Appendix A

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

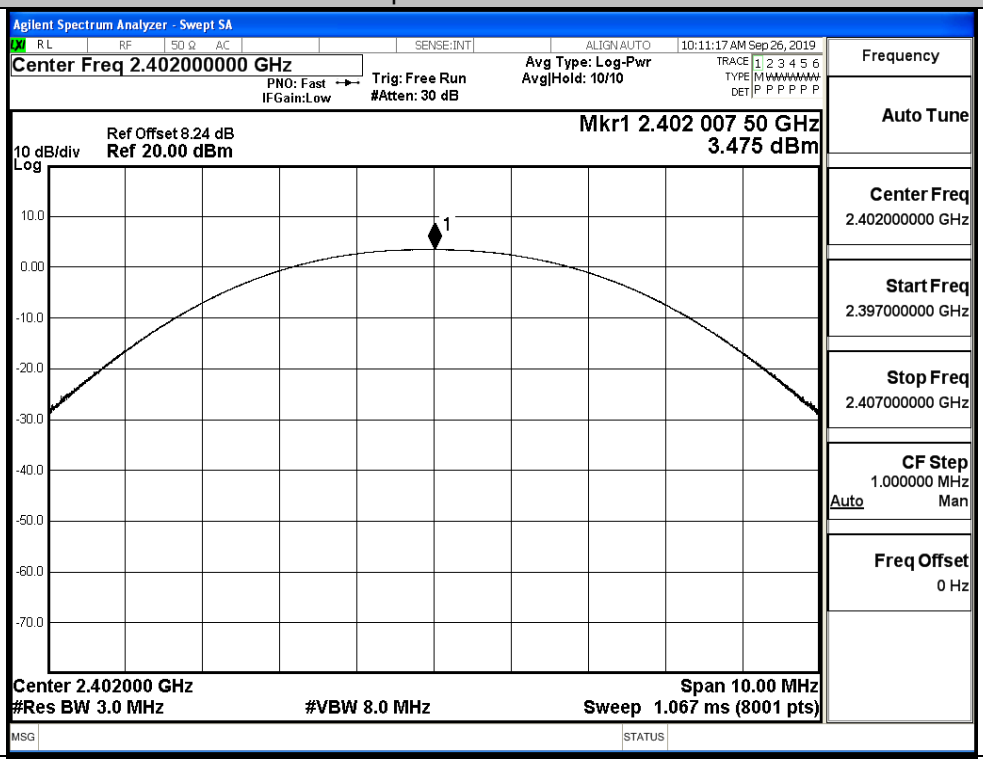
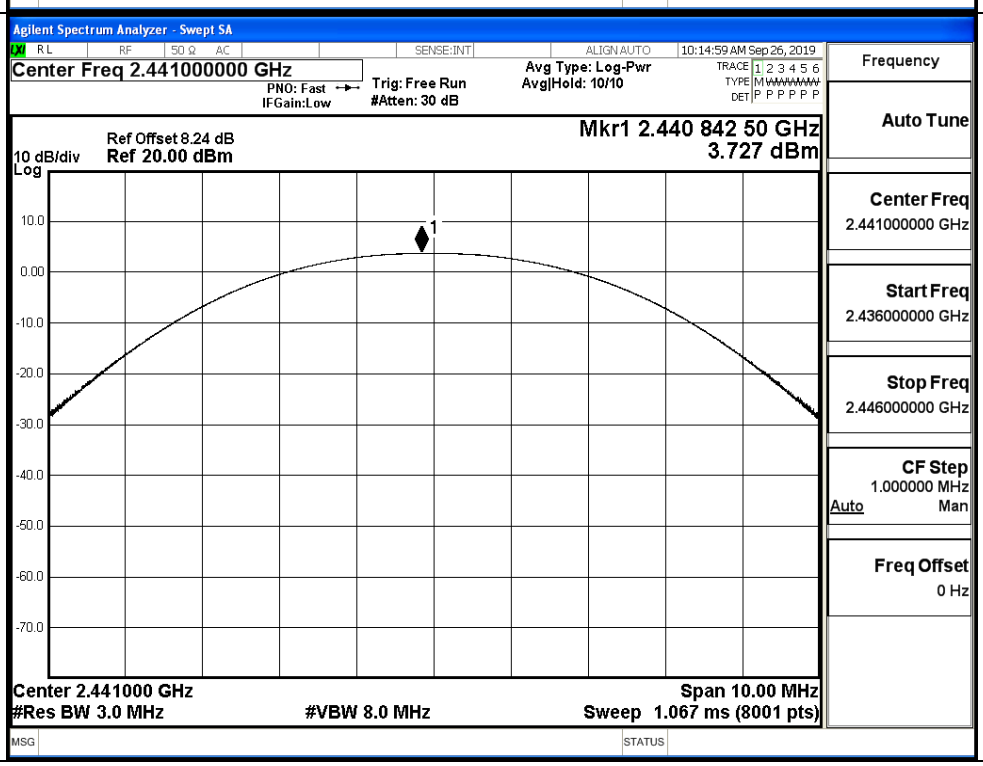
Product Name: 5.5 inch 4G Smart Phone
Trade Mark: LOGIC, iSWAG, UNONU
Test Model: L55A

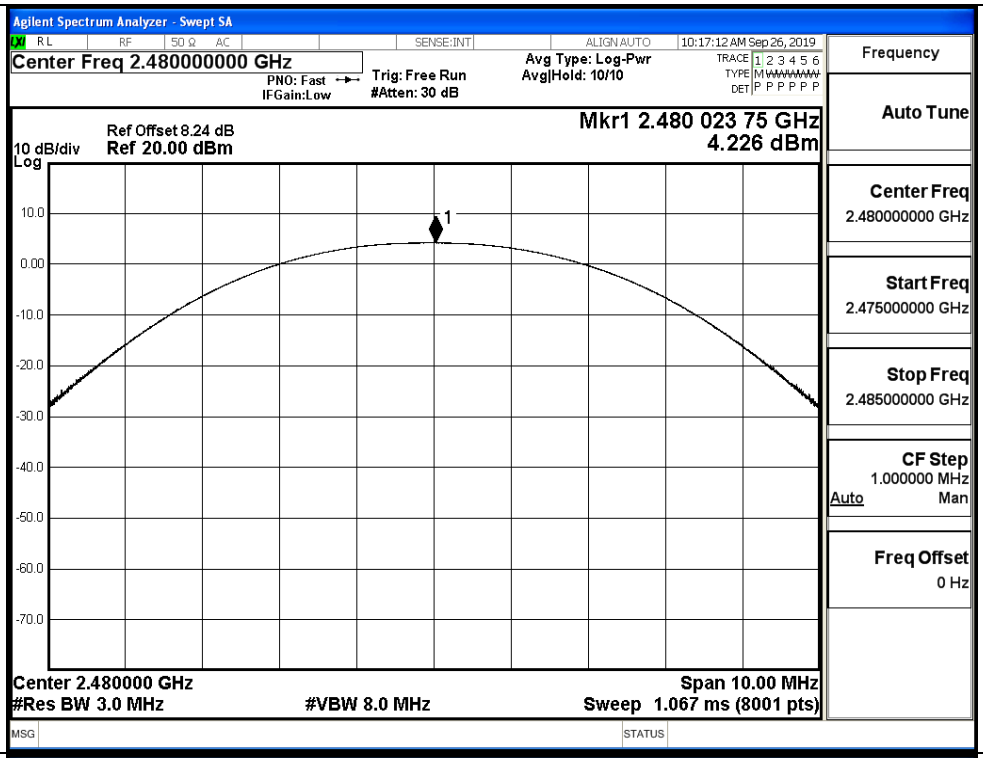
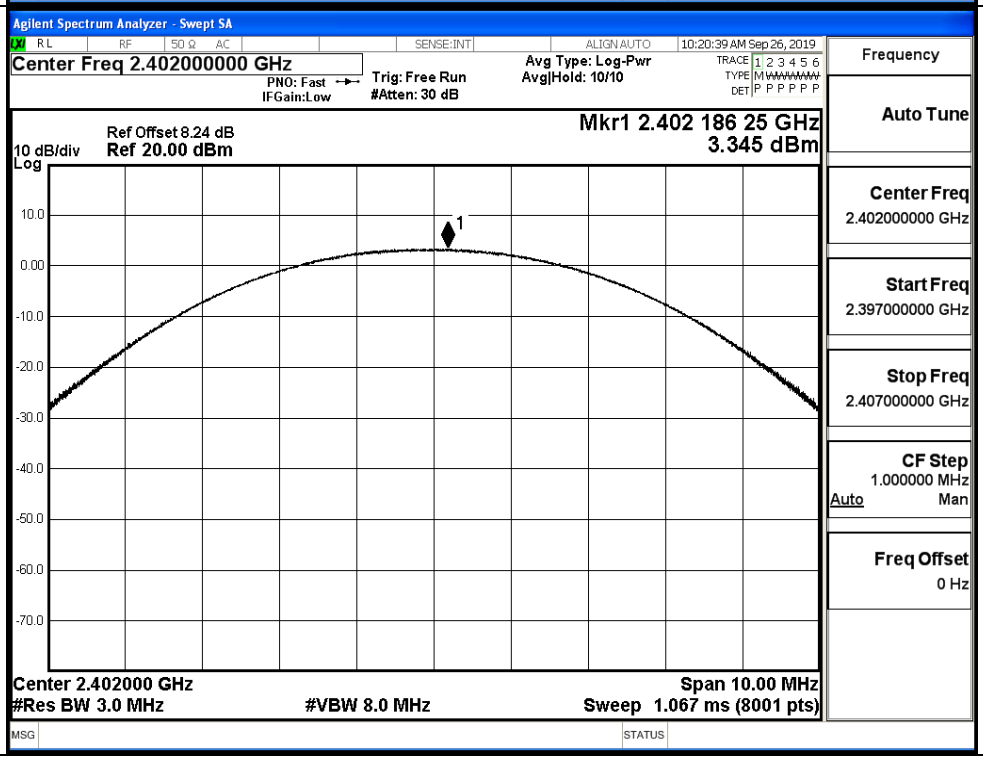
Environmental Conditions

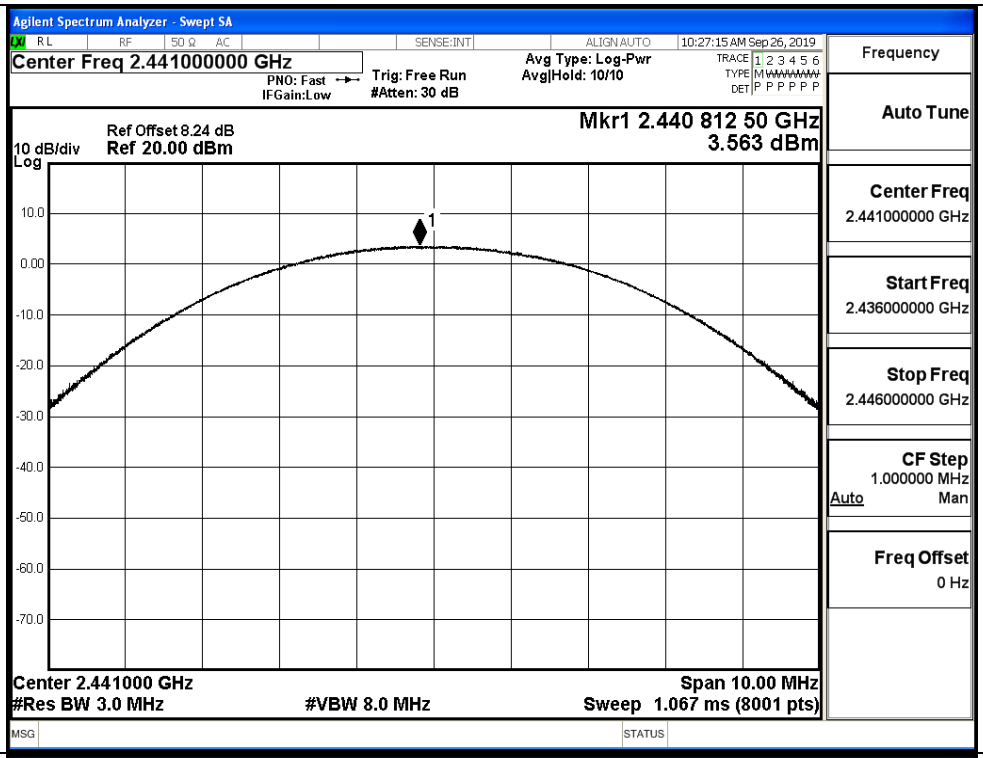
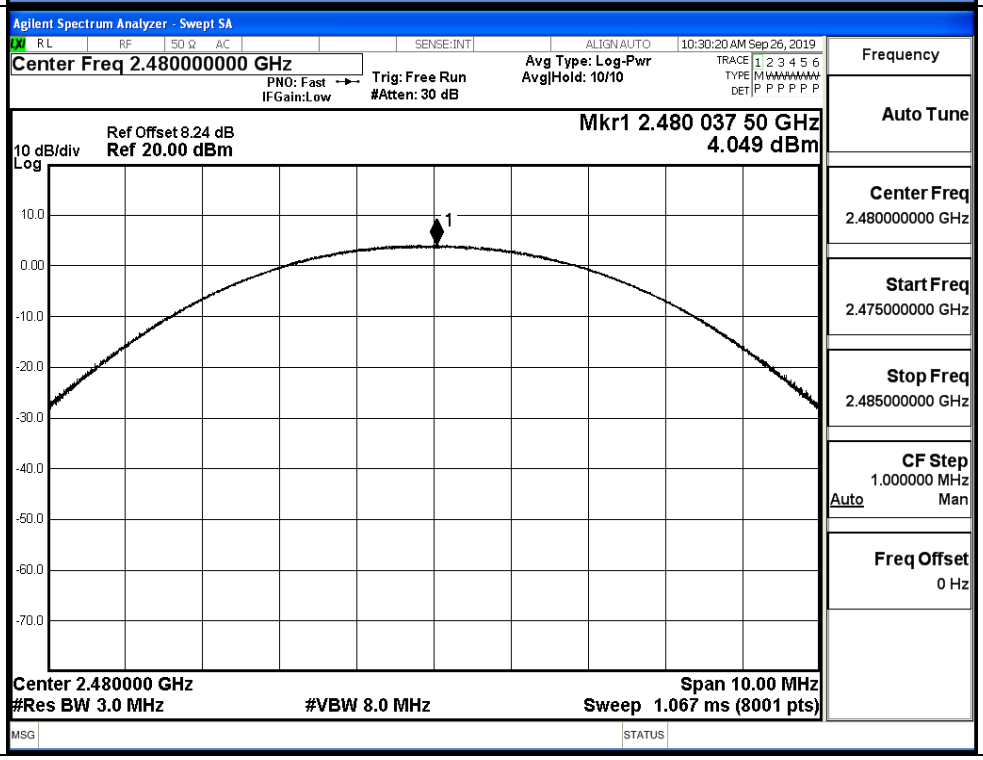
Temperature:	24.4 ° C
Relative Humidity:	53.5%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond.Lu
Supervised by:	Wang.Chuang

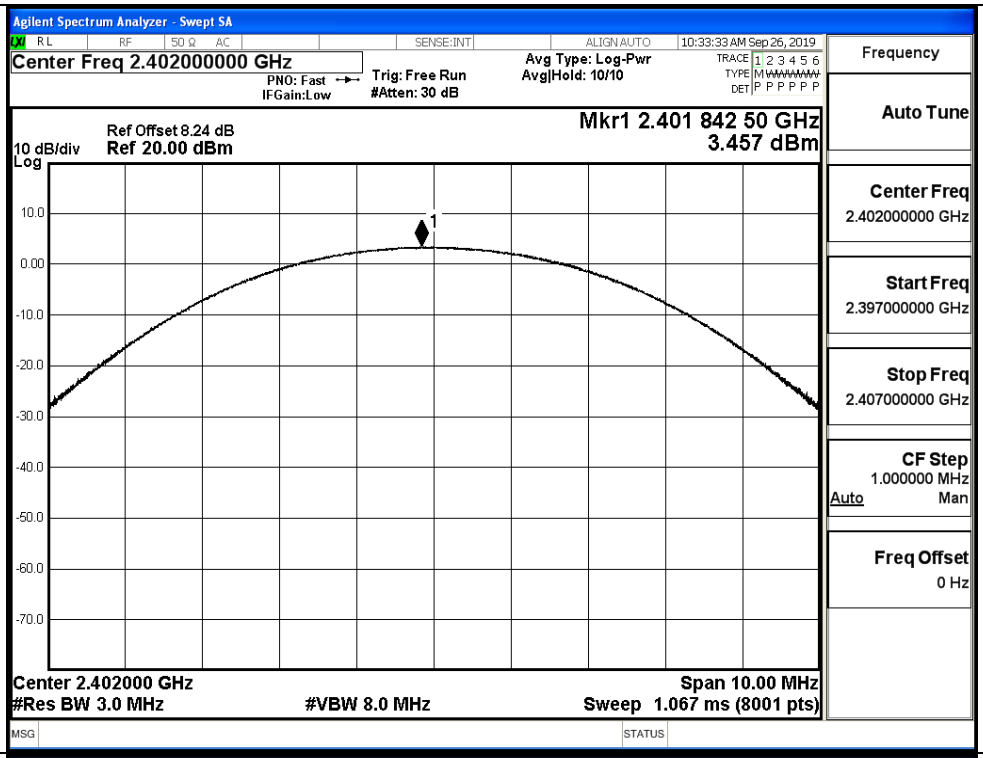
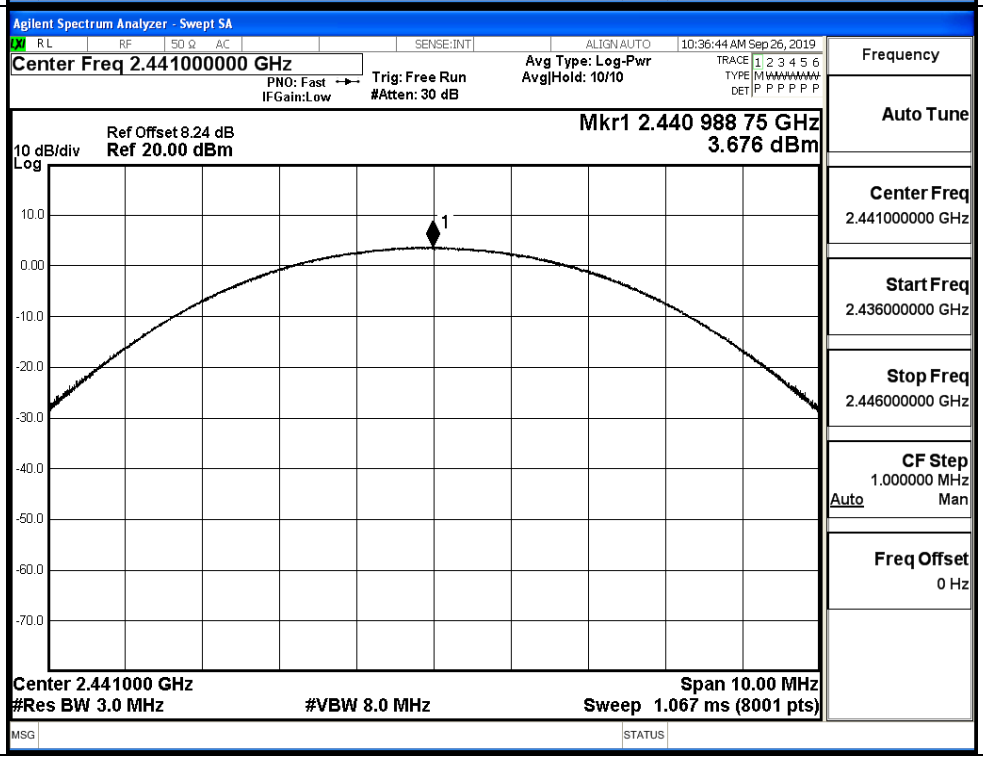
A.1 Maxmum Conducted Peak Output Power

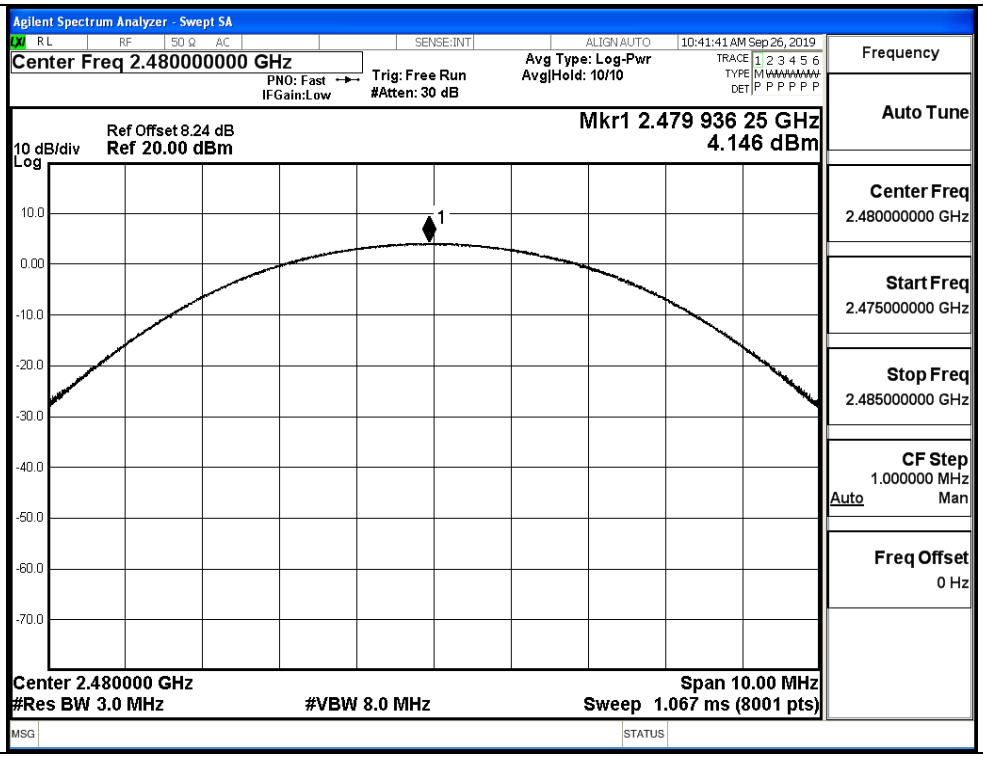
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	3.475	21	PASS
	MCH	3.727	21	PASS
	HCH	4.226	21	PASS
π/4DQPSK	LCH	3.345	21	PASS
	MCH	3.563	21	PASS
	HCH	4.049	21	PASS
8DPSK	LCH	3.457	21	PASS
	MCH	3.676	21	PASS
	HCH	4.146	21	PASS

Test Graphs		
GFSK/LCH		
GFSK/MCH		

GFSK/HCH	
π/4DQPSK/LCH	

π/4DQPSK/MCH		
π/4DQPSK/HCH		

8DPSK/LCH	
8DPSK/MCH	

8DPSK/HCH	

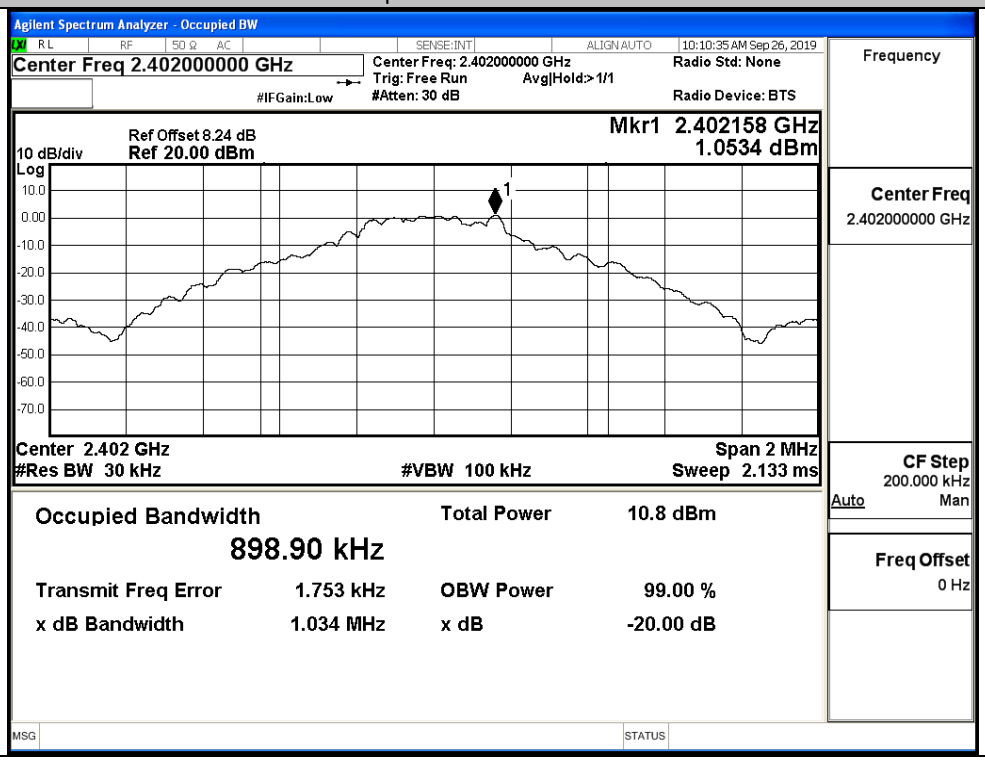
Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:41:41 AM Sep 26, 2019
Center Freq 2.480000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 10/10
TRACE 1 2 3 4 5 6
TYPE M
DET P P P P P
Ref Offset 8.24 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.479 936 25 GHz
4.146 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

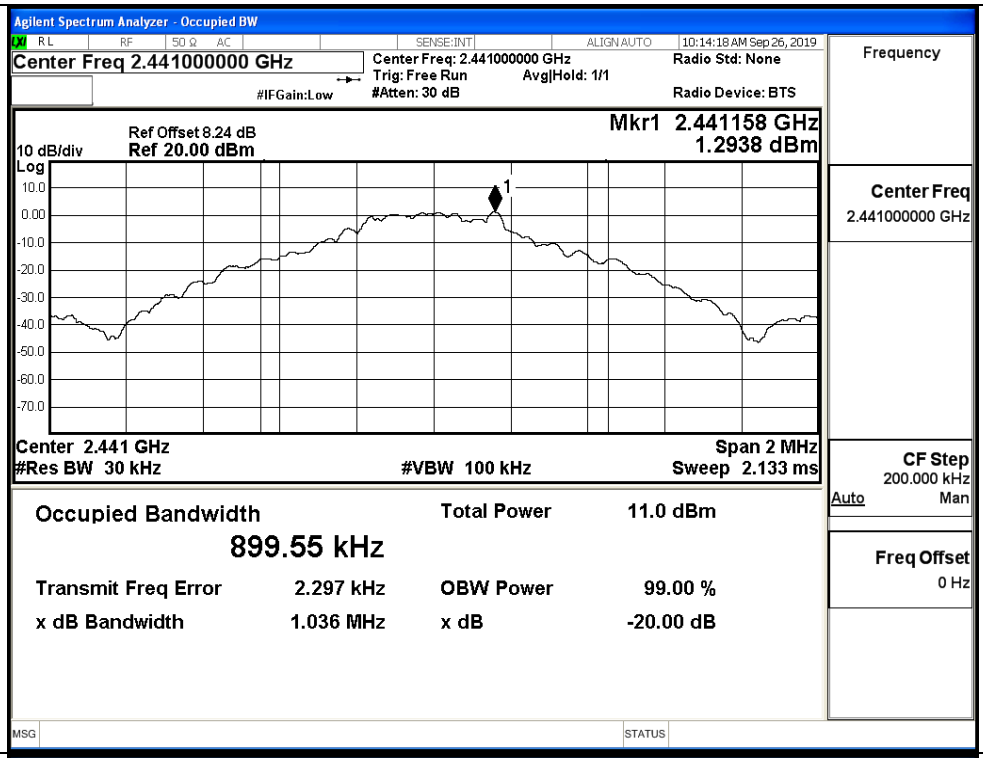
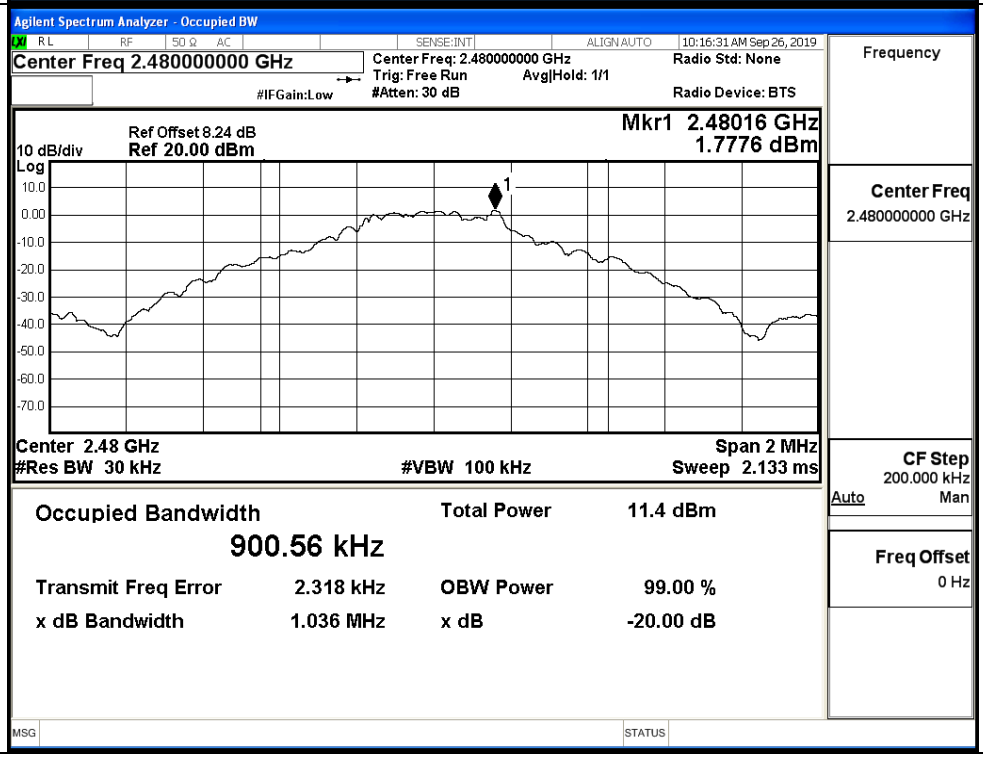
A.2 20dB Bandwidth

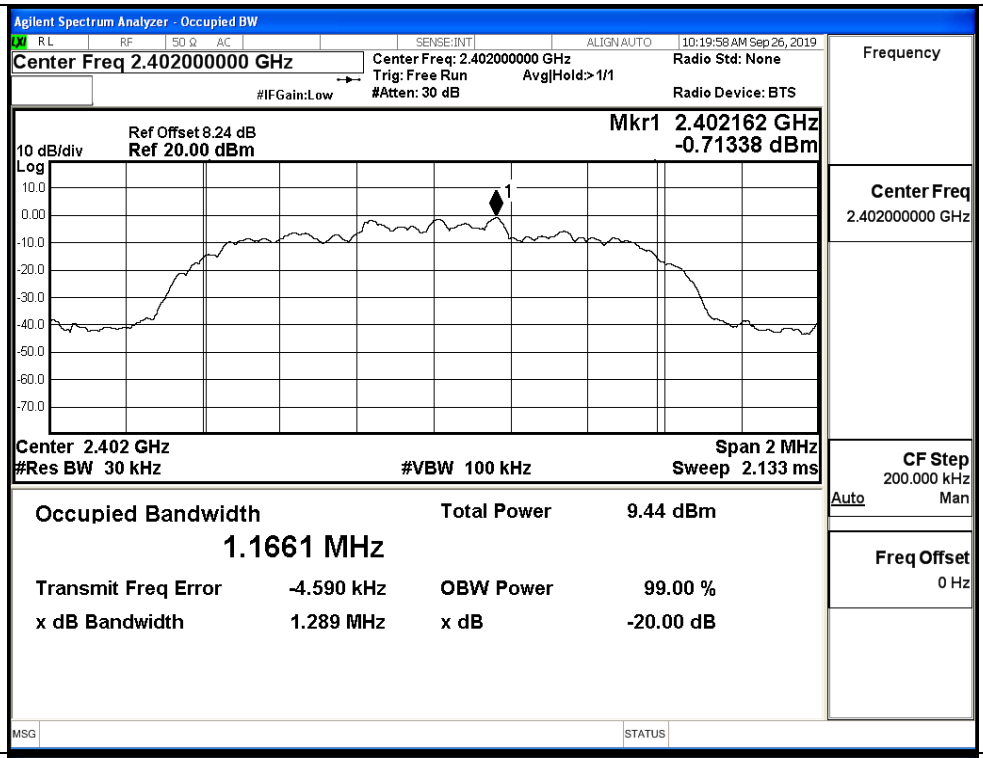
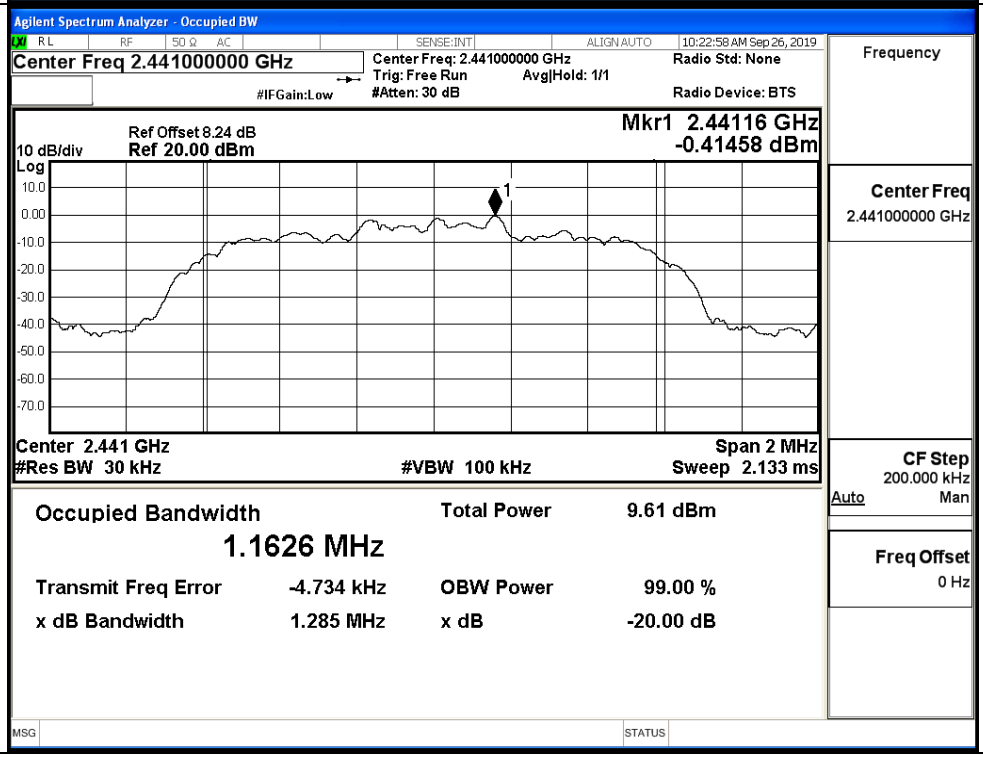
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.034	Not Specified	PASS
	MCH	1.036	Not Specified	PASS
	HCH	1.036	Not Specified	PASS
π/4DQPSK	LCH	1.289	Not Specified	PASS
	MCH	1.285	Not Specified	PASS
	HCH	1.285	Not Specified	PASS
8DPSK	LCH	1.286	Not Specified	PASS
	MCH	1.294	Not Specified	PASS
	HCH	1.288	Not Specified	PASS

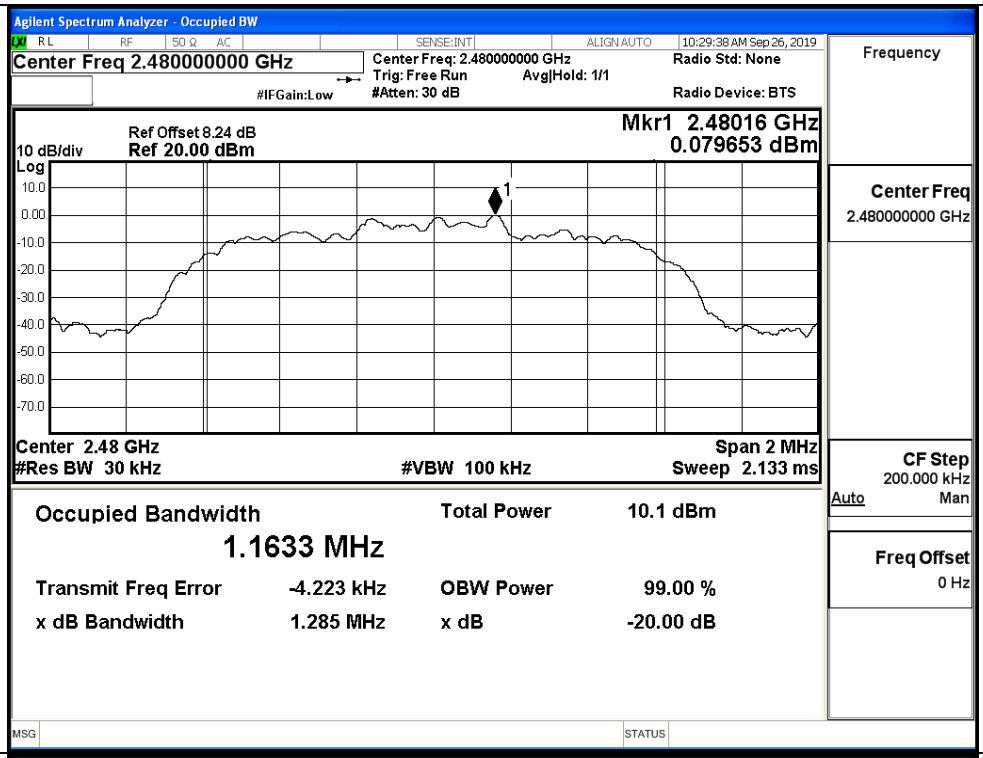
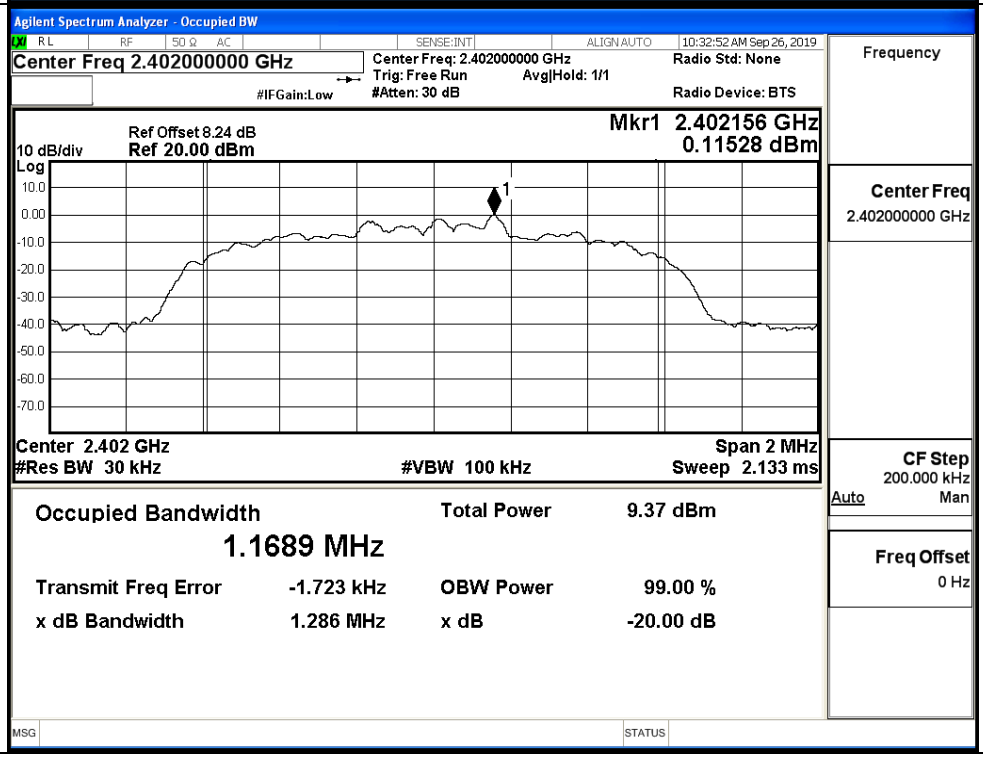
Test Graphs

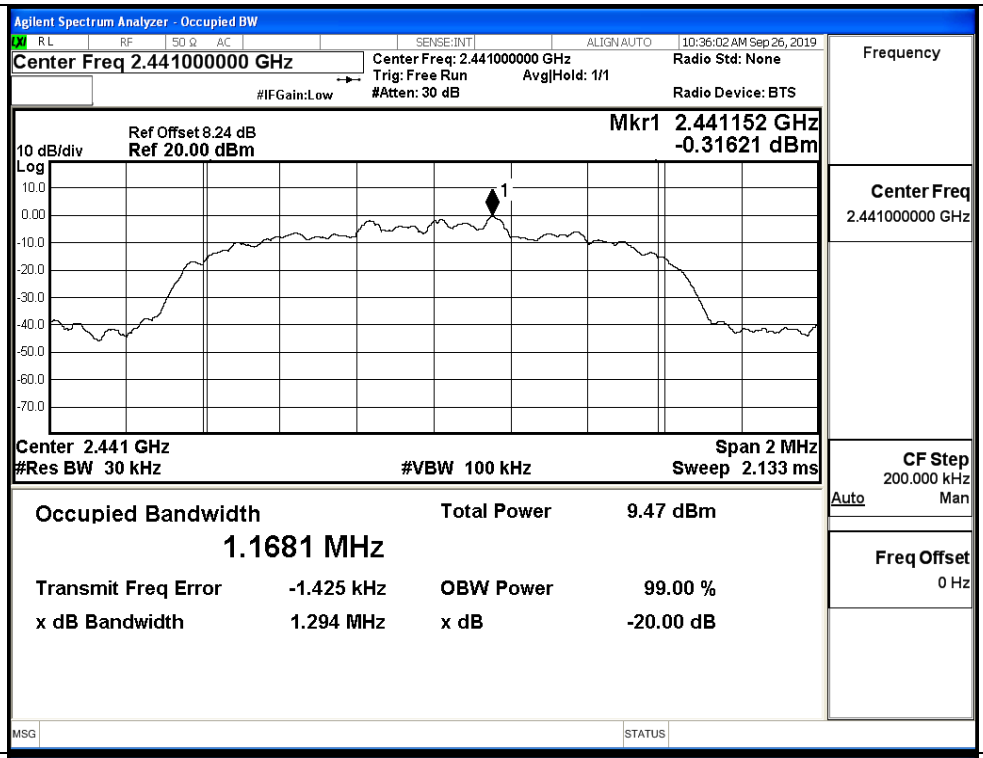
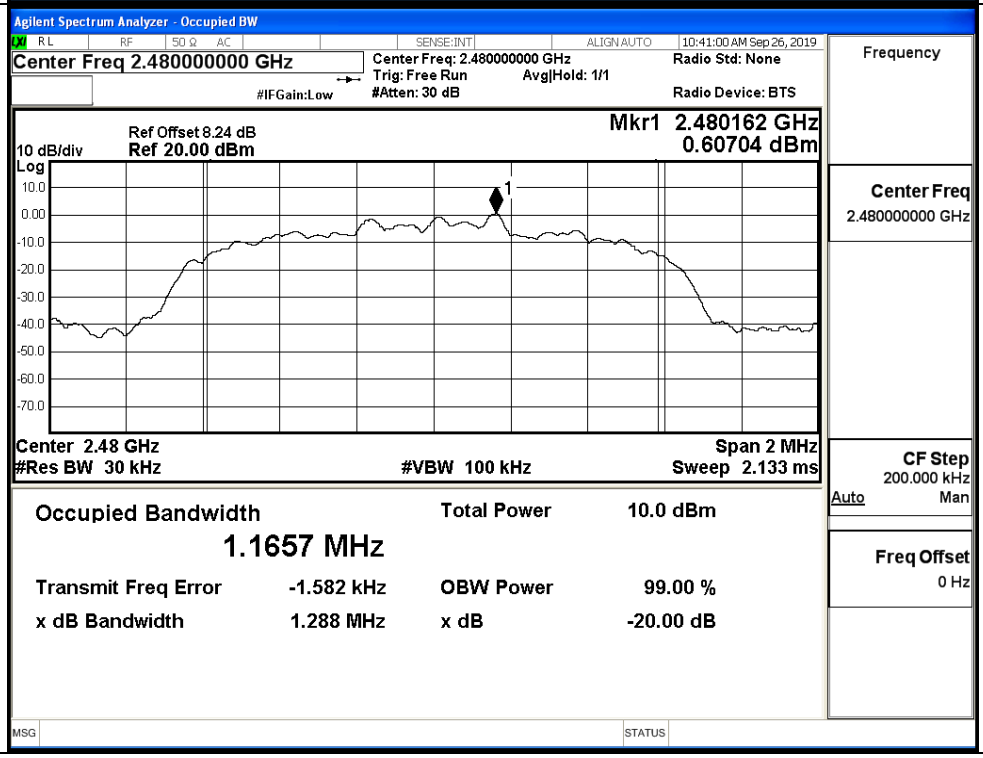
GFSK/LCH



GFSK/MCH	
GFSK/HCH	

π/4DQPSK/LCH	
π/4DQPSK/MCH	

π/4DQPSK/HCH	
8DPSK/LCH	

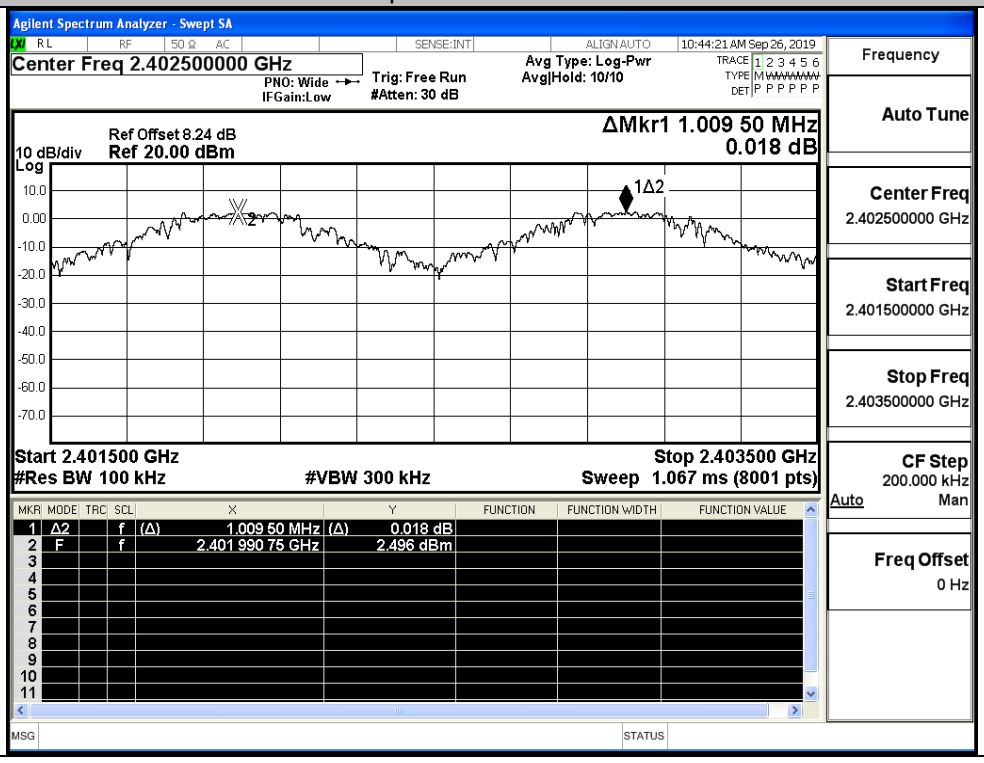
8DPSK/MCH	
8DPSK/HCH	

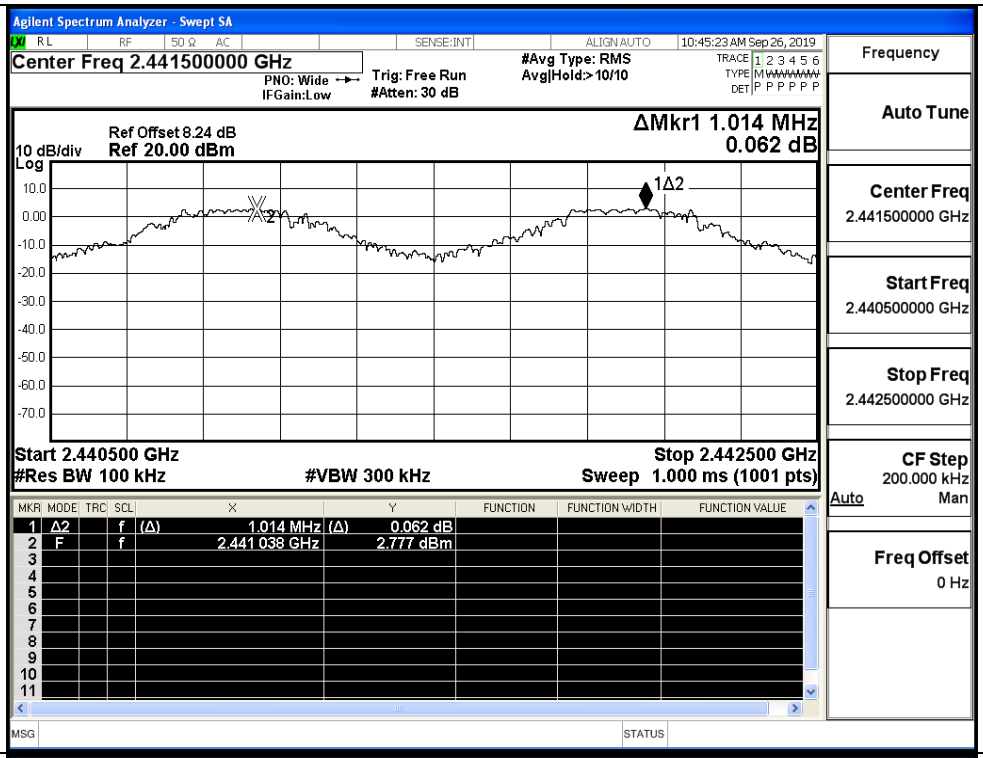
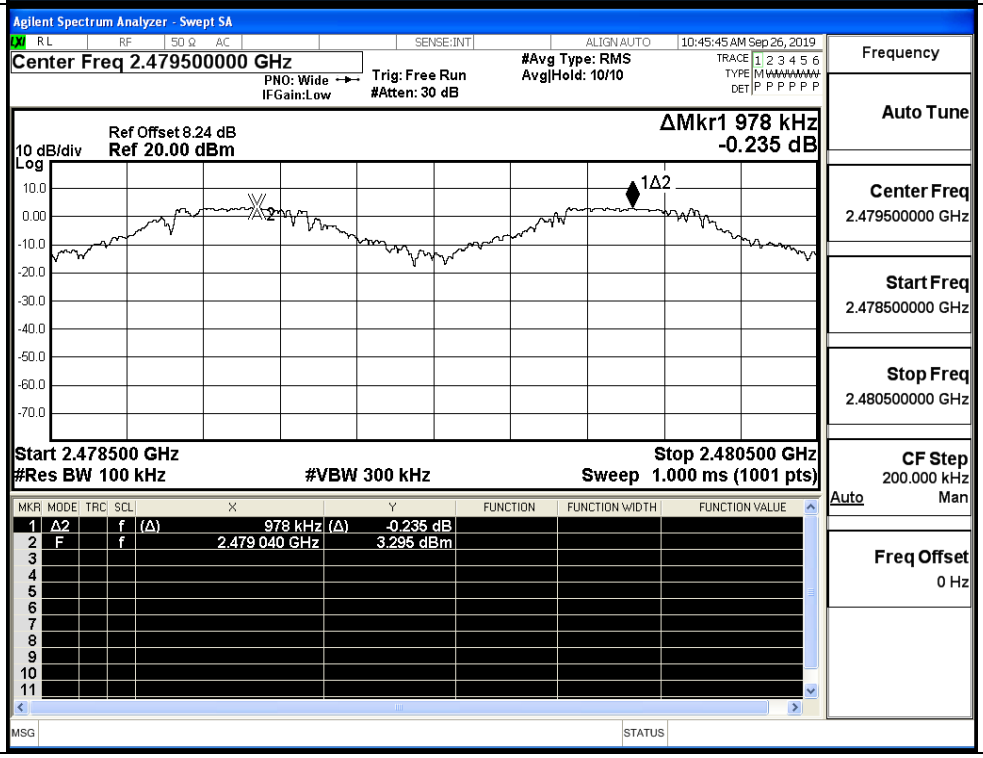
A.3 Carrier Frequency Separation

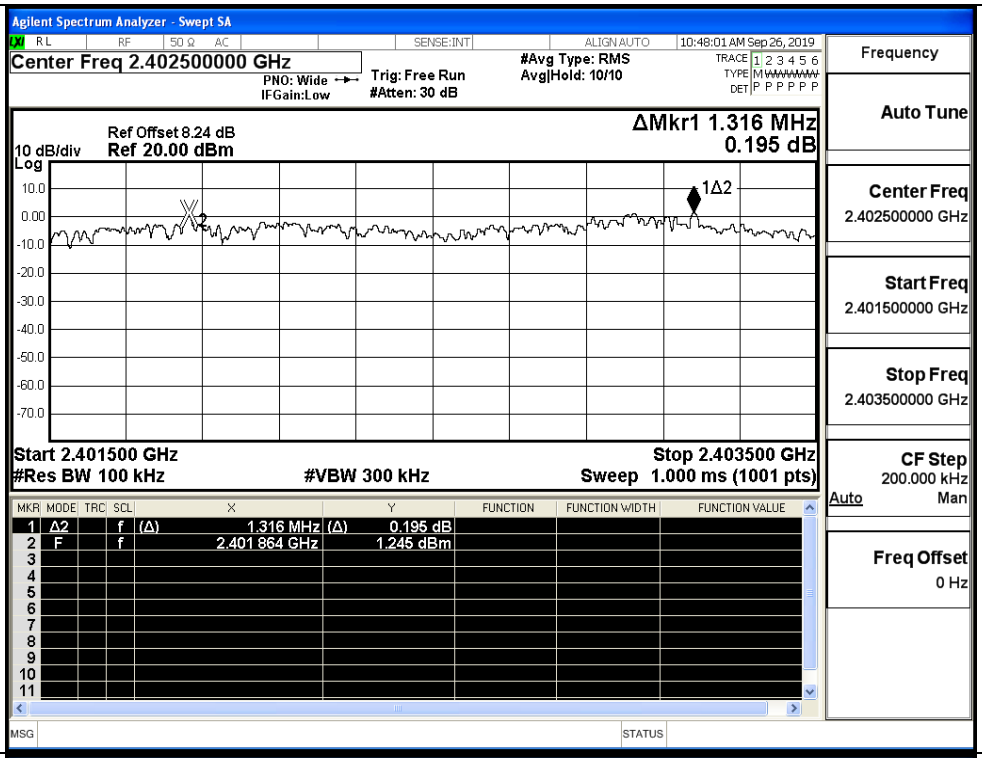
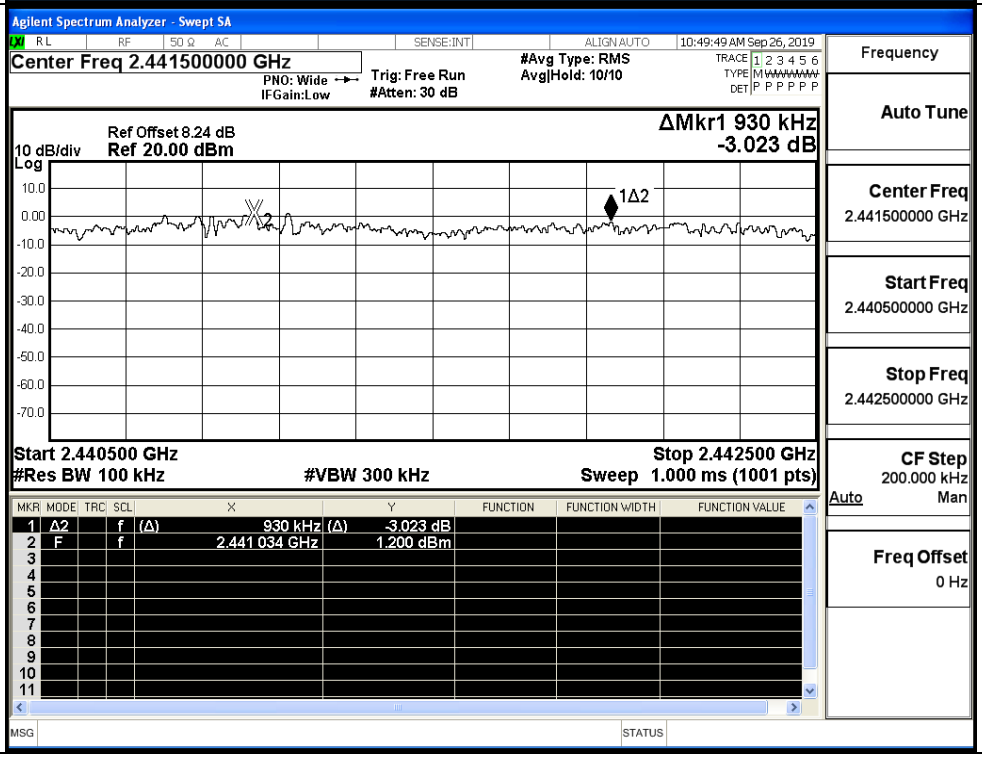
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.010	0.691	PASS
	MCH	1.014	0.691	PASS
	HCH	0.978	0.691	PASS
π/4DQPSK	LCH	1.316	0.859	PASS
	MCH	0.930	0.859	PASS
	HCH	1.092	0.859	PASS
8DPSK	LCH	1.096	0.863	PASS
	MCH	1.308	0.863	PASS
	HCH	0.904	0.863	PASS

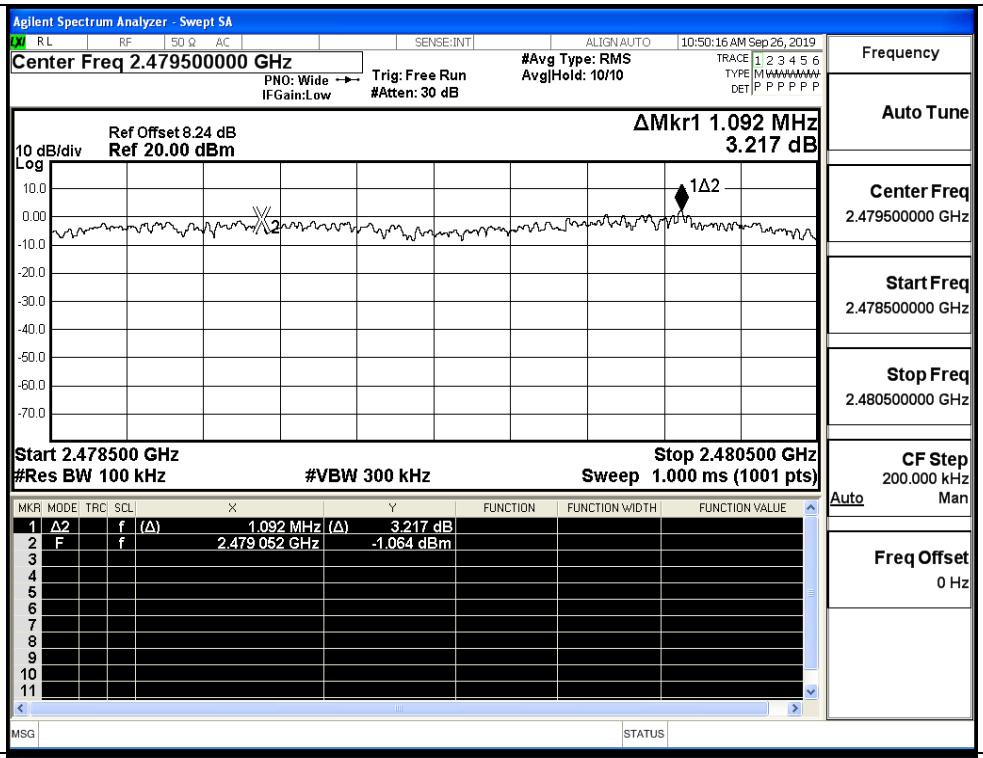
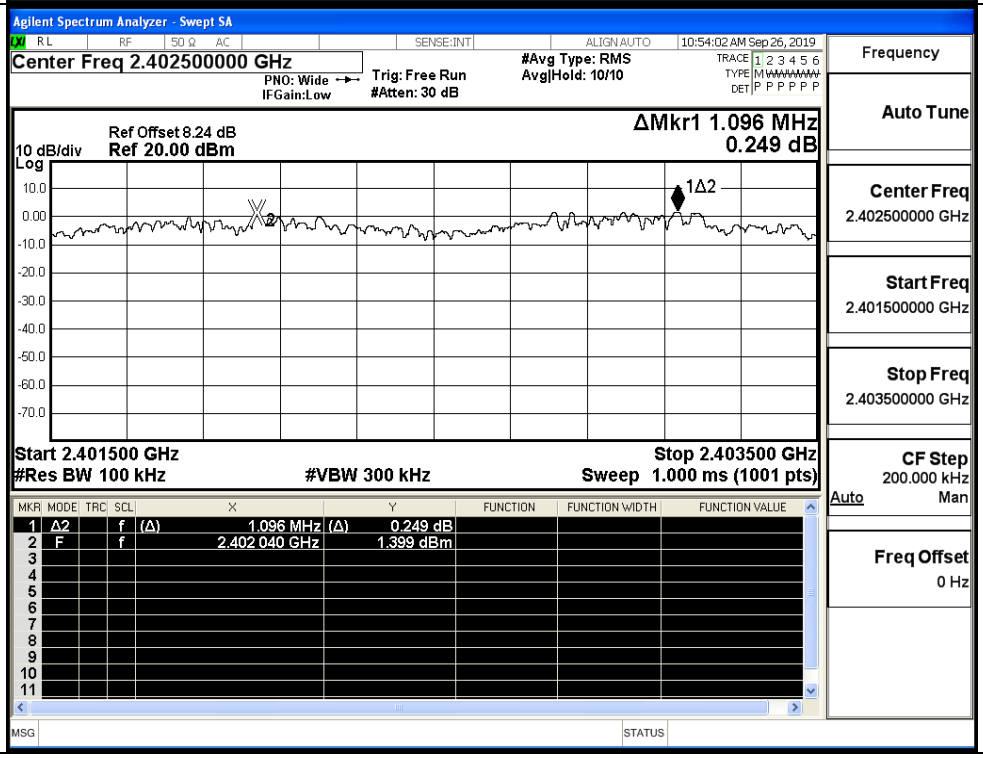
Test Graphs

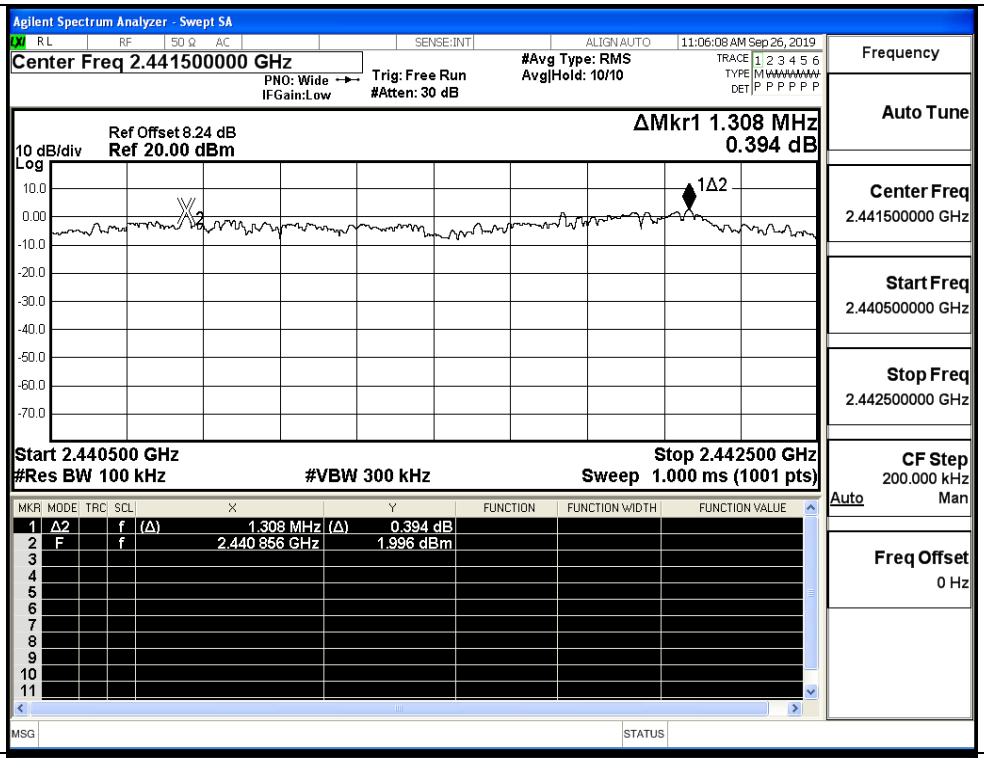
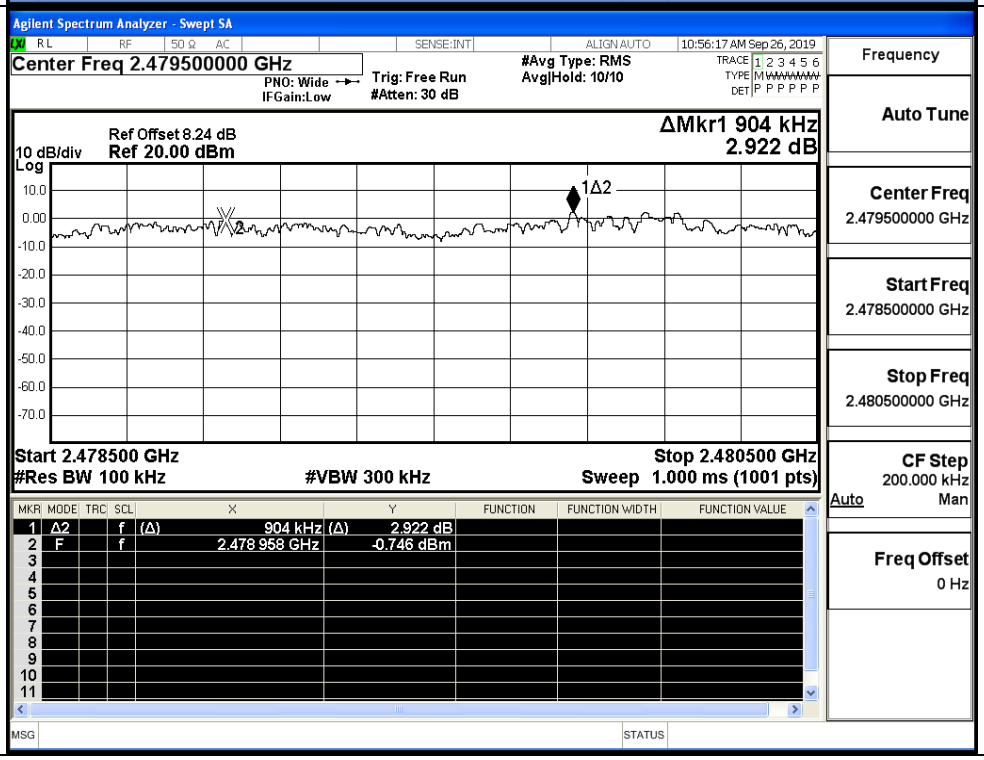
GFSK/LCH



GFSK/MCH	
GFSK/HCH	

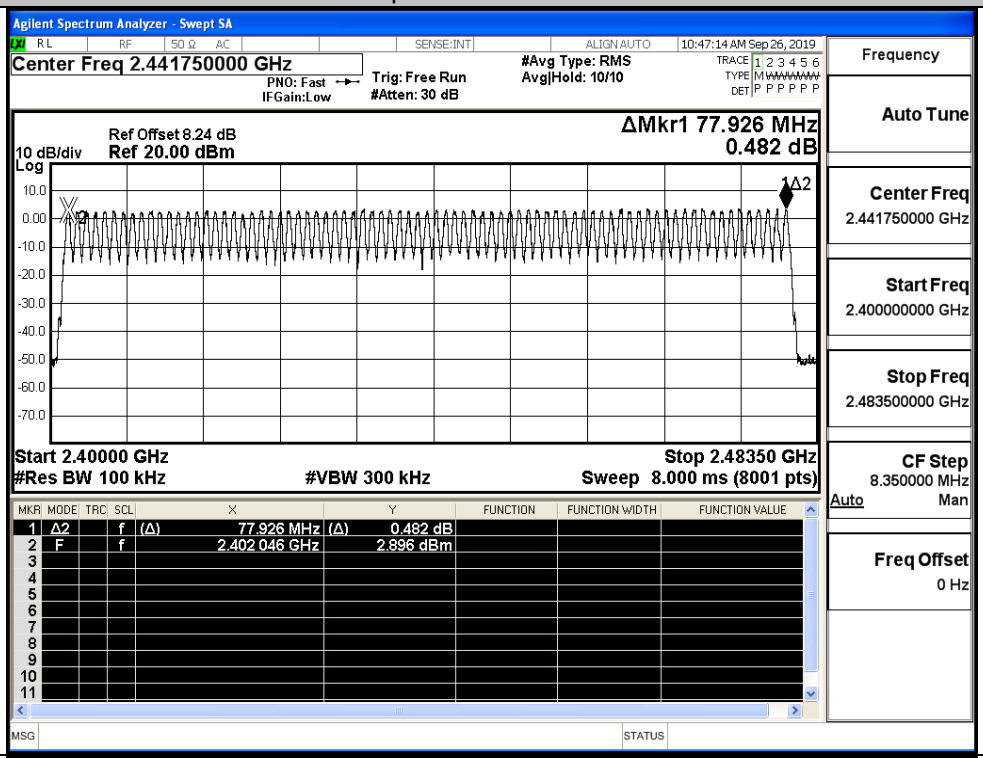
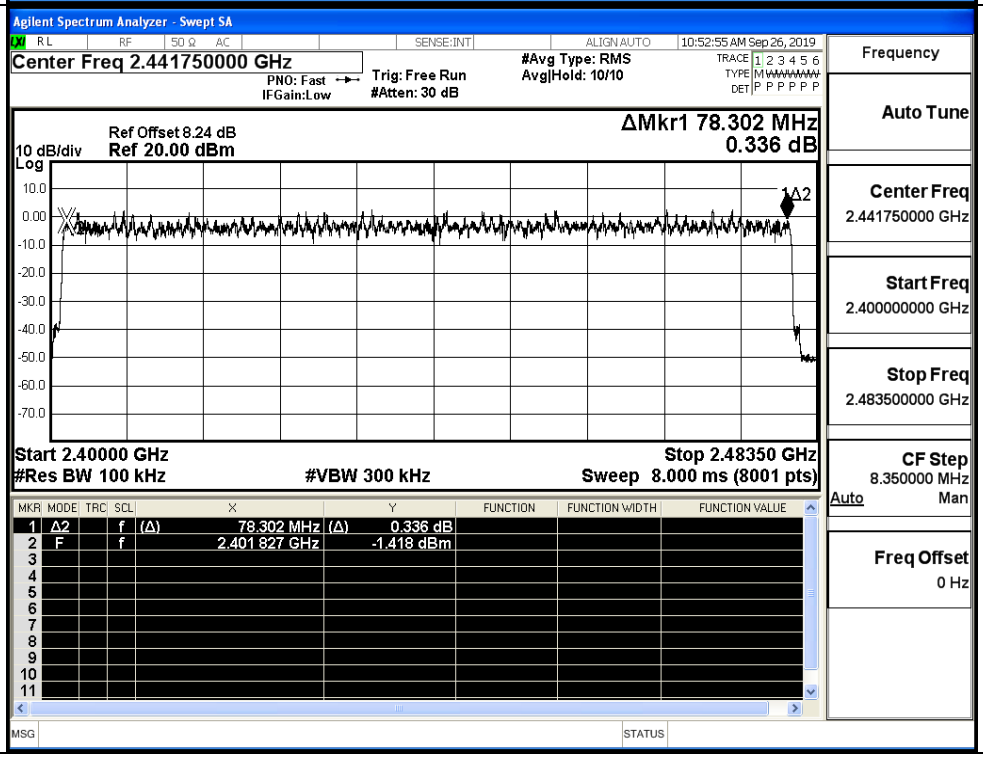
π/4DQPSK/LCH	
π/4DQPSK/MCH	

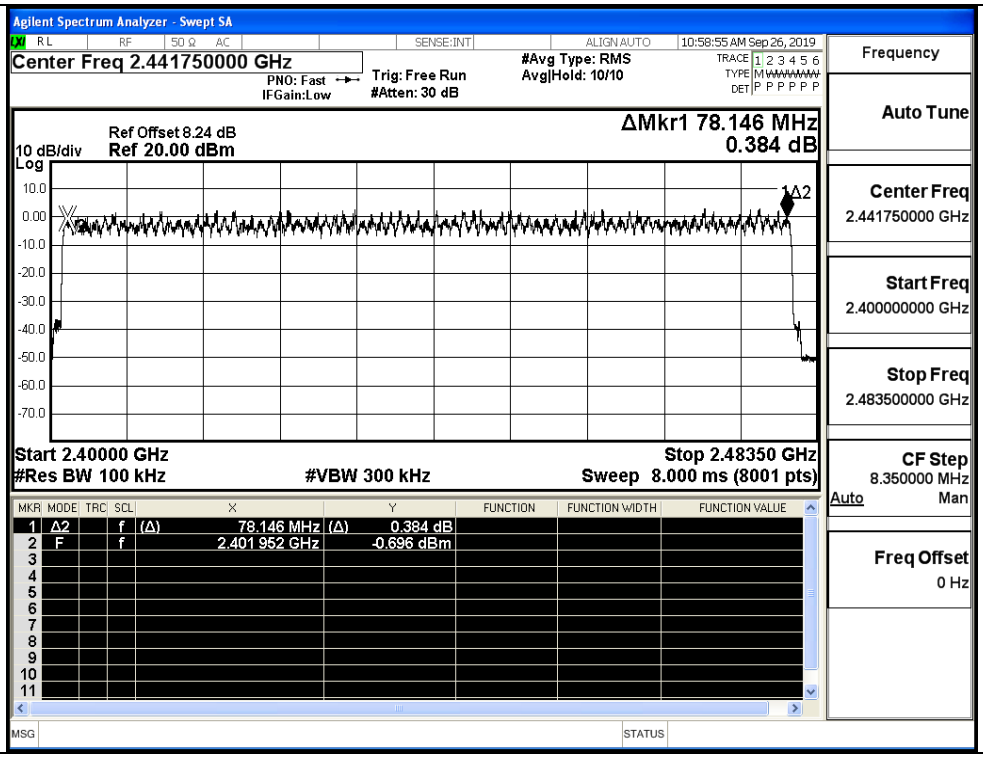
π/4DQPSK/HCH	
8DPSK/LCH	

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	

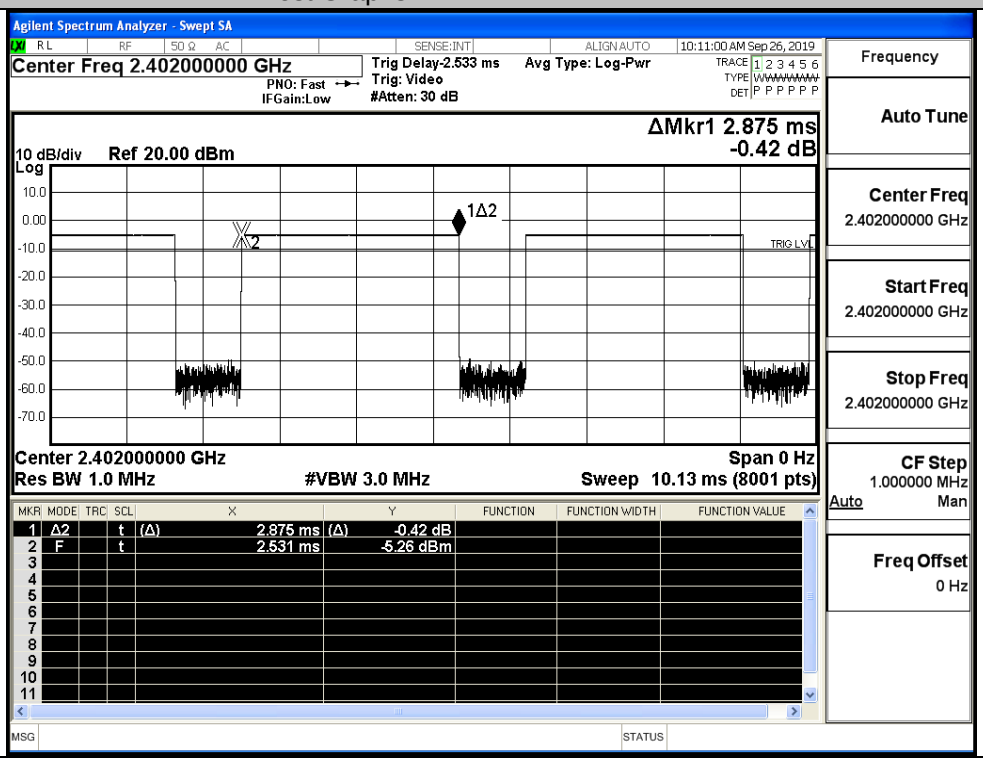
Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:58:55 AM Sep 26, 2019
Center Freq 2.441750000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 10/10
TRACE 1 2 3 4 5 6
TYPE M
DET P P P P P
Ref Offset 8.24 dB
10 dB/div
Log
Ref 20.00 dBm
ΔMkr1 78.146 MHz
0.384 dB
1Δ2
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Start 2.40000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.48350 GHz
Sweep 8.000 ms (8001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 Δ2 f (Δ) 78.146 MHz (Δ) 0.384 dB
2 F f 2.401 952 GHz -0.696 dBm
3
4
5
6
7
8
9
10
11
MSG
STATUS
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

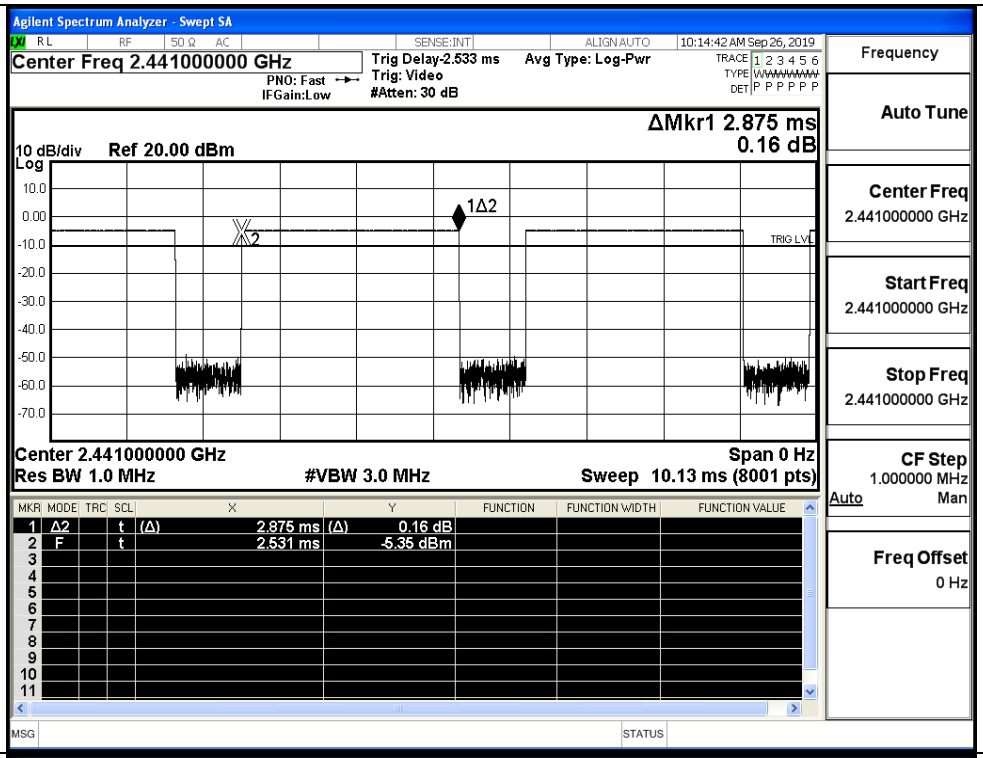
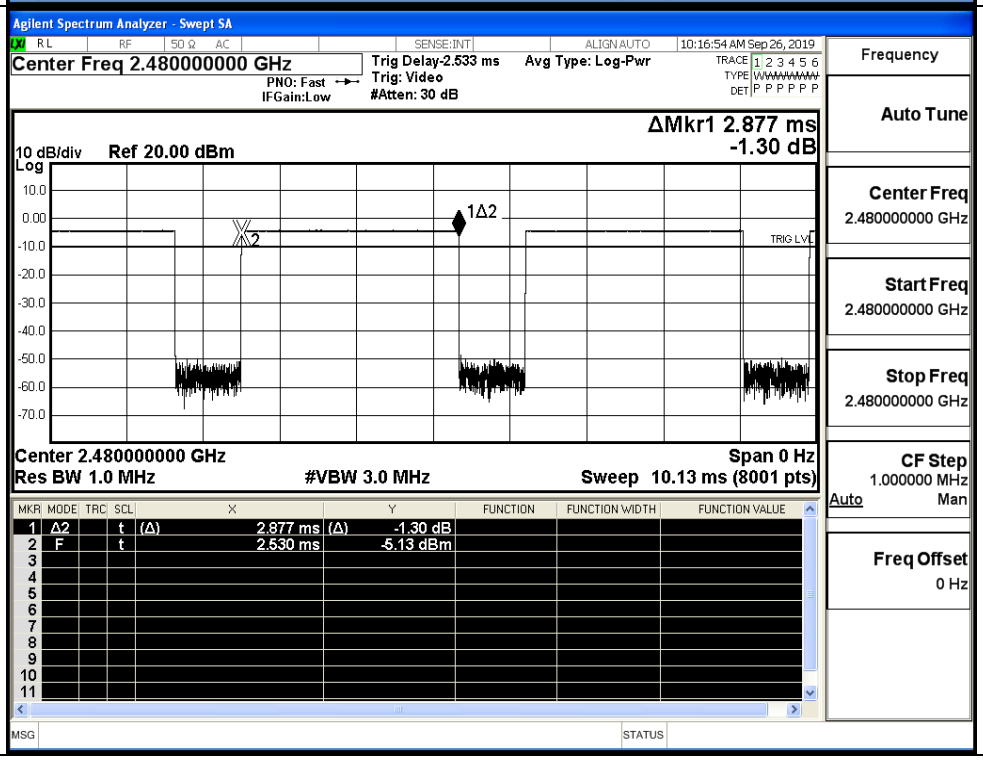
A.5 Dwell Time

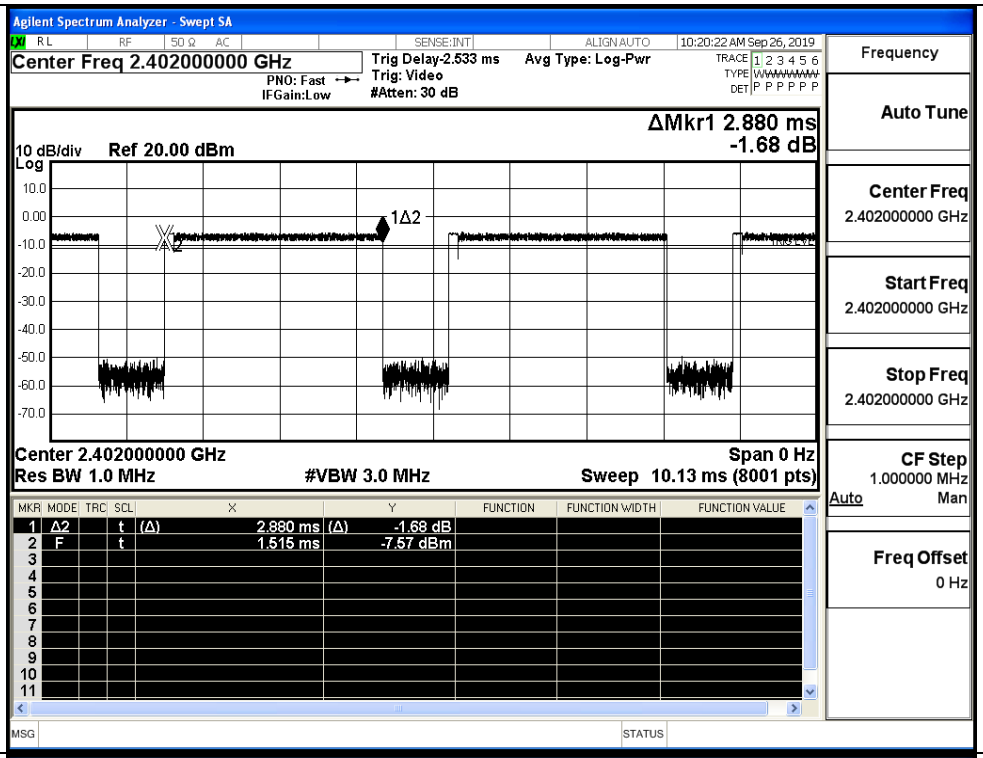
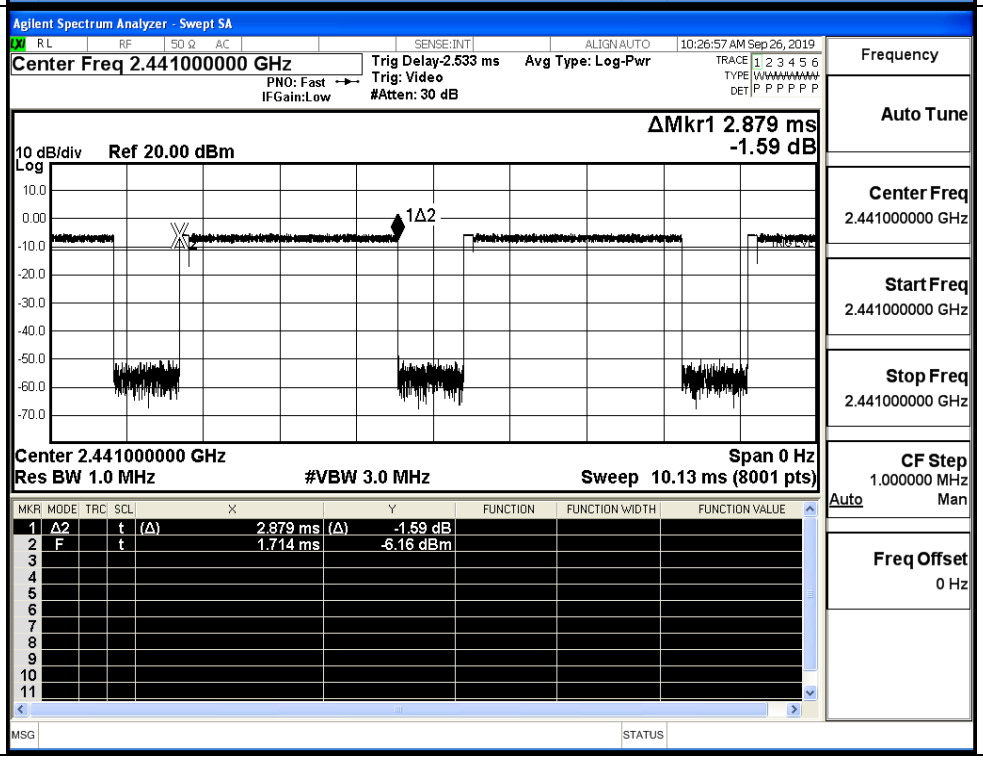
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
π/4DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7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

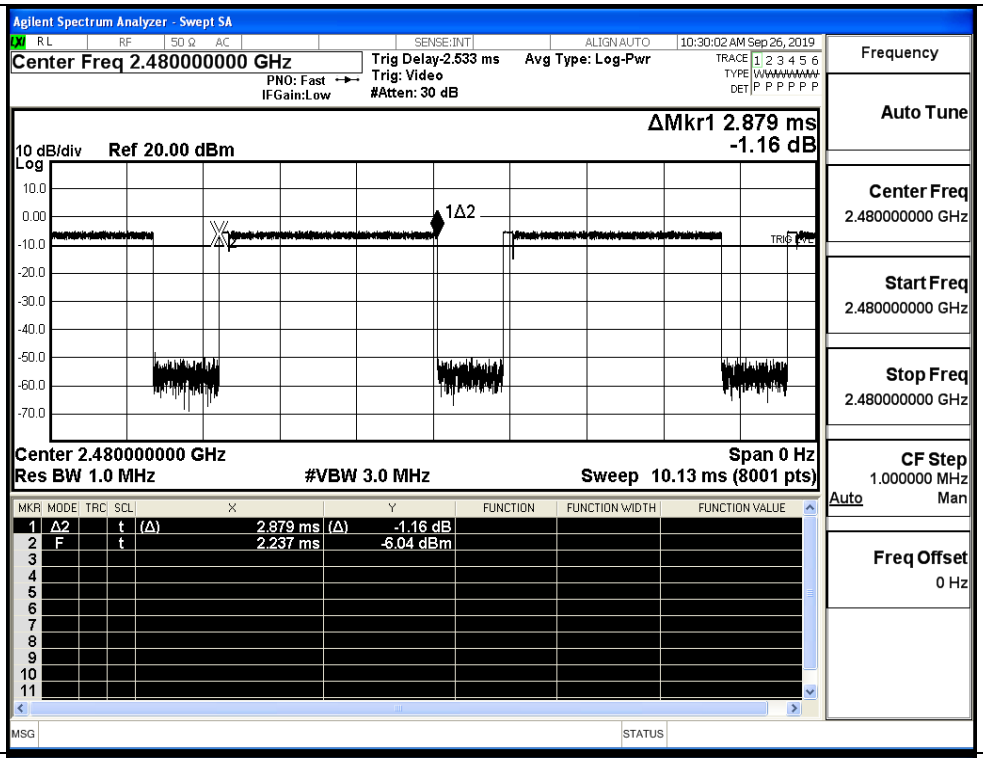
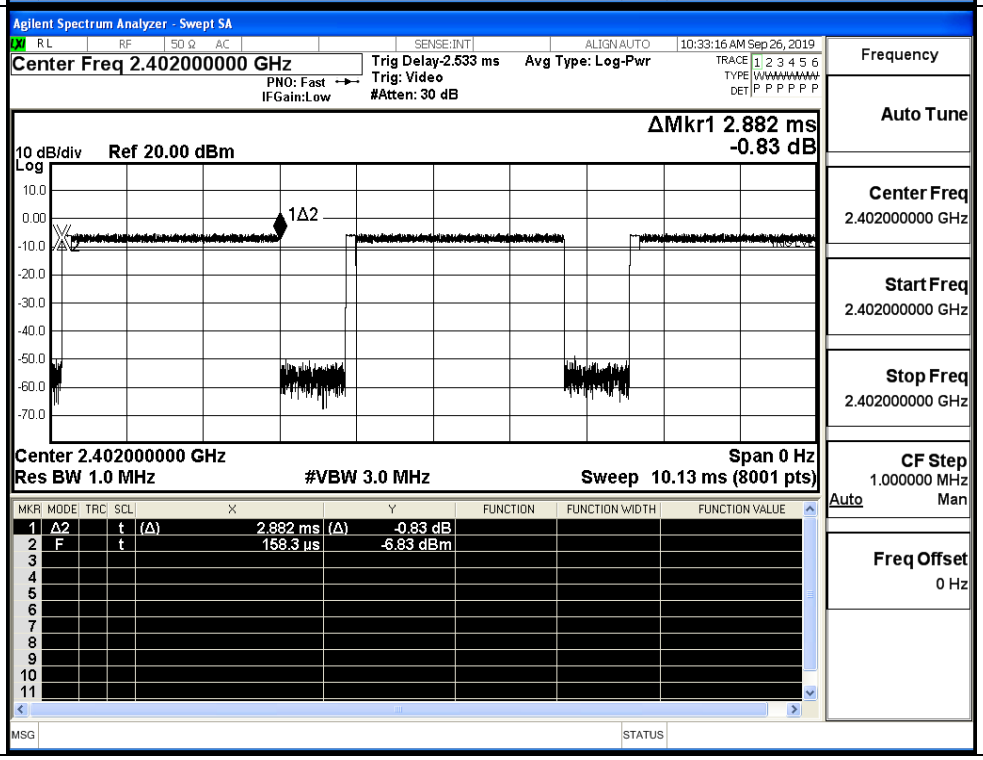
Test Graphs

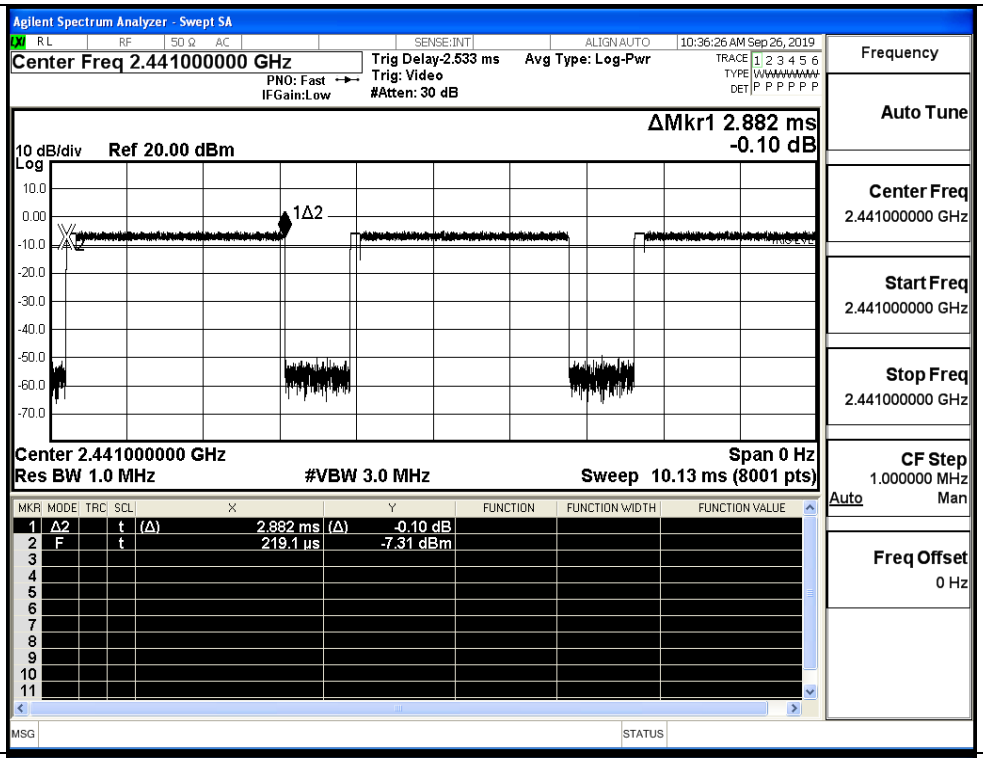
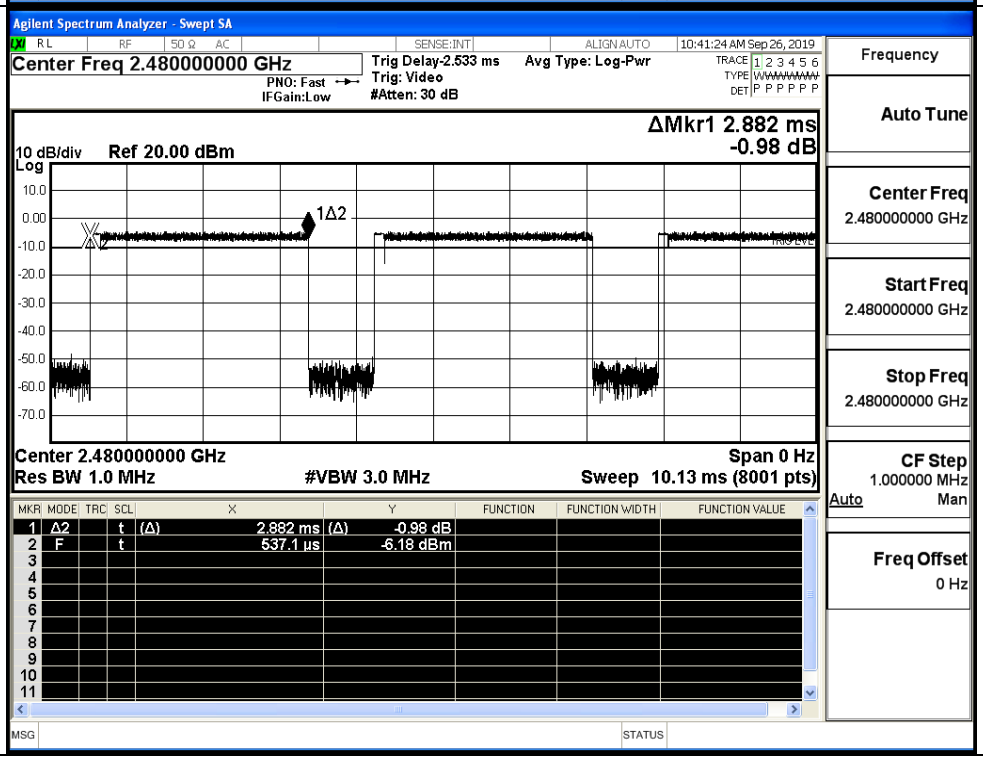
GFSK_DH5/LCH



GFSK_DH5/MCH	
GFSK_DH5/HCH	

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

π/4DQPSK _2DH5/HCH	
8DPSK _3DH5/LCH	

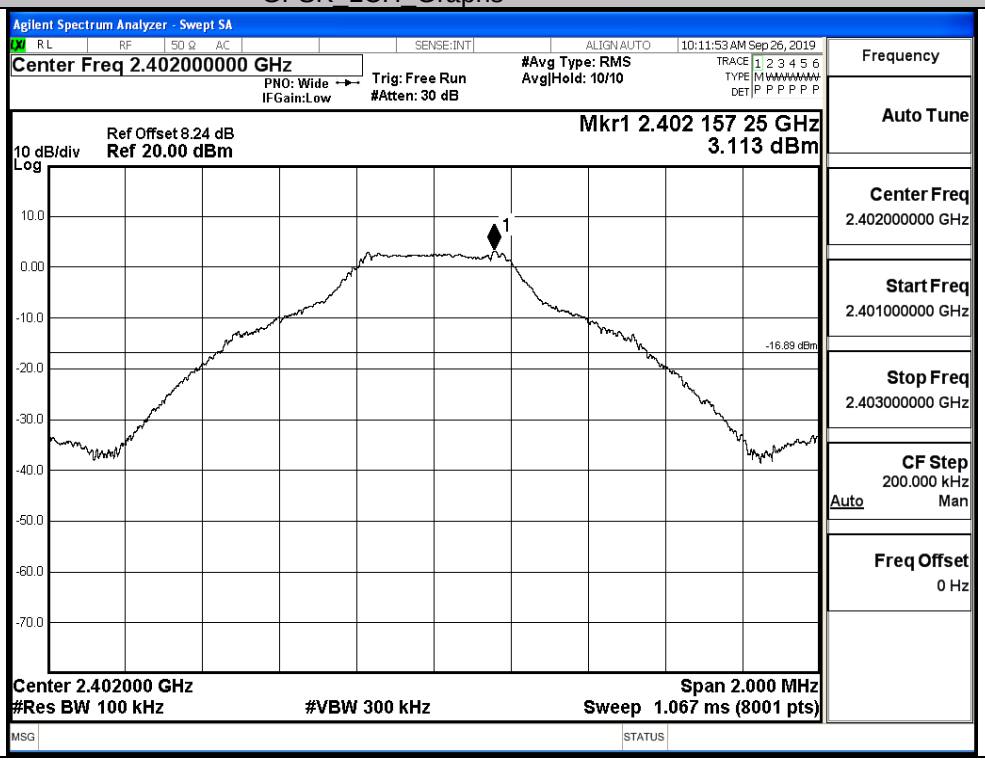
8DPSK _3DH5/MCH	
8DPSK _3DH5/HCH	

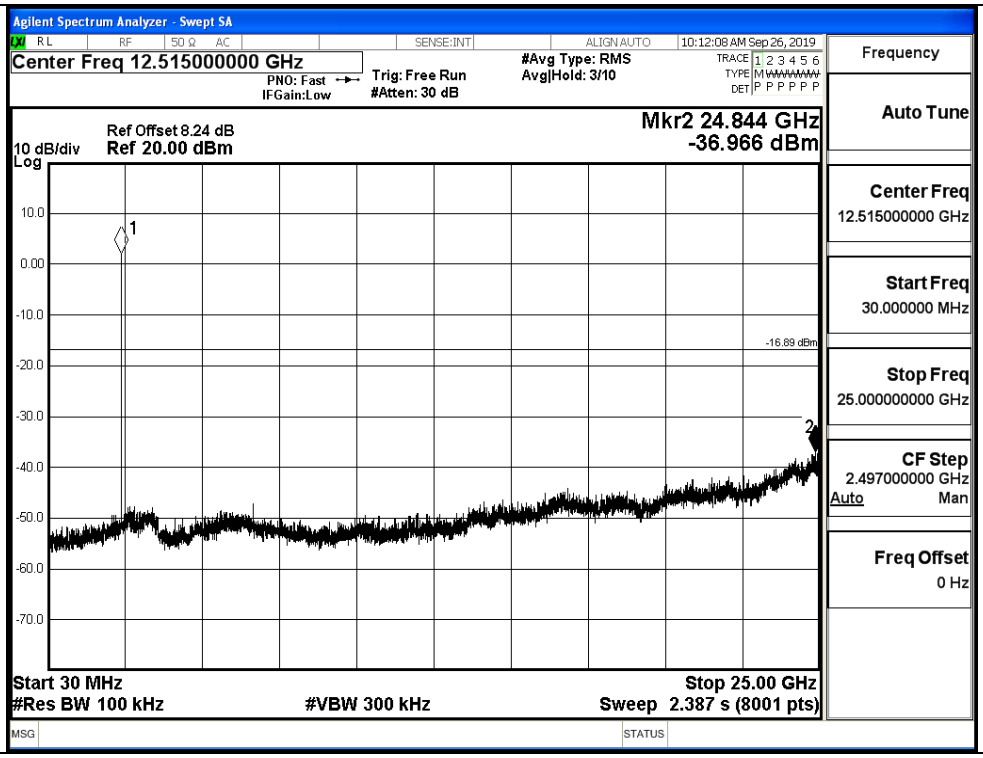
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	3.113	-36.966	-16.887	PASS
	MCH	3.381	-37.742	-16.619	PASS
	HCH	3.573	-37.354	-16.427	PASS
π/4DQPSK	LCH	1.982	-37.320	-18.018	PASS
	MCH	2.209	-37.820	-17.791	PASS
	HCH	2.873	-37.085	-17.127	PASS
8DPSK	LCH	2.261	-37.027	-17.739	PASS
	MCH	2.031	-37.525	-17.969	PASS
	HCH	2.809	-38.073	-17.191	PASS

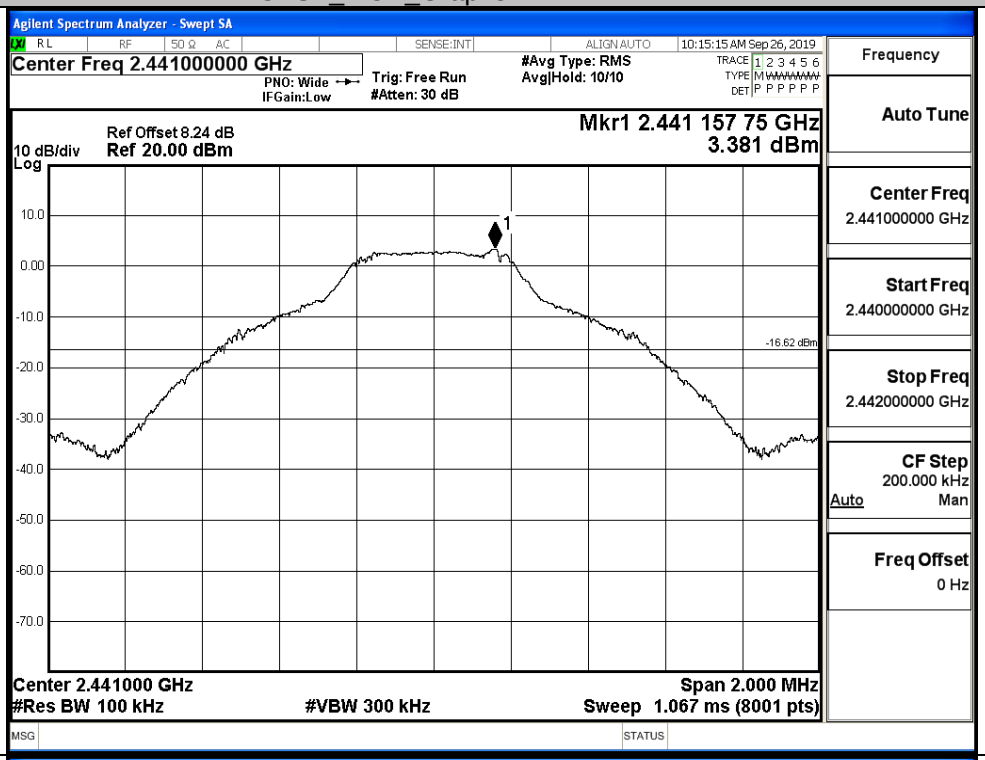
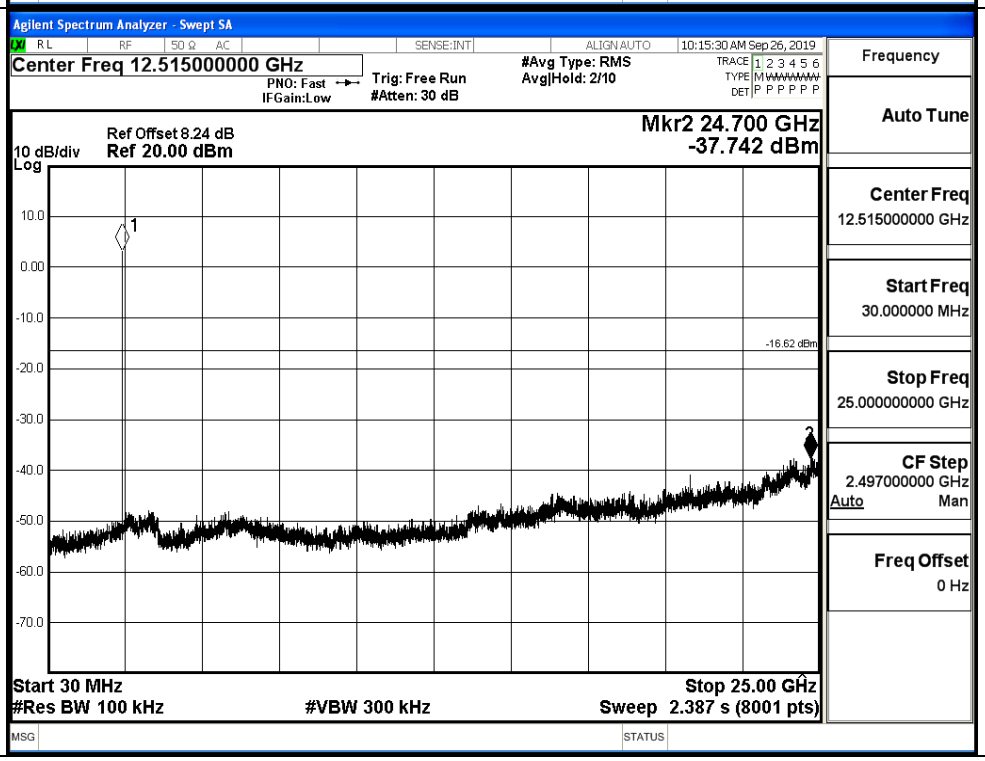
GFSK_LCH_Graphs

Pref



Puw		

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:12:08 AM Sep 26, 2019
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 8.24 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr2 24.844 GHz
-36.966 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-16.89 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
MSG
STATUS

GFSK_MCH_Graphs		
Pref		
Puw		

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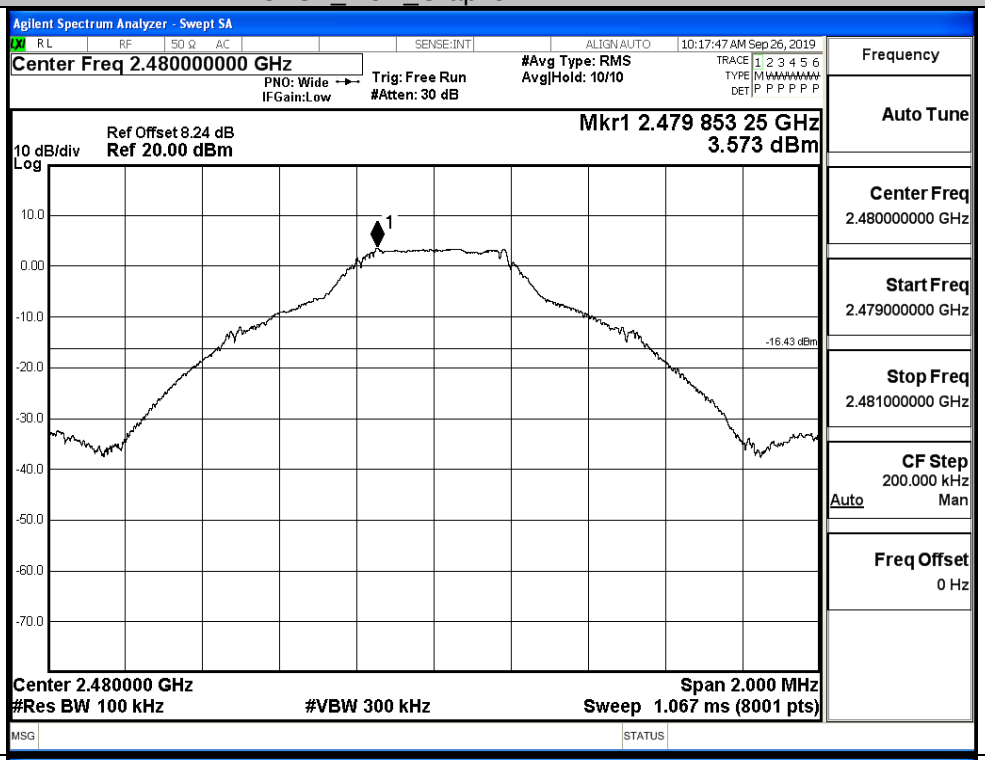
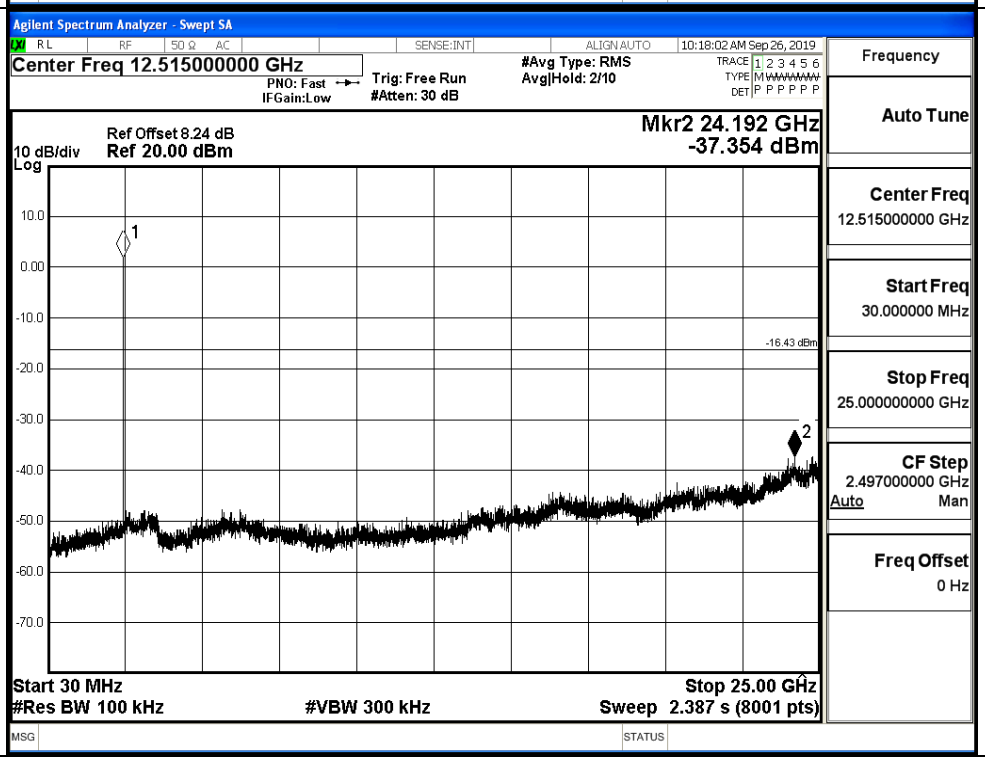
Pref		
Puw		

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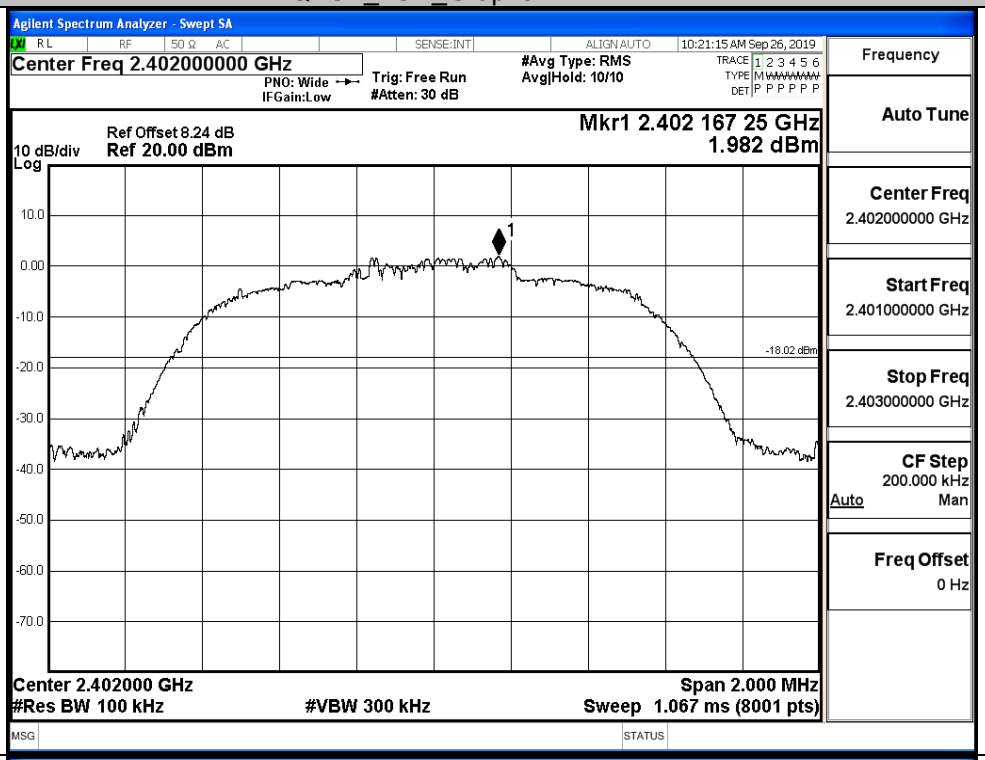
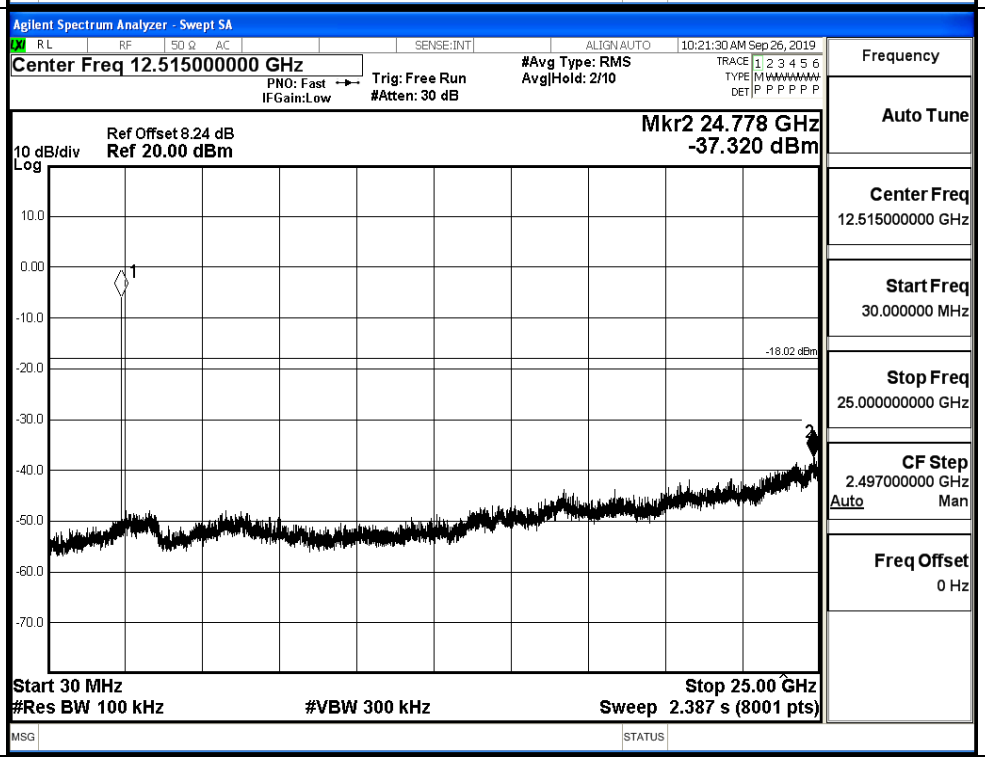
Pref			
Puw			

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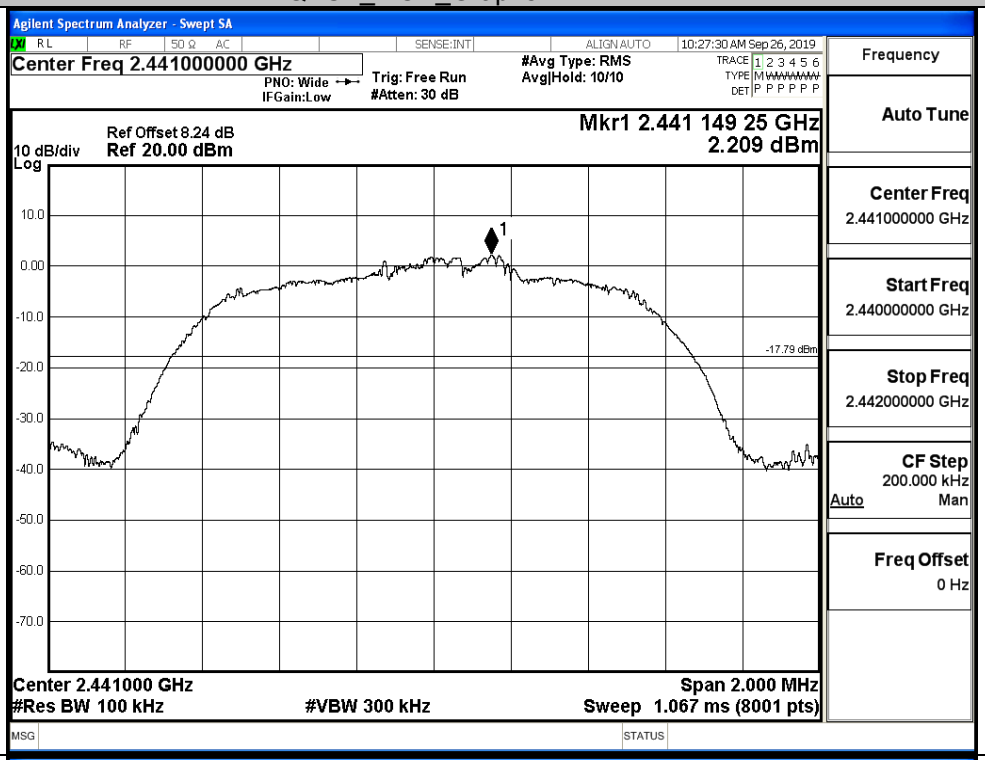
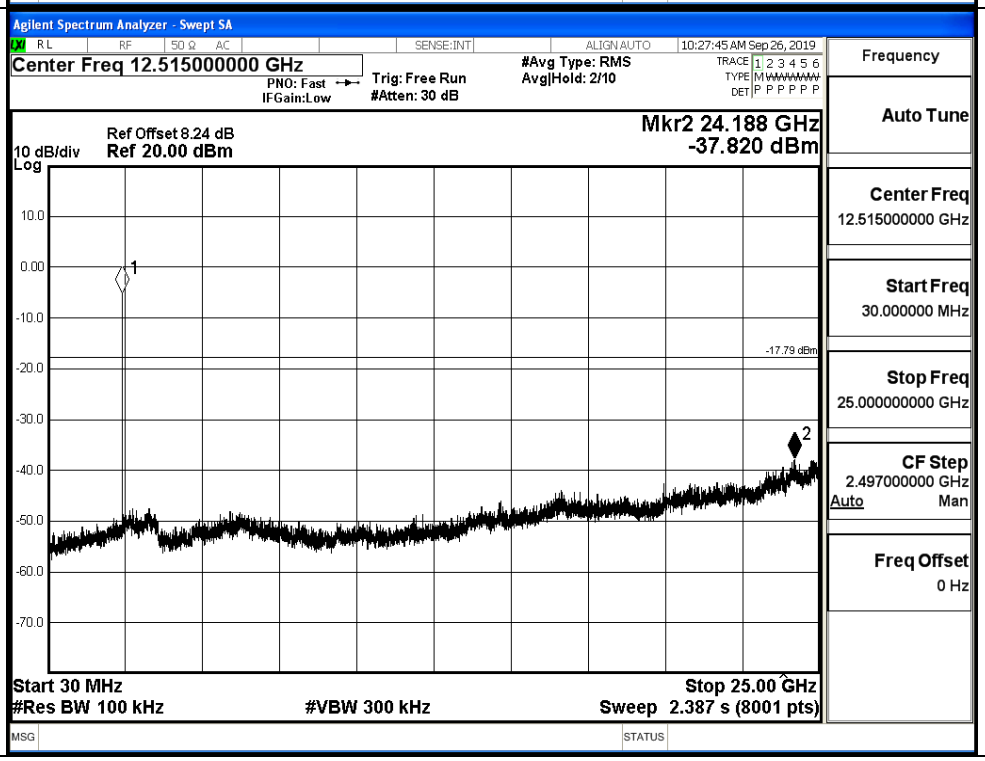
Pref			
Puw			

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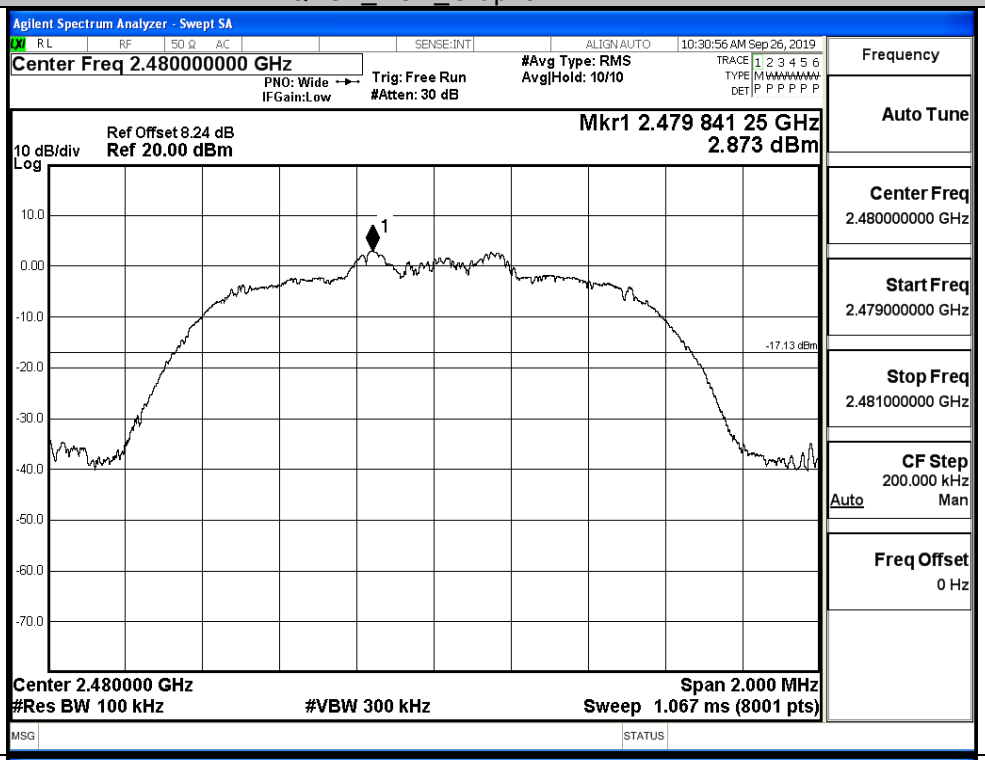
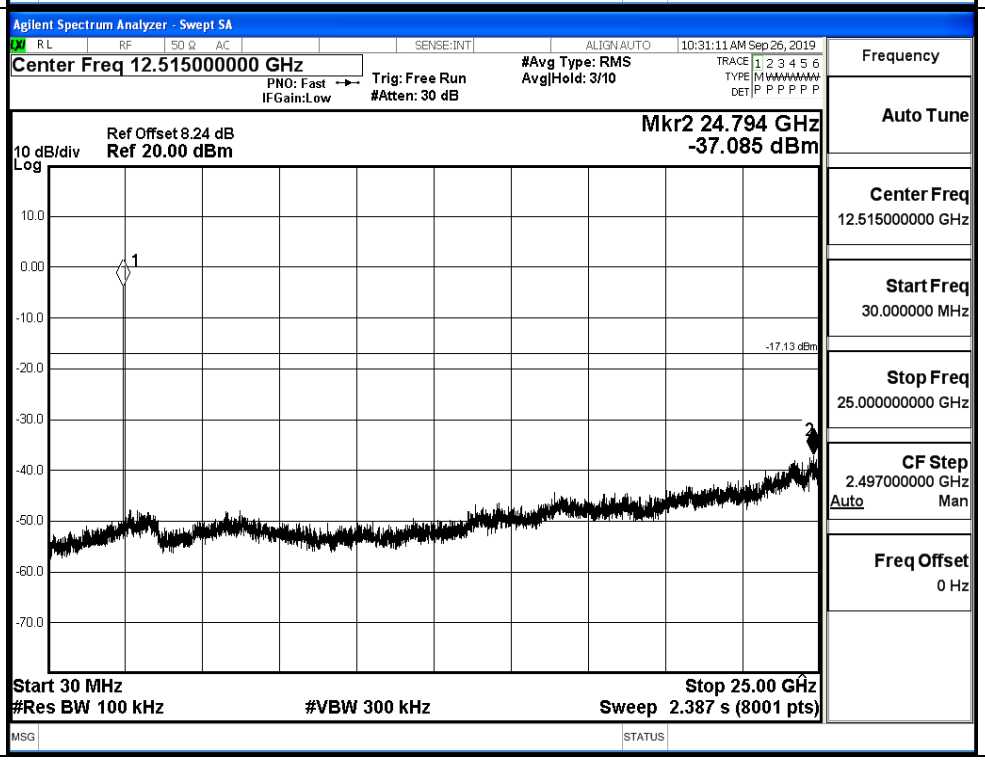
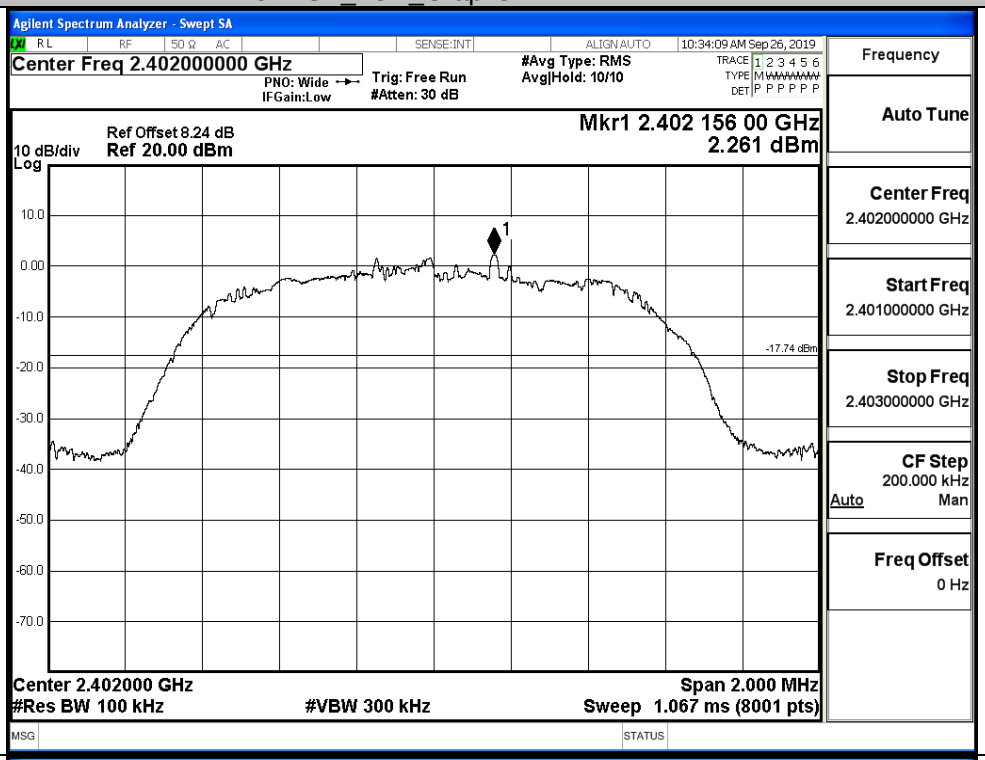
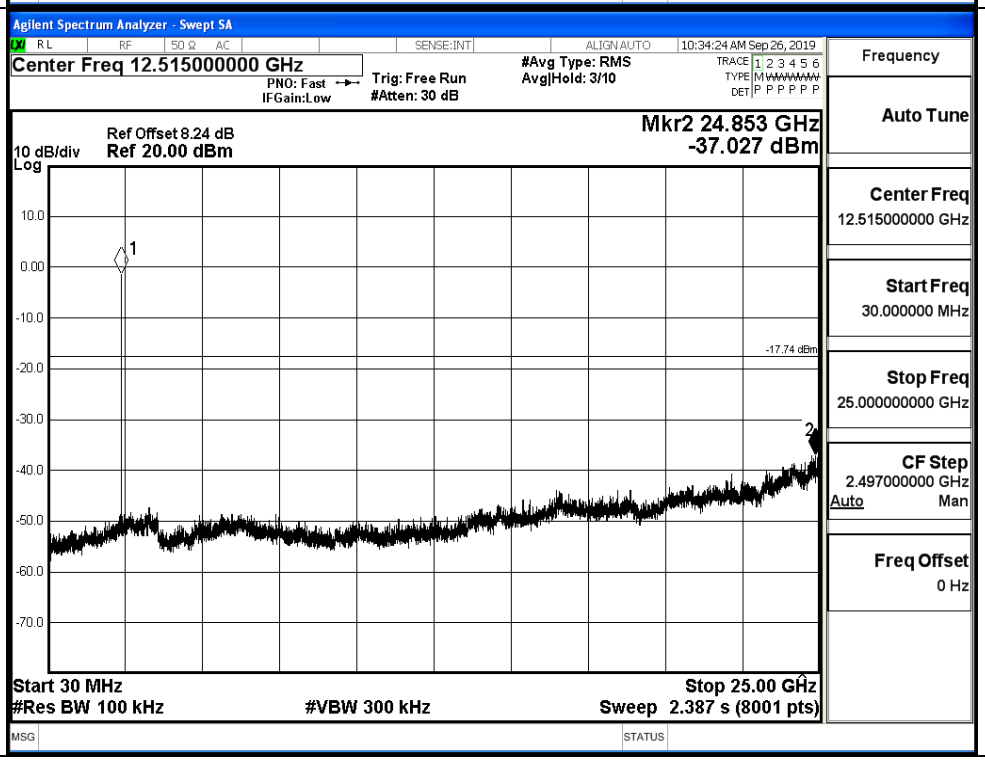
Pref		
Puw		

8DPSK_LCH_Graphs			
Pref			
Puw			

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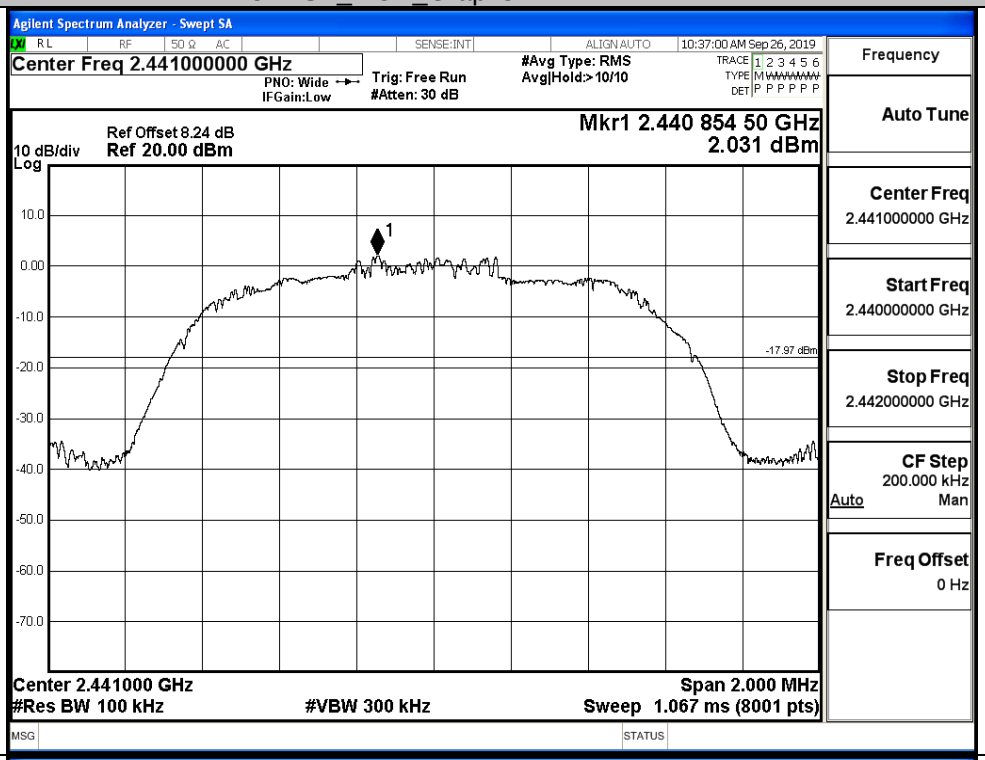
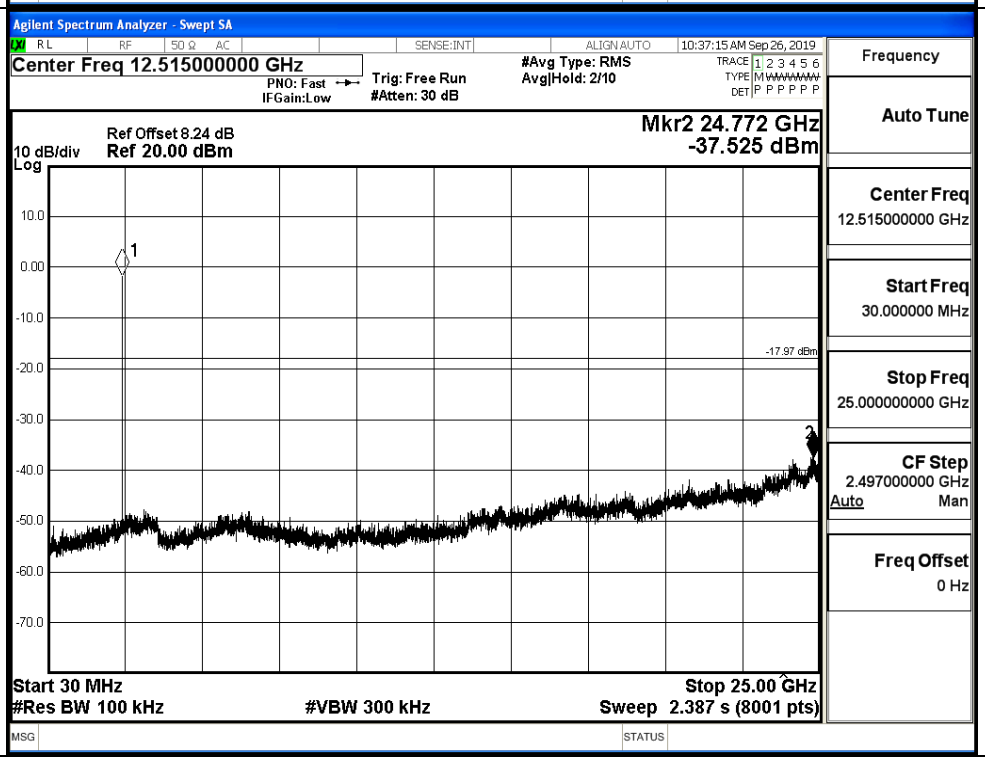
Pref			
Puw			

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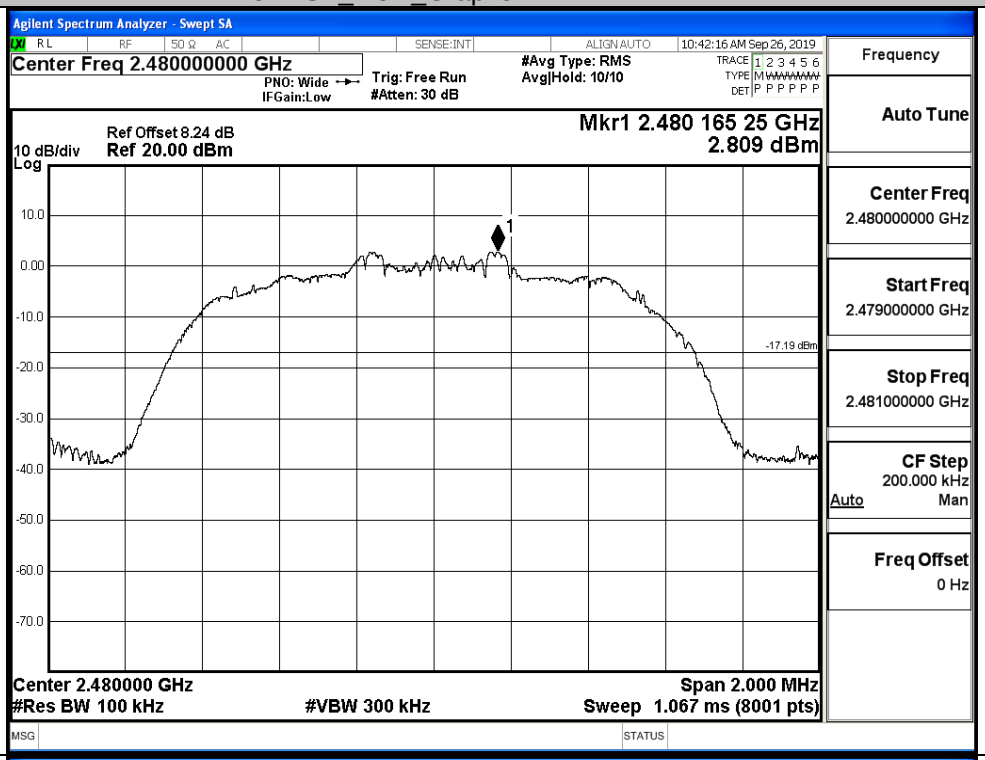
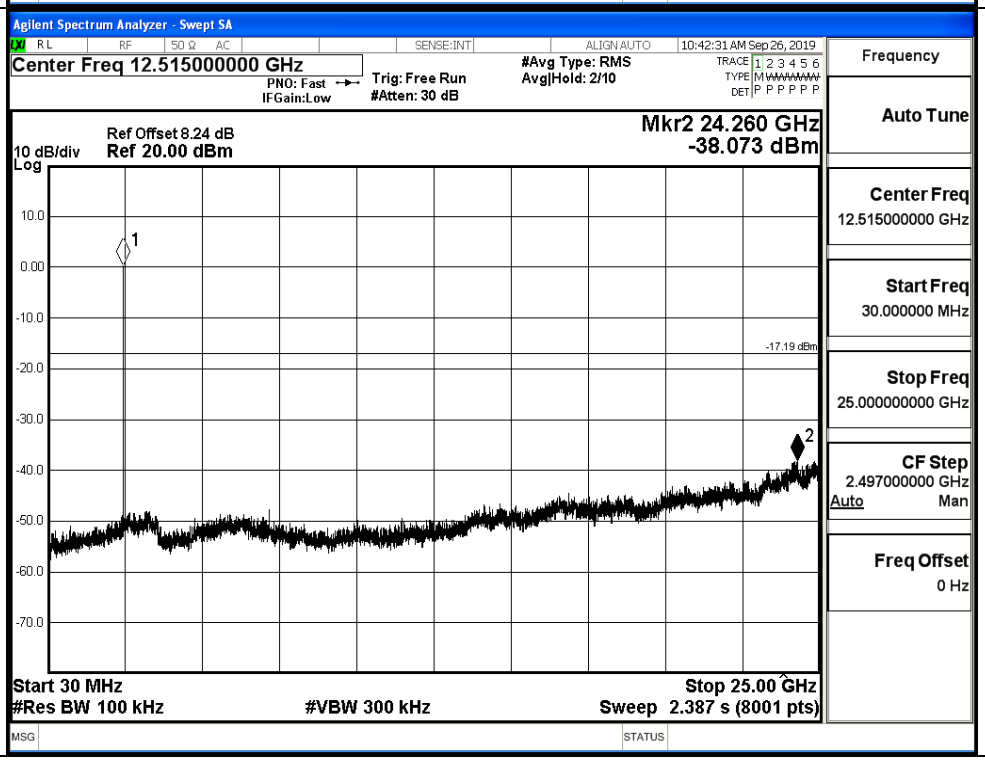
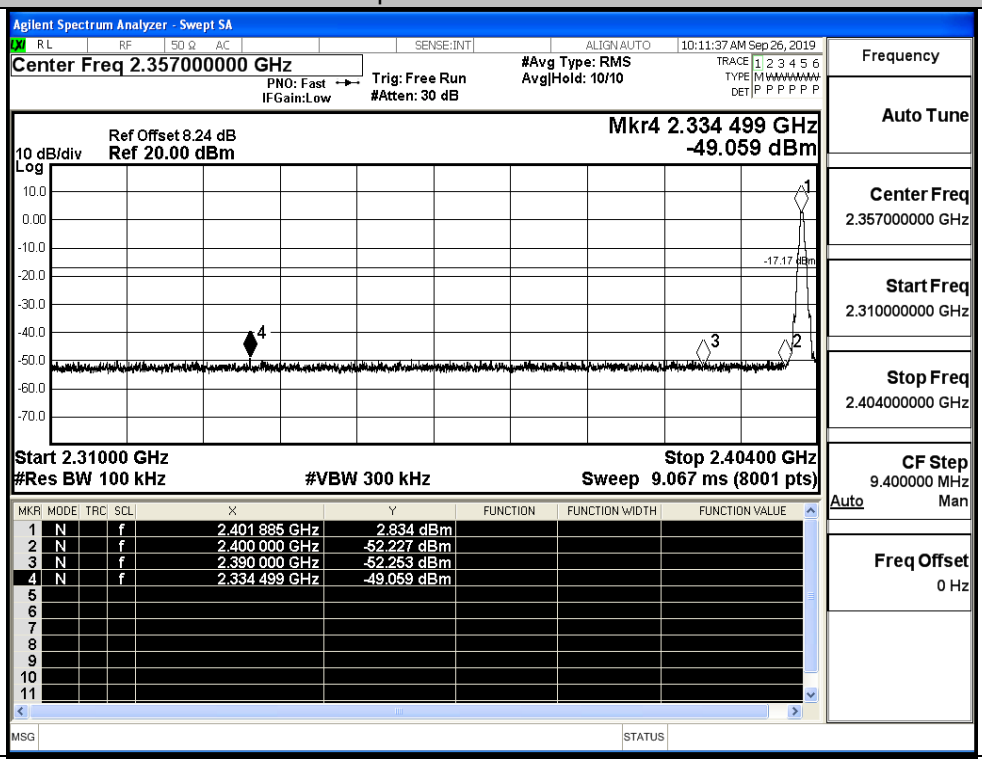
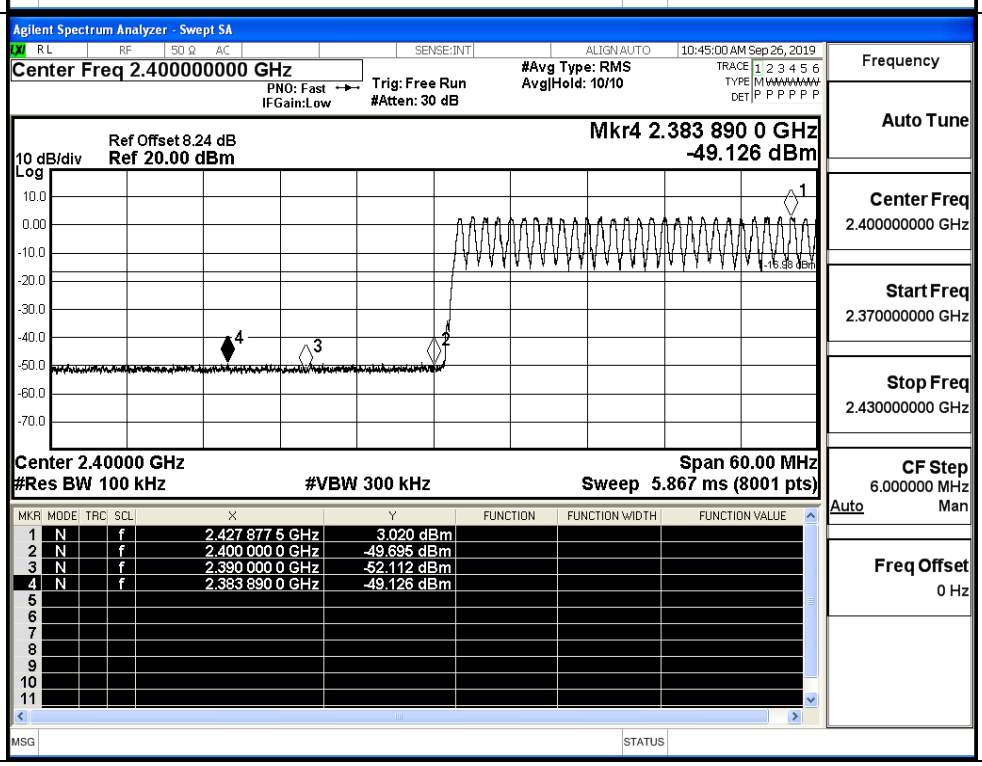
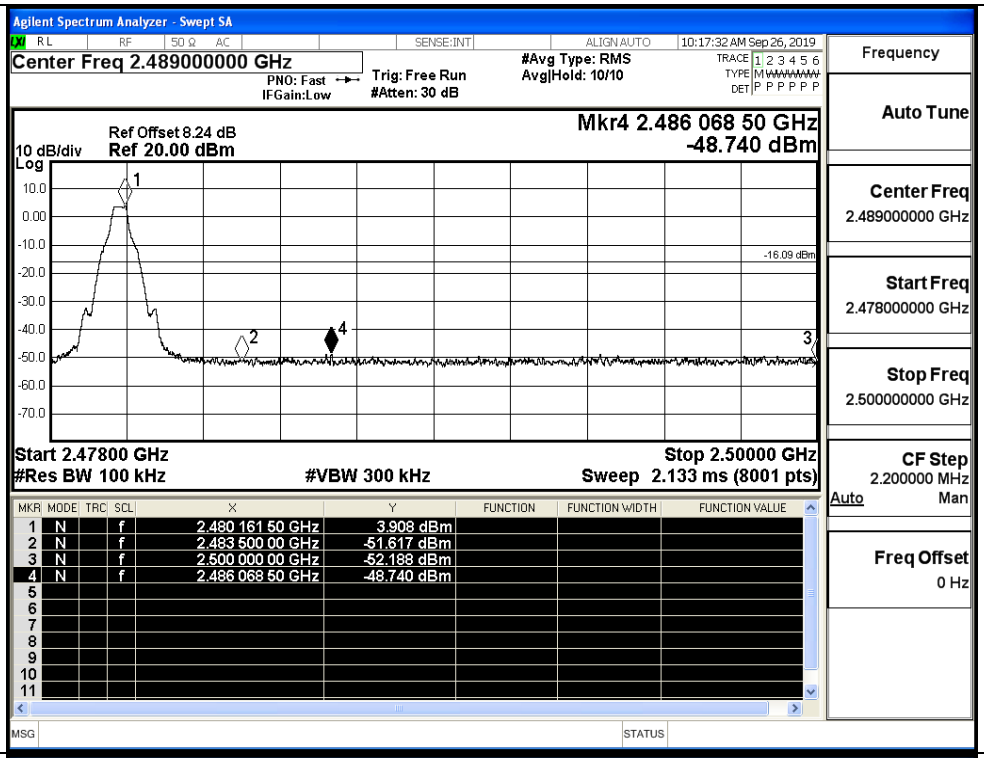
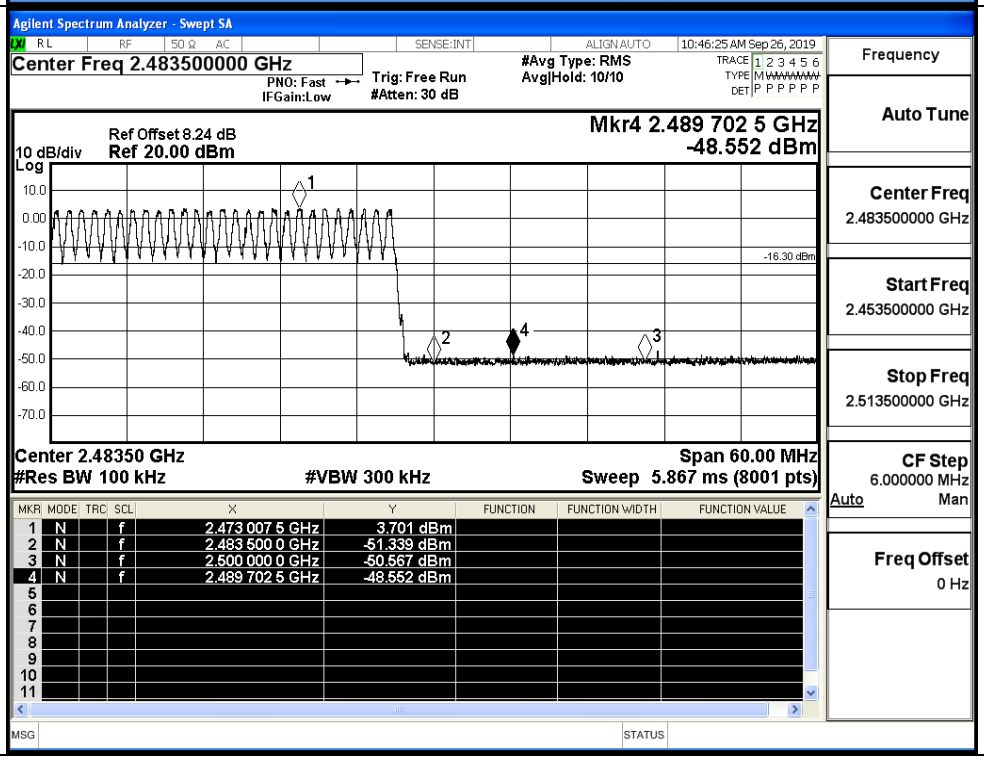
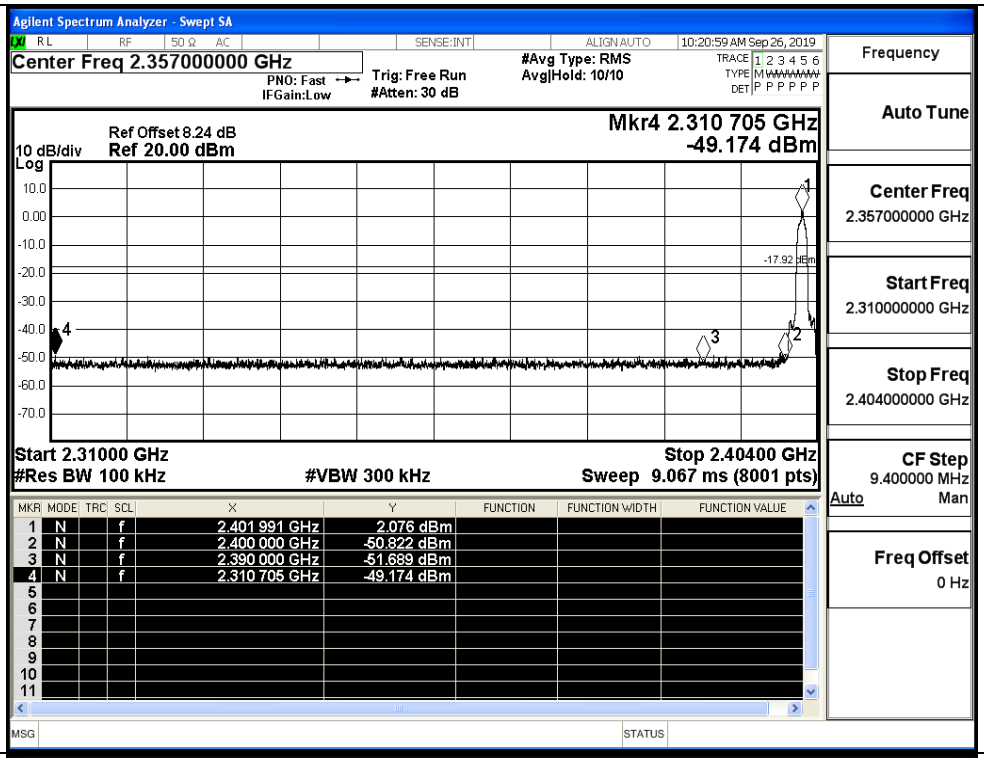
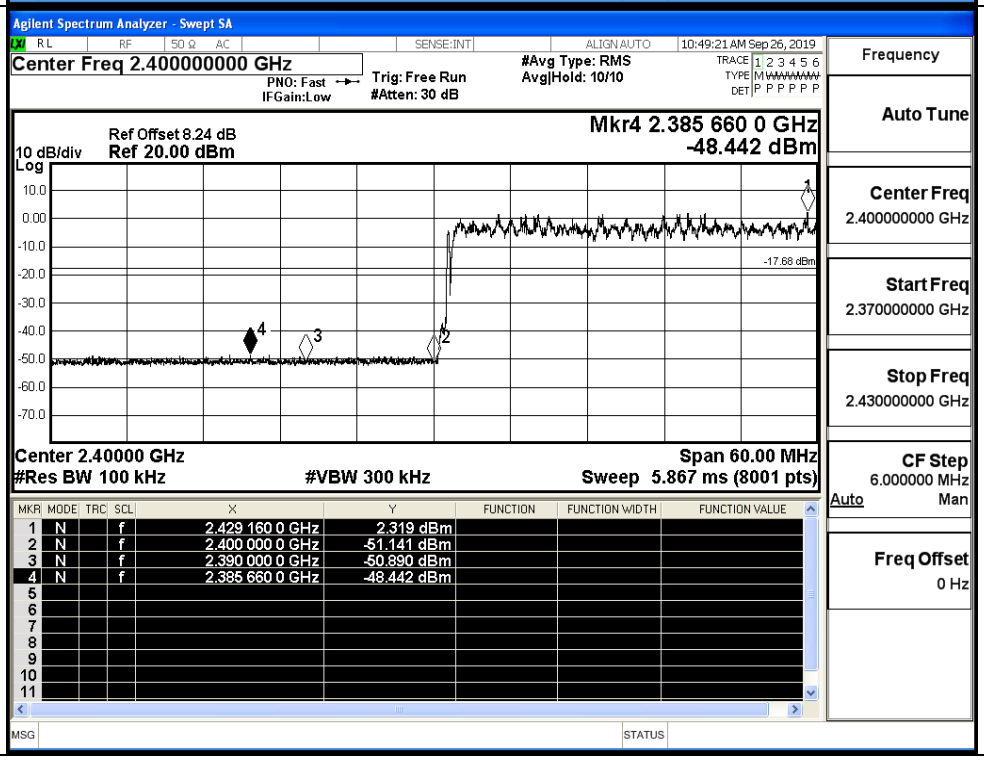
Pref			
Puw			

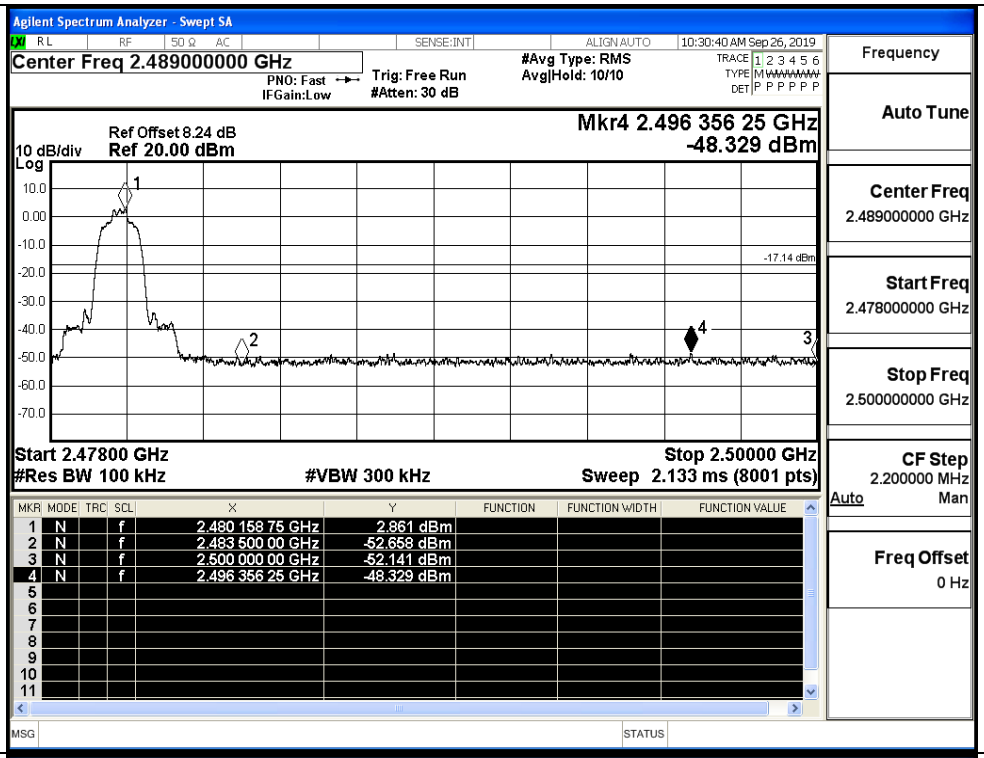
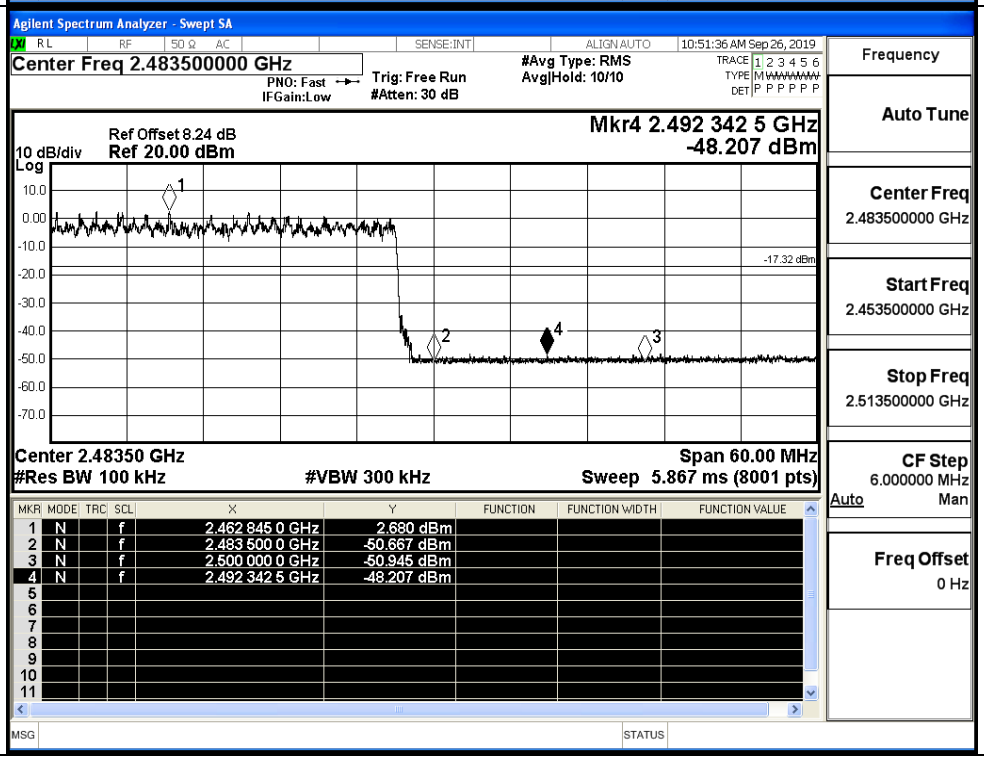
A.7 Band-edge for RF Conducted Emissions

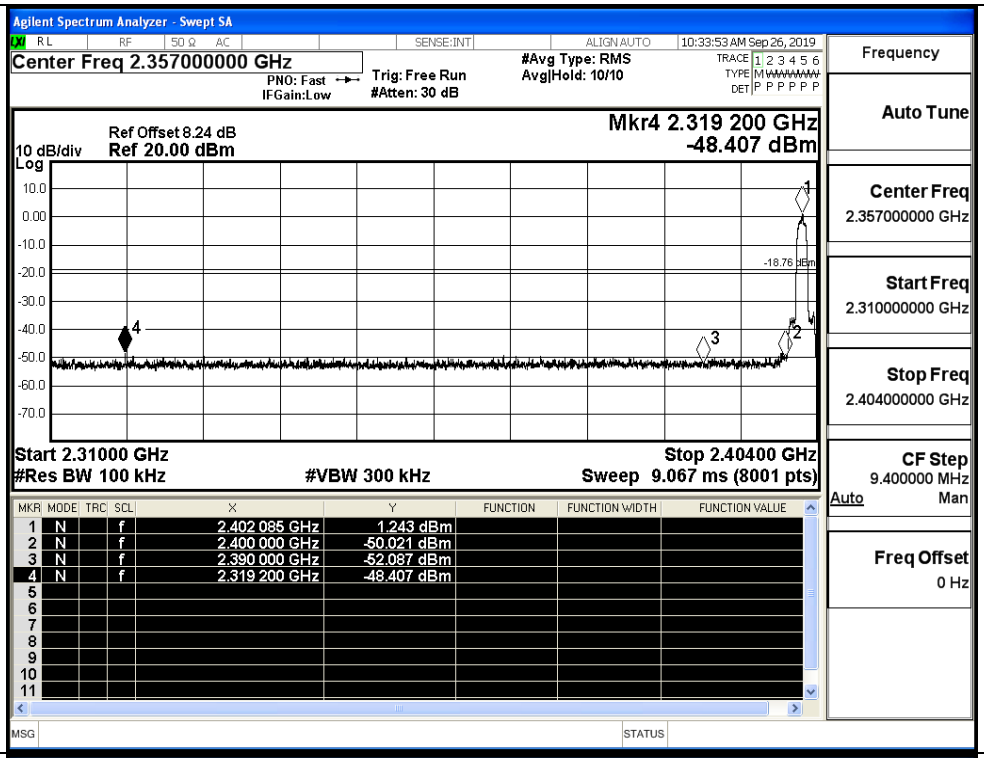
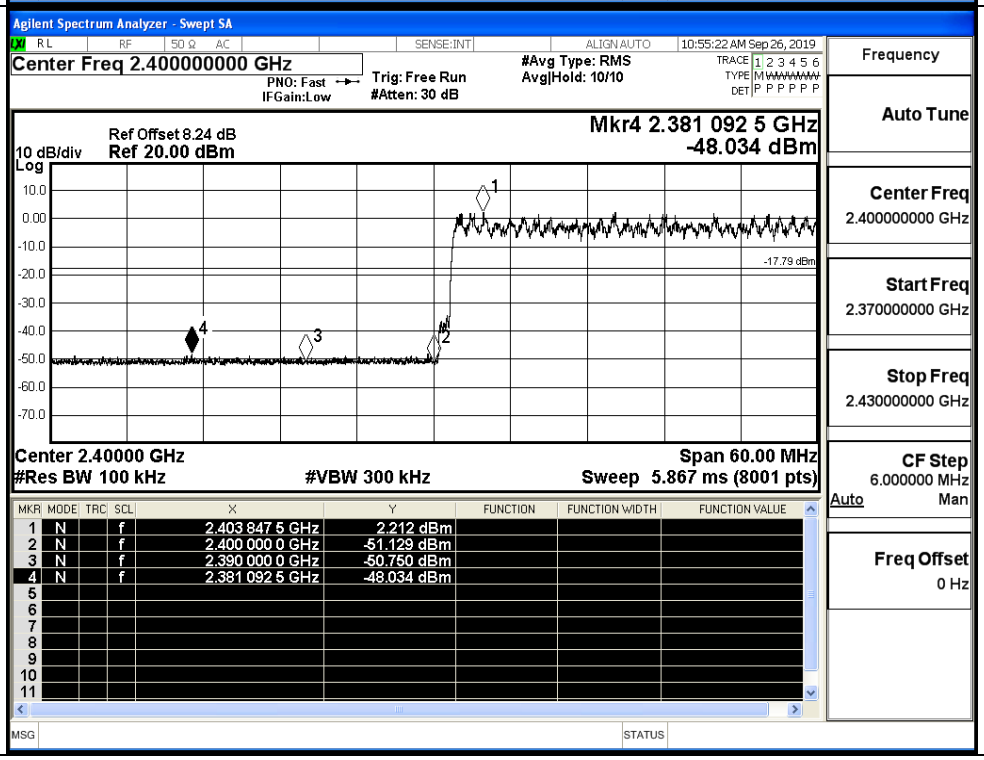
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	2.834	Off	-49.059	-17.17	PASS
			3.020	On	-49.126	-16.98	PASS
	HCH	2480	3.908	Off	-48.740	-16.09	PASS
			3.701	On	-48.552	-16.3	PASS
π/4DQPSK	LCH	2402	2.076	Off	-49.174	-17.92	PASS
			2.319	On	-48.442	-17.68	PASS
	HCH	2480	2.861	Off	-48.329	-17.14	PASS
			2.680	On	-48.207	-17.32	PASS
8DPSK	LCH	2402	1.243	Off	-48.407	-18.76	PASS
			2.212	On	-48.034	-17.79	PASS
	HCH	2480	2.661	Off	-48.364	-17.34	PASS
			2.771	On	-47.646	-17.23	PASS

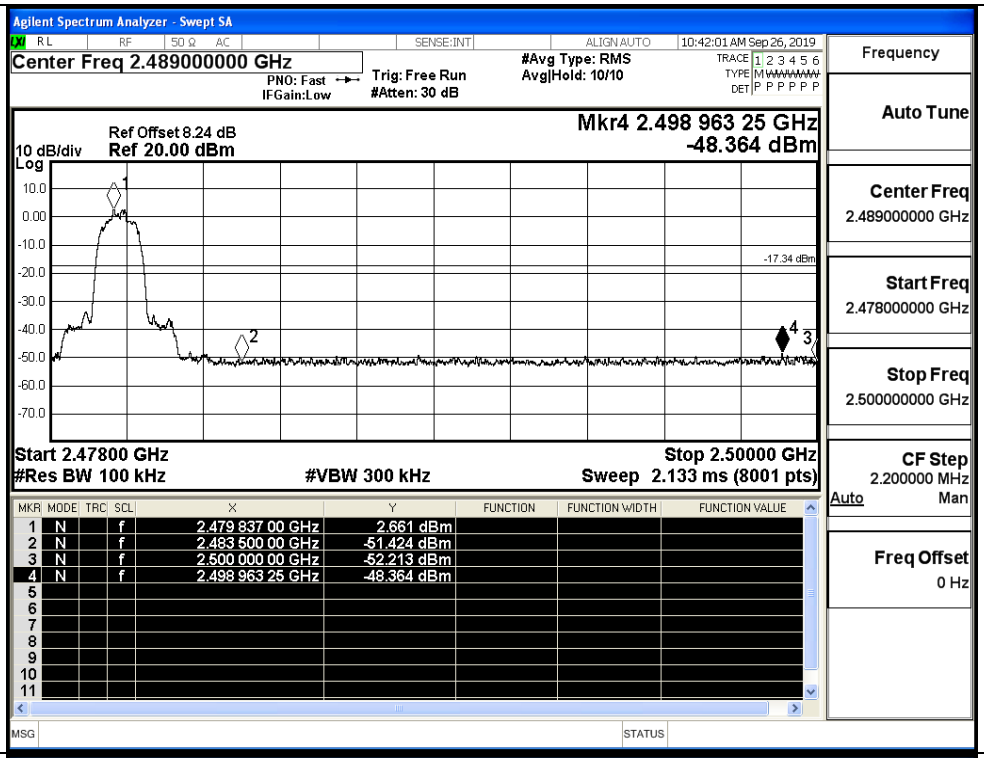
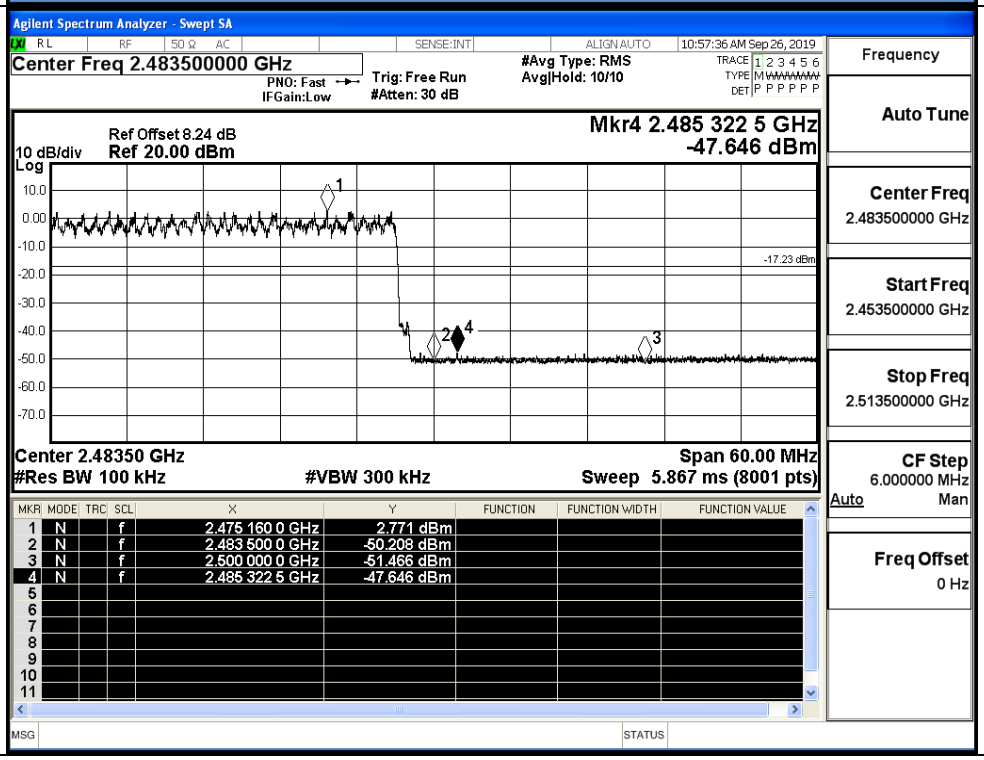
Test Graphs	
GFSK/LCH/No Hop	
GFSK/LCH/Hop	

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	

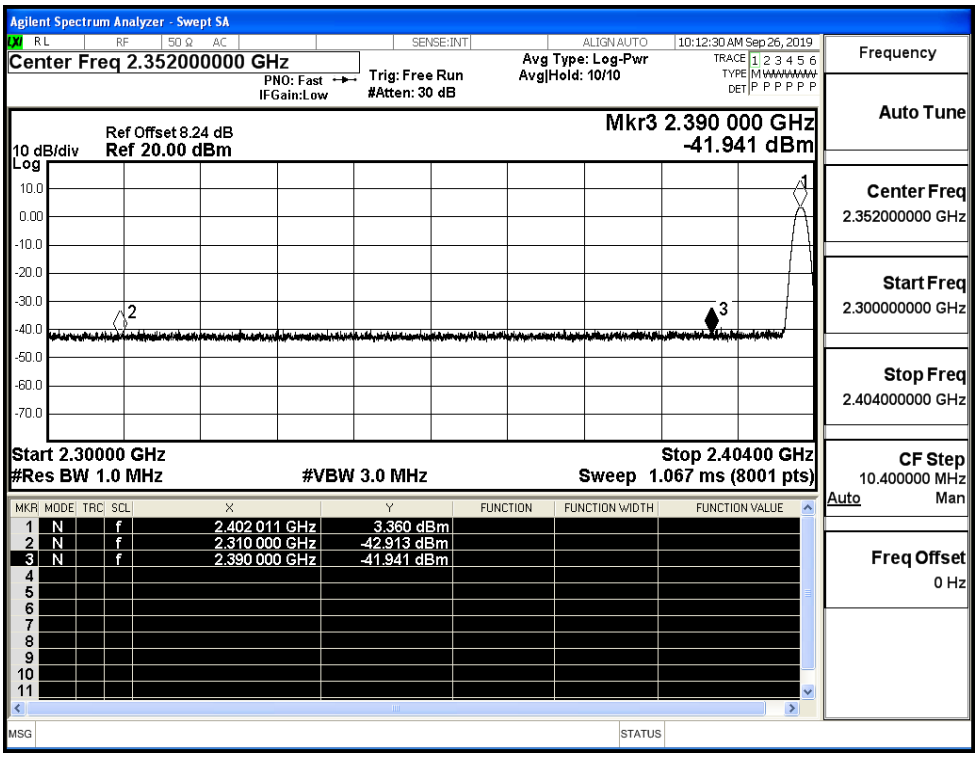
8DPSK/LCH/No Hop	
8DPSK/LCH/Hop	

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

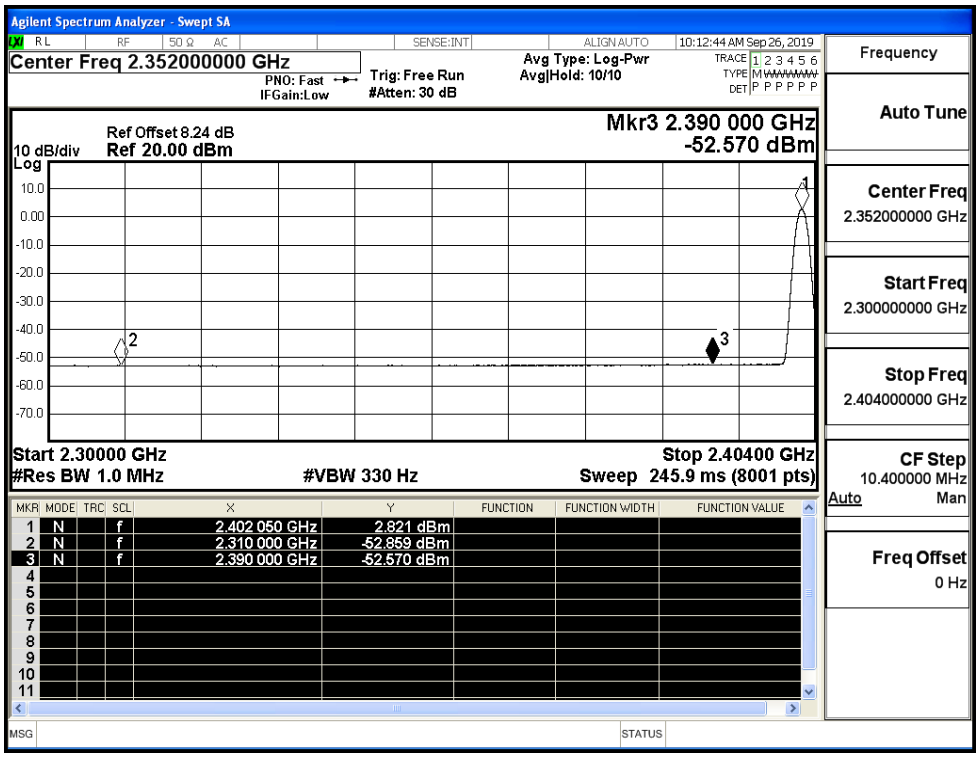
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-42.91	2.0	0	52.34	PEAK	74	PASS
	Off	2310.0	-52.86	2.0	0	42.40	AV	54	PASS
	Off	2390.0	-41.94	2.0	0	53.32	PEAK	74	PASS
	Off	2390.0	-52.57	2.0	0	42.69	AV	54	PASS
	Off	2483.5	-41.52	2.0	0	53.74	PEAK	74	PASS
	Off	2483.5	-52.02	2.0	0	43.24	AV	54	PASS
	Off	2500.0	-41.64	2.0	0	53.62	PEAK	74	PASS
	Off	2500.0	-51.83	2.0	0	43.43	AV	54	PASS
π/4DQPSK	Off	2310.0	-42.43	2.0	0	52.83	PEAK	74	PASS
	Off	2310.0	-52.89	2.0	0	42.37	AV	54	PASS
	Off	2390.0	-41.23	2.0	0	54.03	PEAK	74	PASS
	Off	2390.0	-52.58	2.0	0	42.68	AV	54	PASS
	Off	2483.5	-41.99	2.0	0	53.27	PEAK	74	PASS
	Off	2483.5	-51.96	2.0	0	43.30	AV	54	PASS
	Off	2500.0	-41.36	2.0	0	53.89	PEAK	74	PASS
	Off	2500.0	-51.89	2.0	0	43.37	AV	54	PASS
8DPSK	Off	2310.0	-43.00	2.0	0	52.26	PEAK	74	PASS
	Off	2310.0	-52.90	2.0	0	42.36	AV	54	PASS
	Off	2390.0	-41.97	2.0	0	53.29	PEAK	74	PASS
	Off	2390.0	-52.65	2.0	0	42.60	AV	54	PASS
	Off	2483.5	-41.87	2.0	0	53.39	PEAK	74	PASS
	Off	2483.5	-51.98	2.0	0	43.28	AV	54	PASS
	Off	2500.0	-41.57	2.0	0	53.69	PEAK	74	PASS
	Off	2500.0	-51.88	2.0	0	43.38	AV	54	PASS

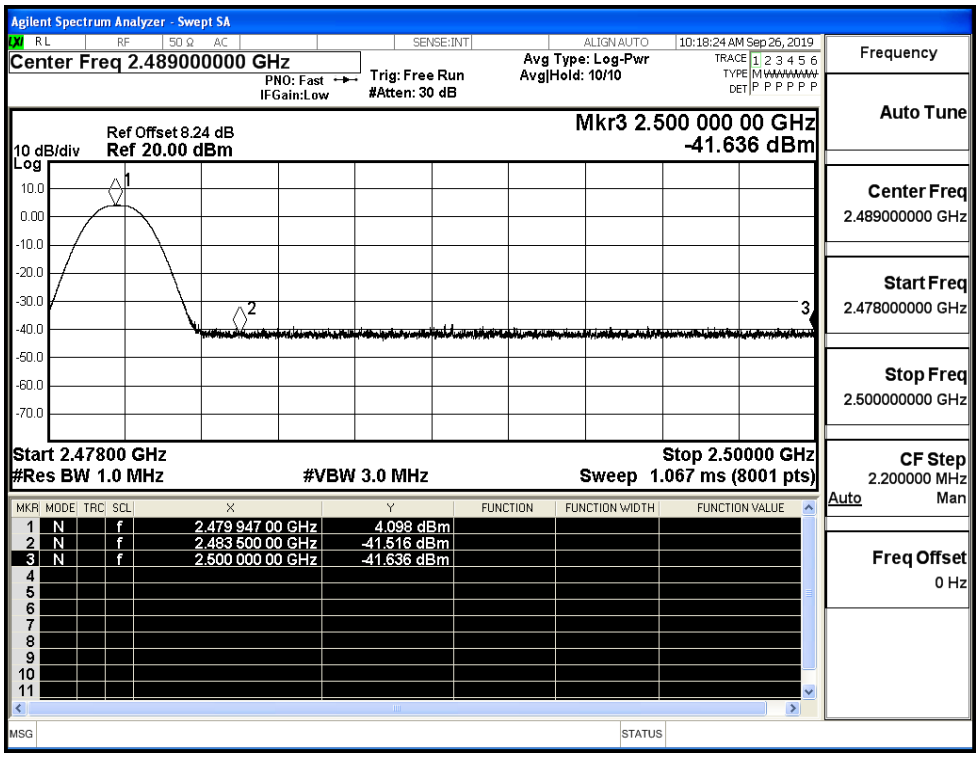
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



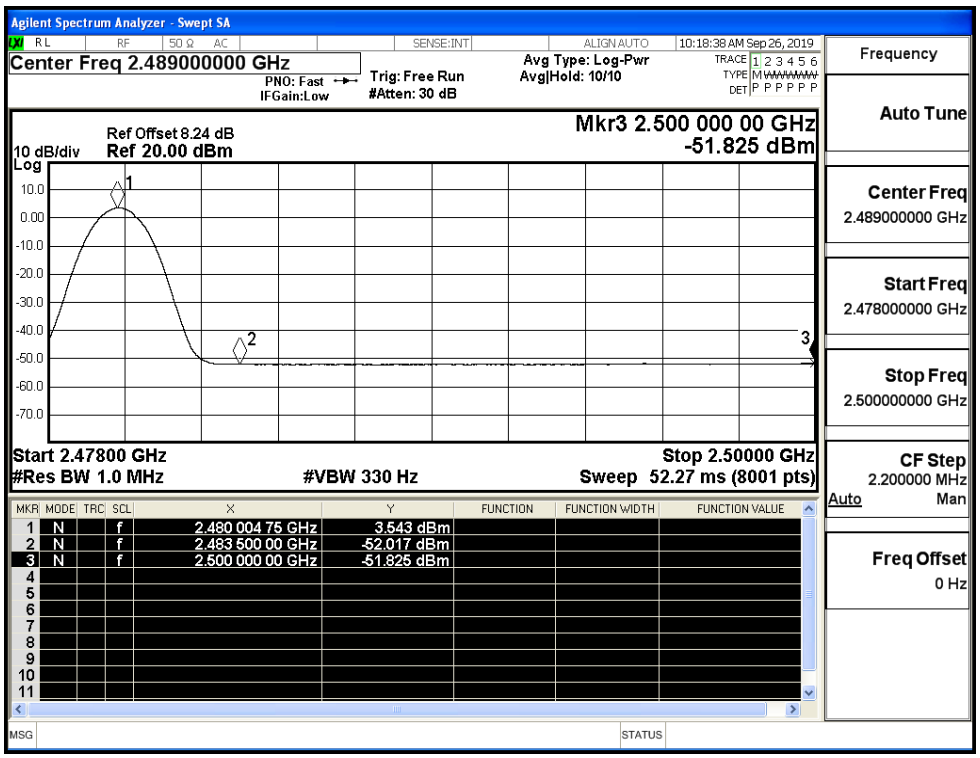
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)



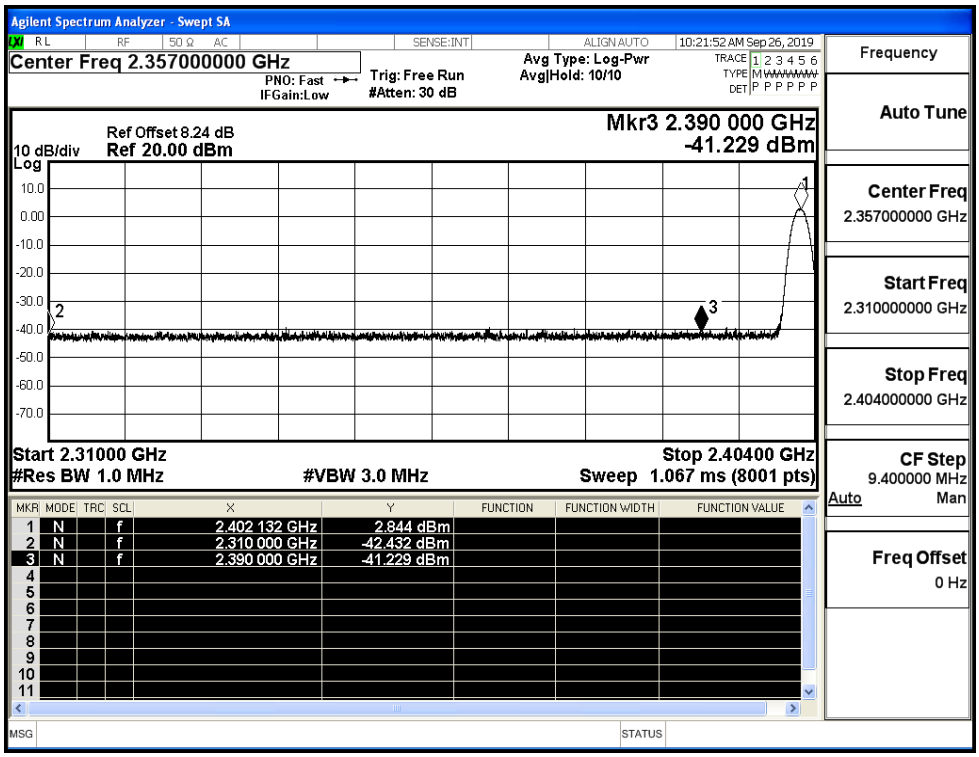
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



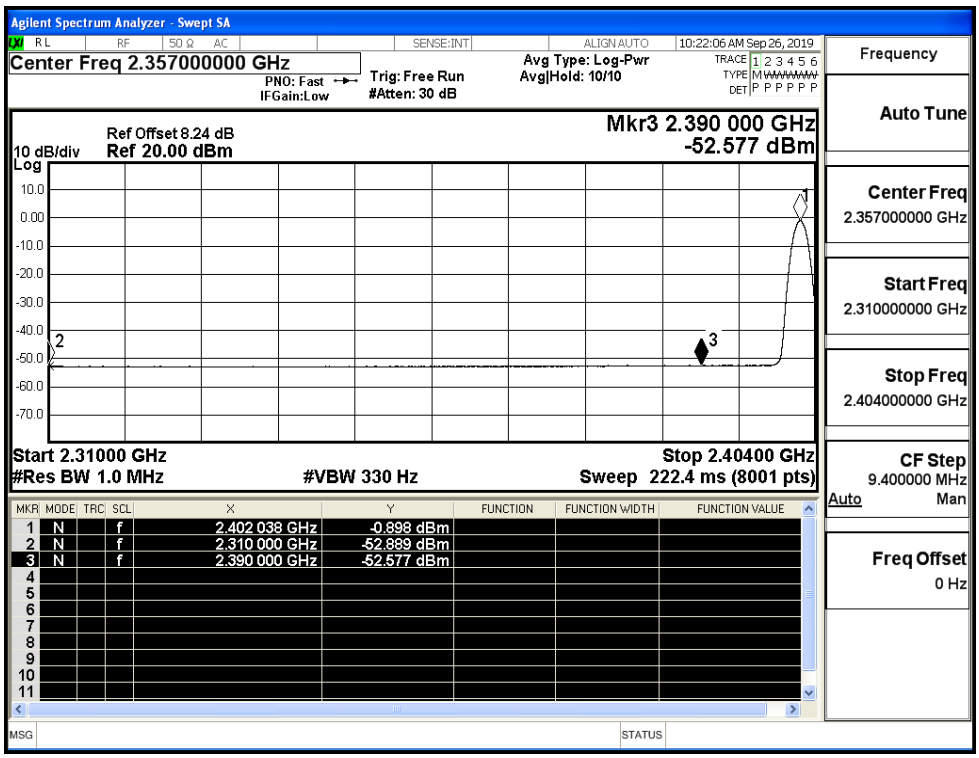
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



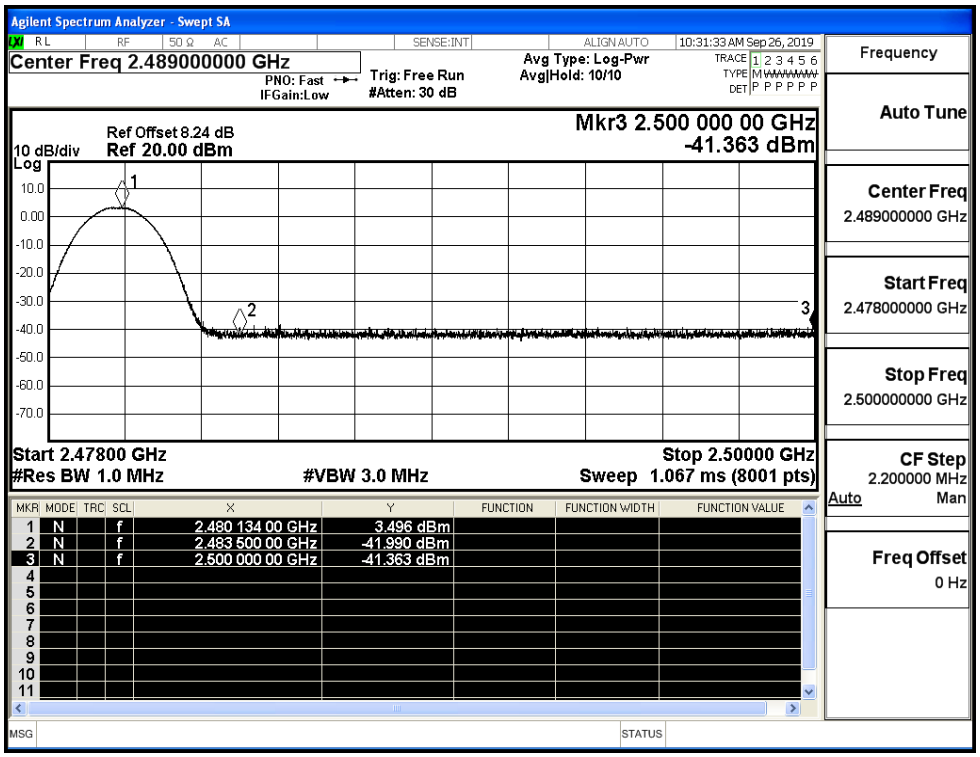
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



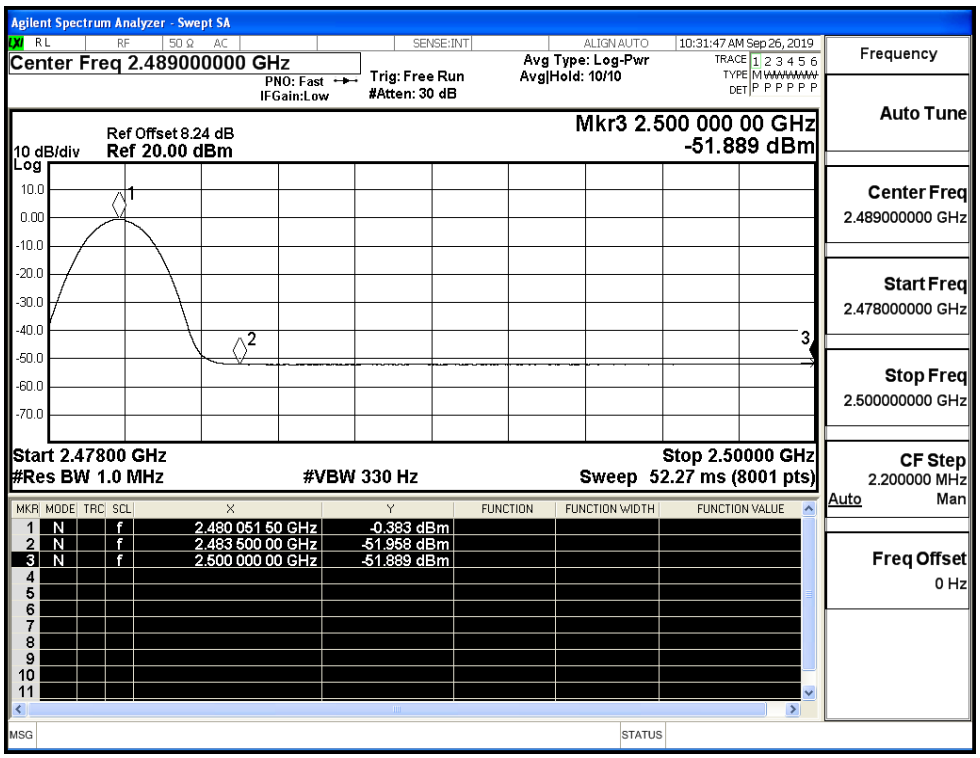
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



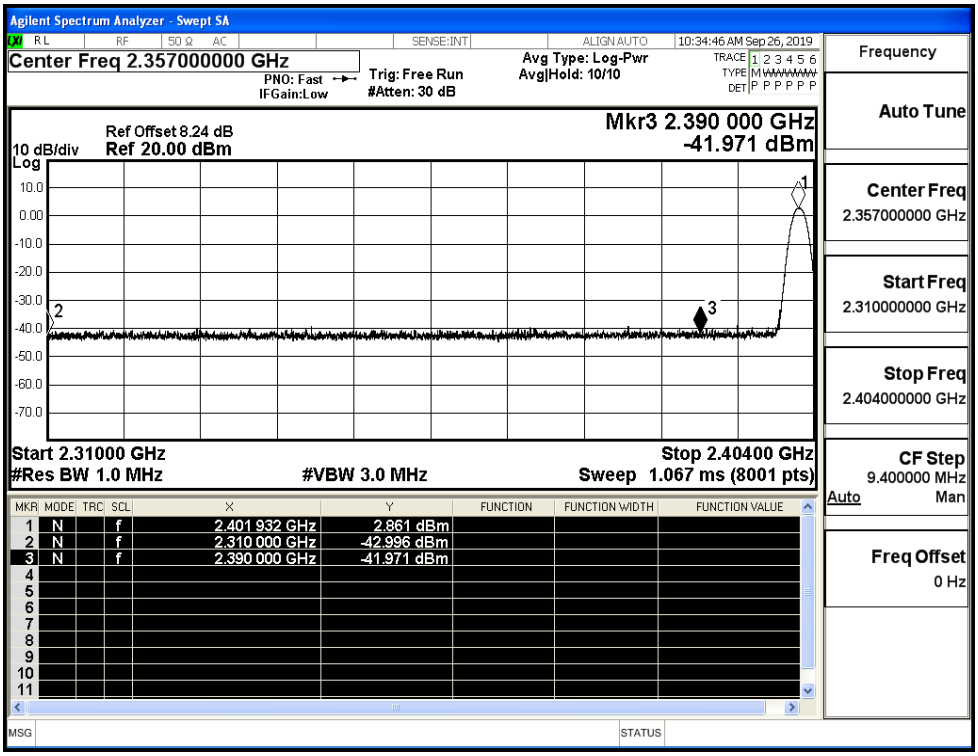
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



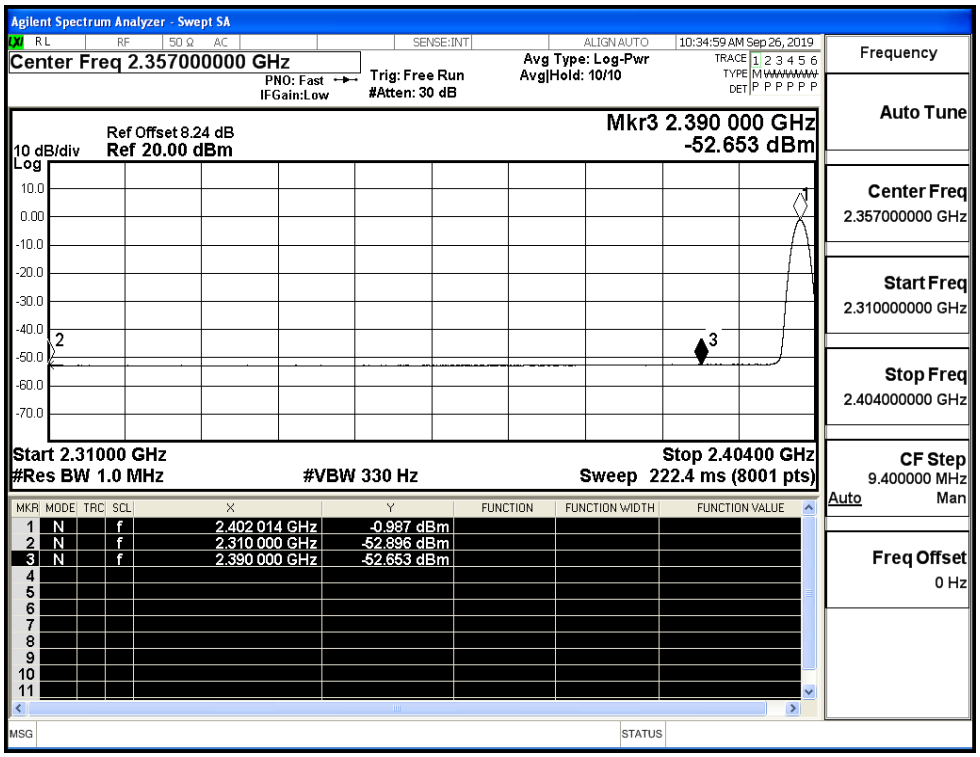
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



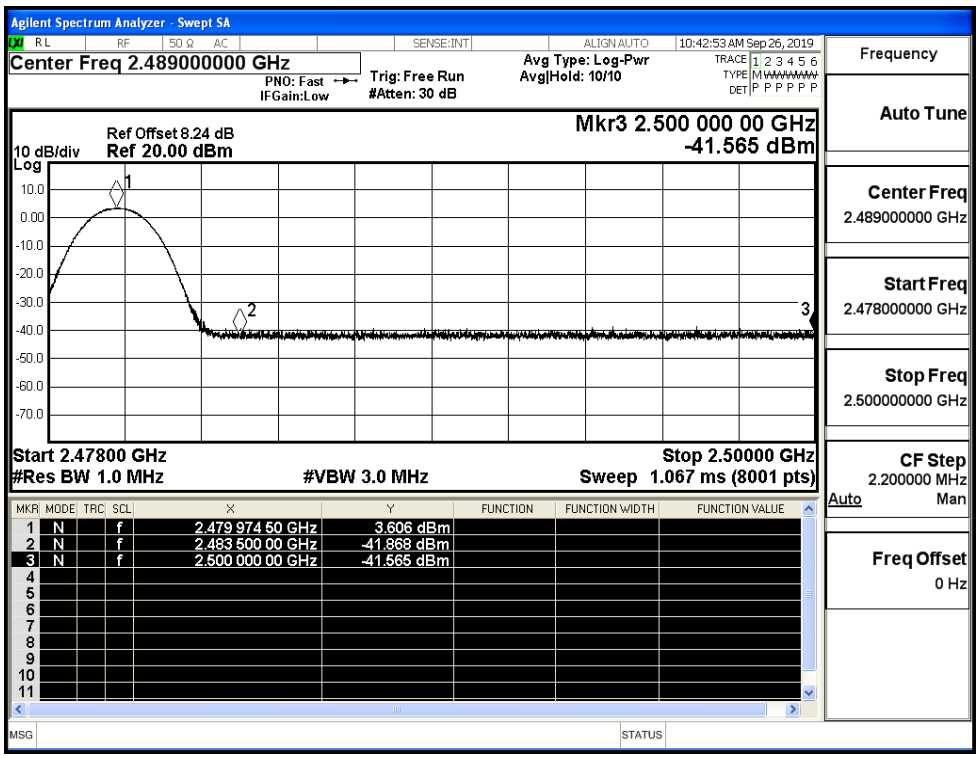
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)