

Appendix A

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

Product Name: Wireless Audio Amplifier Receiver

Trade Mark: 1Mii

Test Model: B08+

Environmental Conditions

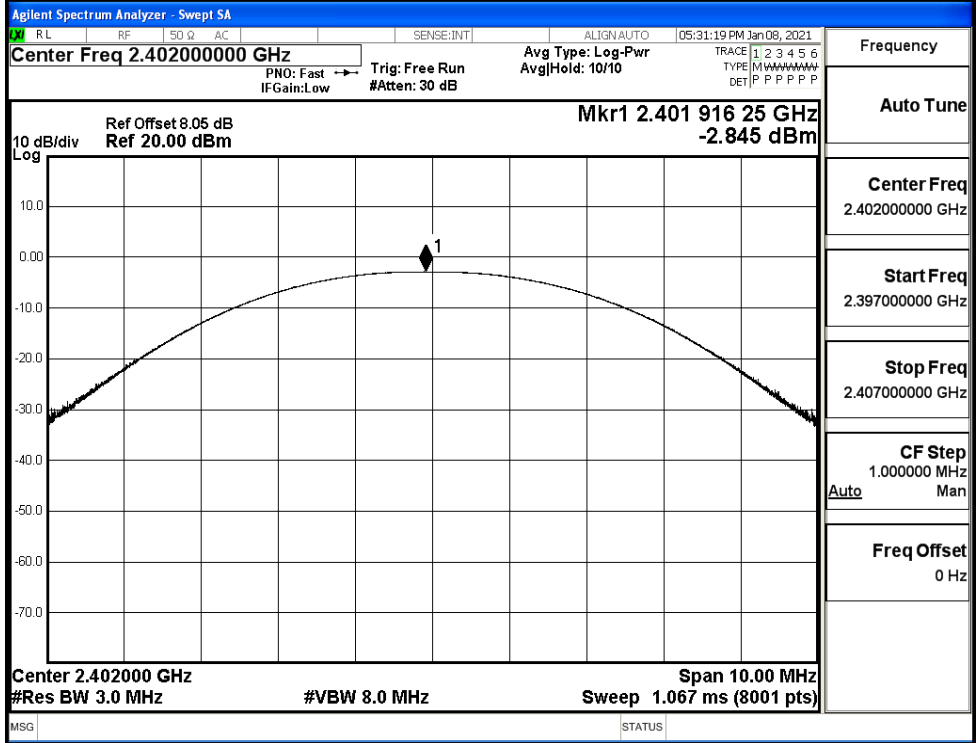
Temperature:	24.6 ° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Li
Supervised by:	Li Huan

A.1 Maxmum Conducted Peak Output Power

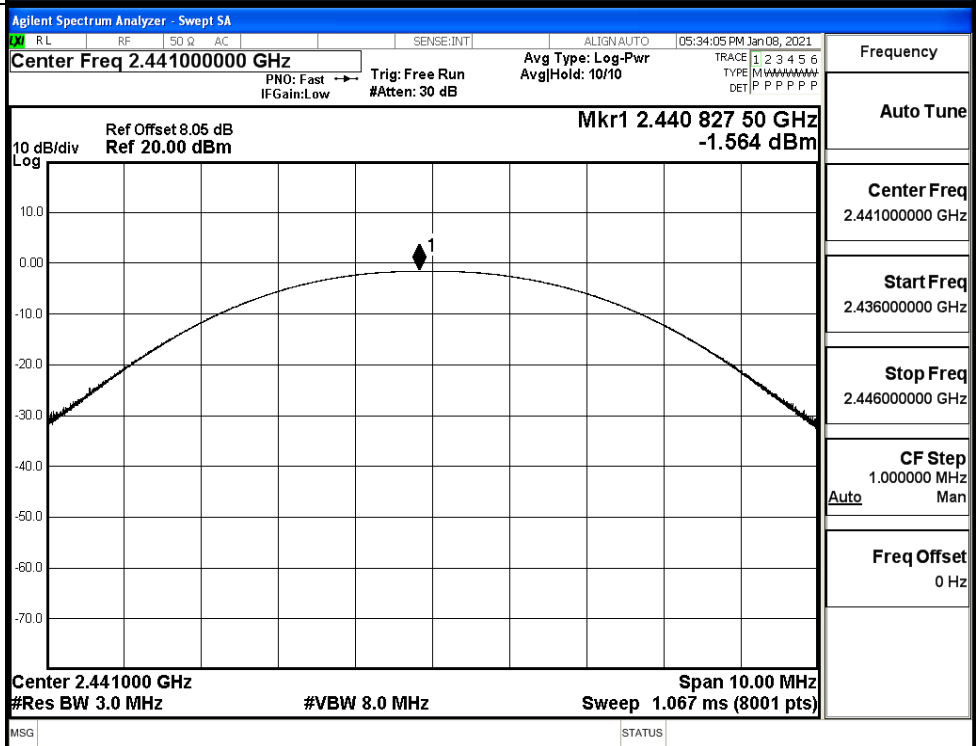
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-2.845	21	PASS
	MCH	-1.564	21	PASS
	HCH	-1.084	21	PASS
$\pi/4$ DQPSK	LCH	-0.655	21	PASS
	MCH	0.573	21	PASS
	HCH	1.102	21	PASS
8DPSK	LCH	-0.053	21	PASS
	MCH	1.182	21	PASS
	HCH	1.717	21	PASS

Test Graphs

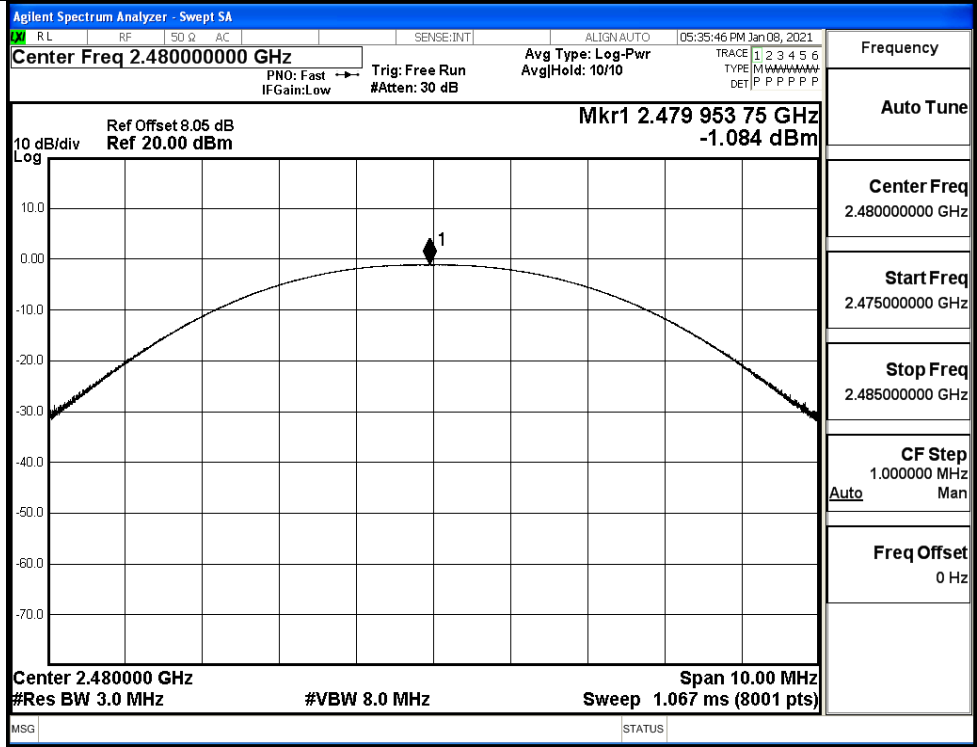
GFSK/LCH



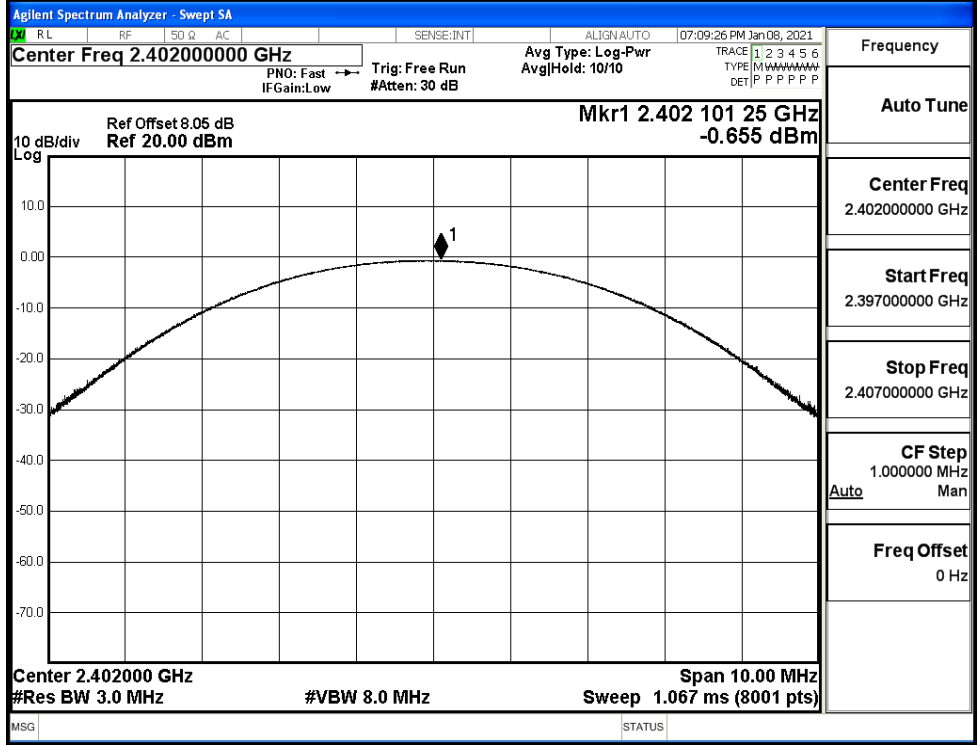
GFSK/MCH

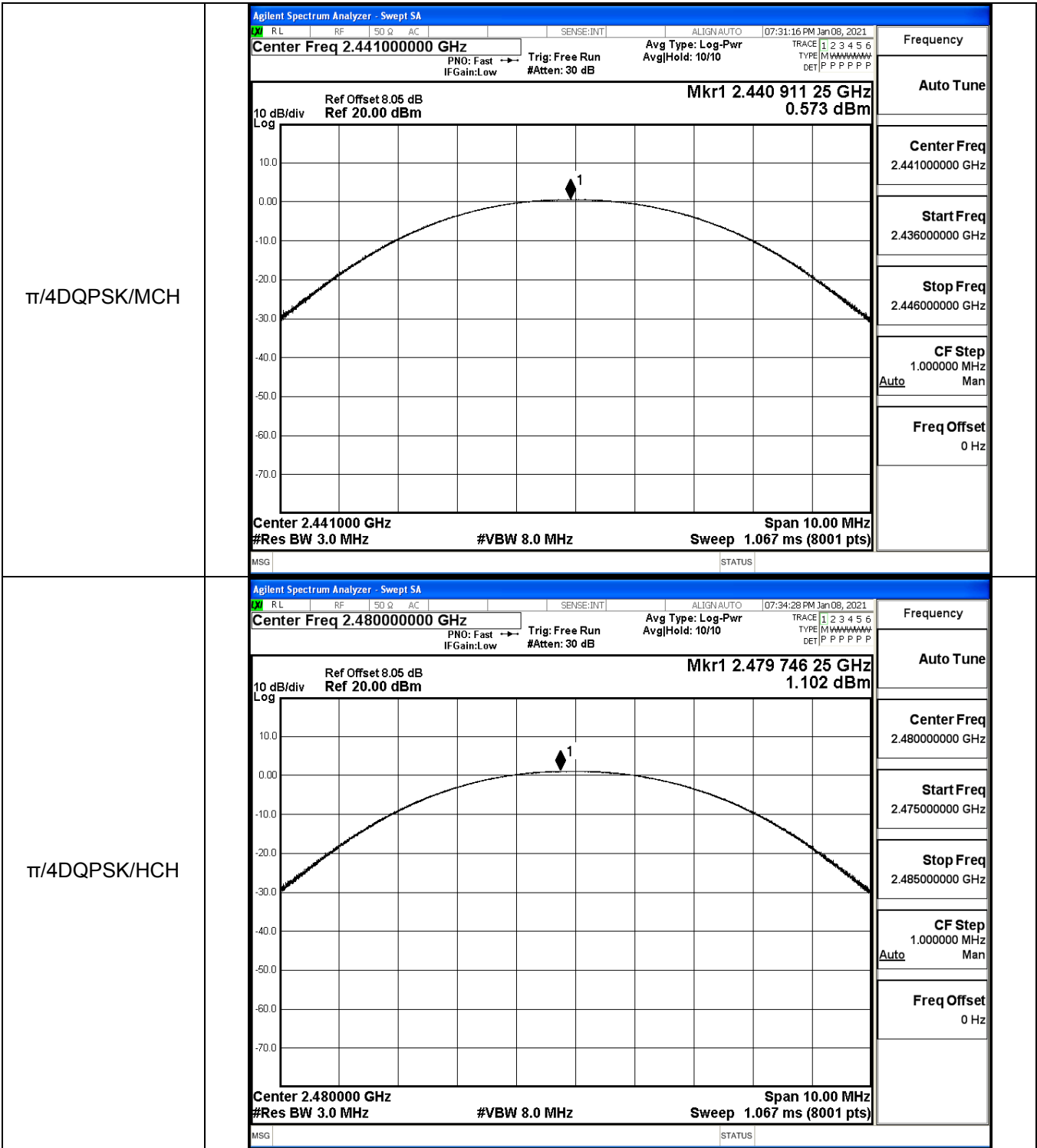


GFSK/HCH

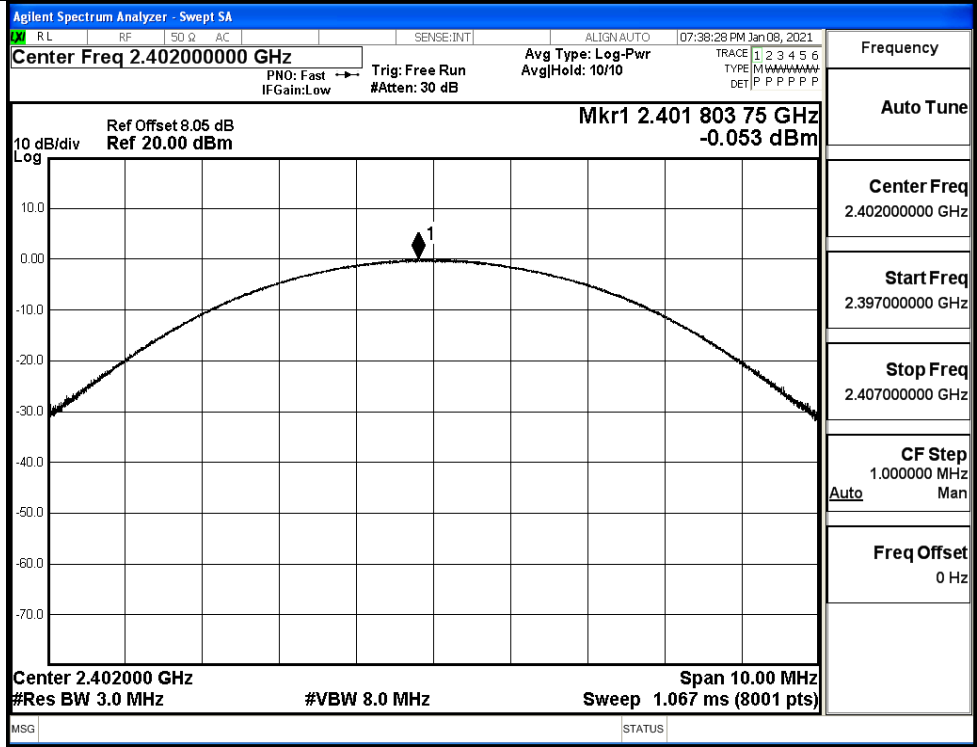


π /4DQPSK/LCH

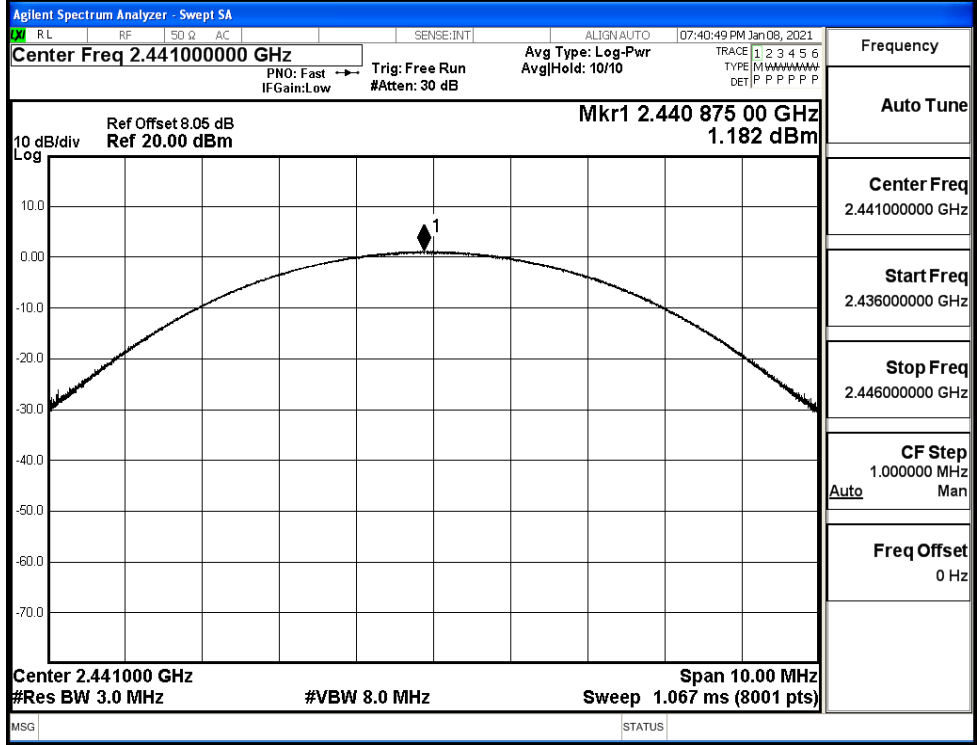




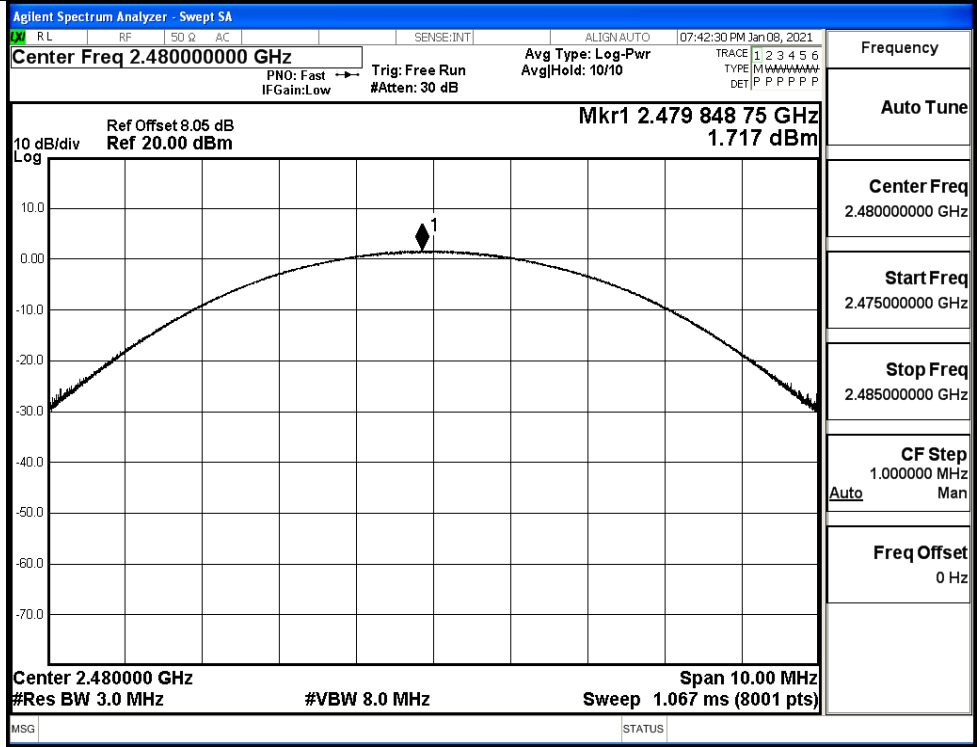
8DPSK/LCH



8DPSK/MCH

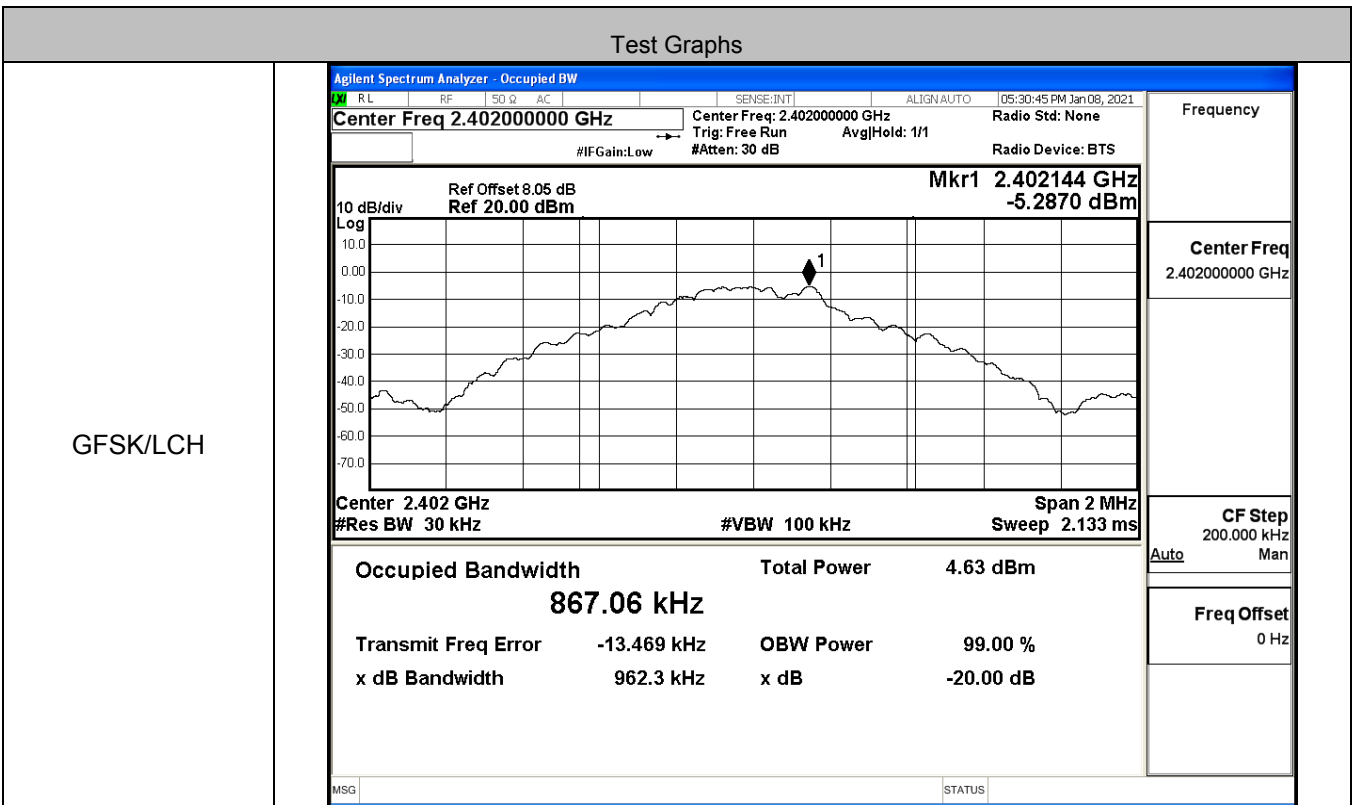


8DPSK/HCH

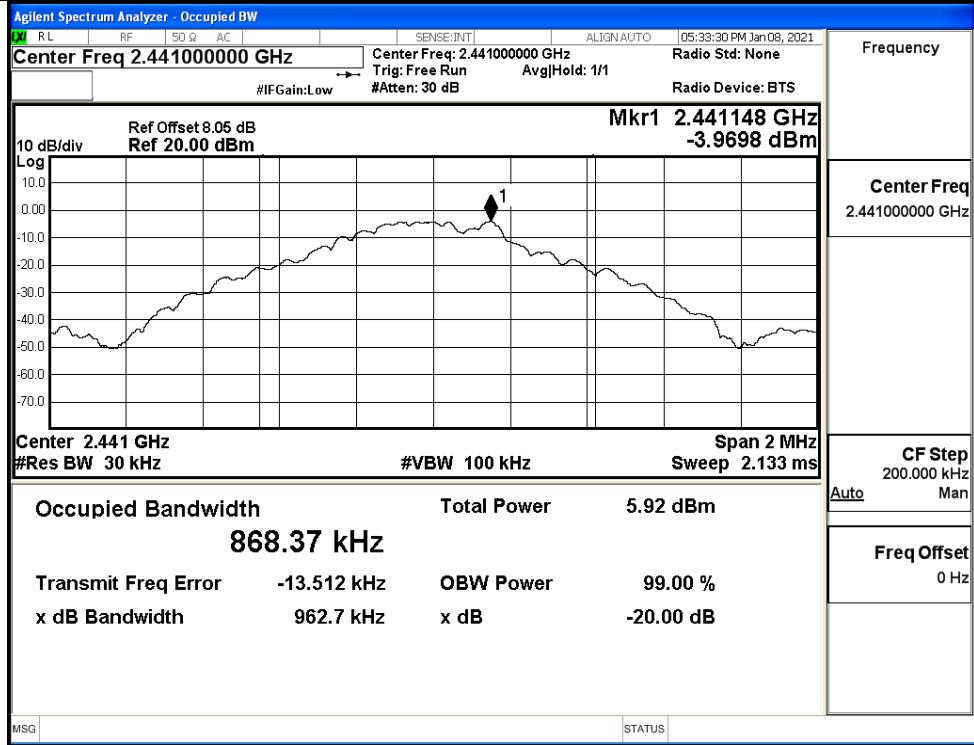


A.2 20dB Bandwidth

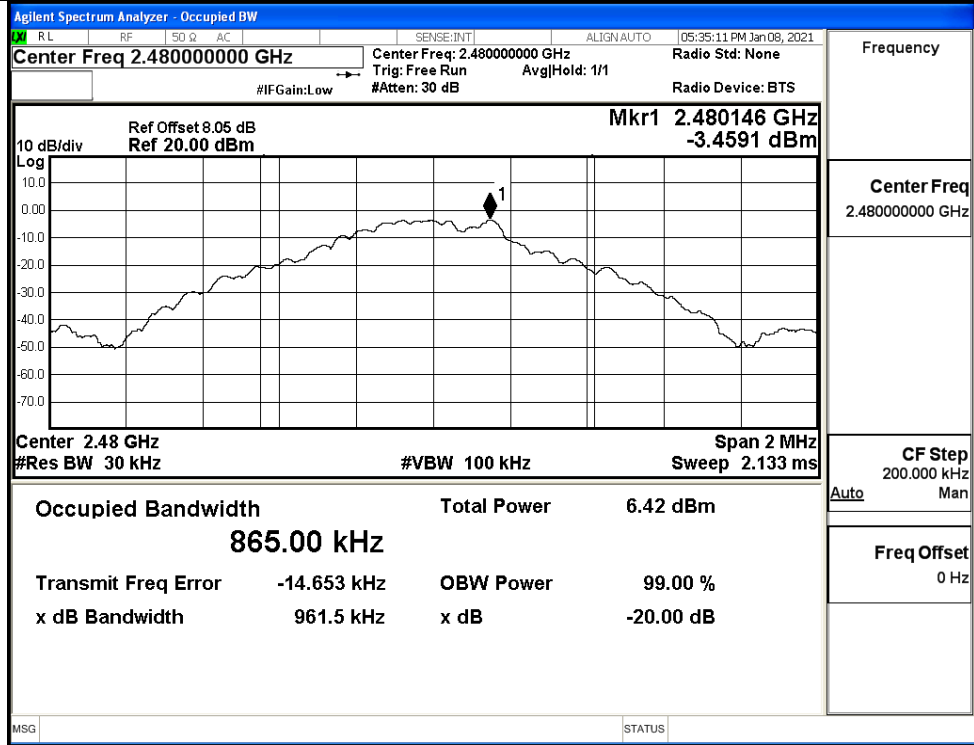
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9623	Not Specified	PASS
	MCH	0.9627	Not Specified	PASS
	HCH	0.9615	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.335	Not Specified	PASS
	MCH	1.333	Not Specified	PASS
	HCH	1.338	Not Specified	PASS
8DPSK	LCH	1.310	Not Specified	PASS
	MCH	1.311	Not Specified	PASS
	HCH	1.311	Not Specified	PASS



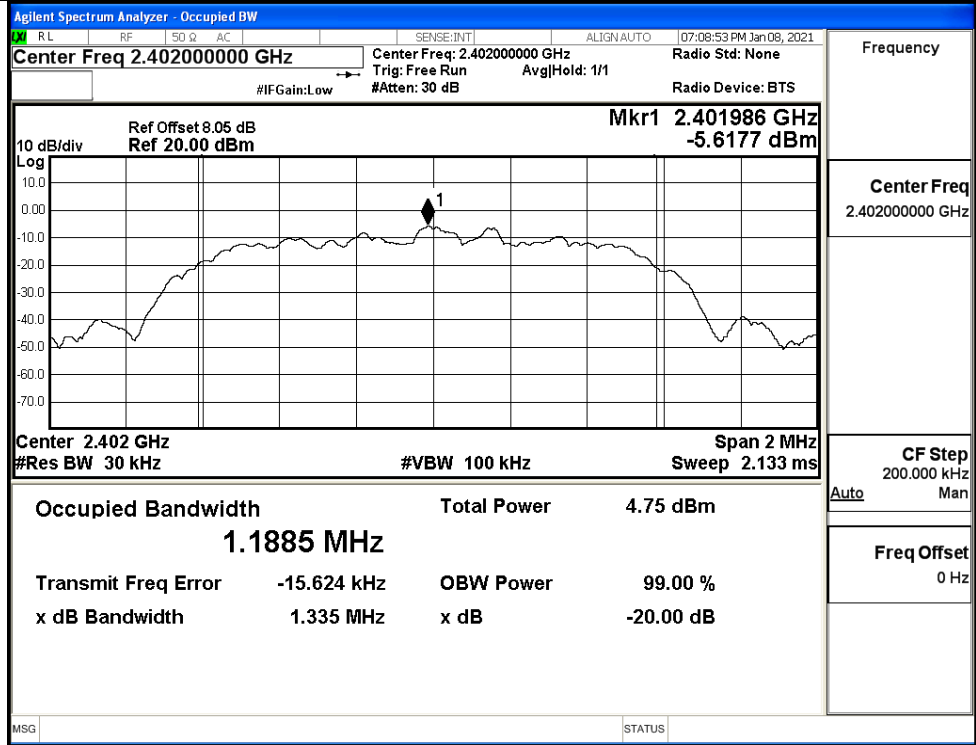
GFSK/MCH



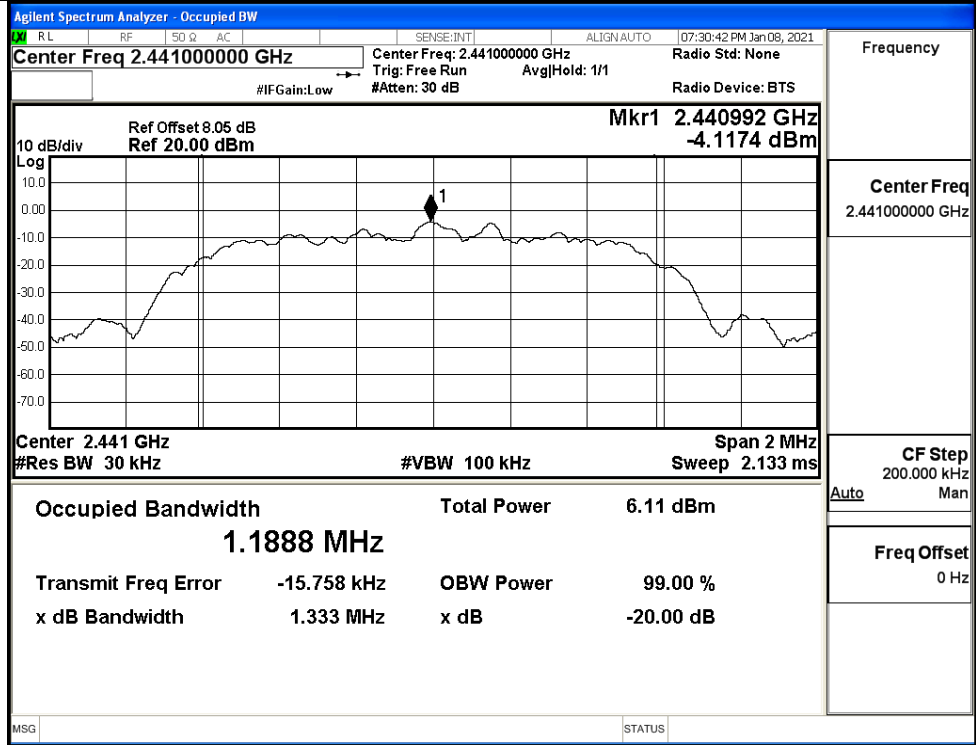
GFSK/HCH



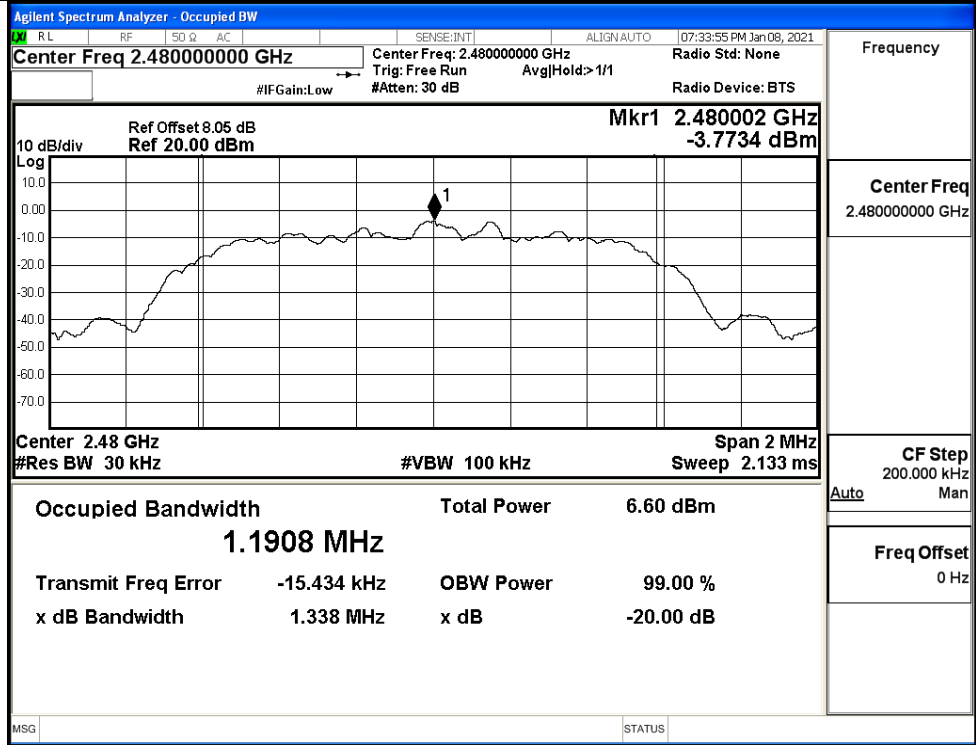
π /4DQPSK/LCH



π /4DQPSK/MCH

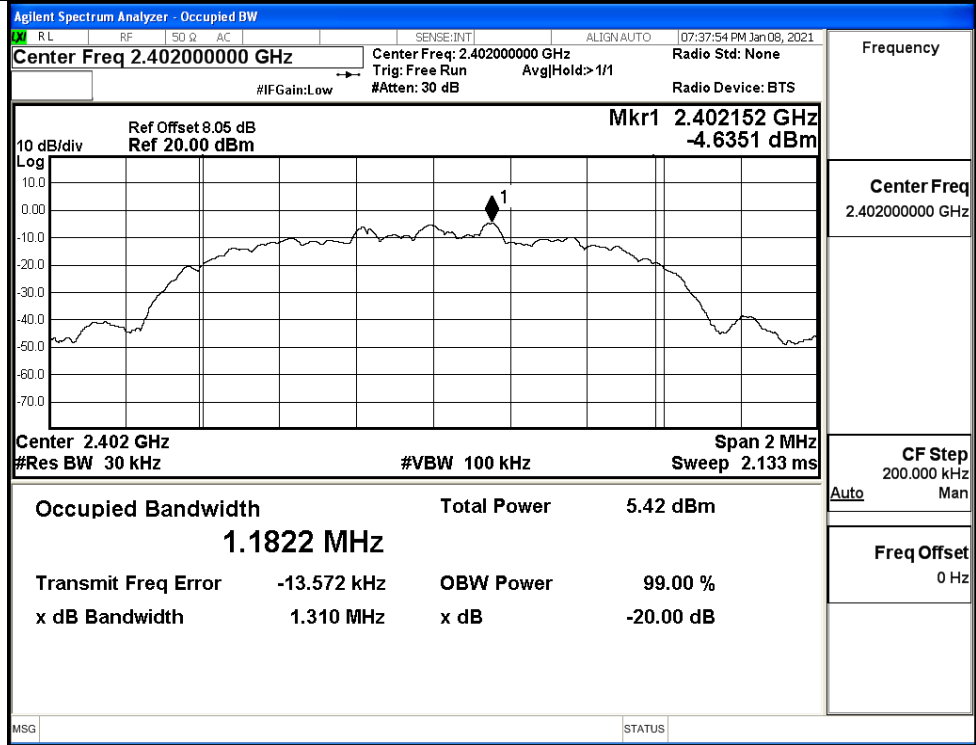


$\pi/4$ DQPSK/HCH



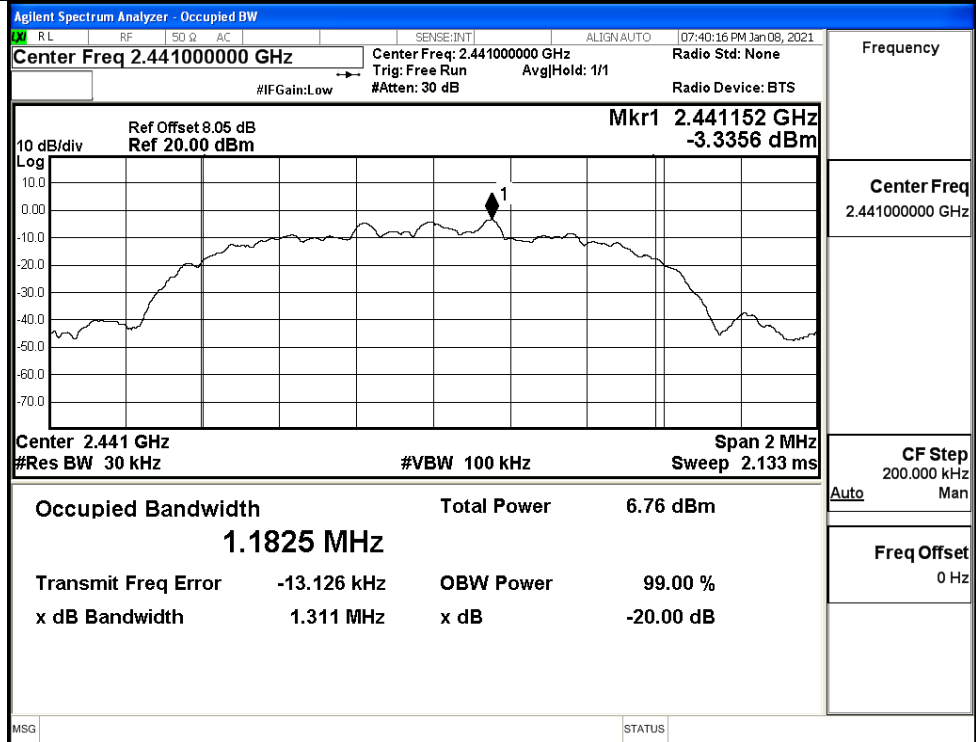
Frequency	2.48000000 GHz
Center Freq	2.48000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

8DPSK/LCH



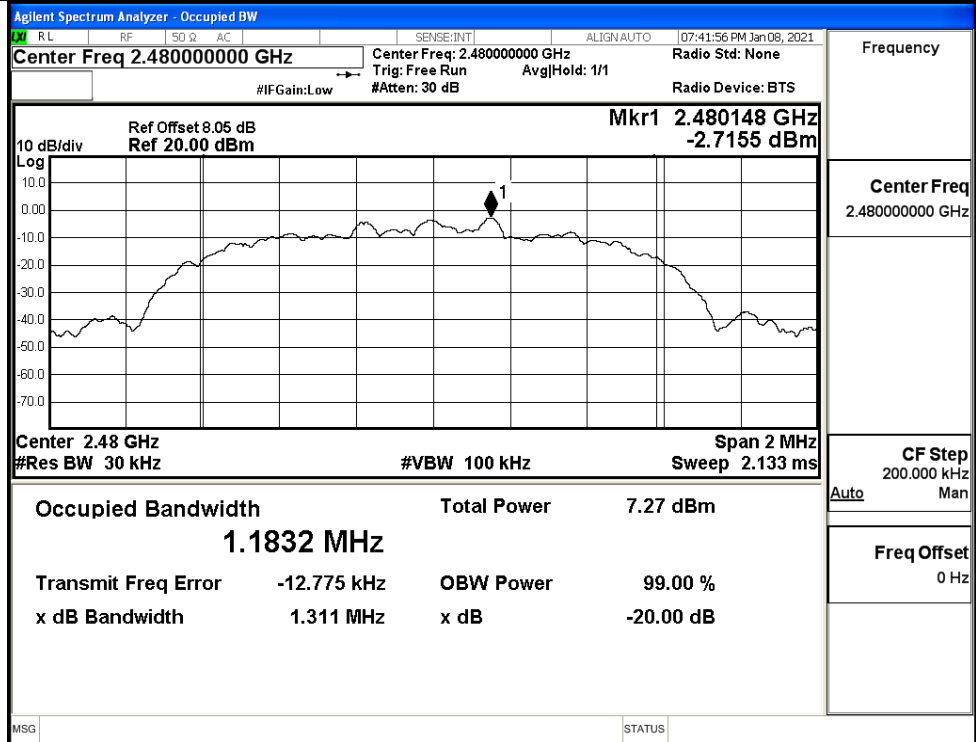
Frequency	2.40200000 GHz
Center Freq	2.40200000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

8DPSK/MCH



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

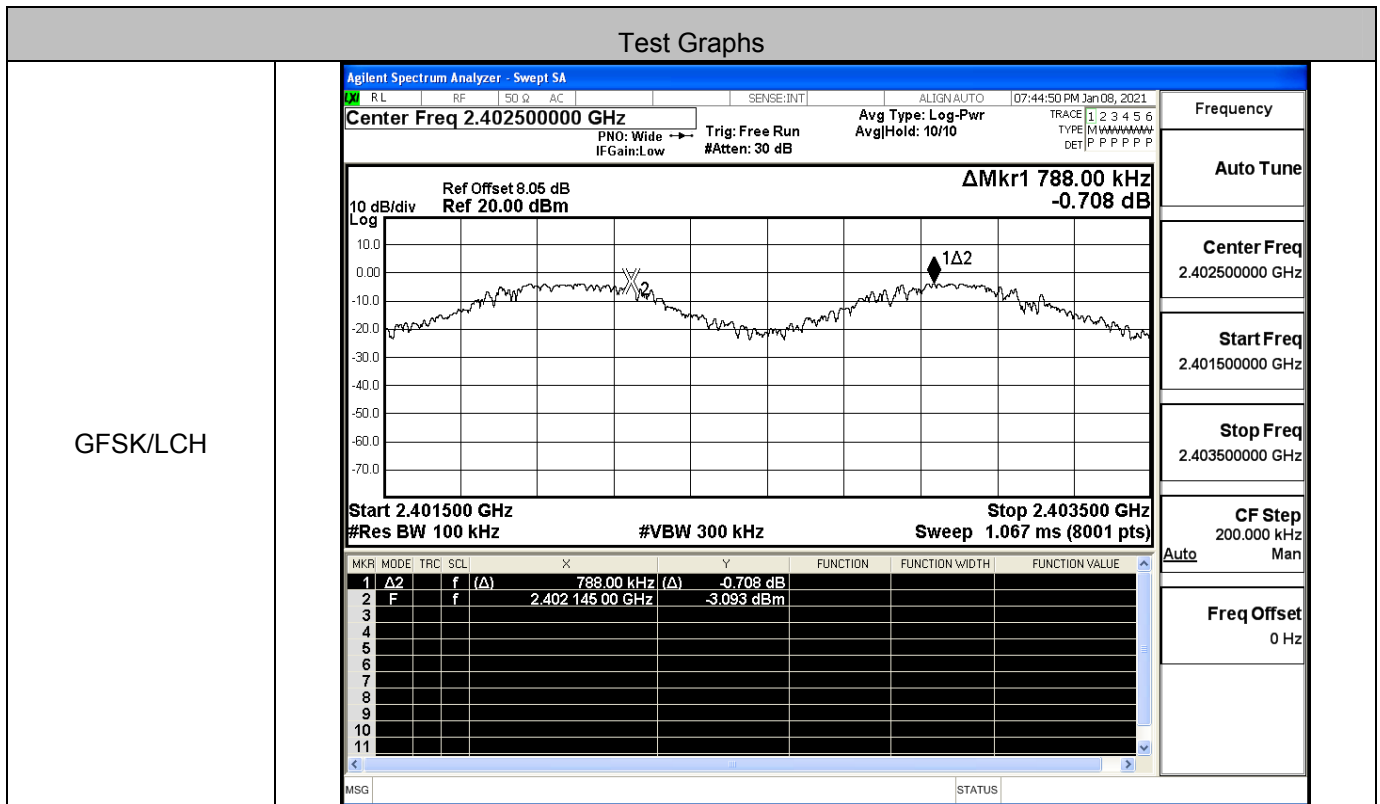
8DPSK/HCH



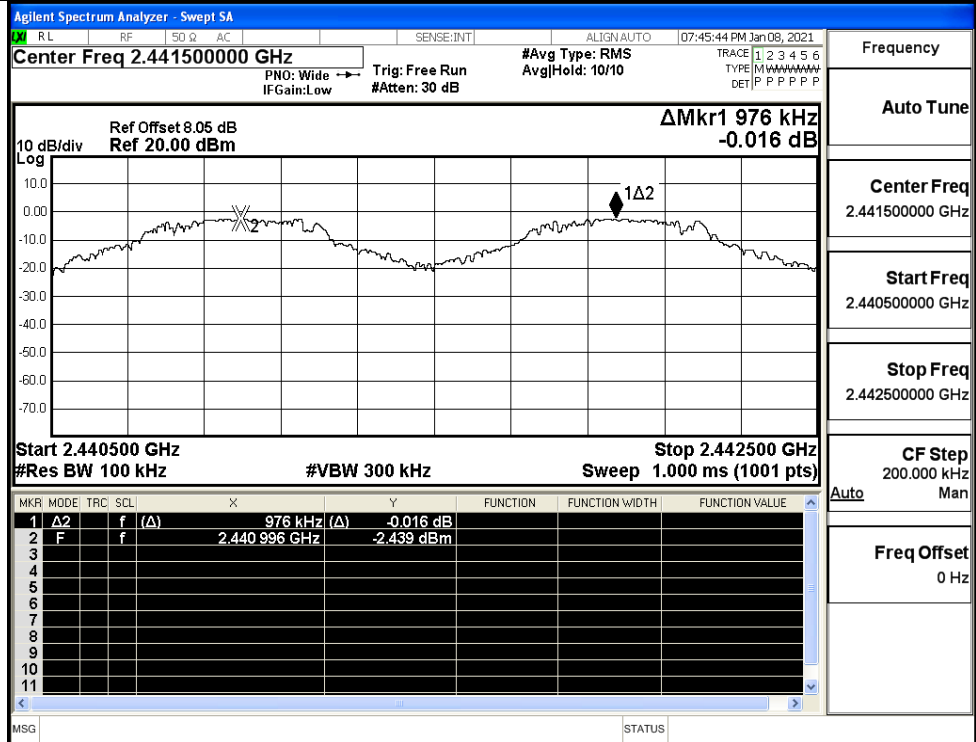
Frequency	2.48000000 GHz
Center Freq	2.48000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.788	0.642	PASS
	MCH	0.976	0.642	PASS
	HCH	1.040	0.642	PASS
π/4DQPSK	LCH	0.964	0.892	PASS
	MCH	0.986	0.892	PASS
	HCH	1.086	0.892	PASS
8DPSK	LCH	1.050	0.874	PASS
	MCH	0.960	0.874	PASS
	HCH	1.036	0.874	PASS

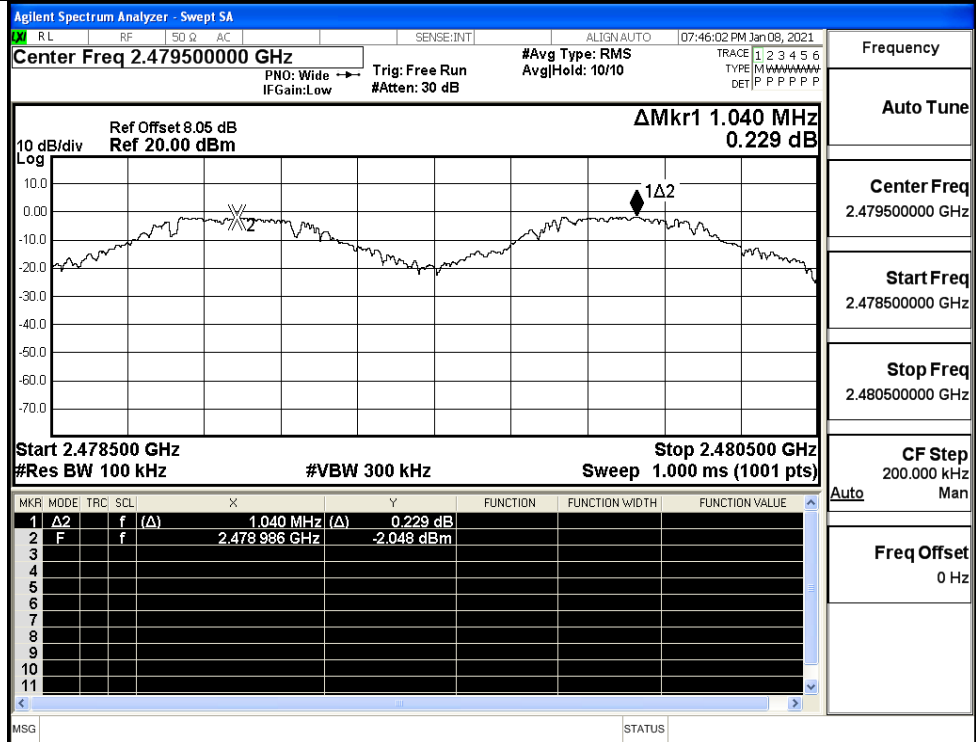


GFSK/MCH



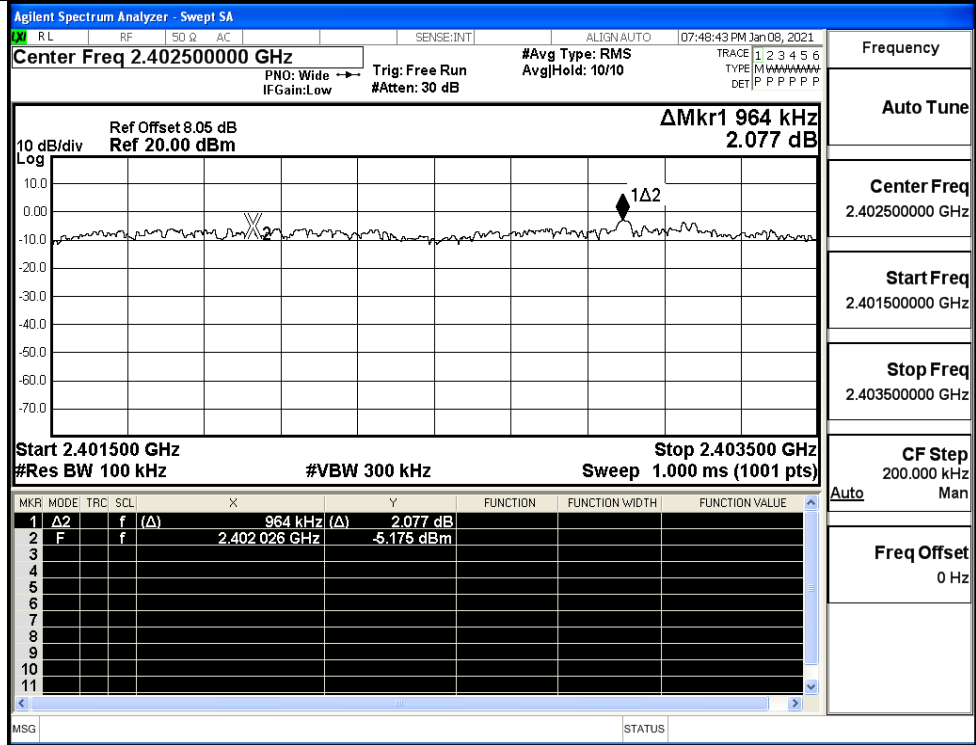
Frequency
Auto Tune
Center Freq 2.441500000 GHz
Start Freq 2.440500000 GHz
Stop Freq 2.442500000 GHz
CF Step 200.000 kHz Auto Man
Freq Offset 0 Hz

GFSK/HCH



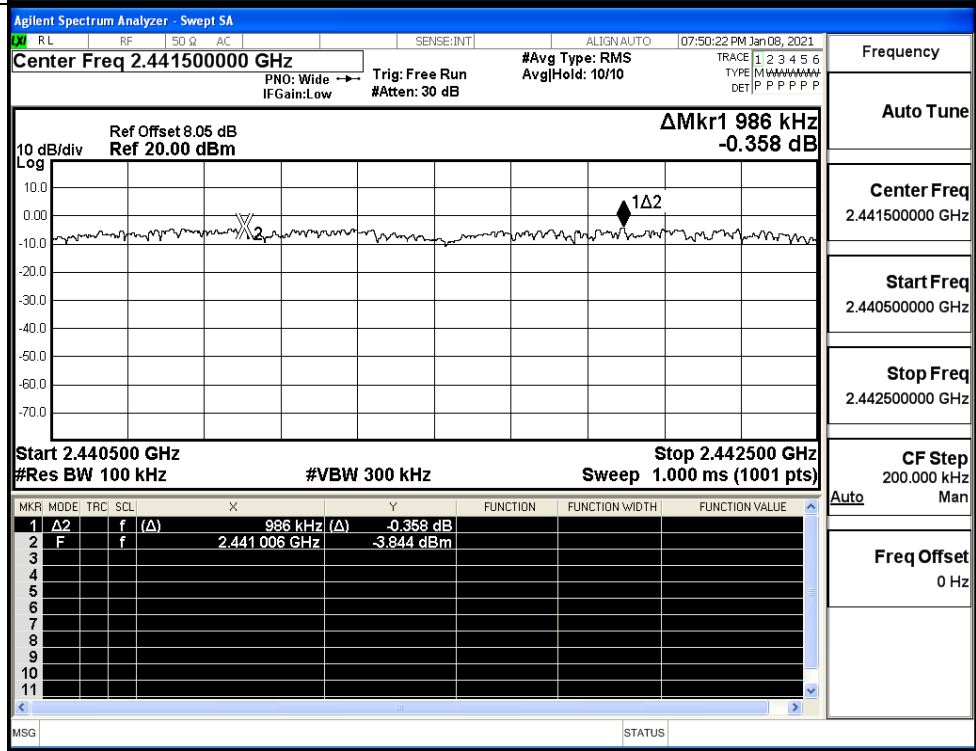
Frequency
Auto Tune
Center Freq 2.479500000 GHz
Start Freq 2.478500000 GHz
Stop Freq 2.480500000 GHz
CF Step 200.000 kHz Auto Man
Freq Offset 0 Hz

π/4DQPSK/LCH



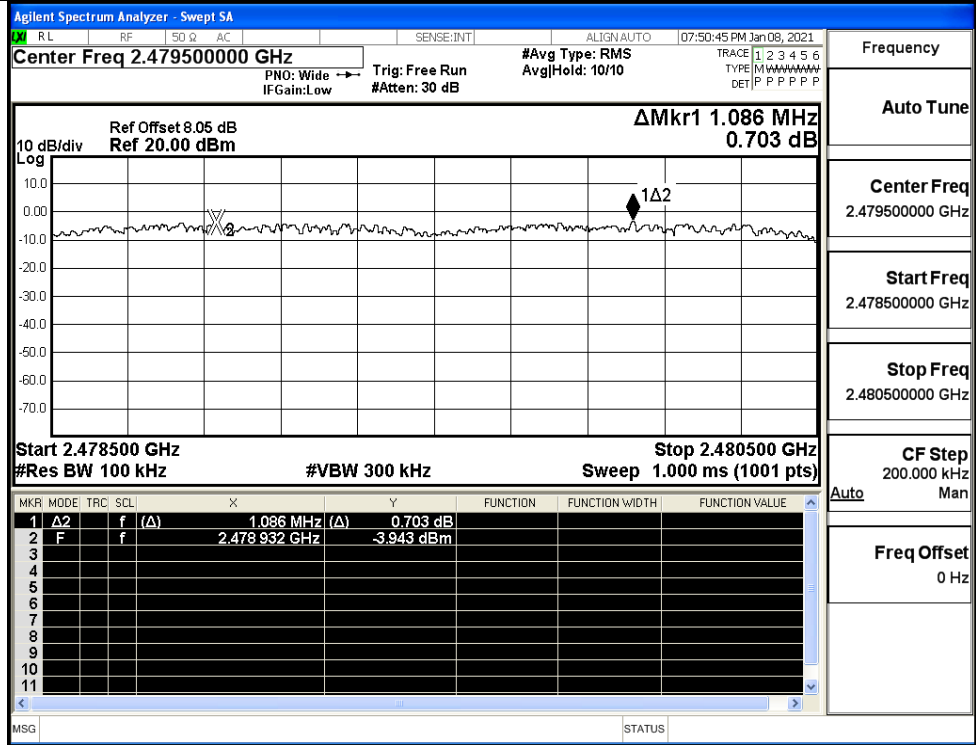
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Auto Tune	
Center Freq	2.402500000 GHz
Start Freq	2.401500000 GHz
Stop Freq	2.403500000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

π/4DQPSK/MCH

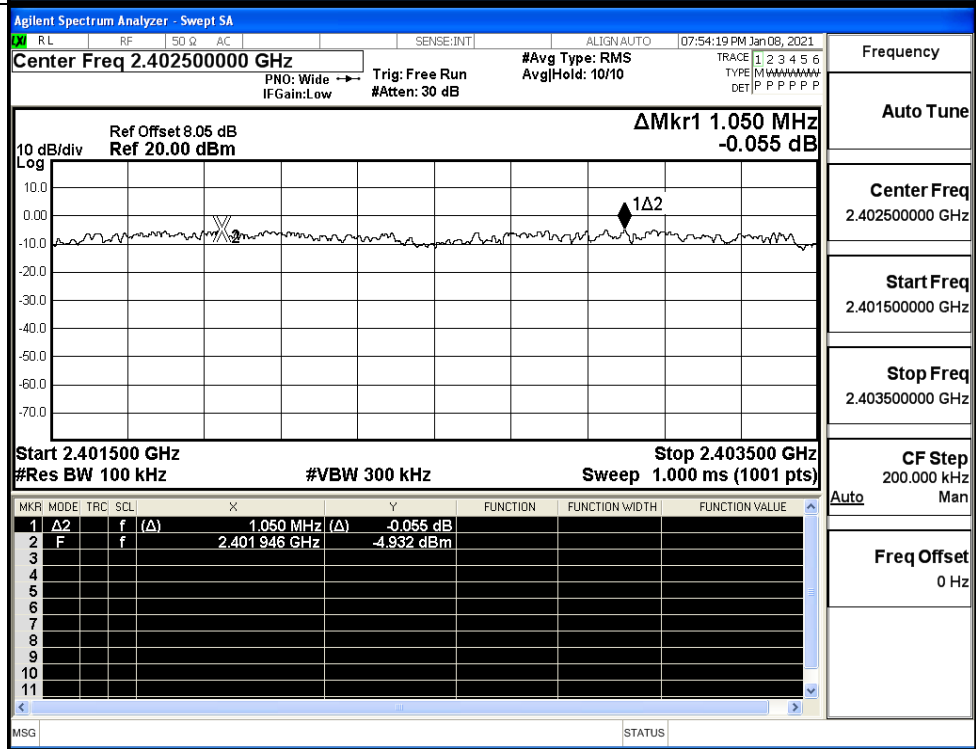


Frequency	2.441500000 GHz
Auto Tune	
Center Freq	2.441500000 GHz
Start Freq	2.440500000 GHz
Stop Freq	2.442500000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

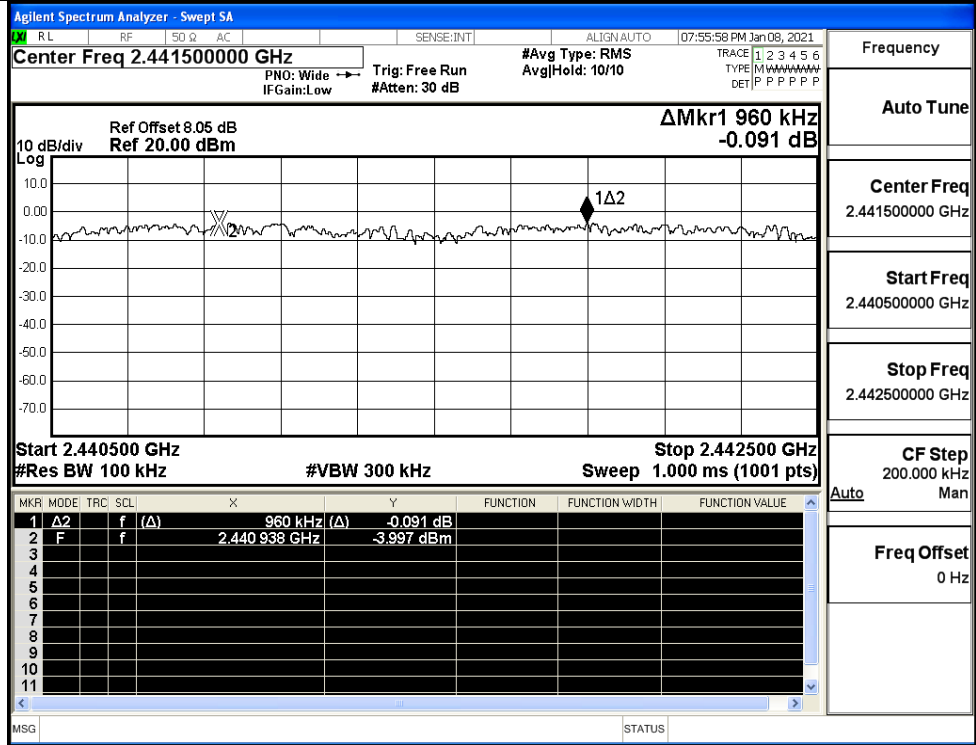
π/4DQPSK/HCH



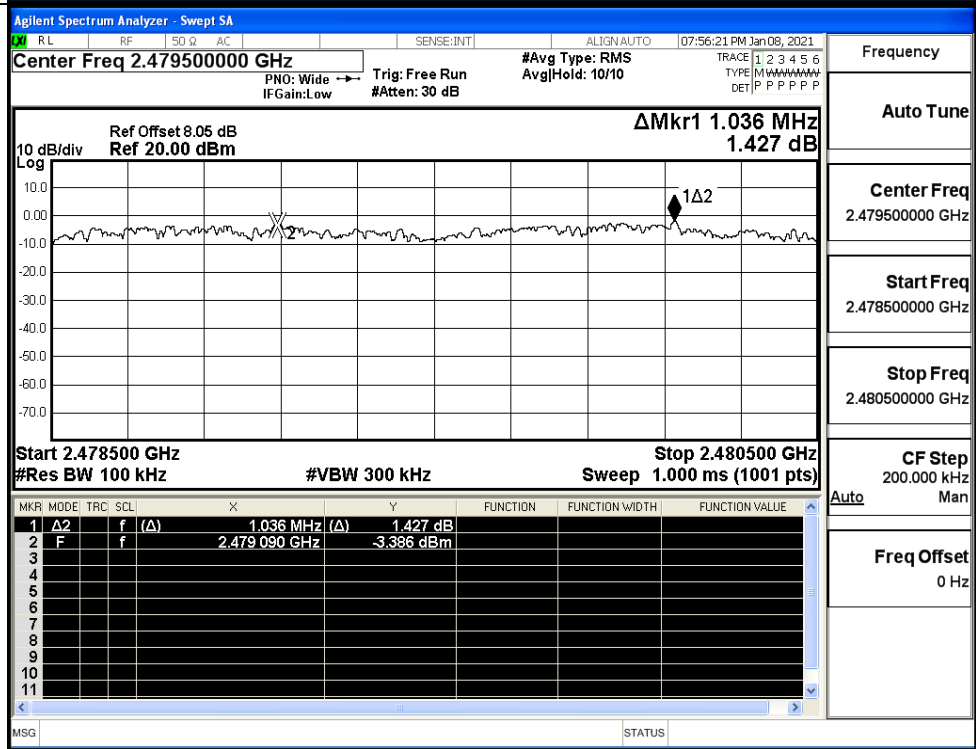
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH



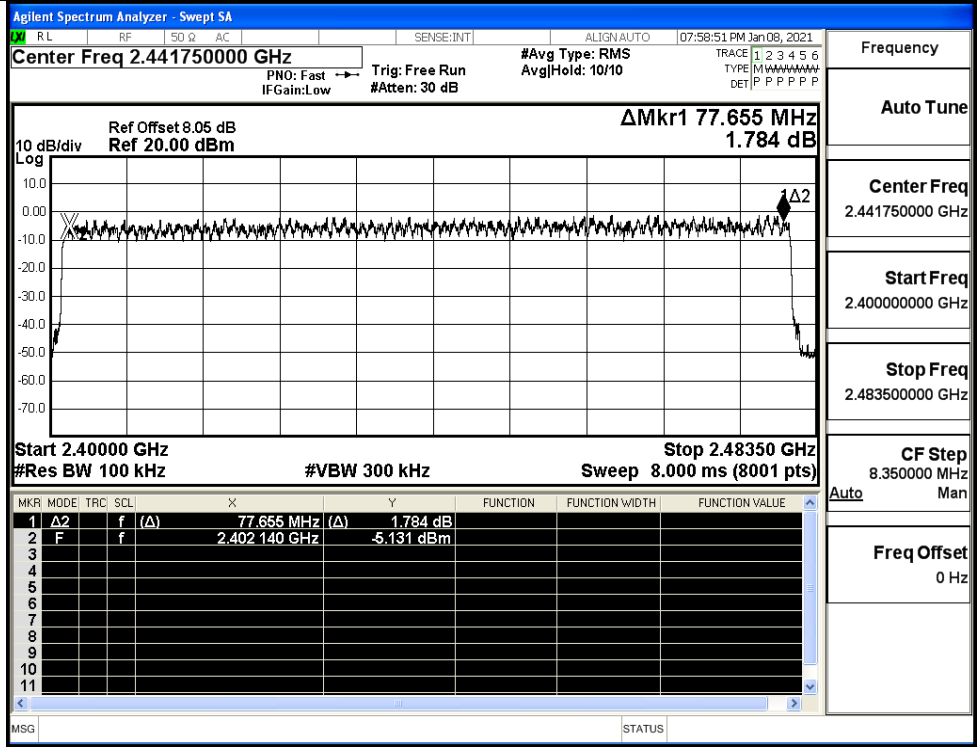
A.4 Hopping Channel Number

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

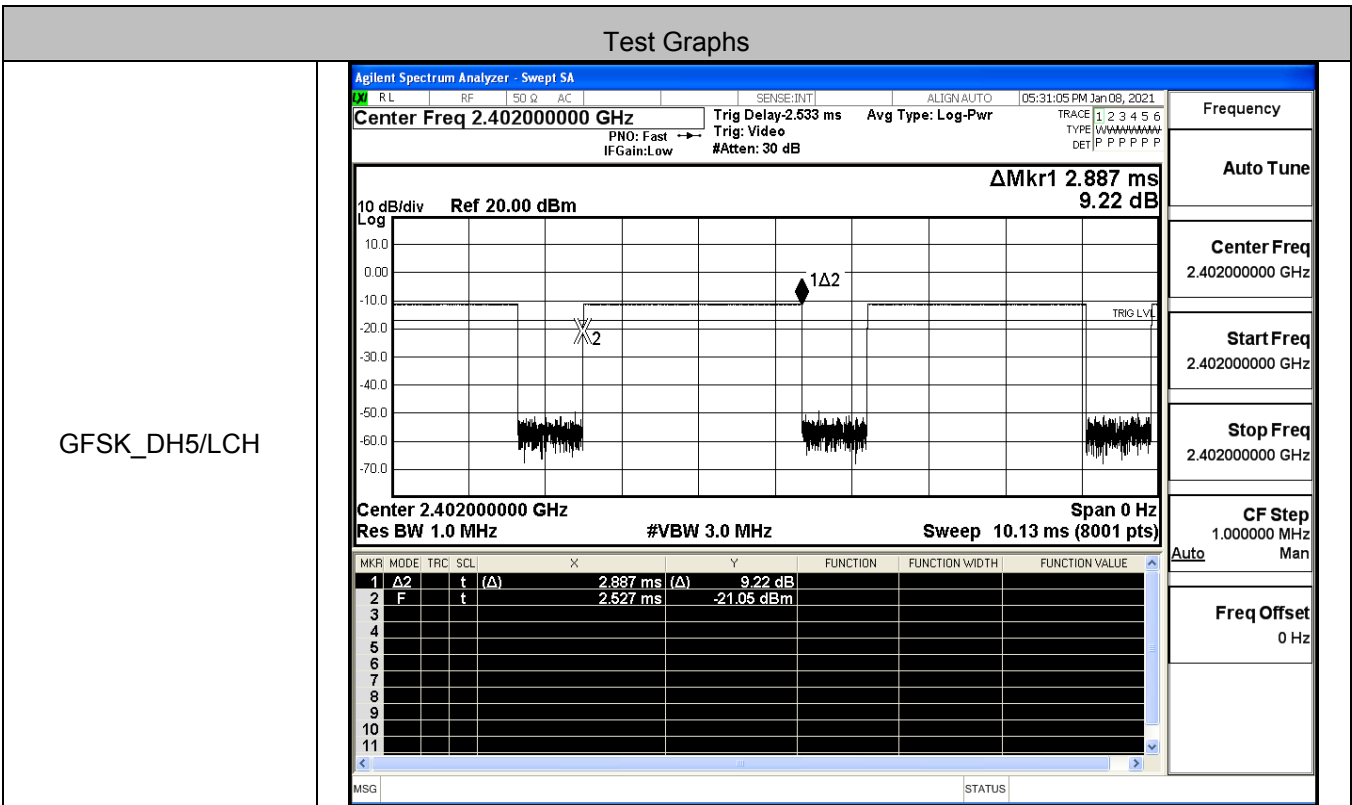
<p>GFSK/Hop</p>	<p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.441750000 GHz</p> <p>Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>ΔMkr1 77.999 MHz 1.932 dB</p> <p>Start 2.40000 GHz Stop 2.48350 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 8.000 ms (8001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</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>77.999 MHz (Δ)</td> <td>1.932 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td>(Δ)</td> <td>2.402150 GHz</td> <td>-3.181 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)	77.999 MHz (Δ)	1.932 dB				2	F	f	(Δ)	2.402150 GHz	-3.181 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)	77.999 MHz (Δ)	1.932 dB																								
2	F	f	(Δ)	2.402150 GHz	-3.181 dBm																								
<p>$\pi/4$DQPSK/Hop</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 77.989 MHz 1.909 dB</p> <p>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>77.989 MHz (Δ)</td> <td>1.909 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td>(Δ)</td> <td>2.401847 GHz</td> <td>-5.401 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)	77.989 MHz (Δ)	1.909 dB				2	F	f	(Δ)	2.401847 GHz	-5.401 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)	77.989 MHz (Δ)	1.909 dB																								
2	F	f	(Δ)	2.401847 GHz	-5.401 dBm																								

8DPSK/Hop

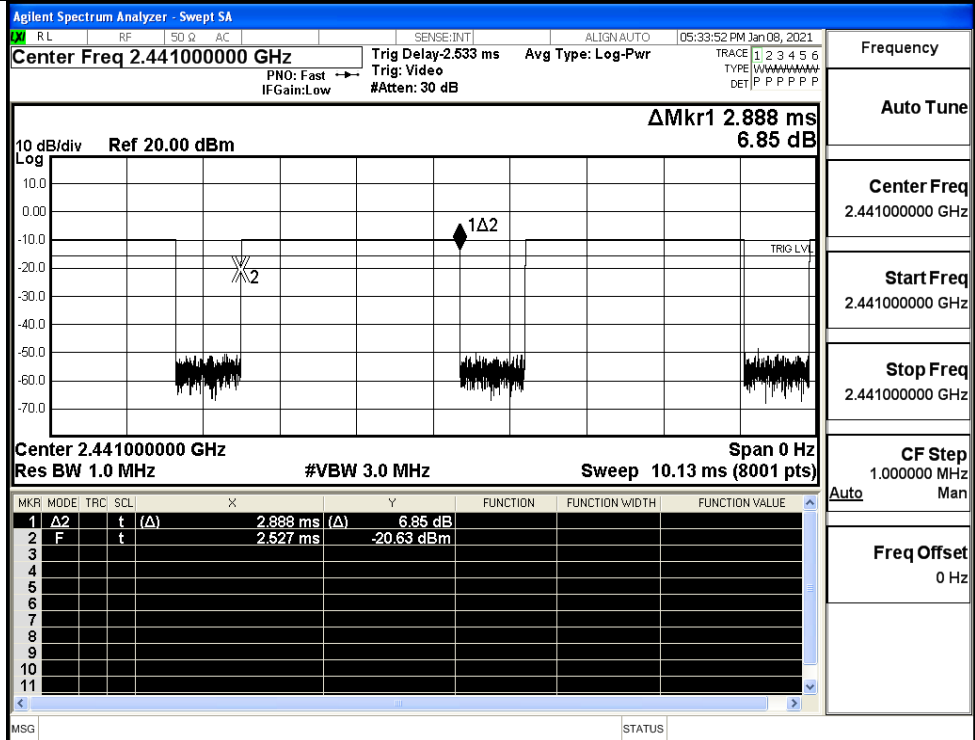


A.5 Dwell Time

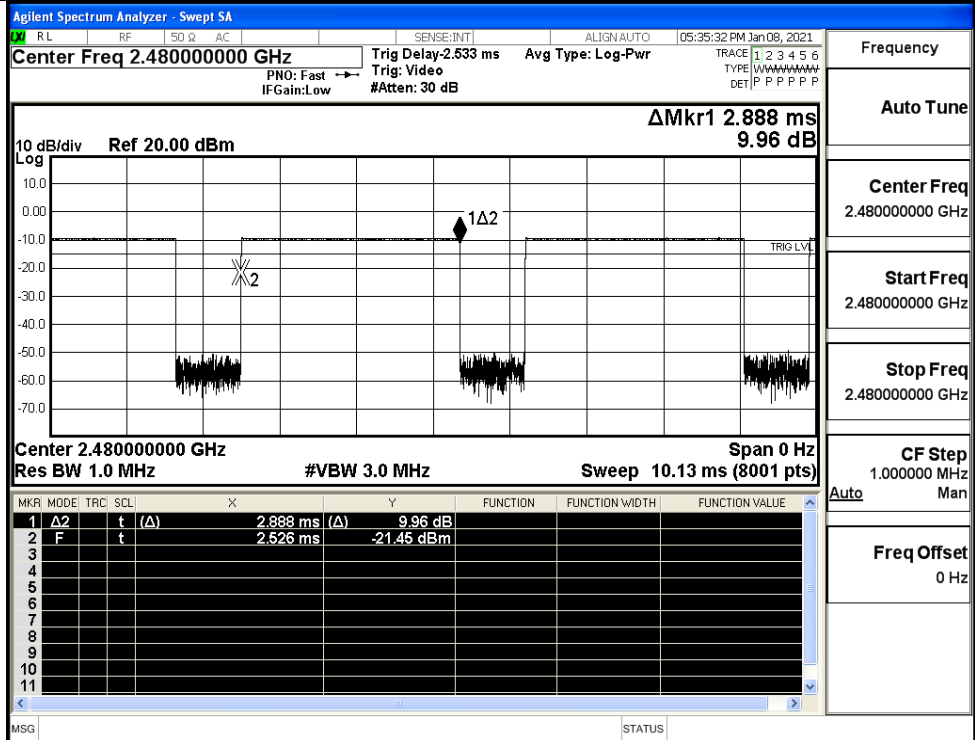
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.89	106.7	0.308	0.4	PASS
	DH5	MCH	2.89	106.7	0.308	0.4	PASS
	DH5	HCH	2.89	106.7	0.308	0.4	PASS
π/4DQPSK	2DH5	LCH	2.89	106.7	0.308	0.4	PASS
	2DH5	MCH	2.89	106.7	0.308	0.4	PASS
	2DH5	HCH	2.89	106.7	0.308	0.4	PASS
8DPSK	3DH5	LCH	2.89	106.7	0.309	0.4	PASS
	3DH5	MCH	2.89	106.7	0.309	0.4	PASS
	3DH5	HCH	2.89	106.7	0.308	0.4	PASS



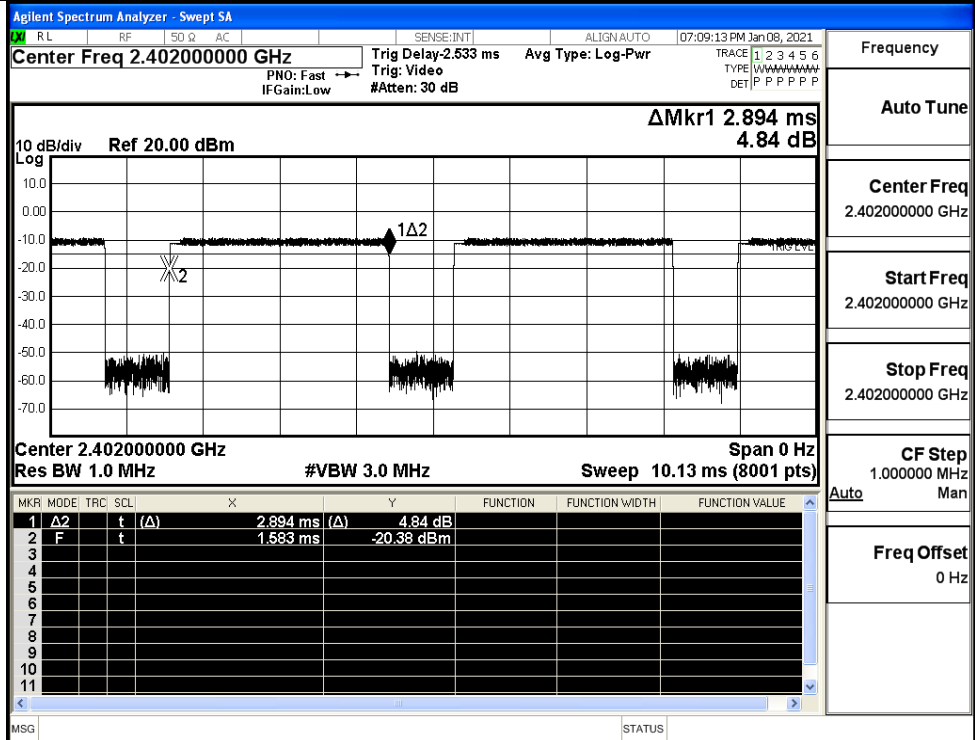
GFSK_DH5/MCH



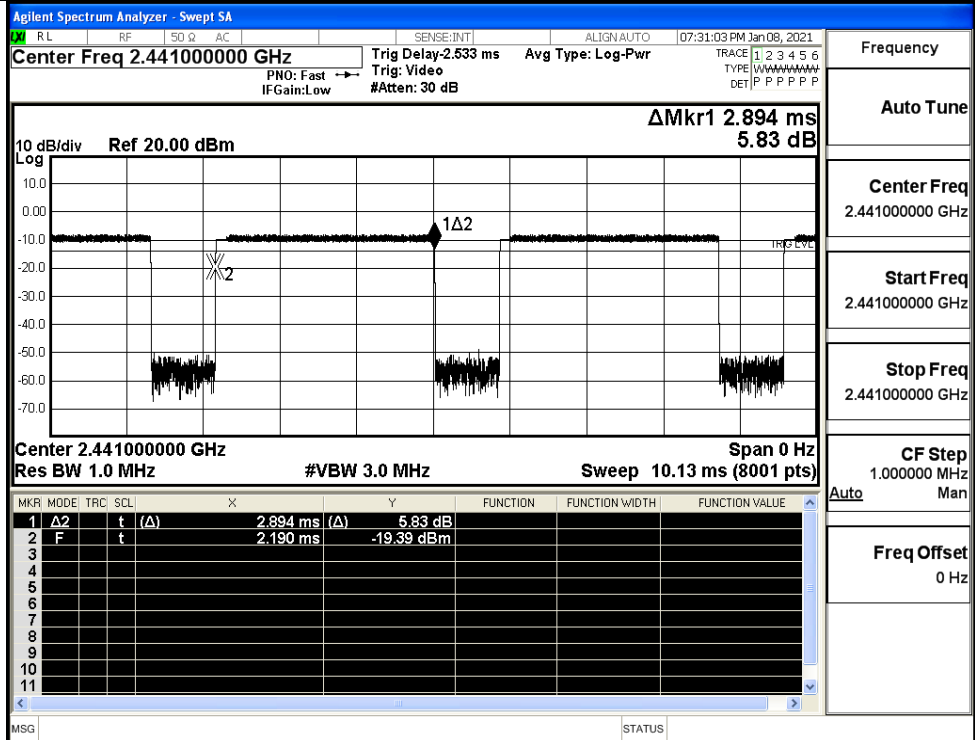
GFSK_DH5/HCH



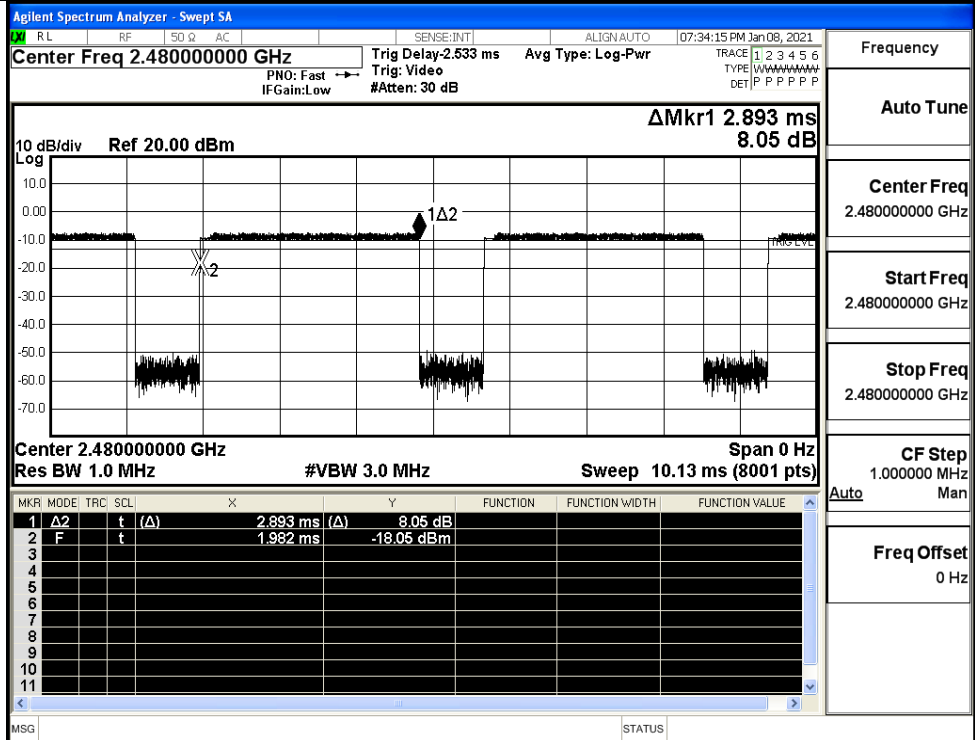
$\pi/4$ DQPSK
_2DH5/LCH



$\pi/4$ DQPSK
_2DH5/MCH

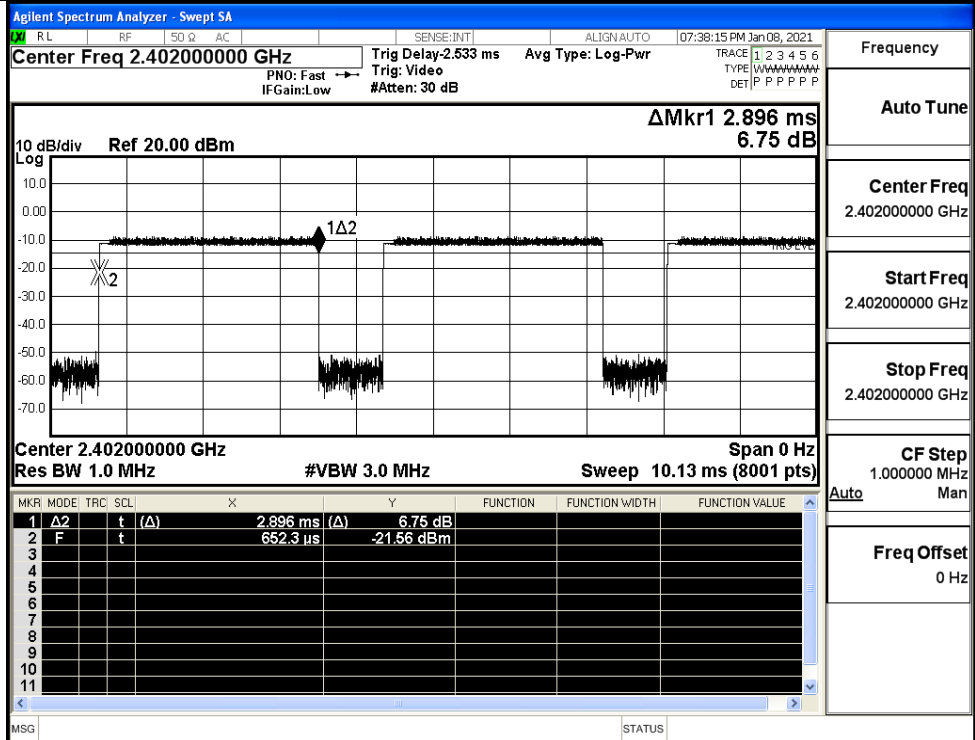


$\pi/4$ DQPSK
_2DH5/HCH



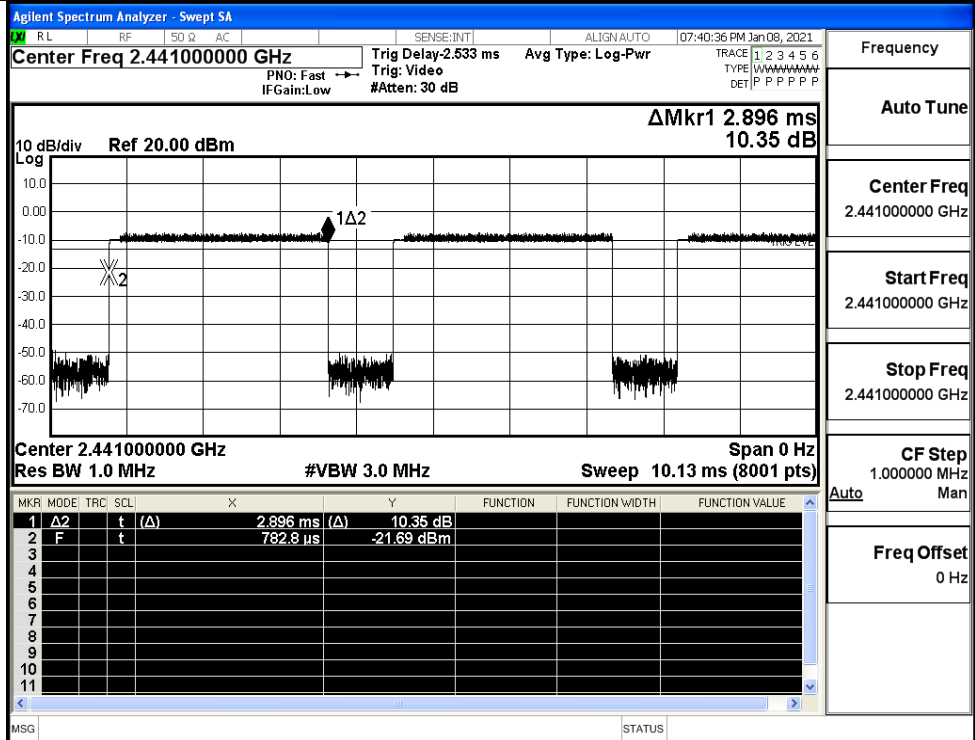
Frequency	
Auto Tune	
Center Freq	2.48000000 GHz
Start Freq	2.480000000 GHz
Stop Freq	2.480000000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

8DPSK_3DH5/LCH

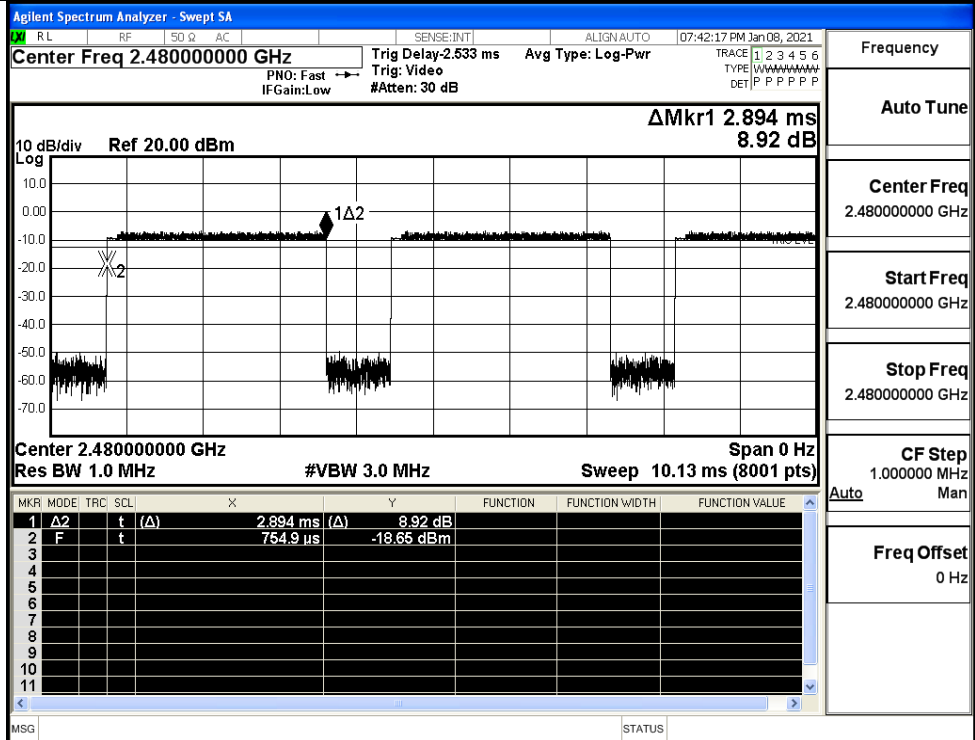


Frequency	
Auto Tune	
Center Freq	2.40200000 GHz
Start Freq	2.402000000 GHz
Stop Freq	2.402000000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

8DPSK_3DH5/MCH



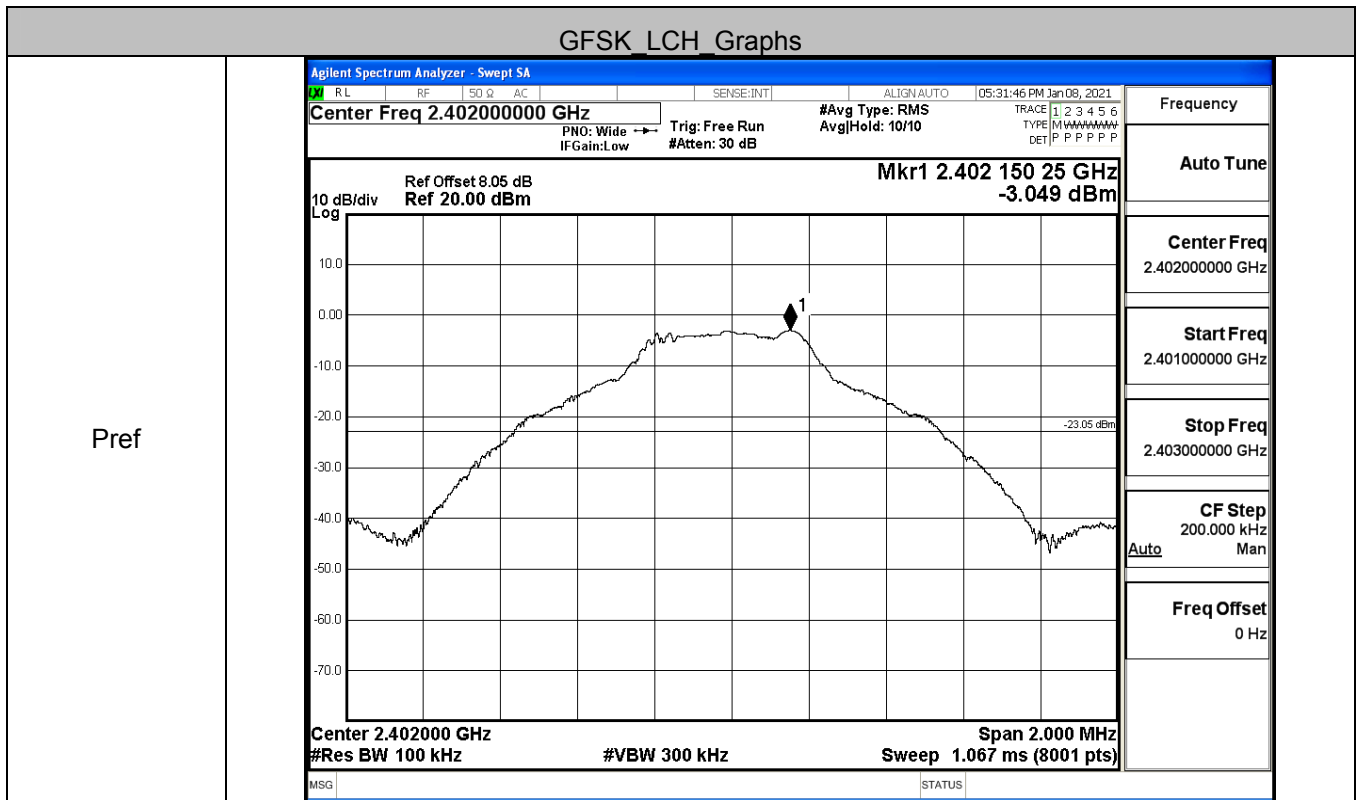
8DPSK_3DH5/HCH

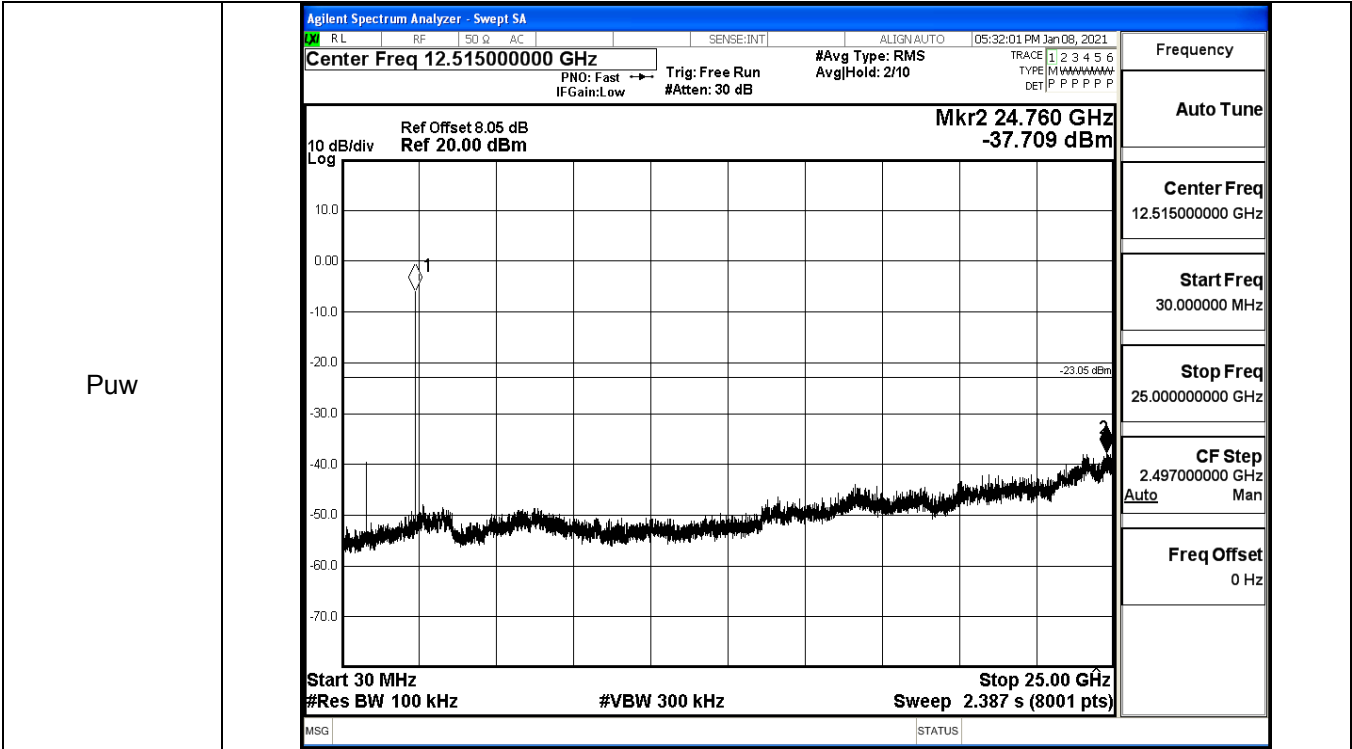


A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-3.049	-37.709	-23.049	PASS
	MCH	-1.76	-37.317	-21.760	PASS
	HCH	-1.431	-37.341	-21.431	PASS
$\pi/4$ DQPSK	LCH	-3.168	-37.312	-23.168	PASS
	MCH	-1.812	-36.801	-21.812	PASS
	HCH	-1.666	-29.672	-21.666	PASS
8DPSK	LCH	-3.021	-37.908	-23.021	PASS
	MCH	-1.758	-37.966	-21.758	PASS
	HCH	-1.217	-37.699	-21.217	PASS

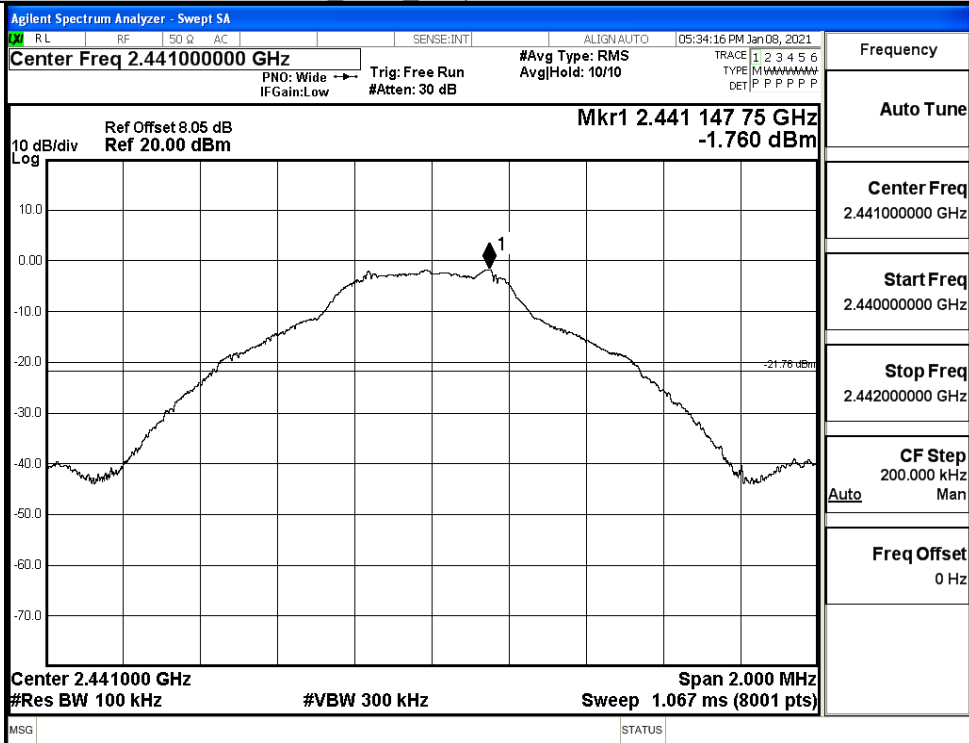
GFSK LCH Graphs



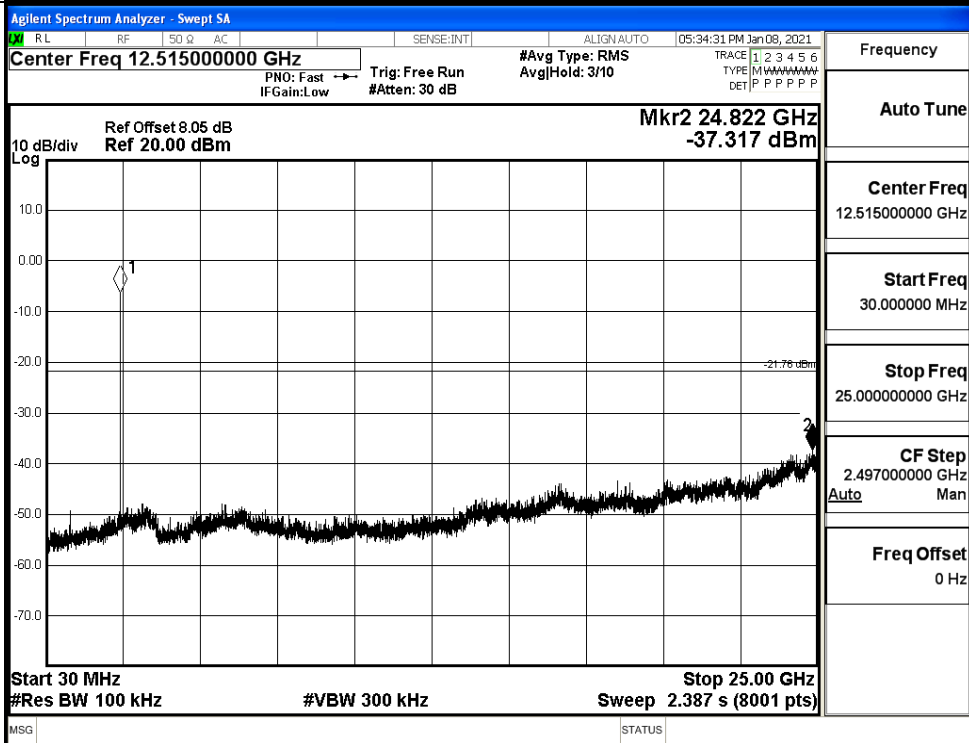


GFSK_MCH_Graphs

Pref

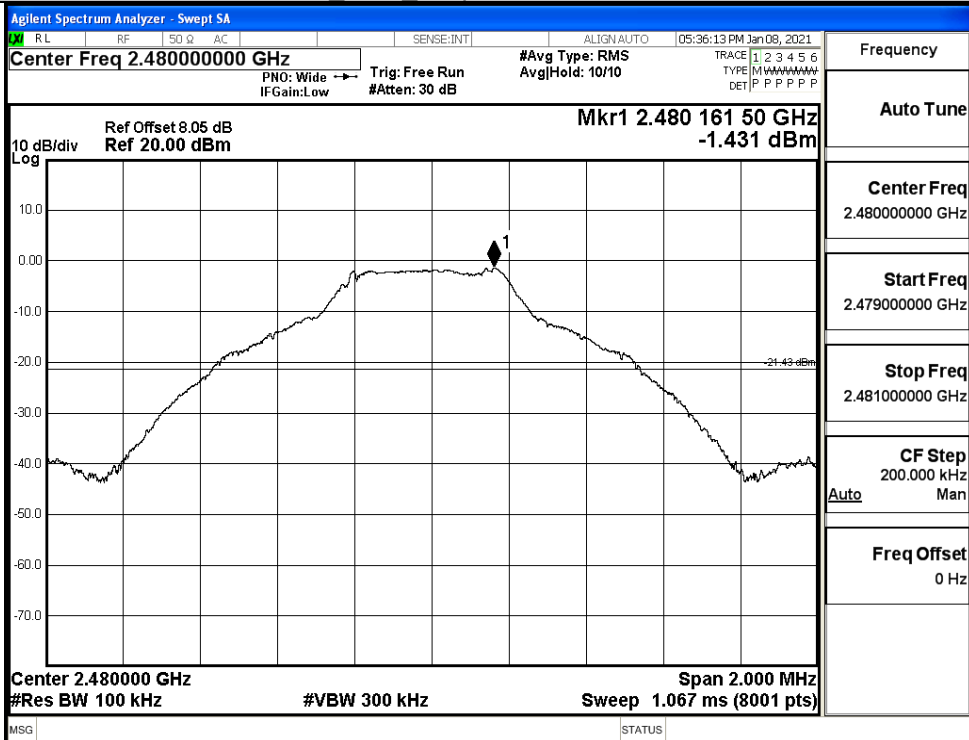


Puw

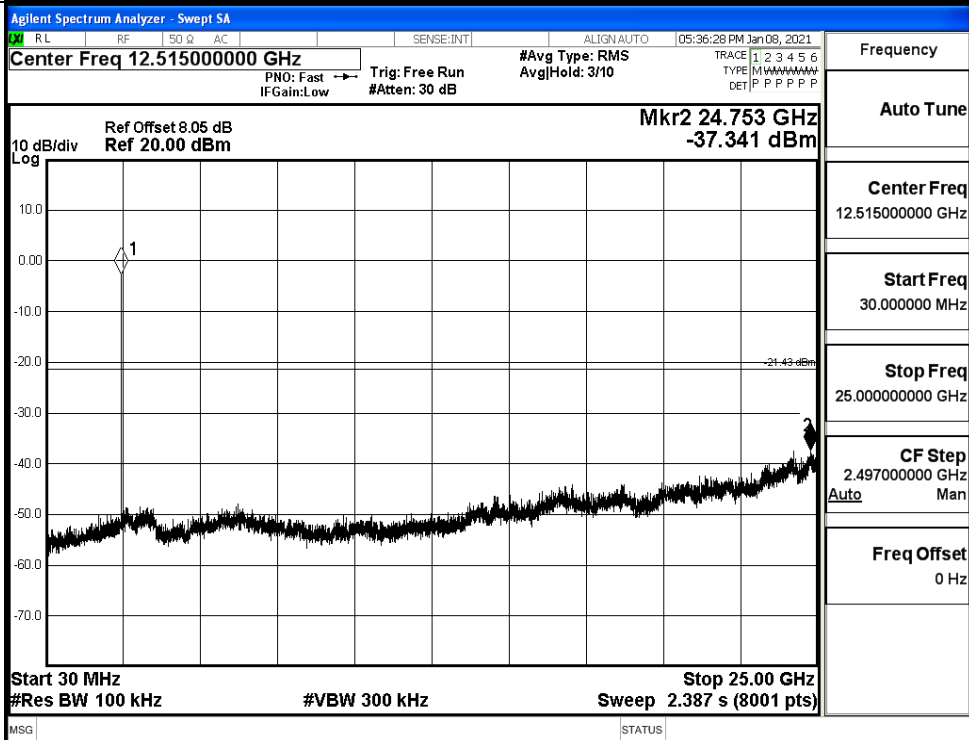


GFSK_HCH_Graphs

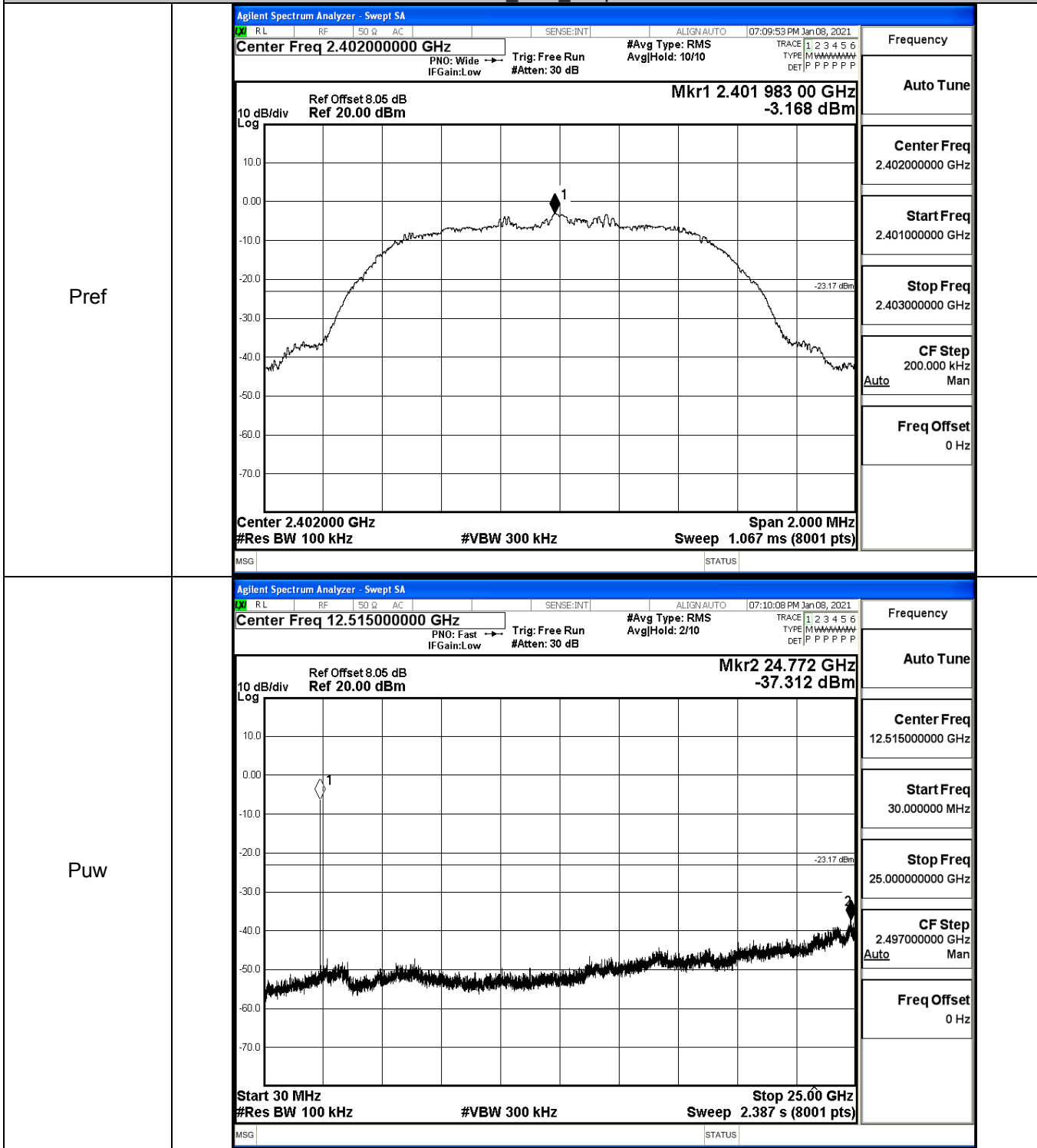
Pref



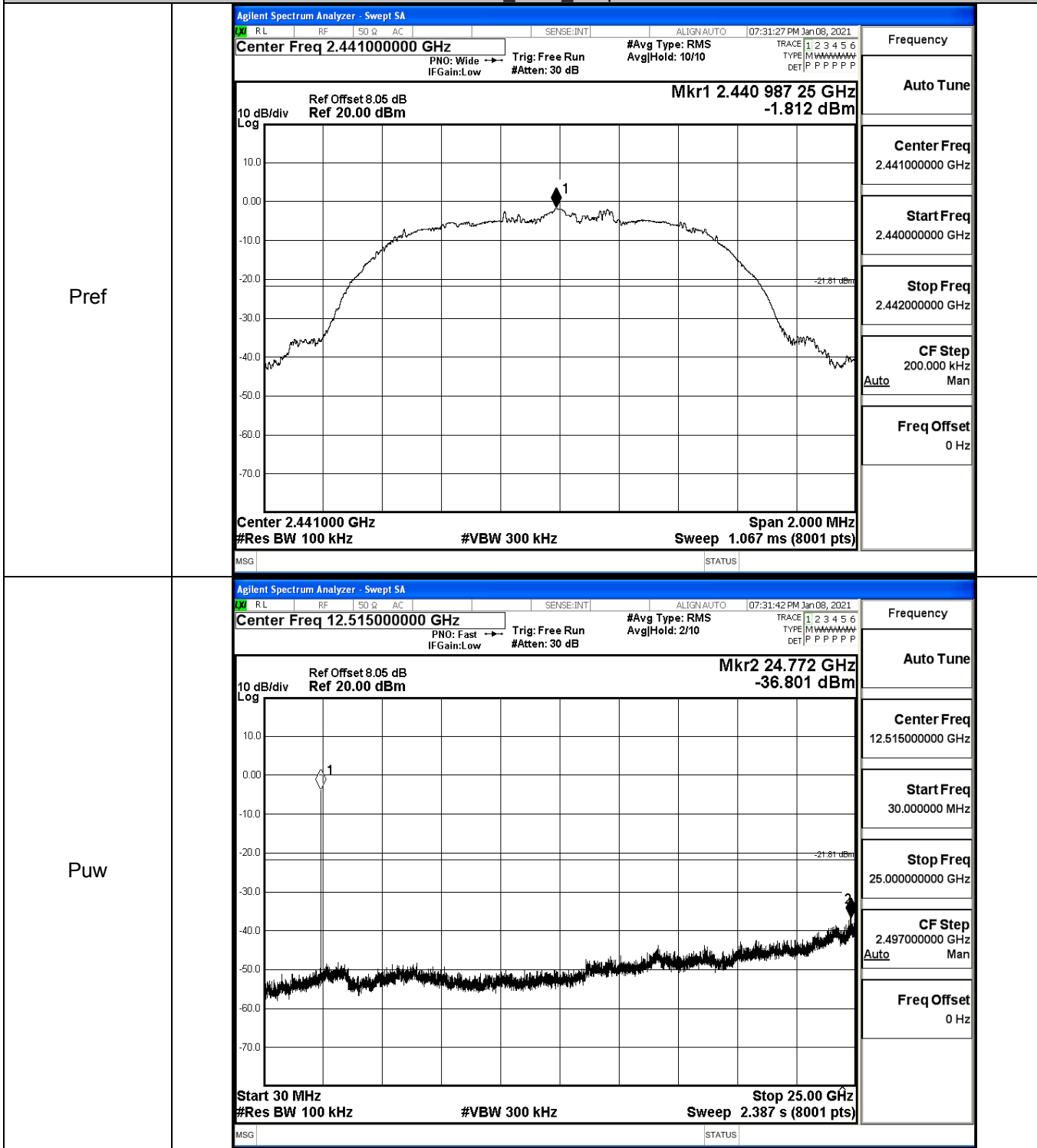
Puw



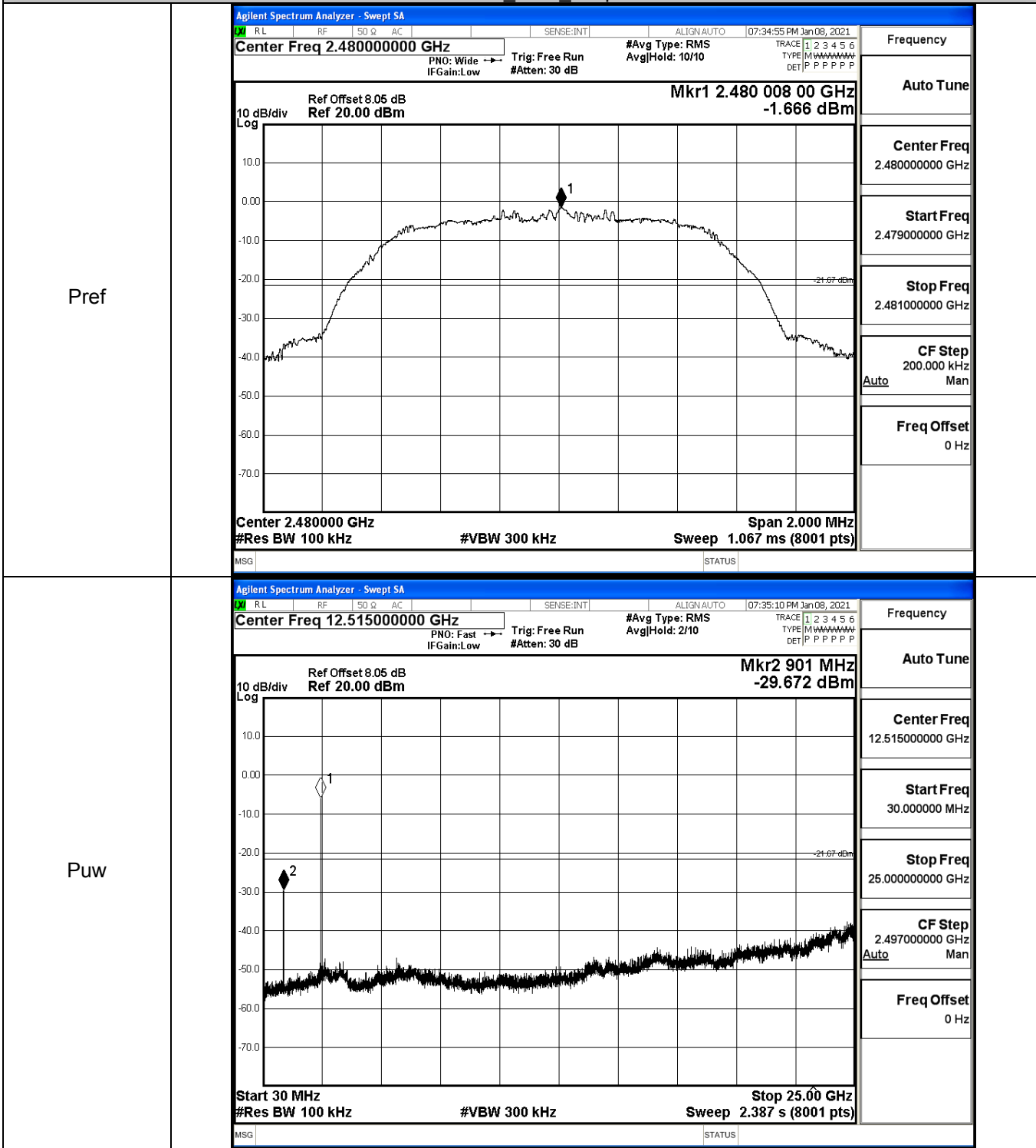
$\pi/4$ DQPSK_LCH_Graphs



$\pi/4$ DQPSK_MCH_Graphs

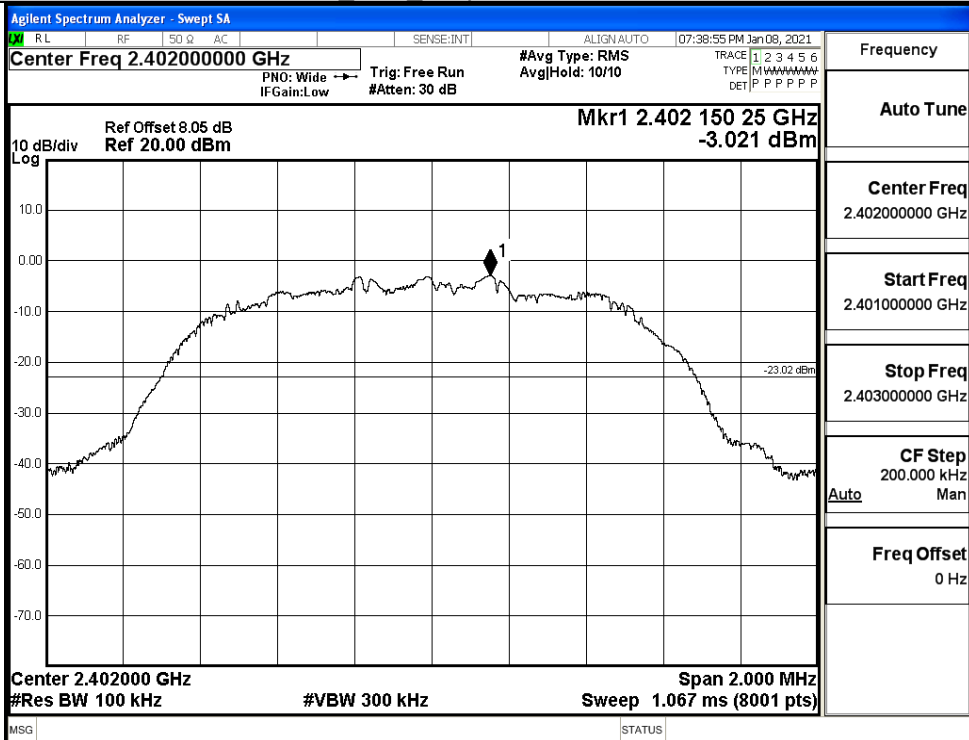


$\pi/4$ DQPSK_HCH_Graphs

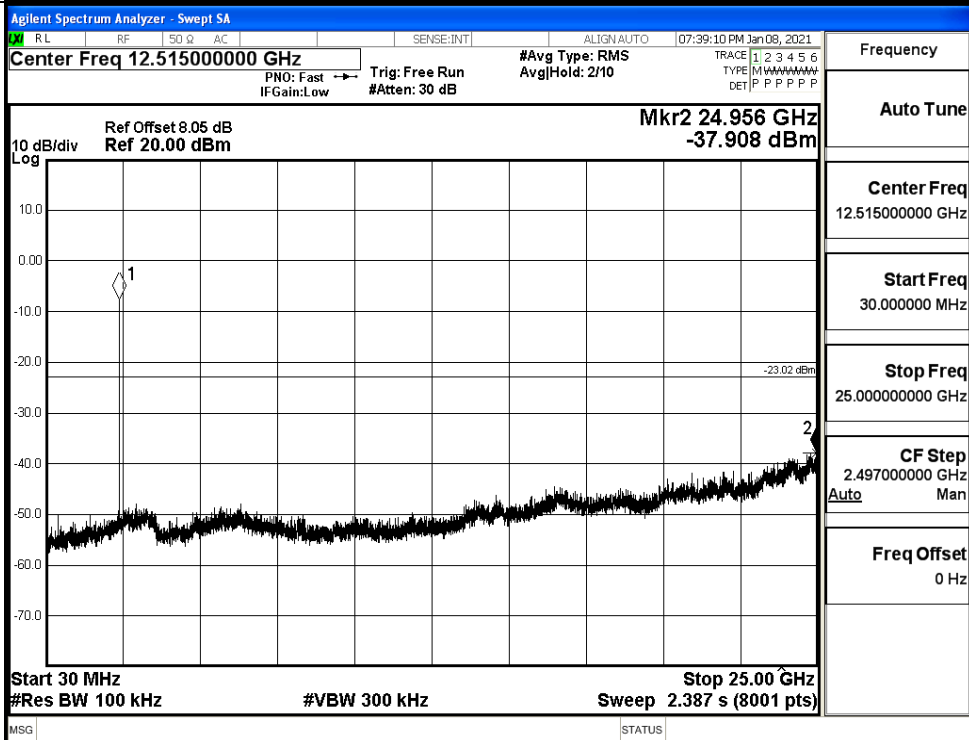


8DPSK_LCH_Graphs

Pref

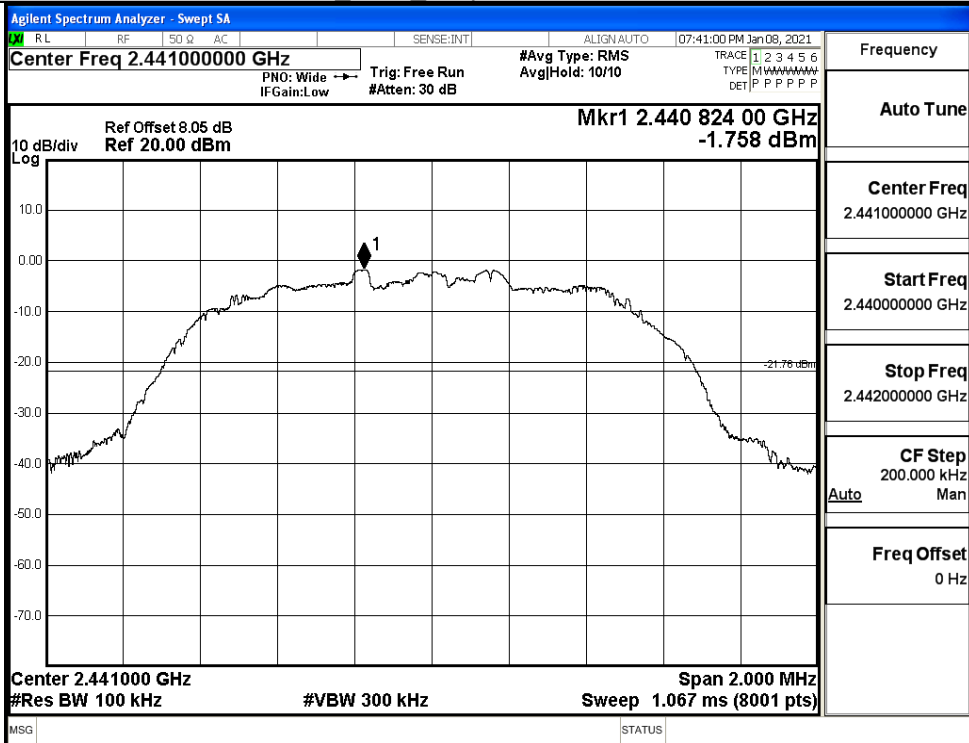


Puw

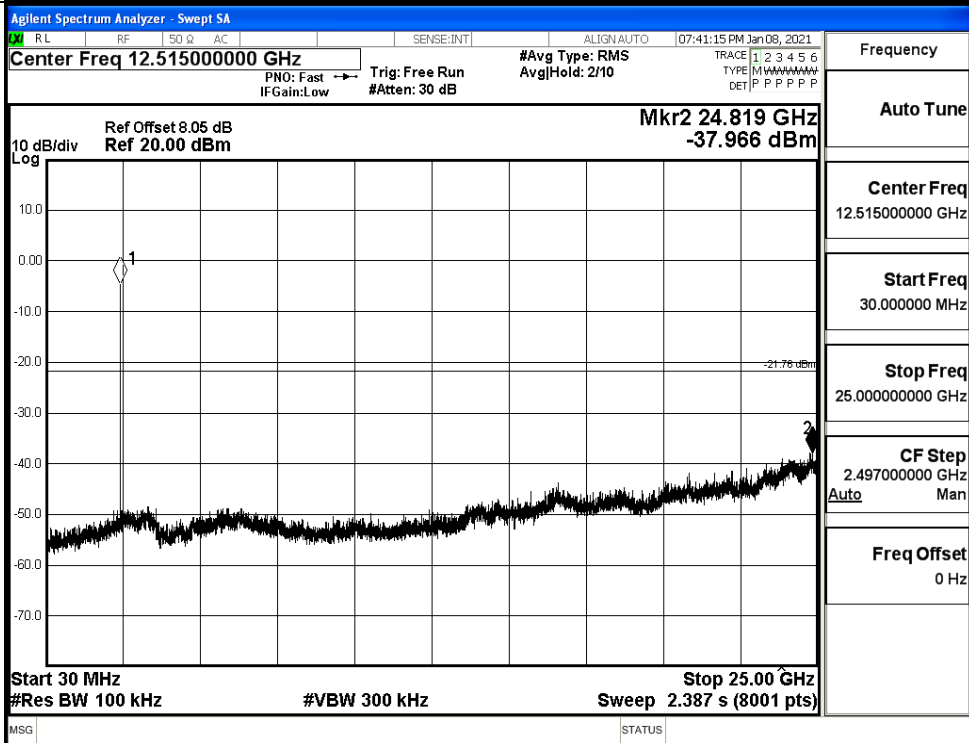


8DPSK_MCH_Graphs

Pref

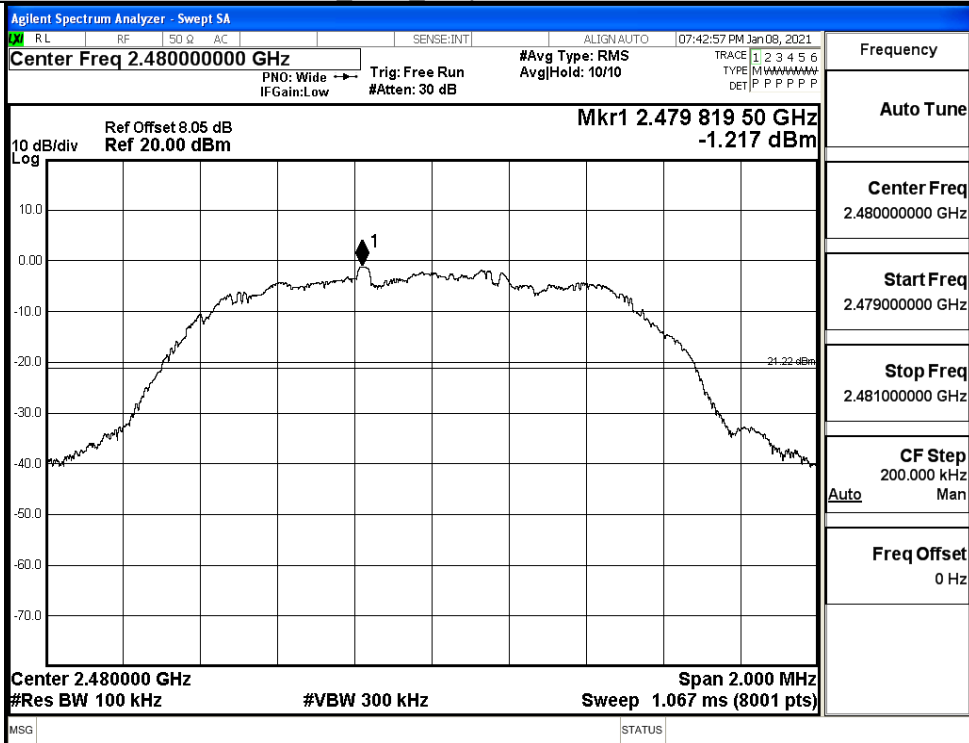


Puw

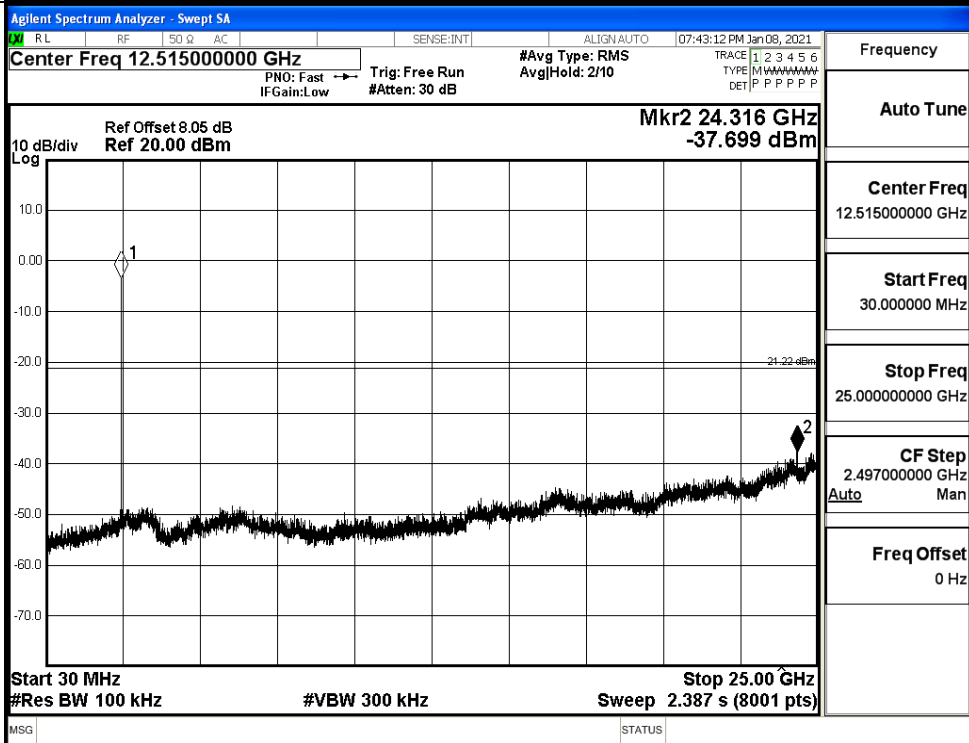


8DPSK_HCH_Graphs

Pref



Puw

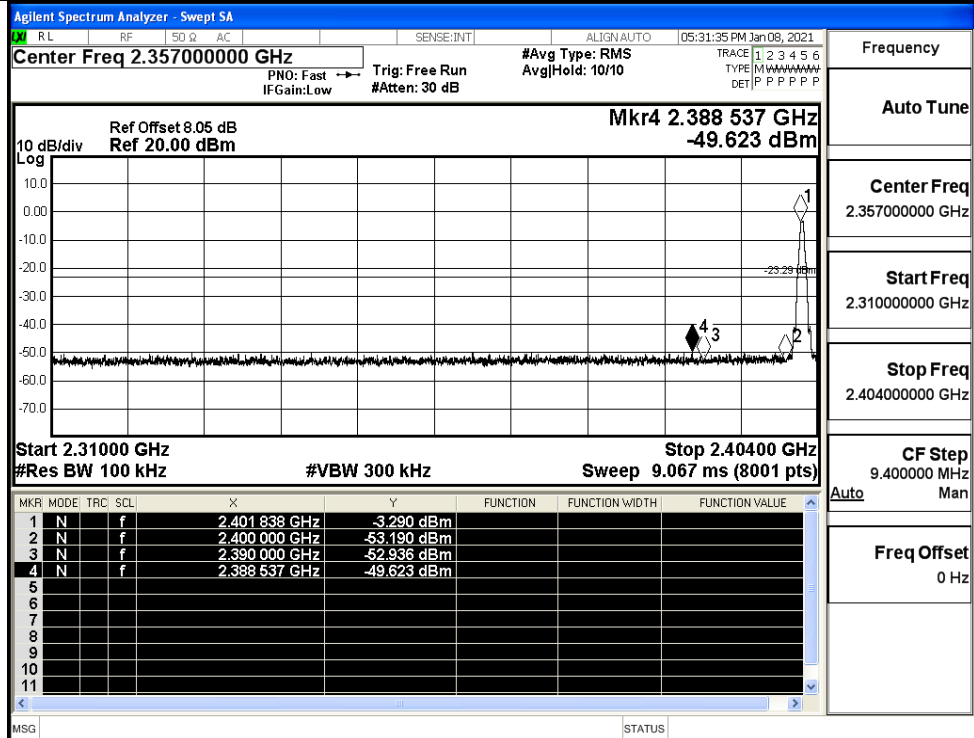


A.7 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-3.290	Off	-49.623	-23.29	PASS
			-2.097	On	-49.808	-22.1	PASS
	HCH	2480	-1.214	Off	-49.011	-21.21	PASS
			-1.313	On	-48.860	-21.31	PASS
$\pi/4$ DQPSK	LCH	2402	-3.937	Off	-49.750	-23.94	PASS
			-2.325	On	-48.340	-22.33	PASS
	HCH	2480	-1.269	Off	-48.837	-21.27	PASS
			-1.230	On	-48.716	-21.23	PASS
8DPSK	LCH	2402	-3.508	Off	-49.529	-23.51	PASS
			-2.227	On	-48.596	-22.23	PASS
	HCH	2480	-1.159	Off	-48.542	-21.16	PASS
			-1.333	On	-48.506	-21.33	PASS

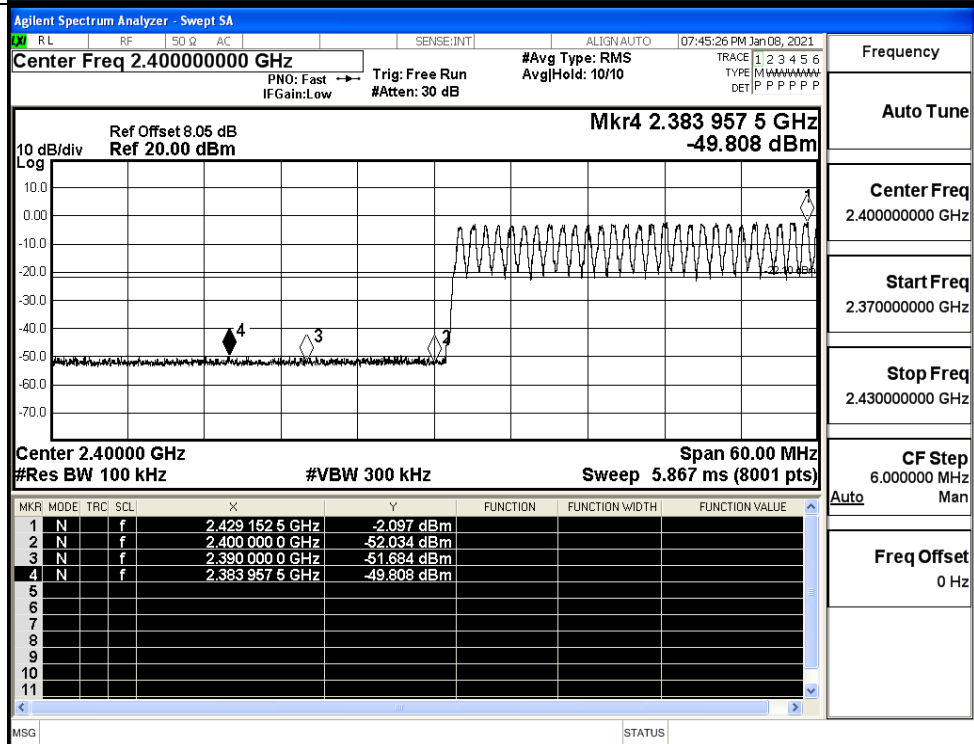
Test Graphs

GFSK/LCH/No Hop



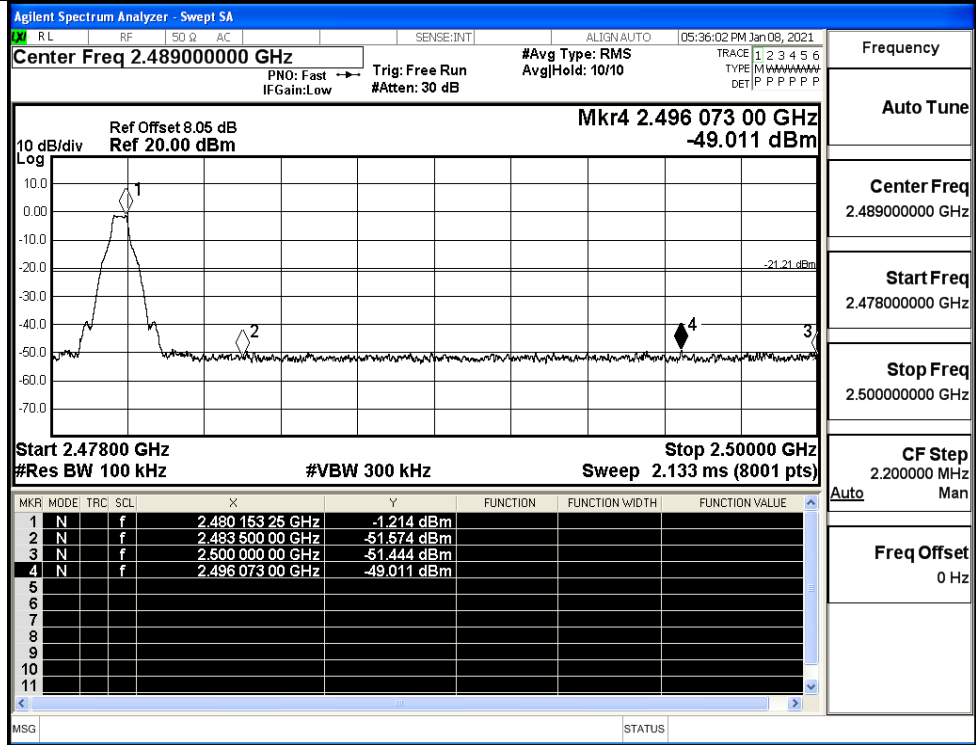
Frequency	Auto Tune
Center Freq	2.357000000 GHz
Start Freq	2.310000000 GHz
Stop Freq	2.404000000 GHz
CF Step	9.400000 MHz
Auto	Man
Freq Offset	0 Hz

GFSK/LCH/Hop

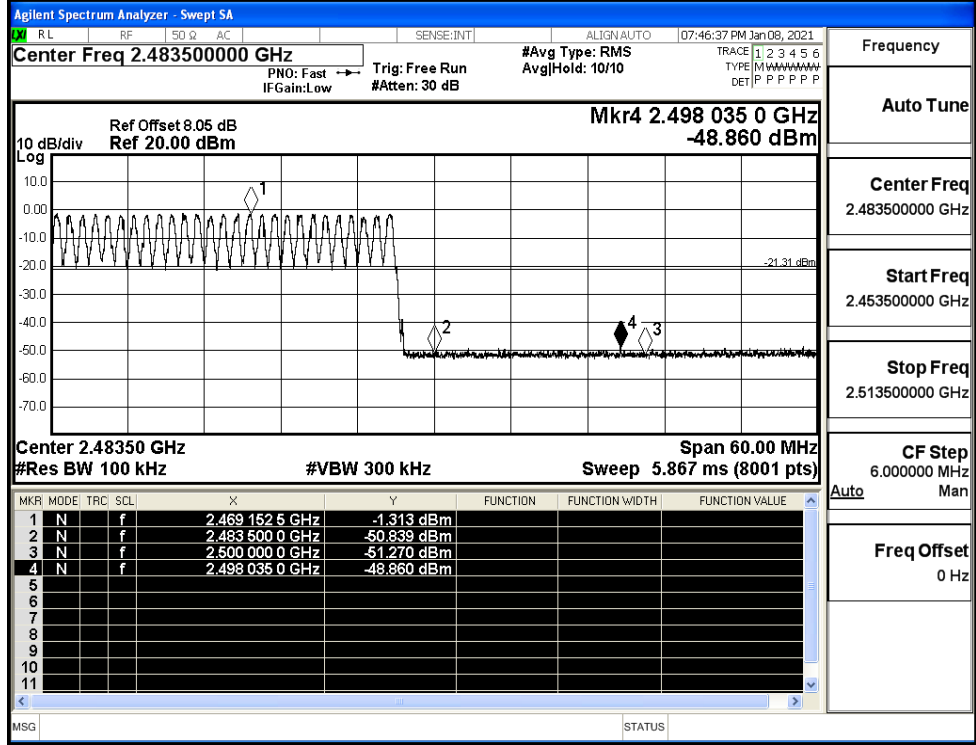


Frequency	Auto Tune
Center Freq	2.400000000 GHz
Start Freq	2.370000000 GHz
Stop Freq	2.430000000 GHz
CF Step	6.000000 MHz
Auto	Man
Freq Offset	0 Hz

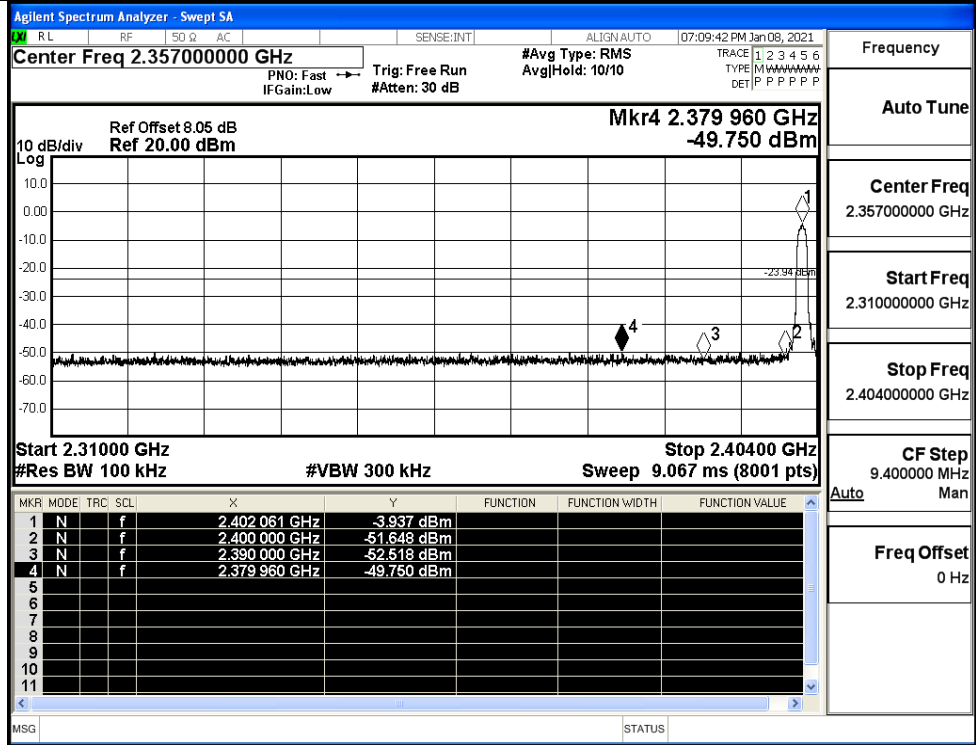
GFSK/HCH/No Hop



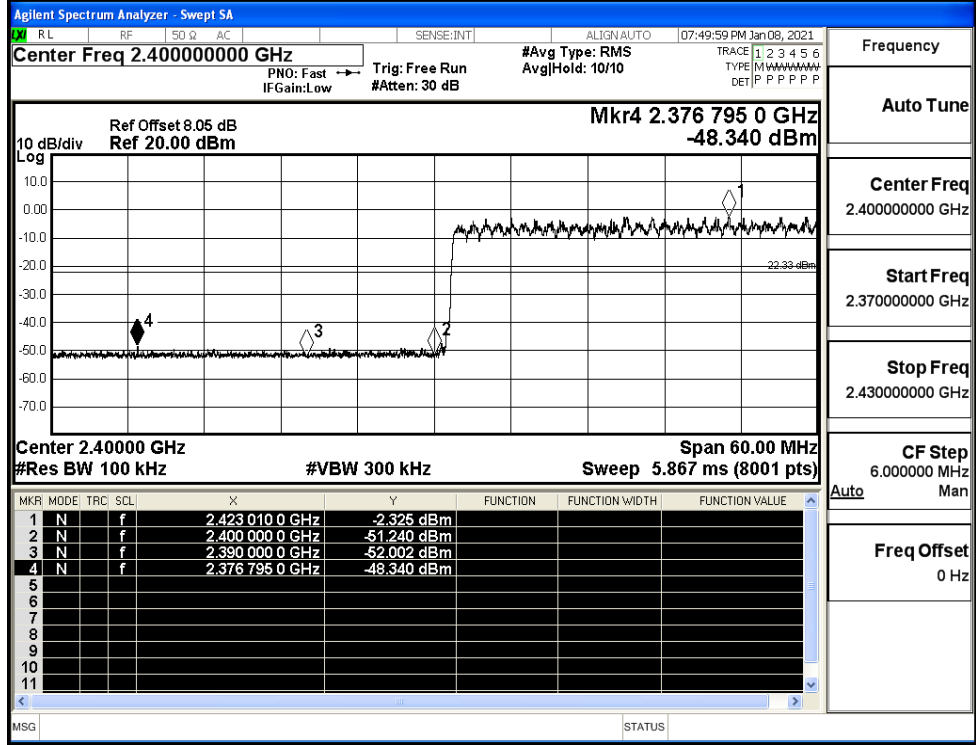
GFSK/HCH/Hop



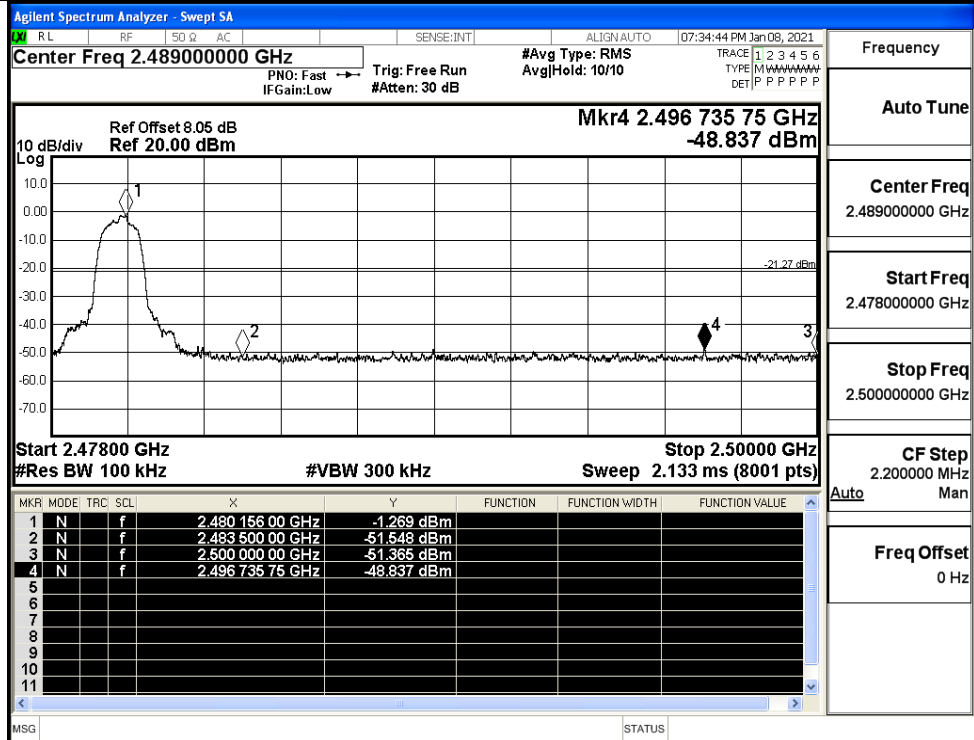
$\pi/4$ DQPSK/LCH/No Hop



$\pi/4$ DQPSK/LCH/Hop

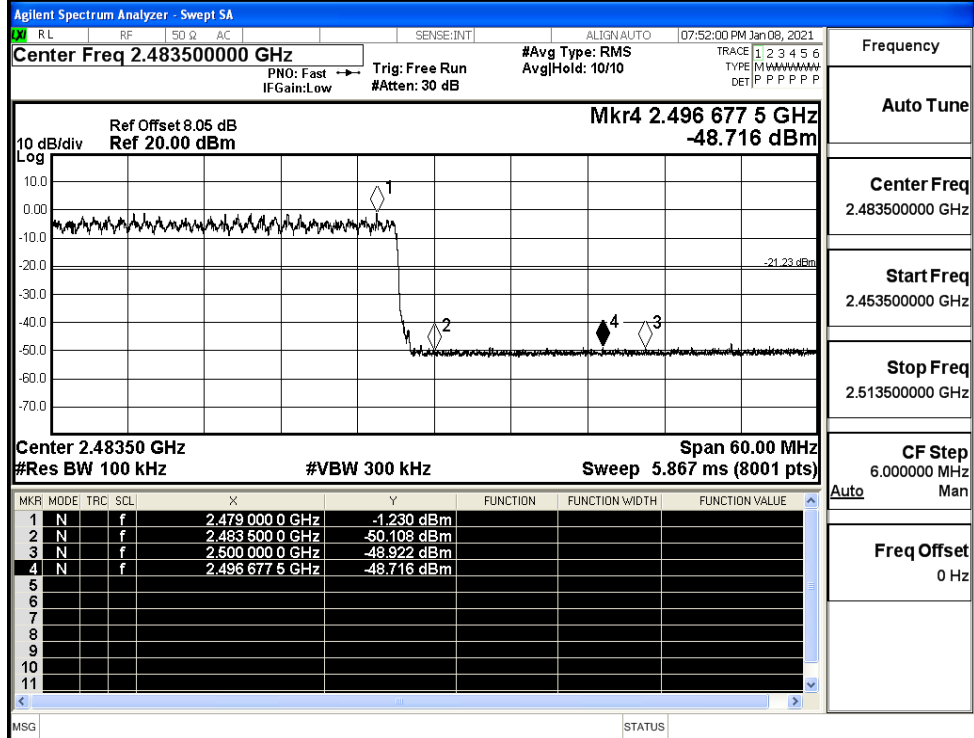


$\pi/4$ DQPSK/HCH/No Hop



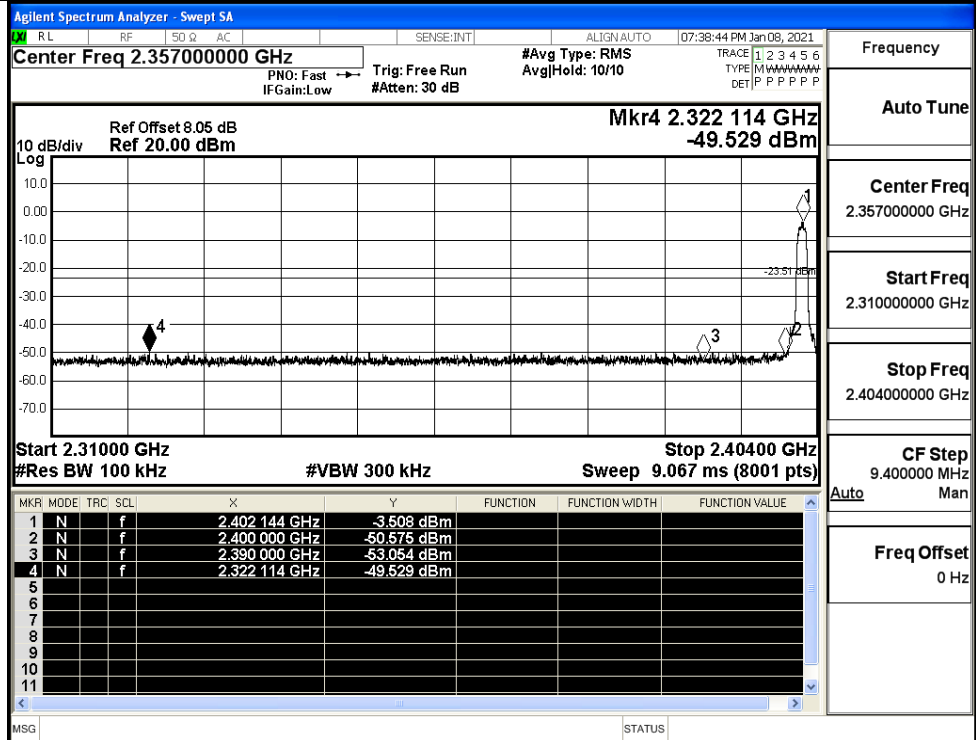
Frequency
Auto Tune
Center Freq
2.489000000 GHz
Start Freq
2.478000000 GHz
Stop Freq
2.500000000 GHz
CF Step
2.200000 MHz
Auto Man
Freq Offset
0 Hz

$\pi/4$ DQPSK/HCH/Hop



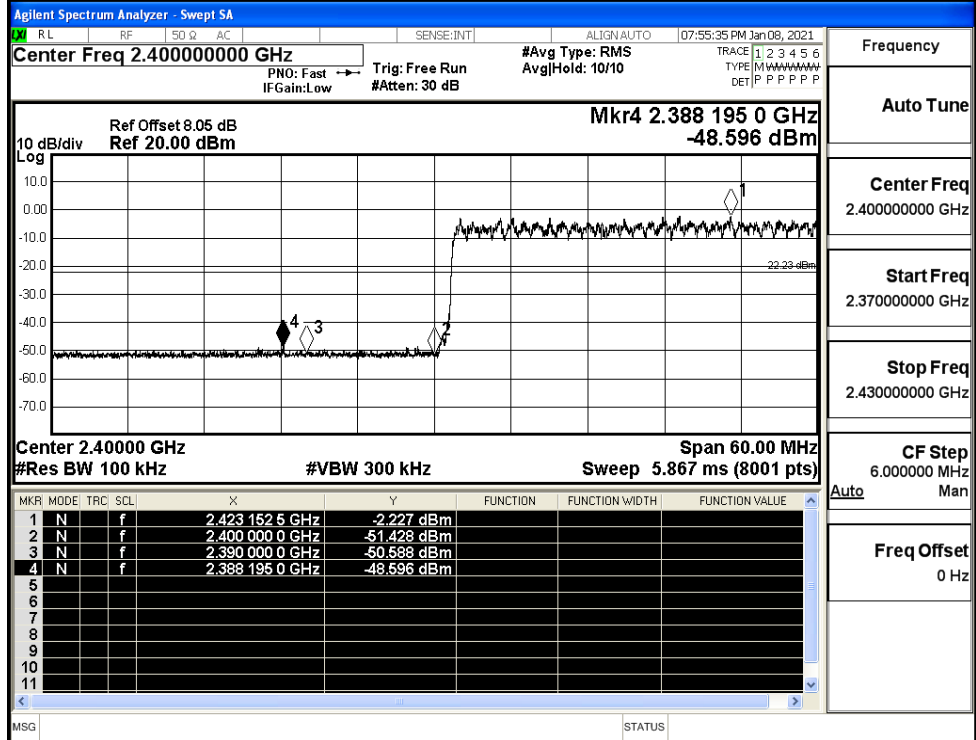
Frequency
Auto Tune
Center Freq
2.483500000 GHz
Start Freq
2.453500000 GHz
Stop Freq
2.513500000 GHz
CF Step
6.000000 MHz
Auto Man
Freq Offset
0 Hz

8DPSK/LCH/No Hop



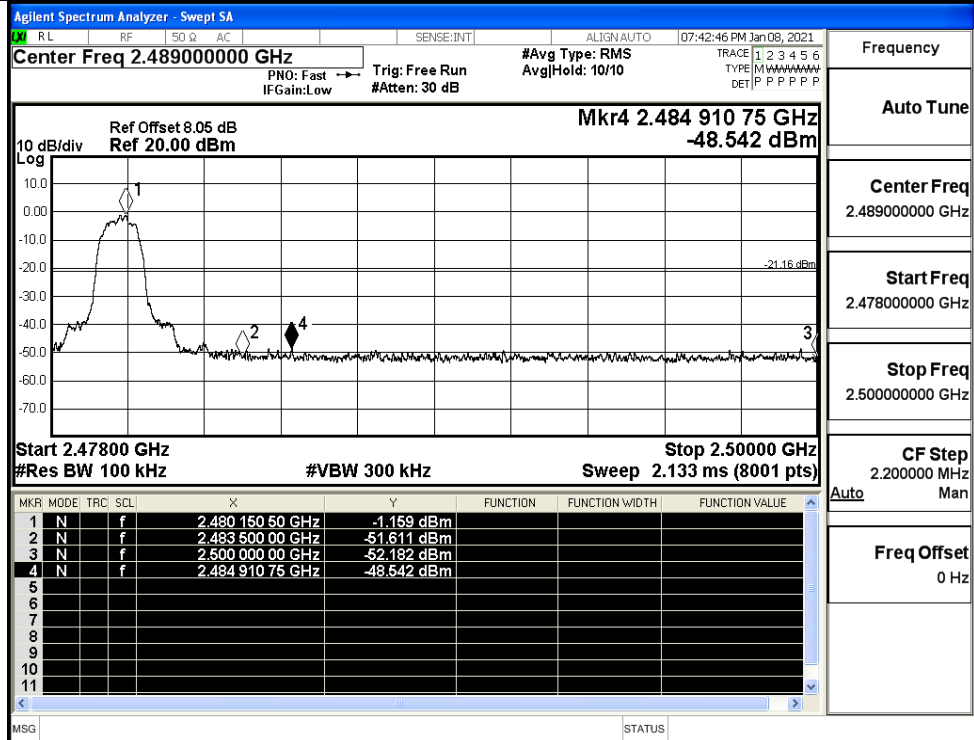
Frequency
Auto Tune
Center Freq
2.357000000 GHz
Start Freq
2.310000000 GHz
Stop Freq
2.404000000 GHz
CF Step
9.400000 MHz
Auto Man
Freq Offset
0 Hz

8DPSK/LCH/Hop



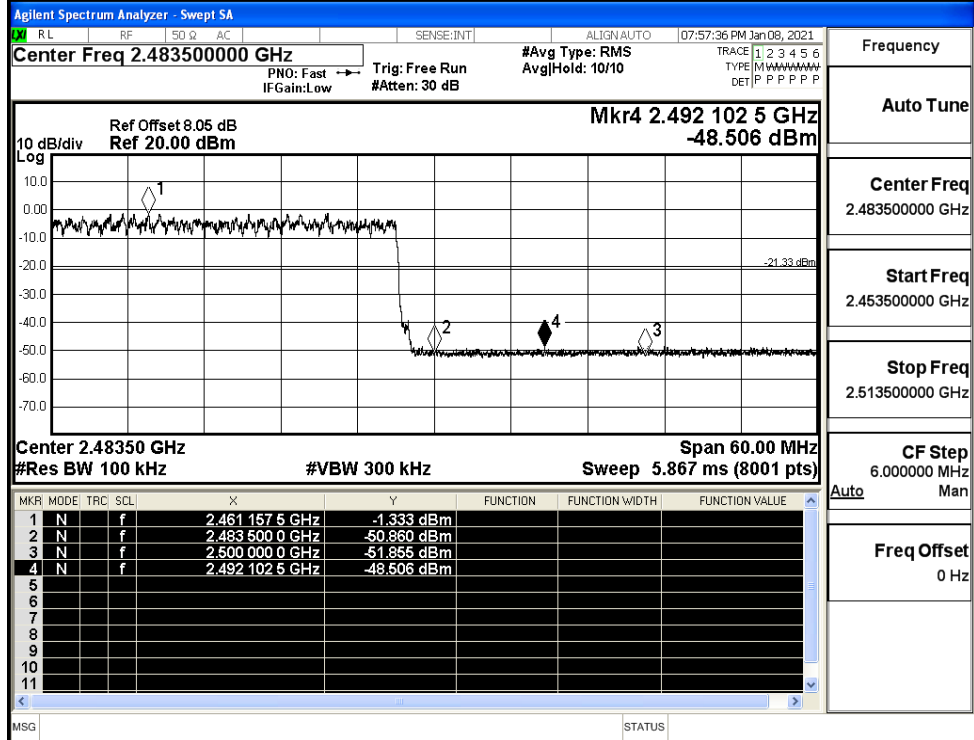
Frequency
Auto Tune
Center Freq
2.400000000 GHz
Start Freq
2.370000000 GHz
Stop Freq
2.430000000 GHz
CF Step
6.000000 MHz
Auto Man
Freq Offset
0 Hz

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

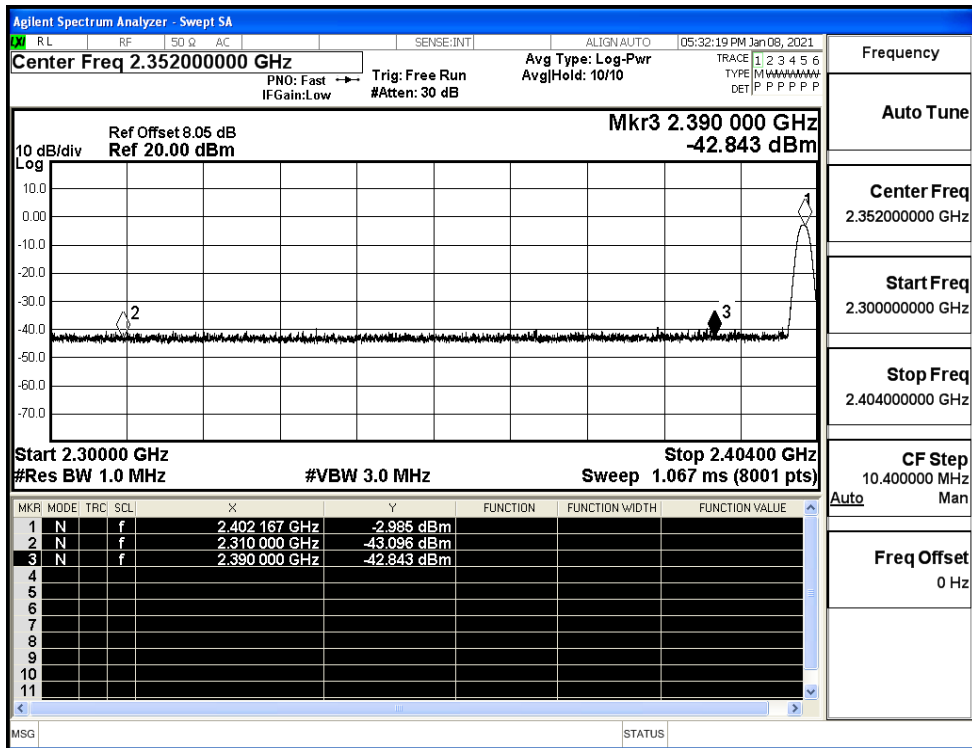


Frequency
Auto Tune
Center Freq
2.483500000 GHz
Start Freq
2.453500000 GHz
Stop Freq
2.513500000 GHz
CF Step
6.000000 MHz
Auto Man
Freq Offset
0 Hz

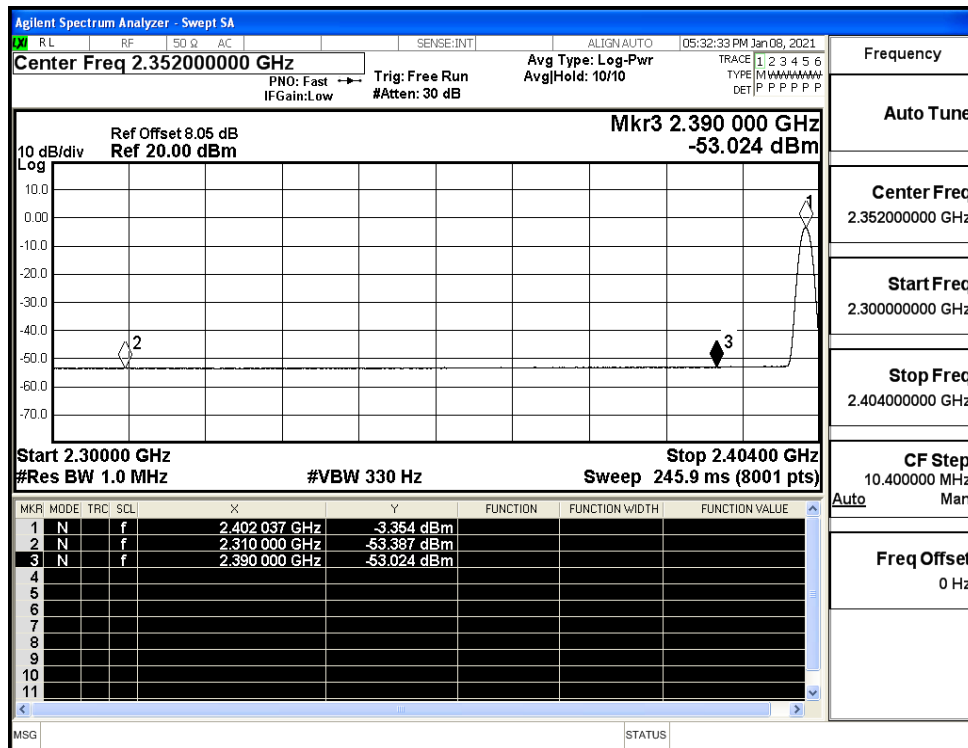
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.10	3.0	0	55.16	PEAK	74	PASS
	Off	2310.0	-53.39	3.0	0	44.87	AV	54	PASS
	Off	2390.0	-42.84	3.0	0	55.41	PEAK	74	PASS
	Off	2390.0	-53.02	3.0	0	45.23	AV	54	PASS
	Off	2483.5	-41.83	3.0	0	56.43	PEAK	74	PASS
	Off	2483.5	-52.33	3.0	0	45.93	AV	54	PASS
	Off	2500.0	-43.15	3.0	0	55.11	PEAK	74	PASS
	Off	2500.0	-52.39	3.0	0	45.87	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.16	3.0	0	55.10	PEAK	74	PASS
	Off	2310.0	-53.35	3.0	0	44.91	AV	54	PASS
	Off	2390.0	-44.07	3.0	0	54.19	PEAK	74	PASS
	Off	2390.0	-52.98	3.0	0	45.28	AV	54	PASS
	Off	2483.5	-41.61	3.0	0	56.65	PEAK	74	PASS
	Off	2483.5	-52.16	3.0	0	46.10	AV	54	PASS
	Off	2500.0	-42.65	3.0	0	55.61	PEAK	74	PASS
	Off	2500.0	-52.39	3.0	0	45.87	AV	54	PASS
8DPSK	Off	2310.0	-43.12	3.0	0	55.14	PEAK	74	PASS
	Off	2310.0	-53.43	3.0	0	44.83	AV	54	PASS
	Off	2390.0	-43.14	3.0	0	55.12	PEAK	74	PASS
	Off	2390.0	-53.02	3.0	0	45.24	AV	54	PASS
	Off	2483.5	-39.69	3.0	0	58.57	PEAK	74	PASS
	Off	2483.5	-51.75	3.0	0	46.51	AV	54	PASS
	Off	2500.0	-41.60	3.0	0	56.65	PEAK	74	PASS
	Off	2500.0	-52.34	3.0	0	45.91	AV	54	PASS

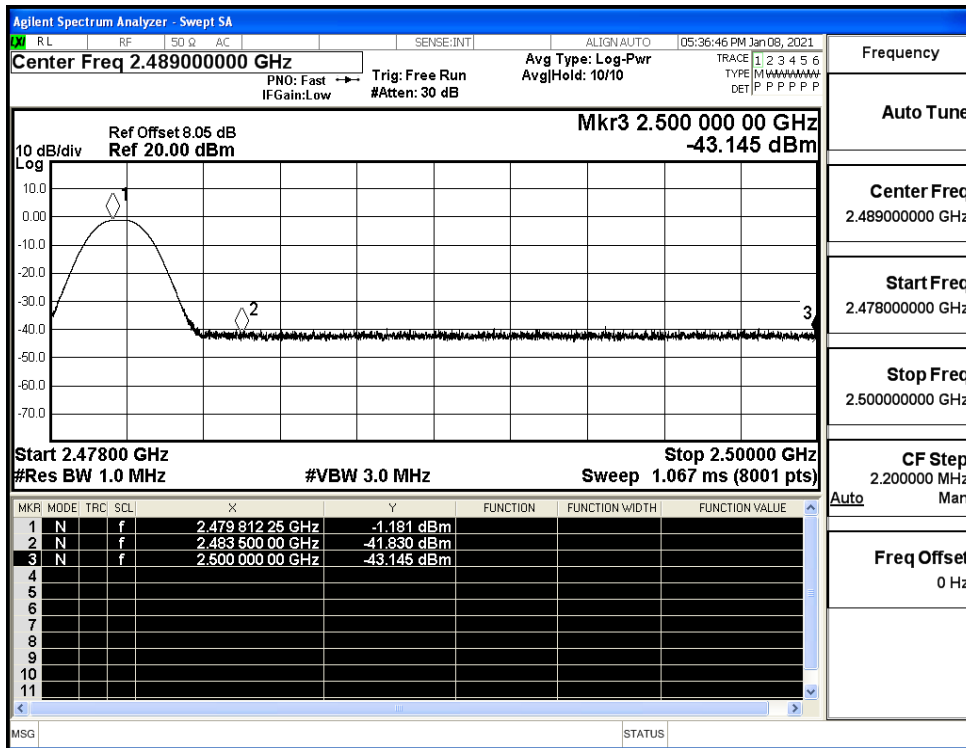
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



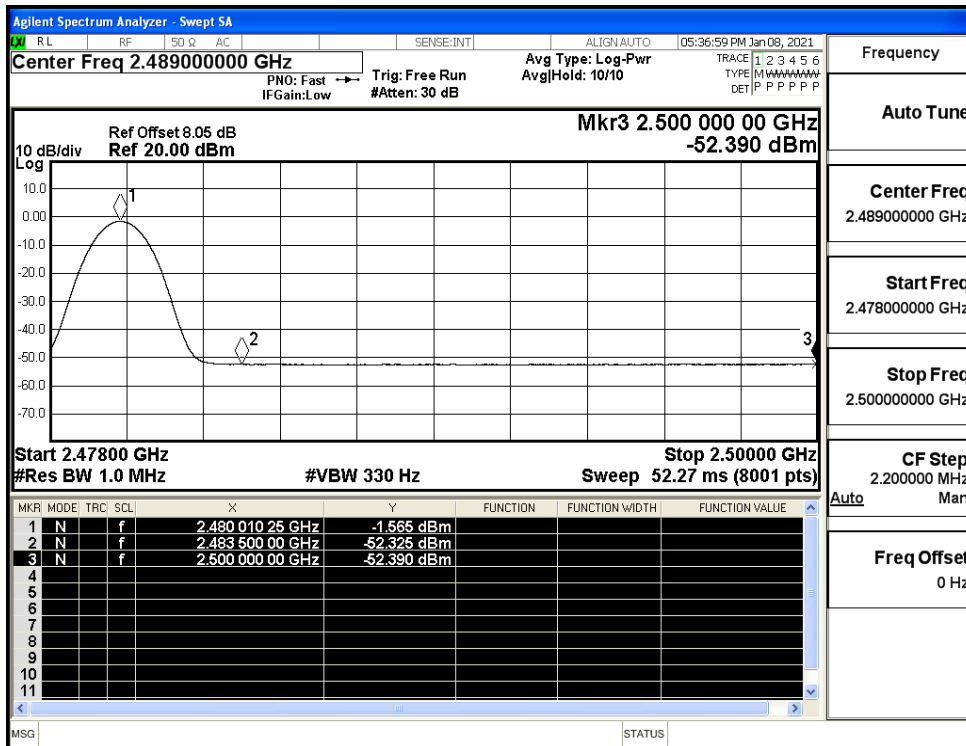
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



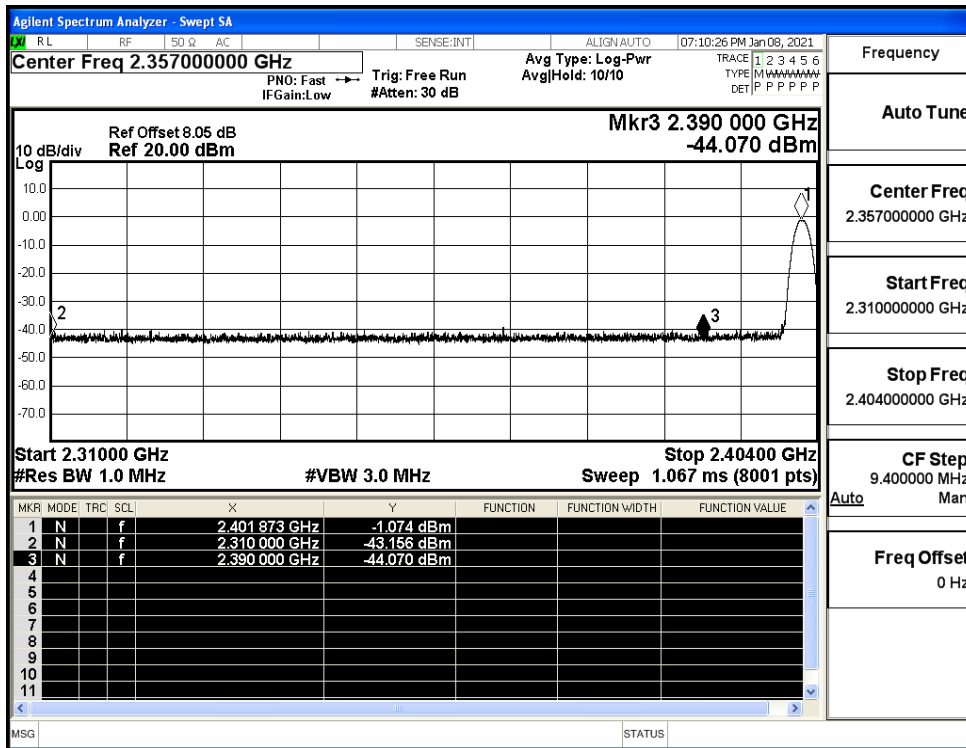
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



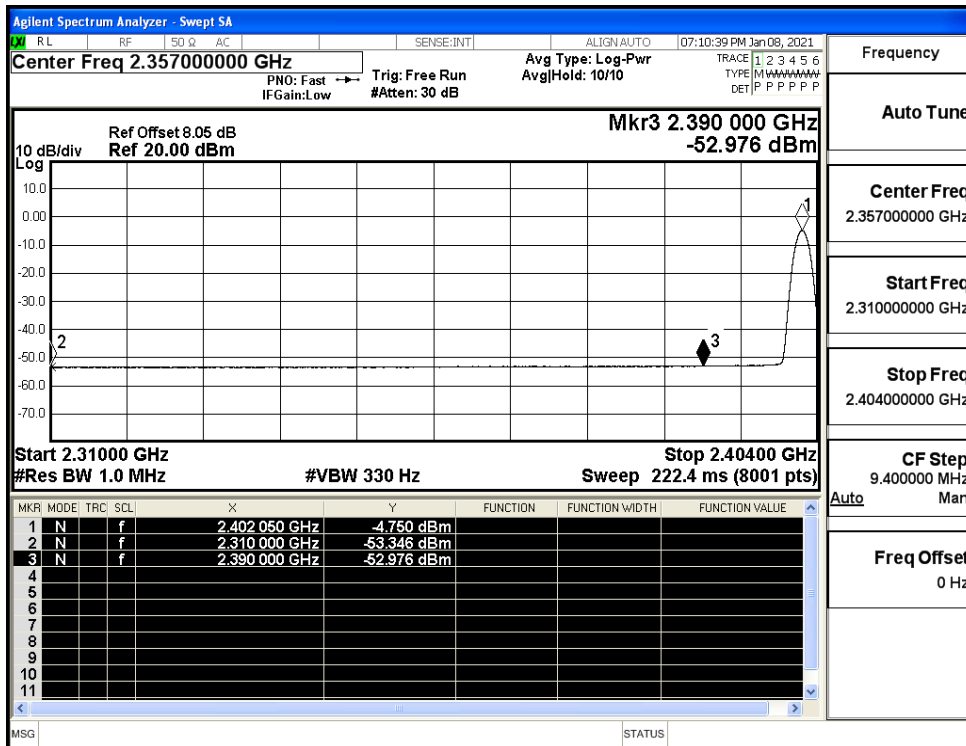
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



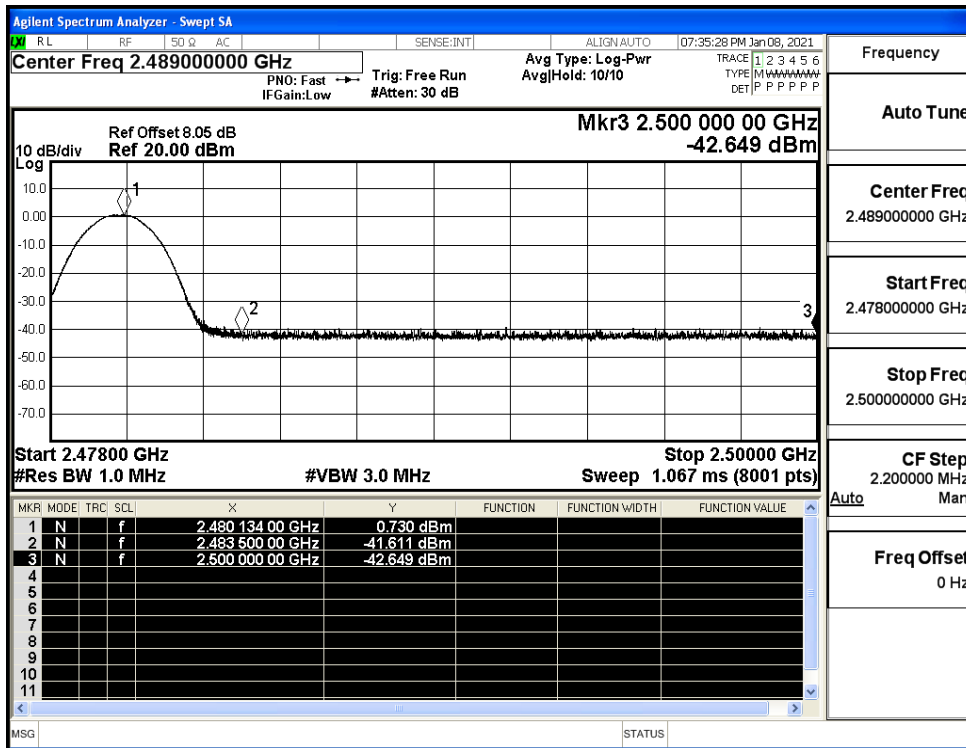
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)



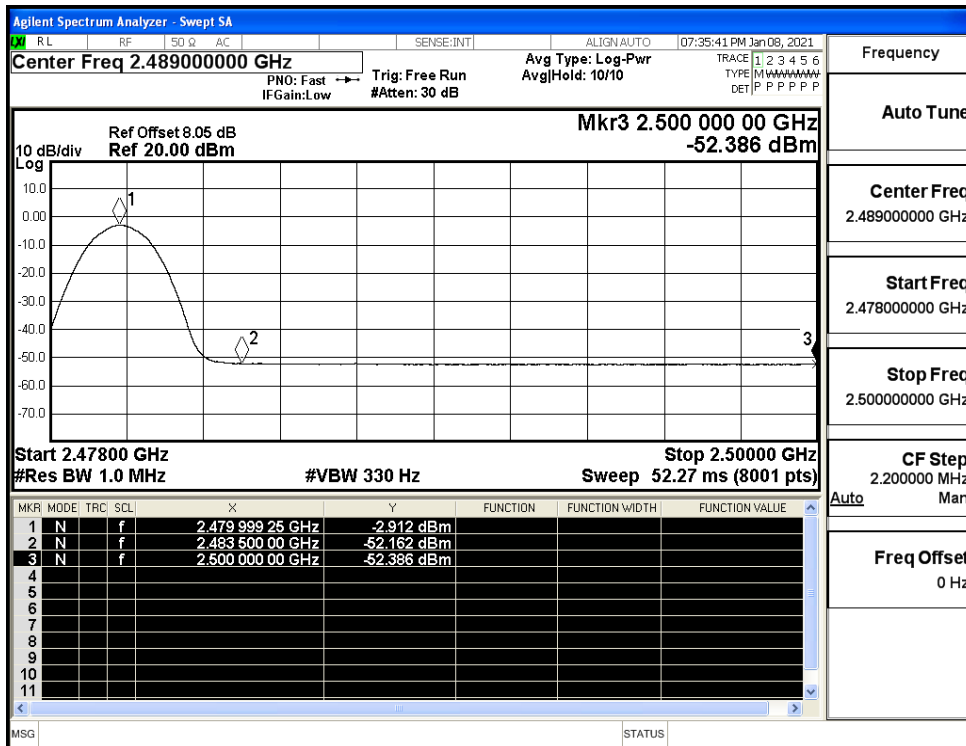
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)



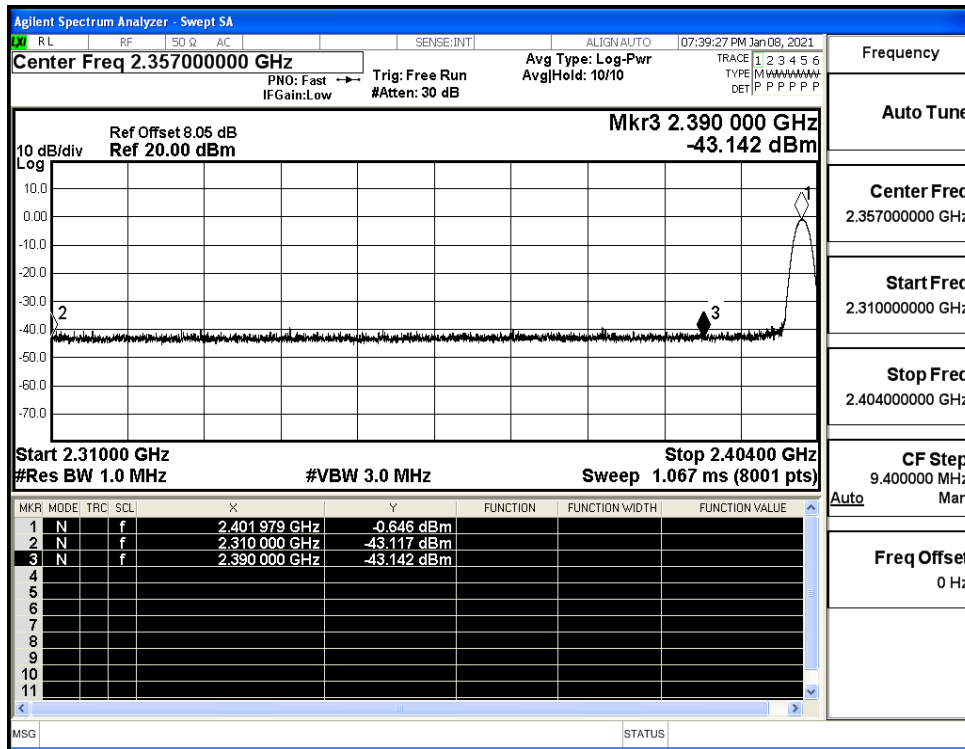
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



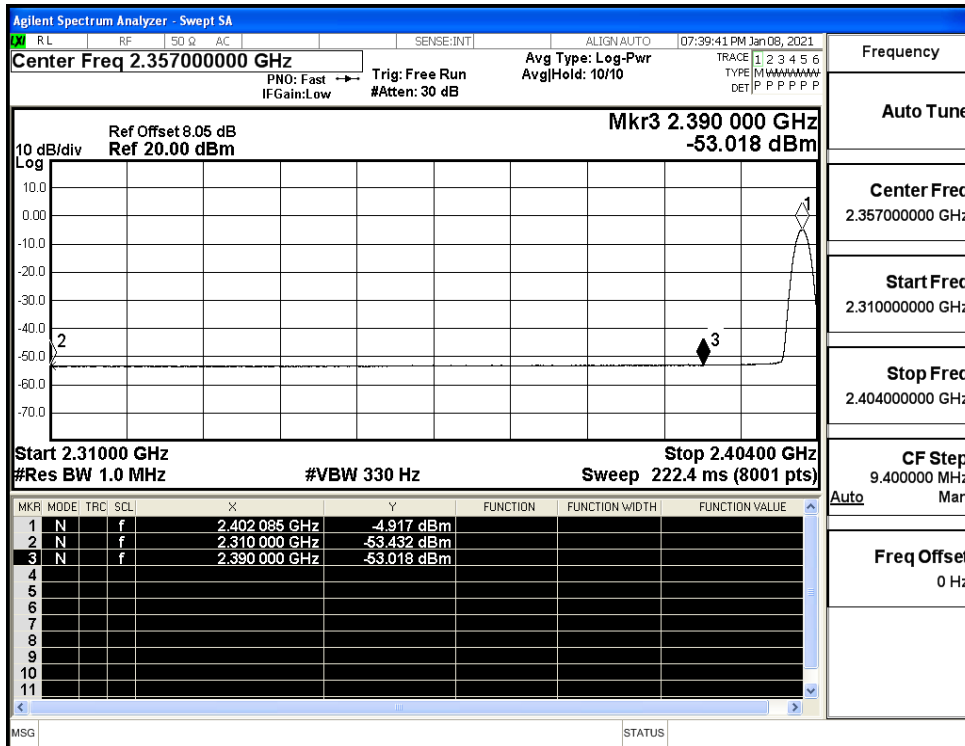
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



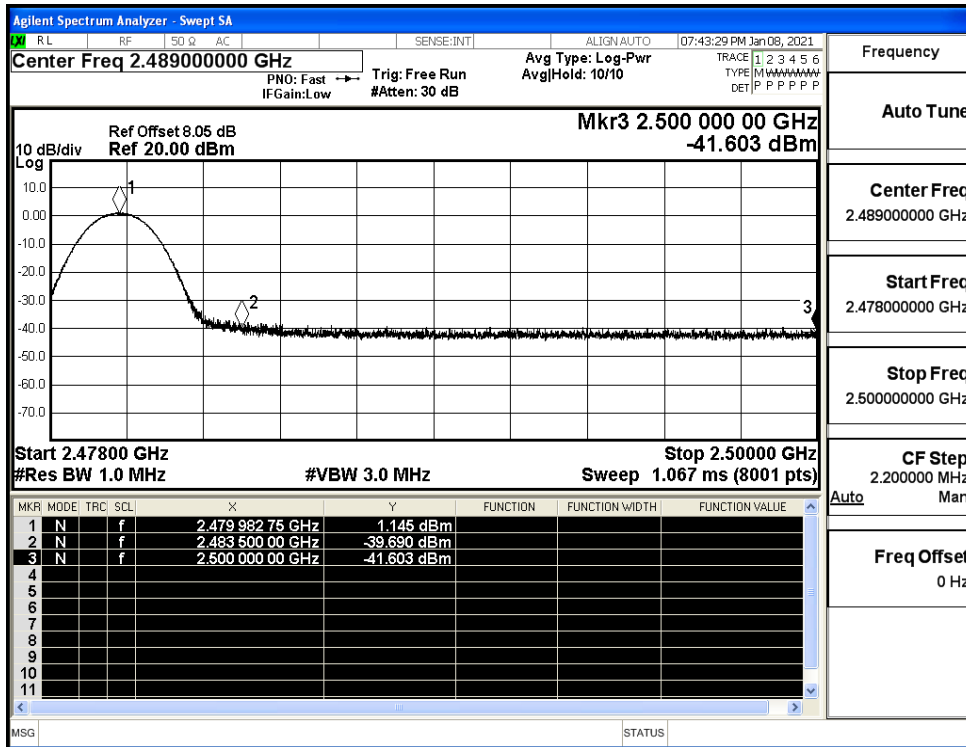
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

