

## Appendix A

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

Product Name: 13.3 notebook

Trade Mark: N/A

Test Model: HTLB131NA58Z1EG

#### Environmental Conditions

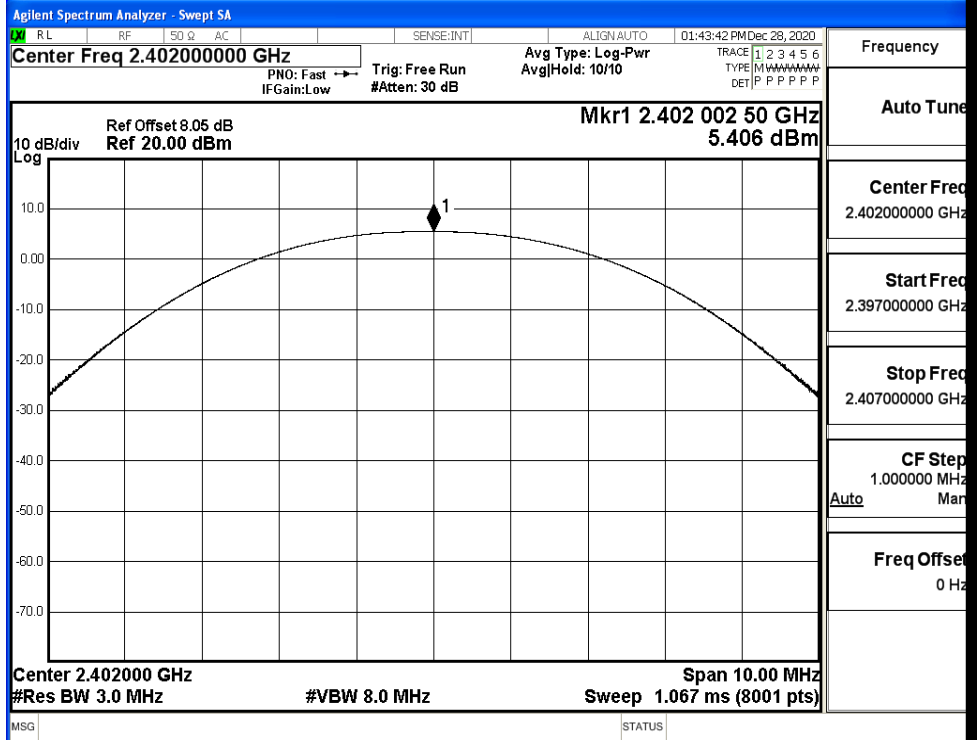
Temperature:	23.2° C
Relative Humidity:	51.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Ken He
Supervised by:	Li Huan

#### A.1 Maximum Conducted Peak Output Power

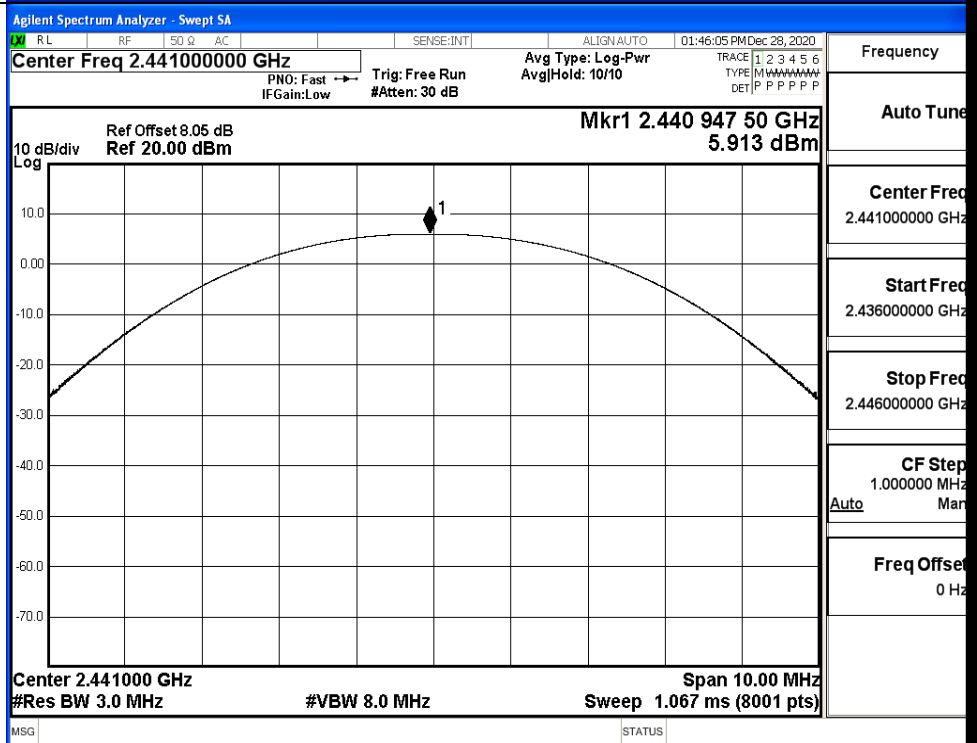
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	5.406	21	PASS
	MCH	5.913	21	PASS
	HCH	6.144	21	PASS
$\pi/4$ DQPSK	LCH	8.164	21	PASS
	MCH	8.440	21	PASS
	HCH	8.824	21	PASS
8DPSK	LCH	8.167	21	PASS
	MCH	8.455	21	PASS
	HCH	8.863	21	PASS

Test Graphs

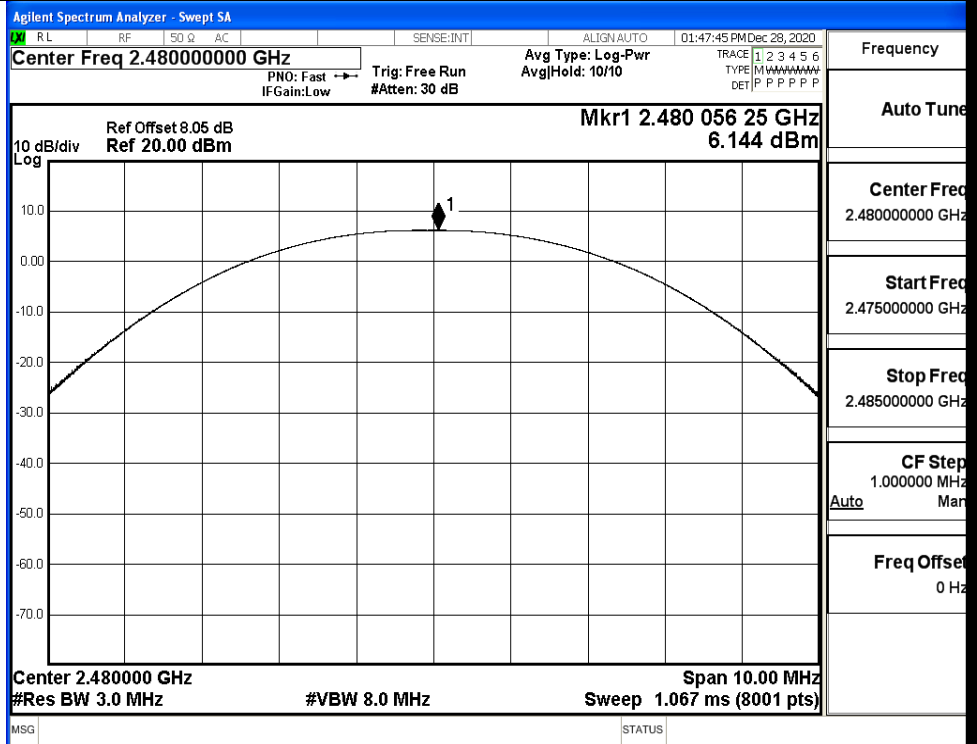
GFSK/LCH



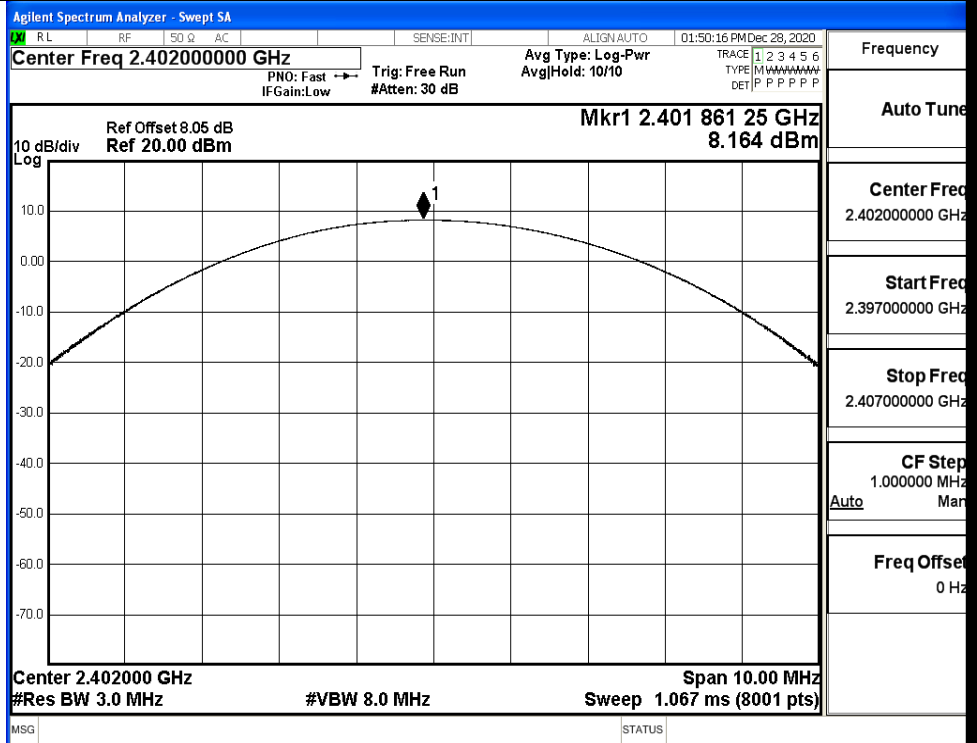
GFSK/MCH



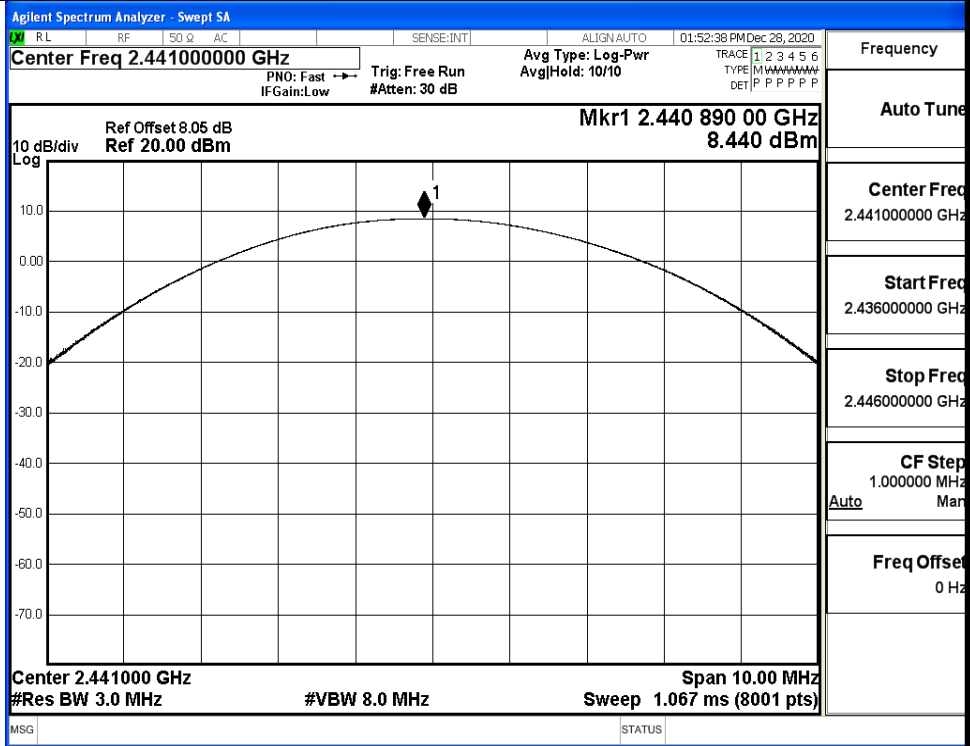
GFSK/HCH



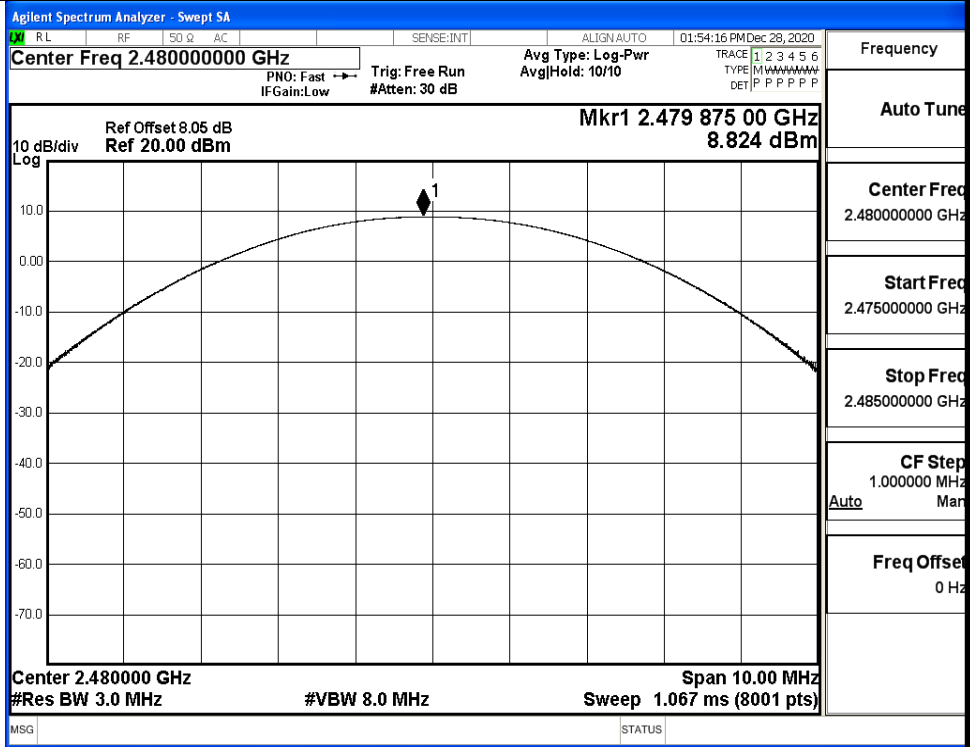
$\pi/4$ DQPSK/LCH



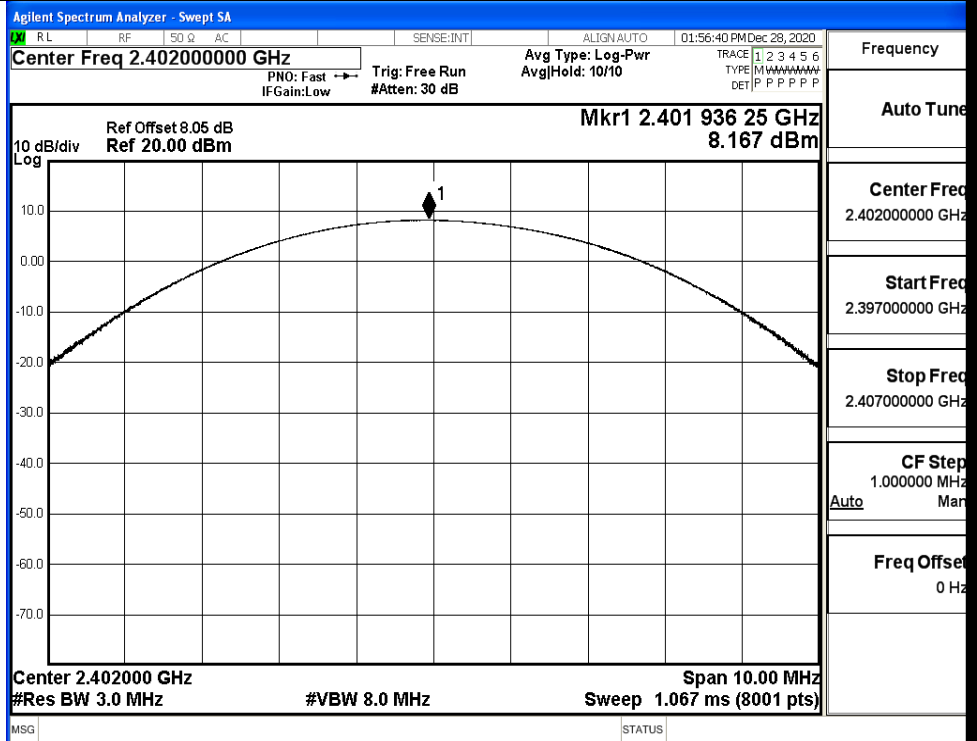
$\pi$ /4DQPSK/MCH



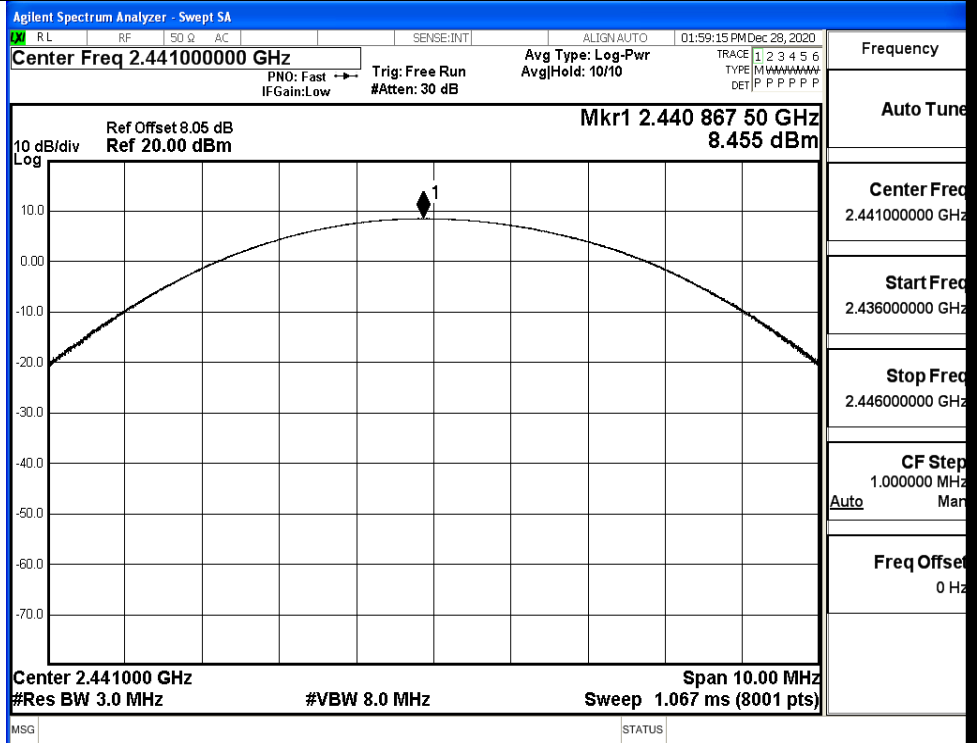
$\pi$ /4DQPSK/HCH



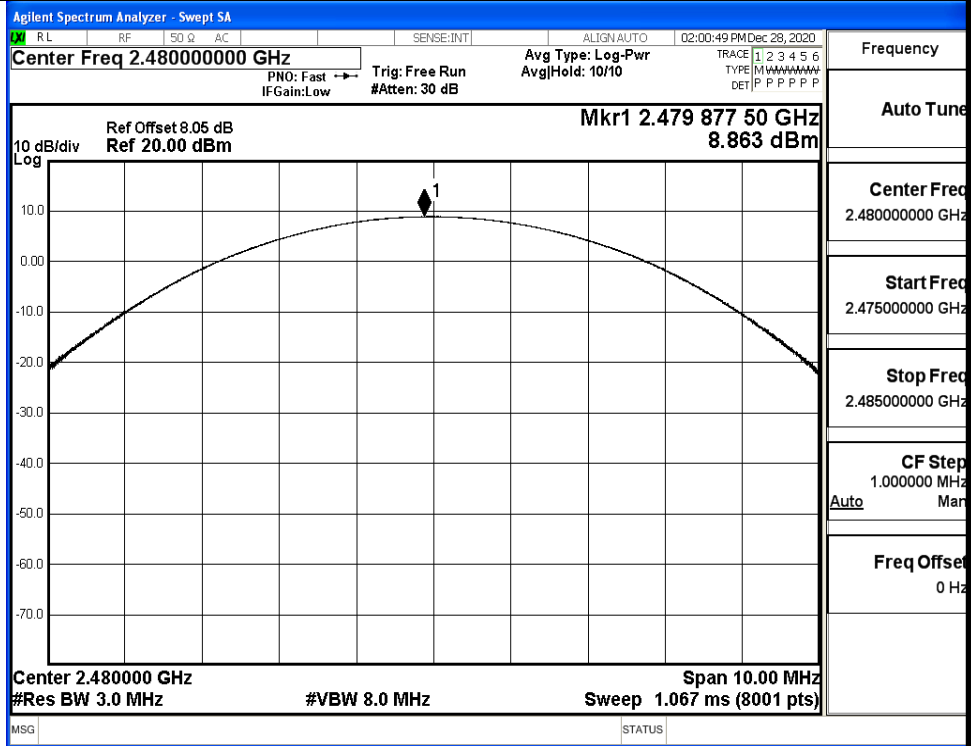
8DPSK/LCH



8DPSK/MCH

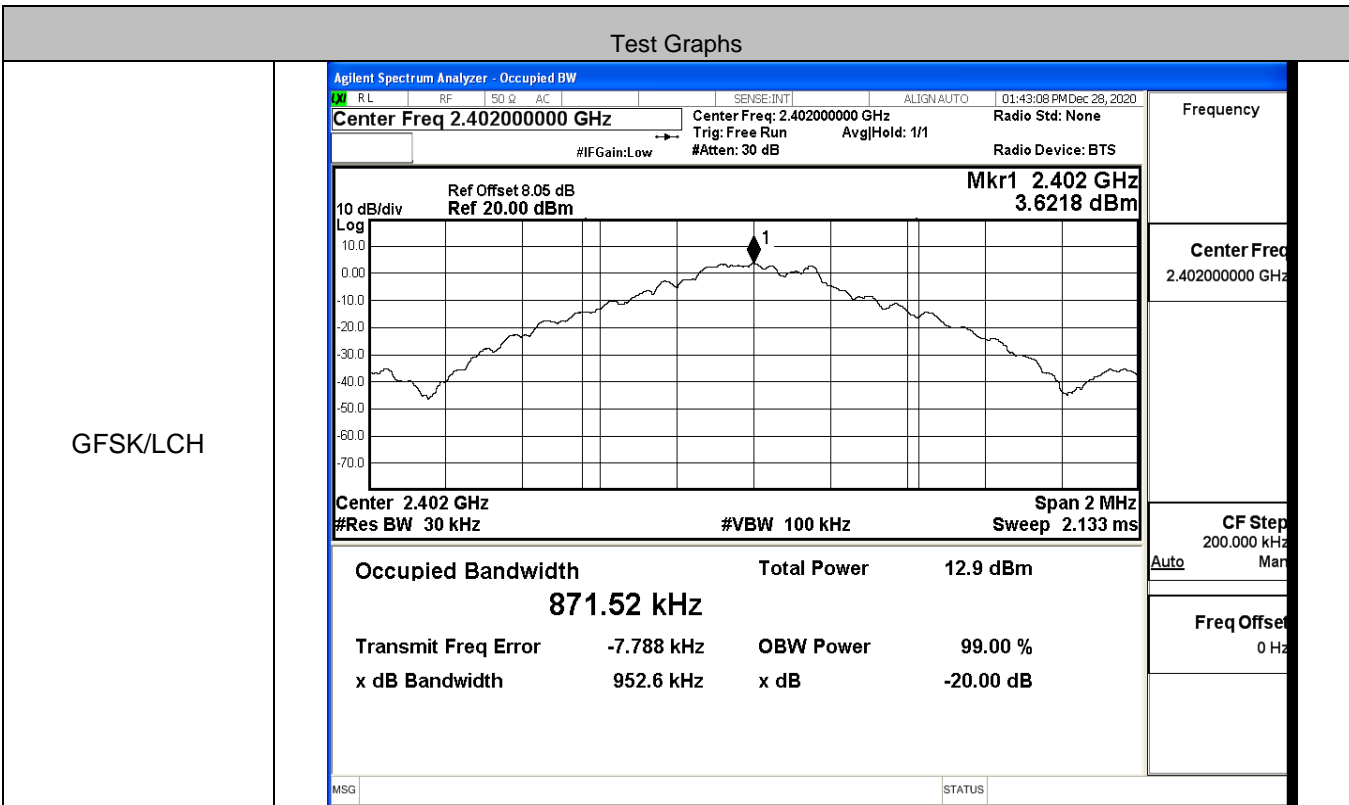


8DPSK/HCH

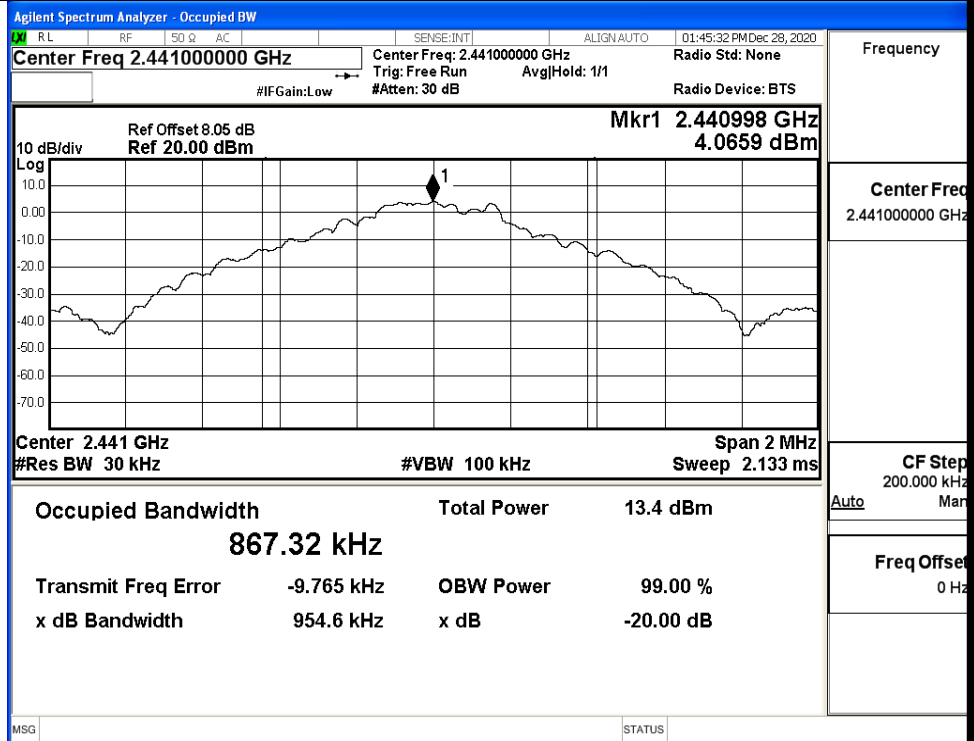


**A.2 20dB Bandwidth**

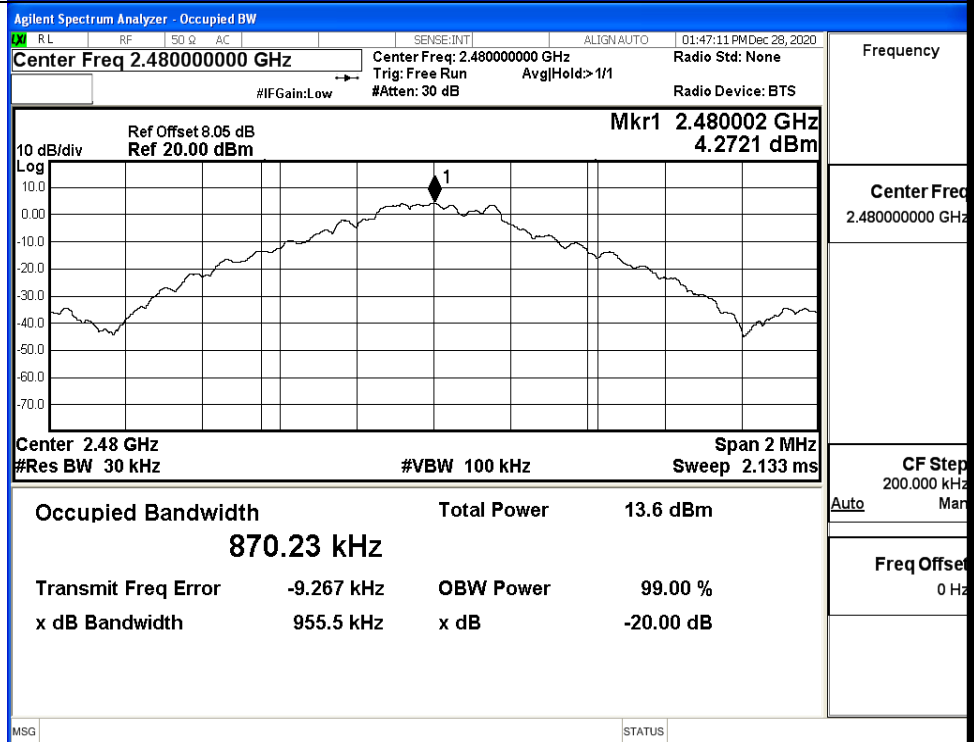
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9526	Not Specified	PASS
	MCH	0.9546	Not Specified	PASS
	HCH	0.9555	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.428	Not Specified	PASS
	MCH	1.430	Not Specified	PASS
	HCH	1.424	Not Specified	PASS
8DPSK	LCH	1.435	Not Specified	PASS
	MCH	1.432	Not Specified	PASS
	HCH	1.438	Not Specified	PASS



GFSK/MCH

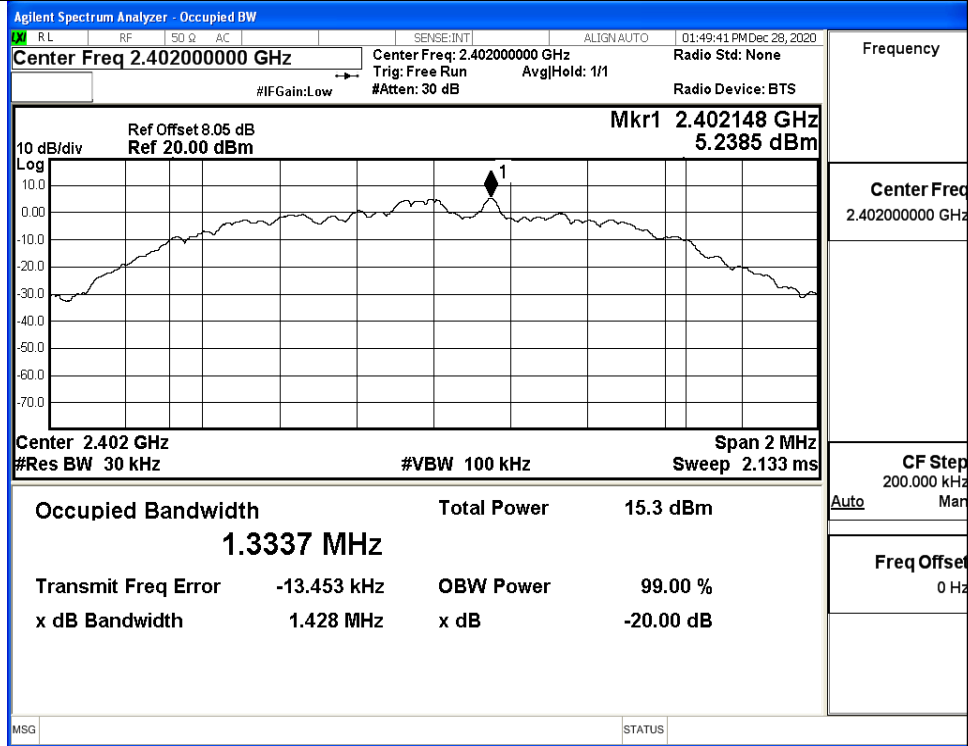


GFSK/HCH

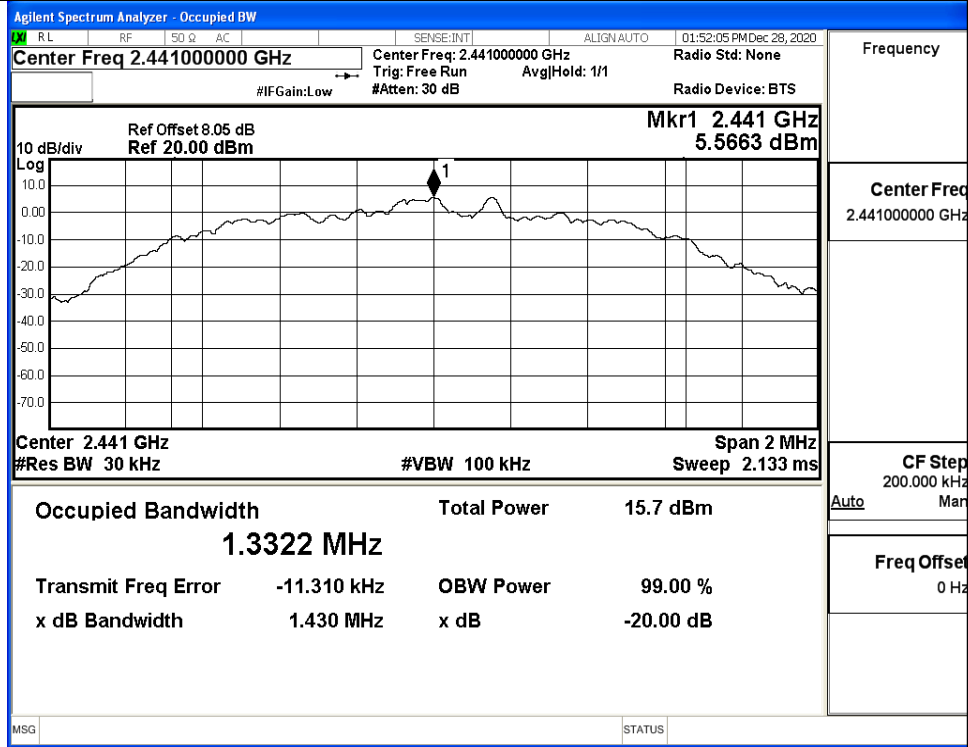




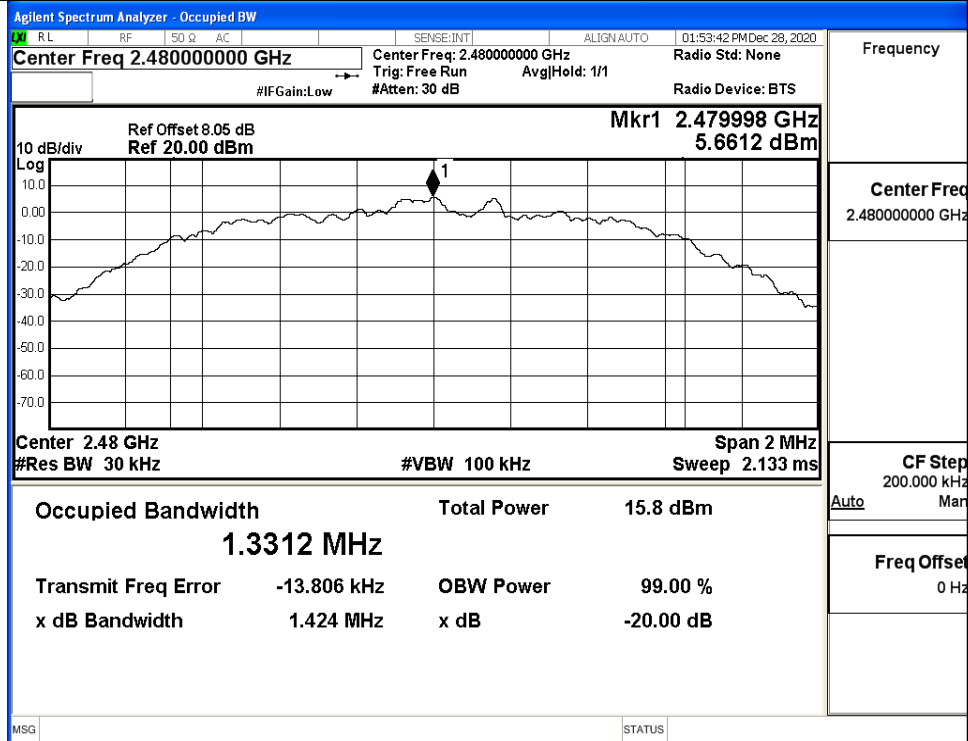
$\pi/4$ DQPSK/LCH



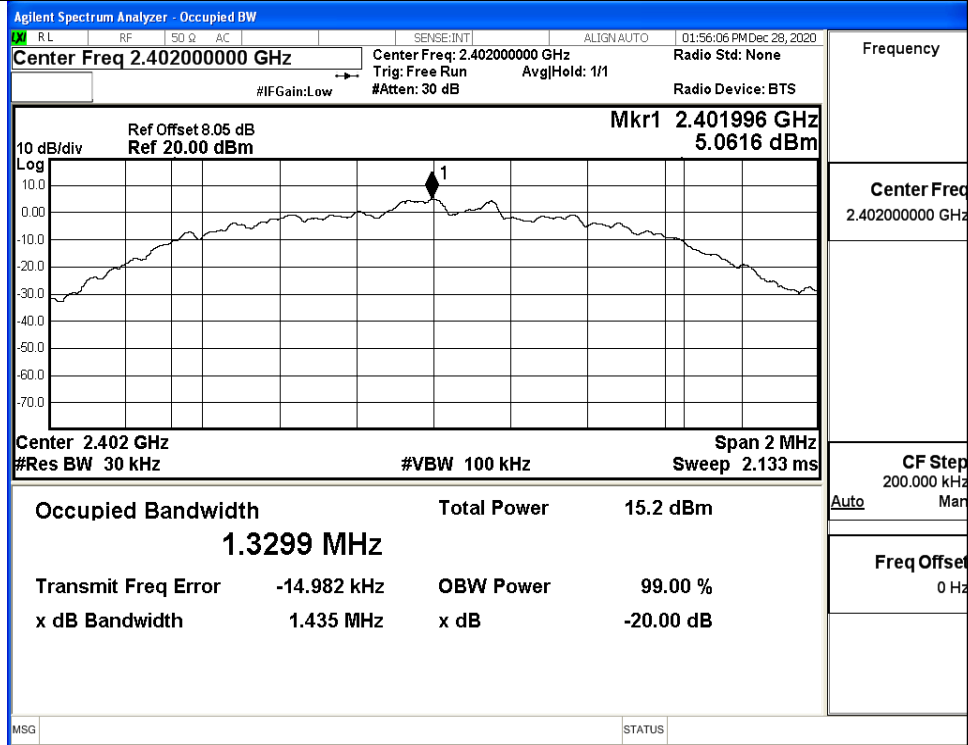
$\pi/4$ DQPSK/MCH



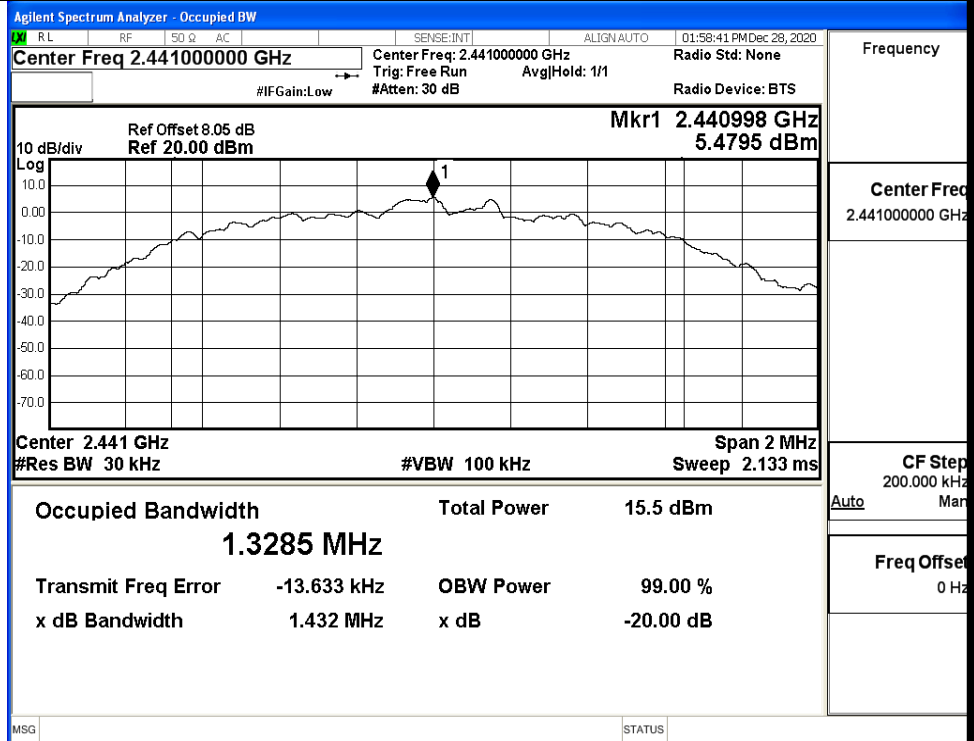
$\pi/4$ DQPSK/HCH



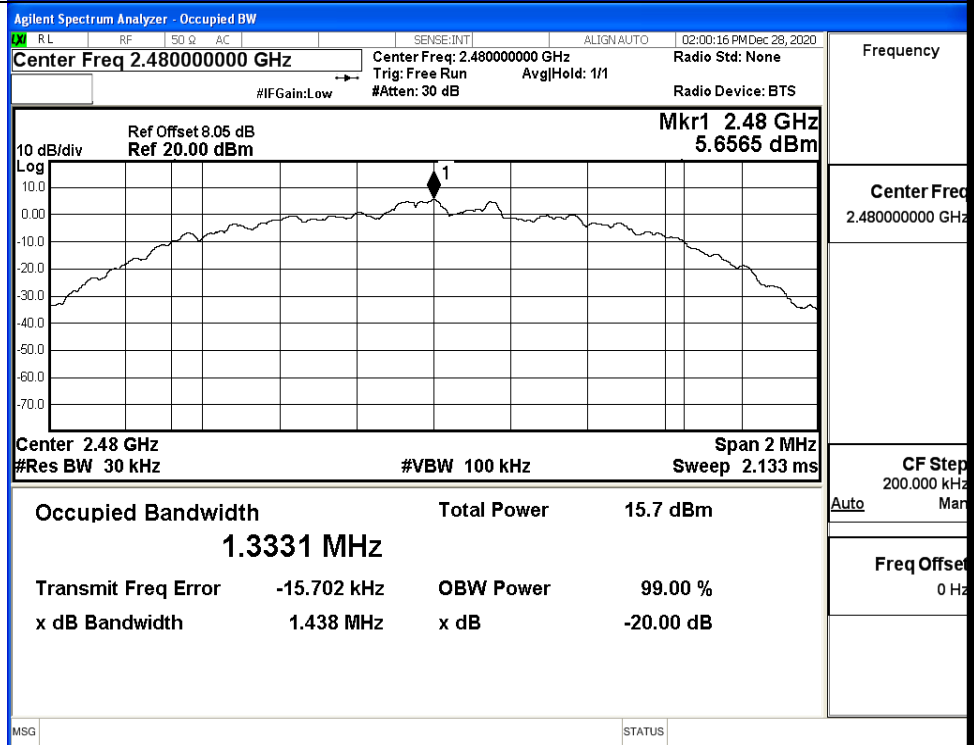
8DPSK/LCH



8DPSK/MCH

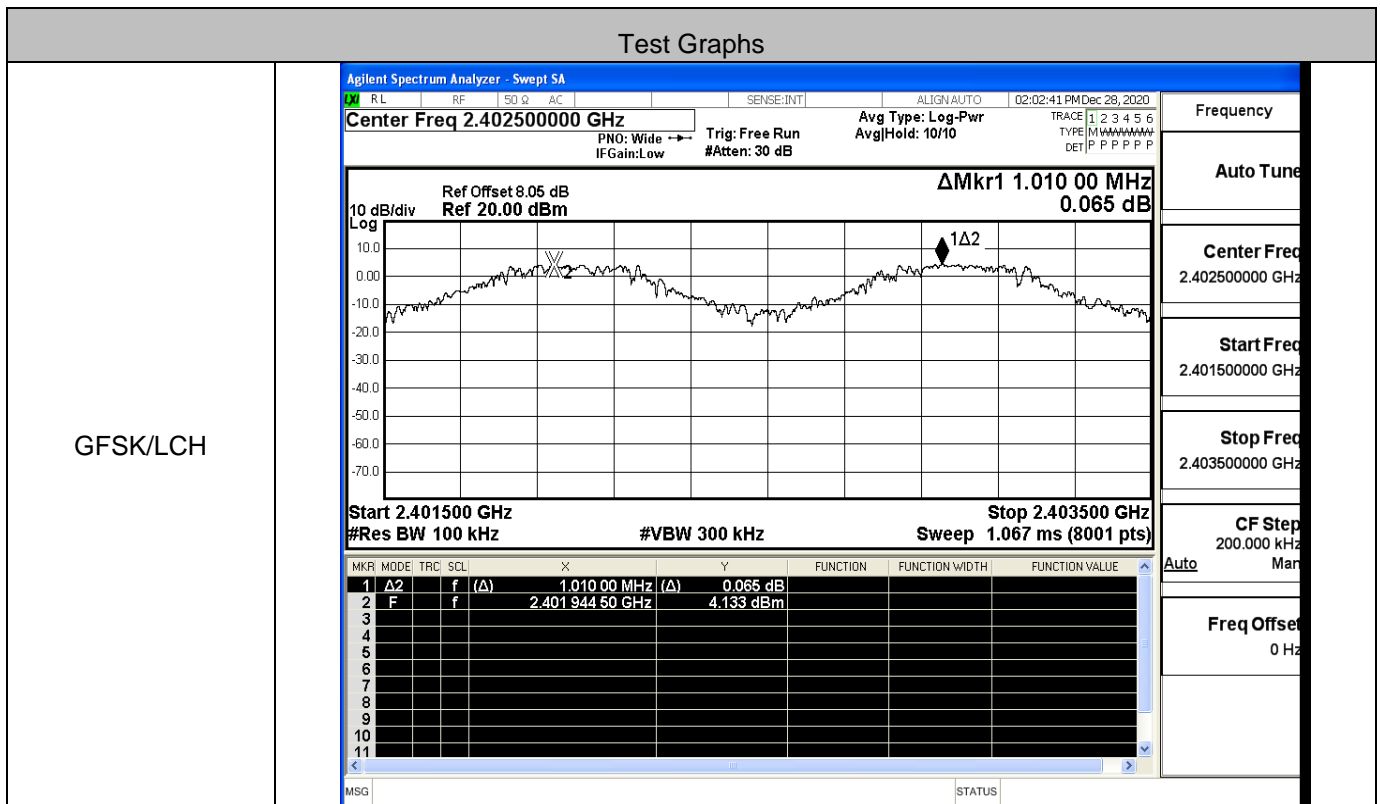


8DPSK/HCH

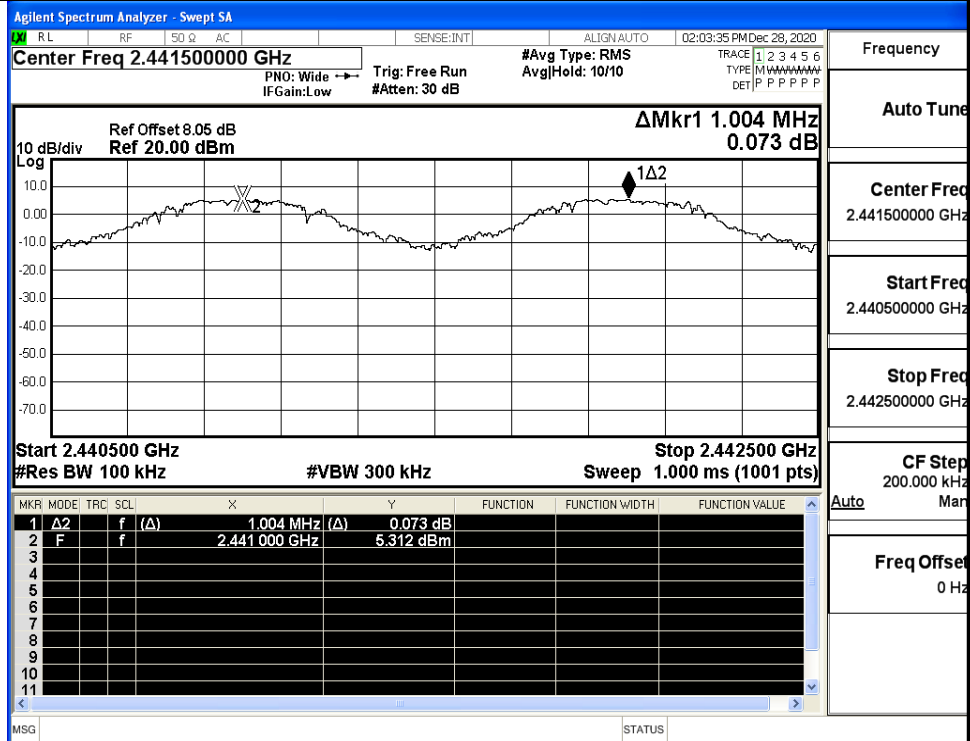


### A.3 Carrier Frequency Separation

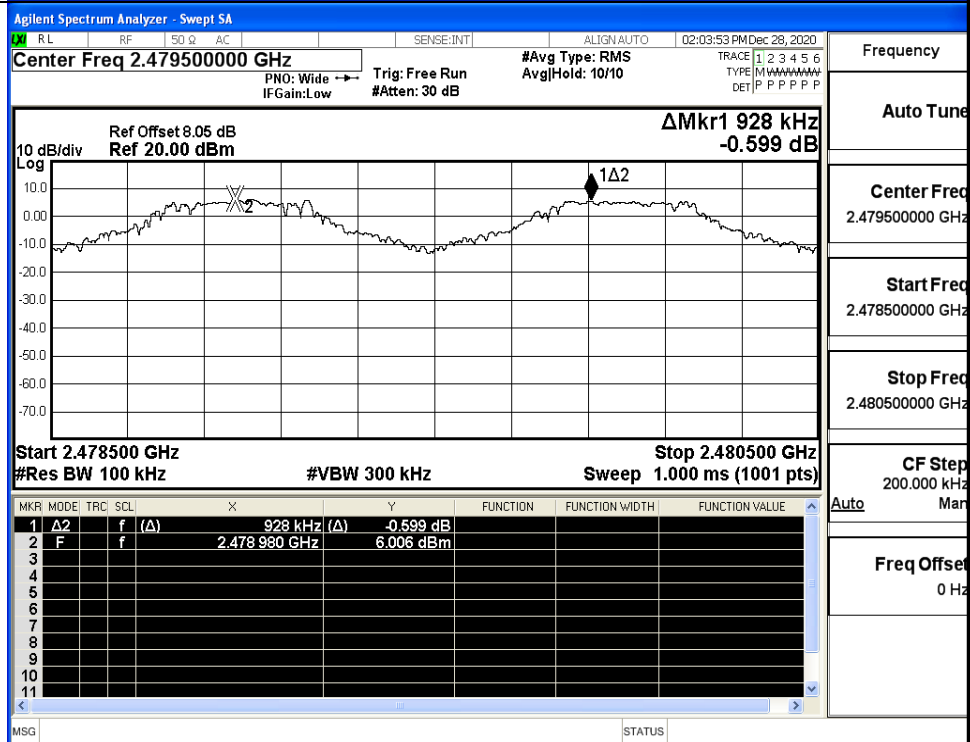
Mode	Channel	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.010	0.637	PASS
	MCH	1.004	0.637	PASS
	HCH	0.928	0.637	PASS
π/4DQPSK	LCH	1.154	0.953	PASS
	MCH	1.039	0.953	PASS
	HCH	0.972	0.953	PASS
8DPSK	LCH	1.034	0.959	PASS
	MCH	1.004	0.959	PASS
	HCH	1.028	0.959	PASS



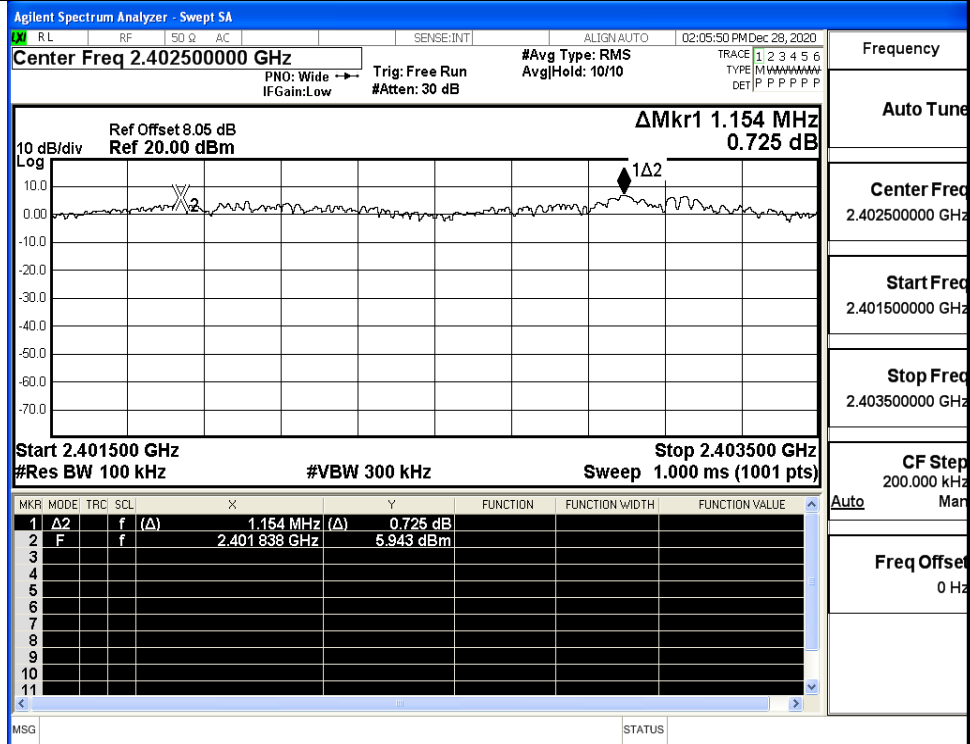
GFSK/MCH



GFSK/HCH



$\pi/4$ DQPSK/LCH



Frequency

Auto Tune

Center Freq  
2.40250000 GHz

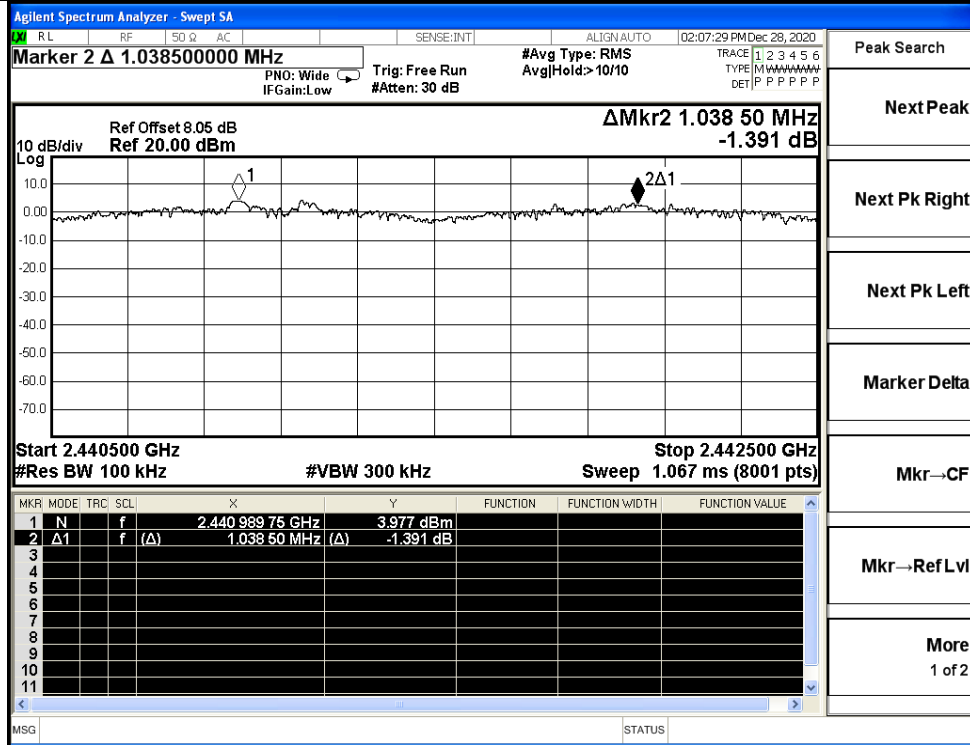
Start Freq  
2.40150000 GHz

Stop Freq  
2.40350000 GHz

CF Step  
200.000 kHz

Freq Offset  
0 Hz

$\pi/4$ DQPSK/MCH



Peak Search

Next Peak

Next Pk Right

Next Pk Left

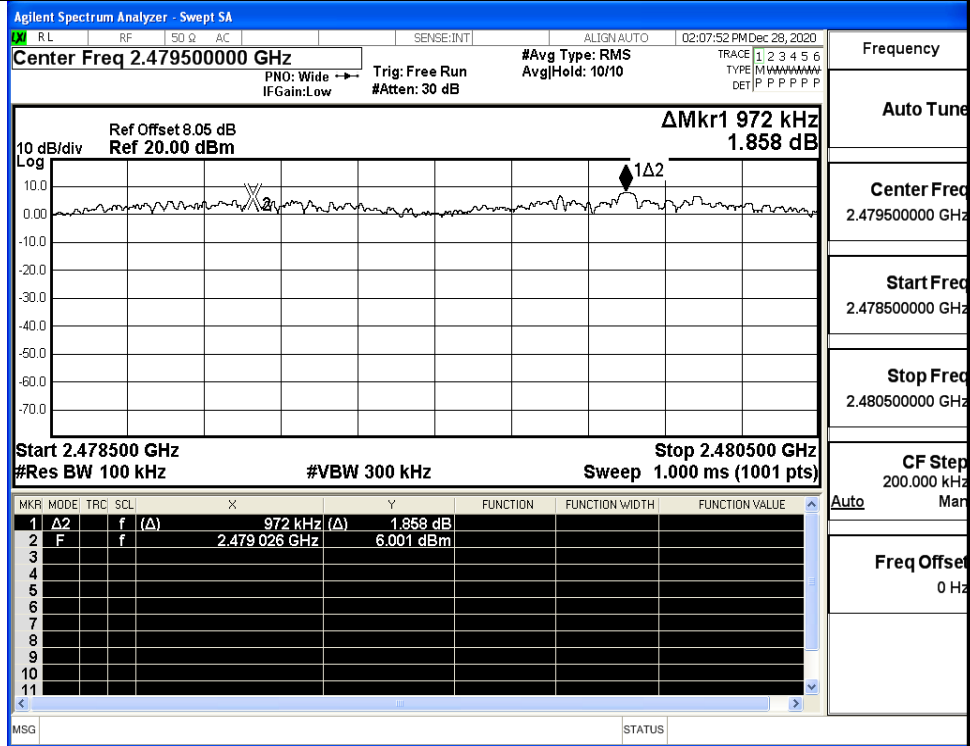
Marker Delta

Mkr  $\rightarrow$  CF

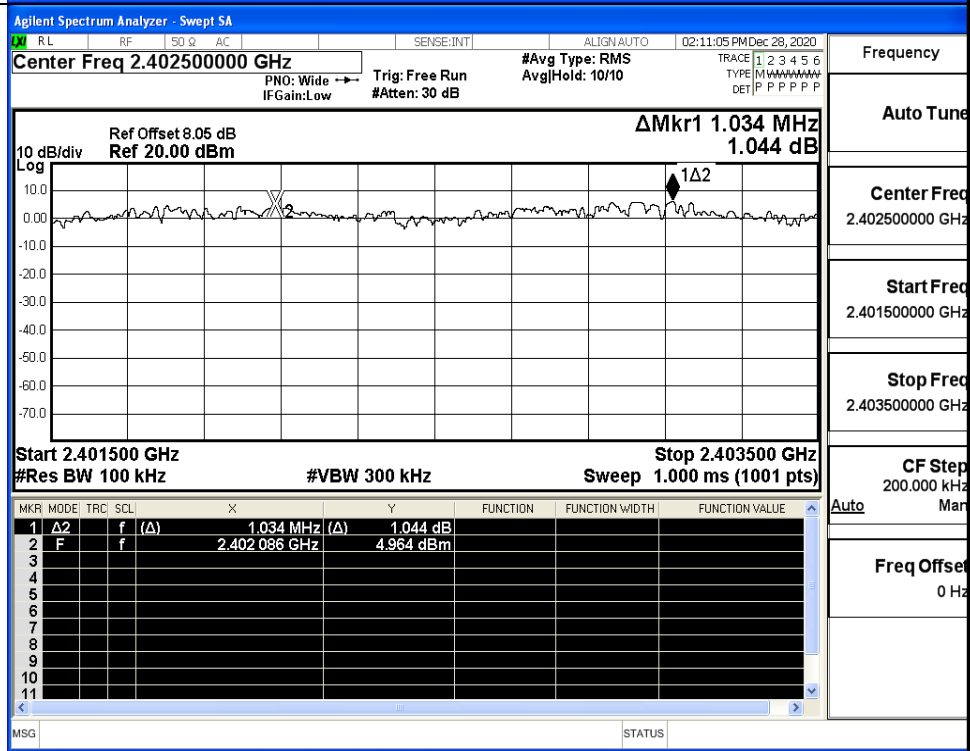
Mkr  $\rightarrow$  Ref Lvl

More  
1 of 2

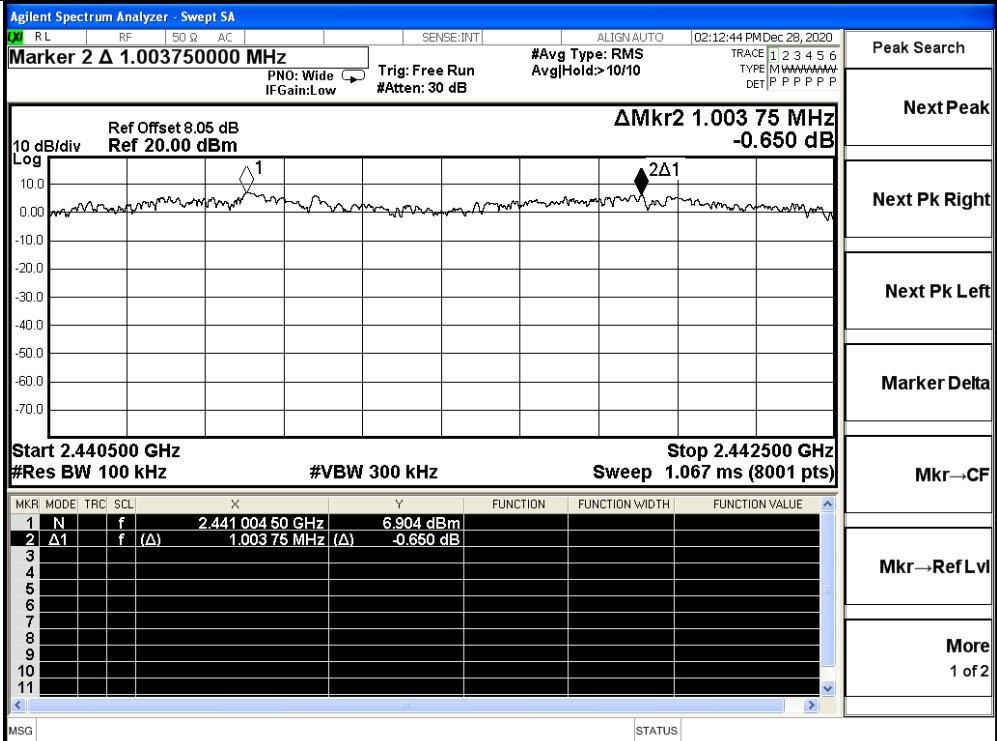
π/4DQPSK/HCH



8DPSK/LCH

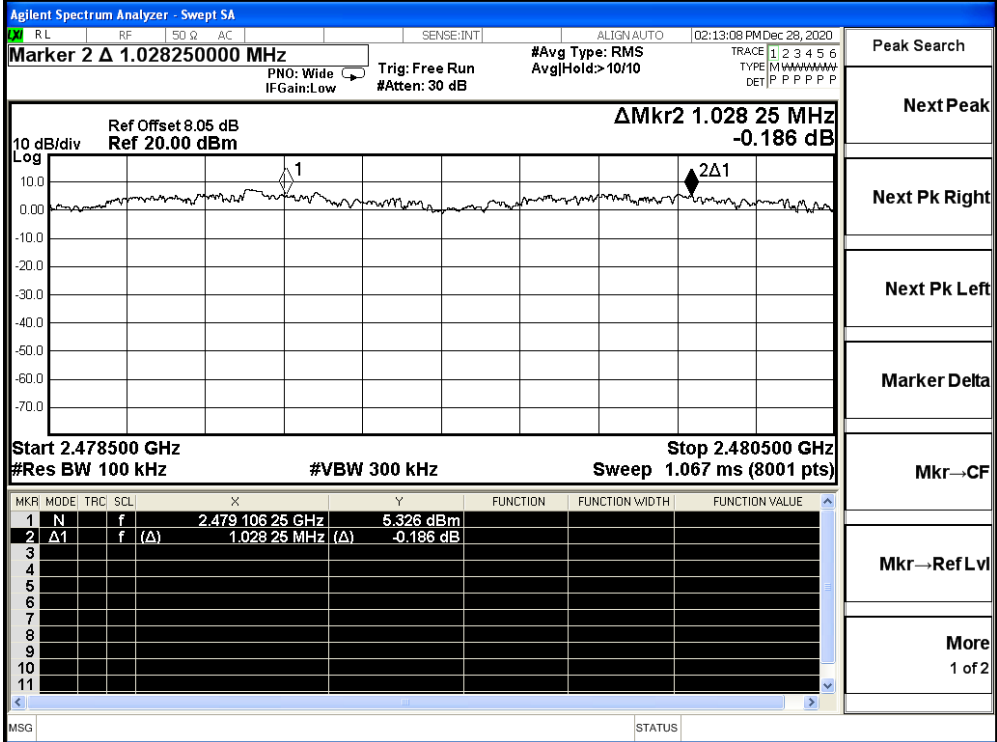


8DPSK/MCH



- Peak Search
- Next Peak
- Next Pk Right
- Next Pk Left
- Marker Delta
- Mkr→CF
- Mkr→Ref Lvl
- More 1 of 2

8DPSK/HCH



- Peak Search
- Next Peak
- Next Pk Right
- Next Pk Left
- Marker Delta
- Mkr→CF
- Mkr→Ref Lvl
- More 1 of 2



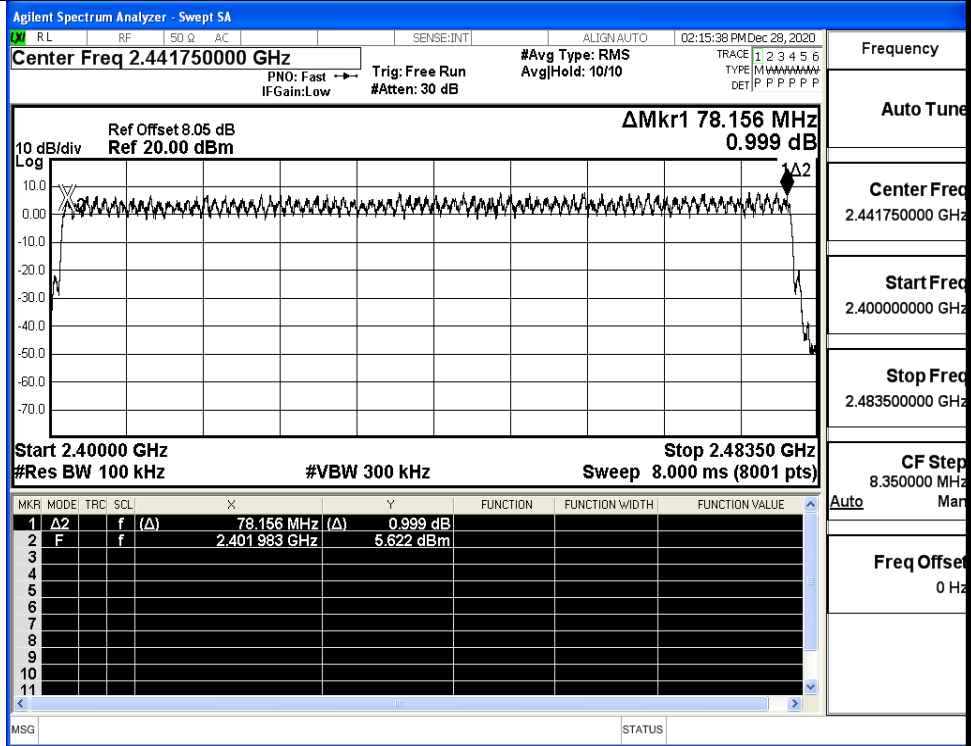
### A.4 Hopping Channel Number

Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

**Test Graphs**

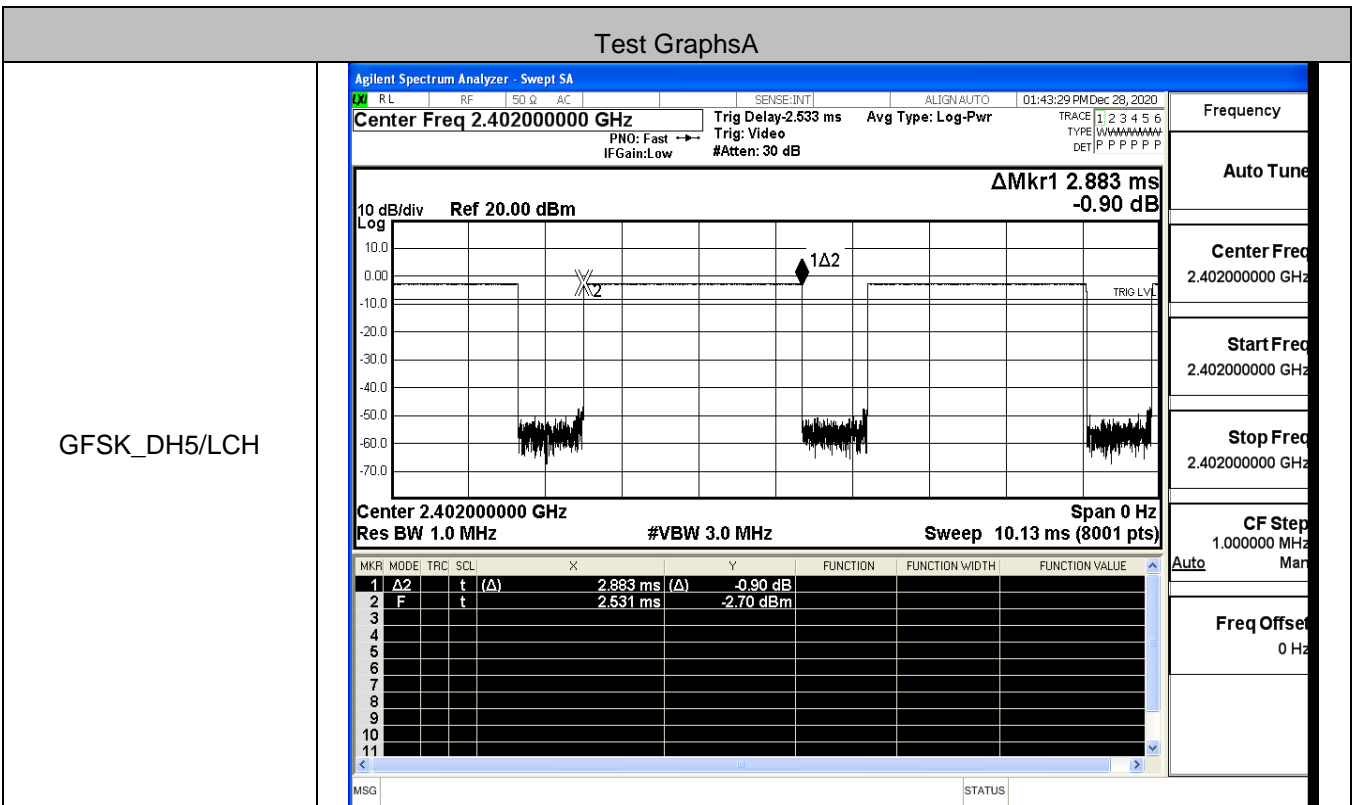
<b>GFSK/Hop</b>	<p>Agilent Spectrum Analyzer - Swept SA                  Center Freq 2.441750000 GHz                  Ref Offset 8.05 dB                  Ref 20.00 dBm  <math>\Delta</math>Mkr1 78.156 MHz                  1.385 dB                  Start 2.40000 GHz                  #Res BW 100 kHz                  #VBW 300 kHz                  Stop 2.48350 GHz                  Sweep 8.000 ms (8001 pts)</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td><math>\Delta</math>2</td> <td>f</td> <td>(<math>\Delta</math>)</td> <td>78.156 MHz (<math>\Delta</math>)</td> <td>1.385 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td></td> <td>2.401983 GHz</td> <td>4.410 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	$\Delta$ 2	f	( $\Delta$ )	78.156 MHz ( $\Delta$ )	1.385 dB				2	F	f		2.401983 GHz	4.410 dBm			
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																				
1	$\Delta$ 2	f	( $\Delta$ )	78.156 MHz ( $\Delta$ )	1.385 dB																							
2	F	f		2.401983 GHz	4.410 dBm																							
<b><math>\pi/4</math>DQPSK/Hop</b>	<p>Agilent Spectrum Analyzer - Swept SA                  Center Freq 2.441750000 GHz                  Ref Offset 8.05 dB                  Ref 20.00 dBm  <math>\Delta</math>Mkr1 77.853 MHz                  -0.299 dB                  Start 2.40000 GHz                  #Res BW 100 kHz                  #VBW 300 kHz                  Stop 2.48350 GHz                  Sweep 8.000 ms (8001 pts)</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td><math>\Delta</math>2</td> <td>f</td> <td>(<math>\Delta</math>)</td> <td>77.853 MHz (<math>\Delta</math>)</td> <td>-0.299 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td></td> <td>2.402161 GHz</td> <td>6.616 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	$\Delta$ 2	f	( $\Delta$ )	77.853 MHz ( $\Delta$ )	-0.299 dB				2	F	f		2.402161 GHz	6.616 dBm			
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																				
1	$\Delta$ 2	f	( $\Delta$ )	77.853 MHz ( $\Delta$ )	-0.299 dB																							
2	F	f		2.402161 GHz	6.616 dBm																							

8DPSK/Hop

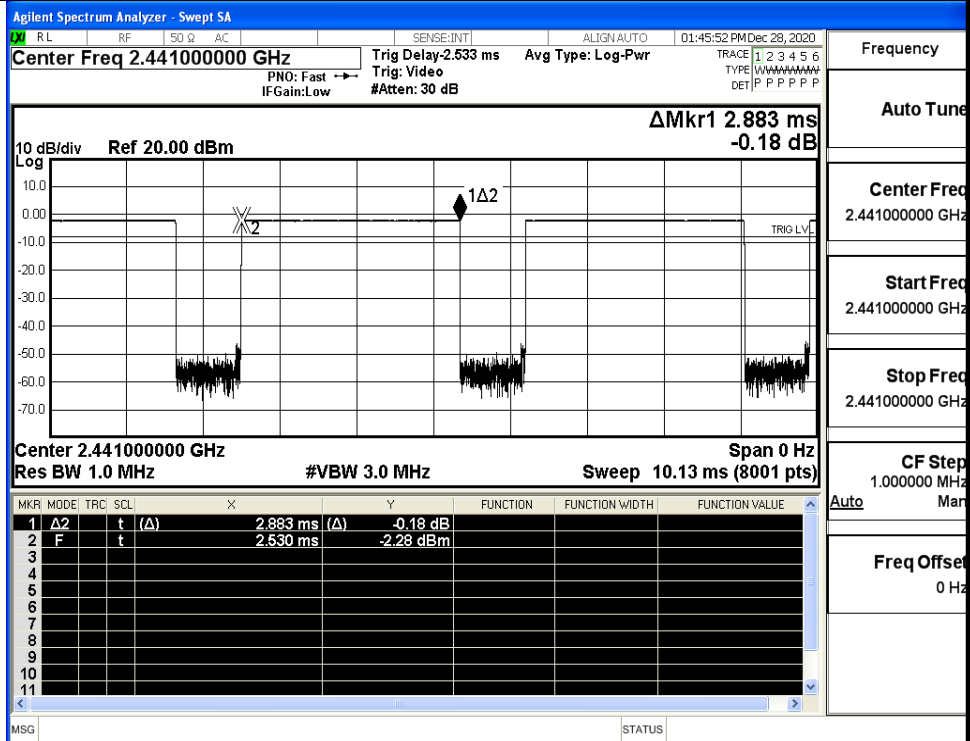


A.5 Dwell Time

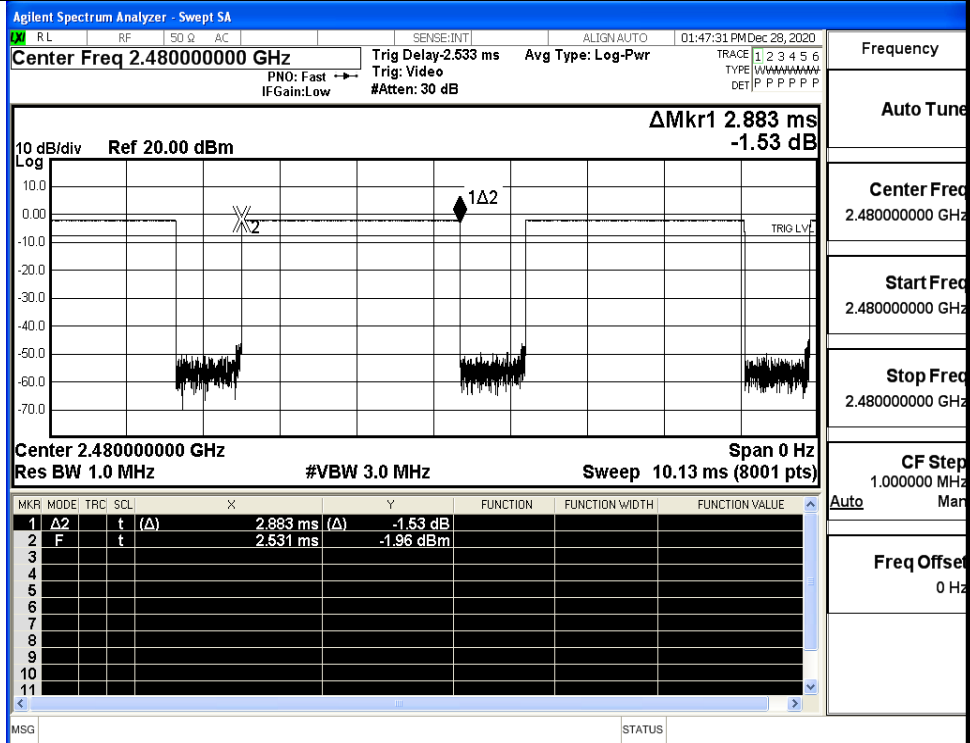
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
π/4DQPSK	2DH5	LCH	2.89	106.7	0.308	0.4	PASS
	2DH5	MCH	2.89	106.7	0.308	0.4	PASS
	2DH5	HCH	2.89	106.7	0.308	0.4	PASS
8DPSK	3DH5	LCH	2.89	106.7	0.308	0.4	PASS
	3DH5	MCH	2.89	106.7	0.308	0.4	PASS
	3DH5	HCH	2.89	106.7	0.308	0.4	PASS



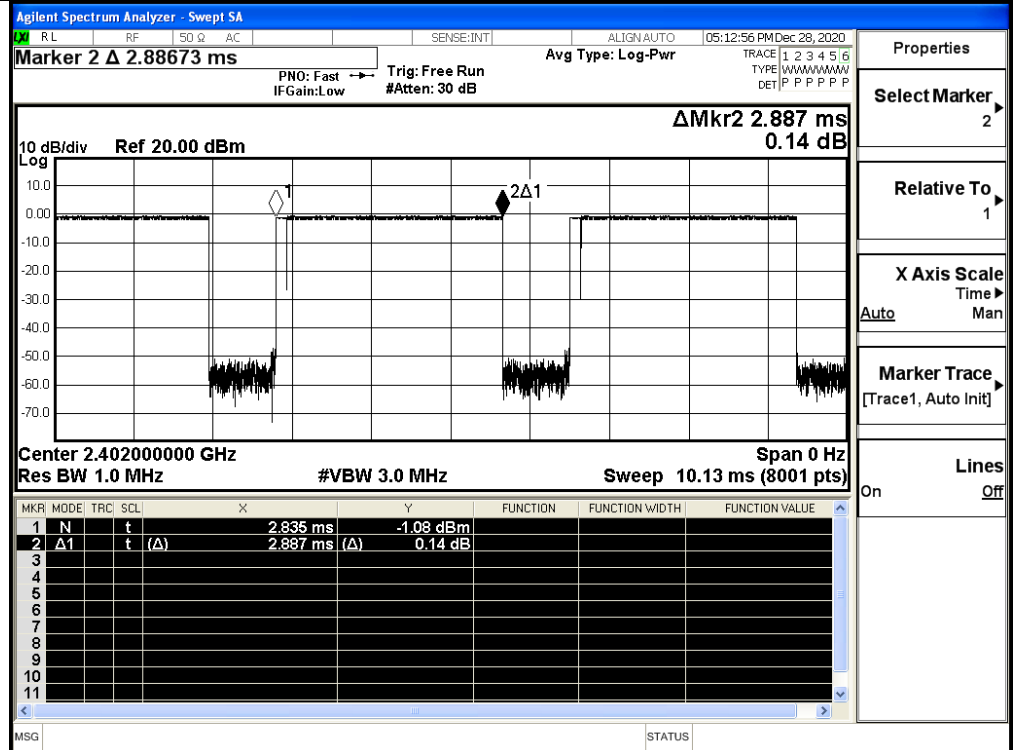
GFSK\_DH5/MCH



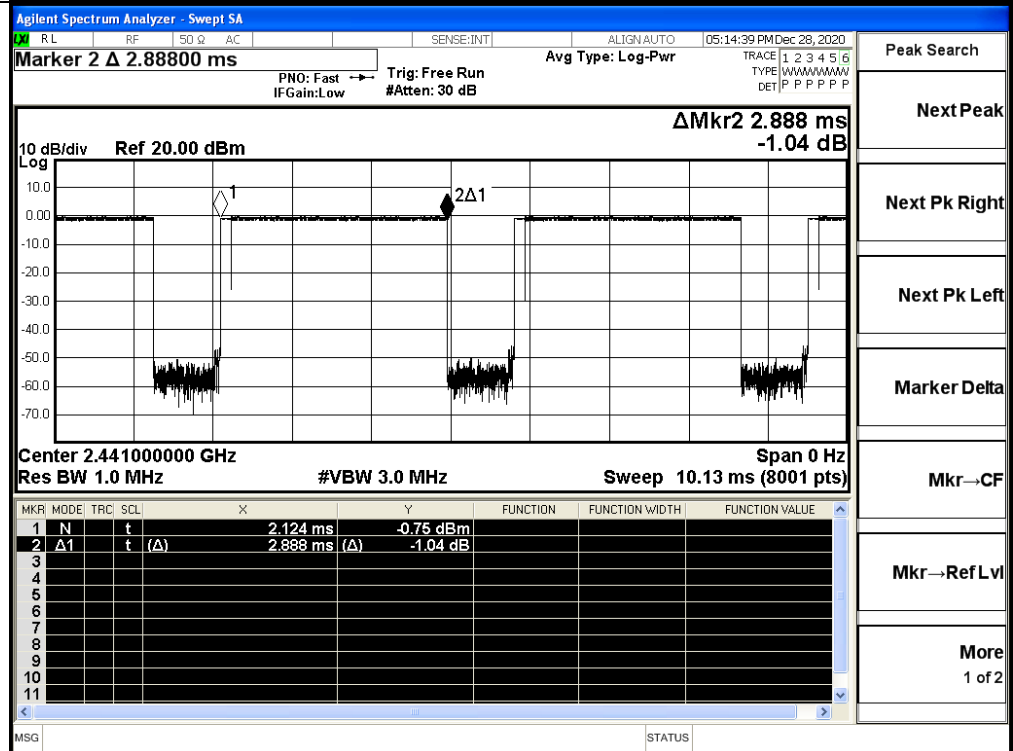
GFSK\_DH5/HCH



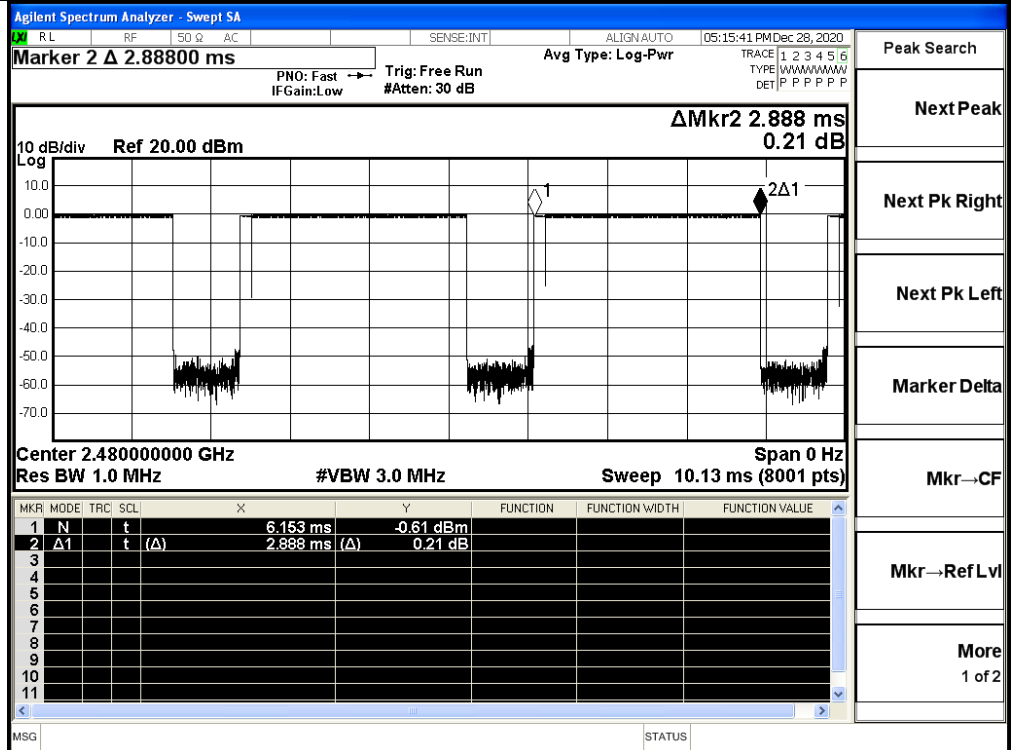
$\pi/4$ DQPSK  
\_2DH5/LCH



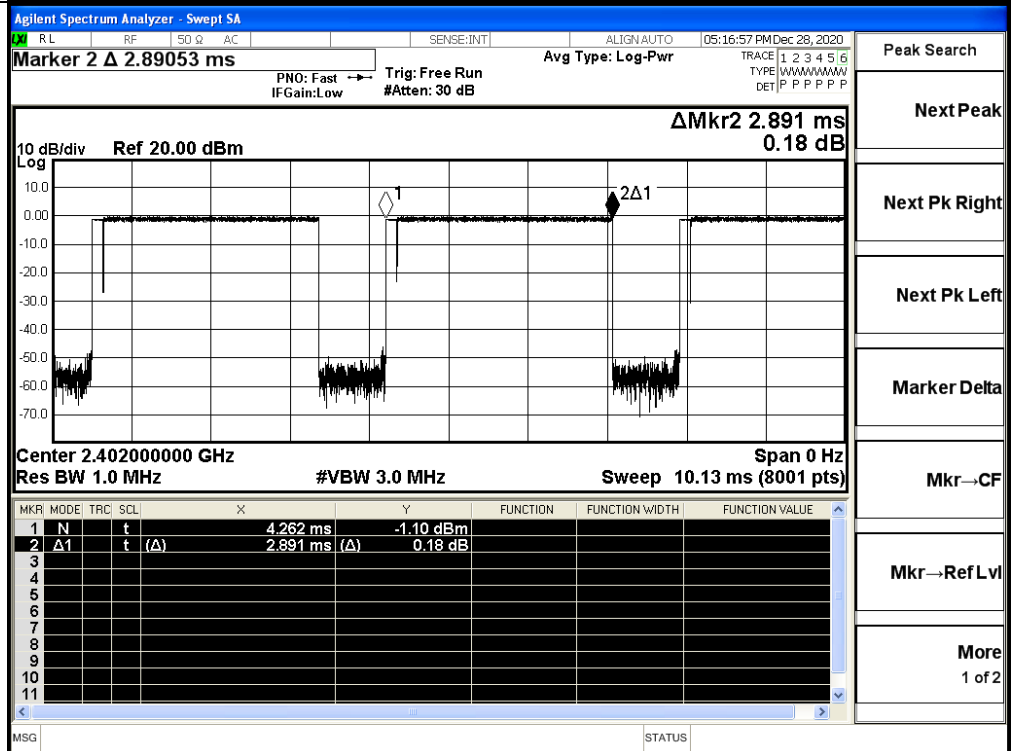
$\pi/4$ DQPSK  
\_2DH5/MCH



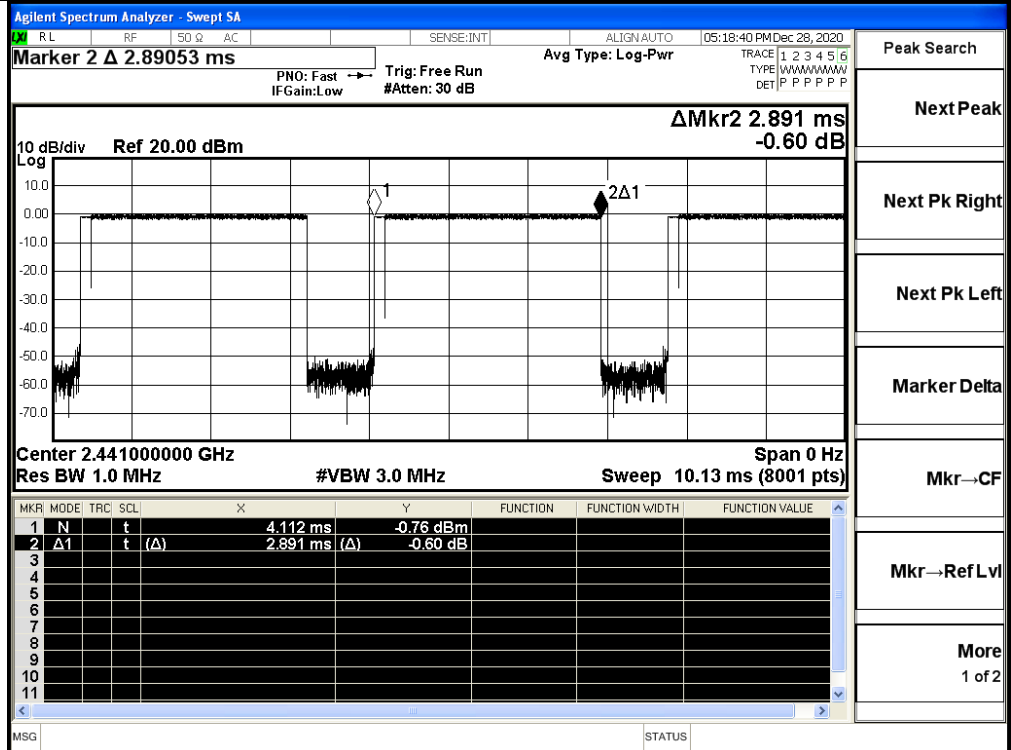
$\pi/4$ DQPSK  
\_2DH5/HCH



8DPSK\_3DH5/LCH

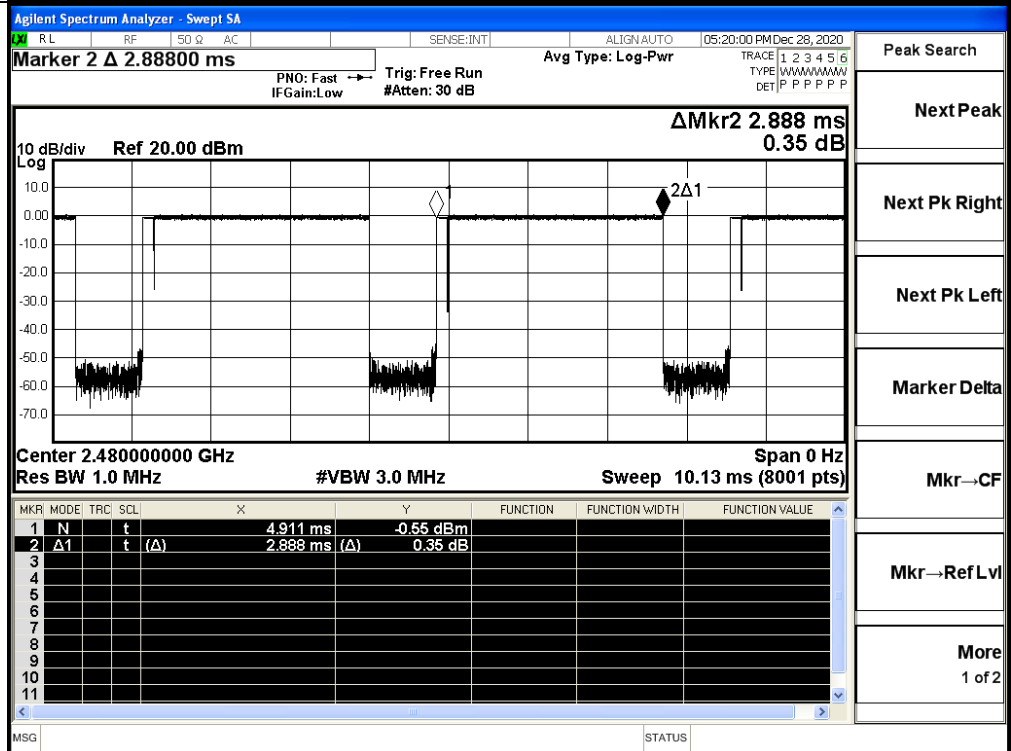


8DPSK\_3DH5/MCH



- Peak Search
- Next Peak
- Next Pk Right
- Next Pk Left
- Marker Delta
- Mkr→CF
- Mkr→Ref Lvl
- More 1 of 2

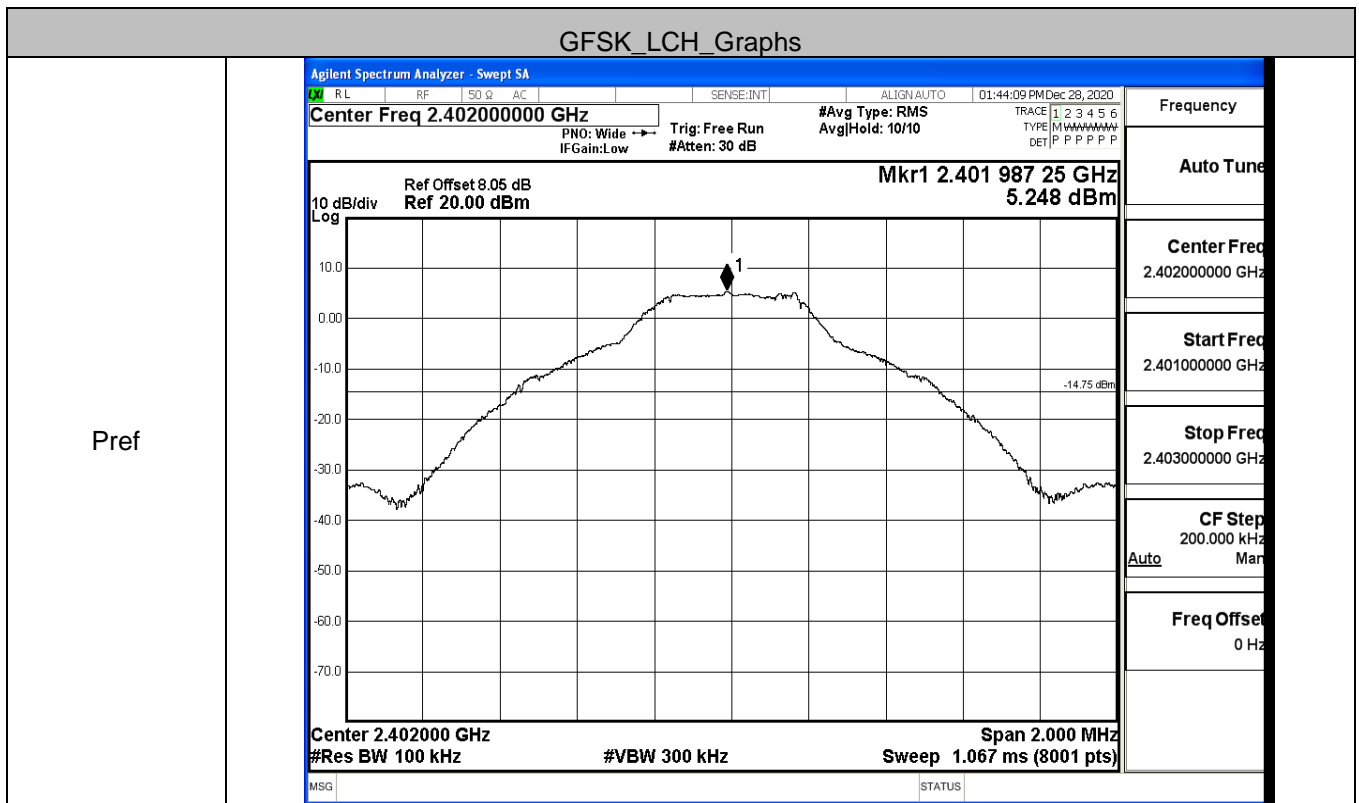
8DPSK\_3DH5/HCH



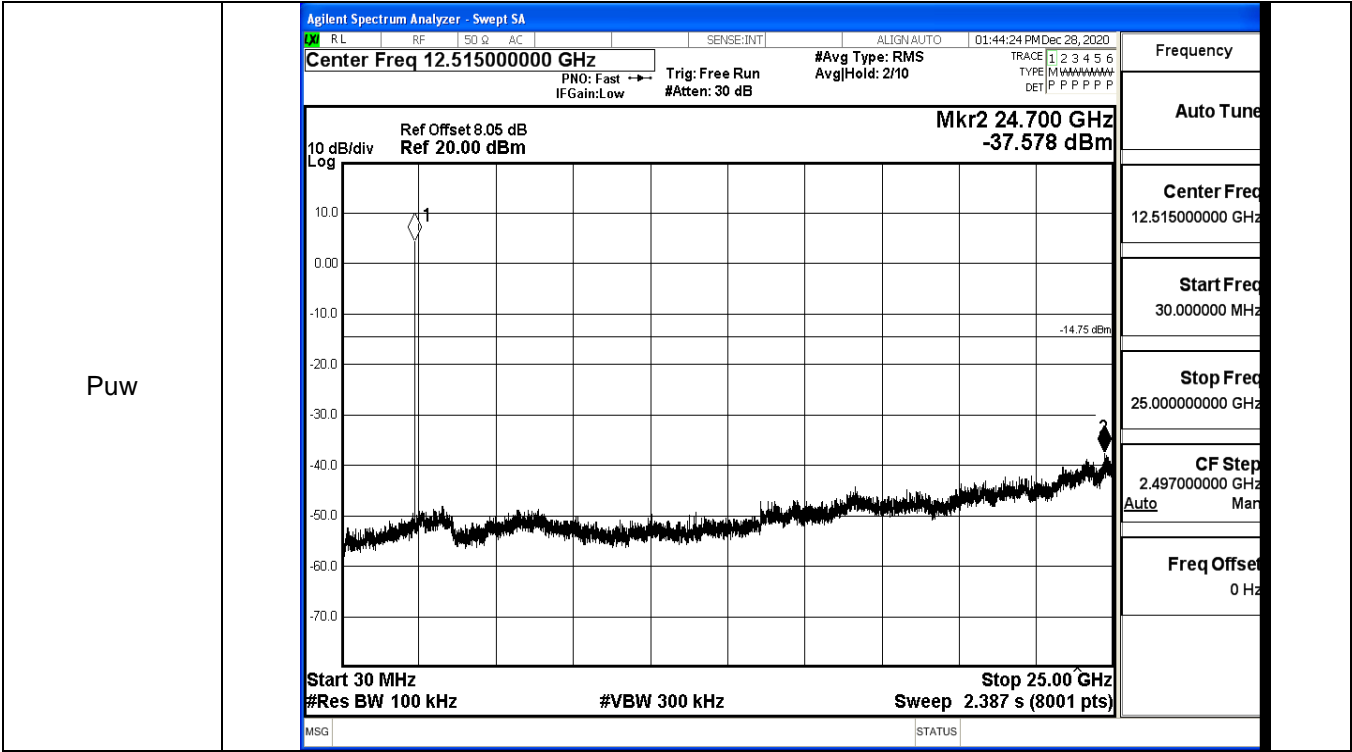
- Peak Search
- Next Peak
- Next Pk Right
- Next Pk Left
- Marker Delta
- Mkr→CF
- Mkr→Ref Lvl
- More 1 of 2

### A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	5.248	-37.578	-14.752	PASS
	MCH	5.637	-37.716	-14.363	PASS
	HCH	6.026	-36.765	-13.974	PASS
$\pi$ /4DQPSK	LCH	6.906	-36.887	-13.094	PASS
	MCH	7.151	-37.675	-12.849	PASS
	HCH	7.382	-37.917	-12.618	PASS
8DPSK	LCH	6.845	-38.102	-13.155	PASS
	MCH	6.644	-36.481	-13.356	PASS
	HCH	7.358	-37.947	-12.642	PASS

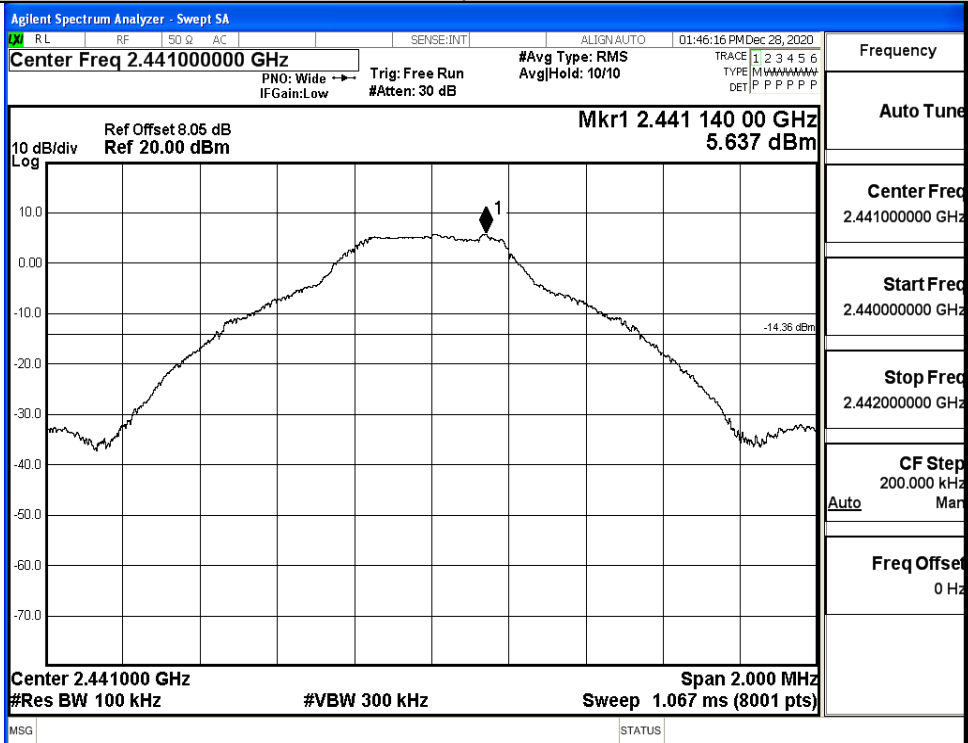




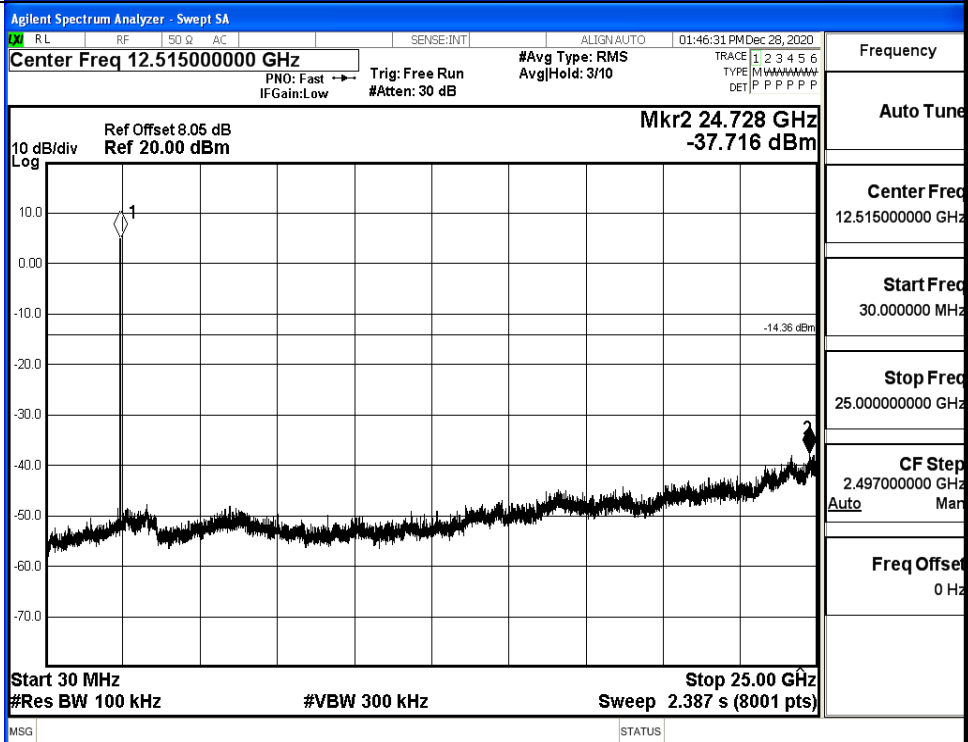


GFSK\_MCH\_Graphs

Pref

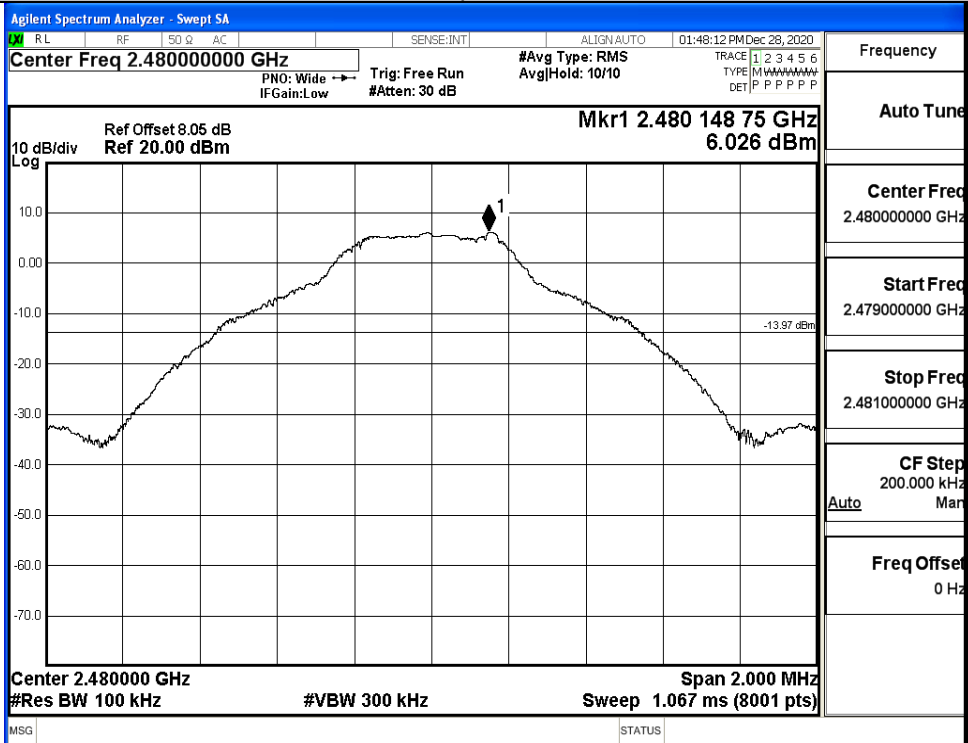


Puw

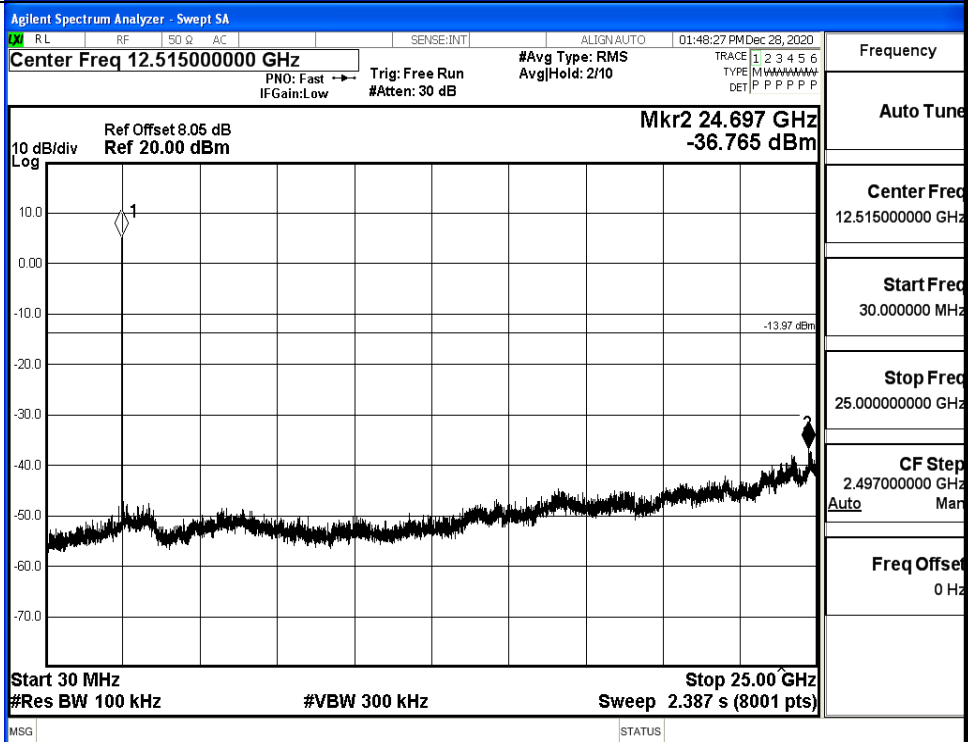


GFSK\_HCH\_Graphs

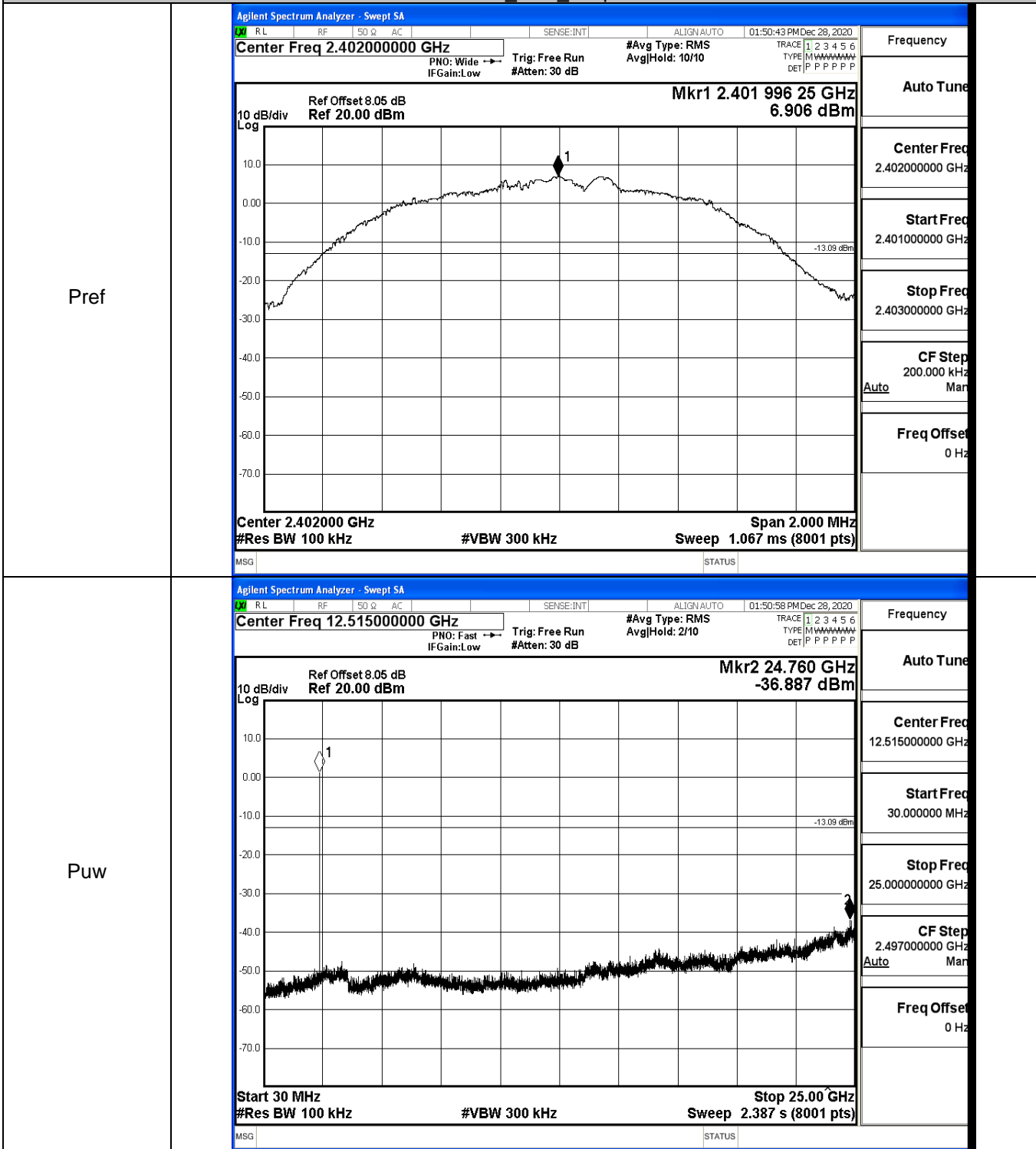
Pref



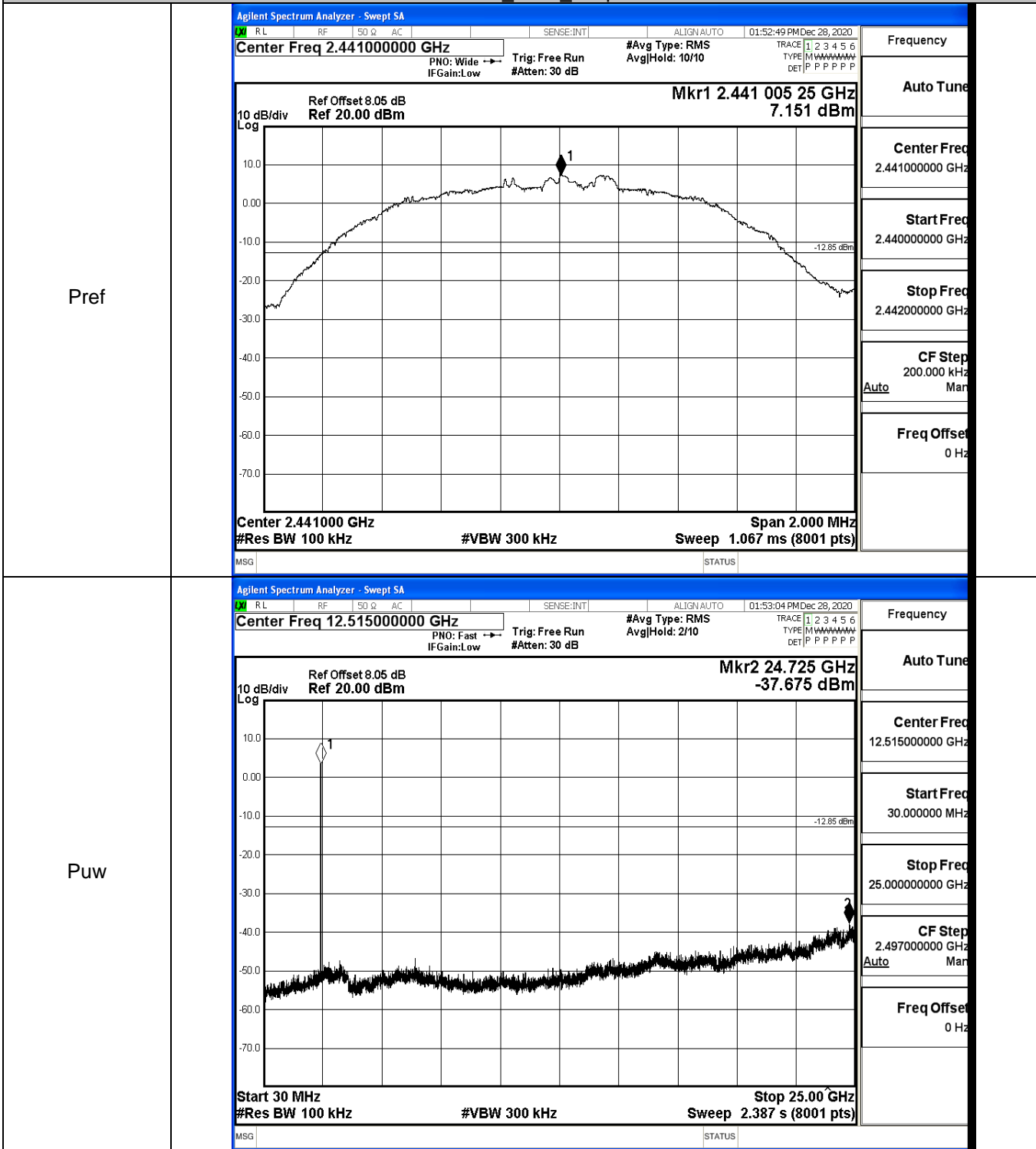
Puw



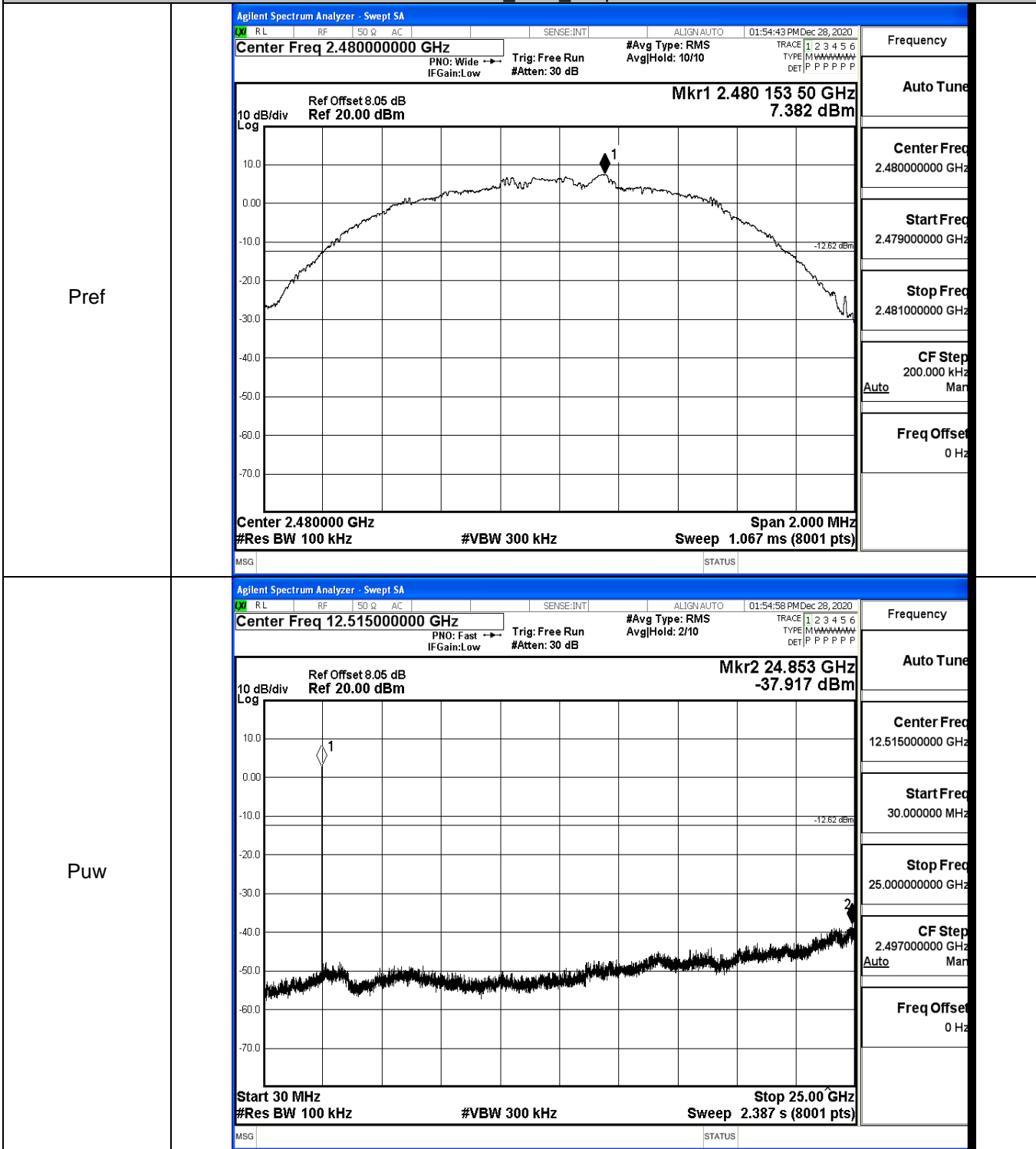
$\pi/4$ DQPSK\_LCH\_Graphs



$\pi/4$ DQPSK\_MCH\_Graphs

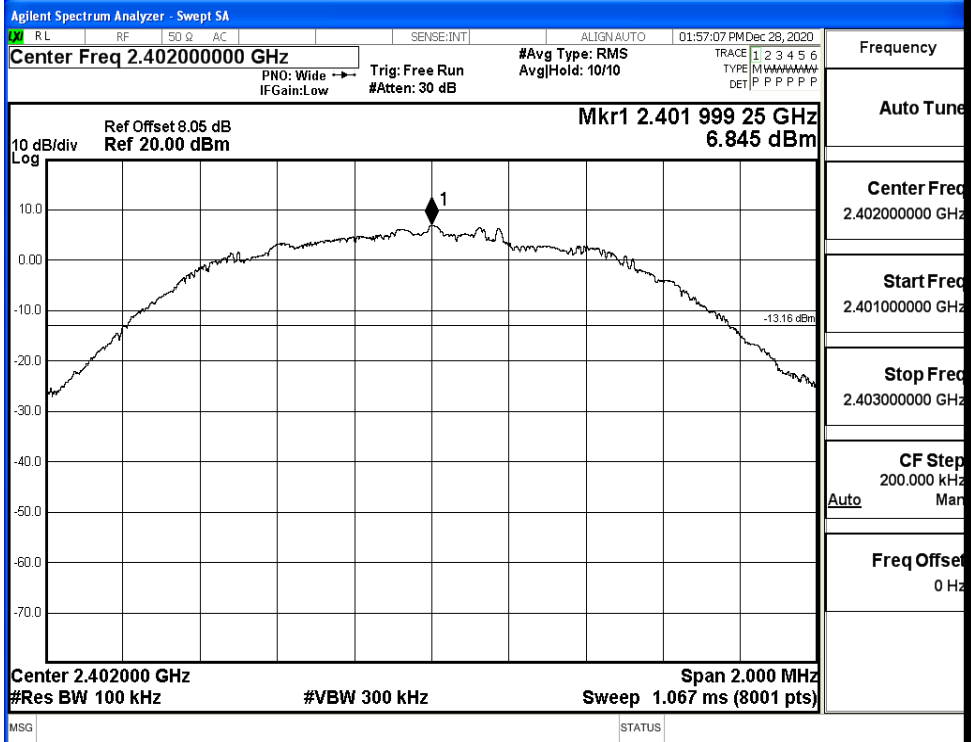


$\pi/4$ DQPSK\_HCH\_Graphs

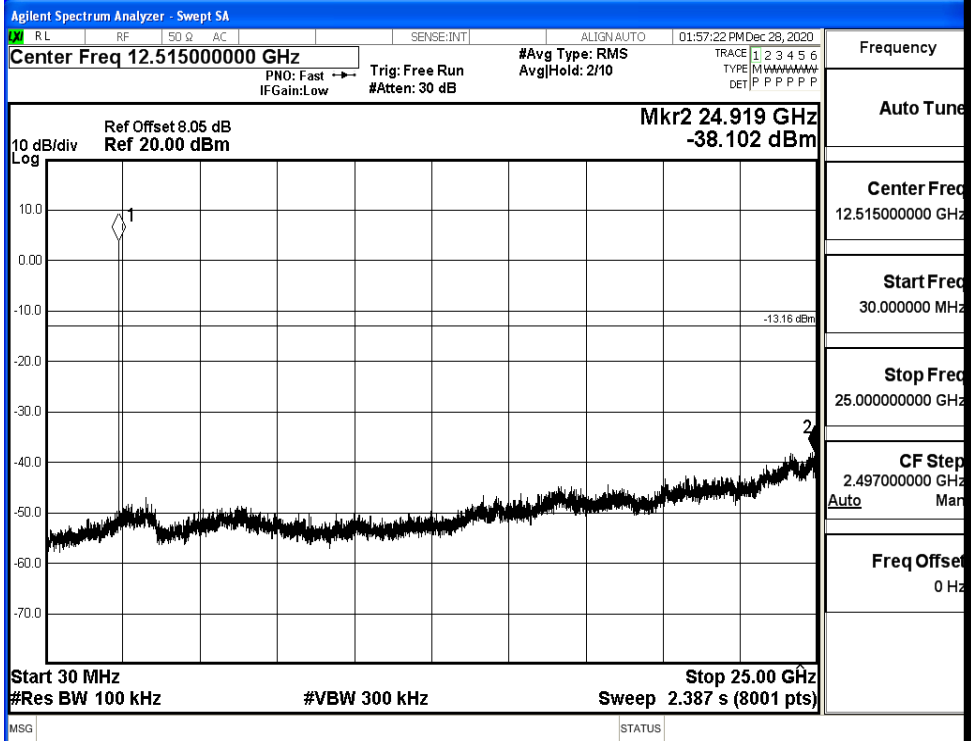


8DPSK\_LCH\_Graphs

Pref

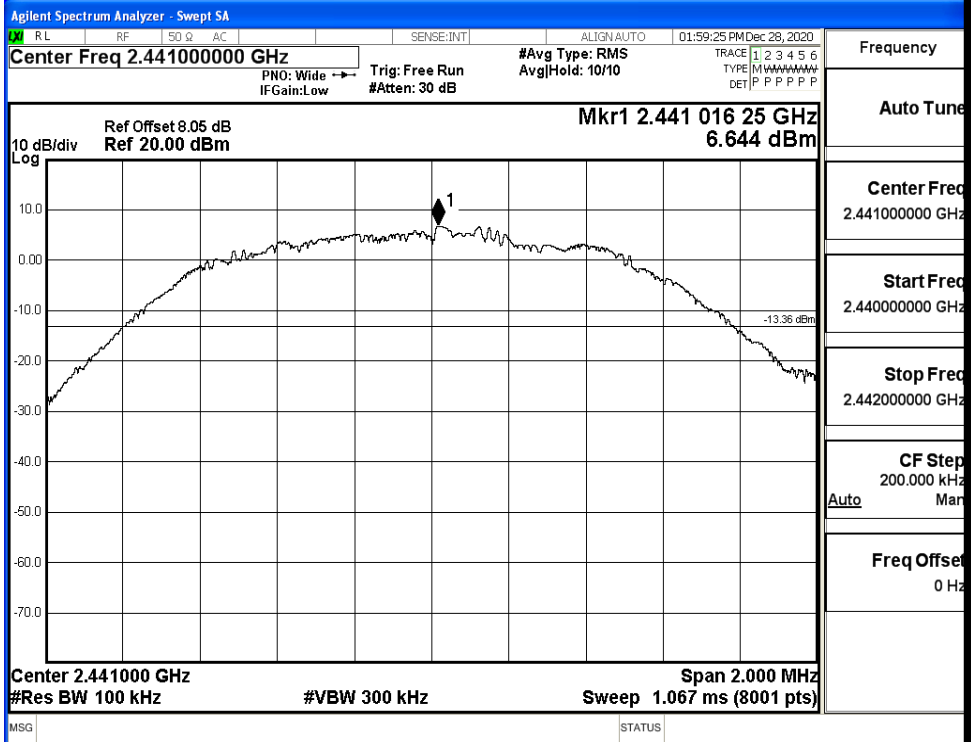


Puw

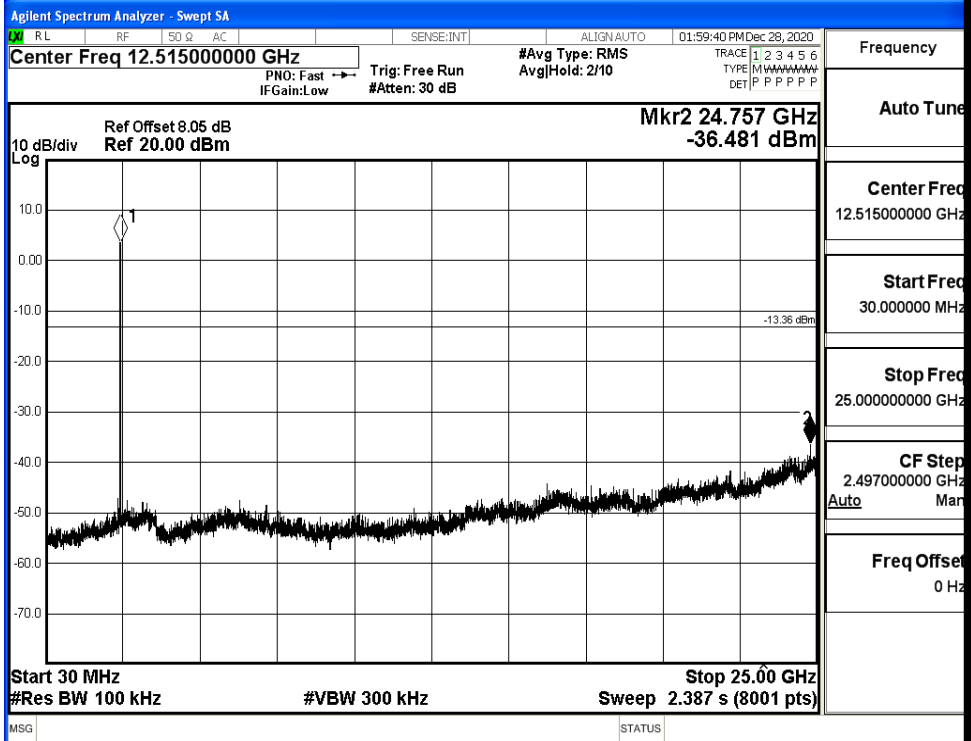


8DPSK\_MCH\_Graphs

Pref



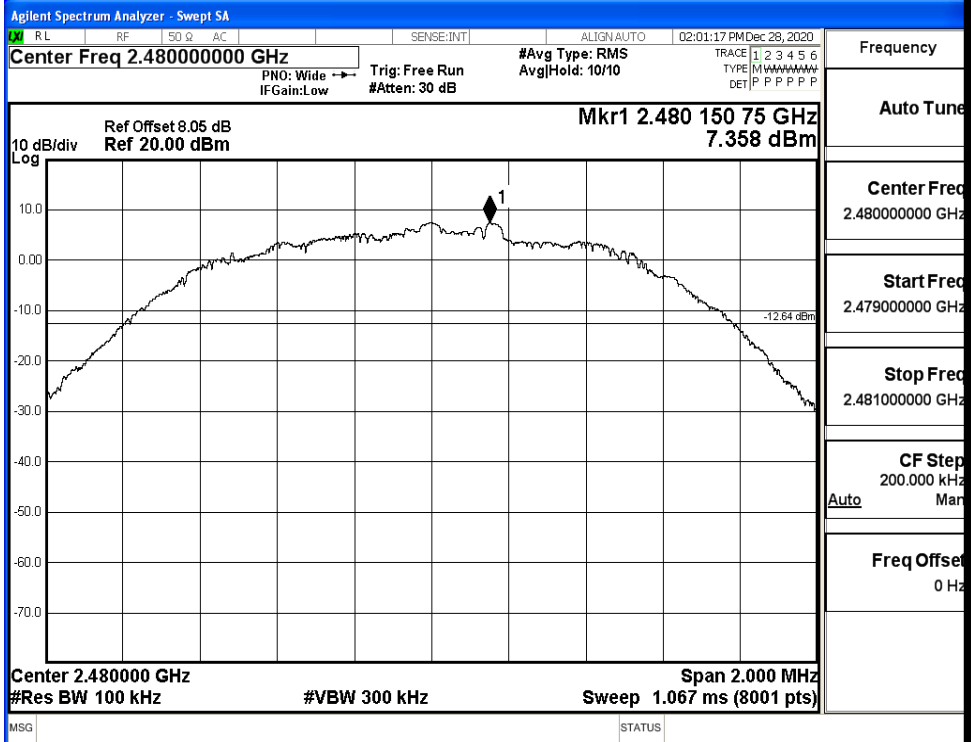
Puw



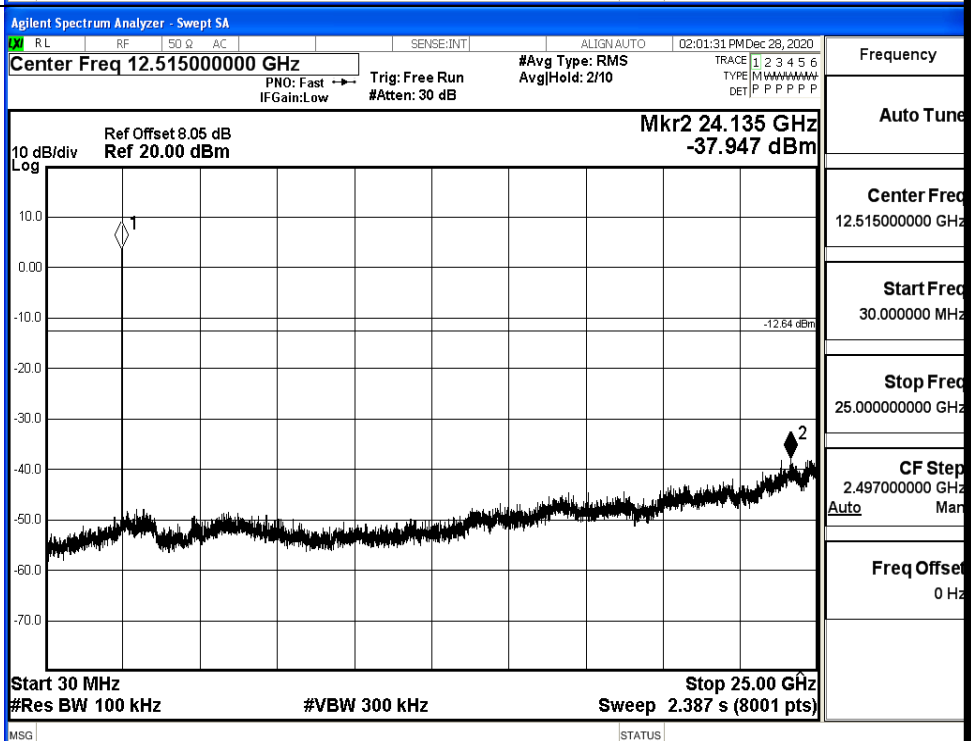


8DPSK\_HCH\_Graphs

Pref



Puw

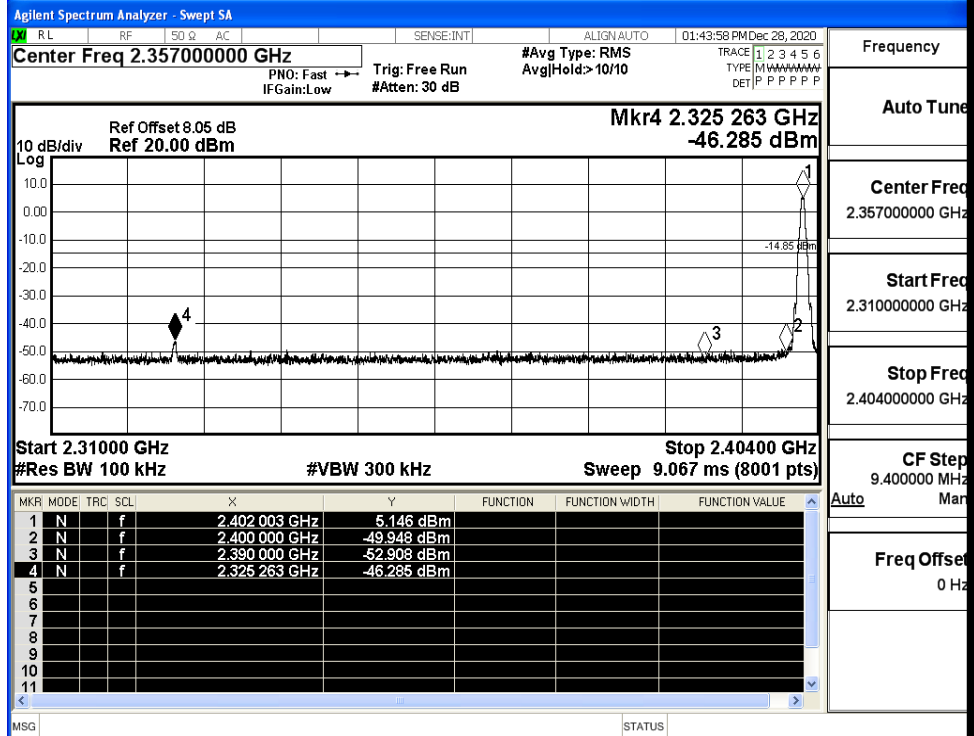


## A.7 Band-edge for RF Conducted Emissions

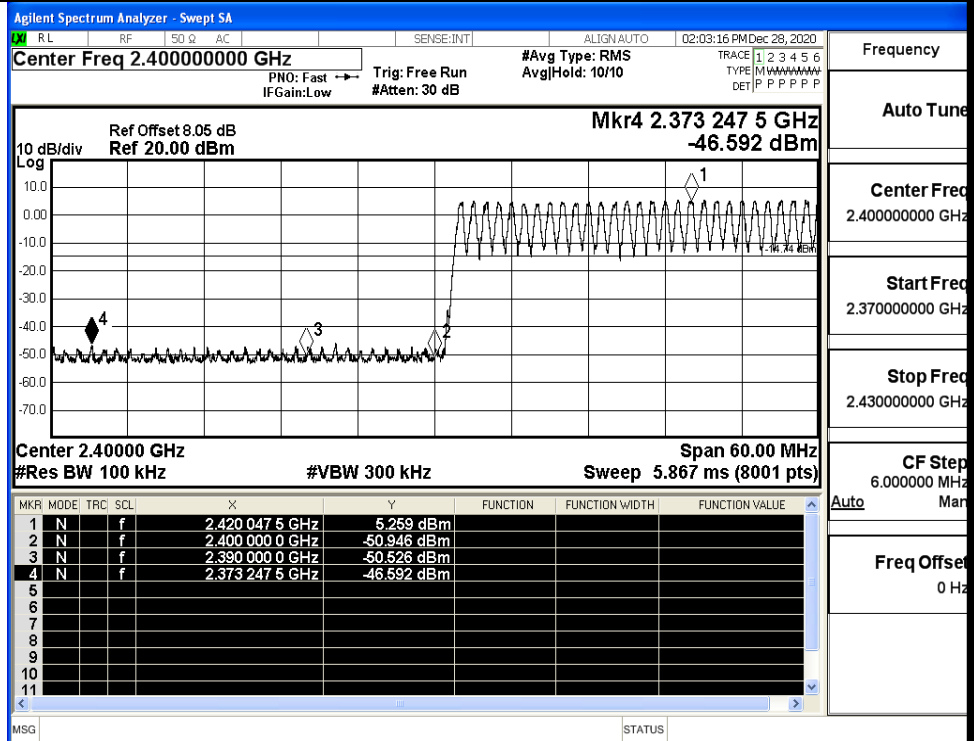
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	5.146	Off	-46.285	-14.85	PASS
			5.259	On	-46.592	-14.74	PASS
	HCH	2480	6.173	Off	-44.772	-13.83	PASS
			6.301	On	-44.265	-13.7	PASS
$\pi/4$ DQPSK	LCH	2402	6.479	Off	-45.321	-13.52	PASS
			7.192	On	-45.533	-12.81	PASS
	HCH	2480	7.388	Off	-42.696	-12.61	PASS
			7.911	On	-42.748	-12.09	PASS
8DPSK	LCH	2402	6.873	Off	-45.964	-13.13	PASS
			6.878	On	-46.220	-13.12	PASS
	HCH	2480	7.444	Off	-43.273	-12.56	PASS
			7.898	On	-42.705	-12.1	PASS

Test Graphs

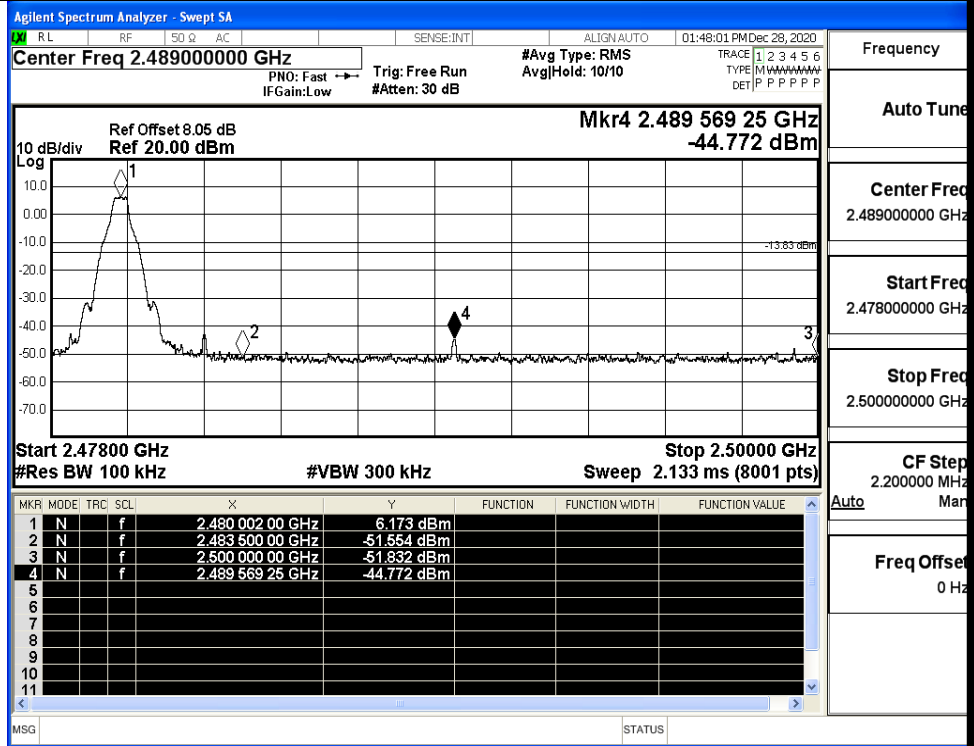
GFSK/LCH/No Hop



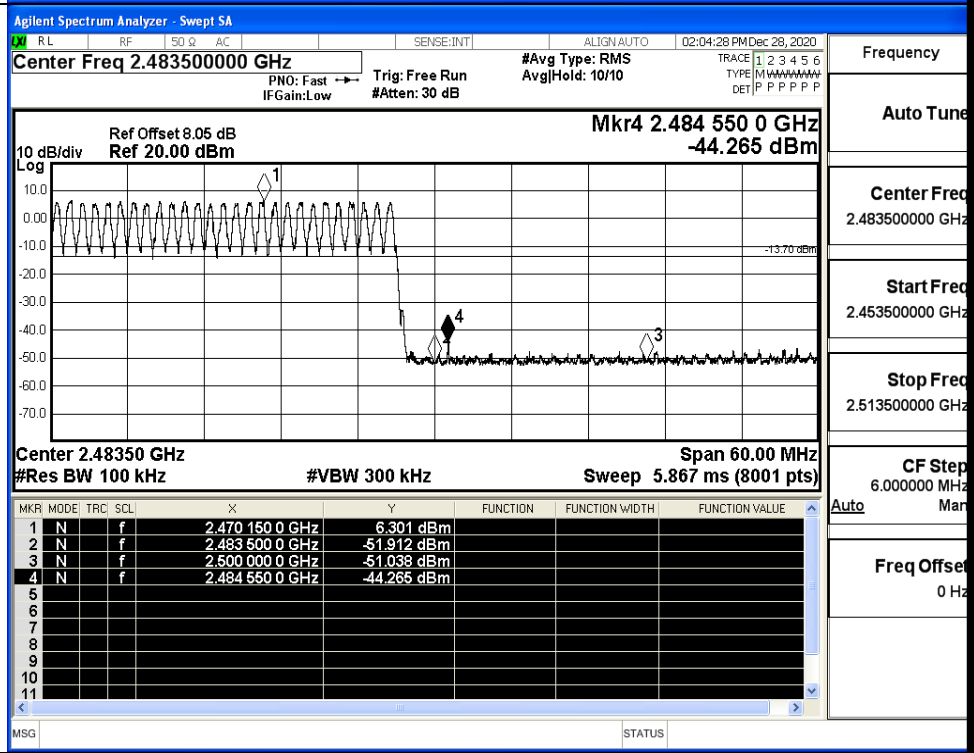
GFSK/LCH/Hop



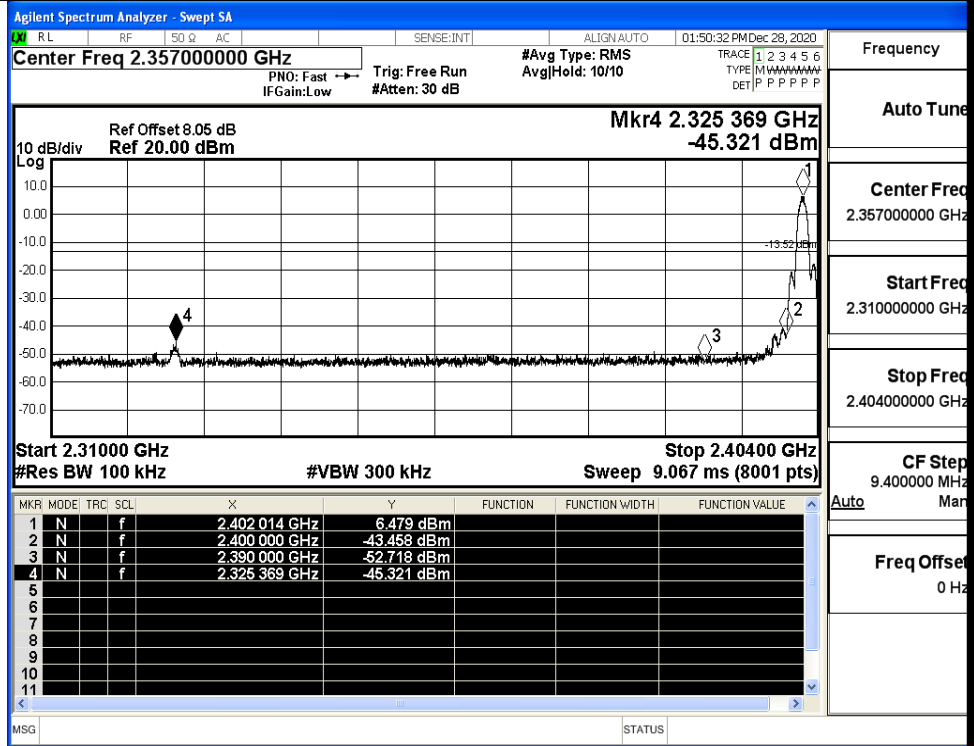
GFSK/HCH/No Hop



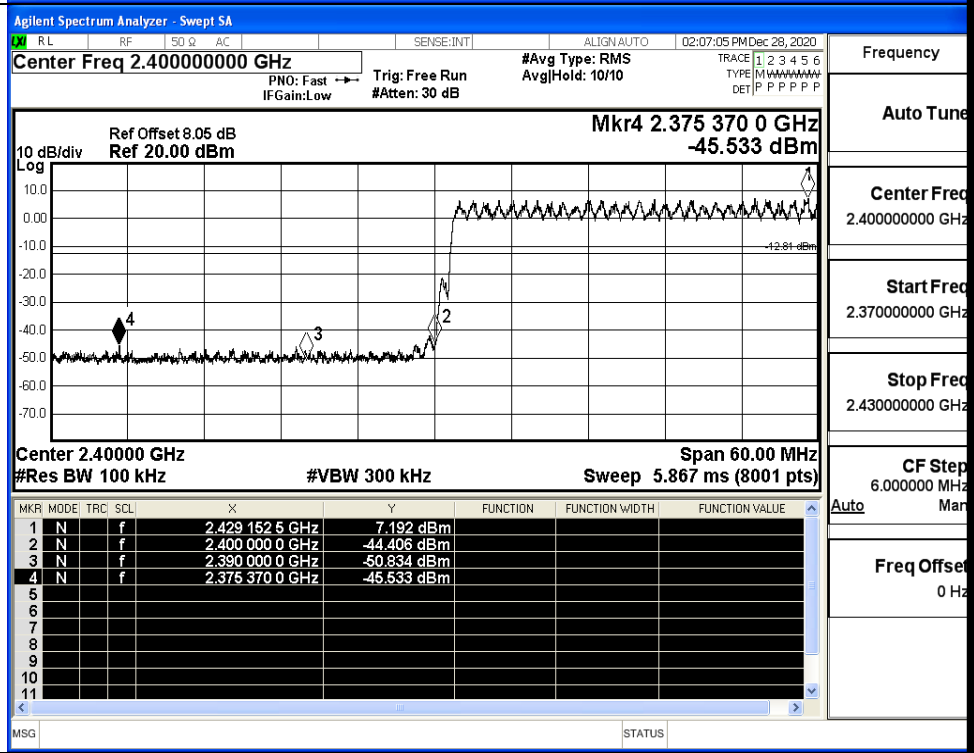
GFSK/HCH/Hop



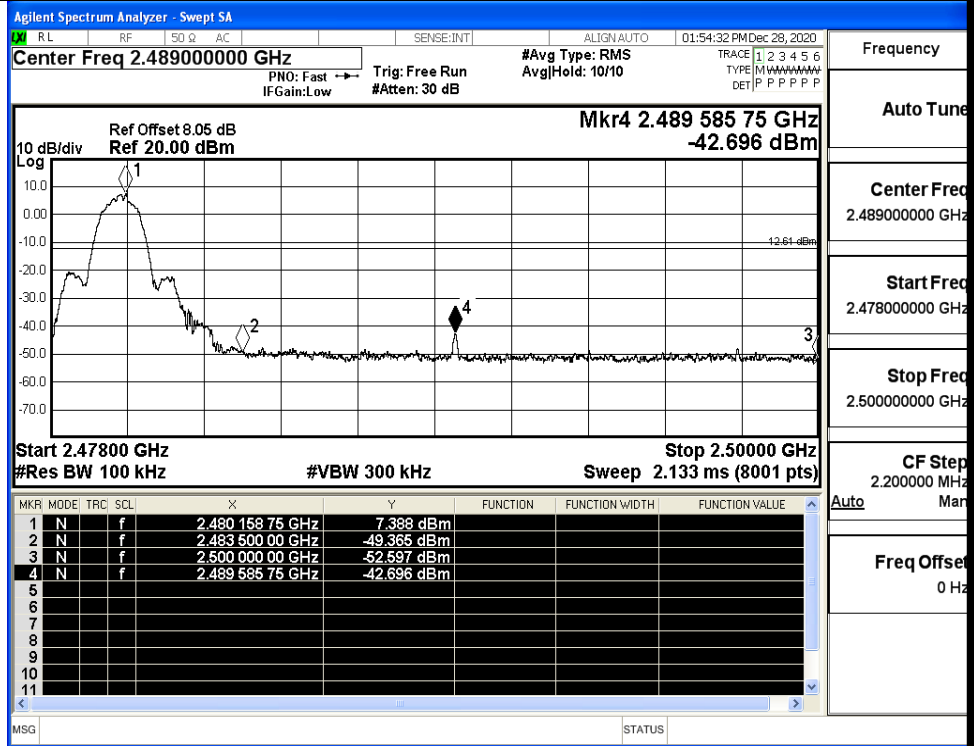
$\pi/4$ DQPSK/LCH/No  
Hop



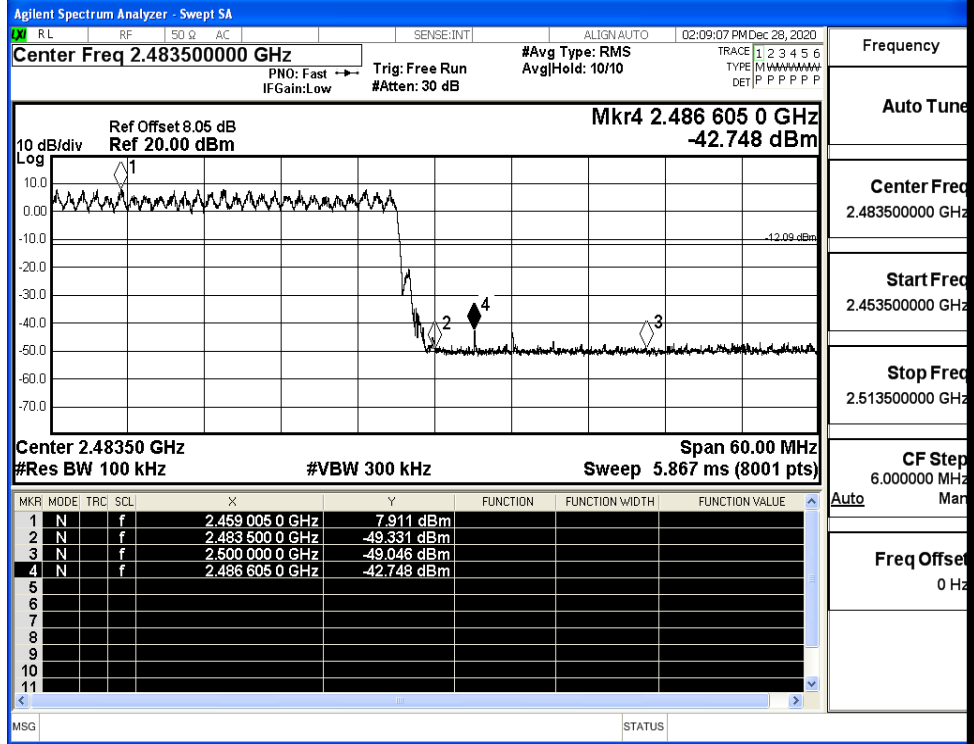
$\pi/4$ DQPSK/LCH/Hop



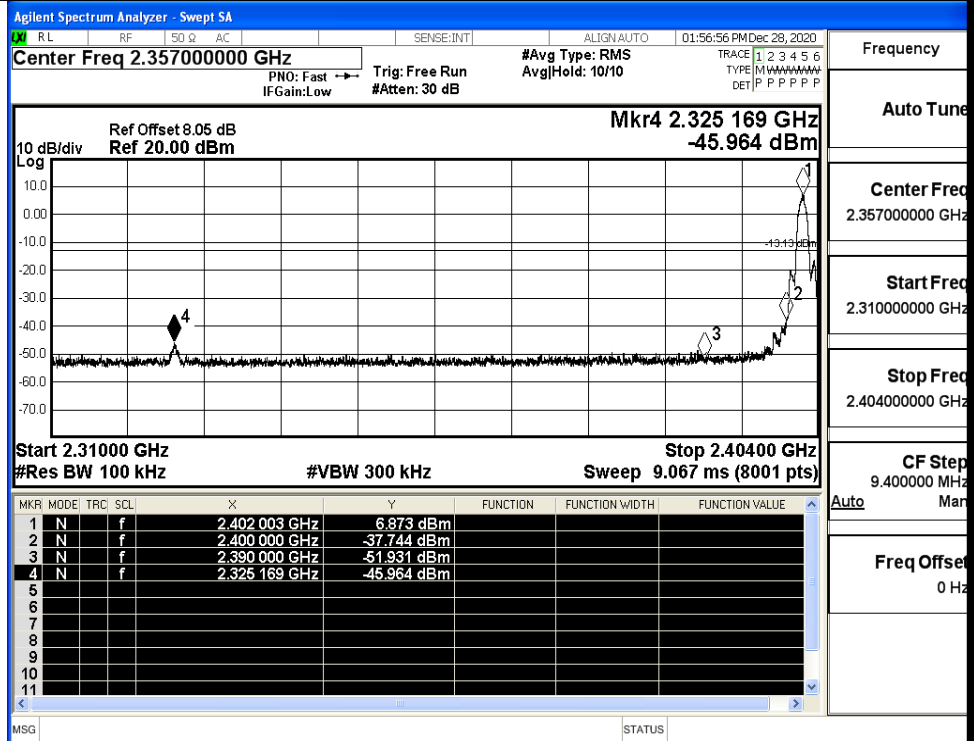
$\pi/4$ DQPSK/HCH/No Hop



$\pi/4$ DQPSK/HCH/Hop

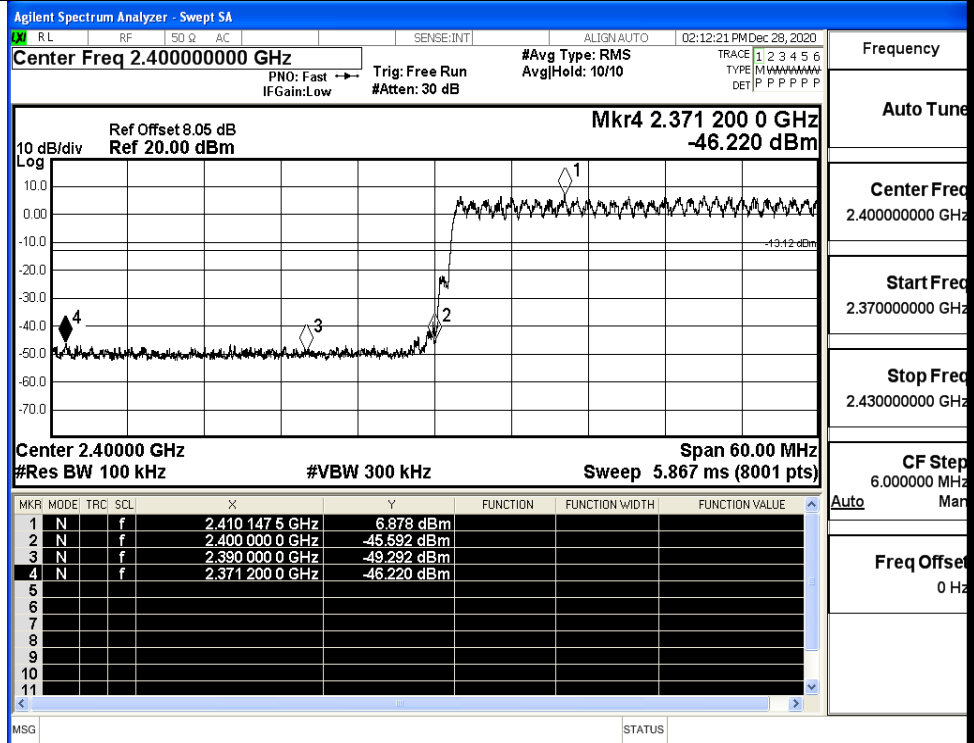


8DPSK/LCH/No Hop



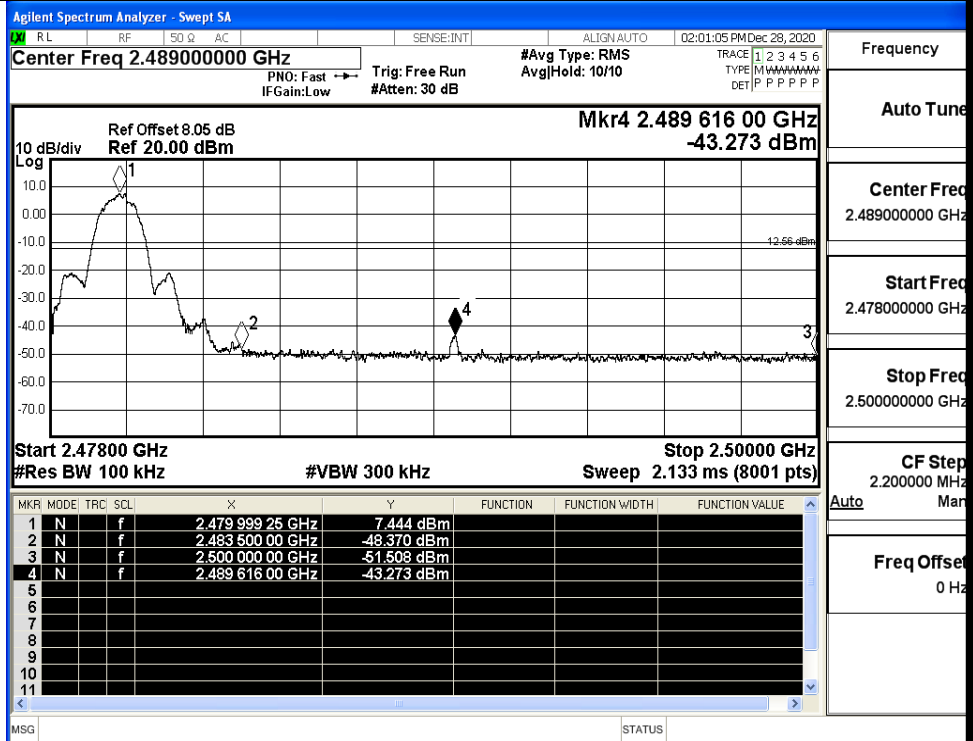
Frequency	
Auto Tune	
Center Freq	2.35700000 GHz
Start Freq	2.31000000 GHz
Stop Freq	2.40400000 GHz
CF Step	9.400000 MHz
Freq Offset	0 Hz

8DPSK/LCH/Hop



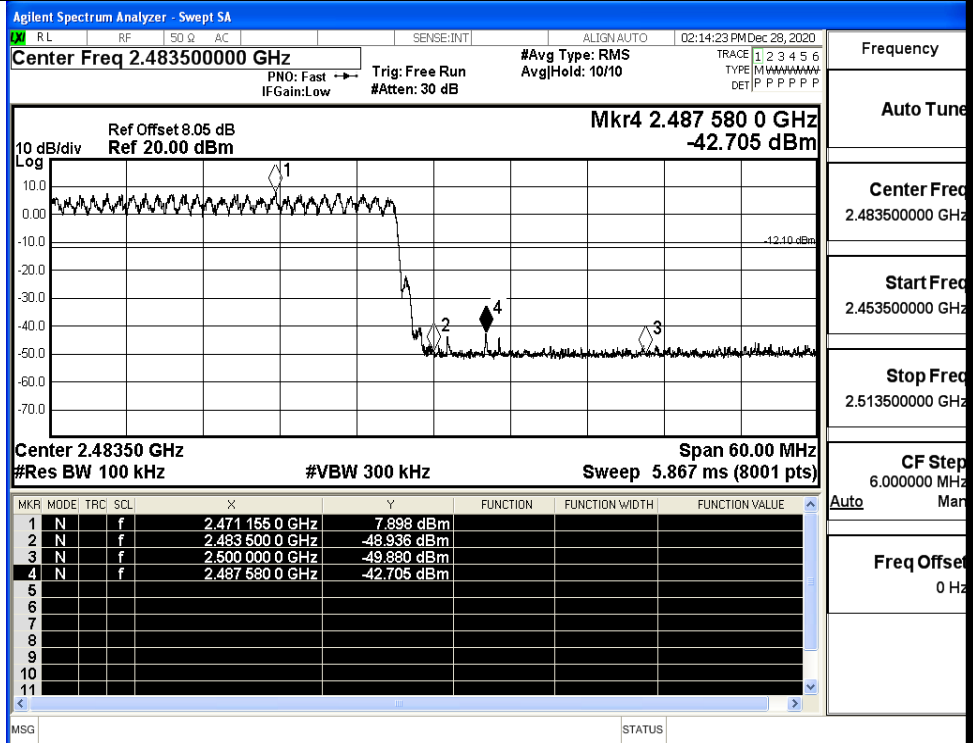
Frequency	
Auto Tune	
Center Freq	2.40000000 GHz
Start Freq	2.37000000 GHz
Stop Freq	2.43000000 GHz
CF Step	6.000000 MHz
Freq Offset	0 Hz

8DPSK/HCH/No Hop



Frequency	2.489000000 GHz
Auto Tune	
Center Freq	2.489000000 GHz
Start Freq	2.478000000 GHz
Stop Freq	2.500000000 GHz
CF Step	2.200000 MHz
Freq Offset	0 Hz

8DPSK/HCH/Hop



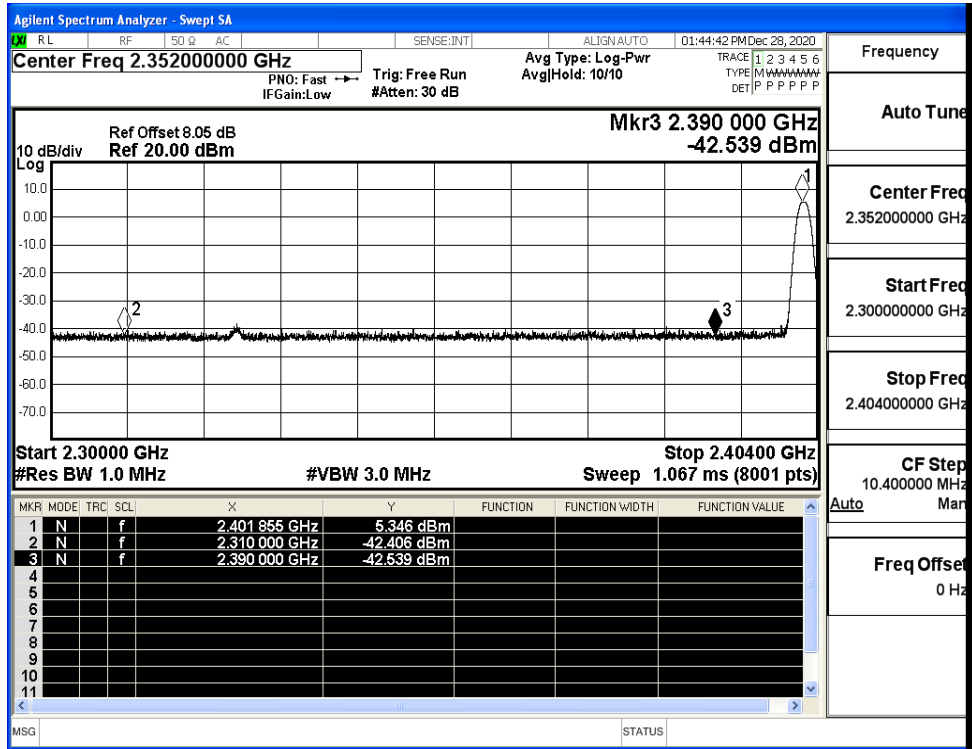
Frequency	2.483500000 GHz
Auto Tune	
Center Freq	2.483500000 GHz
Start Freq	2.453500000 GHz
Stop Freq	2.513500000 GHz
CF Step	6.000000 MHz
Freq Offset	0 Hz



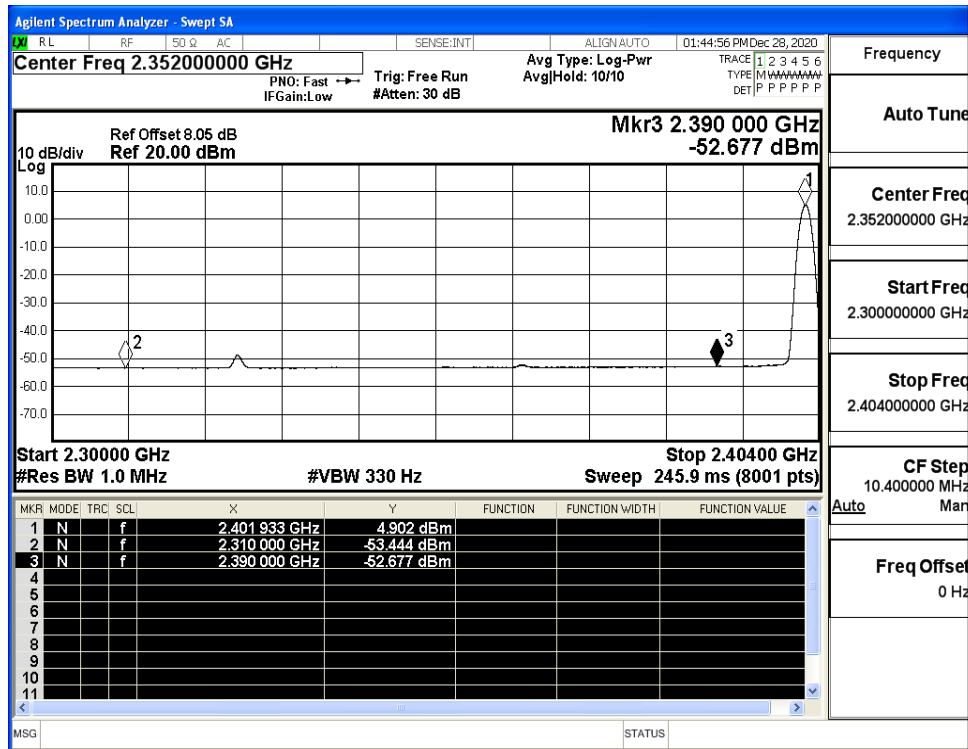
## A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-42.41	2.0	0	54.82	PEAK	74	PASS
	Off	2310.0	-53.44	2.0	0	43.79	AV	54	PASS
	Off	2390.0	-42.54	2.0	0	54.69	PEAK	74	PASS
	Off	2390.0	-52.68	2.0	0	44.55	AV	54	PASS
	Off	2483.5	-42.61	2.0	0	54.62	PEAK	74	PASS
	Off	2483.5	-51.83	2.0	0	45.40	AV	54	PASS
	Off	2500.0	-43.02	2.0	0	54.21	PEAK	74	PASS
	Off	2500.0	-52.31	2.0	0	44.92	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-42.90	2.0	0	54.33	PEAK	74	PASS
	Off	2310.0	-53.47	2.0	0	43.76	AV	54	PASS
	Off	2390.0	-42.54	2.0	0	54.69	PEAK	74	PASS
	Off	2390.0	-52.37	2.0	0	44.86	AV	54	PASS
	Off	2483.5	-38.85	2.0	0	58.38	PEAK	74	PASS
	Off	2483.5	-49.44	2.0	0	47.79	AV	54	PASS
	Off	2500.0	-42.80	2.0	0	54.43	PEAK	74	PASS
	Off	2500.0	-52.11	2.0	0	45.12	AV	54	PASS
8DPSK	Off	2310.0	-43.16	2.0	0	54.07	PEAK	74	PASS
	Off	2310.0	-53.42	2.0	0	43.81	AV	54	PASS
	Off	2390.0	-41.89	2.0	0	55.34	PEAK	74	PASS
	Off	2390.0	-52.49	2.0	0	44.74	AV	54	PASS
	Off	2483.5	-37.40	2.0	0	59.83	PEAK	74	PASS
	Off	2483.5	-49.04	2.0	0	48.19	AV	54	PASS
	Off	2500.0	-40.85	2.0	0	56.38	PEAK	74	PASS
	Off	2500.0	-51.91	2.0	0	45.32	AV	54	PASS

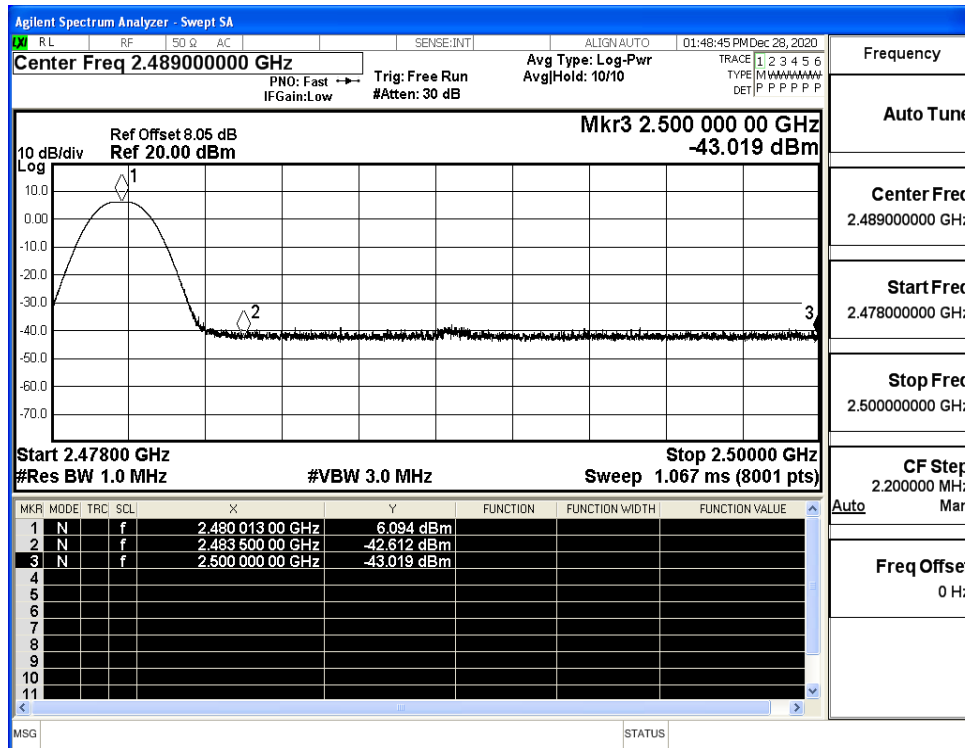
Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (Low Channel)



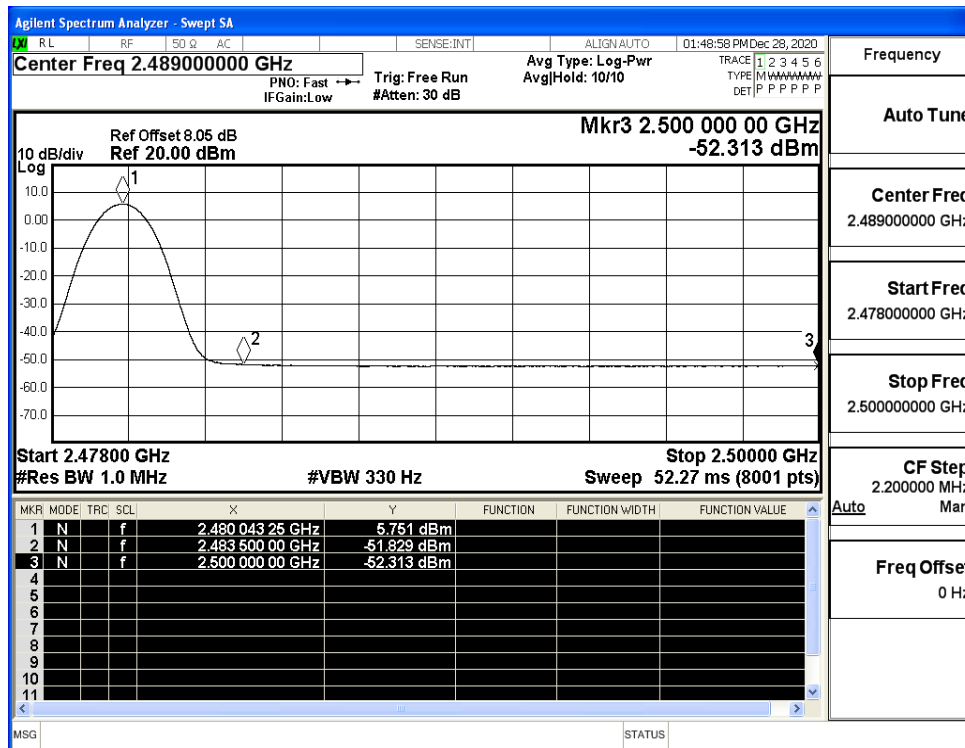
Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (Low Channel)



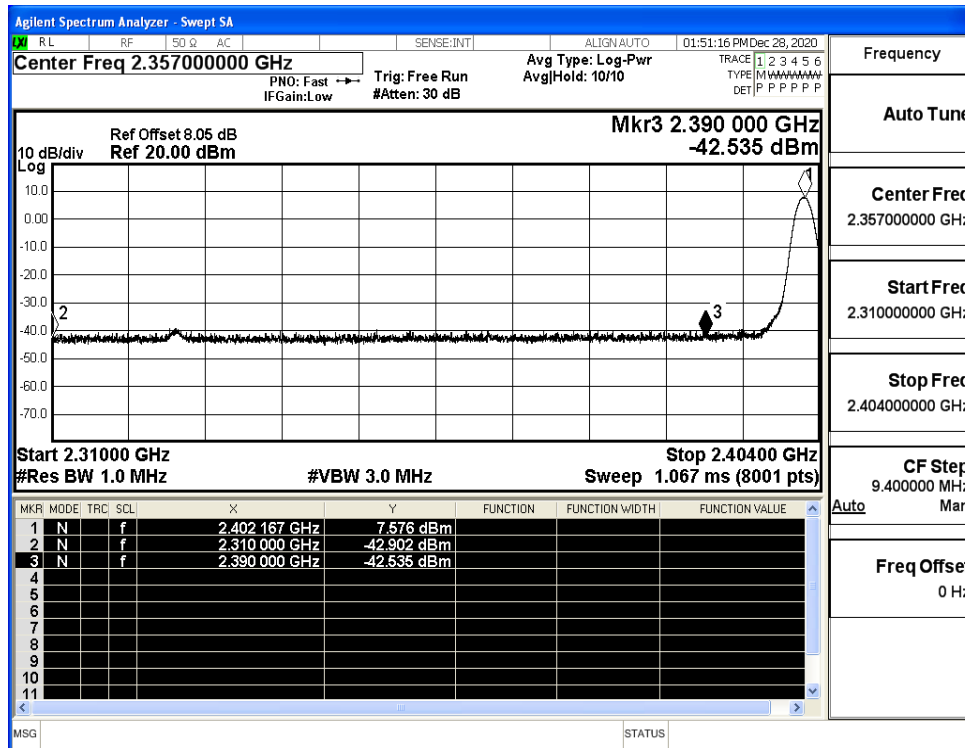
Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (High Channel)



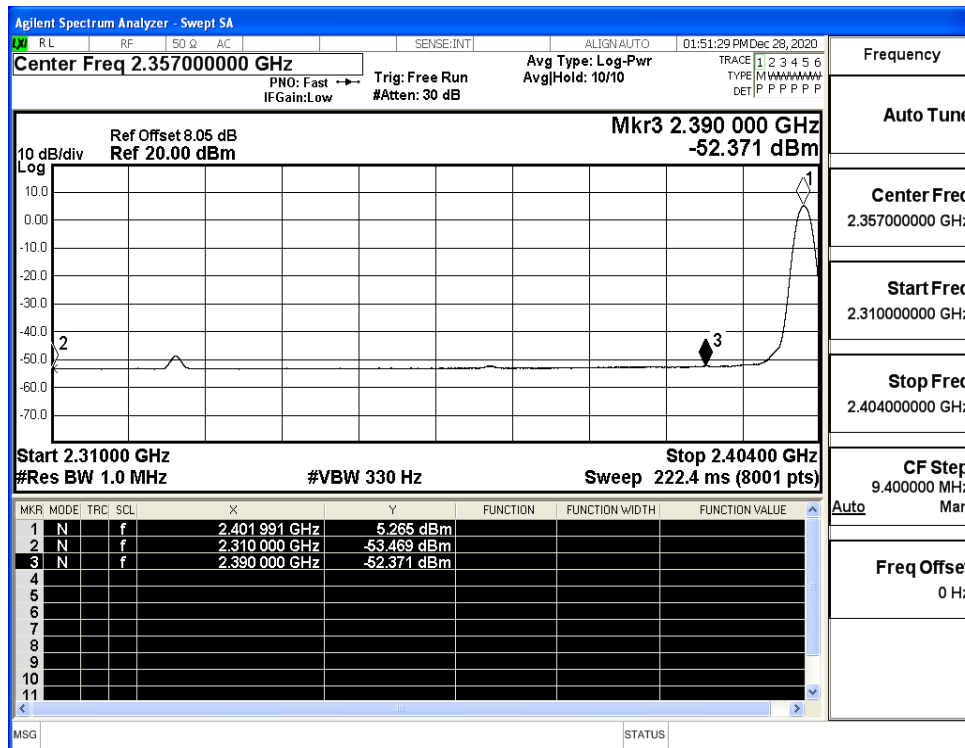
Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (High Channel)



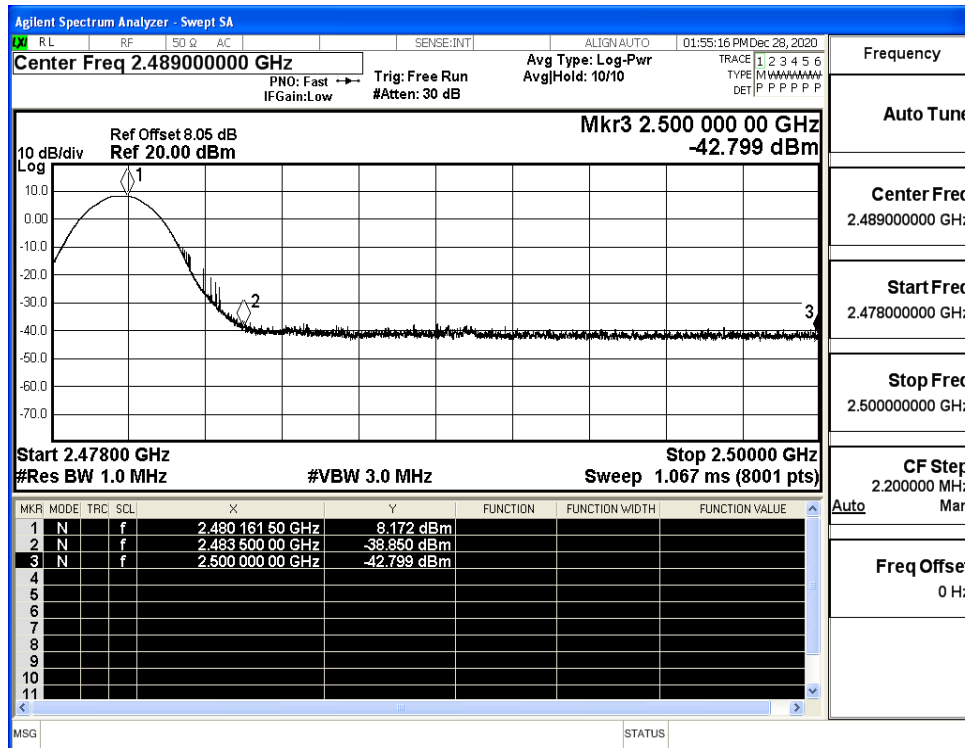
Restrict-band band-edge measurements\_Hopping Off  $\pi/4$ -DQPSK\_PEAK (Low Channel)



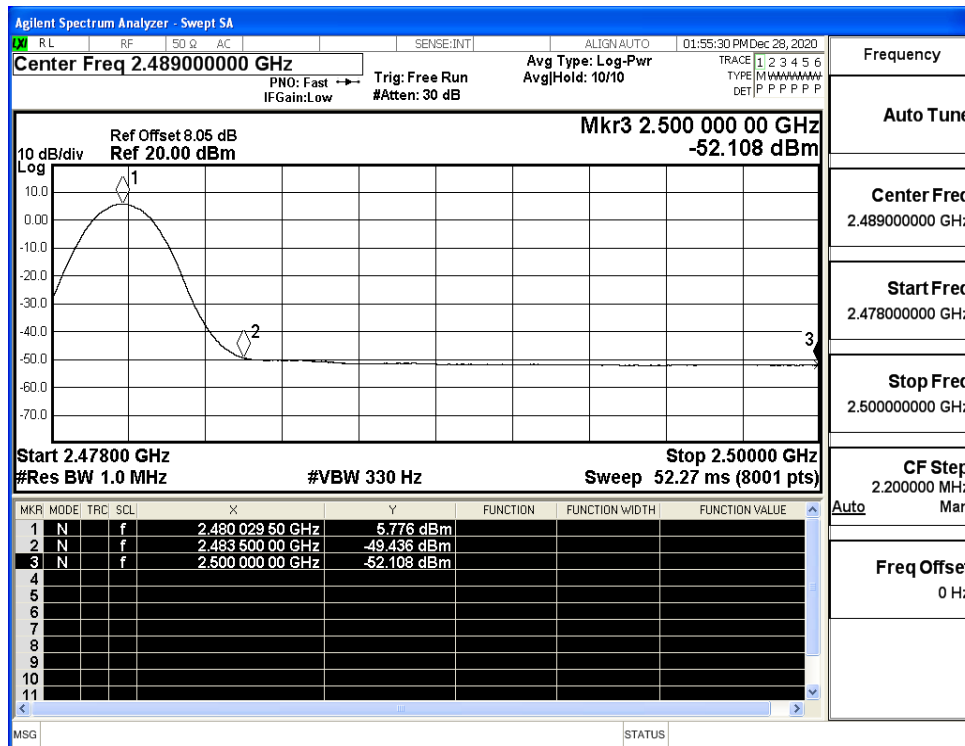
Restrict-band band-edge measurements\_Hopping Off  $\pi/4$ -DQPSK\_Average (Low Channel)



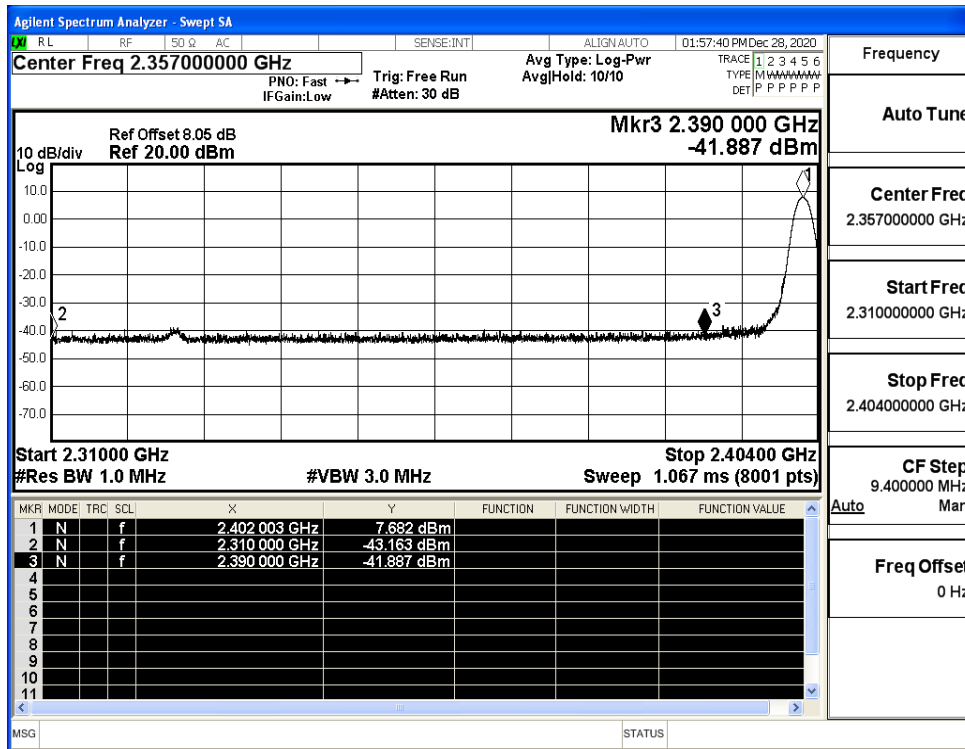
Restrict-band band-edge measurements\_Hopping Off  $\pi/4$ -DQPSK\_PEAK (High Channel)



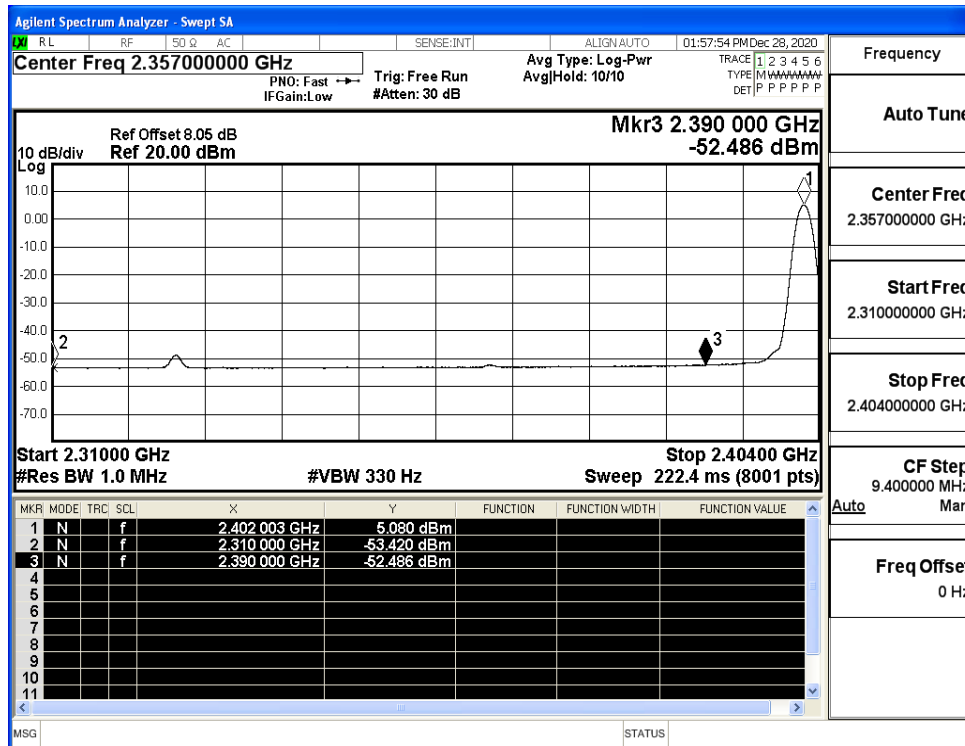
Restrict-band band-edge measurements\_Hopping Off  $\pi/4$ -DQPSK\_Average (High Channel)



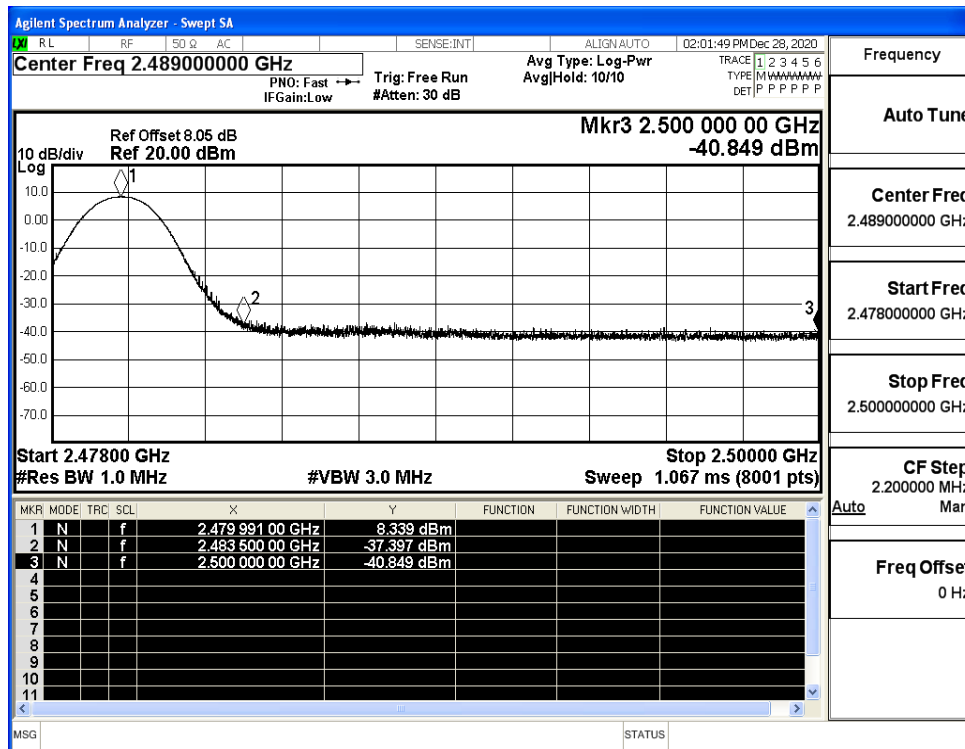
Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_PEAK (Low Channel)



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)

