Appendix A

RF Test Data for BT V5.0(BDR/EDR) (Conducted Measurement)

Product Name: 32”Slim Bluetooth Sound Bar Speaker

Trade Mark: NAXA

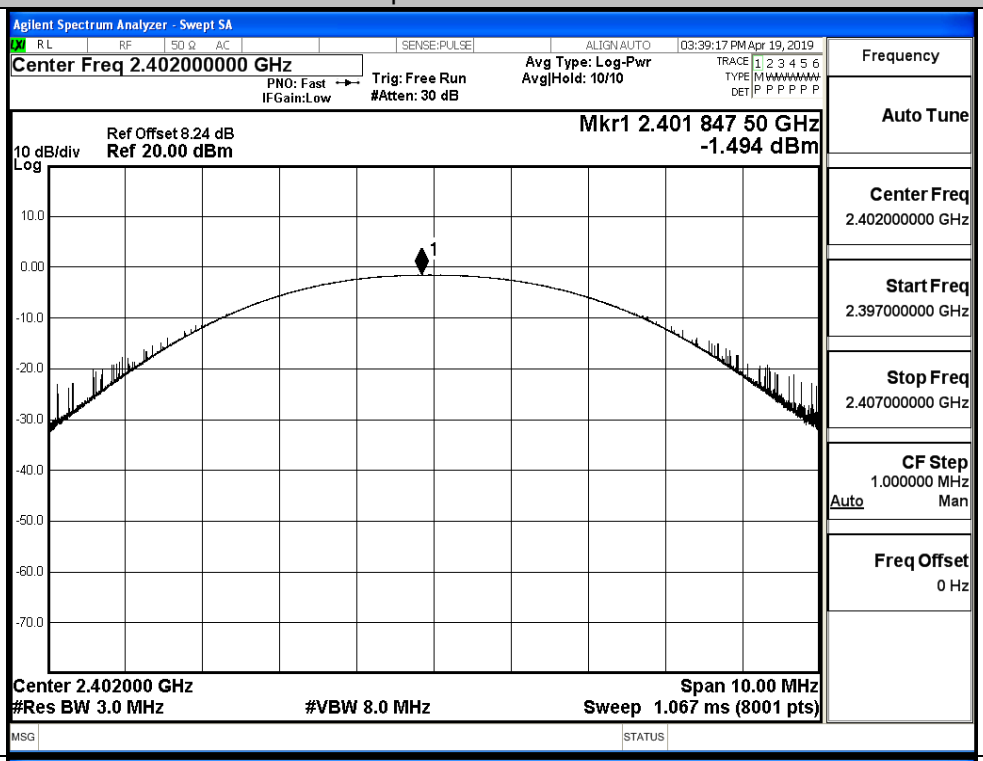
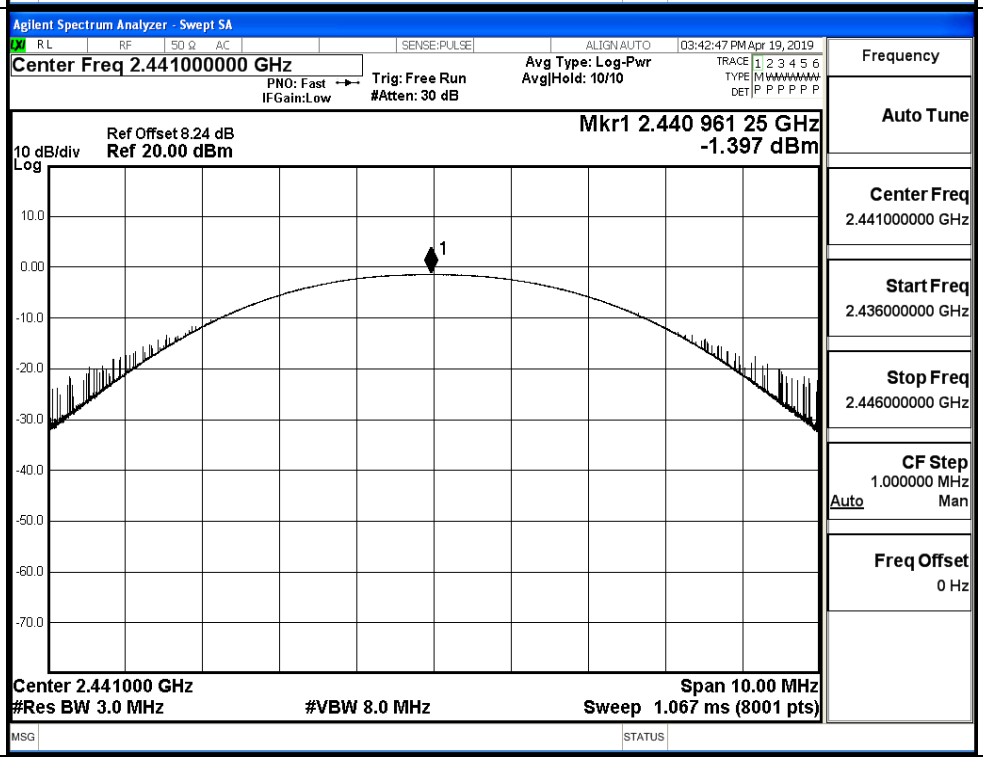
Test Model: NHS-2012A

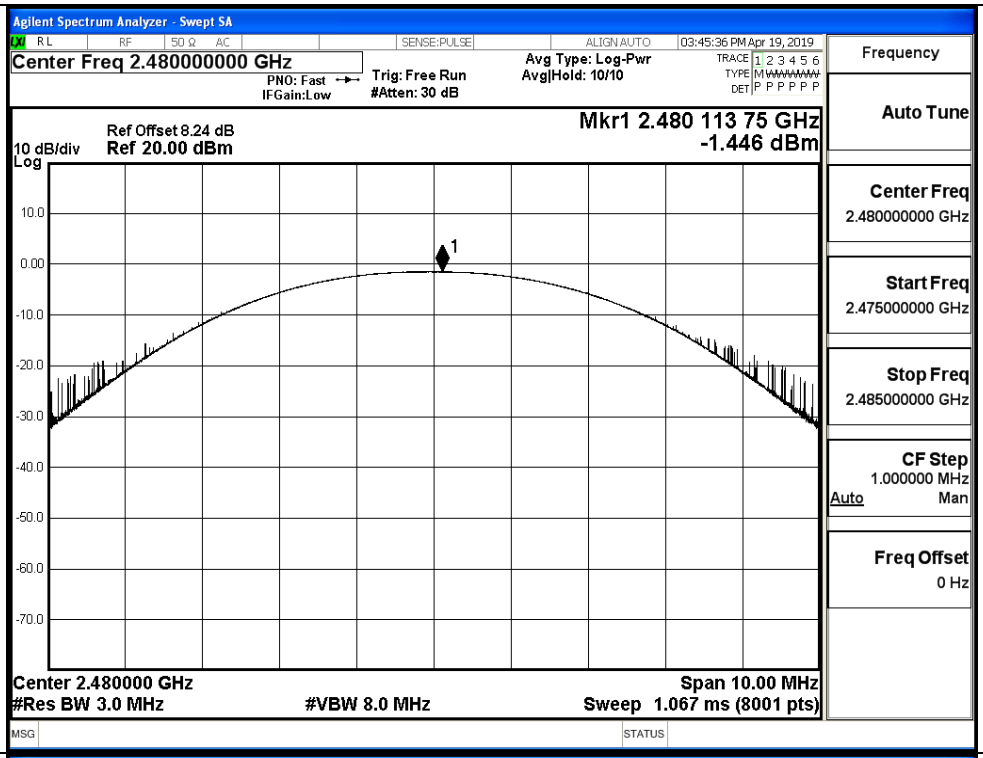
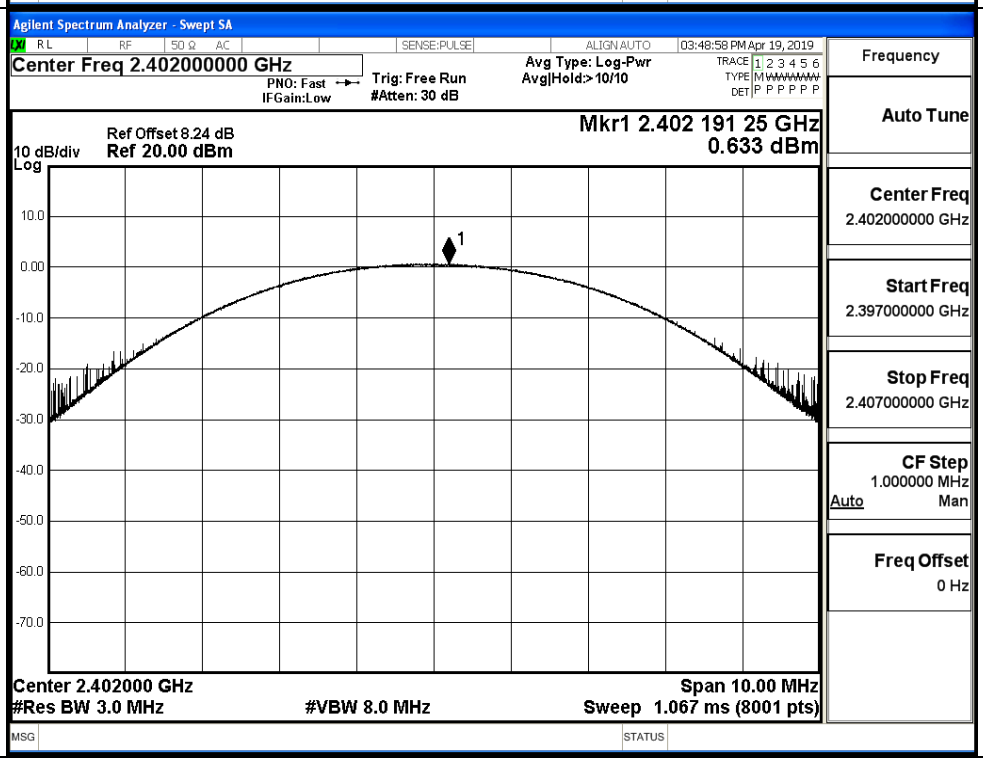
Environmental Conditions

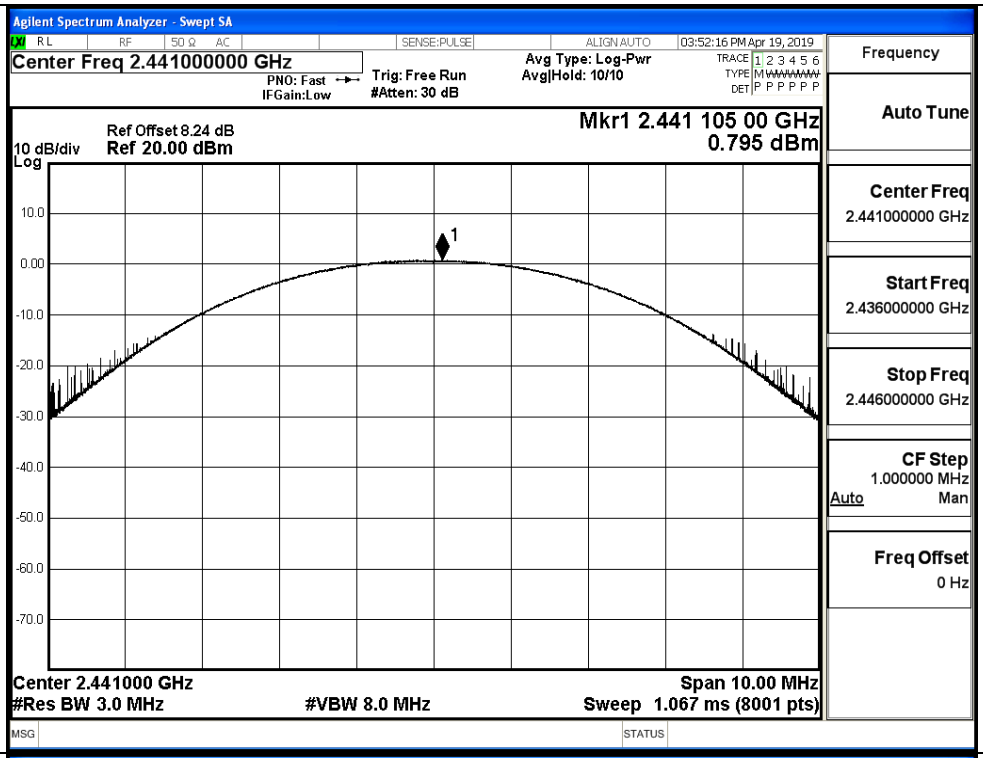
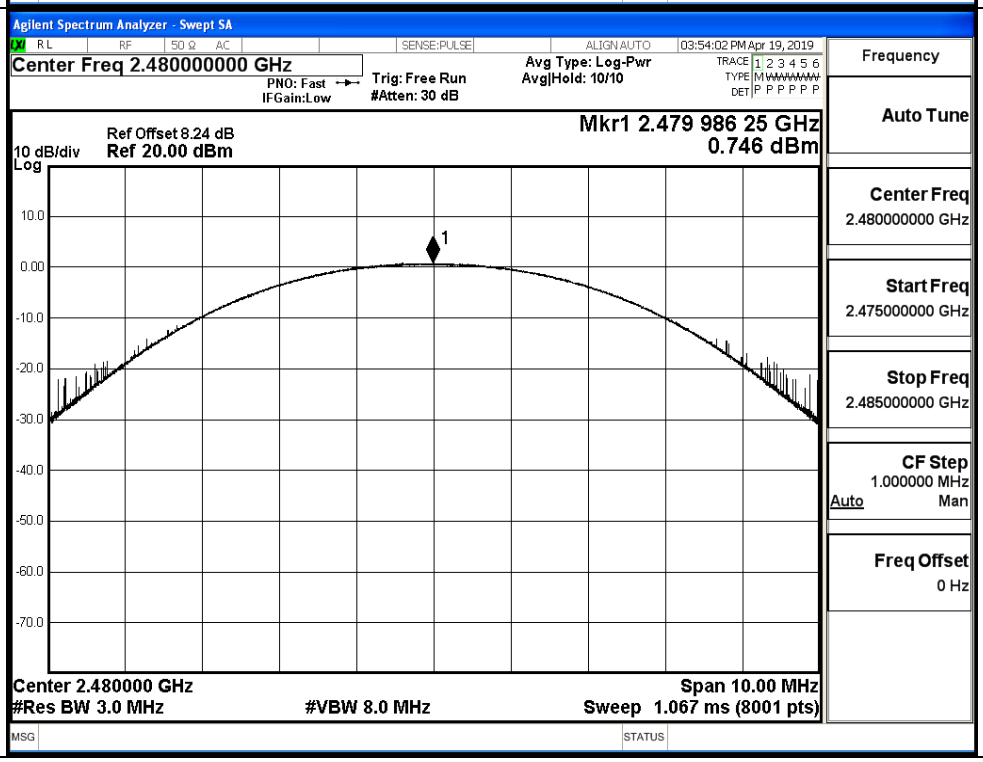
Temperature:	24.3 ° C
Relative Humidity:	53.1%
ATM Pressure:	100.0 kPa
Test Engineer:	JERRY.ZENG
Supervised by:	Tom.Liu

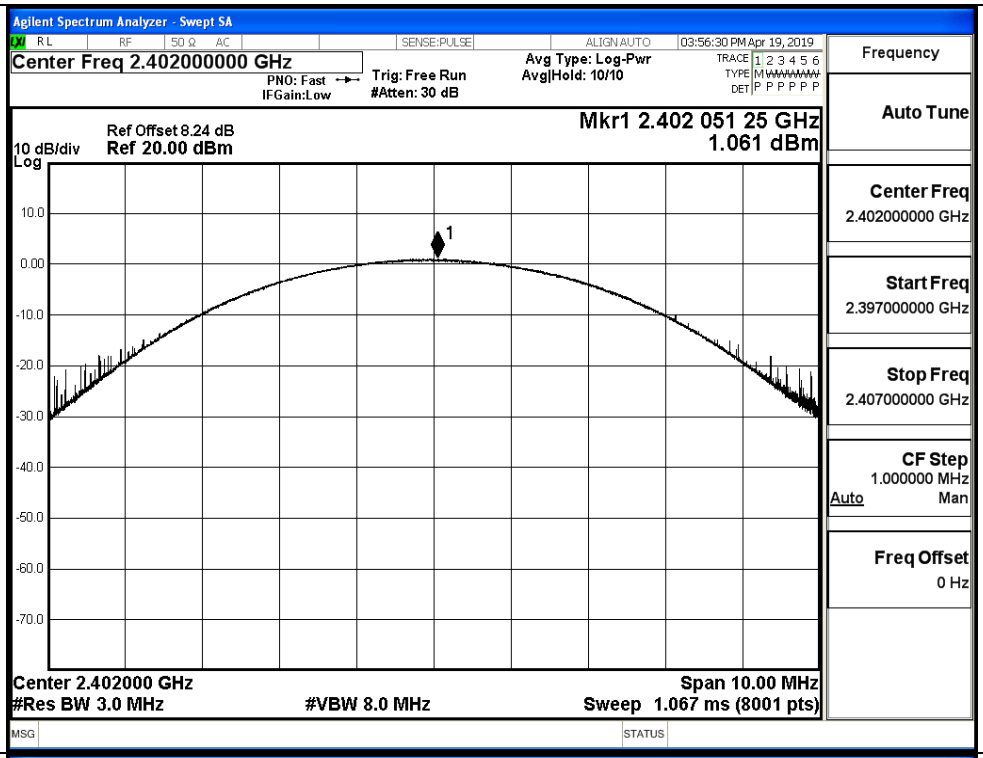
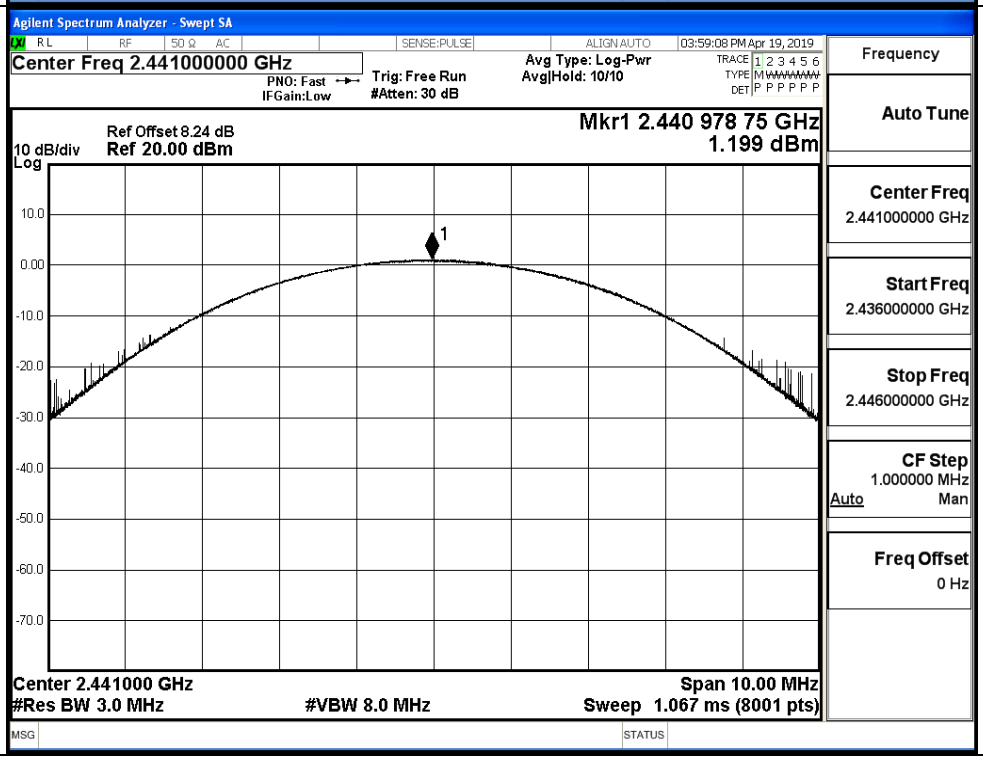
A.1 Maxmum Conducted Peak Output Power

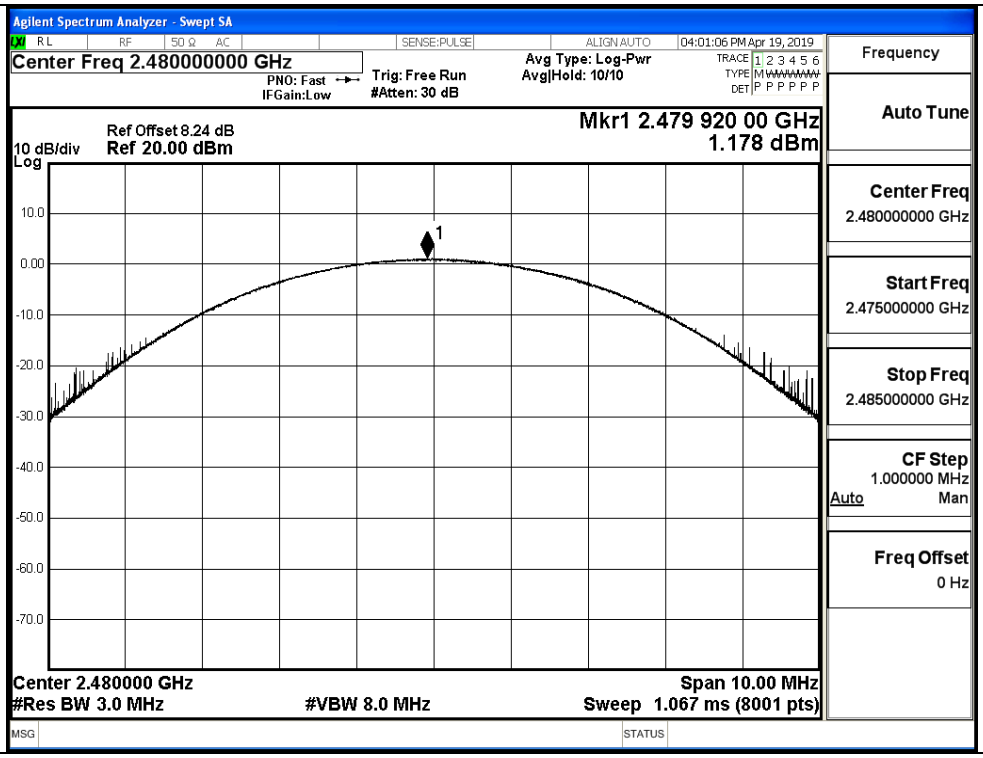
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-1.494	21	PASS
	MCH	-1.397	21	PASS
	HCH	-1.446	21	PASS
π/4DQPSK	LCH	0.633	21	PASS
	MCH	0.795	21	PASS
	HCH	0.746	21	PASS
8DPSK	LCH	1.061	21	PASS
	MCH	1.199	21	PASS
	HCH	1.178	21	PASS

Test Graphs		
GFSK/LCH		
GFSK/MCH		

GFSK/HCH	
π/4DQPSK/LCH	

π/4DQPSK/MCH	
π/4DQPSK/HCH	

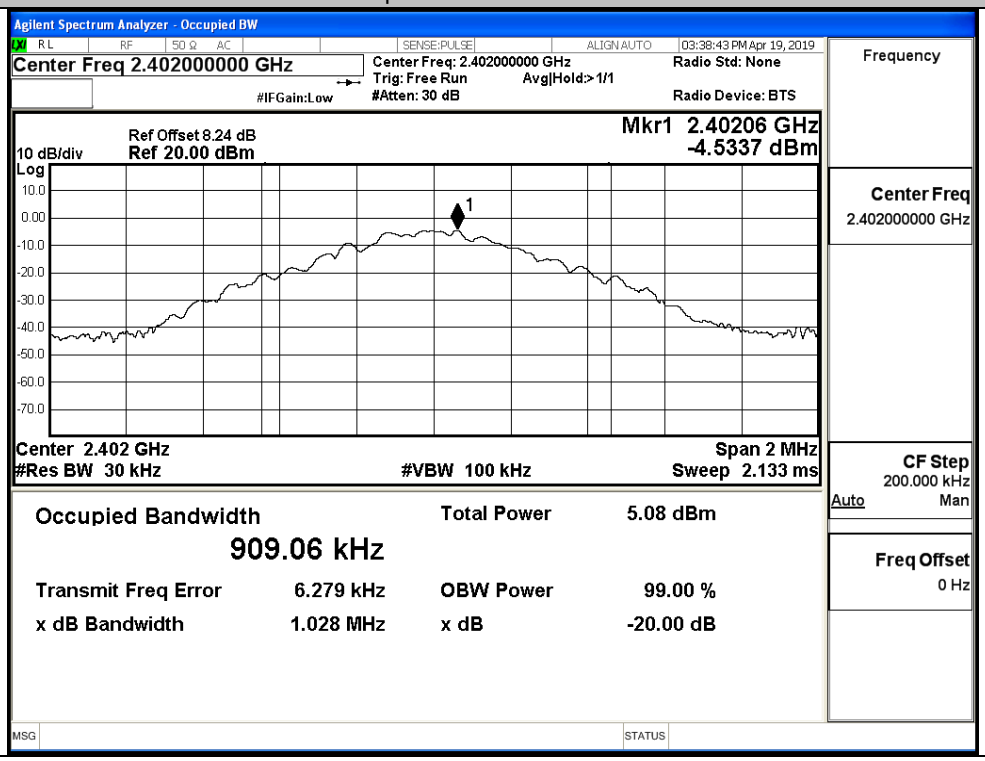
8DPSK/LCH	
8DPSK/MCH	

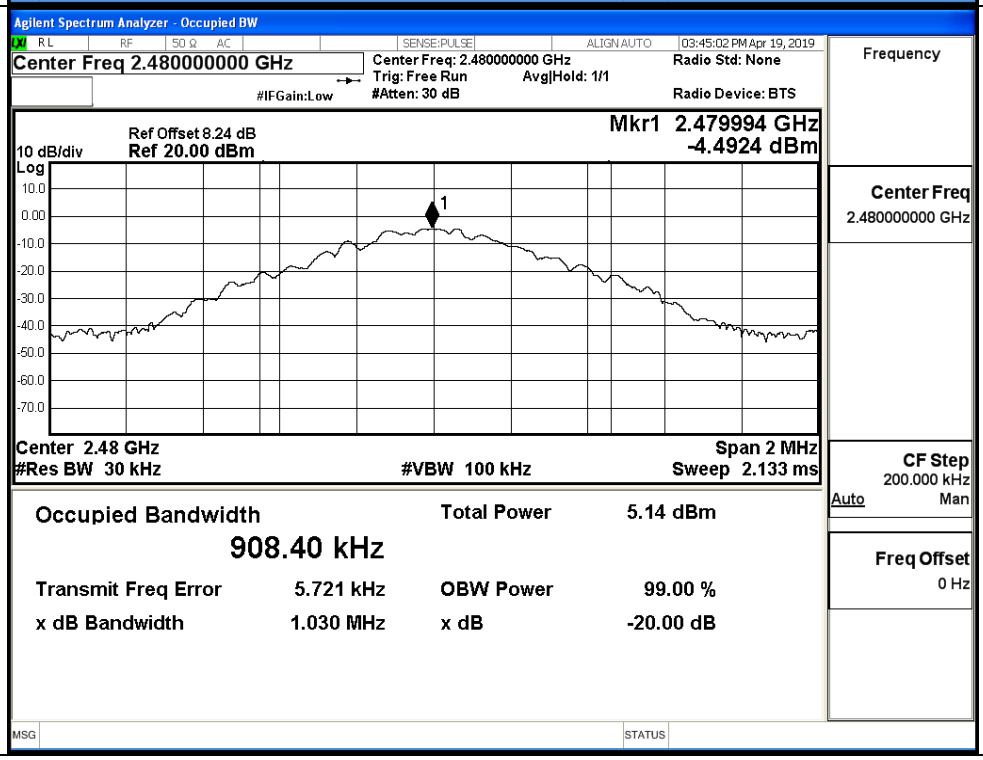
8DPSK/HCH	

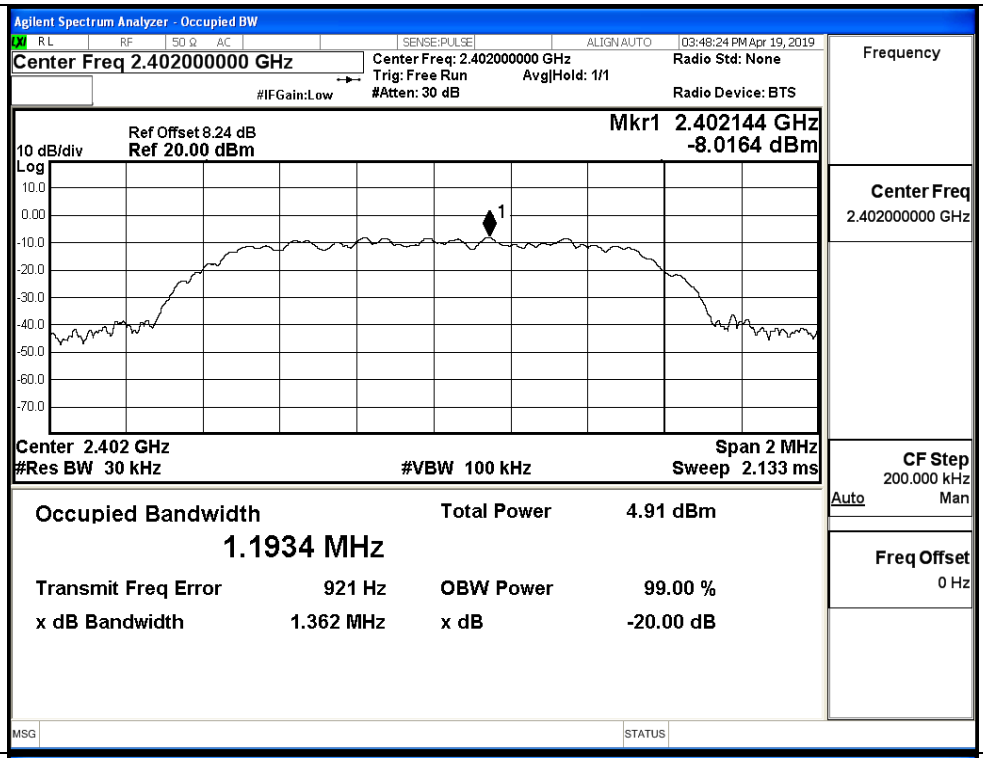
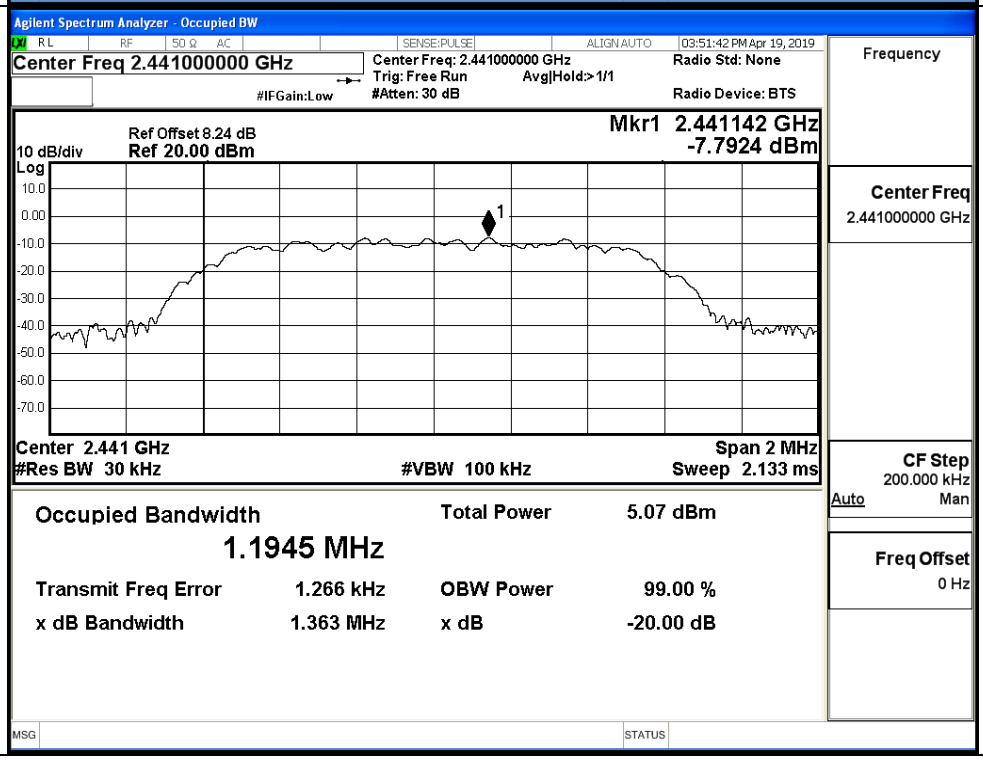
Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:PULSE
ALIGN AUTO
04:01:06 PM Apr 19, 2019
Center Freq 2.480000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 10/10
TRACE 1 2 3 4 5 6
TYPE M
DET P P P P P
Ref Offset 8.24 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.479 920 00 GHz
1.178 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Center 2.480000 GHz
#Res BW 3.0 MHz
#VBW 8.0 MHz
Span 10.00 MHz
Sweep 1.067 ms (8001 pts)
MSG
STATUS
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

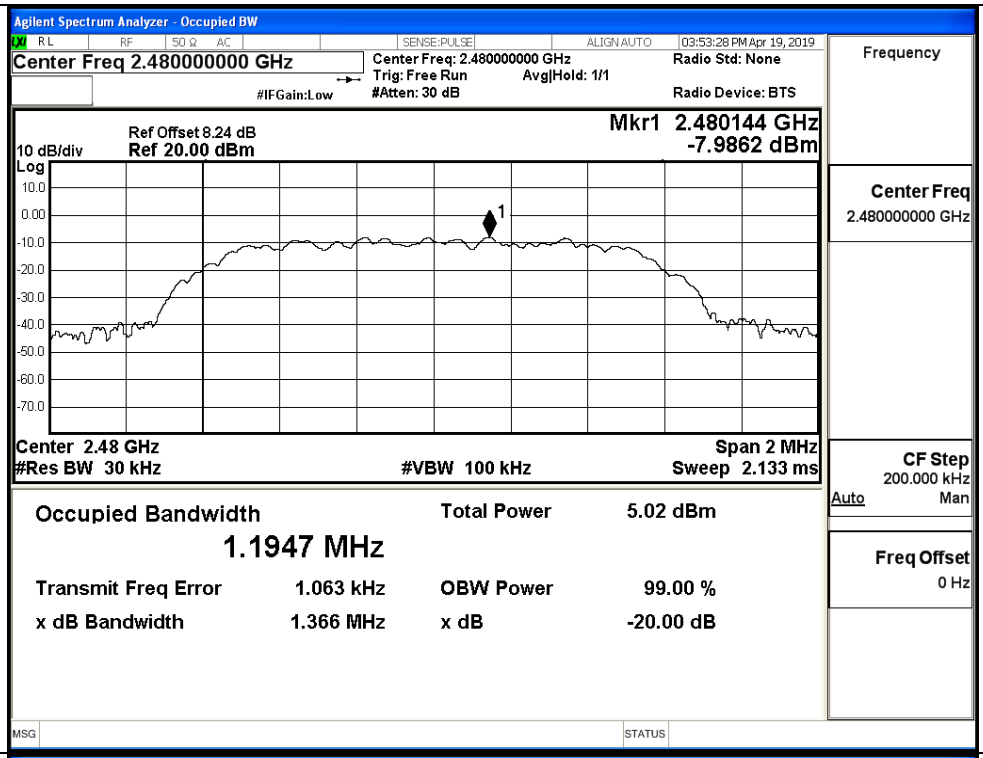
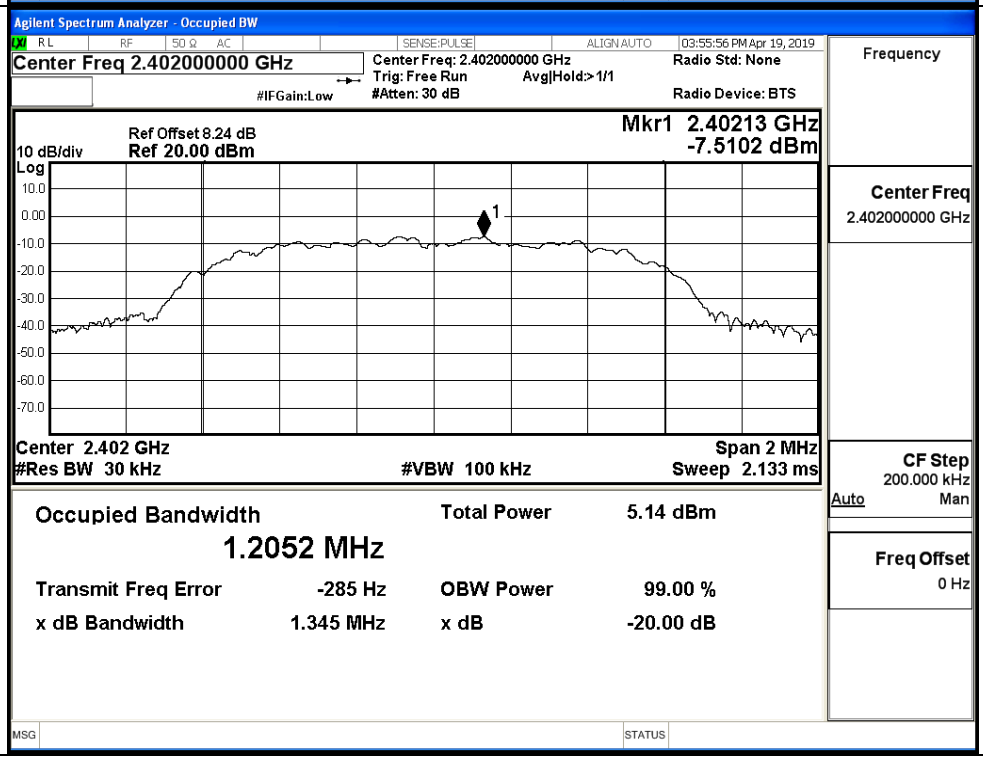
A.2 20dB Bandwidth

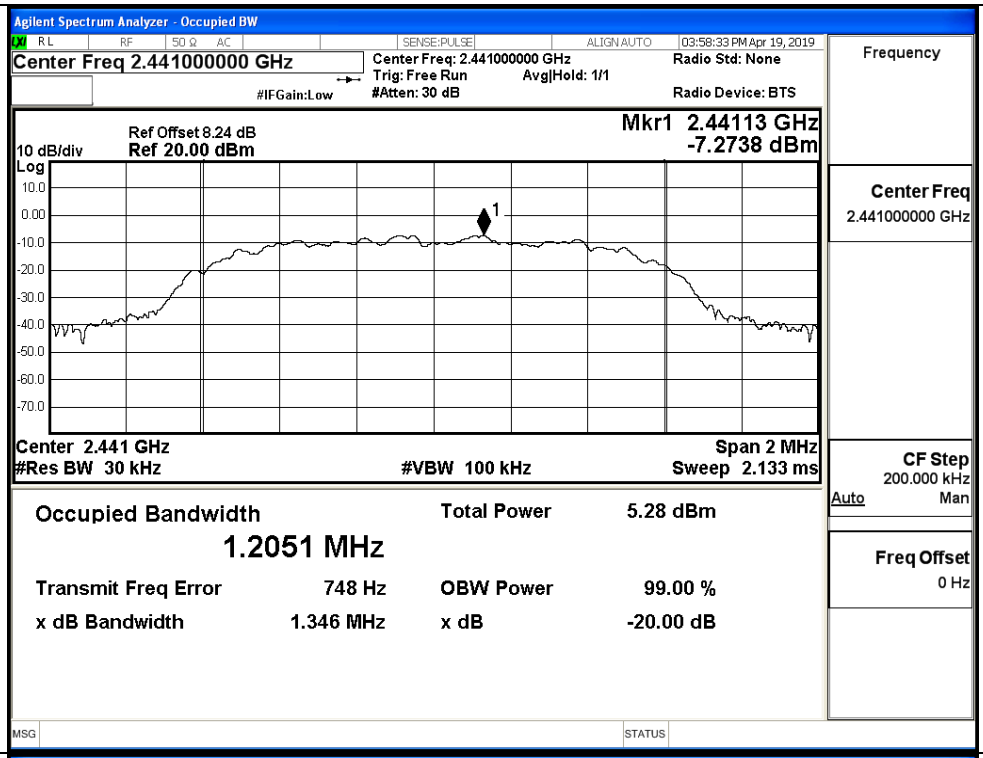
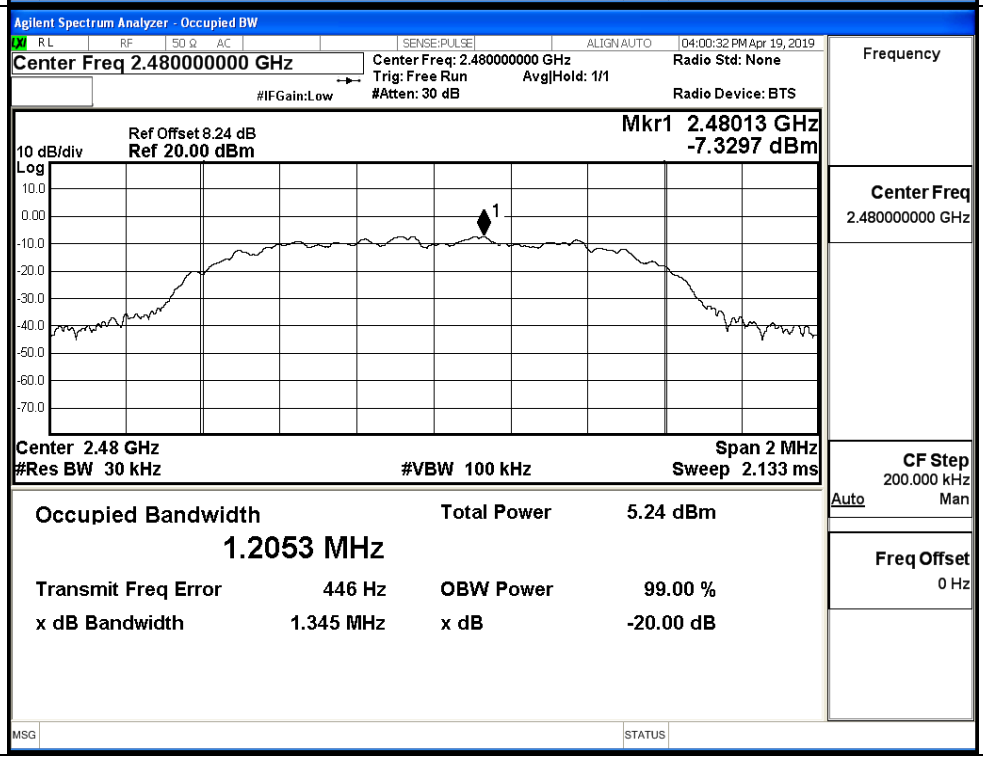
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.028	Not Specified	PASS
	MCH	1.029	Not Specified	PASS
	HCH	1.030	Not Specified	PASS
π/4DQPSK	LCH	1.362	Not Specified	PASS
	MCH	1.363	Not Specified	PASS
	HCH	1.366	Not Specified	PASS
8DPSK	LCH	1.345	Not Specified	PASS
	MCH	1.346	Not Specified	PASS
	HCH	1.345	Not Specified	PASS

Test Graphs	
GFSK/LCH	

GFSK/MCH	
GFSK/HCH	

π/4DQPSK/LCH	
π/4DQPSK/MCH	

π/4DQPSK/HCH	
8DPSK/LCH	

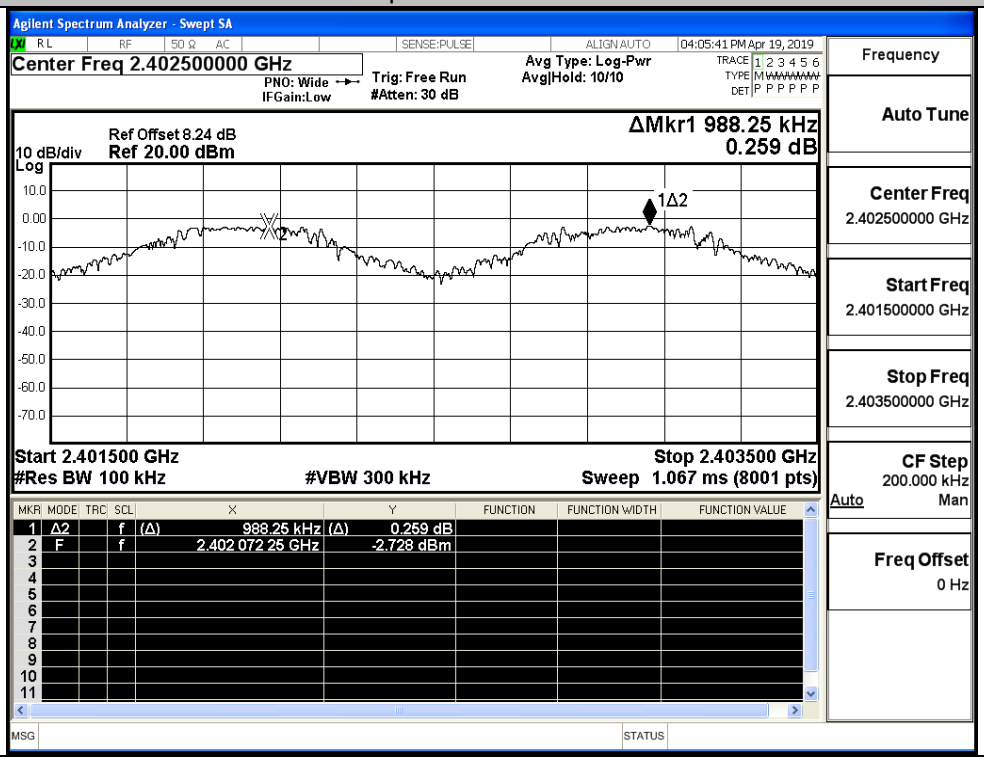
8DPSK/MCH	
8DPSK/HCH	

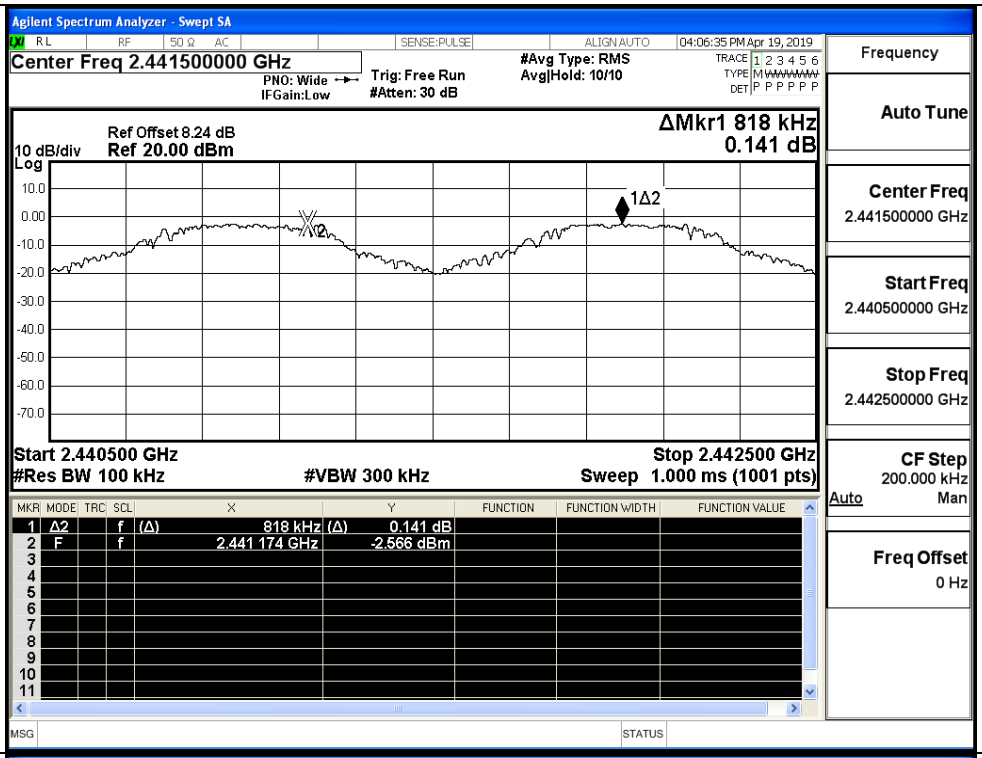
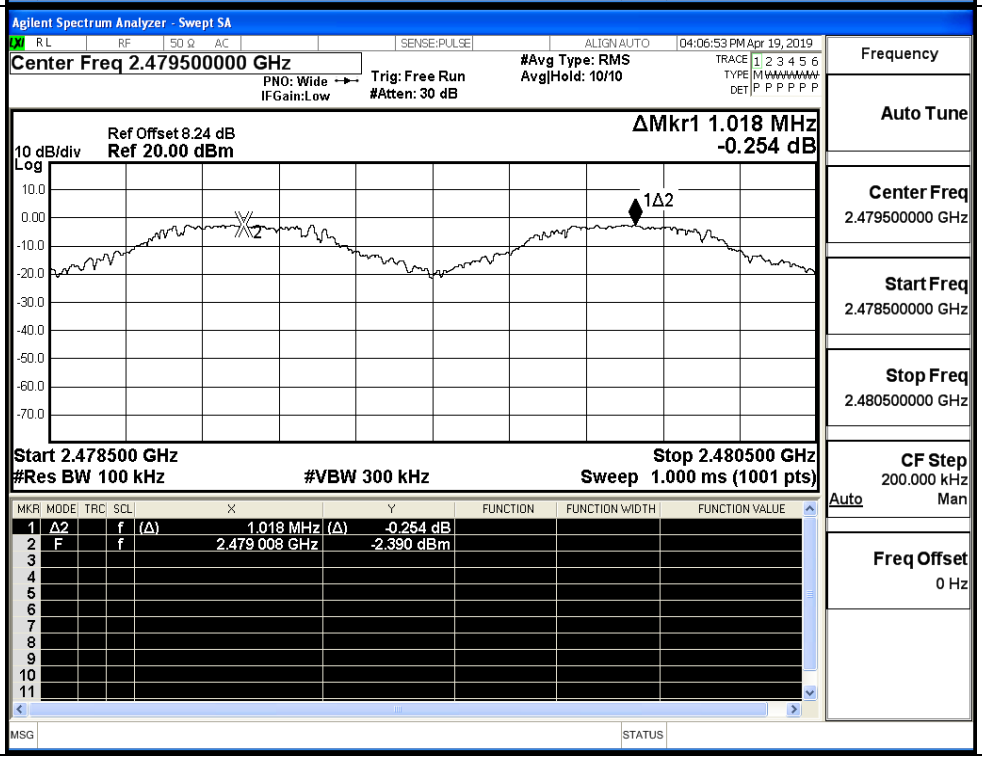
A.3 Carrier Frequency Separation

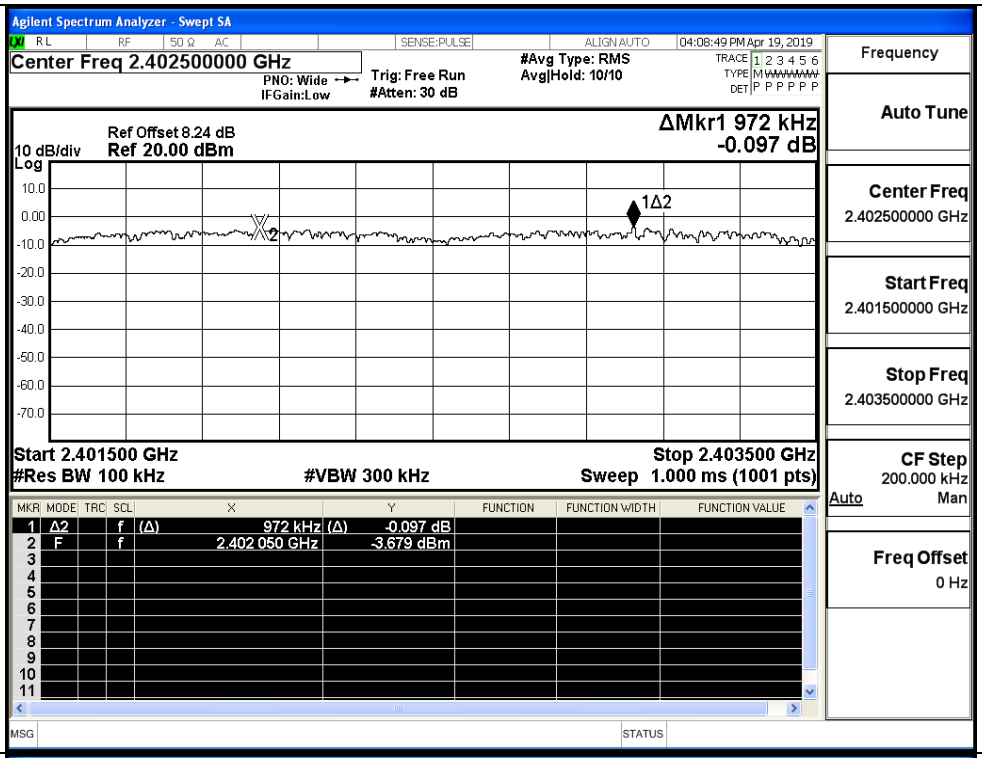
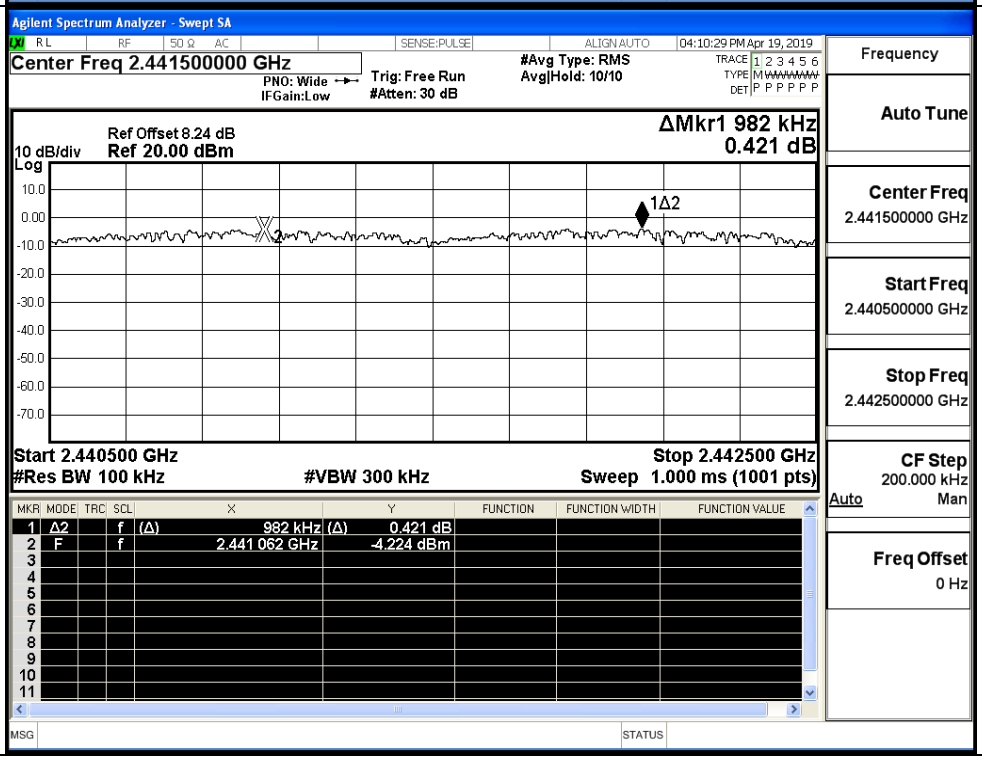
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.988	0.687	PASS
	MCH	0.818	0.687	PASS
	HCH	1.018	0.687	PASS
π/4DQPSK	LCH	0.972	0.911	PASS
	MCH	0.982	0.911	PASS
	HCH	1.040	0.911	PASS
8DPSK	LCH	1.118	0.897	PASS
	MCH	0.998	0.897	PASS
	HCH	0.986	0.897	PASS

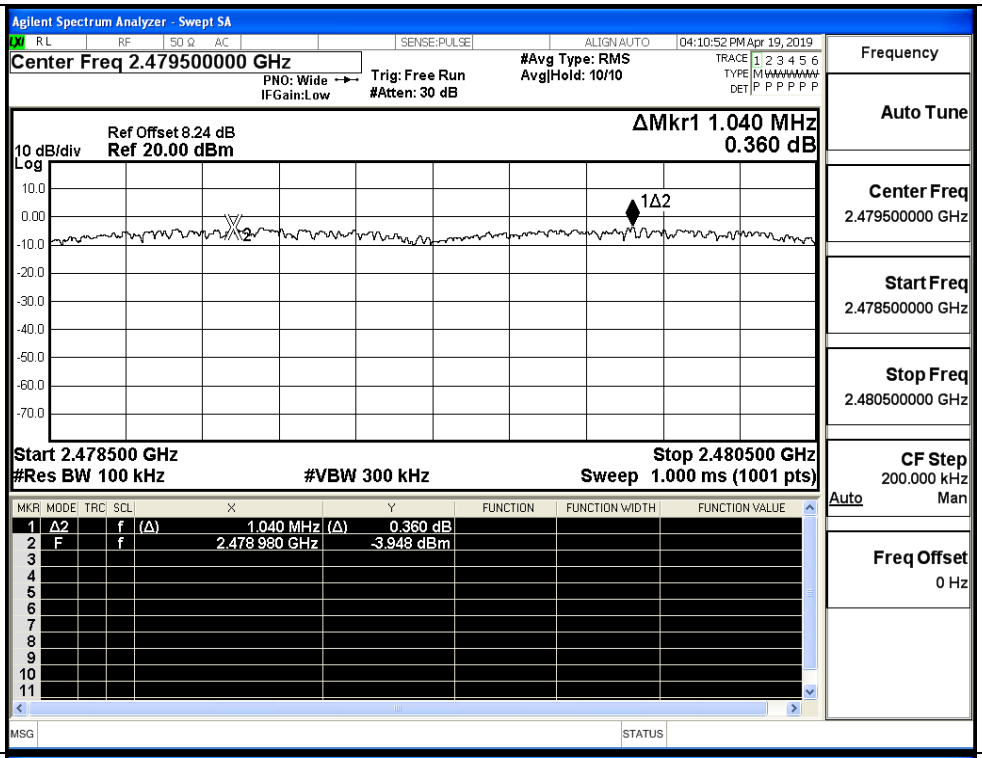
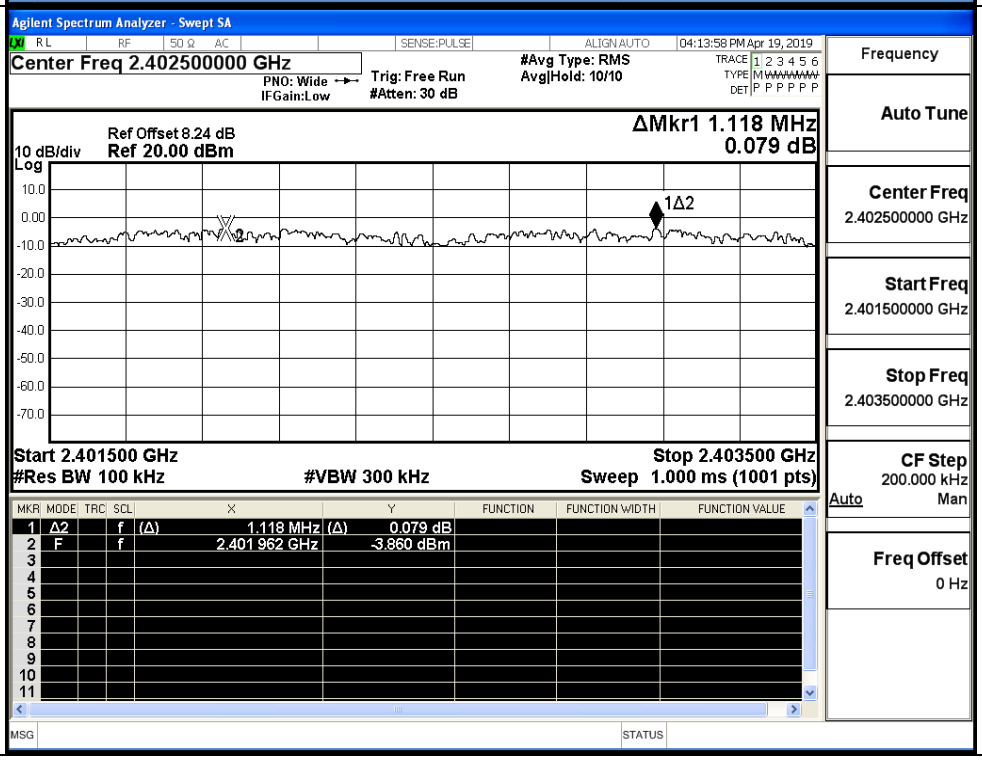
Test Graphs

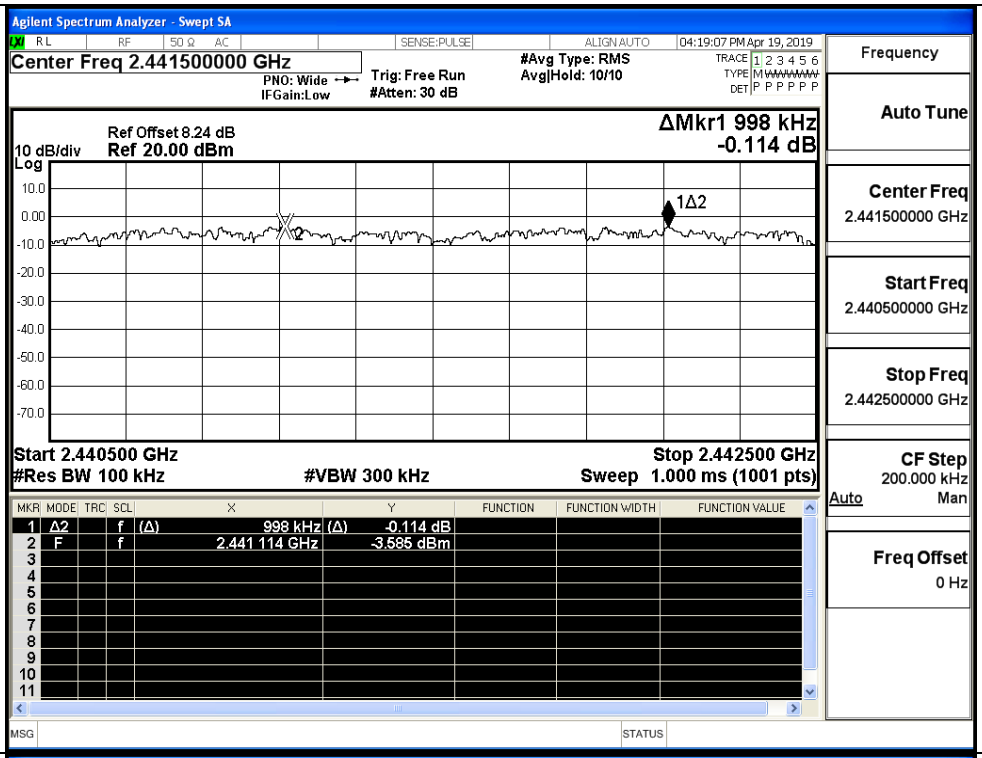
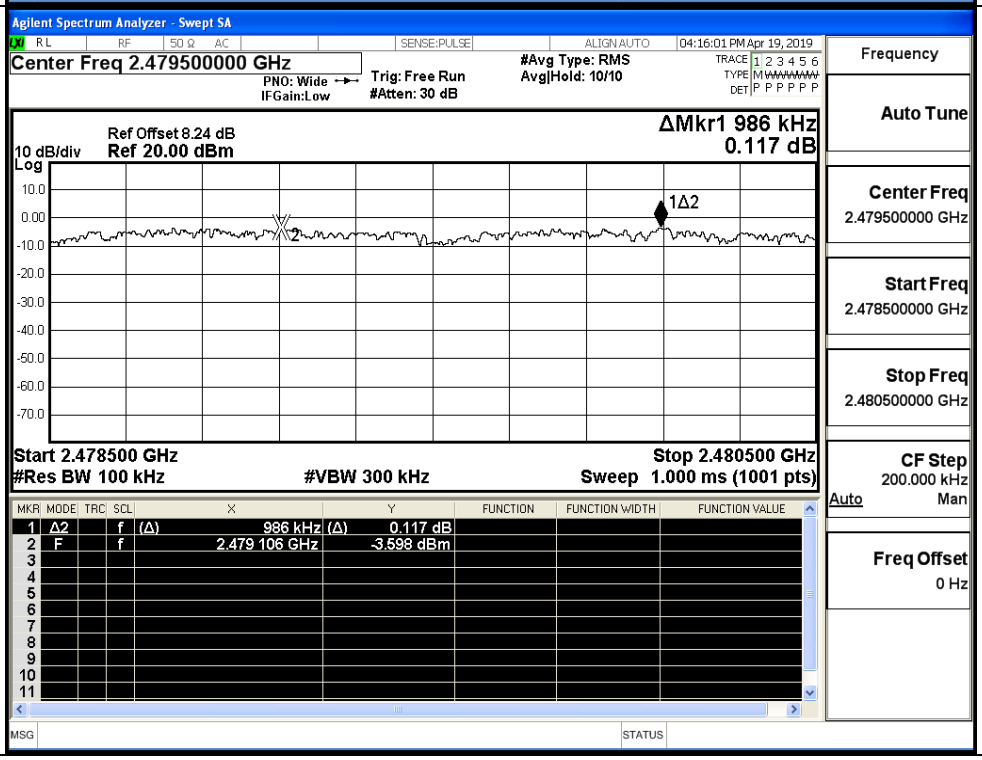
GFSK/LCH



GFSK/MCH	
GFSK/HCH	

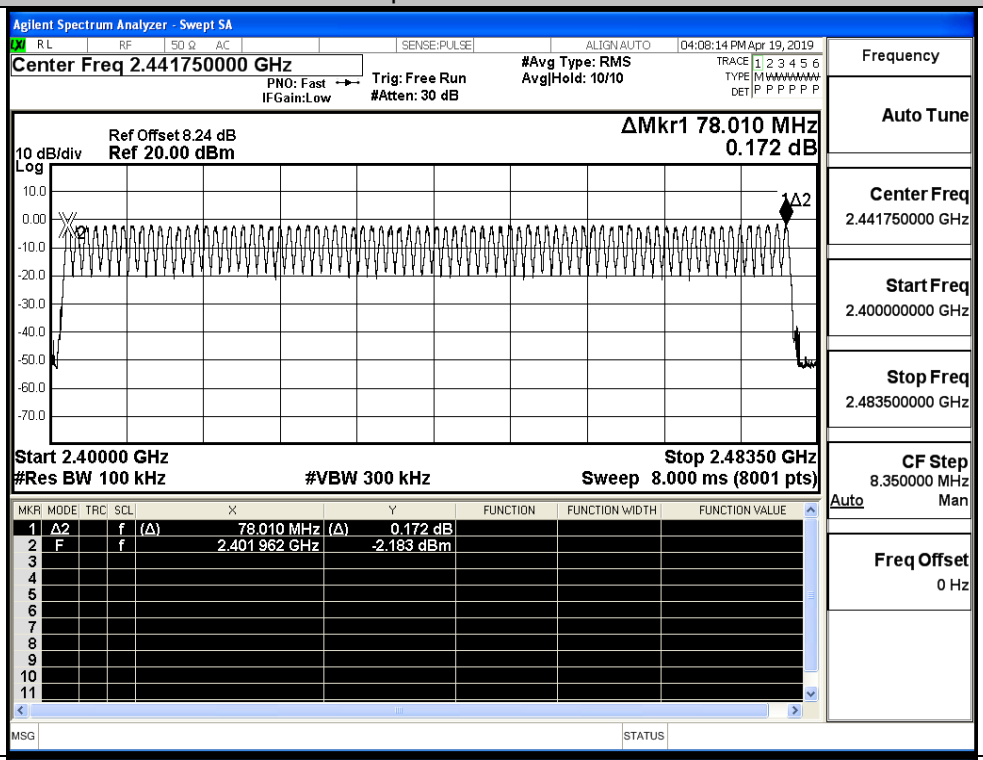
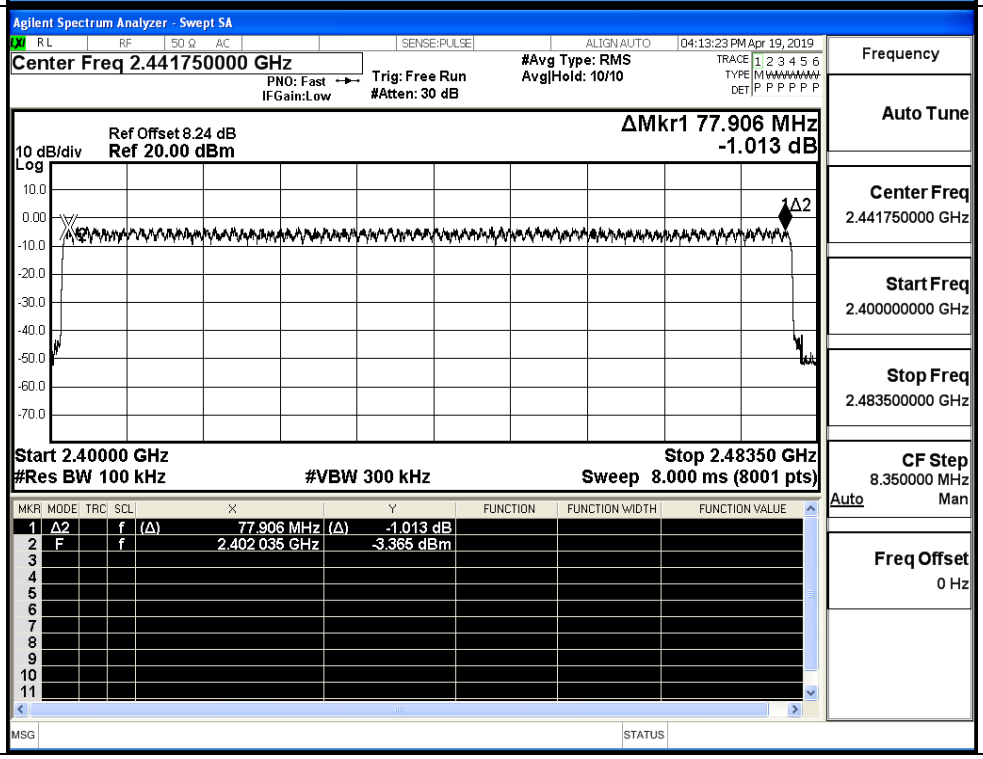
π/4DQPSK/LCH	
π/4DQPSK/MCH	

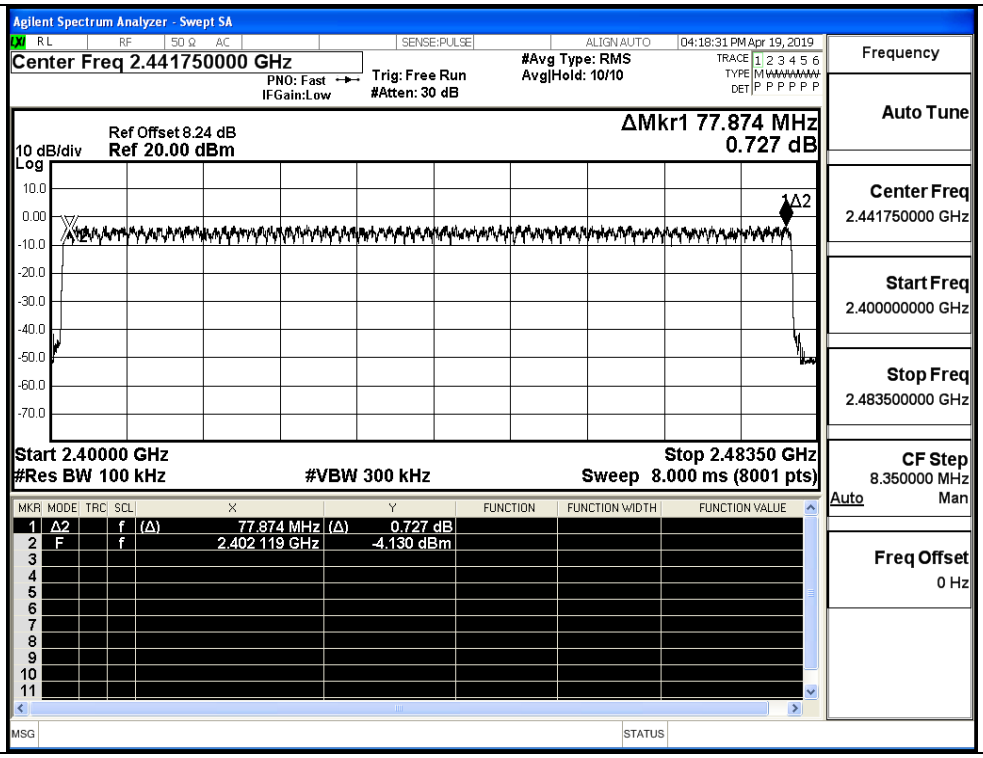
π/4DQPSK/HCH	
8DPSK/LCH	

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	

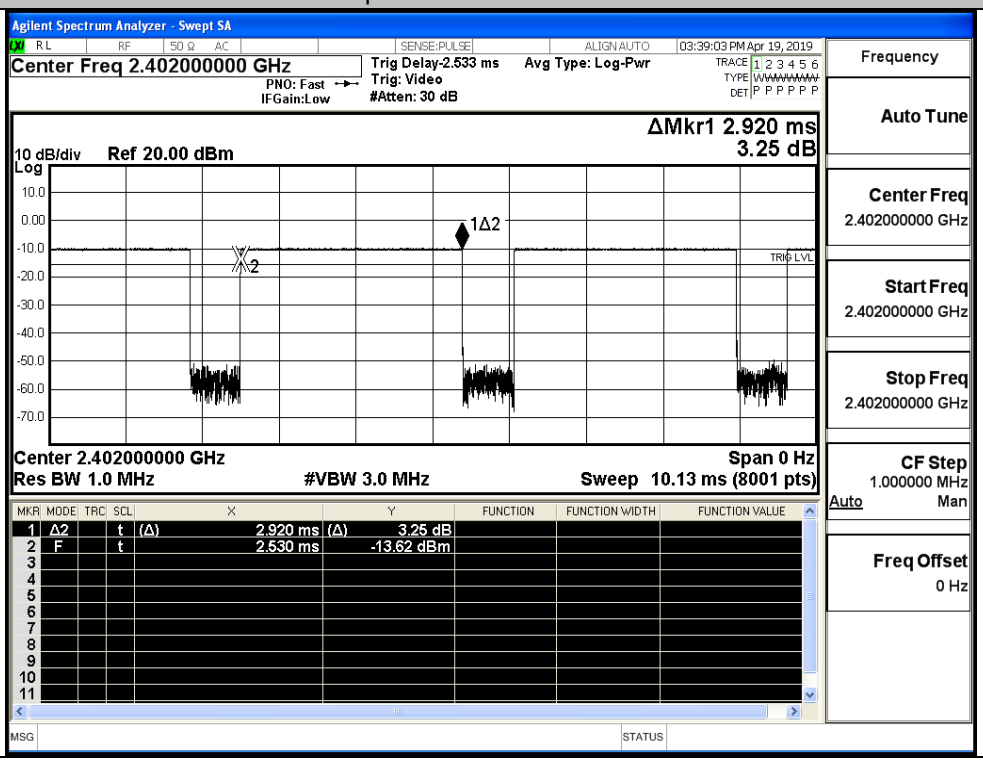
Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441750000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 10/10
04:18:31 PM Apr 19, 2019
Ref Offset 8.24 dB
10 dB/div
Log
Ref 20.00 dBm
ΔMkr1 77.874 MHz
0.727 dB
Start 2.40000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.48350 GHz
Sweep 8.000 ms (8001 pts)
1 Δ2 f (Δ) 77.874 MHz (Δ) 0.727 dB
2 F f 2.402 119 GHz -4.130 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

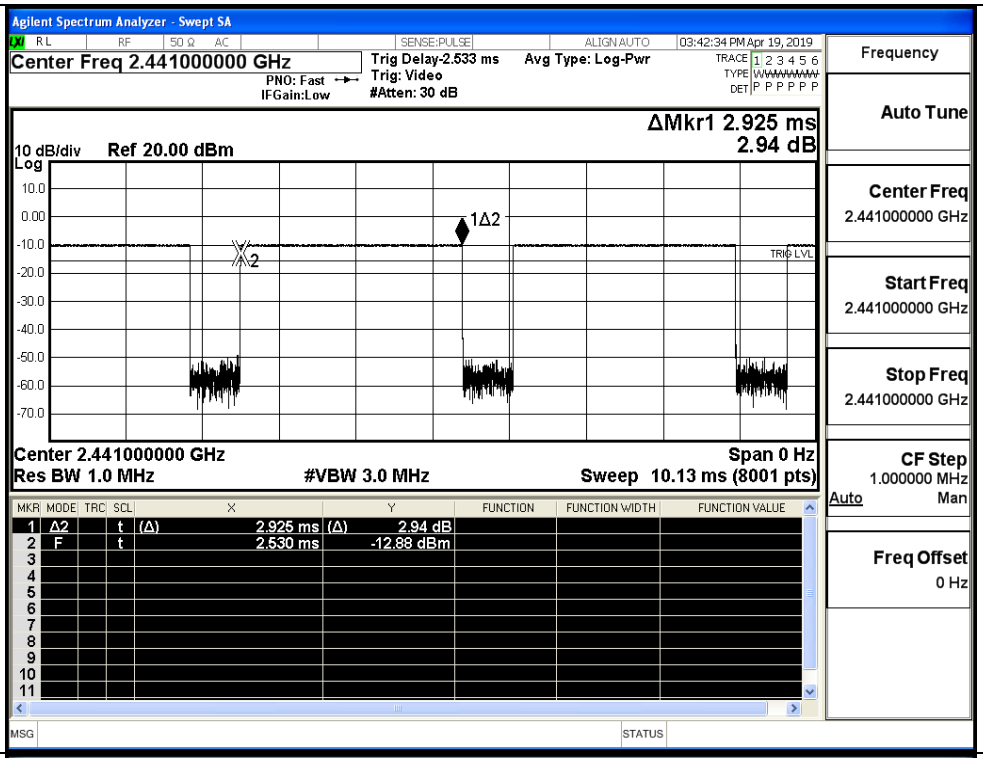
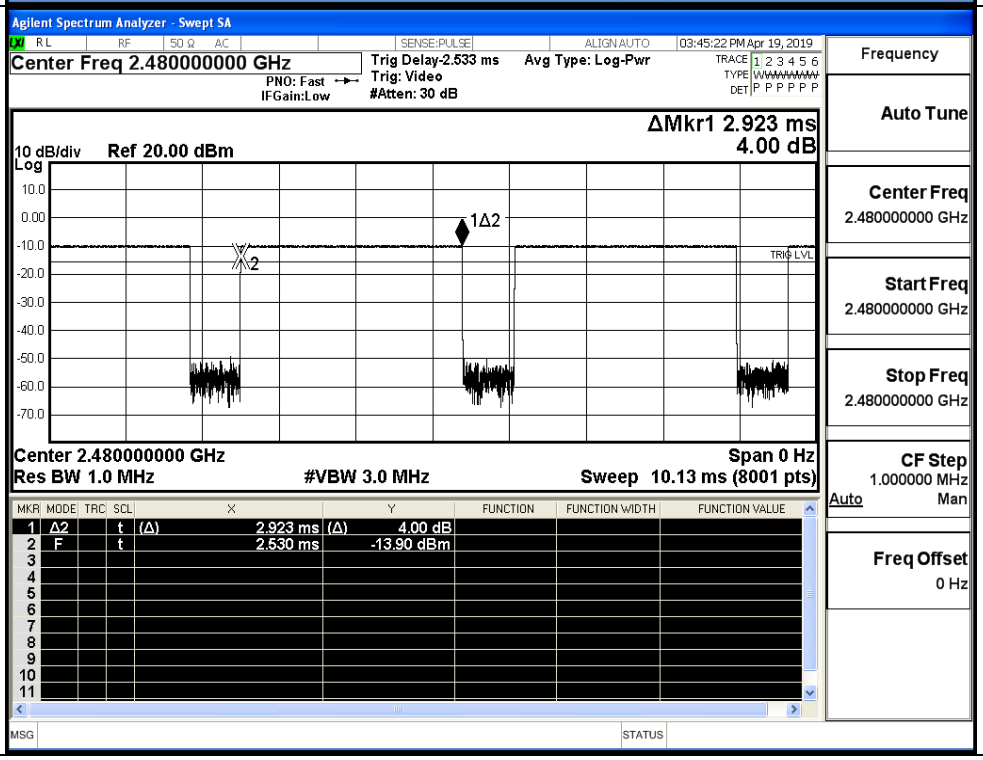
A.5 Dwell Time

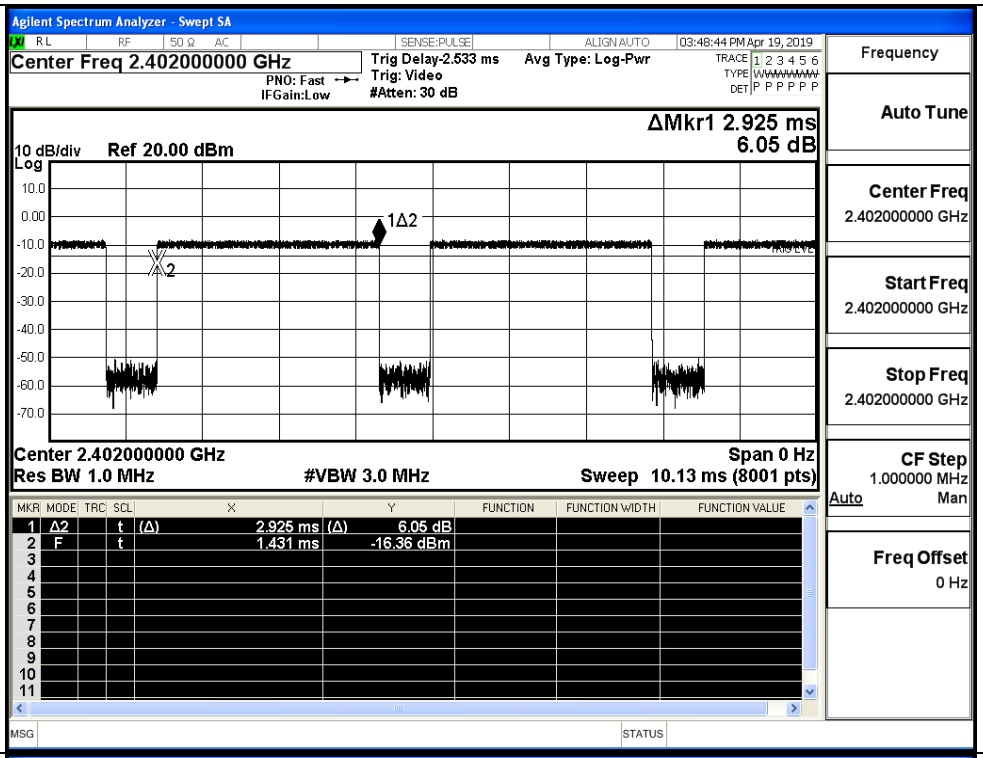
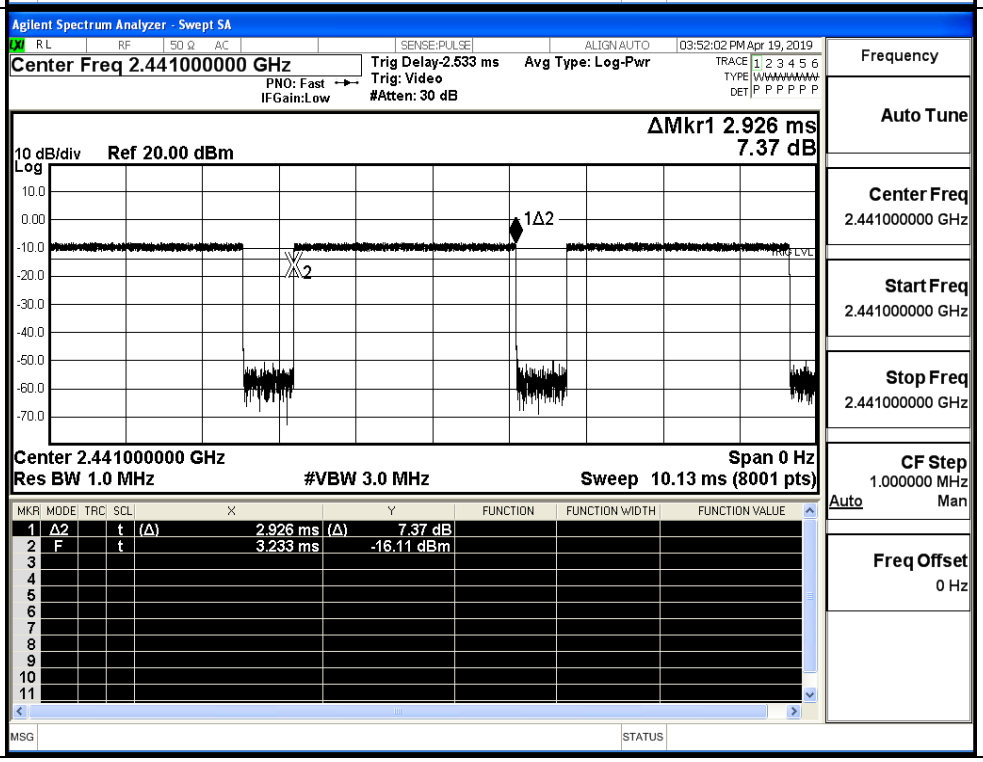
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.92	106.7	0.312	0.4	PASS
	DH5	MCH	2.92	106.7	0.312	0.4	PASS
	DH5	HCH	2.92	106.7	0.312	0.4	PASS
π/4DQPSK	2DH5	LCH	2.92	106.7	0.312	0.4	PASS
	2DH5	MCH	2.92	106.7	0.313	0.4	PASS
	2DH5	HCH	2.92	106.7	0.313	0.4	PASS
8DPSK	3DH5	LCH	2.92	106.7	0.312	0.4	PASS
	3DH5	MCH	2.92	106.7	0.313	0.4	PASS
	3DH5	HCH	2.92	106.7	0.313	0.4	PASS

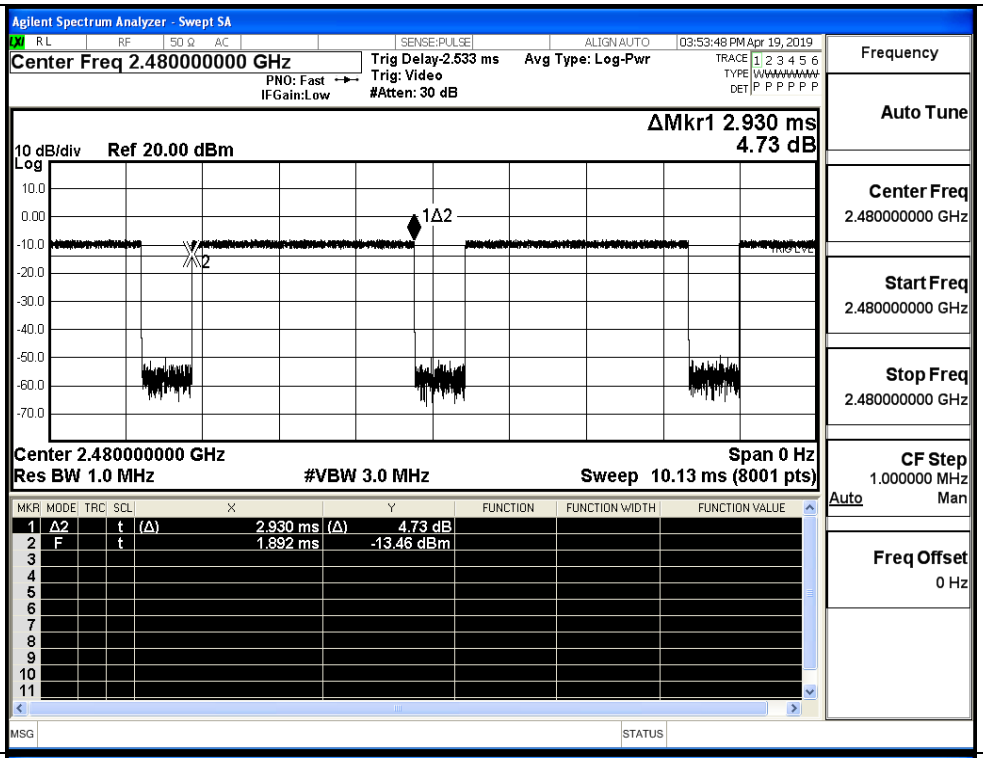
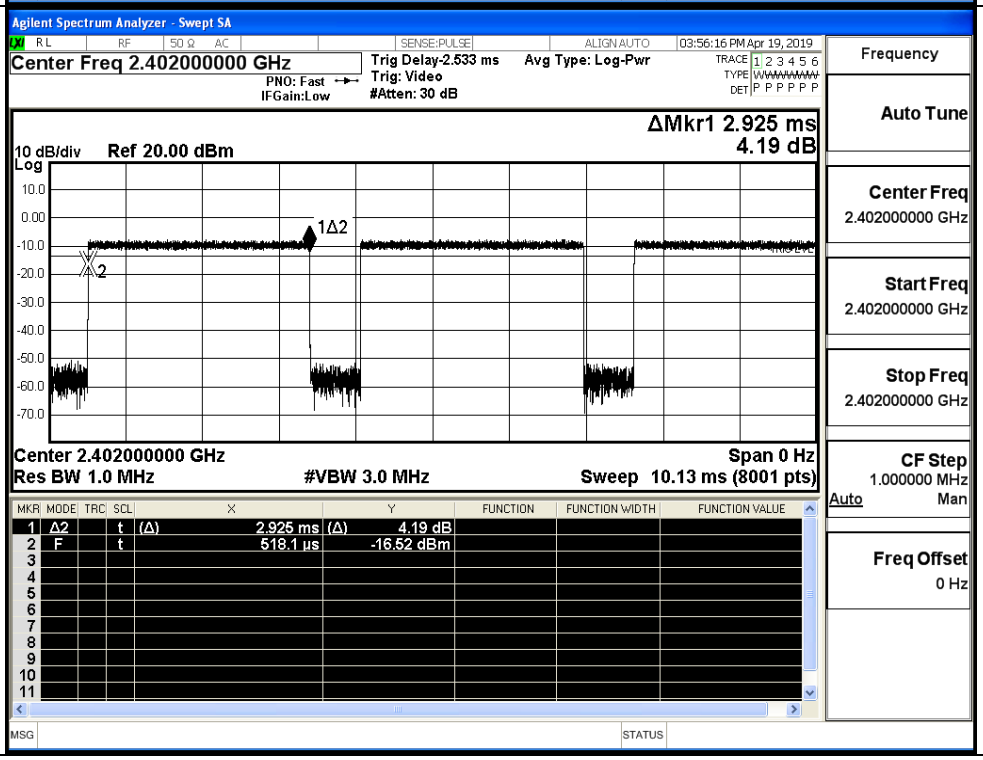
Test Graphs

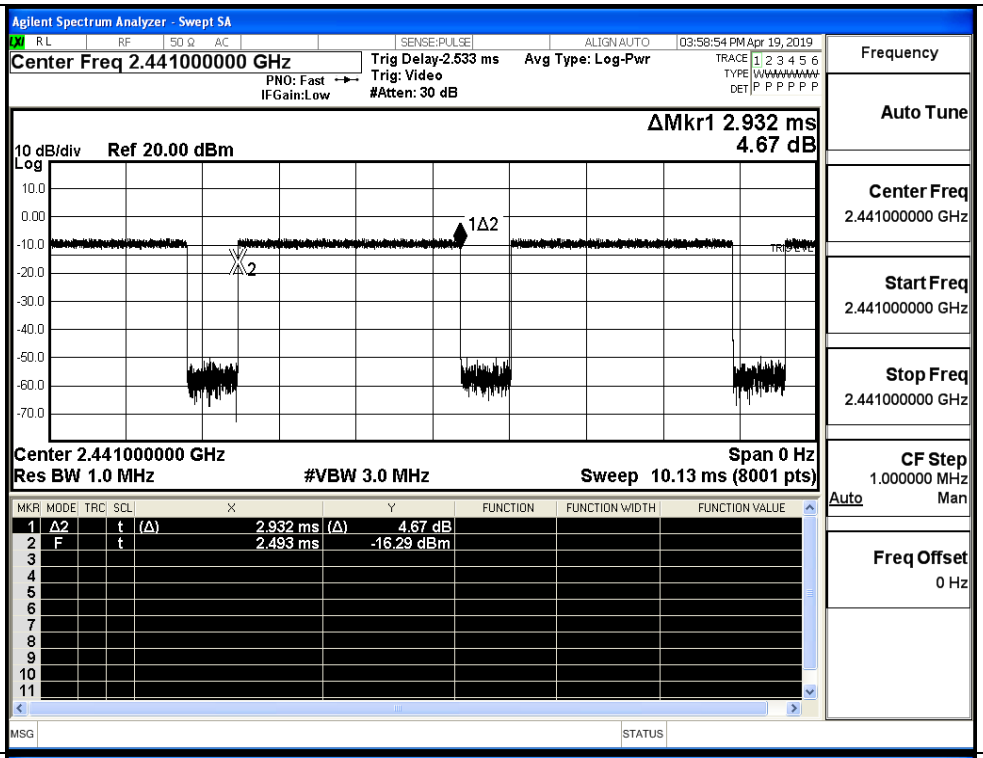
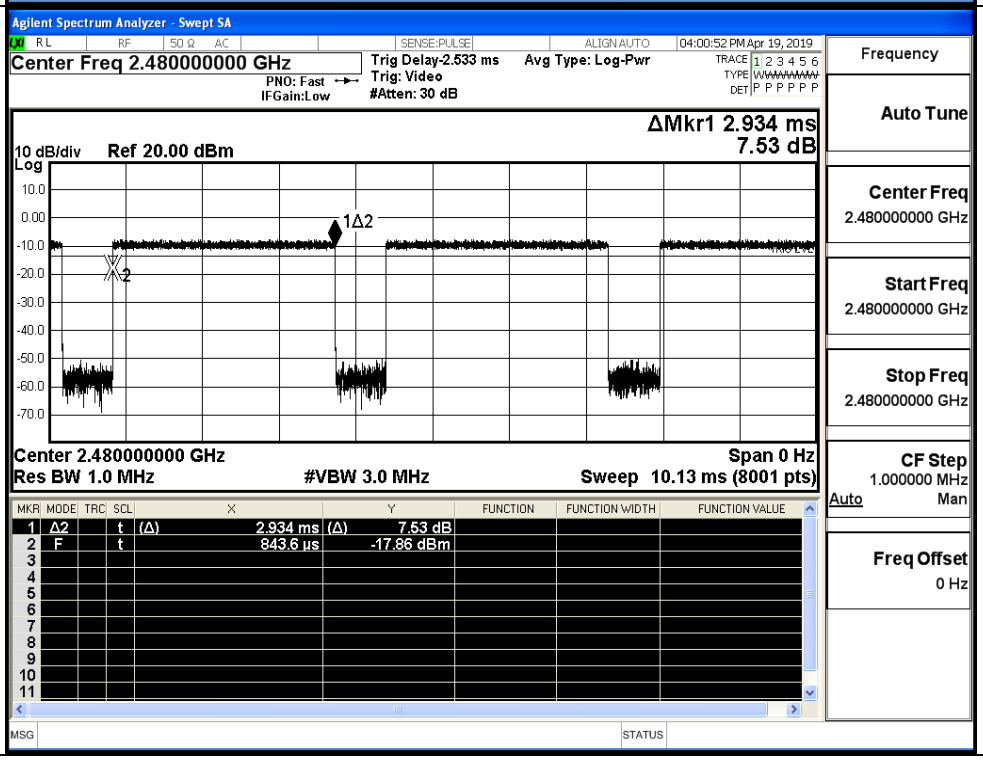
GFSK_DH5/LCH



GFSK_DH5/MCH	
GFSK_DH5/HCH	

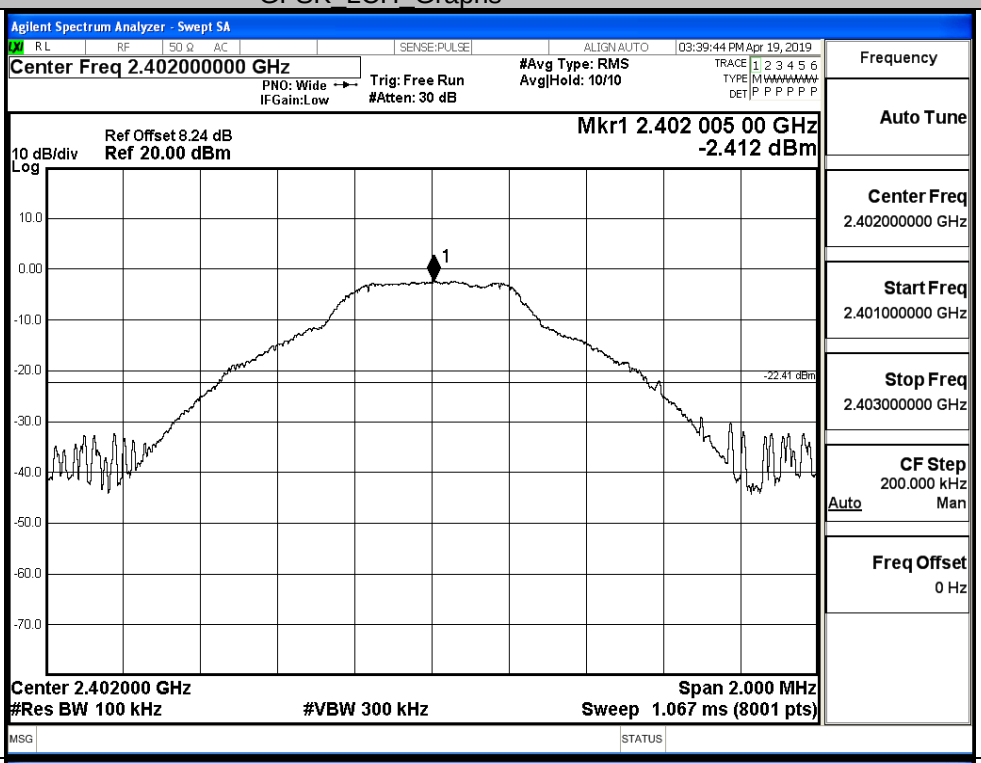
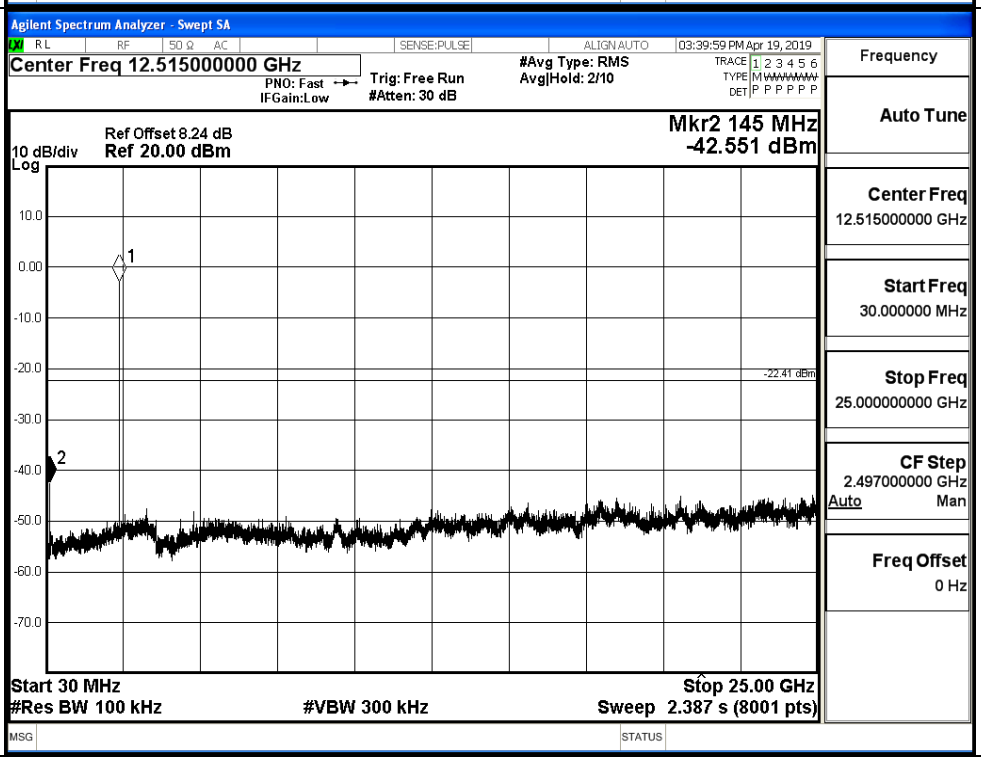
π/4DQPSK _2DH5/LCH	
π/4DQPSK _2DH5/MCH	

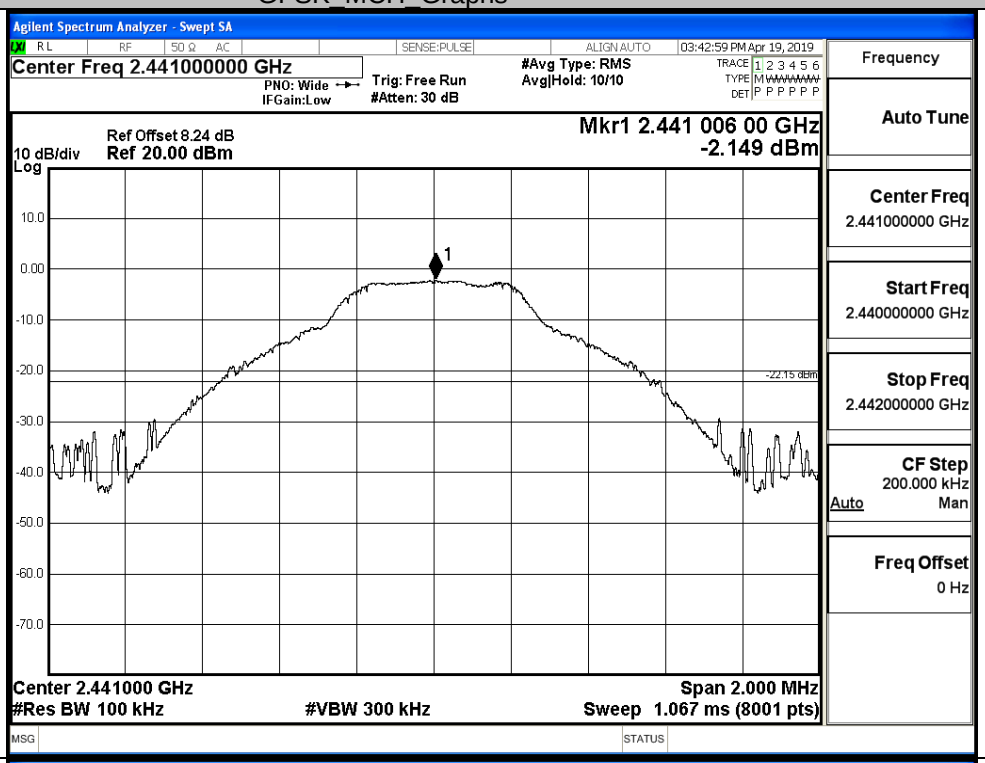
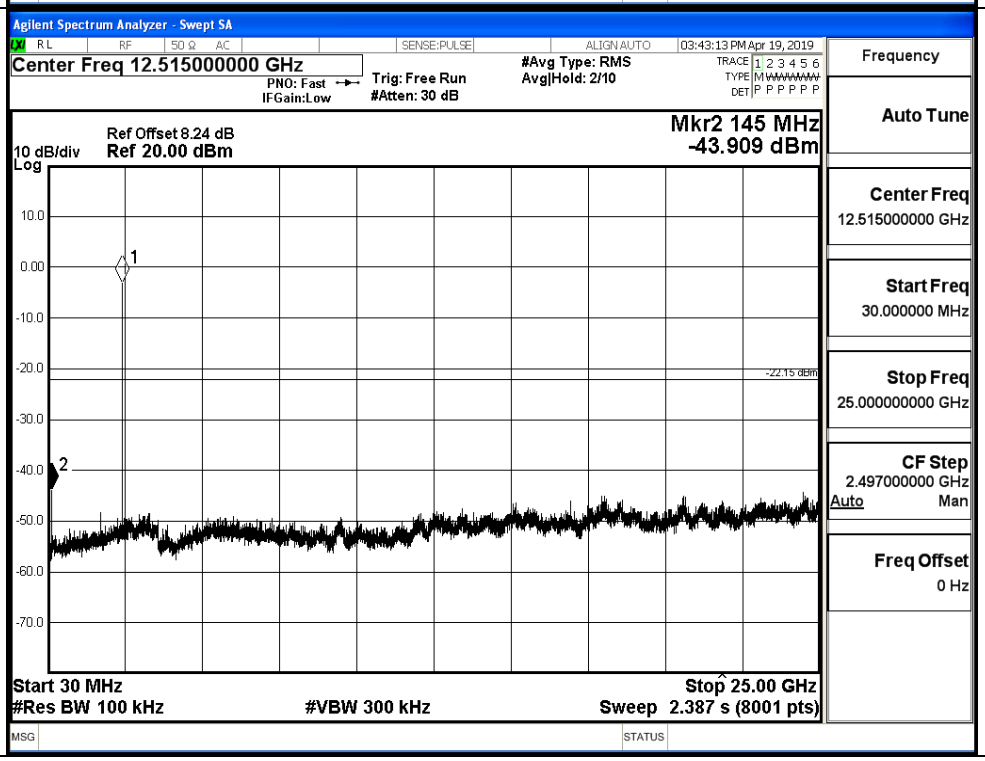
π/4DQPSK _2DH5/HCH	
8DPSK _3DH5/LCH	

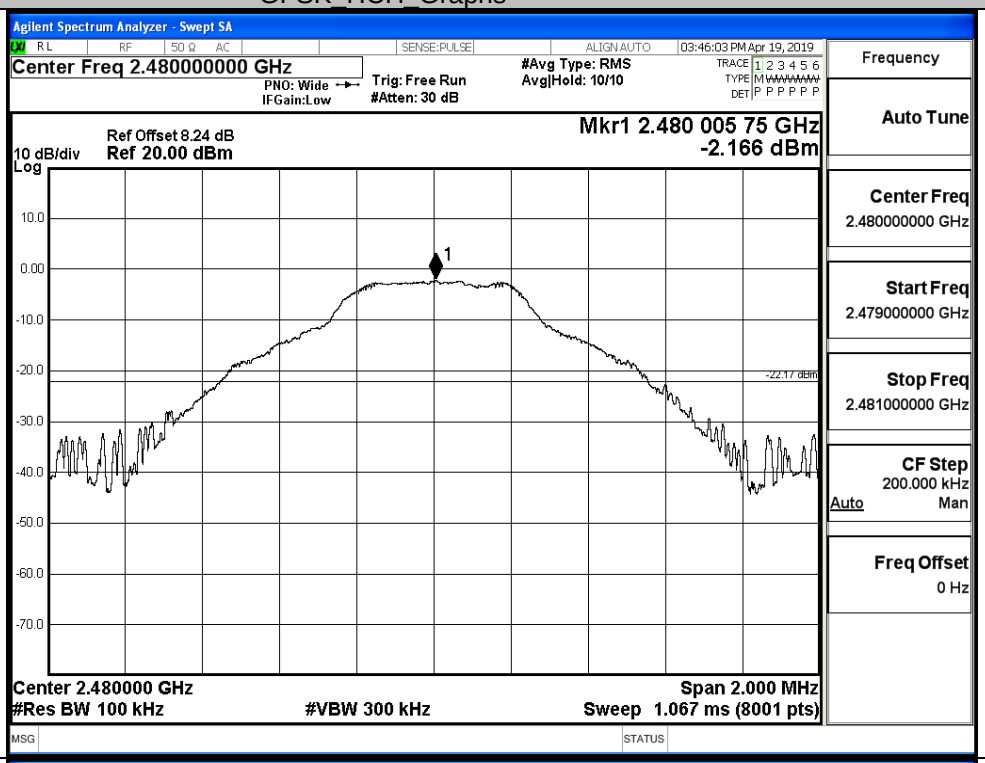
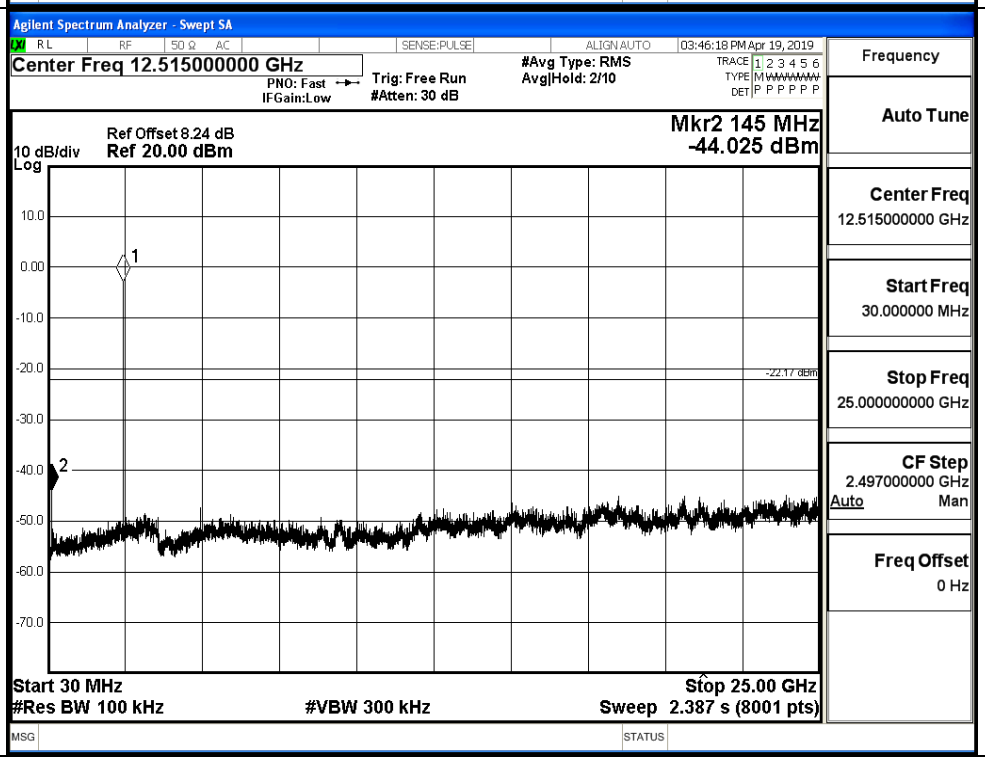
8DPSK _3DH5/MCH	
8DPSK _3DH5/HCH	

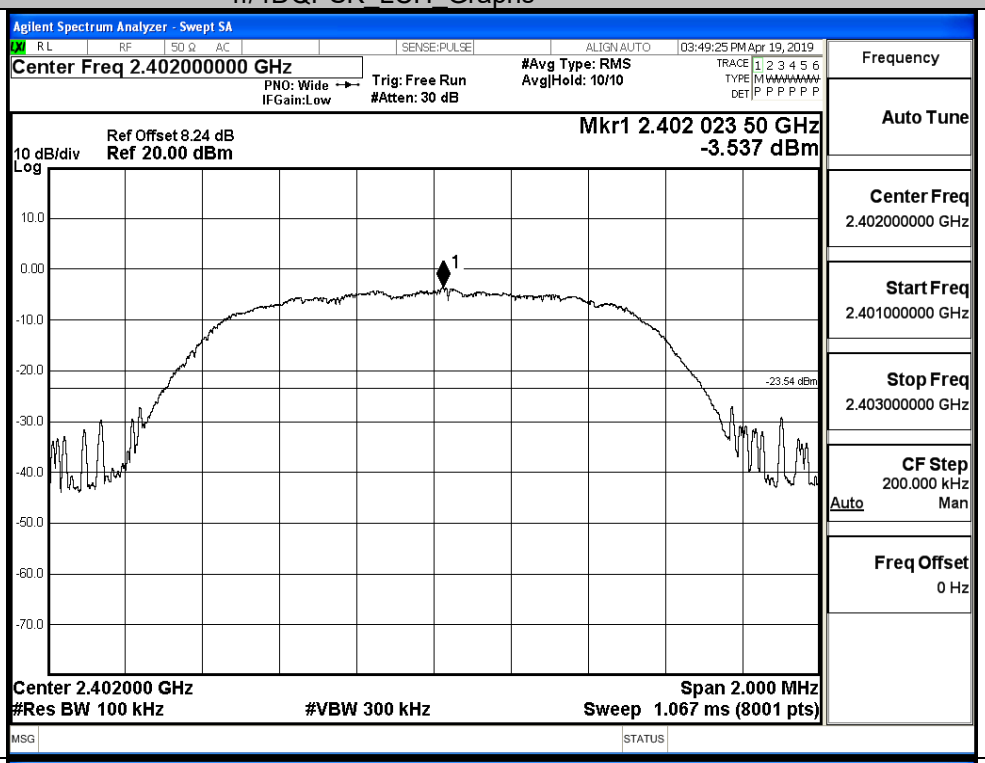
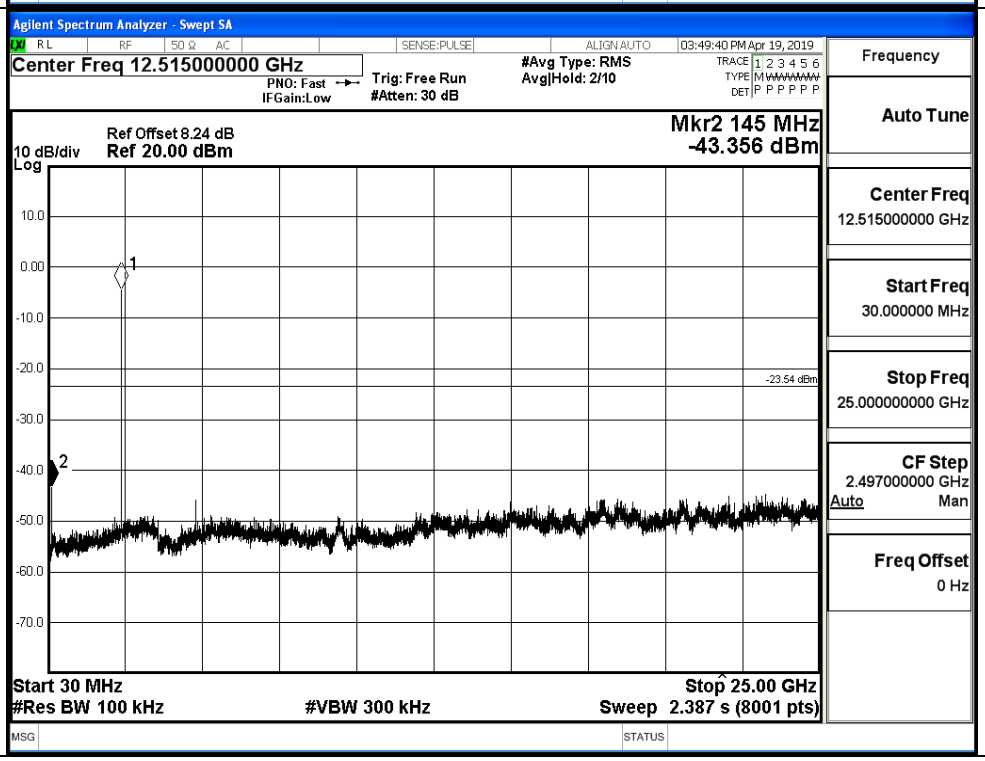
A.6 RF Conducted Spurious Emissions

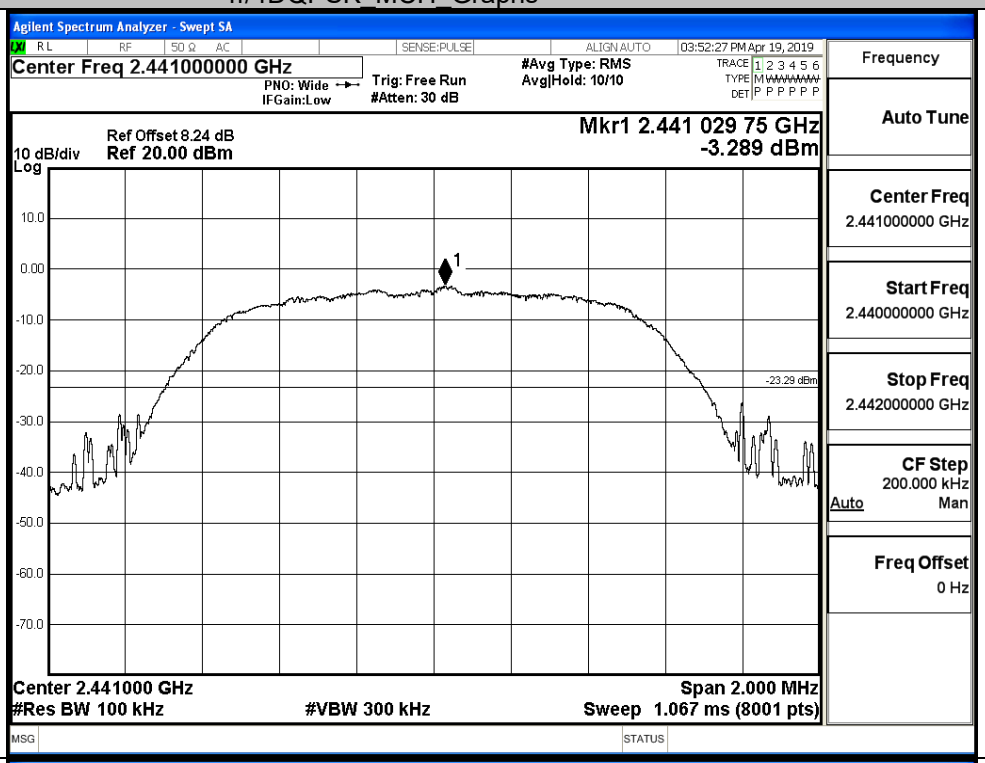
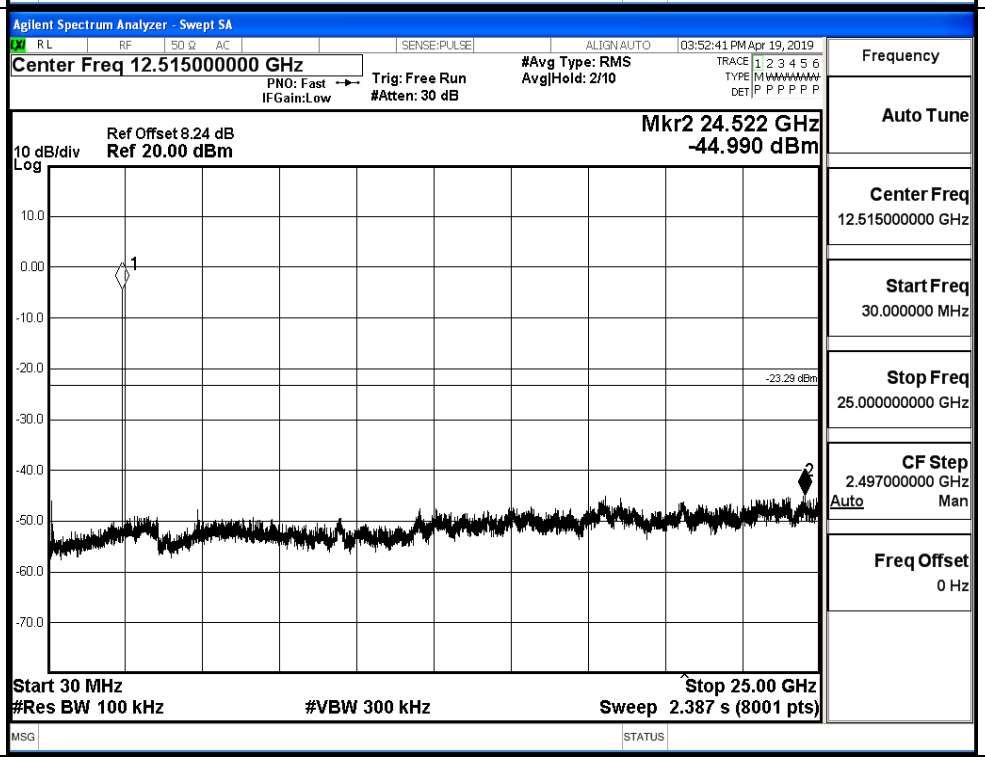
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-2.412	-42.551	-22.412	PASS
	MCH	-2.149	-43.909	-22.149	PASS
	HCH	-2.166	-44.025	-22.166	PASS
π/4DQPSK	LCH	-3.537	-43.356	-23.537	PASS
	MCH	-3.289	-44.990	-23.289	PASS
	HCH	-3.594	-44.439	-23.594	PASS
8DPSK	LCH	-3.501	-41.219	-23.501	PASS
	MCH	-3.402	-43.440	-23.402	PASS
	HCH	-3.353	-42.053	-23.353	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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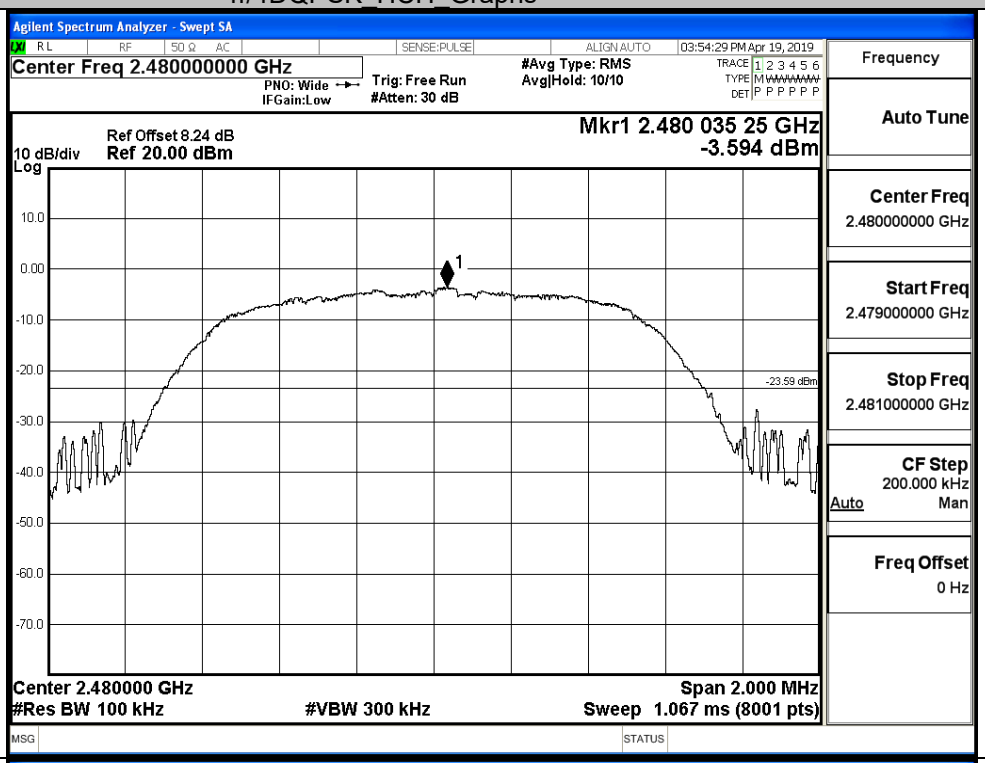
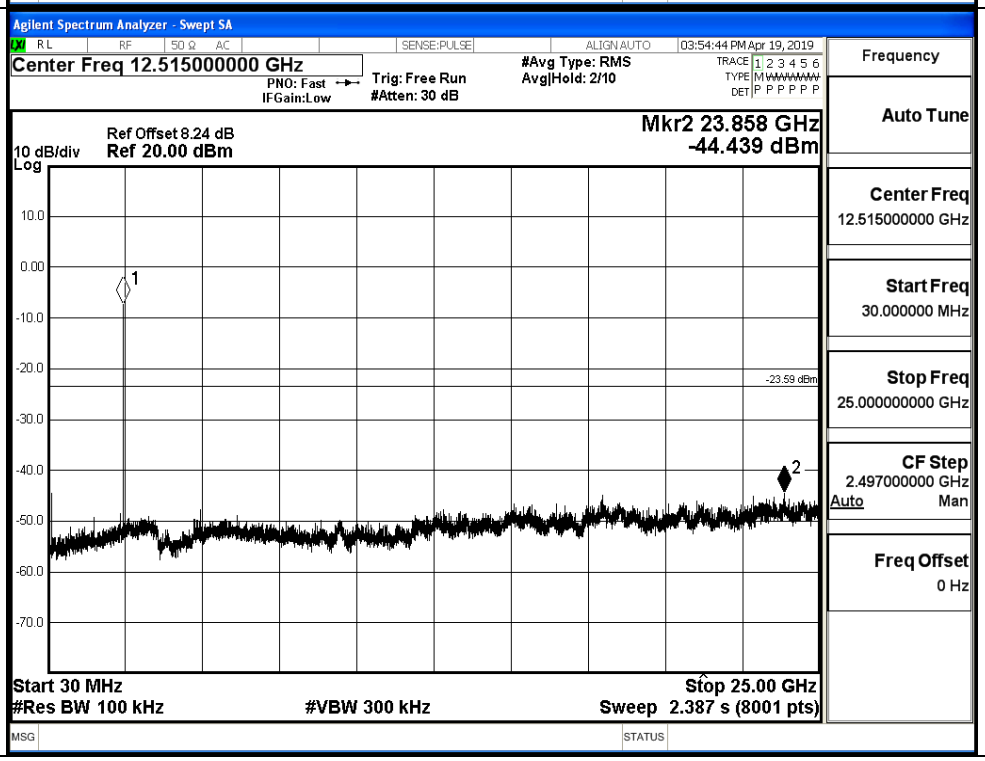
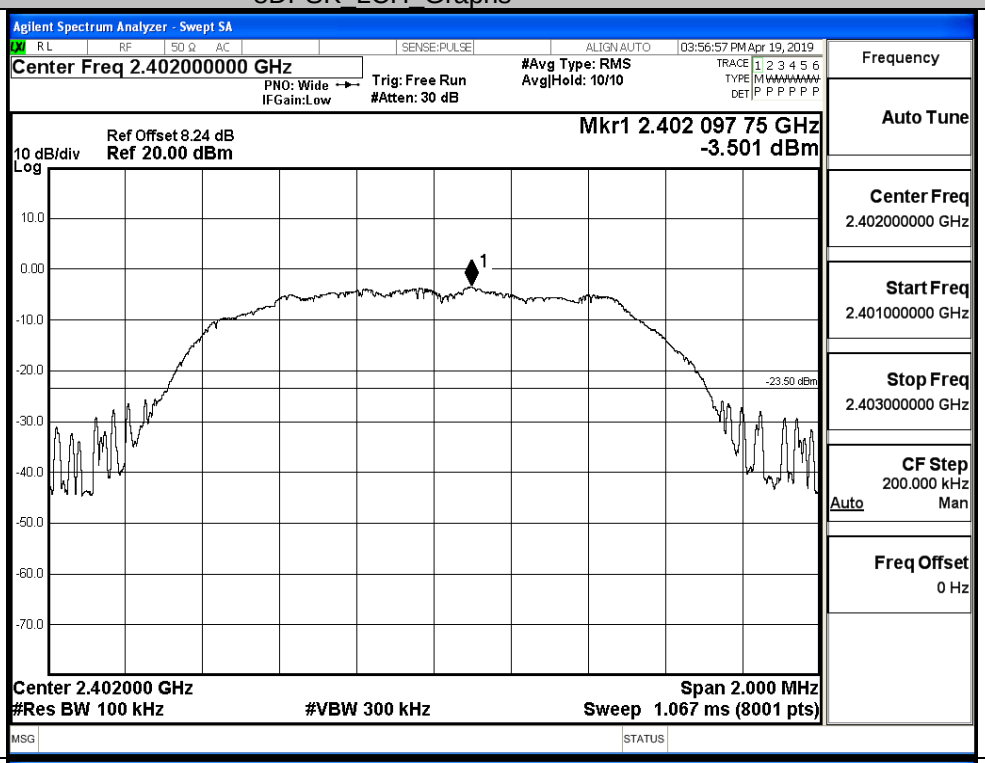
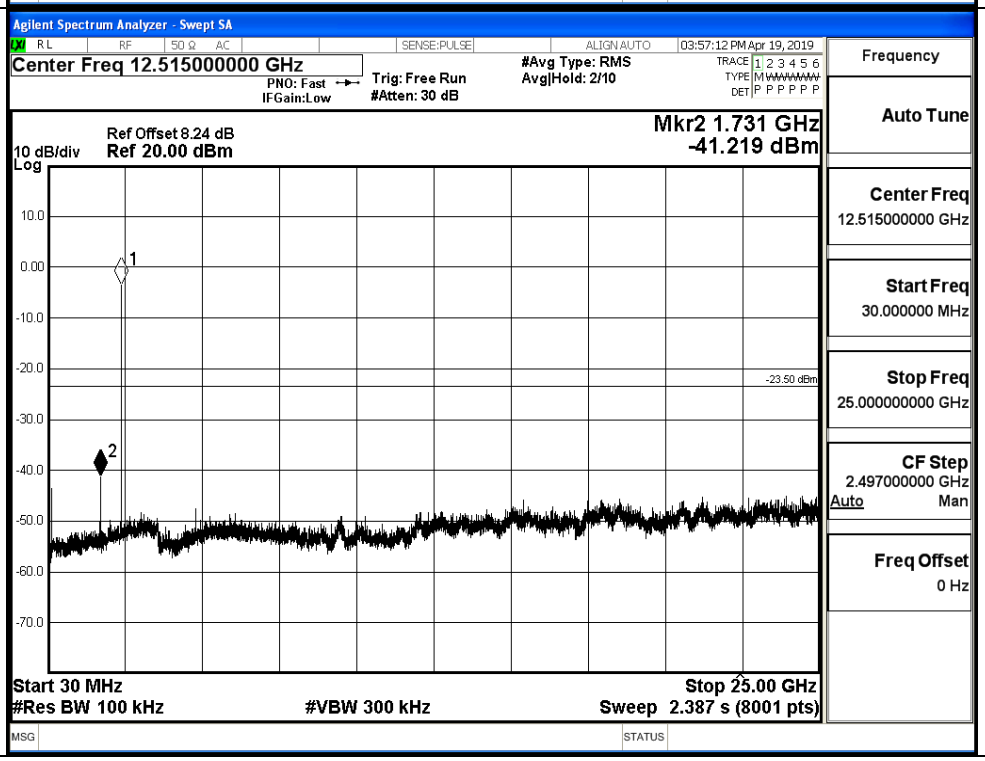
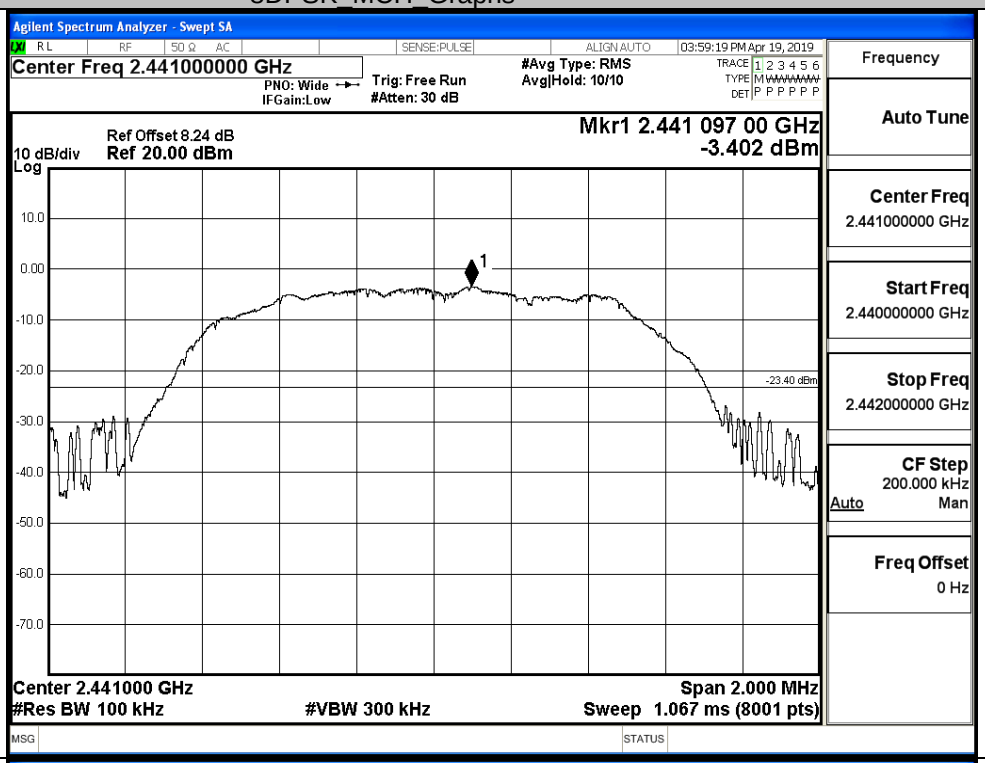
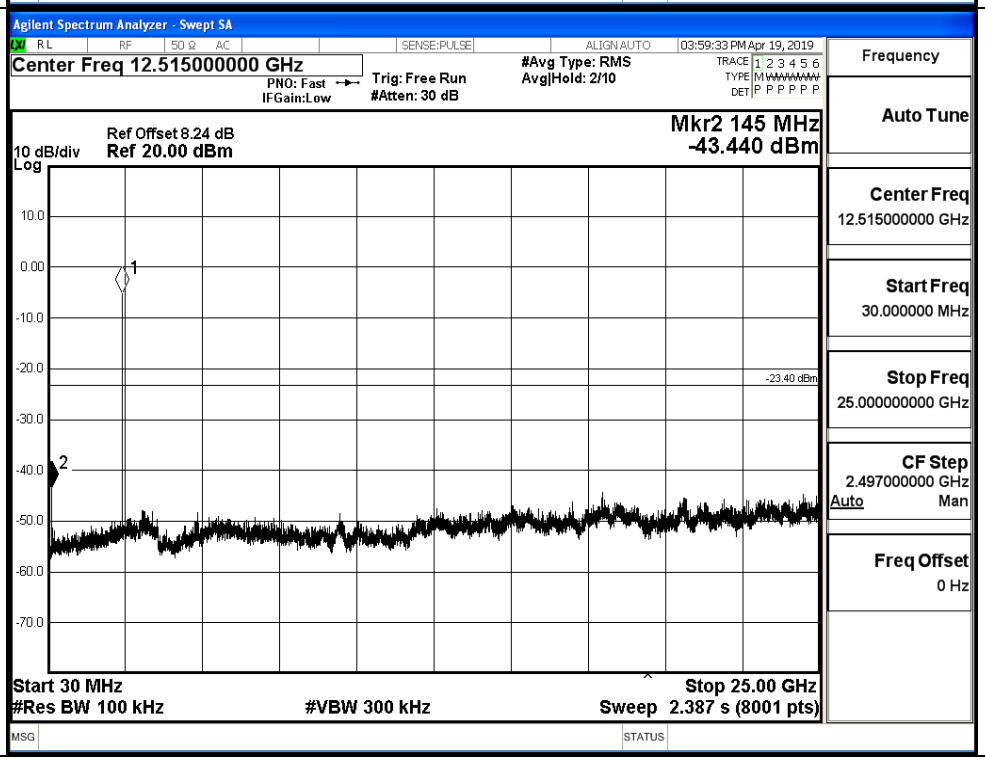
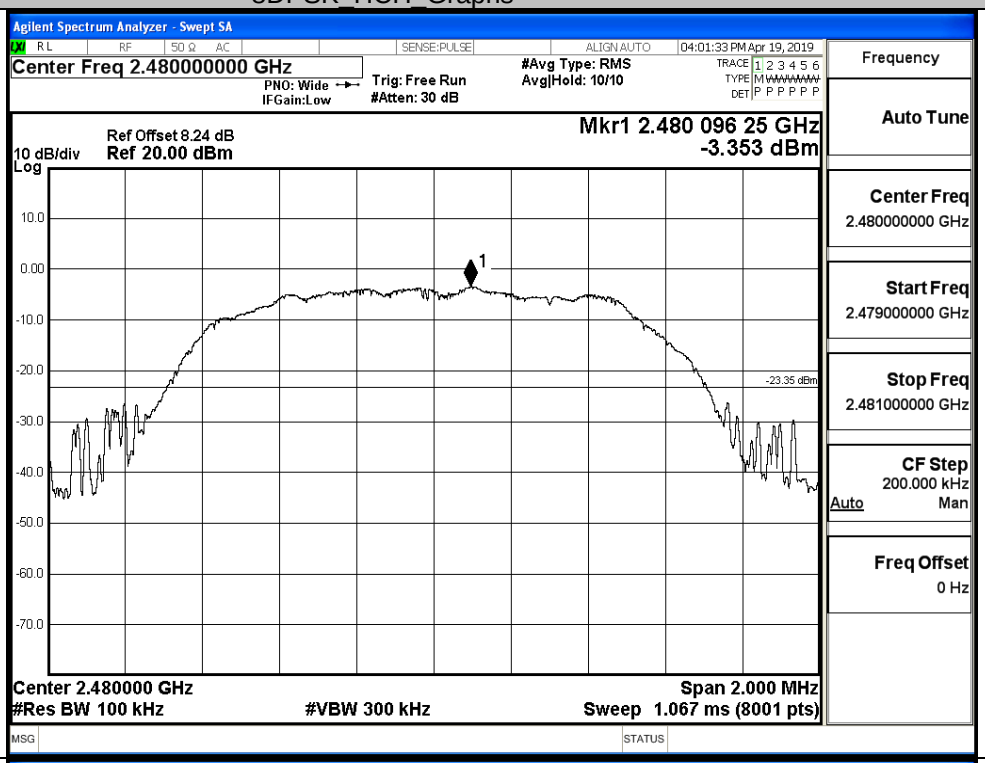
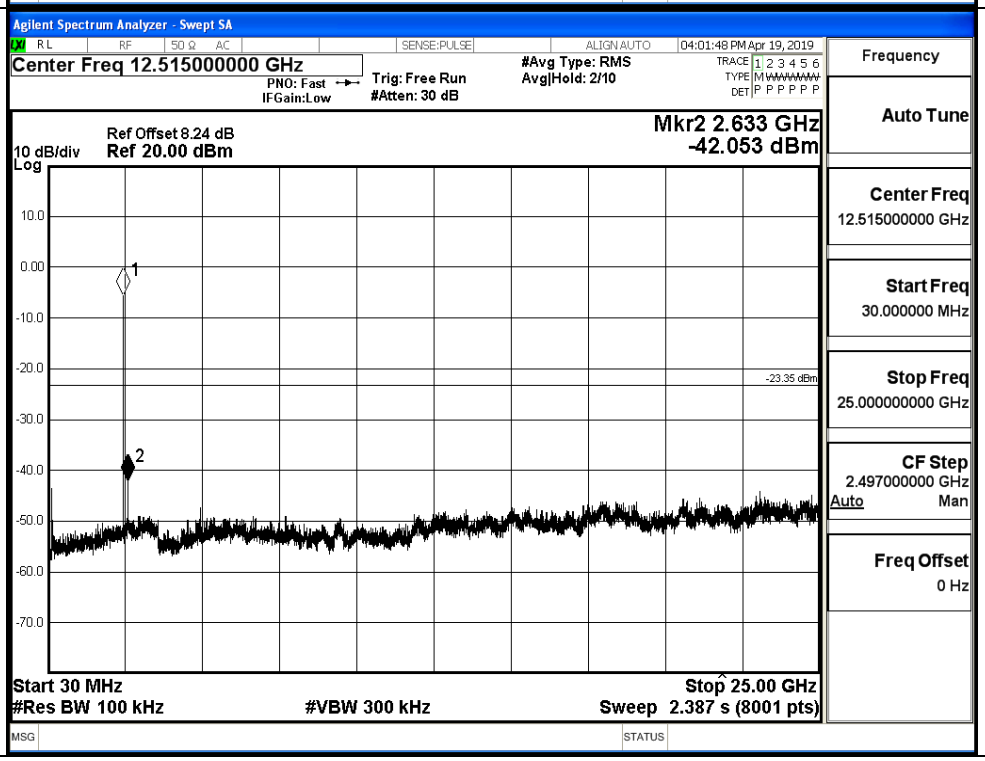
Pref			
Puw			

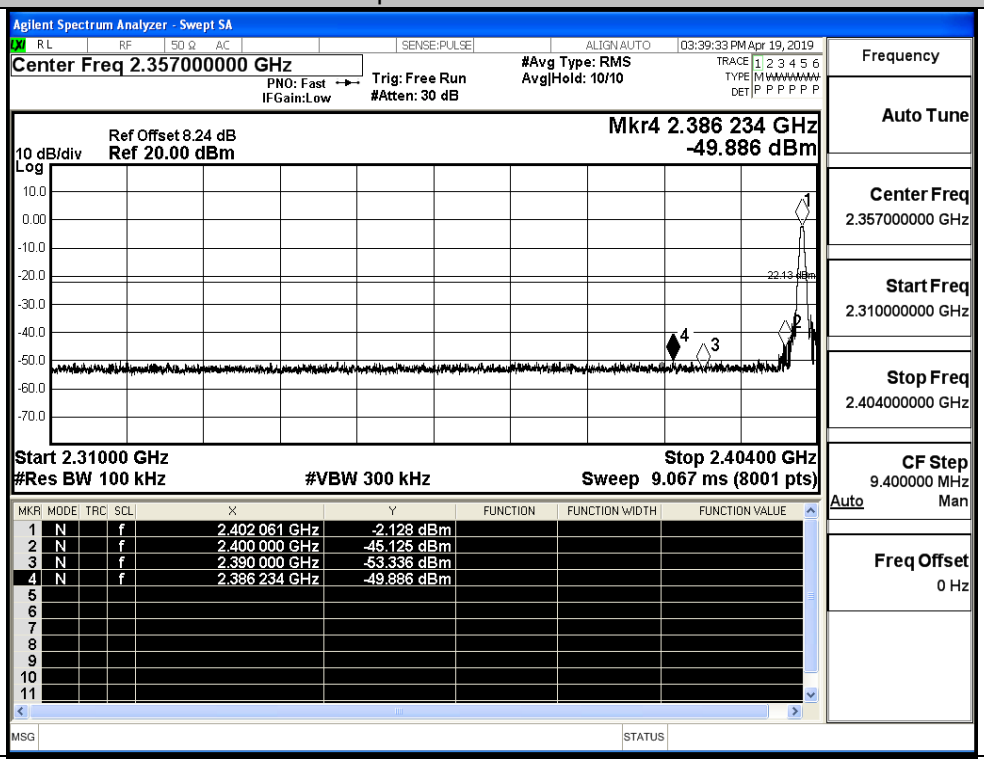
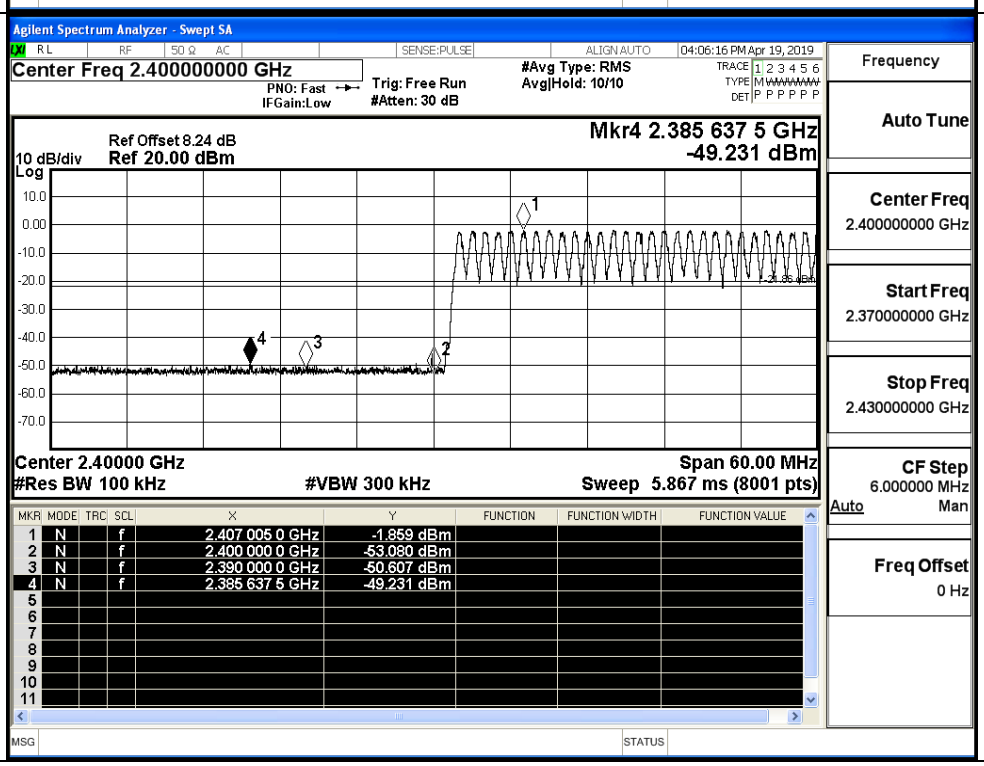
8DPSK_LCH_Graphs			
Pref			
Puw			

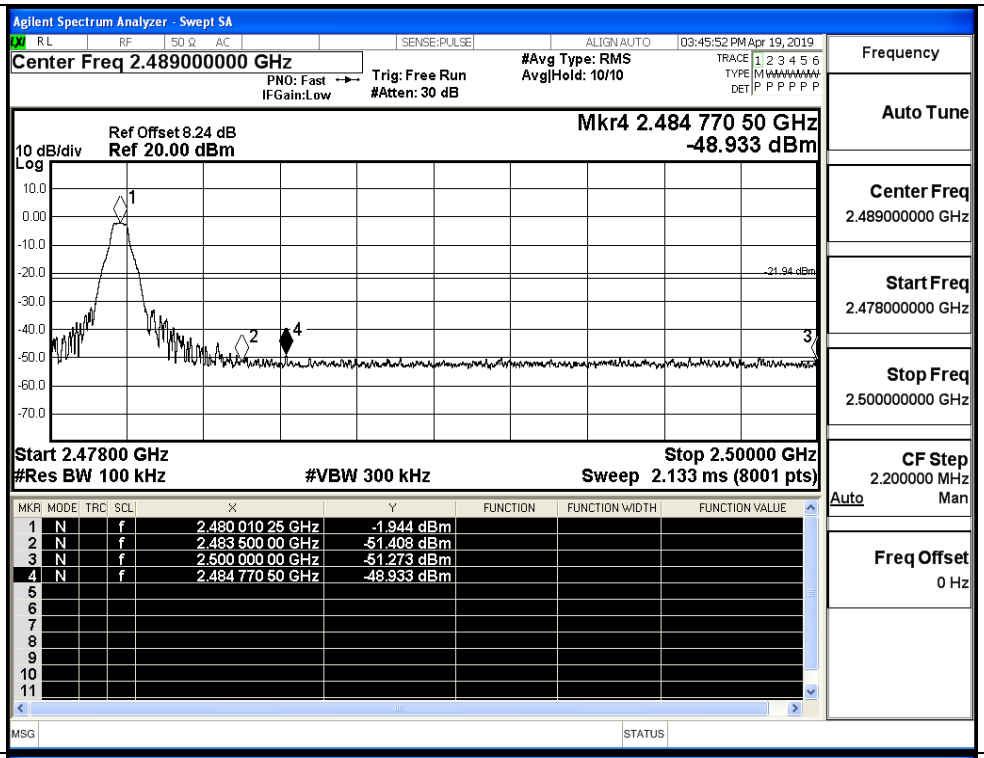
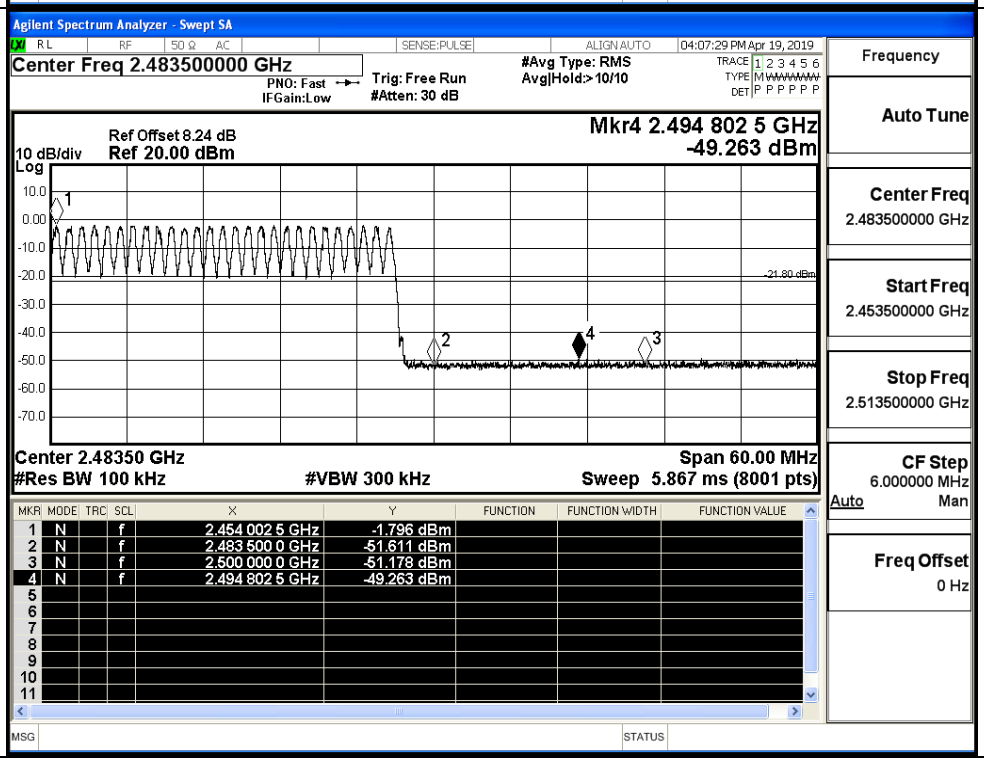
8DPSK_MCH_Graphs			
Pref			
Puw			

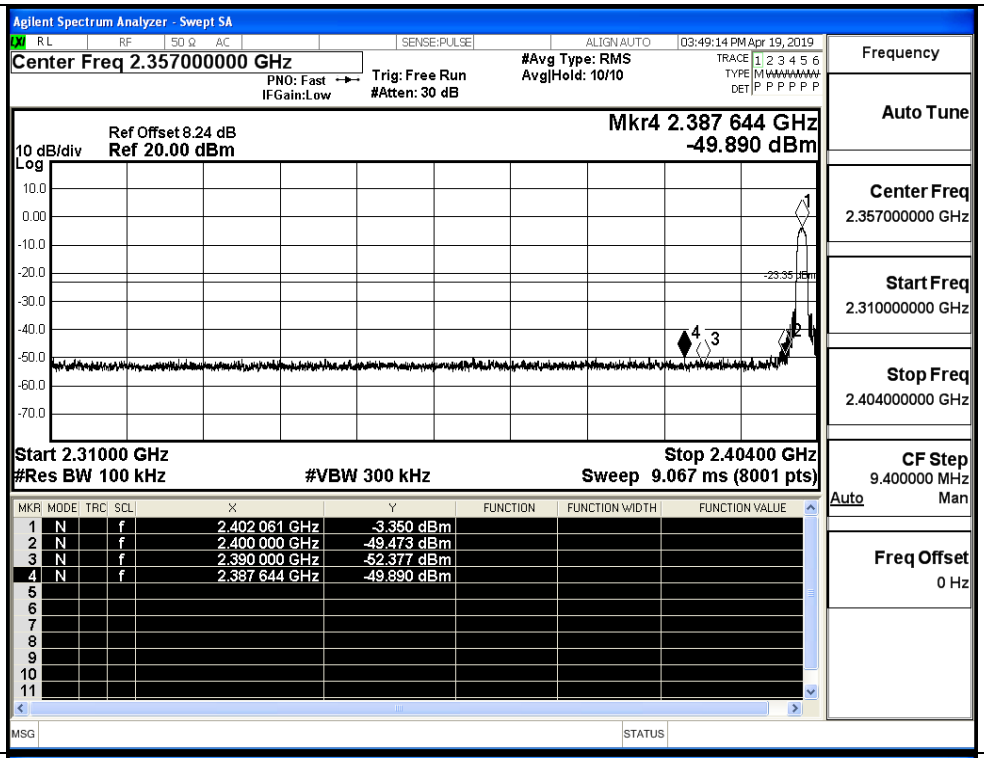
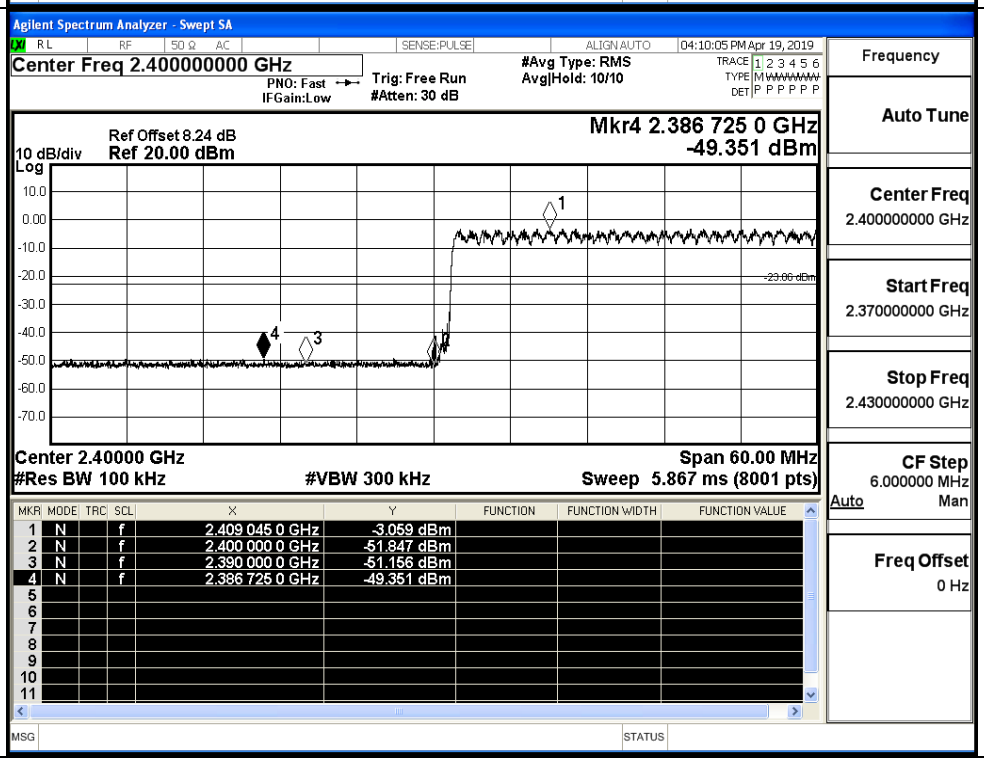
8DPSK_HCH_Graphs			
Pref			
Puw			

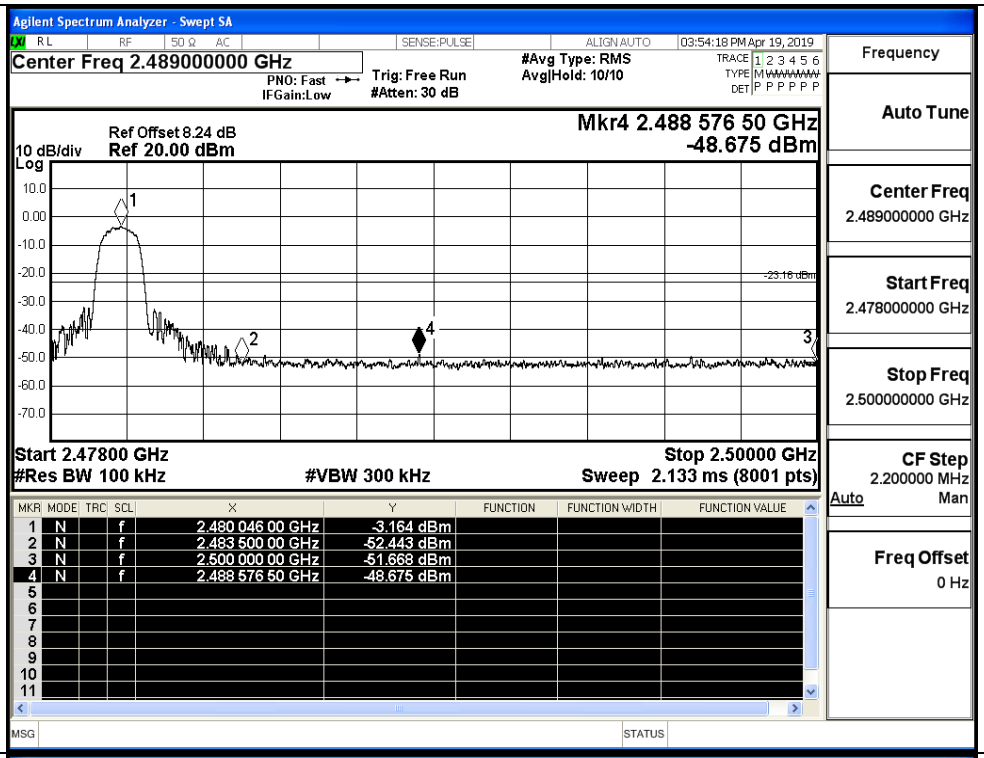
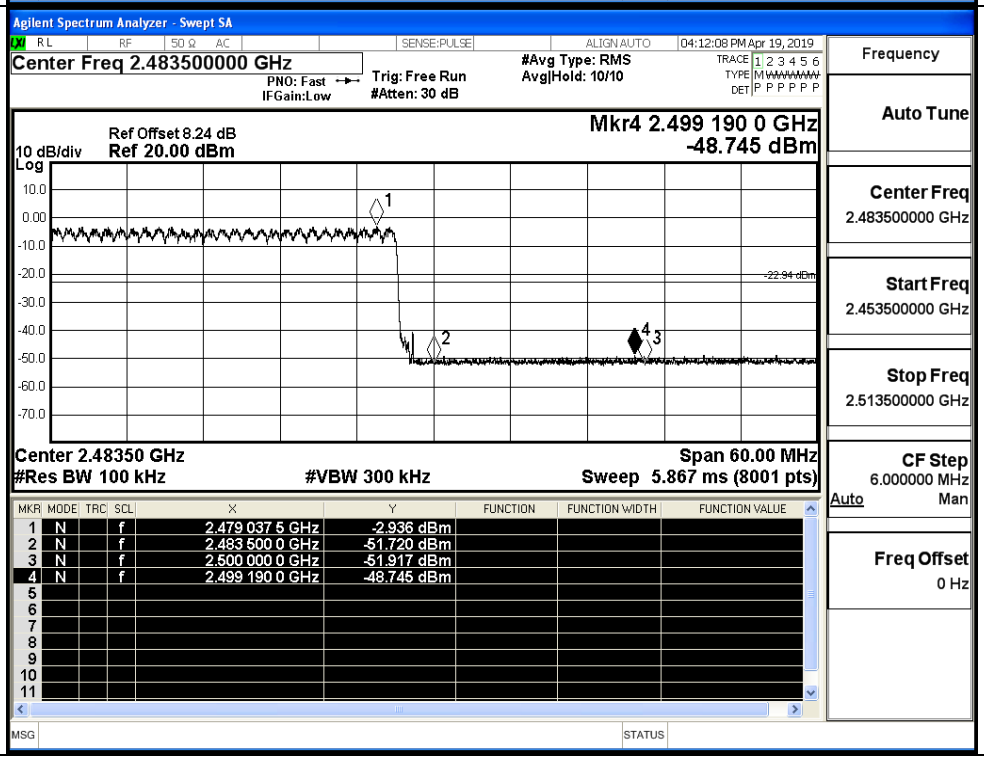
A.7 Band-edge for RF Conducted Emissions

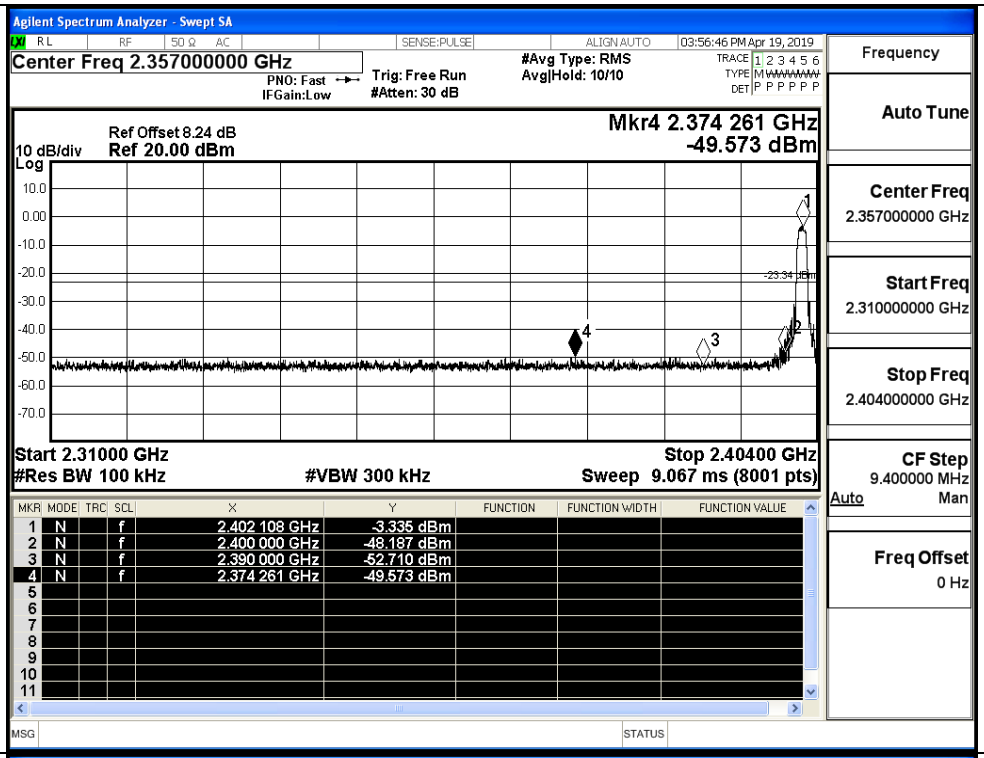
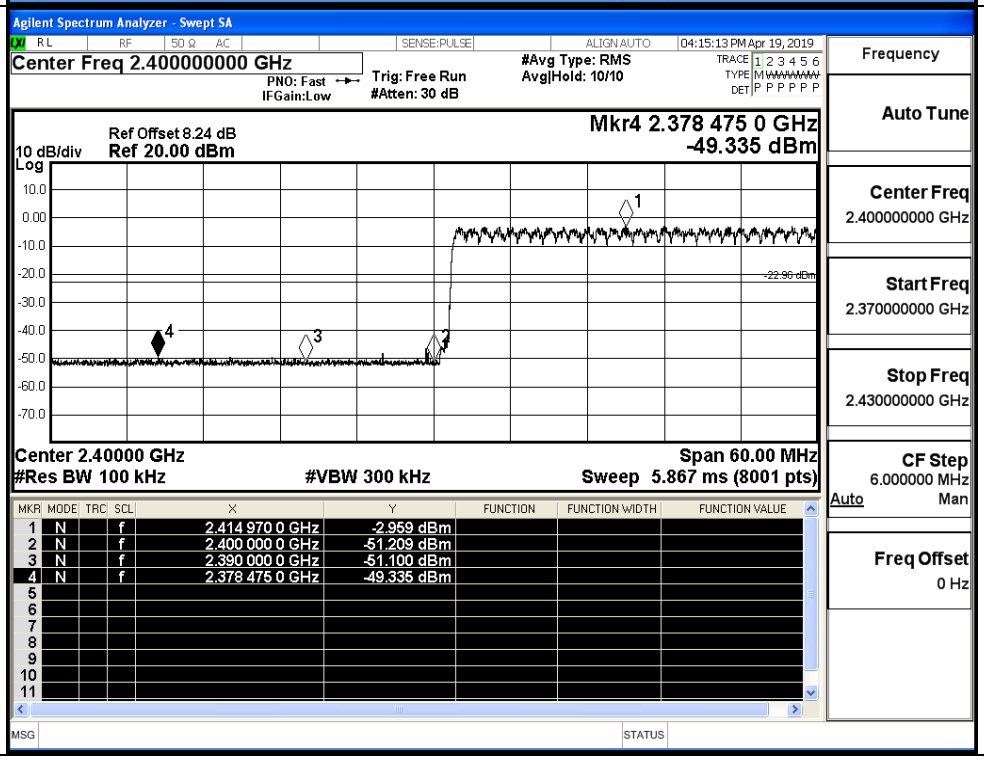
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-2.128	Off	-49.886	-22.13	PASS
			-1.859	On	-49.231	-21.86	PASS
	HCH	2480	-1.944	Off	-48.933	-21.94	PASS
			-1.796	On	-49.263	-21.8	PASS
π/4DQPSK	LCH	2402	-3.350	Off	-49.890	-23.35	PASS
			-3.059	On	-49.351	-23.06	PASS
	HCH	2480	-3.164	Off	-48.675	-23.16	PASS
			-2.936	On	-48.745	-22.94	PASS
8DPSK	LCH	2402	-3.335	Off	-49.573	-23.34	PASS
			-2.959	On	-49.335	-22.96	PASS
	HCH	2480	-3.120	Off	-48.136	-23.12	PASS
			-3.053	On	-48.855	-23.05	PASS

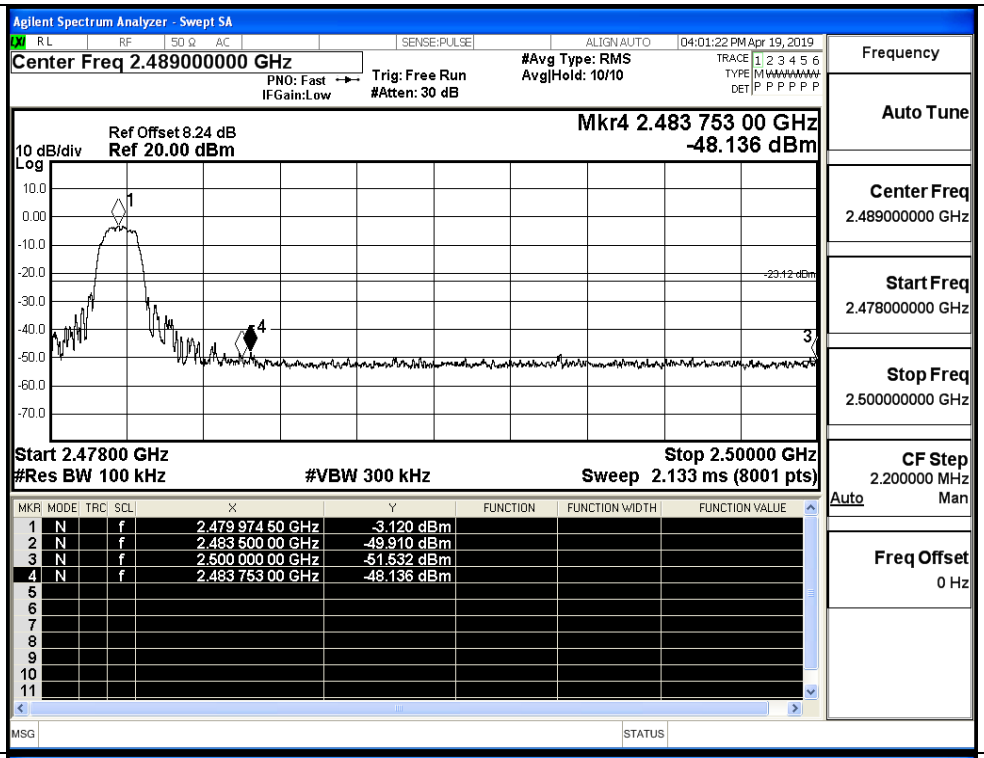
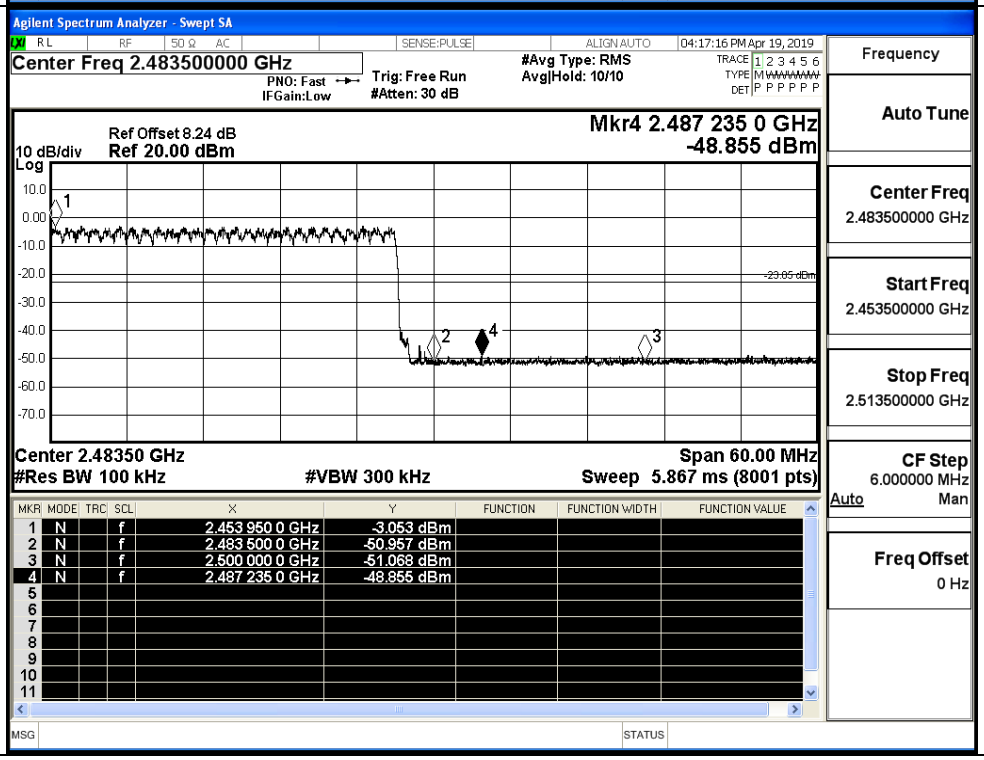
Test Graphs	
GFSK/LCH/No Hop	
GFSK/LCH/Hop	

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	

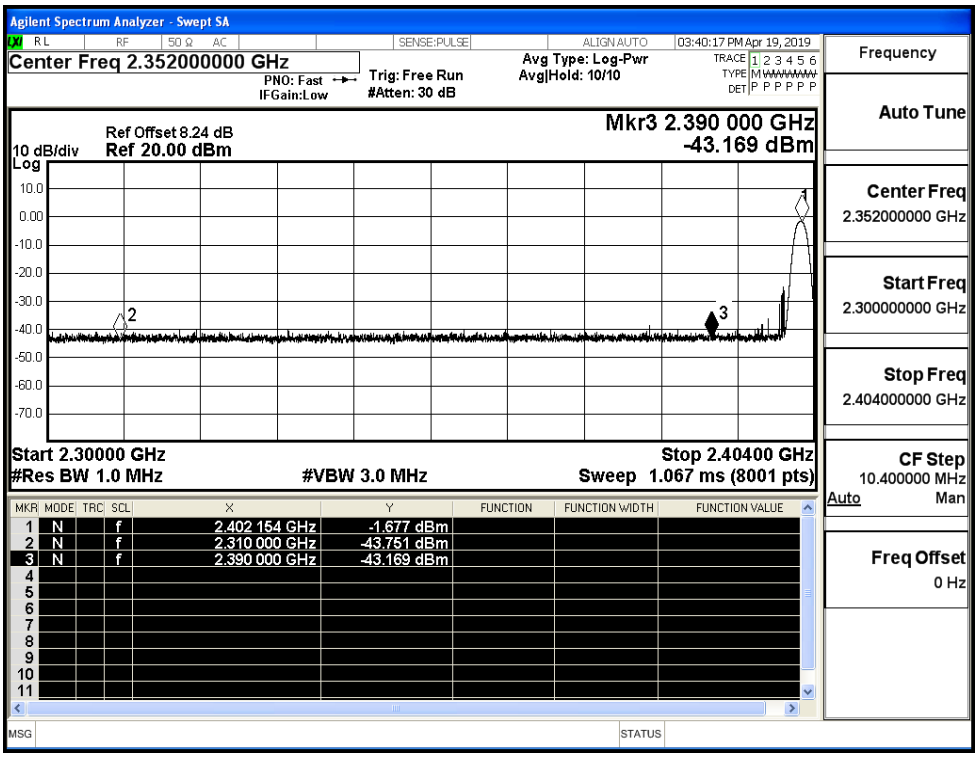
8DPSK/LCH/No Hop	
8DPSK/LCH/Hop	

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

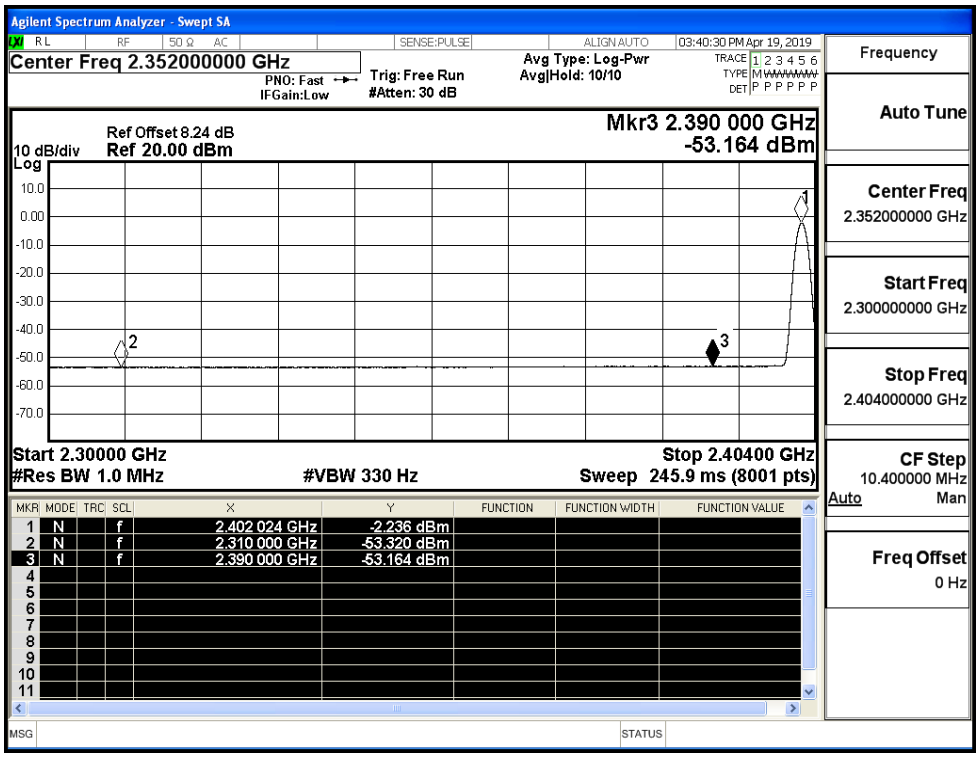
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.75	2.0	0	53.51	PEAK	74	PASS
	Off	2310.0	-53.32	2.0	0	43.94	AV	54	PASS
	Off	2390.0	-43.17	2.0	0	54.09	PEAK	74	PASS
	Off	2390.0	-53.16	2.0	0	44.09	AV	54	PASS
	Off	2483.5	-42.23	2.0	0	55.03	PEAK	74	PASS
	Off	2483.5	-52.79	2.0	0	44.47	AV	54	PASS
	Off	2500.0	-42.55	2.0	0	54.71	PEAK	74	PASS
	Off	2500.0	-52.75	2.0	0	44.51	AV	54	PASS
π/4DQPSK	Off	2310.0	-43.43	2.0	0	53.83	PEAK	74	PASS
	Off	2310.0	-53.50	2.0	0	43.76	AV	54	PASS
	Off	2390.0	-43.38	2.0	0	53.88	PEAK	74	PASS
	Off	2390.0	-53.15	2.0	0	44.11	AV	54	PASS
	Off	2483.5	-42.43	2.0	0	54.83	PEAK	74	PASS
	Off	2483.5	-52.71	2.0	0	44.55	AV	54	PASS
	Off	2500.0	-41.84	2.0	0	55.42	PEAK	74	PASS
	Off	2500.0	-52.81	2.0	0	44.45	AV	54	PASS
8DPSK	Off	2310.0	-43.59	2.0	0	53.67	PEAK	74	PASS
	Off	2310.0	-53.40	2.0	0	43.86	AV	54	PASS
	Off	2390.0	-43.06	2.0	0	54.20	PEAK	74	PASS
	Off	2390.0	-53.18	2.0	0	44.08	AV	54	PASS
	Off	2483.5	-42.81	2.0	0	54.45	PEAK	74	PASS
	Off	2483.5	-52.55	2.0	0	44.70	AV	54	PASS
	Off	2500.0	-42.29	2.0	0	54.97	PEAK	74	PASS
	Off	2500.0	-52.78	2.0	0	44.47	AV	54	PASS

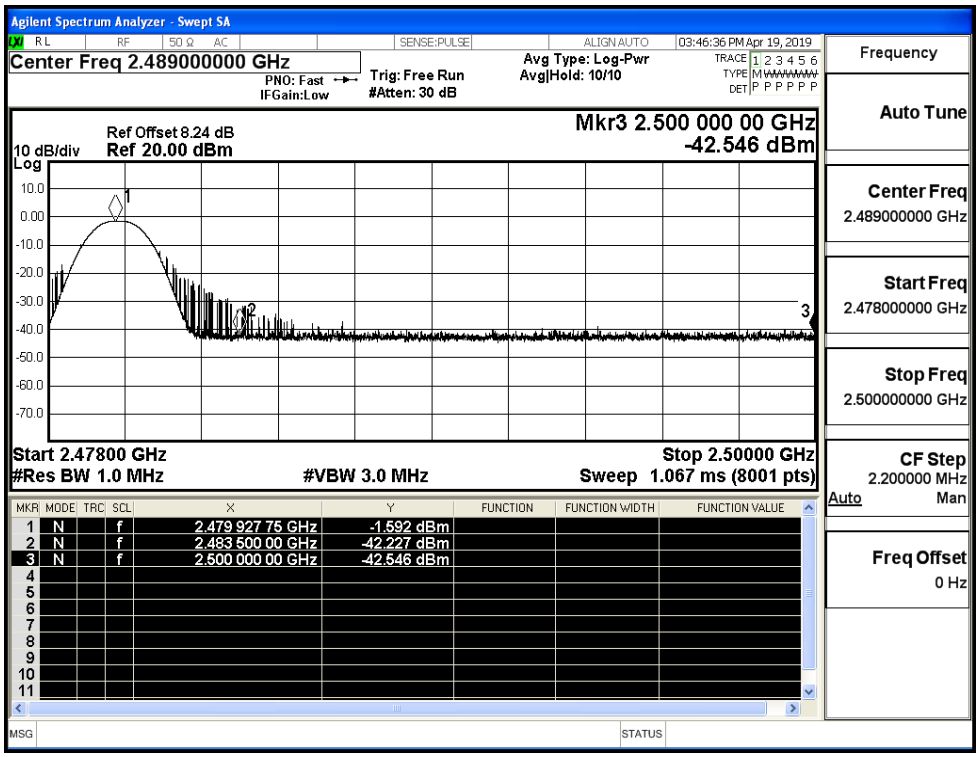
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



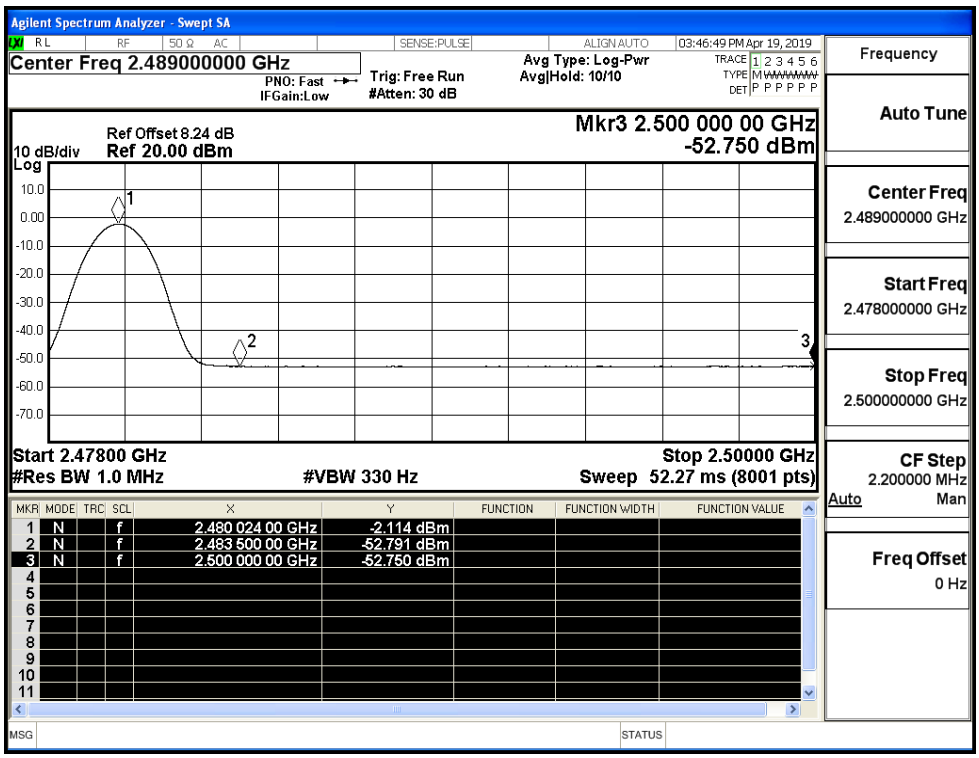
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)



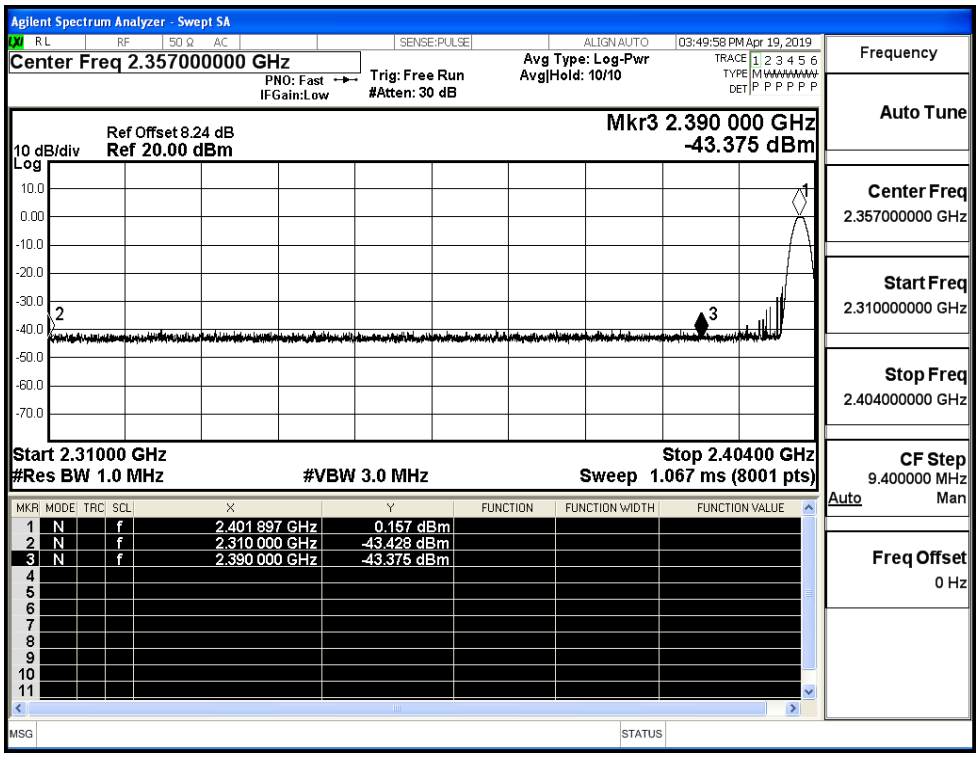
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



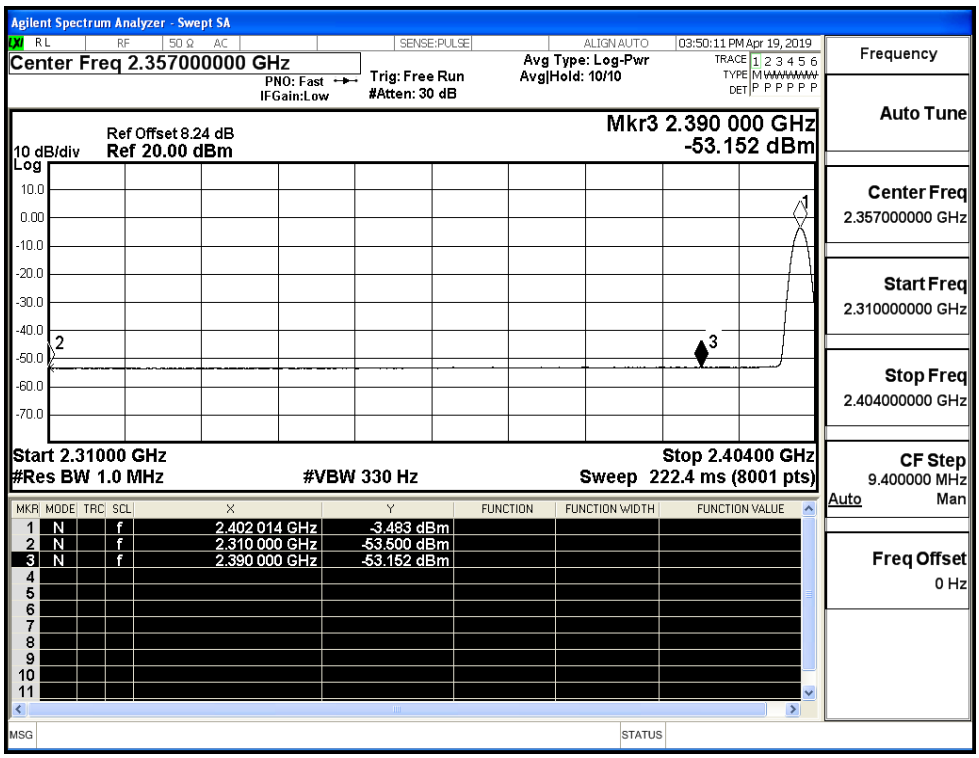
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



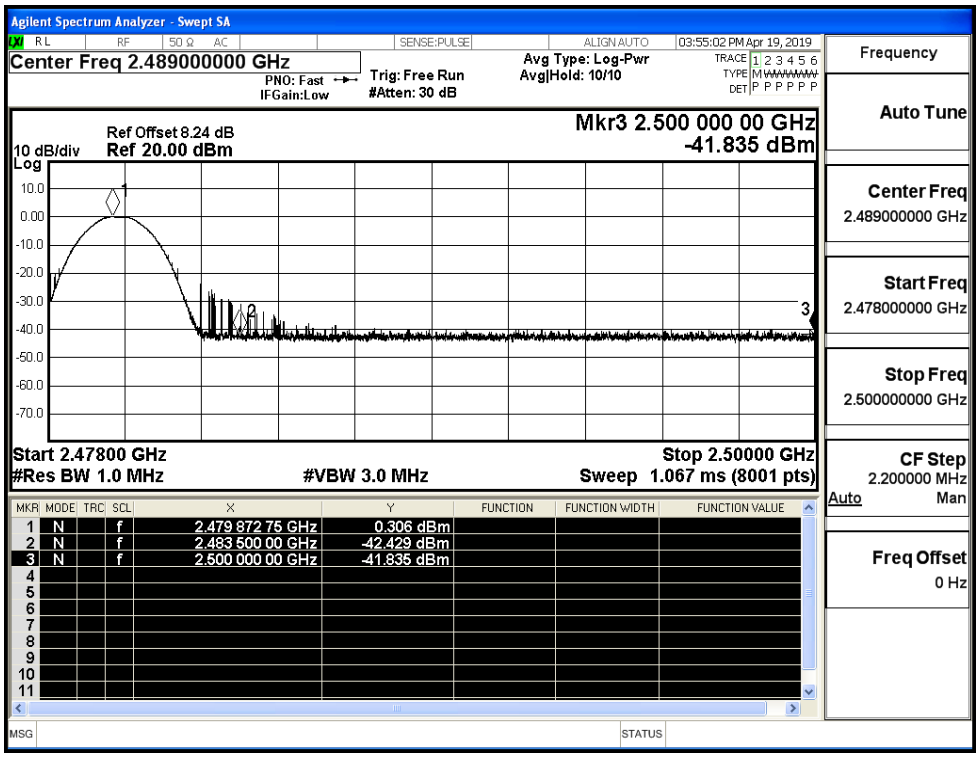
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



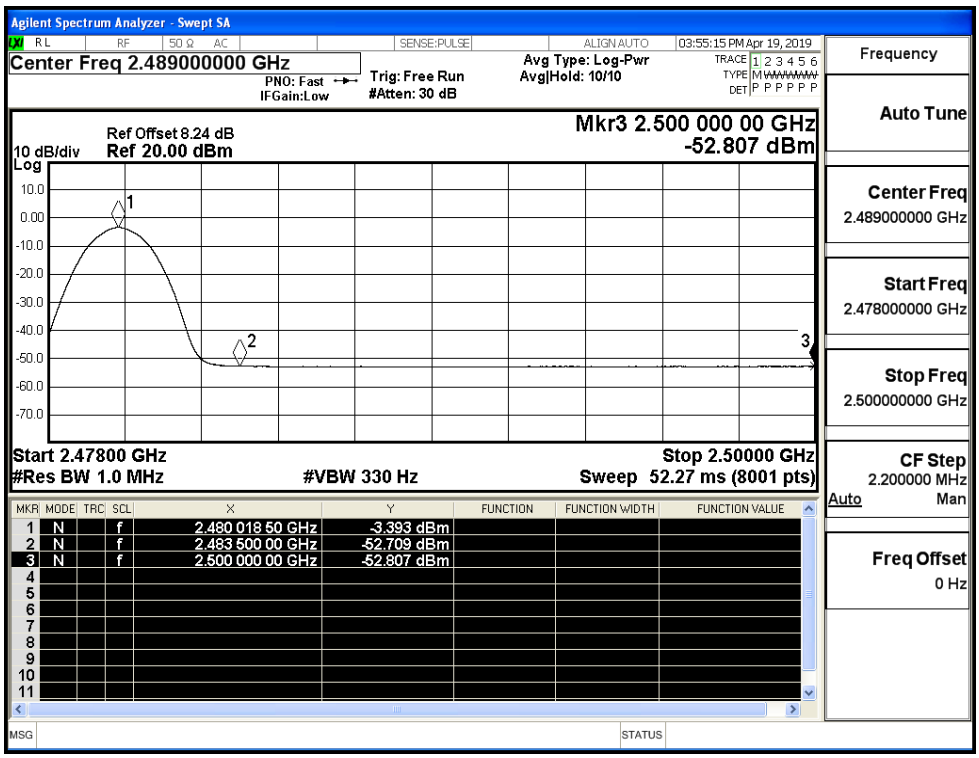
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



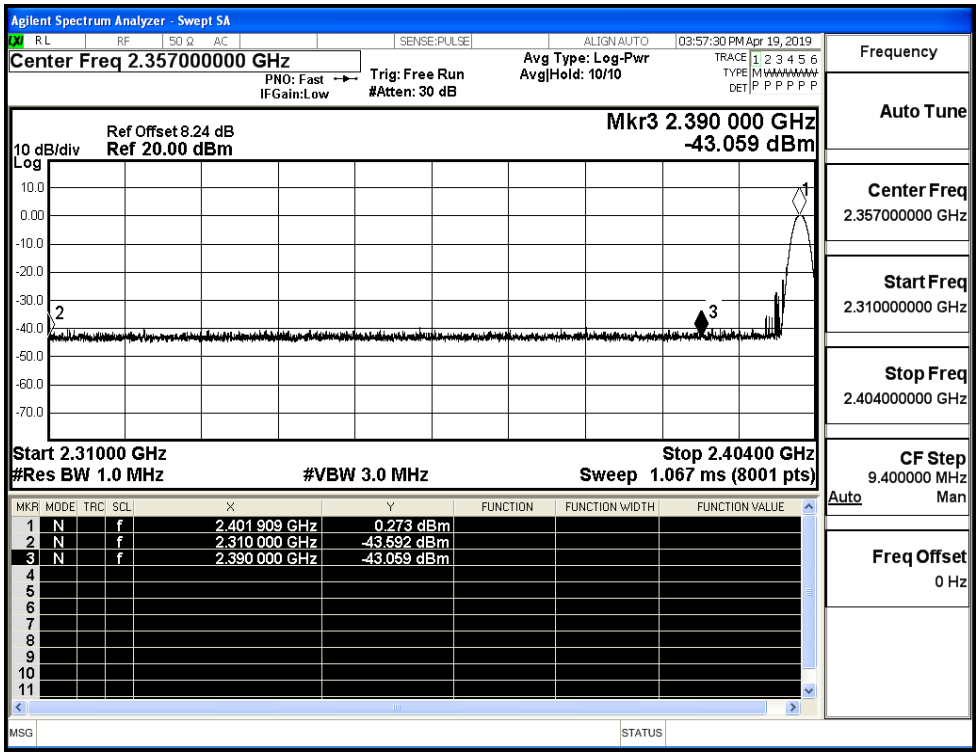
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



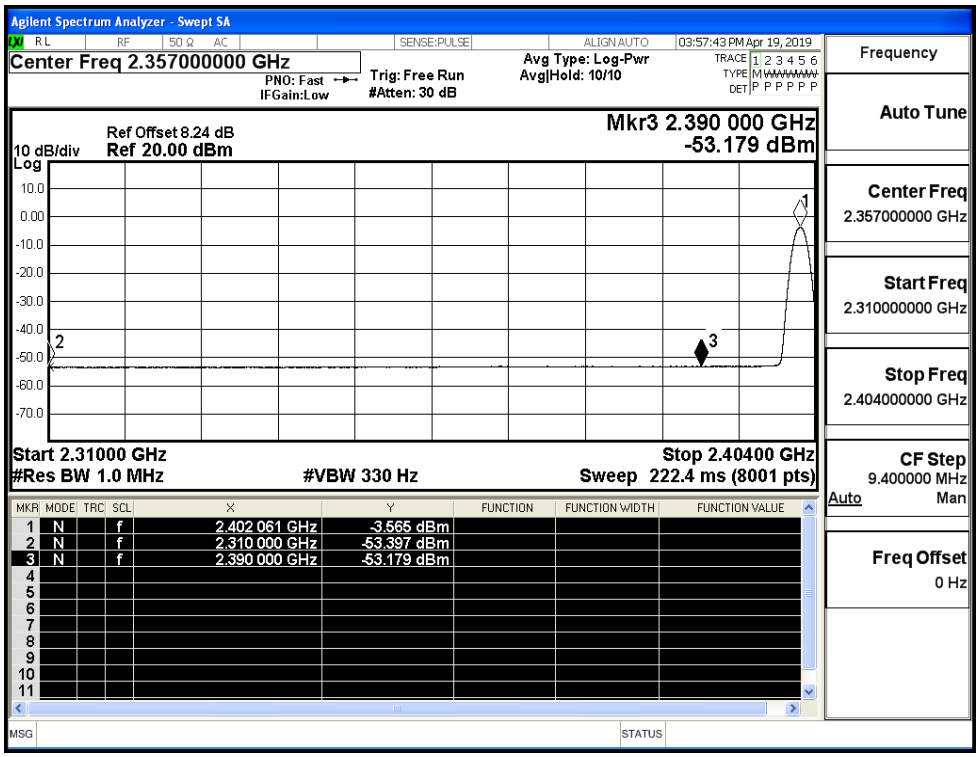
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



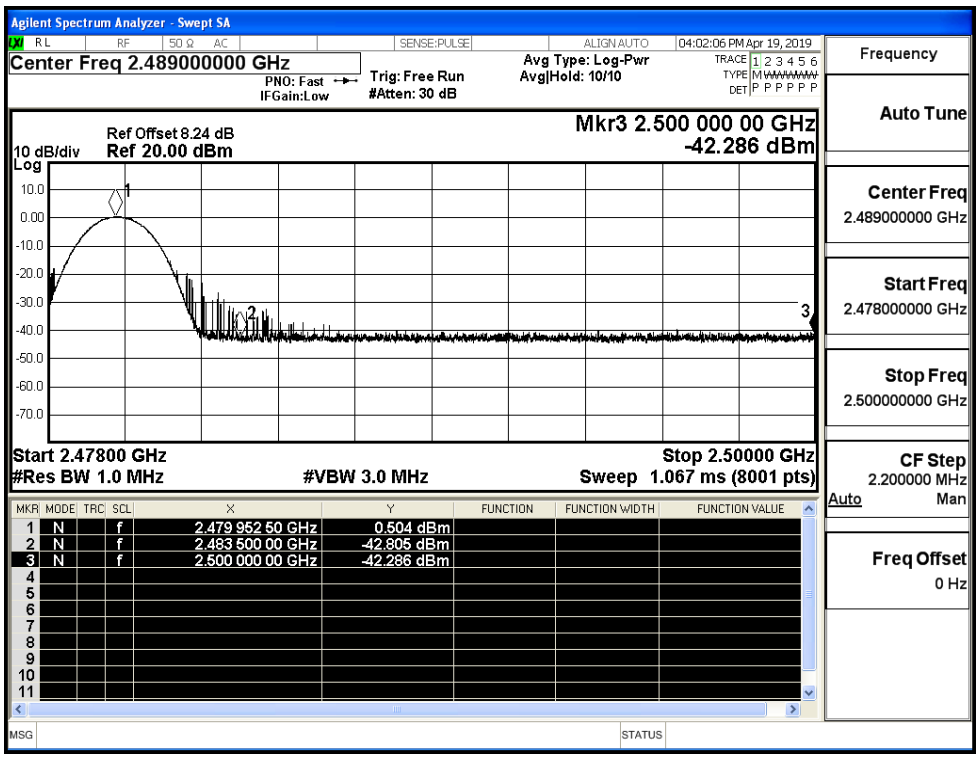
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)