

Appendix A

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

Product Name: Car Audio

Trade Mark: Ortek

Test Model: TD-68

Environmental Conditions

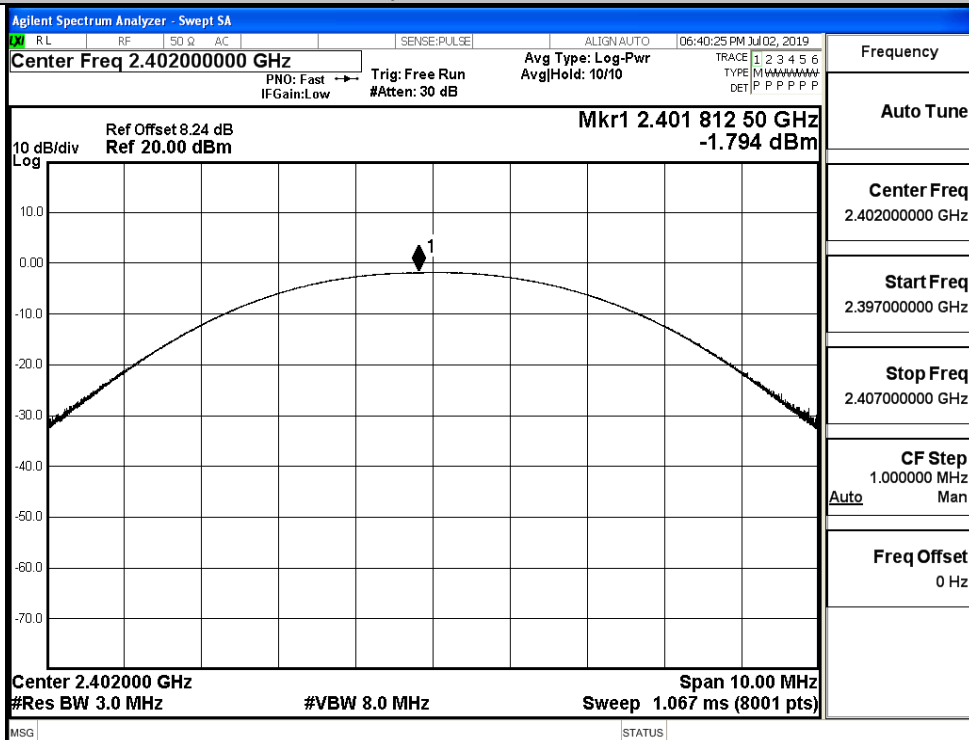
Temperature:	24.6 ° C
Relative Humidity:	54.2%
ATM Pressure:	100.0 kPa
Test Engineer:	JERRY.ZENG
Supervised by:	Wang.Chuang

A.1 Maximum Conducted Peak Output Power

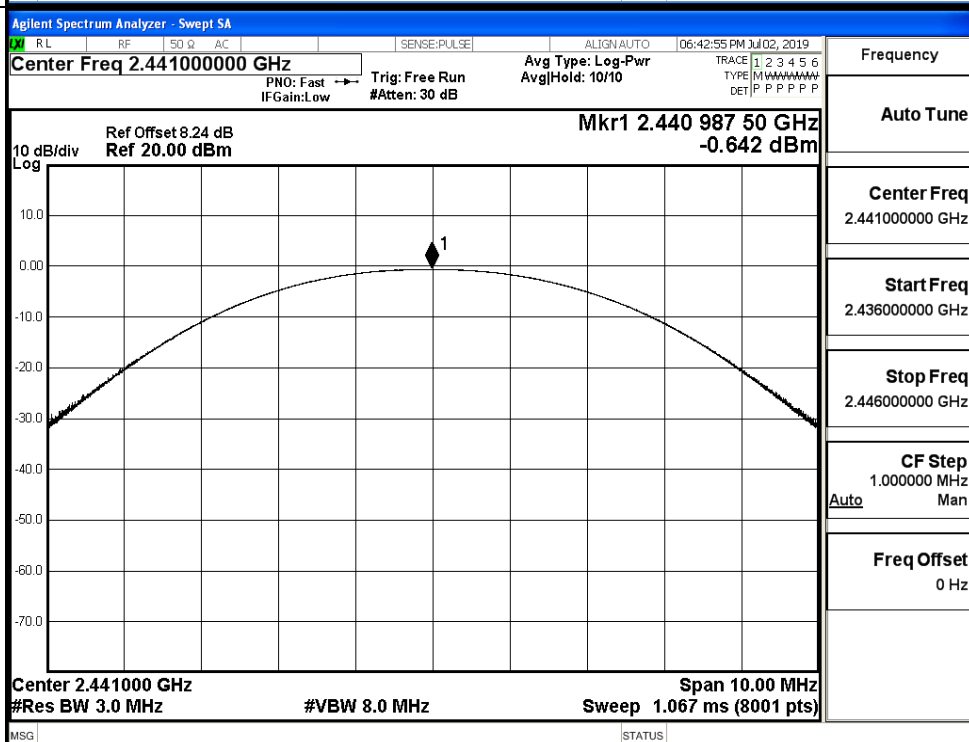
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-1.794	21	PASS
	MCH	-0.642	21	PASS
	HCH	-1.572	21	PASS
$\pi/4$ DQPSK	LCH	-2.385	21	PASS
	MCH	-1.196	21	PASS
	HCH	-2.205	21	PASS
8DPSK	LCH	-2.233	21	PASS
	MCH	-0.921	21	PASS
	HCH	-2.069	21	PASS

Test Graphs

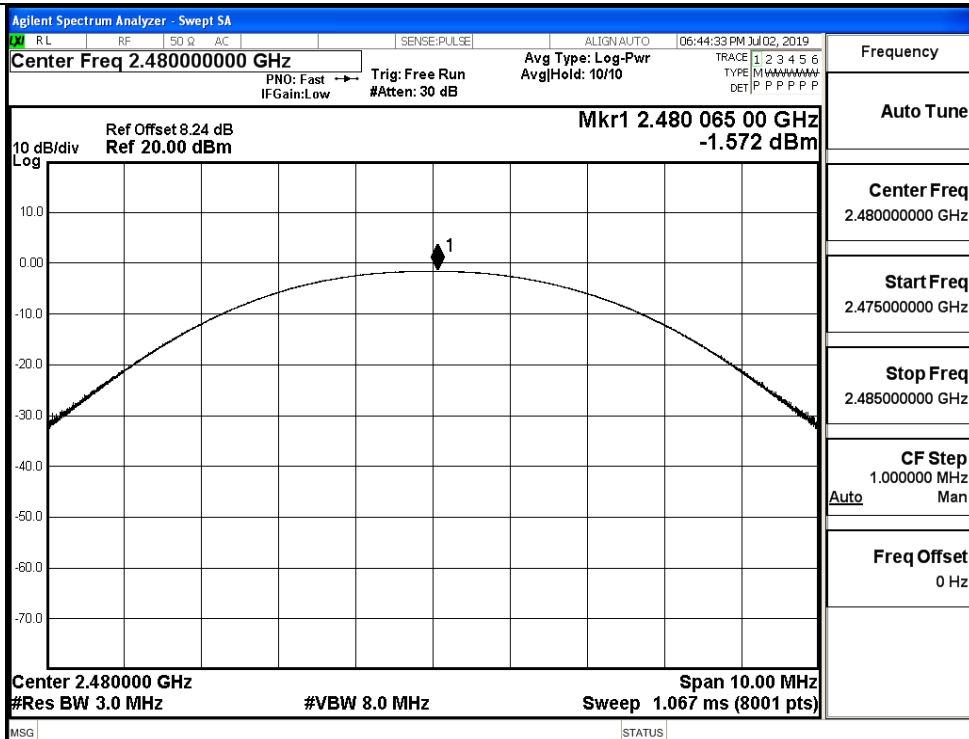
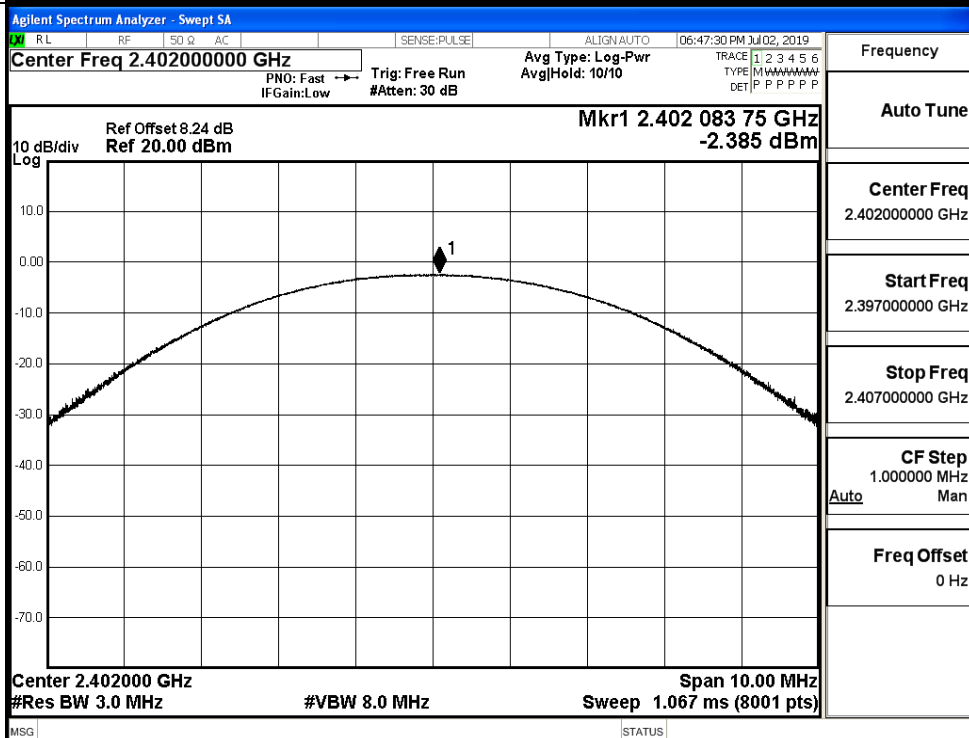
GFSK/LCH

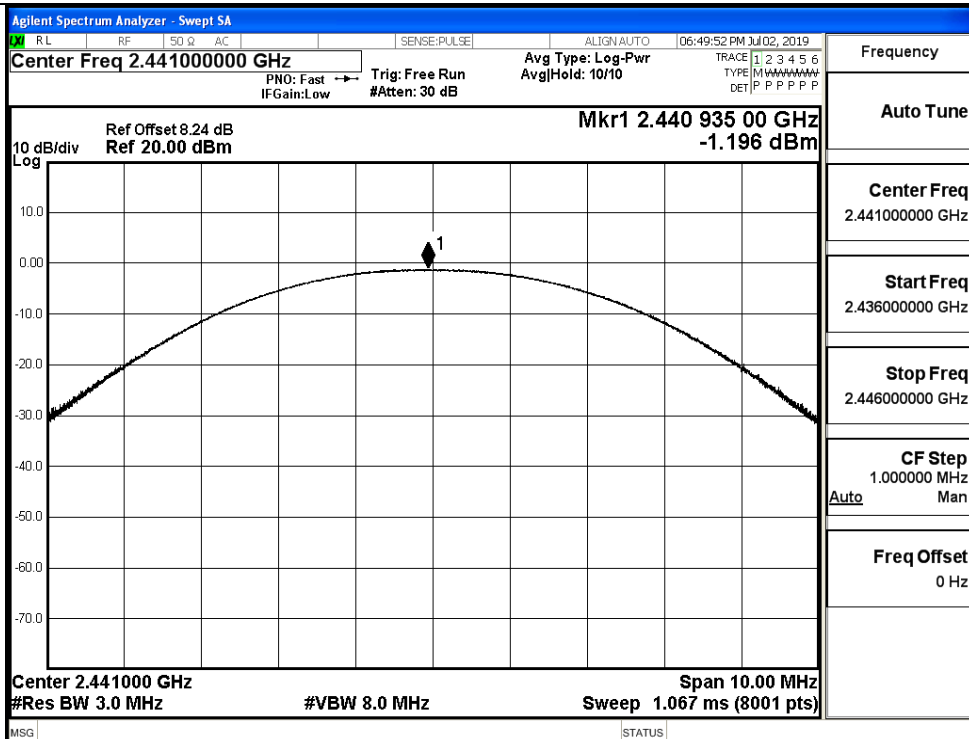
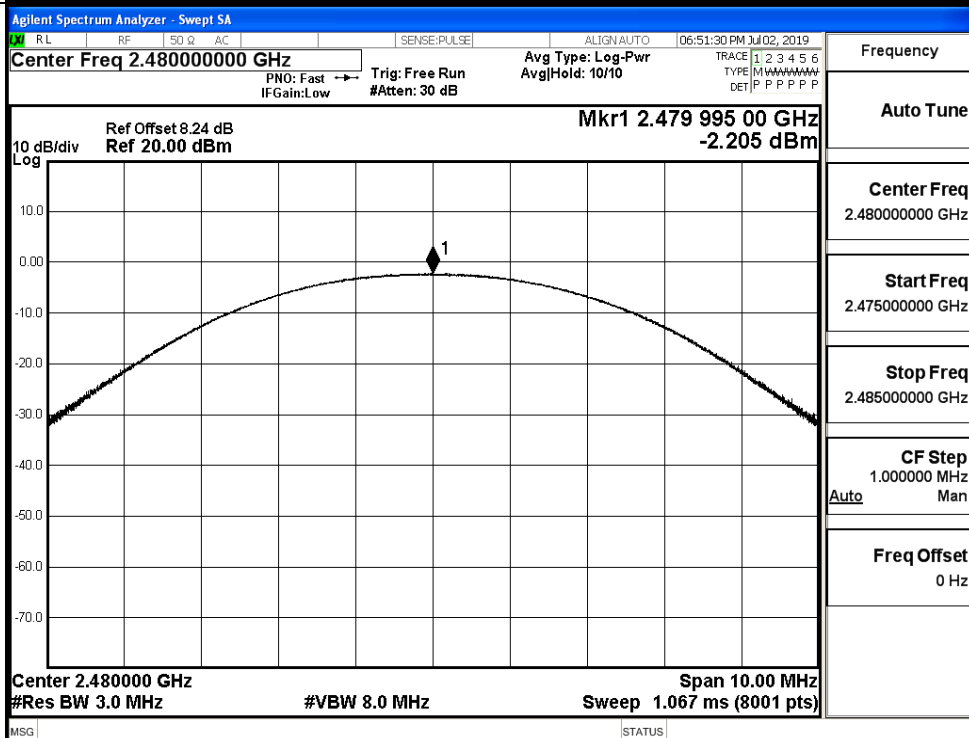


GFSK/MCH

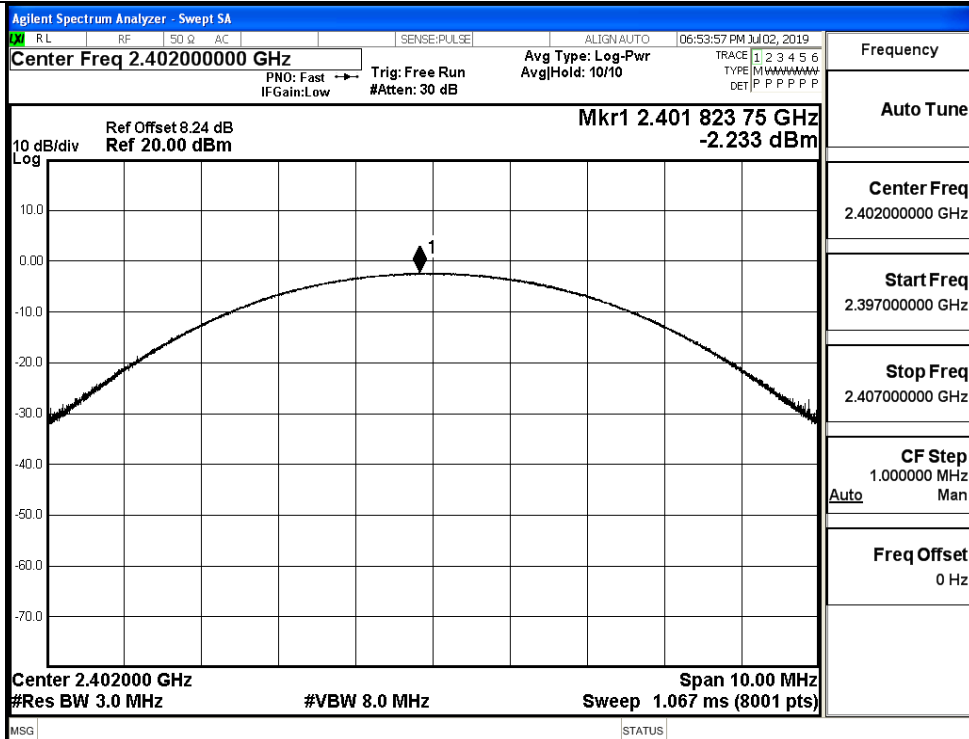


GFSK/HCH

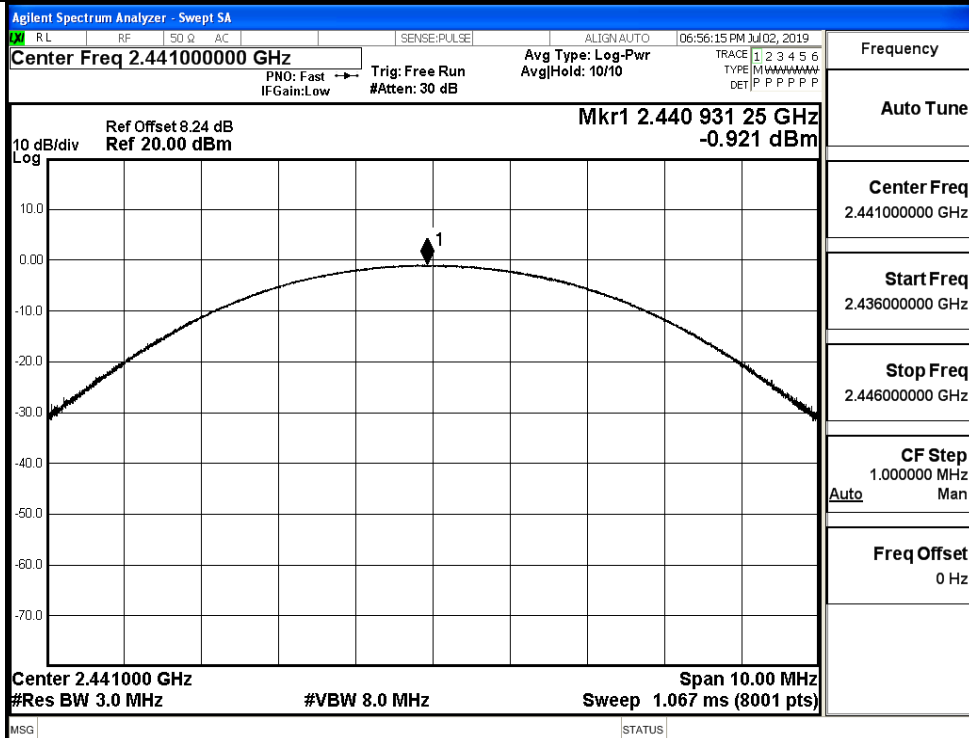
 π /4DQPSK/LCH

$\pi/4$ DQPSK/MCH $\pi/4$ DQPSK/HCH

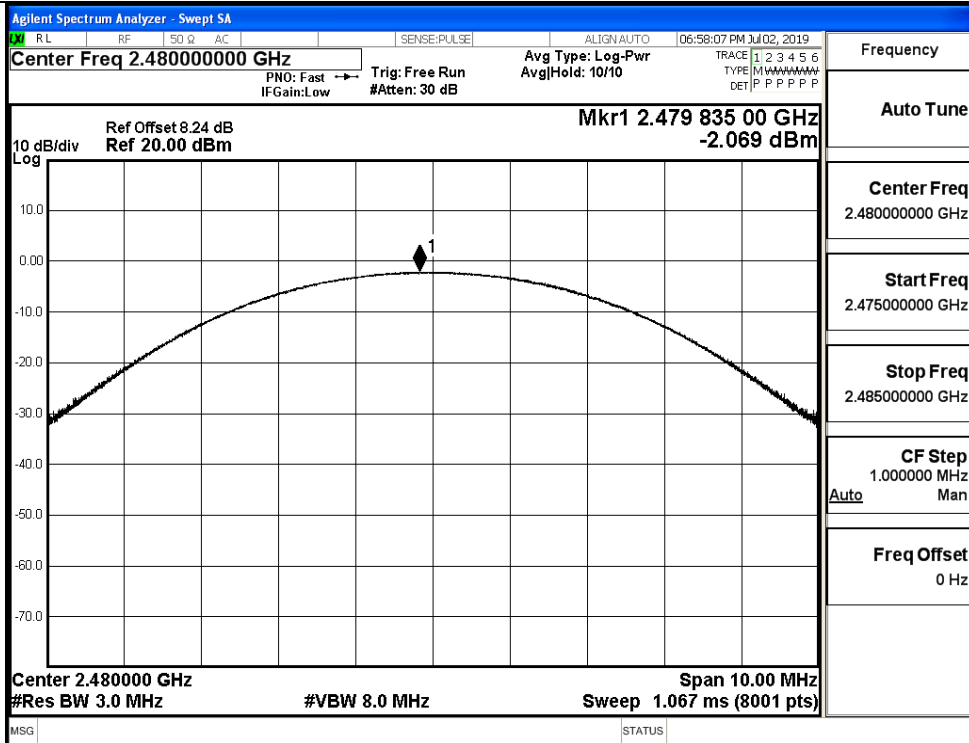
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

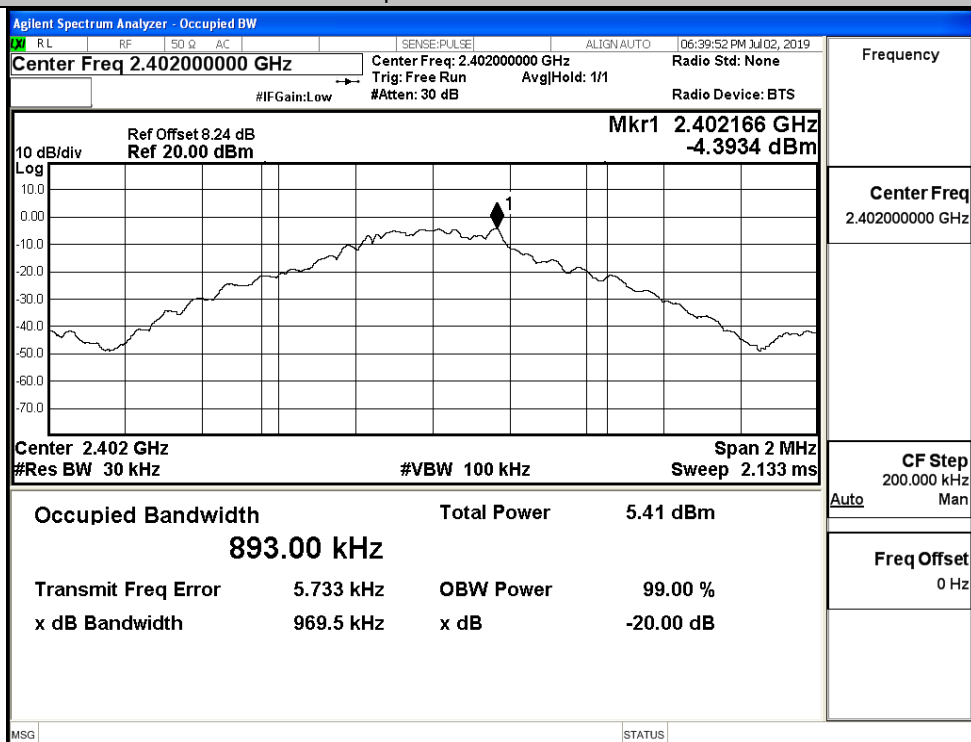


A.2 20dB Bandwidth

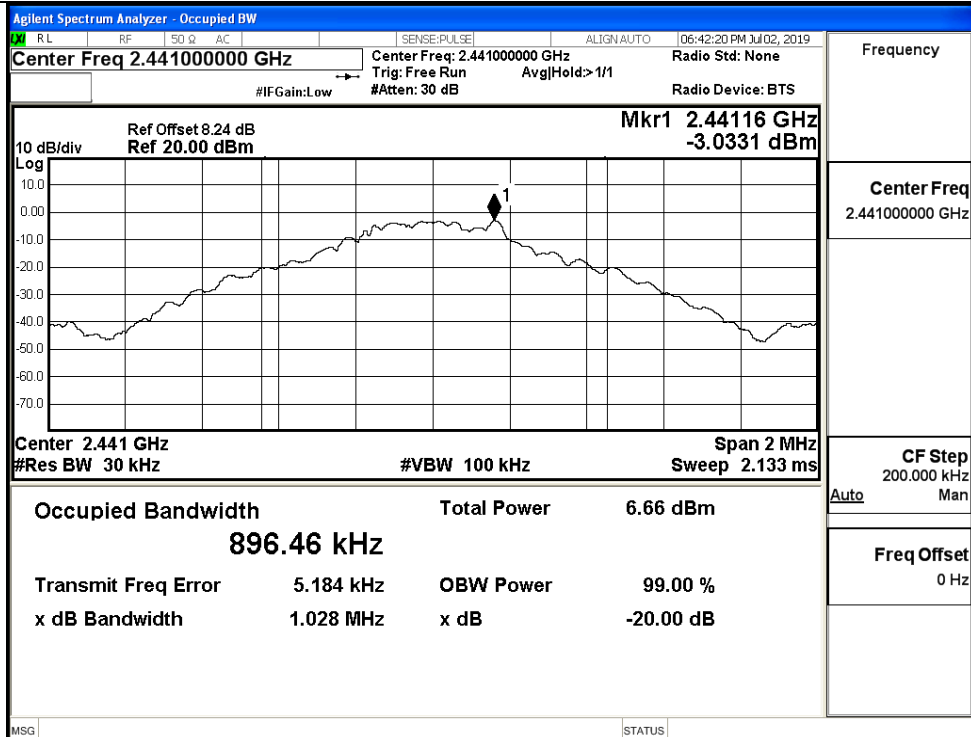
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9695	Not Specified	PASS
	MCH	1.028	Not Specified	PASS
	HCH	0.9684	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.293	Not Specified	PASS
	MCH	1.311	Not Specified	PASS
	HCH	1.292	Not Specified	PASS
8DPSK	LCH	1.295	Not Specified	PASS
	MCH	1.296	Not Specified	PASS
	HCH	1.298	Not Specified	PASS

Test Graphs

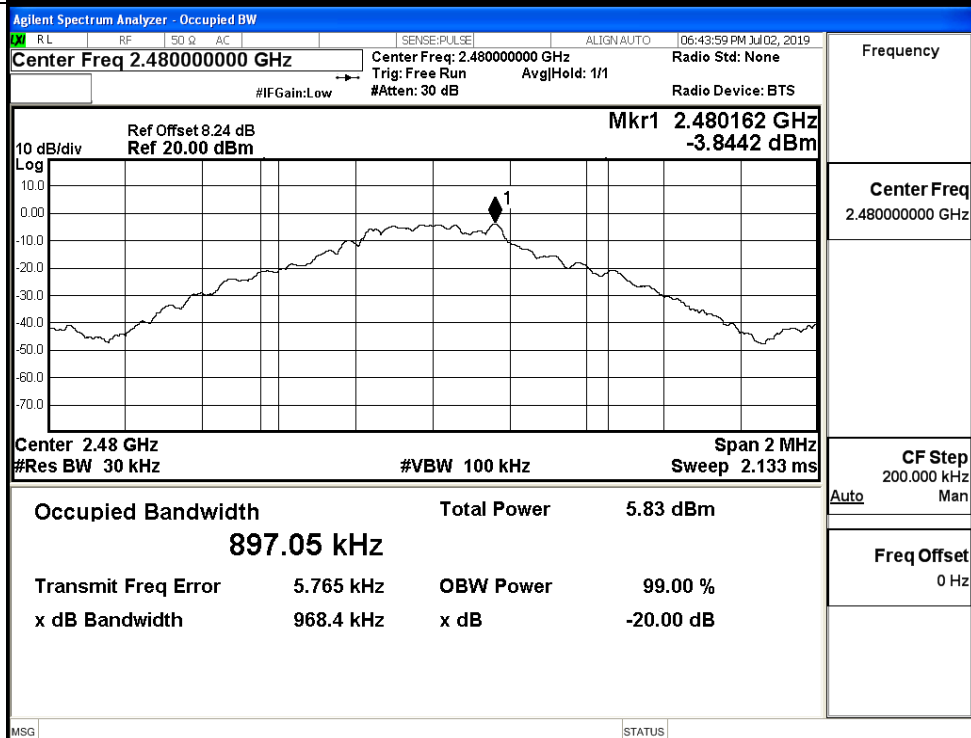
GFSK/LCH

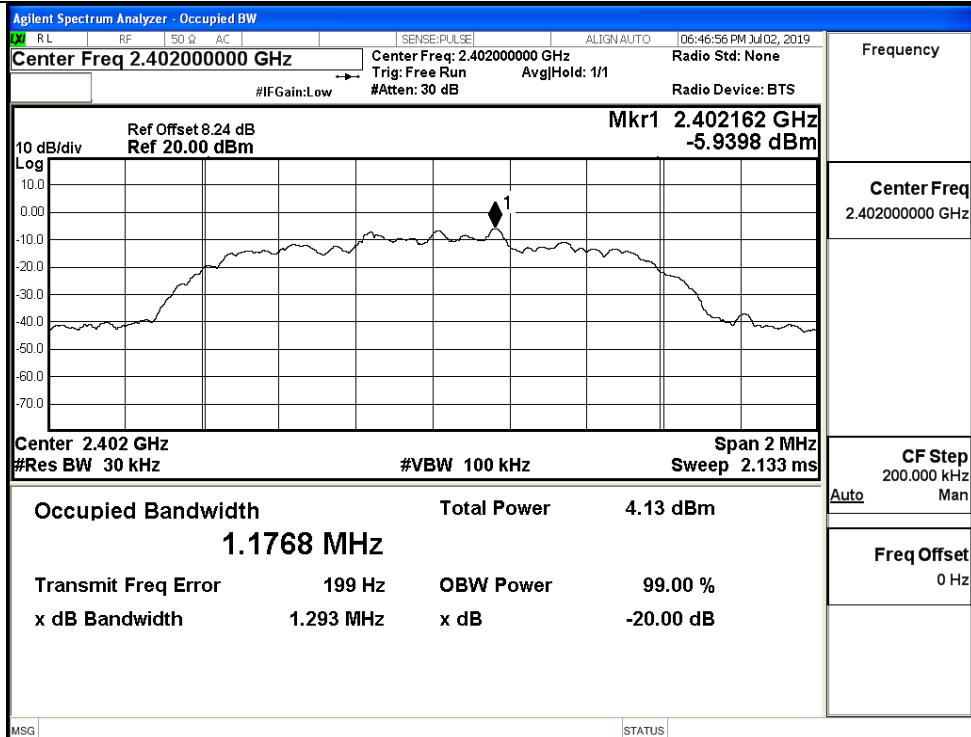
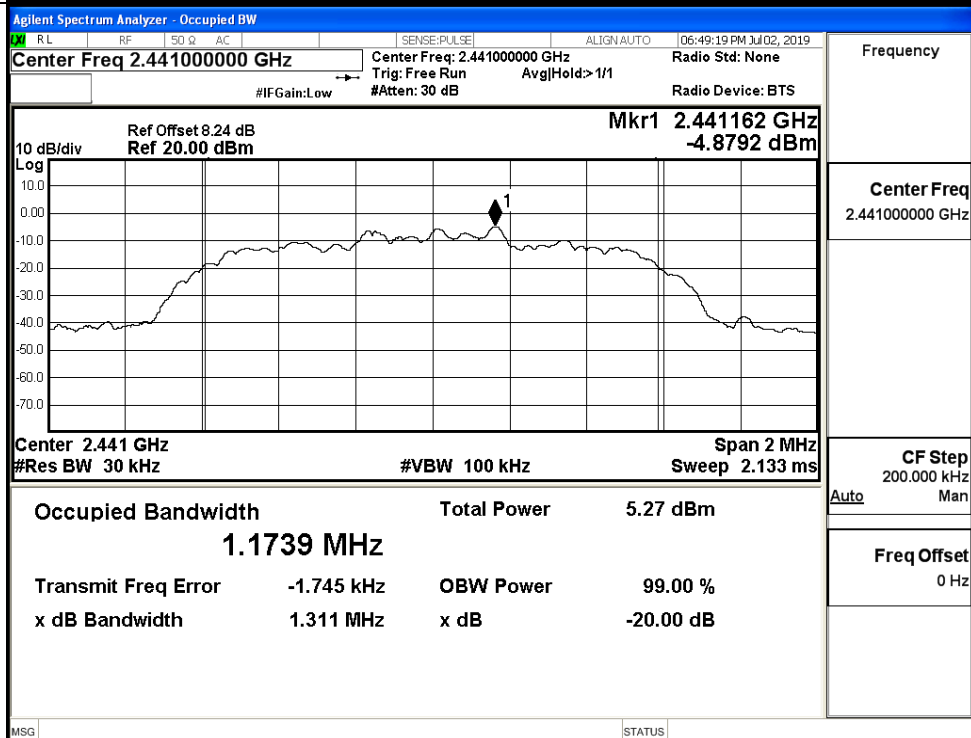


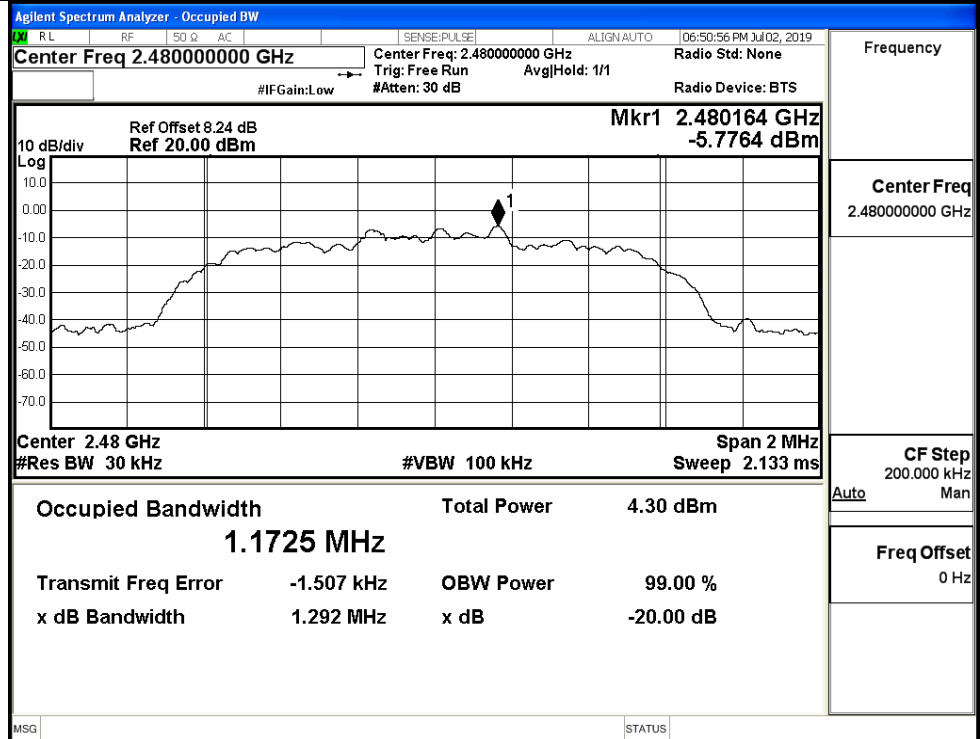
GFSK/MCH



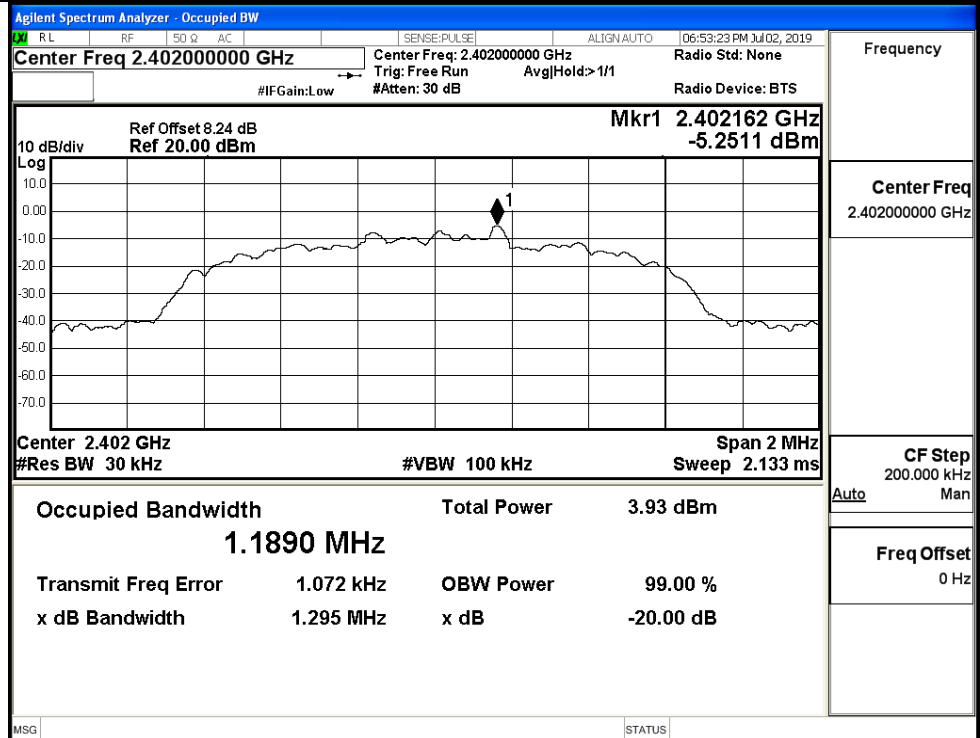
GFSK/HCH



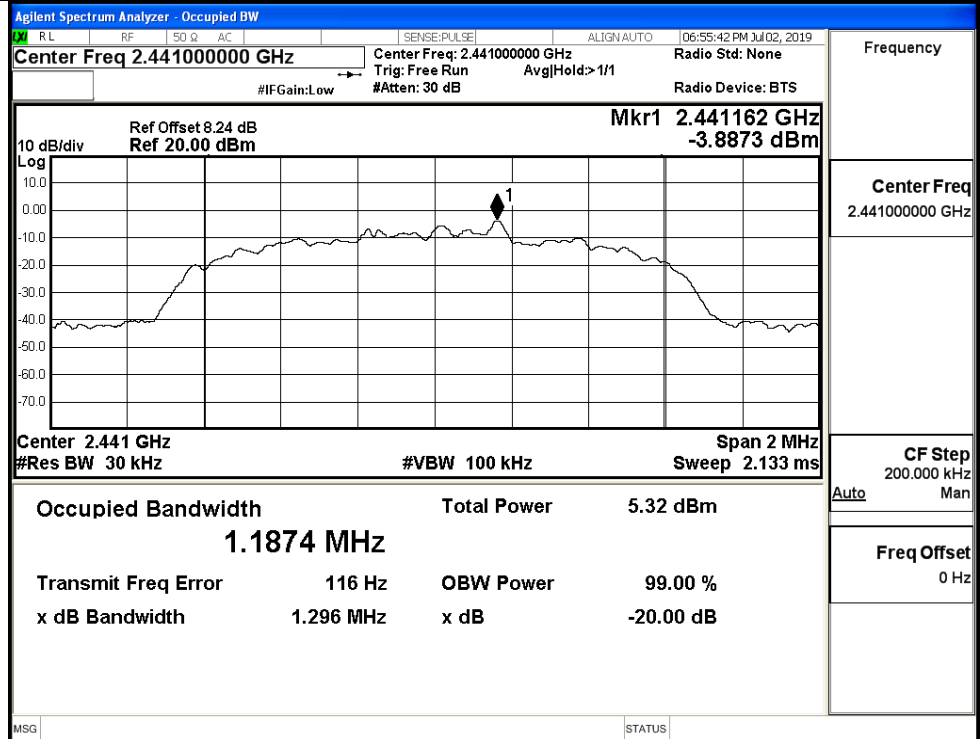
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

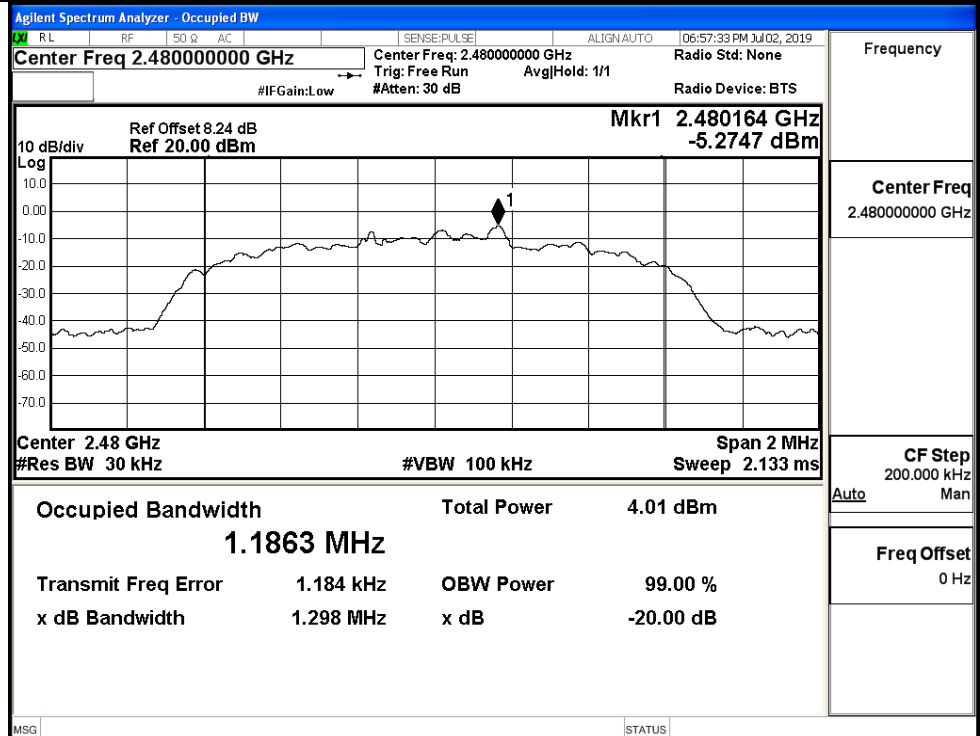
8DPSK/LCH



8DPSK/MCH



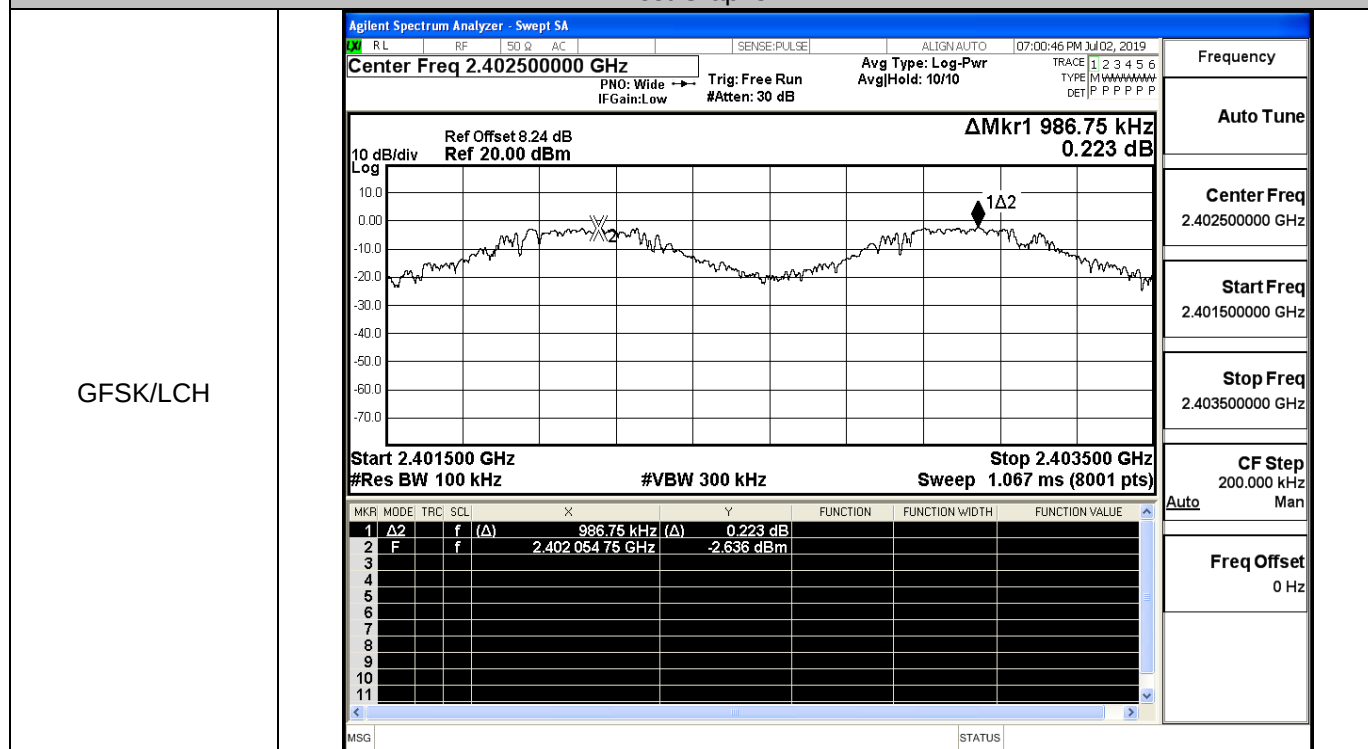
8DPSK/HCH



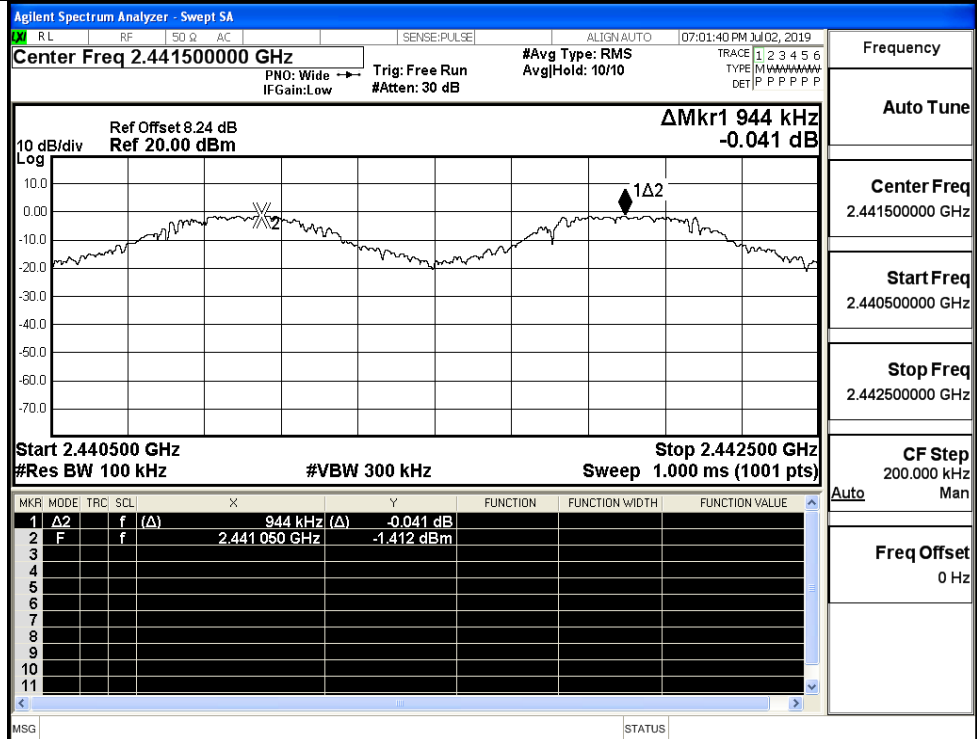
A.3 Carrier Frequency Separation

Mode	Channel	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.987	0.685	PASS
	MCH	0.944	0.685	PASS
	HCH	0.876	0.685	PASS
π /4DQPSK	LCH	0.992	0.874	PASS
	MCH	1.008	0.874	PASS
	HCH	1.002	0.874	PASS
8DPSK	LCH	1.242	0.865	PASS
	MCH	1.102	0.865	PASS
	HCH	0.886	0.865	PASS

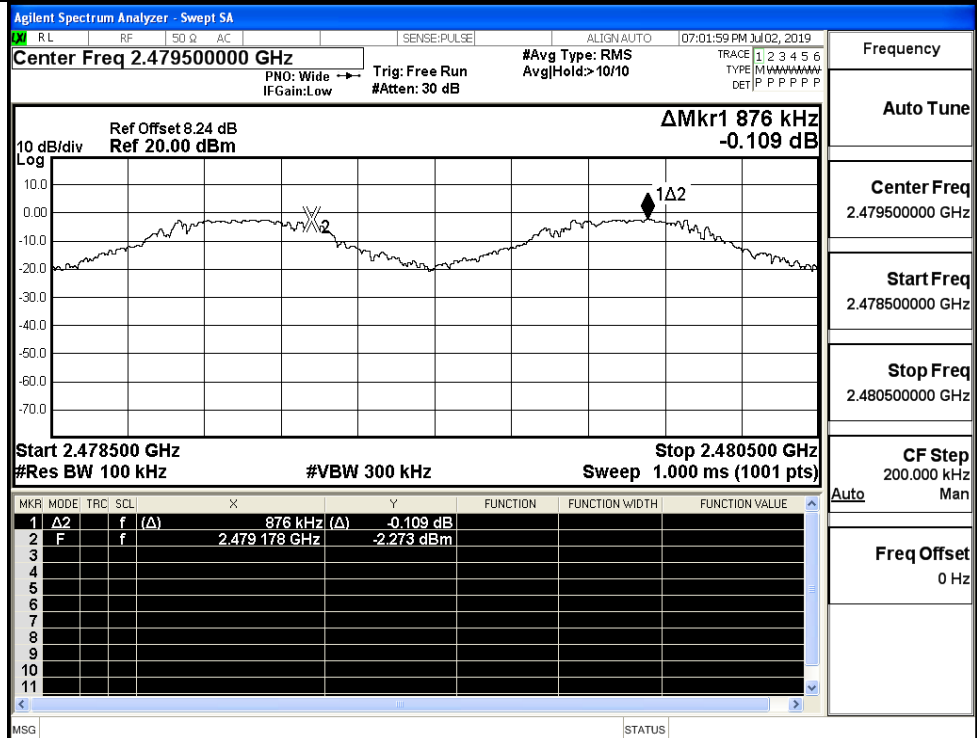
Test Graphs

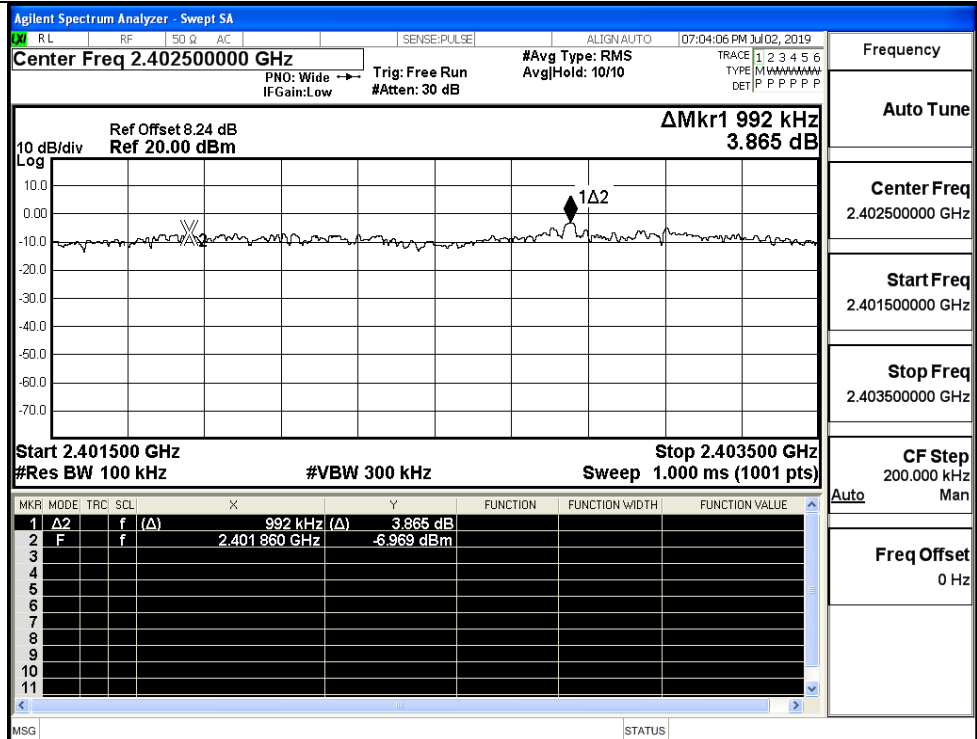
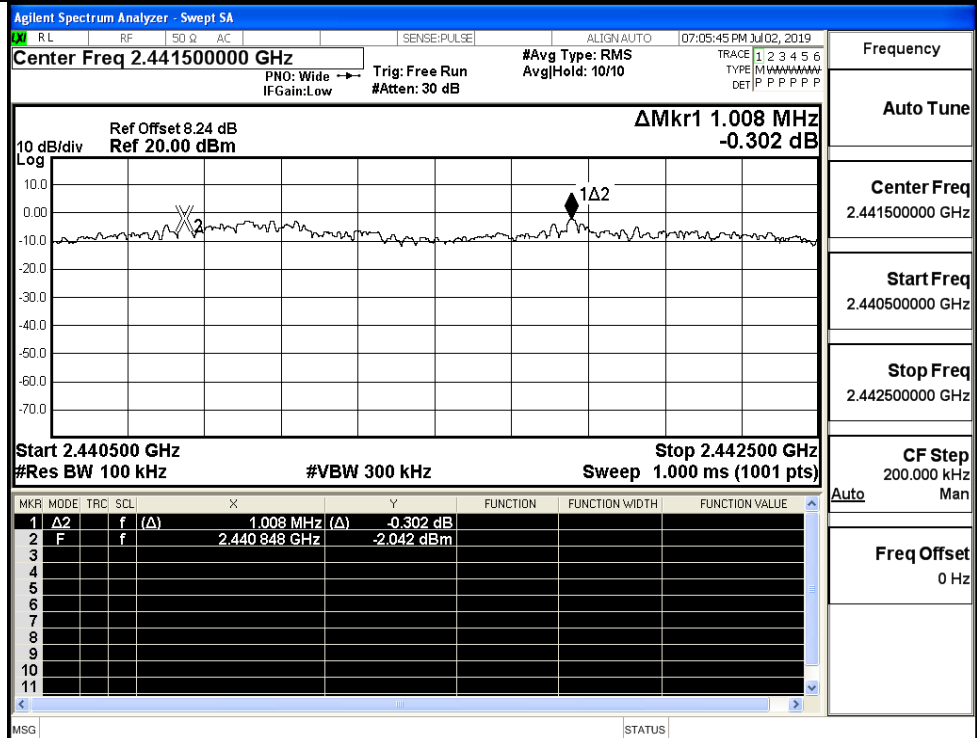


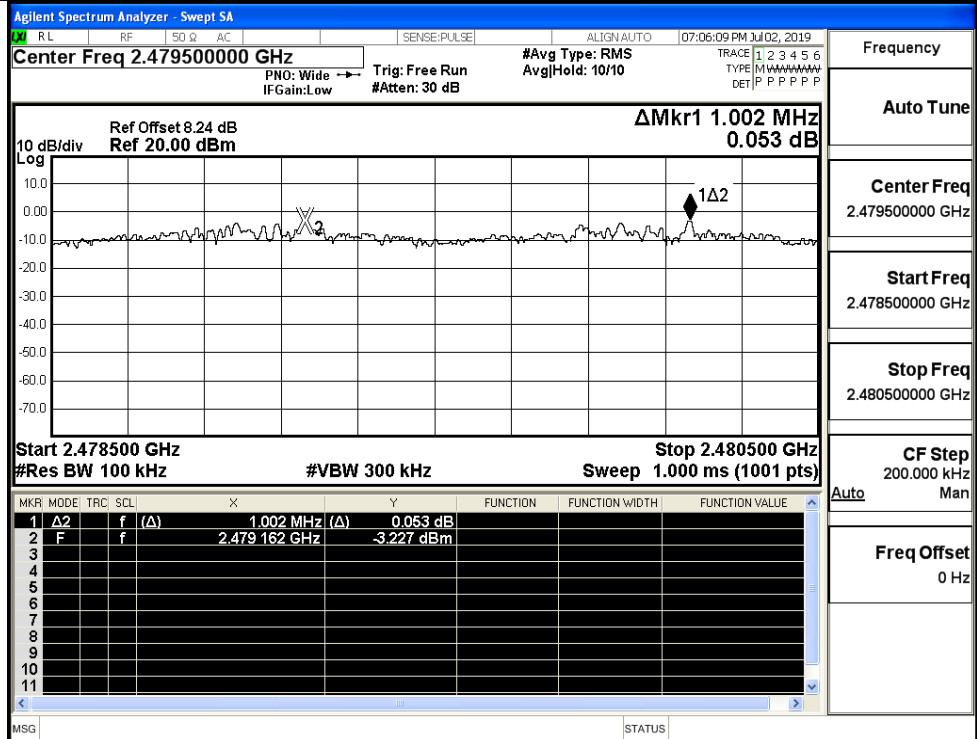
GFSK/MCH



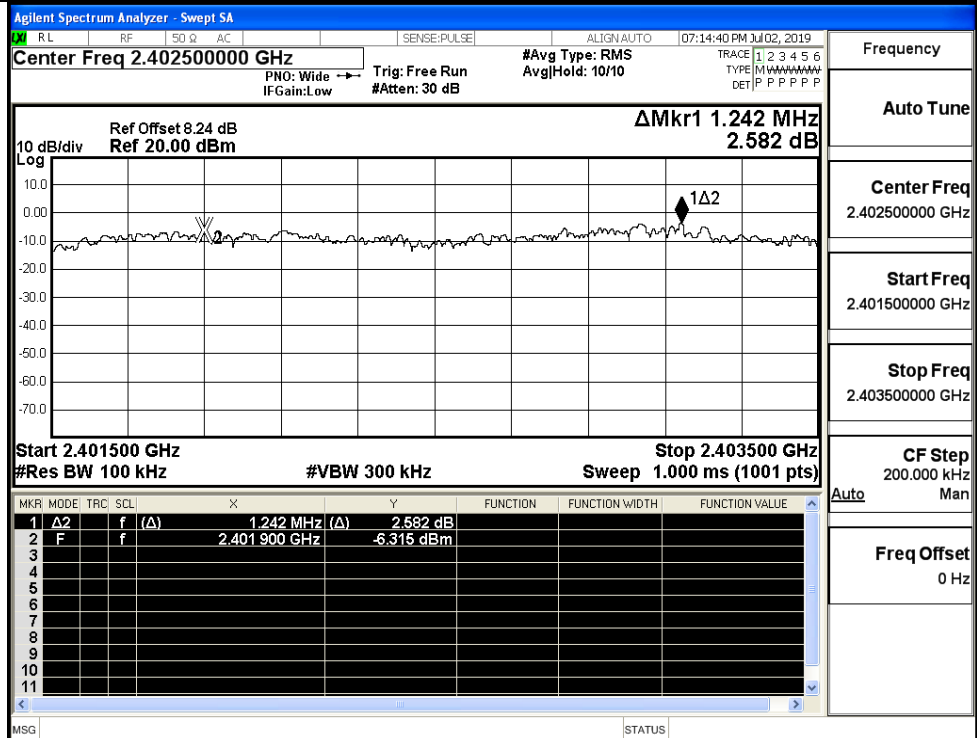
GFSK/HCH



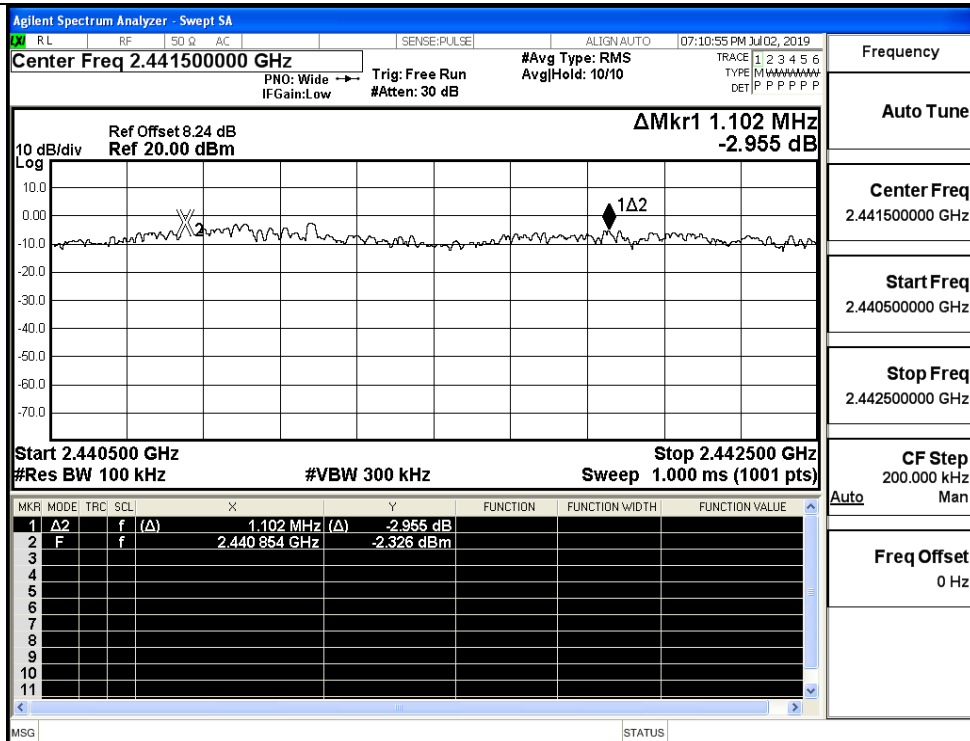
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

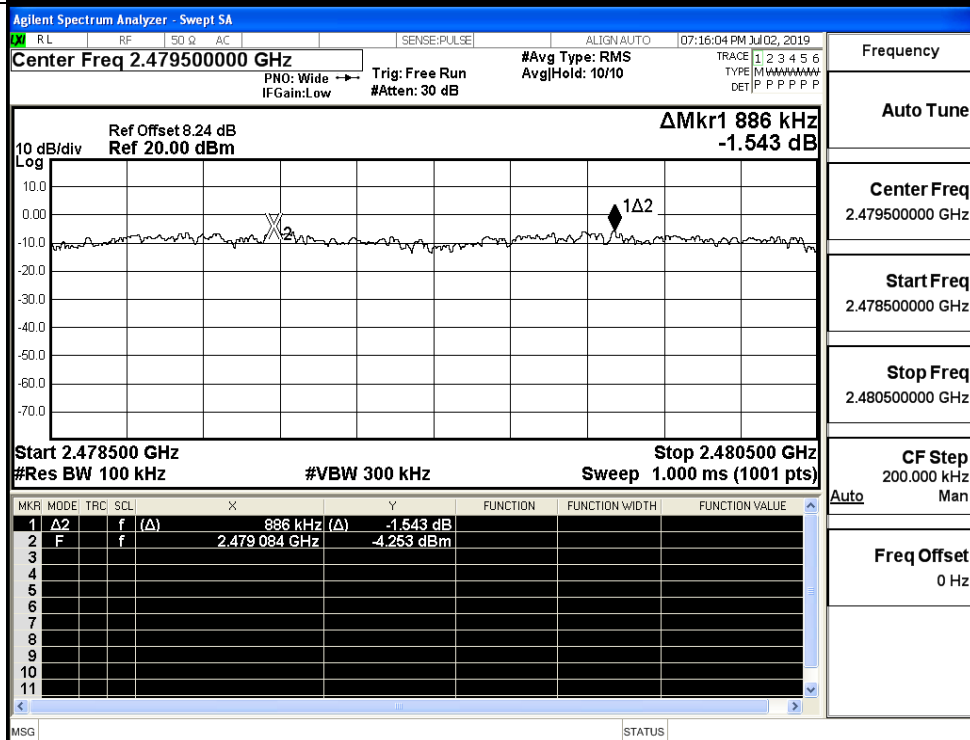
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

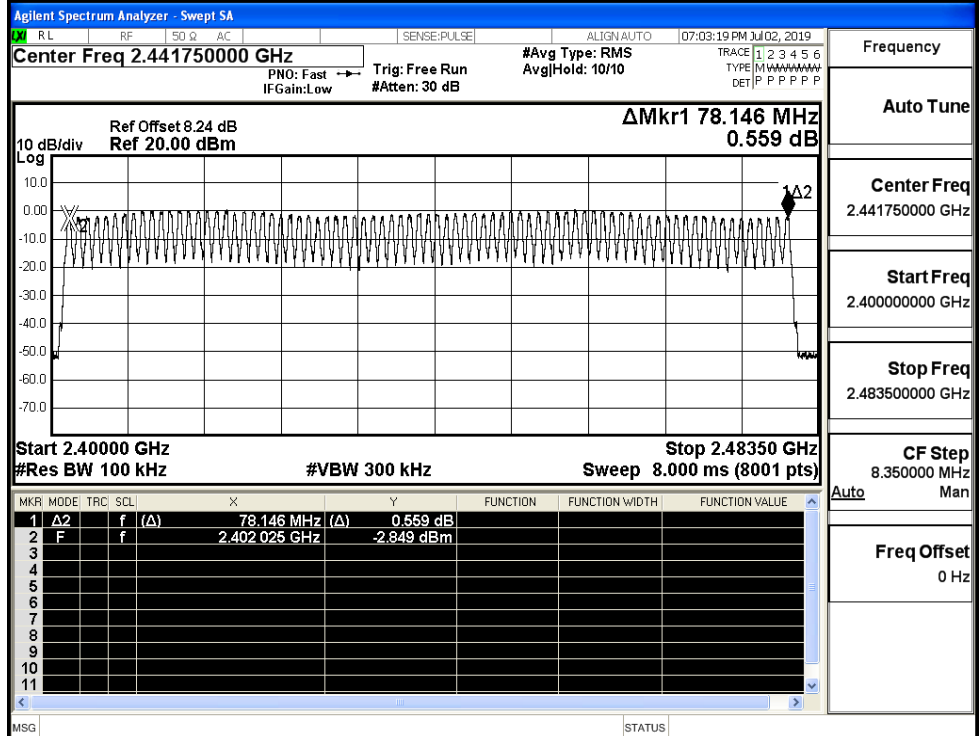
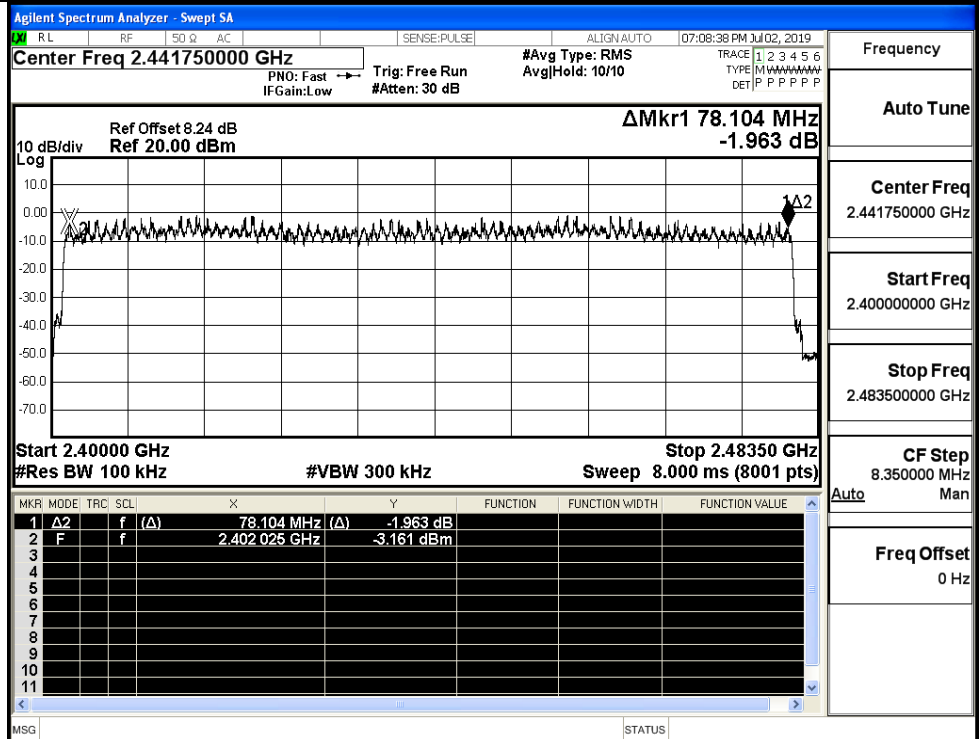


A.4 Hopping Channel Number

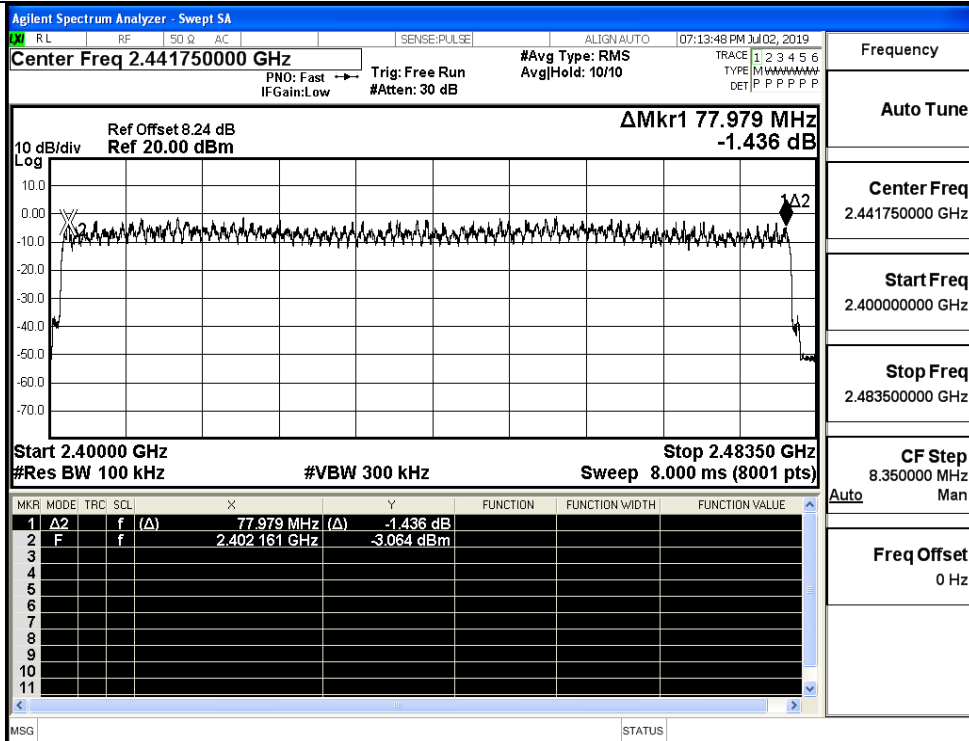
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

Test Graphs

GFSK/Hop

 $\pi/4$ DQPSK/Hop

8DPSK/Hop

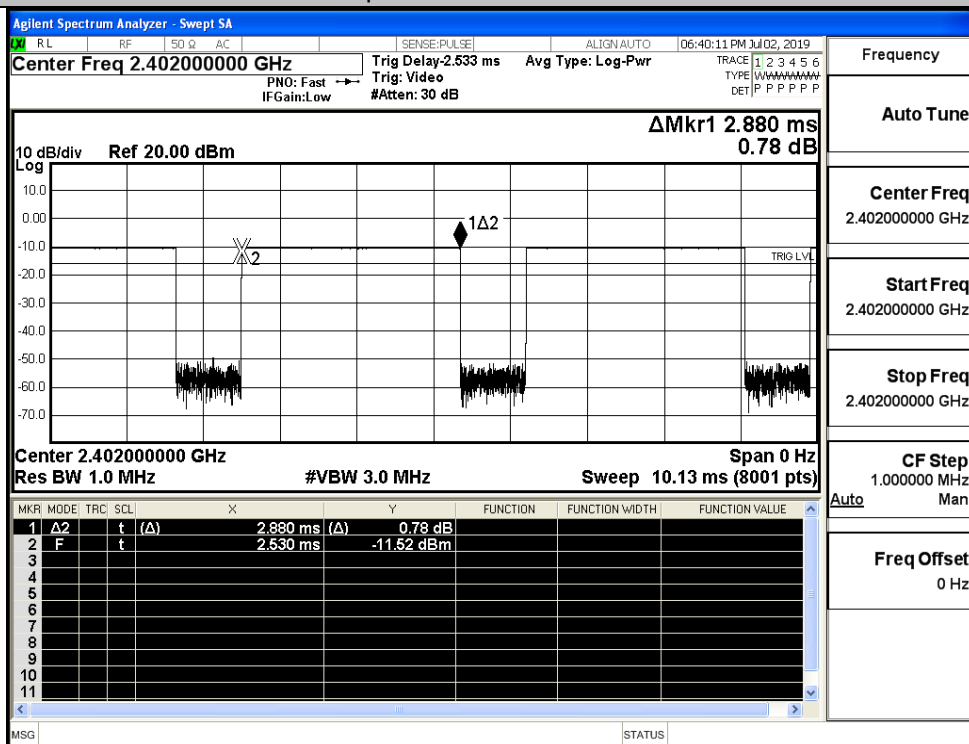


A.5 Dwell Time

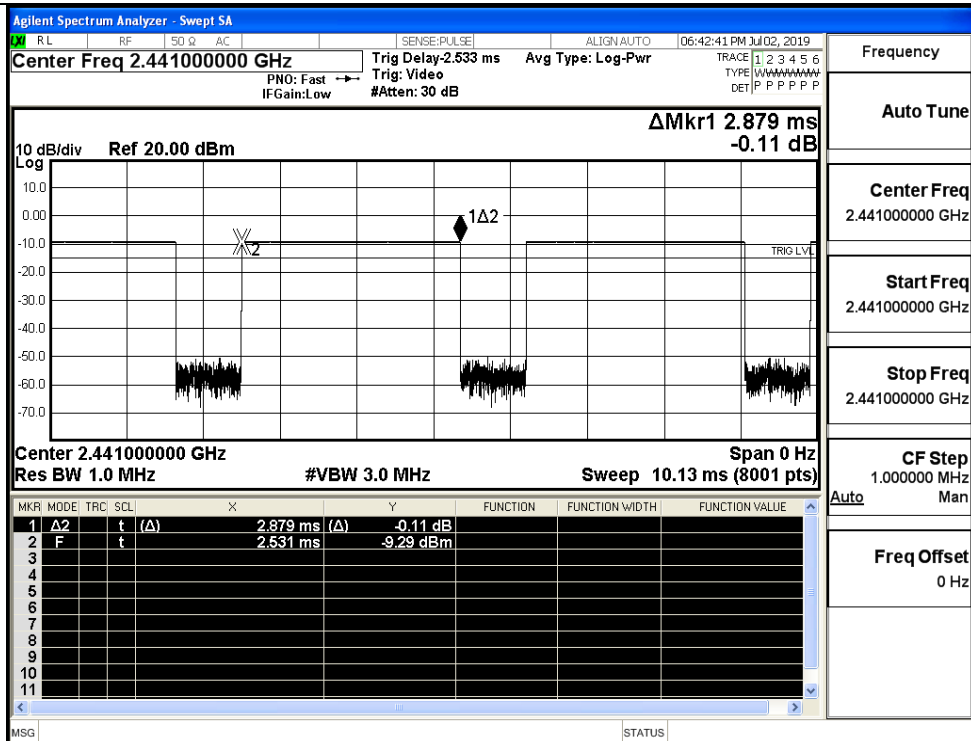
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88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

Test Graphs

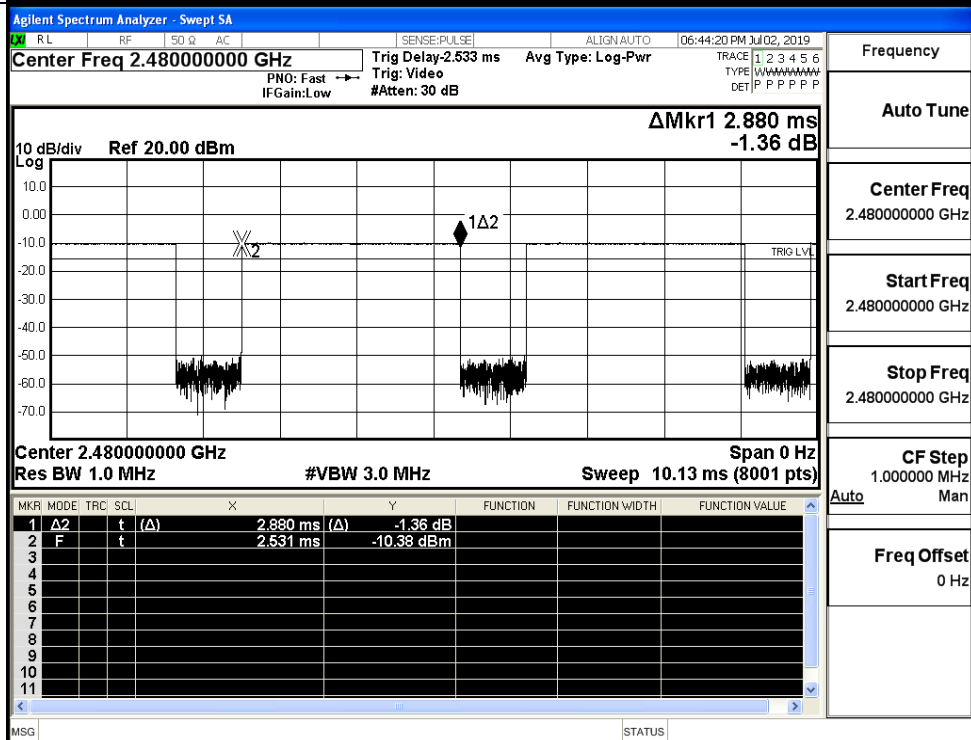
GFSK_DH5/LCH



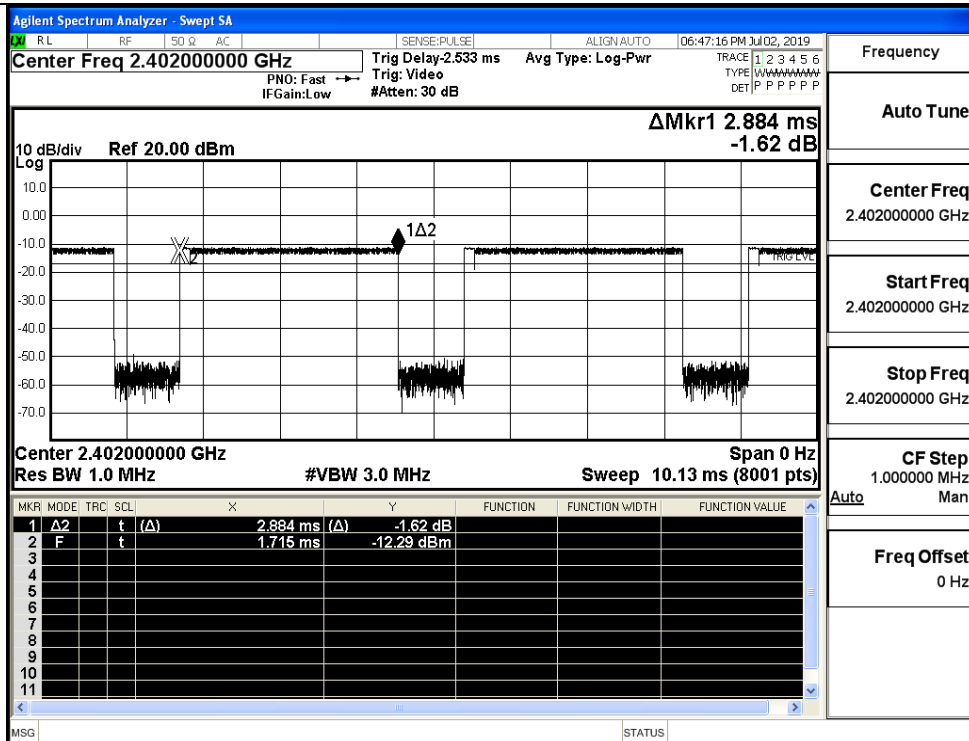
GFSK_DH5/MCH



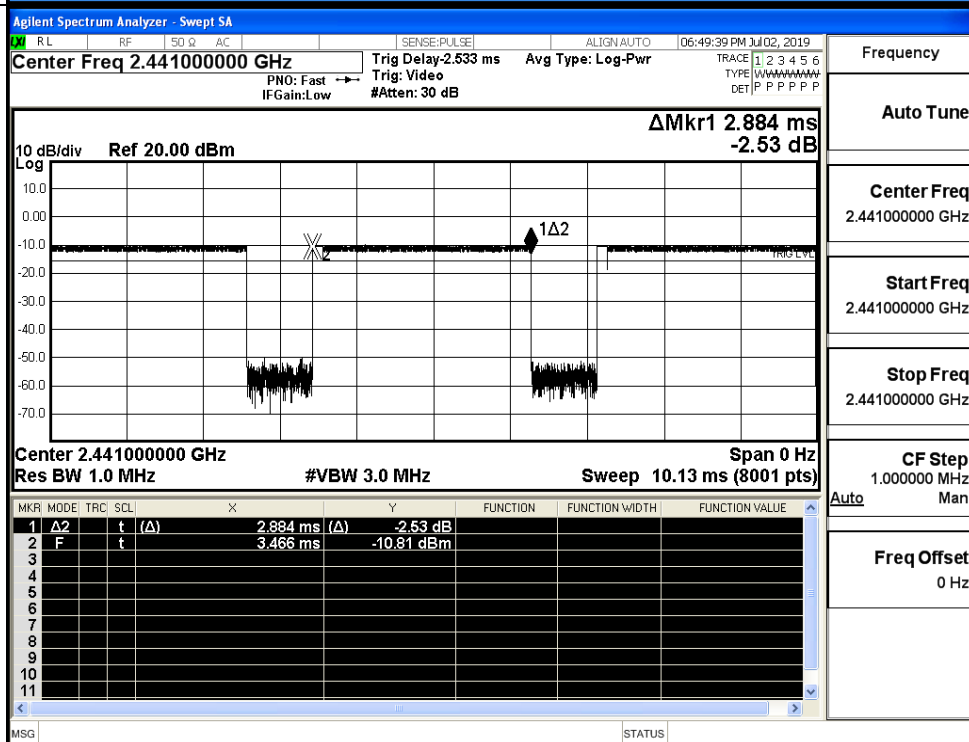
GFSK_DH5/HCH



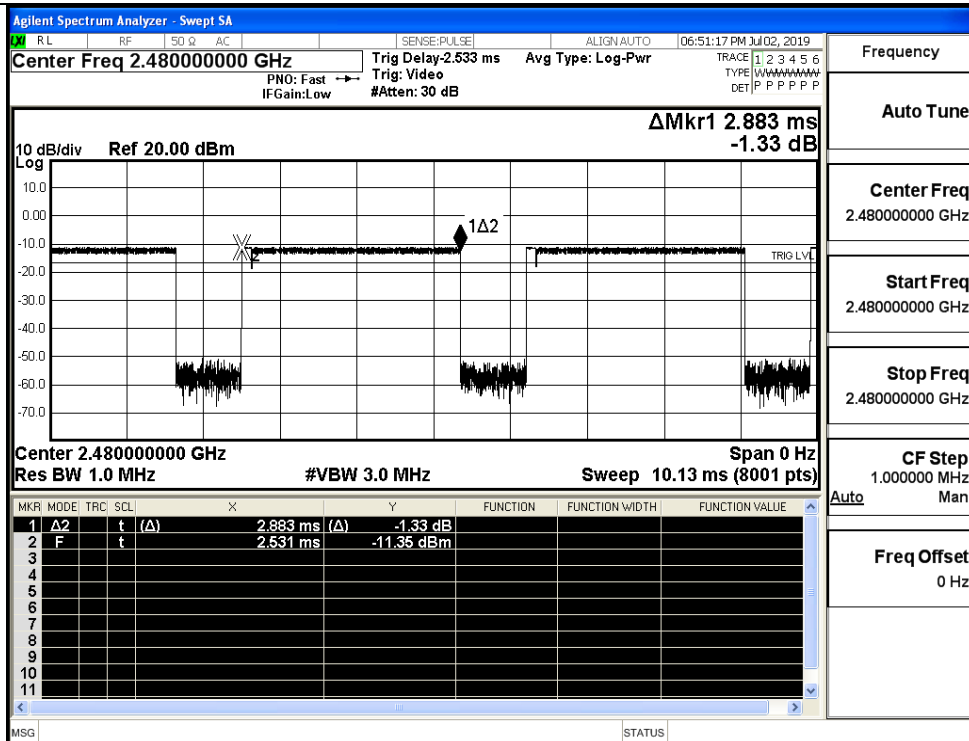
$\pi/4$ DQPSK
_2DH5/LCH



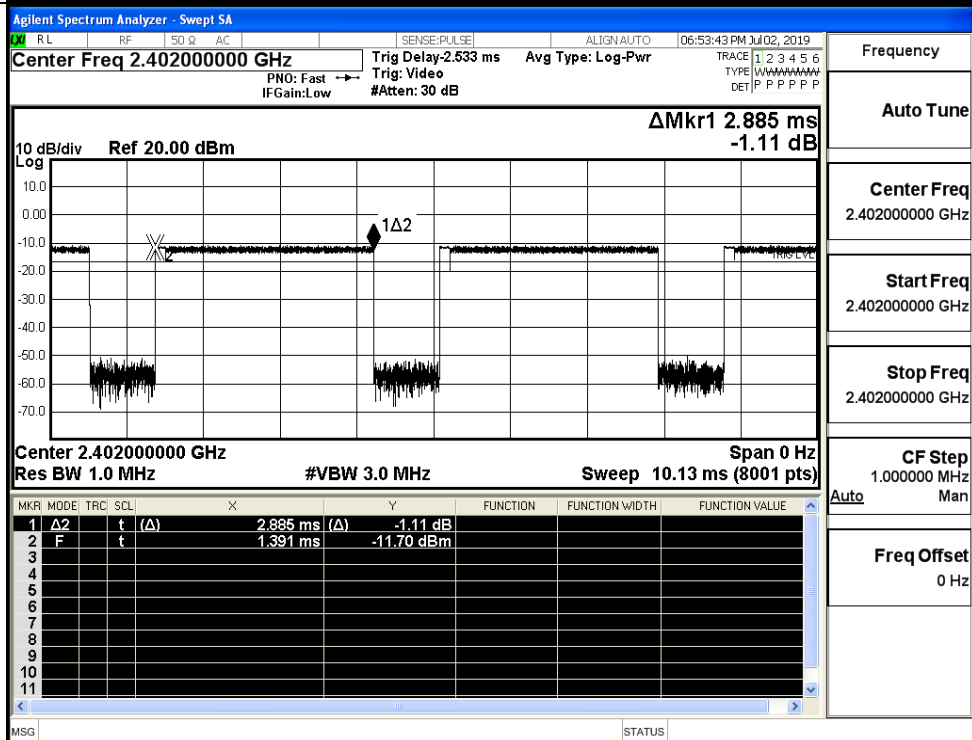
$\pi/4$ DQPSK
_2DH5/MCH



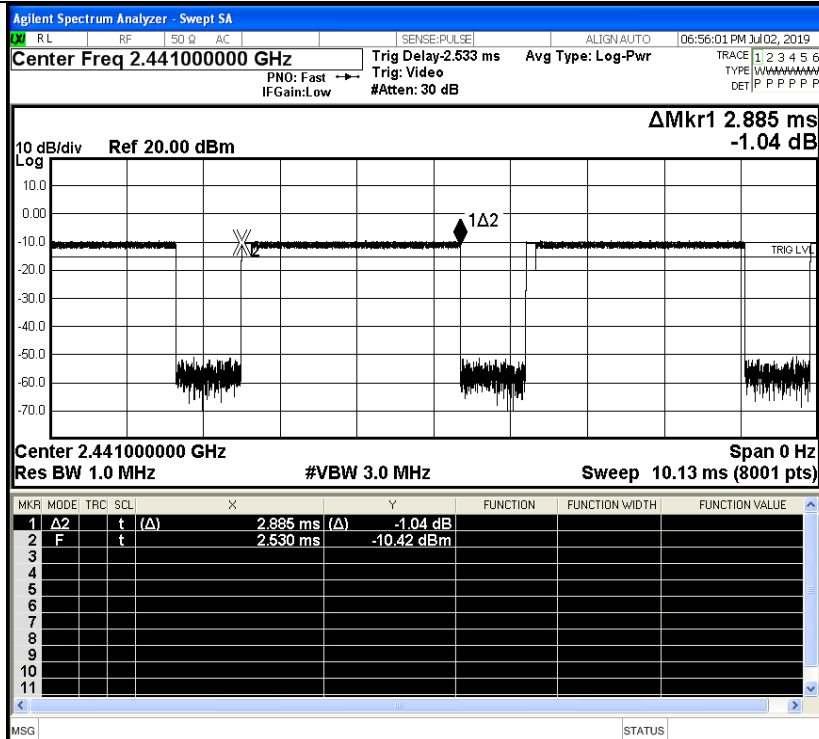
$\pi/4$ DQPSK
_2DH5/HCH



8DPSK _3DH5/LCH



8DPSK_3DH5/MCH

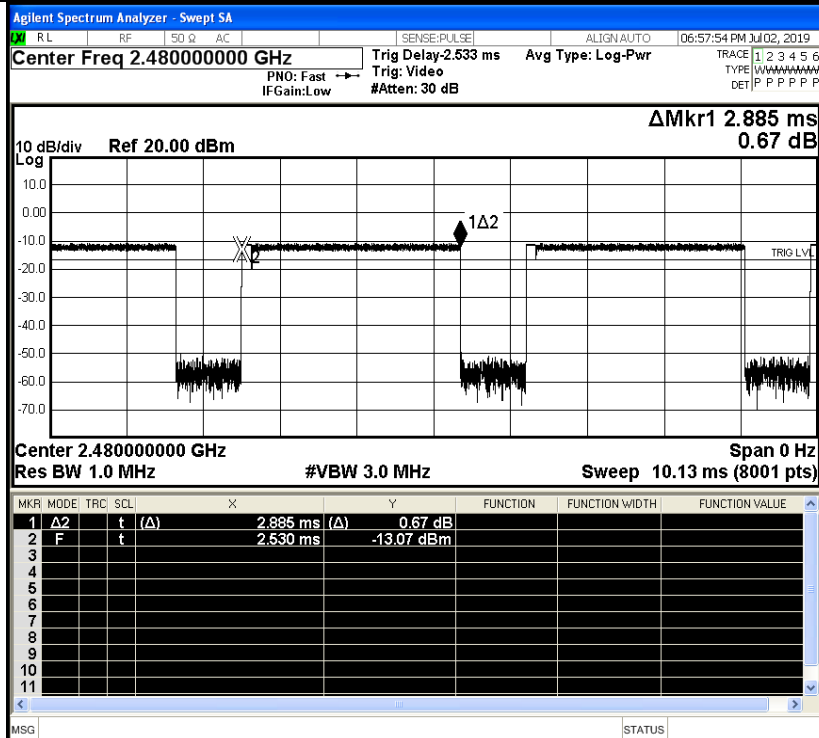


Frequency

Auto Tune

Center Freq
2.441000000 GHzStart Freq
2.441000000 GHzStop Freq
2.441000000 GHzCF Step
1.000000 MHz
Auto ManFreq Offset
0 Hz

8DPSK_3DH5/HCH



Frequency

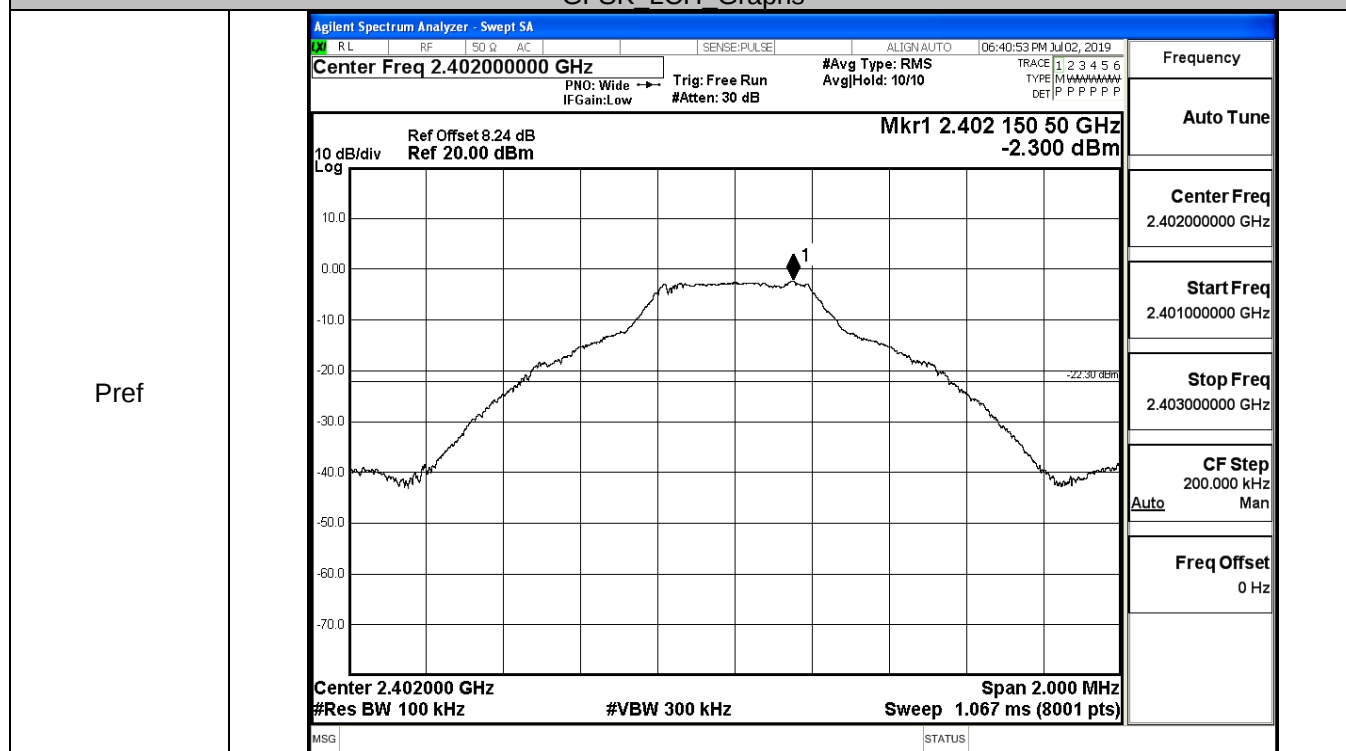
Auto Tune

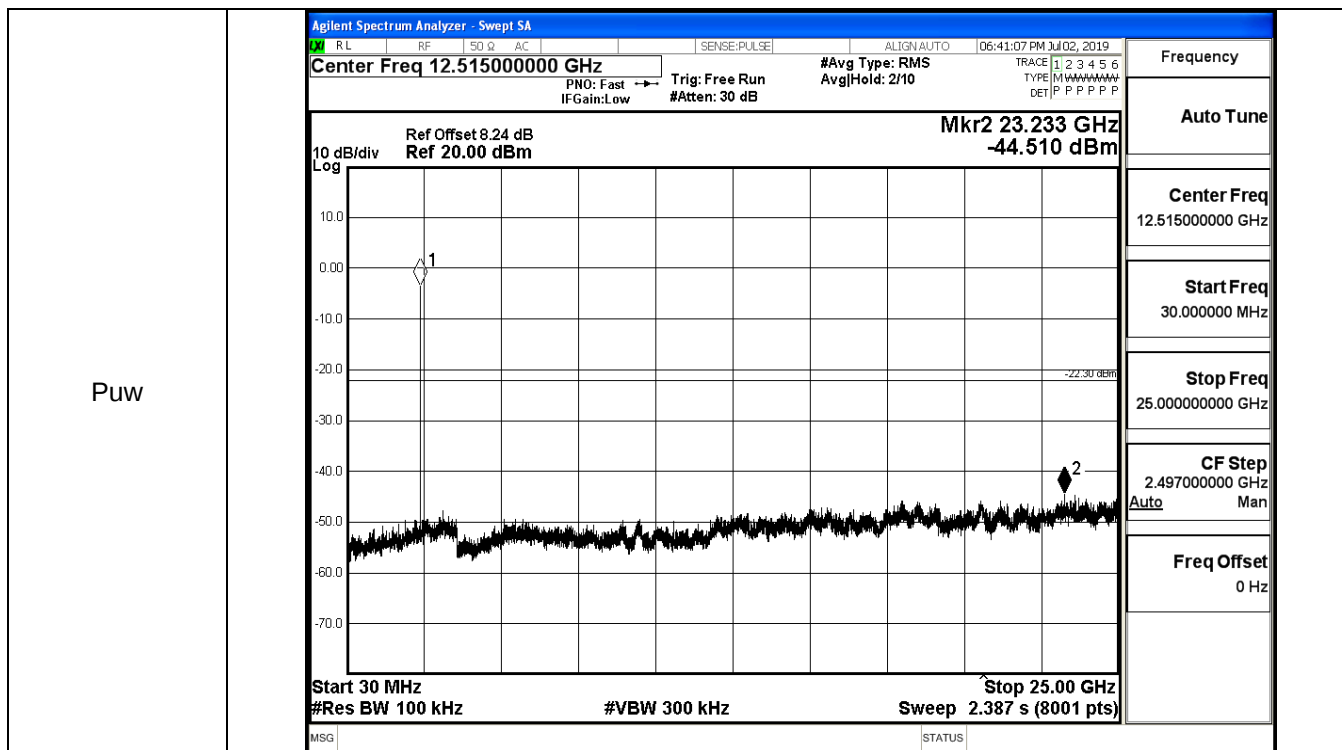
Center Freq
2.480000000 GHzStart Freq
2.480000000 GHzStop Freq
2.480000000 GHzCF Step
1.000000 MHz
Auto ManFreq Offset
0 Hz

A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-2.3	-44.510	-22.300	PASS
	MCH	-0.941	-45.344	-20.941	PASS
	HCH	-1.812	-44.779	-21.812	PASS
$\pi/4$ DQPSK	LCH	-3.215	-44.954	-23.215	PASS
	MCH	-2.076	-45.062	-22.076	PASS
	HCH	-2.963	-44.320	-22.963	PASS
8DPSK	LCH	-3.222	-45.153	-23.222	PASS
	MCH	-1.813	-43.554	-21.813	PASS
	HCH	-2.964	-44.844	-22.964	PASS

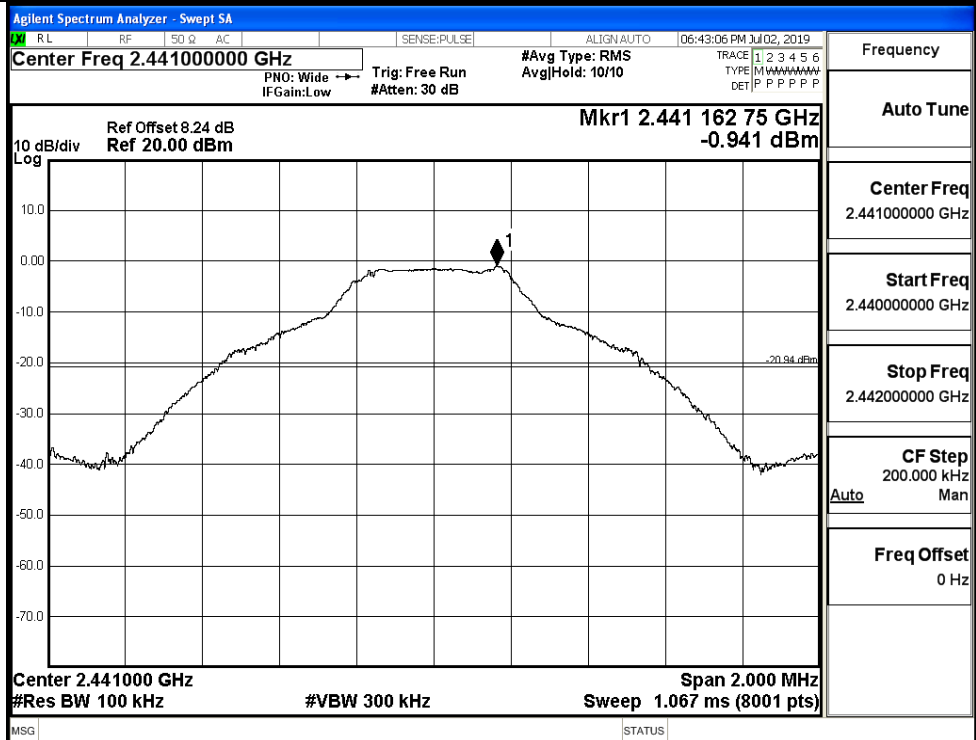
GFSK LCH Graphs



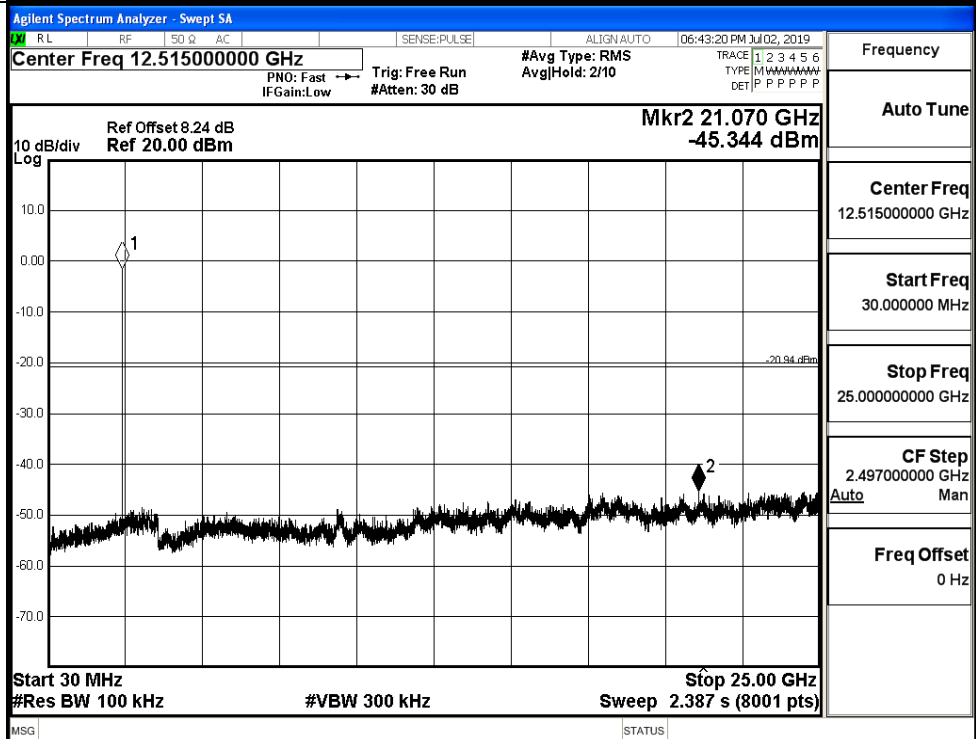


GFSK MCH Graphs

Pref

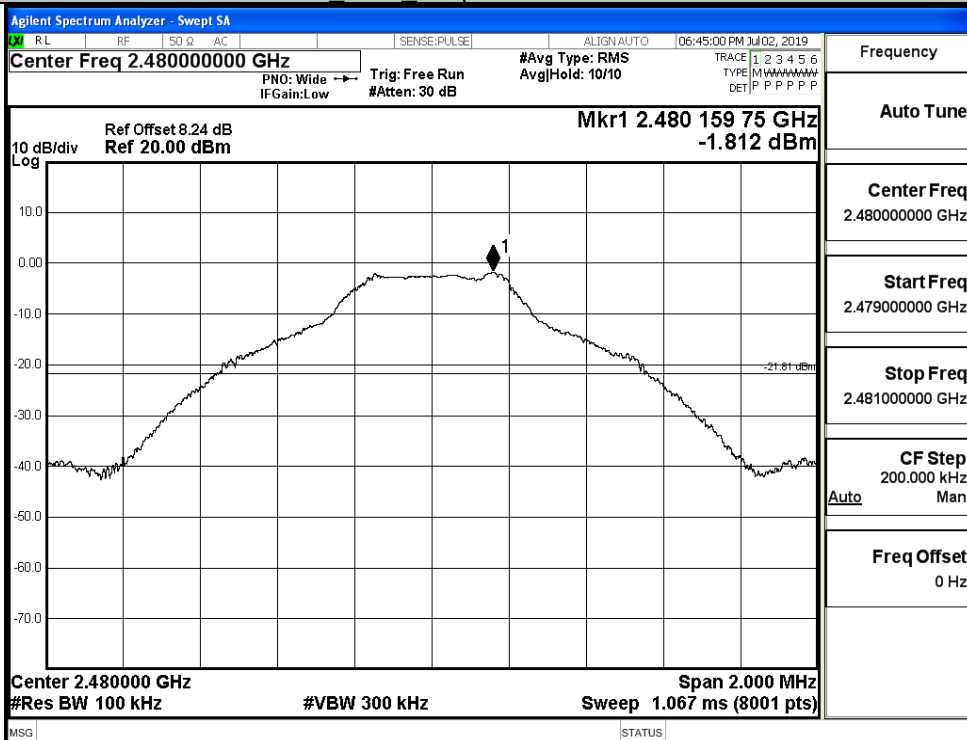


Puw

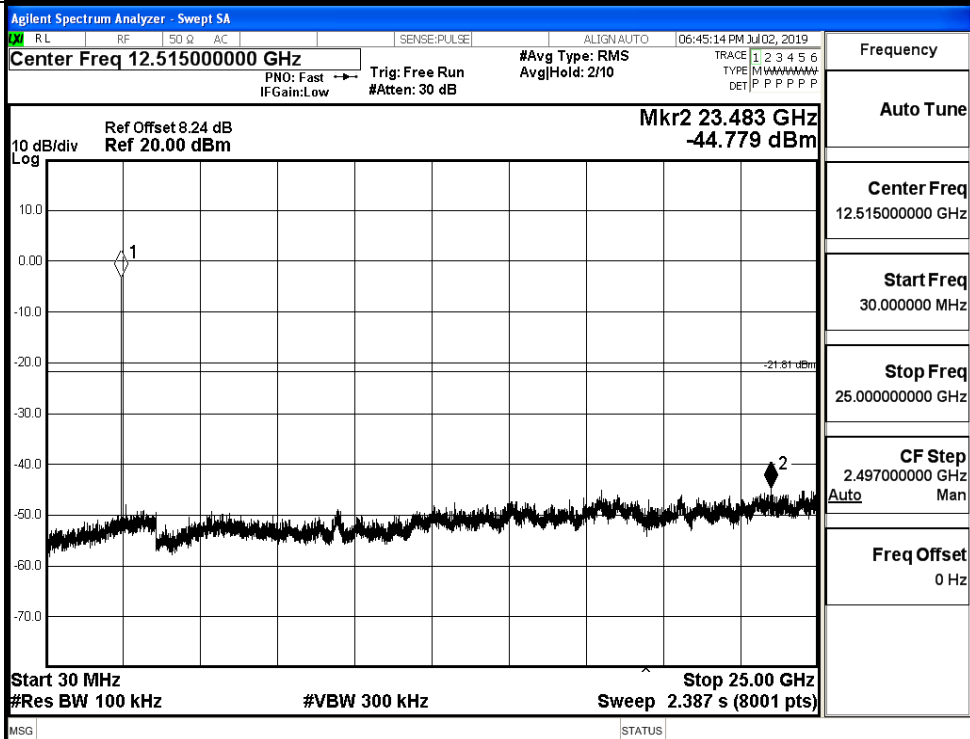


GFSK HCH Graphs

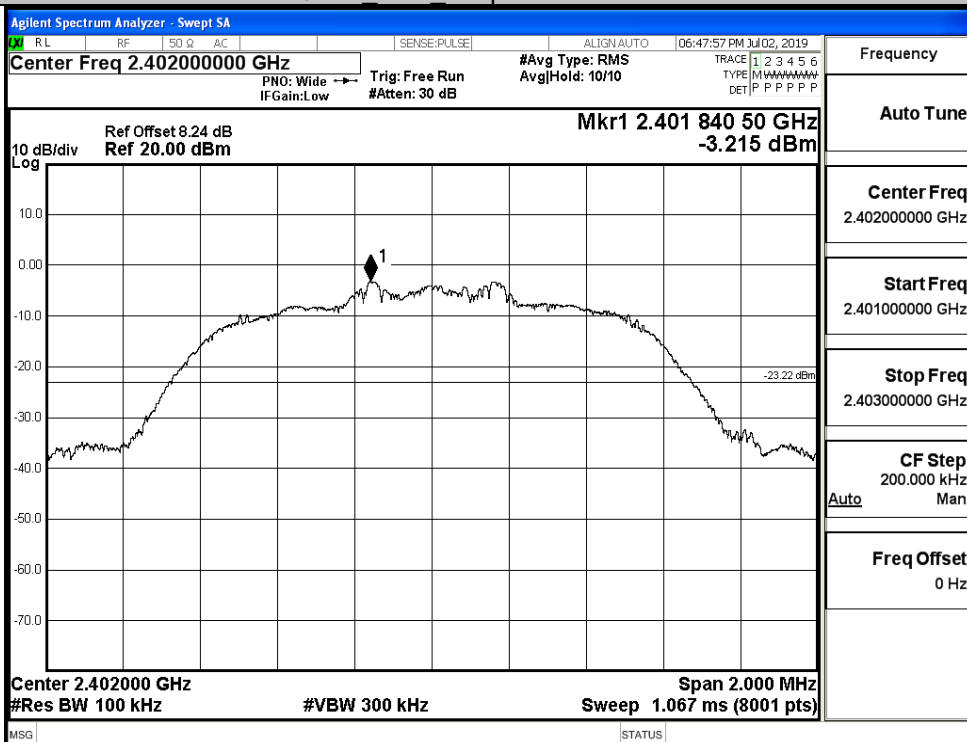
Pref



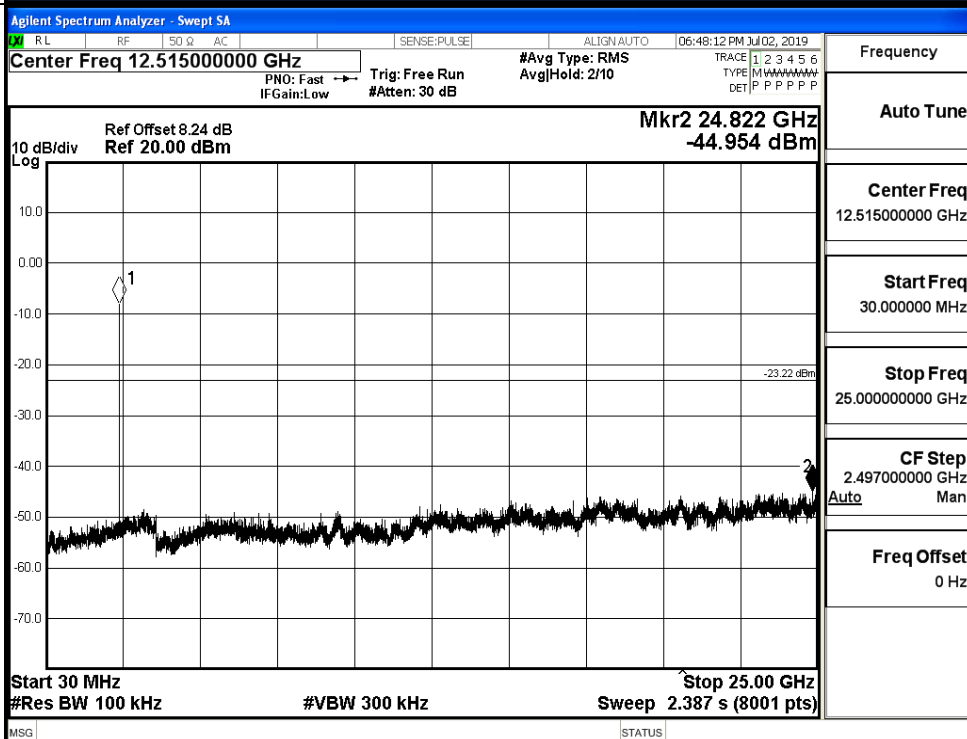
Puw



Pref

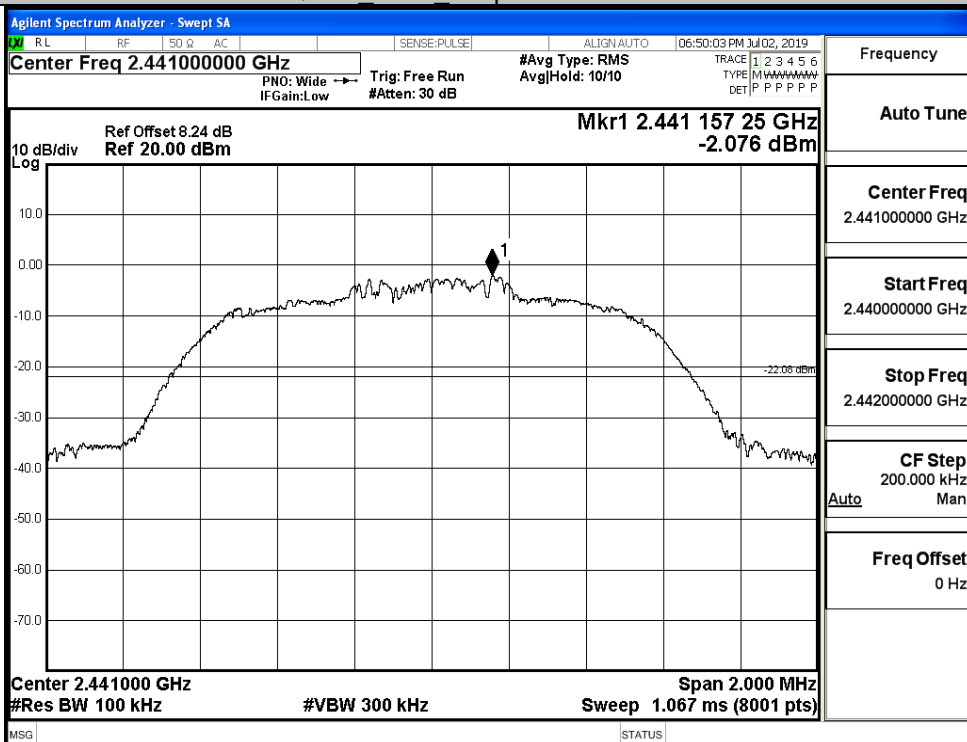


Puw

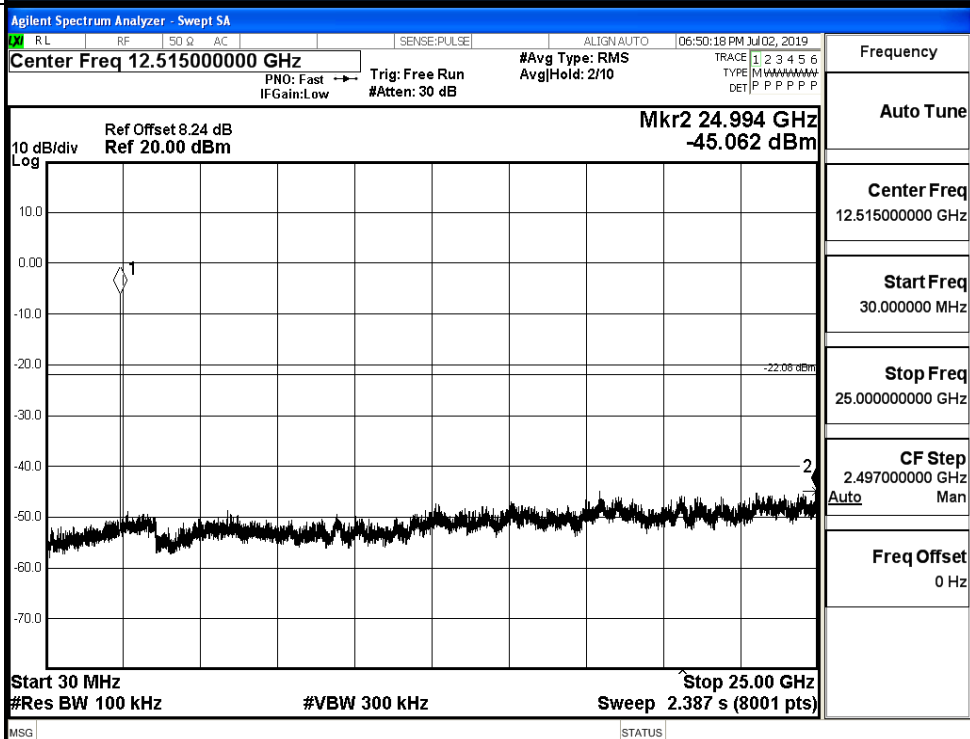


π /4DQPSK MCH Graphs

Pref

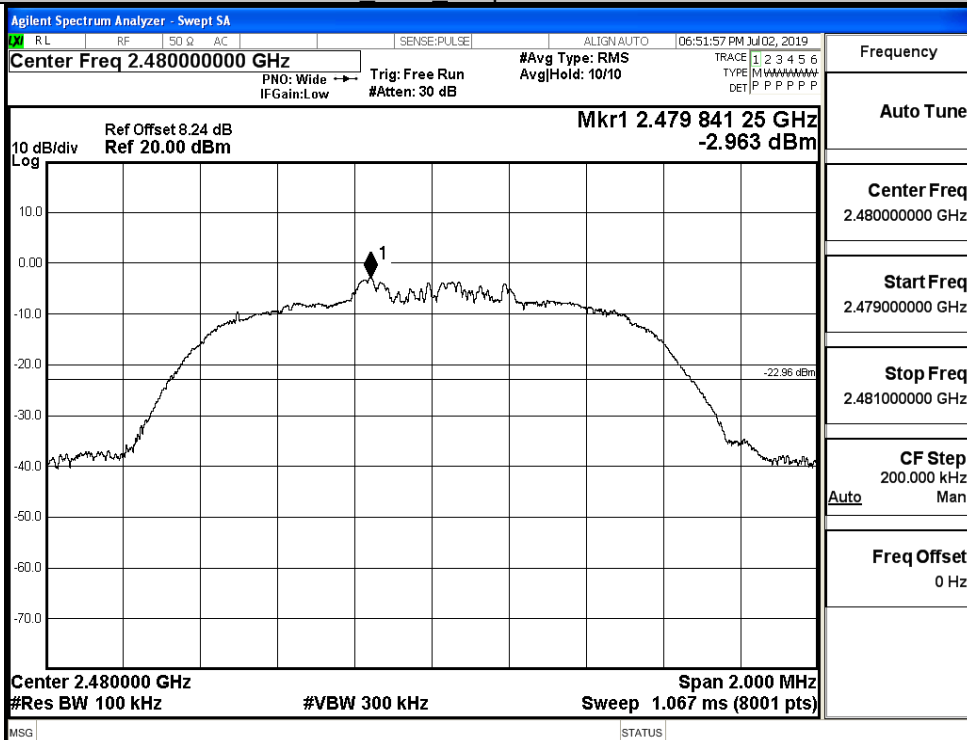


Puw

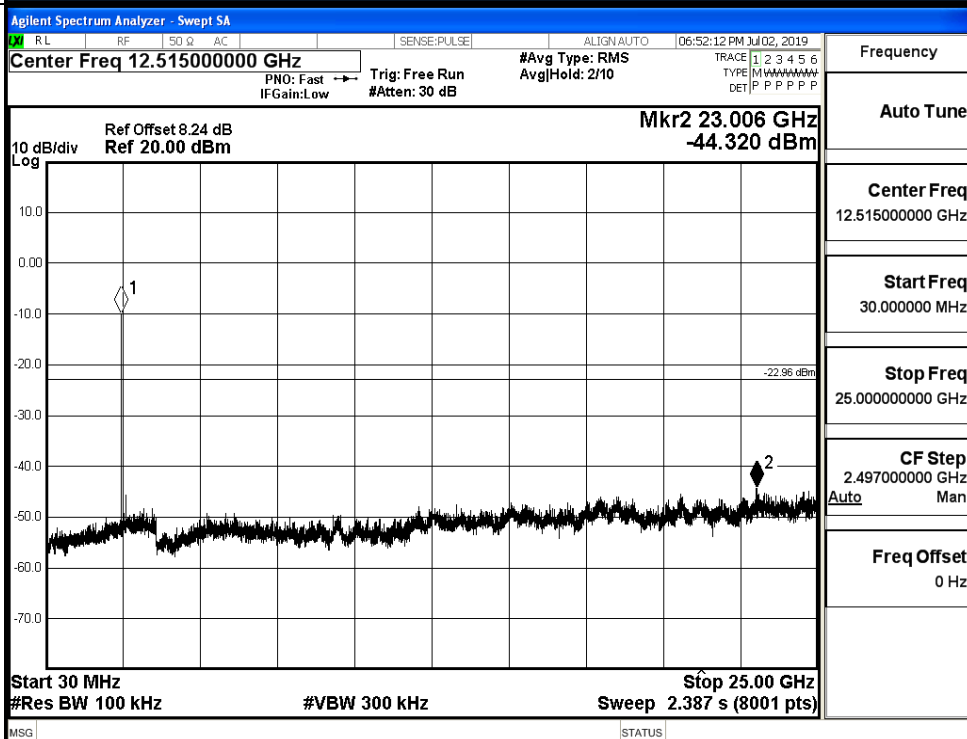


$\pi/4$ DQPSK HCH Graphs

Pref

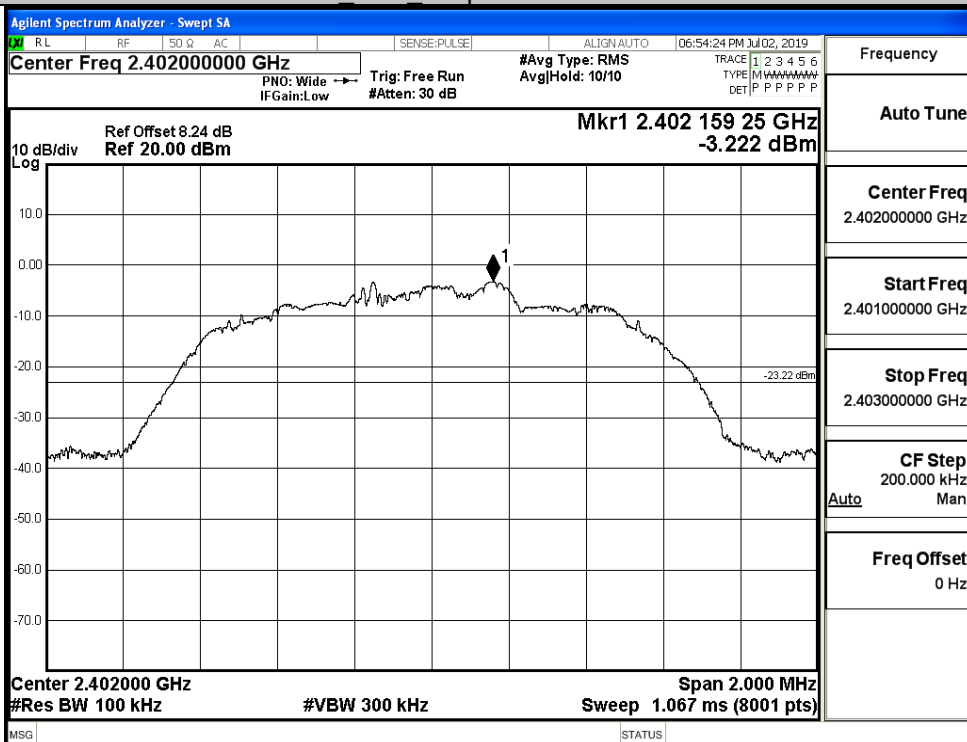


Puw

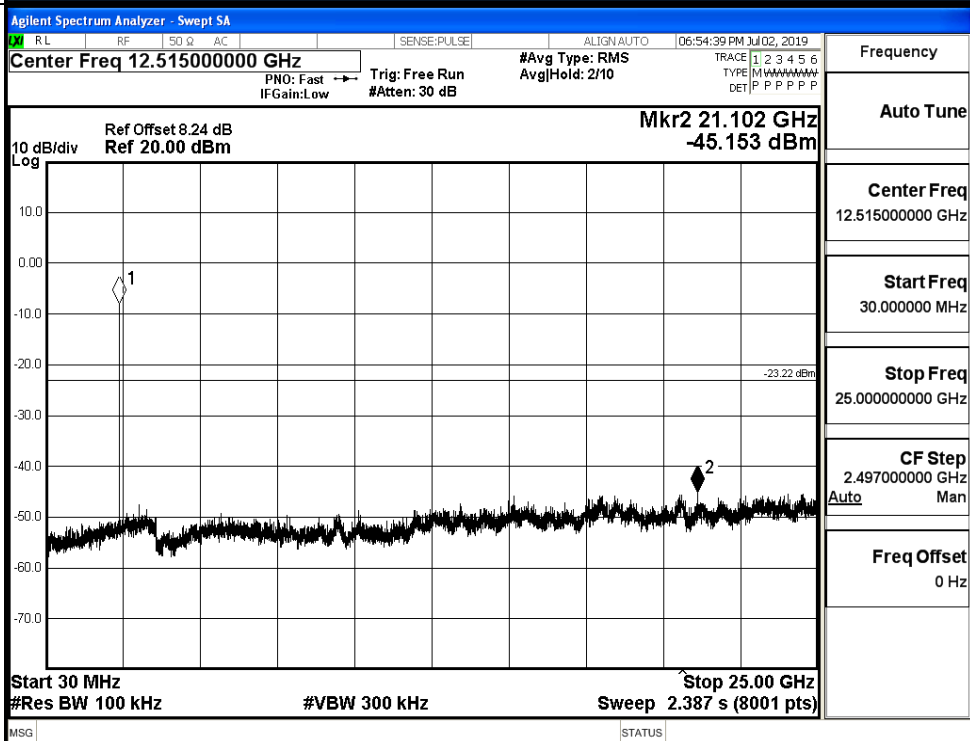


8DPSK LCH Graphs

Pref

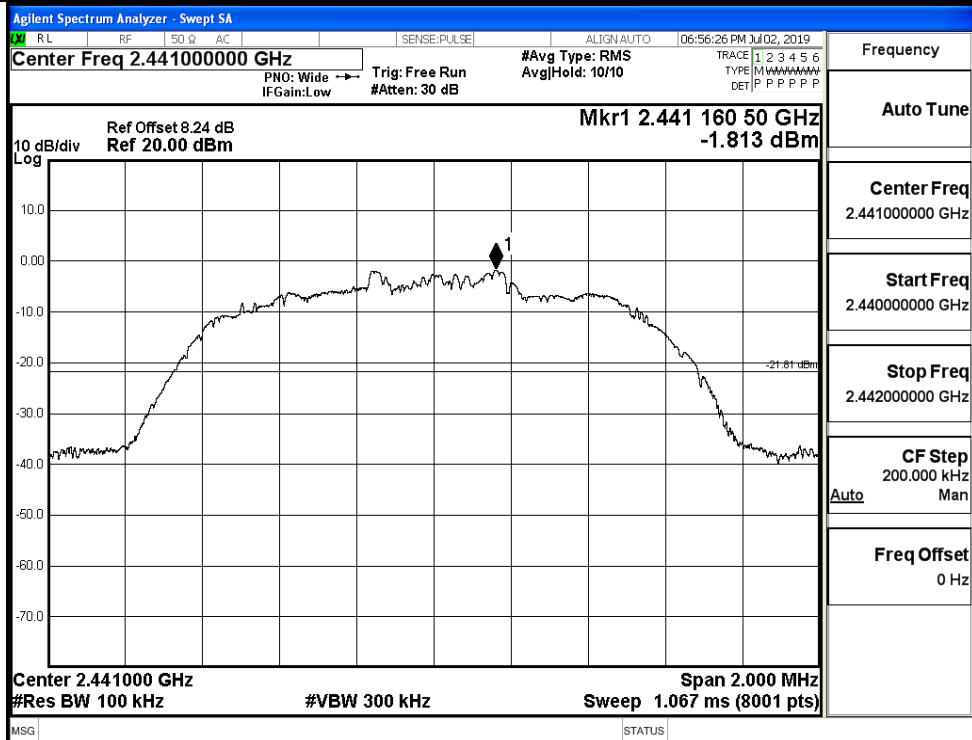


Puw

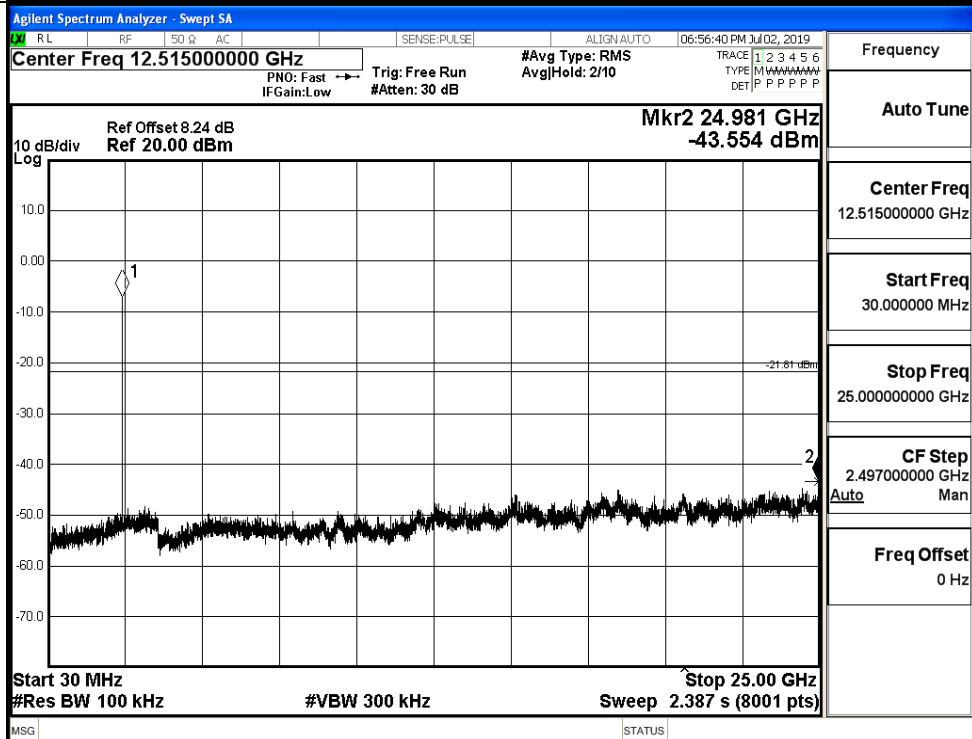


8DPSK MCH Graphs

Pref

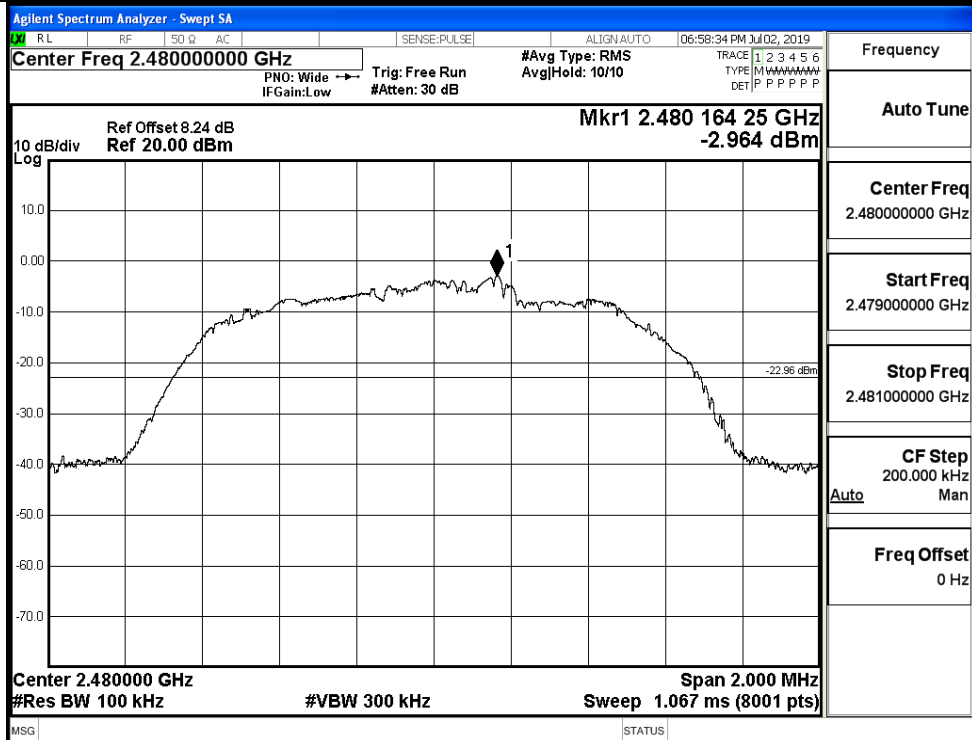


Puw

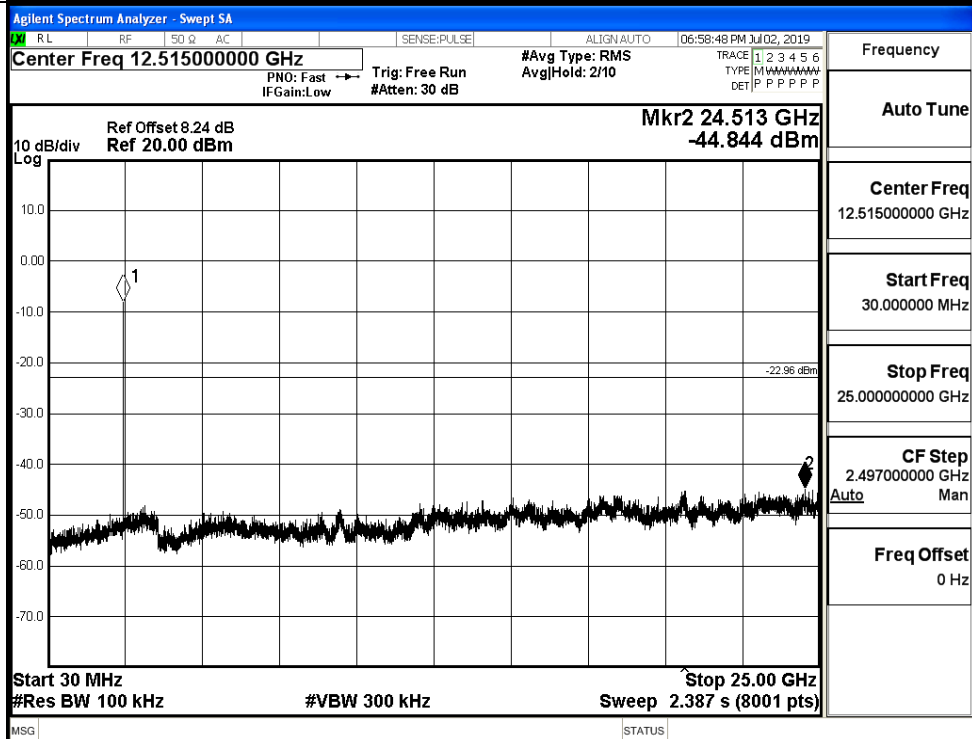


8DPSK_HCH Graphs

Pref



Puw

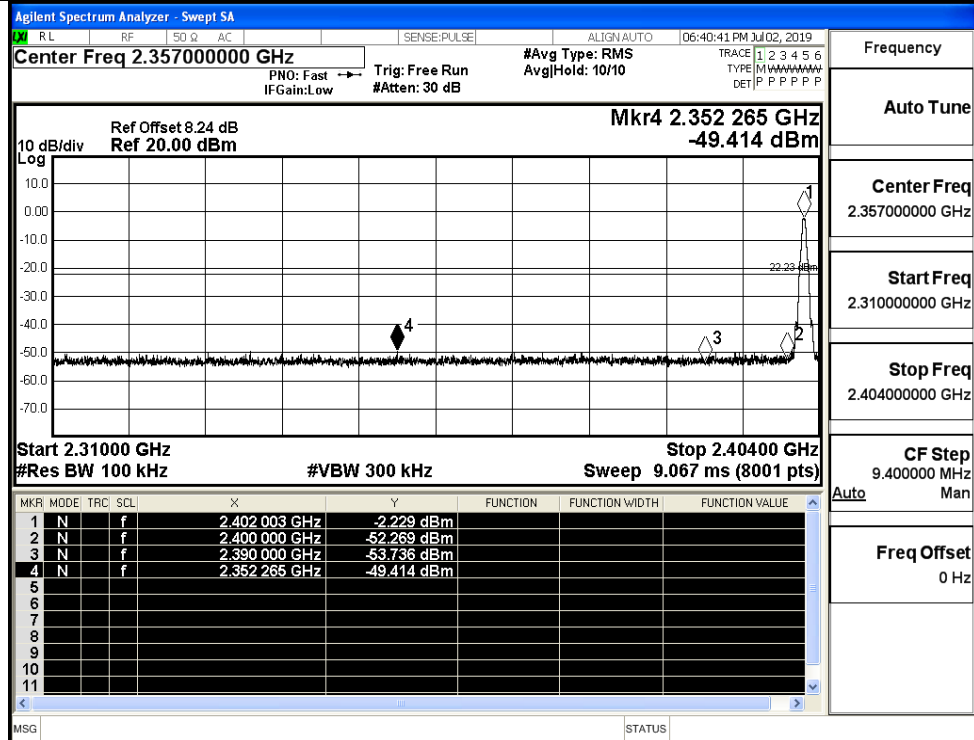


A.7 Band-edge for RF Conducted Emissions

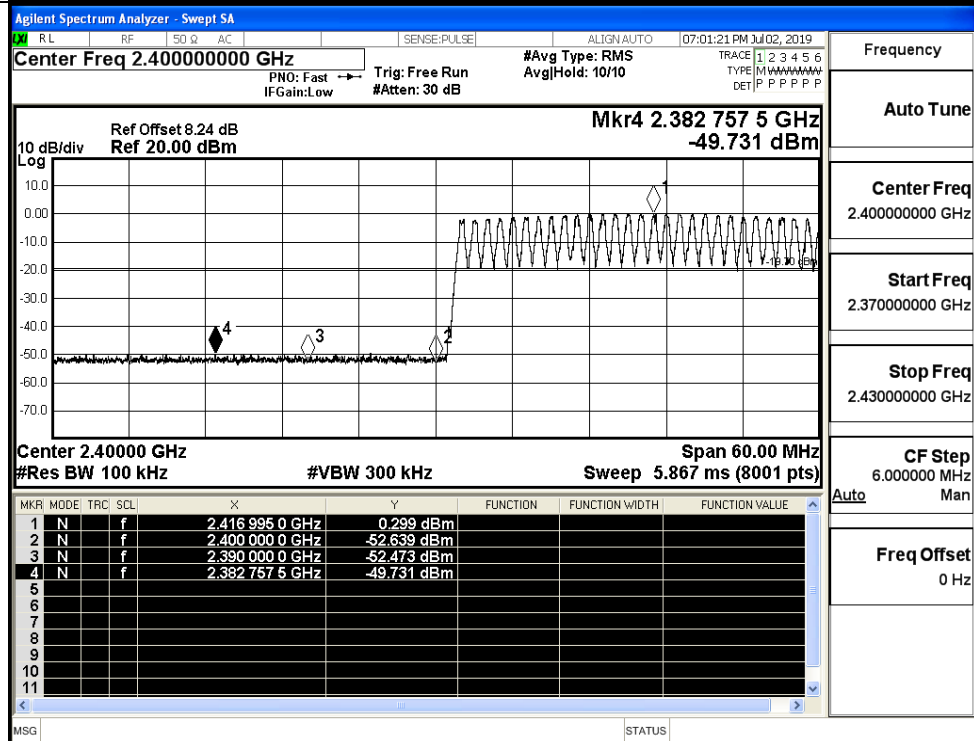
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-2.229	Off	-49.414	-22.23	PASS
			0.299	On	-49.731	-19.7	PASS
	HCH	2480	-1.802	Off	-49.215	-21.8	PASS
			0.626	On	-49.375	-19.37	PASS
$\pi/4$ DQPSK	LCH	2402	-3.602	Off	-49.837	-23.6	PASS
			-1.168	On	-49.152	-21.17	PASS
	HCH	2480	-3.005	Off	-49.440	-23.01	PASS
			-0.902	On	-49.048	-20.9	PASS
8DPSK	LCH	2402	-3.389	Off	-49.157	-23.39	PASS
			-0.865	On	-49.179	-20.87	PASS
	HCH	2480	-3.432	Off	-49.568	-23.43	PASS
			-0.905	On	-48.844	-20.91	PASS

Test Graphs

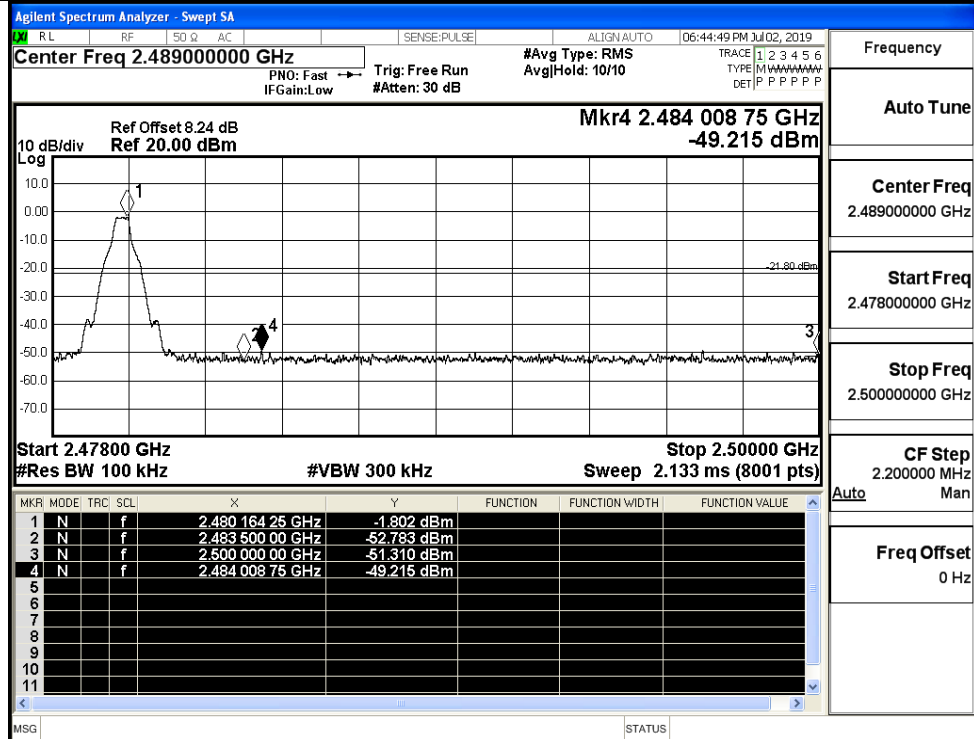
GFSK/LCH/No Hop



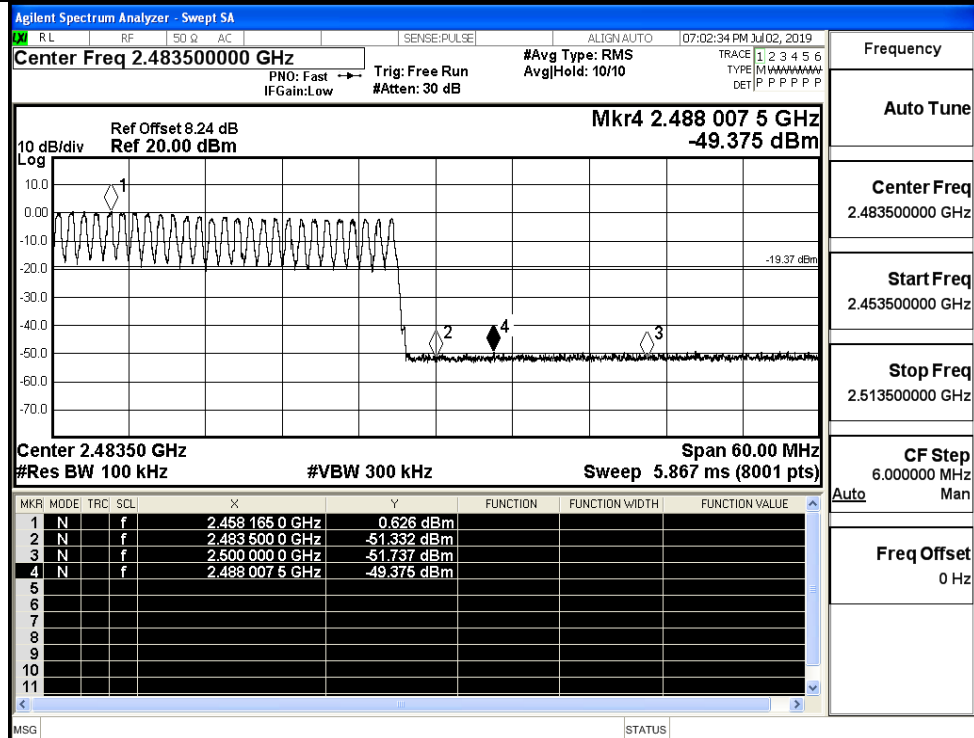
GFSK/LCH/Hop



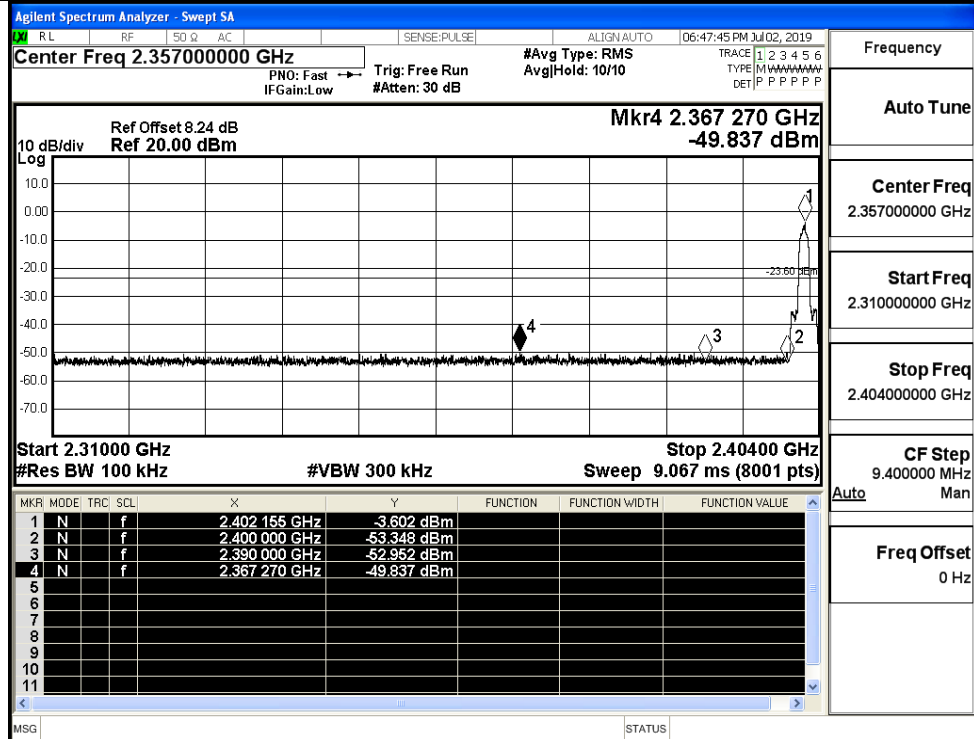
GFSK/HCH/No Hop



GFSK/HCH/Hop



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



Frequency

Auto Tune

Center Freq
2.357000000 GHz

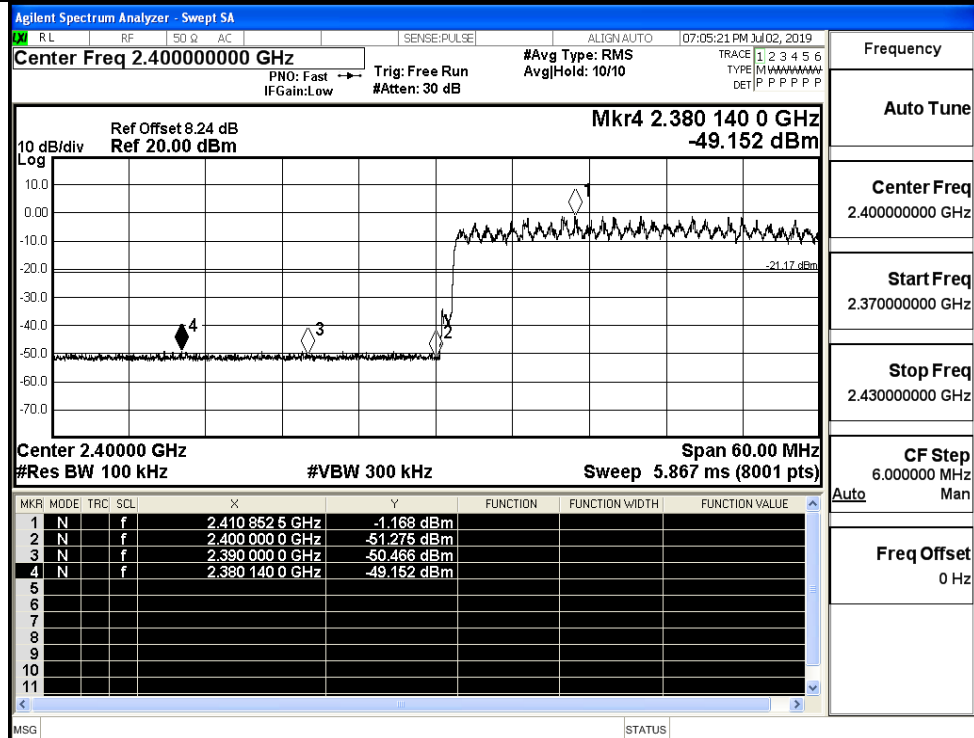
Start Freq
2.310000000 GHz

Stop Freq
2.404000000 GHz

CF Step
9.400000 MHz

Freq Offset
0 Hz

$\pi/4$ DQPSK/LCH/Hop



Frequency

Auto Tune

Center Freq
2.400000000 GHz

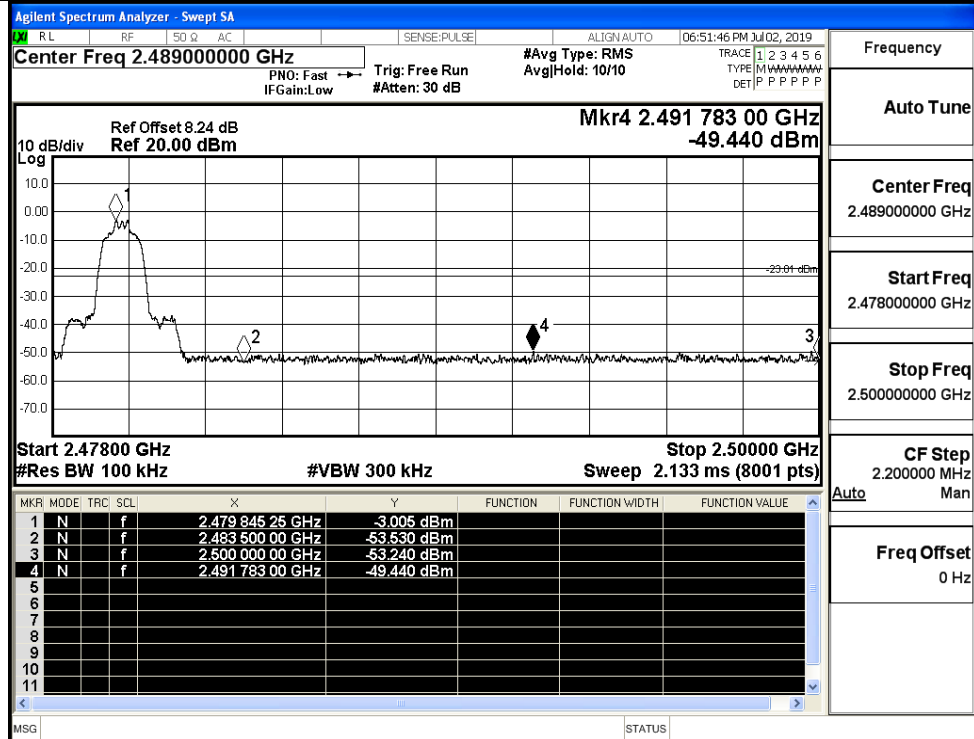
Start Freq
2.370000000 GHz

Stop Freq
2.430000000 GHz

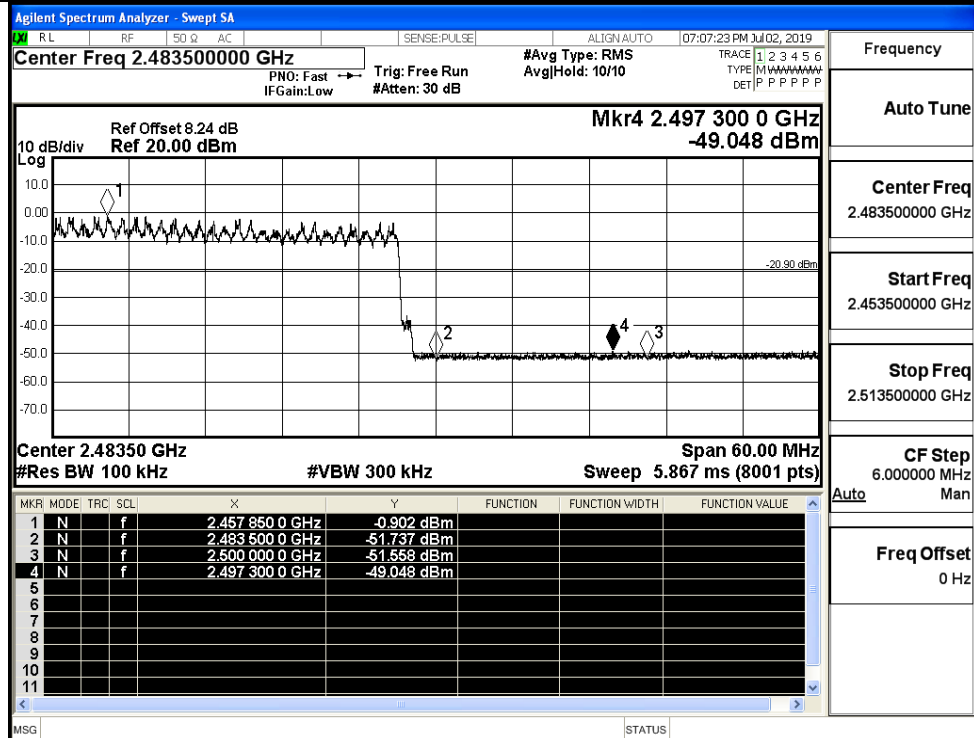
CF Step
6.000000 MHz

Freq Offset
0 Hz

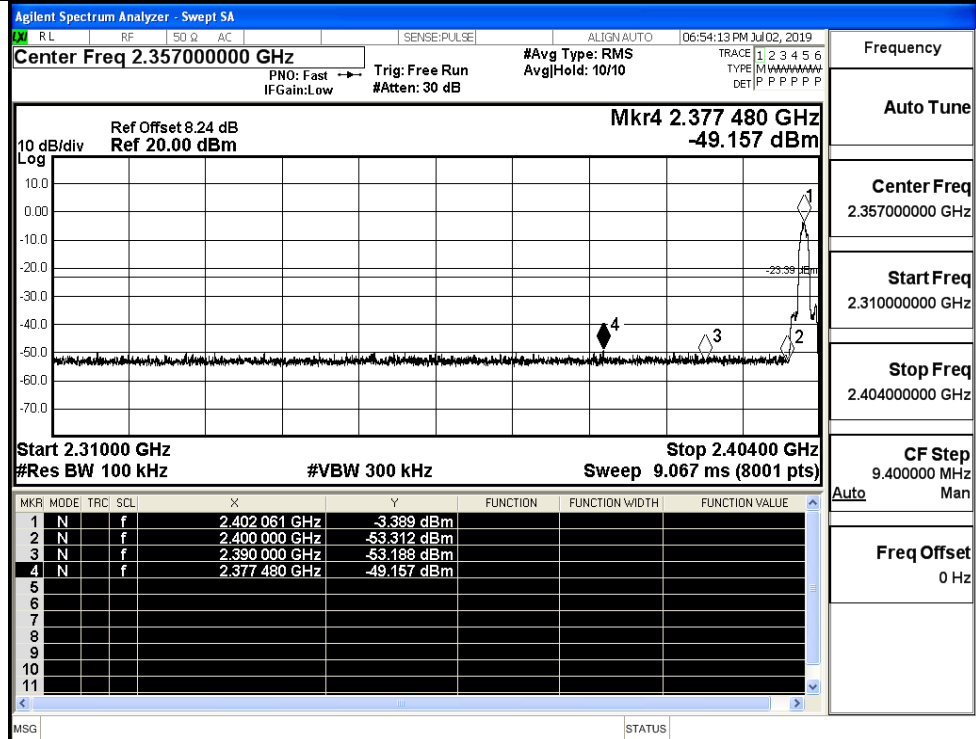
$\pi/4$ DQPSK/HCH/No
Hop



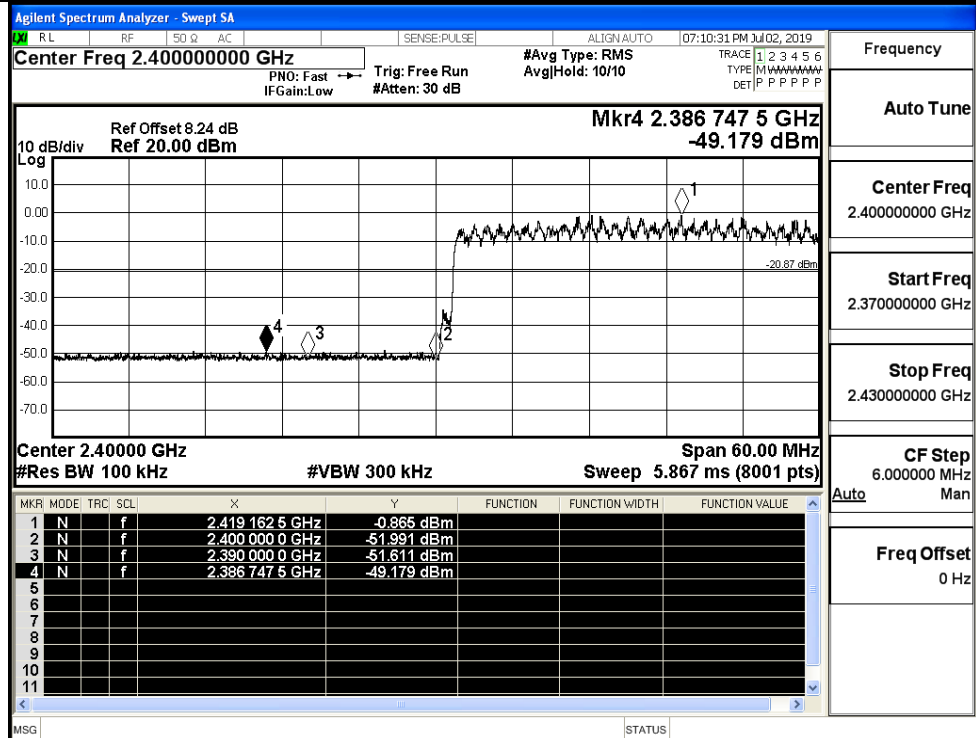
$\pi/4$ DQPSK/HCH/Hop



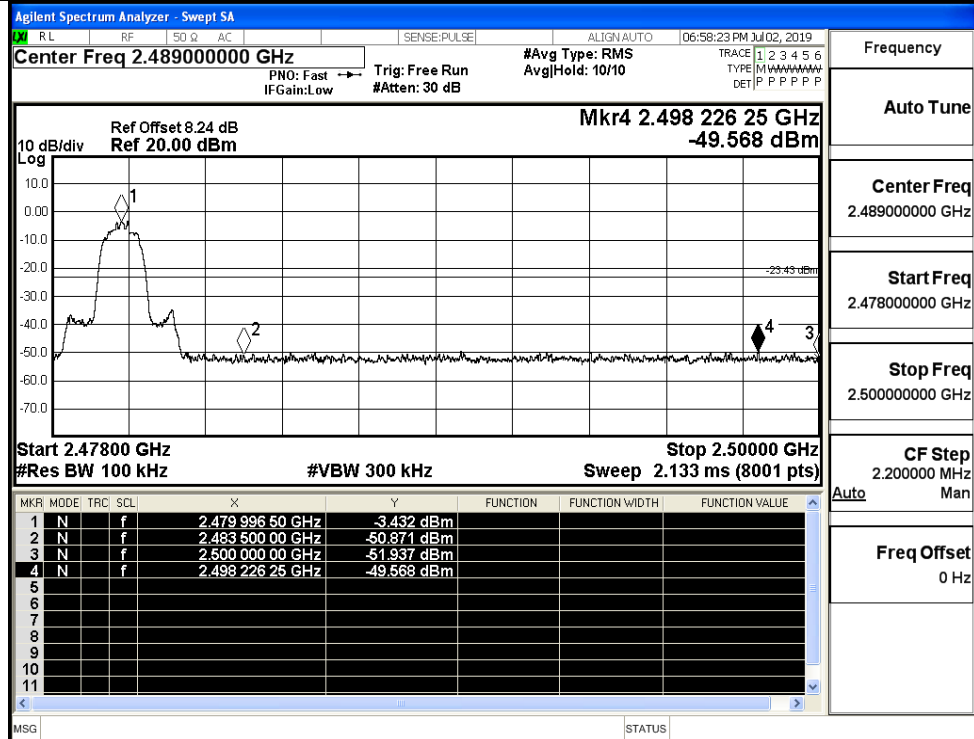
8DPSK/LCH/No Hop



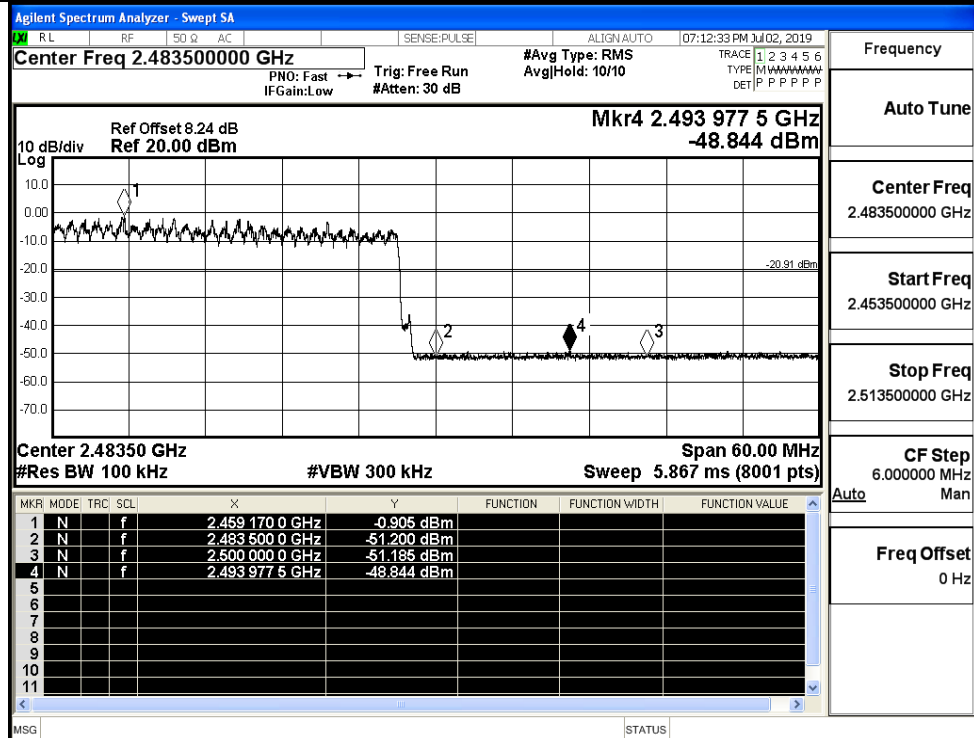
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



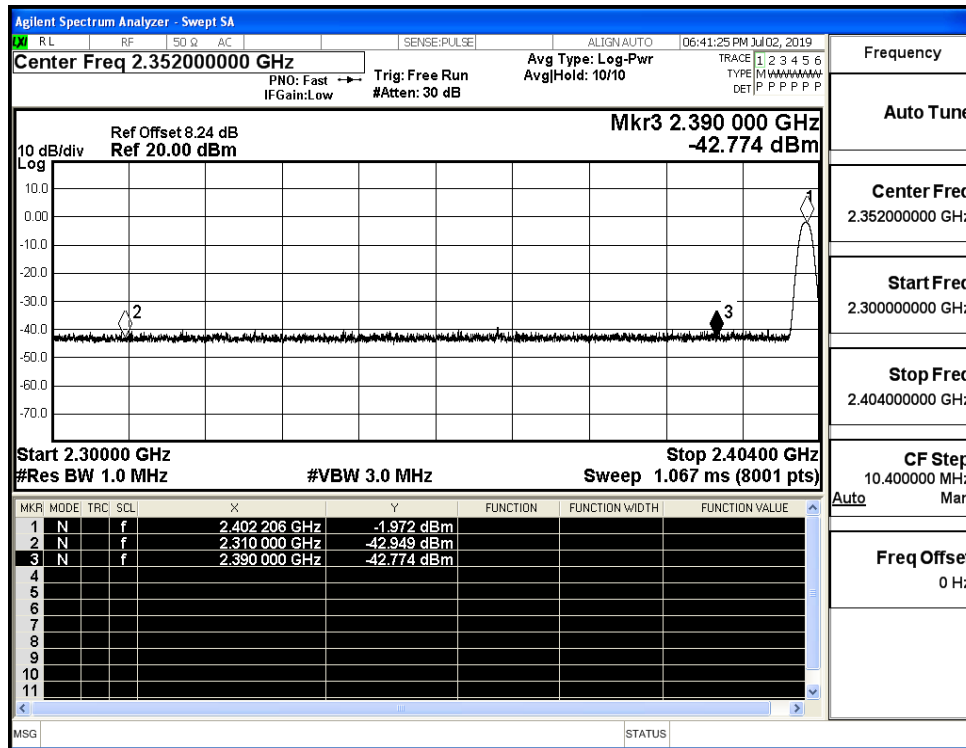
8DPSK/HCH/Hop



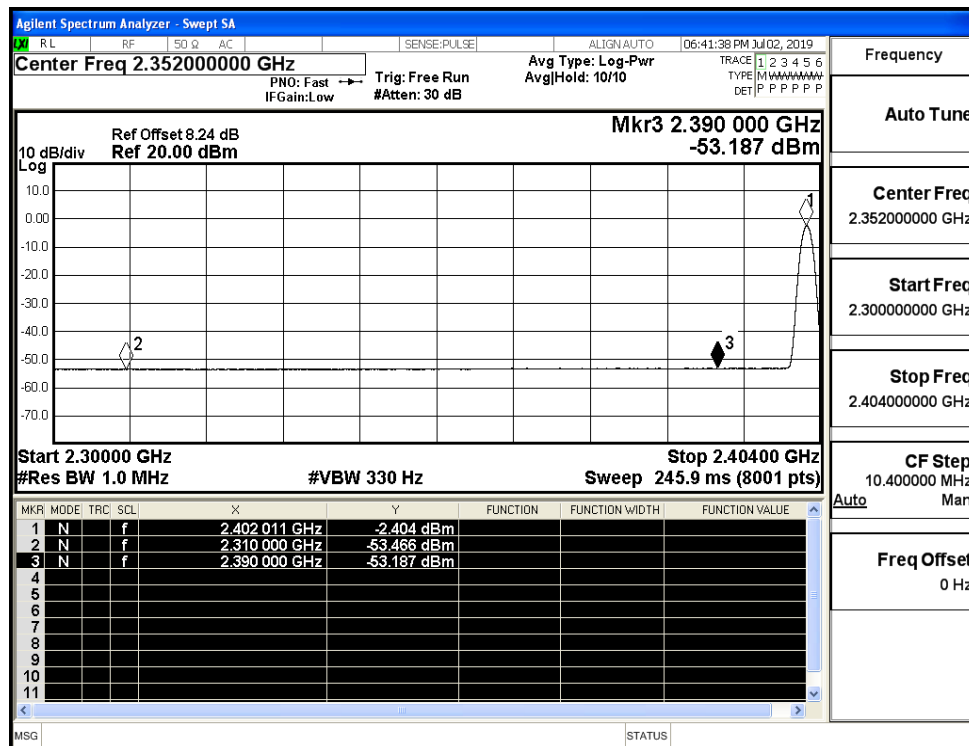
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-42.95	2.0	0	54.31	PEAK	74	PASS
	Off	2310.0	-53.47	2.0	0	43.79	AV	54	PASS
	Off	2390.0	-42.77	2.0	0	54.48	PEAK	74	PASS
	Off	2390.0	-53.19	2.0	0	44.07	AV	54	PASS
	Off	2483.5	-41.17	2.0	0	56.09	PEAK	74	PASS
	Off	2483.5	-52.74	2.0	0	44.52	AV	54	PASS
	Off	2500.0	-41.64	2.0	0	55.62	PEAK	74	PASS
	Off	2500.0	-52.73	2.0	0	44.52	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.11	2.0	0	54.14	PEAK	74	PASS
	Off	2310.0	-53.46	2.0	0	43.80	AV	54	PASS
	Off	2390.0	-42.75	2.0	0	54.50	PEAK	74	PASS
	Off	2390.0	-53.09	2.0	0	44.16	AV	54	PASS
	Off	2483.5	-42.43	2.0	0	54.82	PEAK	74	PASS
	Off	2483.5	-52.90	2.0	0	44.36	AV	54	PASS
	Off	2500.0	-41.77	2.0	0	55.49	PEAK	74	PASS
	Off	2500.0	-52.68	2.0	0	44.58	AV	54	PASS
8DPSK	Off	2310.0	-42.94	2.0	0	54.31	PEAK	74	PASS
	Off	2310.0	-53.37	2.0	0	43.89	AV	54	PASS
	Off	2390.0	-41.90	2.0	0	55.36	PEAK	74	PASS
	Off	2390.0	-53.18	2.0	0	44.07	AV	54	PASS
	Off	2483.5	-41.82	2.0	0	55.44	PEAK	74	PASS
	Off	2483.5	-52.86	2.0	0	44.40	AV	54	PASS
	Off	2500.0	-43.41	2.0	0	53.85	PEAK	74	PASS
	Off	2500.0	-52.80	2.0	0	44.46	AV	54	PASS

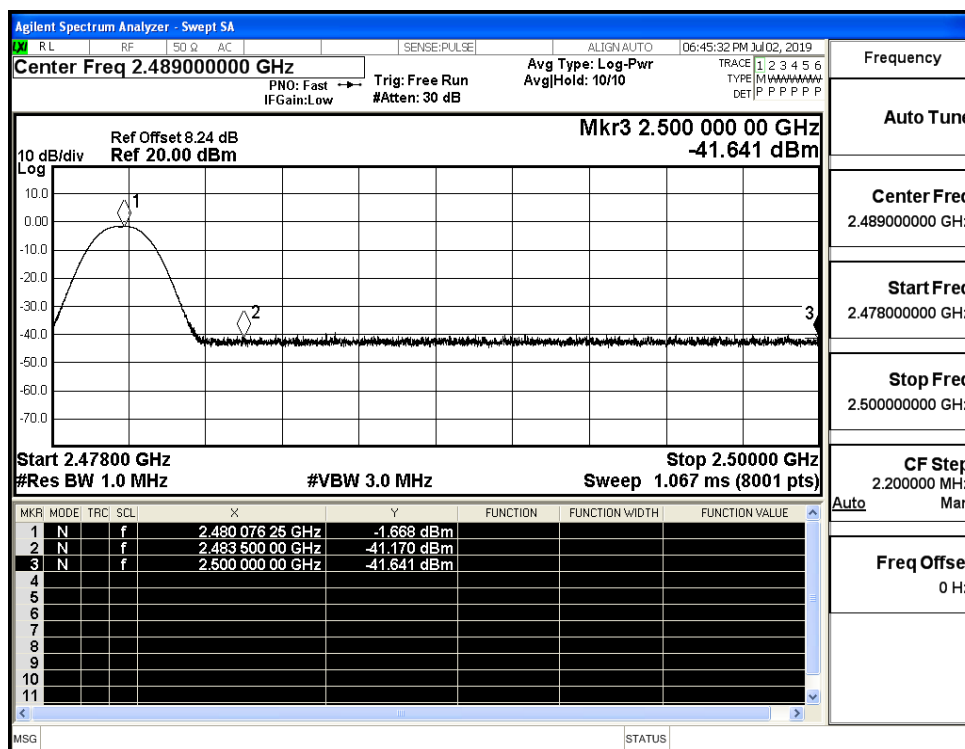
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



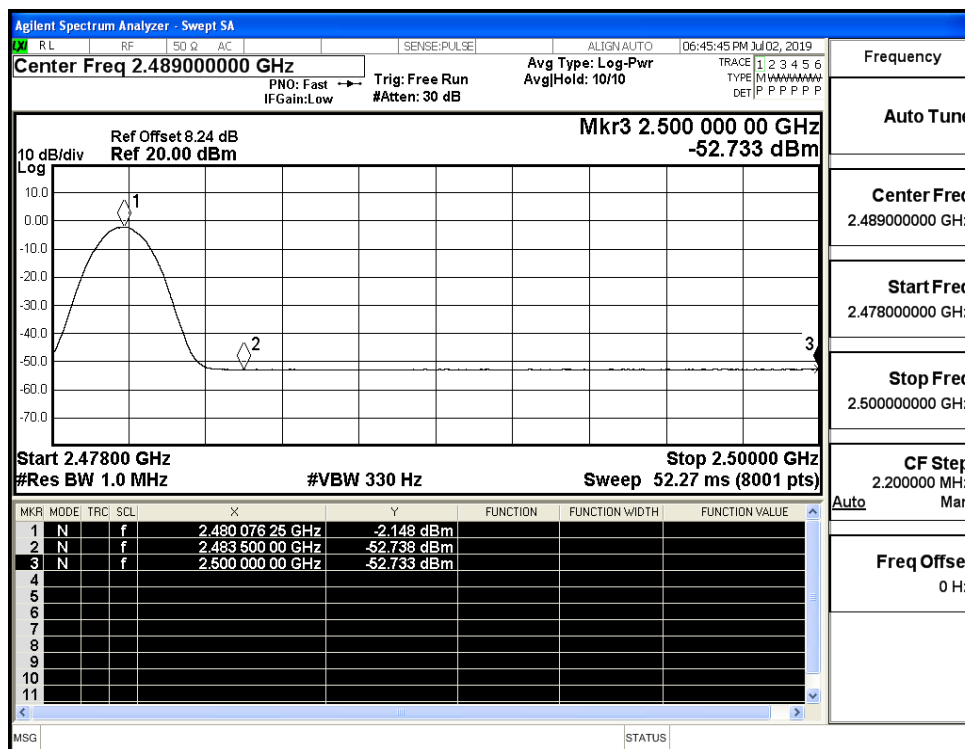
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

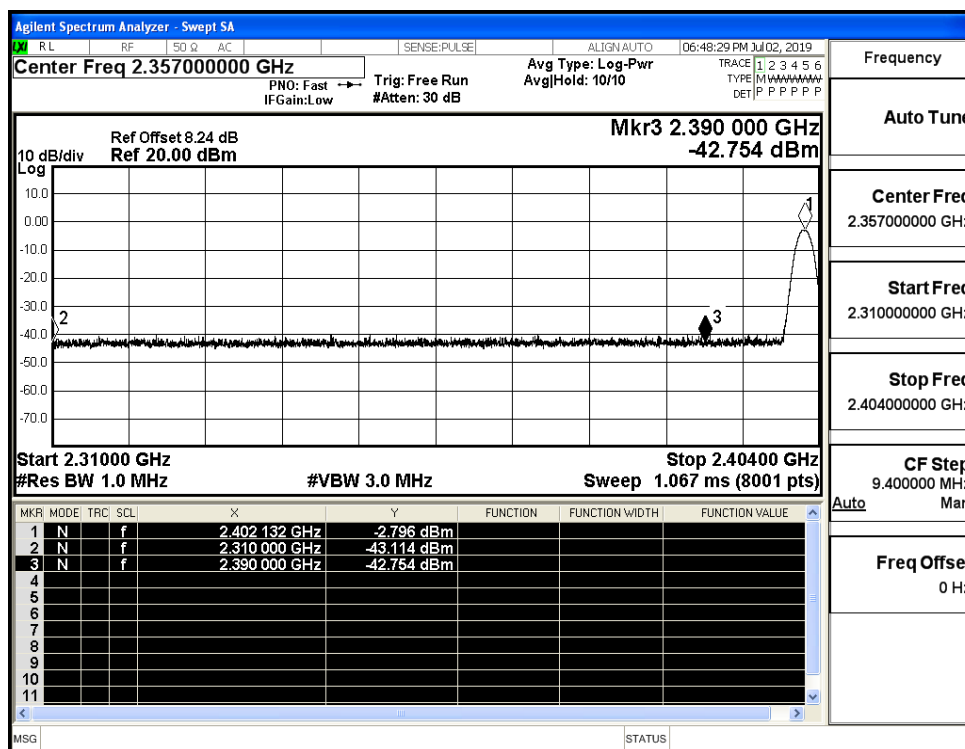
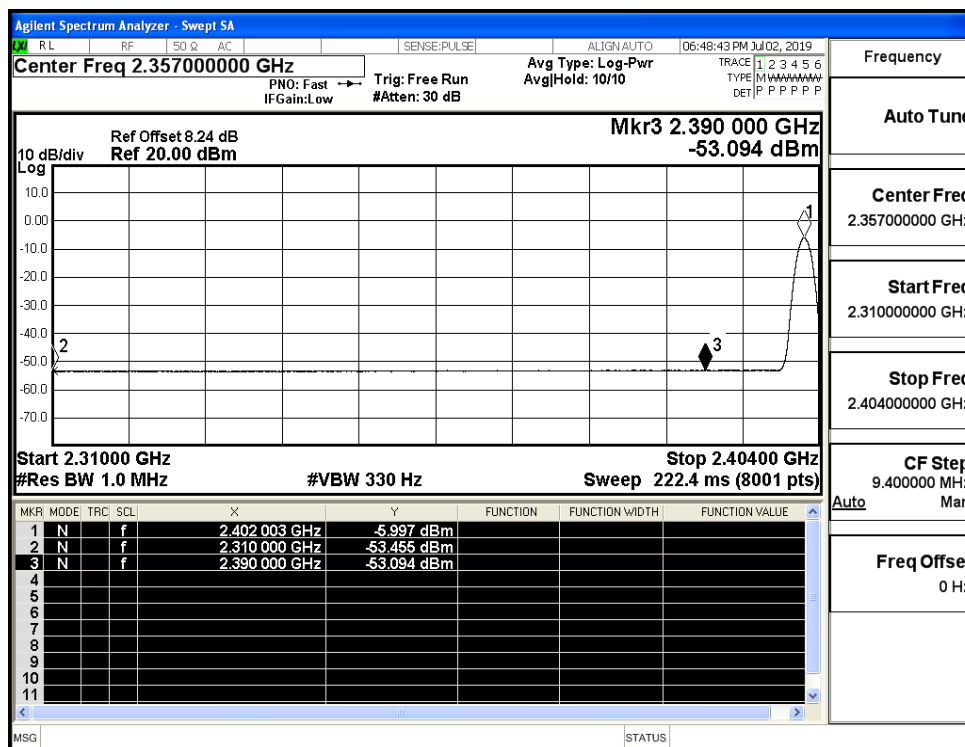


Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)

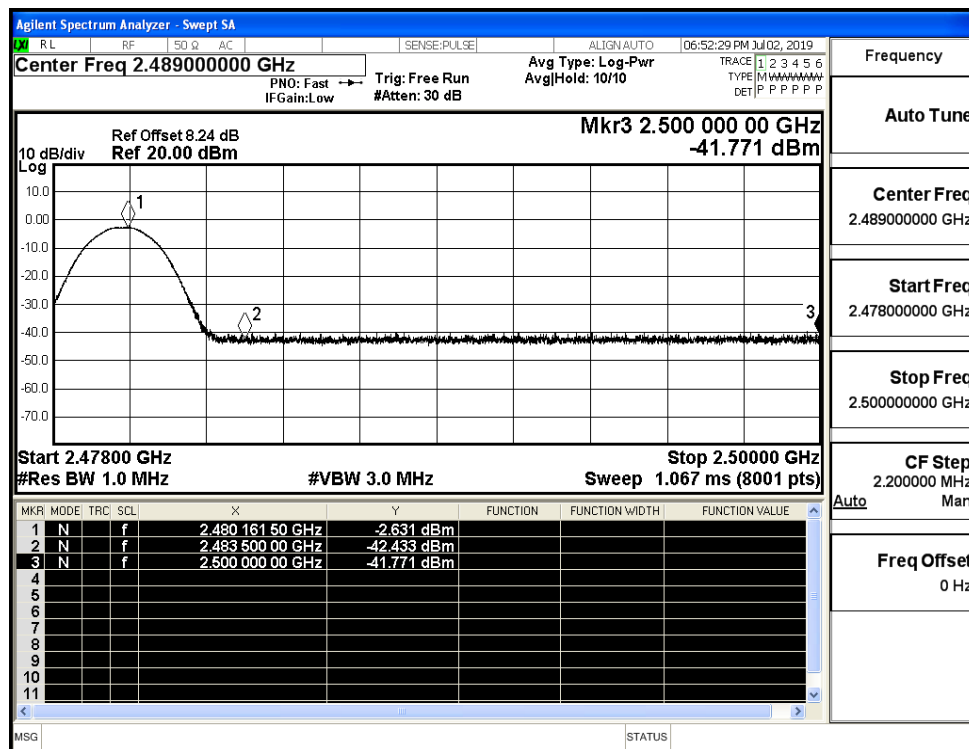


Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)

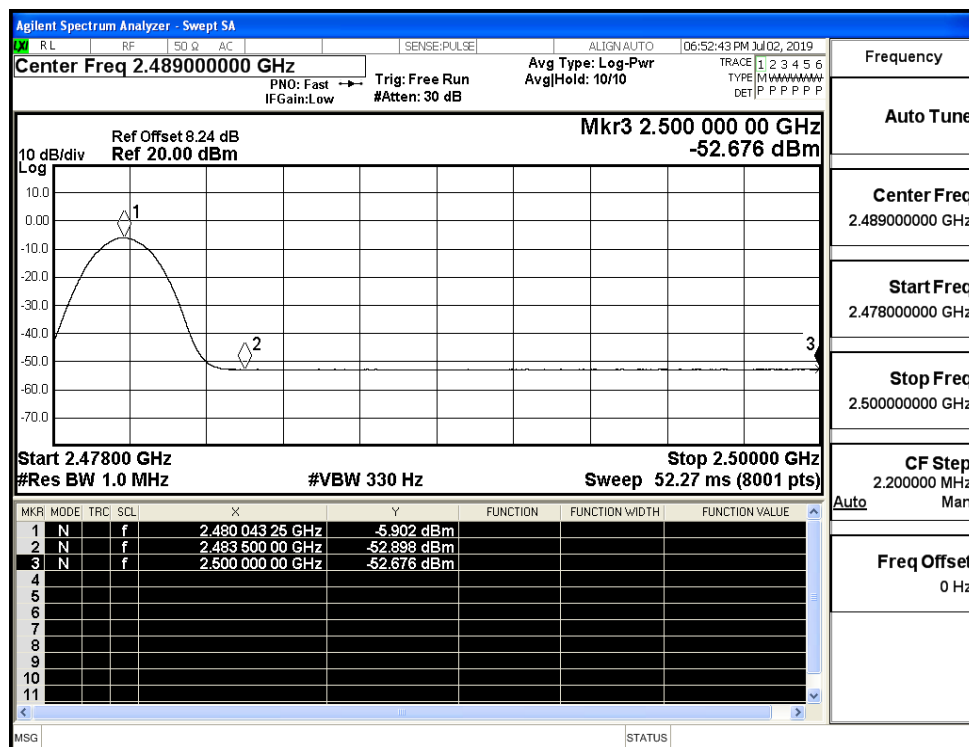


Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

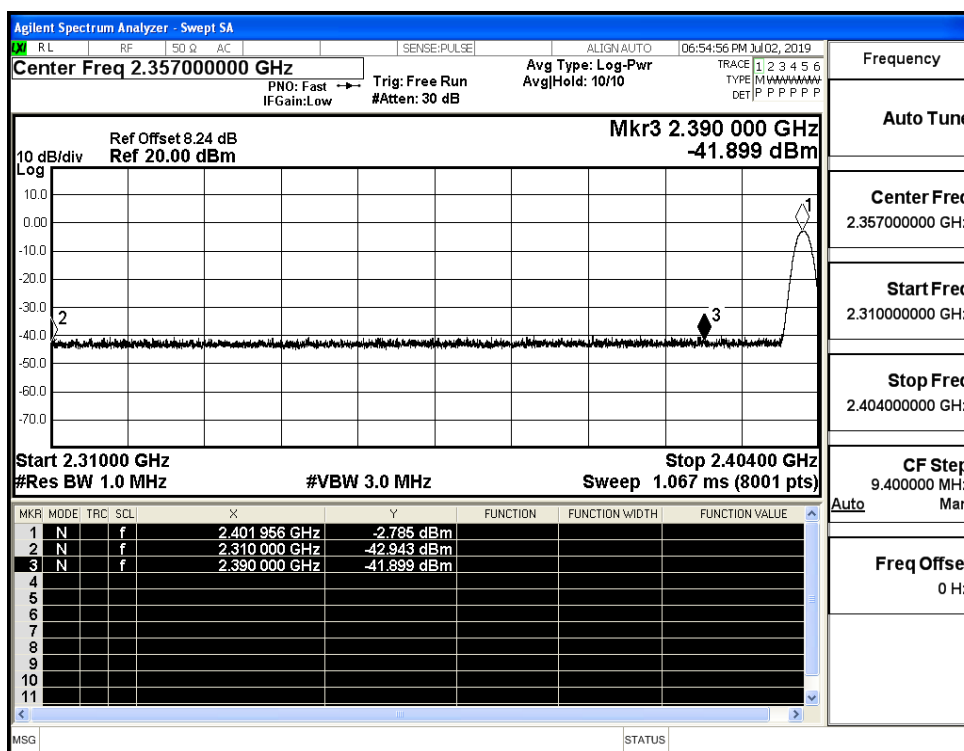
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



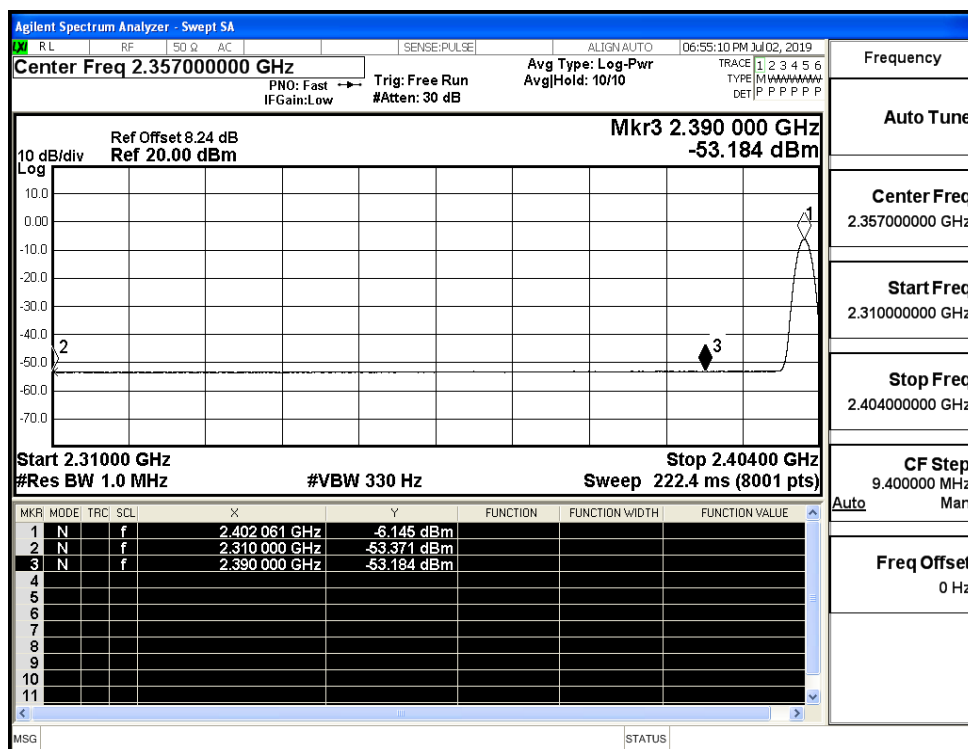
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



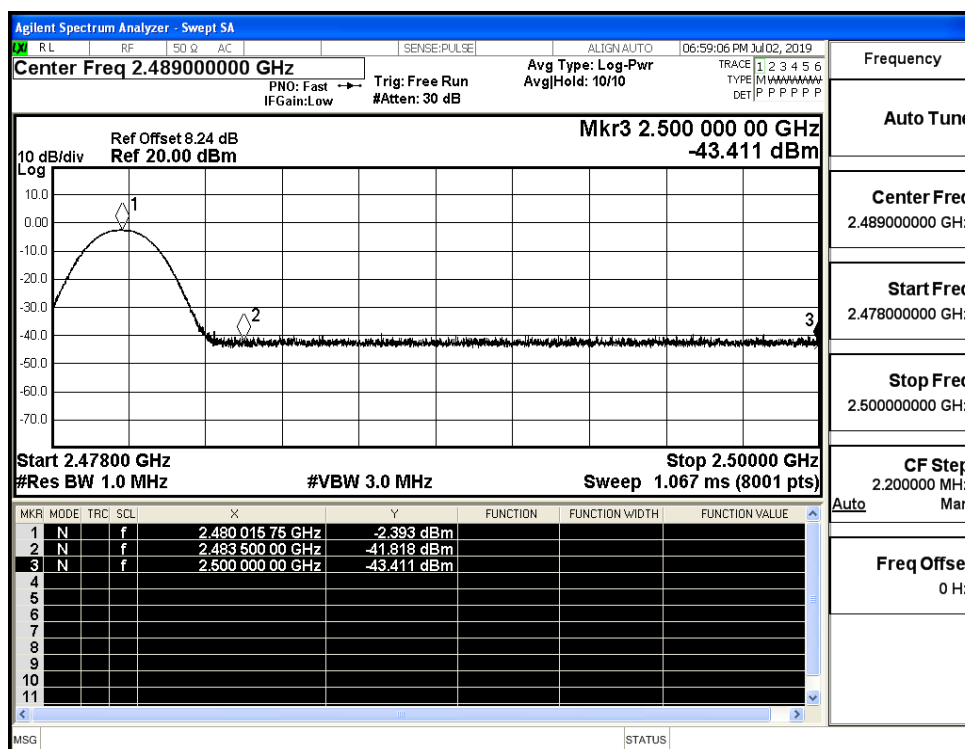
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

