

Appendix A

RF Test Data for BT V2.1(BDR/EDR) (Conducted Measurement)

Product Name: tablet

Trade Mark: TOPELOTEK, UJoyFeel

Test Model: KIDS706

Environmental Conditions

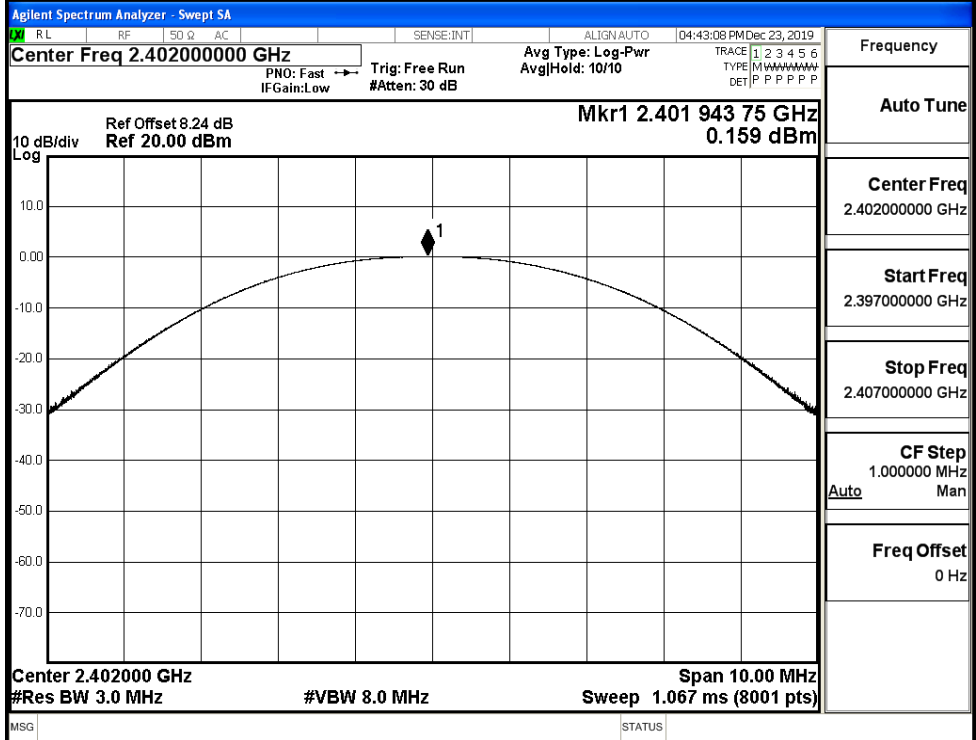
Temperature:	23.8°C
Relative Humidity:	52.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Alisa Huang
Supervised by:	Wang Chuang

A.1 Maximum Conducted Peak Output Power

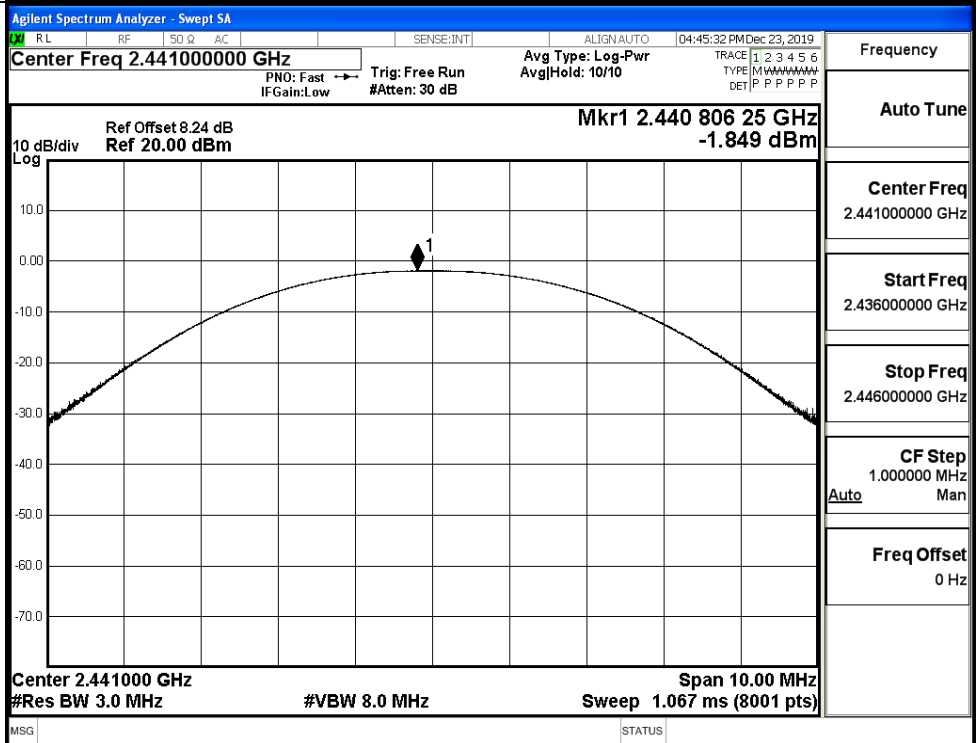
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.159	21	PASS
	MCH	-1.849	21	PASS
	HCH	-0.627	21	PASS
$\pi/4$ DQPSK	LCH	-0.575	21	PASS
	MCH	-2.486	21	PASS
	HCH	-1.342	21	PASS
8DPSK	LCH	-0.431	21	PASS
	MCH	-2.148	21	PASS
	HCH	-1.133	21	PASS

Test Graphs

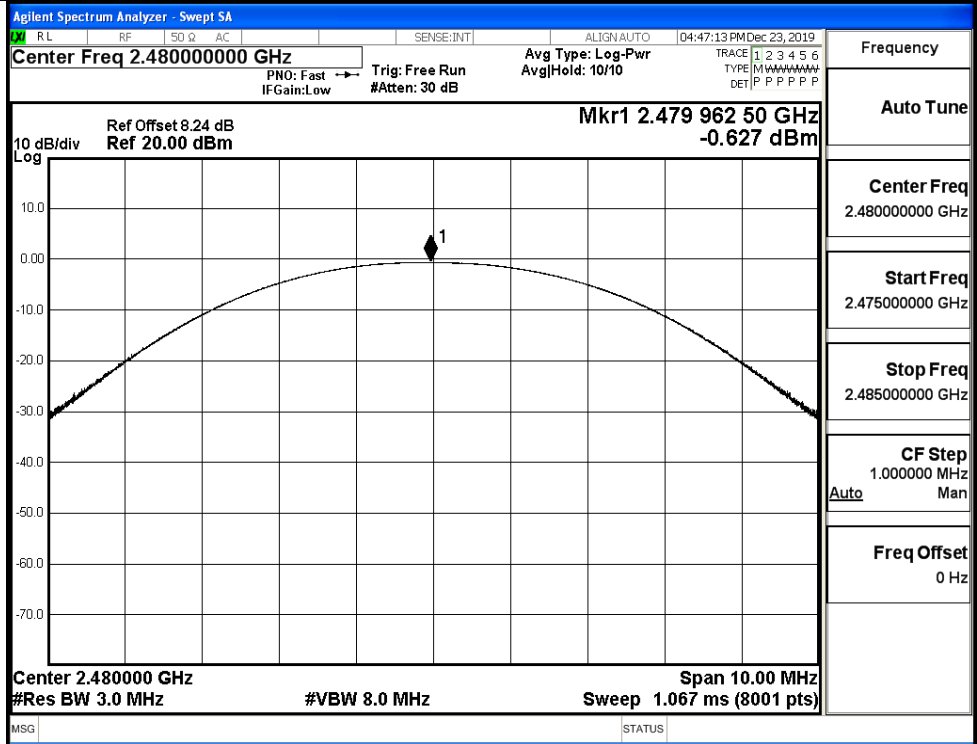
GFSK/LCH



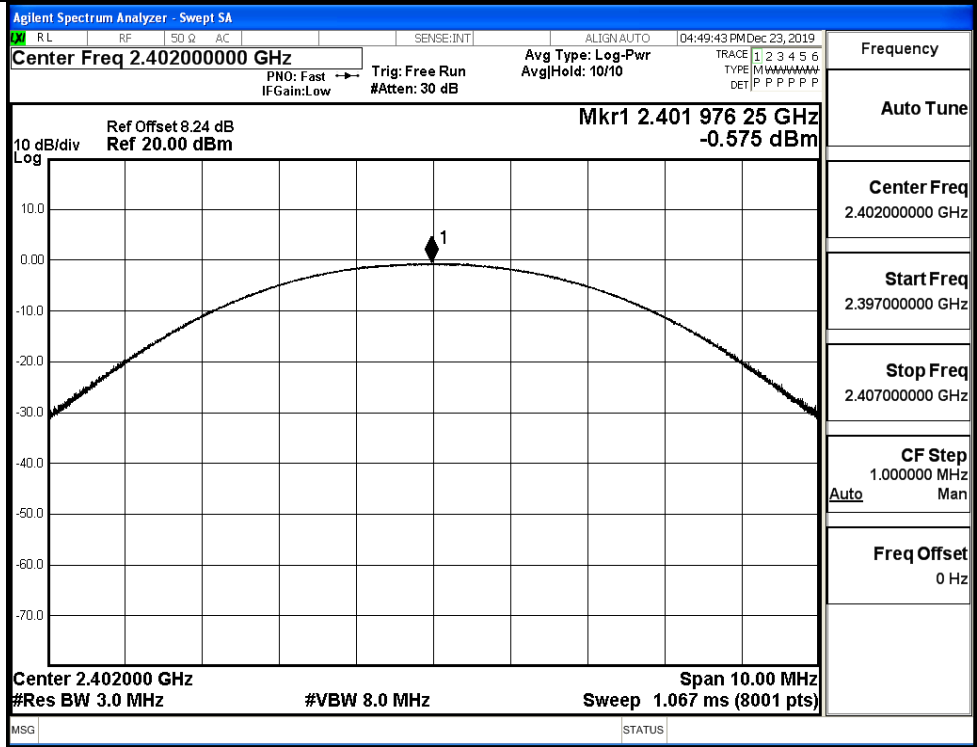
GFSK/MCH



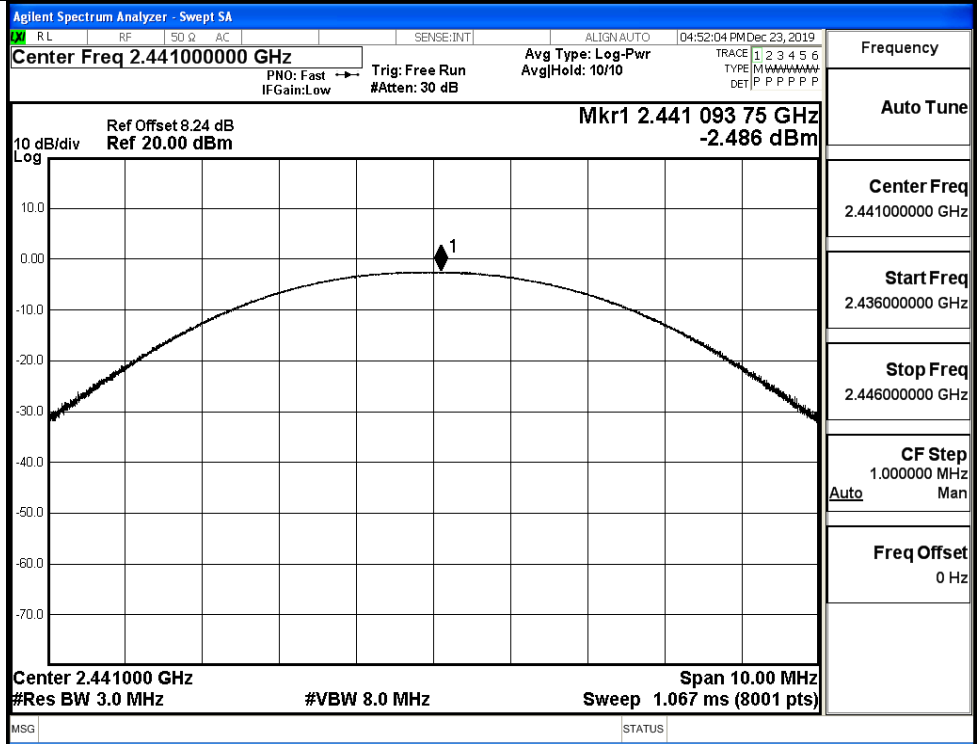
GFSK/HCH



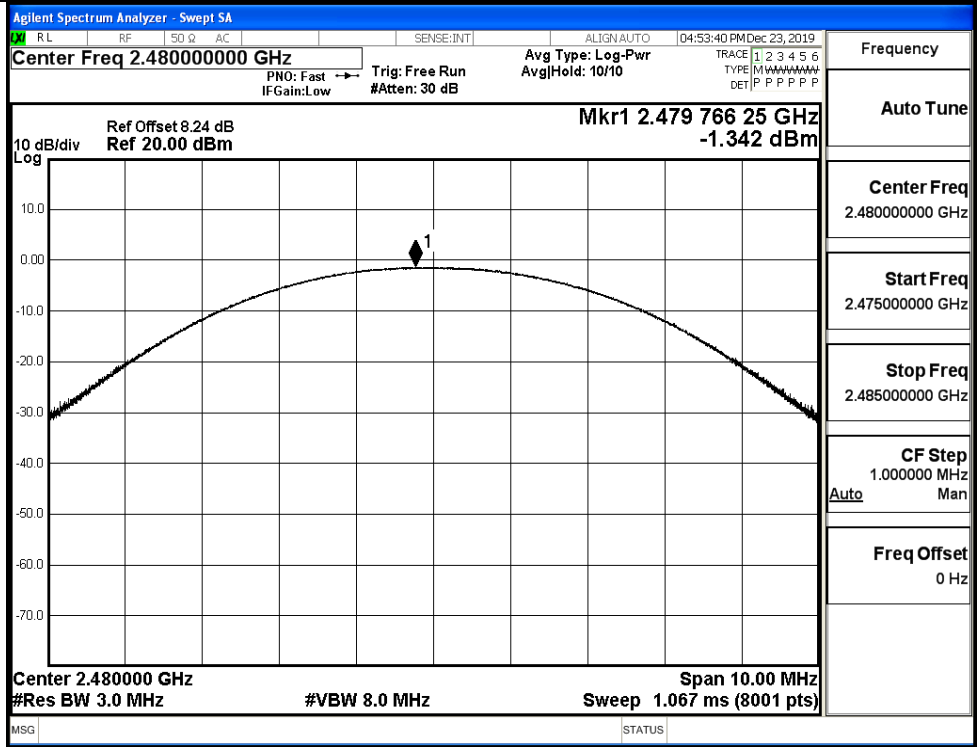
$\pi/4$ DQPSK/LCH

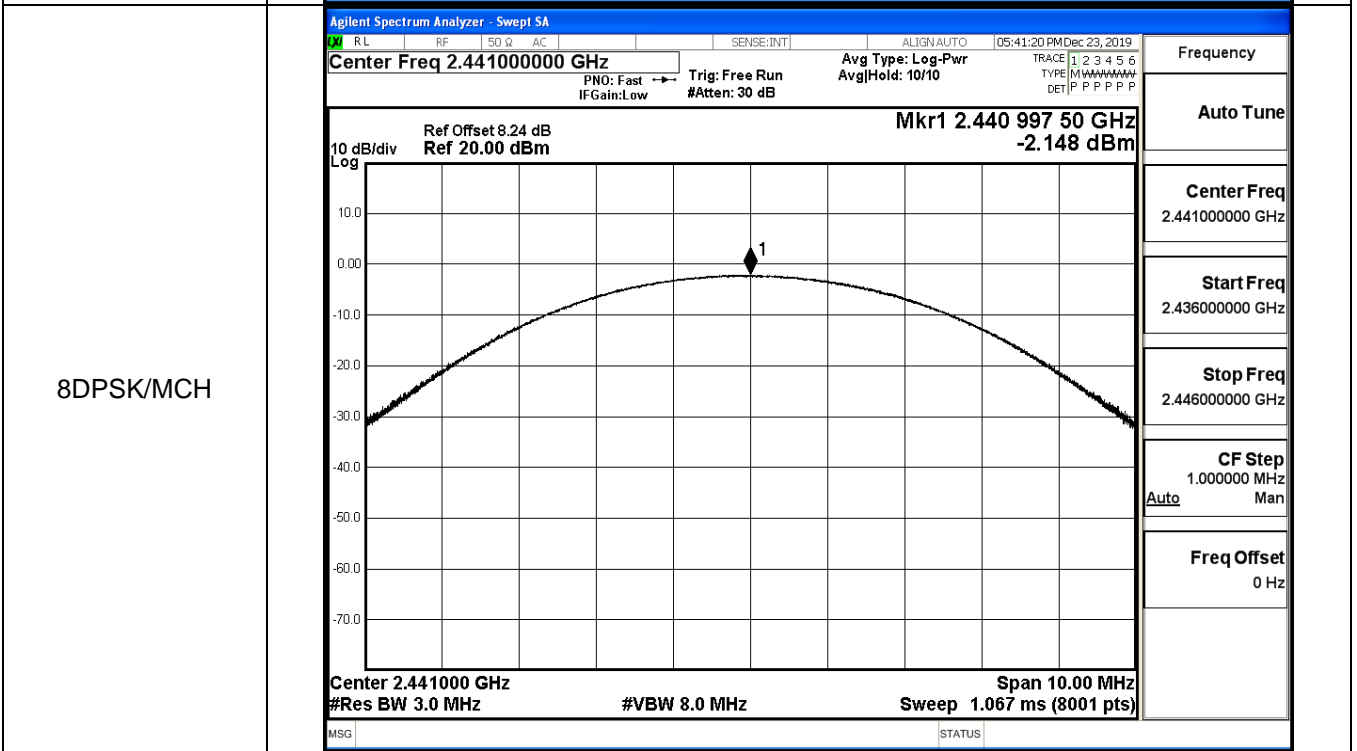
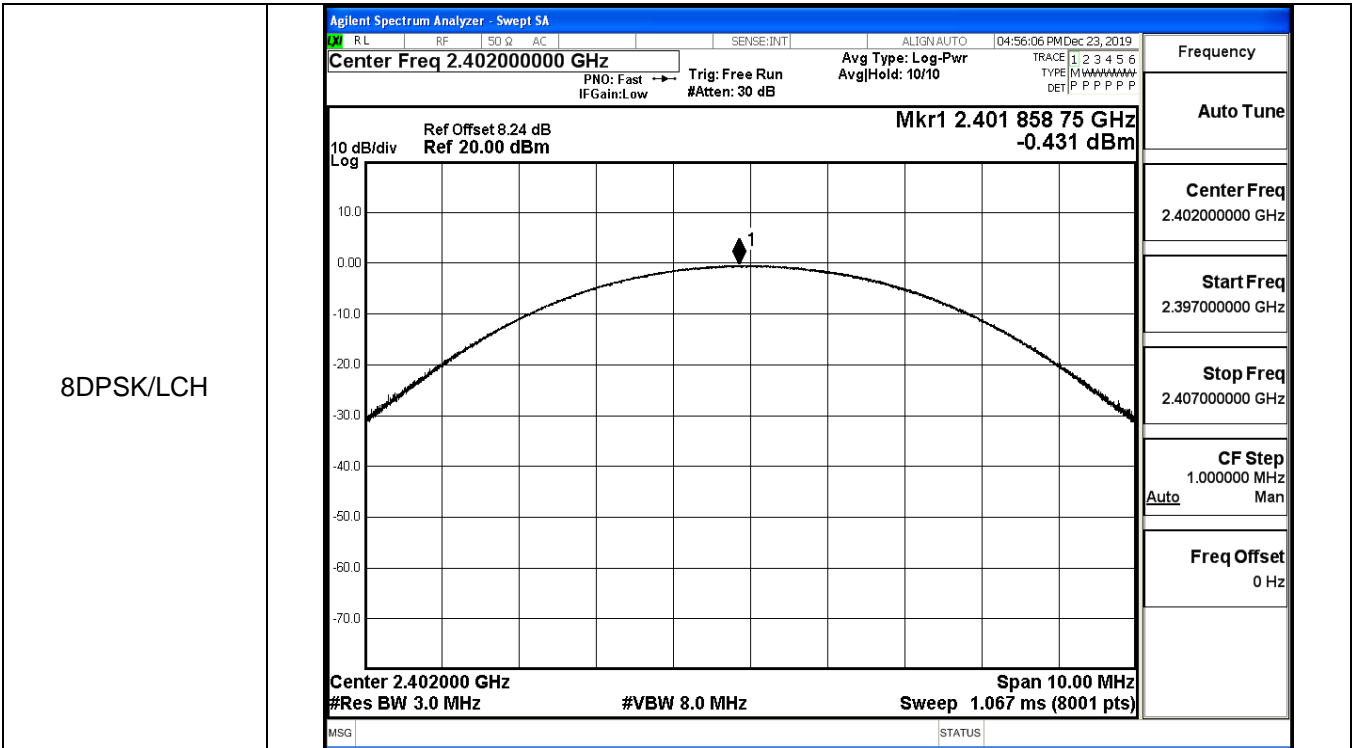


$\pi/4$ DQPSK/MCH

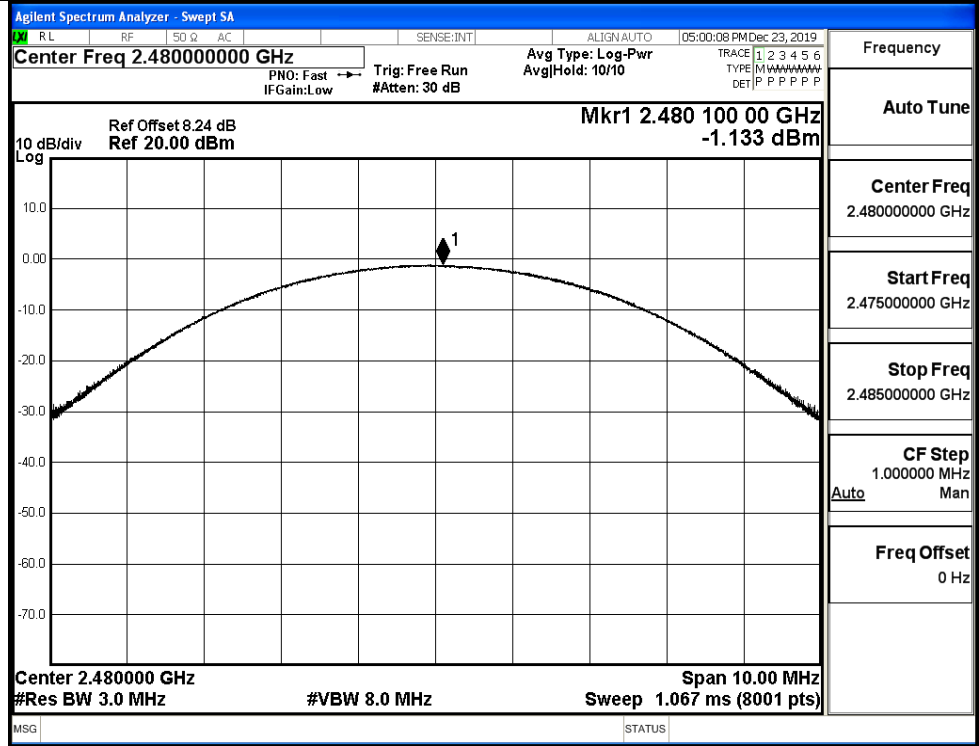


$\pi/4$ DQPSK/HCH



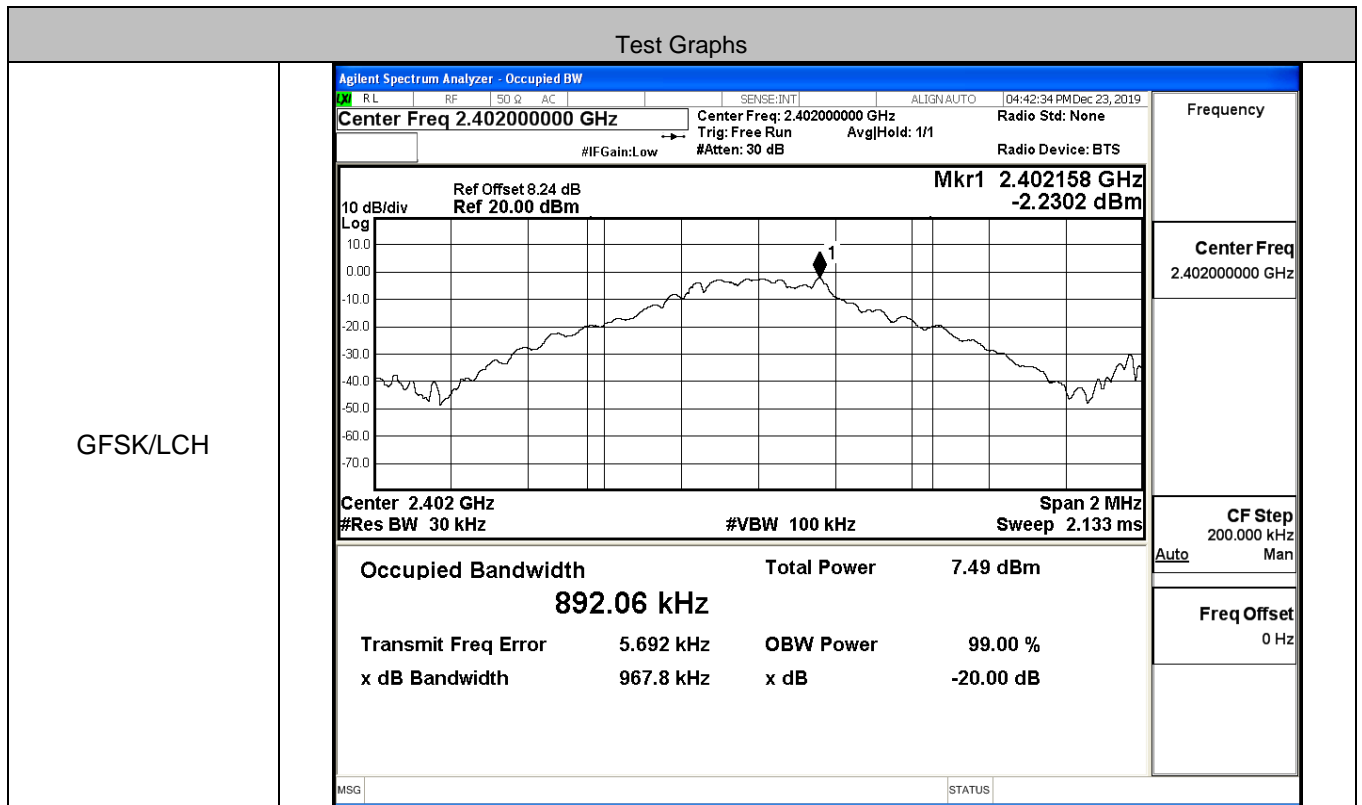


8DPSK/HCH

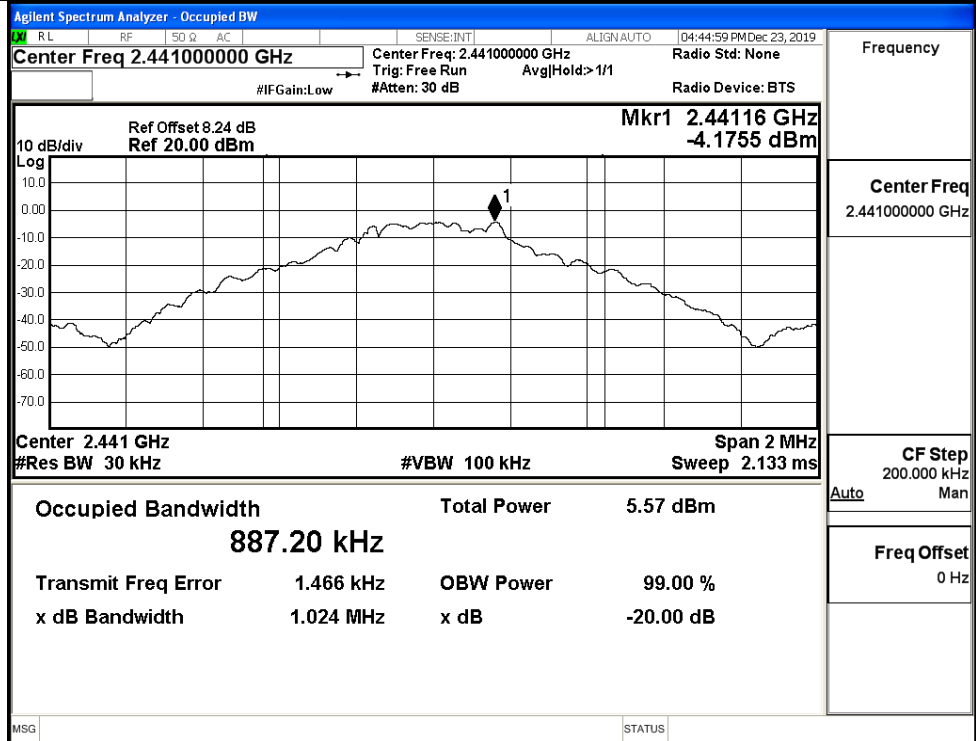


A.2 20dB Bandwidth and 99% Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	99% Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9678	0.8921	Not Specified	PASS
	MCH	1.024	0.8872	Not Specified	PASS
	HCH	1.030	0.8882	Not Specified	PASS
π/4DQPSK	LCH	1.288	1.170	Not Specified	PASS
	MCH	1.315	1.177	Not Specified	PASS
	HCH	1.289	1.171	Not Specified	PASS
8DPSK	LCH	1.296	1.179	Not Specified	PASS
	MCH	1.297	1.187	Not Specified	PASS
	HCH	1.295	1.181	Not Specified	PASS



GFSK/MCH



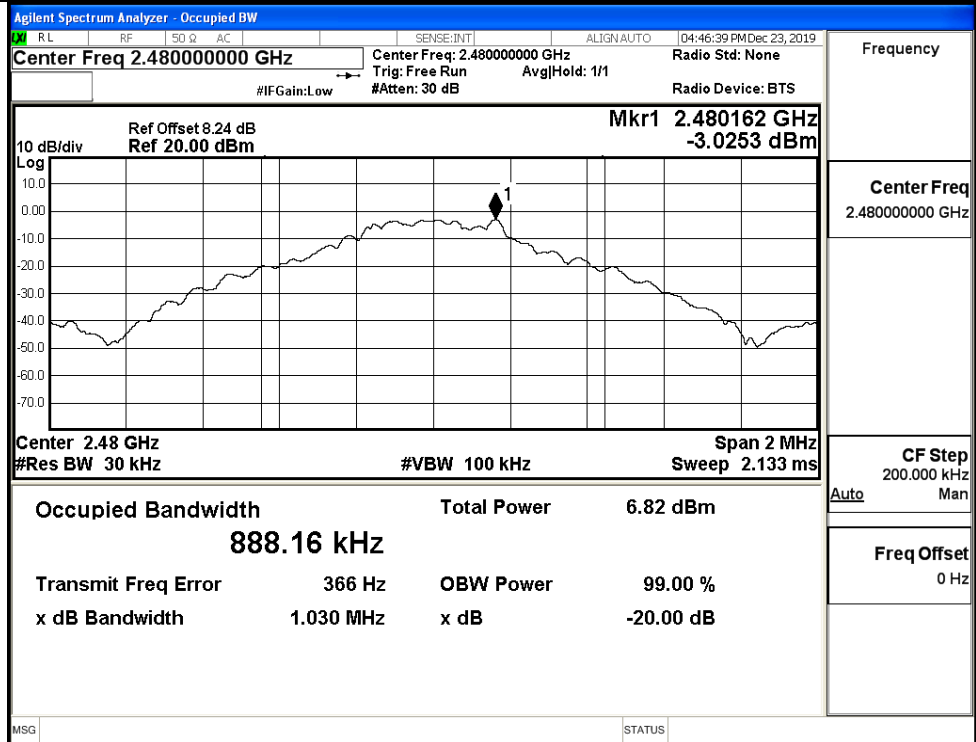
Frequency

Center Freq
2.441000000 GHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

GFSK/HCH



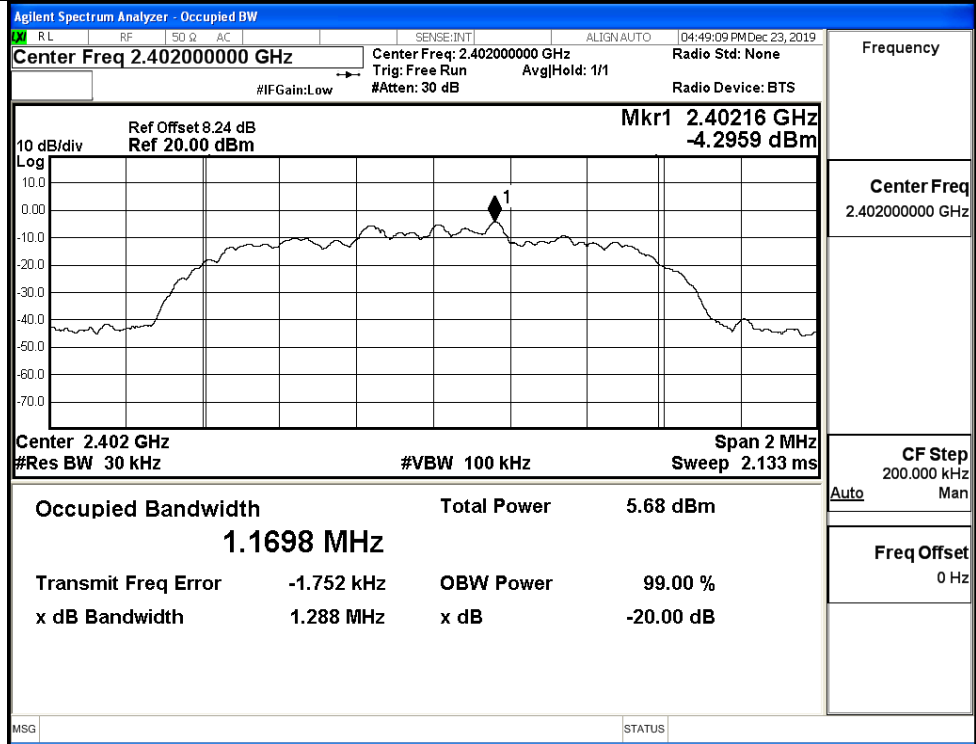
Frequency

Center Freq
2.480000000 GHz

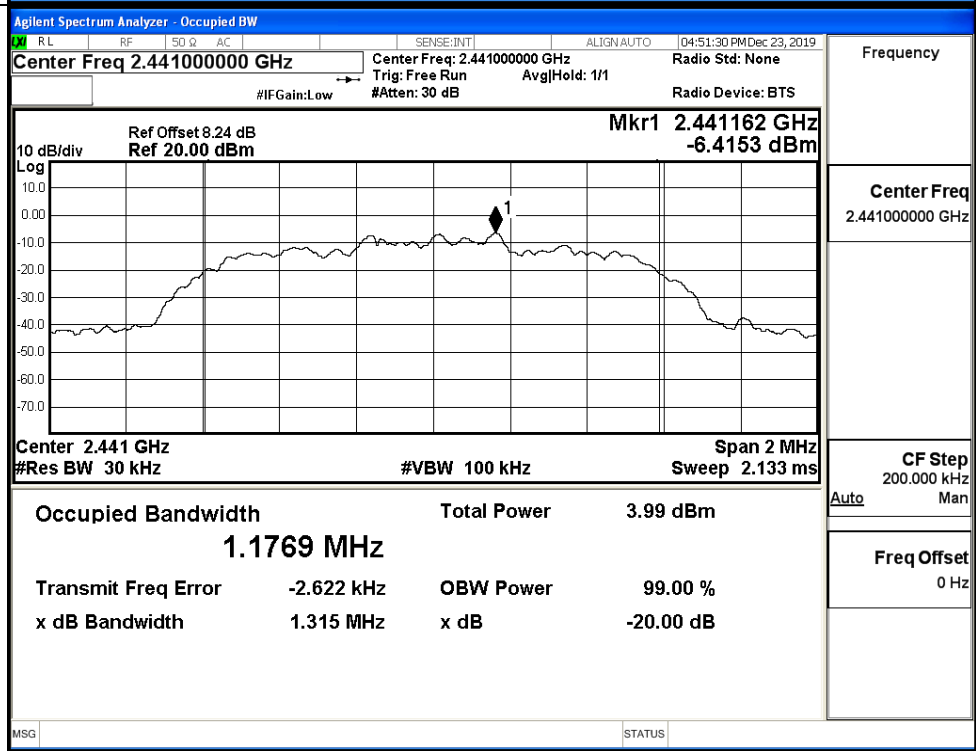
CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

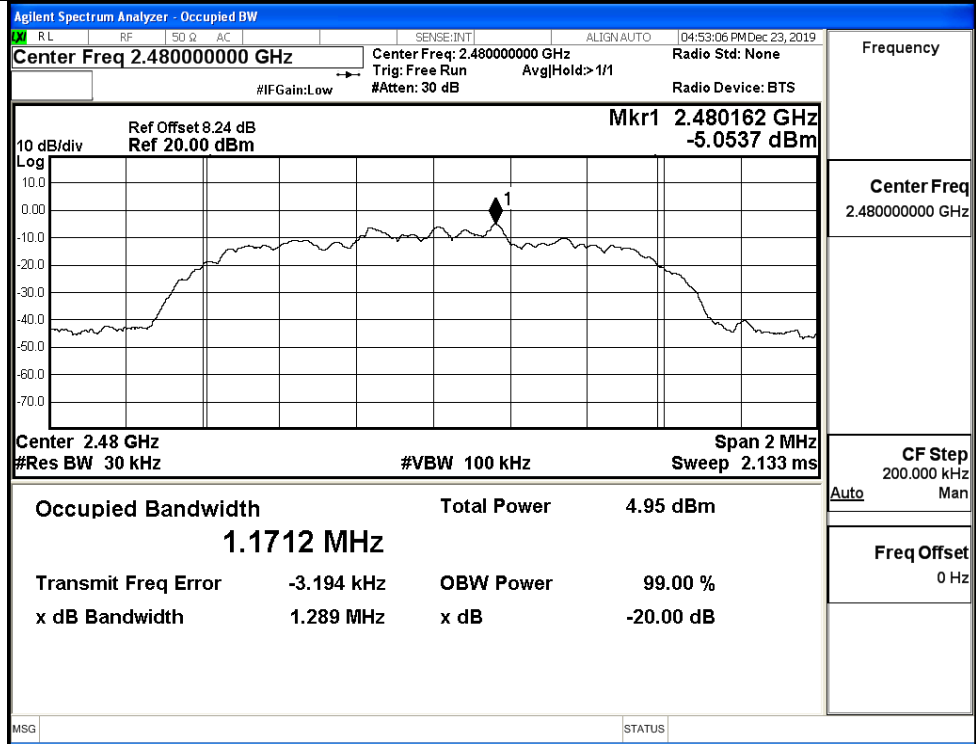
$\pi/4$ DQPSK/LCH



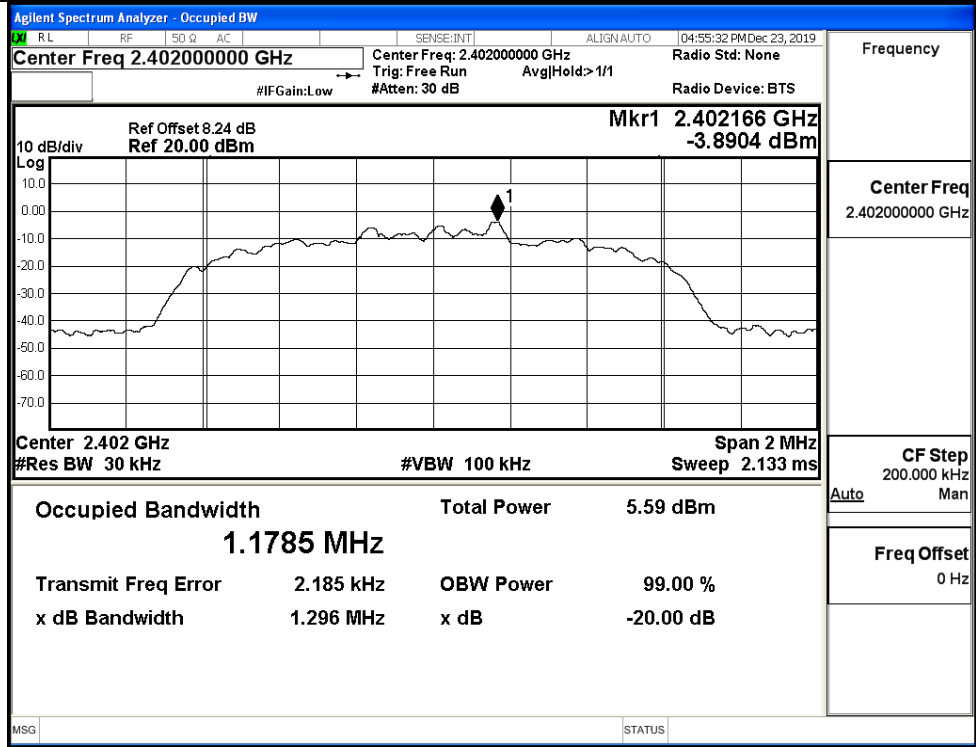
$\pi/4$ DQPSK/MCH



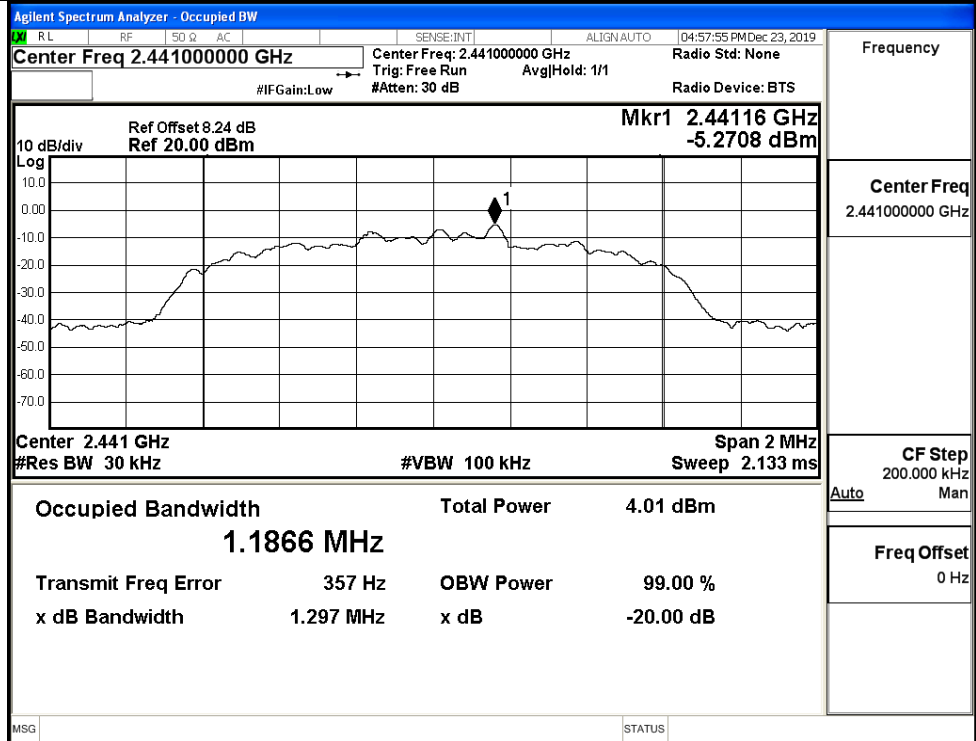
$\pi/4$ DQPSK/HCH



8DPSK/LCH

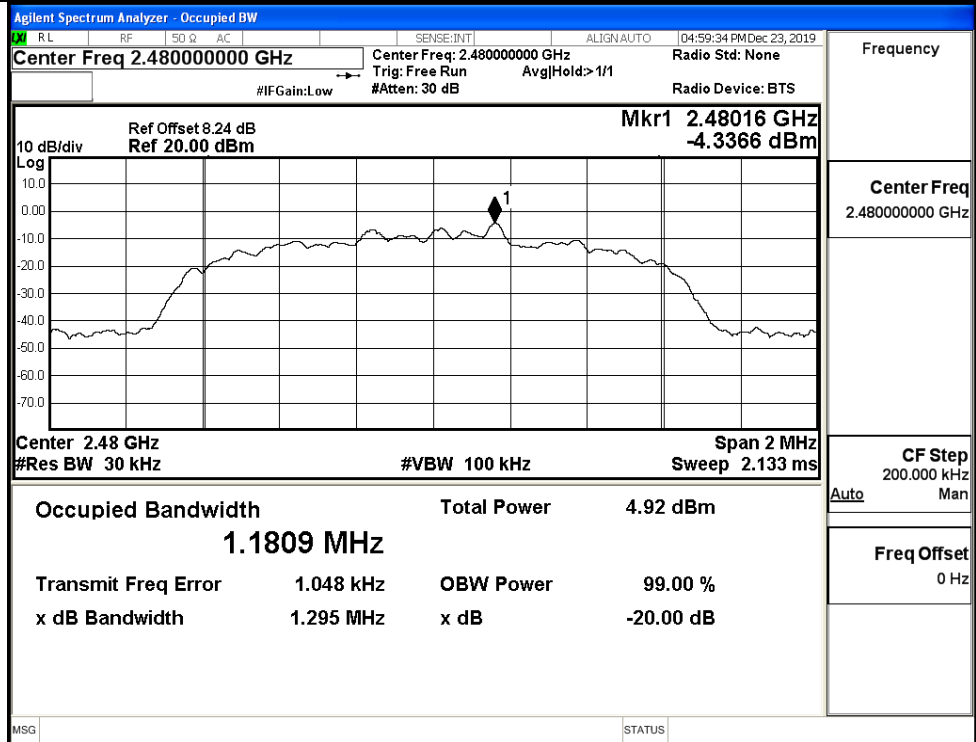


8DPSK/MCH



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

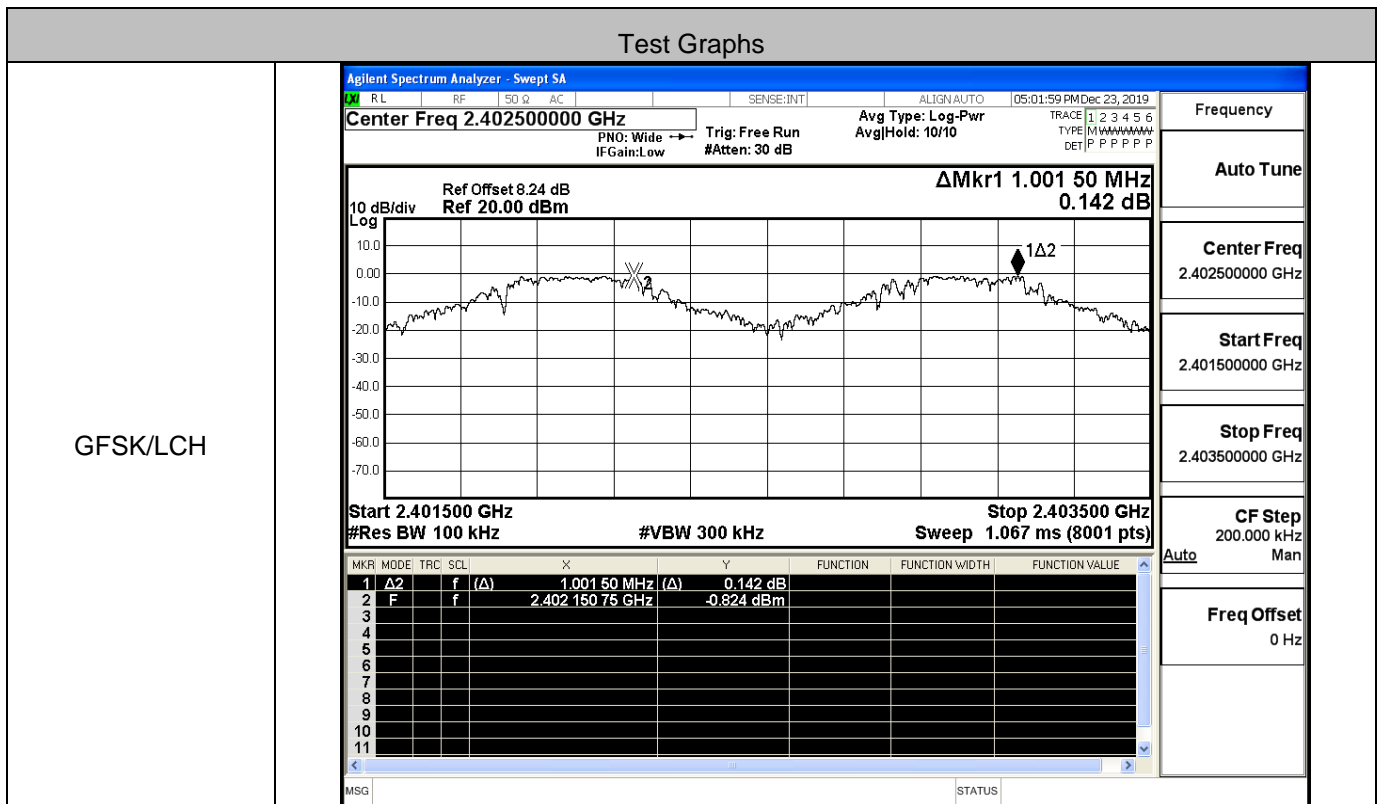
8DPSK/HCH



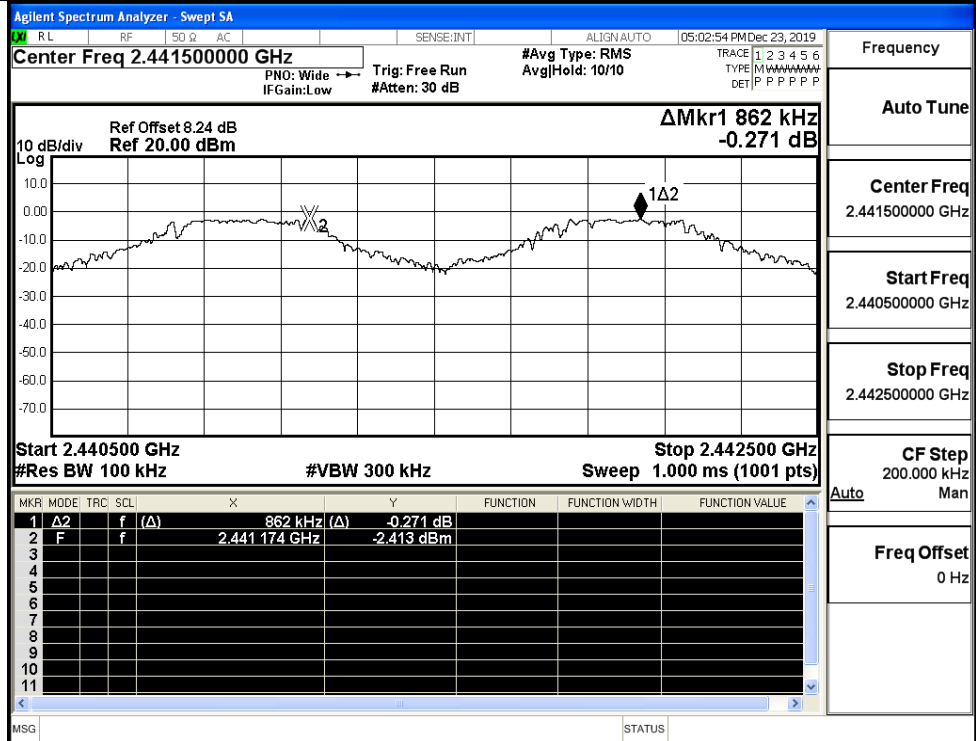
Frequency	2.48000000 GHz
Center Freq	2.48000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

A.3 Carrier Frequency Separation

Mode	Channel	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.002	0.687	PASS
	MCH	0.862	0.687	PASS
	HCH	1.210	0.687	PASS
π/4DQPSK	LCH	0.900	0.877	PASS
	MCH	1.130	0.877	PASS
	HCH	1.146	0.877	PASS
8DPSK	LCH	1.020	0.865	PASS
	MCH	0.990	0.865	PASS
	HCH	1.246	0.865	PASS

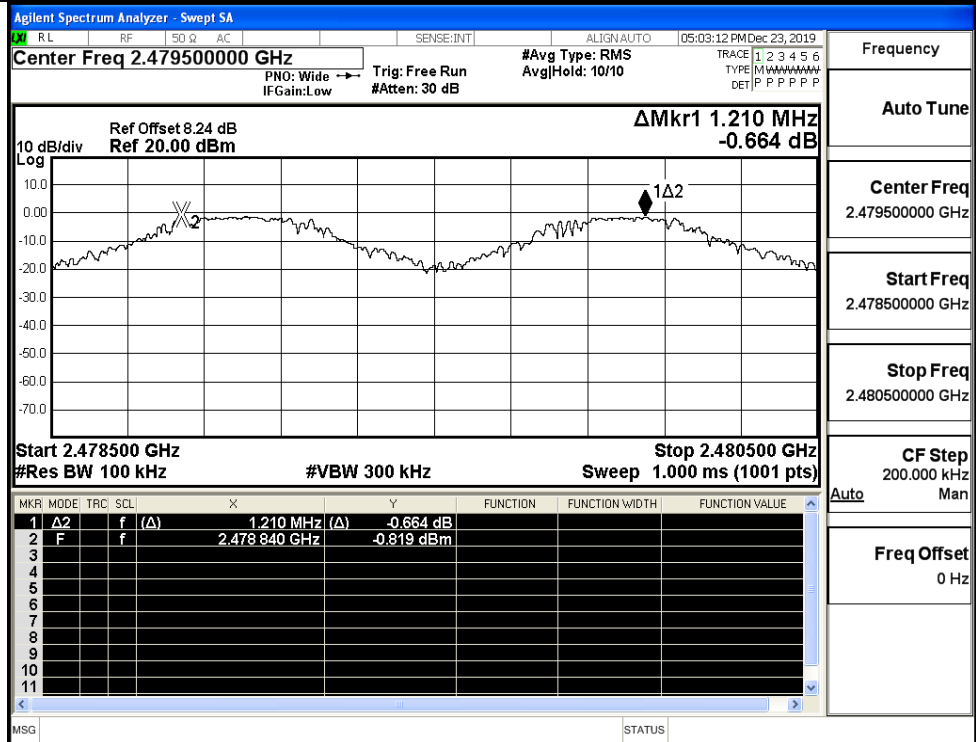


GFSK/MCH



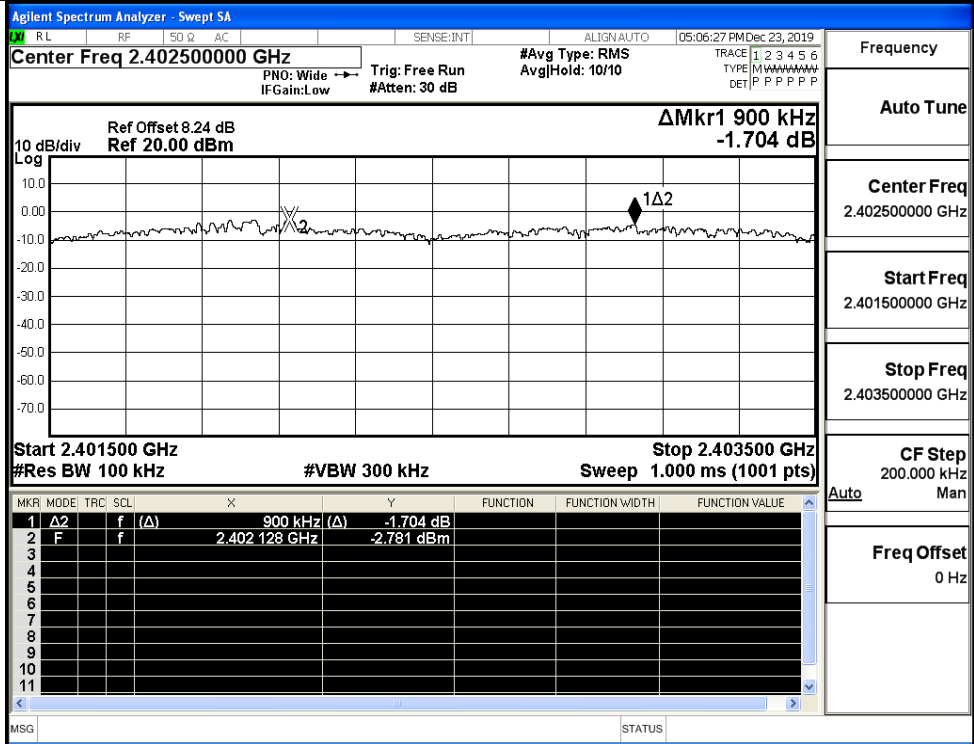
Frequency
Auto Tune
Center Freq
2.441500000 GHz
Start Freq
2.440500000 GHz
Stop Freq
2.442500000 GHz
CF Step
200.000 kHz
Auto Man
Freq Offset
0 Hz

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

$\pi/4$ DQPSK/LCH



Frequency

Auto Tune

Center Freq
2.40250000 GHz

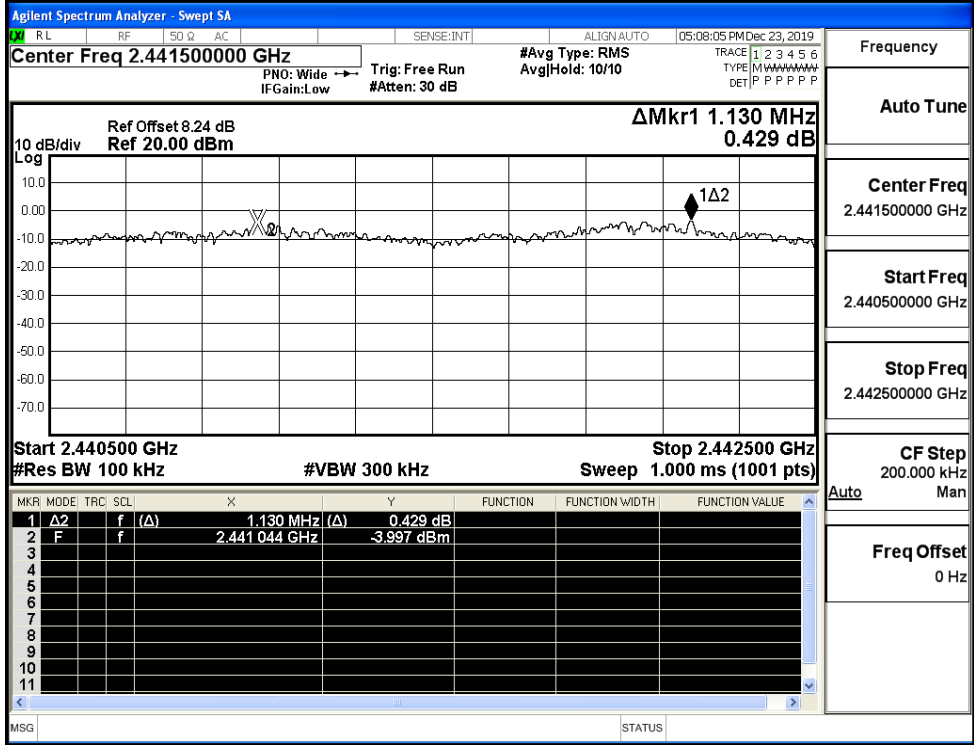
Start Freq
2.40150000 GHz

Stop Freq
2.40350000 GHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

$\pi/4$ DQPSK/MCH



Frequency

Auto Tune

Center Freq
2.44150000 GHz

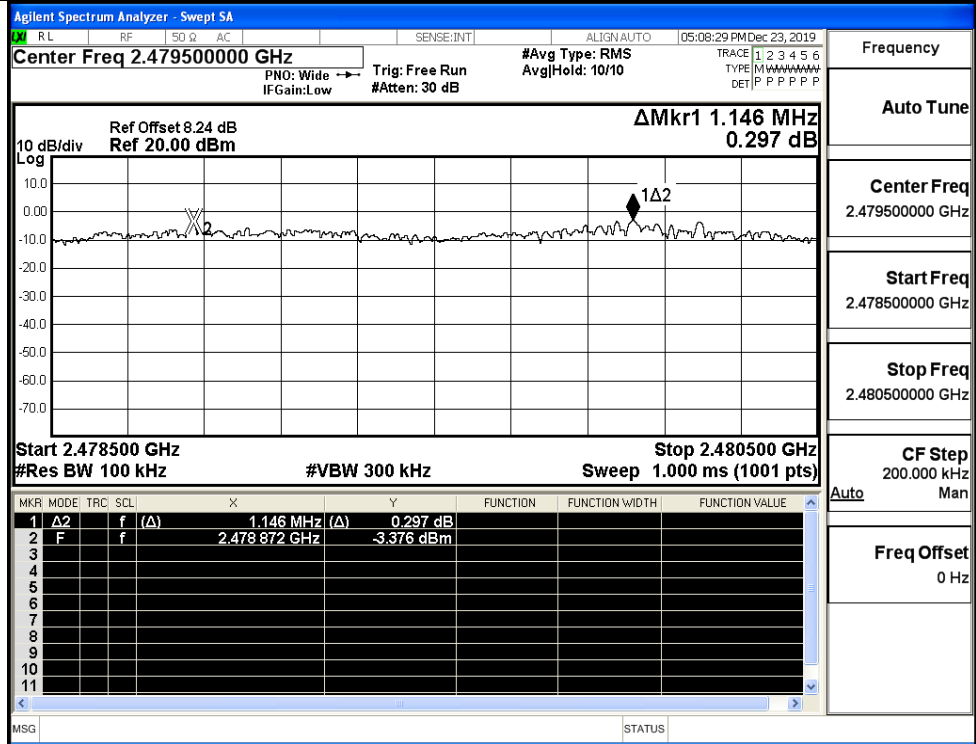
Start Freq
2.44050000 GHz

Stop Freq
2.44250000 GHz

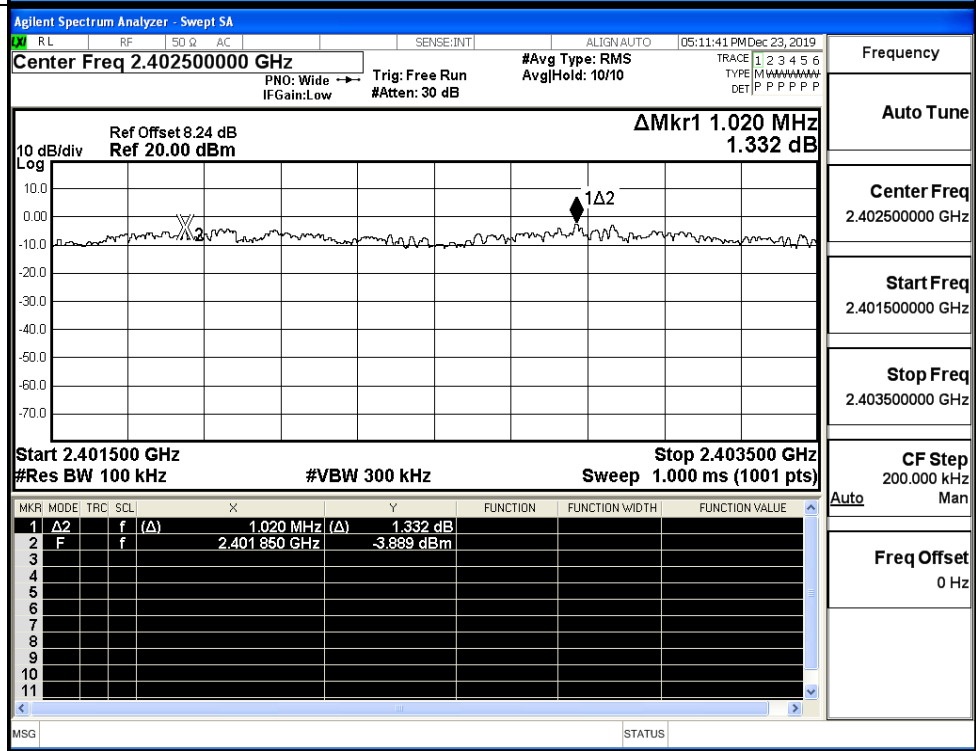
CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

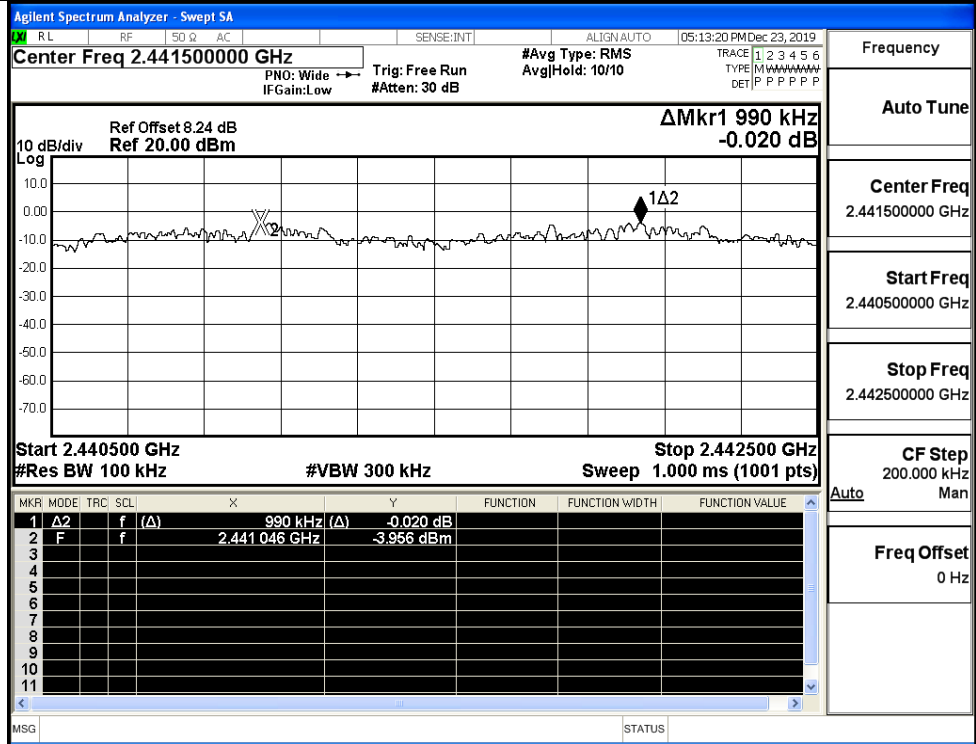
π/4DQPSK/HCH



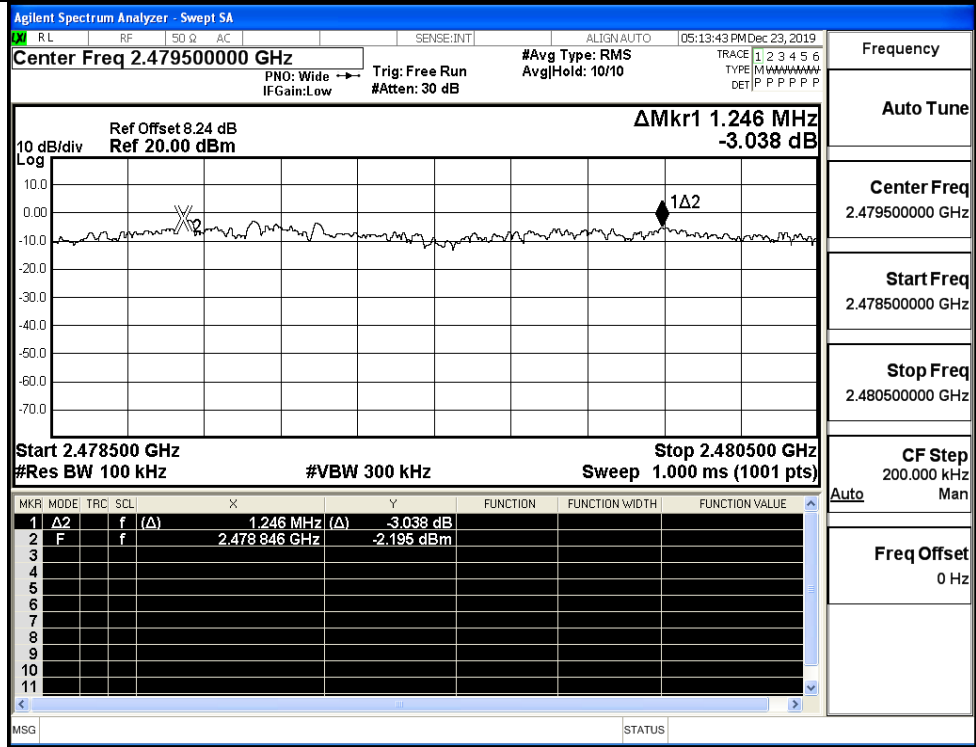
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH



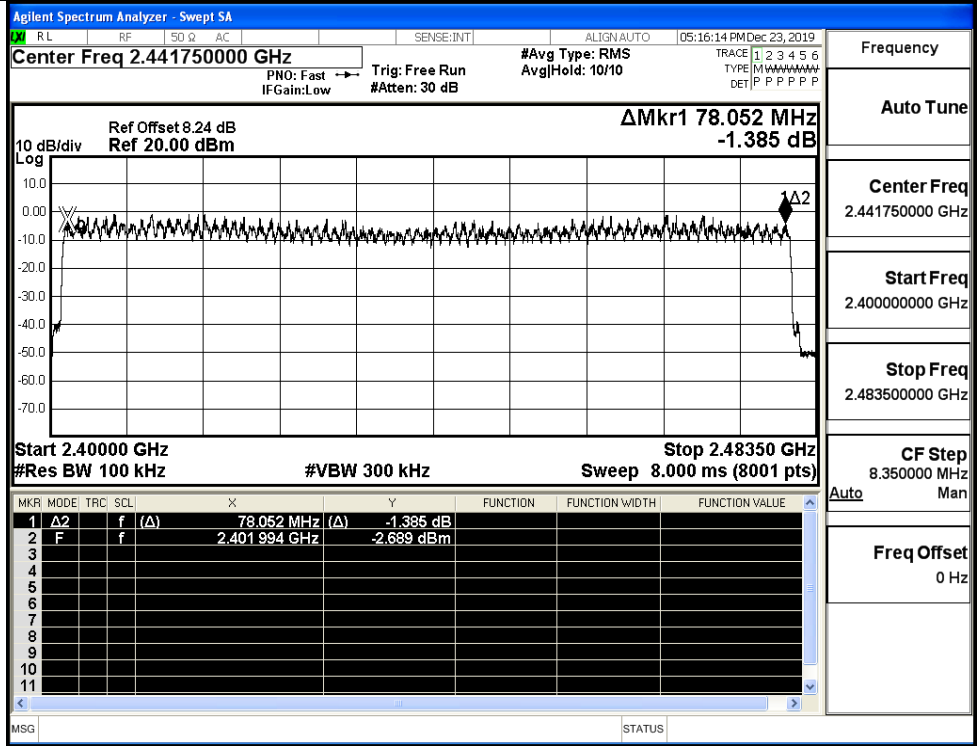
A.4 Hopping Channel Number

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

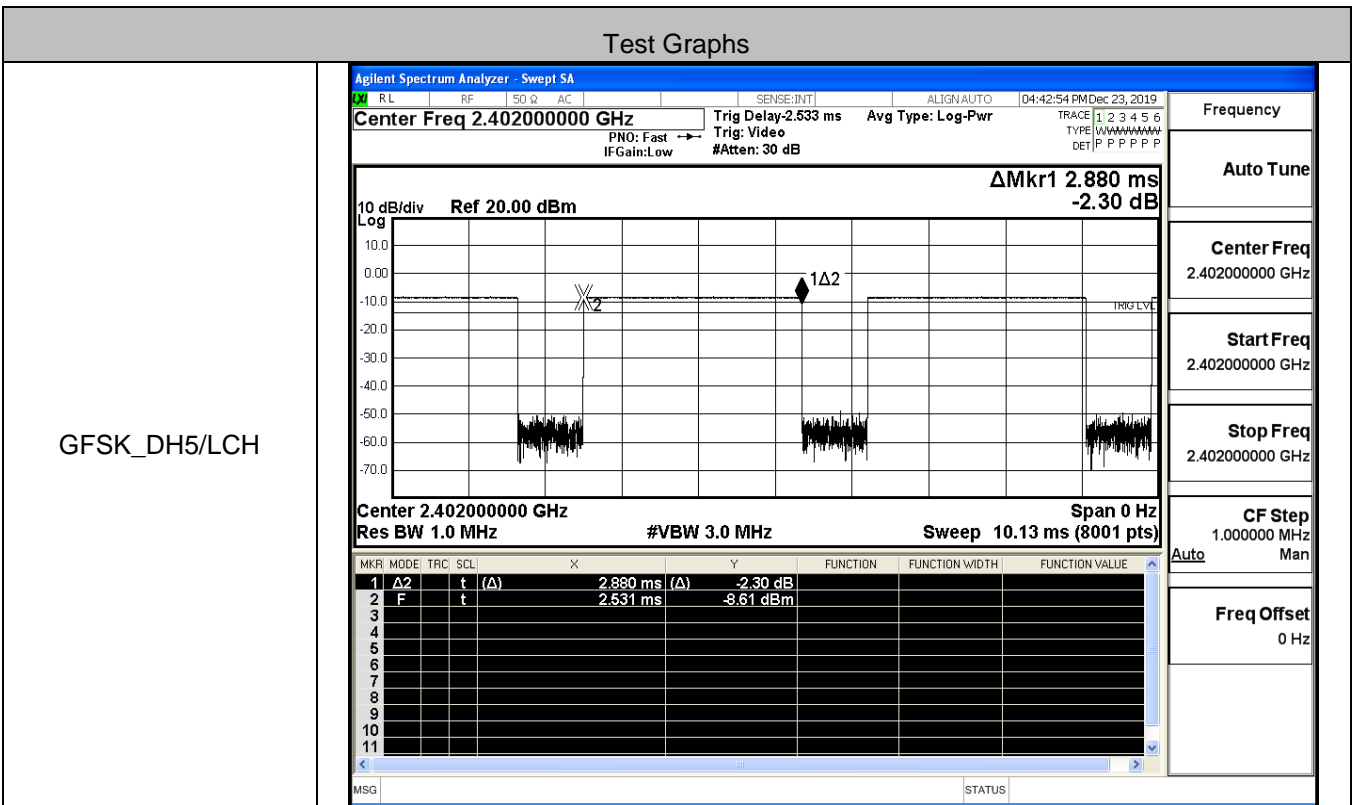
<p>GFSK/Hop</p>	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 2.441750000 GHz Ref Offset 8.24 dB Ref 20.00 dBm ΔMkr1 77.968 MHz -0.872 dB Start 2.40000 GHz #Res BW 100 kHz #VBW 300 kHz Stop 2.48350 GHz Sweep 8.000 ms (8001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</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>77.968 MHz</td> <td>(Δ)</td> <td>-0.872 dB</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td></td> <td>2.401994 GHz</td> <td></td> <td>-0.329 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)	77.968 MHz	(Δ)	-0.872 dB			2	F	f		2.401994 GHz		-0.329 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)	77.968 MHz	(Δ)	-0.872 dB																							
2	F	f		2.401994 GHz		-0.329 dBm																							
<p>$\pi/4$DQPSK/Hop</p>	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 2.441750000 GHz Ref Offset 8.24 dB Ref 20.00 dBm ΔMkr1 77.832 MHz -3.234 dB Start 2.40000 GHz #Res BW 100 kHz #VBW 300 kHz Stop 2.48350 GHz 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>77.832 MHz</td> <td>(Δ)</td> <td>-3.234 dB</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td></td> <td>2.401983 GHz</td> <td></td> <td>-2.236 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)	77.832 MHz	(Δ)	-3.234 dB			2	F	f		2.401983 GHz		-2.236 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)	77.832 MHz	(Δ)	-3.234 dB																							
2	F	f		2.401983 GHz		-2.236 dBm																							

8DPSK/Hop

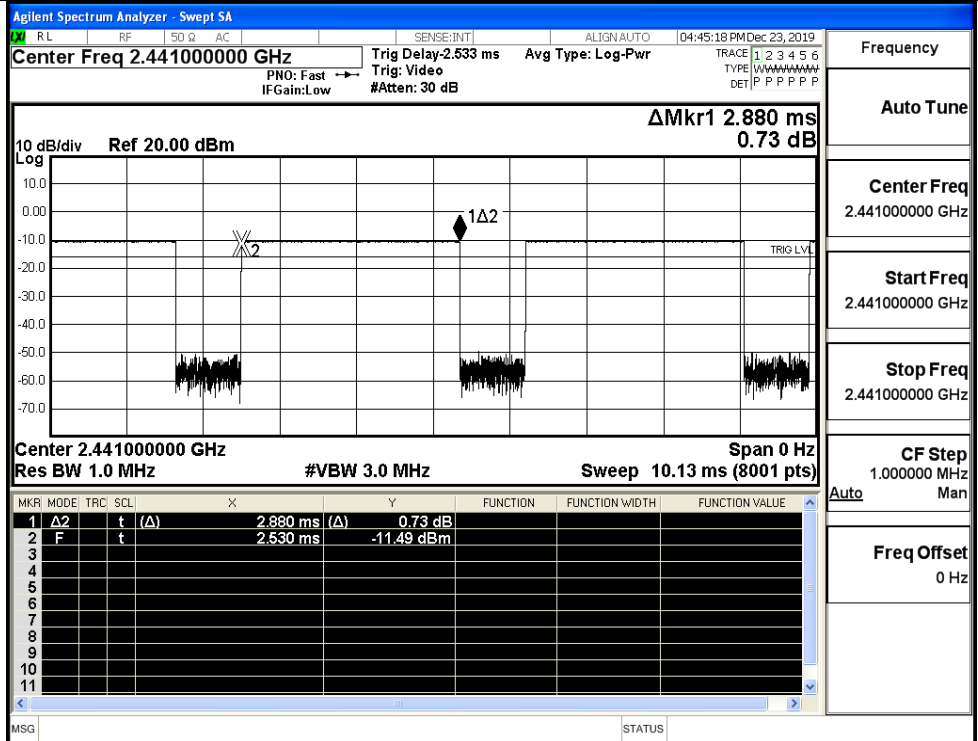


A.5 Dwell Time

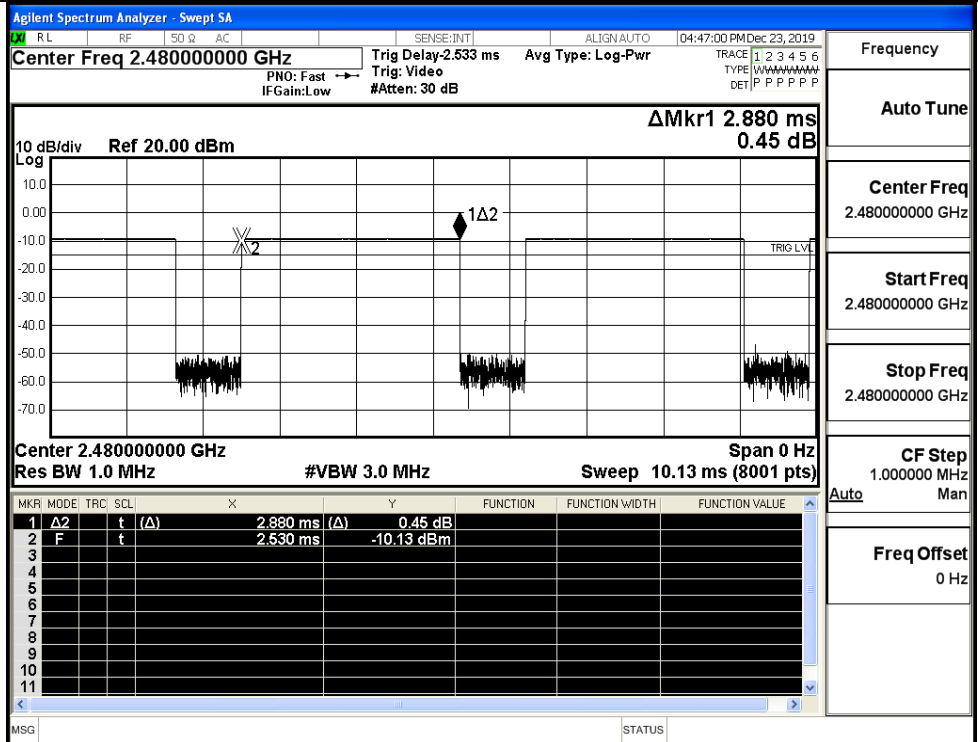
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
π/4DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7	0.307	0.4	PASS
8DPSK	3DH5	LCH	2.88	106.7	0.308	0.4	PASS
	3DH5	MCH	2.88	106.7	0.308	0.4	PASS
	3DH5	HCH	2.88	106.7	0.308	0.4	PASS



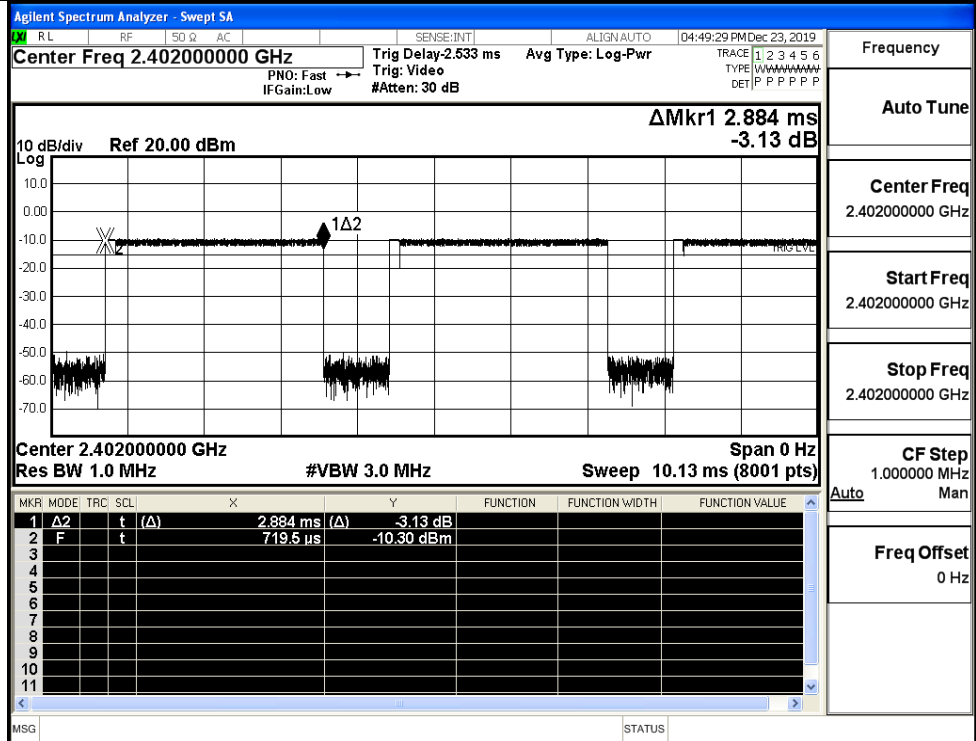
GFSK_DH5/MCH



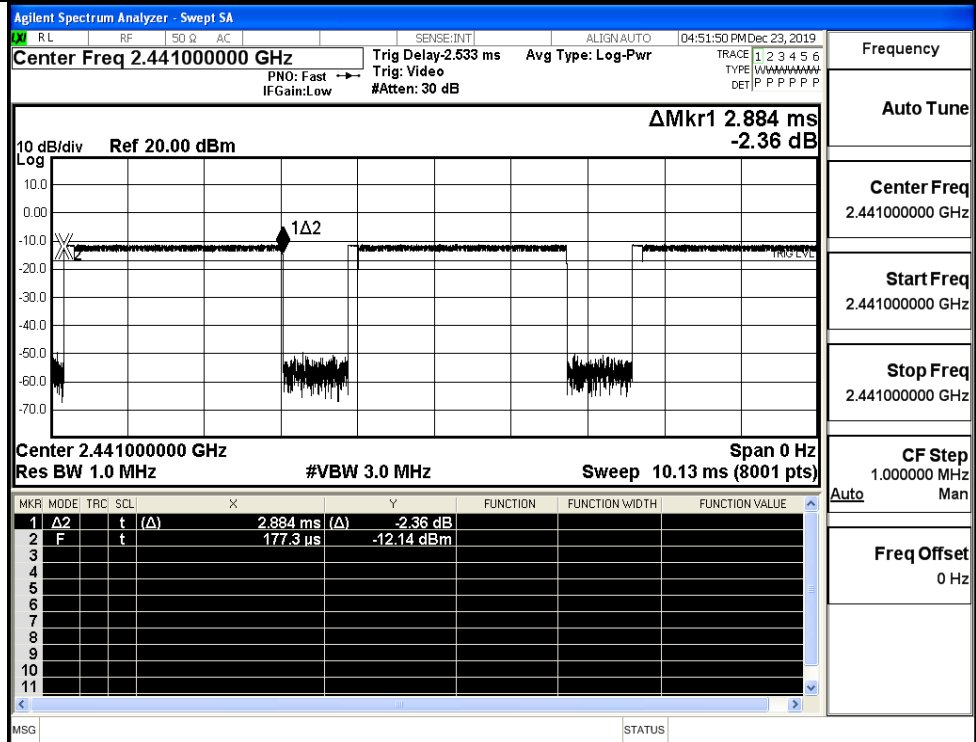
GFSK_DH5/HCH



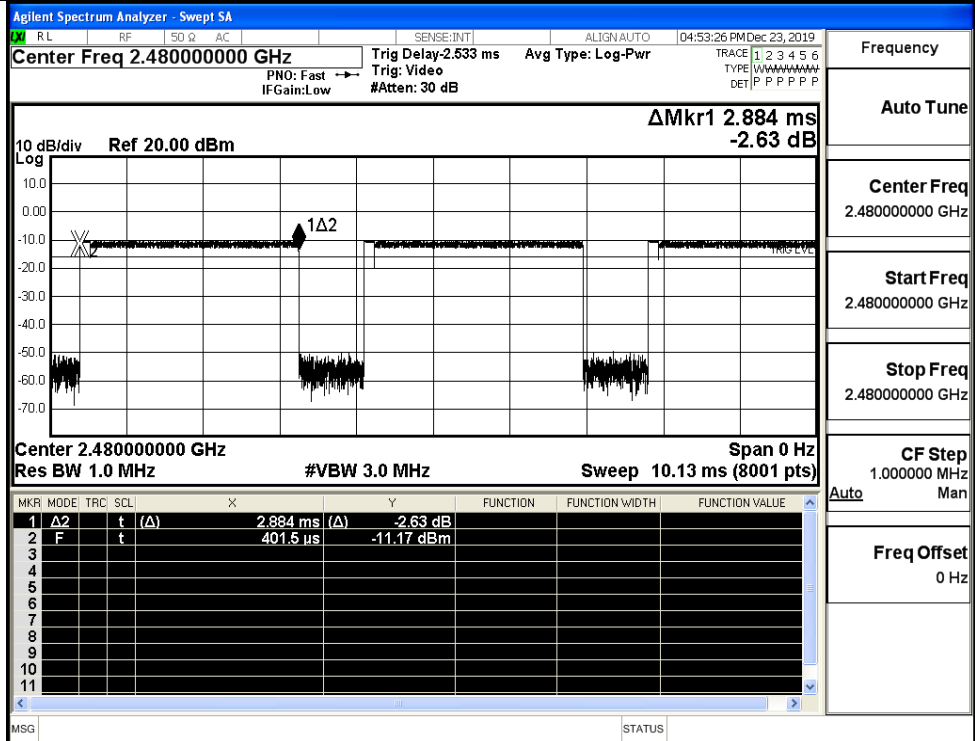
$\pi/4$ DQPSK
_2DH5/LCH



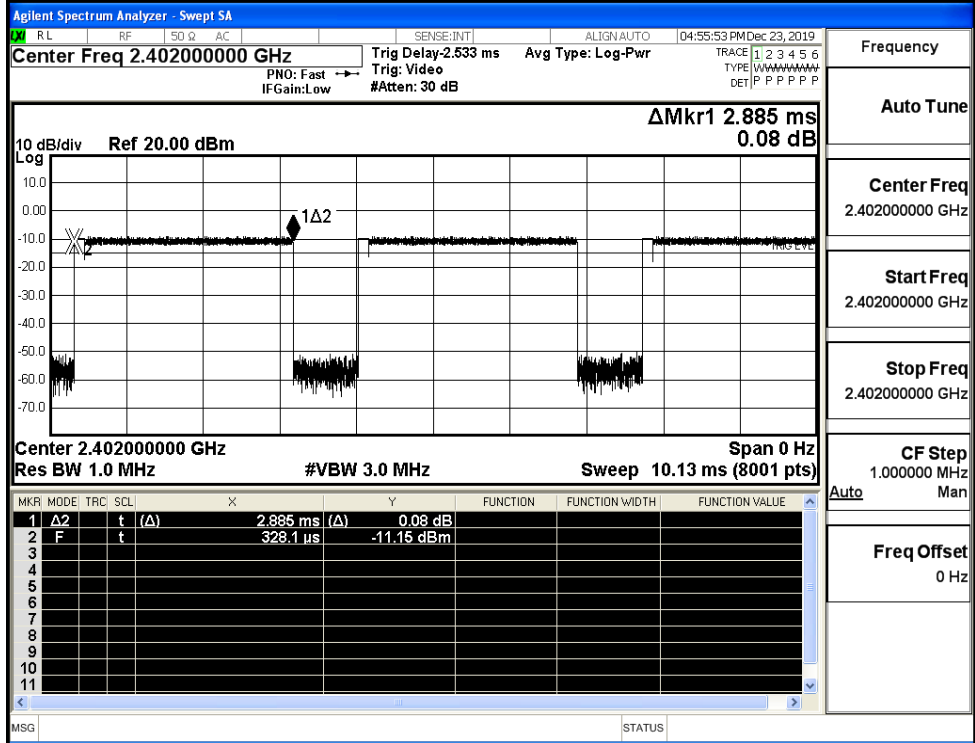
$\pi/4$ DQPSK
_2DH5/MCH



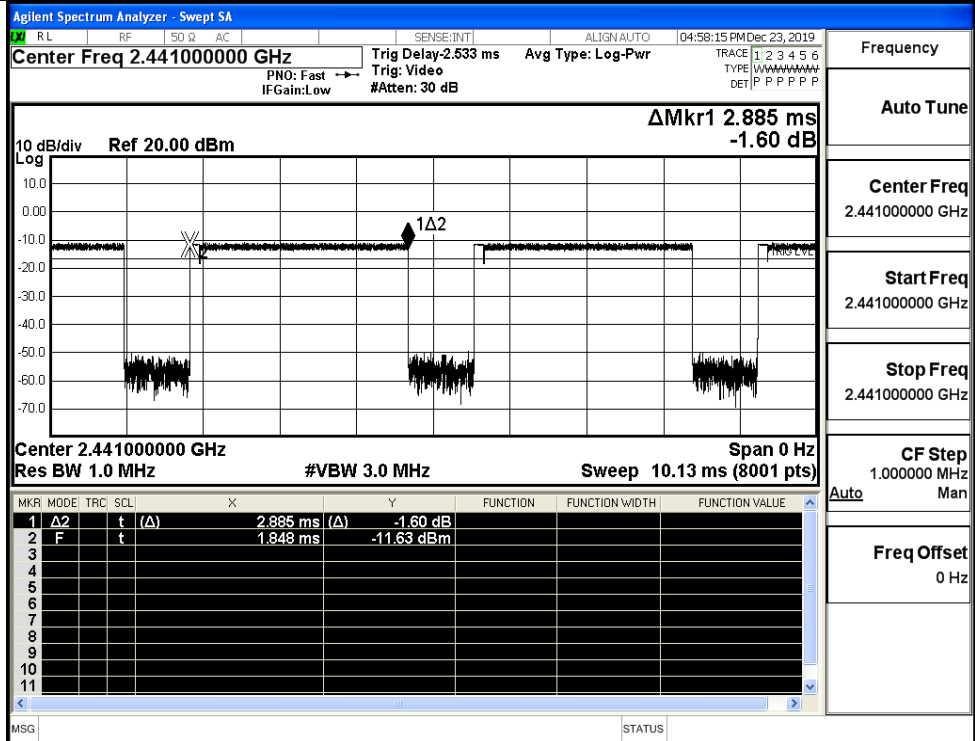
$\pi/4$ DQPSK
_2DH5/HCH



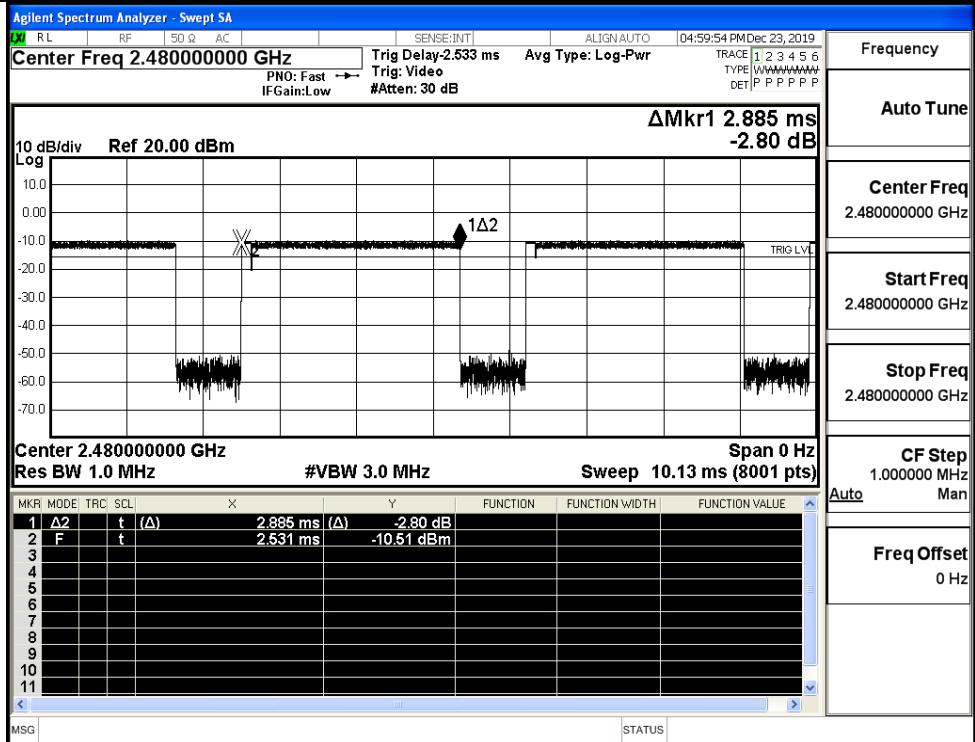
8DPSK_3DH5/LCH



8DPSK_3DH5/MCH

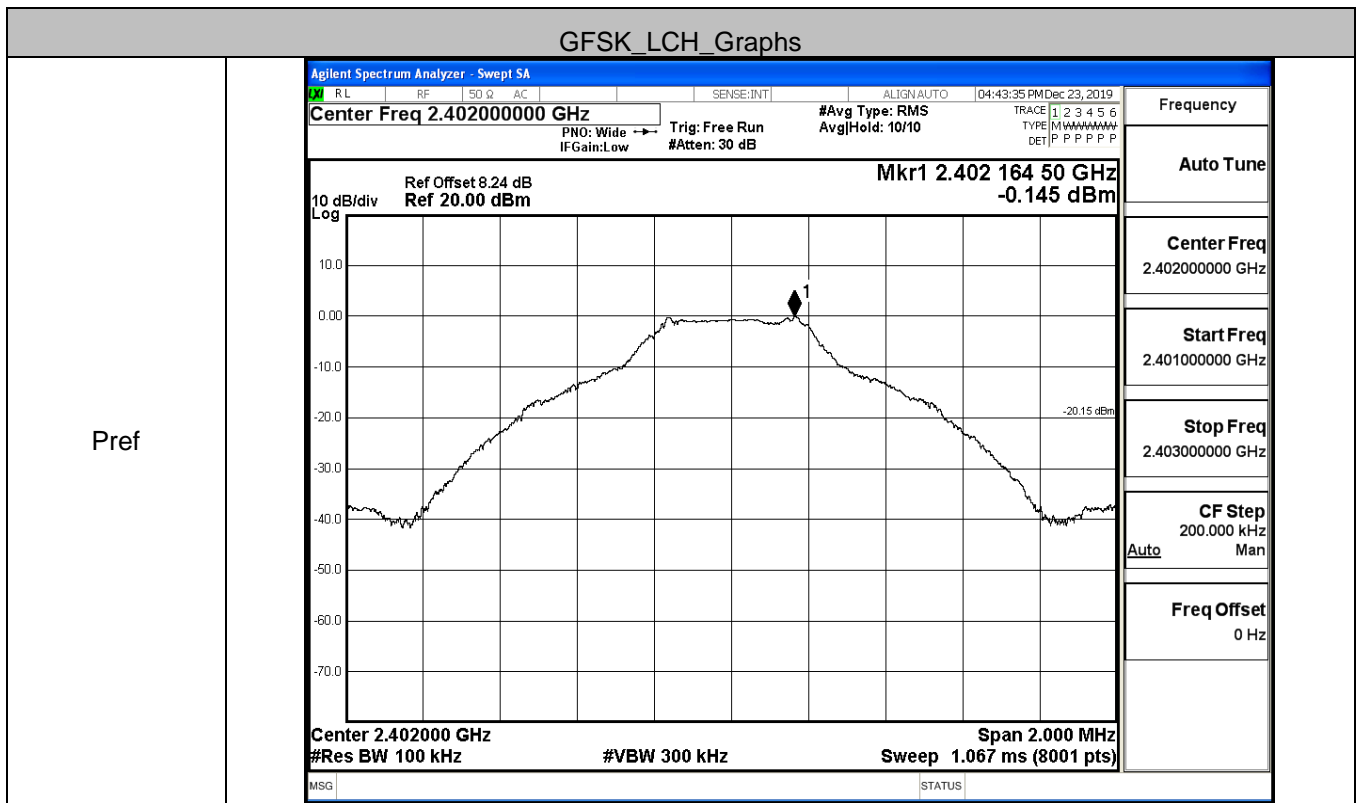


8DPSK_3DH5/HCH

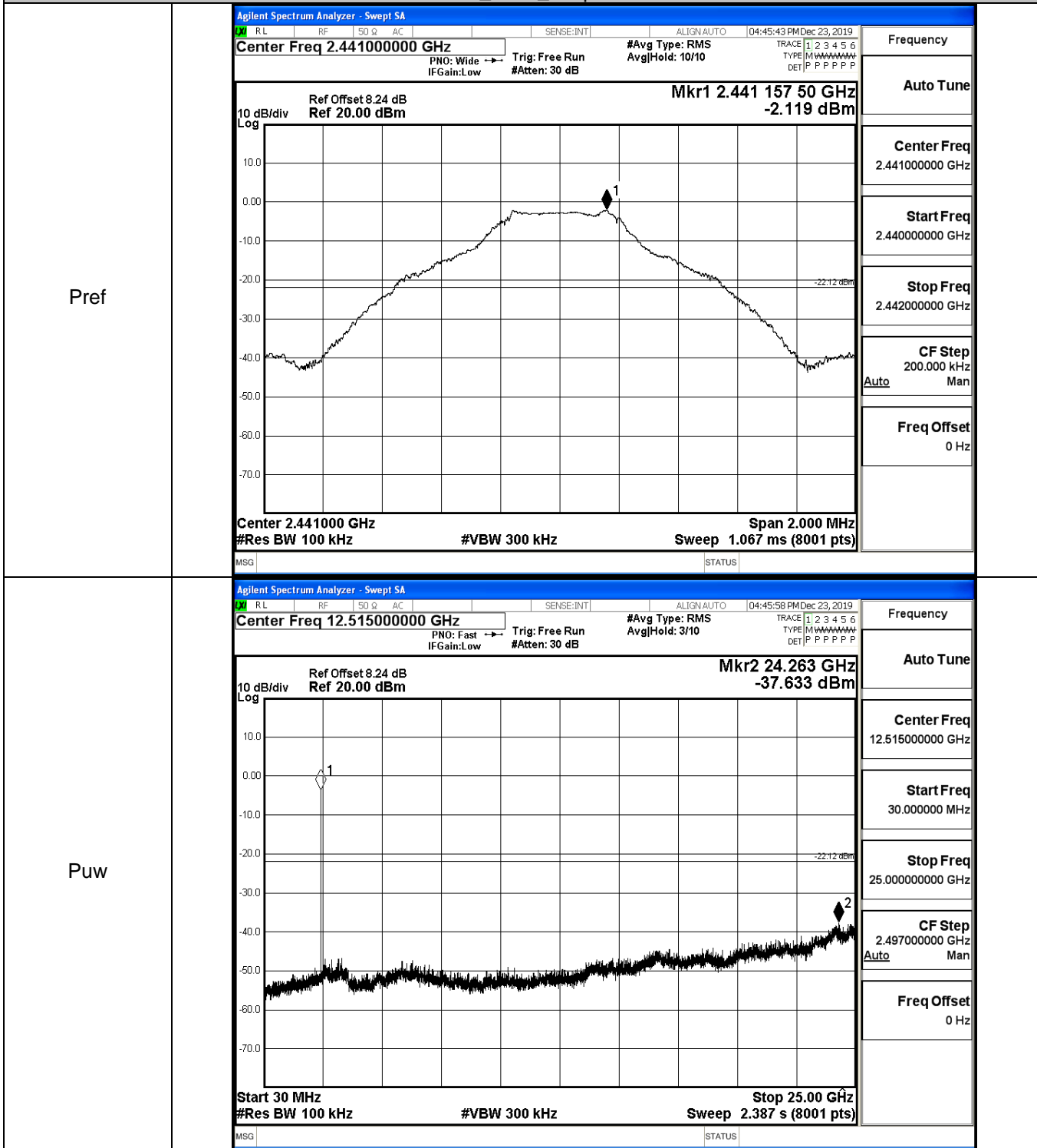


A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.145	-37.236	-20.145	PASS
	MCH	-2.119	-37.633	-22.119	PASS
	HCH	-0.959	-36.977	-20.959	PASS
π /4DQPSK	LCH	-1.594	-33.046	-21.594	PASS
	MCH	-3.94	-37.168	-23.940	PASS
	HCH	-2.243	-37.387	-22.243	PASS
8DPSK	LCH	-2.382	-37.190	-22.382	PASS
	MCH	-3.269	-36.560	-23.269	PASS
	HCH	-2.239	-37.189	-22.239	PASS

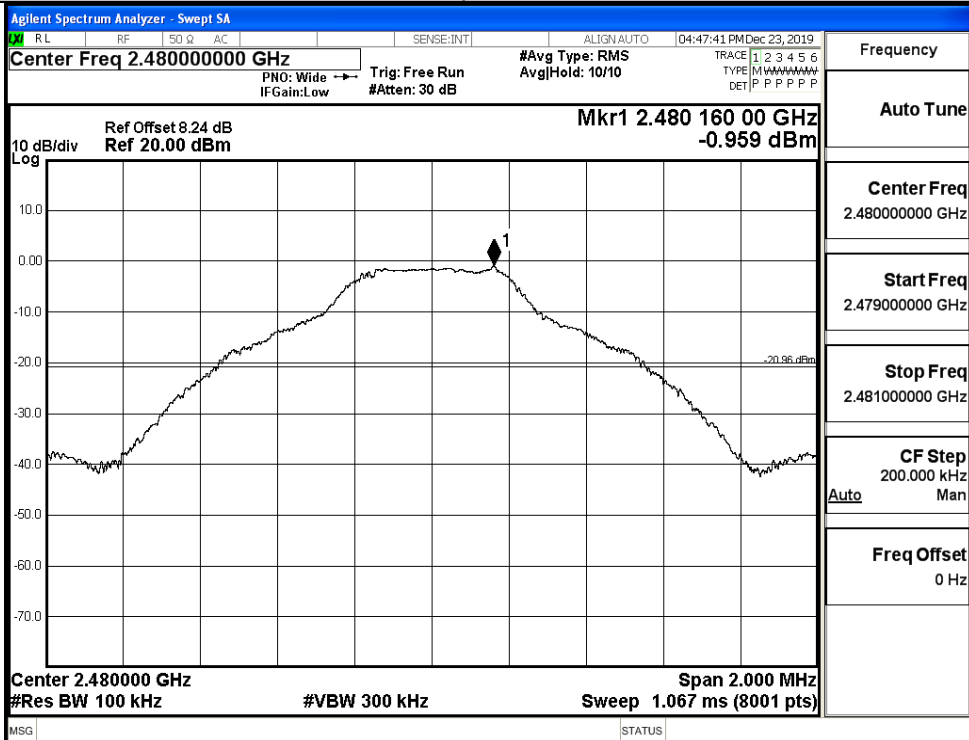


GFSK_MCH_Graphs

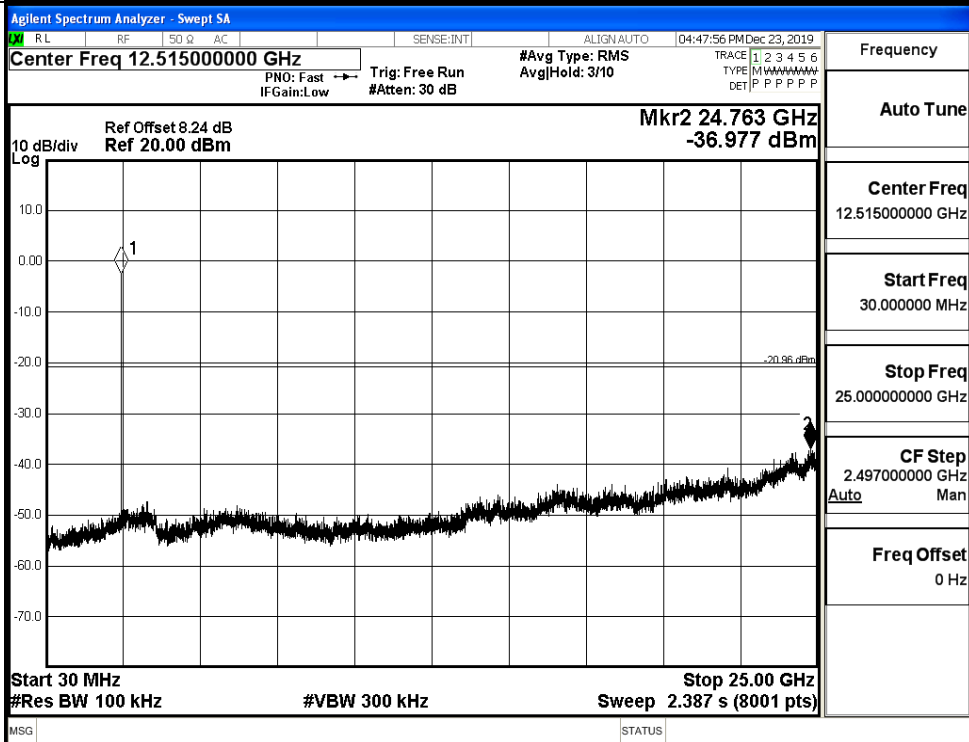


GFSK_HCH_Graphs

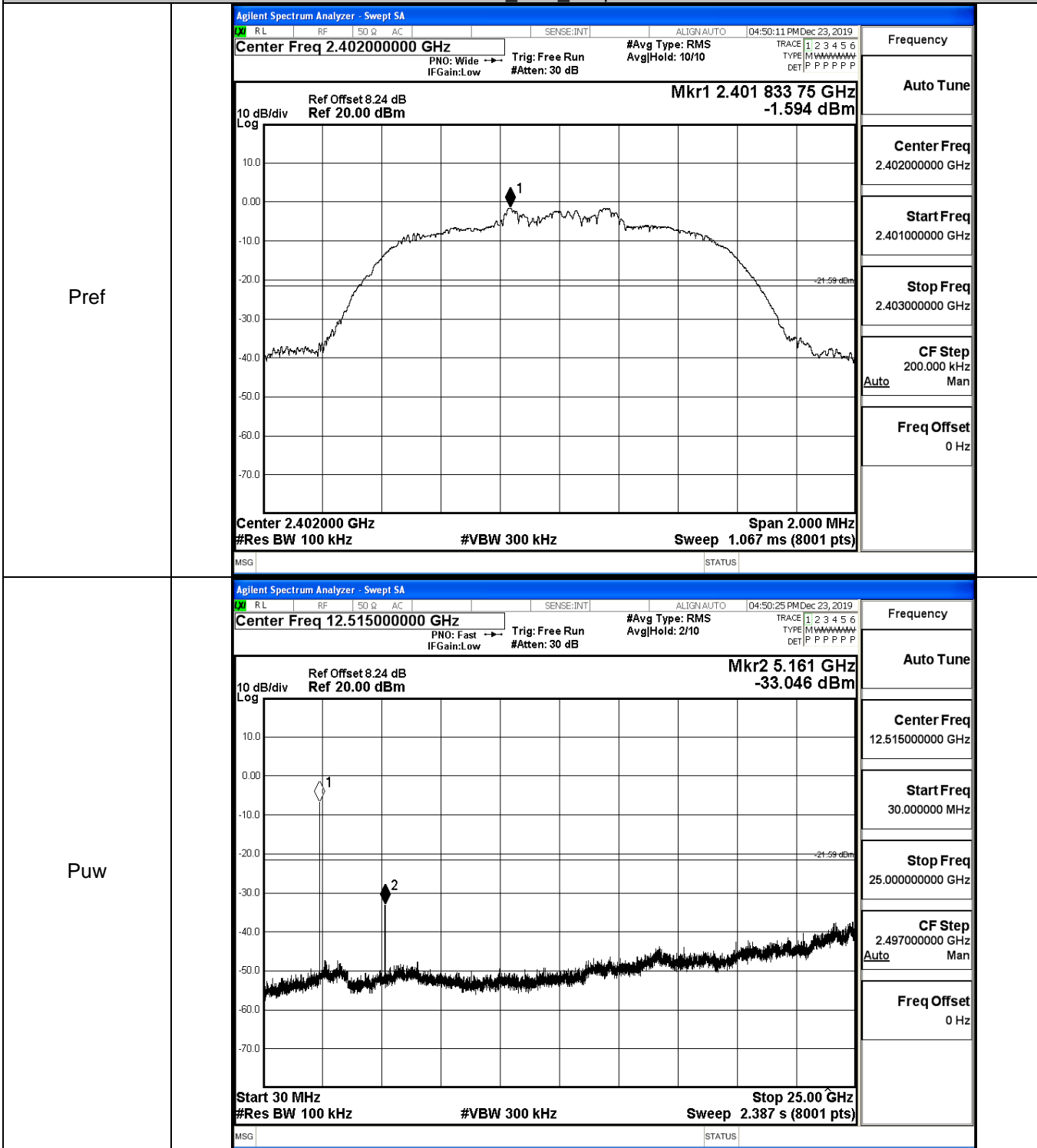
Pref



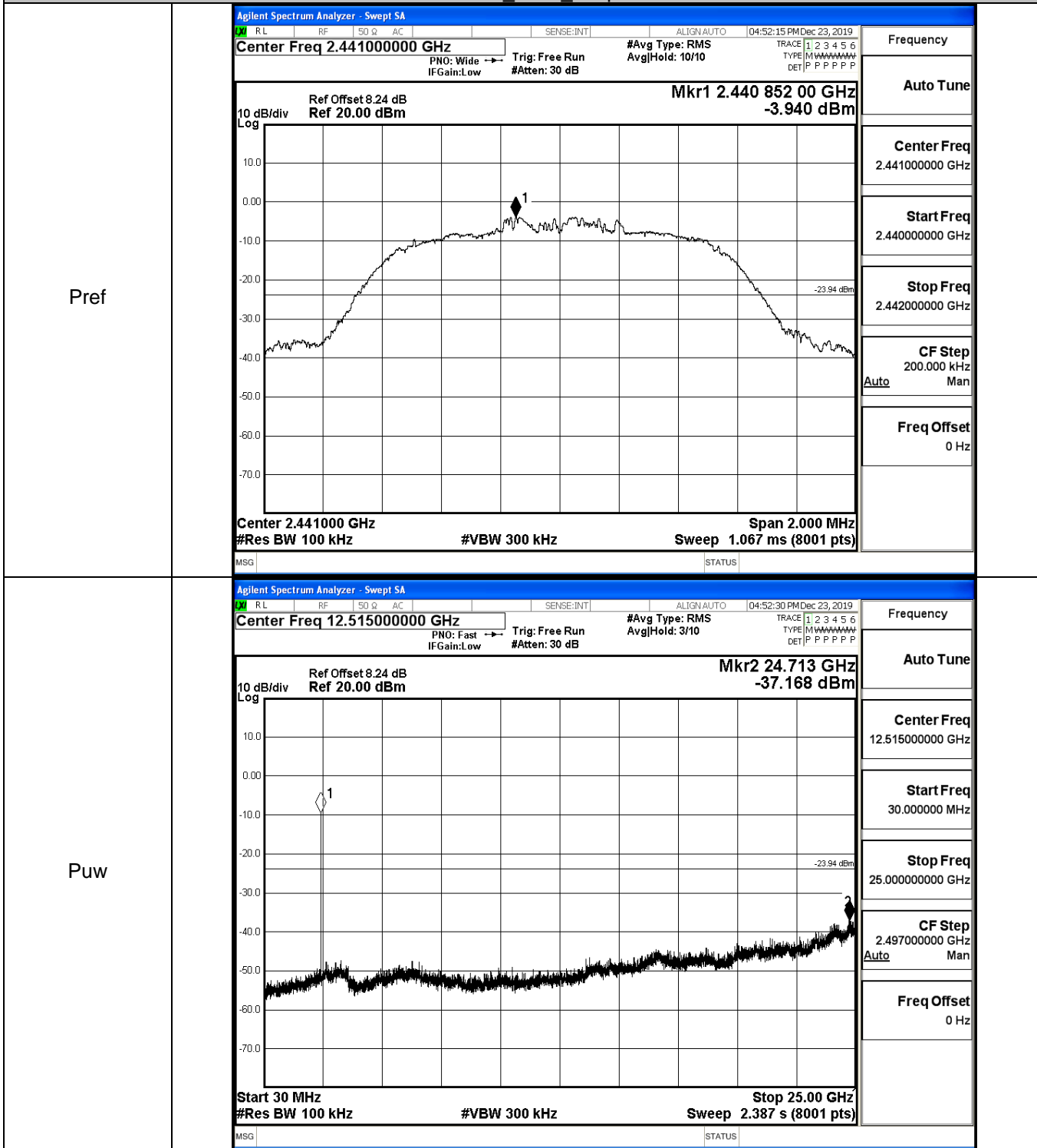
Puw



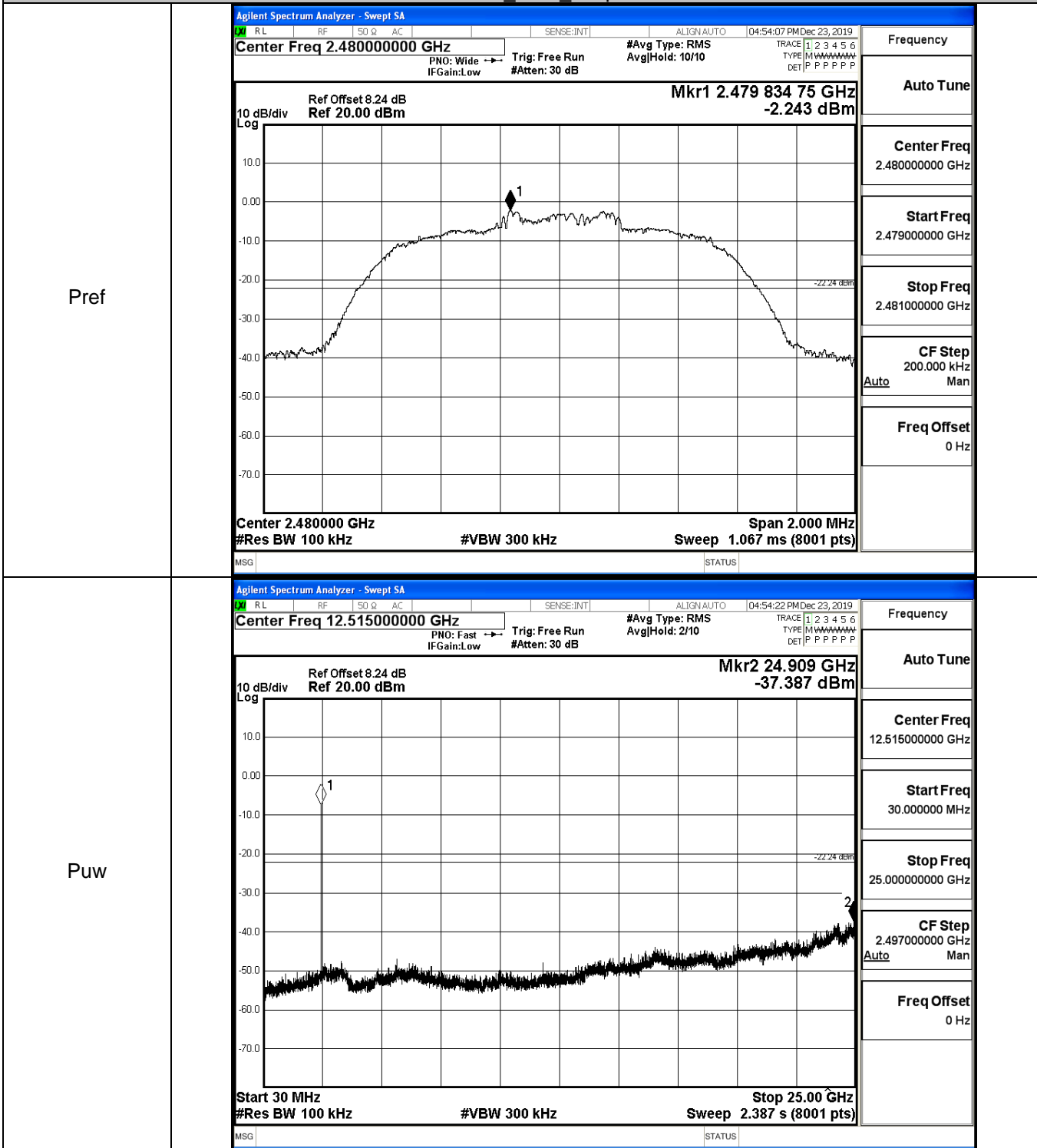
$\pi/4$ DQPSK_LCH_Graphs



$\pi/4$ DQPSK_MCH_Graphs

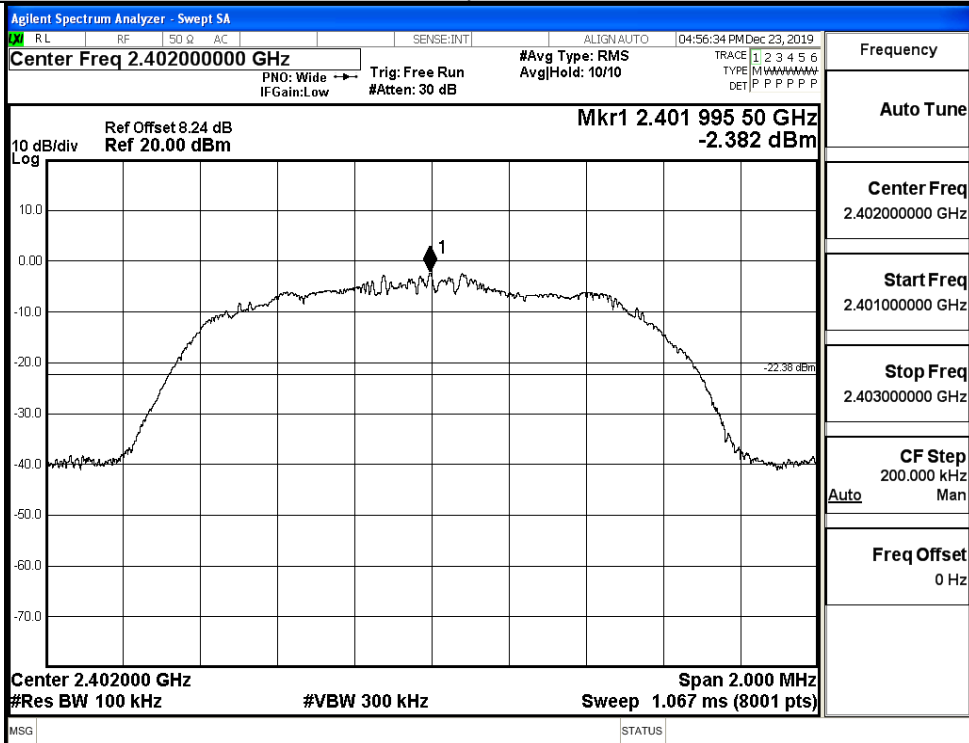


$\pi/4$ DQPSK_HCH_Graphs

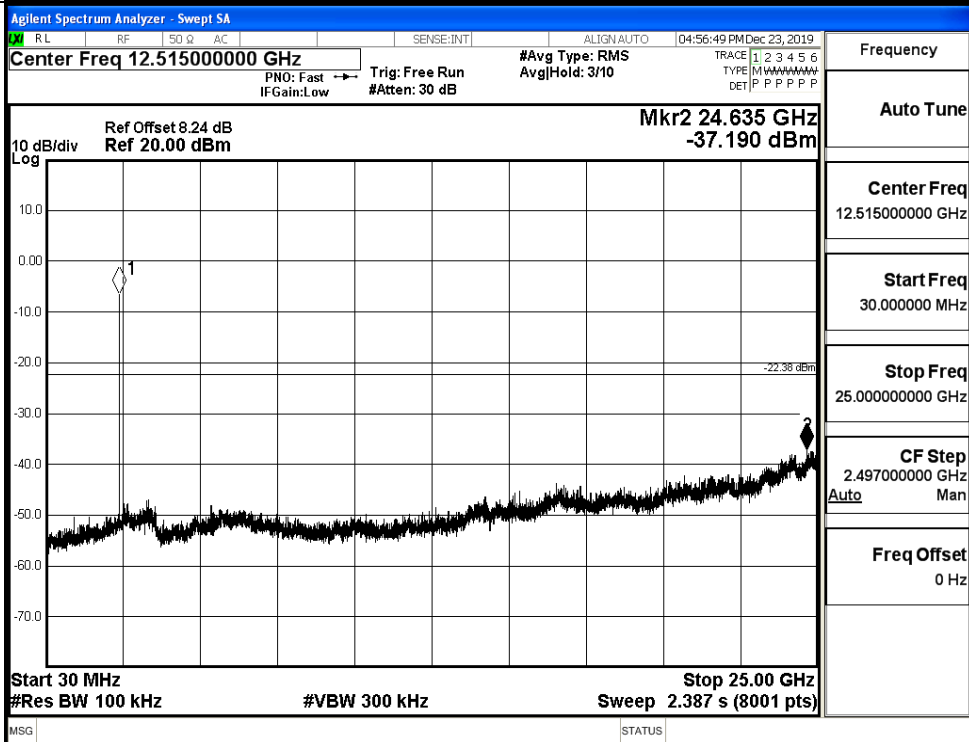


8DPSK_LCH_Graphs

Pref

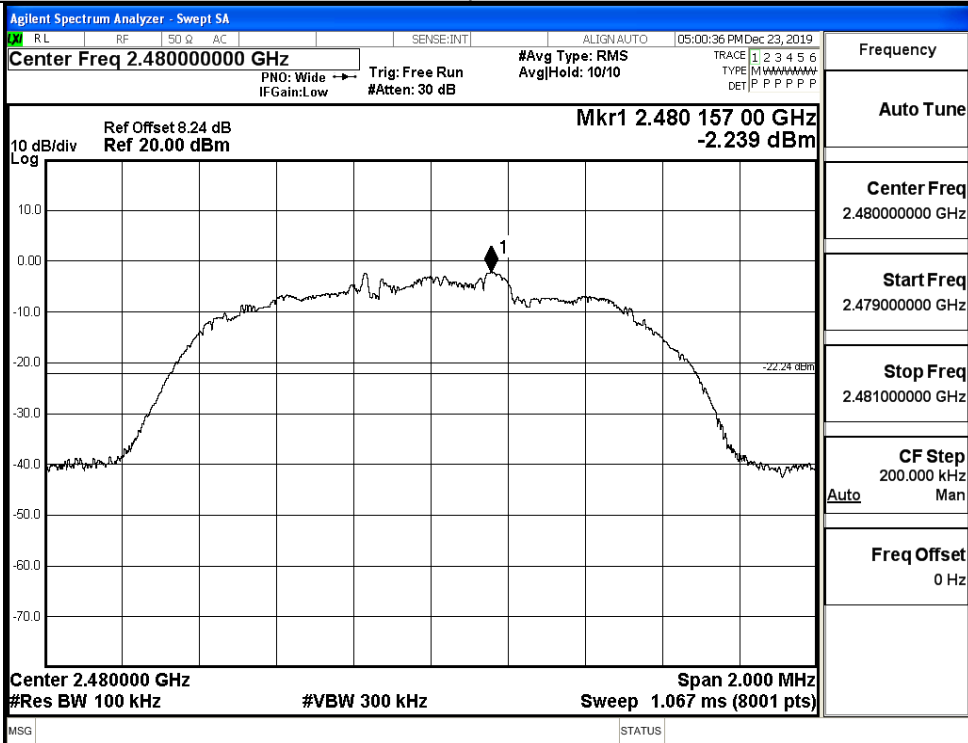


Puw

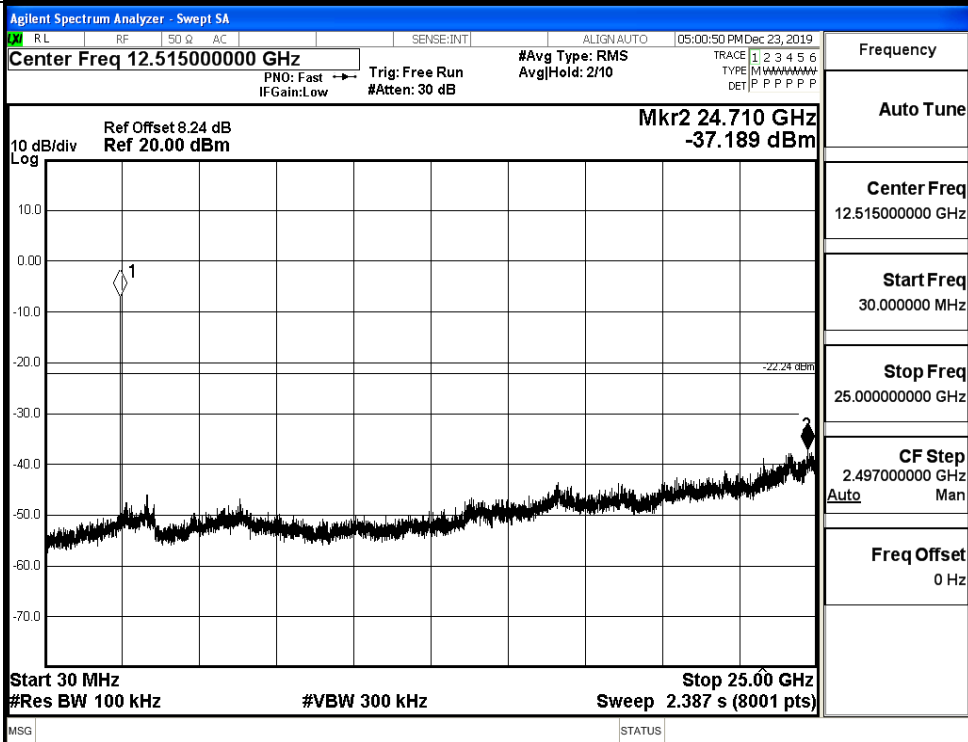


8DPSK_HCH_Graphs

Pref



Puw

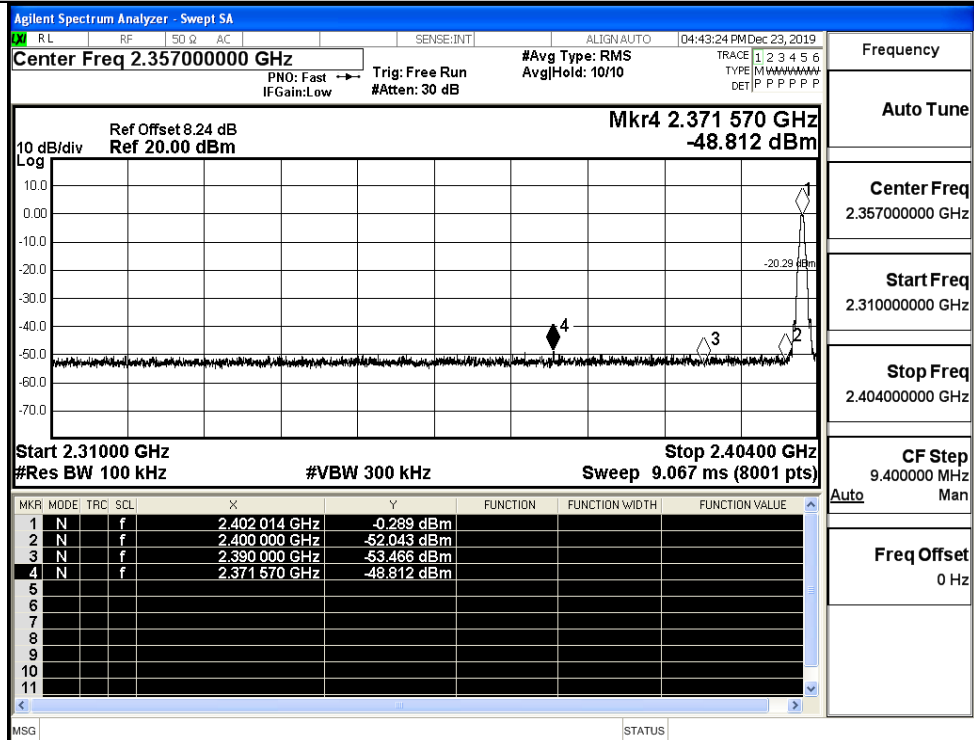


A.7 Band-edge for RF Conducted Emissions

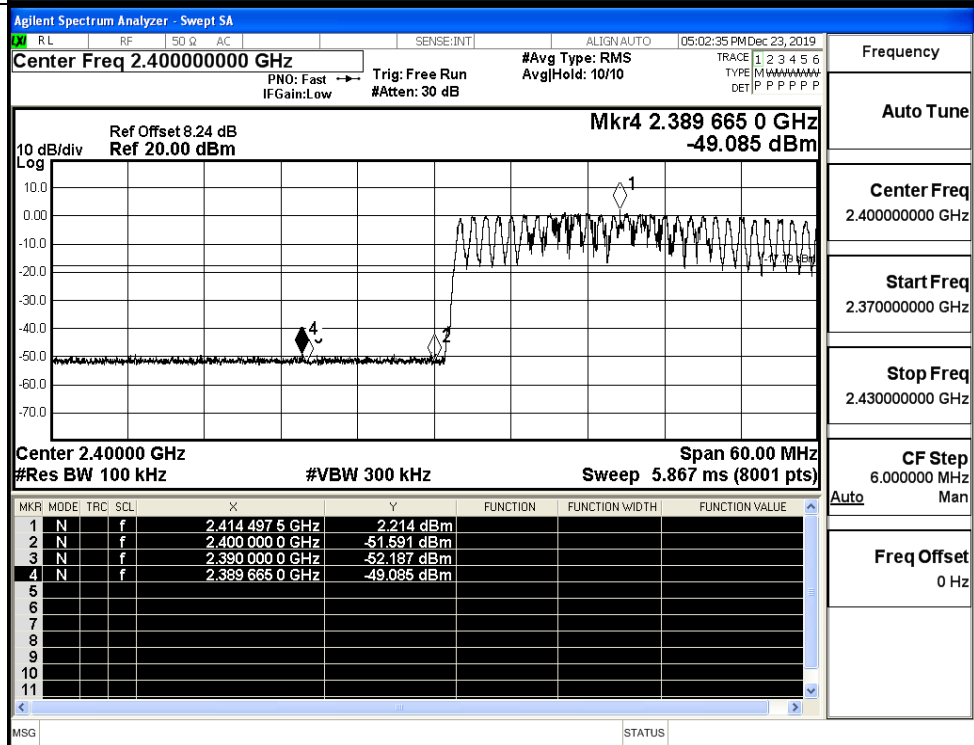
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-0.289	Off	-48.812	-20.29	PASS
			2.214	On	-49.085	-17.79	PASS
	HCH	2480	-0.986	Off	-48.786	-20.99	PASS
			1.678	On	-34.360	-18.32	PASS
$\pi/4$ DQPSK	LCH	2402	-2.035	Off	-49.603	-22.04	PASS
			-0.655	On	-48.345	-20.66	PASS
	HCH	2480	-2.233	Off	-48.647	-22.23	PASS
			-0.971	On	-48.362	-20.97	PASS
8DPSK	LCH	2402	-1.980	Off	-49.224	-21.98	PASS
			-0.530	On	-48.740	-20.53	PASS
	HCH	2480	-2.218	Off	-48.525	-22.22	PASS
			-0.997	On	-48.247	-21	PASS

Test Graphs

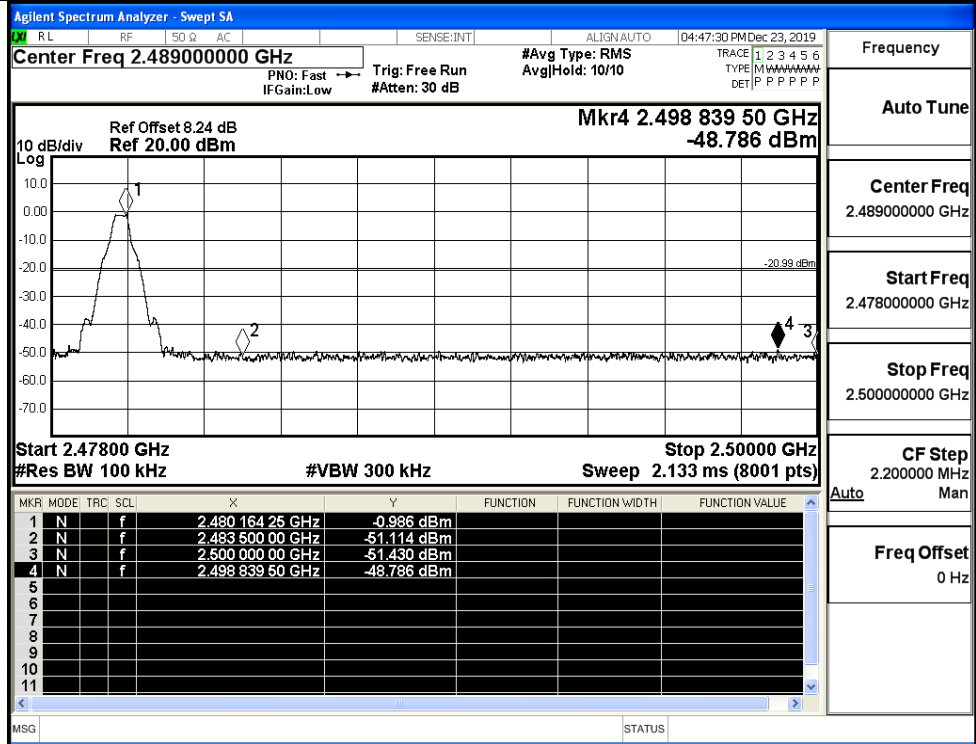
GFSK/LCH/No Hop



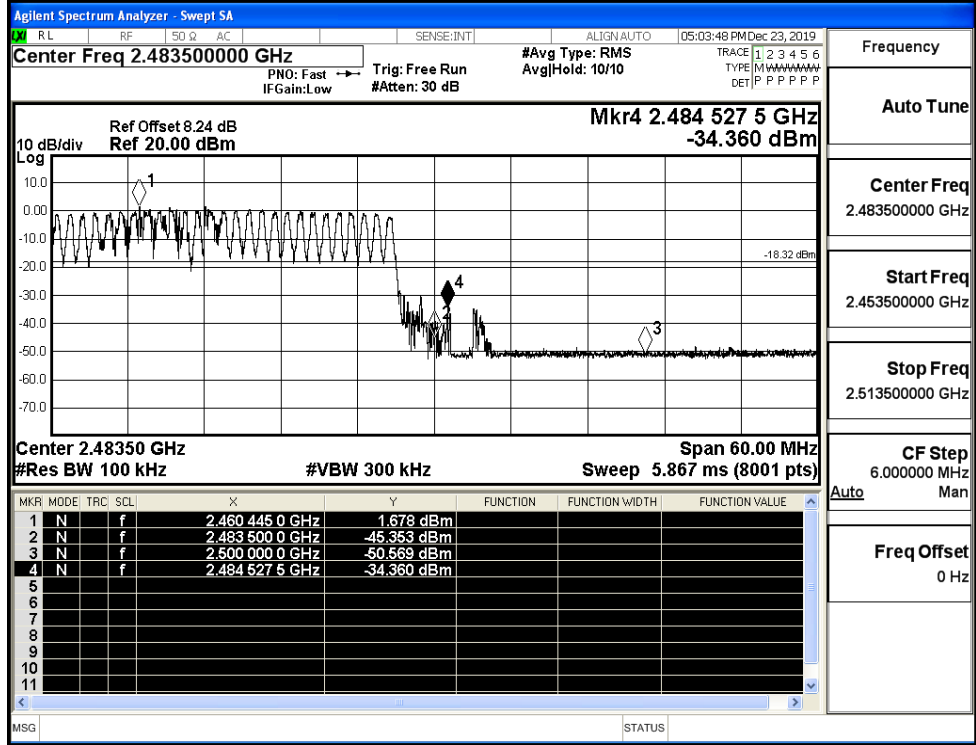
GFSK/LCH/Hop



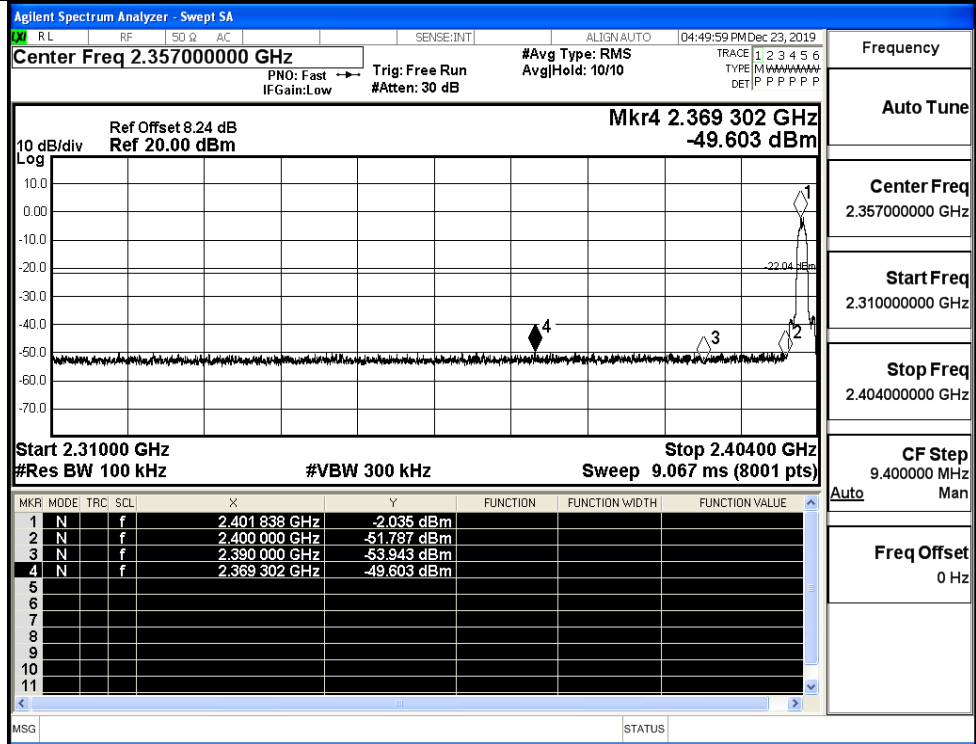
GFSK/HCH/No Hop



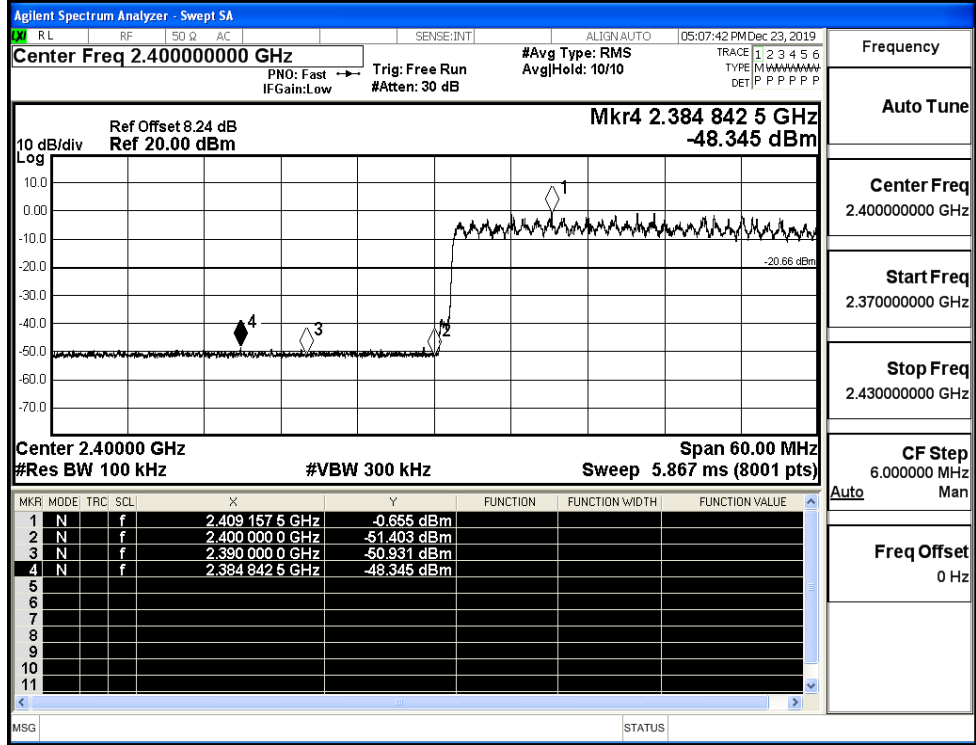
GFSK/HCH/Hop



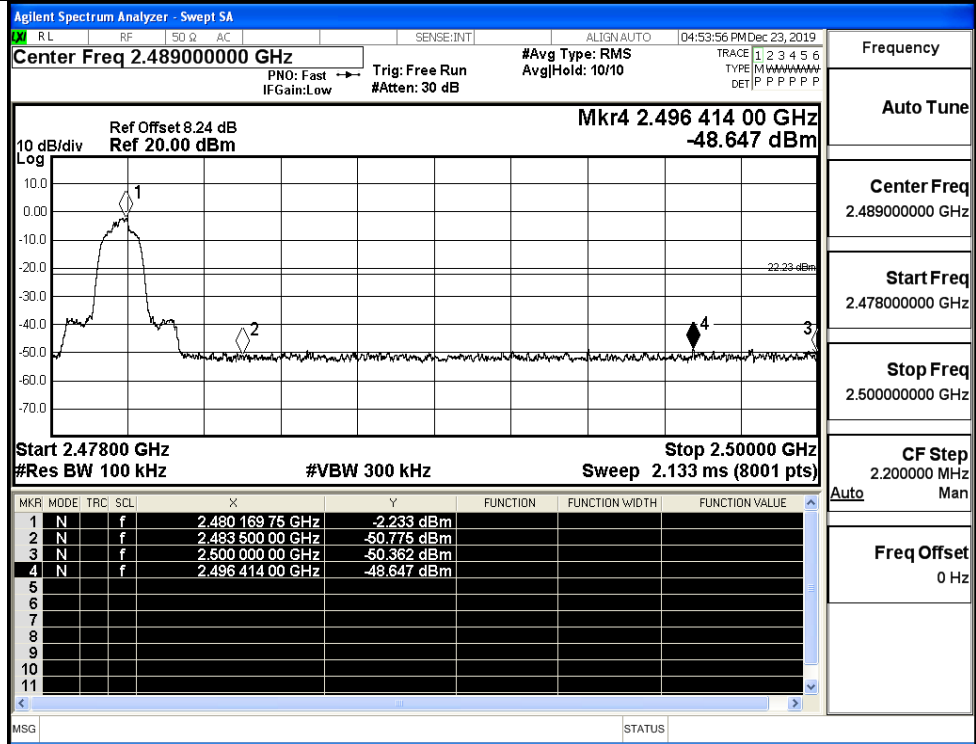
$\pi/4$ DQPSK/LCH/No
Hop



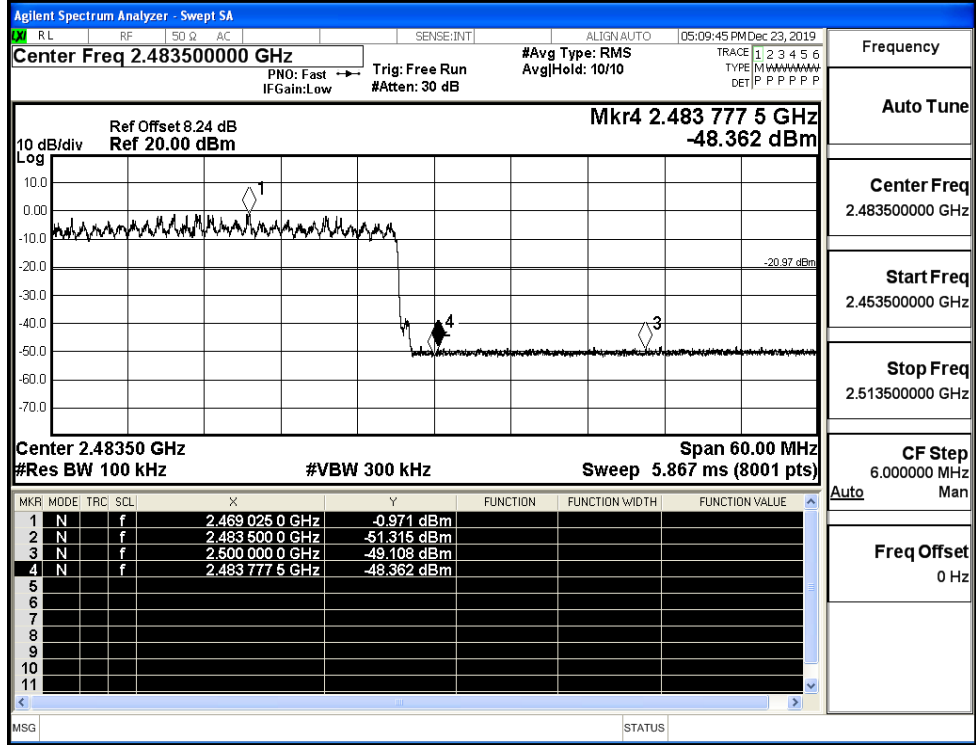
$\pi/4$ DQPSK/LCH/Hop



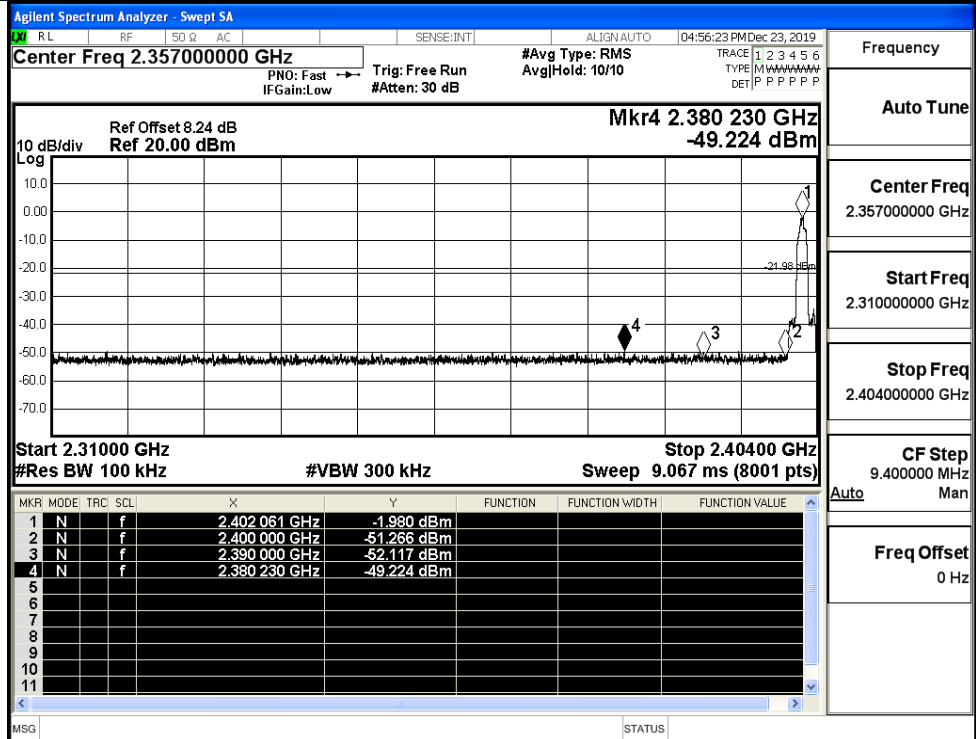
π /4DQPSK/HCH/No Hop



π /4DQPSK/HCH/Hop

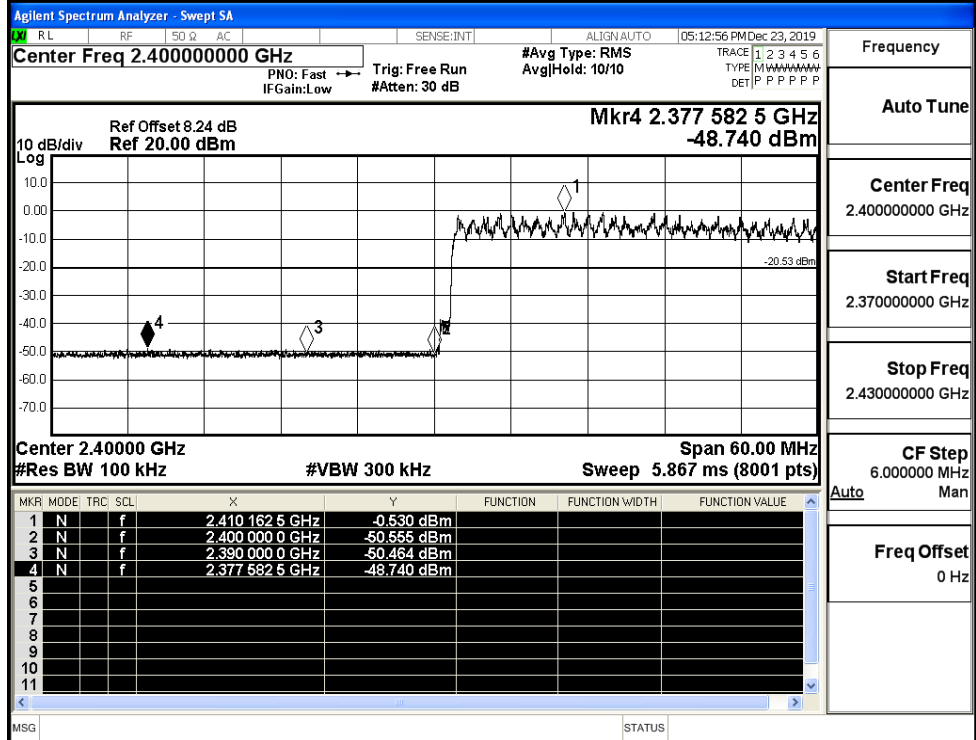


8DPSK/LCH/No Hop



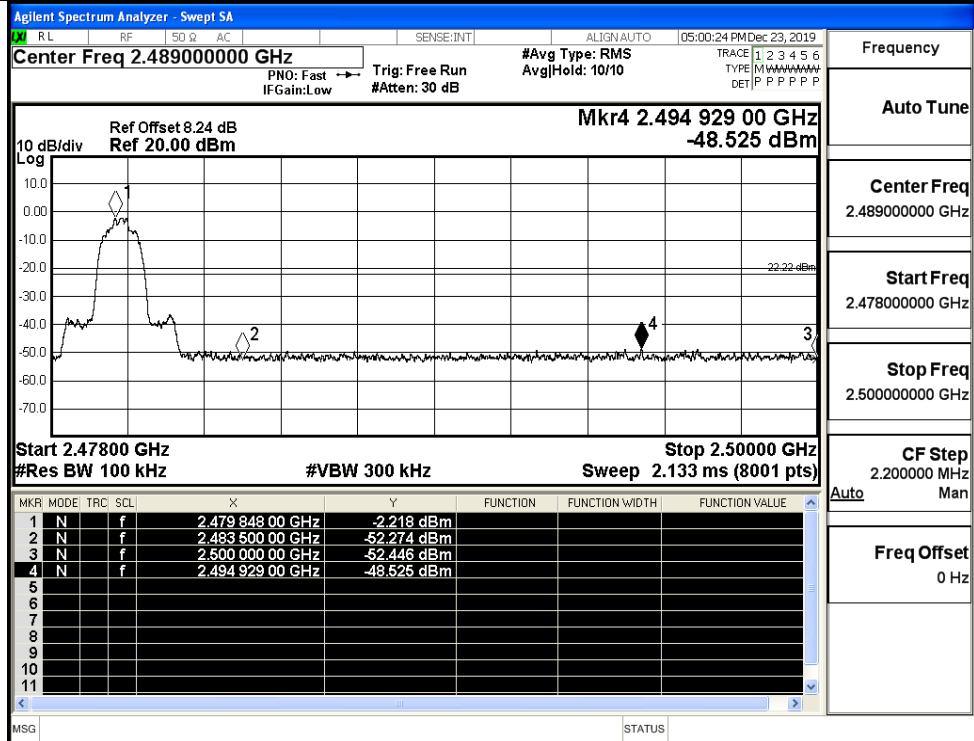
Frequency
Auto Tune
Center Freq
2.357000000 GHz
Start Freq
2.310000000 GHz
Stop Freq
2.404000000 GHz
CF Step
9.400000 MHz
Auto Man
Freq Offset
0 Hz

8DPSK/LCH/Hop



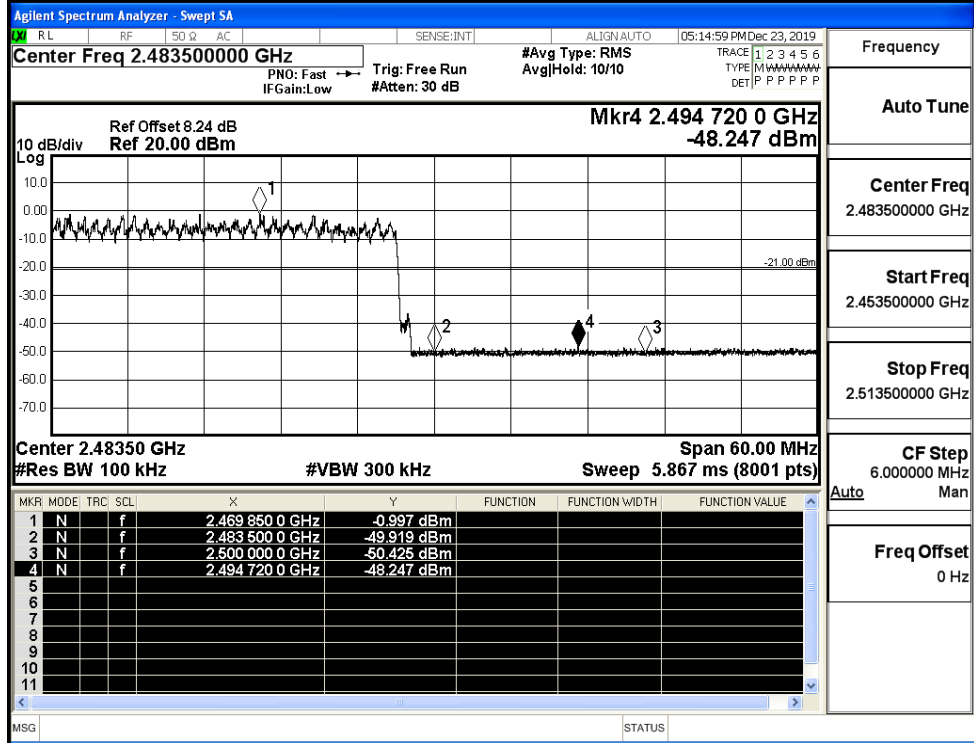
Frequency
Auto Tune
Center Freq
2.400000000 GHz
Start Freq
2.370000000 GHz
Stop Freq
2.430000000 GHz
CF Step
6.000000 MHz
Auto Man
Freq Offset
0 Hz

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

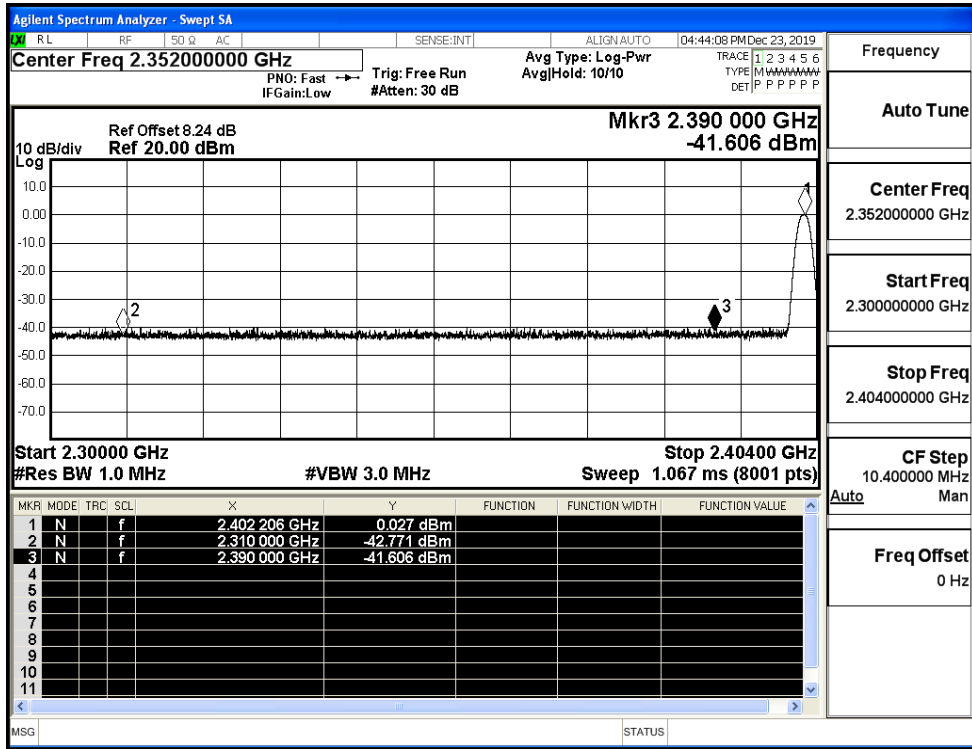


Frequency
Auto Tune
Center Freq
2.483500000 GHz
Start Freq
2.453500000 GHz
Stop Freq
2.513500000 GHz
CF Step
6.000000 MHz
Auto Man
Freq Offset
0 Hz

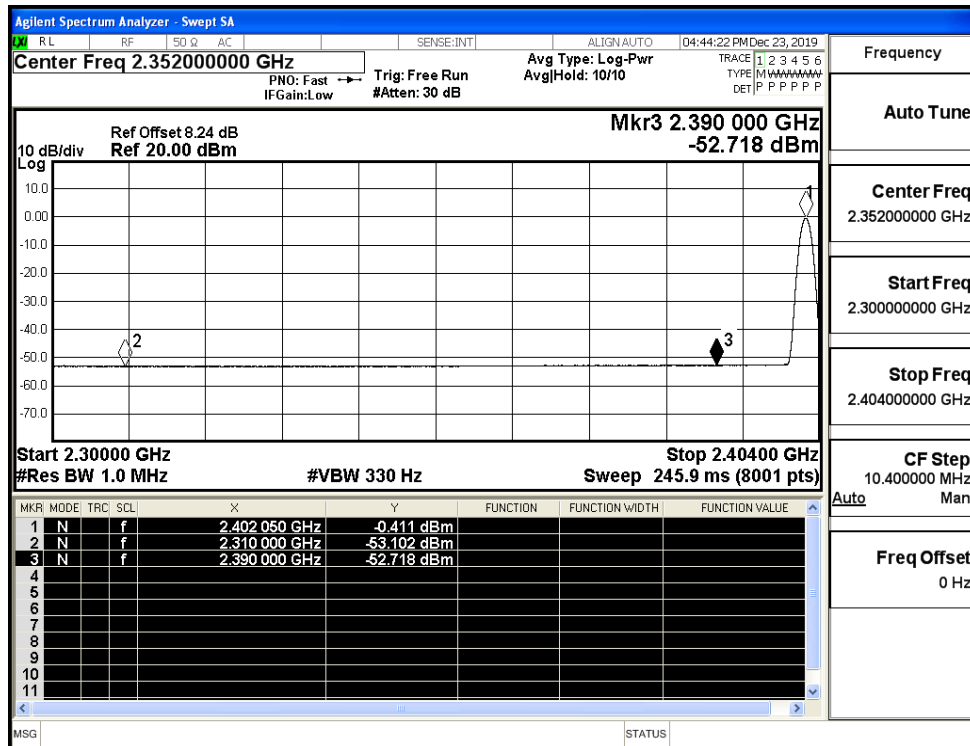
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-42.77	2.0	0	54.49	PEAK	74	PASS
	Off	2310.0	-53.10	2.0	0	44.16	AV	54	PASS
	Off	2390.0	-41.61	2.0	0	55.65	PEAK	74	PASS
	Off	2390.0	-52.72	2.0	0	44.54	AV	54	PASS
	Off	2483.5	-41.52	2.0	0	55.73	PEAK	74	PASS
	Off	2483.5	-52.16	2.0	0	45.10	AV	54	PASS
	Off	2500.0	-40.84	2.0	0	56.42	PEAK	74	PASS
	Off	2500.0	-52.19	2.0	0	45.06	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-42.22	2.0	0	55.04	PEAK	74	PASS
	Off	2310.0	-53.15	2.0	0	44.11	AV	54	PASS
	Off	2390.0	-41.50	2.0	0	55.75	PEAK	74	PASS
	Off	2390.0	-52.80	2.0	0	44.46	AV	54	PASS
	Off	2483.5	-42.85	2.0	0	54.41	PEAK	74	PASS
	Off	2483.5	-52.24	2.0	0	45.02	AV	54	PASS
	Off	2500.0	-42.17	2.0	0	55.09	PEAK	74	PASS
	Off	2500.0	-52.10	2.0	0	45.16	AV	54	PASS
8DPSK	Off	2310.0	-42.66	2.0	0	54.60	PEAK	74	PASS
	Off	2310.0	-53.13	2.0	0	44.13	AV	54	PASS
	Off	2390.0	-40.57	2.0	0	56.69	PEAK	74	PASS
	Off	2390.0	-52.77	2.0	0	44.49	AV	54	PASS
	Off	2483.5	-42.10	2.0	0	55.16	PEAK	74	PASS
	Off	2483.5	-52.27	2.0	0	44.99	AV	54	PASS
	Off	2500.0	-41.60	2.0	0	55.66	PEAK	74	PASS
	Off	2500.0	-52.20	2.0	0	45.06	AV	54	PASS

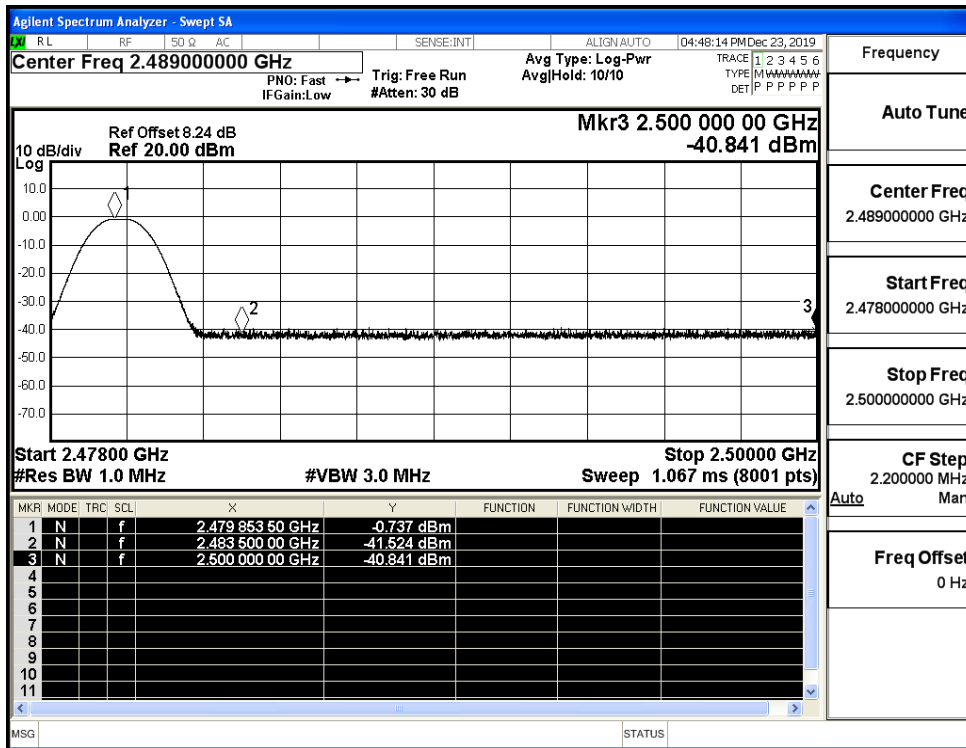
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



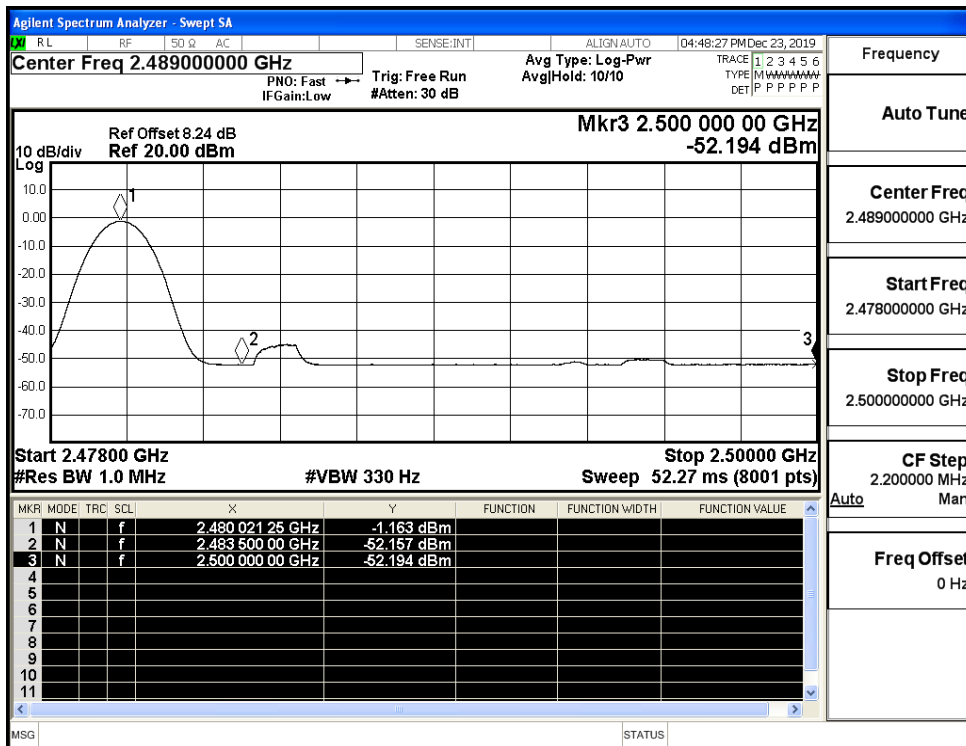
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



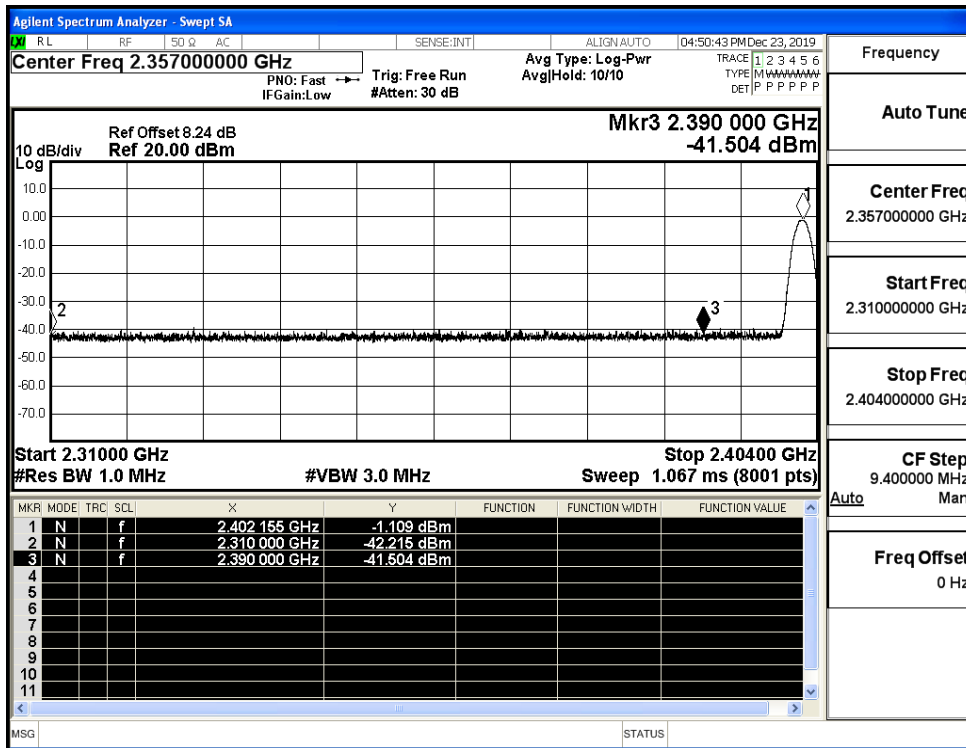
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



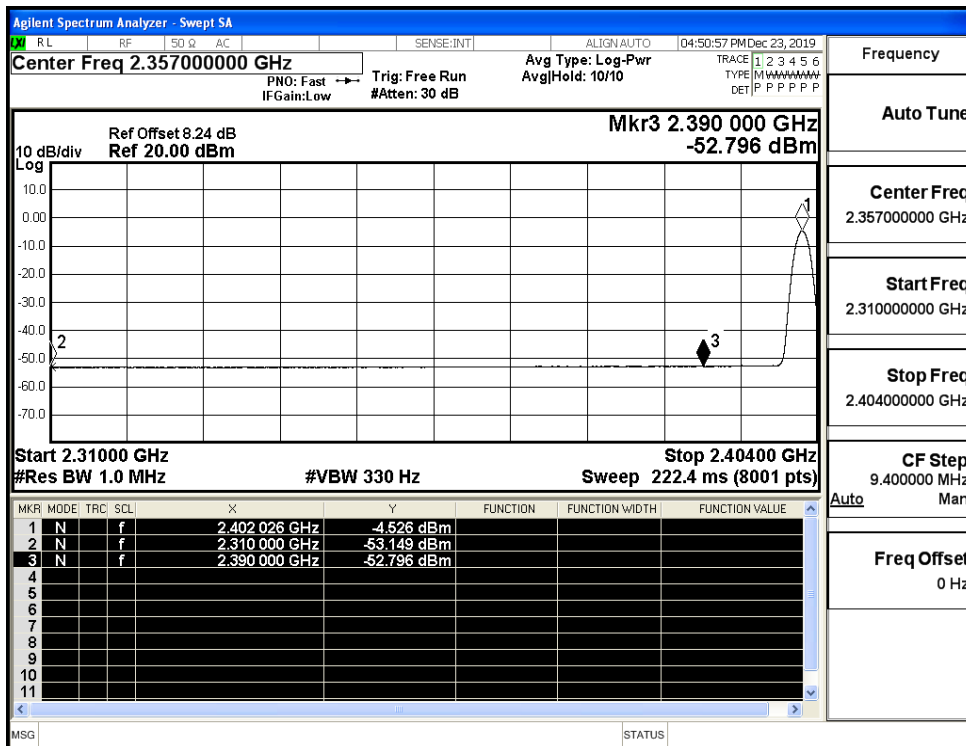
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



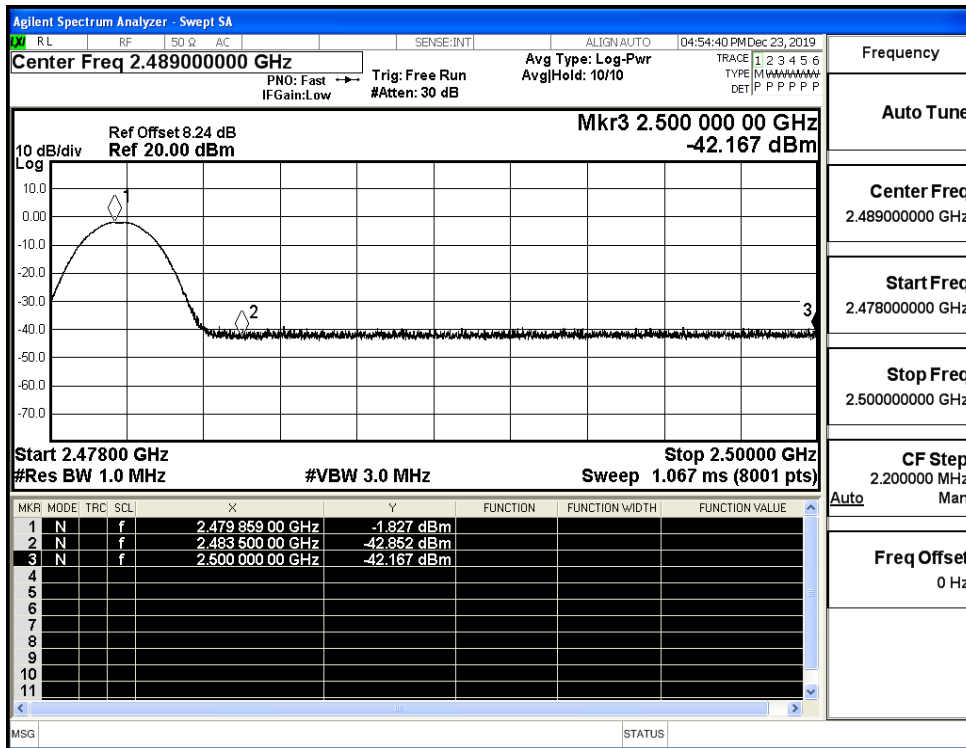
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)



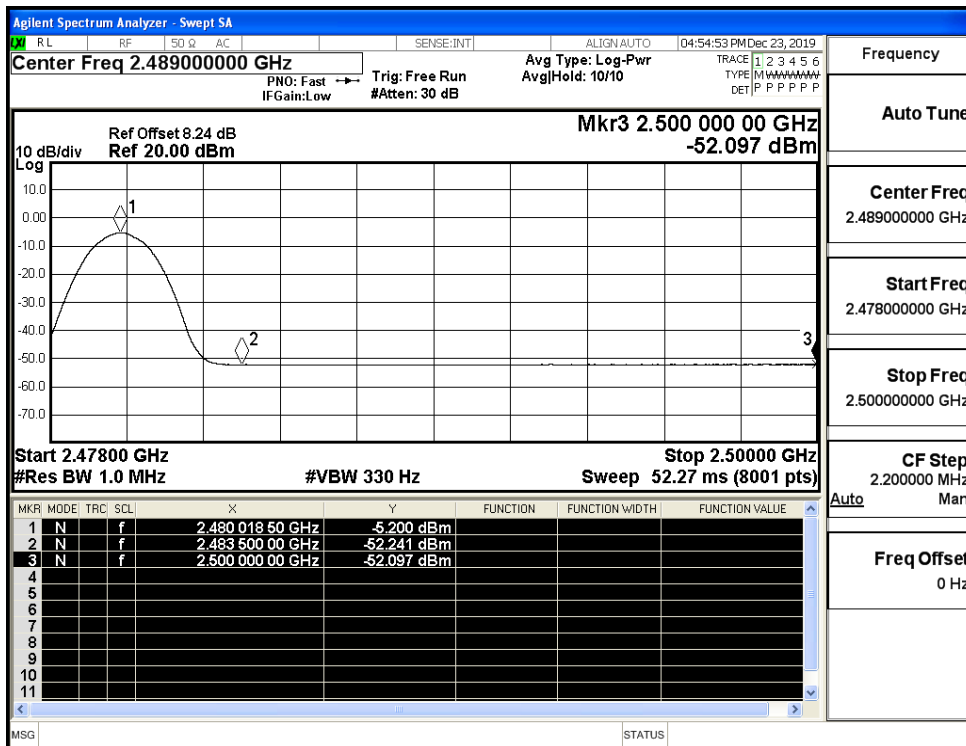
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)



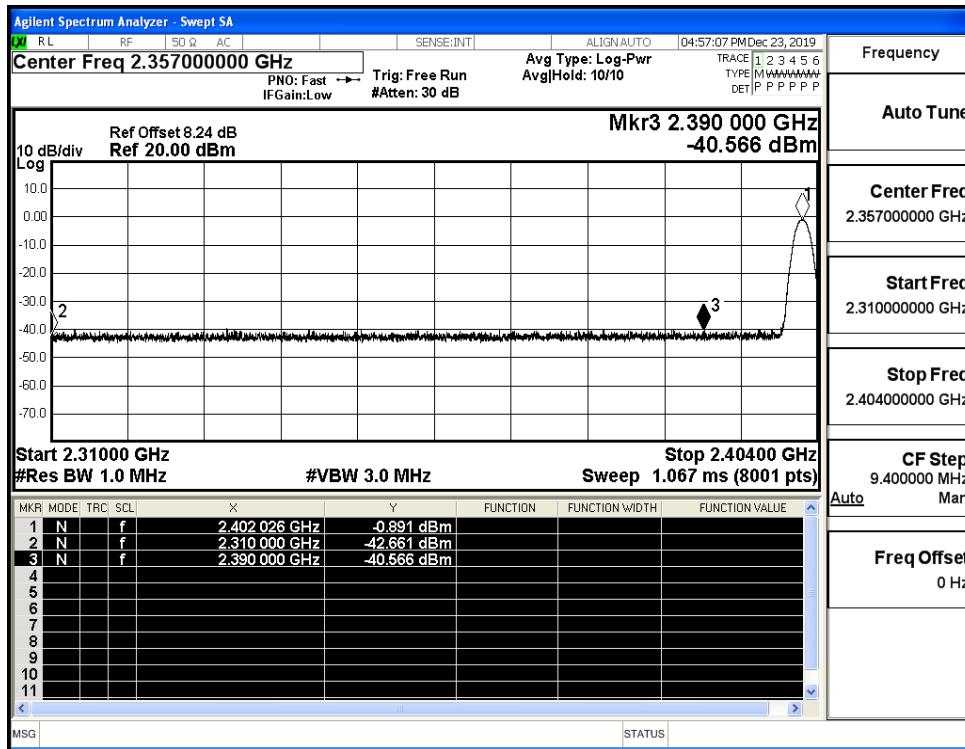
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (High Channel)



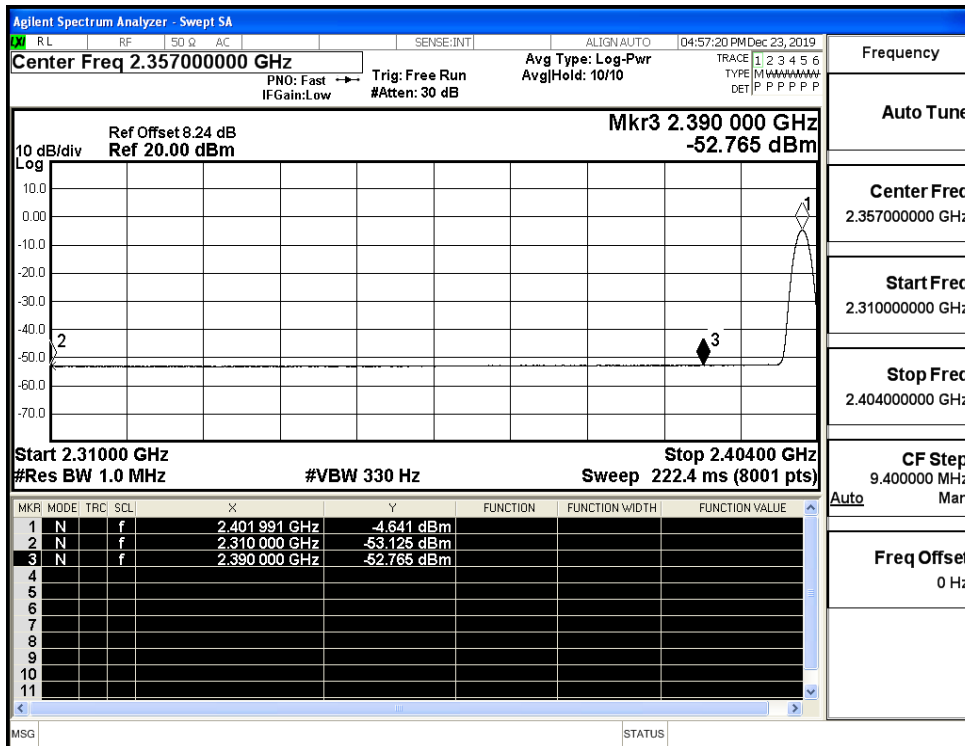
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (High Channel)



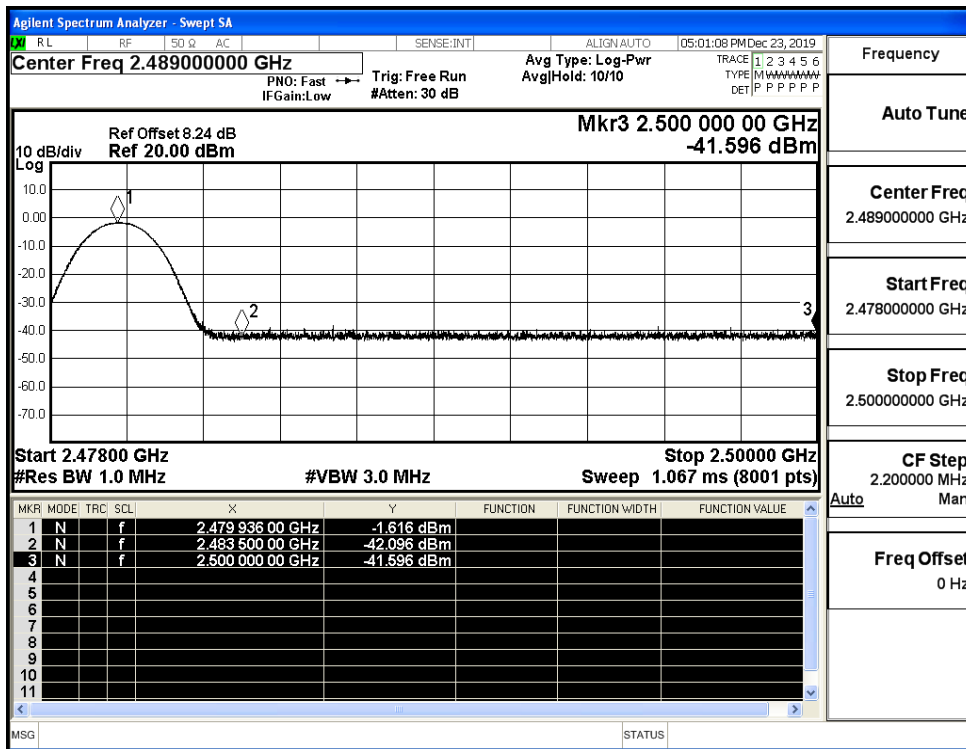
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

