Appendix A

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

Product Name: STEREO HEADPHONES

Trade Mark: PIONEER

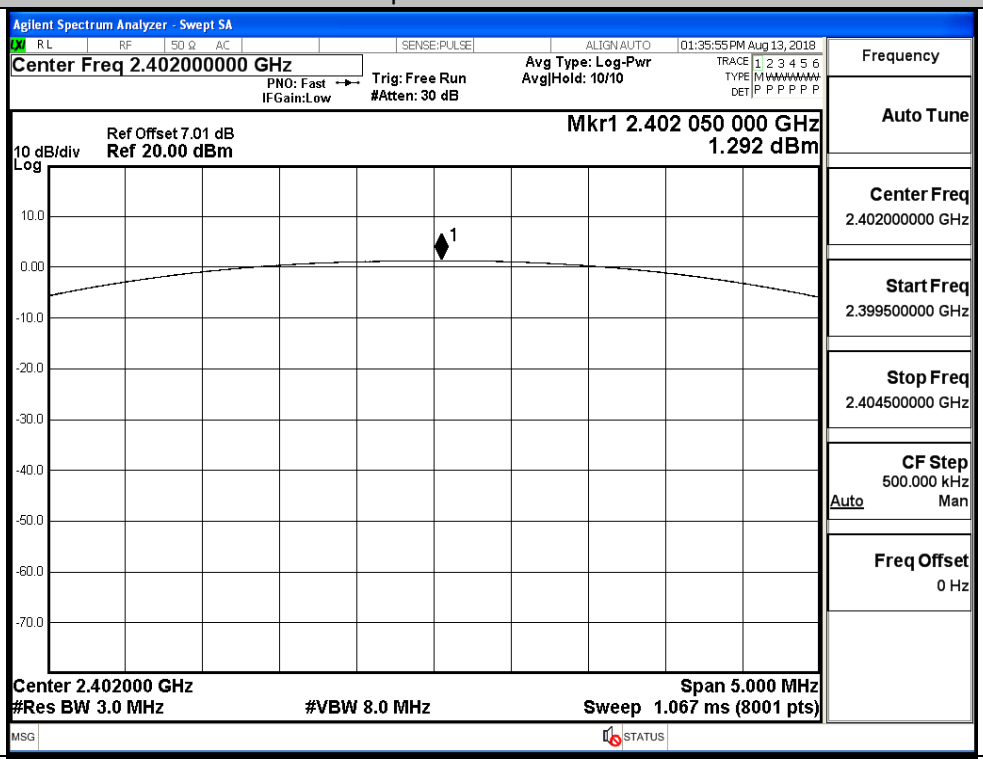
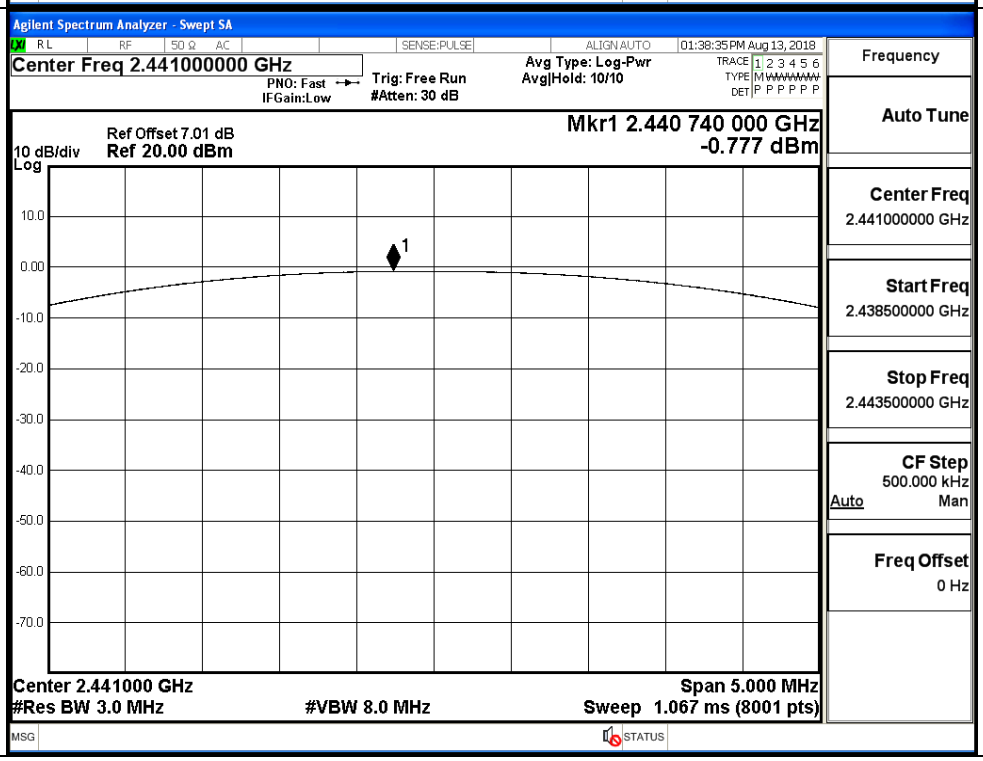
Test Model: SE-C4BT

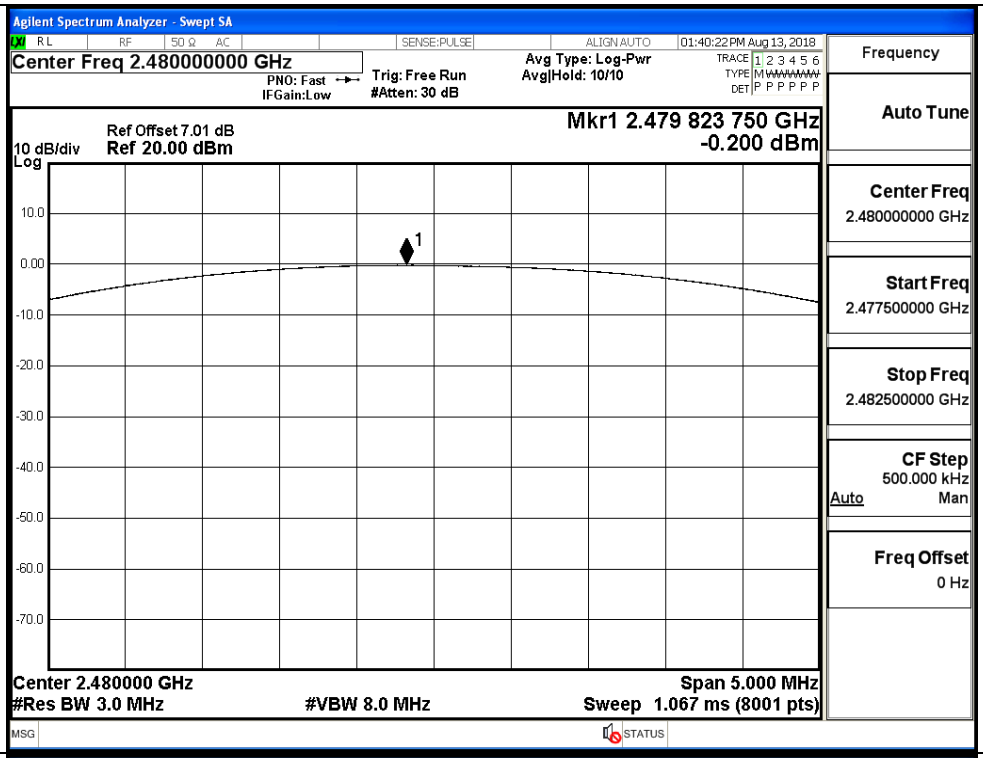
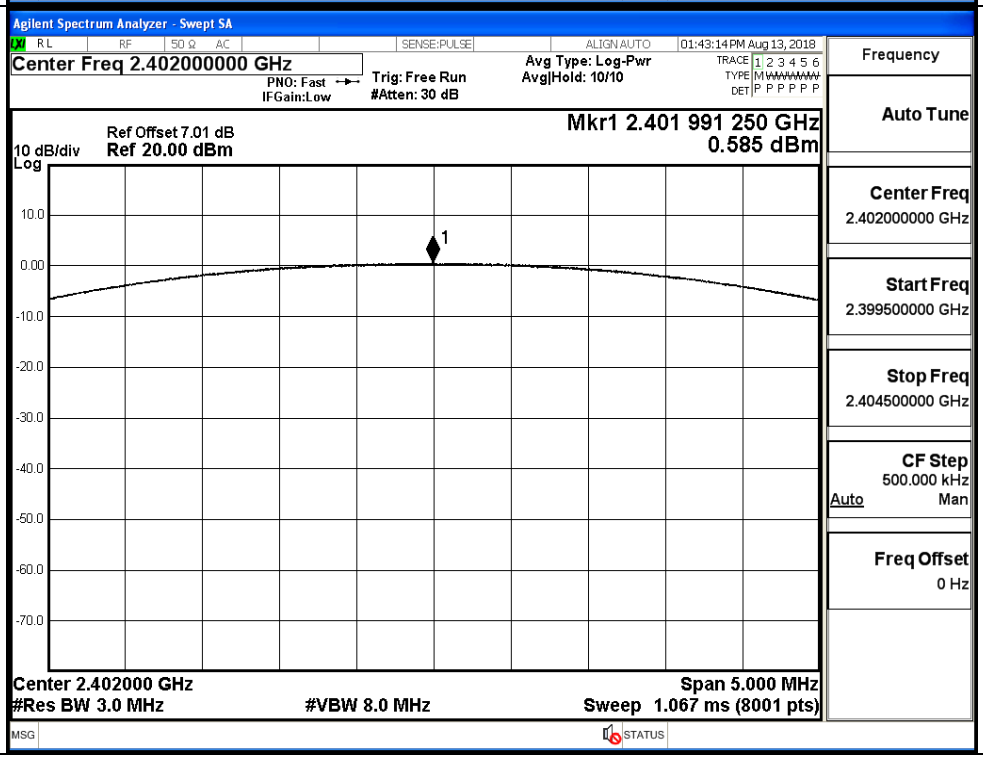
Environmental Conditions

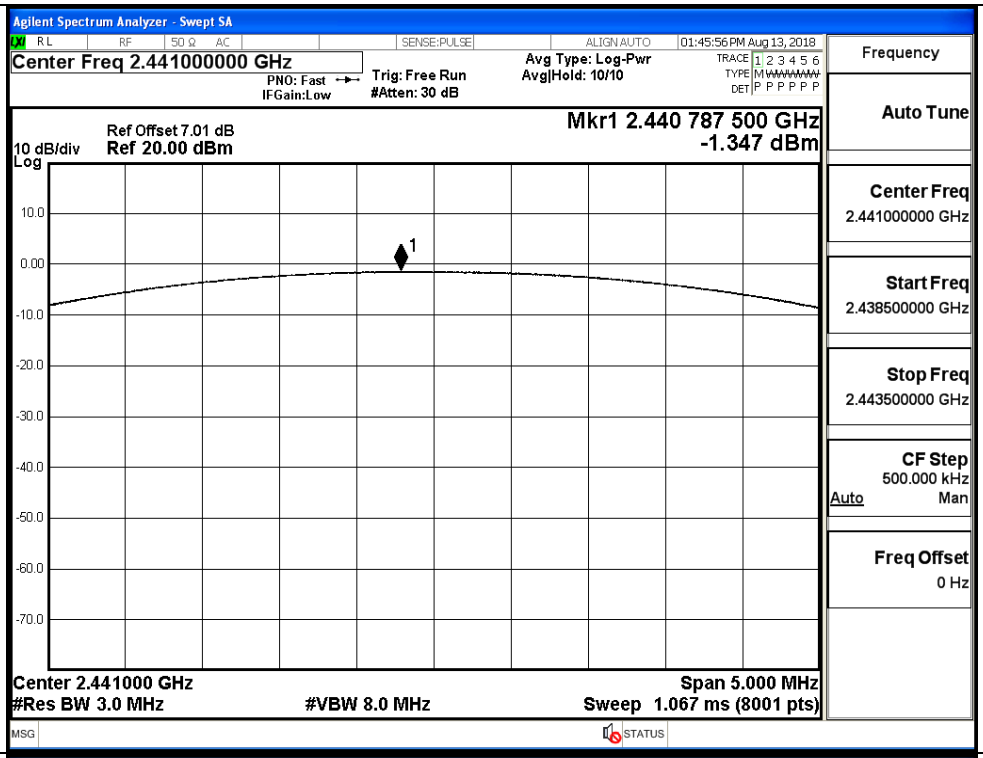
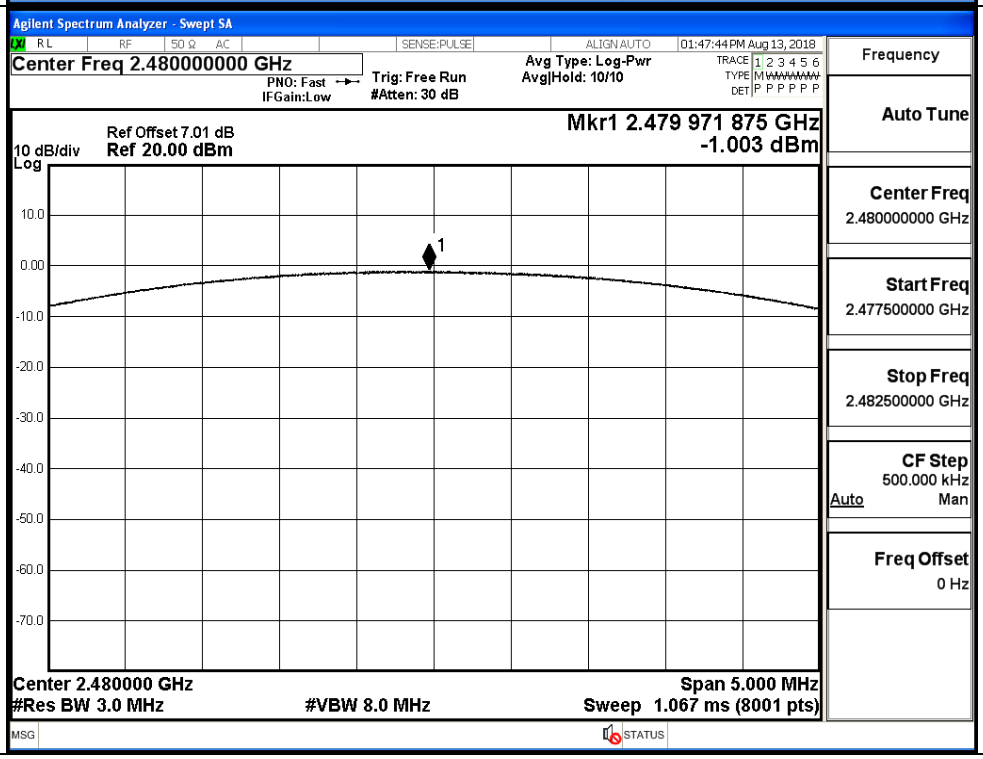
Temperature:	23.5 ° C
Relative Humidity:	53.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Mina.Xu
Supervised by:	Jayden.Zhuo

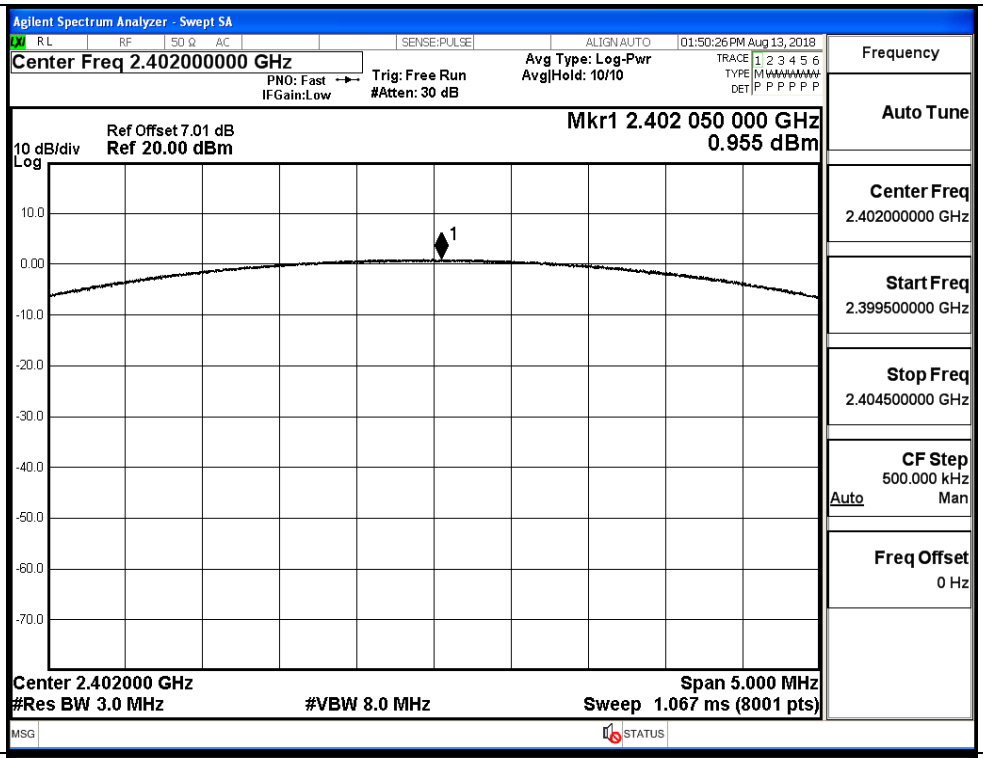
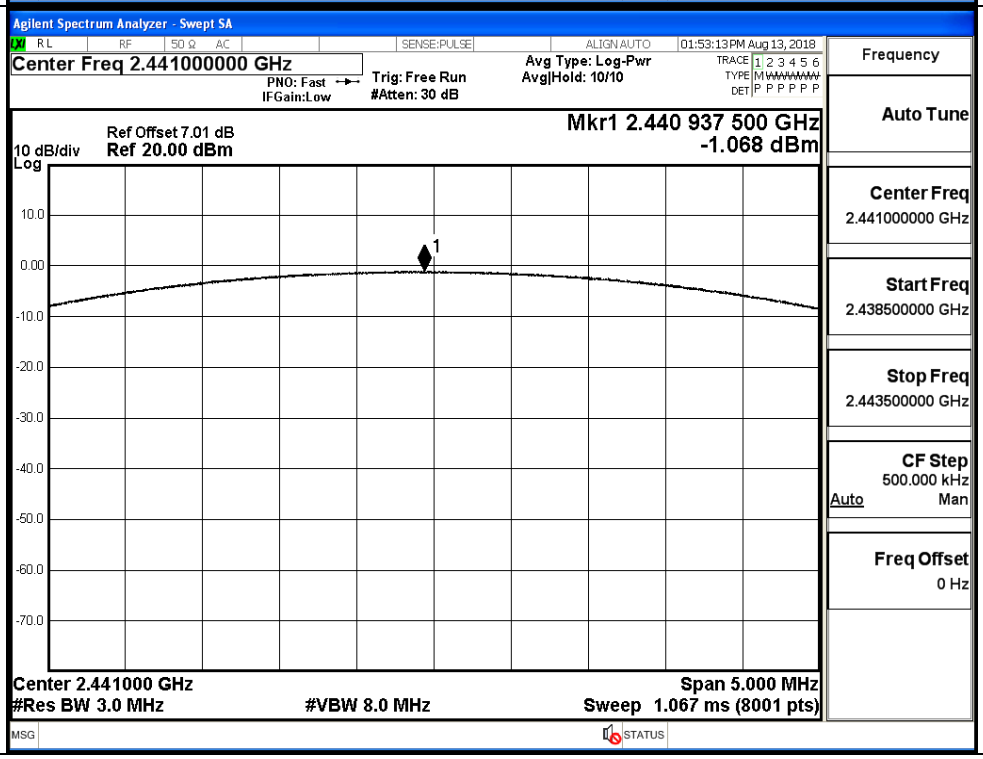
A.1 Maximums Conducted Peak Output Power

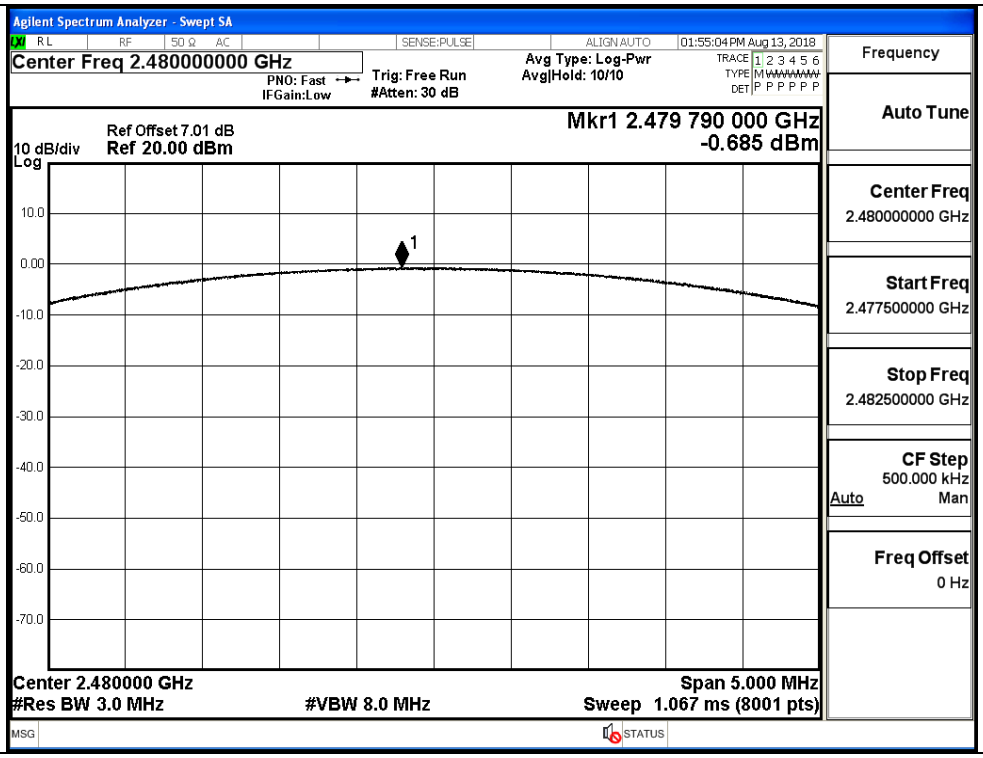
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	1.292	21	PASS
	MCH	-0.777	21	PASS
	HCH	-0.200	21	PASS
π/4DQPSK	LCH	0.585	21	PASS
	MCH	-1.347	21	PASS
	HCH	-1.003	21	PASS
8DPSK	LCH	0.955	21	PASS
	MCH	-1.068	21	PASS
	HCH	-0.685	21	PASS

Test Graphs		
GFSK/LCH		
GFSK/MCH		

GFSK/HCH	
π/4DQPSK/LCH	

π/4DQPSK/MCH	
π/4DQPSK/HCH	

8DPSK/LCH	
8DPSK/MCH	

8DPSK/HCH	

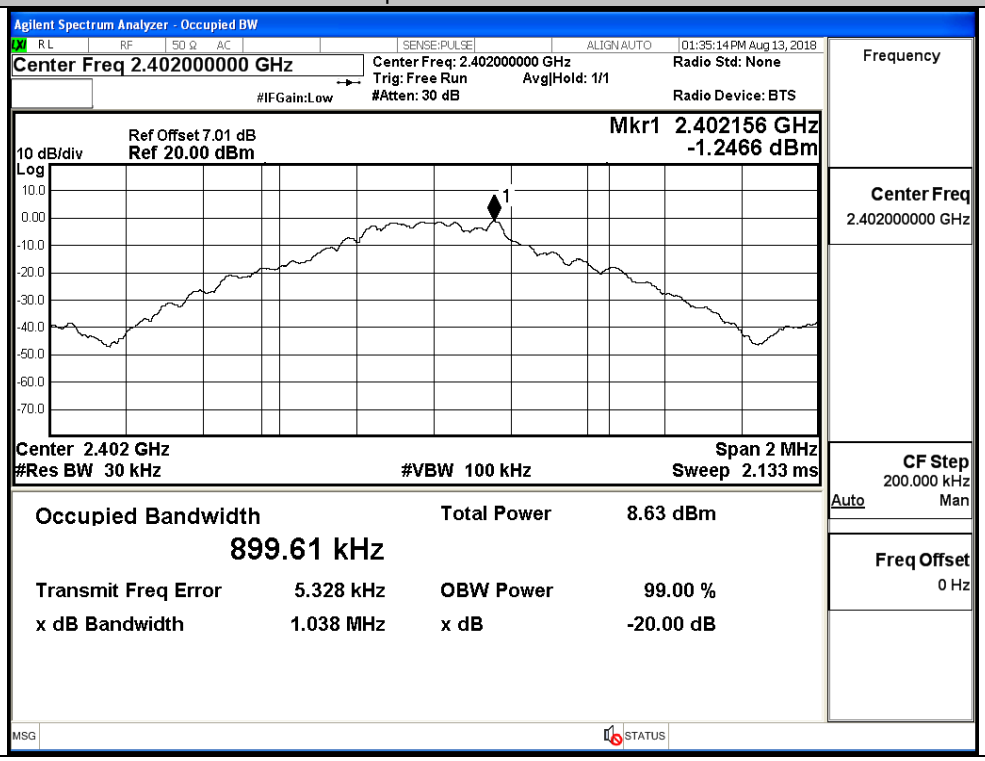
Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:PULSE
ALIGN AUTO
01:55:04 PM Aug 13, 2018
Center Freq 2.480000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 10/10
TRACE 1 2 3 4 5 6
TYPE M
DET P P P P P
Ref Offset 7.01 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.479 790 000 GHz
-0.685 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.480000 GHz
#Res BW 3.0 MHz
#VBW 8.0 MHz
Span 5.000 MHz
Sweep 1.067 ms (8001 pts)
MSG
STATUS
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

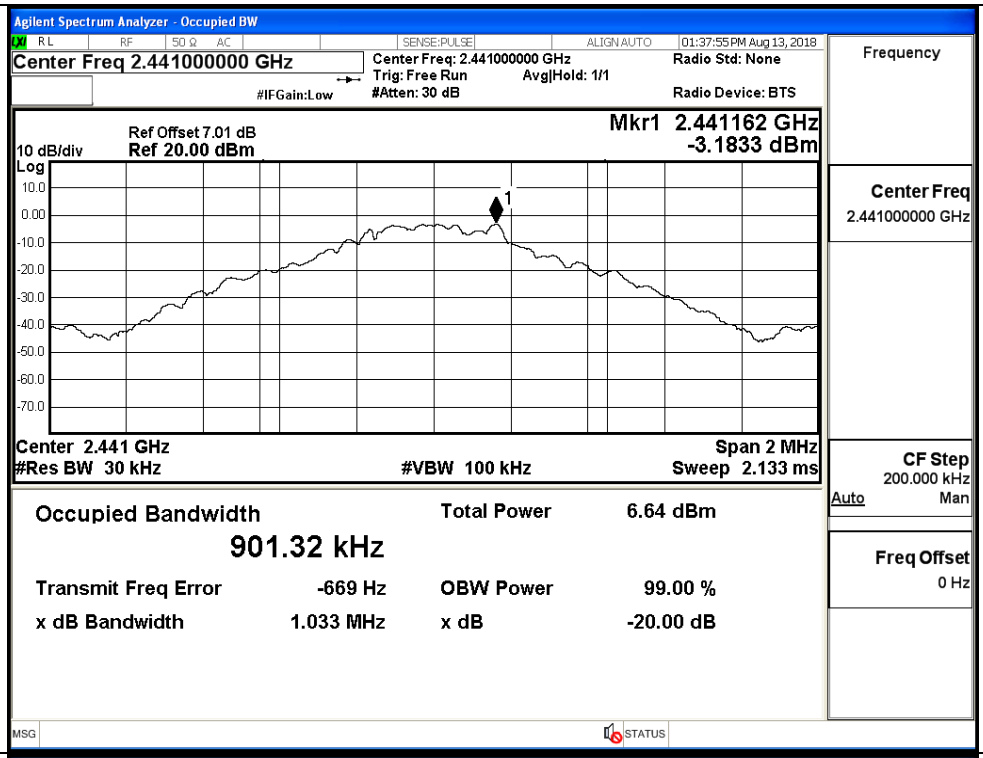
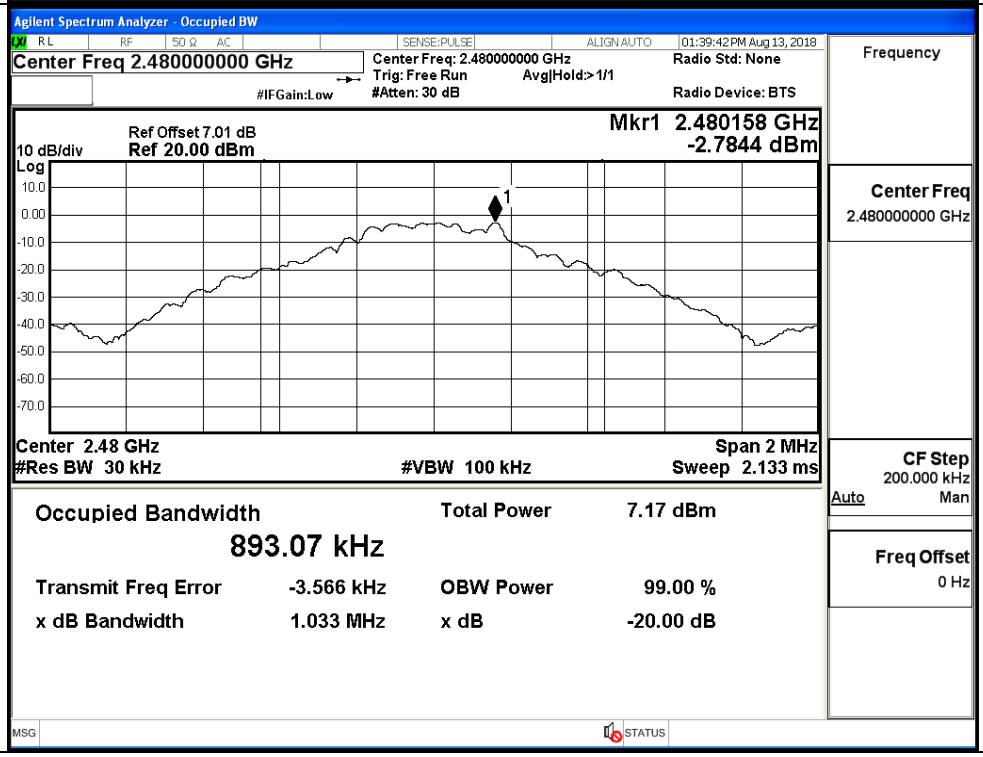
A.2 99% and 20dB Bandwidth

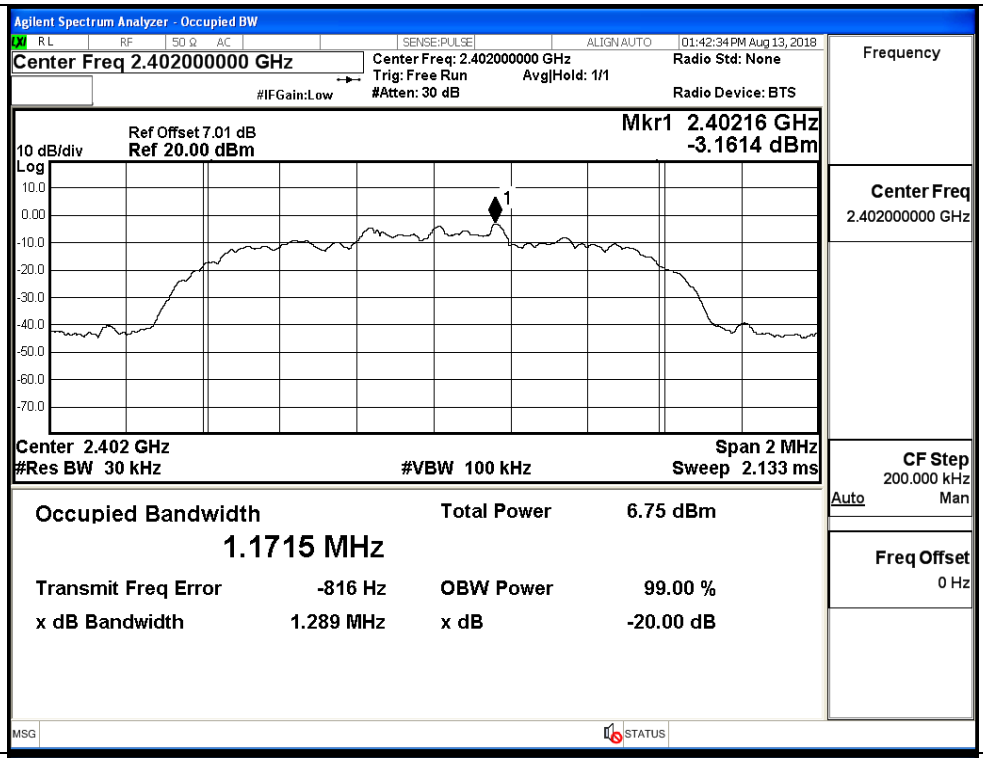
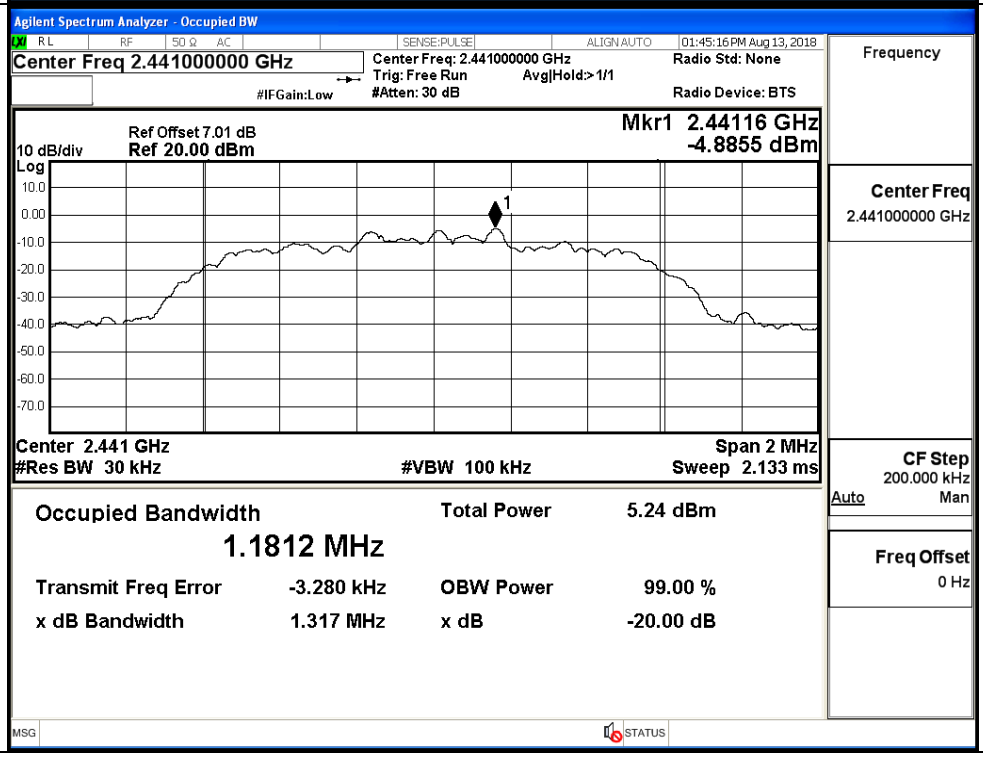
Mode	Channel.	99% Bandwidth [MHz]	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.89961	1.038	Not Specified	PASS
	MCH	0.90132	1.033	Not Specified	PASS
	HCH	0.89307	1.033	Not Specified	PASS
π/4DQPSK	LCH	1.1715	1.289	Not Specified	PASS
	MCH	1.1812	1.317	Not Specified	PASS
	HCH	1.1708	1.289	Not Specified	PASS
8DPSK	LCH	1.1785	1.291	Not Specified	PASS
	MCH	1.2000	1.300	Not Specified	PASS
	HCH	1.1788	1.291	Not Specified	PASS

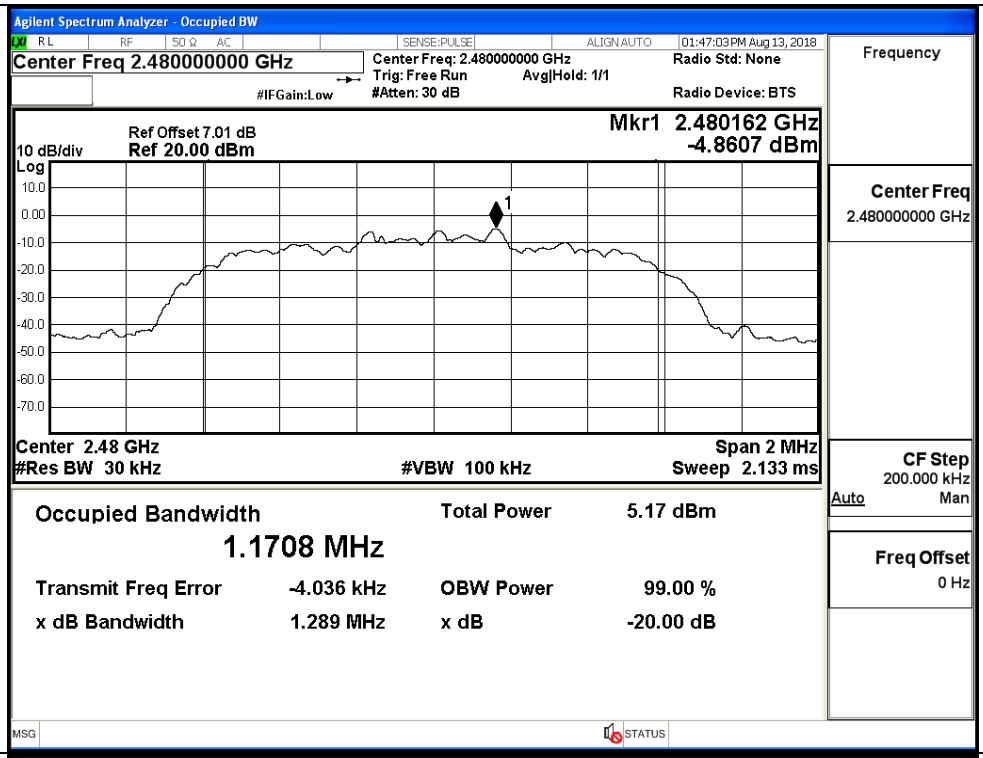
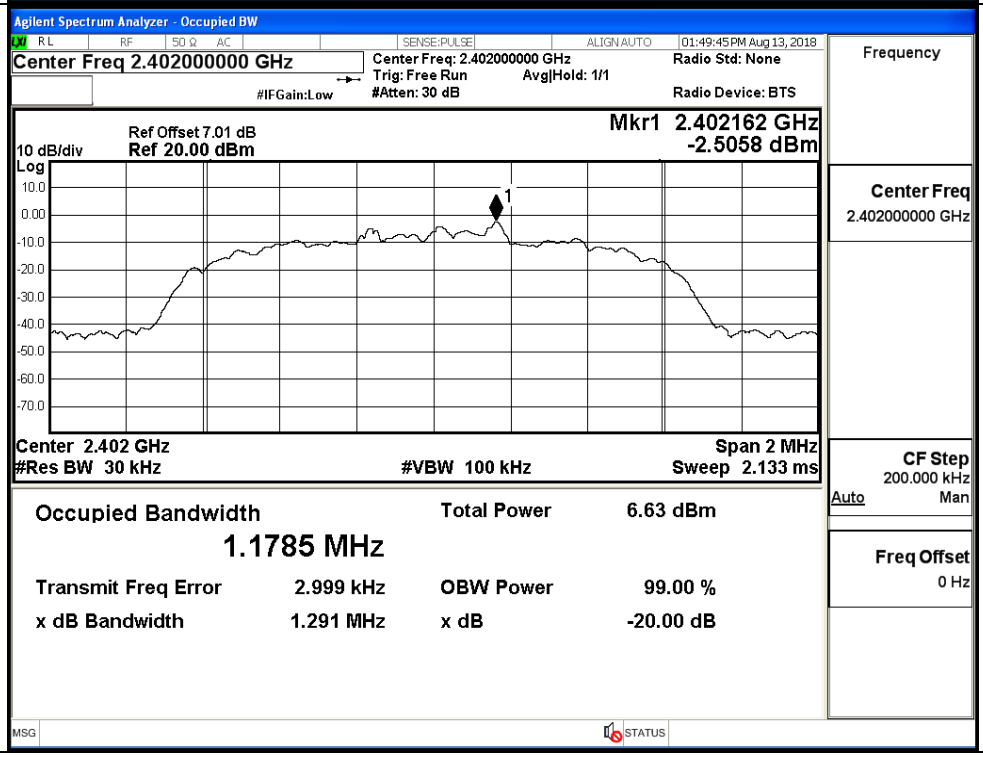
Test Graphs

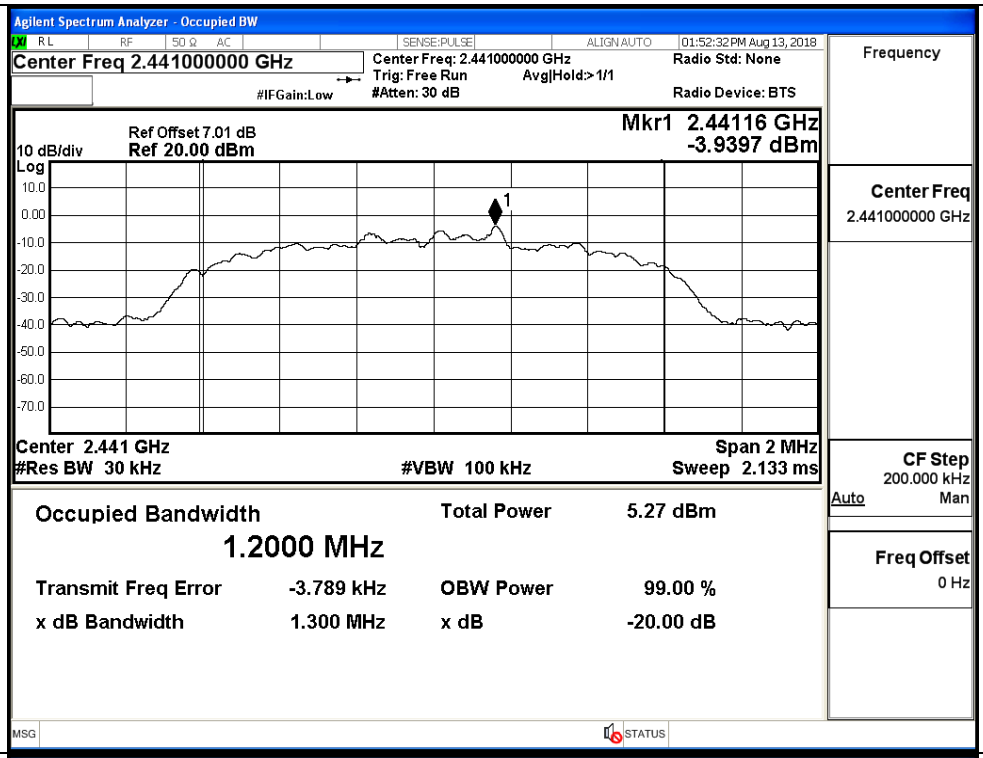
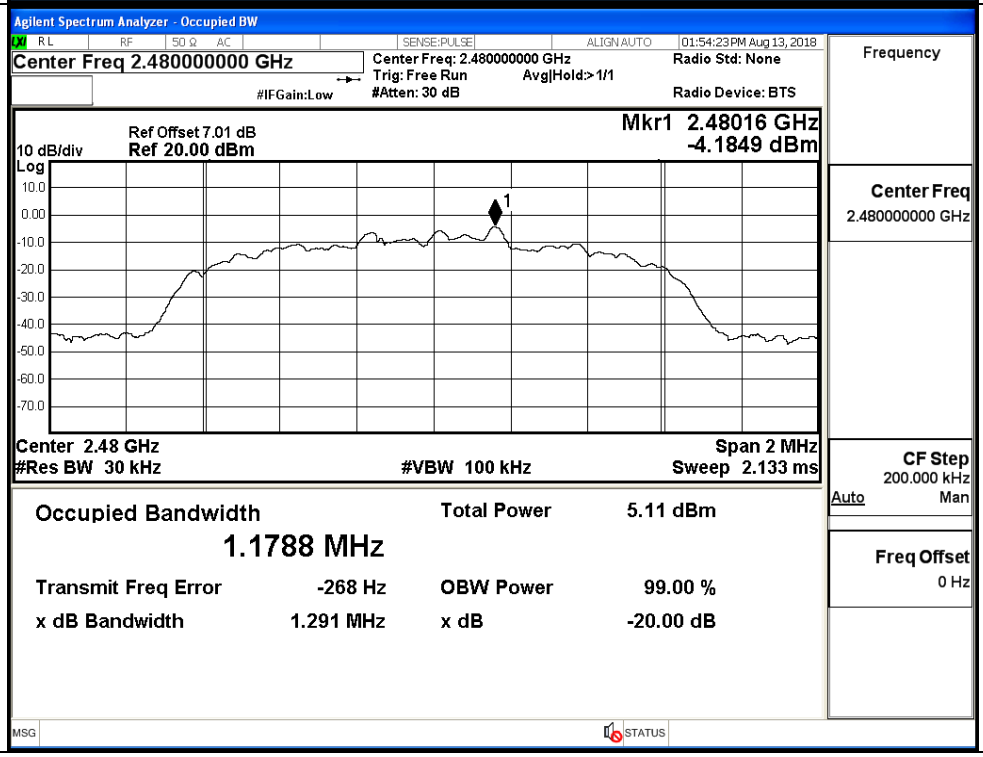
GFSK/LCH



GFSK/MCH	
GFSK/HCH	

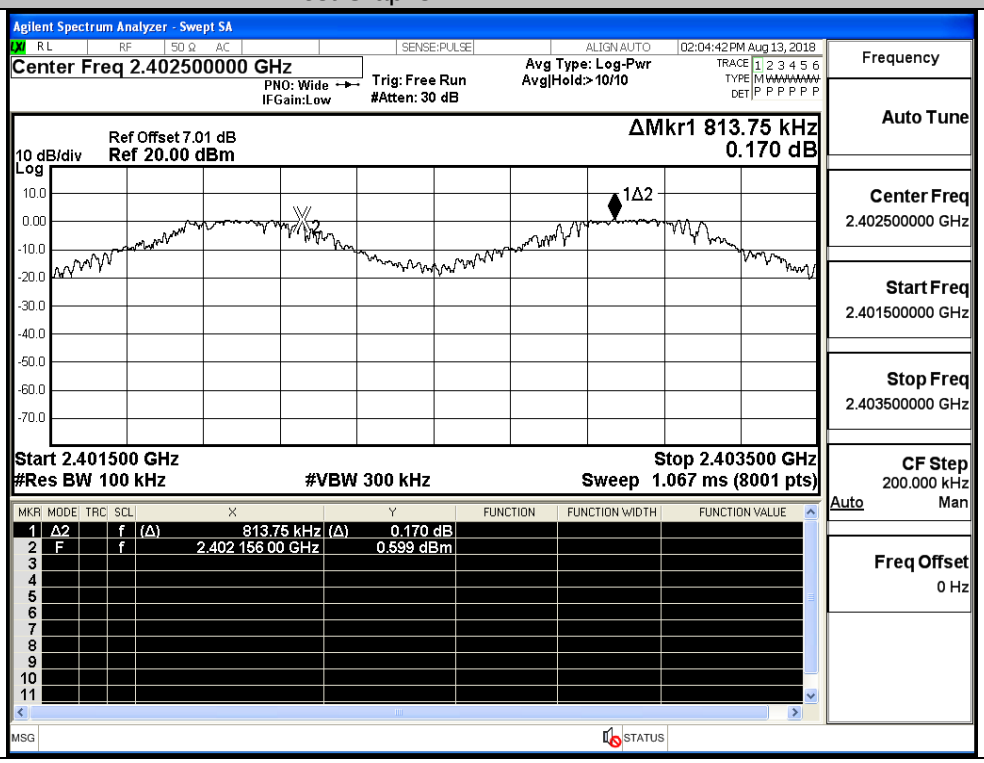
π/4DQPSK/LCH	
π/4DQPSK/MCH	

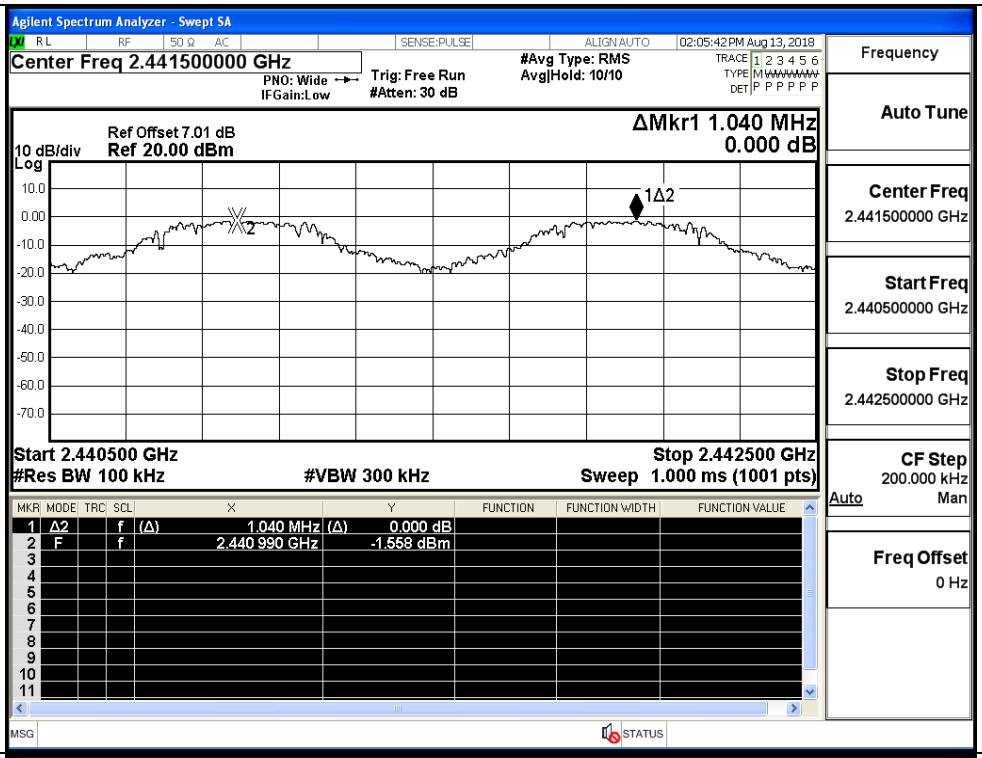
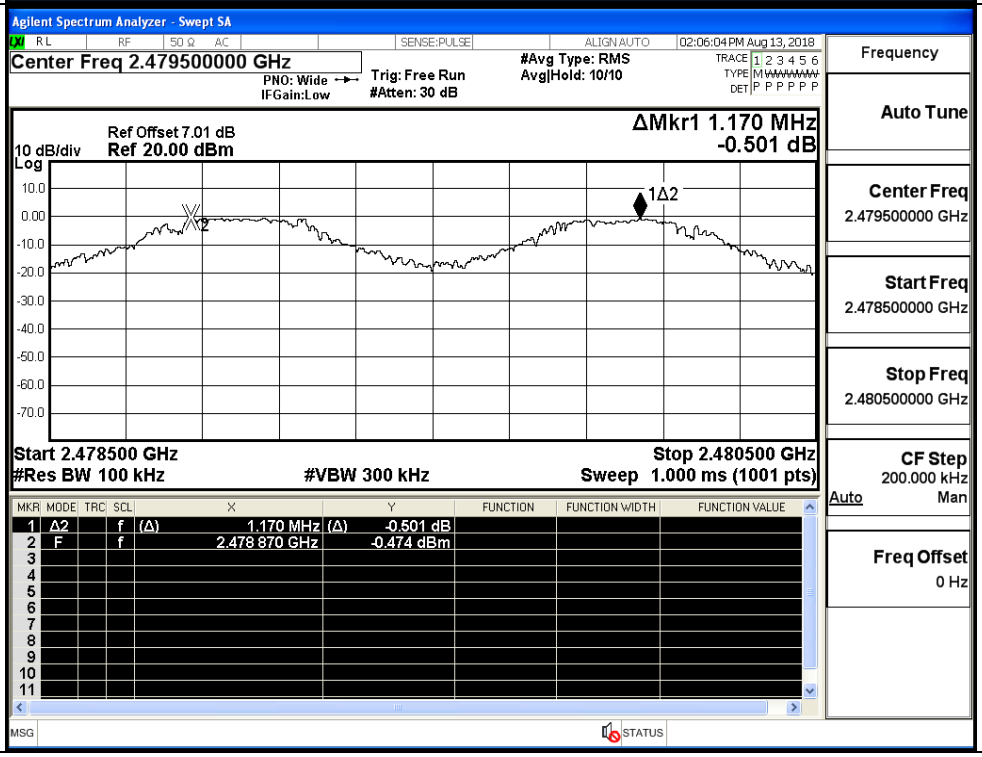
π/4DQPSK/HCH	
8DPSK/LCH	

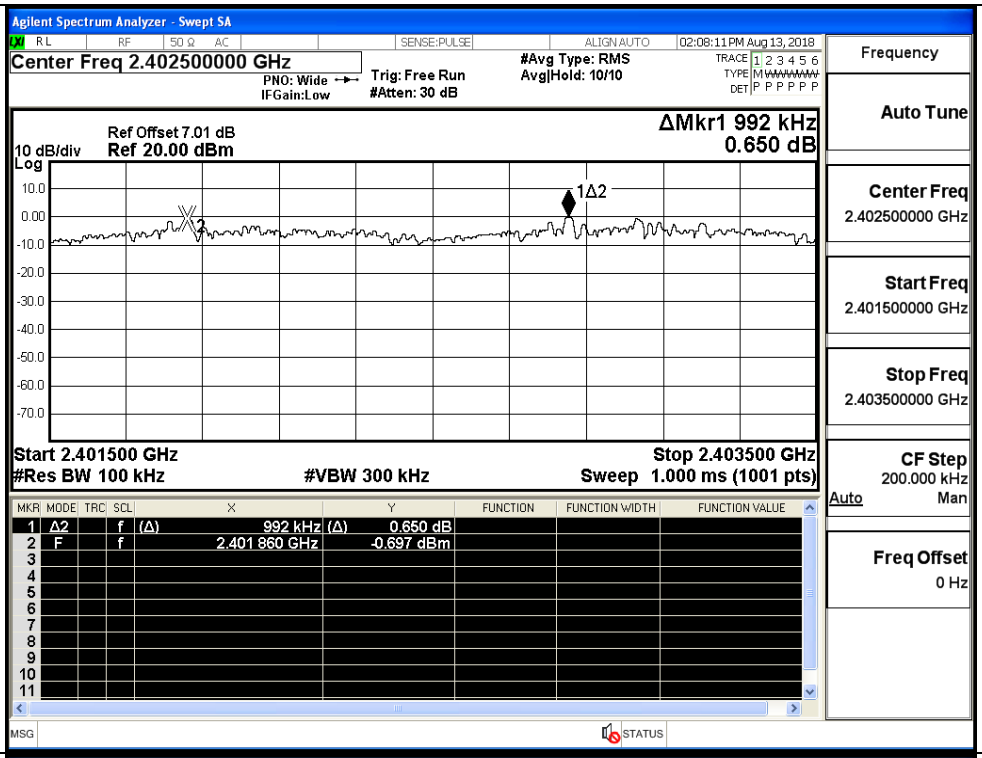
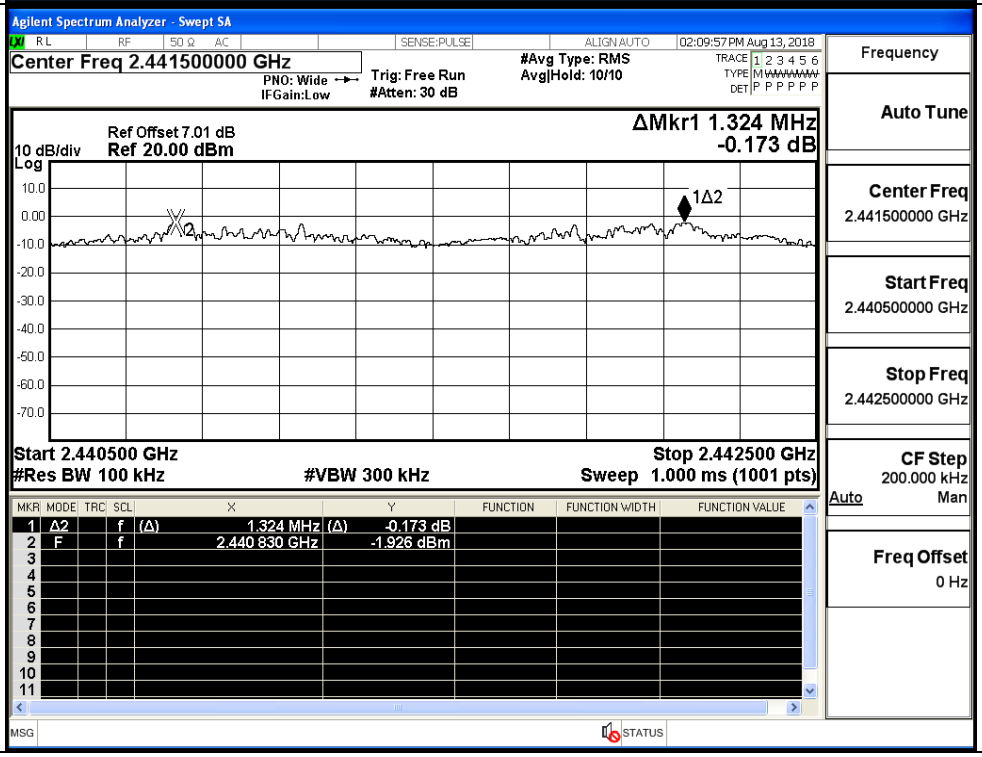
8DPSK/MCH	
8DPSK/HCH	

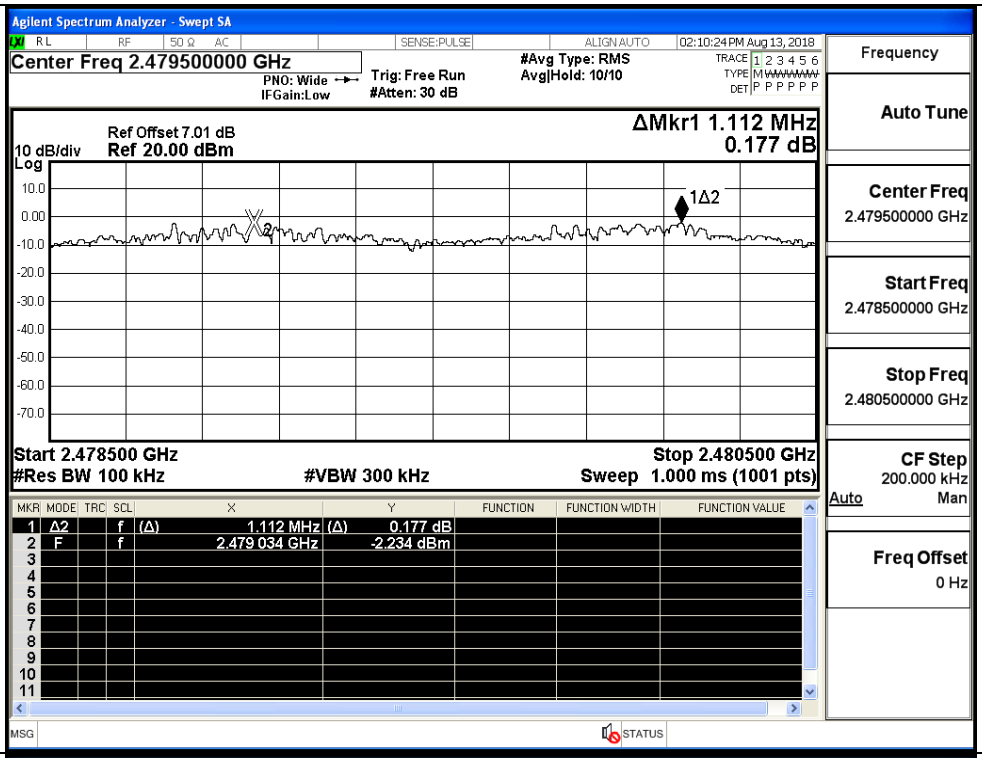
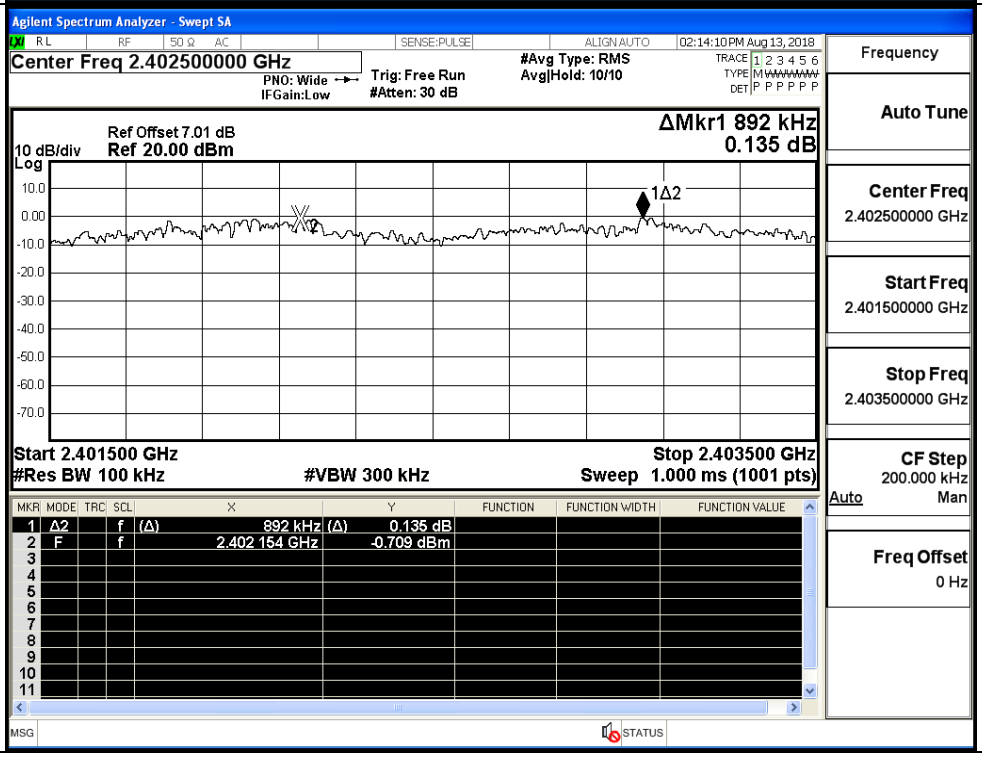
A.3 Carrier Frequency Separation

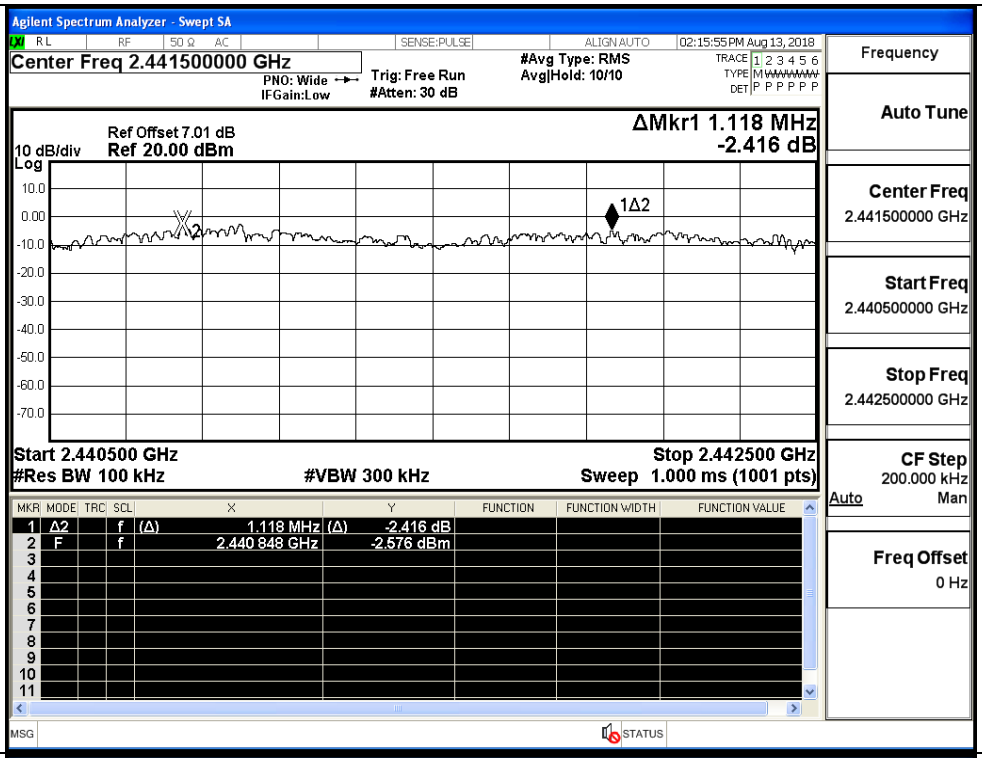
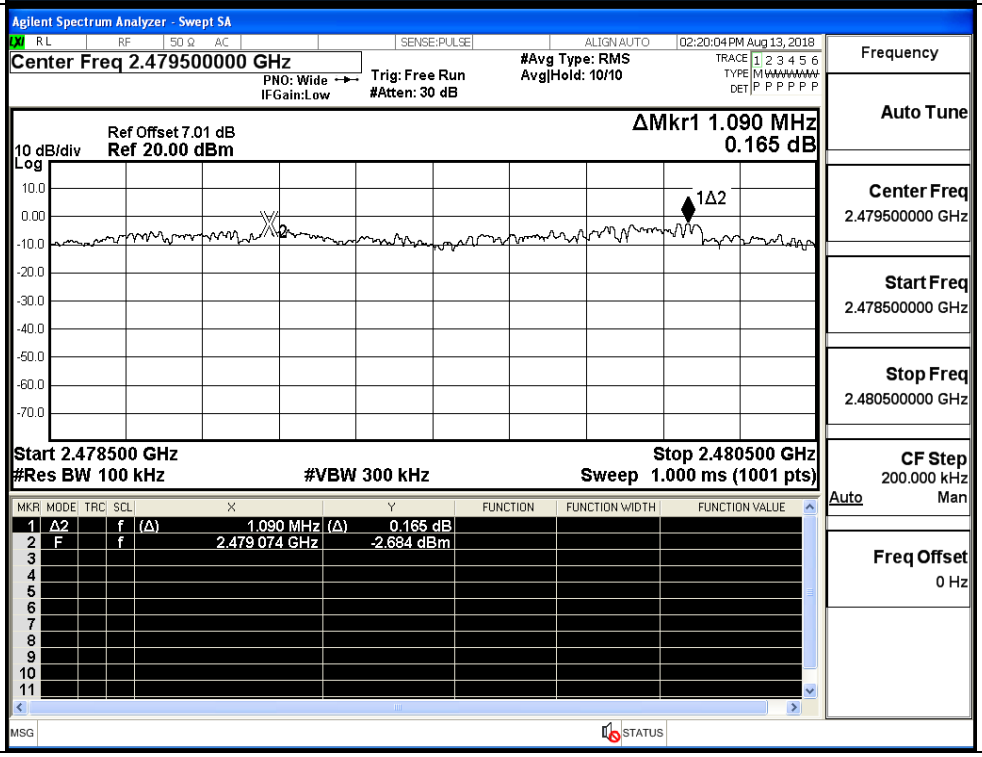
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.814	0.692	PASS
	MCH	1.040	0.692	PASS
	HCH	1.170	0.692	PASS
π/4DQPSK	LCH	0.992	0.878	PASS
	MCH	1.324	0.878	PASS
	HCH	1.112	0.878	PASS
8DPSK	LCH	0.892	0.867	PASS
	MCH	1.118	0.867	PASS
	HCH	1.090	0.867	PASS

Test Graphs	
GFSK/LCH	

GFSK/MCH	
GFSK/HCH	

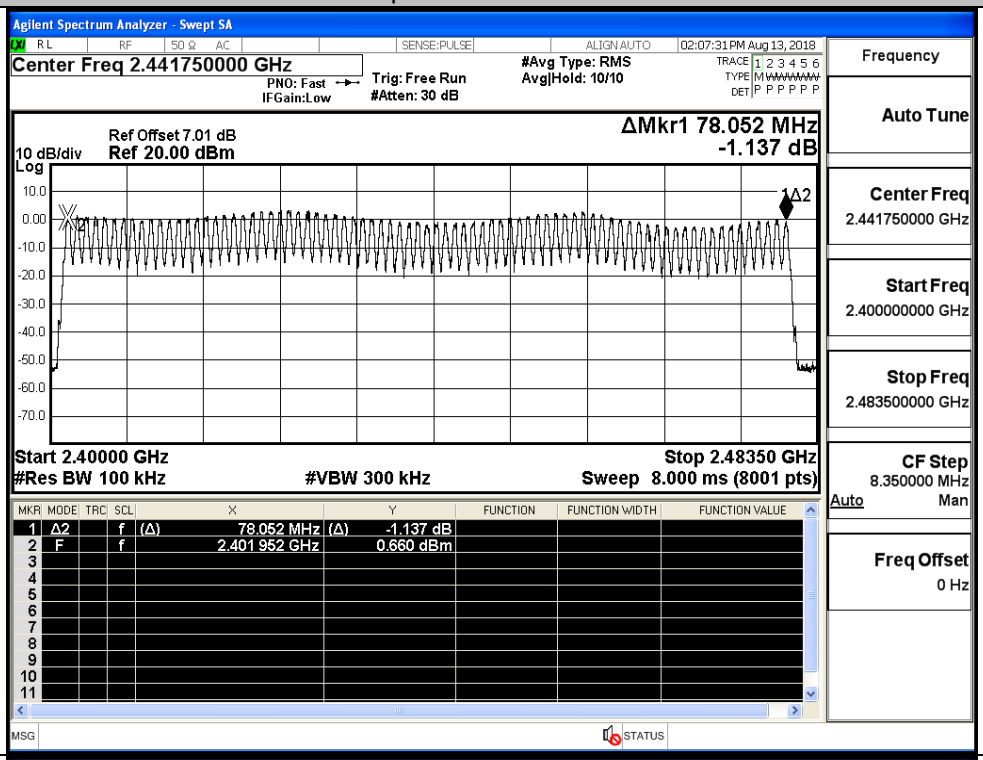
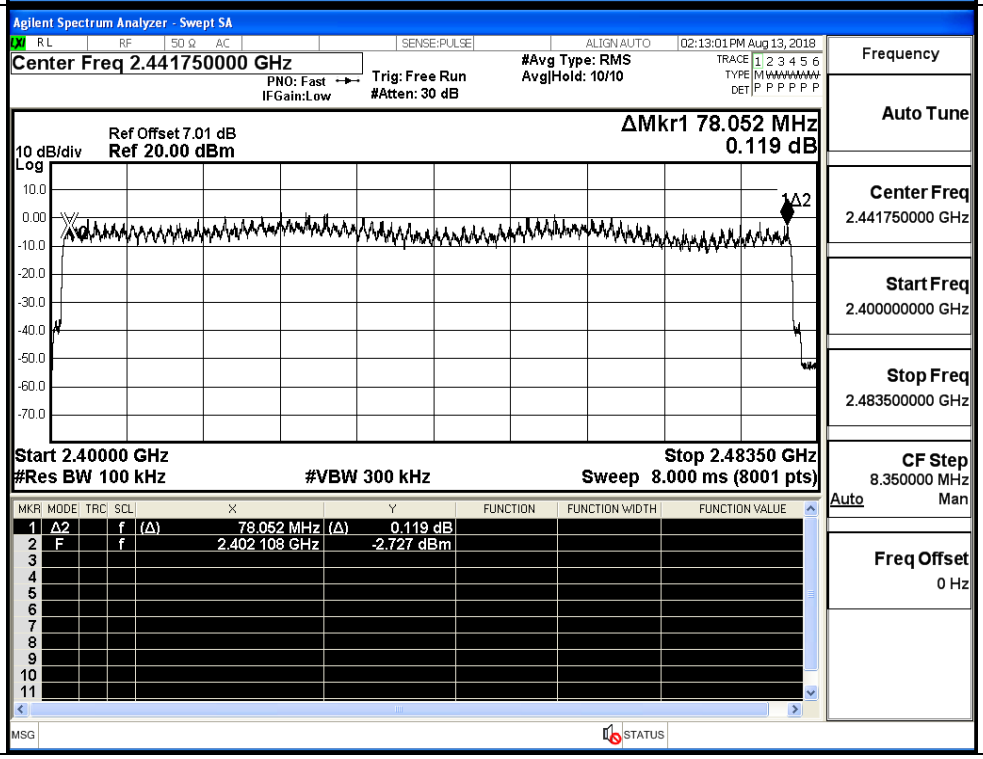
π/4DQPSK/LCH	
π/4DQPSK/MCH	

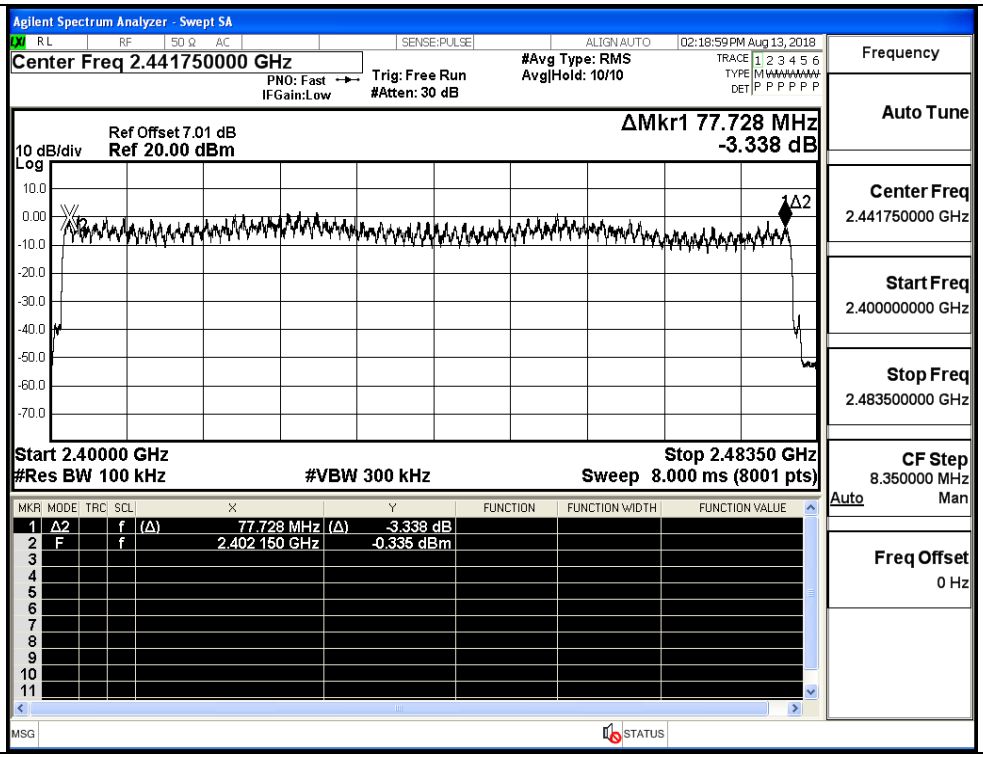
π/4DQPSK/HCH	
8DPSK/LCH	

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	

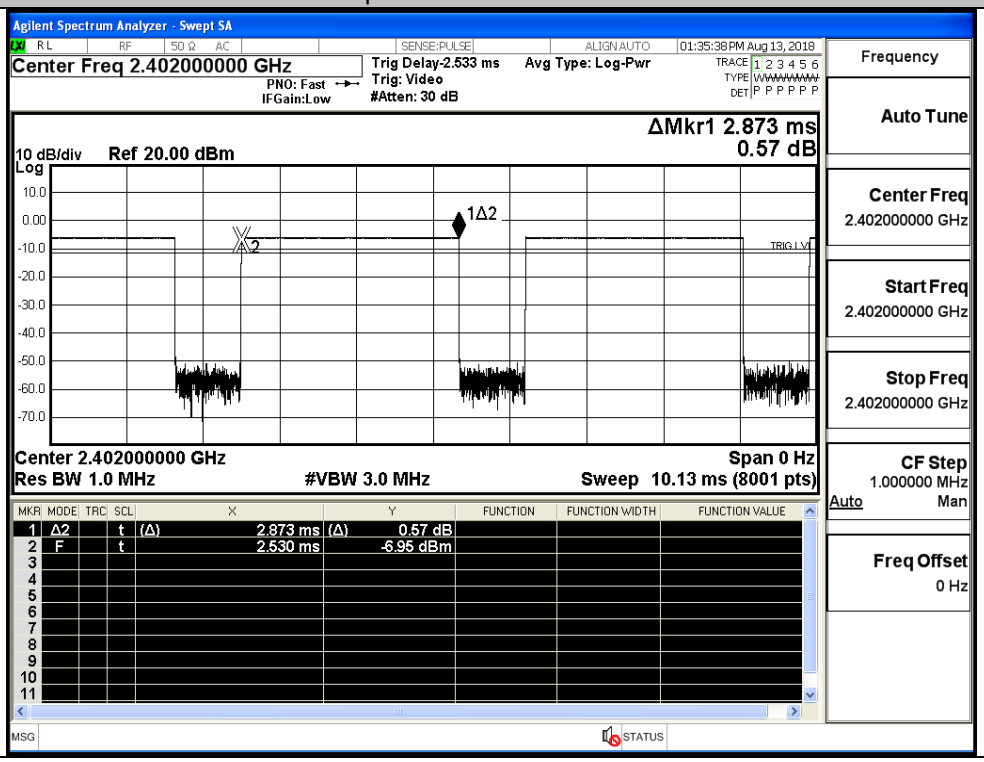
Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441750000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 10/10
02:18:59 PM Aug 13, 2018
Ref Offset 7.01 dB
10 dB/div
Log
Ref 20.00 dBm
ΔMkr1 77.728 MHz
-3.338 dB
Start 2.40000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.48350 GHz
Sweep 8.000 ms (8001 pts)
1 Δ2 f (Δ) 77.728 MHz (Δ) -3.338 dB
2 F f 2.402 150 GHz -0.335 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

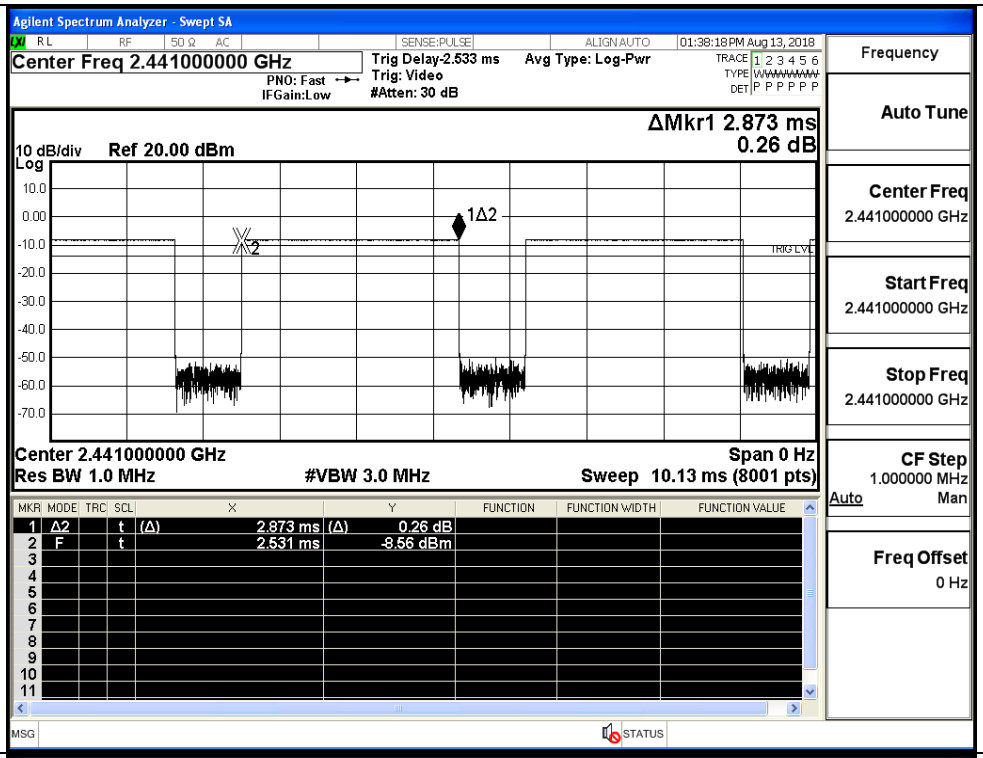
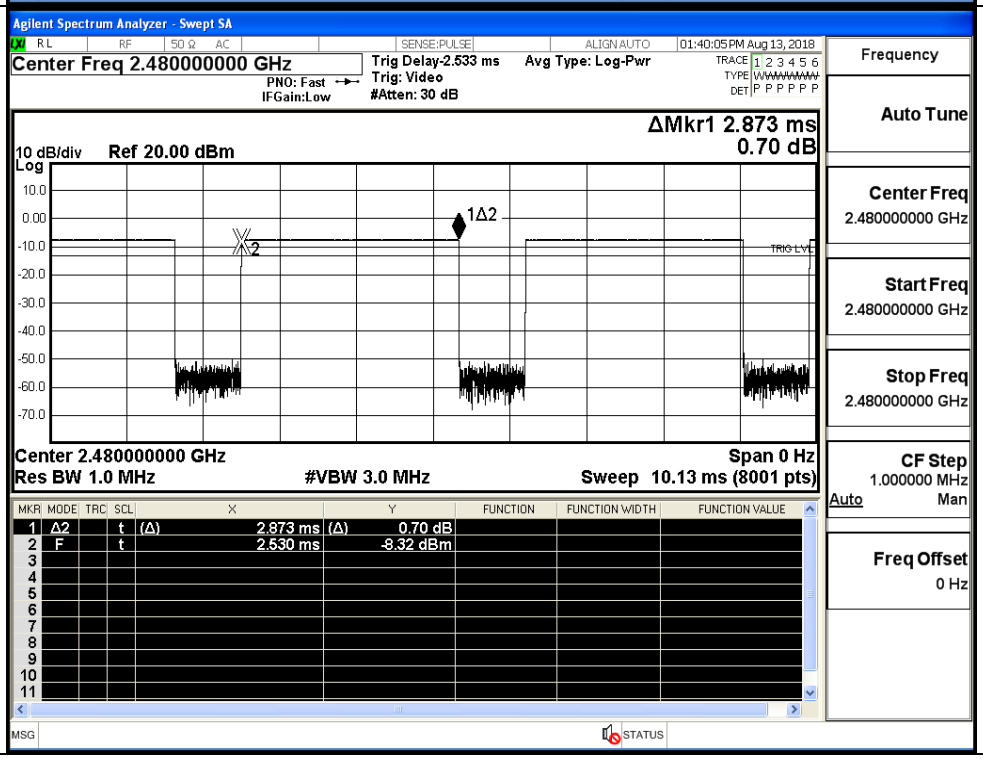
A.5 Dwell Time

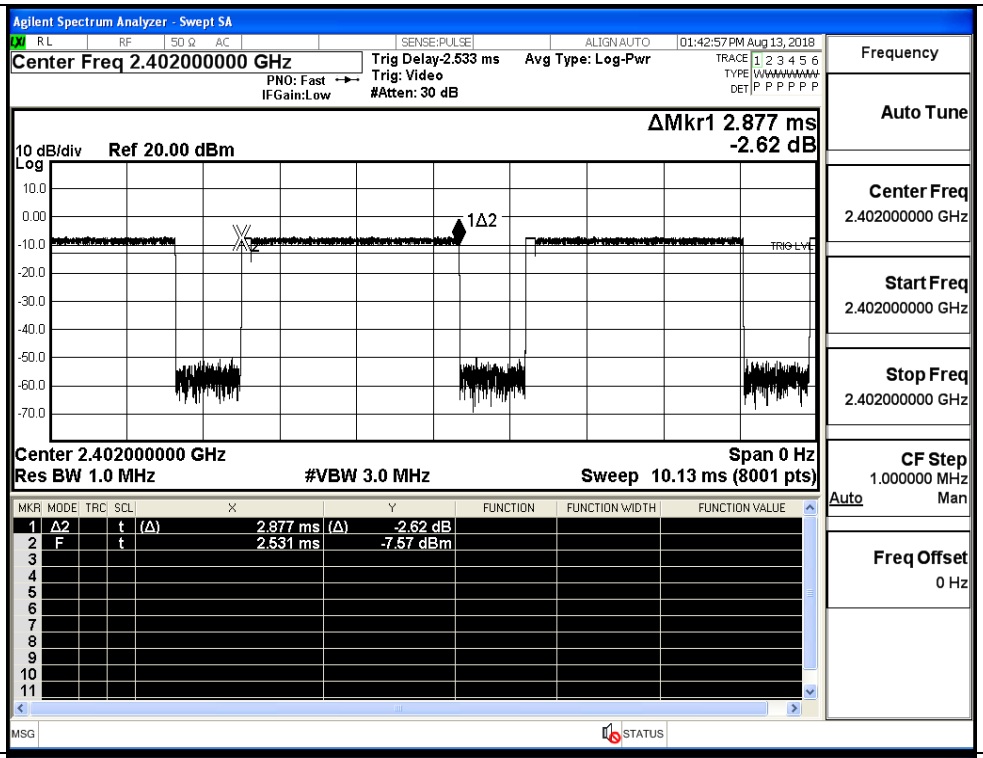
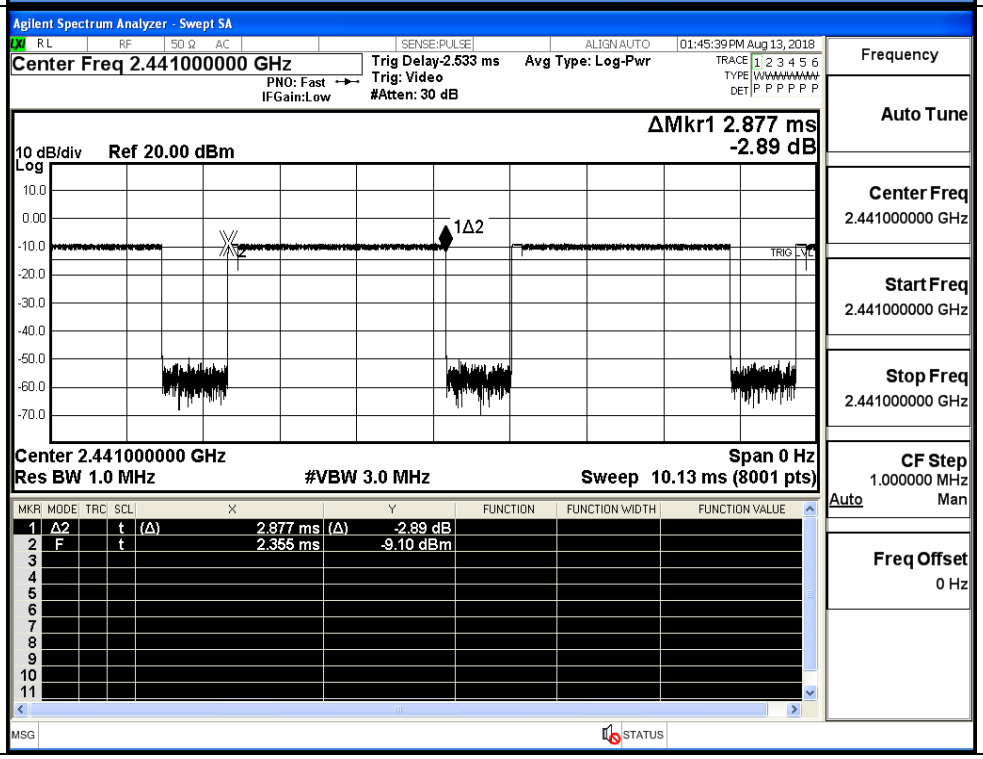
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.87	106.7	0.306	0.4	PASS
	DH5	MCH	2.87	106.7	0.306	0.4	PASS
	DH5	HCH	2.87	106.7	0.306	0.4	PASS
π/4DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7	0.307	0.4	PASS
8DPSK	3DH5	LCH	2.88	106.7	0.307	0.4	PASS
	3DH5	MCH	2.88	106.7	0.307	0.4	PASS
	3DH5	HCH	2.88	106.7	0.307	0.4	PASS

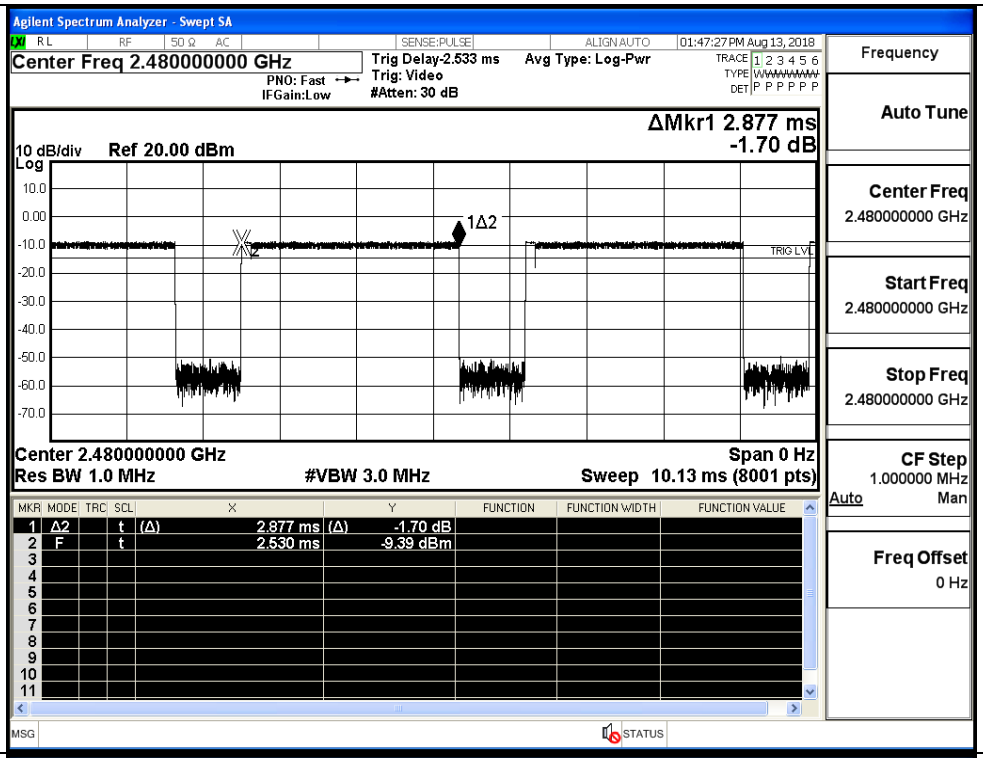
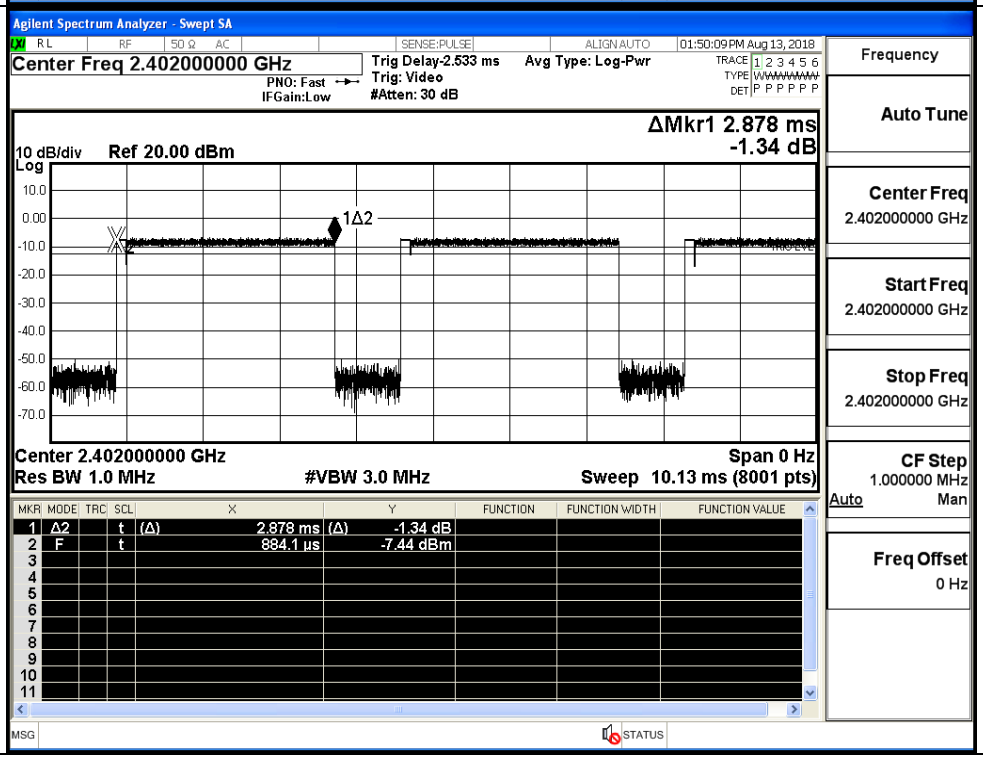
Test Graphs

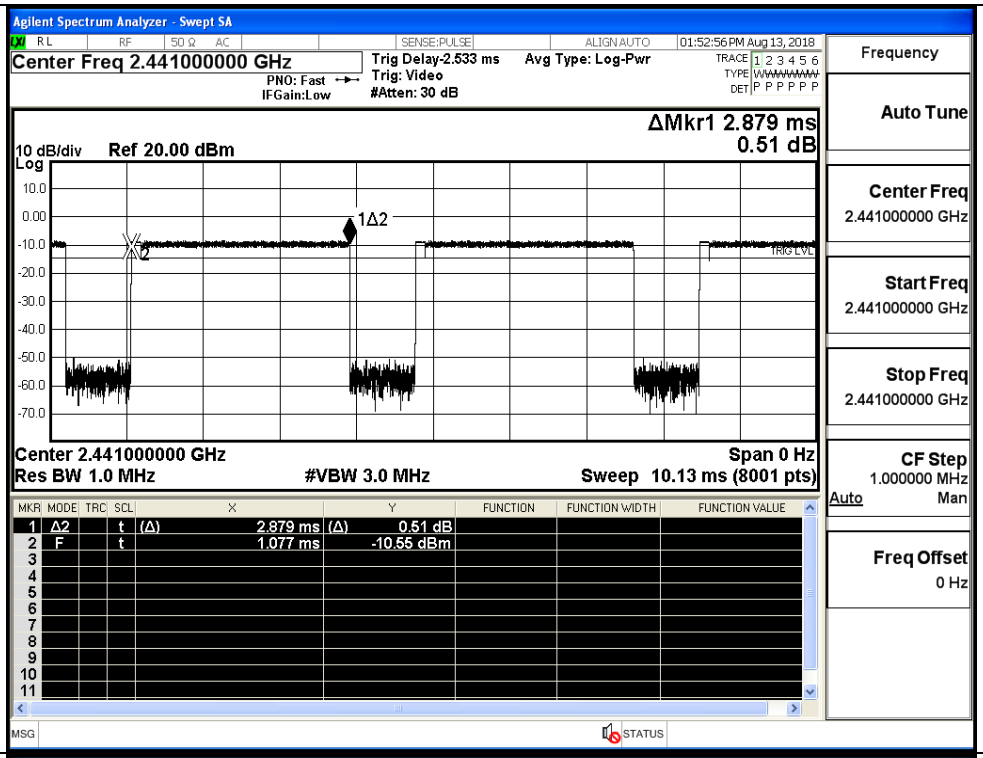
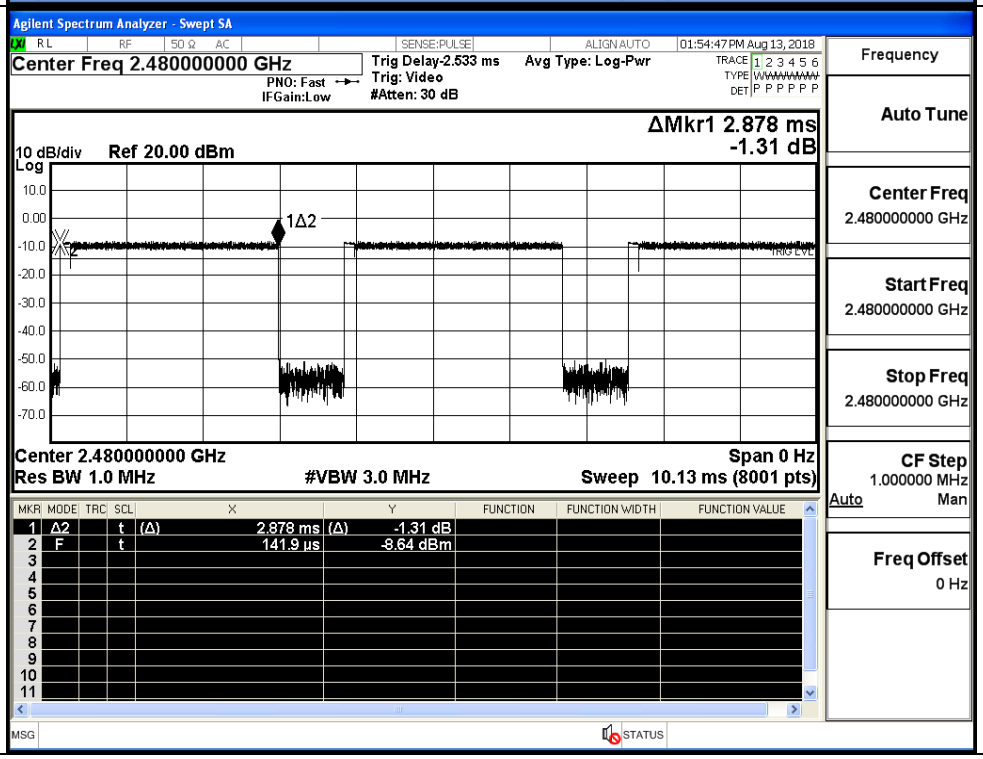
GFSK_DH5/LCH



GFSK_DH5/MCH	
GFSK_DH5/HCH	

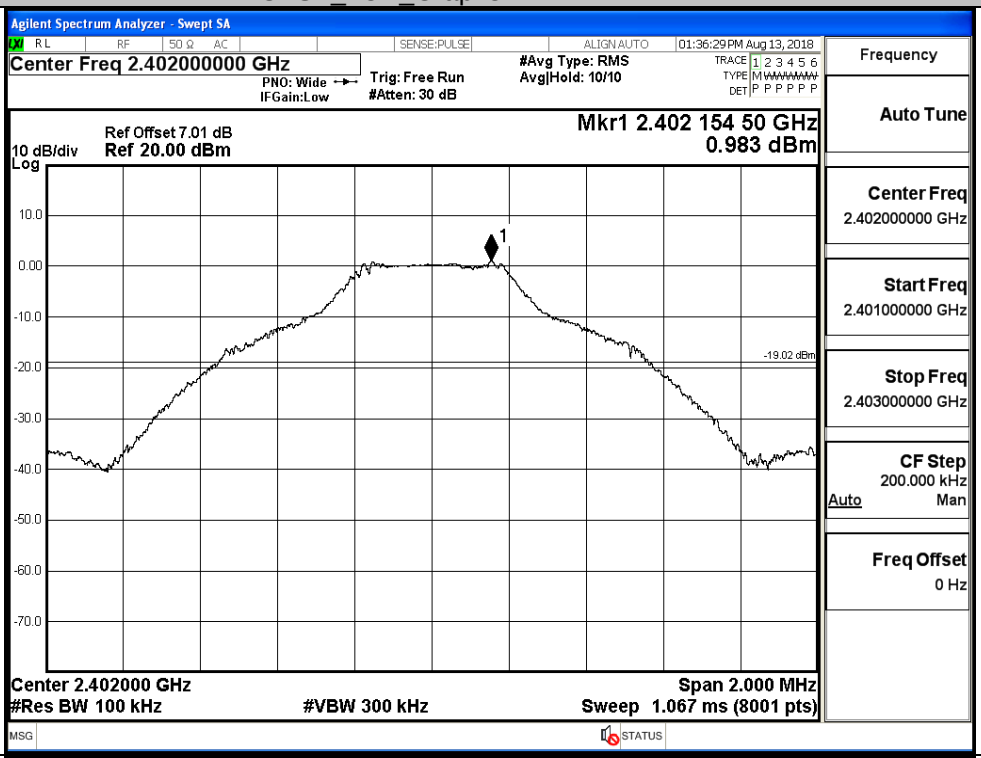
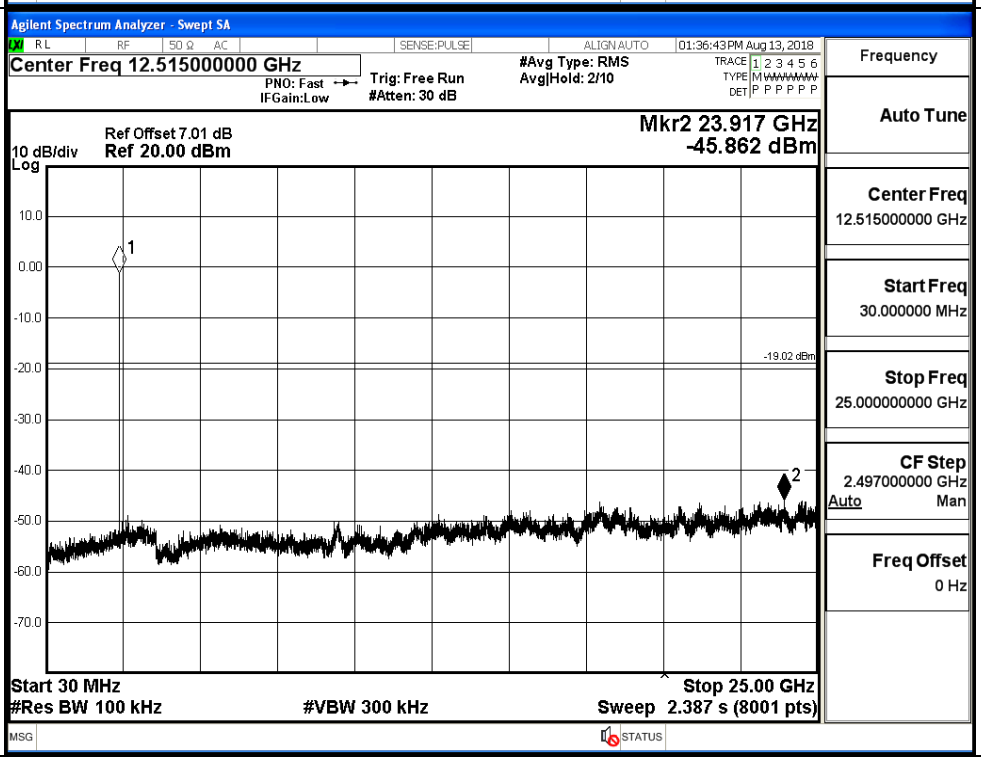
π/4DQPSK _2DH5/LCH	
π/4DQPSK _2DH5/MCH	

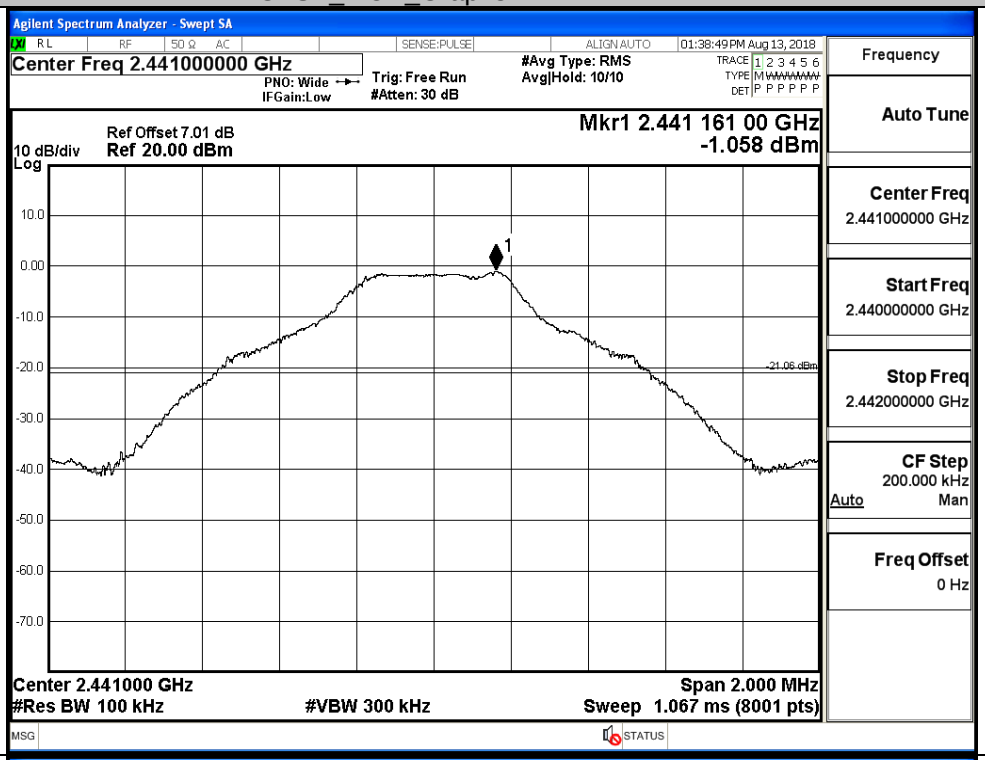
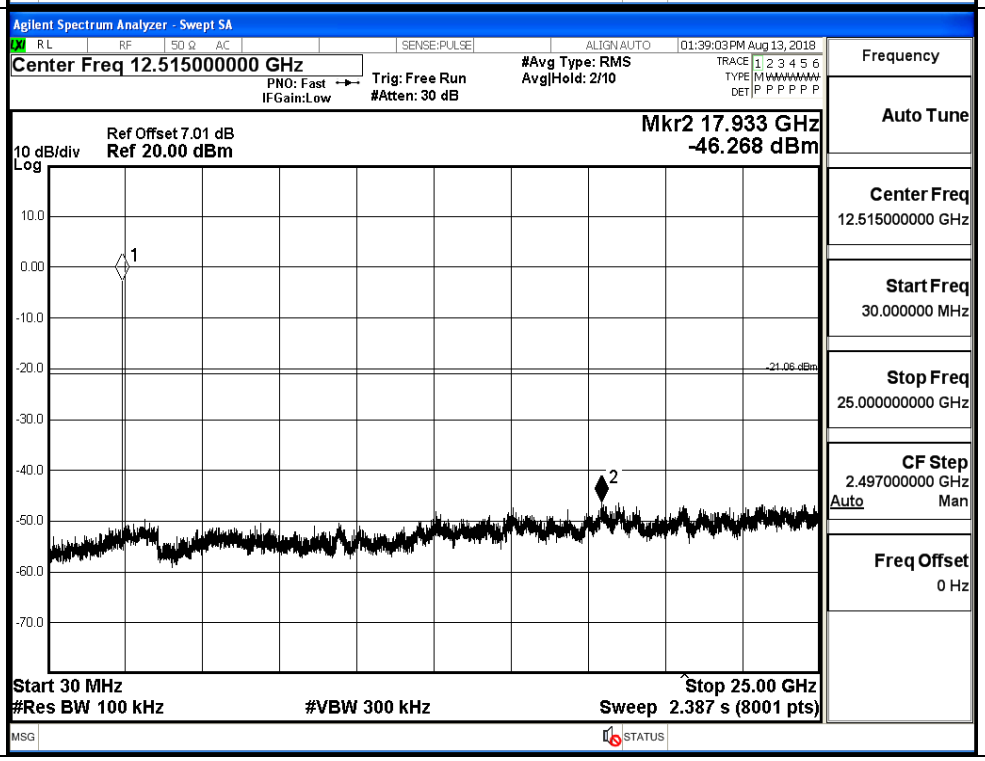
π/4DQPSK _2DH5/HCH	
8DPSK _3DH5/LCH	

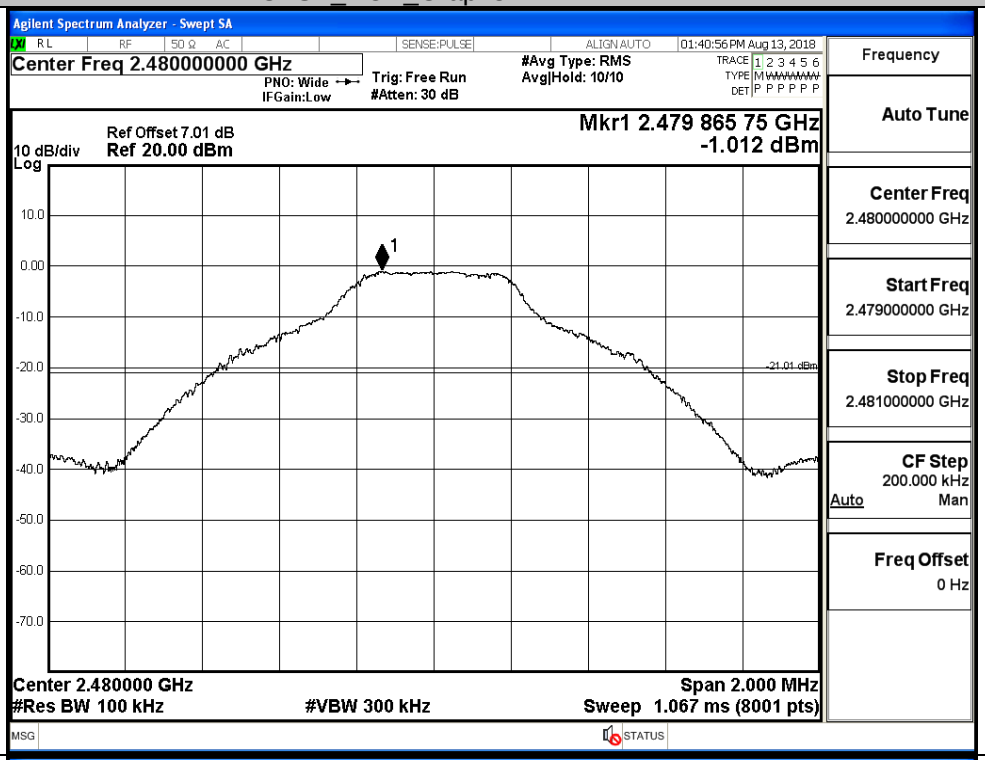
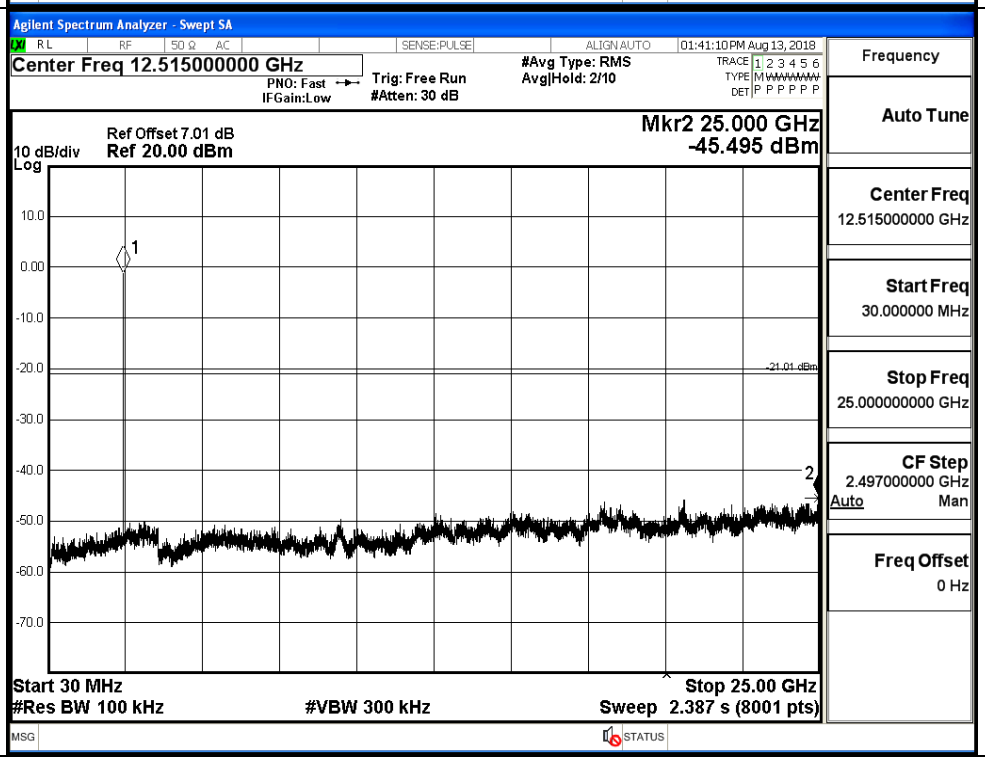
8DPSK _3DH5/MCH	
8DPSK _3DH5/HCH	

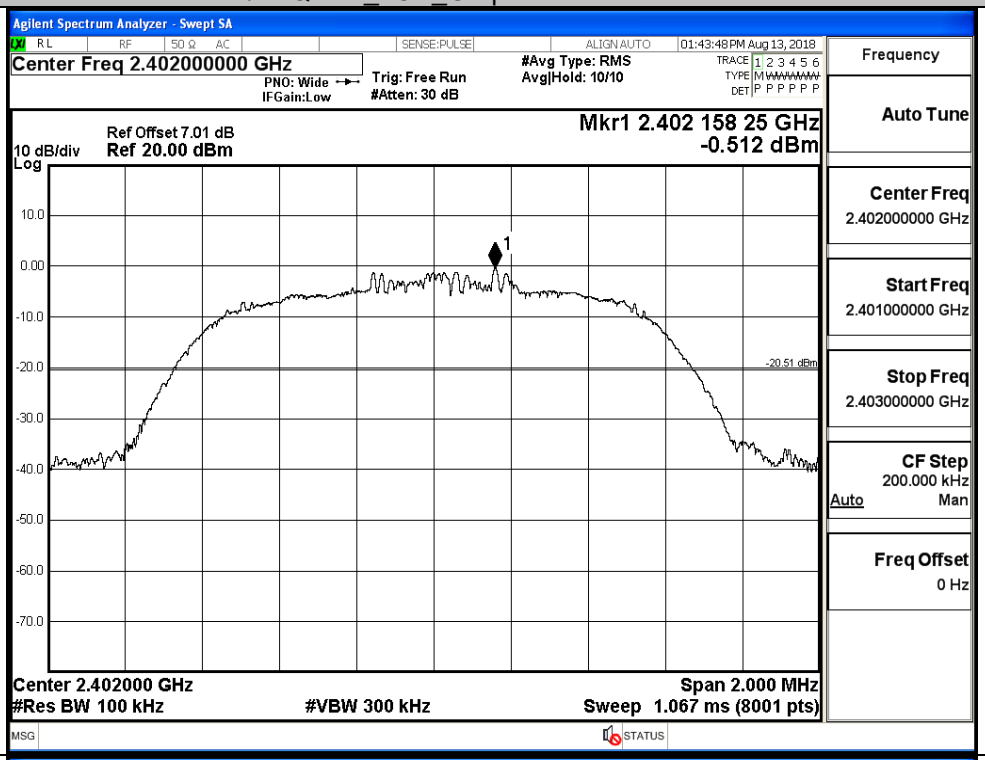
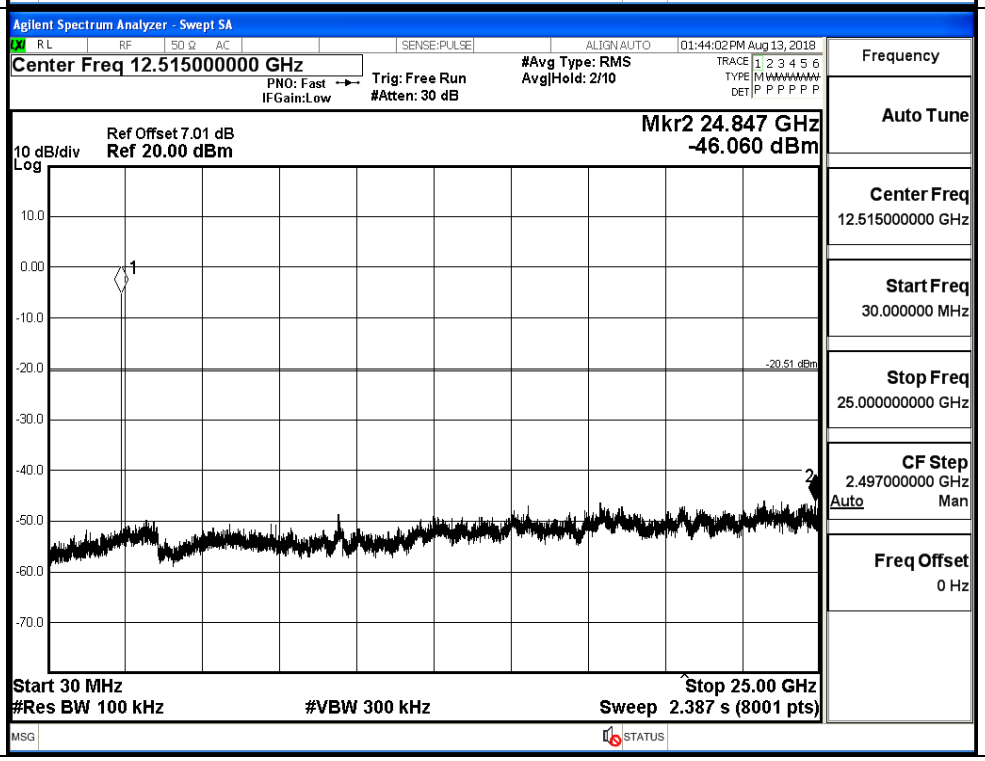
A.6 RF Conducted Spurious Emissions

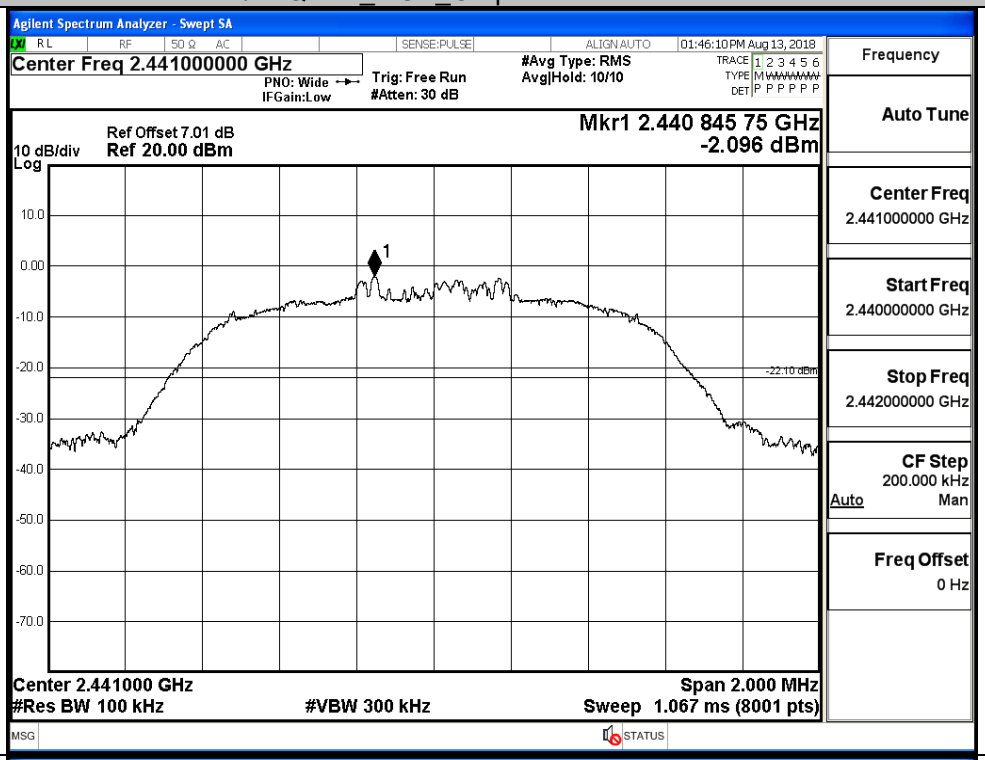
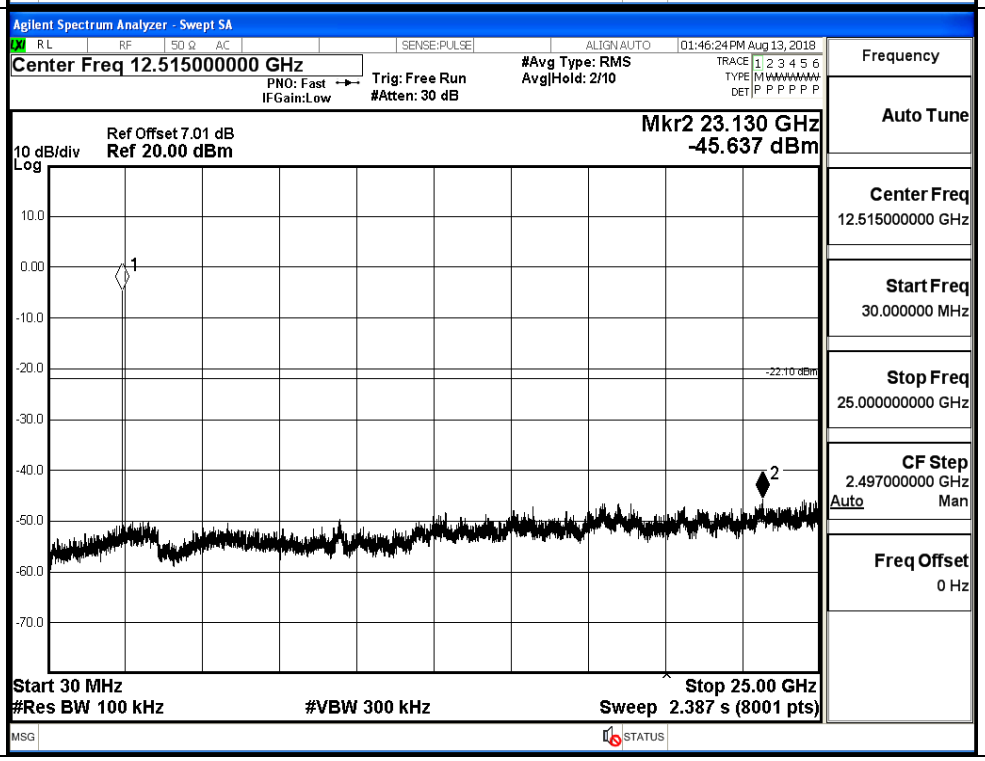
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.983	-45.862	-19.017	PASS
	MCH	-1.058	-46.268	-21.058	PASS
	HCH	-1.012	-45.495	-21.012	PASS
π/4DQPSK	LCH	-0.512	-46.060	-20.512	PASS
	MCH	-2.096	-45.637	-22.096	PASS
	HCH	-2.569	-46.062	-22.569	PASS
8DPSK	LCH	-0.612	-46.246	-20.612	PASS
	MCH	-2.176	-45.639	-22.176	PASS
	HCH	-1.78	-46.008	-21.780	PASS

GFSK_LCH_Graphs			
Pref			
Puw			

GFSK_MCH_Graphs		
Pref		
Puw		

GFSK_HCH_Graphs		
Pref		
Puw		

π/4DQPSK_LCH_Graphs		
Pref		
Puw		

π/4DQPSK_MCH_Graphs		
Pref		
Puw		

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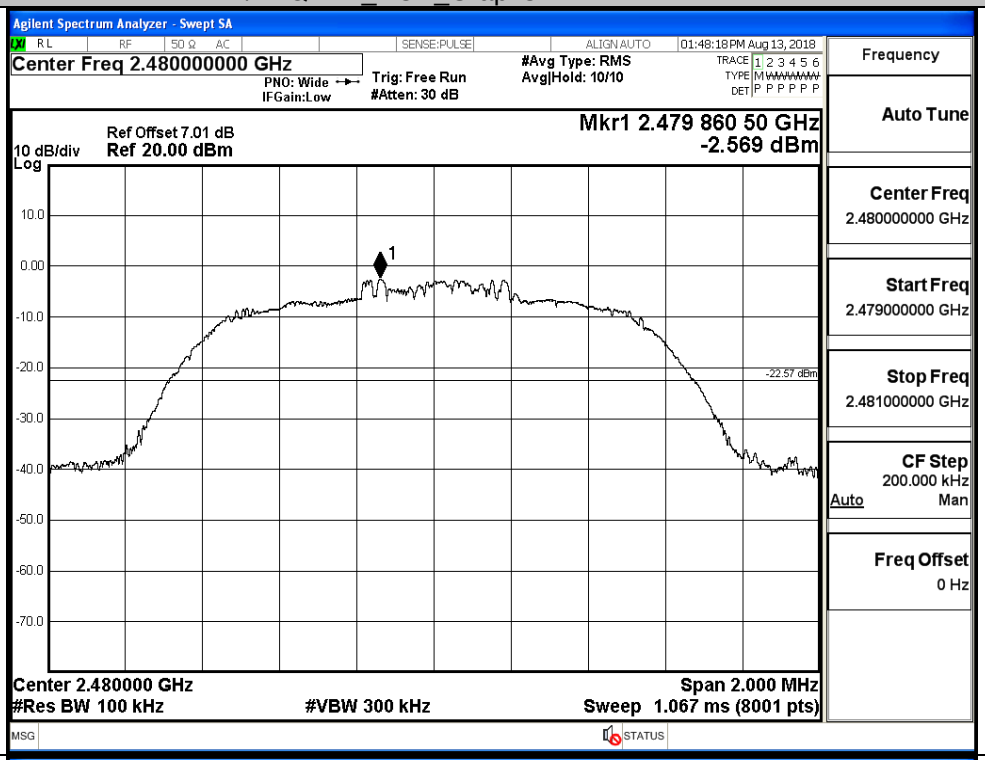
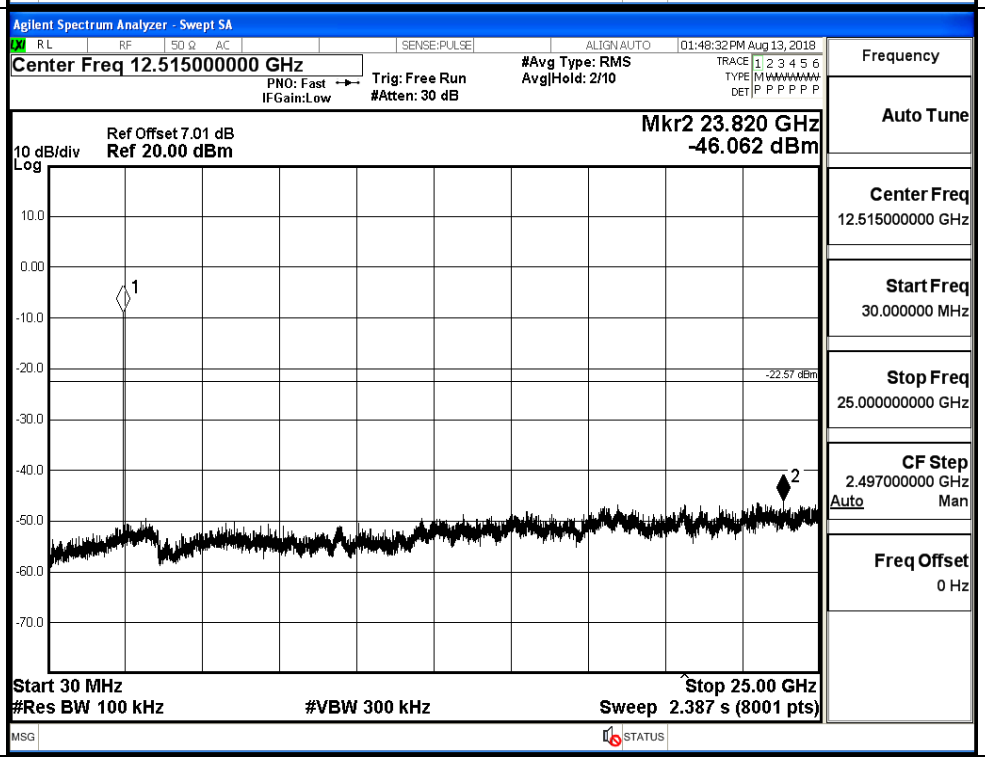
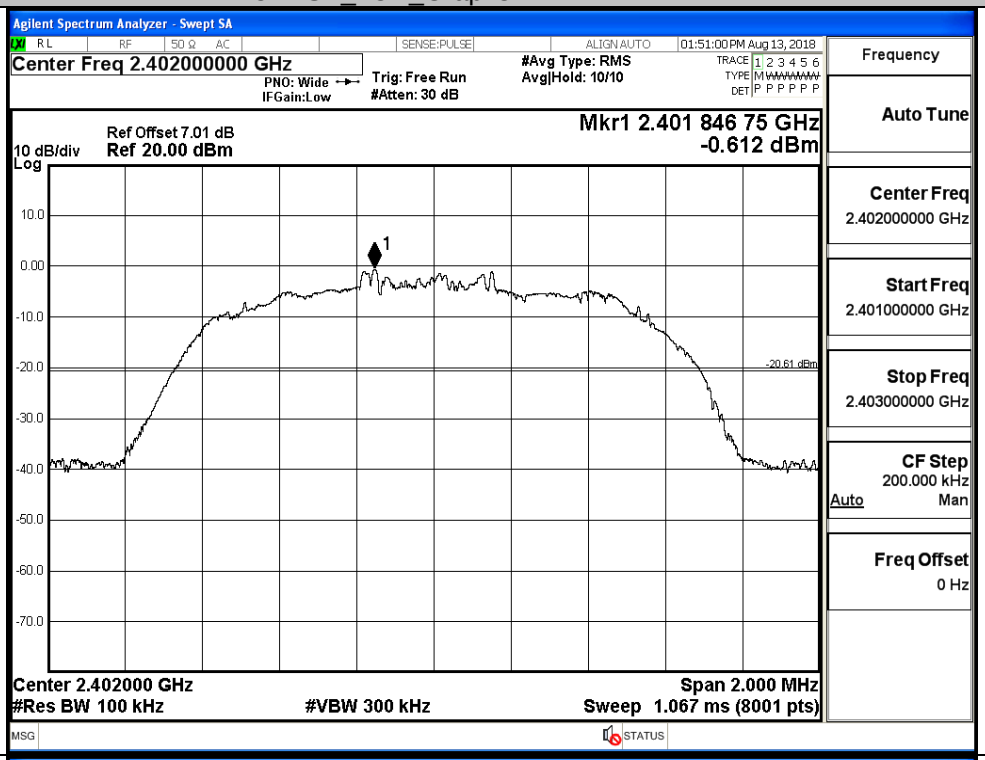
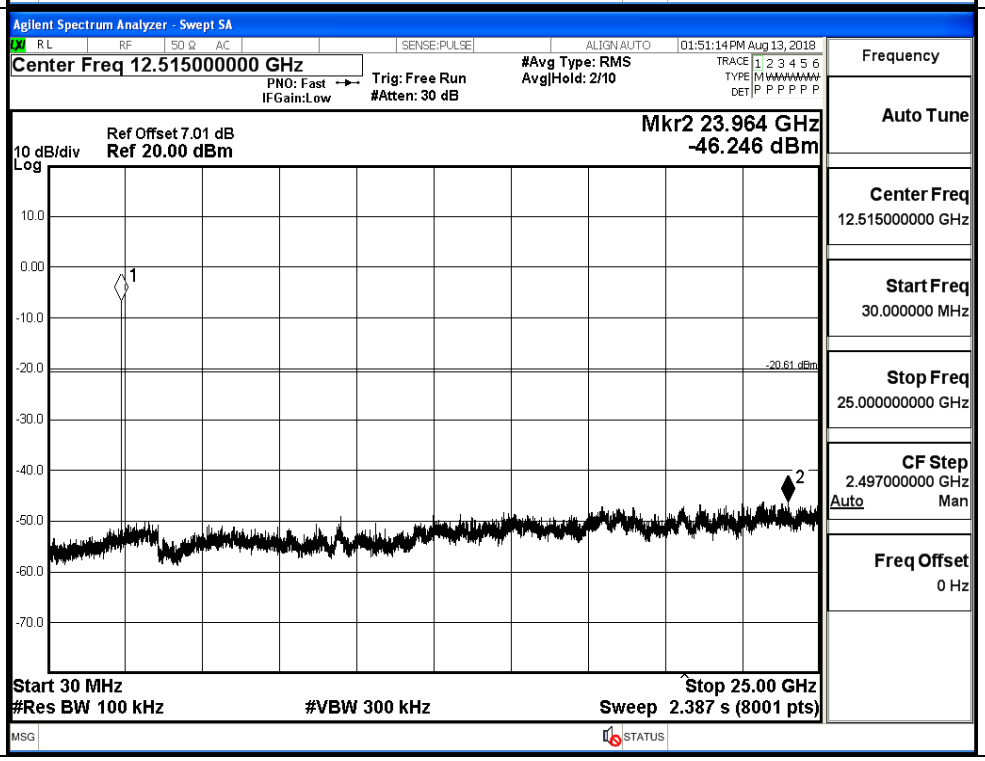
Pref		
Puw		

8DPSK_LCH_Graphs		
Pref		
Puw		

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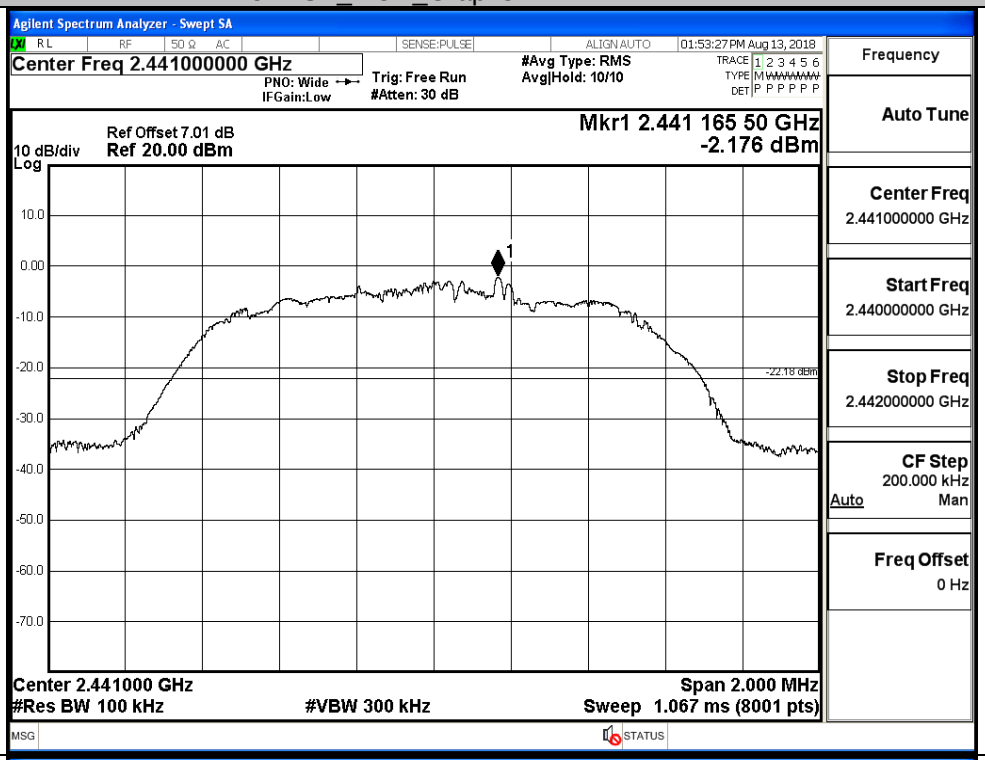
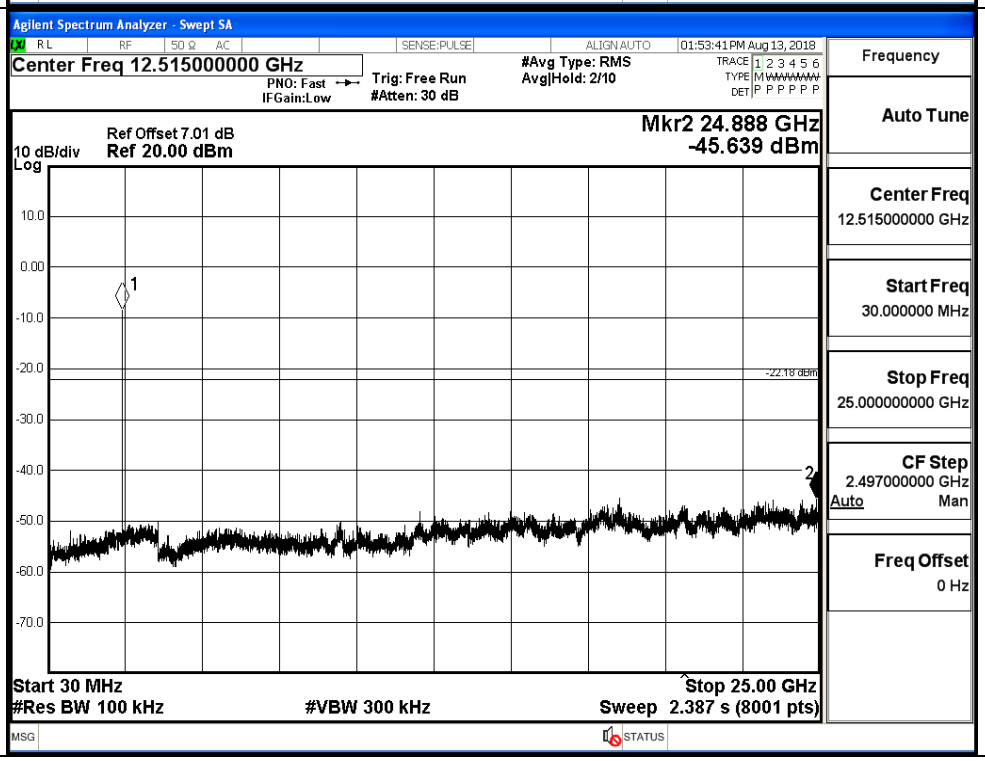
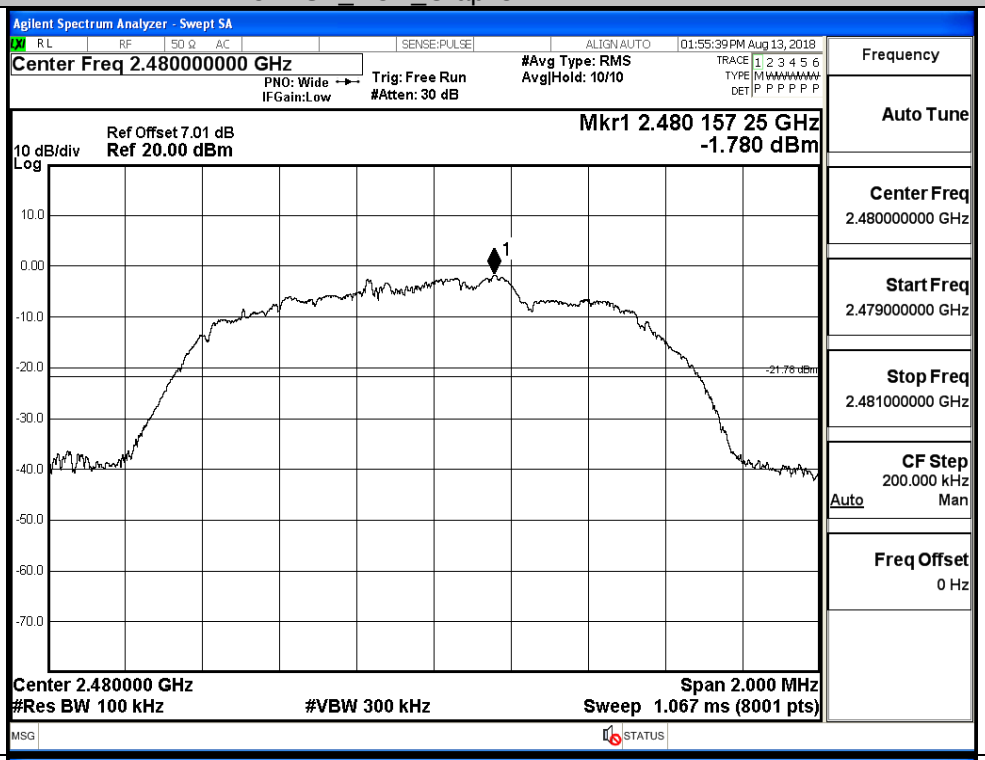
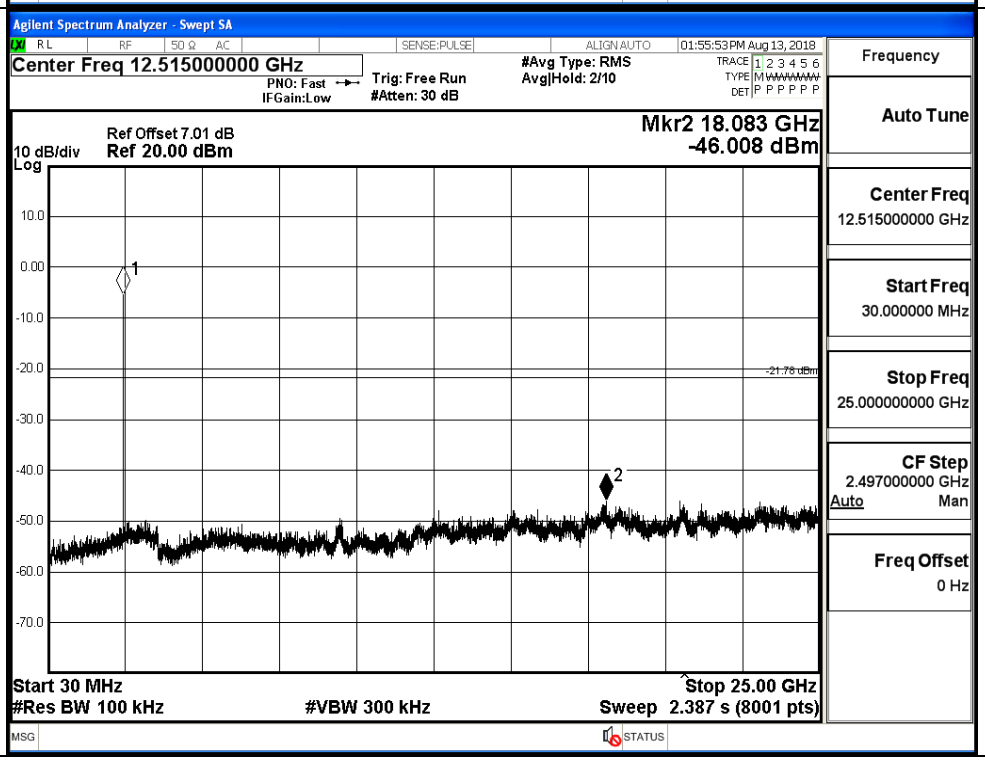
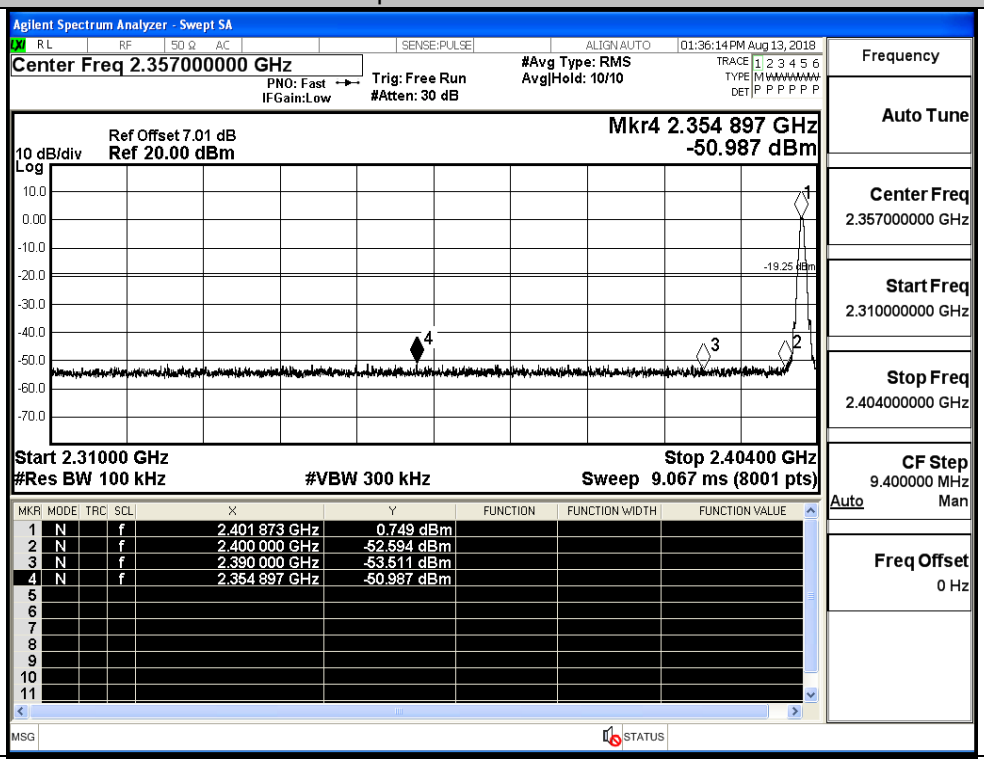
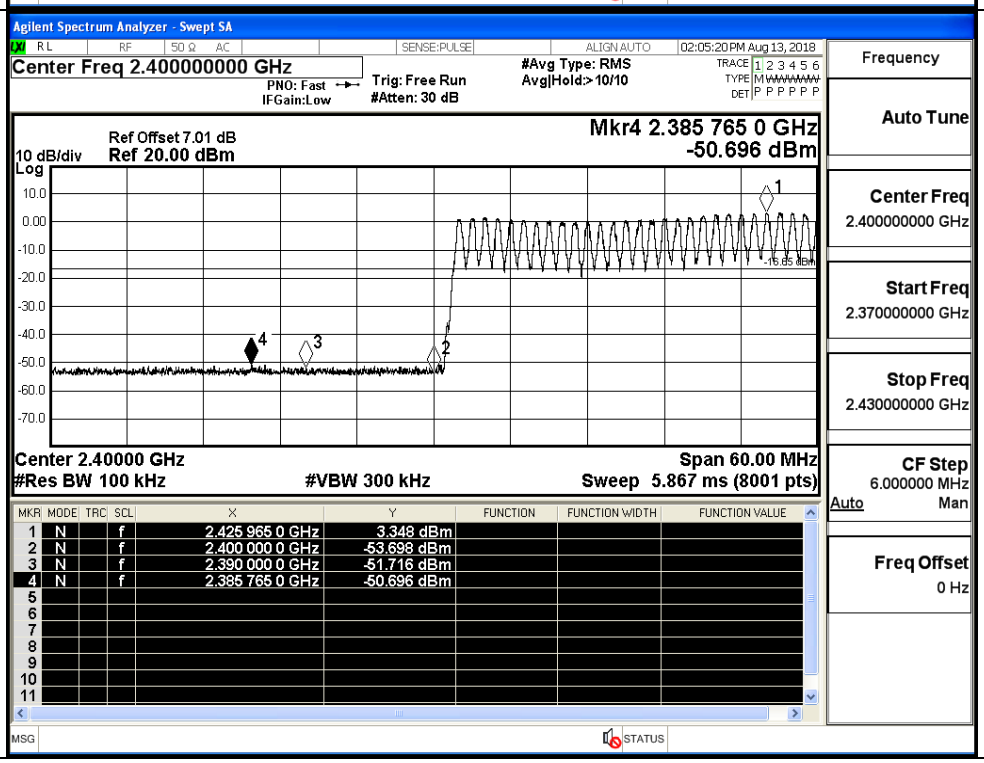
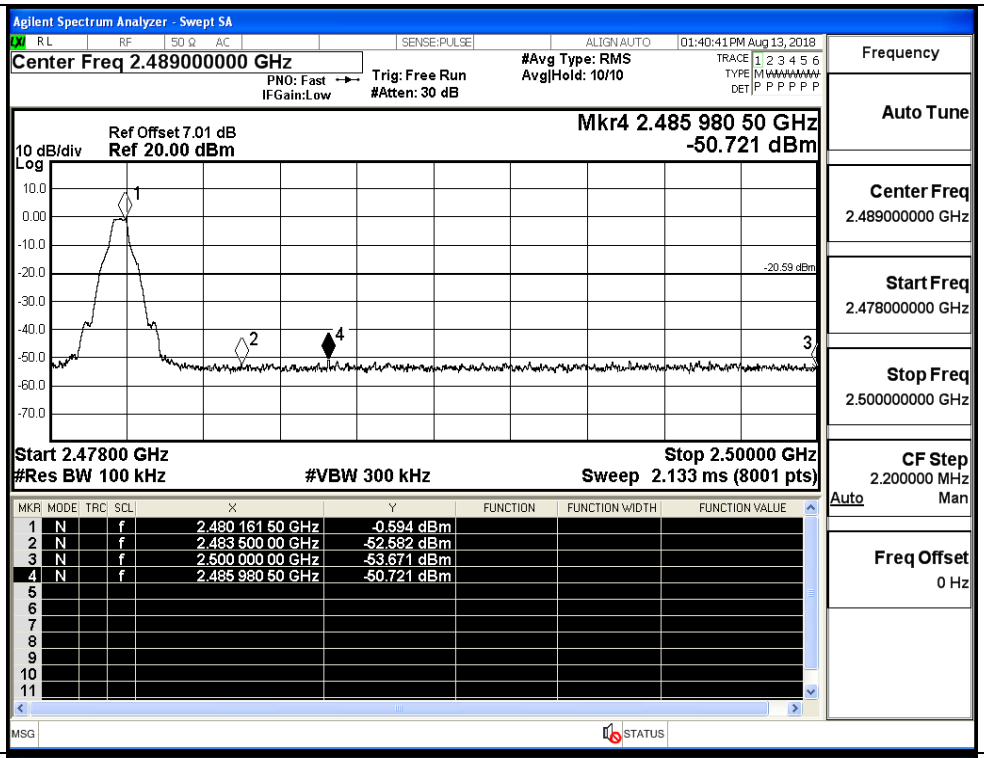
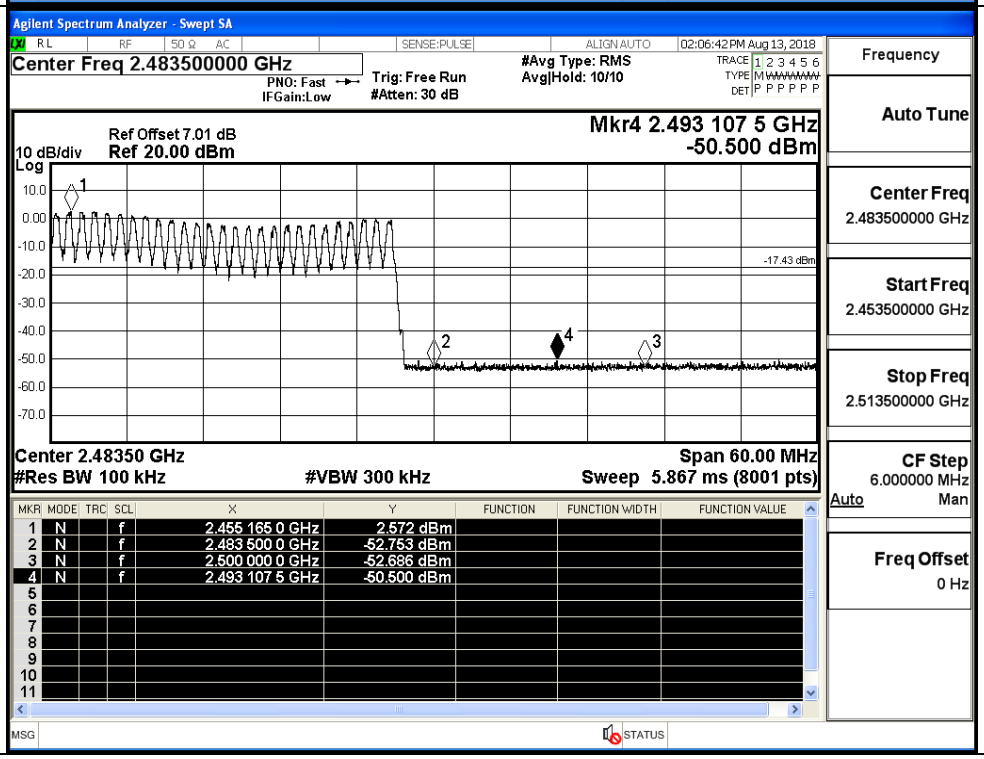
Pref		
Puw		

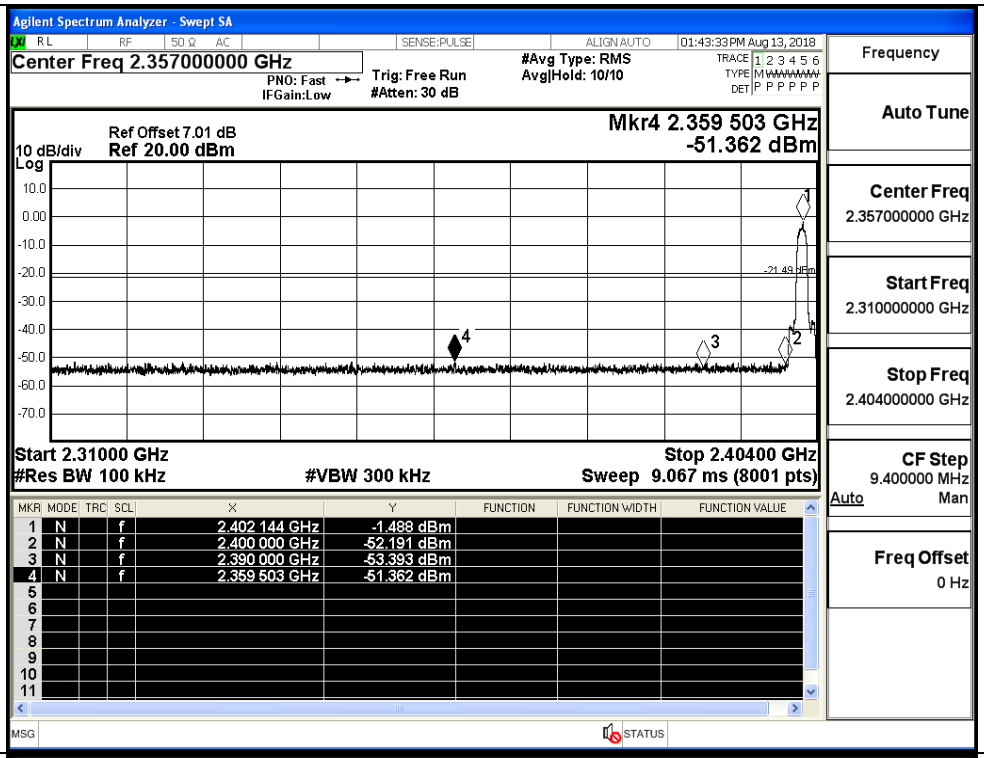
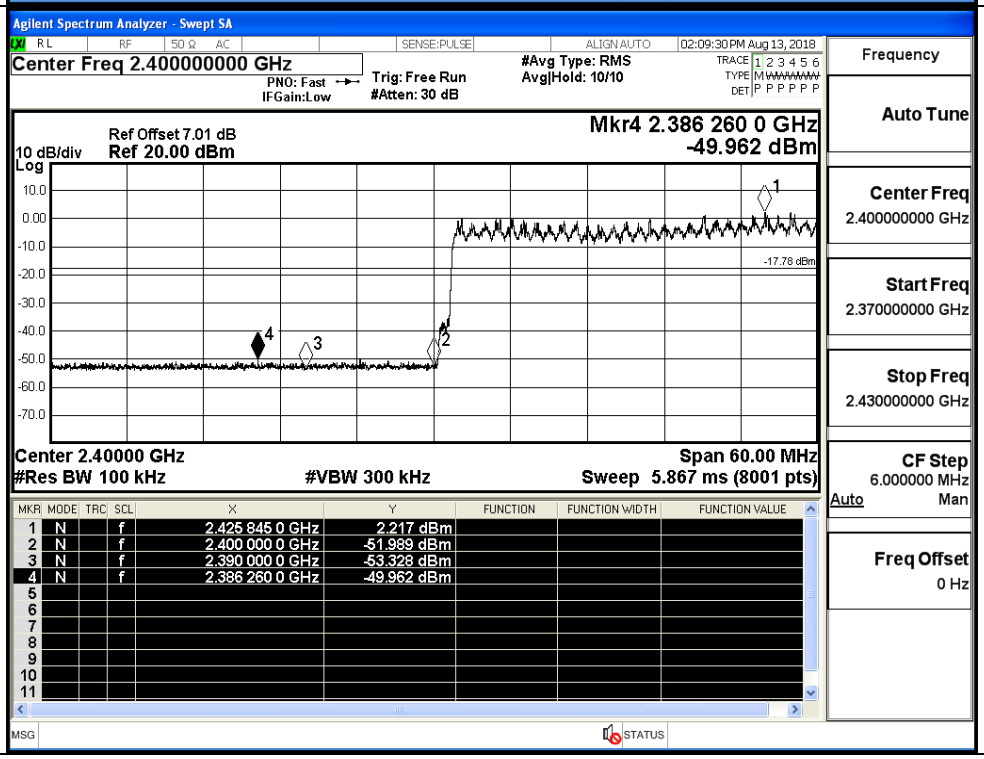
8DPSK_HCH_Graphs		
Pref		
Puw		

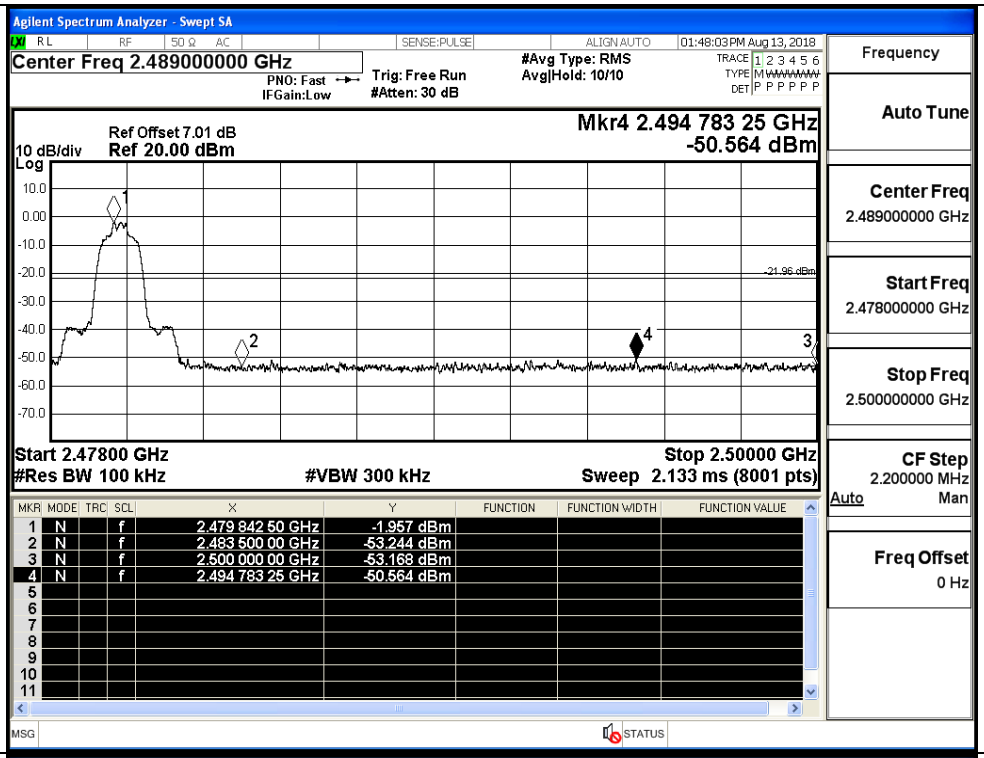
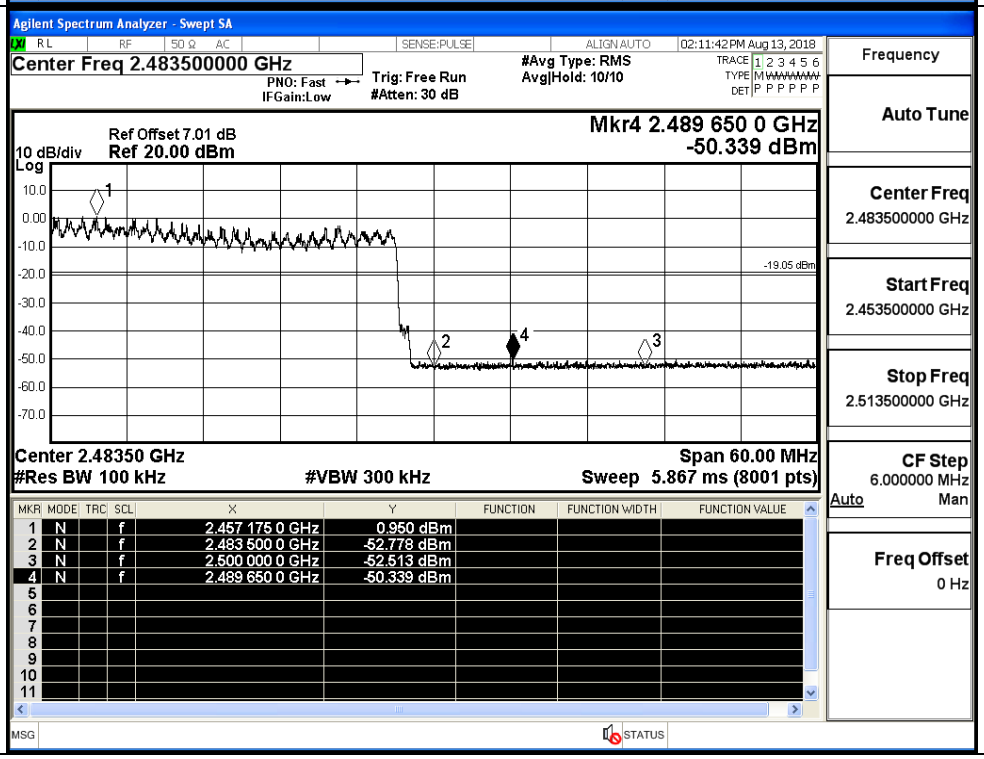
A.7 Band-edge for RF Conducted Emissions

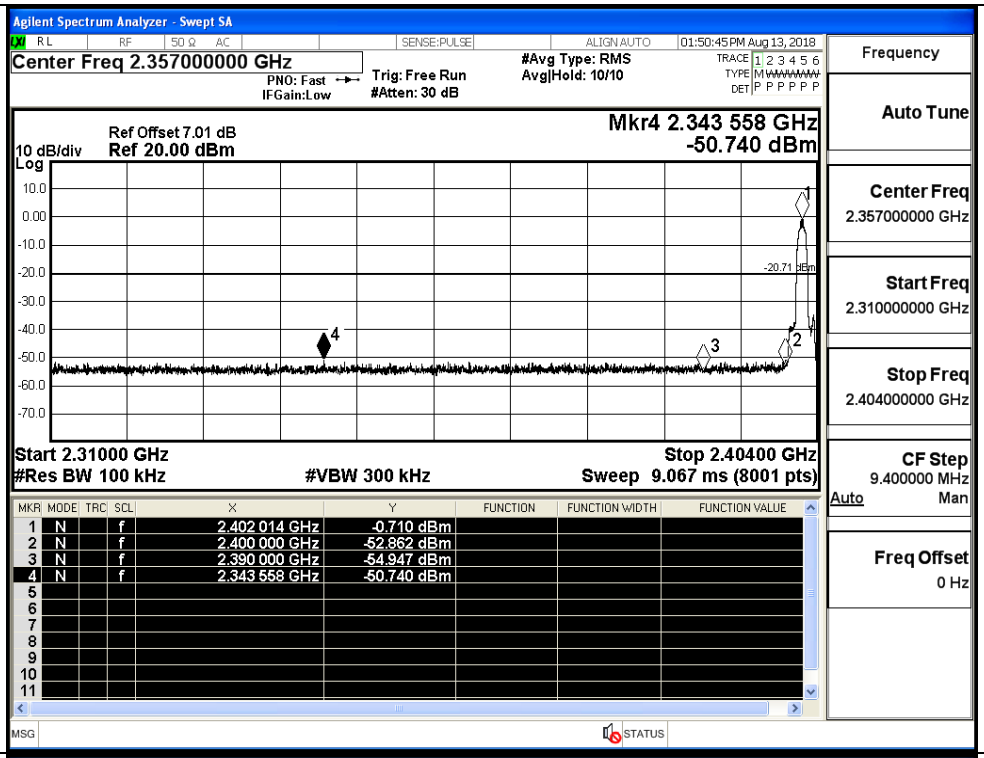
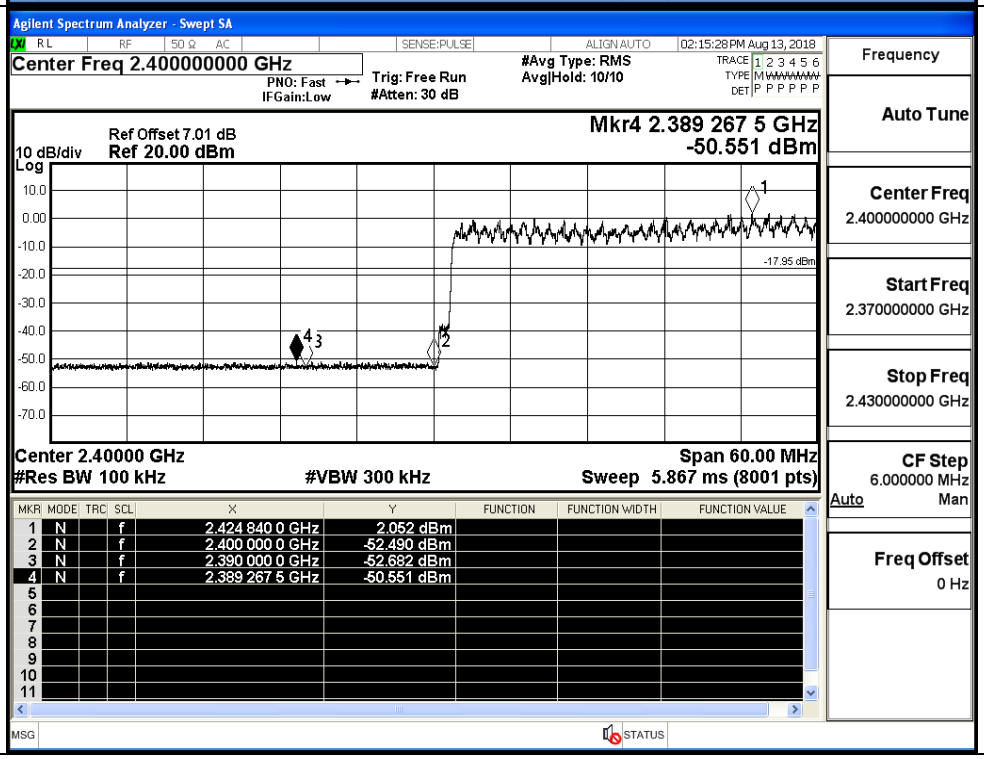
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	0.749	Off	-50.987	-19.25	PASS
			3.348	On	-50.696	-16.65	PASS
	HCH	2480	-0.594	Off	-50.721	-20.59	PASS
			2.572	On	-50.500	-17.43	PASS
π/4DQPSK	LCH	2402	-1.488	Off	-51.362	-21.49	PASS
			2.217	On	-49.962	-17.78	PASS
	HCH	2480	-1.957	Off	-50.564	-21.96	PASS
			0.950	On	-50.339	-19.05	PASS
8DPSK	LCH	2402	-0.710	Off	-50.740	-20.71	PASS
			2.052	On	-50.551	-17.95	PASS
	HCH	2480	-1.650	Off	-49.409	-21.65	PASS
			0.943	On	-49.921	-19.06	PASS

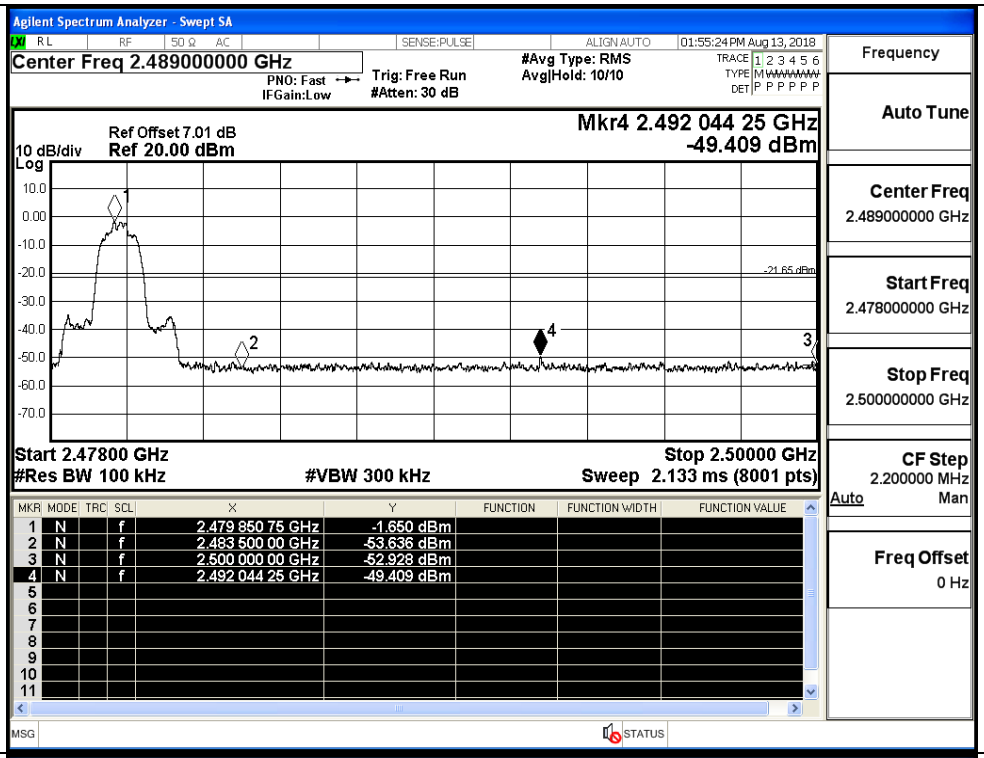
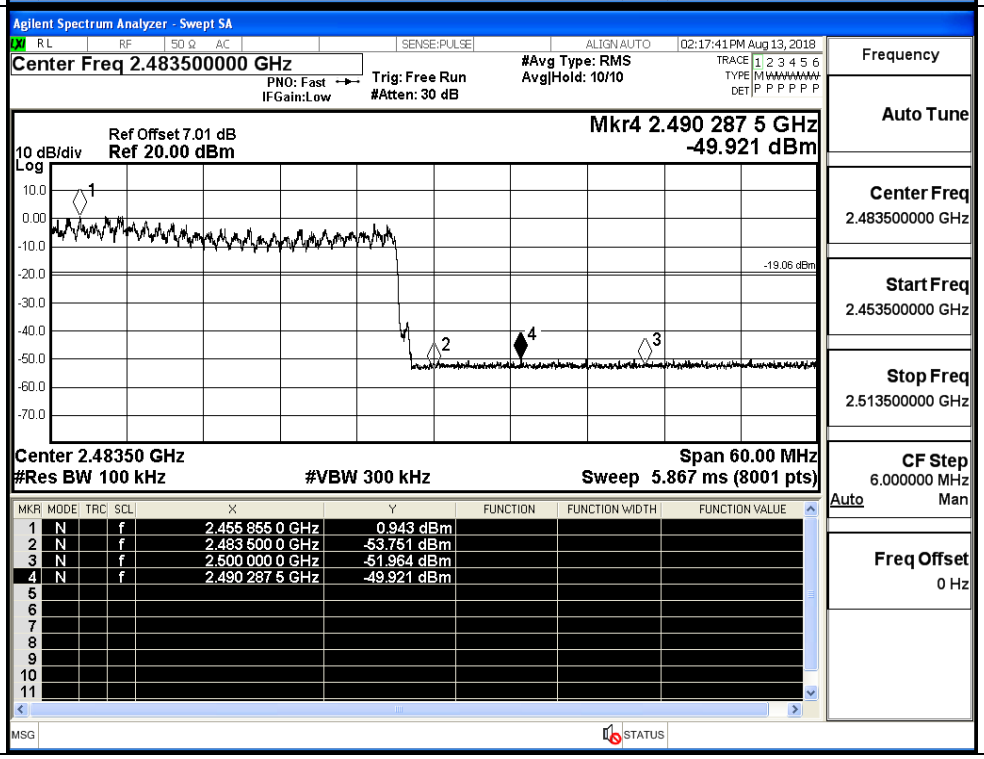
Test Graphs	
GFSK/LCH/No Hop	
GFSK/LCH/Hop	

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	

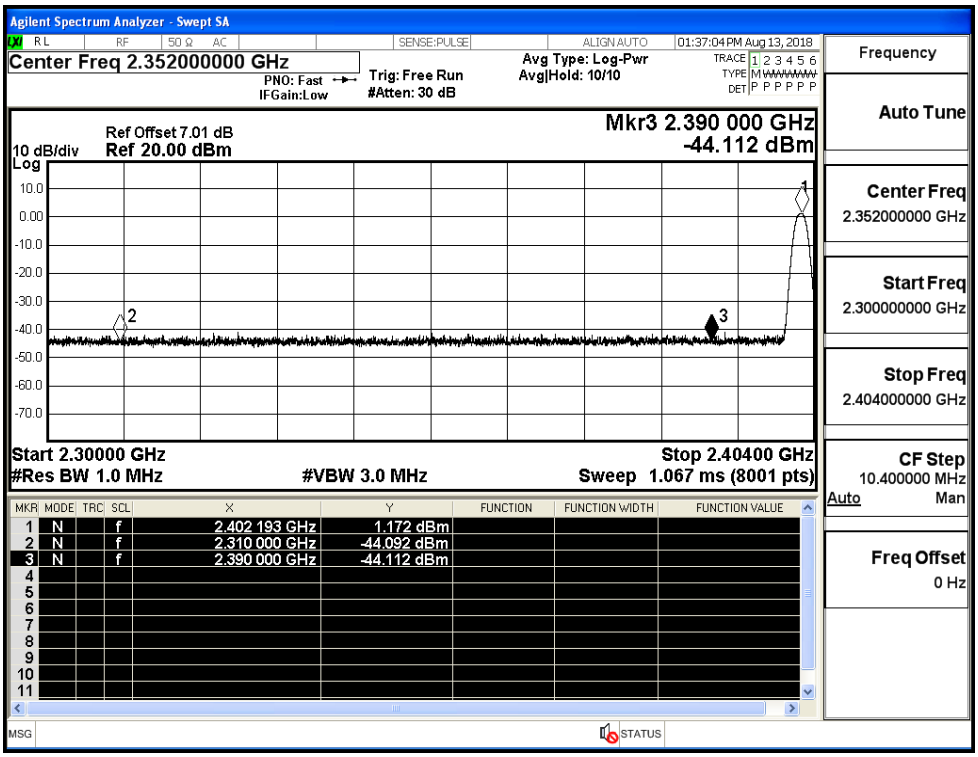
8DPSK/LCH/No Hop	
8DPSK/LCH/Hop	

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

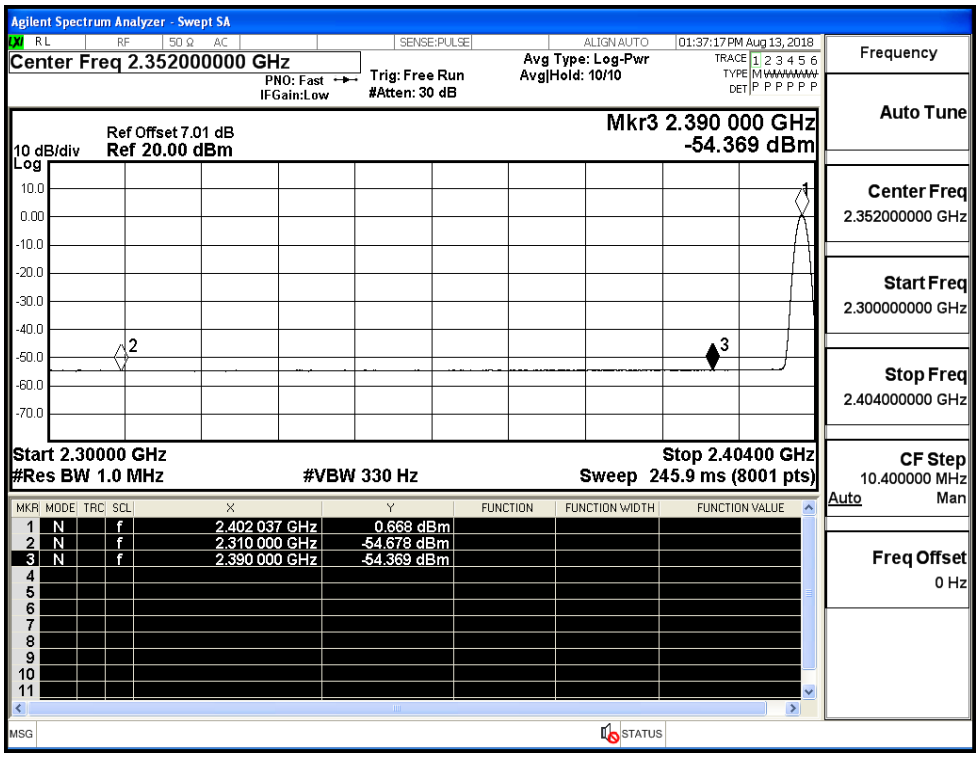
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-44.09	2.0	0	53.17	PEAK	74	PASS
	Off	2310.0	-54.68	2.0	0	42.58	AV	54	PASS
	Off	2390.0	-44.11	2.0	0	53.15	PEAK	74	PASS
	Off	2390.0	-54.37	2.0	0	42.89	AV	54	PASS
	Off	2483.5	-44.27	2.0	0	52.99	PEAK	74	PASS
	Off	2483.5	-54.22	2.0	0	43.04	AV	54	PASS
	Off	2500.0	-42.89	2.0	0	54.37	PEAK	74	PASS
	Off	2500.0	-54.02	2.0	0	43.24	AV	54	PASS
π/4DQPSK	Off	2310.0	-45.44	2.0	0	51.82	PEAK	74	PASS
	Off	2310.0	-54.61	2.0	0	42.65	AV	54	PASS
	Off	2390.0	-43.96	2.0	0	53.29	PEAK	74	PASS
	Off	2390.0	-54.40	2.0	0	42.86	AV	54	PASS
	Off	2483.5	-44.14	2.0	0	53.11	PEAK	74	PASS
	Off	2483.5	-54.05	2.0	0	43.21	AV	54	PASS
	Off	2500.0	-43.21	2.0	0	54.04	PEAK	74	PASS
	Off	2500.0	-54.05	2.0	0	43.21	AV	54	PASS
8DPSK	Off	2310.0	-43.68	2.0	0	53.58	PEAK	74	PASS
	Off	2310.0	-54.70	2.0	0	42.56	AV	54	PASS
	Off	2390.0	-44.14	2.0	0	53.12	PEAK	74	PASS
	Off	2390.0	-54.41	2.0	0	42.85	AV	54	PASS
	Off	2483.5	-44.29	2.0	0	52.96	PEAK	74	PASS
	Off	2483.5	-54.04	2.0	0	43.21	AV	54	PASS
	Off	2500.0	-41.79	2.0	0	55.47	PEAK	74	PASS
	Off	2500.0	-54.09	2.0	0	43.17	AV	54	PASS

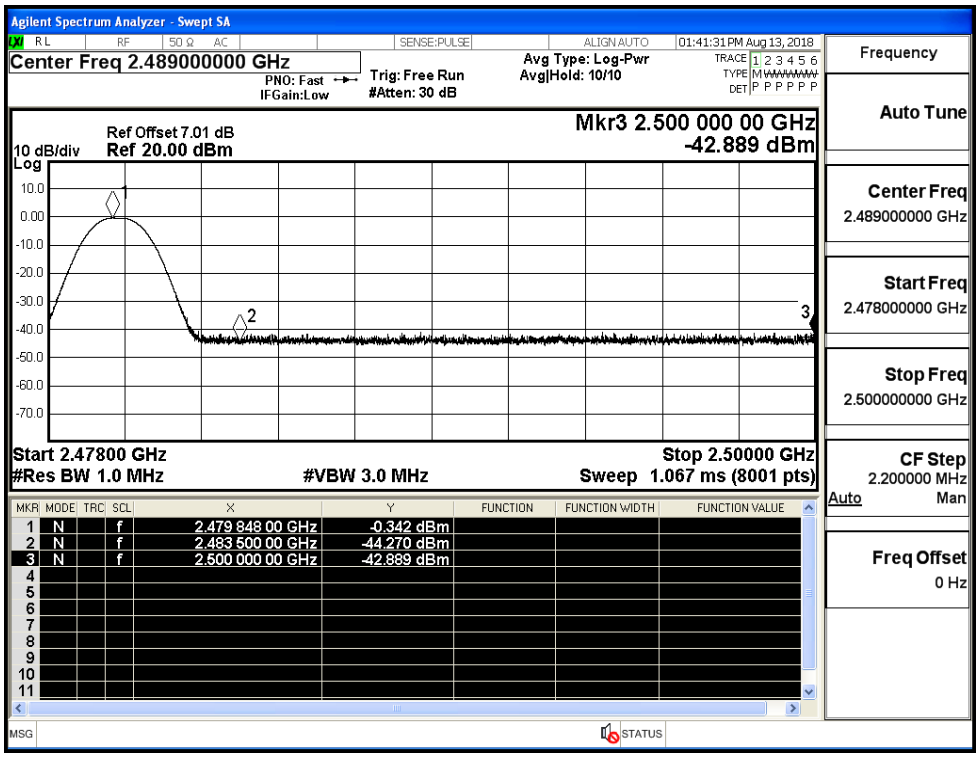
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



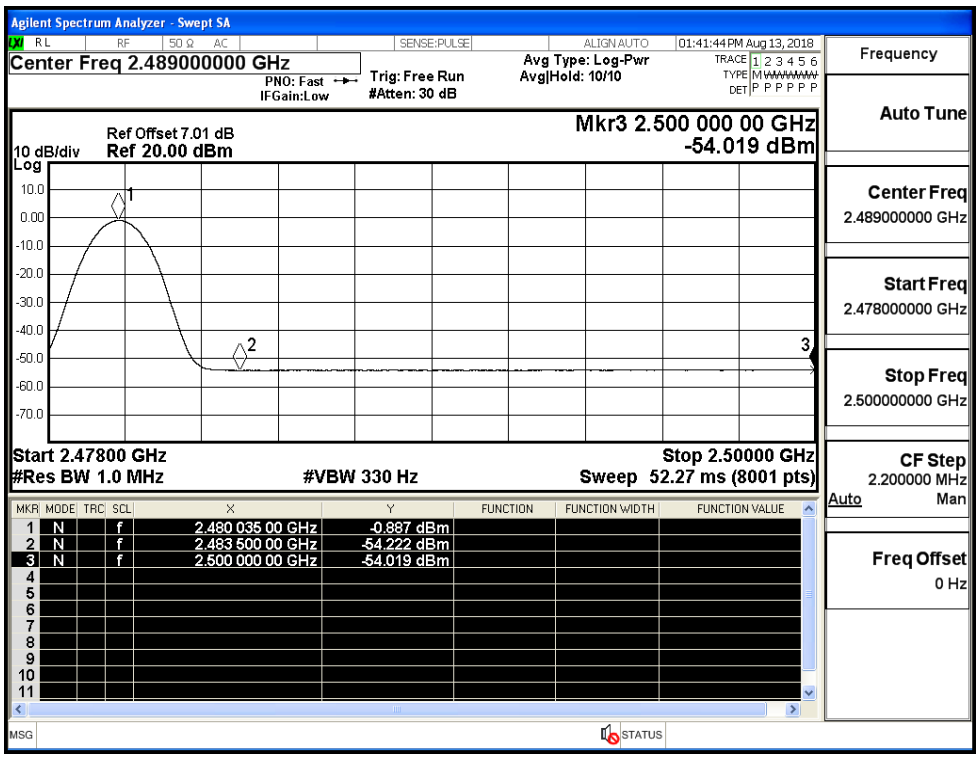
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)



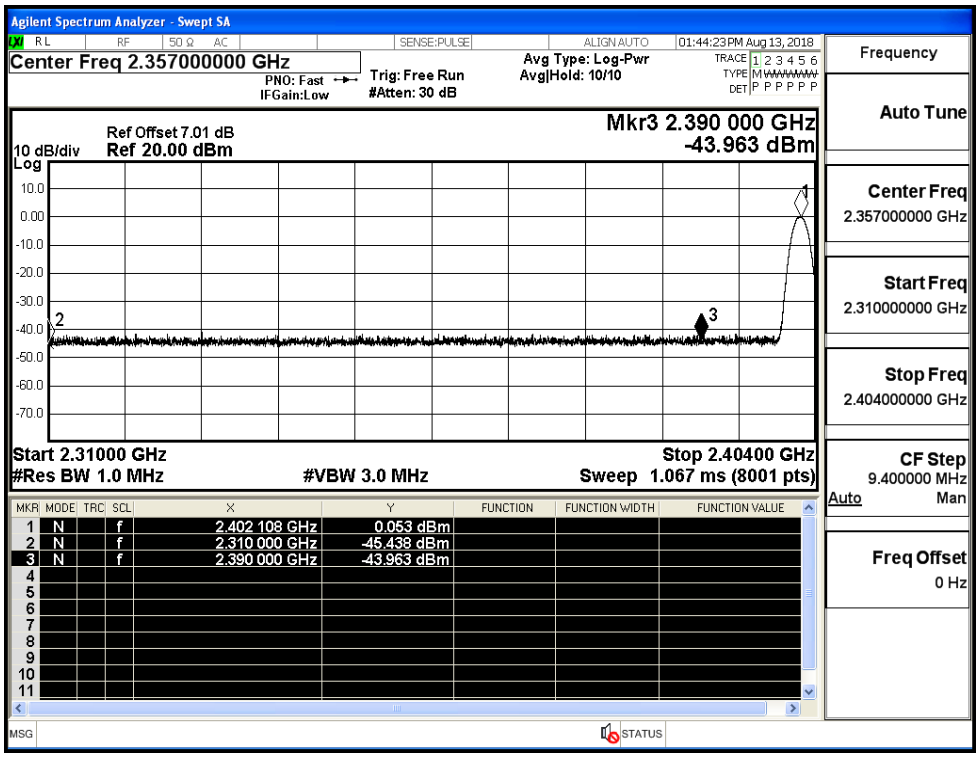
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



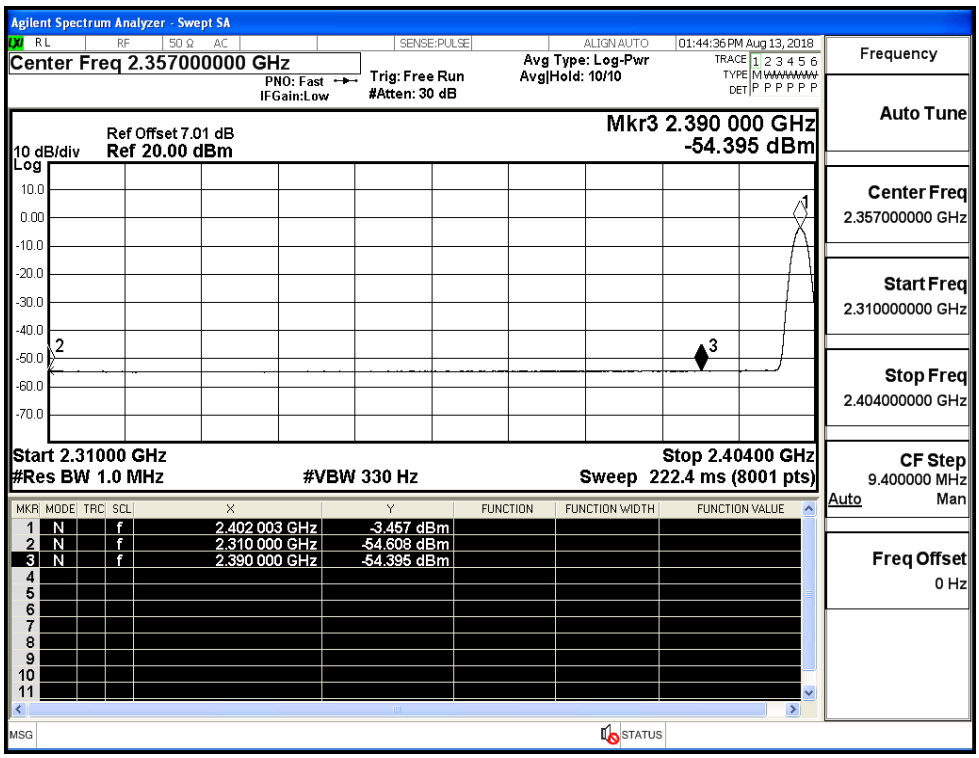
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



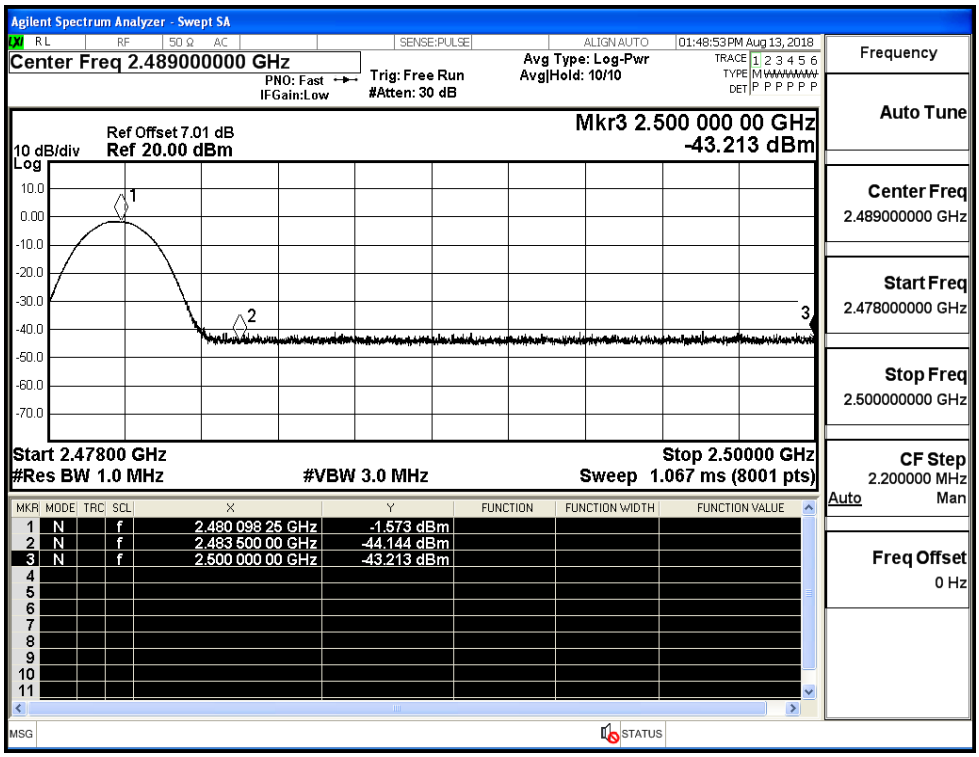
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



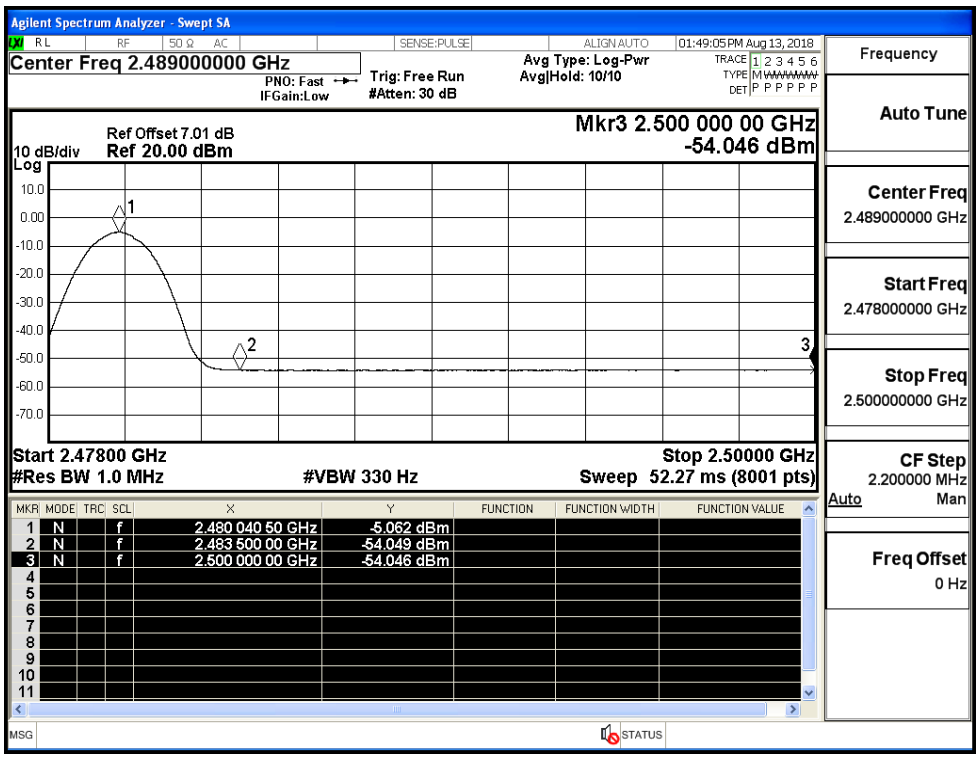
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



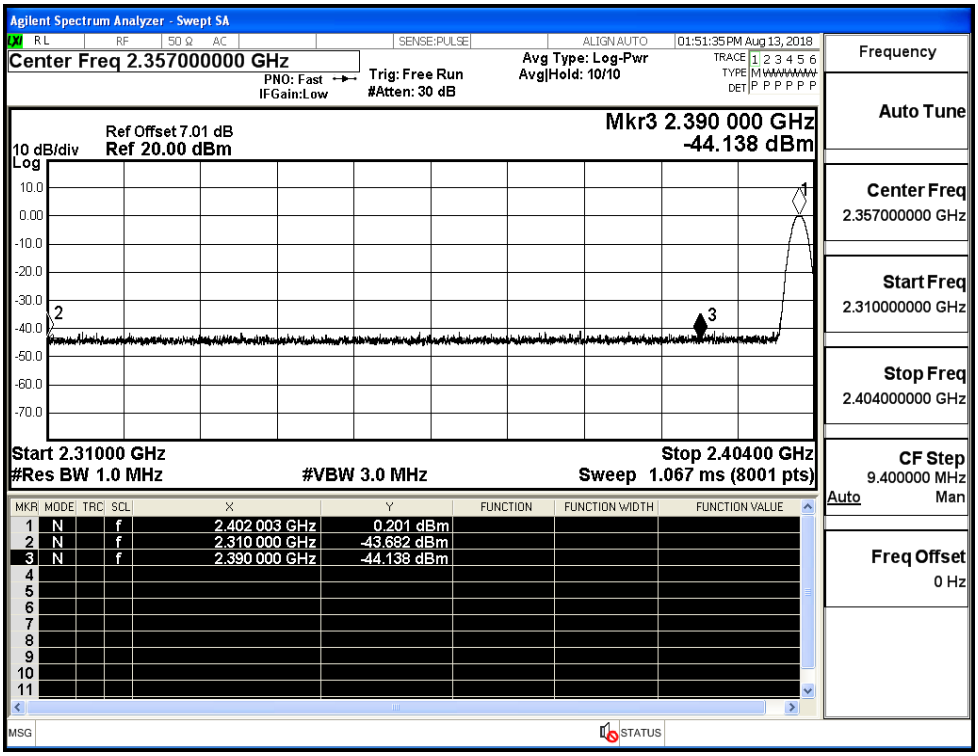
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



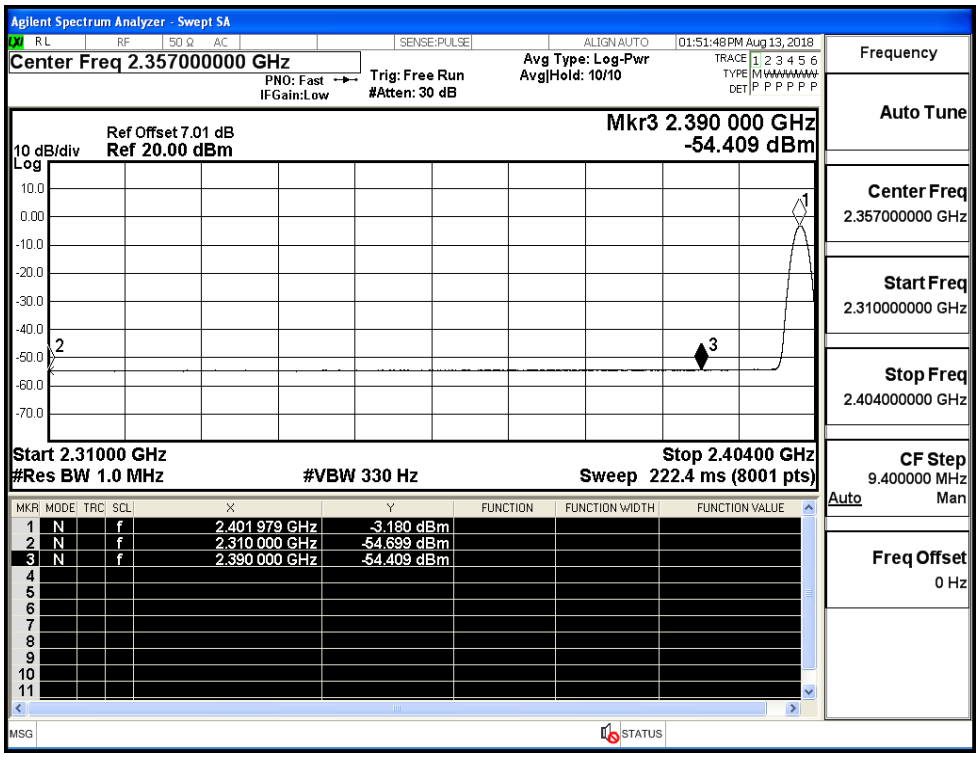
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



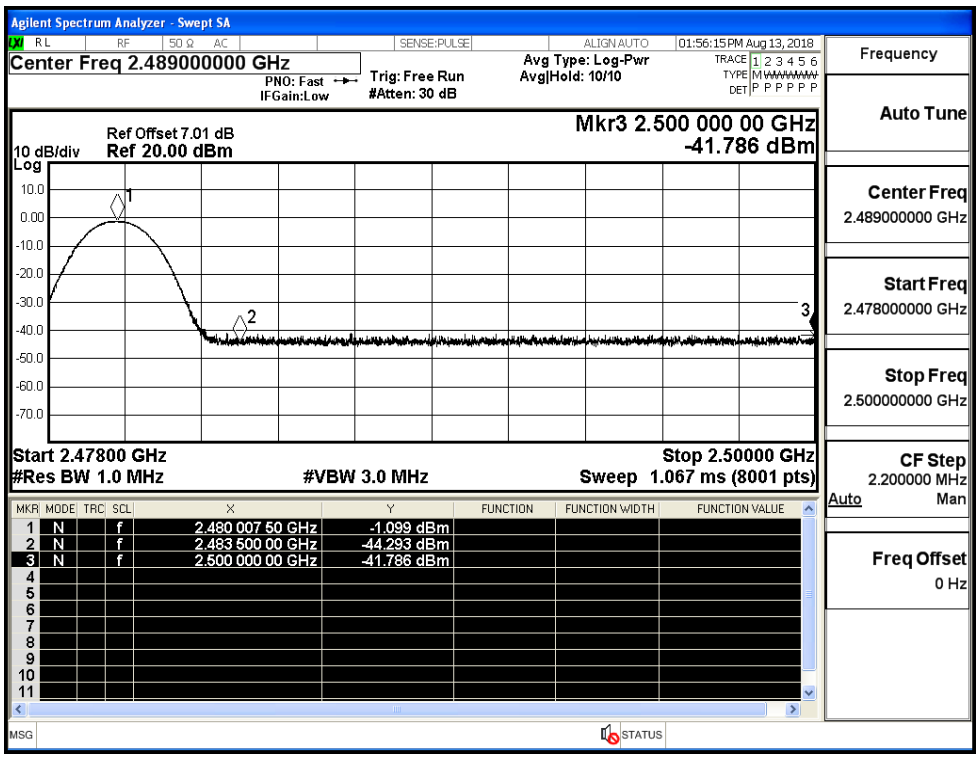
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)