

Appendix A

RF Test Data for BT V4.0 (BDR/EDR) (Conducted Measurement)

Product Name: LTE GSM/WCDMA Smartphone

Trade Mark: DOOGEE

Test Model: S80 Lite

Environmental Conditions

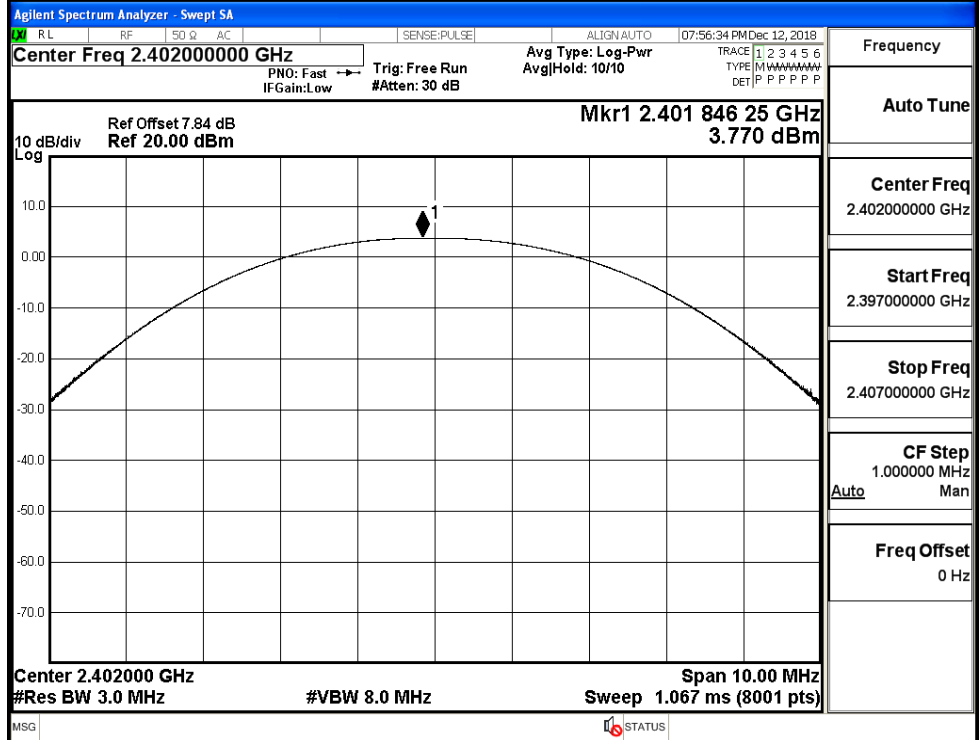
Temperature:	23.6 ° C
Relative Humidity:	53.1%
ATM Pressure:	100.0 kPa
Test Engineer:	WANGCHUANG
Supervised by:	Jayden.Zhuo

A.1 Maximum Conducted Peak Output Power

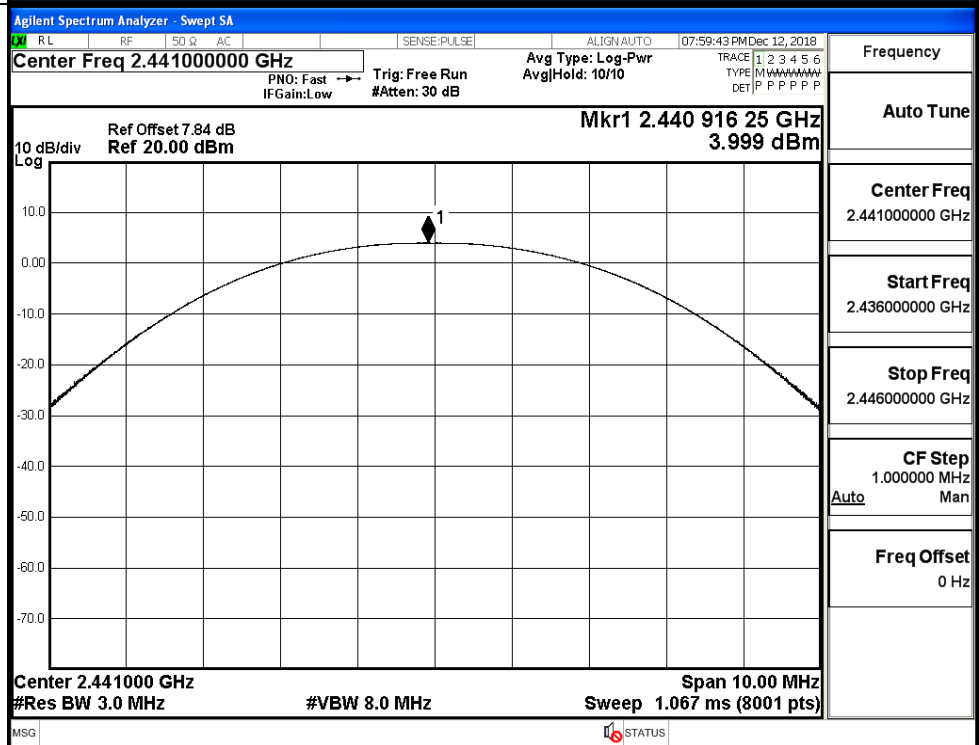
Mode	Channel.	Maximum Peak Output Power [dBm]	Maximum Average Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	3.770	1.325	30	PASS
	MCH	3.999	1.256	30	PASS
	HCH	3.972	1.326	30	PASS
$\pi/4$ DQPSK	LCH	3.097	1.248	21	PASS
	MCH	3.210	1.251	21	PASS
	HCH	3.186	1.032	21	PASS
8DPSK	LCH	3.258	1.256	21	PASS
	MCH	3.387	1.245	21	PASS
	HCH	3.319	1.148	21	PASS

Test Graphs

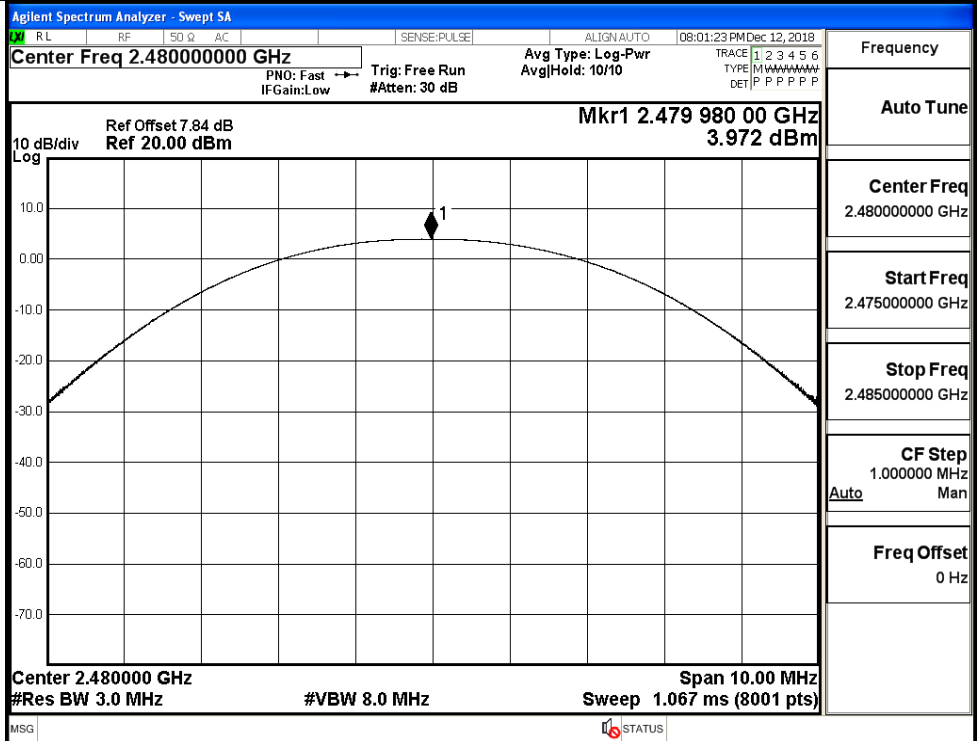
GFSK/LCH



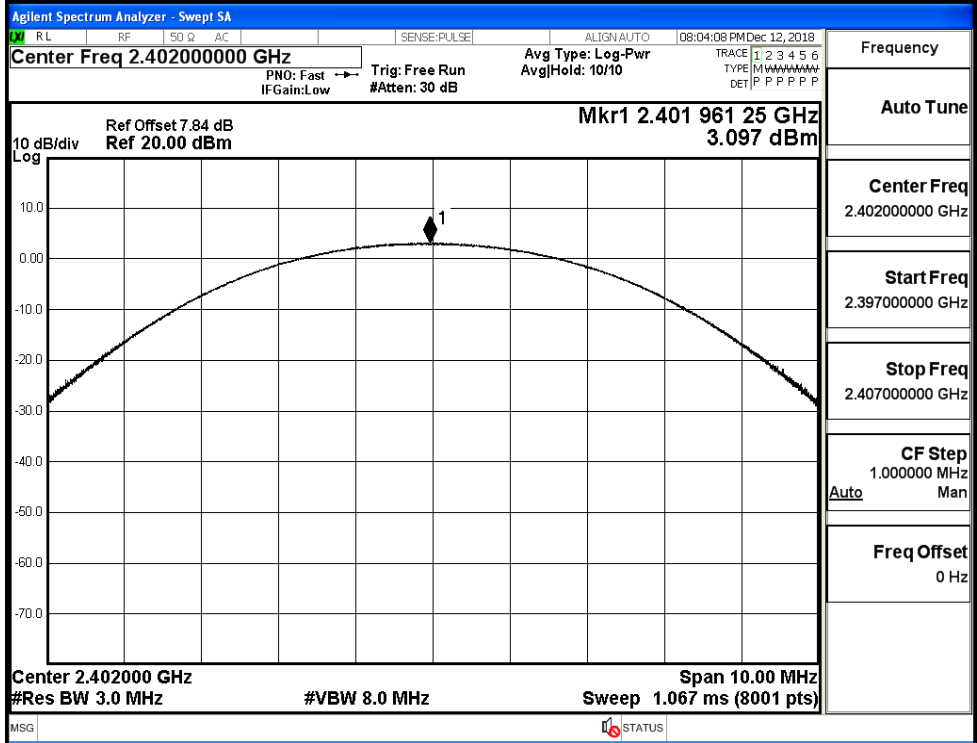
GFSK/MCH



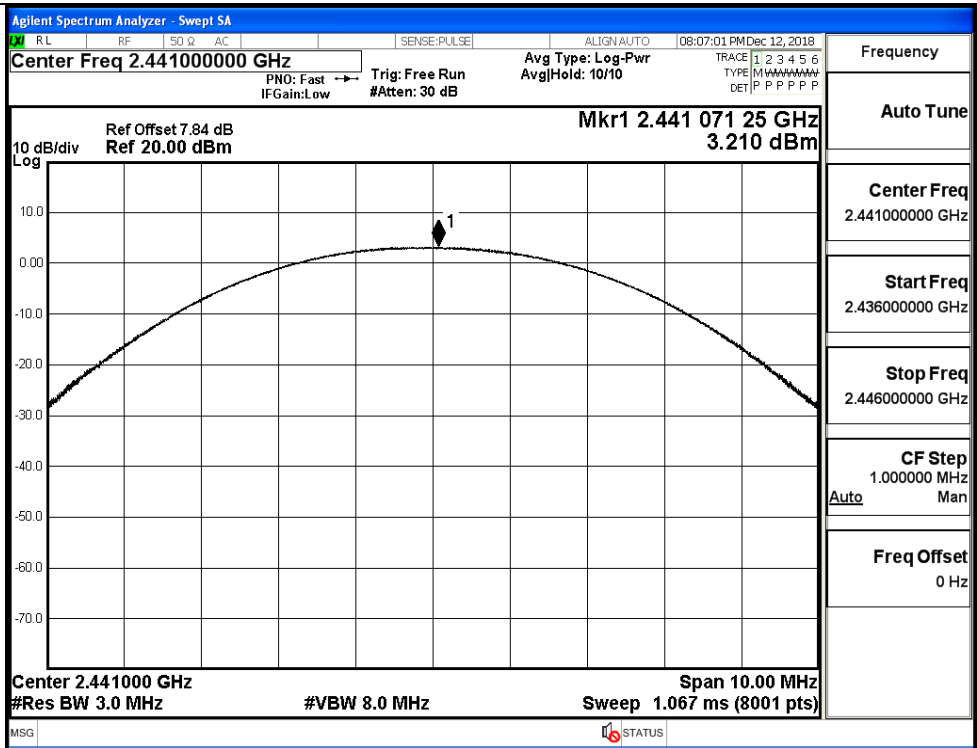
GFSK/HCH



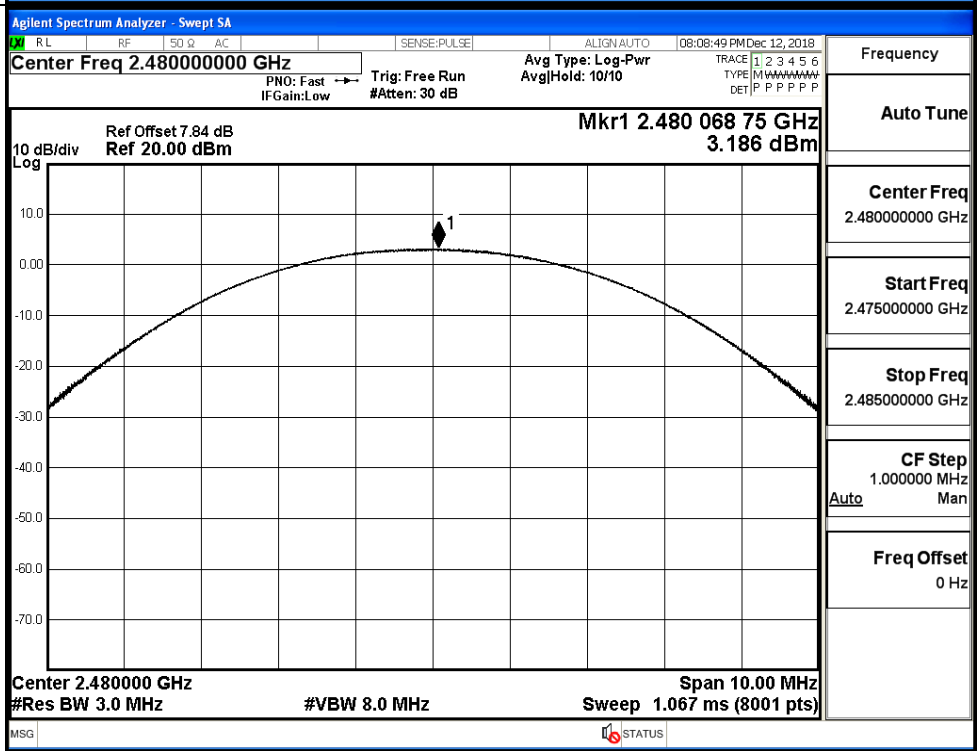
$\pi/4$ DQPSK/LCH



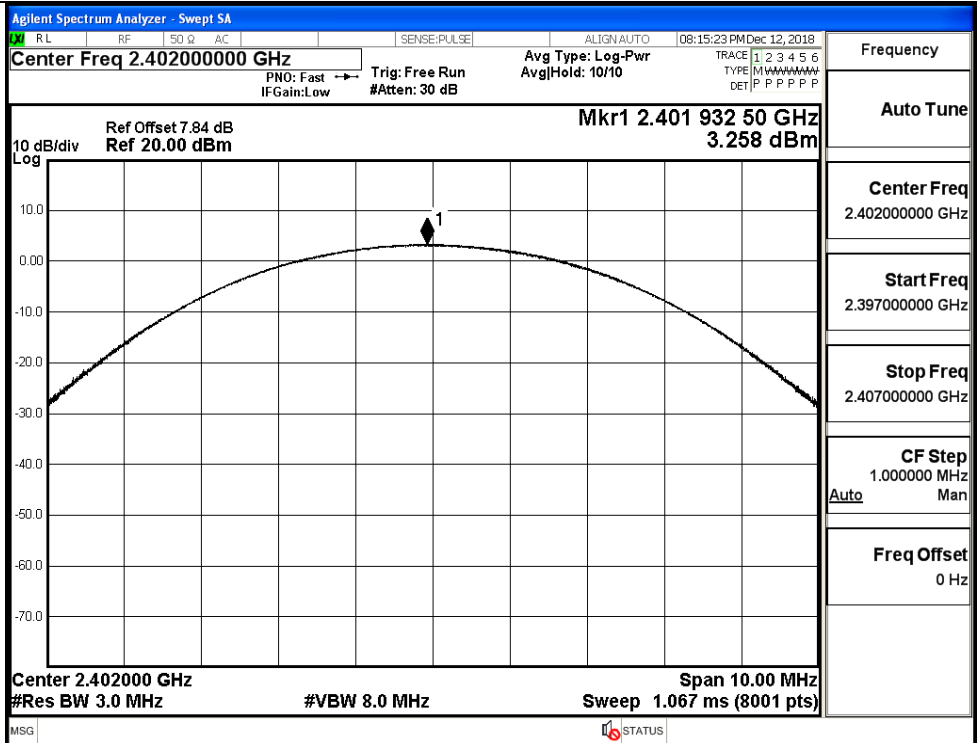
π /4DQPSK/MCH



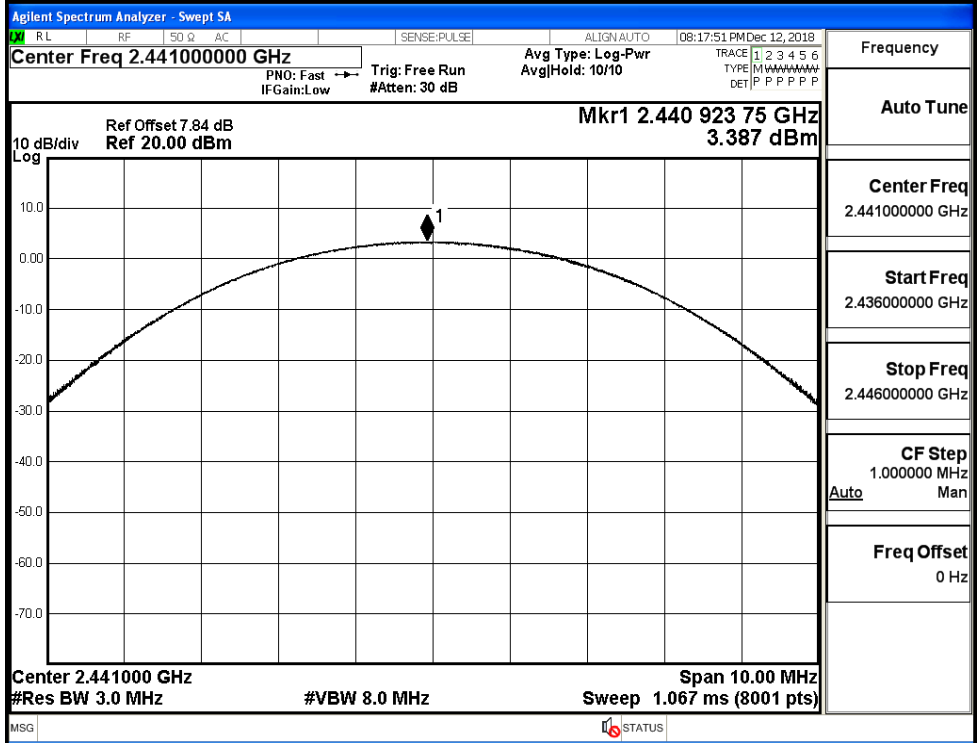
π /4DQPSK/HCH



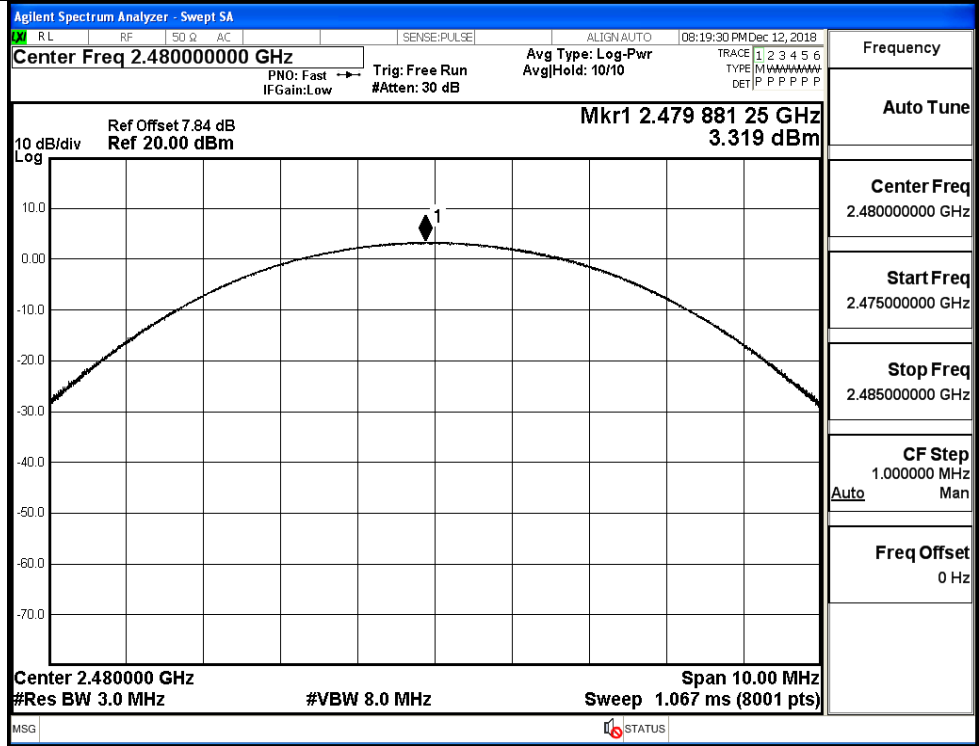
8DPSK/LCH



8DPSK/MCH

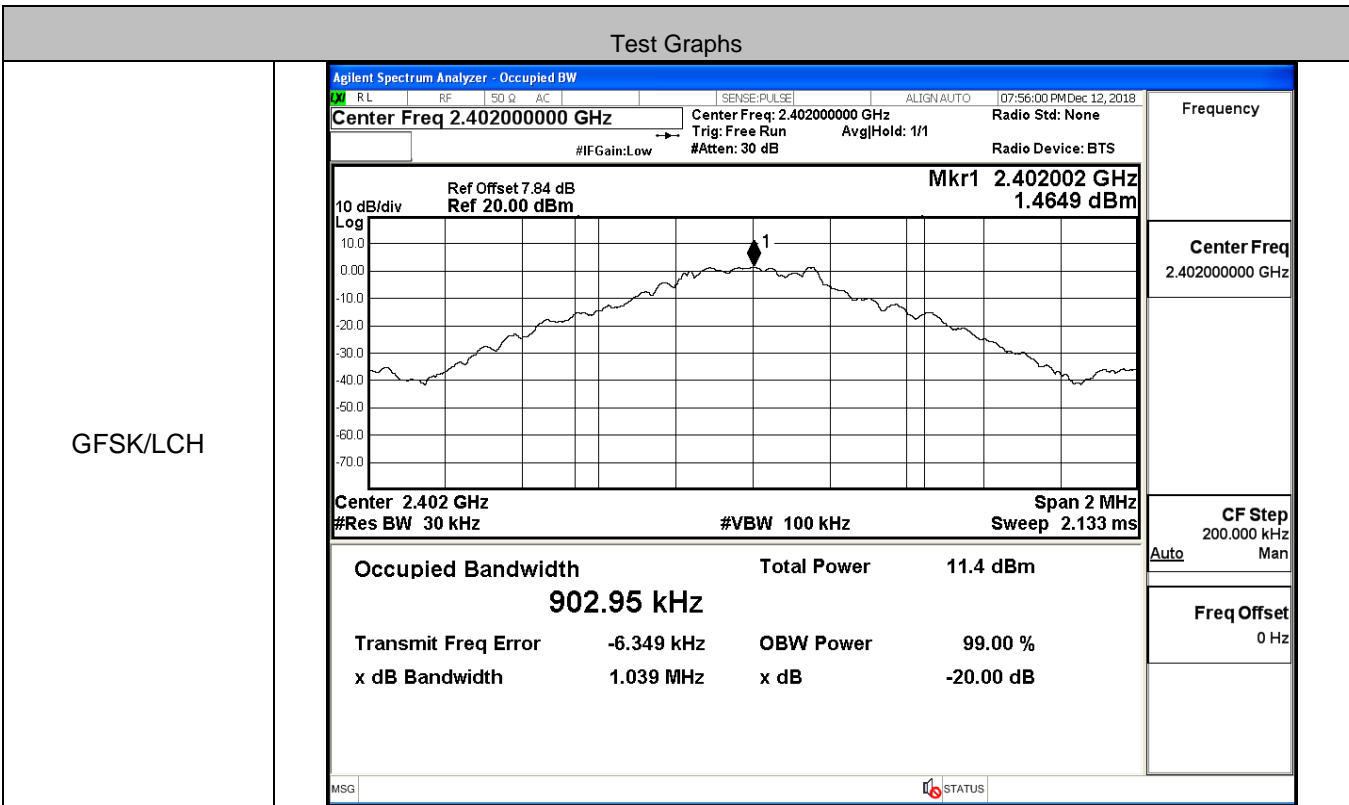


8DPSK/HCH

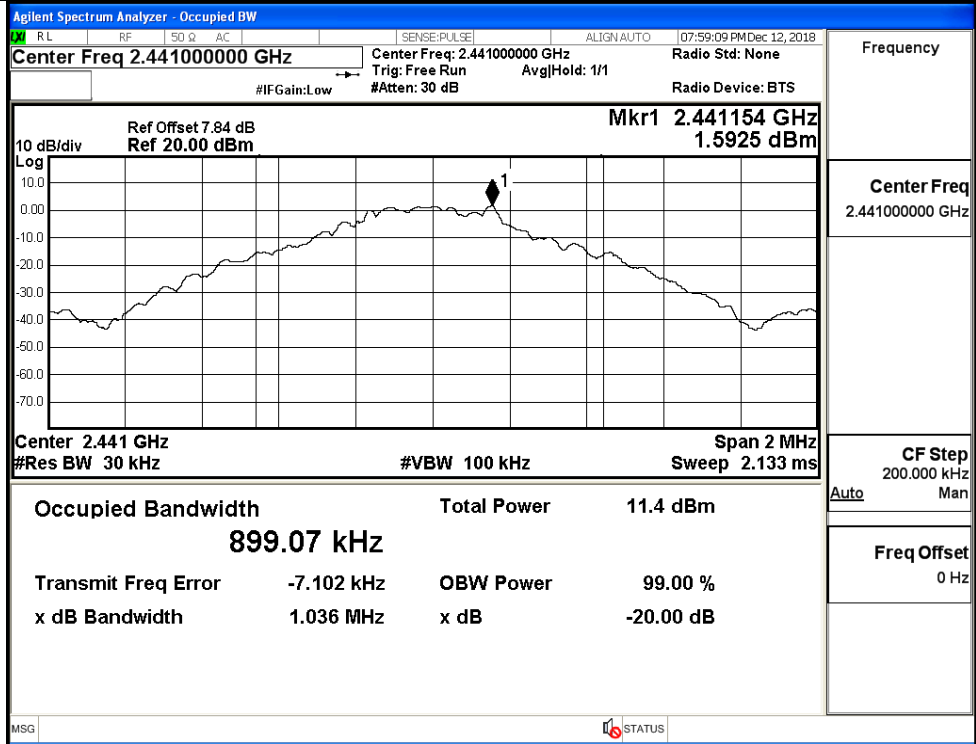


A.2 20dB Bandwidth

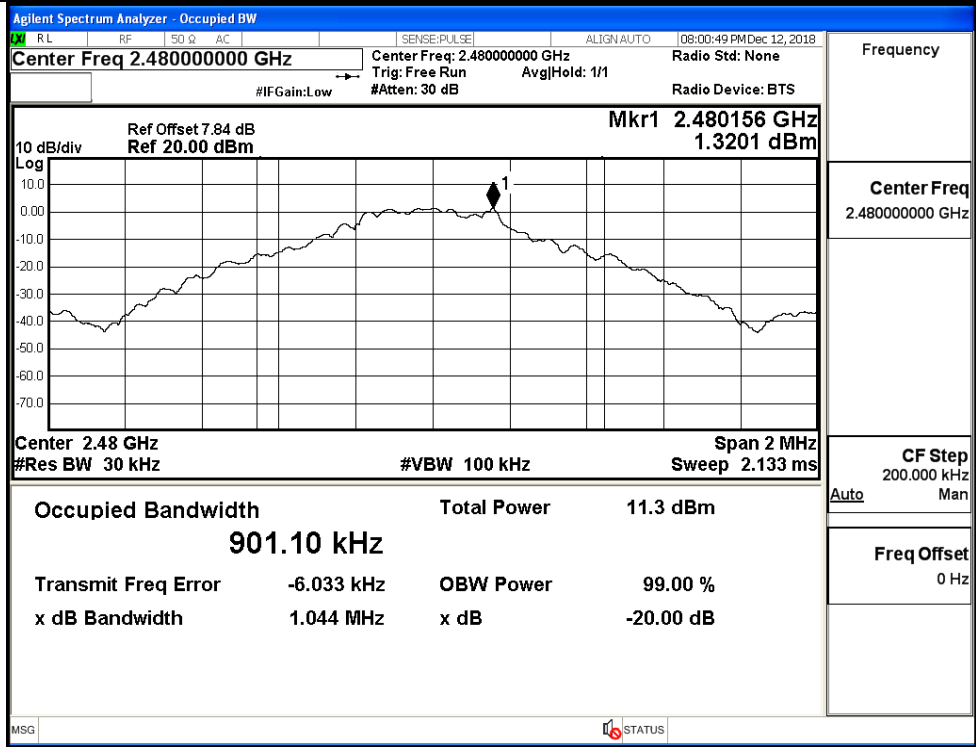
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.039	Not Specified	PASS
	MCH	1.036	Not Specified	PASS
	HCH	1.044	Not Specified	PASS
π/4DQPSK	LCH	1.291	Not Specified	PASS
	MCH	1.290	Not Specified	PASS
	HCH	1.291	Not Specified	PASS
8DPSK	LCH	1.299	Not Specified	PASS
	MCH	1.296	Not Specified	PASS
	HCH	1.295	Not Specified	PASS



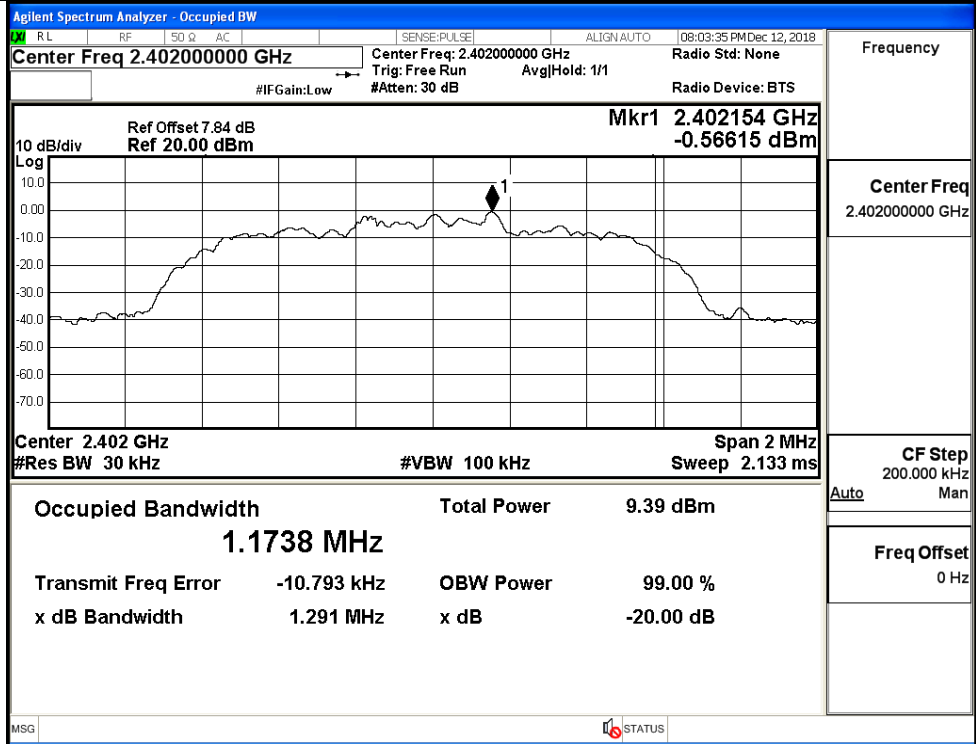
GFSK/MCH



GFSK/HCH

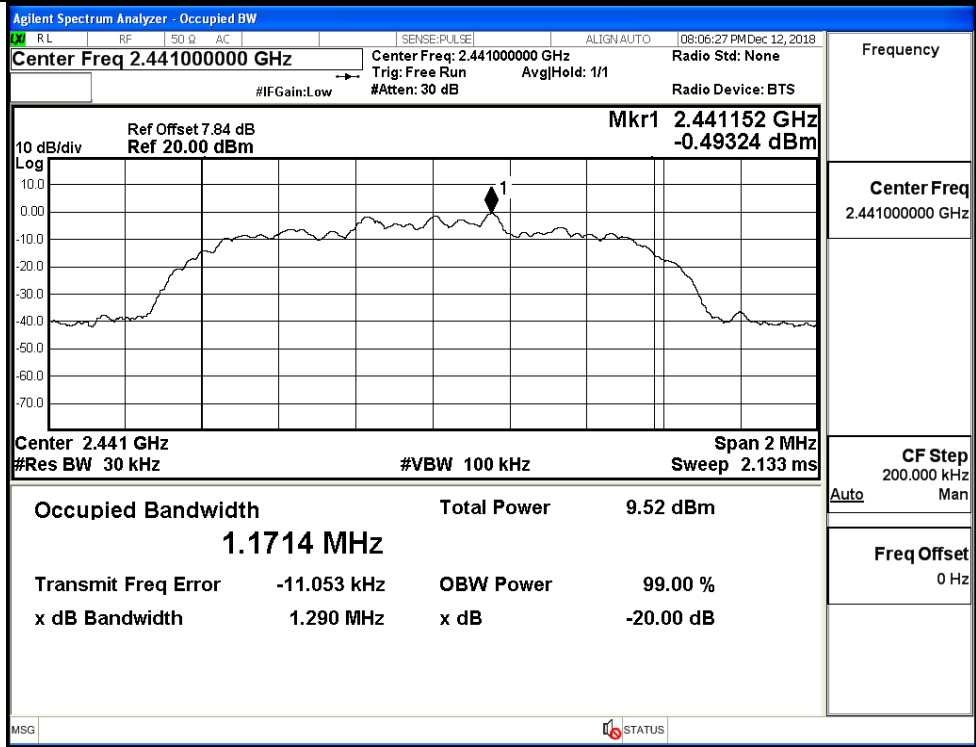


$\pi/4$ DQPSK/LCH



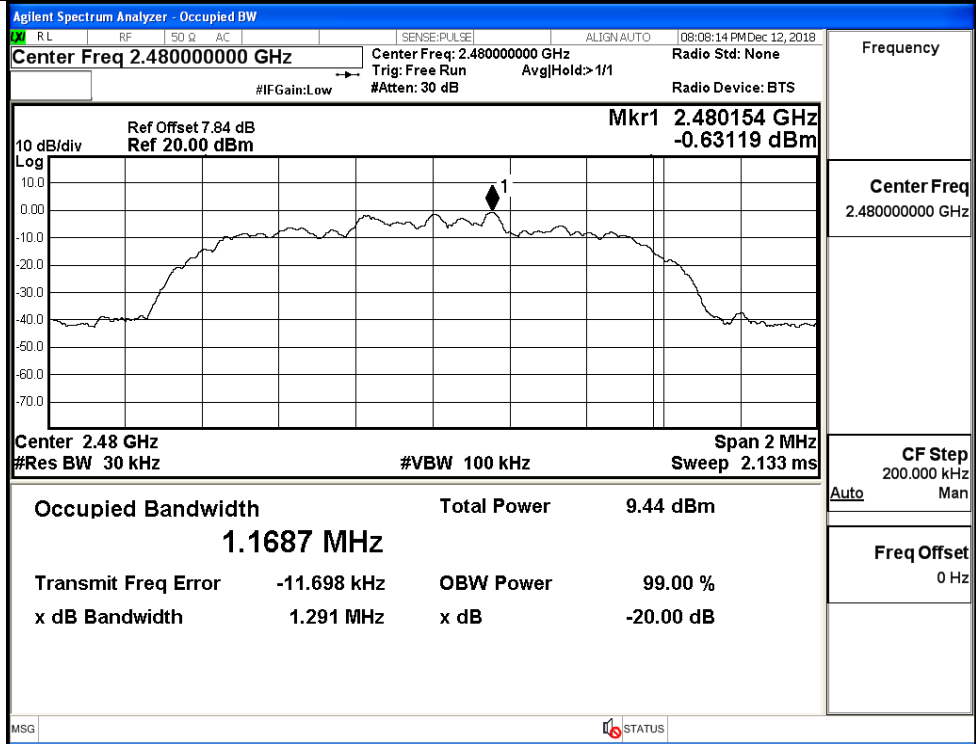
Frequency	2.40200000 GHz
Center Freq	2.40200000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

$\pi/4$ DQPSK/MCH

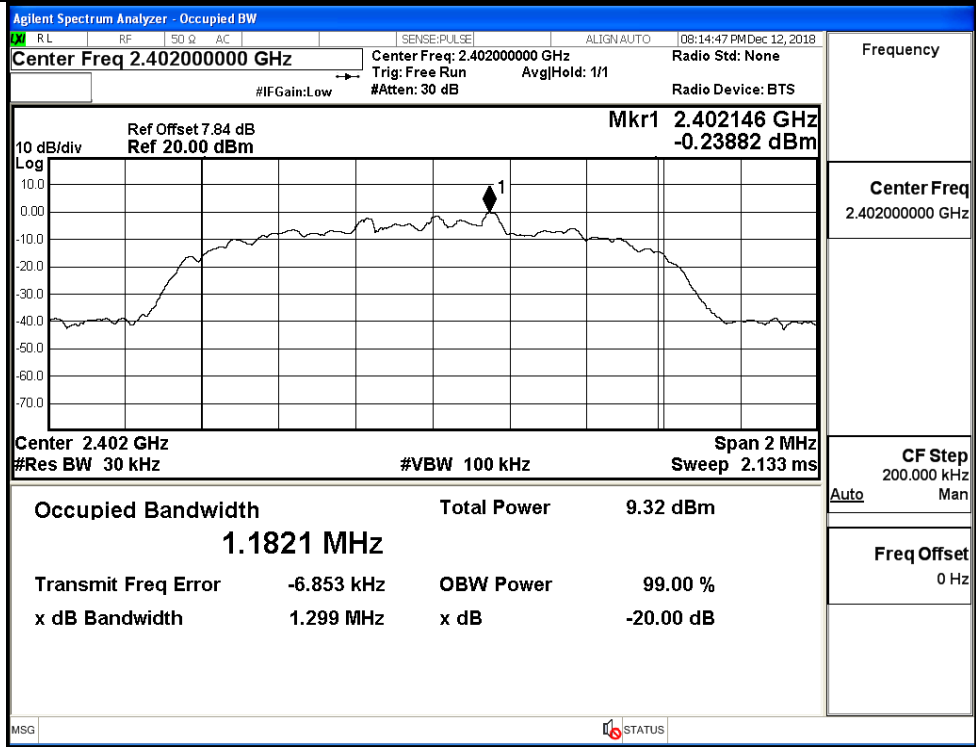


Frequency	2.44100000 GHz
Center Freq	2.44100000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

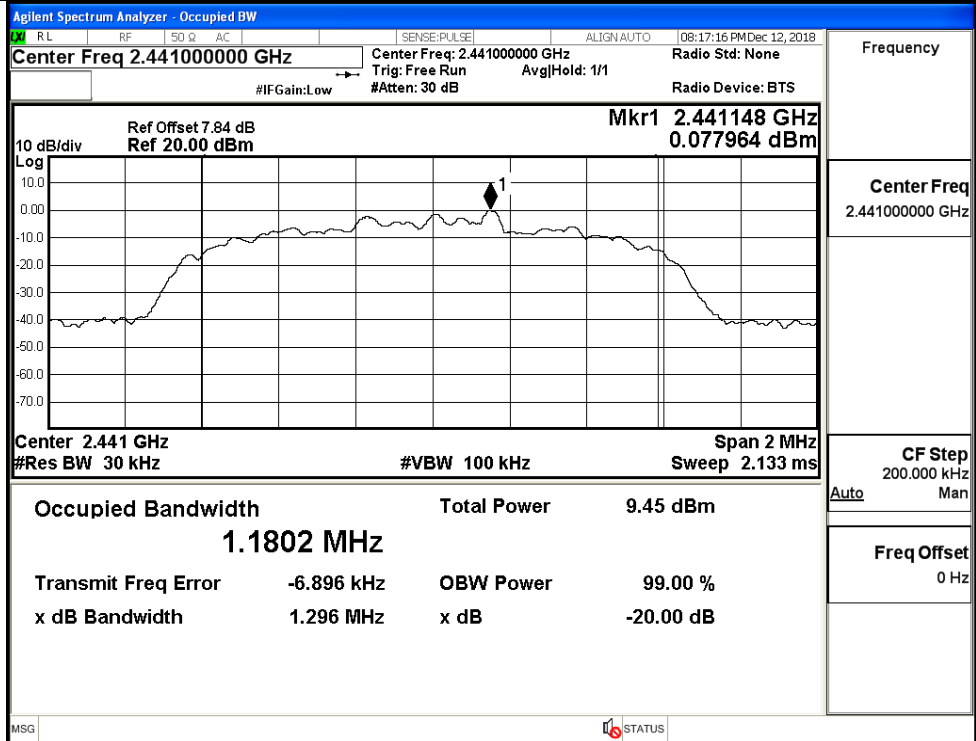
$\pi/4$ DQPSK/HCH



8DPSK/LCH

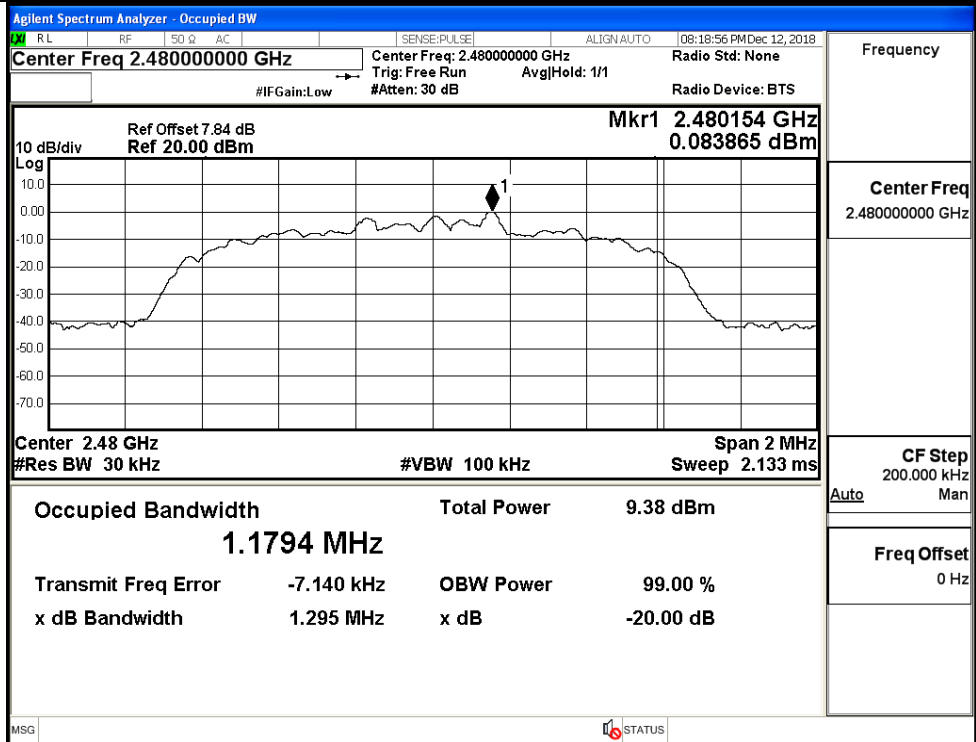


8DPSK/MCH



Frequency	2.441000000 GHz
Center Freq	2.441000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

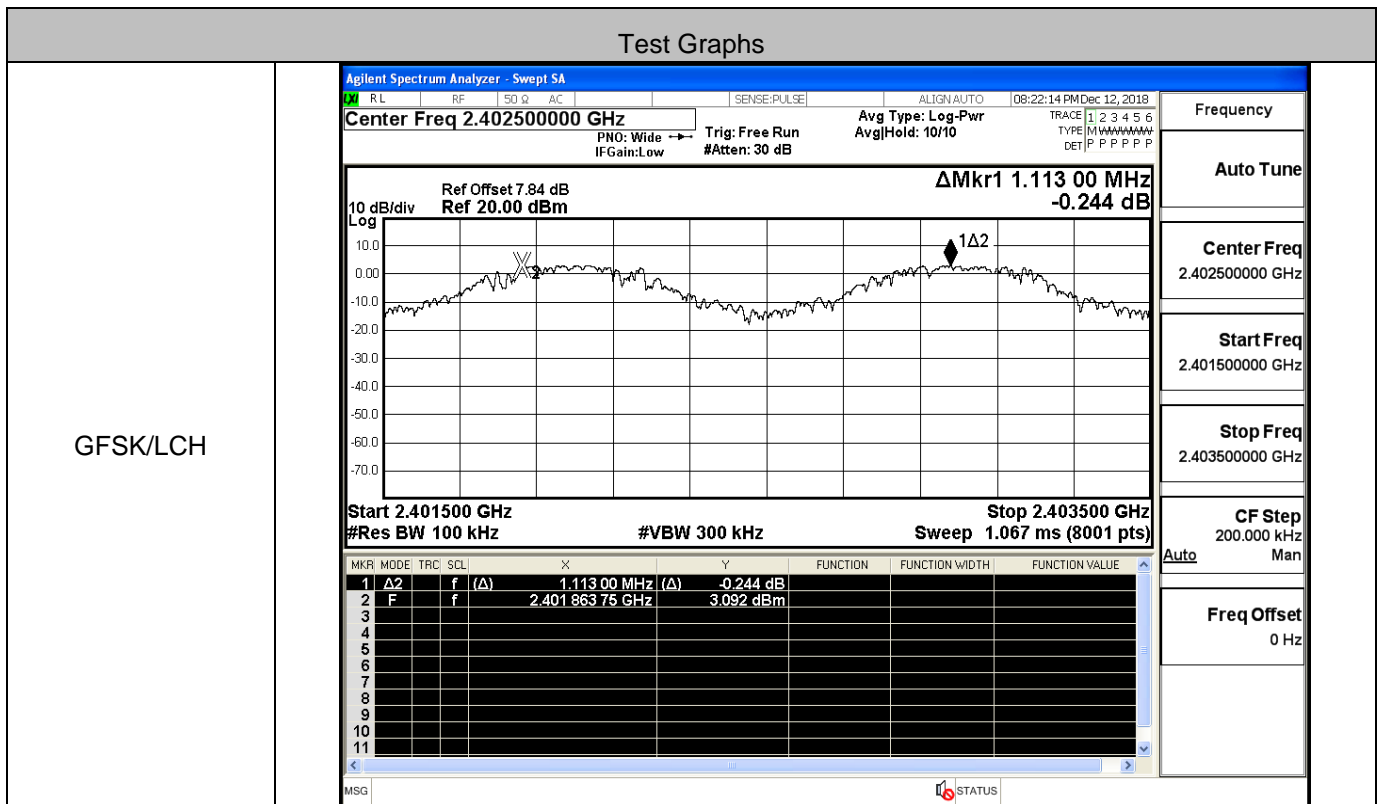
8DPSK/HCH



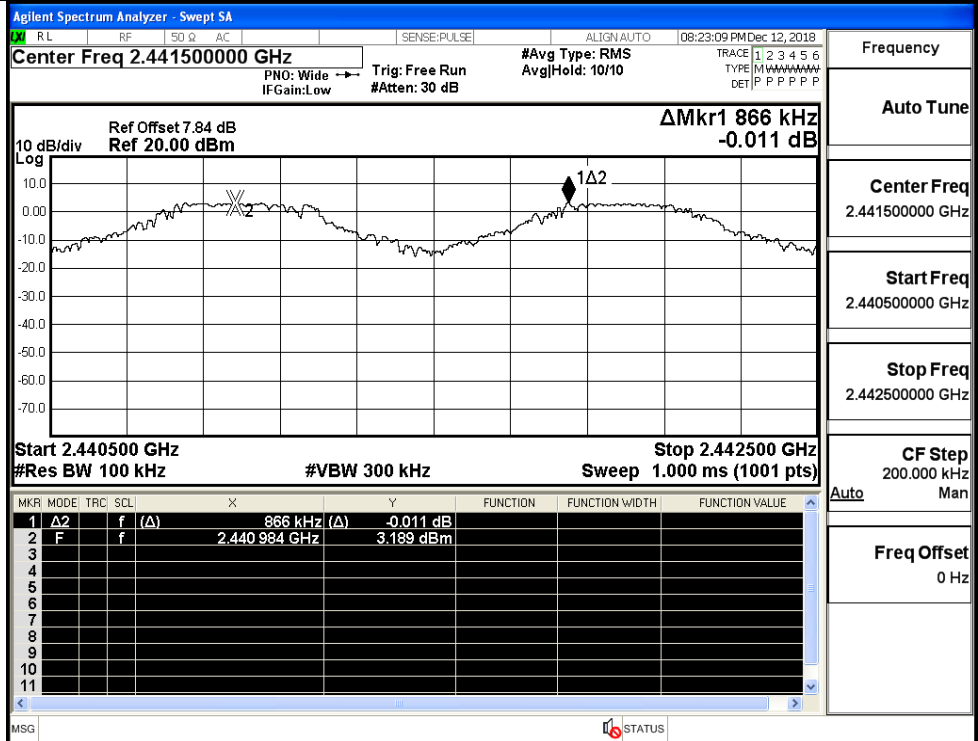
Frequency	2.480000000 GHz
Center Freq	2.480000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

A.3 Carrier Frequency Separation

Mode	Channel	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.113	0.696	PASS
	MCH	0.866	0.696	PASS
	HCH	0.882	0.696	PASS
π/4DQPSK	LCH	1.144	0.861	PASS
	MCH	1.340	0.861	PASS
	HCH	1.126	0.861	PASS
8DPSK	LCH	0.914	0.866	PASS
	MCH	1.078	0.866	PASS
	HCH	0.996	0.866	PASS



GFSK/MCH



Frequency

Auto Tune

Center Freq
2.441500000 GHz

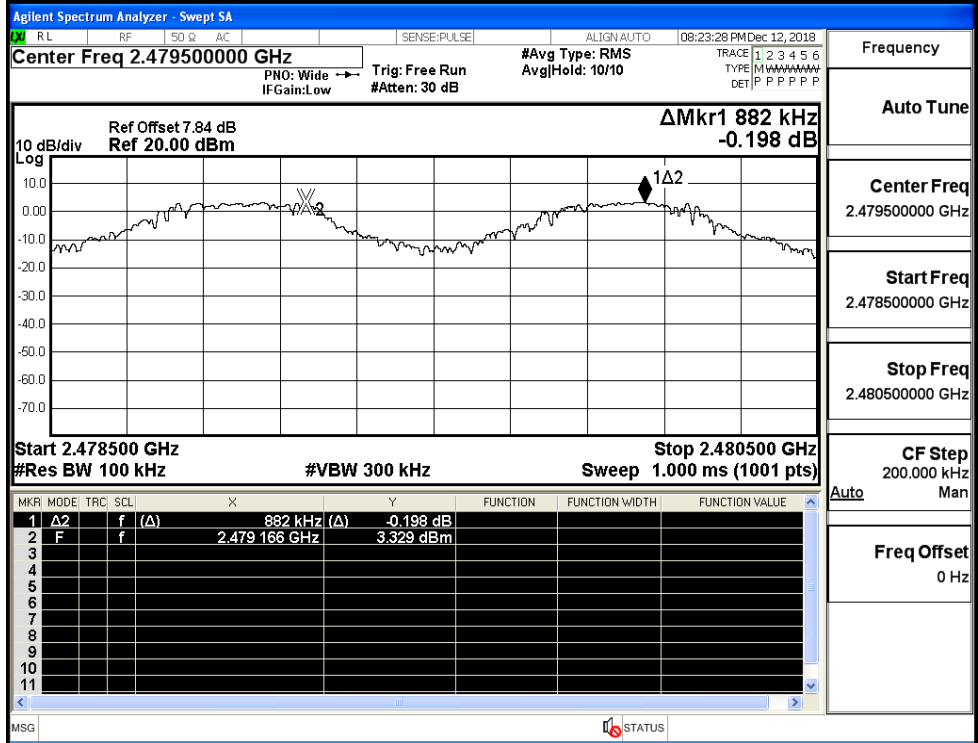
Start Freq
2.440500000 GHz

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

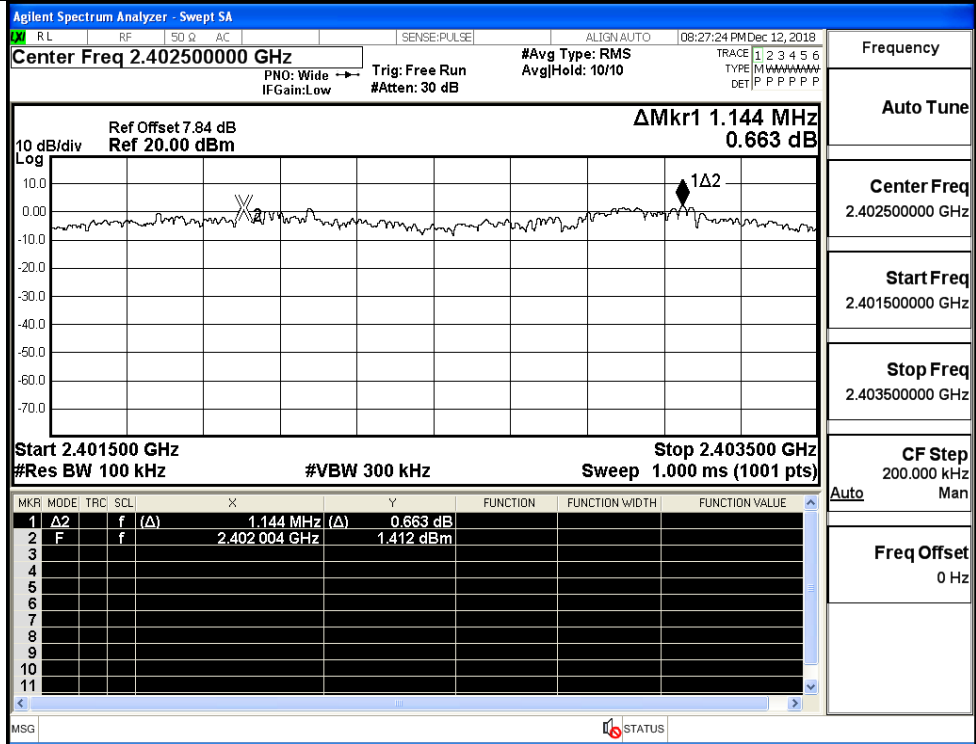
Start Freq
2.478500000 GHz

Stop Freq
2.480500000 GHz

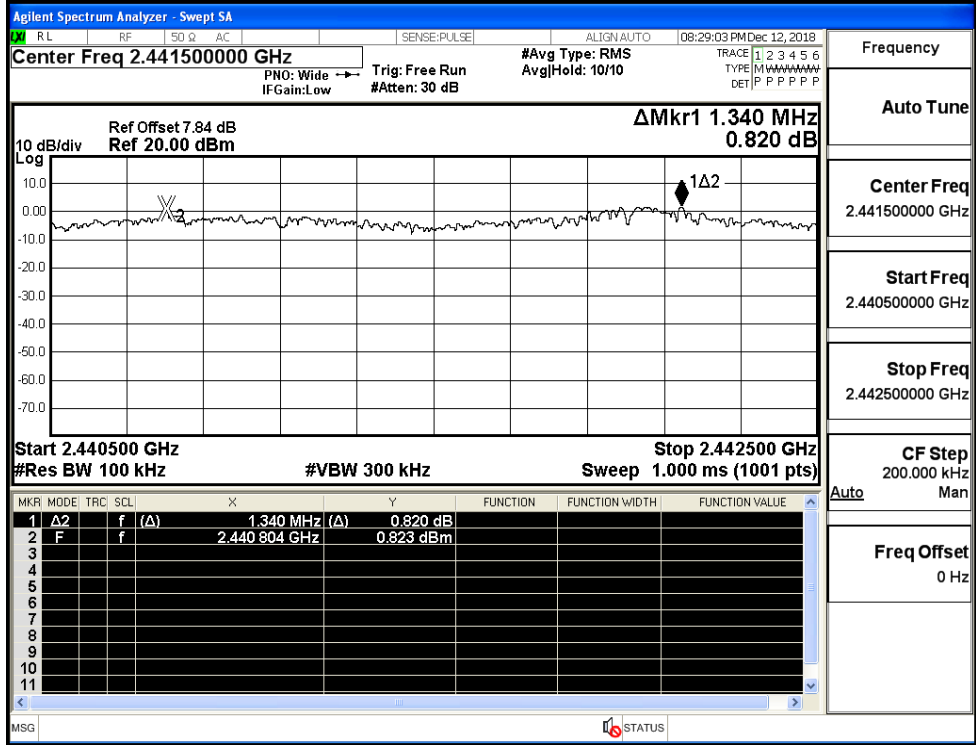
CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

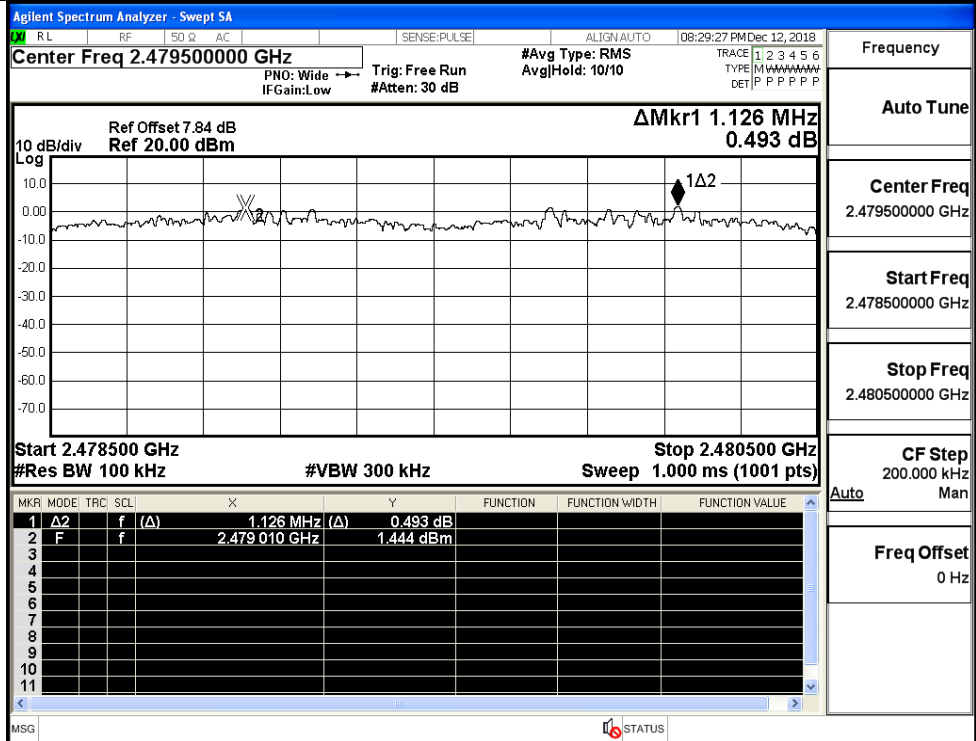
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



π/4DQPSK/HCH



Frequency

Auto Tune

Center Freq
2.479500000 GHz

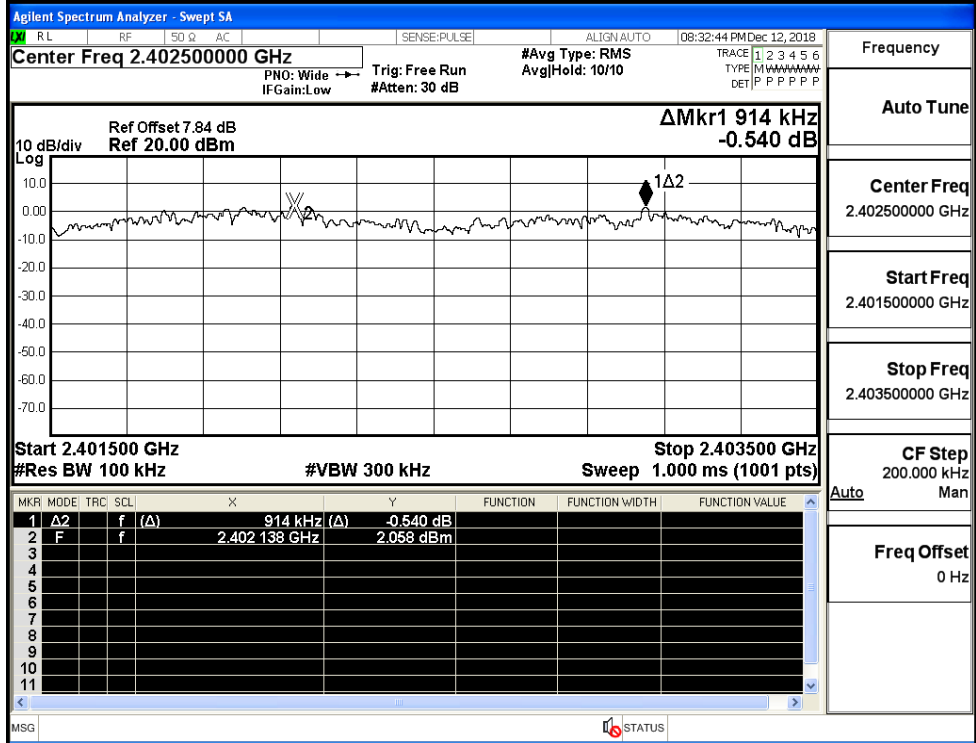
Start Freq
2.478500000 GHz

Stop Freq
2.480500000 GHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

8DPSK/LCH



Frequency

Auto Tune

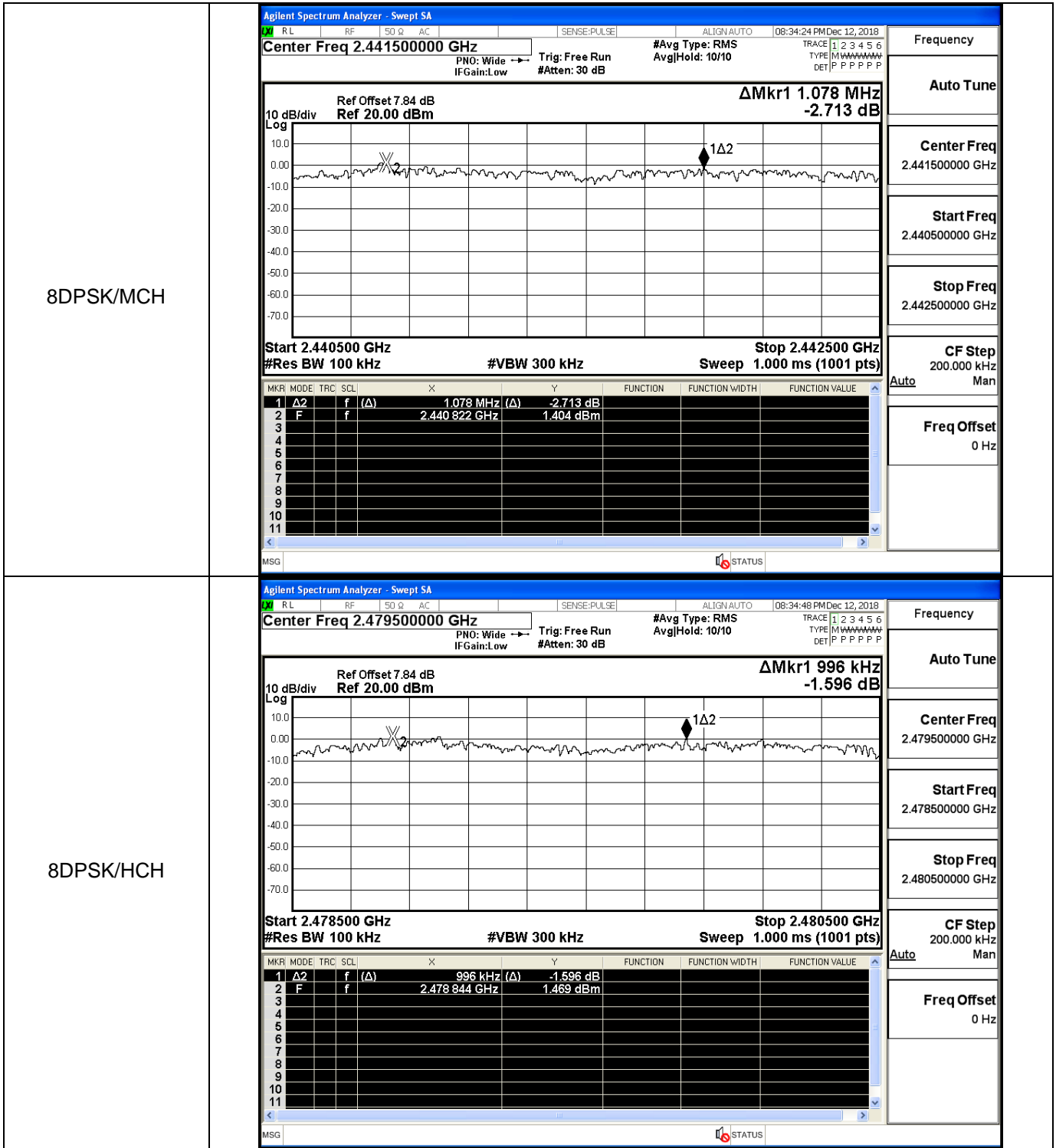
Center Freq
2.402500000 GHz

Start Freq
2.401500000 GHz

Stop Freq
2.403500000 GHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

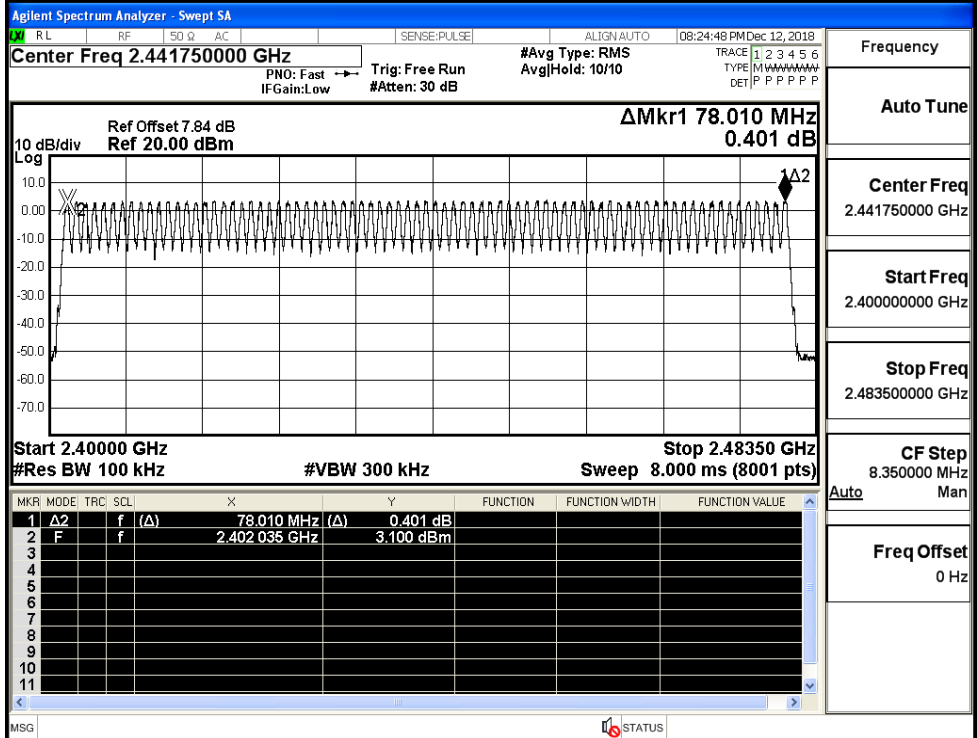


A.4 Hopping Channel Number

Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
π/4DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

Test Graphs

GFSK/Hop



Frequency

Auto Tune

Center Freq
2.441750000 GHz

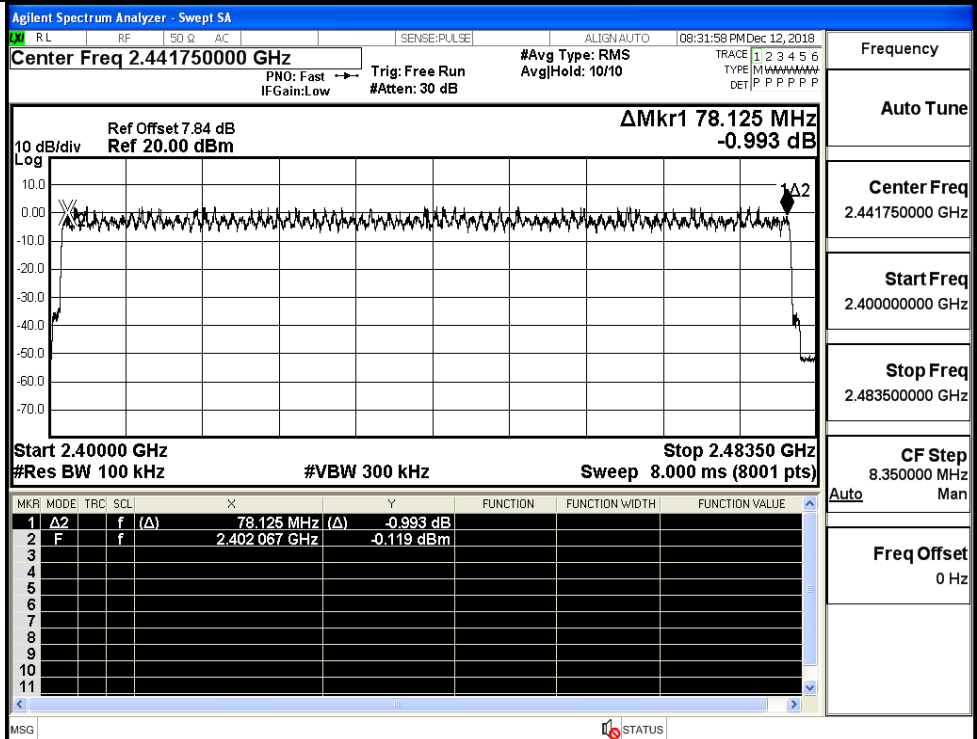
Start Freq
2.400000000 GHz

Stop Freq
2.483500000 GHz

CF Step
8.350000 MHz
Auto Man

Freq Offset
0 Hz

π/4DQPSK/Hop



Frequency

Auto Tune

Center Freq
2.441750000 GHz

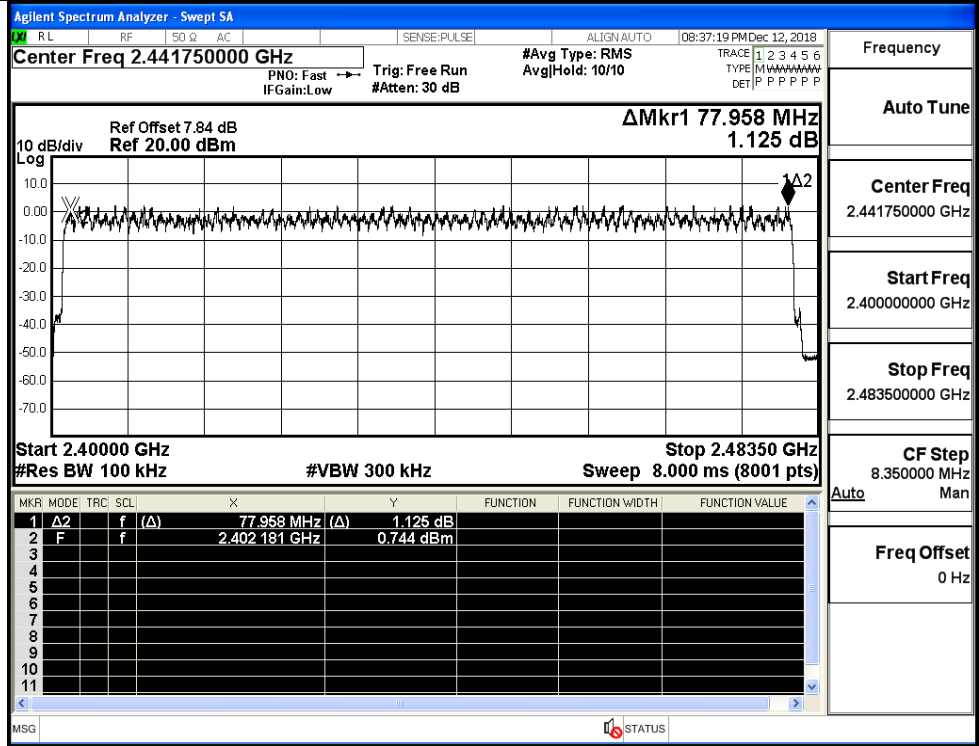
Start Freq
2.400000000 GHz

Stop Freq
2.483500000 GHz

CF Step
8.350000 MHz
Auto Man

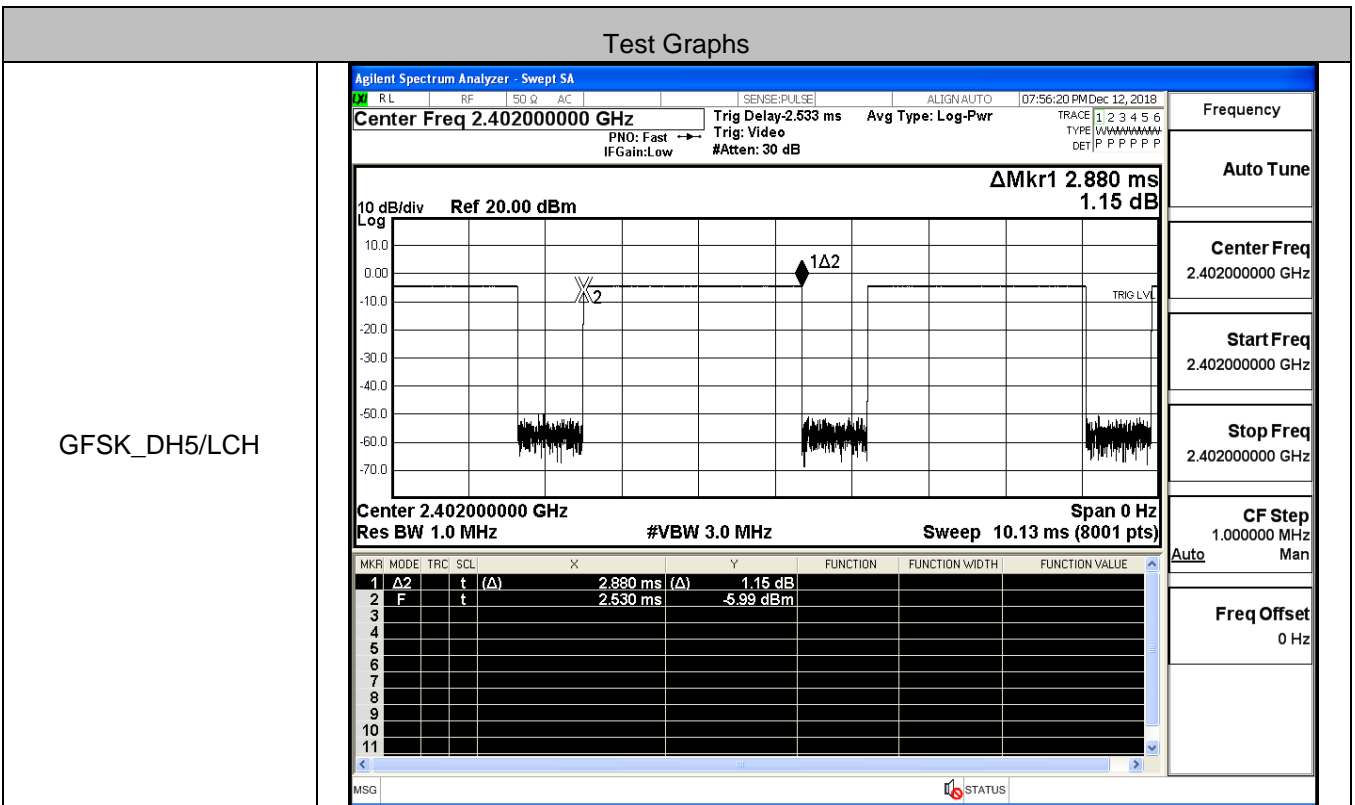
Freq Offset
0 Hz

8DPSK/Hop

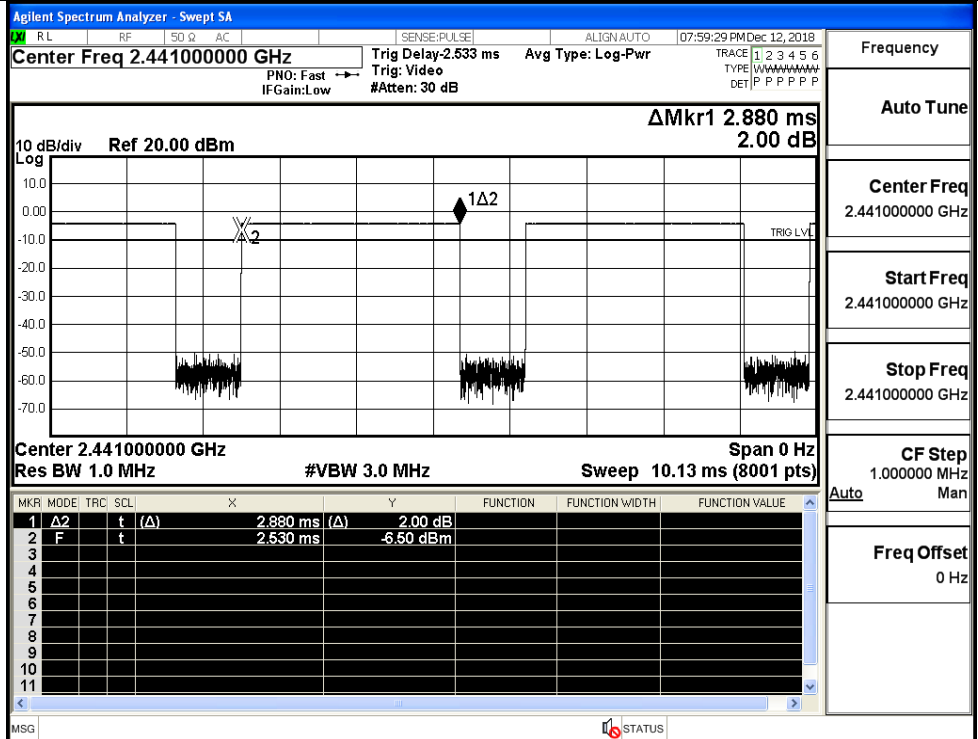


A.5 Dwell Time

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



Frequency

Auto Tune

Center Freq 2.441000000 GHz

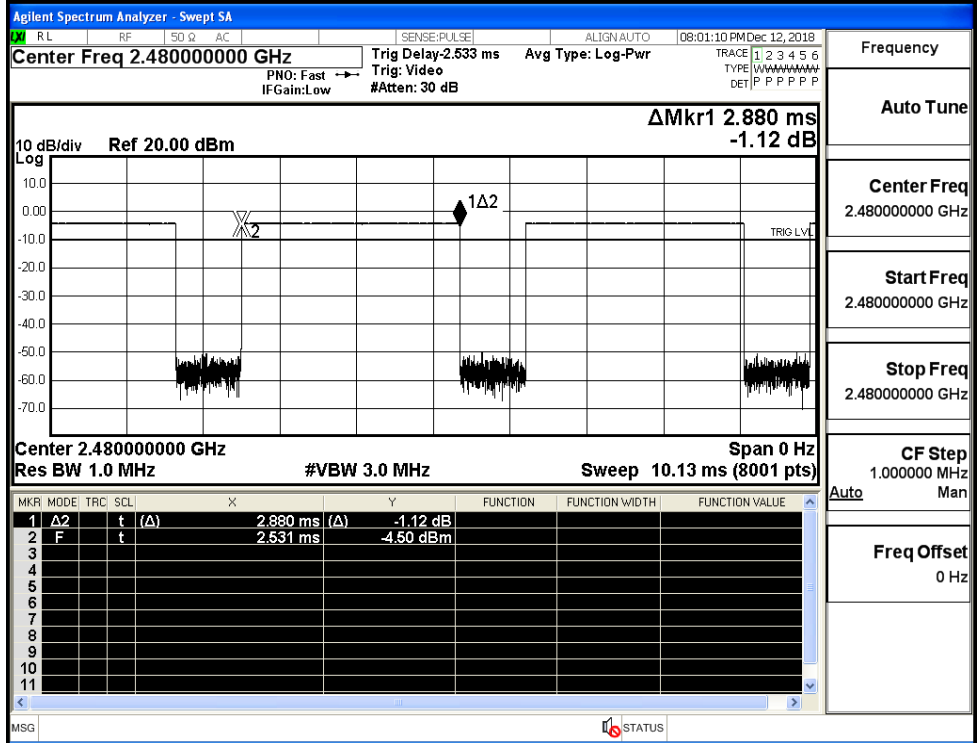
Start Freq 2.441000000 GHz

Stop Freq 2.441000000 GHz

CF Step 1.000000 MHz

Freq Offset 0 Hz

GFSK_DH5/HCH



Frequency

Auto Tune

Center Freq 2.480000000 GHz

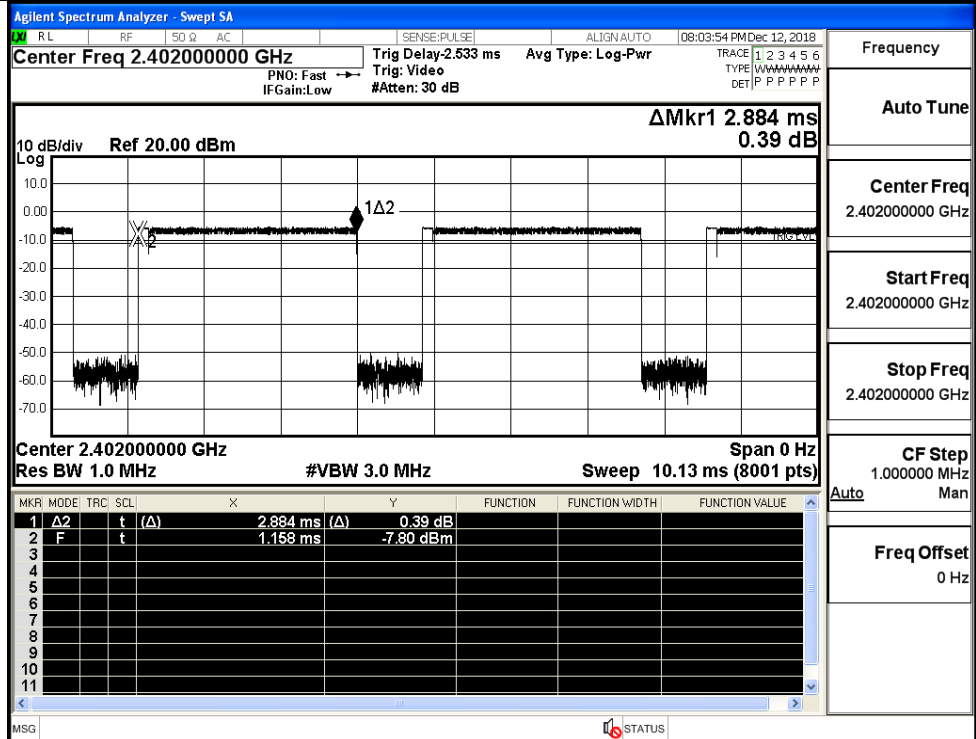
Start Freq 2.480000000 GHz

Stop Freq 2.480000000 GHz

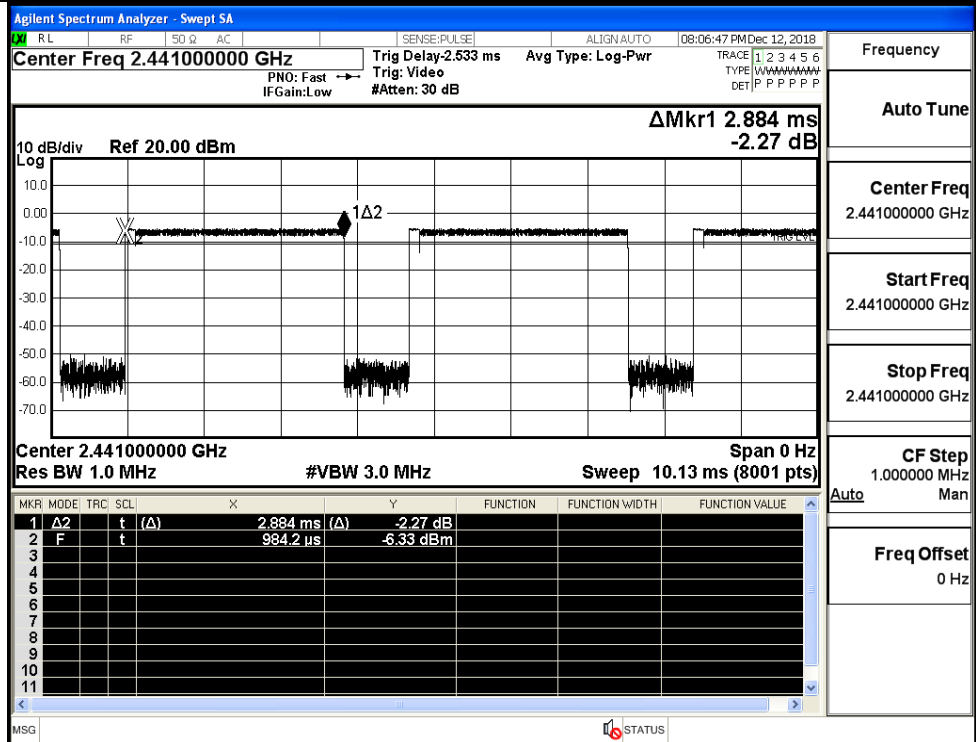
CF Step 1.000000 MHz

Freq Offset 0 Hz

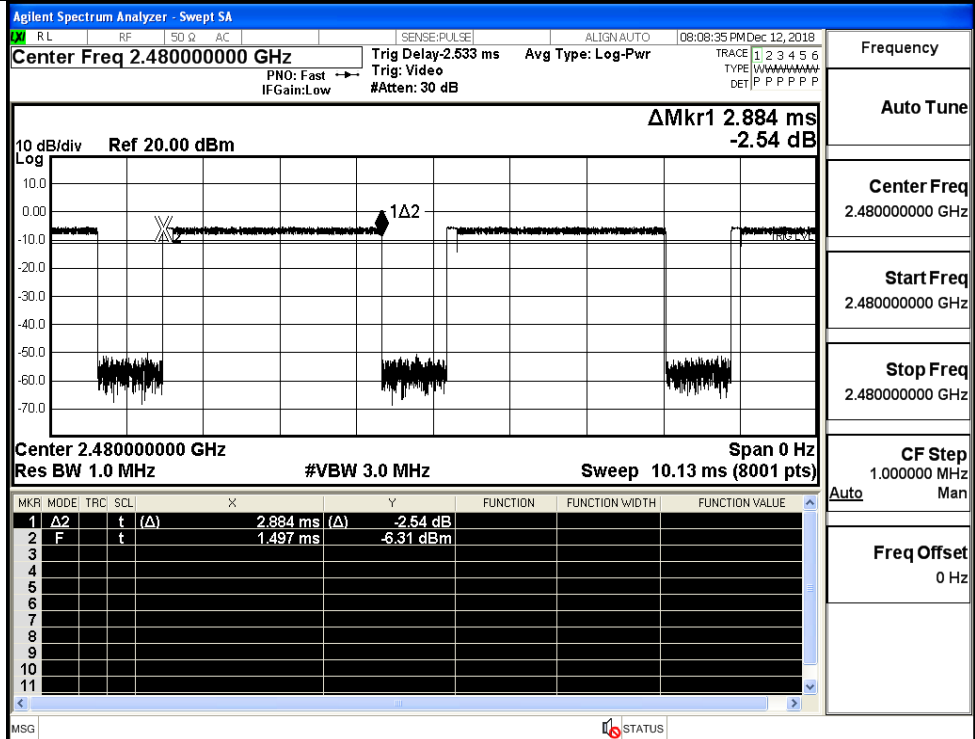
$\pi/4$ DQPSK
_2DH5/LCH



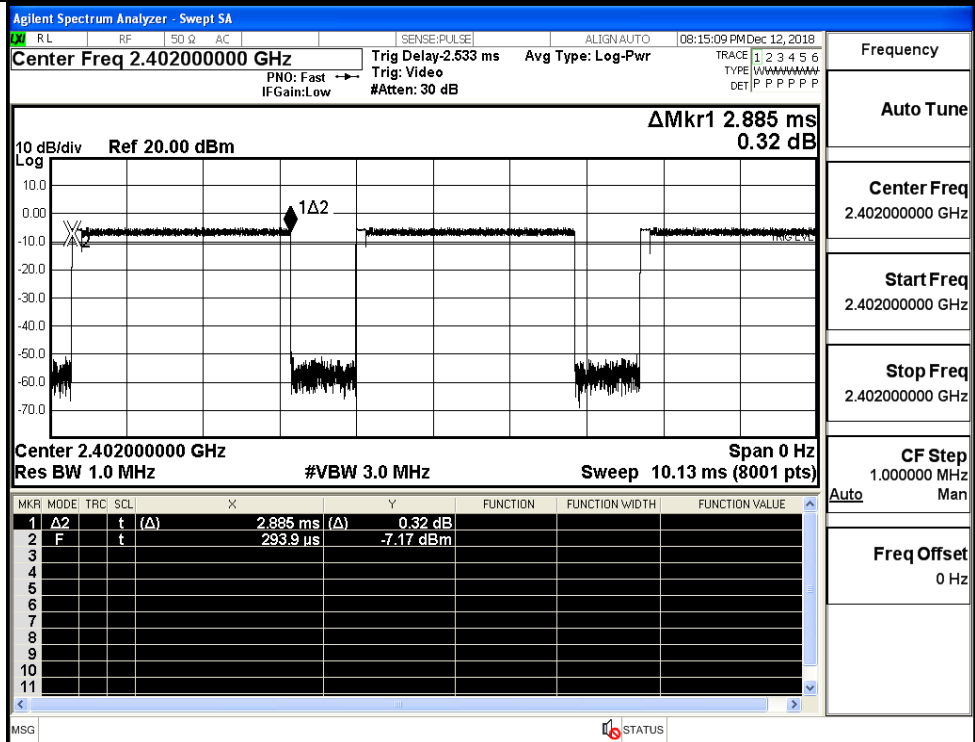
$\pi/4$ DQPSK
_2DH5/MCH



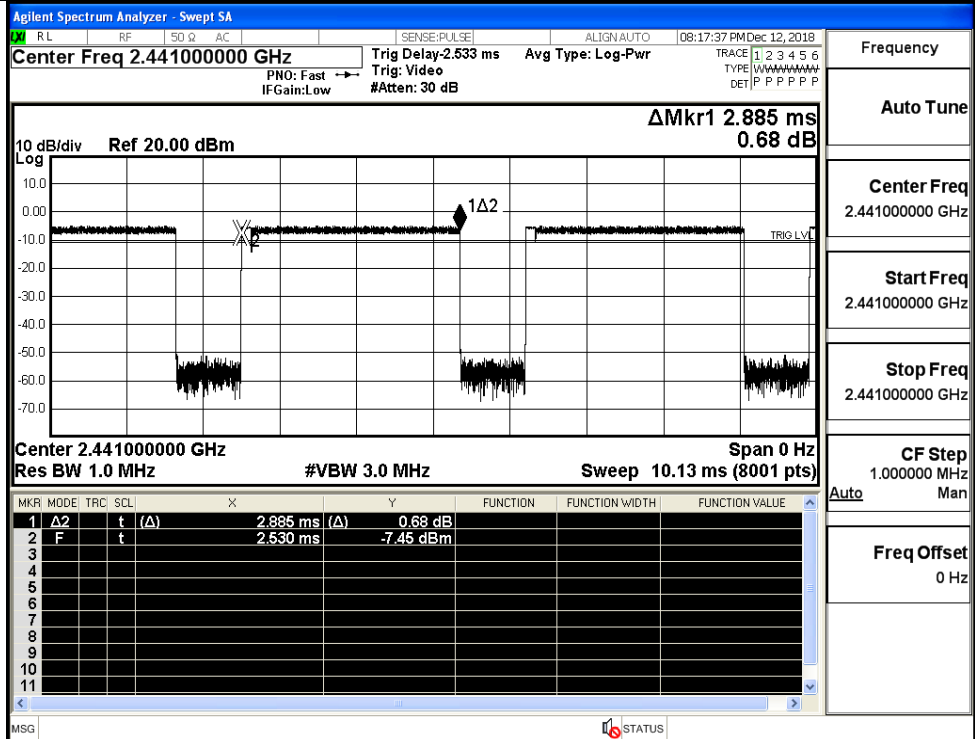
$\pi/4$ DQPSK
_2DH5/HCH



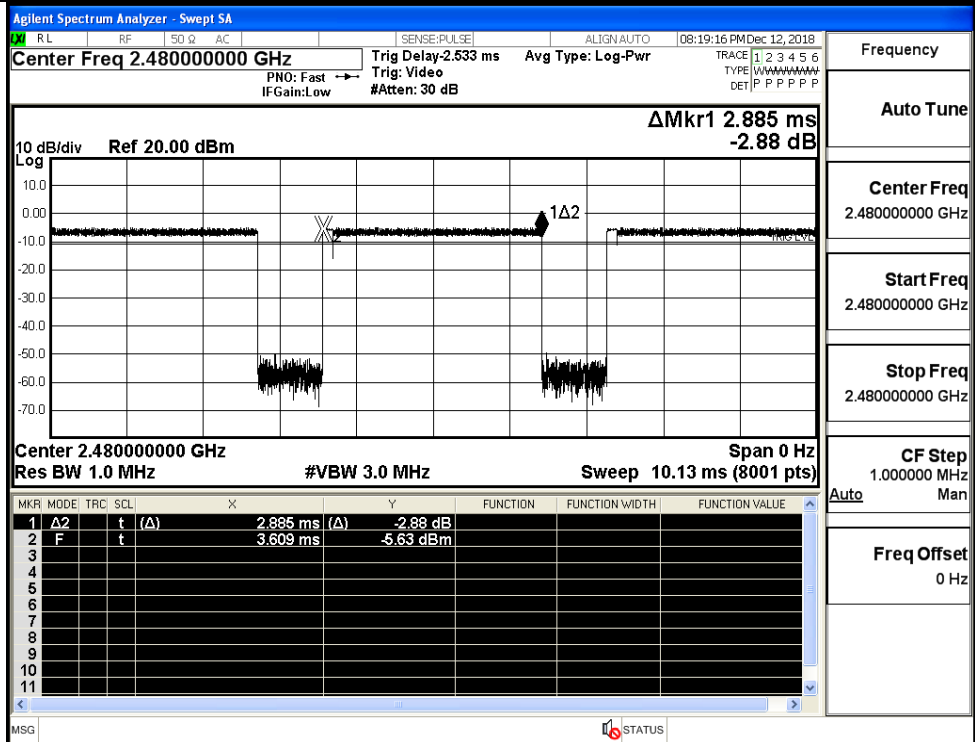
8DPSK_3DH5/LCH



8DPSK_3DH5/MCH



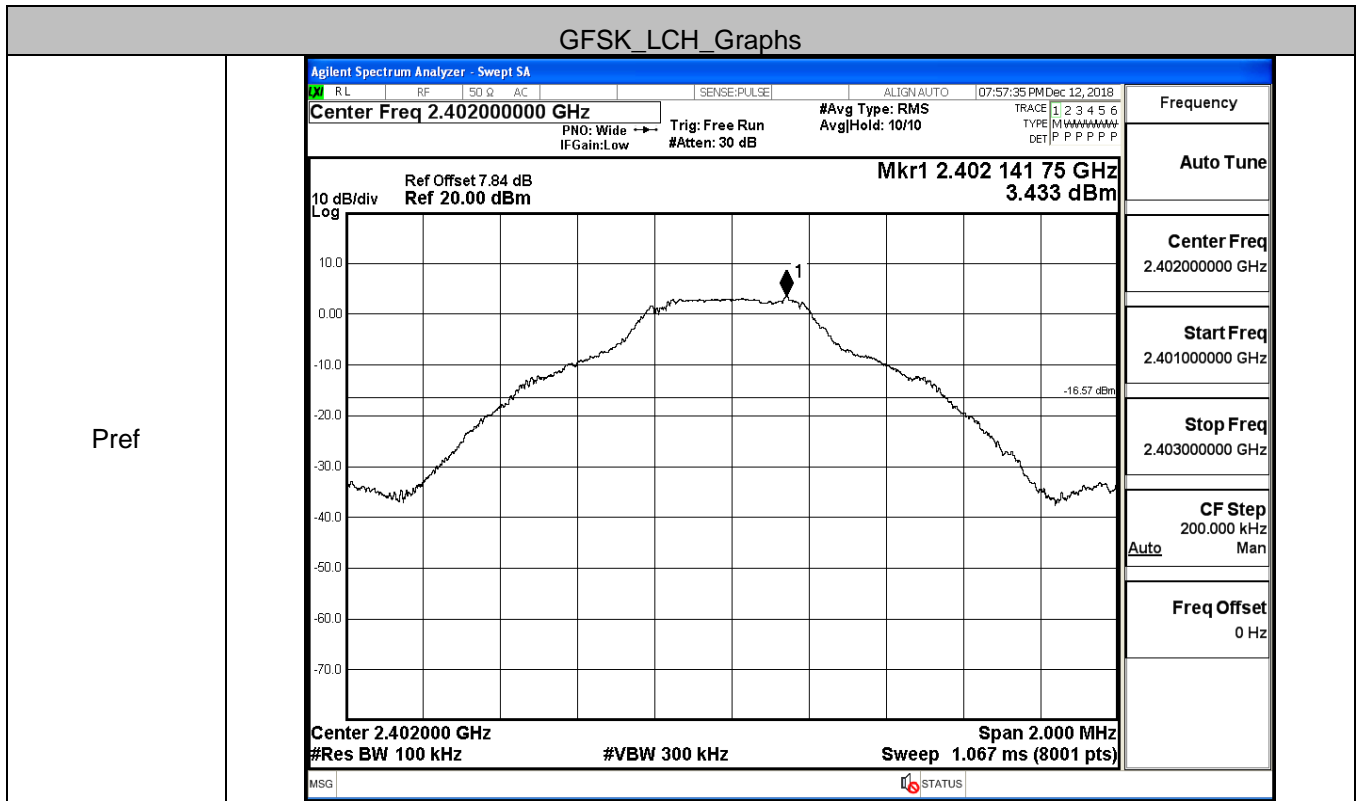
8DPSK_3DH5/HCH



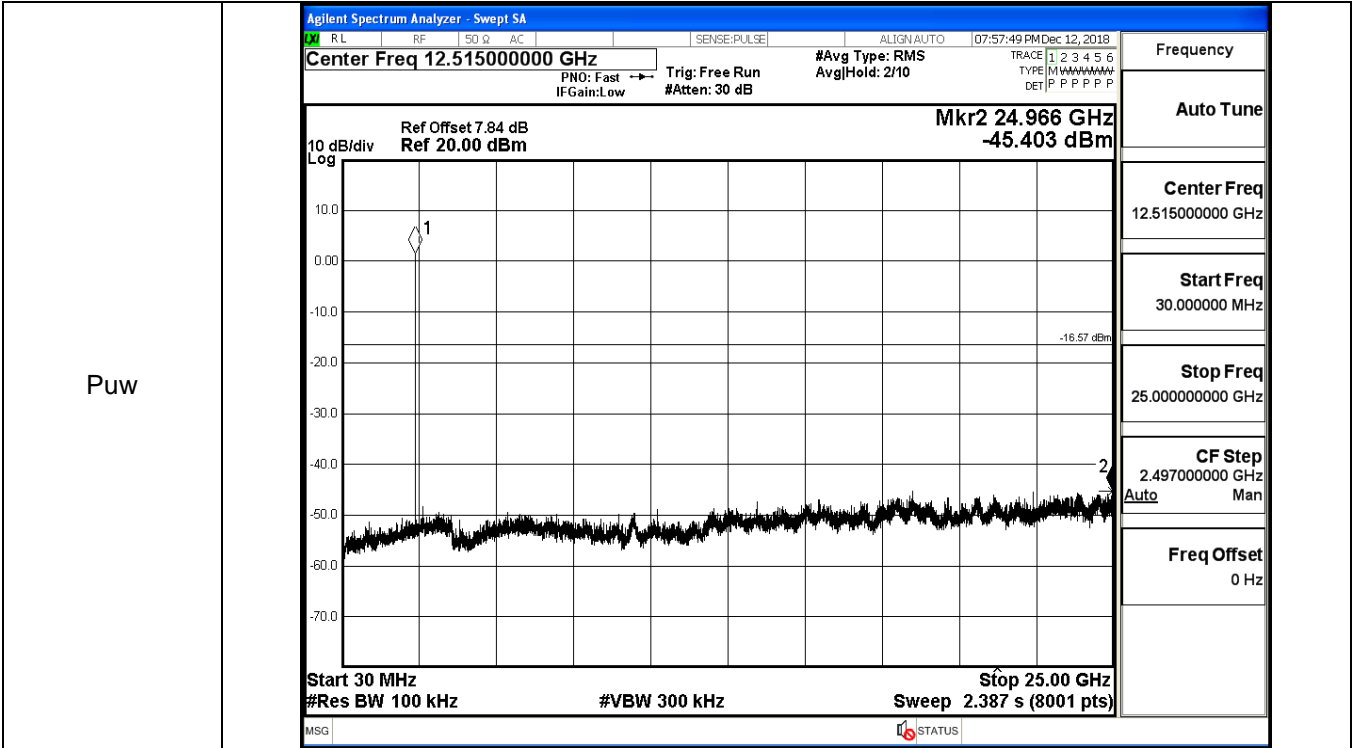
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	3.433	-45.403	-16.567	PASS
	MCH	3.23	-44.639	-16.770	PASS
	HCH	3.578	-44.793	-16.422	PASS
π/4DQPSK	LCH	1.947	-43.901	-18.053	PASS
	MCH	2.287	-44.766	-17.713	PASS
	HCH	2.044	-44.988	-17.956	PASS
8DPSK	LCH	2.165	-44.823	-17.835	PASS
	MCH	2.237	-44.693	-17.763	PASS
	HCH	2.242	-44.853	-17.758	PASS

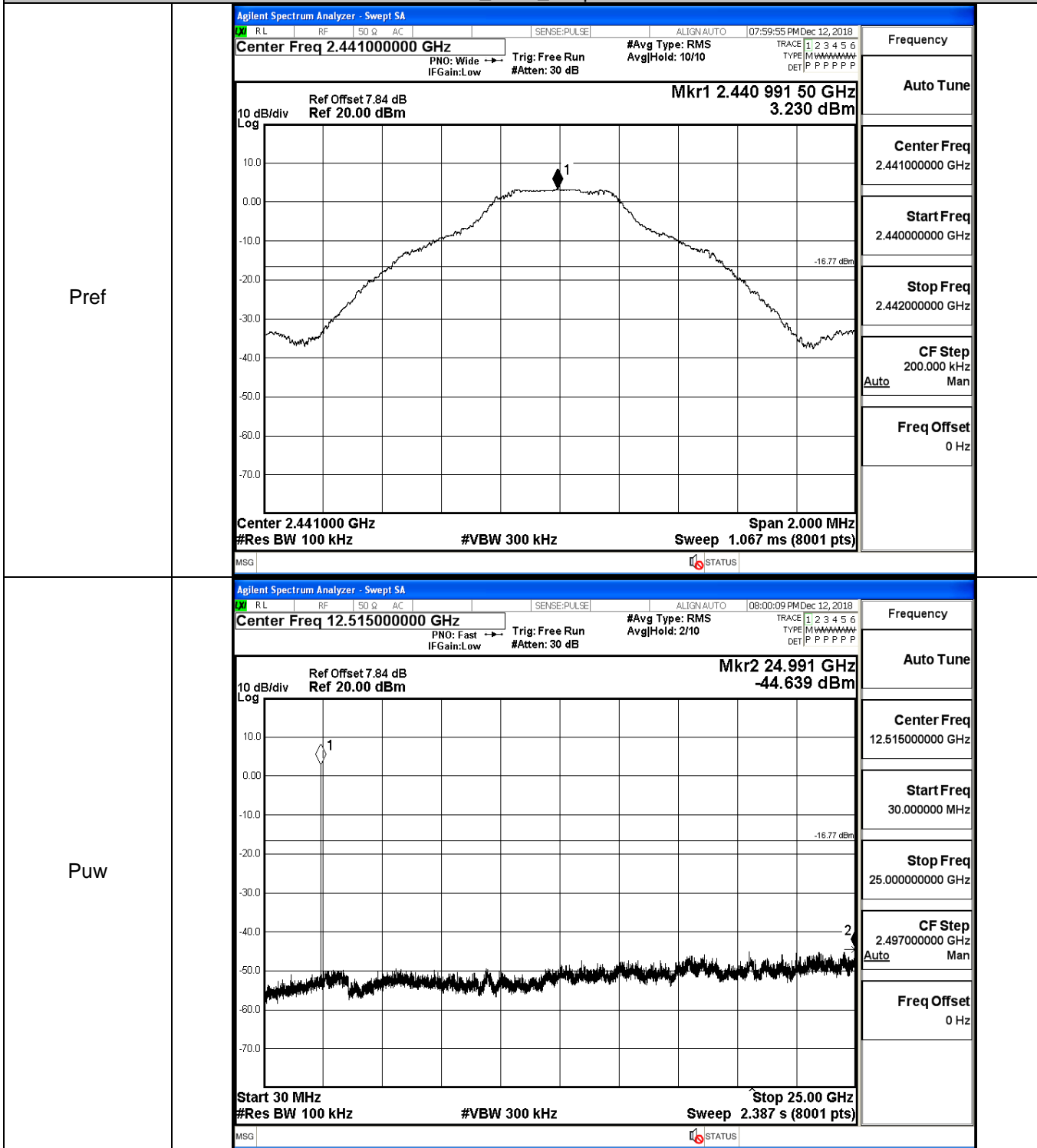
GFSK_LCH_Graphs



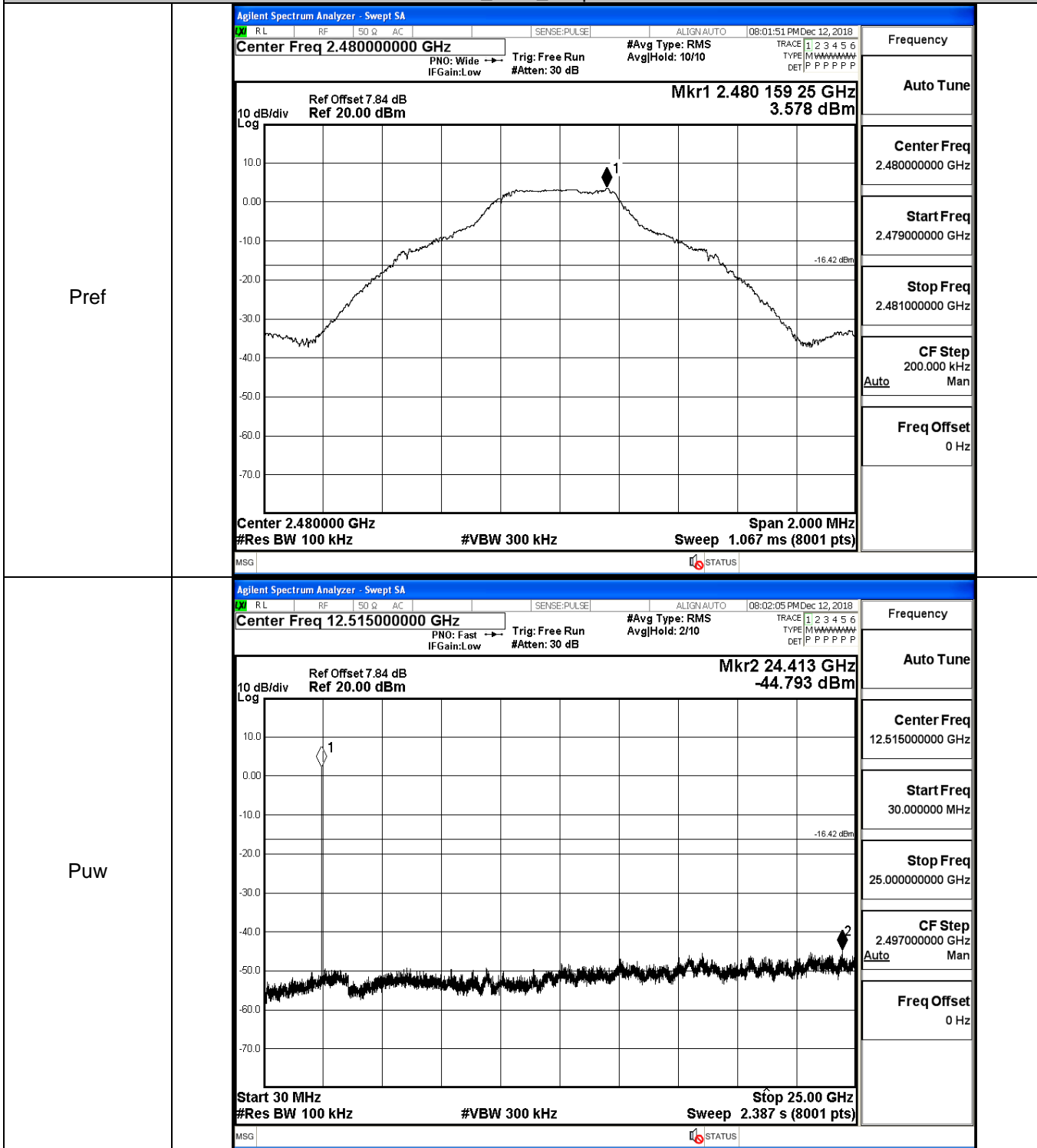
Pref



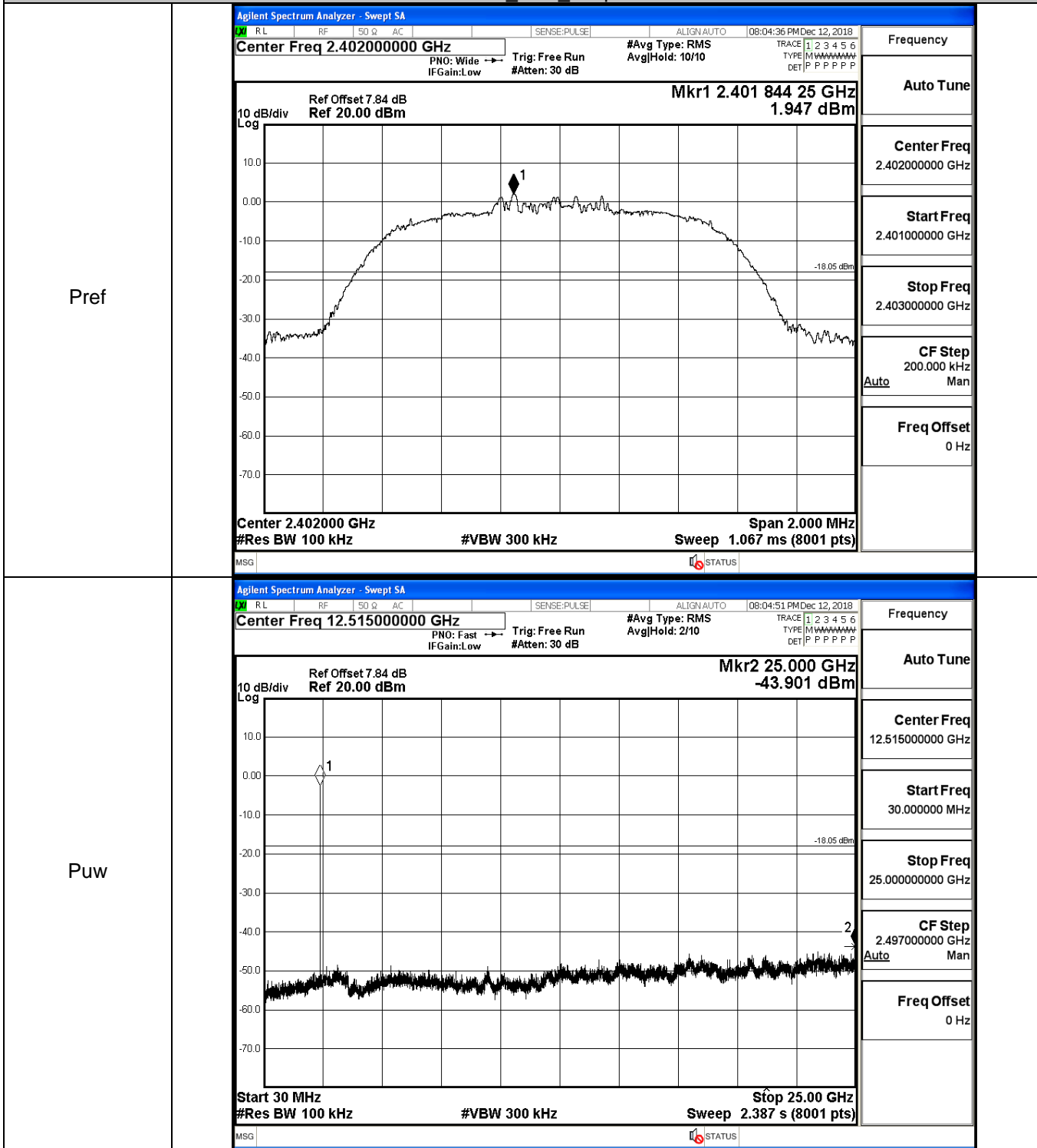
GFSK_MCH_Graphs



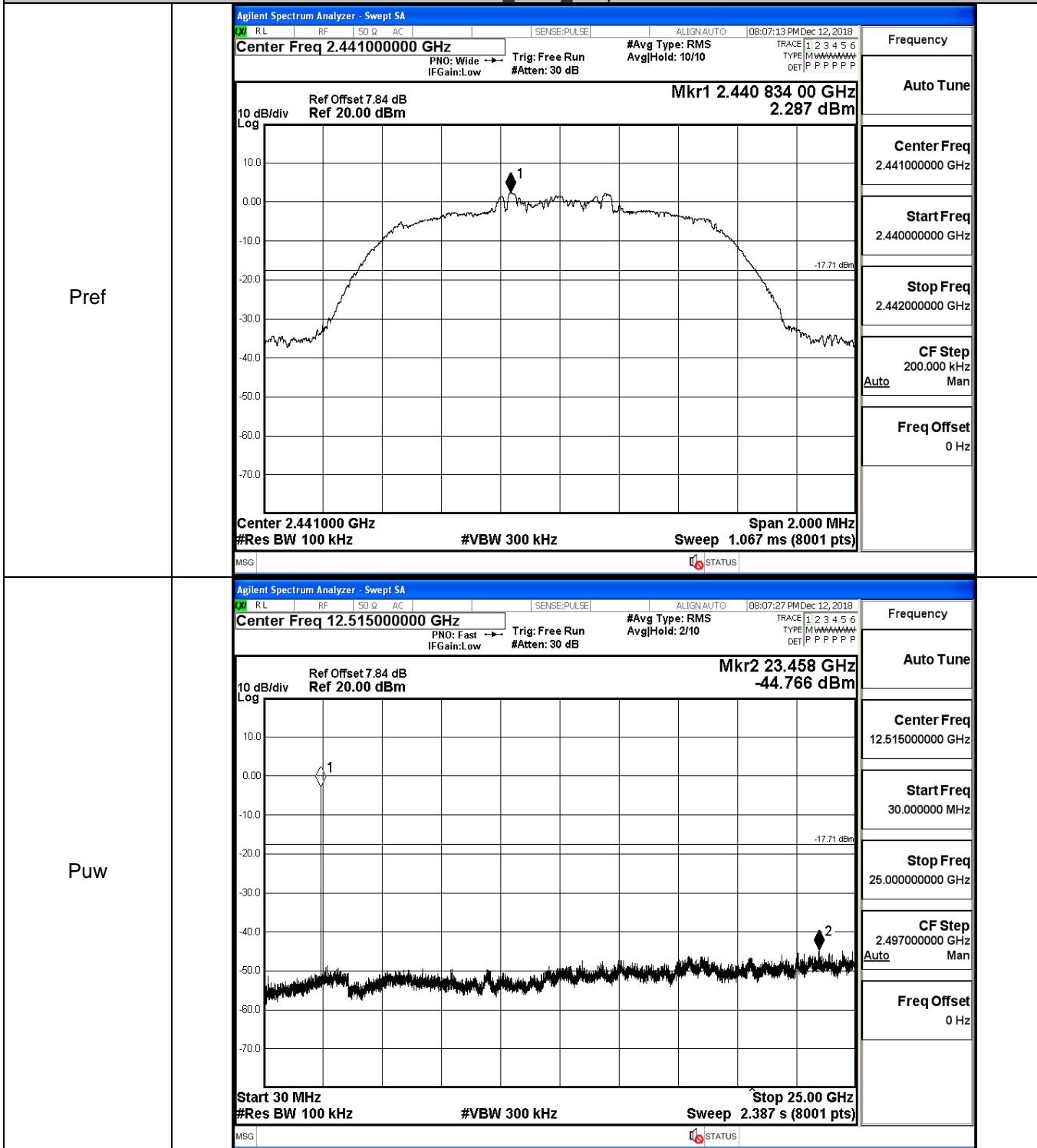
GFSK_HCH_Graphs



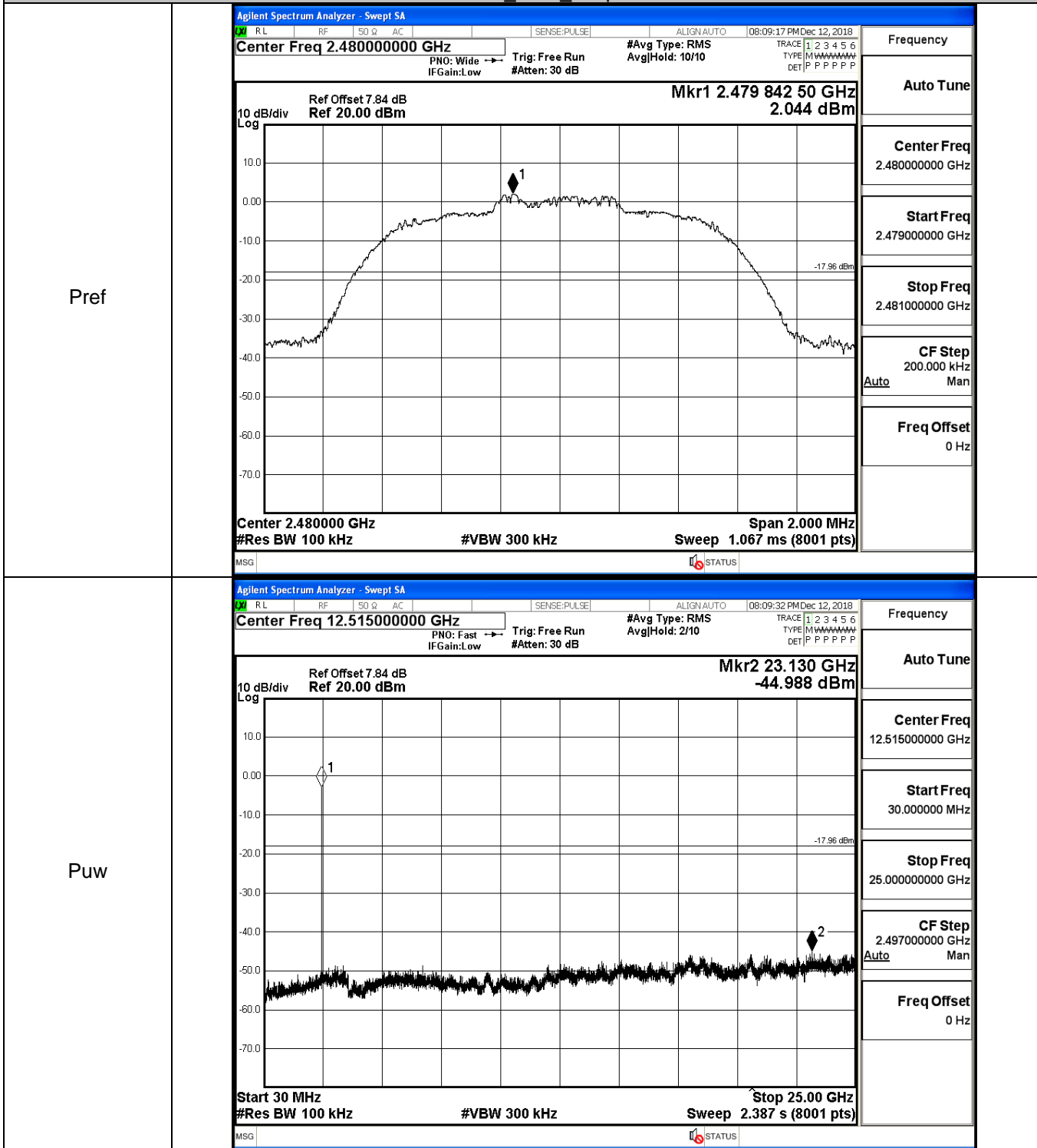
$\pi/4$ DQPSK_LCH_Graphs



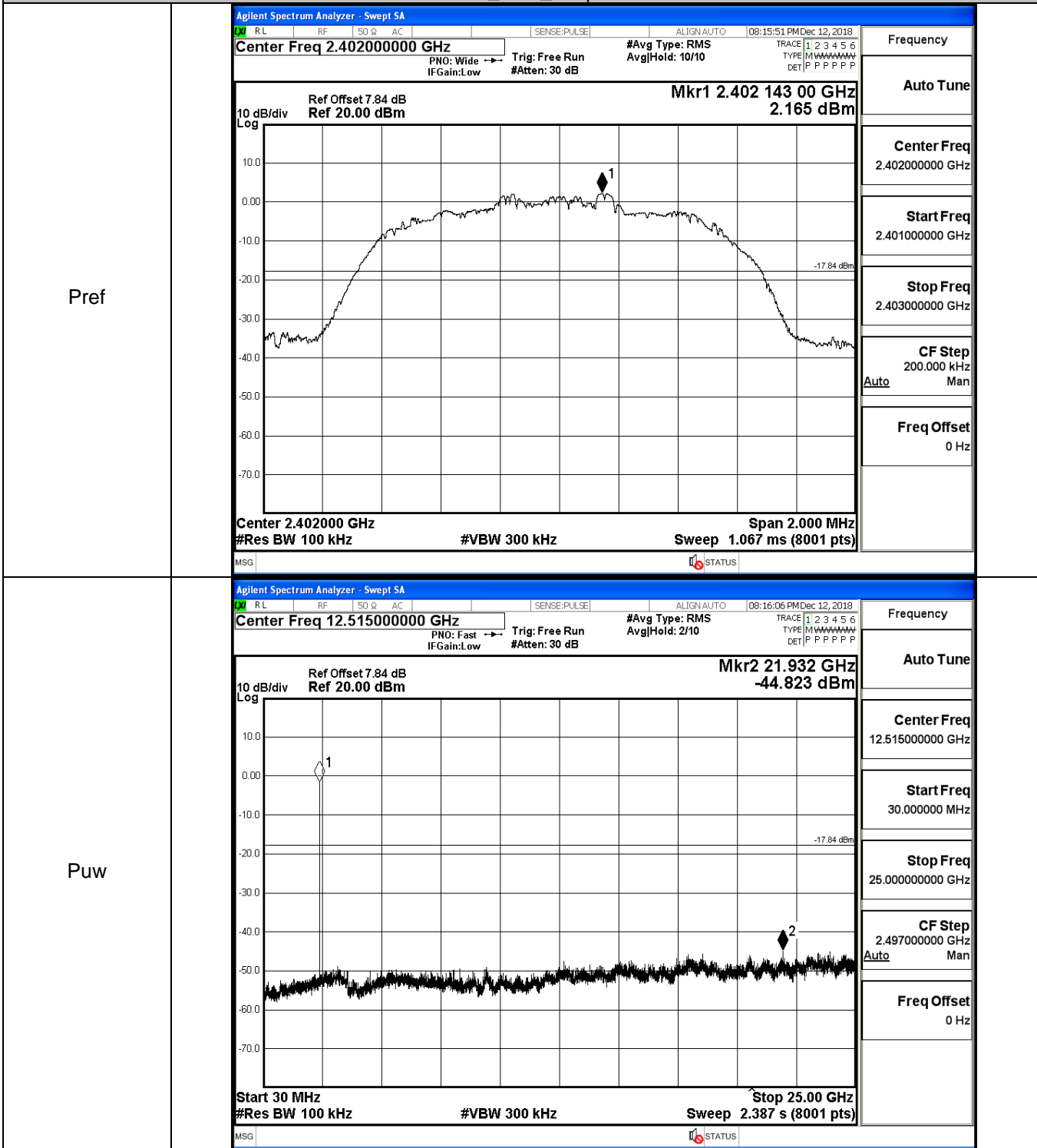
$\pi/4$ DQPSK_MCH_Graphs



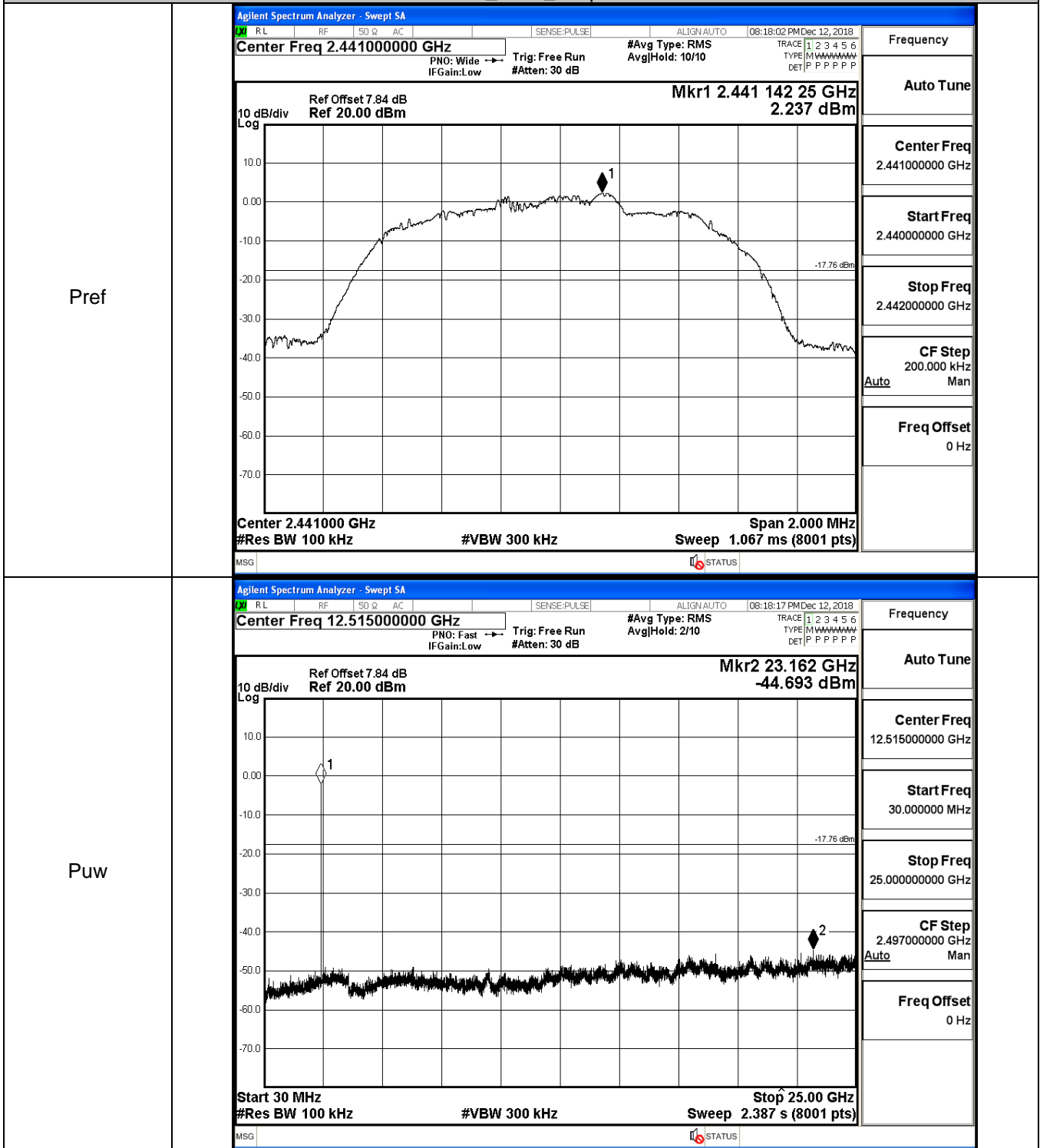
$\pi/4$ DQPSK_HCH_Graphs



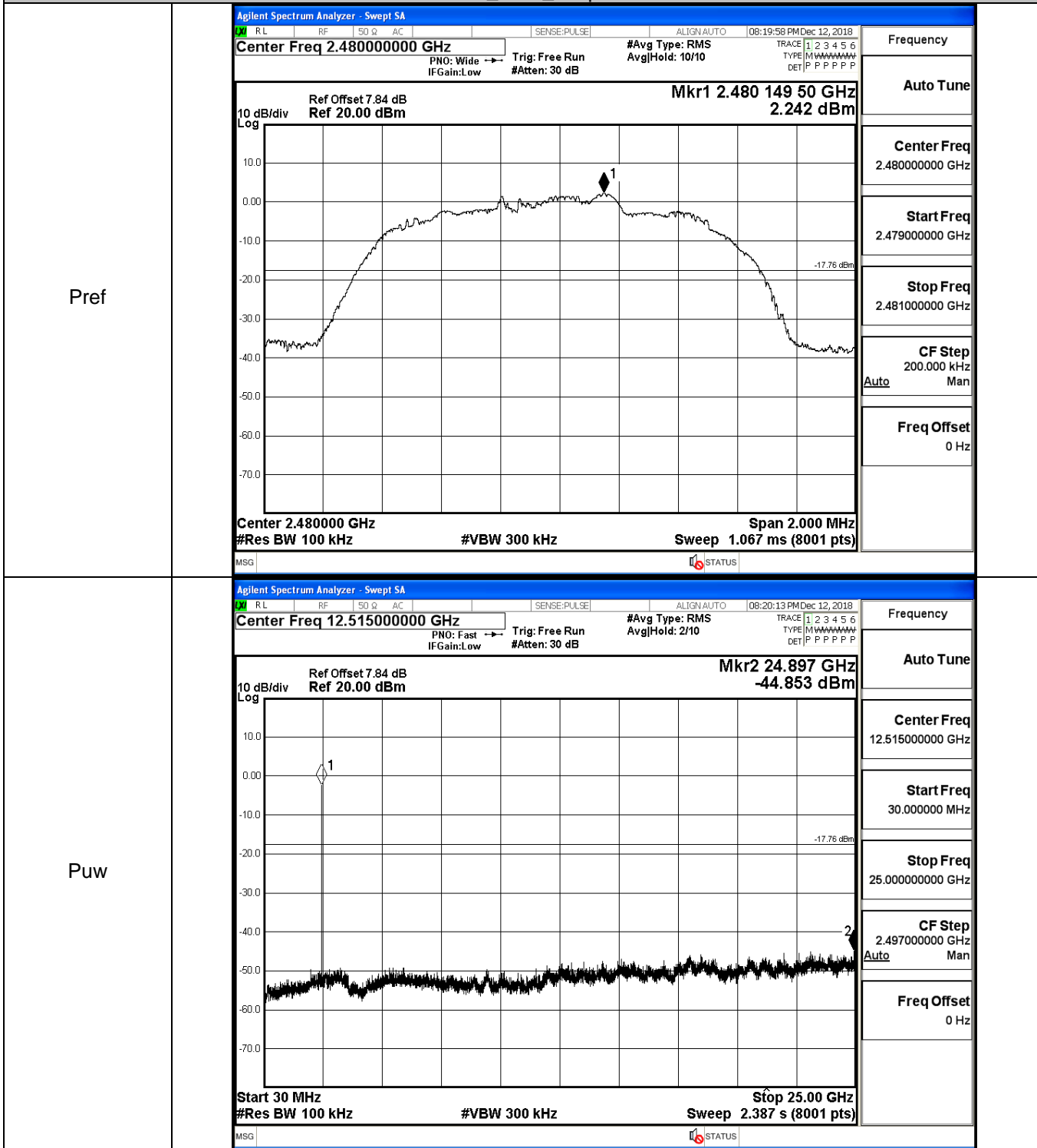
8DPSK_LCH_Graphs



8DPSK_MCH_Graphs



8DPSK_HCH_Graphs

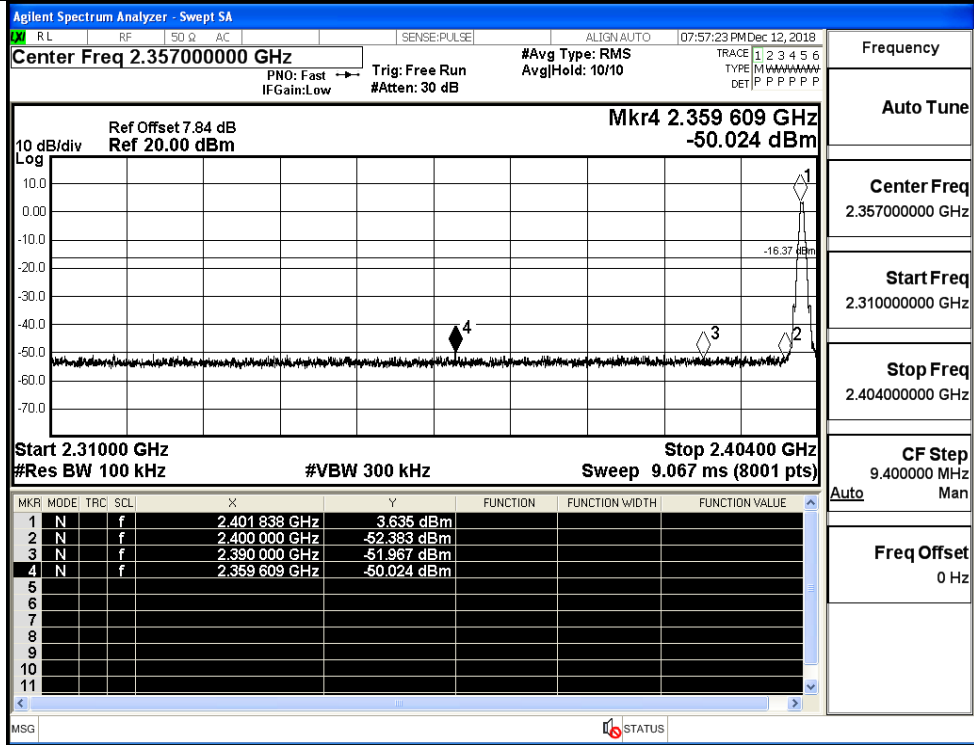


A.7 Band-edge for RF Conducted Emissions

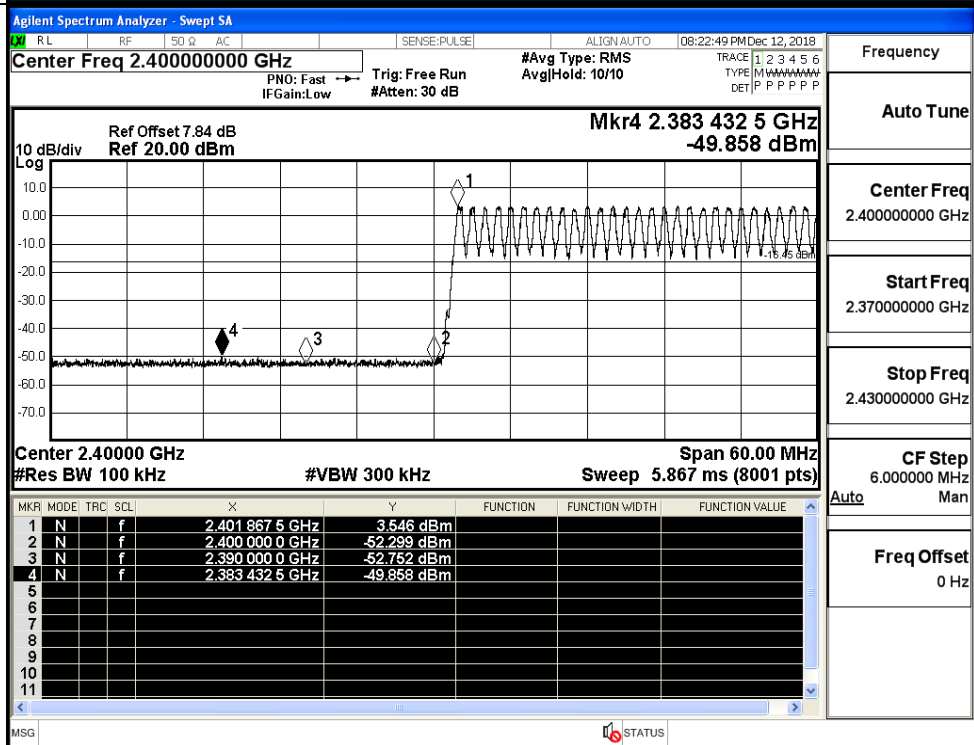
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	3.635	Off	-50.024	-16.37	PASS
			3.546	On	-49.858	-16.45	PASS
	HCH	2480	3.719	Off	-50.341	-16.28	PASS
			3.714	On	-49.428	-16.29	PASS
$\pi/4$ DQPSK	LCH	2402	2.090	Off	-49.884	-17.91	PASS
			2.356	On	-49.460	-17.64	PASS
	HCH	2480	2.316	Off	-50.258	-17.68	PASS
			2.389	On	-49.778	-17.61	PASS
8DPSK	LCH	2402	-0.511	Off	-50.456	-20.51	PASS
			2.189	On	-50.019	-17.81	PASS
	HCH	2480	2.251	Off	-49.943	-17.75	PASS
			2.157	On	-49.719	-17.84	PASS

Test Graphs

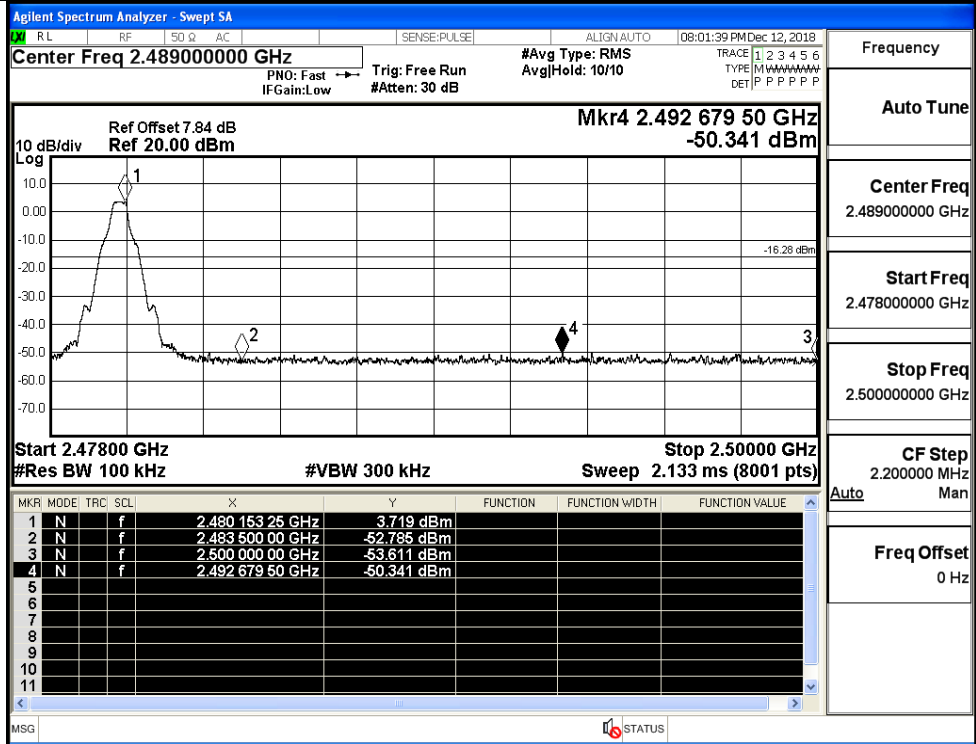
GFSK/LCH/No Hop



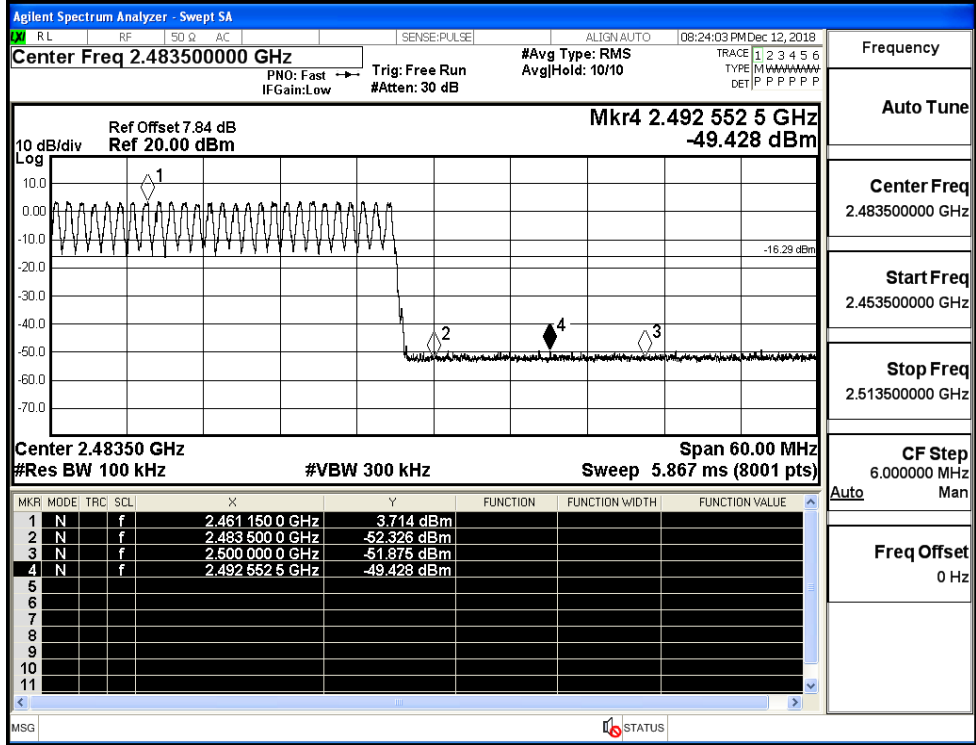
GFSK/LCH/Hop



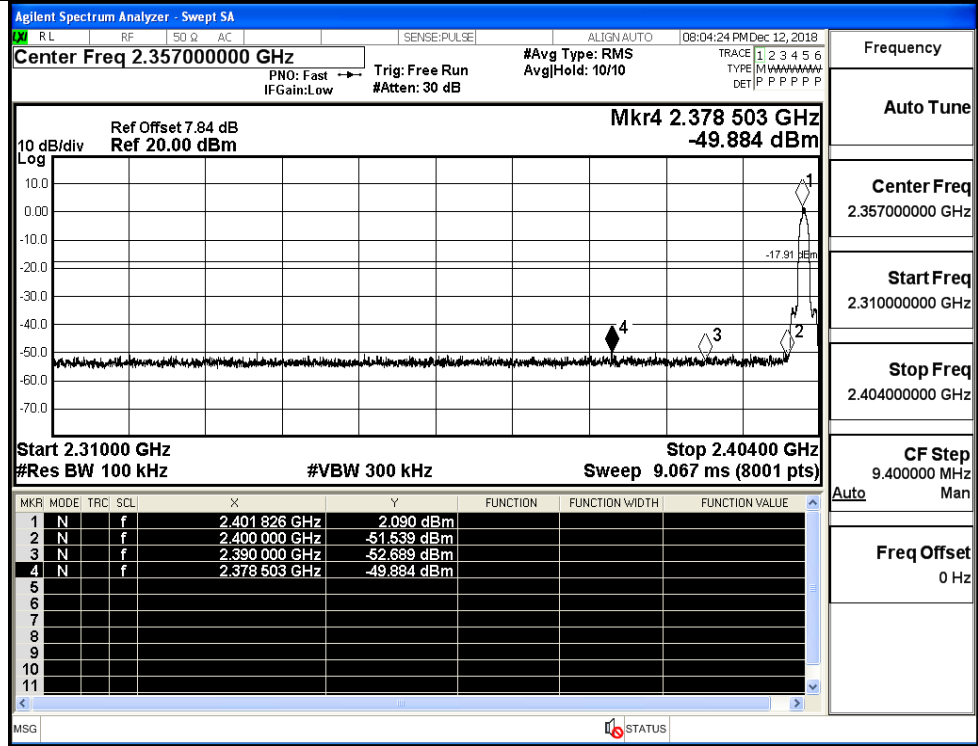
GFSK/HCH/No Hop



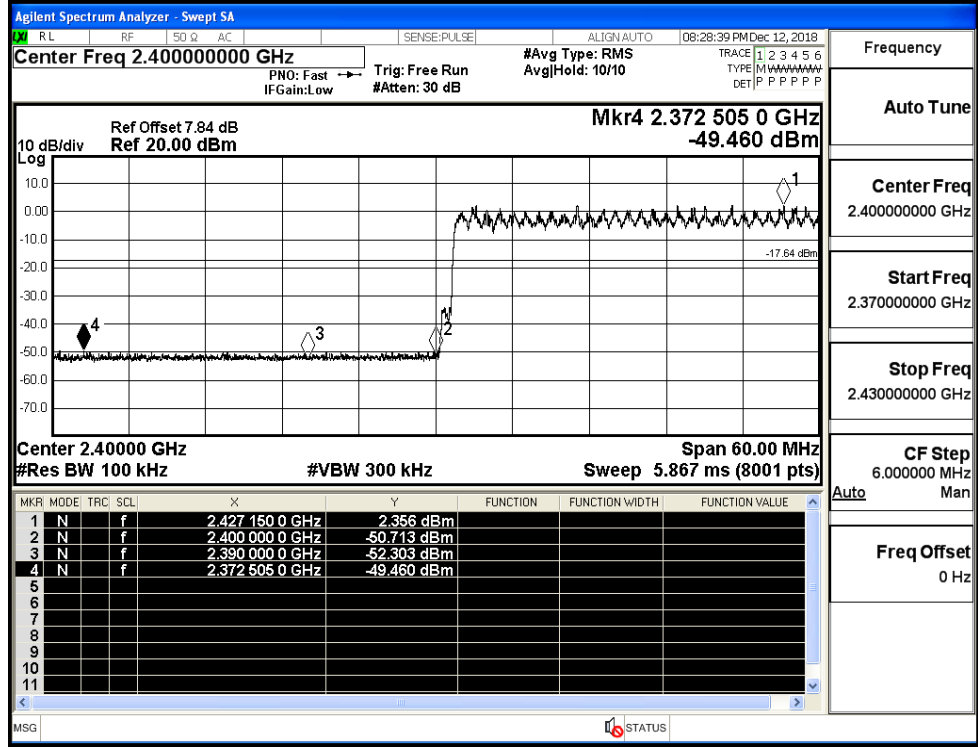
GFSK/HCH/Hop



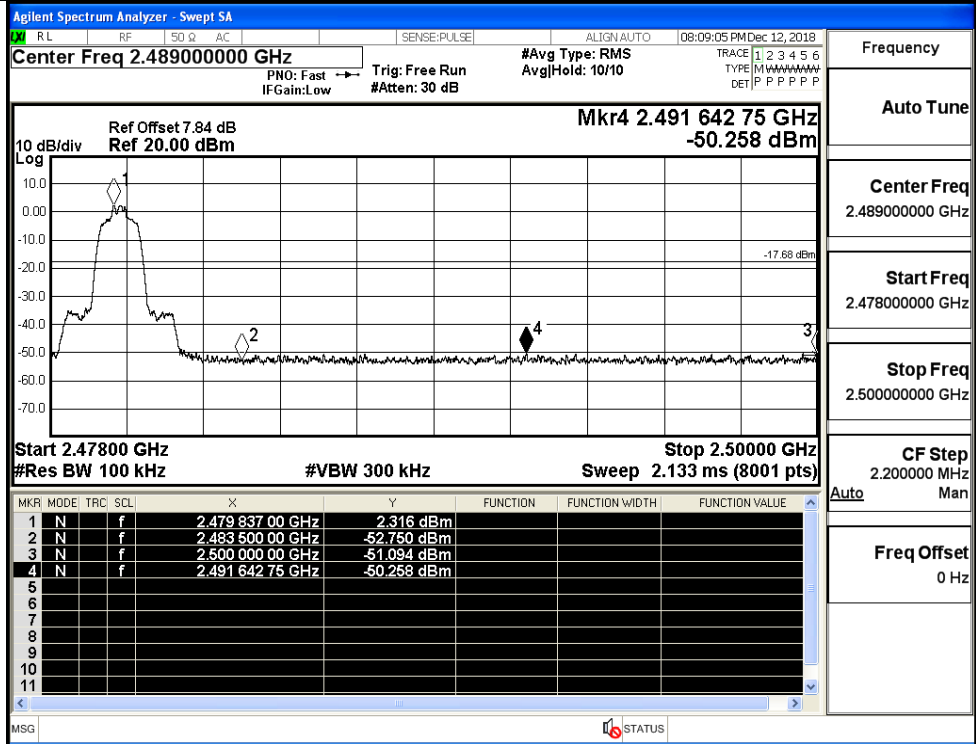
$\pi/4$ DQPSK/LCH/No Hop



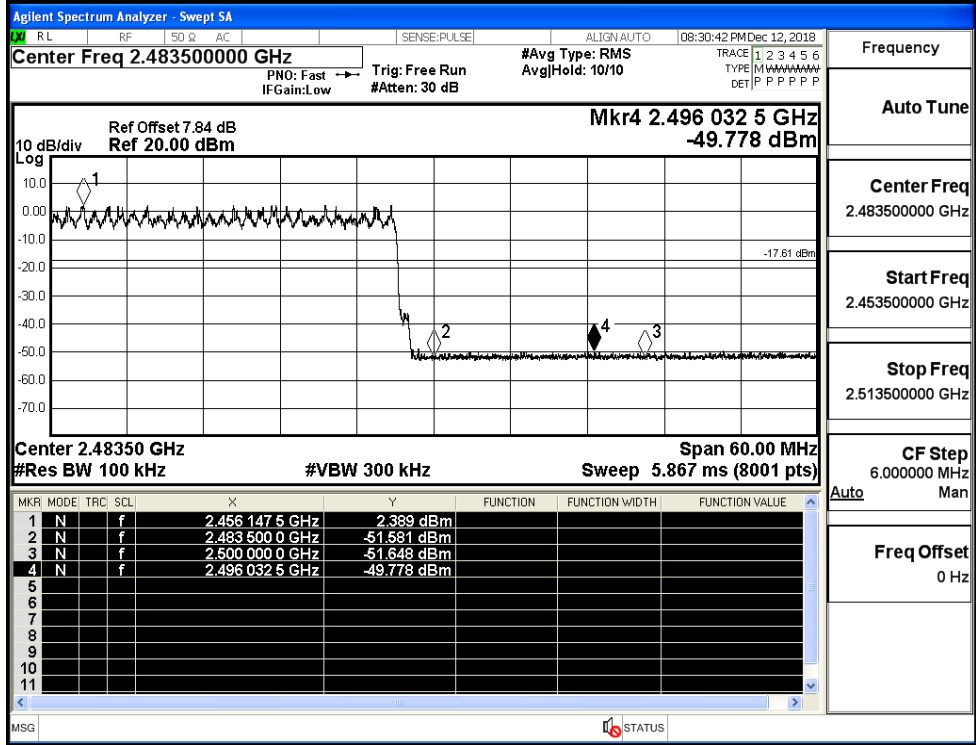
$\pi/4$ DQPSK/LCH/Hop



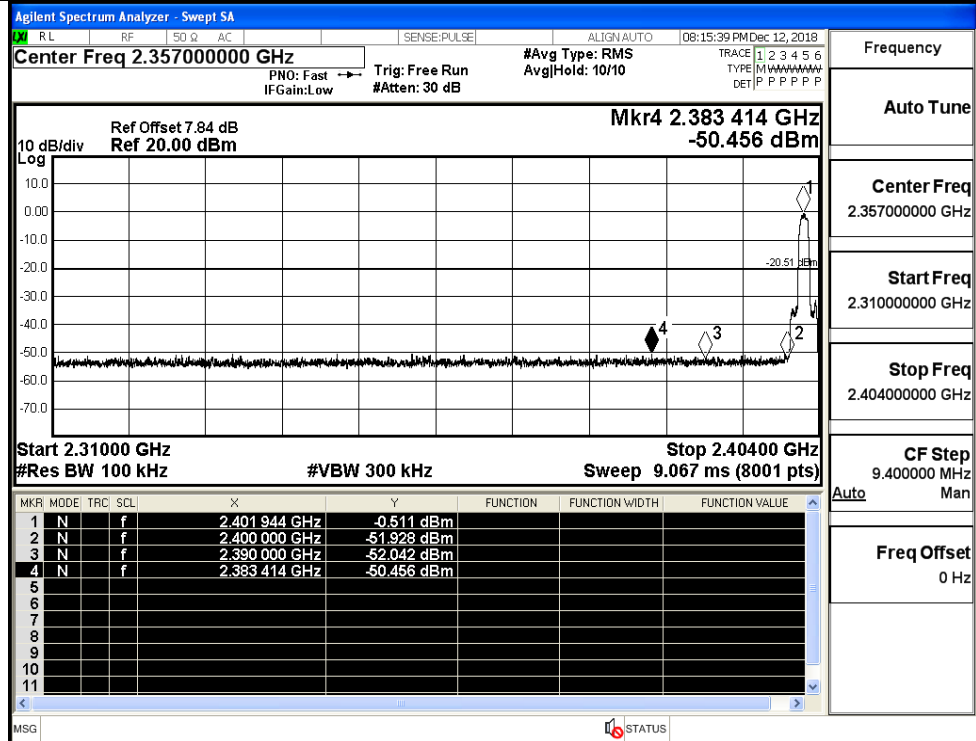
$\pi/4$ DQPSK/HCH/No Hop



$\pi/4$ DQPSK/HCH/Hop



8DPSK/LCH/No Hop



Frequency

Auto Tune

Center Freq
2.357000000 GHz

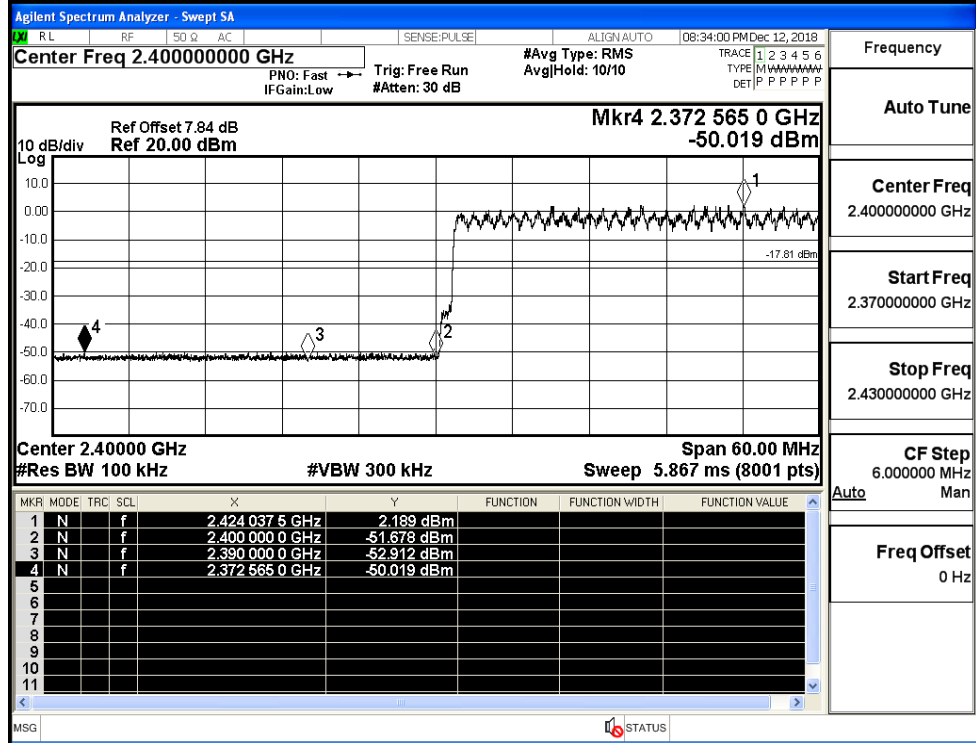
Start Freq
2.310000000 GHz

Stop Freq
2.404000000 GHz

CF Step
9.400000 MHz

Freq Offset
0 Hz

8DPSK/LCH/Hop



Frequency

Auto Tune

Center Freq
2.400000000 GHz

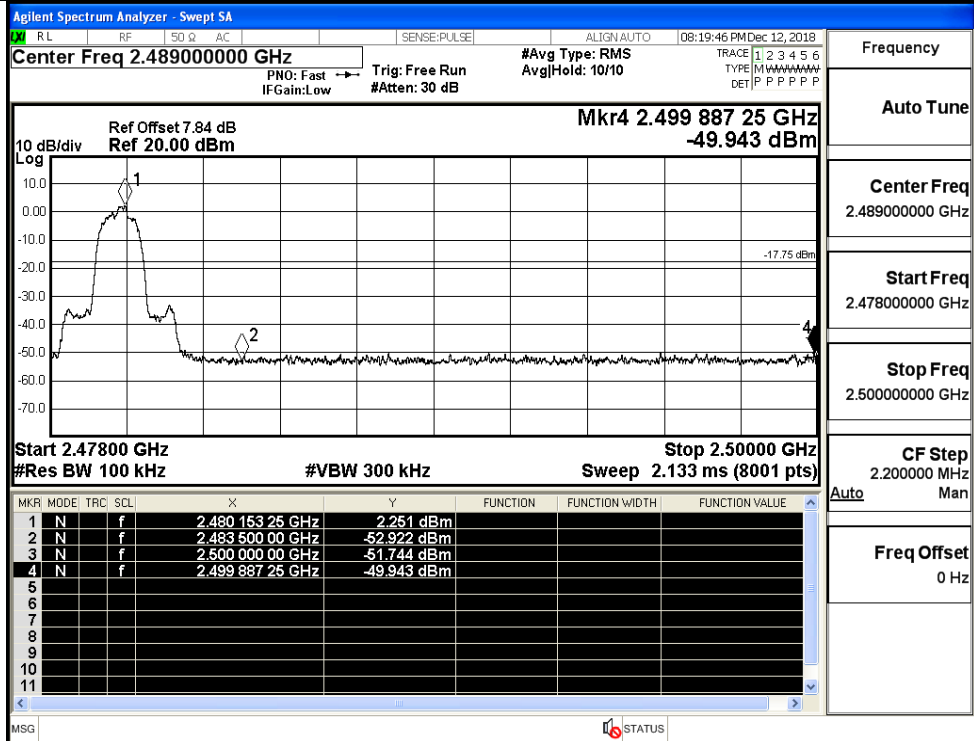
Start Freq
2.370000000 GHz

Stop Freq
2.430000000 GHz

CF Step
6.000000 MHz

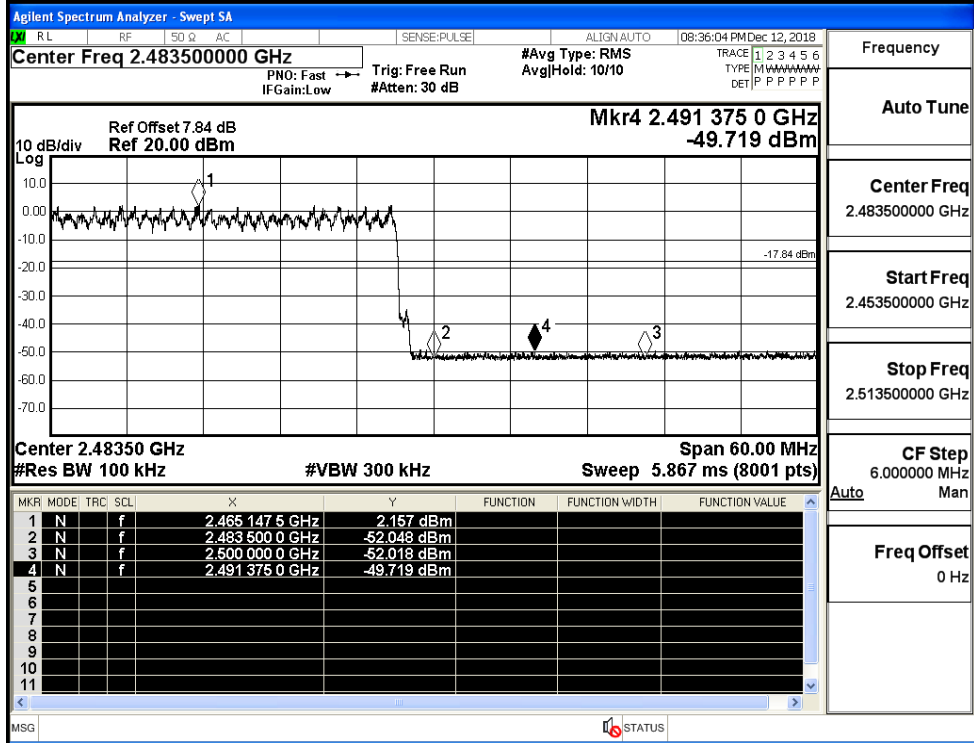
Freq Offset
0 Hz

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

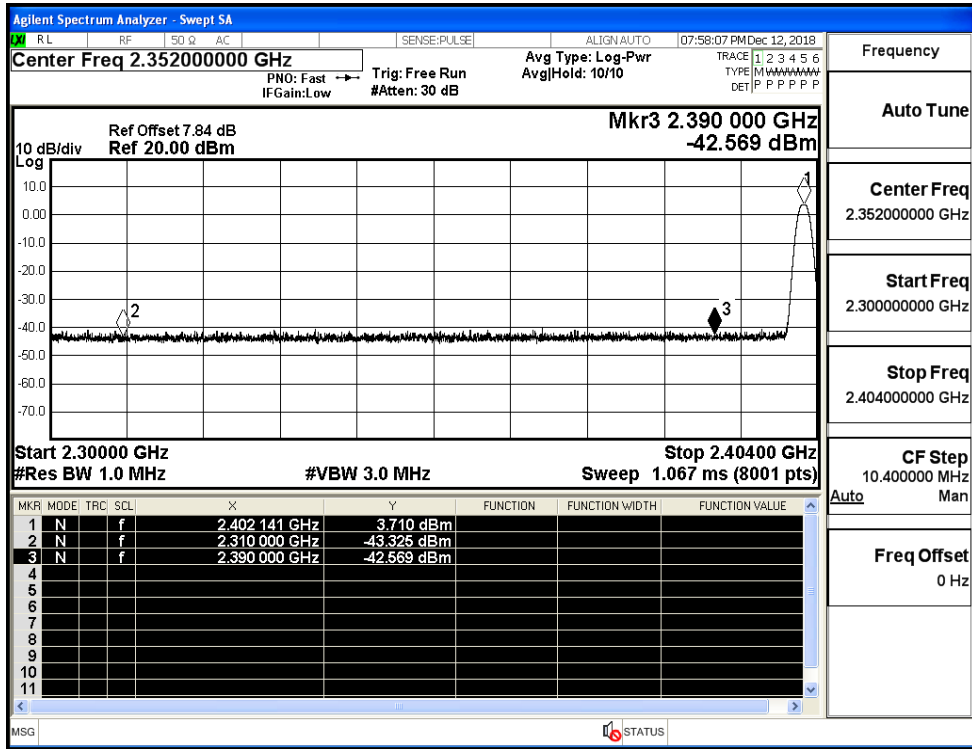


Frequency	
Auto Tune	
Center Freq	2.483500000 GHz
Start Freq	2.453500000 GHz
Stop Freq	2.513500000 GHz
CF Step	6.000000 MHz
Auto	Man
Freq Offset	0 Hz

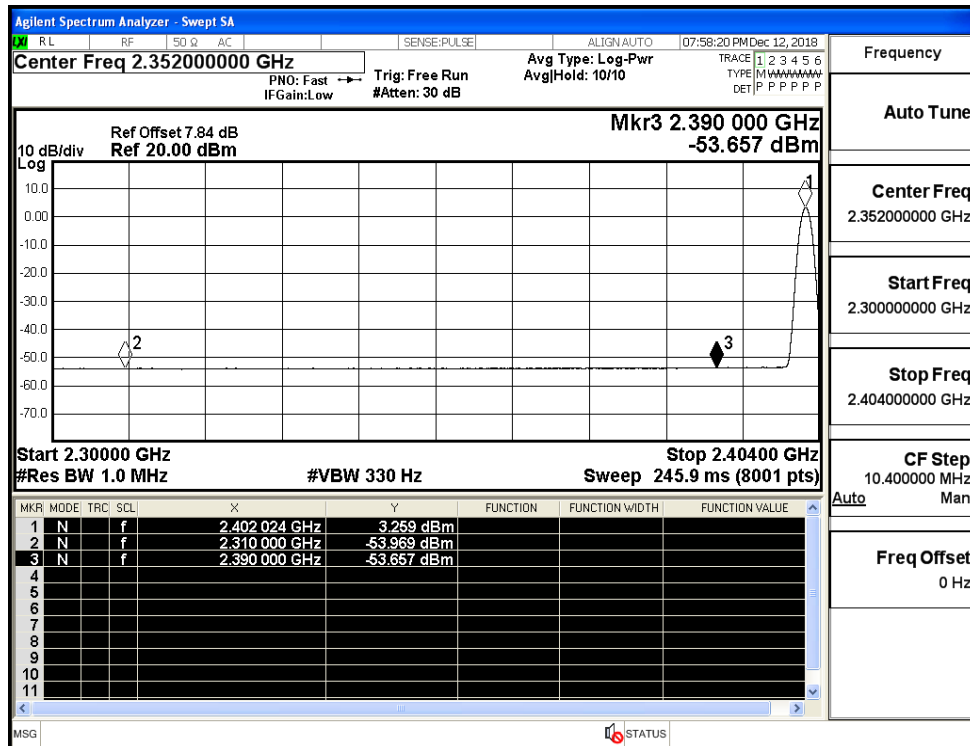
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.33	0.0	0	51.90	PEAK	74	PASS
	Off	2310.0	-53.97	0.0	0	41.26	AV	54	PASS
	Off	2390.0	-42.57	0.0	0	52.66	PEAK	74	PASS
	Off	2390.0	-53.66	0.0	0	41.57	AV	54	PASS
	Off	2483.5	-42.90	0.0	0	52.33	PEAK	74	PASS
	Off	2483.5	-53.06	0.0	0	42.17	AV	54	PASS
	Off	2500.0	-44.50	0.0	0	50.73	PEAK	74	PASS
	Off	2500.0	-53.40	0.0	0	41.83	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-42.87	0.0	0	52.36	PEAK	74	PASS
	Off	2310.0	-54.07	0.0	0	41.16	AV	54	PASS
	Off	2390.0	-43.99	0.0	0	51.24	PEAK	74	PASS
	Off	2390.0	-53.72	0.0	0	41.51	AV	54	PASS
	Off	2483.5	-43.45	0.0	0	51.78	PEAK	74	PASS
	Off	2483.5	-53.28	0.0	0	41.95	AV	54	PASS
	Off	2500.0	-42.96	0.0	0	52.27	PEAK	74	PASS
	Off	2500.0	-53.26	0.0	0	41.97	AV	54	PASS
8DPSK	Off	2310.0	-43.69	0.0	0	51.54	PEAK	74	PASS
	Off	2310.0	-53.98	0.0	0	41.25	AV	54	PASS
	Off	2390.0	-43.59	0.0	0	51.64	PEAK	74	PASS
	Off	2390.0	-53.62	0.0	0	41.61	AV	54	PASS
	Off	2483.5	-42.98	0.0	0	52.25	PEAK	74	PASS
	Off	2483.5	-53.27	0.0	0	41.96	AV	54	PASS
	Off	2500.0	-43.30	0.0	0	51.93	PEAK	74	PASS
	Off	2500.0	-53.32	0.0	0	41.91	AV	54	PASS

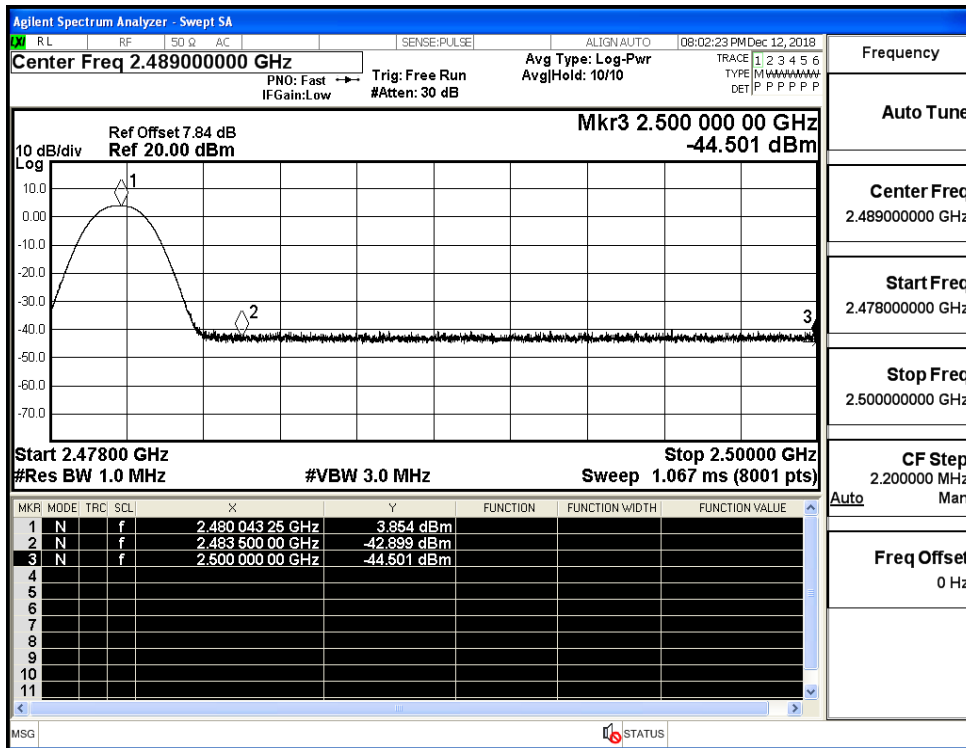
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



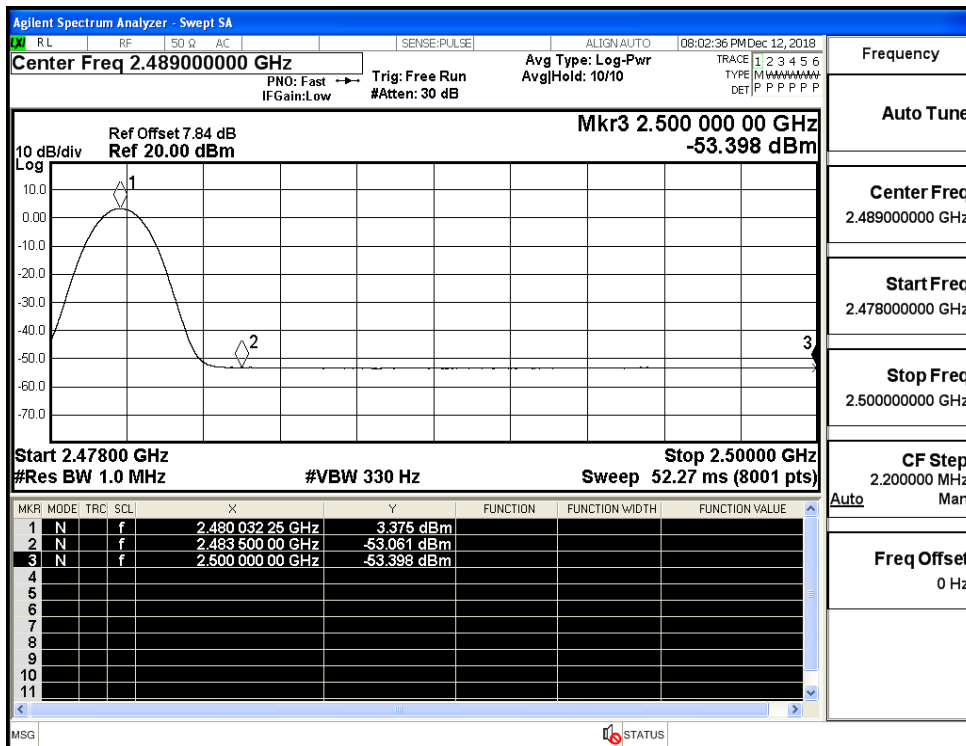
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



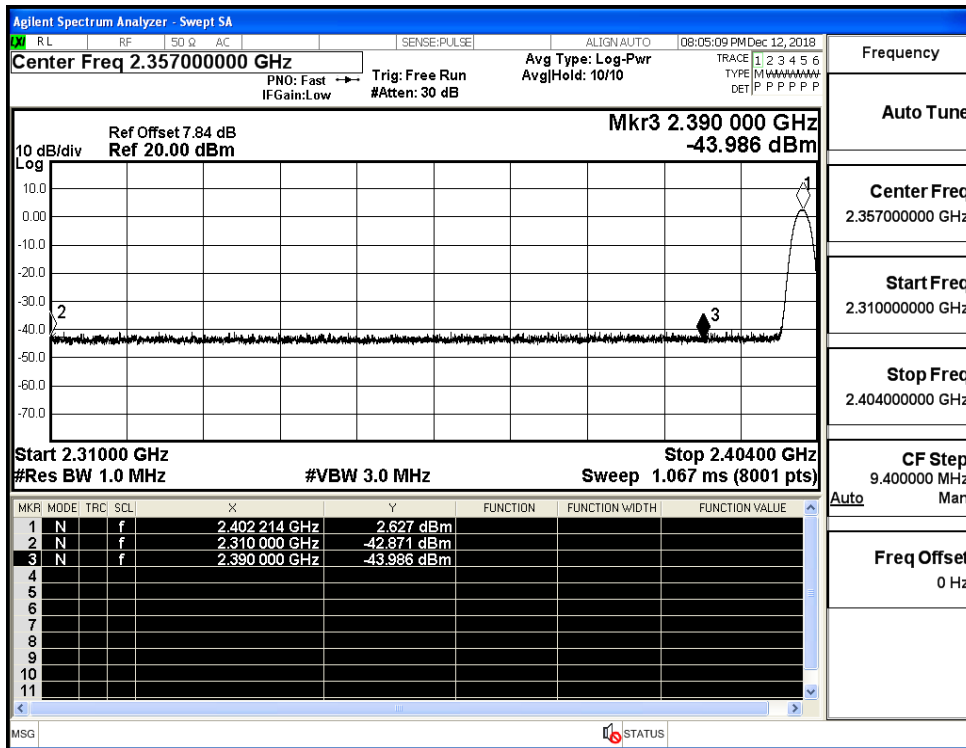
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



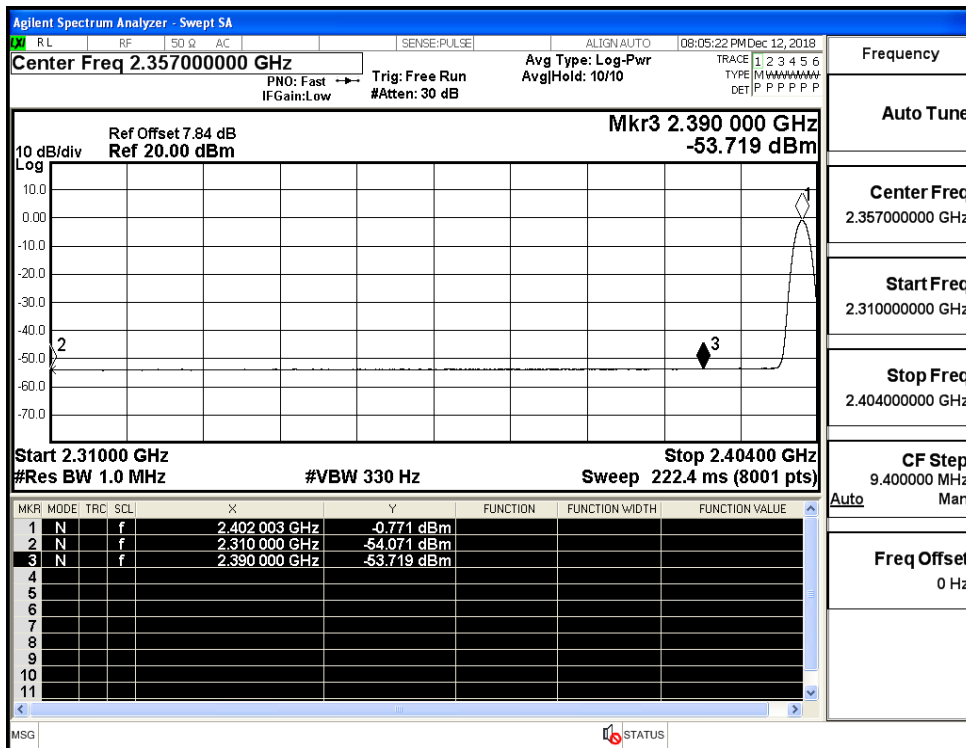
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



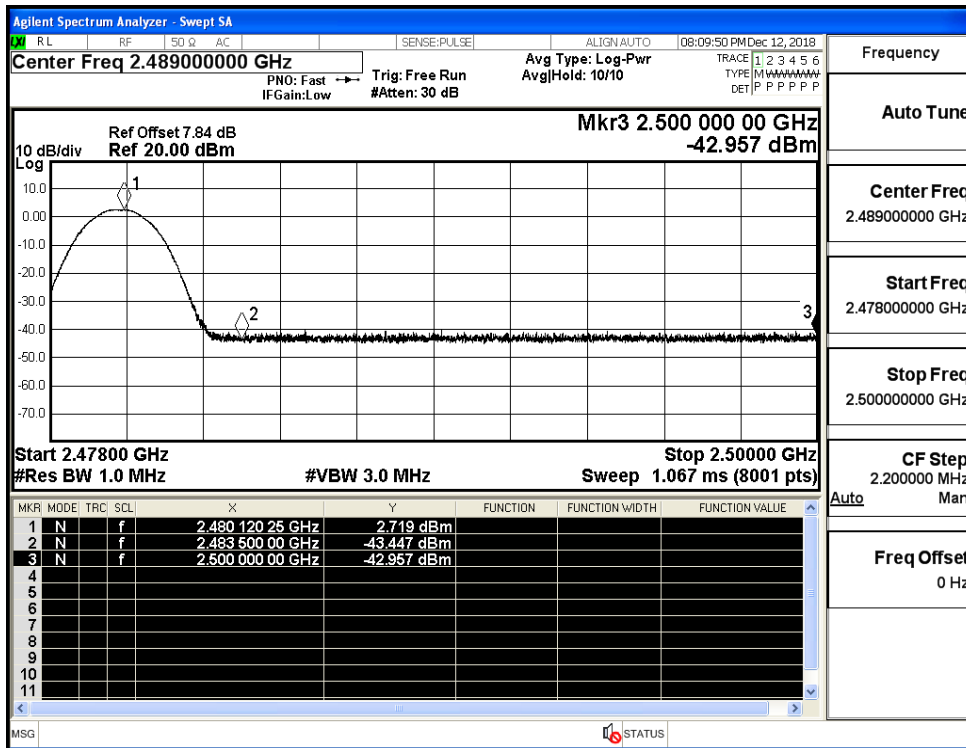
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)



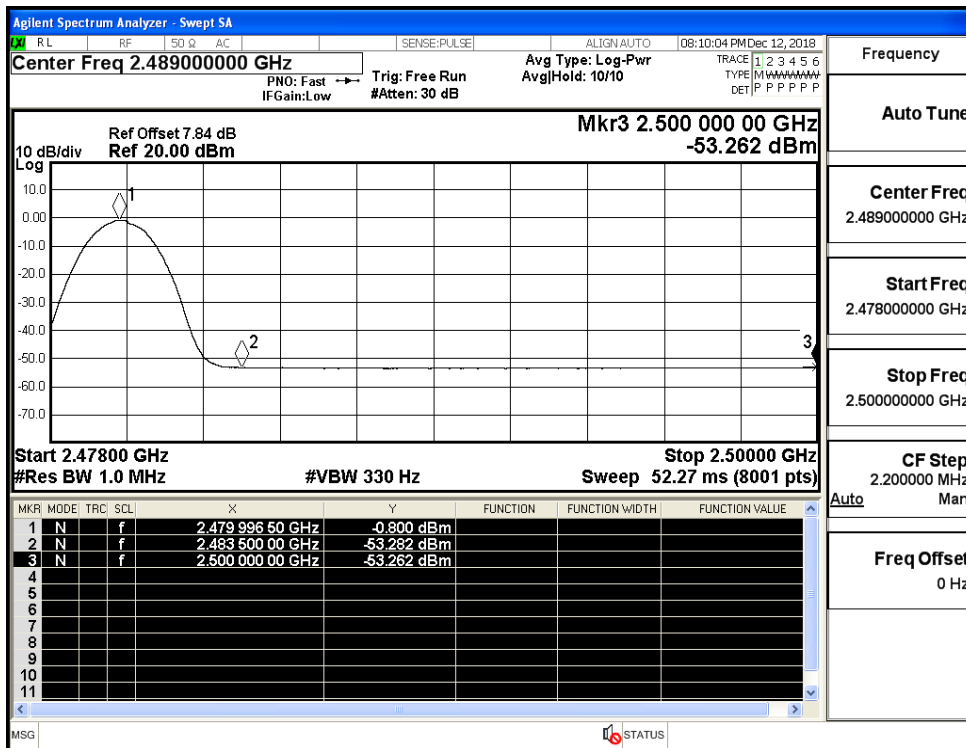
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)



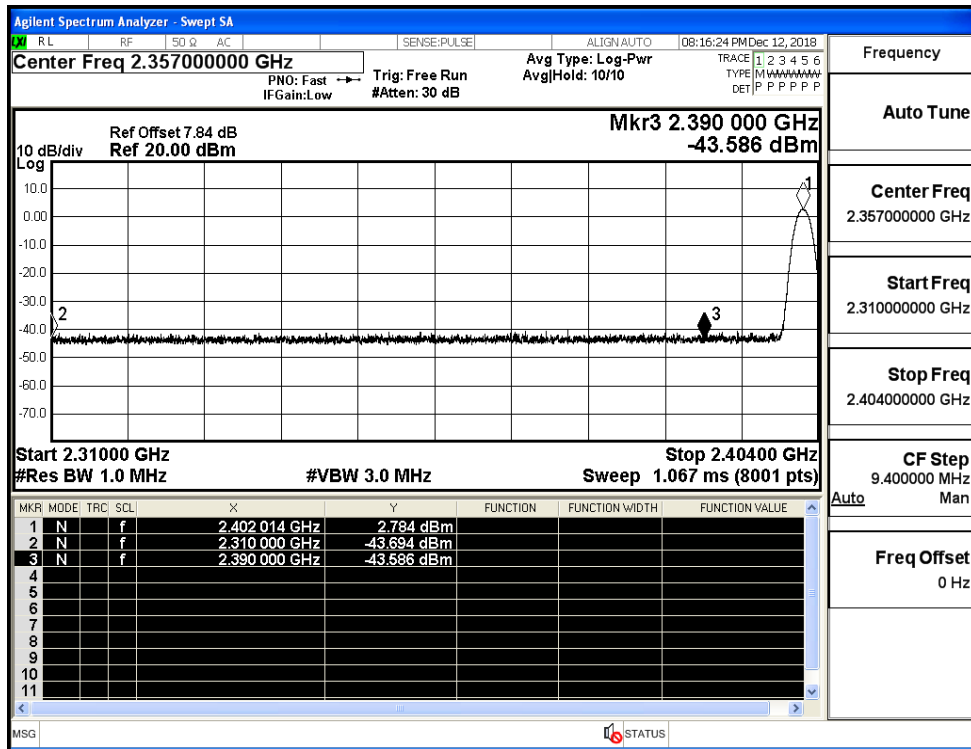
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



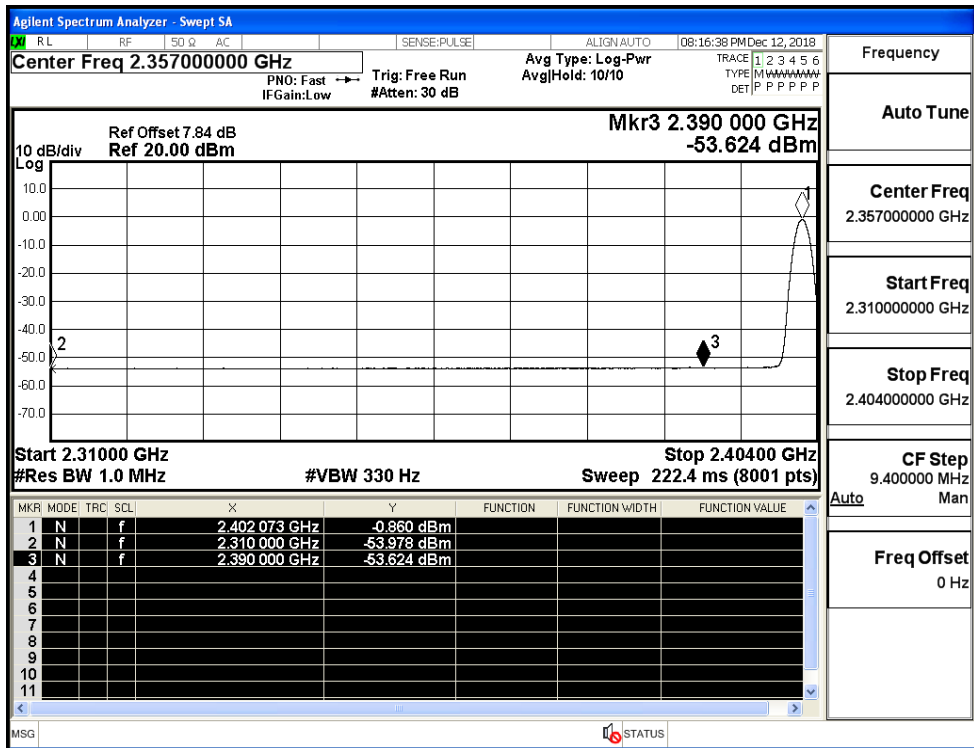
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



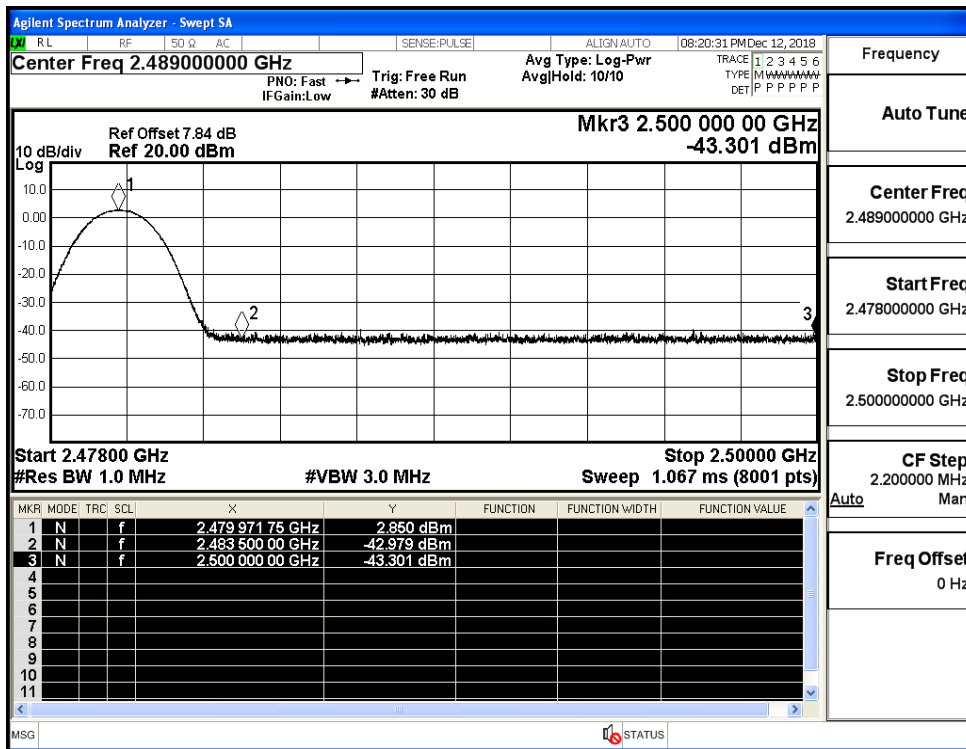
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

