

Appendix A

RF Test Data for BT V5.1(BDR/EDR) (Conducted Measurement)

Product Name: MULTIMEDIA PROJECTOR

Trade Mark: GPX, iLive, KJM

Test Model: PJ770B

Environmental Conditions

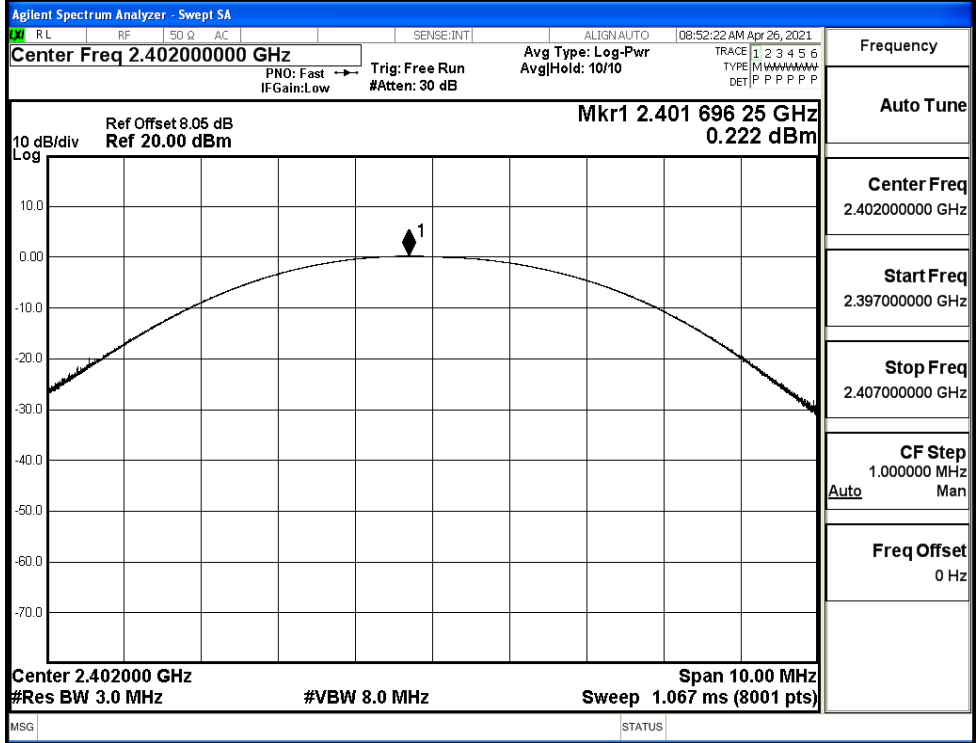
Temperature:	24.6° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Ben Jin
Supervised by:	Li Huan

A.1 Maximum Conducted Peak Output Power

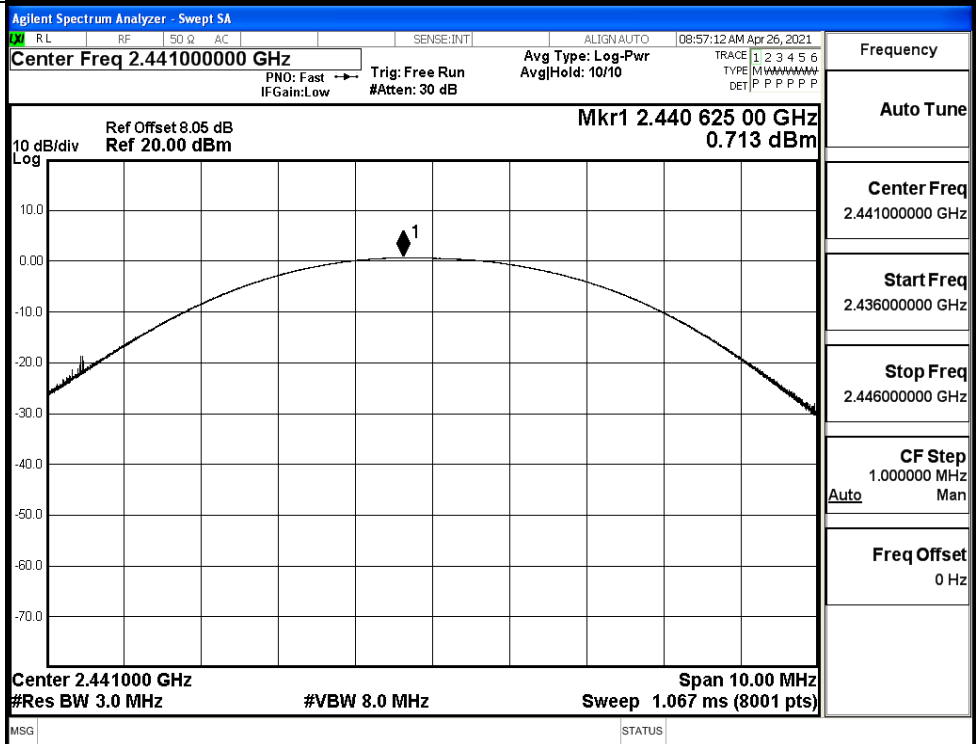
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.222	30	PASS
	MCH	0.713	30	PASS
	HCH	0.451	30	PASS
$\pi/4$ DQPSK	LCH	0.958	21	PASS
	MCH	1.453	21	PASS
	HCH	1.182	21	PASS

Test Graphs

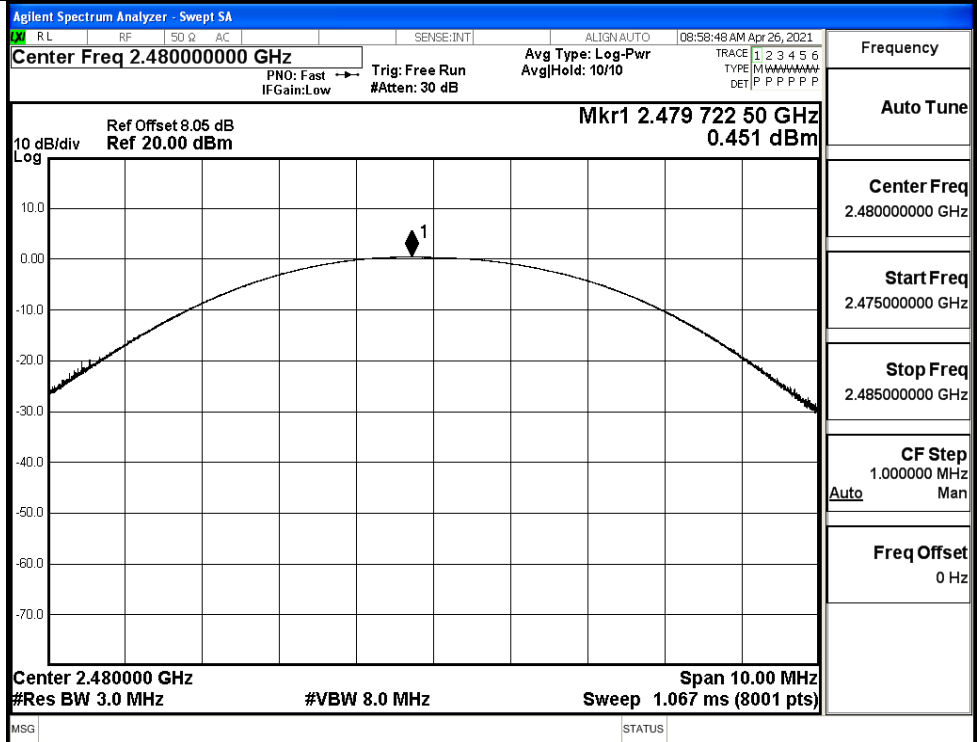
GFSK/LCH



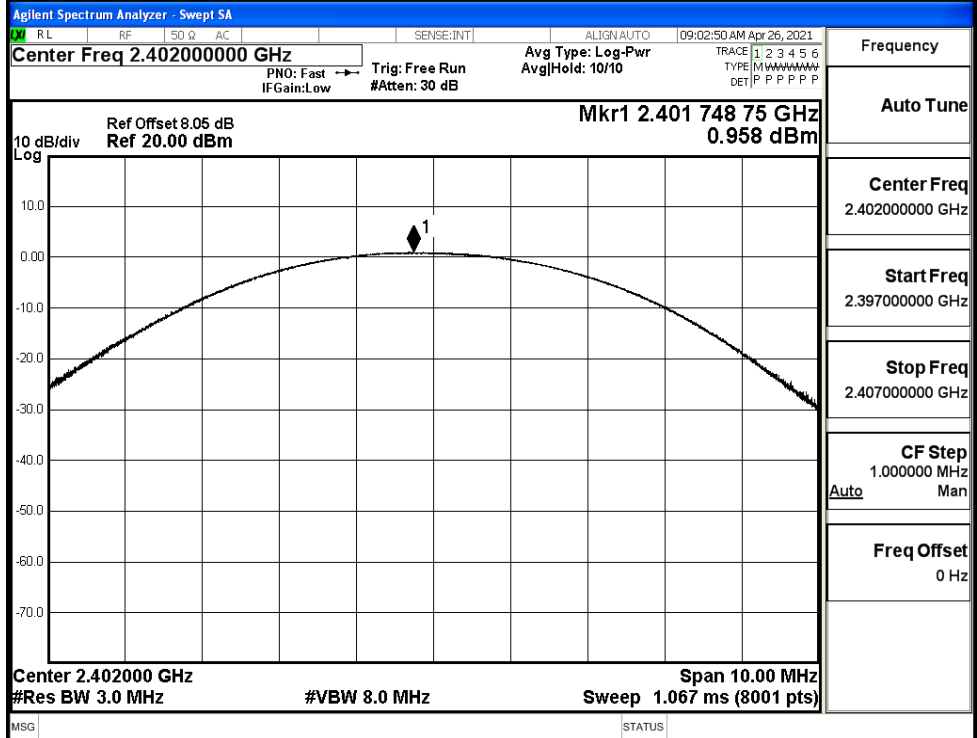
GFSK/MCH



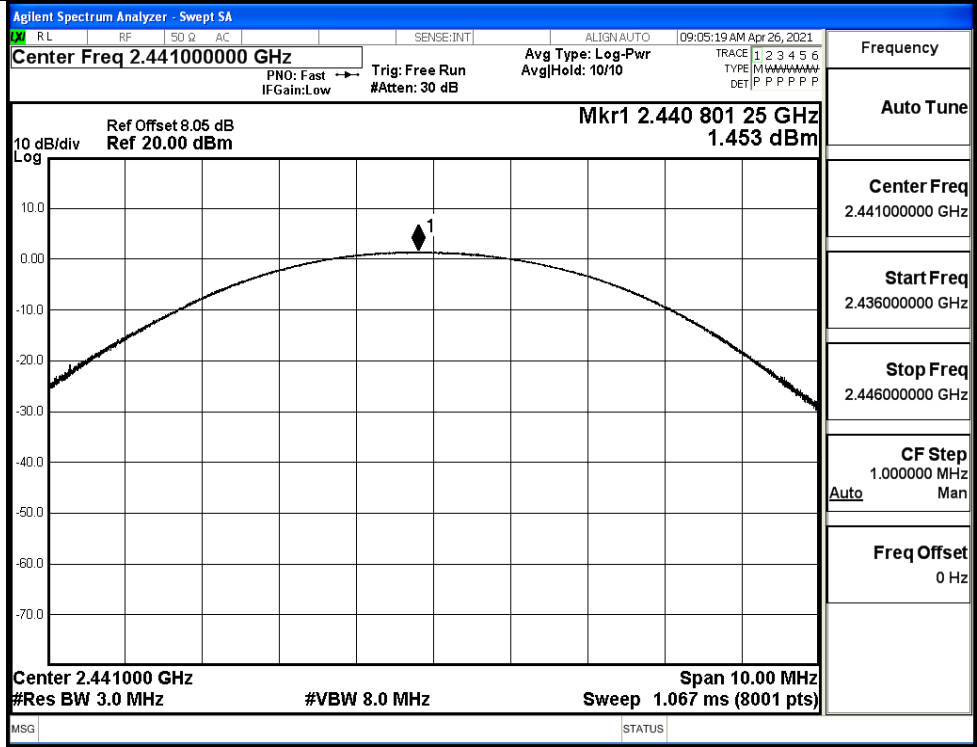
GFSK/HCH



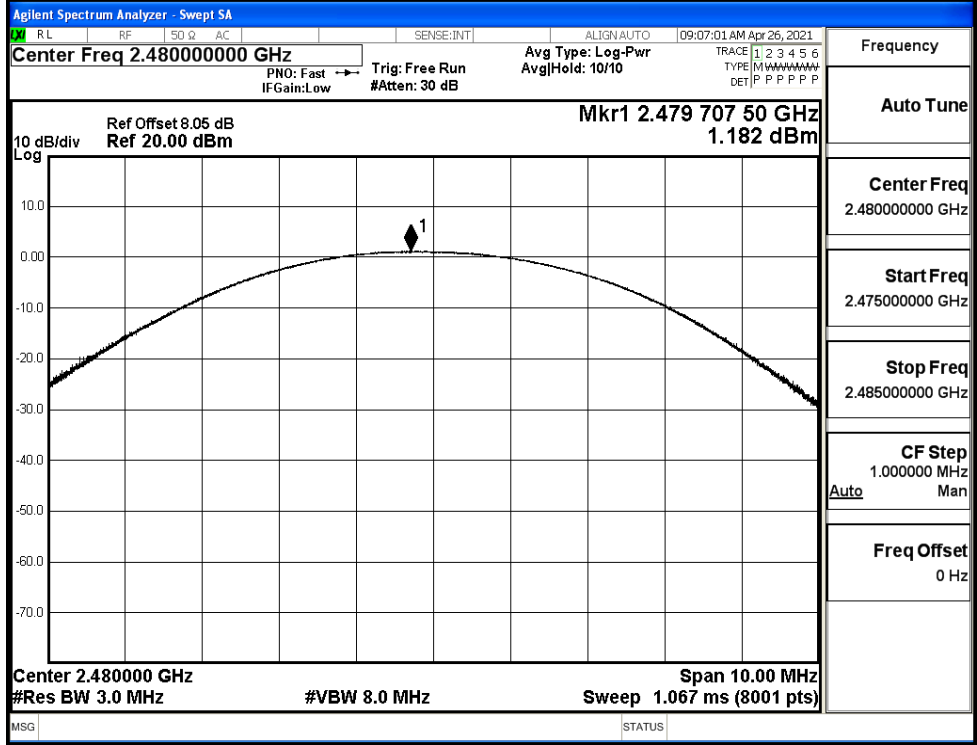
π /4DQPSK/LCH



$\pi/4$ DQPSK/MCH

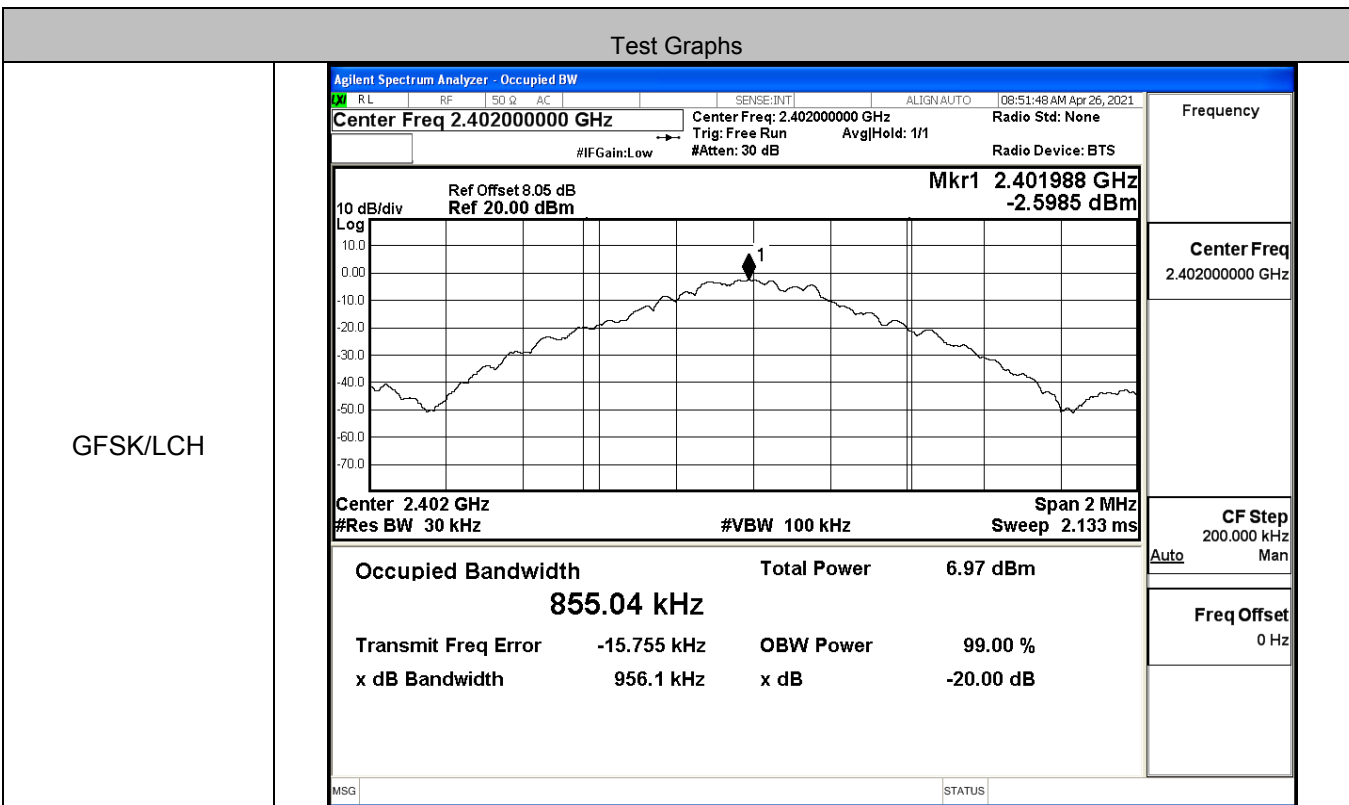


$\pi/4$ DQPSK/HCH

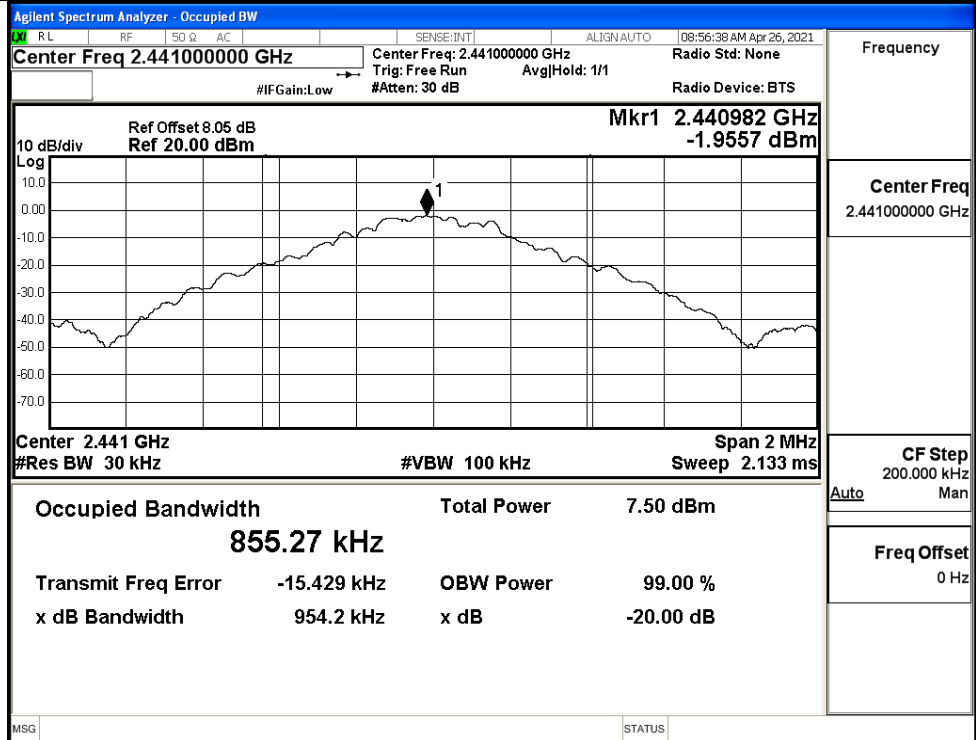


A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9561	Not Specified	PASS
	MCH	0.9542	Not Specified	PASS
	HCH	0.9542	Not Specified	PASS
π/4DQPSK	LCH	1.310	Not Specified	PASS
	MCH	1.313	Not Specified	PASS
	HCH	1.318	Not Specified	PASS

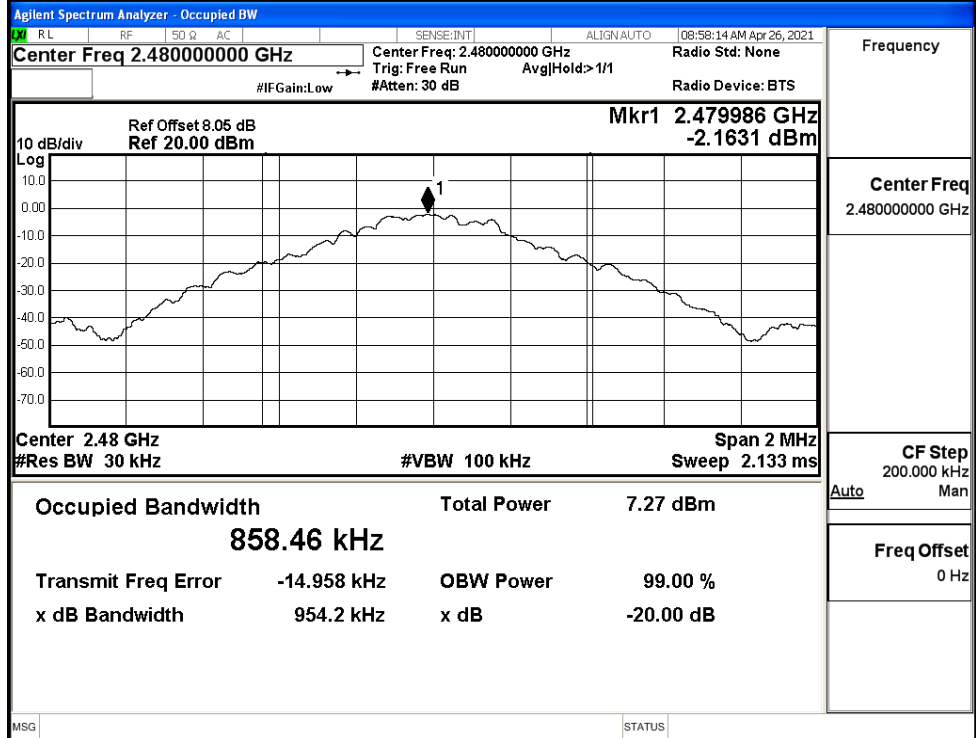


GFSK/MCH



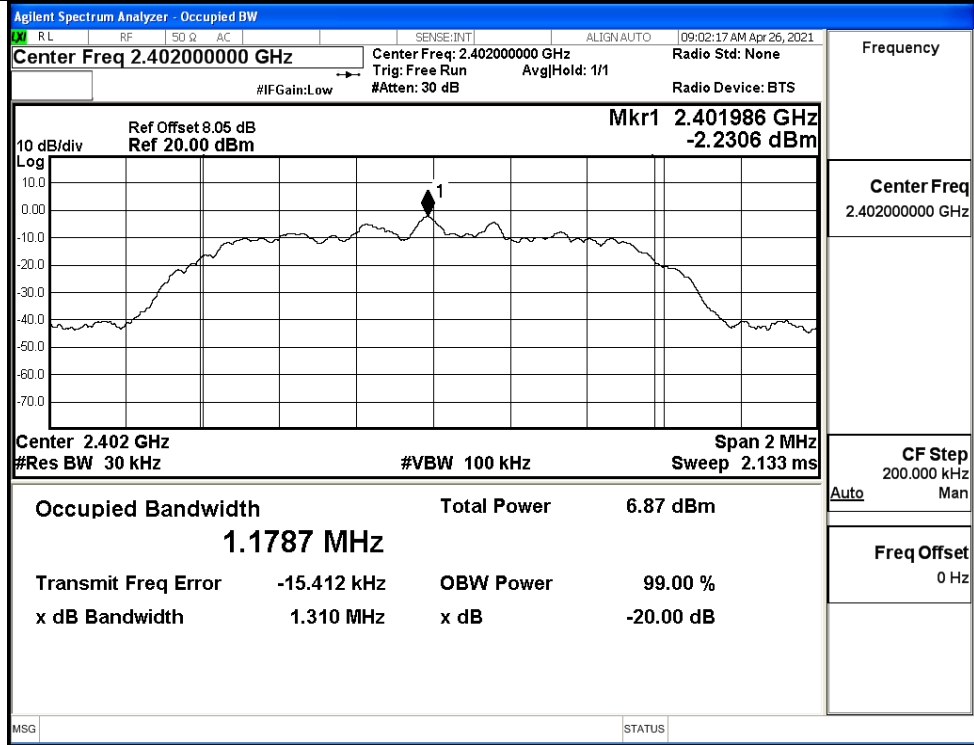
Frequency	2.44100000 GHz
Center Freq	2.44100000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

GFSK/HCH

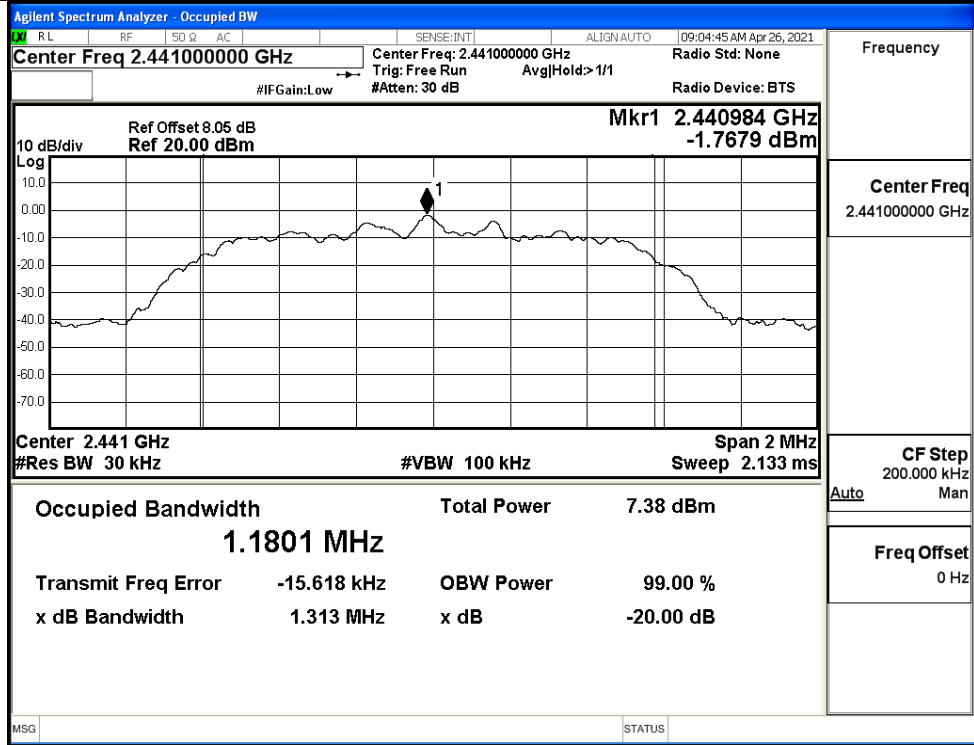


Frequency	2.48000000 GHz
Center Freq	2.48000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

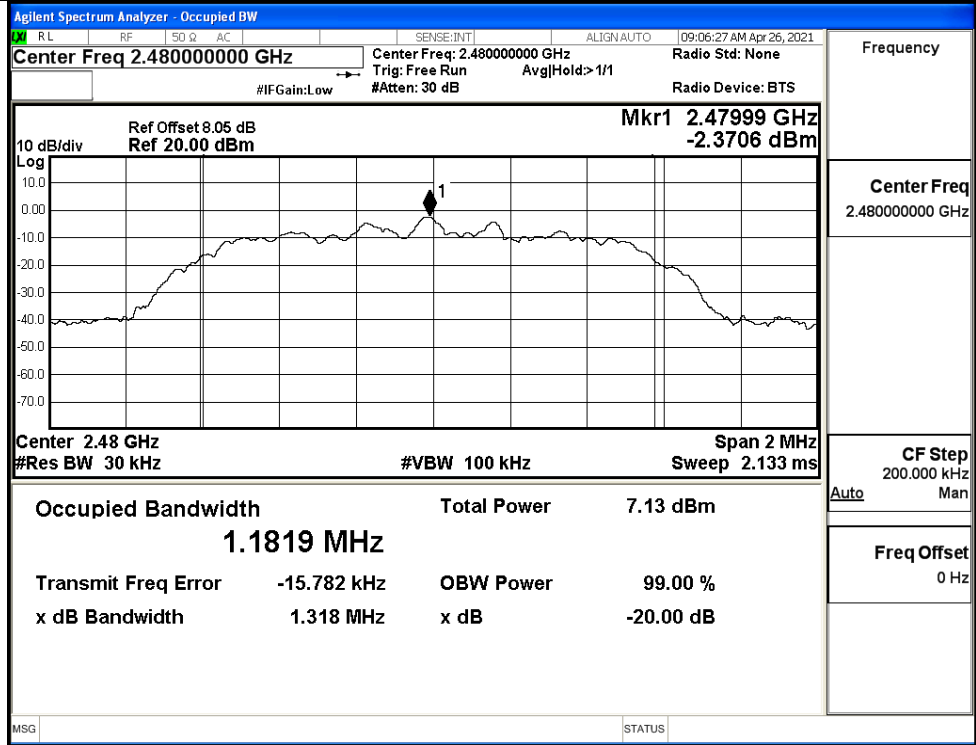
π /4DQPSK/LCH



π /4DQPSK/MCH



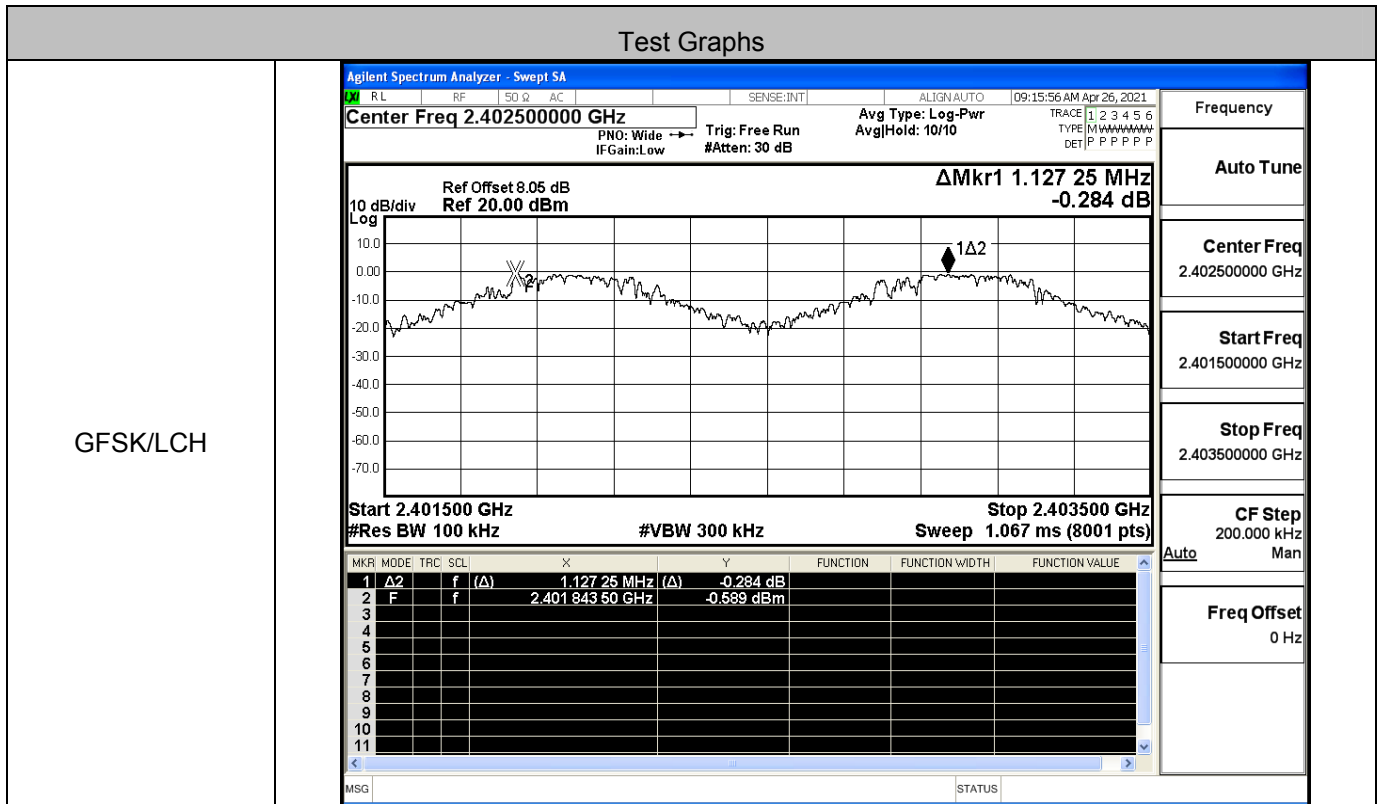
$\pi/4$ DQPSK/HCH



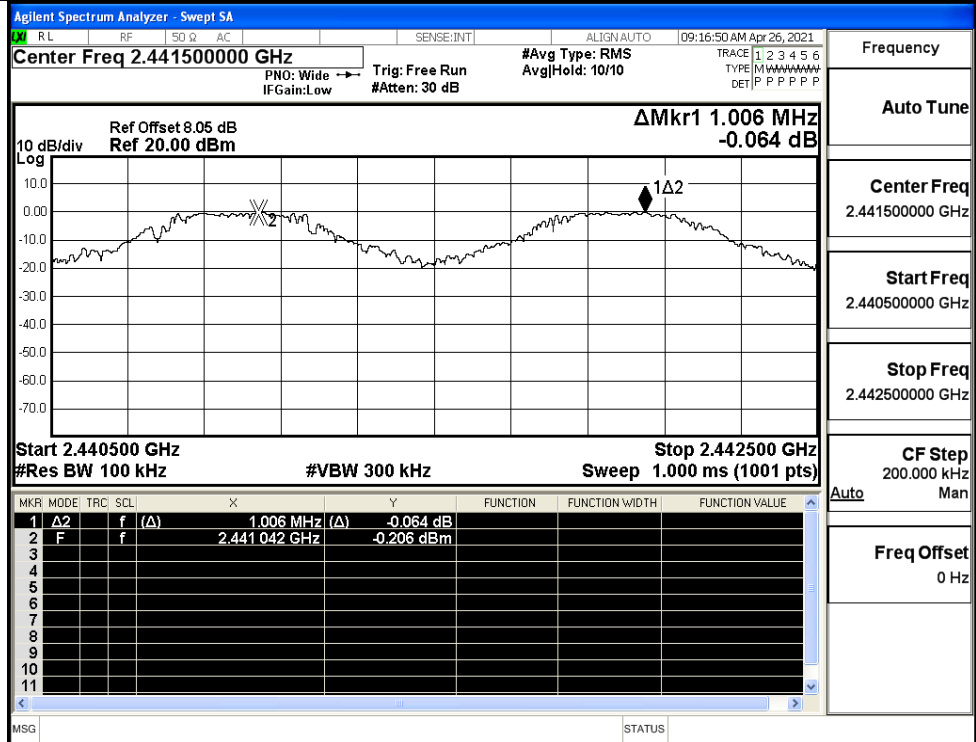
A.3 Carrier Frequency Separation

Mode	Channel	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.127	0.637	PASS
	MCH	1.006	0.637	PASS
	HCH	1.004	0.637	PASS
π/4DQPSK	LCH	1.124	0.879	PASS
	MCH	1.212	0.879	PASS
	HCH	1.178	0.879	PASS

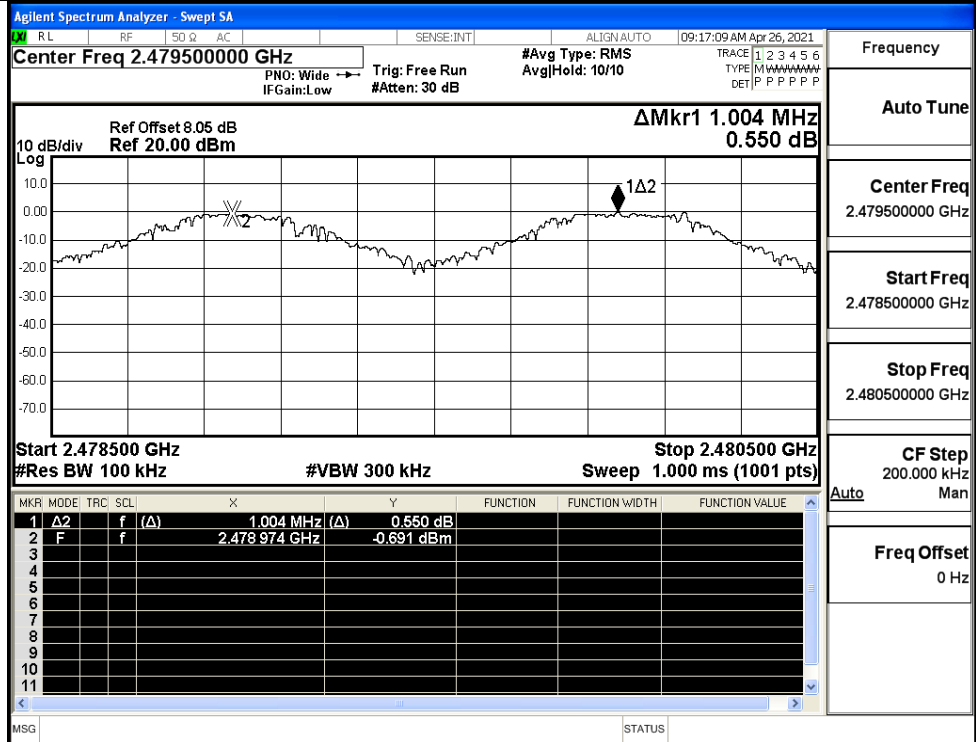
Test Graphs



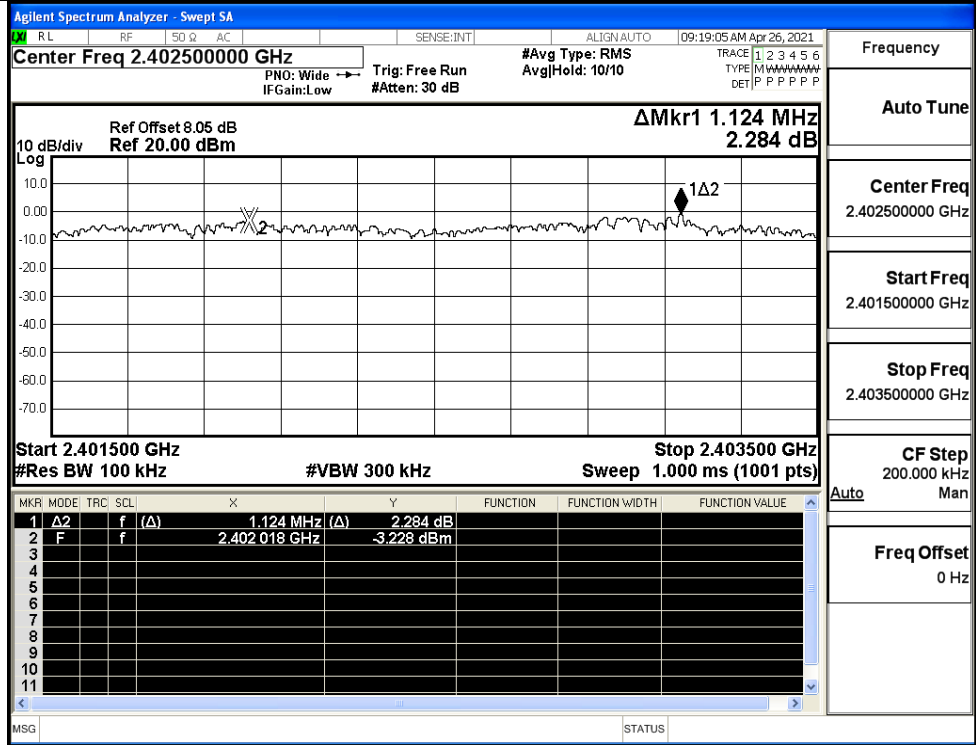
GFSK/MCH



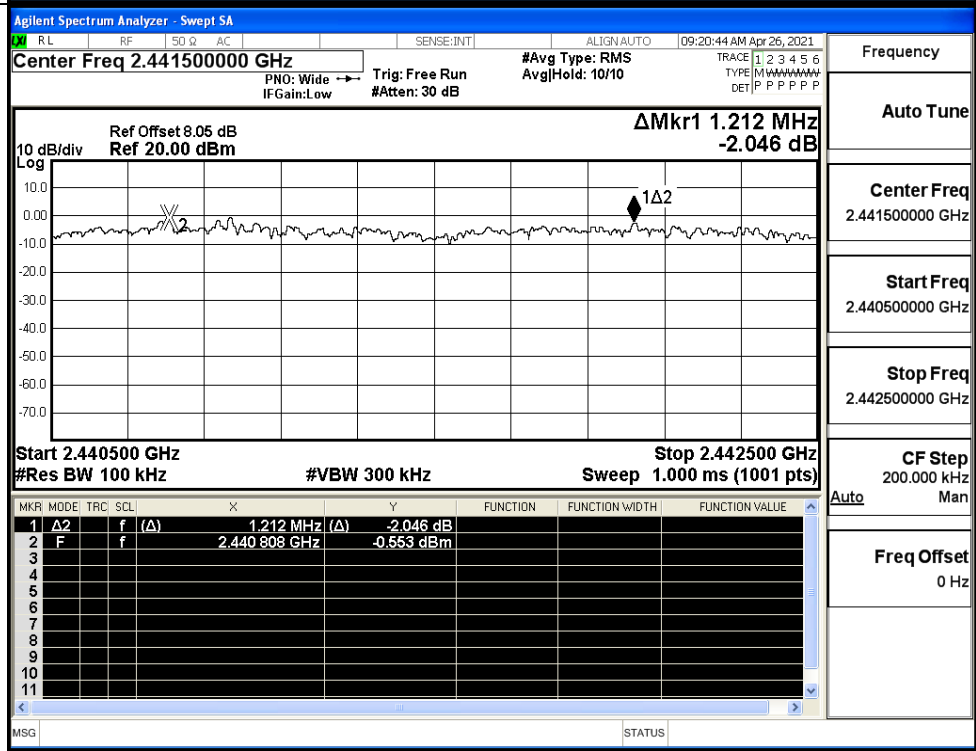
GFSK/HCH



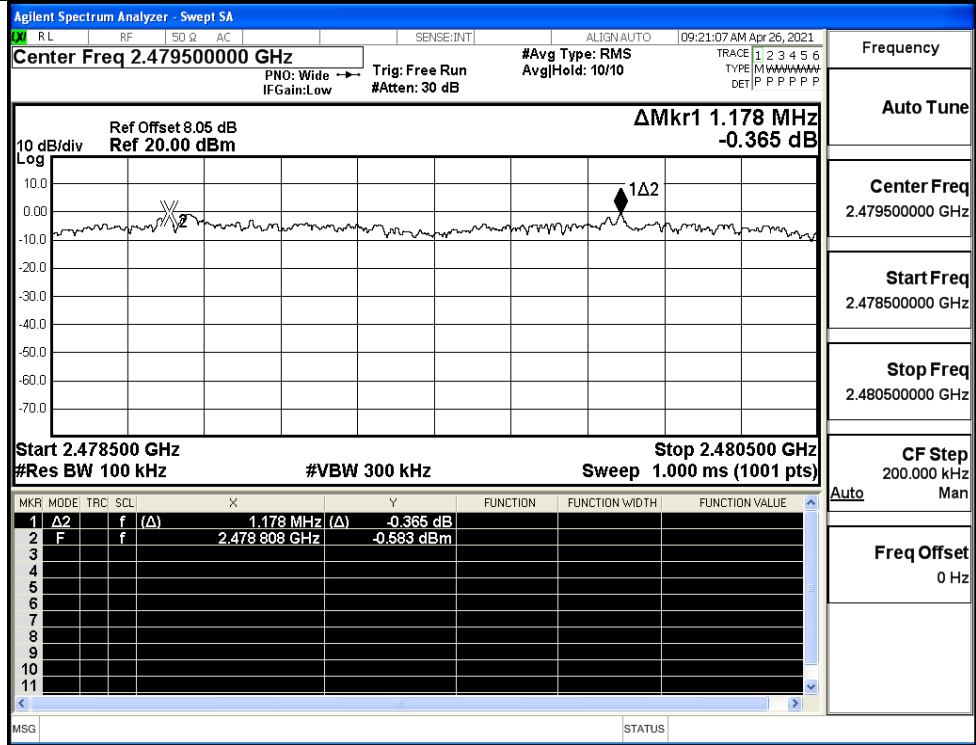
π/4DQPSK/LCH



π/4DQPSK/MCH



$\pi/4$ DQPSK/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

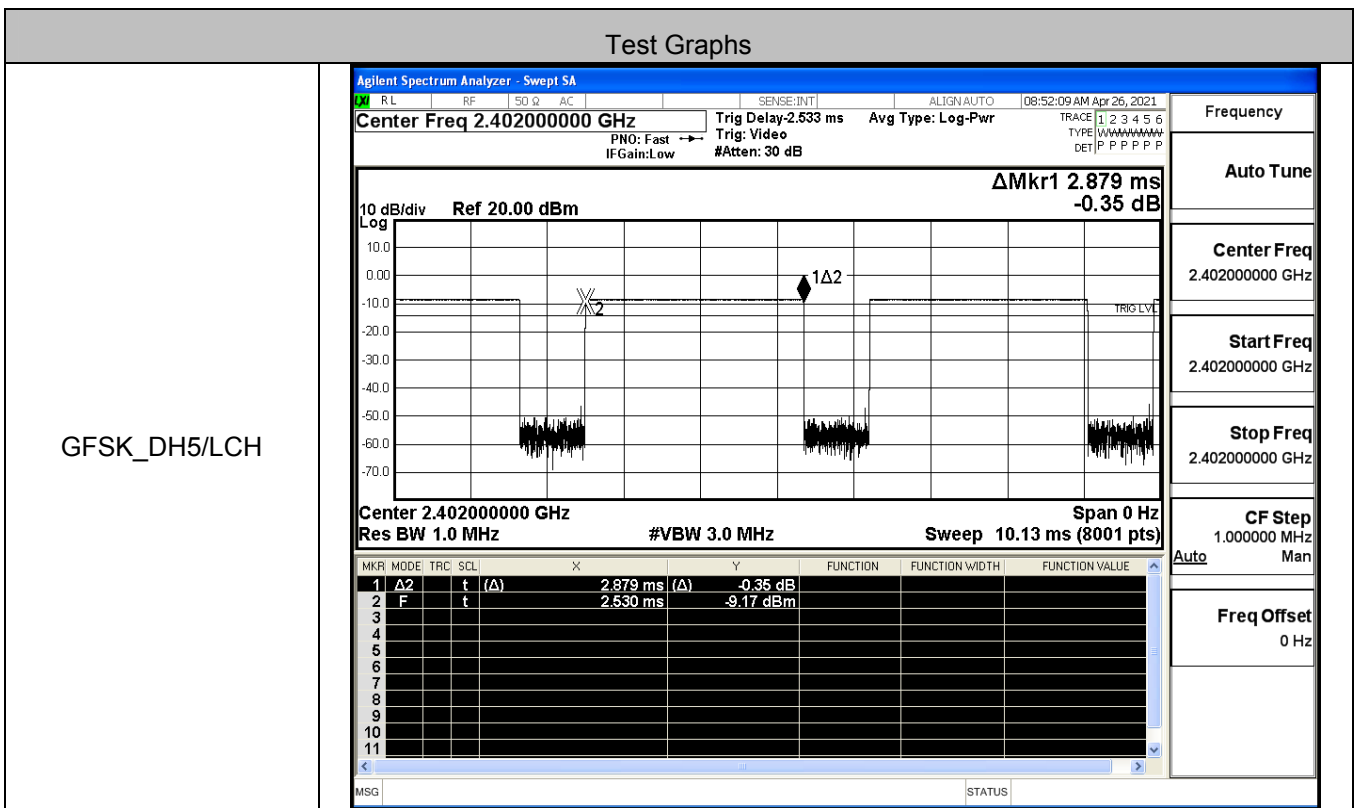
Test Graphs

GFSK/Hop	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 2.441750000 GHz Ref Offset 8.05 dB Ref 20.00 dBm ΔMkr1 78.114 MHz -0.103 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"> <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>78.114 MHz (Δ)</td> <td>-0.103 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td></td> <td>2.401847 GHz</td> <td>-0.288 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	Δ 2	f	(Δ)	78.114 MHz (Δ)	-0.103 dB				2	F	f		2.401847 GHz	-0.288 dBm				<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 Man</p> <p>Freq Offset 0 Hz</p>
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
1	Δ 2	f	(Δ)	78.114 MHz (Δ)	-0.103 dB																								
2	F	f		2.401847 GHz	-0.288 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 78.146 MHz -0.292 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"> <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>78.146 MHz (Δ)</td> <td>-0.292 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td></td> <td>2.401837 GHz</td> <td>-0.040 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	Δ 2	f	(Δ)	78.146 MHz (Δ)	-0.292 dB				2	F	f		2.401837 GHz	-0.040 dBm				<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 Man</p> <p>Freq Offset 0 Hz</p>
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
1	Δ 2	f	(Δ)	78.146 MHz (Δ)	-0.292 dB																								
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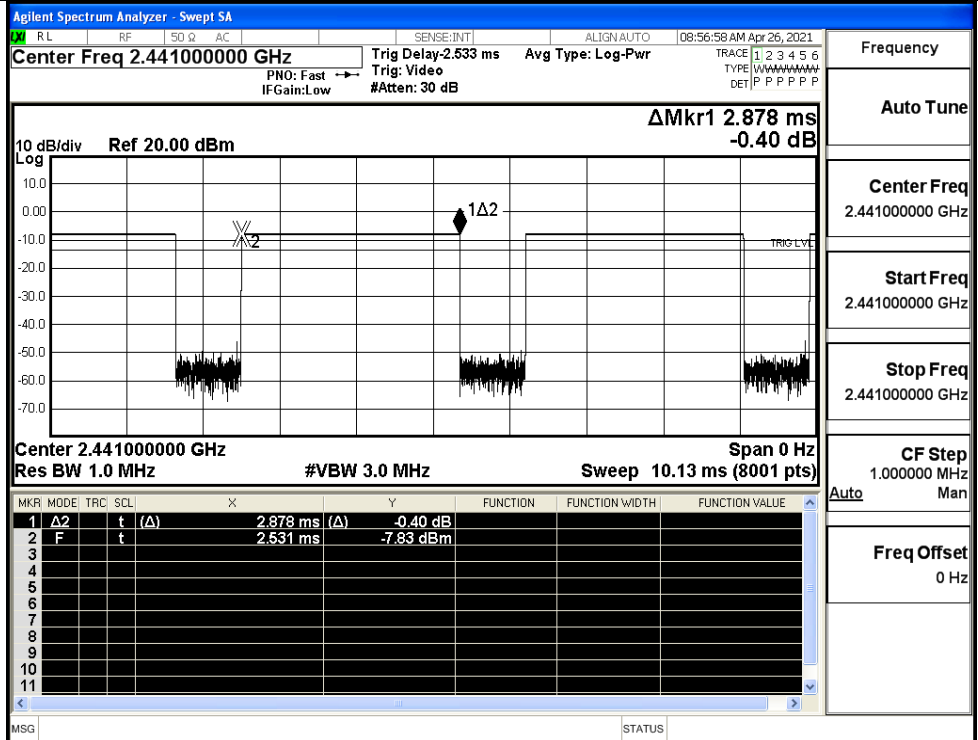
A.5 Dwell Time

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
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.308	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

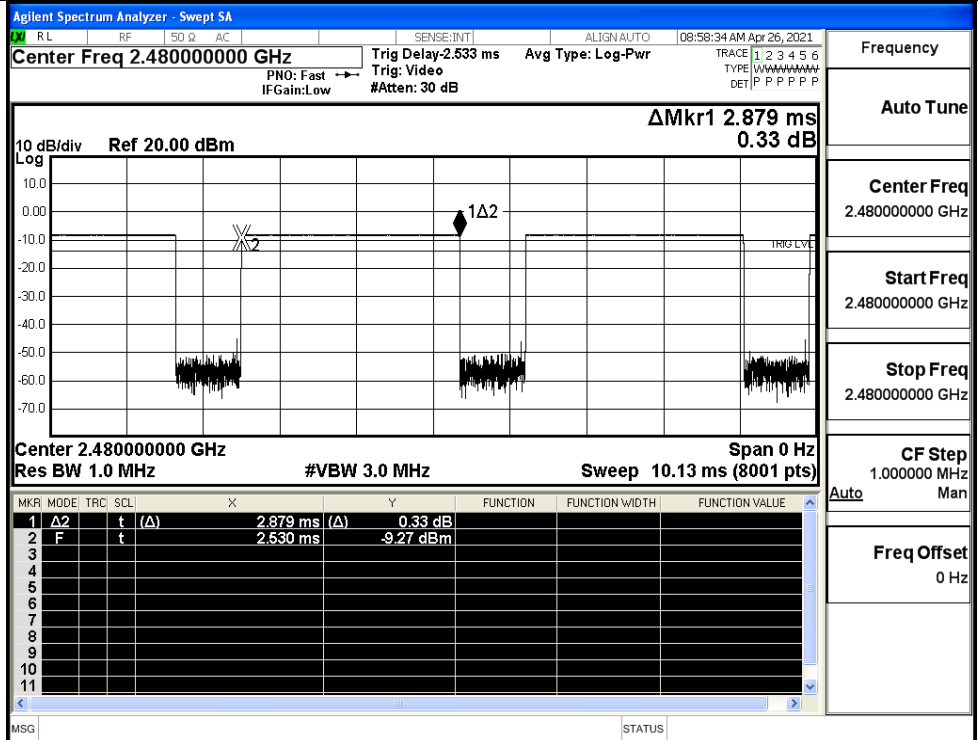
Test Graphs



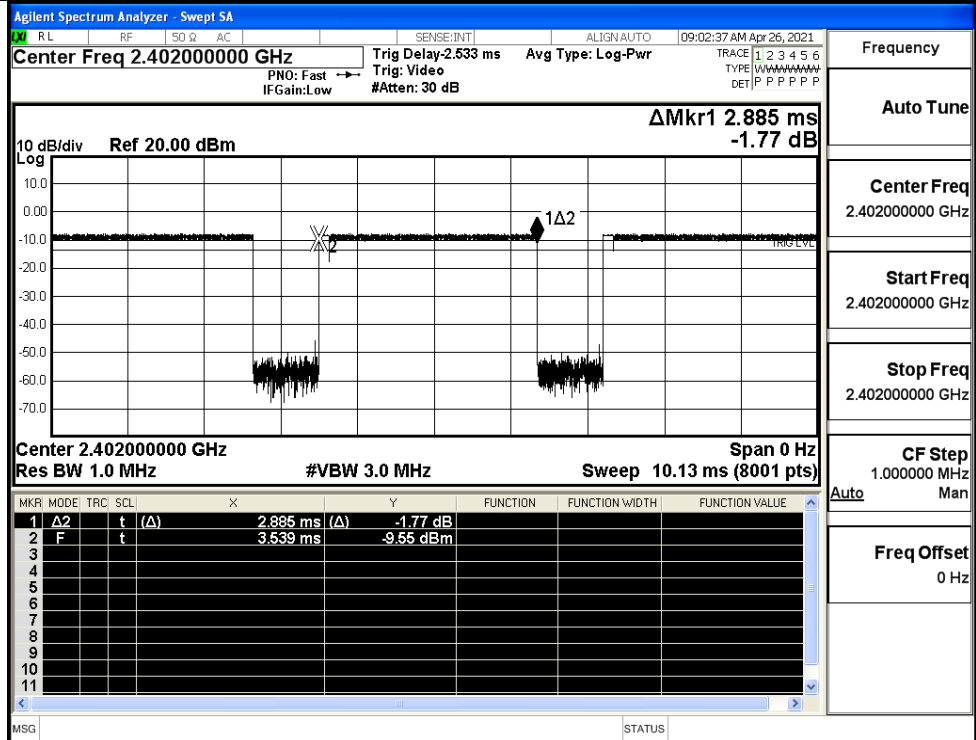
GFSK_DH5/MCH



GFSK_DH5/HCH

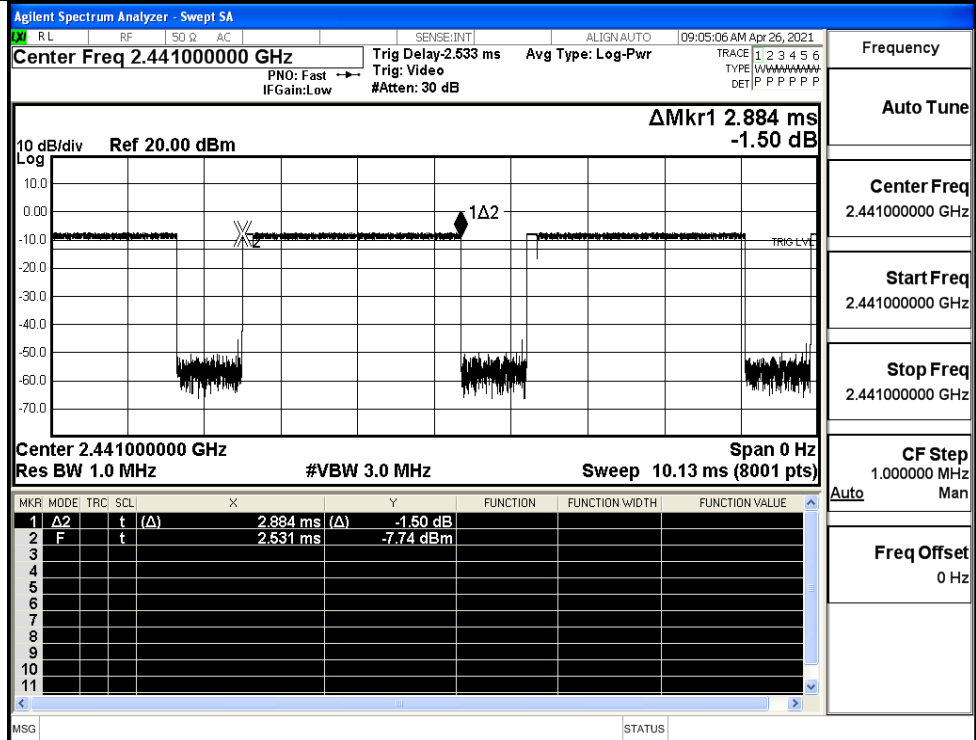


$\pi/4$ DQPSK
_2DH5/LCH



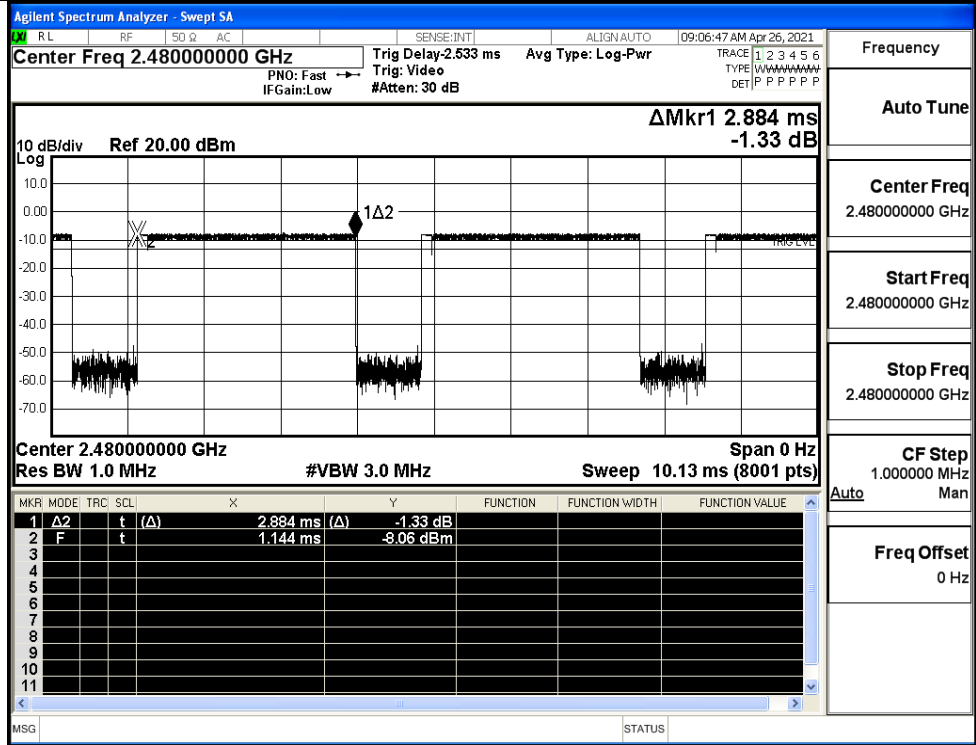
Frequency	2.402000000 GHz
Auto Tune	
Center Freq	2.402000000 GHz
Start Freq	2.402000000 GHz
Stop Freq	2.402000000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

$\pi/4$ DQPSK
_2DH5/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
Auto	Man
Freq Offset	0 Hz

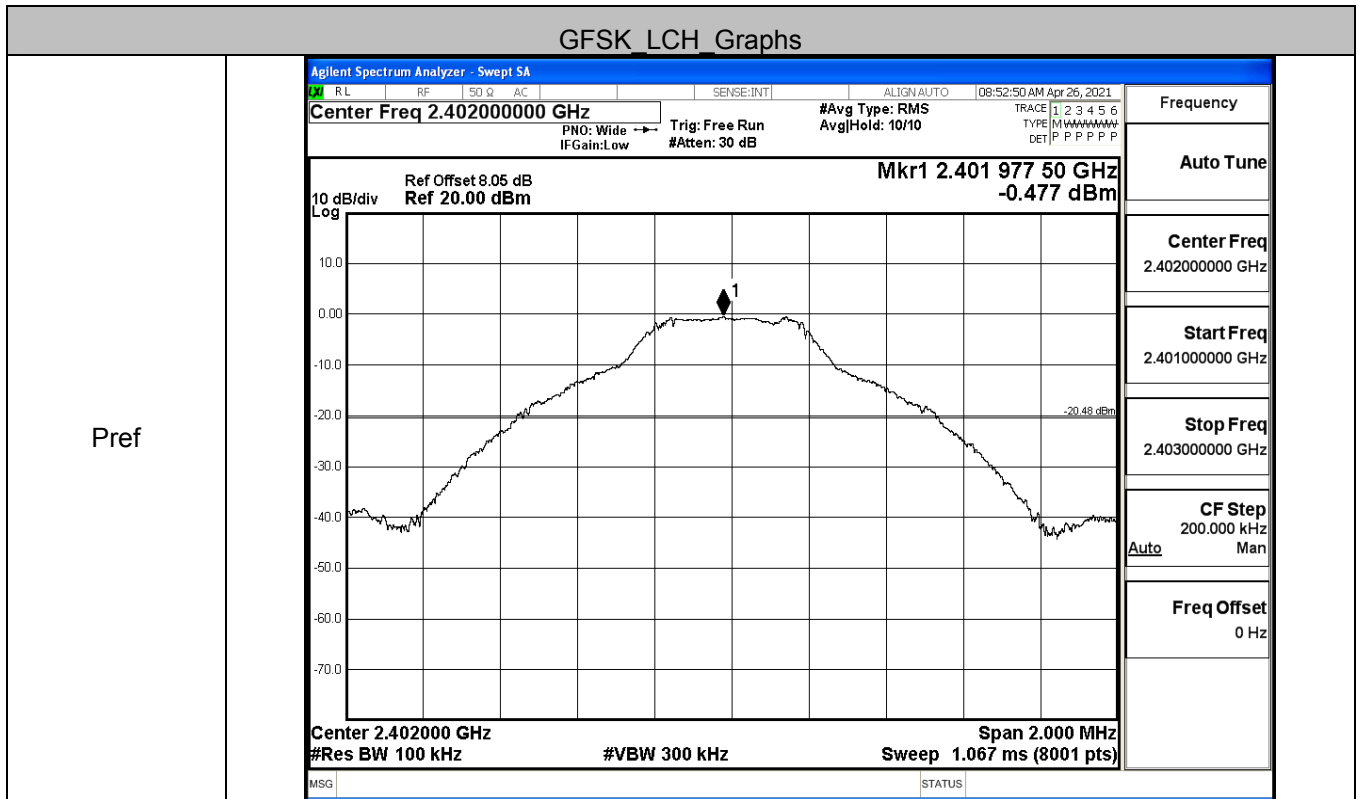
$\pi/4$ DQPSK
_2DH5/HCH

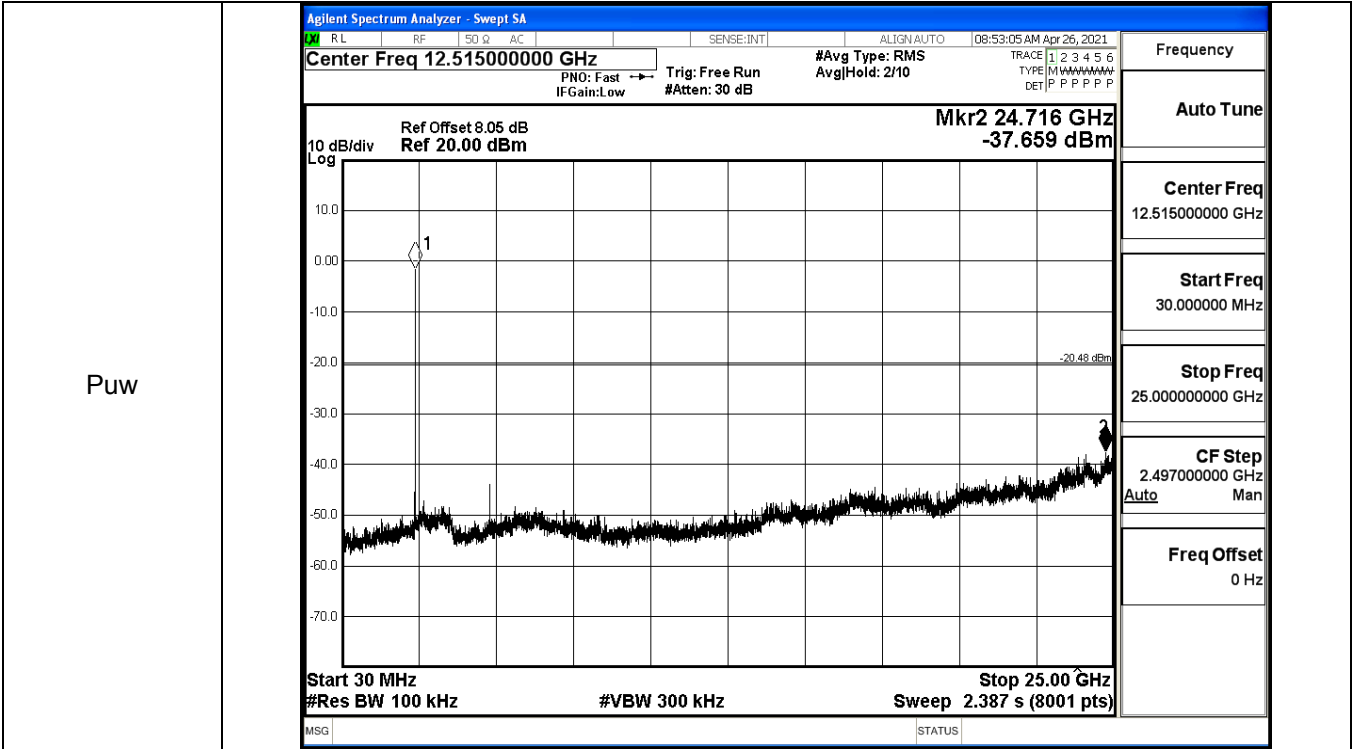


A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.477	-37.659	-20.477	PASS
	MCH	0.051	-37.230	-19.949	PASS
	HCH	-0.231	-38.075	-20.231	PASS
$\pi/4$ DQPSK	LCH	-0.204	-37.505	-20.204	PASS
	MCH	0.235	-37.457	-19.765	PASS
	HCH	-0.253	-37.934	-20.253	PASS

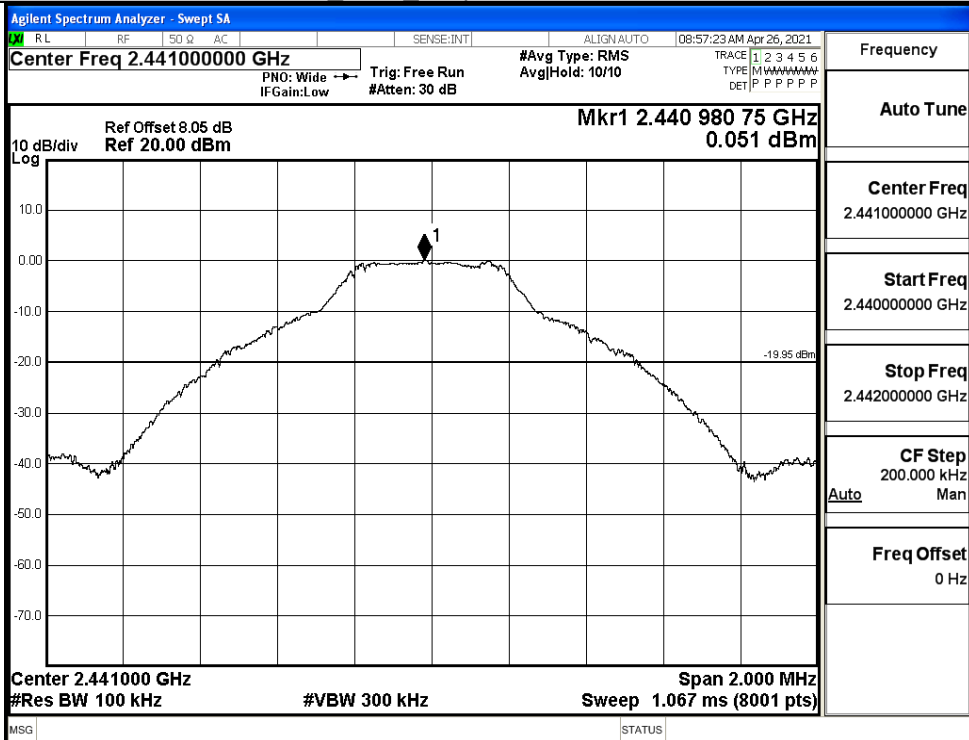
GFSK LCH Graphs



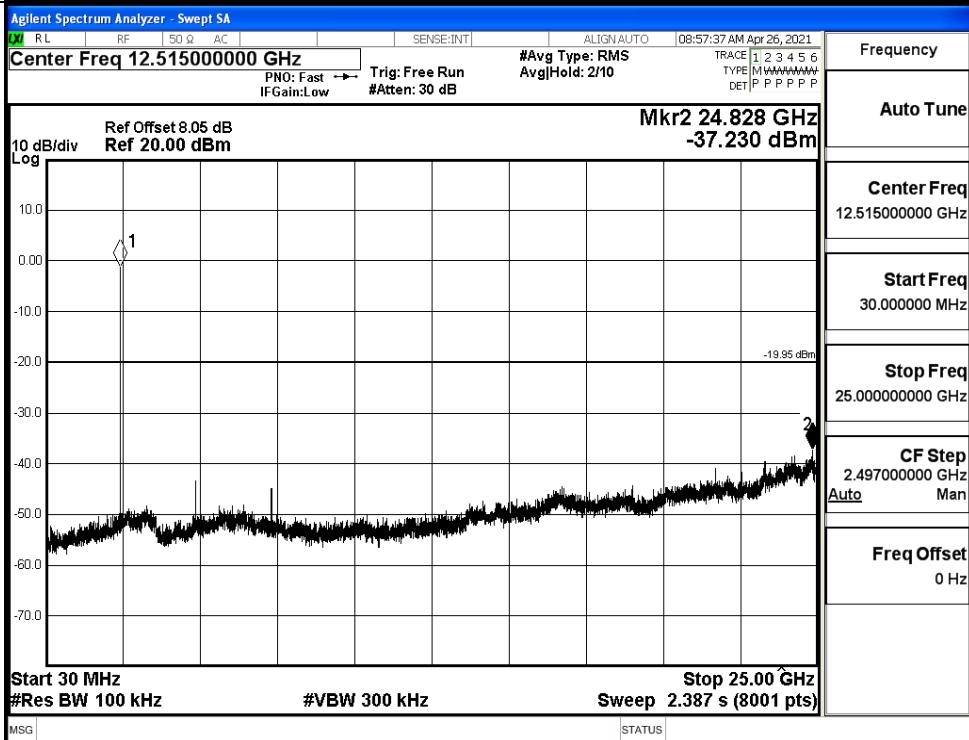


GFSK_MCH_Graphs

Pref

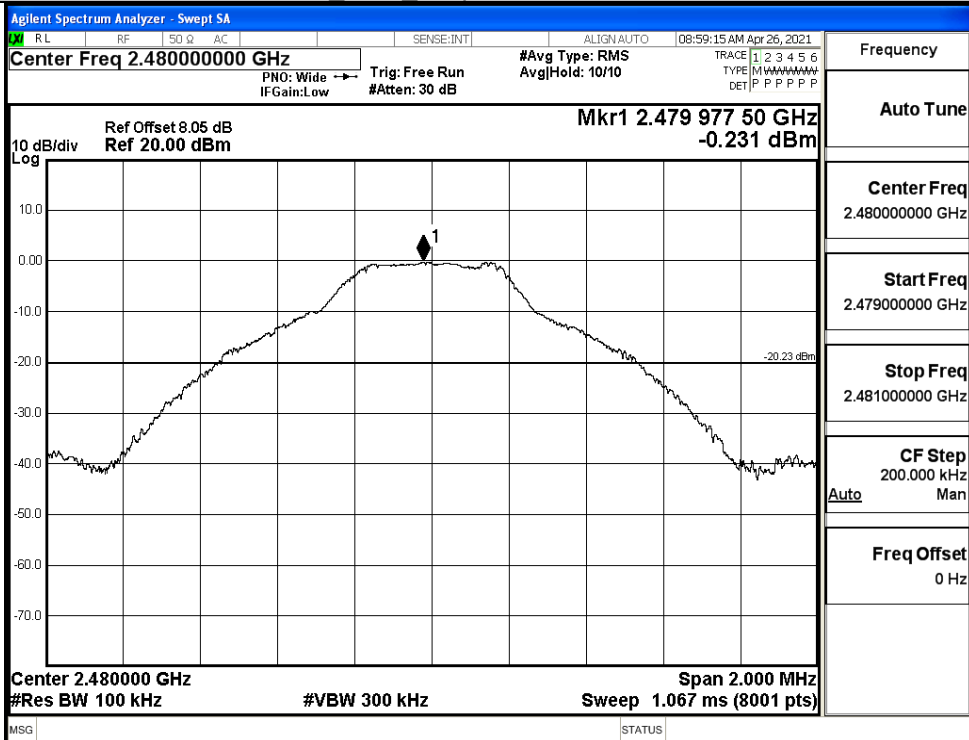


Puw

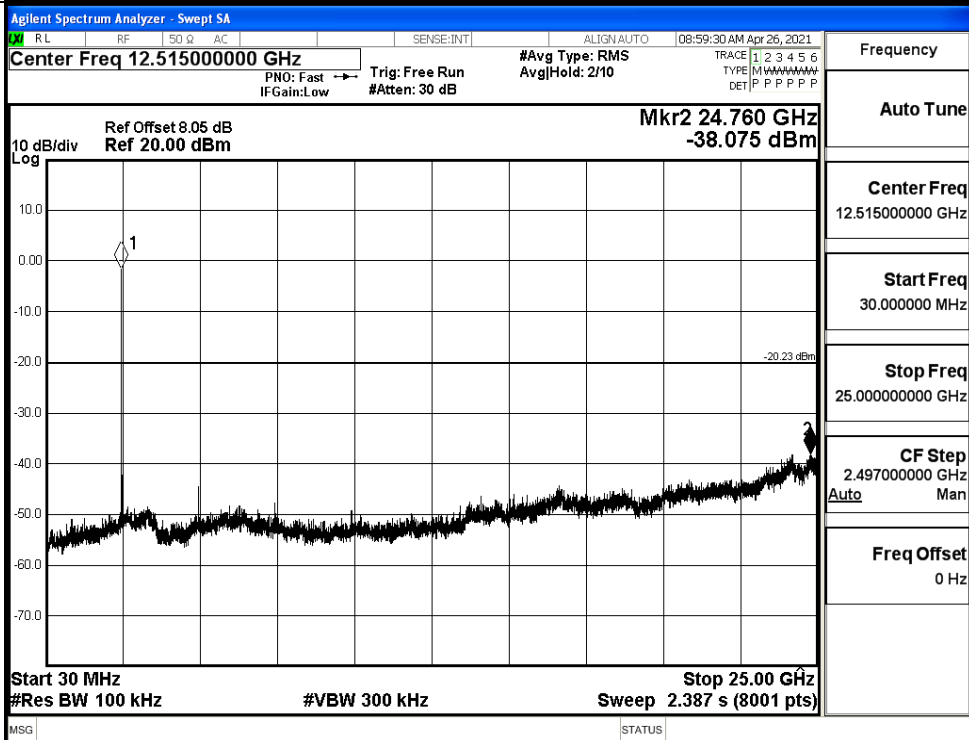


GFSK_HCH_Graphs

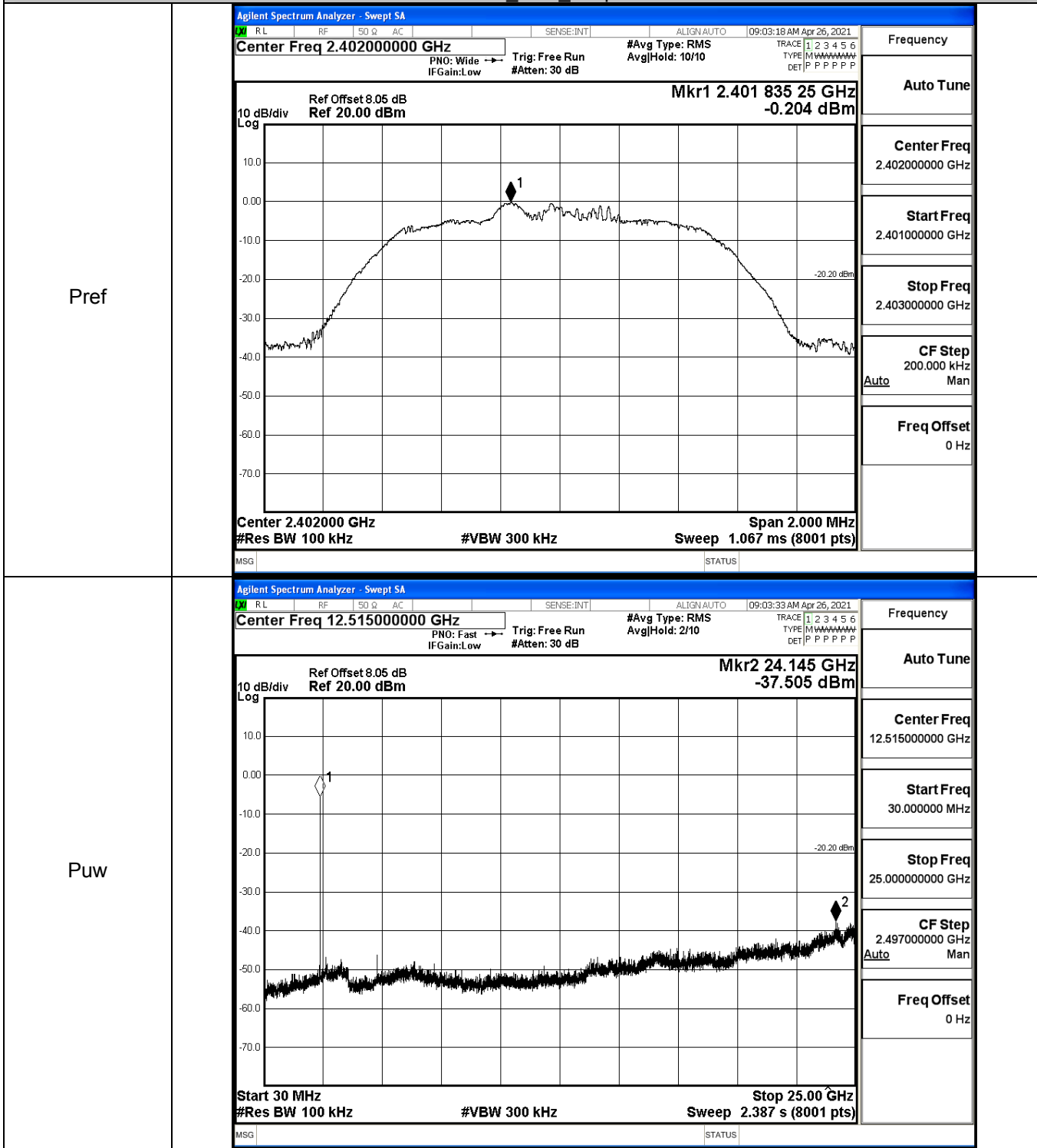
Pref



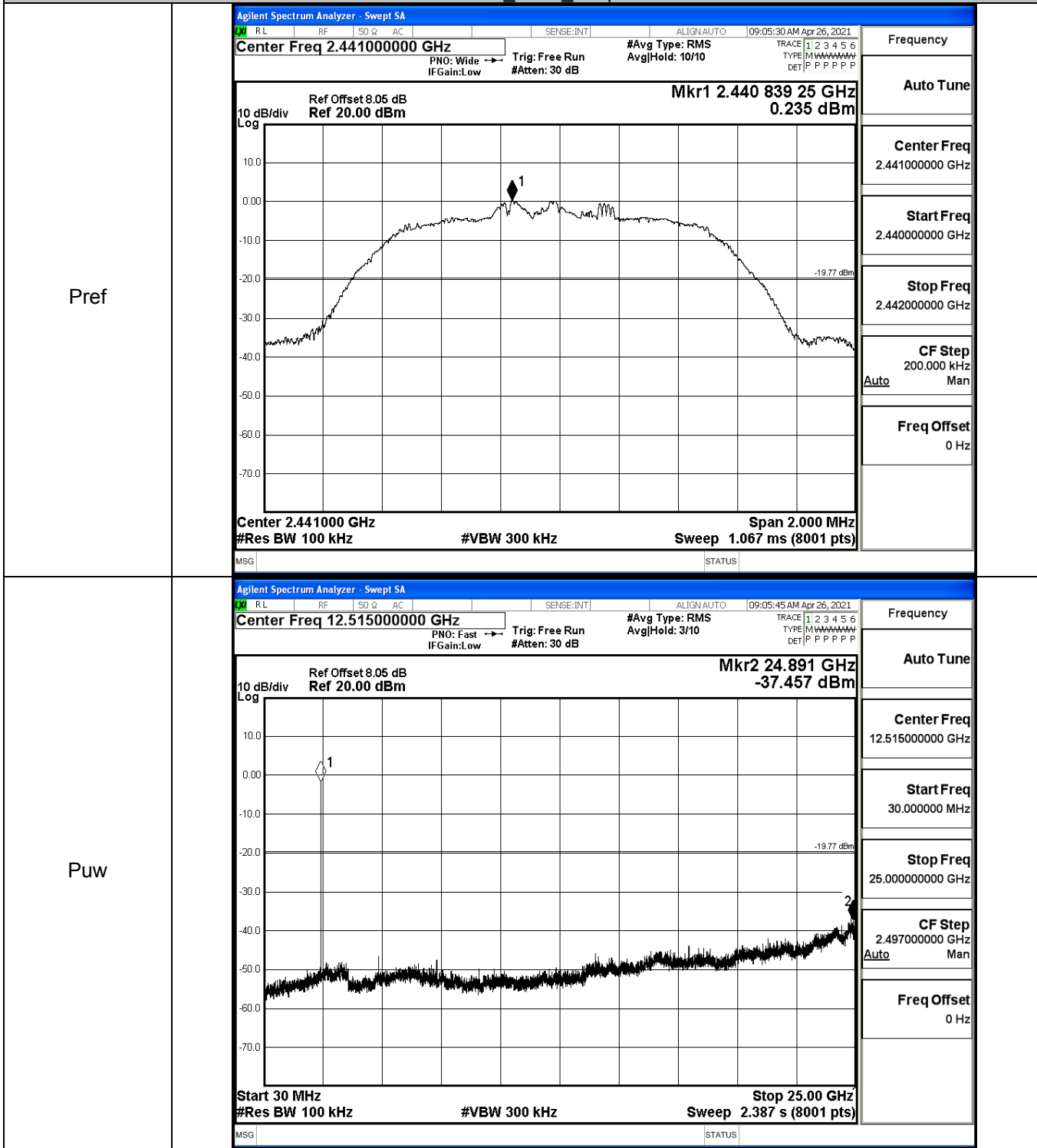
Puw



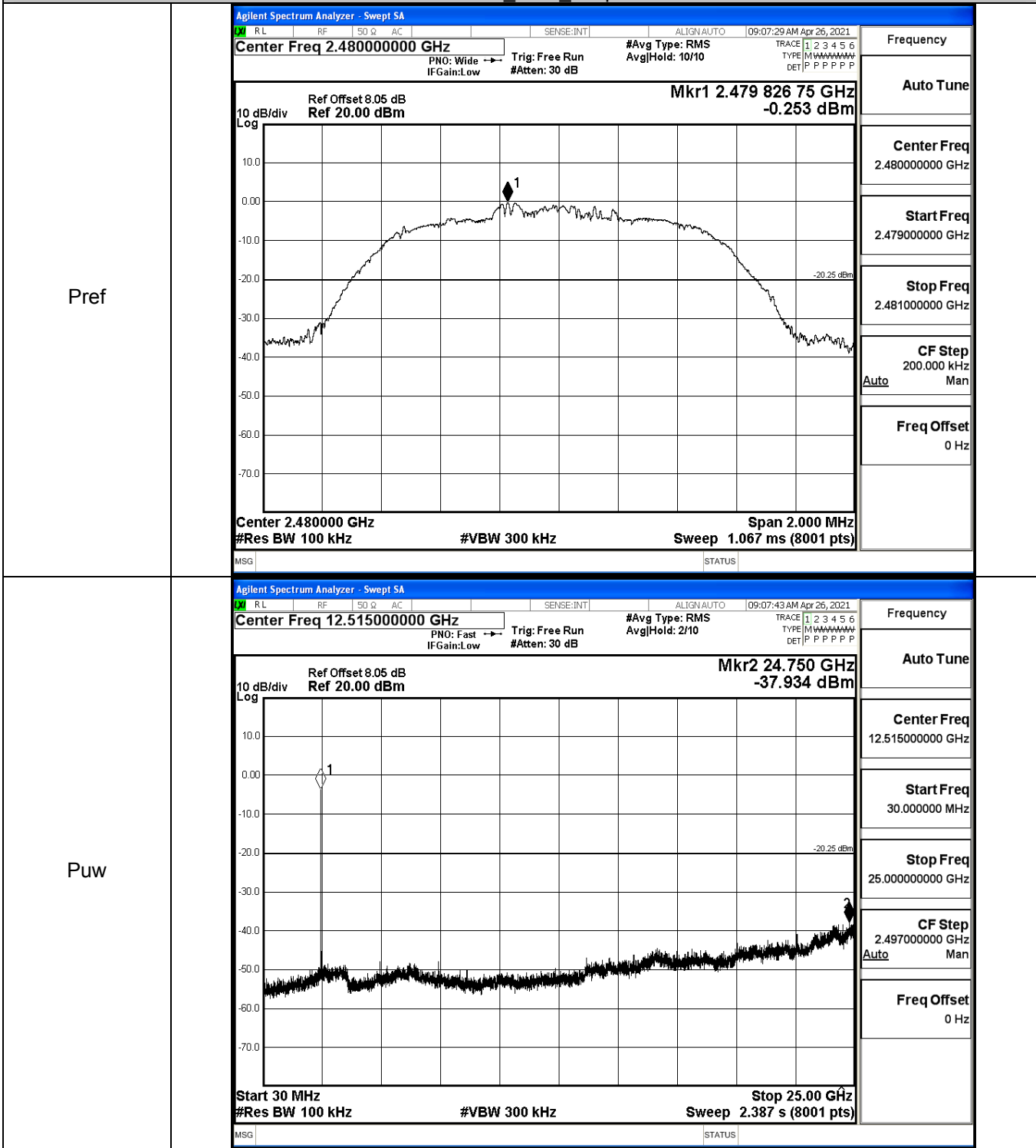
$\pi/4$ DQPSK_LCH_Graphs



π /4DQPSK_MCH_Graphs



$\pi/4$ DQPSK_HCH_Graphs

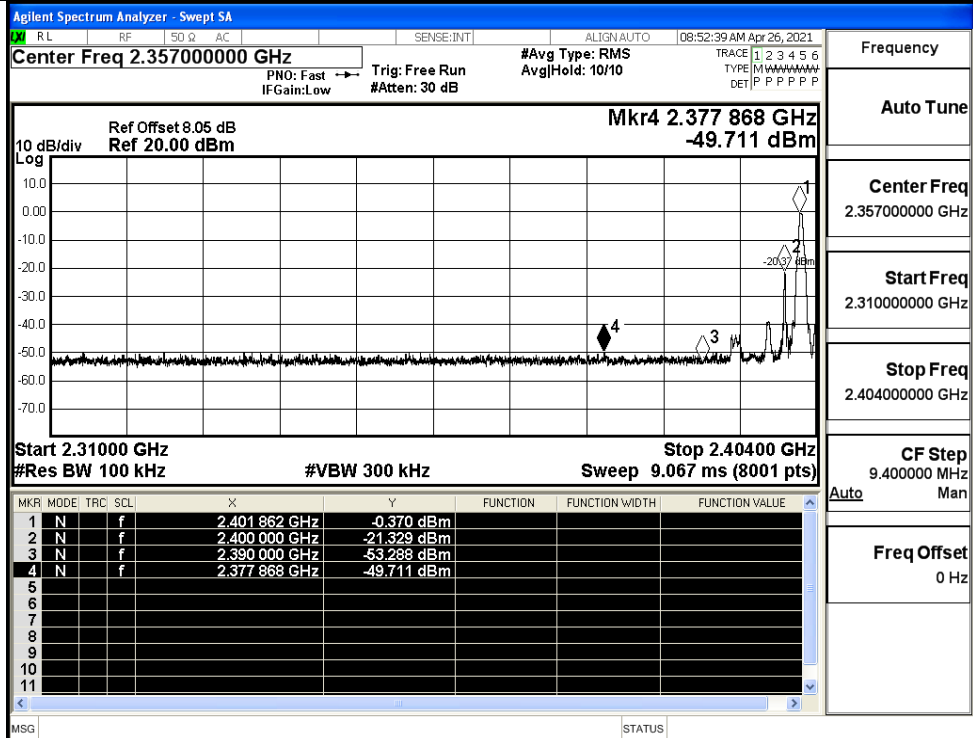


A.7 Band-edge for RF Conducted Emissions

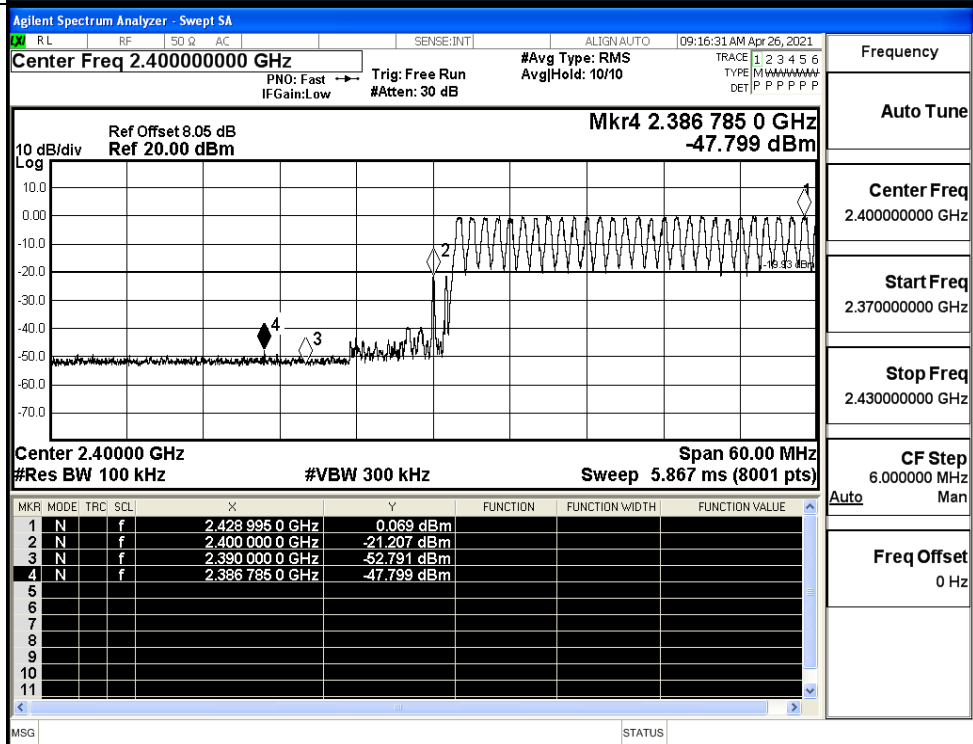
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-0.370	Off	-49.711	-20.37	PASS
			0.069	On	-47.799	-19.93	PASS
	HCH	2480	-0.113	Off	-48.665	-20.11	PASS
			-0.081	On	-48.730	-20.08	PASS
$\pi/4$ DQPSK	LCH	2402	-0.150	Off	-49.588	-20.15	PASS
			0.119	On	-49.162	-19.88	PASS
	HCH	2480	-0.160	Off	-48.867	-20.16	PASS
			-0.012	On	-48.597	-20.01	PASS

Test Graphs

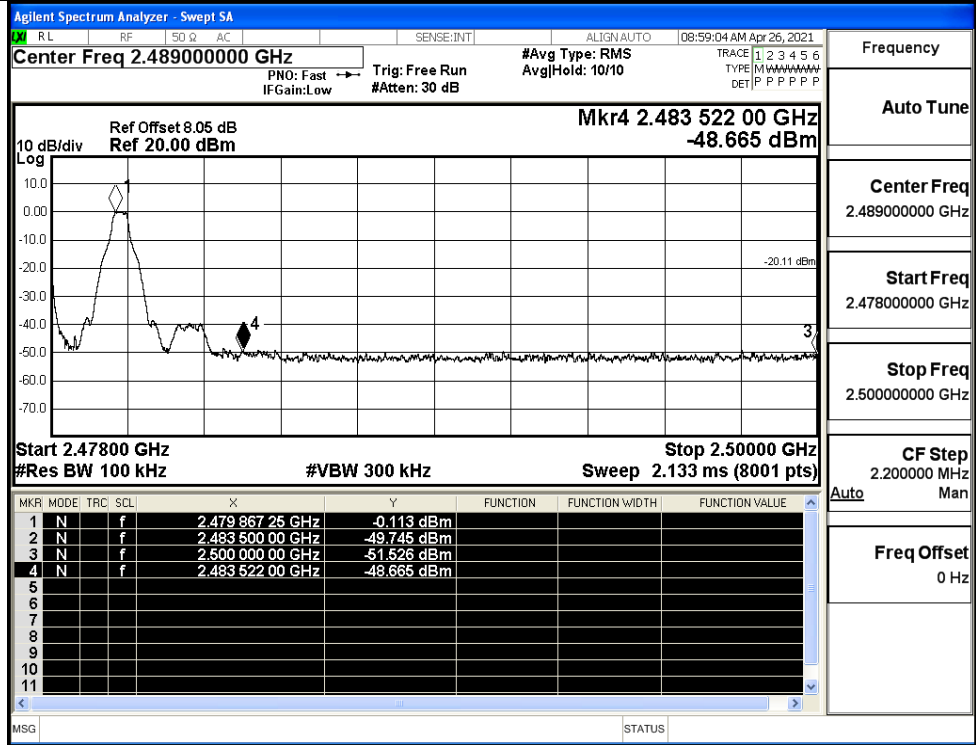
GFSK/LCH/No Hop



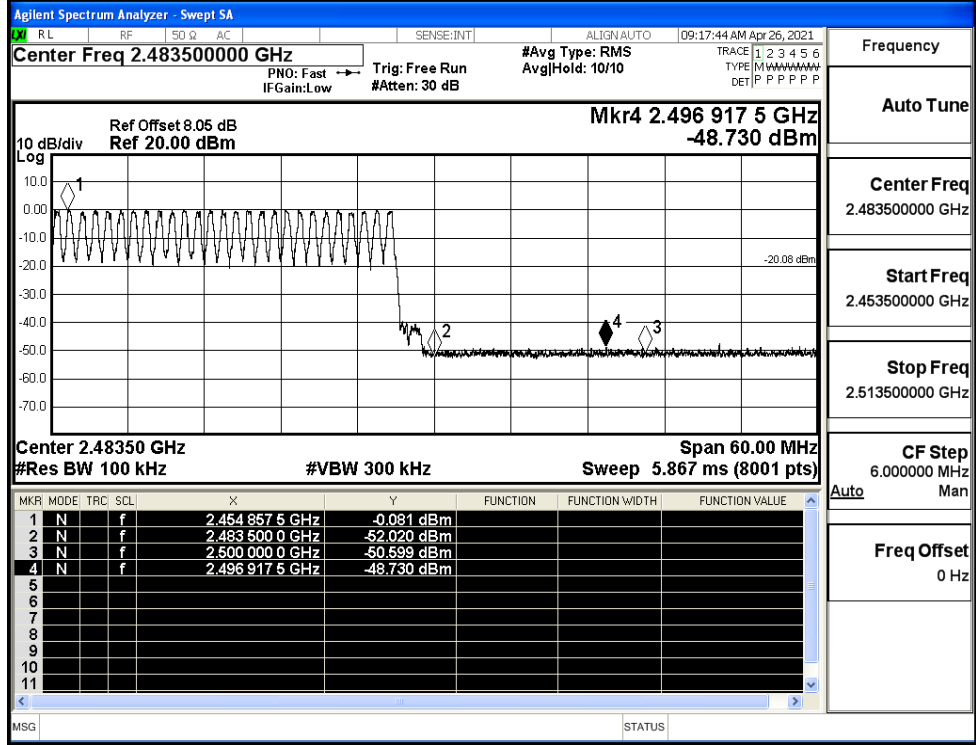
GFSK/LCH/Hop



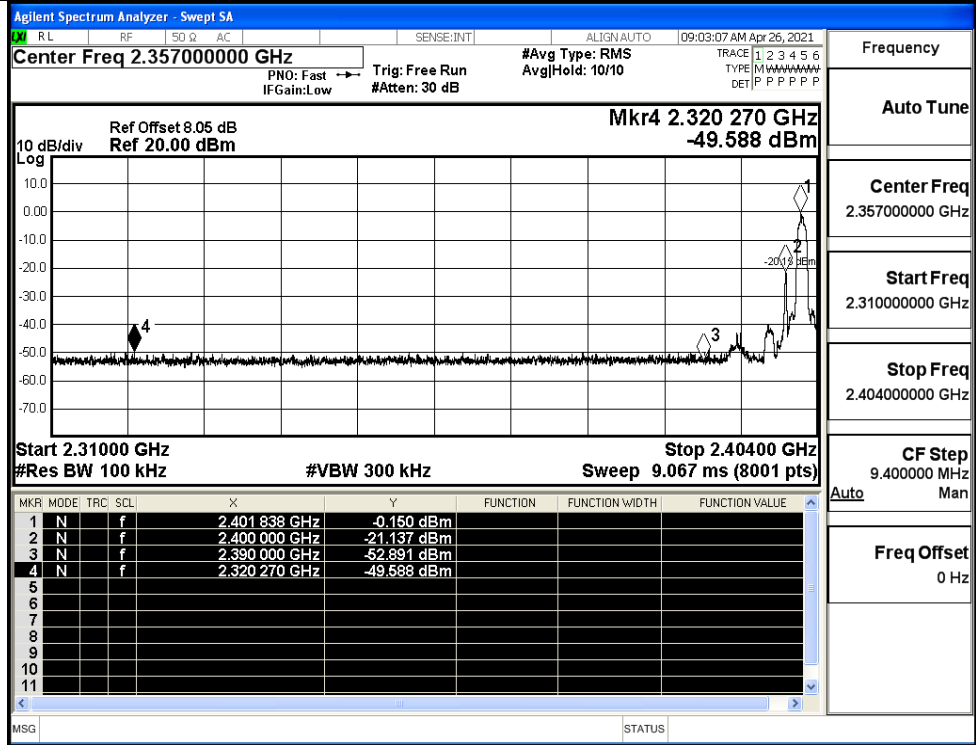
GFSK/HCH/No Hop



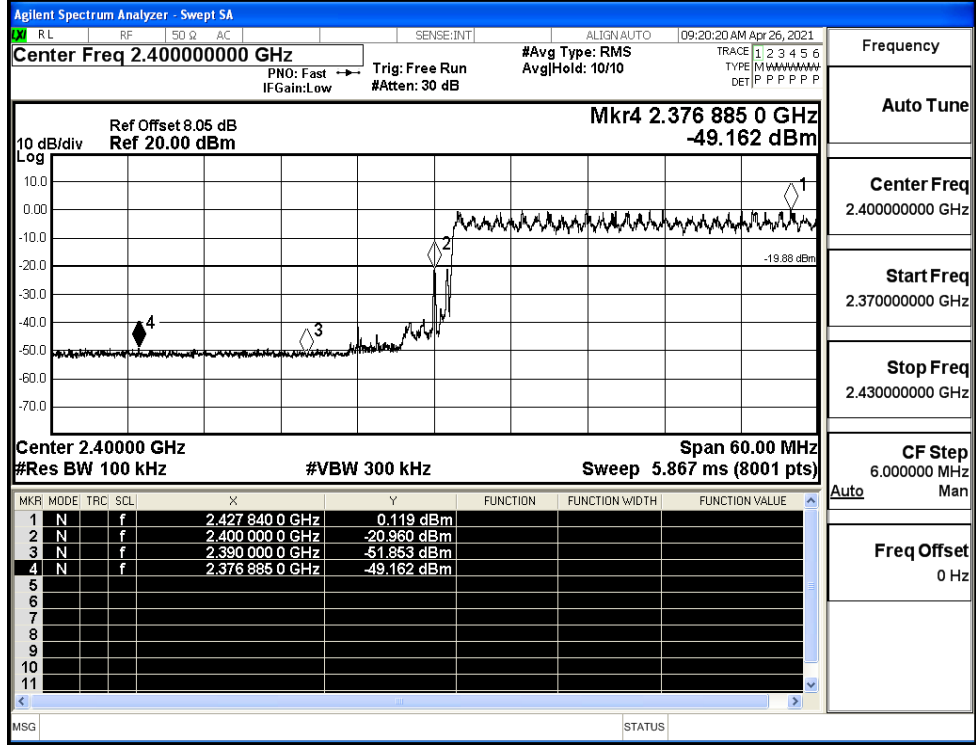
GFSK/HCH/Hop



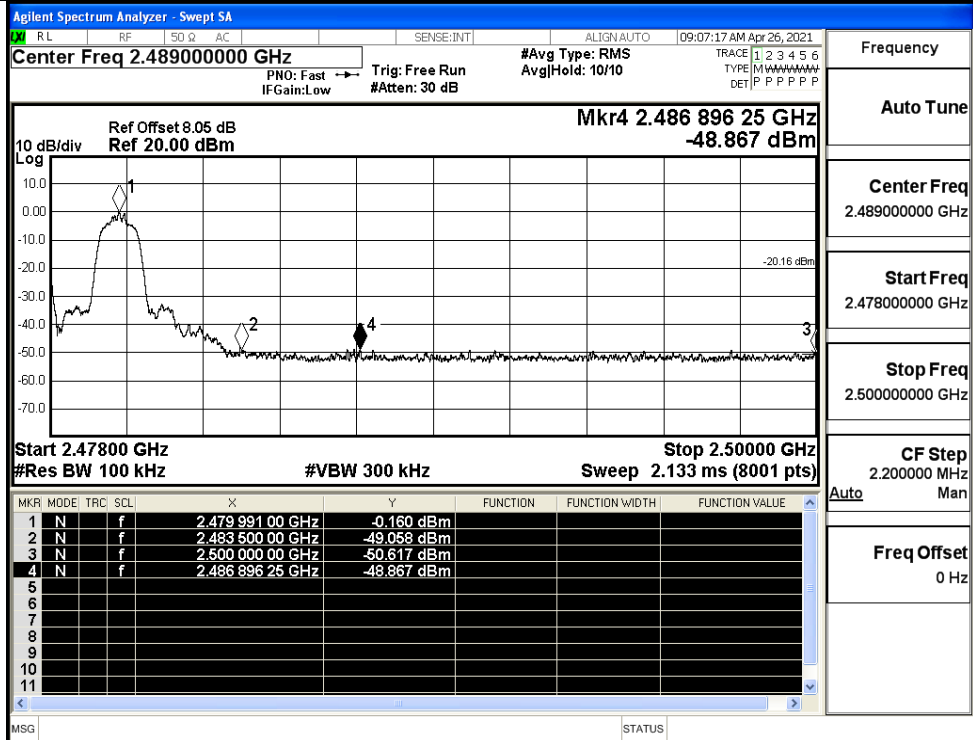
$\pi/4$ DQPSK/LCH/No
Hop



$\pi/4$ DQPSK/LCH/Hop

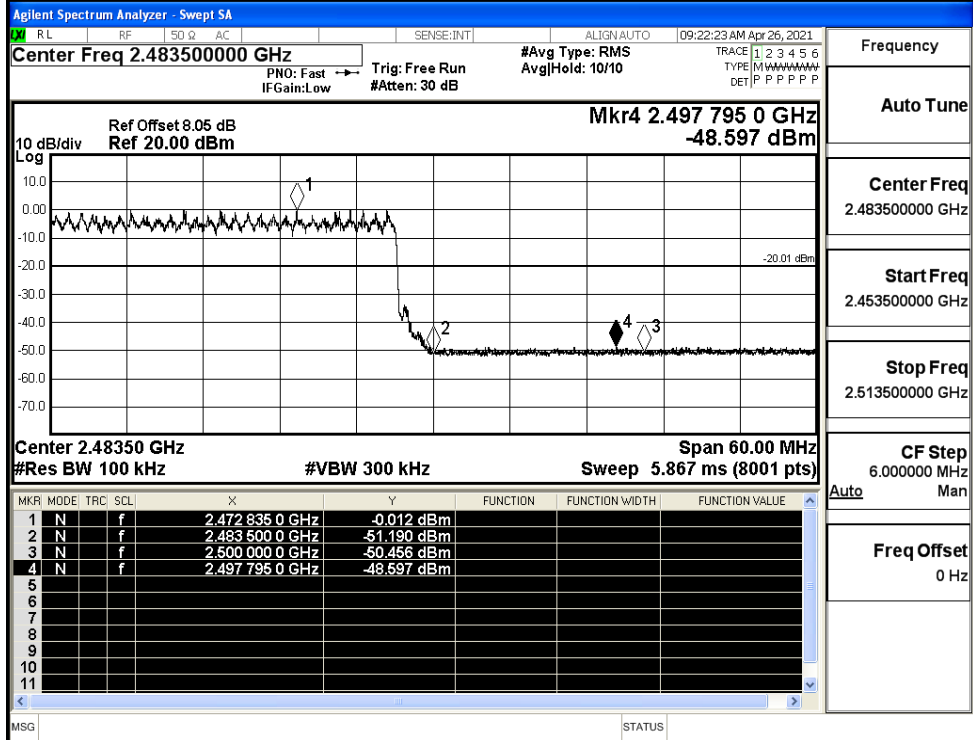


$\pi/4$ DQPSK/HCH/No
Hop



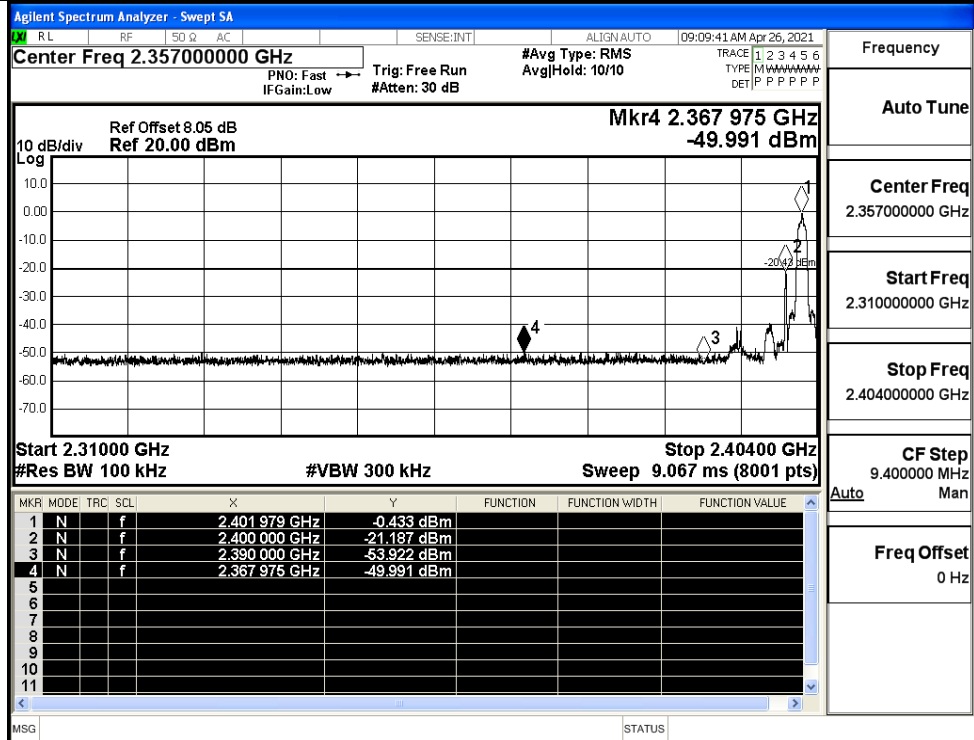
Frequency	2.489000000 GHz
Auto Tune	
Center Freq	2.489000000 GHz
Start Freq	2.478000000 GHz
Stop Freq	2.500000000 GHz
CF Step	2.200000 MHz
Freq Offset	0 Hz

$\pi/4$ DQPSK/HCH/Hop



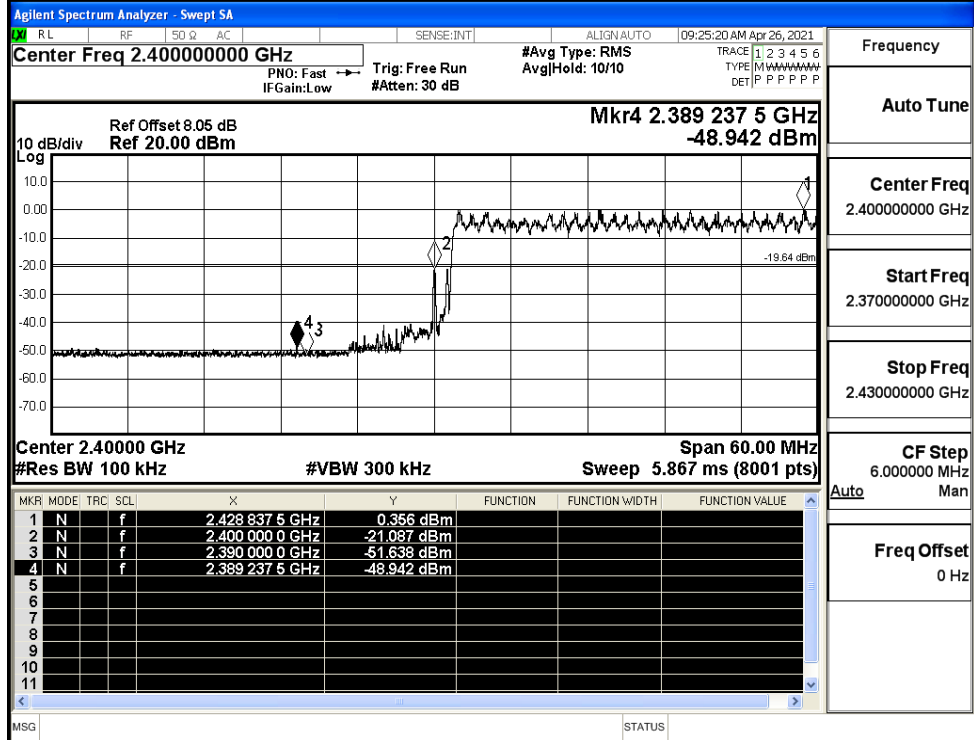
Frequency	2.483500000 GHz
Auto Tune	
Center Freq	2.483500000 GHz
Start Freq	2.453500000 GHz
Stop Freq	2.513500000 GHz
CF Step	6.000000 MHz
Freq Offset	0 Hz

8DPSK/LCH/No Hop



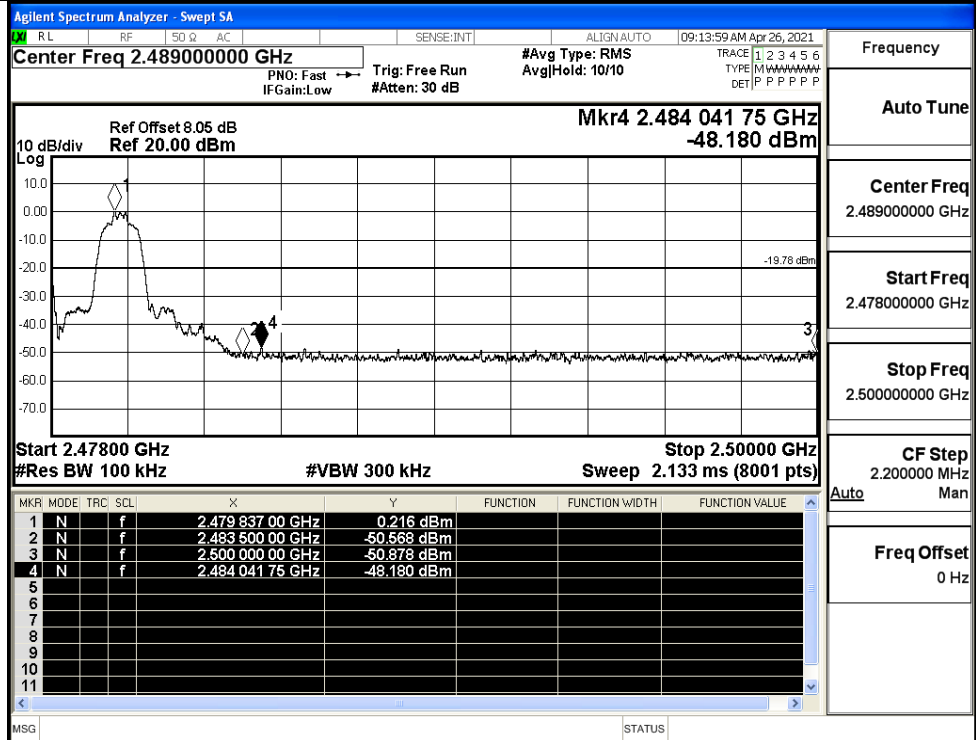
Frequency
Auto Tune
Center Freq
2.357000000 GHz
Start Freq
2.310000000 GHz
Stop Freq
2.404000000 GHz
CF Step
9.400000 MHz
Auto Man
Freq Offset
0 Hz

8DPSK/LCH/Hop



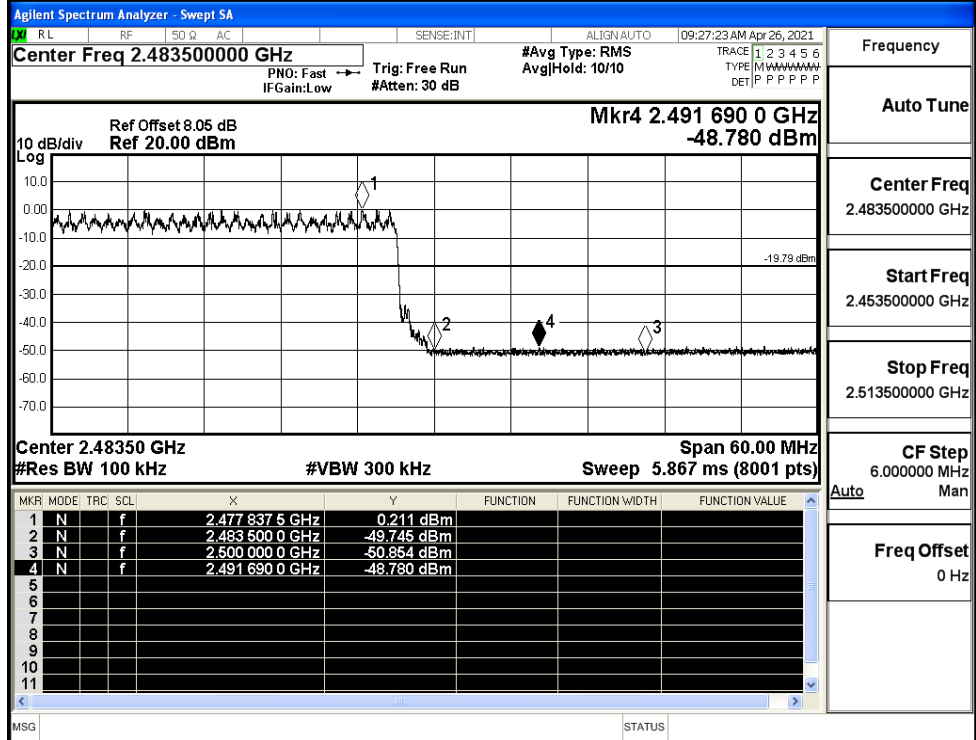
Frequency
Auto Tune
Center Freq
2.400000000 GHz
Start Freq
2.370000000 GHz
Stop Freq
2.430000000 GHz
CF Step
6.000000 MHz
Auto Man
Freq Offset
0 Hz

8DPSK/HCH/No Hop



Agilent Spectrum Analyzer - Swept SA
 Center Freq 2.489000000 GHz
 Auto Tune
 Mkr4 2.484 041 75 GHz
 -48.180 dBm
 Start Freq 2.478000000 GHz
 Stop Freq 2.500000000 GHz
 CF Step 2.200000 MHz
 Freq Offset 0 Hz

8DPSK/HCH/Hop

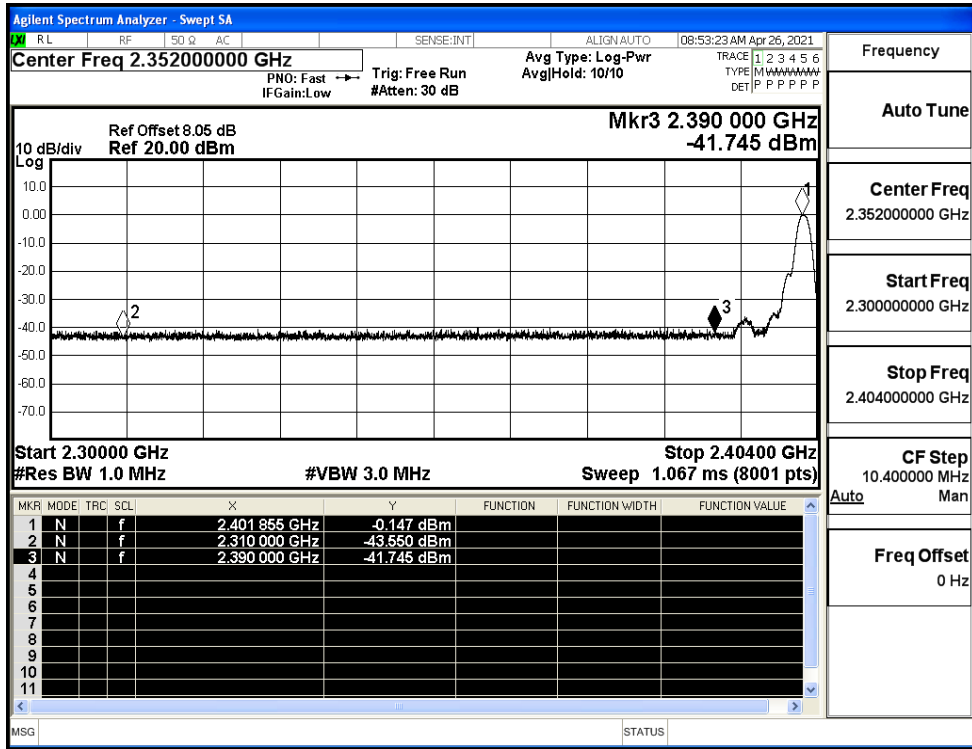


Agilent Spectrum Analyzer - Swept SA
 Center Freq 2.483500000 GHz
 Auto Tune
 Mkr4 2.491 690 0 GHz
 -48.780 dBm
 Start Freq 2.453500000 GHz
 Stop Freq 2.513500000 GHz
 CF Step 6.000000 MHz
 Freq Offset 0 Hz

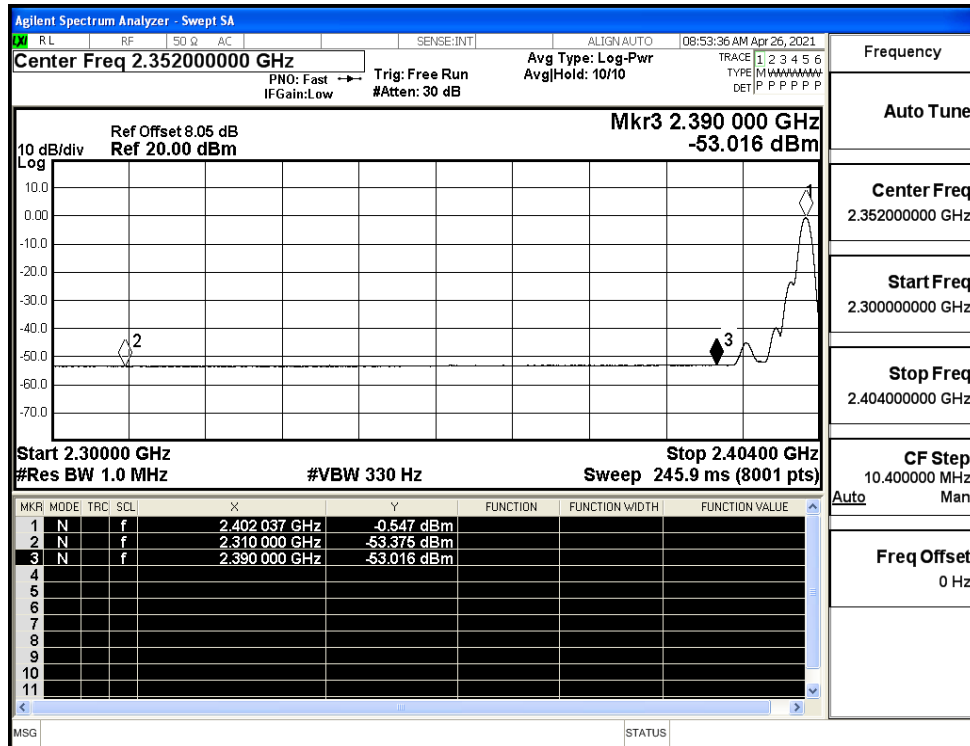
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.55	2.0	0	51.71	PEAK	74	PASS
	Off	2310.0	-53.38	2.0	0	41.88	AV	54	PASS
	Off	2390.0	-41.75	2.0	0	53.51	PEAK	74	PASS
	Off	2390.0	-53.02	2.0	0	42.24	AV	54	PASS
	Off	2483.5	-41.01	2.0	0	54.25	PEAK	74	PASS
	Off	2483.5	-50.26	2.0	0	45.00	AV	54	PASS
	Off	2500.0	-39.42	2.0	0	55.83	PEAK	74	PASS
	Off	2500.0	-52.39	2.0	0	42.87	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-42.49	2.0	0	52.77	PEAK	74	PASS
	Off	2310.0	-53.40	2.0	0	41.86	AV	54	PASS
	Off	2390.0	-41.88	2.0	0	53.38	PEAK	74	PASS
	Off	2390.0	-52.95	2.0	0	42.31	AV	54	PASS
	Off	2483.5	-39.66	2.0	0	55.60	PEAK	74	PASS
	Off	2483.5	-50.21	2.0	0	45.05	AV	54	PASS
	Off	2500.0	-41.03	2.0	0	54.22	PEAK	74	PASS
	Off	2500.0	-52.37	2.0	0	42.89	AV	54	PASS
8DPSK	Off	2310.0	-43.37	2.0	0	51.89	PEAK	74	PASS
	Off	2310.0	-53.38	2.0	0	41.88	AV	54	PASS
	Off	2390.0	-42.87	2.0	0	52.38	PEAK	74	PASS
	Off	2390.0	-52.98	2.0	0	42.28	AV	54	PASS
	Off	2483.5	-39.61	2.0	0	55.65	PEAK	74	PASS
	Off	2483.5	-50.20	2.0	0	45.05	AV	54	PASS
	Off	2500.0	-41.99	2.0	0	53.27	PEAK	74	PASS
	Off	2500.0	-52.38	2.0	0	42.87	AV	54	PASS

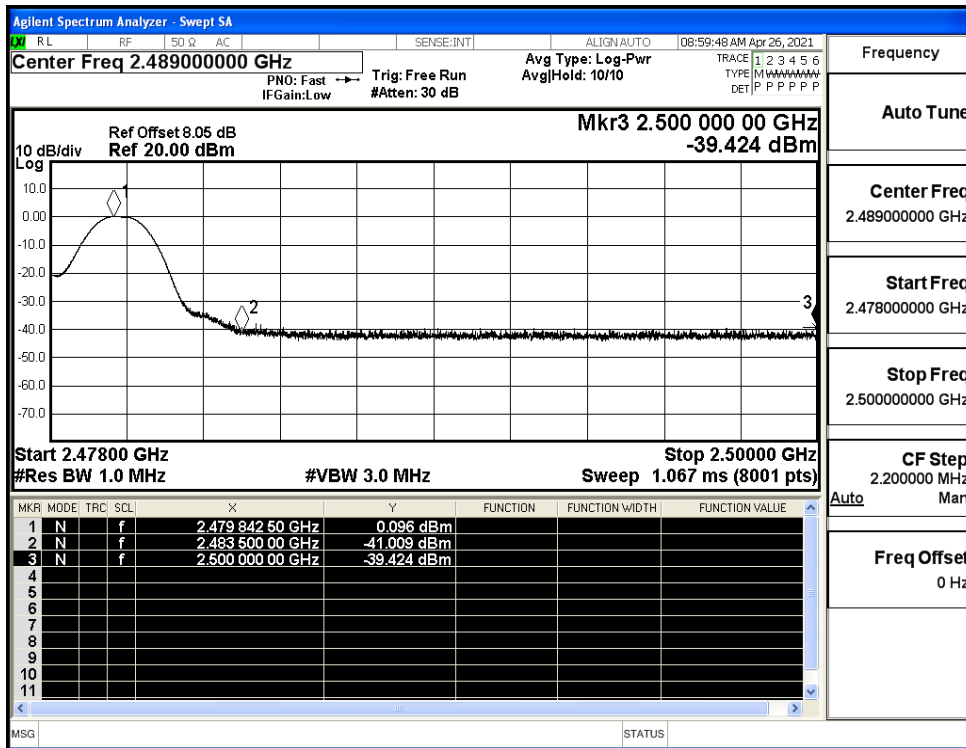
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



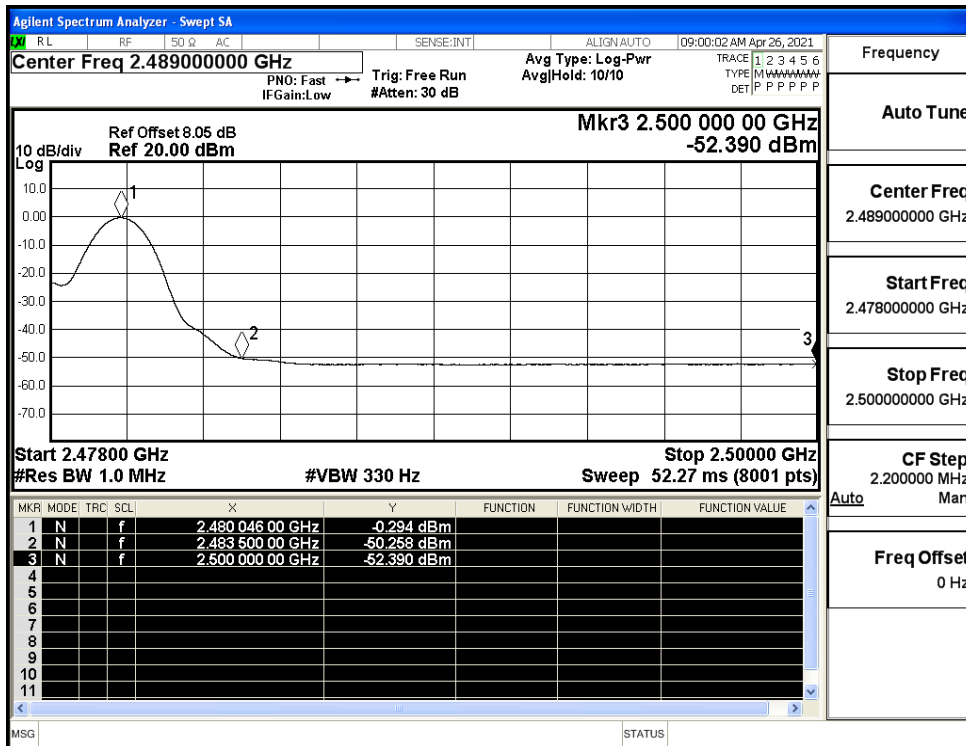
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



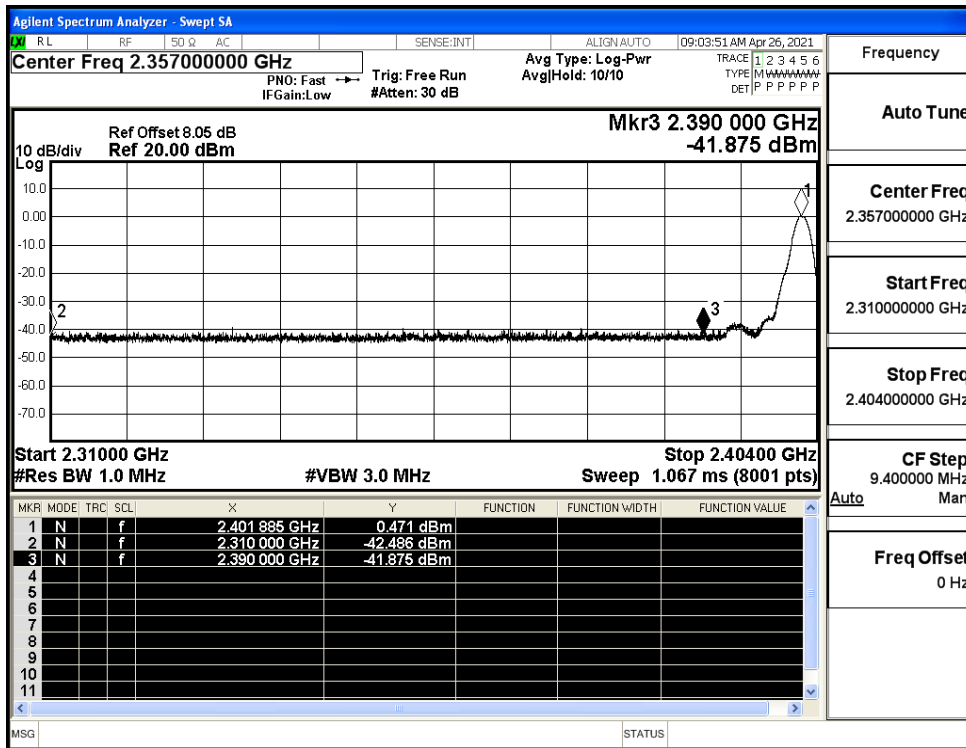
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



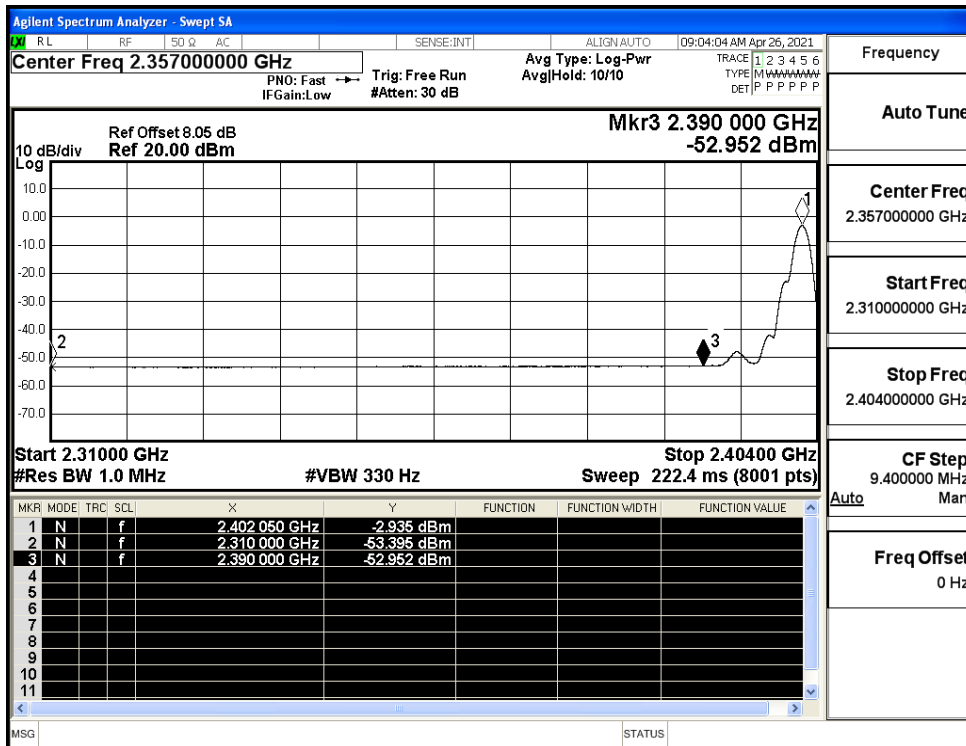
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



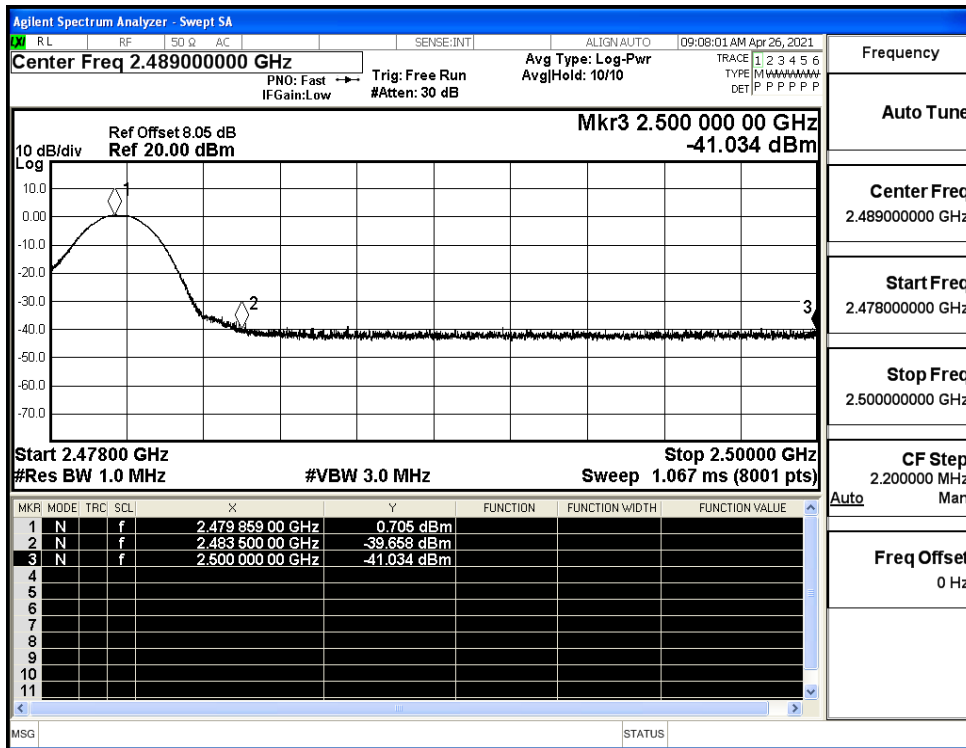
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)



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)

