Appendix A
RF Test Data for BT(BDR/EDR) (Conducted Measurement)

Product Name: Bluetooth Noise Cancelling Headphones

Trade Mark: LYNXSONIC

Test Model: LYNXSONIC 433

FCC ID: 2AURP-AK1001

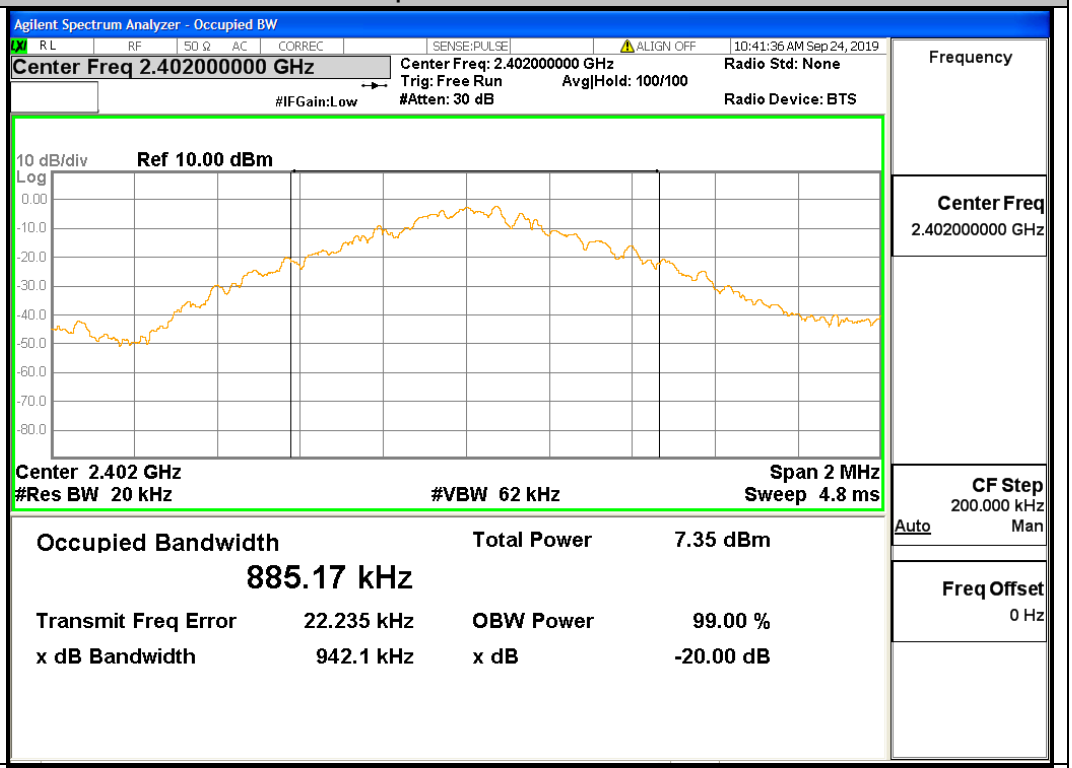
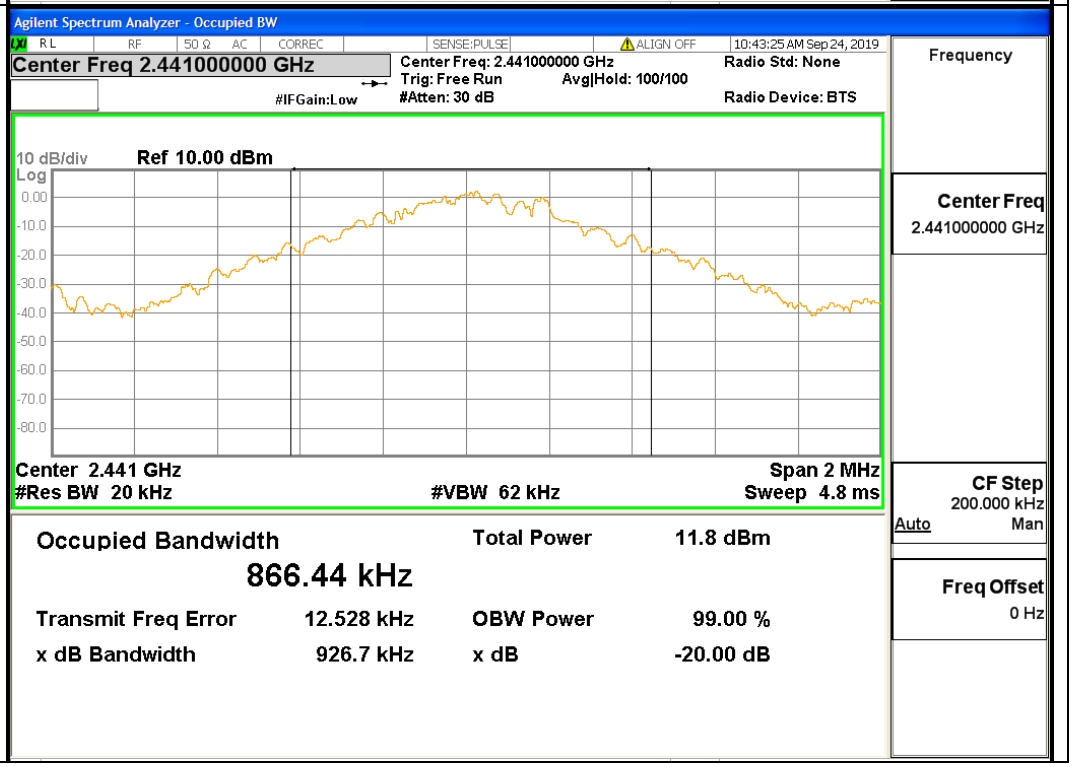
Environmental Conditions

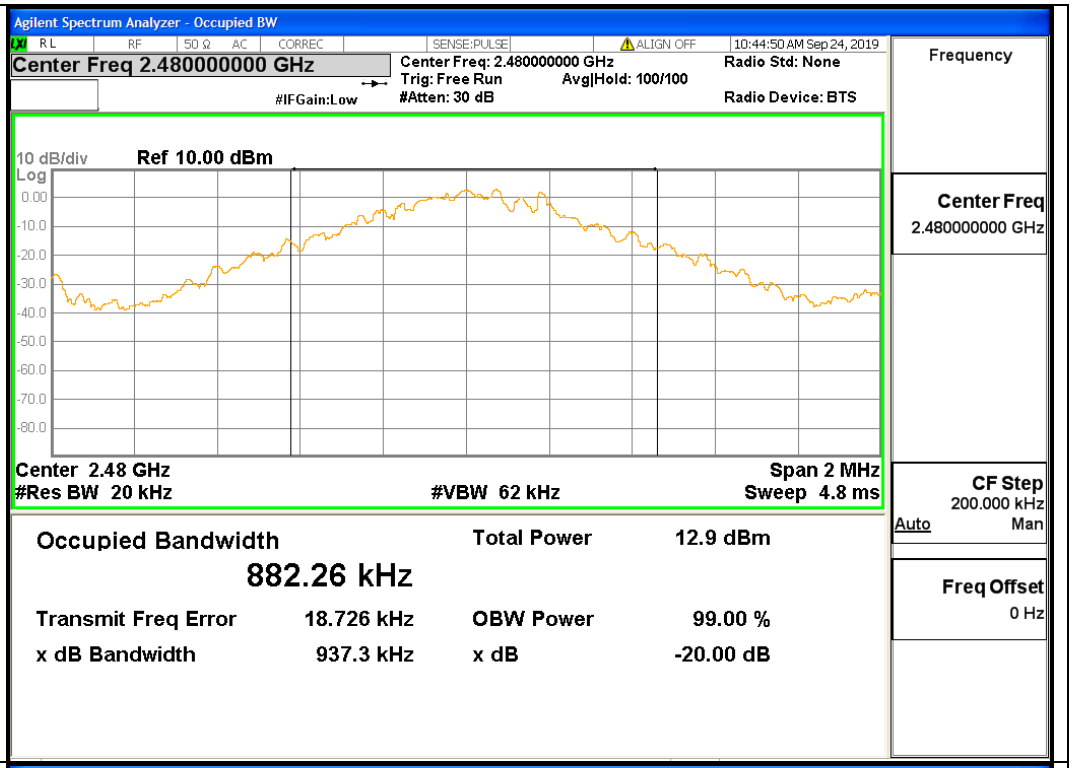
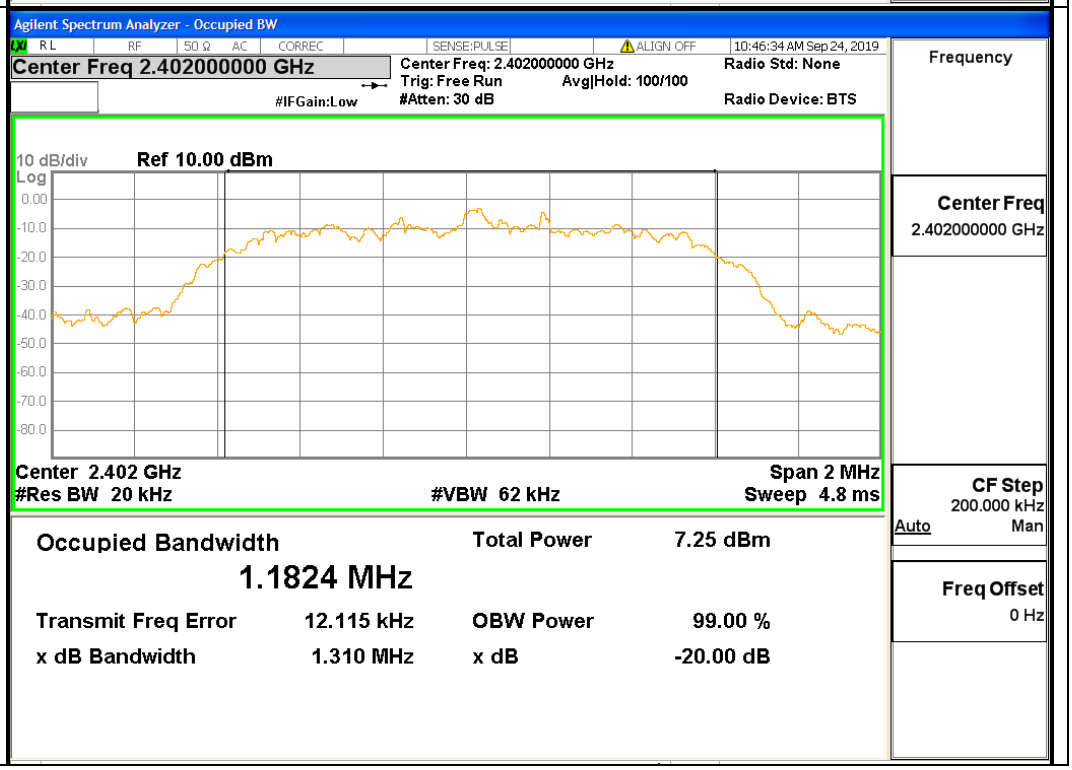
Temperature:	22.8° C
Relative Humidity:	50%
ATM Pressure:	100.0 kPa
Test Engineer:	Gary Qian
Supervised by:	Eden Hu

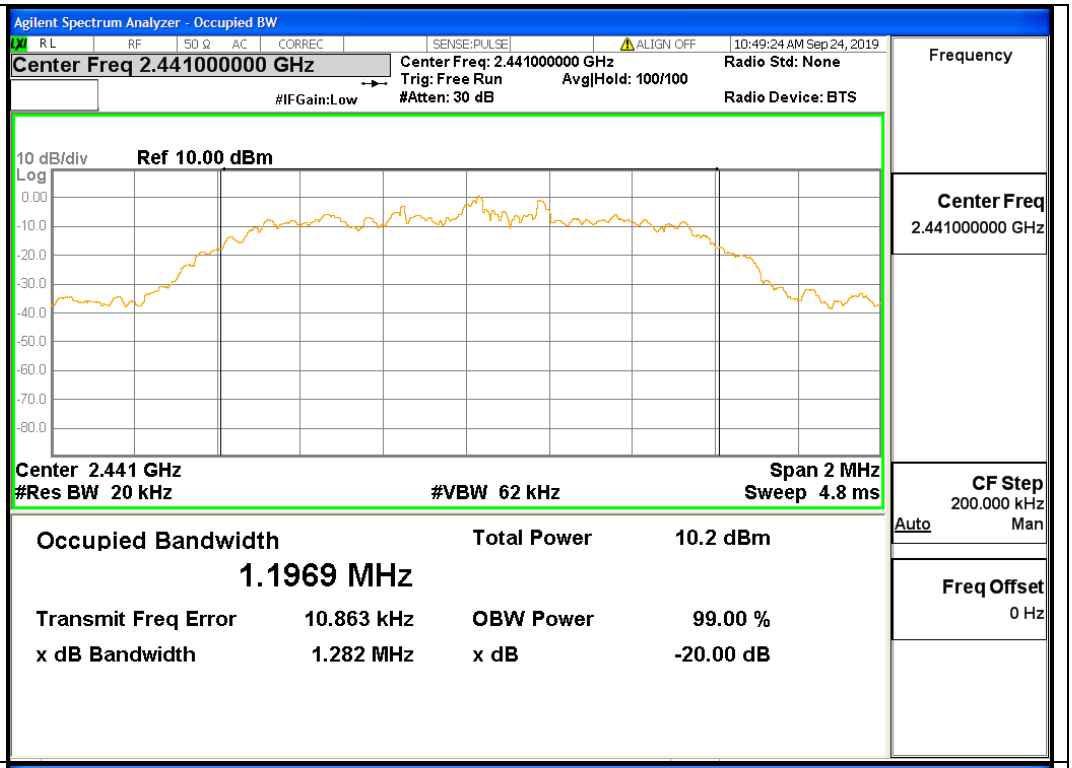
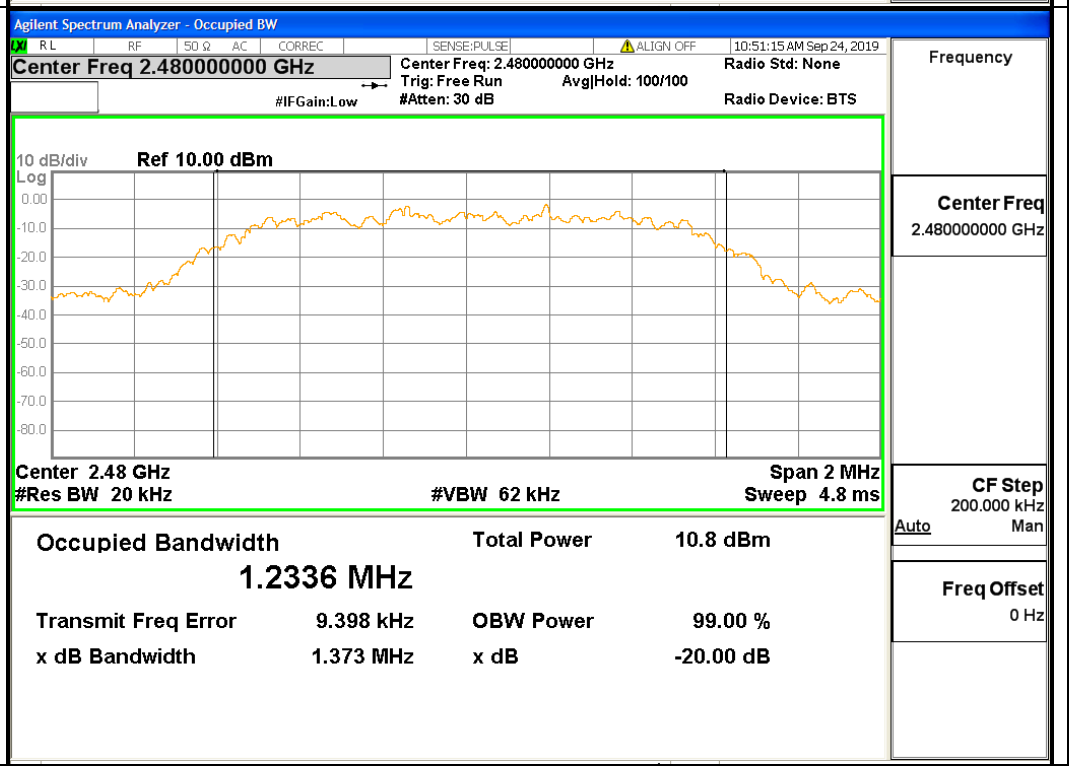
A.1 20 dB Bandwidth

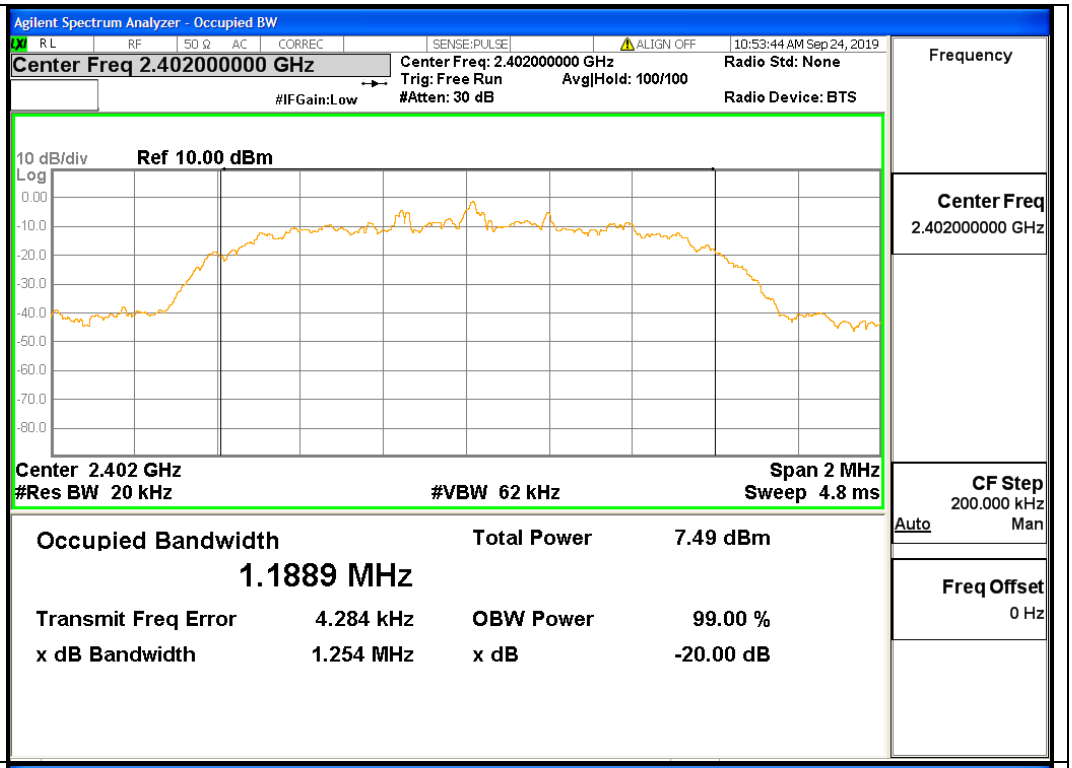
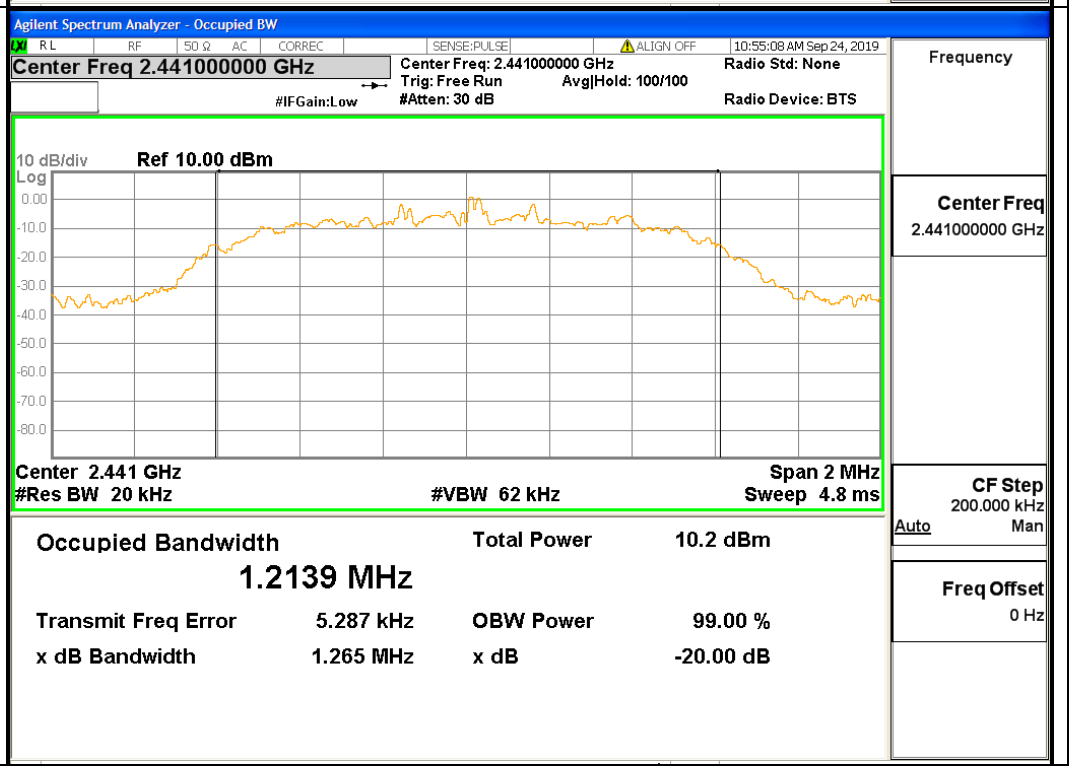
Mode	Channel.	20dB Bandwidth [MHz]	Limit(MHz)	Verdict
GFSK	LCH	0.942	Not Specified	PASS
GFSK	MCH	0.927	Not Specified	PASS
GFSK	HCH	0.937	Not Specified	PASS
π/4DQPSK	LCH	1.310	Not Specified	PASS
π/4DQPSK	MCH	1.282	Not Specified	PASS
π/4DQPSK	HCH	1.373	Not Specified	PASS
8DPSK	LCH	1.254	Not Specified	PASS
8DPSK	MCH	1.265	Not Specified	PASS
8DPSK	HCH	1.267	Not Specified	PASS

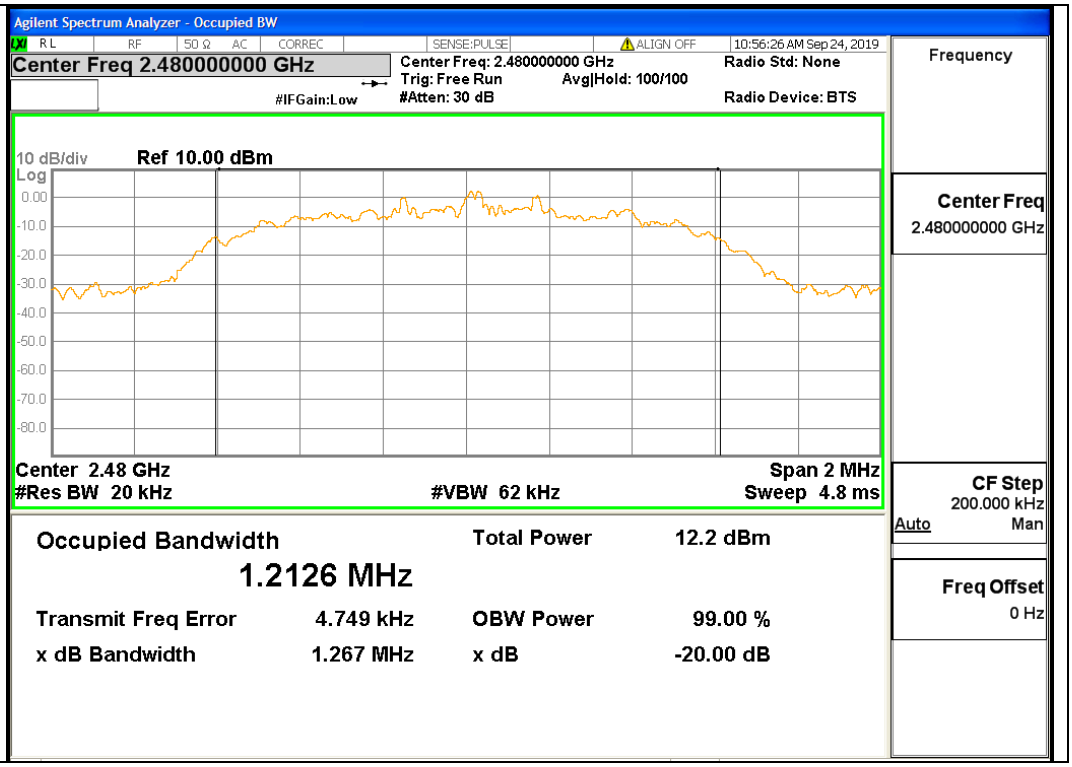
Test Graph

Graphs	
GFSK/LCH	
GFSK/MCH	

GFSK/HCH	
π/4DQPSK/LCH	

π/4DQPSK/MCH	
π/4DQPSK/HCH	

8DPSK/LCH	
8DPSK/MCH	

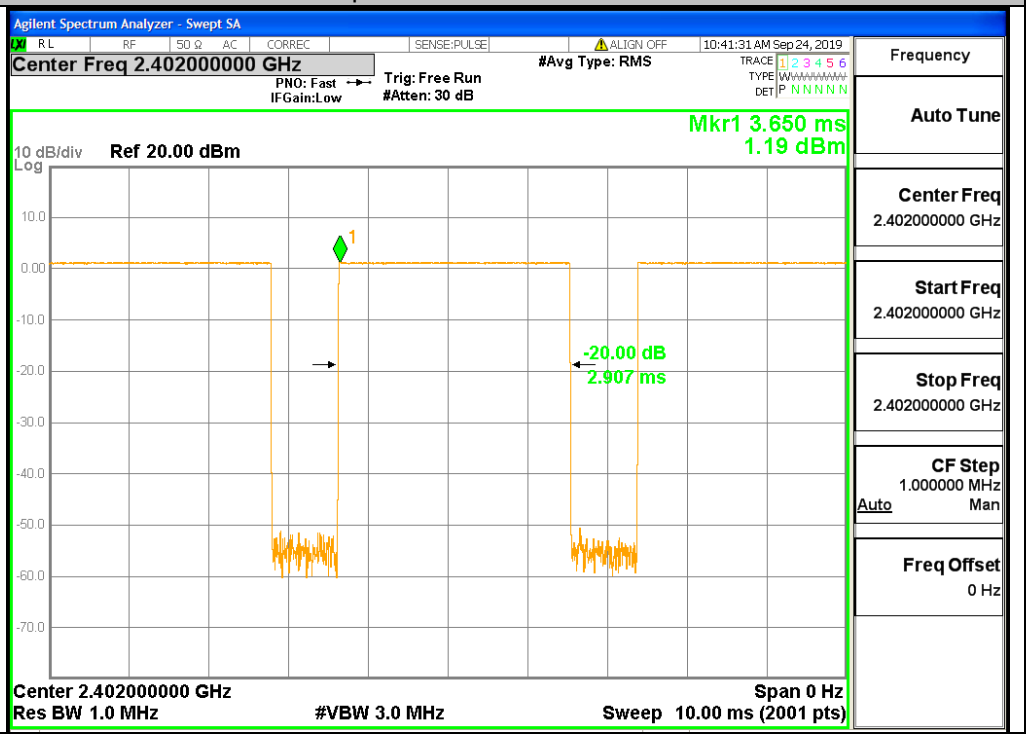
8DPSK/HCH	

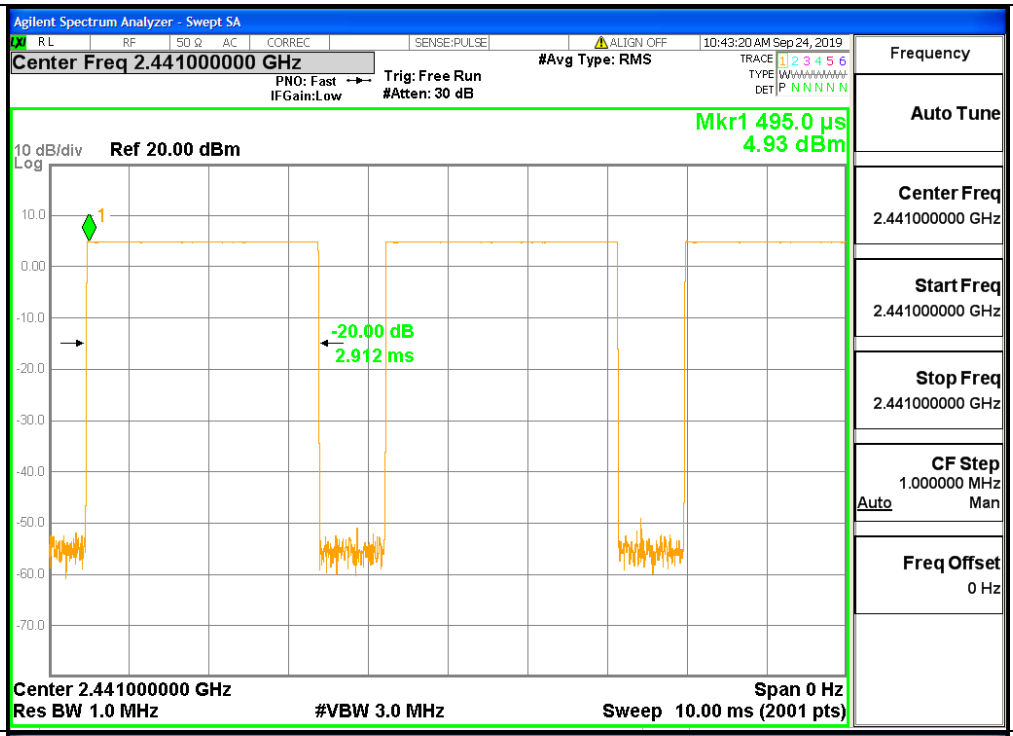
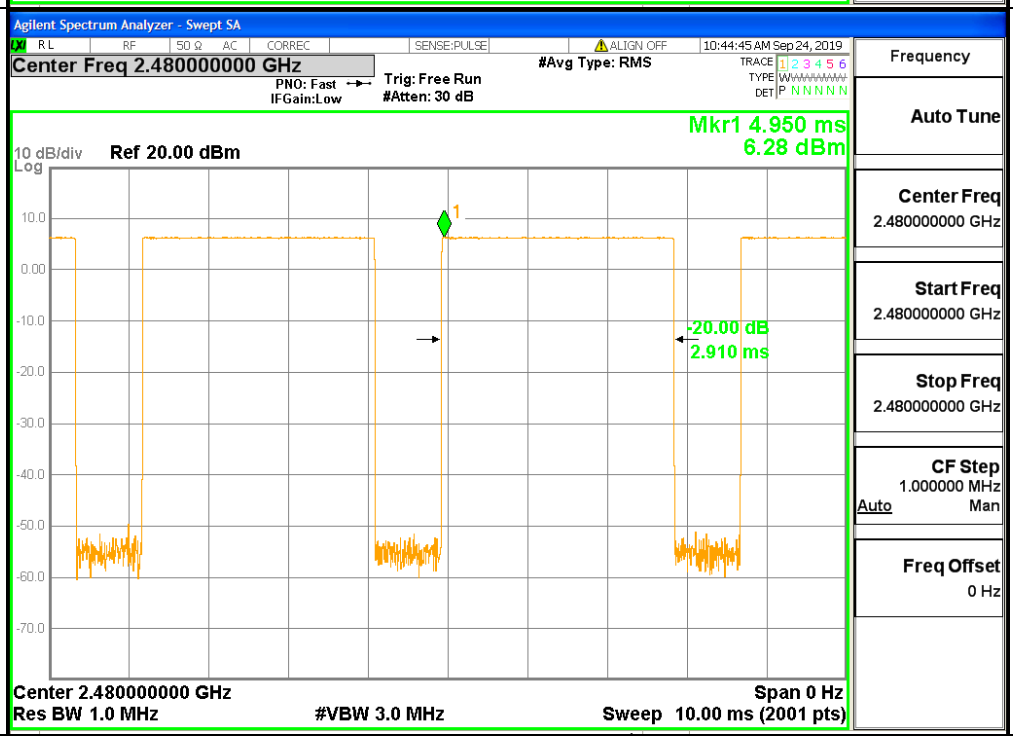
Agilent Spectrum Analyzer - Occupied BW
RL
RF
50 Ω AC
CORREC
SENSE:PULSE
ALIGN OFF
10:56:26 AM Sep 24, 2019
Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#IFGain:Low
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 10.00 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Center Freq
2.480000000 GHz
Center 2.48 GHz
#Res BW 20 kHz
#VBW 62 kHz
Span 2 MHz
Sweep 4.8 ms
CF Step
200.000 kHz
Auto
Man
Occupied Bandwidth
1.2126 MHz
Total Power
12.2 dBm
Transmit Freq Error
4.749 kHz
OBW Power
99.00 %
x dB Bandwidth
1.267 MHz
x dB
-20.00 dB
Freq Offset
0 Hz

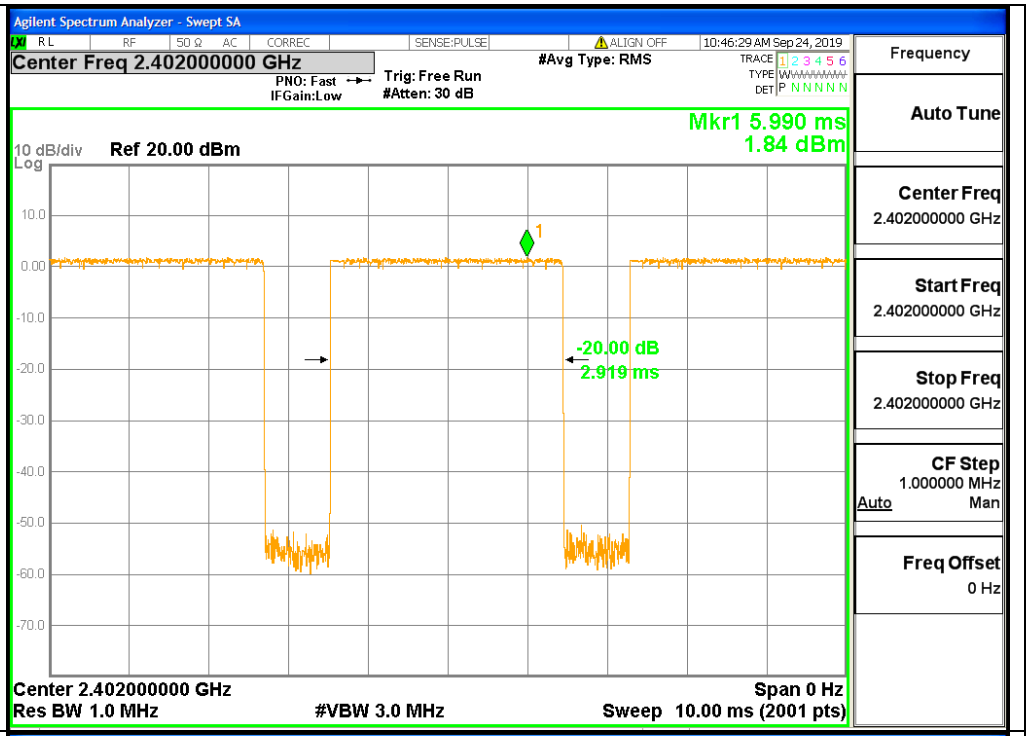
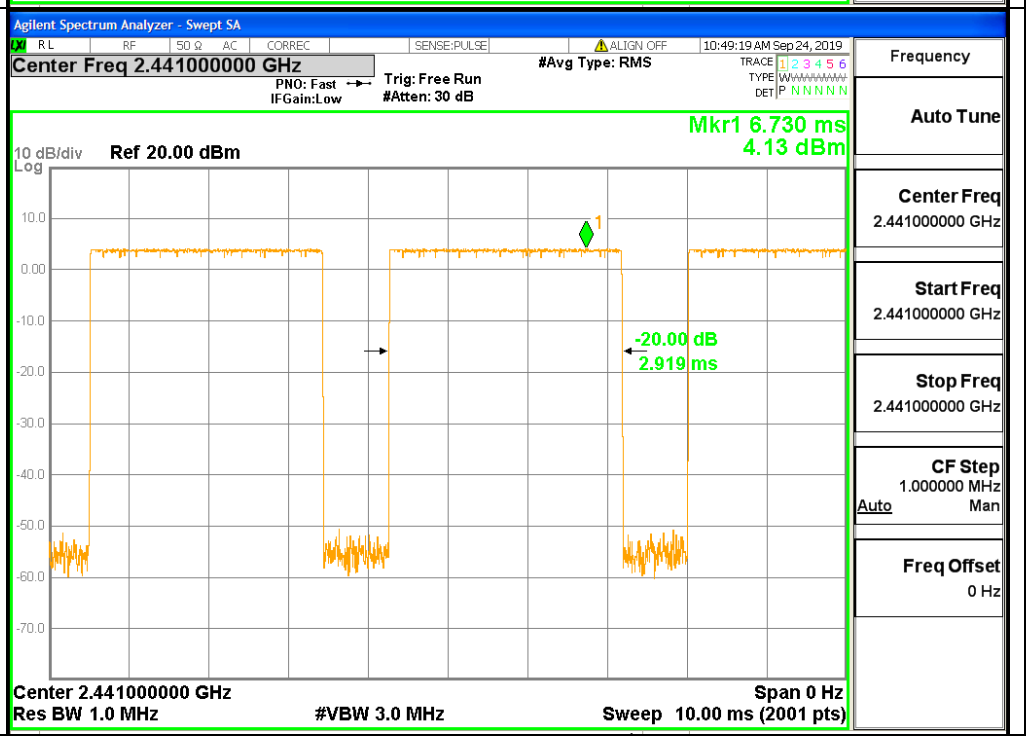
A.2 Dwell Time

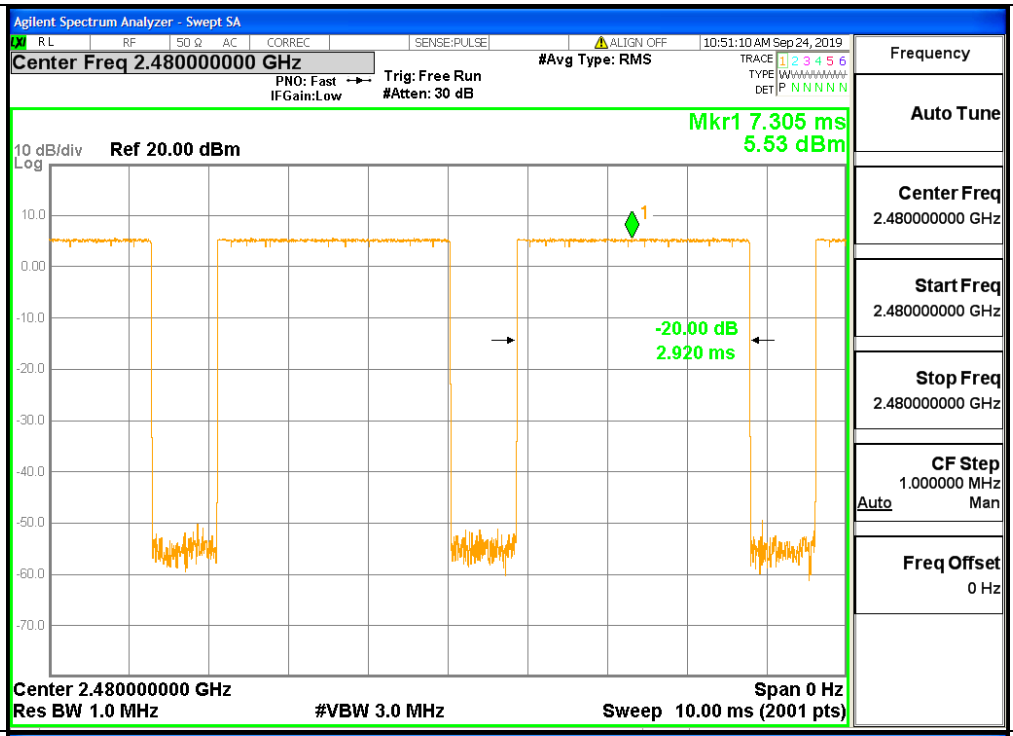
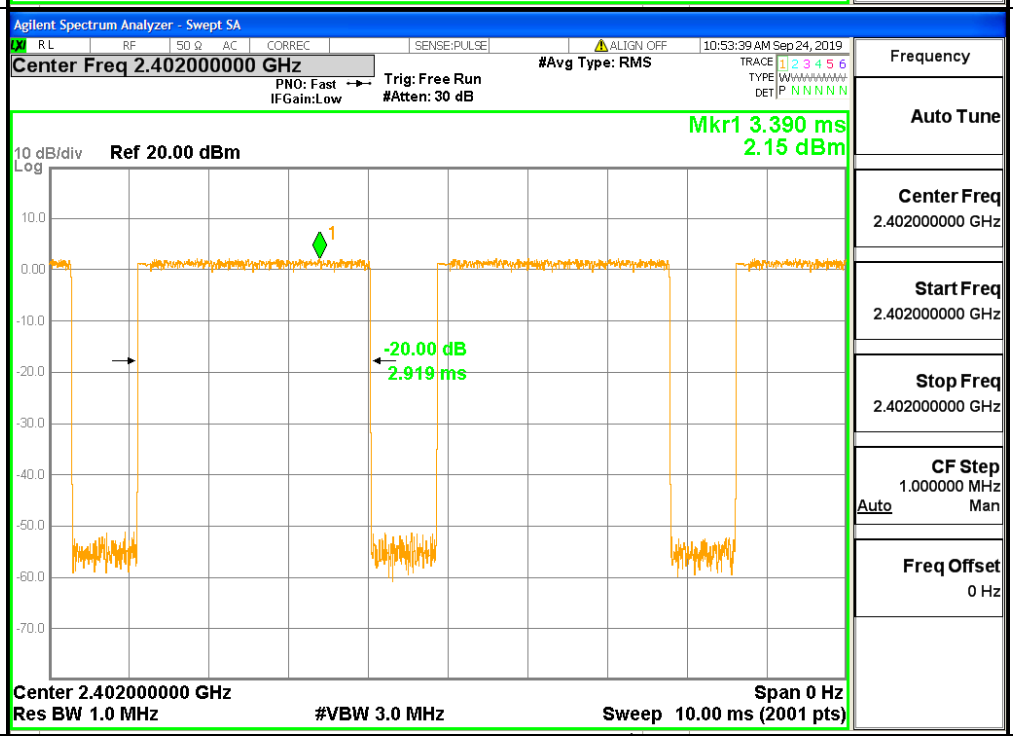
Mode	Packet	Channel	Burst Width [s/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	0.002907	106.7	0.310217	0.4	PASS
GFSK	DH5	MCH	0.002912	106.7	0.310676	0.4	PASS
GFSK	DH5	HCH	0.002910	106.7	0.310521	0.4	PASS
π/4DQPSK	2DH5	LCH	0.002919	106.7	0.311478	0.4	PASS
π/4DQPSK	2DH5	MCH	0.002919	106.7	0.311472	0.4	PASS
π/4DQPSK	2DH5	HCH	0.002920	106.7	0.311557	0.4	PASS
8DPSK	3DH5	LCH	0.002919	106.7	0.311479	0.4	PASS
8DPSK	3DH5	MCH	0.002920	106.7	0.311572	0.4	PASS
8DPSK	3DH5	HCH	0.002920	106.7	0.311535	0.4	PASS

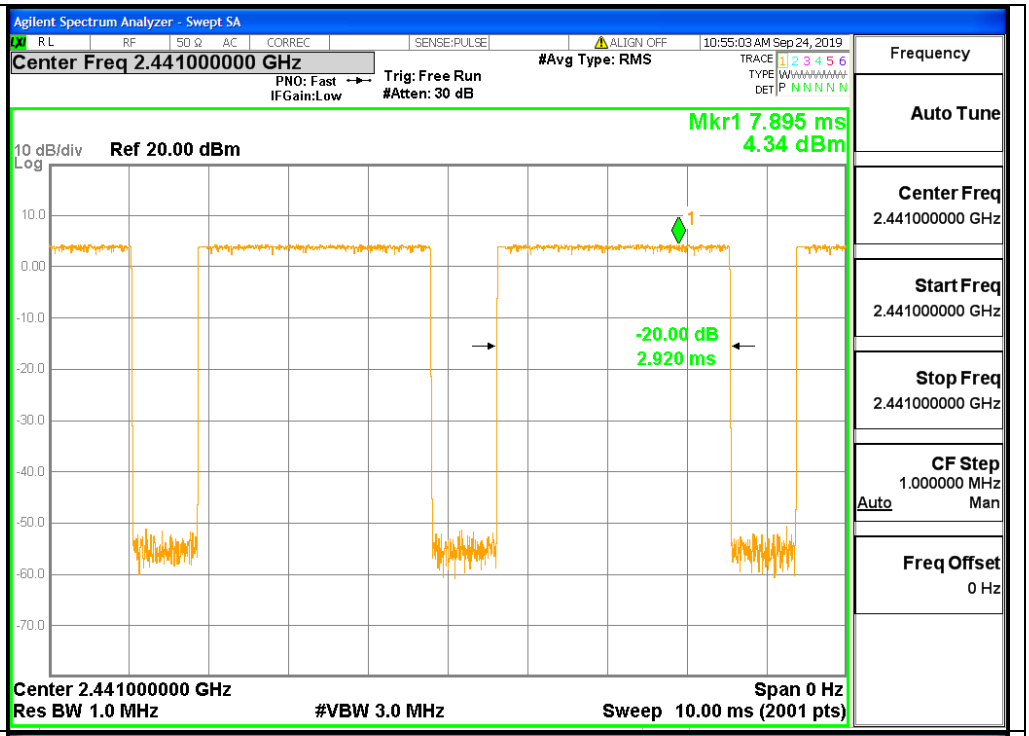
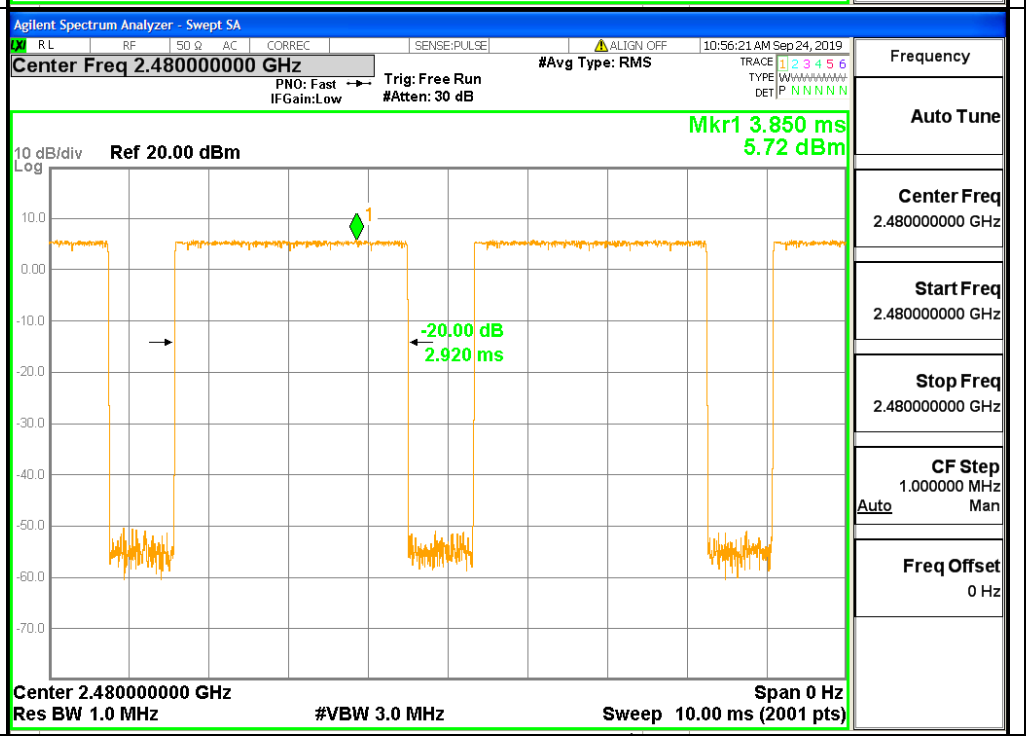
Test Graph

Graphs	
GFSK_DH5/LCH	

GFSK_DH5/MCH	
GFSK_DH5/HCH	

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

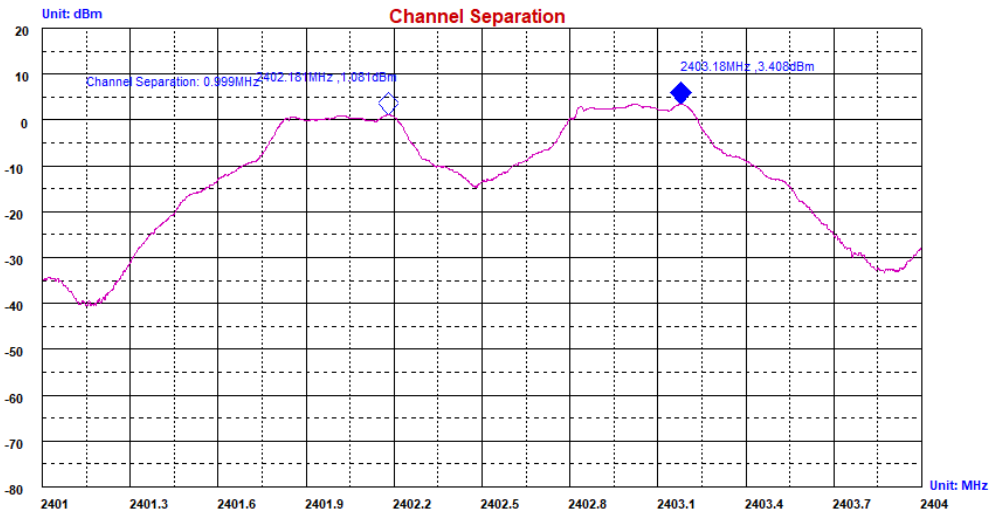
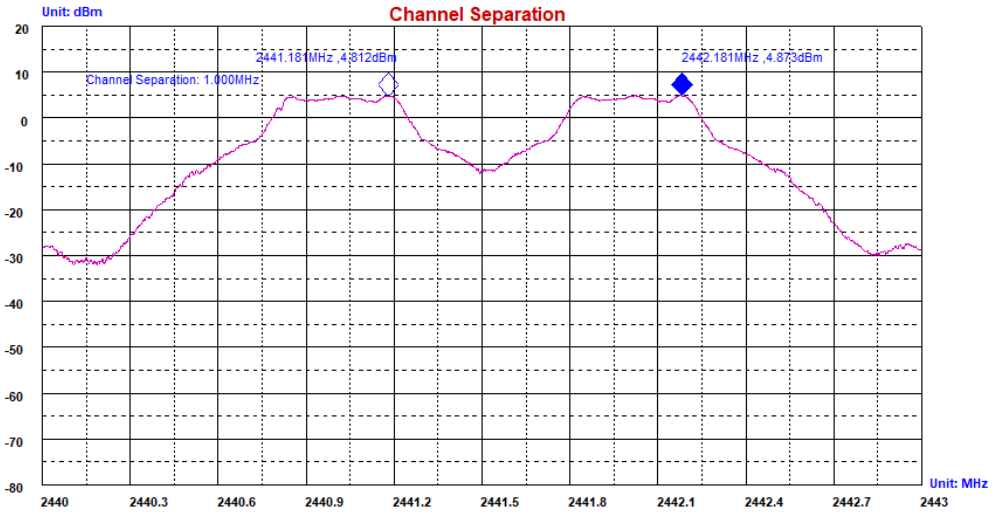
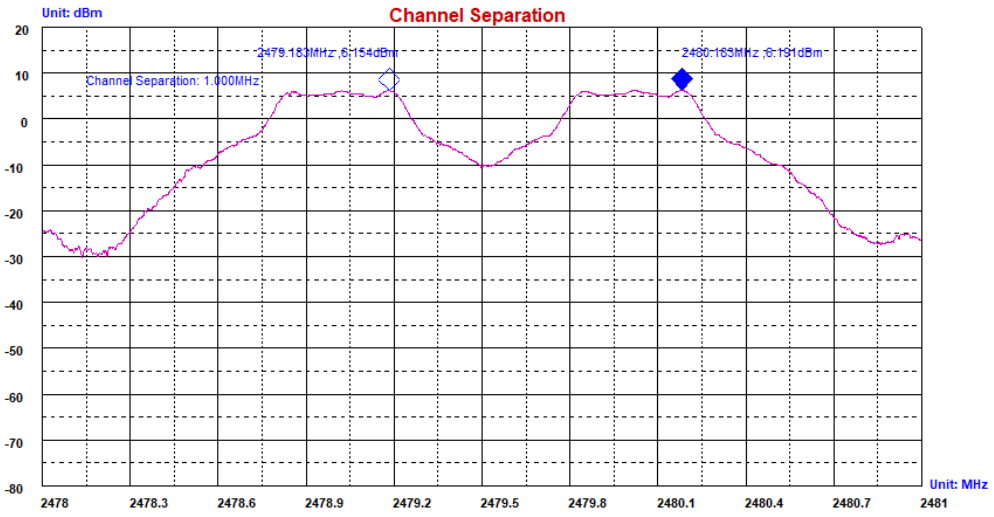
π/4DQPSK _2DH5/HCH	
8DPSK _3DH5/LCH	

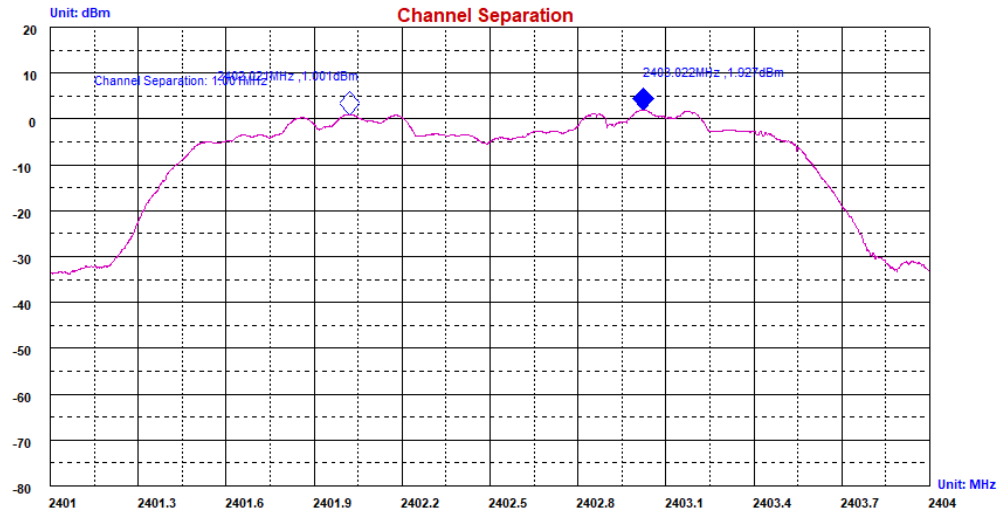
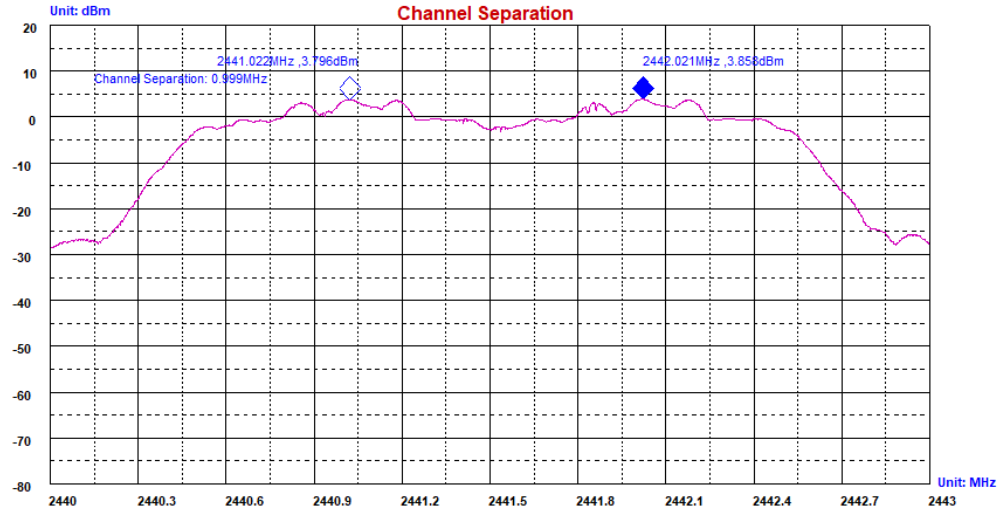
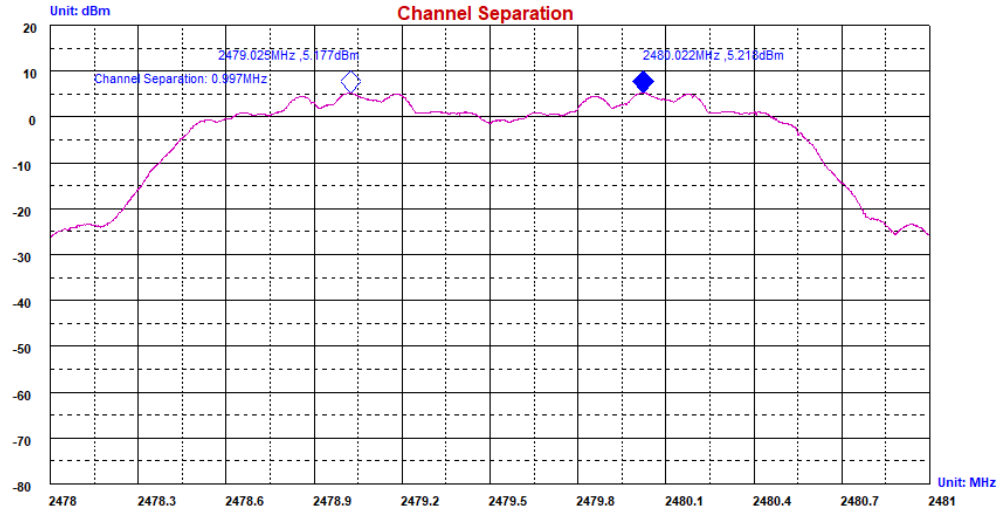
8DPSK _3DH5/MCH	
8DPSK _3DH5/HCH	

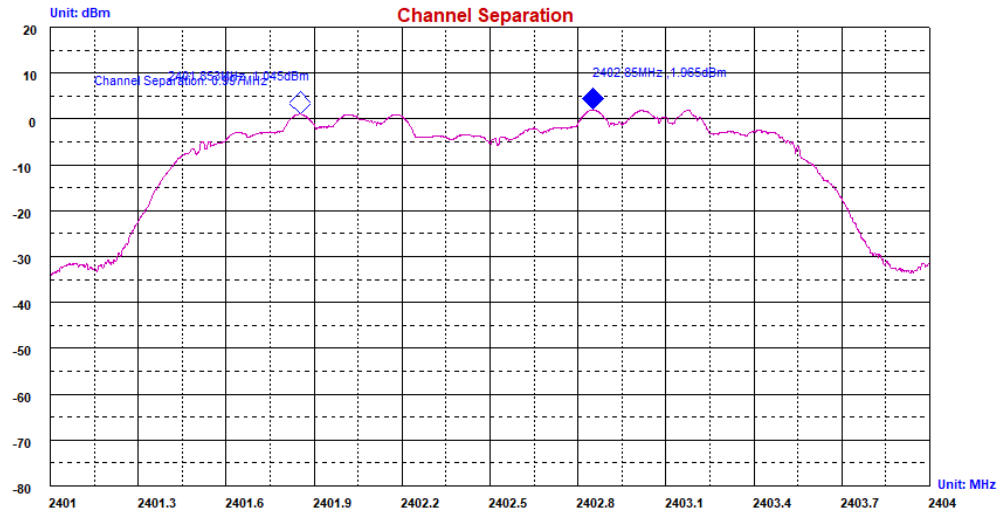
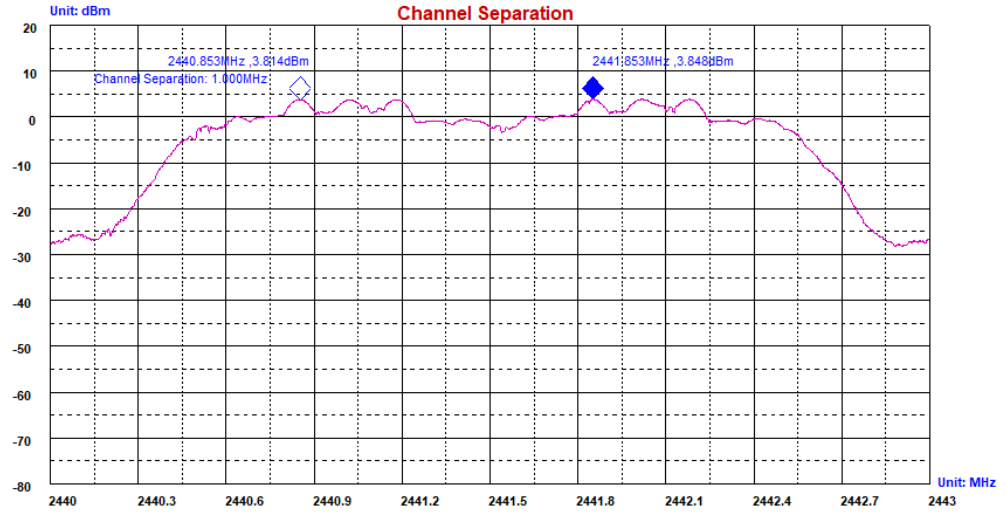
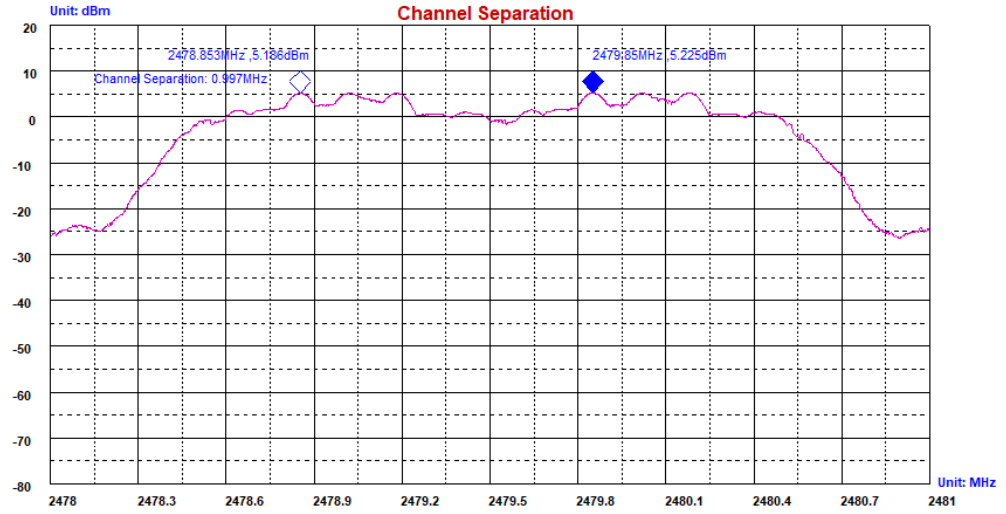
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.999	0.628	PASS
GFSK	MCH	1.000	0.618	PASS
GFSK	HCH	1.000	0.625	PASS
π/4DQPSK	LCH	1.001	0.873	PASS
π/4DQPSK	MCH	0.999	0.855	PASS
π/4DQPSK	HCH	0.997	0.915	PASS
8DPSK	LCH	0.997	0.836	PASS
8DPSK	MCH	1.000	0.843	PASS
8DPSK	HCH	0.997	0.845	PASS

Test Graph

Graphs	
GFSK/LCH	
GFSK/MCH	
GFSK/HCH	

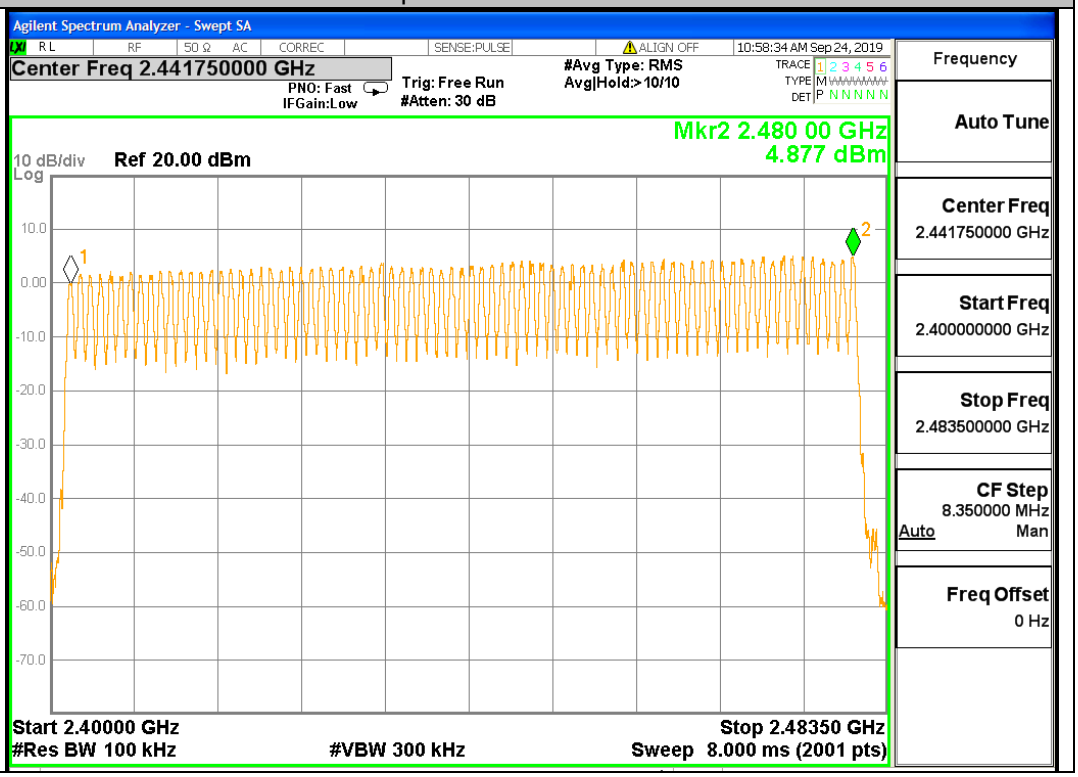
π/4DQPSK/LCH	
π/4DQPSK/MCH	
π/4DQPSK/HCH	

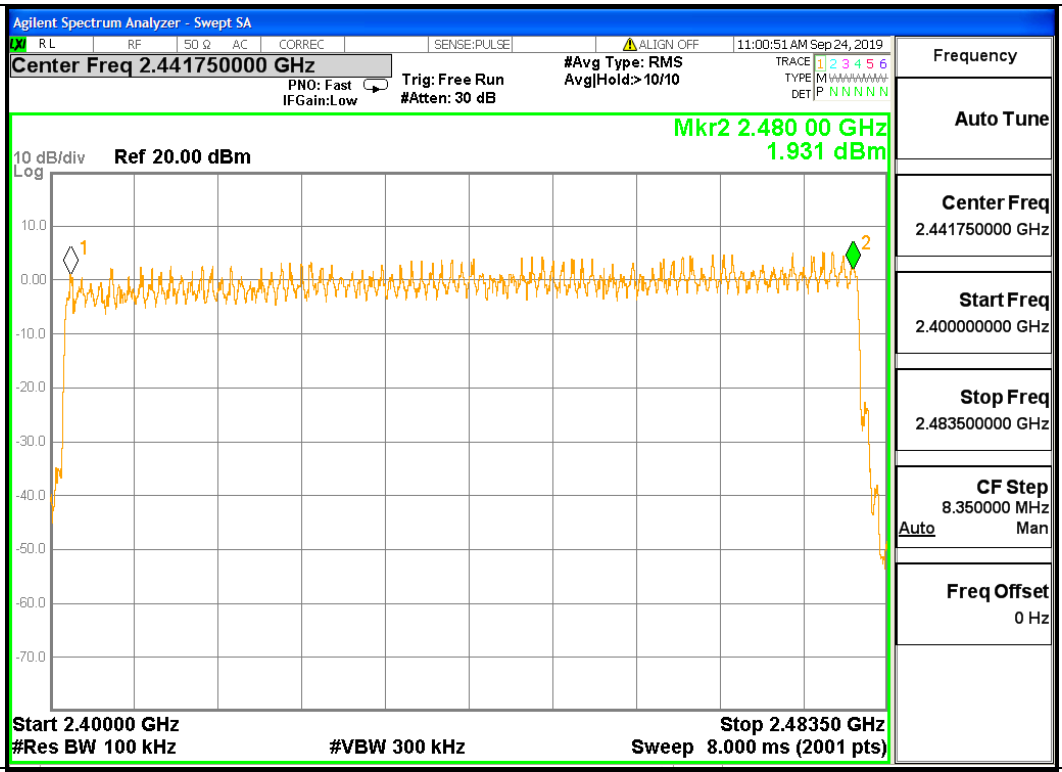
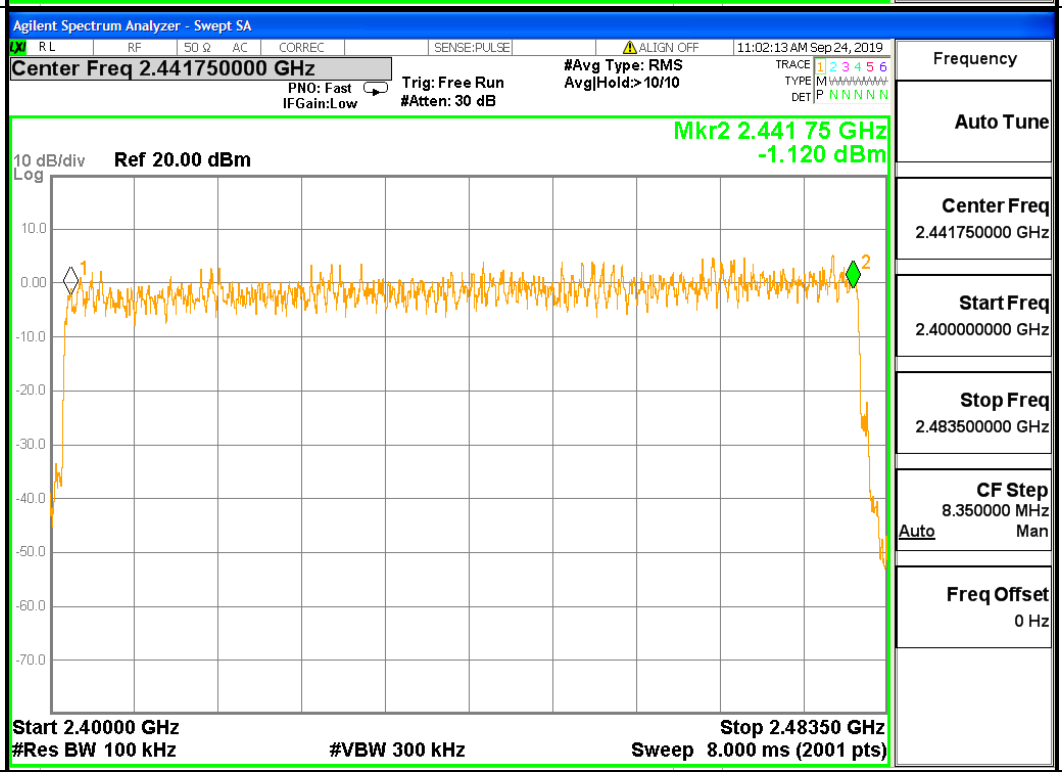
8DPSK/LCH	
8DPSK/MCH	
8DPSK/HCH	

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 Graph

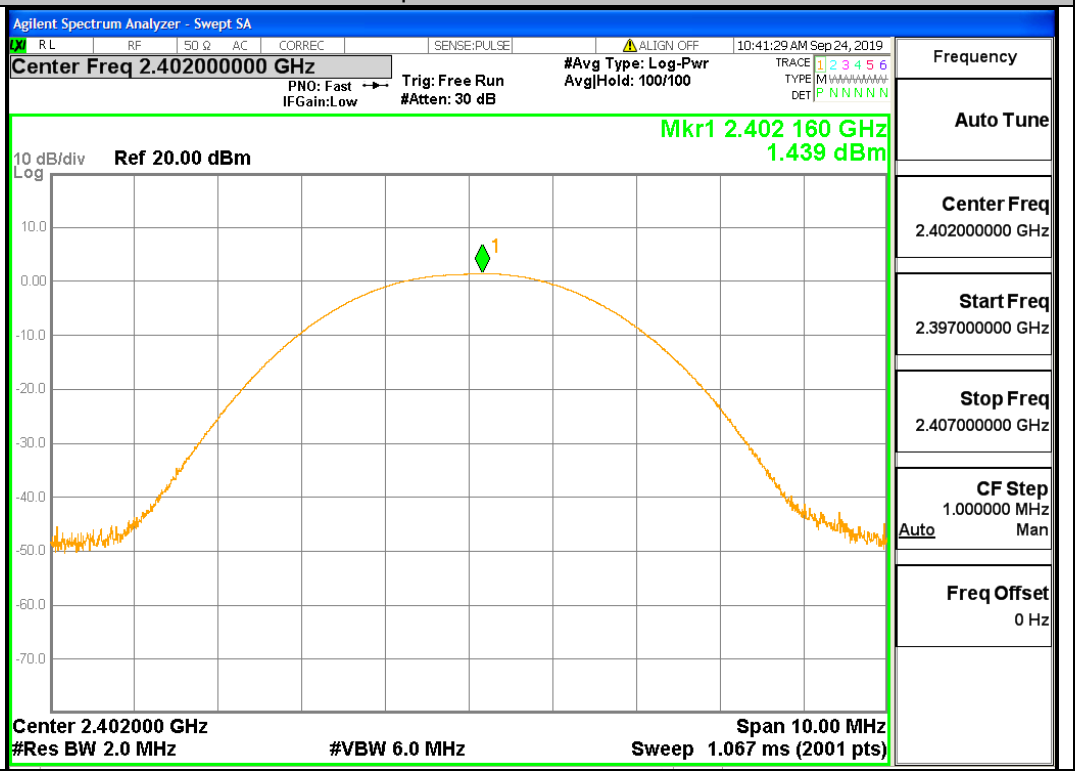
Graphs	
GFSK/Hop	

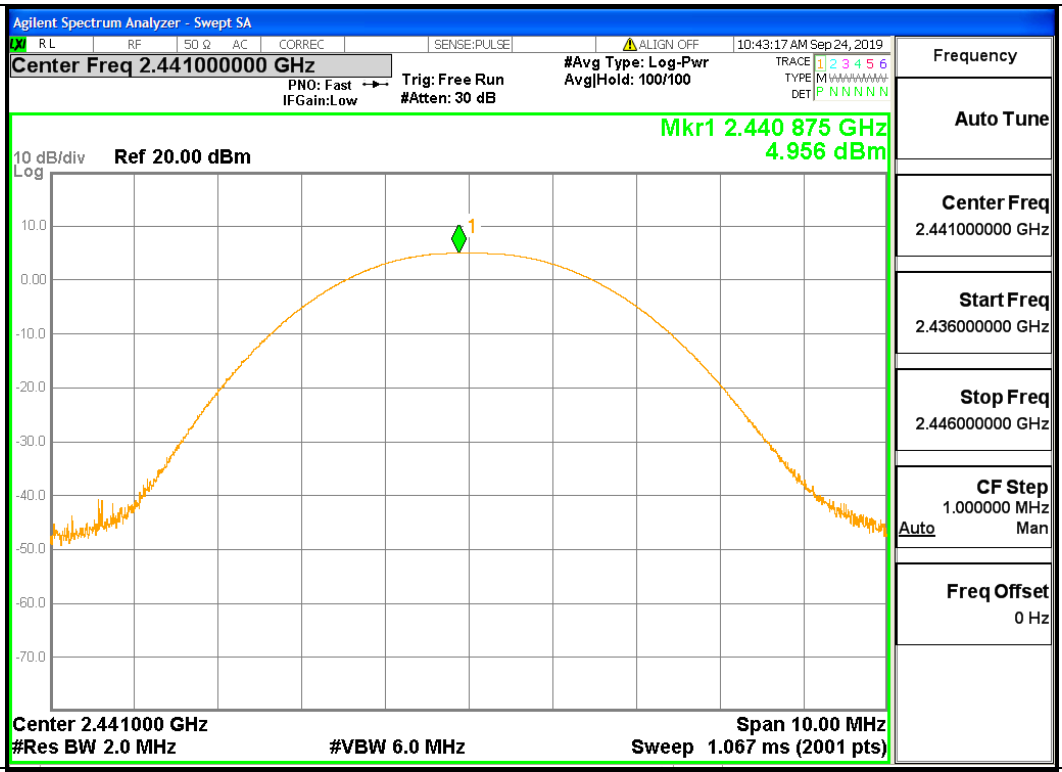
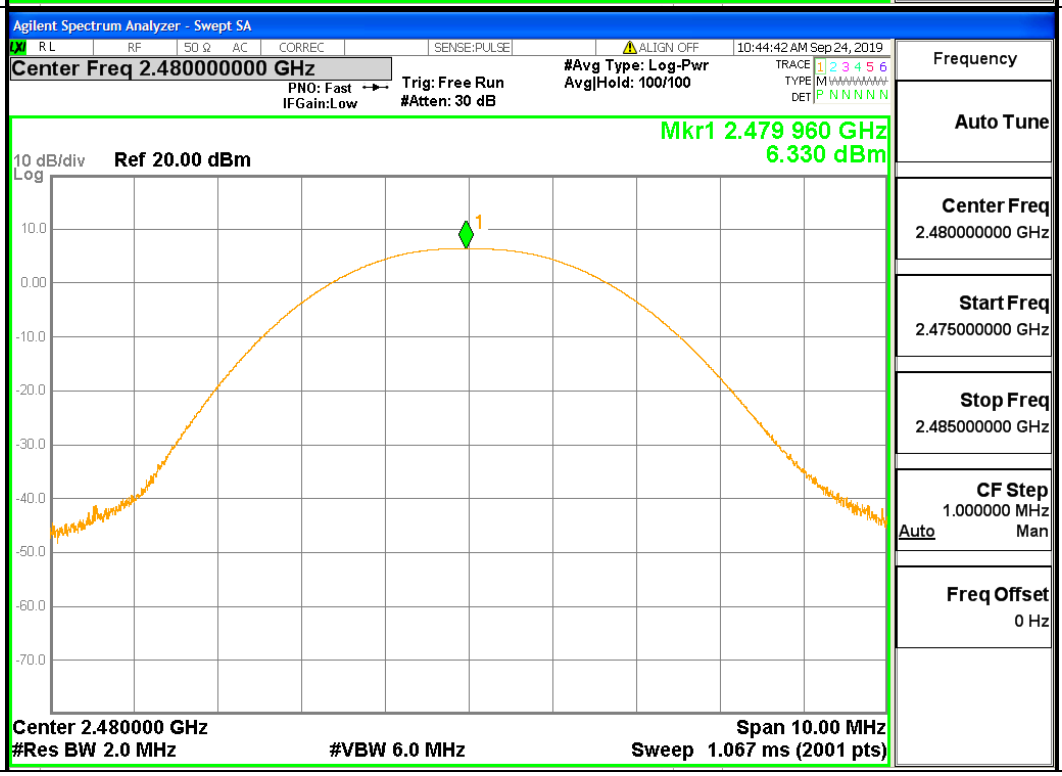
π/4DQPSK/Hop	
8DPSK/Hop	

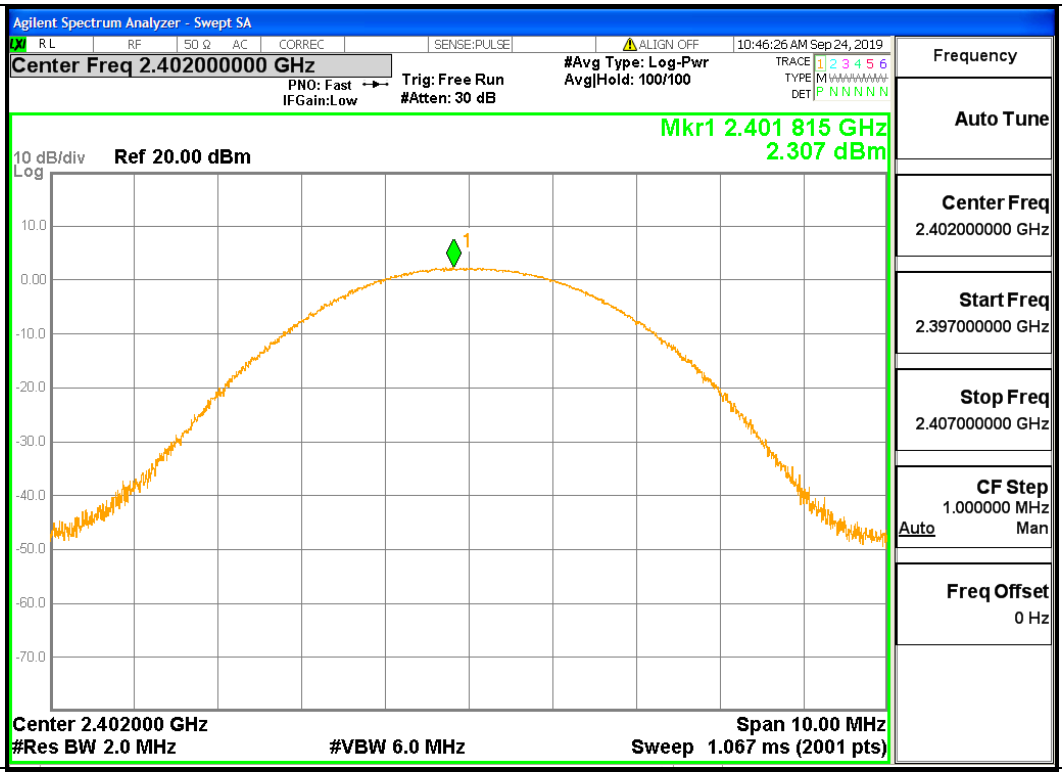
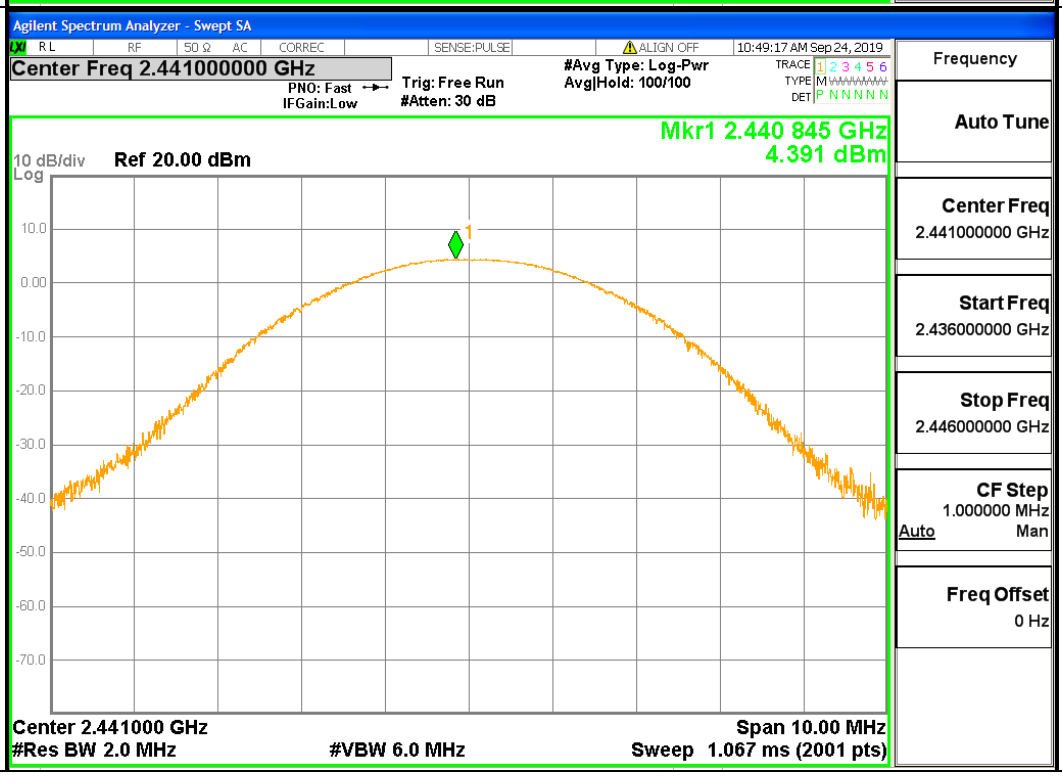
A.5 Conducted Peak Output Power

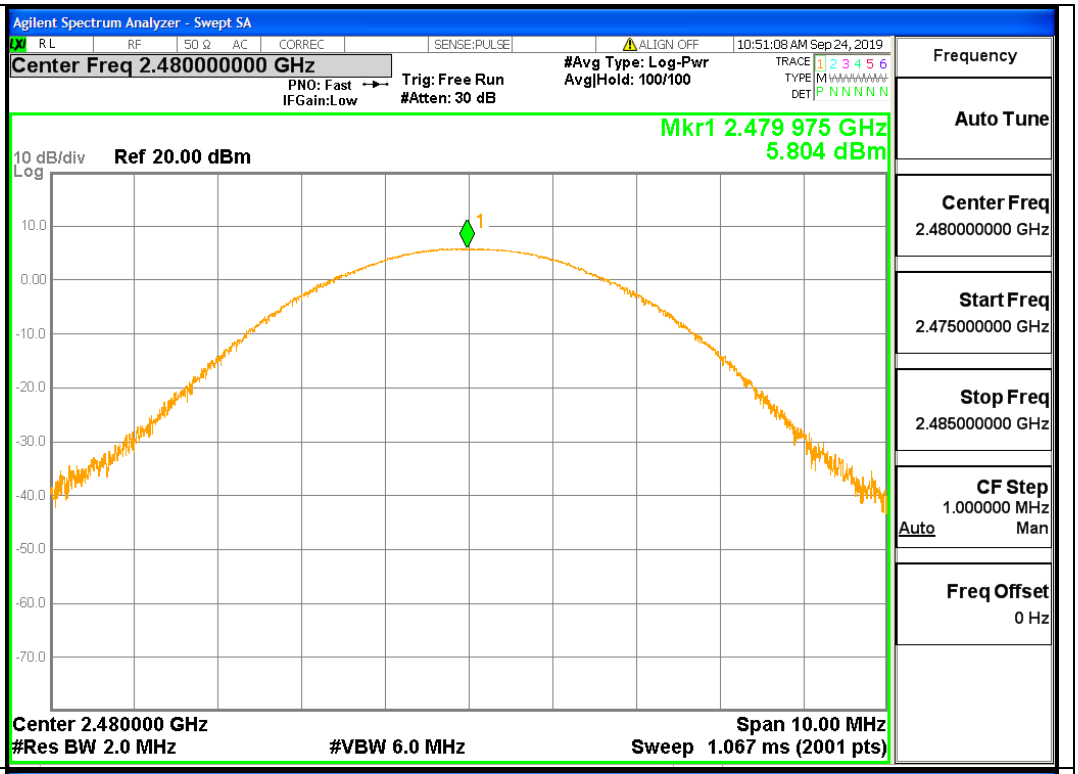
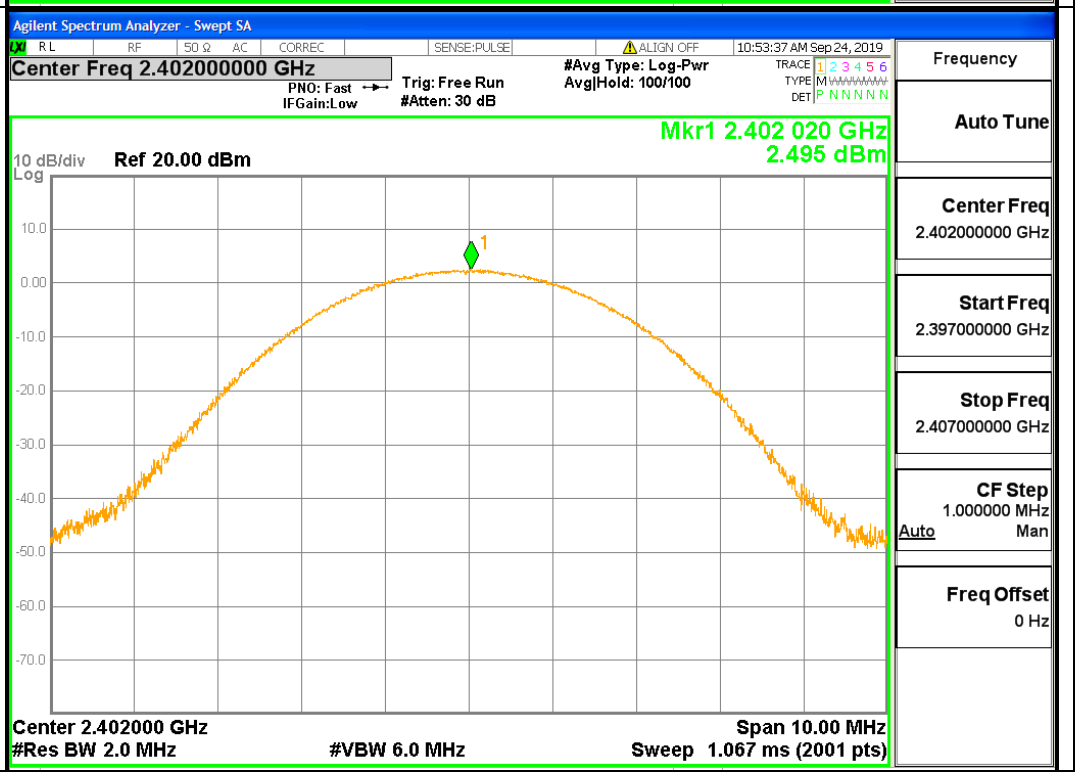
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	1.439	21	PASS
GFSK	MCH	4.956	21	PASS
GFSK	HCH	6.330	21	PASS
π/4DQPSK	LCH	2.307	21	PASS
π/4DQPSK	MCH	4.391	21	PASS
π/4DQPSK	HCH	5.804	21	PASS
8DPSK	LCH	2.495	21	PASS
8DPSK	MCH	4.494	21	PASS
8DPSK	HCH	5.863	21	PASS

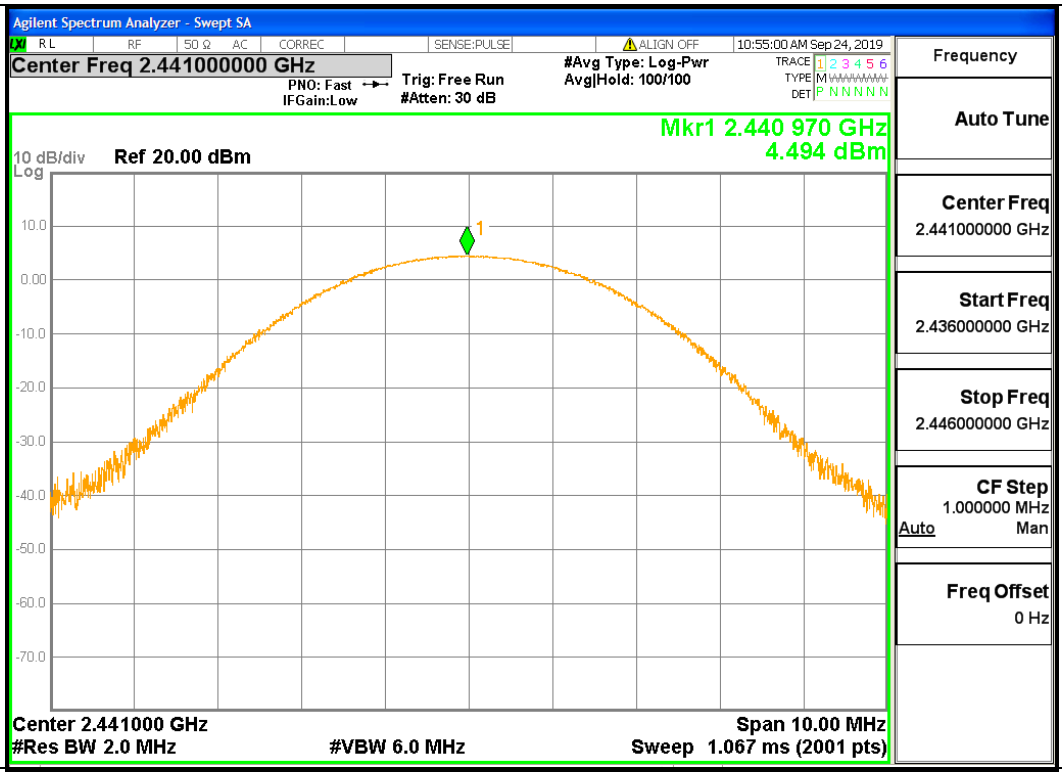
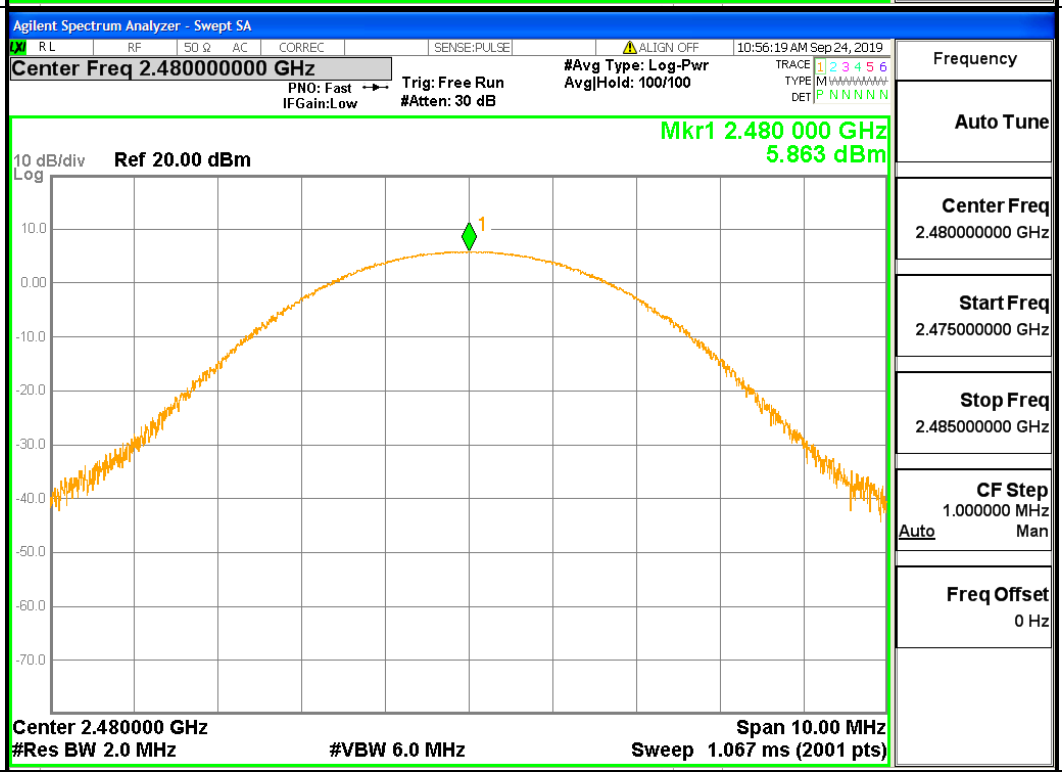
Test Graph

Graphs	
GFSK/LCH	

GFSK/MCH	
GFSK/HCH	

π/4DQPSK/LCH	
π/4DQPSK/MCH	

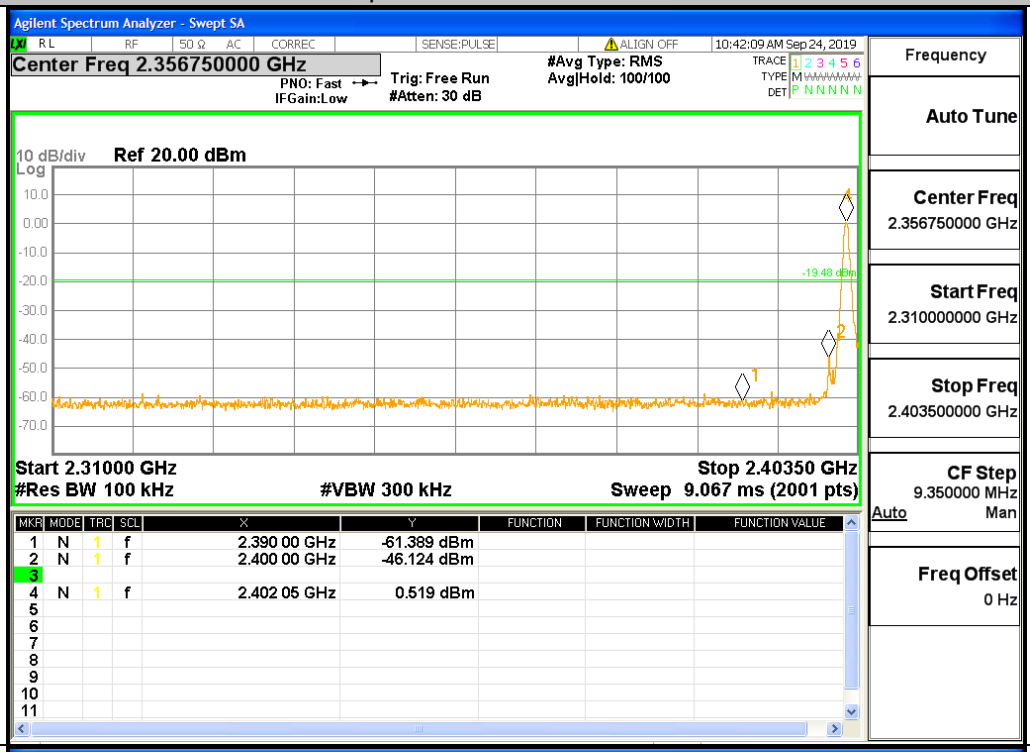
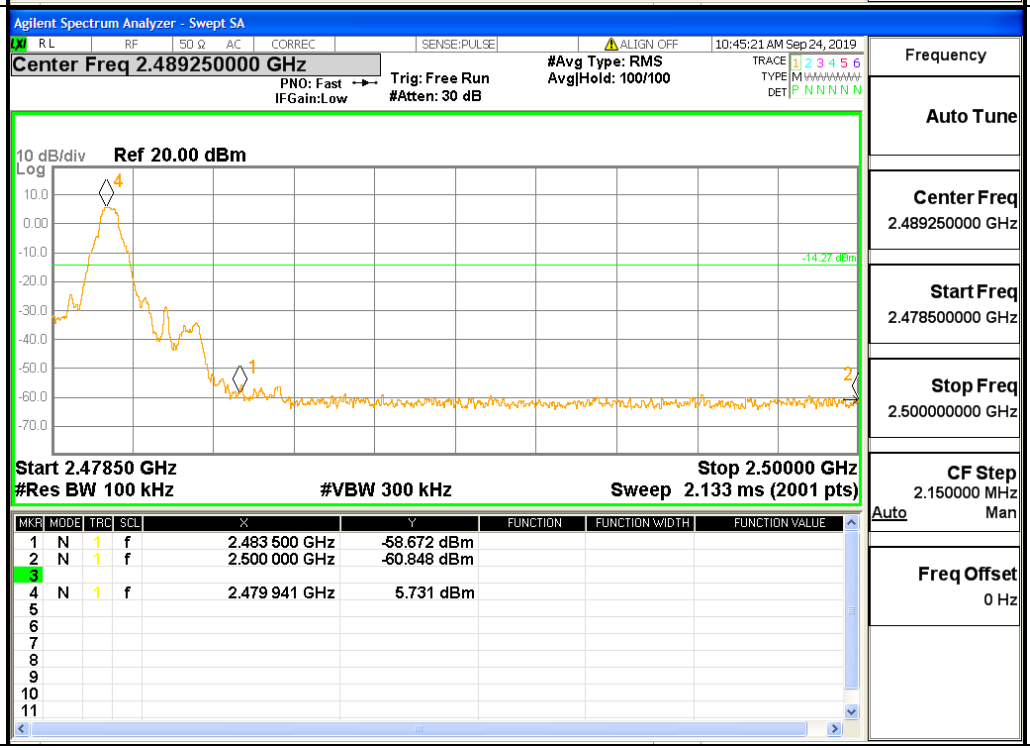
π/4DQPSK/HCH	
8DPSK/LCH	

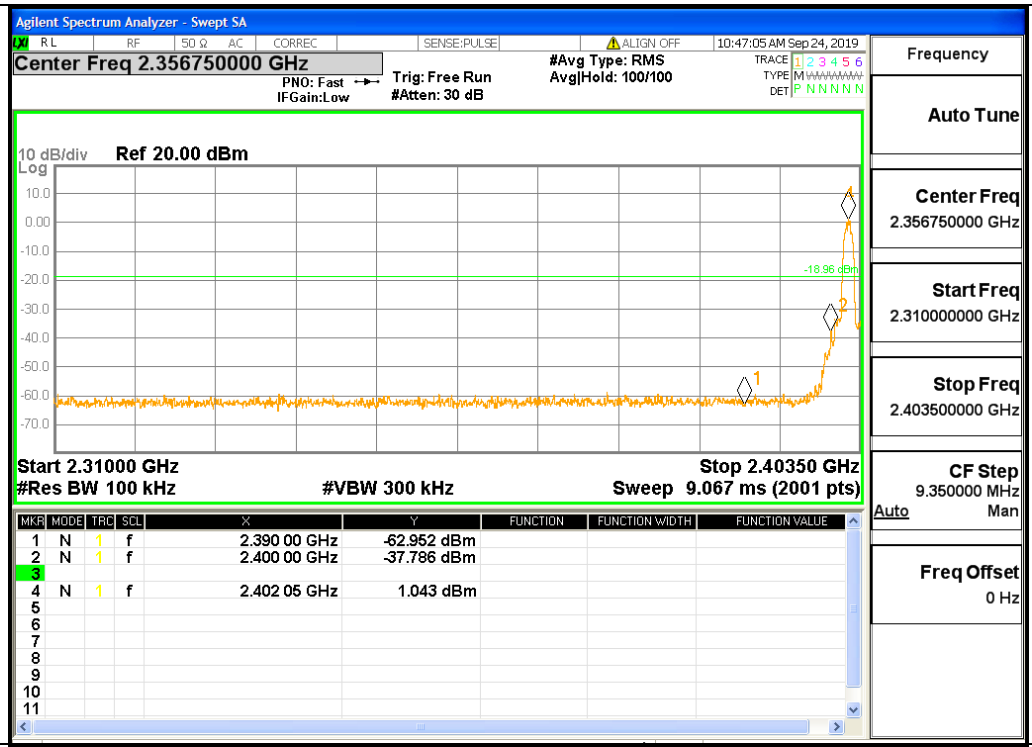
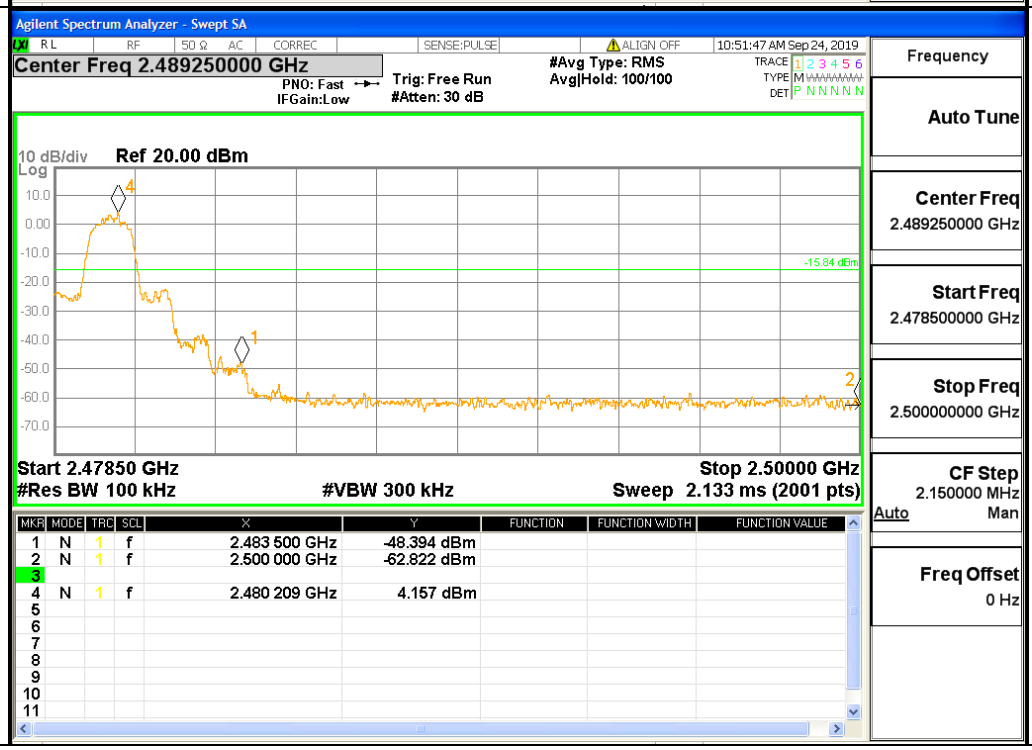
8DPSK/MCH	
8DPSK/HCH	

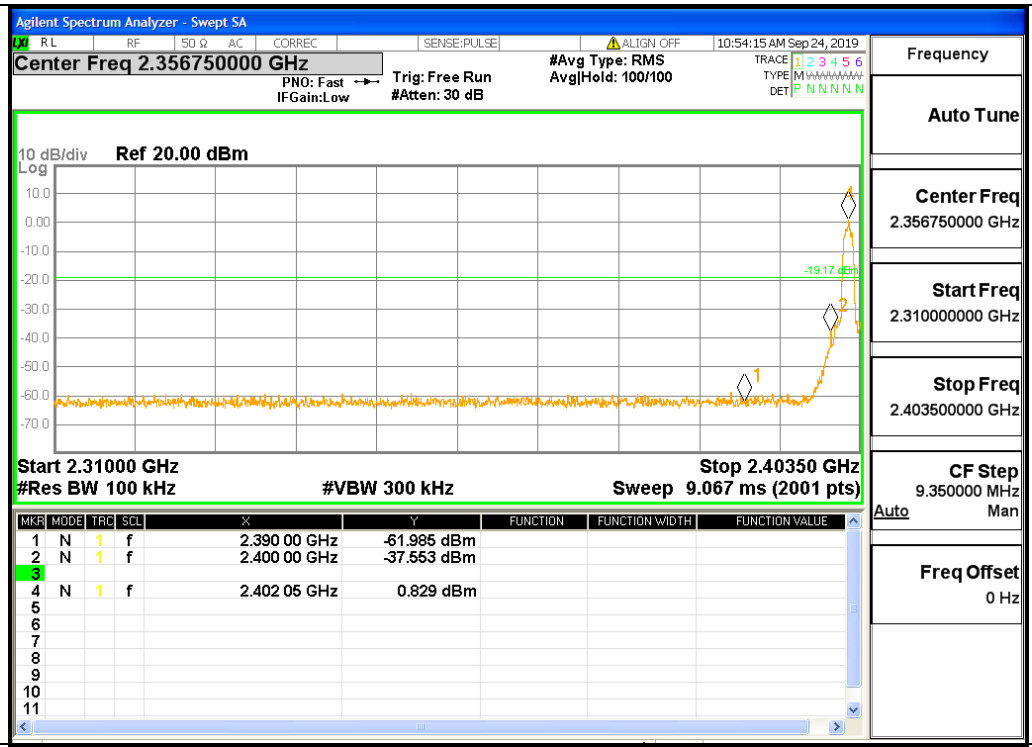
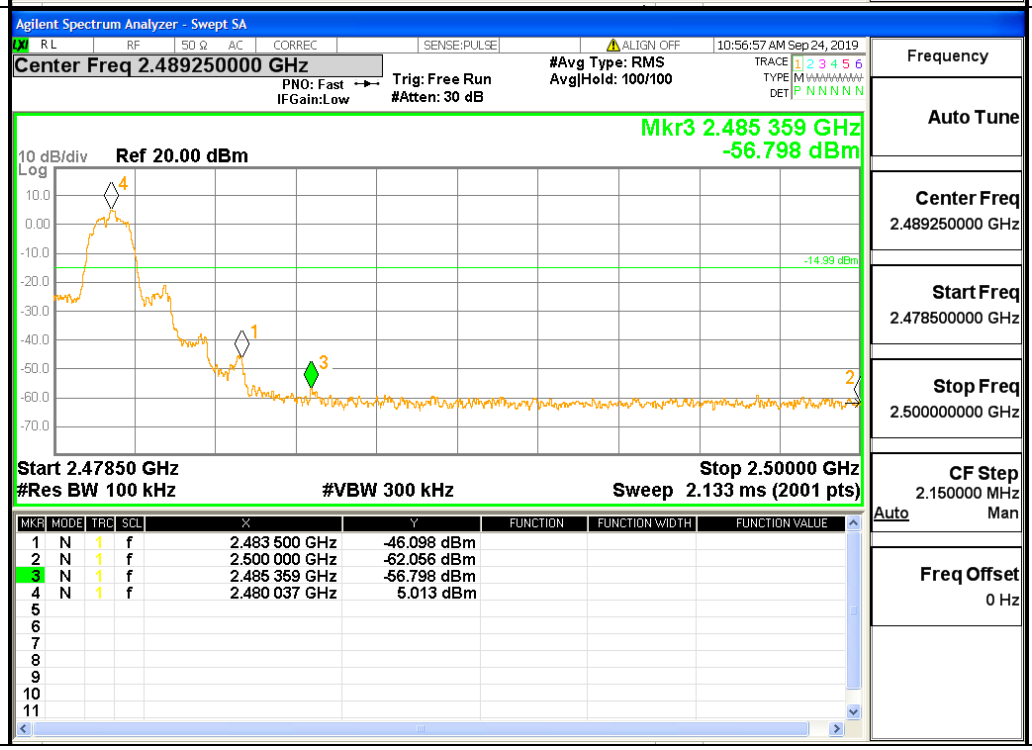
A.6 Band-edge for RF Conducted Emissions

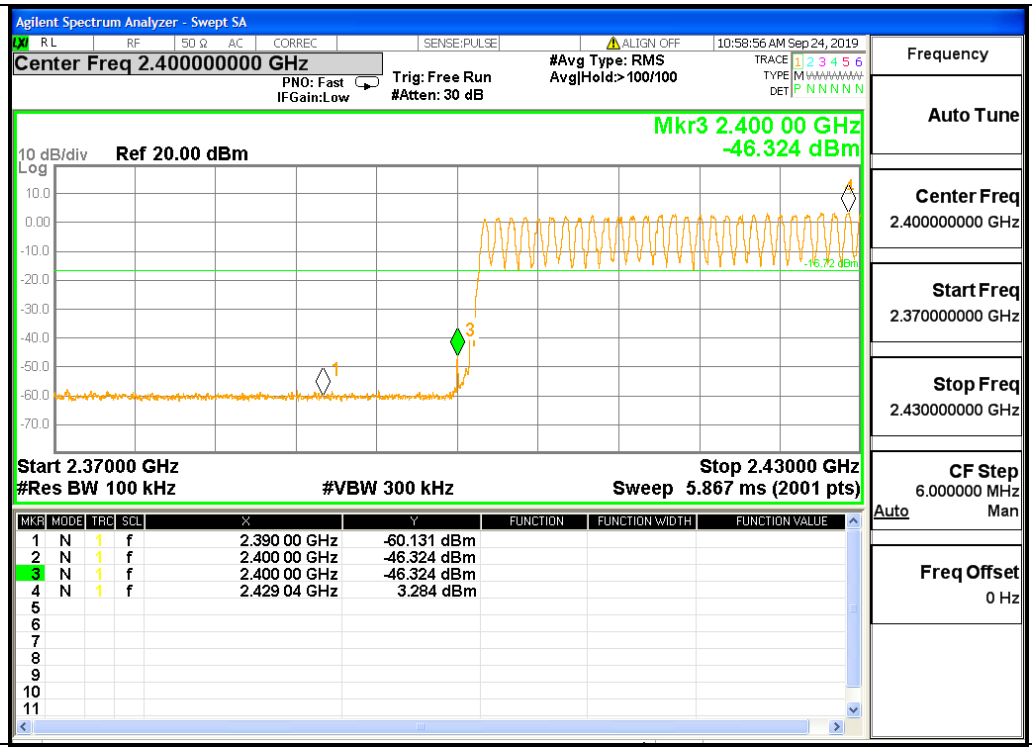
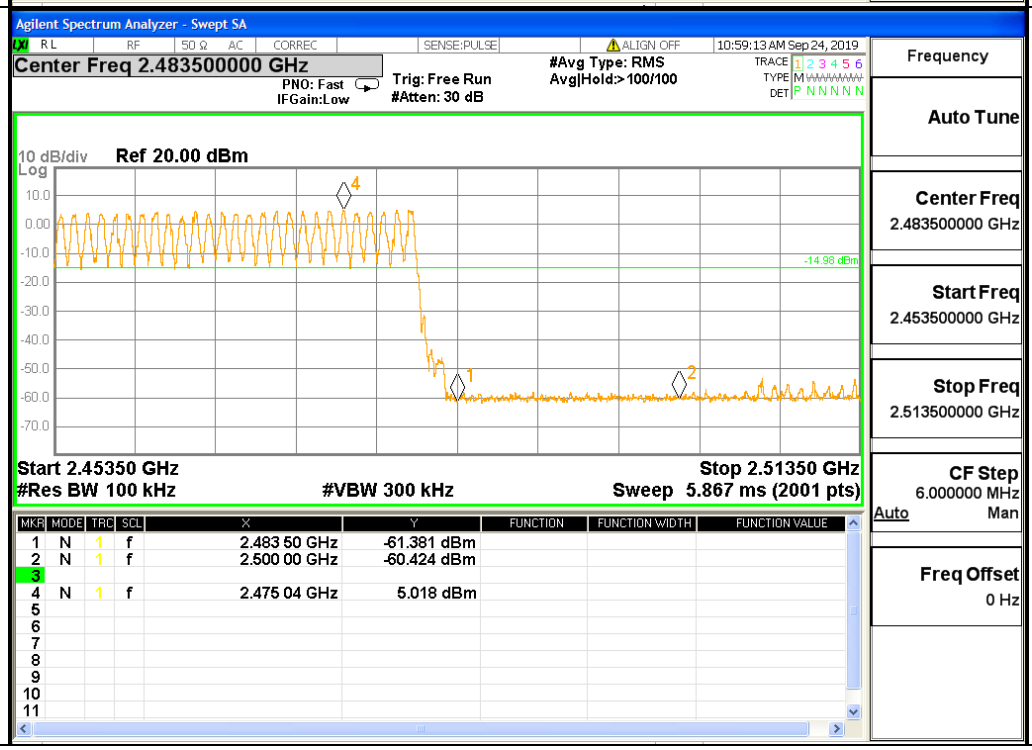
Type	Carrier Frequency(MHz)	Frequency(MHz)	Carrier Frequency Power [dBm]	Bandedge Peak(dBm)	Upper limit(dBm)	Conclusion
1DH5	2402	2400	0.519	-46.12	-19.481	Pass
1DH5	2480	2483.5	5.731	-58.67	-14.269	Pass
2DH5	2402	2400	1.043	-37.79	-18.957	Pass
2DH5	2480	2483.5	4.157	-48.39	-15.843	Pass
3DH5	2402	2400	0.829	-37.55	-19.171	Pass
3DH5	2480	2483.5	5.013	-46.1	-14.987	Pass
1DH5-Hopping	2402	2400	3.284	-46.32	-16.716	Pass
1DH5-Hopping	2480	2500	5.018	-60.42	-14.982	Pass
2DH5-Hopping	2402	2399.97	3.239	-41.214	-16.761	Pass
2DH5-Hopping	2480	2483.5	5.099	-56.33	-14.901	Pass
3DH5-Hopping	2402	2400	3.509	-48.76	-16.491	Pass
3DH5-Hopping	2480	2483.5	5.219	-48.3	-14.781	Pass

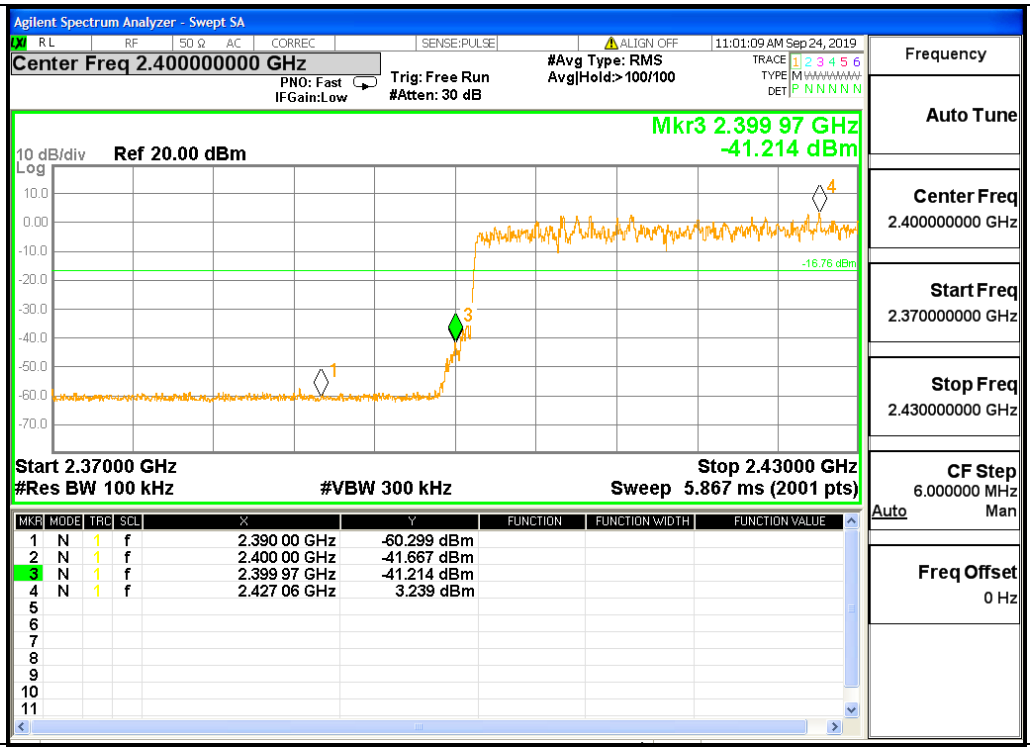
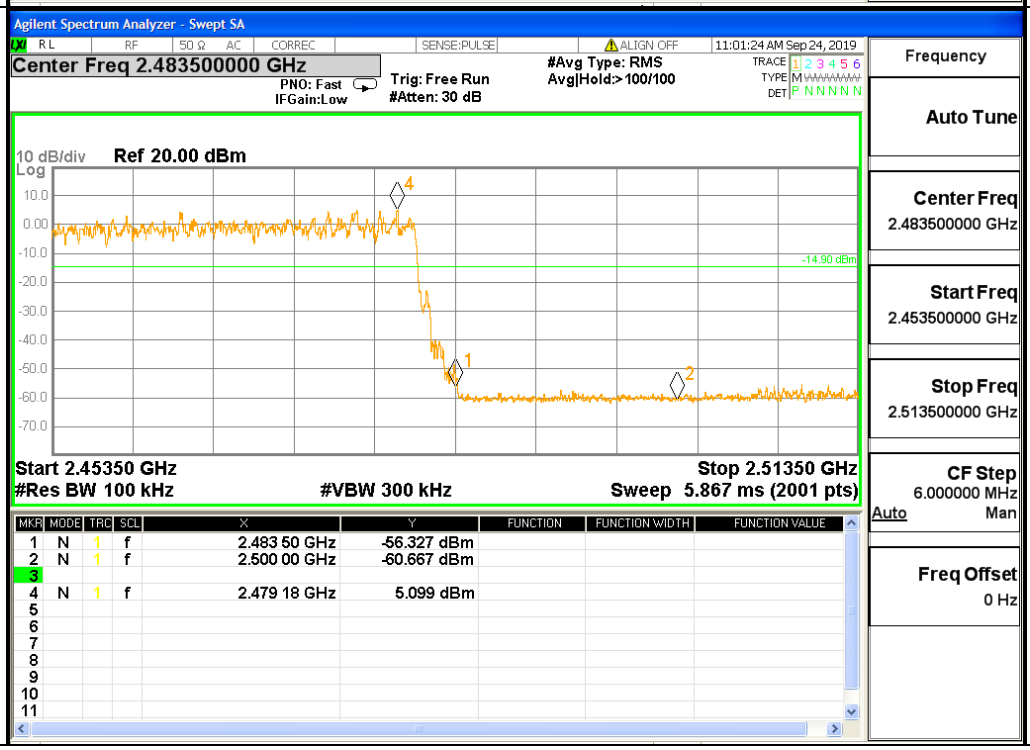
Test Graph

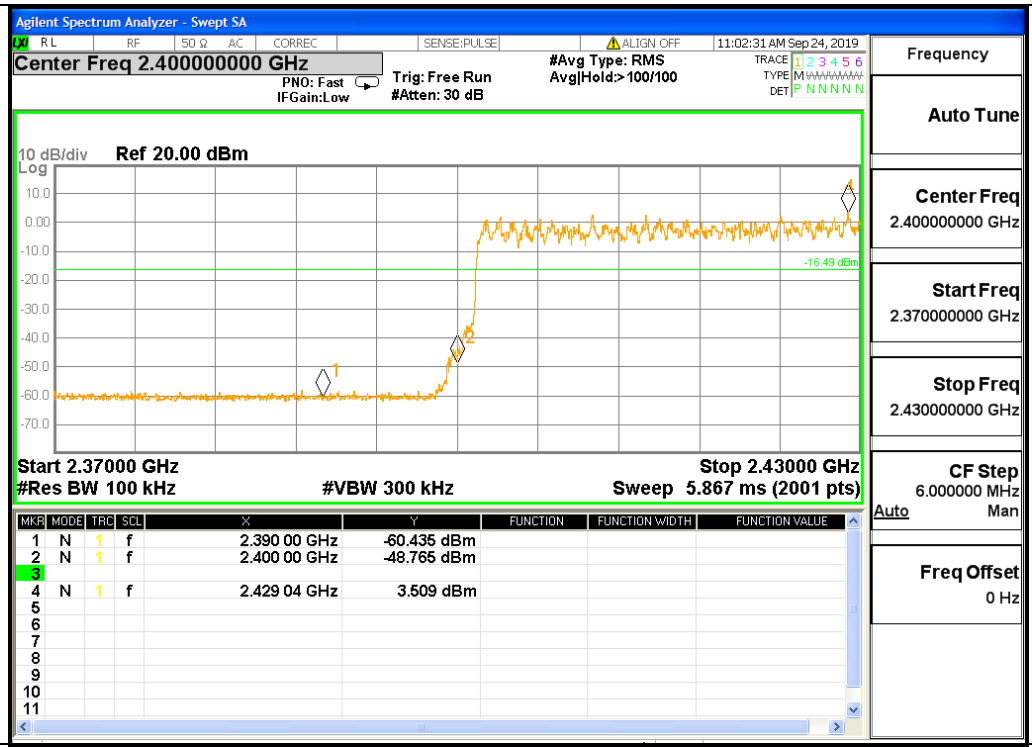
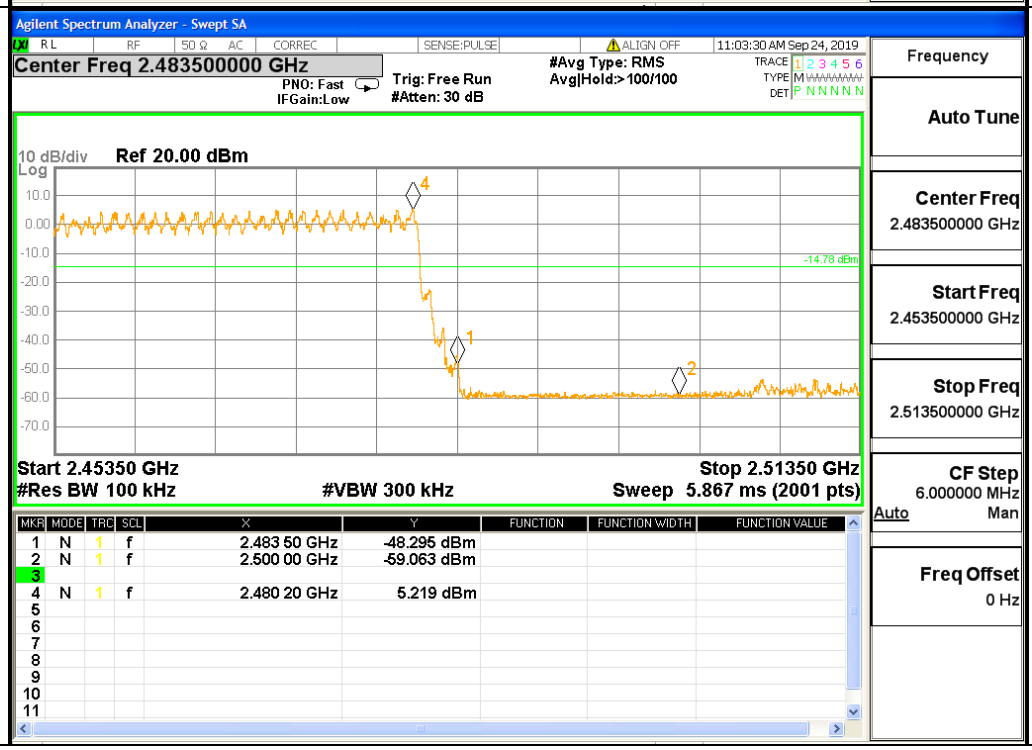
Graphs	
GFSK/LCH/No Hop	
GFSK/HCH/No Hop	

π/4DQPSK/LCH/No Hop	
π/4DQPSK/HCH/No Hop	

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

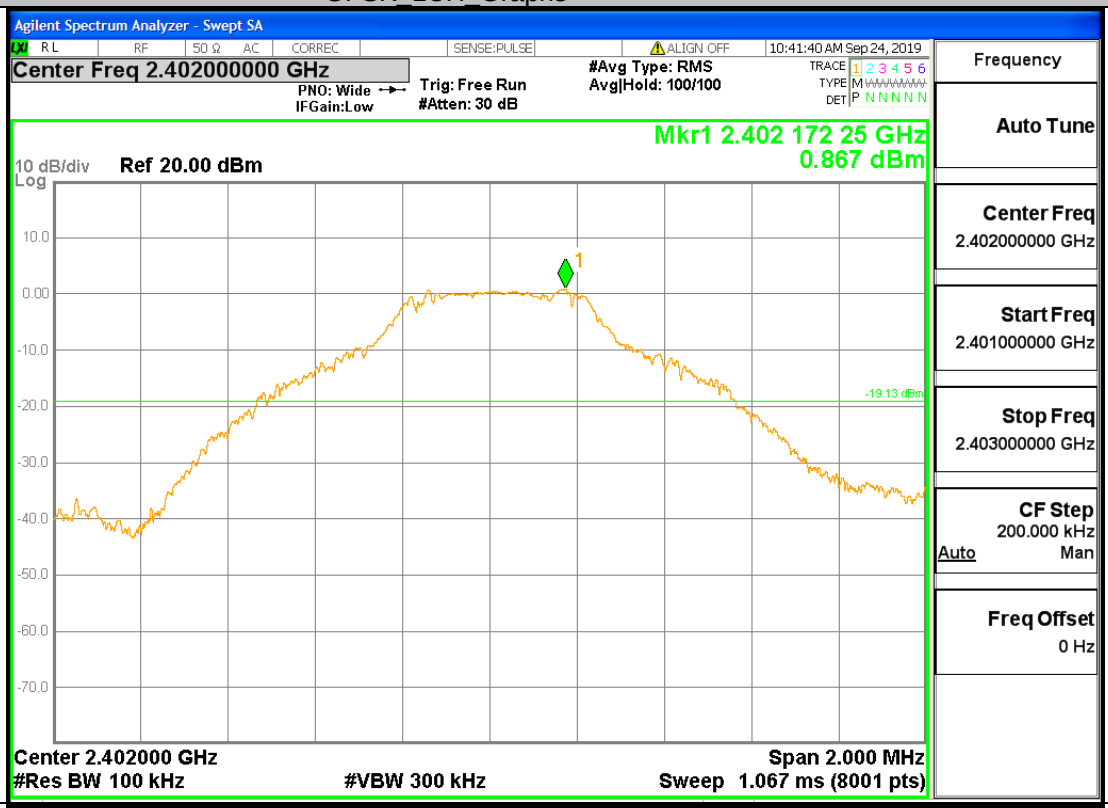
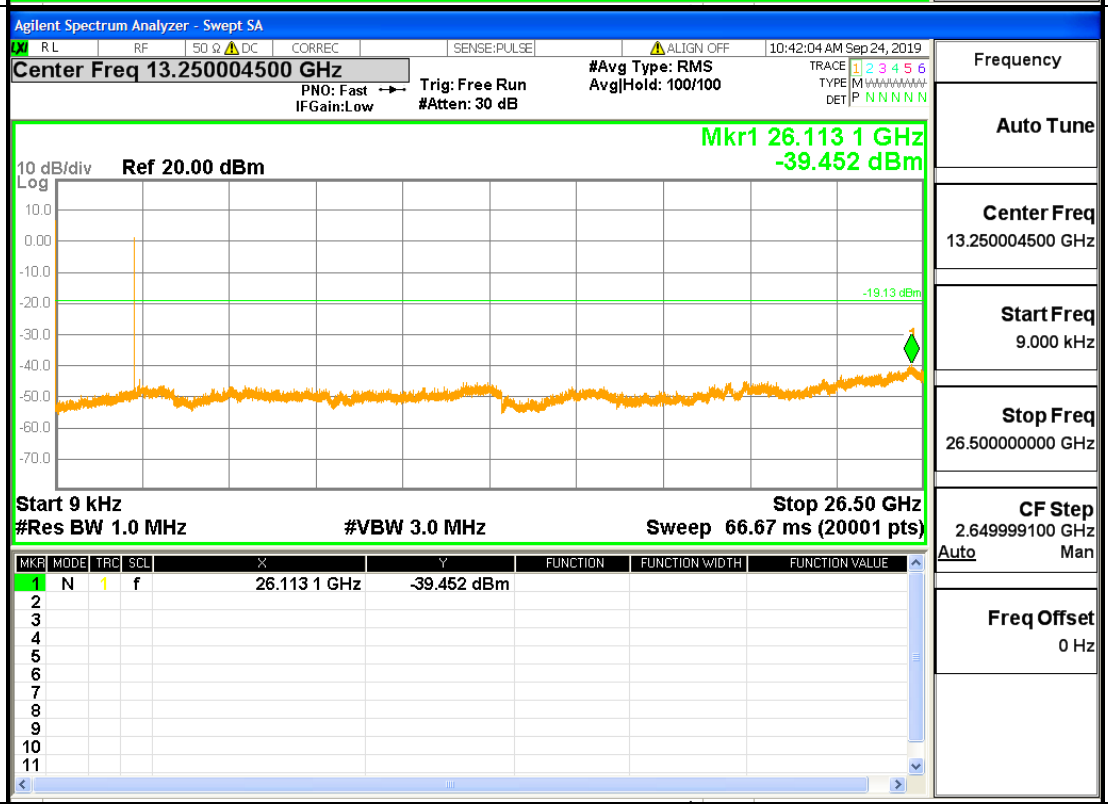
GFSK/LCH/Hop	
GFSK/HCH/Hop	

π/4DQPSK/LCH/Hop	
π /4DQPSK/HCH/Hop	

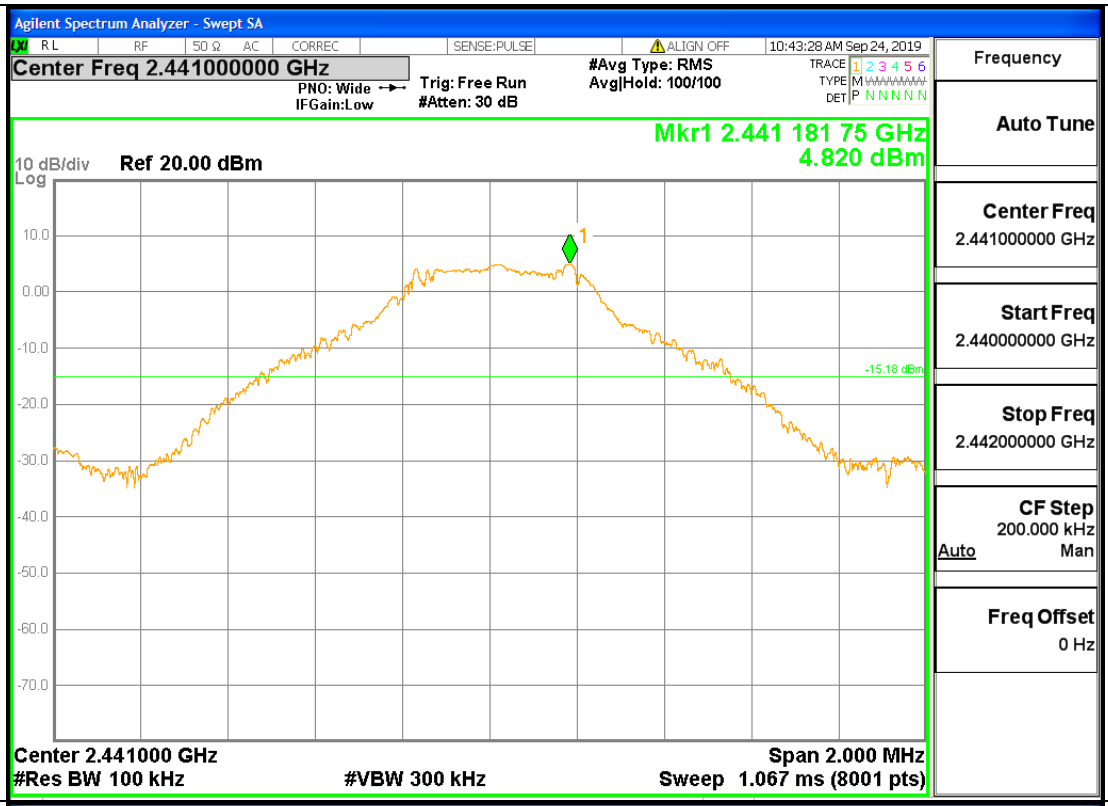
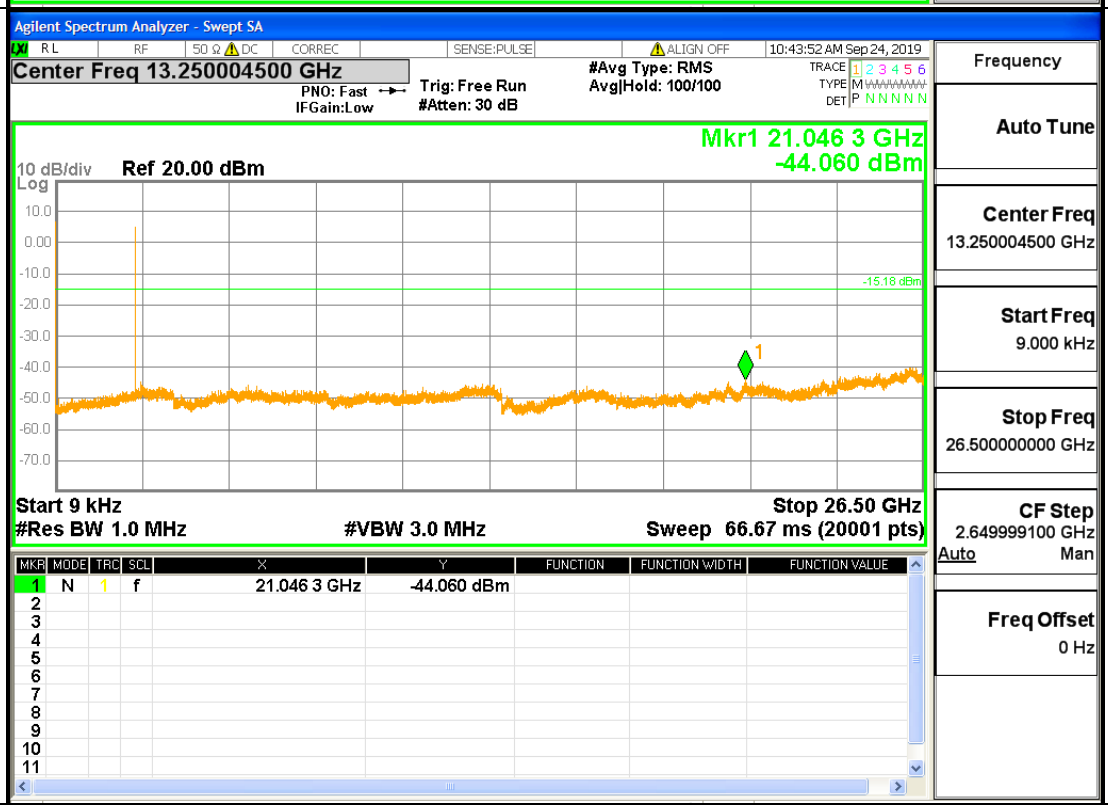
8DPSK/LCH/Hop	
8DPSK/HCH/Hop	

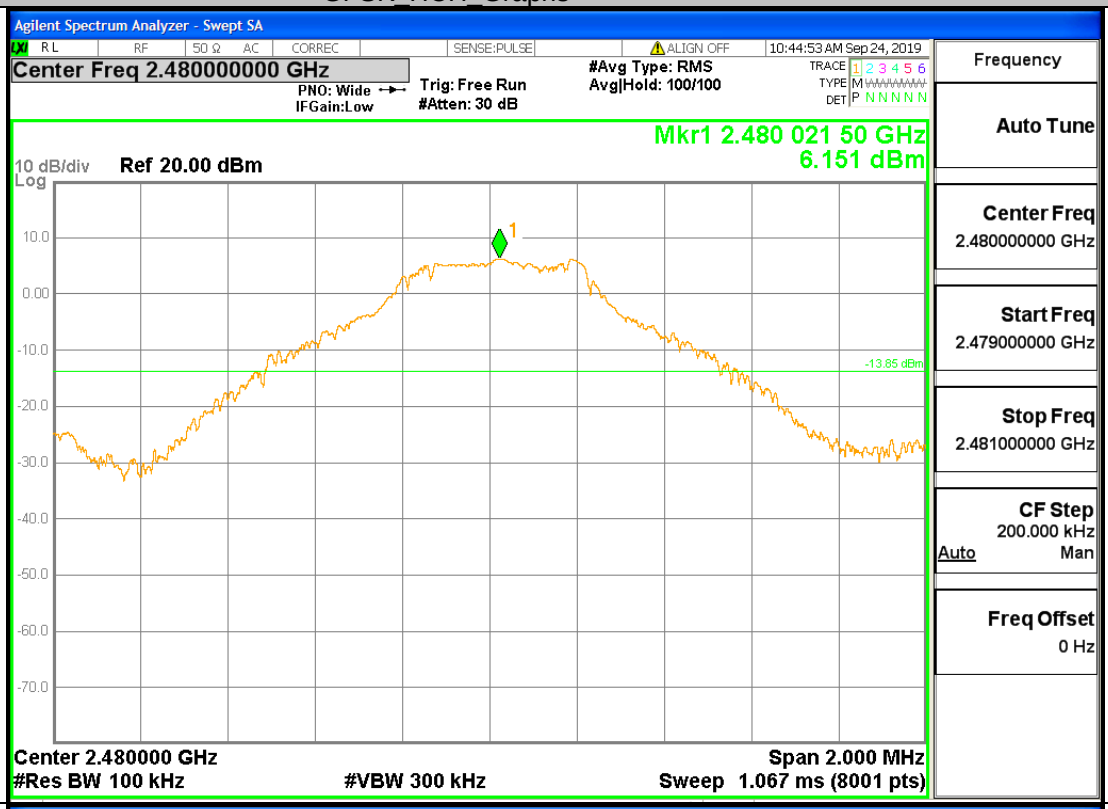
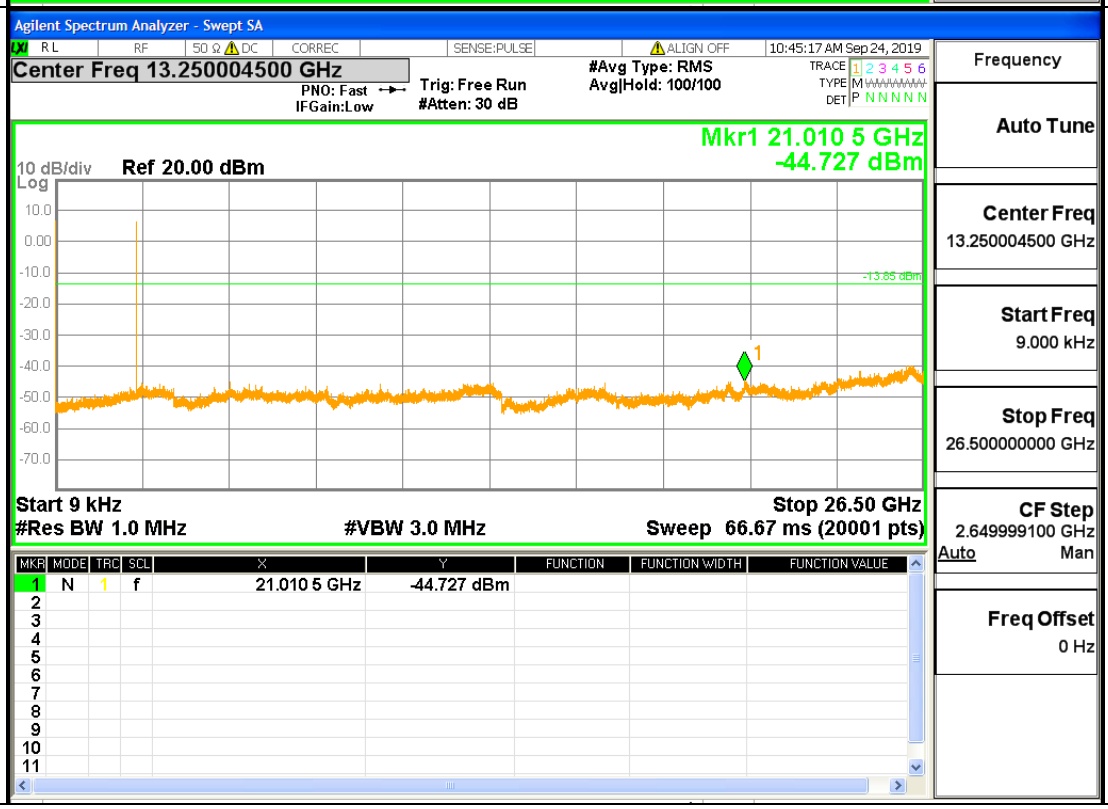
A.7 RF Conducted Spurious Emissions

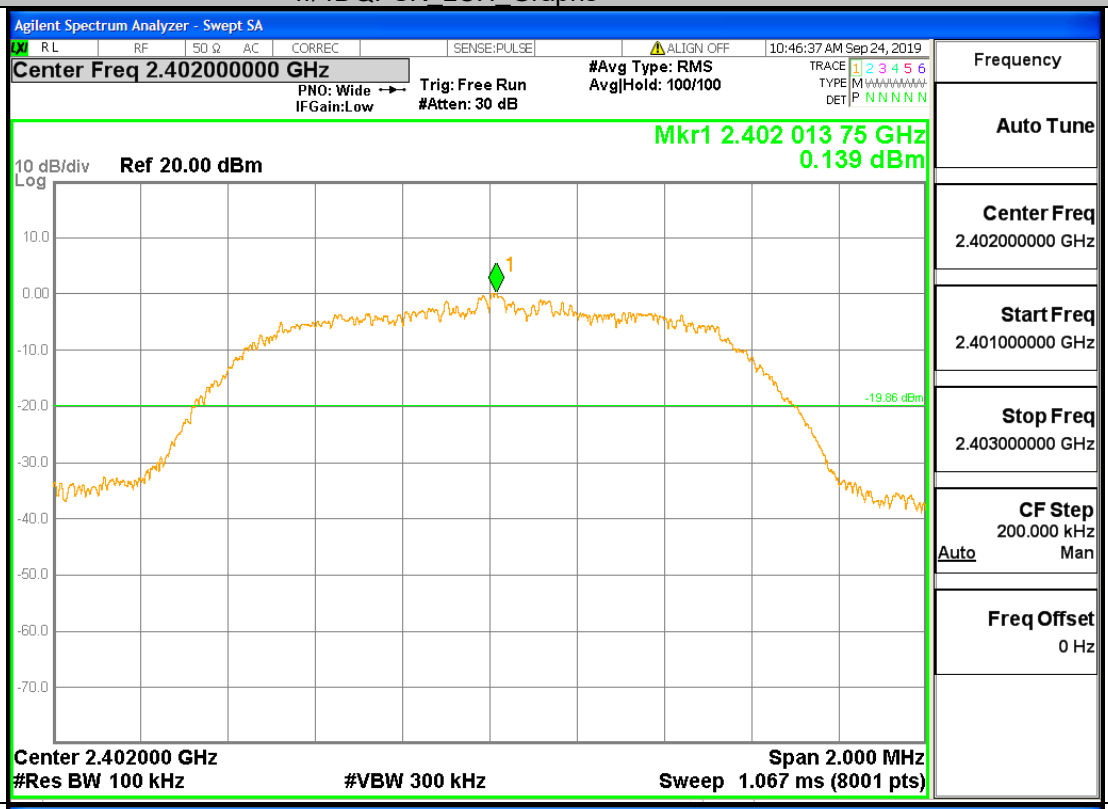
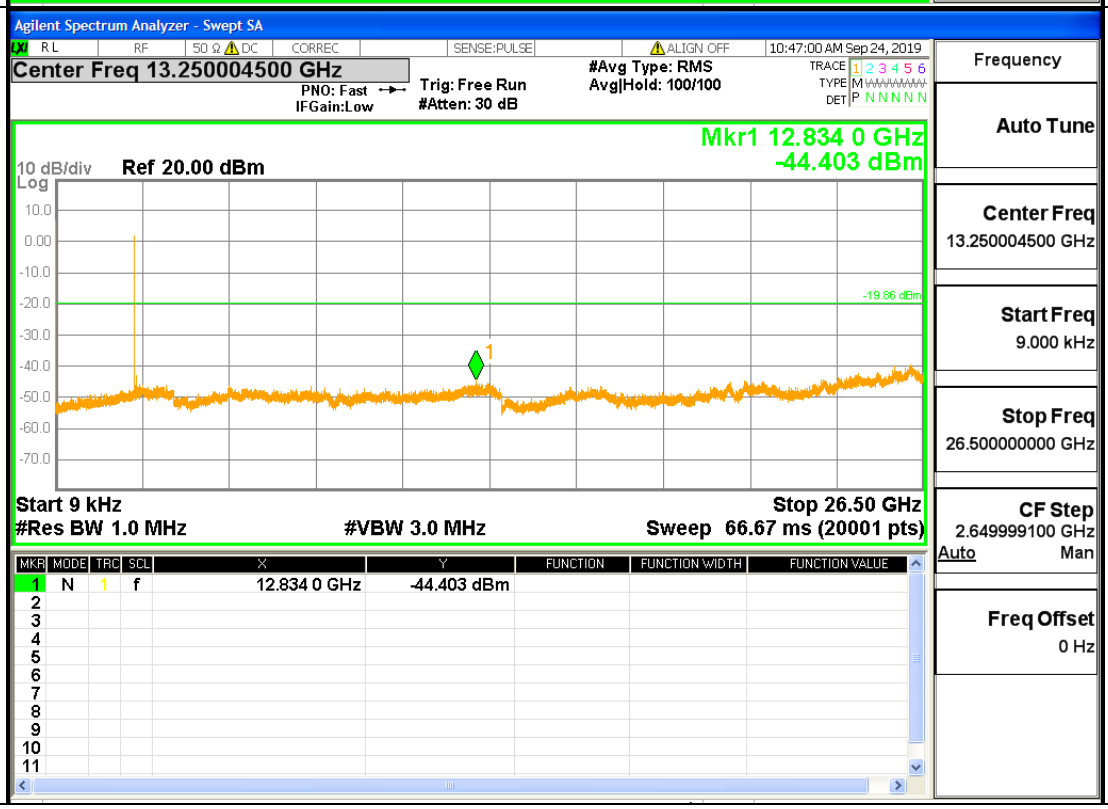
Test Graph

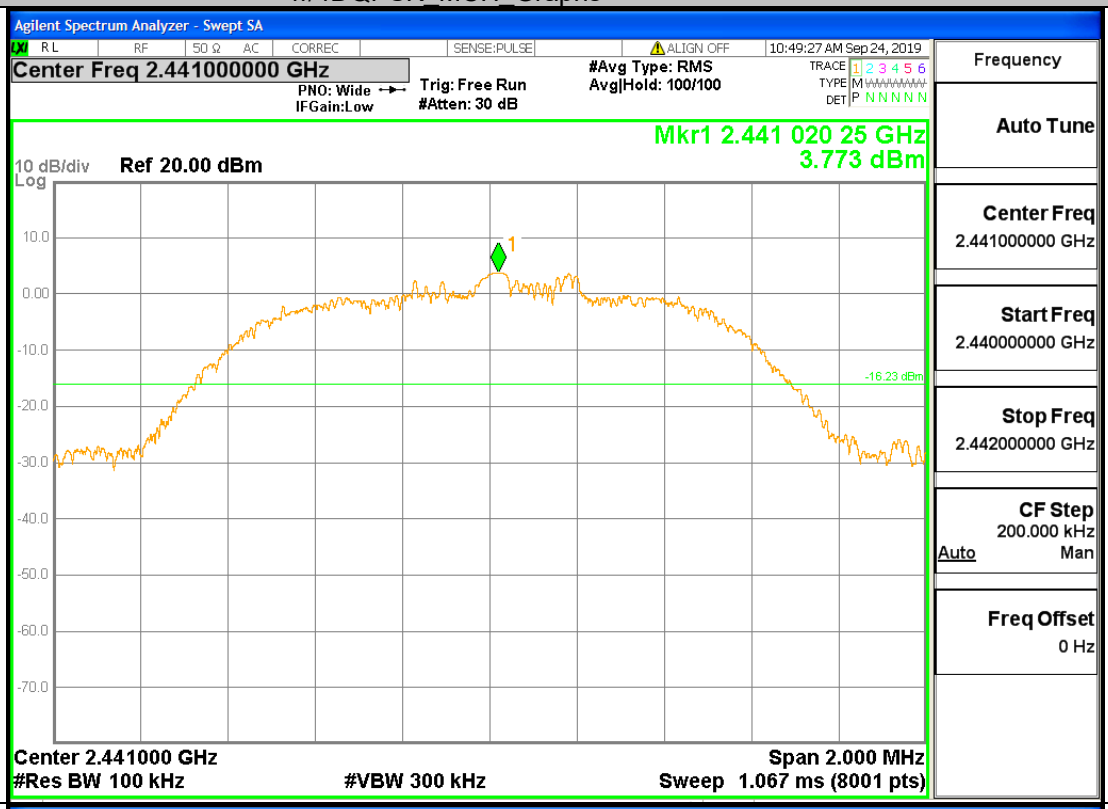
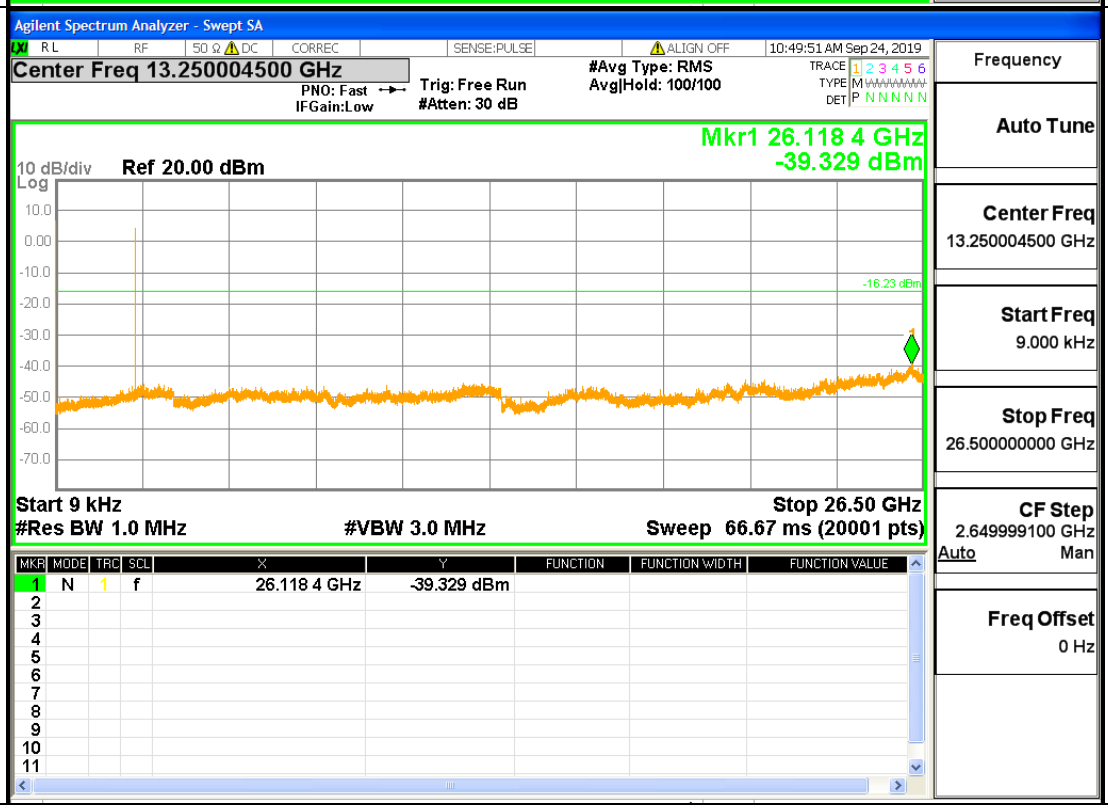
GFSK_LCH_Graphs	
Pref	
Puw	

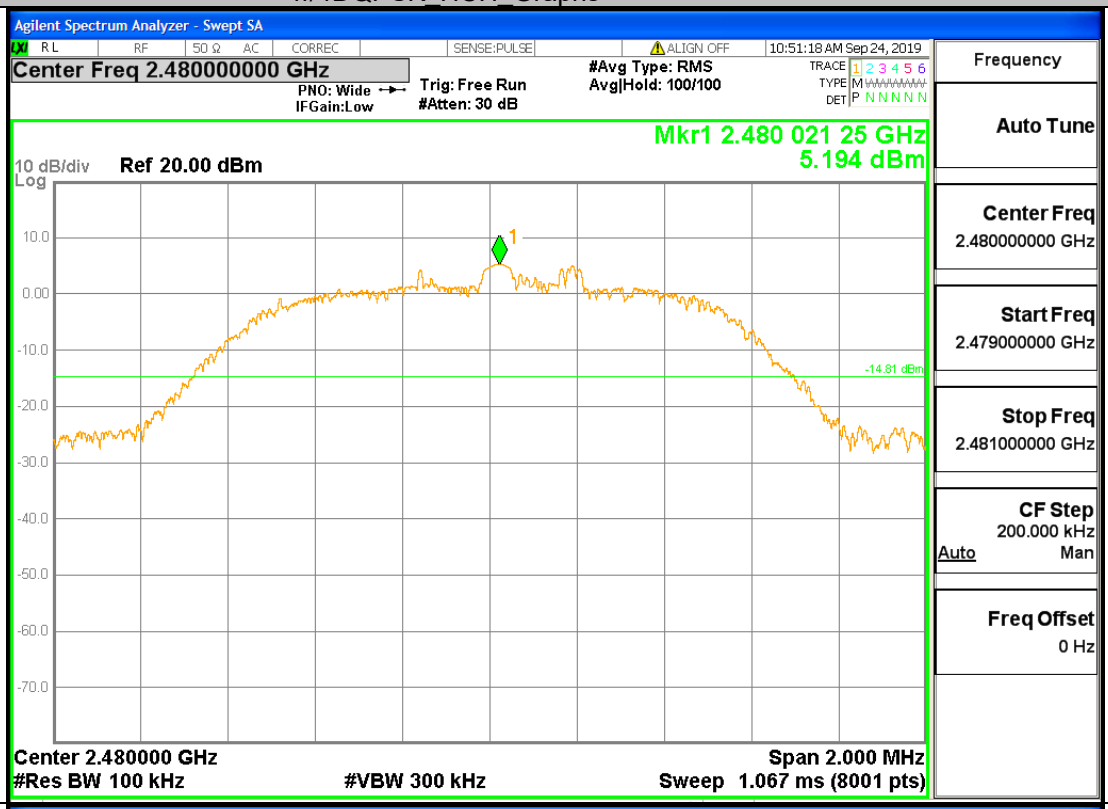
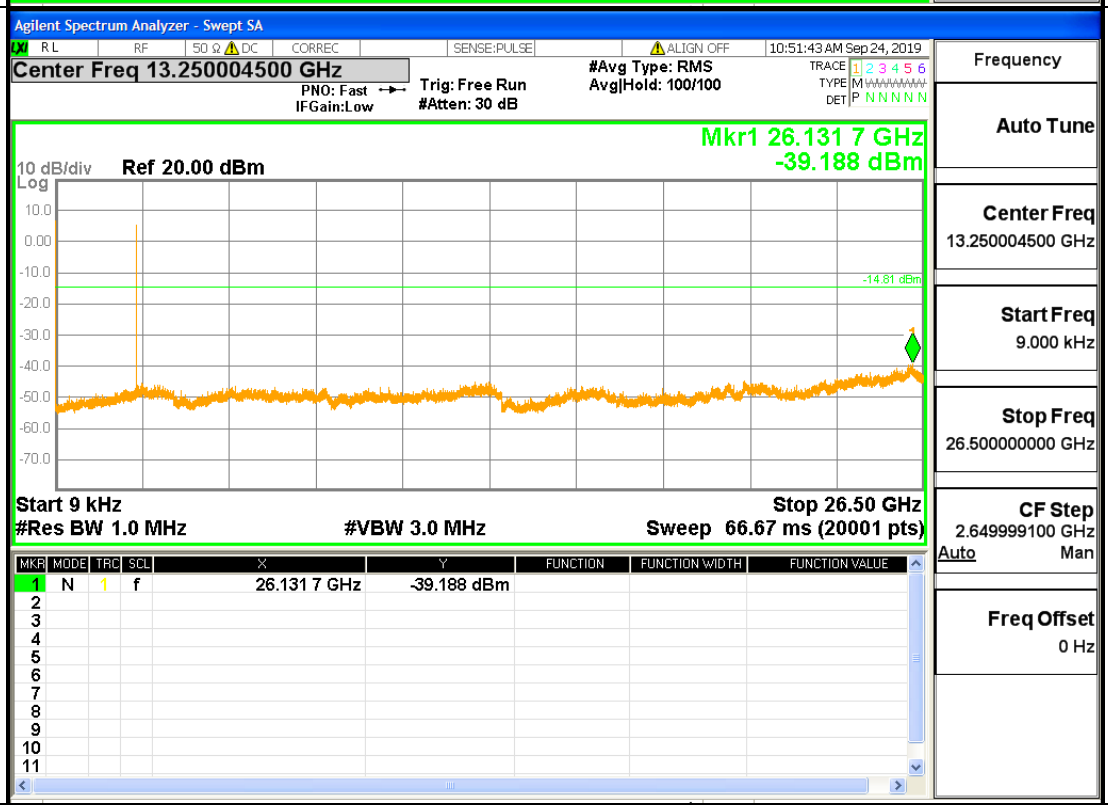
GFSK_MCH_Graphs

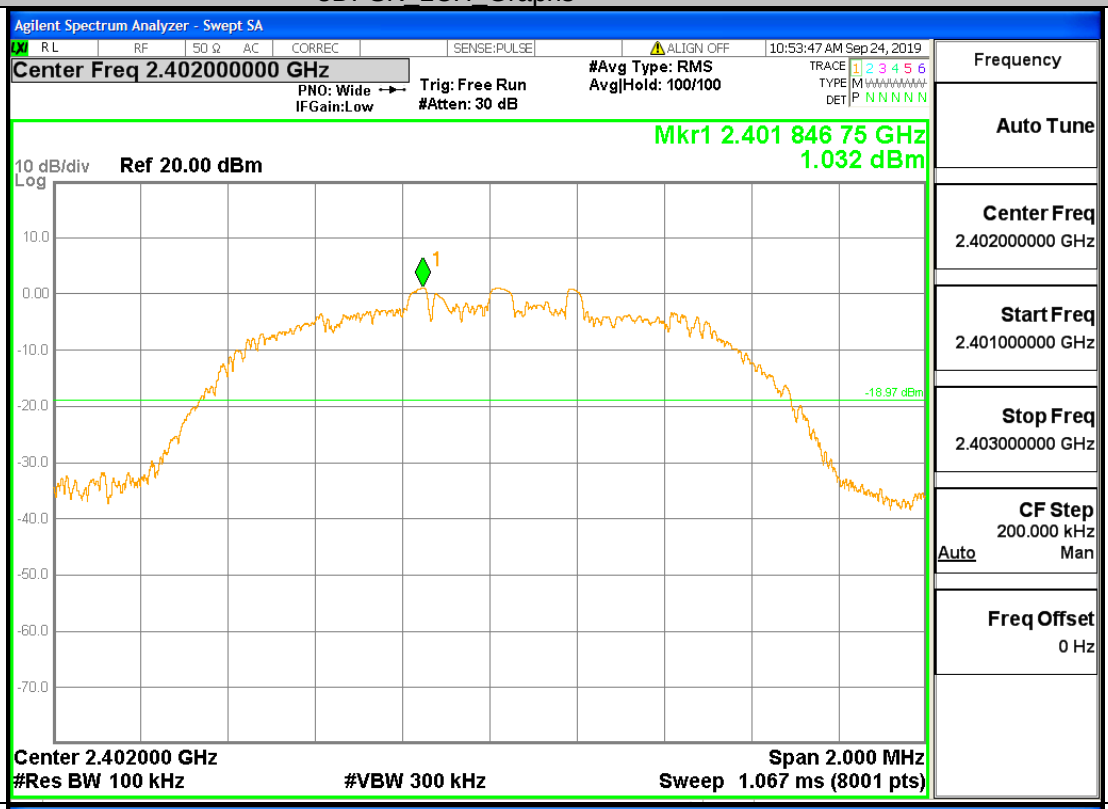
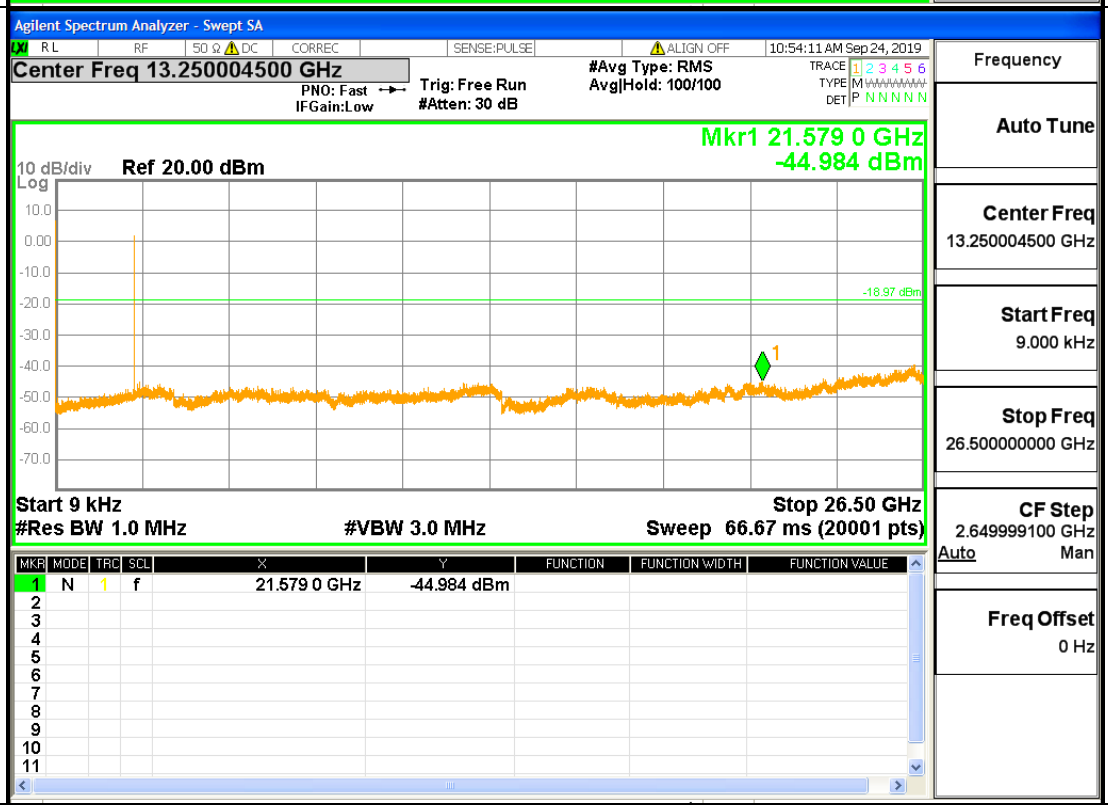
Pref	 Agilent Spectrum Analyzer - Swept SA Center Freq 2.441000000 GHz PNO: Wide IFGain:Low Trig: Free Run #Atten: 30 dB #Avg Type: RMS Avg|Hold: 100/100 10:43:28 AM Sep 24, 2019 Mkr1 2.441 181 75 GHz 4.820 dBm 10 dB/div Log Ref 20.00 dBm -15.18 dBm Center 2.441000 GHz #Res BW 100 kHz #VBW 300 kHz Span 2.000 MHz Sweep 1.067 ms (8001 pts) Frequency Auto Tune Center Freq 2.441000000 GHz Start Freq 2.440000000 GHz Stop Freq 2.442000000 GHz CF Step 200.000 kHz Auto Man Freq Offset 0 Hz
Puw	 Agilent Spectrum Analyzer - Swept SA Center Freq 13.250004500 GHz PNO: Fast IFGain:Low Trig: Free Run #Atten: 30 dB #Avg Type: RMS Avg|Hold: 100/100 10:43:52 AM Sep 24, 2019 Mkr1 21.046 3 GHz -44.060 dBm 10 dB/div Log Ref 20.00 dBm -15.18 dBm Start 9 kHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 26.50 GHz Sweep 66.67 ms (20001 pts) MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE 1 N 1 f 21.046 3 GHz -44.060 dBm Frequency Auto Tune Center Freq 13.250004500 GHz Start Freq 9.000 kHz Stop Freq 26.500000000 GHz CF Step 2.649999100 GHz Auto Man Freq Offset 0 Hz

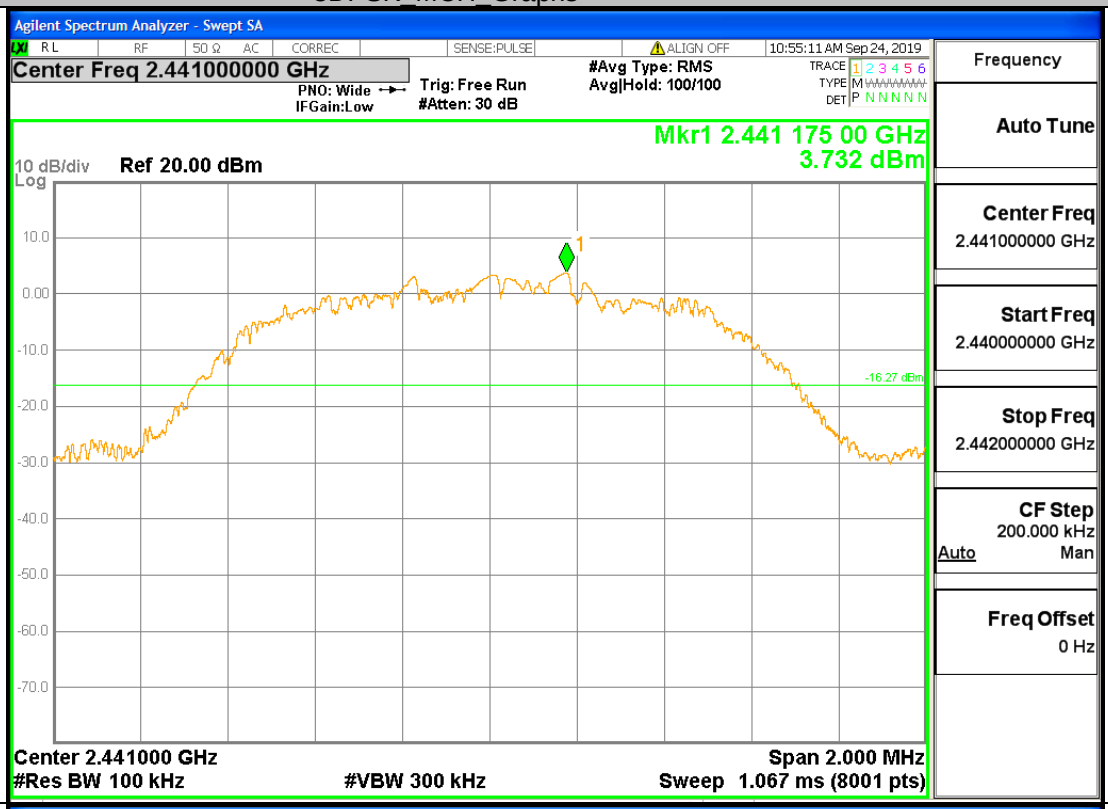
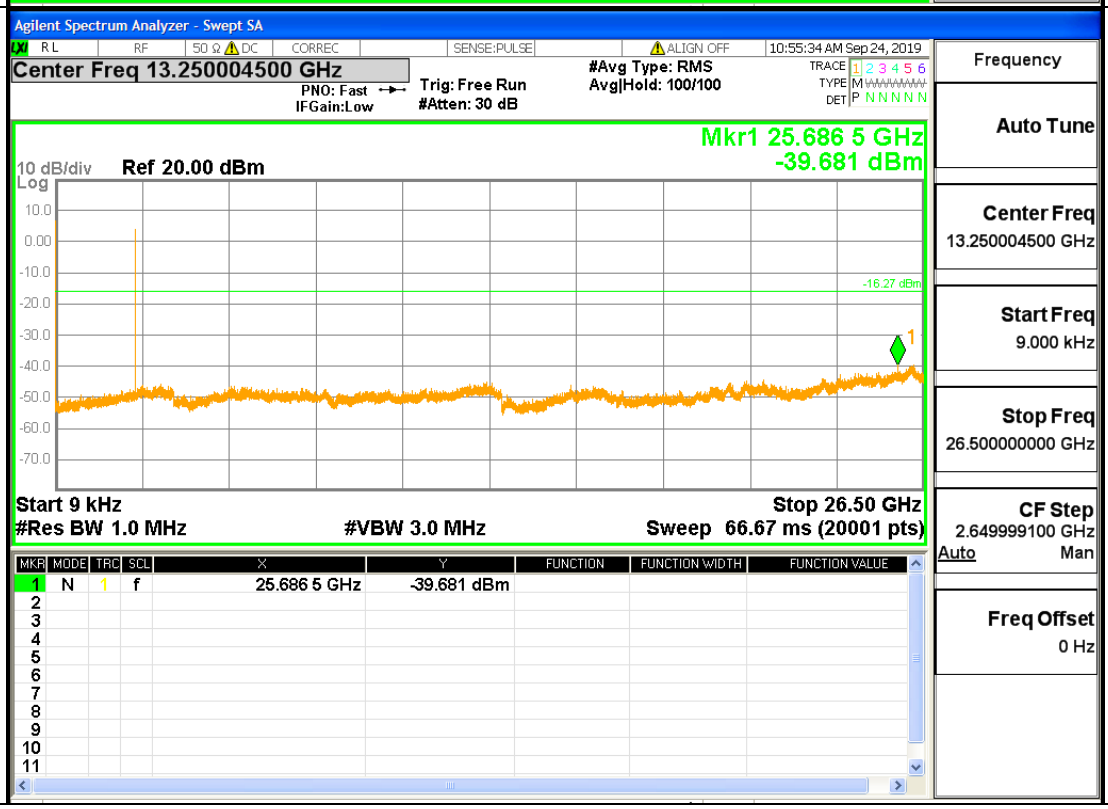
GFSK_HCH_Graphs	
Pref	
Puw	

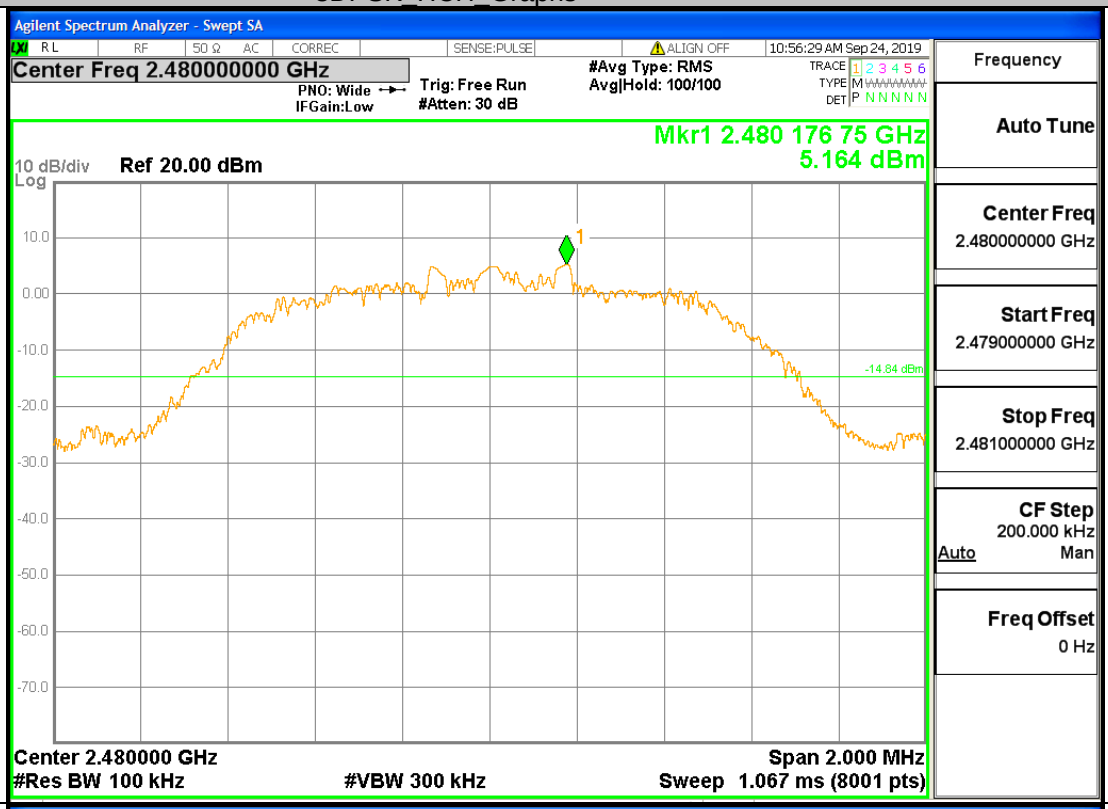
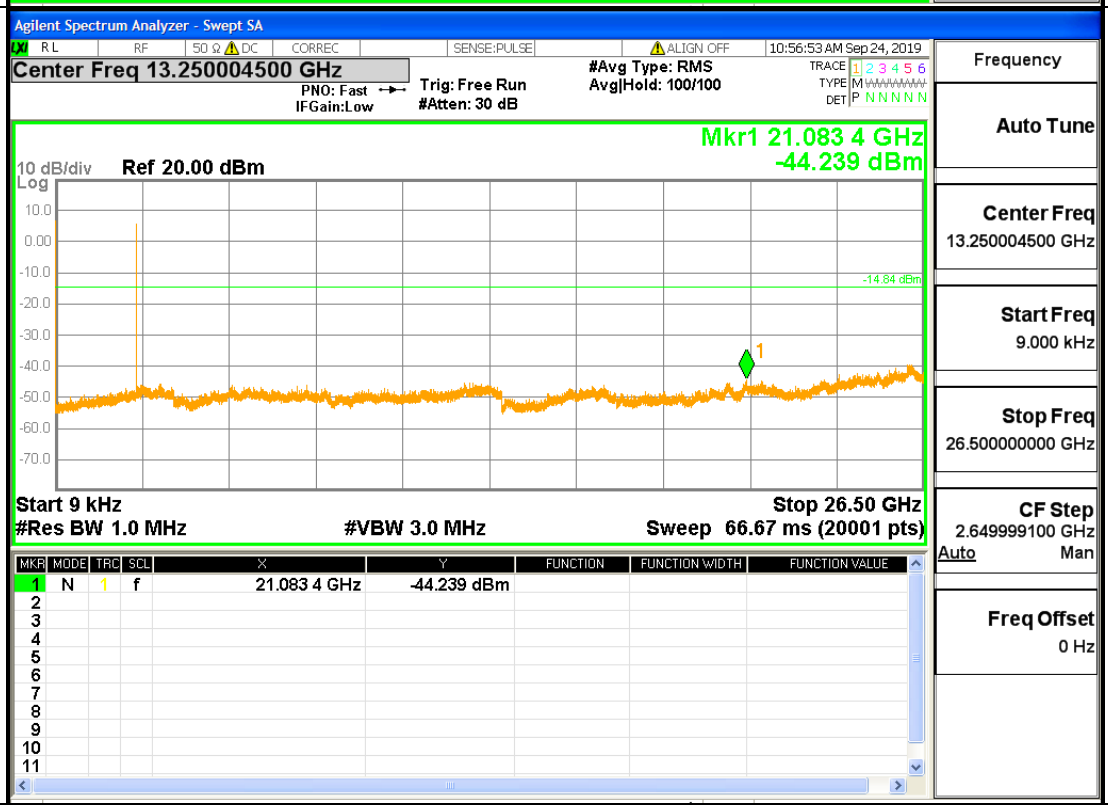
π/4DQPSK_LCH_Graphs	
Pref	
Puw	

π/4DQPSK_MCH_Graphs	
Pref	
Puw	

π/4DQPSK_HCH_Graphs	
Pref	
Puw	

8DPSK_LCH_Graphs	
Pref	
Puw	

8DPSK_MCH_Graphs	
Pref	
Puw	

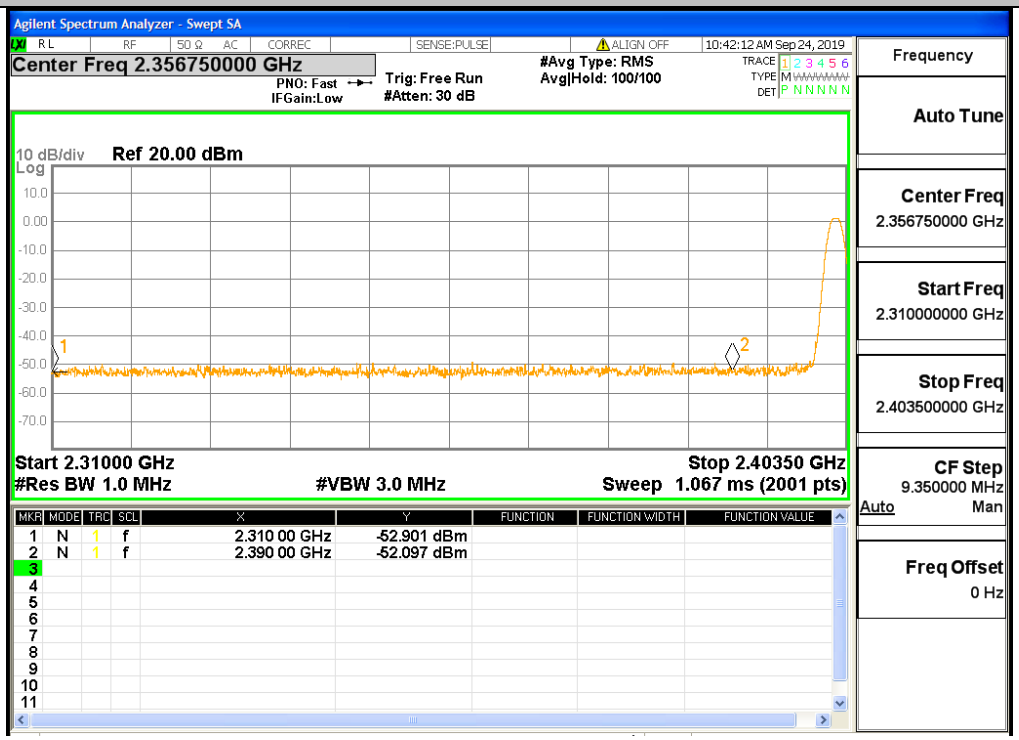
8DPSK_HCH_Graphs	
Pref	
Puw	

A.8 Restrict-band band-edge measurements

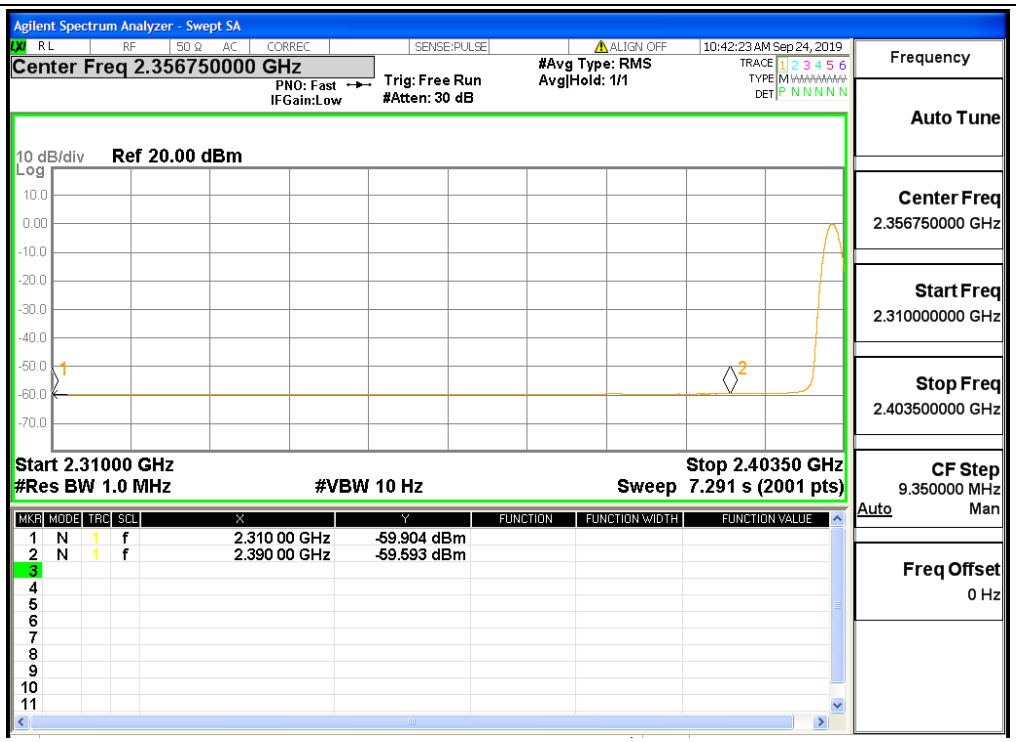
Type	Carrier Frequency (MHz)	Frequency(MHz)	Gain	Ground Factor	Peak Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Conclusion
1DH5	2402	2390.00	2.00	0.00	-52.10	45.10	74	Pass
1DH5	2480	2483.50	2.00	0.00	-43.48	53.72	74	Pass
2DH5	2402	2310.00	2.00	0.00	-52.98	44.22	74	Pass
2DH5	2480	2483.50	2.00	0.00	-35.84	61.36	74	Pass
3DH5	2402	2390.00	2.00	0.00	-52.25	44.95	74	Pass
3DH5	2480	2483.50	2.00	0.00	-37.98	59.22	74	Pass

Type	Carrier Frequency (MHz)	Frequency(MHz)	Gain	Ground Factor	Average Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Conclusion
1DH5	2402	2390.00	2.00	0.00	-59.59	37.61	54	Pass
1DH5	2480	2483.50	2.00	0.00	-48.10	49.10	54	Pass
2DH5	2402	2310.00	2.00	0.00	-59.60	37.60	54	Pass
2DH5	2480	2483.50	2.00	0.00	-47.76	49.44	54	Pass
3DH5	2402	2390.00	2.00	0.00	-59.59	37.61	54	Pass
3DH5	2480	2483.50	2.00	0.00	-48.22	48.98	54	Pass

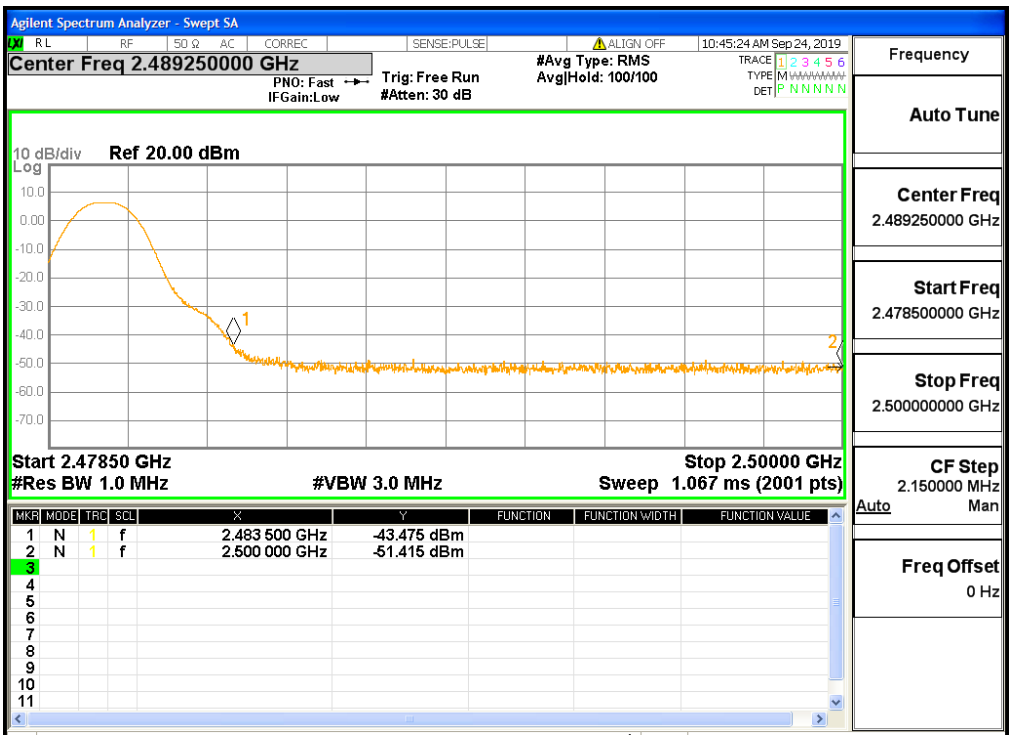
Restrict-band band-edge measurements_2402_PEAK_DH5



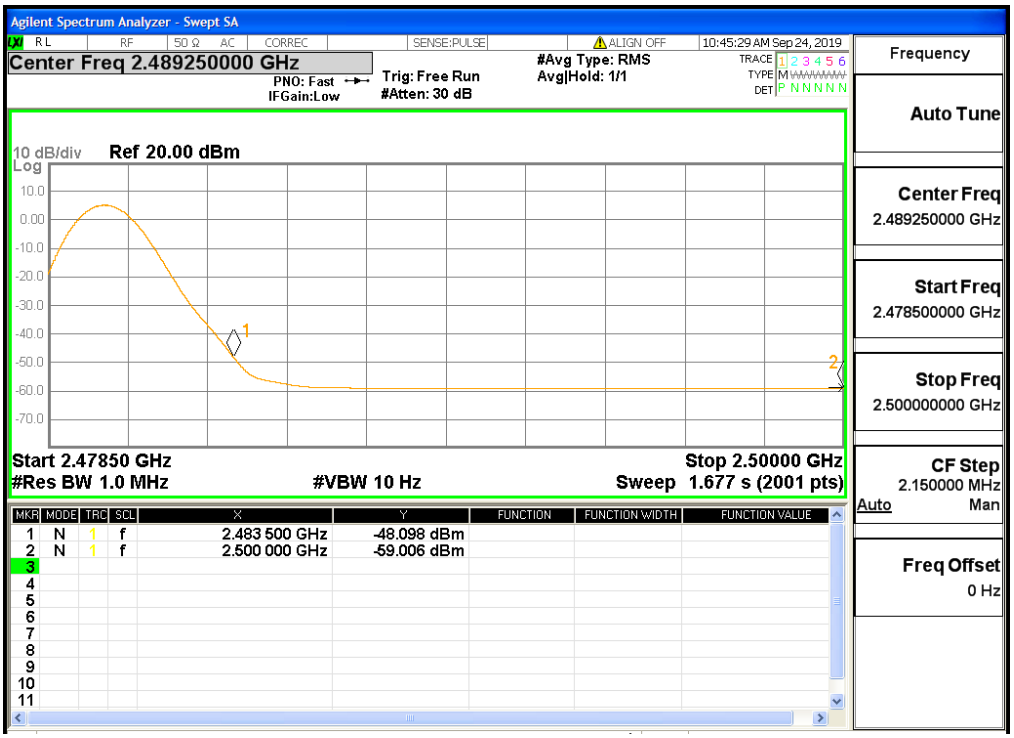
Restrict-band band-edge measurements_2402_AV_DH5



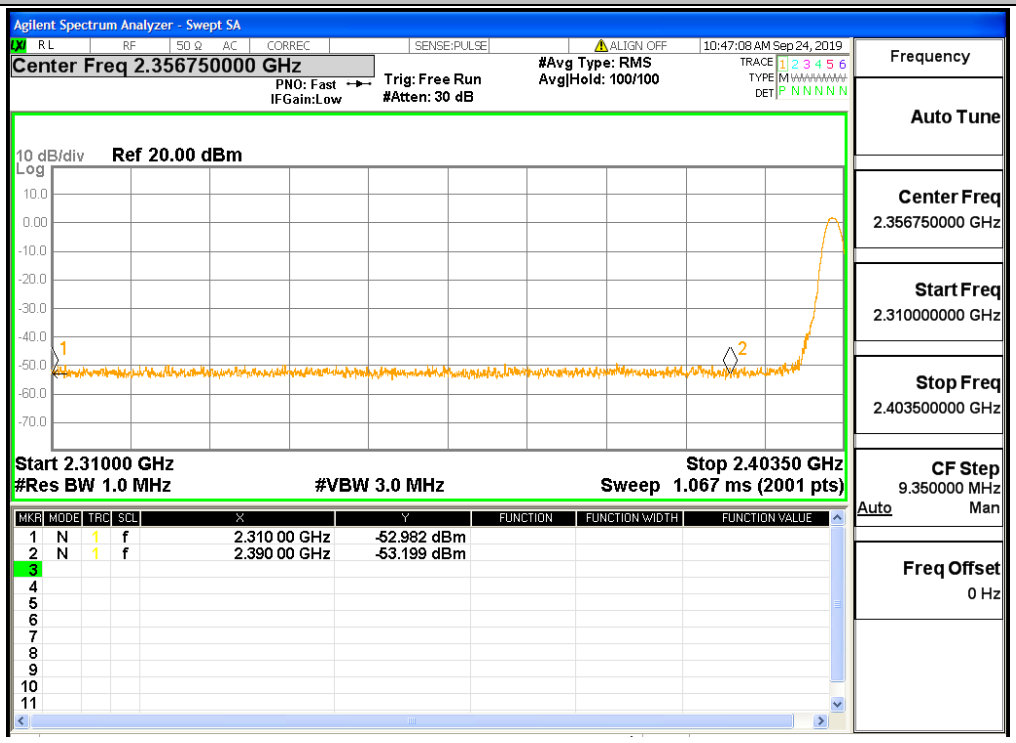
Restrict-band band-edge measurements_2480_PEAK_DH5



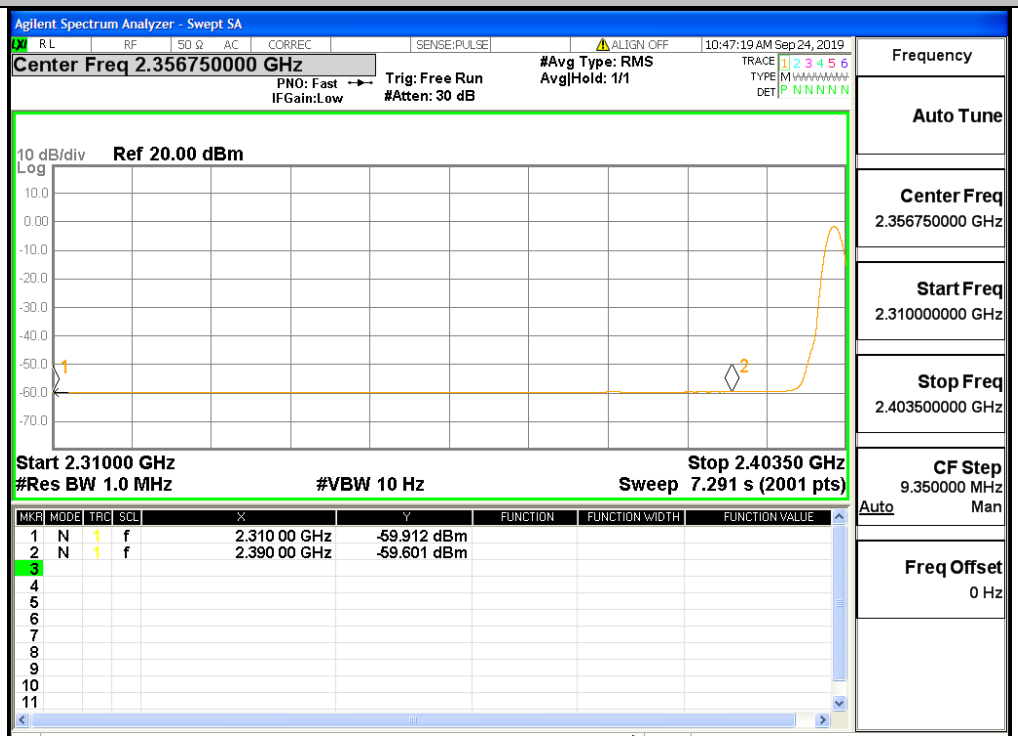
Restrict-band band-edge measurements_2480_AV_DH5



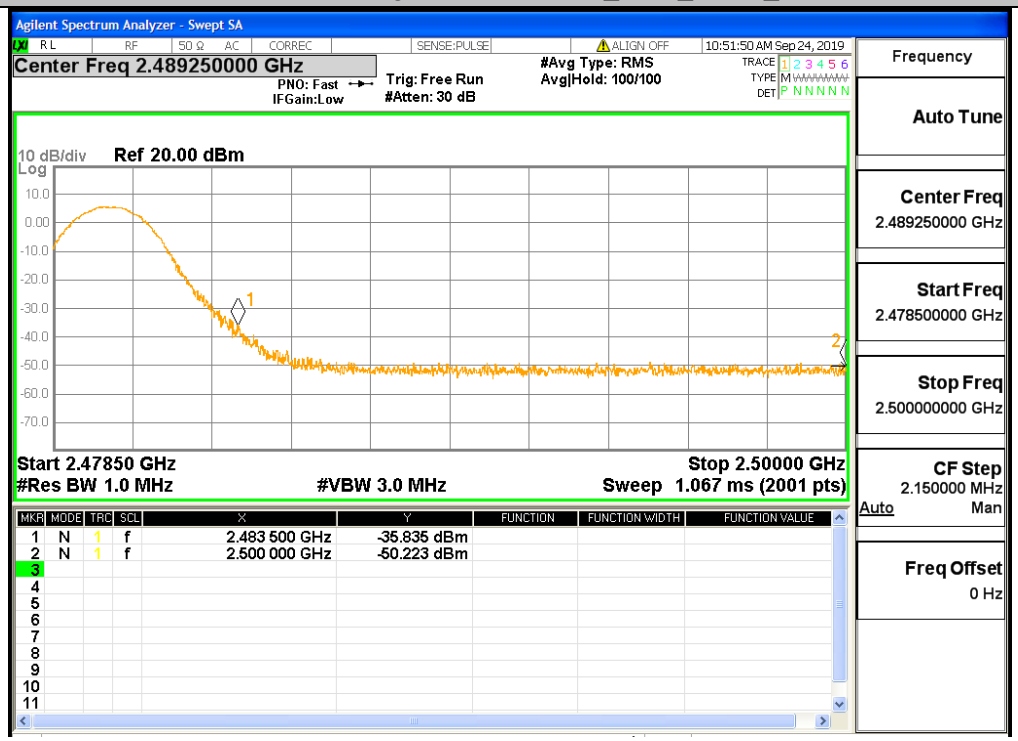
Restrict-band band-edge measurements_2402_PEAK_2DH5



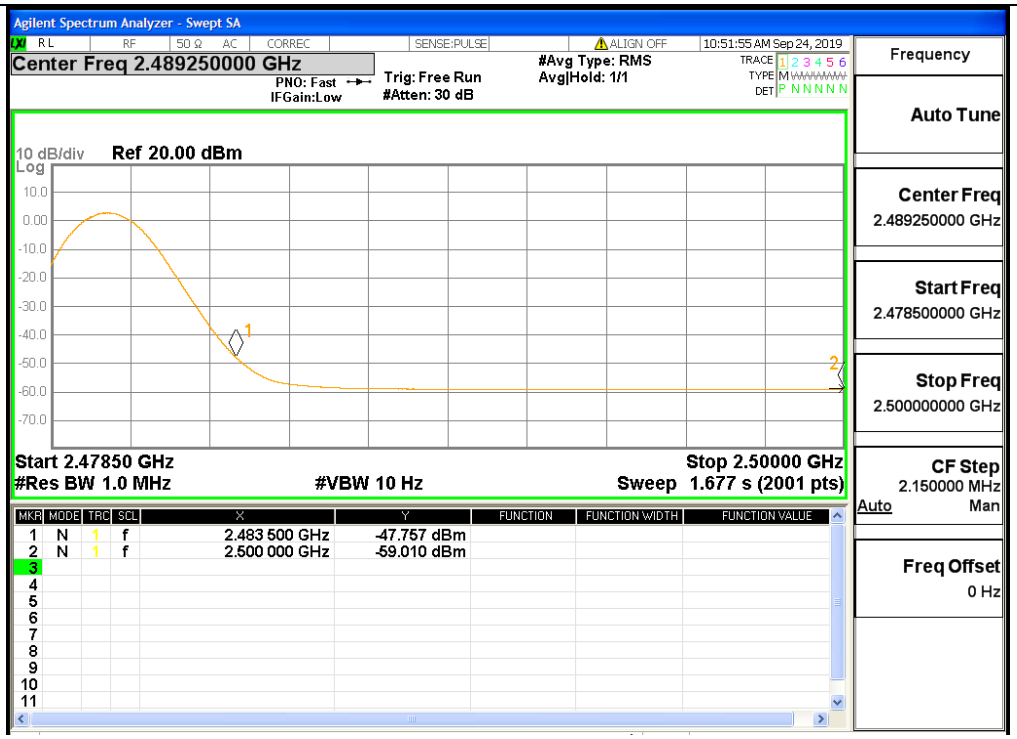
Restrict-band band-edge measurements_2402_AV_2DH5



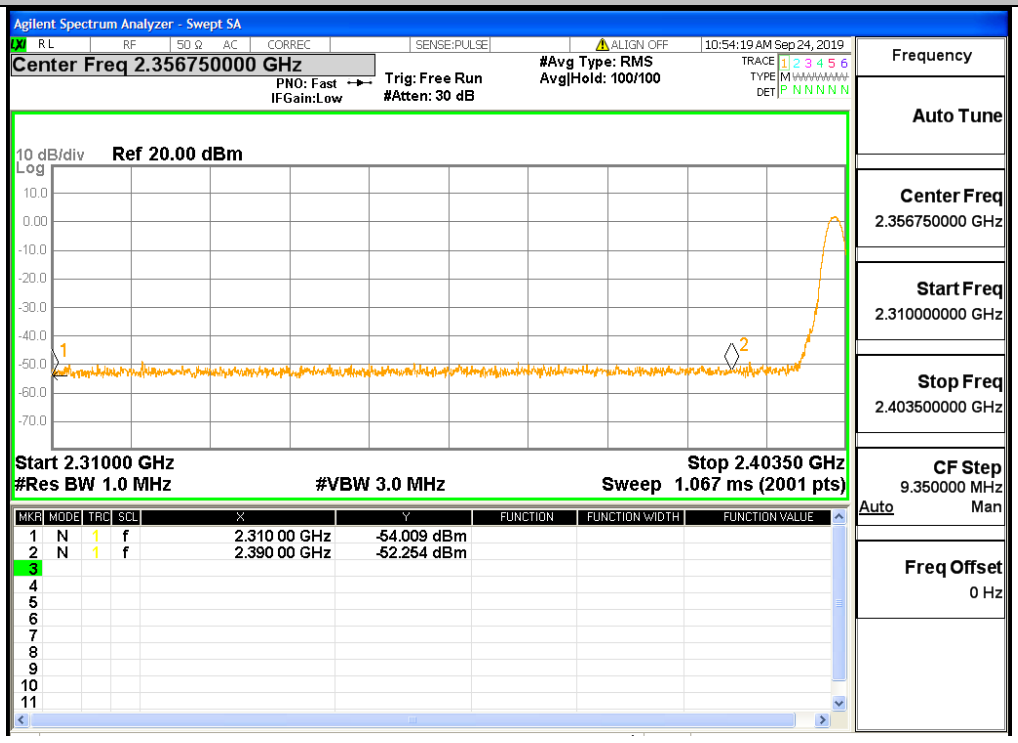
Restrict-band band-edge measurements_2480_PEAK_2DH5



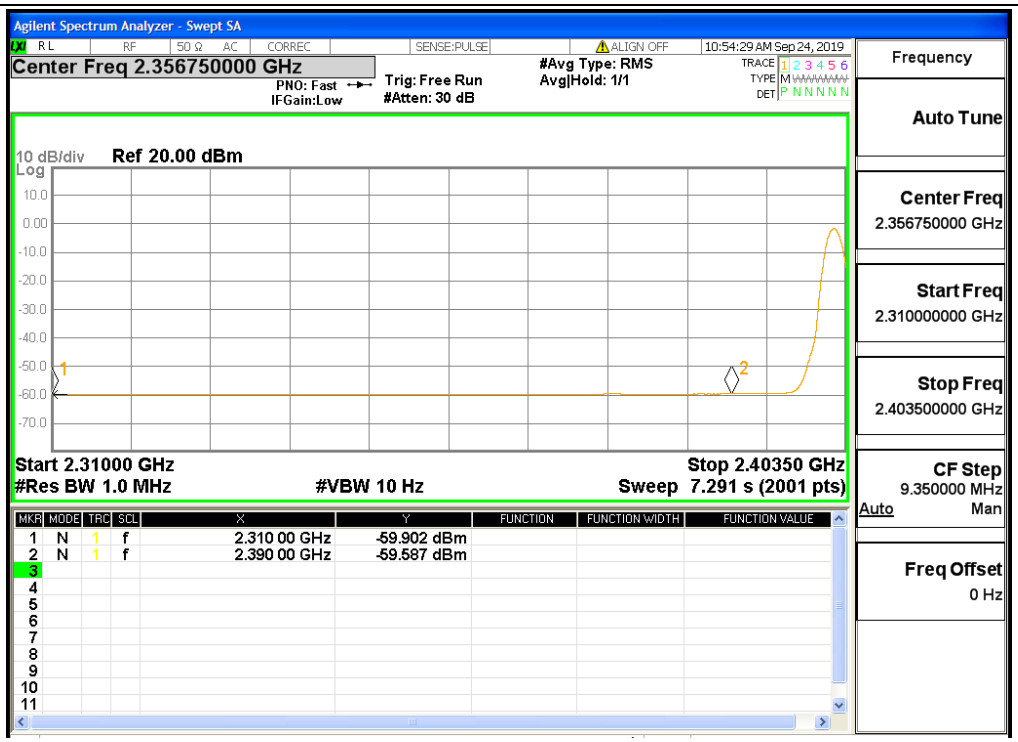
Restrict-band band-edge measurements_2480_AV_2DH5



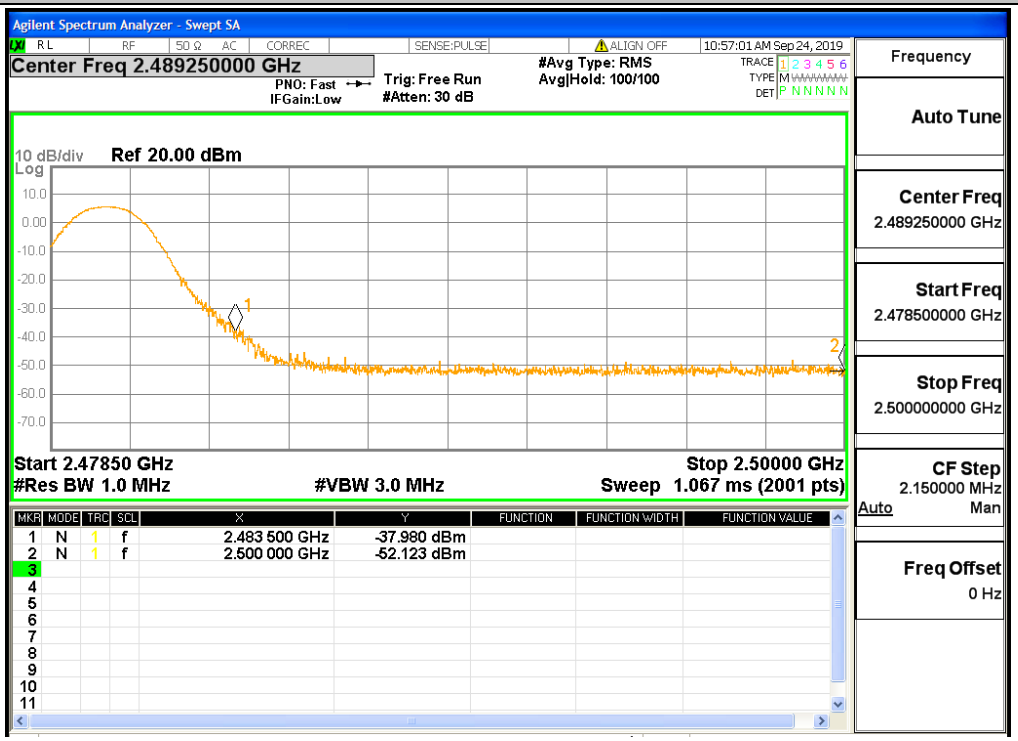
Restrict-band band-edge measurements_2402_PEAK_3DH5



Restrict-band band-edge measurements_2402_AV_3DH5



Restrict-band band-edge measurements_2480_PEAK_3DH5



Restrict-band band-edge measurements_2480_AV_3DH5