

Appendix A

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

Product Name: 14.1" Windows Laptop

Trade Mark: N/A

Test Model: HT14CCIC81ES

Environmental Conditions

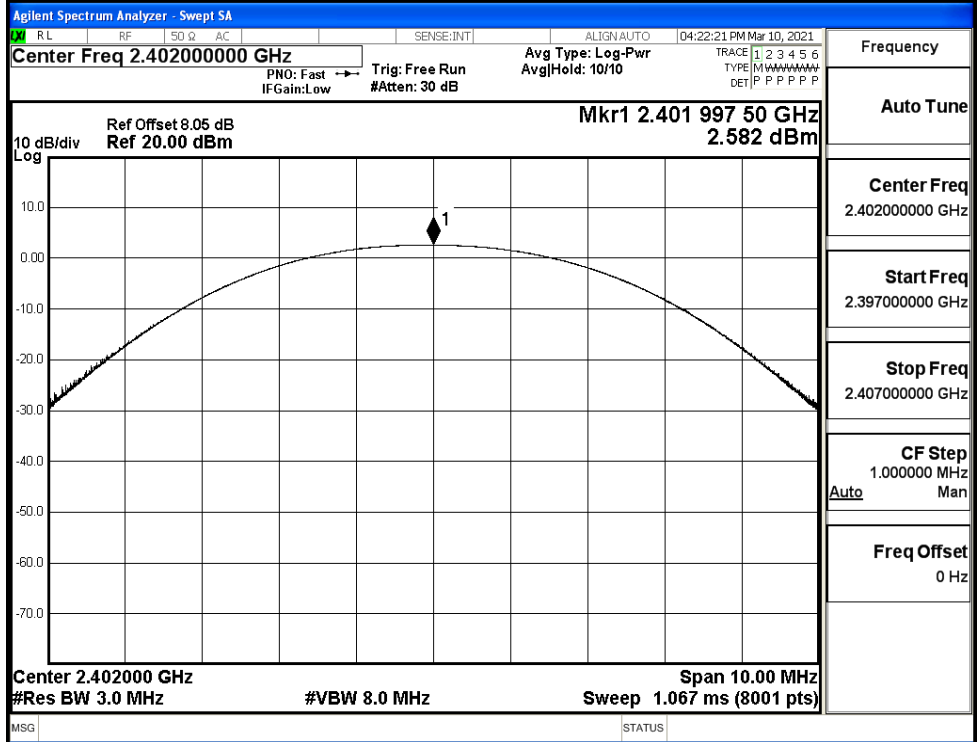
Temperature:	24.8° C
Relative Humidity:	56.5%
ATM Pressure:	100.0 kPa
Test Engineer:	Ben Jin
Supervised by:	Li Huan

A.1 Maximum Conducted Peak Output Power

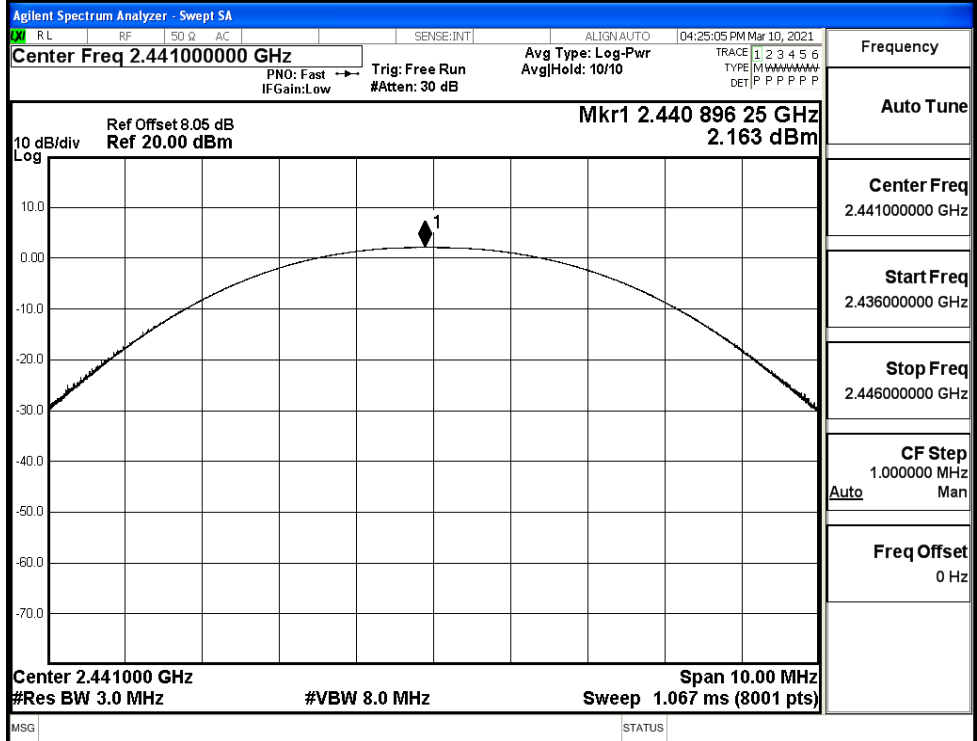
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2.582	21	PASS
	MCH	2.163	21	PASS
	HCH	1.000	21	PASS
$\pi/4$ DQPSK	LCH	3.318	21	PASS
	MCH	2.851	21	PASS
	HCH	1.721	21	PASS
8DPSK	LCH	3.653	21	PASS
	MCH	3.207	21	PASS
	HCH	2.158	21	PASS

Test Graphs

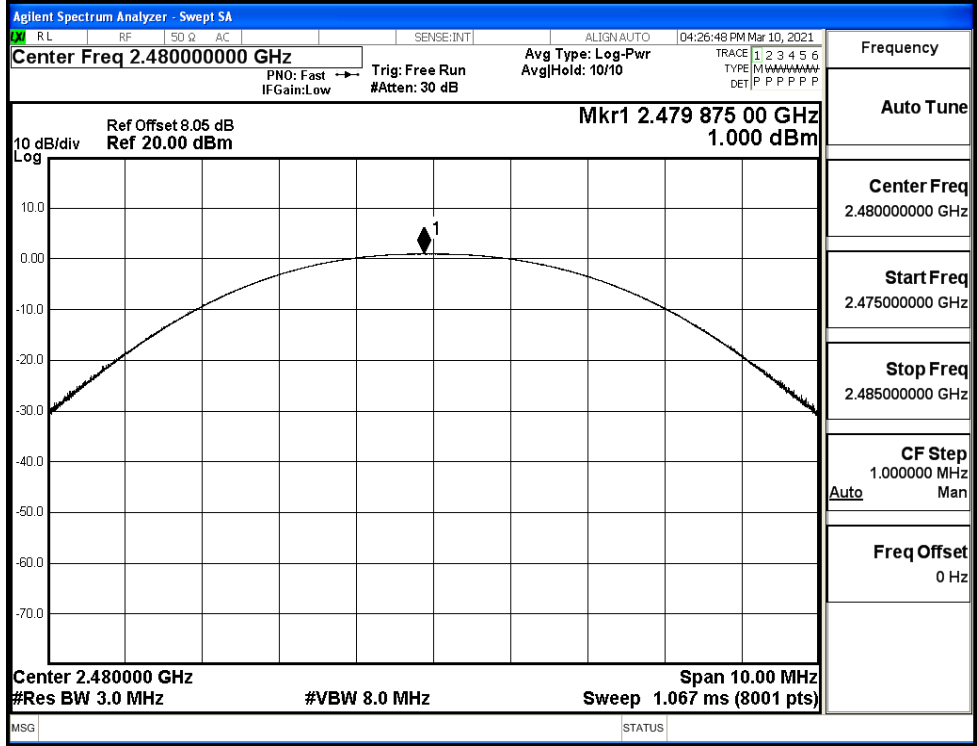
GFSK/LCH



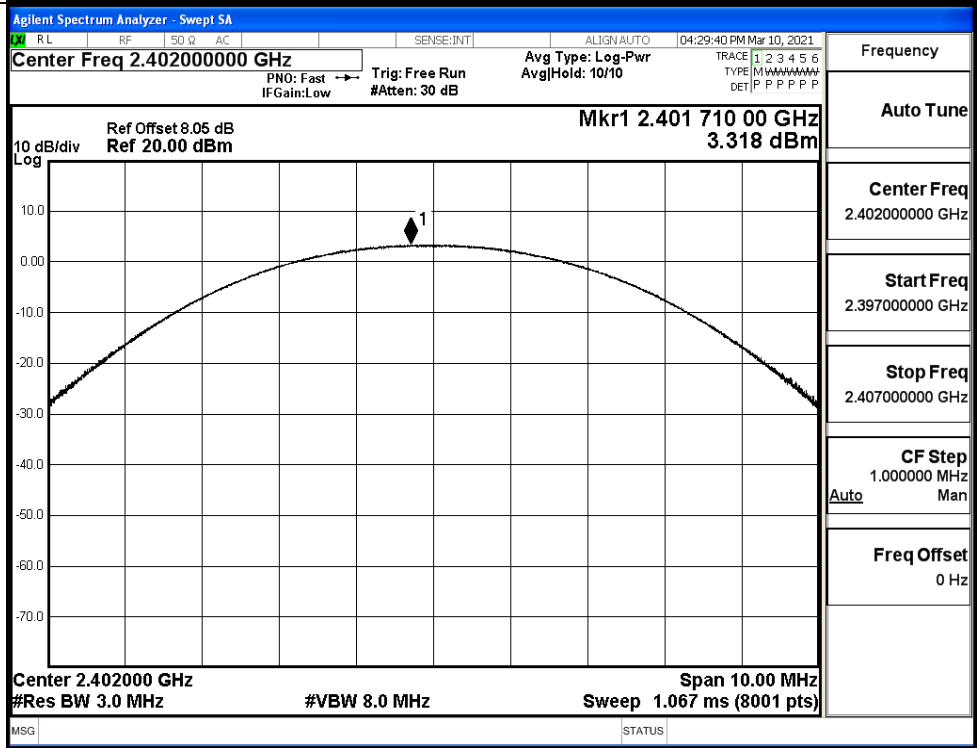
GFSK/MCH



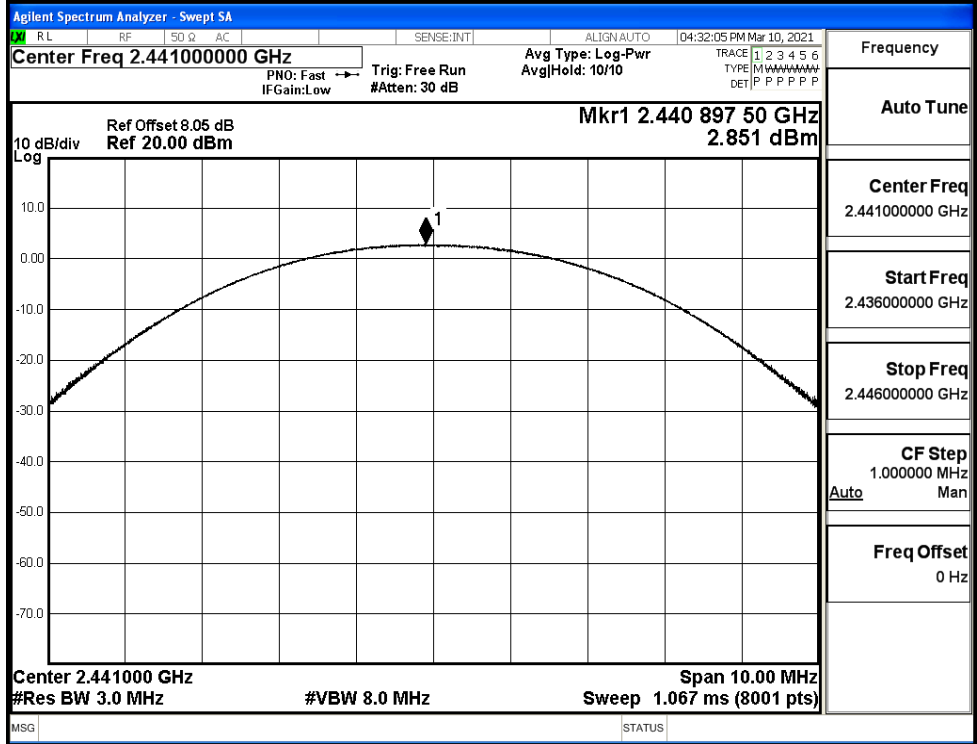
GFSK/HCH



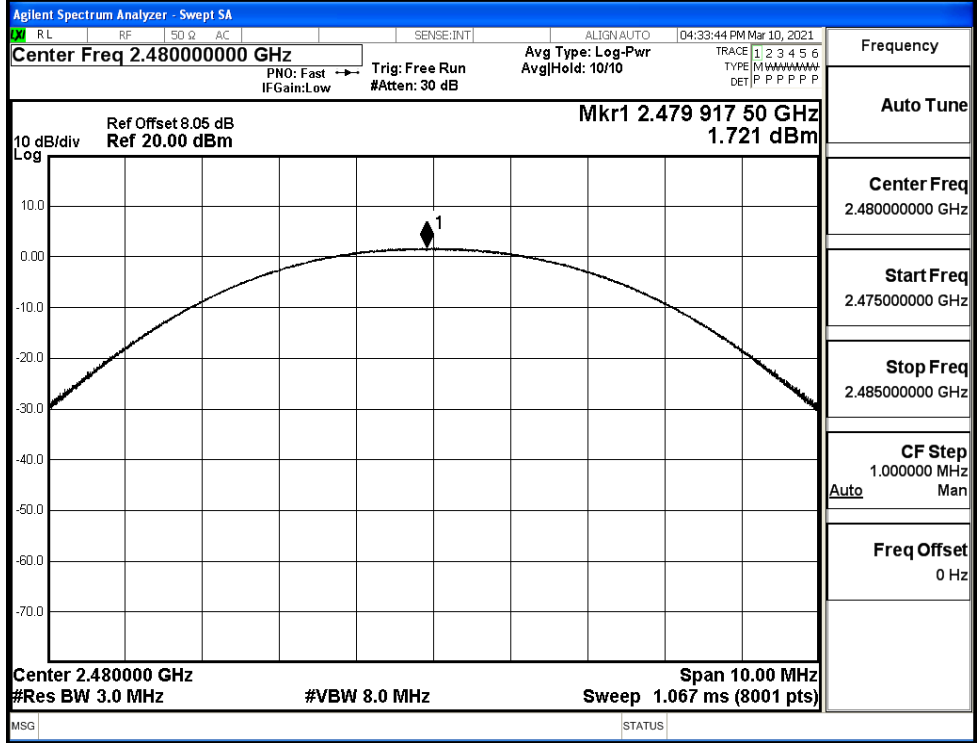
$\pi/4$ DQPSK/LCH



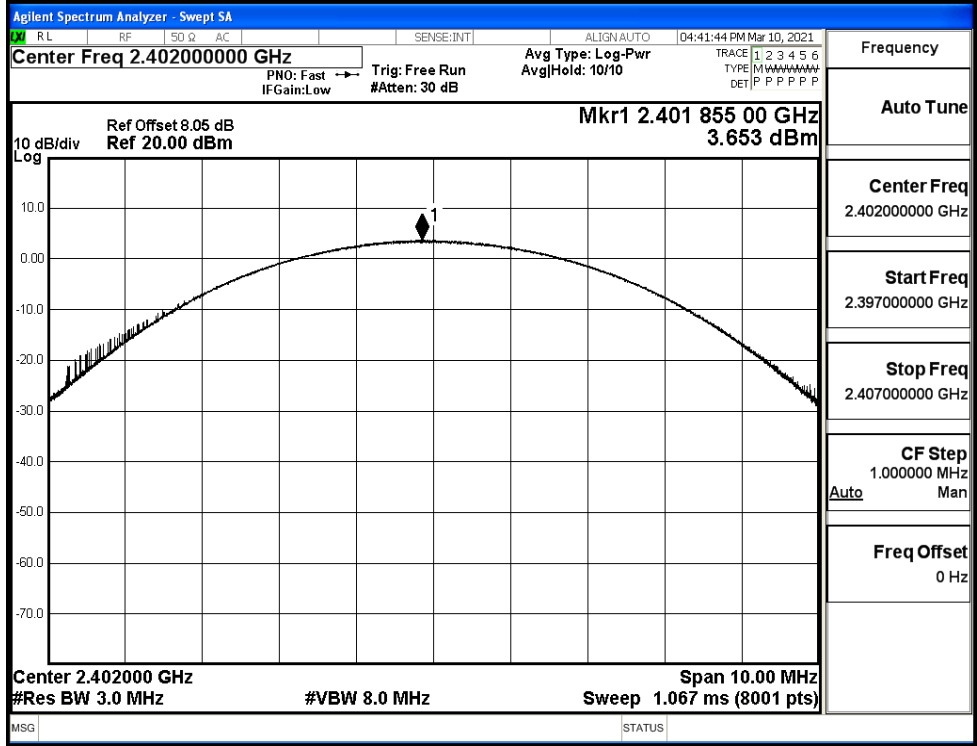
π /4DQPSK/MCH



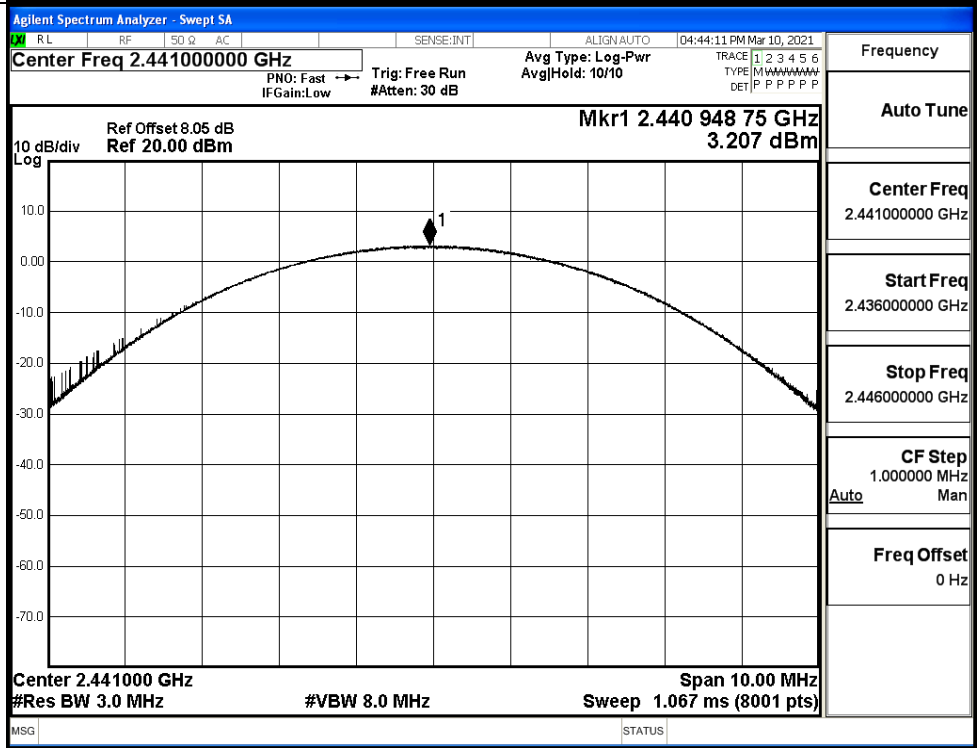
π /4DQPSK/HCH



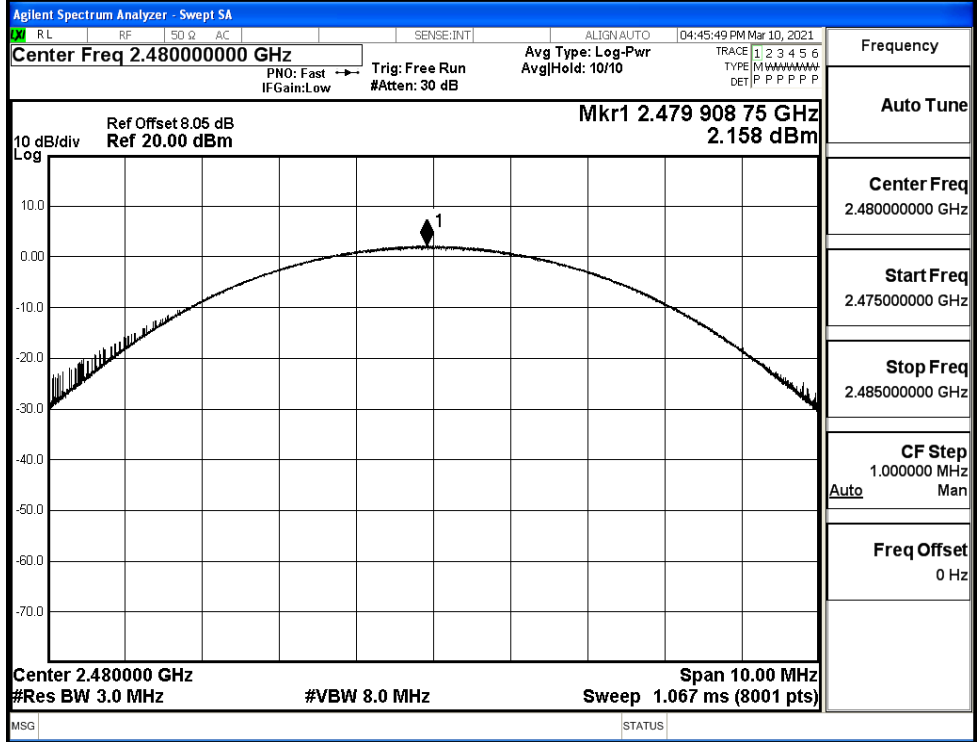
8DPSK/LCH



8DPSK/MCH

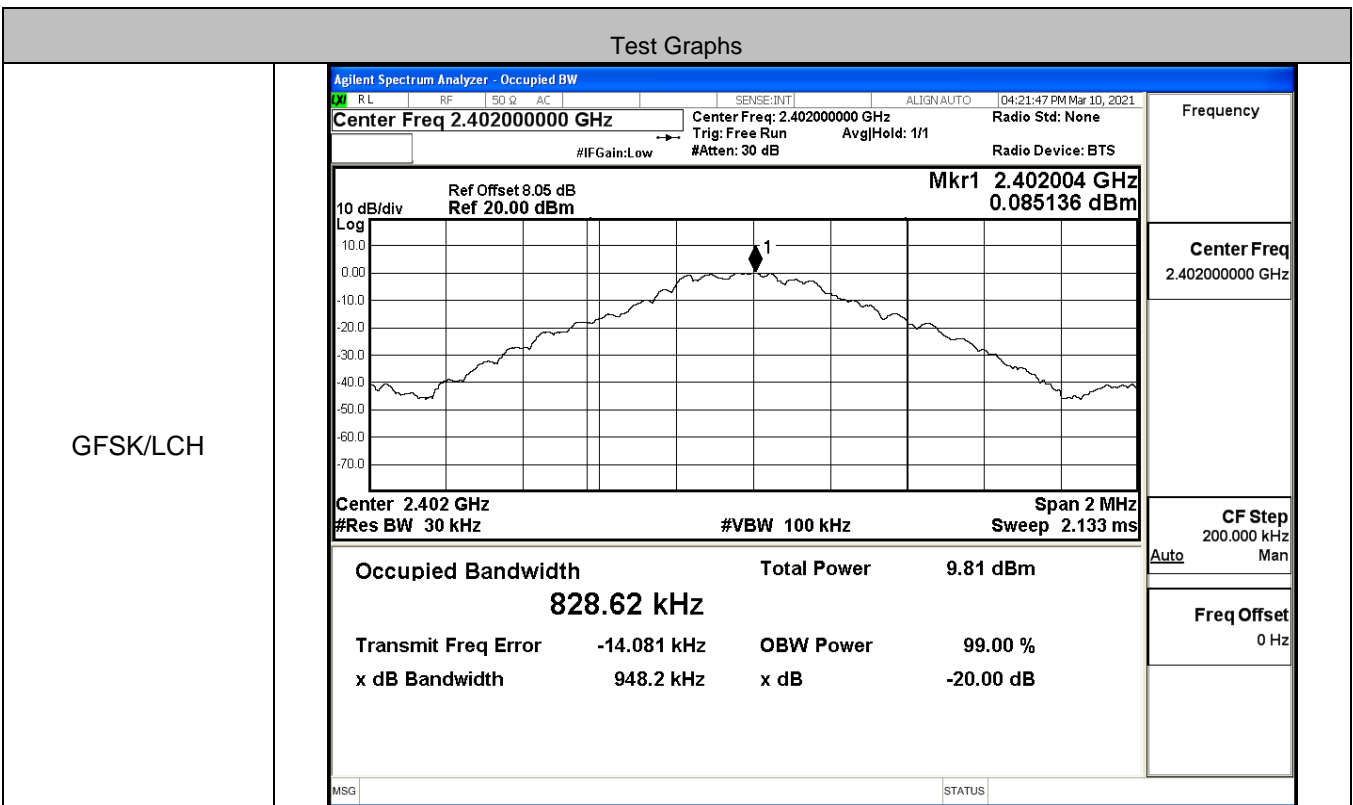


8DPSK/HCH

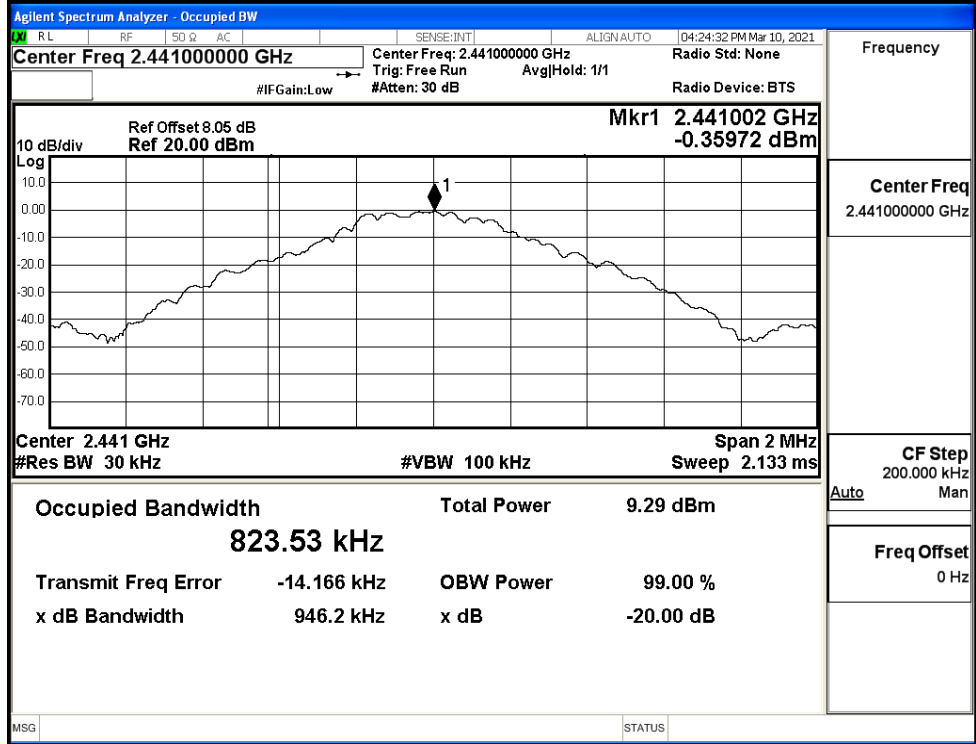


A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9482	Not Specified	PASS
	MCH	0.9462	Not Specified	PASS
	HCH	0.9469	Not Specified	PASS
π/4DQPSK	LCH	1.283	Not Specified	PASS
	MCH	1.280	Not Specified	PASS
	HCH	1.282	Not Specified	PASS
8DPSK	LCH	1.308	Not Specified	PASS
	MCH	1.308	Not Specified	PASS
	HCH	1.309	Not Specified	PASS

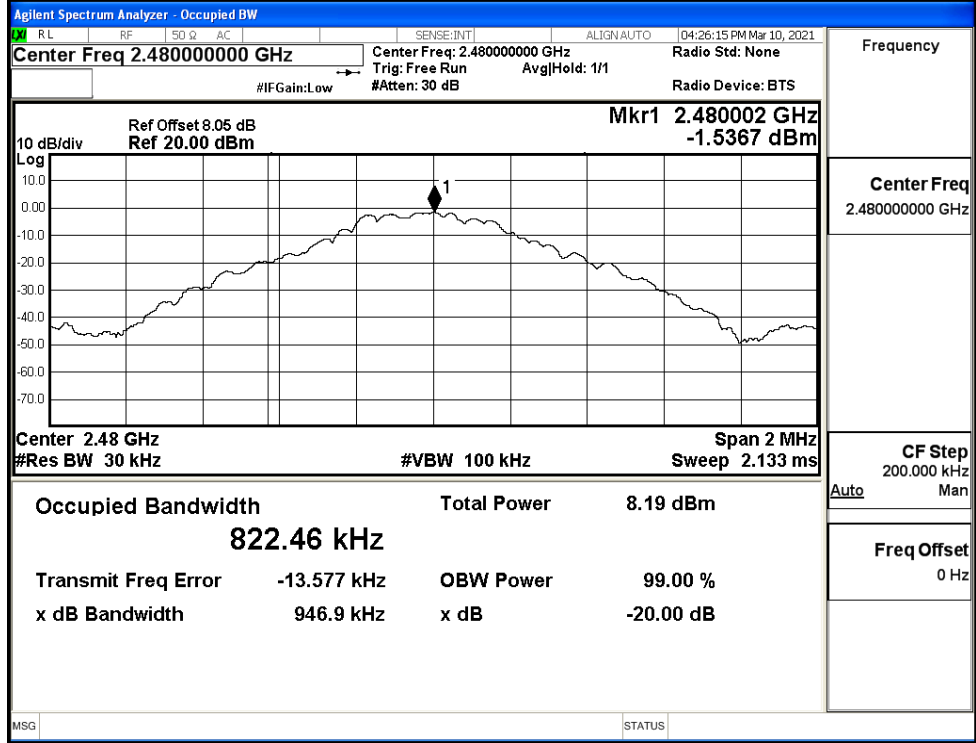


GFSK/MCH



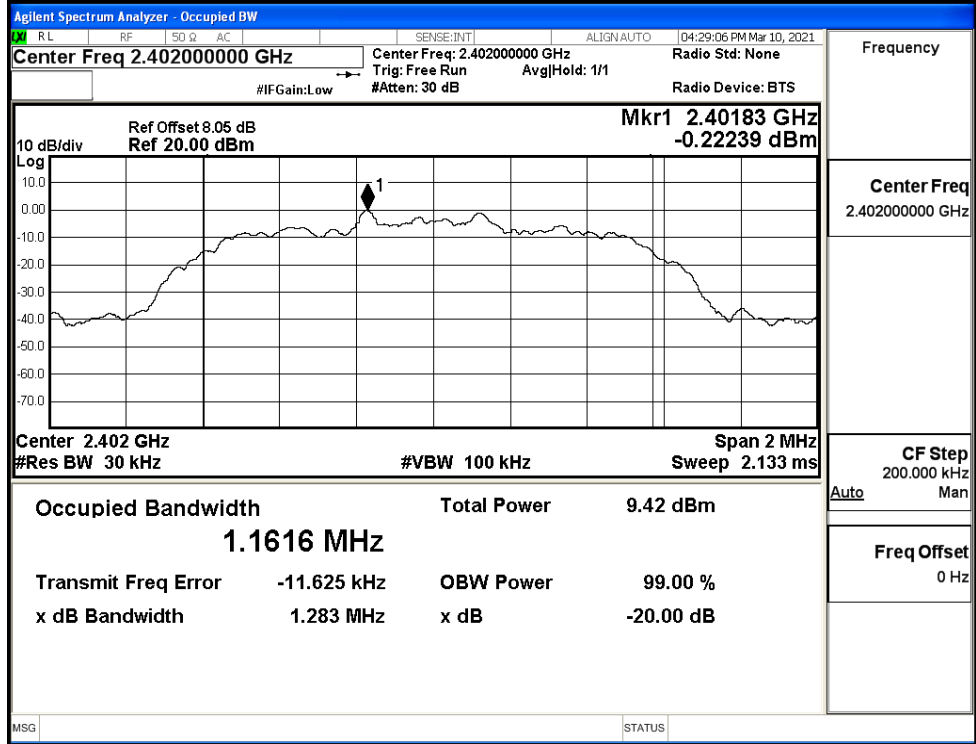
Frequency	
Center Freq	2.44100000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

GFSK/HCH



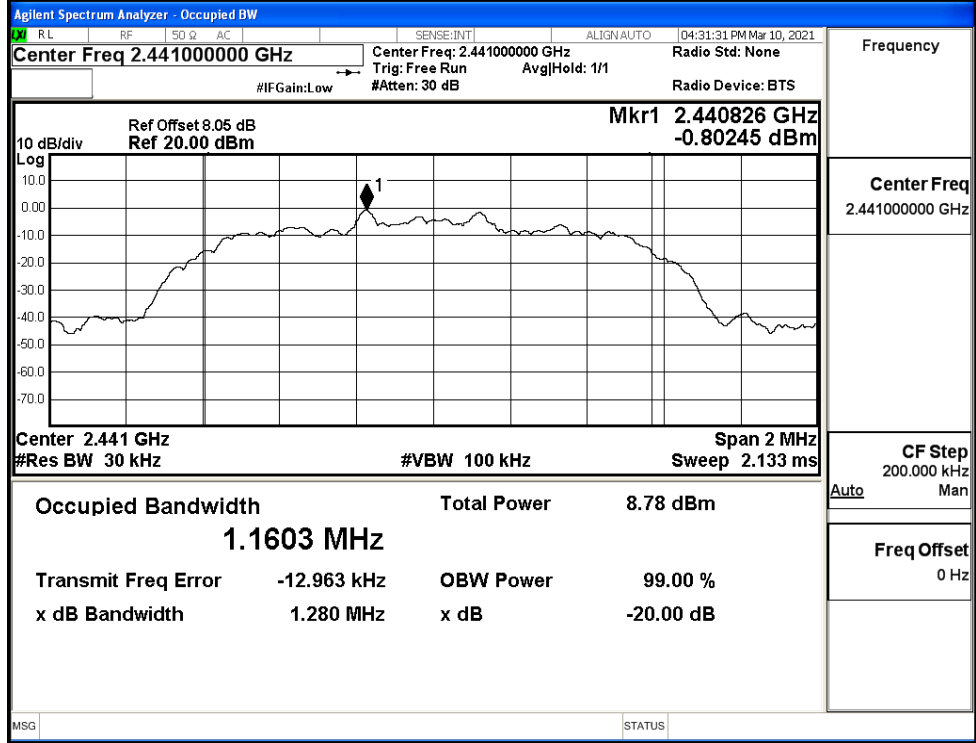
Frequency	
Center Freq	2.48000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

π /4DQPSK/LCH



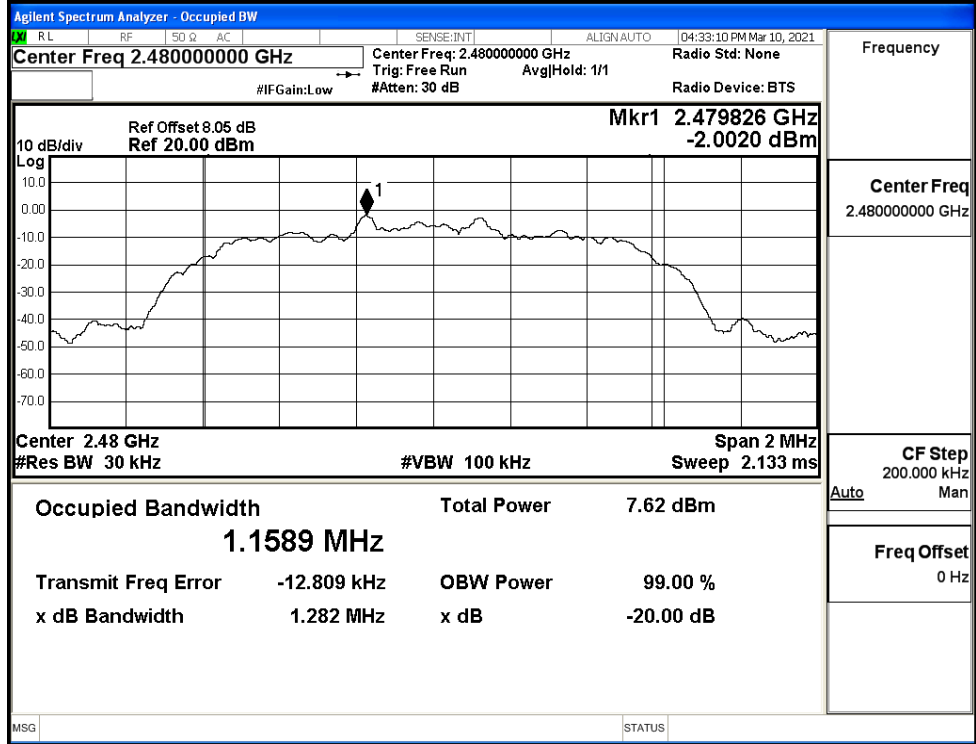
Frequency	2.40200000 GHz
Center Freq	2.40200000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

π /4DQPSK/MCH



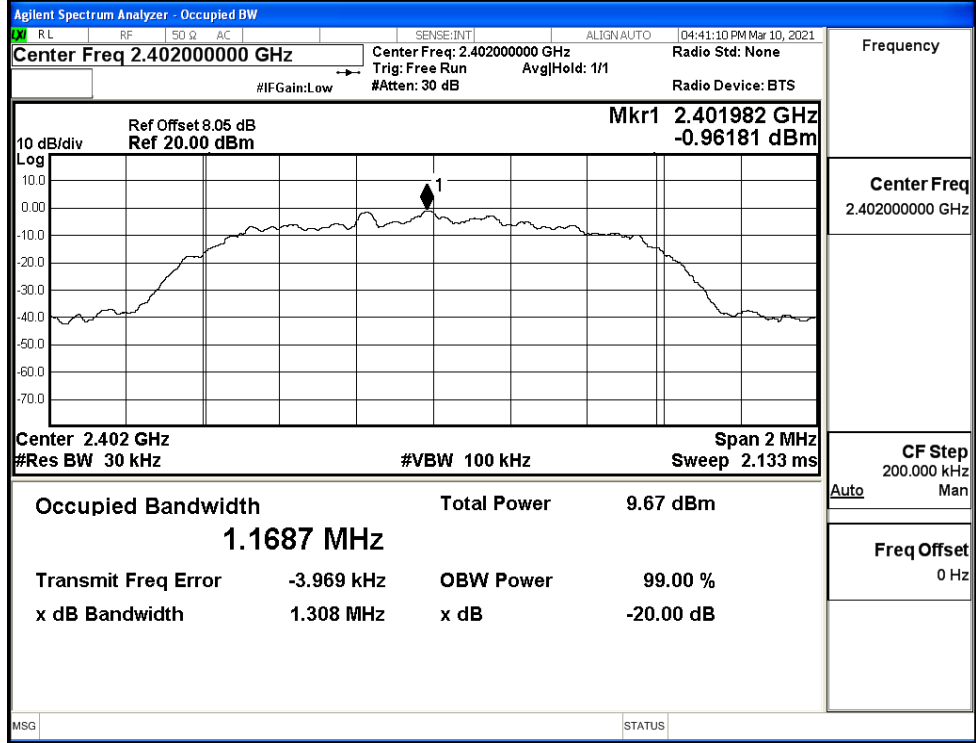
Frequency	2.44100000 GHz
Center Freq	2.44100000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

π/4DQPSK/HCH



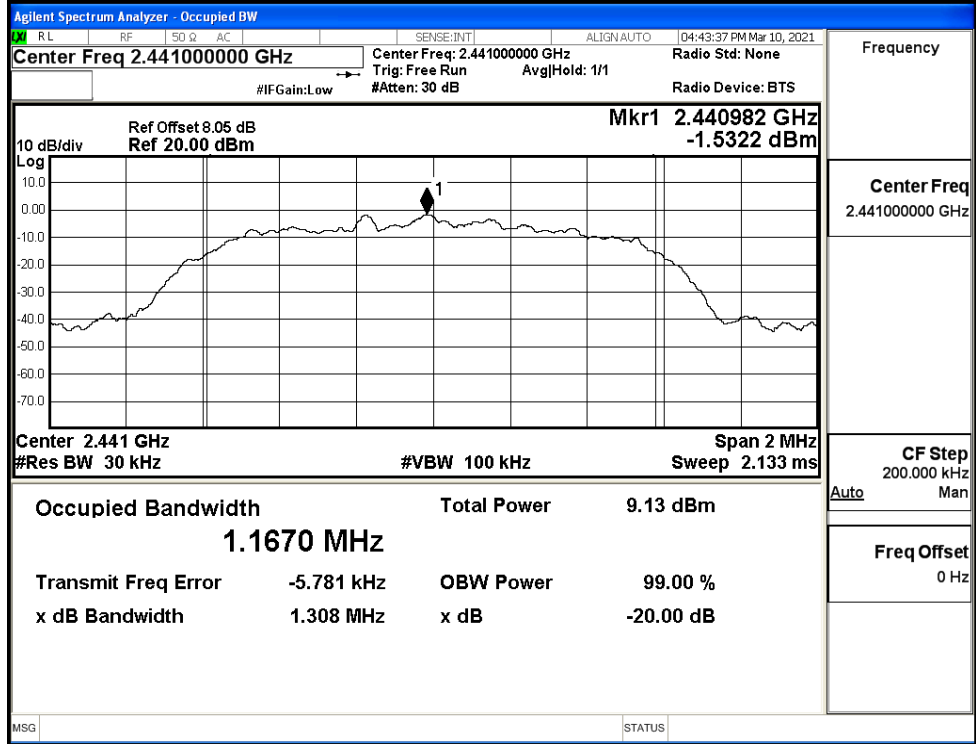
Frequency	
Center Freq	2.48000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

8DPSK/LCH

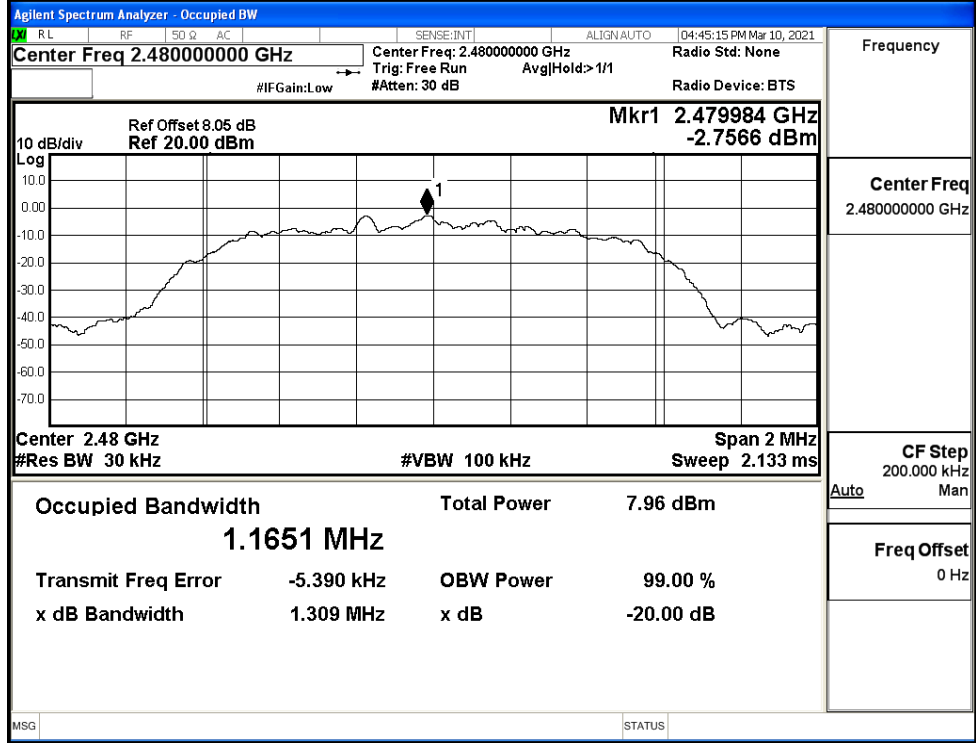


Frequency	
Center Freq	2.40200000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

8DPSK/MCH

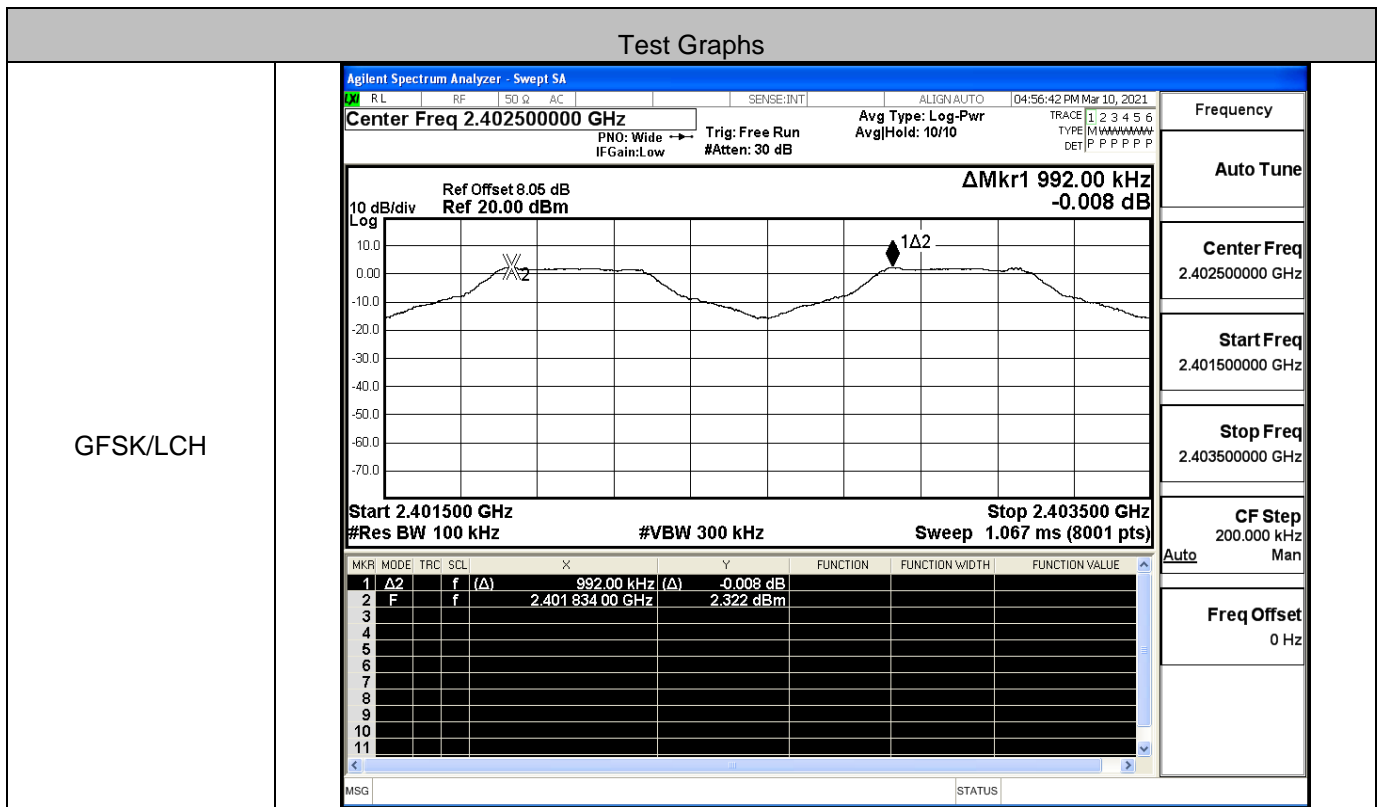


8DPSK/HCH

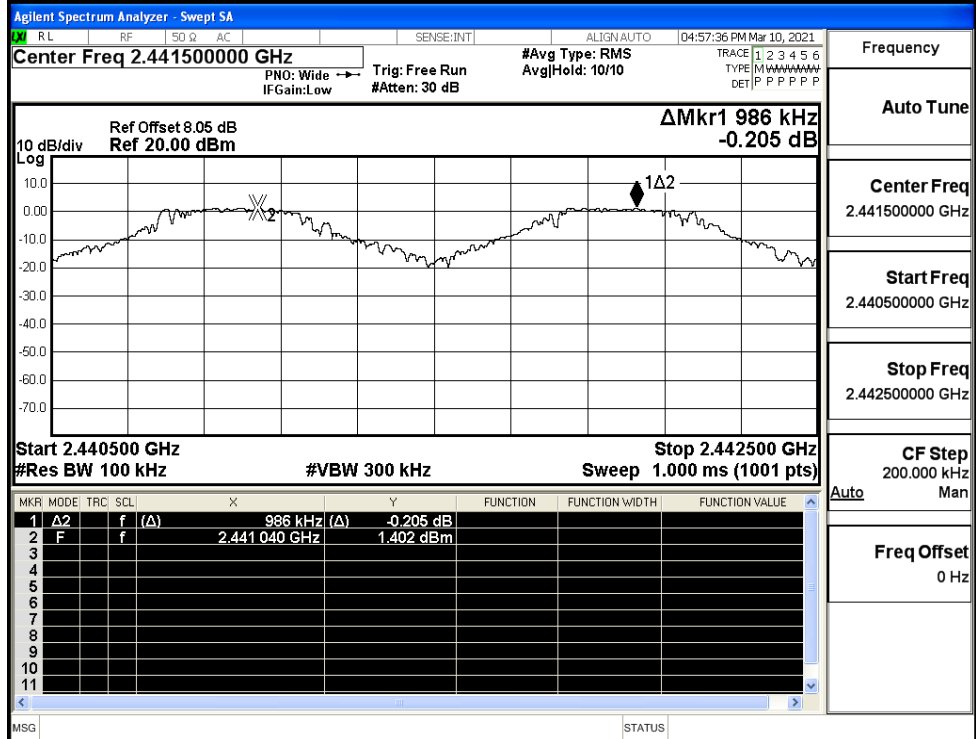


A.3 Carrier Frequency Separation

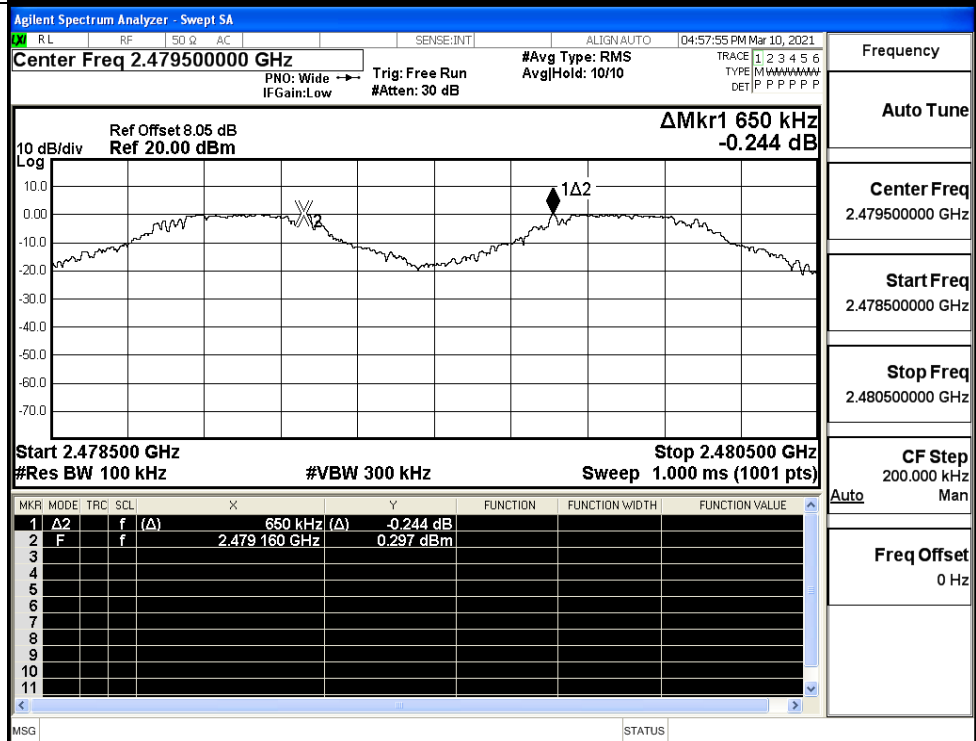
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.992	0.632	PASS
	MCH	0.986	0.632	PASS
	HCH	0.650	0.632	PASS
π/4DQPSK	LCH	1.028	0.855	PASS
	MCH	1.008	0.855	PASS
	HCH	0.994	0.855	PASS
8DPSK	LCH	0.998	0.873	PASS
	MCH	1.316	0.873	PASS
	HCH	1.308	0.873	PASS



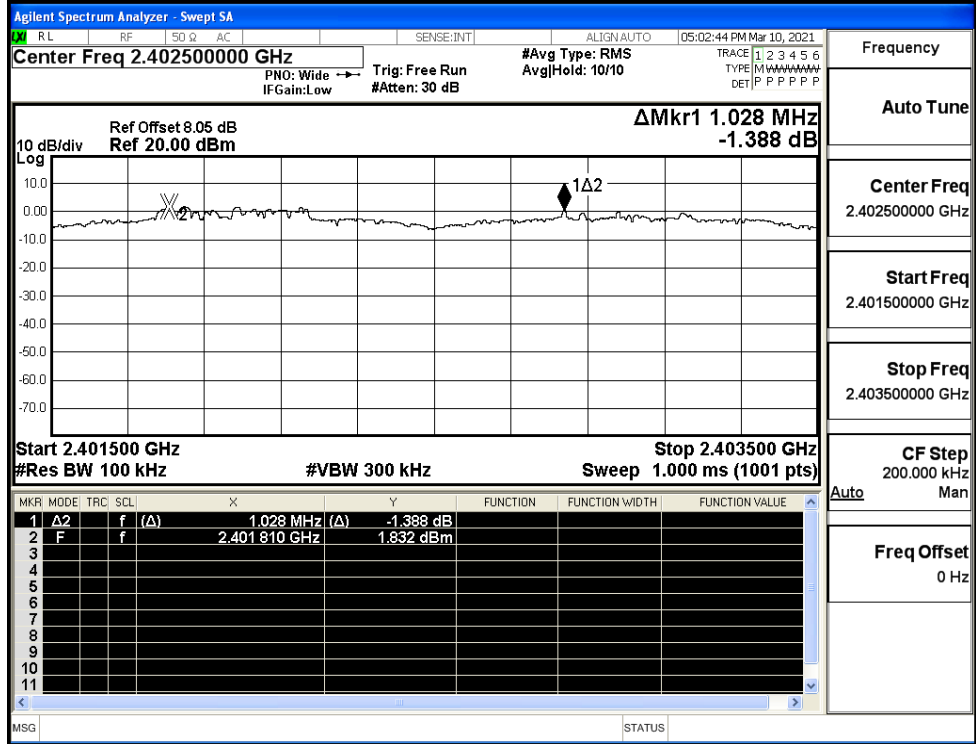
GFSK/MCH



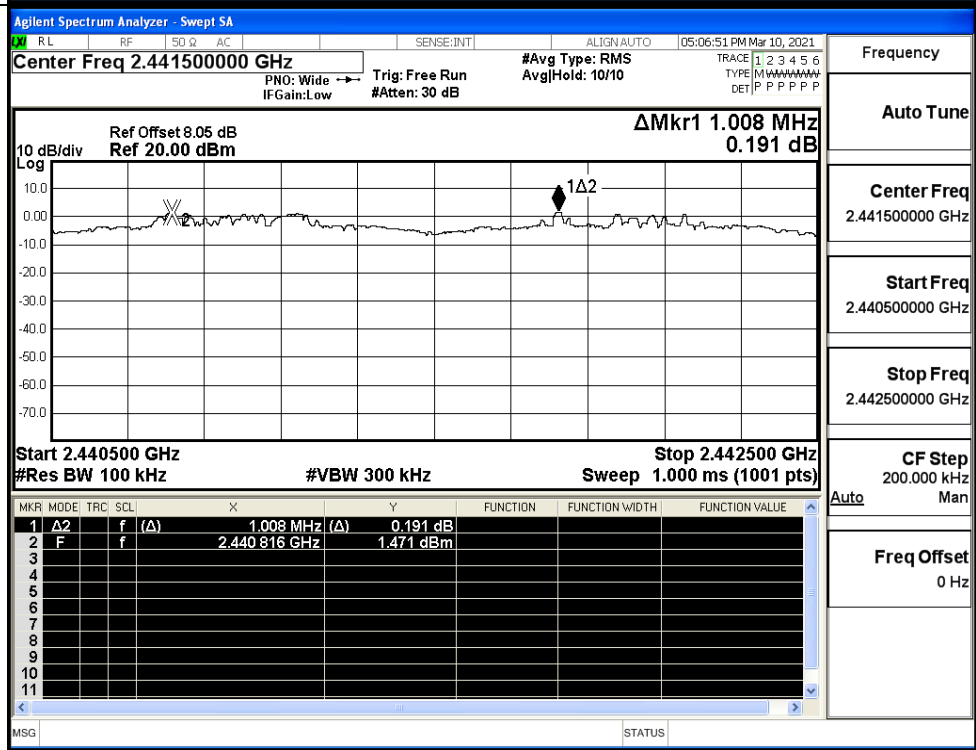
GFSK/HCH



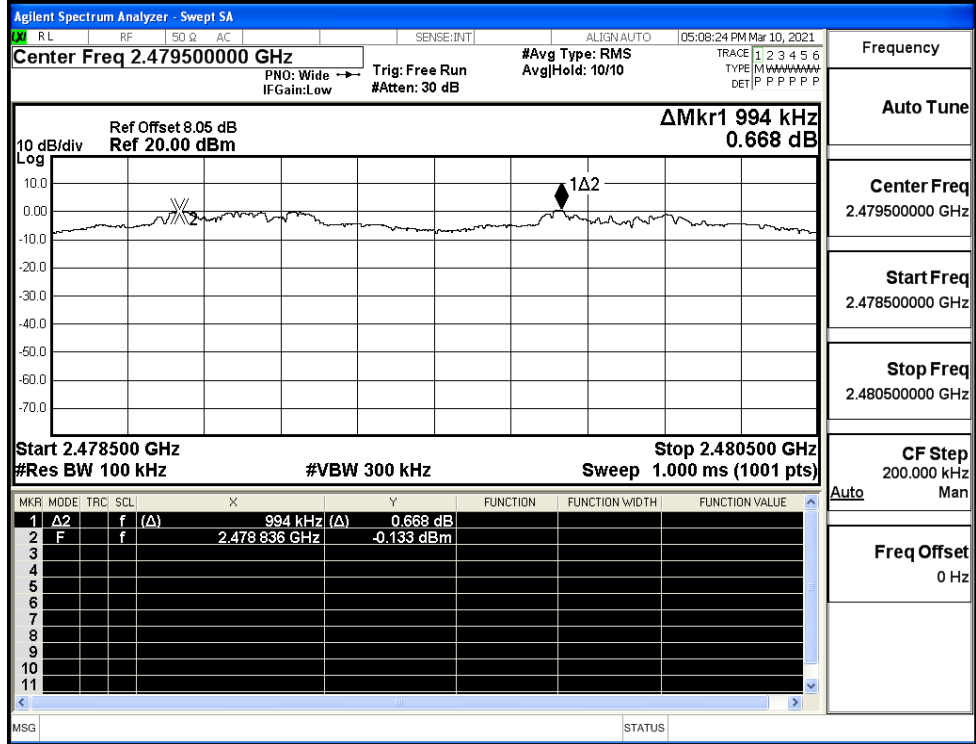
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



π/4DQPSK/HCH



Frequency

Auto Tune

Center Freq
2.479500000 GHz

Start Freq
2.478500000 GHz

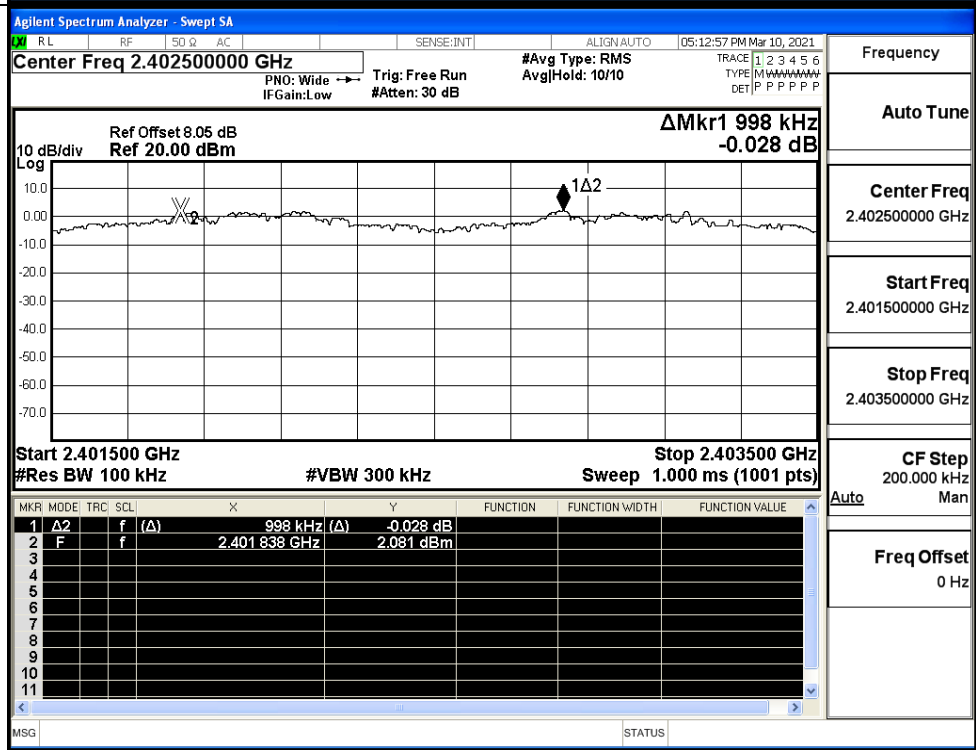
Stop Freq
2.480500000 GHz

CF Step
200.000 kHz

Auto

Freq Offset
0 Hz

8DPSK/LCH



Frequency

Auto Tune

Center Freq
2.402500000 GHz

Start Freq
2.401500000 GHz

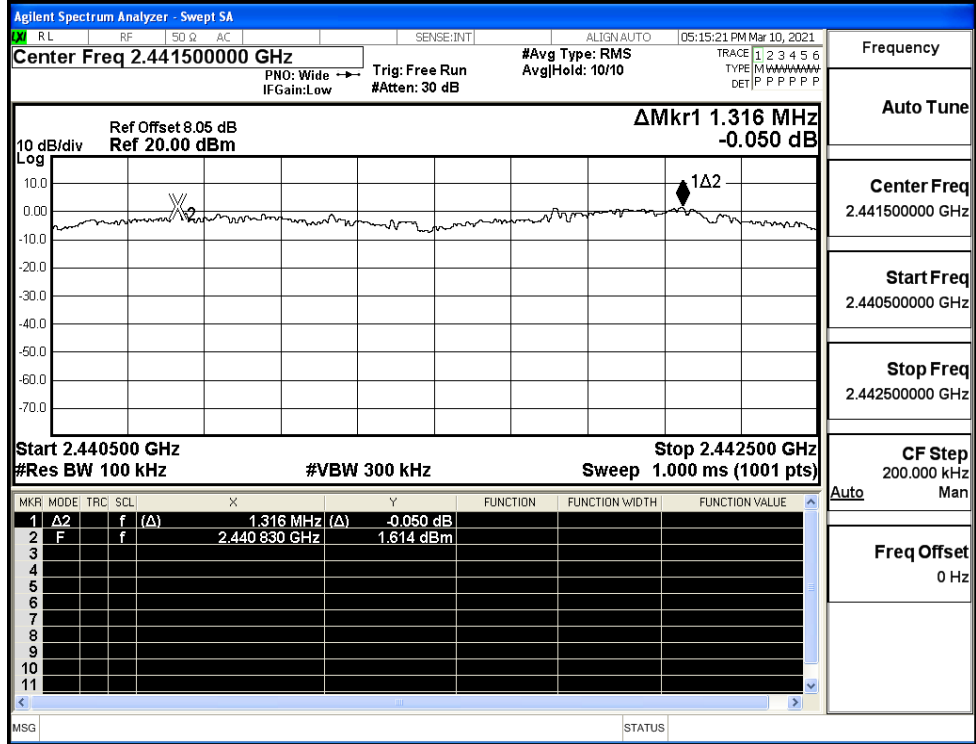
Stop Freq
2.403500000 GHz

CF Step
200.000 kHz

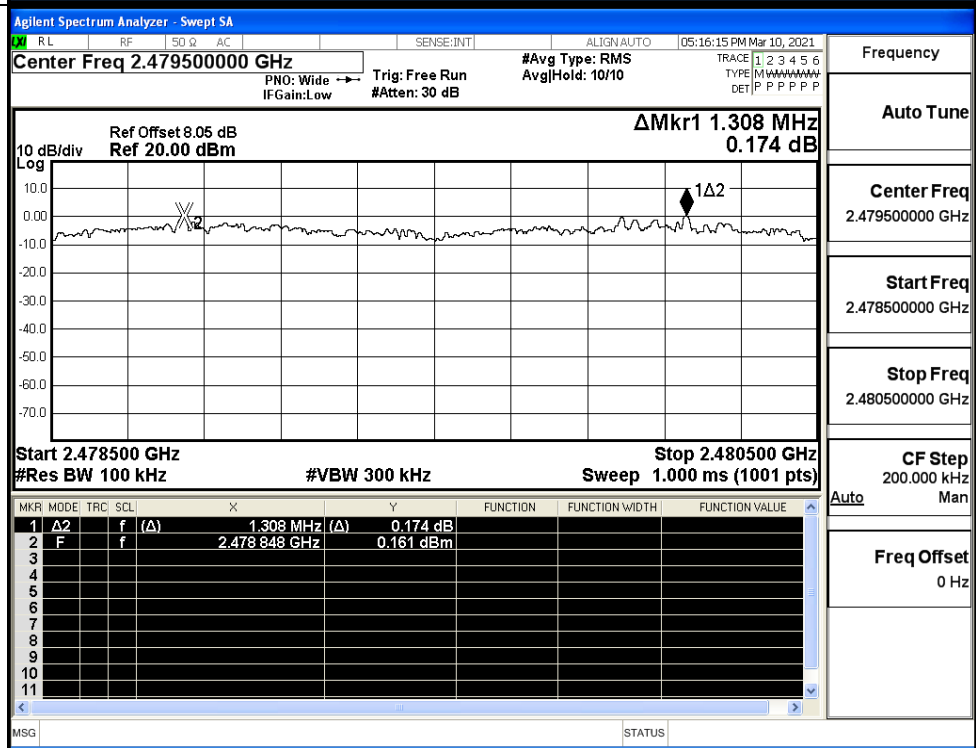
Auto

Freq Offset
0 Hz

8DPSK/MCH



8DPSK/HCH



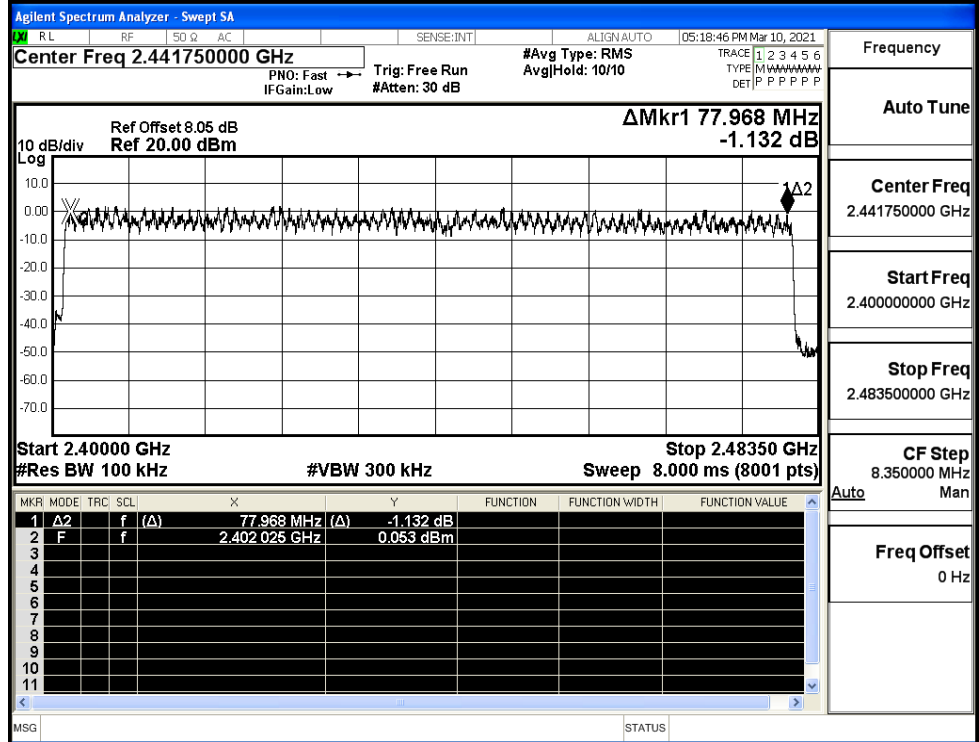
A.4 Hopping Channel Number

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

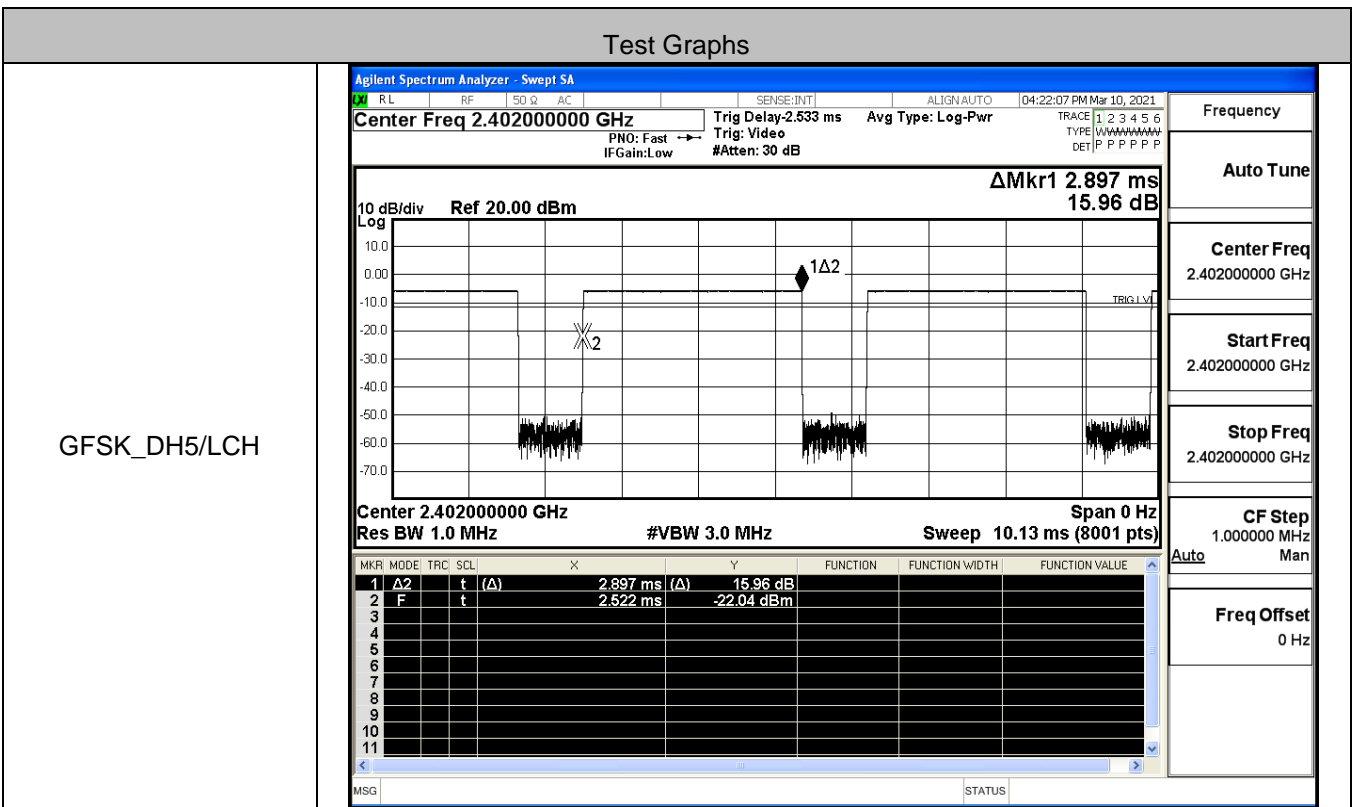
GFSK/Hop	<p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.441750000 GHz</p> <p>Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>ΔMkr1 78.031 MHz -1.602 dB</p> <p>Start 2.40000 GHz Stop 2.48350 GHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 8.000 ms (8001 pts)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <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>78.031 MHz</td> <td>(Δ)</td> <td>-1.602 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>2.240 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)	78.031 MHz	(Δ)	-1.602 dB			2	F	f		2.401941 GHz		2.240 dBm		
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																				
1	Δ 2	f	(Δ)	78.031 MHz	(Δ)	-1.602 dB																						
2	F	f		2.401941 GHz		2.240 dBm																						
$\pi/4$ DQPSK/Hop	<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 78.083 MHz -2.997 dB</p> <p>Start 2.40000 GHz Stop 2.48350 GHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 8.000 ms (8001 pts)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <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>78.083 MHz</td> <td>(Δ)</td> <td>-2.997 dB</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td></td> <td>2.402046 GHz</td> <td></td> <td>1.583 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)	78.083 MHz	(Δ)	-2.997 dB			2	F	f		2.402046 GHz		1.583 dBm		
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																				
1	Δ 2	f	(Δ)	78.083 MHz	(Δ)	-2.997 dB																						
2	F	f		2.402046 GHz		1.583 dBm																						

8DPSK/Hop

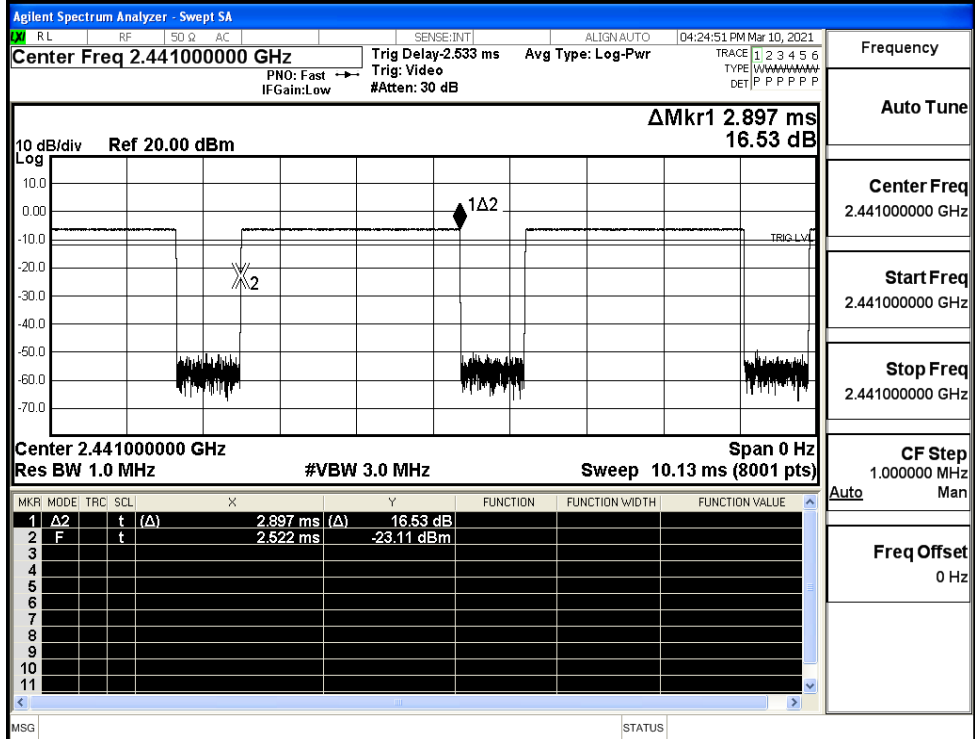


A.5 Dwell Time

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.9	106.7	0.309	0.4	PASS
	DH5	MCH	2.9	106.7	0.309	0.4	PASS
	DH5	HCH	2.9	106.7	0.309	0.4	PASS
π/4DQPSK	2DH5	LCH	2.9	106.7	0.309	0.4	PASS
	2DH5	MCH	2.9	106.7	0.309	0.4	PASS
	2DH5	HCH	2.9	106.7	0.309	0.4	PASS
8DPSK	3DH5	LCH	2.9	106.7	0.31	0.4	PASS
	3DH5	MCH	2.9	106.7	0.31	0.4	PASS
	3DH5	HCH	2.9	106.7	0.31	0.4	PASS

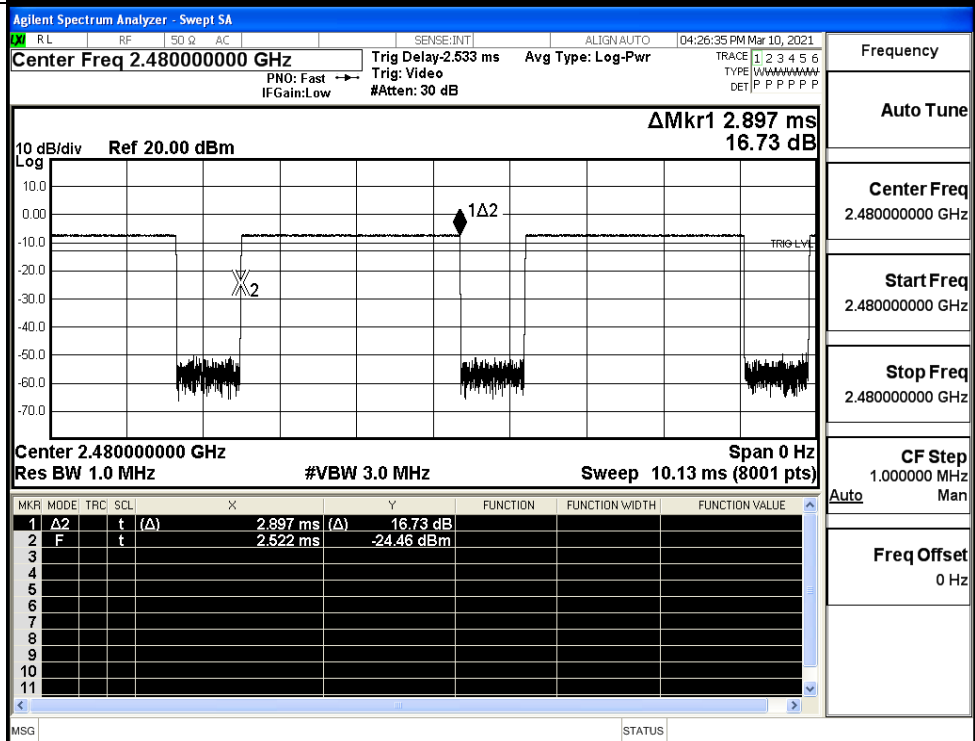


GFSK_DH5/MCH



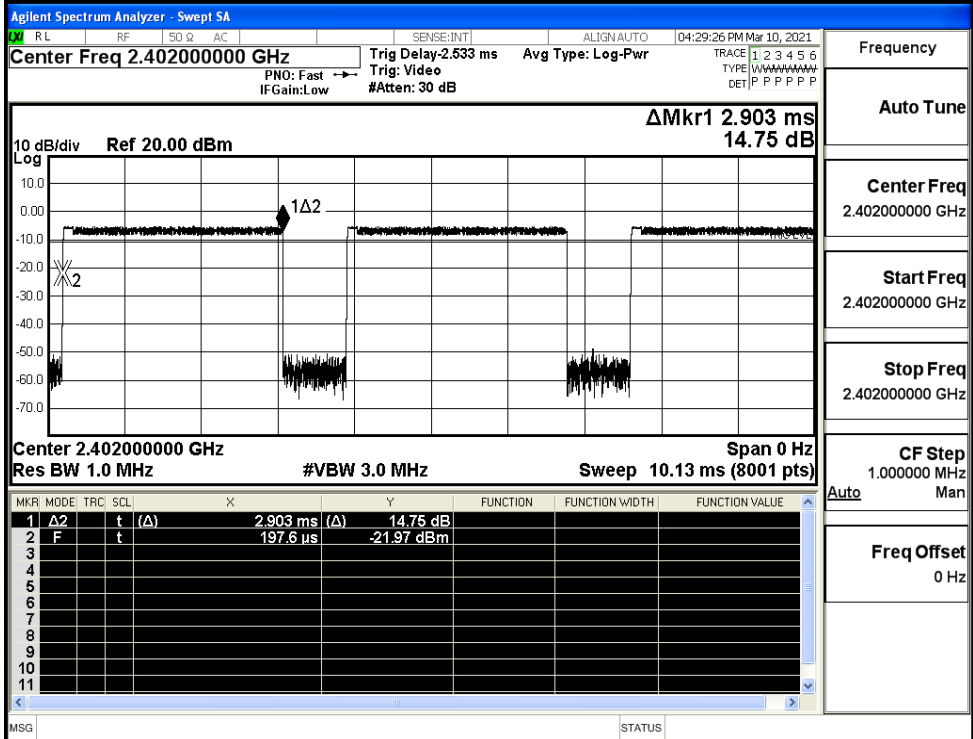
Frequency	2.441000000 GHz
Auto Tune	
Center Freq	2.441000000 GHz
Start Freq	2.441000000 GHz
Stop Freq	2.441000000 GHz
CF Step	1.000000 MHz
Freq Offset	0 Hz

GFSK_DH5/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
Freq Offset	0 Hz

π /4DQPSK
_2DH5/LCH



Frequency

Auto Tune

Center Freq
2.402000000 GHz

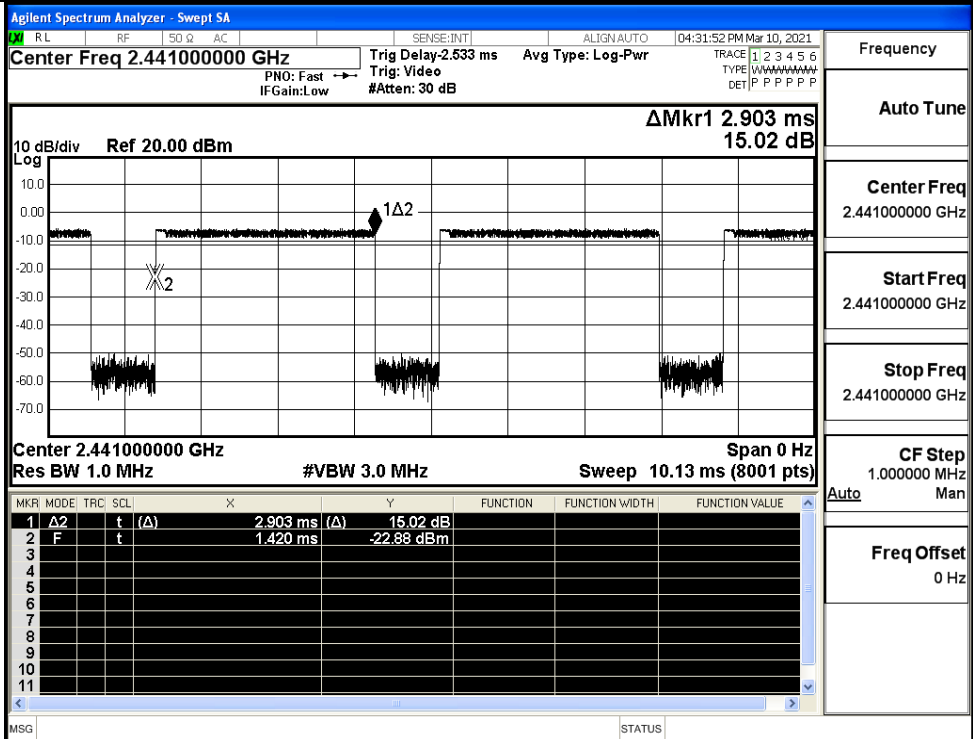
Start Freq
2.402000000 GHz

Stop Freq
2.402000000 GHz

CF Step
1.000000 MHz

Freq Offset
0 Hz

π /4DQPSK
_2DH5/MCH



Frequency

Auto Tune

Center Freq
2.441000000 GHz

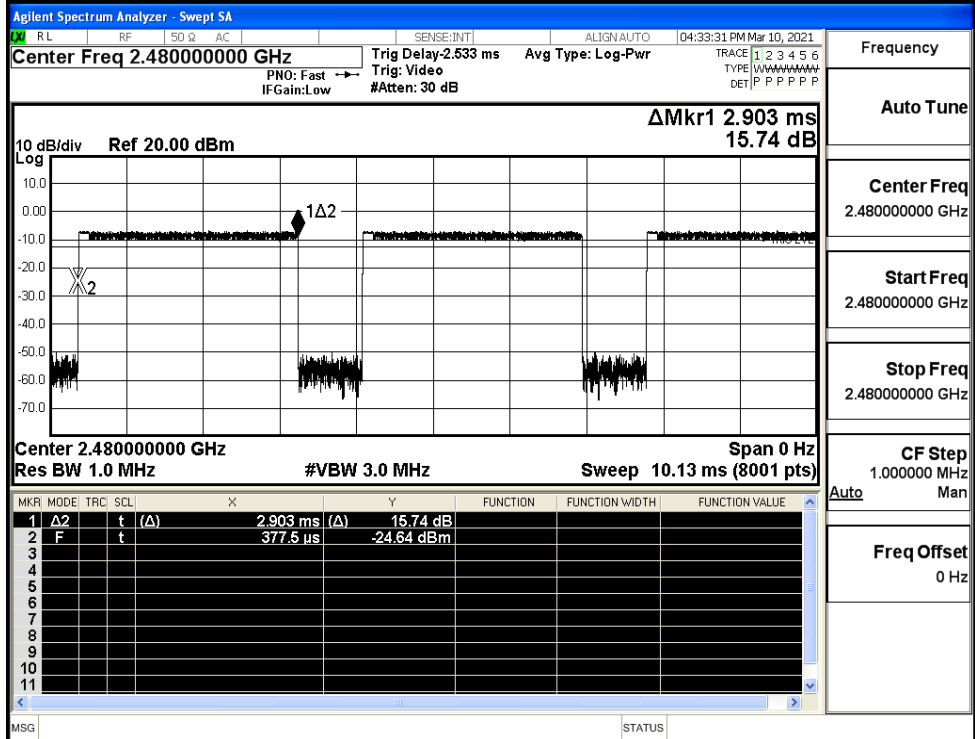
Start Freq
2.441000000 GHz

Stop Freq
2.441000000 GHz

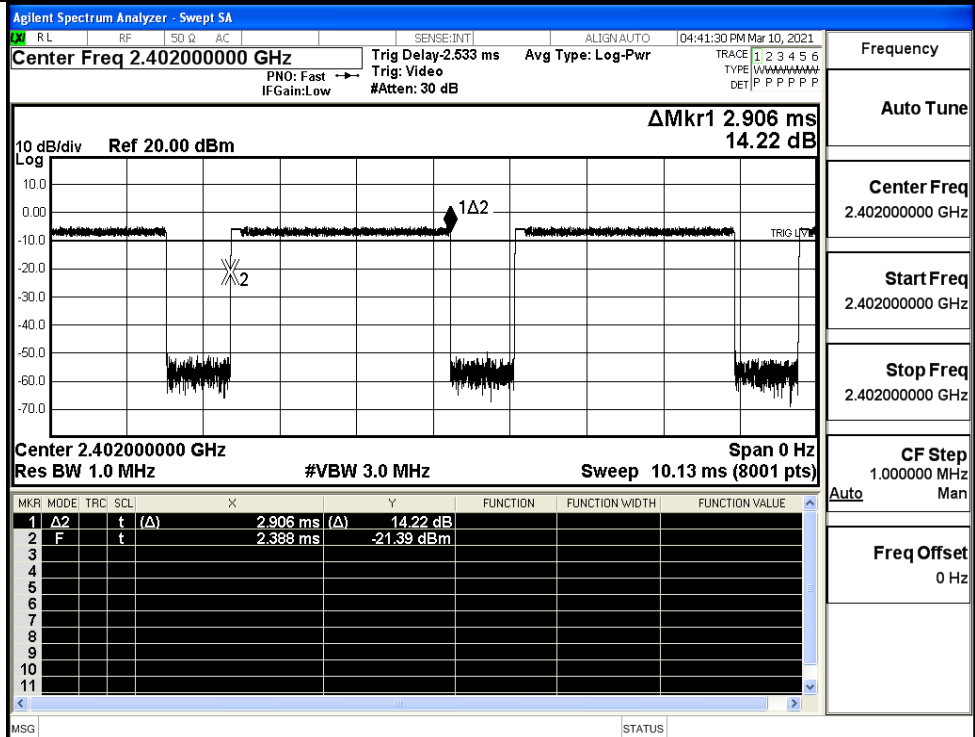
CF Step
1.000000 MHz

Freq Offset
0 Hz

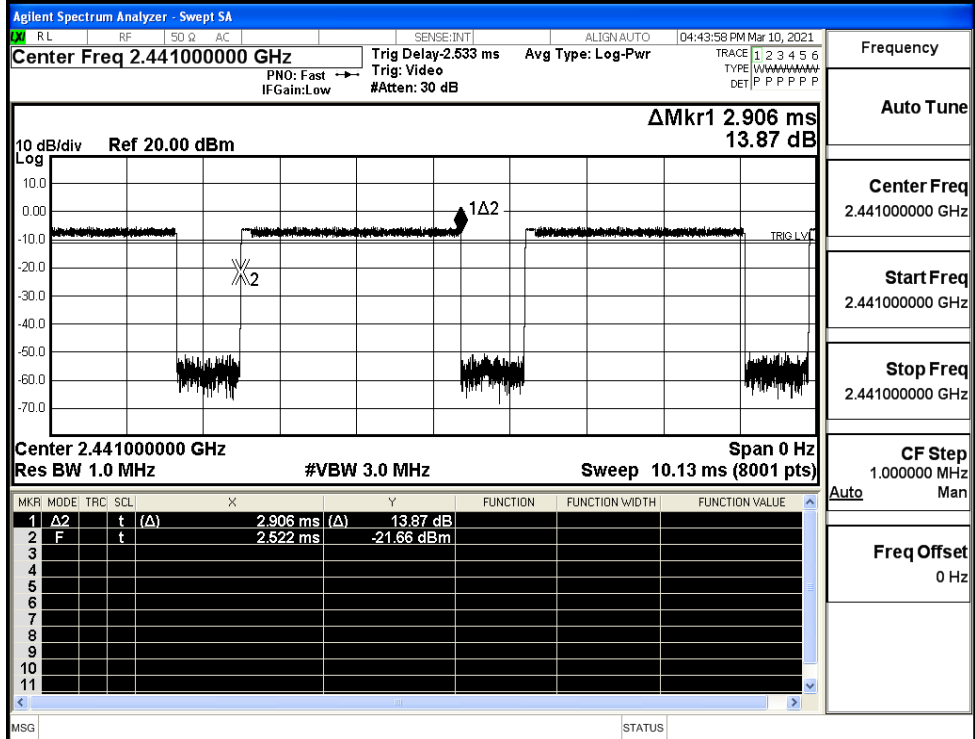
$\pi/4$ DQPSK
_2DH5/HCH



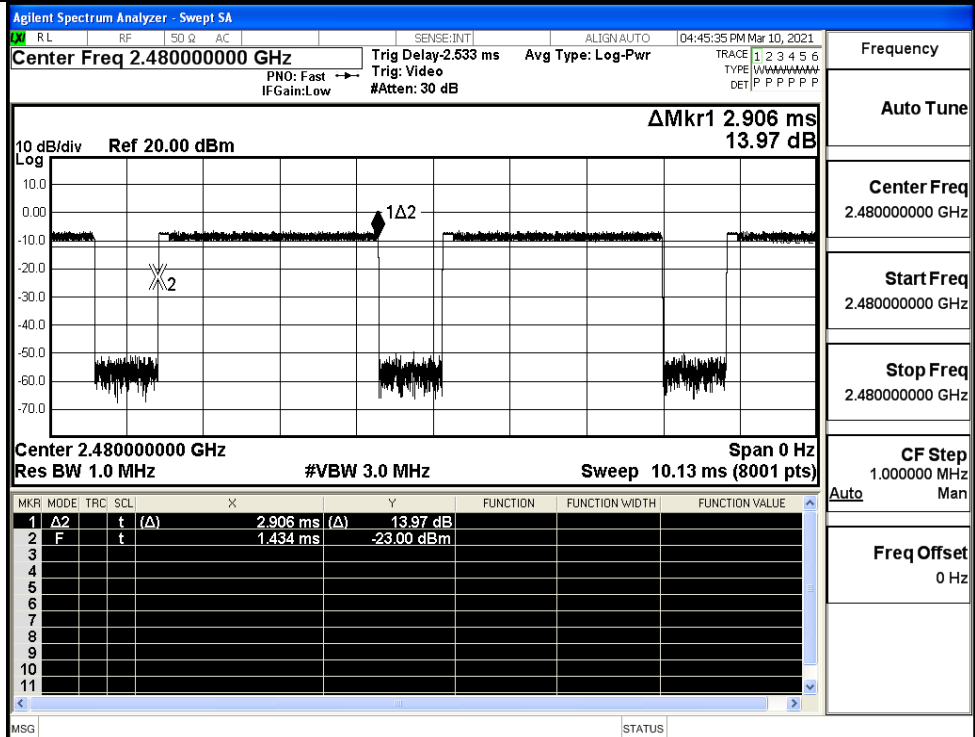
8DPSK_3DH5/LCH



8DPSK_3DH5/MCH



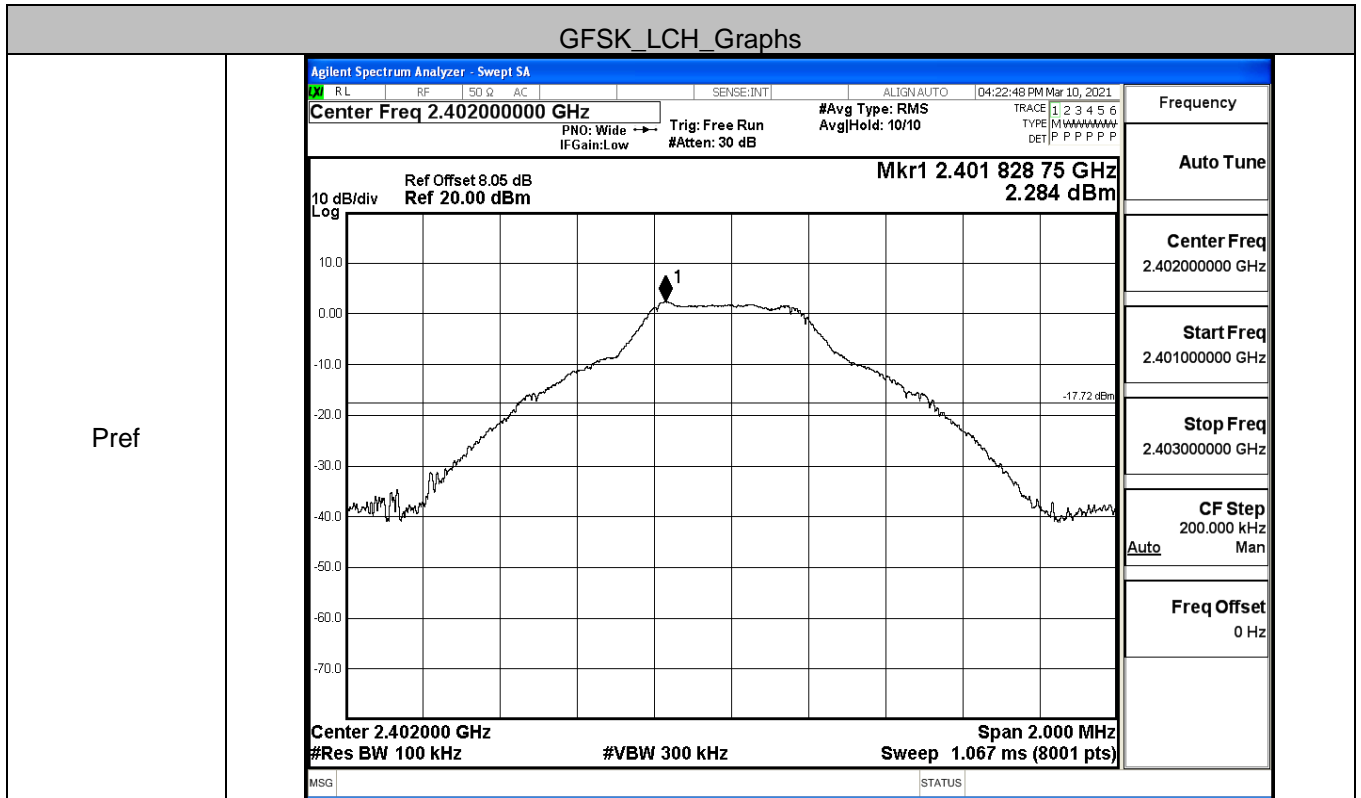
8DPSK_3DH5/HCH



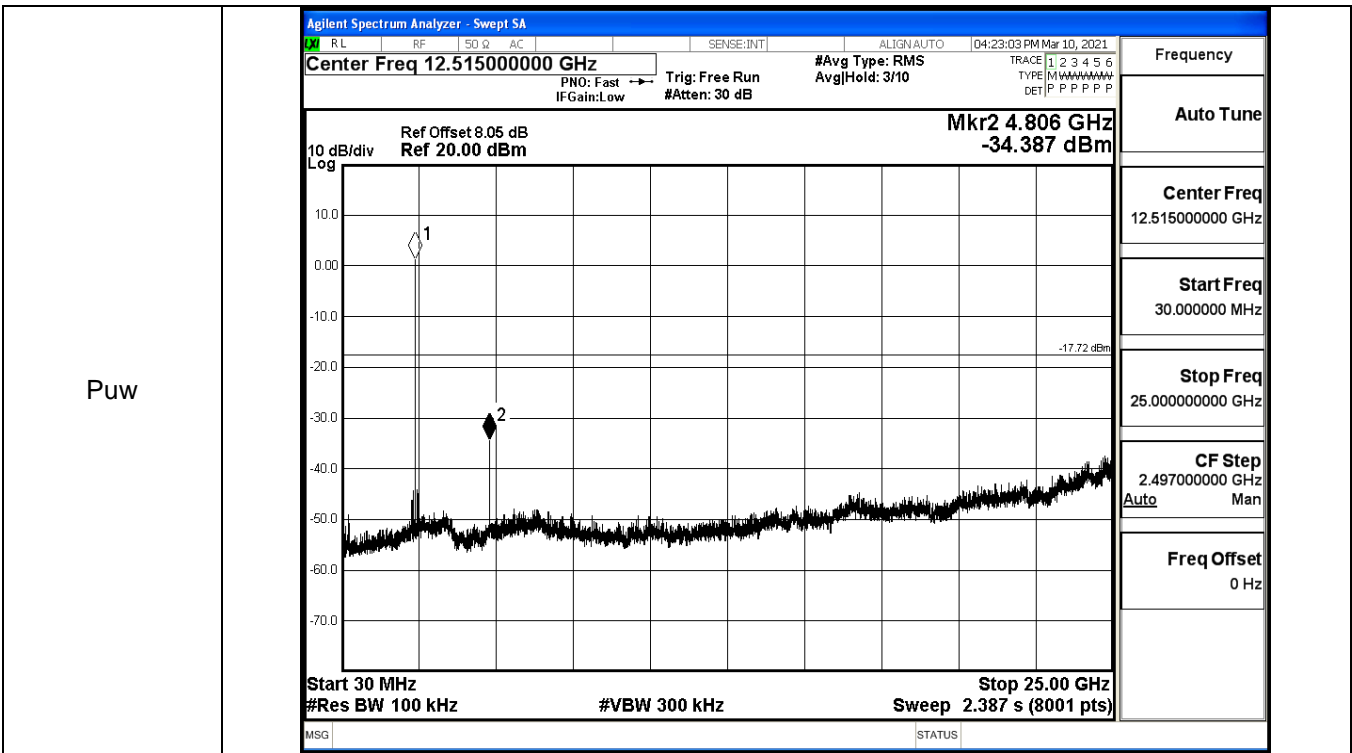
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2.284	-34.387	-17.716	PASS
	MCH	1.85	-36.530	-18.150	PASS
	HCH	0.677	-37.311	-19.323	PASS
π/4DQPSK	LCH	2.031	-37.916	-17.969	PASS
	MCH	1.867	-38.311	-18.133	PASS
	HCH	0.006	-37.526	-19.994	PASS
8DPSK	LCH	2.22	-38.186	-17.780	PASS
	MCH	1.697	-37.791	-18.303	PASS
	HCH	0.432	-37.333	-19.568	PASS

GFSK_LCH_Graphs

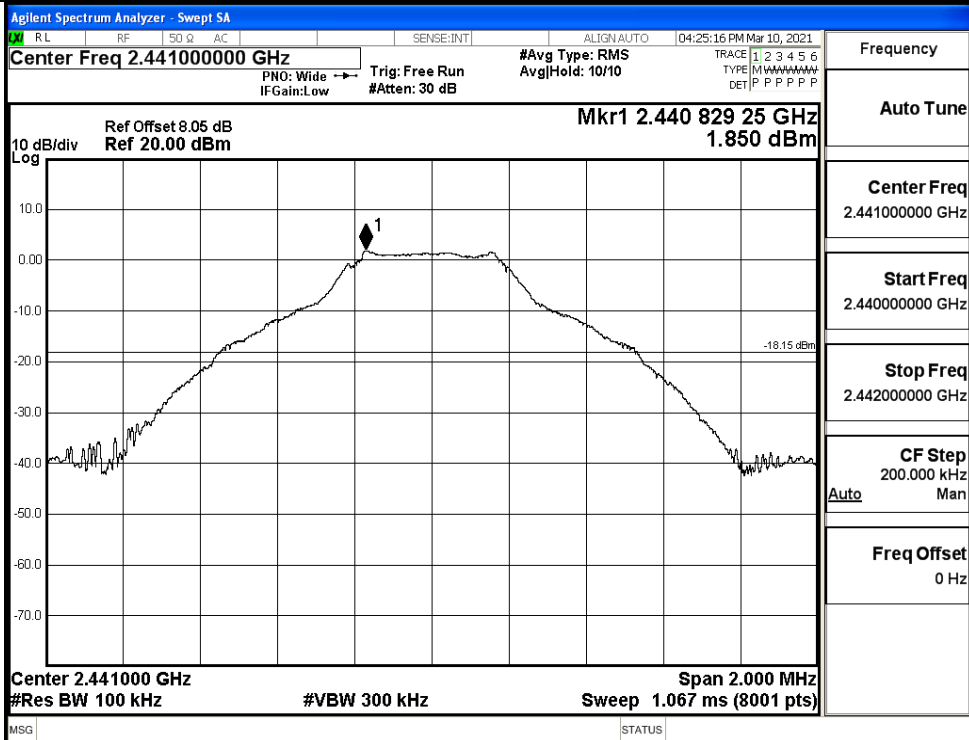


Pref

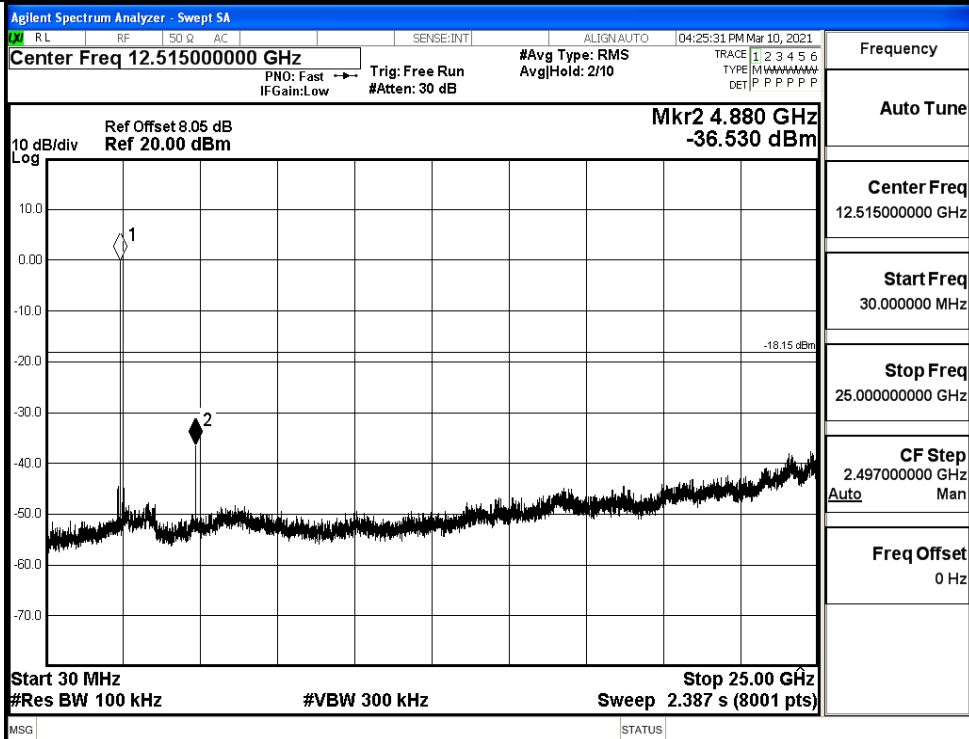


GFSK_MCH_Graphs

Pref

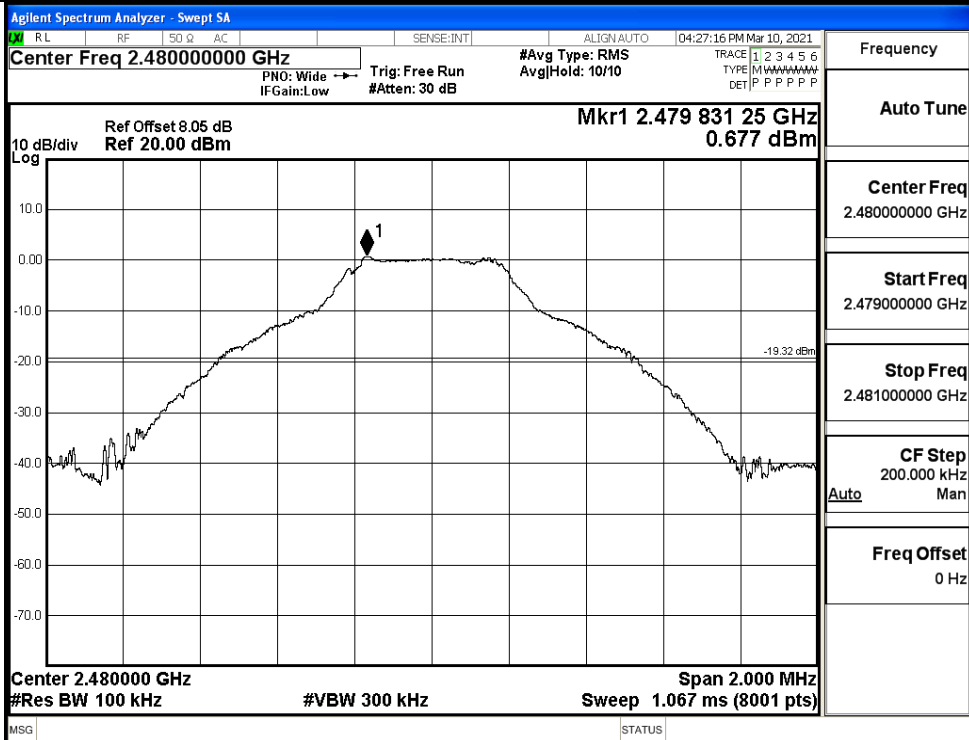


Puw

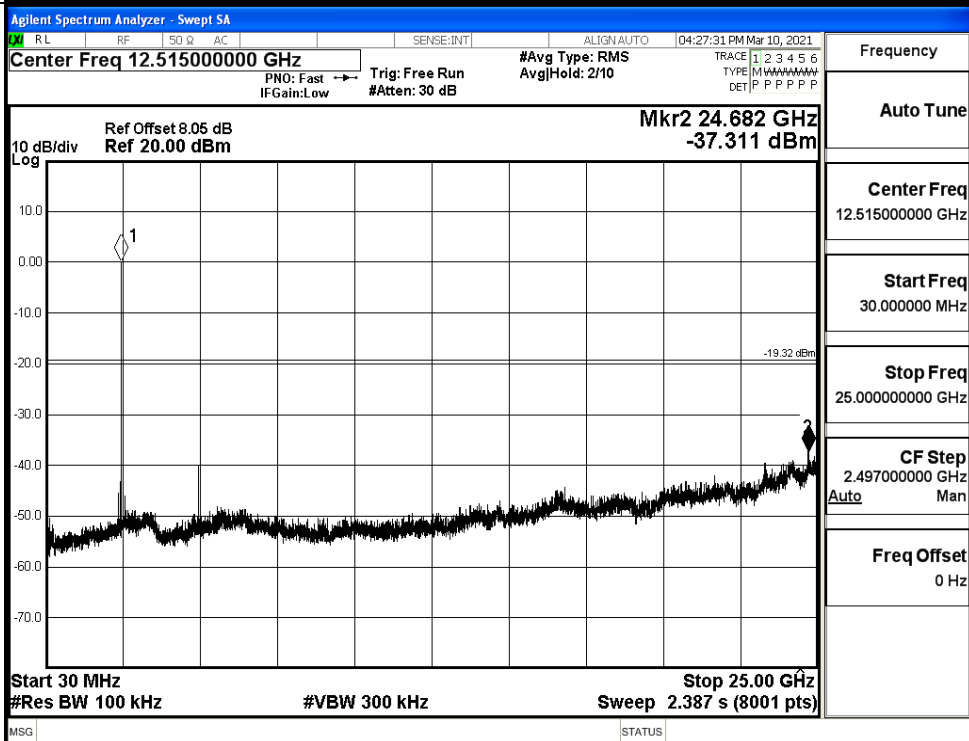


GFSK_HCH_Graphs

Pref

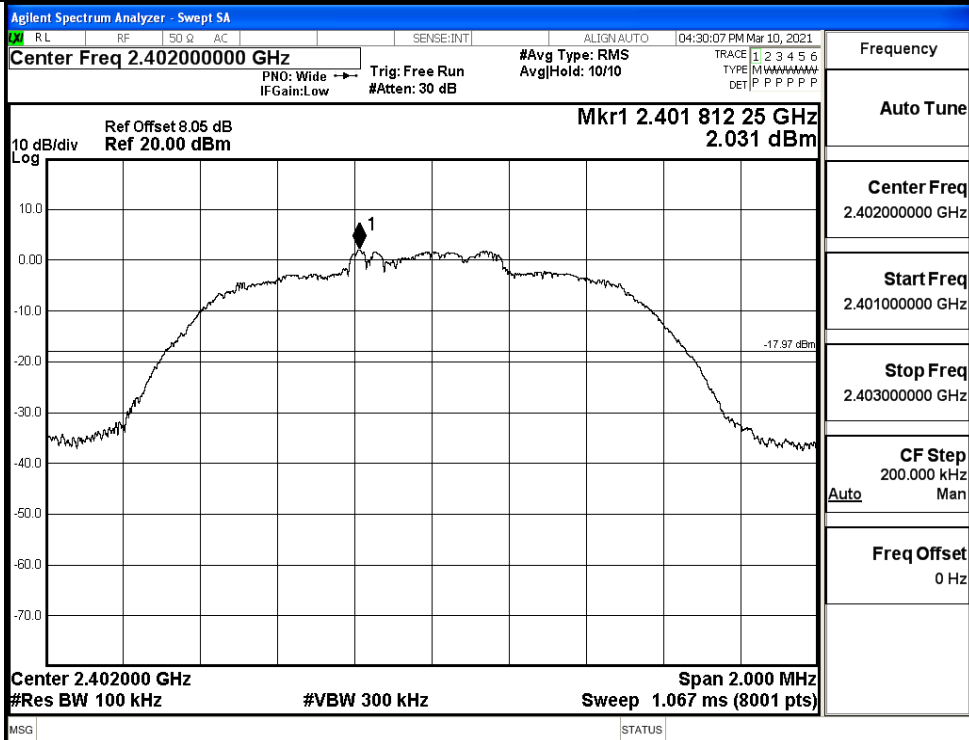


Puw

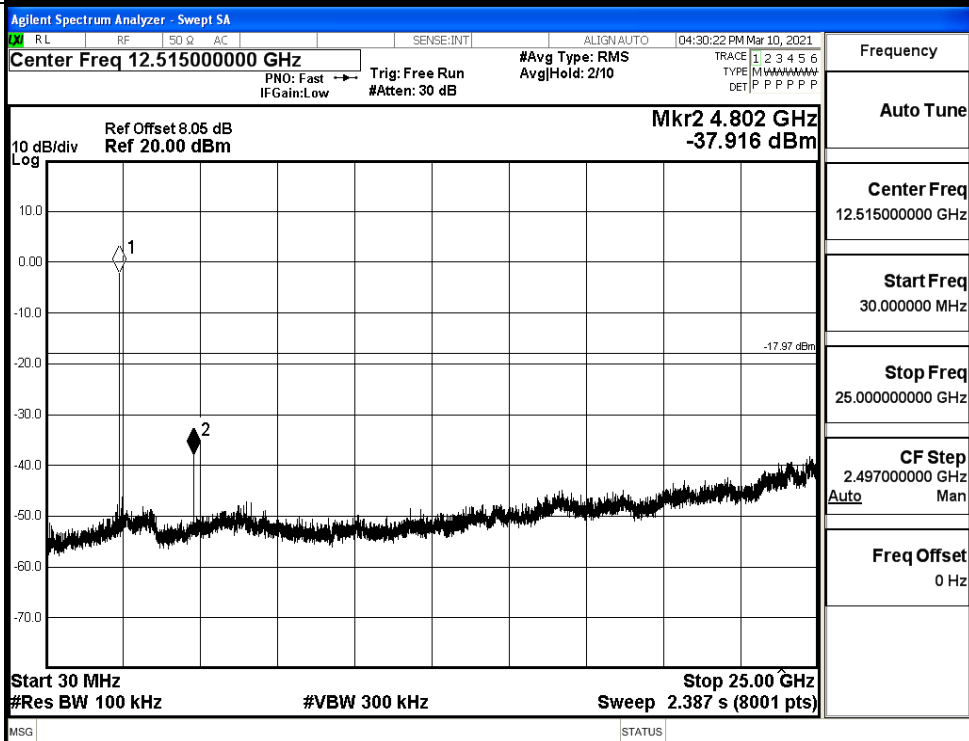


$\pi/4$ DQPSK LCH Graphs

Pref

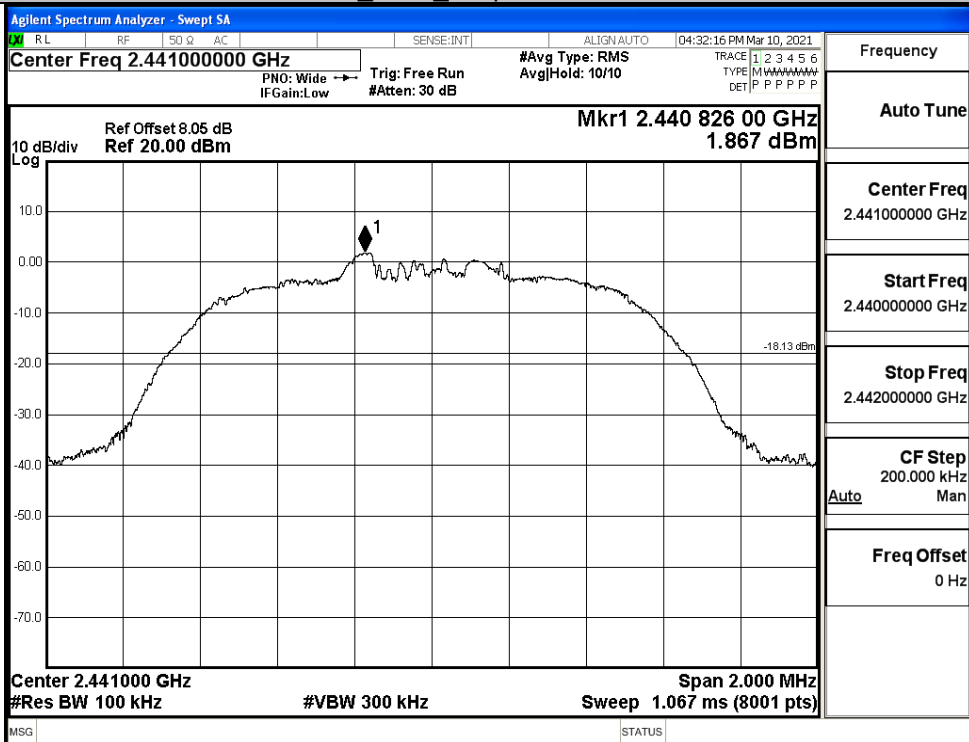


Puw

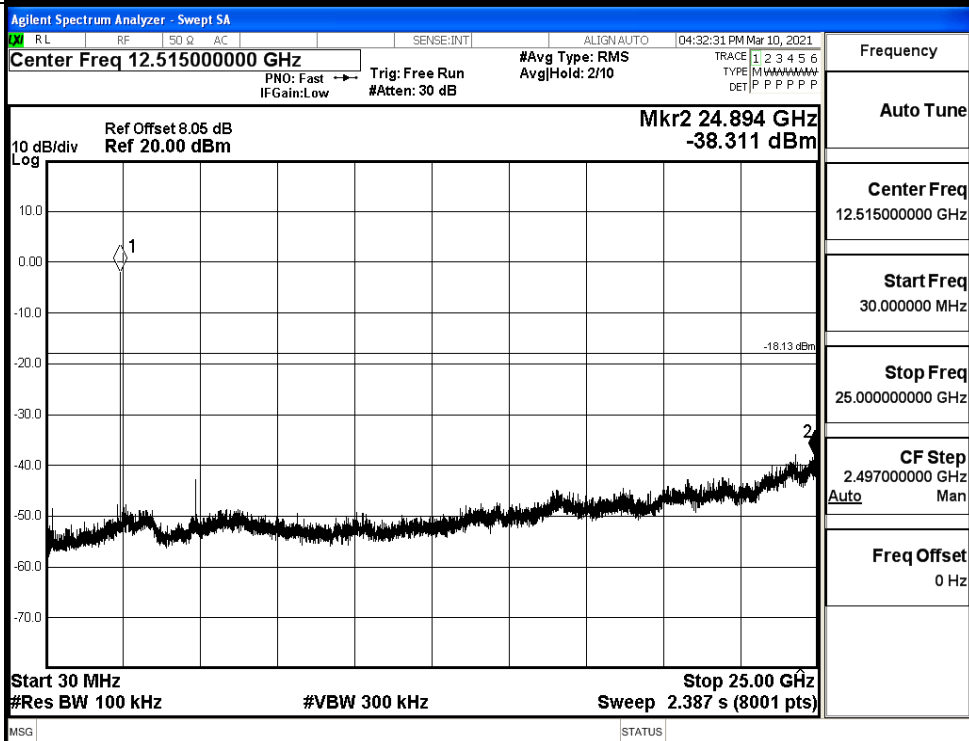


π /4DQPSK_MCH_Graphs

Pref

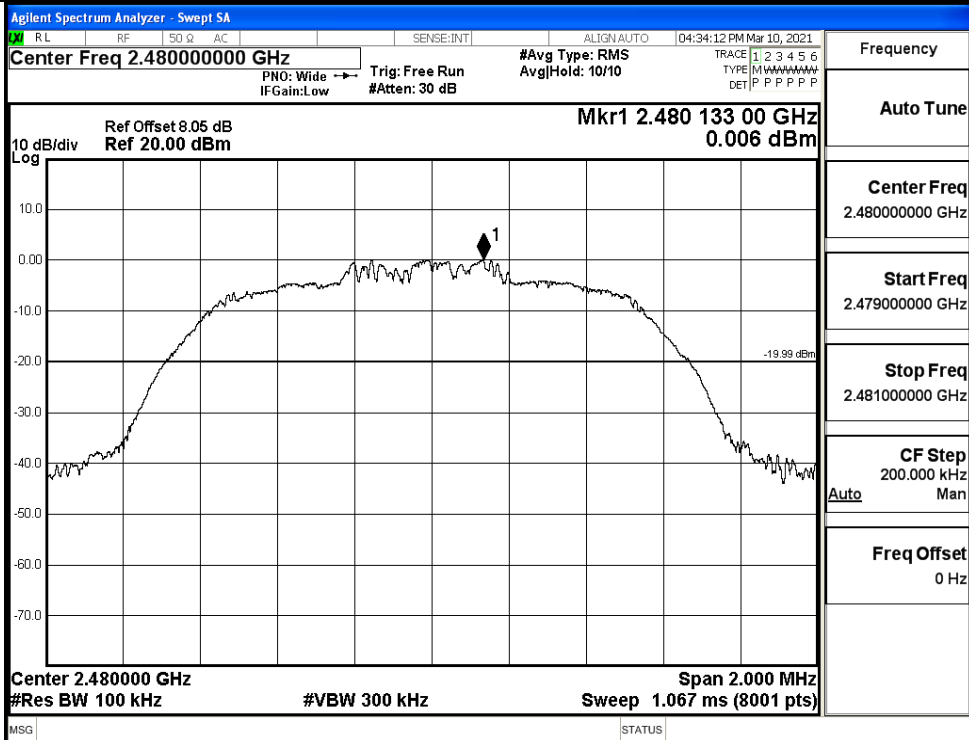


Puw

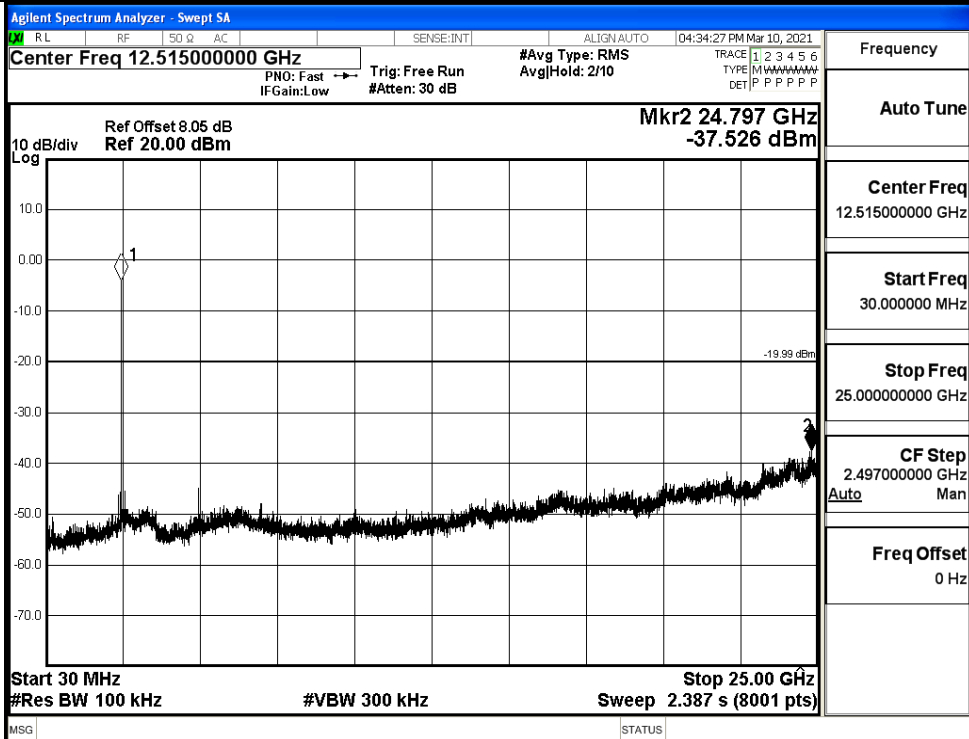


$\pi/4$ DQPSK_HCH_Graphs

Pref

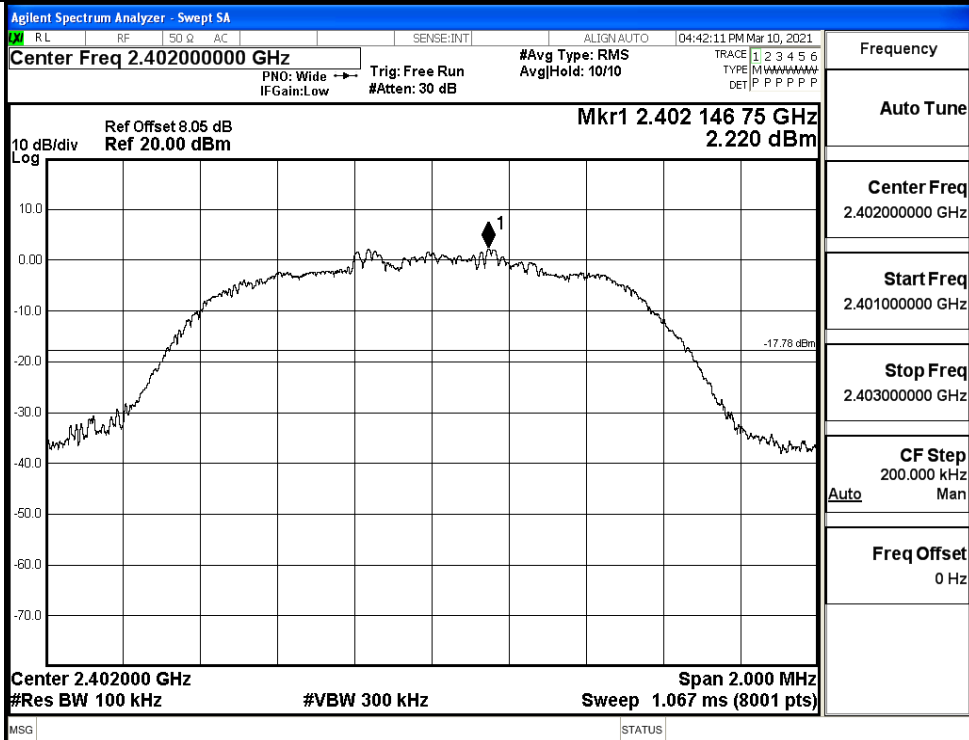


Puw

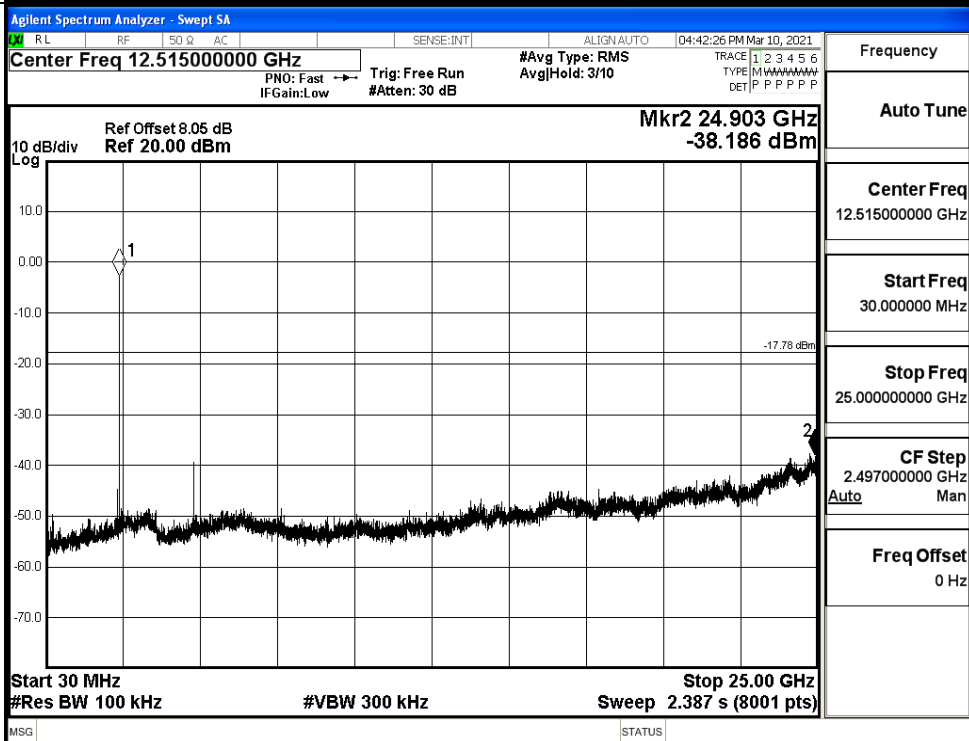


8DPSK_LCH_Graphs

Pref

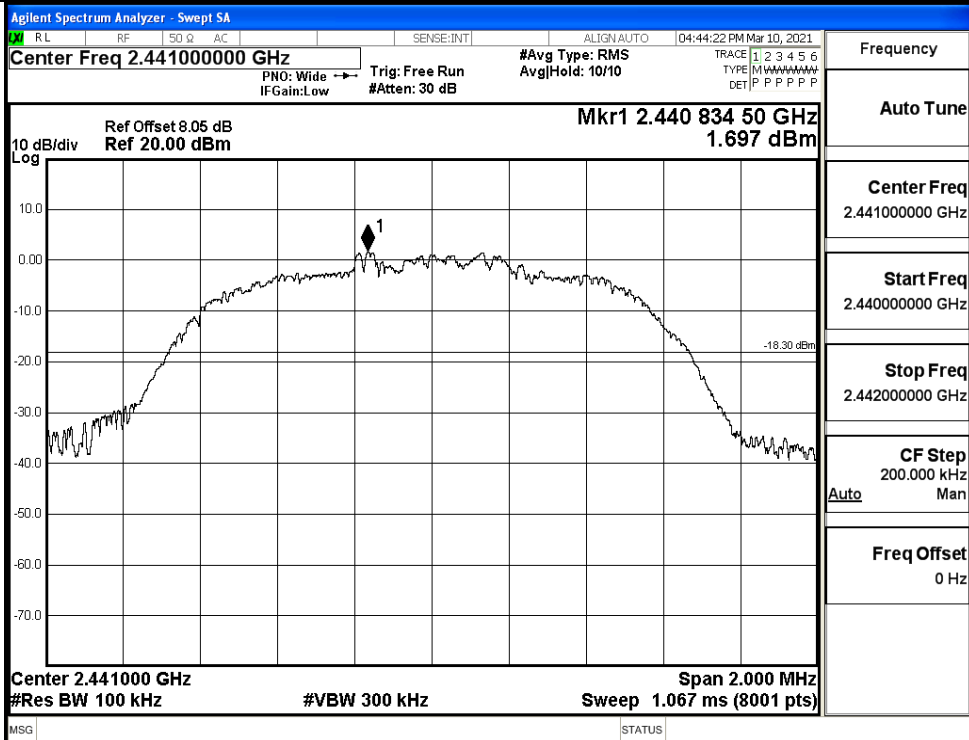


Puw

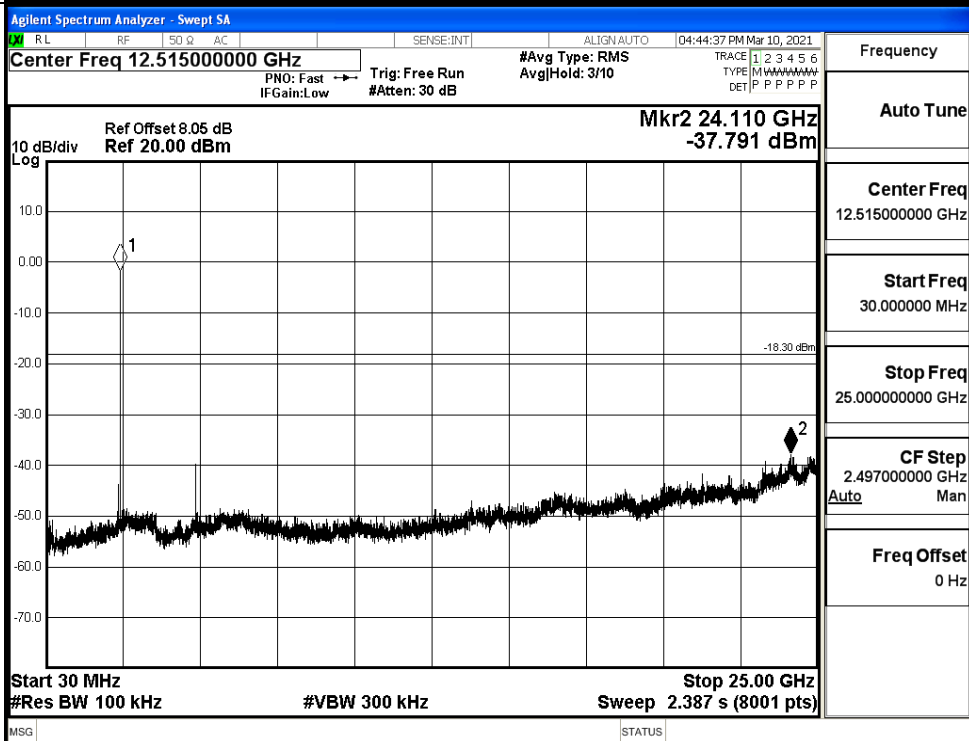


8DPSK_MCH_Graphs

Pref

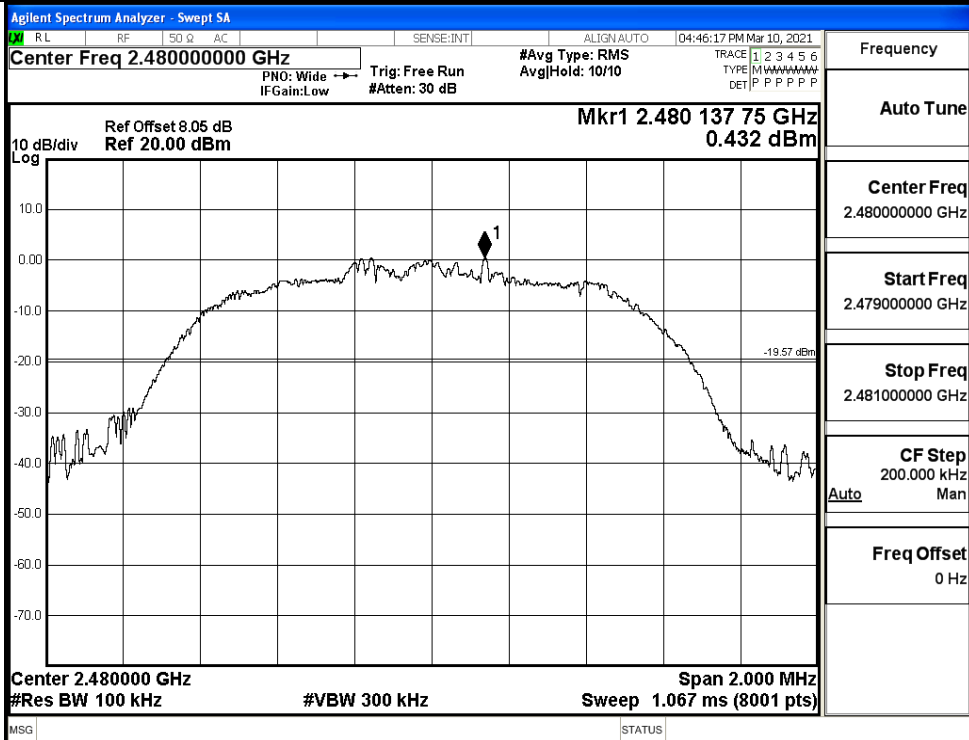


Puw

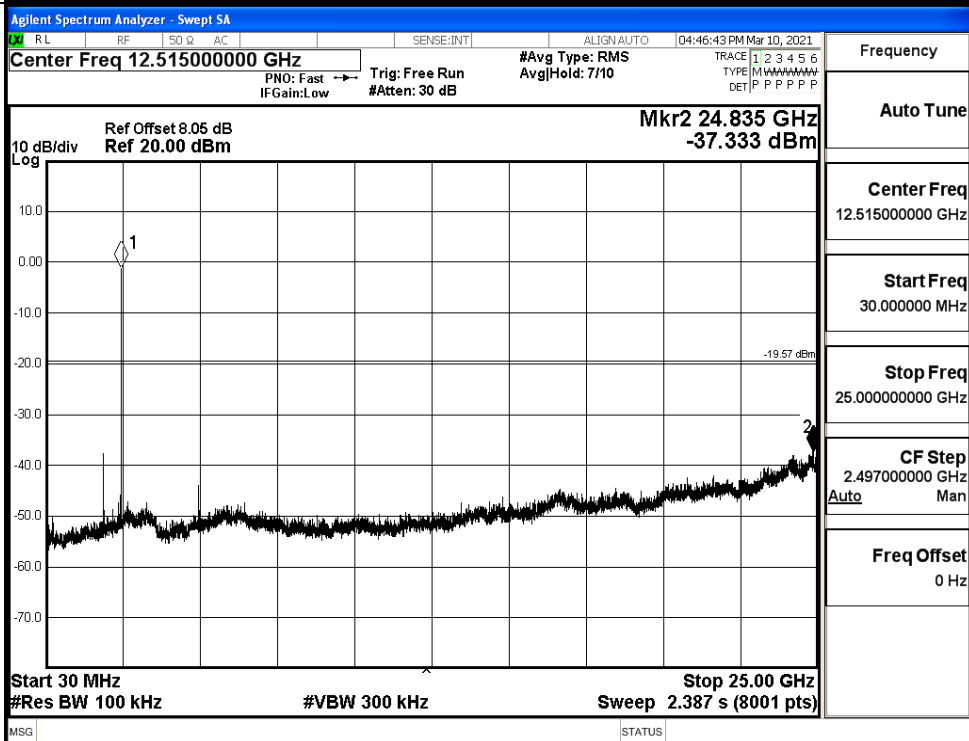


8DPSK_HCH_Graphs

Pref



Puw

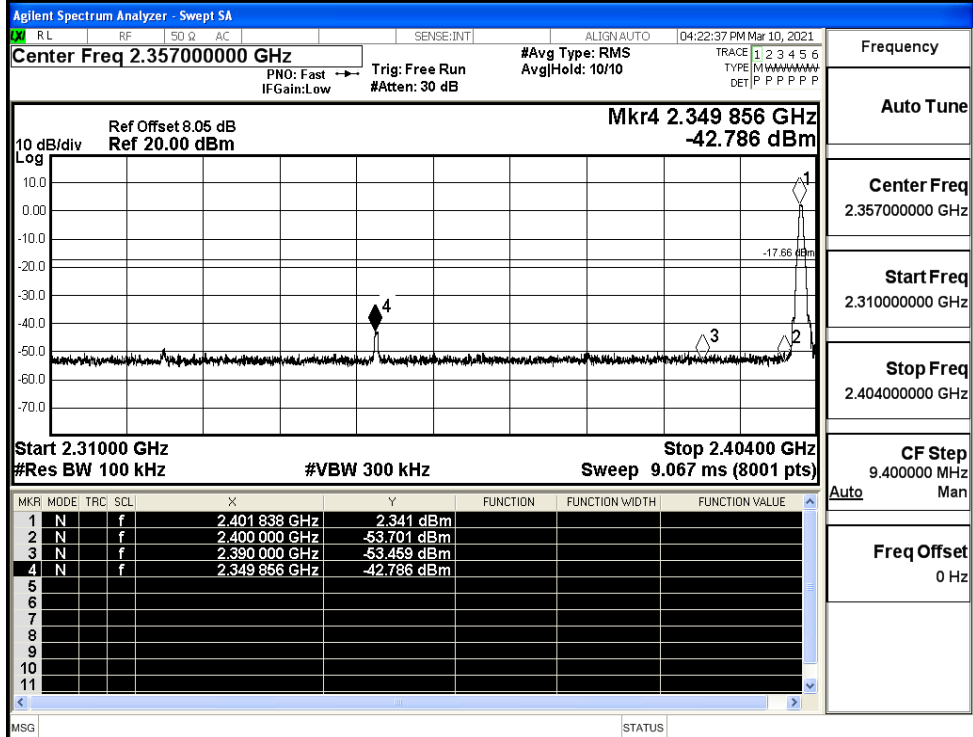


A.7 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	2.341	Off	-42.786	-17.66	PASS
			2.252	On	-42.859	-17.75	PASS
	HCH	2480	0.581	Off	-48.929	-19.42	PASS
			1.015	On	-44.530	-18.99	PASS
π/4DQPSK	LCH	2402	2.463	Off	-43.211	-17.54	PASS
			2.146	On	-42.244	-17.85	PASS
	HCH	2480	0.732	Off	-49.256	-19.27	PASS
			0.540	On	-45.657	-19.46	PASS
8DPSK	LCH	2402	0.849	Off	-44.863	-19.15	PASS
			2.203	On	-43.371	-17.8	PASS
	HCH	2480	0.201	Off	-49.094	-19.8	PASS
			1.064	On	-45.001	-18.94	PASS

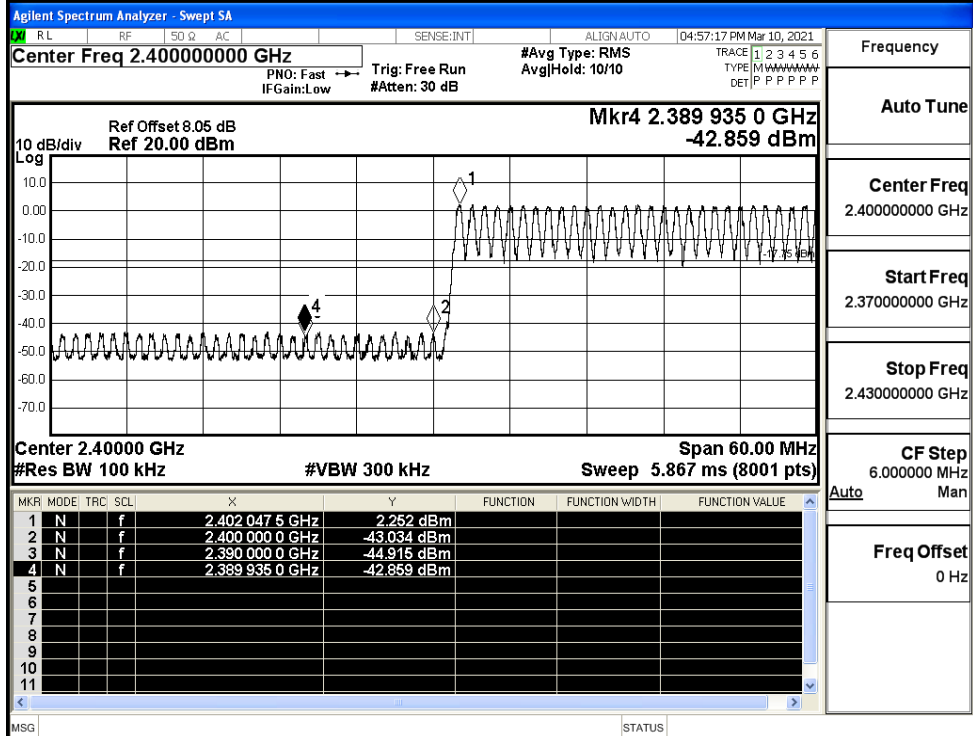
Test Graphs

GFSK/LCH/No Hop



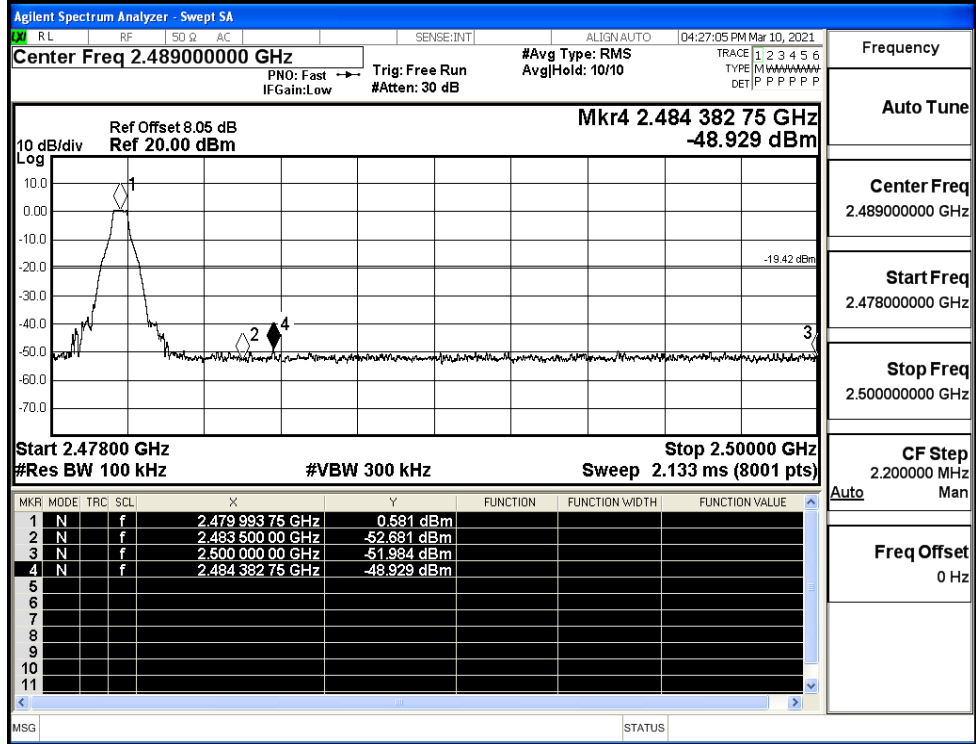
Frequency	2.357000000 GHz
Auto Tune	
Center Freq	2.357000000 GHz
Start Freq	2.310000000 GHz
Stop Freq	2.404000000 GHz
CF Step	9.400000 MHz
Auto	Man
Freq Offset	0 Hz

GFSK/LCH/Hop

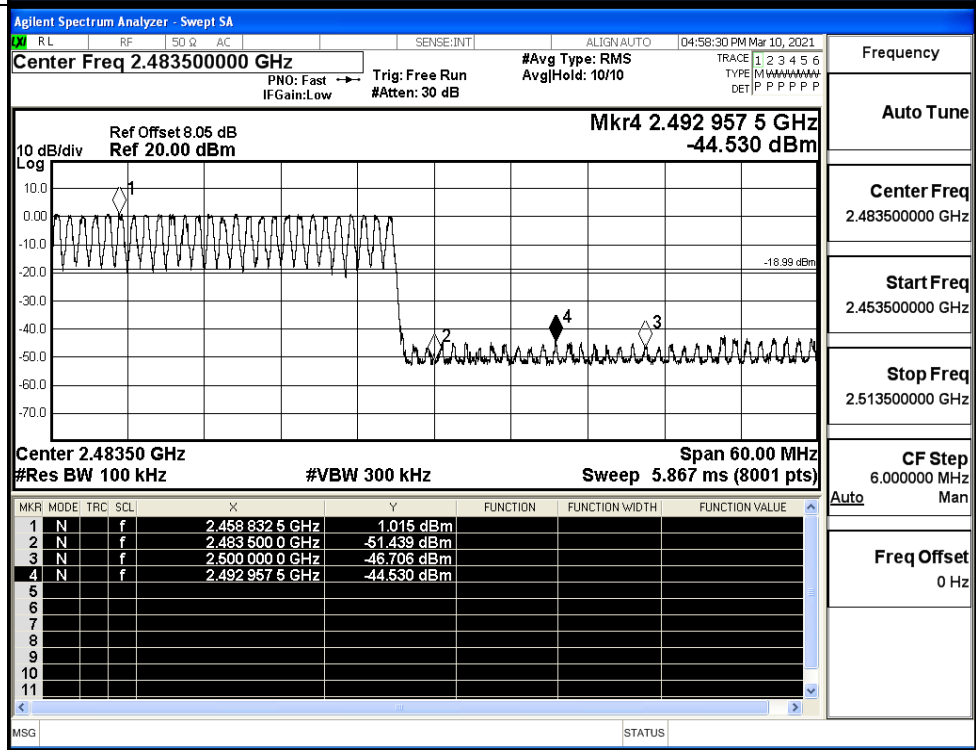


Frequency	2.400000000 GHz
Auto Tune	
Center Freq	2.400000000 GHz
Start Freq	2.370000000 GHz
Stop Freq	2.430000000 GHz
CF Step	6.000000 MHz
Auto	Man
Freq Offset	0 Hz

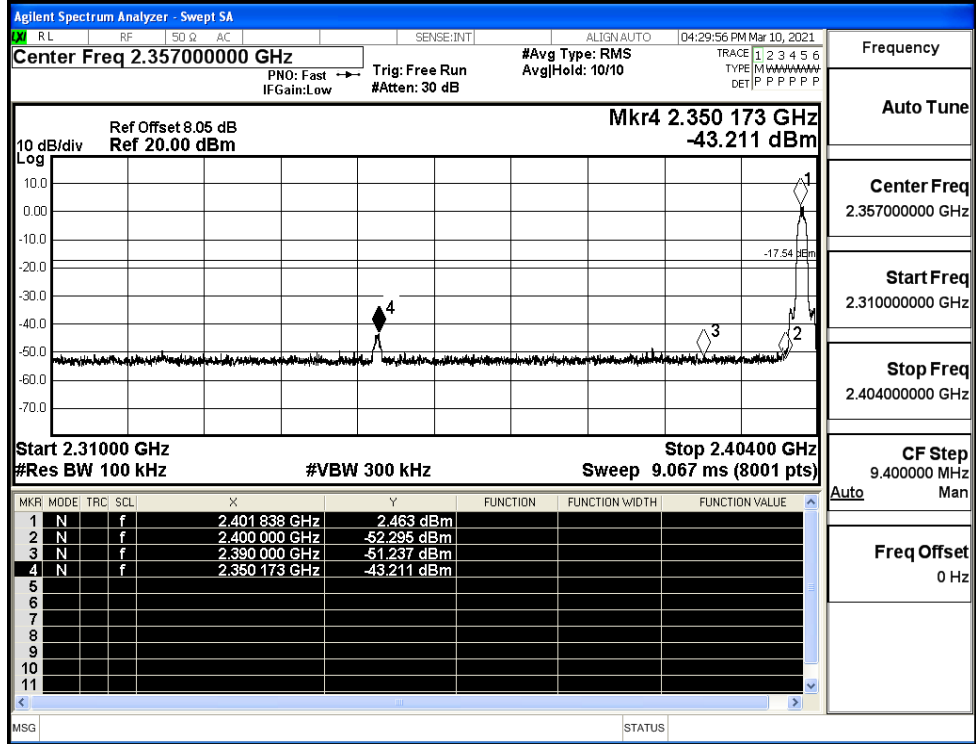
GFSK/HCH/No Hop



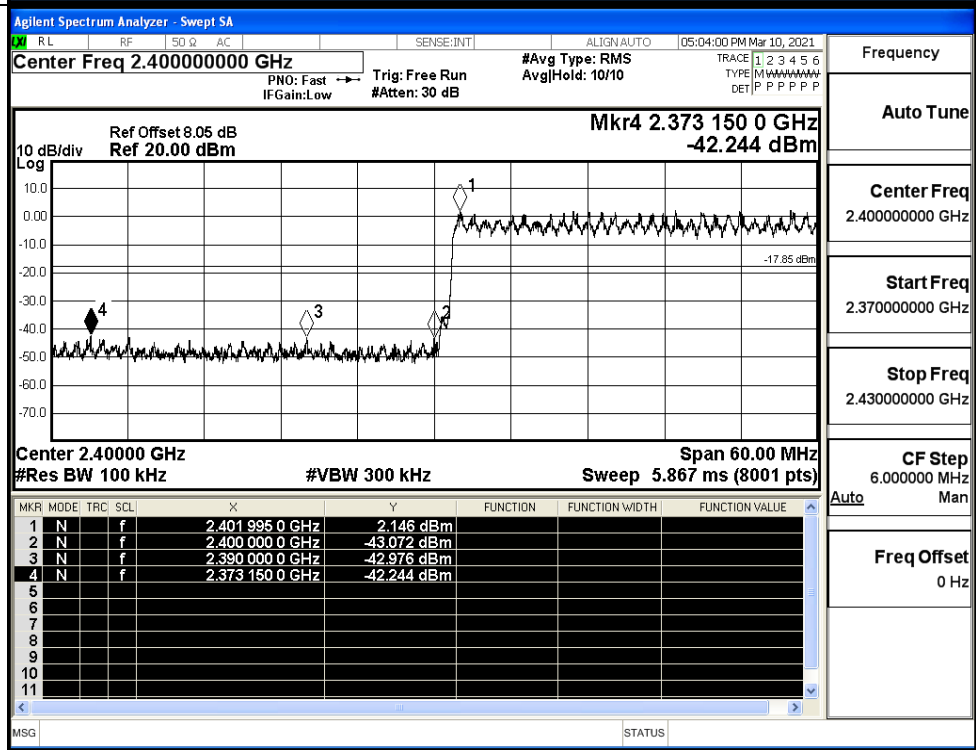
GFSK/HCH/Hop



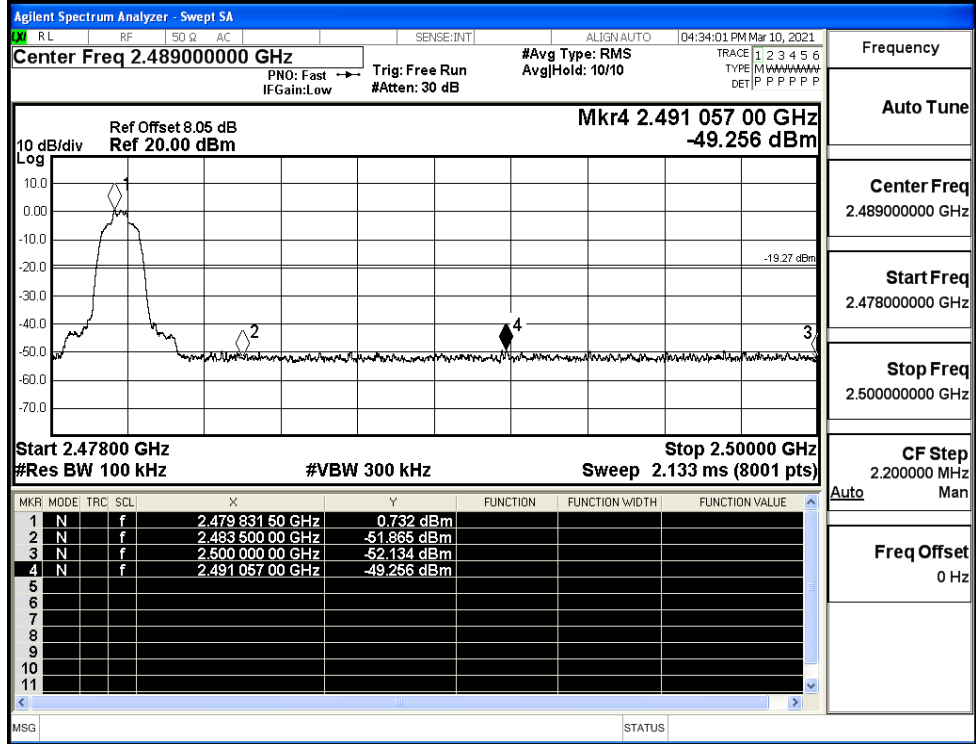
$\pi/4$ DQPSK/LCH/No
Hop



$\pi/4$ DQPSK/LCH/Hop

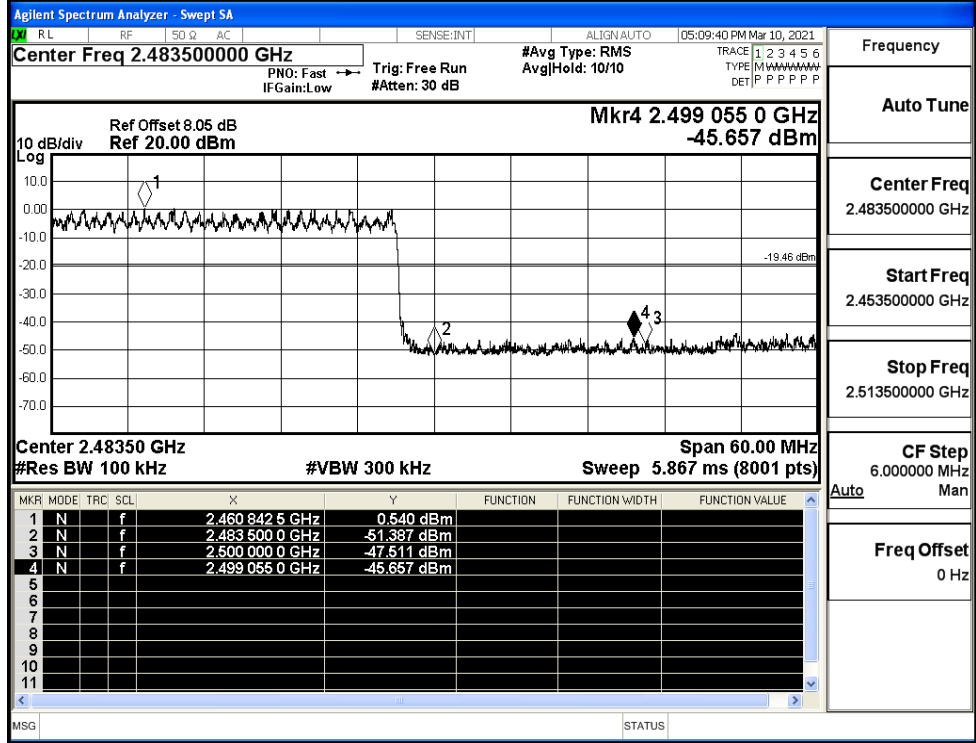


π /4DQPSK/HCH/No
Hop



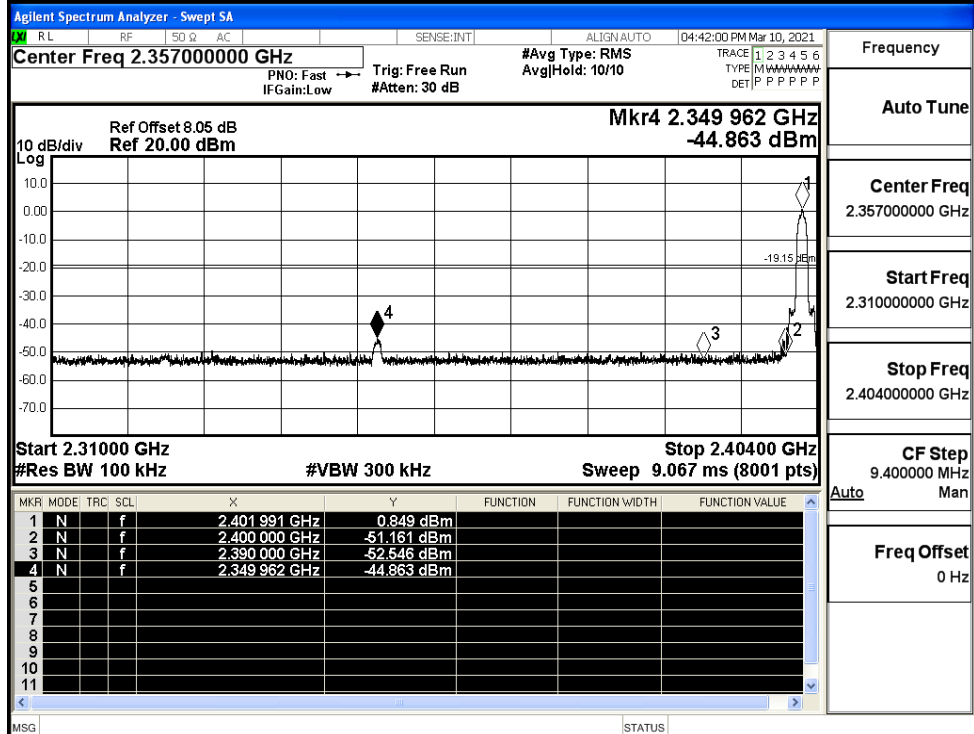
Frequency	
Auto Tune	
Center Freq	2.489000000 GHz
Start Freq	2.478000000 GHz
Stop Freq	2.500000000 GHz
CF Step	2.200000 MHz
Auto	Man
Freq Offset	0 Hz

π /4DQPSK/HCH/Hop



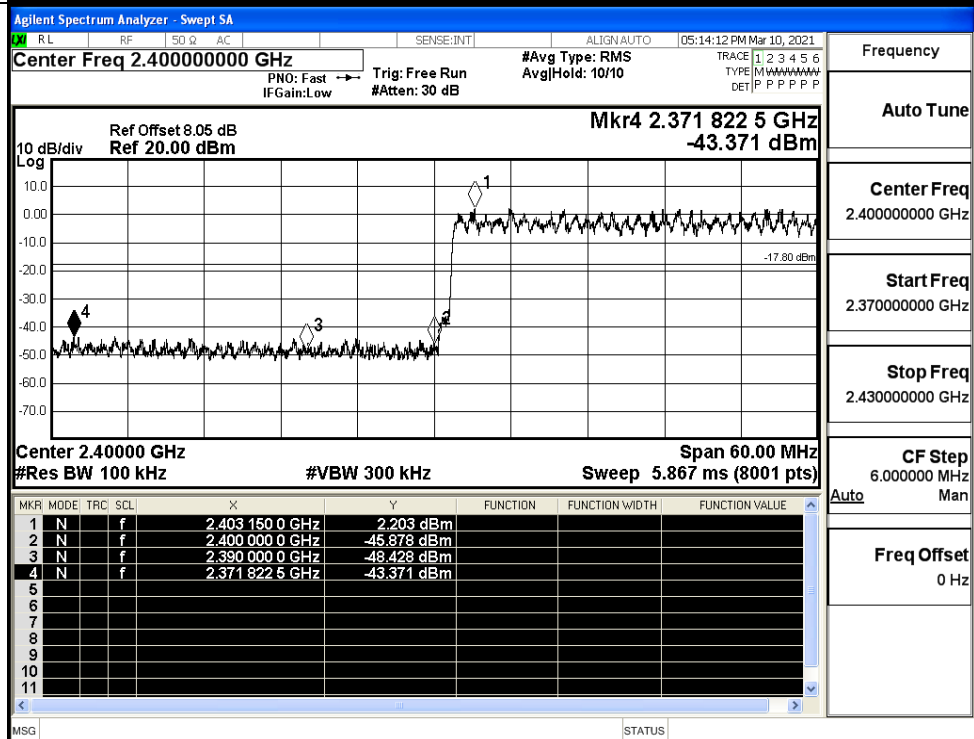
Frequency	
Auto Tune	
Center Freq	2.483500000 GHz
Start Freq	2.453500000 GHz
Stop Freq	2.513500000 GHz
CF Step	6.000000 MHz
Auto	Man
Freq Offset	0 Hz

8DPSK/LCH/No Hop



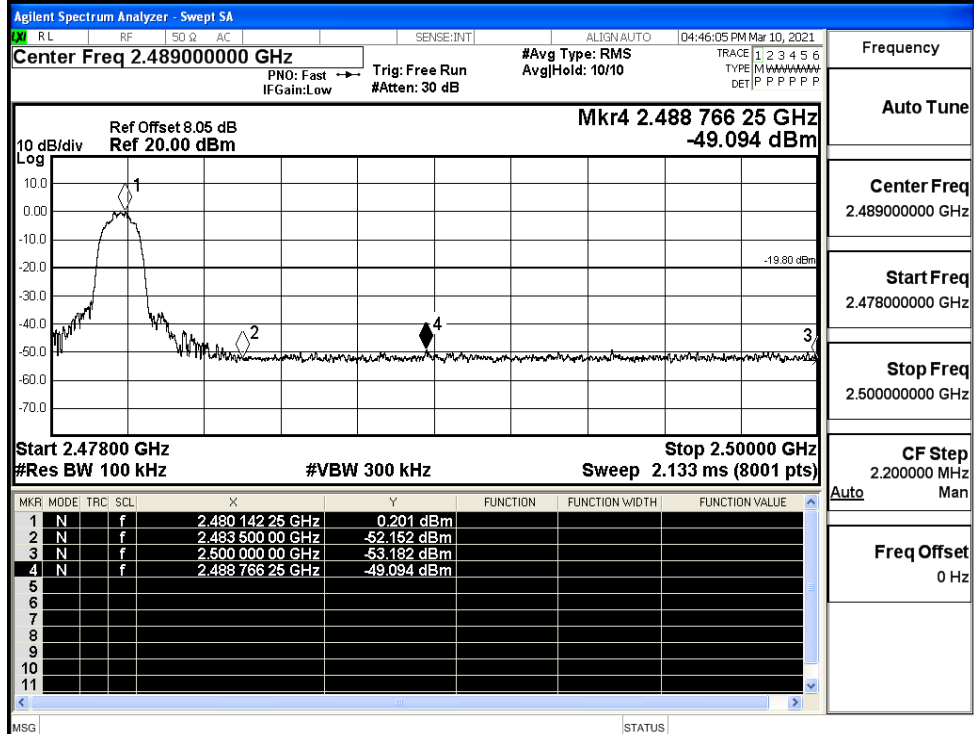
Frequency	
Auto Tune	
Center Freq	2.357000000 GHz
Start Freq	2.310000000 GHz
Stop Freq	2.404000000 GHz
CF Step	9.400000 MHz
Auto	Man
Freq Offset	0 Hz

8DPSK/LCH/Hop



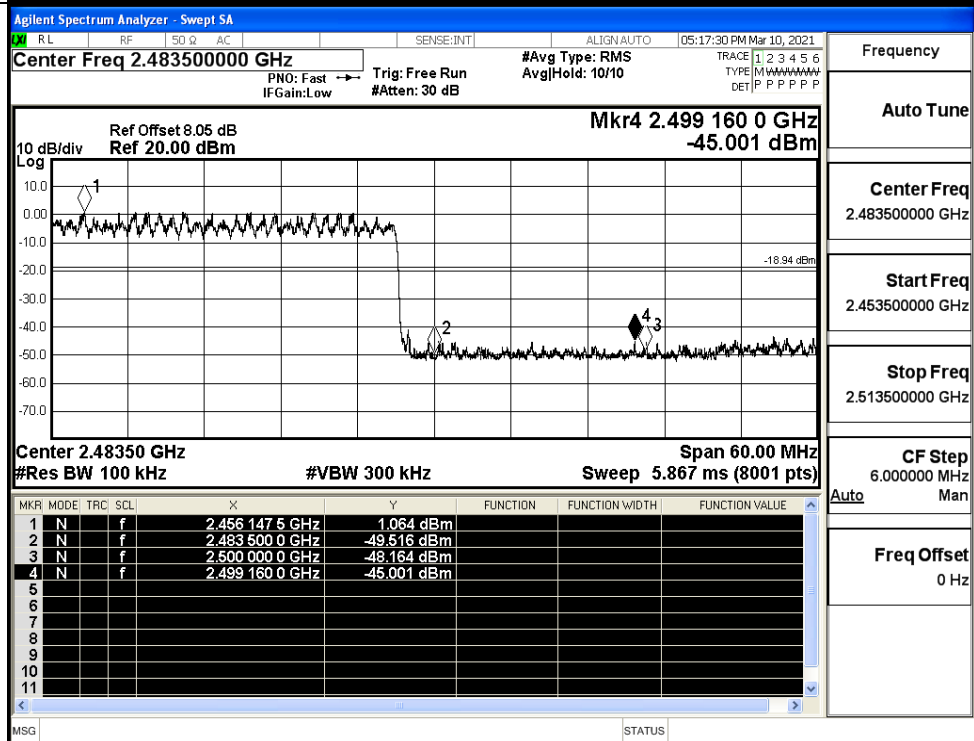
Frequency	
Auto Tune	
Center Freq	2.400000000 GHz
Start Freq	2.370000000 GHz
Stop Freq	2.430000000 GHz
CF Step	6.000000 MHz
Auto	Man
Freq Offset	0 Hz

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
Auto	Man
Freq Offset	0 Hz

8DPSK/HCH/Hop

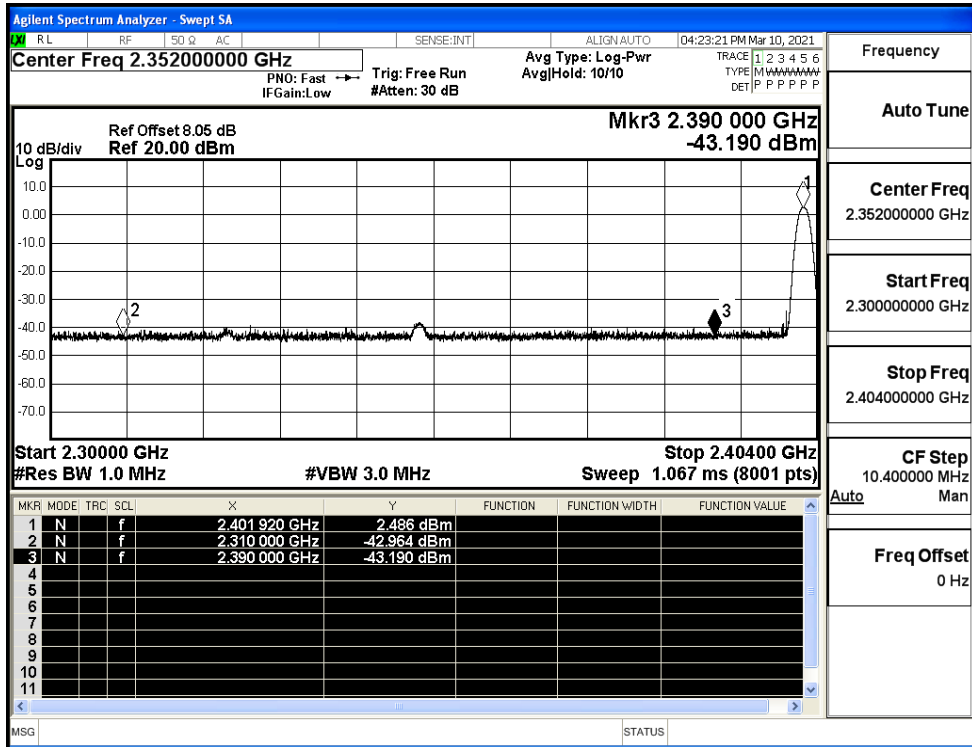


Frequency	
Auto Tune	
Center Freq	2.483500000 GHz
Start Freq	2.453500000 GHz
Stop Freq	2.513500000 GHz
CF Step	6.000000 MHz
Auto	Man
Freq Offset	0 Hz

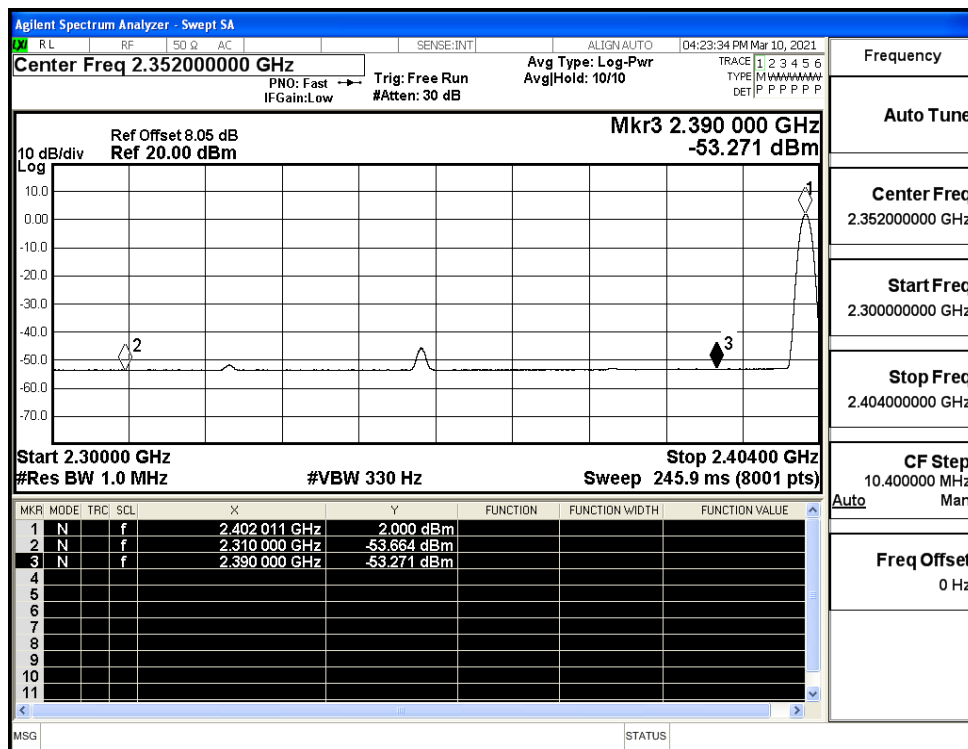
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-42.96	2.0	0	54.27	PEAK	74	PASS
	Off	2310.0	-53.66	2.0	0	43.57	AV	54	PASS
	Off	2390.0	-43.19	2.0	0	54.04	PEAK	74	PASS
	Off	2390.0	-53.27	2.0	0	43.96	AV	54	PASS
	Off	2483.5	-42.47	2.0	0	54.76	PEAK	74	PASS
	Off	2483.5	-52.57	2.0	0	44.66	AV	54	PASS
	Off	2500.0	-40.52	2.0	0	56.71	PEAK	74	PASS
	Off	2500.0	-52.59	2.0	0	44.64	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-42.82	2.0	0	54.41	PEAK	74	PASS
	Off	2310.0	-53.61	2.0	0	43.62	AV	54	PASS
	Off	2390.0	-43.65	2.0	0	53.58	PEAK	74	PASS
	Off	2390.0	-53.20	2.0	0	44.03	AV	54	PASS
	Off	2483.5	-42.41	2.0	0	54.82	PEAK	74	PASS
	Off	2483.5	-52.58	2.0	0	44.65	AV	54	PASS
	Off	2500.0	-42.34	2.0	0	54.89	PEAK	74	PASS
	Off	2500.0	-52.43	2.0	0	44.80	AV	54	PASS
8DPSK	Off	2310.0	-43.02	2.0	0	54.21	PEAK	74	PASS
	Off	2310.0	-53.50	2.0	0	43.73	AV	54	PASS
	Off	2390.0	-43.28	2.0	0	53.95	PEAK	74	PASS
	Off	2390.0	-53.15	2.0	0	44.08	AV	54	PASS
	Off	2483.5	-42.00	2.0	0	55.23	PEAK	74	PASS
	Off	2483.5	-52.66	2.0	0	44.57	AV	54	PASS
	Off	2500.0	-42.61	2.0	0	54.62	PEAK	74	PASS
	Off	2500.0	-52.44	2.0	0	44.79	AV	54	PASS

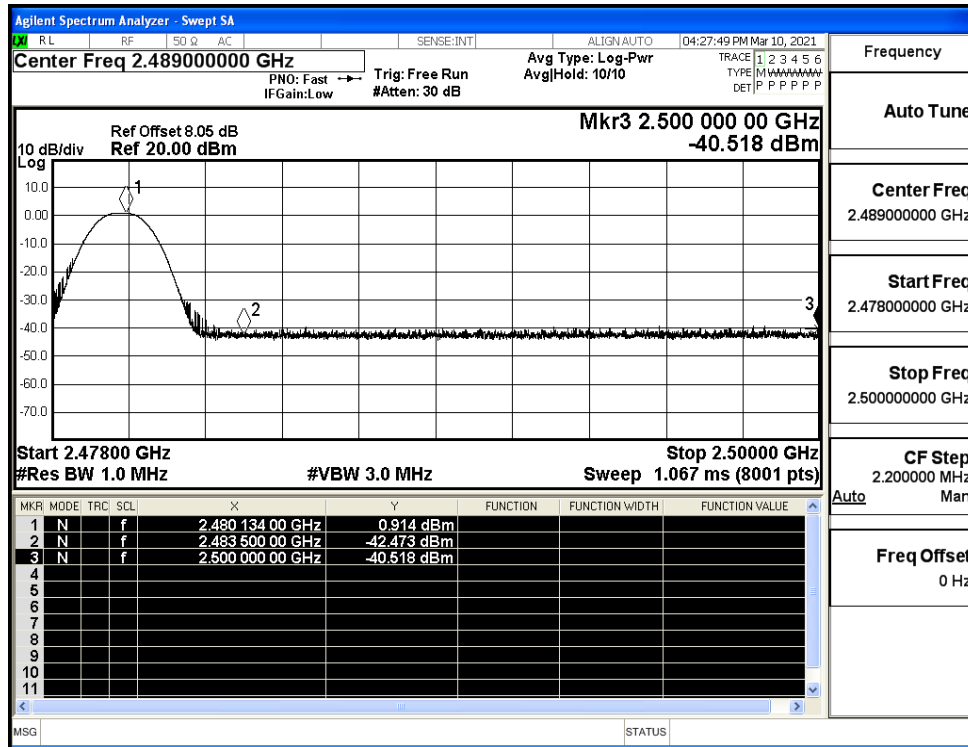
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



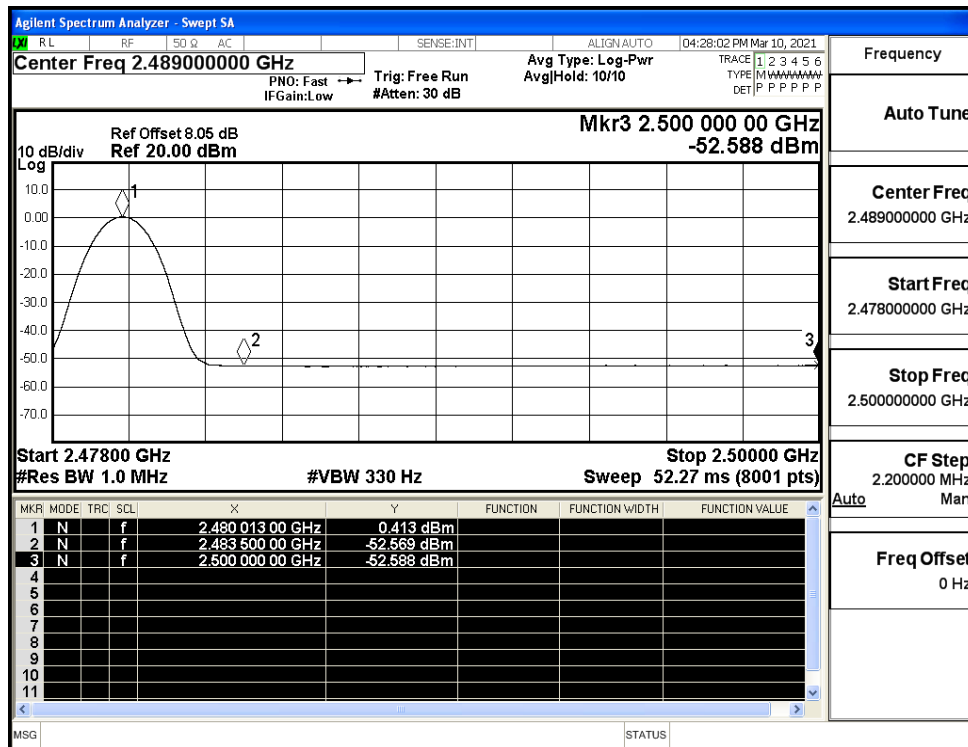
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



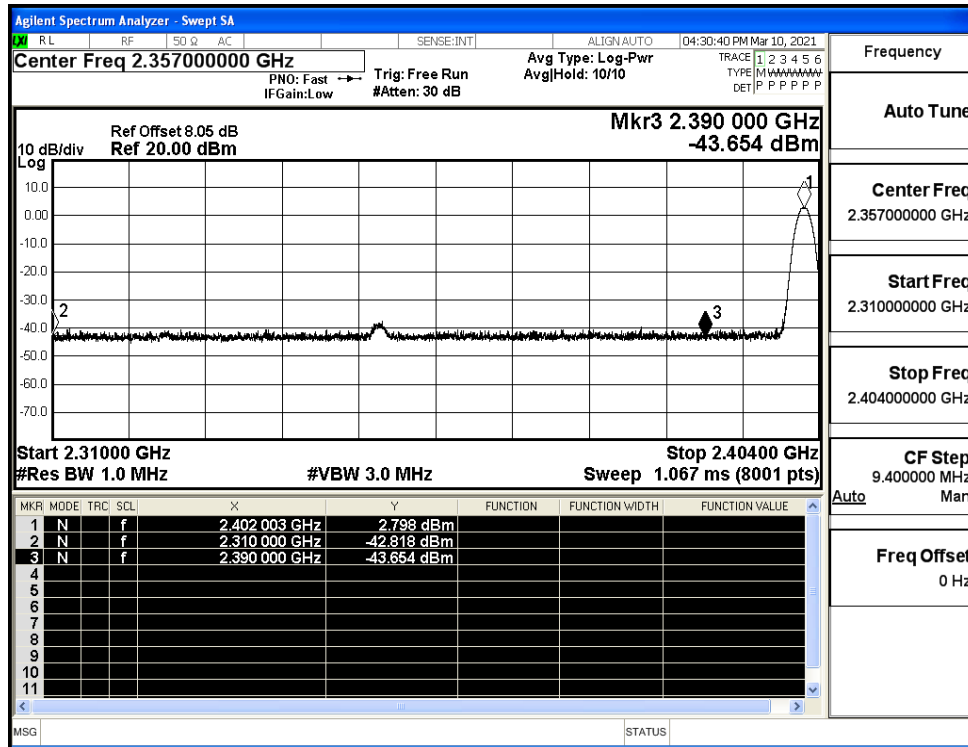
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



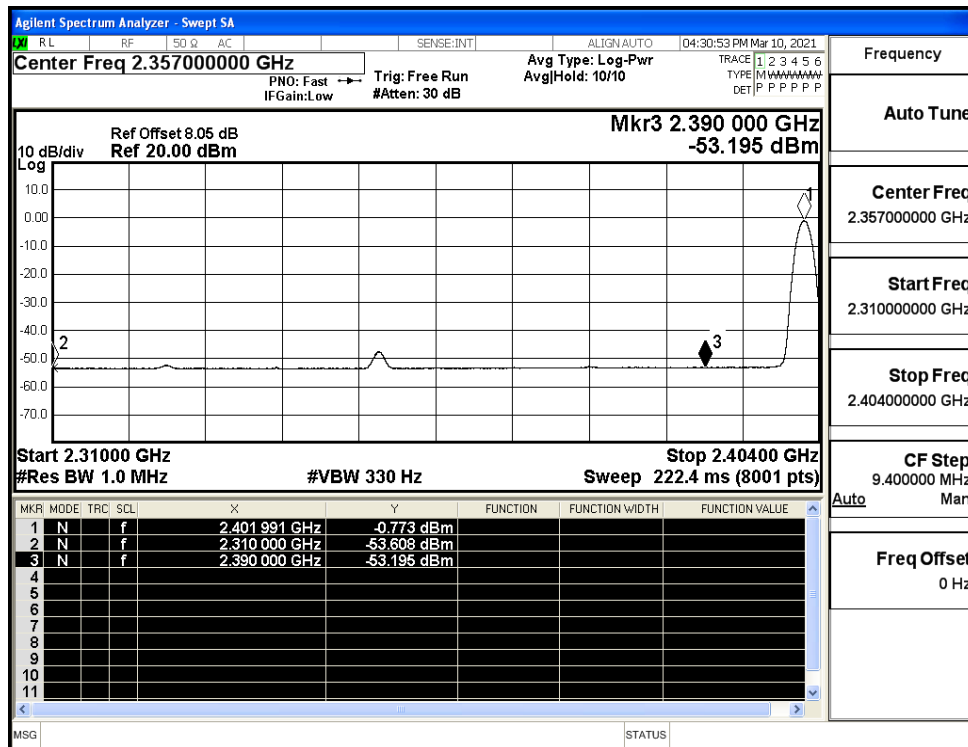
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



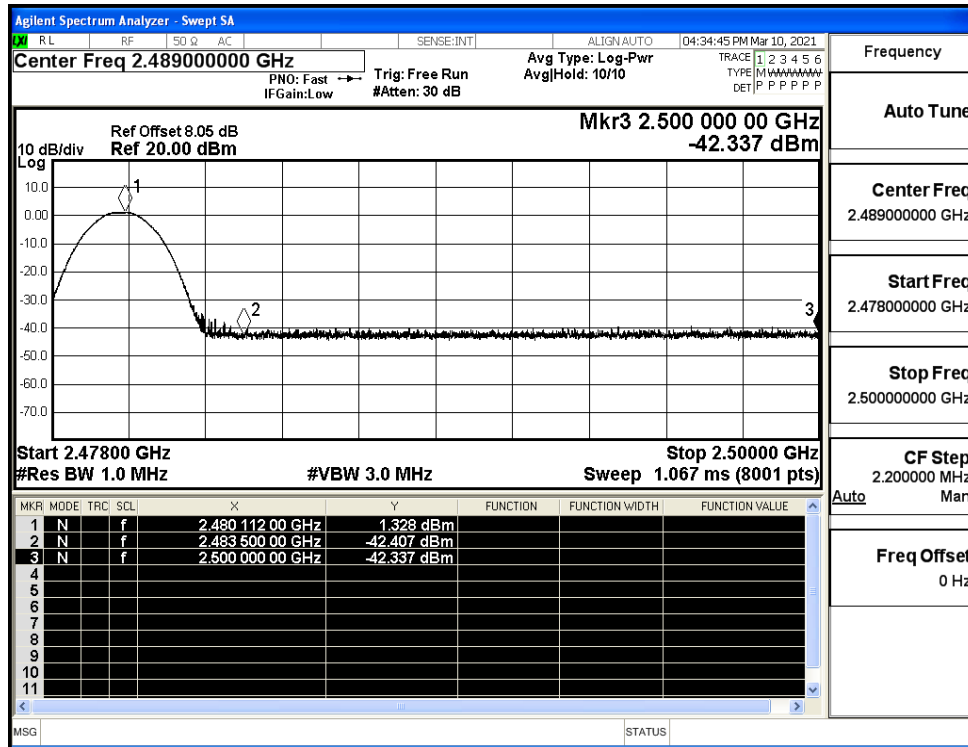
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



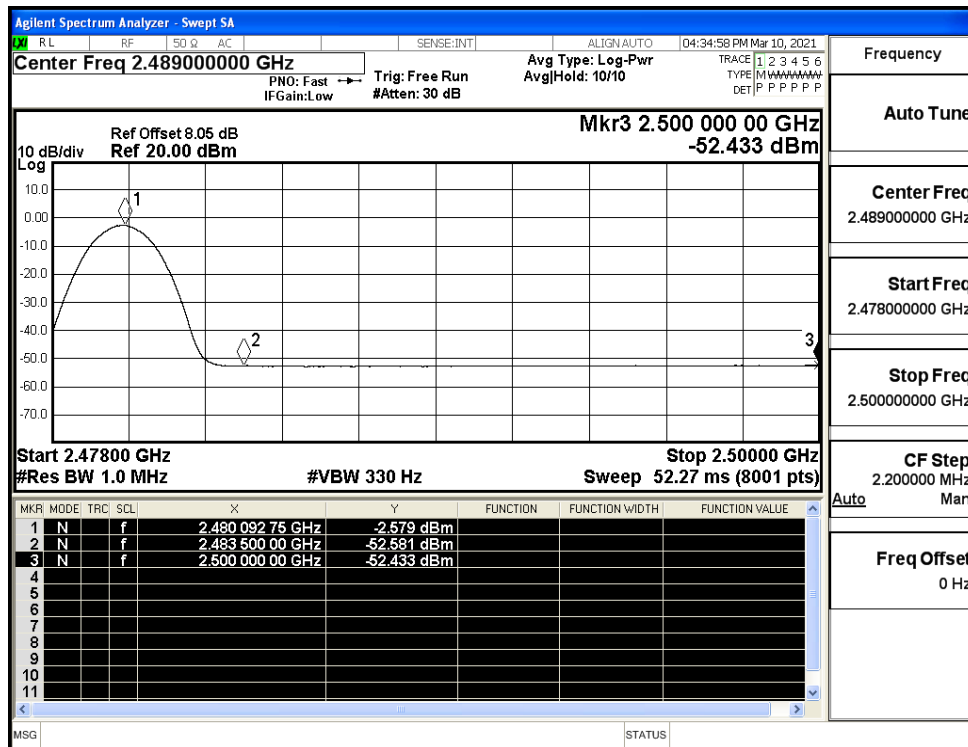
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



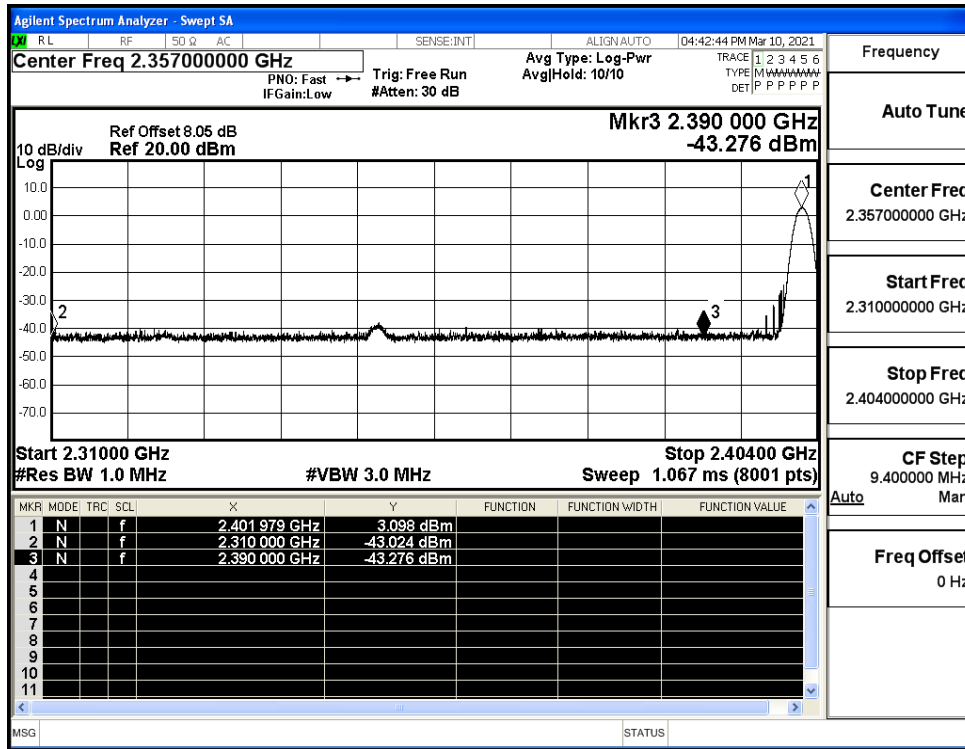
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



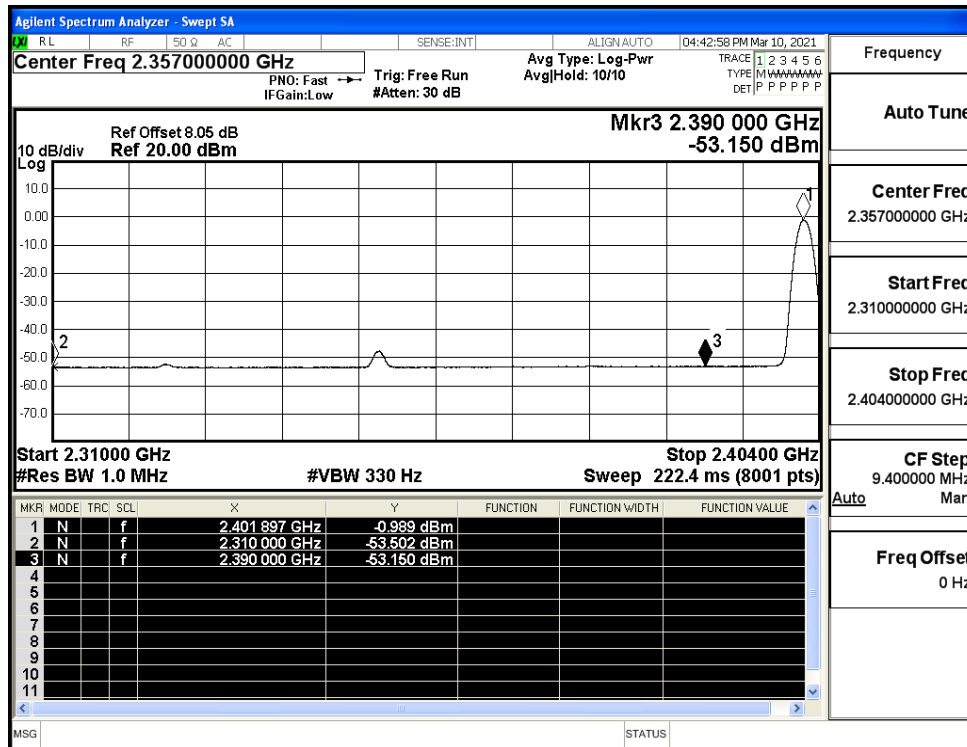
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



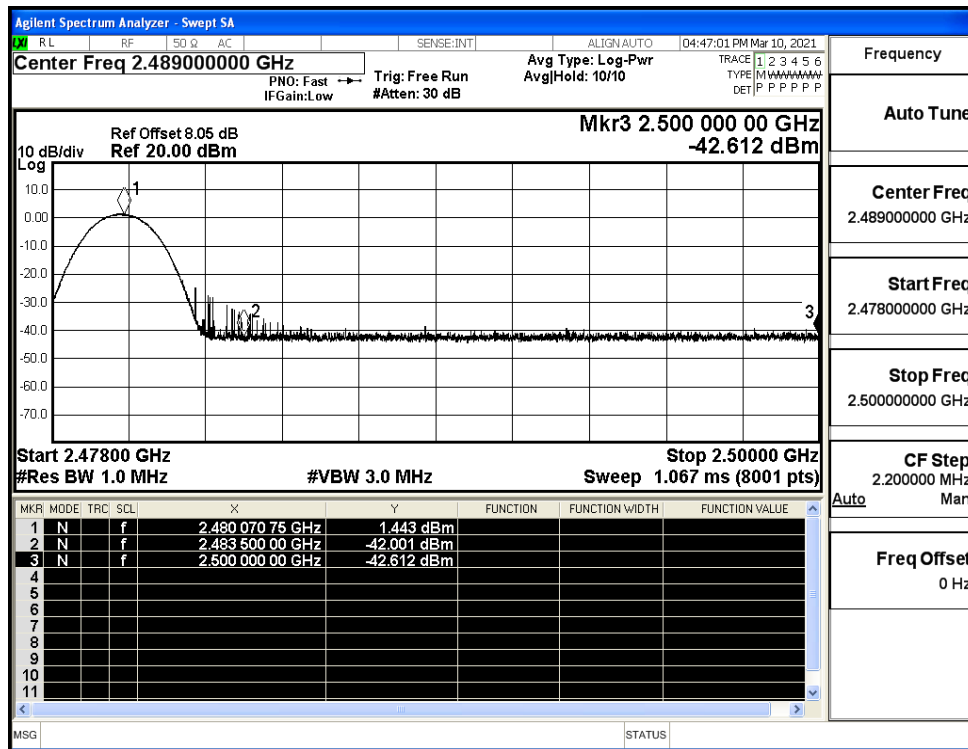
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



Restrict-band band-edge measurements_Hopping Off_8DPSK_Average (Low Channel)



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



Restrict-band band-edge measurements_Hopping Off_8DPSK_Average (High Channel)

