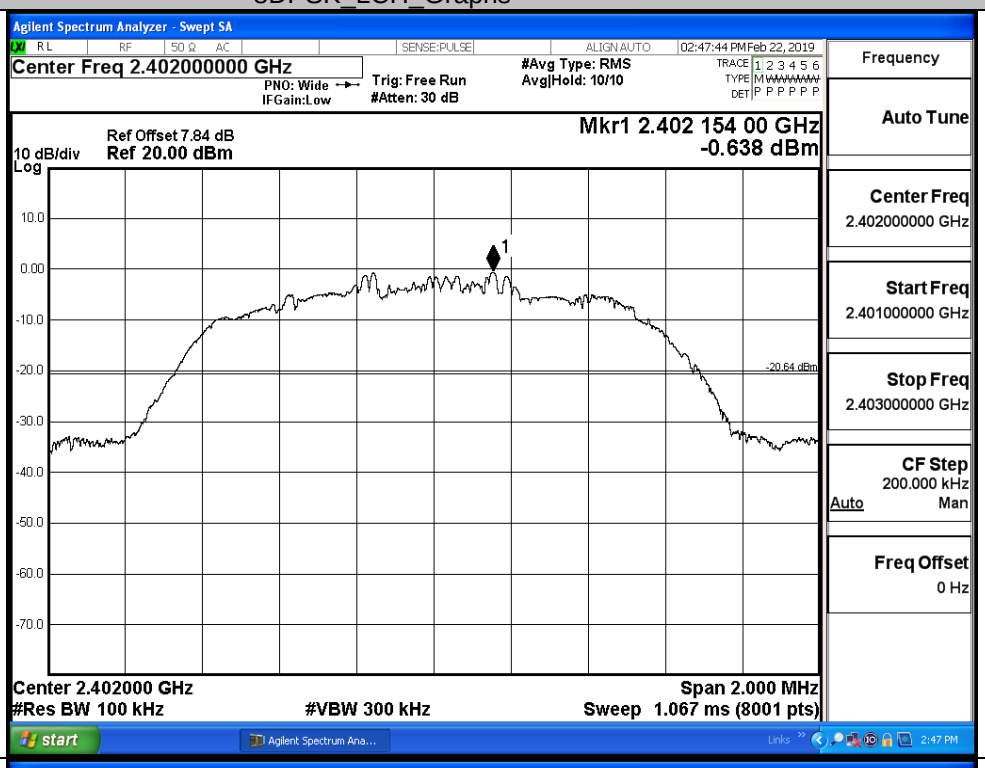
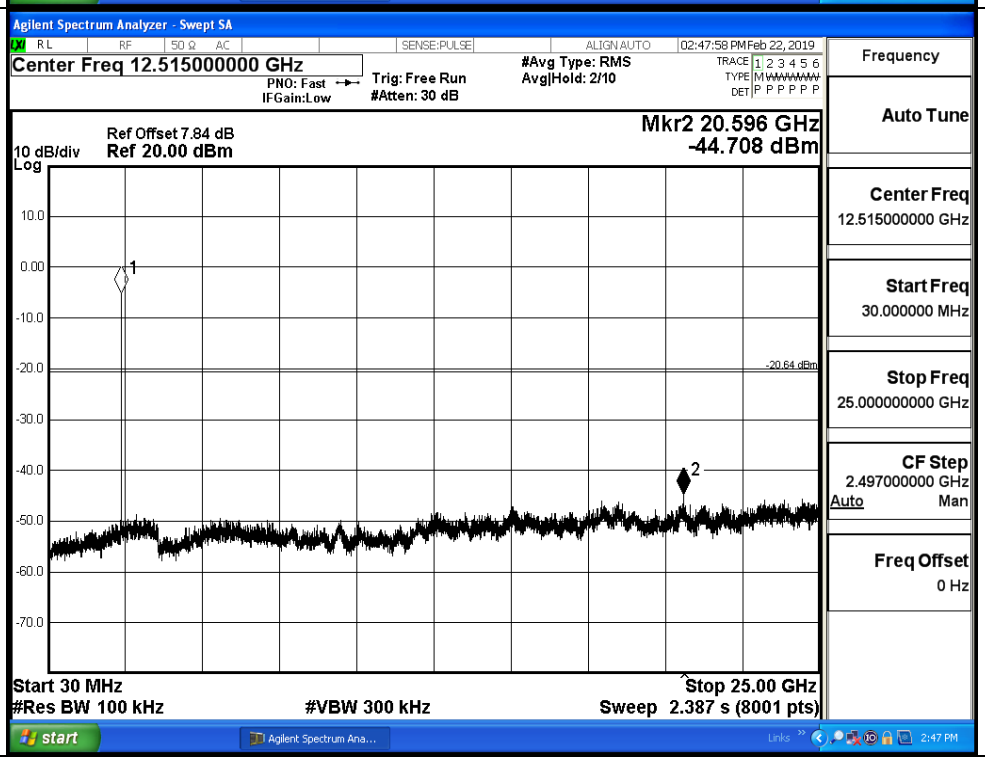
Pref		
Puw		

8DPSK_LCH_Graphs		
Pref		
Puw		

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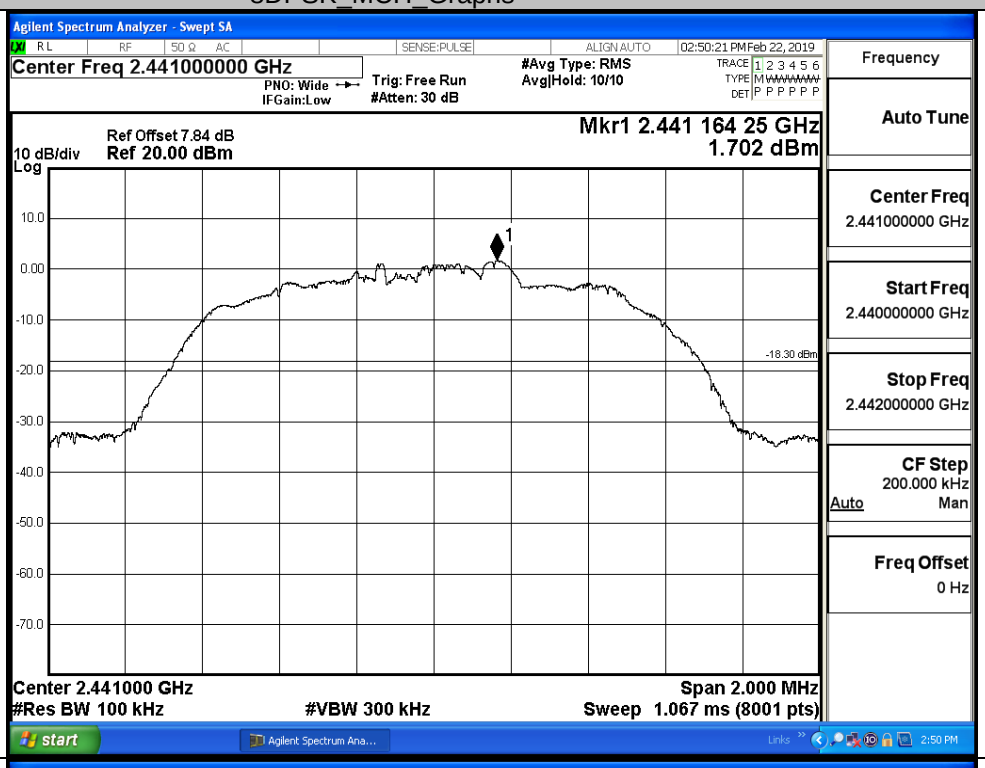
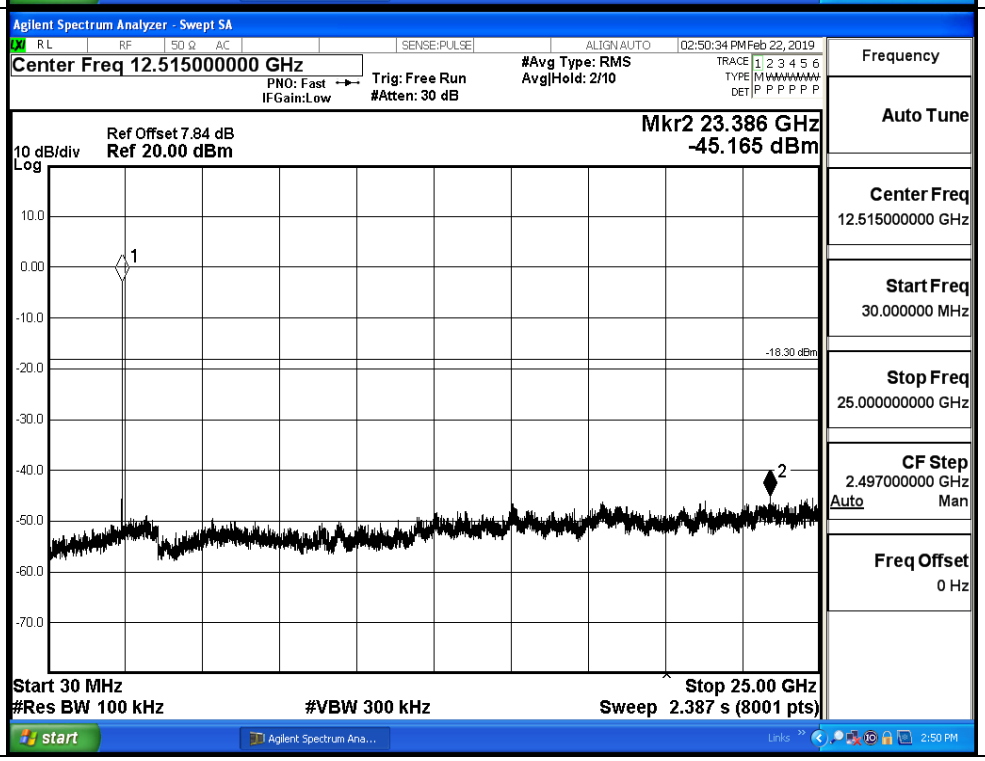
Pref		
Puw		

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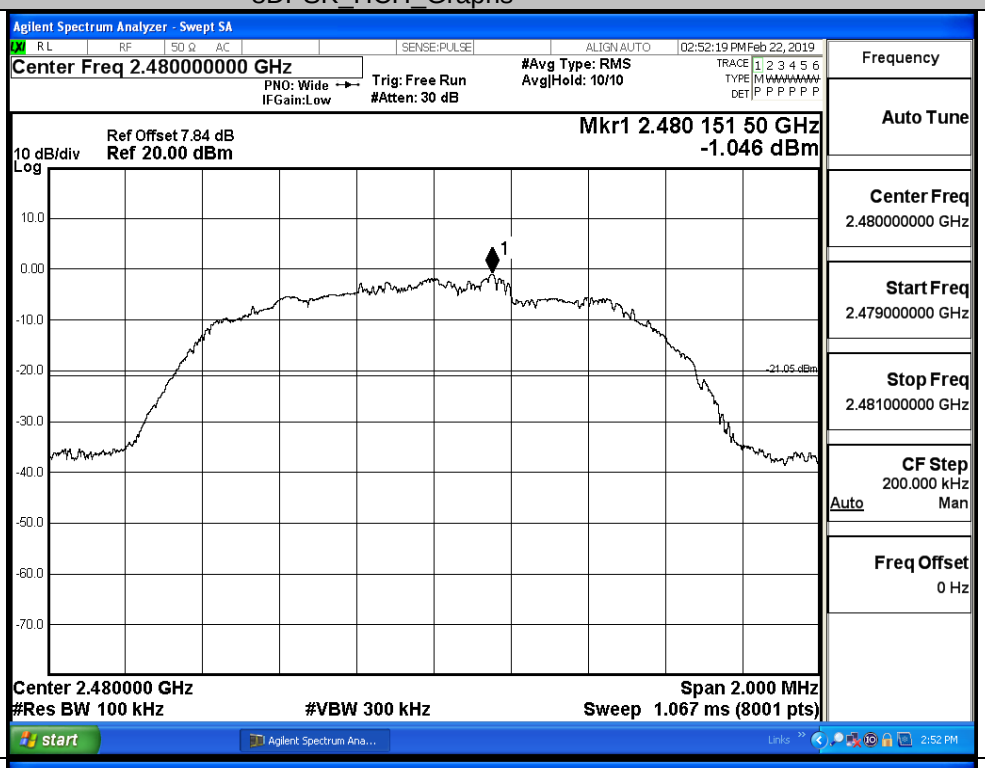
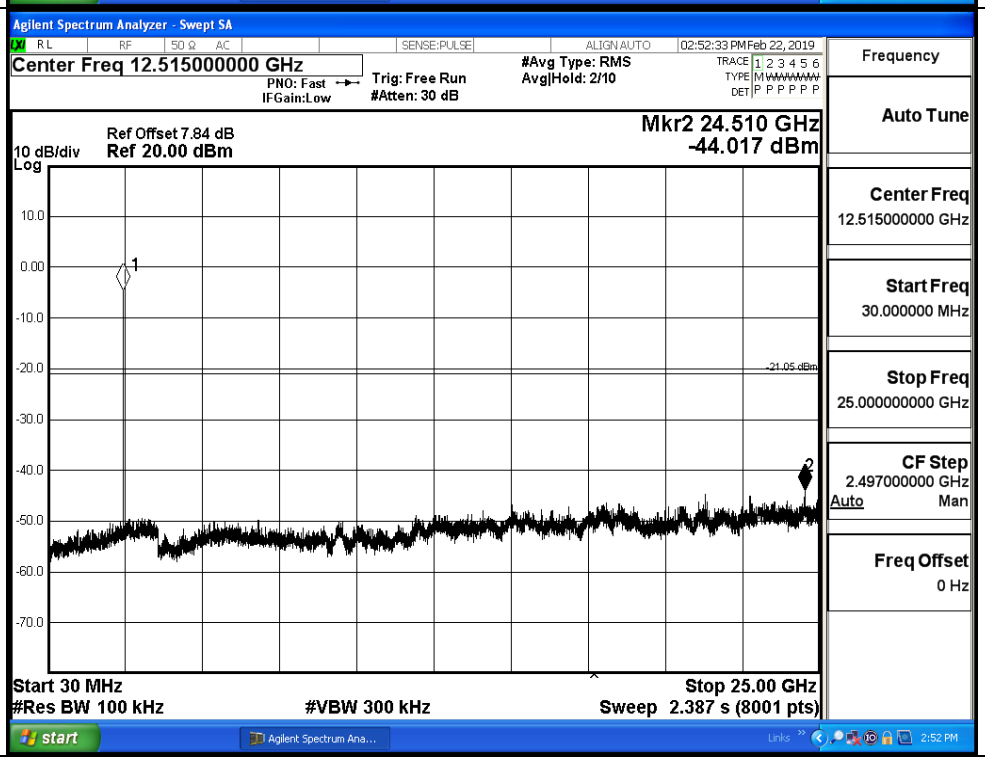
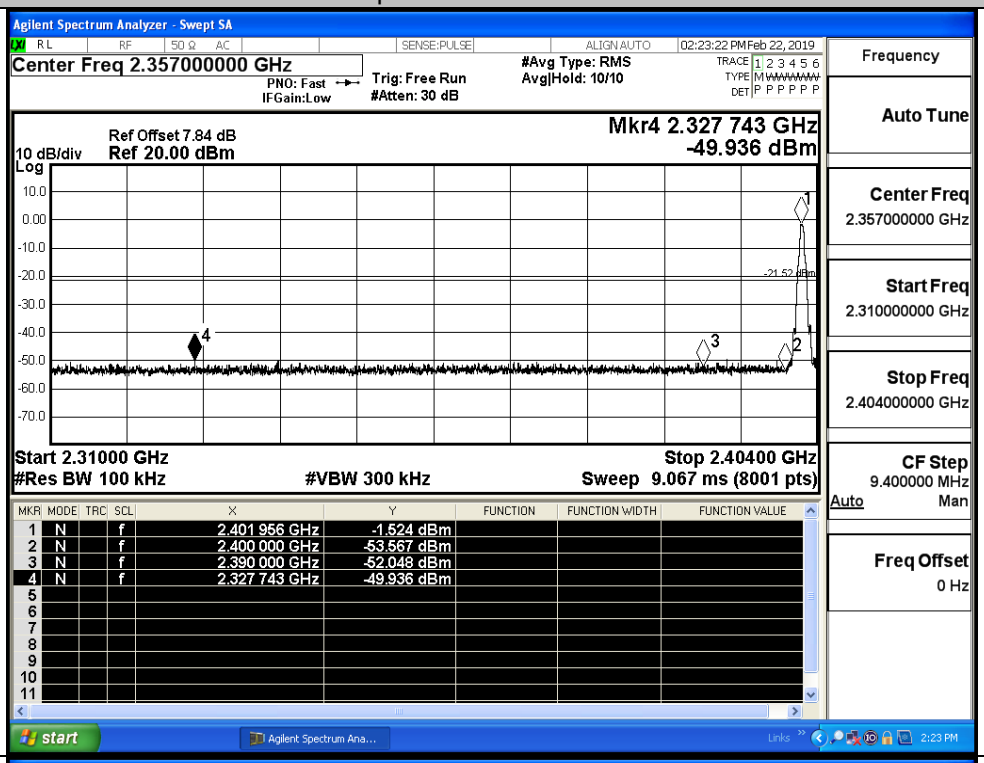
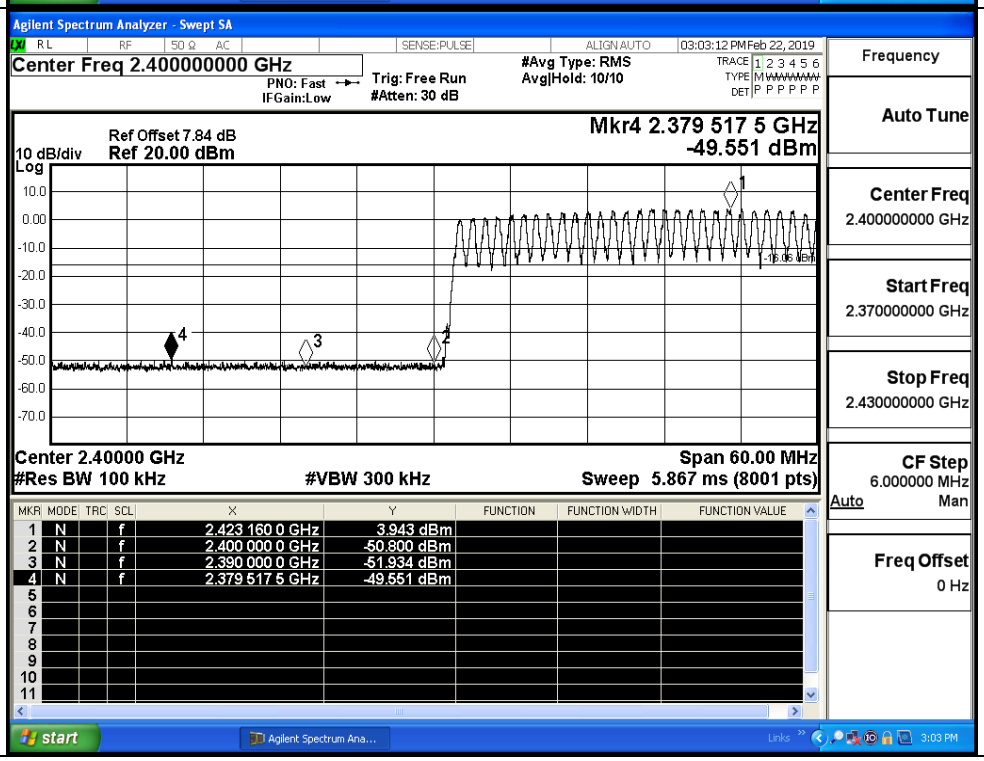
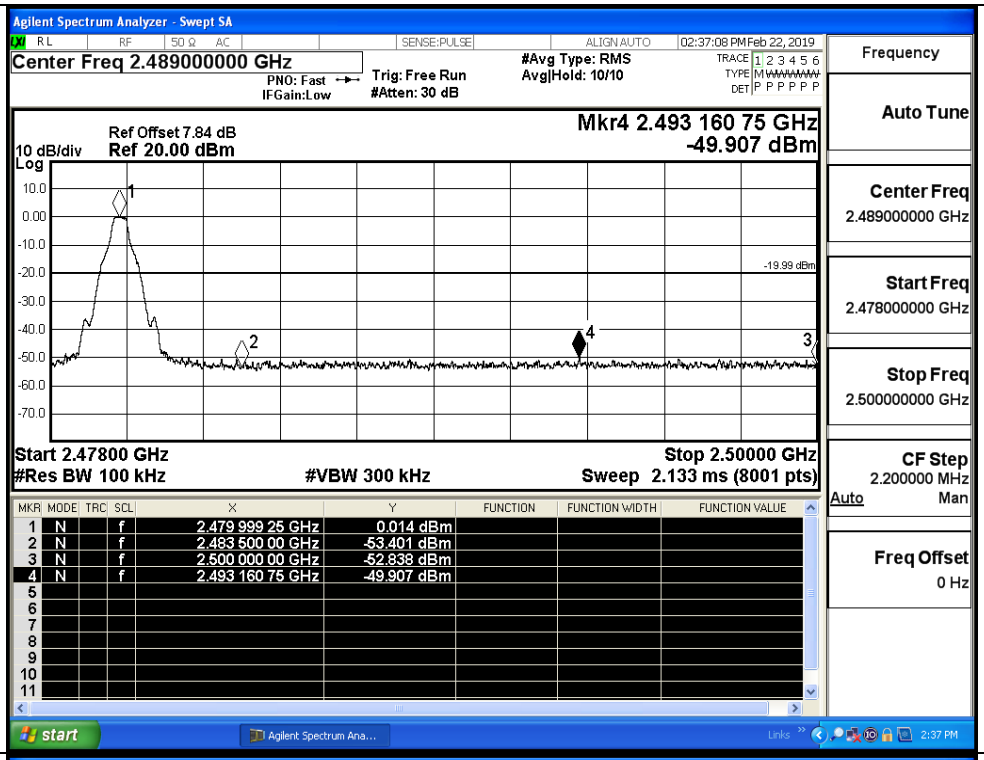
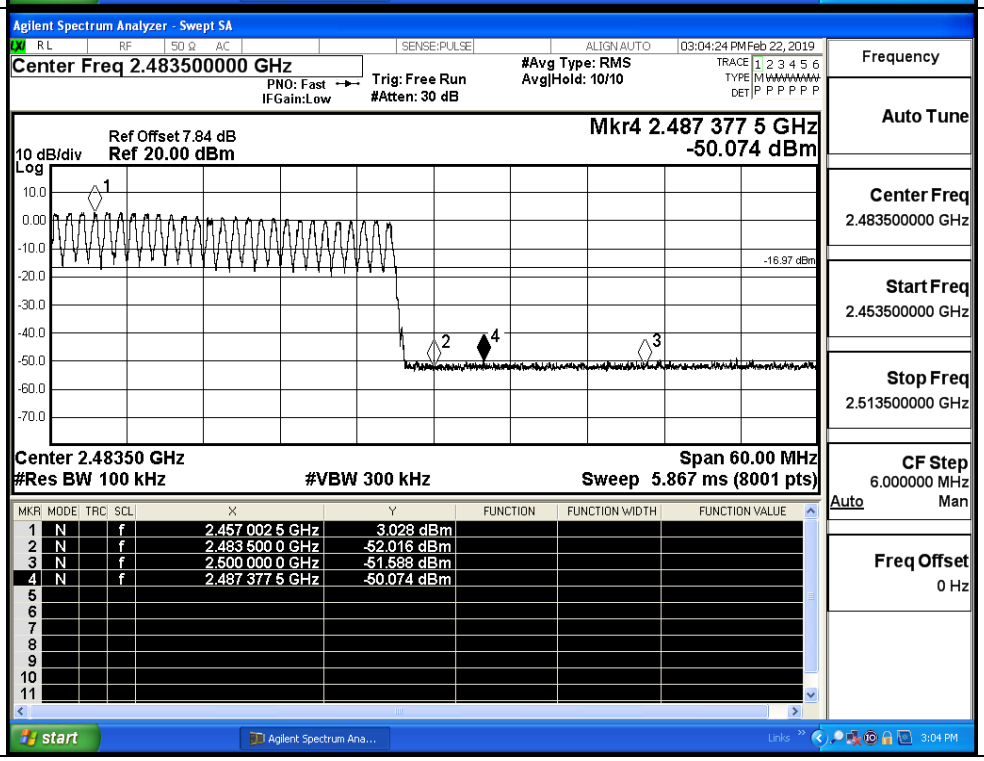
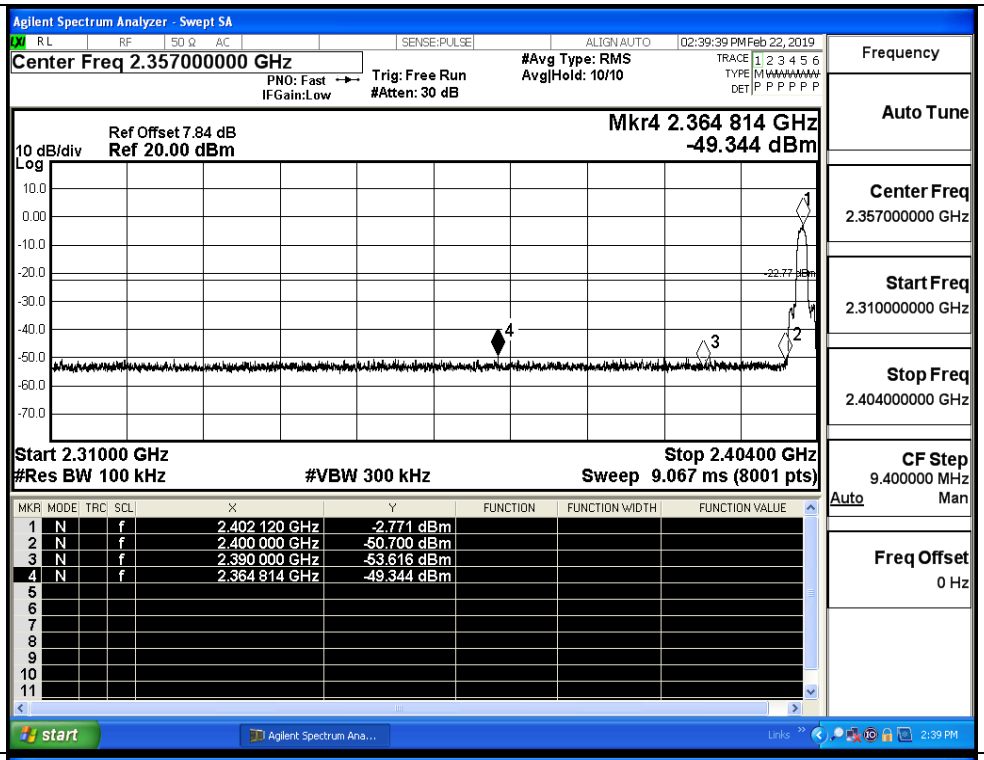
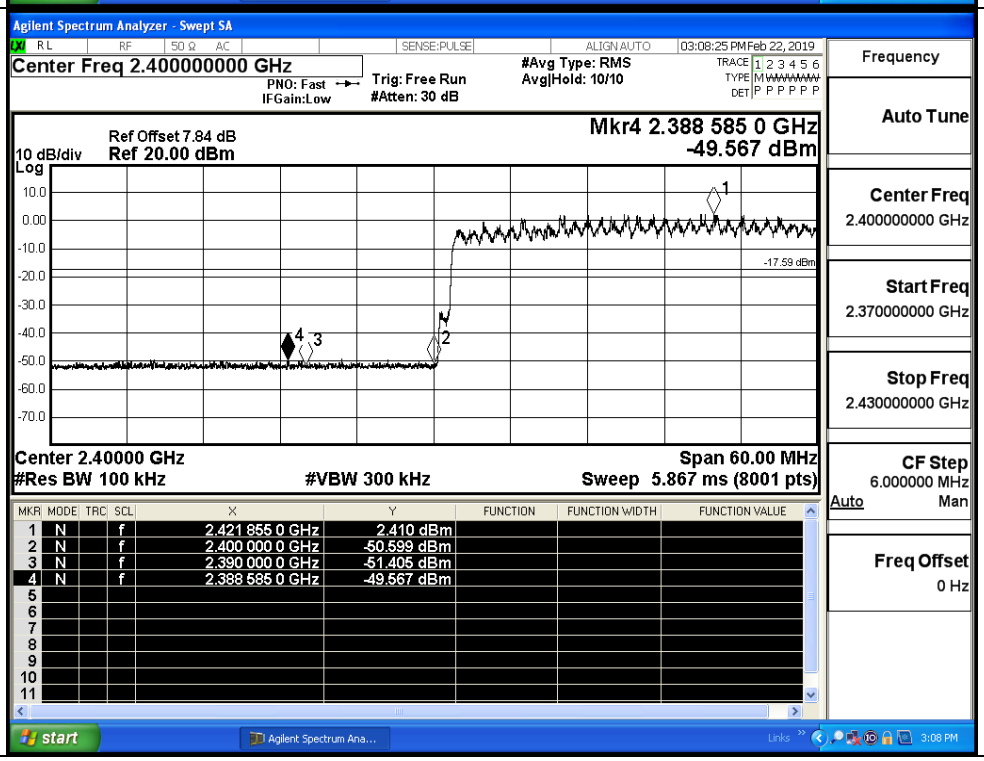
Pref		
Puw		

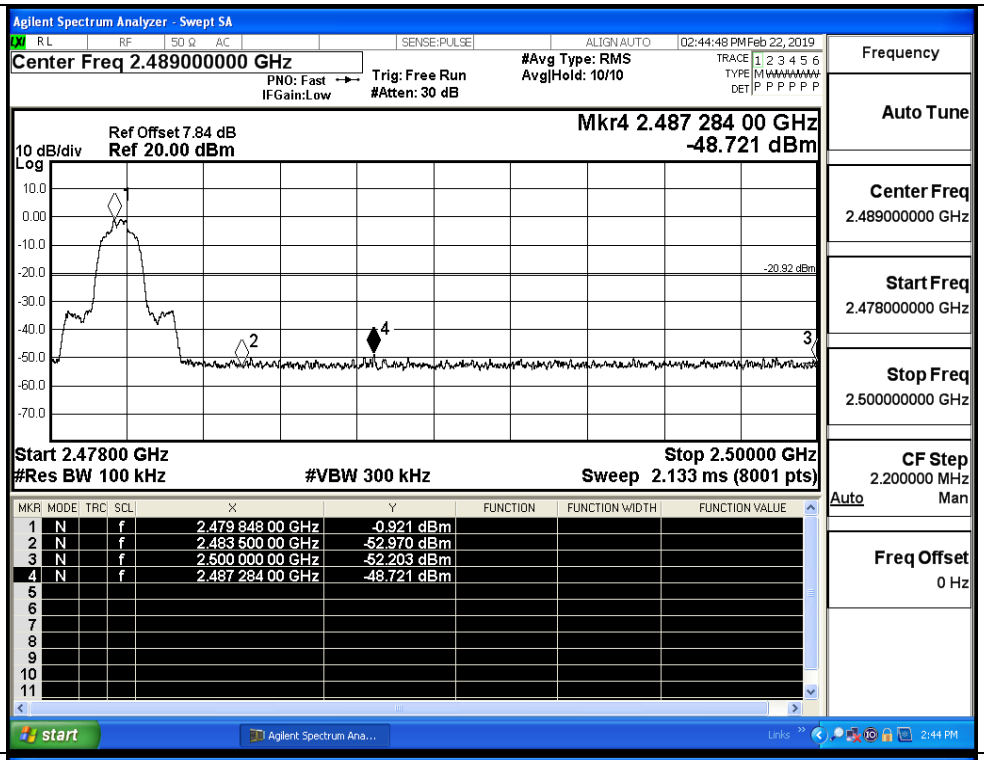
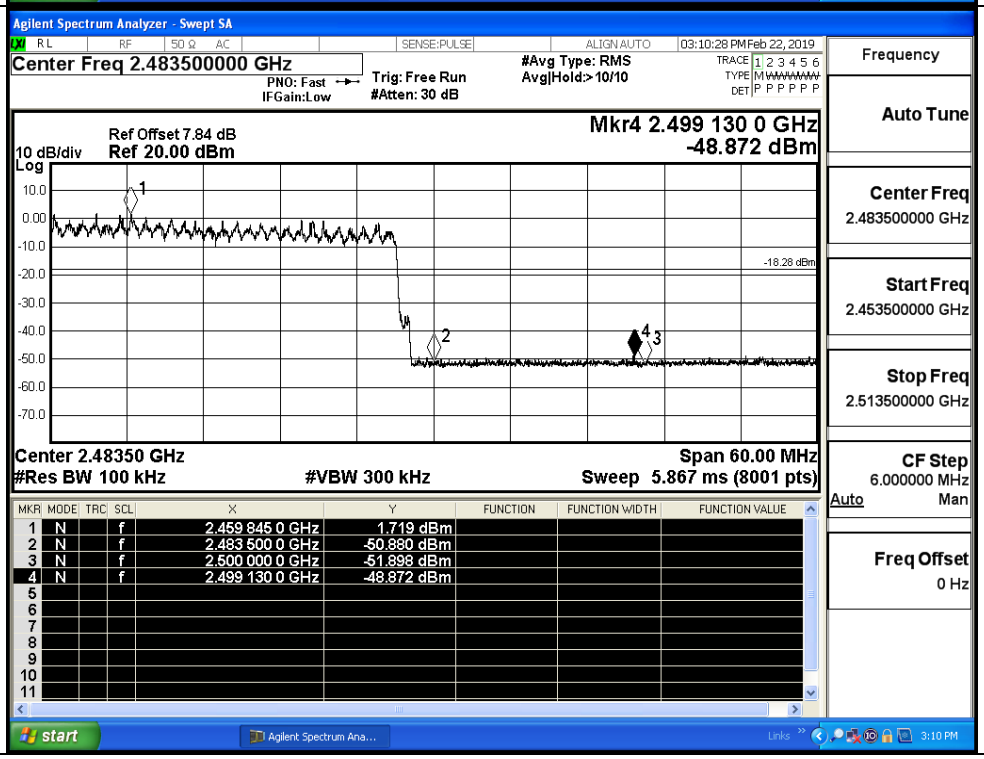
A.7 Band-edge for RF Conducted Emissions

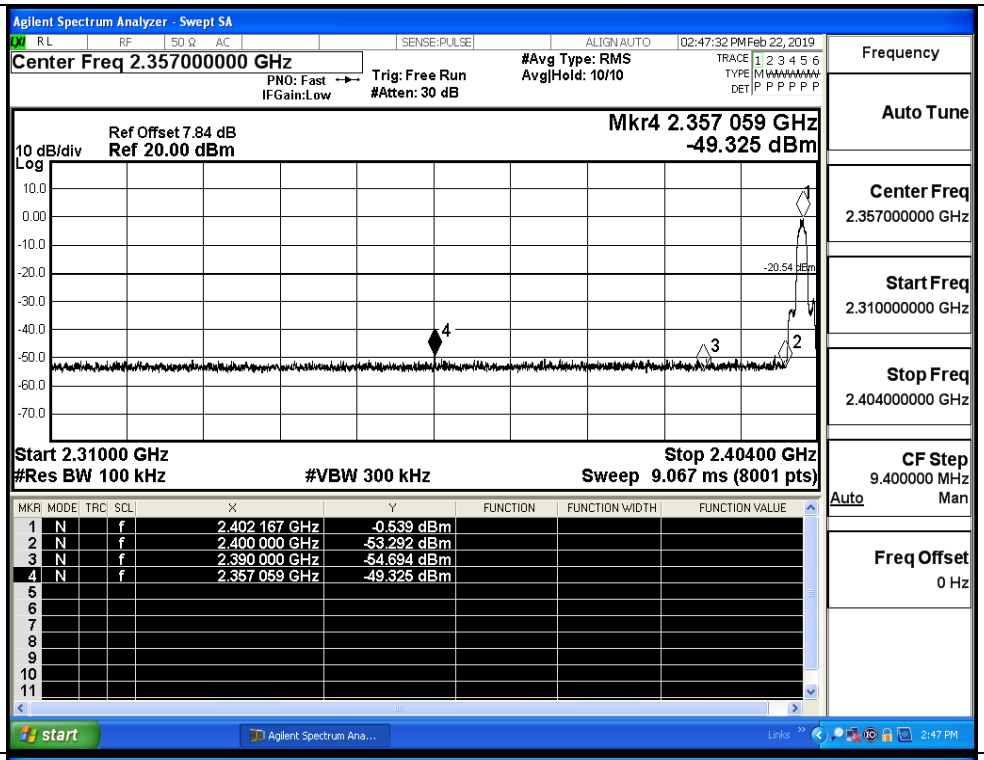
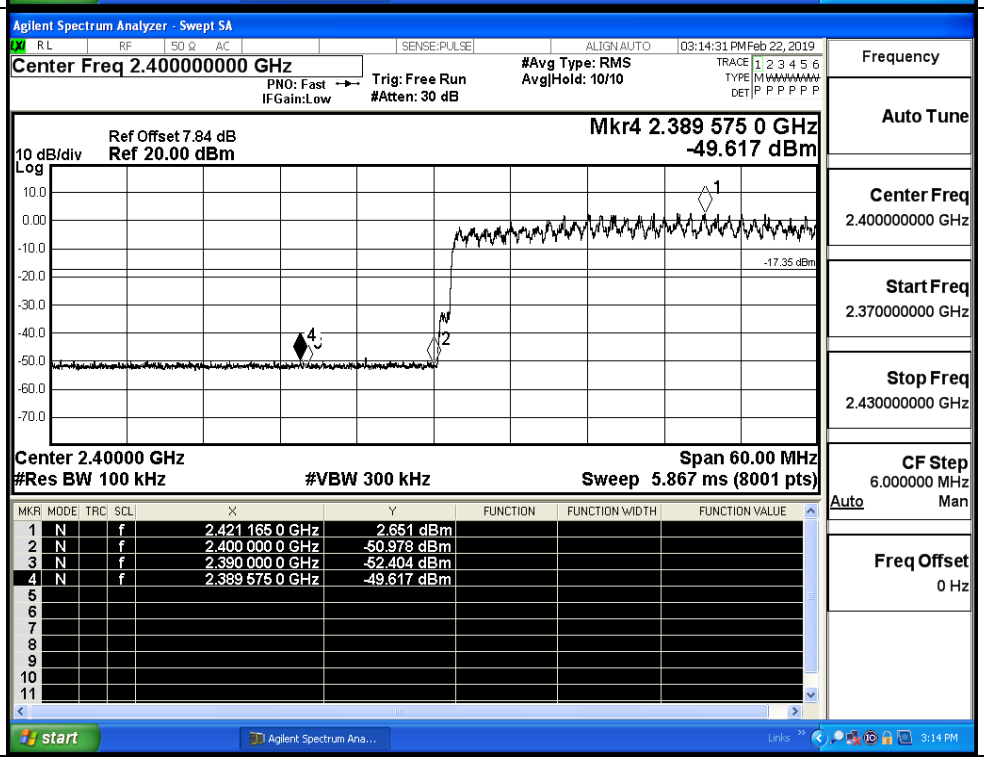
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-1.524	Off	-49.936	-21.52	PASS
			3.943	On	-49.551	-16.06	PASS
	HCH	2480	0.014	Off	-49.907	-19.99	PASS
			3.028	On	-50.074	-16.97	PASS
π/4DQPSK	LCH	2402	-2.771	Off	-49.344	-22.77	PASS
			2.410	On	-49.567	-17.59	PASS
	HCH	2480	-0.921	Off	-48.721	-20.92	PASS
			1.719	On	-48.872	-18.28	PASS
8DPSK	LCH	2402	-0.539	Off	-49.325	-20.54	PASS
			2.651	On	-49.617	-17.35	PASS
	HCH	2480	-0.912	Off	-49.831	-20.91	PASS
			1.469	On	-48.562	-18.53	PASS

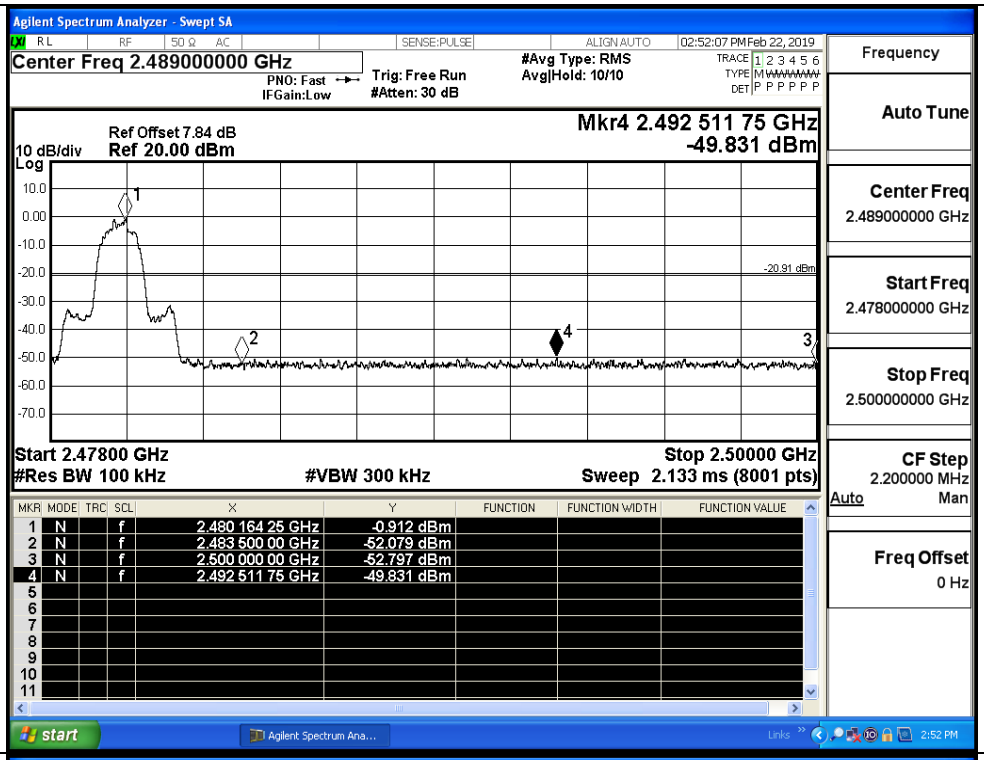
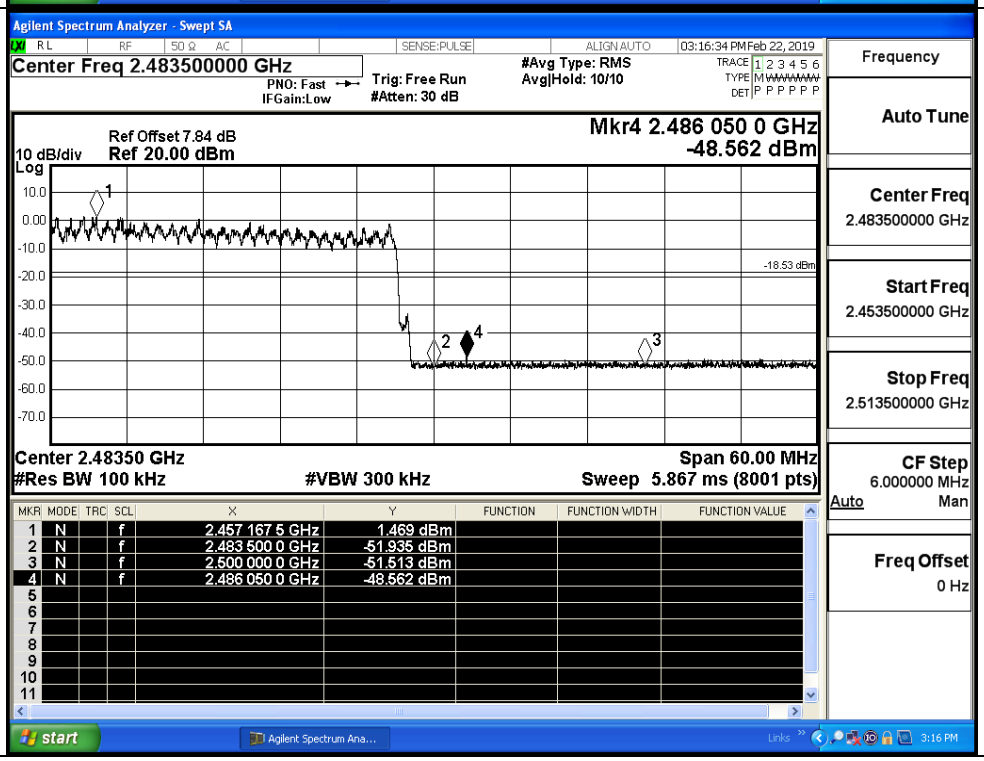
Test Graphs	
GFSK/LCH/No Hop	
GFSK/LCH/Hop	

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	

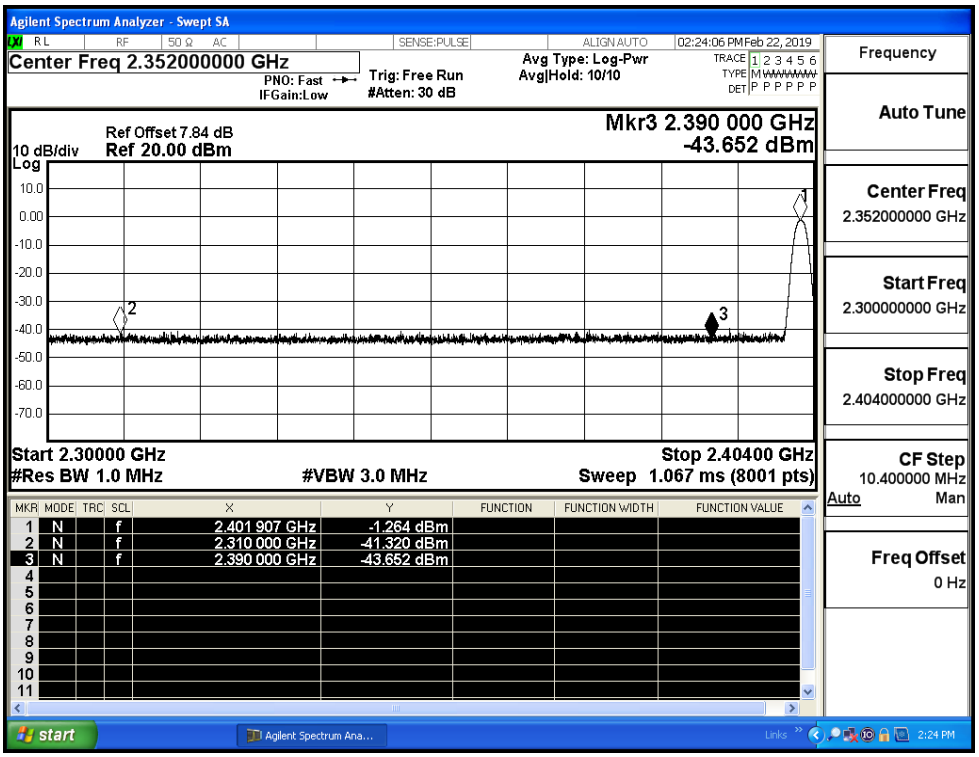
8DPSK/LCH/No Hop	
8DPSK/LCH/Hop	

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

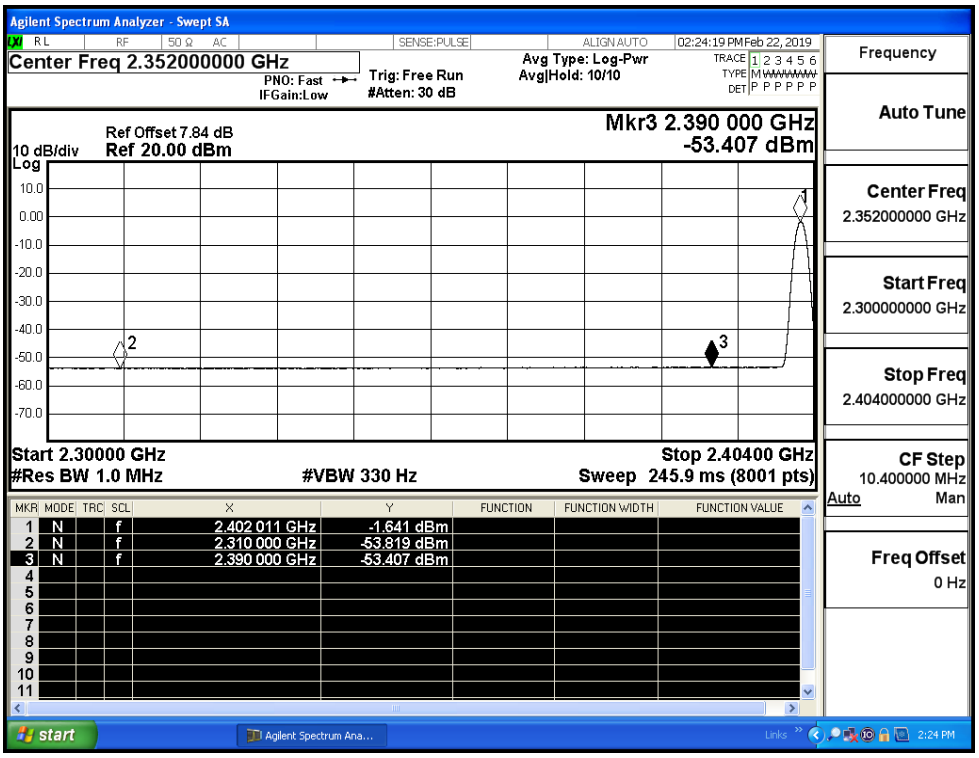
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-41.32	2.0	0	55.94	PEAK	74	PASS
	Off	2310.0	-53.82	2.0	0	43.44	AV	54	PASS
	Off	2390.0	-43.65	2.0	0	53.61	PEAK	74	PASS
	Off	2390.0	-53.41	2.0	0	43.85	AV	54	PASS
	Off	2483.5	-43.14	2.0	0	54.12	PEAK	74	PASS
	Off	2483.5	-53.14	2.0	0	44.12	AV	54	PASS
	Off	2500.0	-43.12	2.0	0	54.14	PEAK	74	PASS
	Off	2500.0	-53.14	2.0	0	44.12	AV	54	PASS
π/4DQPSK	Off	2310.0	-42.46	2.0	0	54.80	PEAK	74	PASS
	Off	2310.0	-53.76	2.0	0	43.50	AV	54	PASS
	Off	2390.0	-42.95	2.0	0	54.31	PEAK	74	PASS
	Off	2390.0	-53.51	2.0	0	43.75	AV	54	PASS
	Off	2483.5	-43.01	2.0	0	54.24	PEAK	74	PASS
	Off	2483.5	-53.06	2.0	0	44.19	AV	54	PASS
	Off	2500.0	-42.97	2.0	0	54.28	PEAK	74	PASS
	Off	2500.0	-52.96	2.0	0	44.30	AV	54	PASS
8DPSK	Off	2310.0	-43.84	2.0	0	53.42	PEAK	74	PASS
	Off	2310.0	-53.75	2.0	0	43.51	AV	54	PASS
	Off	2390.0	-44.03	2.0	0	53.23	PEAK	74	PASS
	Off	2390.0	-53.51	2.0	0	43.75	AV	54	PASS
	Off	2483.5	-41.94	2.0	0	55.32	PEAK	74	PASS
	Off	2483.5	-53.14	2.0	0	44.12	AV	54	PASS
	Off	2500.0	-42.53	2.0	0	54.73	PEAK	74	PASS
	Off	2500.0	-53.14	2.0	0	44.12	AV	54	PASS

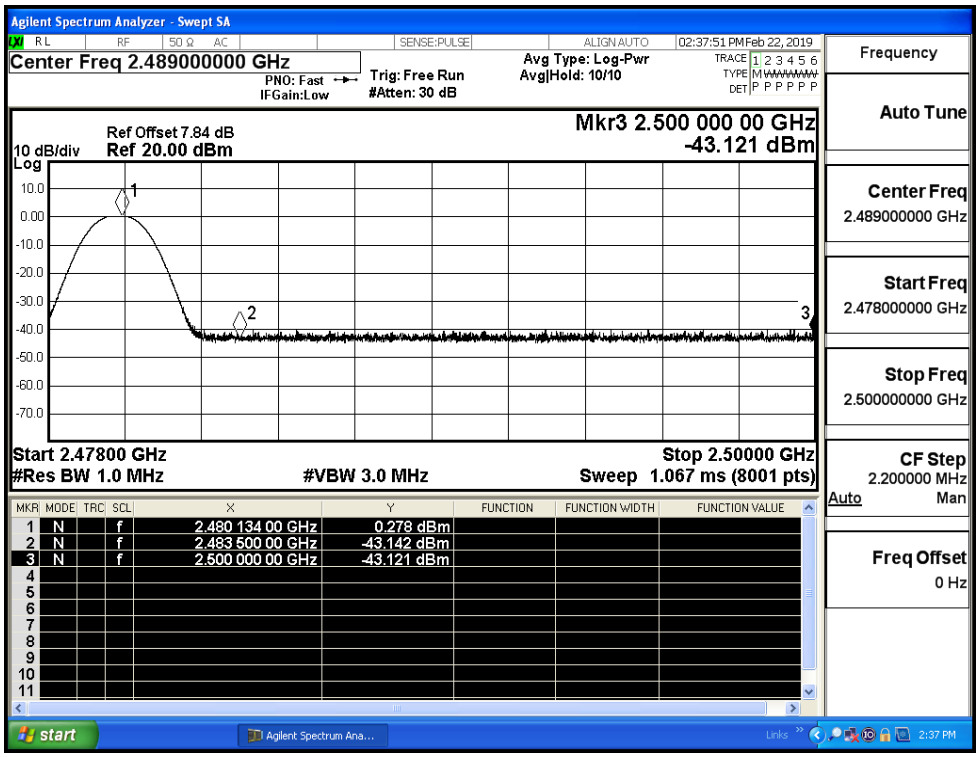
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



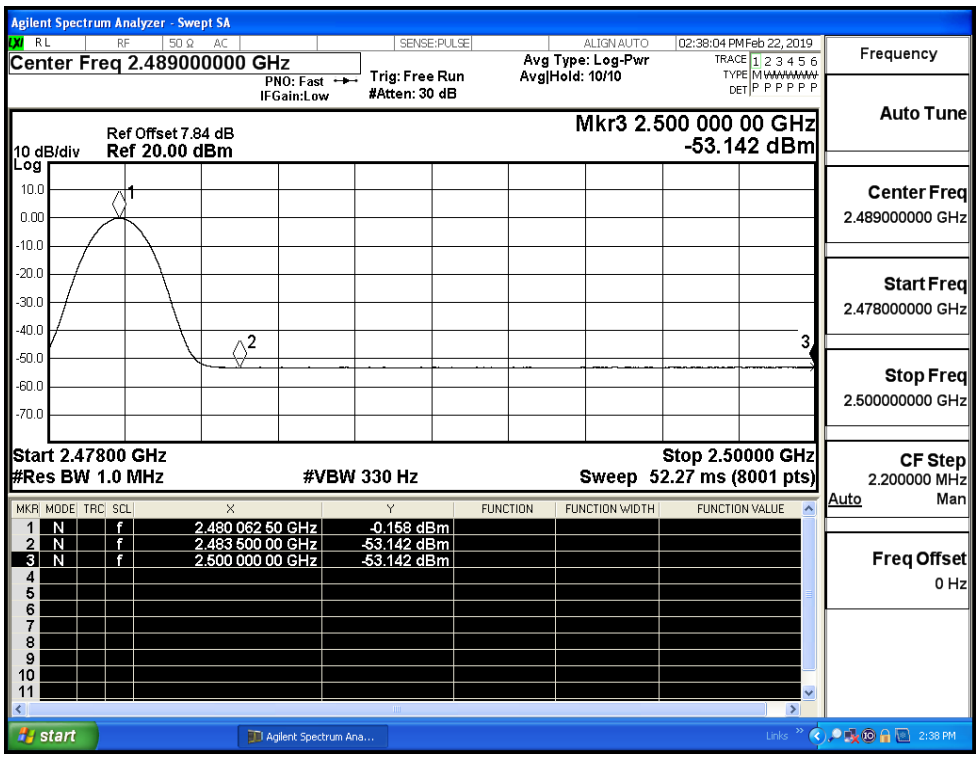
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)



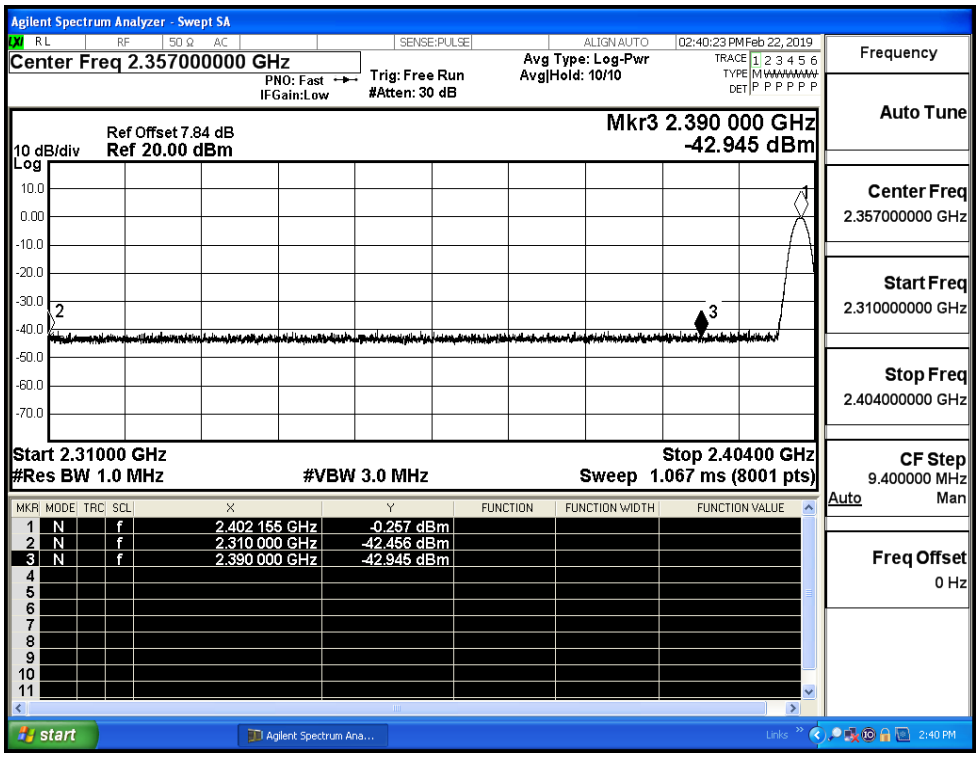
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



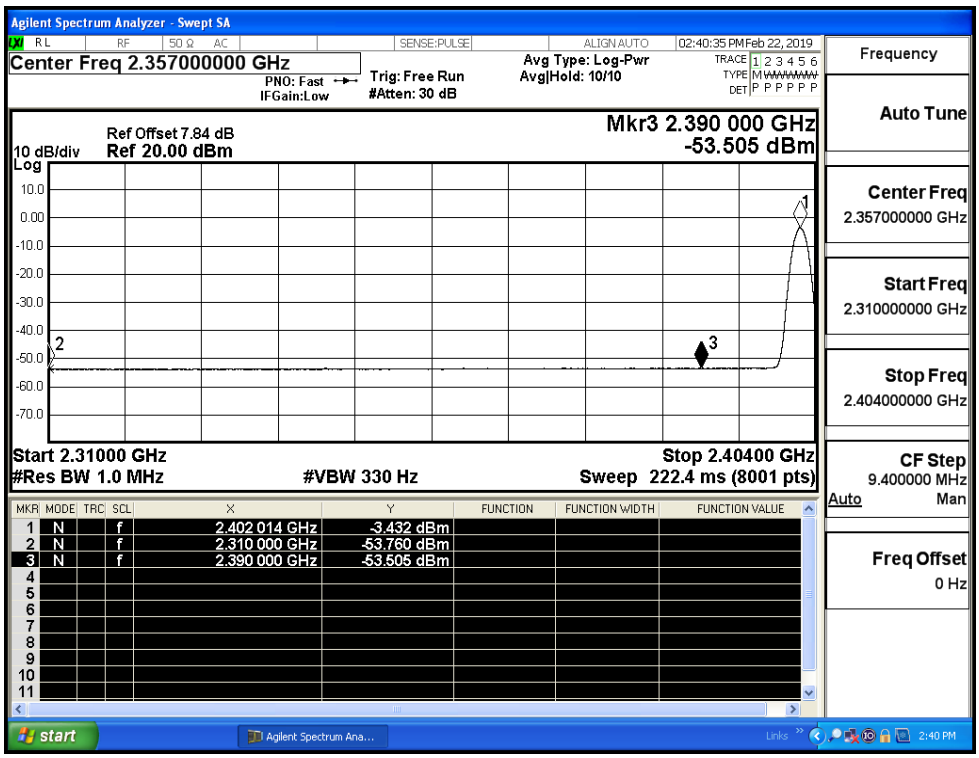
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



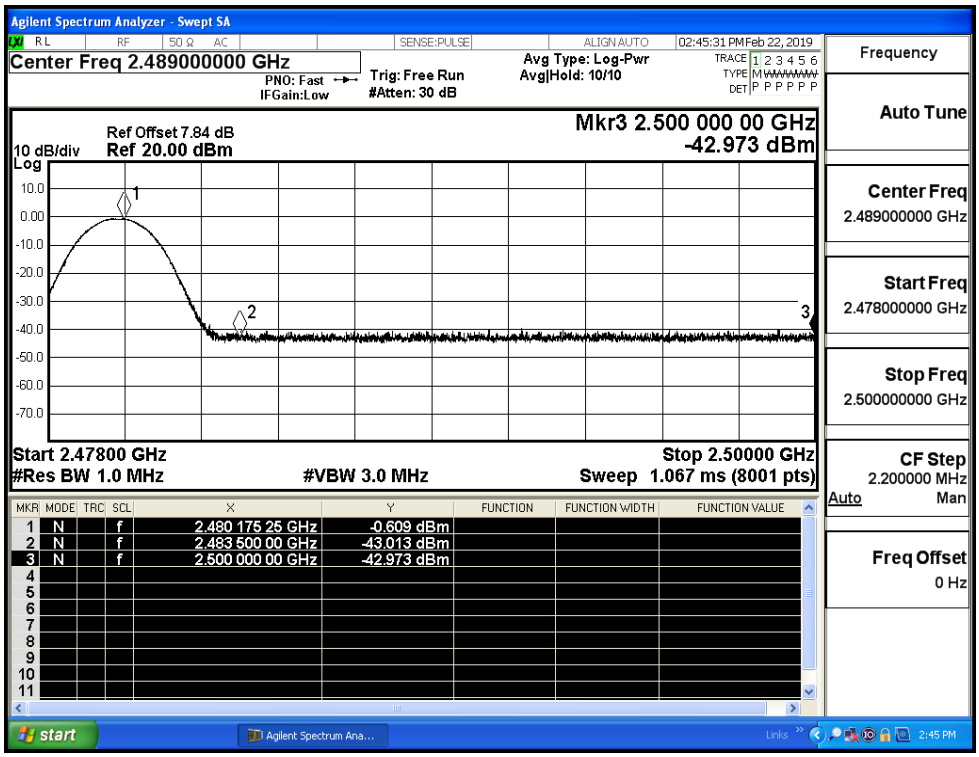
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



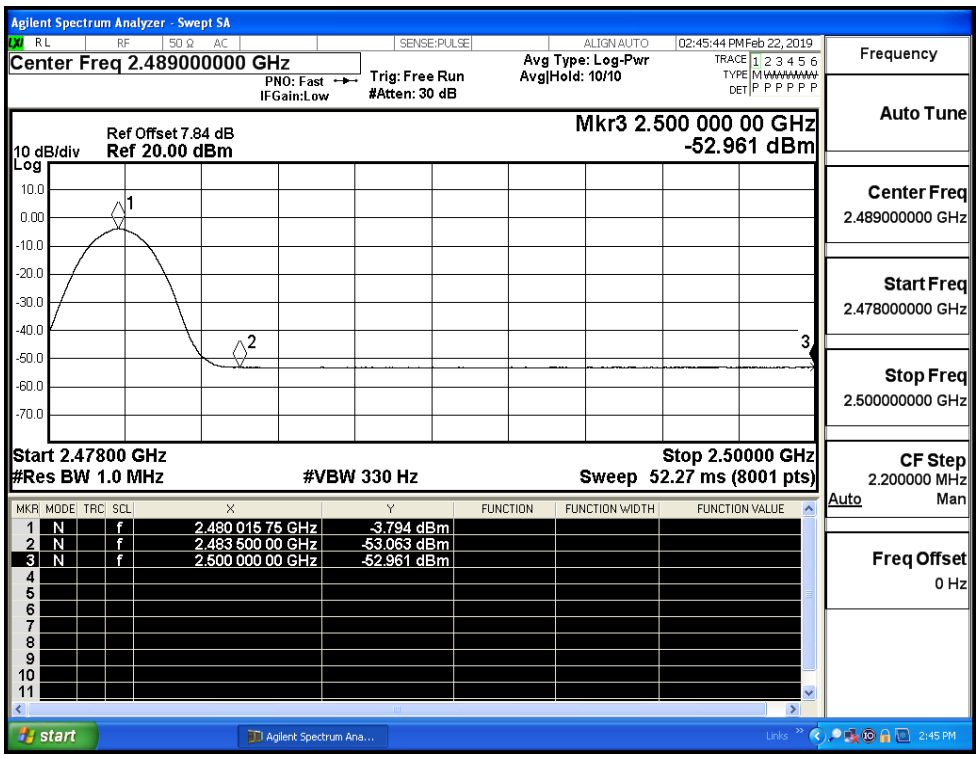
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



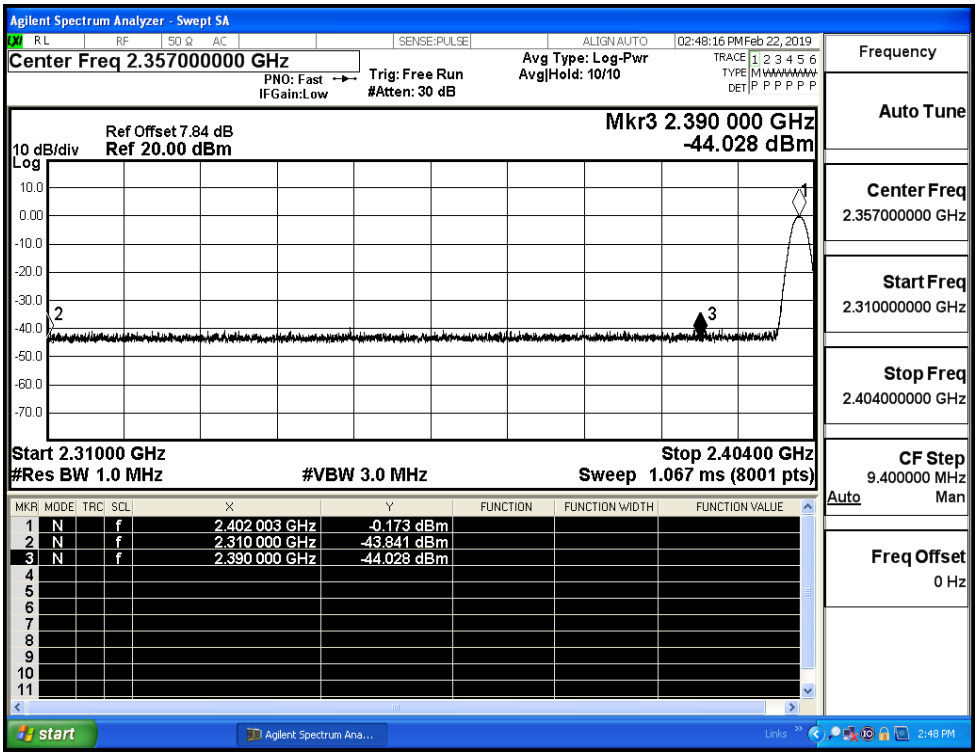
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



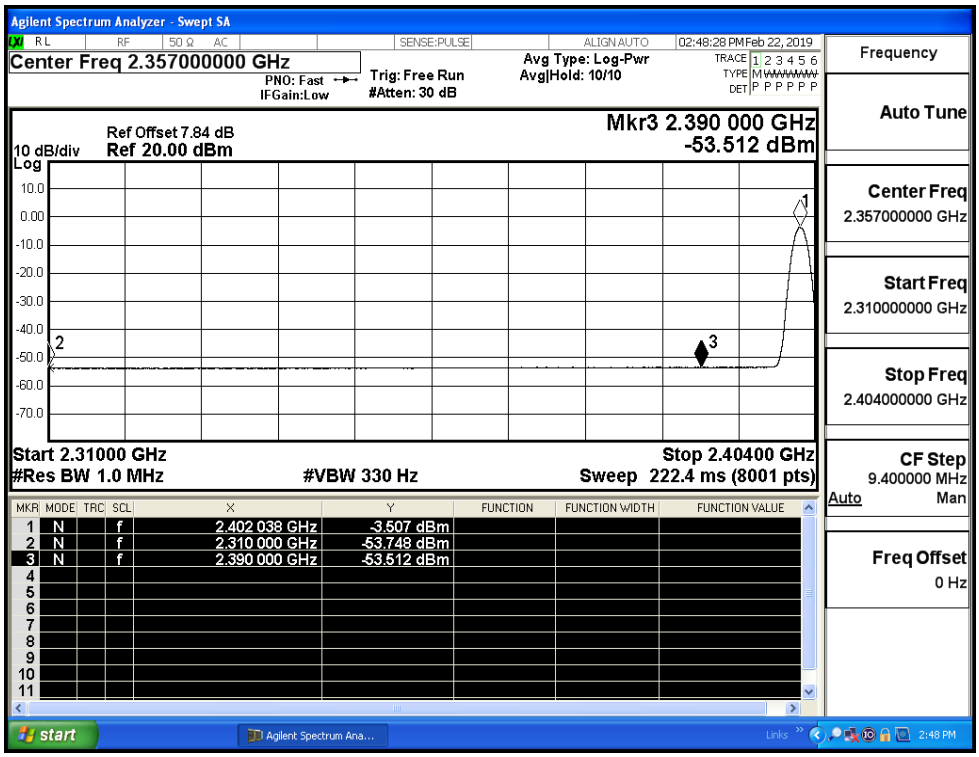
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



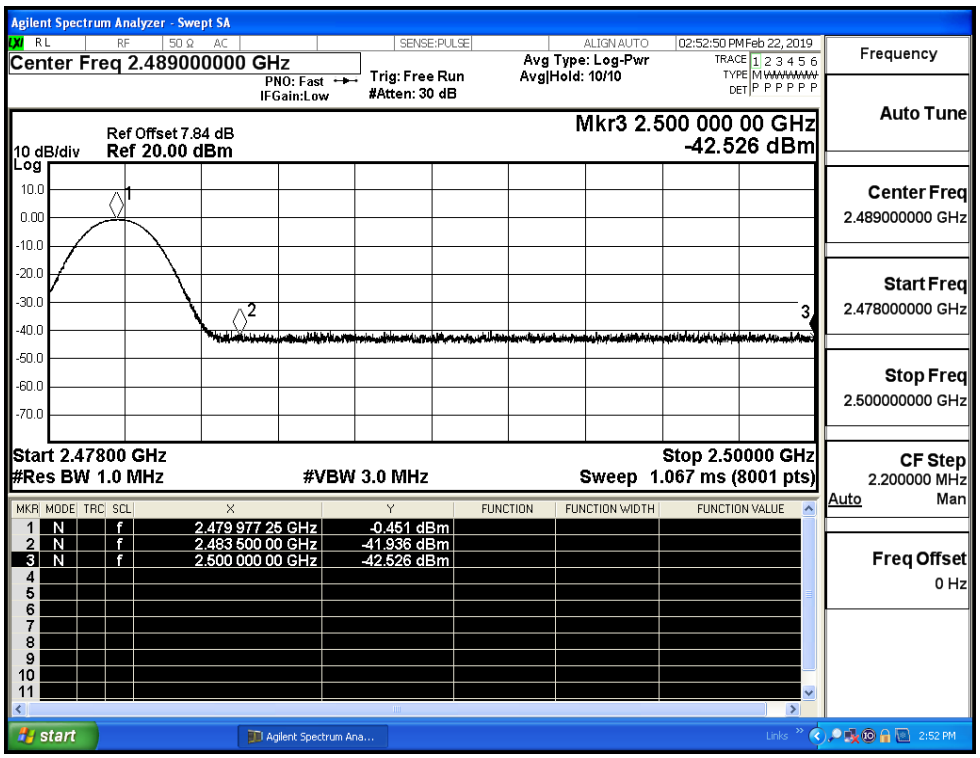
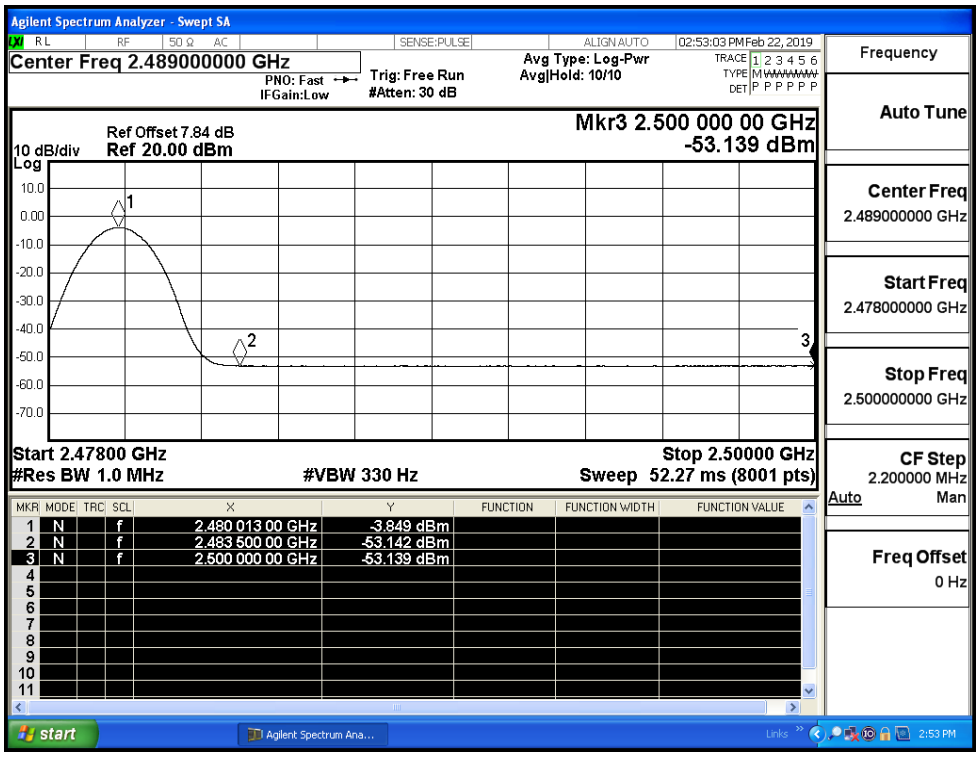
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)