

Appendix A

RF Test Data for BT V4.0(BDR/EDR) (Conducted Measurement)

Product Name: Tablet

Trade Mark: N/A

Test Model: I1401

Environmental Conditions

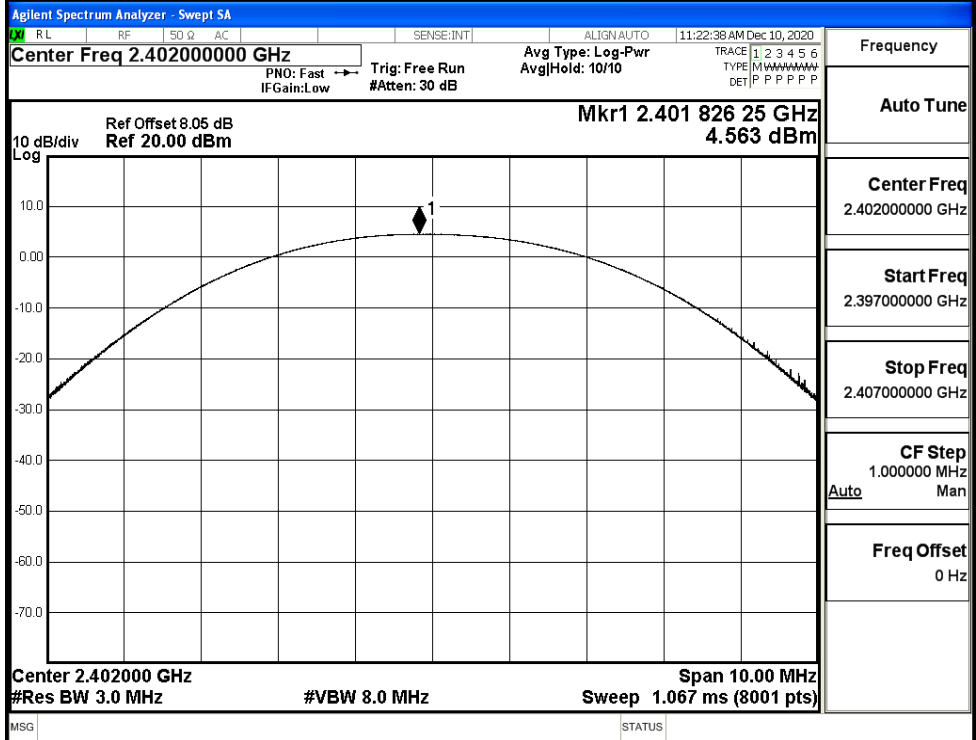
Temperature:	24.6° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Ben Jin
Supervised by:	Li Huan

A.1 Maximum Conducted Peak Output Power

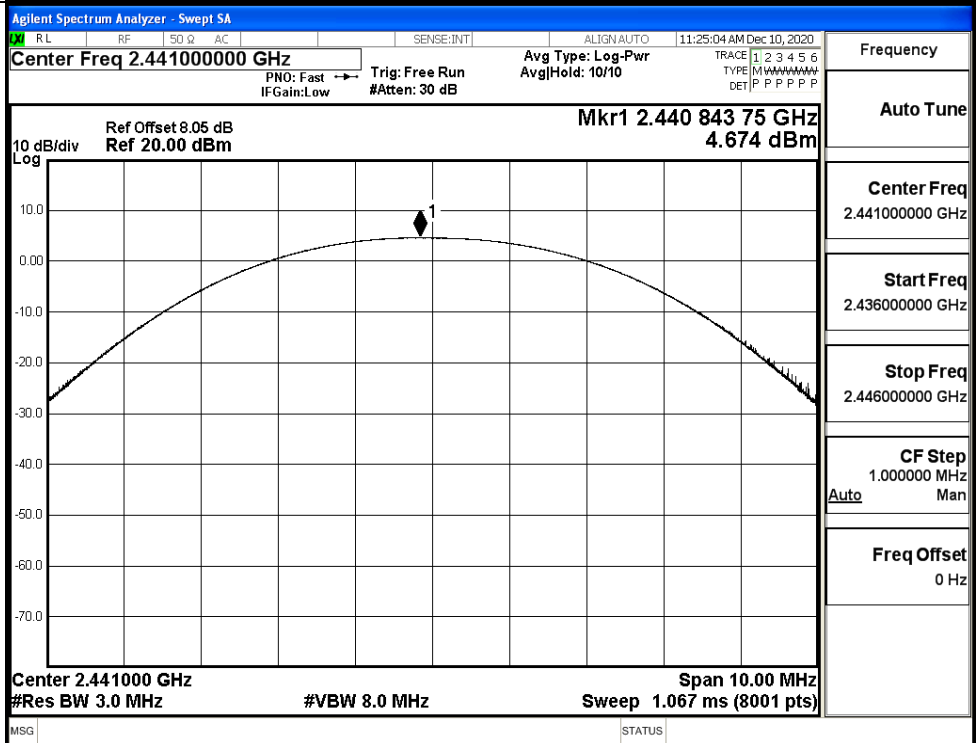
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	4.563	21	PASS
	MCH	4.674	21	PASS
	HCH	3.592	21	PASS
π/4DQPSK	LCH	5.464	21	PASS
	MCH	5.562	21	PASS
	HCH	4.731	21	PASS
8DPSK	LCH	5.778	21	PASS
	MCH	5.876	21	PASS
	HCH	5.045	21	PASS

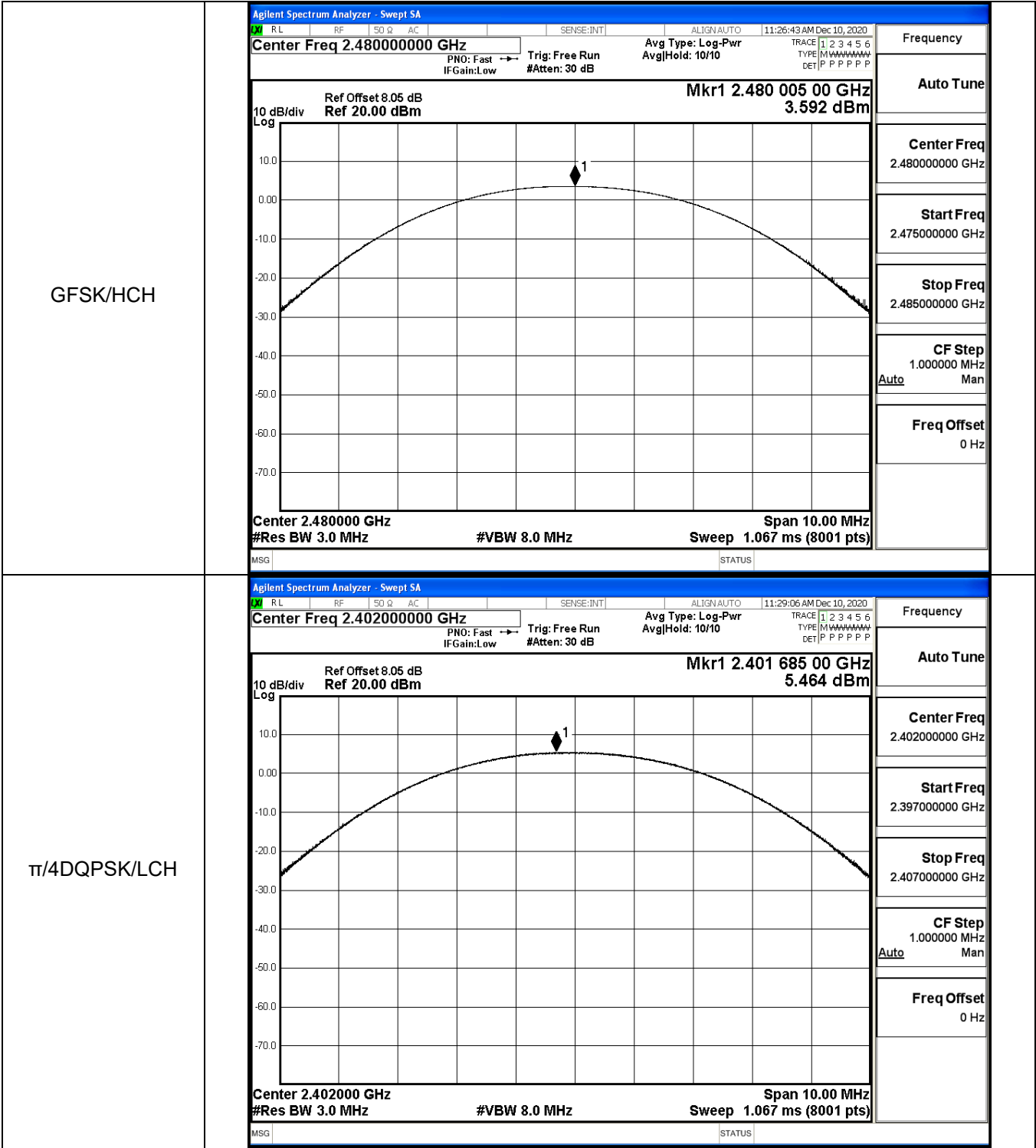
Test Graphs

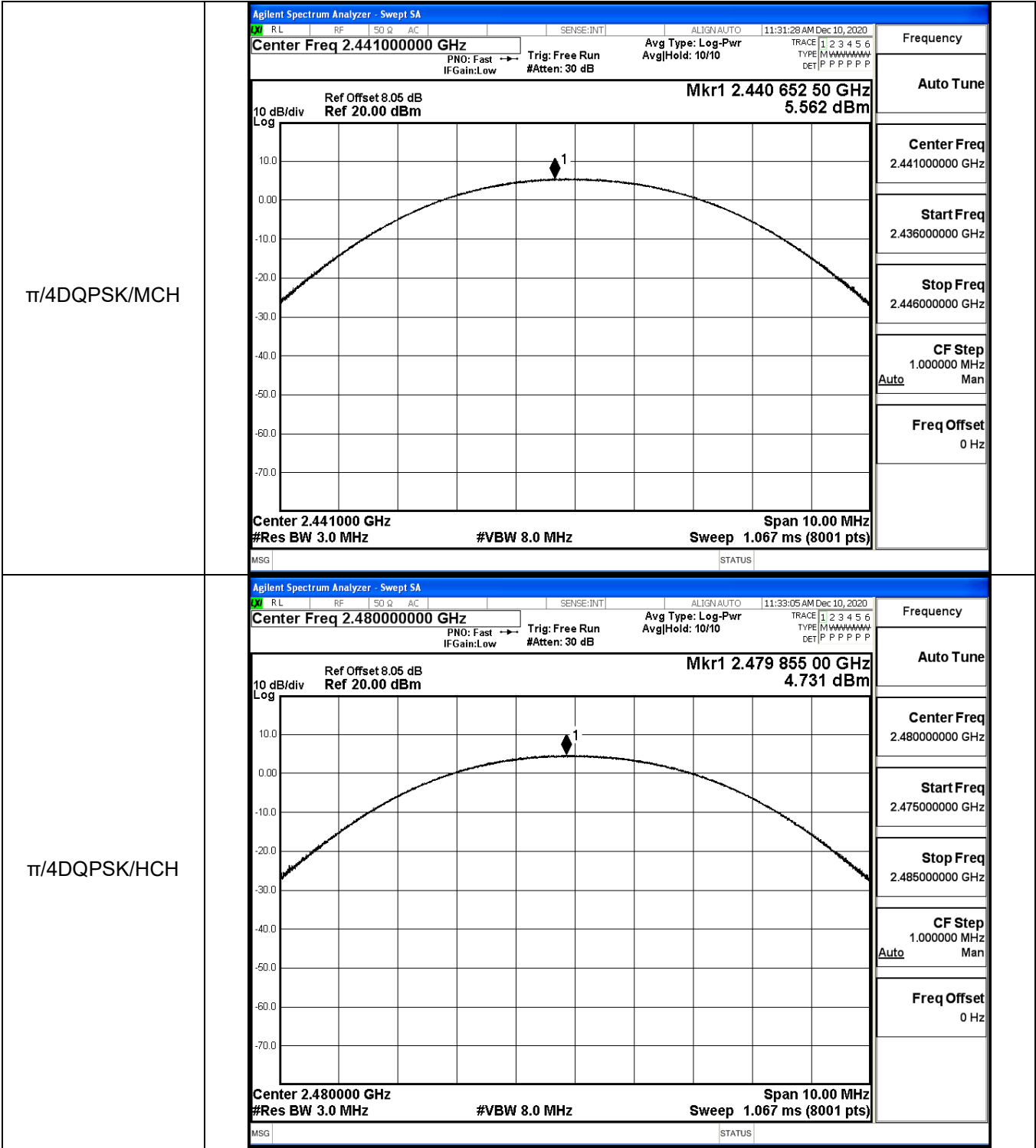
GFSK/LCH

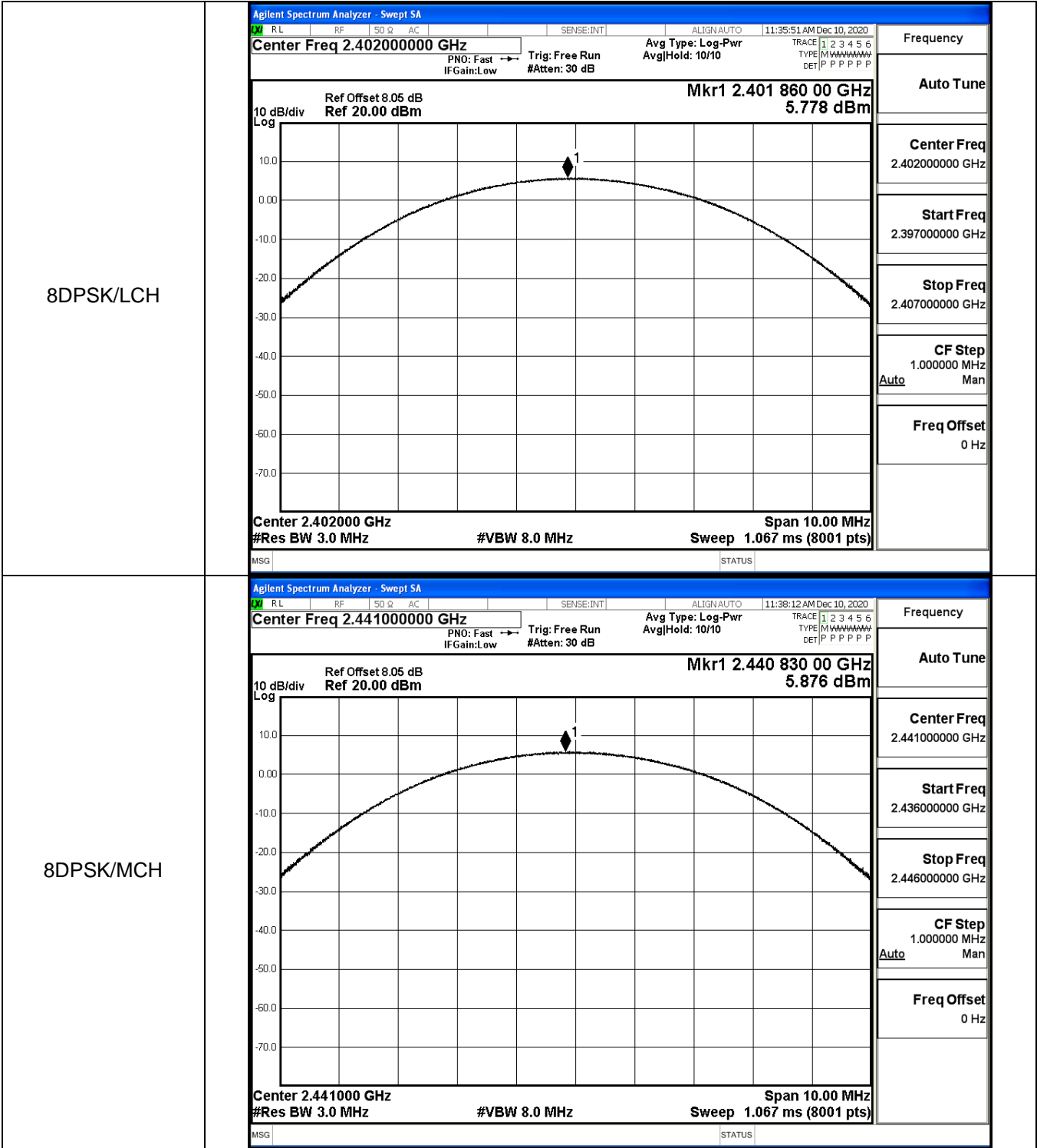


GFSK/MCH

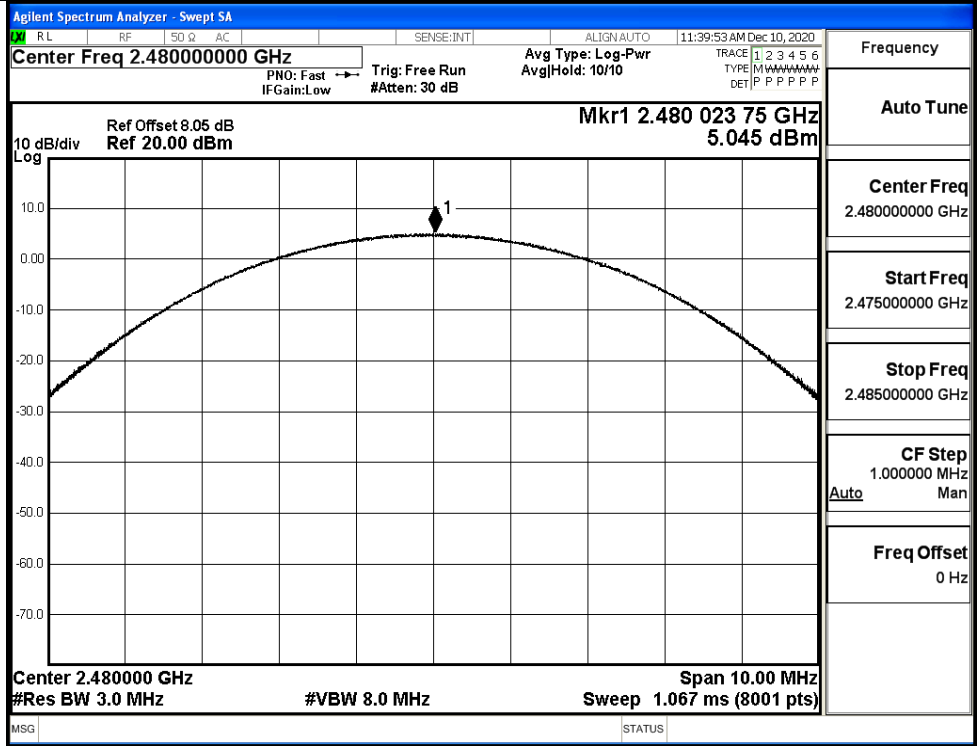






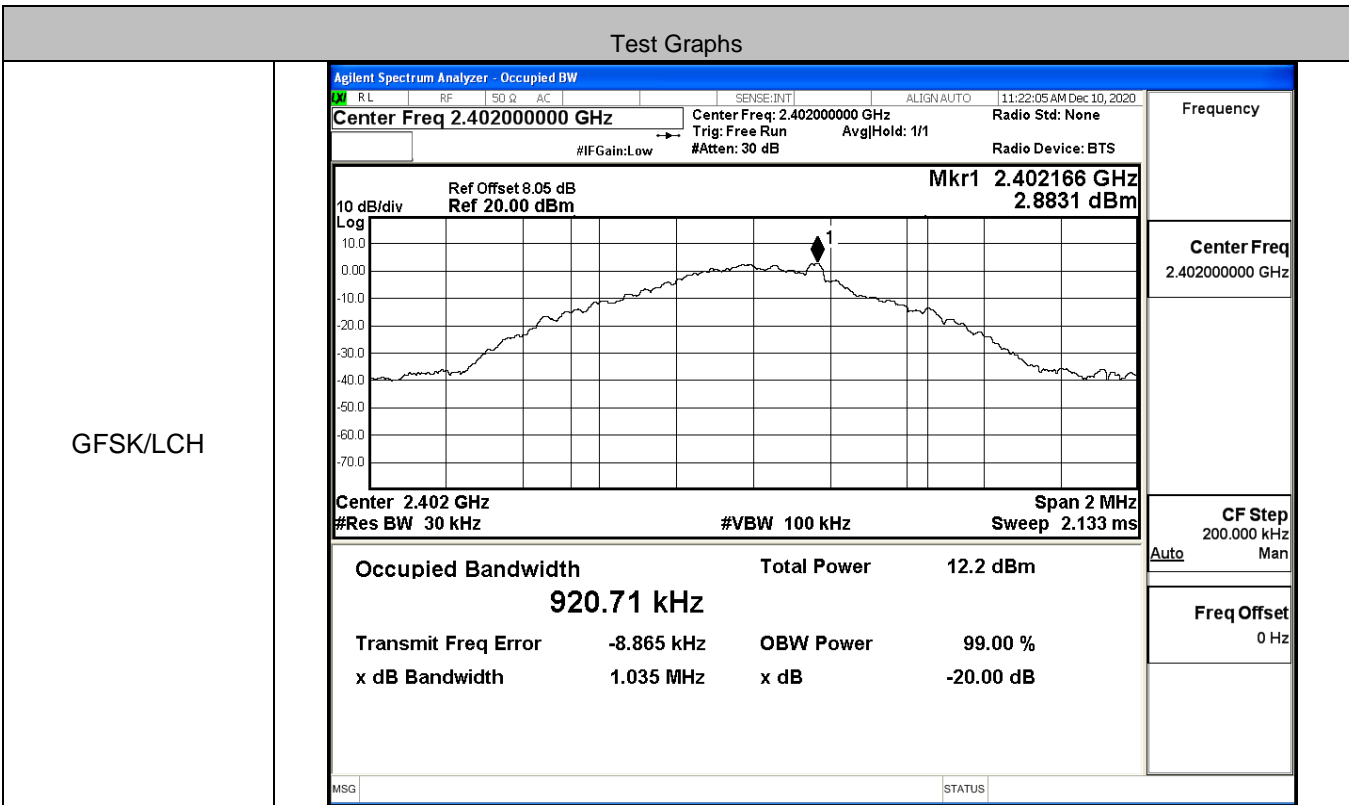


8DPSK/HCH

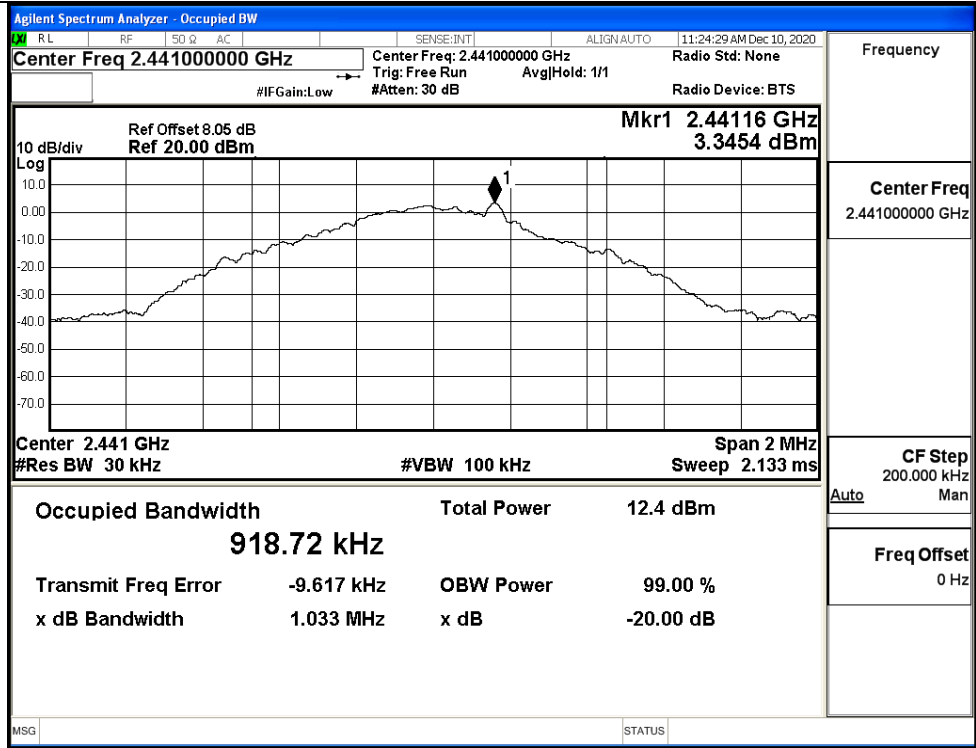


A.2 20dB Bandwidth

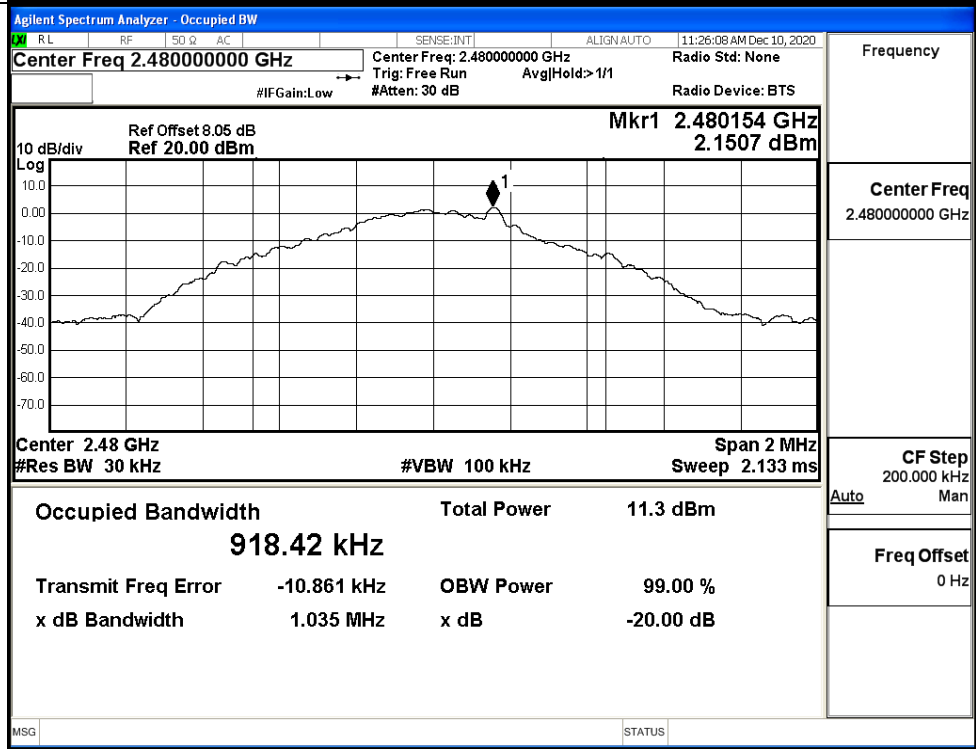
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.035	Not Specified	PASS
	MCH	1.033	Not Specified	PASS
	HCH	1.035	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.287	Not Specified	PASS
	MCH	1.294	Not Specified	PASS
	HCH	1.293	Not Specified	PASS
8DPSK	LCH	1.293	Not Specified	PASS
	MCH	1.293	Not Specified	PASS
	HCH	1.292	Not Specified	PASS



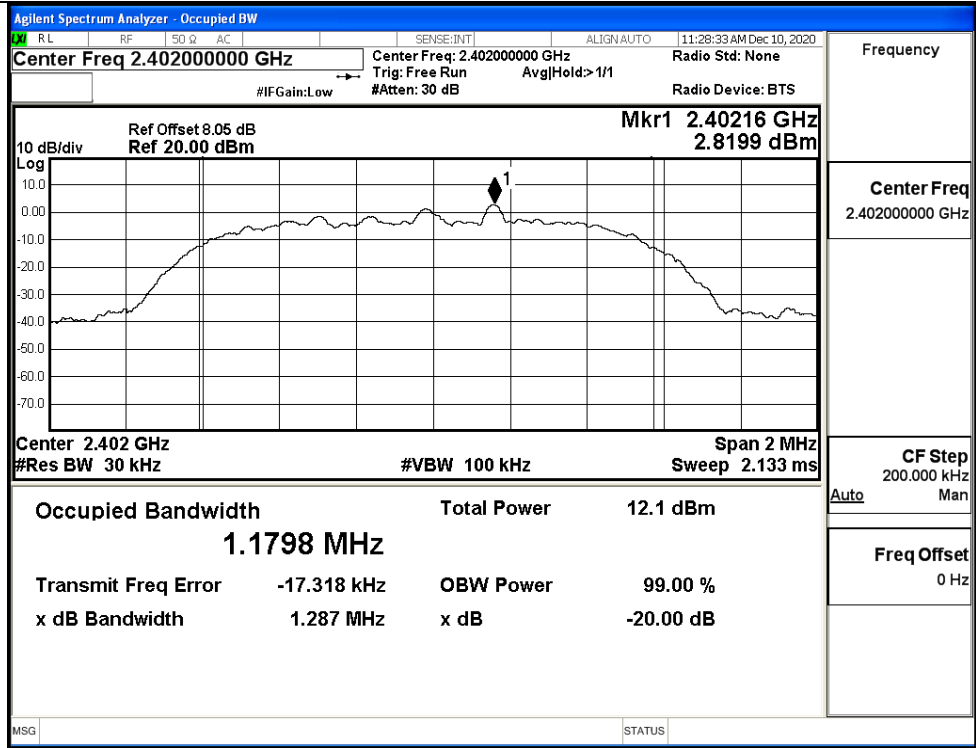
GFSK/MCH



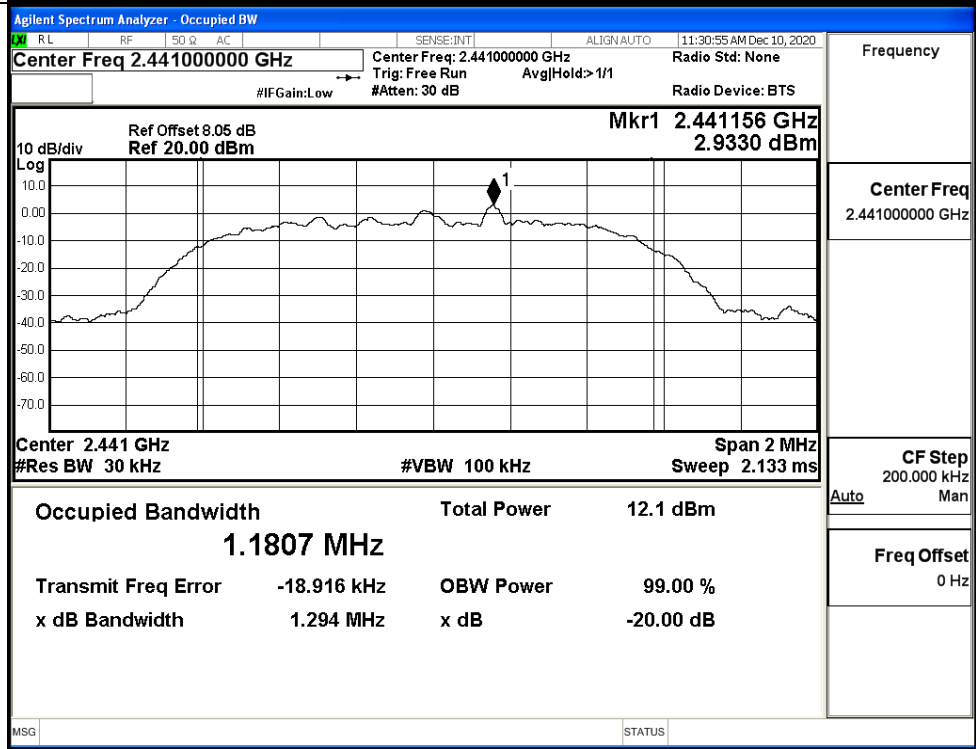
GFSK/HCH

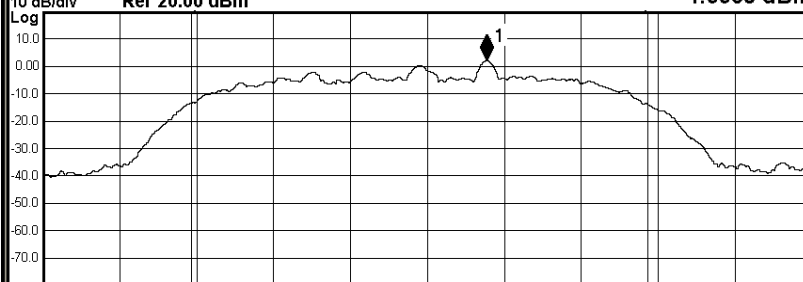
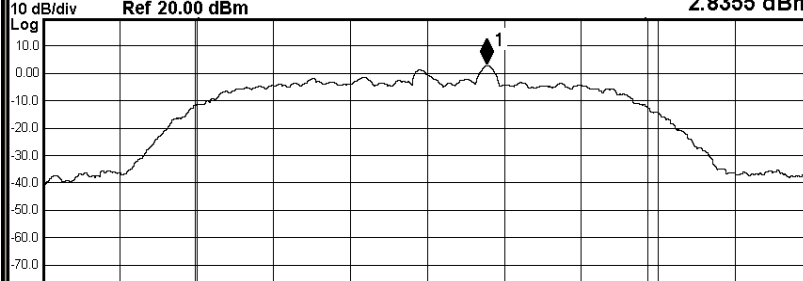


$\pi/4$ DQPSK/LCH

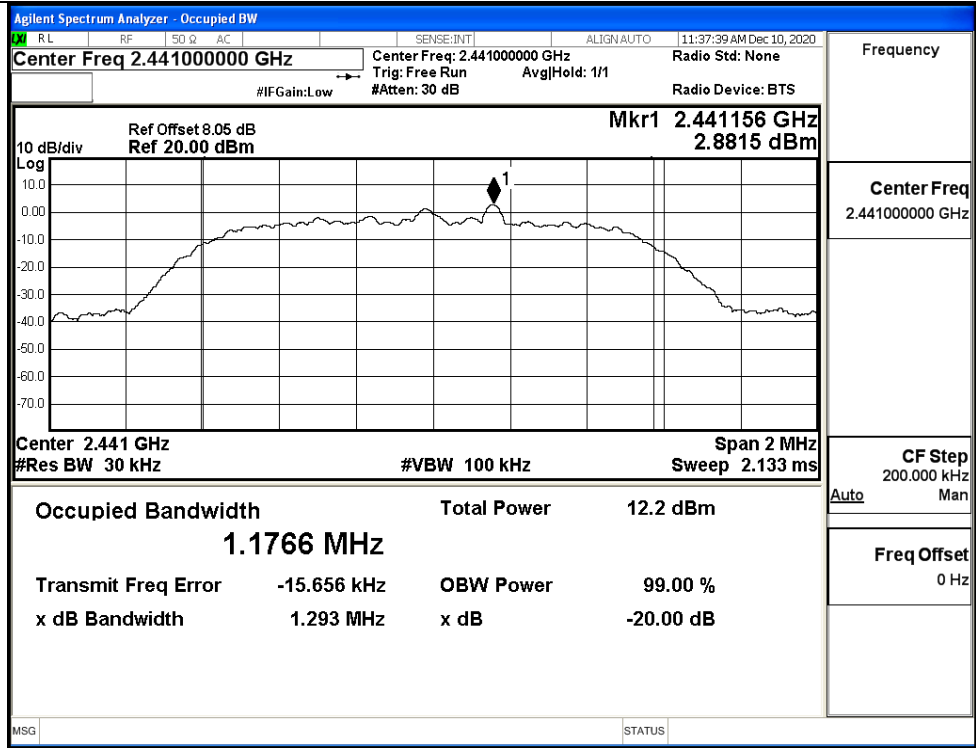


$\pi/4$ DQPSK/MCH

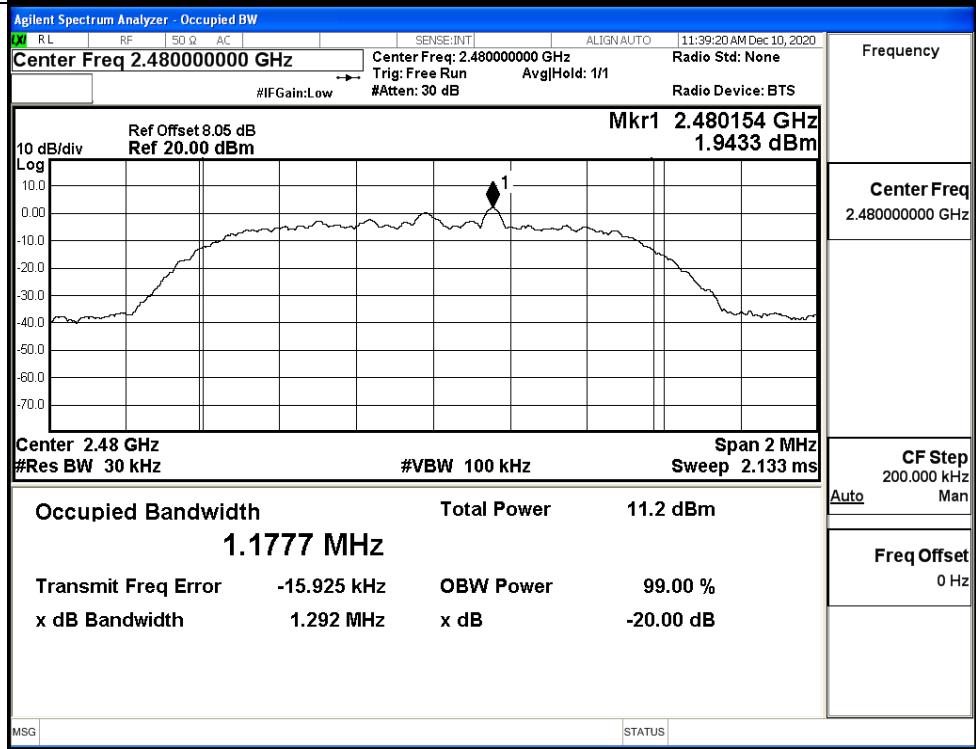


<p style="text-align: center;">π/4DQPSK/HCH</p>	<div style="border: 1px solid black; padding: 5px;"> <p style="font-size: small; margin: 0;">Agilent Spectrum Analyzer - Occupied BW</p> <p style="font-size: x-small; margin: 0;"> <input checked="" type="checkbox"/> RL <input type="checkbox"/> RF <input type="checkbox"/> 50 Ω <input type="checkbox"/> AC <input type="checkbox"/> SENSE:INT <input type="checkbox"/> ALIGN:AUTO 11:32:32 AM Dec 10, 2020 </p> <p style="margin: 0;"> Center Freq 2.48000000 GHz Center Freq: 2.48000000 GHz Radio Std: None Trig: Free Run Avg Hold: 1/1 #IFGain:Low #Atten: 30 dB Radio Device: BTS </p> <hr/> <p style="text-align: right; font-weight: bold;">Mkr1 2.480154 GHz 1.9938 dBm</p> <p style="font-size: x-small; margin: 0;">10 dB/div Ref Offset 8.05 dB Ref 20.00 dBm</p>  <p style="font-size: x-small; margin: 0;">Center 2.48 GHz Span 2 MHz #Res BW 30 kHz #VBW 100 kHz Sweep 2.133 ms</p> <table style="width: 100%; font-size: x-small; border-collapse: collapse;"> <tr> <td style="width: 33%;">Occupied Bandwidth</td> <td style="width: 33%;">Total Power</td> <td style="width: 33%;">11.2 dBm</td> </tr> <tr> <td style="text-align: center; font-weight: bold;">1.1814 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>-18.821 kHz</td> <td>OBW Power</td> </tr> <tr> <td>x dB Bandwidth</td> <td>1.293 MHz</td> <td>x dB</td> </tr> <tr> <td></td> <td></td> <td>-20.00 dB</td> </tr> </table> <p style="font-size: x-small; margin: 0;">MSG STATUS</p> </div>	Occupied Bandwidth	Total Power	11.2 dBm	1.1814 MHz			Transmit Freq Error	-18.821 kHz	OBW Power	x dB Bandwidth	1.293 MHz	x dB			-20.00 dB	<p style="font-size: x-small;">Frequency</p> <p style="font-size: x-small;">Center Freq 2.48000000 GHz</p> <p style="font-size: x-small;">CF Step 200.000 kHz Auto Man</p> <p style="font-size: x-small;">Freq Offset 0 Hz</p>
Occupied Bandwidth	Total Power	11.2 dBm															
1.1814 MHz																	
Transmit Freq Error	-18.821 kHz	OBW Power															
x dB Bandwidth	1.293 MHz	x dB															
		-20.00 dB															
<p style="text-align: center;">8DPSK/LCH</p>	<div style="border: 1px solid black; padding: 5px;"> <p style="font-size: small; margin: 0;">Agilent Spectrum Analyzer - Occupied BW</p> <p style="font-size: x-small; margin: 0;"> <input checked="" type="checkbox"/> RL <input type="checkbox"/> RF <input type="checkbox"/> 50 Ω <input type="checkbox"/> AC <input type="checkbox"/> SENSE:INT <input type="checkbox"/> ALIGN:AUTO 11:35:17 AM Dec 10, 2020 </p> <p style="margin: 0;"> Center Freq 2.40200000 GHz Center Freq: 2.40200000 GHz Radio Std: None Trig: Free Run Avg Hold: 1/1 #IFGain:Low #Atten: 30 dB Radio Device: BTS </p> <hr/> <p style="text-align: right; font-weight: bold;">Mkr1 2.402154 GHz 2.8355 dBm</p> <p style="font-size: x-small; margin: 0;">10 dB/div Ref Offset 8.05 dB Ref 20.00 dBm</p>  <p style="font-size: x-small; margin: 0;">Center 2.402 GHz Span 2 MHz #Res BW 30 kHz #VBW 100 kHz Sweep 2.133 ms</p> <table style="width: 100%; font-size: x-small; border-collapse: collapse;"> <tr> <td style="width: 33%;">Occupied Bandwidth</td> <td style="width: 33%;">Total Power</td> <td style="width: 33%;">12.0 dBm</td> </tr> <tr> <td style="text-align: center; font-weight: bold;">1.1758 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>-14.987 kHz</td> <td>OBW Power</td> </tr> <tr> <td>x dB Bandwidth</td> <td>1.293 MHz</td> <td>x dB</td> </tr> <tr> <td></td> <td></td> <td>-20.00 dB</td> </tr> </table> <p style="font-size: x-small; margin: 0;">MSG STATUS</p> </div>	Occupied Bandwidth	Total Power	12.0 dBm	1.1758 MHz			Transmit Freq Error	-14.987 kHz	OBW Power	x dB Bandwidth	1.293 MHz	x dB			-20.00 dB	<p style="font-size: x-small;">Frequency</p> <p style="font-size: x-small;">Center Freq 2.40200000 GHz</p> <p style="font-size: x-small;">CF Step 200.000 kHz Auto Man</p> <p style="font-size: x-small;">Freq Offset 0 Hz</p>
Occupied Bandwidth	Total Power	12.0 dBm															
1.1758 MHz																	
Transmit Freq Error	-14.987 kHz	OBW Power															
x dB Bandwidth	1.293 MHz	x dB															
		-20.00 dB															

8DPSK/MCH

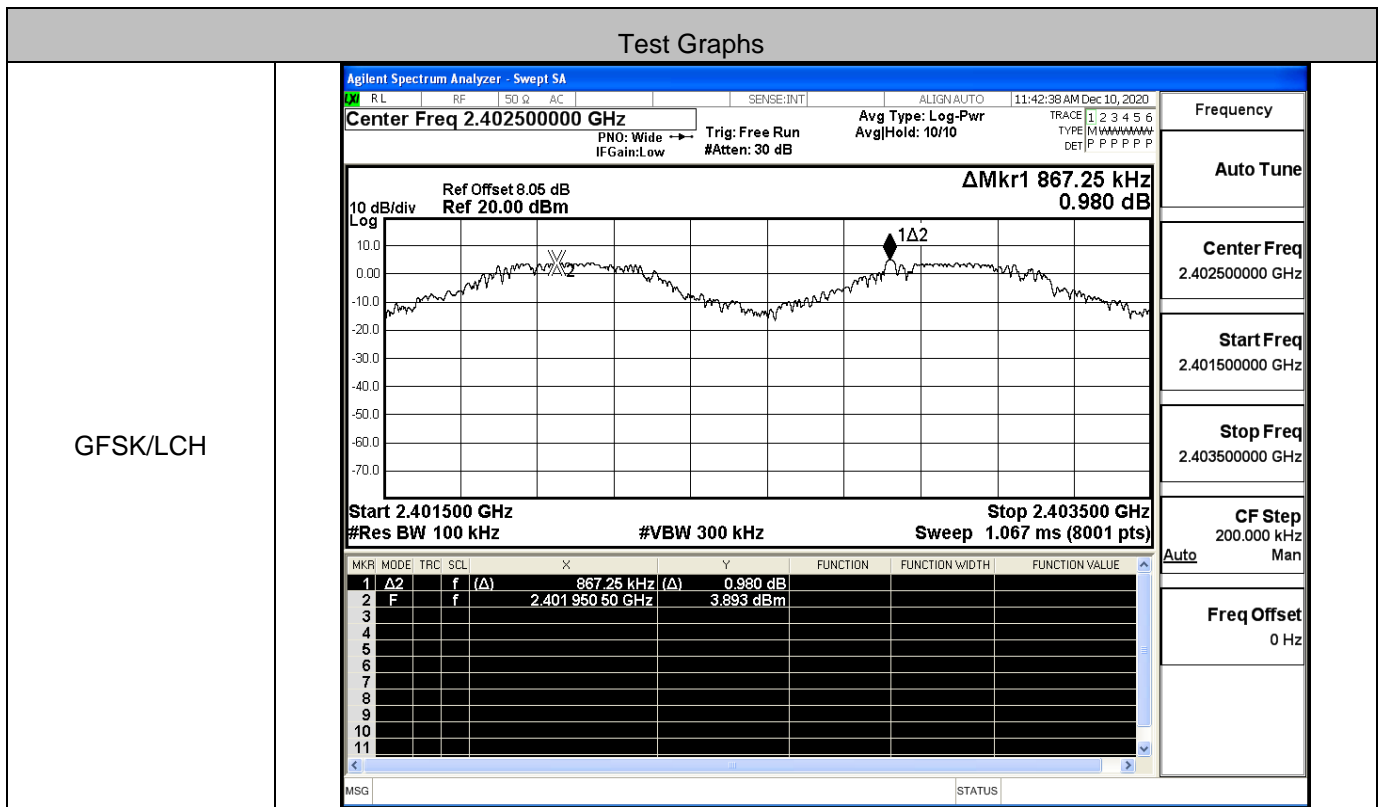


8DPSK/HCH

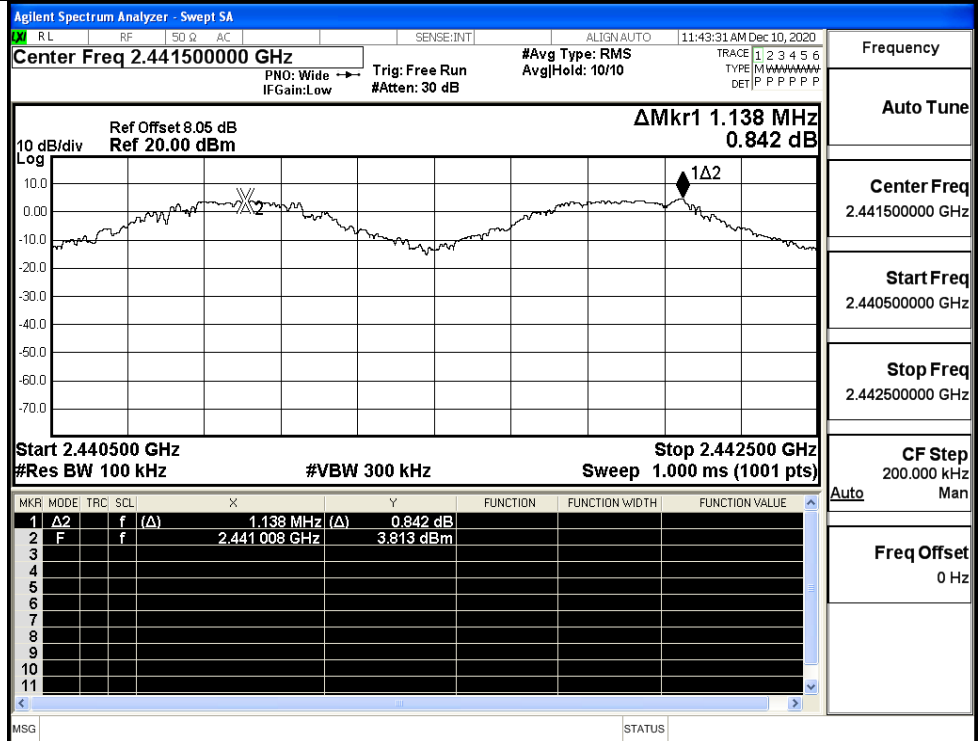


A.3 Carrier Frequency Separation

Mode	Channel	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.867	0.690	PASS
	MCH	1.138	0.690	PASS
	HCH	0.958	0.690	PASS
π/4DQPSK	LCH	1.362	0.863	PASS
	MCH	1.344	0.863	PASS
	HCH	1.348	0.863	PASS
8DPSK	LCH	1.132	0.862	PASS
	MCH	1.004	0.862	PASS
	HCH	1.340	0.862	PASS

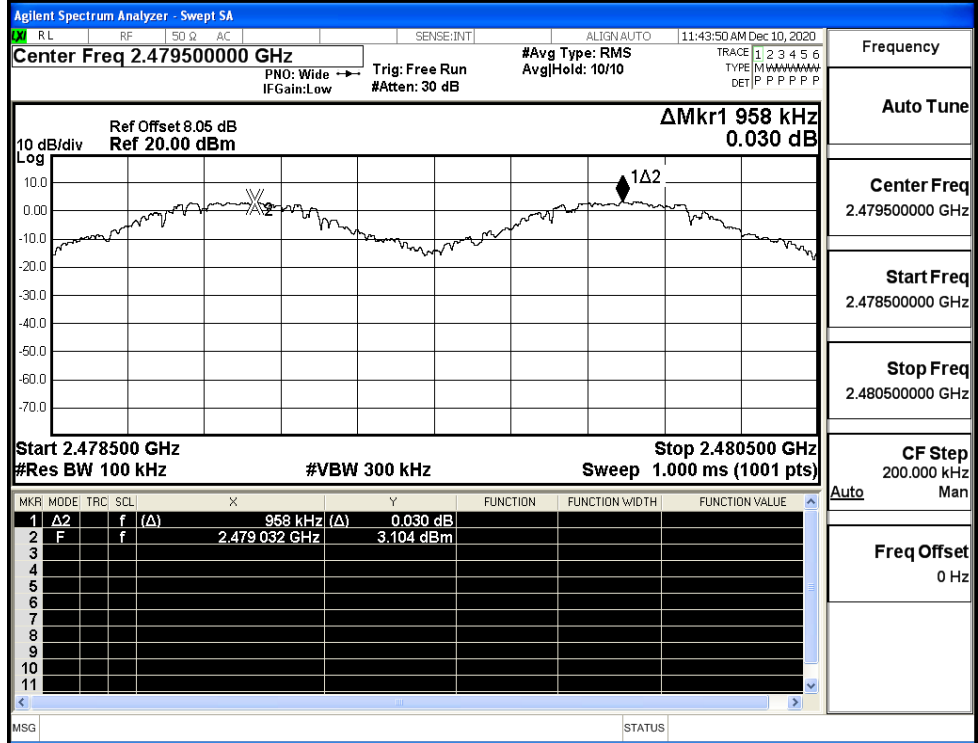


GFSK/MCH



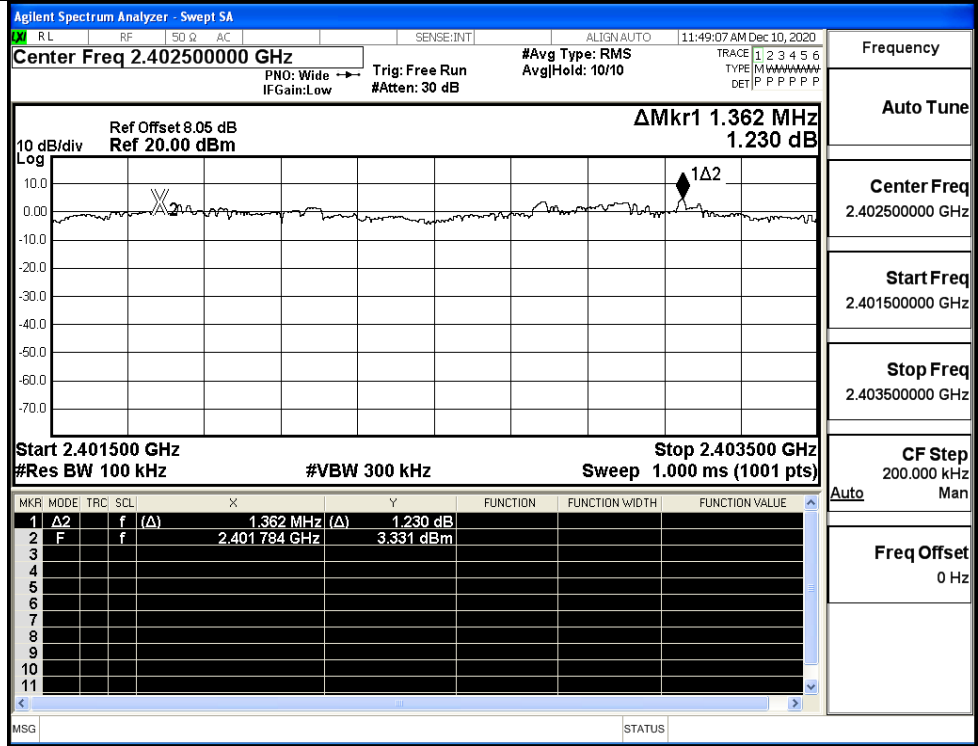
Frequency
Auto Tune
Center Freq
2.441500000 GHz
Start Freq
2.440500000 GHz
Stop Freq
2.442500000 GHz
CF Step
200.000 kHz
Auto Man
Freq Offset
0 Hz

GFSK/HCH



Frequency
Auto Tune
Center Freq
2.479500000 GHz
Start Freq
2.478500000 GHz
Stop Freq
2.480500000 GHz
CF Step
200.000 kHz
Auto Man
Freq Offset
0 Hz

$\pi/4$ DQPSK/LCH



Frequency

Auto Tune

Center Freq
2.402500000 GHz

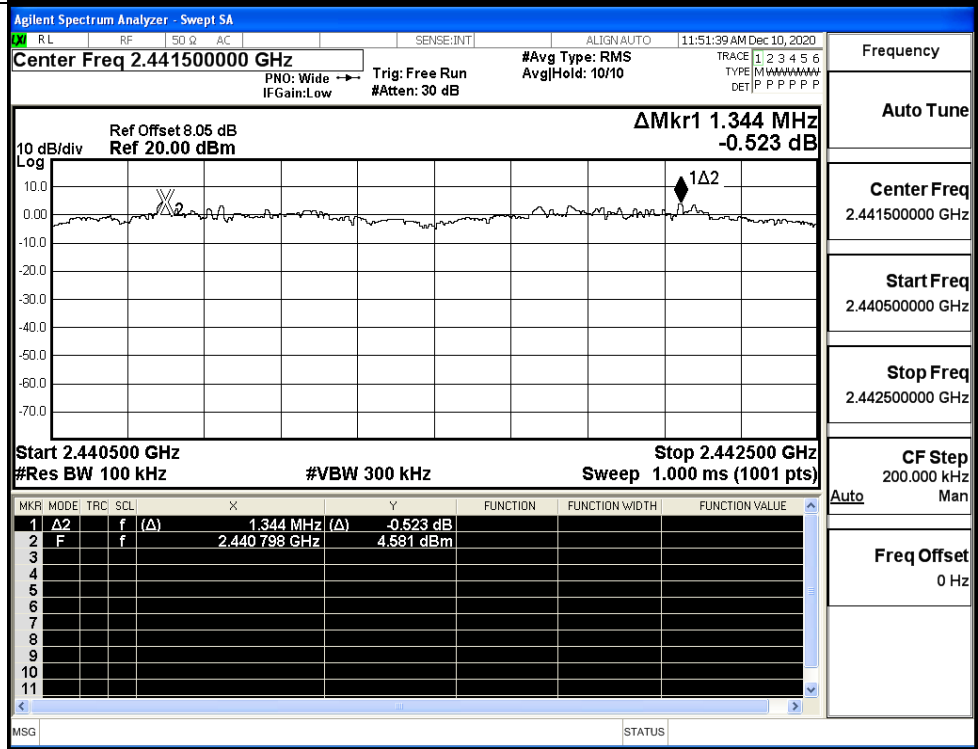
Start Freq
2.401500000 GHz

Stop Freq
2.403500000 GHz

CF Step
200.000 kHz

Freq Offset
0 Hz

$\pi/4$ DQPSK/MCH



Frequency

Auto Tune

Center Freq
2.441500000 GHz

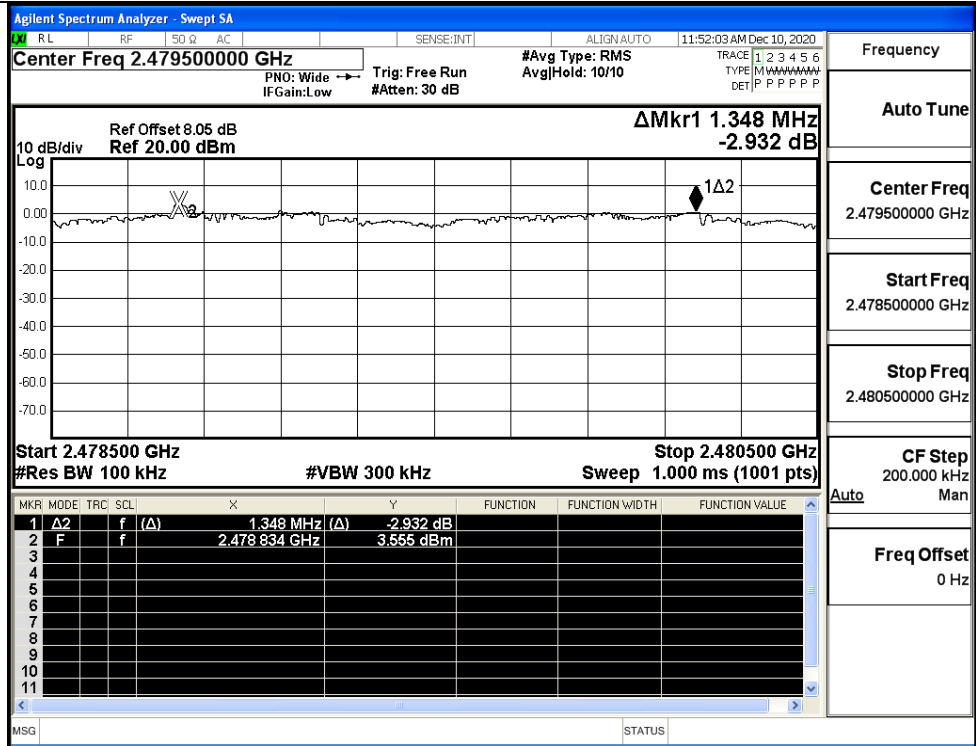
Start Freq
2.440500000 GHz

Stop Freq
2.442500000 GHz

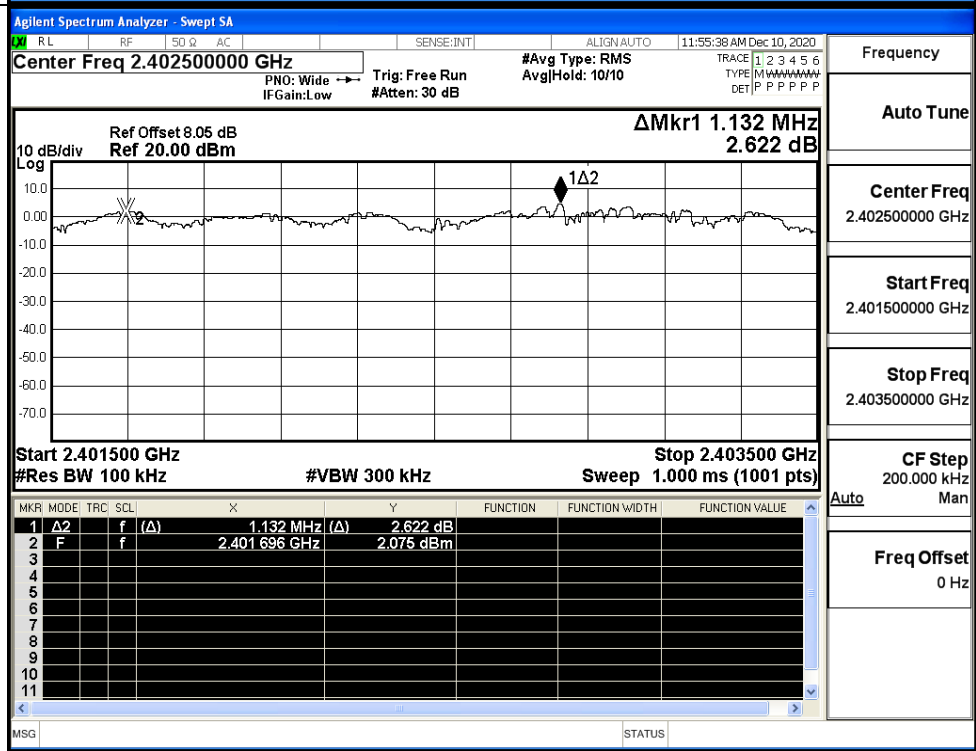
CF Step
200.000 kHz

Freq Offset
0 Hz

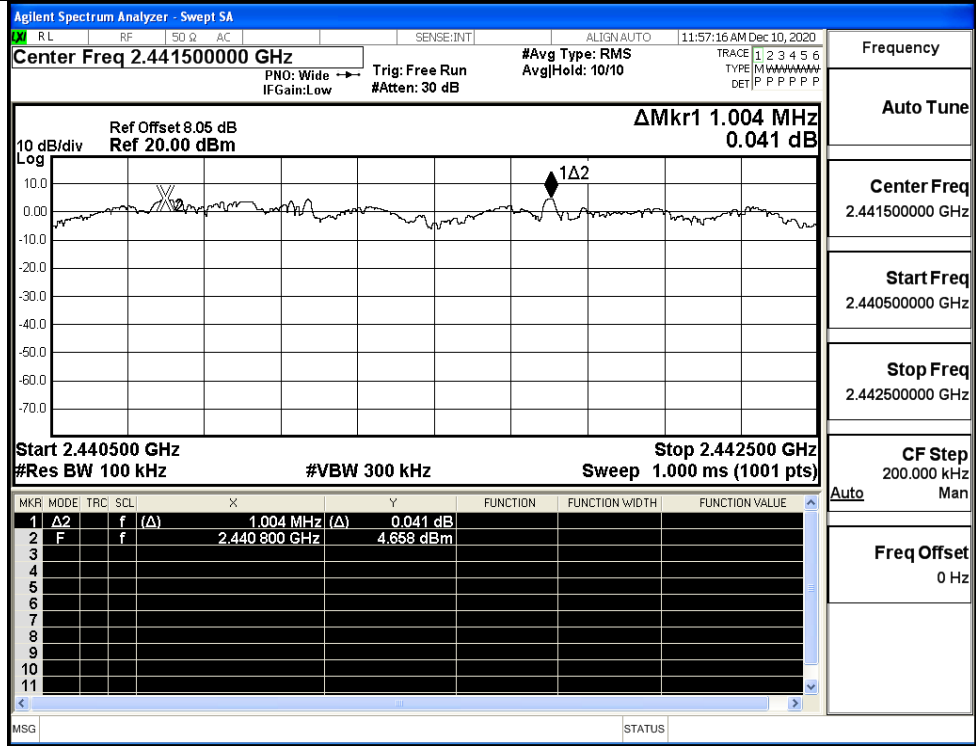
π/4DQPSK/HCH



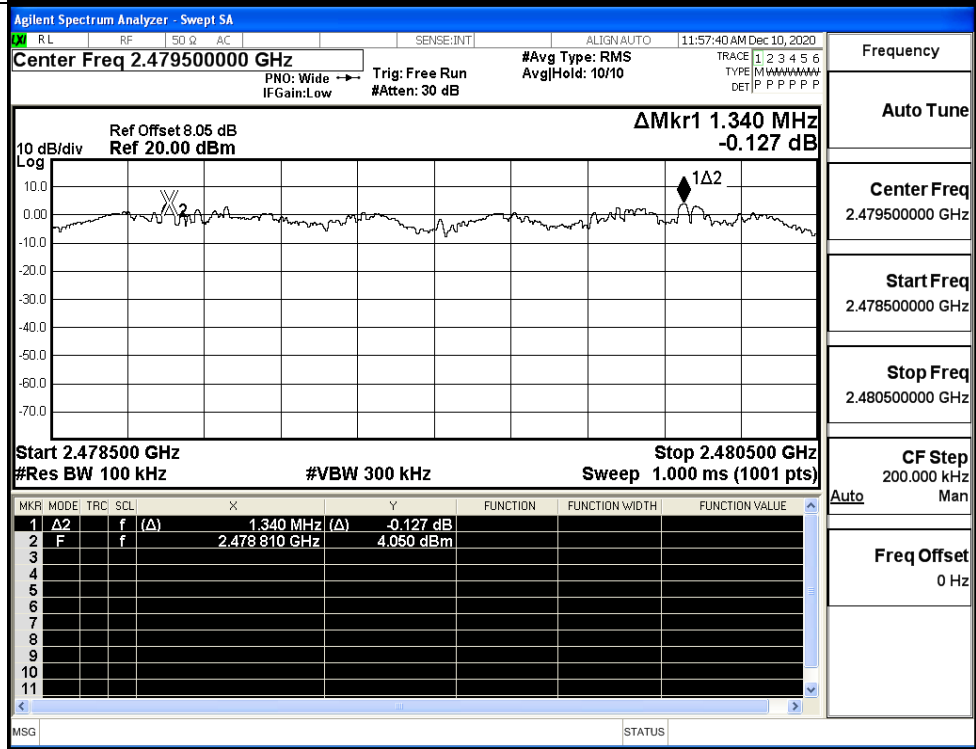
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH



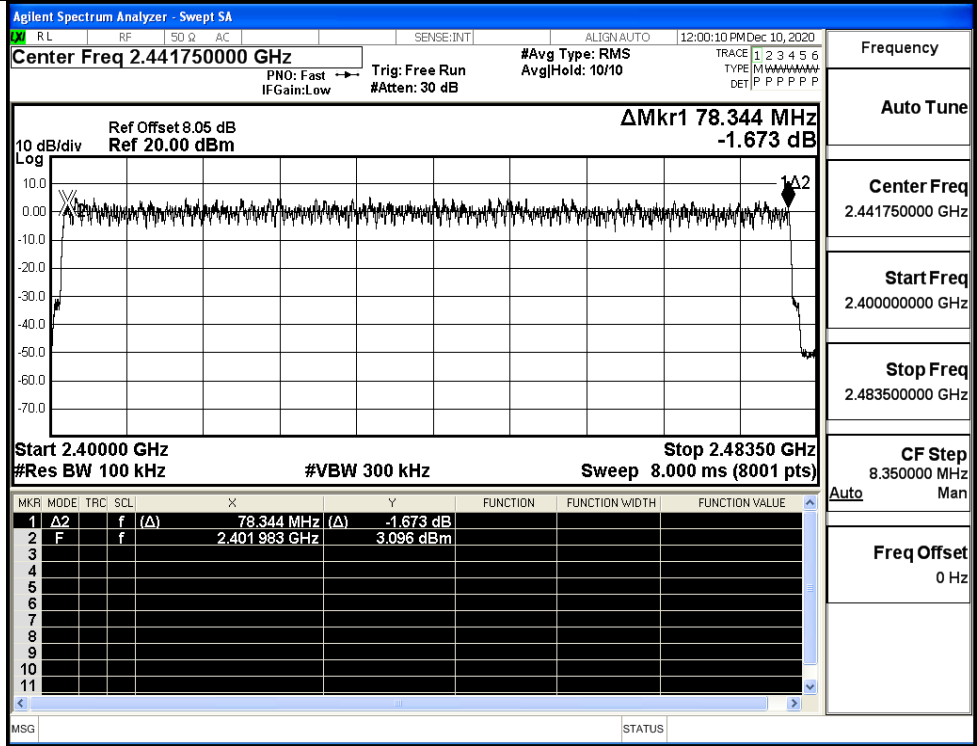
A.4 Hopping Channel Number

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

Test Graphs

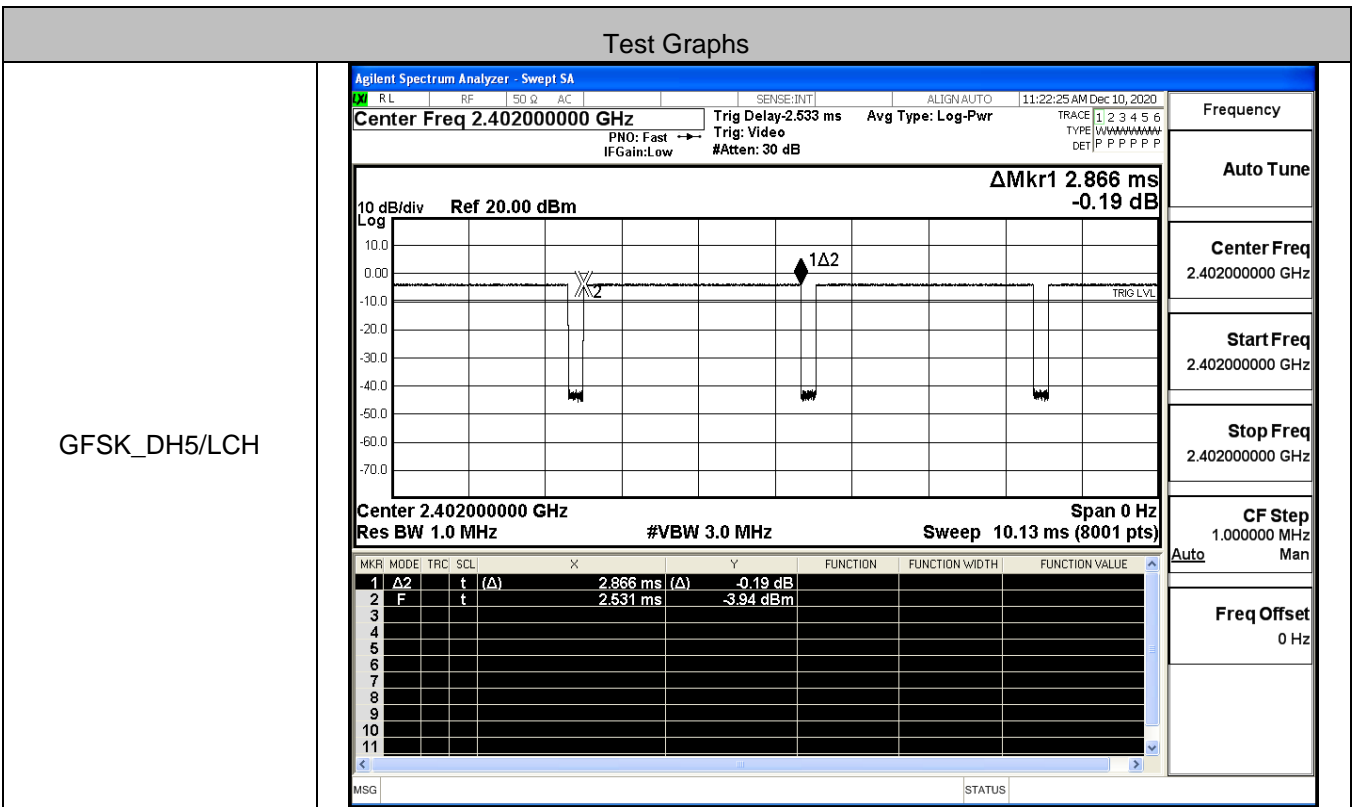
GFSK/Hop	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 2.441750000 GHz Ref Offset 8.05 dB Ref 20.00 dBm ΔMkr1 77.874 MHz -0.585 dB Start 2.40000 GHz Stop 2.48350 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 8.000 ms (8001 pts)</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: 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>Δ2</td> <td>f</td> <td>(Δ)</td> <td>77.874 MHz (Δ)</td> <td>-0.585 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td>(Δ)</td> <td>2.402035 GHz</td> <td>4.171 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	Δ2	f	(Δ)	77.874 MHz (Δ)	-0.585 dB				2	F	f	(Δ)	2.402035 GHz	4.171 dBm				Frequency Auto Tune Center Freq 2.441750000 GHz Start Freq 2.400000000 GHz Stop Freq 2.483500000 GHz CF Step 8.350000 MHz Man Auto Freq Offset 0 Hz
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
1	Δ2	f	(Δ)	77.874 MHz (Δ)	-0.585 dB																								
2	F	f	(Δ)	2.402035 GHz	4.171 dBm																								
$\pi/4$ DQPSK/Hop	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 2.441750000 GHz Ref Offset 8.05 dB Ref 20.00 dBm ΔMkr1 78.010 MHz -0.259 dB Start 2.40000 GHz Stop 2.48350 GHz #Res BW 100 kHz #VBW 300 kHz 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>Δ2</td> <td>f</td> <td>(Δ)</td> <td>78.010 MHz (Δ)</td> <td>-0.259 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td>(Δ)</td> <td>2.401816 GHz</td> <td>4.144 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	Δ2	f	(Δ)	78.010 MHz (Δ)	-0.259 dB				2	F	f	(Δ)	2.401816 GHz	4.144 dBm				Frequency Auto Tune Center Freq 2.441750000 GHz Start Freq 2.400000000 GHz Stop Freq 2.483500000 GHz CF Step 8.350000 MHz Man Auto Freq Offset 0 Hz
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
1	Δ2	f	(Δ)	78.010 MHz (Δ)	-0.259 dB																								
2	F	f	(Δ)	2.401816 GHz	4.144 dBm																								

8DPSK/Hop

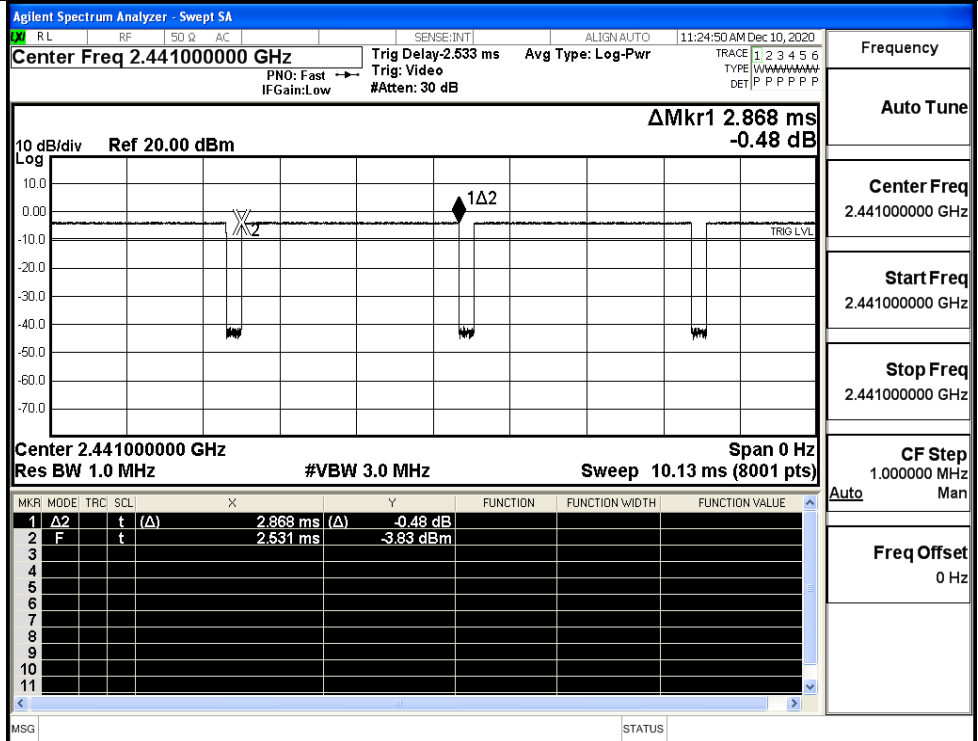


A.5 Dwell Time

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.87	106.7	0.306	0.4	PASS
	DH5	MCH	2.87	106.7	0.306	0.4	PASS
	DH5	HCH	2.87	106.7	0.306	0.4	PASS
π/4DQPSK	2DH5	LCH	2.87	106.7	0.307	0.4	PASS
	2DH5	MCH	2.87	106.7	0.307	0.4	PASS
	2DH5	HCH	2.87	106.7	0.307	0.4	PASS
8DPSK	3DH5	LCH	2.87	106.7	0.308	0.4	PASS
	3DH5	MCH	2.87	106.7	0.307	0.4	PASS
	3DH5	HCH	2.87	106.7	0.307	0.4	PASS



GFSK_DH5/MCH



Frequency

Auto Tune

Center Freq
2.441000000 GHz

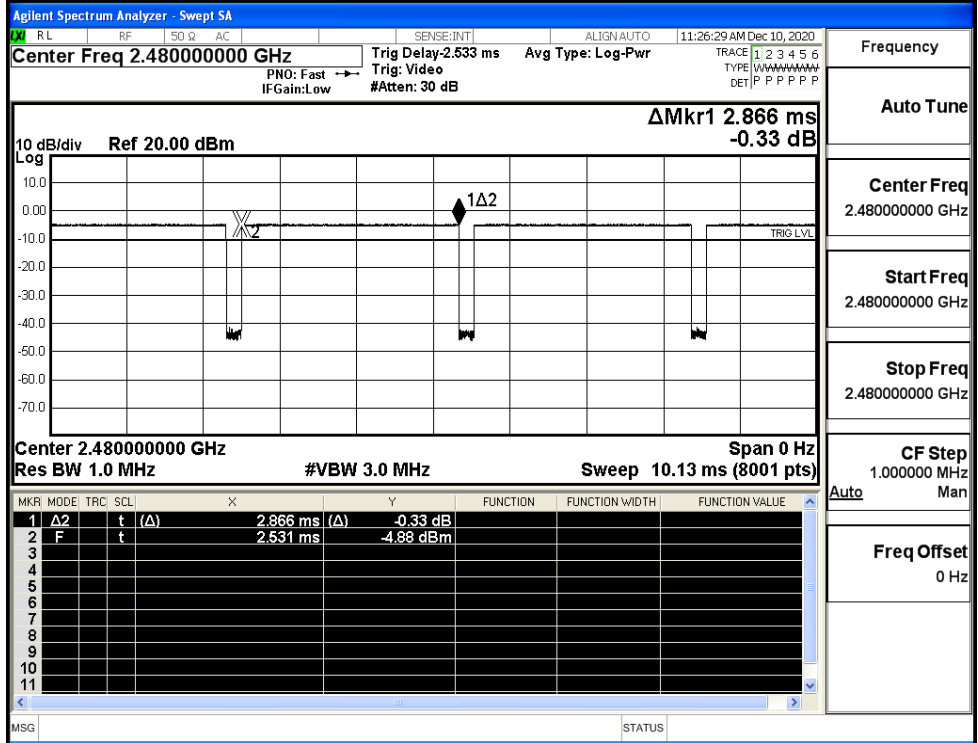
Start Freq
2.441000000 GHz

Stop Freq
2.441000000 GHz

CF Step
1.000000 MHz
Auto Man

Freq Offset
0 Hz

GFSK_DH5/HCH



Frequency

Auto Tune

Center Freq
2.480000000 GHz

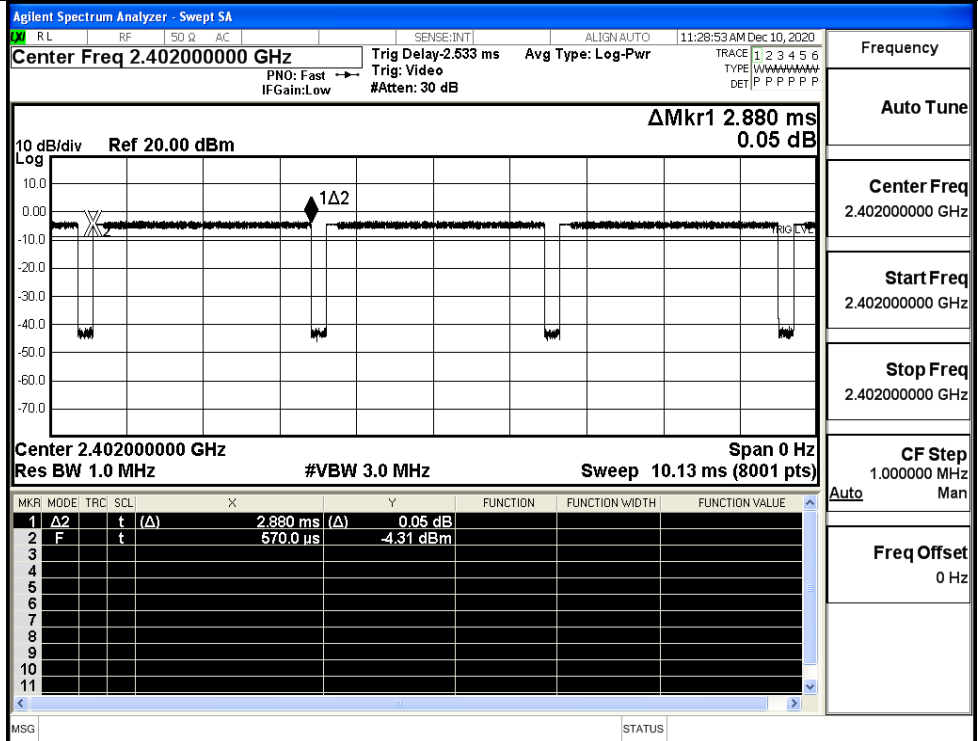
Start Freq
2.480000000 GHz

Stop Freq
2.480000000 GHz

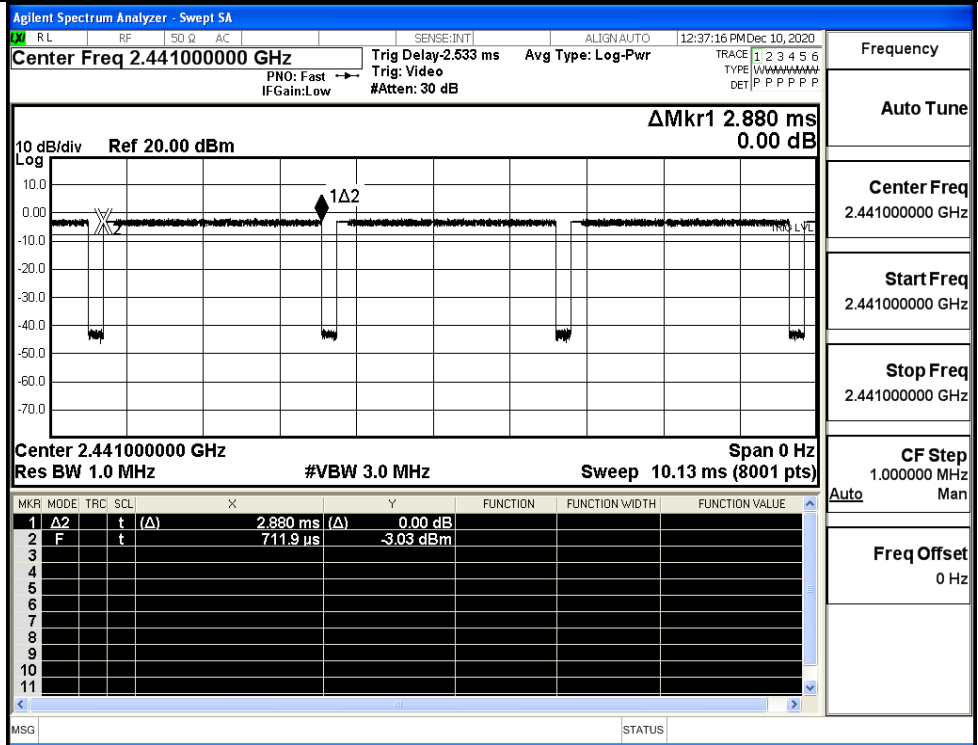
CF Step
1.000000 MHz
Auto Man

Freq Offset
0 Hz

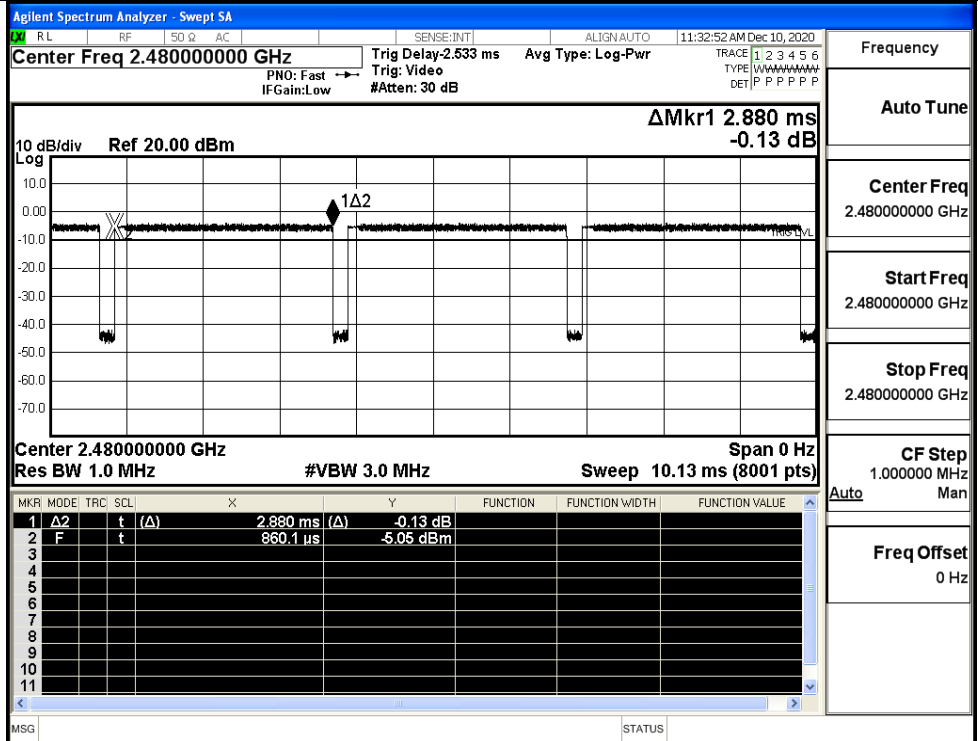
$\pi/4$ DQPSK
_2DH5/LCH



$\pi/4$ DQPSK
_2DH5/MCH

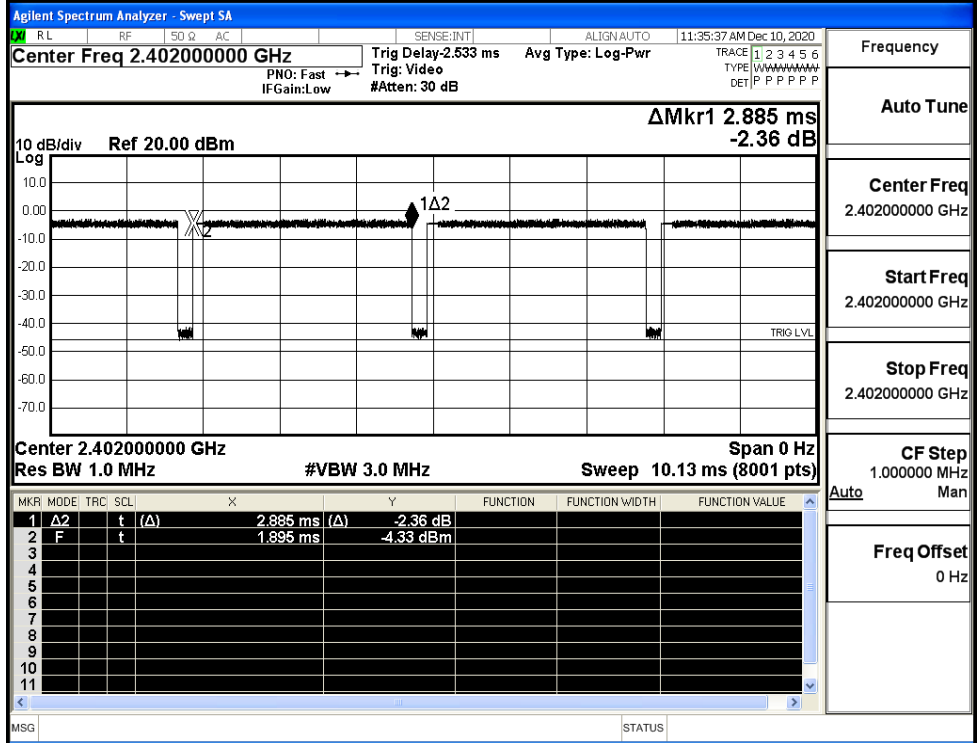


π /4DQPSK
_2DH5/HCH



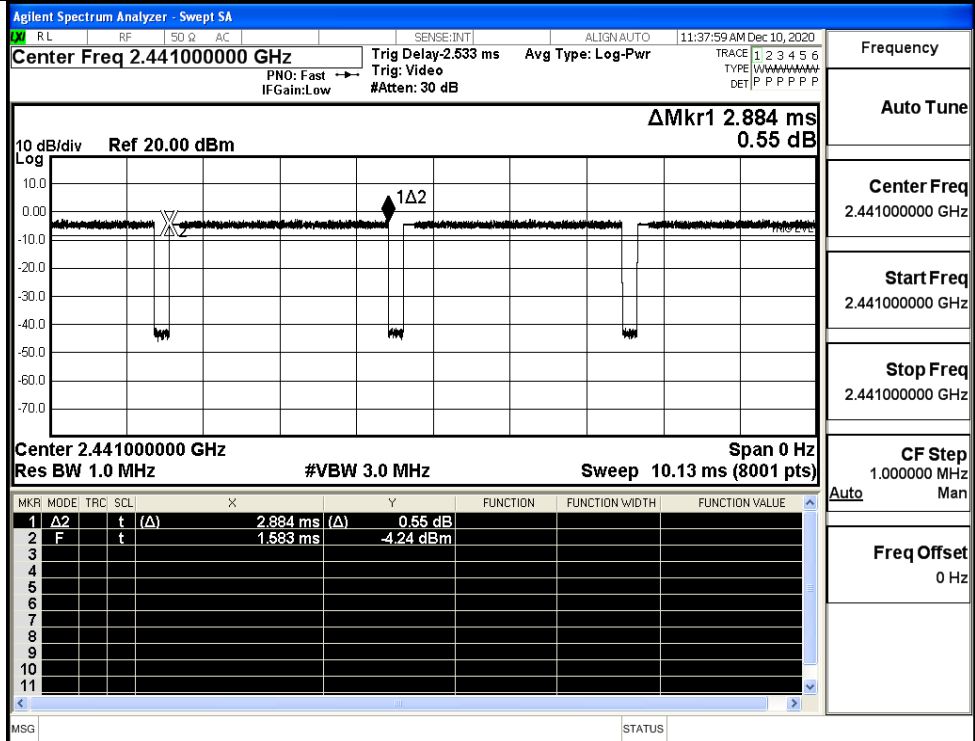
Frequency	2.480000000 GHz
Auto Tune	
Center Freq	2.480000000 GHz
Start Freq	2.480000000 GHz
Stop Freq	2.480000000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

8DPSK_3DH5/LCH

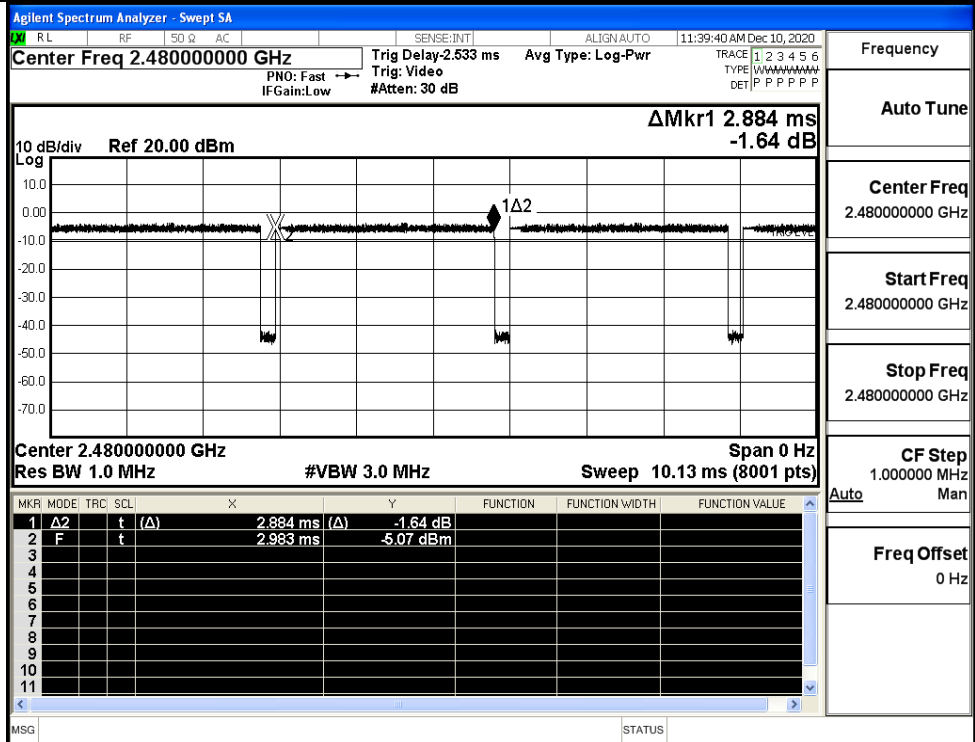


Frequency	2.402000000 GHz
Auto Tune	
Center Freq	2.402000000 GHz
Start Freq	2.402000000 GHz
Stop Freq	2.402000000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

8DPSK_3DH5/MCH



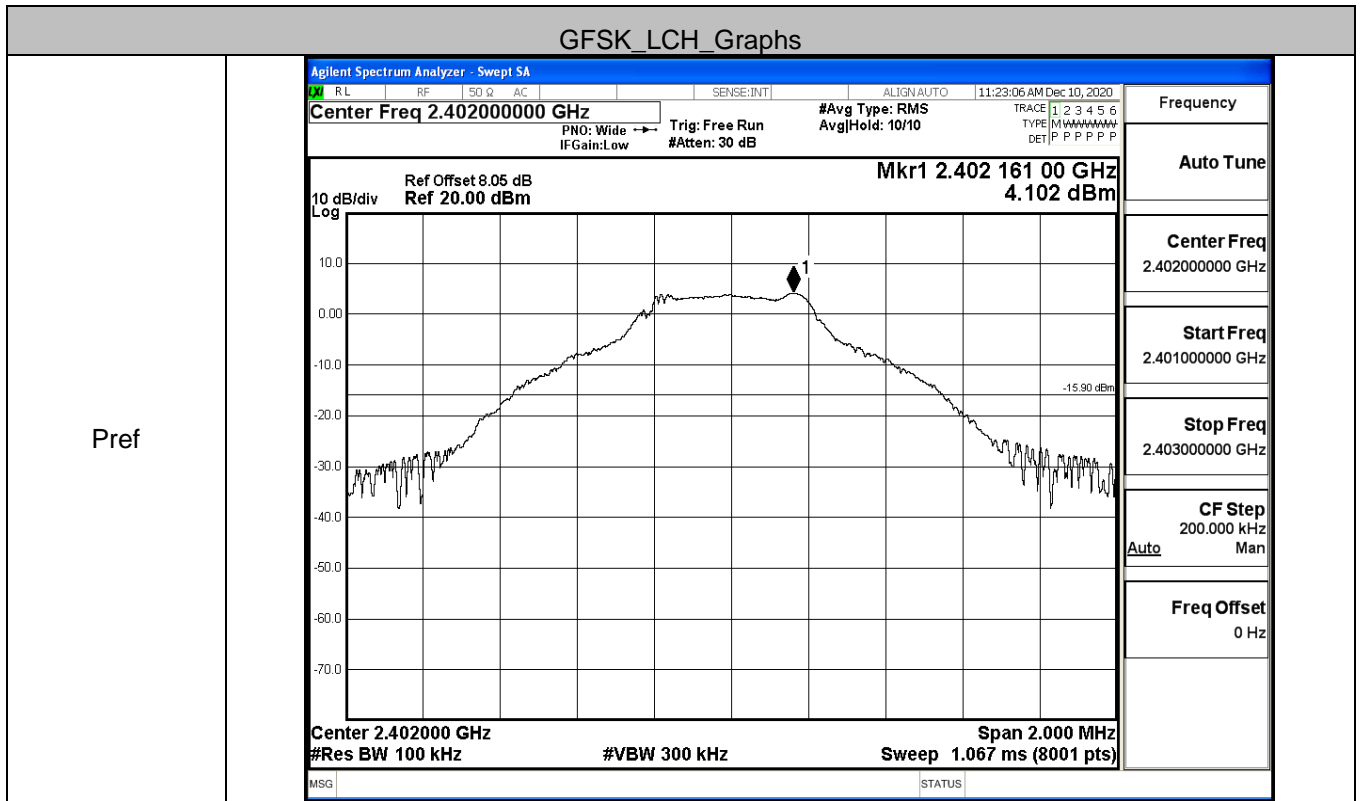
8DPSK_3DH5/HCH



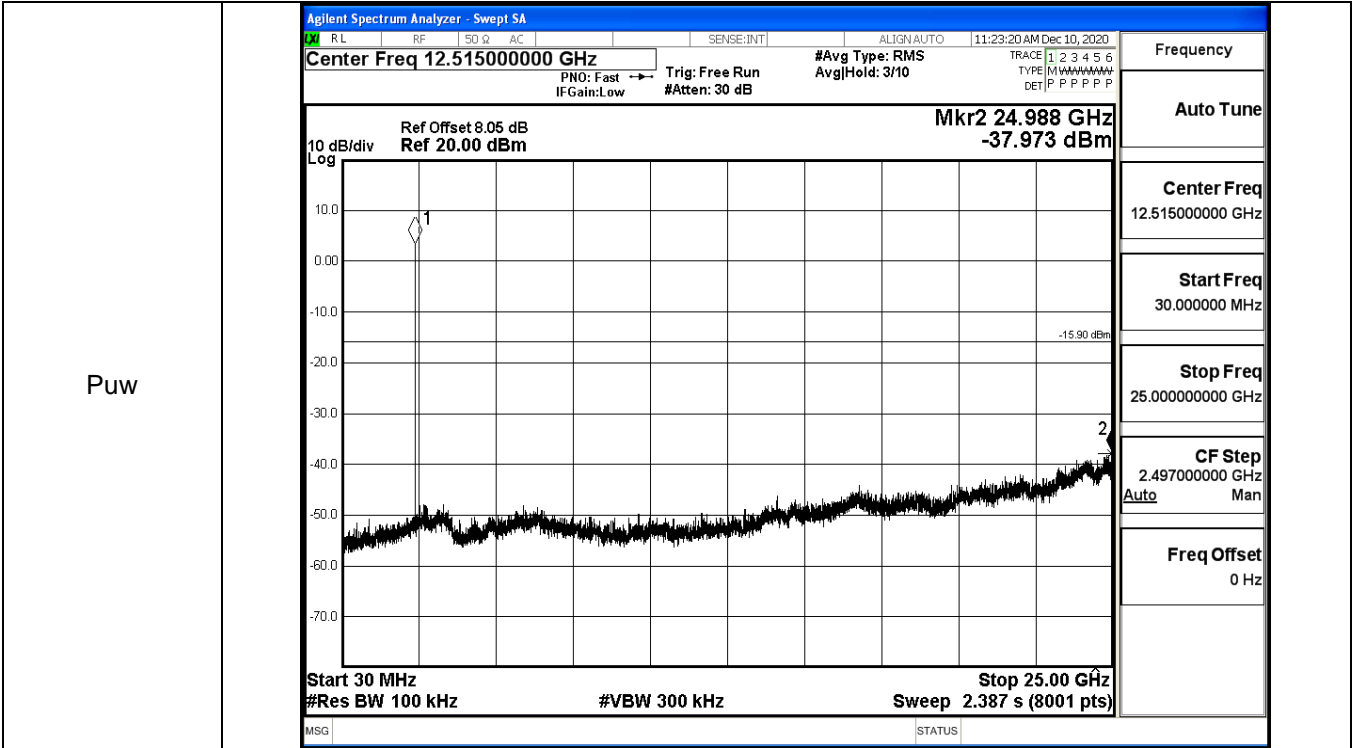
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	4.102	-37.973	-15.898	PASS
	MCH	3.728	-38.467	-16.272	PASS
	HCH	2.84	-38.005	-17.160	PASS
π /4DQPSK	LCH	3.525	-38.078	-16.475	PASS
	MCH	3.578	-37.985	-16.422	PASS
	HCH	2.586	-38.356	-17.414	PASS
8DPSK	LCH	3.681	-37.442	-16.319	PASS
	MCH	3.462	-37.367	-16.538	PASS
	HCH	2.664	-37.324	-17.336	PASS

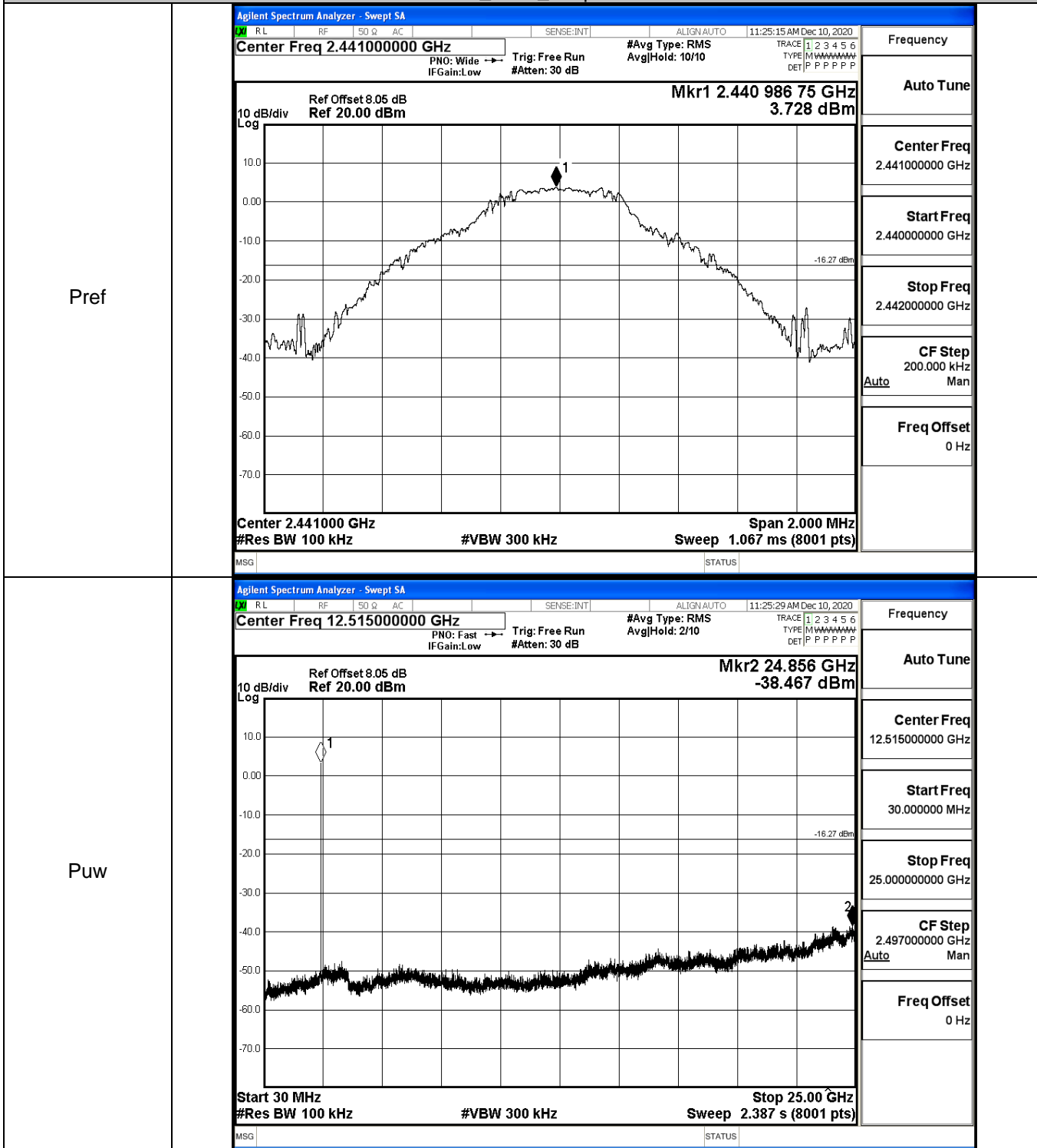
GFSK_LCH_Graphs



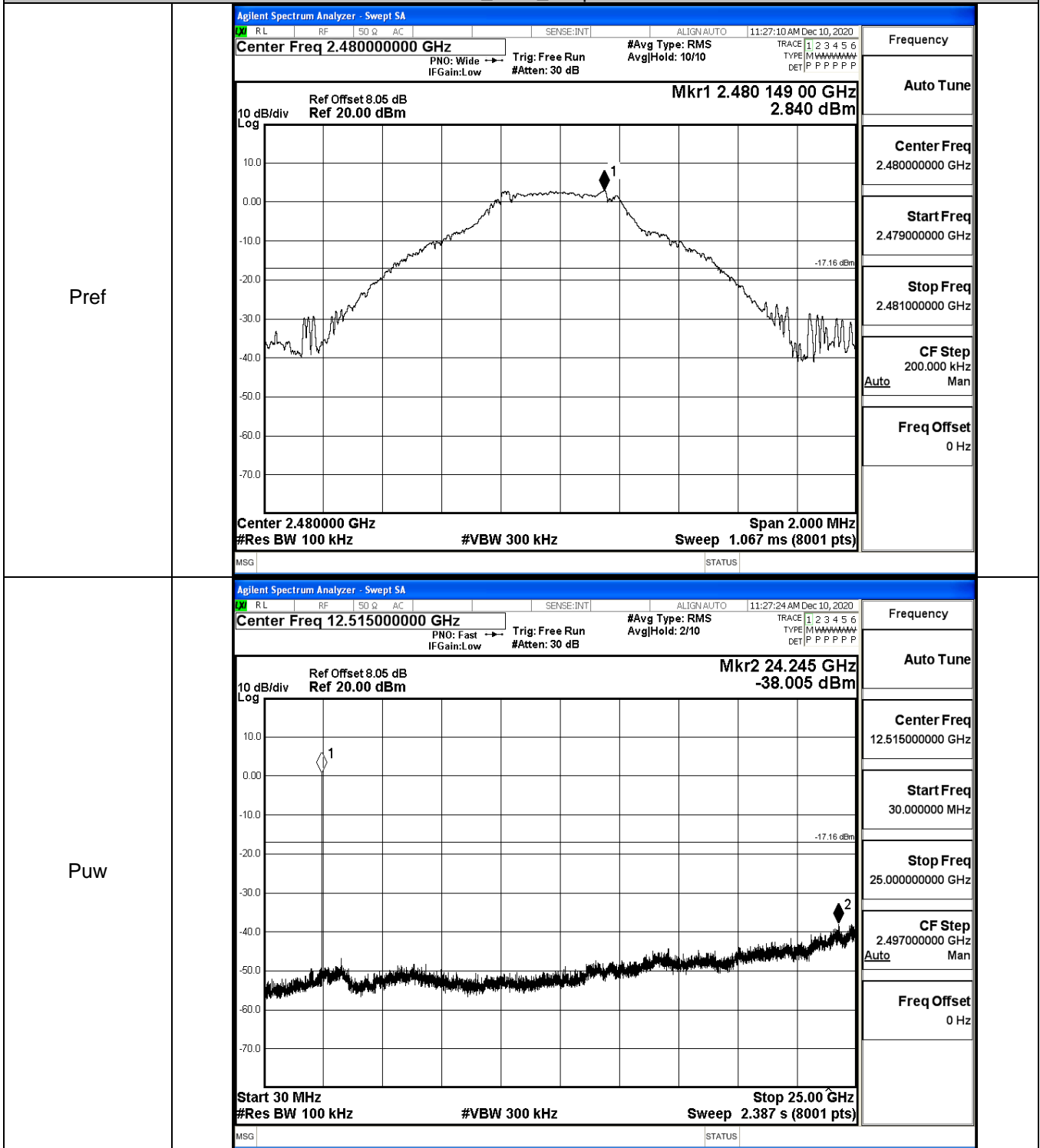
Pref



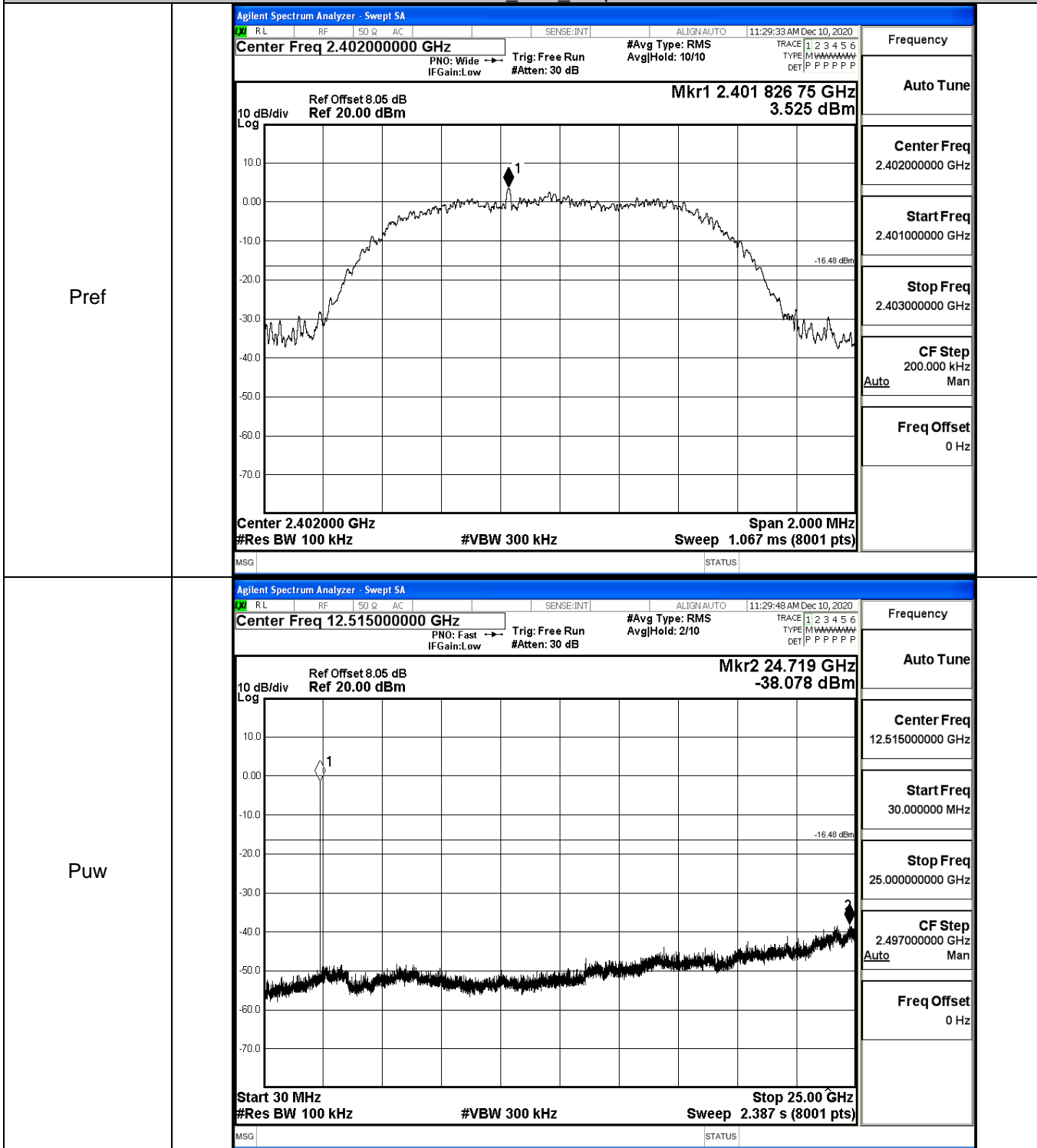
GFSK_MCH_Graphs



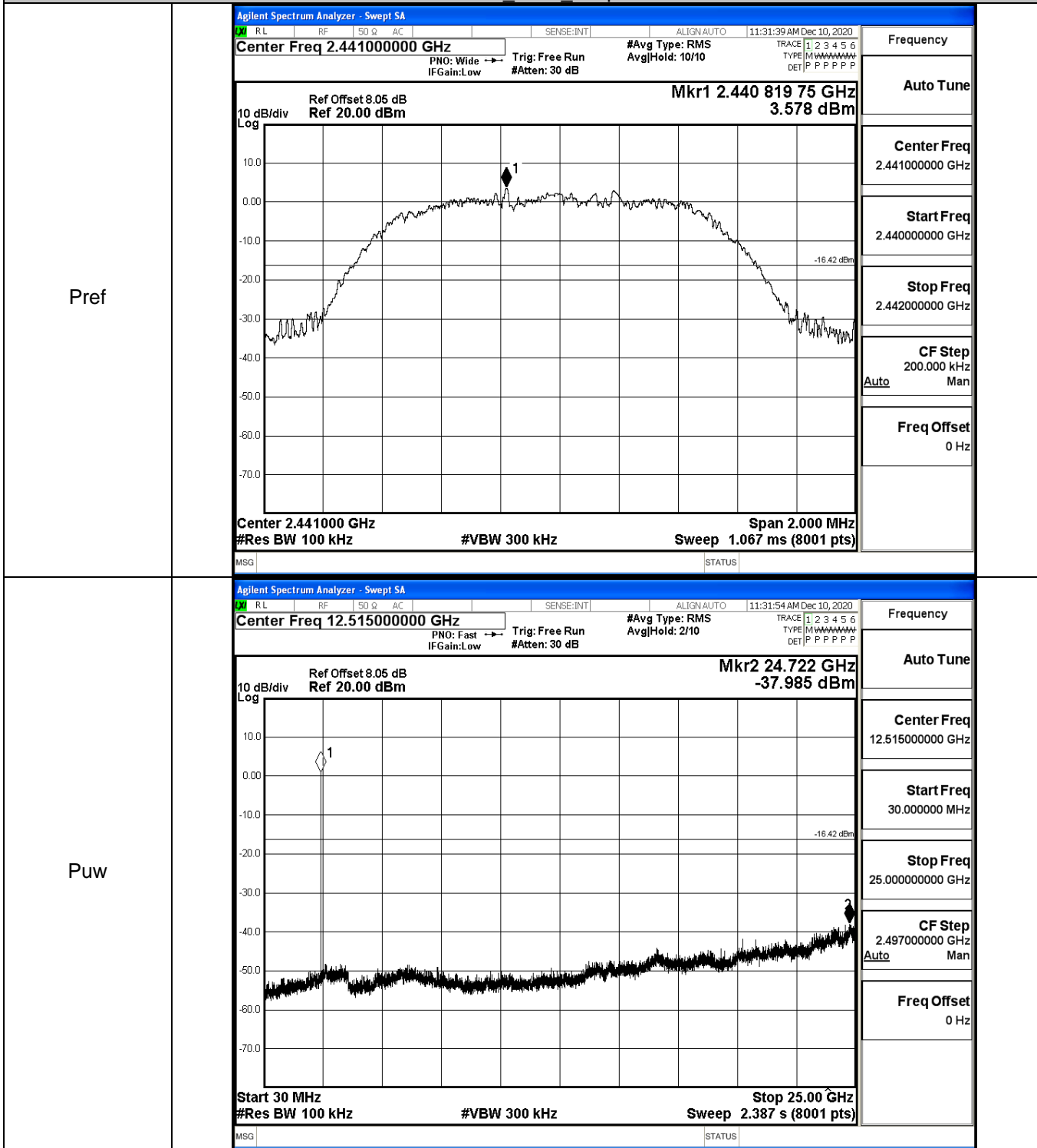
GFSK_HCH_Graphs



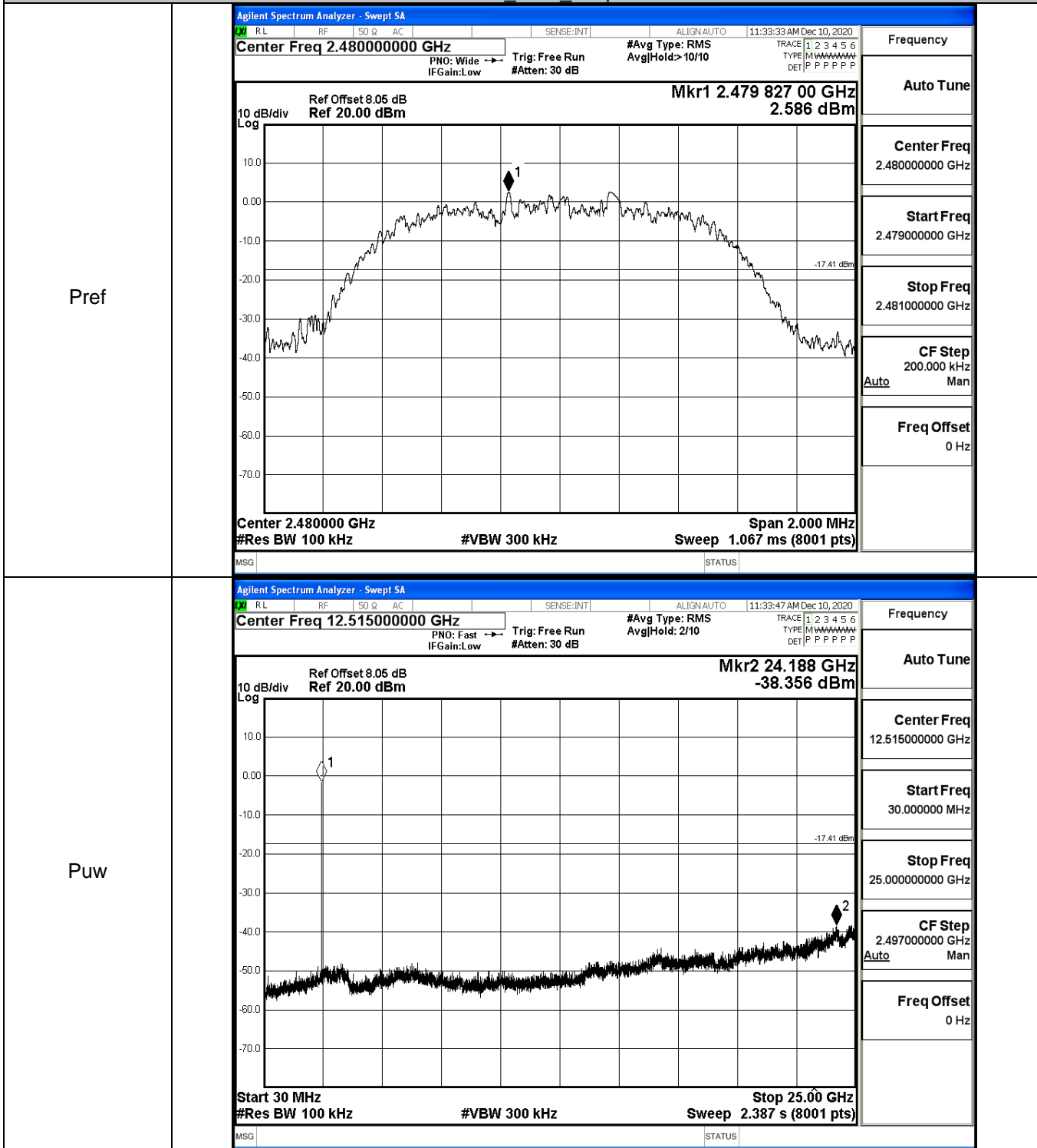
$\pi/4$ DQPSK_LCH_Graphs



$\pi/4$ DQPSK_MCH_Graphs

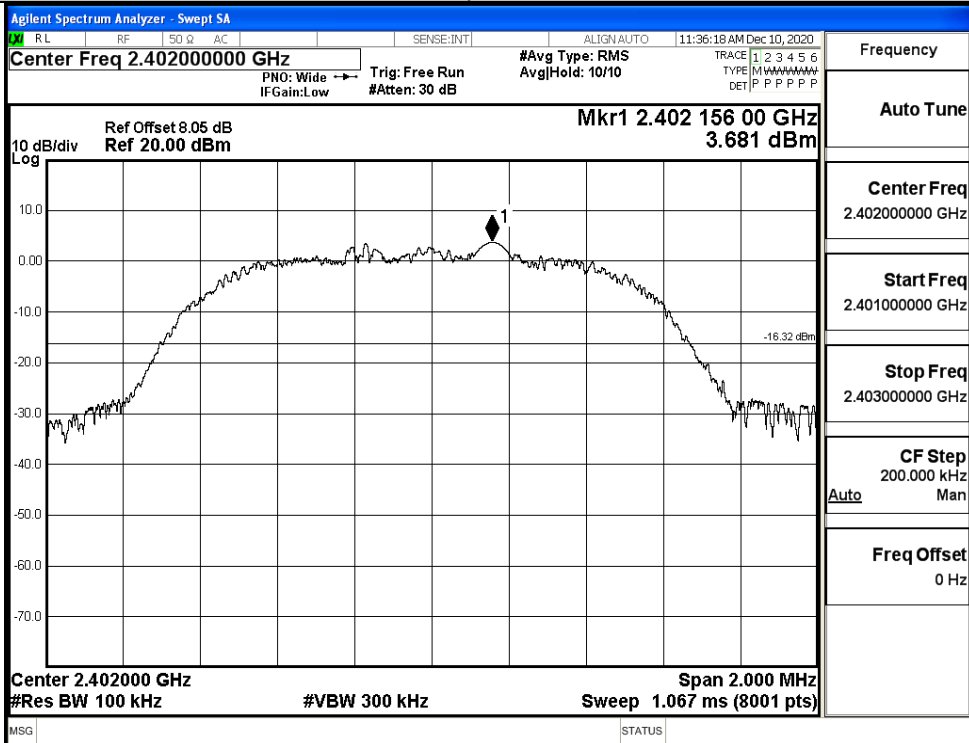


$\pi/4$ DQPSK_HCH_Graphs

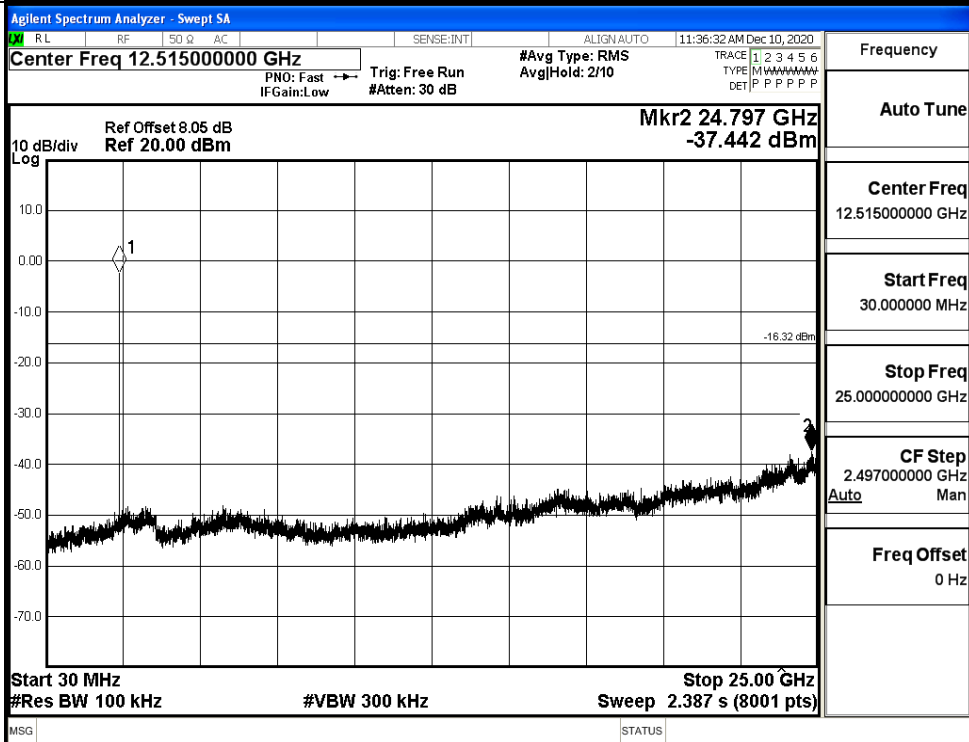


8DPSK_LCH_Graphs

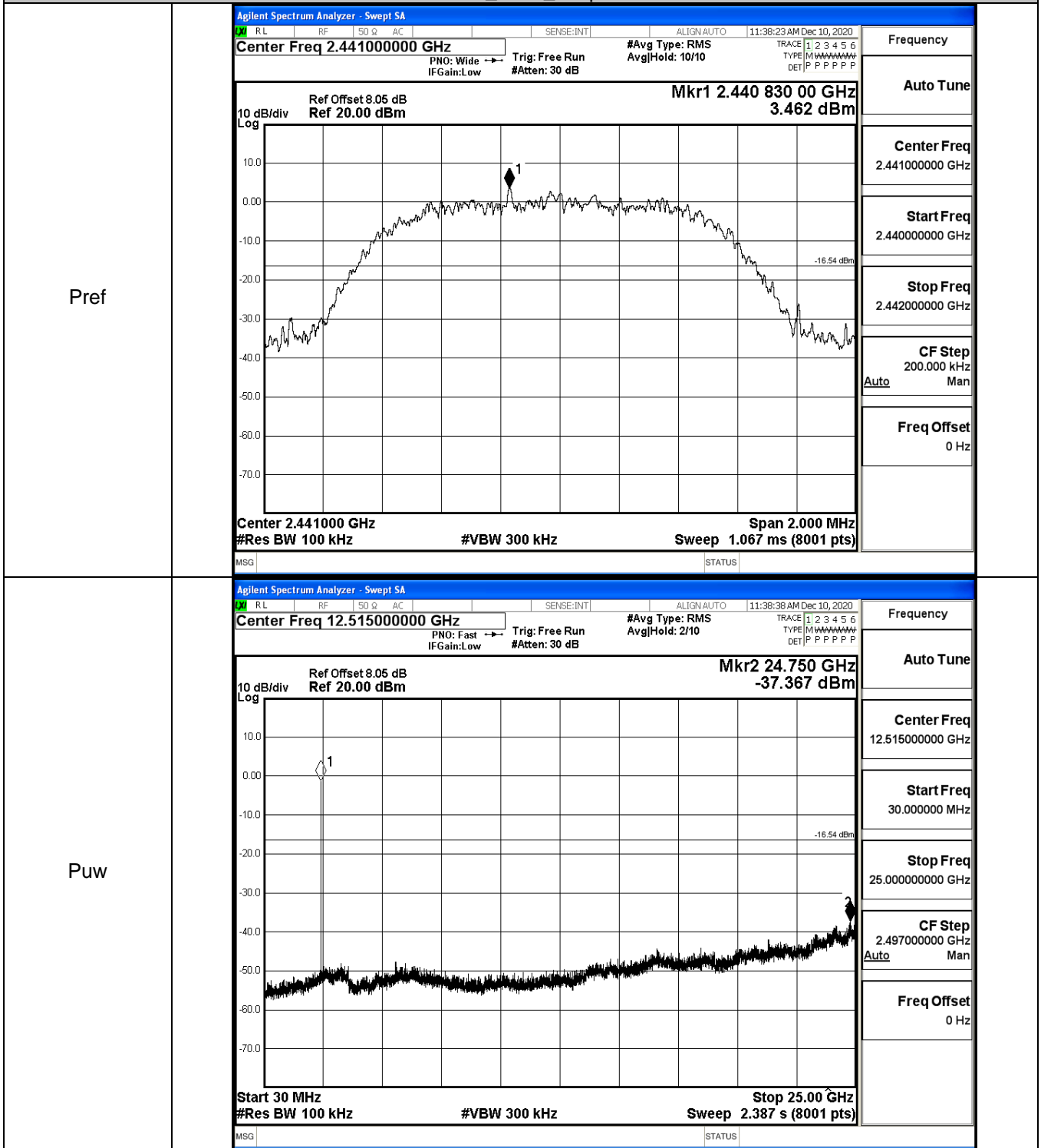
Pref



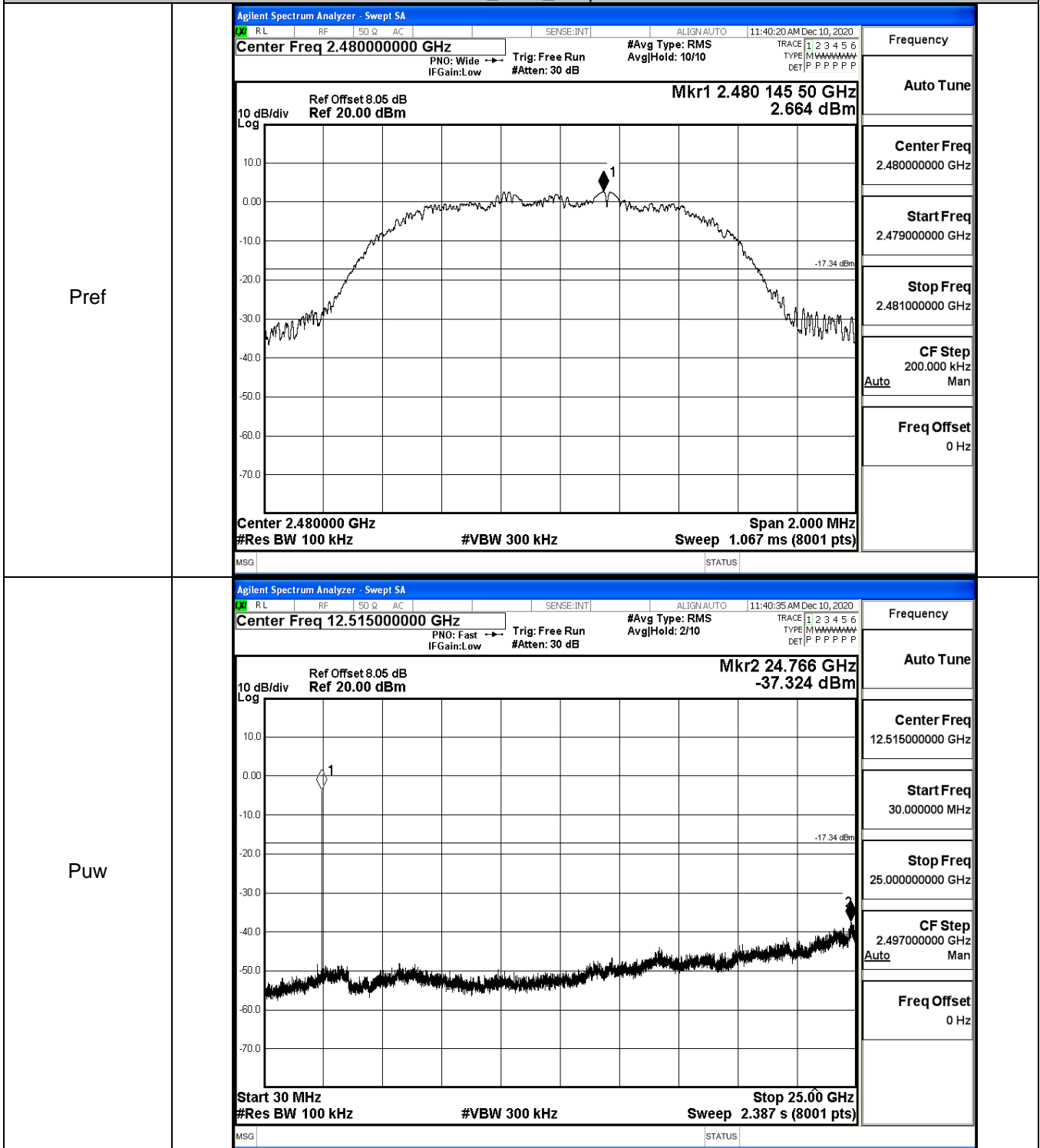
Puw



8DPSK_MCH_Graphs



8DPSK_HCH_Graphs

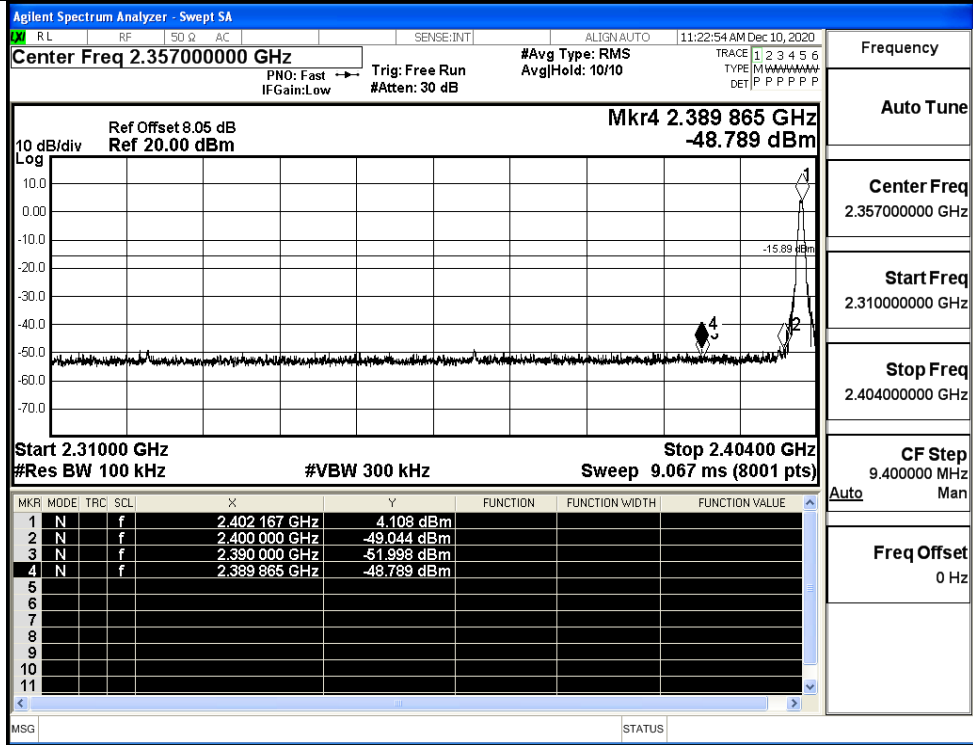


A.7 Band-edge for RF Conducted Emissions

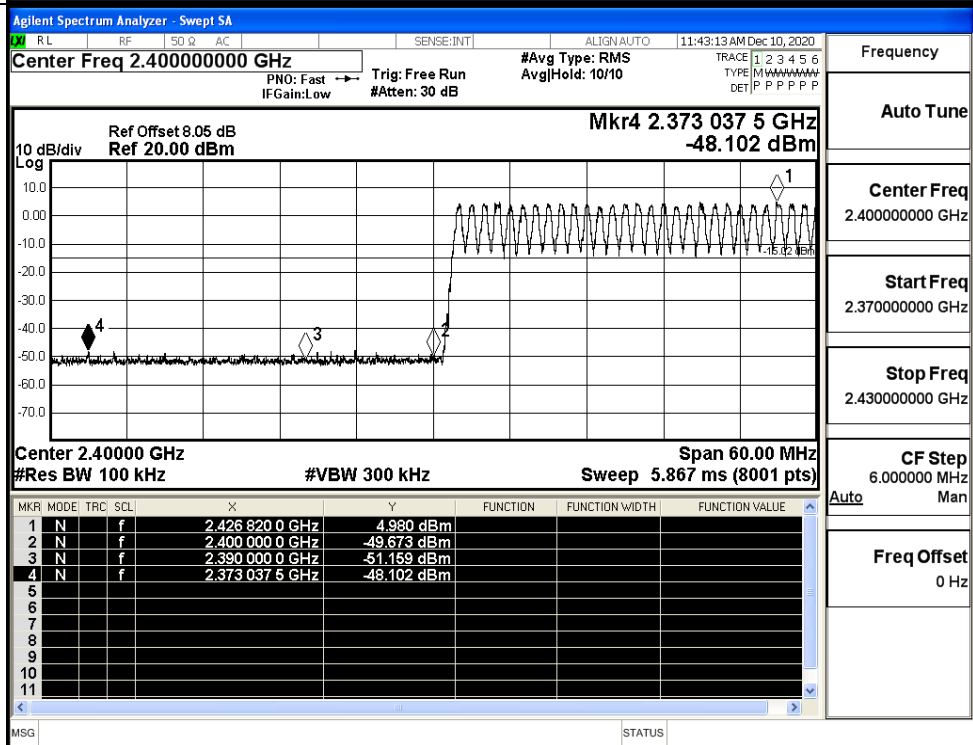
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	4.108	Off	-48.789	-15.89	PASS
			4.980	On	-48.102	-15.02	PASS
	HCH	2480	3.117	Off	-49.101	-16.88	PASS
			4.363	On	-48.159	-15.64	PASS
π/4DQPSK	LCH	2402	3.779	Off	-49.716	-16.22	PASS
			5.019	On	-48.111	-14.98	PASS
	HCH	2480	2.801	Off	-49.404	-17.2	PASS
			4.429	On	-48.068	-15.57	PASS
8DPSK	LCH	2402	3.724	Off	-49.430	-16.28	PASS
			4.851	On	-48.382	-15.15	PASS
	HCH	2480	2.853	Off	-49.196	-17.15	PASS
			4.711	On	-48.280	-15.29	PASS

Test Graphs

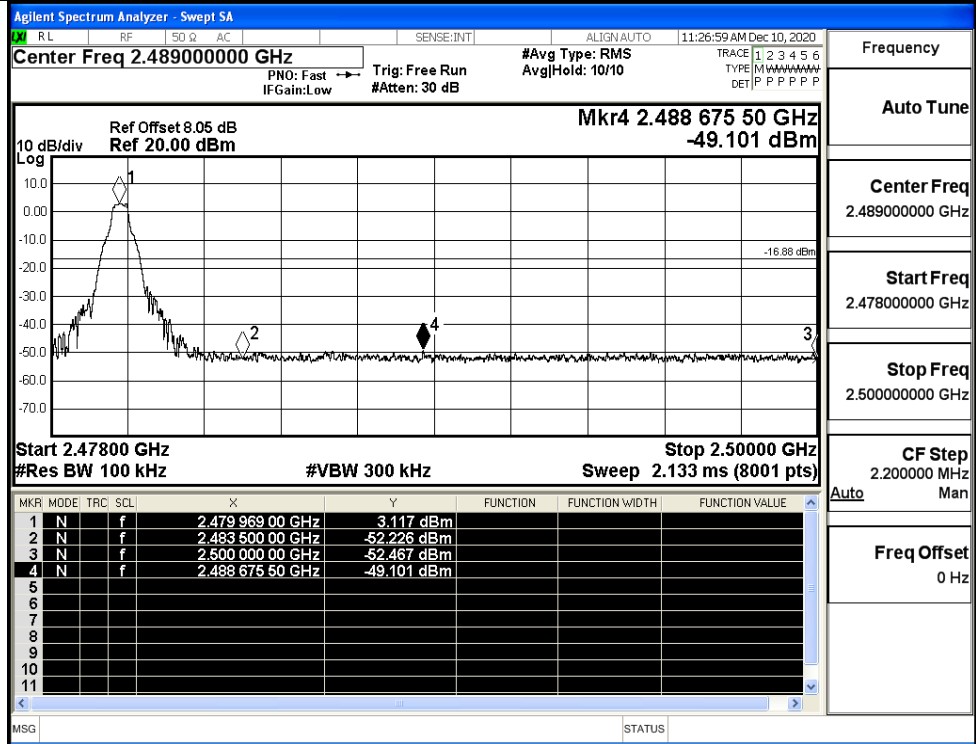
GFSK/LCH/No Hop



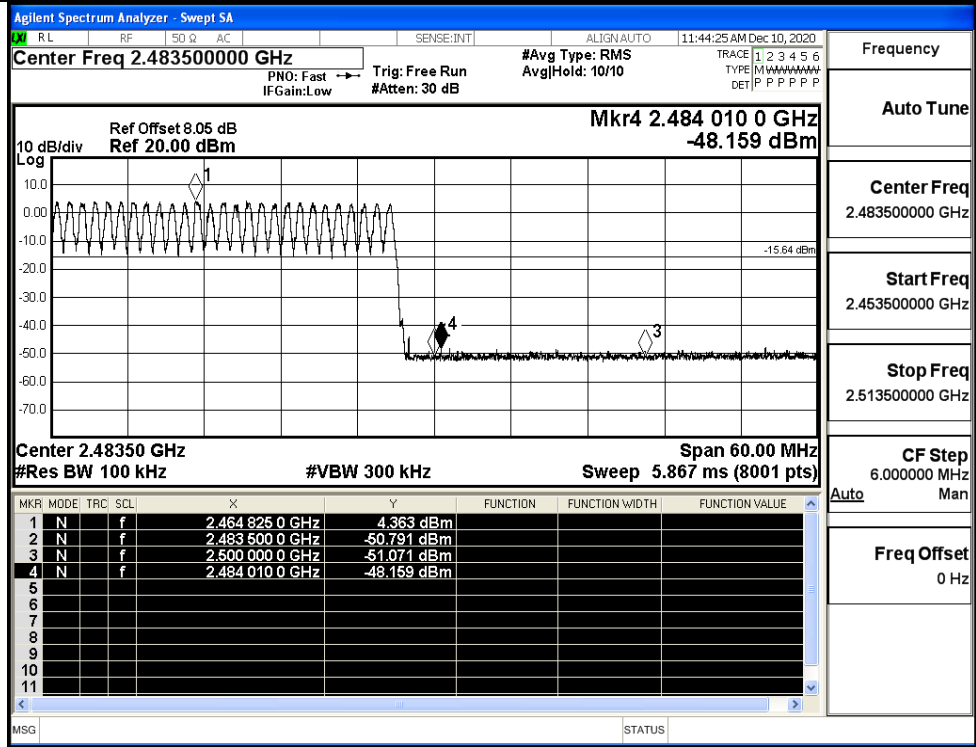
GFSK/LCH/Hop



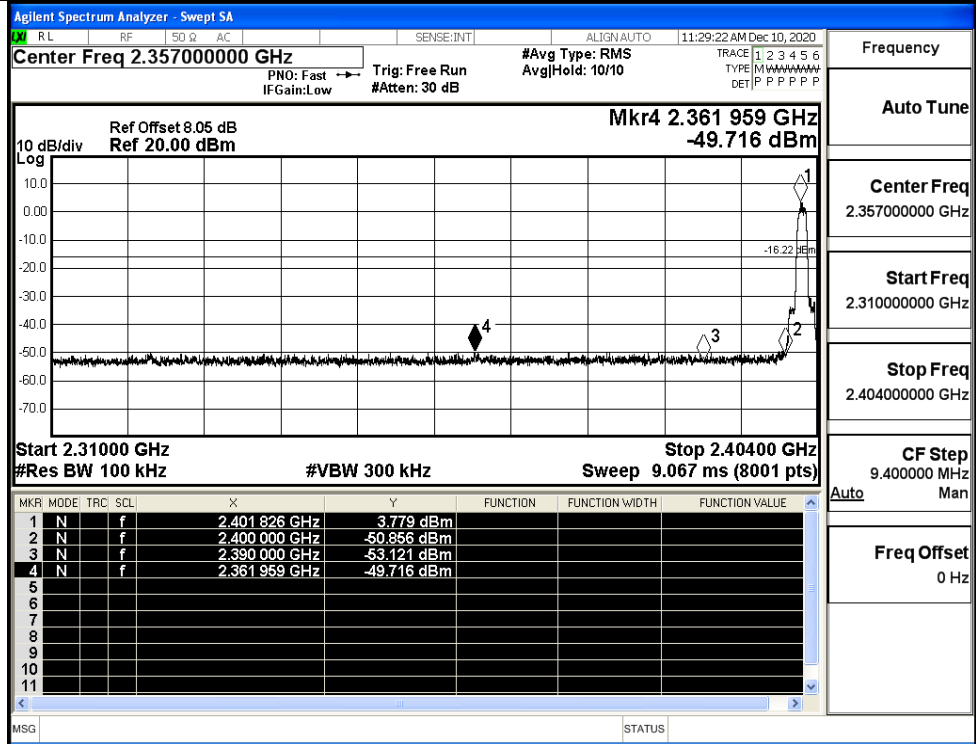
GFSK/HCH/No Hop



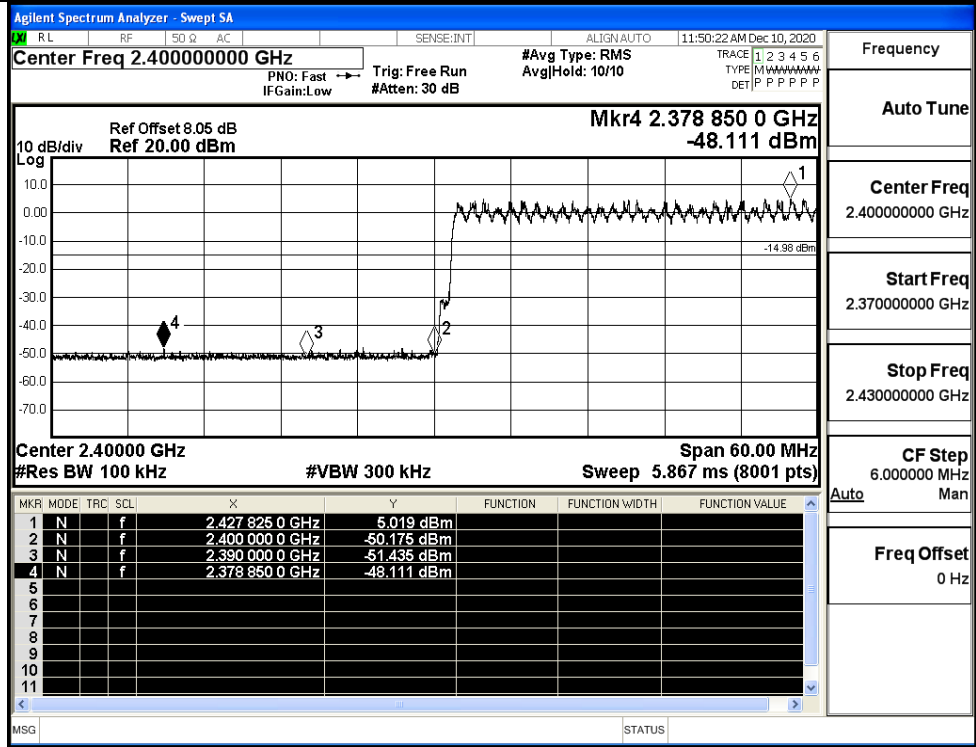
GFSK/HCH/Hop



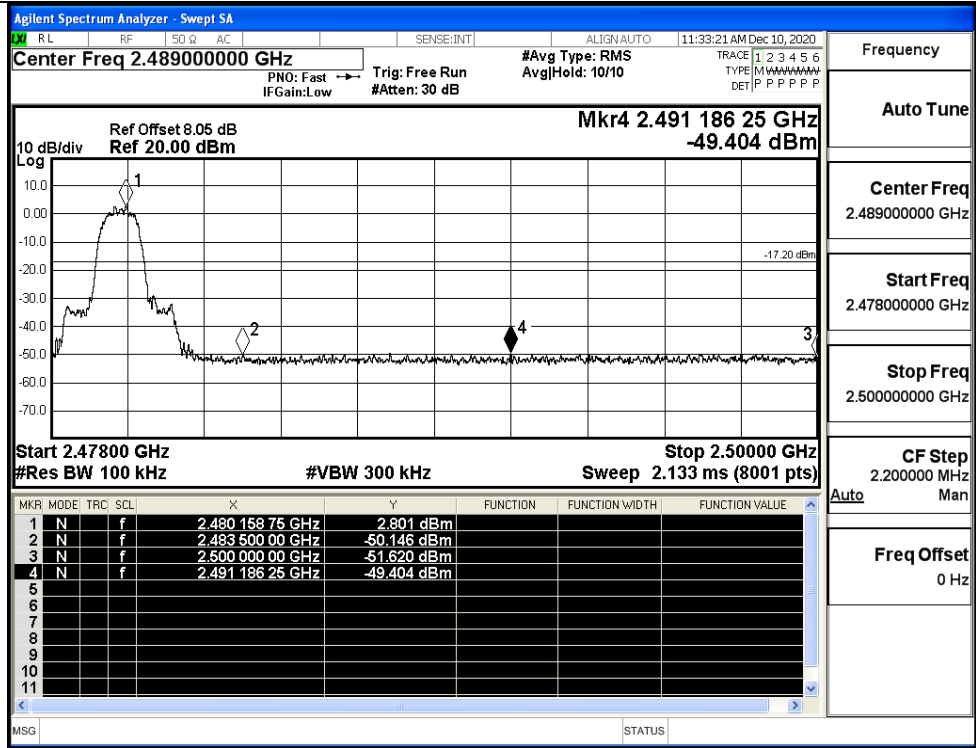
$\pi/4$ DQPSK/LCH/No
Hop



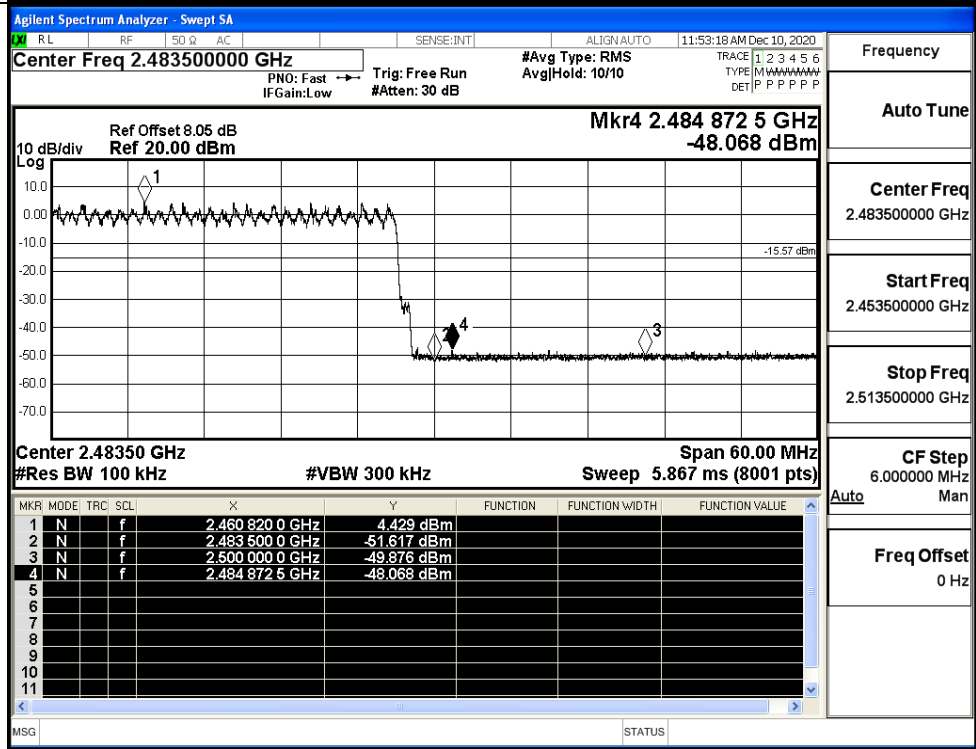
$\pi/4$ DQPSK/LCH/Hop



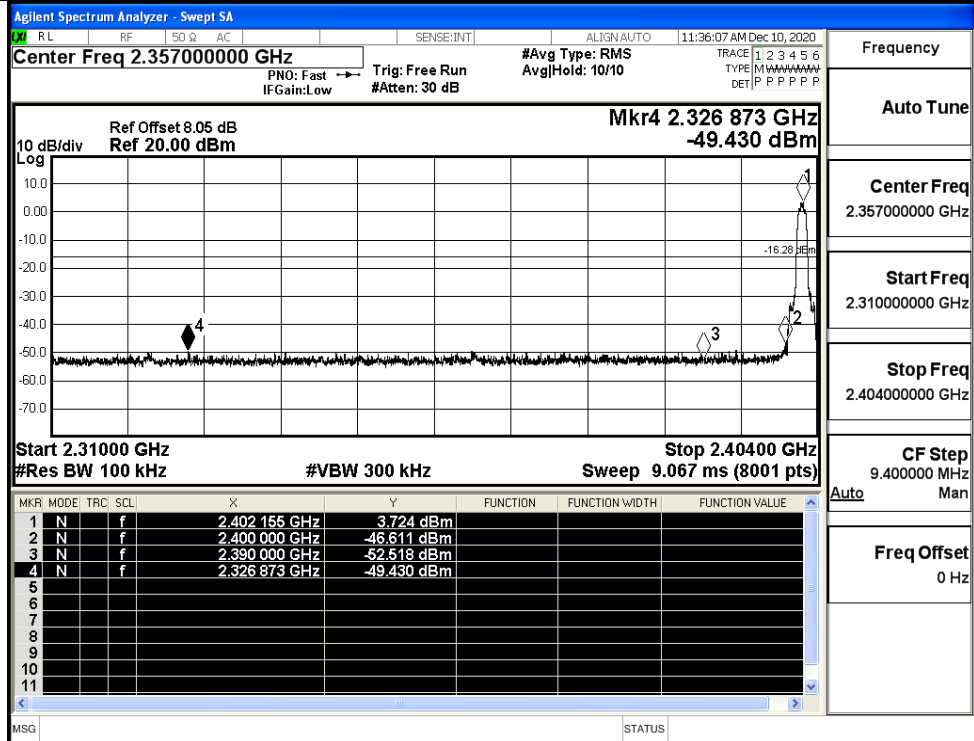
$\pi/4$ DQPSK/HCH/No
Hop



$\pi/4$ DQPSK/HCH/Hop

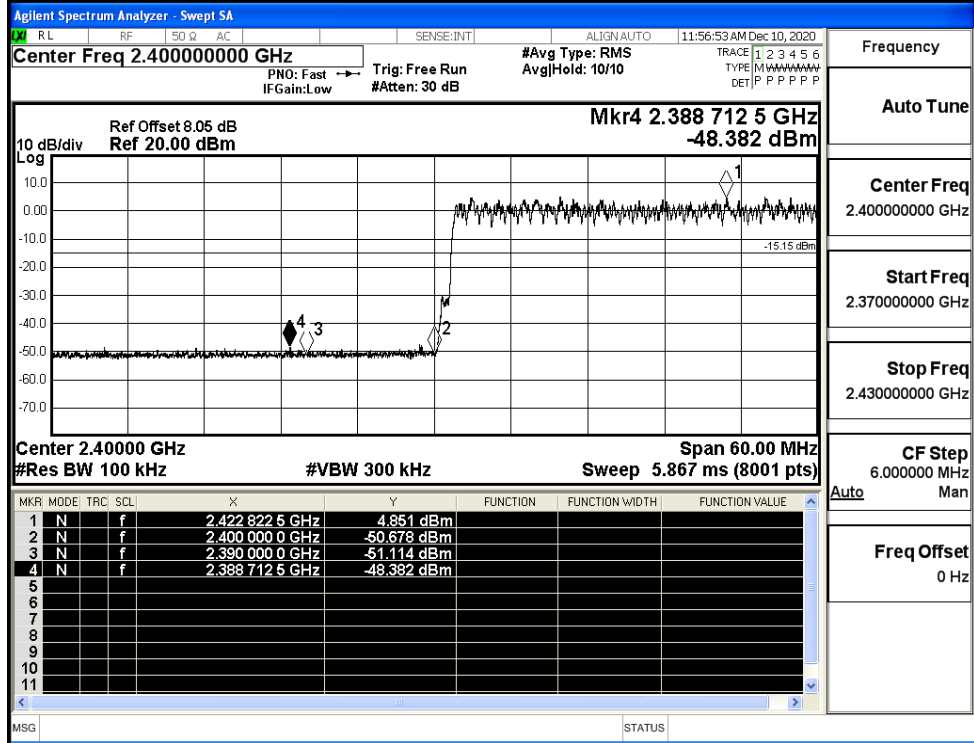


8DPSK/LCH/No Hop



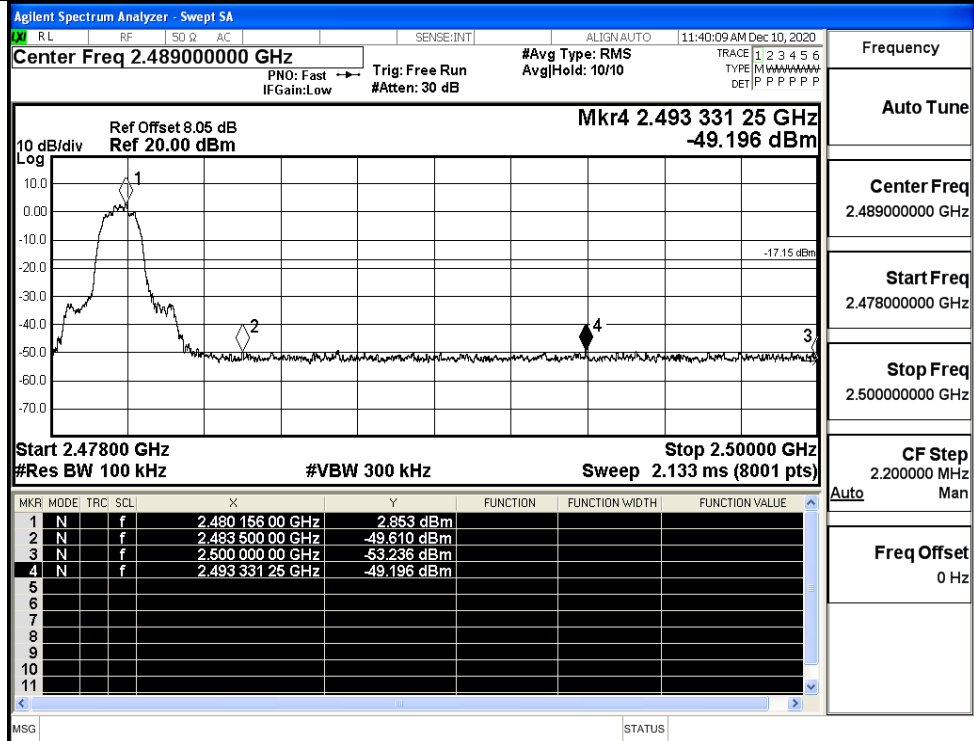
Frequency	
Auto Tune	
Center Freq	2.357000000 GHz
Start Freq	2.310000000 GHz
Stop Freq	2.404000000 GHz
CF Step	9.400000 MHz
Freq Offset	0 Hz

8DPSK/LCH/Hop



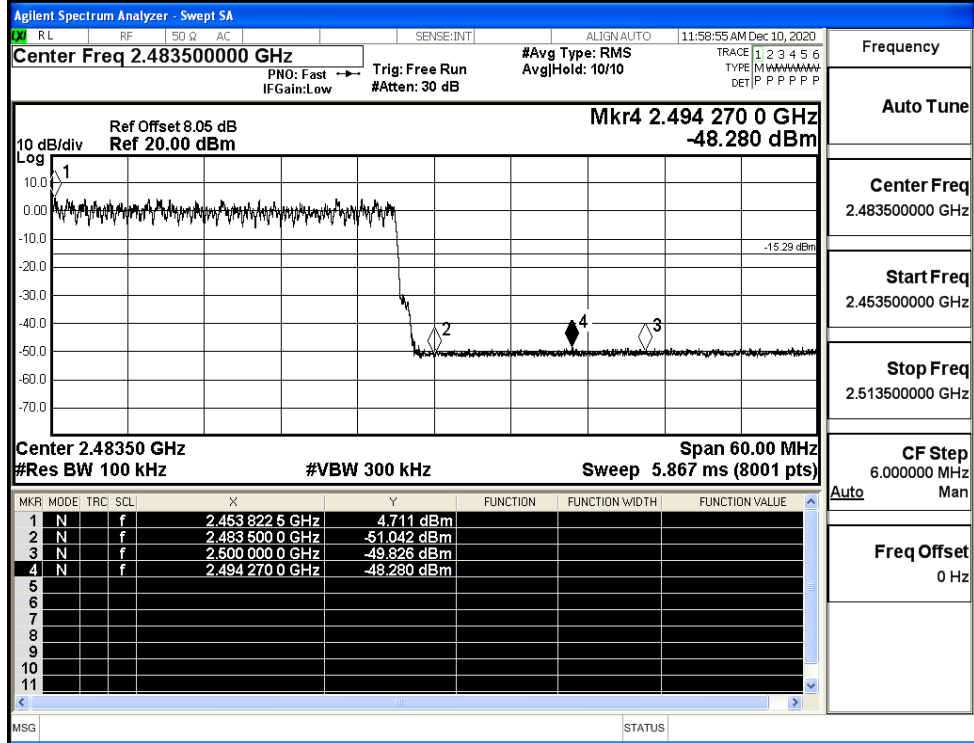
Frequency	
Auto Tune	
Center Freq	2.400000000 GHz
Start Freq	2.370000000 GHz
Stop Freq	2.430000000 GHz
CF Step	6.000000 MHz
Freq Offset	0 Hz

8DPSK/HCH/No Hop



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

8DPSK/HCH/Hop

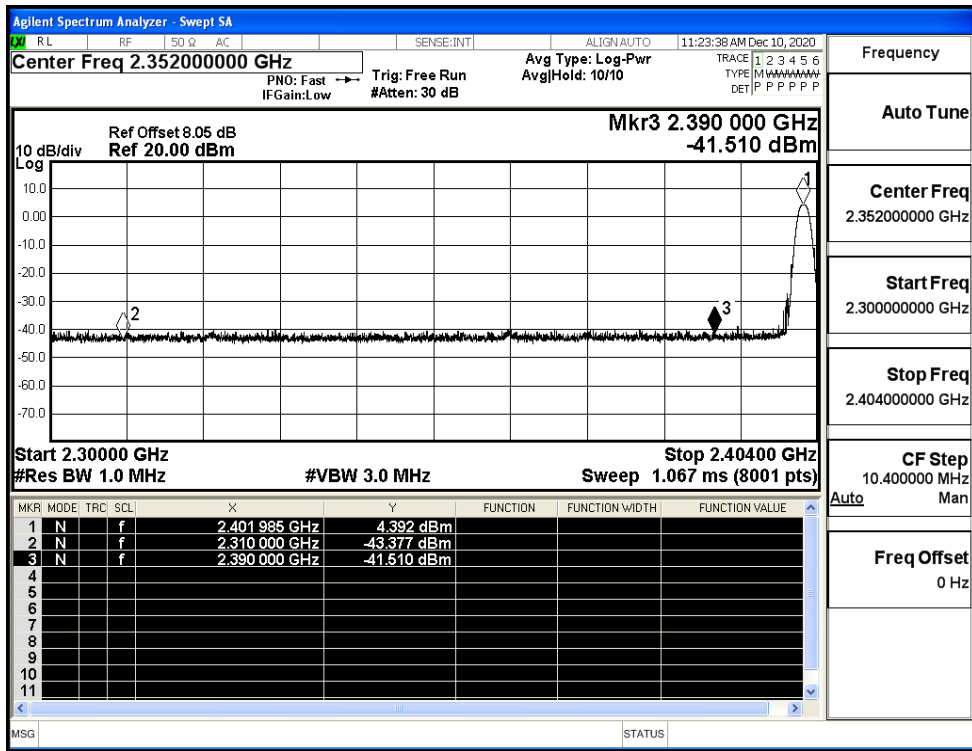


Frequency
Auto Tune
Center Freq
2.483500000 GHz
Start Freq
2.453500000 GHz
Stop Freq
2.513500000 GHz
CF Step
6.000000 MHz
Auto Man
Freq Offset
0 Hz

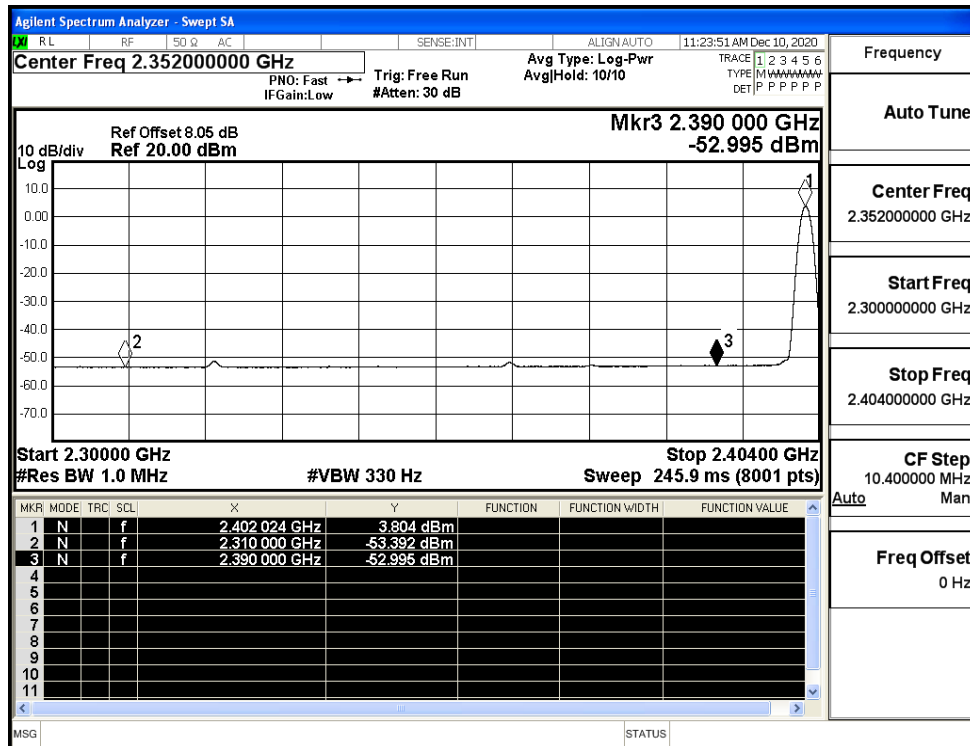
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.38	2.0	0	53.88	PEAK	74	PASS
	Off	2310.0	-53.39	2.0	0	43.87	AV	54	PASS
	Off	2390.0	-41.51	2.0	0	55.75	PEAK	74	PASS
	Off	2390.0	-53.00	2.0	0	44.26	AV	54	PASS
	Off	2483.5	-41.67	2.0	0	55.59	PEAK	74	PASS
	Off	2483.5	-52.26	2.0	0	45.00	AV	54	PASS
	Off	2500.0	-42.84	2.0	0	54.42	PEAK	74	PASS
	Off	2500.0	-52.38	2.0	0	44.88	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-42.27	2.0	0	54.99	PEAK	74	PASS
	Off	2310.0	-53.42	2.0	0	43.84	AV	54	PASS
	Off	2390.0	-42.43	2.0	0	54.83	PEAK	74	PASS
	Off	2390.0	-53.01	2.0	0	44.25	AV	54	PASS
	Off	2483.5	-41.96	2.0	0	55.30	PEAK	74	PASS
	Off	2483.5	-52.29	2.0	0	44.97	AV	54	PASS
	Off	2500.0	-41.88	2.0	0	55.38	PEAK	74	PASS
	Off	2500.0	-52.32	2.0	0	44.94	AV	54	PASS
8DPSK	Off	2310.0	-43.39	2.0	0	53.87	PEAK	74	PASS
	Off	2310.0	-53.42	2.0	0	43.84	AV	54	PASS
	Off	2390.0	-42.57	2.0	0	54.69	PEAK	74	PASS
	Off	2390.0	-53.07	2.0	0	44.19	AV	54	PASS
	Off	2483.5	-41.00	2.0	0	56.26	PEAK	74	PASS
	Off	2483.5	-52.30	2.0	0	44.96	AV	54	PASS
	Off	2500.0	-42.95	2.0	0	54.31	PEAK	74	PASS
	Off	2500.0	-52.24	2.0	0	45.02	AV	54	PASS

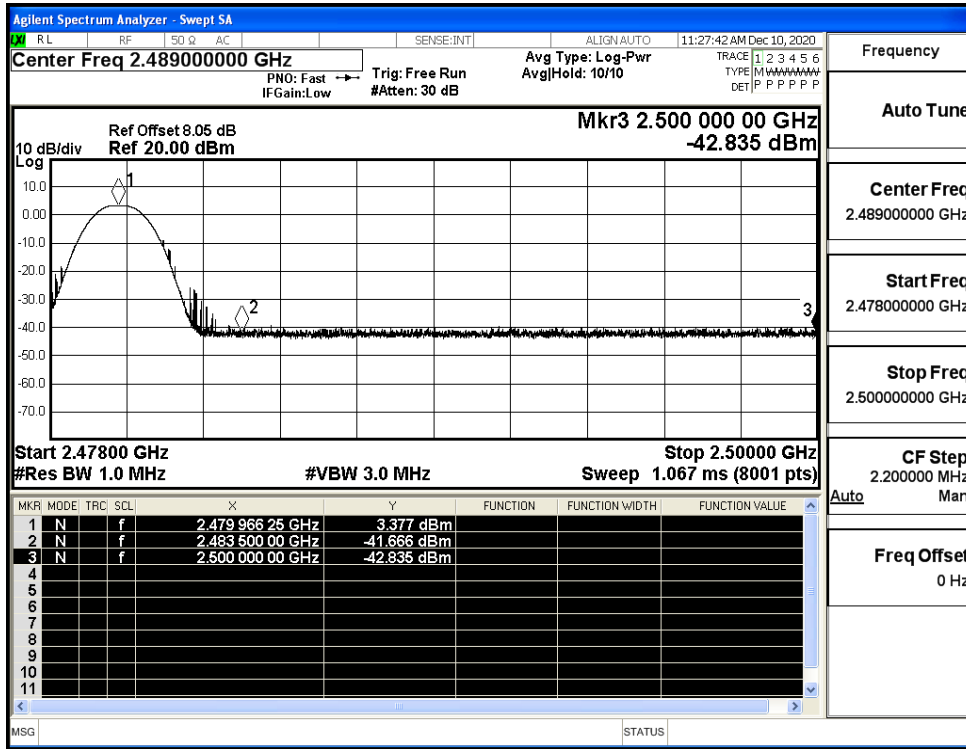
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



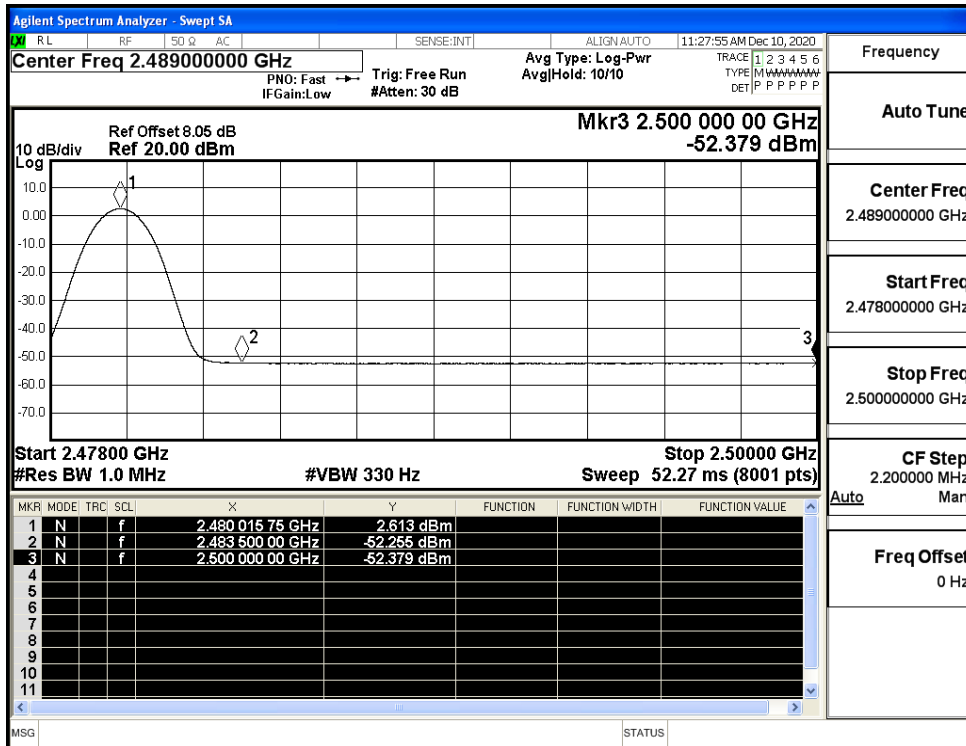
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



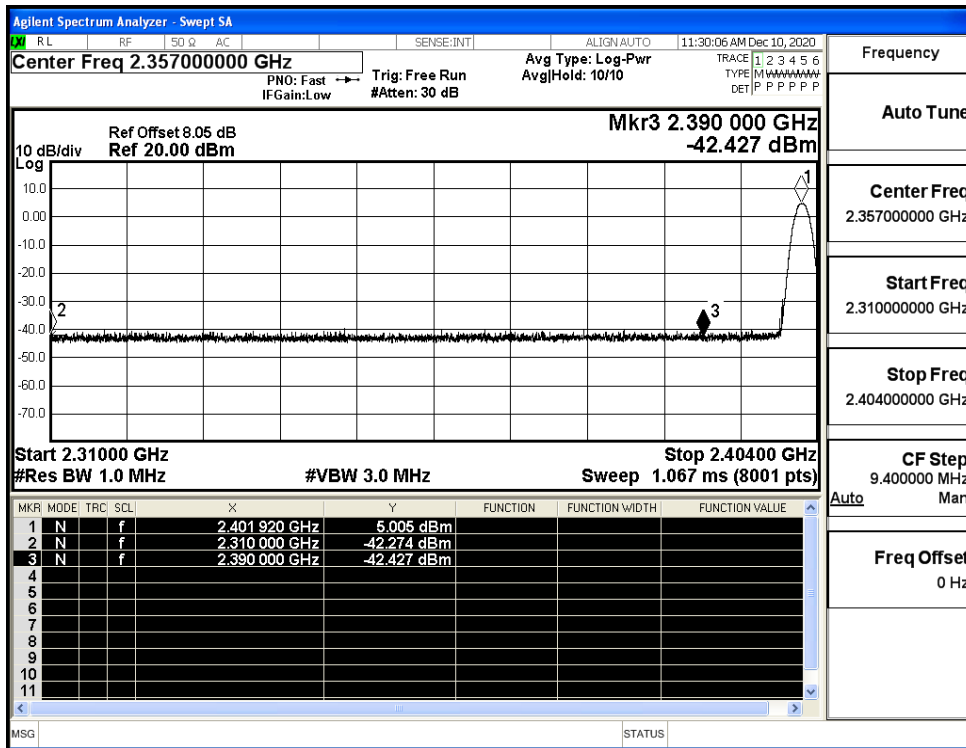
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



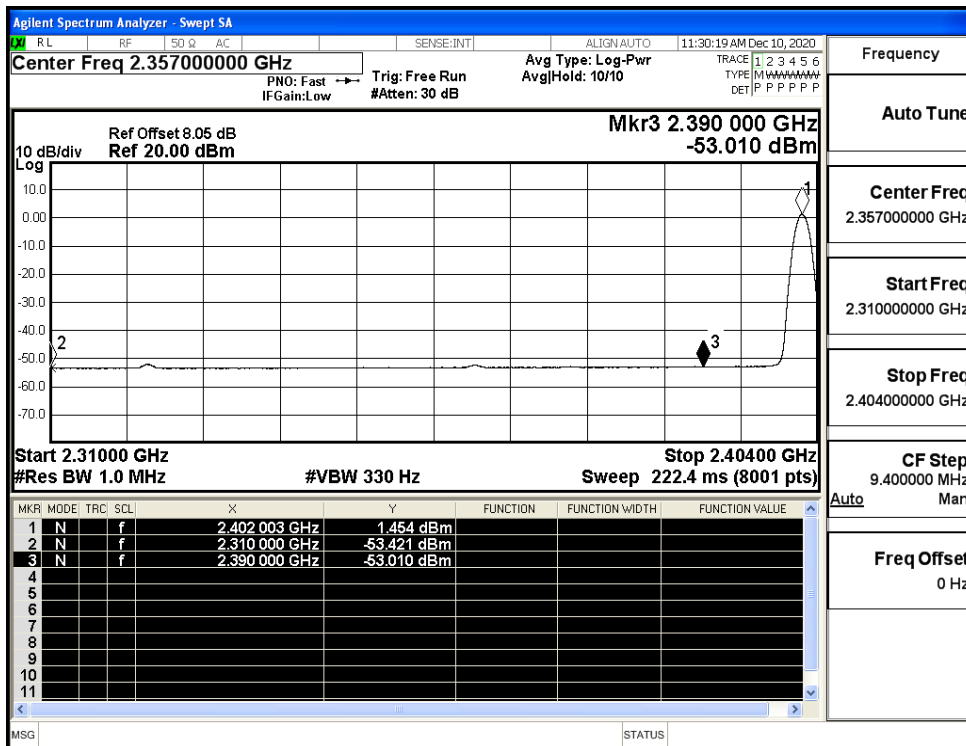
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



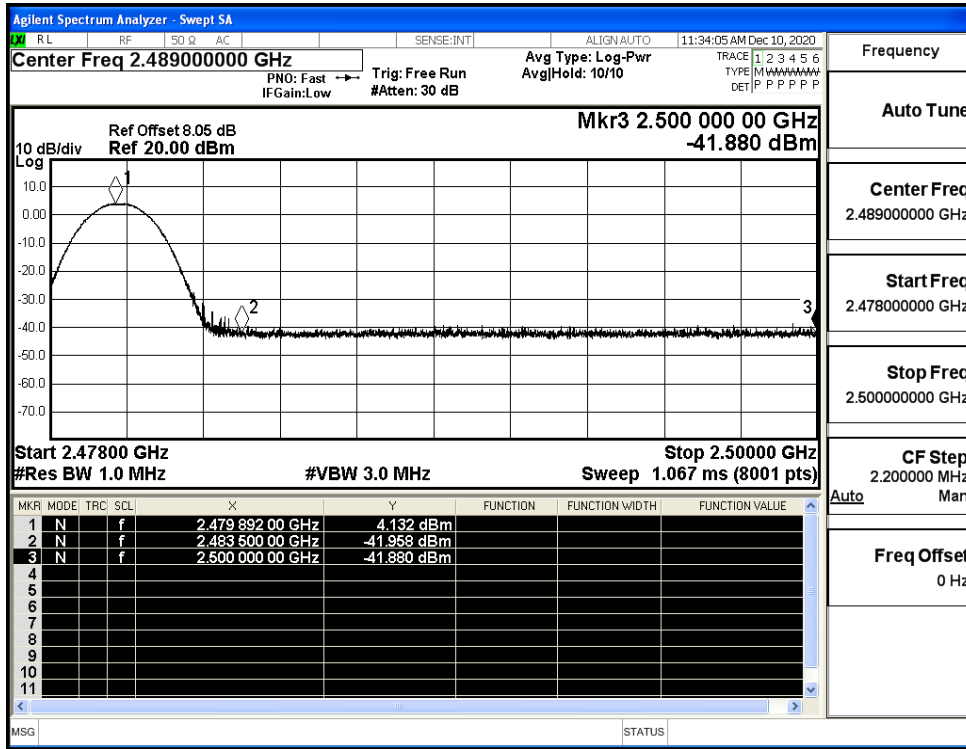
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)



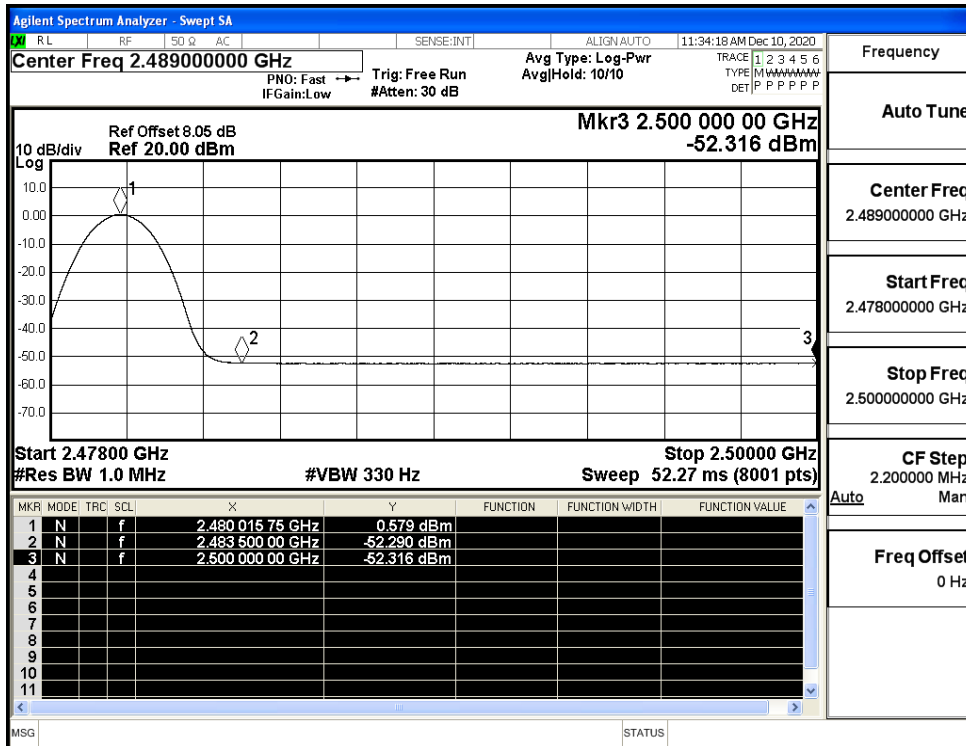
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)



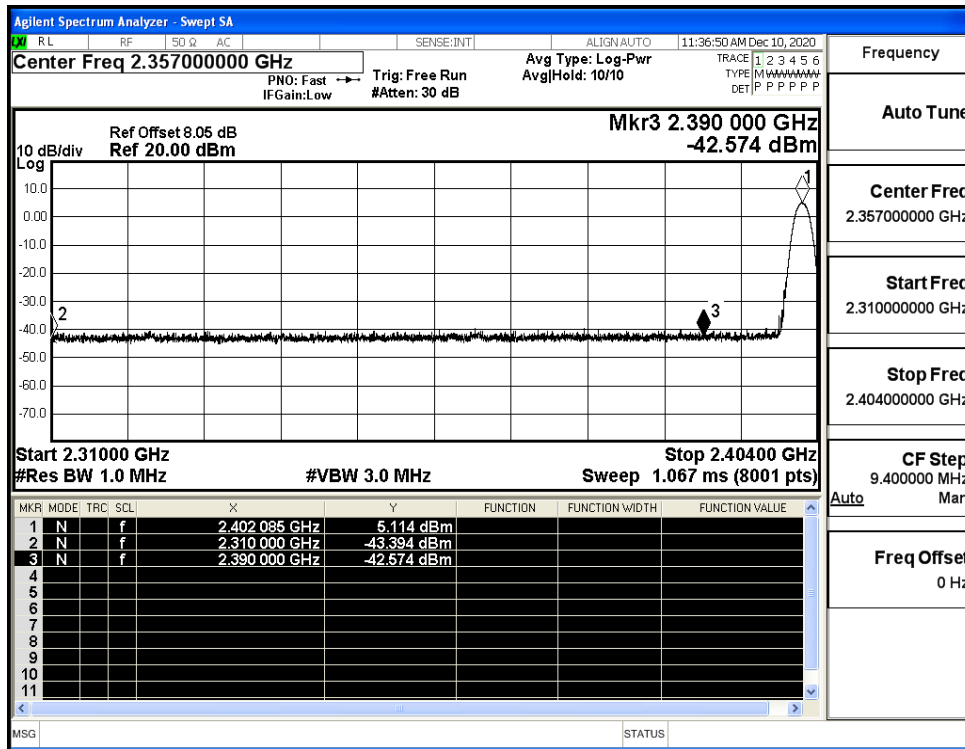
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (High Channel)



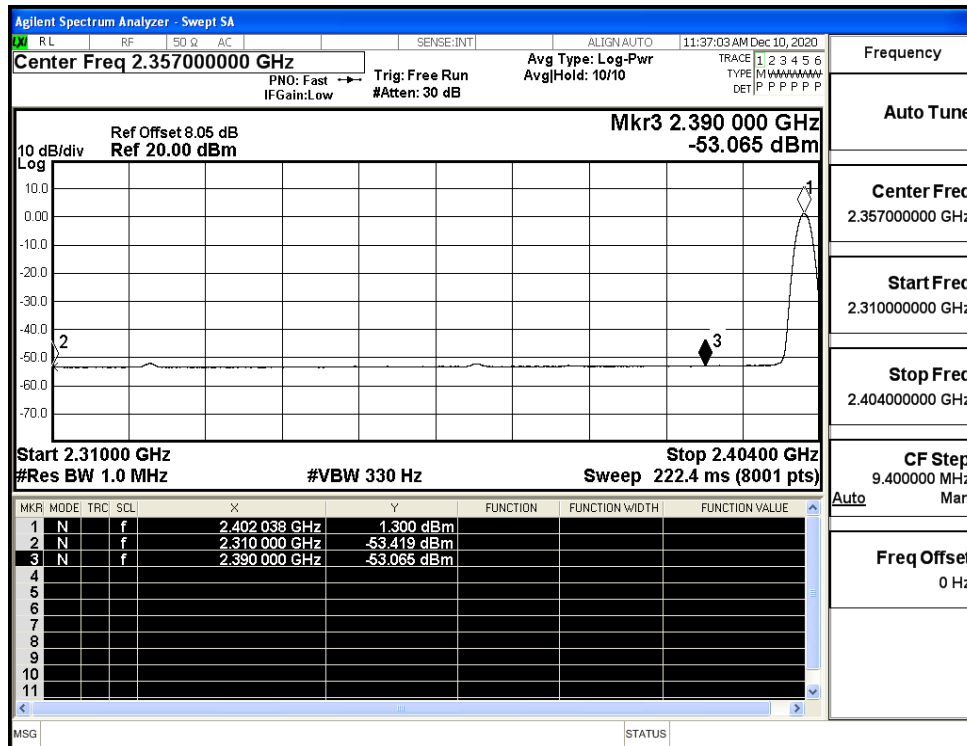
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (High Channel)



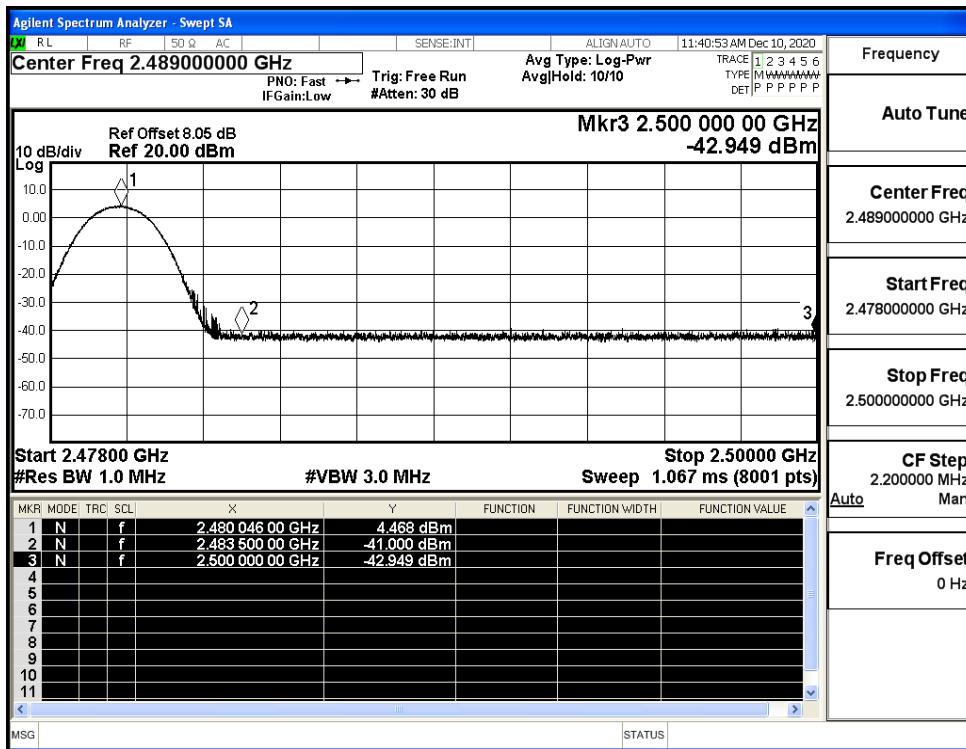
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

