

Appendix A

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

Product Name: Wireless Audio Receiver

Trade Mark: 1Mii

Test Model: DS200Pro

Environmental Conditions

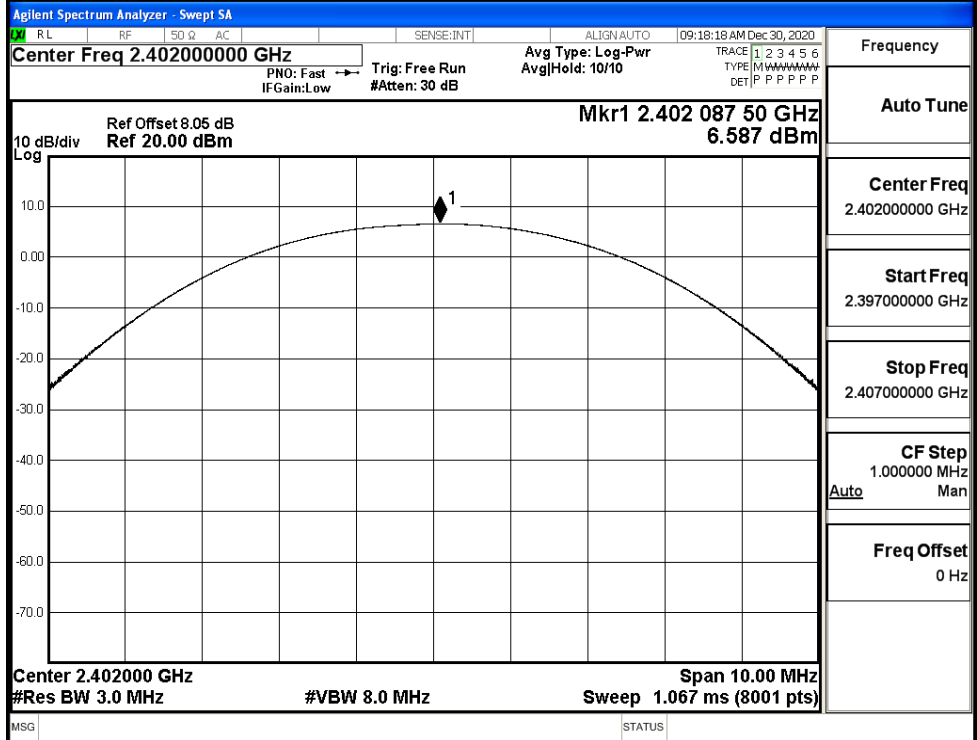
Temperature:	24.6 ° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Li
Supervised by:	Li Huan

A.1 Maximum Conducted Peak Output Power

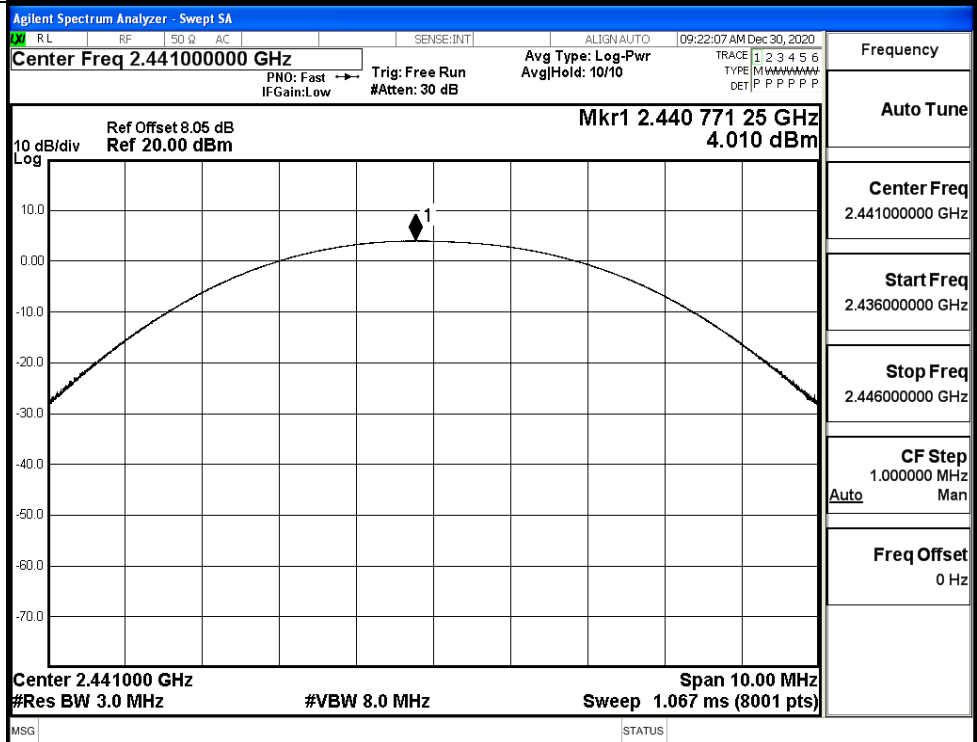
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	6.587	21	PASS
	MCH	4.010	21	PASS
	HCH	4.158	21	PASS
$\pi/4$ DQPSK	LCH	6.437	21	PASS
	MCH	4.190	21	PASS
	HCH	4.328	21	PASS
8DPSK	LCH	3.273	21	PASS
	MCH	5.325	21	PASS
	HCH	5.444	21	PASS

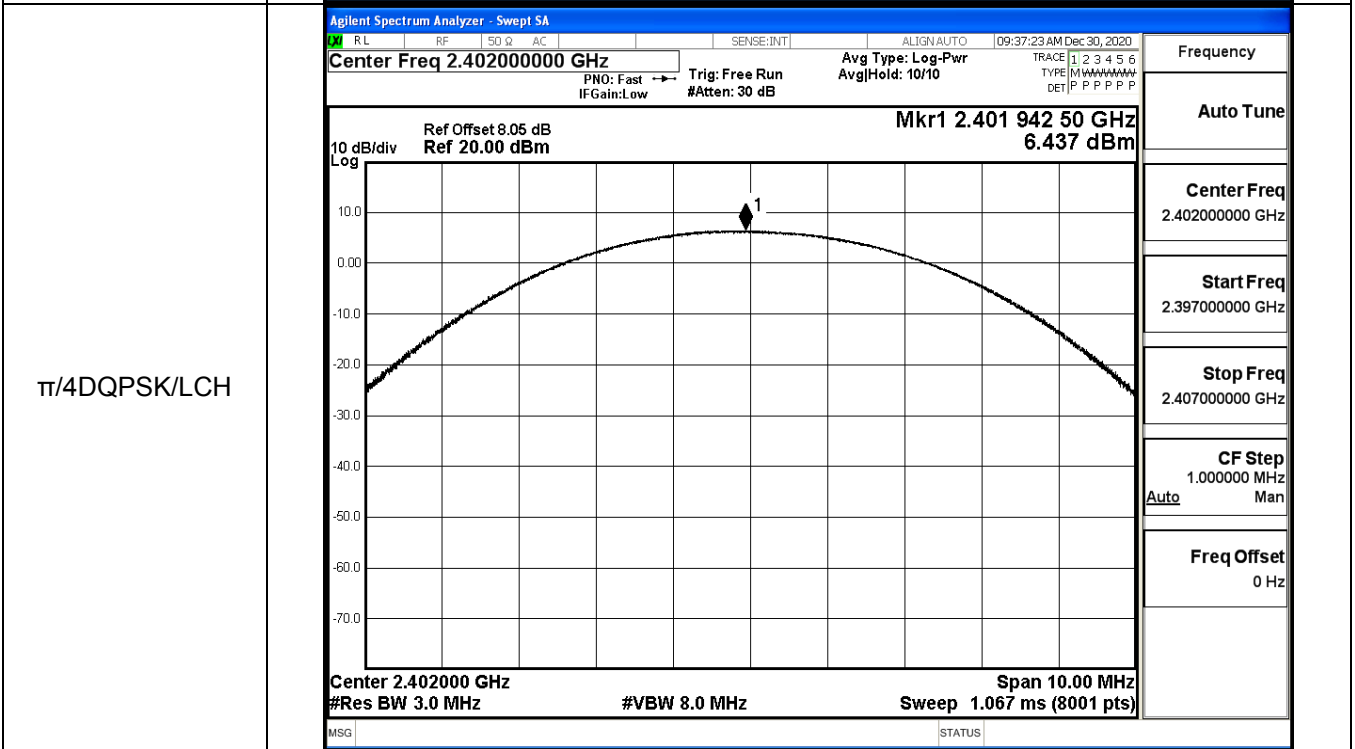
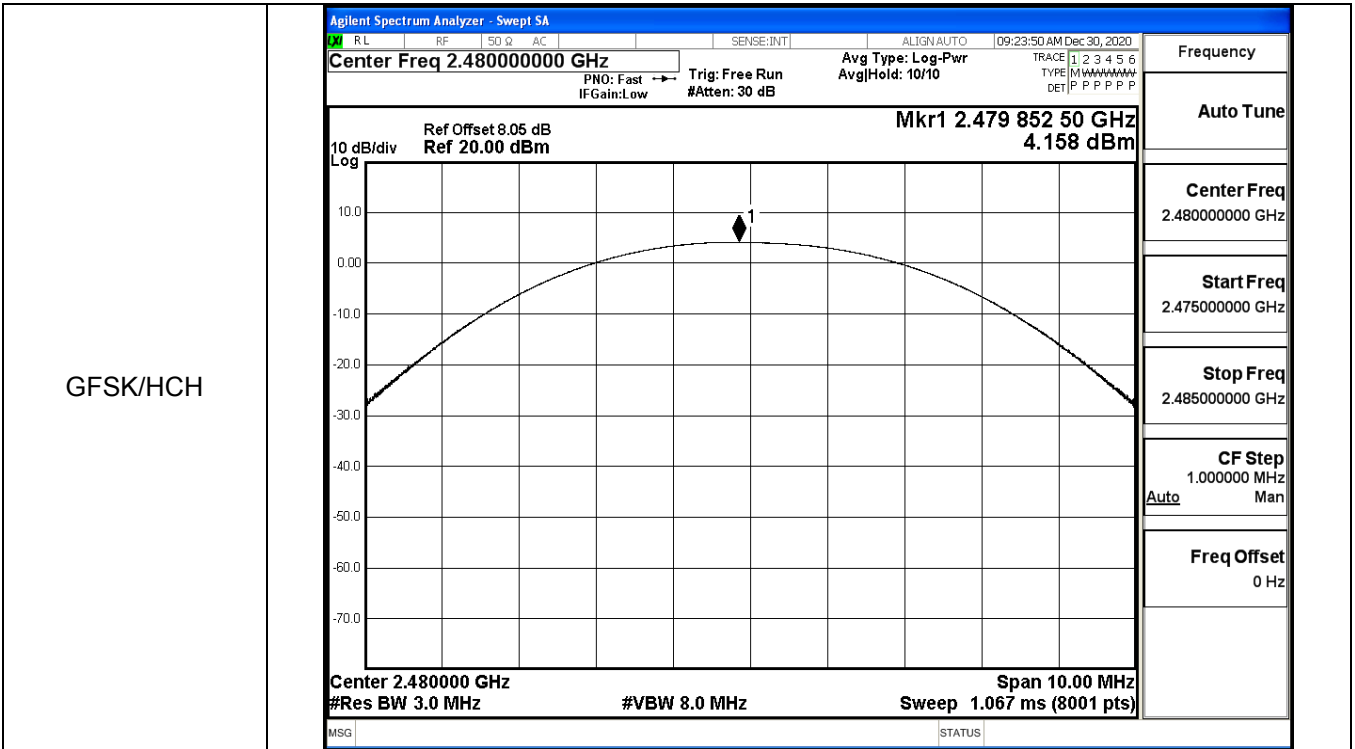
Test Graphs

GFSK/LCH

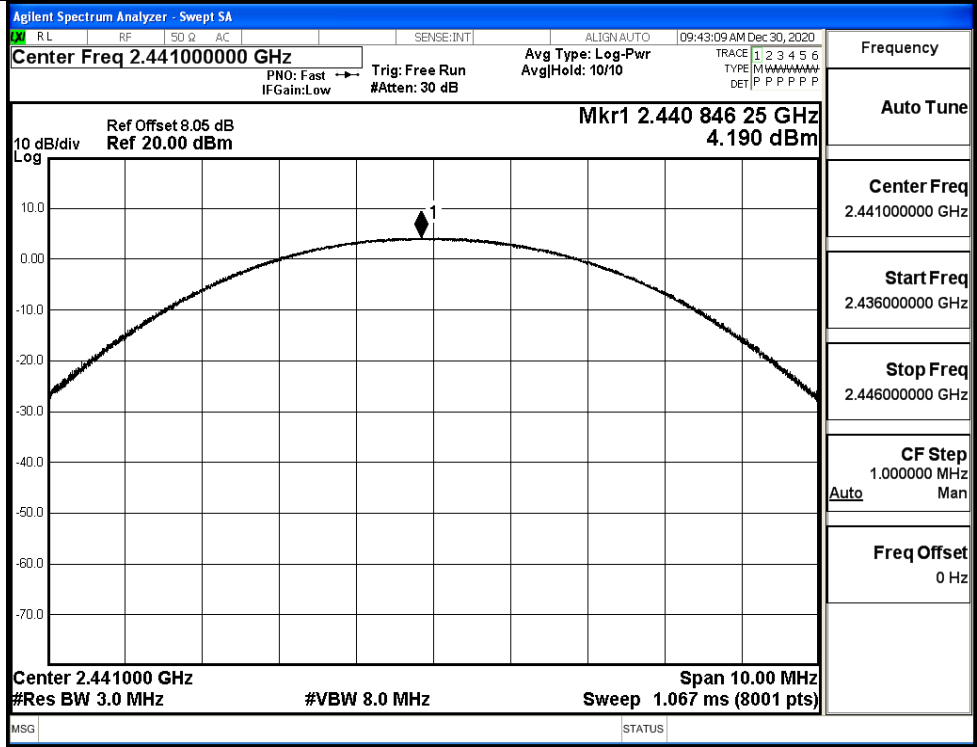


GFSK/MCH

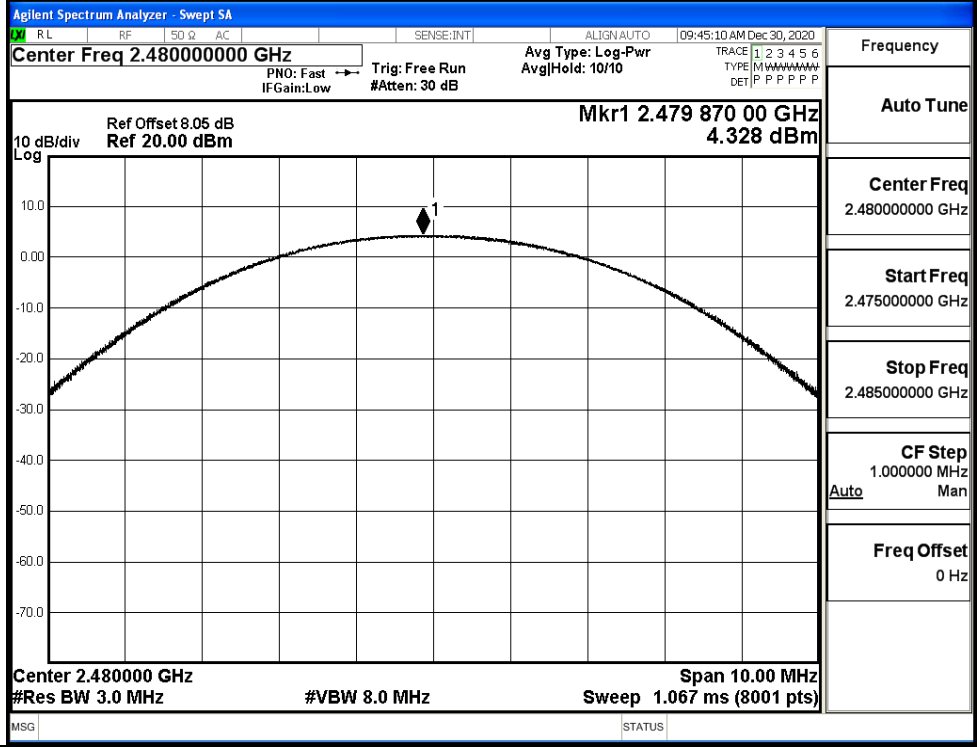




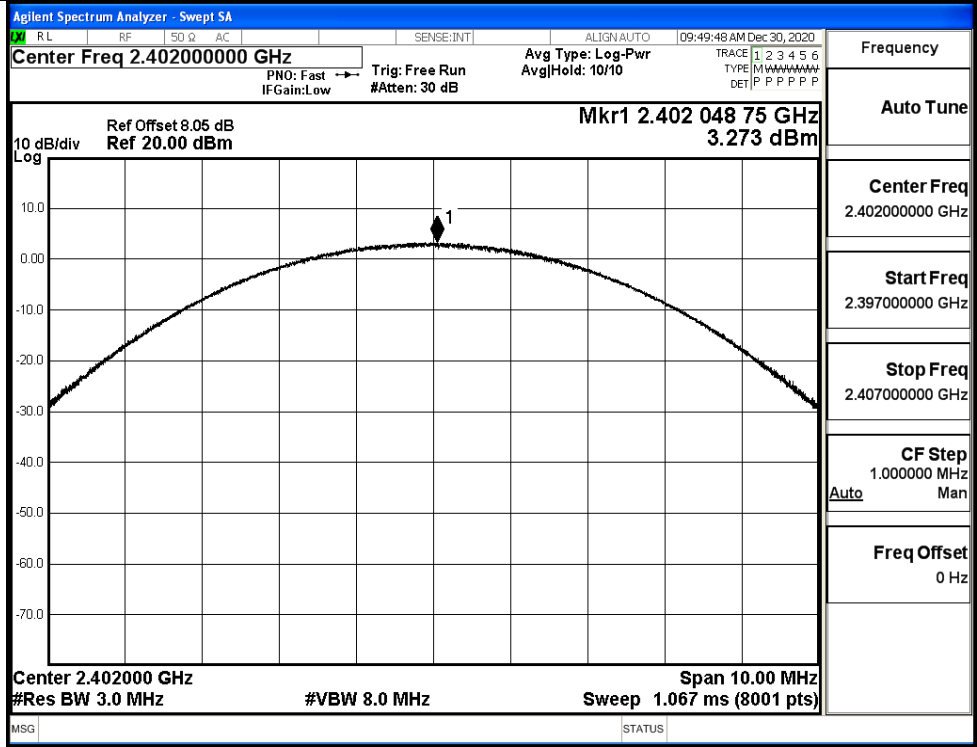
$\pi/4$ DQPSK/MCH



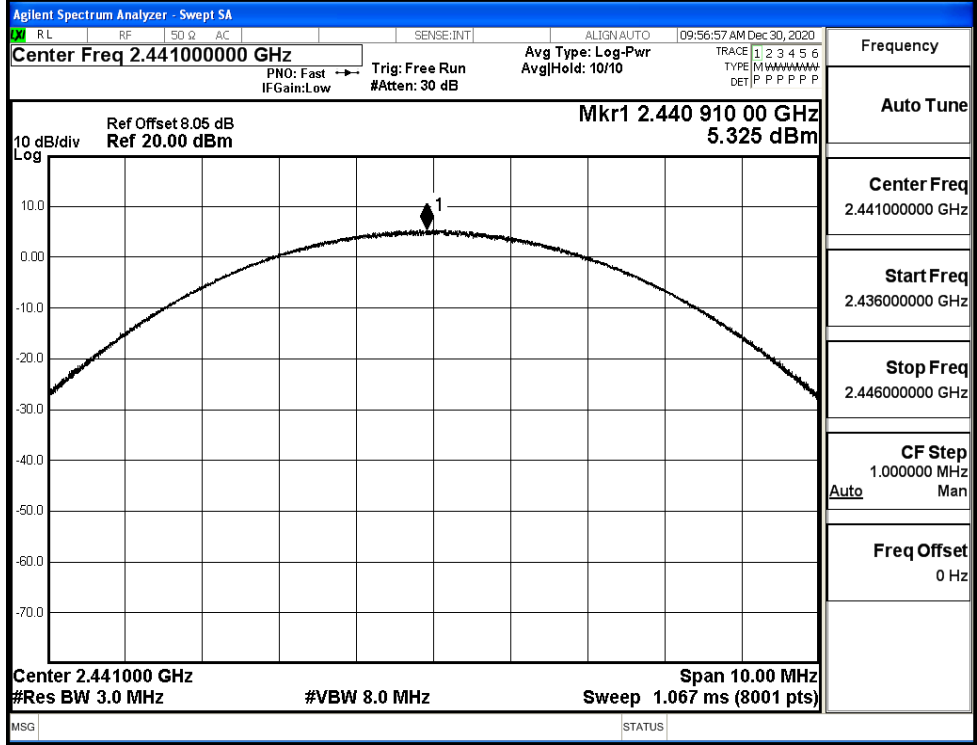
$\pi/4$ DQPSK/HCH



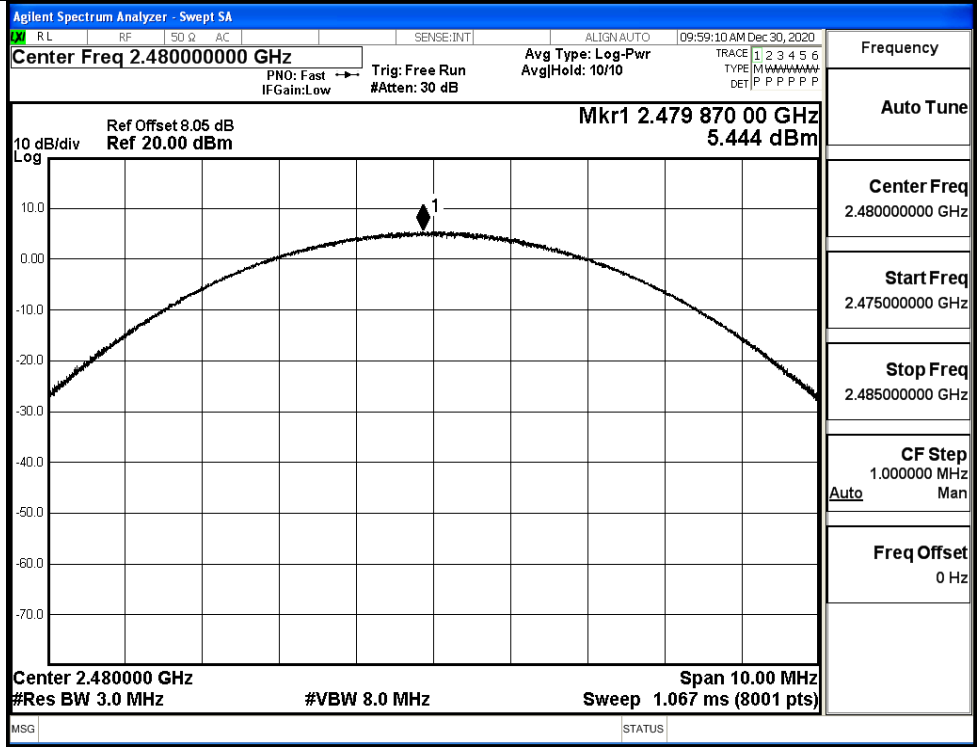
8DPSK/LCH



8DPSK/MCH

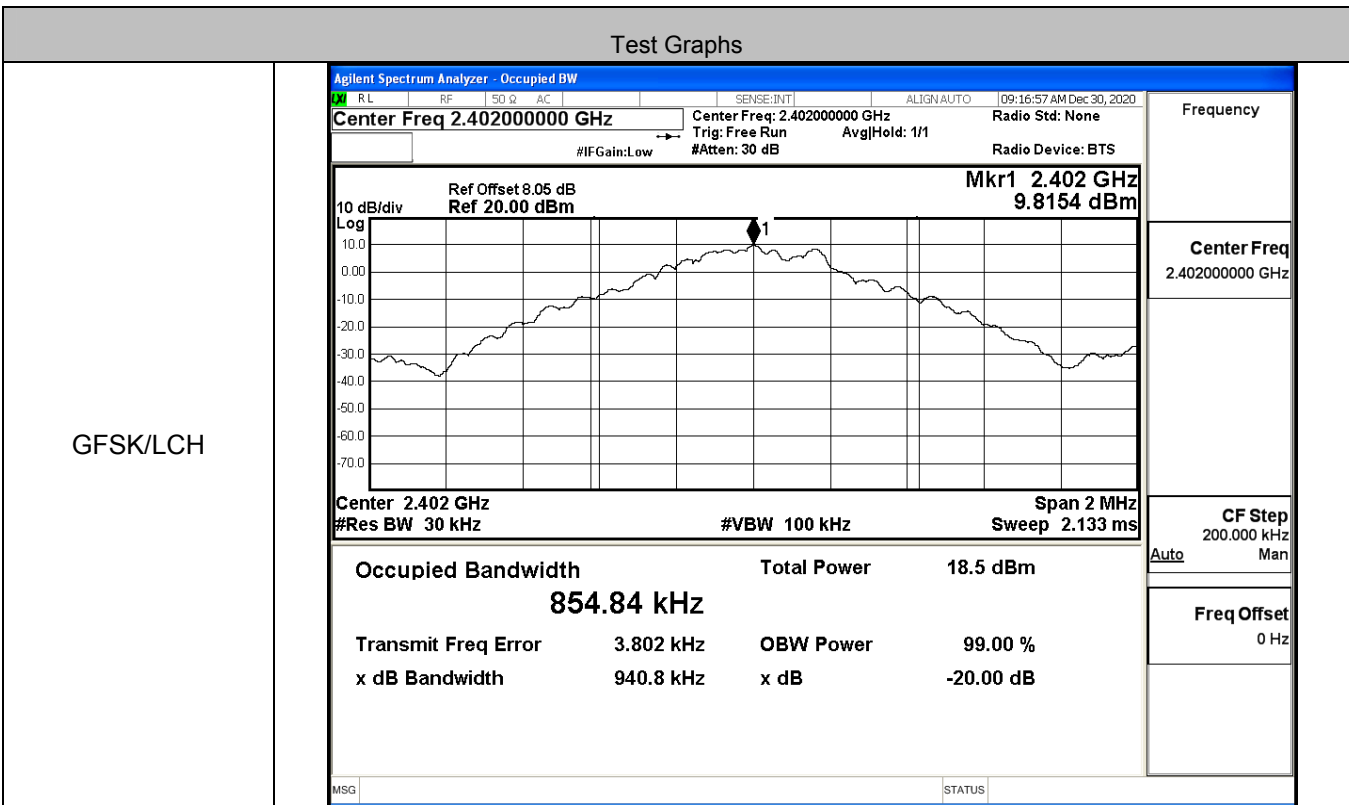


8DPSK/HCH

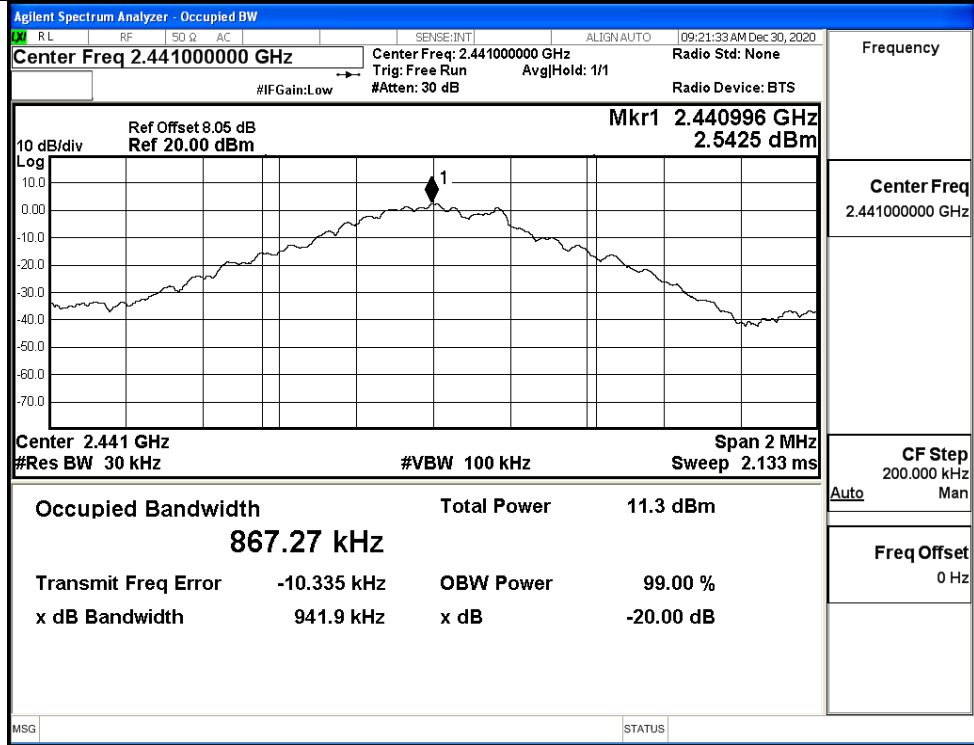


A.2 20dB Bandwidth

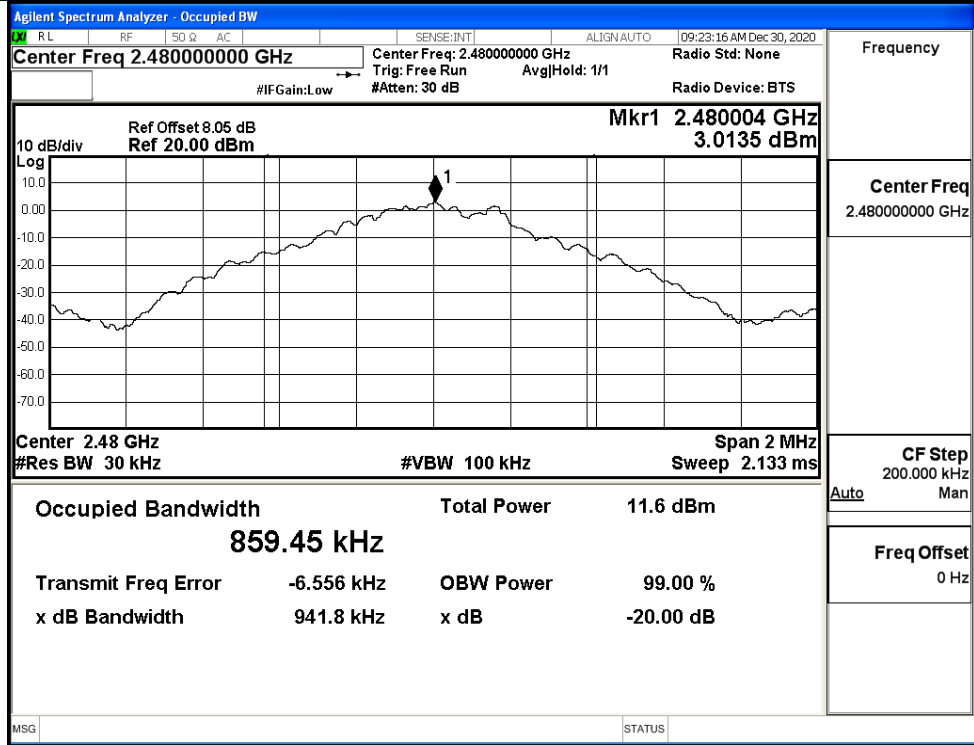
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9408	Not Specified	PASS
	MCH	0.9419	Not Specified	PASS
	HCH	0.9418	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.242	Not Specified	PASS
	MCH	1.247	Not Specified	PASS
	HCH	1.248	Not Specified	PASS
8DPSK	LCH	1.251	Not Specified	PASS
	MCH	1.251	Not Specified	PASS
	HCH	1.255	Not Specified	PASS



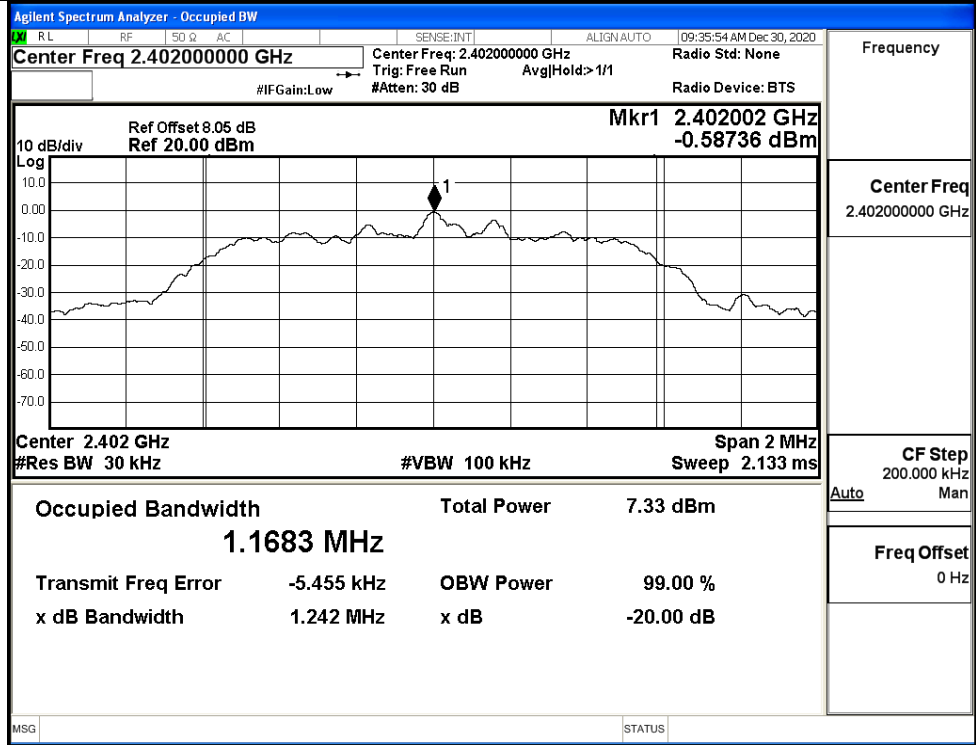
GFSK/MCH



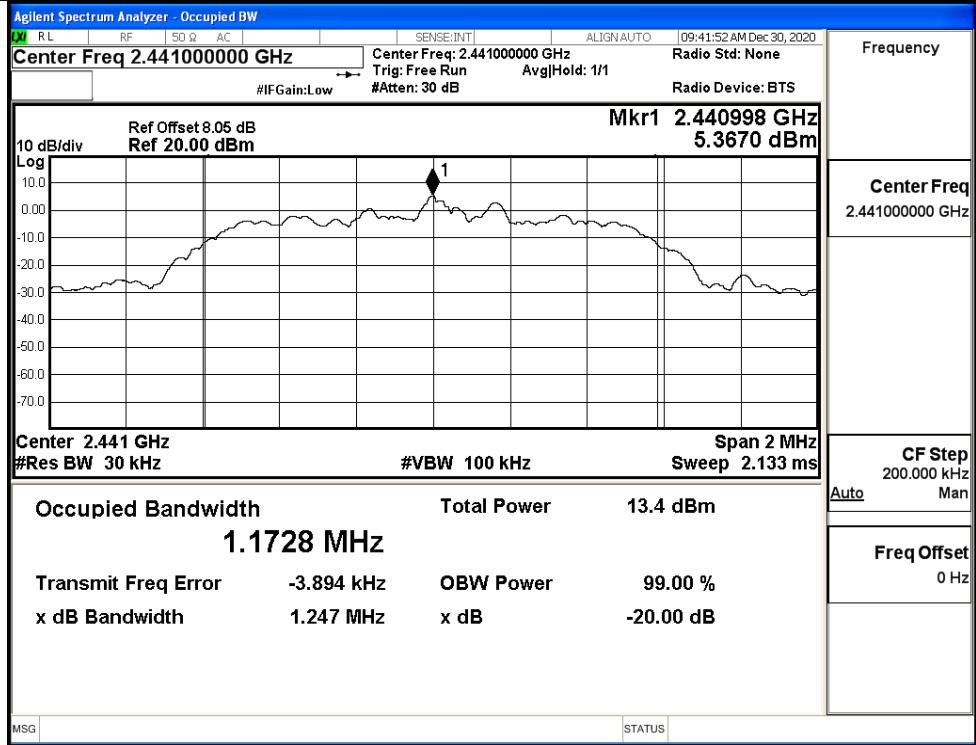
GFSK/HCH



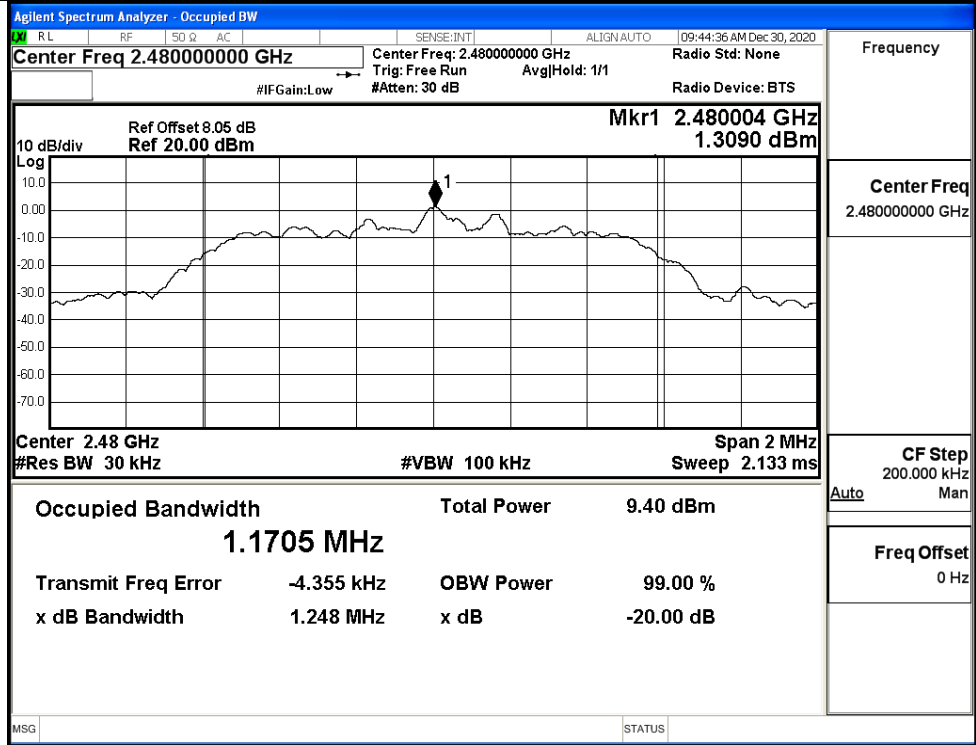
π /4DQPSK/LCH



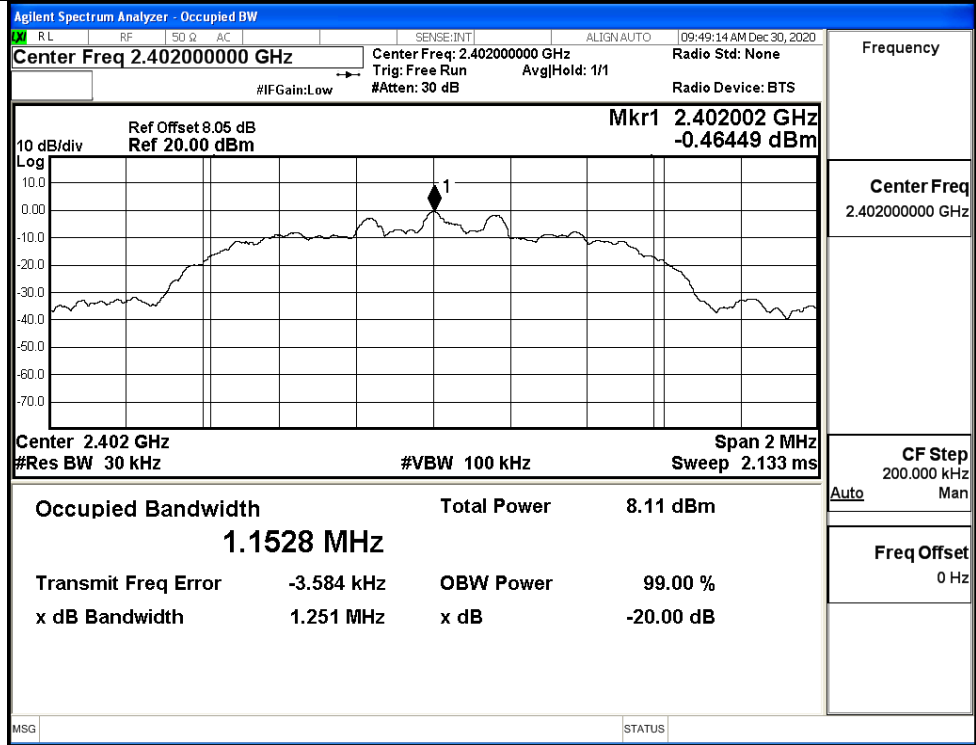
π /4DQPSK/MCH



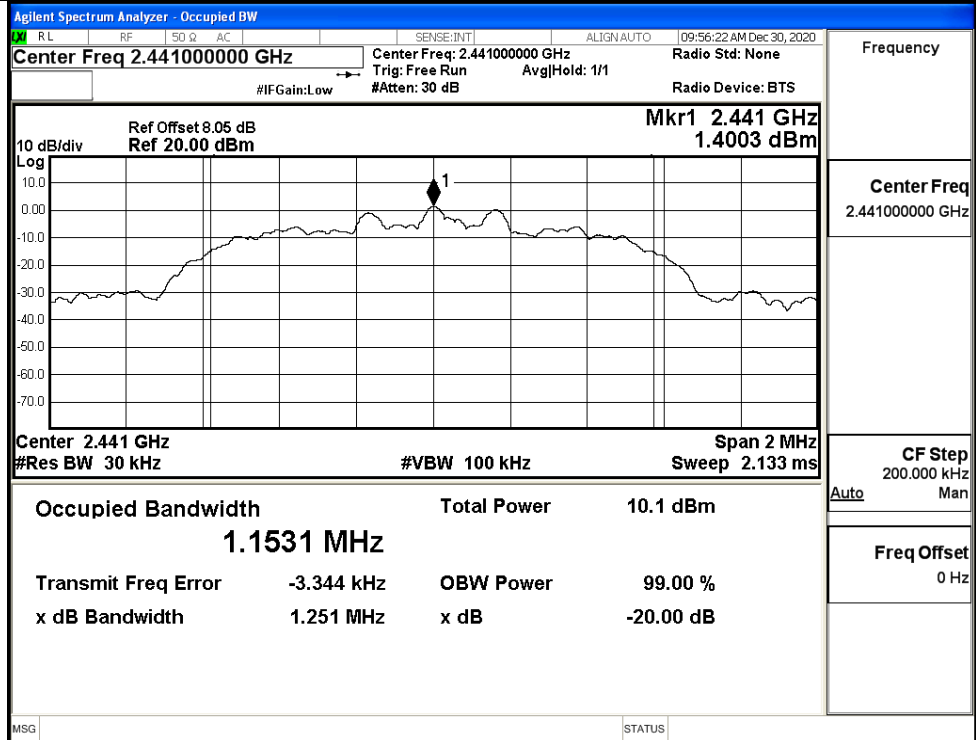
$\pi/4$ DQPSK/HCH



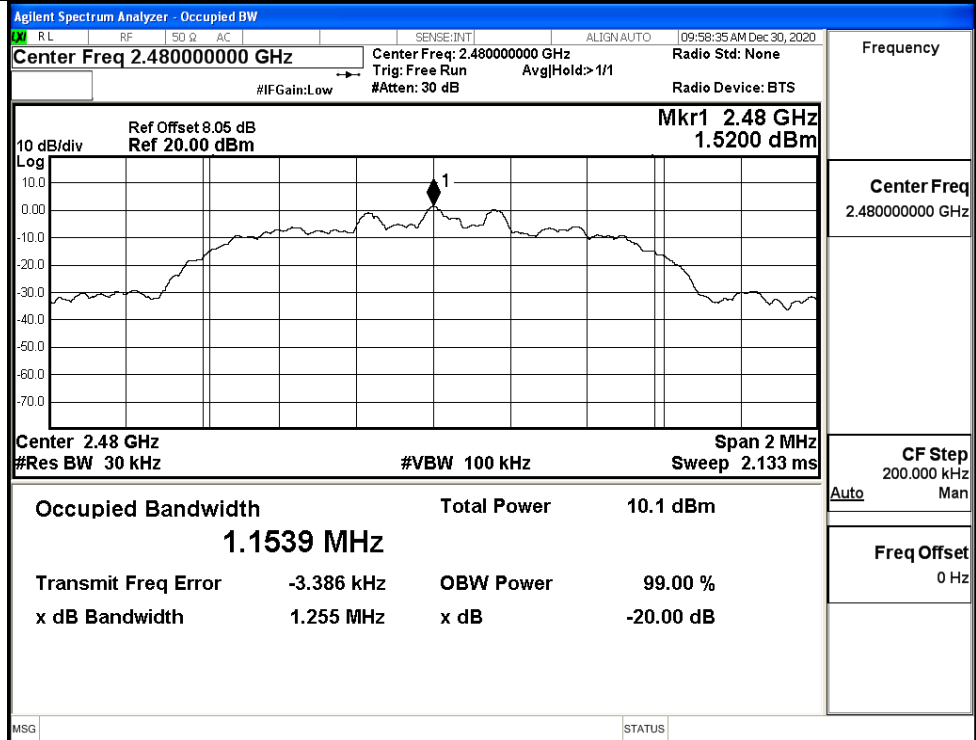
8DPSK/LCH



8DPSK/MCH

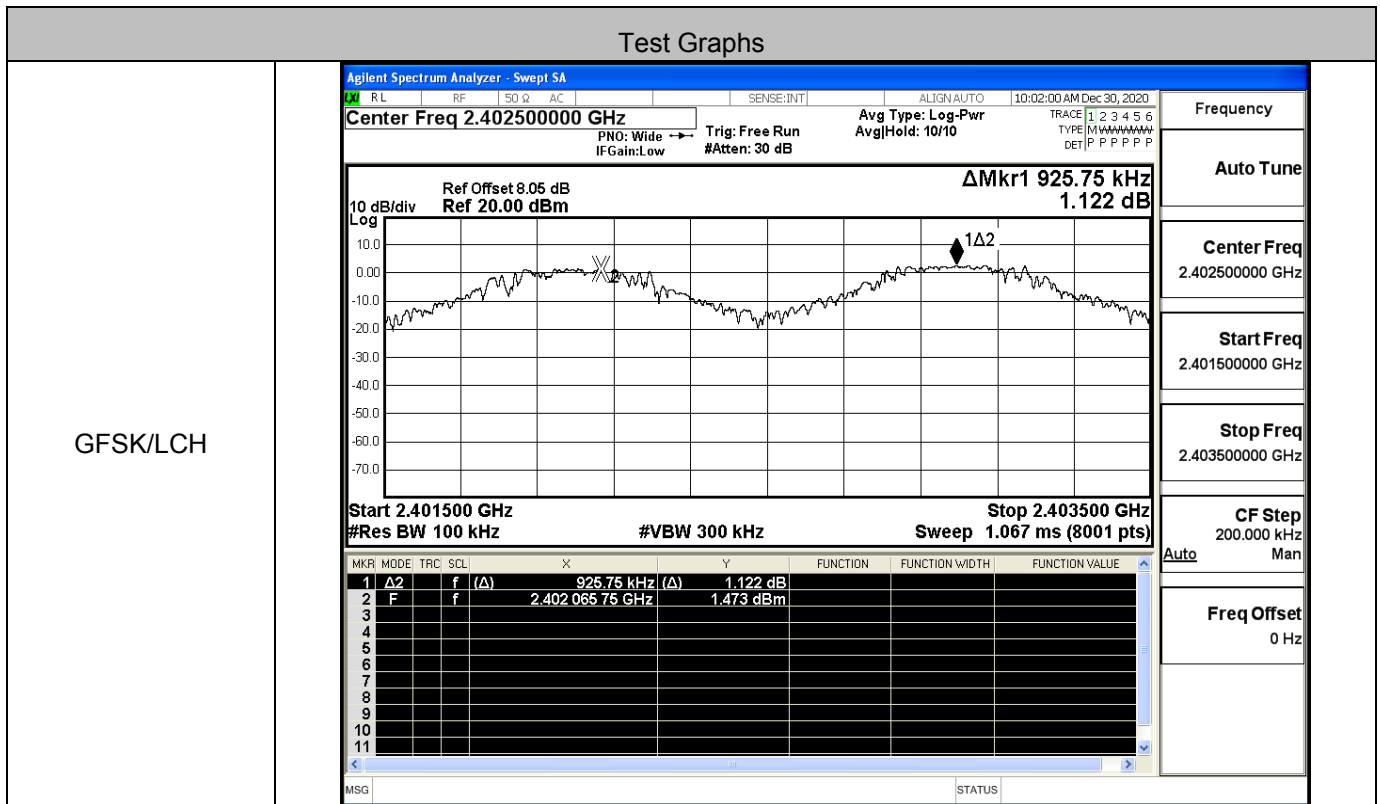


8DPSK/HCH

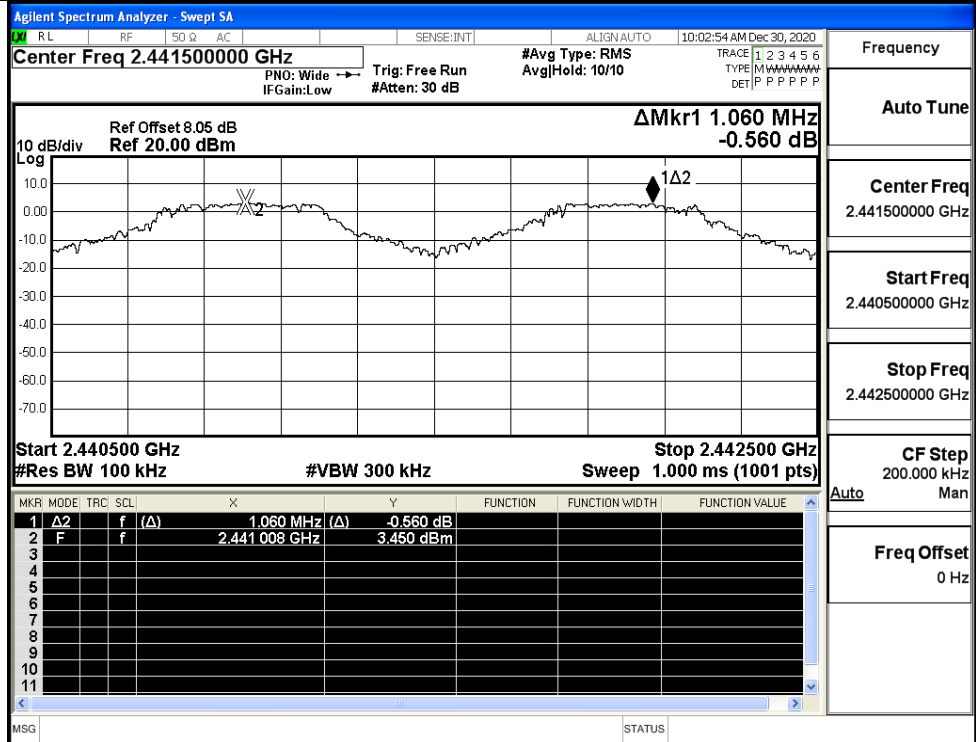


A.3 Carrier Frequency Separation

Mode	Channel	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.926	0.628	PASS
	MCH	1.060	0.628	PASS
	HCH	1.042	0.628	PASS
π/4DQPSK	LCH	1.026	0.832	PASS
	MCH	1.146	0.832	PASS
	HCH	1.080	0.832	PASS
8DPSK	LCH	1.158	0.837	PASS
	MCH	1.048	0.837	PASS
	HCH	1.046	0.837	PASS

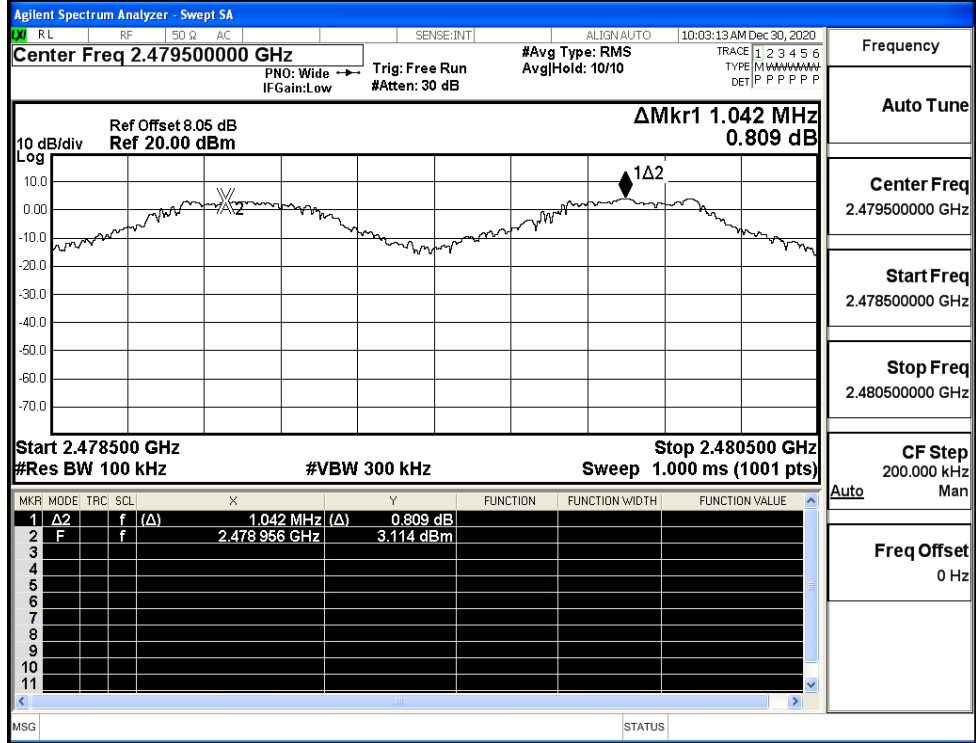


GFSK/MCH



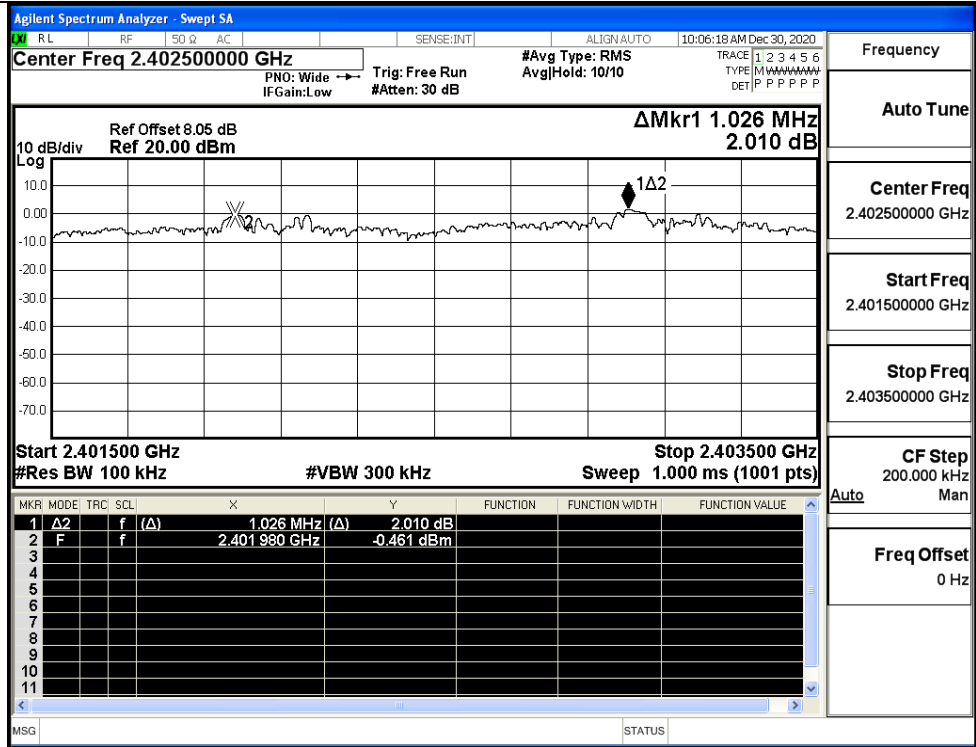
Frequency
Auto Tune
Center Freq
2.441500000 GHz
Start Freq
2.440500000 GHz
Stop Freq
2.442500000 GHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz

GFSK/HCH

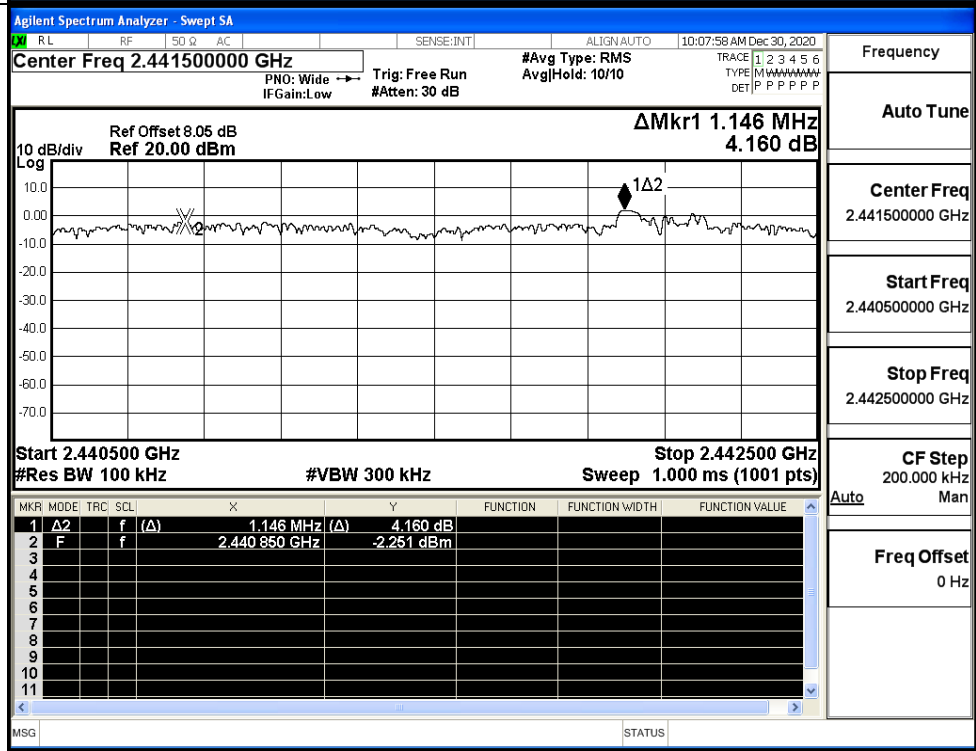


Frequency
Auto Tune
Center Freq
2.479500000 GHz
Start Freq
2.478500000 GHz
Stop Freq
2.480500000 GHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz

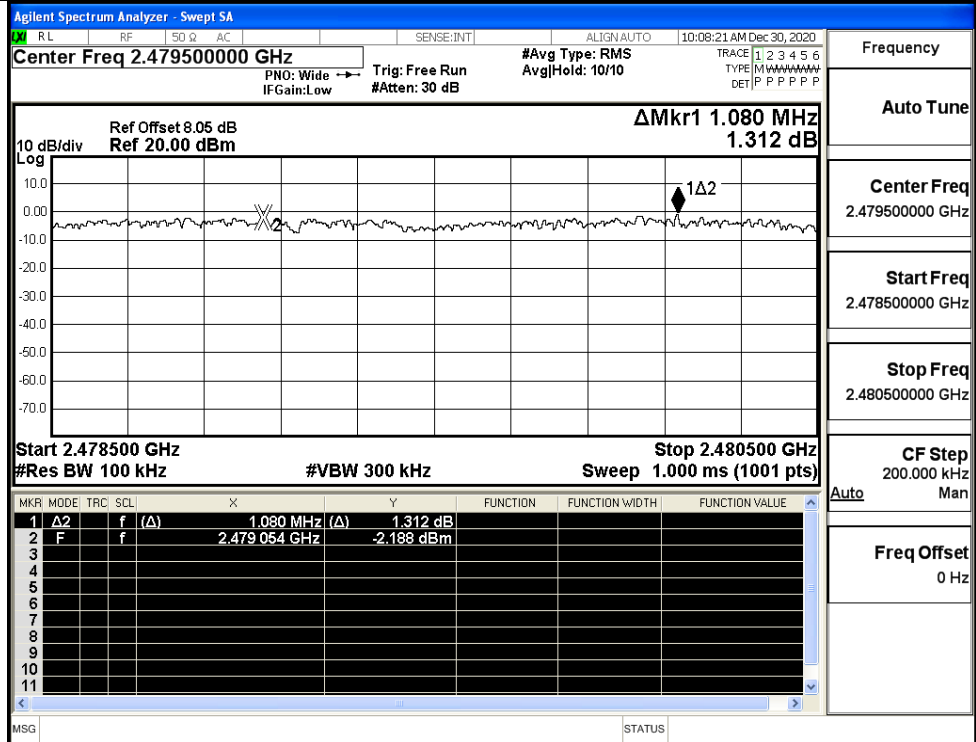
π/4DQPSK/LCH



π/4DQPSK/MCH

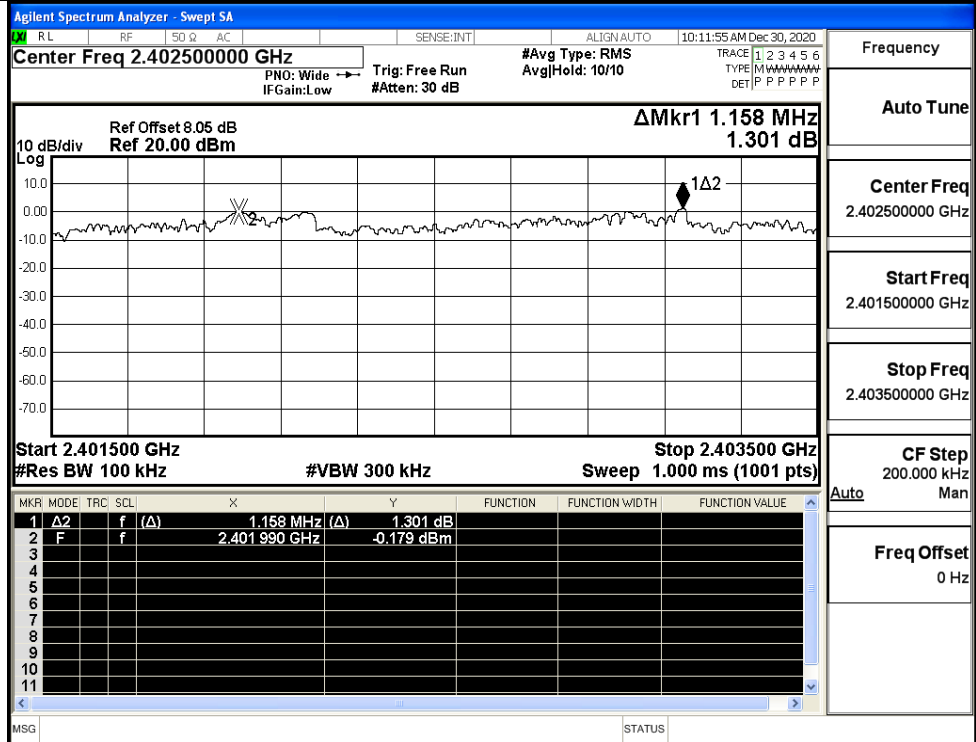


π/4DQPSK/HCH



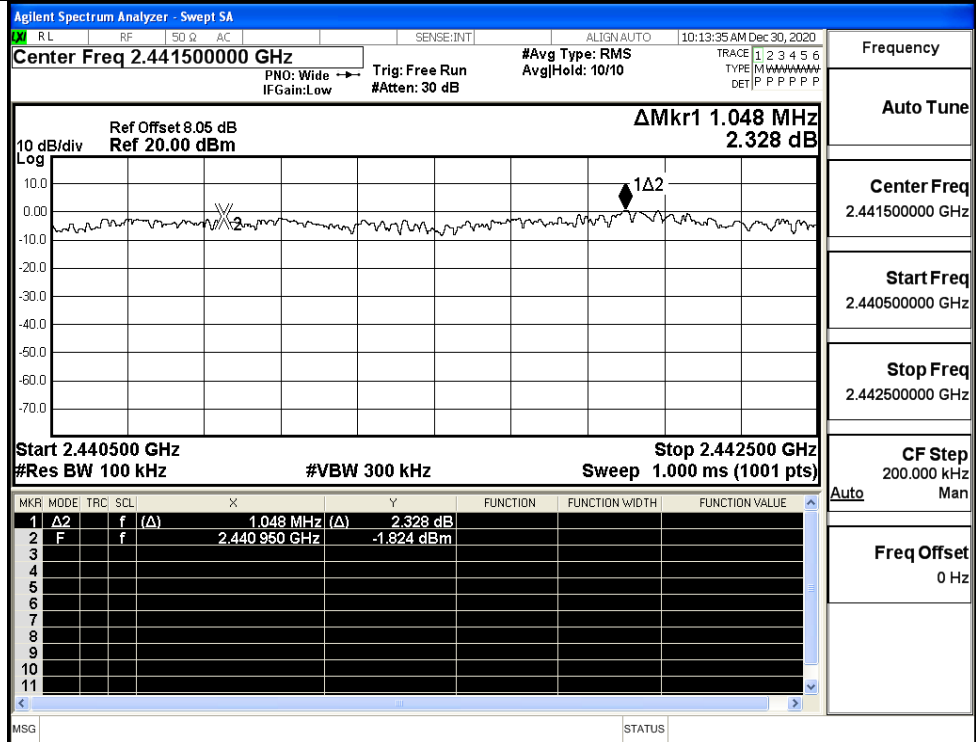
Frequency	2.47950000 GHz
Auto Tune	
Center Freq	2.47950000 GHz
Start Freq	2.47850000 GHz
Stop Freq	2.48050000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

8DPSK/LCH



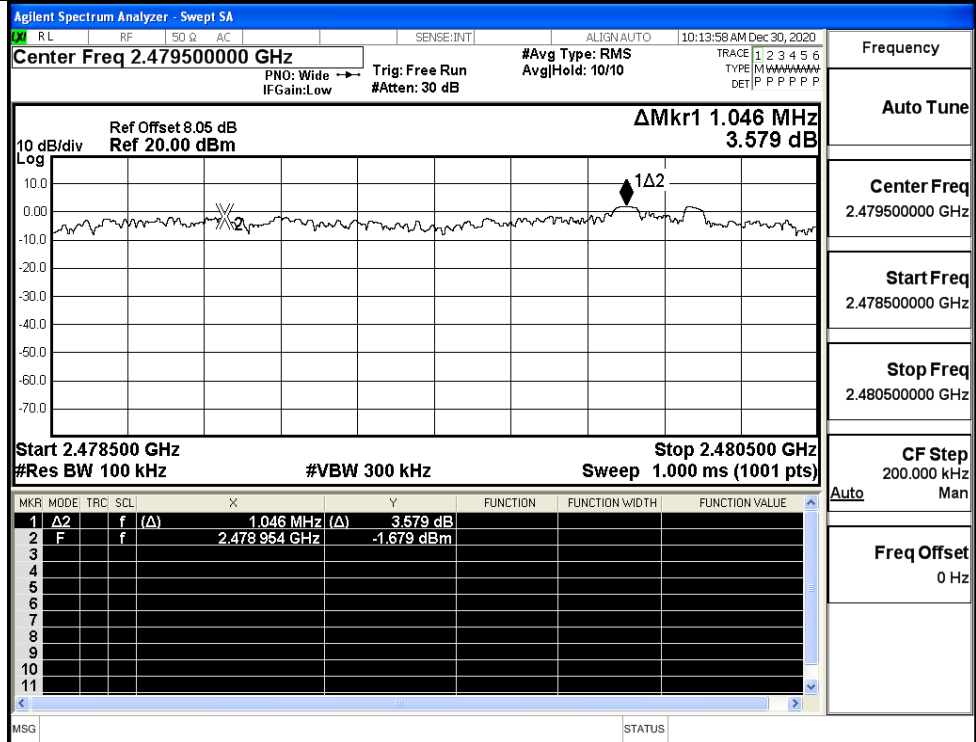
Frequency	2.40250000 GHz
Auto Tune	
Center Freq	2.40250000 GHz
Start Freq	2.40150000 GHz
Stop Freq	2.40350000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

8DPSK/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

8DPSK/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

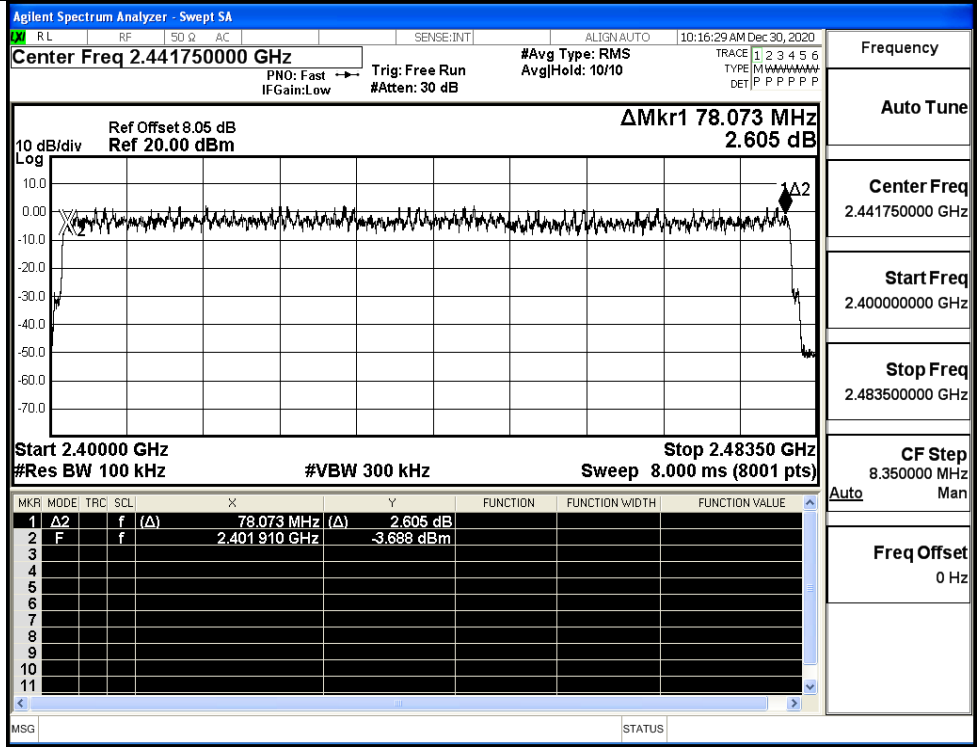
A.4 Hopping Channel Number

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

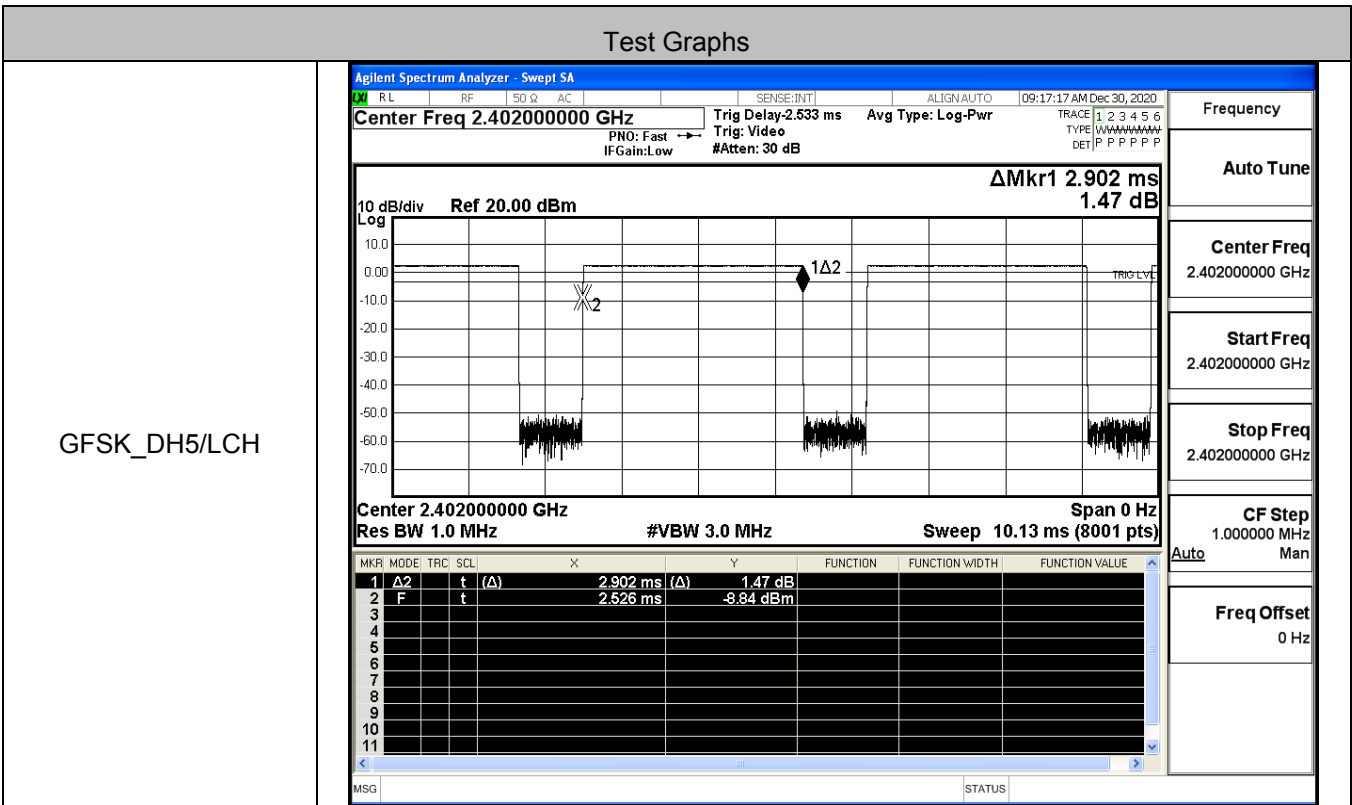
<p>GFSK/Hop</p>	<p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.441750000 GHz</p> <p>Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>ΔMkr1 77.958 MHz 1.557 dB</p> <p>Start 2.40000 GHz #Res BW 100 kHz</p> <p>Stop 2.48350 GHz #VBW 300 kHz Sweep 8.000 ms (8001 pts)</p> <table border="1"> <thead> <tr> <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>77.958 MHz (Δ)</td> <td>1.557 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td>(Δ)</td> <td>2.402025 GHz</td> <td>1.583 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)	77.958 MHz (Δ)	1.557 dB				2	F	f	(Δ)	2.402025 GHz	1.583 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)	77.958 MHz (Δ)	1.557 dB																								
2	F	f	(Δ)	2.402025 GHz	1.583 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 78.323 MHz 4.649 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>78.323 MHz (Δ)</td> <td>4.649 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td>(Δ)</td> <td>2.401785 GHz</td> <td>-3.815 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)	78.323 MHz (Δ)	4.649 dB				2	F	f	(Δ)	2.401785 GHz	-3.815 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)	78.323 MHz (Δ)	4.649 dB																								
2	F	f	(Δ)	2.401785 GHz	-3.815 dBm																								

8DPSK/Hop

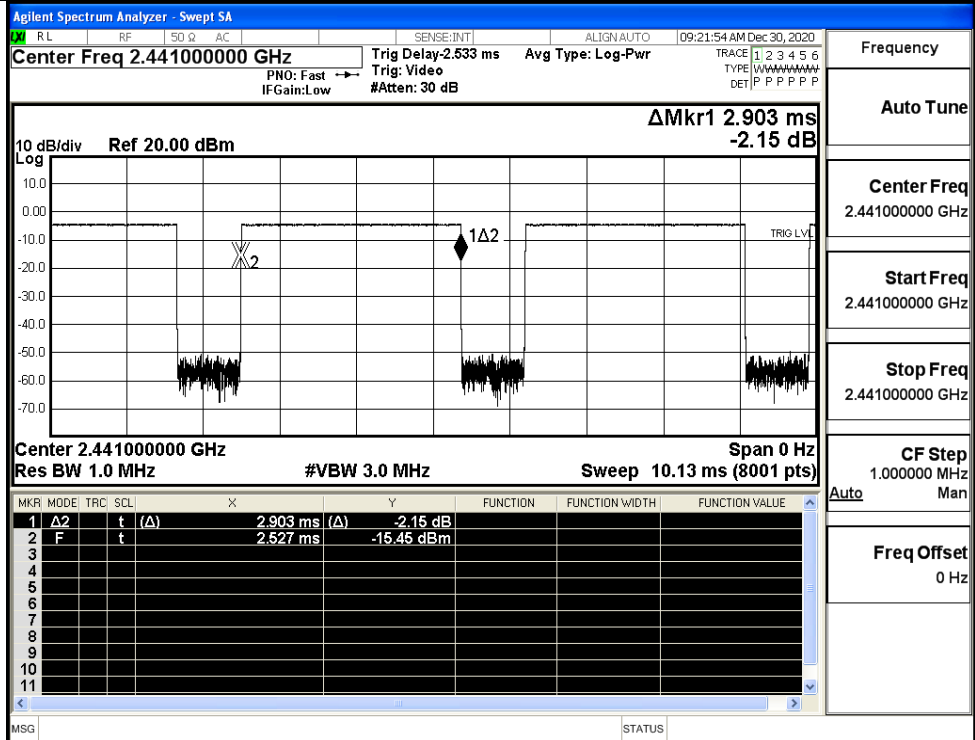


A.5 Dwell Time

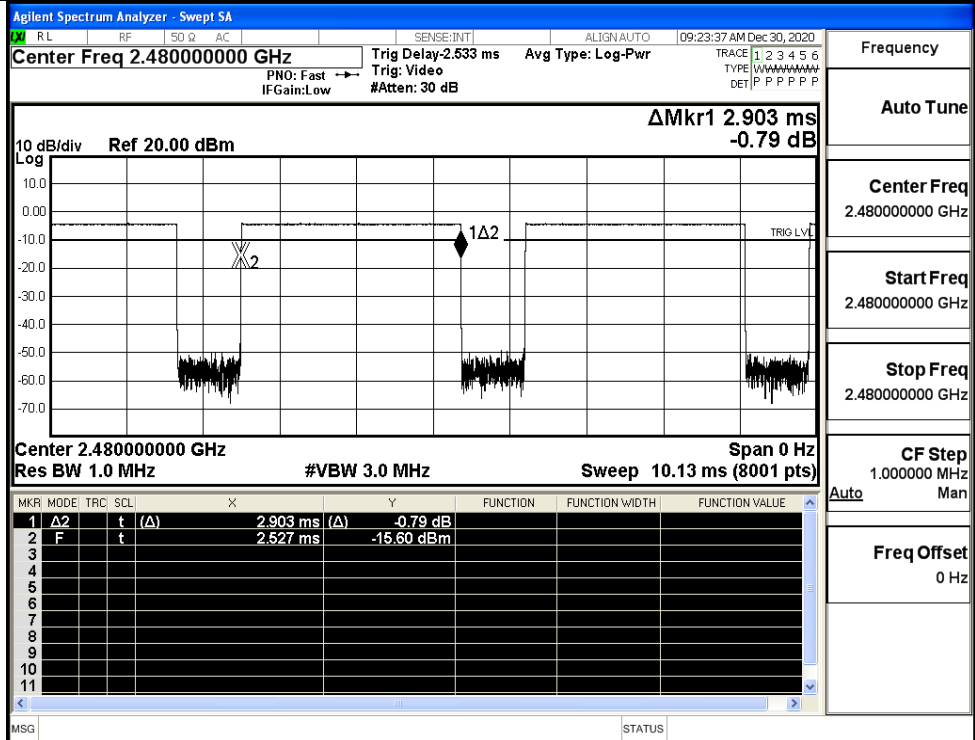
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.9	106.7	0.309	0.4	PASS
	DH5	MCH	2.9	106.7	0.309	0.4	PASS
	DH5	HCH	2.9	106.7	0.309	0.4	PASS
π/4DQPSK	2DH5	LCH	2.9	106.7	0.31	0.4	PASS
	2DH5	MCH	2.9	106.7	0.31	0.4	PASS
	2DH5	HCH	2.9	106.7	0.31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



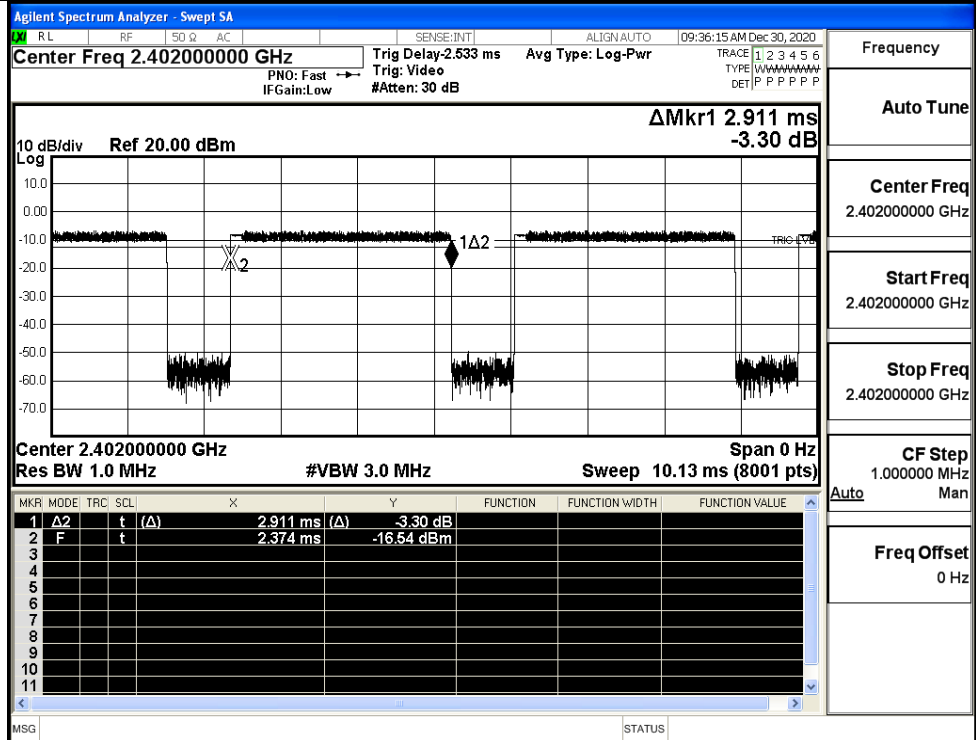
GFSK_DH5/MCH



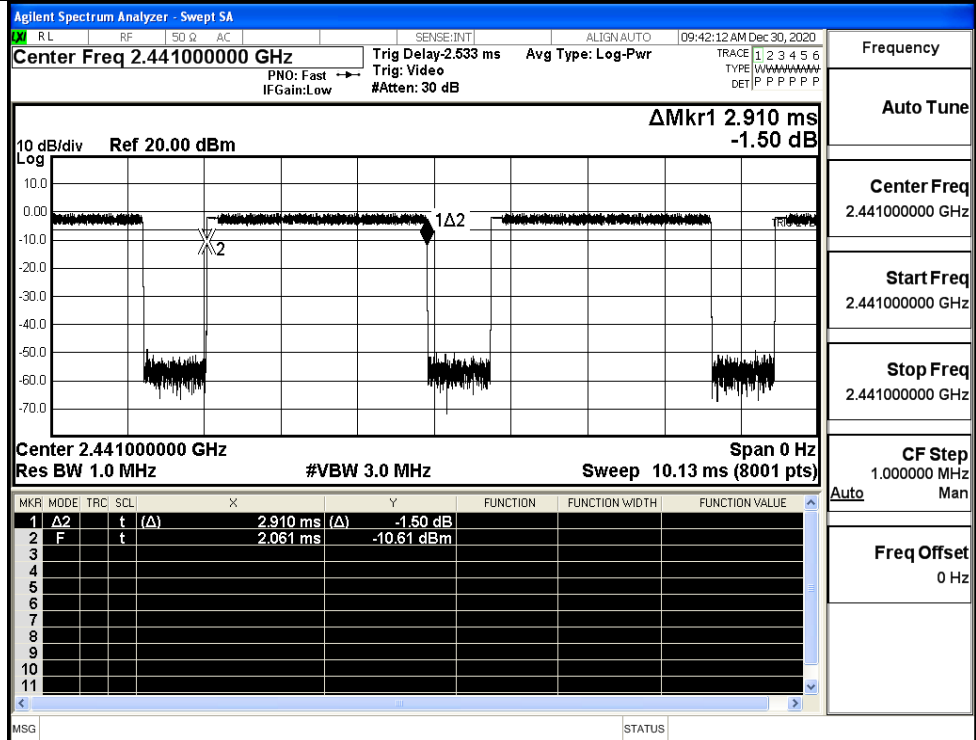
GFSK_DH5/HCH



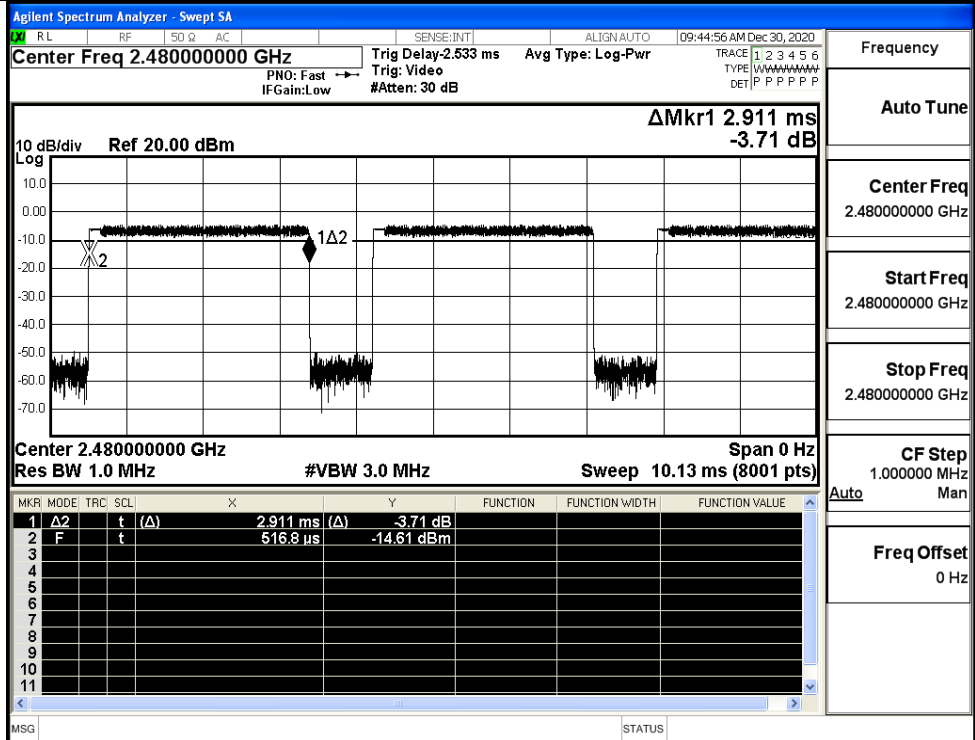
π /4DQPSK
_2DH5/LCH



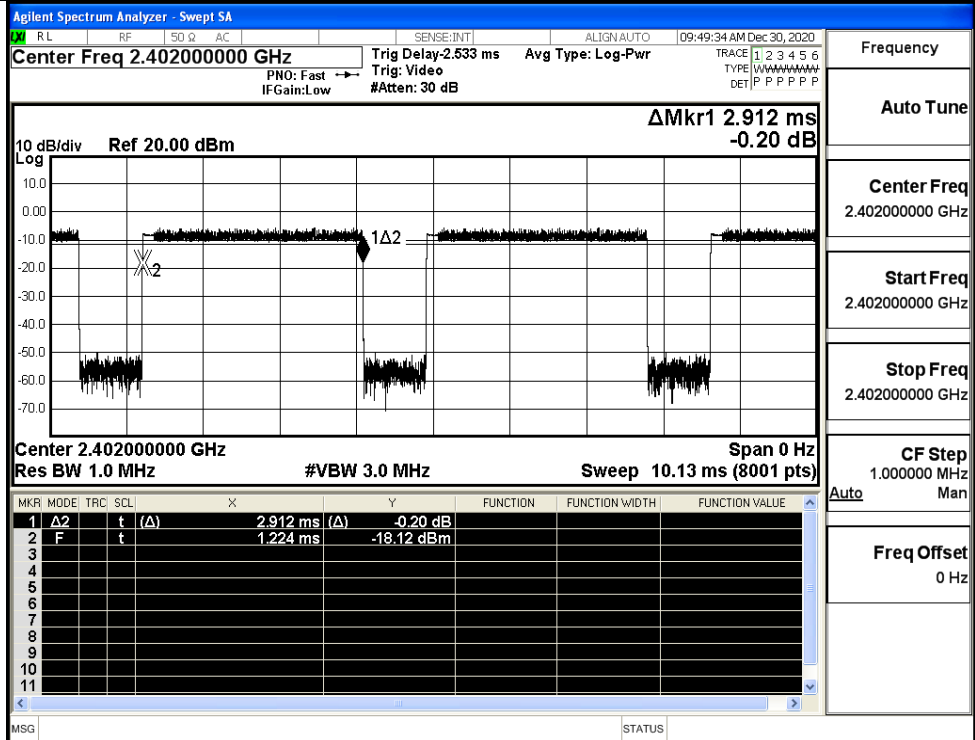
π /4DQPSK
_2DH5/MCH



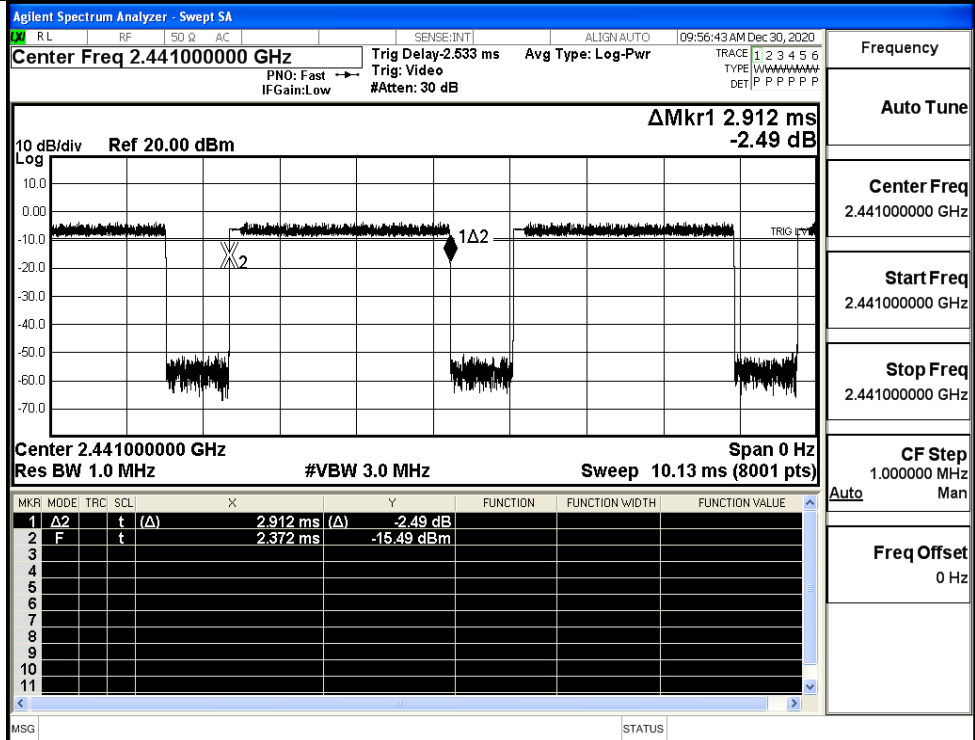
$\pi/4$ DQPSK
_2DH5/HCH



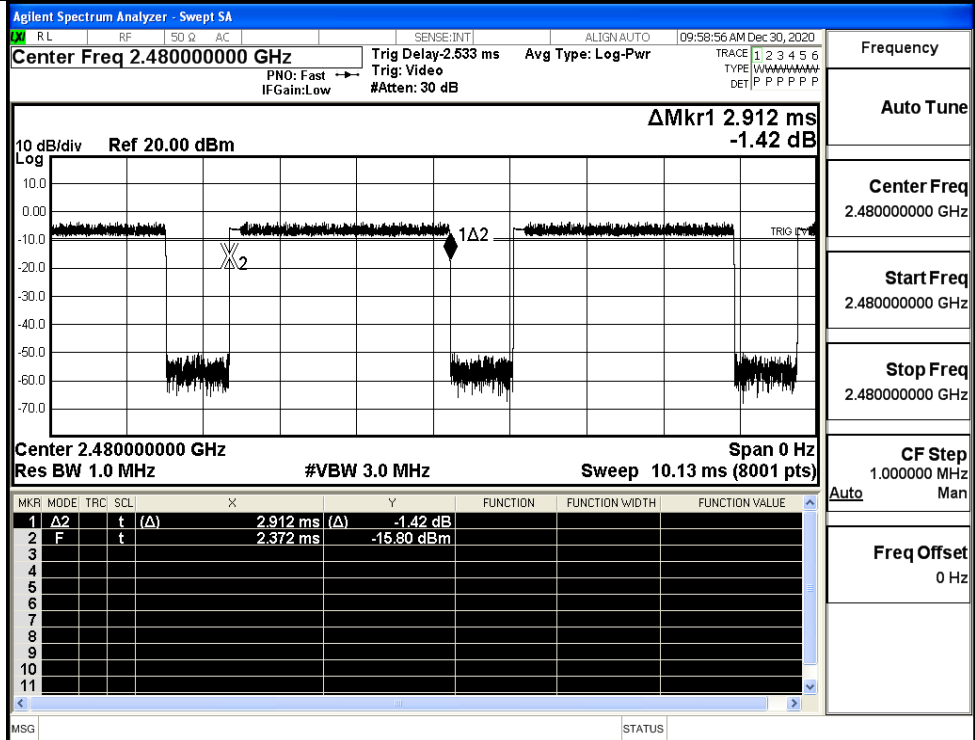
8DPSK_3DH5/LCH



8DPSK_3DH5/MCH



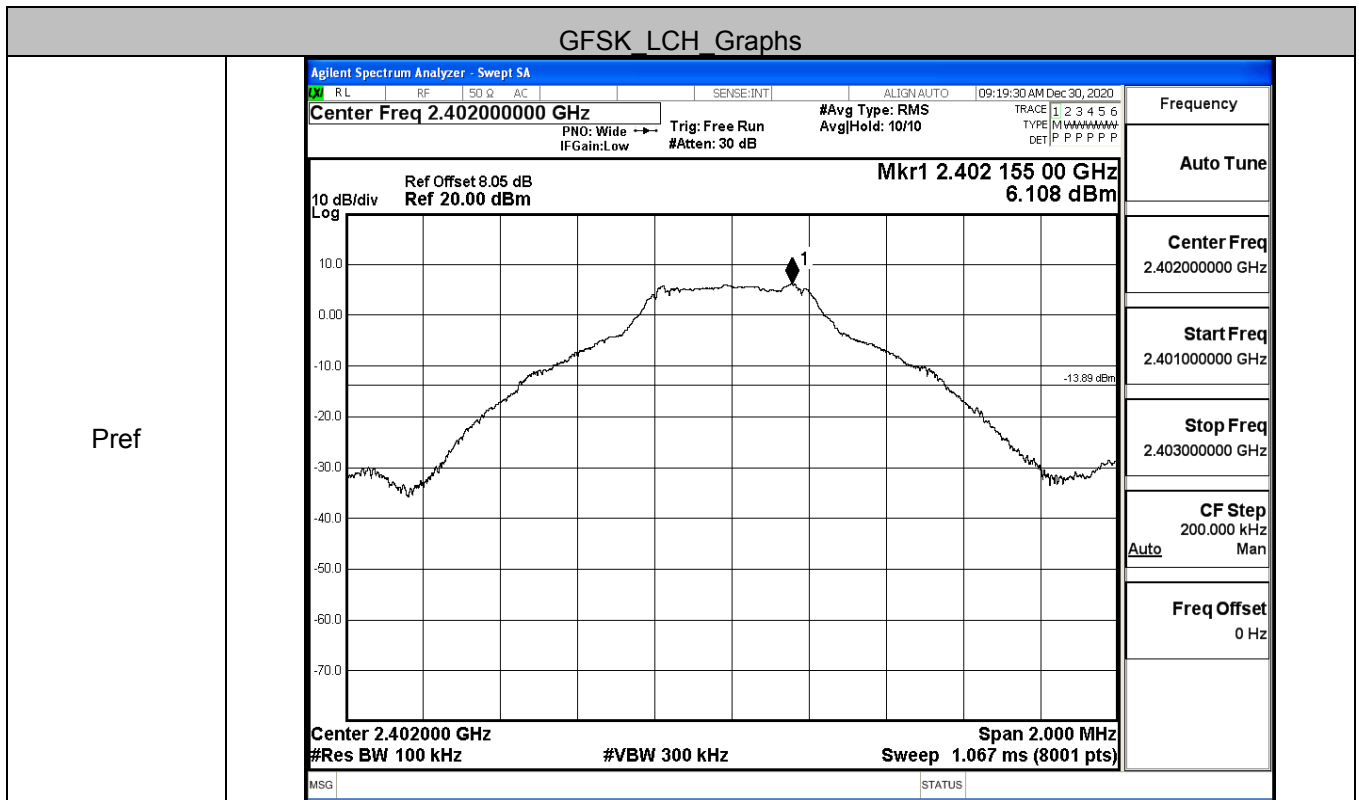
8DPSK_3DH5/HCH

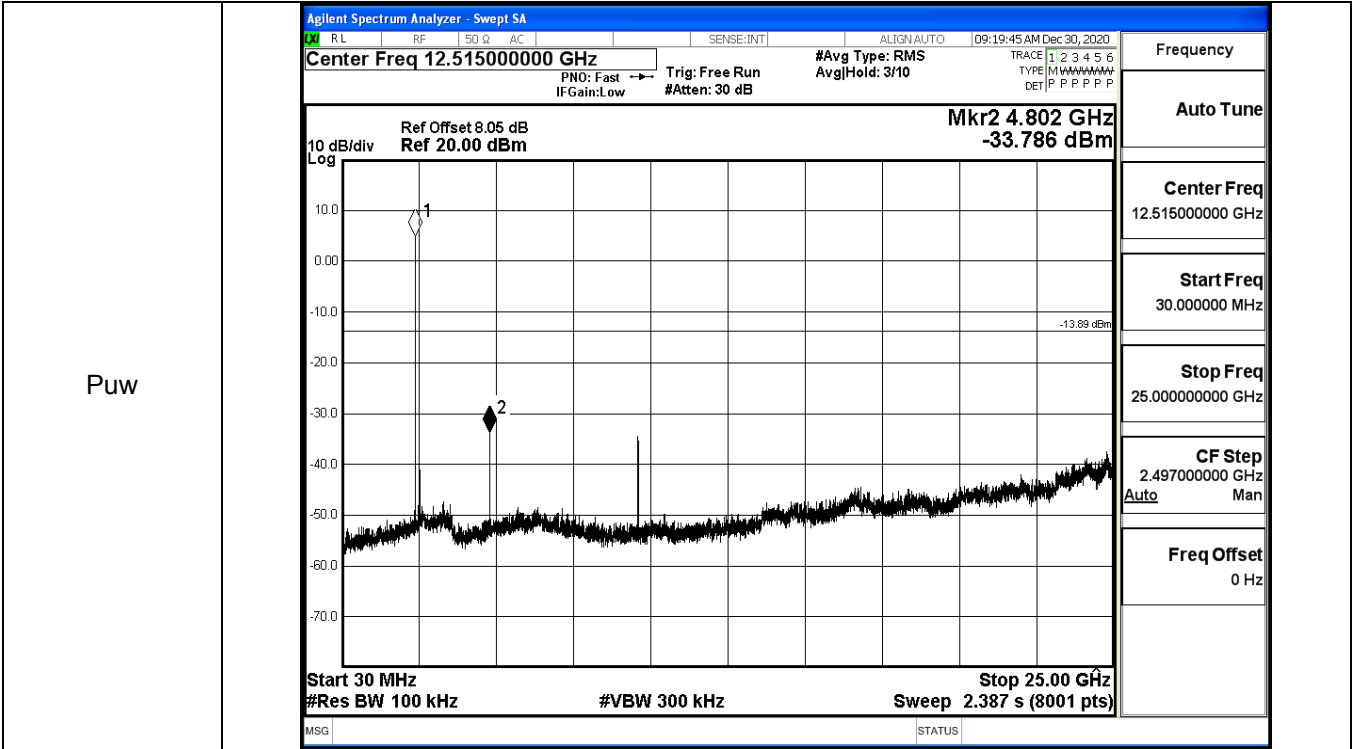


A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	6.108	-33.786	-13.892	PASS
	MCH	3.396	-34.692	-16.604	PASS
	HCH	3.864	-33.103	-16.136	PASS
$\pi/4$ DQPSK	LCH	4.008	-37.411	-15.992	PASS
	MCH	1.767	-37.855	-18.233	PASS
	HCH	1.933	-36.369	-18.067	PASS
8DPSK	LCH	0.062	-37.915	-19.938	PASS
	MCH	1.969	-37.189	-18.031	PASS
	HCH	2.072	-37.935	-17.928	PASS

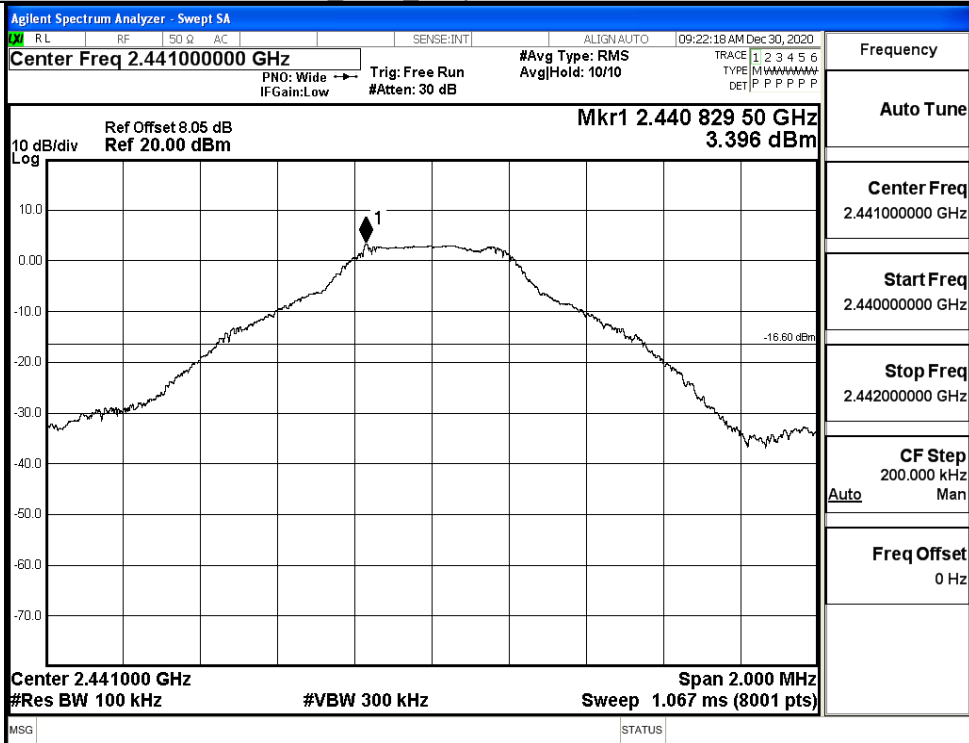
GFSK LCH Graphs



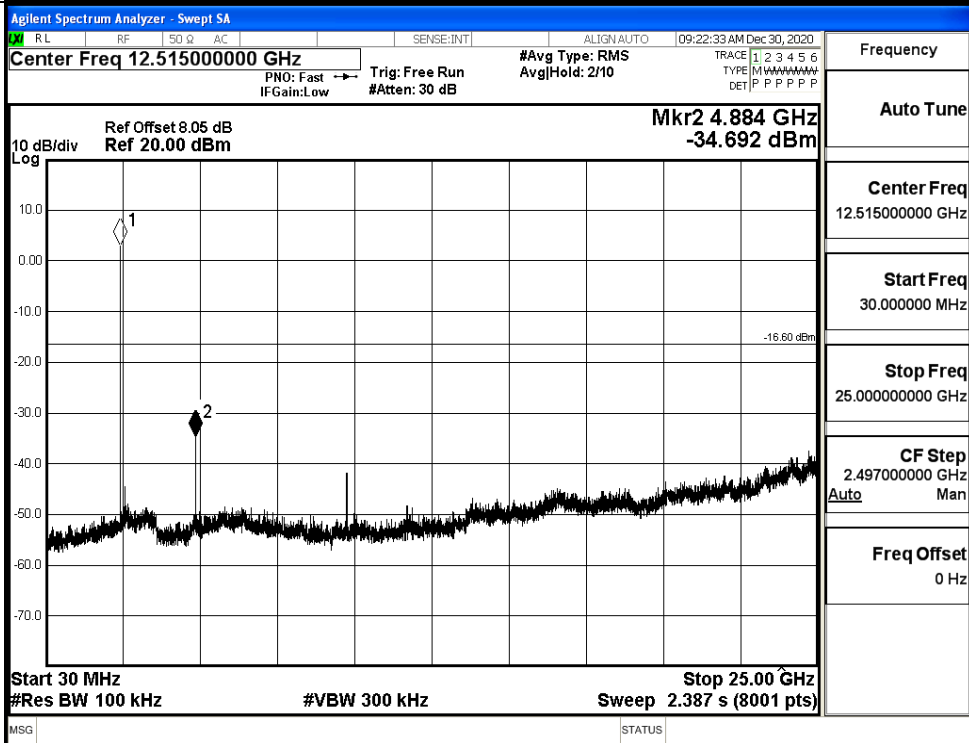


GFSK_MCH_Graphs

Pref

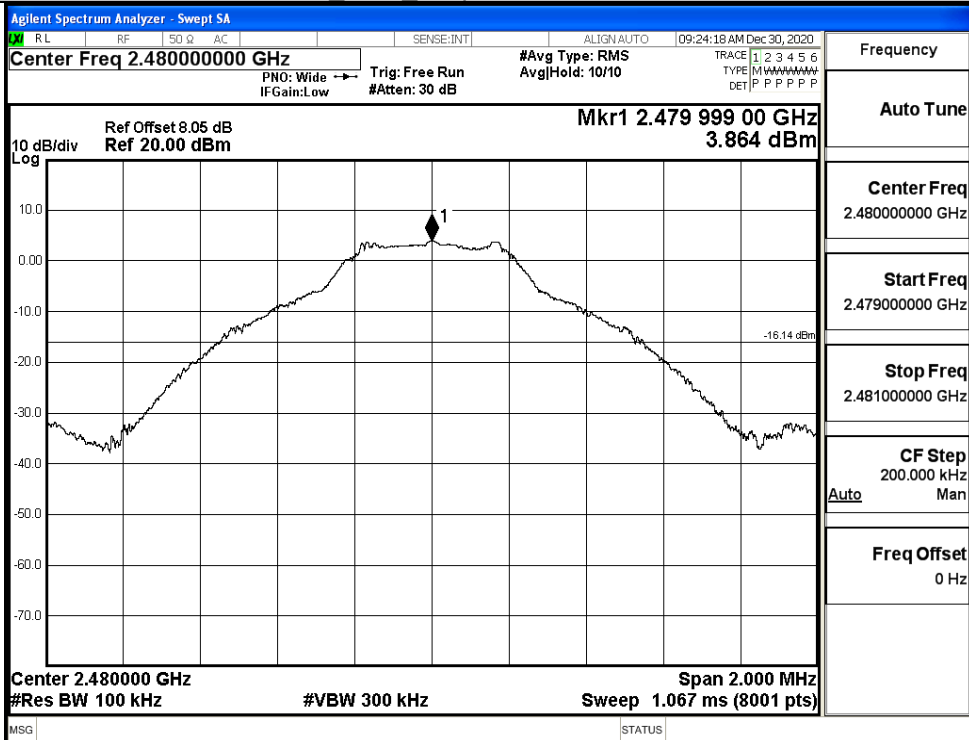


Puw

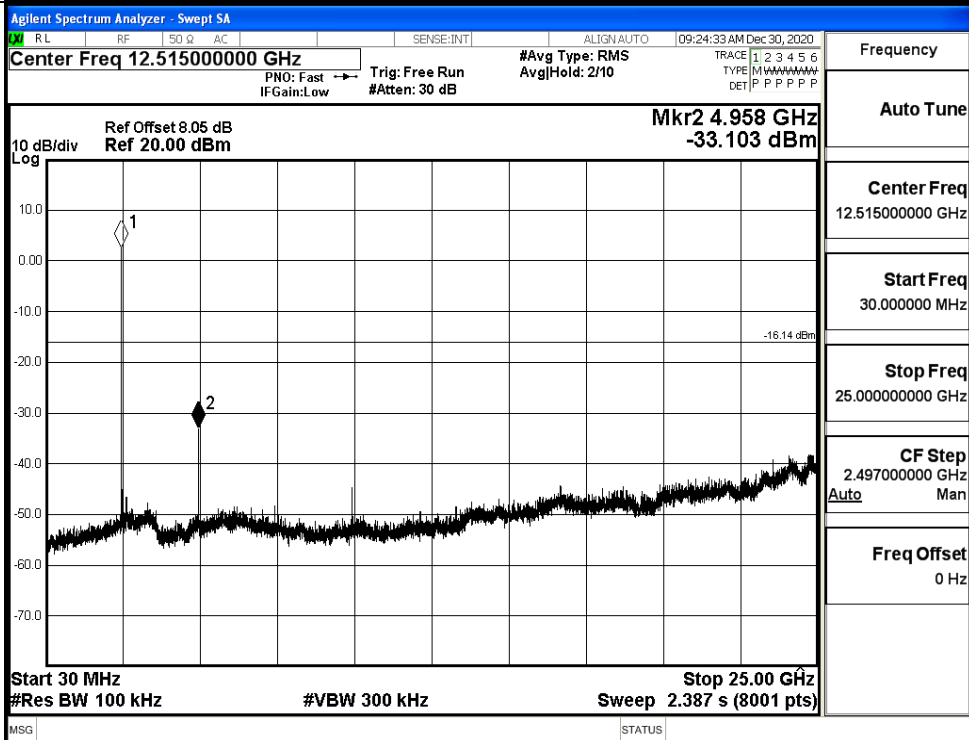


GFSK_HCH_Graphs

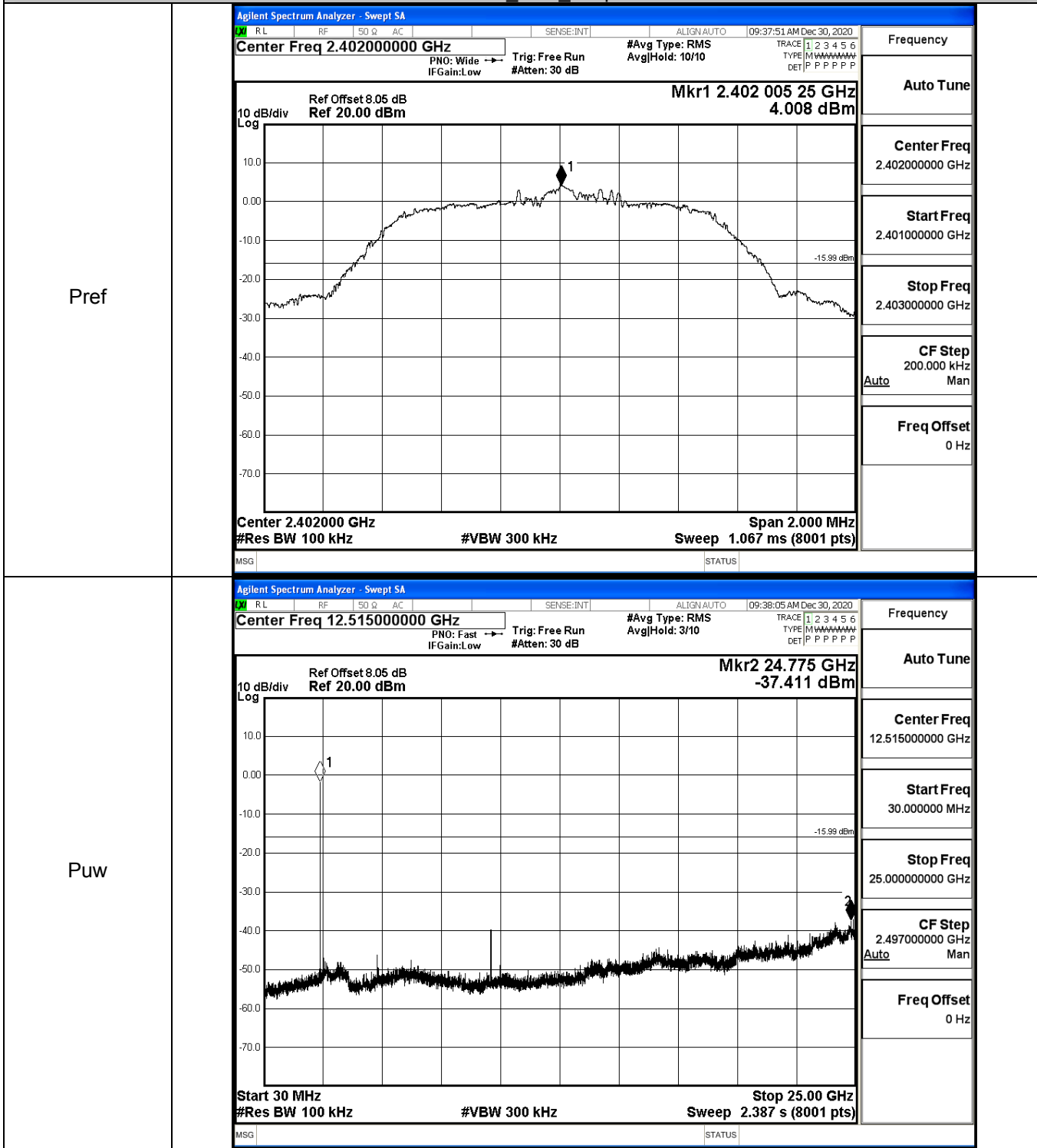
Pref



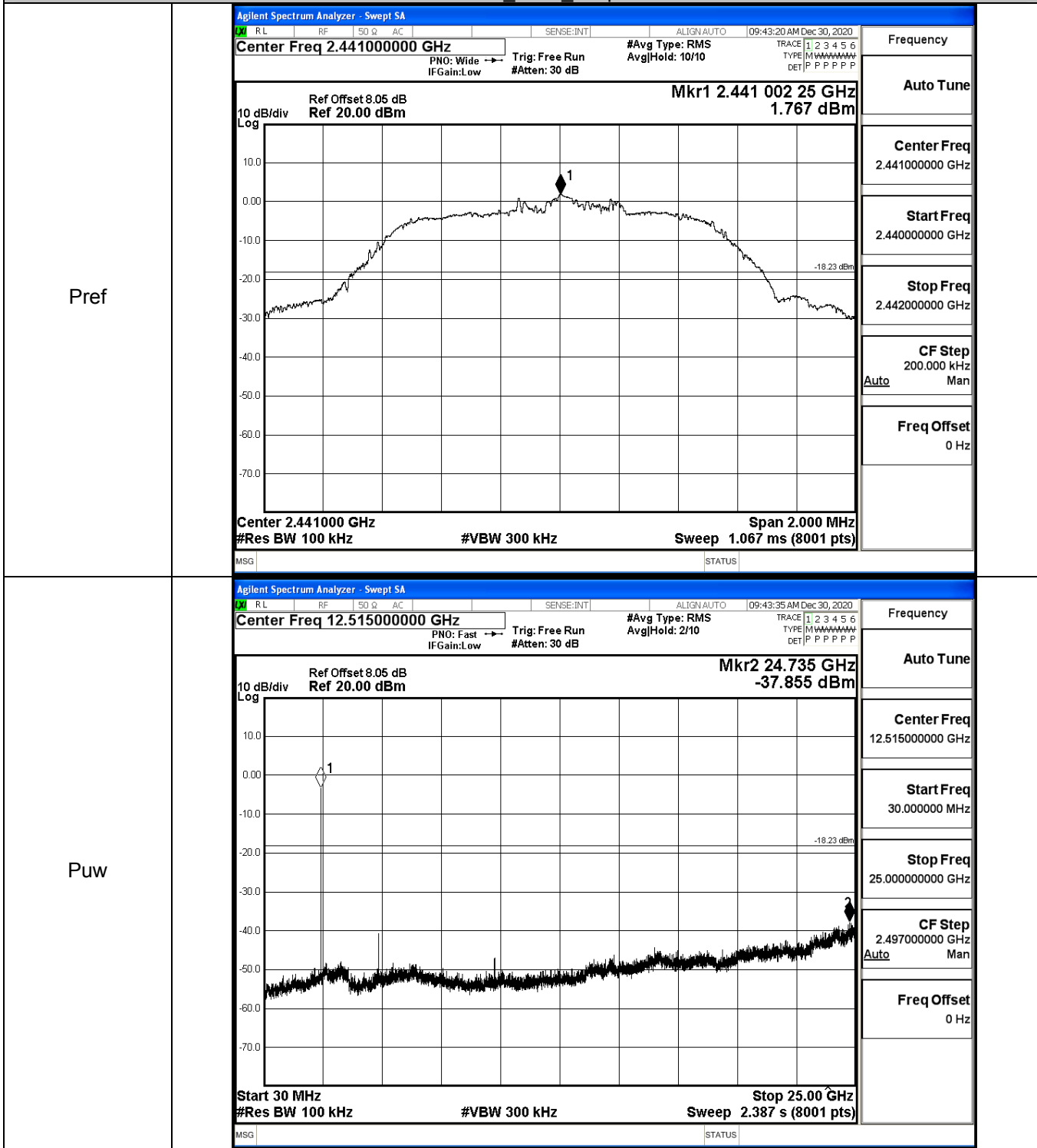
Puw



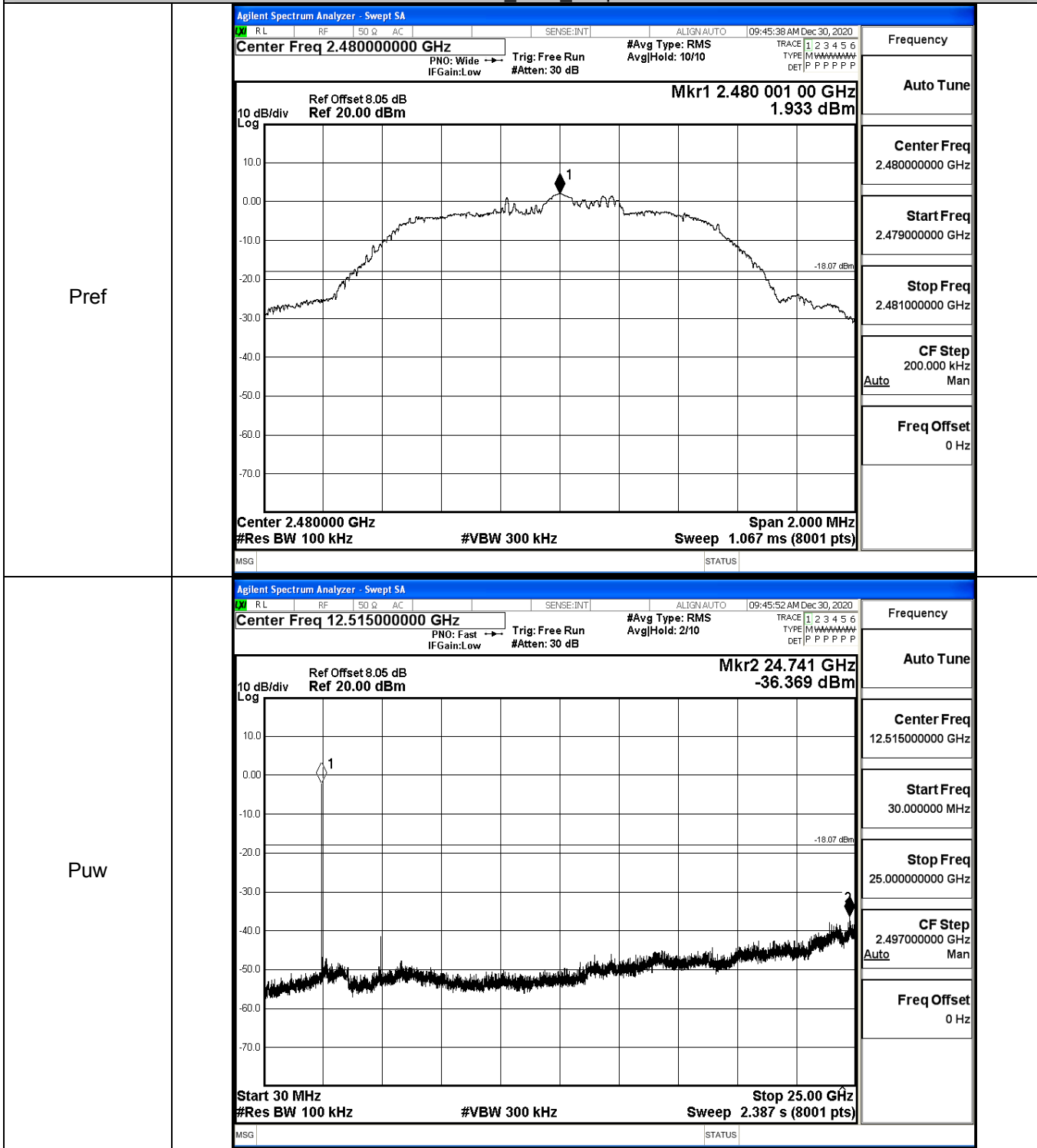
$\pi/4$ DQPSK_LCH_Graphs



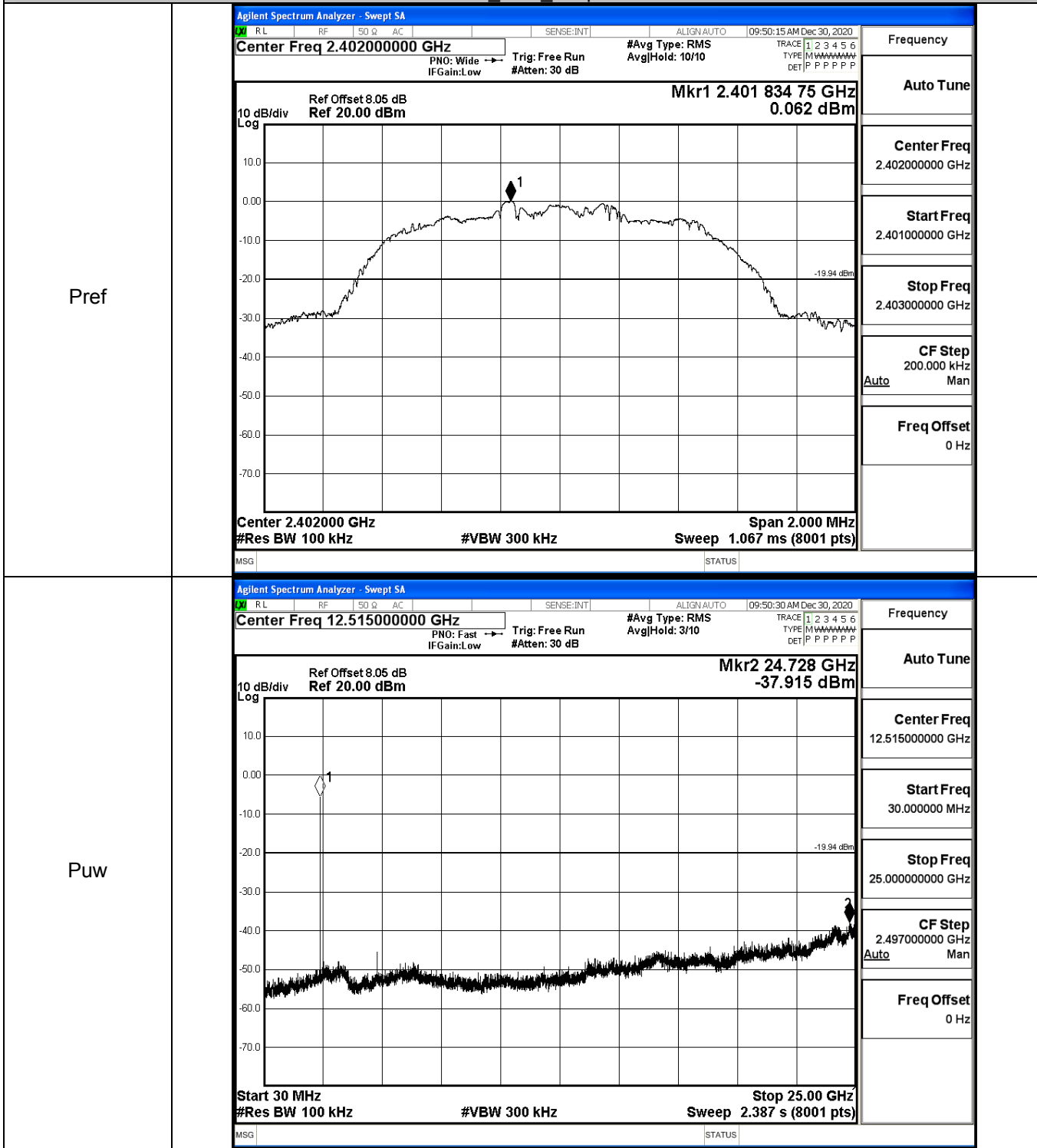
$\pi/4$ DQPSK_MCH_Graphs



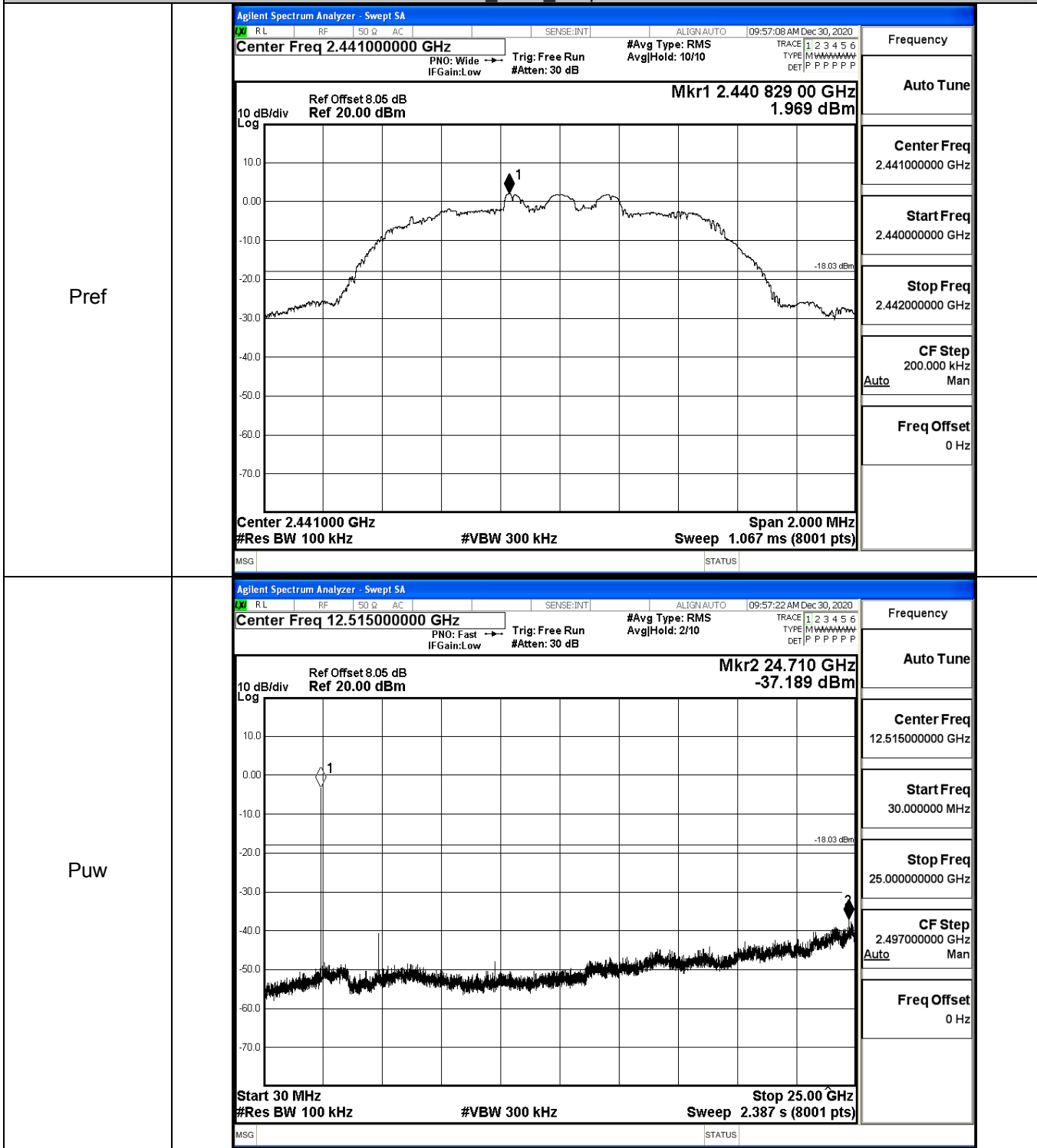
$\pi/4$ DQPSK_HCH_Graphs



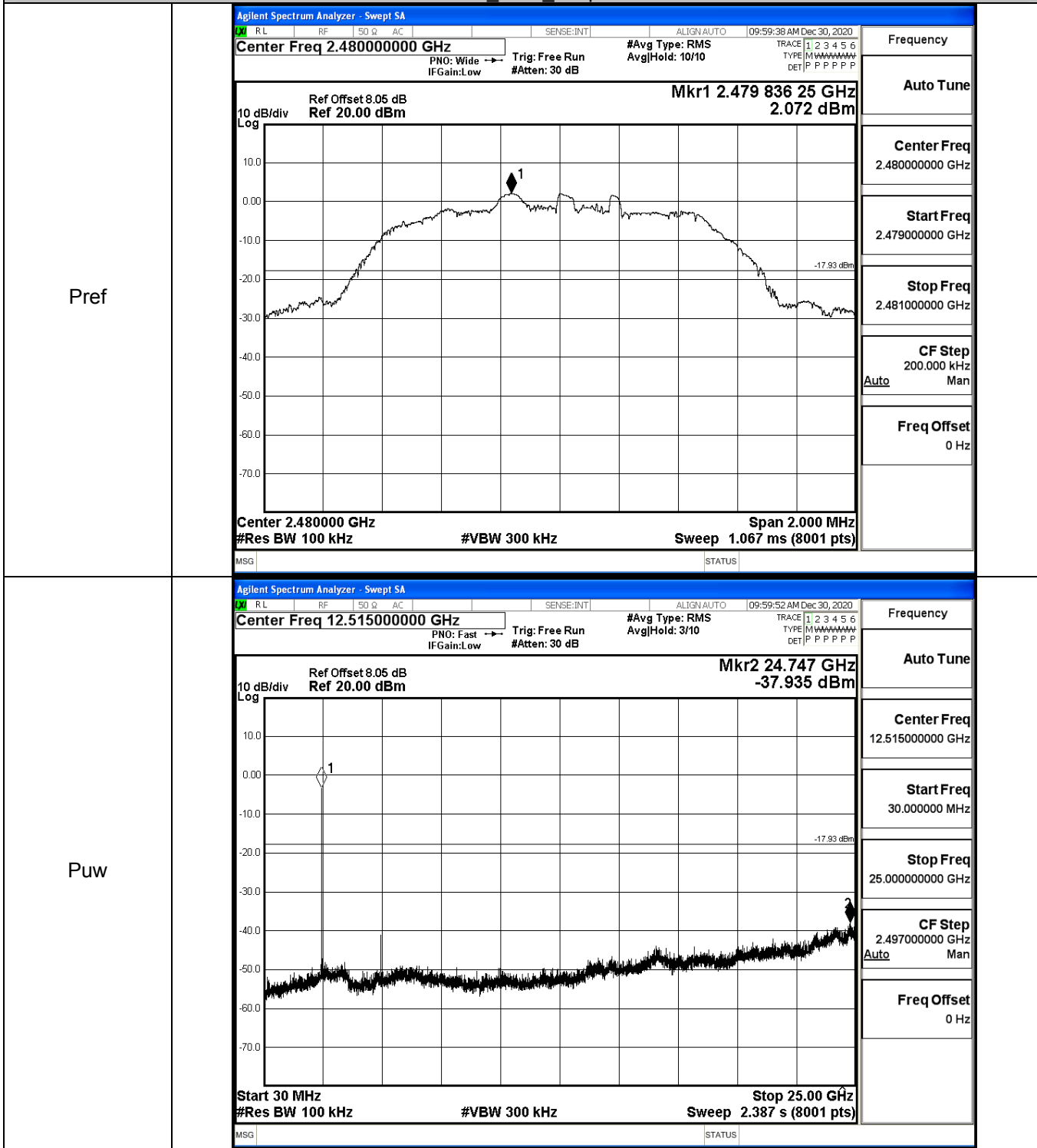
8DPSK_LCH_Graphs



8DPSK_MCH_Graphs



8DPSK_HCH_Graphs

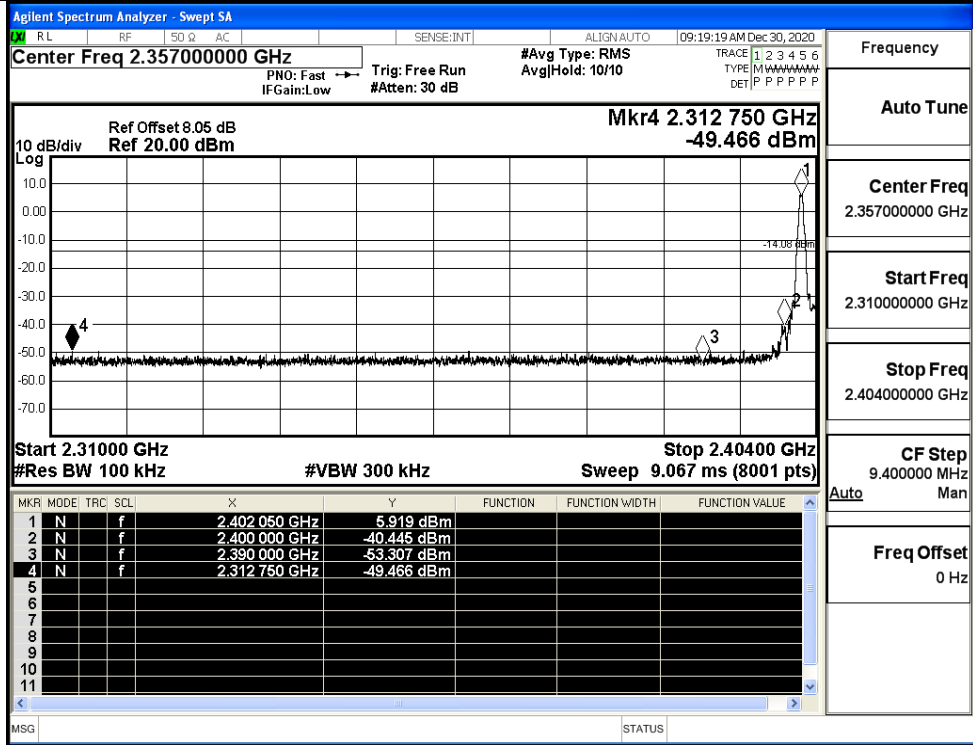


A.7 Band-edge for RF Conducted Emissions

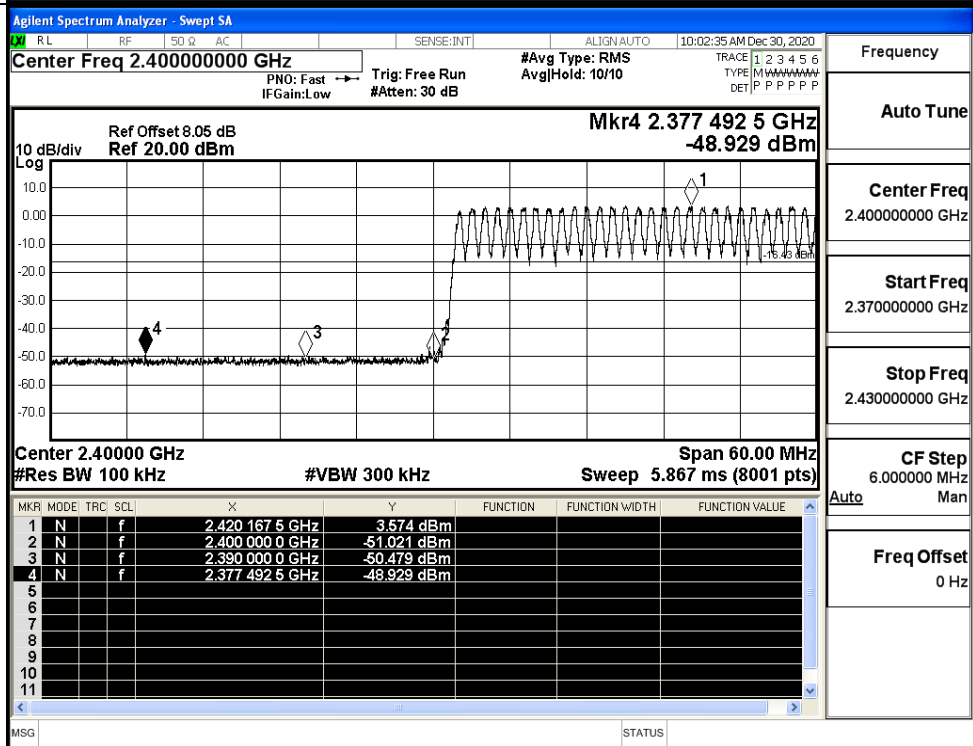
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	5.919	Off	-49.466	-14.08	PASS
			3.574	On	-48.929	-16.43	PASS
	HCH	2480	3.861	Off	-48.717	-16.14	PASS
			3.524	On	-47.851	-16.48	PASS
$\pi/4$ DQPSK	LCH	2402	1.875	Off	-49.857	-18.13	PASS
			2.230	On	-49.536	-17.77	PASS
	HCH	2480	1.936	Off	-49.296	-18.06	PASS
			1.792	On	-48.016	-18.21	PASS
8DPSK	LCH	2402	0.182	Off	-49.865	-19.82	PASS
			2.102	On	-48.769	-17.9	PASS
	HCH	2480	2.055	Off	-49.069	-17.95	PASS
			1.971	On	-48.612	-18.03	PASS

Test Graphs

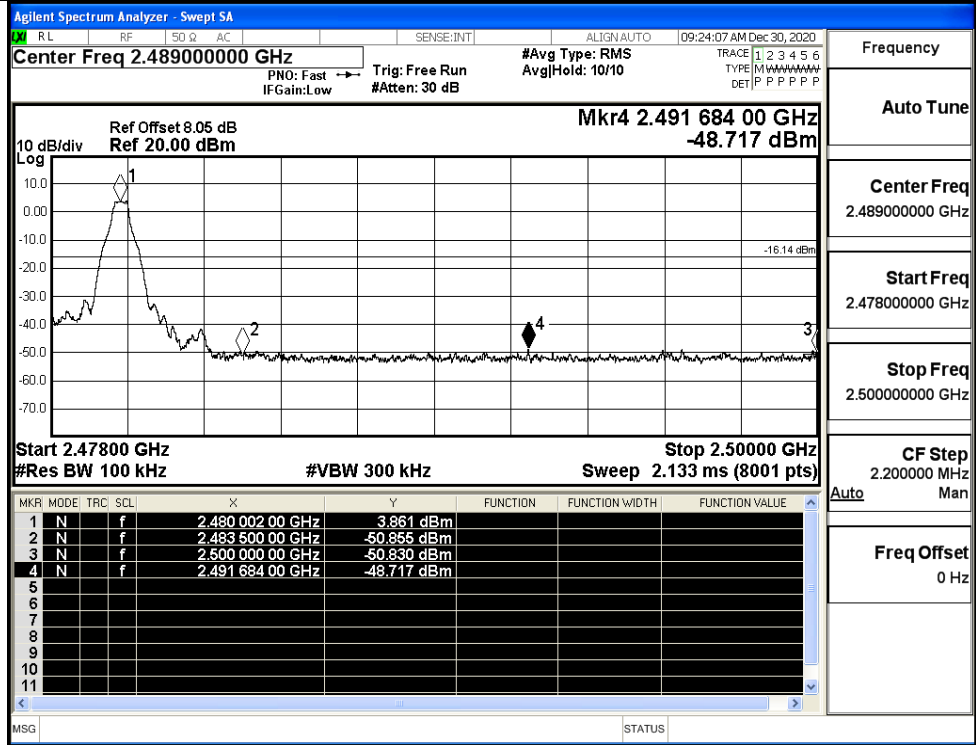
GFSK/LCH/No Hop



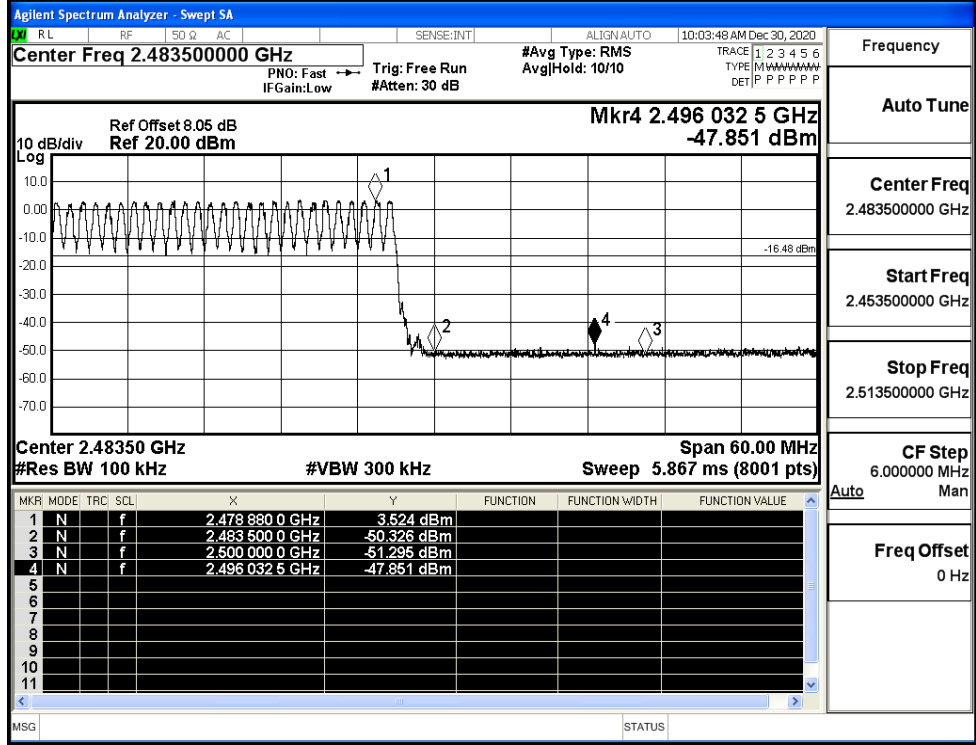
GFSK/LCH/Hop



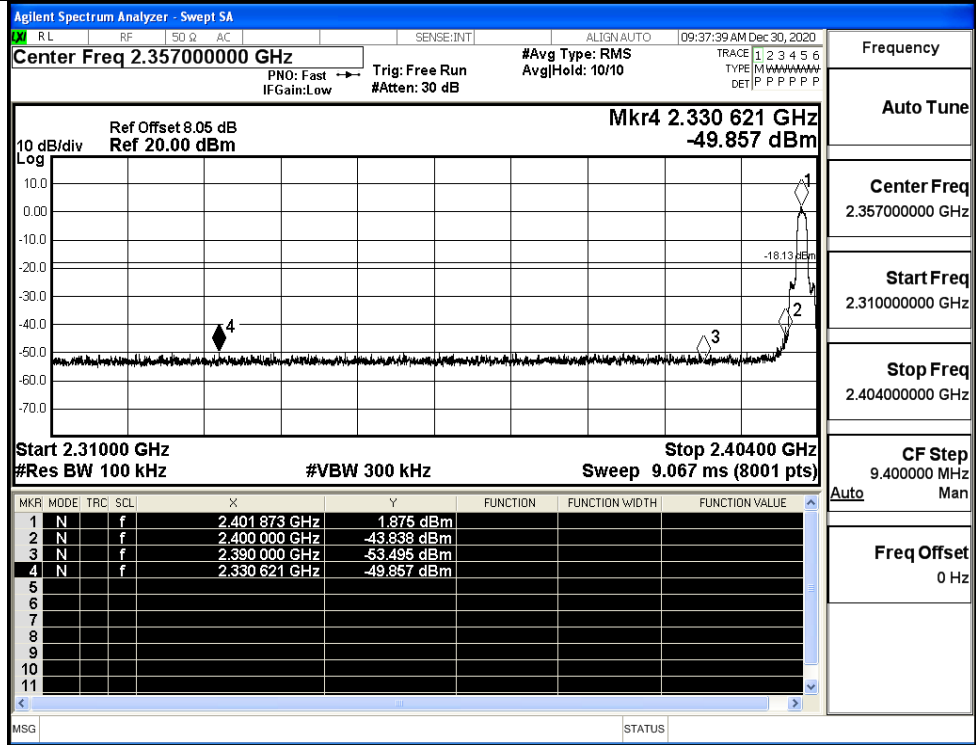
GFSK/HCH/No Hop



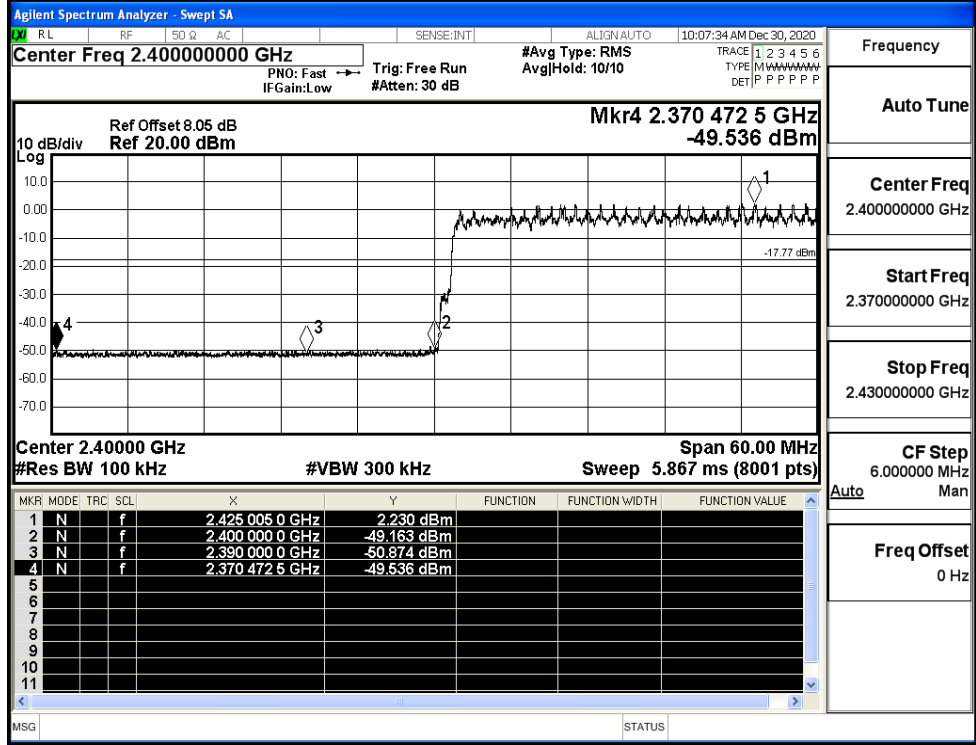
GFSK/HCH/Hop



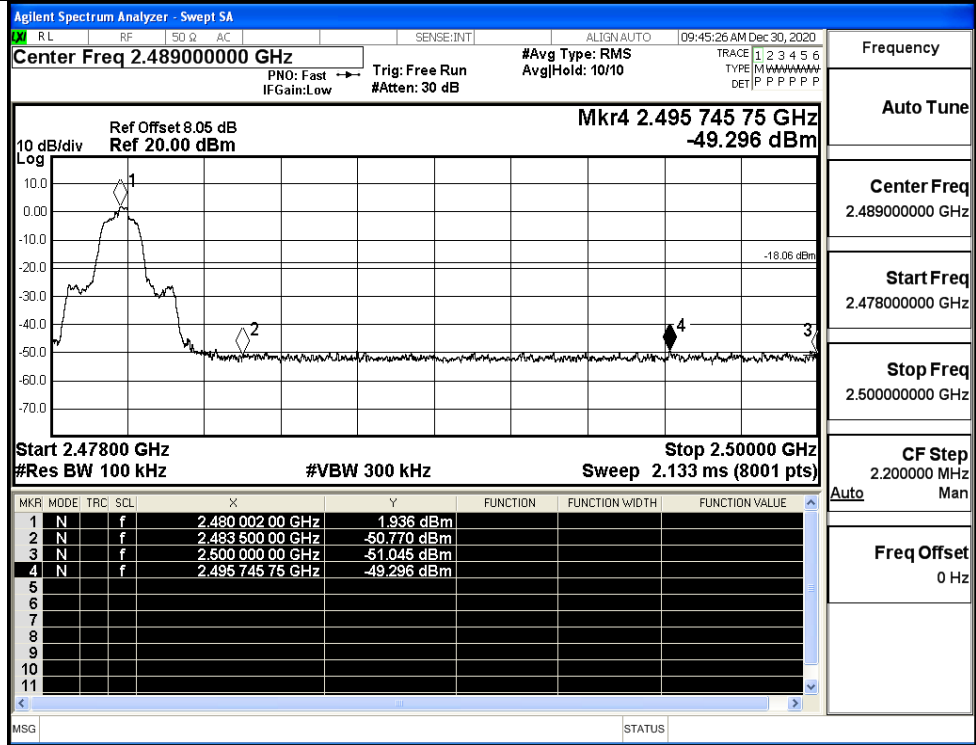
$\pi/4$ DQPSK/LCH/No Hop



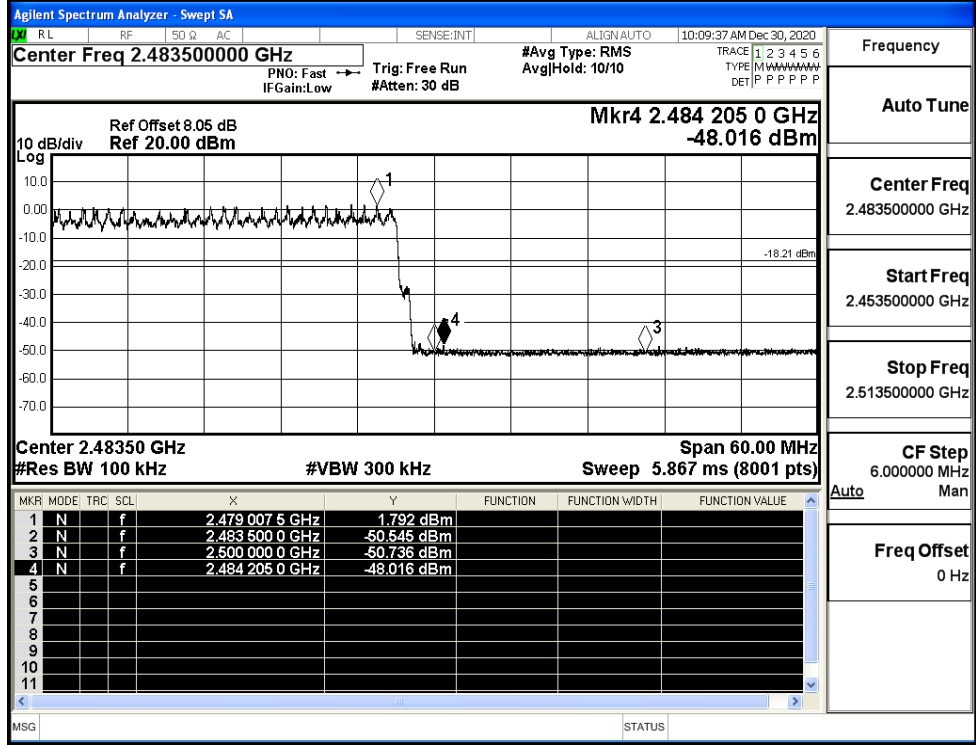
$\pi/4$ DQPSK/LCH/Hop



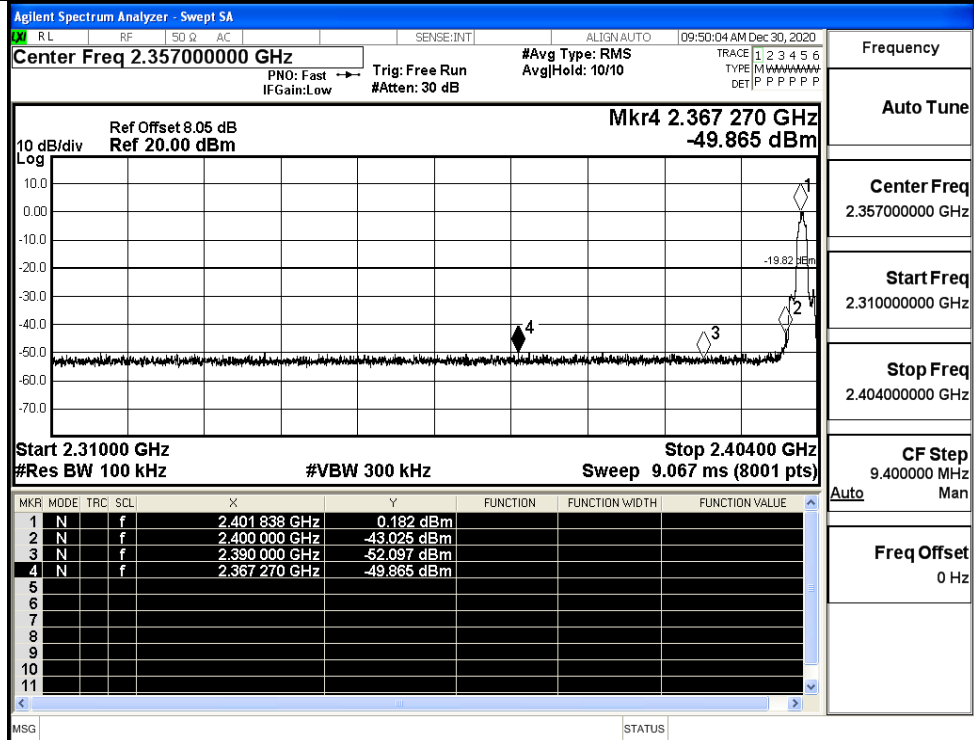
π /4DQPSK/HCH/No
Hop



π /4DQPSK/HCH/Hop

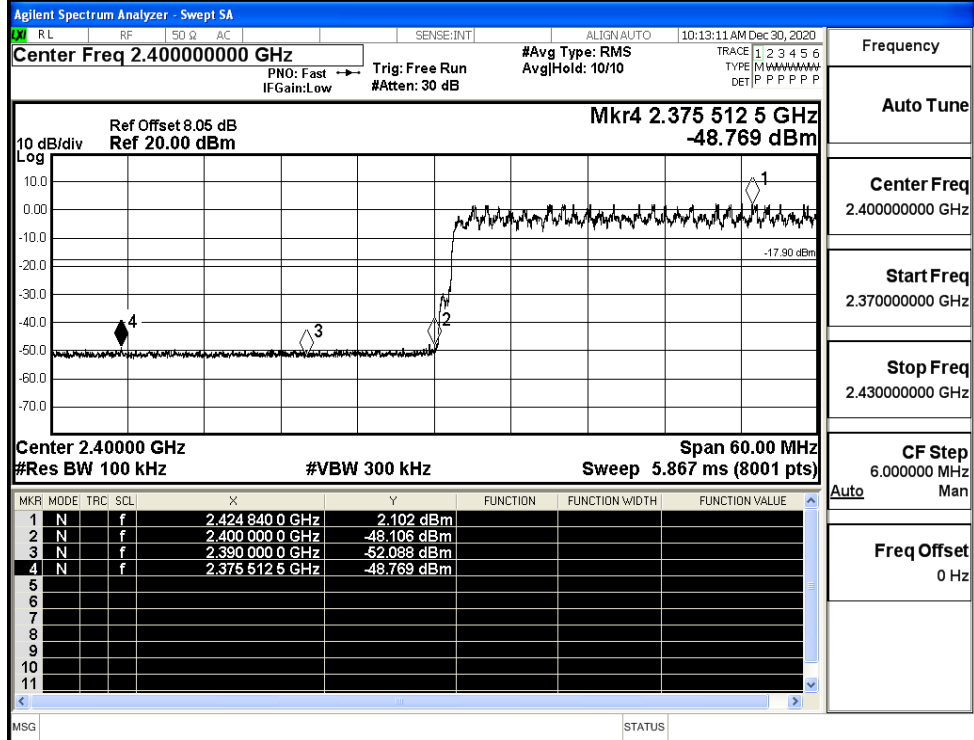


8DPSK/LCH/No Hop



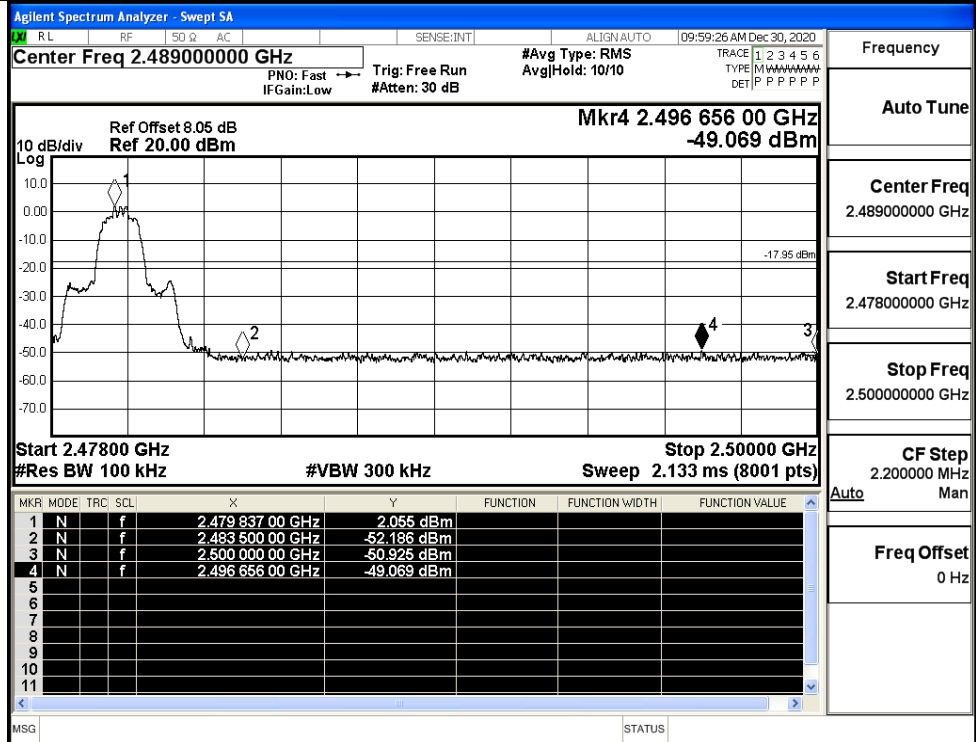
Frequency
Auto Tune
Center Freq
2.357000000 GHz
Start Freq
2.310000000 GHz
Stop Freq
2.404000000 GHz
CF Step
9.400000 MHz
Auto Man
Freq Offset
0 Hz

8DPSK/LCH/Hop



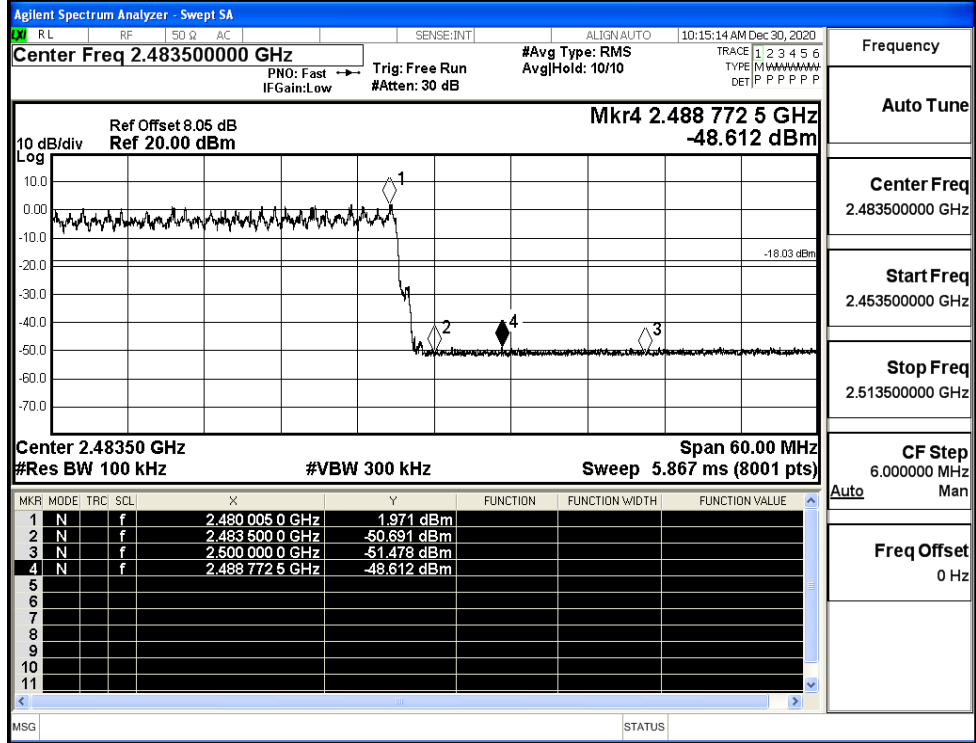
Frequency
Auto Tune
Center Freq
2.400000000 GHz
Start Freq
2.370000000 GHz
Stop Freq
2.430000000 GHz
CF Step
6.000000 MHz
Auto Man
Freq Offset
0 Hz

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

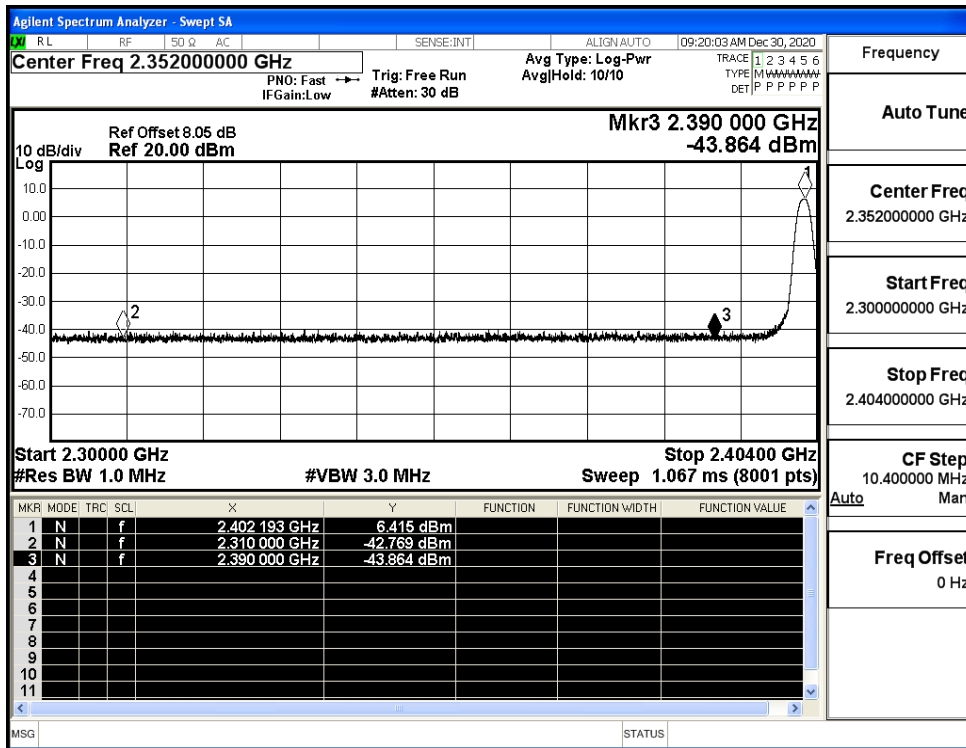


Frequency
Auto Tune
Center Freq
2.483500000 GHz
Start Freq
2.453500000 GHz
Stop Freq
2.513500000 GHz
CF Step
6.000000 MHz
Auto Man
Freq Offset
0 Hz

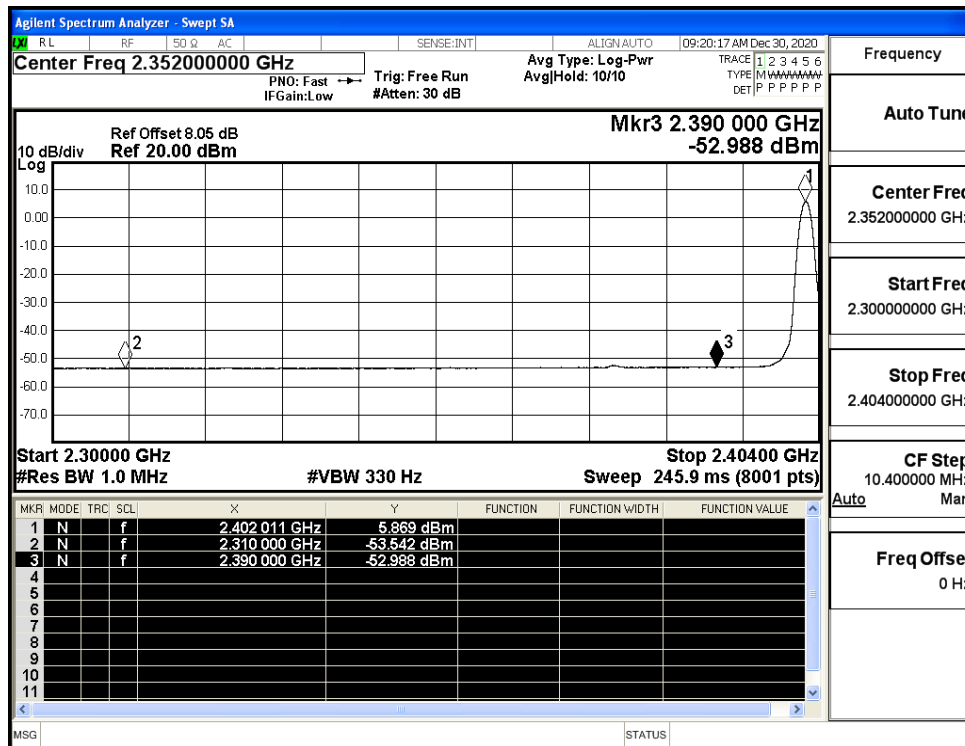
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-42.77	3.0	0	55.49	PEAK	74	PASS
	Off	2310.0	-53.54	3.0	0	44.72	AV	54	PASS
	Off	2390.0	-43.86	3.0	0	54.39	PEAK	74	PASS
	Off	2390.0	-52.99	3.0	0	45.27	AV	54	PASS
	Off	2483.5	-41.49	3.0	0	56.77	PEAK	74	PASS
	Off	2483.5	-51.10	3.0	0	47.16	AV	54	PASS
	Off	2500.0	-40.53	3.0	0	57.73	PEAK	74	PASS
	Off	2500.0	-52.39	3.0	0	45.87	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.15	3.0	0	55.11	PEAK	74	PASS
	Off	2310.0	-53.46	3.0	0	44.80	AV	54	PASS
	Off	2390.0	-43.33	3.0	0	54.93	PEAK	74	PASS
	Off	2390.0	-53.04	3.0	0	45.22	AV	54	PASS
	Off	2483.5	-40.92	3.0	0	57.34	PEAK	74	PASS
	Off	2483.5	-52.06	3.0	0	46.19	AV	54	PASS
	Off	2500.0	-42.10	3.0	0	56.15	PEAK	74	PASS
	Off	2500.0	-52.40	3.0	0	45.86	AV	54	PASS
8DPSK	Off	2310.0	-42.02	3.0	0	56.24	PEAK	74	PASS
	Off	2310.0	-53.35	3.0	0	44.91	AV	54	PASS
	Off	2390.0	-42.98	3.0	0	55.27	PEAK	74	PASS
	Off	2390.0	-52.94	3.0	0	45.32	AV	54	PASS
	Off	2483.5	-41.99	3.0	0	56.27	PEAK	74	PASS
	Off	2483.5	-51.99	3.0	0	46.27	AV	54	PASS
	Off	2500.0	-42.72	3.0	0	55.53	PEAK	74	PASS
	Off	2500.0	-52.31	3.0	0	45.94	AV	54	PASS

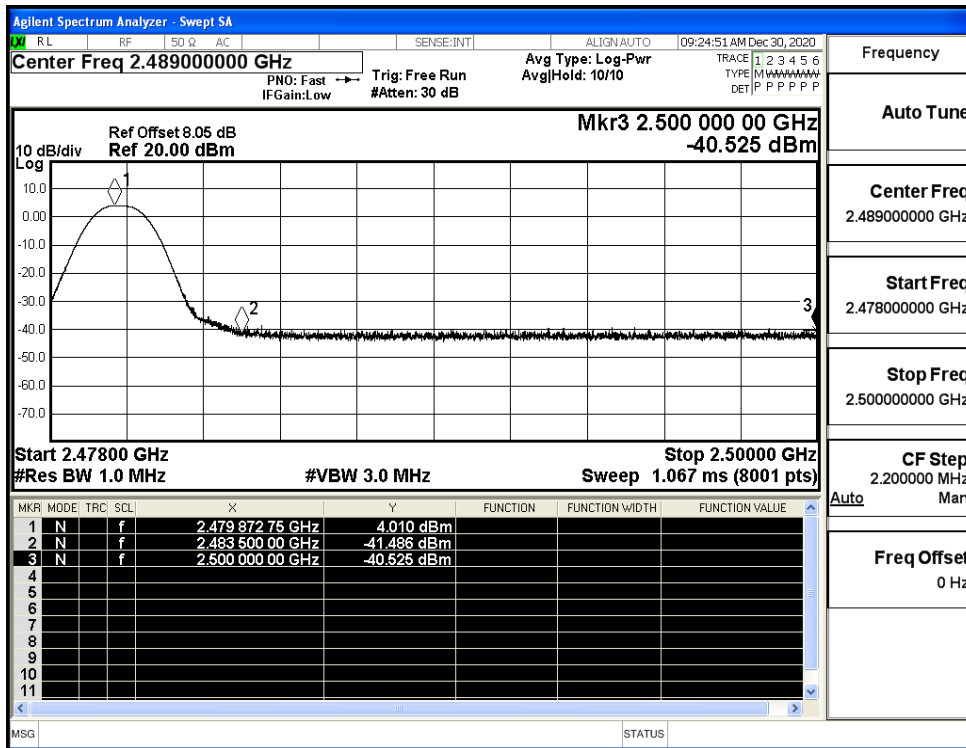
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



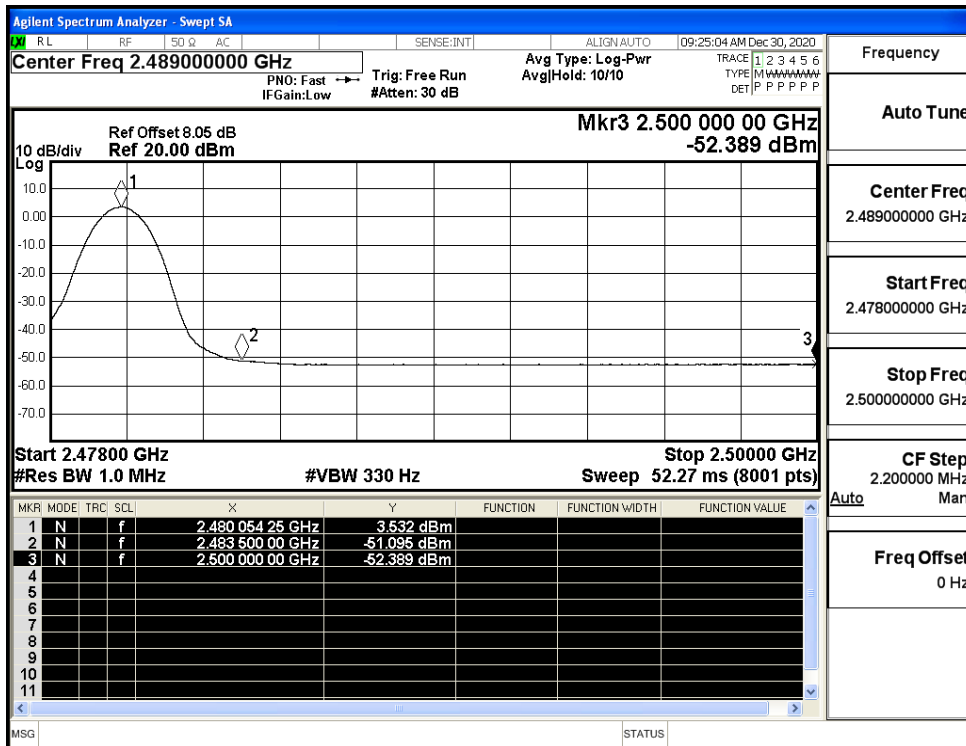
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



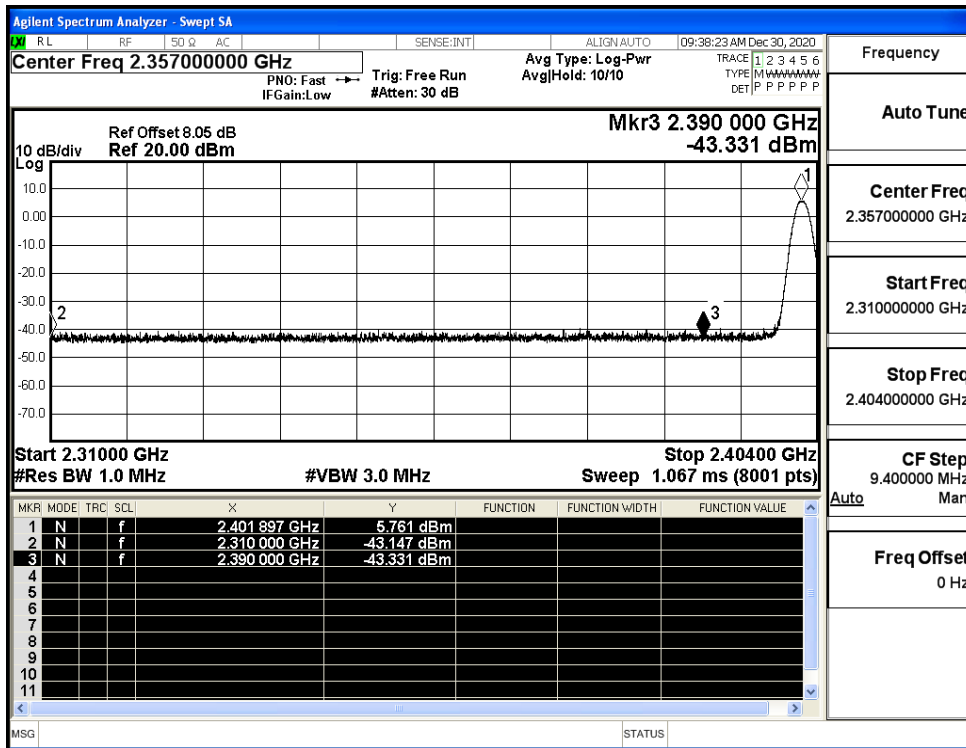
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



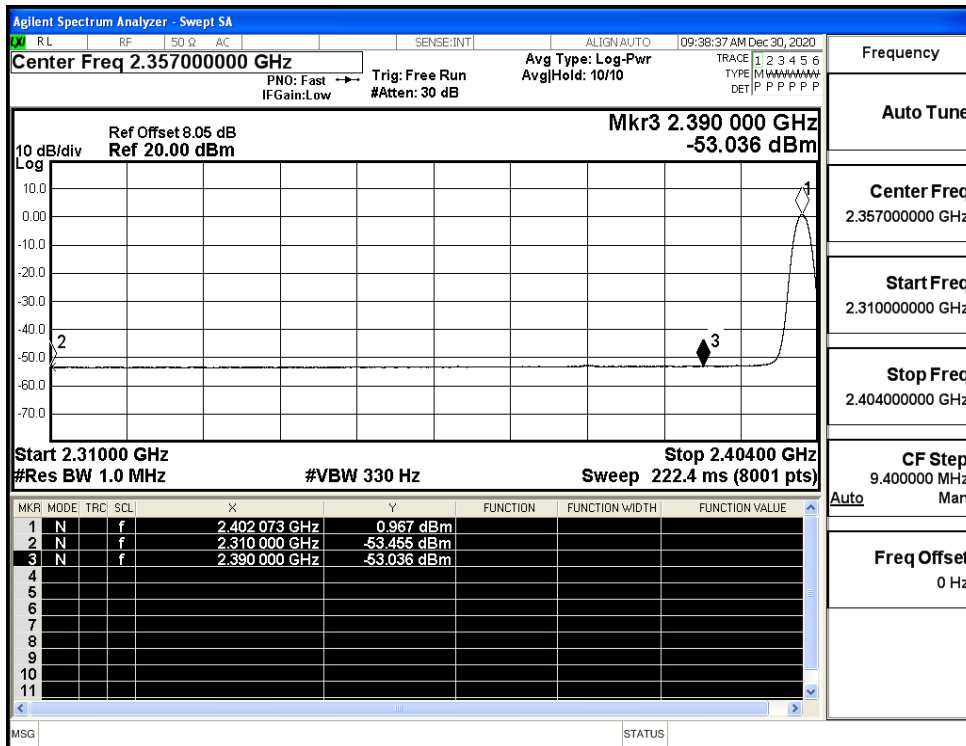
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



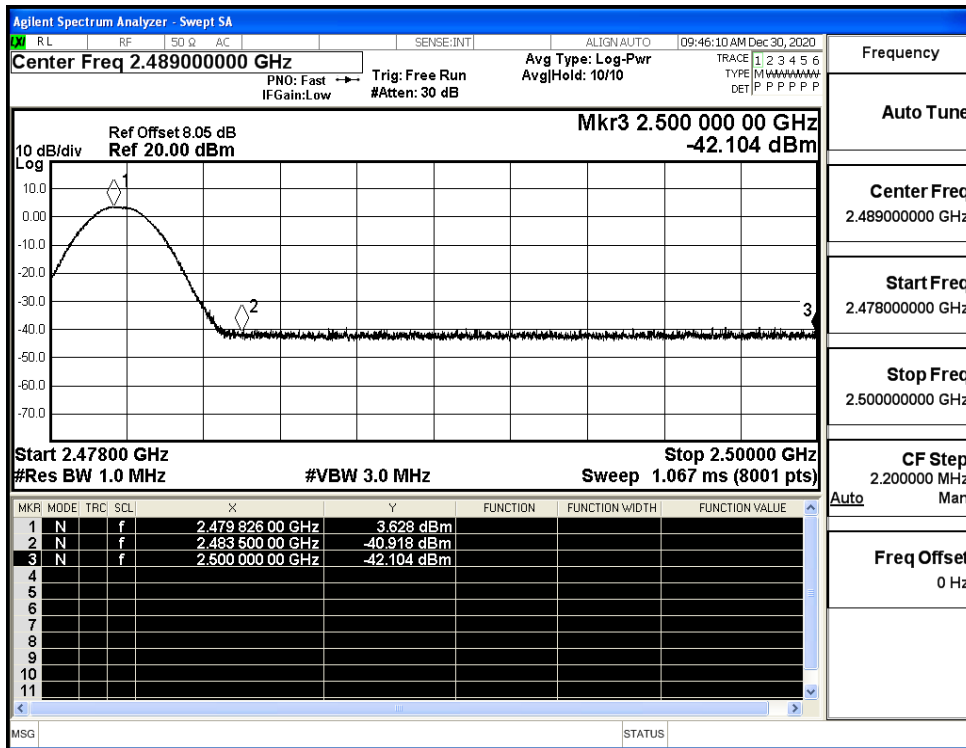
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)



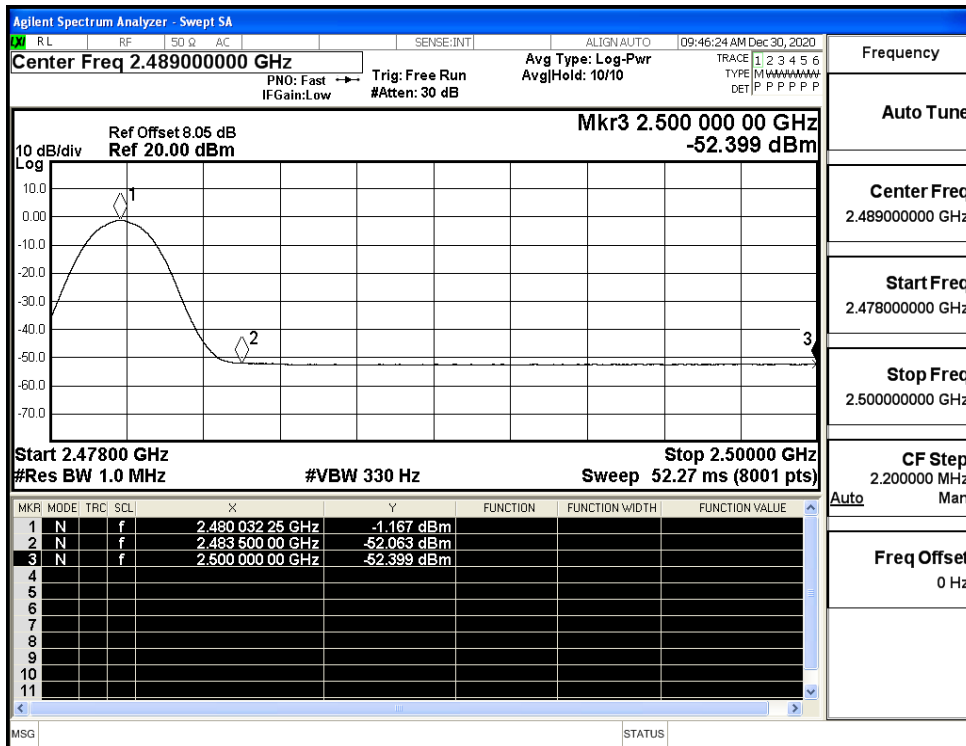
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)



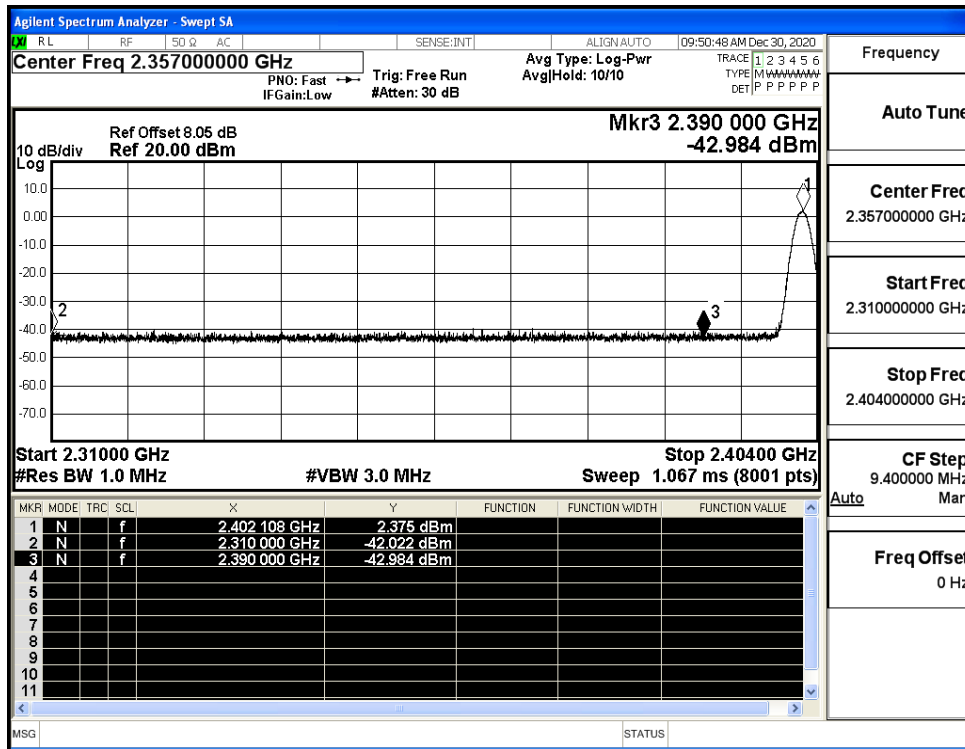
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



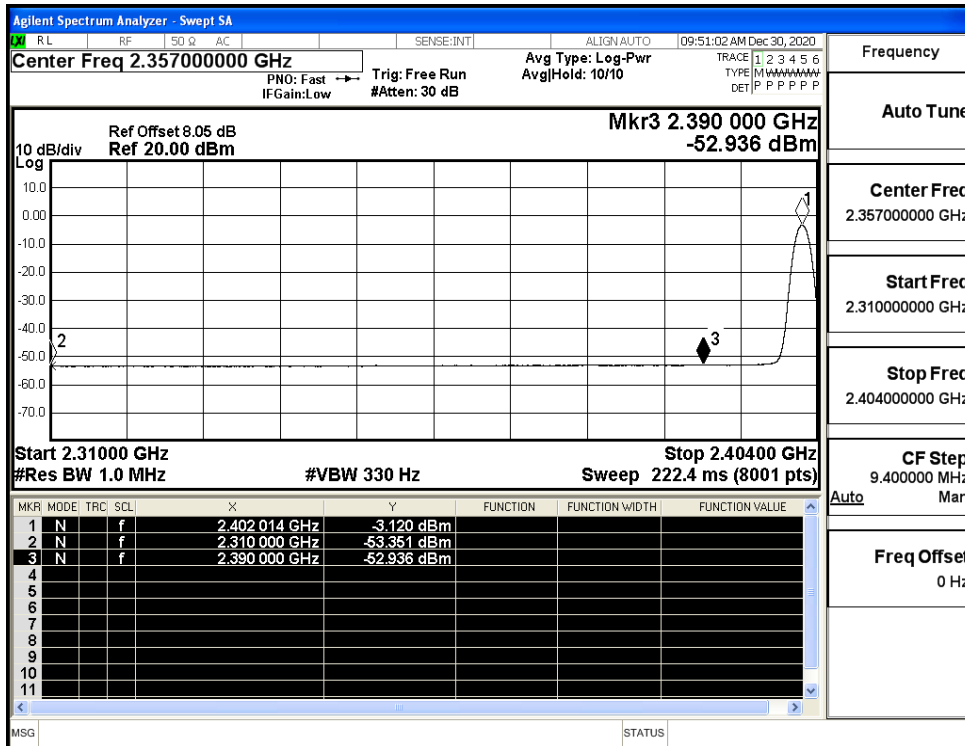
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



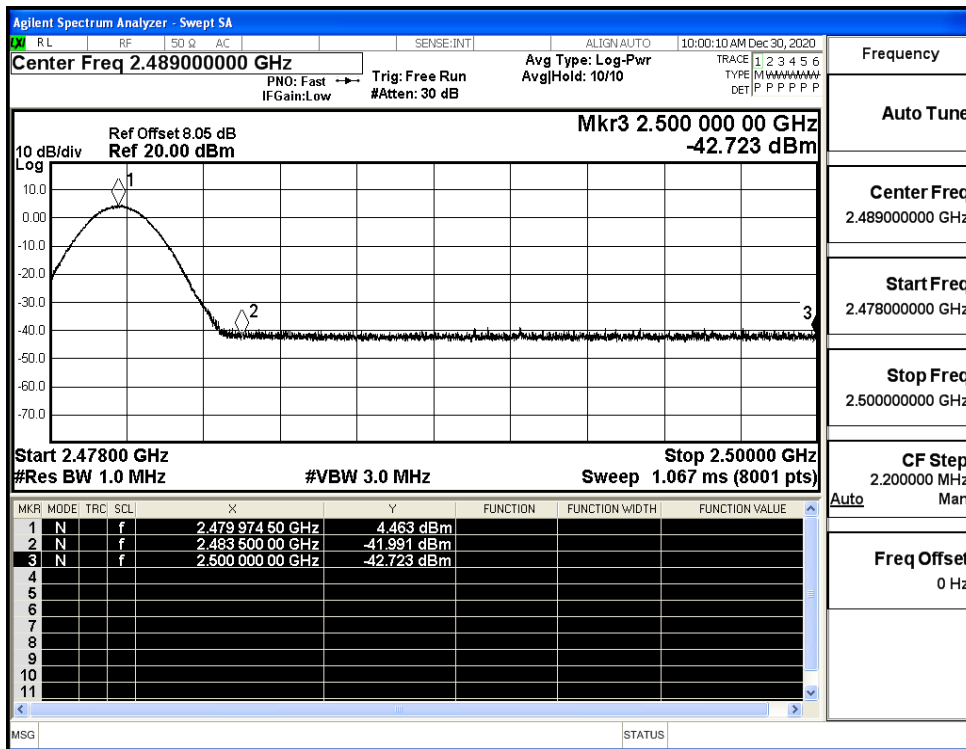
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

