Appendix A

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

Product Name: Action Camera

Trade Mark: AKASO

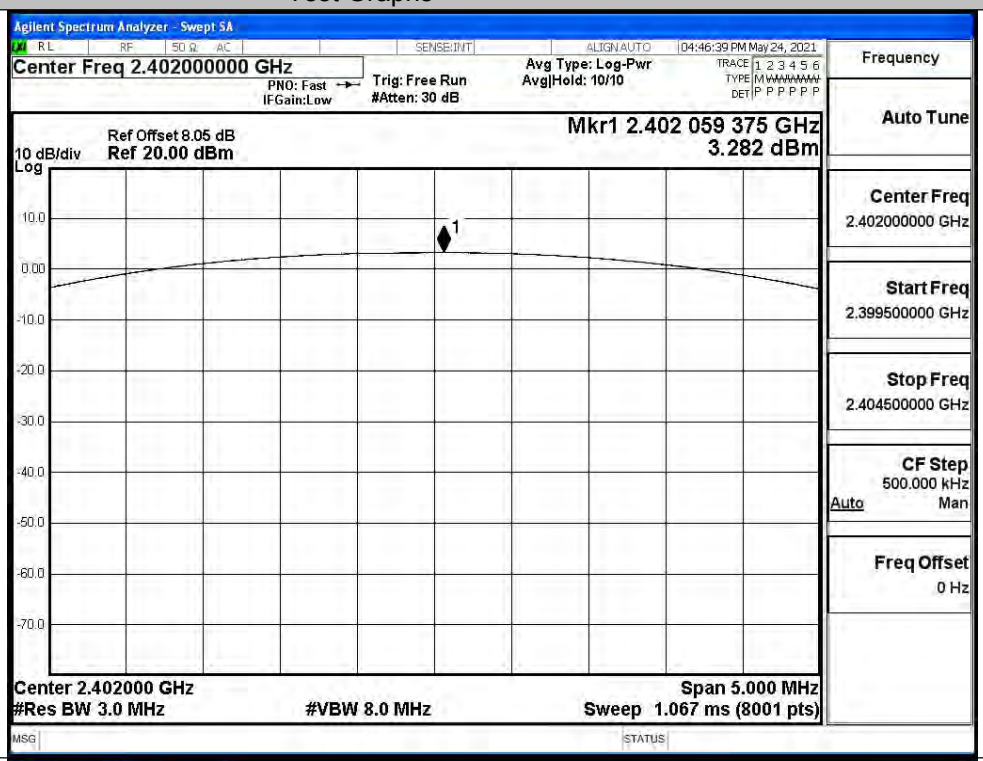
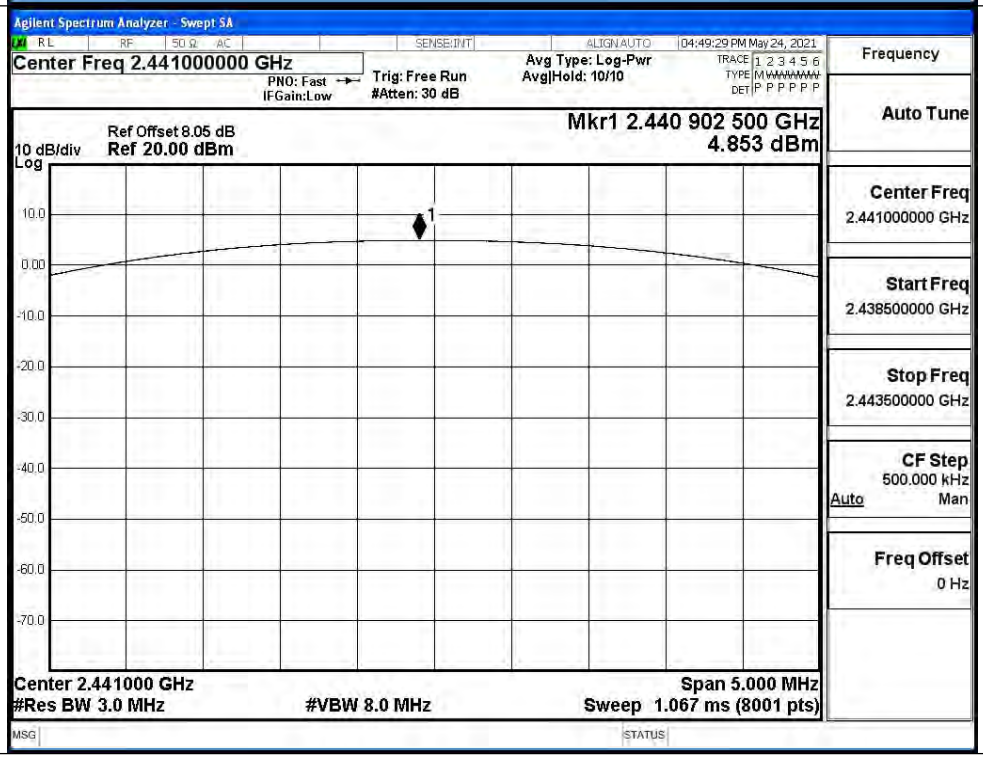
Test Model: Brave 8 Lite

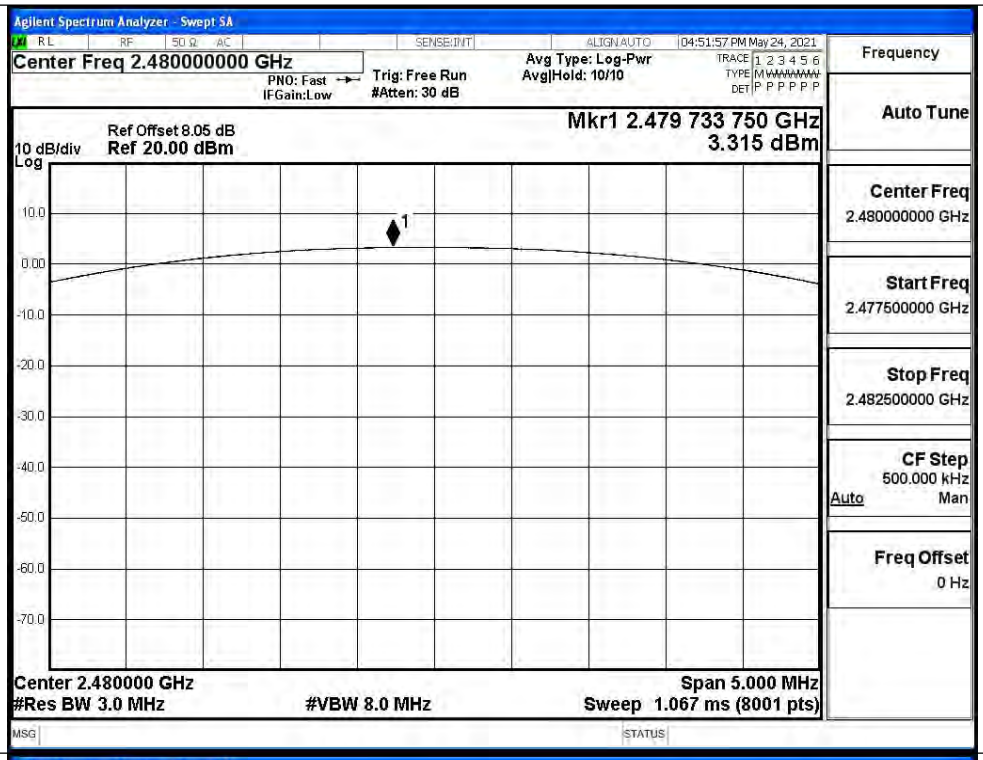
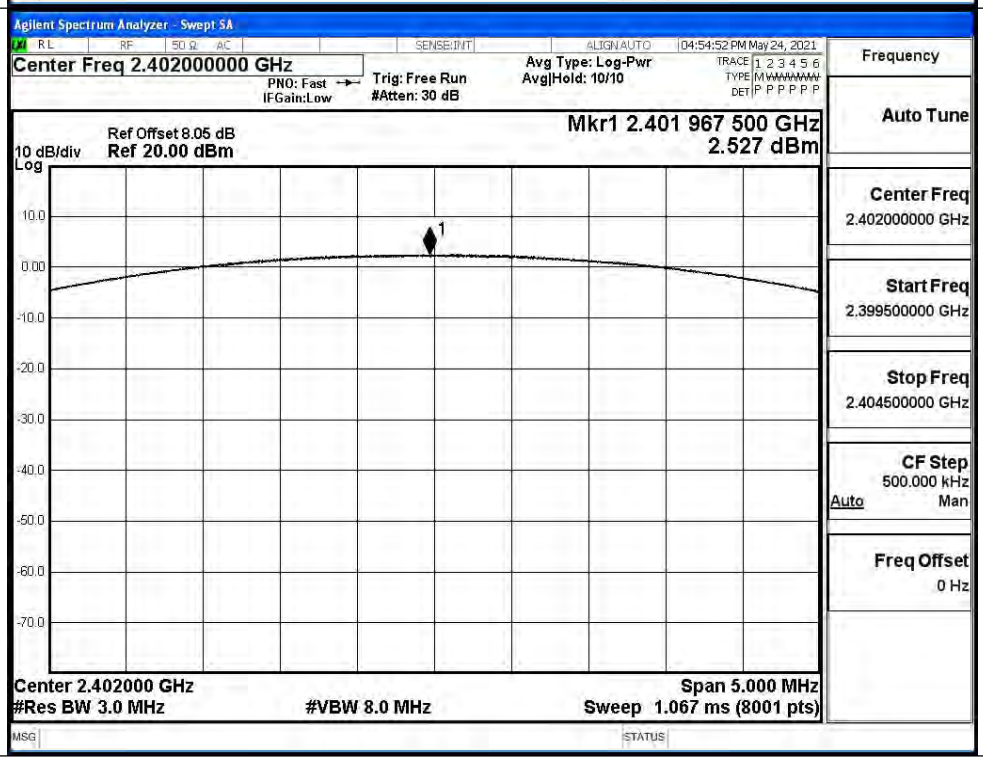
Environmental Conditions

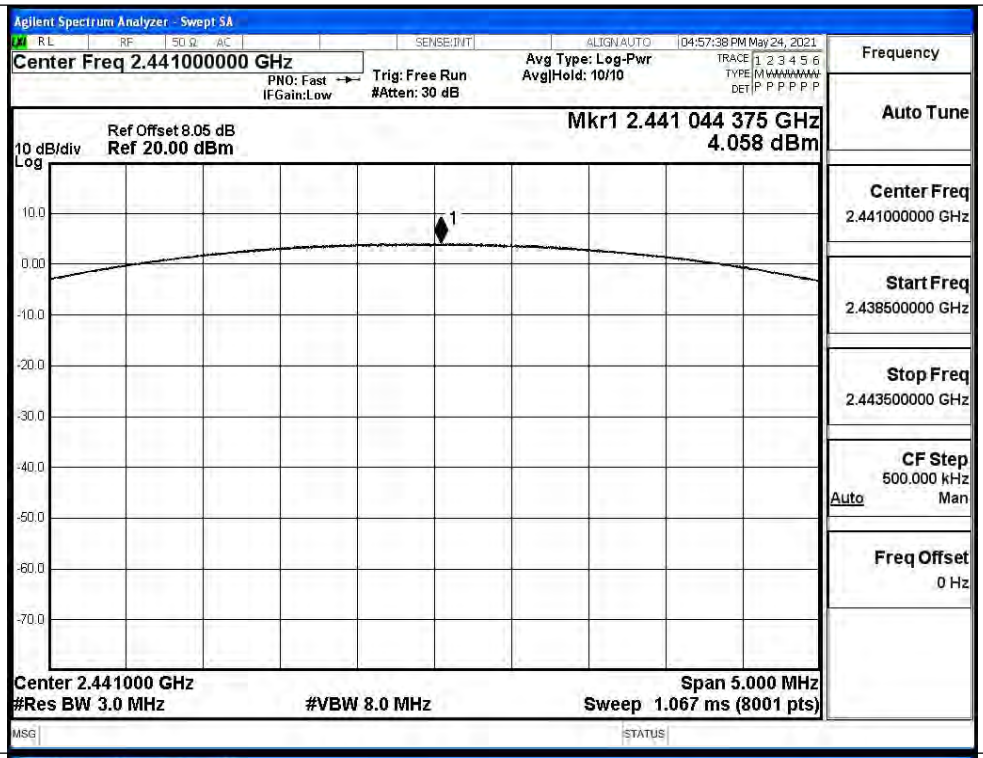
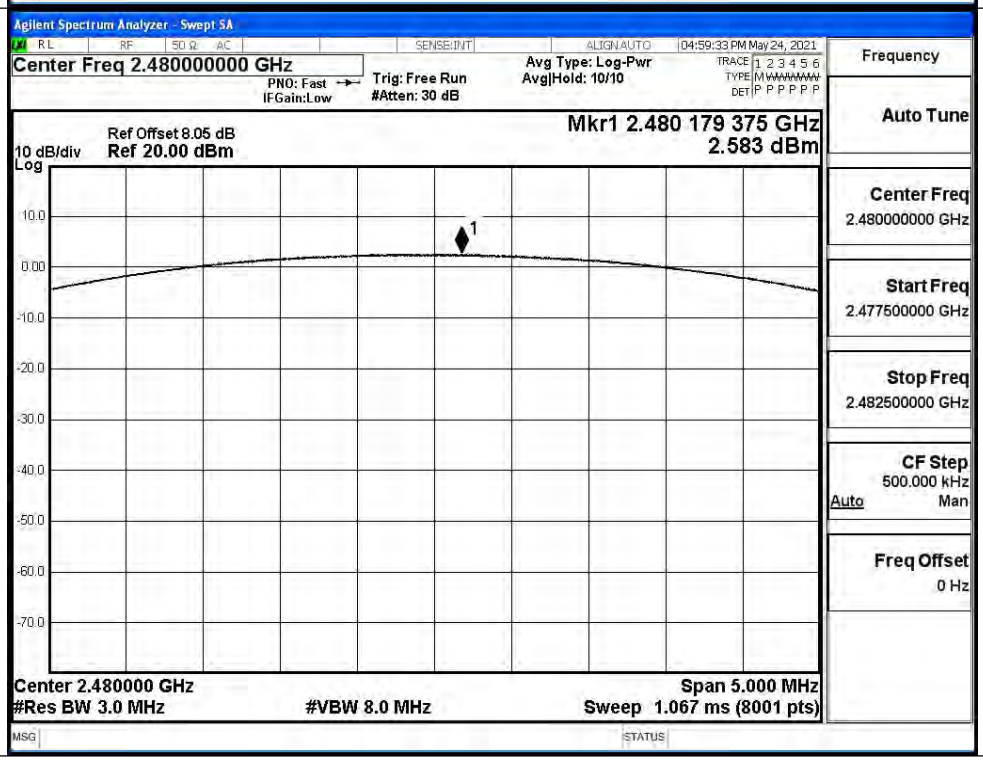
Temperature:	24.6°C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Li
Supervised by:	Li Huan

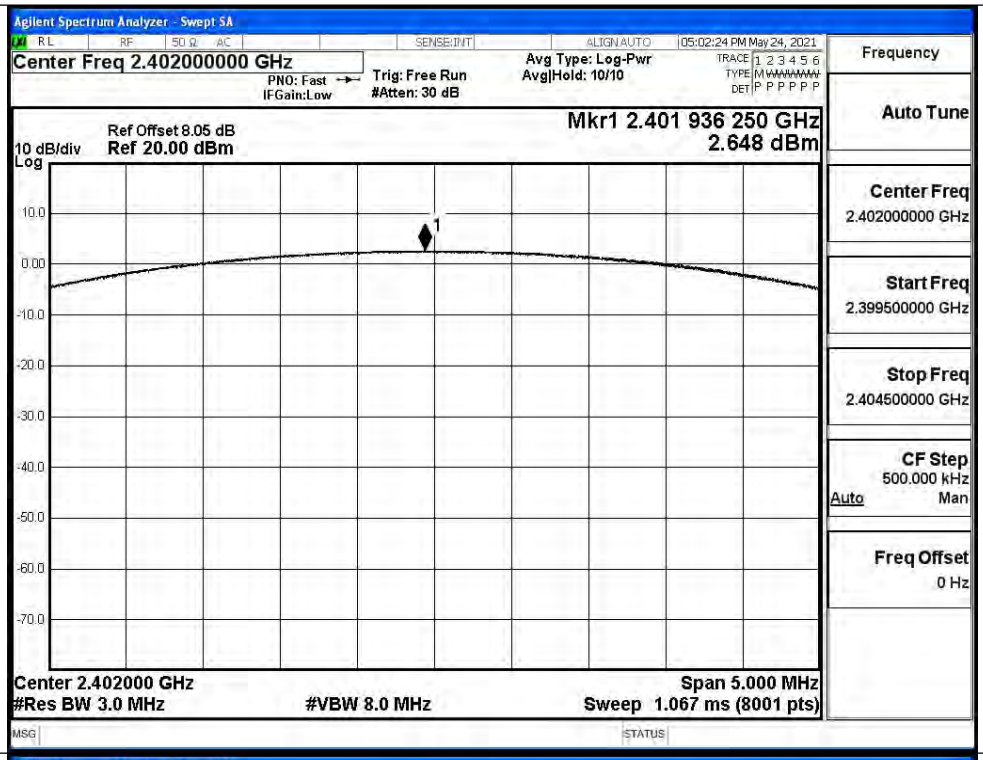
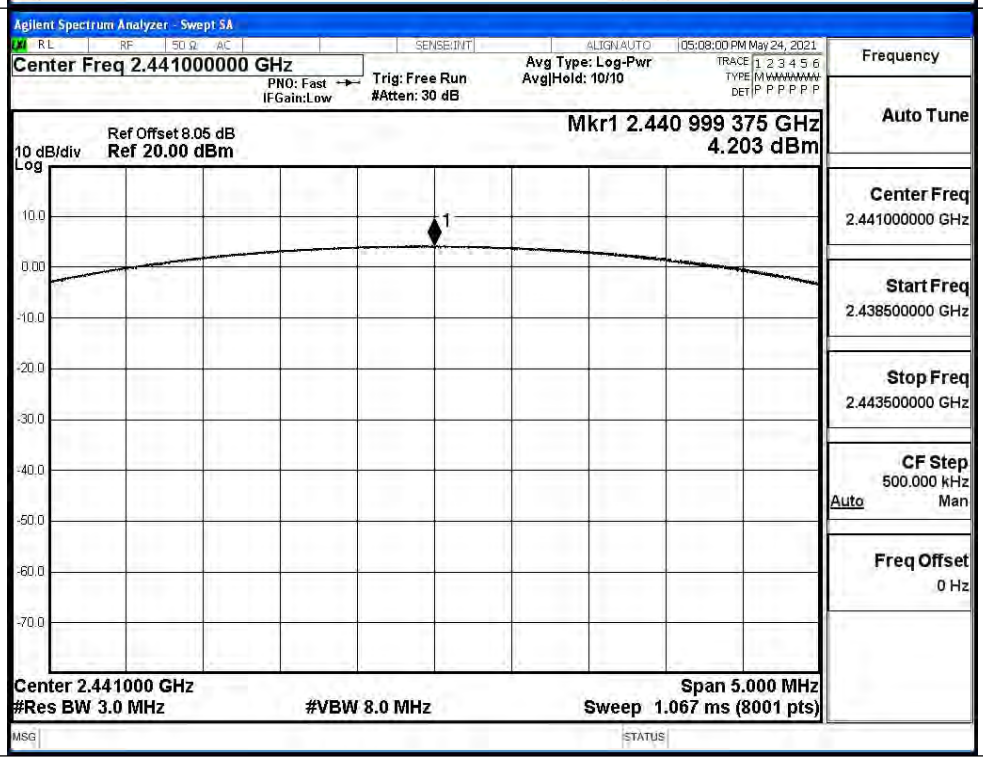
A.1 Maximum Conducted Peak Output Power

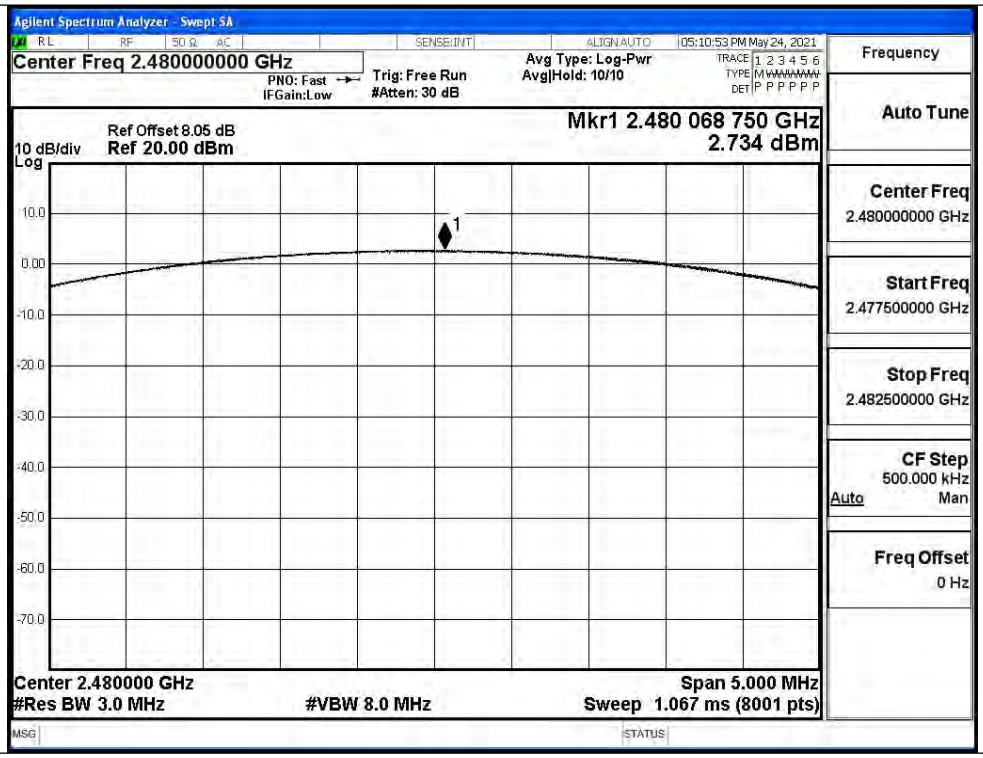
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	3.282	30	PASS
	MCH	4.853	30	PASS
	HCH	3.315	30	PASS
π/4DQPSK	LCH	2.527	21	PASS
	MCH	4.058	21	PASS
	HCH	2.583	21	PASS
8DPSK	LCH	2.648	21	PASS
	MCH	4.203	21	PASS
	HCH	2.734	21	PASS

Test Graphs	
GFSK/LCH	
GFSK/MCH	

GFSK/HCH	
π/4DQPSK/LCH	

π/4DQPSK/MCH	
π/4DQPSK/HCH	

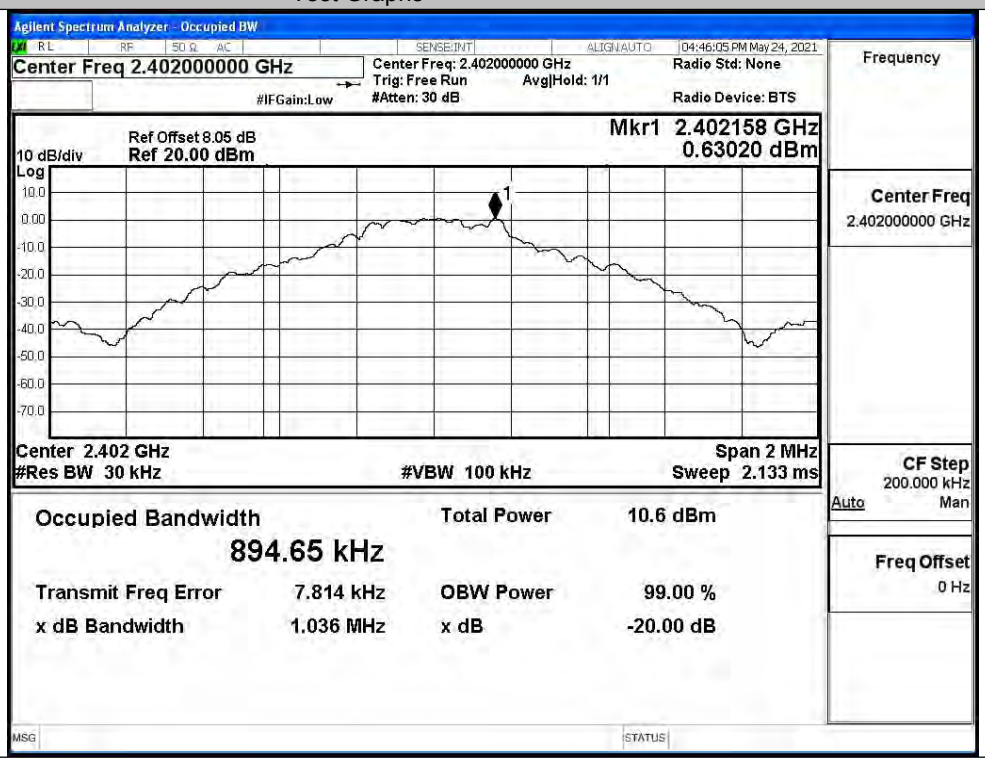
8DPSK/LCH		
8DPSK/MCH		

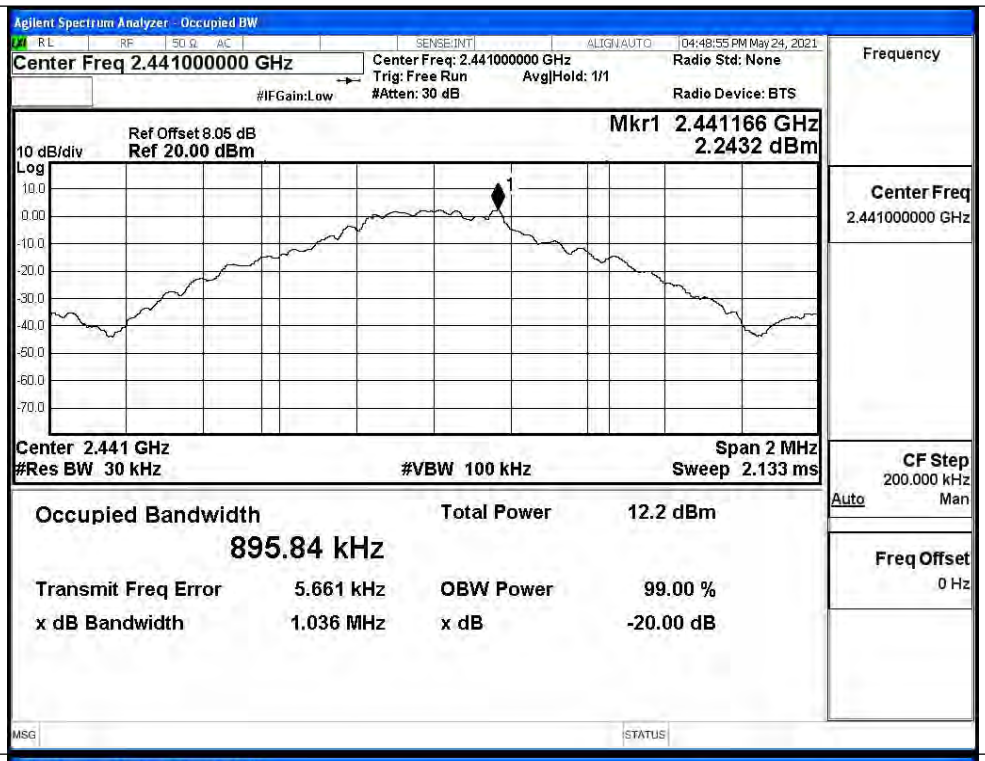
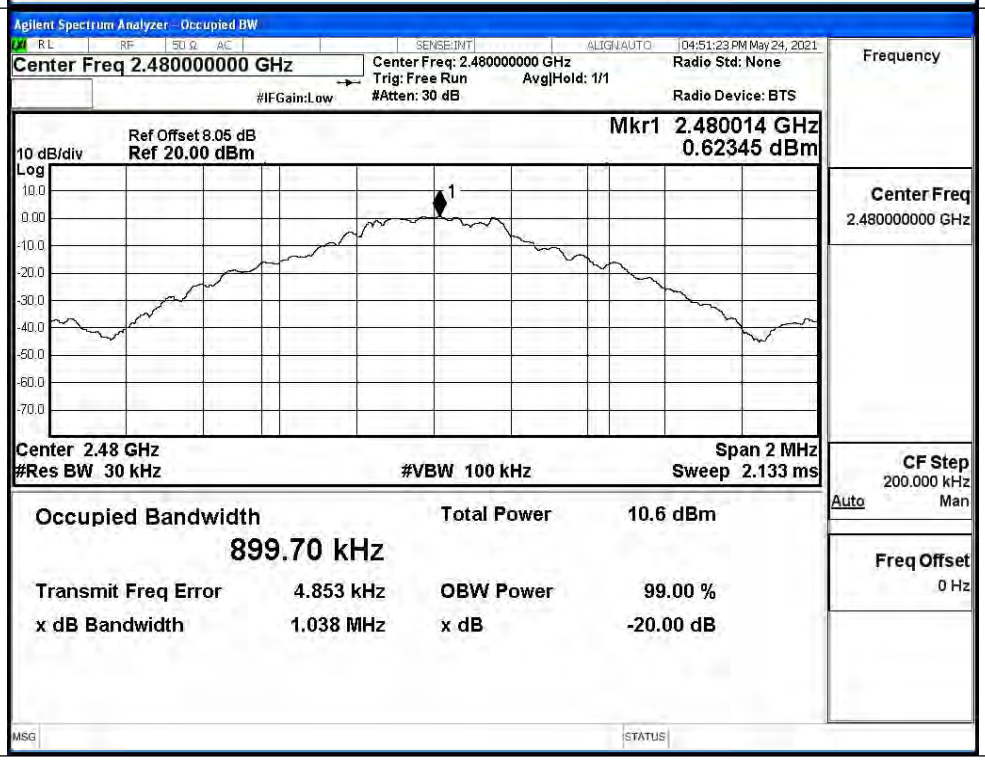
8DPSK/HCH	

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
05:10:53 PM May 24, 2021
Ref Offset 8.05 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.480 068 750 GHz
2.734 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

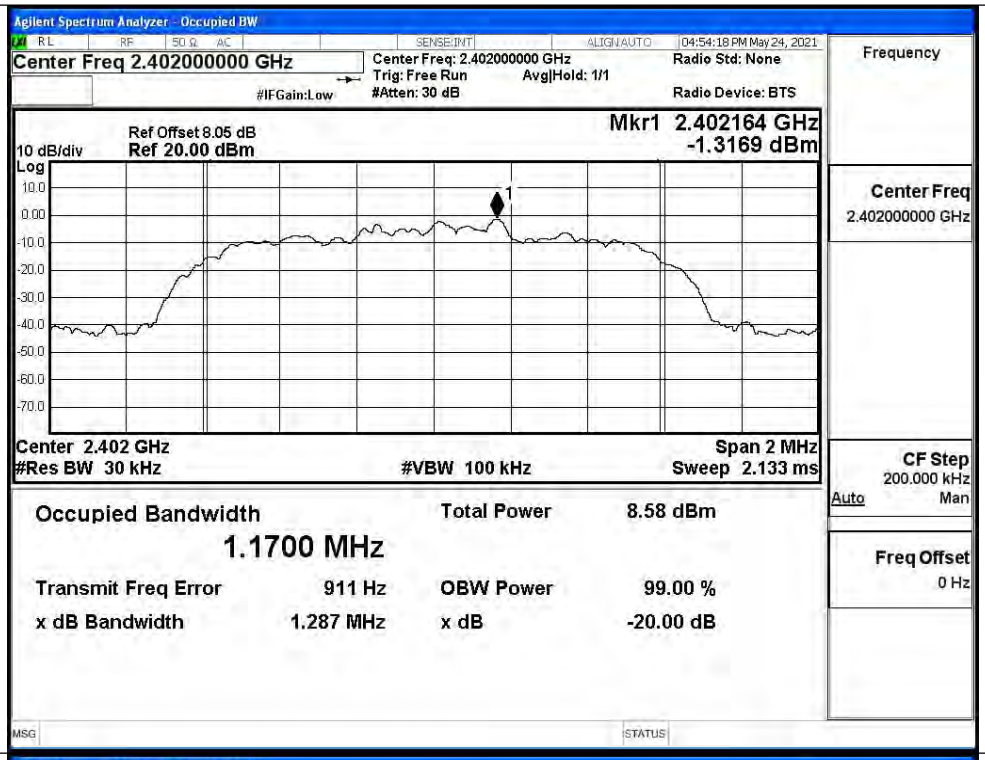
A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.036	Not Specified	PASS
	MCH	1.036	Not Specified	PASS
	HCH	1.038	Not Specified	PASS
π/4DQPSK	LCH	1.287	Not Specified	PASS
	MCH	1.288	Not Specified	PASS
	HCH	1.289	Not Specified	PASS
8DPSK	LCH	1.291	Not Specified	PASS
	MCH	1.290	Not Specified	PASS
	HCH	1.293	Not Specified	PASS

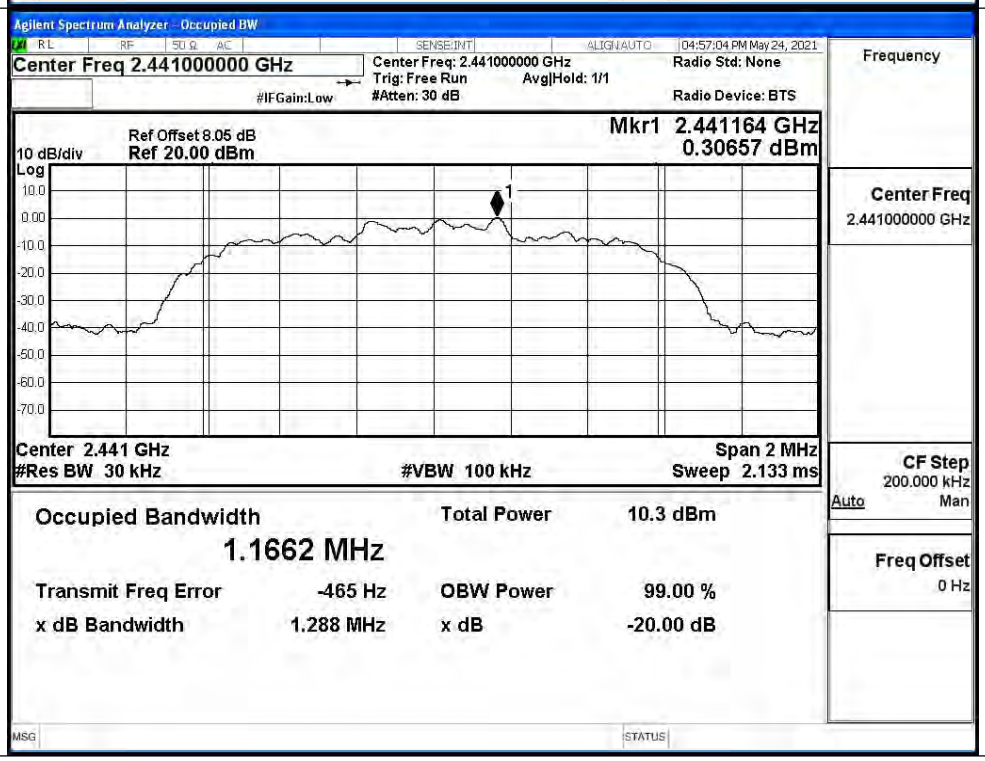
Test Graphs		
GFSK/LCH		

GFSK/MCH	
GFSK/HCH	

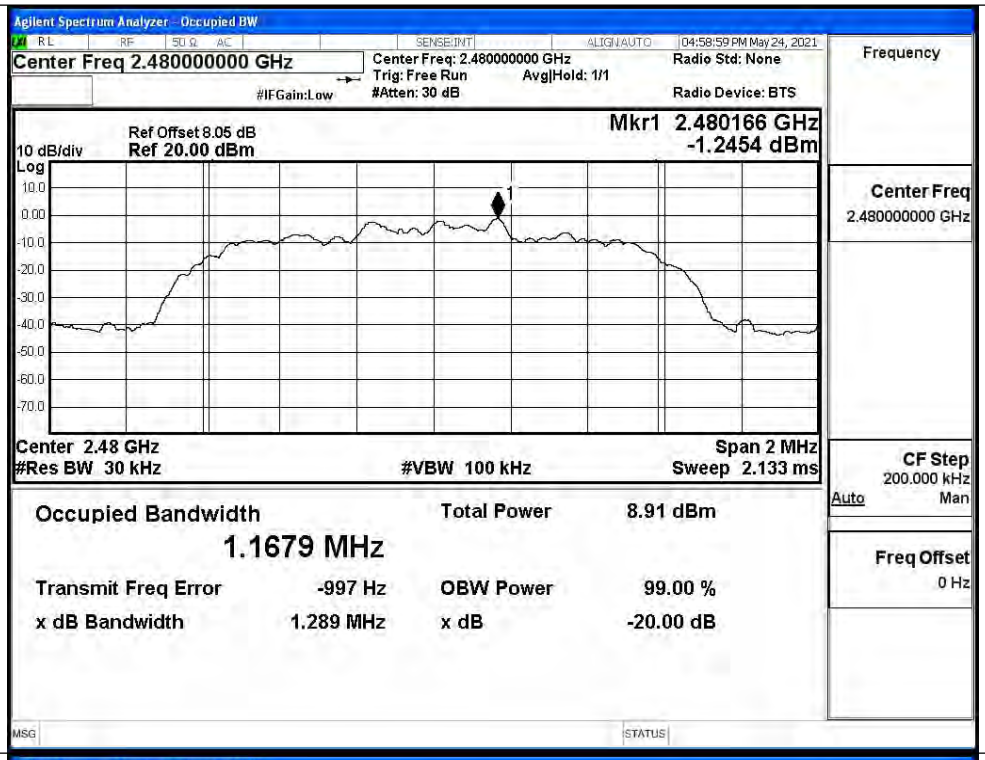
π/4DQPSK/LCH



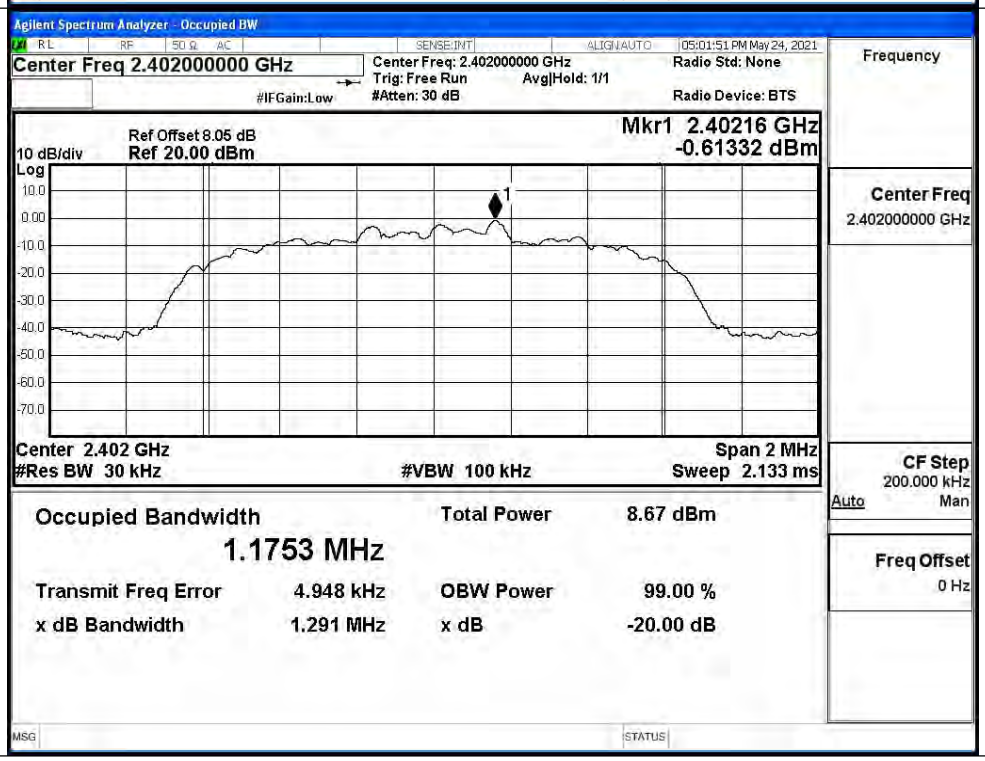
π/4DQPSK/MCH

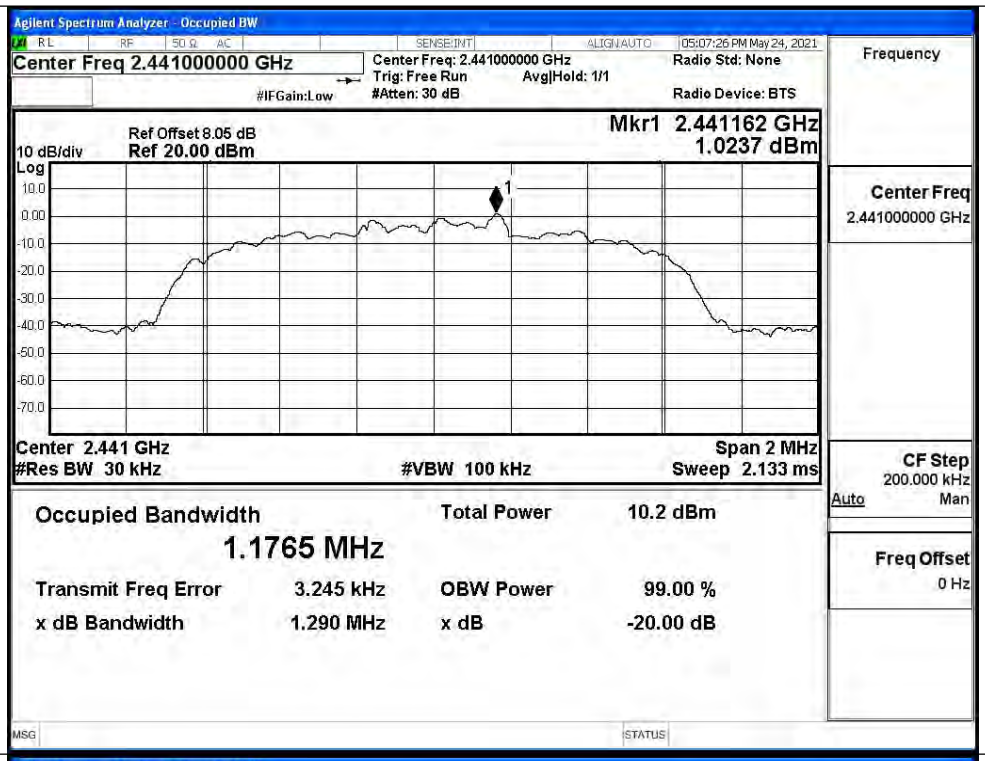
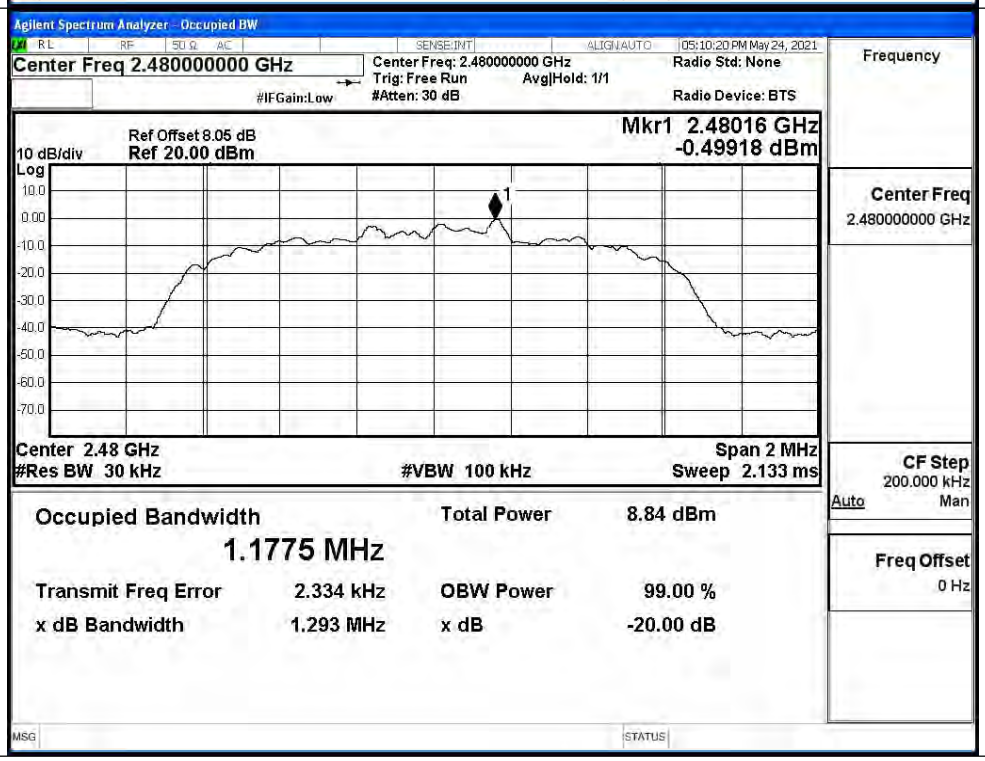


π/4DQPSK/HCH



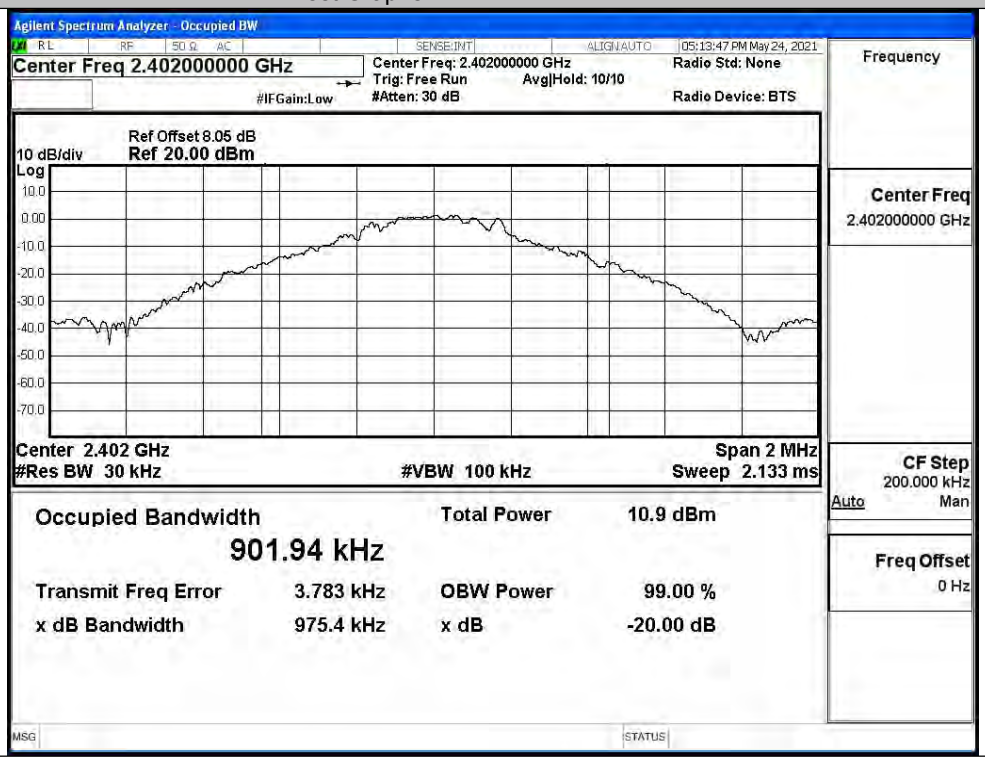
8DPSK/LCH

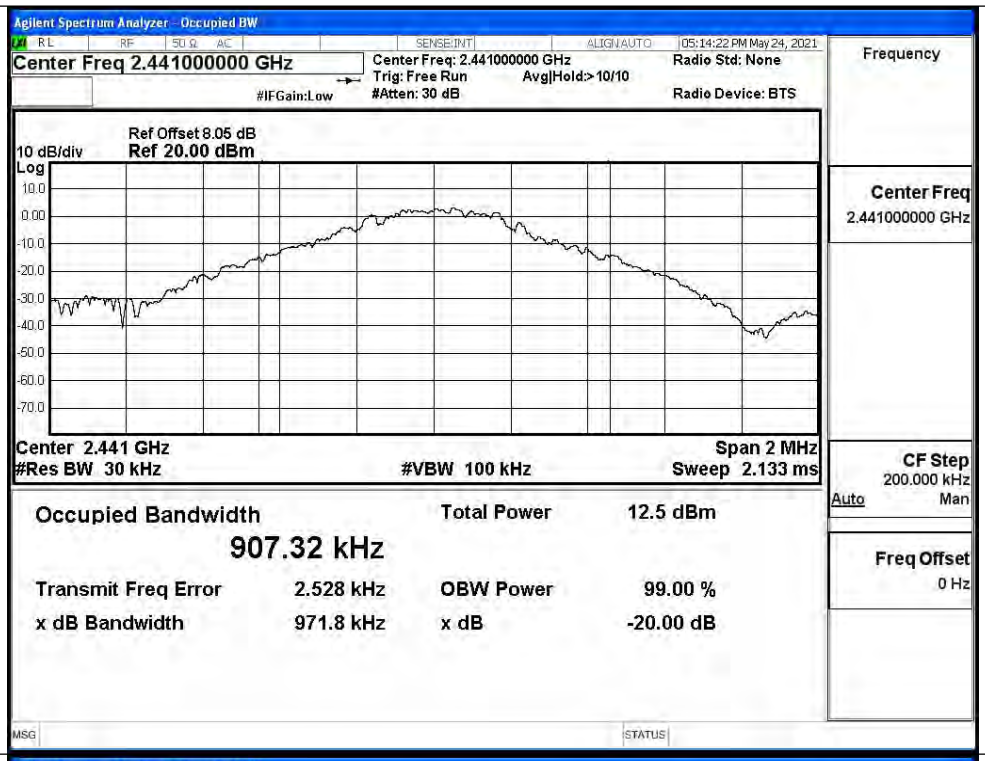


8DPSK/MCH	
8DPSK/HCH	

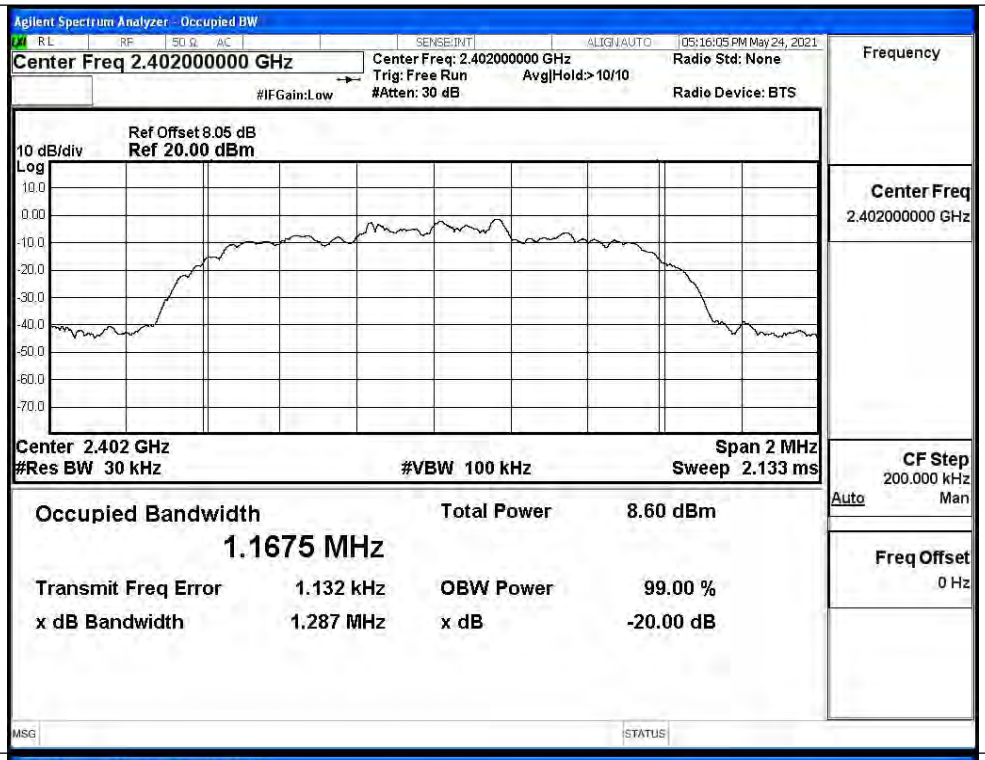
A.3 Occupied Bandwidth

Mode	Channel.	Occupied Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.90194	Not Specified	PASS
	MCH	0.90732	Not Specified	PASS
	HCH	0.91195	Not Specified	PASS
π/4DQPSK	LCH	1.1675	Not Specified	PASS
	MCH	1.1707	Not Specified	PASS
	HCH	1.1711	Not Specified	PASS
8DPSK	LCH	1.1786	Not Specified	PASS
	MCH	1.1782	Not Specified	PASS
	HCH	1.1804	Not Specified	PASS

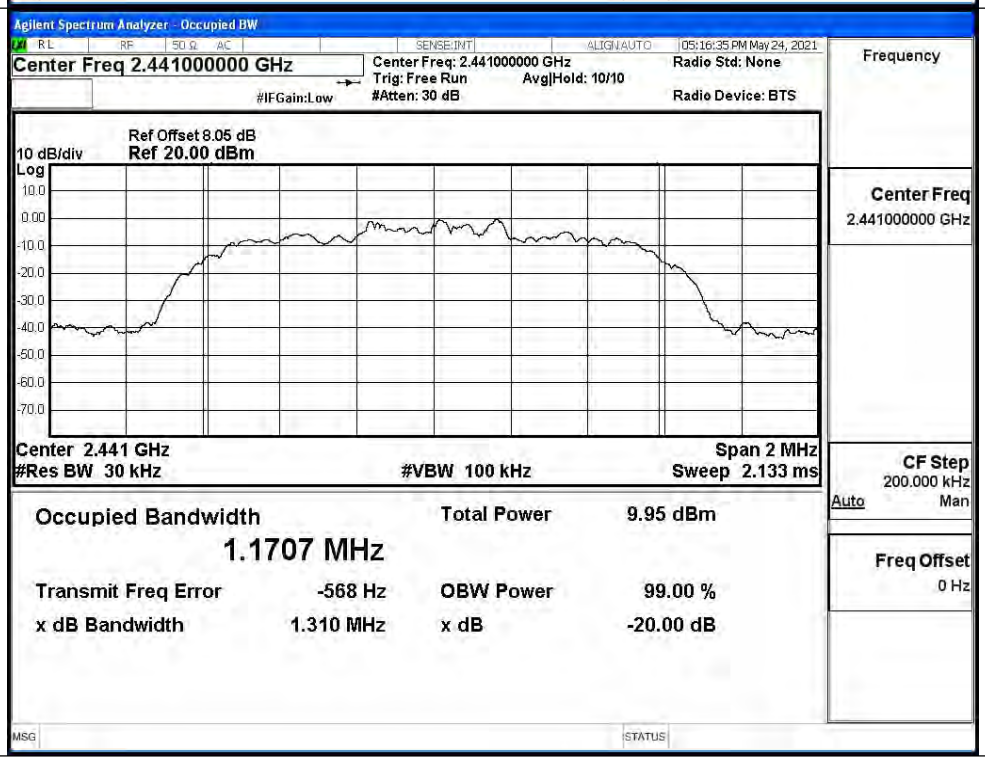
Test Graphs		
GFSK/LCH		

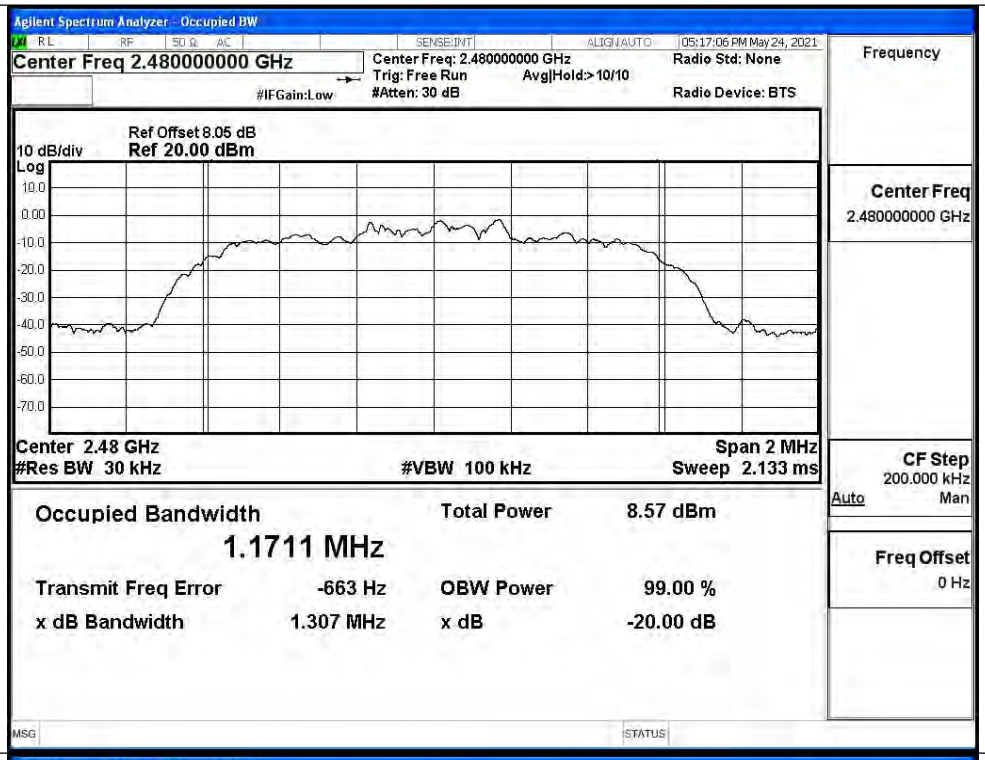
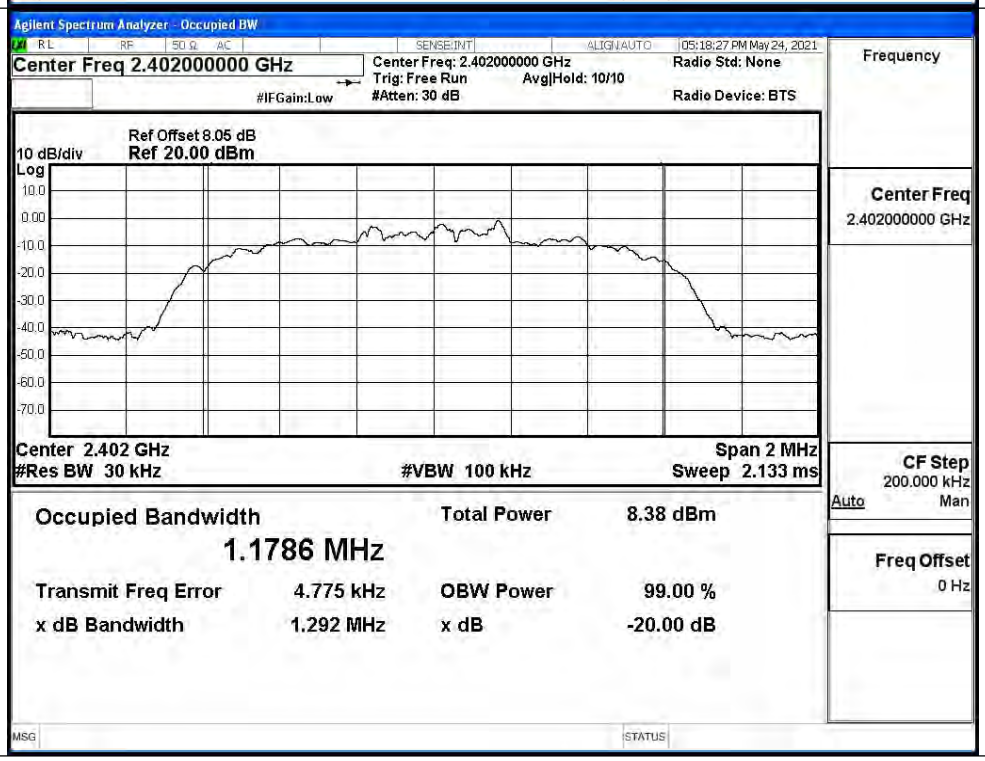
GFSK/MCH	
GFSK/HCH	

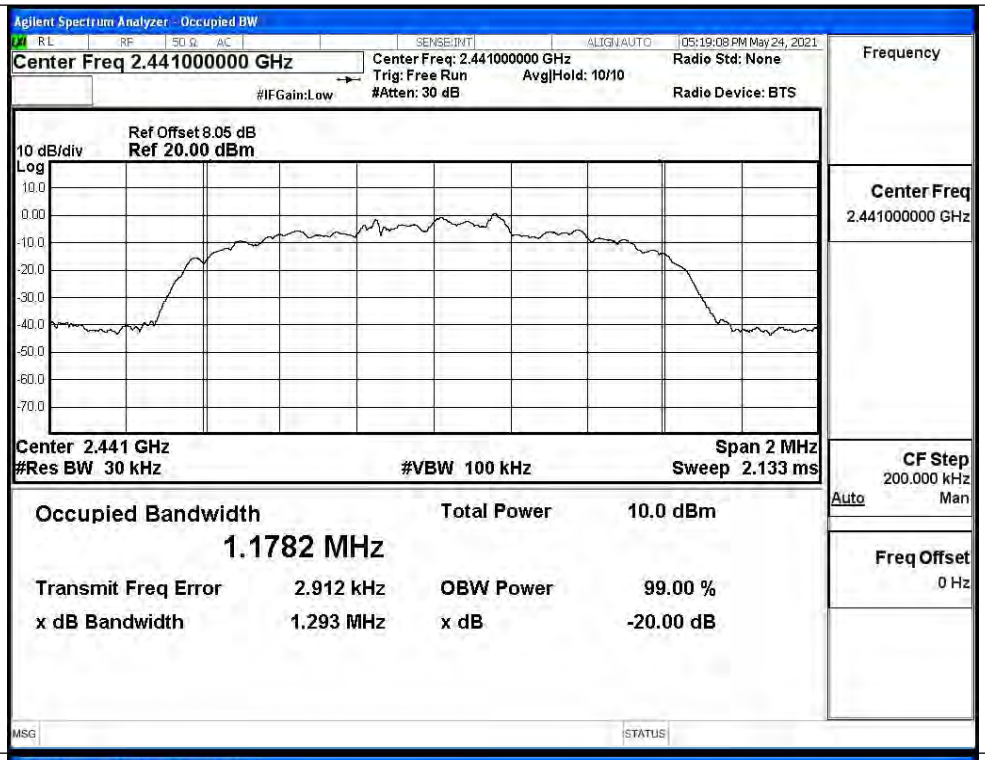
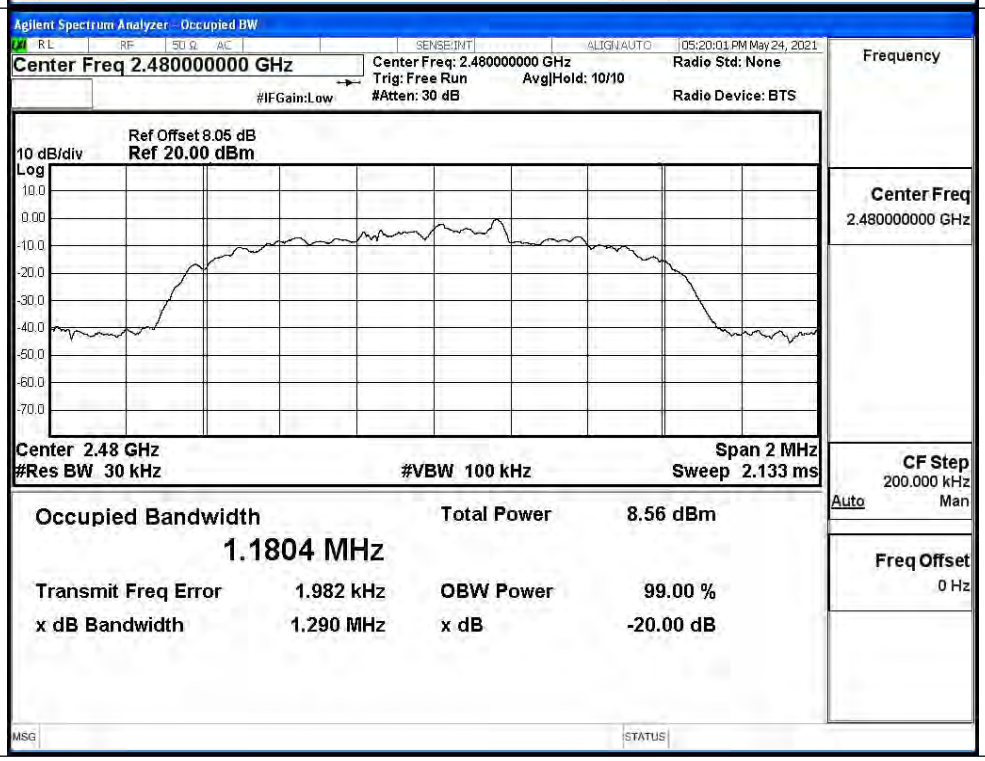
π/4DQPSK/LCH



π/4DQPSK/MCH

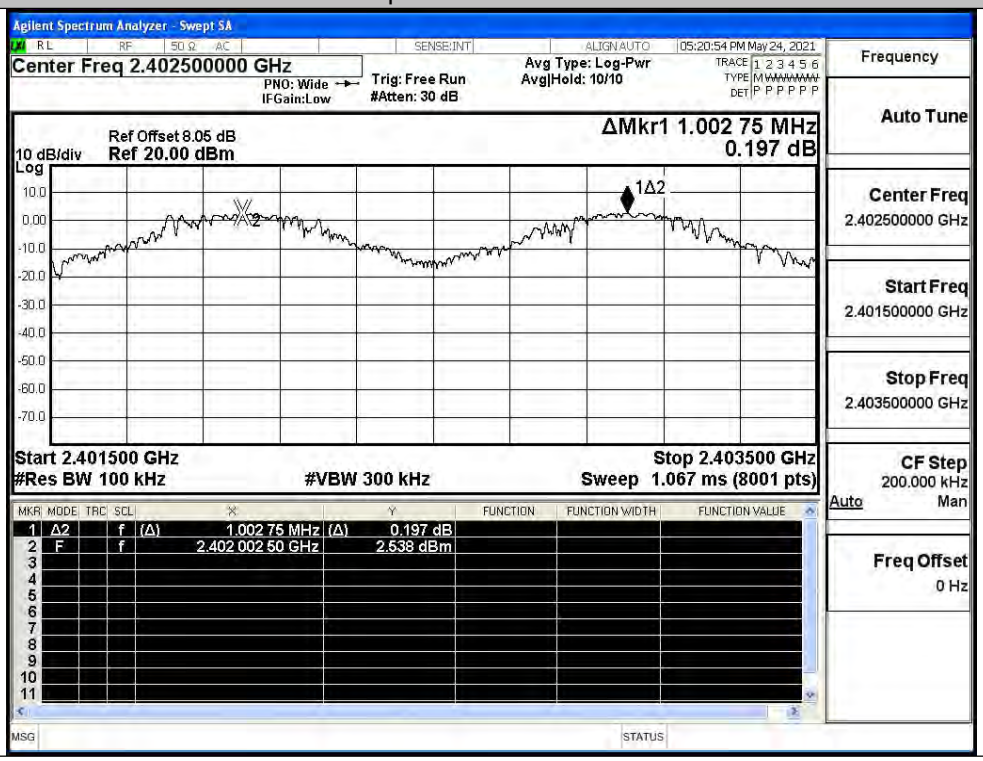


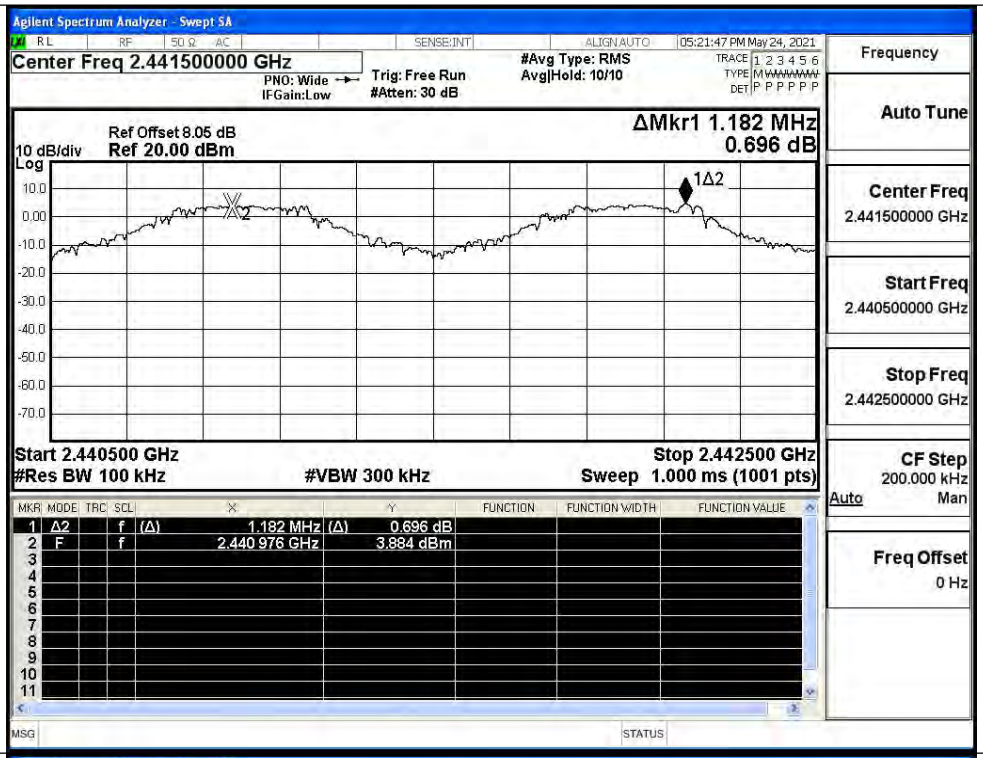
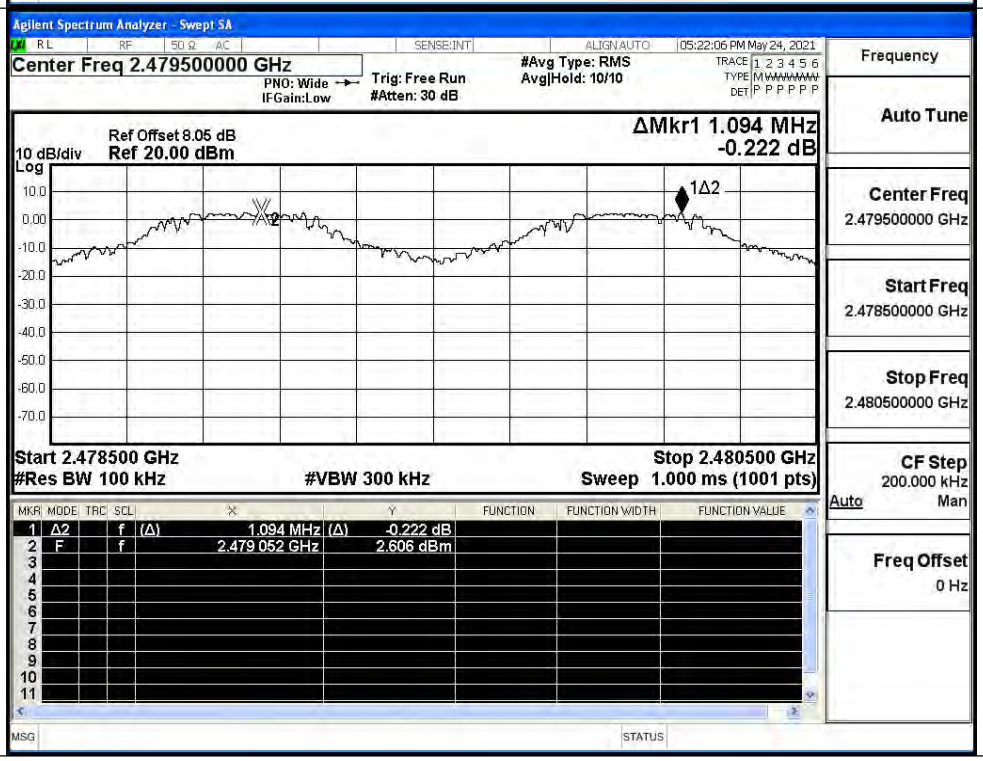
π/4DQPSK/HCH	
8DPSK/LCH	

8DPSK/MCH	
8DPSK/HCH	

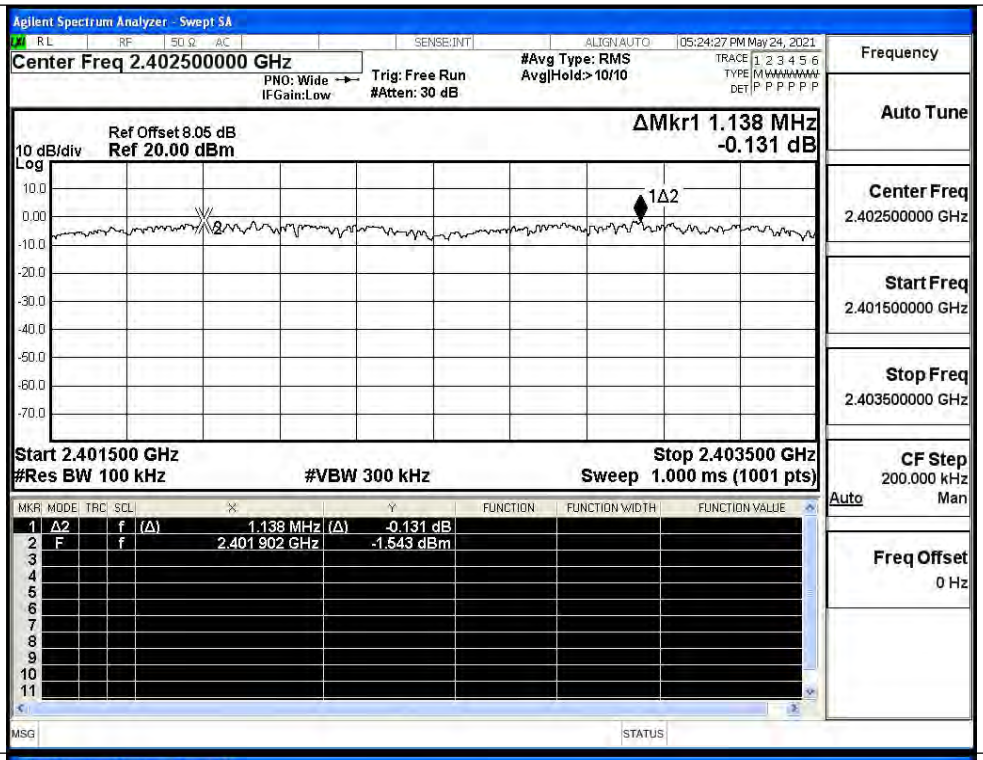
A.4 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.003	0.692	PASS
	MCH	1.182	0.692	PASS
	HCH	1.094	0.692	PASS
π/4DQPSK	LCH	1.138	0.859	PASS
	MCH	1.340	0.859	PASS
	HCH	1.010	0.859	PASS
8DPSK	LCH	1.198	0.862	PASS
	MCH	1.010	0.862	PASS
	HCH	1.052	0.862	PASS

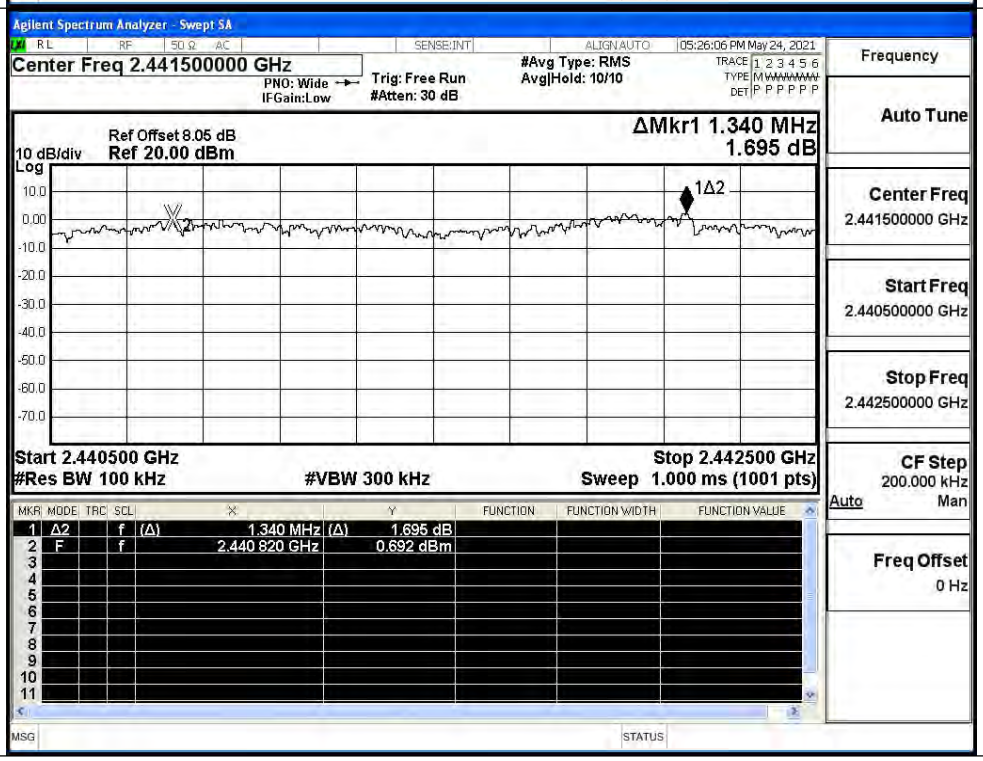
Test Graphs		
GFSK/LCH		

GFSK/MCH		
GFSK/HCH		

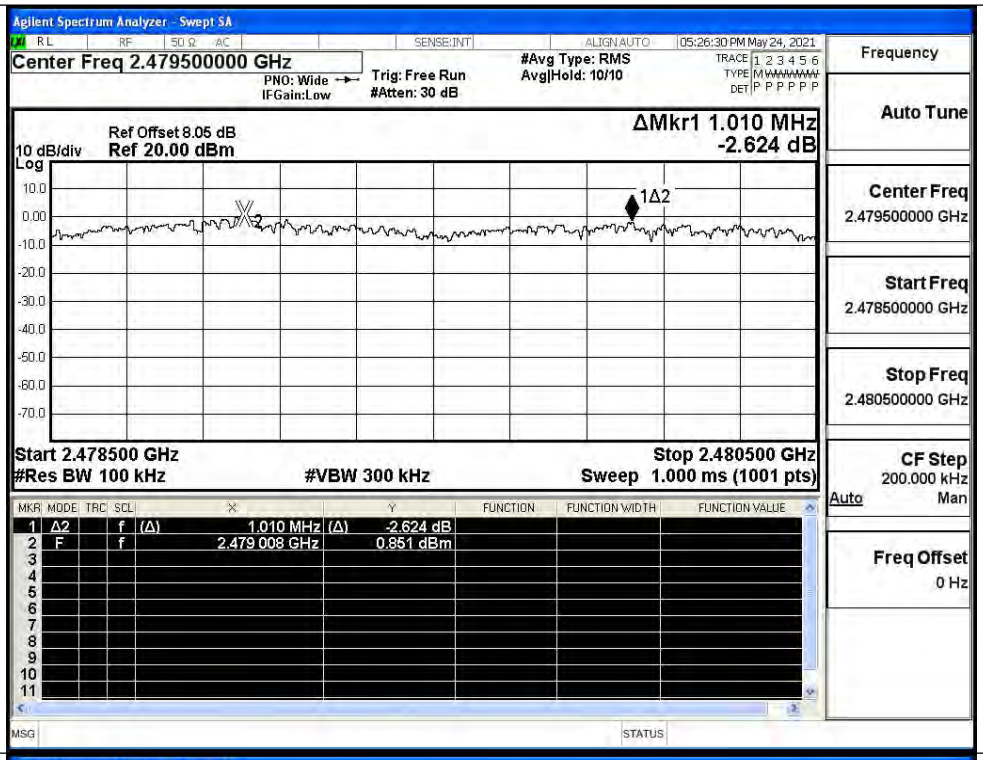
π/4DQPSK/LCH



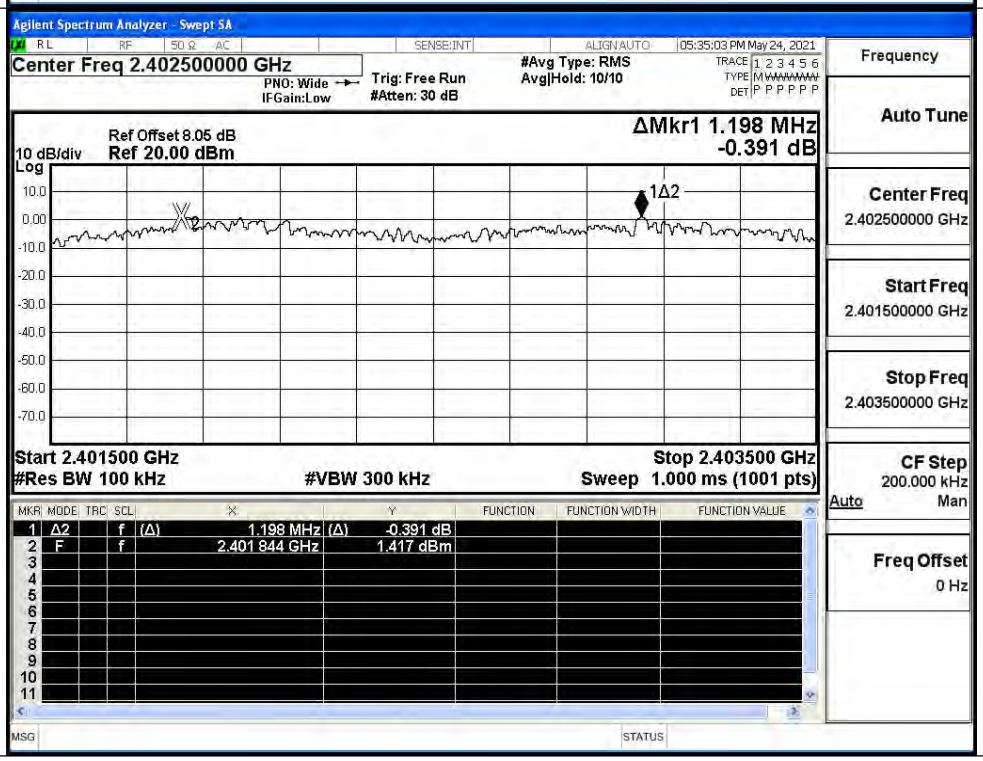
π/4DQPSK/MCH

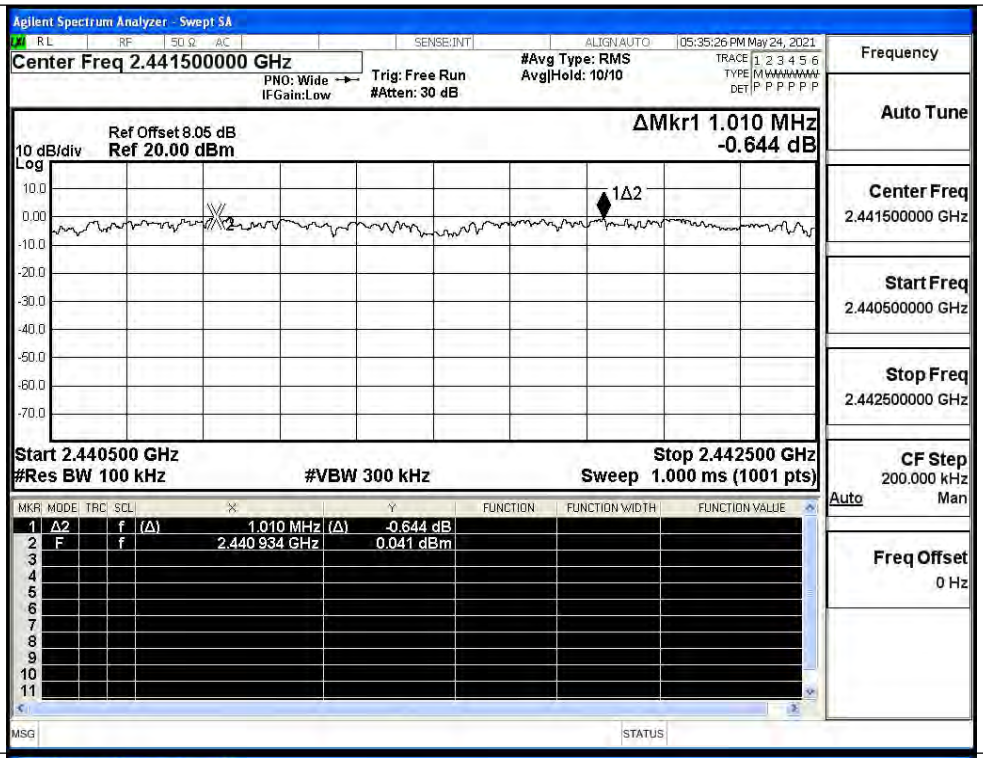
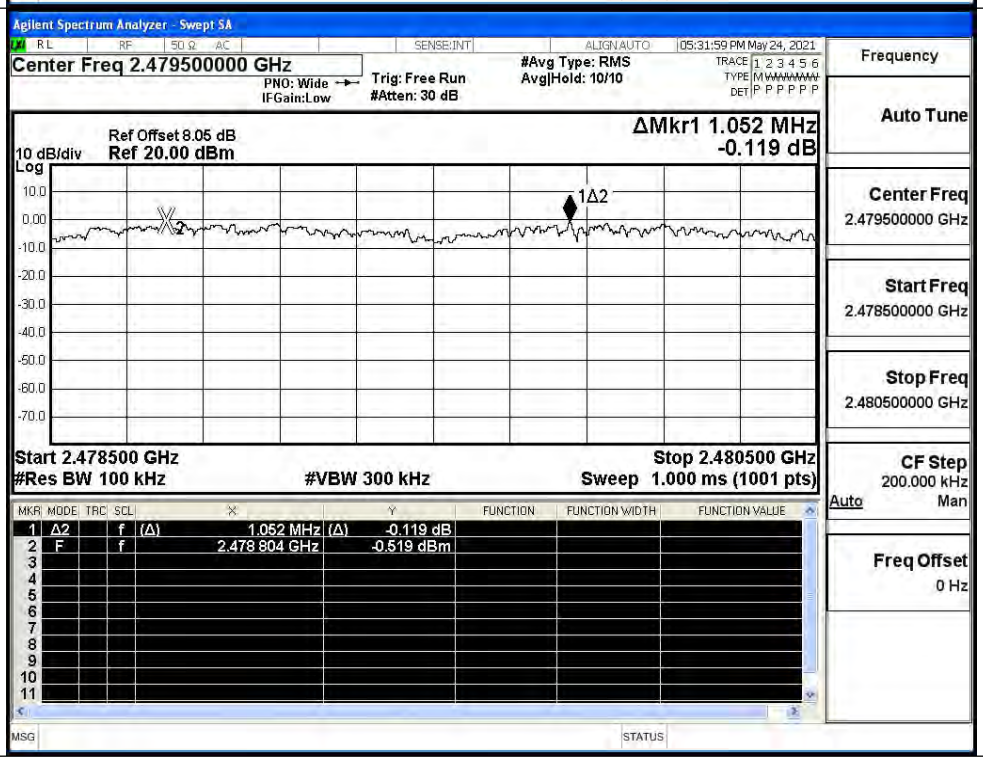


π/4DQPSK/HCH



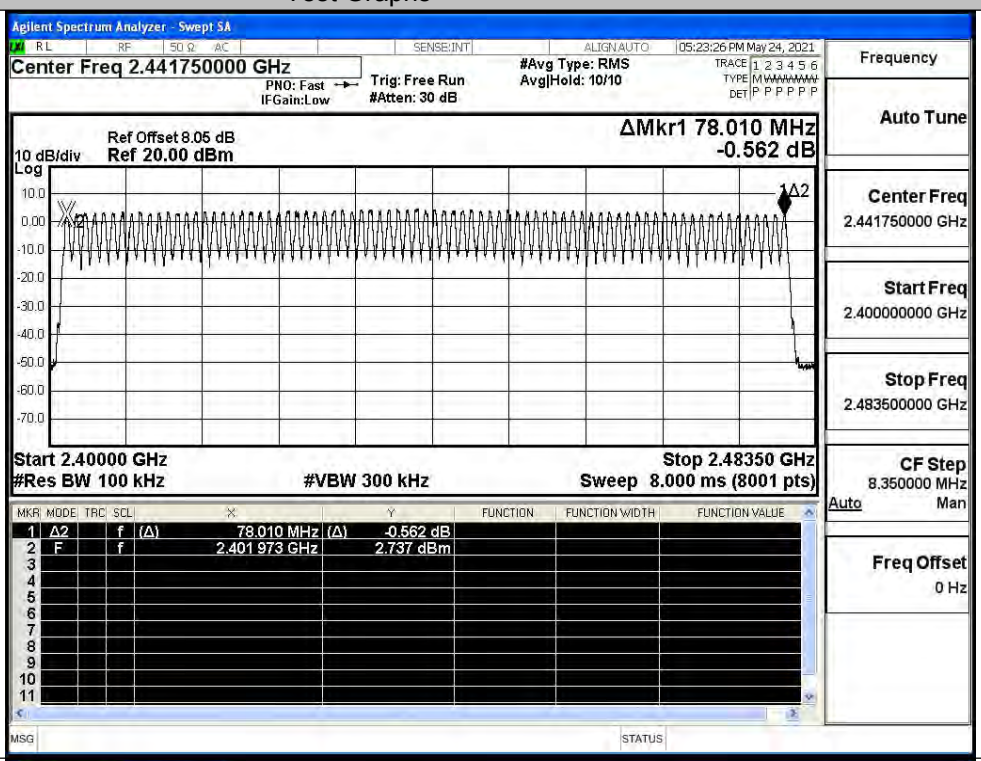
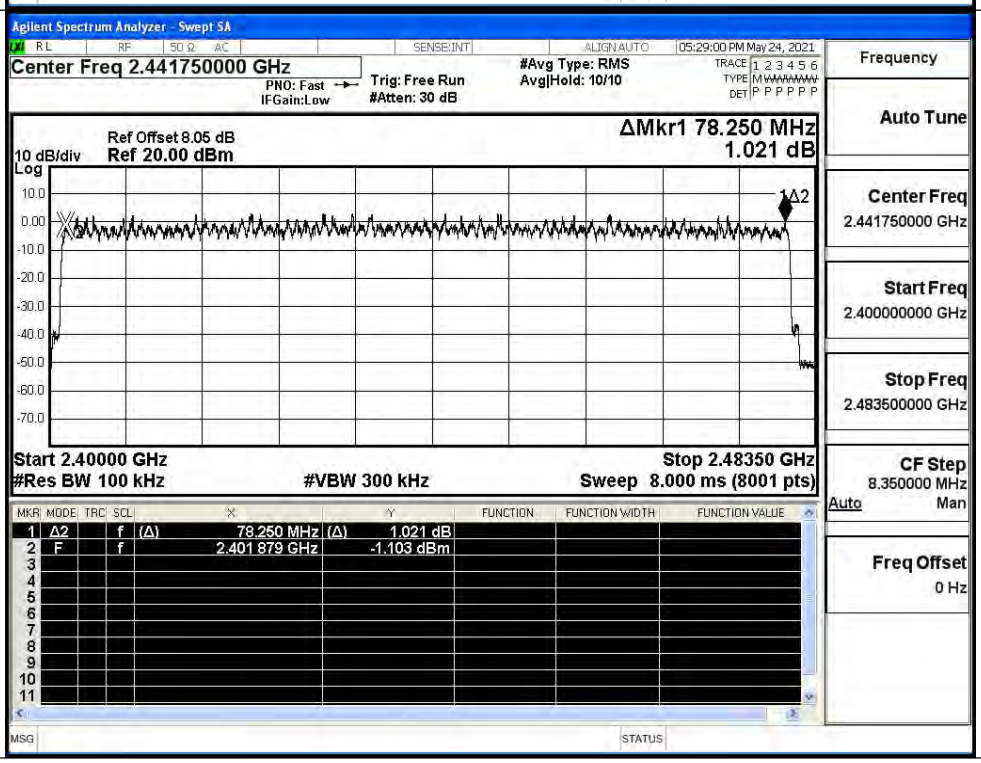
8DPSK/LCH

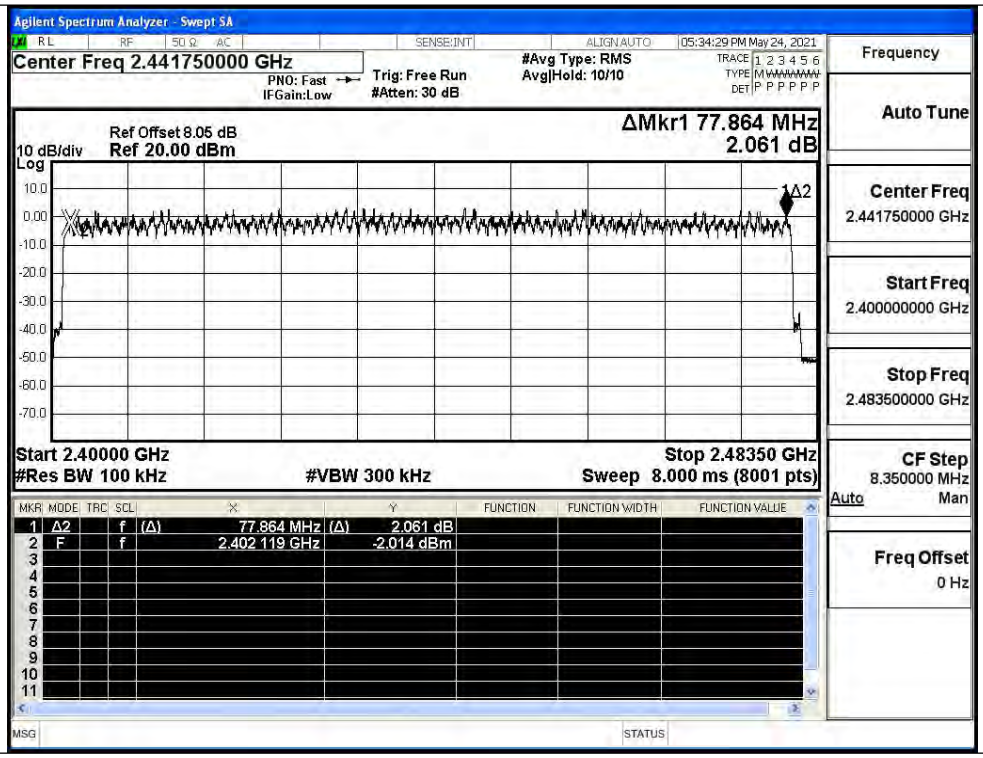


8DPSK/MCH	
8DPSK/HCH	

A.5 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

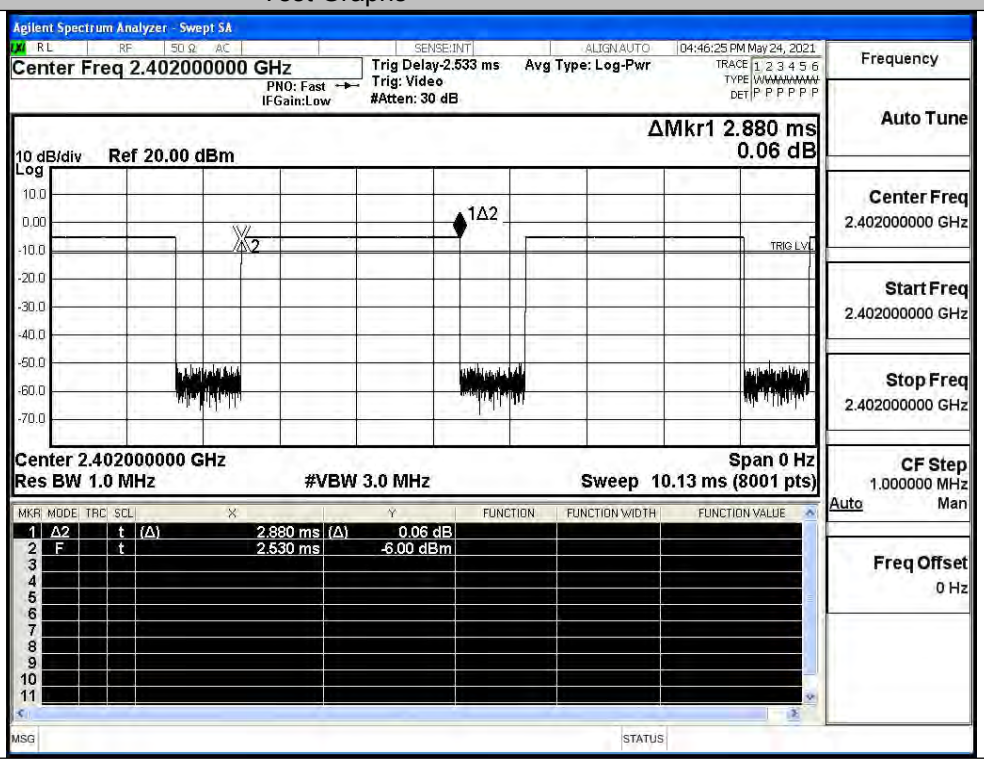
Test Graphs	
GFSK/Hop	
π/4DQPSK/Hop	

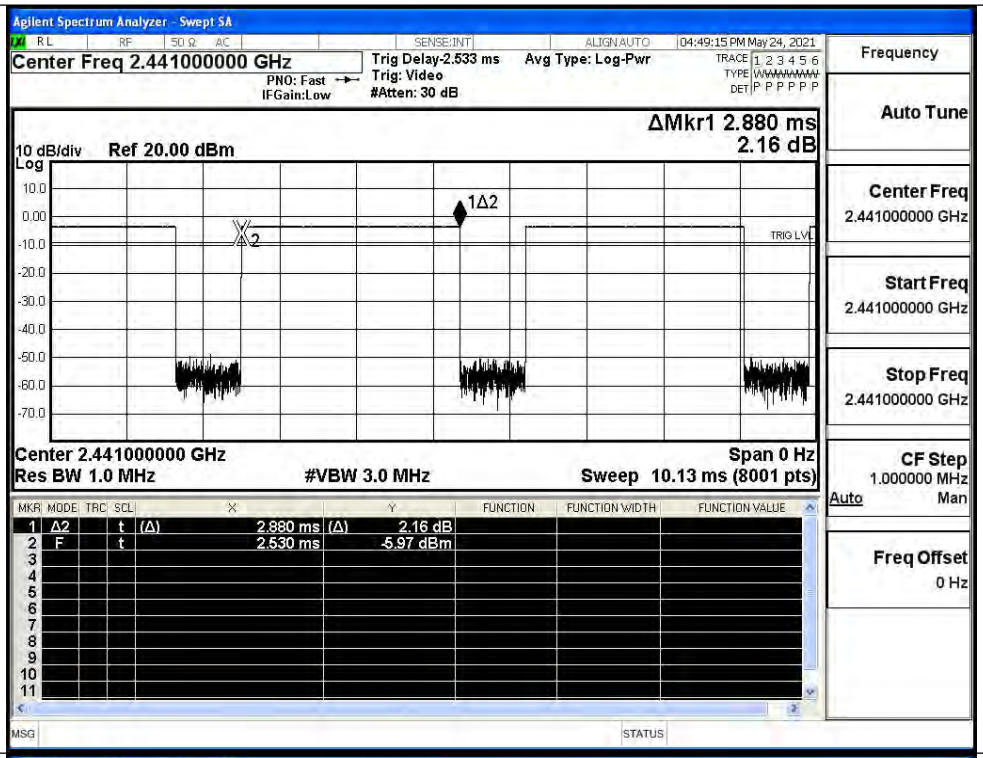
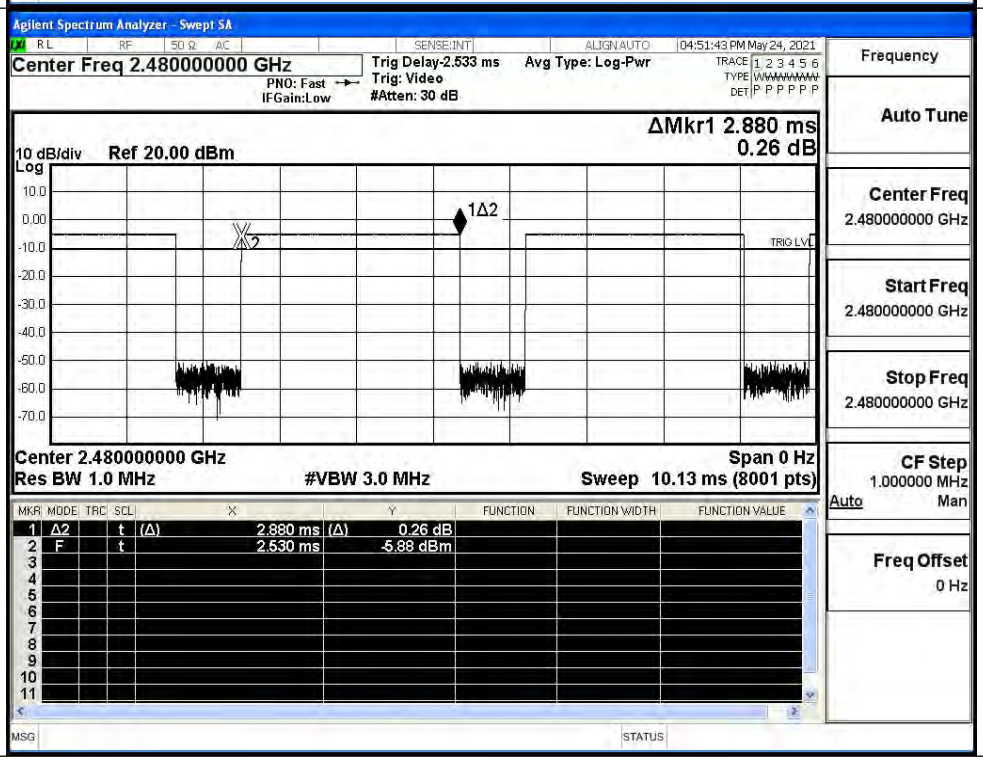
8DPSK/Hop	

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
05:34:29 PM May 24, 2021
Ref Offset 8.05 dB
10 dB/div Ref 20.00 dBm
Log
ΔMkr1 77.864 MHz
2.061 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) 77.864 MHz (Δ) 2.061 dB
2 F f 2.402 119 GHz -2.014 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

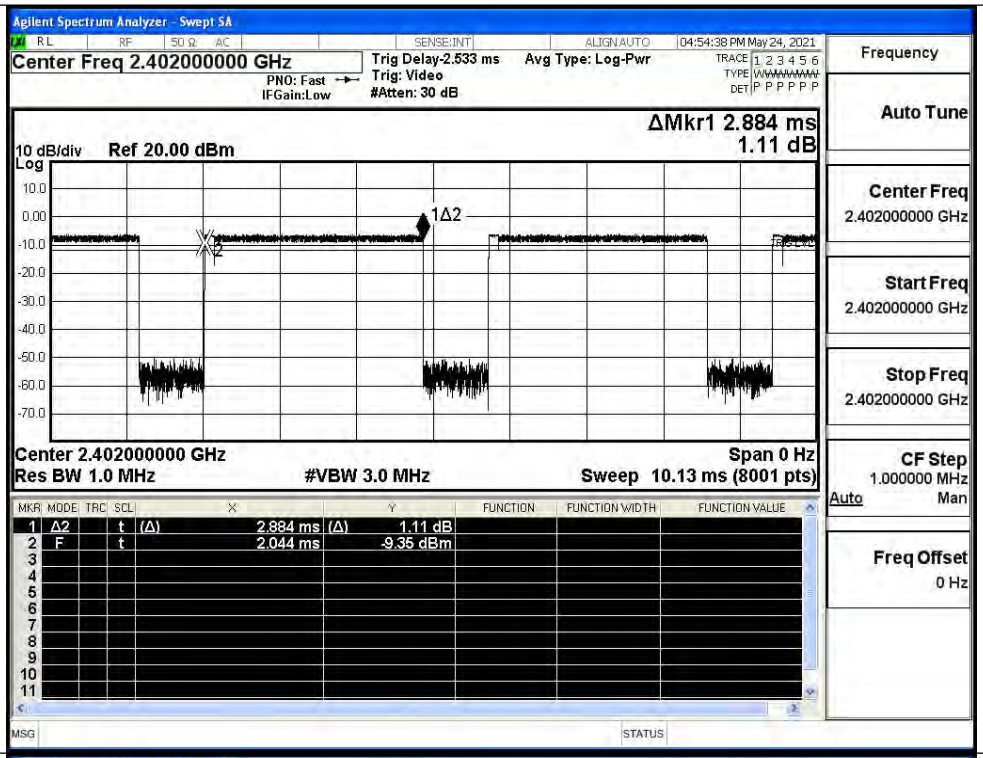
A.6 Dwell Time

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	2.88	106.7	0.308	0.4	PASS
	3DH5	MCH	2.88	106.7	0.308	0.4	PASS
	3DH5	HCH	2.88	106.7	0.308	0.4	PASS

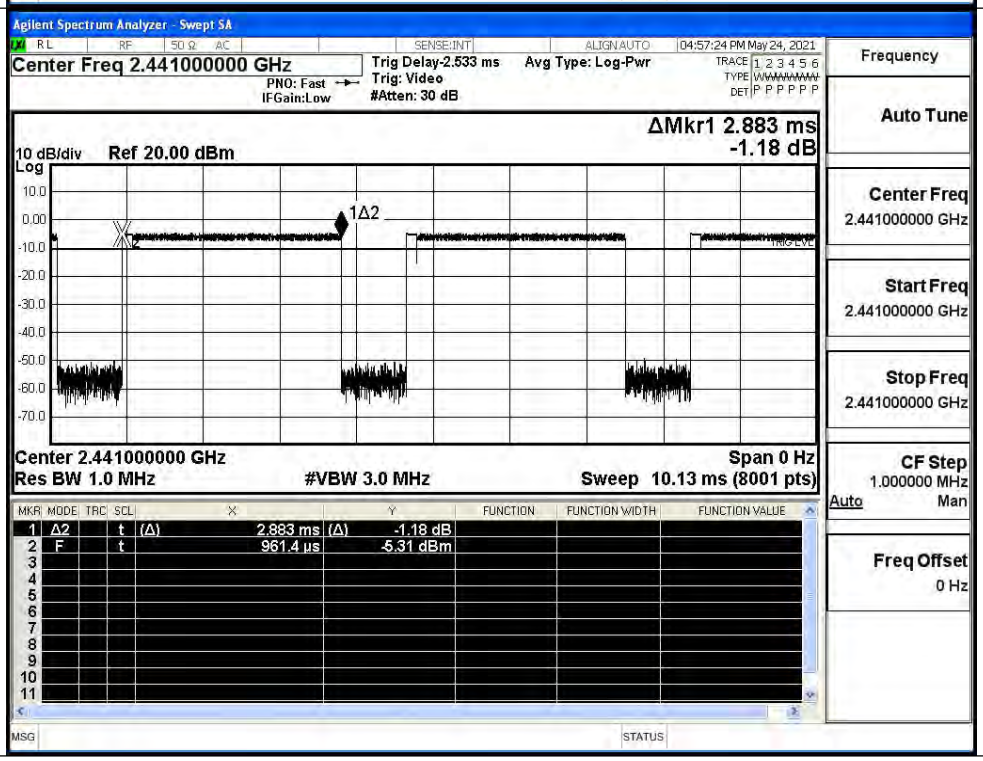
Test Graphs	
GFSK_DH5/LCH	

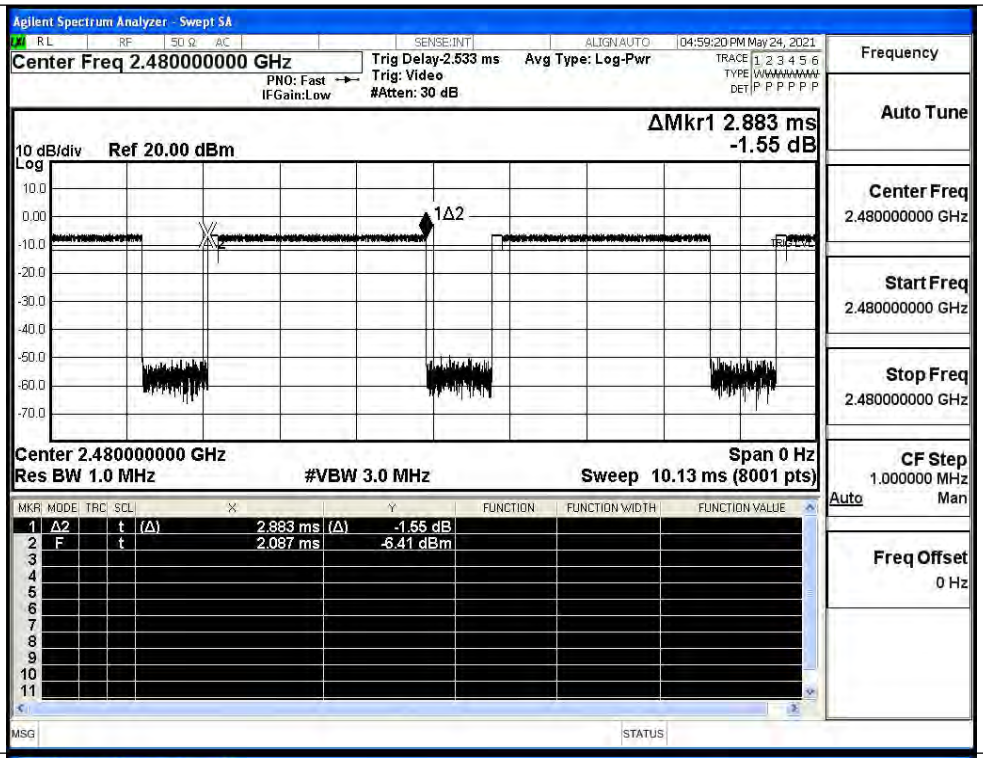
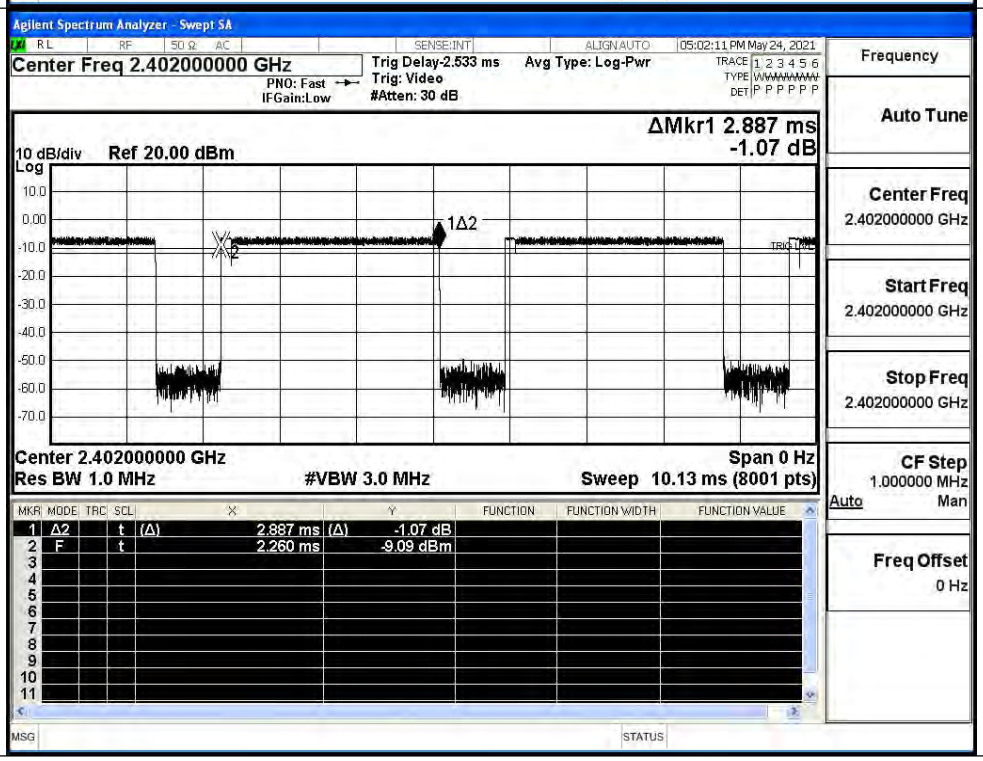
GFSK_DH5/MCH	
GFSK_DH5/HCH	

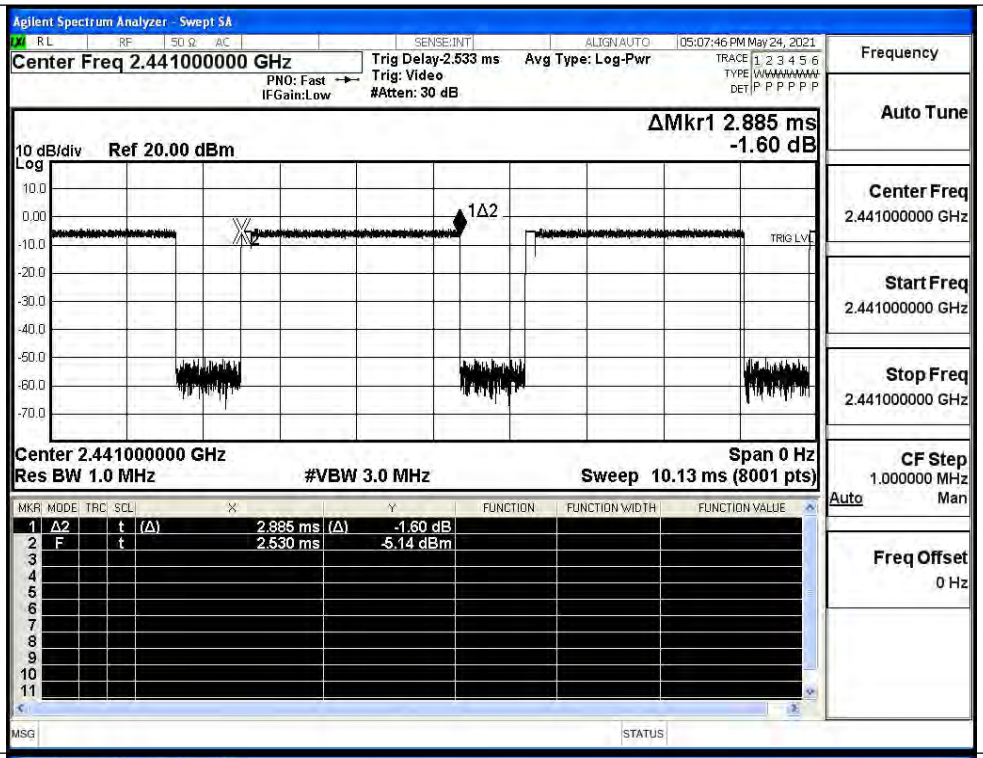
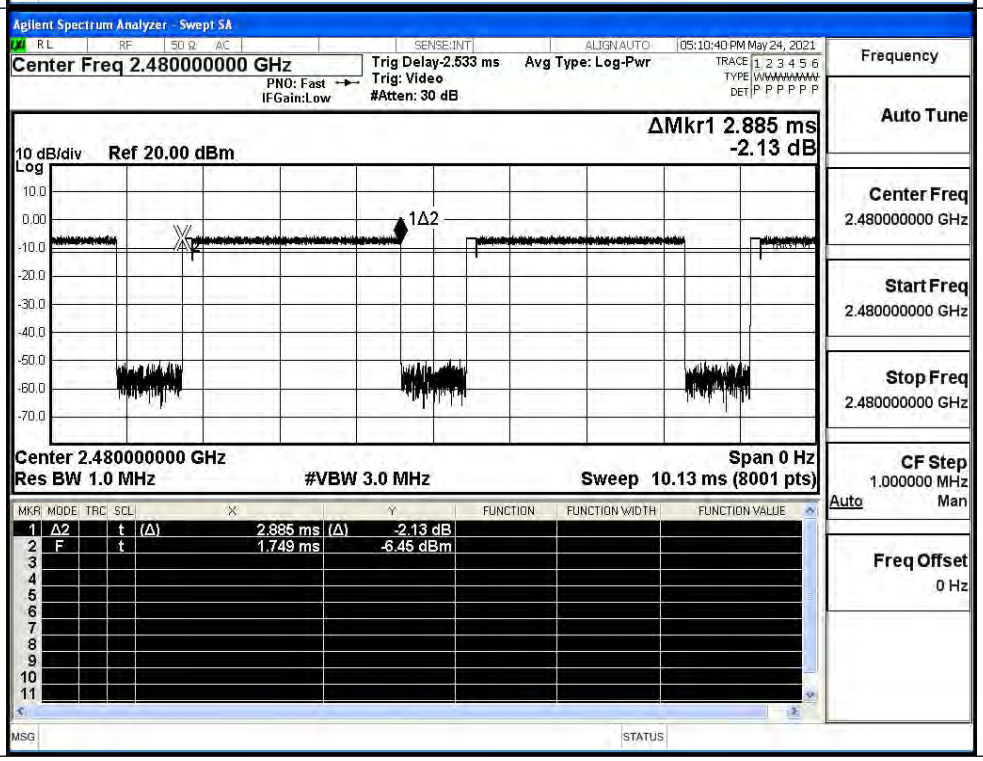
π/4DQPSK
_2DH5/LCH



π/4DQPSK
_2DH5/MCH

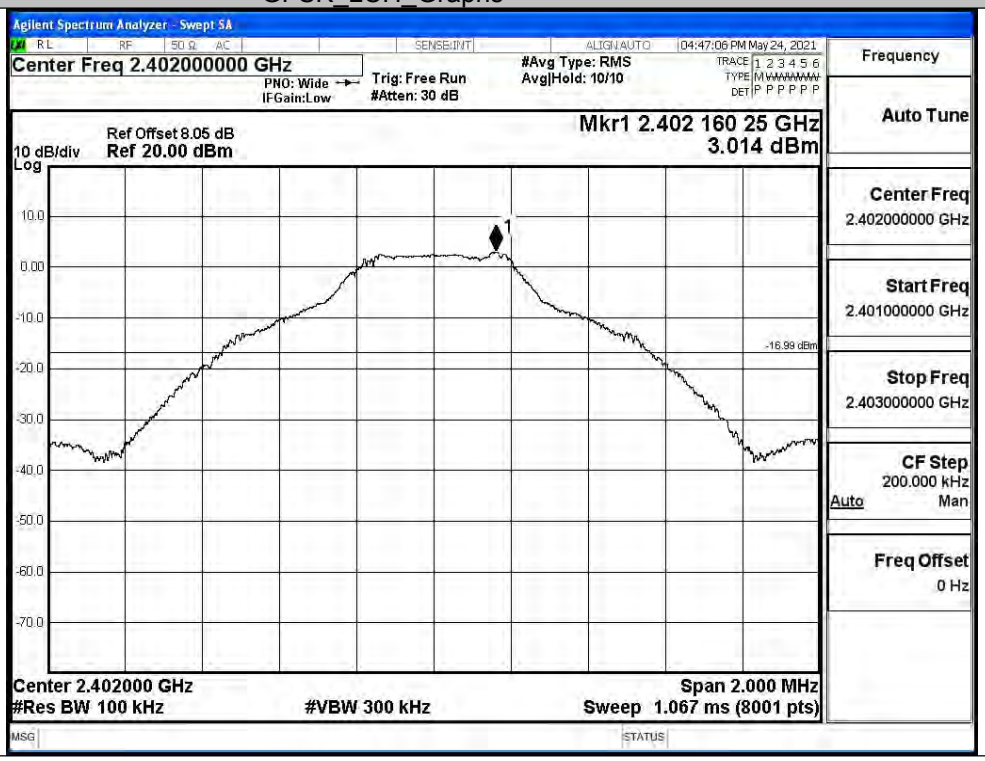


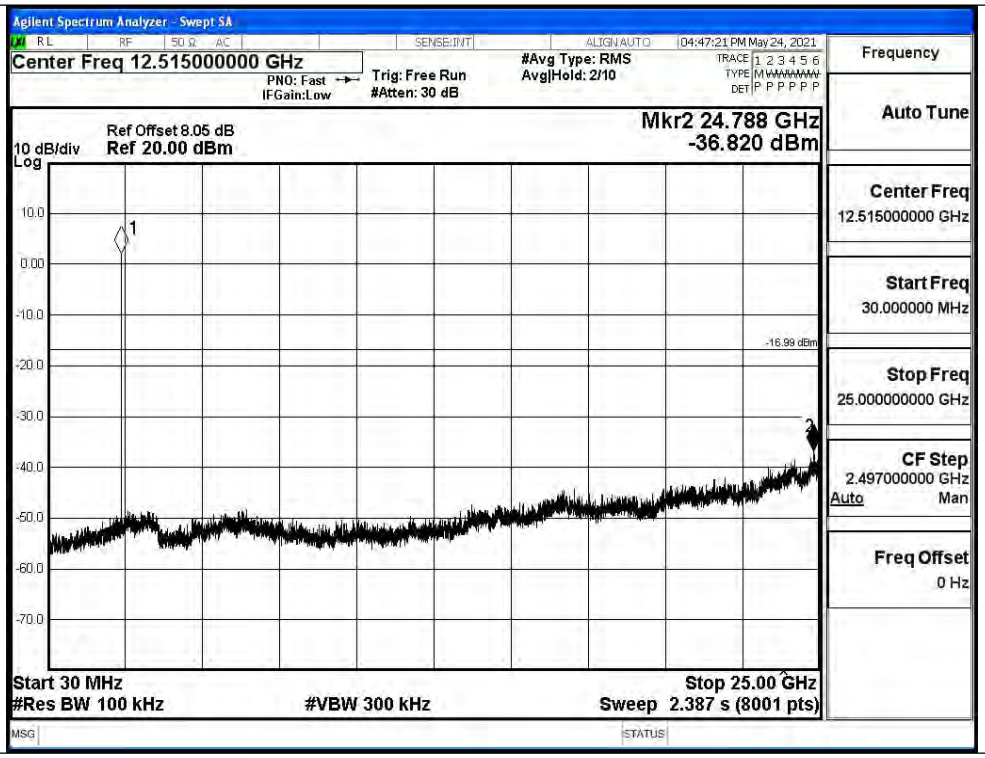
π/4DQPSK _2DH5/HCH	
8DPSK _3DH5/LCH	

8DPSK _3DH5/MCH	
8DPSK _3DH5/HCH	

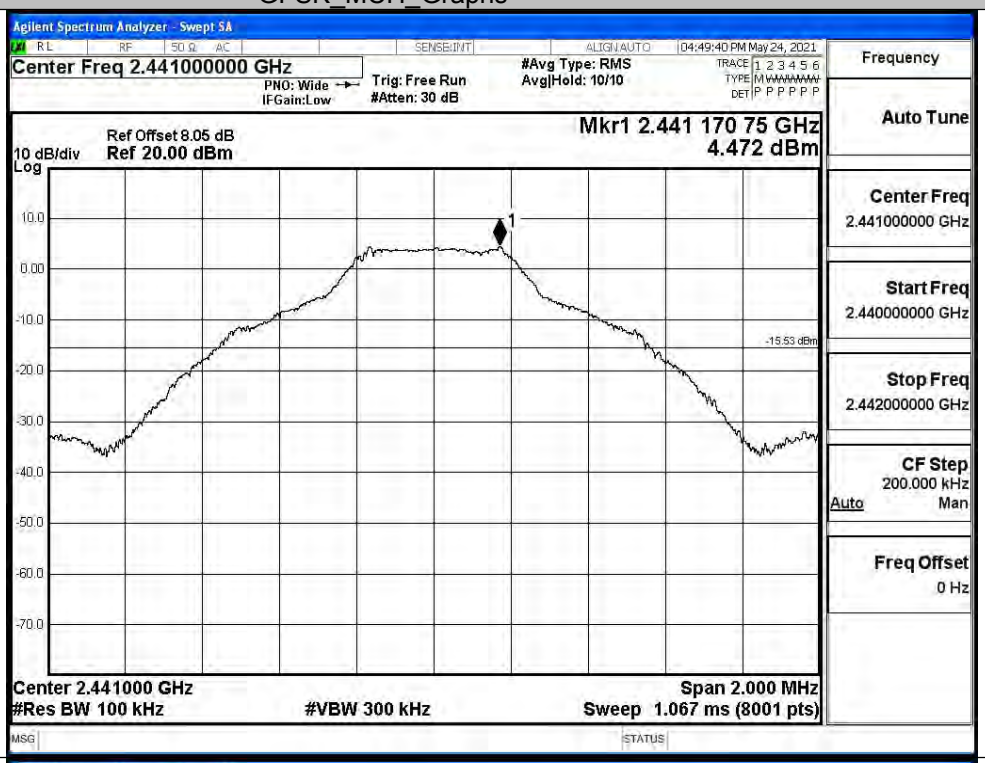
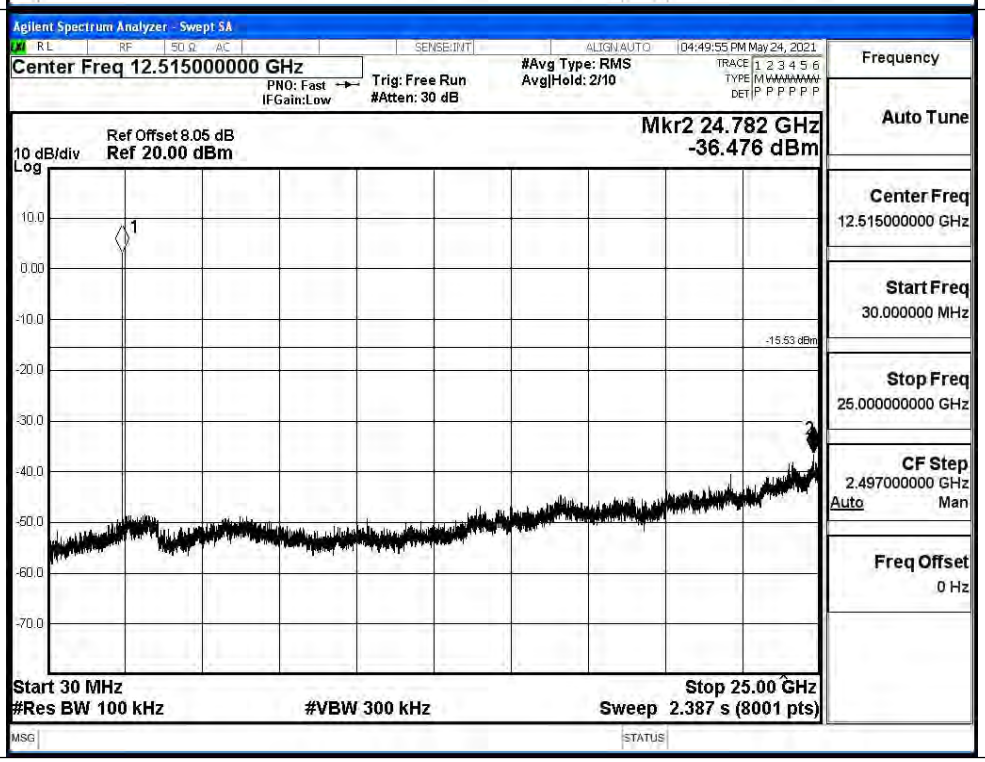
A.7 RF Conducted Spurious Emissions

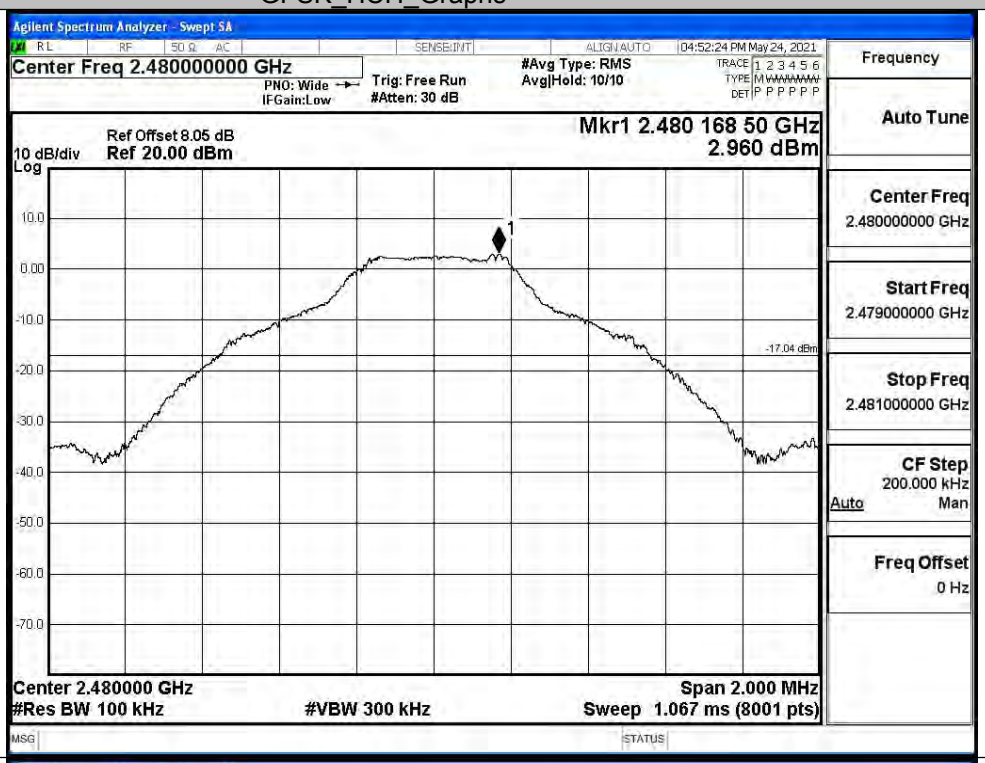
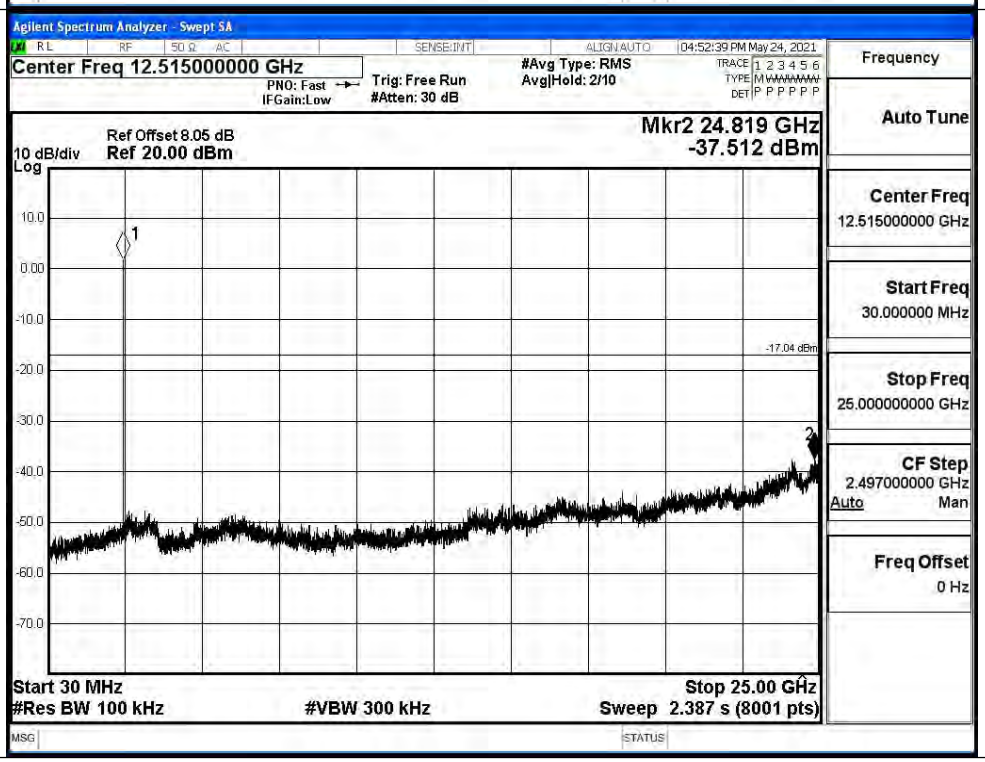
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	3.014	-36.820	-16.986	PASS
	MCH	4.472	-36.476	-15.528	PASS
	HCH	2.96	-37.512	-17.040	PASS
π/4DQPSK	LCH	1.198	-38.671	-18.802	PASS
	MCH	2.535	-38.083	-17.465	PASS
	HCH	1.364	-38.076	-18.636	PASS
8DPSK	LCH	1.548	-37.163	-18.452	PASS
	MCH	2.863	-36.799	-17.137	PASS
	HCH	1.388	-37.198	-18.612	PASS

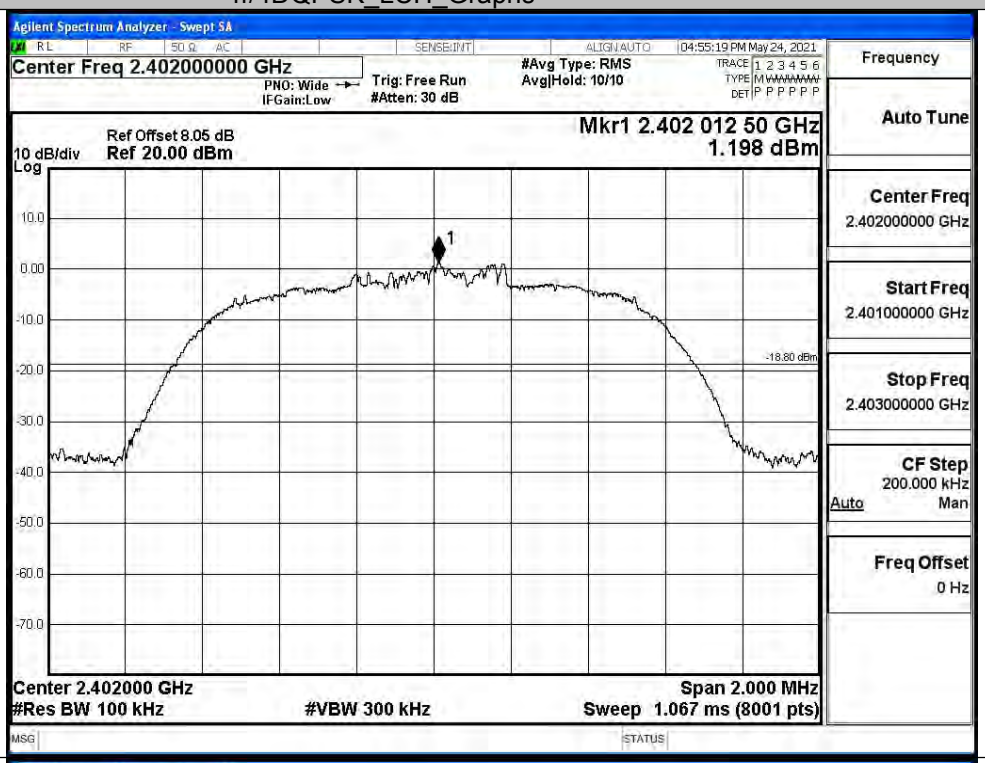
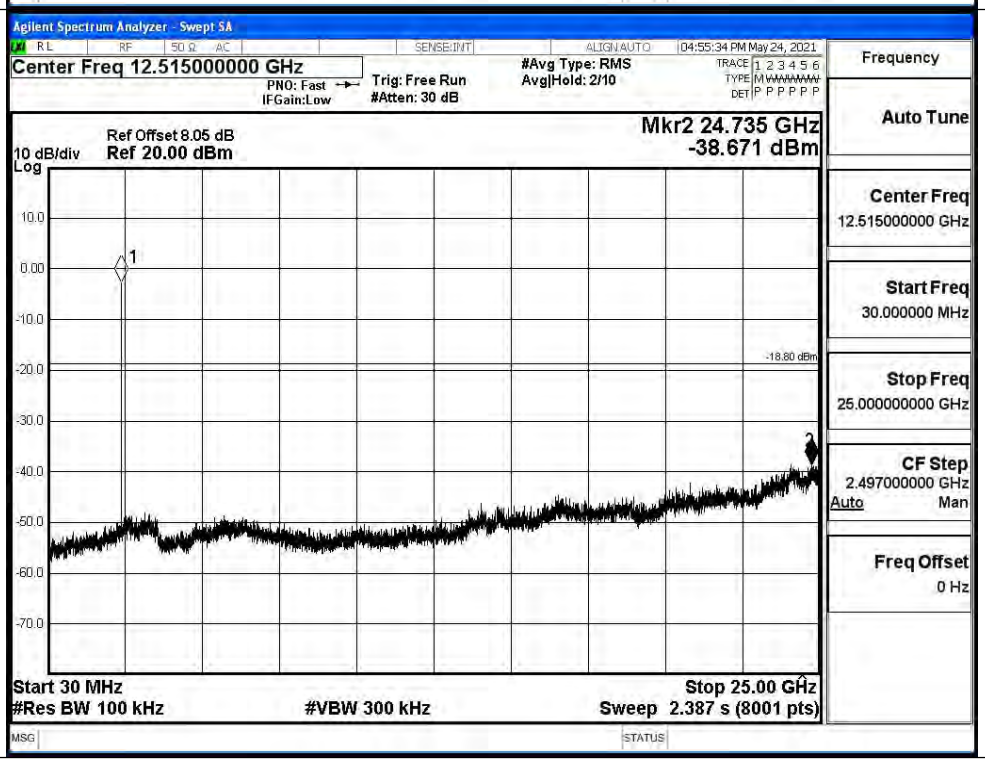
GFSK_LCH_Graphs		
Pref		

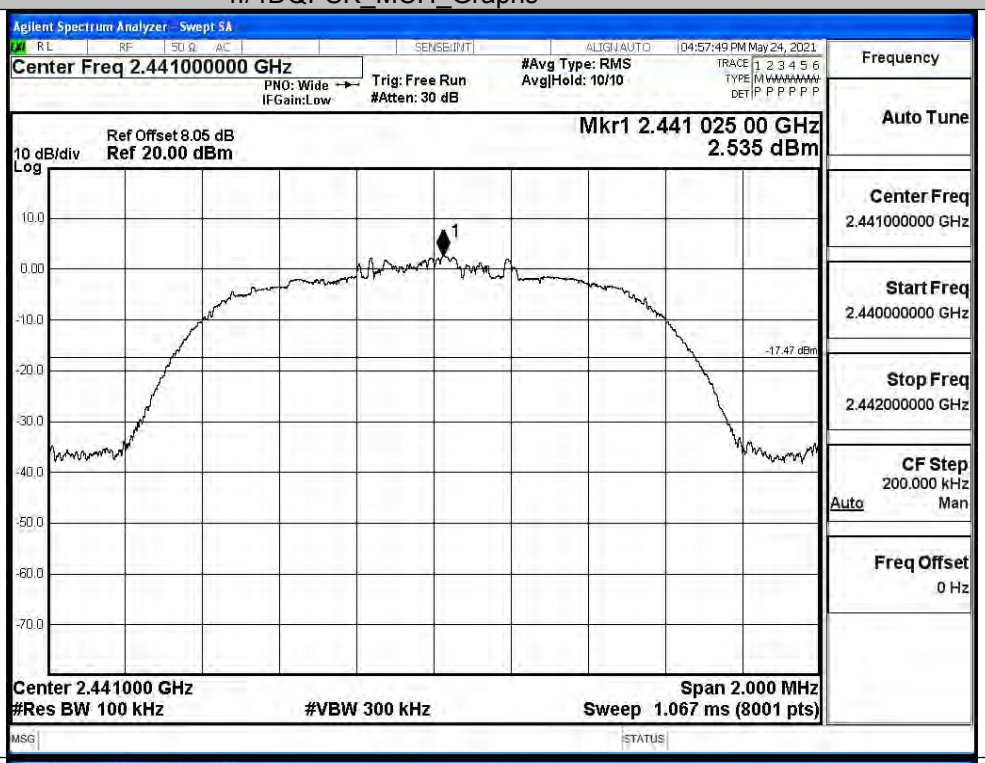
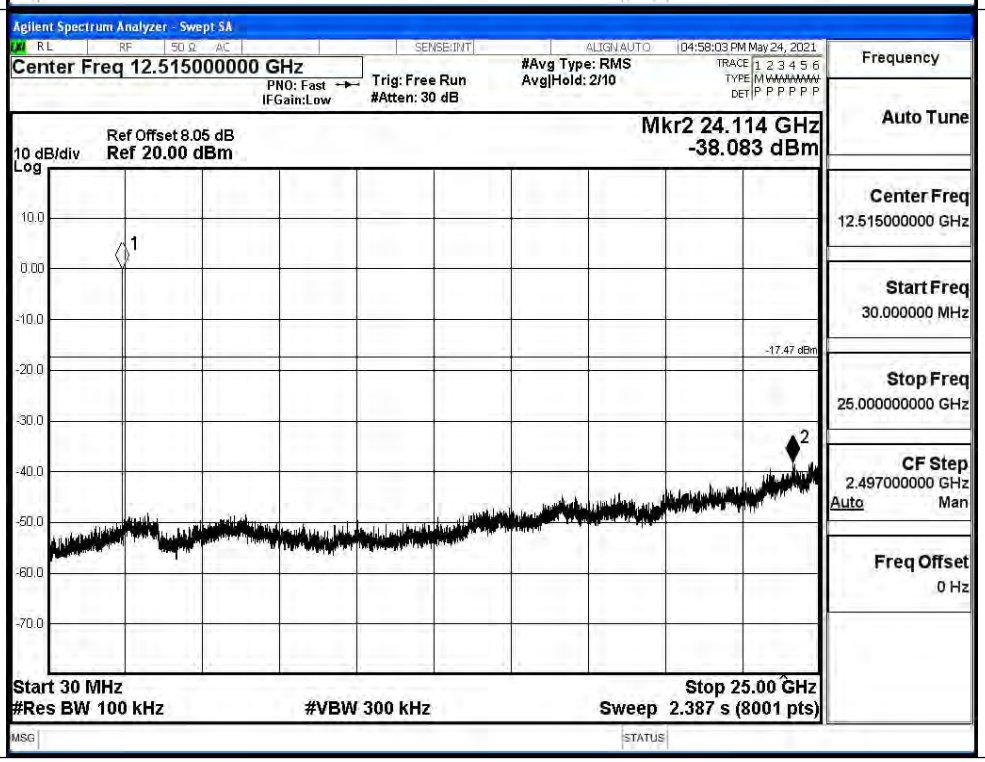
Puw		

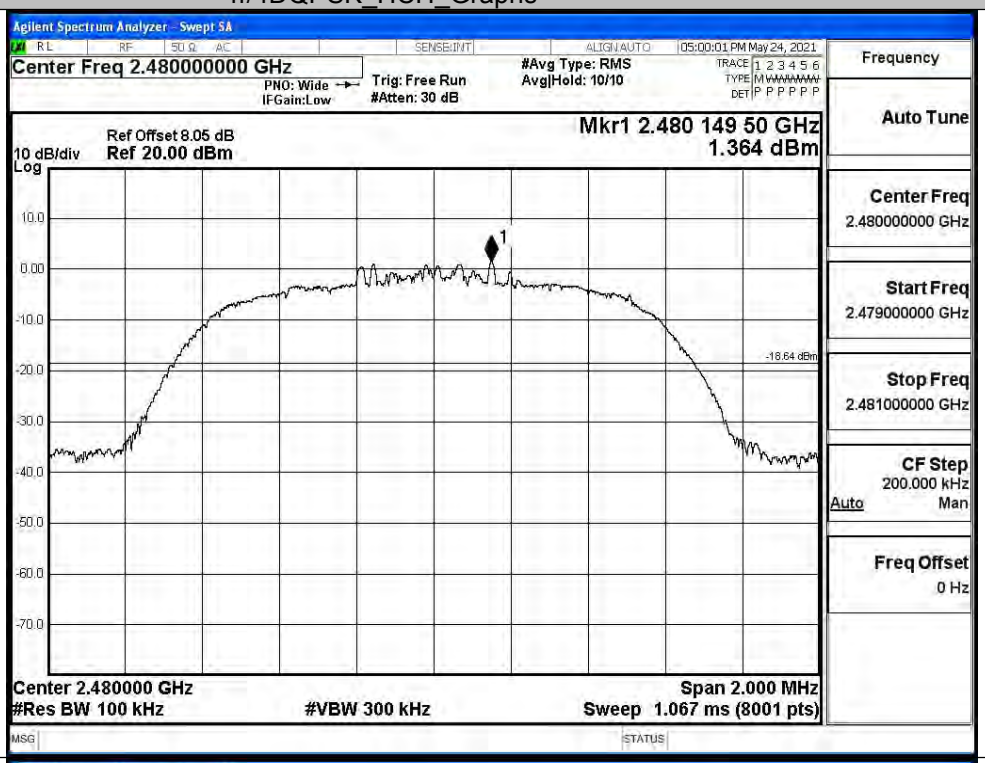
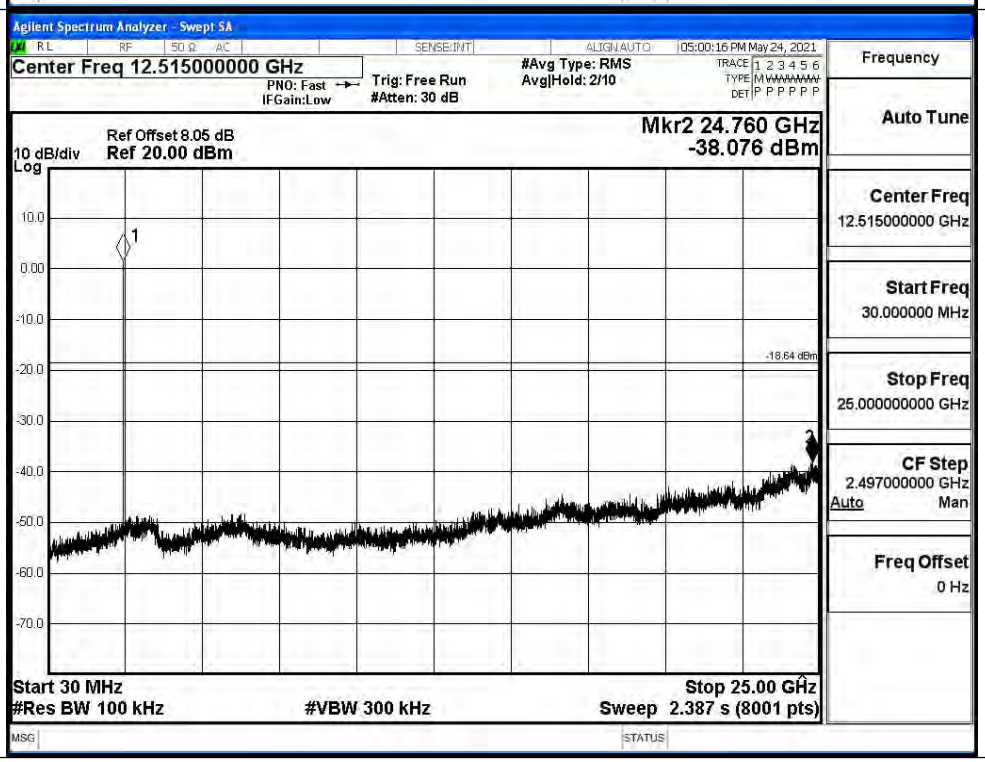
Agilent Spectrum Analyzer - Swept SA
Center Freq 12.515000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 2/10
04:47:21 PM May 24, 2021
Ref Offset 8.05 dB
10 dB/div
Ref 20.00 dBm
Mkr2 24.788 GHz
-36.820 dBm
-16.99 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.387 s (8001 pts)
Frequency
Auto Tune
Center Freq
12.515000000 GHz
Start Freq
30.000000 MHz
Stop Freq
25.000000000 GHz
CF Step
2.497000000 GHz
Auto
Man
Freq Offset
0 Hz

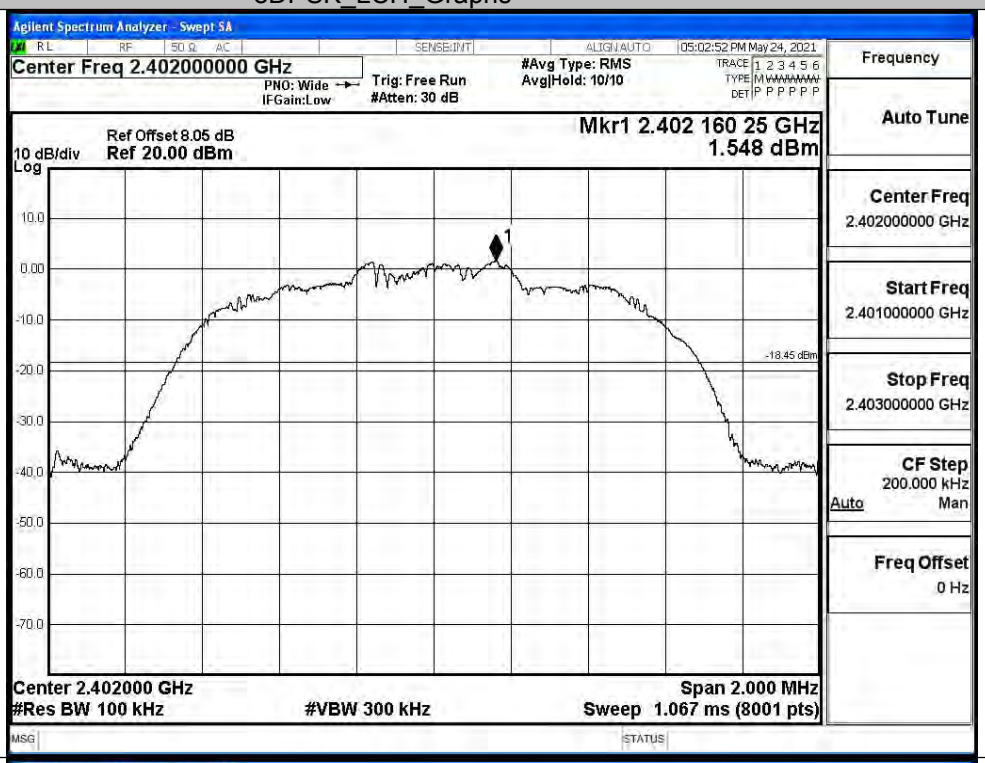
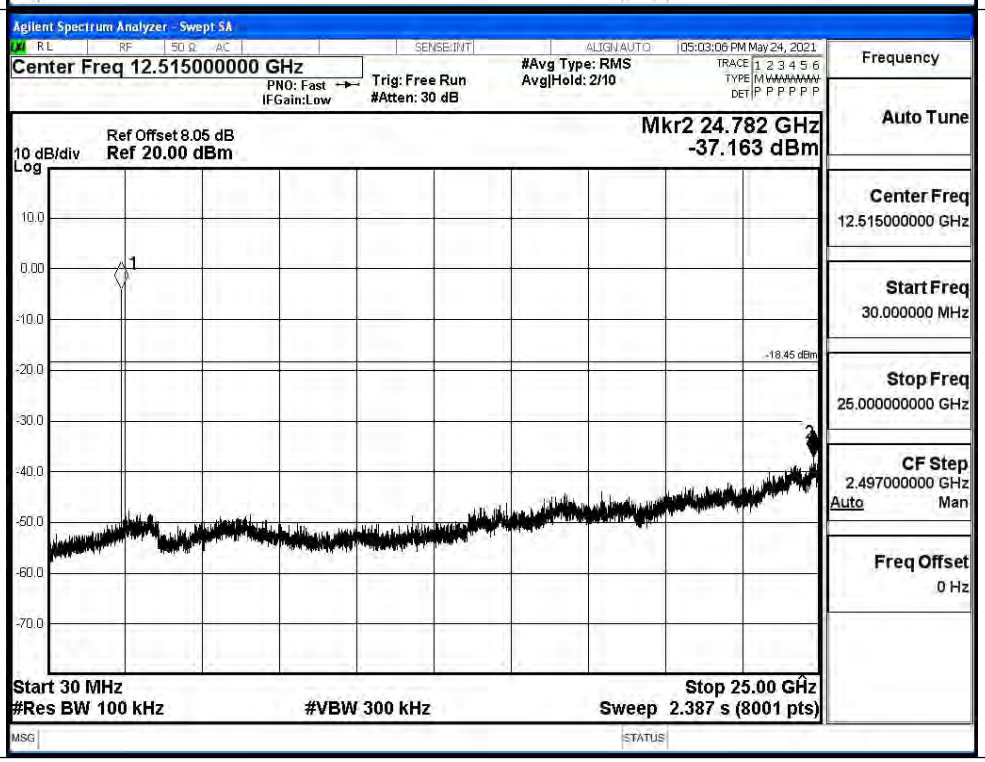
GFSK_MCH_Graphs		
Pref		
Puw		

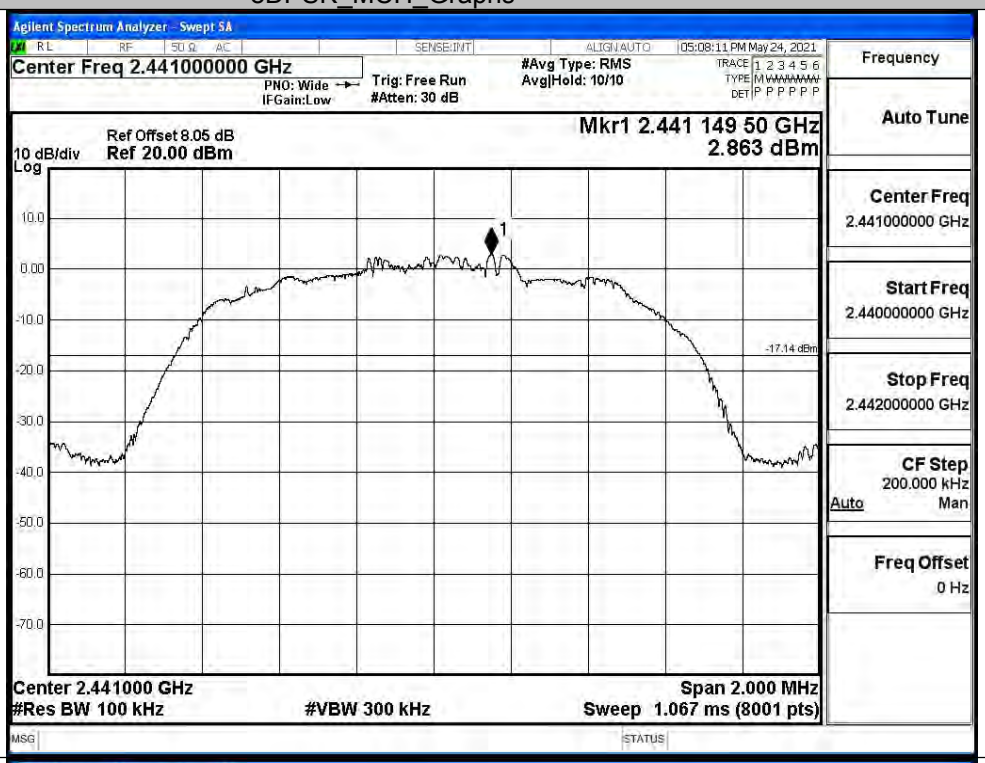
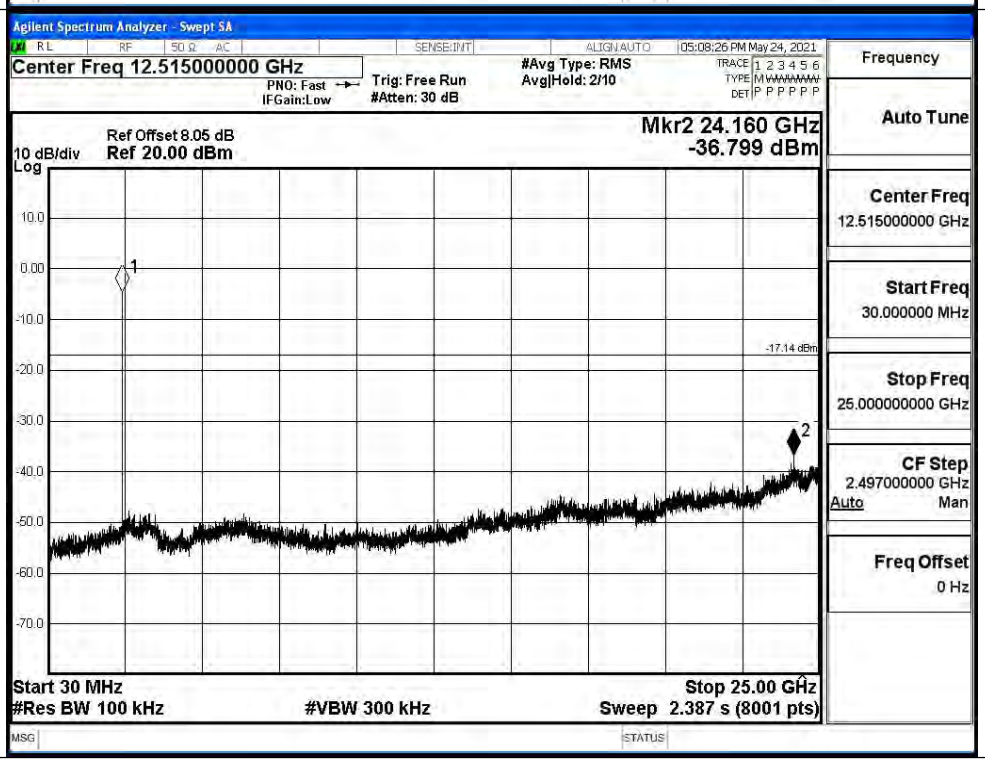
GFSK_HCH_Graphs			
Pref			
Puw			

π/4DQPSK_LCH_Graphs		
Pref		
Puw		

π/4DQPSK_MCH_Graphs			
Pref			
Puw			

π/4DQPSK_HCH_Graphs			
Pref			
Puw			

8DPSK_LCH_Graphs		
Pref		
Puw		

8DPSK_MCH_Graphs		
Pref		
Puw		

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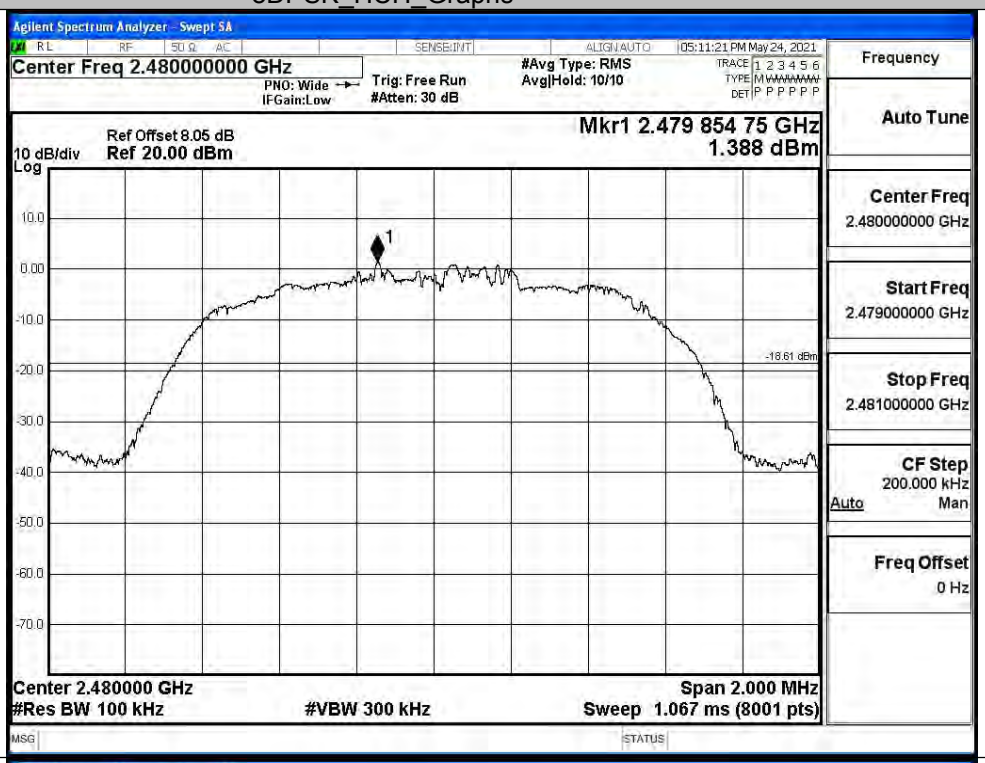
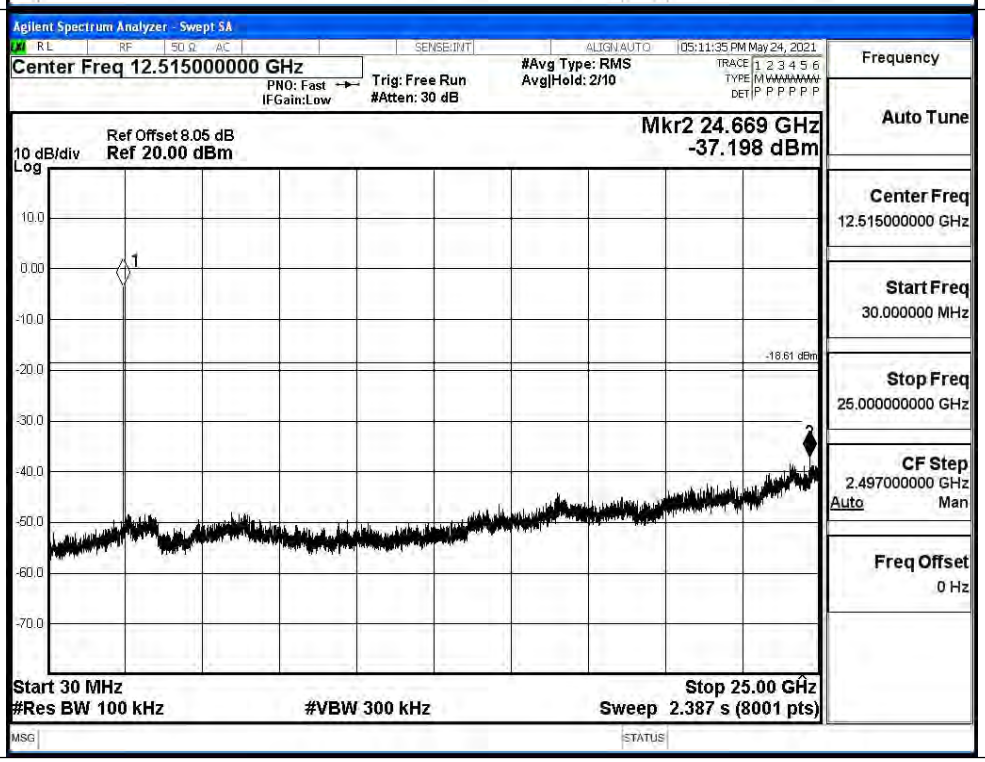
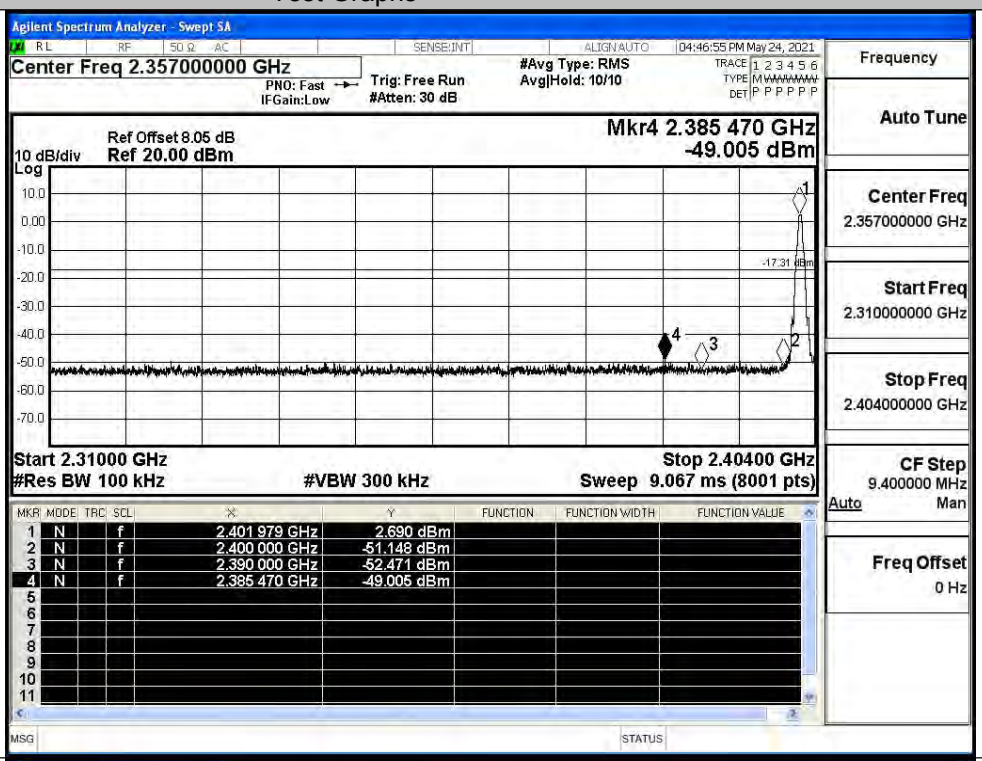
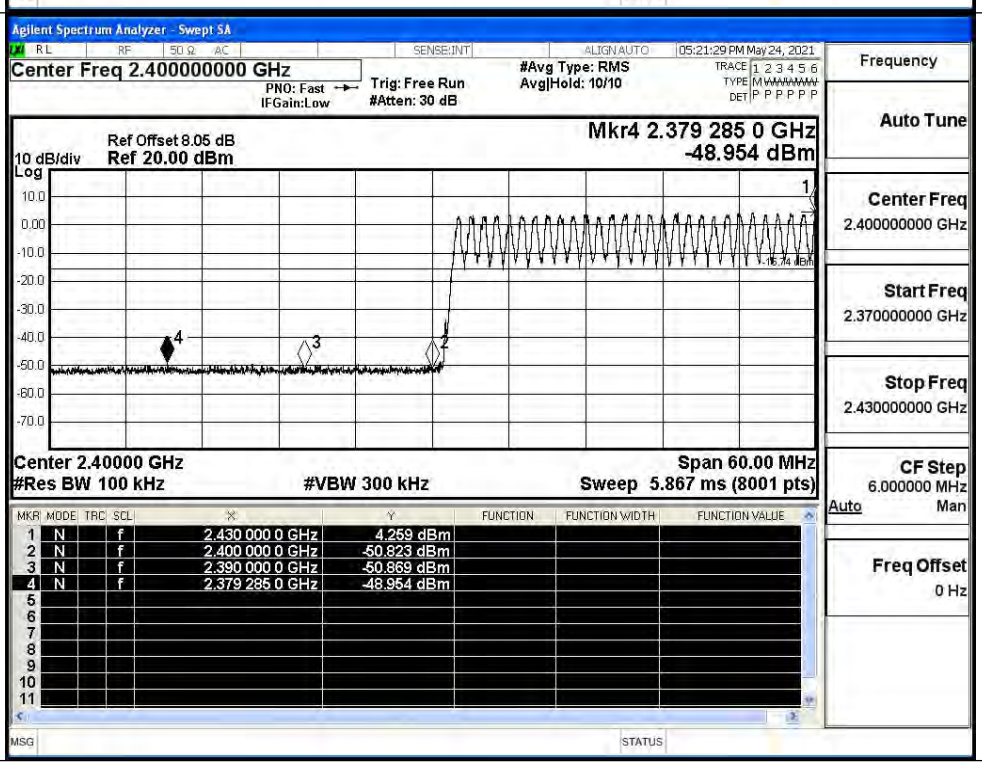
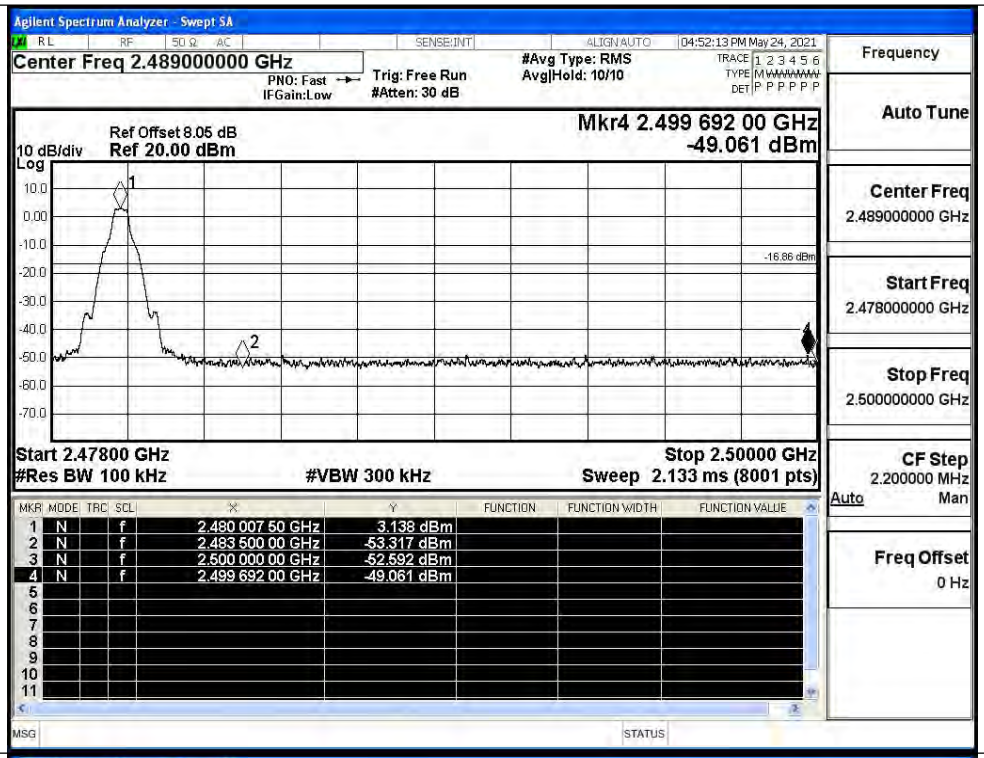
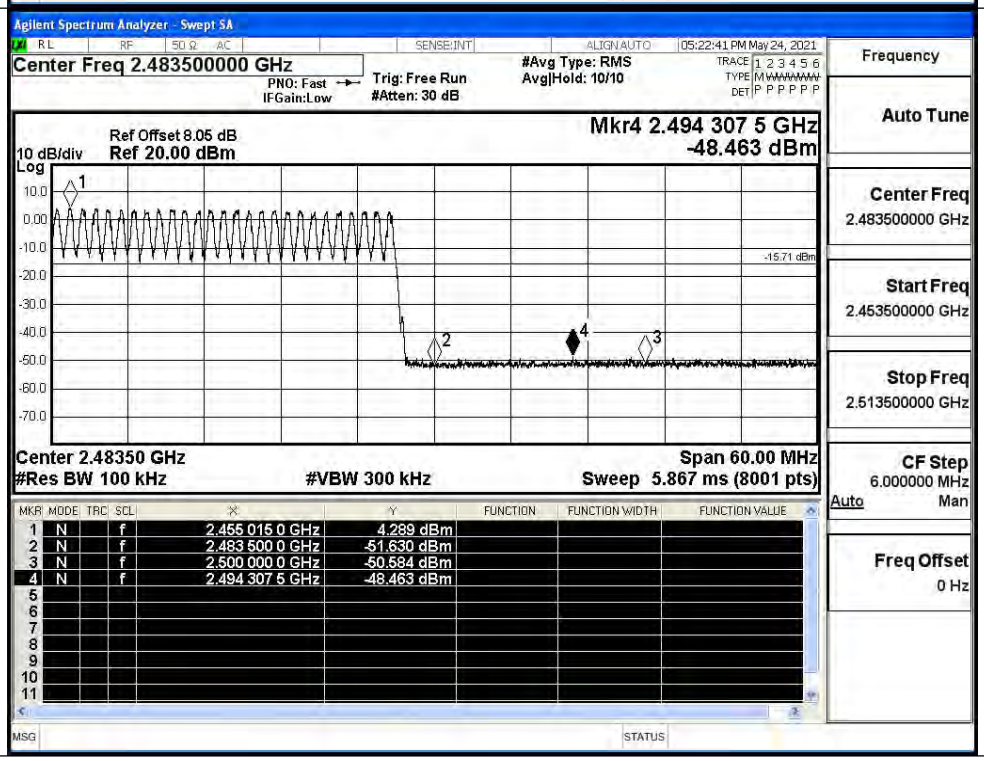
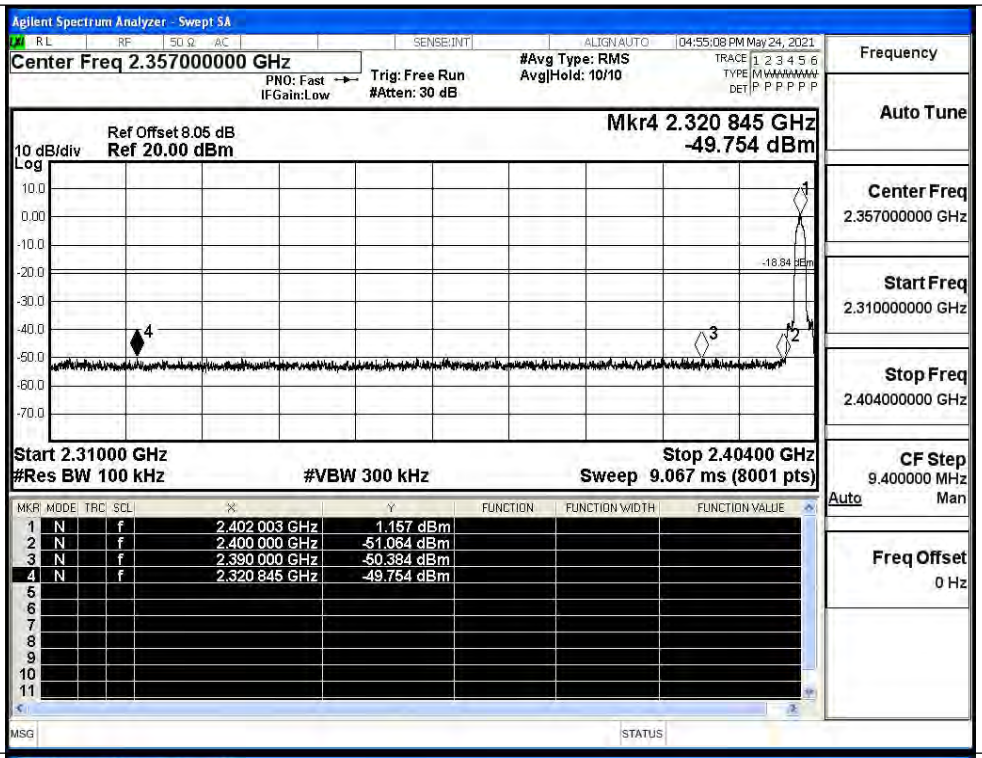
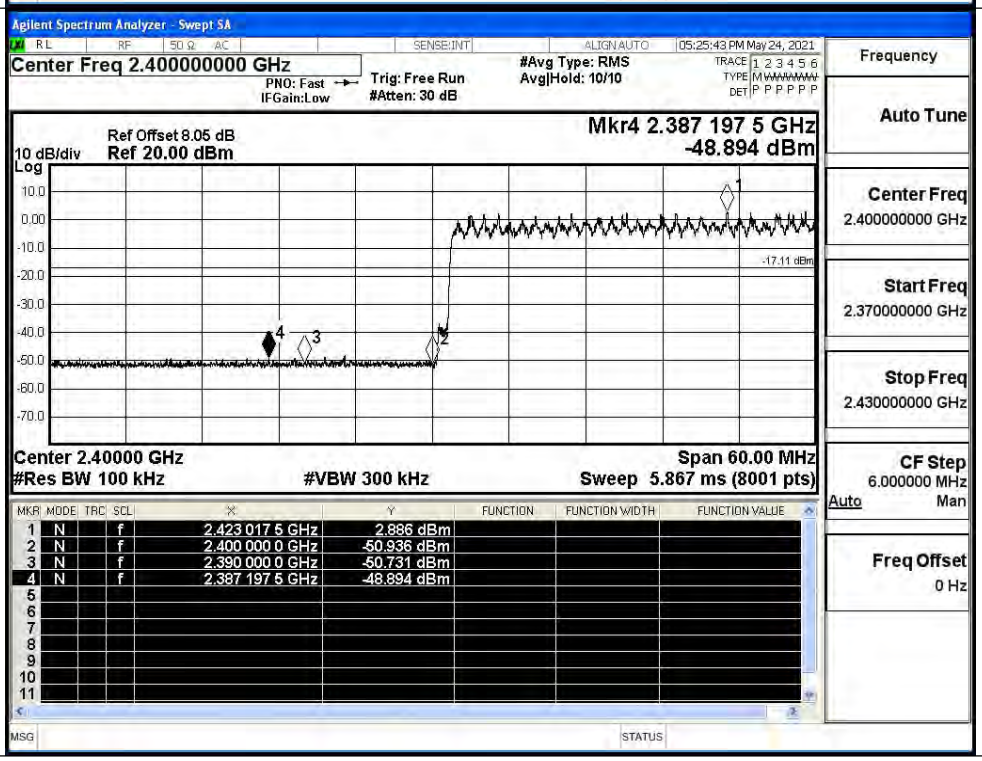
Pref		
Puw		

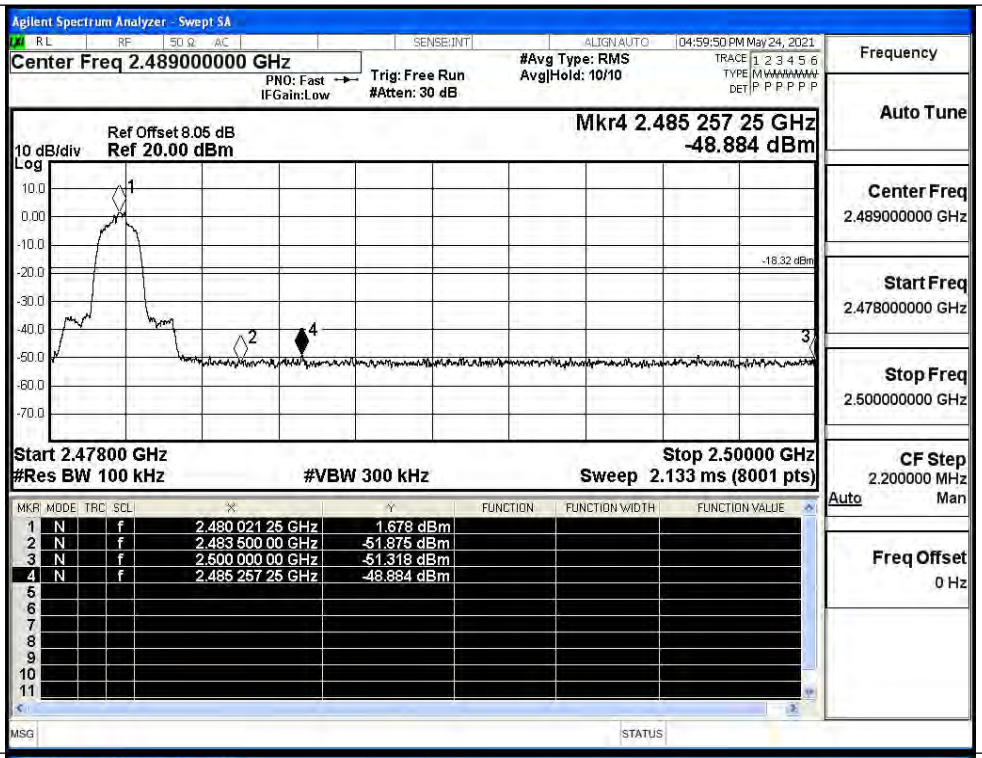
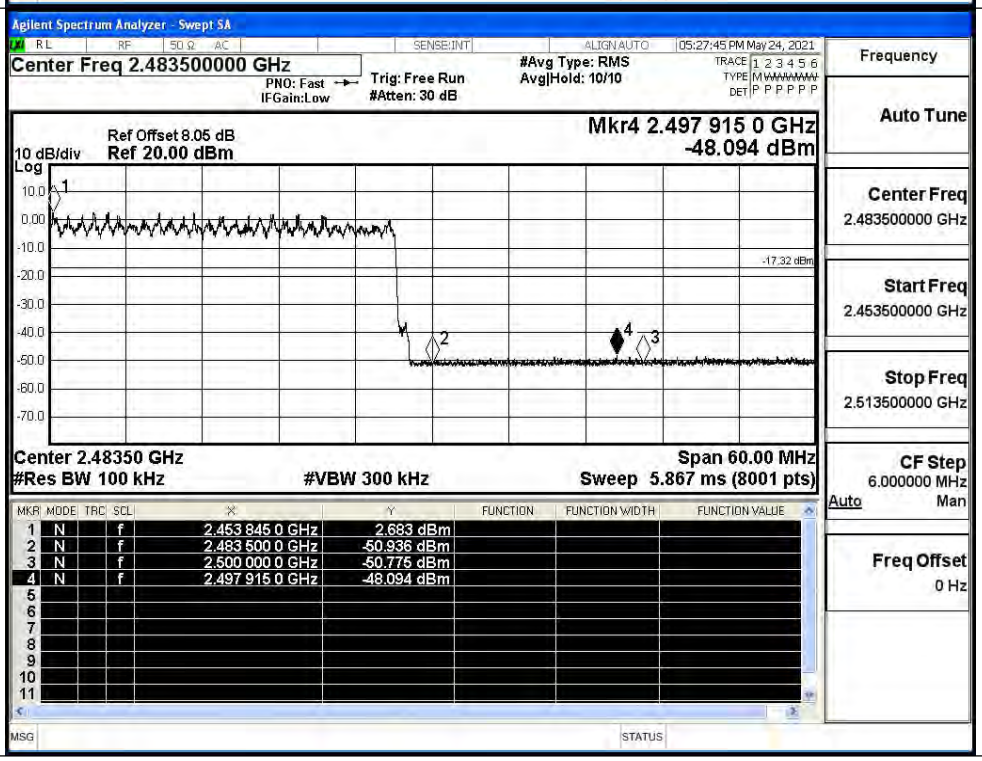
A.8 Band-edge for RF Conducted Emissions

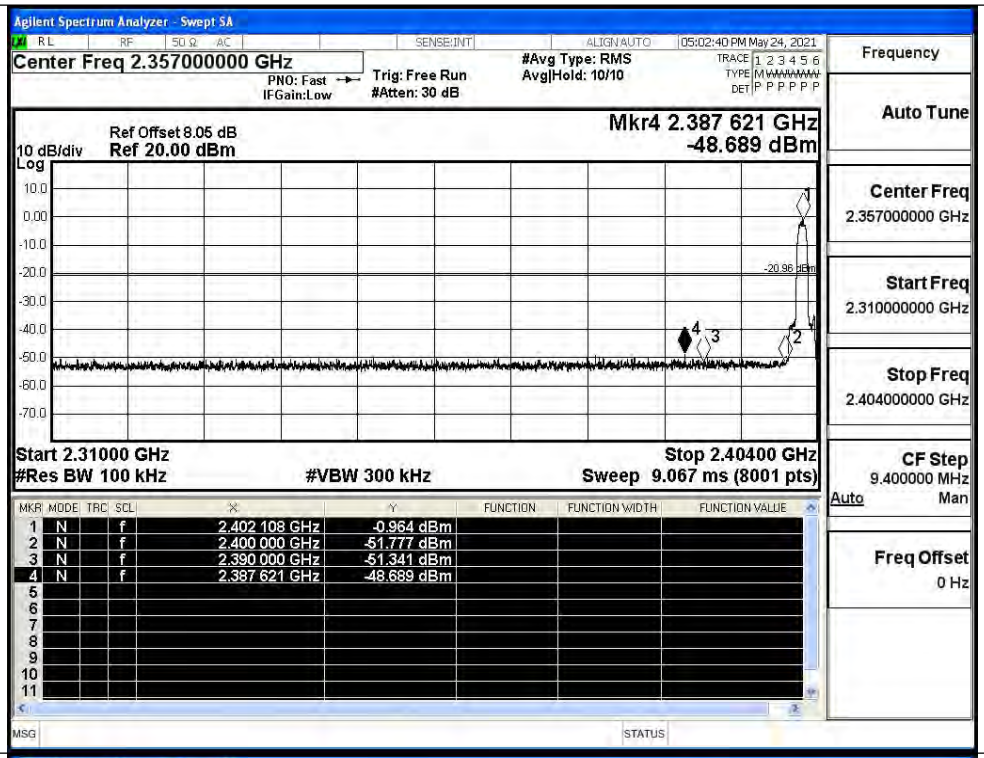
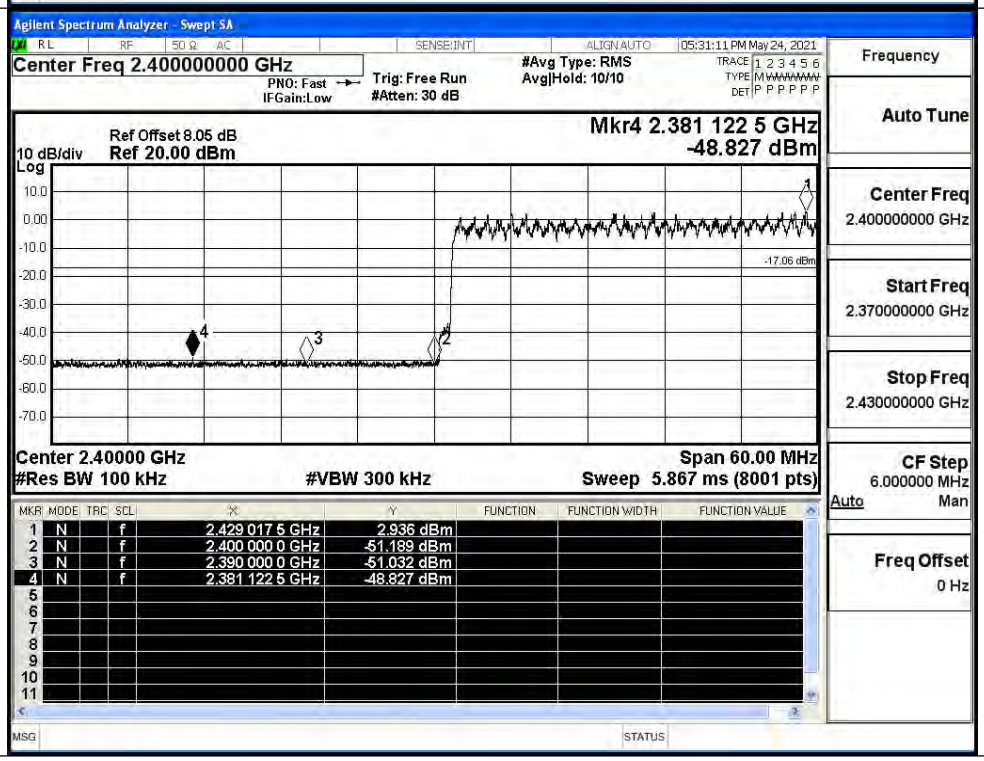
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	2.690	Off	-49.005	-17.31	PASS
			4.259	On	-48.954	-15.74	PASS
	HCH	2480	3.138	Off	-49.061	-16.86	PASS
			4.289	On	-48.463	-15.71	PASS
π/4DQPSK	LCH	2402	1.157	Off	-49.754	-18.84	PASS
			2.886	On	-48.894	-17.11	PASS
	HCH	2480	1.678	Off	-48.884	-18.32	PASS
			2.683	On	-48.094	-17.32	PASS
8DPSK	LCH	2402	-0.964	Off	-48.689	-20.96	PASS
			2.936	On	-48.827	-17.06	PASS
	HCH	2480	1.720	Off	-48.888	-18.28	PASS
			2.310	On	-48.193	-17.69	PASS

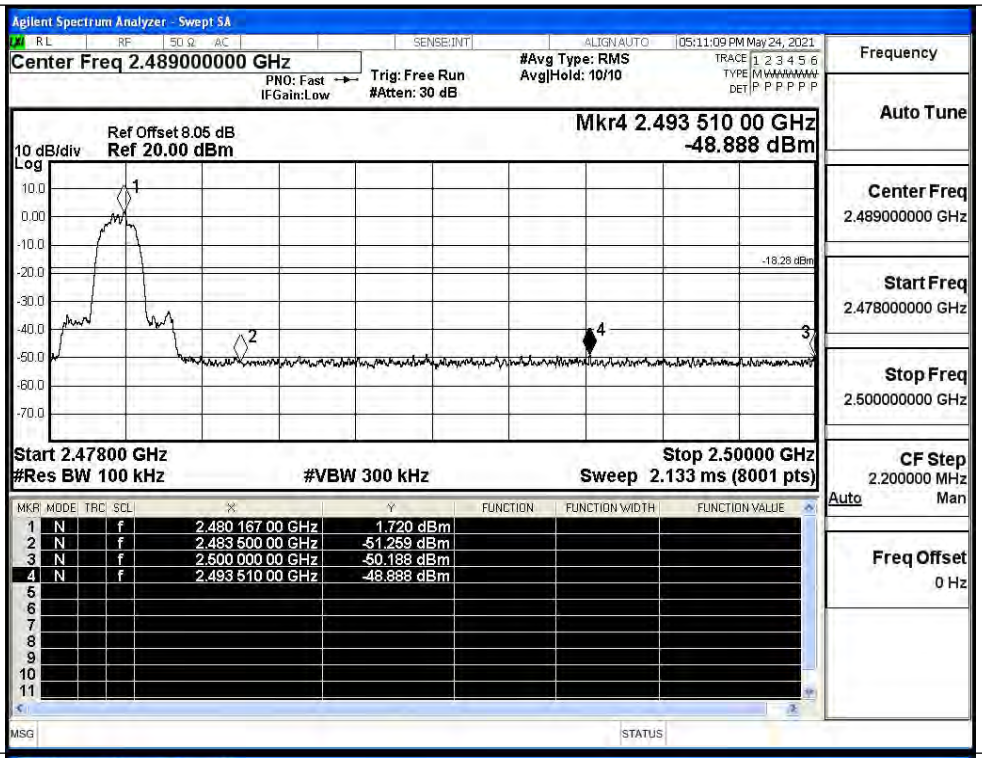
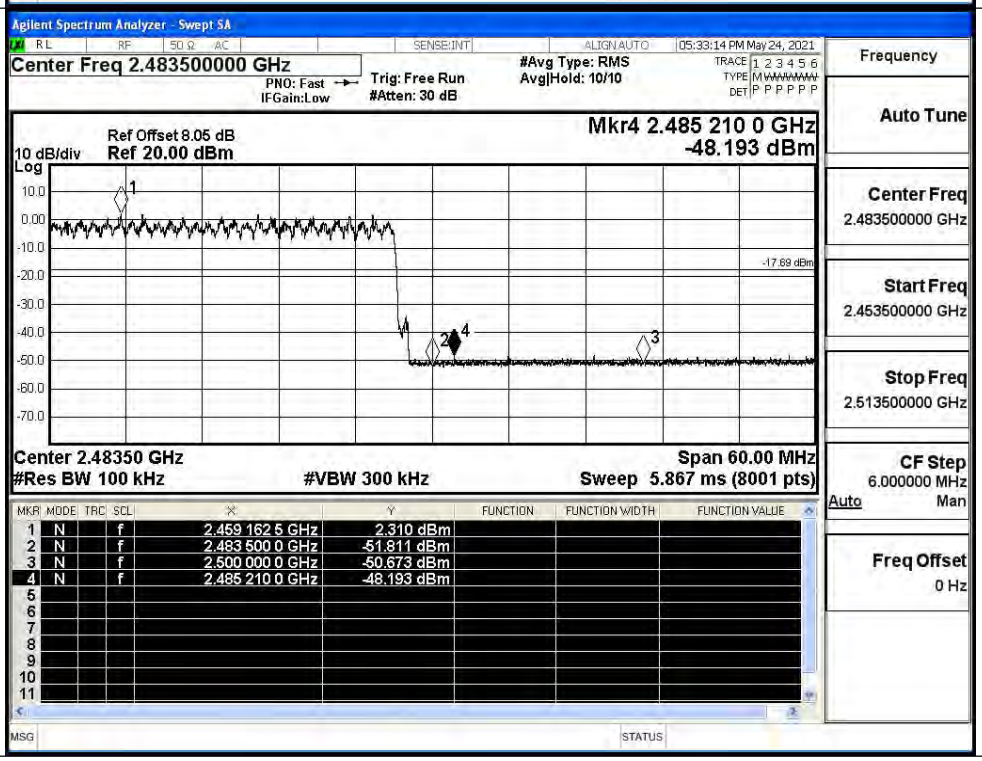
Test Graphs	
GFSK/LCH/No Hop	
GFSK/LCH/Hop	

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	

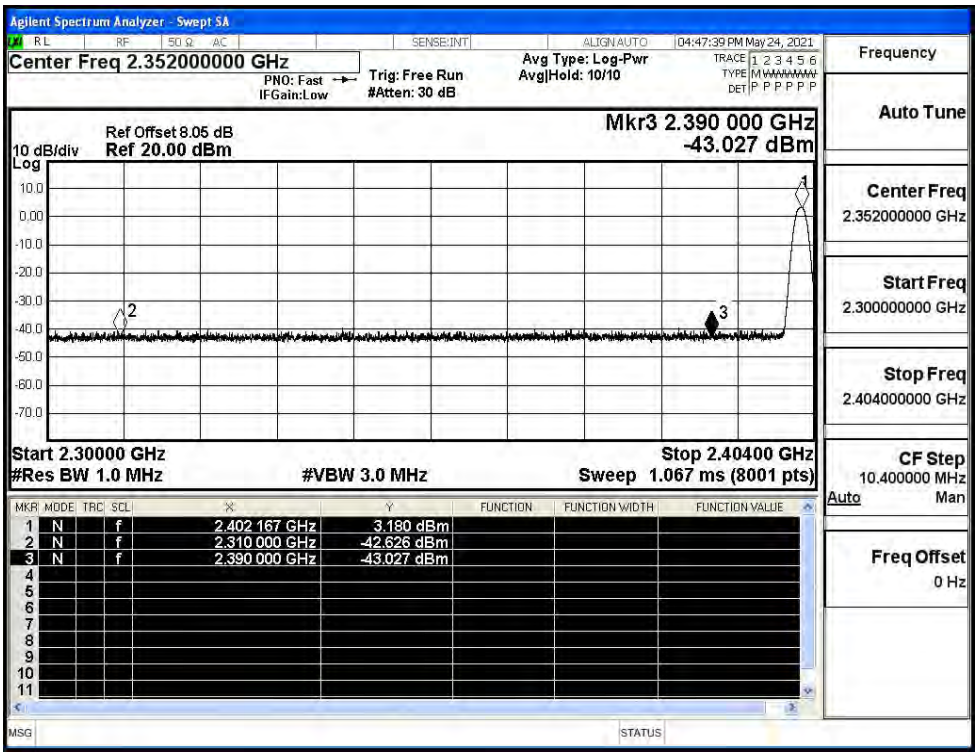
8DPSK/LCH/No Hop	
8DPSK/LCH/Hop	

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

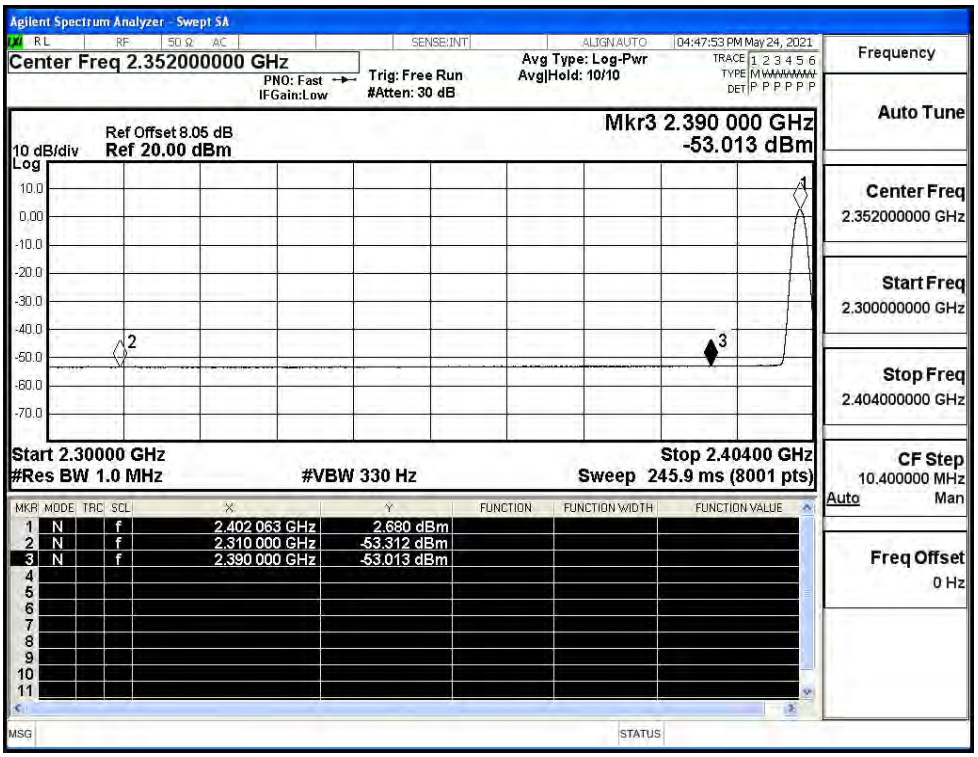
A.9 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-42.63	2.0	0	52.63	PEAK	74	PASS
	Off	2310.0	-53.31	2.0	0	41.95	AV	54	PASS
	Off	2390.0	-43.03	2.0	0	52.23	PEAK	74	PASS
	Off	2390.0	-53.01	2.0	0	42.24	AV	54	PASS
	Off	2483.5	-43.18	2.0	0	52.07	PEAK	74	PASS
	Off	2483.5	-52.45	2.0	0	42.81	AV	54	PASS
	Off	2500.0	-42.24	2.0	0	53.02	PEAK	74	PASS
	Off	2500.0	-52.36	2.0	0	42.90	AV	54	PASS
π/4DQPSK	Off	2310.0	-43.58	2.0	0	51.68	PEAK	74	PASS
	Off	2310.0	-53.36	2.0	0	41.89	AV	54	PASS
	Off	2390.0	-43.54	2.0	0	51.72	PEAK	74	PASS
	Off	2390.0	-53.07	2.0	0	42.19	AV	54	PASS
	Off	2483.5	-42.33	2.0	0	52.93	PEAK	74	PASS
	Off	2483.5	-52.32	2.0	0	42.93	AV	54	PASS
	Off	2500.0	-43.05	2.0	0	52.21	PEAK	74	PASS
	Off	2500.0	-52.39	2.0	0	42.87	AV	54	PASS
8DPSK	Off	2310.0	-43.61	2.0	0	51.64	PEAK	74	PASS
	Off	2310.0	-53.37	2.0	0	41.89	AV	54	PASS
	Off	2390.0	-43.82	2.0	0	51.44	PEAK	74	PASS
	Off	2390.0	-52.91	2.0	0	42.35	AV	54	PASS
	Off	2483.5	-41.93	2.0	0	53.33	PEAK	74	PASS
	Off	2483.5	-52.39	2.0	0	42.87	AV	54	PASS
	Off	2500.0	-42.03	2.0	0	53.23	PEAK	74	PASS
	Off	2500.0	-52.30	2.0	0	42.96	AV	54	PASS

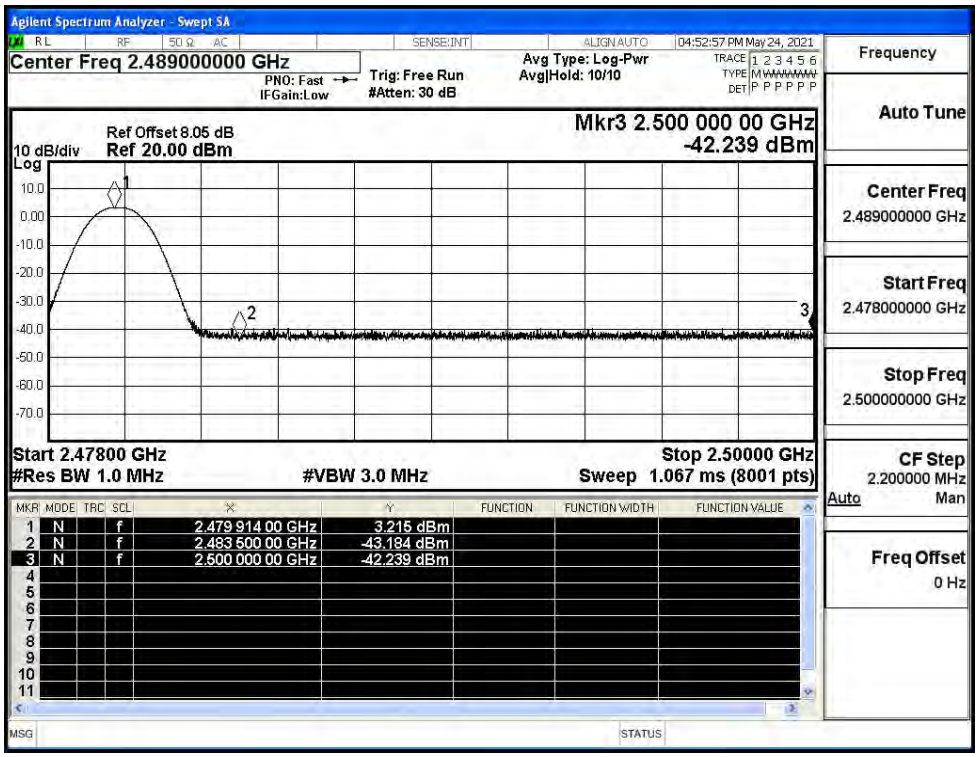
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



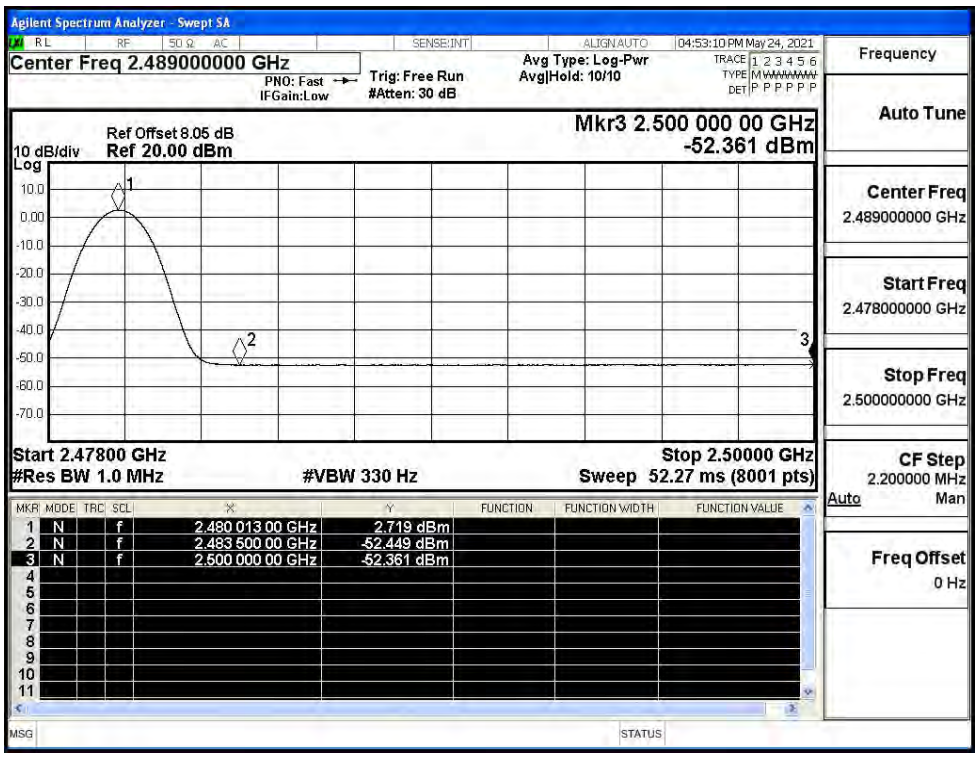
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)



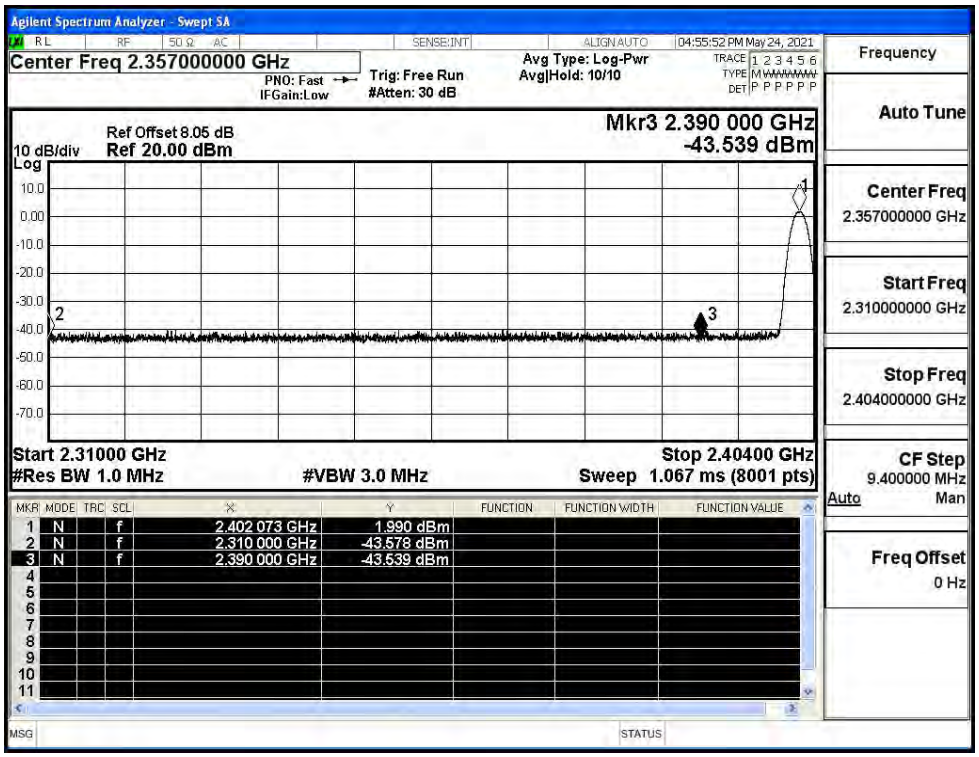
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



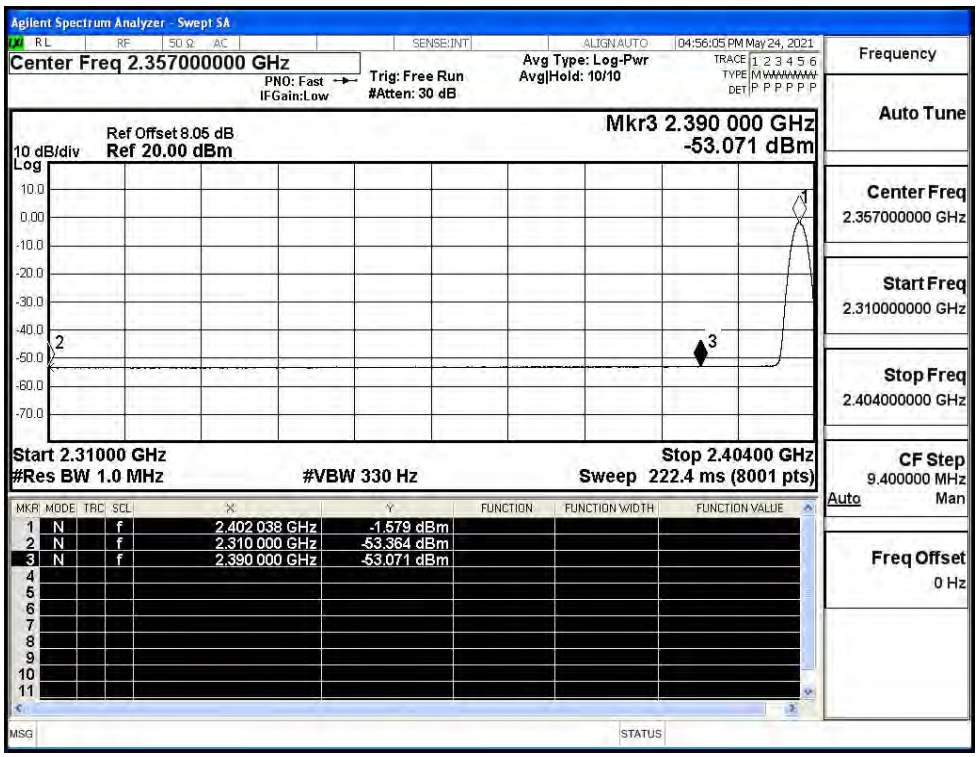
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



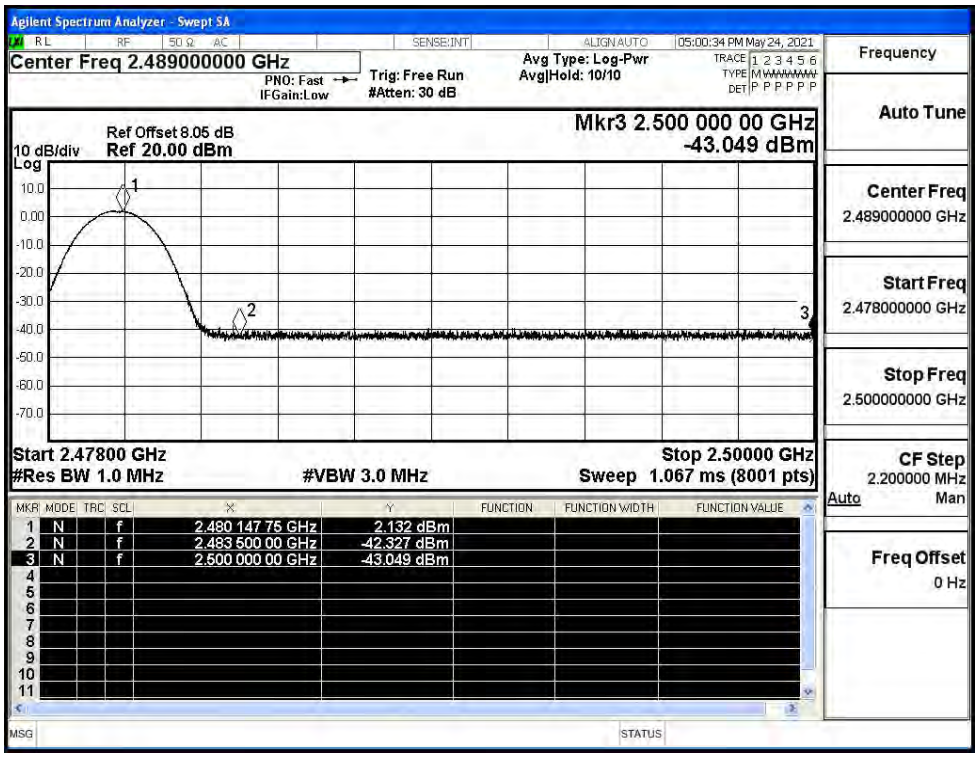
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



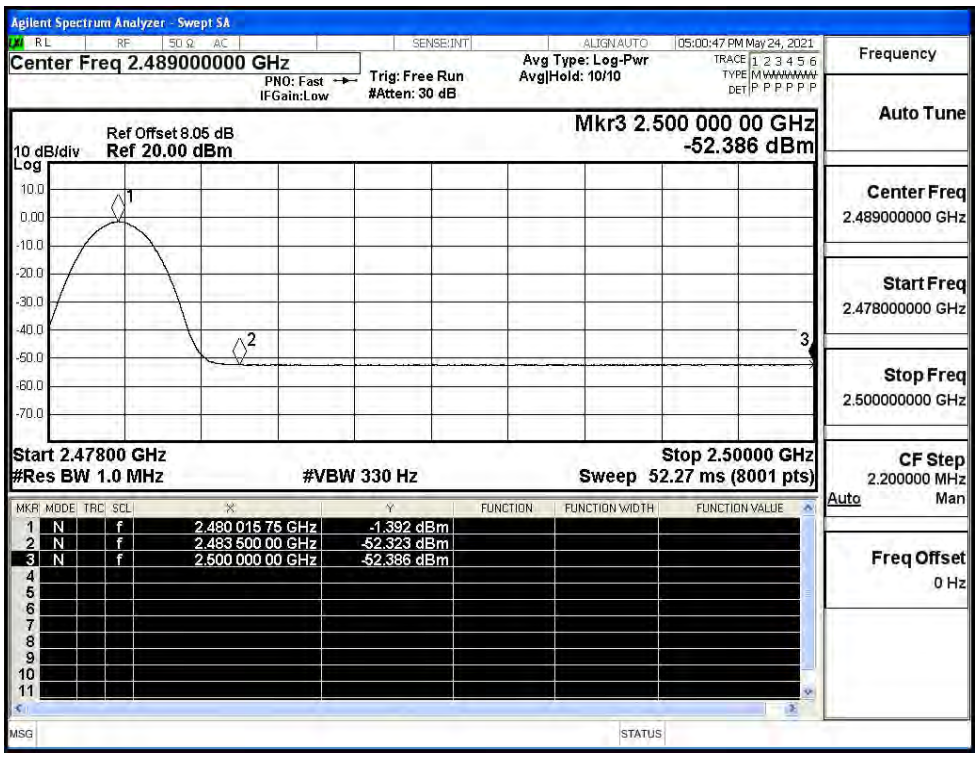
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



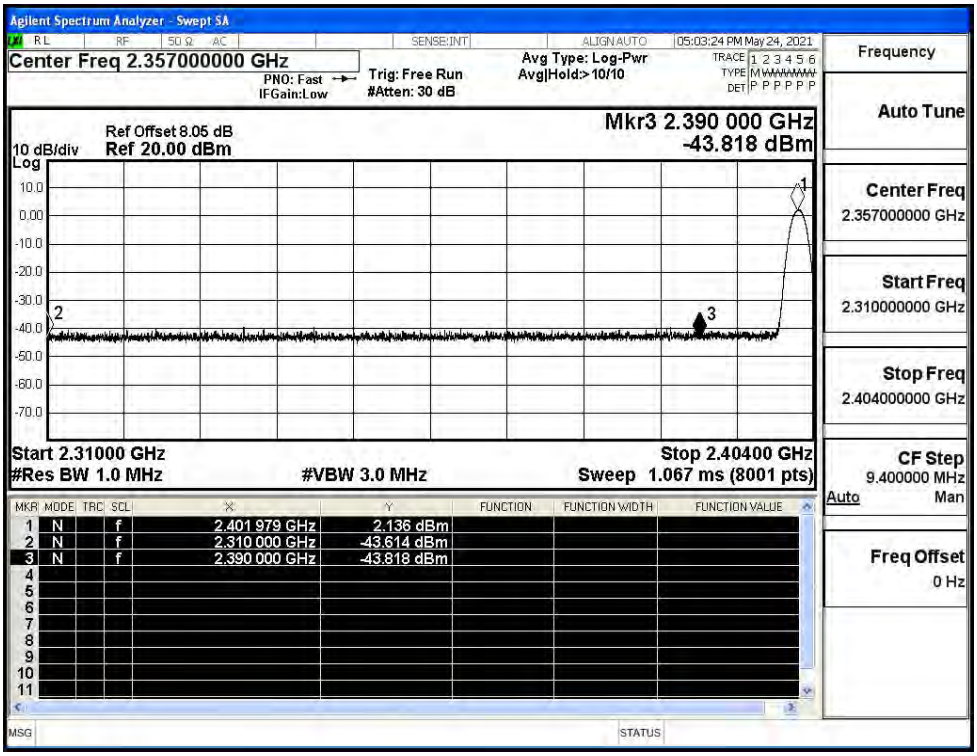
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



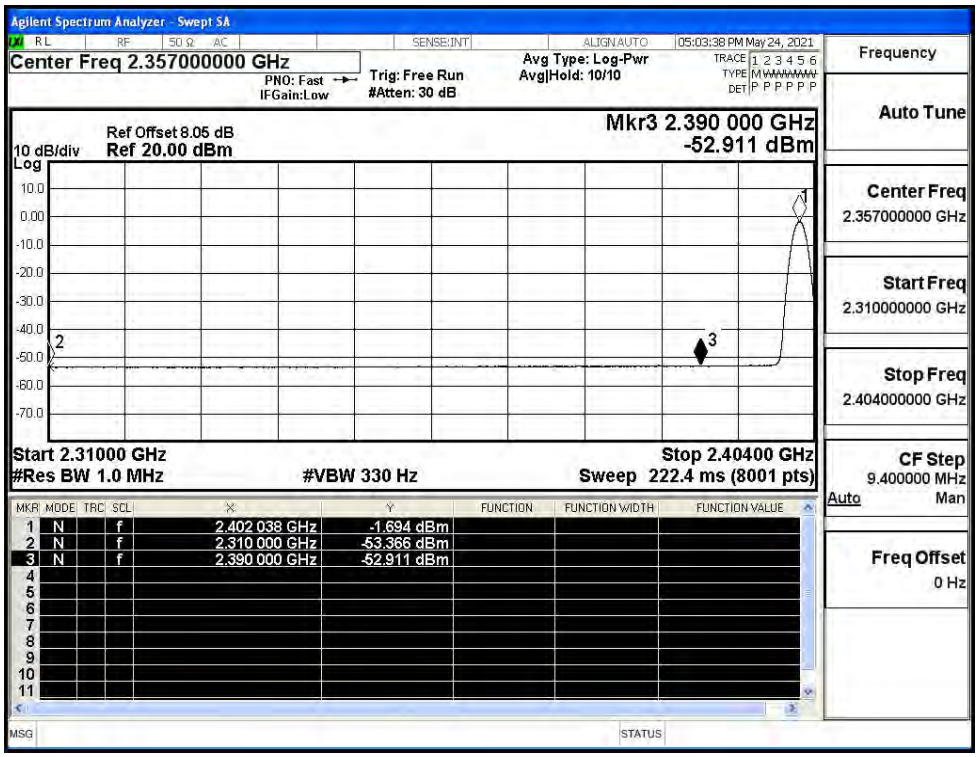
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



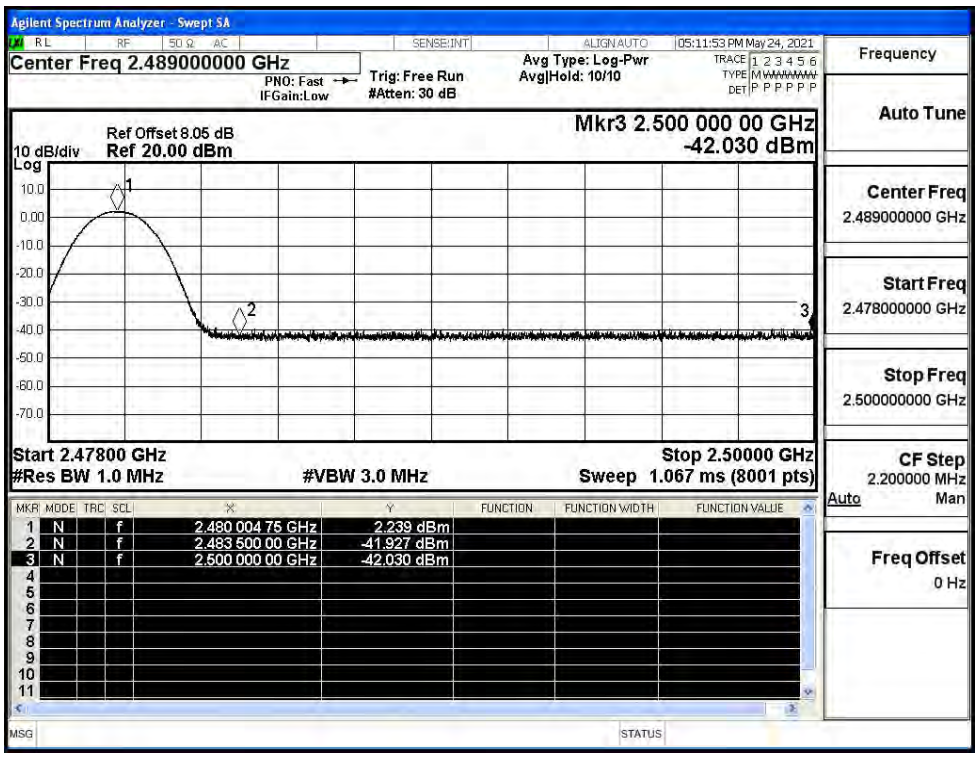
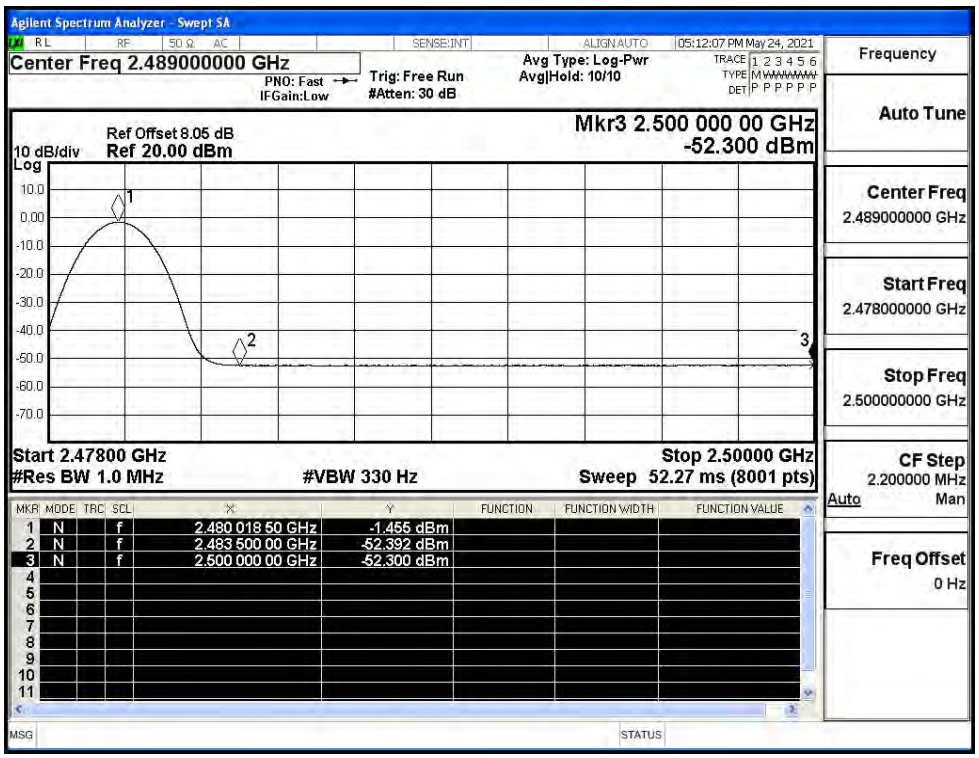
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)