Appendix A

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

Product Name: T1 Ture Wireless Stereo Earbuds

Trade Mark: ACEFAST

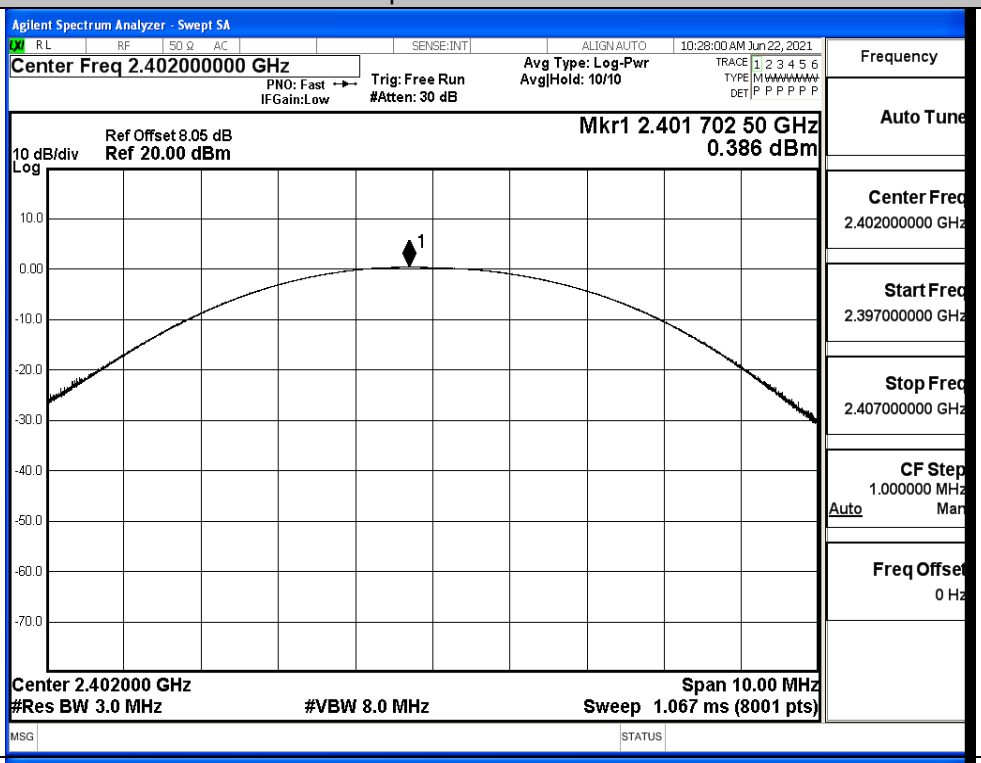
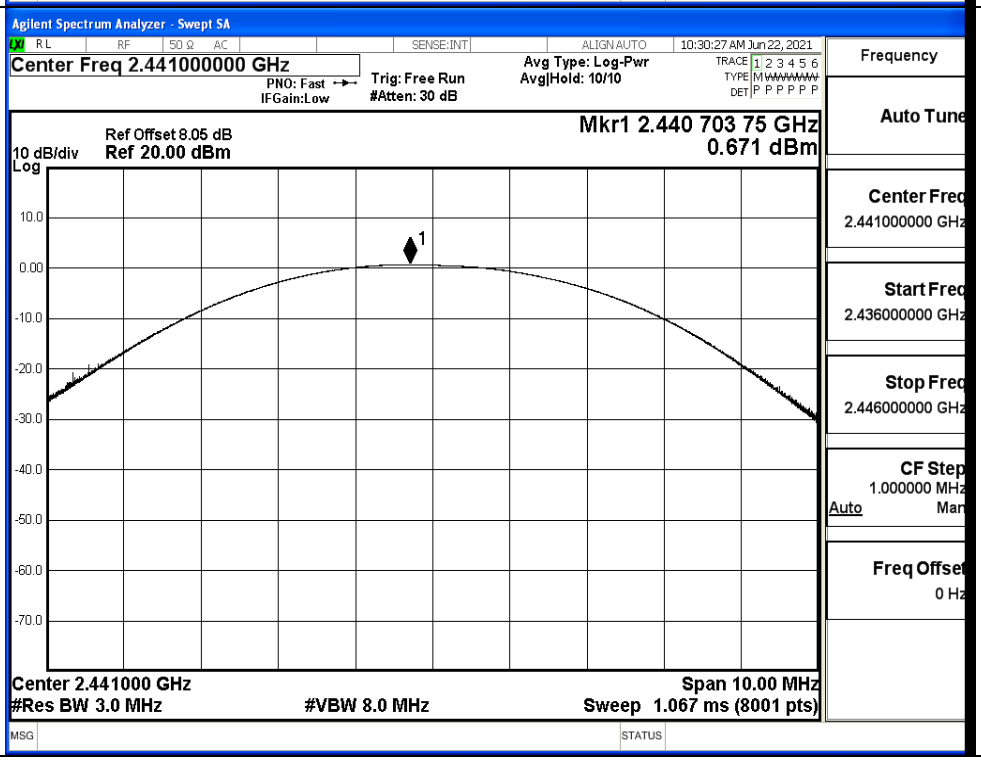
Test Model: T1

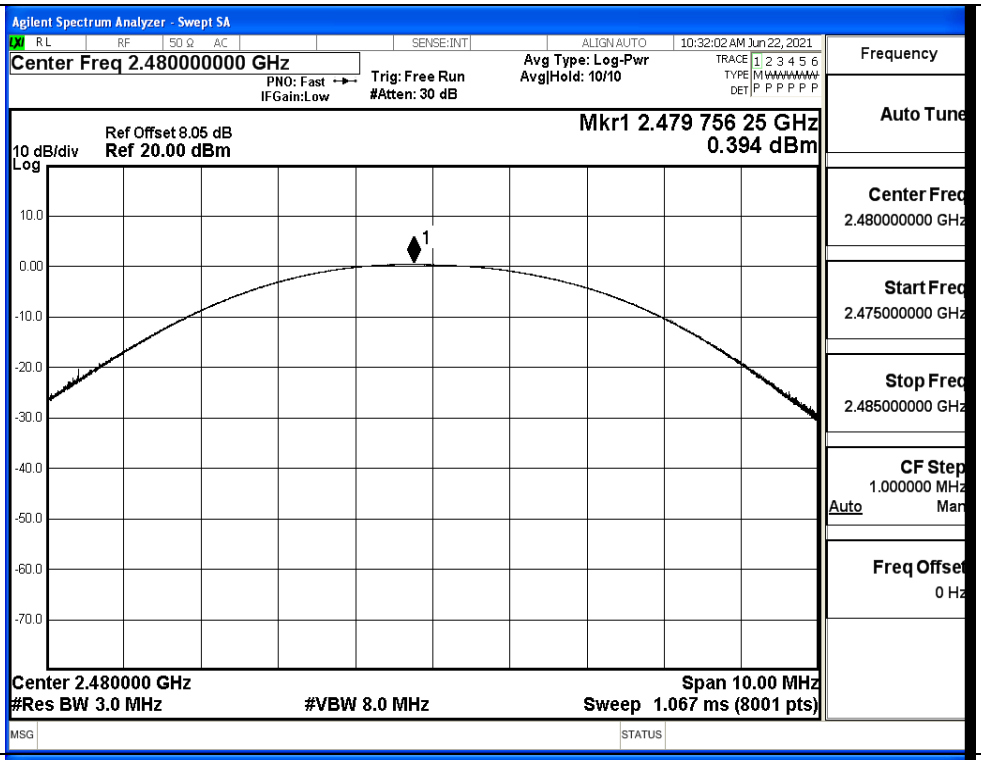
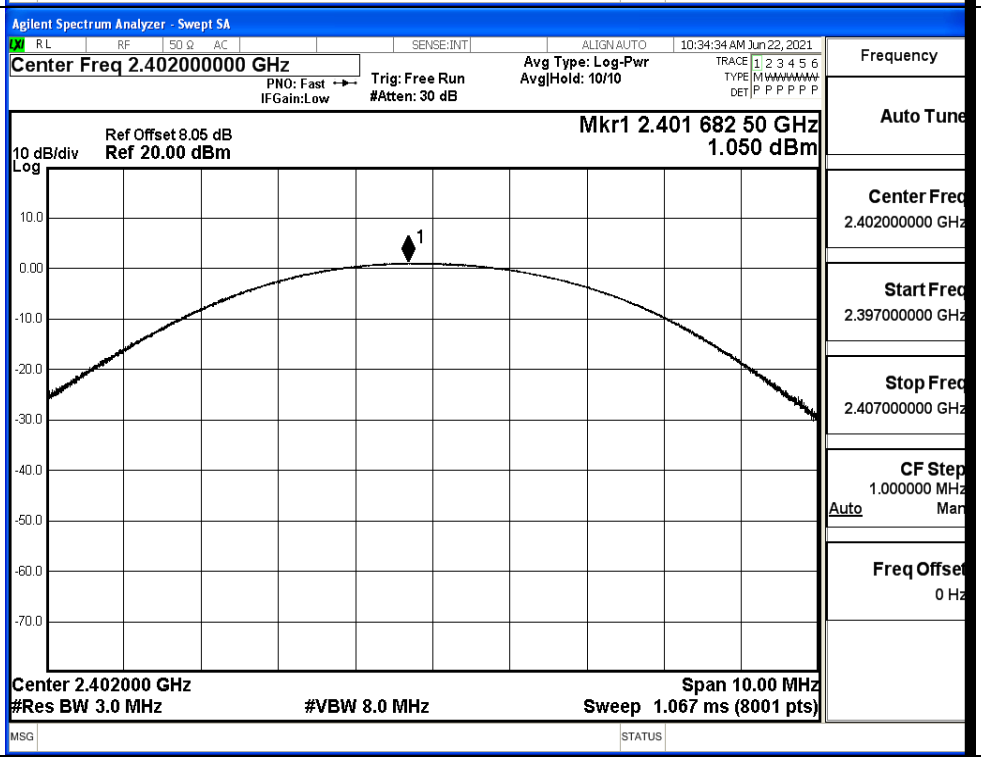
Environmental Conditions

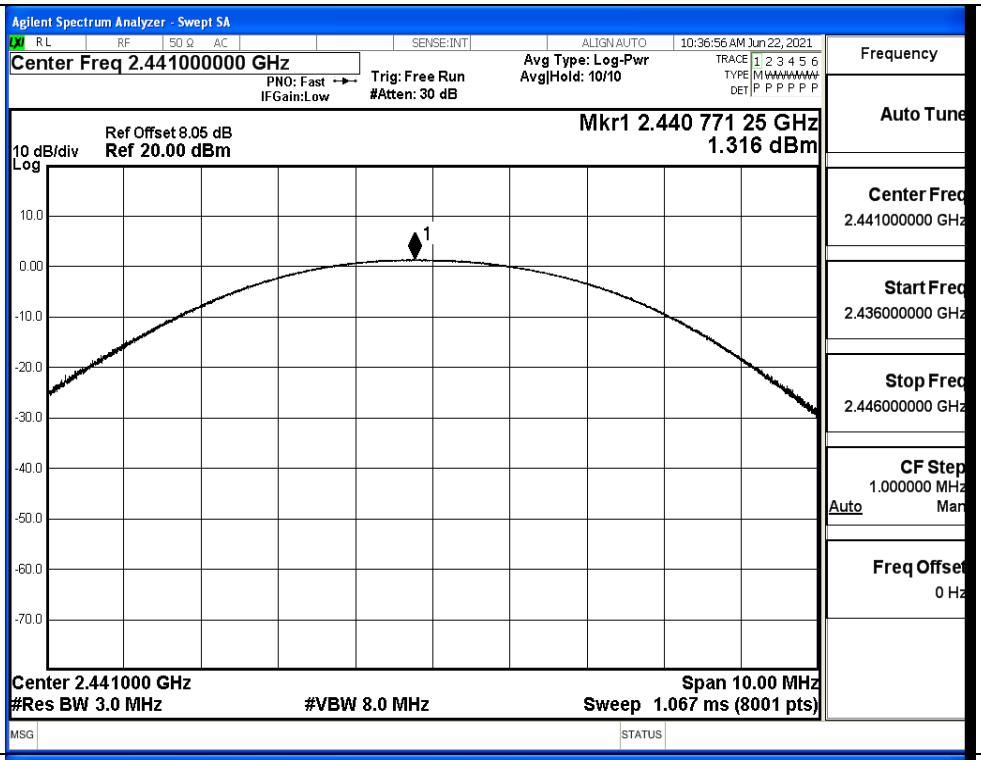
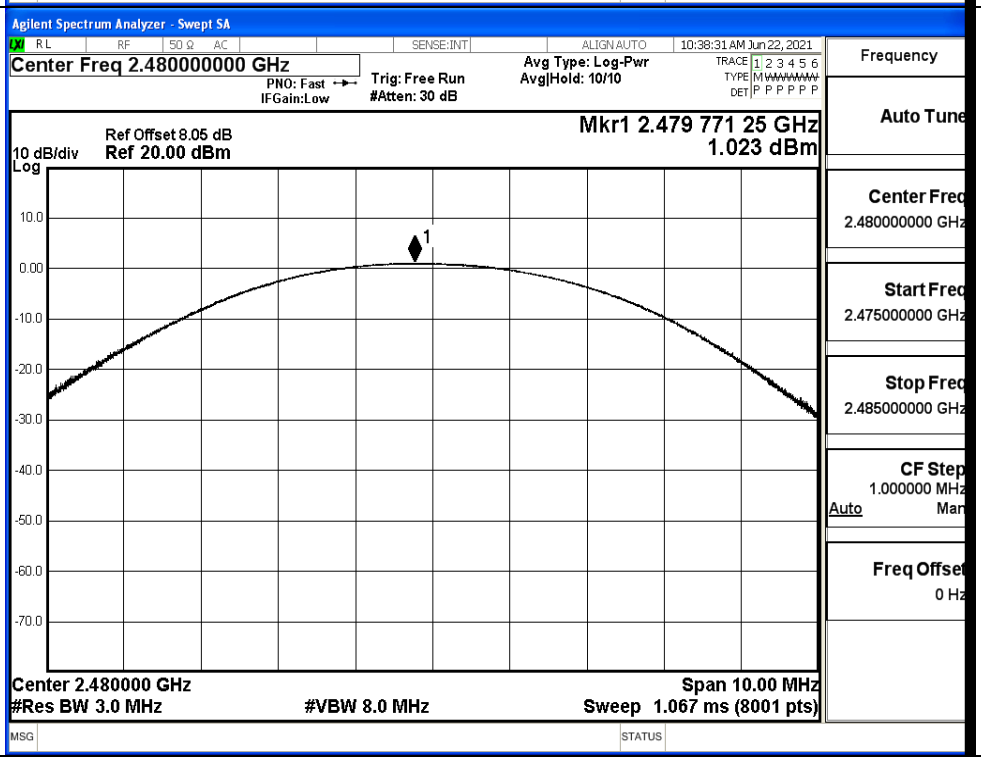
Temperature:	22.4° C
Relative Humidity:	54.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Kay Hu
Supervised by:	Li Huan

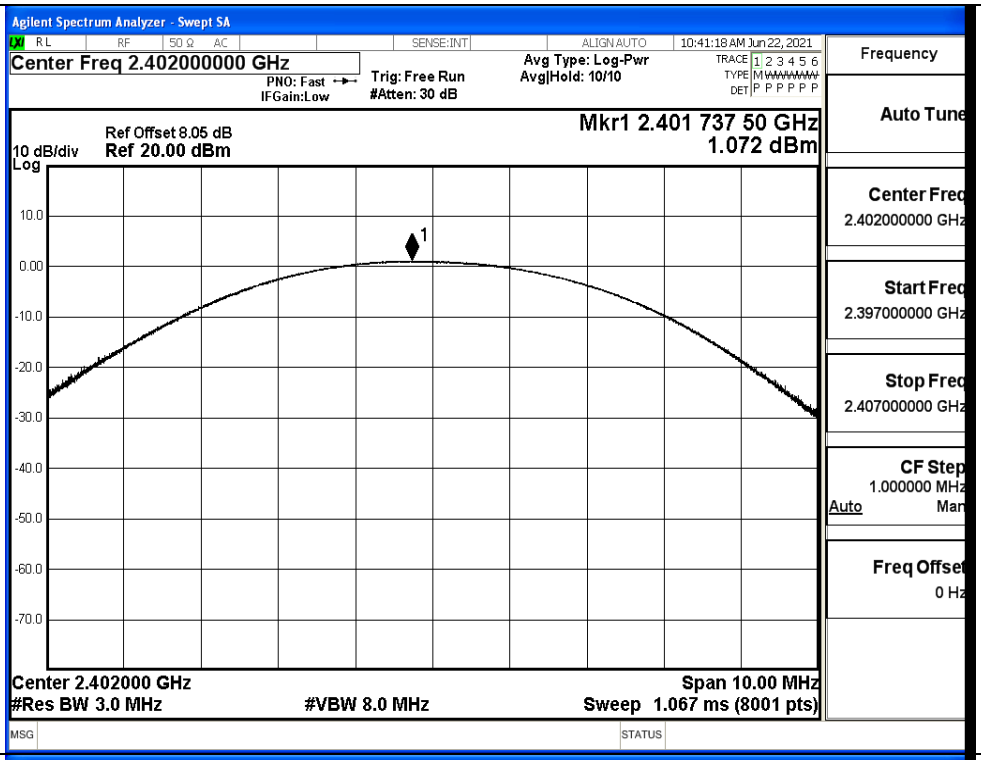
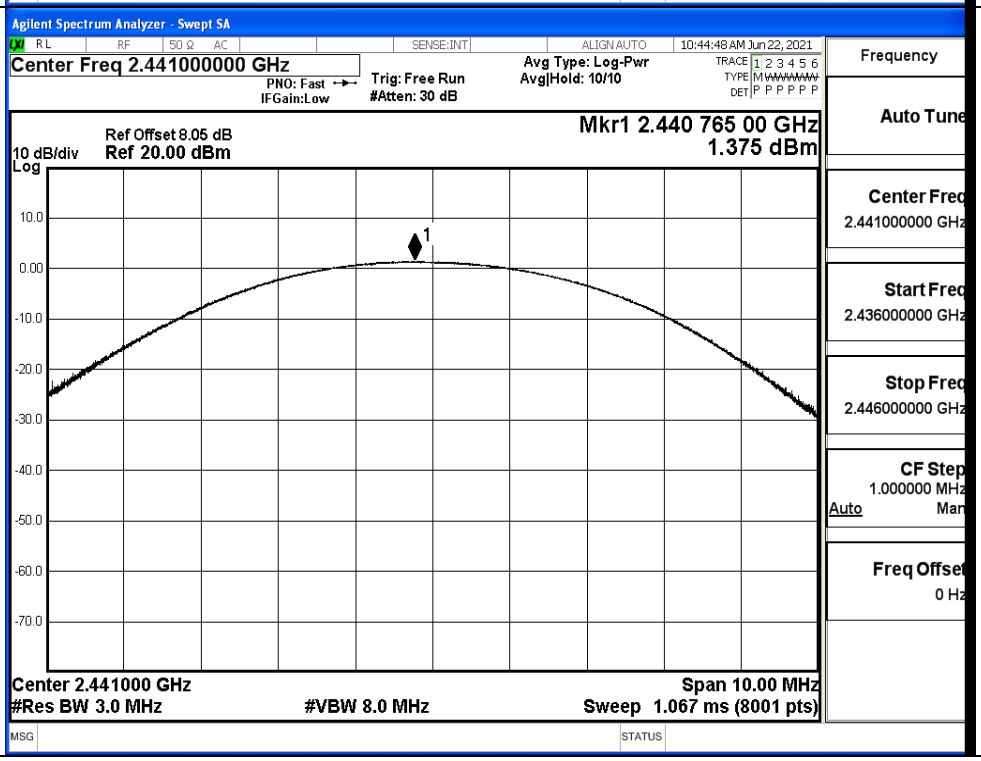
A.1 Maximum Conducted Peak Output Power

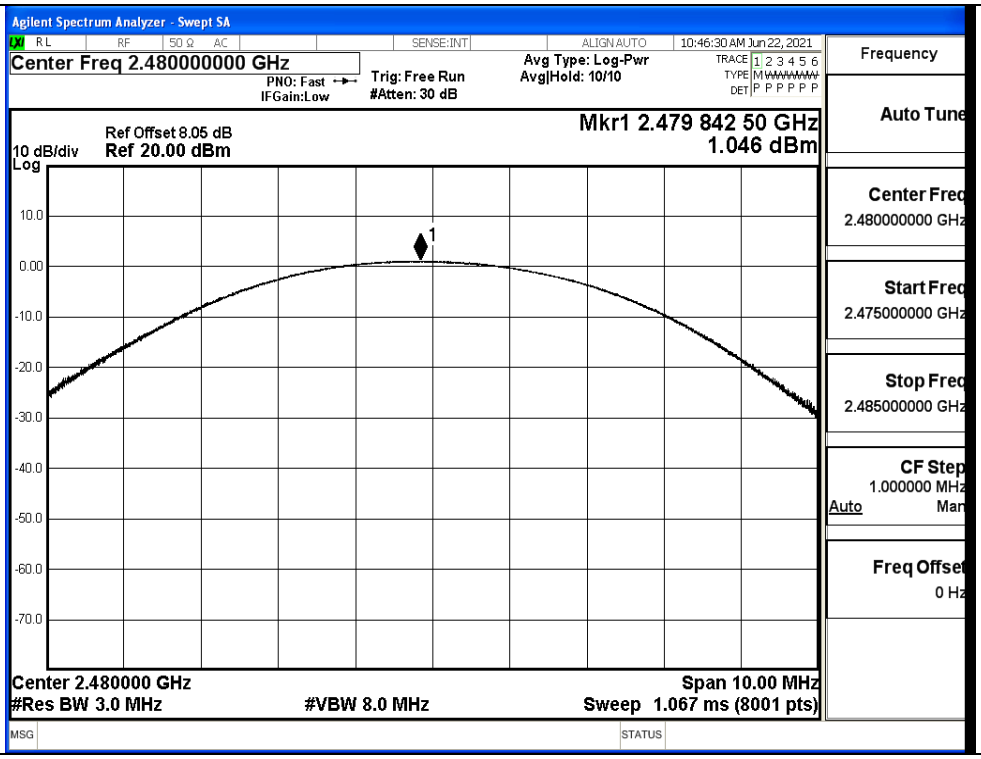
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.386	21	PASS
	MCH	0.671	21	PASS
	HCH	0.394	21	PASS
π/4DQPSK	LCH	1.050	21	PASS
	MCH	1.316	21	PASS
	HCH	1.023	21	PASS
8DPSK	LCH	1.072	21	PASS
	MCH	1.375	21	PASS
	HCH	1.046	21	PASS

Test Graphs		
GFSK/LCH		
GFSK/MCH		

GFSK/HCH		
π/4DQPSK/LCH		

π/4DQPSK/MCH		
π/4DQPSK/HCH		

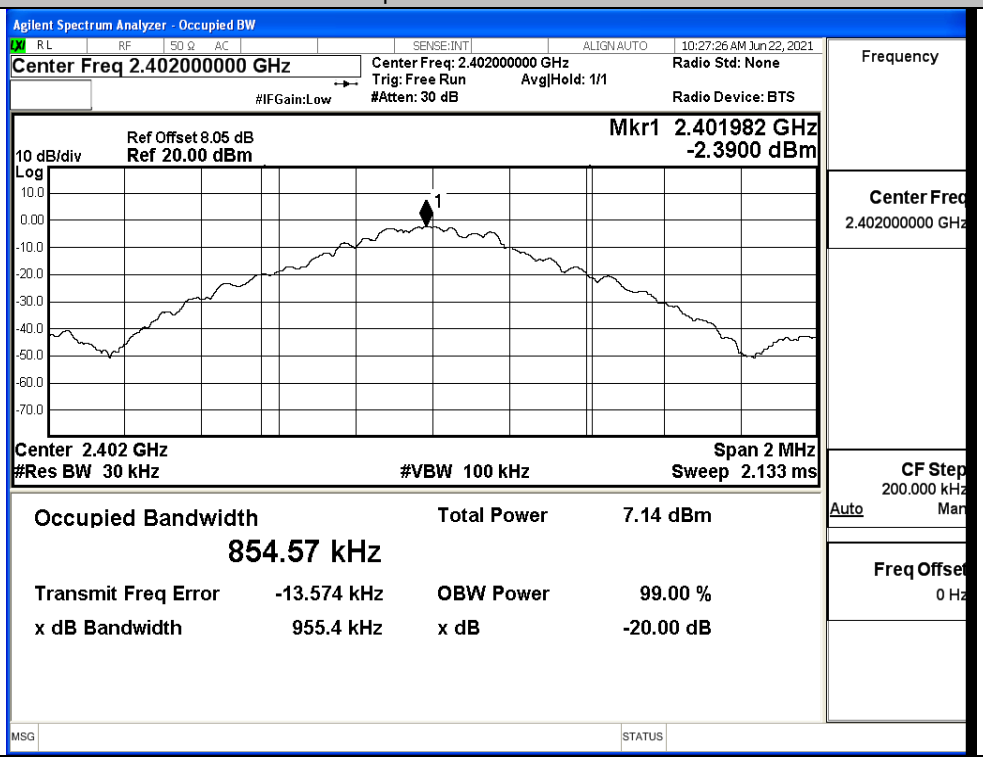
8DPSK/LCH		
8DPSK/MCH		

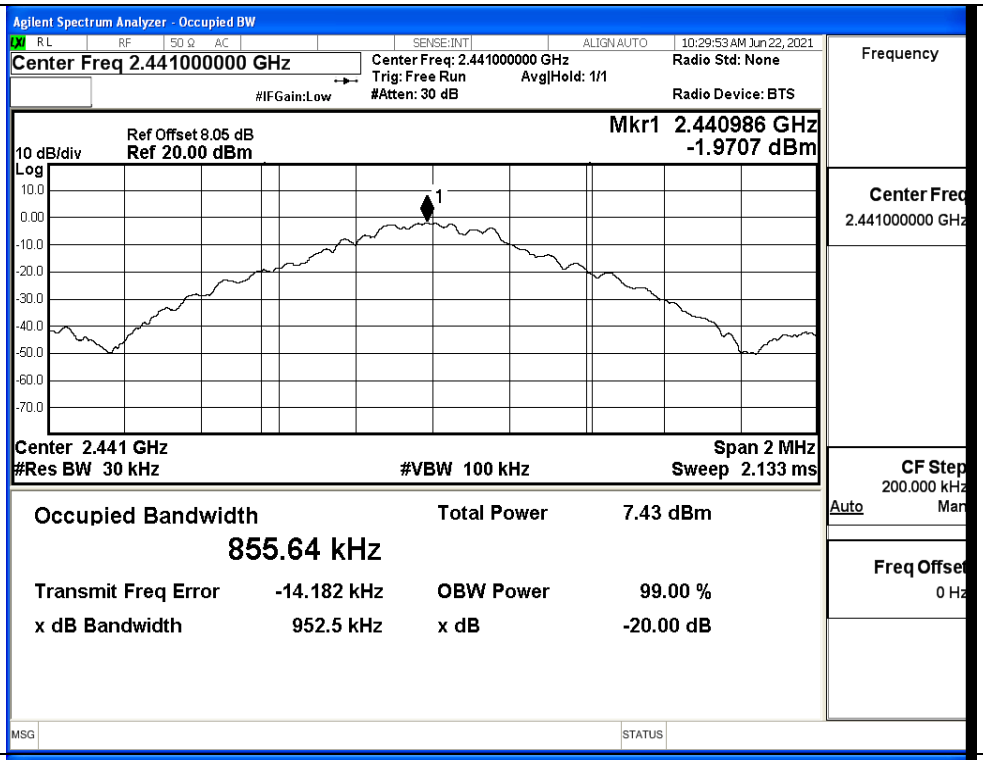
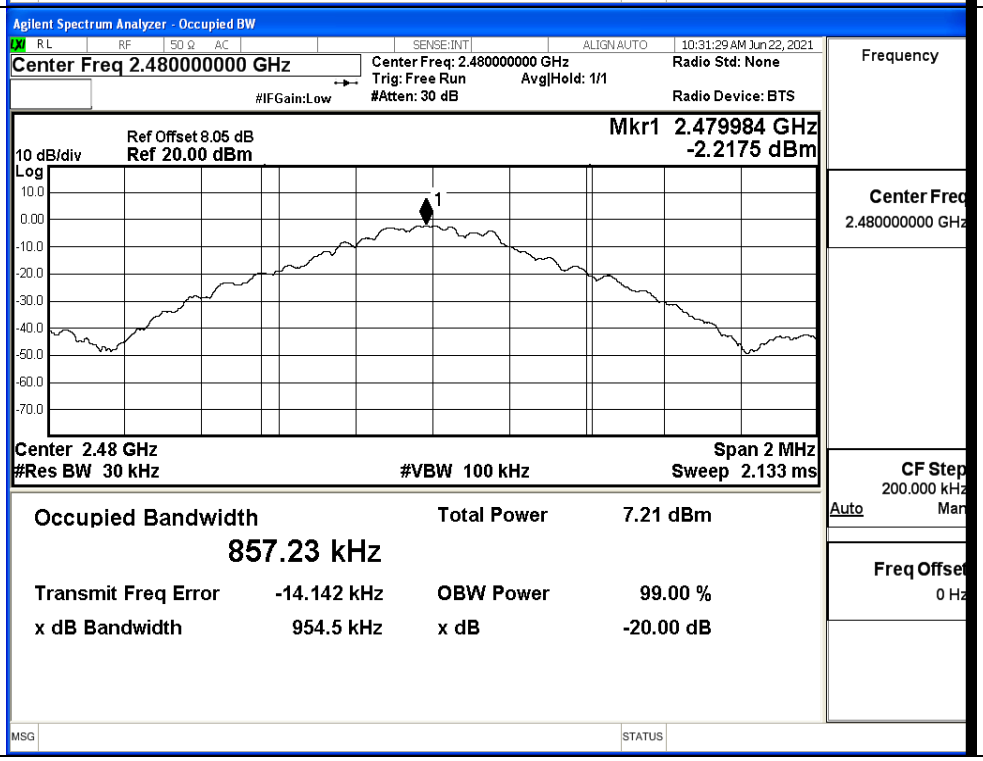
8DPSK/HCH	

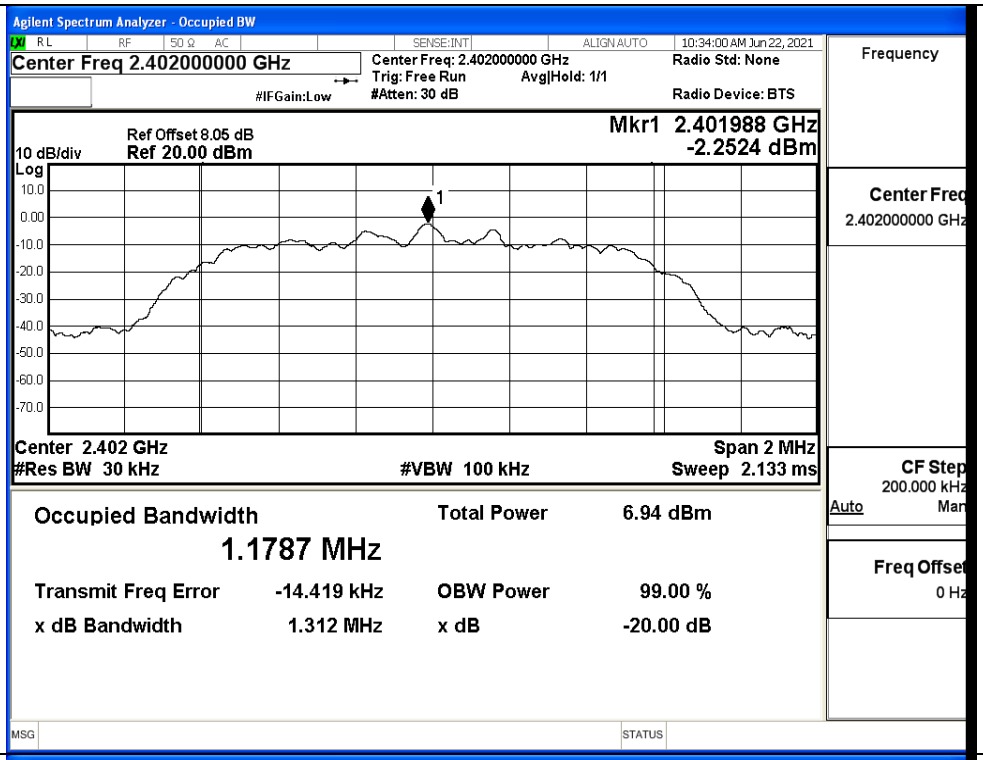
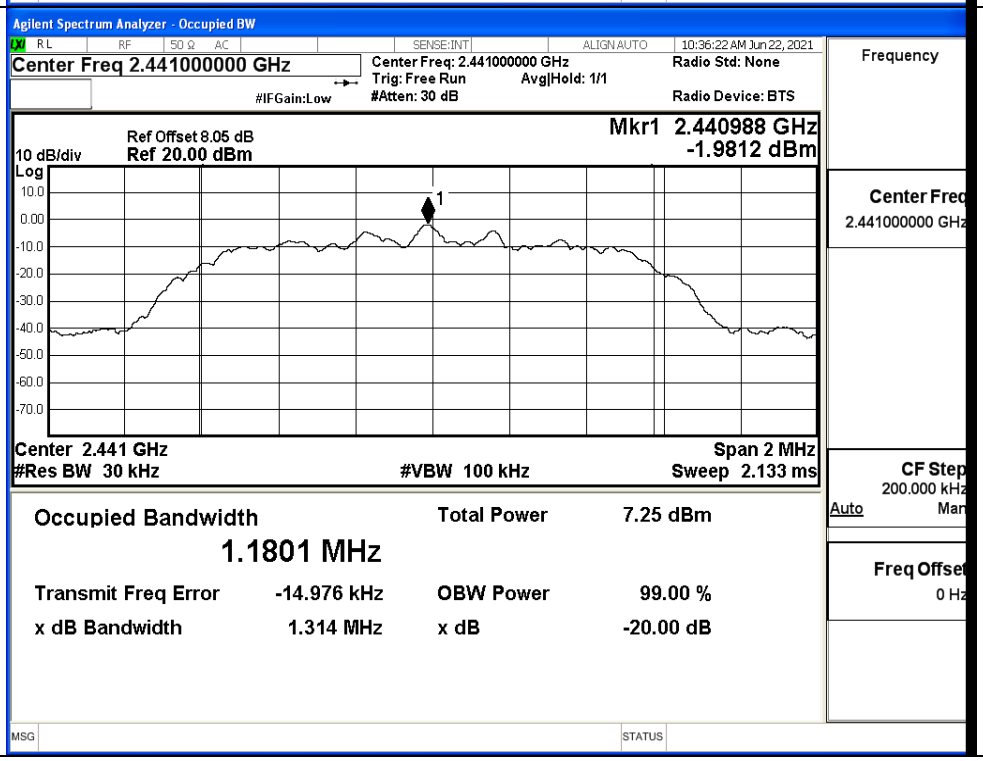
Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:46:30 AM Jun 22, 2021
Center Freq 2.480000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 10/10
TRACE 1 2 3 4 5 6
TYPE M
DET P P P P P
Ref Offset 8.05 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.479 842 50 GHz
1.046 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 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

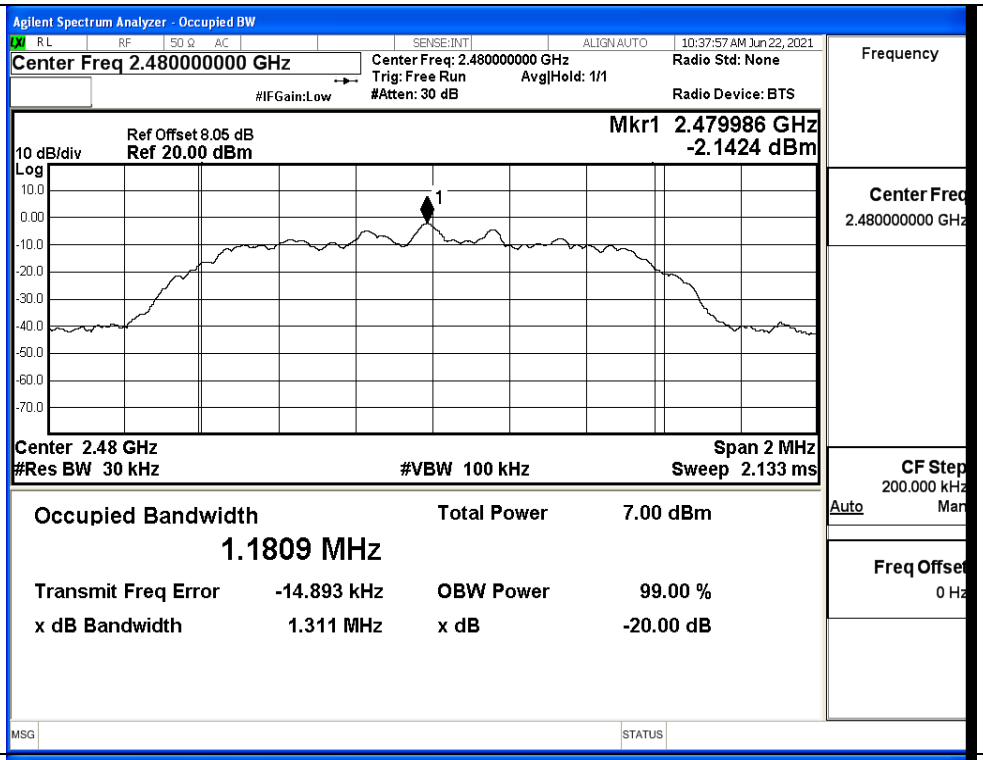
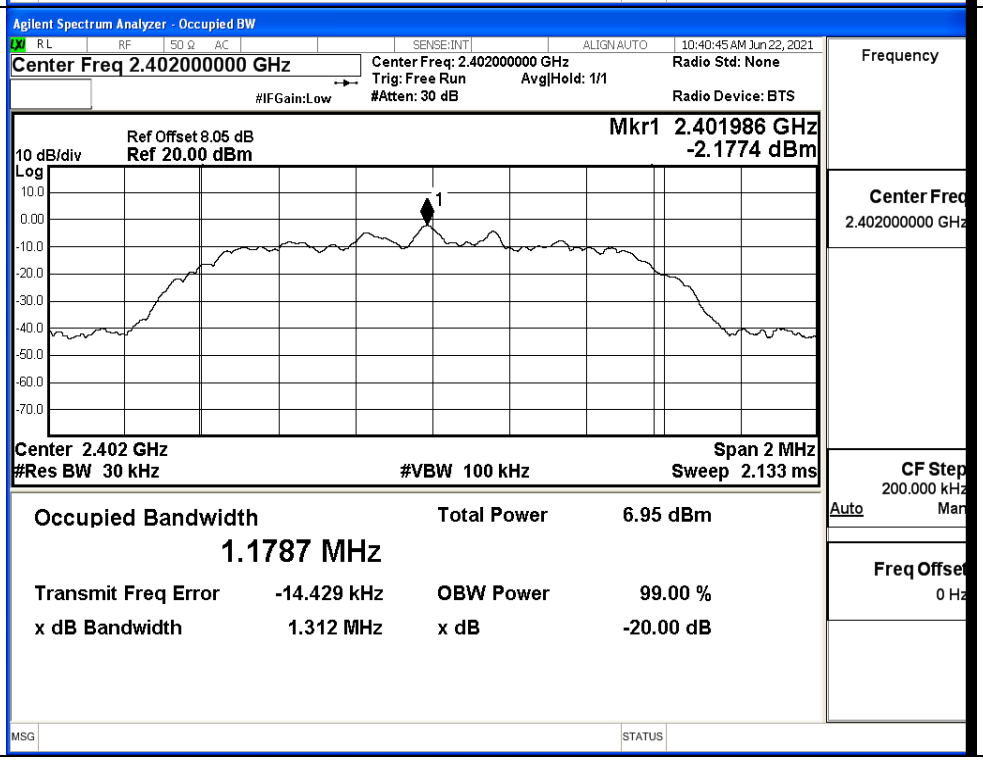
A.2 20dB Bandwidth

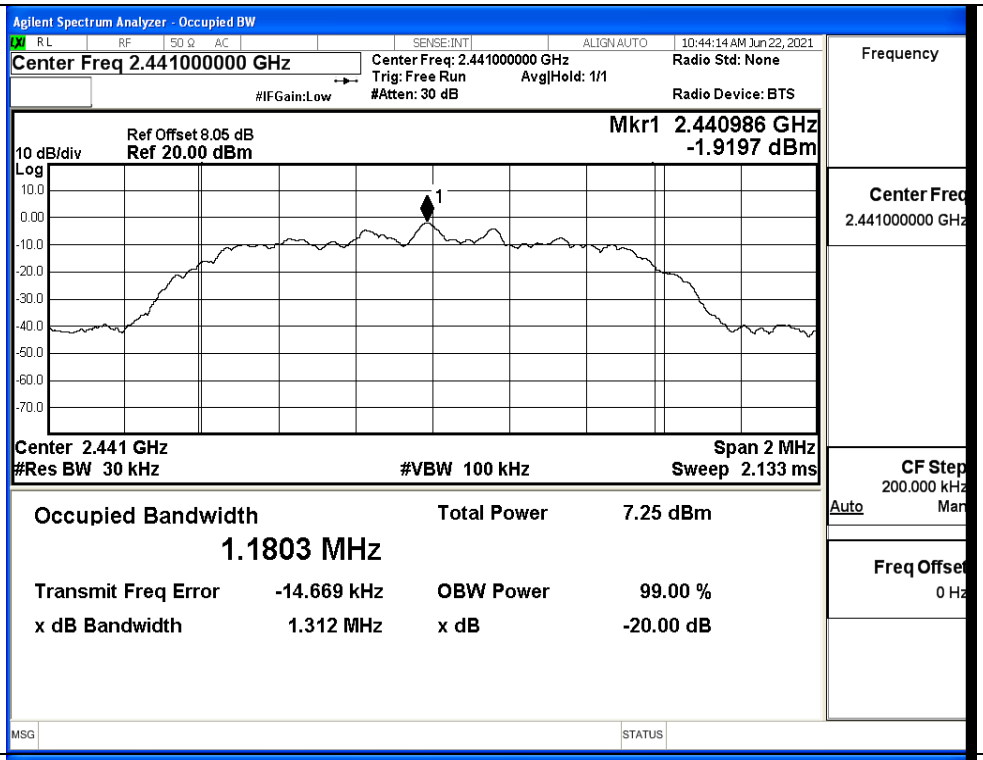
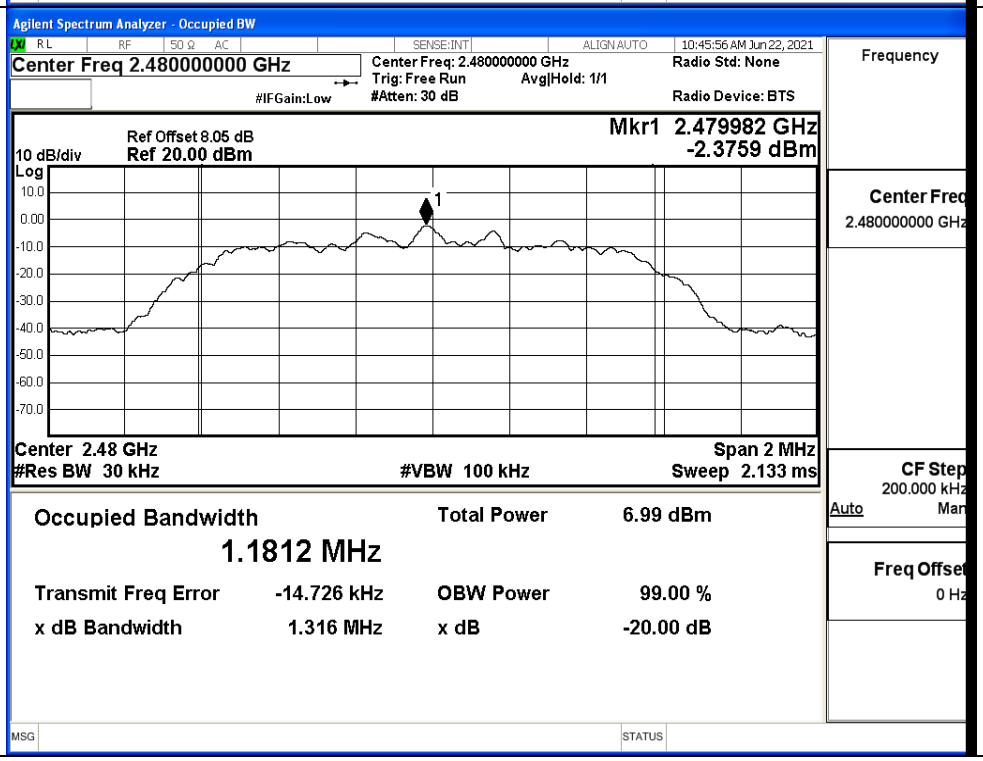
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9554	Not Specified	PASS
	MCH	0.9525	Not Specified	PASS
	HCH	0.9545	Not Specified	PASS
π/4DQPSK	LCH	1.312	Not Specified	PASS
	MCH	1.314	Not Specified	PASS
	HCH	1.311	Not Specified	PASS
8DPSK	LCH	1.312	Not Specified	PASS
	MCH	1.312	Not Specified	PASS
	HCH	1.316	Not Specified	PASS

Test Graphs	
GFSK/LCH	

GFSK/MCH	
GFSK/HCH	

π/4DQPSK/LCH	
π/4DQPSK/MCH	

π/4DQPSK/HCH	
8DPSK/LCH	

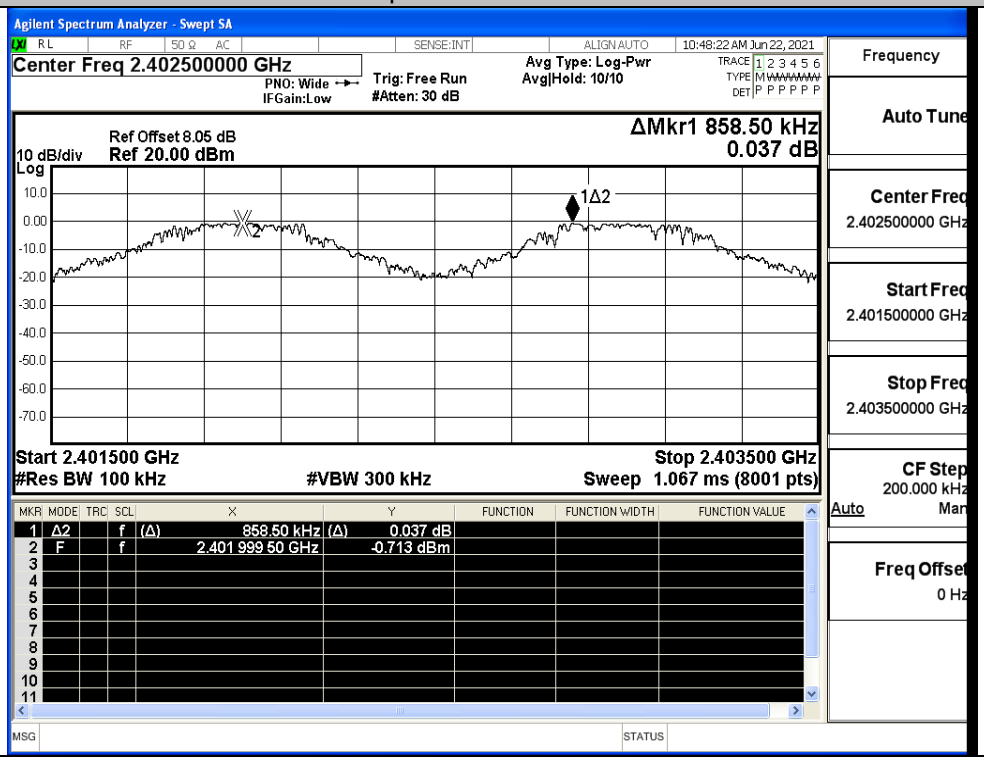
8DPSK/MCH	
8DPSK/HCH	

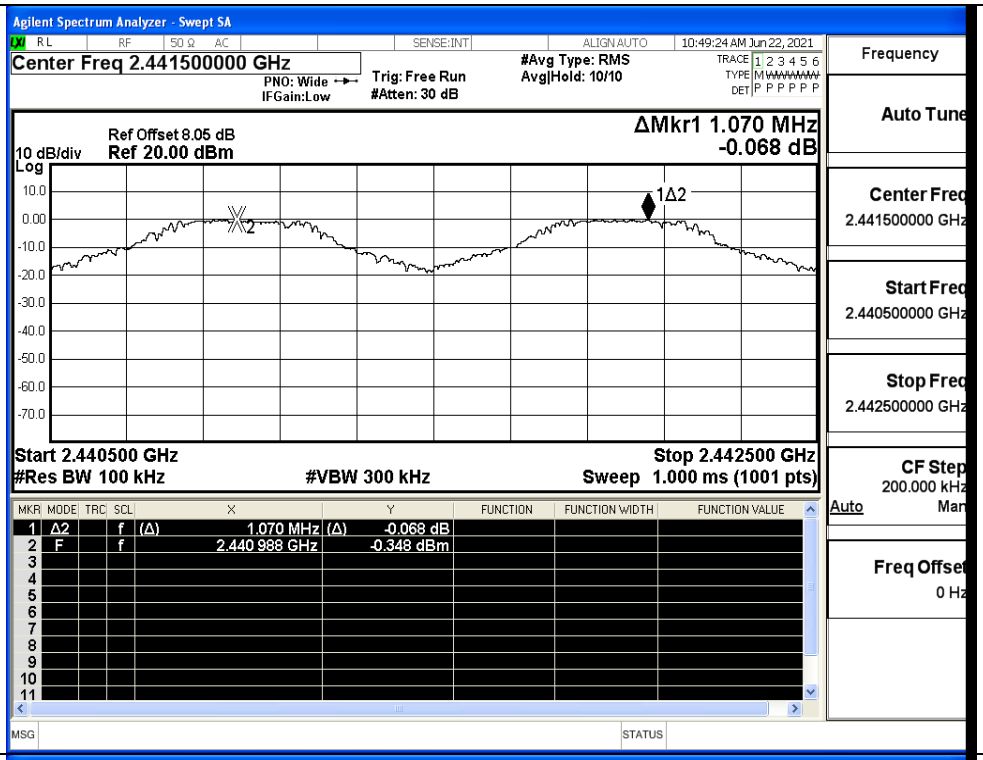
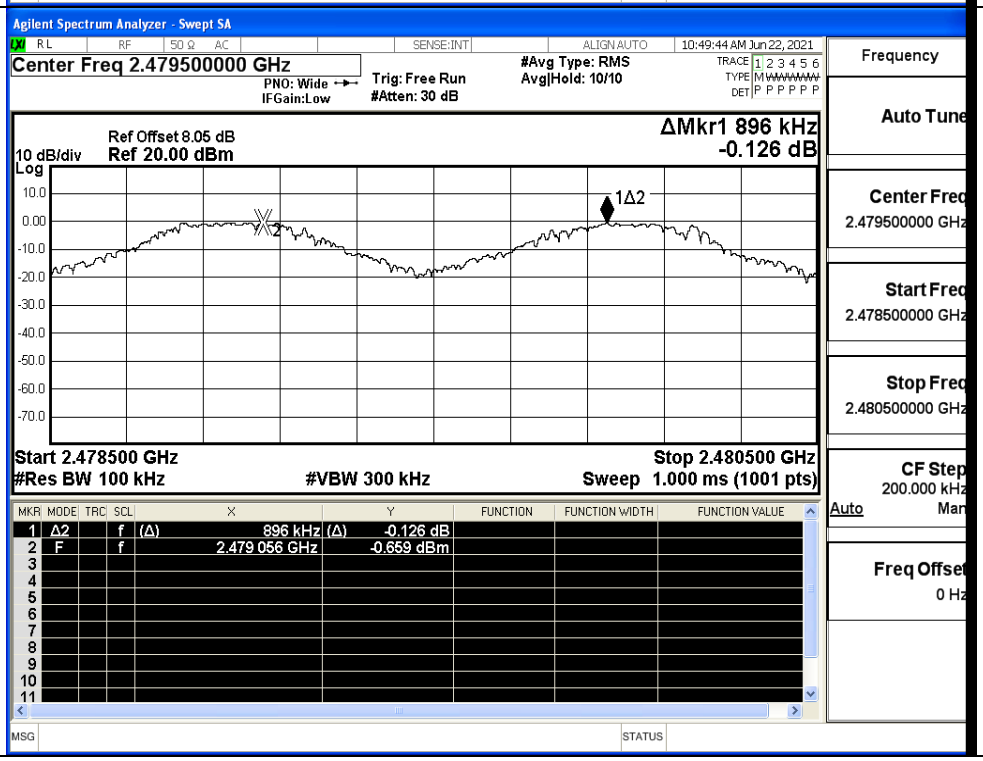
A.3 Carrier Frequency Separation

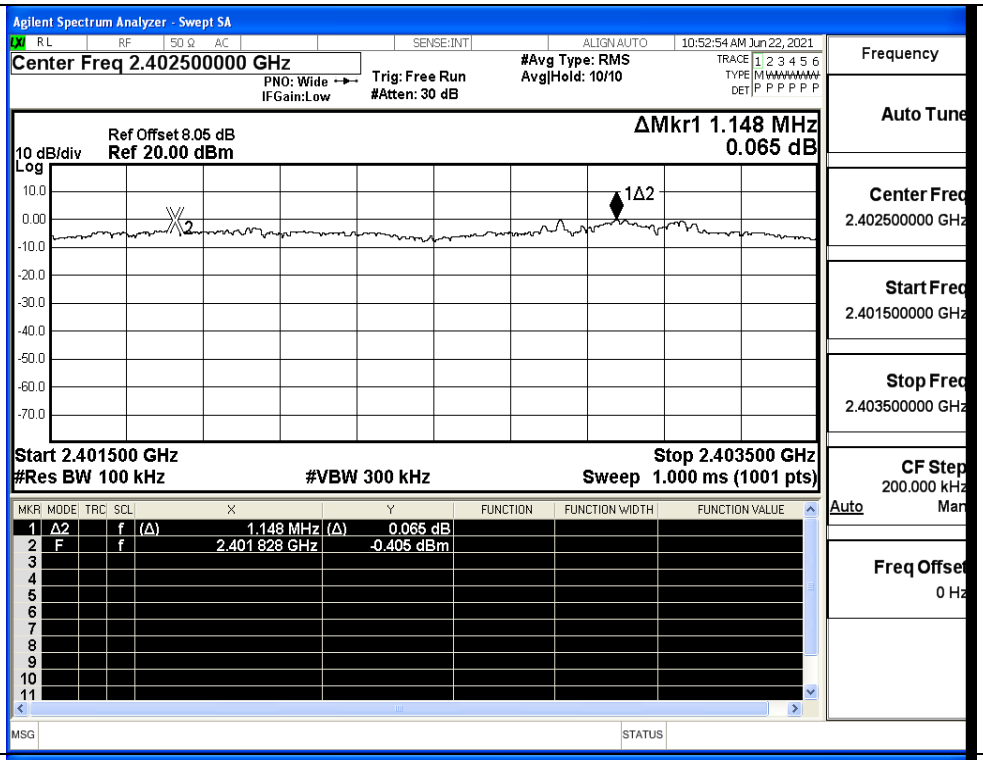
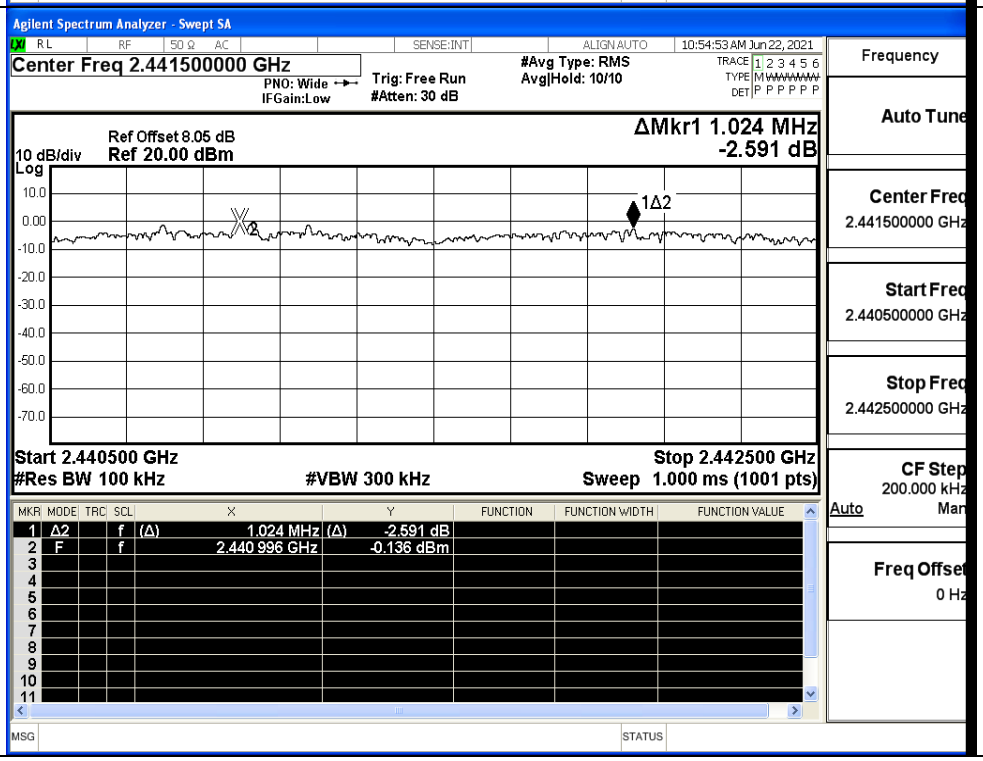
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.859	0.637	PASS
	MCH	1.070	0.637	PASS
	HCH	0.896	0.637	PASS
π/4DQPSK	LCH	1.148	0.876	PASS
	MCH	1.024	0.876	PASS
	HCH	1.192	0.876	PASS
8DPSK	LCH	1.122	0.877	PASS
	MCH	1.060	0.877	PASS
	HCH	0.934	0.877	PASS

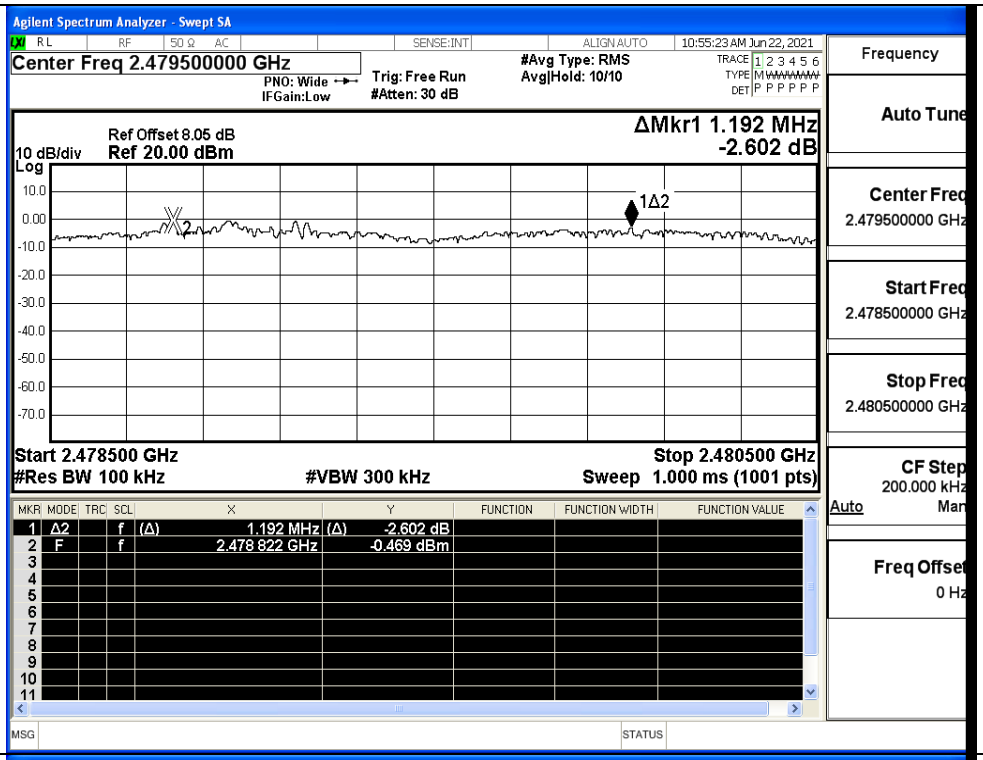
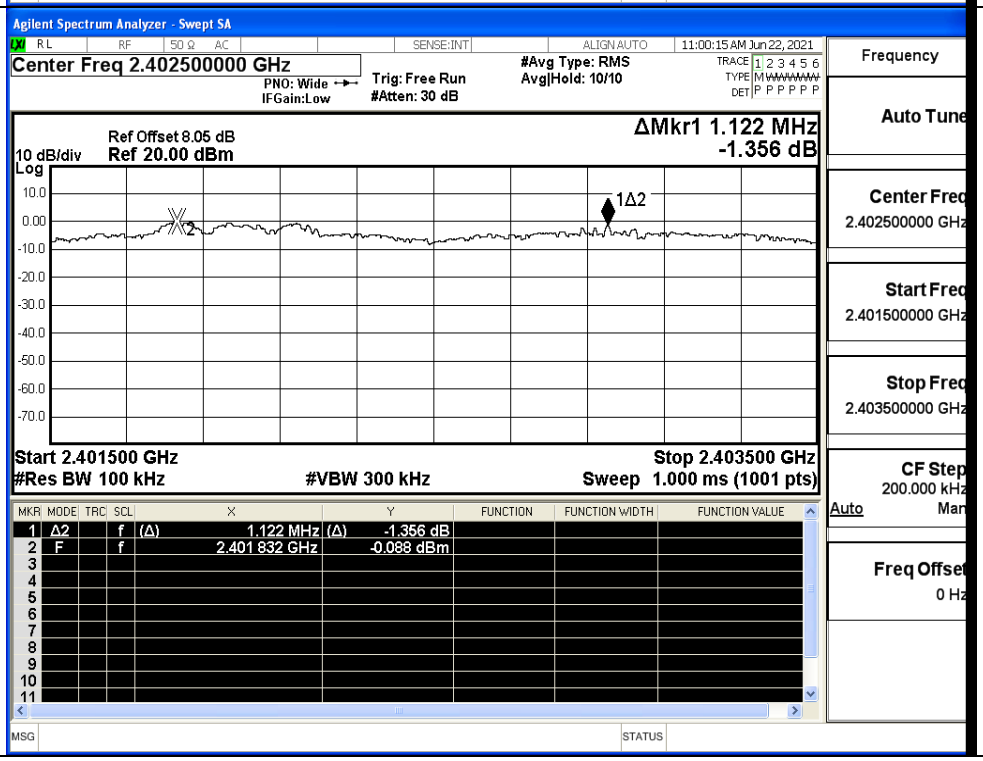
Test Graphs

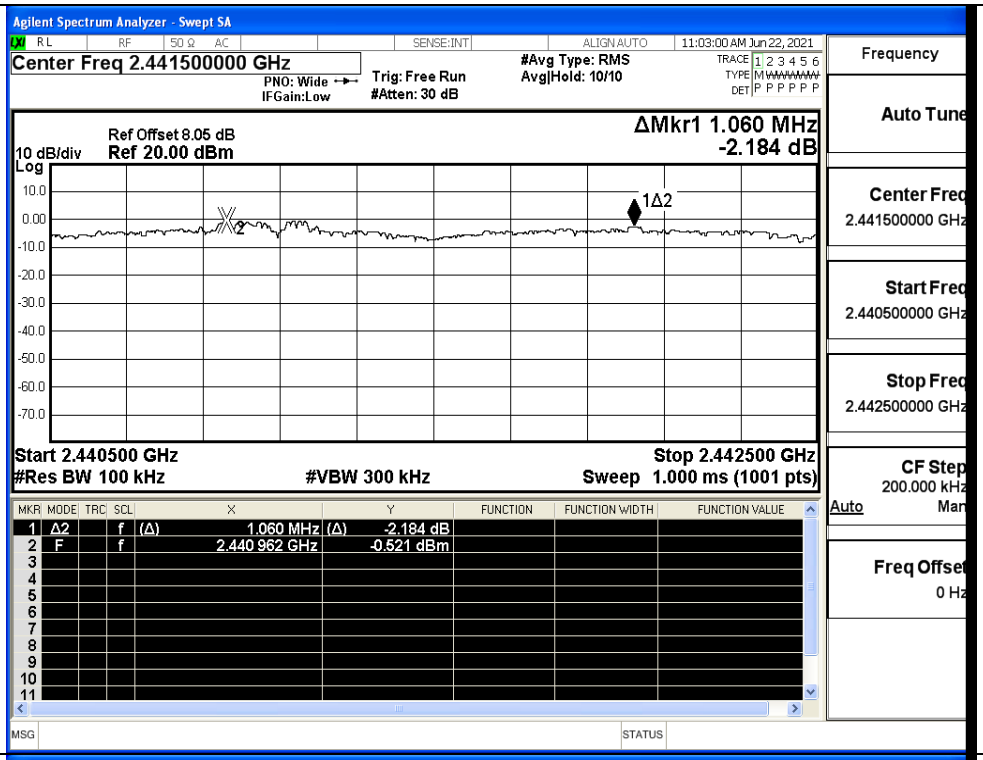
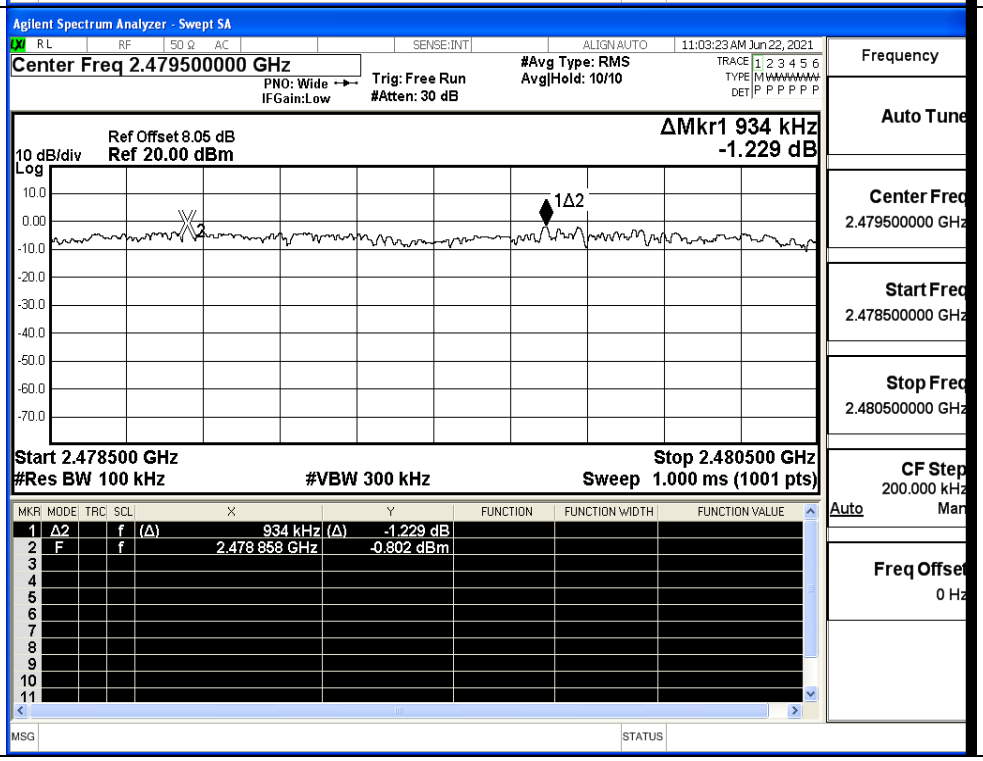
GFSK/LCH



GFSK/MCH	
GFSK/HCH	

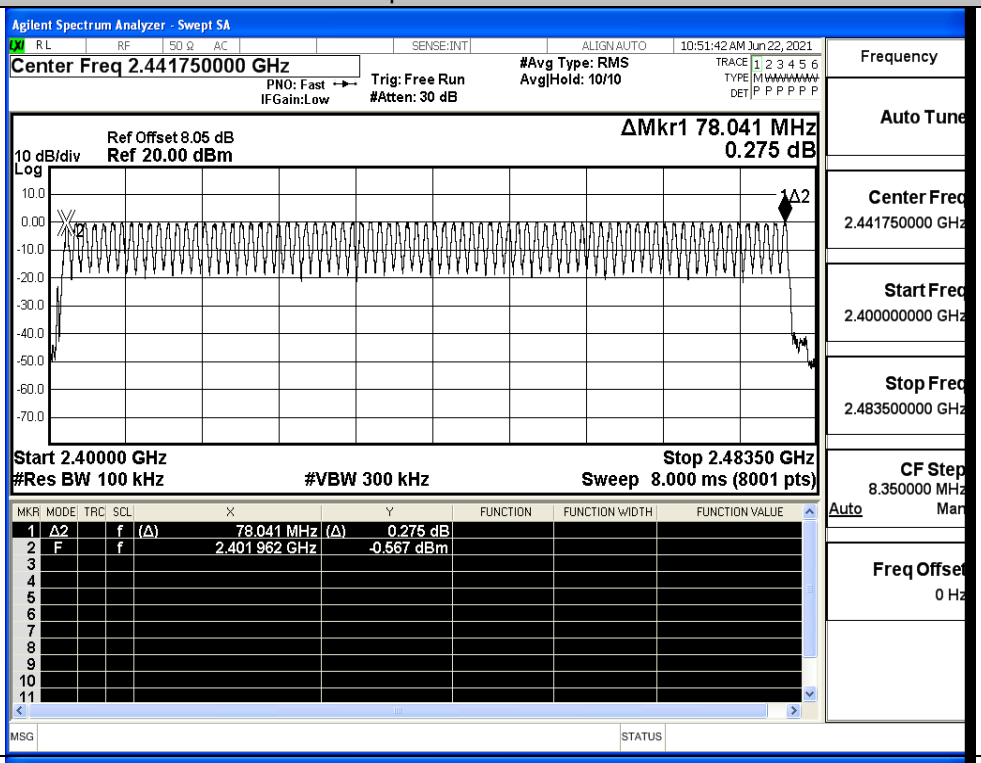
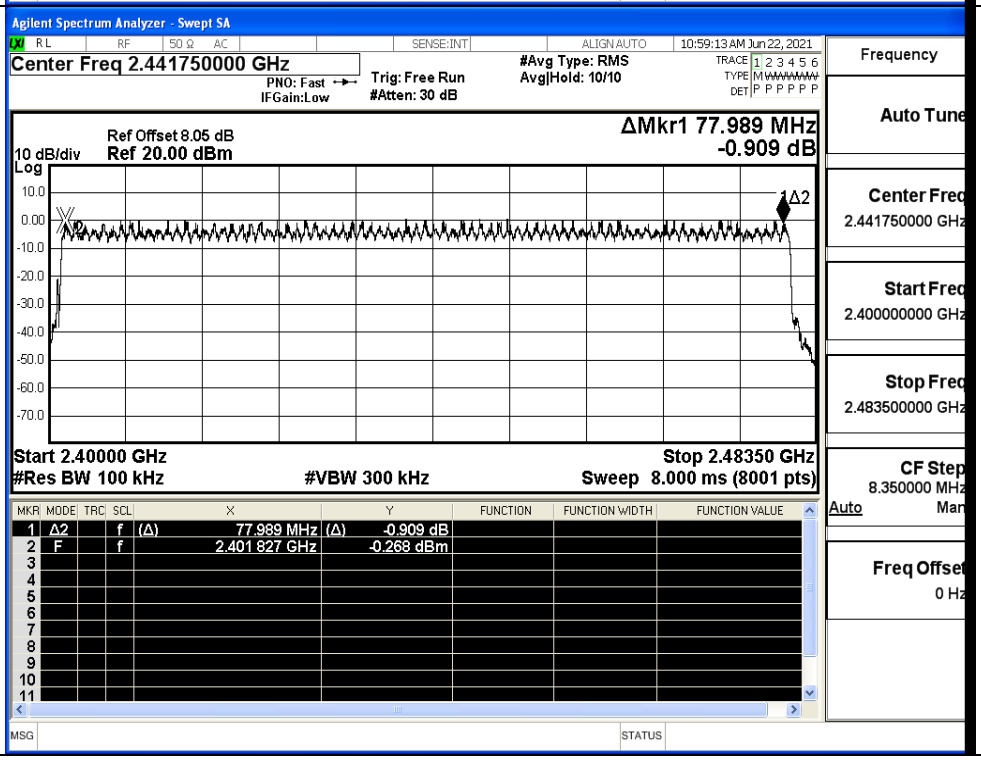
π/4DQPSK/LCH	
π/4DQPSK/MCH	

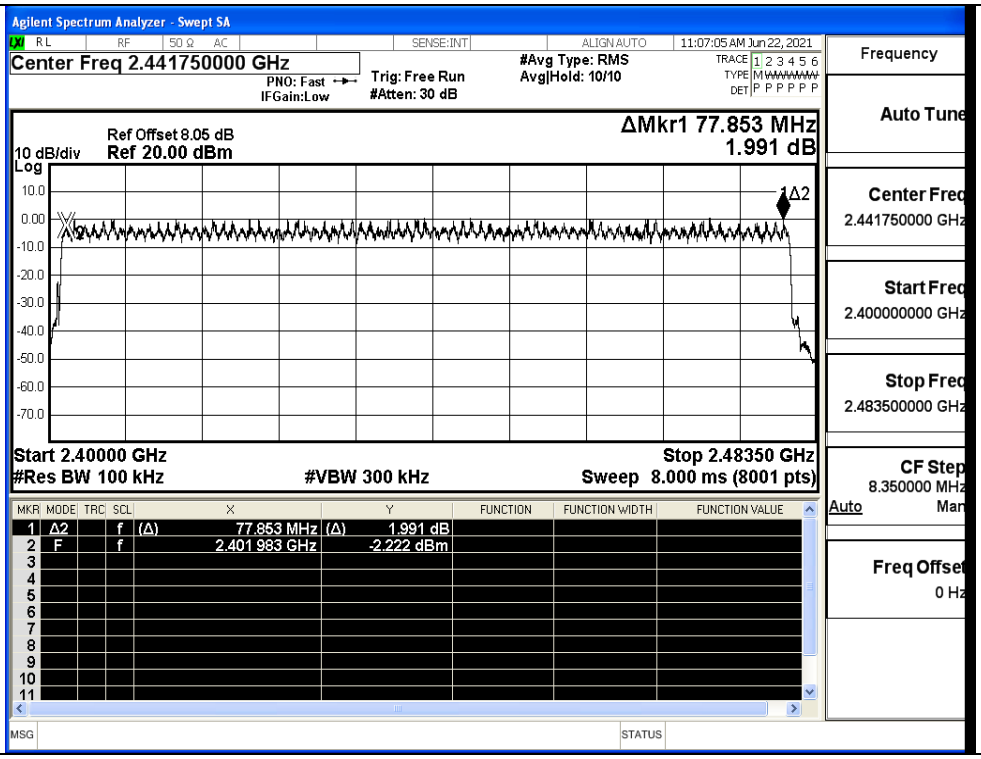
π/4DQPSK/HCH	
8DPSK/LCH	

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	

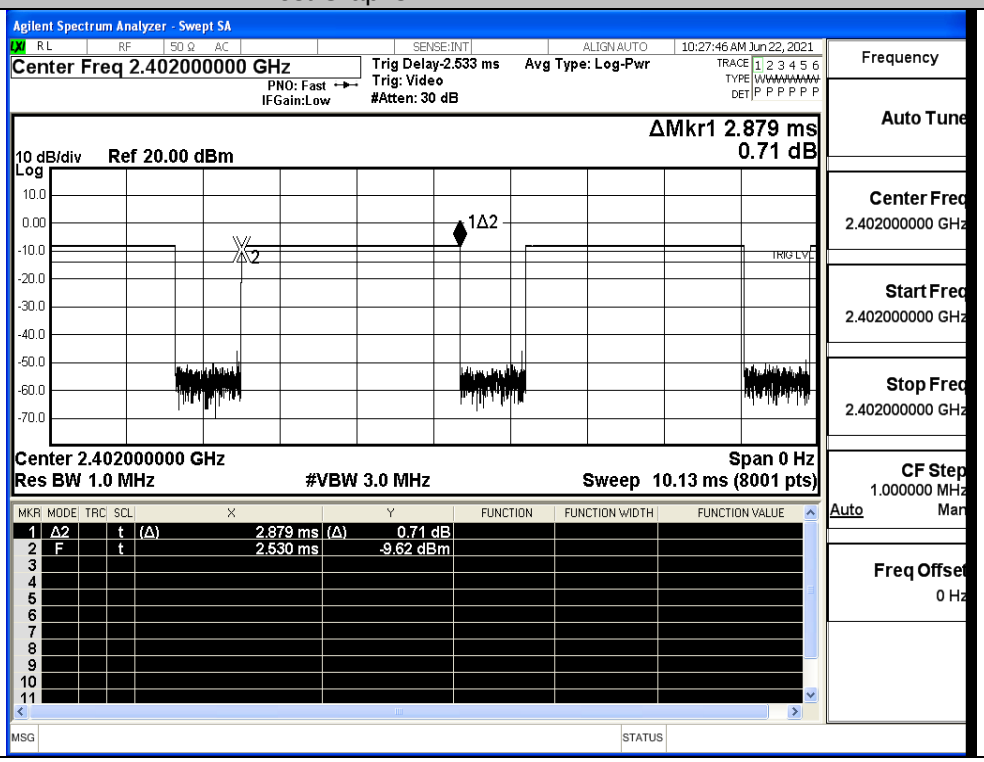
Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441750000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 10/10
11:07:05 AM Jun 22, 2021
Ref Offset 8.05 dB
10 dB/div
Ref 20.00 dBm
ΔMkr1 77.853 MHz
1.991 dB
Start 2.40000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.48350 GHz
Sweep 8.000 ms (8001 pts)
1 Δ2 77.853 MHz 1.991 dB
2 F 2.401 983 GHz -2.222 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

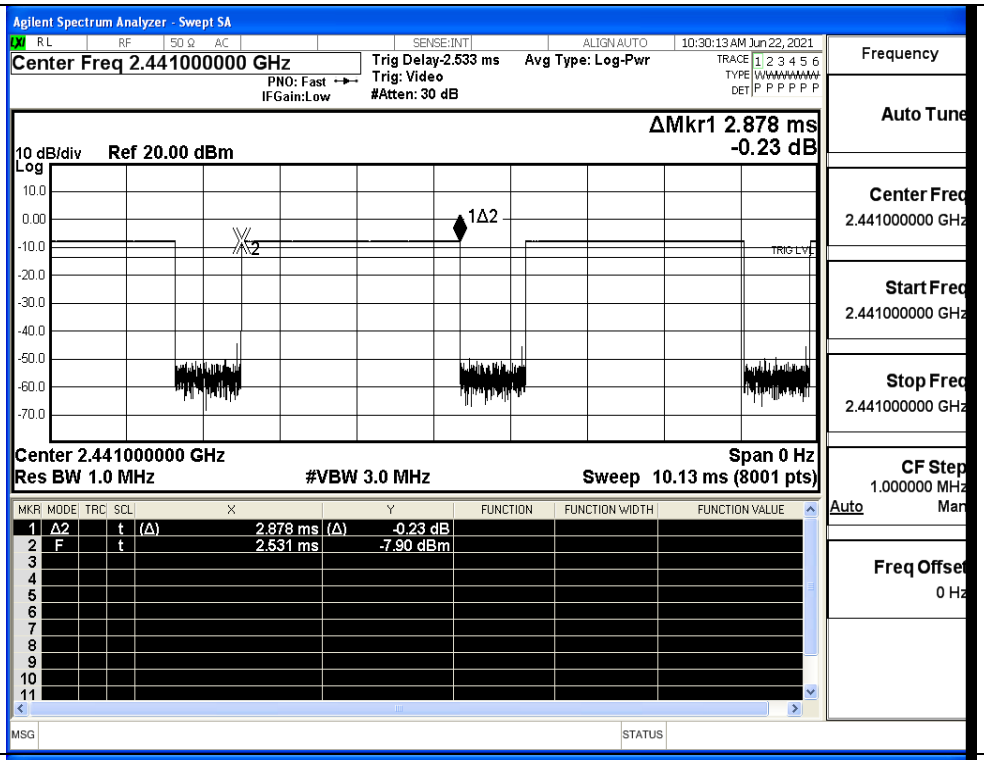
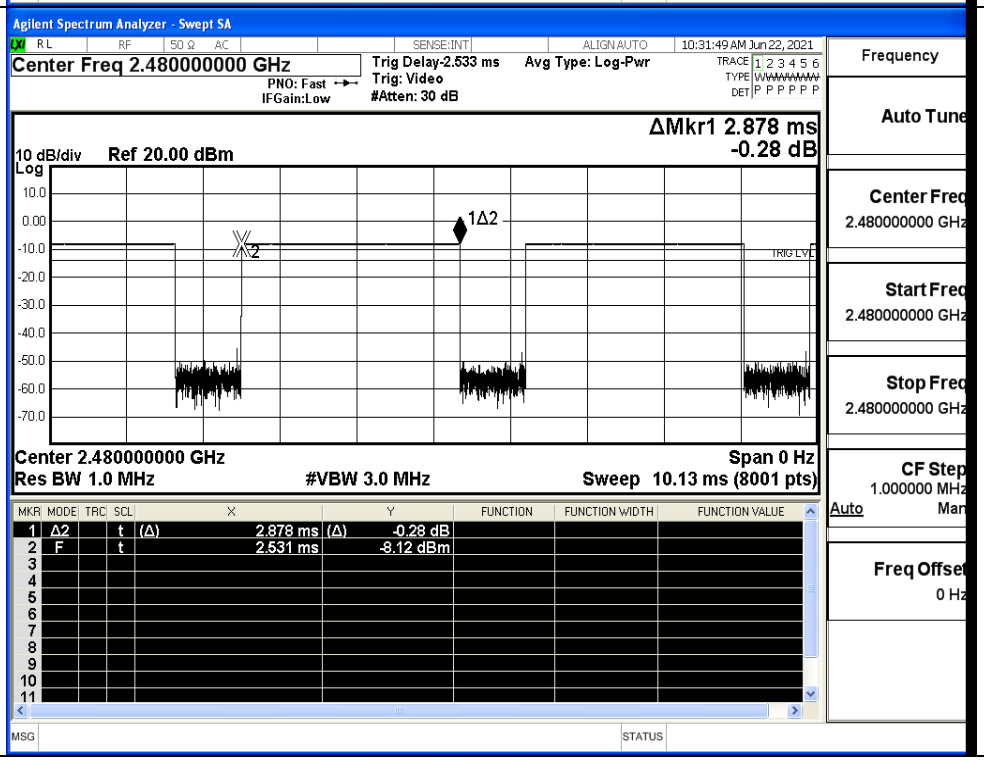
A.5 Dwell Time

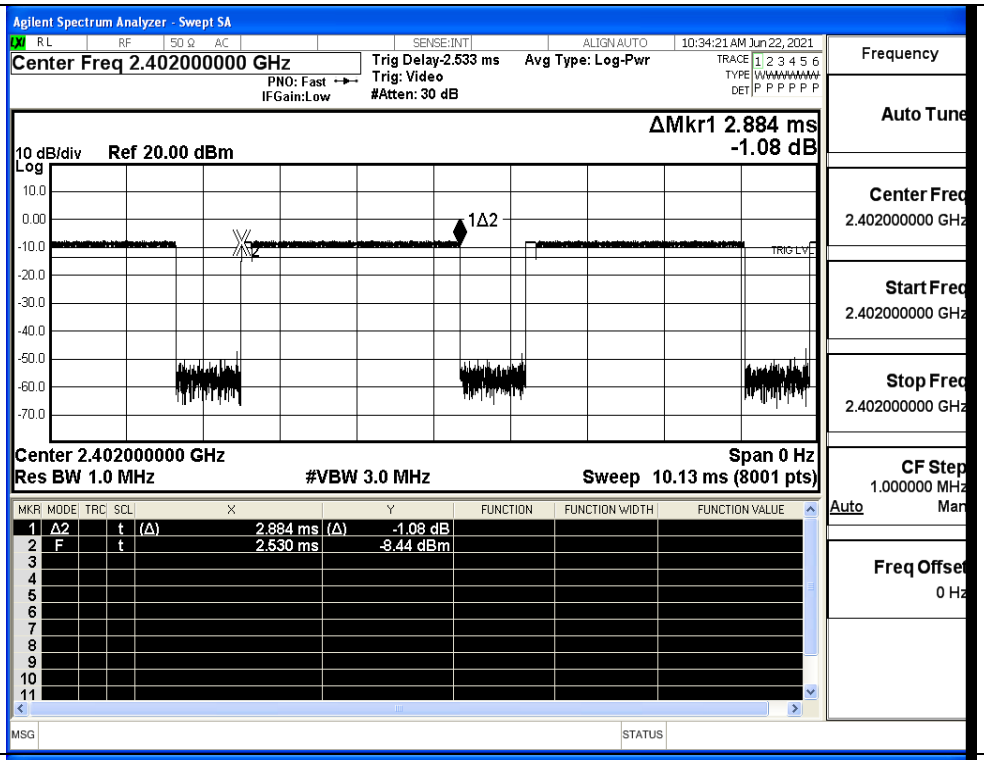
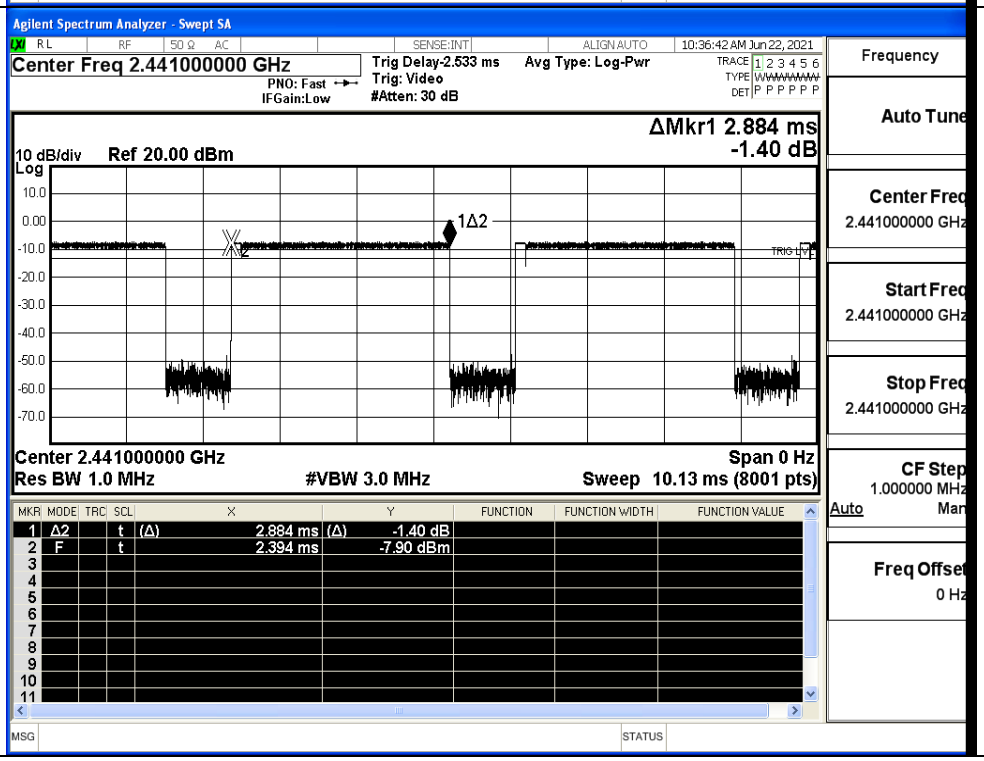
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
π/4DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7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

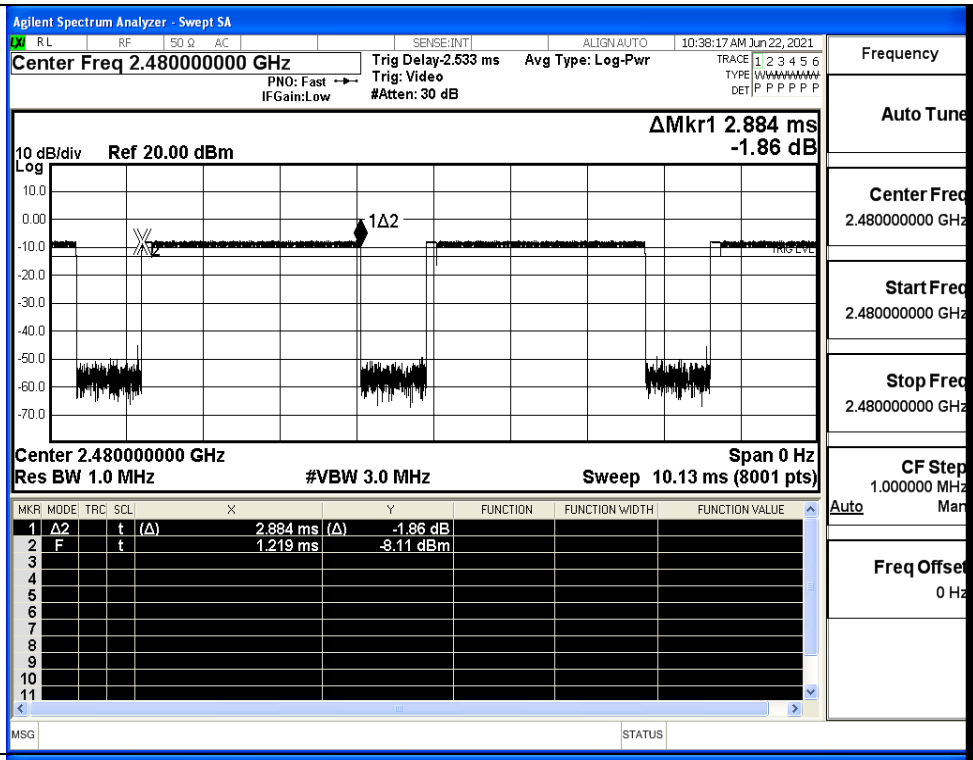
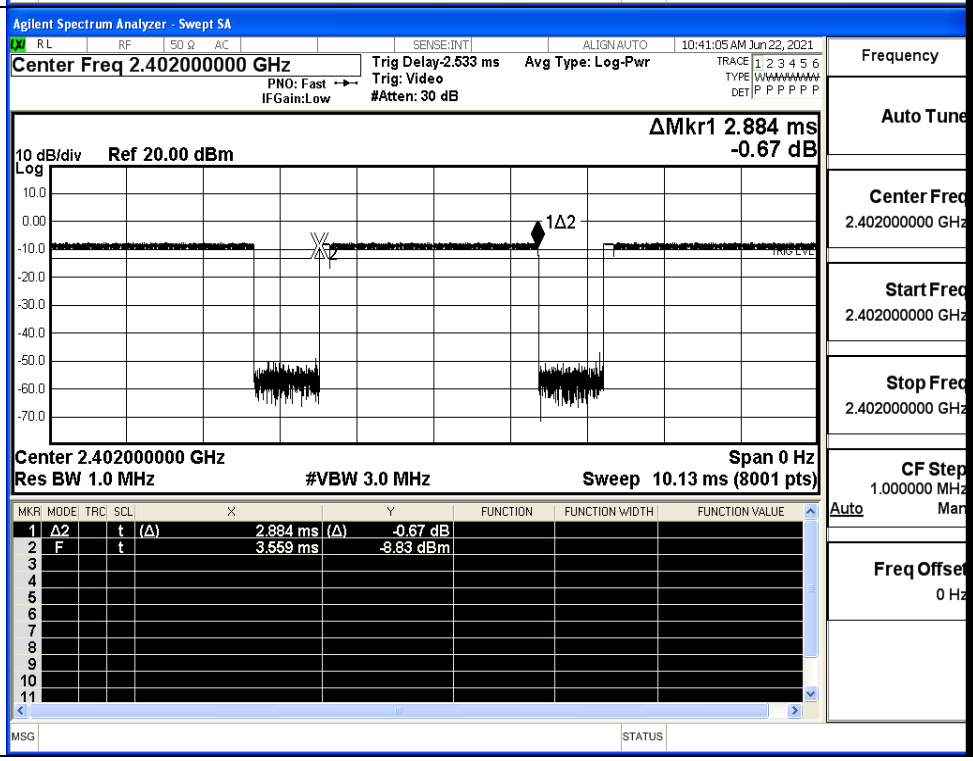
Test Graphs

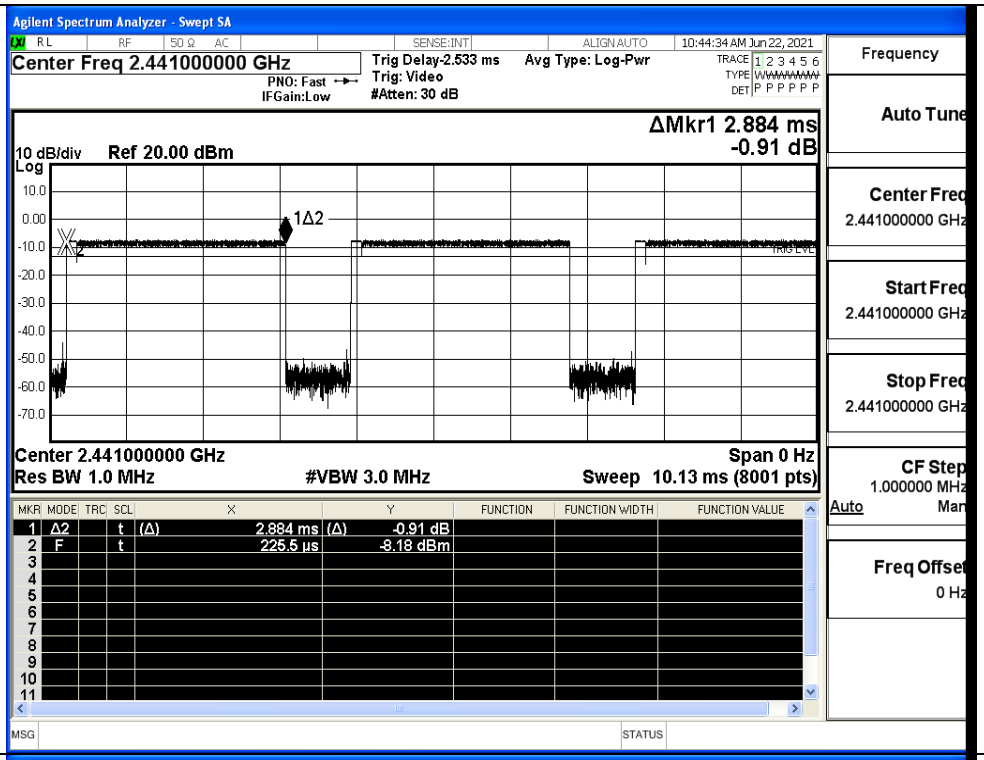
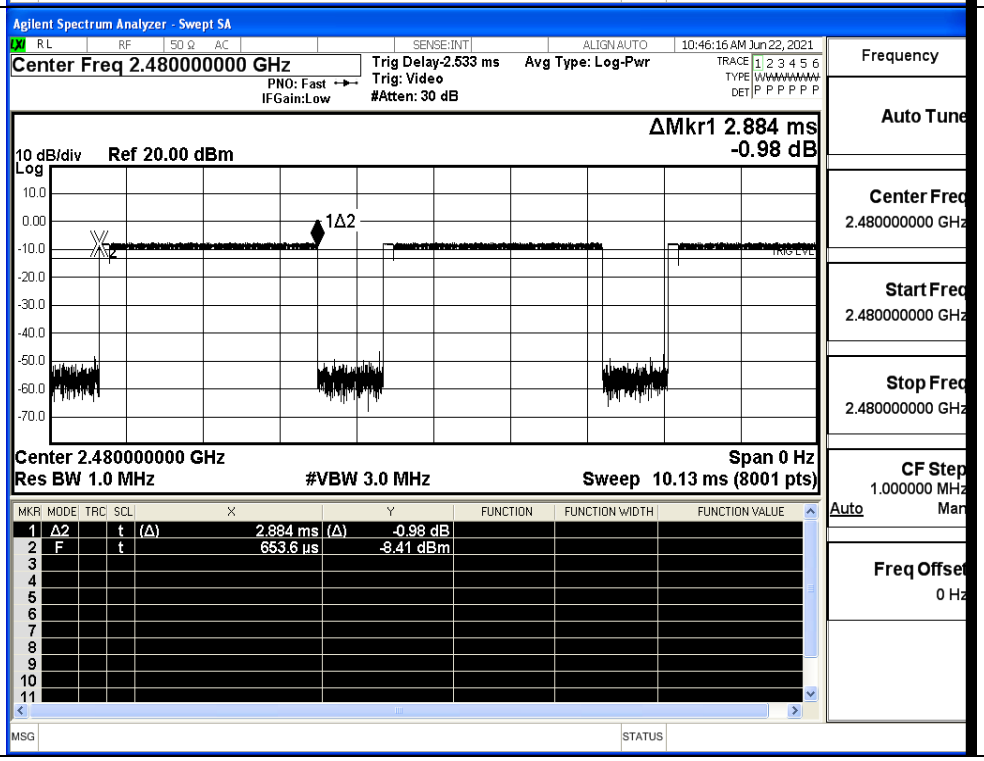
GFSK_DH5/LCH



GFSK_DH5/MCH	
GFSK_DH5/HCH	

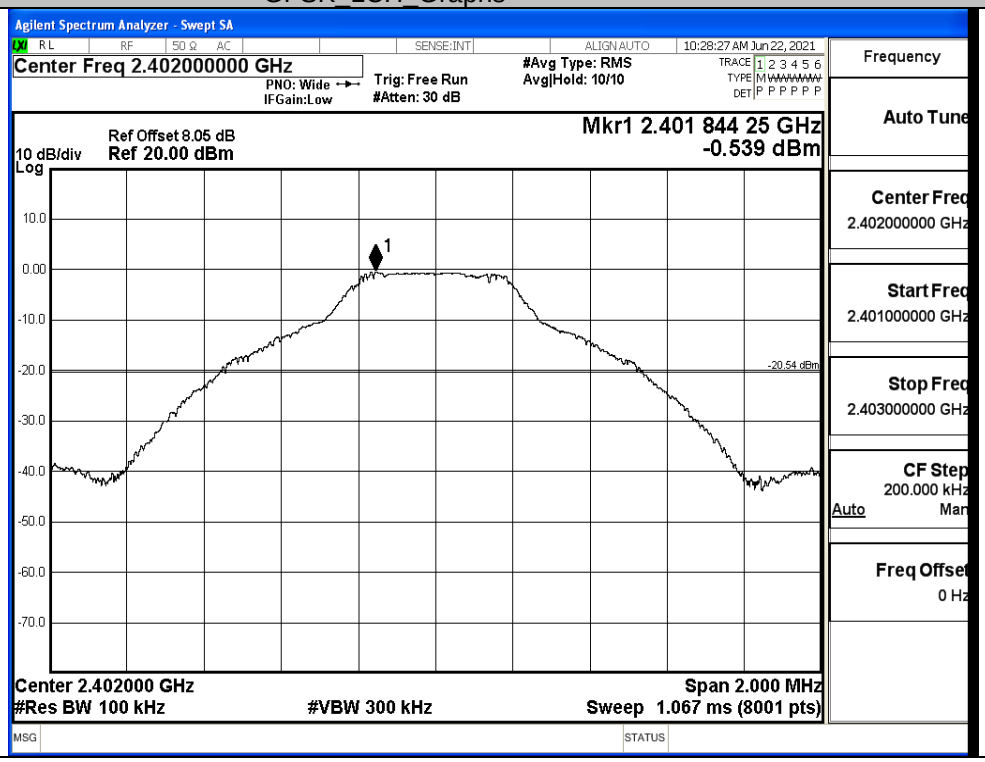
π/4DQPSK _2DH5/LCH	
π/4DQPSK _2DH5/MCH	

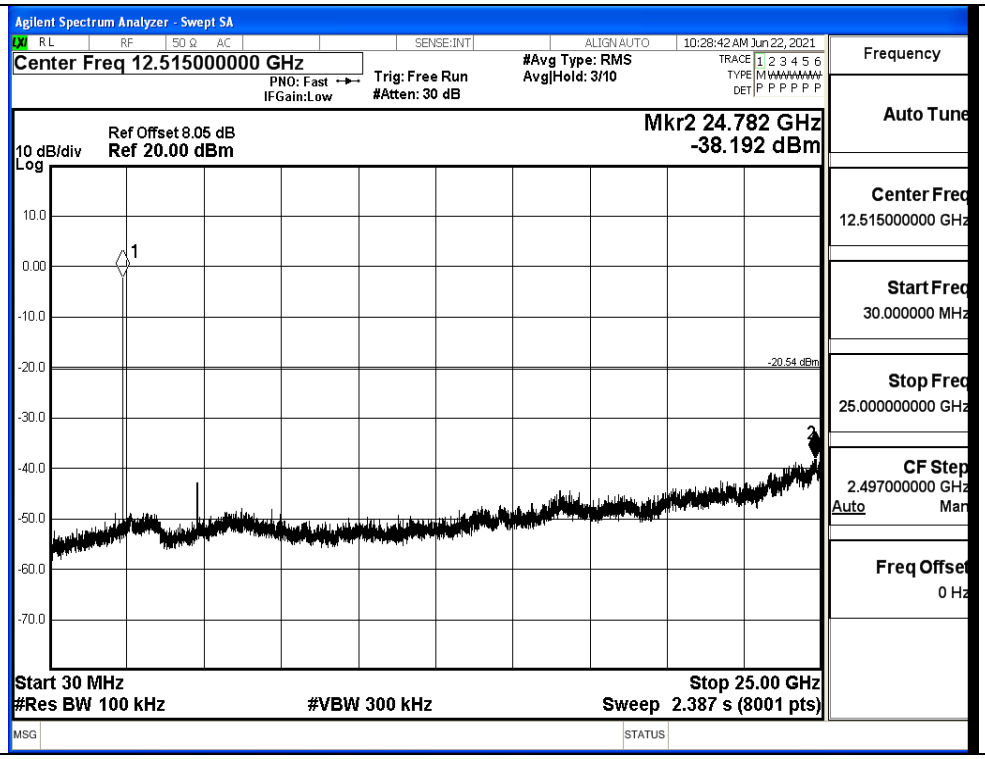
π/4DQPSK _2DH5/HCH	
8DPSK _3DH5/LCH	

8DPSK _3DH5/MCH	
8DPSK _3DH5/HCH	

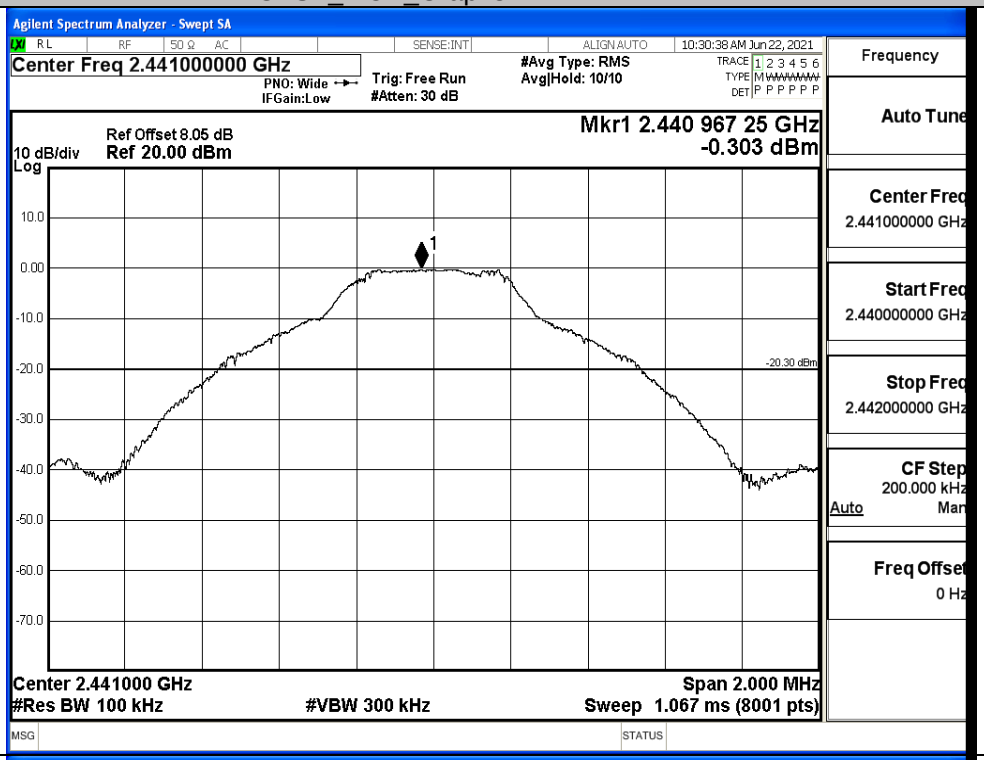
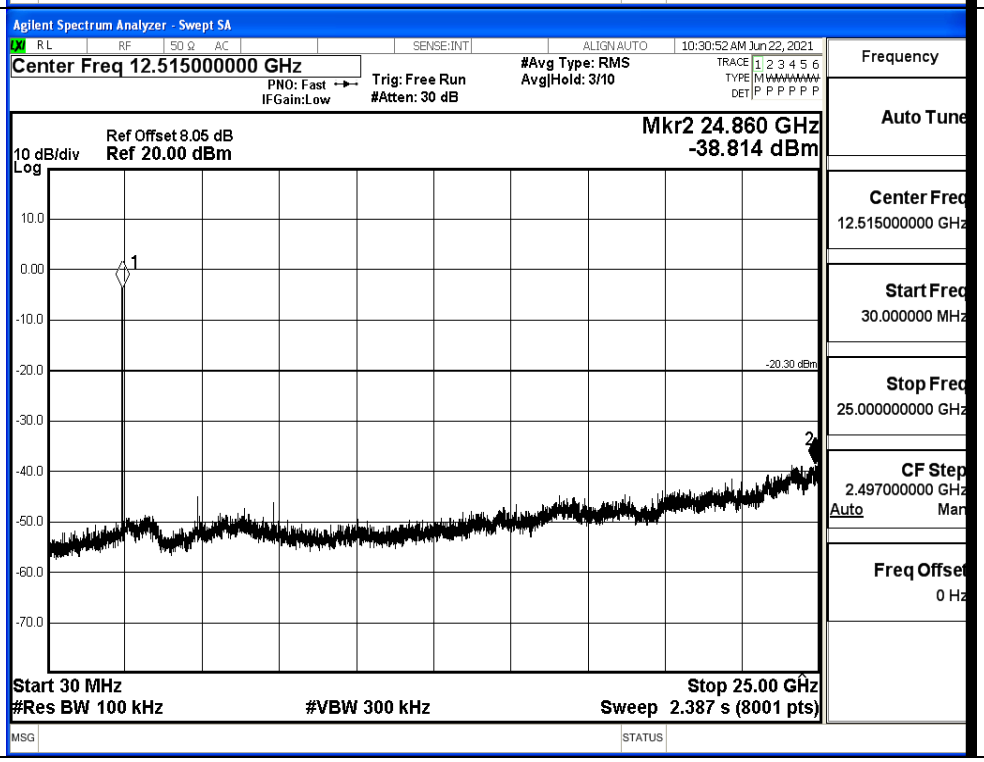
A.6 RF Conducted Spurious Emissions

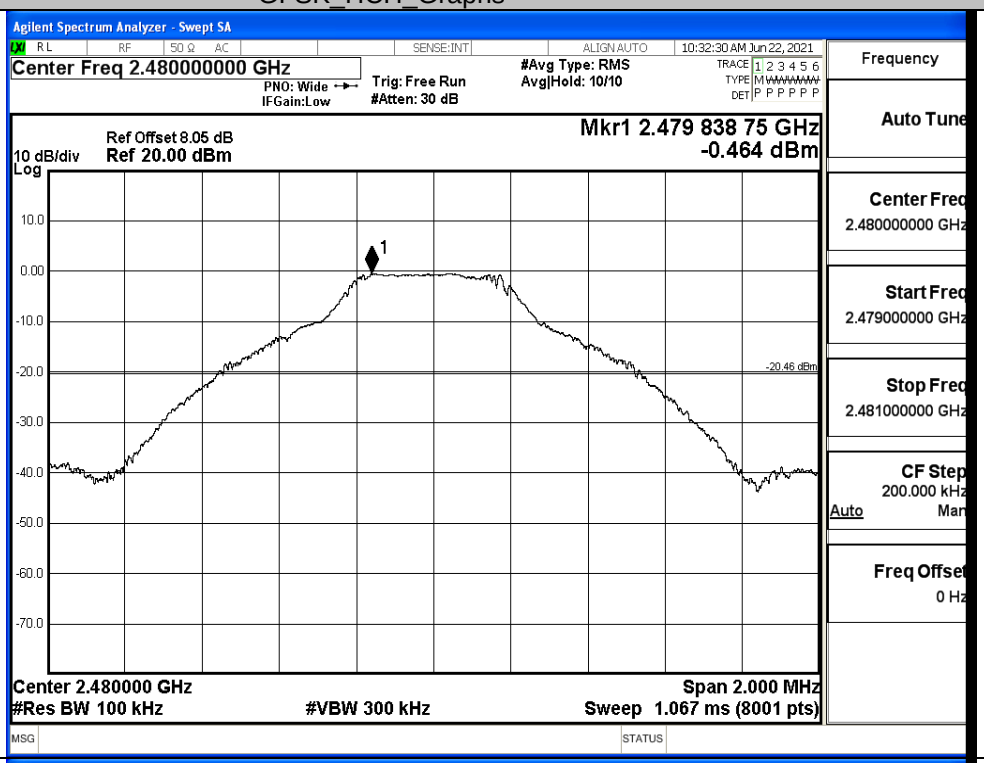
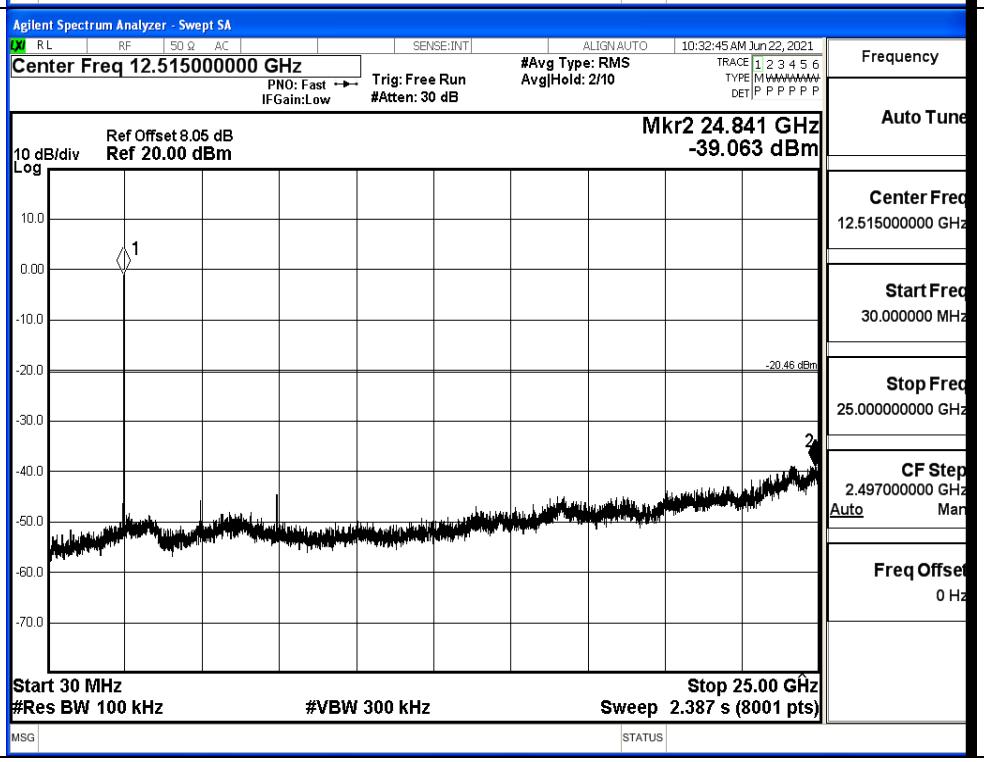
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.539	-38.192	-20.539	PASS
	MCH	-0.303	-38.814	-20.303	PASS
	HCH	-0.464	-39.063	-20.464	PASS
π/4DQPSK	LCH	-0.139	-38.176	-20.139	PASS
	MCH	0.181	-36.840	-19.819	PASS
	HCH	-0.107	-38.090	-20.107	PASS
8DPSK	LCH	-0.34	-37.598	-20.340	PASS
	MCH	0.205	-38.057	-19.795	PASS
	HCH	-0.076	-38.212	-20.076	PASS

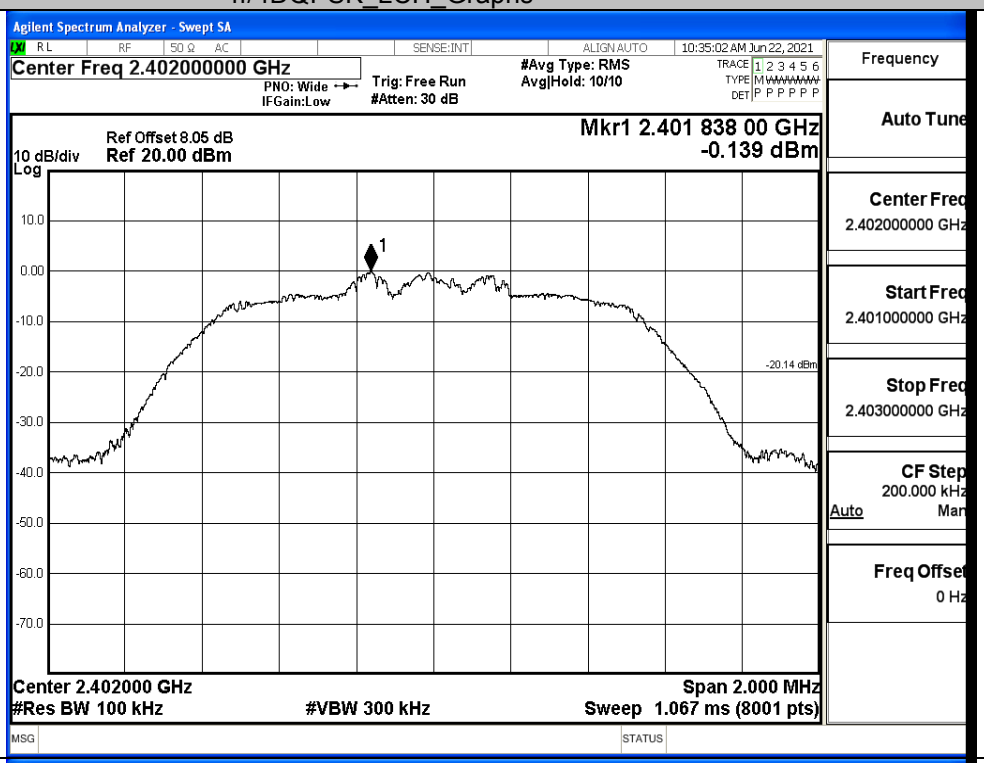
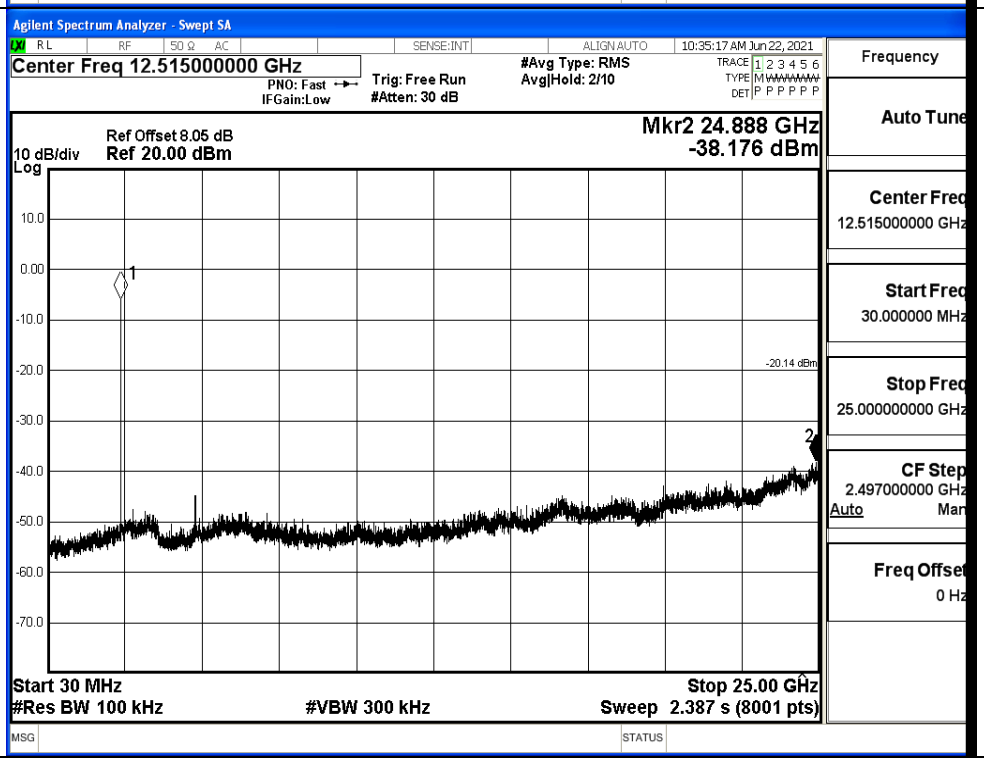
GFSK_LCH_Graphs	
Pref	

Puw		

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:28:42 AM Jun 22, 2021
Center Freq 12.515000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 3/10
TRACE 1 2 3 4 5 6
TYPE M
DET P P P P P
Ref Offset 8.05 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr2 24.782 GHz
-38.192 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-20.54 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.387 s (8001 pts)
MSG
STATUS
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		

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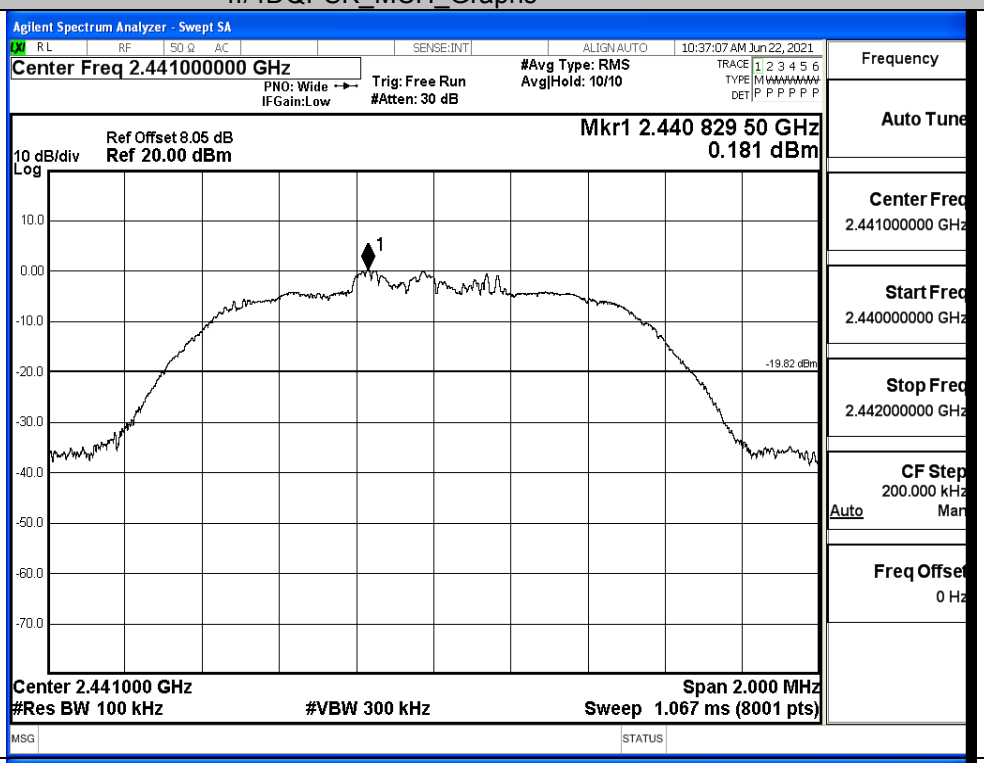
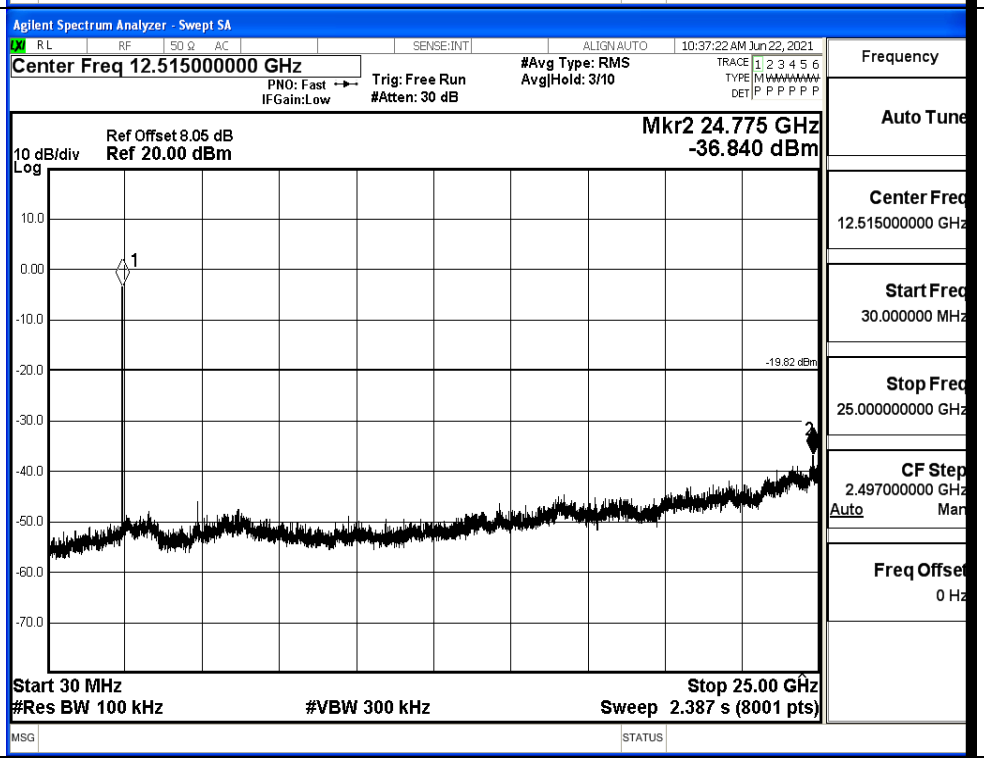
Pref		
Puw		

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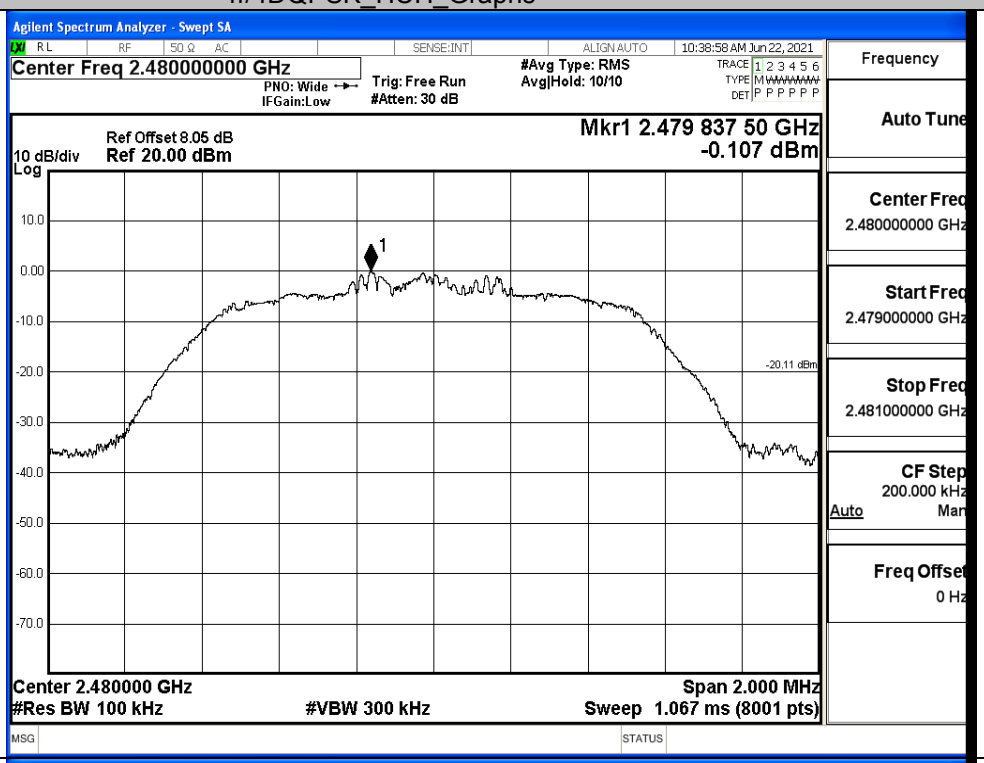
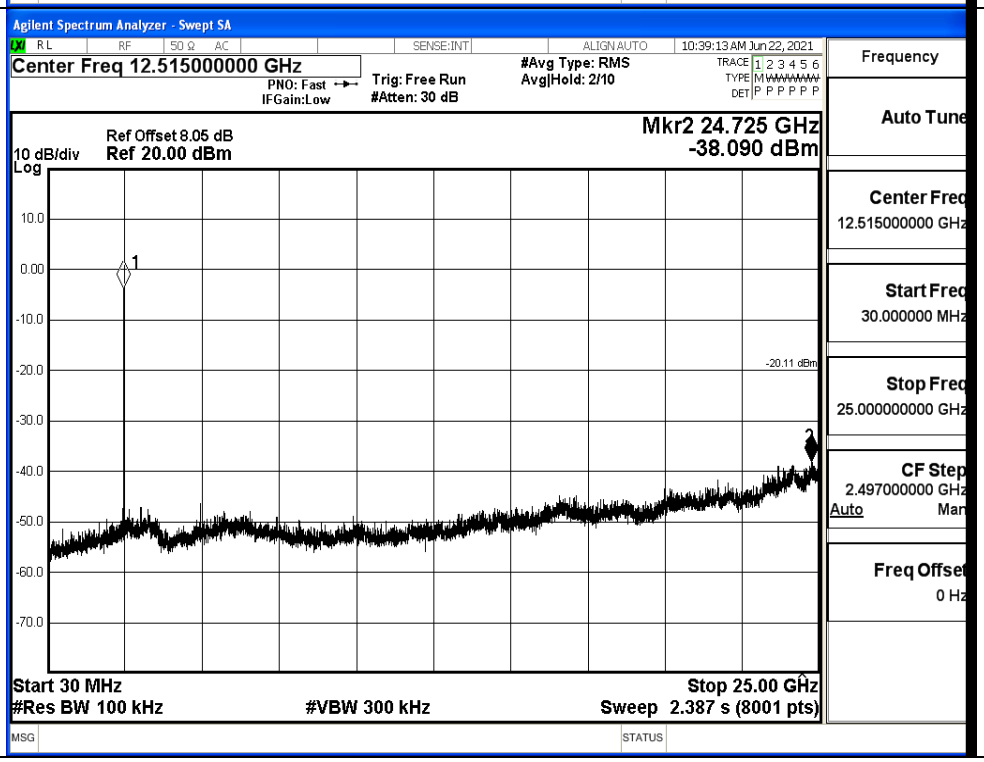
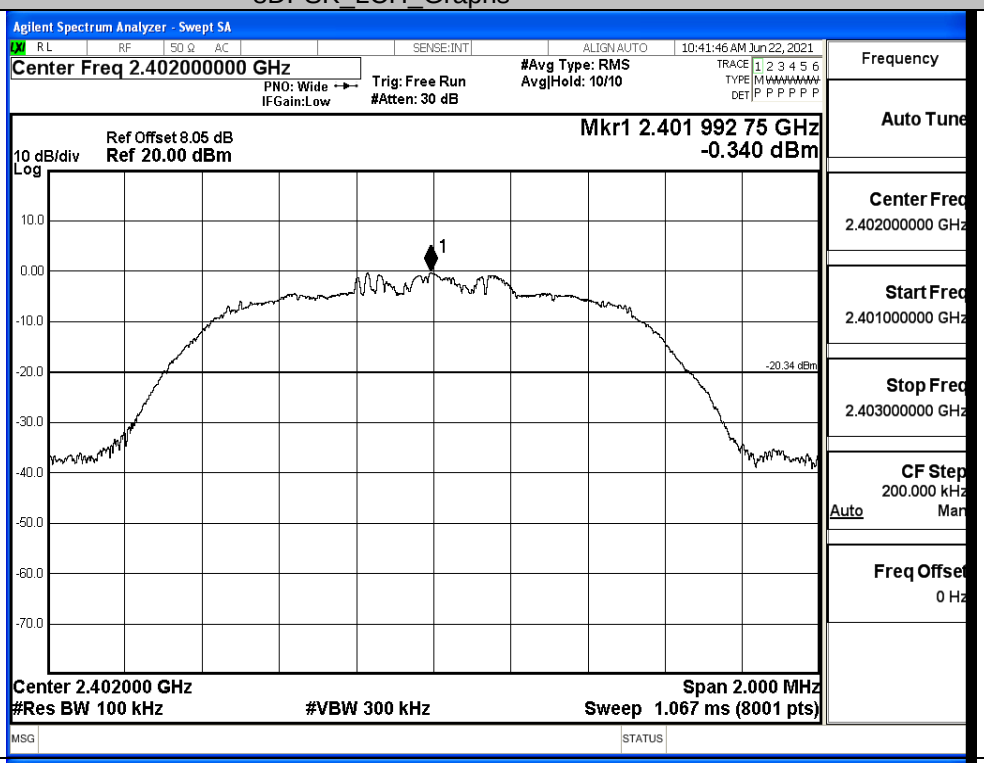
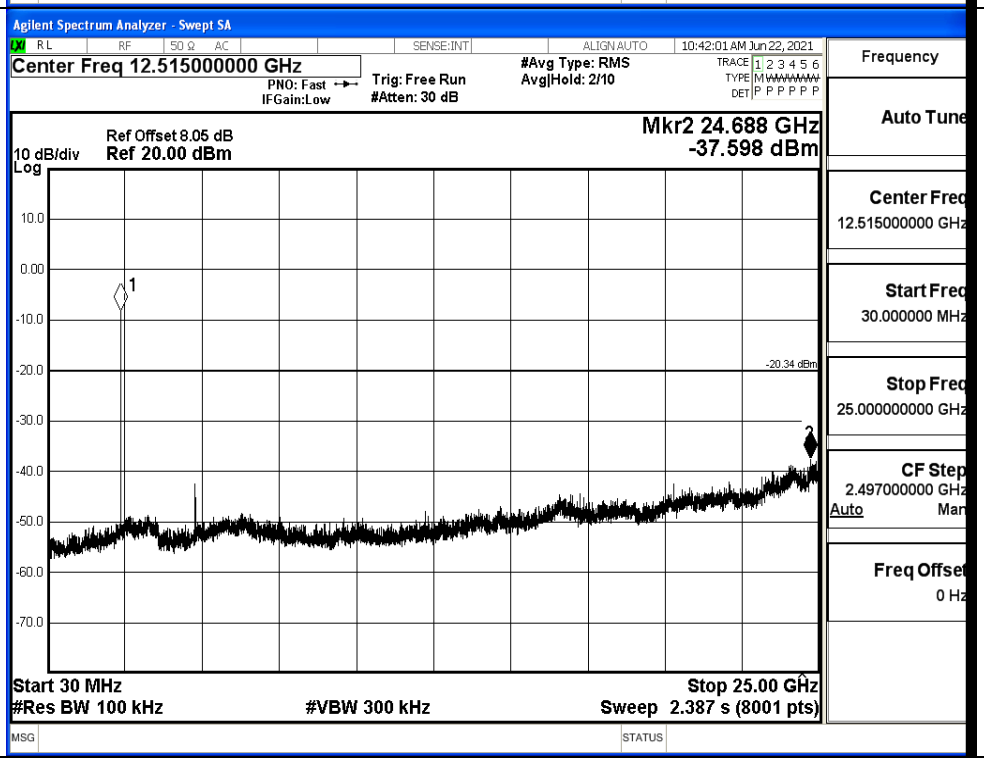
Pref		
Puw		

8DPSK_LCH_Graphs		
Pref		
Puw		

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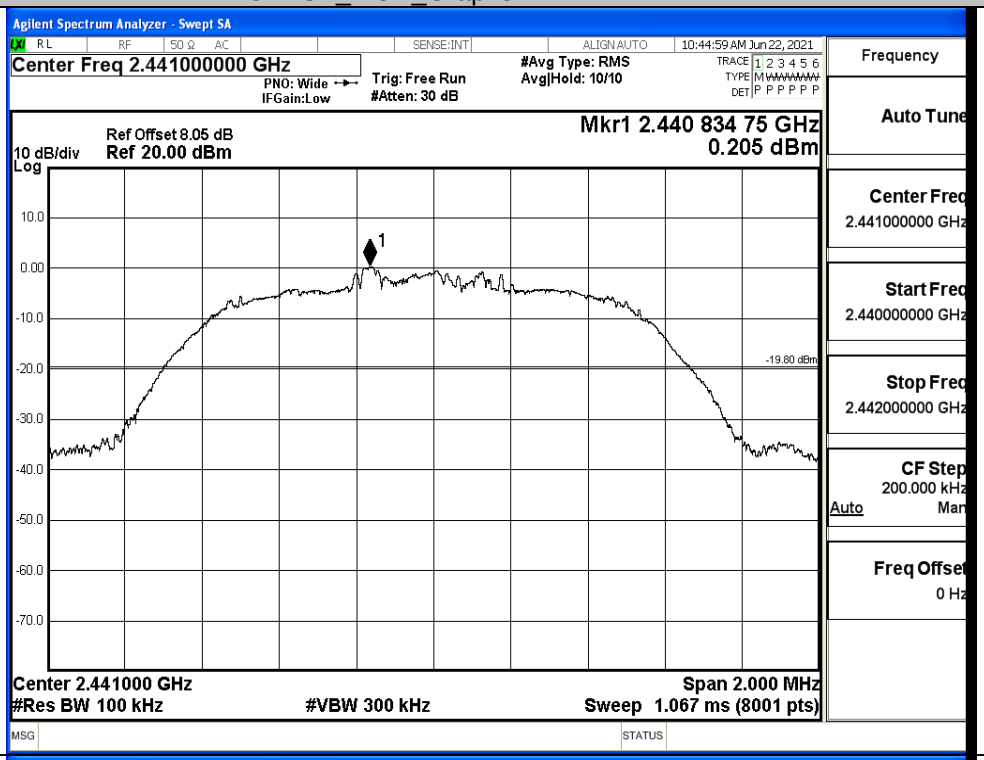
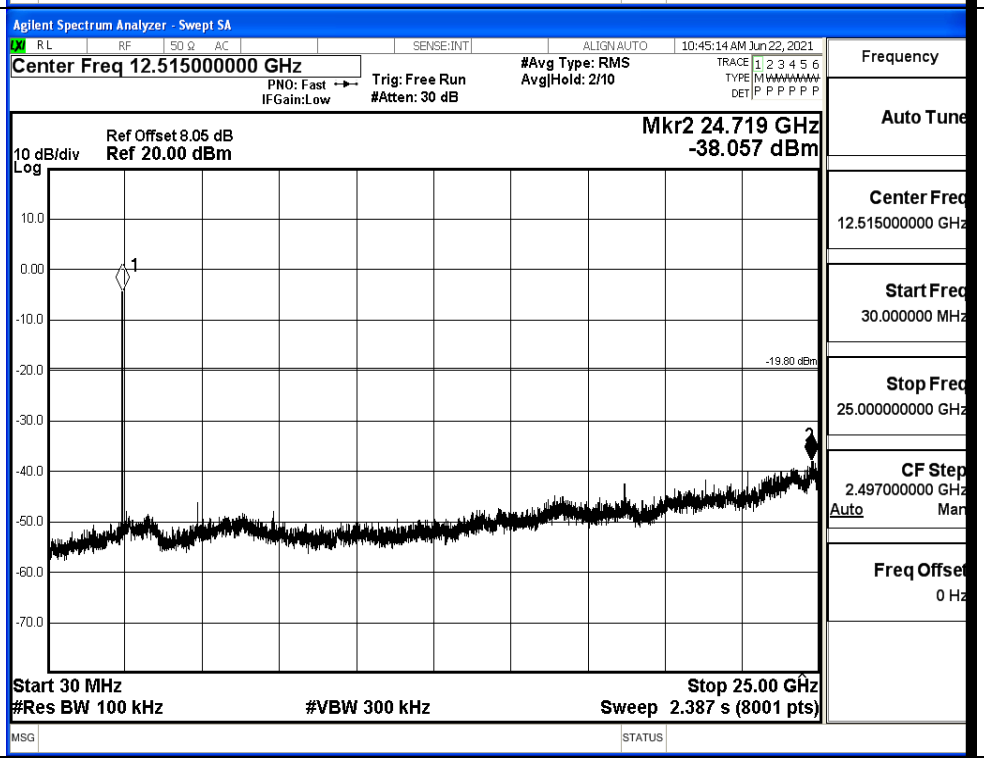
Pref		
Puw		

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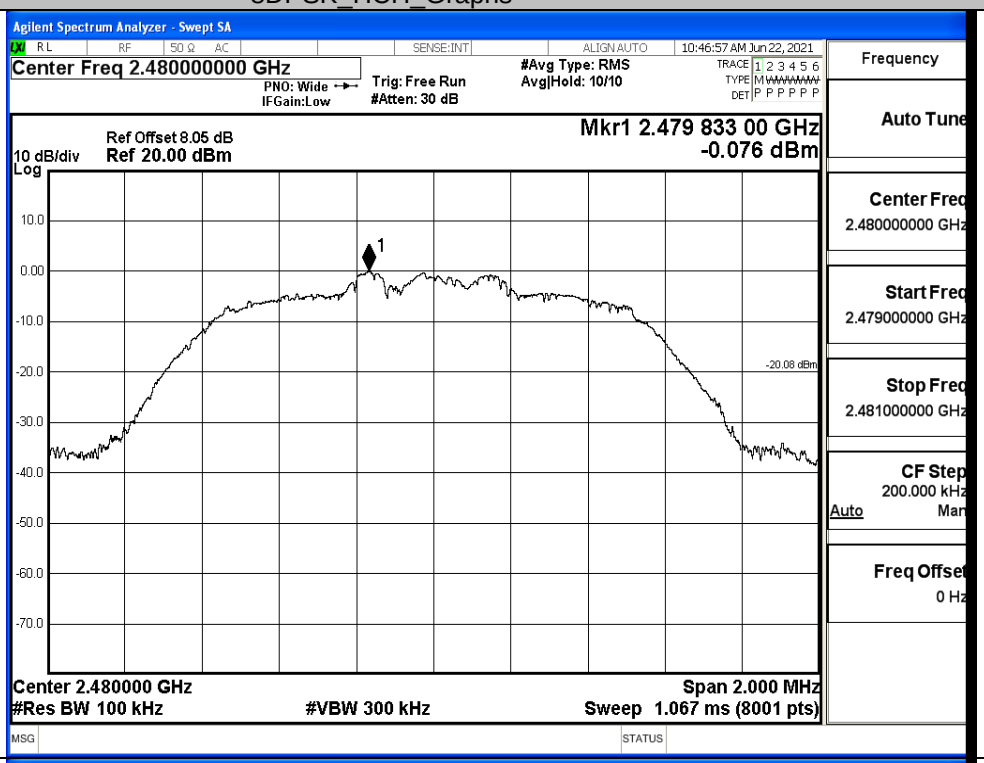
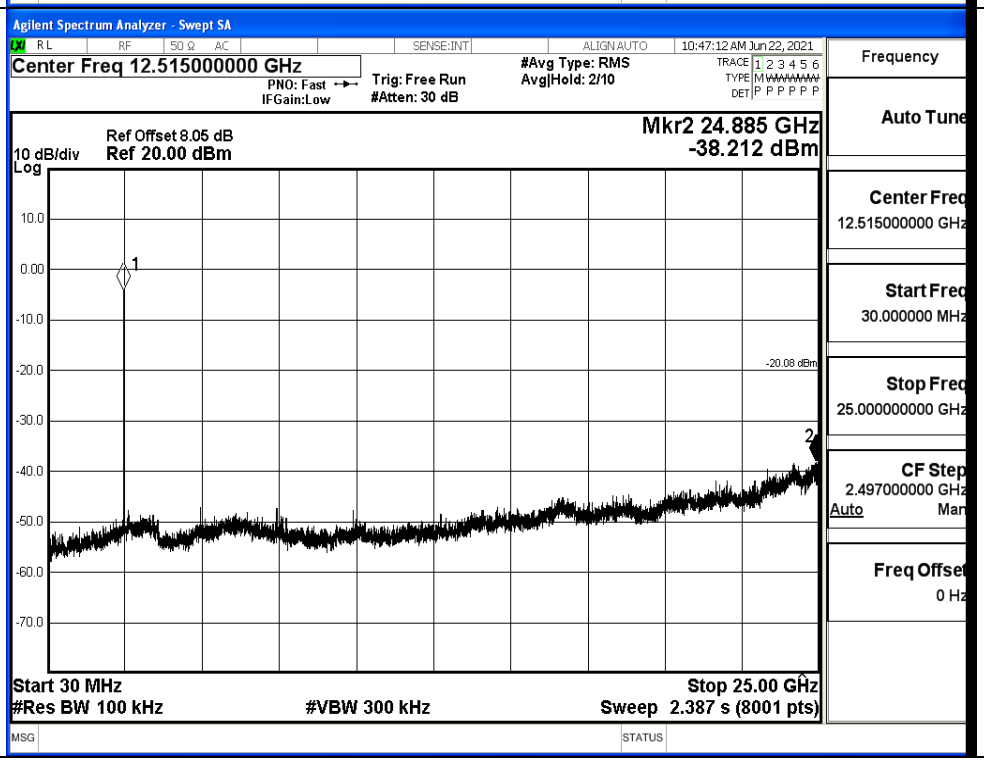
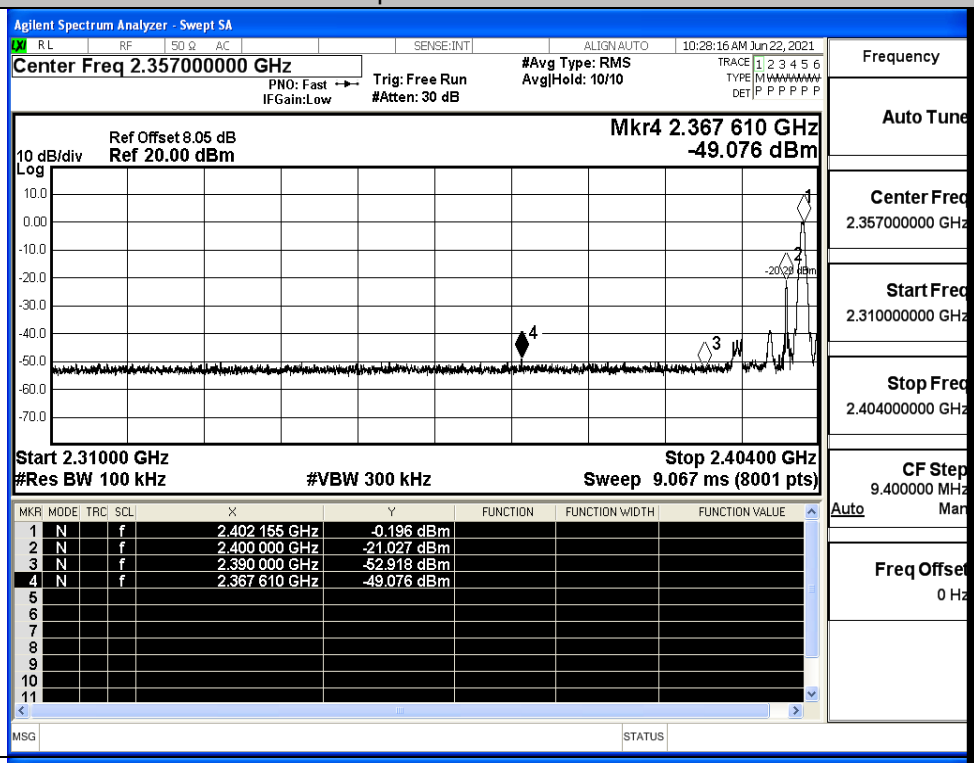
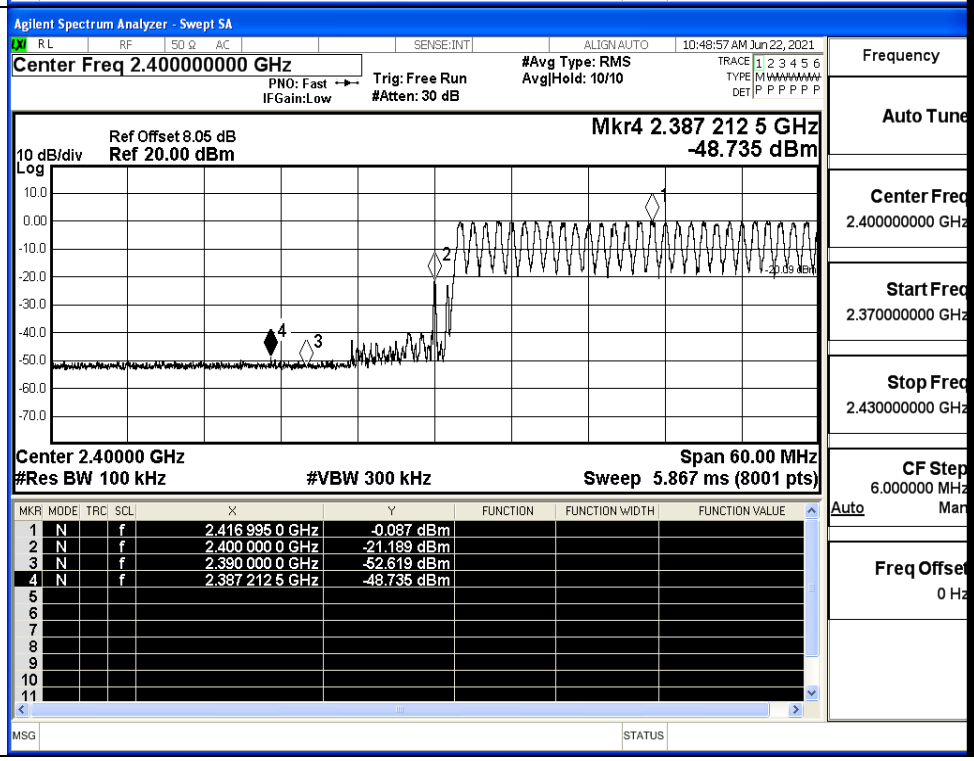
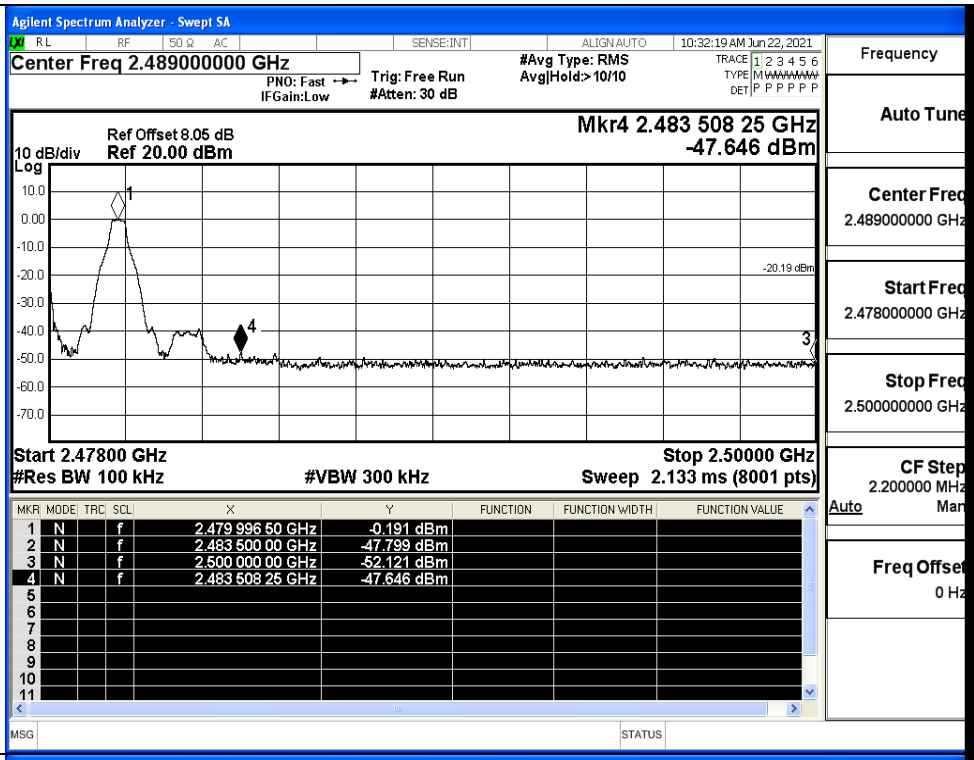
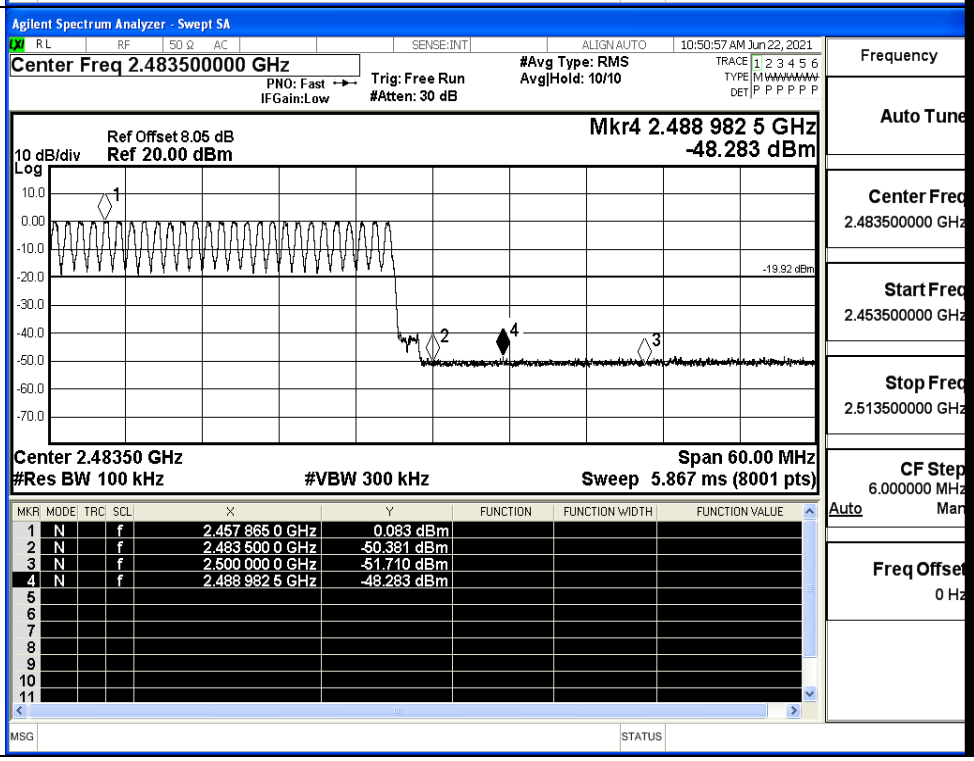
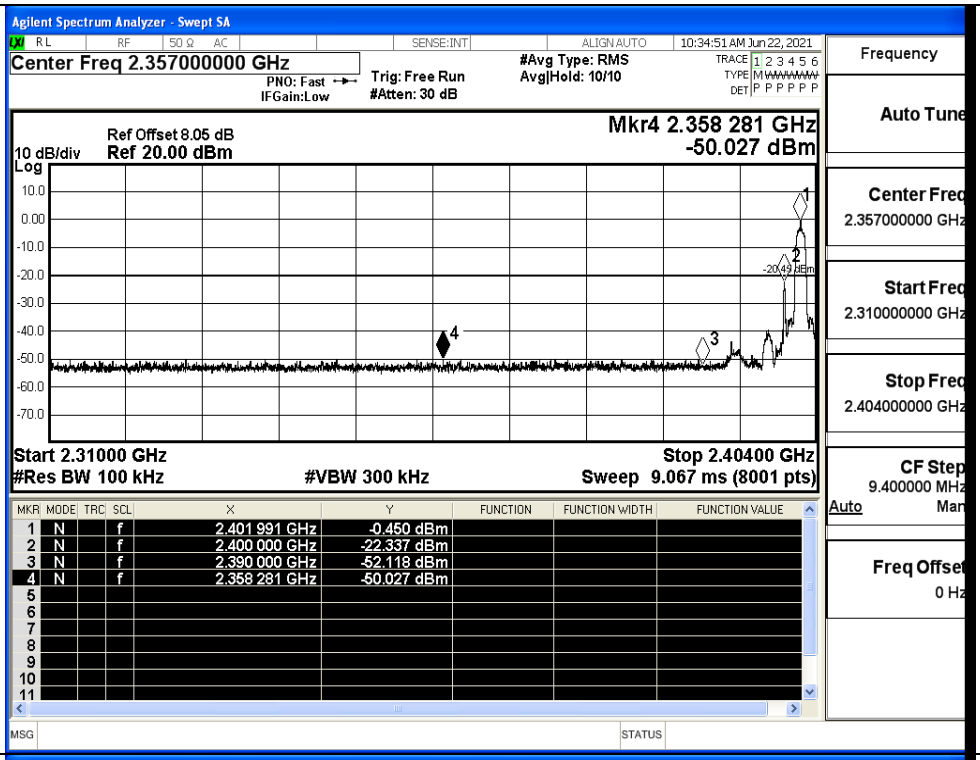
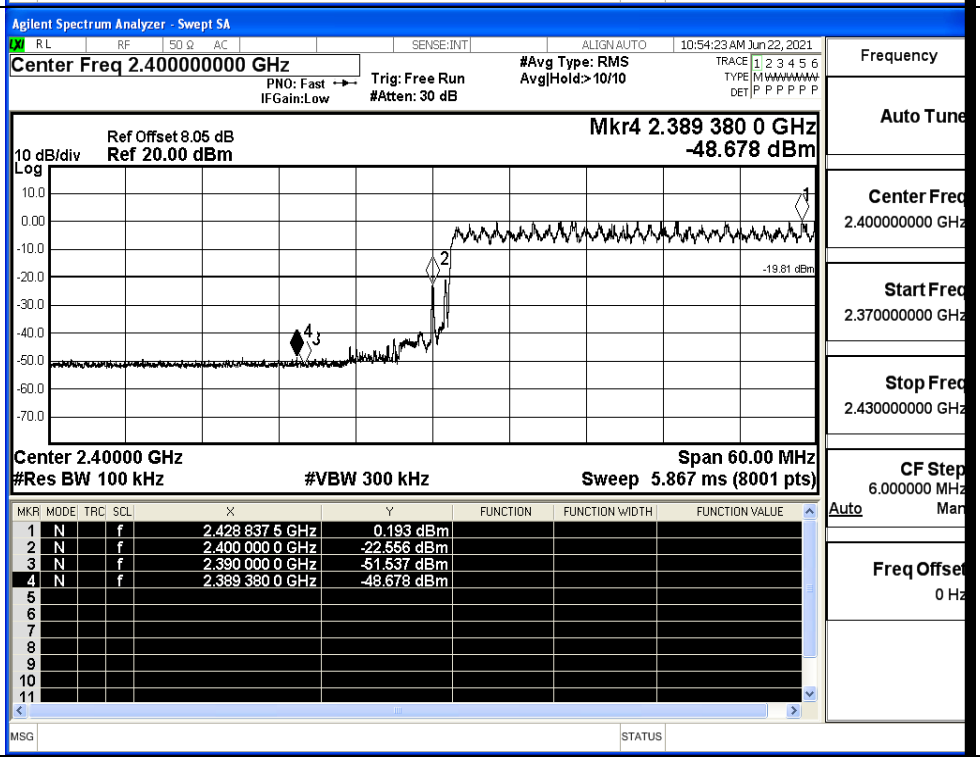
Pref			
Puw			

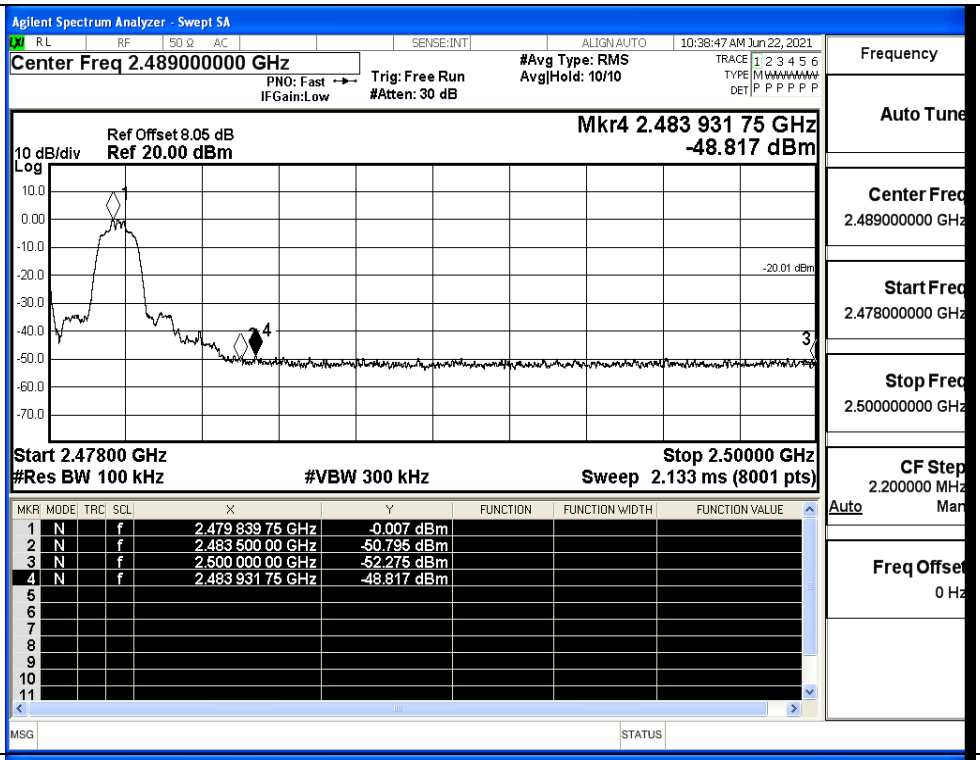
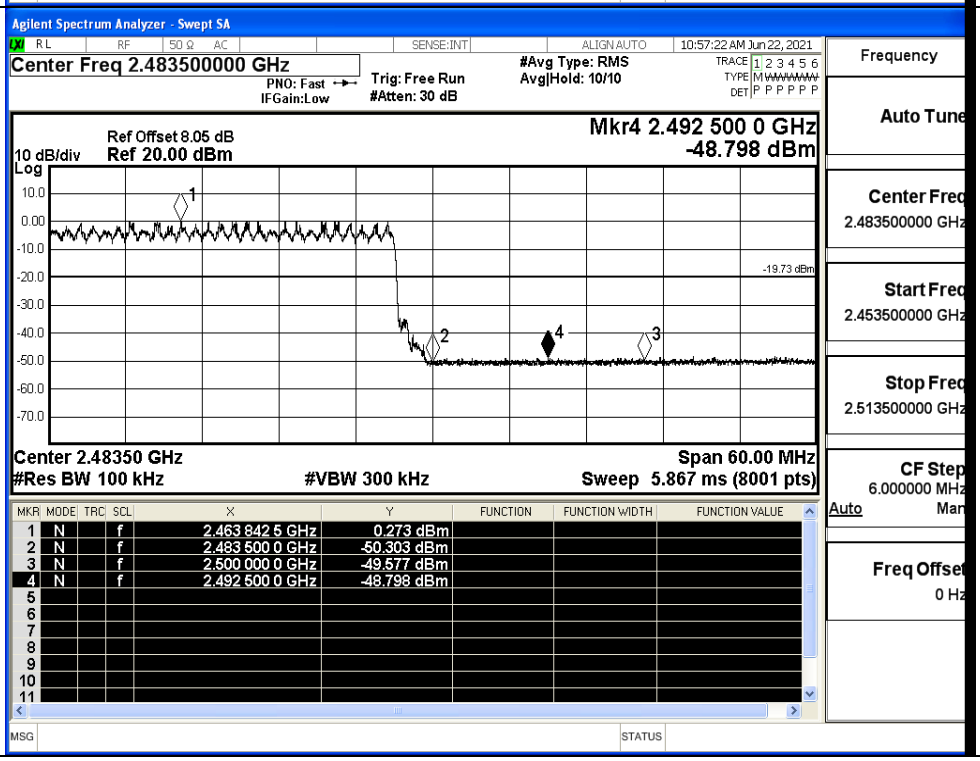
A.7 Band-edge for RF Conducted Emissions

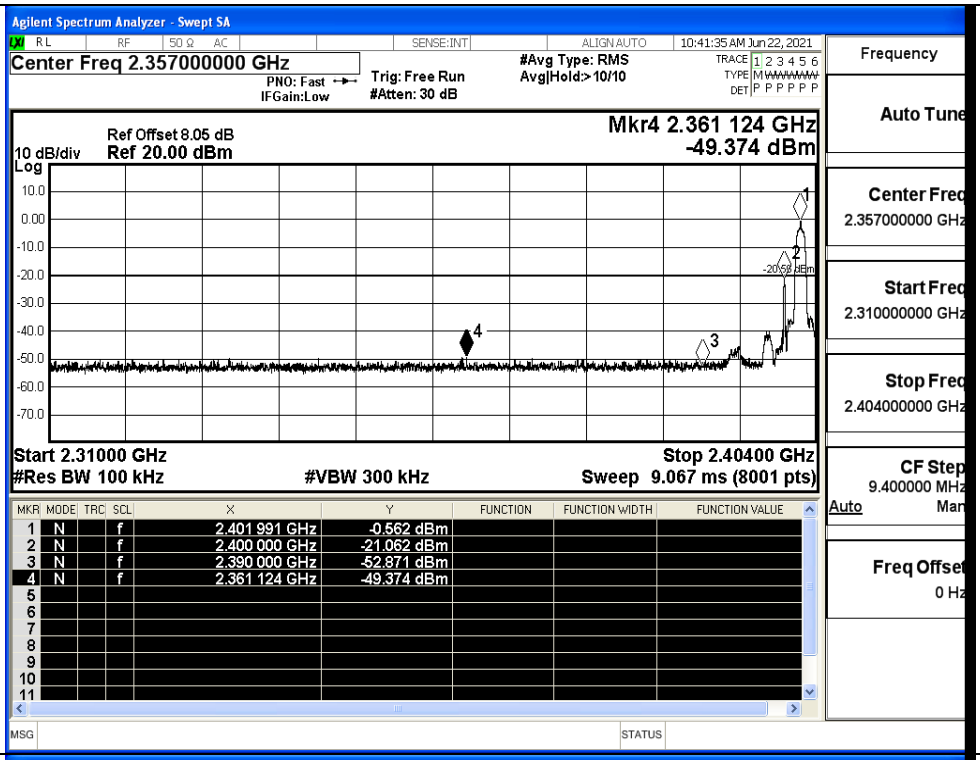
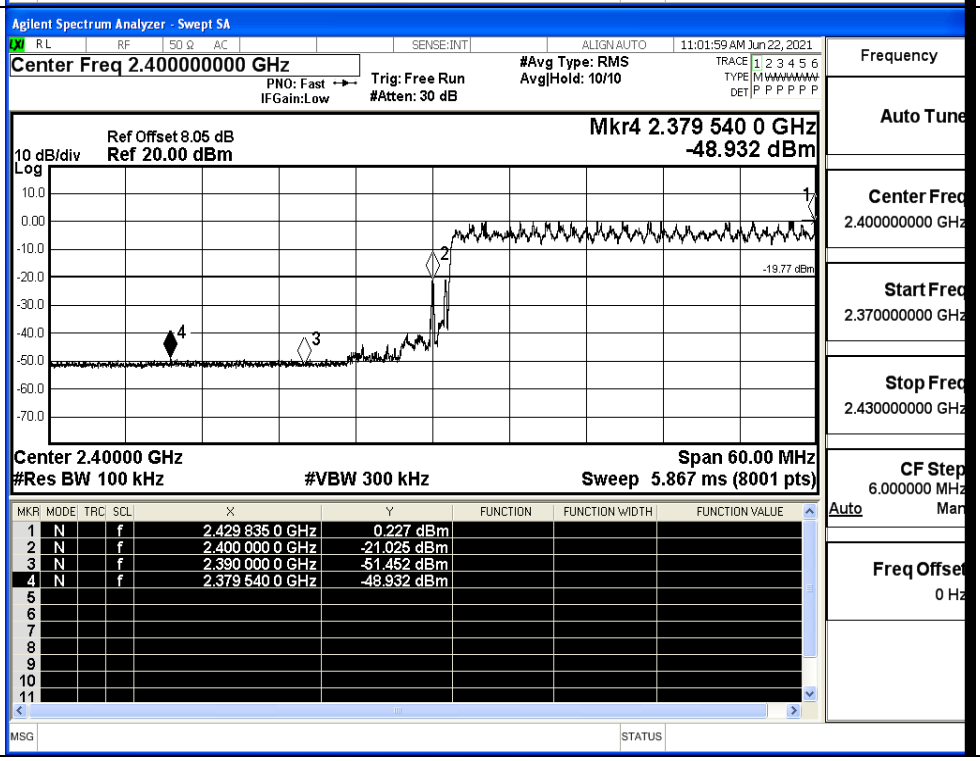
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-0.196	Off	-49.076	-20.2	PASS
			-0.087	On	-48.735	-20.09	PASS
	HCH	2480	-0.191	Off	-47.646	-20.19	PASS
			0.083	On	-48.283	-19.92	PASS
π/4DQPSK	LCH	2402	-0.450	Off	-50.027	-20.45	PASS
			0.193	On	-48.678	-19.81	PASS
	HCH	2480	-0.007	Off	-48.817	-20.01	PASS
			0.273	On	-48.798	-19.73	PASS
8DPSK	LCH	2402	-0.562	Off	-49.374	-20.56	PASS
			0.227	On	-48.932	-19.77	PASS
	HCH	2480	-0.063	Off	-48.408	-20.06	PASS
			0.198	On	-48.346	-19.8	PASS

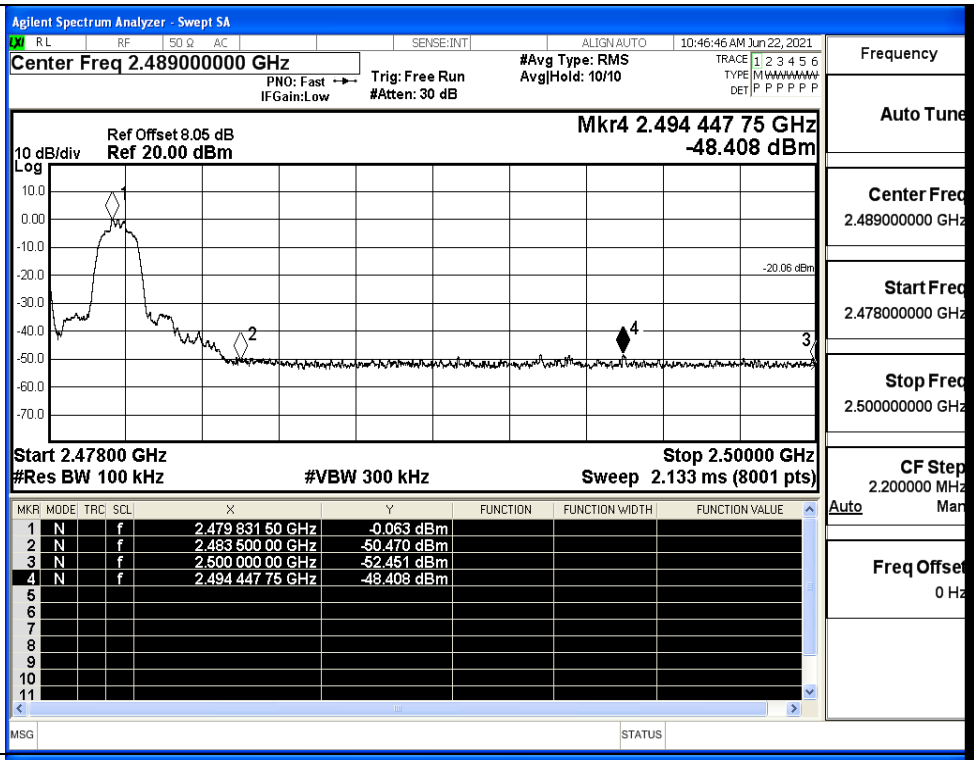
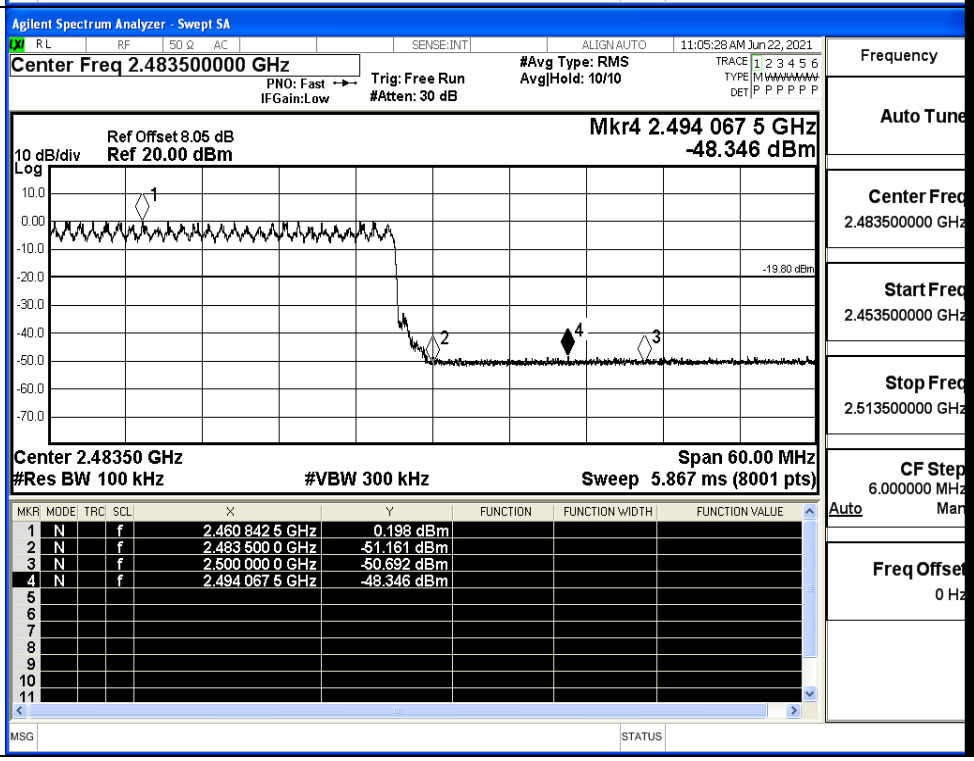
Test Graphs	
GFSK/LCH/No Hop	
GFSK/LCH/Hop	

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	

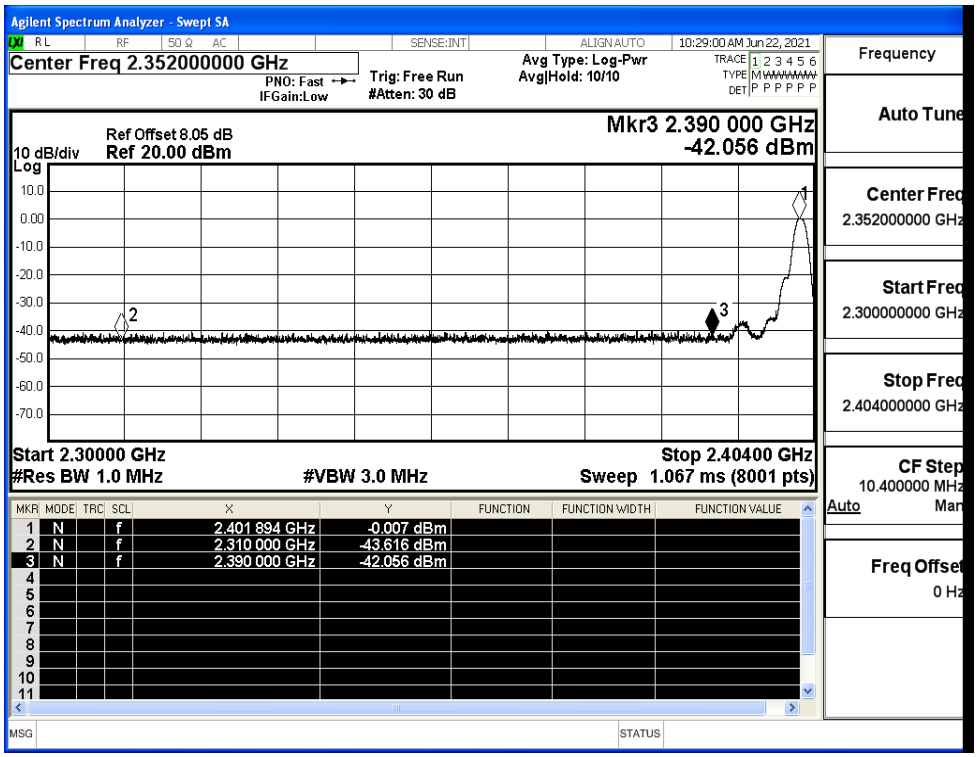
8DPSK/LCH/No Hop	
8DPSK/LCH/Hop	

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

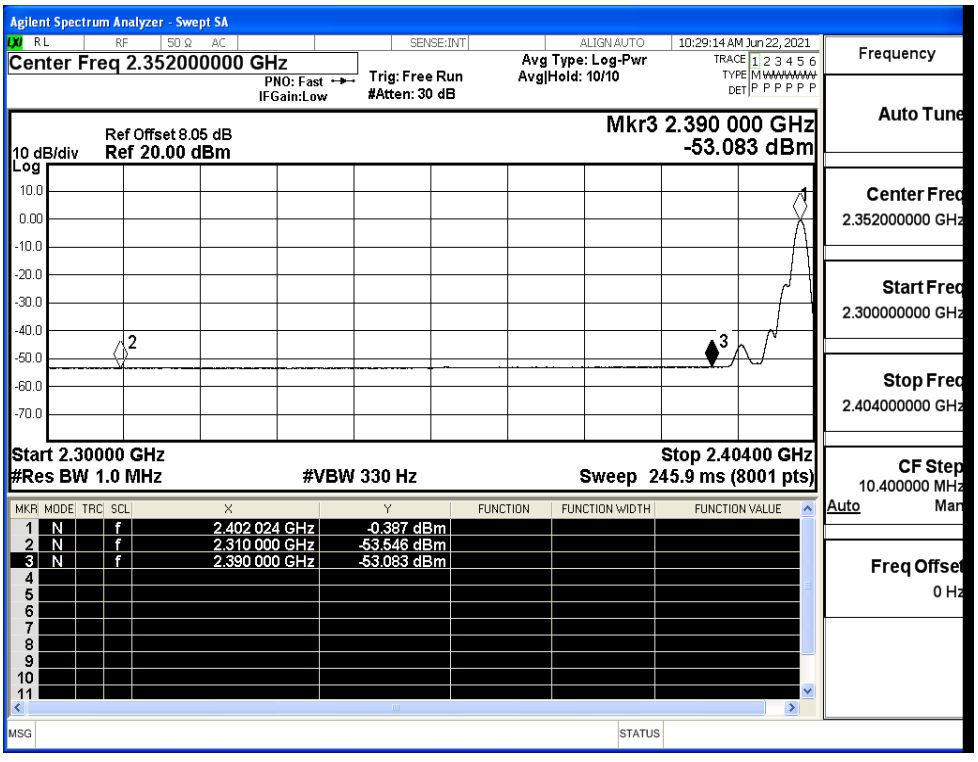
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.62	2.7	0	54.34	PEAK	74	PASS
	Off	2310.0	-53.55	2.7	0	44.41	AV	54	PASS
	Off	2390.0	-42.06	2.7	0	55.90	PEAK	74	PASS
	Off	2390.0	-53.08	2.7	0	44.88	AV	54	PASS
	Off	2483.5	-41.71	2.7	0	56.25	PEAK	74	PASS
	Off	2483.5	-50.40	2.7	0	47.56	AV	54	PASS
	Off	2500.0	-41.90	2.7	0	56.06	PEAK	74	PASS
	Off	2500.0	-52.51	2.7	0	45.45	AV	54	PASS
π/4DQPSK	Off	2310.0	-39.97	2.7	0	57.99	PEAK	74	PASS
	Off	2310.0	-53.49	2.7	0	44.47	AV	54	PASS
	Off	2390.0	-42.13	2.7	0	55.83	PEAK	74	PASS
	Off	2390.0	-53.03	2.7	0	44.93	AV	54	PASS
	Off	2483.5	-40.02	2.7	0	57.94	PEAK	74	PASS
	Off	2483.5	-50.46	2.7	0	47.50	AV	54	PASS
	Off	2500.0	-42.66	2.7	0	55.30	PEAK	74	PASS
	Off	2500.0	-52.45	2.7	0	45.51	AV	54	PASS
8DPSK	Off	2310.0	-42.58	2.7	0	55.38	PEAK	74	PASS
	Off	2310.0	-53.45	2.7	0	44.51	AV	54	PASS
	Off	2390.0	-43.15	2.7	0	54.81	PEAK	74	PASS
	Off	2390.0	-53.04	2.7	0	44.92	AV	54	PASS
	Off	2483.5	-41.87	2.7	0	56.09	PEAK	74	PASS
	Off	2483.5	-50.18	2.7	0	47.78	AV	54	PASS
	Off	2500.0	-42.61	2.7	0	55.35	PEAK	74	PASS
	Off	2500.0	-52.39	2.7	0	45.57	AV	54	PASS

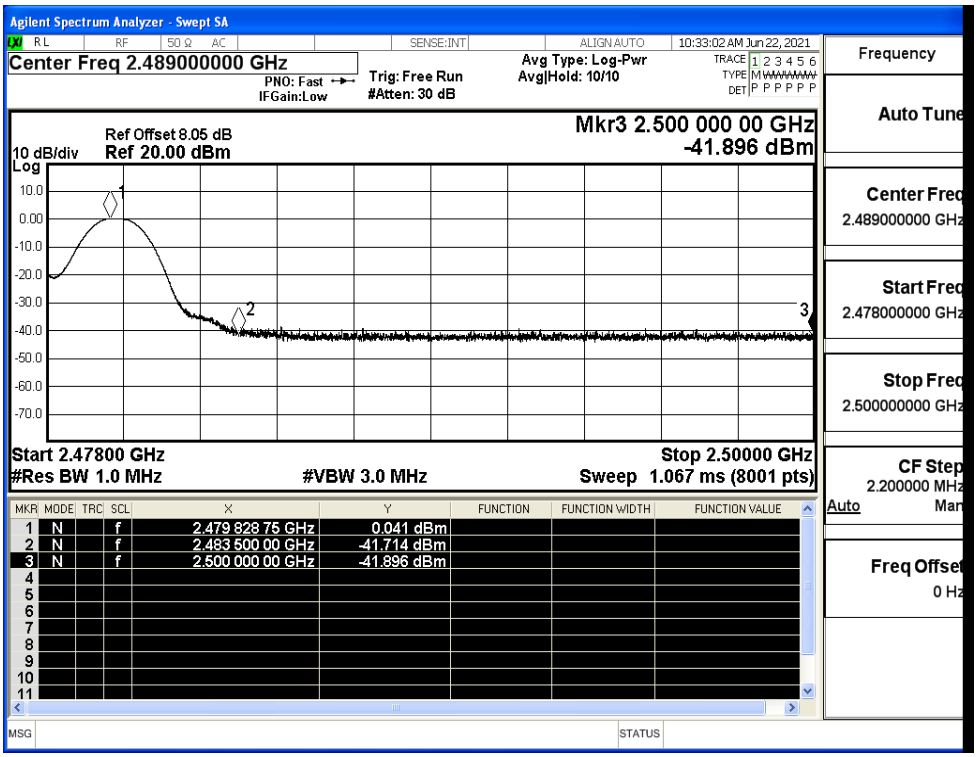
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



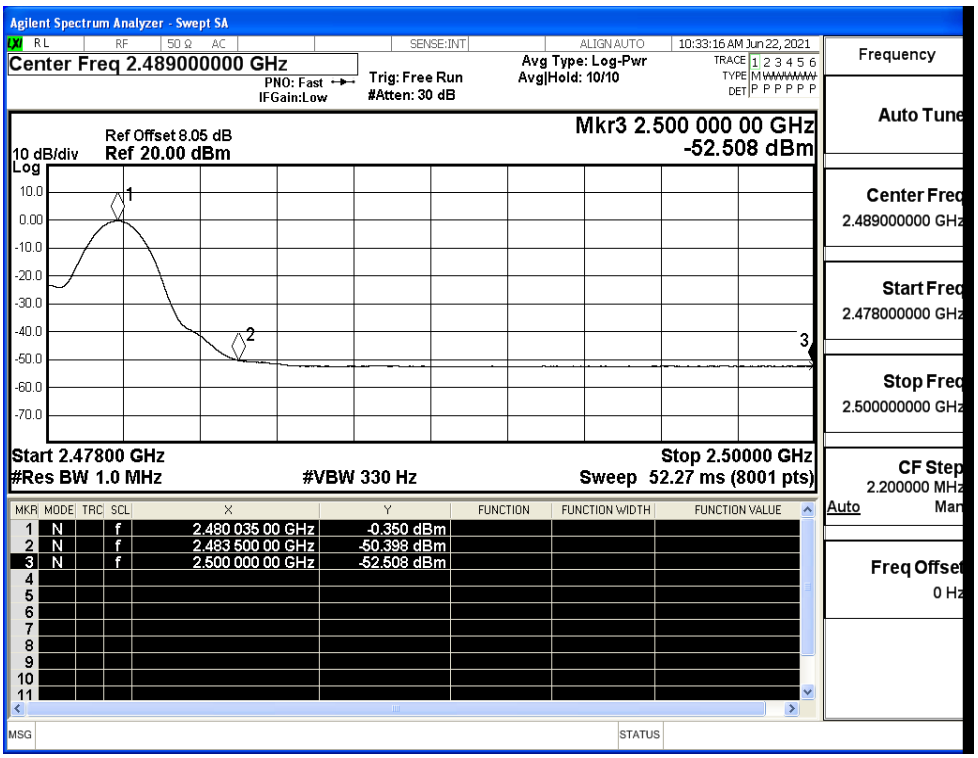
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)



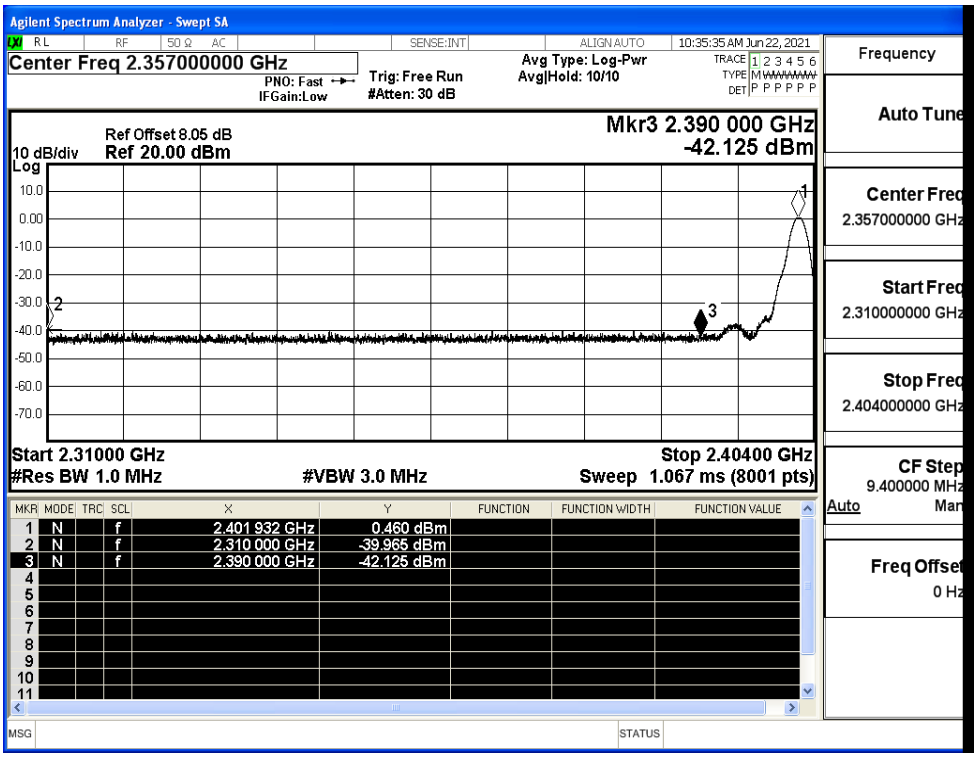
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



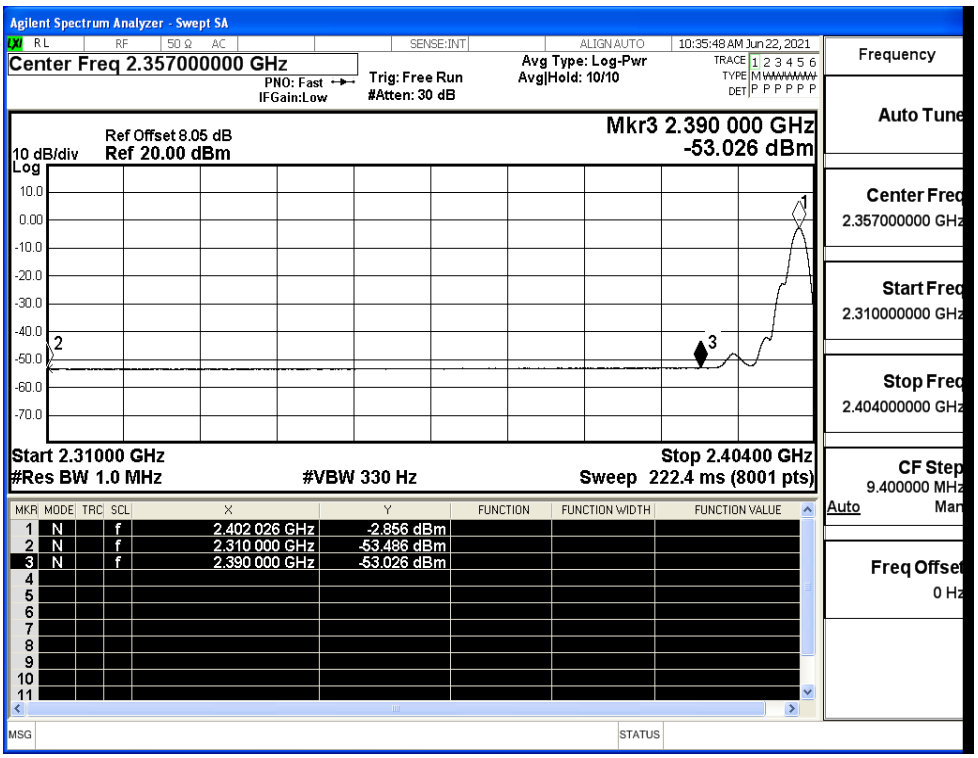
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



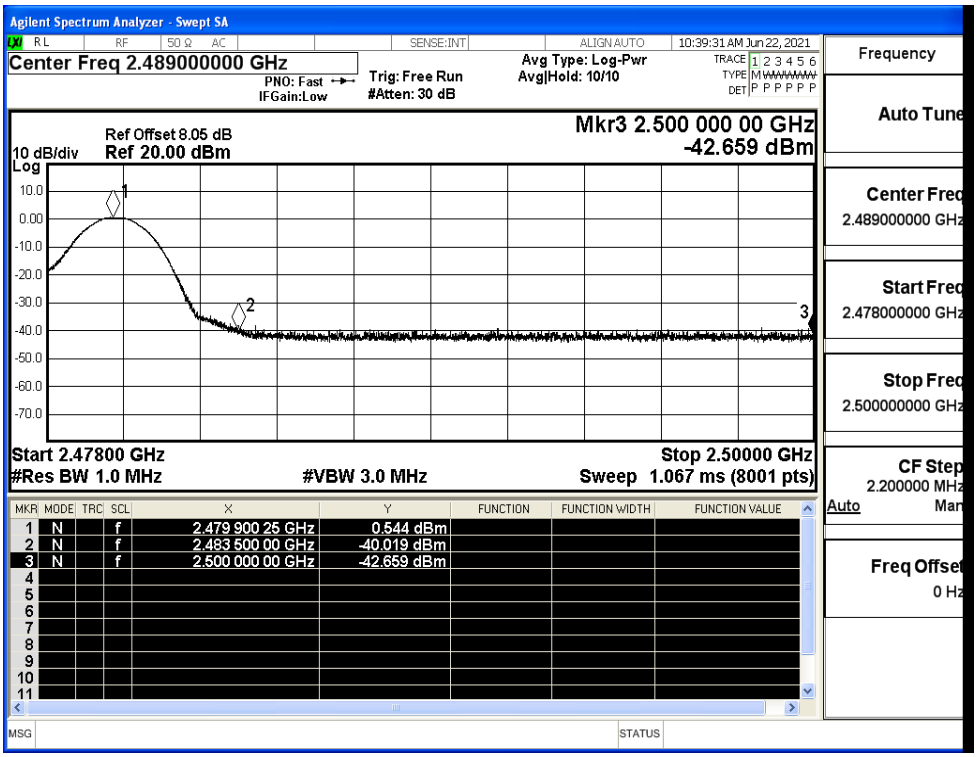
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



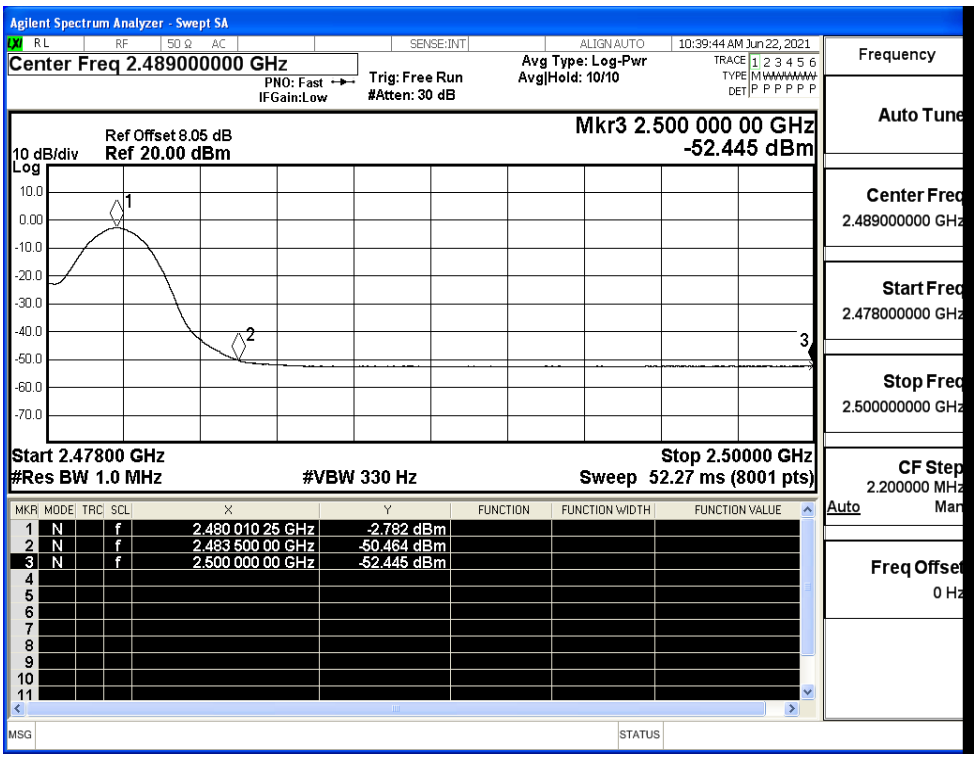
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



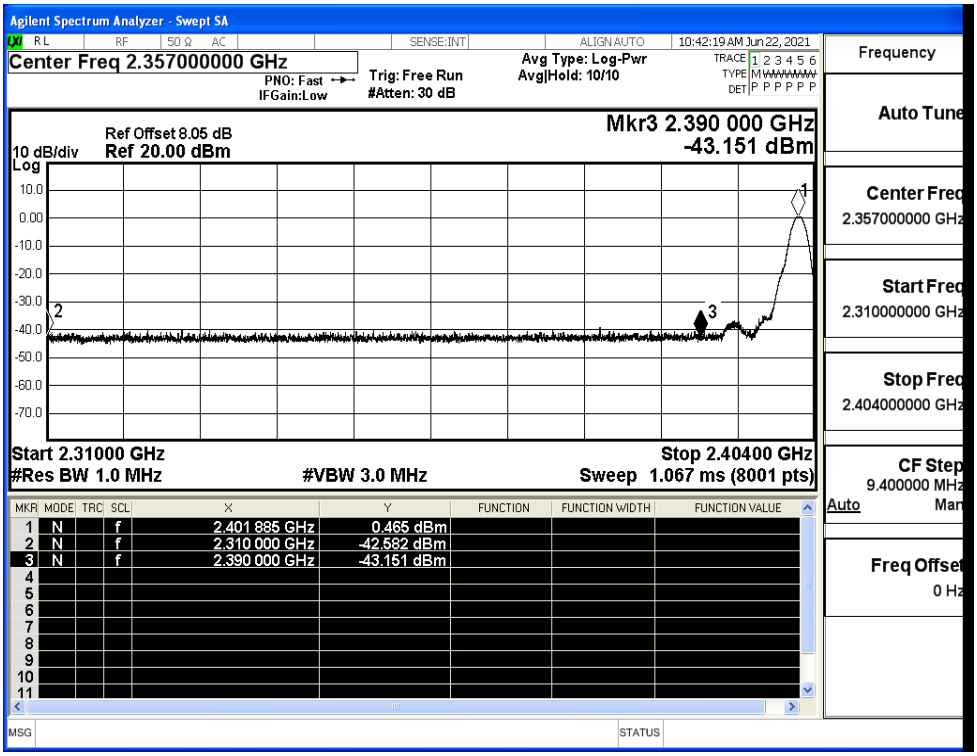
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



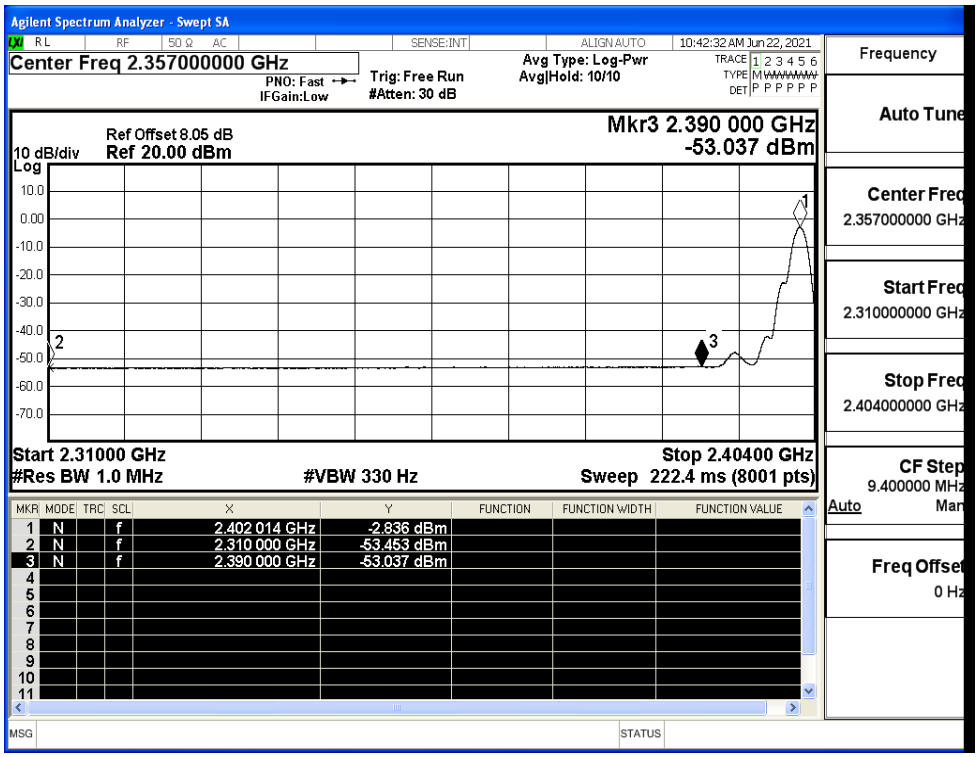
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



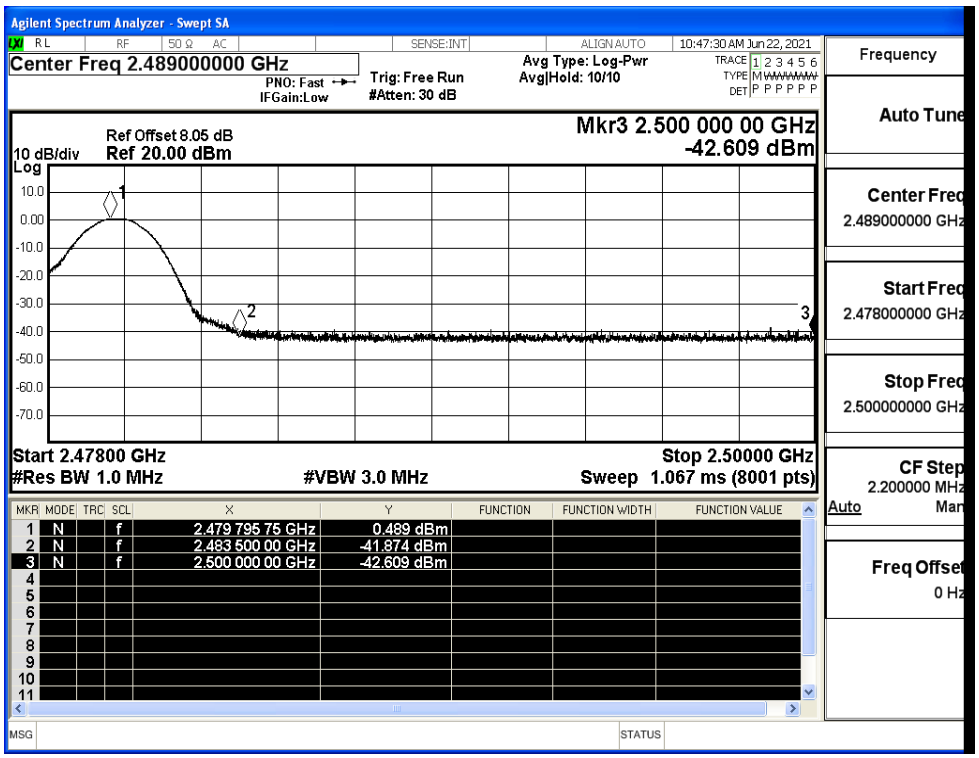
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)