

Appendix A

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

Product Name: Projector

Trade Mark: N/A

Test Model: F-506

Environmental Conditions

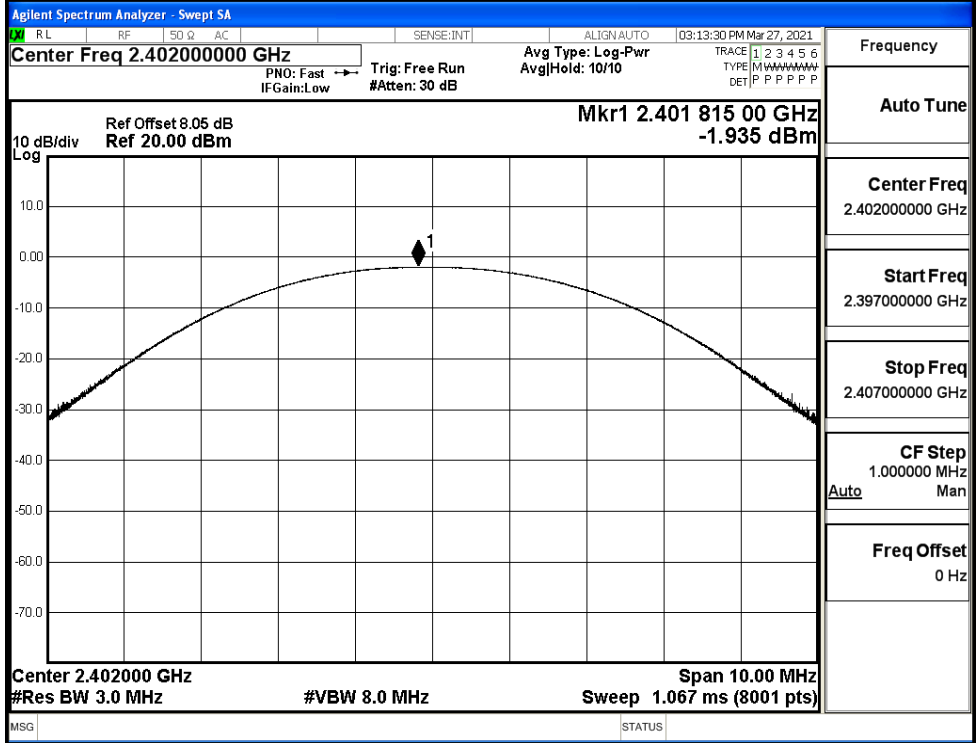
Temperature:	24.6° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond Lu
Supervised by:	Li Huan

A.1 Maxmum Conducted Peak Output Power

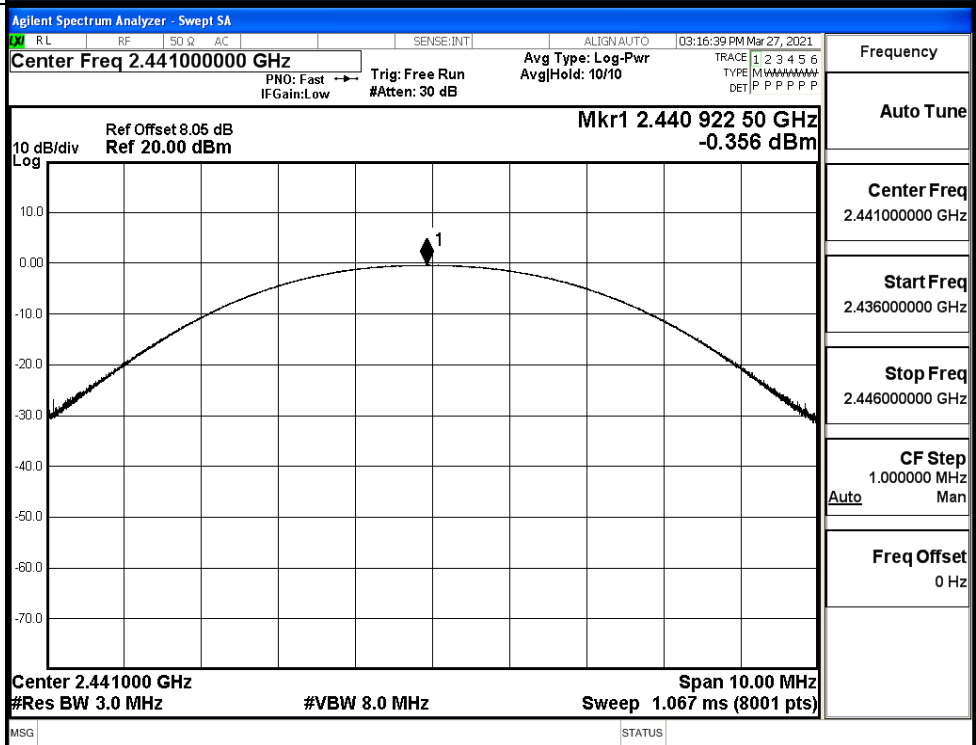
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-1.935	21	PASS
	MCH	-0.356	21	PASS
	HCH	-0.321	21	PASS
$\pi/4$ DQPSK	LCH	0.139	21	PASS
	MCH	1.985	21	PASS
	HCH	1.787	21	PASS
8DPSK	LCH	0.594	21	PASS
	MCH	2.334	21	PASS
	HCH	2.519	21	PASS

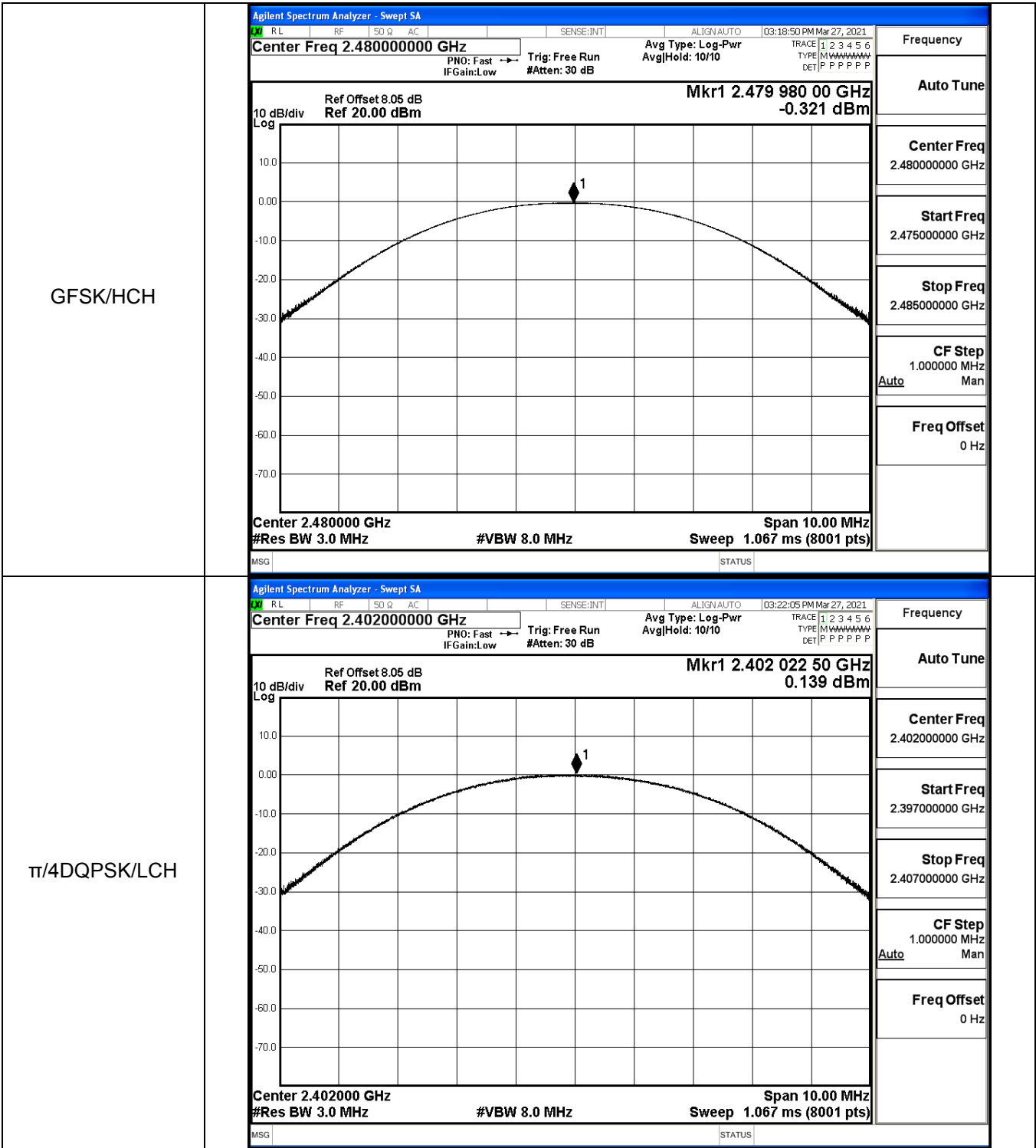
Test Graphs

GFSK/LCH

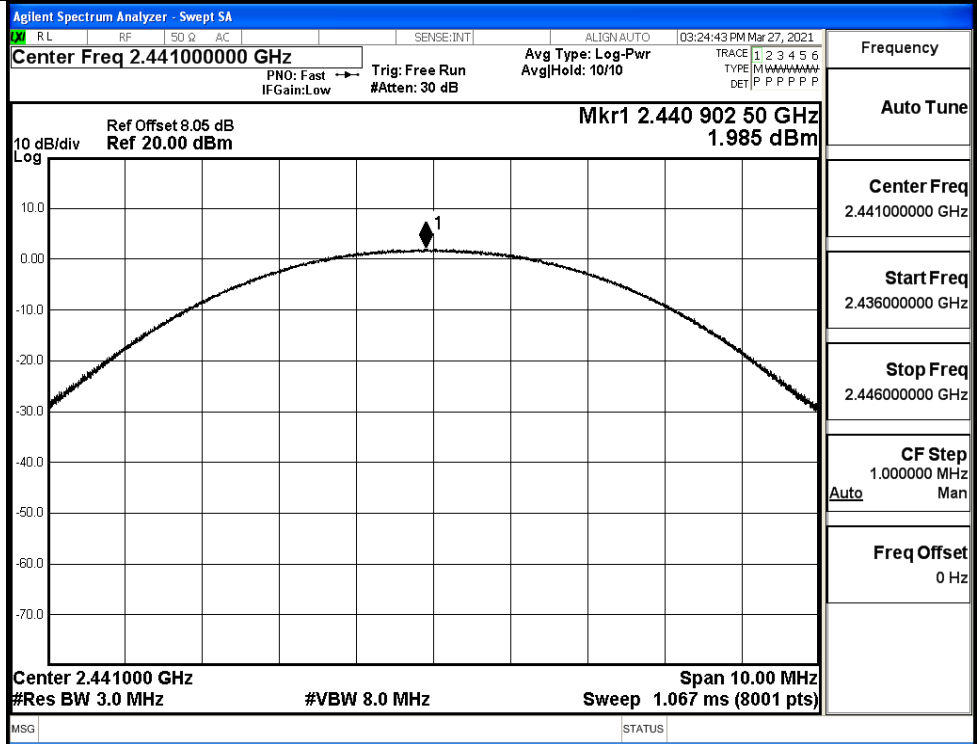


GFSK/MCH

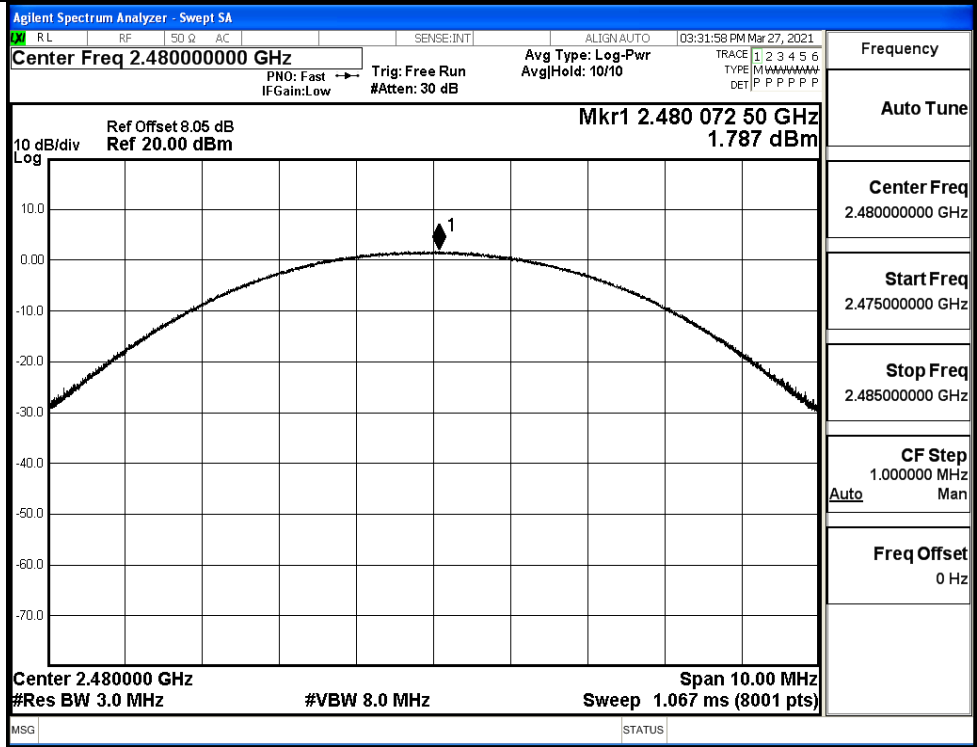




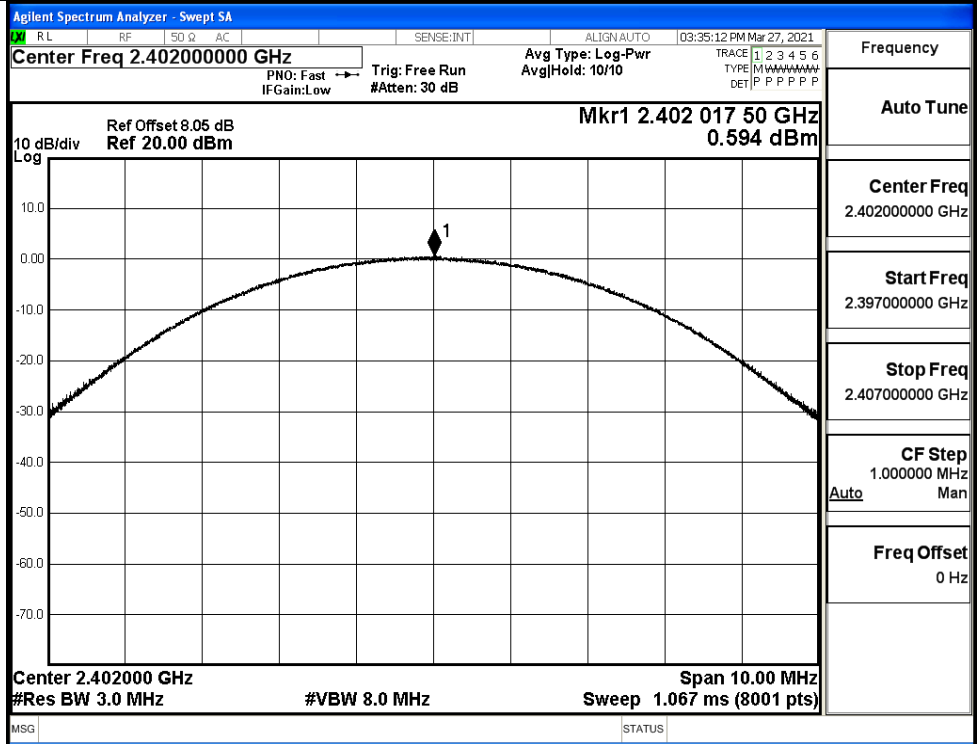
$\pi/4$ DQPSK/MCH



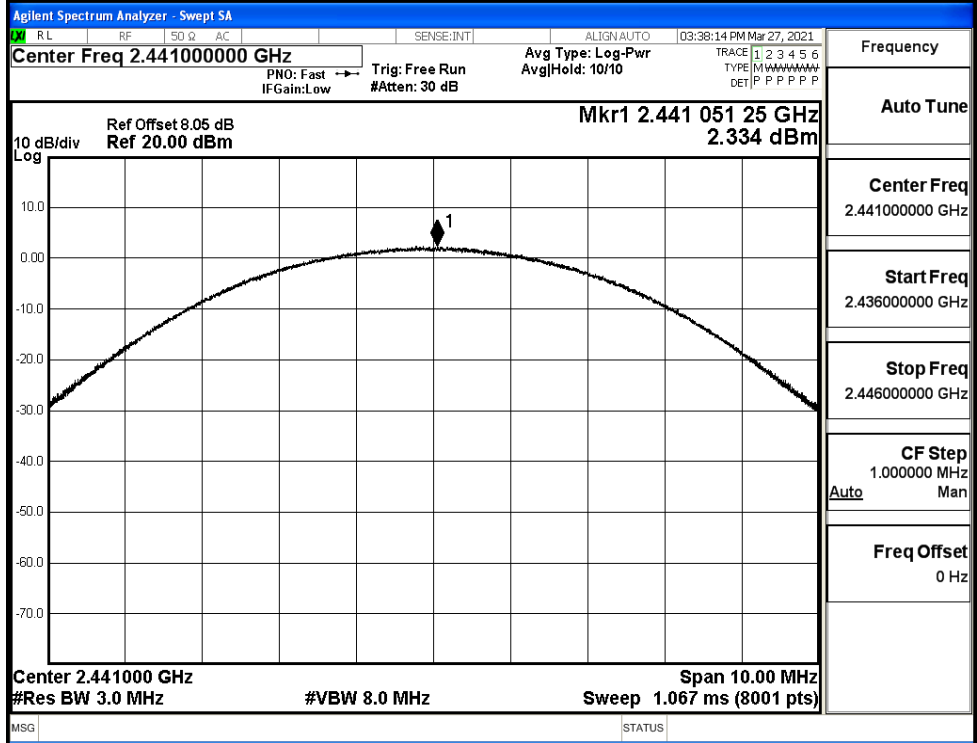
$\pi/4$ DQPSK/HCH



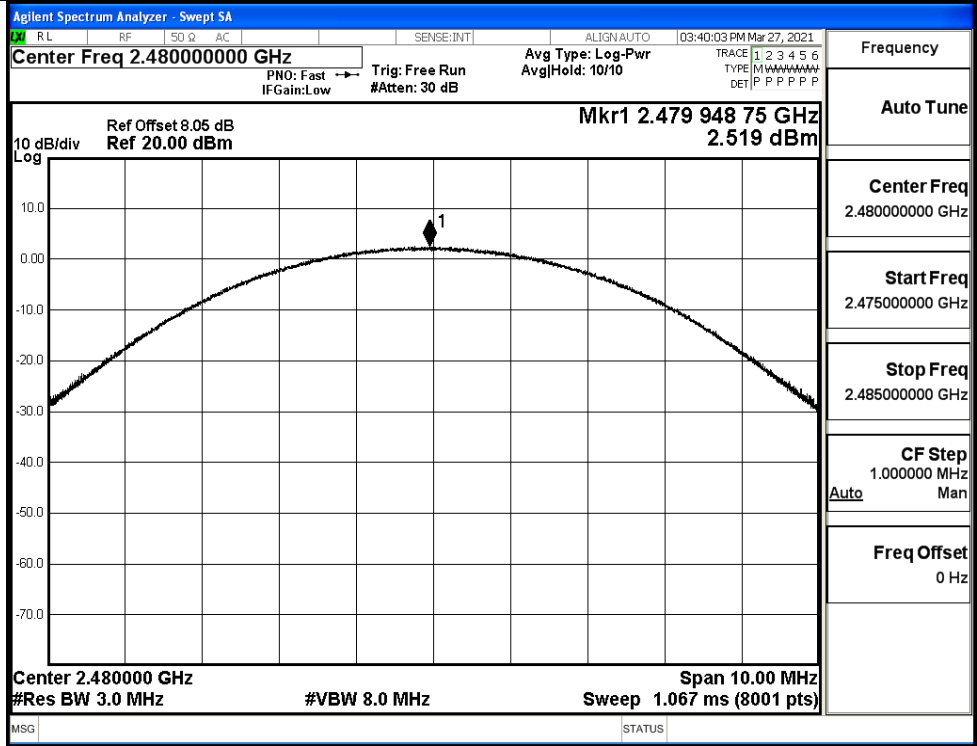
8DPSK/LCH



8DPSK/MCH

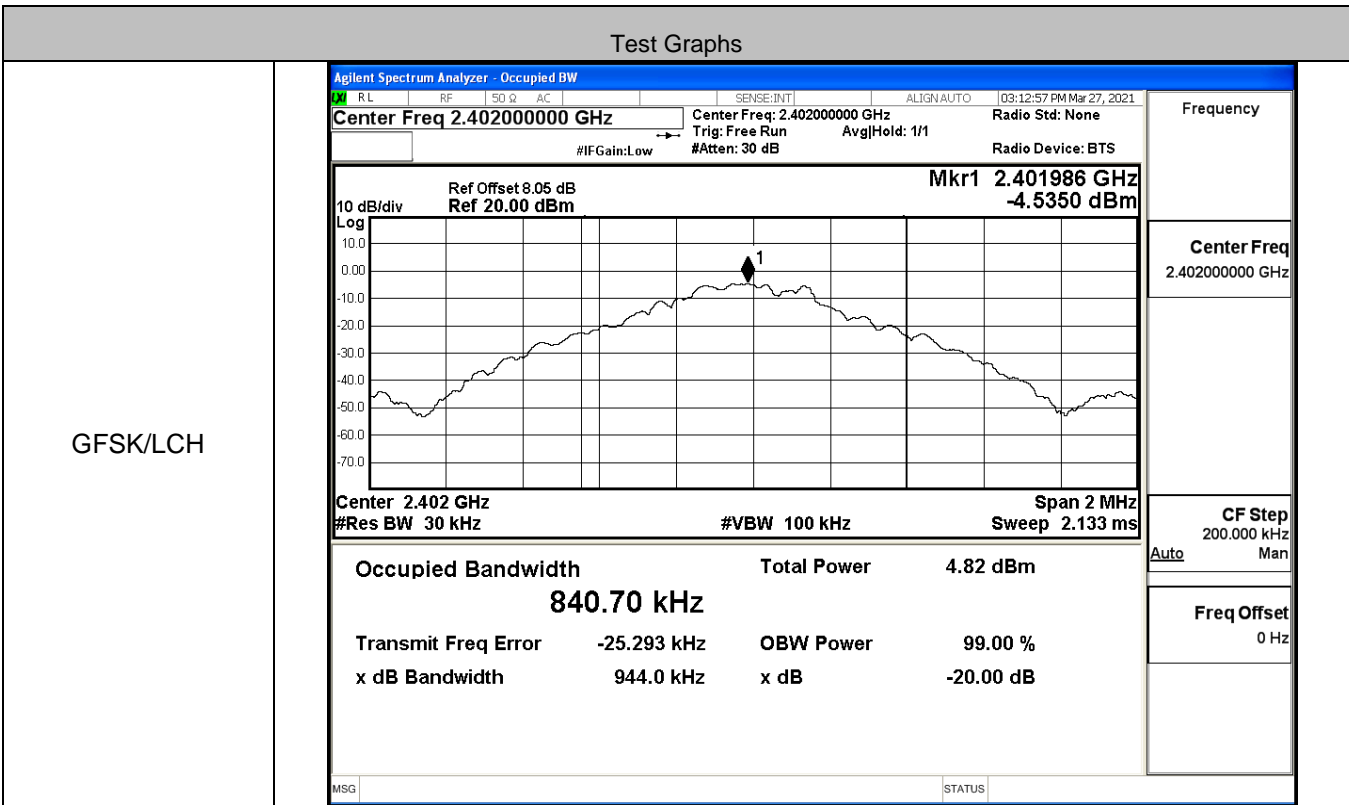


8DPSK/HCH

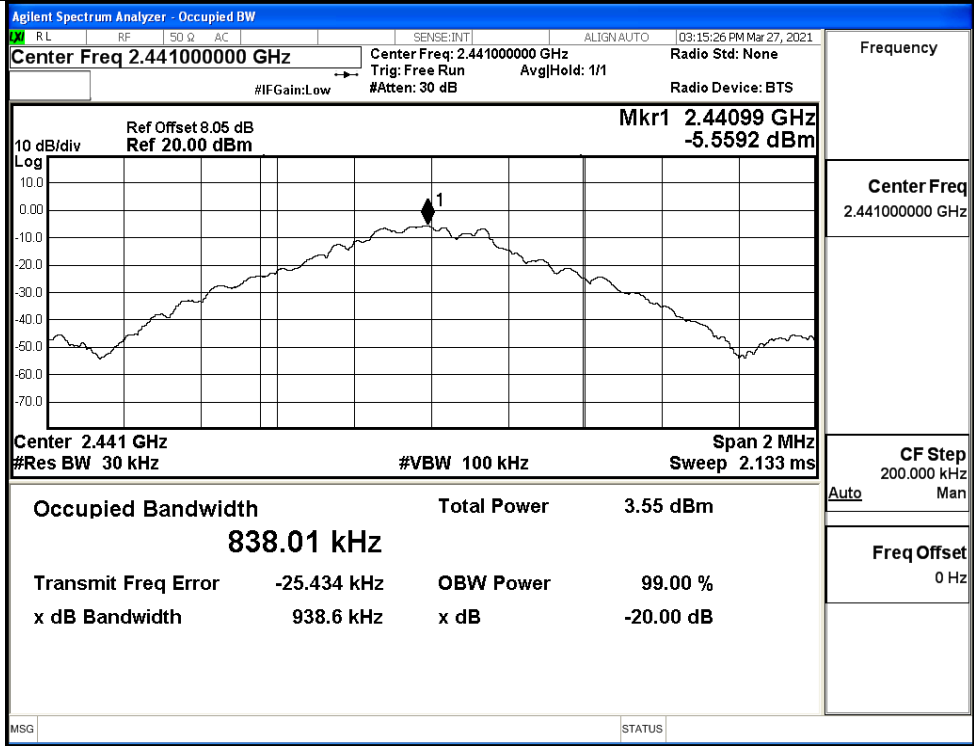


A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9440	Not Specified	PASS
	MCH	0.9386	Not Specified	PASS
	HCH	0.9393	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.318	Not Specified	PASS
	MCH	1.313	Not Specified	PASS
	HCH	1.316	Not Specified	PASS
8DPSK	LCH	1.311	Not Specified	PASS
	MCH	1.309	Not Specified	PASS
	HCH	1.308	Not Specified	PASS

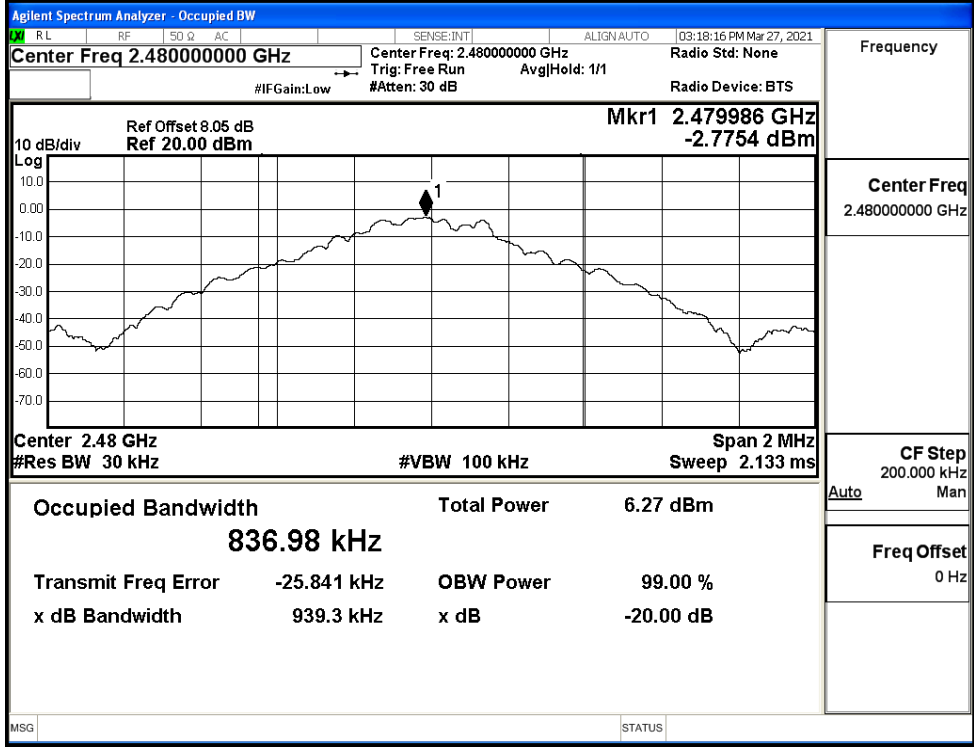


GFSK/MCH



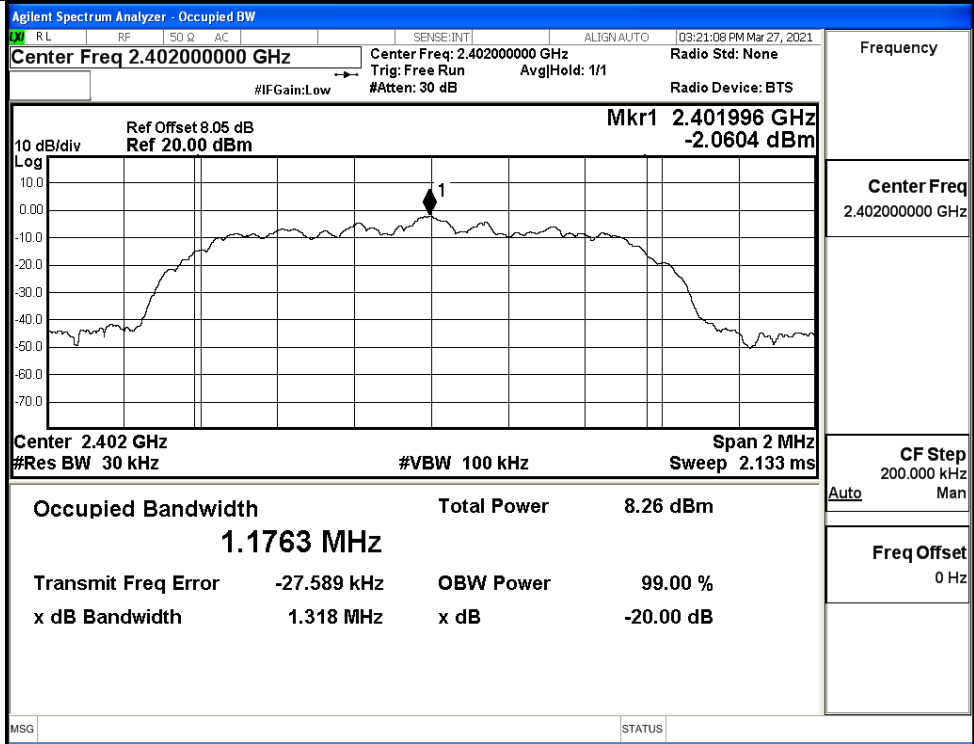
Frequency	2.44100000 GHz
Center Freq	2.44100000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

GFSK/HCH



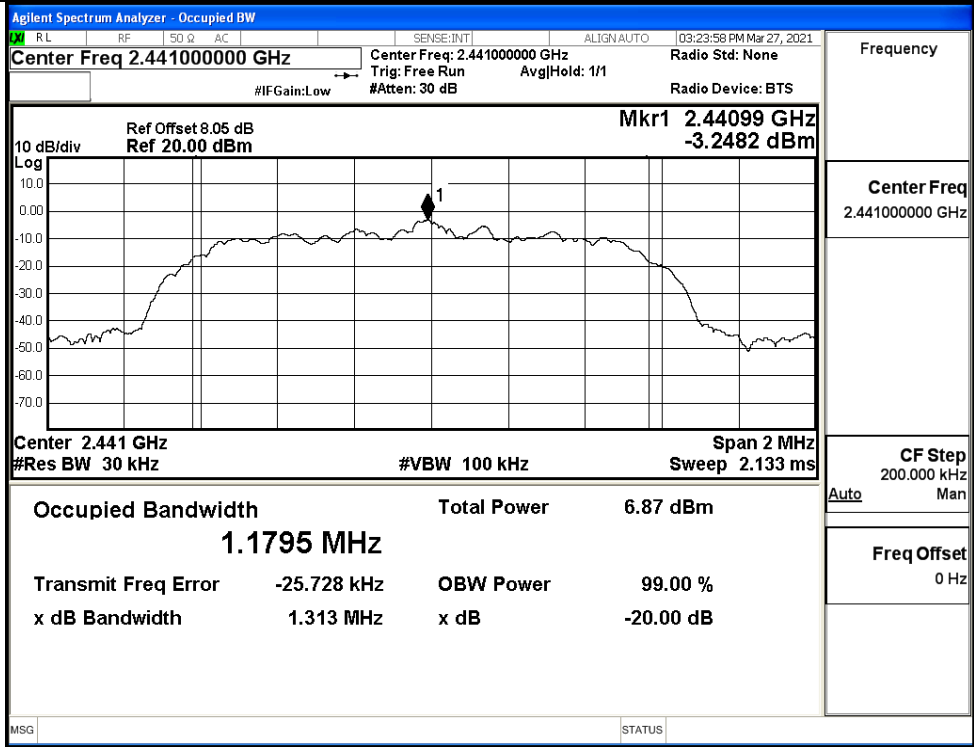
Frequency	2.48000000 GHz
Center Freq	2.48000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

$\pi/4$ DQPSK/LCH



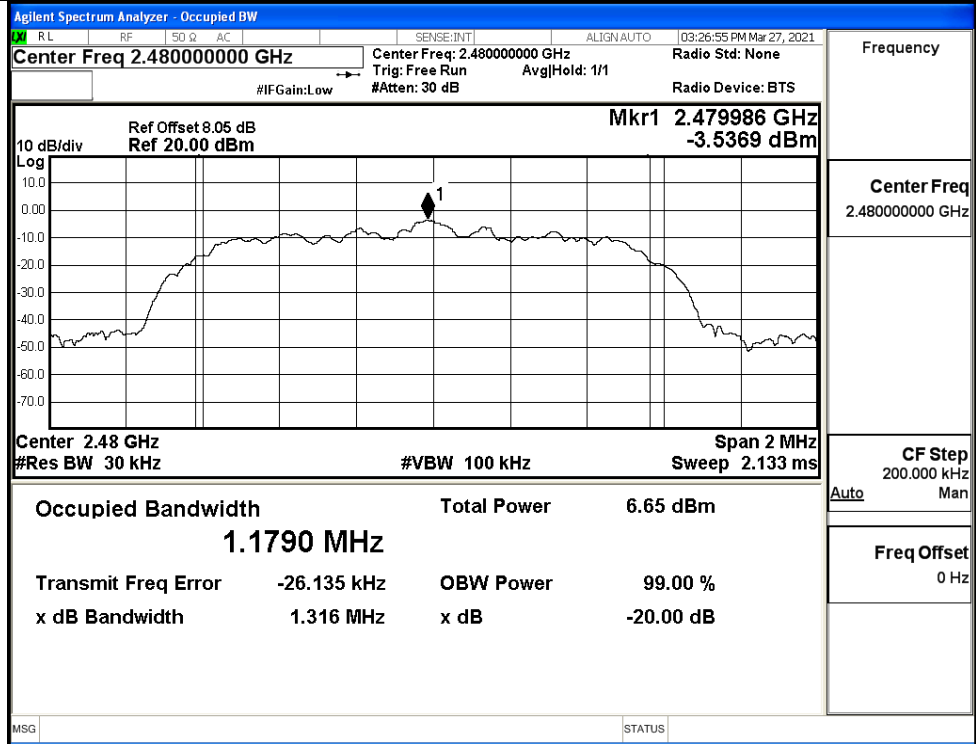
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Center Freq	2.40200000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

$\pi/4$ DQPSK/MCH

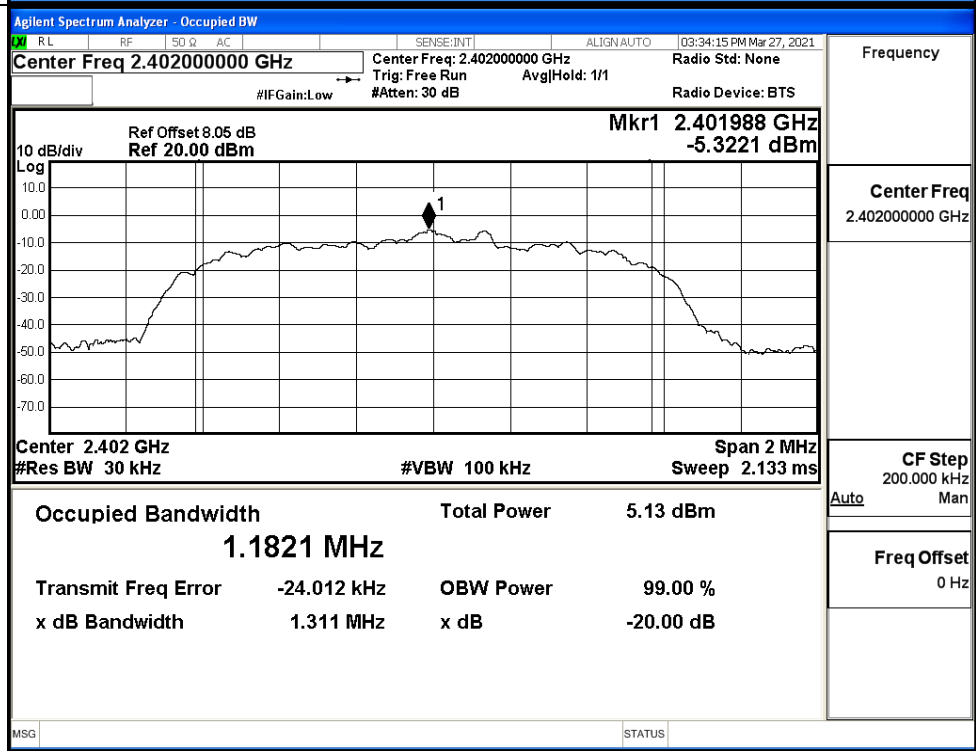


Frequency	2.44100000 GHz
Center Freq	2.44100000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

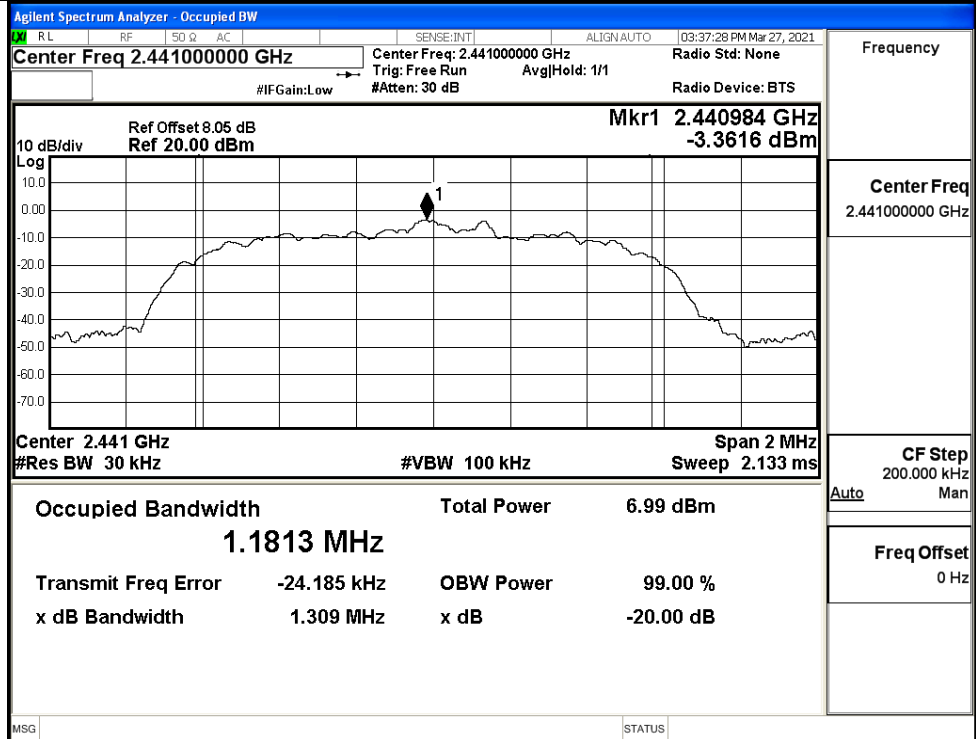
$\pi/4$ DQPSK/HCH



8DPSK/LCH

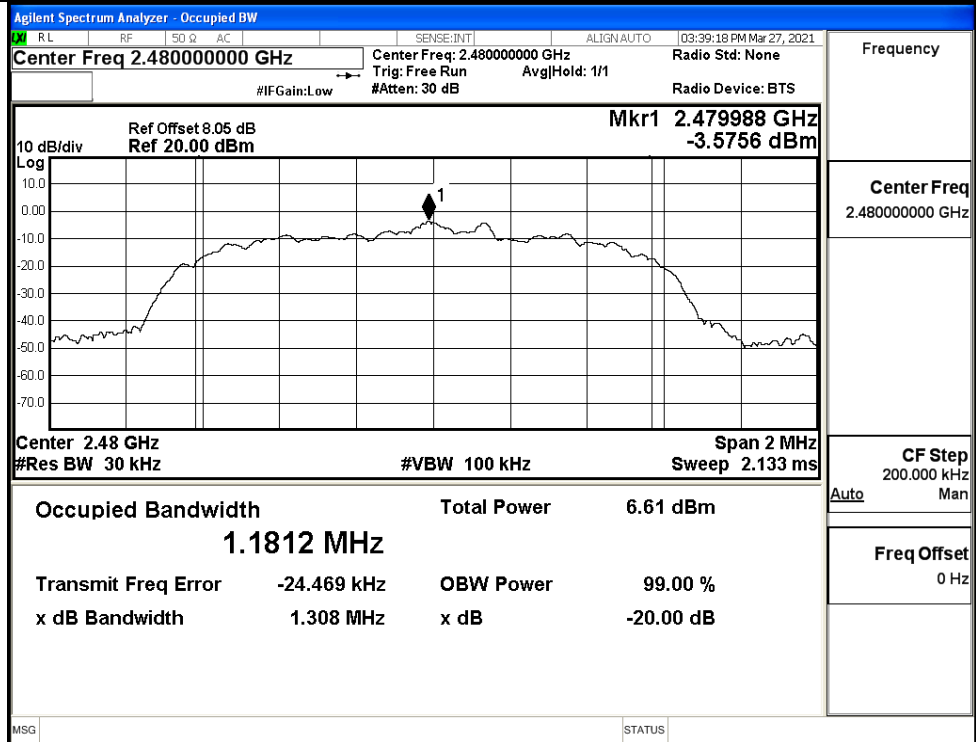


8DPSK/MCH



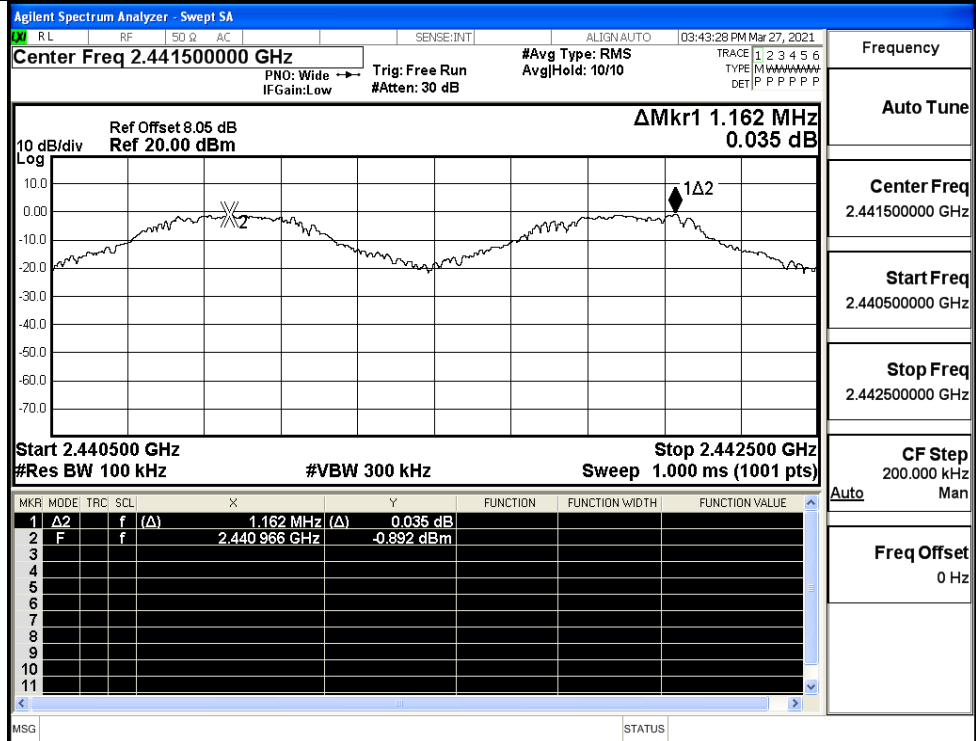
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Center Freq	2.441000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

8DPSK/HCH

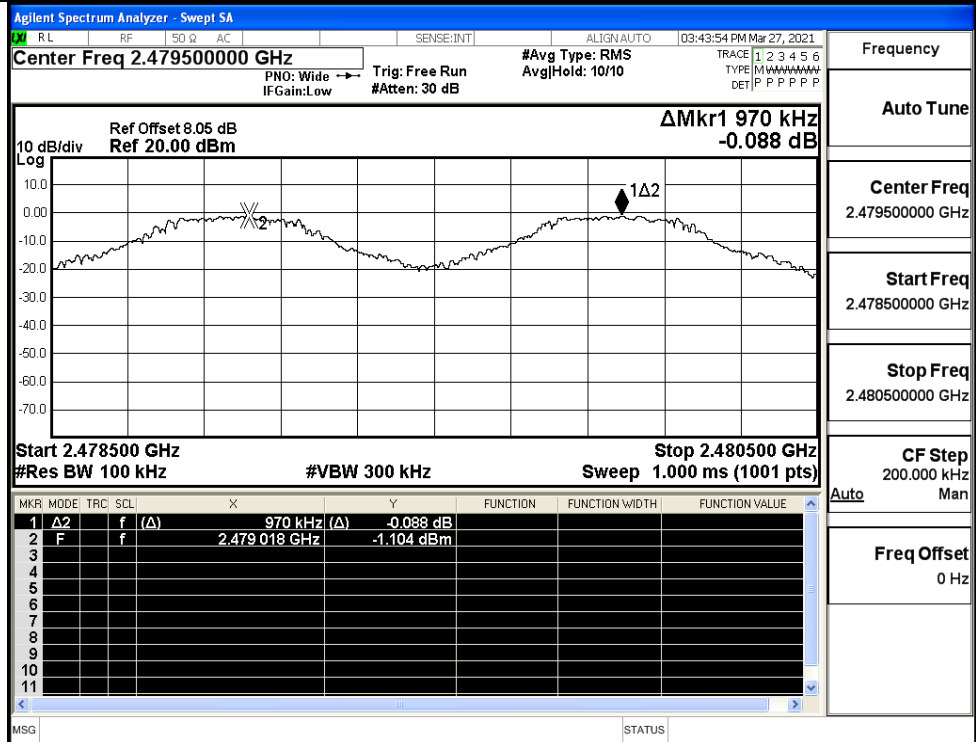


Frequency	2.480000000 GHz
Center Freq	2.480000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

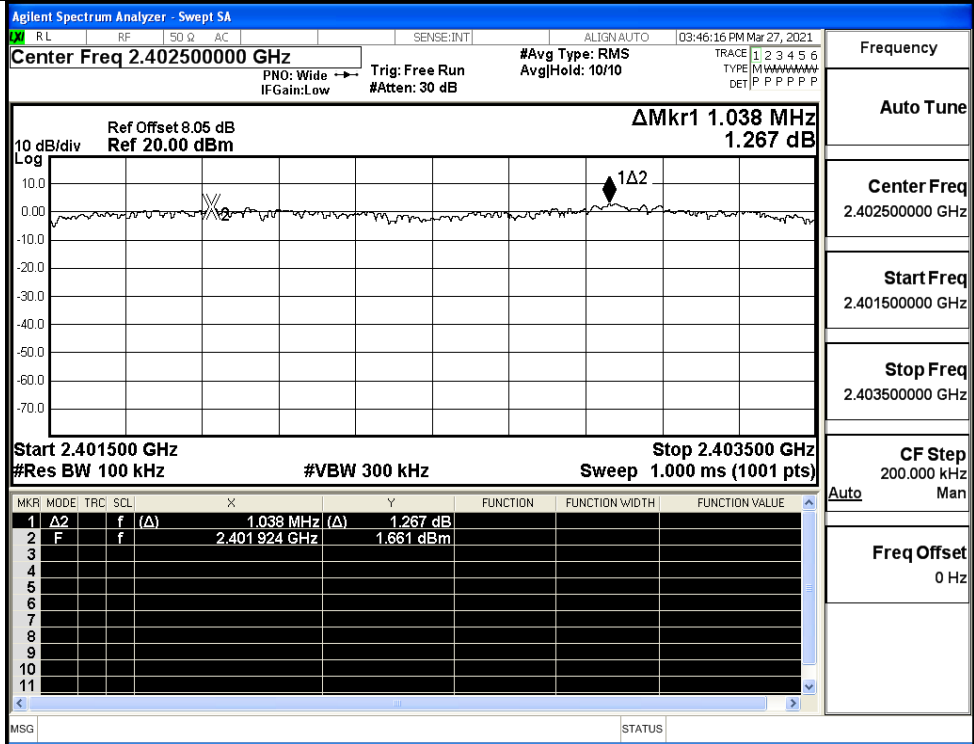
GFSK/MCH



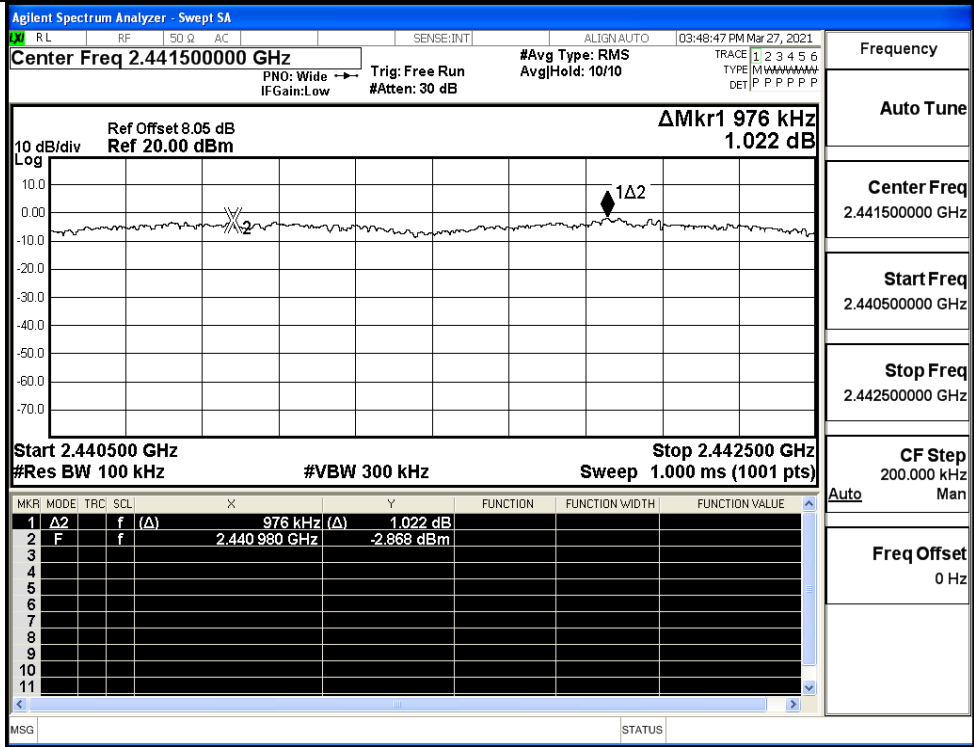
GFSK/HCH



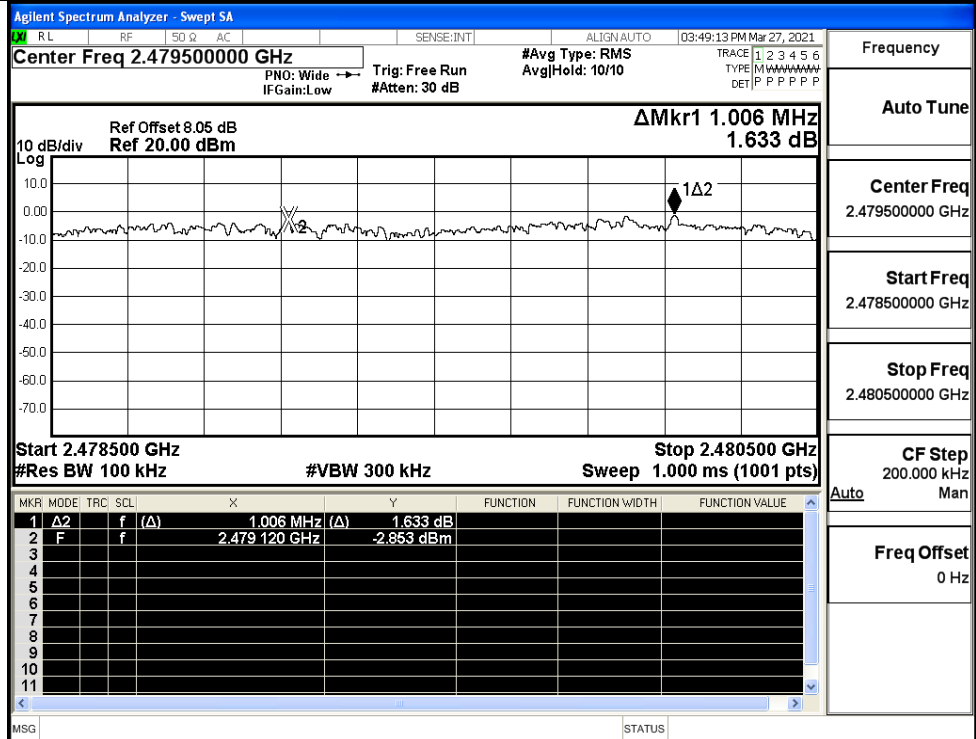
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH

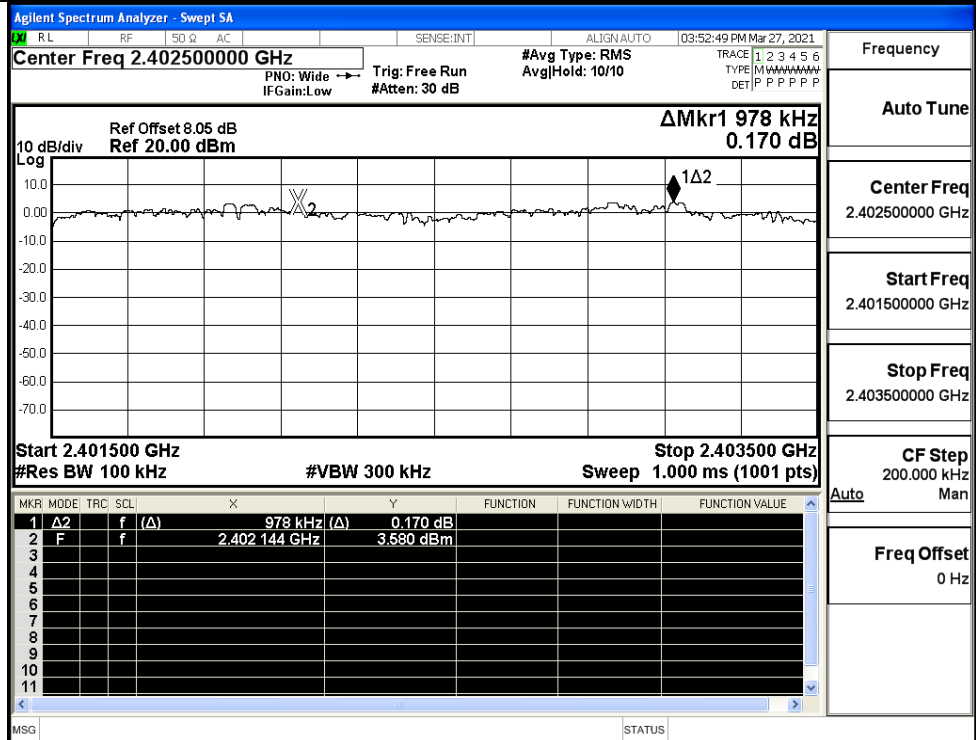


π/4DQPSK/HCH



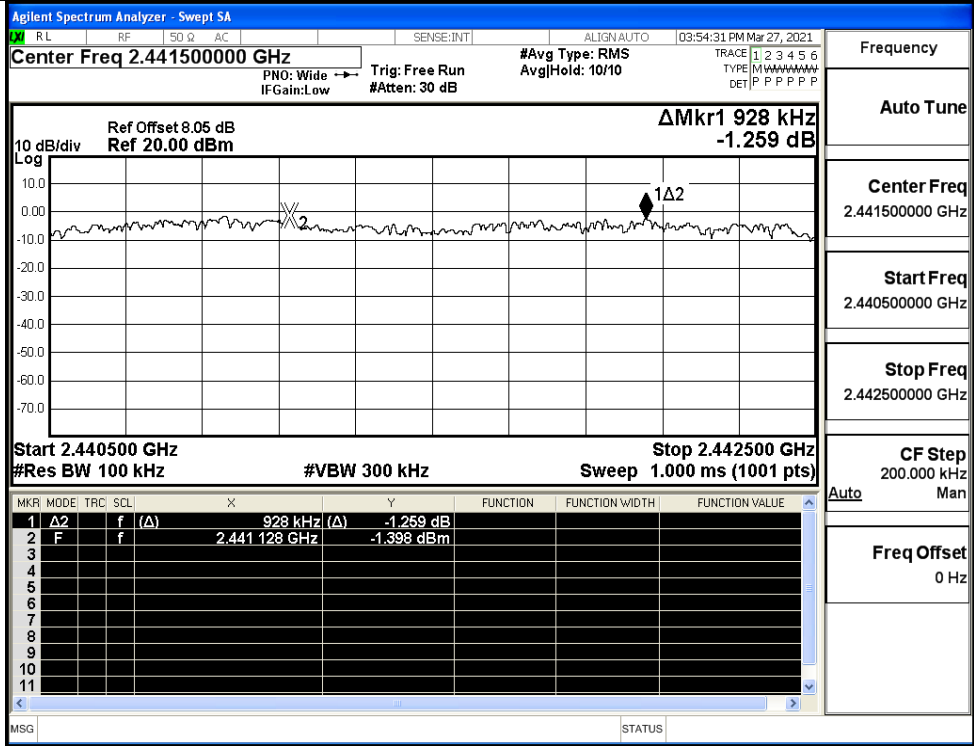
Frequency
Auto Tune
Center Freq
2.479500000 GHz
Start Freq
2.478500000 GHz
Stop Freq
2.480500000 GHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz

8DPSK/LCH

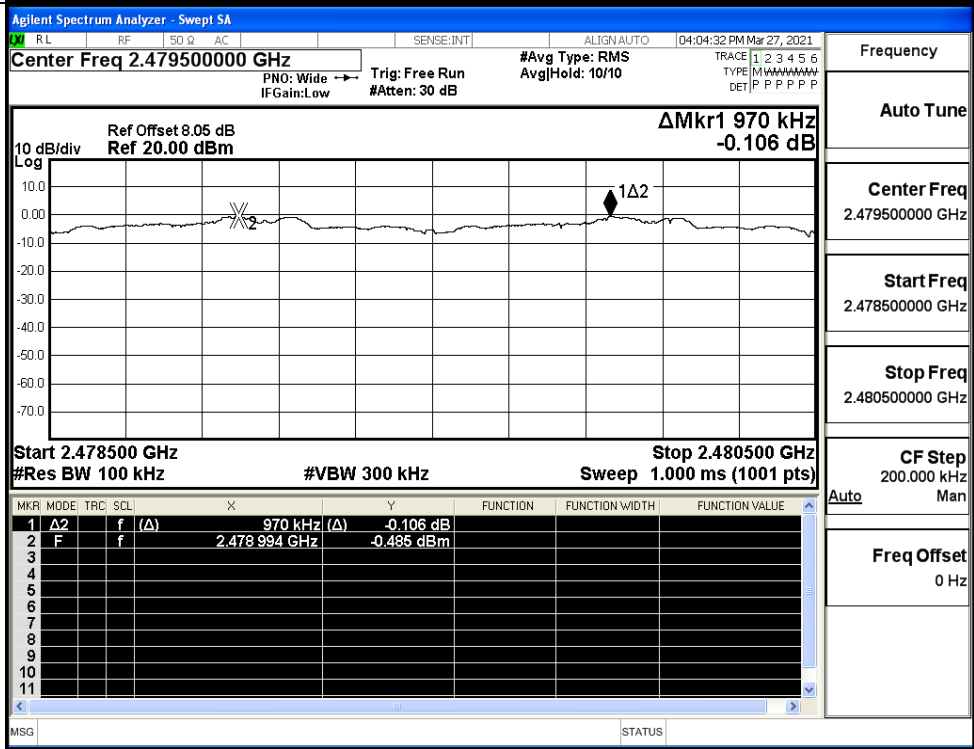


Frequency
Auto Tune
Center Freq
2.402500000 GHz
Start Freq
2.401500000 GHz
Stop Freq
2.403500000 GHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz

8DPSK/MCH



8DPSK/HCH



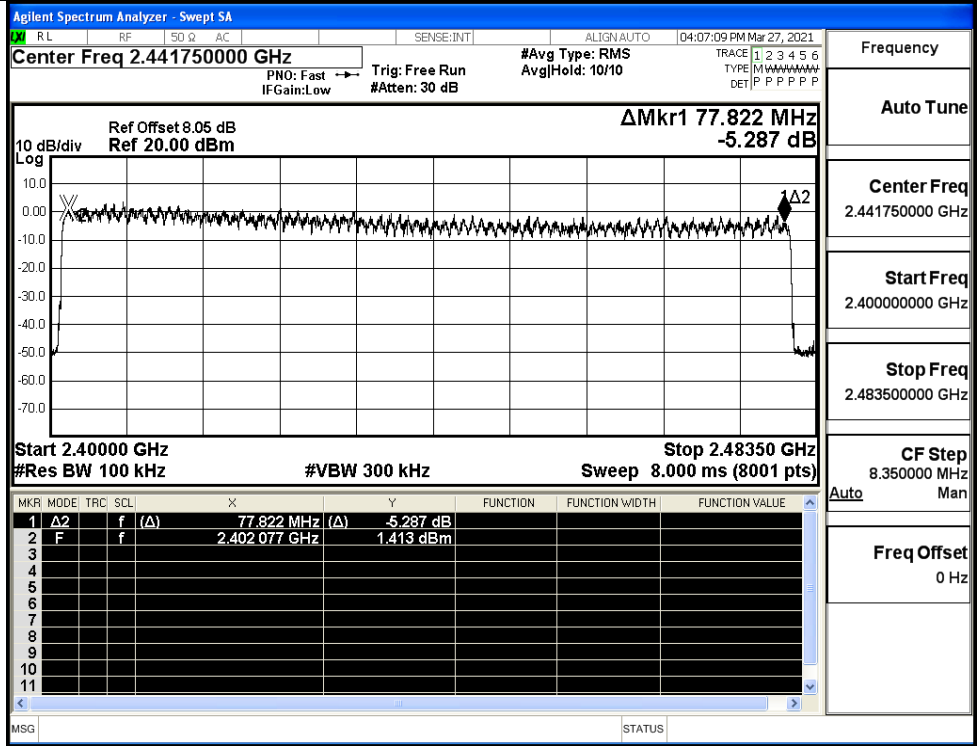
A.4 Hopping Channel Number

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

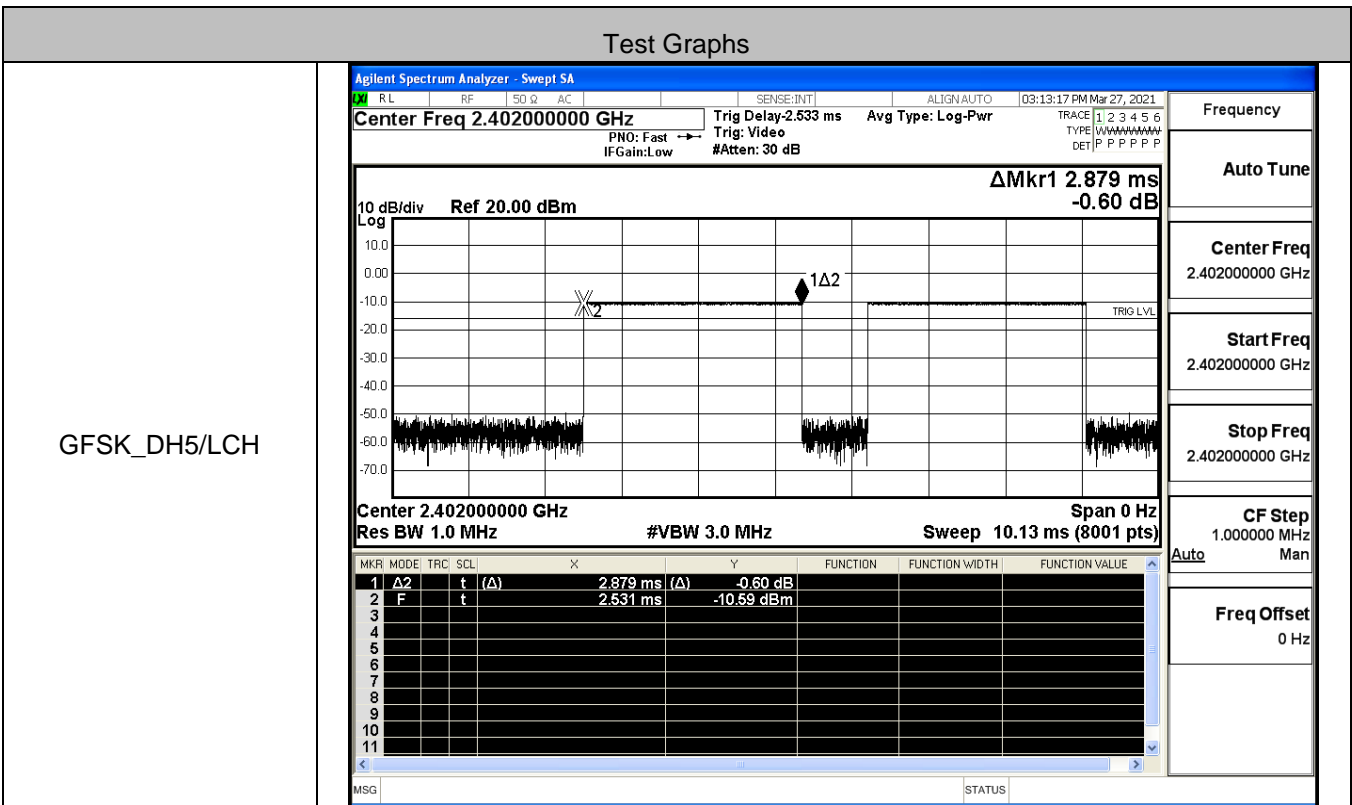
GFSK/Hop		<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.441750000 GHz</p> <p>Start Freq 2.400000000 GHz</p> <p>Stop Freq 2.483500000 GHz</p> <p>CF Step 8.350000 MHz</p> <p>Freq Offset 0 Hz</p>																									
	<p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.441750000 GHz</p> <p>Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>ΔMkr1 78.010 MHz -4.680 dB</p> <p>Start 2.40000 GHz #Res BW 100 kHz</p> <p>Stop 2.48350 GHz #VBW 300 kHz Sweep 8.000 ms (8001 pts)</p> <table border="1"> <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</td> <td>(Δ)</td> <td>-4.680 dB</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td></td> <td>2.401941 GHz</td> <td></td> <td>3.629 dBm</td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	Δ 2	f	(Δ)	78.010 MHz	(Δ)	-4.680 dB			2	F	f		2.401941 GHz		3.629 dBm	
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																			
1	Δ 2	f	(Δ)	78.010 MHz	(Δ)	-4.680 dB																					
2	F	f		2.401941 GHz		3.629 dBm																					
$\pi/4$ DQPSK/Hop		<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.441750000 GHz</p> <p>Start Freq 2.400000000 GHz</p> <p>Stop Freq 2.483500000 GHz</p> <p>CF Step 8.350000 MHz</p> <p>Freq Offset 0 Hz</p>																									
	<p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.441750000 GHz</p> <p>Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>ΔMkr1 78.313 MHz -5.123 dB</p> <p>Start 2.40000 GHz #Res BW 100 kHz</p> <p>Stop 2.48350 GHz #VBW 300 kHz Sweep 8.000 ms (8001 pts)</p> <table border="1"> <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>78.313 MHz</td> <td>(Δ)</td> <td>-5.123 dB</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td></td> <td>2.401806 GHz</td> <td></td> <td>1.568 dBm</td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	Δ 2	f	(Δ)	78.313 MHz	(Δ)	-5.123 dB			2	F	f		2.401806 GHz		1.568 dBm	
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																			
1	Δ 2	f	(Δ)	78.313 MHz	(Δ)	-5.123 dB																					
2	F	f		2.401806 GHz		1.568 dBm																					

8DPSK/Hop

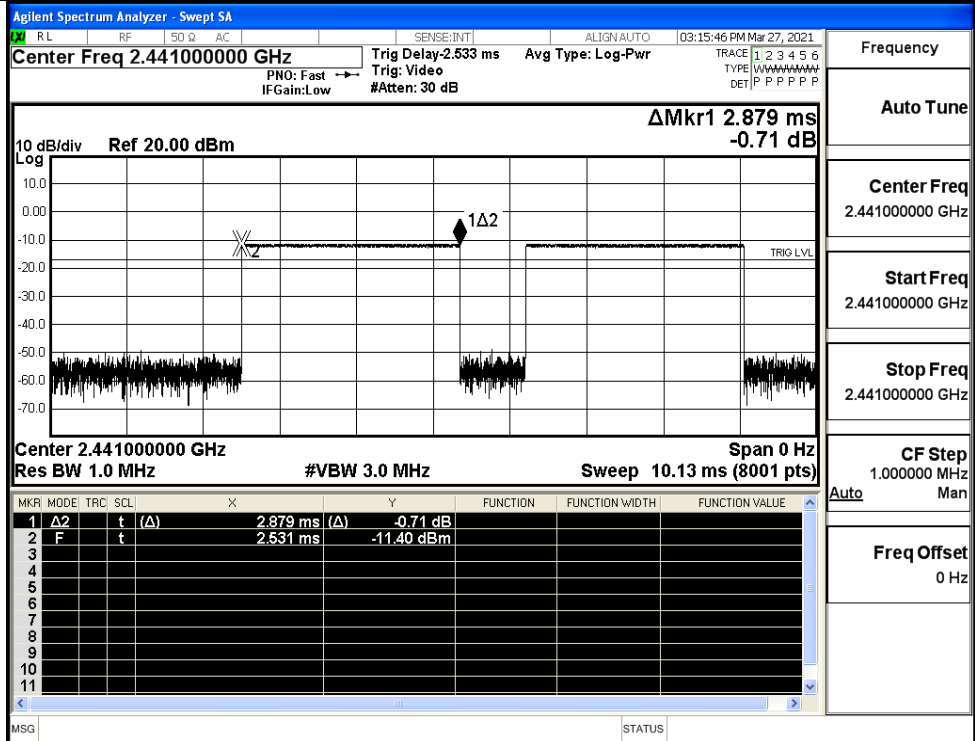


A.5 Dwell Time

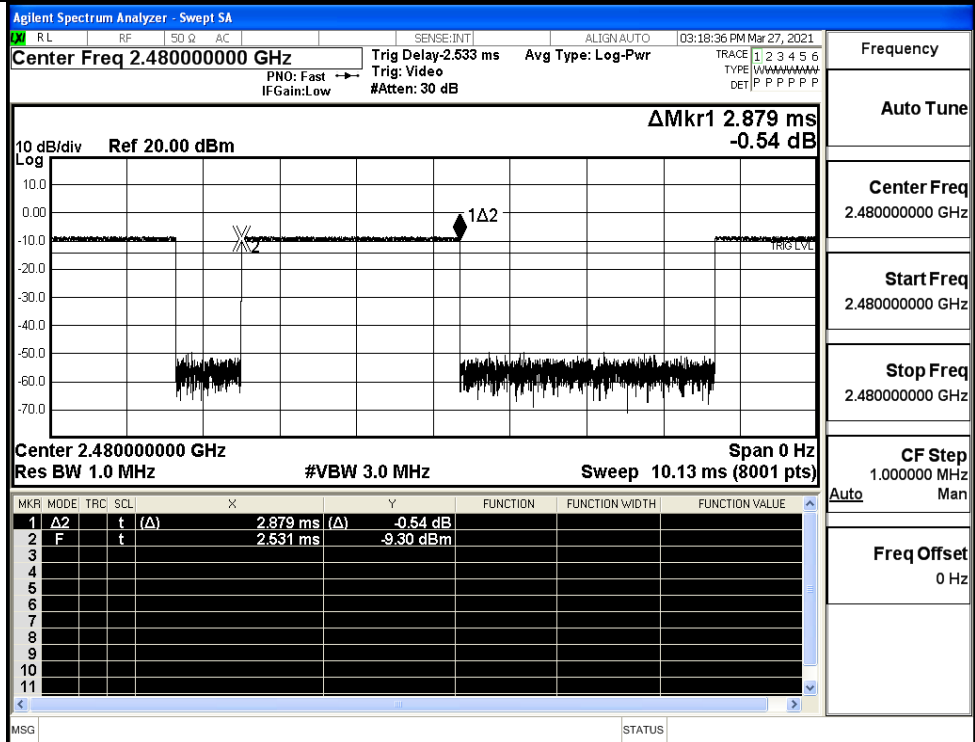
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
π/4DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7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



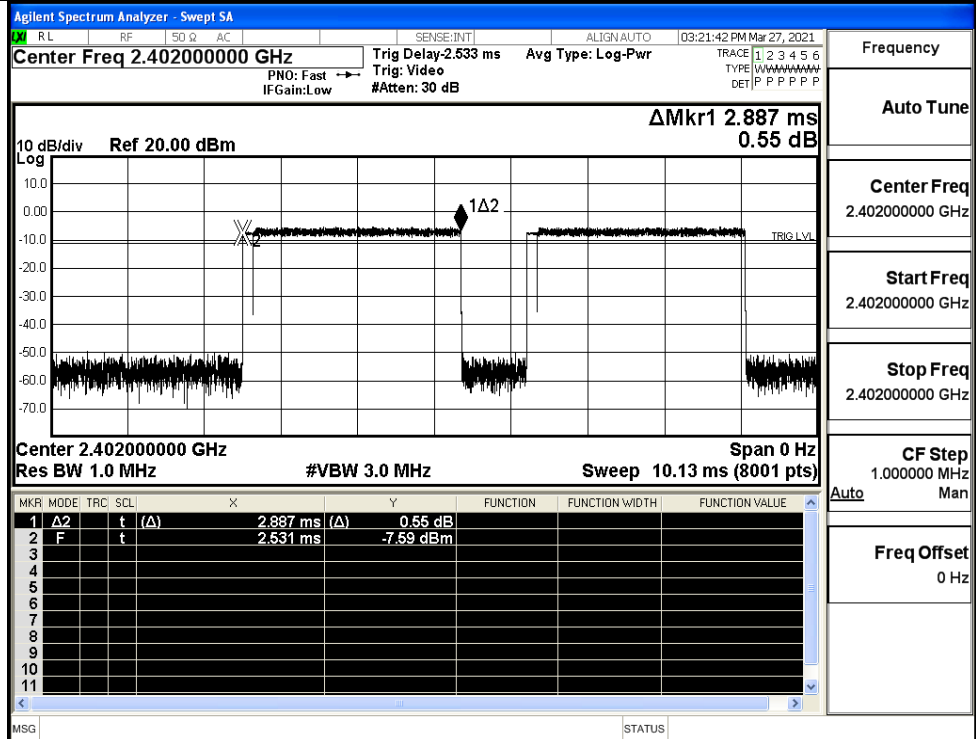
GFSK_DH5/MCH



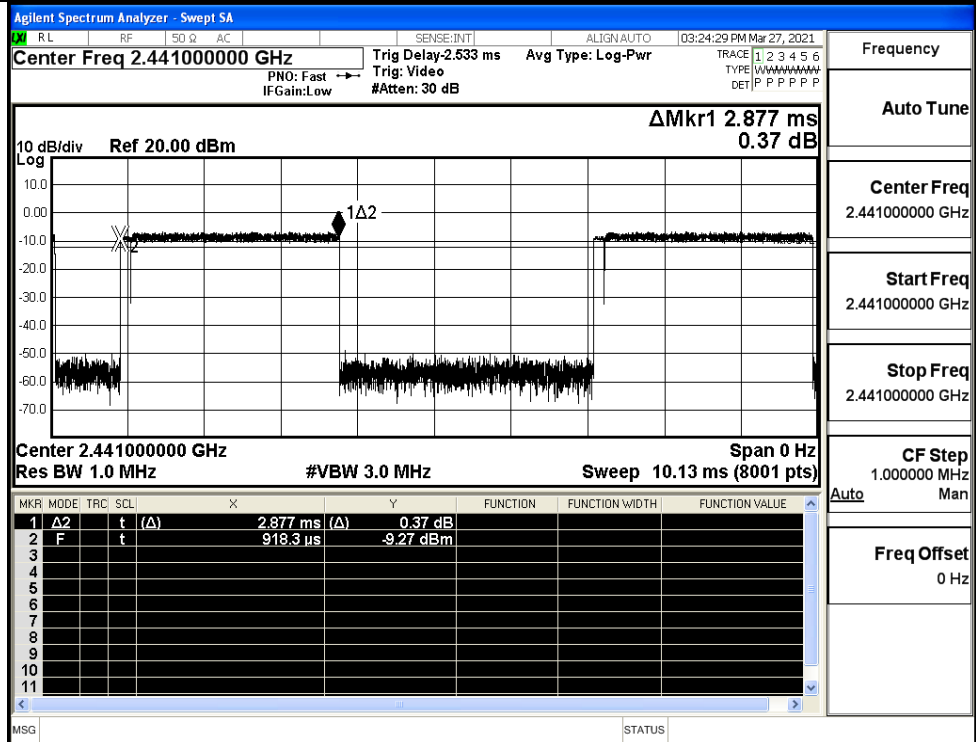
GFSK_DH5/HCH



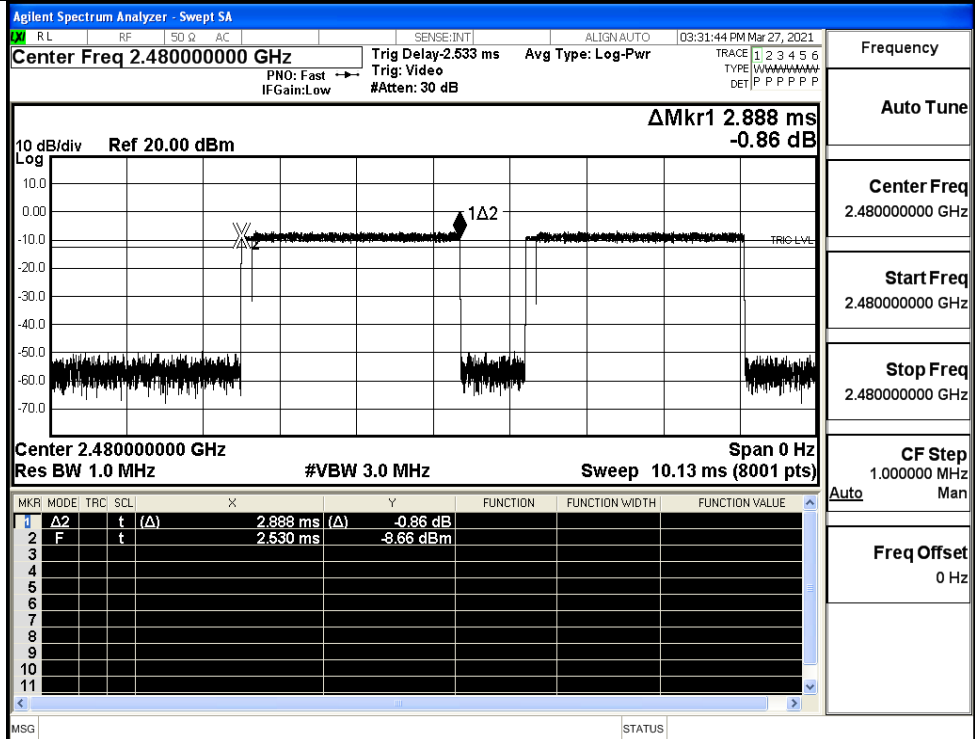
$\pi/4$ DQPSK
_2DH5/LCH



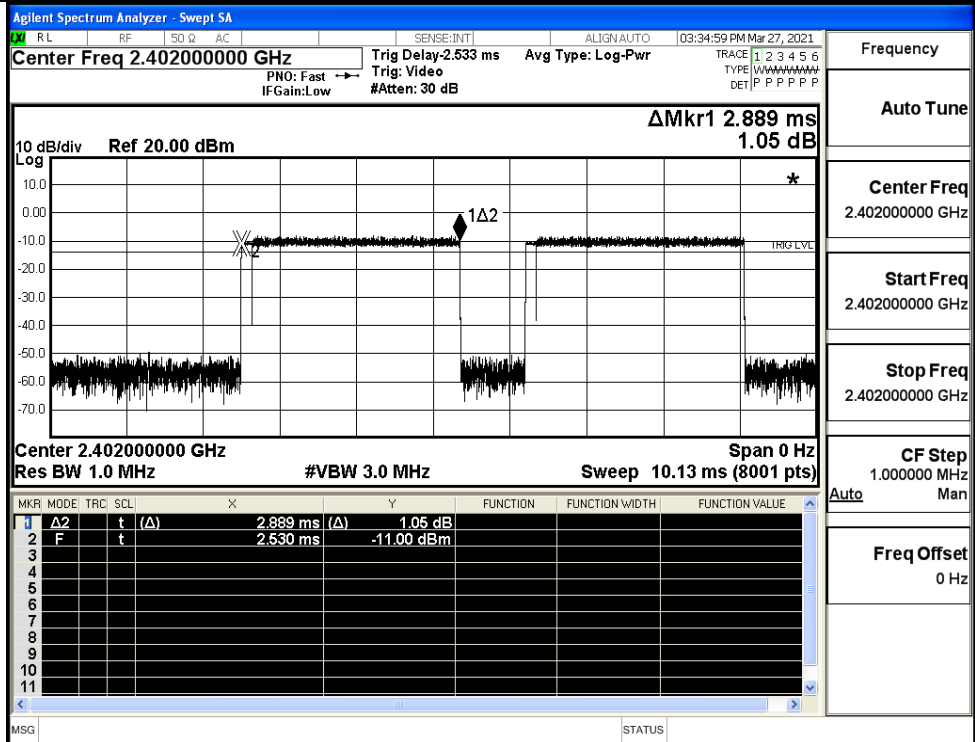
$\pi/4$ DQPSK
_2DH5/MCH



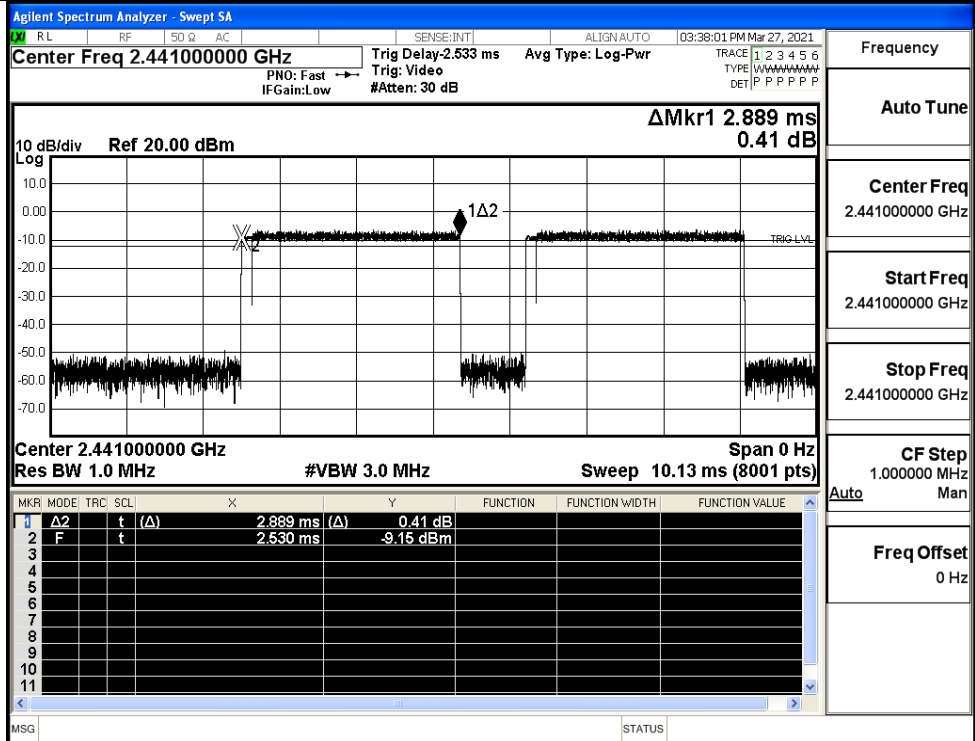
$\pi/4$ DQPSK
_2DH5/HCH



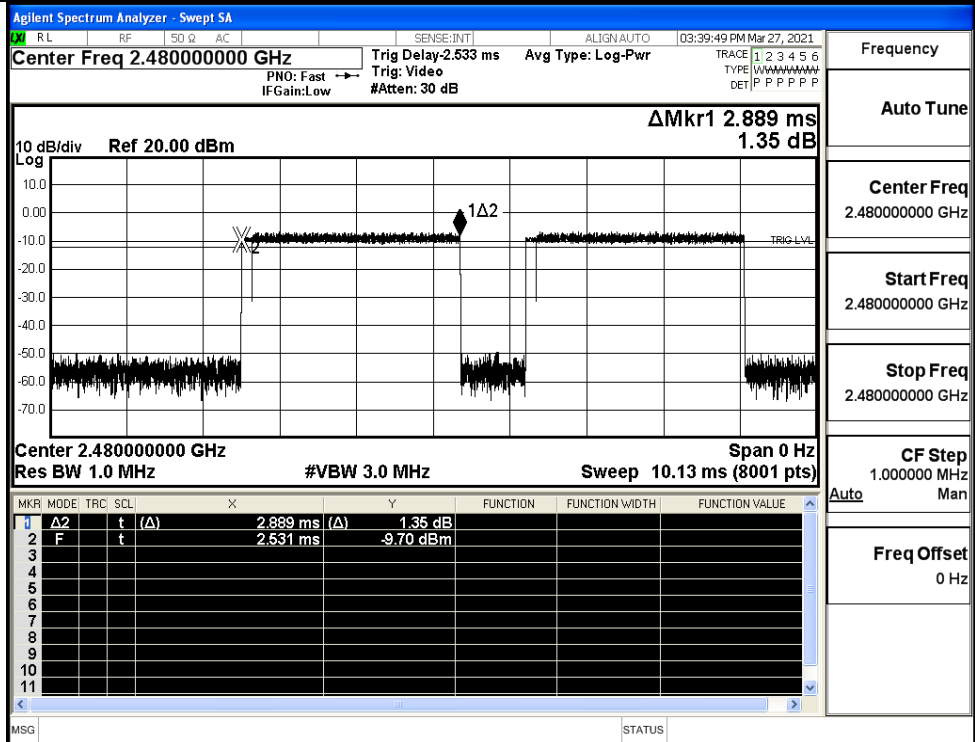
8DPSK_3DH5/LCH



8DPSK_3DH5/MCH



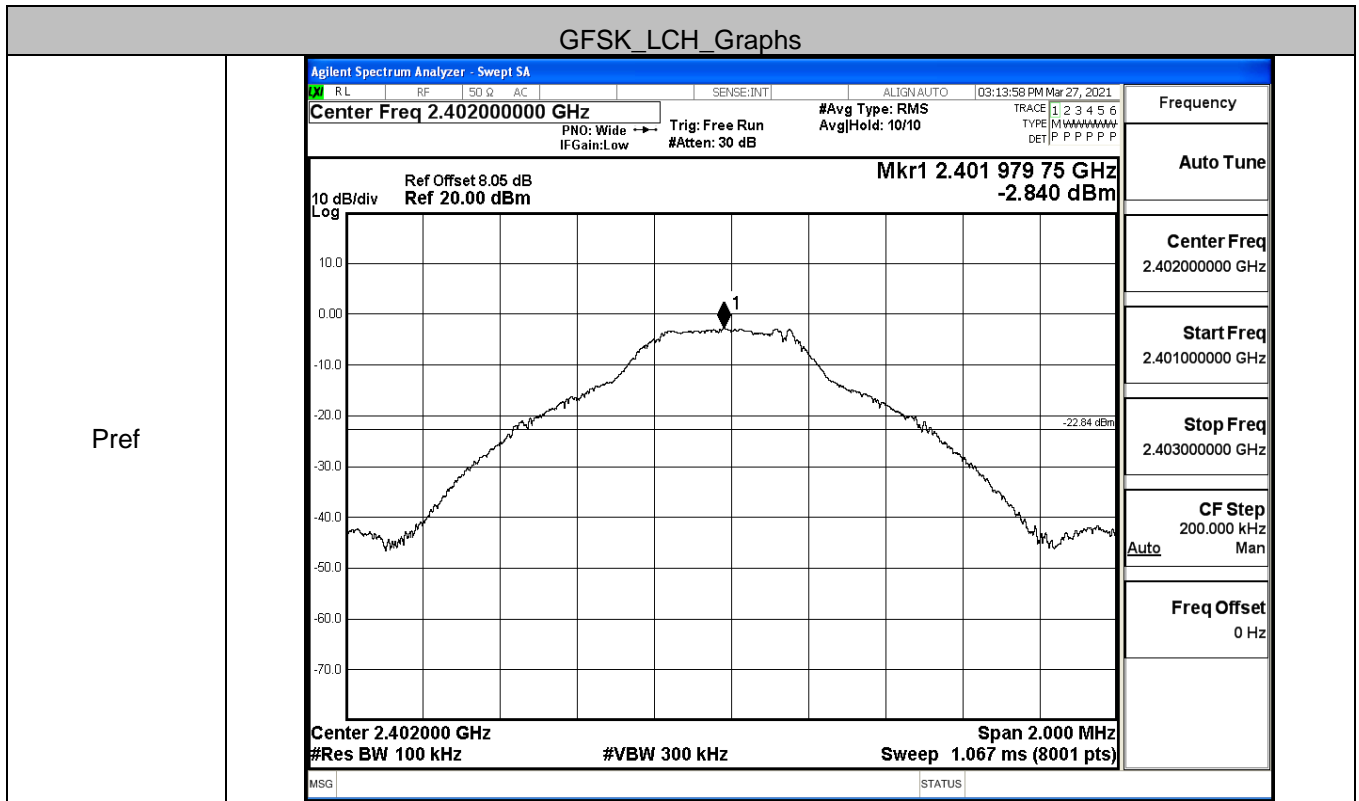
8DPSK_3DH5/HCH

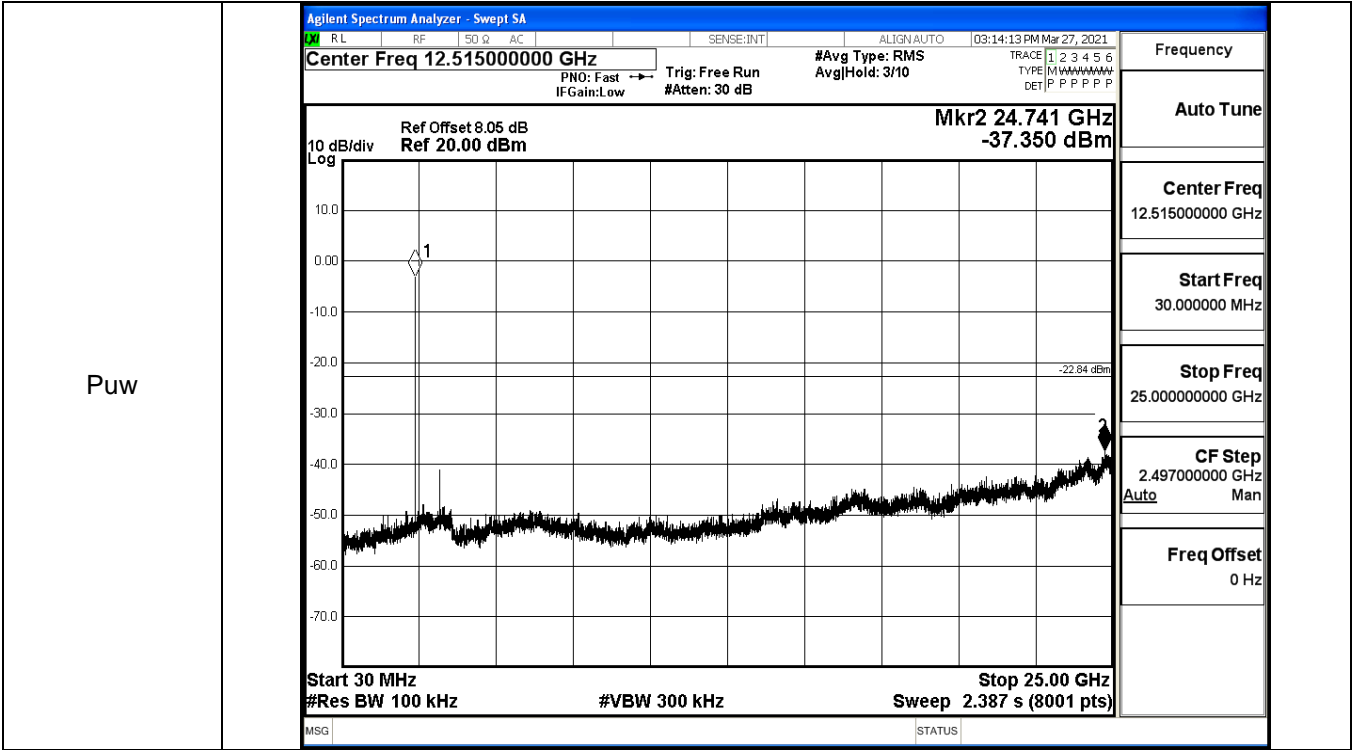


A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-2.84	-37.350	-22.840	PASS
	MCH	-1.184	-37.762	-21.184	PASS
	HCH	-0.756	-37.325	-20.756	PASS
π /4DQPSK	LCH	-2.752	-38.140	-22.752	PASS
	MCH	-0.914	-37.591	-20.914	PASS
	HCH	-1.775	-37.948	-21.775	PASS
8DPSK	LCH	-2.674	-36.779	-22.674	PASS
	MCH	-1.331	-38.006	-21.331	PASS
	HCH	-1.162	-37.618	-21.162	PASS

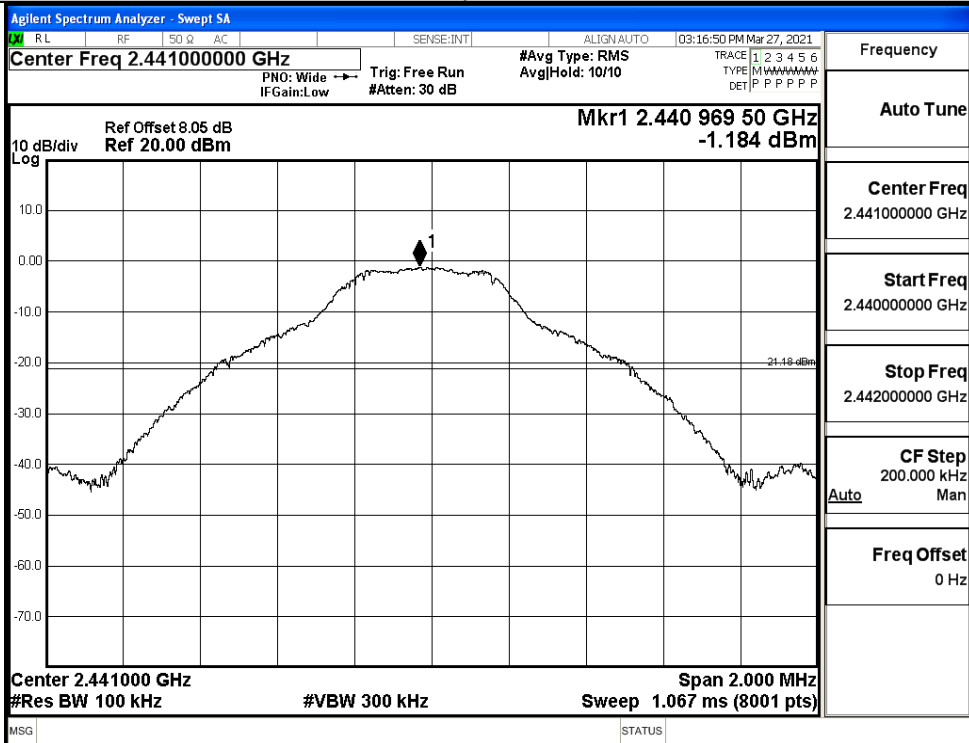
GFSK_LCH_Graphs



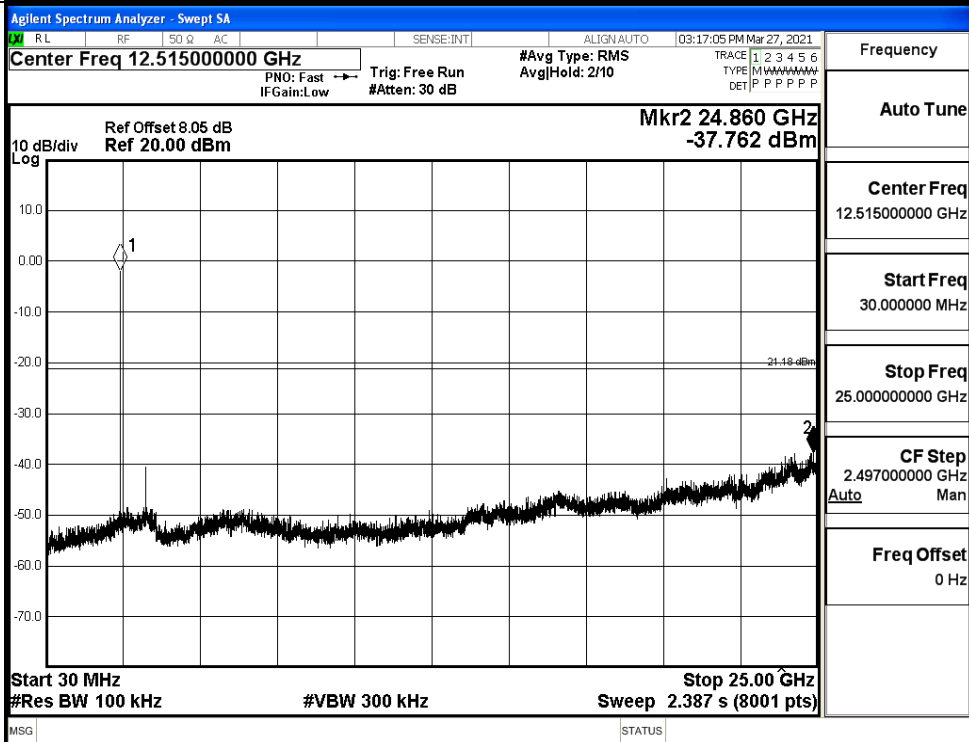


GFSK_MCH_Graphs

Pref

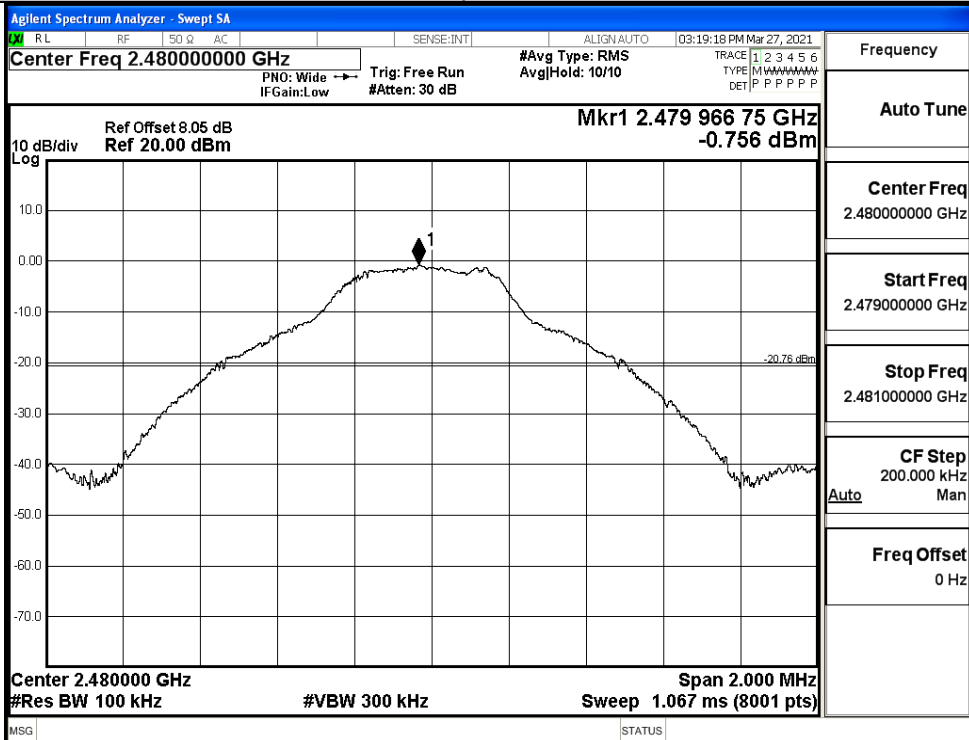


Puw

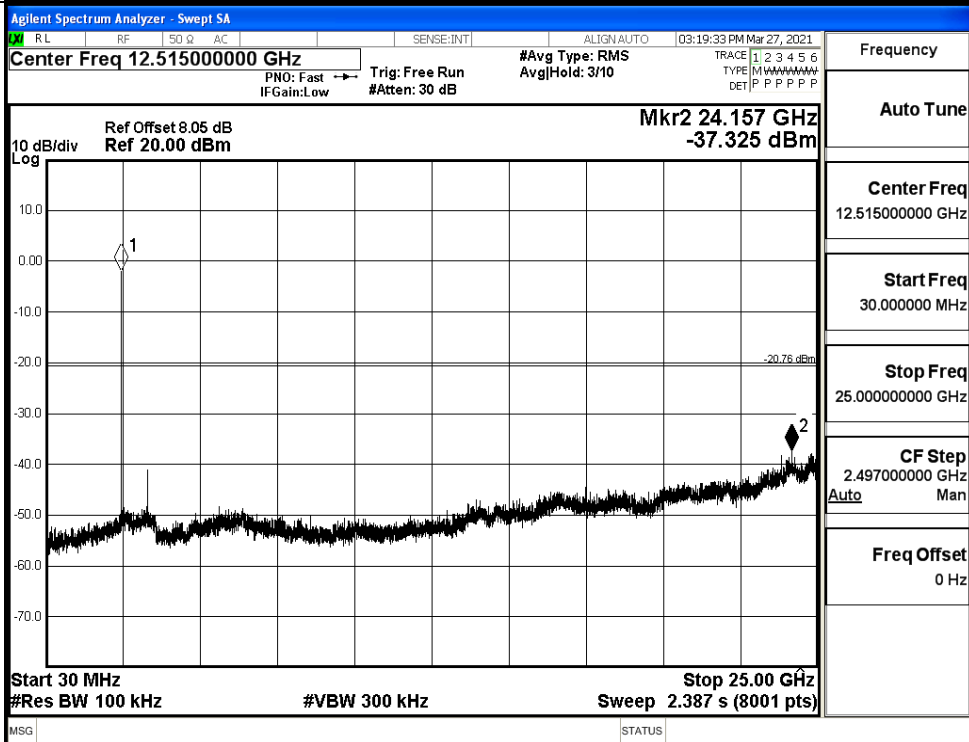


GFSK_HCH_Graphs

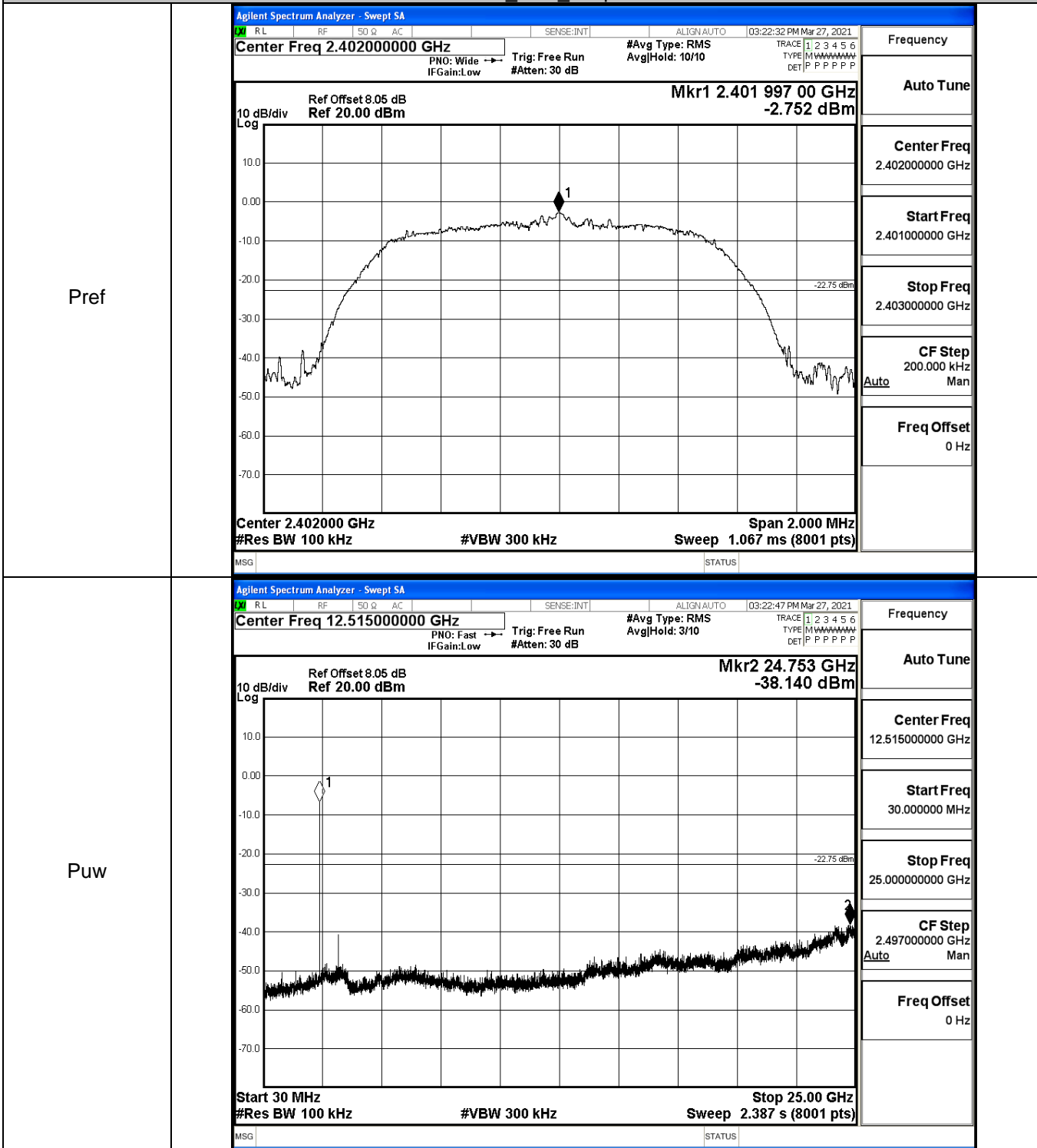
Pref



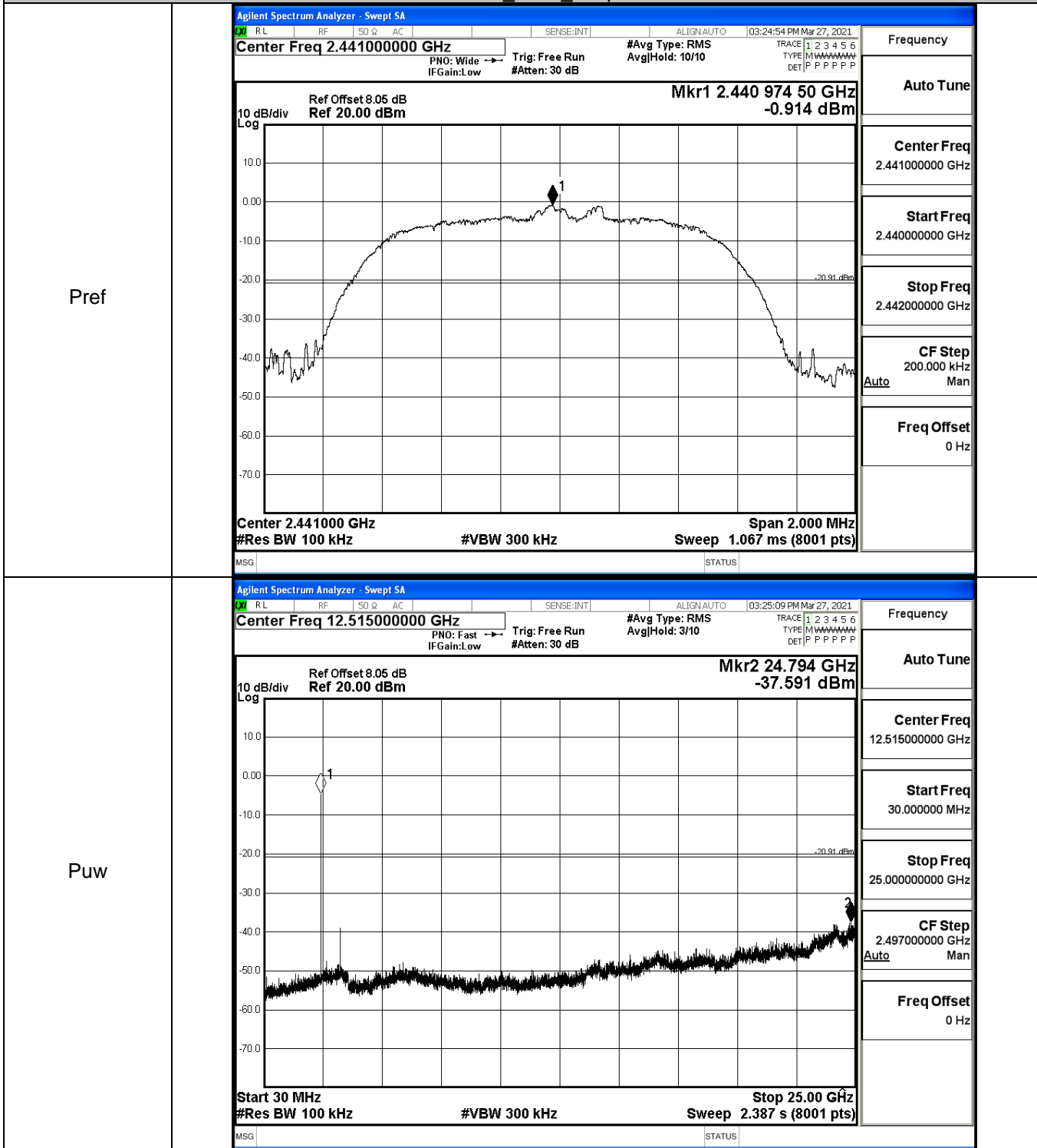
Puw



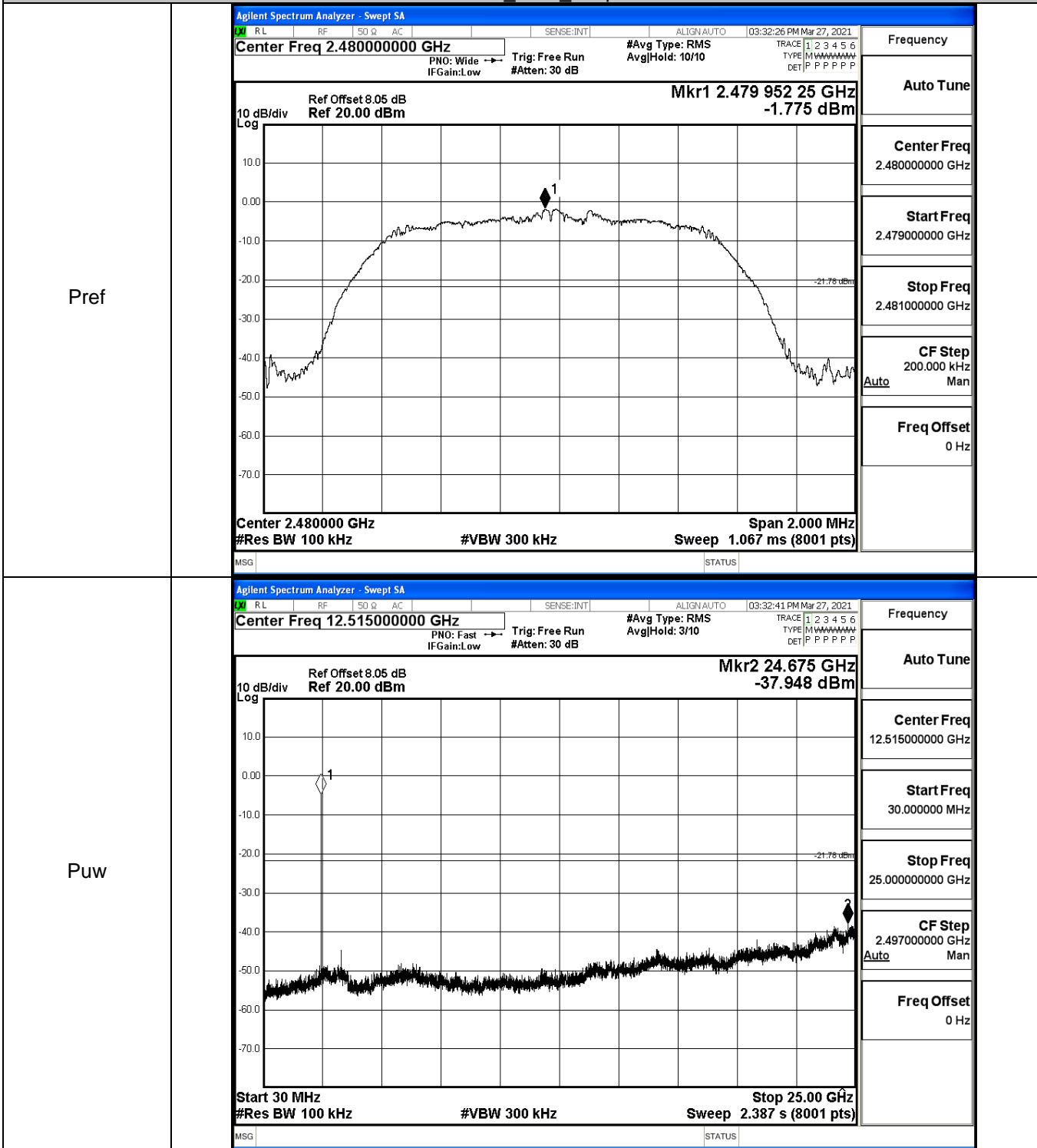
$\pi/4$ DQPSK_LCH_Graphs



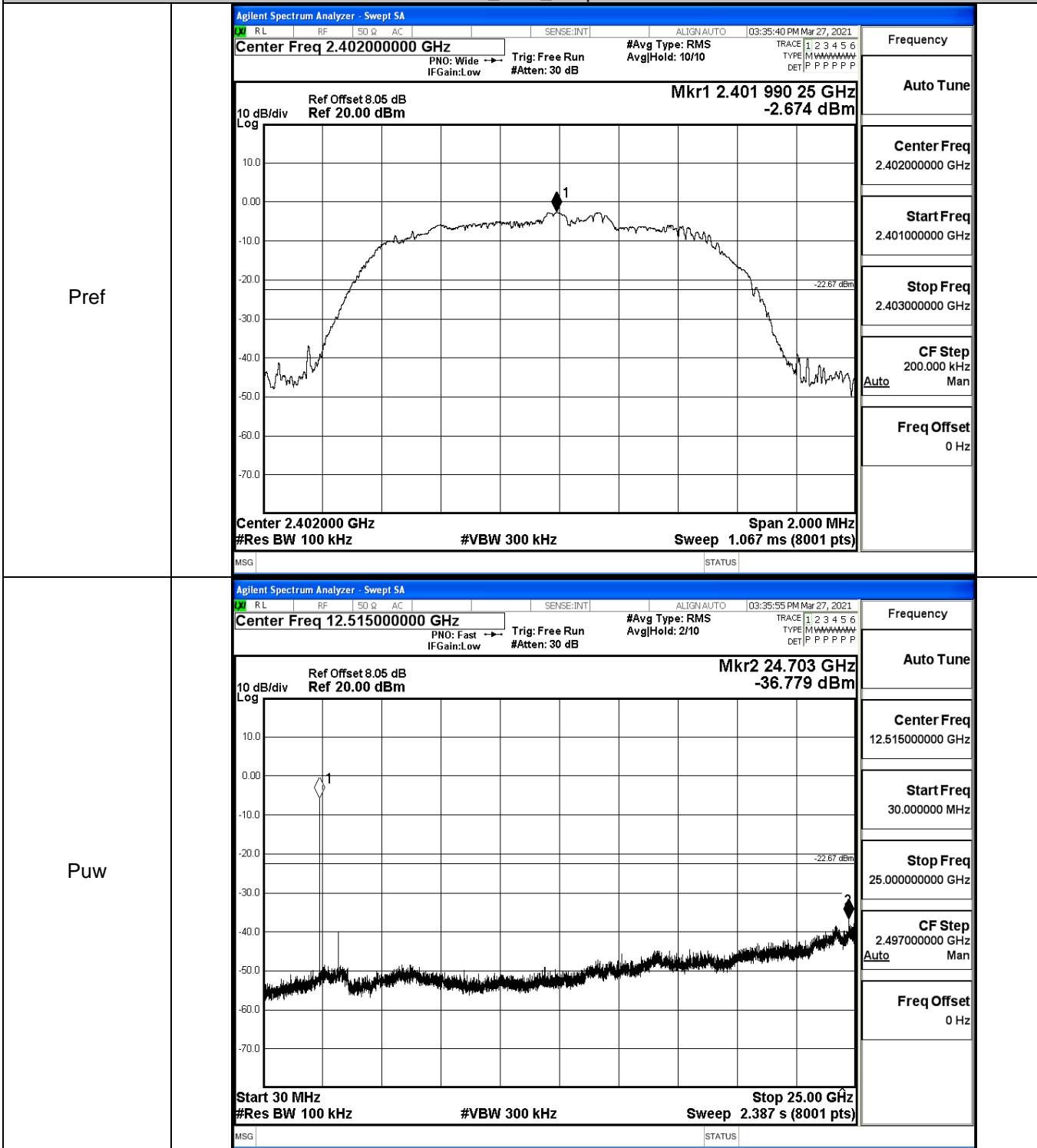
$\pi/4$ DQPSK_MCH_Graphs



$\pi/4$ DQPSK_HCH_Graphs

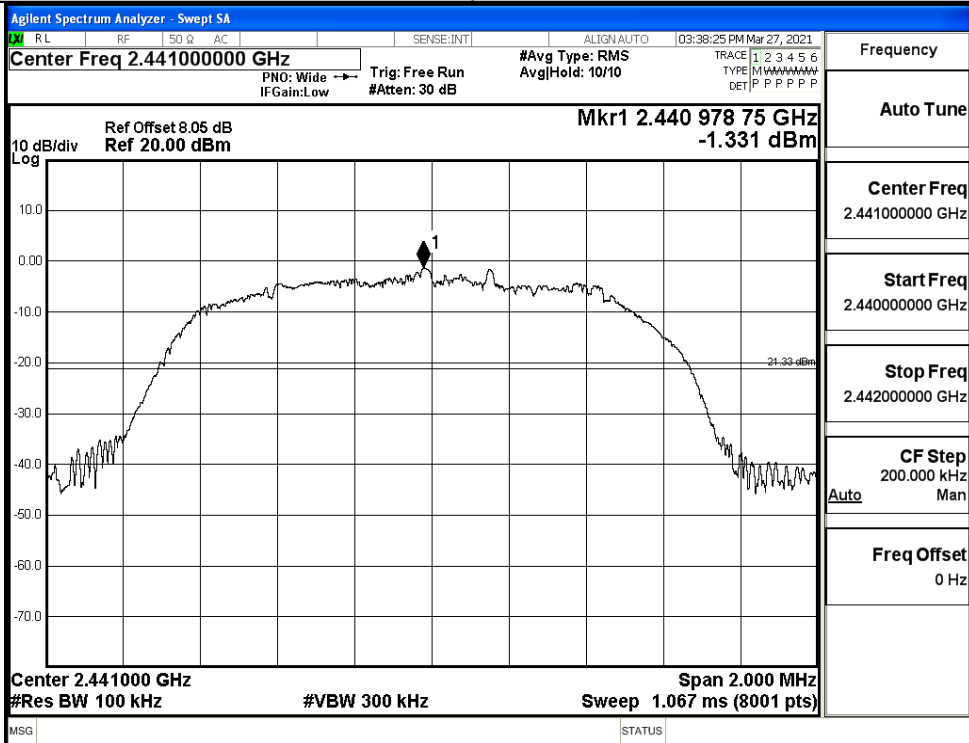


8DPSK_LCH_Graphs

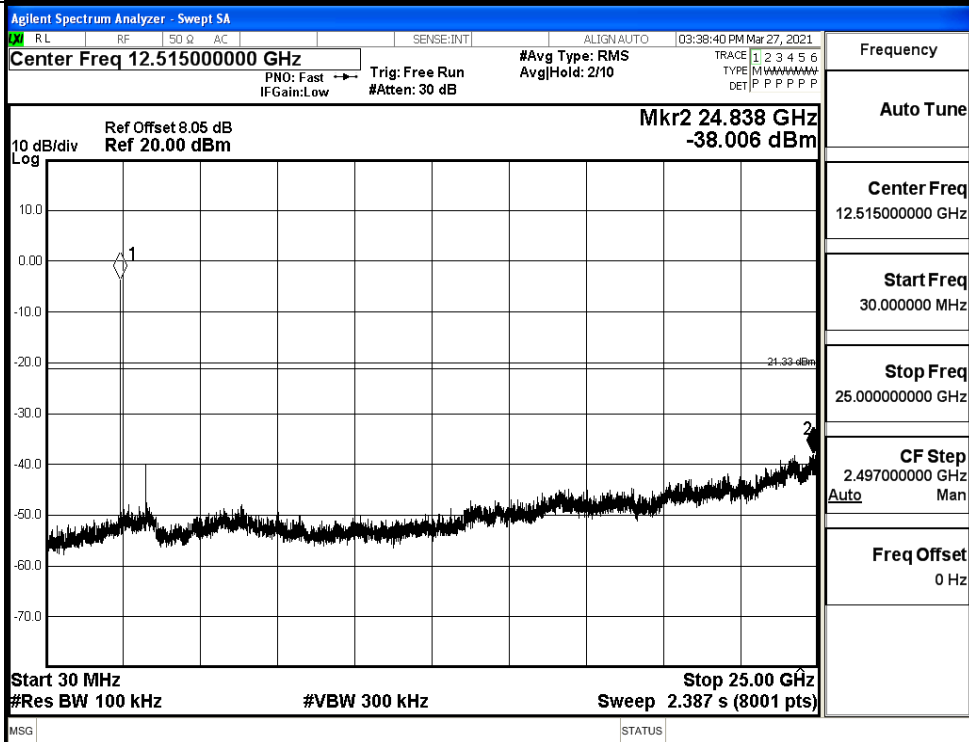


8DPSK_MCH_Graphs

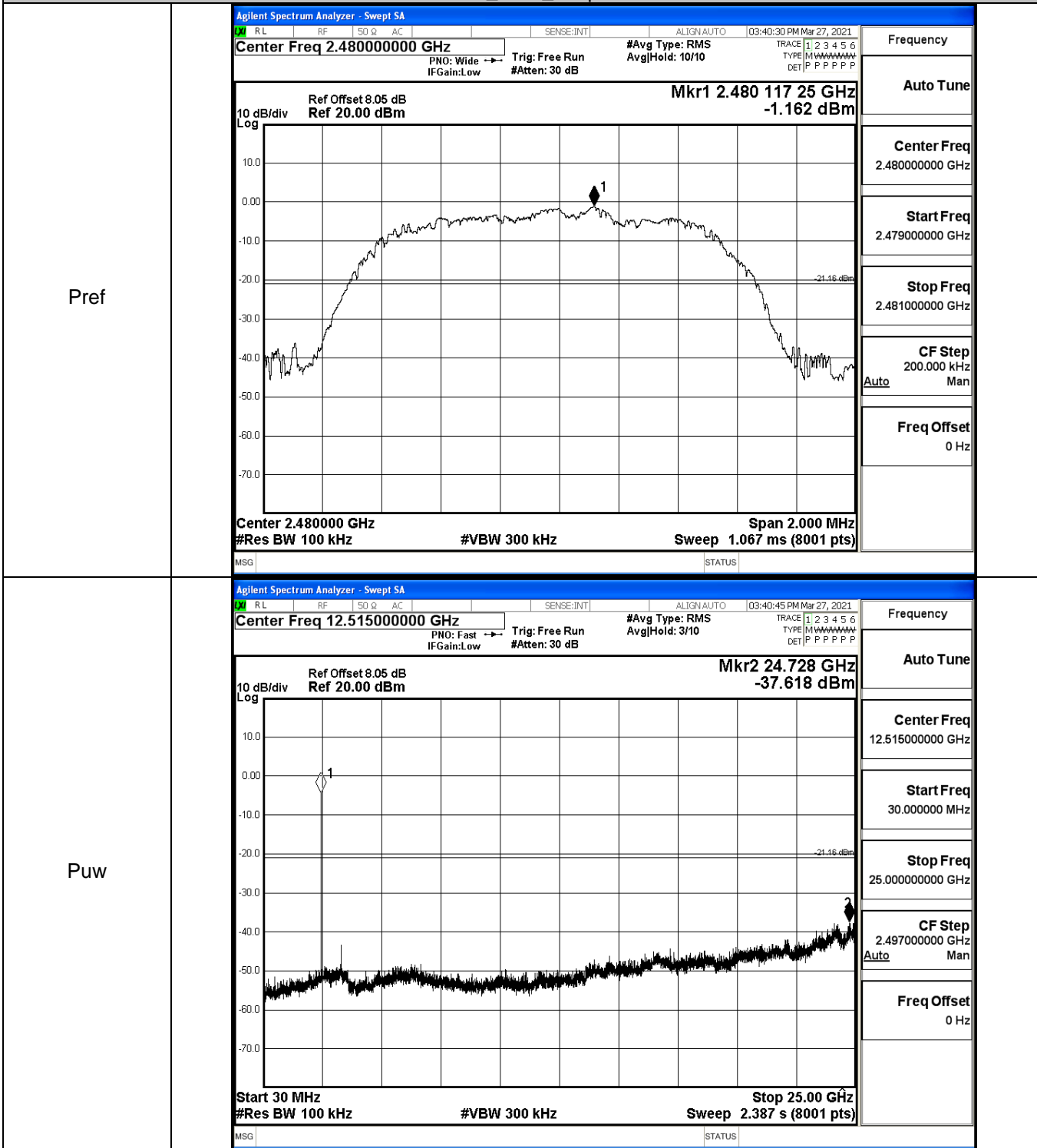
Pref



Puw



8DPSK_HCH_Graphs

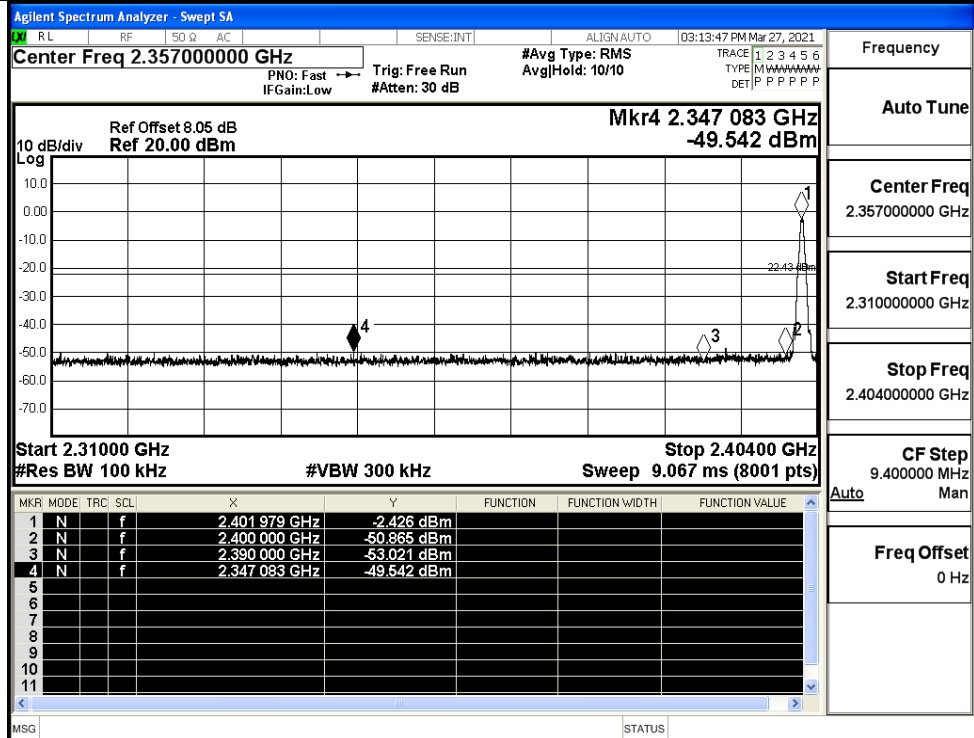


A.7 Band-edge for RF Conducted Emissions

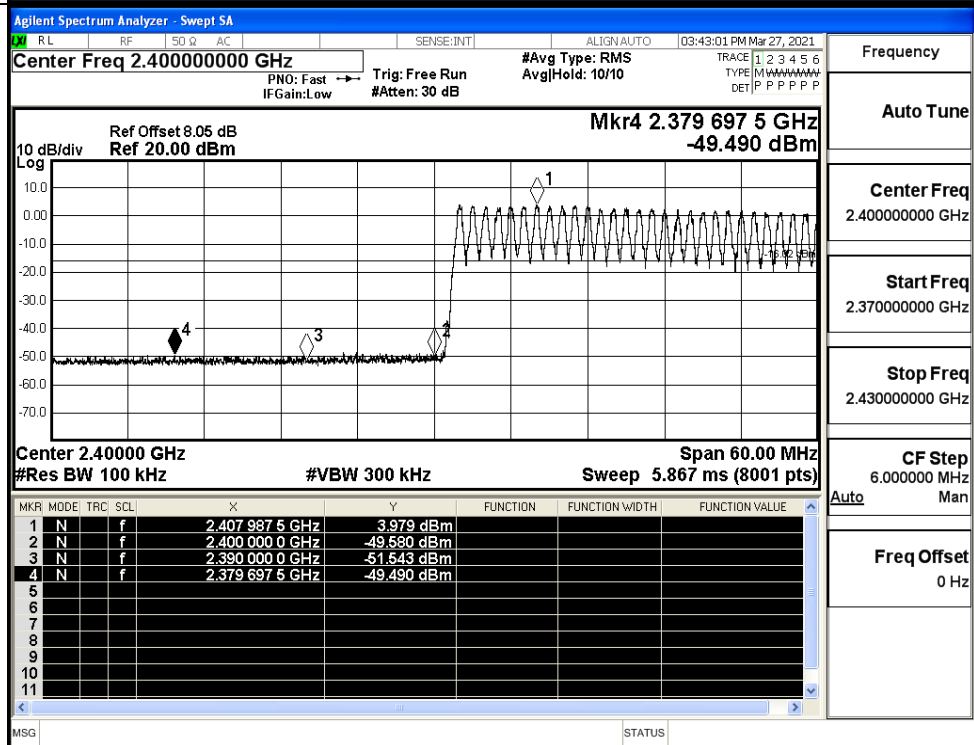
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-2.426	Off	-49.542	-22.43	PASS
			3.979	On	-49.490	-16.02	PASS
	HCH	2480	-0.661	Off	-46.334	-20.66	PASS
			-0.936	On	-47.751	-20.94	PASS
$\pi/4$ DQPSK	LCH	2402	-3.242	Off	-49.486	-23.24	PASS
			2.974	On	-48.946	-17.03	PASS
	HCH	2480	-1.458	Off	-47.409	-21.46	PASS
			-0.878	On	-46.849	-20.88	PASS
8DPSK	LCH	2402	-2.742	Off	-49.896	-22.74	PASS
			3.095	On	-49.608	-16.91	PASS
	HCH	2480	-1.412	Off	-47.212	-21.41	PASS
			-0.910	On	-47.136	-20.91	PASS

Test Graphs

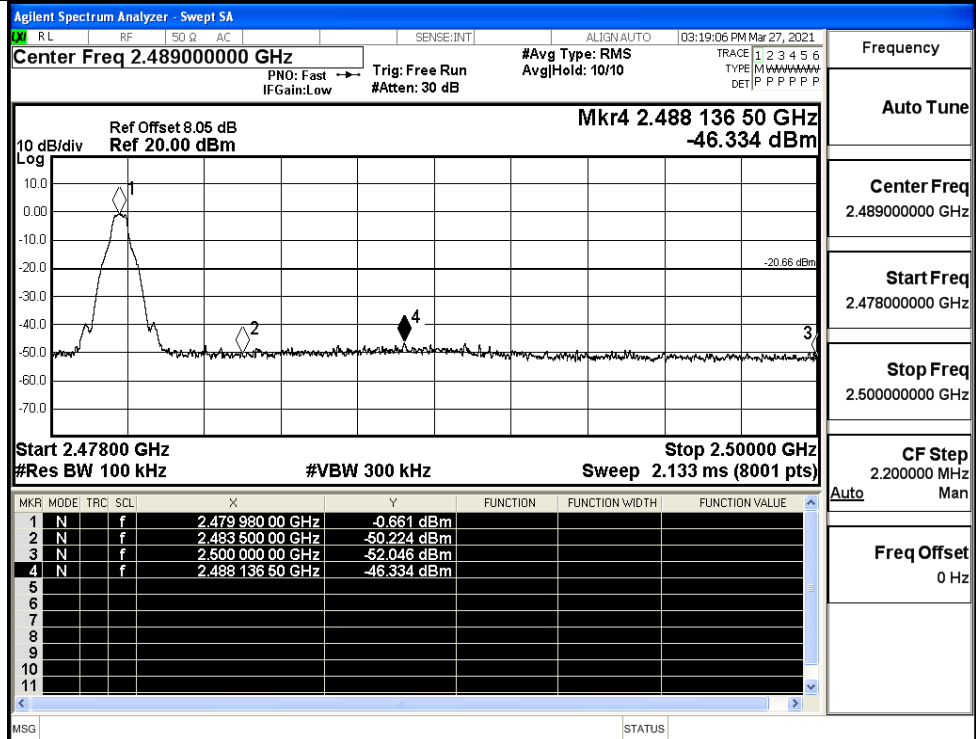
GFSK/LCH/No Hop



GFSK/LCH/Hop

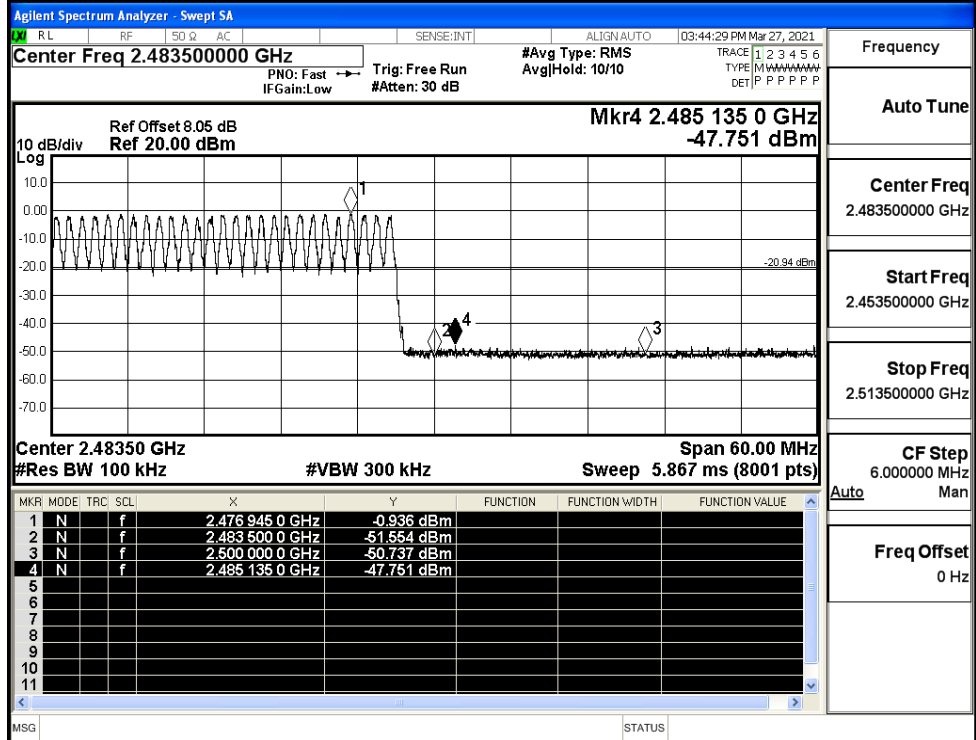


GFSK/HCH/No Hop



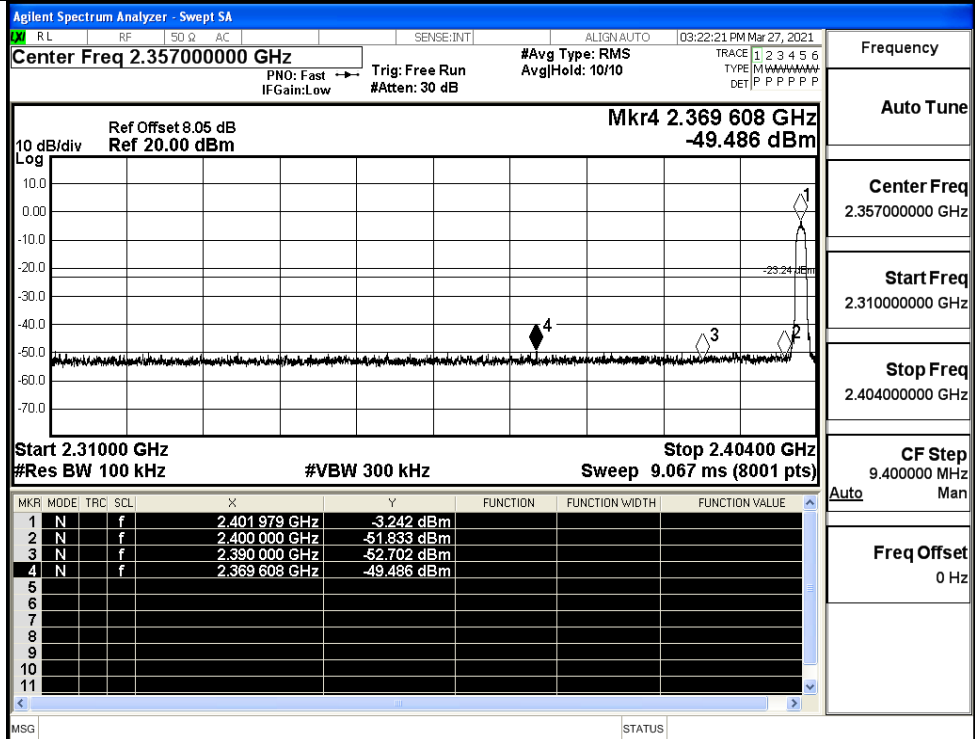
Frequency
Auto Tune
Center Freq
2.489000000 GHz
Start Freq
2.478000000 GHz
Stop Freq
2.500000000 GHz
CF Step
2.200000 MHz
Auto Man
Freq Offset
0 Hz

GFSK/HCH/Hop



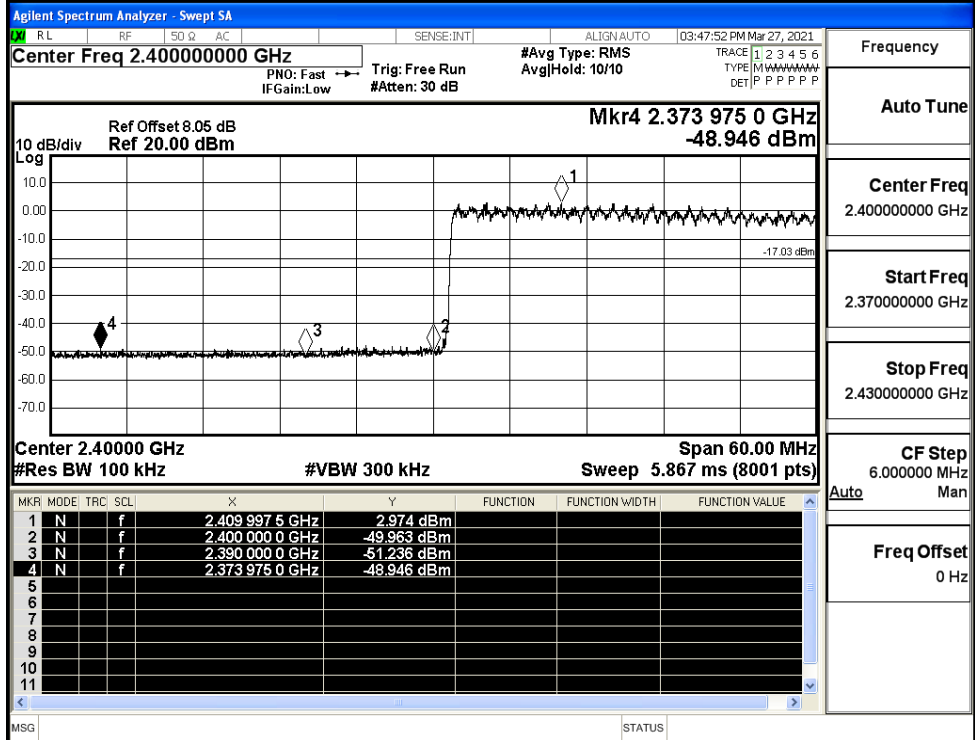
Frequency
Auto Tune
Center Freq
2.483500000 GHz
Start Freq
2.453500000 GHz
Stop Freq
2.513500000 GHz
CF Step
6.000000 MHz
Auto Man
Freq Offset
0 Hz

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



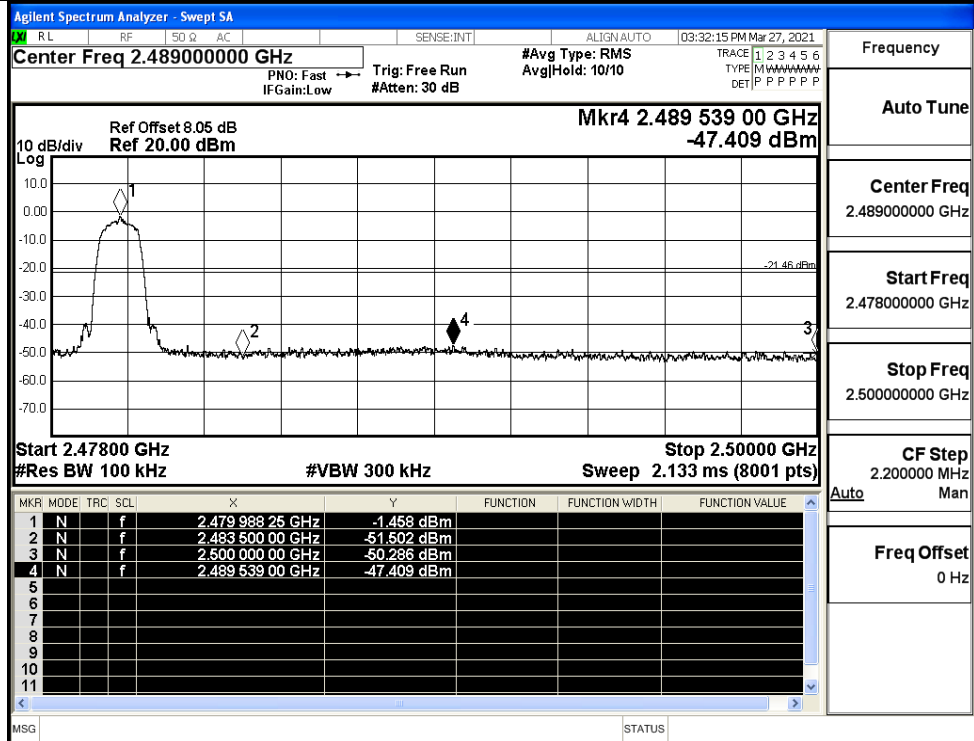
Frequency
Auto Tune
Center Freq
2.357000000 GHz
Start Freq
2.310000000 GHz
Stop Freq
2.404000000 GHz
CF Step
9.400000 MHz
Auto Man
Freq Offset
0 Hz

$\pi/4$ DQPSK/LCH/Hop



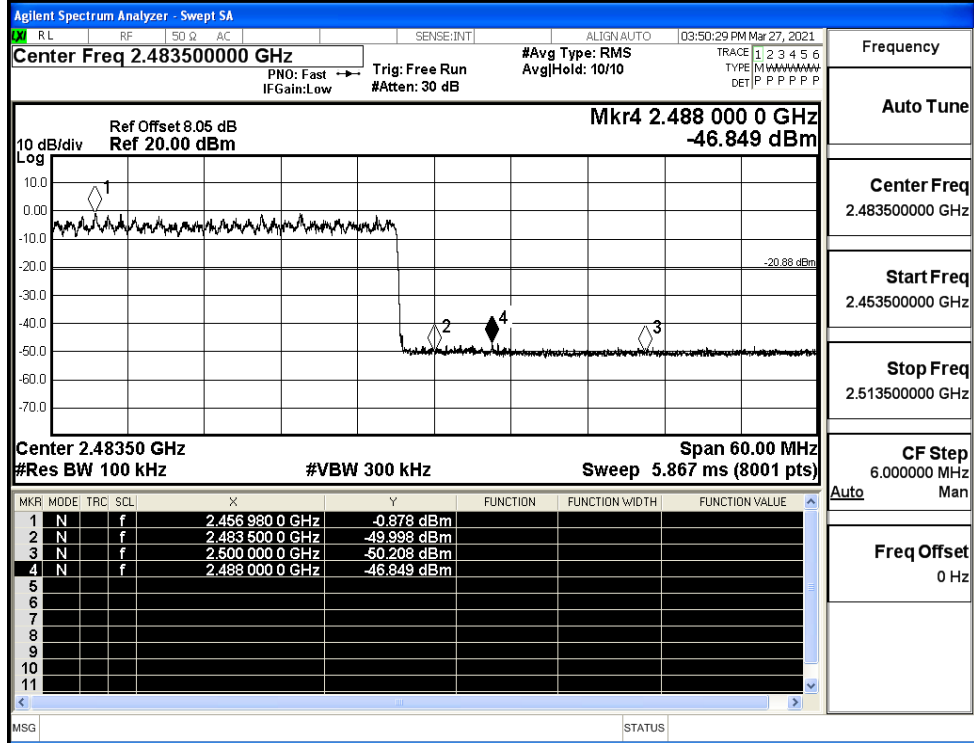
Frequency
Auto Tune
Center Freq
2.400000000 GHz
Start Freq
2.370000000 GHz
Stop Freq
2.430000000 GHz
CF Step
6.000000 MHz
Auto Man
Freq Offset
0 Hz

π /4DQPSK/HCH/No
Hop



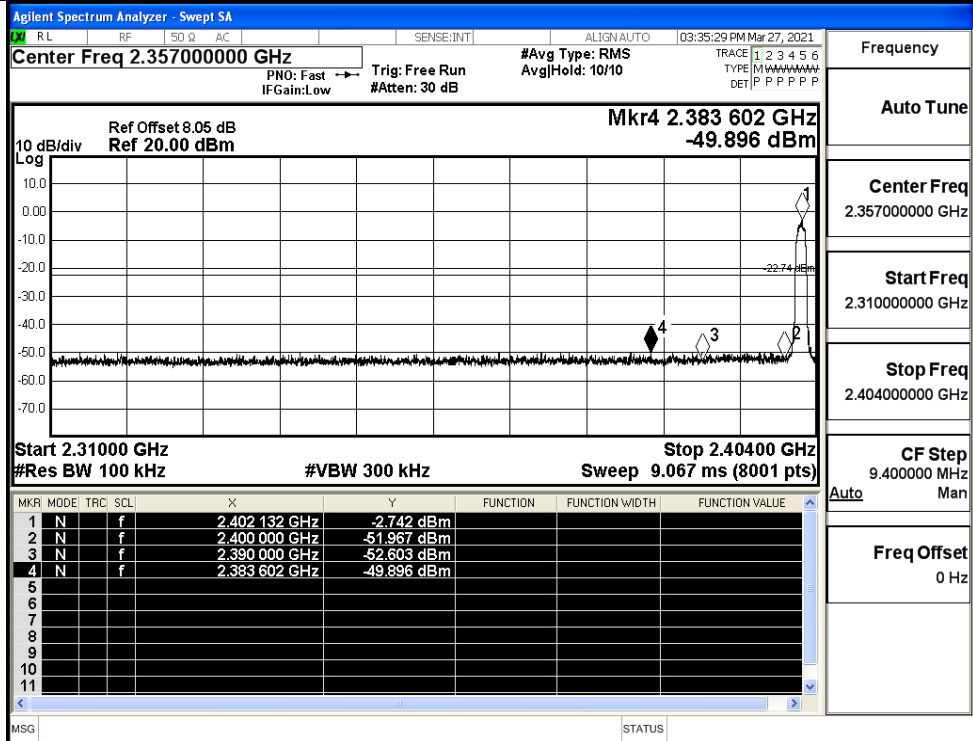
Frequency	
Auto Tune	
Center Freq	2.489000000 GHz
Start Freq	2.478000000 GHz
Stop Freq	2.500000000 GHz
CF Step	2.200000 MHz
Freq Offset	0 Hz

π /4DQPSK/HCH/Hop



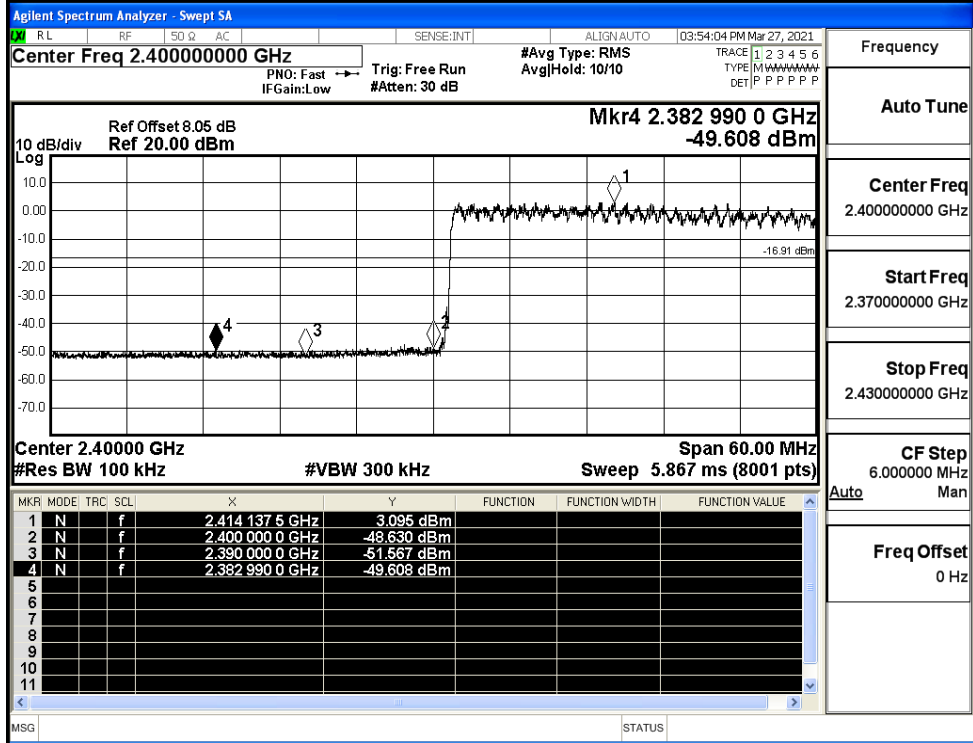
Frequency	
Auto Tune	
Center Freq	2.483500000 GHz
Start Freq	2.453500000 GHz
Stop Freq	2.513500000 GHz
CF Step	6.000000 MHz
Freq Offset	0 Hz

8DPSK/LCH/No Hop



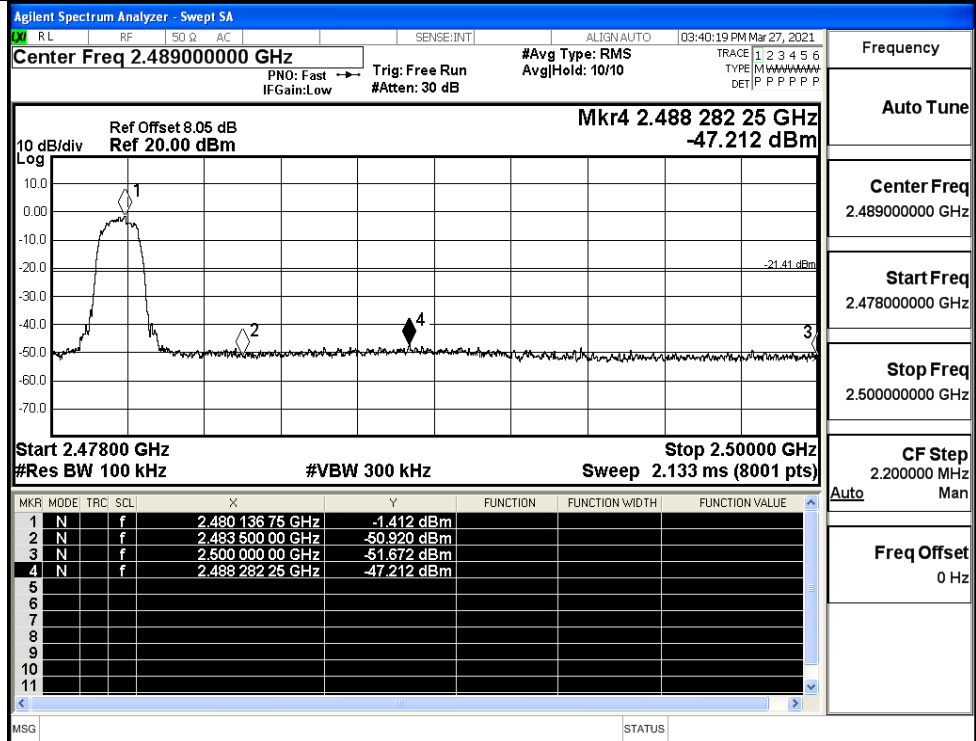
Frequency
Auto Tune
Center Freq
2.357000000 GHz
Start Freq
2.310000000 GHz
Stop Freq
2.404000000 GHz
CF Step
9.400000 MHz
Auto Man
Freq Offset
0 Hz

8DPSK/LCH/Hop



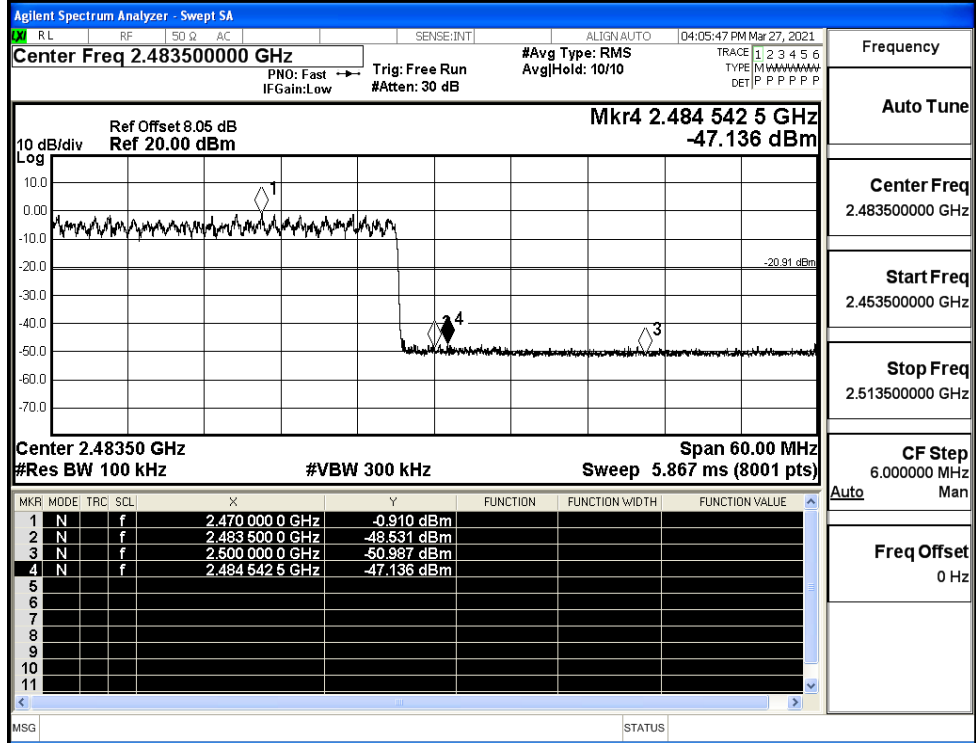
Frequency
Auto Tune
Center Freq
2.400000000 GHz
Start Freq
2.370000000 GHz
Stop Freq
2.430000000 GHz
CF Step
6.000000 MHz
Auto Man
Freq Offset
0 Hz

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
Freq Offset
0 Hz

8DPSK/HCH/Hop

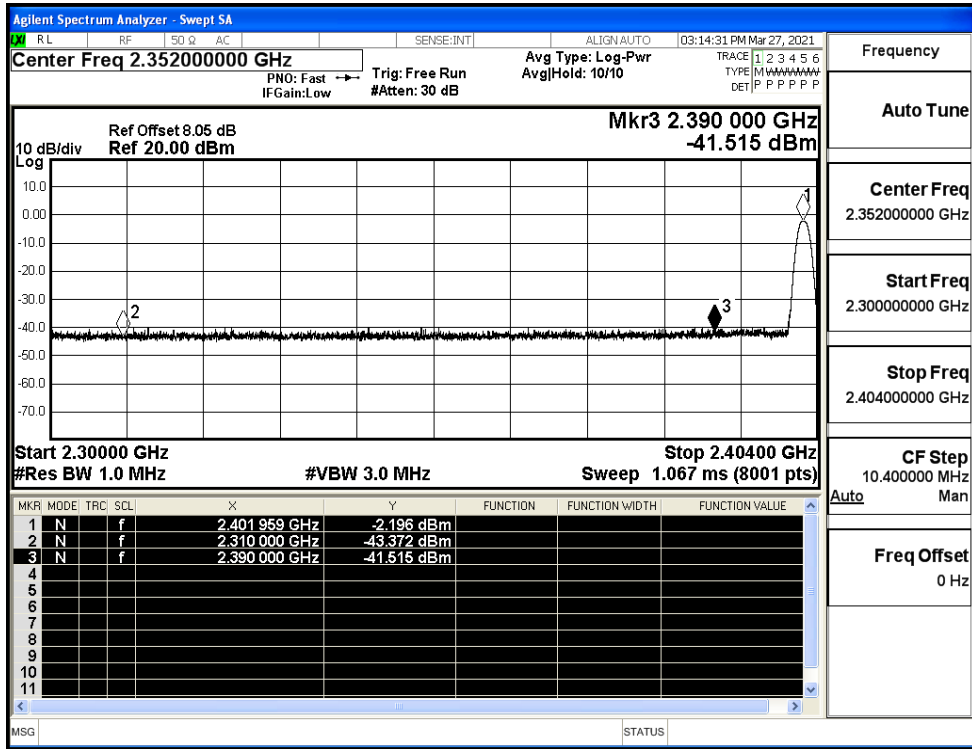


Frequency
Auto Tune
Center Freq
2.483500000 GHz
Start Freq
2.453500000 GHz
Stop Freq
2.513500000 GHz
CF Step
6.000000 MHz
Freq Offset
0 Hz

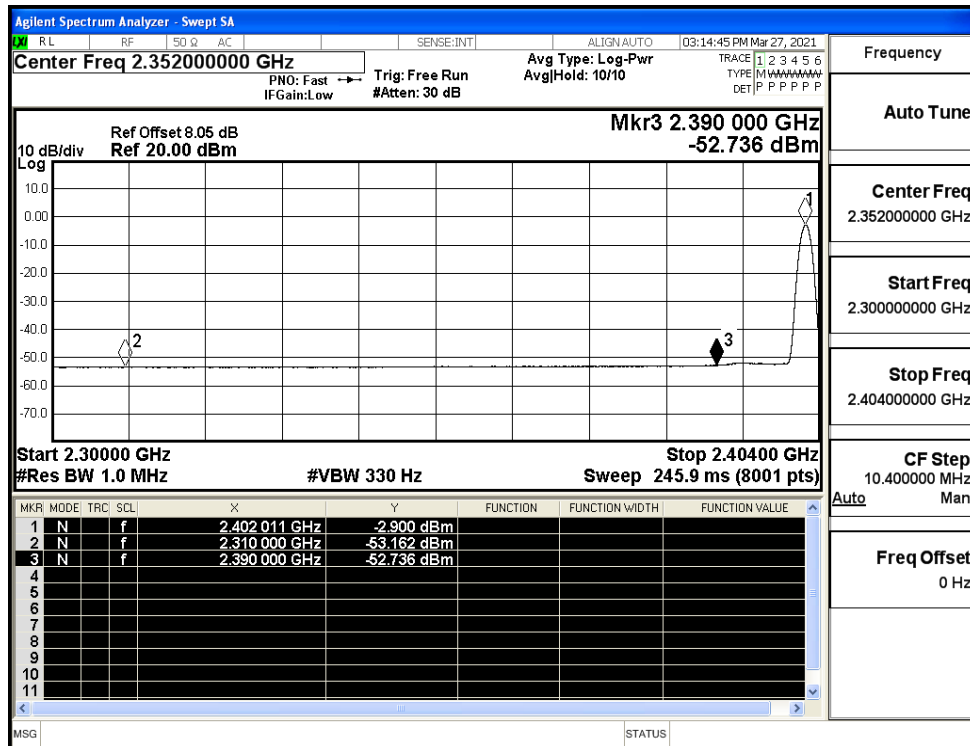
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.37	2.0	0	53.89	PEAK	74	PASS
	Off	2310.0	-53.16	2.0	0	44.1	AV	54	PASS
	Off	2390.0	-41.52	2.0	0	55.74	PEAK	74	PASS
	Off	2390.0	-52.74	2.0	0	44.52	AV	54	PASS
	Off	2483.5	-40.86	2.0	0	56.4	PEAK	74	PASS
	Off	2483.5	-50.64	2.0	0	46.62	AV	54	PASS
	Off	2500.0	-41.76	2.0	0	55.5	PEAK	74	PASS
	Off	2500.0	-52.14	2.0	0	45.12	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-42.51	2.0	0	54.75	PEAK	74	PASS
	Off	2310.0	-53.42	2.0	0	43.84	AV	54	PASS
	Off	2390.0	-43.53	2.0	0	53.73	PEAK	74	PASS
	Off	2390.0	-52.93	2.0	0	44.33	AV	54	PASS
	Off	2483.5	-40.25	2.0	0	57.01	PEAK	74	PASS
	Off	2483.5	-50.85	2.0	0	46.41	AV	54	PASS
	Off	2500.0	-40.99	2.0	0	56.27	PEAK	74	PASS
	Off	2500.0	-52.26	2.0	0	45	AV	54	PASS
8DPSK	Off	2310.0	-43.22	2.0	0	54.04	PEAK	74	PASS
	Off	2310.0	-53.44	2.0	0	43.82	AV	54	PASS
	Off	2390.0	-41.45	2.0	0	55.81	PEAK	74	PASS
	Off	2390.0	-52.93	2.0	0	44.33	AV	54	PASS
	Off	2483.5	-40.91	2.0	0	56.35	PEAK	74	PASS
	Off	2483.5	-50.58	2.0	0	46.68	AV	54	PASS
	Off	2500.0	-42.17	2.0	0	55.09	PEAK	74	PASS
	Off	2500.0	-52.10	2.0	0	45.16	AV	54	PASS

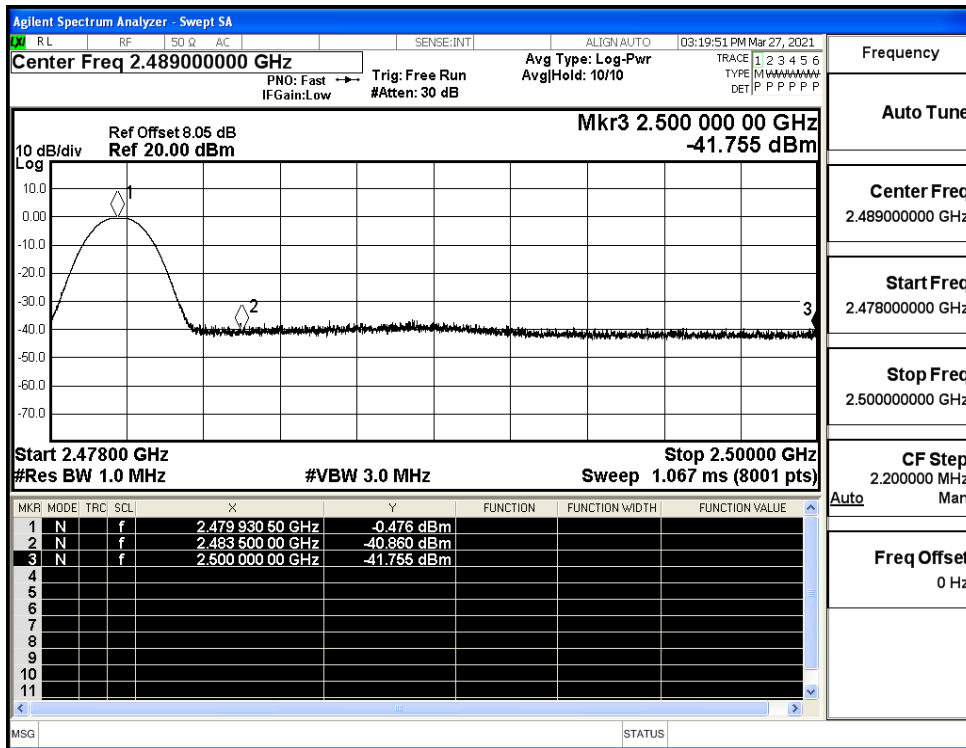
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



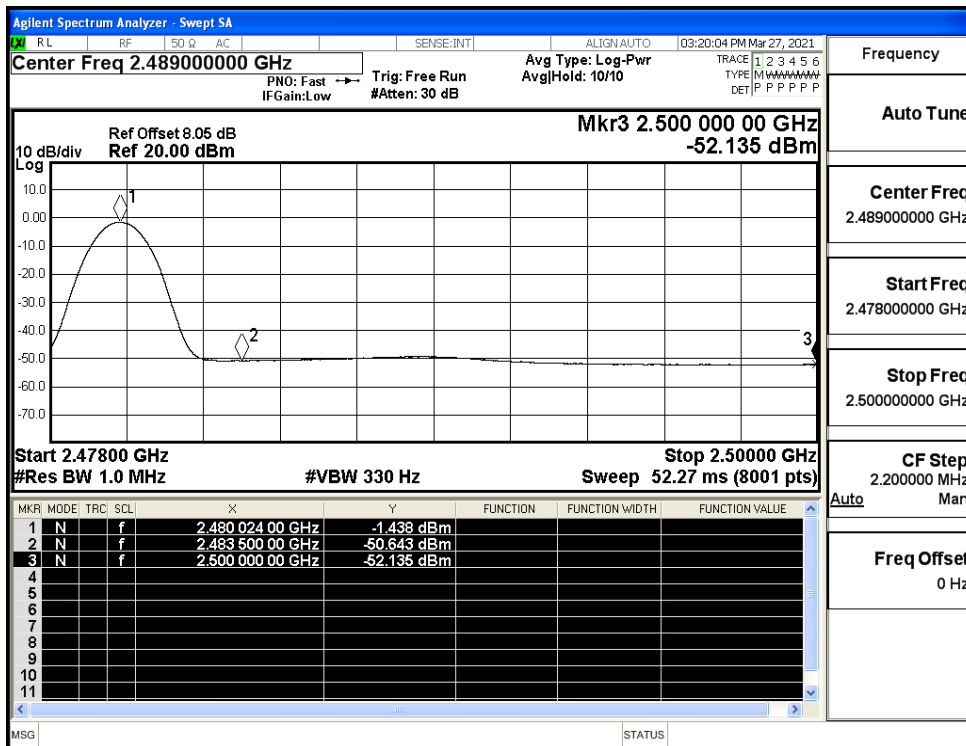
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



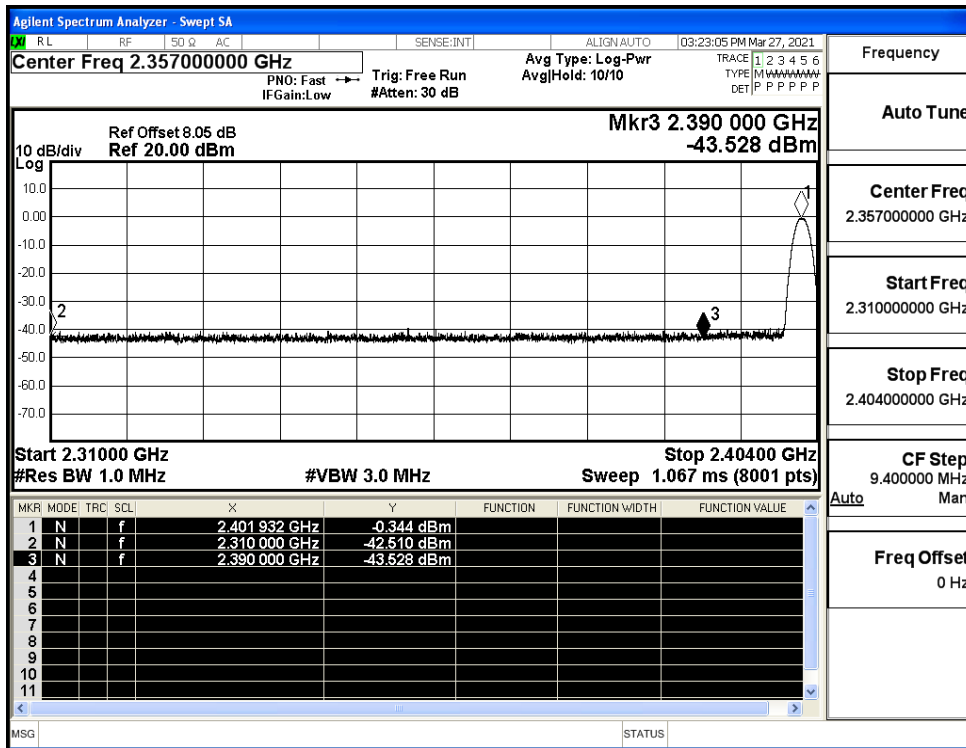
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



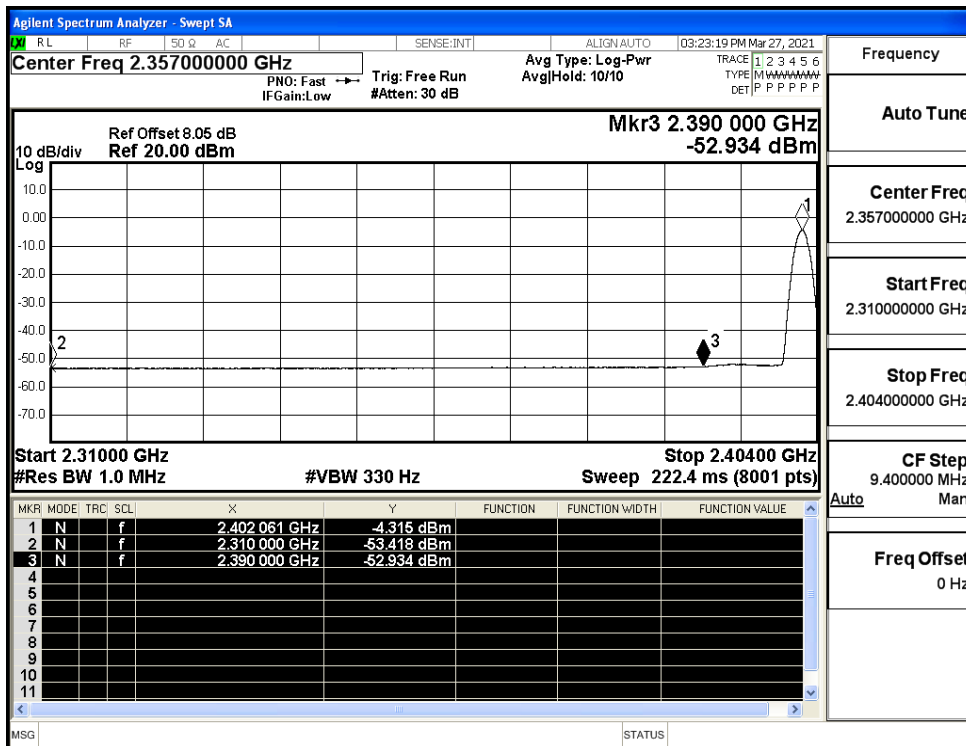
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



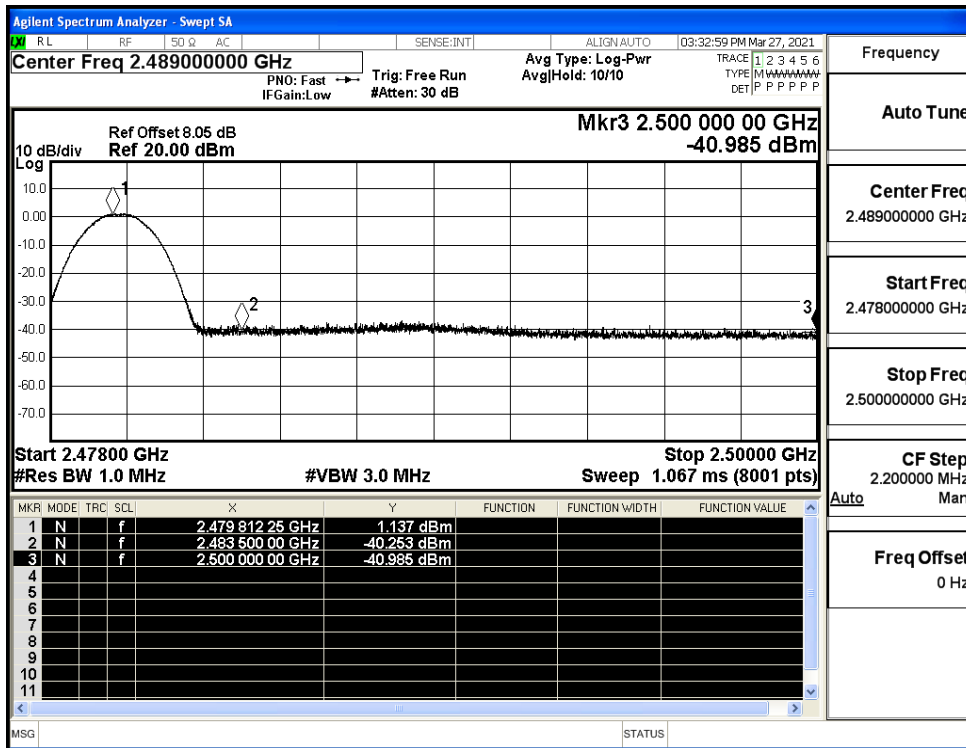
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)



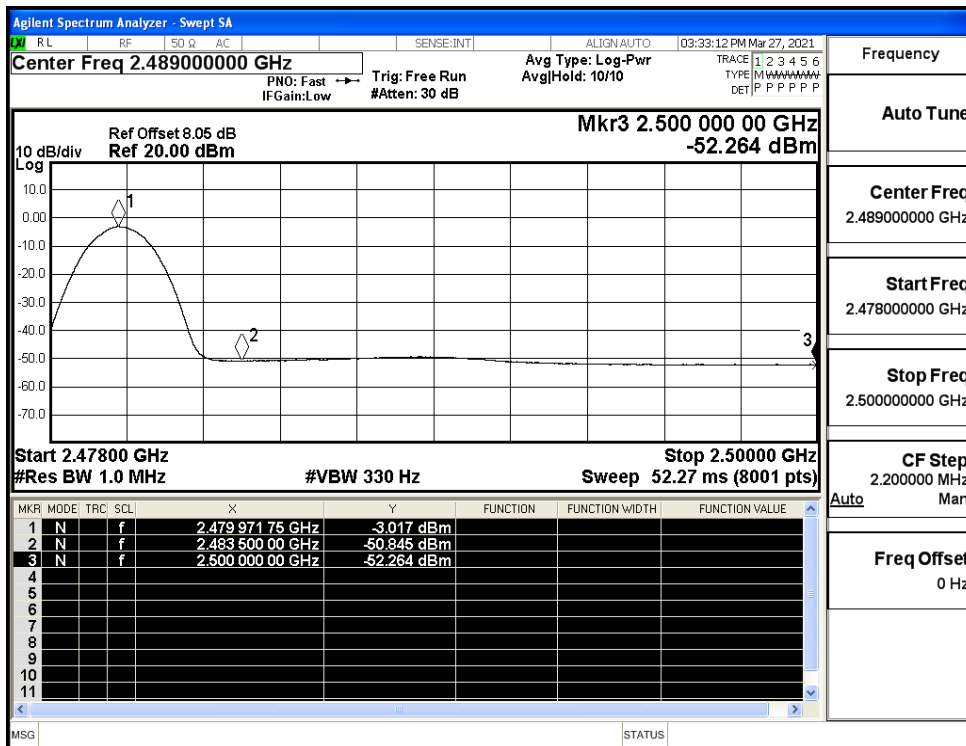
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)



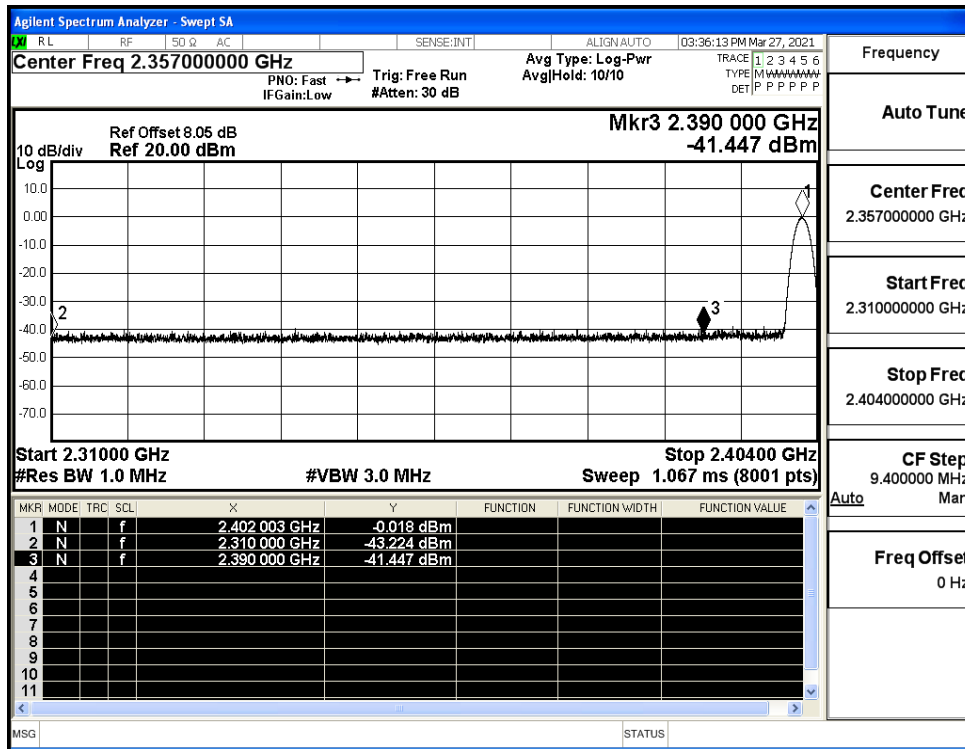
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



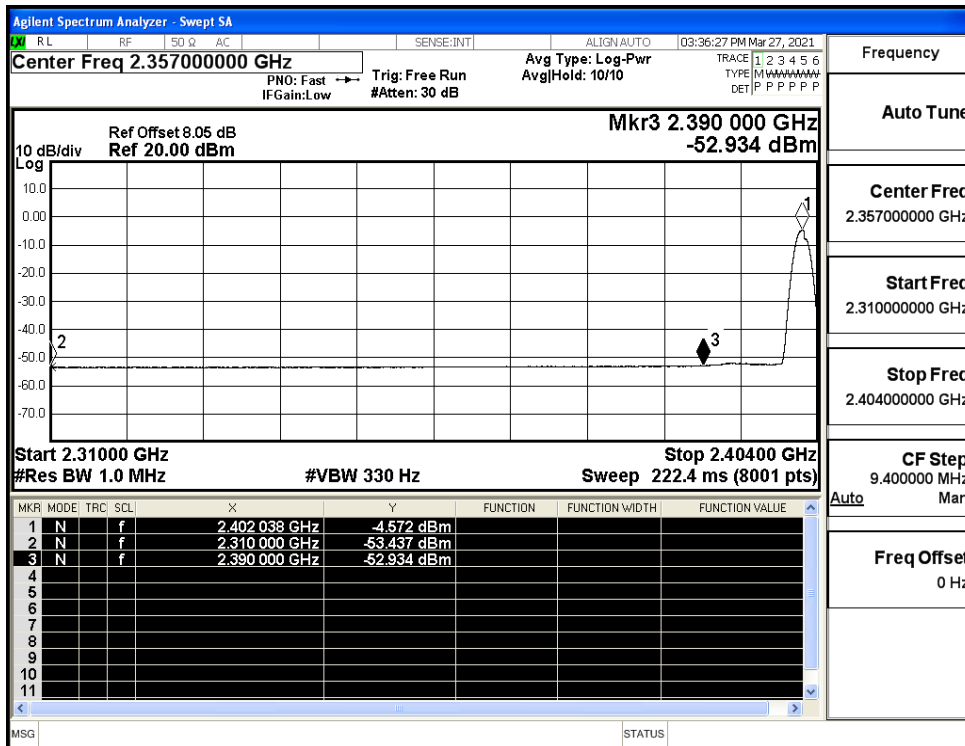
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



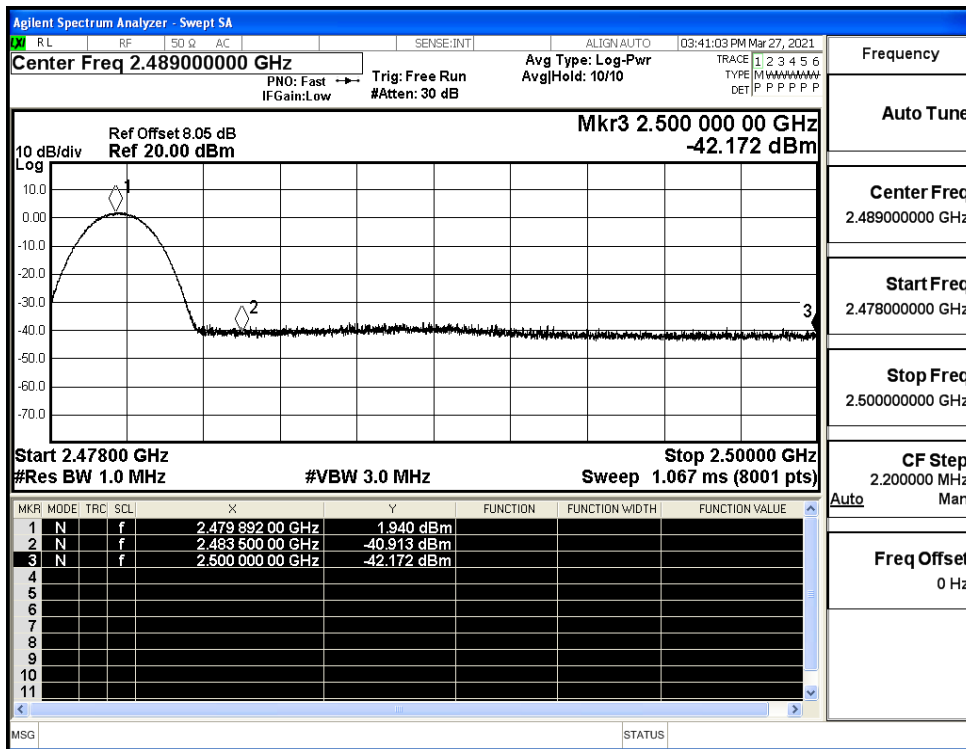
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

