

Appendix A

RF Test Data for BT V4.1 (BDR/EDR) (Conducted Measurement)

Product Name: Wireless Bone Conduction Headphones

Trade Mark: Vidonn

Test Model: Q2

Environmental Conditions

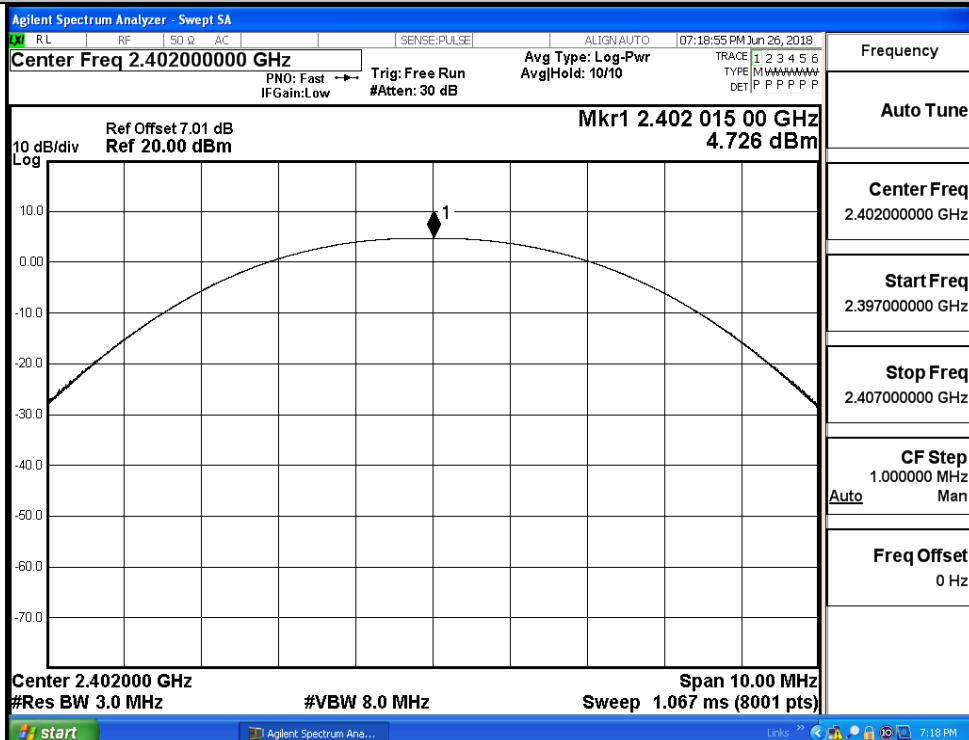
Temperature:	23.4 ° C
Relative Humidity:	53.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Wilson.Hong
Supervised by:	Jayden.Zhuo

A.1 Maximum Conducted Peak Output Power

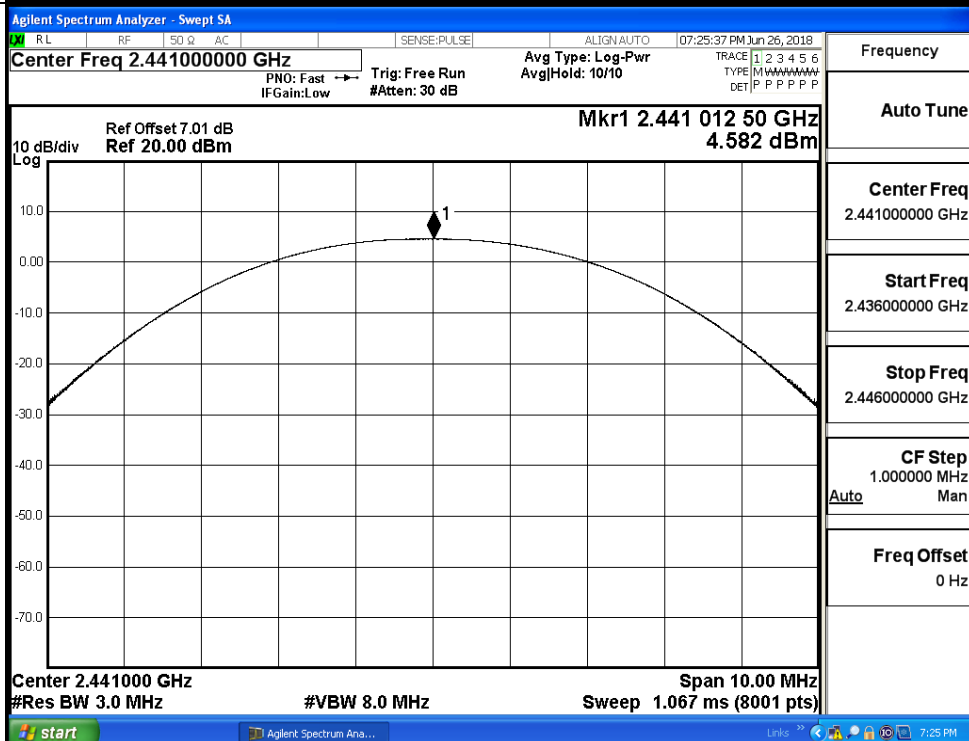
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	4.726	30	PASS
	MCH	4.582	30	PASS
	HCH	4.639	30	PASS
$\pi/4$ DQPSK	LCH	4.504	21	PASS
	MCH	4.586	21	PASS
	HCH	4.614	21	PASS
8DPSK	LCH	4.681	21	PASS
	MCH	4.718	21	PASS
	HCH	4.848	21	PASS

Test Graphs

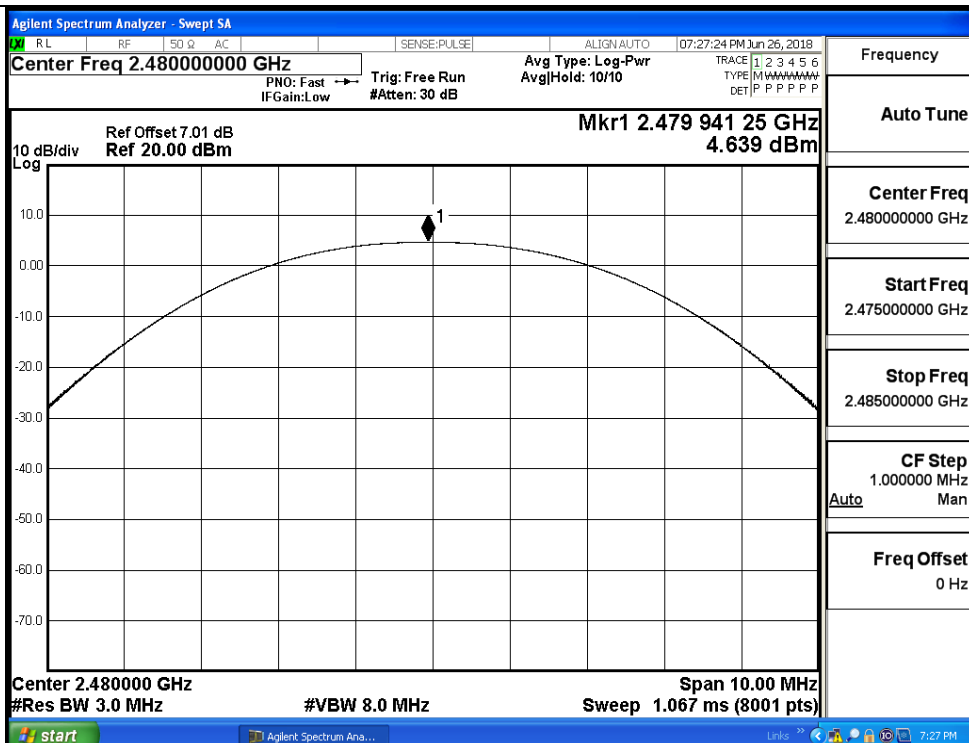
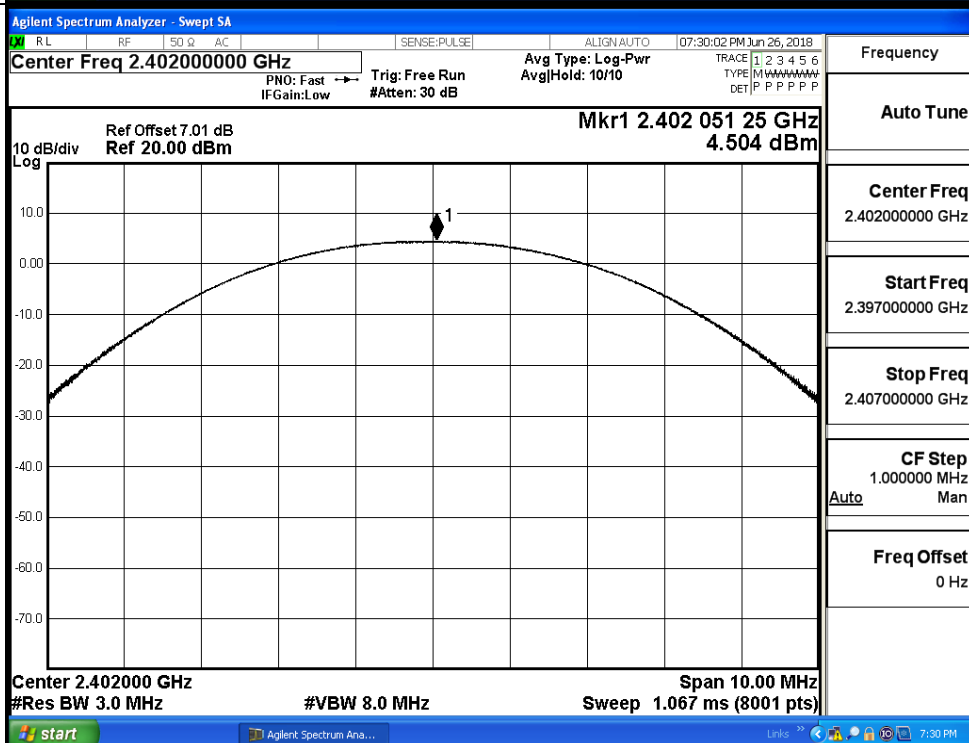
GFSK/LCH

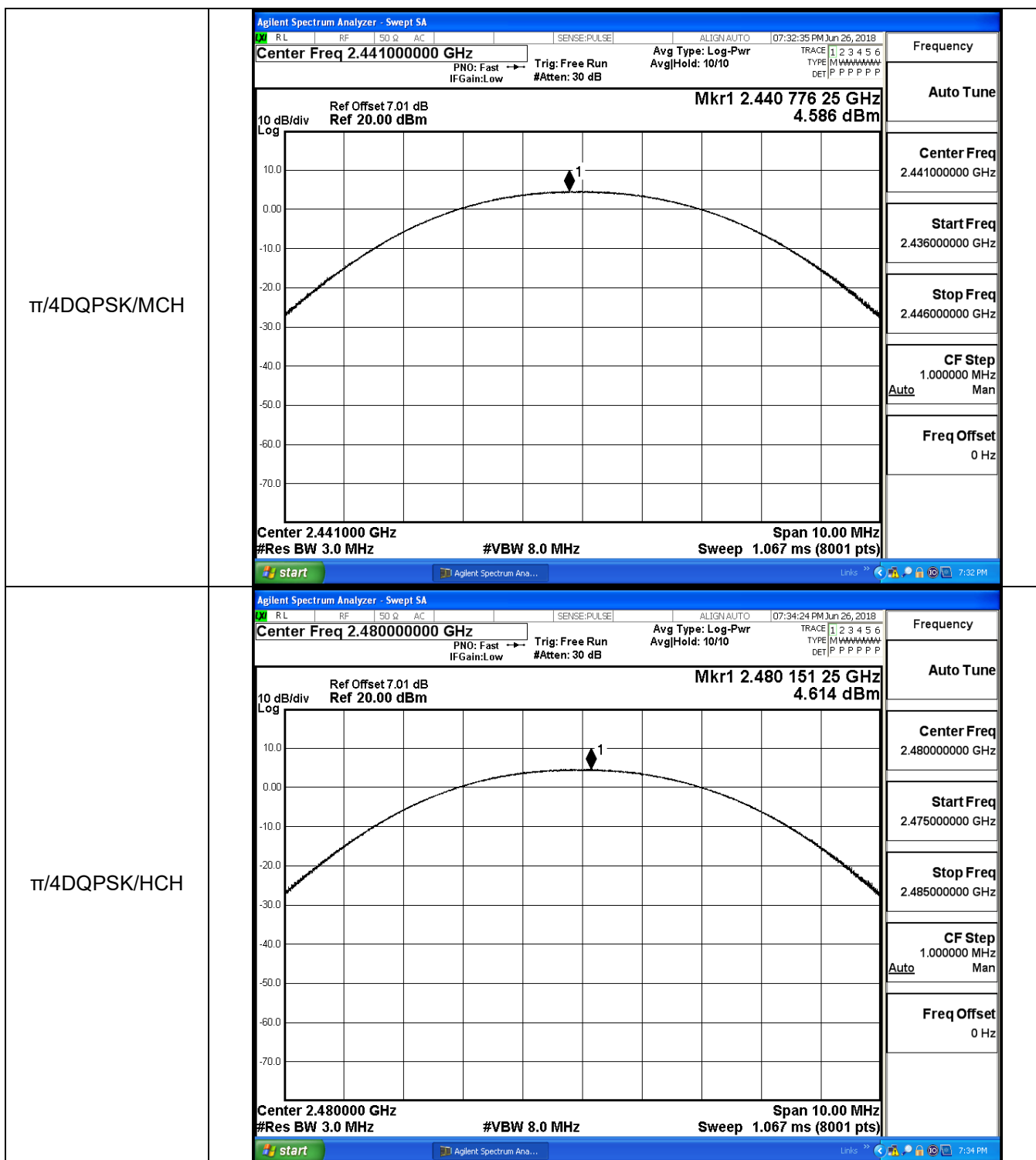


GFSK/MCH

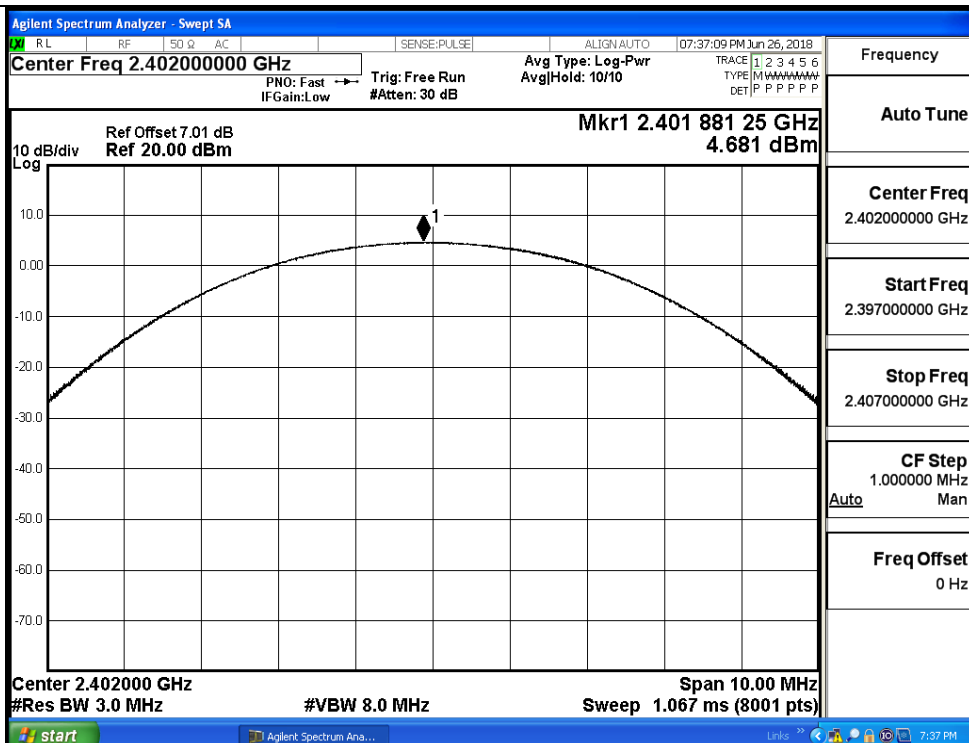


GFSK/HCH

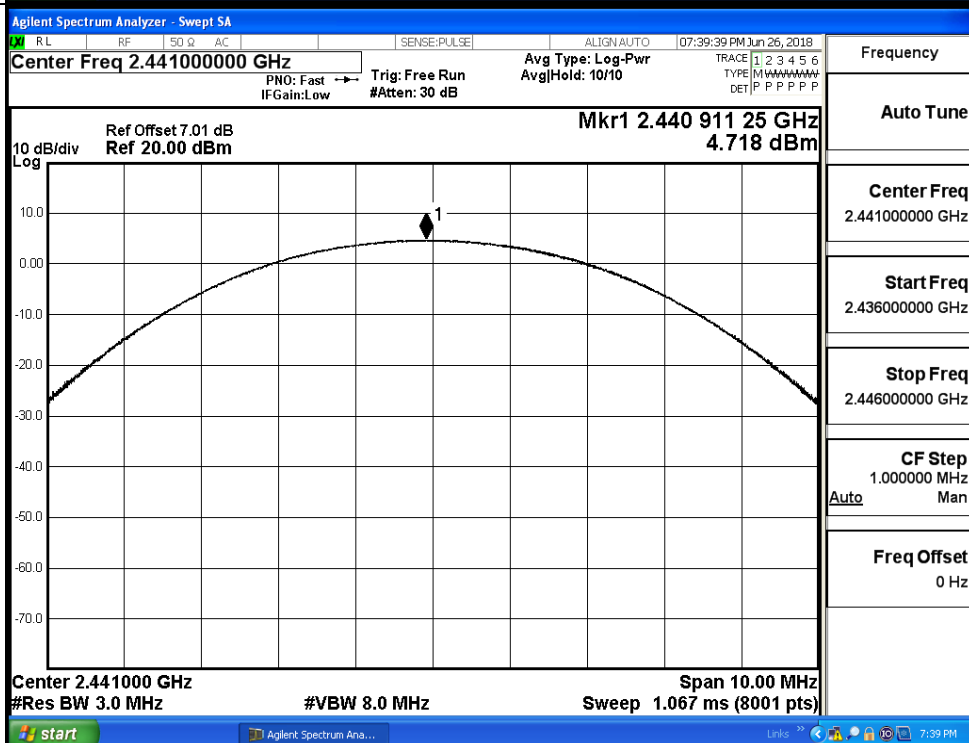
 π /4DQPSK/LCH



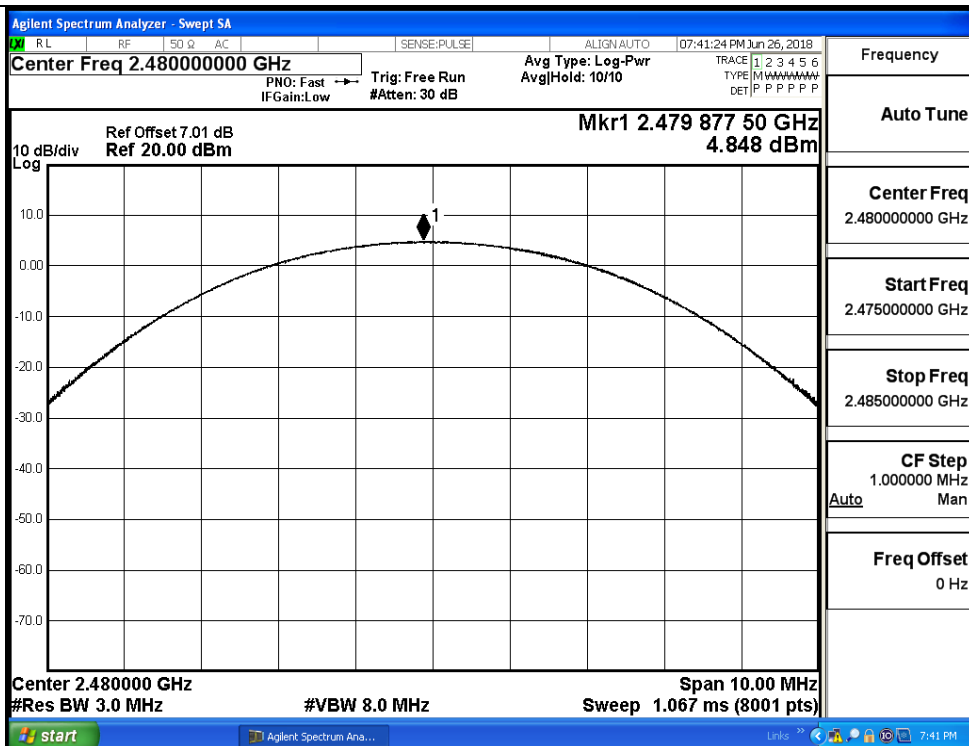
8DPSK/LCH



8DPSK/MCH



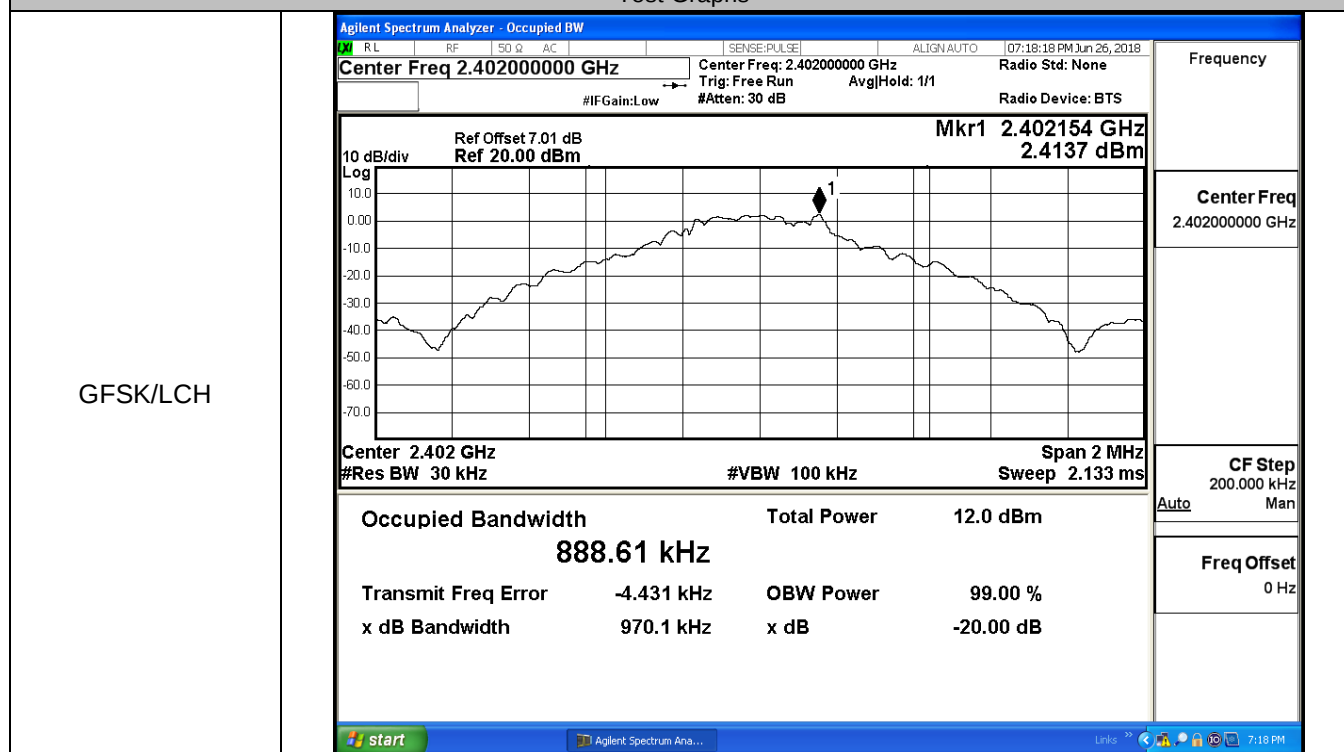
8DPSK/HCH



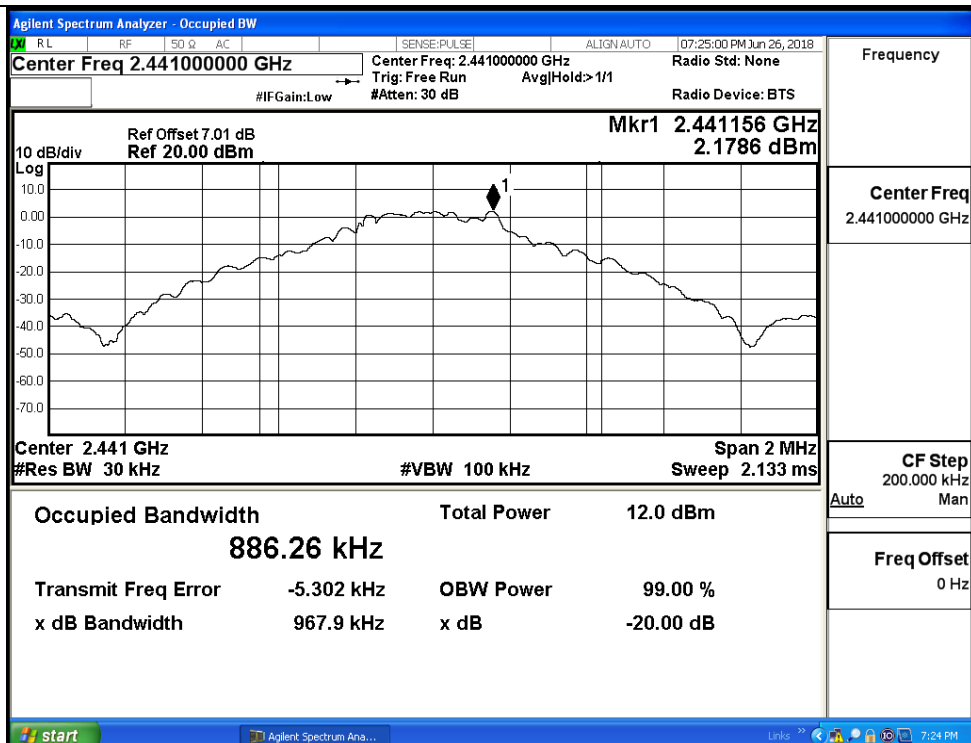
A.2 99% Occupied Bandwidth and 20dB Bandwidth

Mode	Channel.	99% Occupied Bandwidth (MHz)	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.88861	0.9701	Not Specified	PASS
	MCH	0.88626	0.9679	Not Specified	PASS
	HCH	0.88653	1.031	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.1721	1.293	Not Specified	PASS
	MCH	1.1659	1.288	Not Specified	PASS
	HCH	1.1678	1.288	Not Specified	PASS
8DPSK	LCH	1.1792	1.292	Not Specified	PASS
	MCH	1.1753	1.291	Not Specified	PASS
	HCH	1.1727	1.291	Not Specified	PASS

Test Graphs



GFSK/MCH



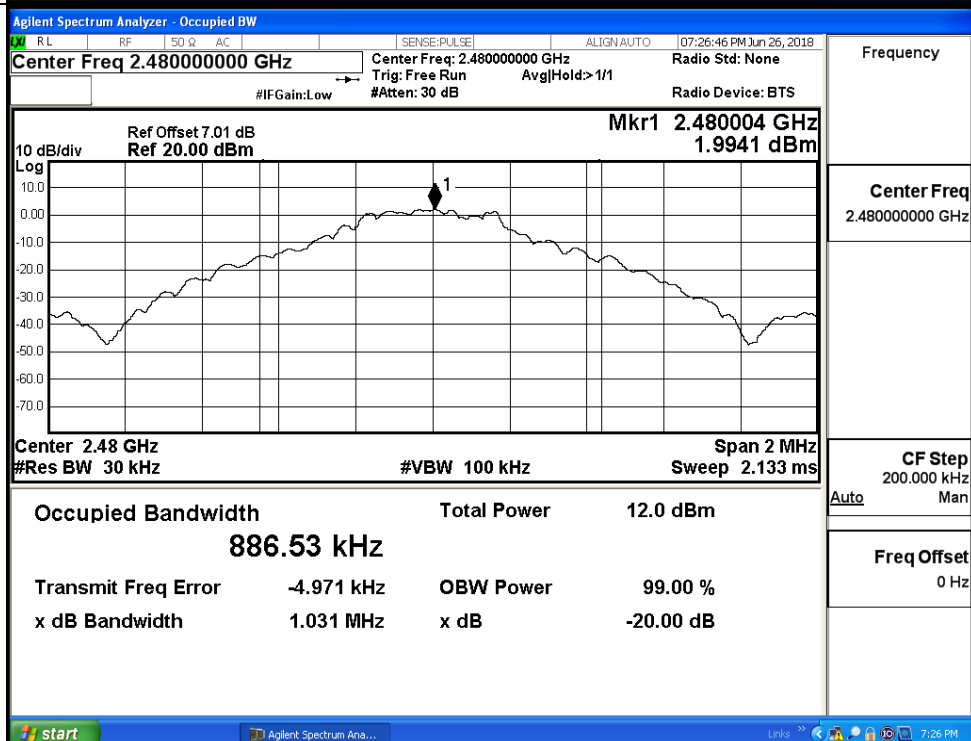
Frequency

Center Freq
2.441000000 GHzCF Step
200.000 kHz
Man

Auto

Freq Offset
0 Hz

GFSK/HCH

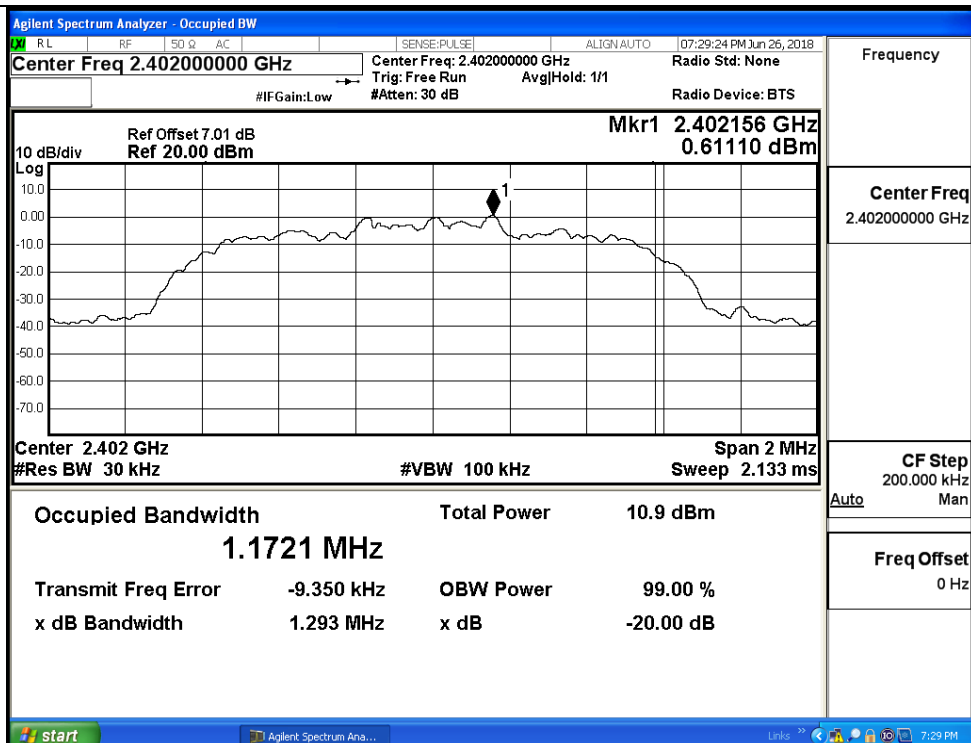


Frequency

Center Freq
2.480000000 GHzCF Step
200.000 kHz
Man

Auto

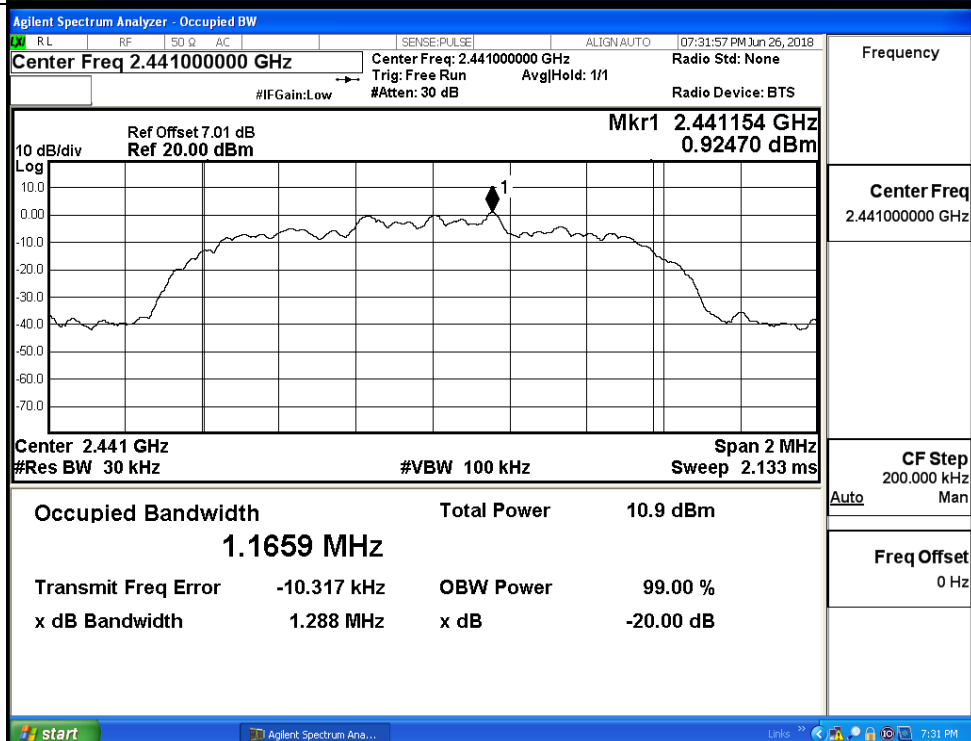
Freq Offset
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$\pi/4$ DQPSK/LCH

Frequency

Center Freq
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200.000 kHz
Man

Auto

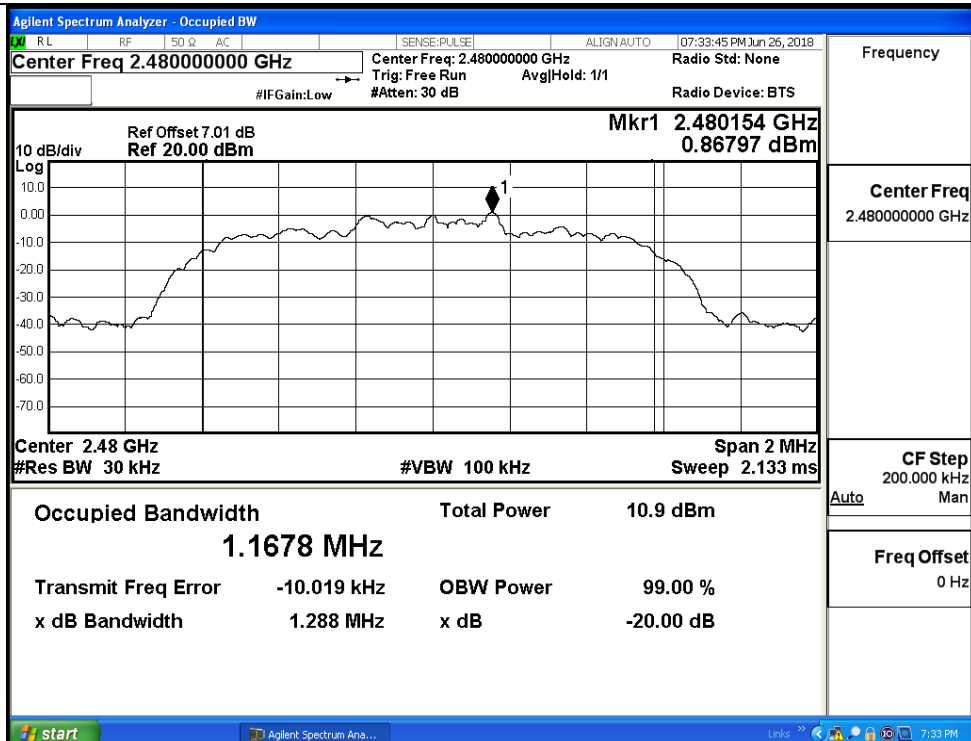
Freq Offset
0 Hz $\pi/4$ DQPSK/MCH

Frequency

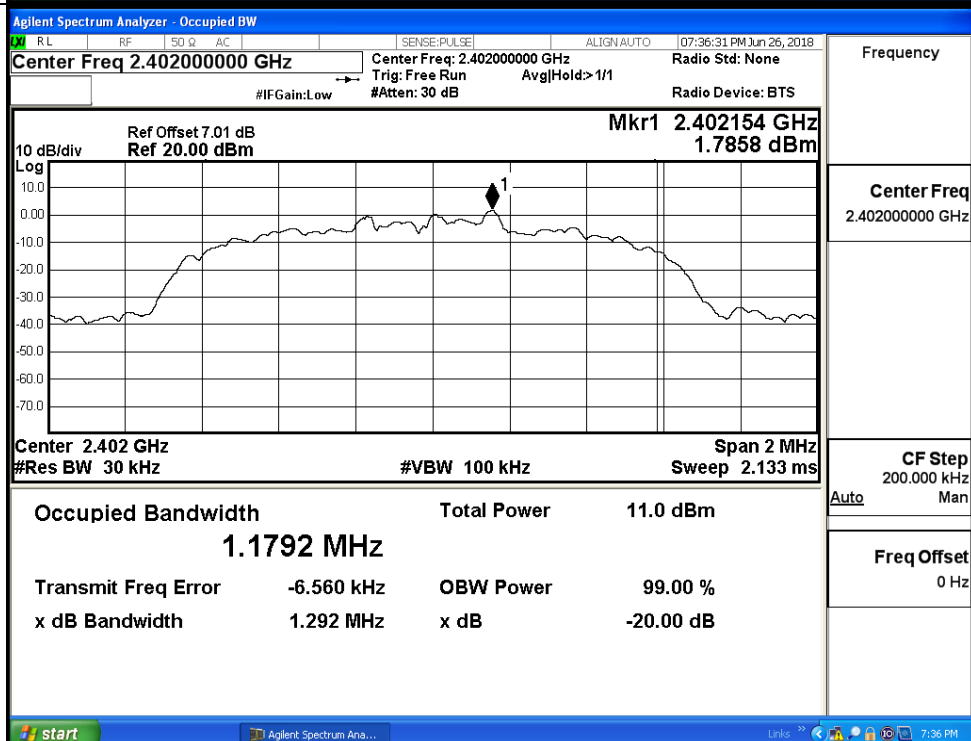
Center Freq
2.441000000 GHzCF Step
200.000 kHz
Man

Auto

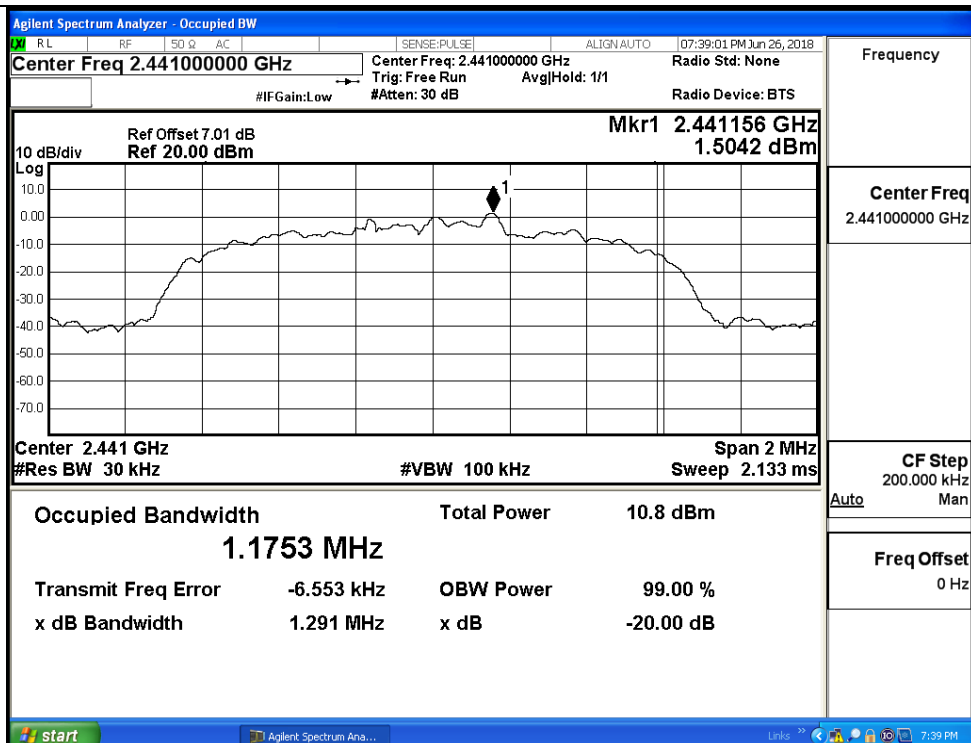
Freq Offset
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$\pi/4$ DQPSK/HCH

8DPSK/LCH



8DPSK/MCH



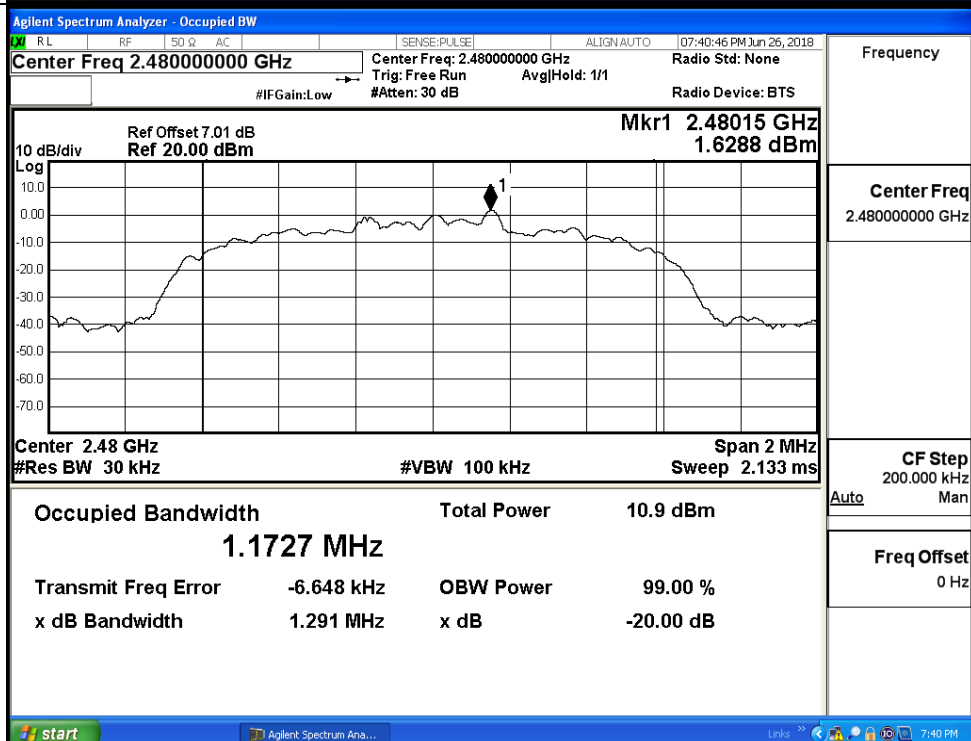
Frequency

Center Freq
2.441000000 GHzCF Step
200.000 kHz
Man

Auto

Freq Offset
0 Hz

8DPSK/HCH



Frequency

Center Freq
2.480000000 GHzCF Step
200.000 kHz
Man

Auto

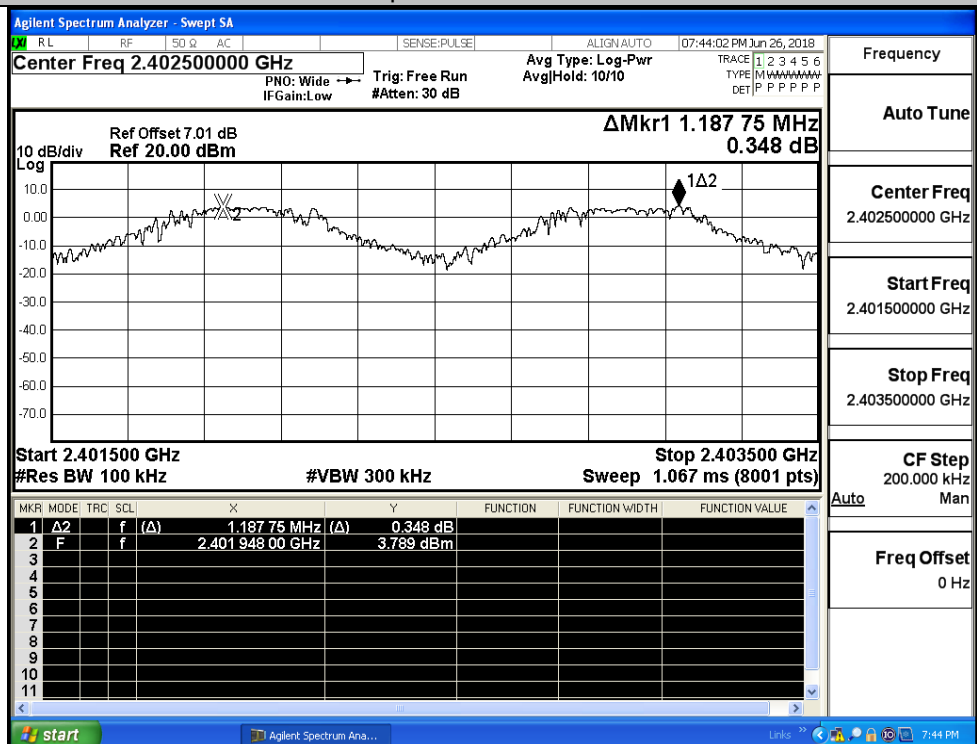
Freq Offset
0 Hz

A.3 Carrier Frequency Separation

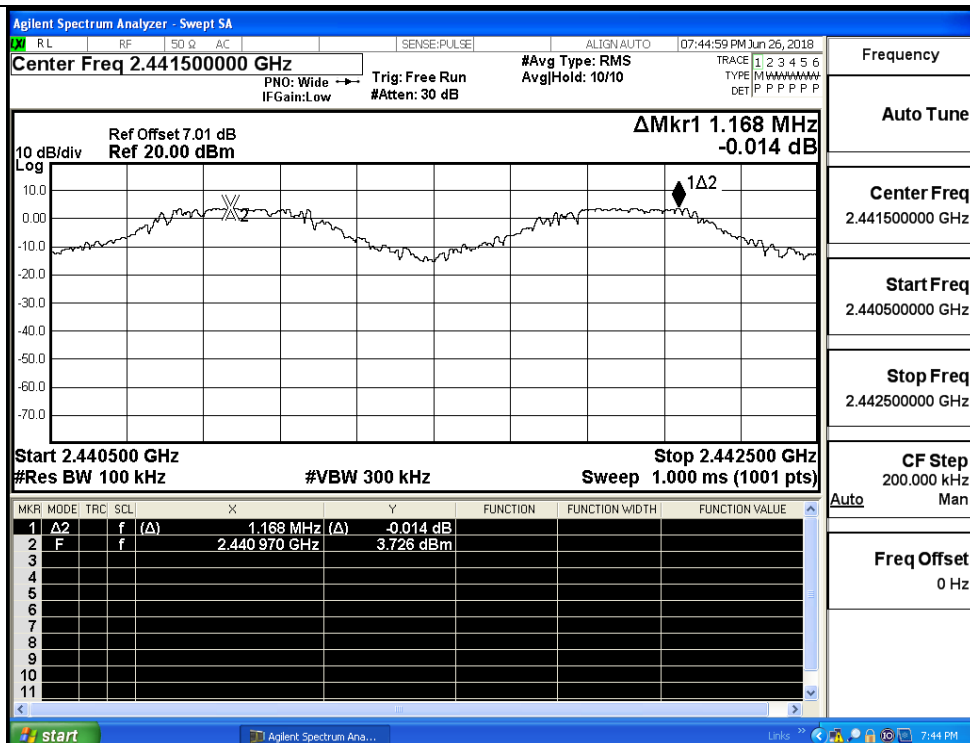
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.188	0.647	PASS
	MCH	1.168	0.645	PASS
	HCH	1.012	0.687	PASS
π /4DQPSK	LCH	1.098	0.862	PASS
	MCH	1.046	0.859	PASS
	HCH	1.210	0.859	PASS
8DPSK	LCH	1.308	0.861	PASS
	MCH	1.144	0.861	PASS
	HCH	1.018	0.861	PASS

Test Graphs

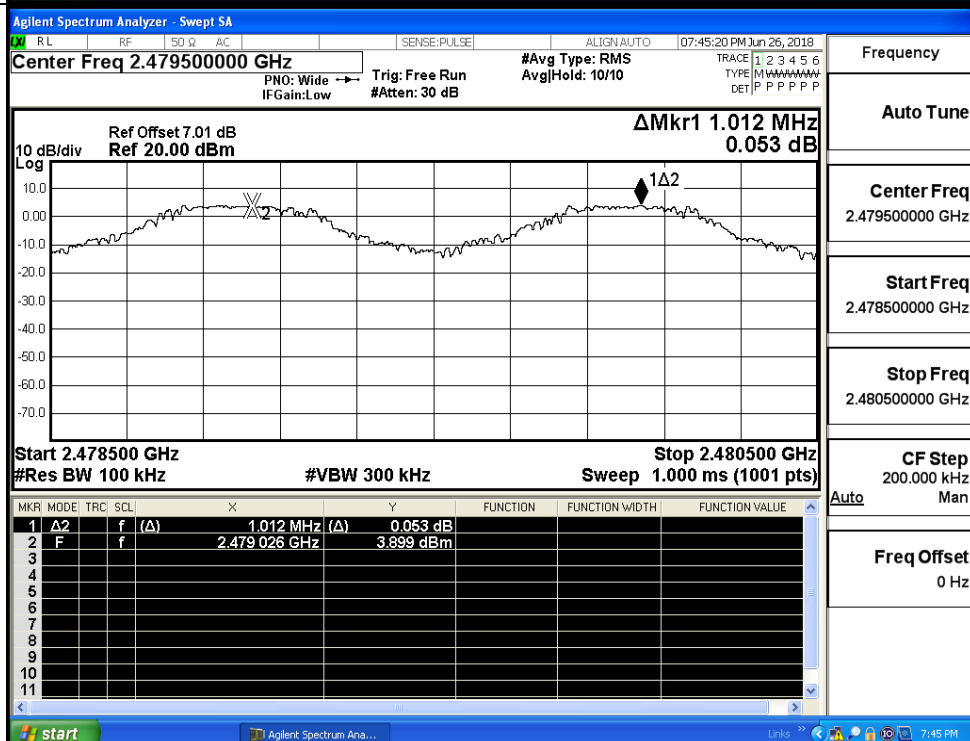
GFSK/LCH

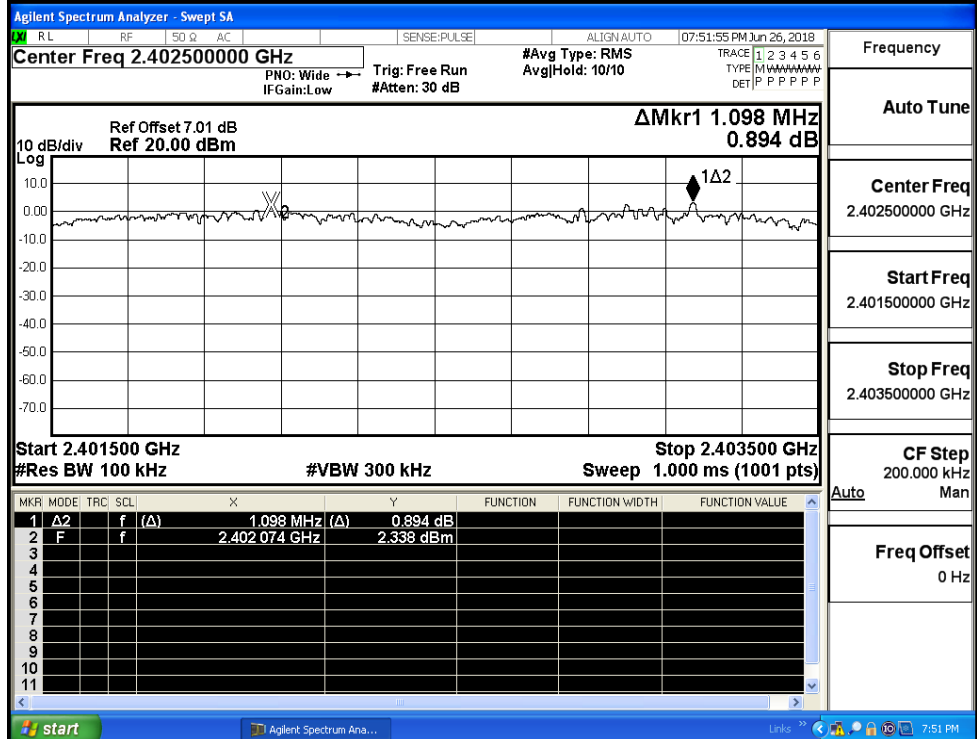
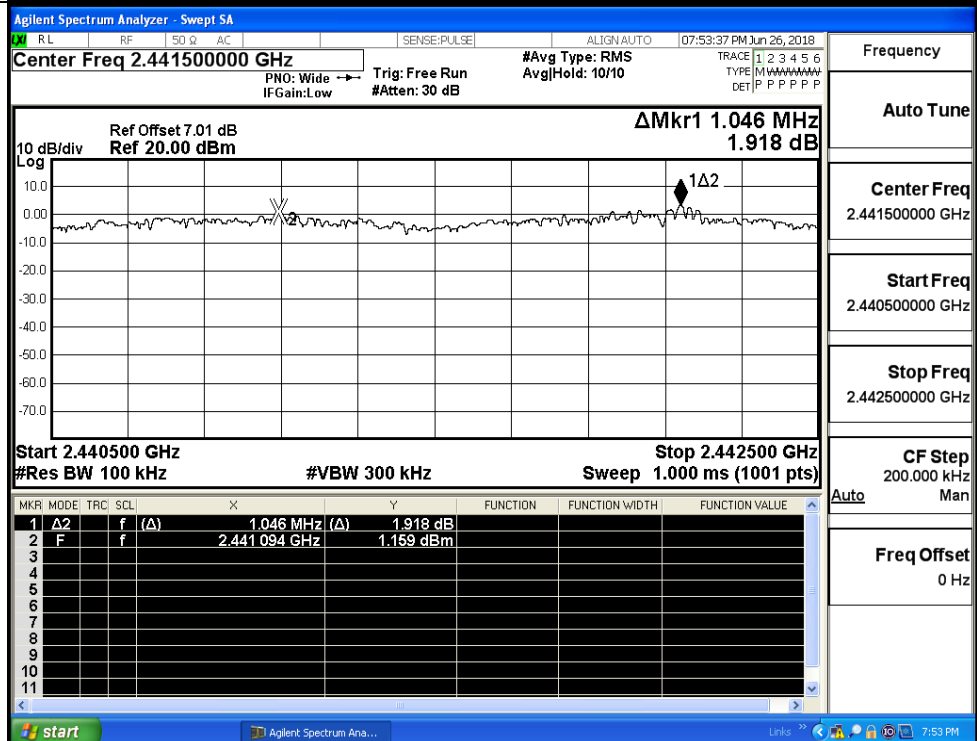


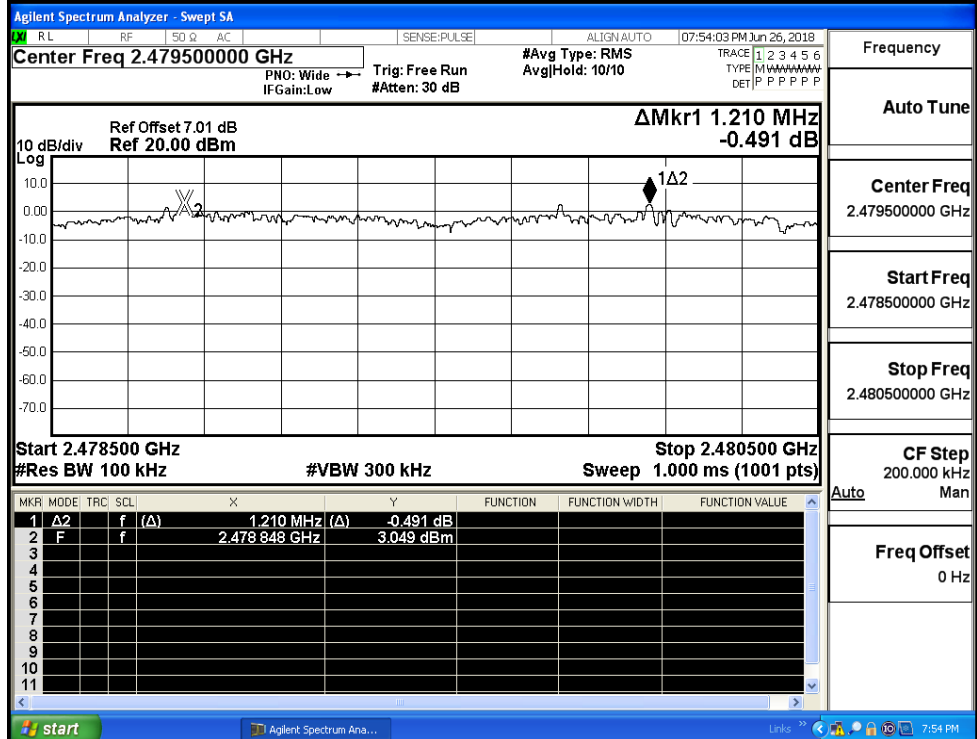
GFSK/MCH



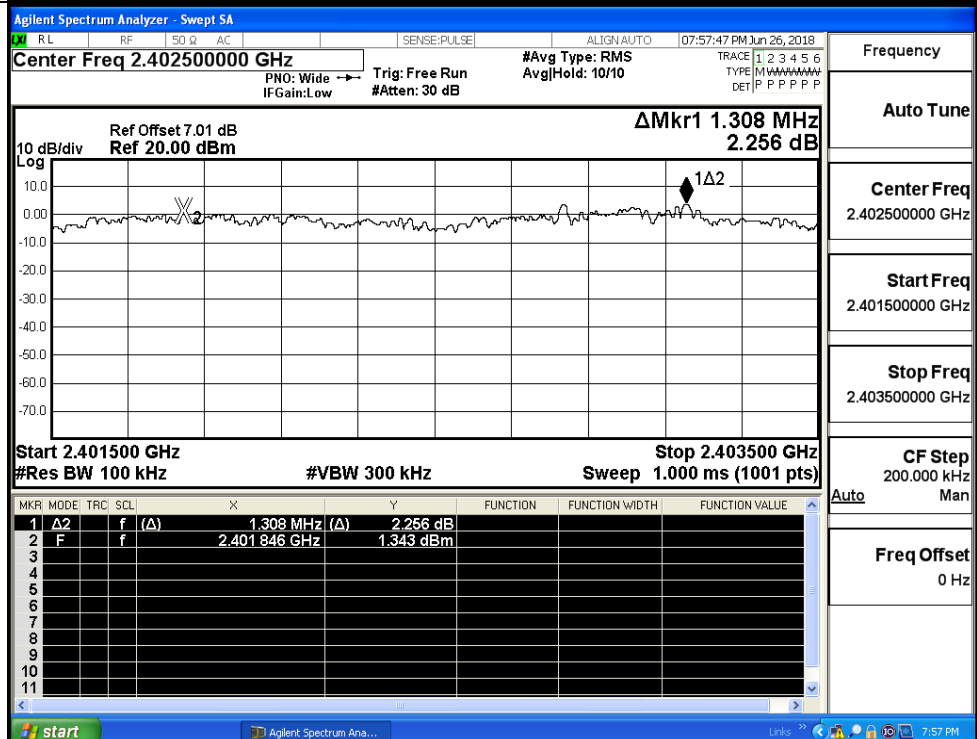
GFSK/HCH



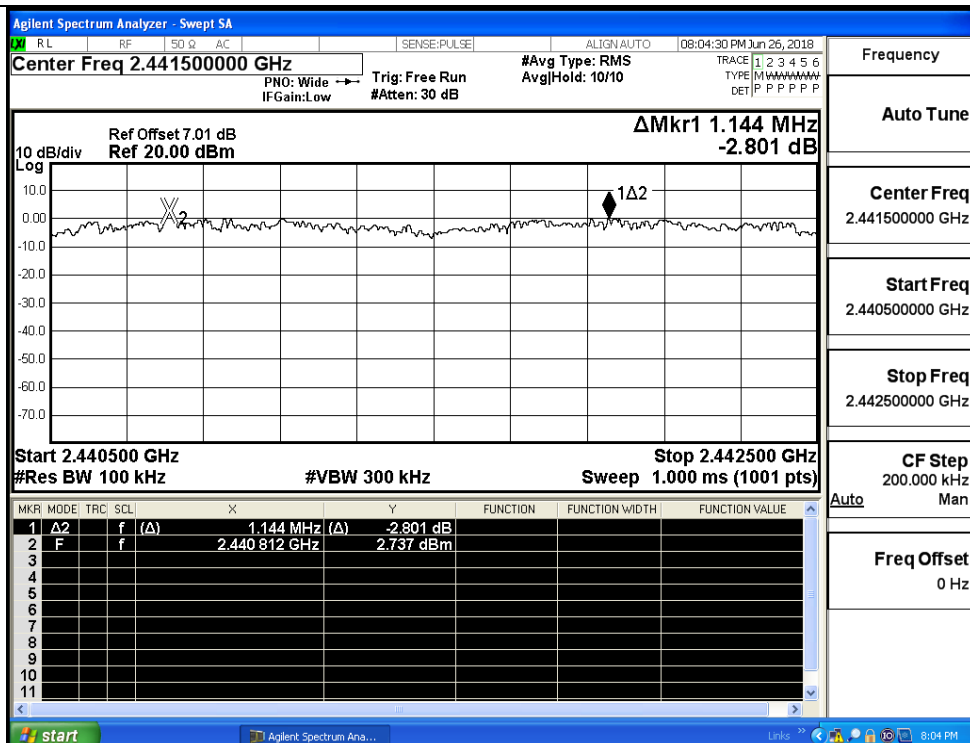
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

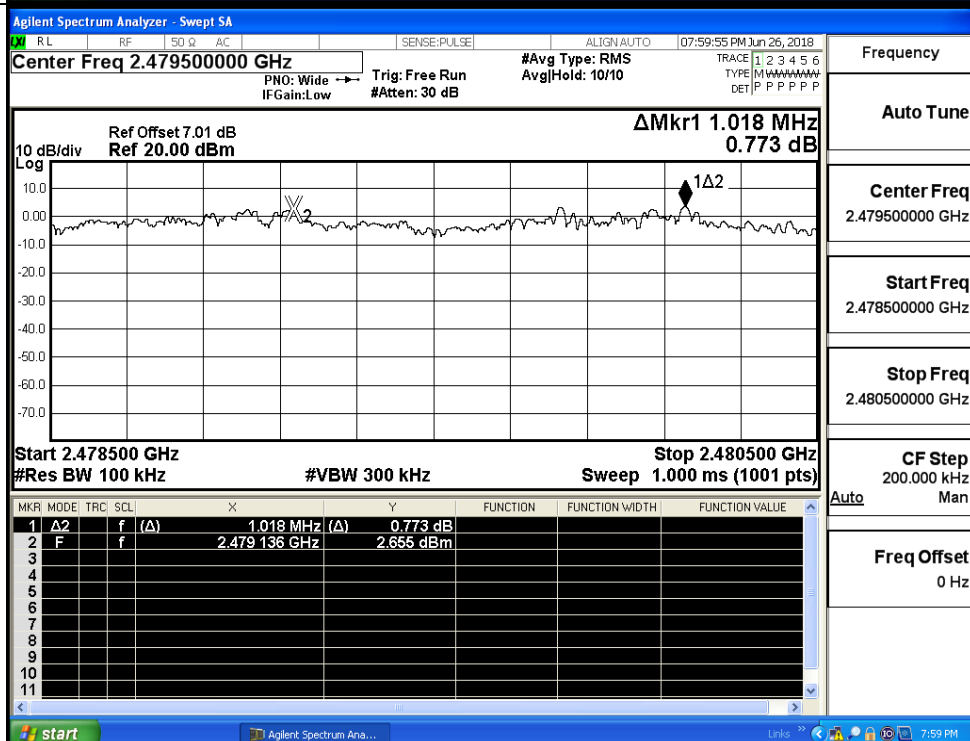
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

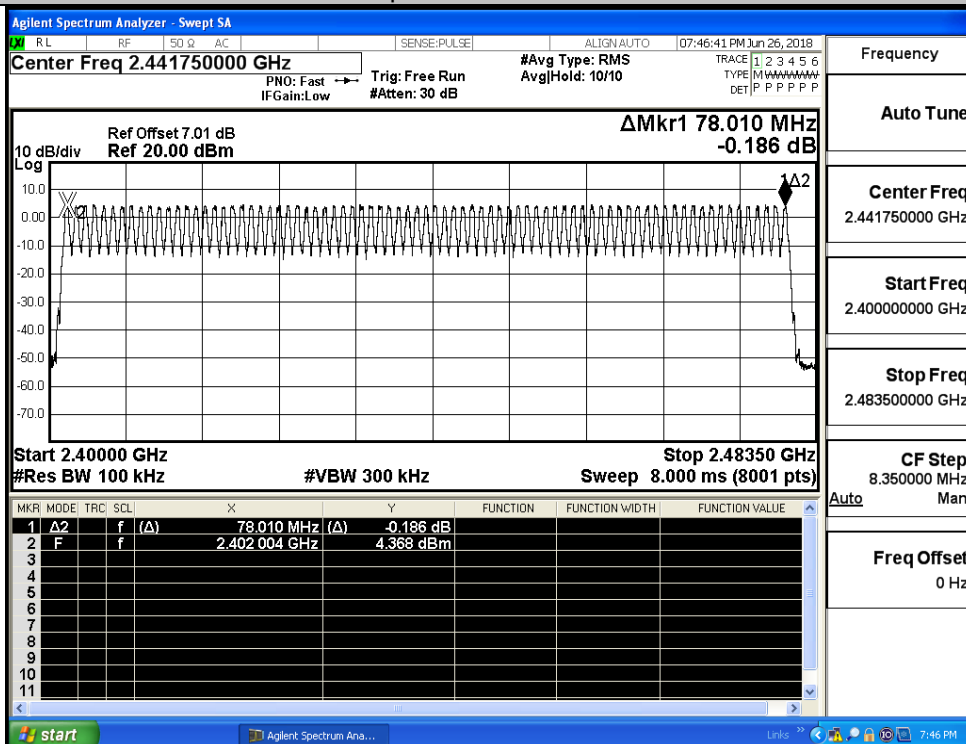


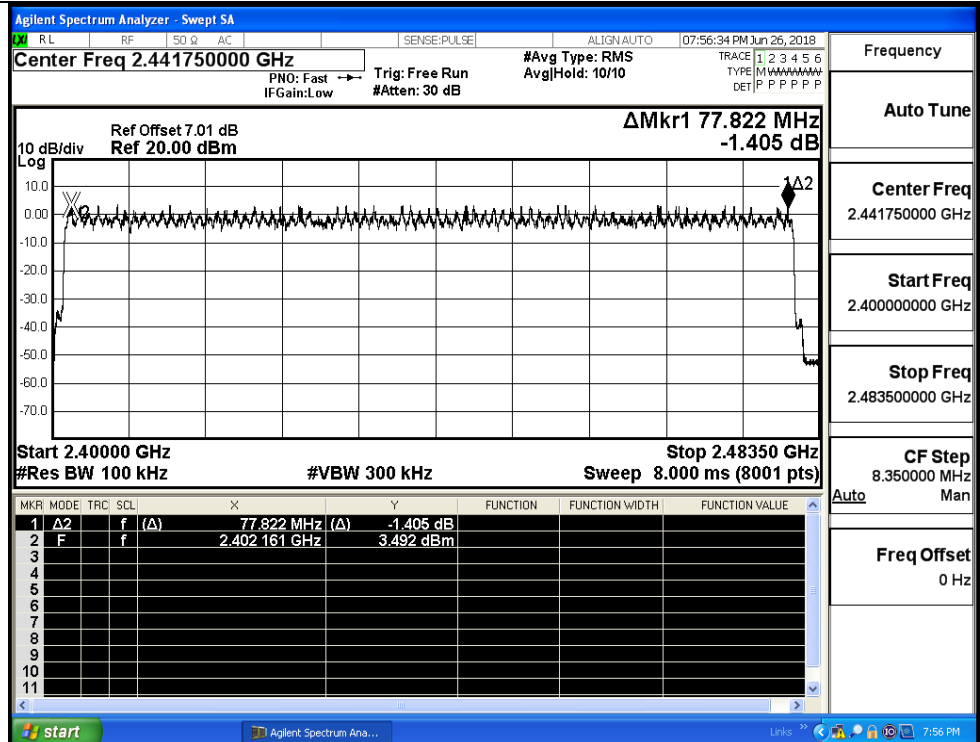
A.4 Hopping Channel Number

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

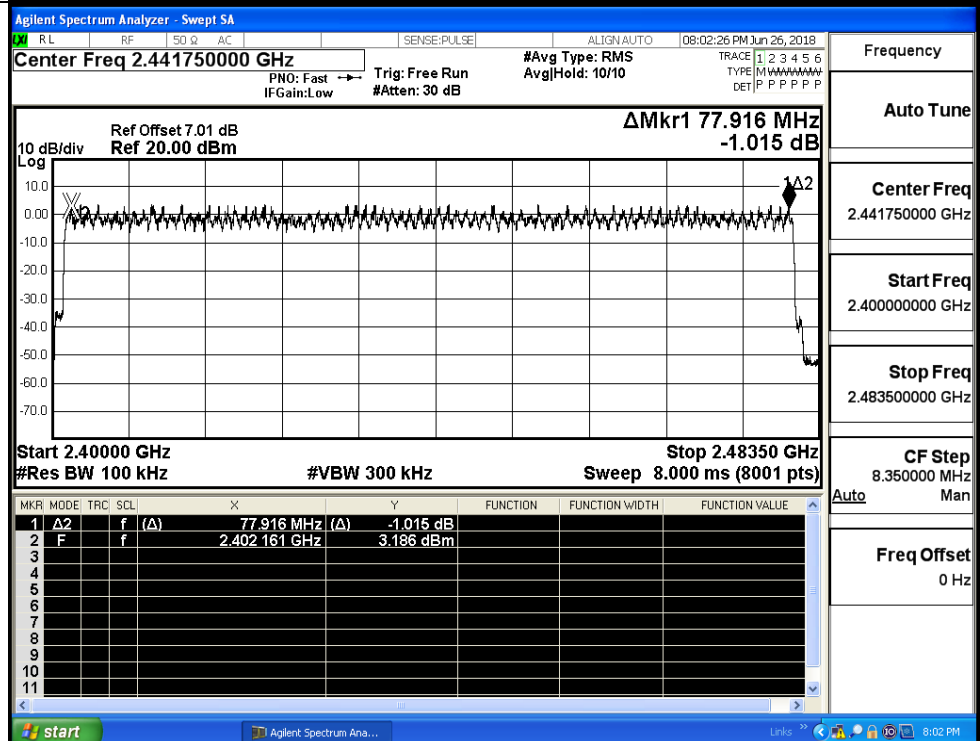
Test Graphs

GFSK/Hop



$\pi/4$ DQPSK/Hop

8DPSK/Hop

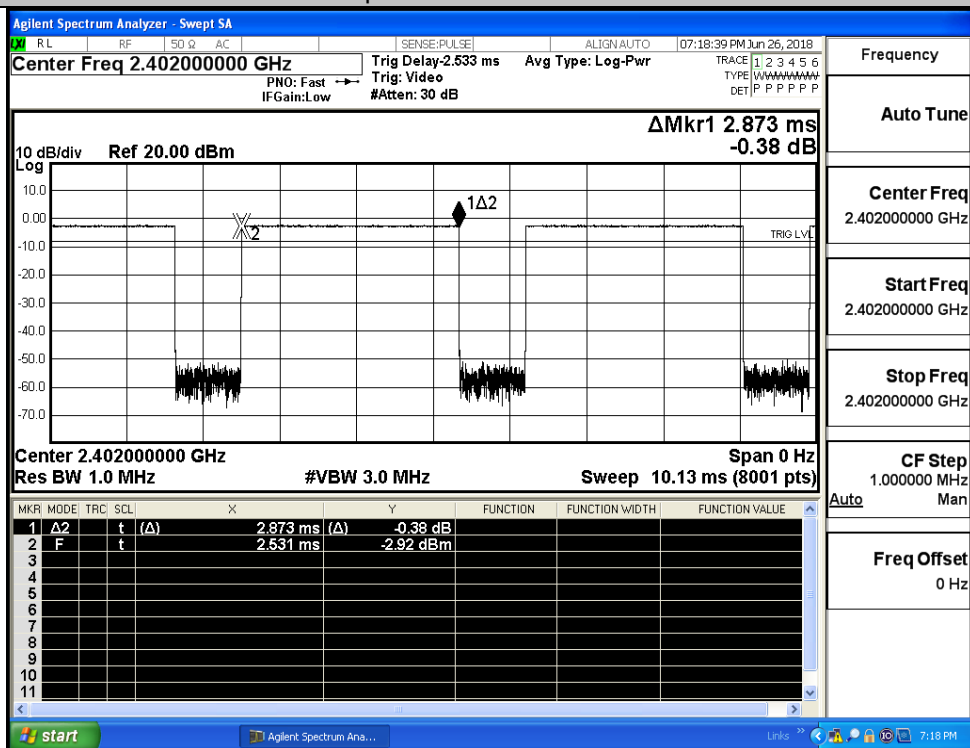


A.5 Dwell Time

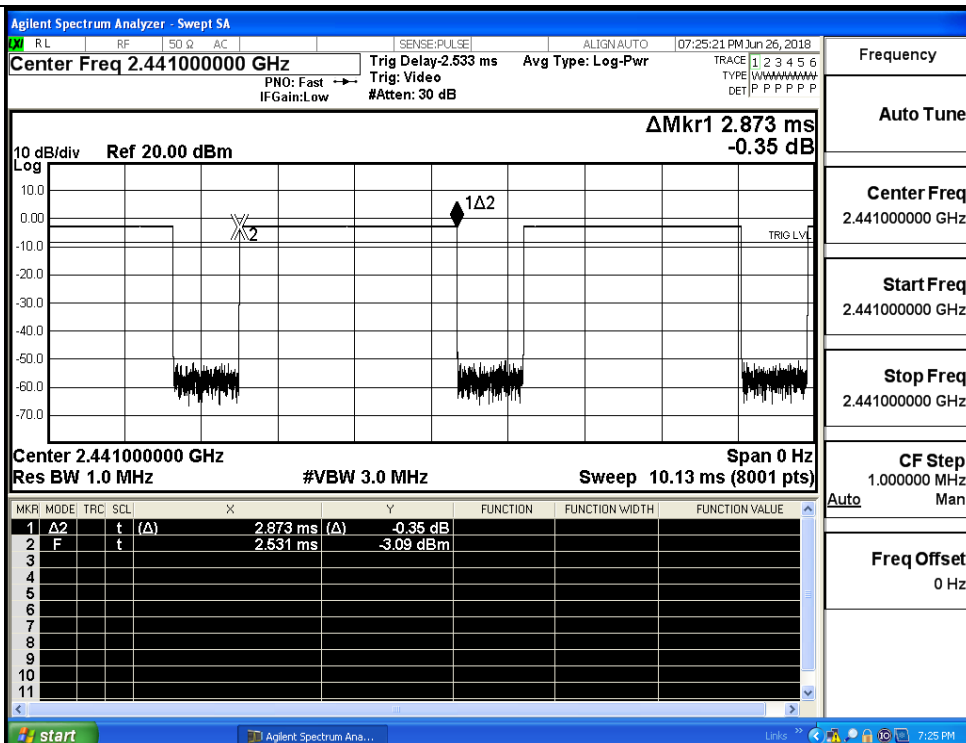
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.87	106.7	0.306	0.4	PASS
	DH5	MCH	2.87	106.7	0.306	0.4	PASS
	DH5	HCH	2.87	106.7	0.306	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.87	106.7	0.307	0.4	PASS
	2DH5	MCH	2.87	106.7	0.307	0.4	PASS
	2DH5	HCH	2.87	106.7	0.307	0.4	PASS
8DPSK	3DH5	LCH	2.87	106.7	0.307	0.4	PASS
	3DH5	MCH	2.87	106.7	0.307	0.4	PASS
	3DH5	HCH	2.87	106.7	0.307	0.4	PASS

Test Graphs

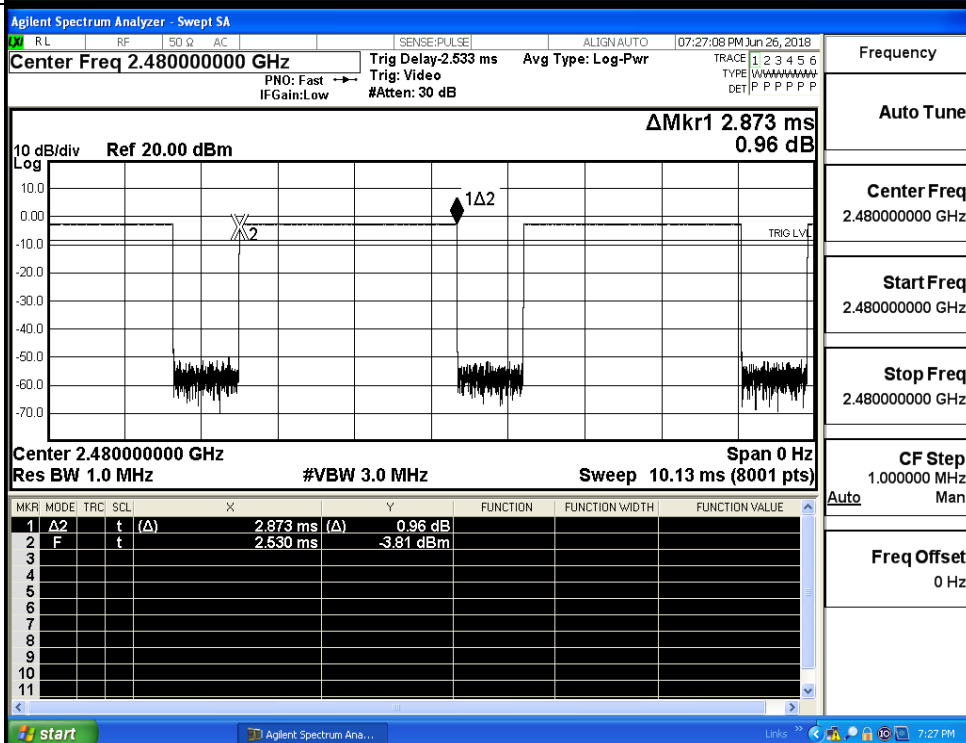
GFSK_DH5/LCH

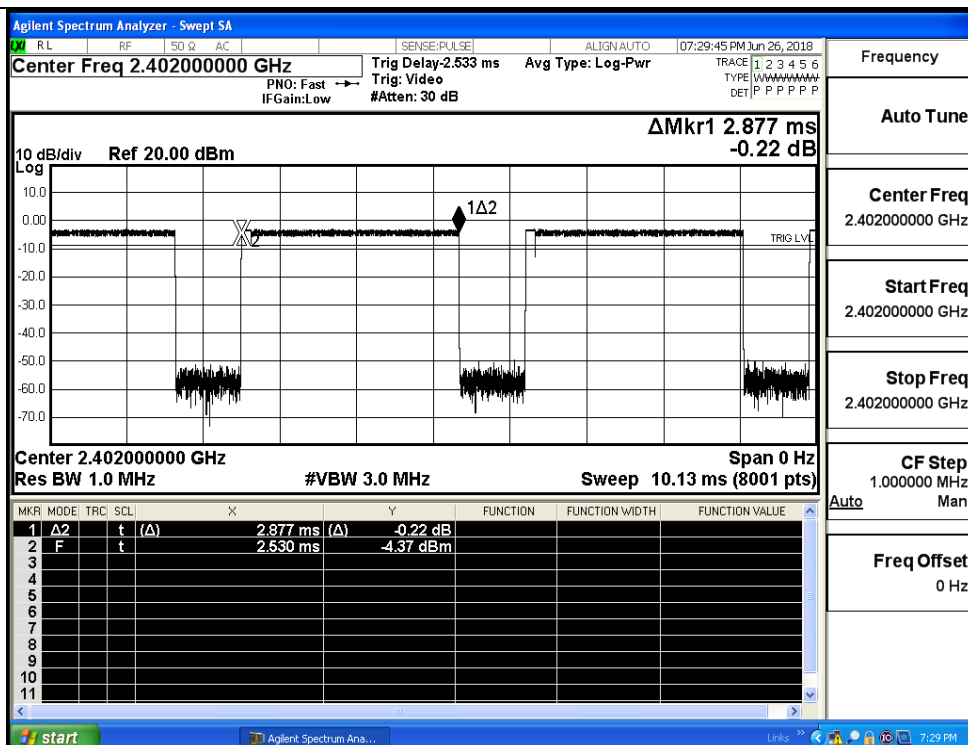
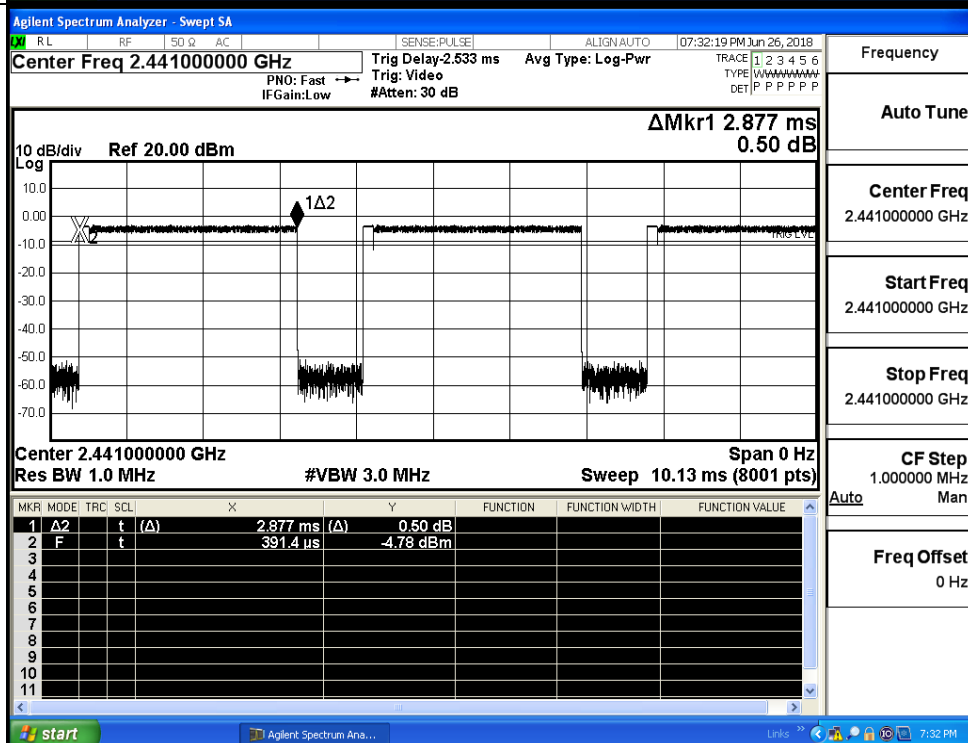


GFSK_DH5/MCH

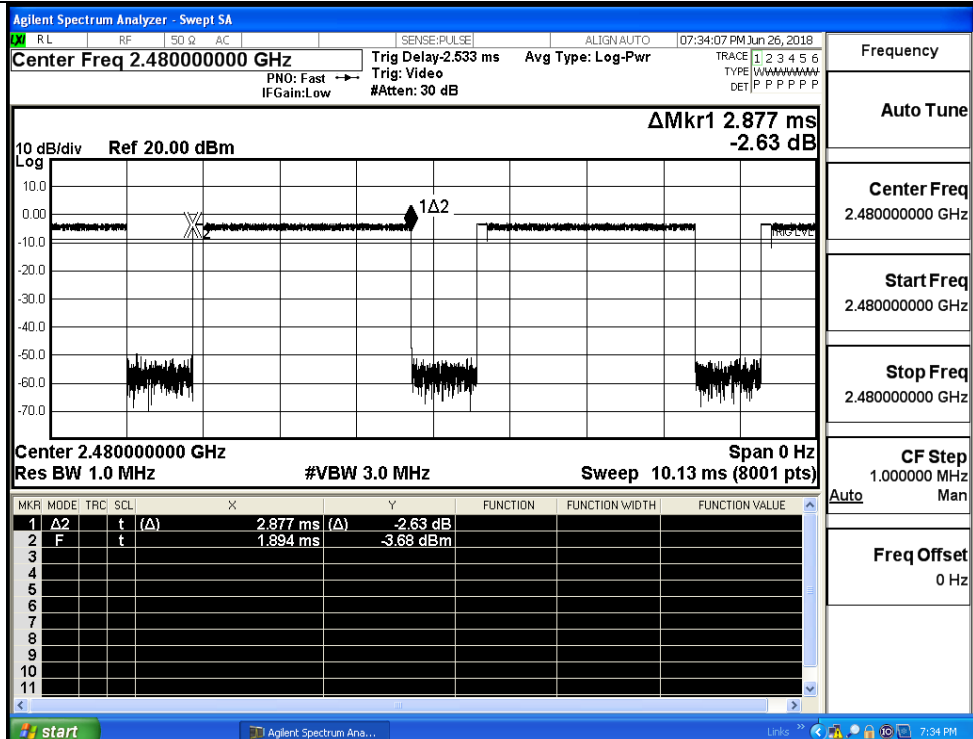


GFSK_DH5/HCH

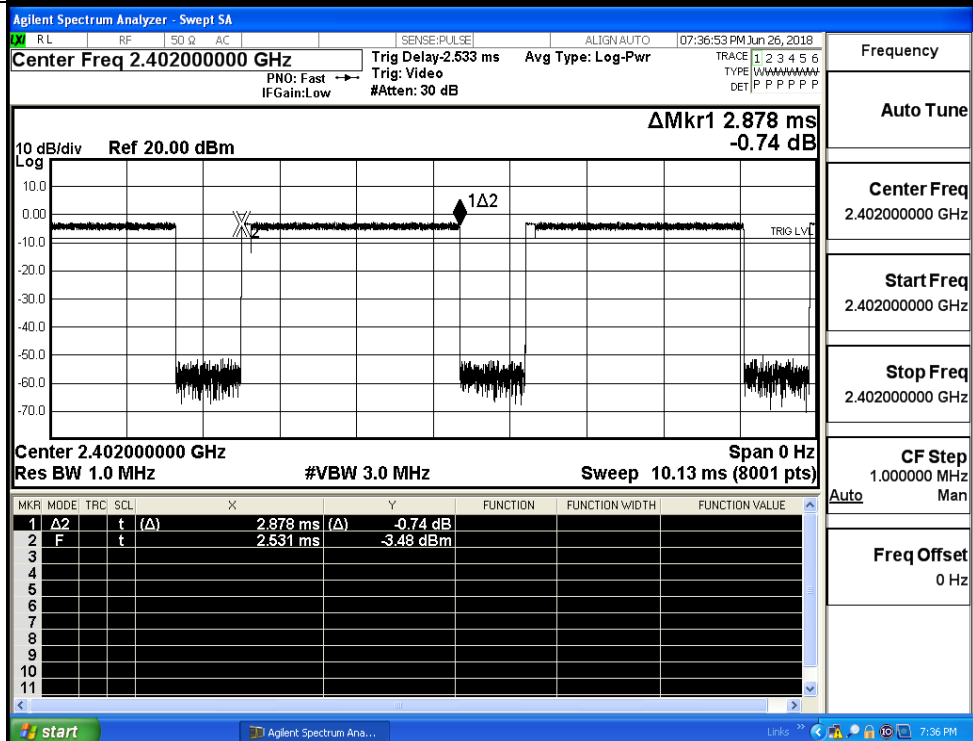


$\pi/4$ DQPSK
_2DH5/LCH $\pi/4$ DQPSK
_2DH5/MCH

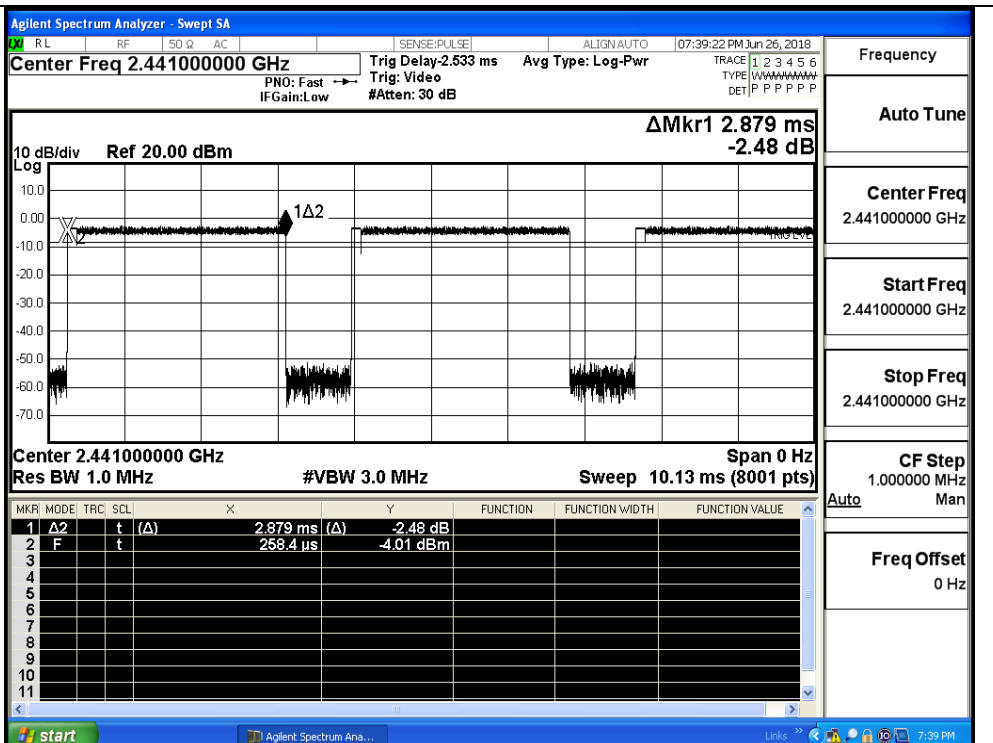
$\pi/4$ DQPSK
_2DH5/HCH



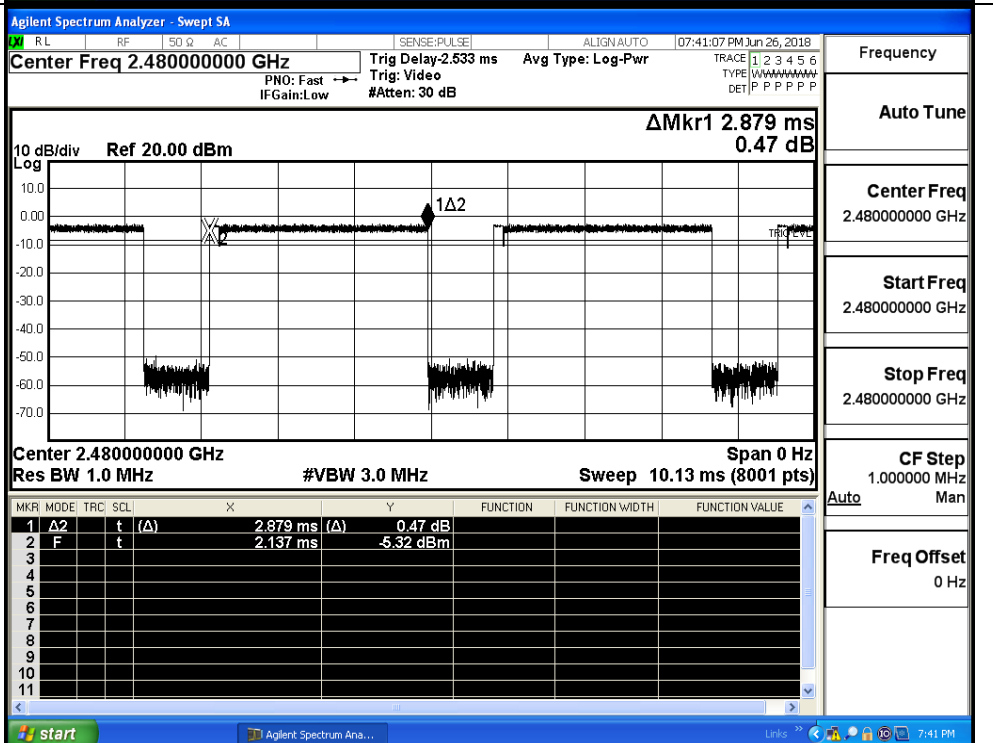
8DPSK_3DH5/LCH



8DPSK_3DH5/MCH



8DPSK_3DH5/HCH

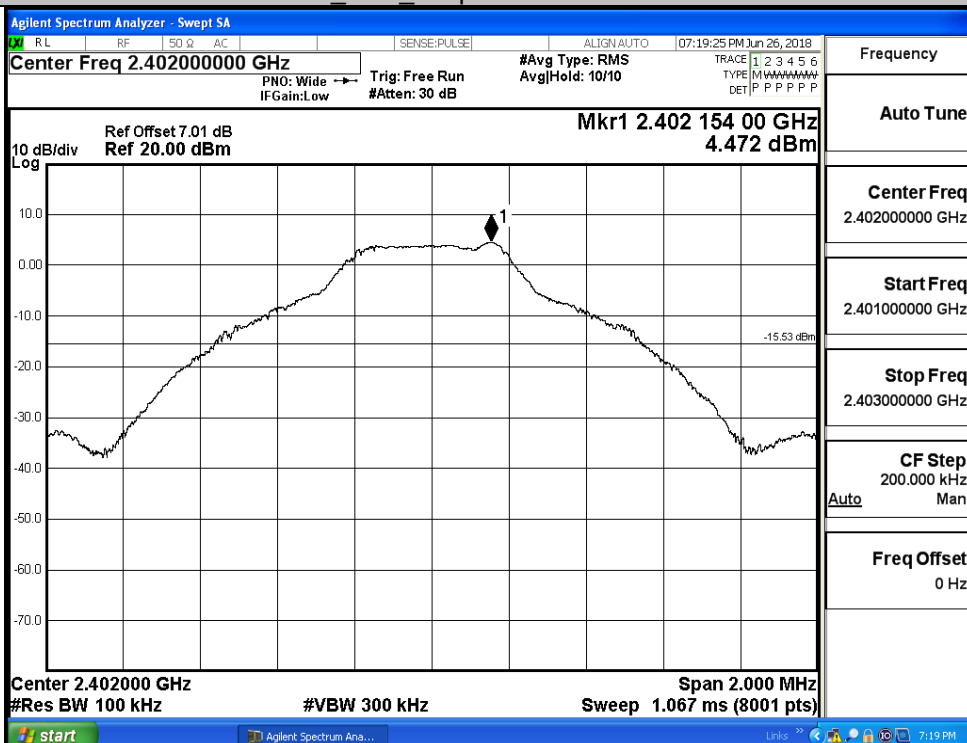


A.6 RF Conducted Spurious Emissions

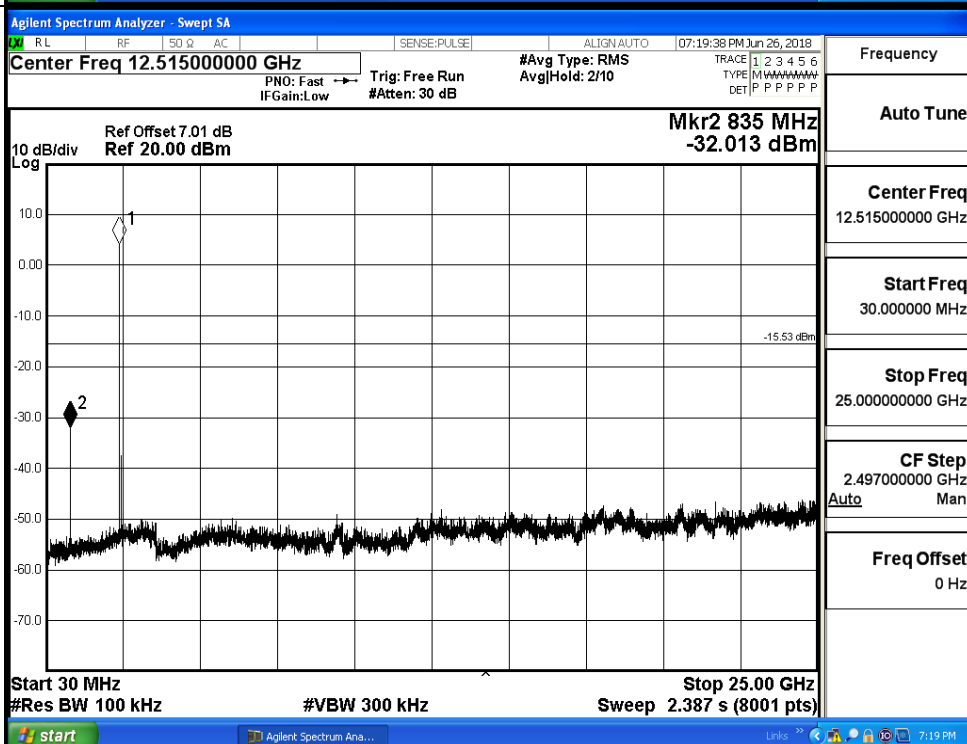
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	4.472	-32.013	-15.528	PASS
	MCH	4.317	-38.732	-15.683	PASS
	HCH	4.429	-32.581	-15.571	PASS
$\pi/4$ DQPSK	LCH	3.517	-39.028	-16.483	PASS
	MCH	3.686	-33.676	-16.314	PASS
	HCH	3.669	-45.817	-16.331	PASS
8DPSK	LCH	3.548	-34.065	-16.452	PASS
	MCH	3.743	-38.886	-16.257	PASS
	HCH	3.794	-37.746	-16.206	PASS

GFSK LCH Graphs

Pref

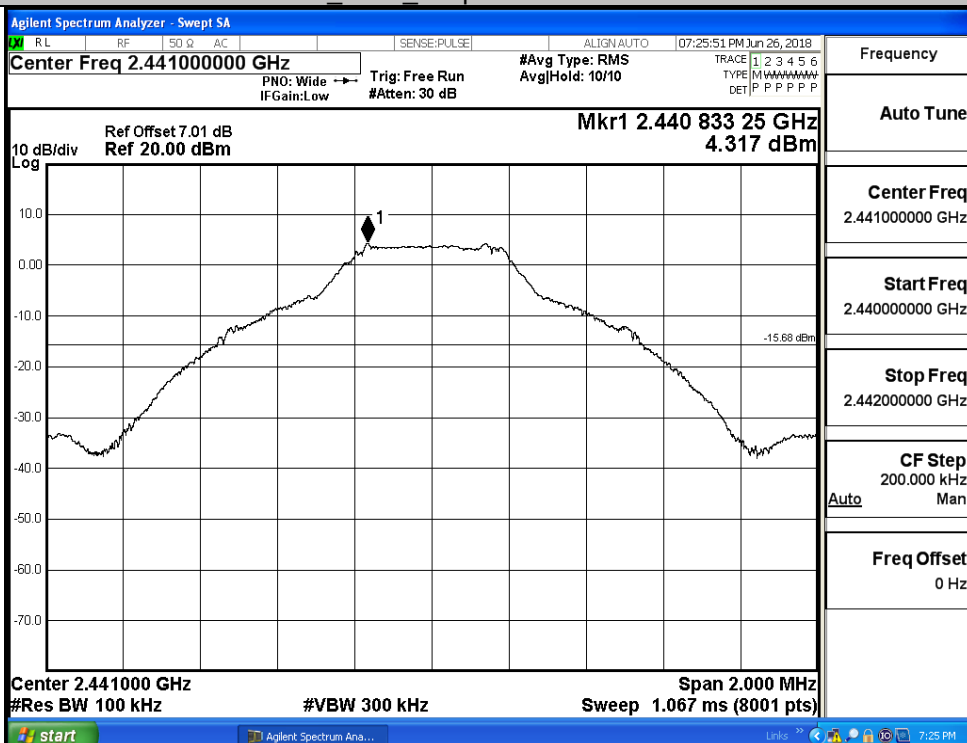


Puw

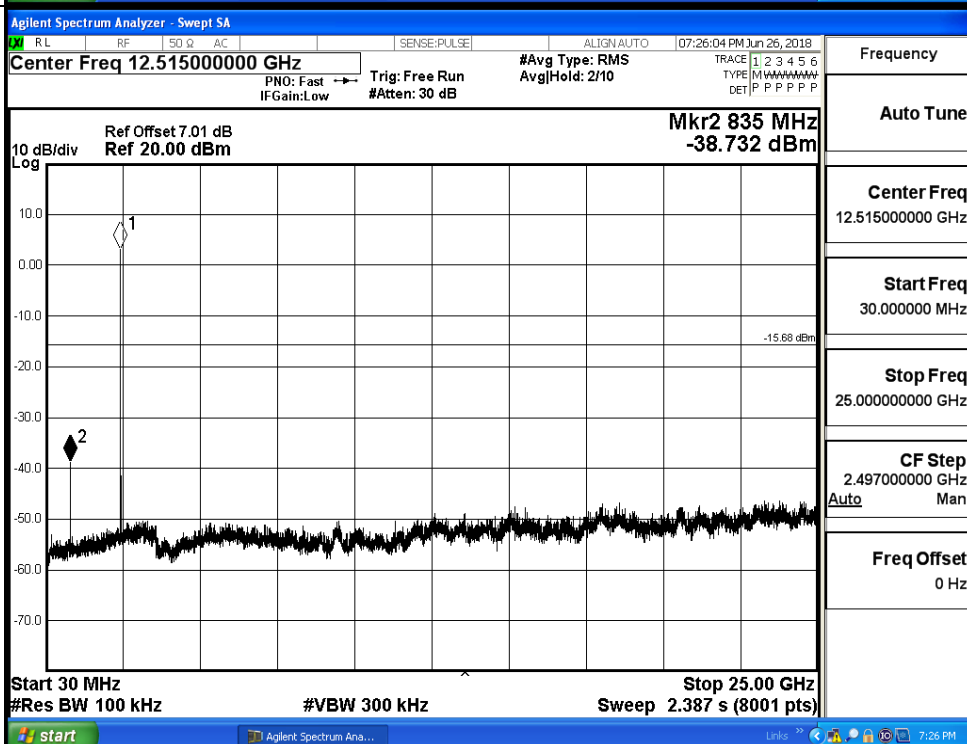


GFSK MCH_Graphs

Pref

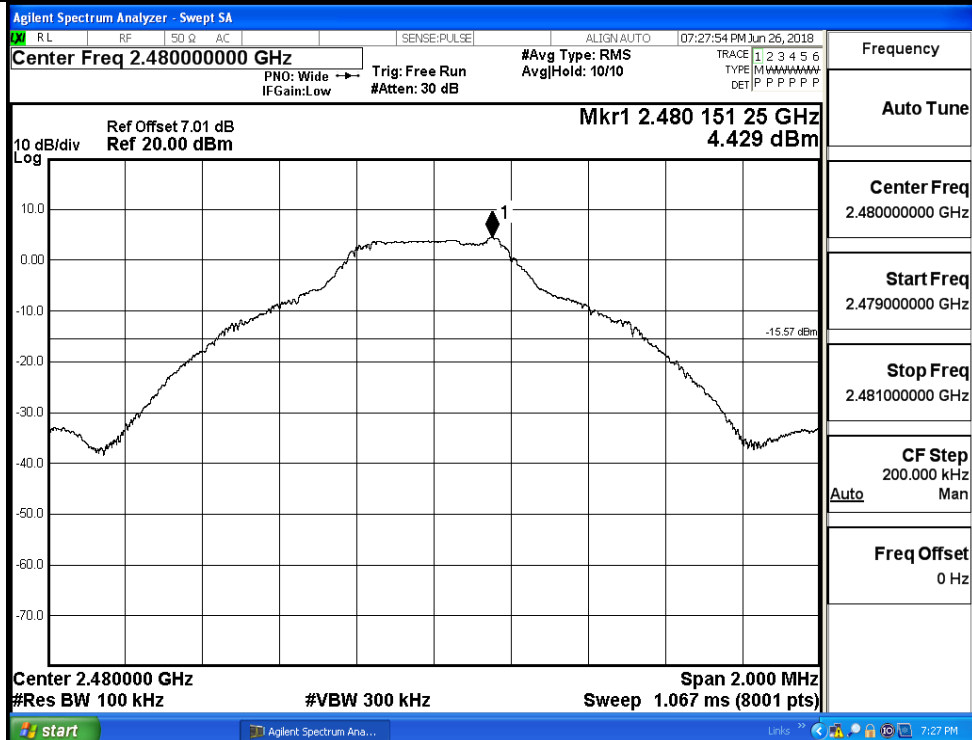


Puw

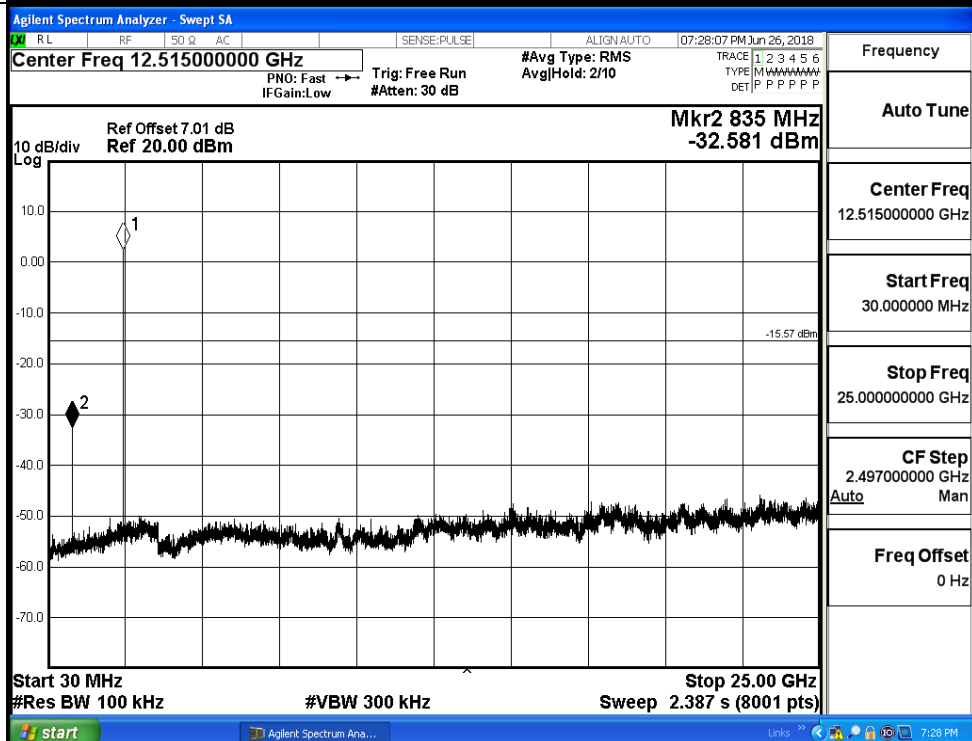


GFSK HCH Graphs

Pref

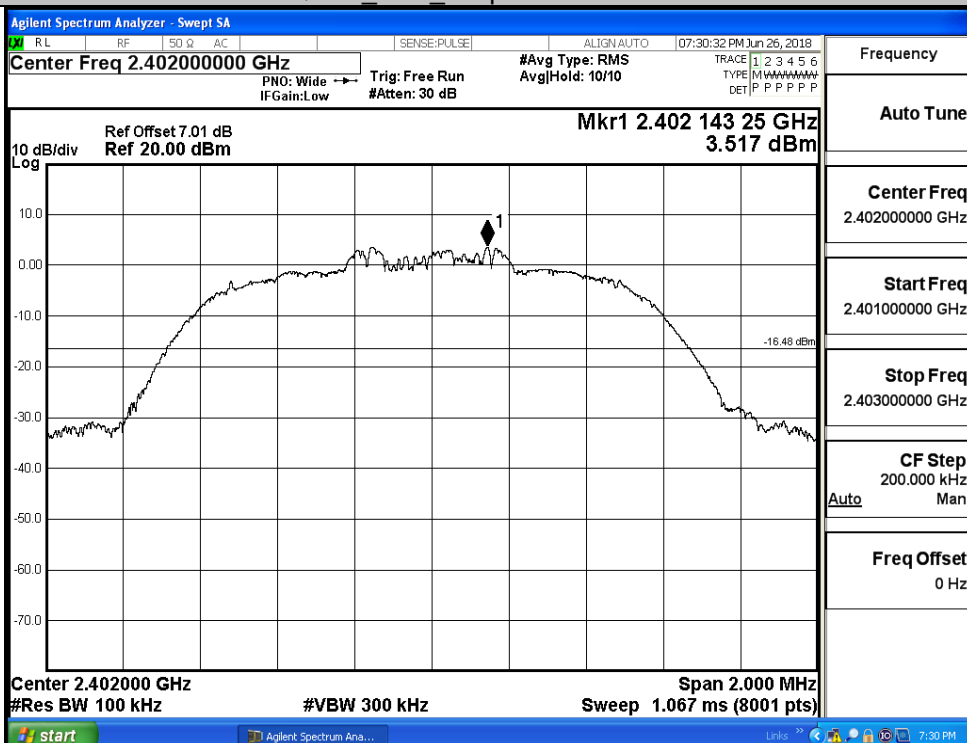


Puw

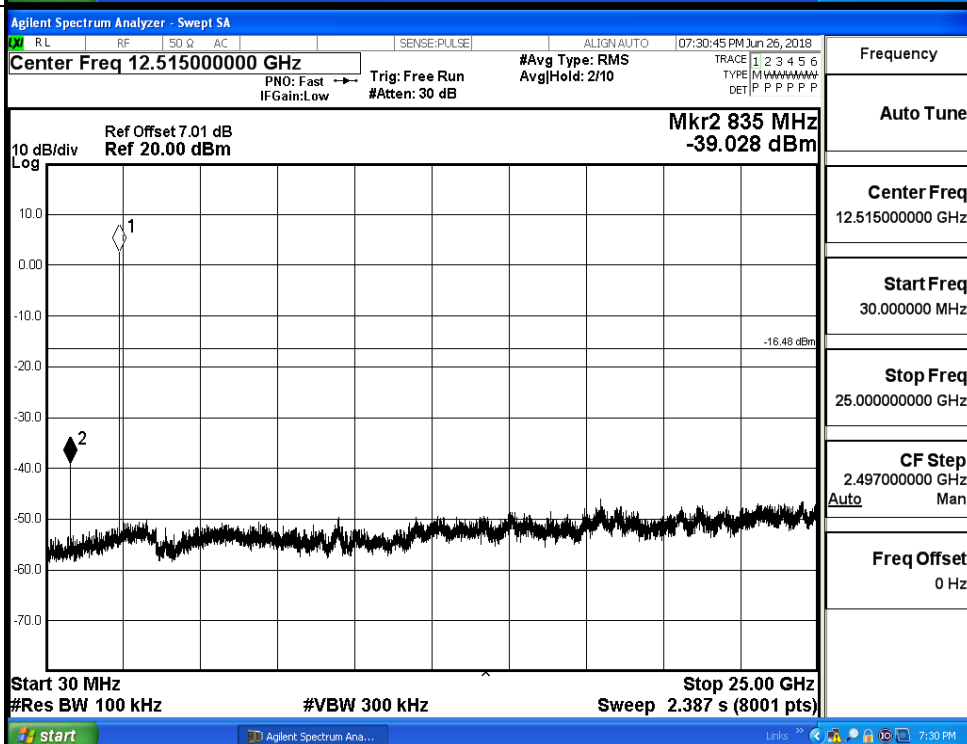


$\pi/4$ DQPSK LCH_Graphs

Pref

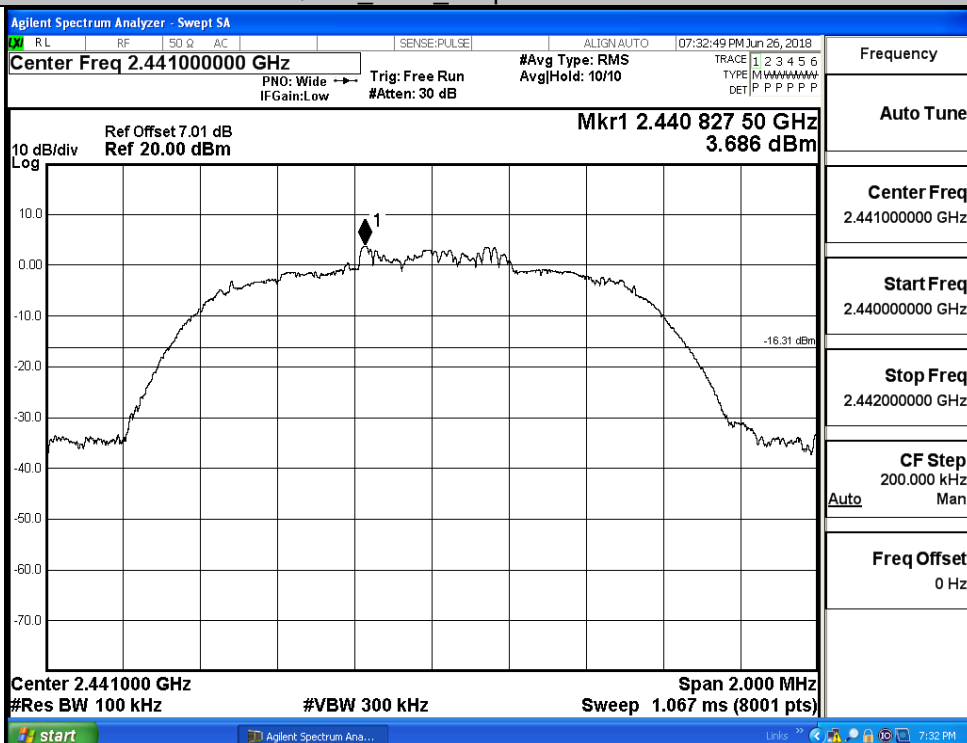


Puw

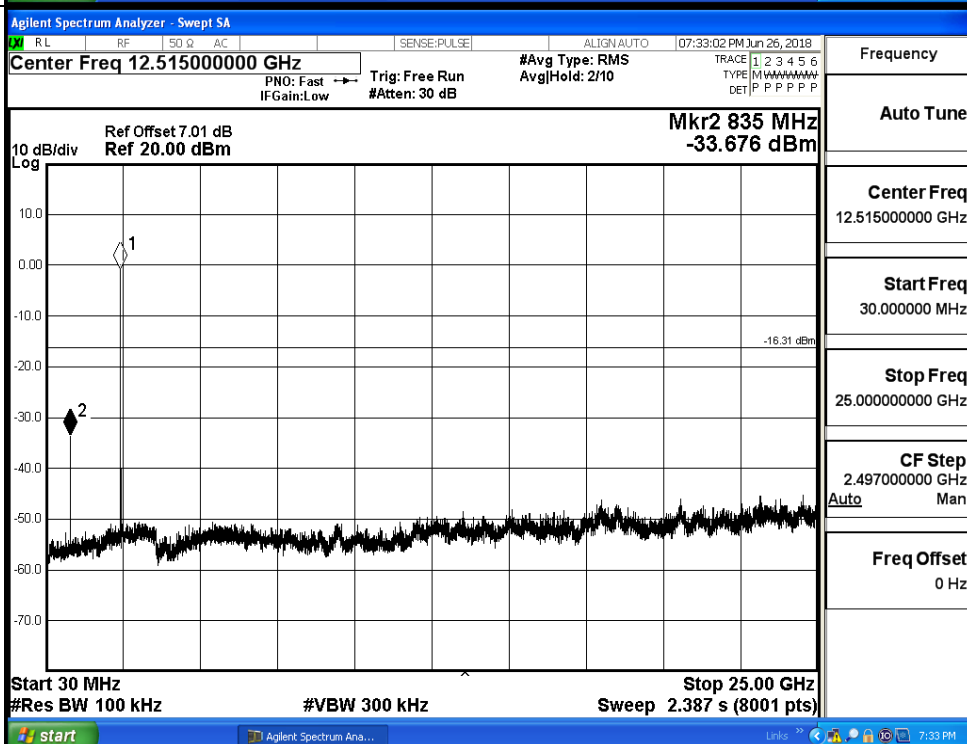


π /4DQPSK MCH_Graphs

Pref

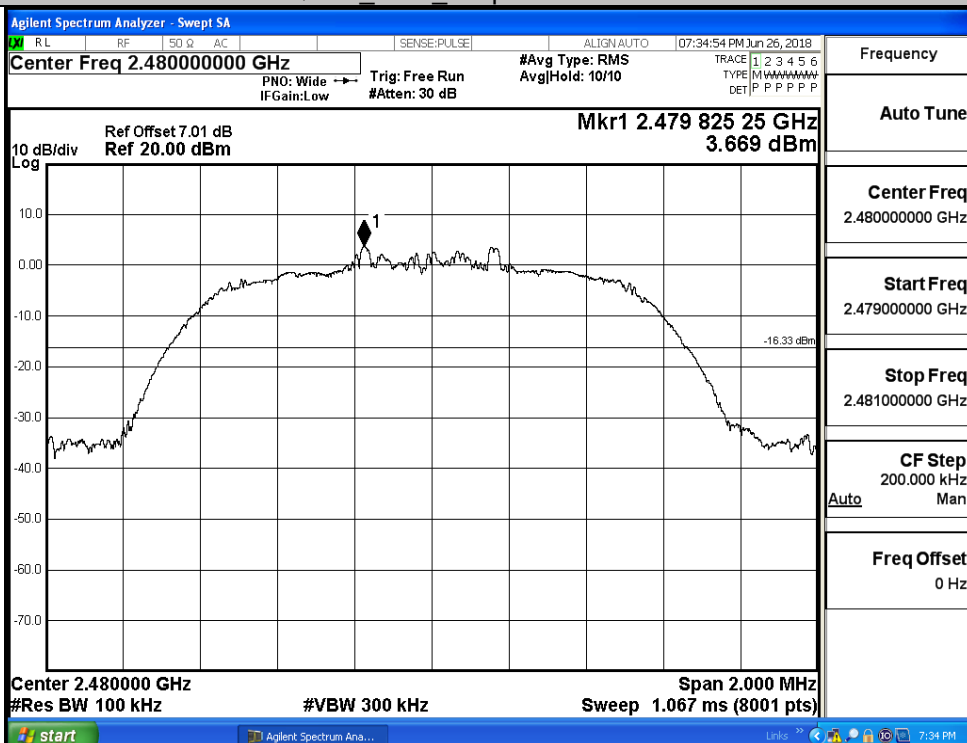


Puw

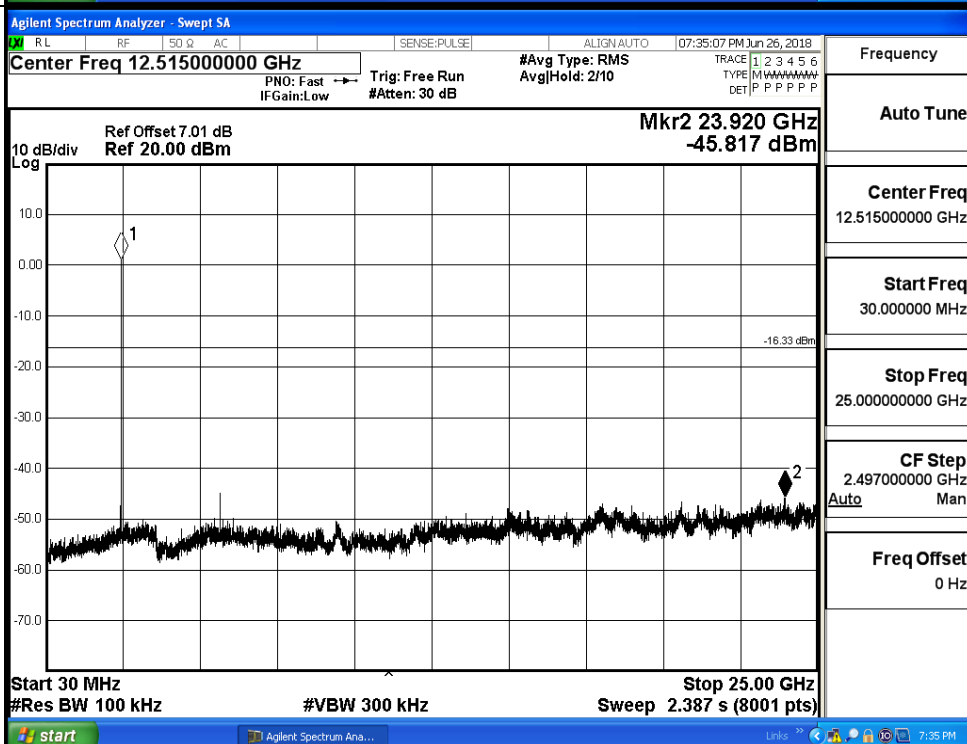


$\pi/4$ DQPSK HCH Graphs

Pref

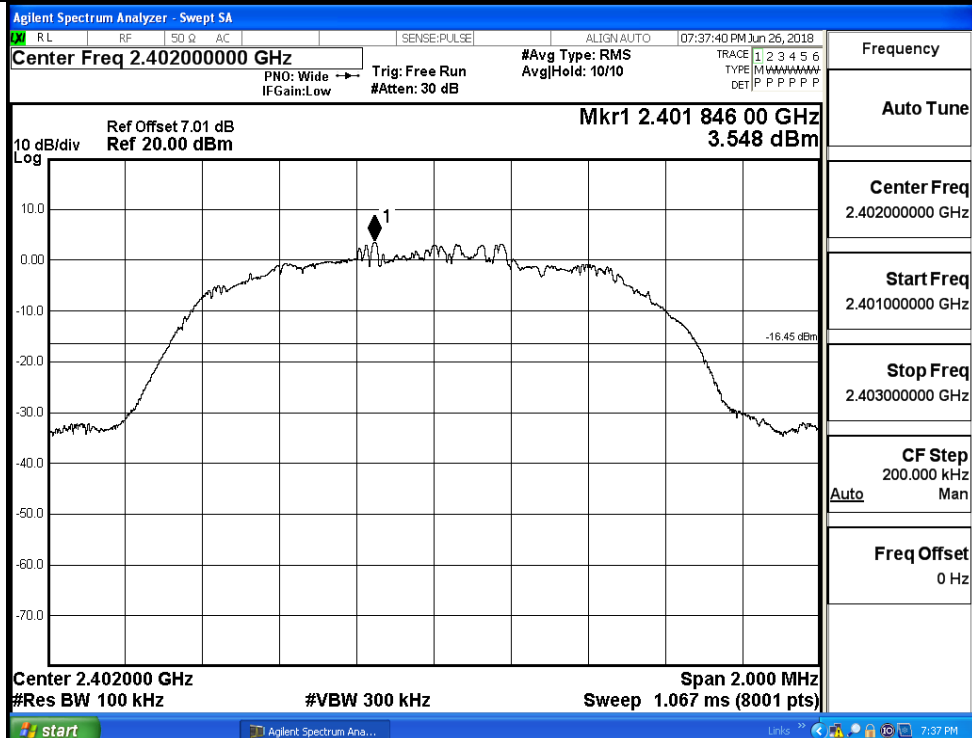


Puw

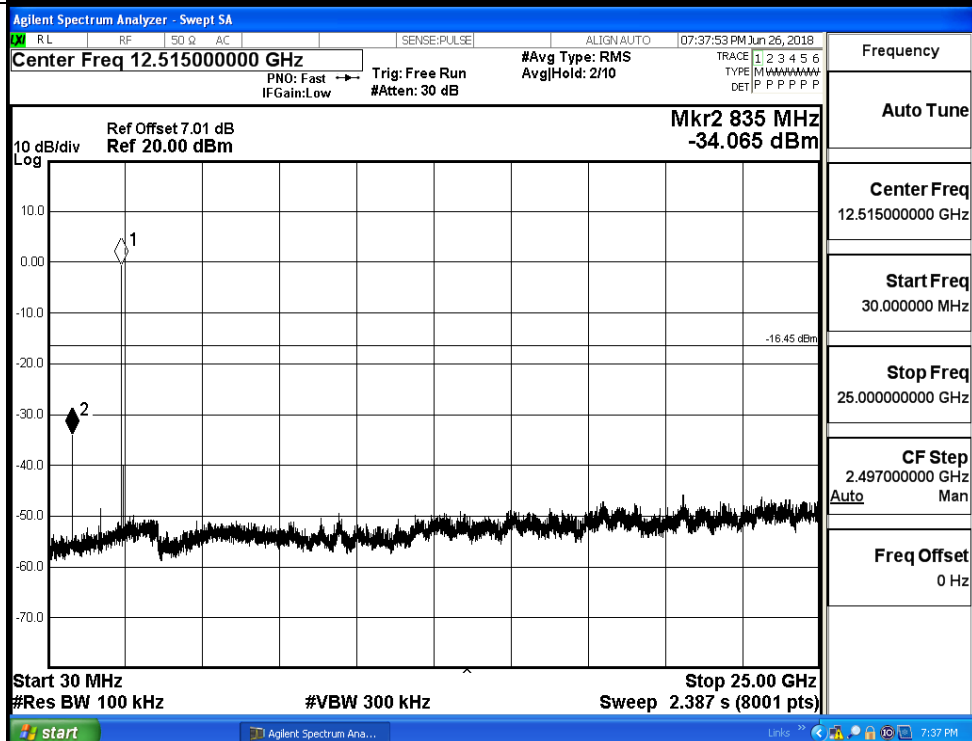


8DPSK_LCH_Graphs

Pref

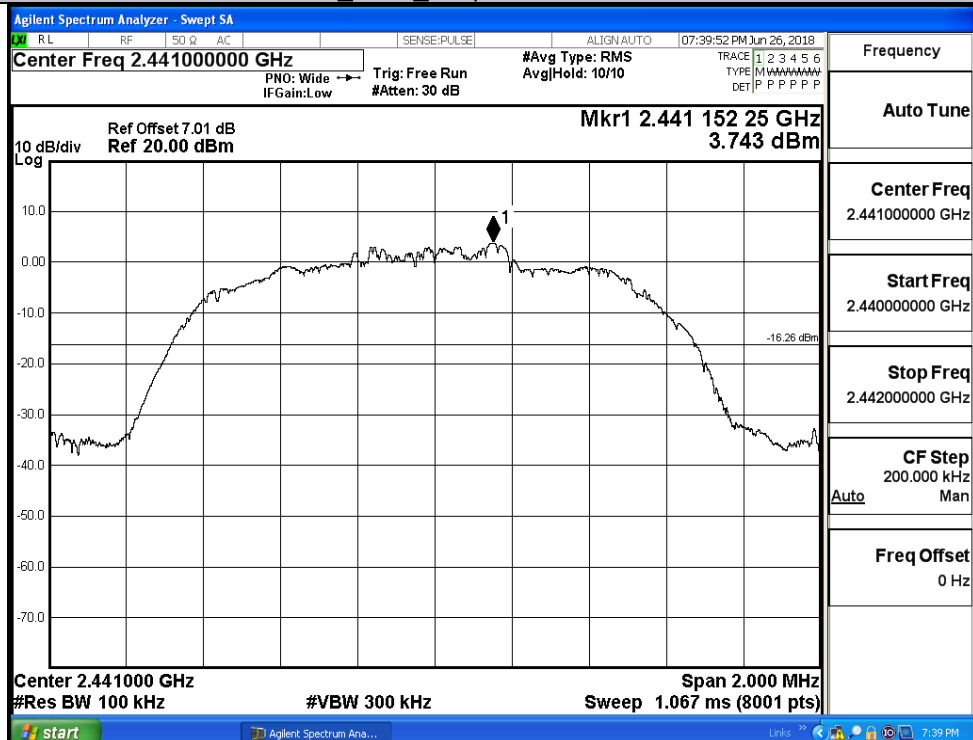


Puw

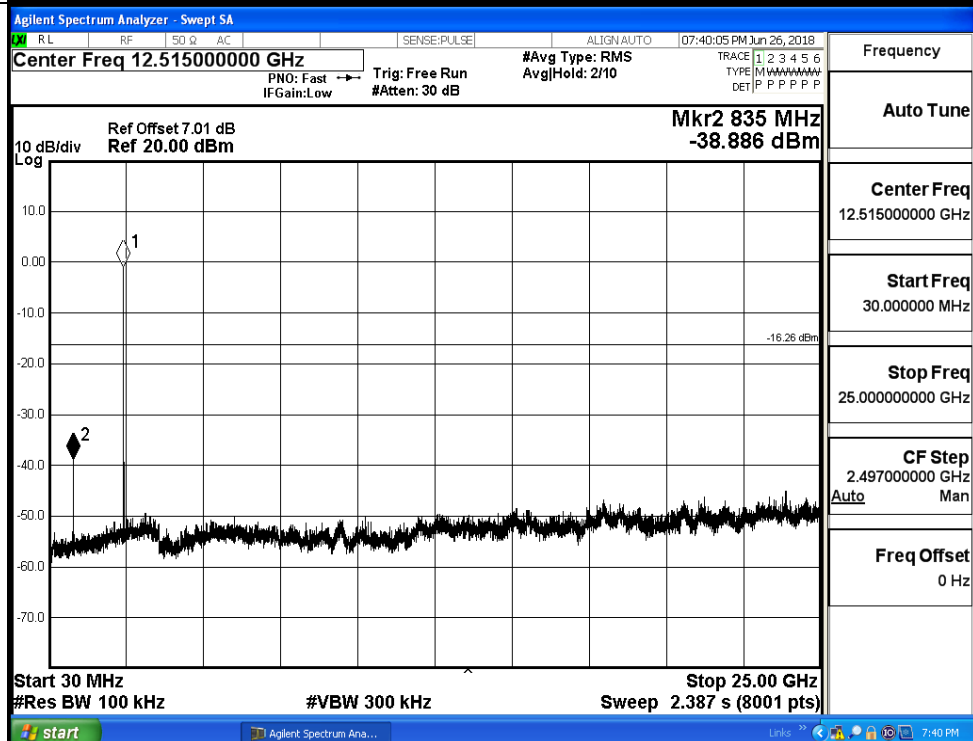


8DPSK MCH_Graphs

Pref

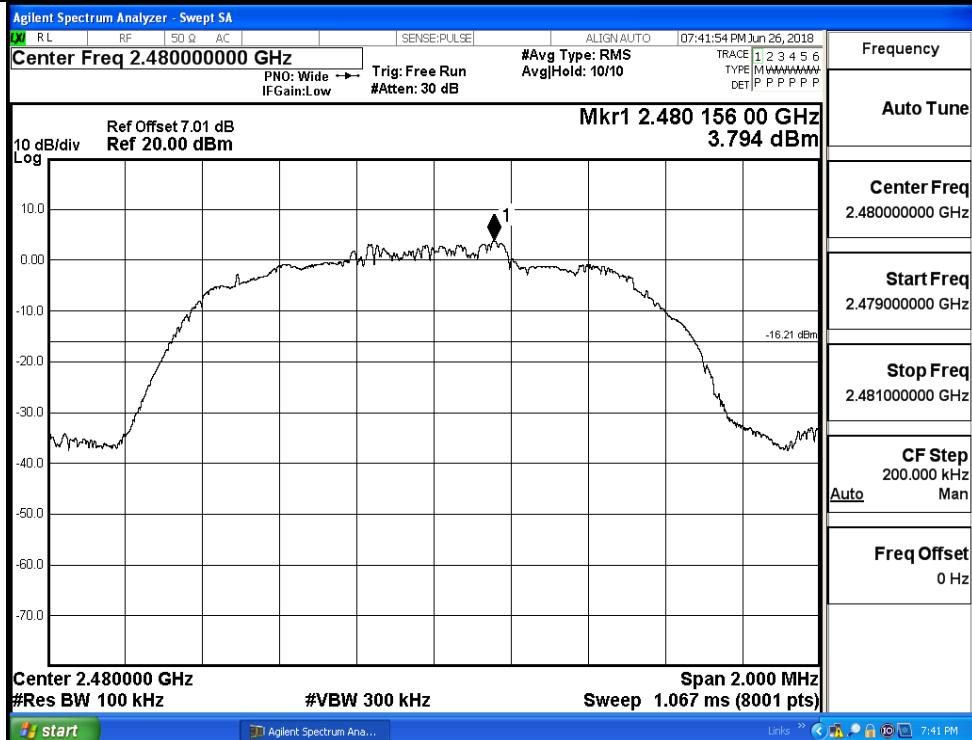


Puw

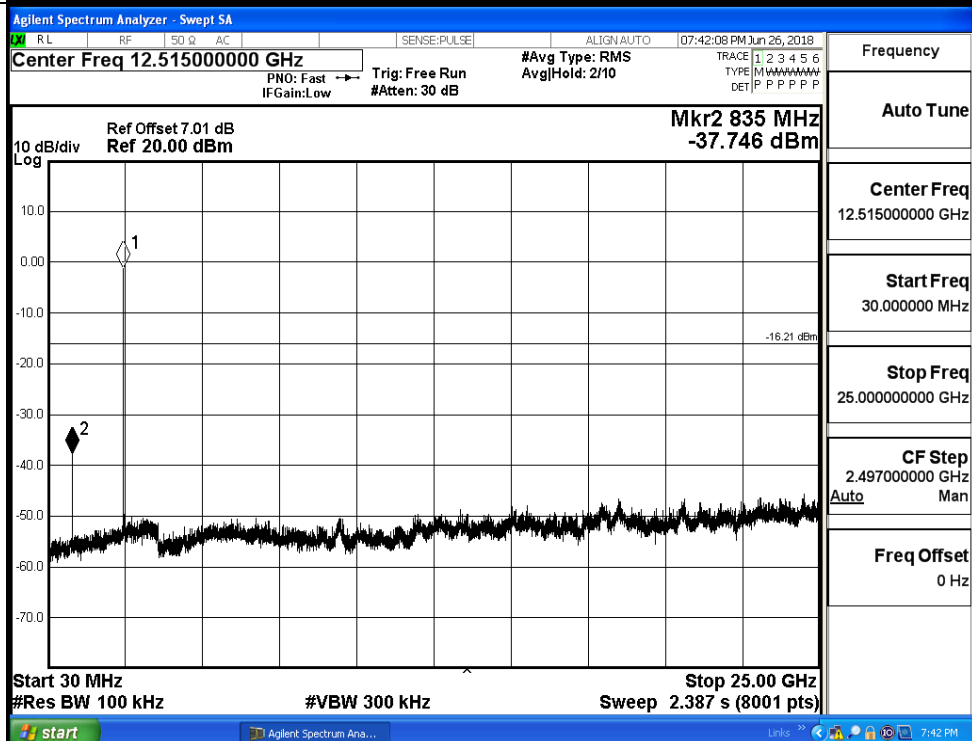


8DPSK_HCH_Graphs

Pref



Puw

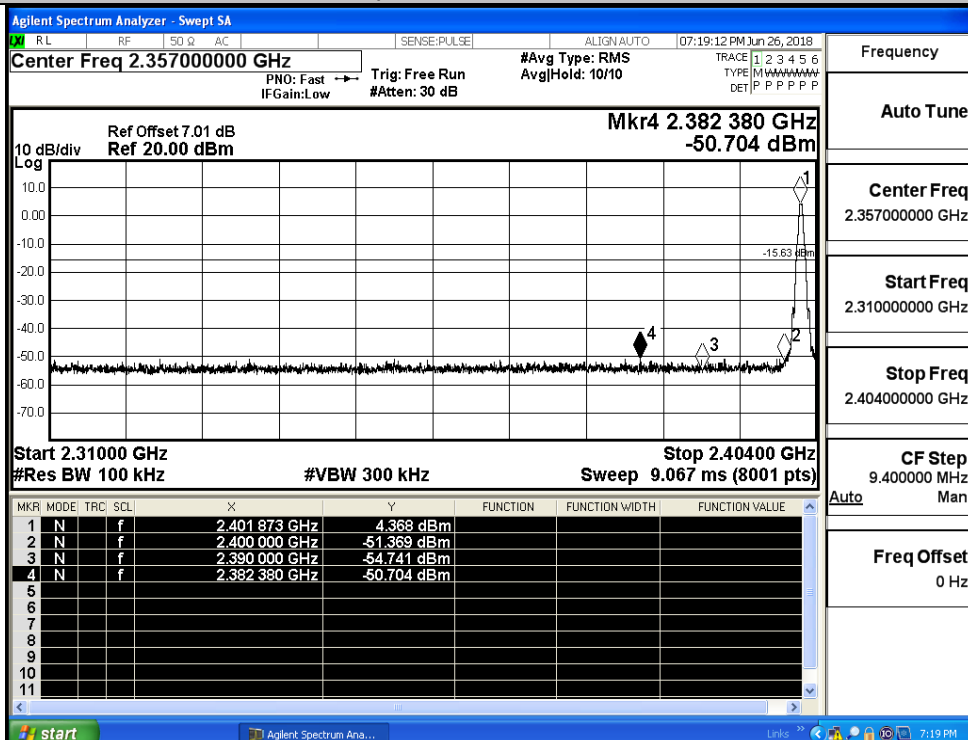


A.7 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	4.368	Off	-50.704	-15.63	PASS
			4.489	On	-50.474	-15.51	PASS
	HCH	2480	4.501	Off	-50.203	-15.50	PASS
			4.453	On	-50.557	-15.55	PASS
π /4DQPSK	LCH	2402	3.611	Off	-50.917	-16.39	PASS
			3.235	On	-50.400	-16.77	PASS
	HCH	2480	3.781	Off	-51.231	-16.22	PASS
			3.459	On	-50.259	-16.54	PASS
8DPSK	LCH	2402	3.873	Off	-50.156	-16.13	PASS
			3.659	On	-50.048	-16.34	PASS
	HCH	2480	3.903	Off	-50.822	-16.10	PASS
			3.536	On	-49.573	-16.46	PASS

Test Graphs

GFSK/LCH/No Hop

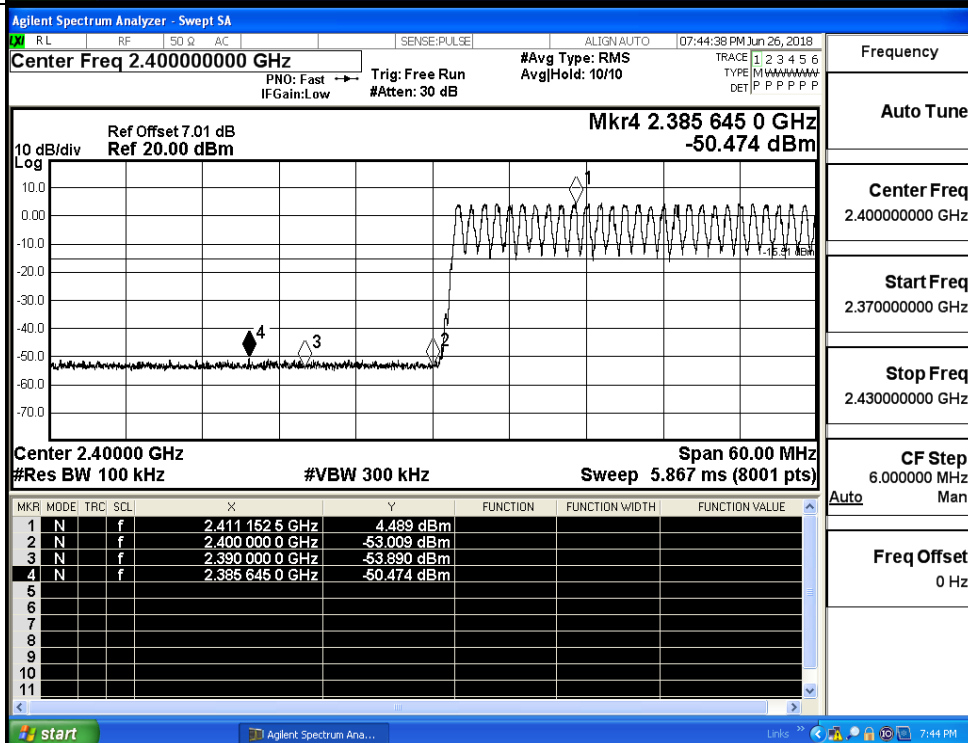


Frequency

Auto Tune

Center Freq
2.357000000 GHzStart Freq
2.310000000 GHzStop Freq
2.404000000 GHzCF Step
9.400000 MHz
ManFreq Offset
0 Hz

GFSK/LCH/Hop

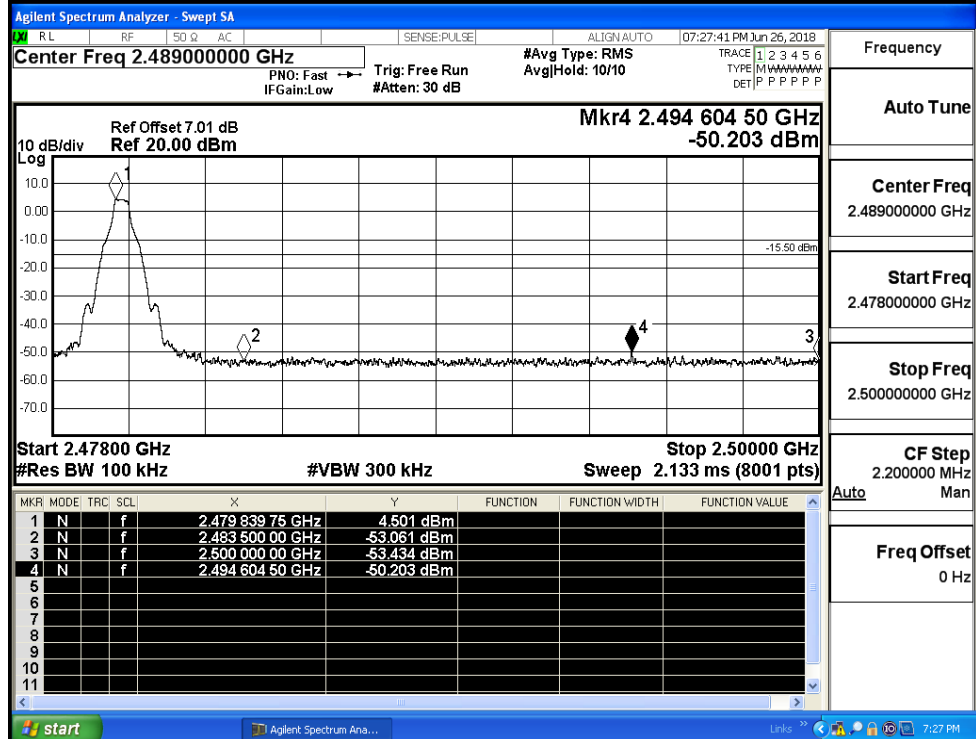


Frequency

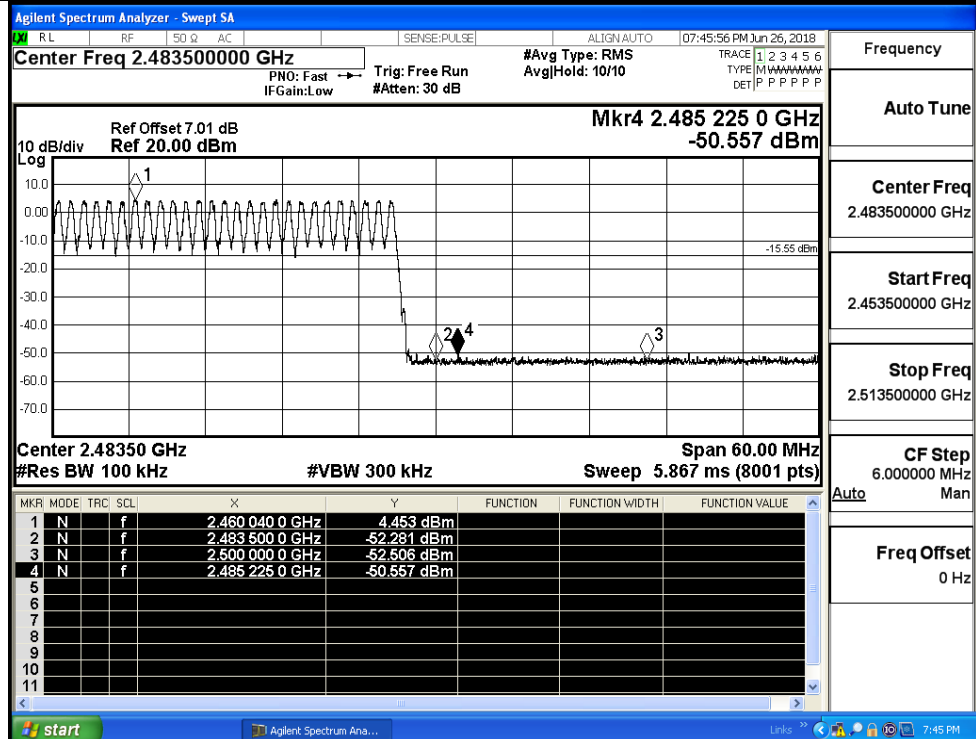
Auto Tune

Center Freq
2.400000000 GHzStart Freq
2.370000000 GHzStop Freq
2.430000000 GHzCF Step
6.000000 MHz
ManFreq Offset
0 Hz

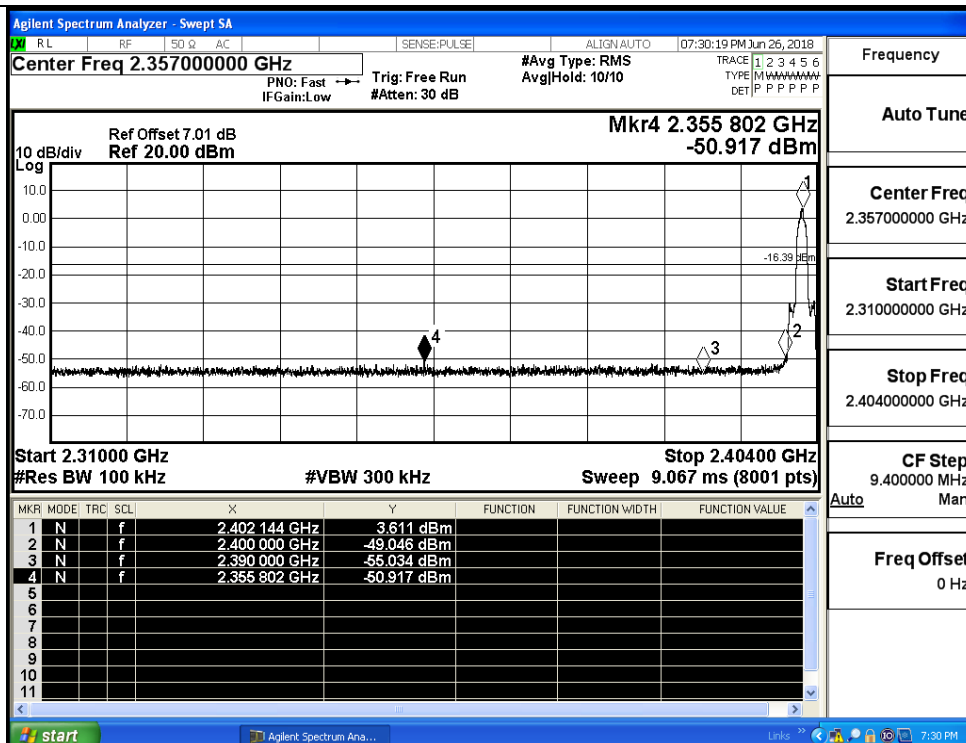
GFSK/HCH/No Hop



GFSK/HCH/Hop



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



Frequency

Auto Tune

Center Freq
2.357000000 GHz

Start Freq
2.310000000 GHz

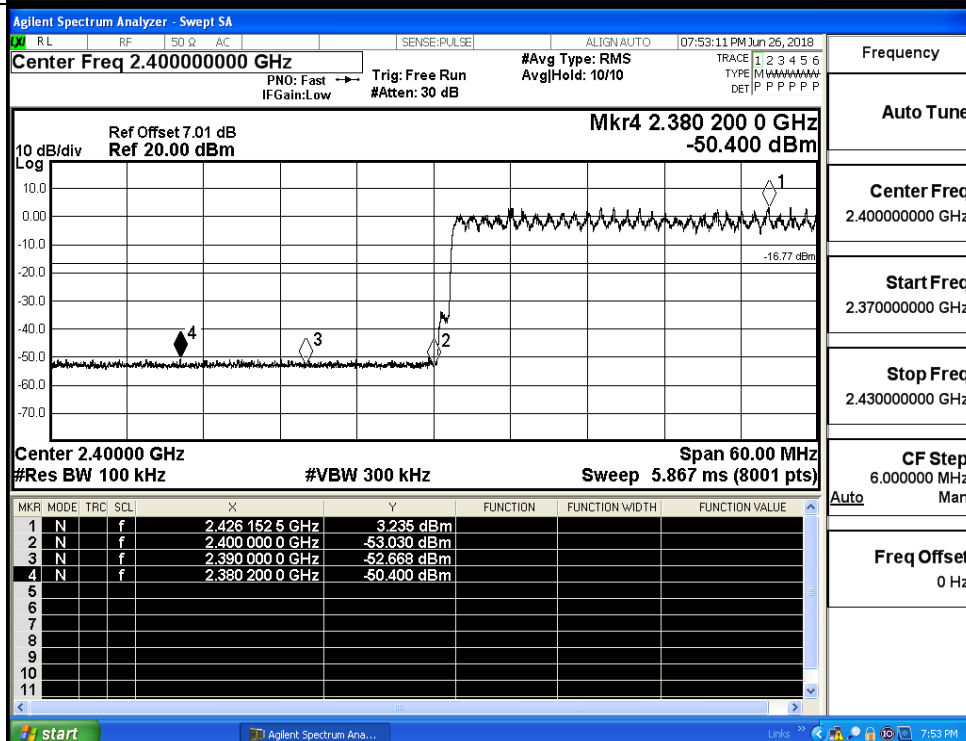
Stop Freq
2.404000000 GHz

CF Step
9.400000 MHz

Auto Man

Freq Offset
0 Hz

$\pi/4$ DQPSK/LCH/Hop



Frequency

Auto Tune

Center Freq
2.400000000 GHz

Start Freq
2.370000000 GHz

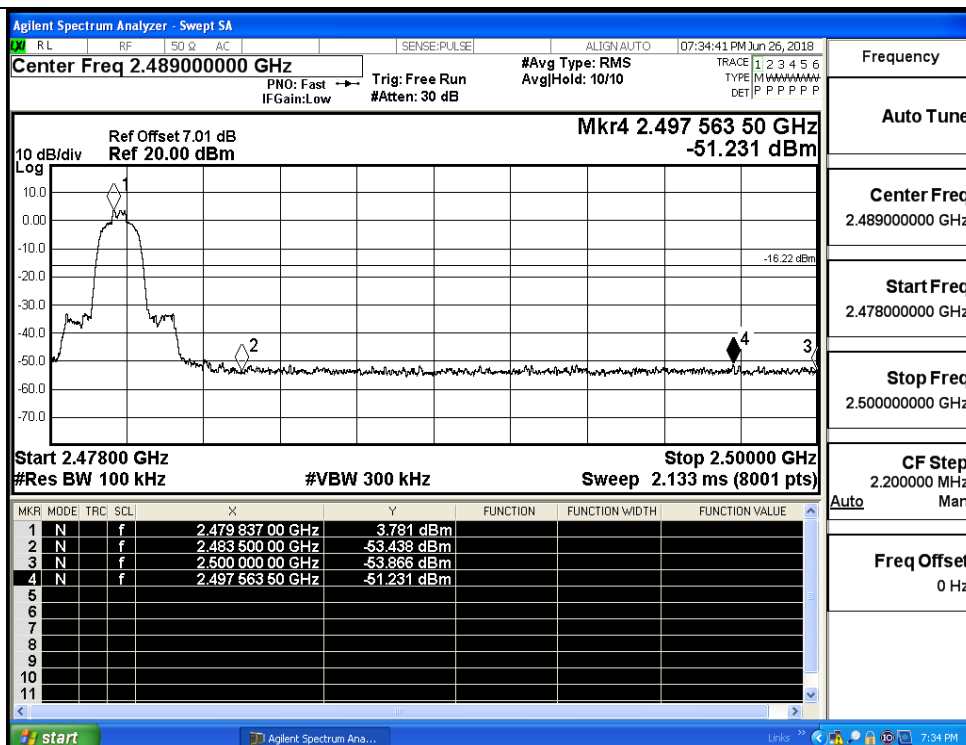
Stop Freq
2.430000000 GHz

CF Step
6.000000 MHz

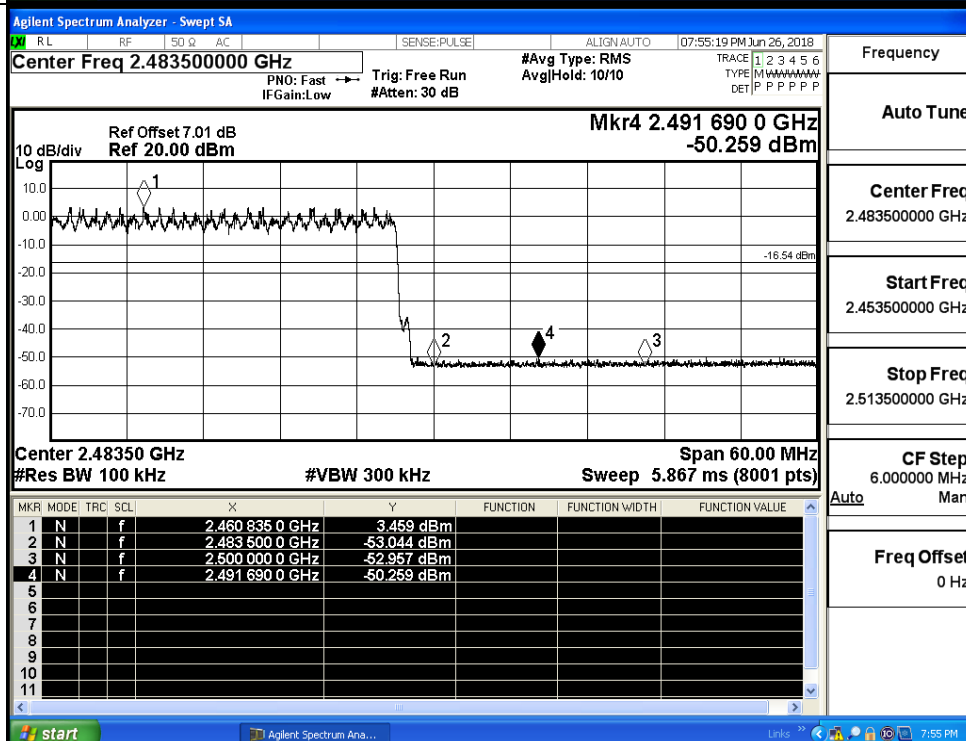
Auto Man

Freq Offset
0 Hz

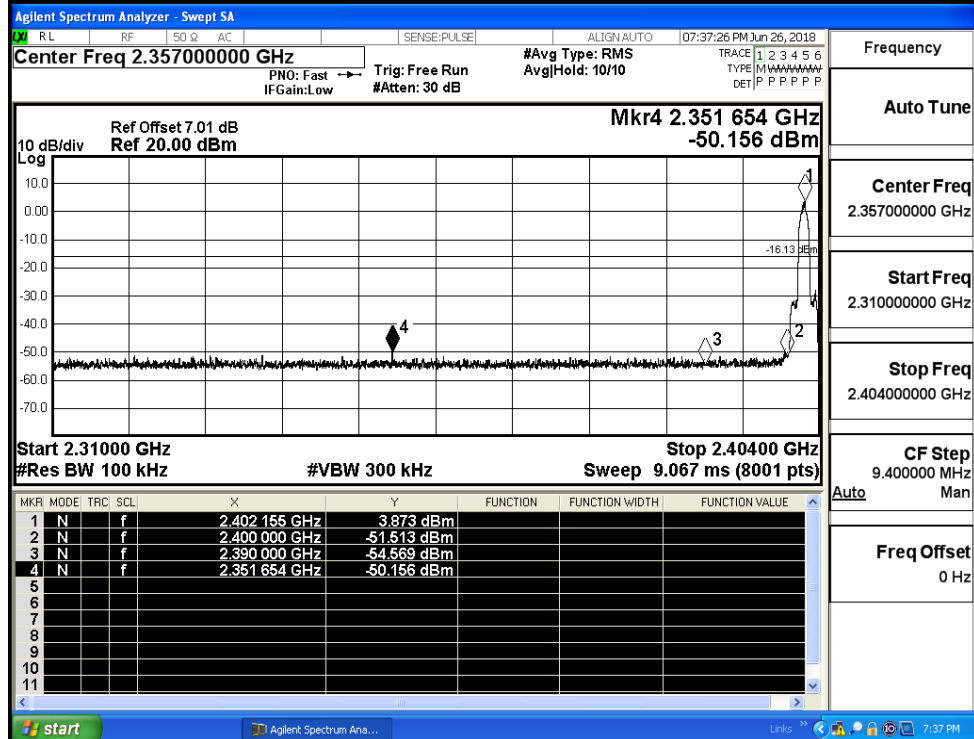
$\pi/4$ DQPSK/HCH/No
Hop



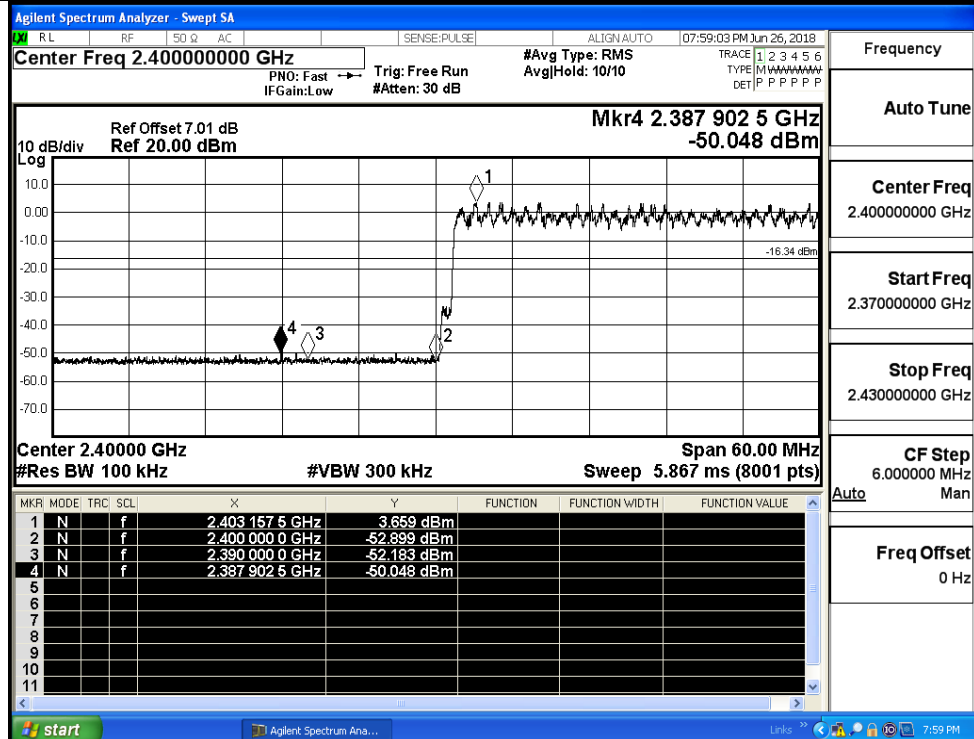
$\pi/4$ DQPSK/HCH/Hop



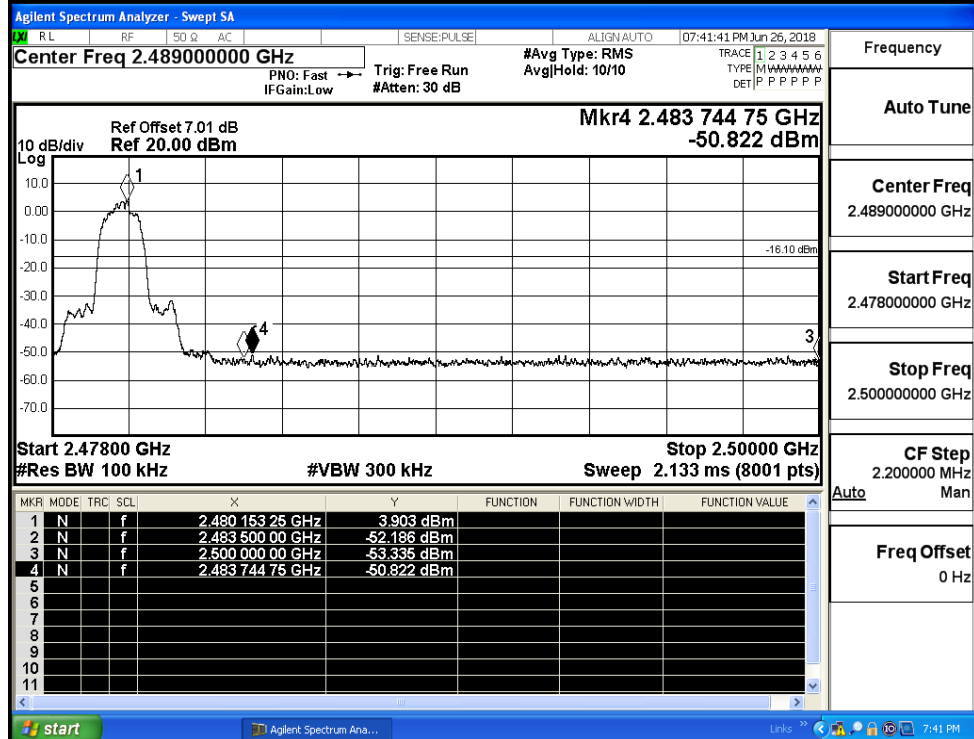
8DPSK/LCH/No Hop



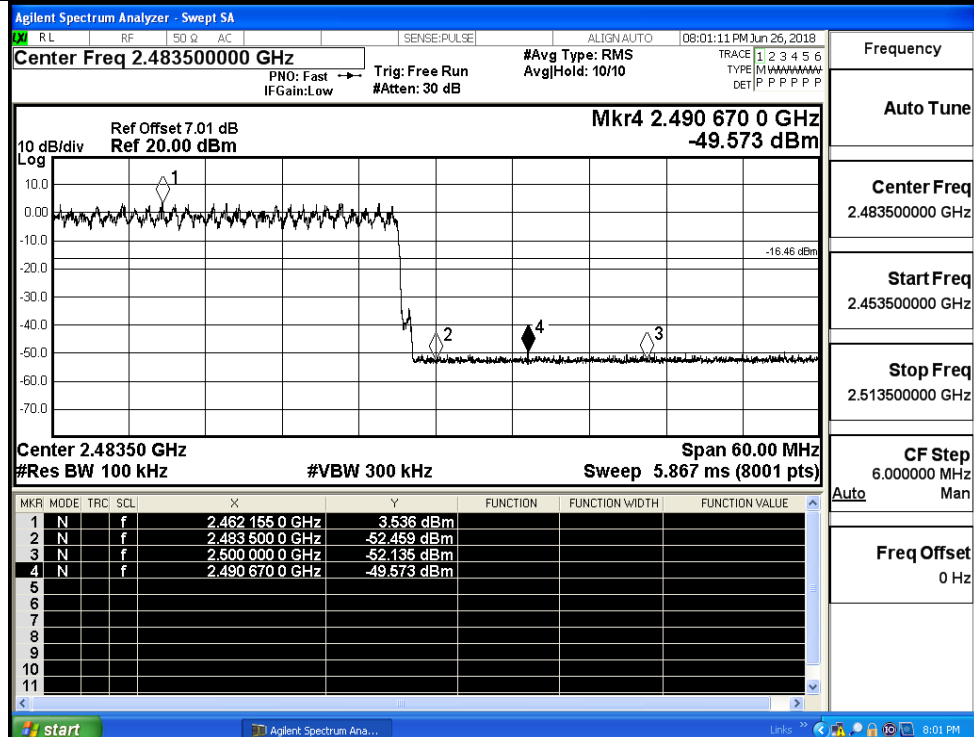
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



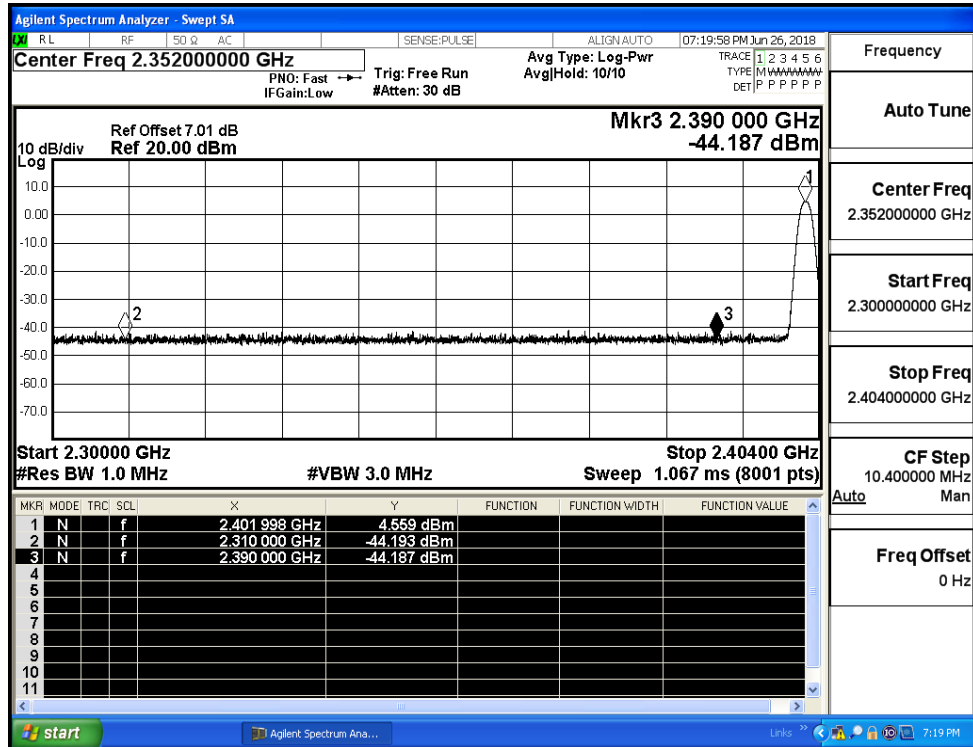
8DPSK/HCH/Hop



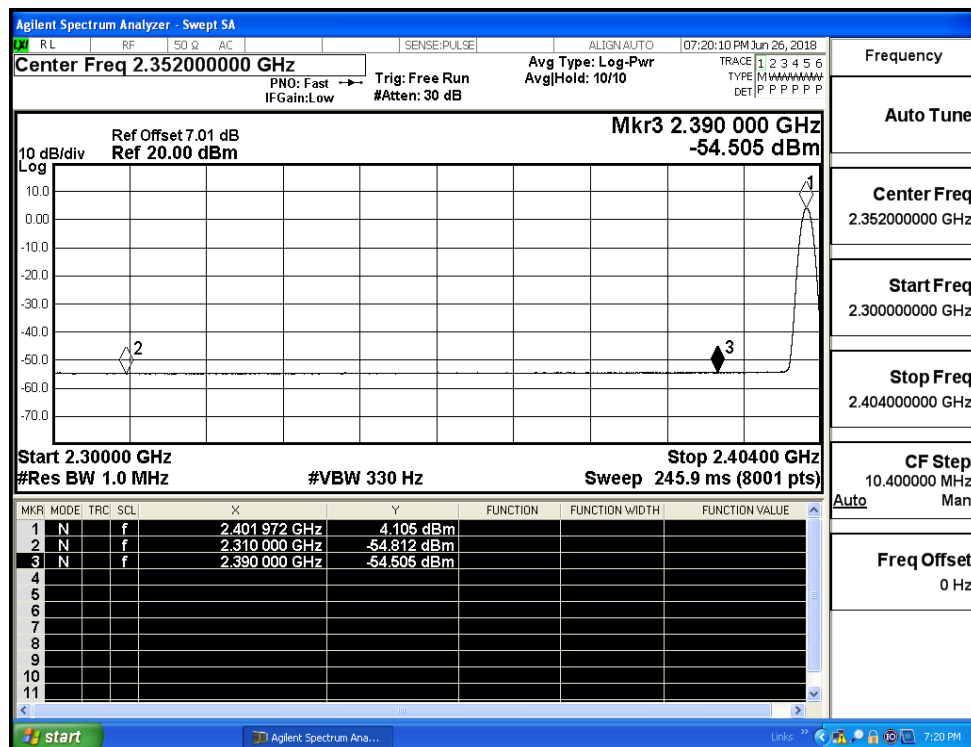
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-44.19	2.0	0	53.06	PEAK	74	PASS
	Off	2310.0	-54.81	2.0	0	42.45	AV	54	PASS
	Off	2390.0	-44.19	2.0	0	53.07	PEAK	74	PASS
	Off	2390.0	-54.51	2.0	0	42.75	AV	54	PASS
	Off	2483.5	-44.11	2.0	0	53.15	PEAK	74	PASS
	Off	2483.5	-53.98	2.0	0	43.27	AV	54	PASS
	Off	2500.0	-43.62	2.0	0	53.64	PEAK	74	PASS
	Off	2500.0	-54.13	2.0	0	43.13	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-44.06	2.0	0	53.19	PEAK	74	PASS
	Off	2310.0	-54.77	2.0	0	42.49	AV	54	PASS
	Off	2390.0	-45.24	2.0	0	52.02	PEAK	74	PASS
	Off	2390.0	-54.41	2.0	0	42.84	AV	54	PASS
	Off	2483.5	-44.39	2.0	0	52.87	PEAK	74	PASS
	Off	2483.5	-53.81	2.0	0	43.45	AV	54	PASS
	Off	2500.0	-43.88	2.0	0	53.38	PEAK	74	PASS
	Off	2500.0	-54.07	2.0	0	43.19	AV	54	PASS
8DPSK	Off	2310.0	-45.15	2.0	0	52.11	PEAK	74	PASS
	Off	2310.0	-54.82	2.0	0	42.44	AV	54	PASS
	Off	2390.0	-44.00	2.0	0	53.26	PEAK	74	PASS
	Off	2390.0	-54.39	2.0	0	42.87	AV	54	PASS
	Off	2483.5	-42.38	2.0	0	54.88	PEAK	74	PASS
	Off	2483.5	-53.73	2.0	0	43.53	AV	54	PASS
	Off	2500.0	-44.14	2.0	0	53.12	PEAK	74	PASS
	Off	2500.0	-54.13	2.0	0	43.13	AV	54	PASS

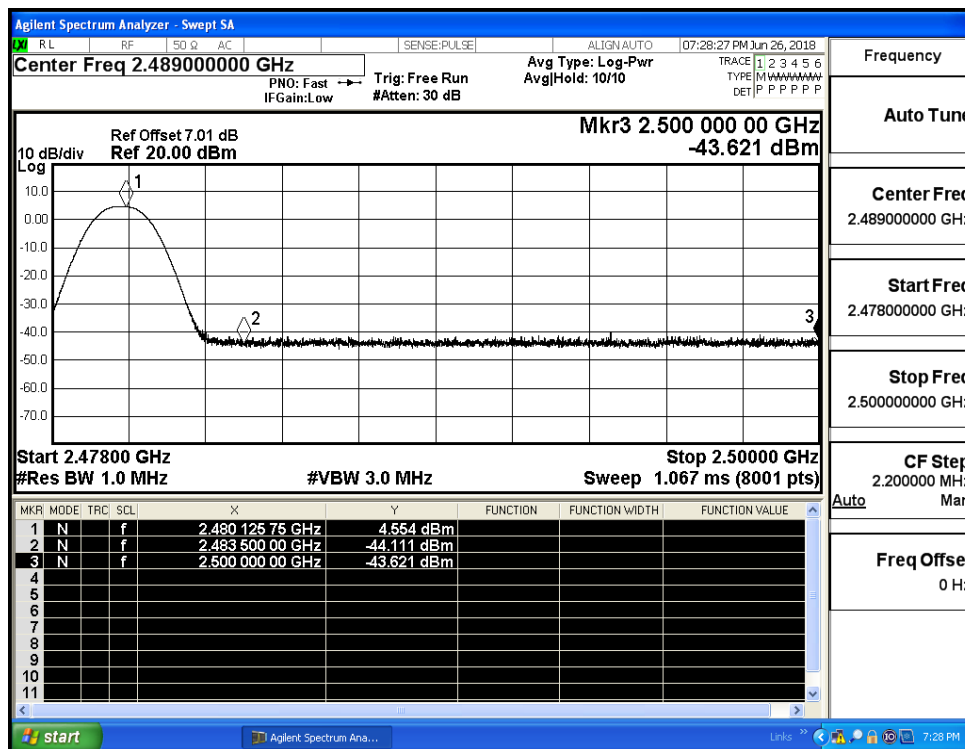
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



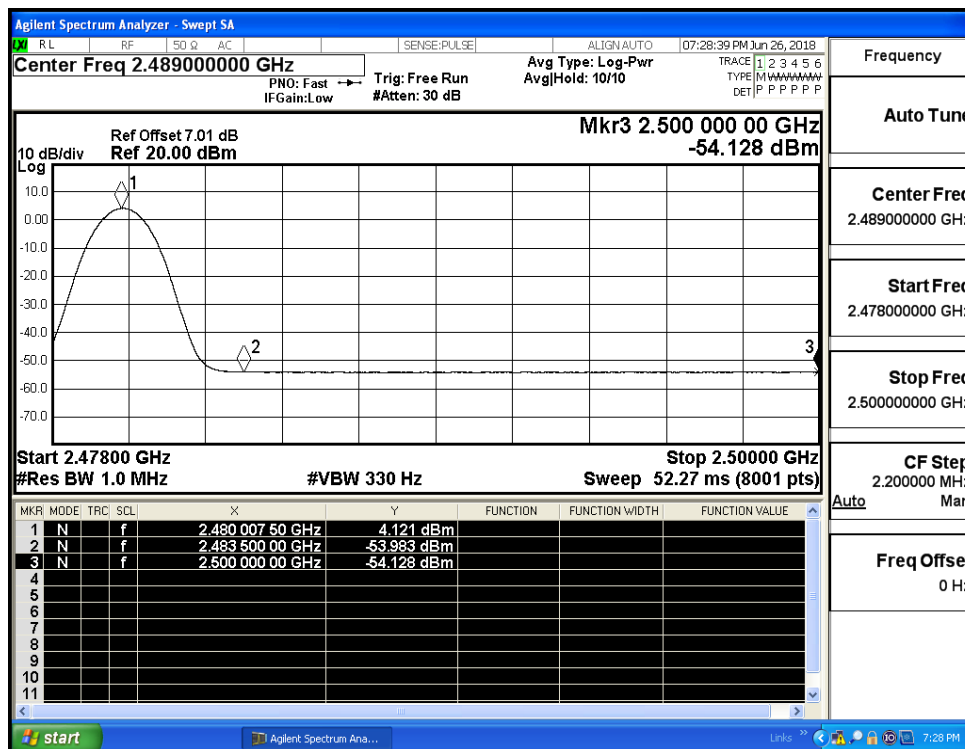
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

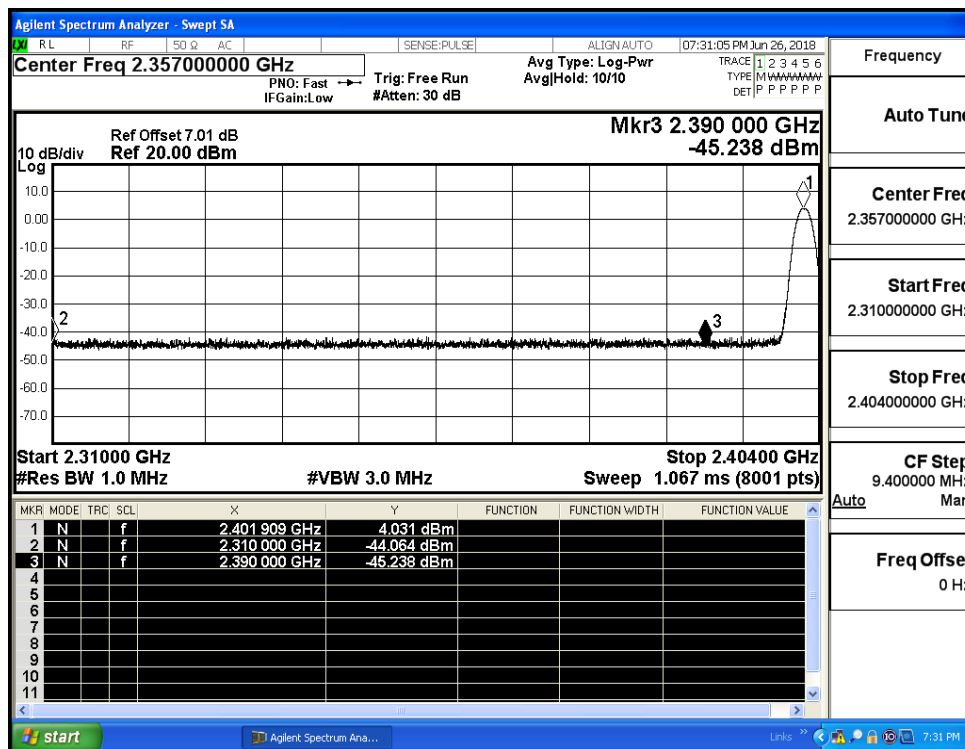
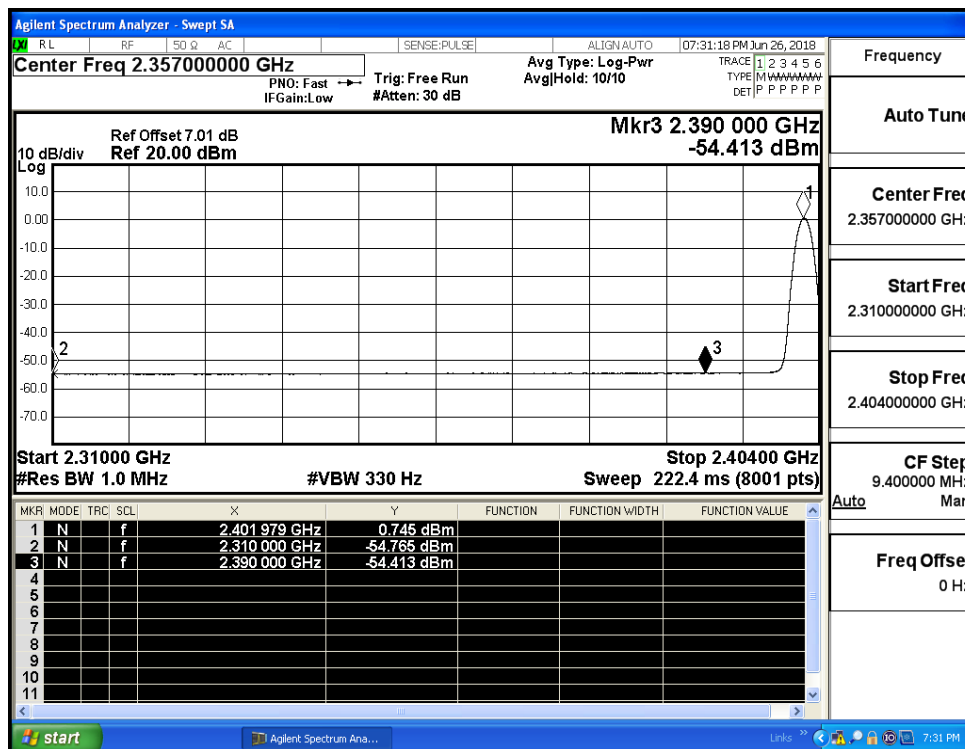


Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)

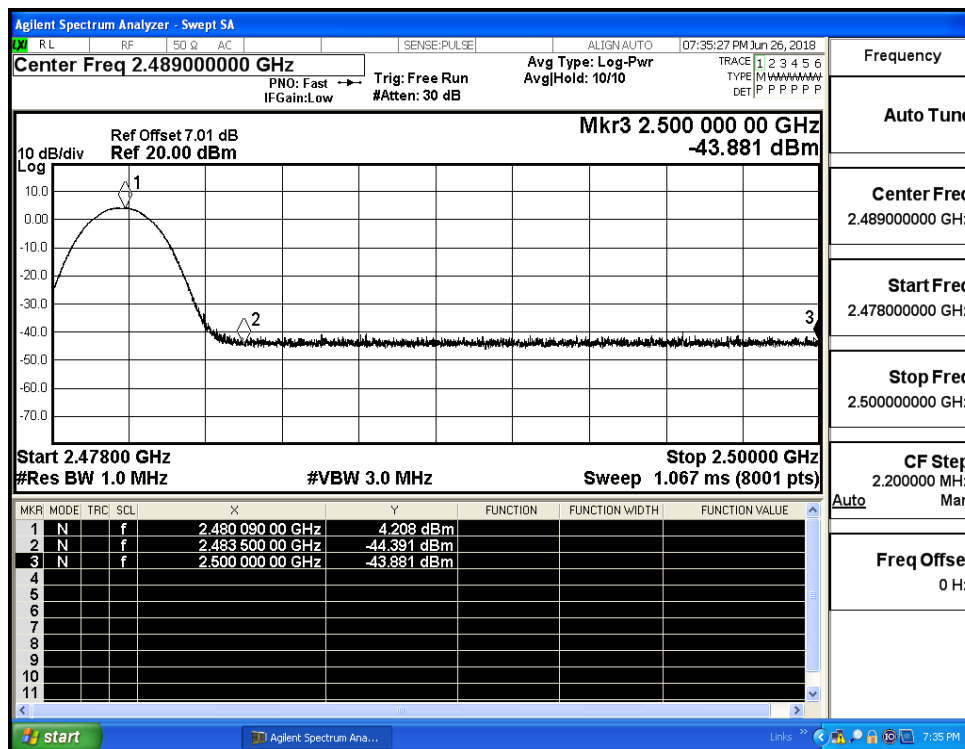


Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)

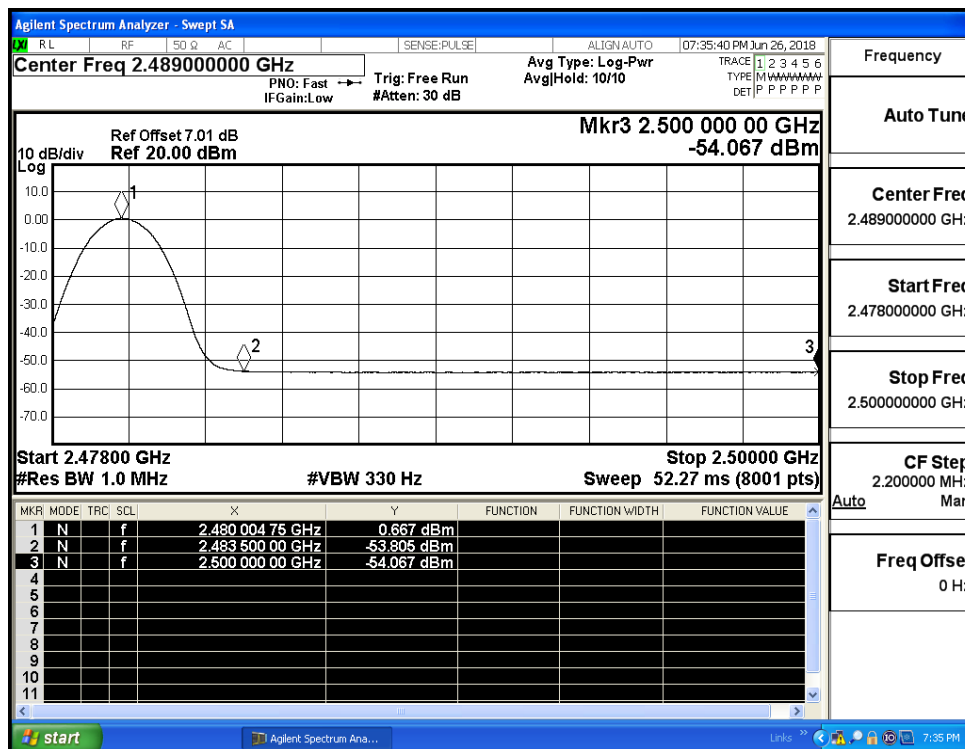


Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

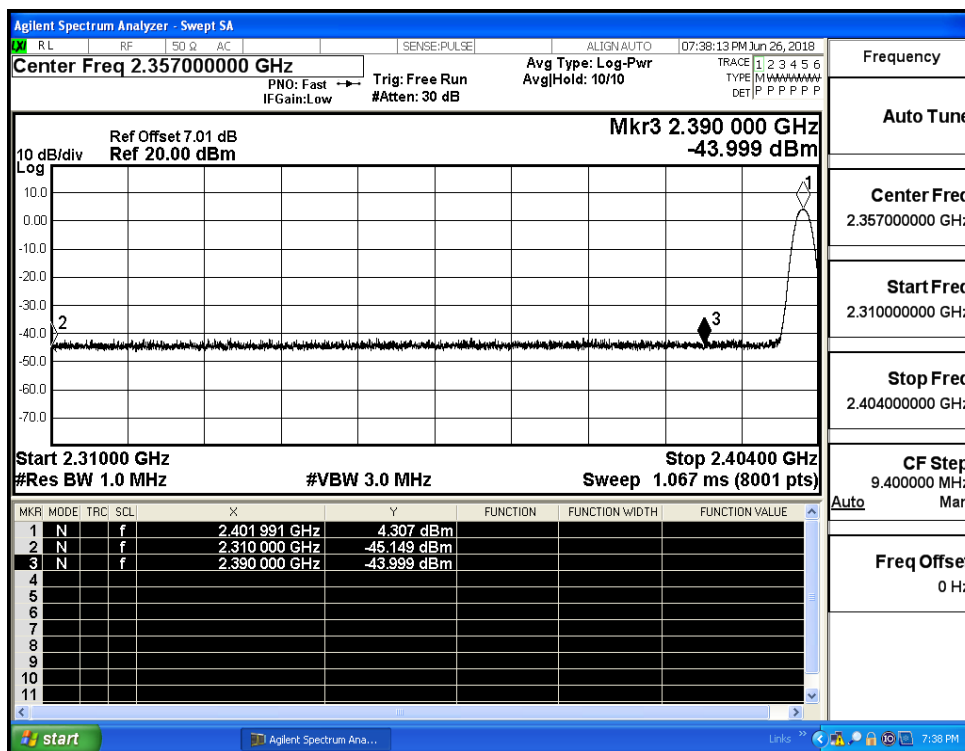
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



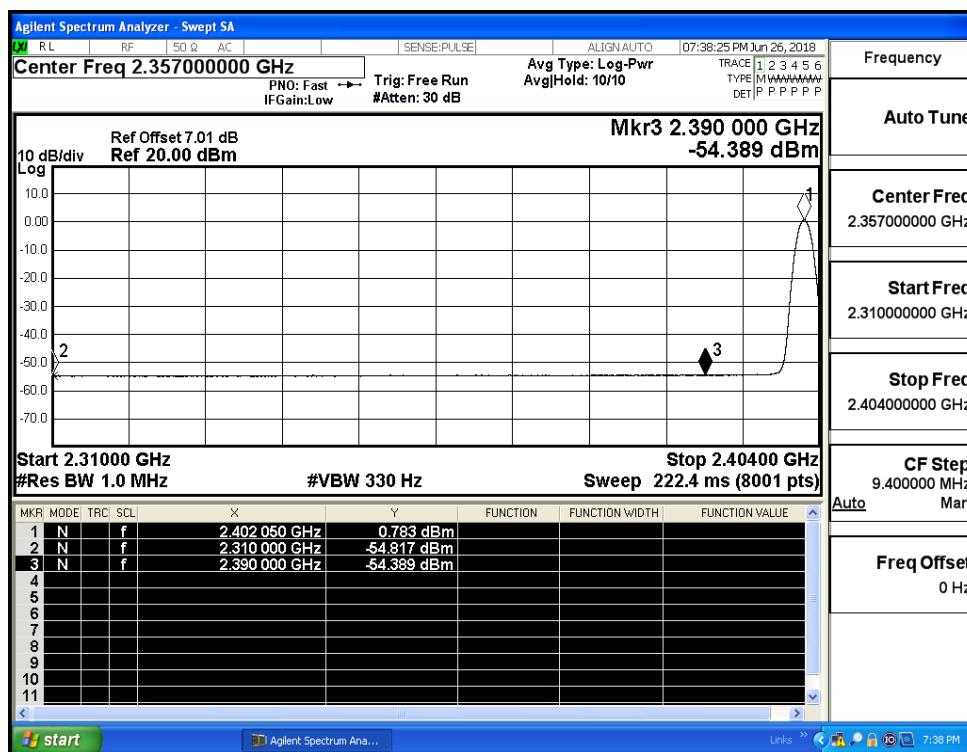
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



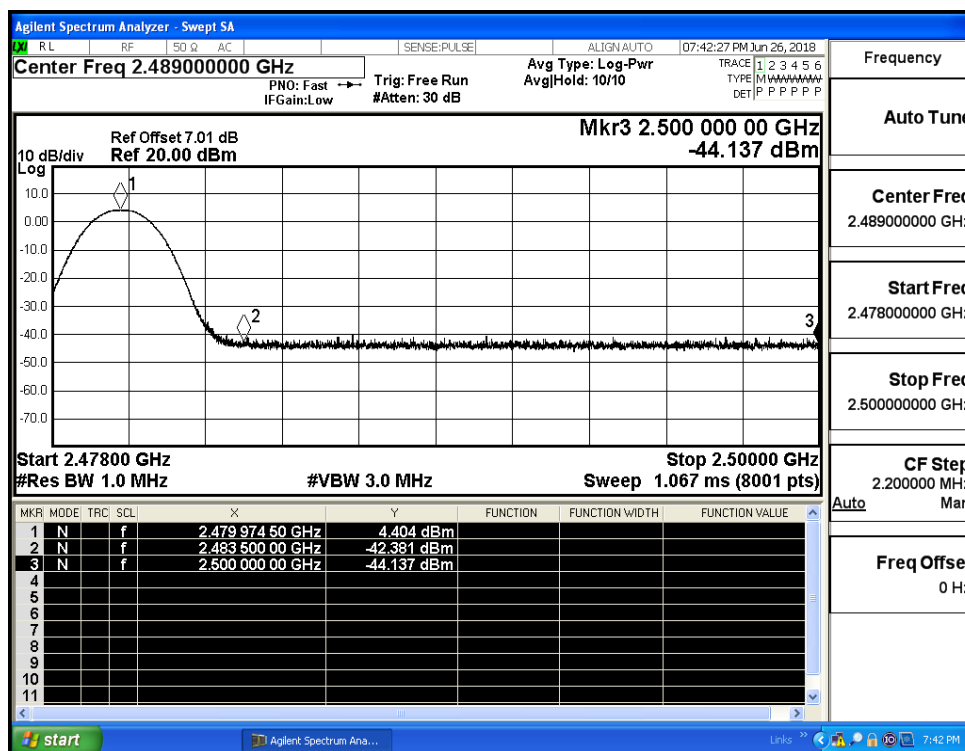
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

