Appendix A

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

Product Name: Chuangze brand autonomous mobile intelligent disinfection robot (CZ-RobotDf-DZ type)

Trade Mark: N/A

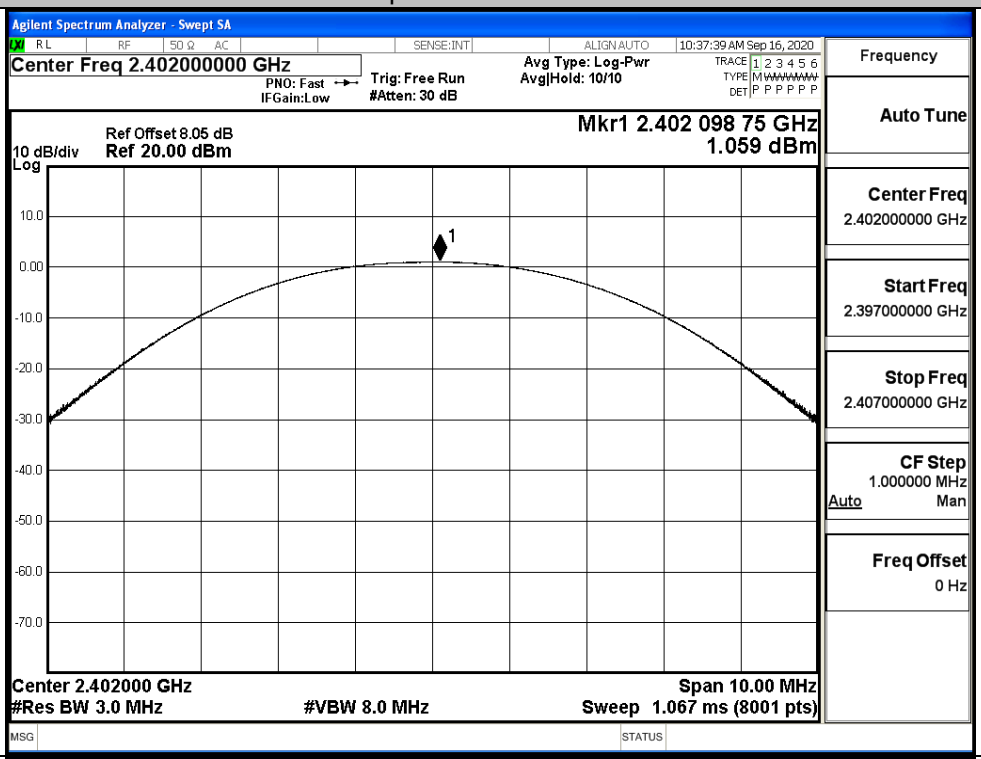
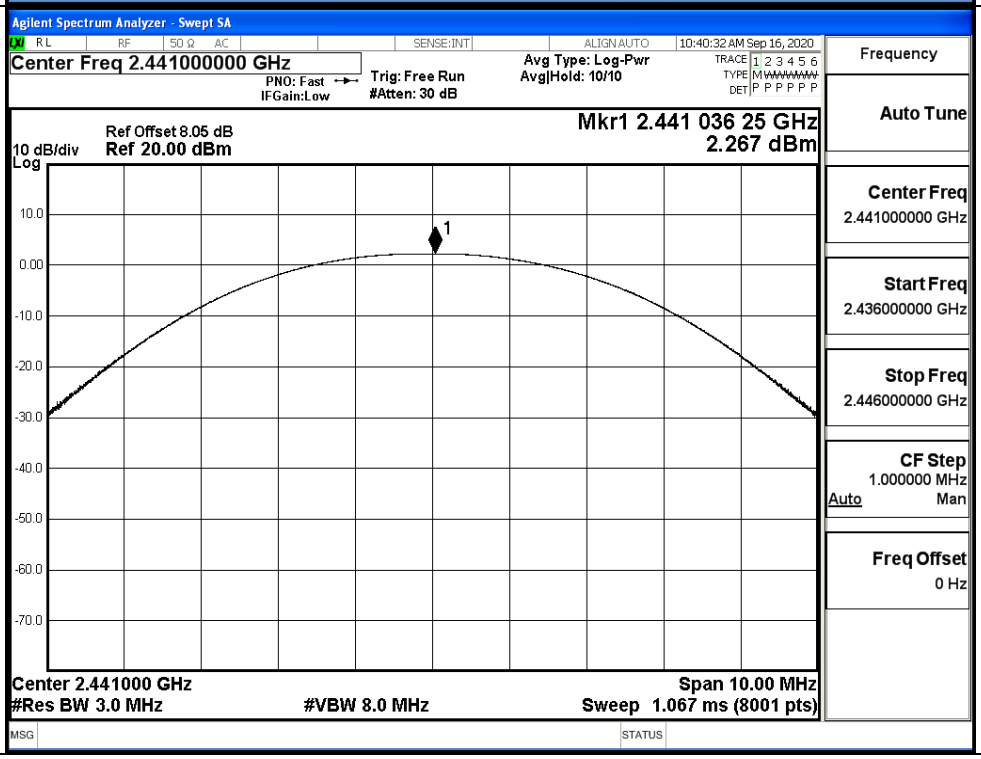
Test Model: CZ-RobotDf-DZ

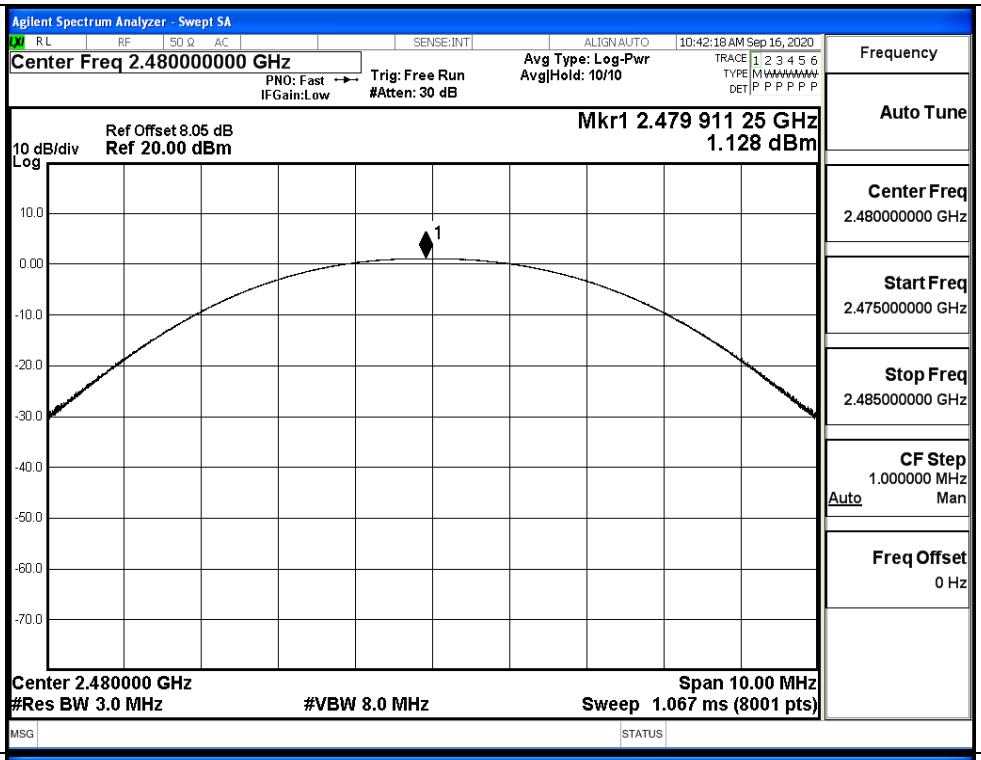
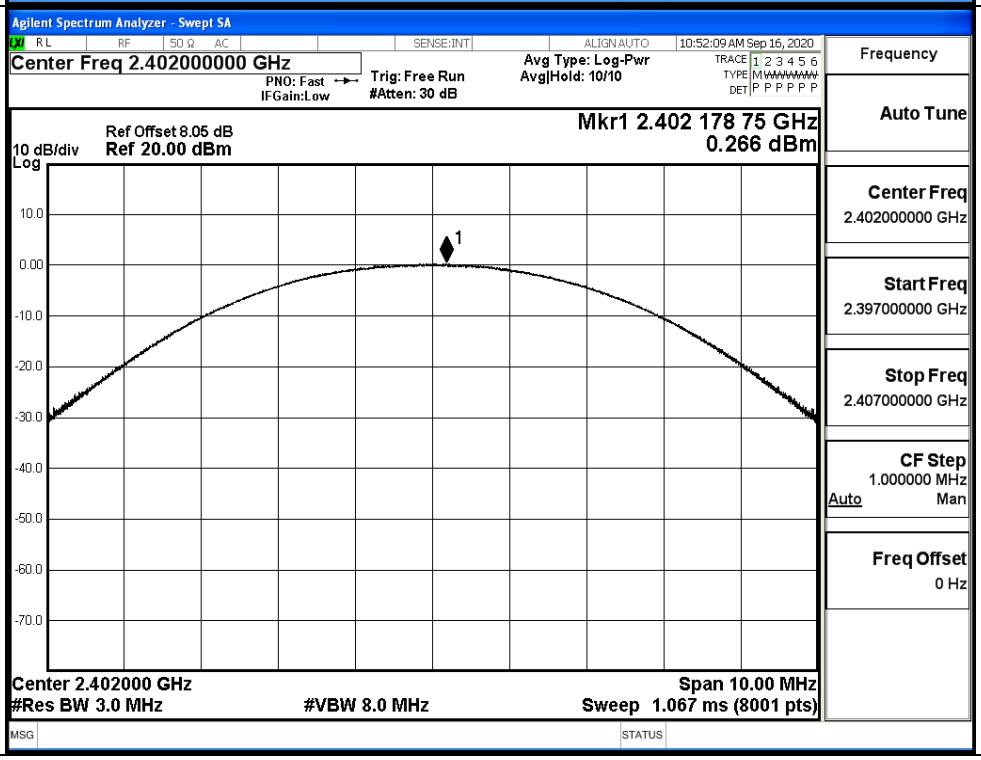
Environmental Conditions

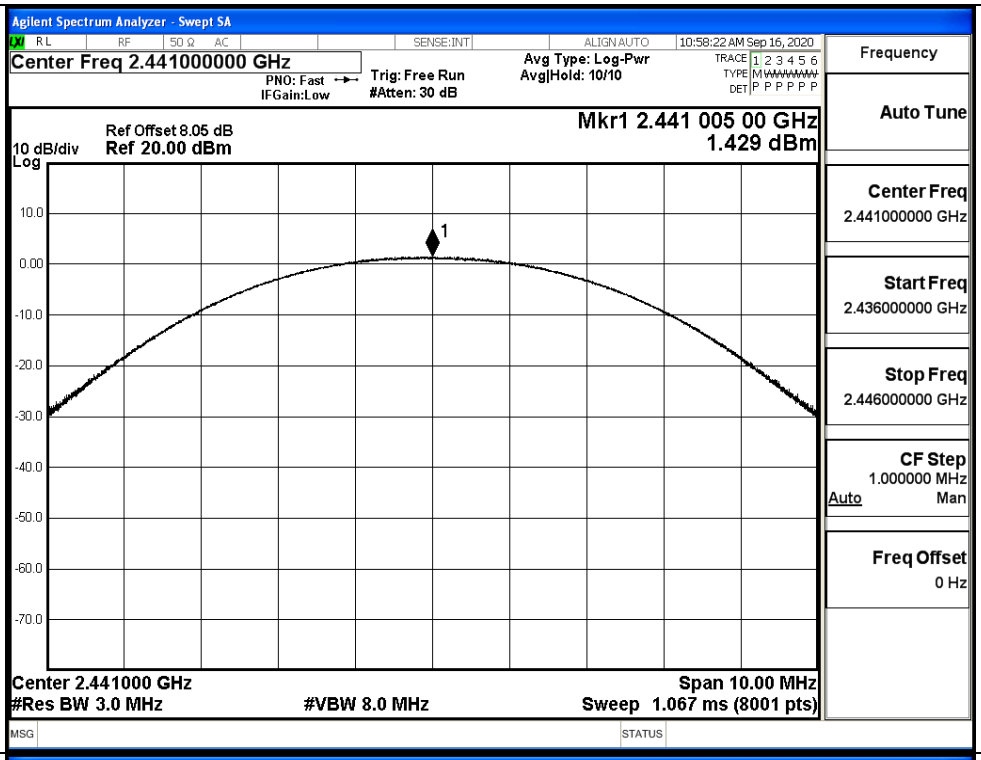
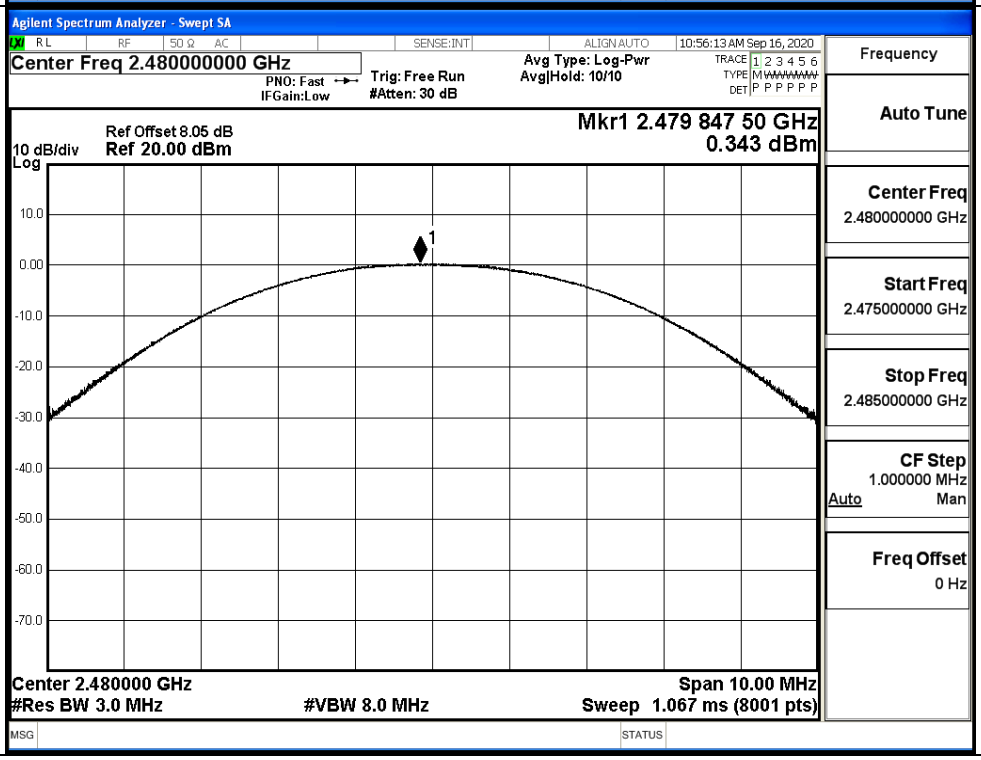
Temperature:	22.5° C
Relative Humidity:	53.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Carl Fu
Supervised by:	Li Huan

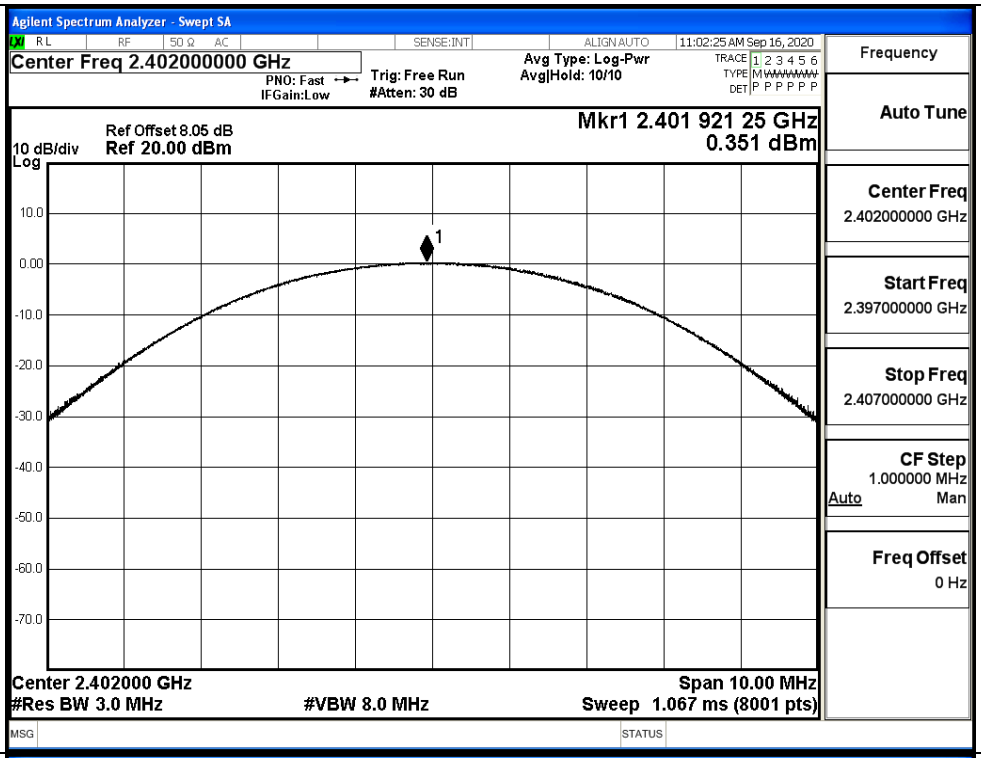
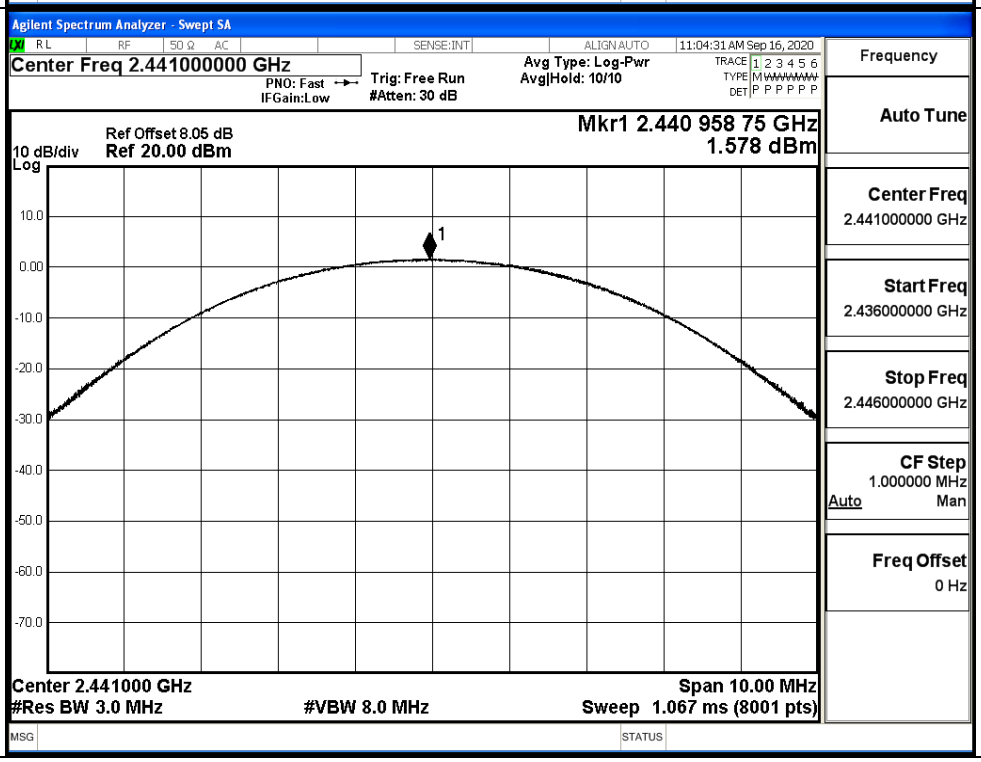
A.1 Maxmum Conducted Peak Output Power

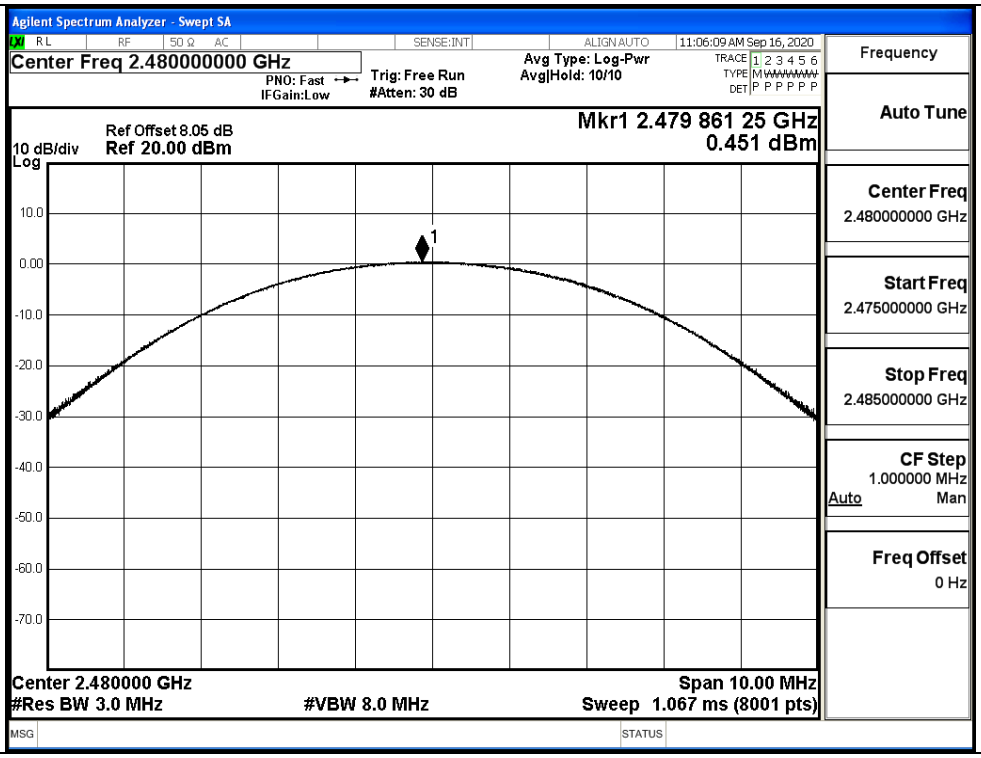
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	1.059	21	PASS
	MCH	2.267	21	PASS
	HCH	1.128	21	PASS
π/4DQPSK	LCH	0.266	21	PASS
	MCH	1.429	21	PASS
	HCH	0.343	21	PASS
8DPSK	LCH	0.351	21	PASS
	MCH	1.578	21	PASS
	HCH	0.451	21	PASS

Test Graphs		
GFSK/LCH		
GFSK/MCH		

GFSK/HCH	
π/4DQPSK/LCH	

π/4DQPSK/MCH	
π/4DQPSK/HCH	

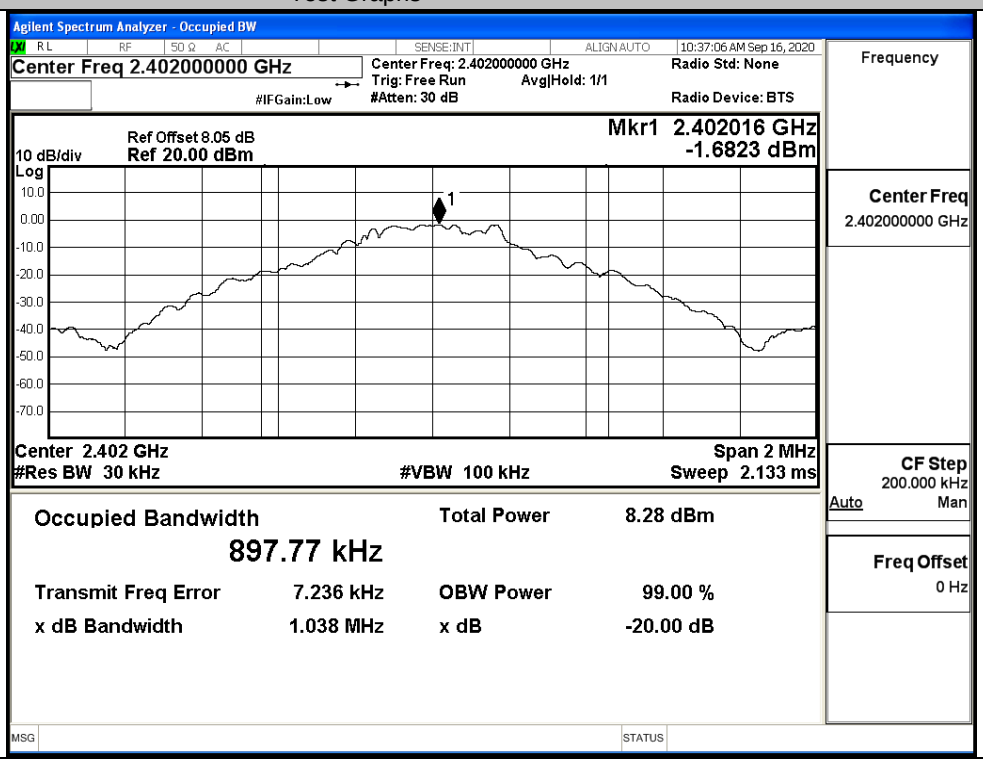
8DPSK/LCH		
8DPSK/MCH		

8DPSK/HCH		

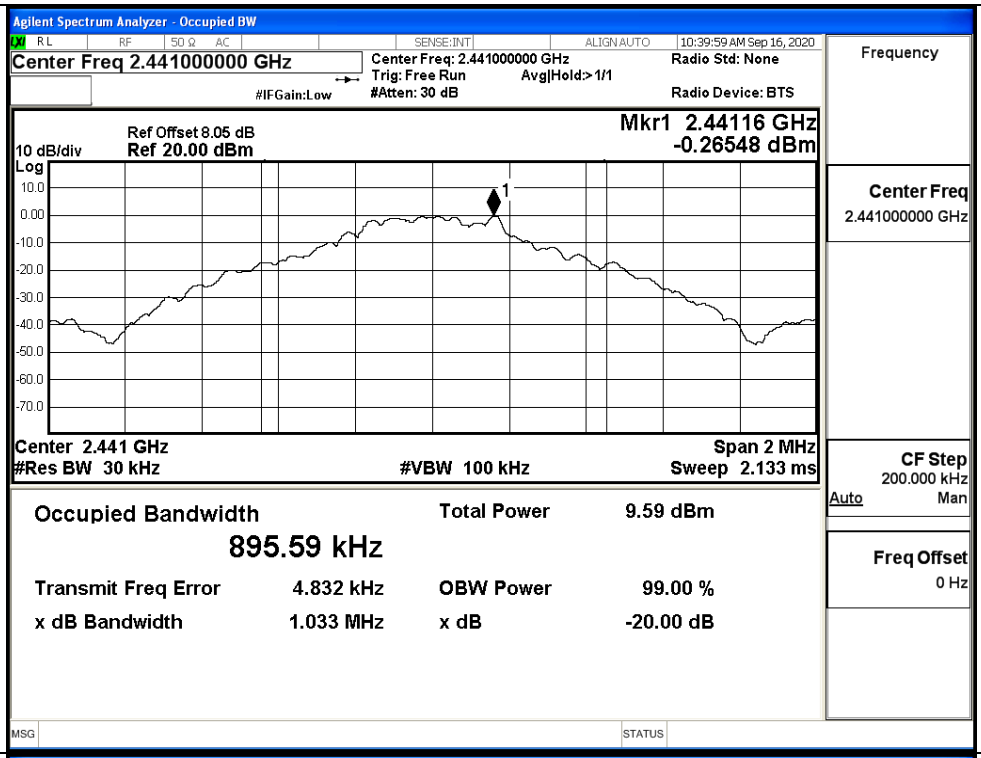
Agilent Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 10/10
11:06:09 AM Sep 16, 2020
Ref Offset 8.05 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.479 861 25 GHz
0.451 dBm
Center 2.480000 GHz
#Res BW 3.0 MHz
#VBW 8.0 MHz
Span 10.00 MHz
Sweep 1.067 ms (8001 pts)
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.475000000 GHz
Stop Freq
2.485000000 GHz
CF Step
1.000000 MHz
Auto
Man
Freq Offset
0 Hz

A.2 20dB Bandwidth

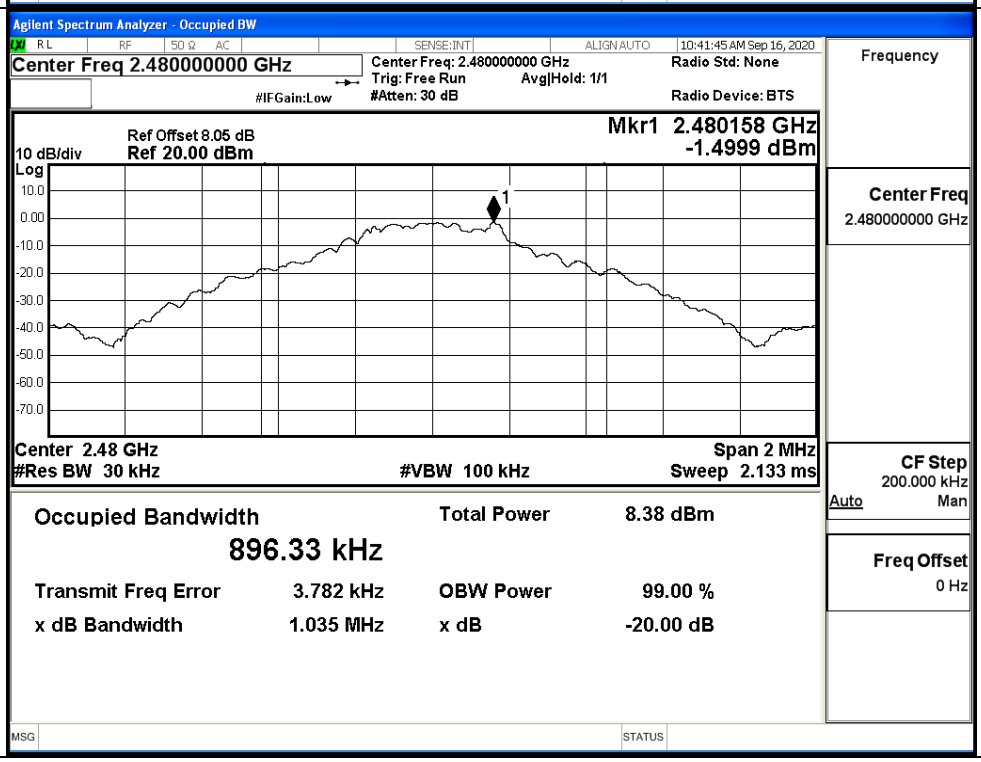
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.038	Not Specified	PASS
	MCH	1.033	Not Specified	PASS
	HCH	1.035	Not Specified	PASS
π/4DQPSK	LCH	1.288	Not Specified	PASS
	MCH	1.288	Not Specified	PASS
	HCH	1.288	Not Specified	PASS
8DPSK	LCH	1.291	Not Specified	PASS
	MCH	1.293	Not Specified	PASS
	HCH	1.292	Not Specified	PASS

Test Graphs		
GFSK/LCH		

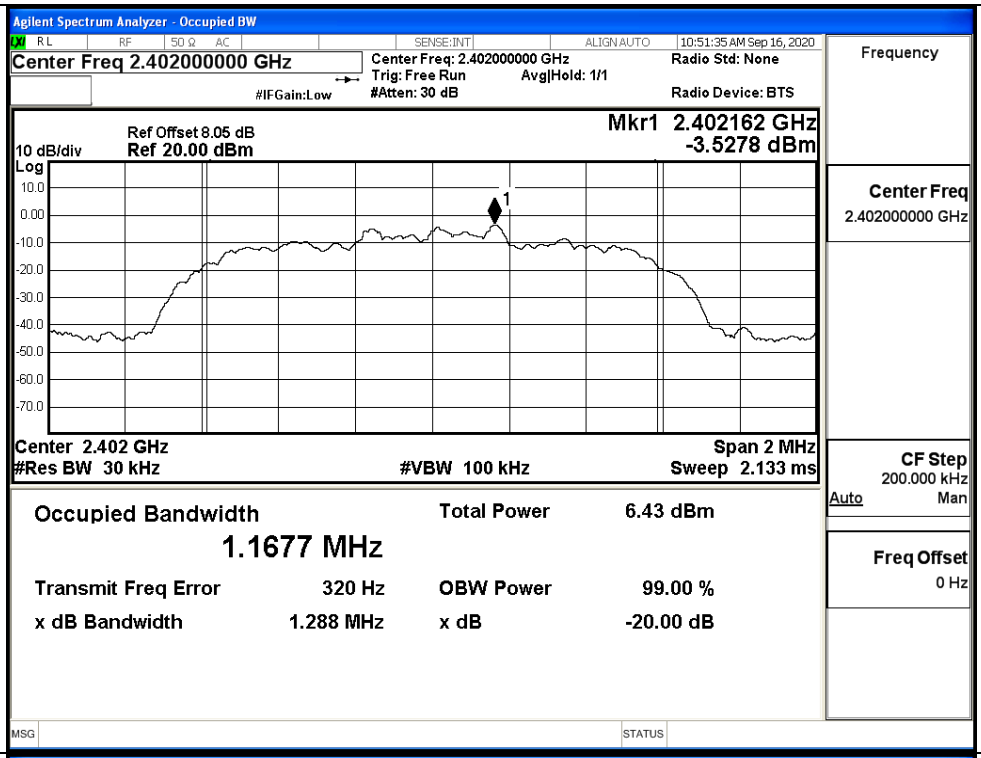
GFSK/MCH



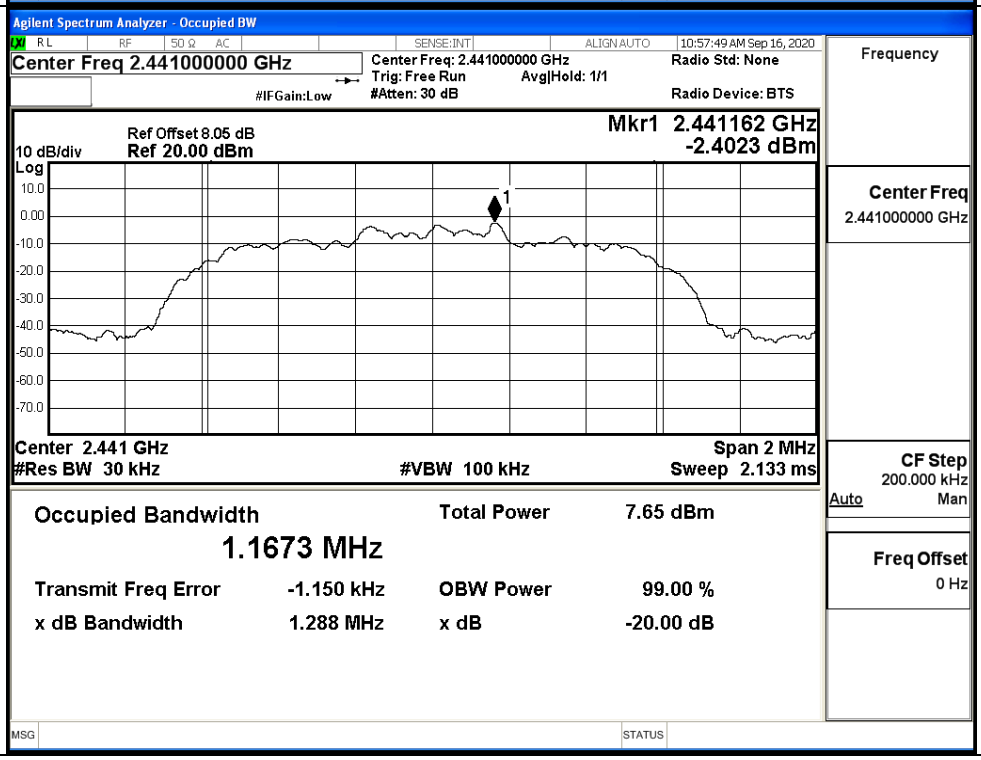
GFSK/HCH



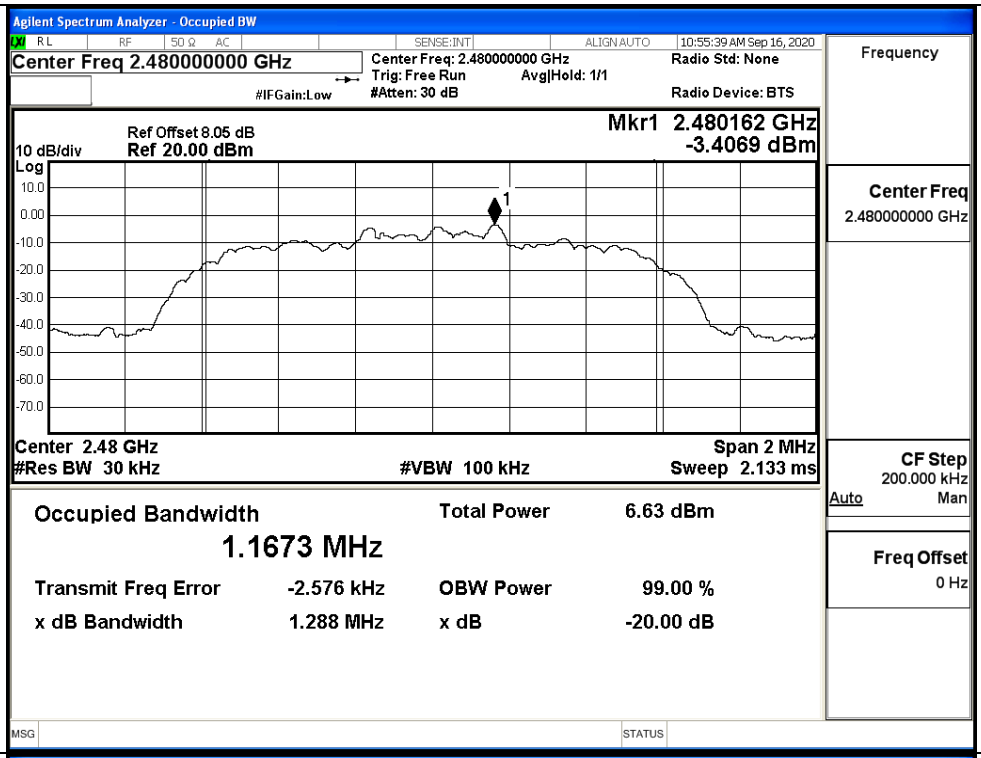
π/4DQPSK/LCH



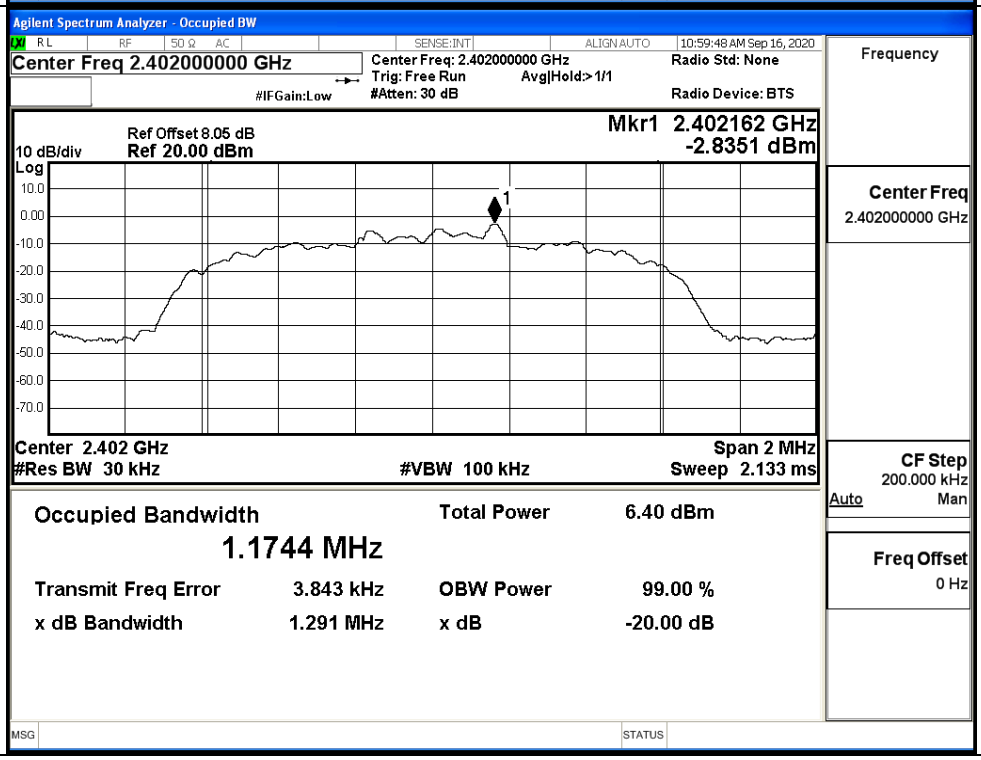
π/4DQPSK/MCH



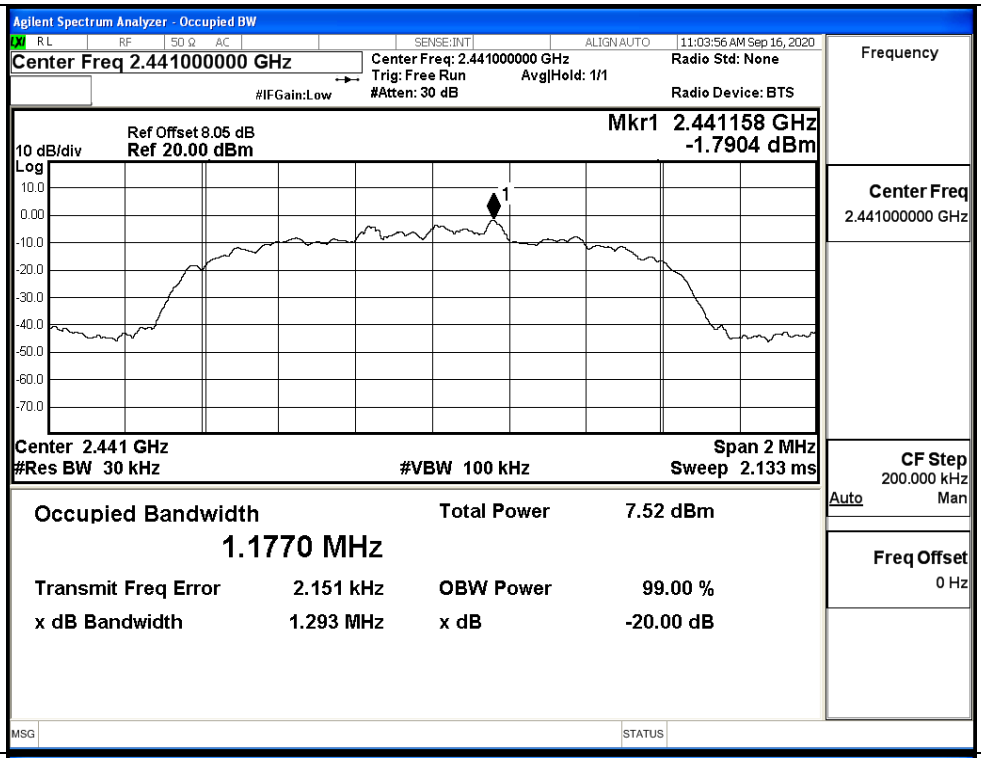
π/4DQPSK/HCH



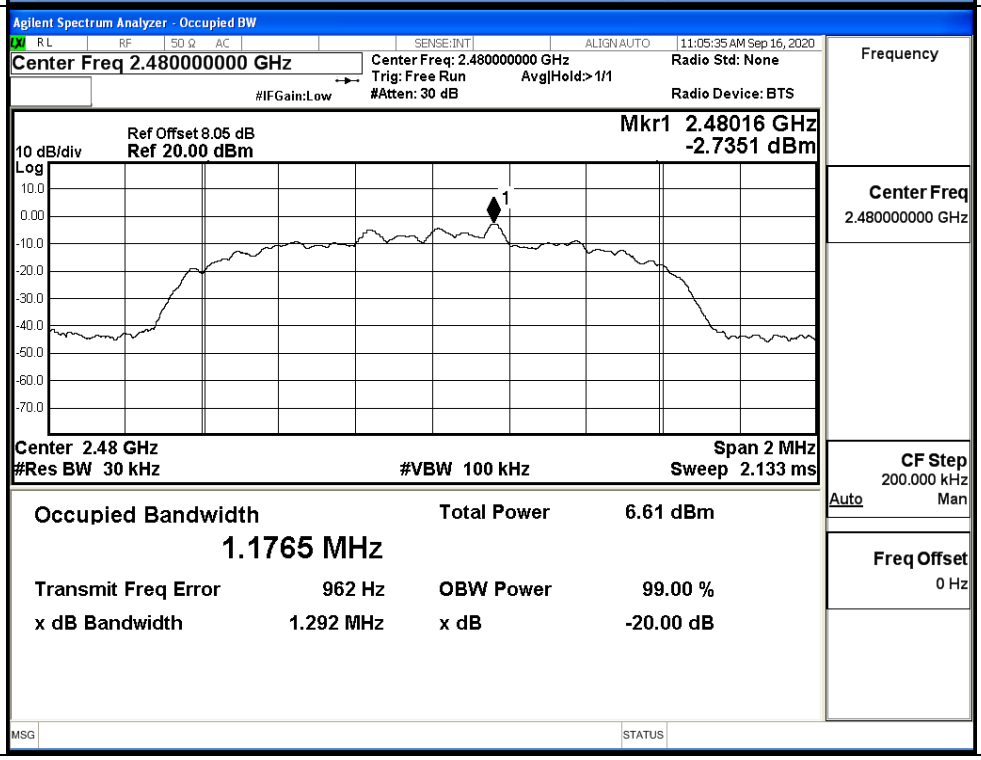
8DPSK/LCH



8DPSK/MCH

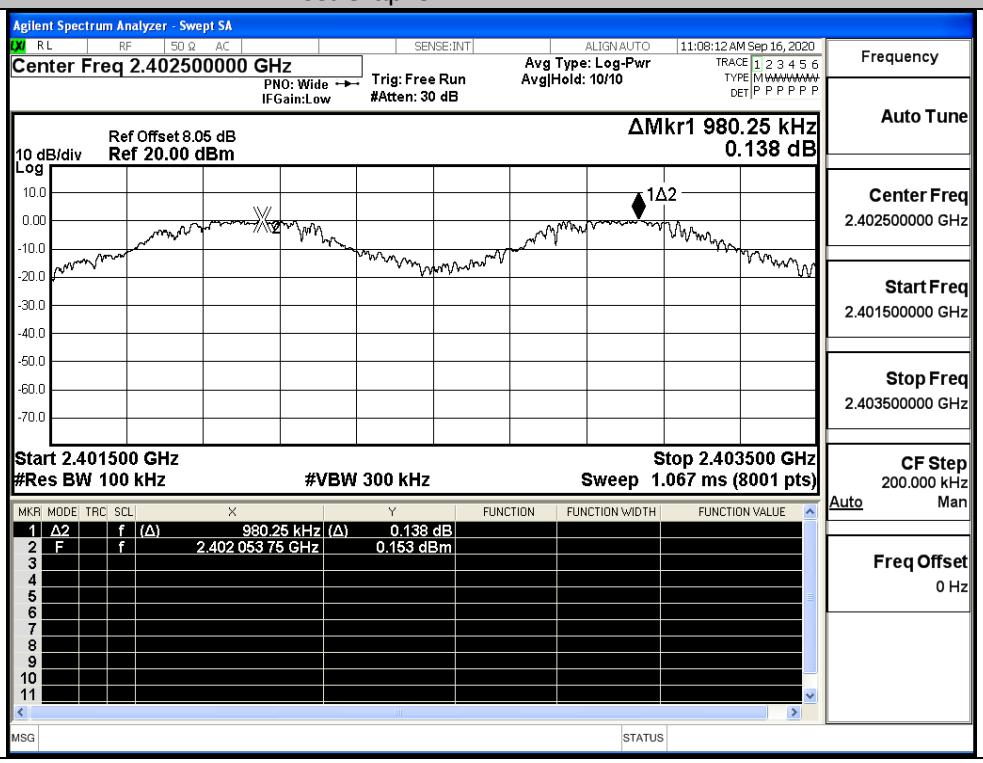


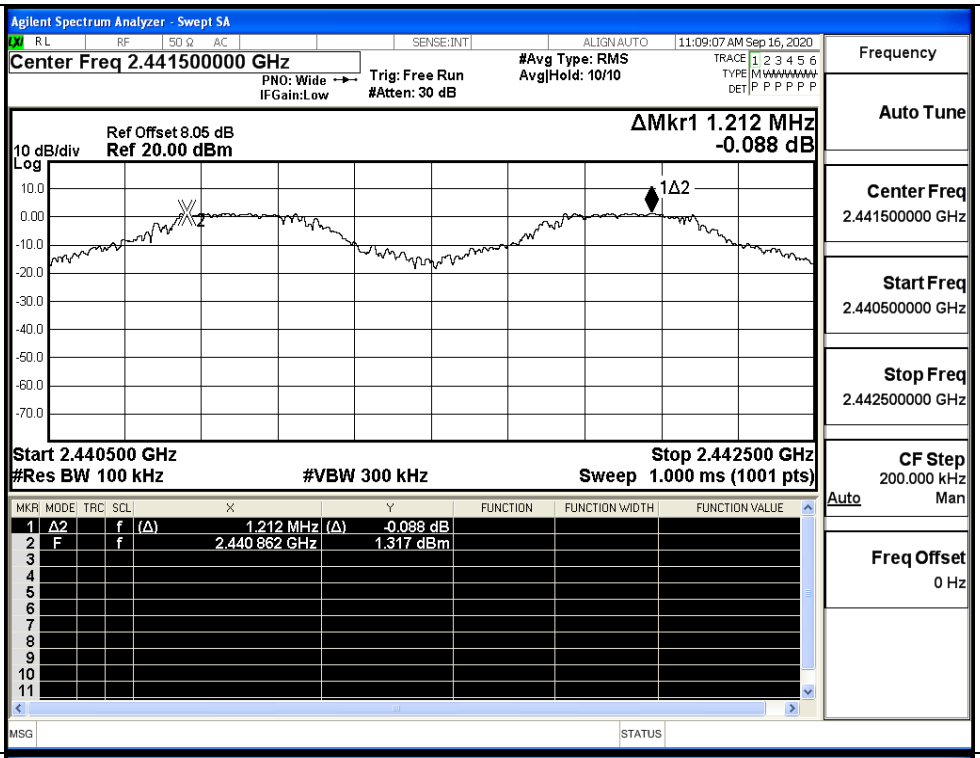
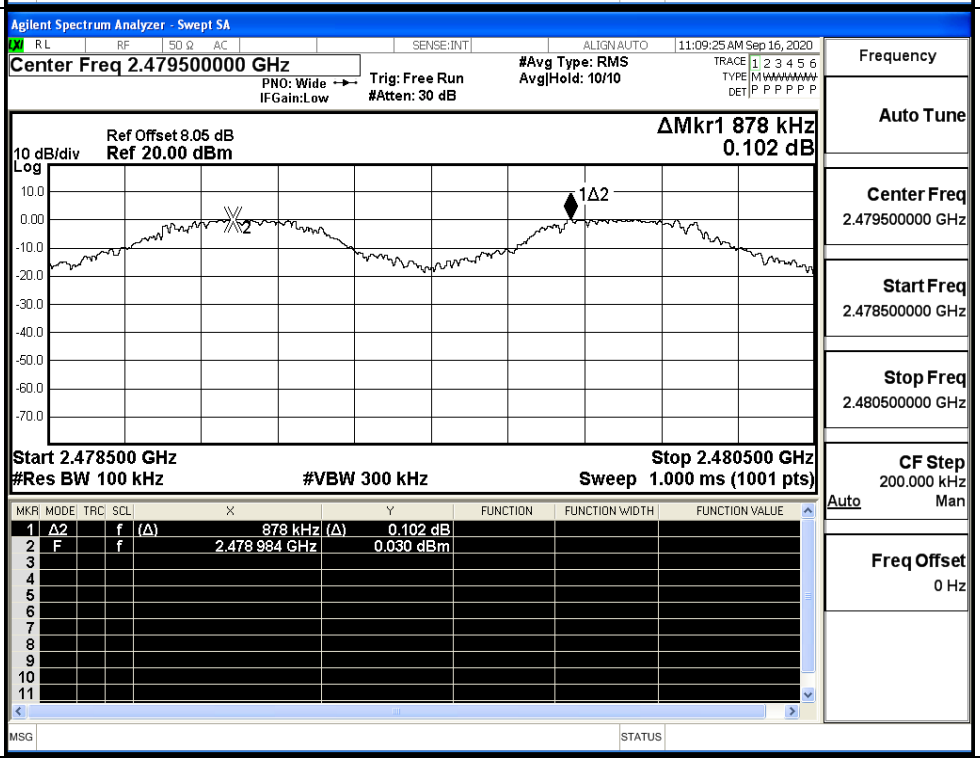
8DPSK/HCH



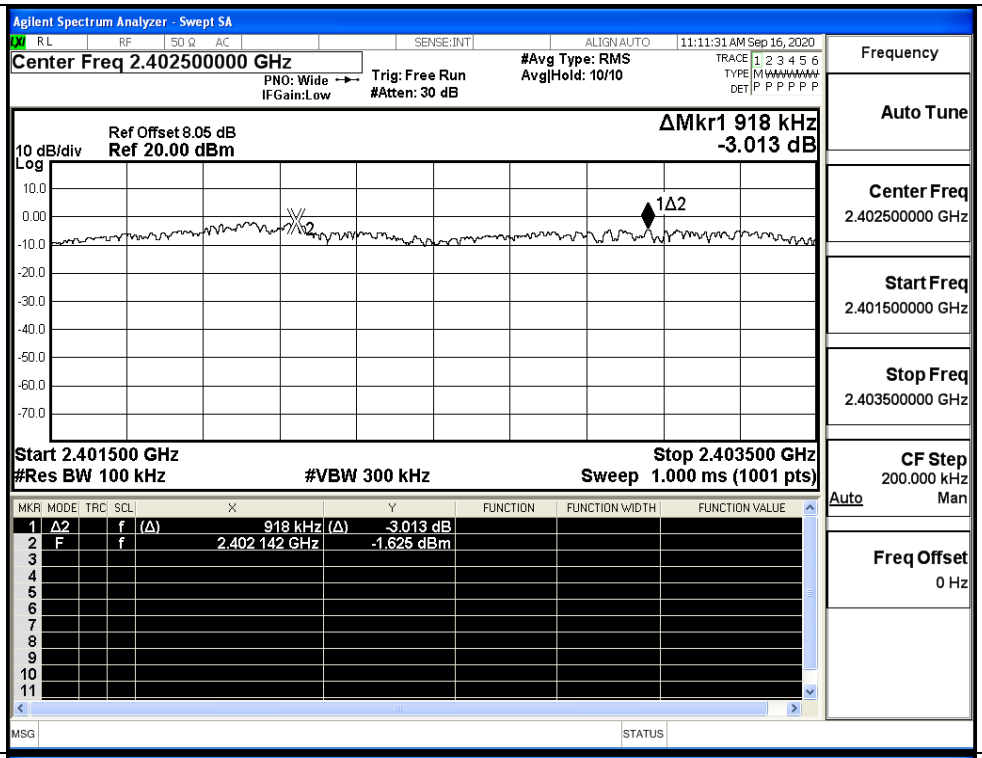
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.980	0.692	PASS
	MCH	1.212	0.692	PASS
	HCH	0.878	0.692	PASS
π/4DQPSK	LCH	0.918	0.859	PASS
	MCH	1.046	0.859	PASS
	HCH	1.050	0.859	PASS
8DPSK	LCH	1.096	0.862	PASS
	MCH	0.918	0.862	PASS
	HCH	1.062	0.862	PASS

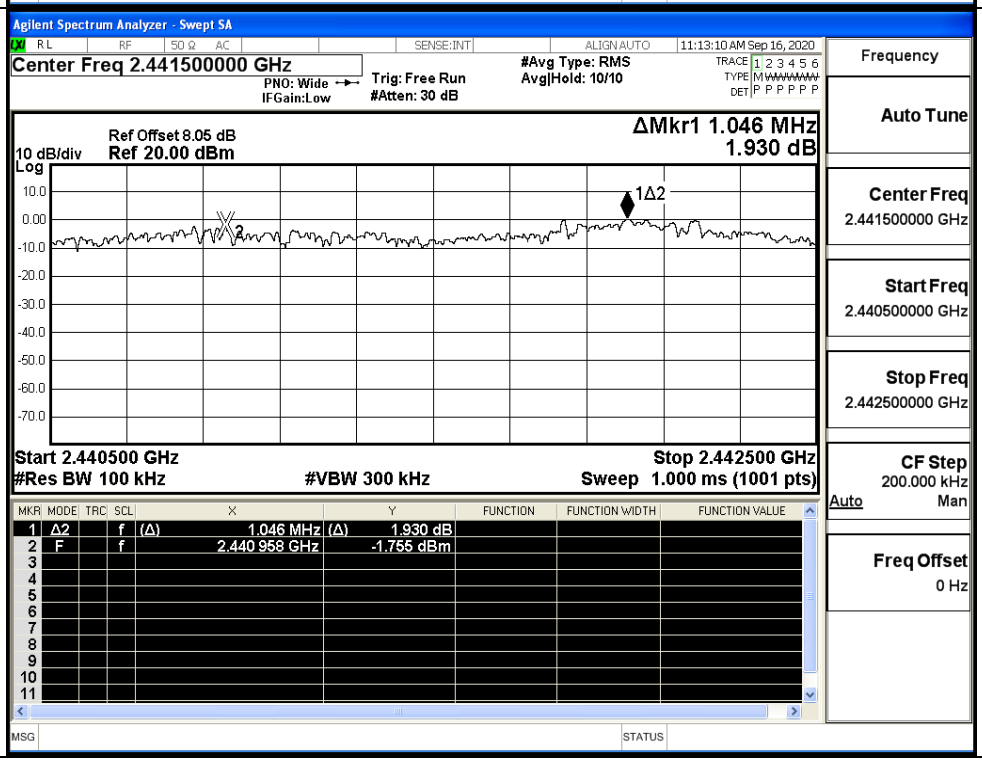
Test Graphs		
GFSK/LCH		

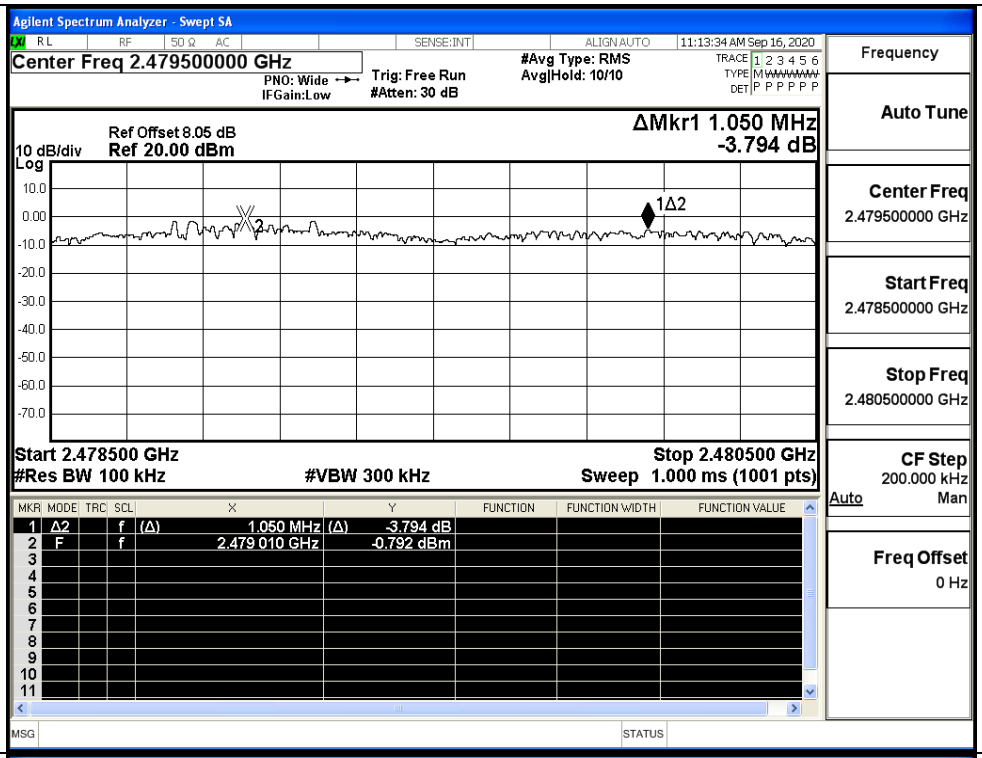
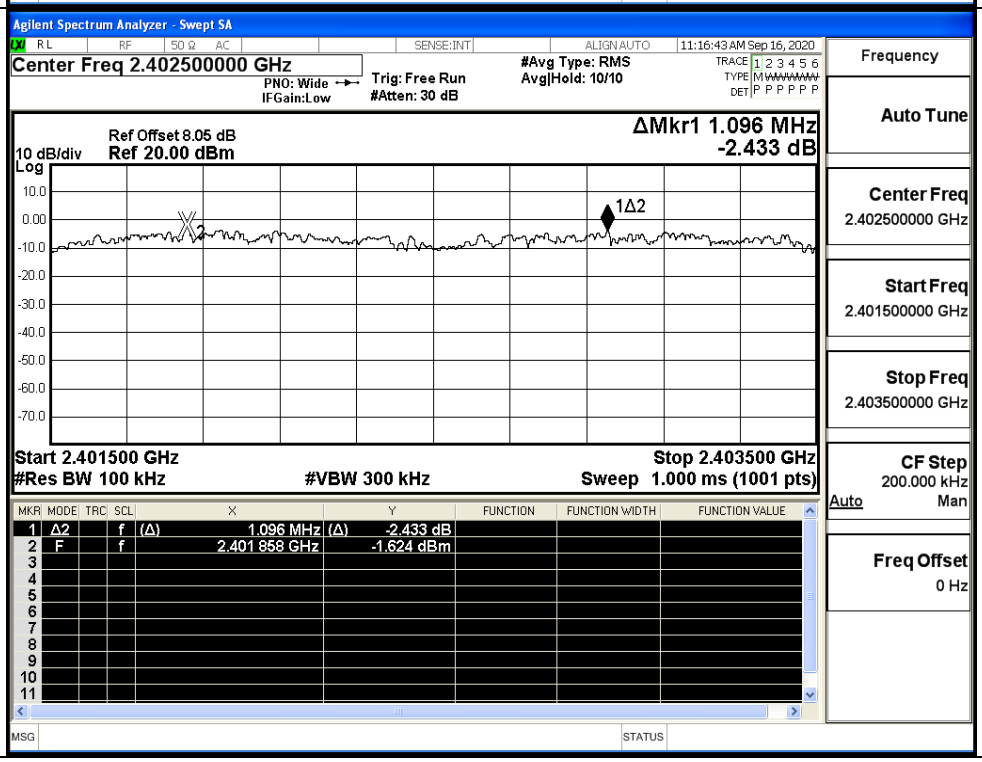
GFSK/MCH		
GFSK/HCH		

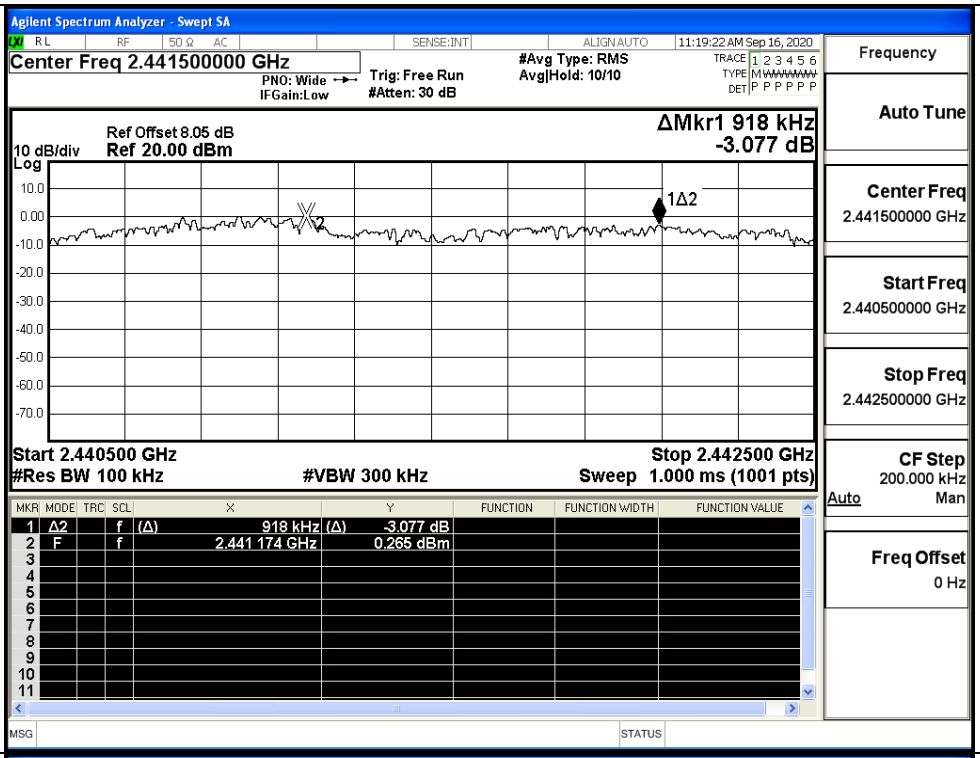
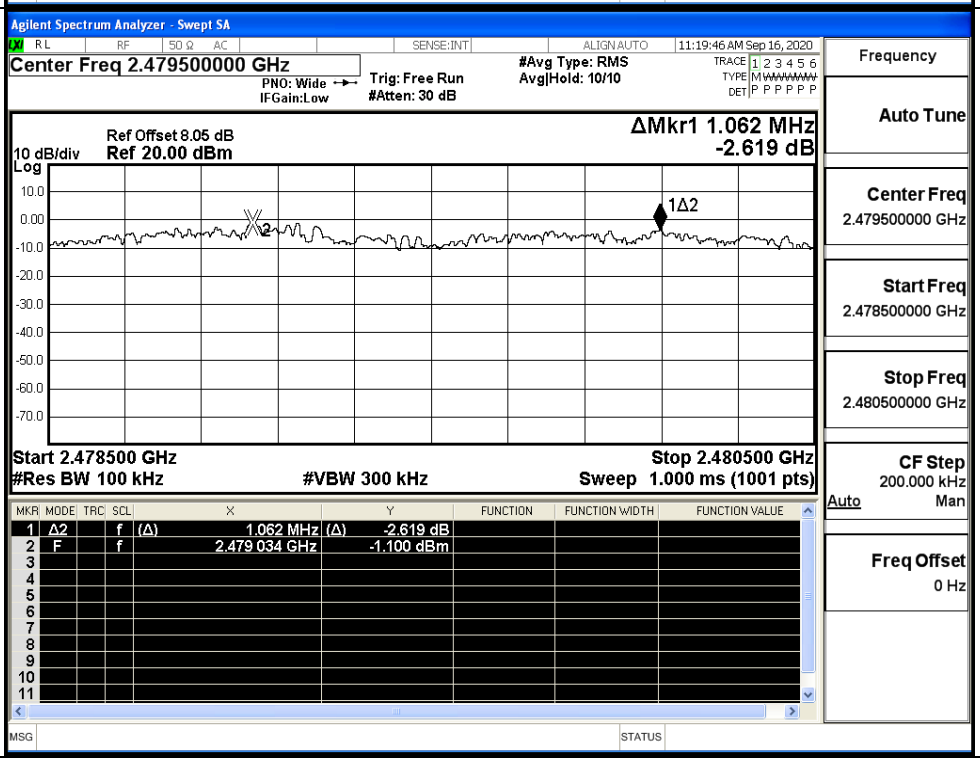
π/4DQPSK/LCH



π/4DQPSK/MCH

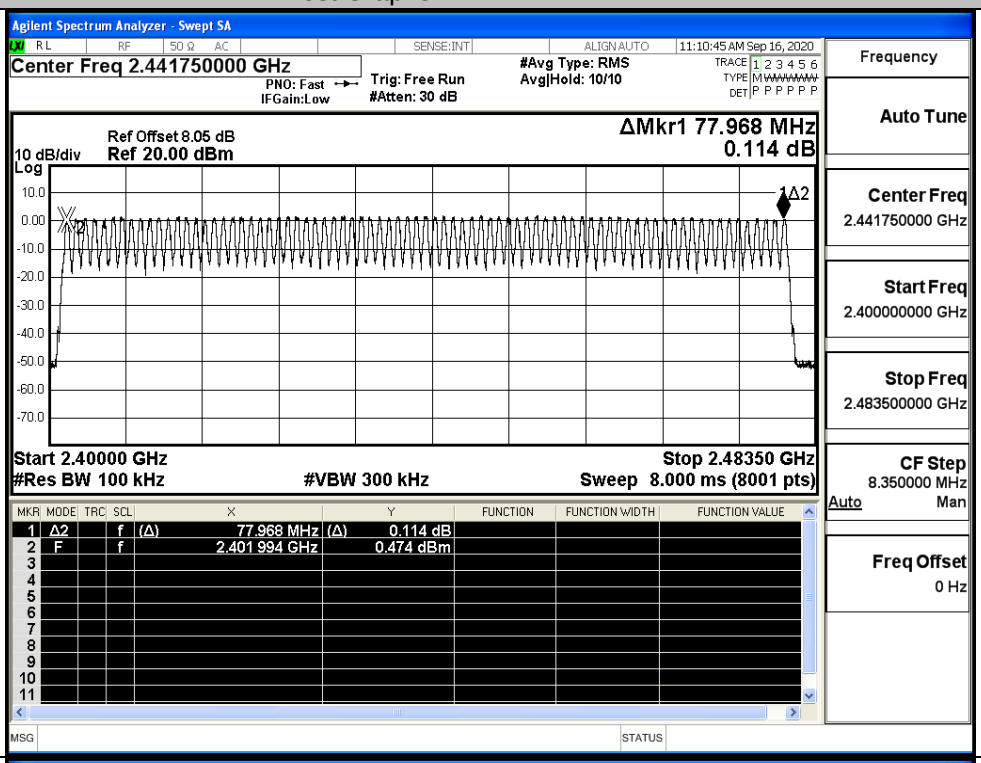
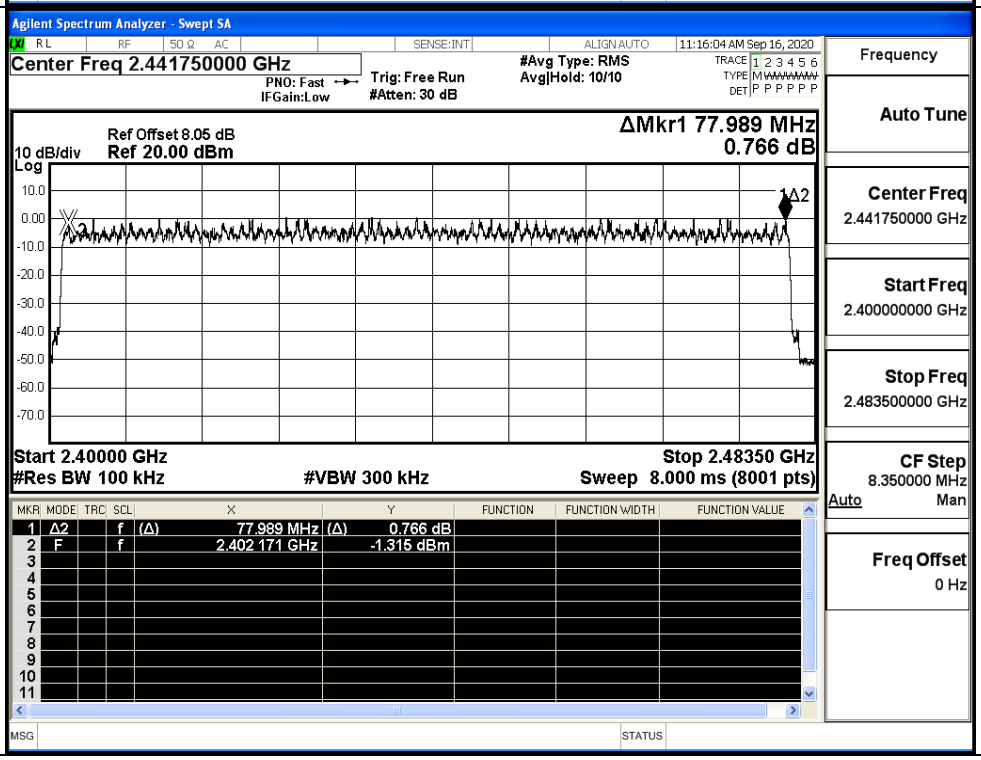


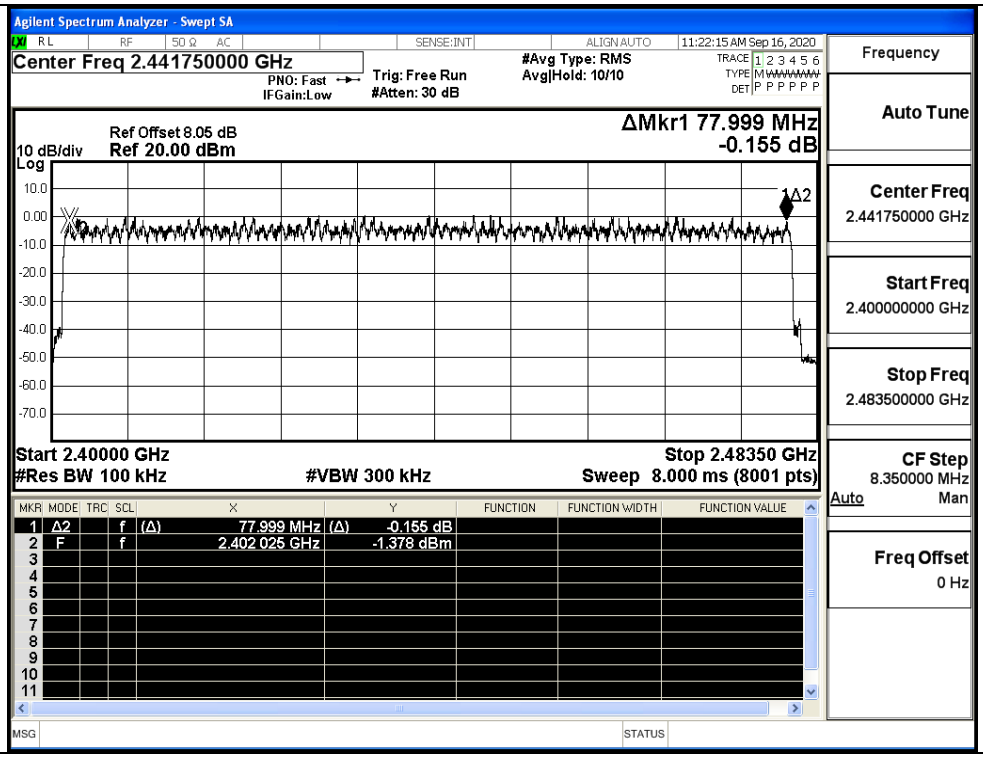
π/4DQPSK/HCH		
8DPSK/LCH		

8DPSK/MCH		
8DPSK/HCH		

A.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

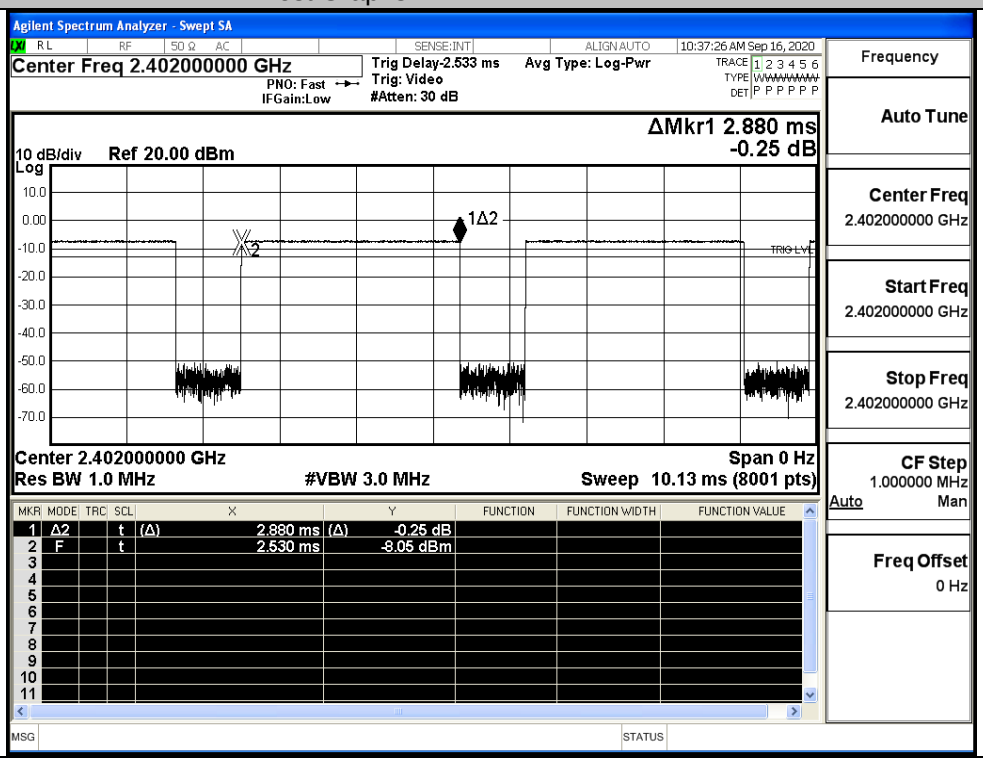
Test Graphs		
GFSK/Hop		
π/4DQPSK/Hop		

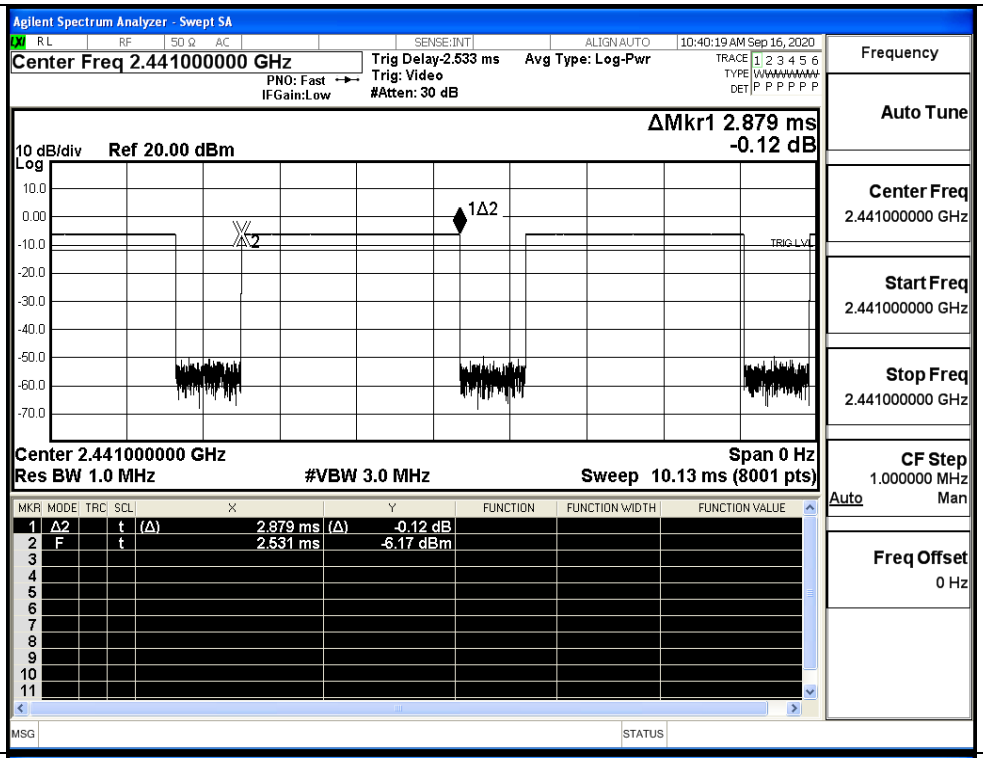
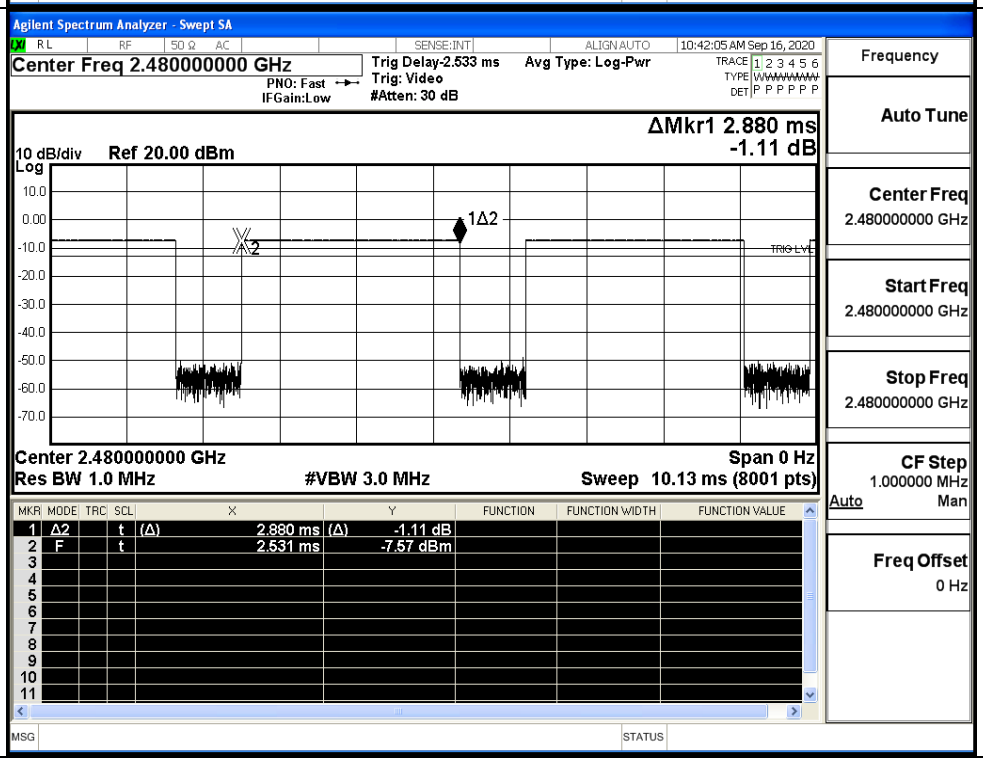
8DPSK/Hop	

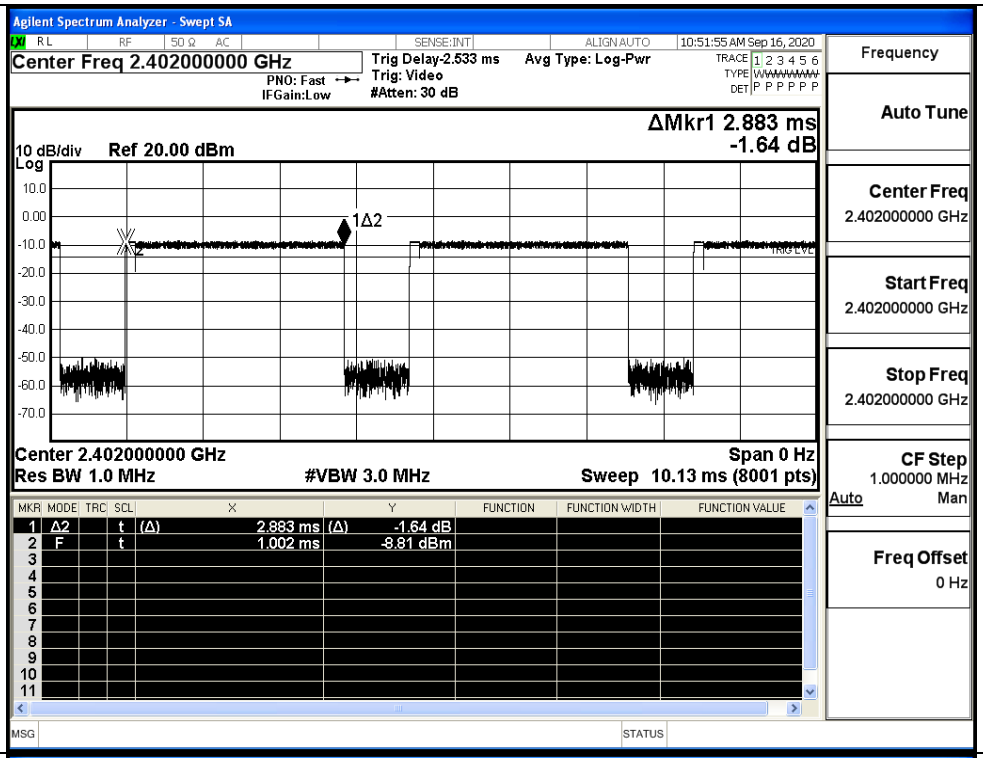
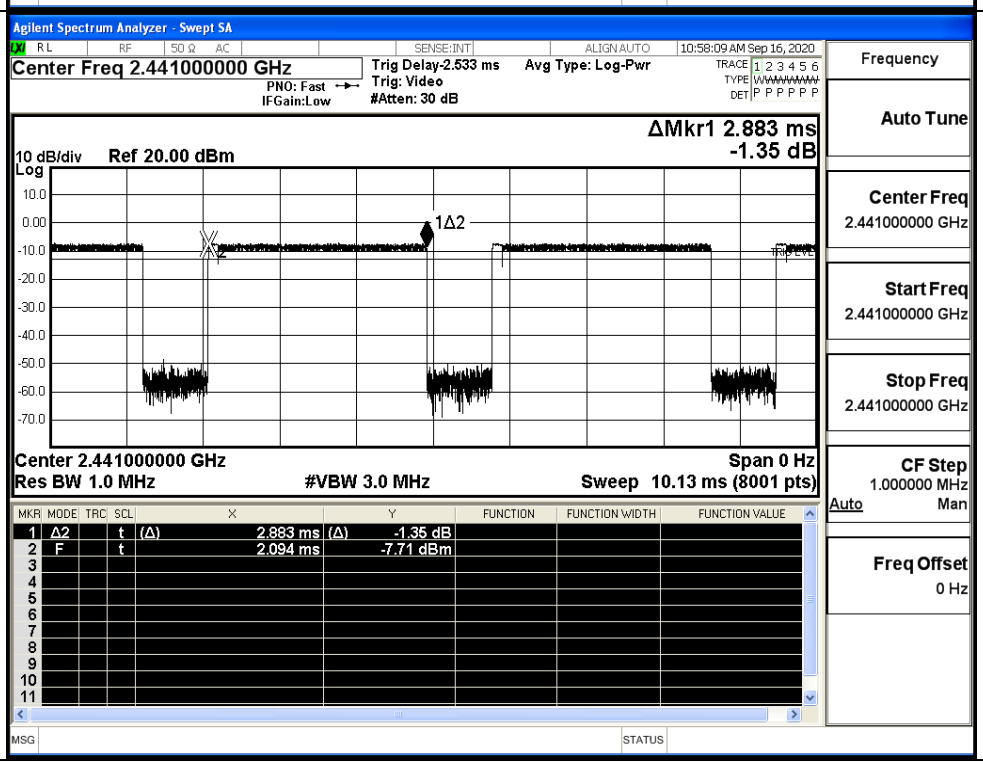
Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441750000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 10/10
11:22:15 AM Sep 16, 2020
Ref Offset 8.05 dB
10 dB/div
Ref 20.00 dBm
ΔMkr1 77.999 MHz
-0.155 dB
Start 2.40000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.48350 GHz
Sweep 8.000 ms (8001 pts)
1 Δ2 f (Δ) 77.999 MHz (Δ) -0.155 dB
2 F f 2.402 025 GHz -1.378 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

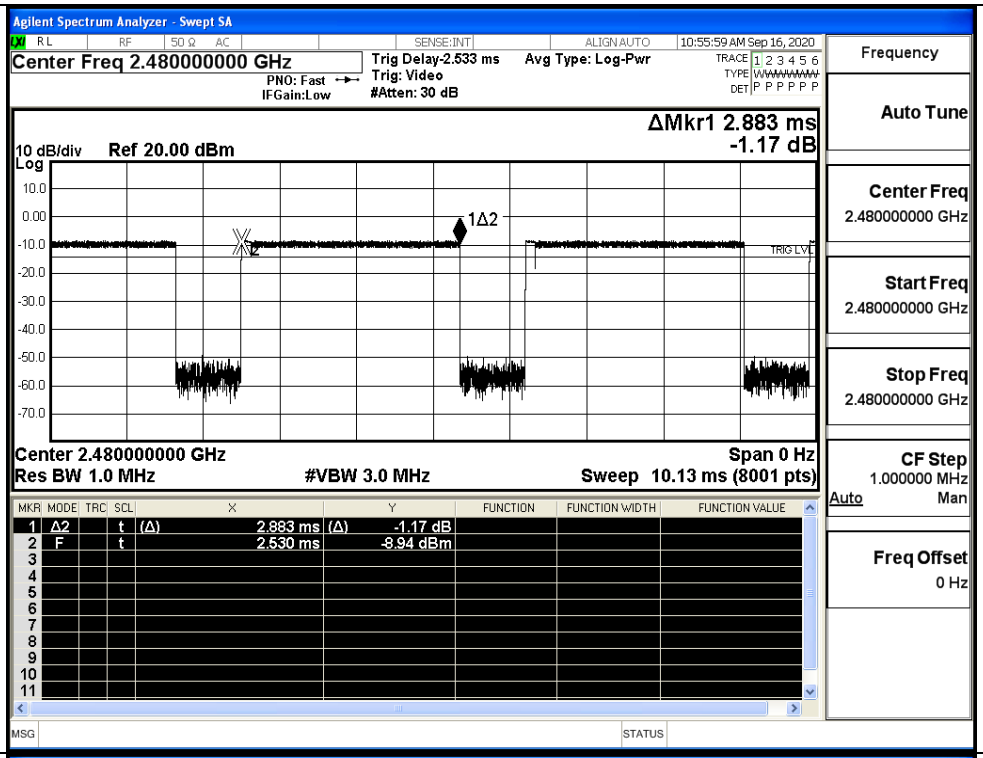
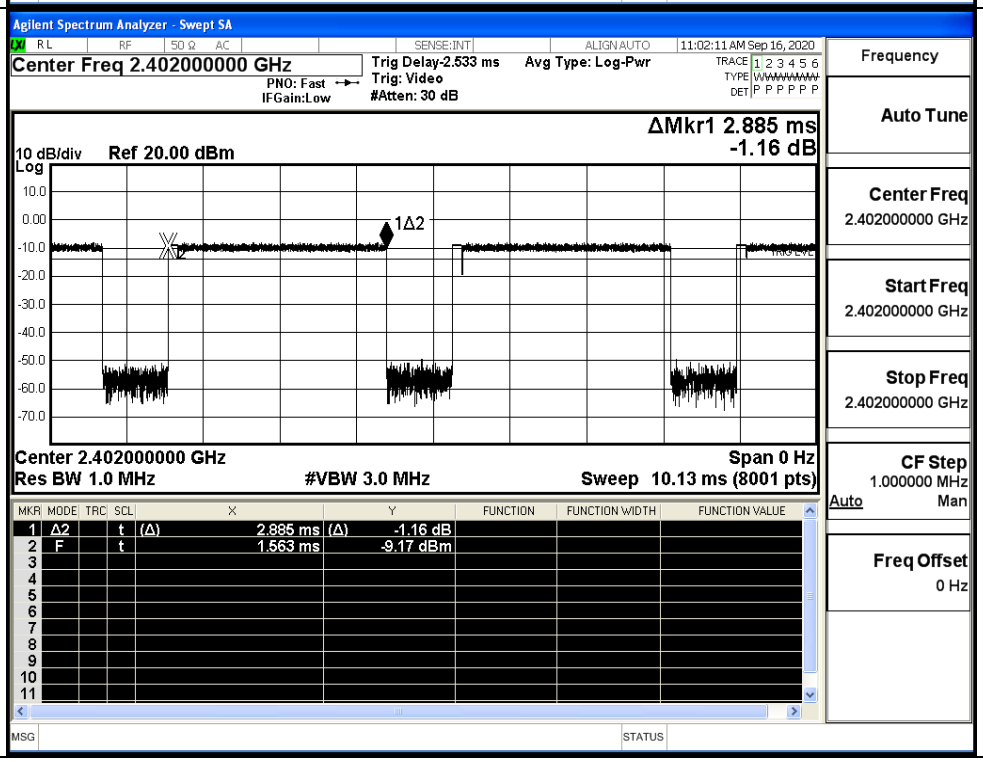
A.5 Dwell Time

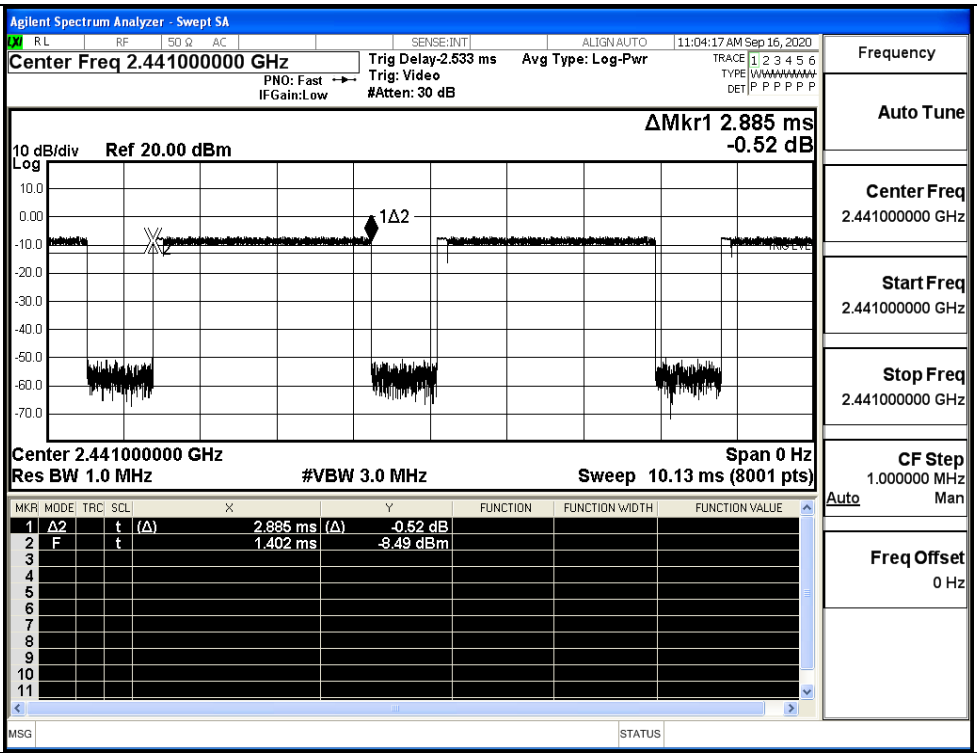
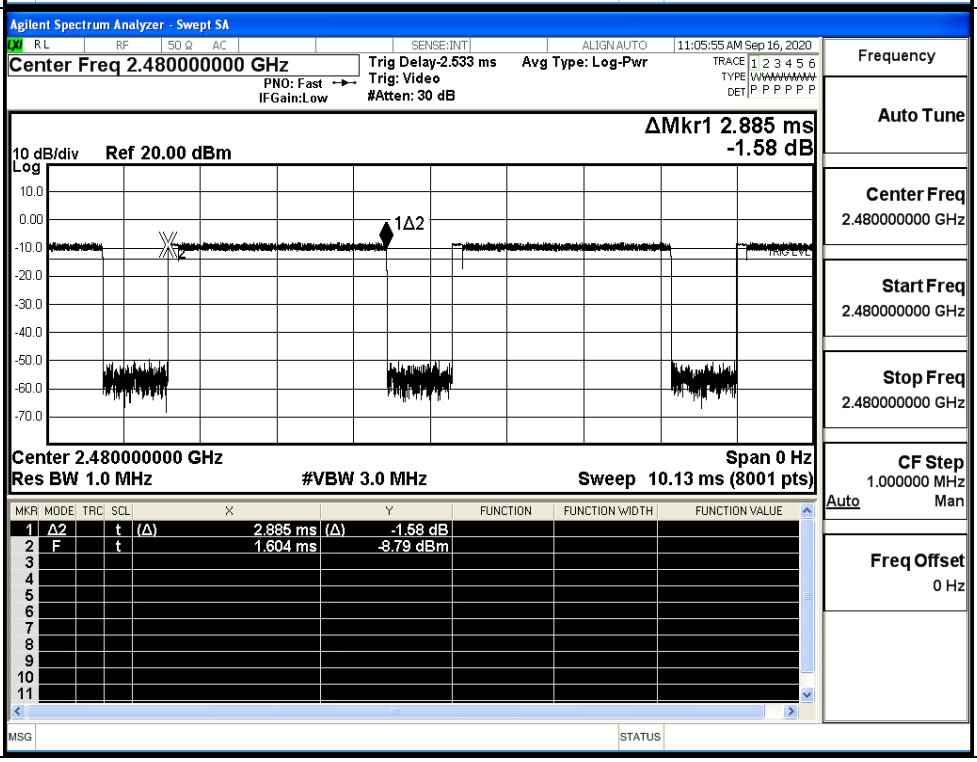
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
π/4DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7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

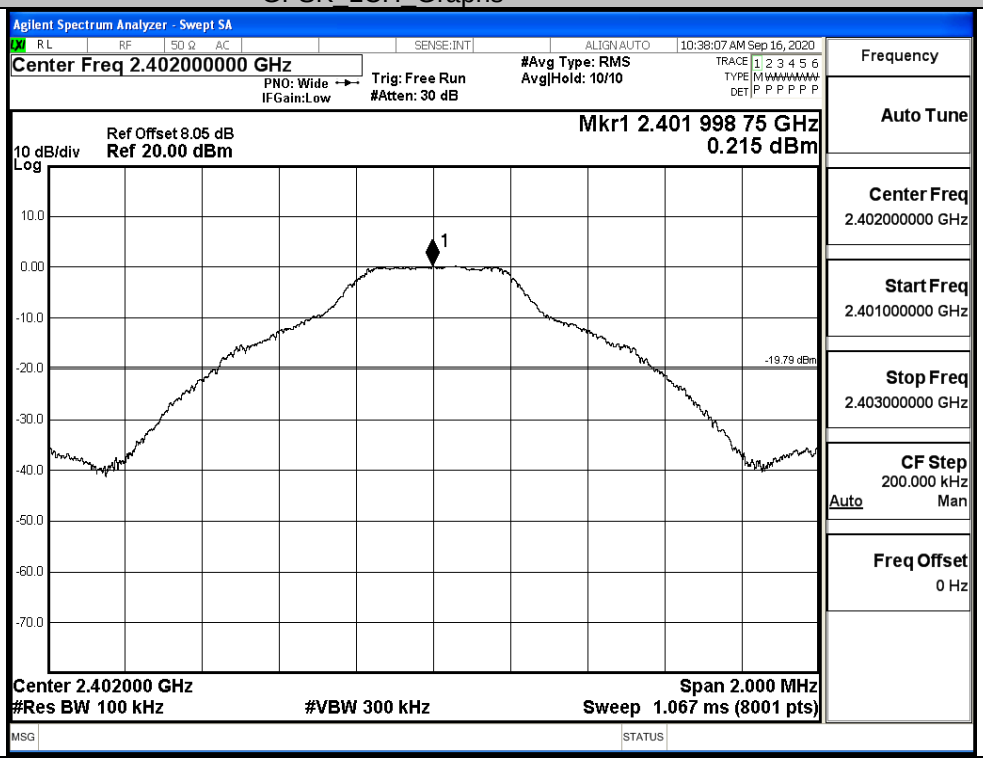
8DPSK _3DH5/MCH	
8DPSK _3DH5/HCH	

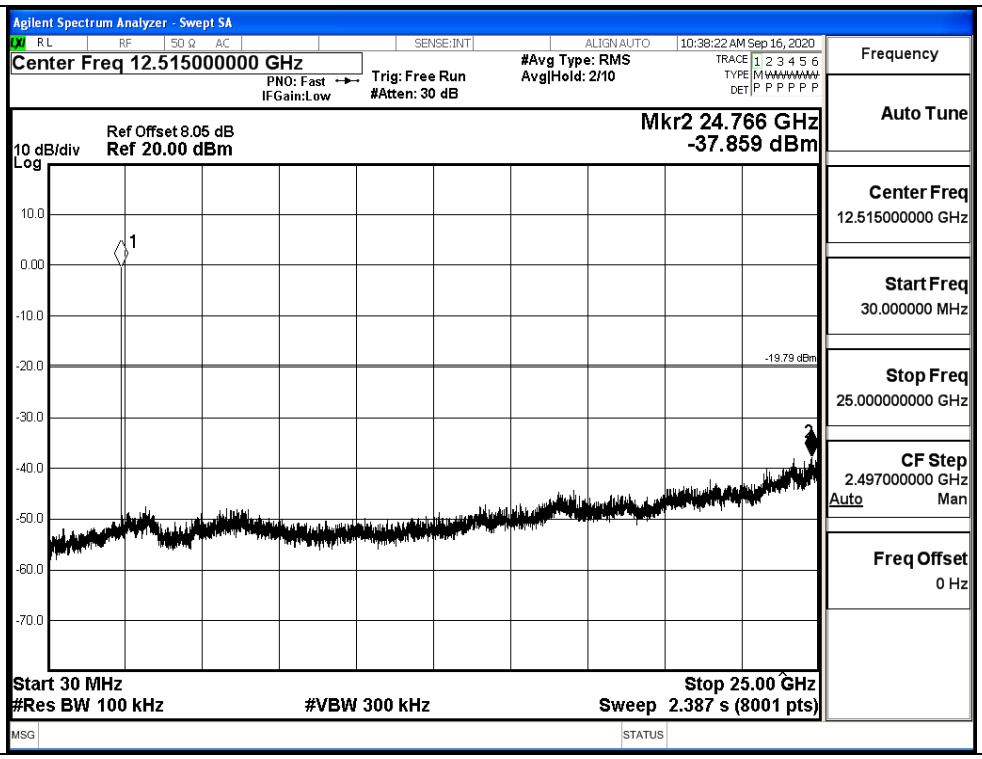
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.215	-37.859	-19.785	PASS
	MCH	1.96	-37.911	-18.040	PASS
	HCH	0.791	-38.548	-19.209	PASS
π/4DQPSK	LCH	-0.892	-38.082	-20.892	PASS
	MCH	0.138	-38.668	-19.862	PASS
	HCH	-1.275	-37.123	-21.275	PASS
8DPSK	LCH	-0.802	-36.906	-20.800	PASS
	MCH	0.442	-38.146	-19.558	PASS
	HCH	-0.597	-37.025	-20.597	PASS

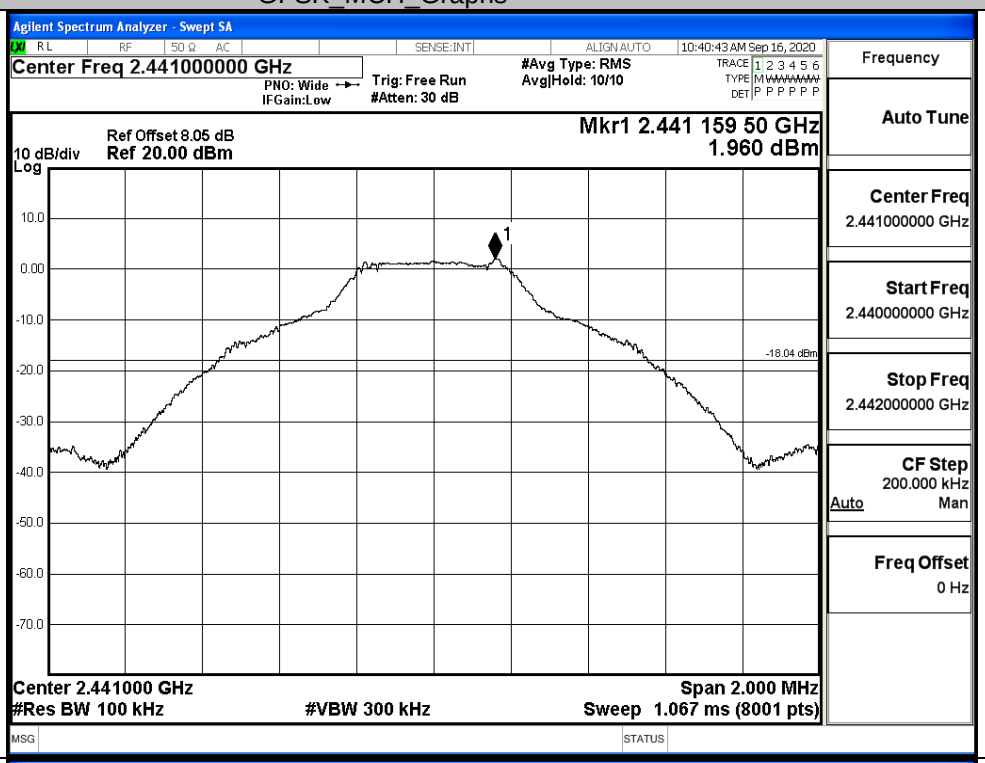
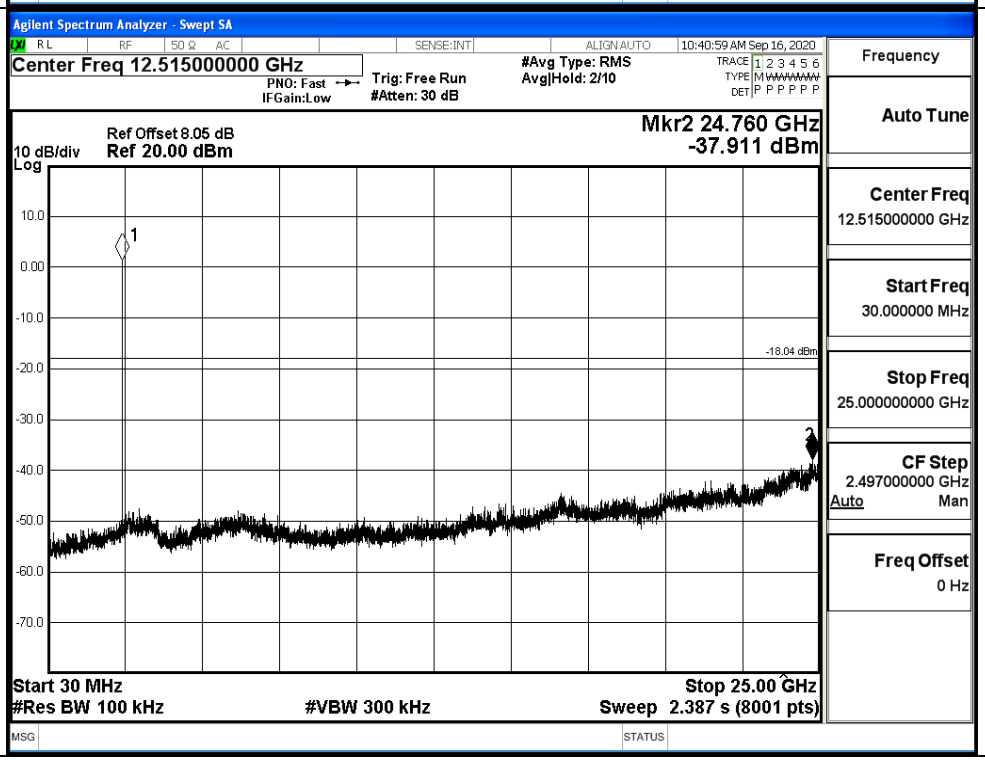
GFSK_LCH_Graphs

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
10:38:22 AM Sep 16, 2020
Ref Offset 8.05 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr2 24.766 GHz
-37.859 dBm
-19.79 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		

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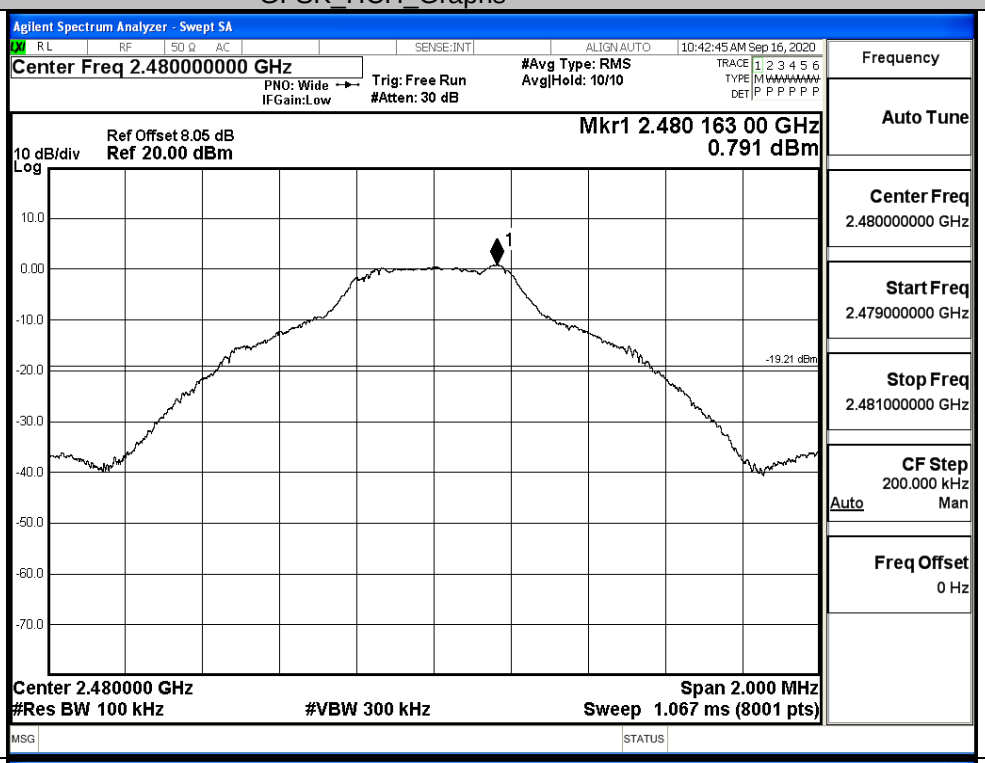
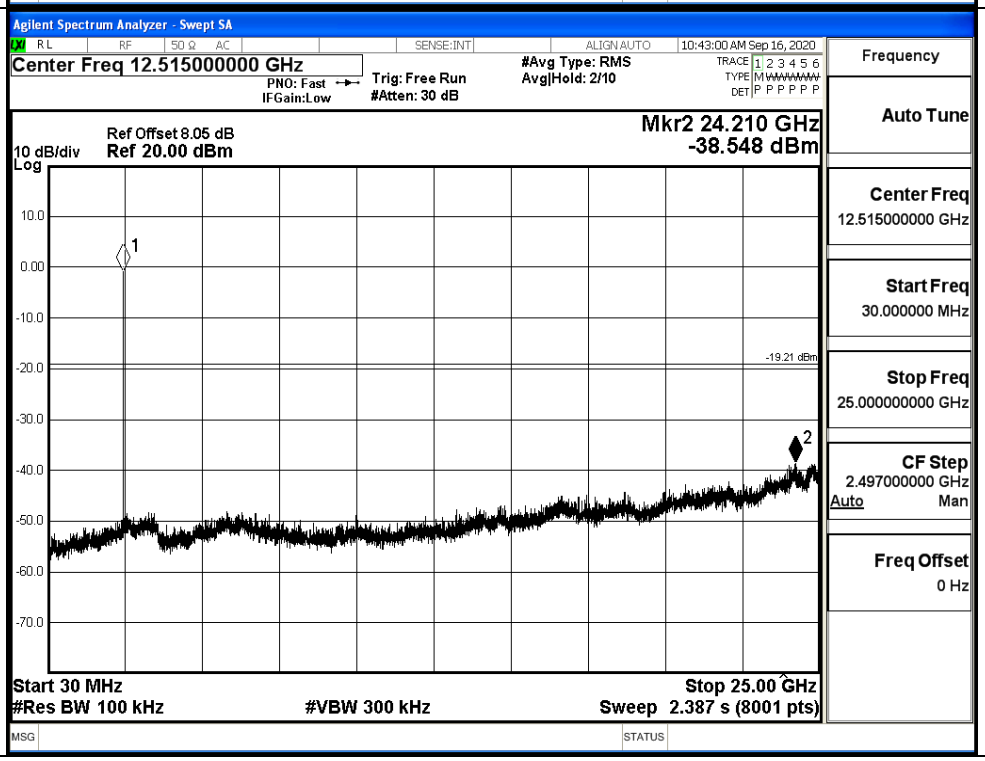
Pref		
Puw		

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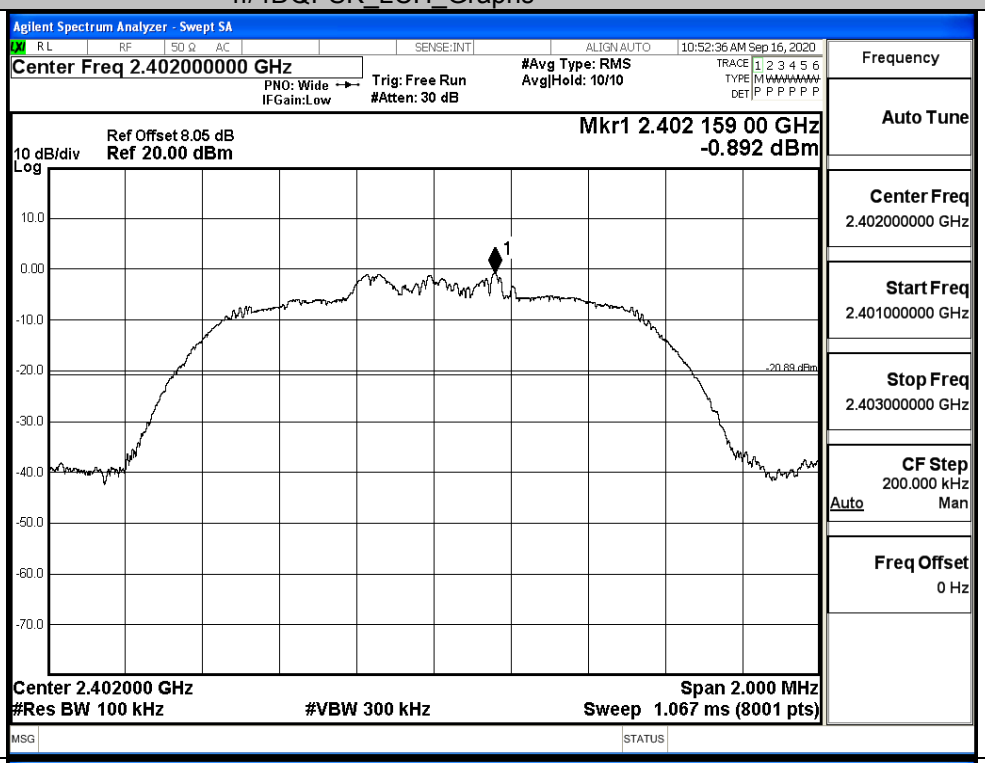
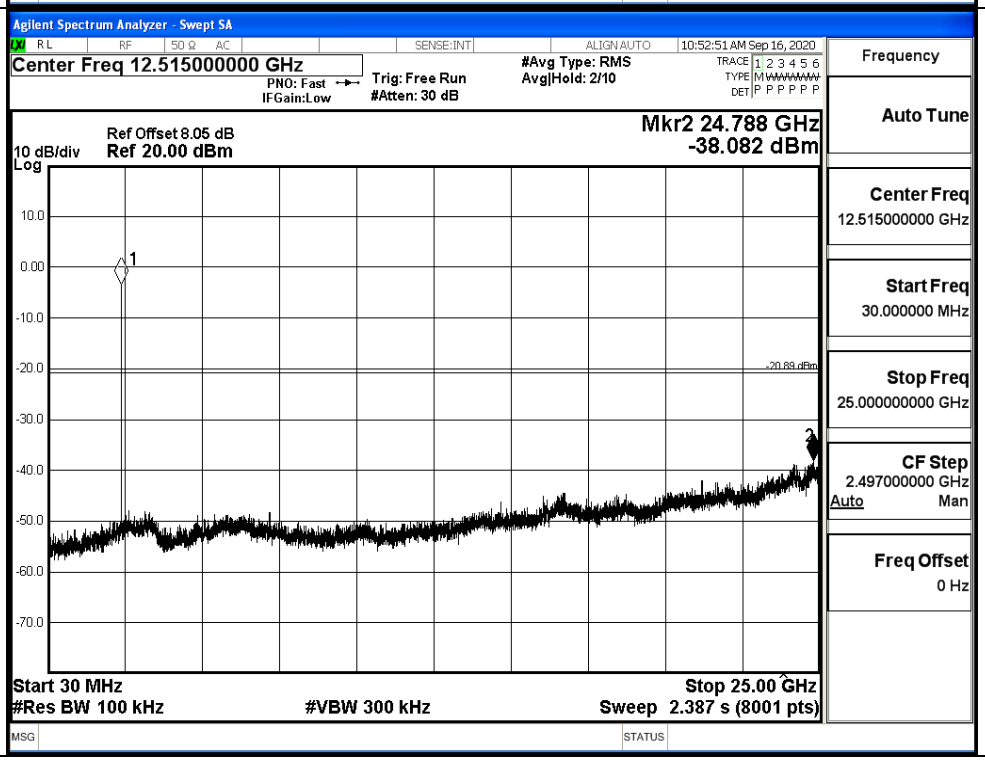
Pref		
Puw		

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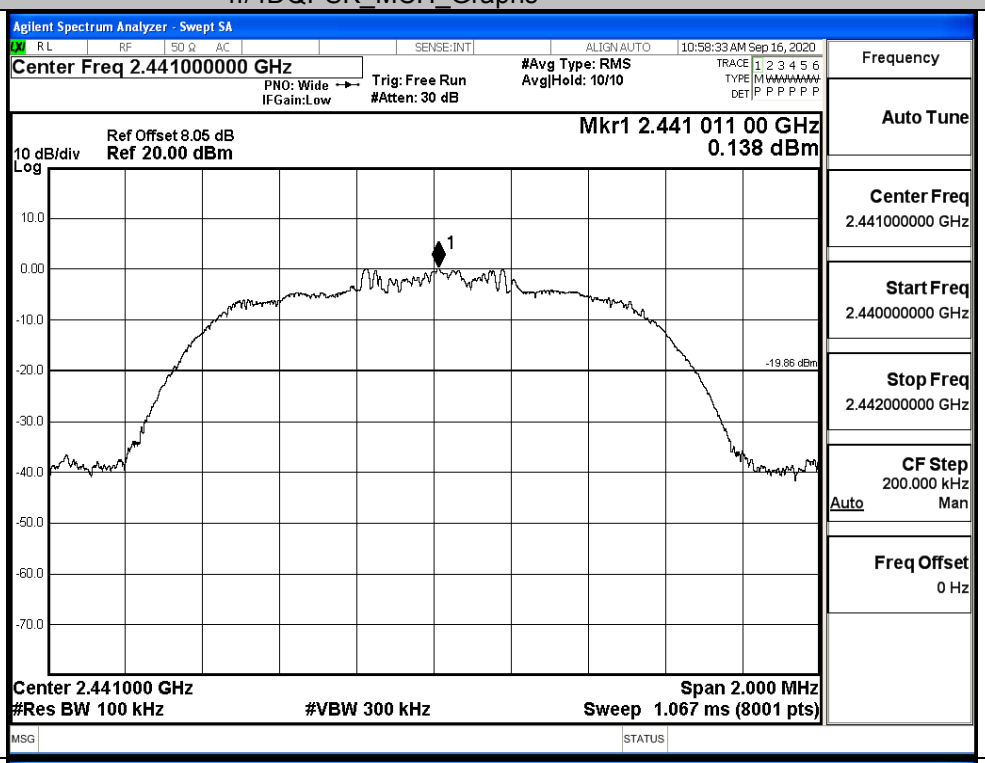
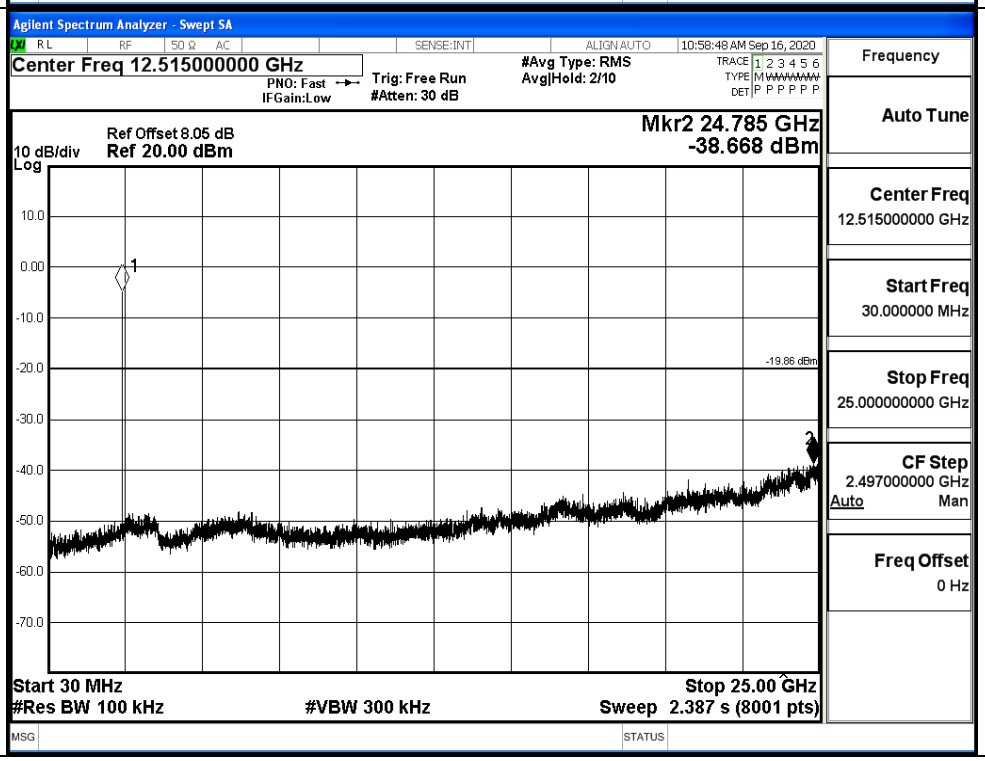
Pref			
Puw			

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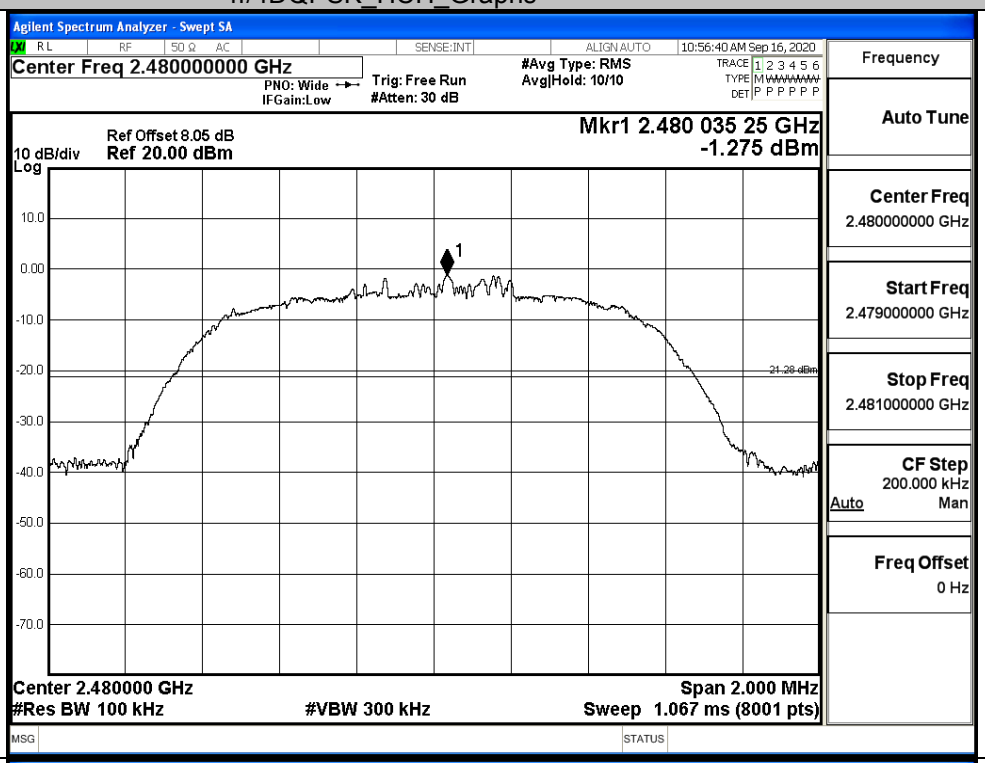
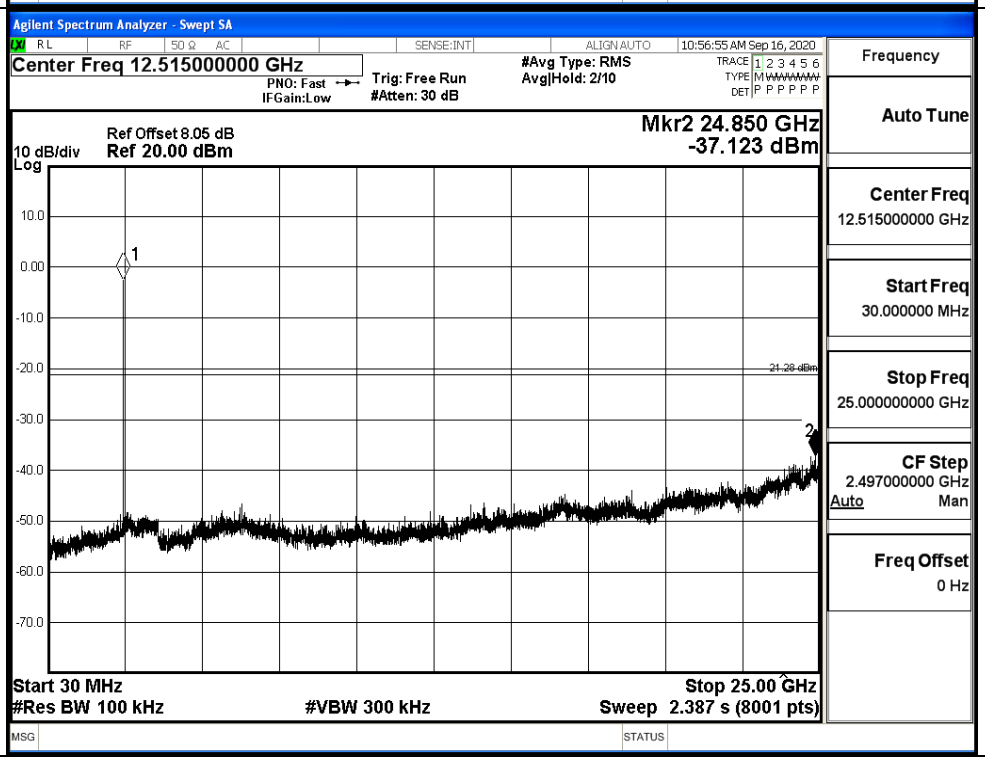
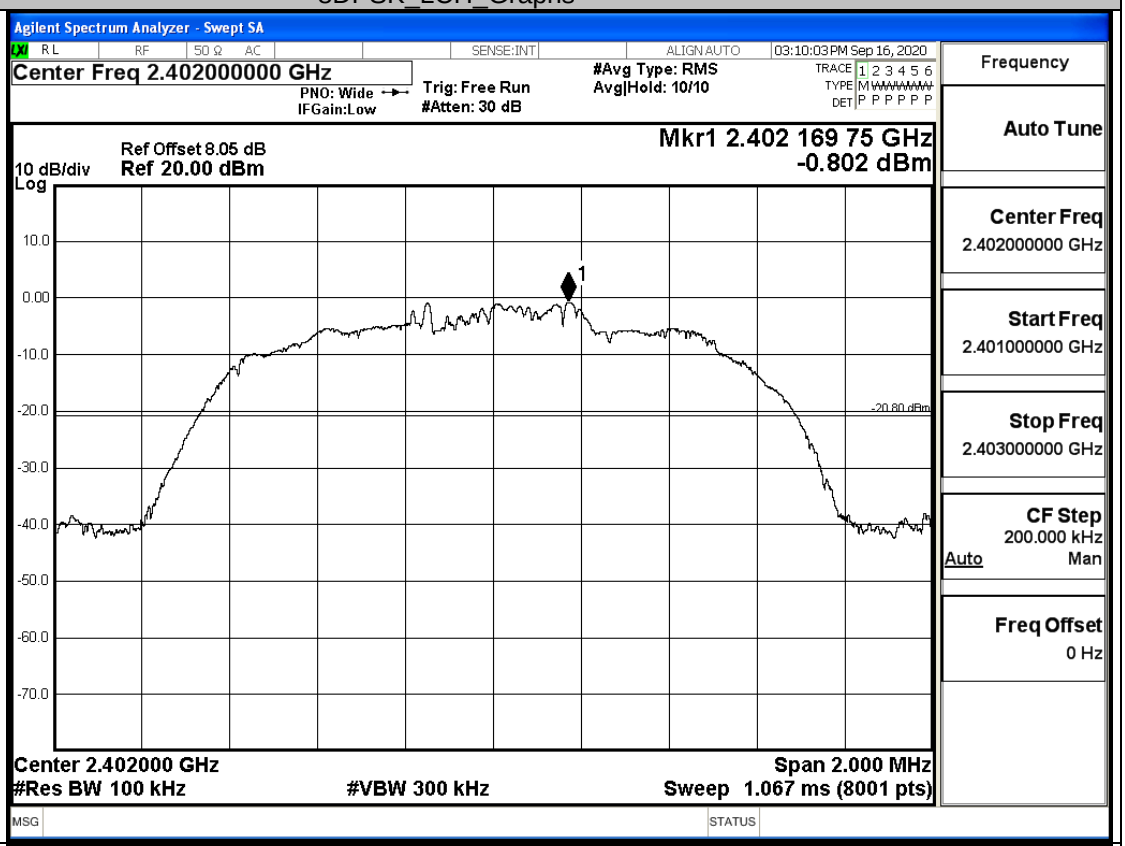
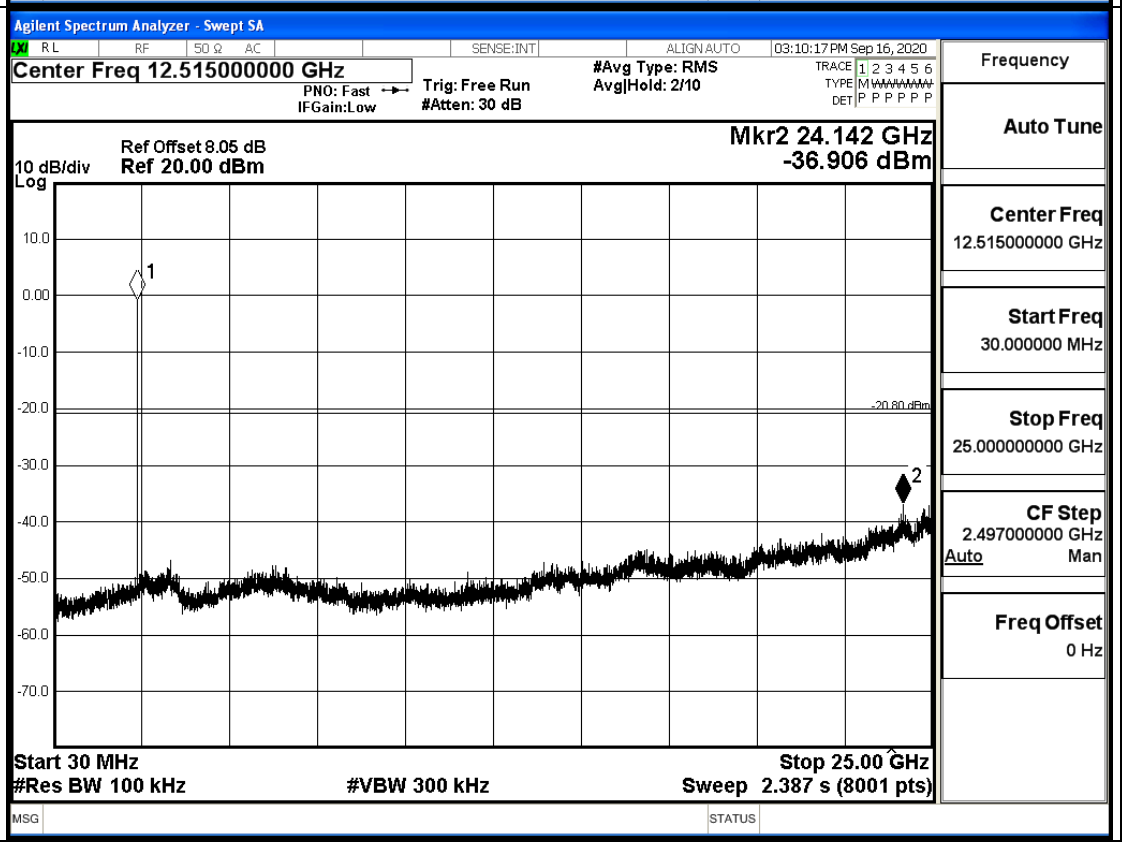
Pref			
Puw			

8DPSK_LCH_Graphs	
Pref	
Puw	

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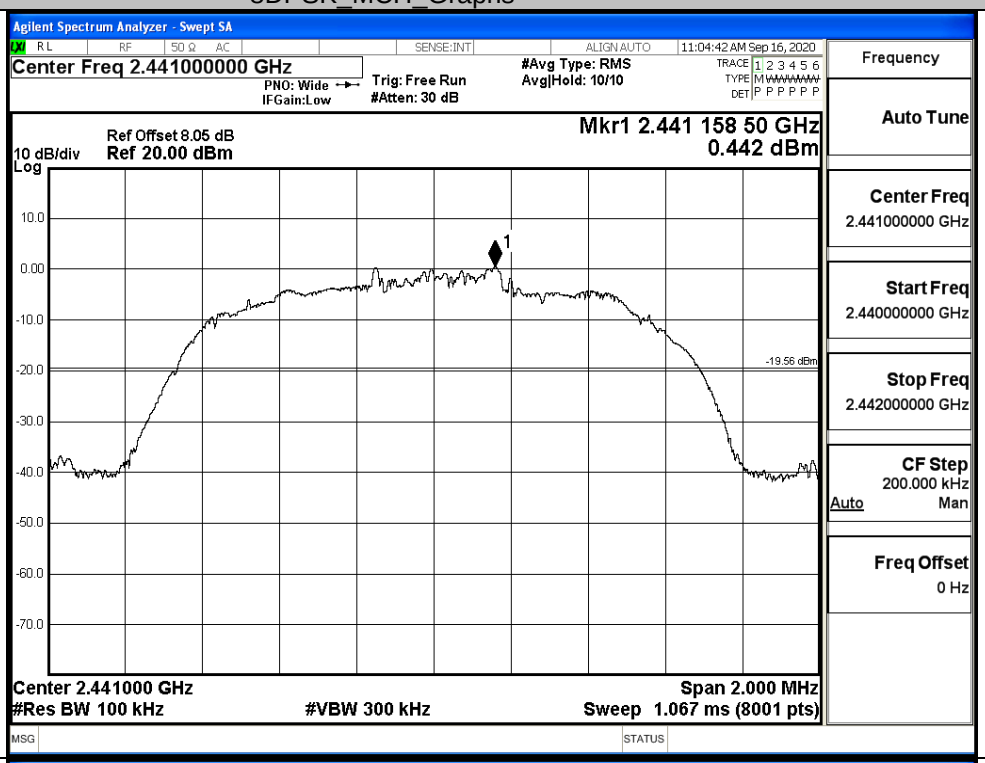
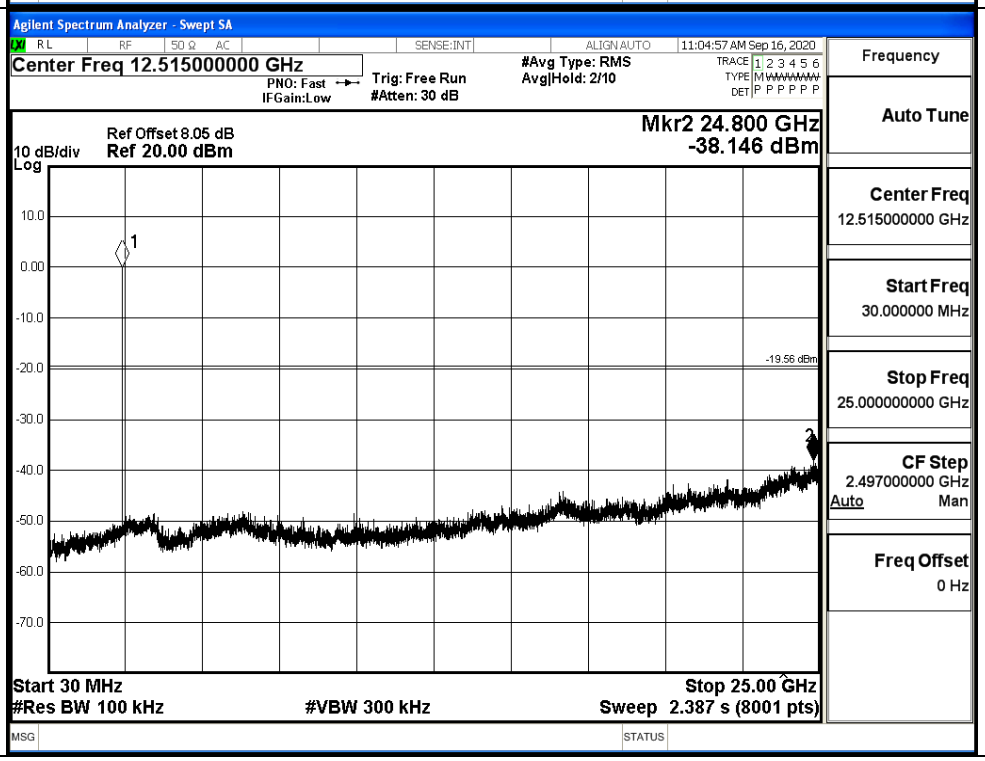
Pref		
Puw		

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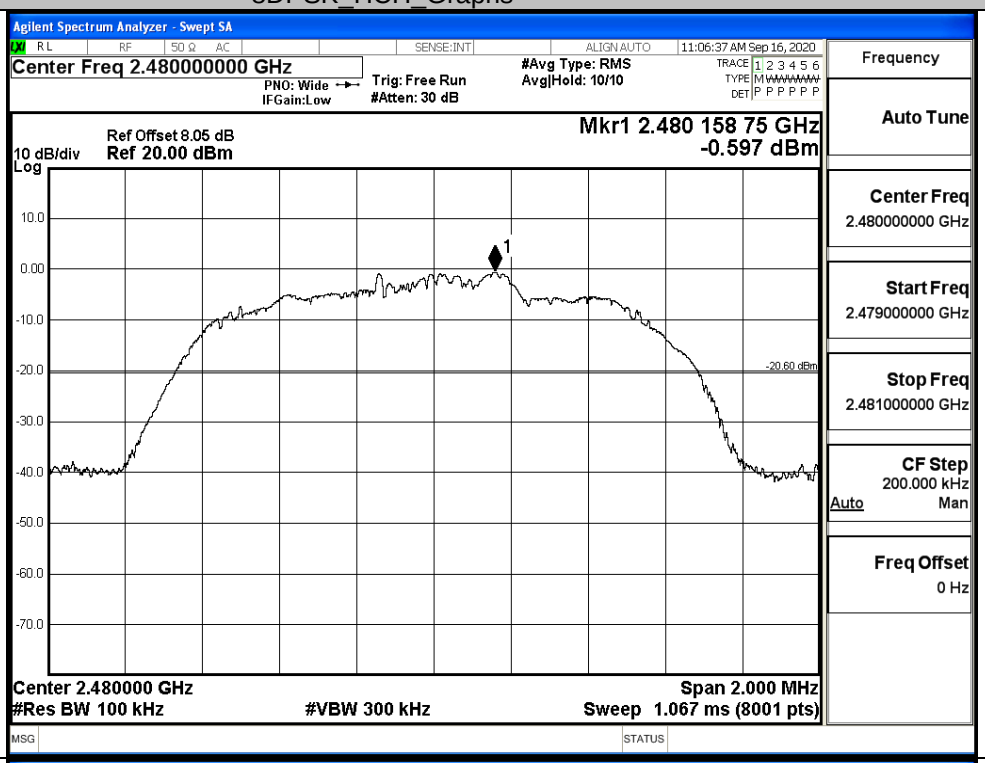
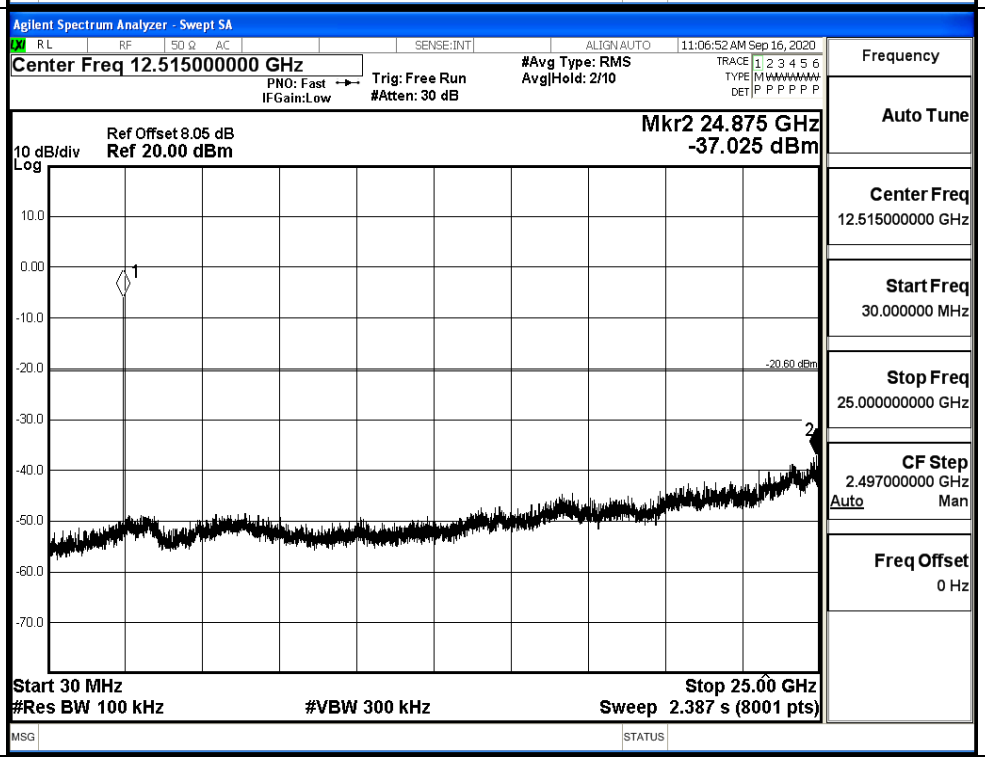
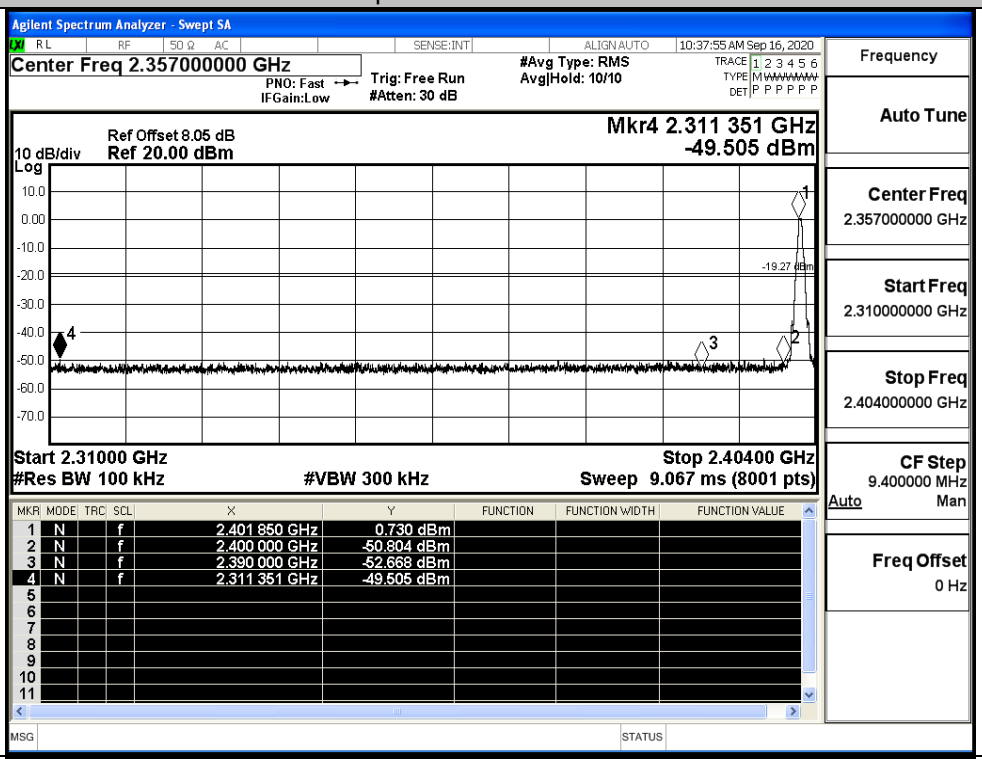
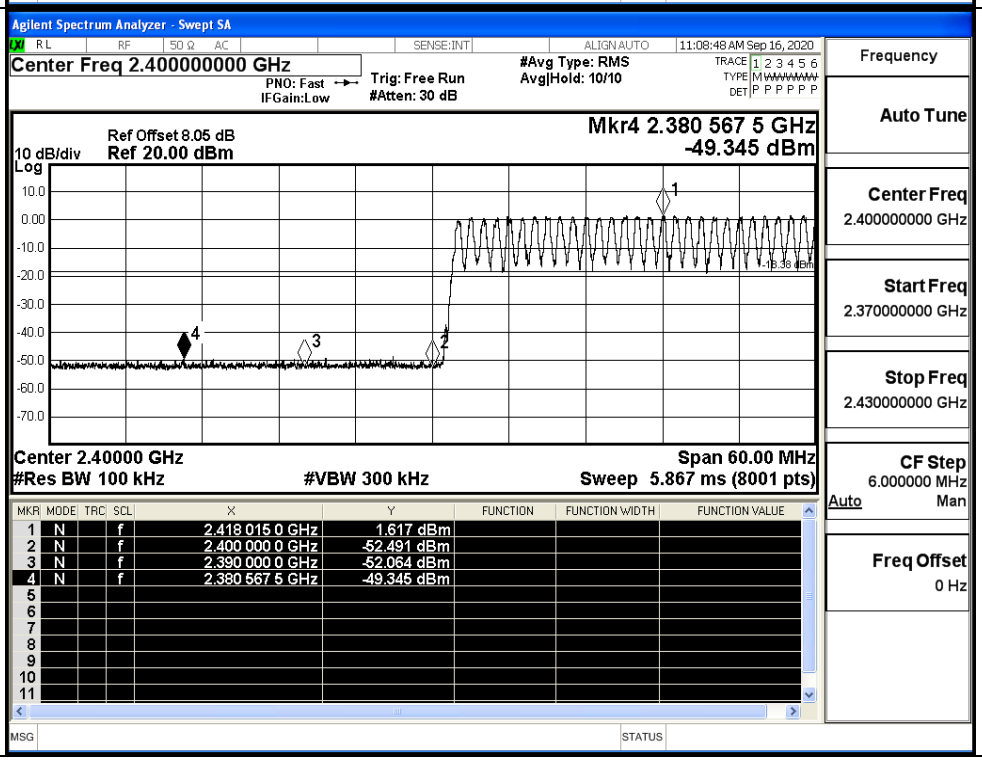
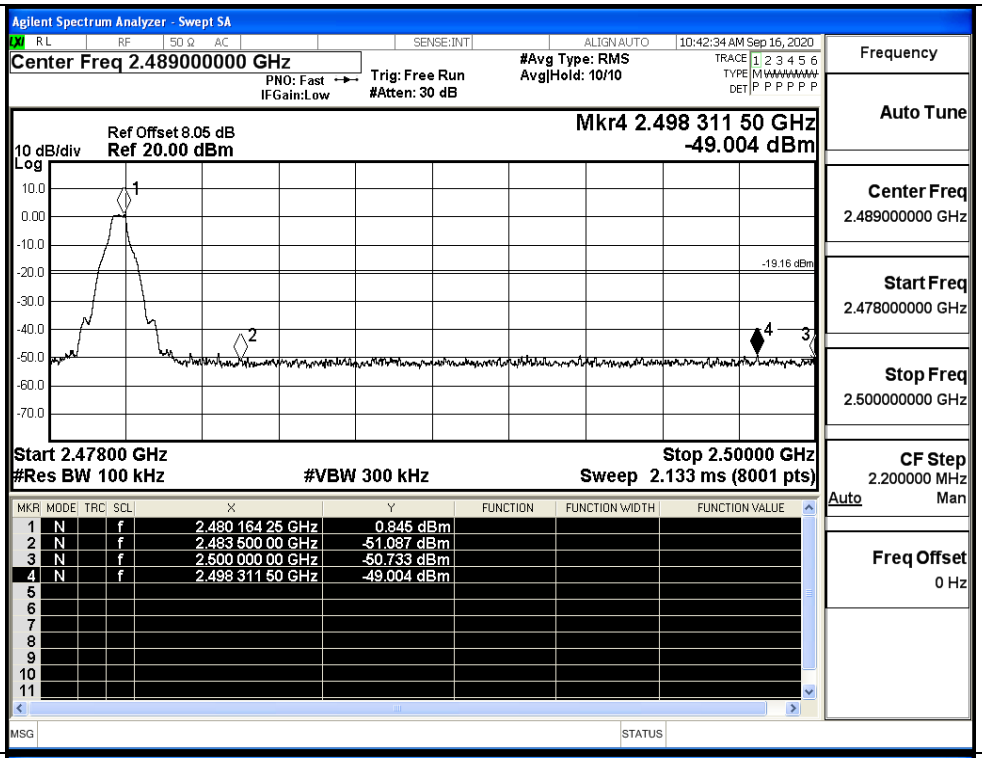
Pref		
Puw		

A.7 Band-edge for RF Conducted Emissions

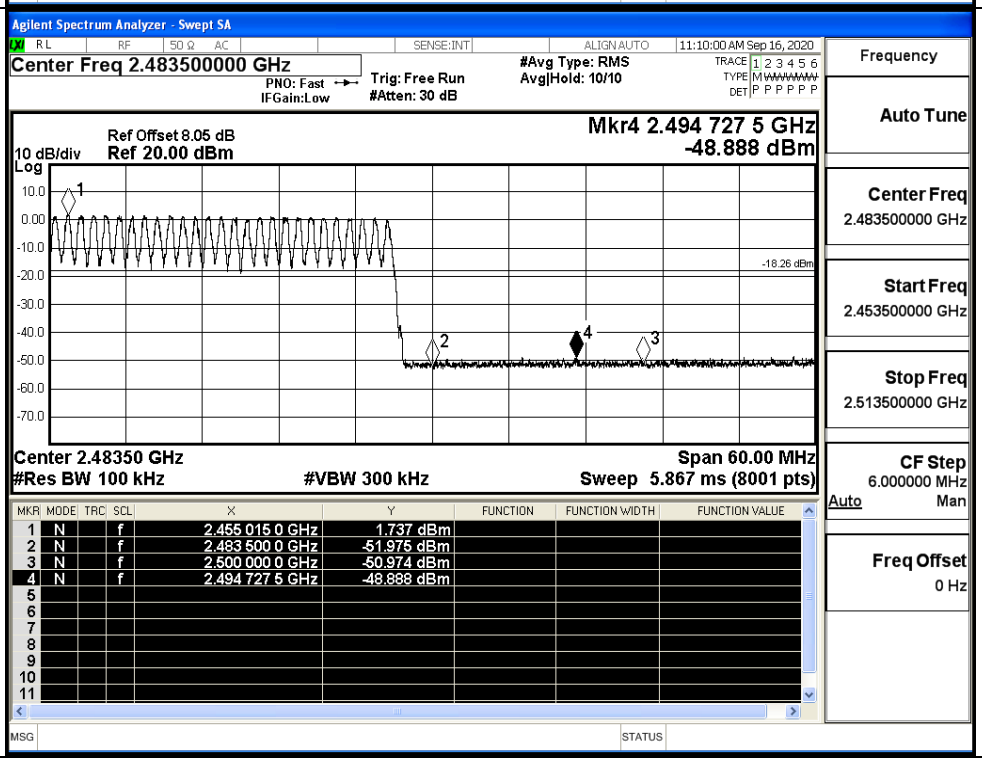
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	0.730	Off	-49.505	-19.27	PASS
			1.617	On	-49.345	-18.38	PASS
	HCH	2480	0.845	Off	-49.004	-19.16	PASS
			1.737	On	-48.888	-18.26	PASS
π/4DQPSK	LCH	2402	-0.769	Off	-49.529	-20.77	PASS
			0.361	On	-48.636	-19.64	PASS
	HCH	2480	-0.582	Off	-48.887	-20.58	PASS
			0.366	On	-47.890	-19.63	PASS
8DPSK	LCH	2402	-1.225	Off	-49.502	-21.23	PASS
			0.449	On	-48.880	-19.55	PASS
	HCH	2480	-0.471	Off	-48.875	-20.47	PASS
			0.250	On	-48.094	-19.75	PASS

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

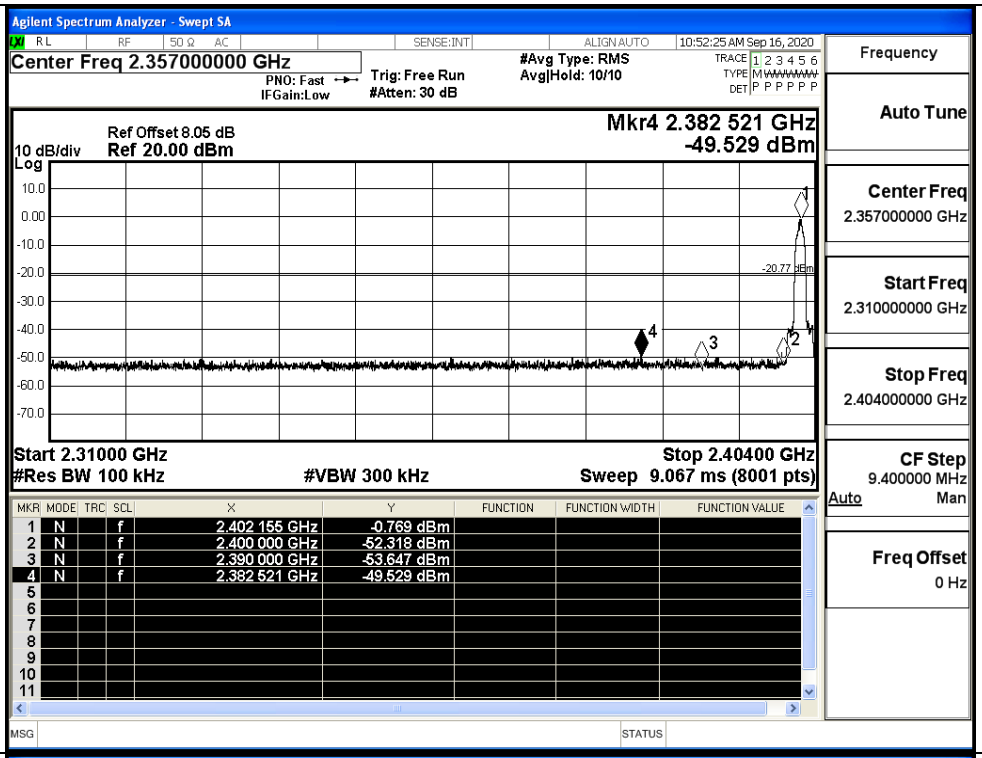
GFSK/HCH/No Hop



GFSK/HCH/Hop



π/4DQPSK/LCH/No Hop



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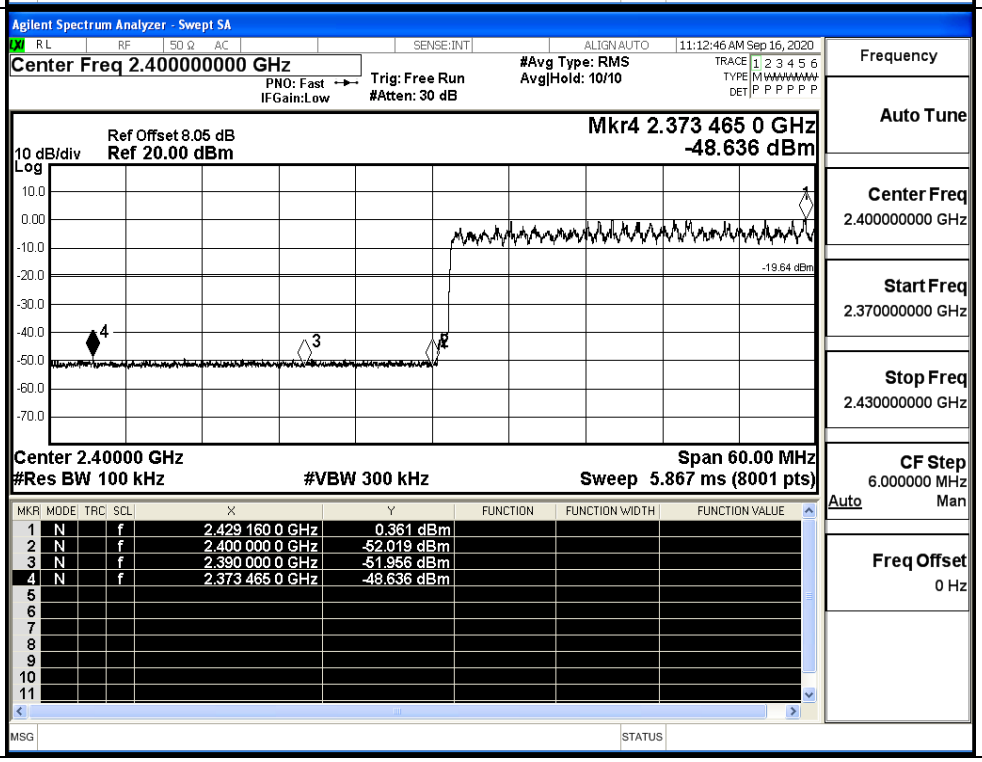

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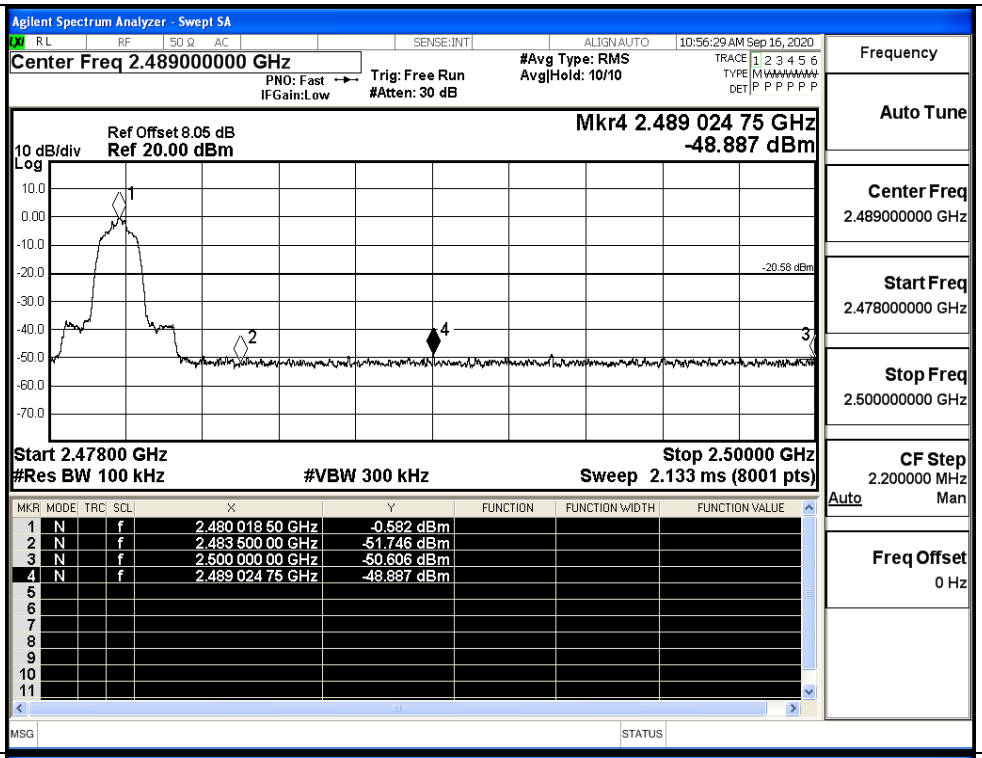

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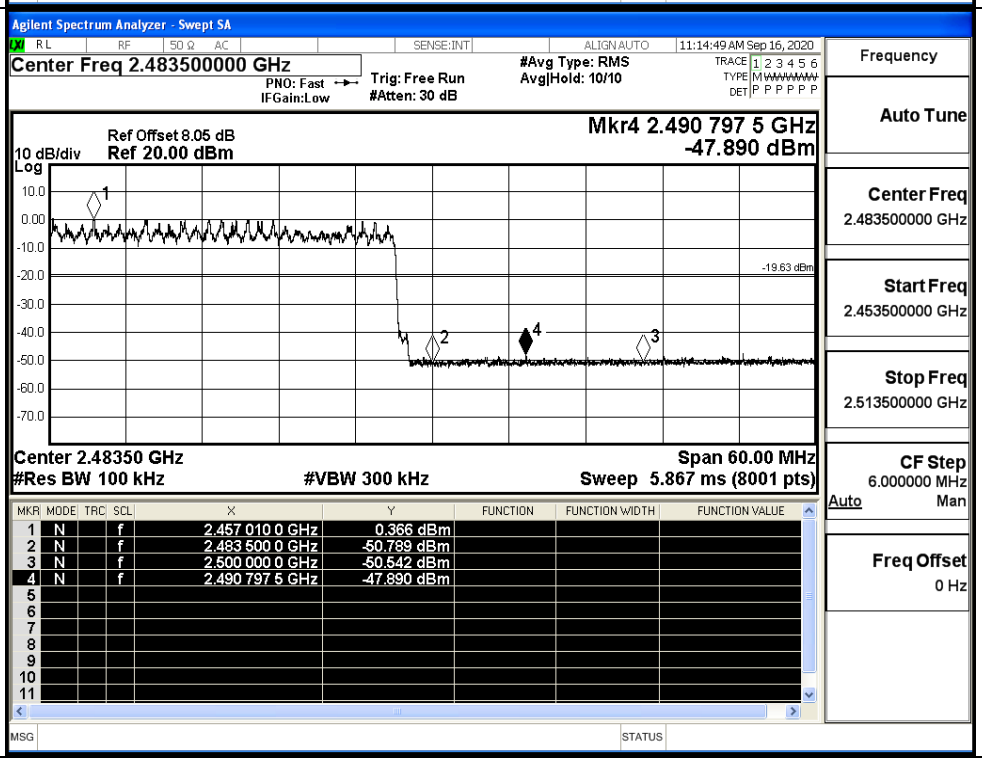
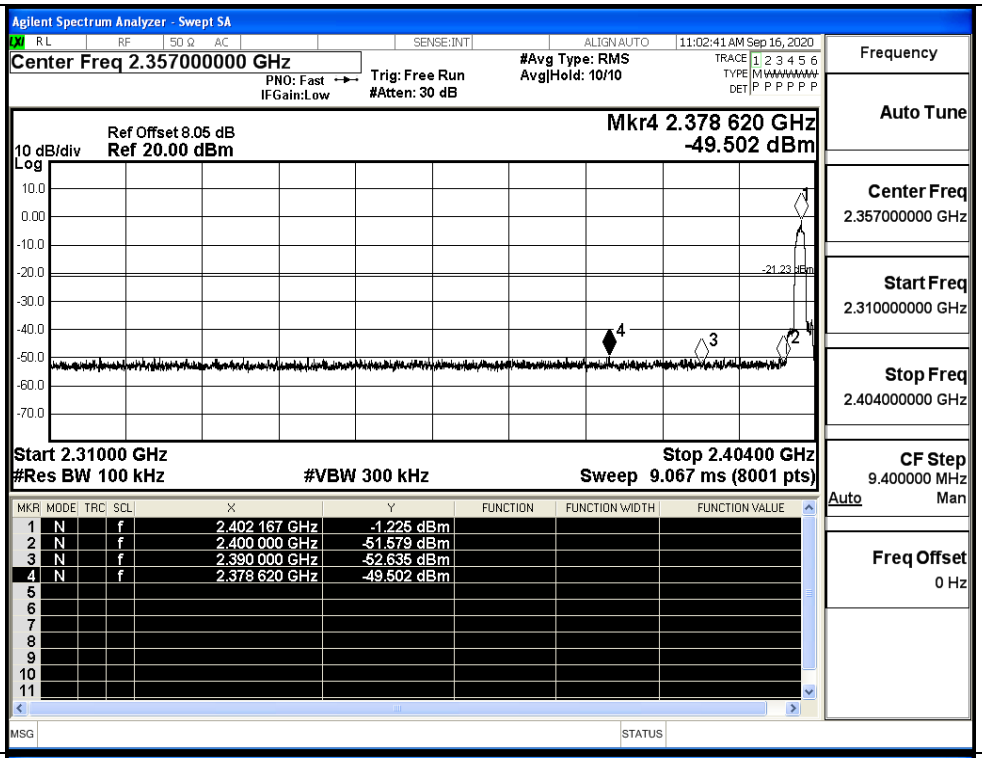
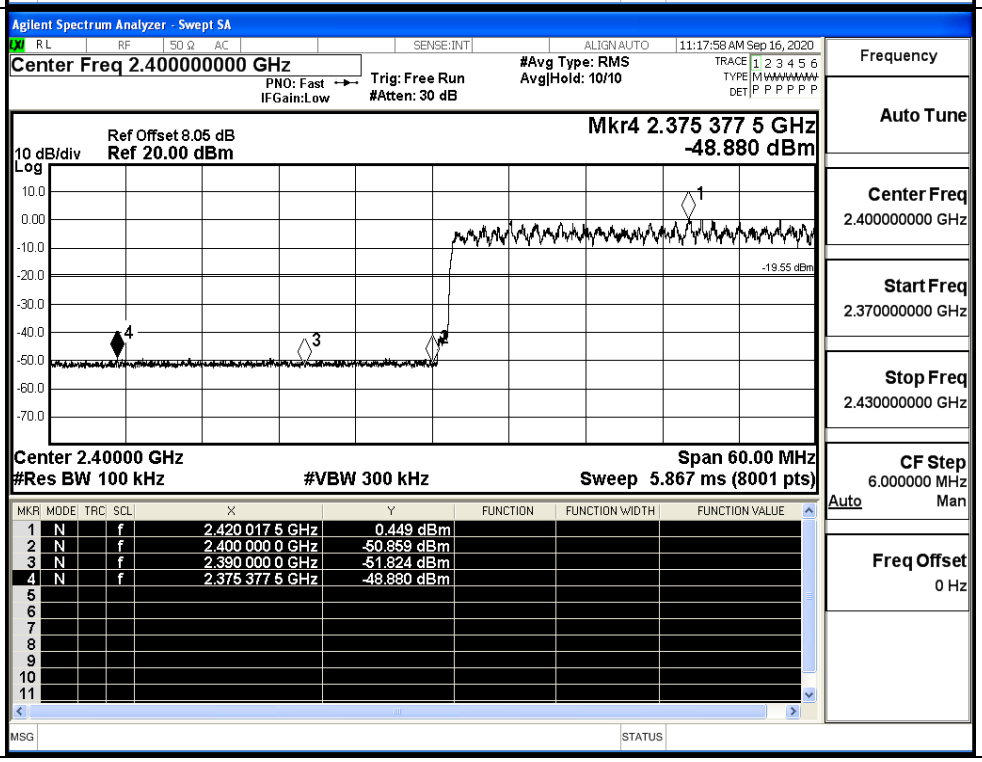


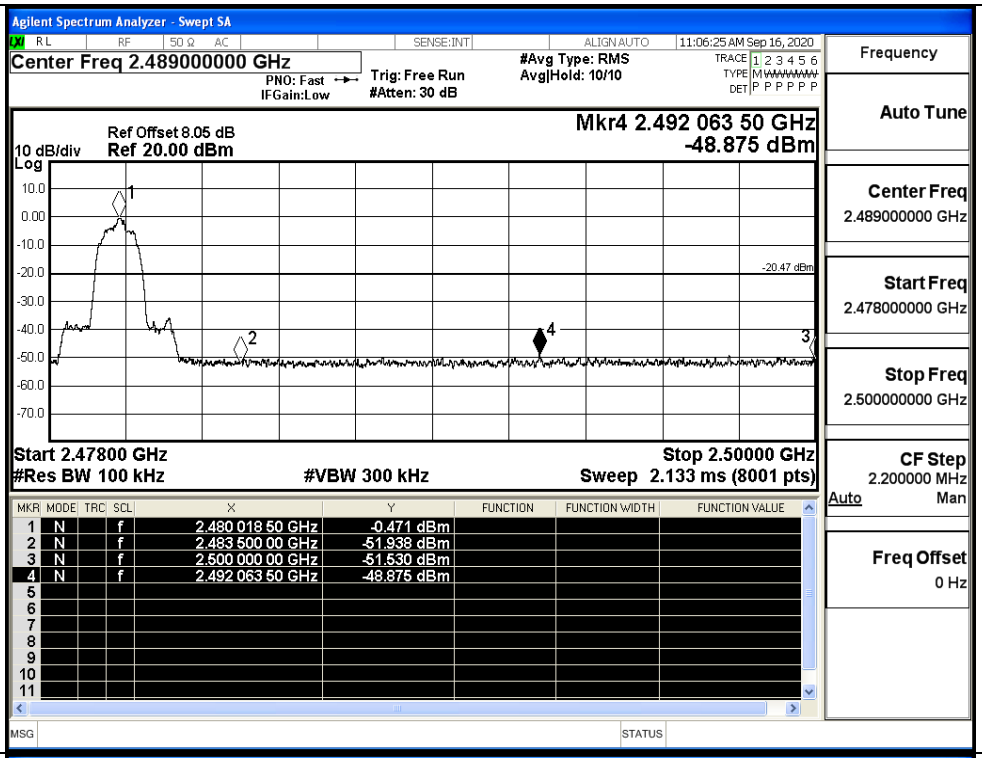
8DPSK/LCH/No Hop



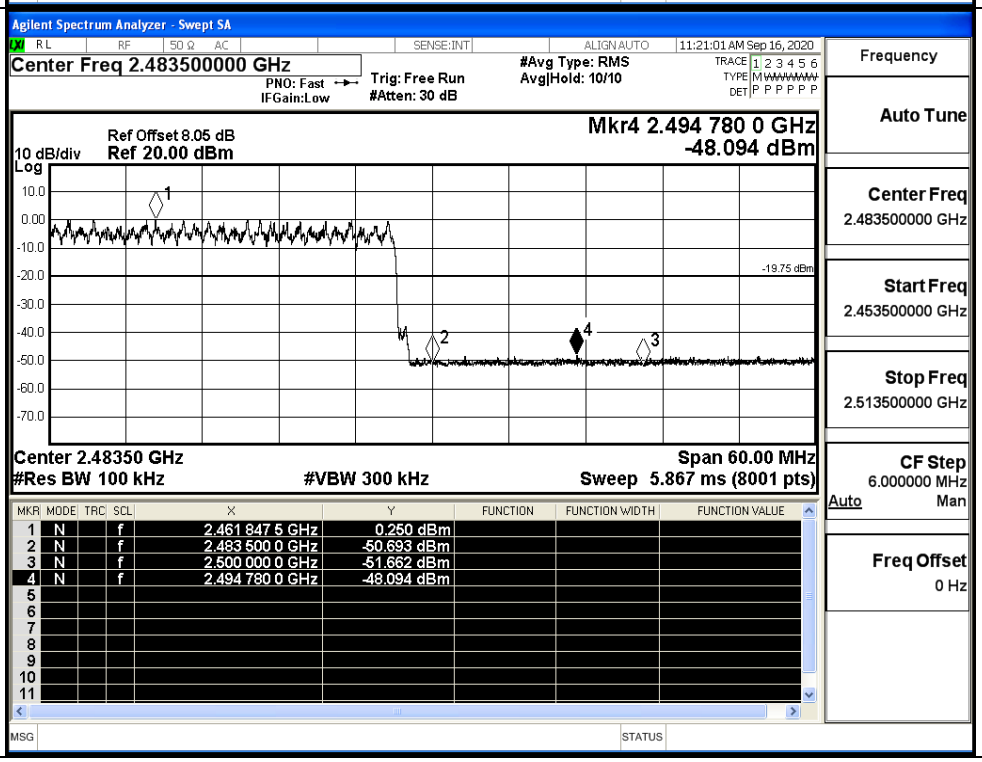
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



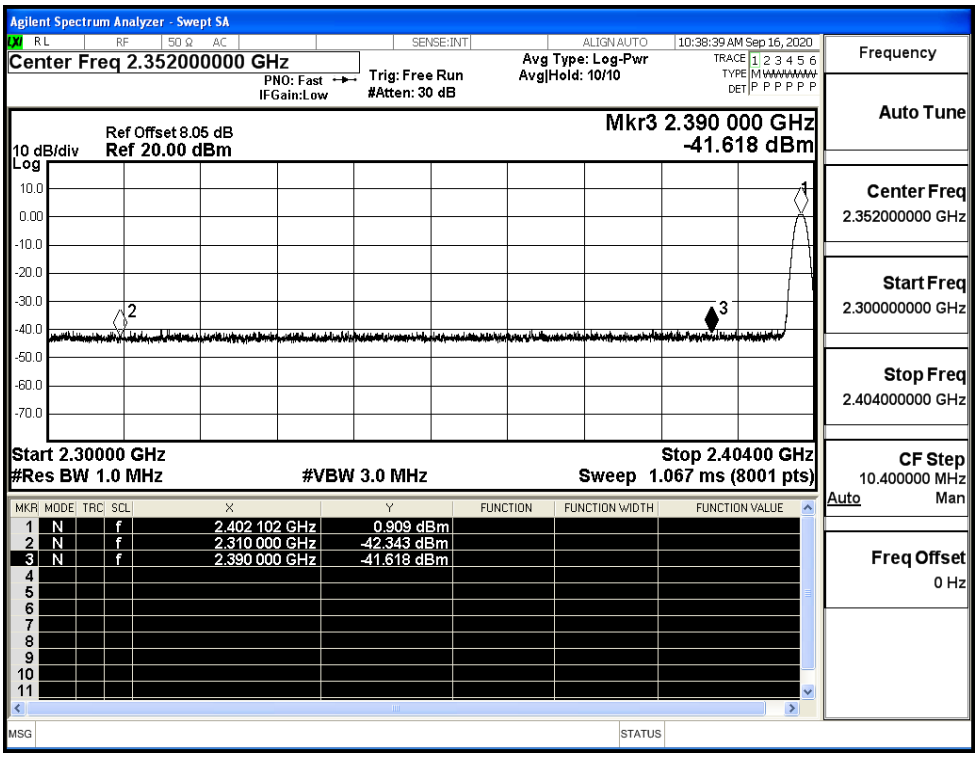
8DPSK/HCH/Hop



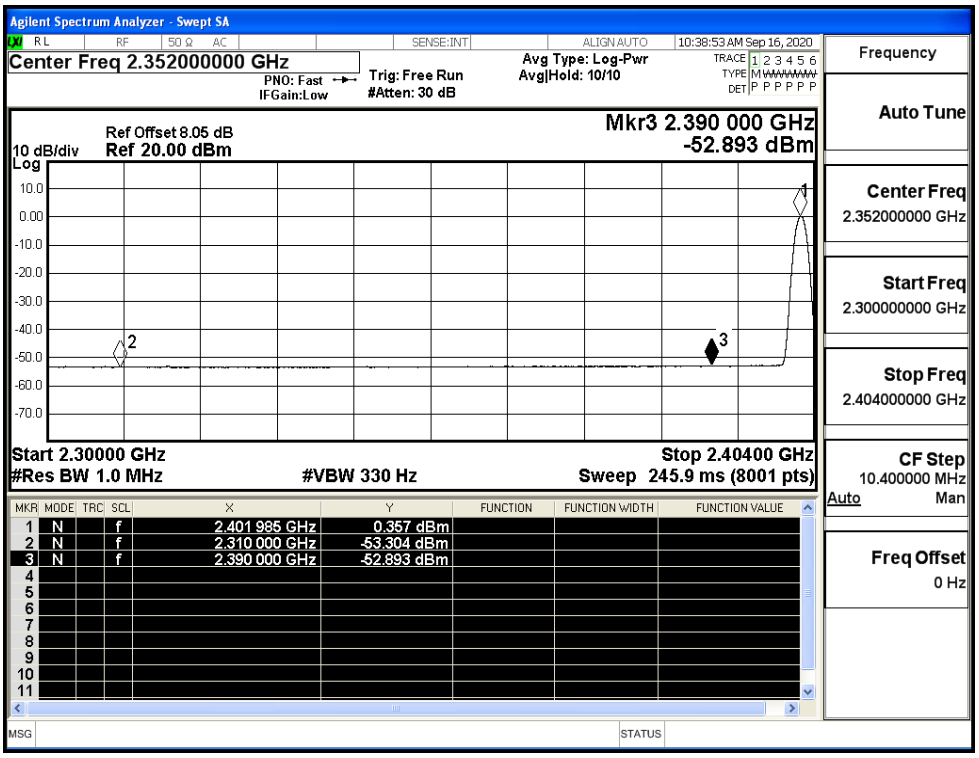
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-42.34	2.0	0	52.91	PEAK	74	PASS
	Off	2310.0	-53.30	2.0	0	41.95	AV	54	PASS
	Off	2390.0	-41.62	2.0	0	53.64	PEAK	74	PASS
	Off	2390.0	-52.89	2.0	0	42.36	AV	54	PASS
	Off	2483.5	-42.99	2.0	0	52.27	PEAK	74	PASS
	Off	2483.5	-52.42	2.0	0	42.84	AV	54	PASS
	Off	2500.0	-42.59	2.0	0	52.67	PEAK	74	PASS
	Off	2500.0	-52.29	2.0	0	42.96	AV	54	PASS
π/4DQPSK	Off	2310.0	-44.06	2.0	0	51.20	PEAK	74	PASS
	Off	2310.0	-53.41	2.0	0	41.85	AV	54	PASS
	Off	2390.0	-42.60	2.0	0	52.66	PEAK	74	PASS
	Off	2390.0	-53.07	2.0	0	42.19	AV	54	PASS
	Off	2483.5	-41.68	2.0	0	53.58	PEAK	74	PASS
	Off	2483.5	-52.57	2.0	0	42.68	AV	54	PASS
	Off	2500.0	-42.26	2.0	0	53.00	PEAK	74	PASS
	Off	2500.0	-52.42	2.0	0	42.84	AV	54	PASS
8DPSK	Off	2310.0	-43.62	2.0	0	51.64	PEAK	74	PASS
	Off	2310.0	-53.30	2.0	0	41.96	AV	54	PASS
	Off	2390.0	-42.27	2.0	0	52.99	PEAK	74	PASS
	Off	2390.0	-52.96	2.0	0	42.29	AV	54	PASS
	Off	2483.5	-42.02	2.0	0	53.24	PEAK	74	PASS
	Off	2483.5	-52.42	2.0	0	42.84	AV	54	PASS
	Off	2500.0	-42.33	2.0	0	52.93	PEAK	74	PASS
	Off	2500.0	-52.43	2.0	0	42.83	AV	54	PASS

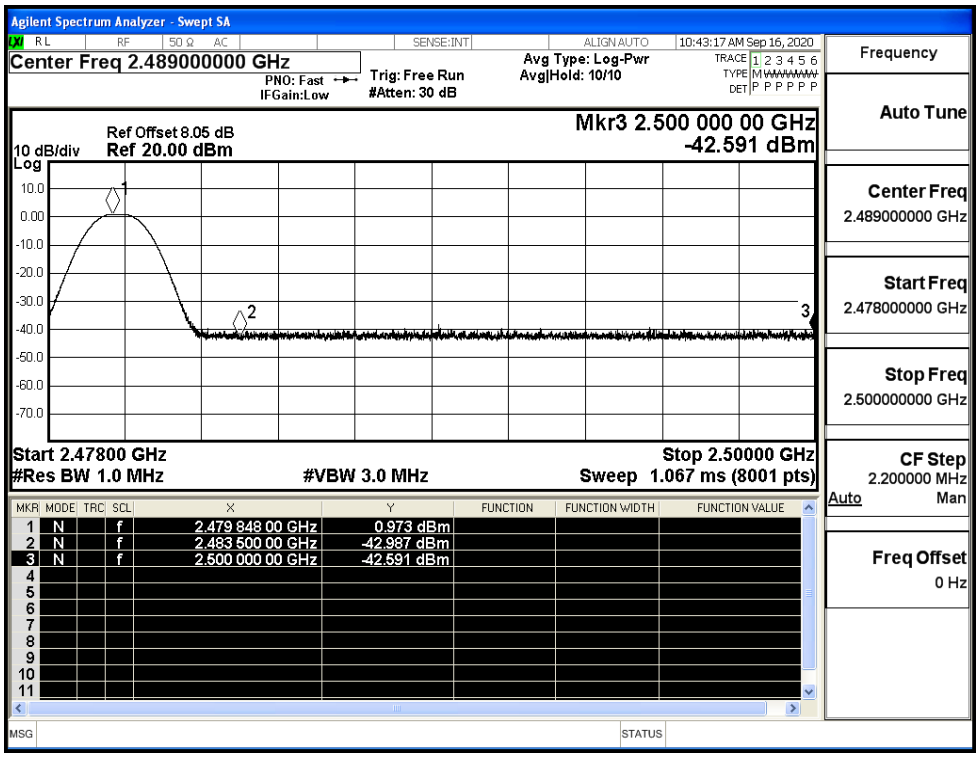
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



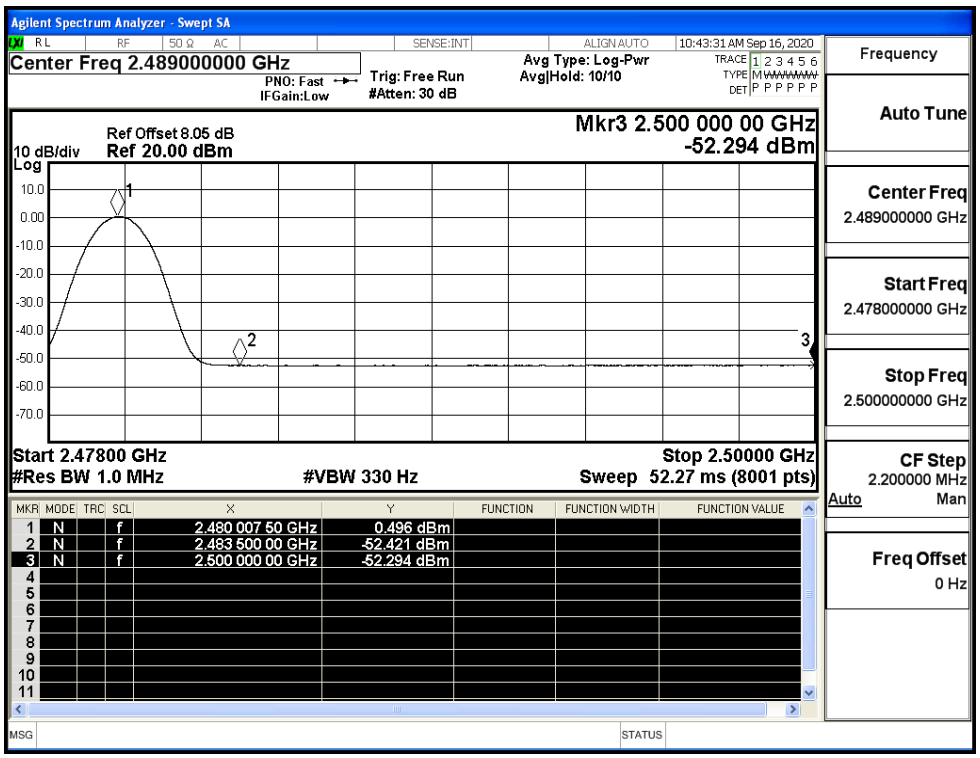
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)



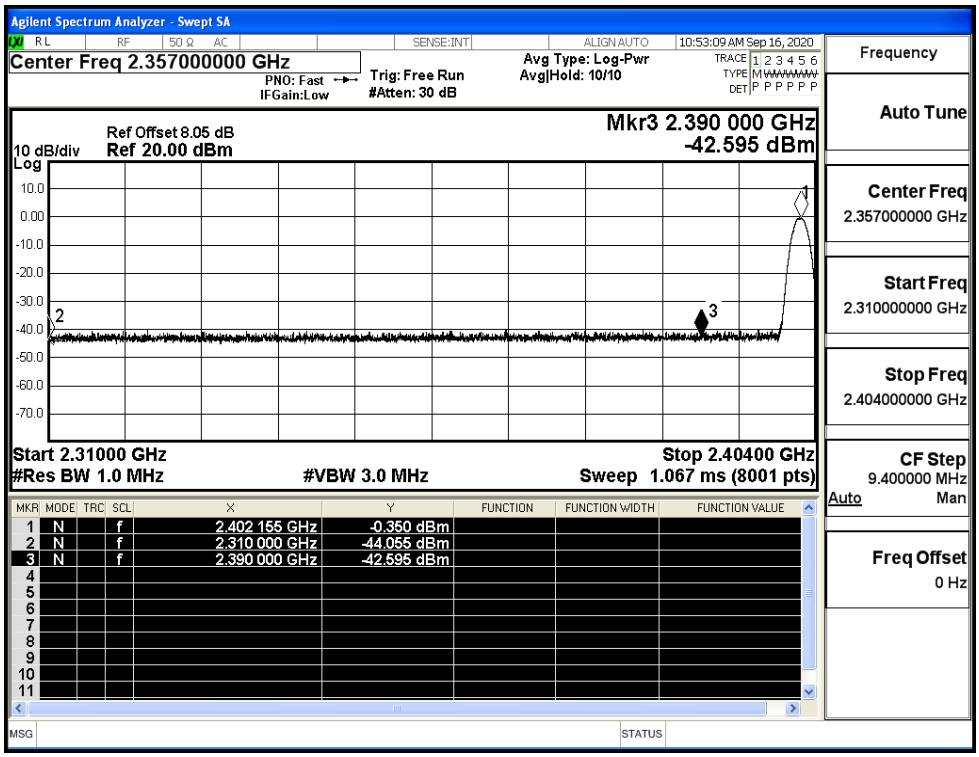
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



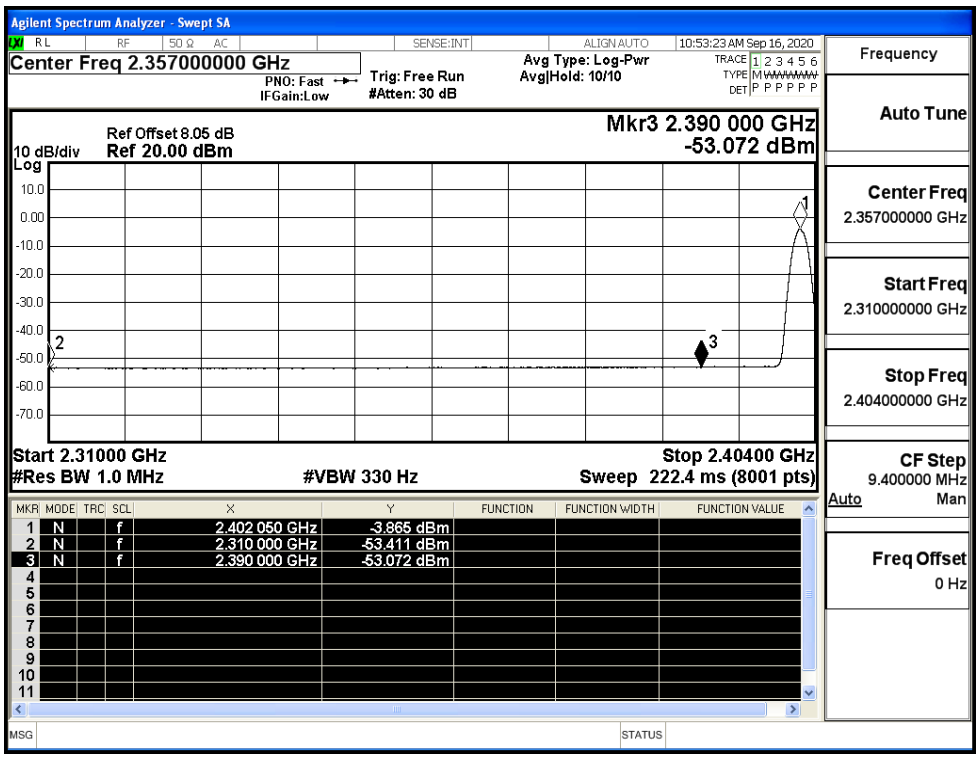
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



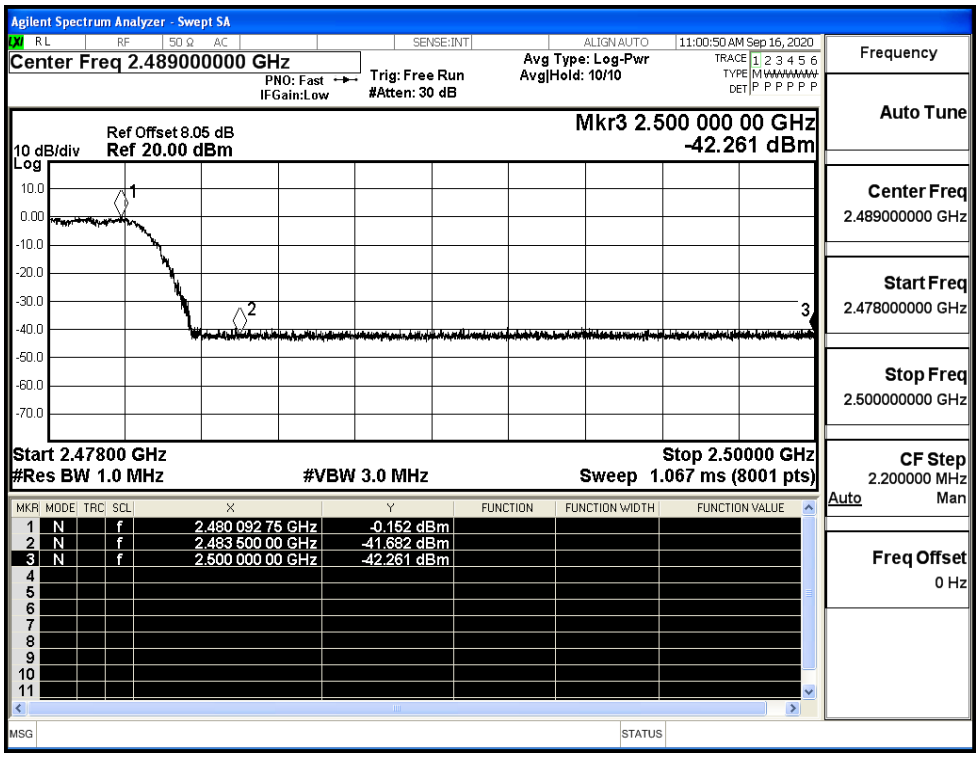
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



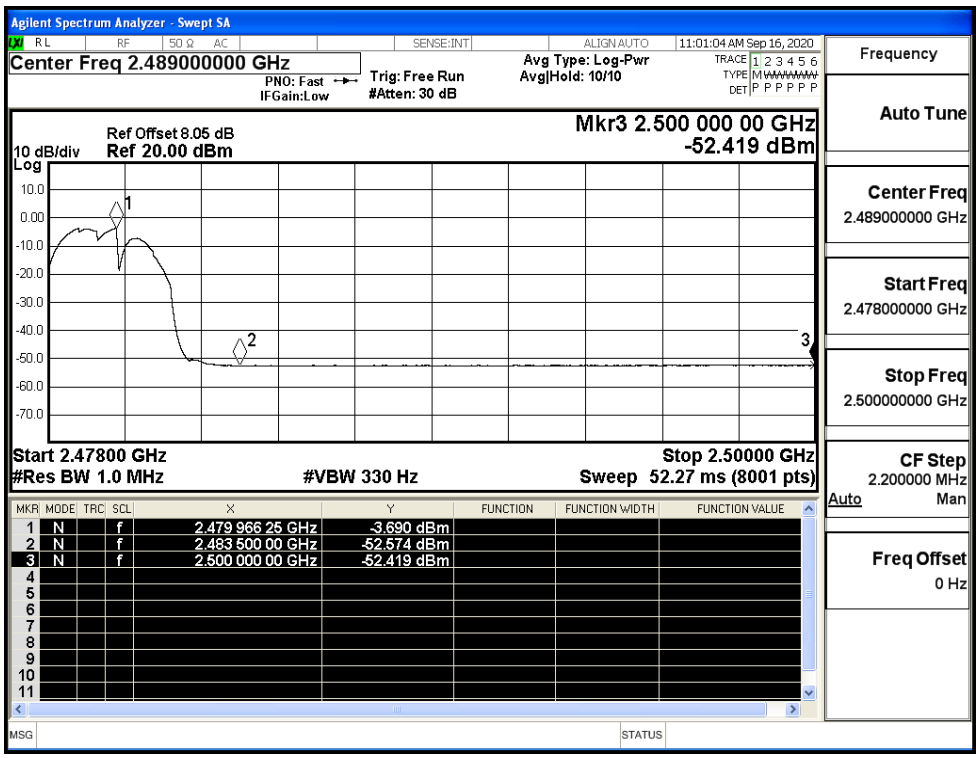
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



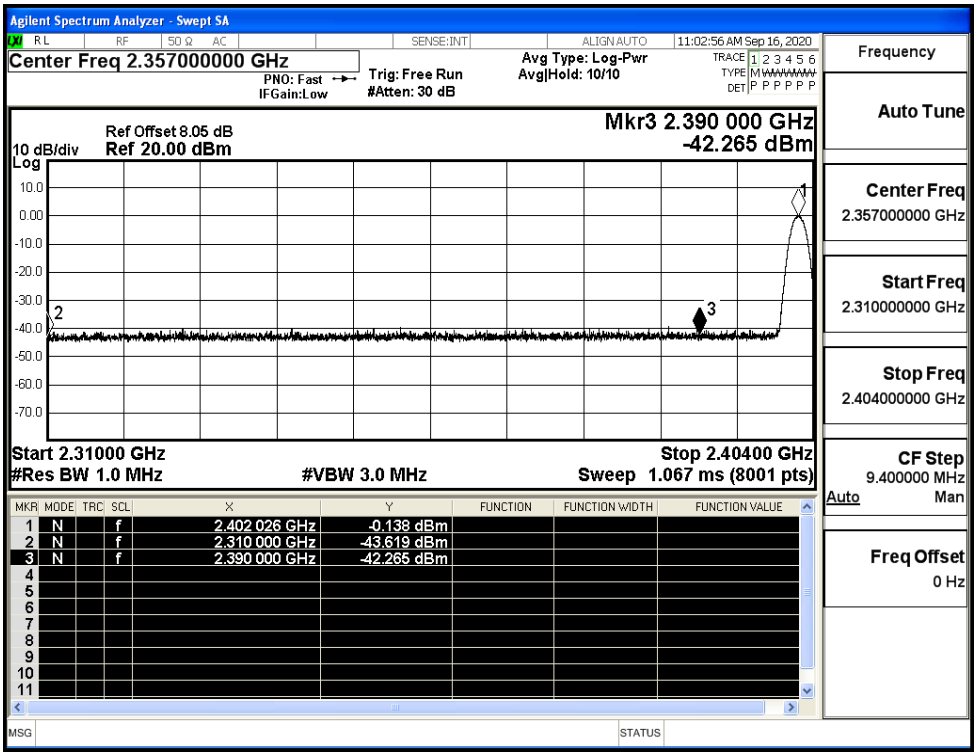
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



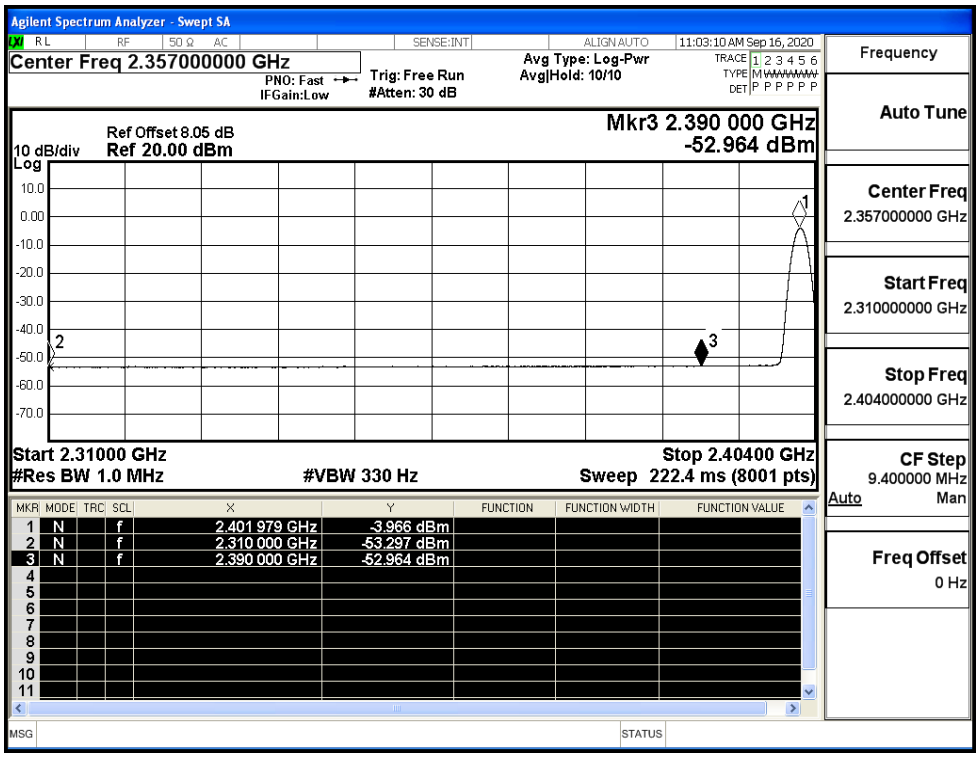
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



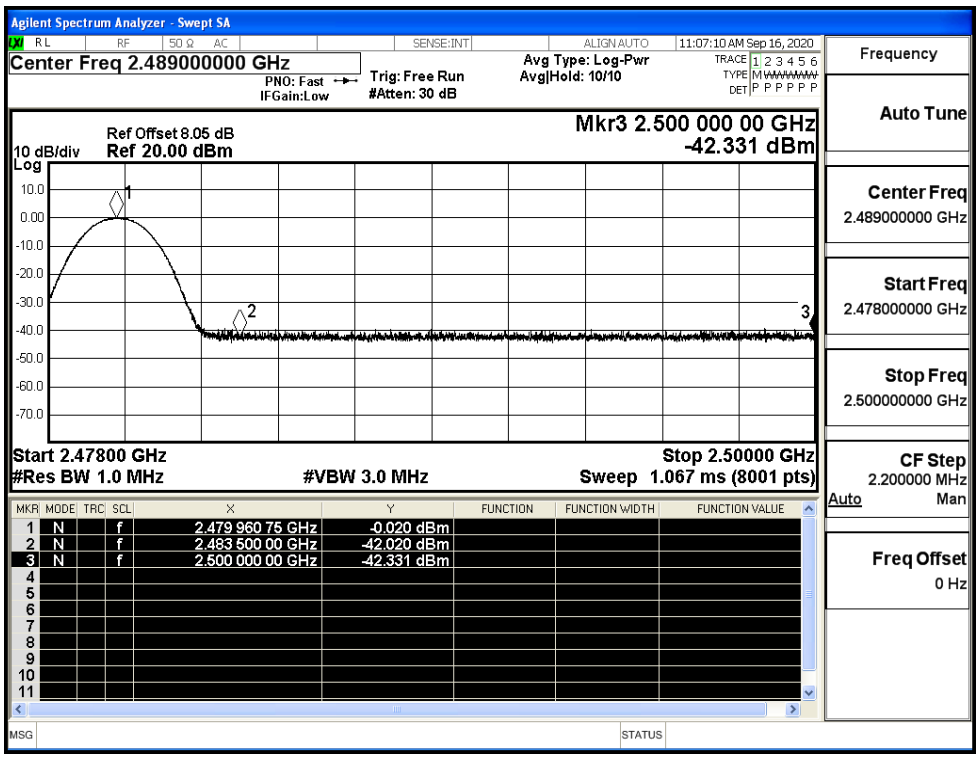
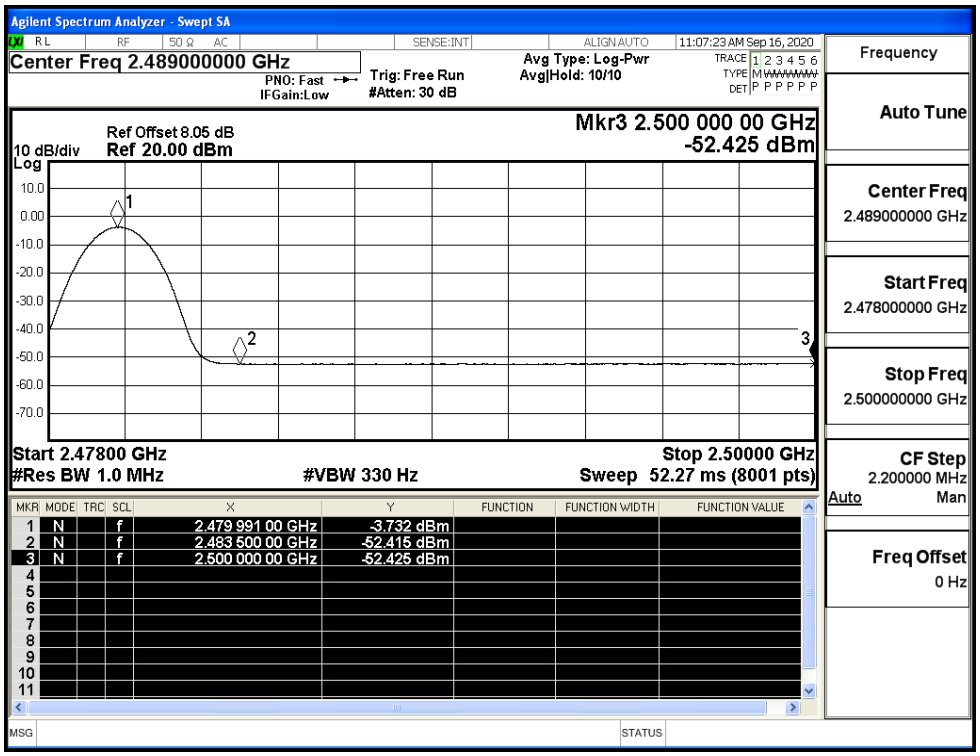
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)