

Appendix A

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

Product Name: Urbanista London

Trade Mark: Urbanista

Test Model: Urbanista London

Environmental Conditions

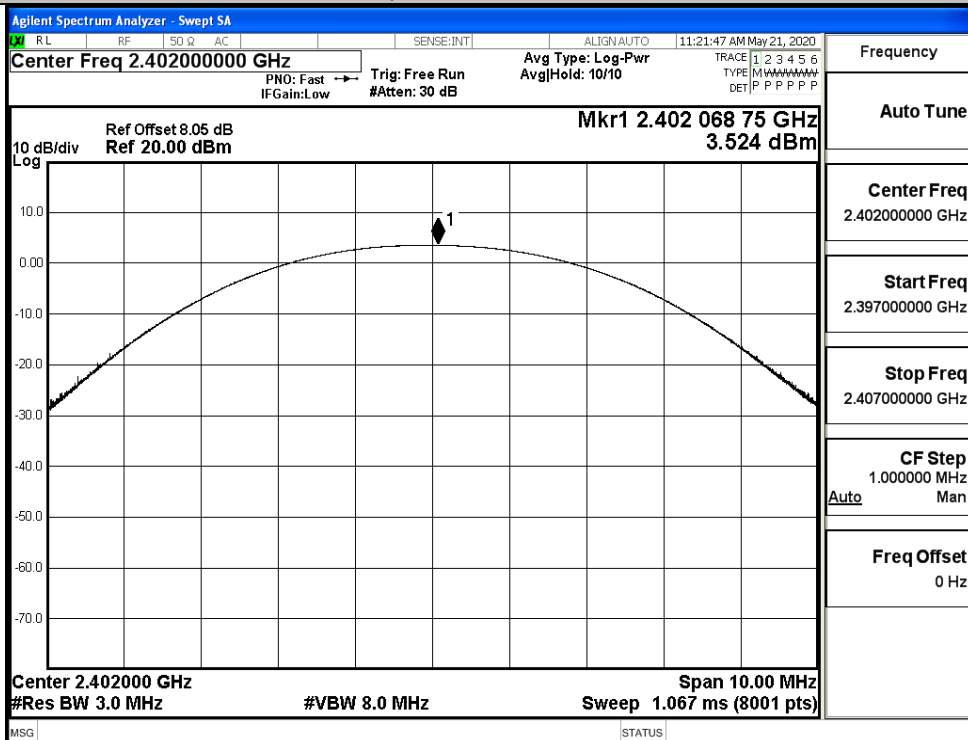
Temperature:	24.6°C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond Lu
Supervised by:	Li Huan

A.1 Maximum Conducted Peak Output Power

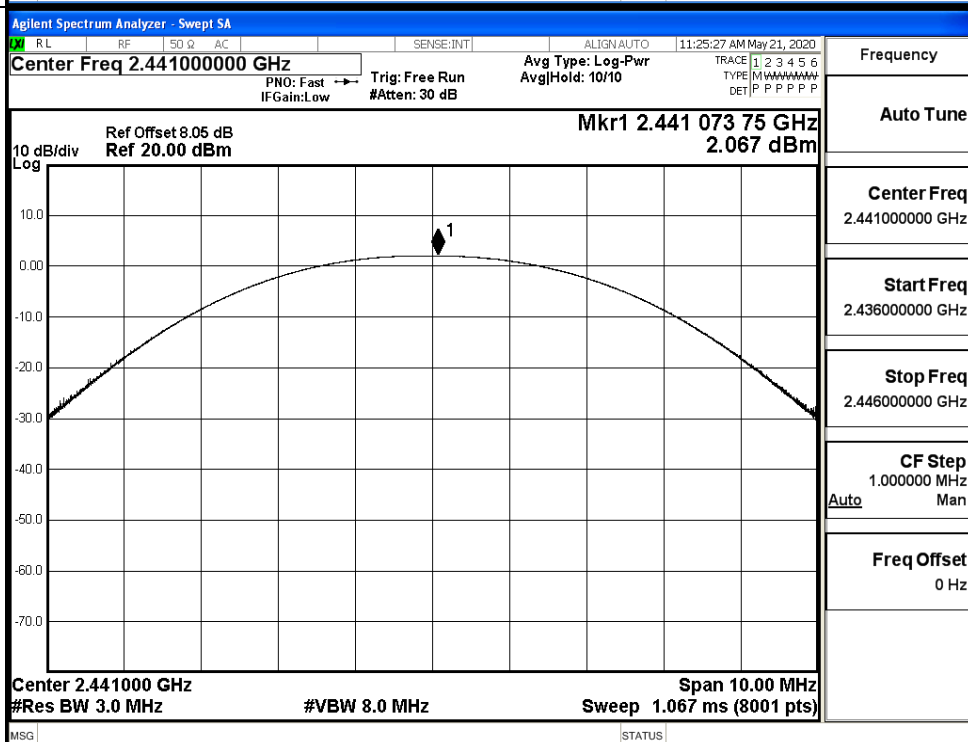
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	3.524	21	PASS
	MCH	2.067	21	PASS
	HCH	0.488	21	PASS
$\pi/4$ DQPSK	LCH	5.948	21	PASS
	MCH	4.340	21	PASS
	HCH	2.677	21	PASS
8DPSK	LCH	6.329	21	PASS
	MCH	4.787	21	PASS
	HCH	3.108	21	PASS

Test Graphs

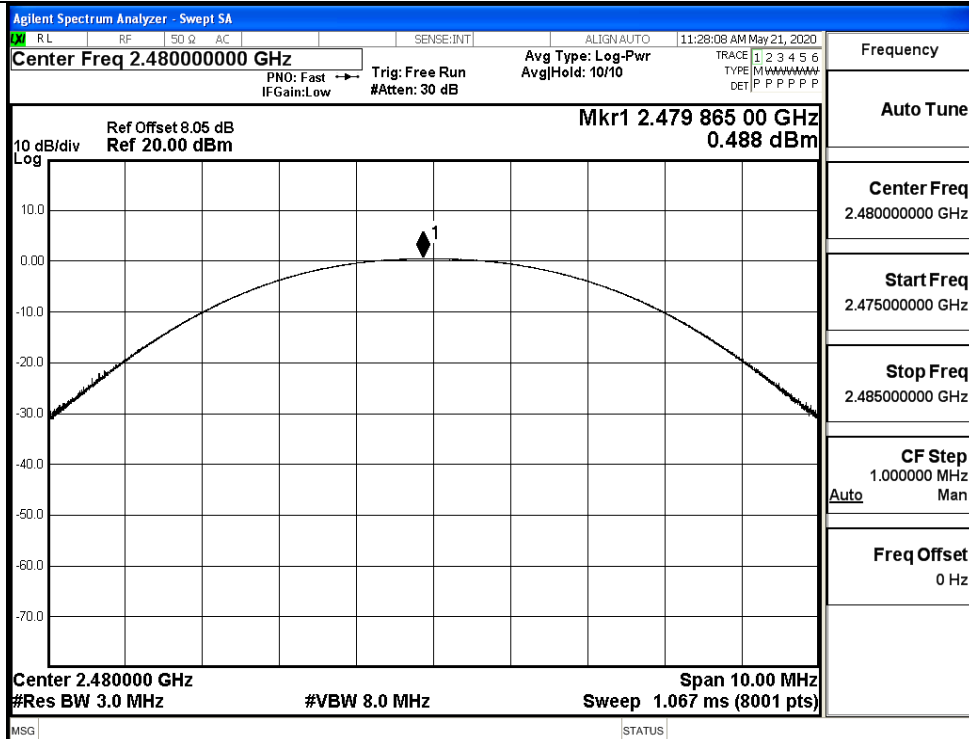
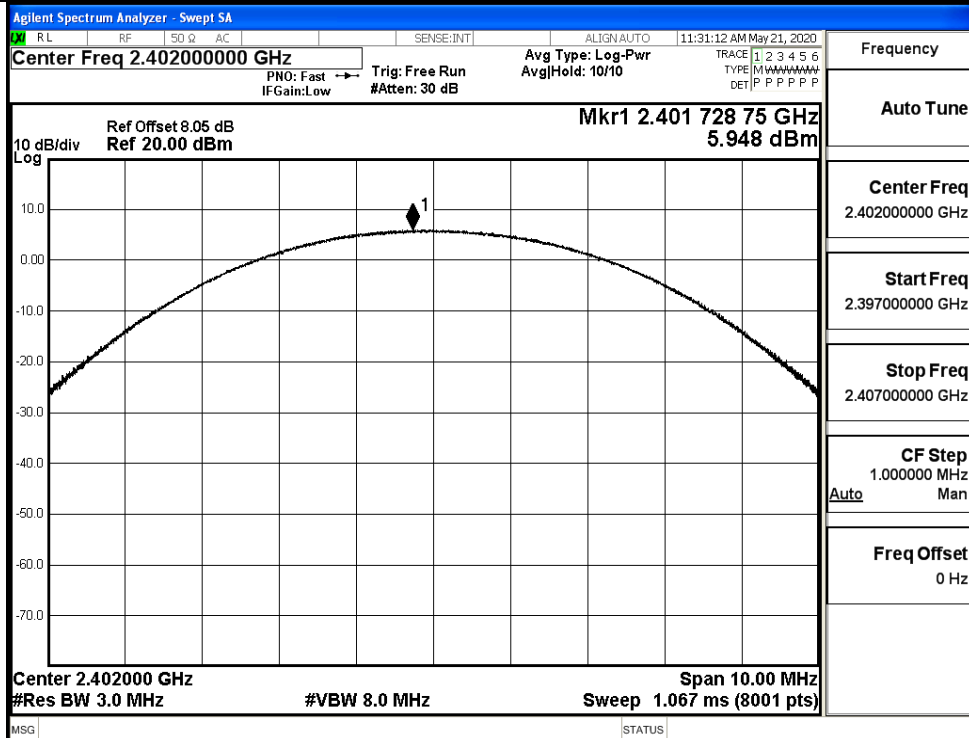
GFSK/LCH

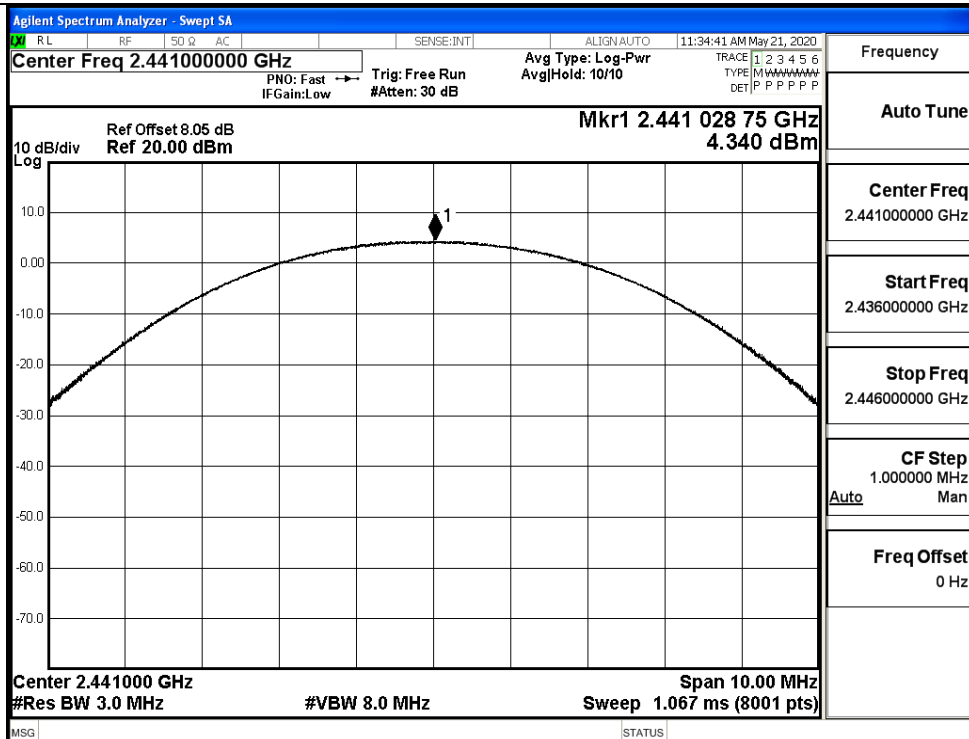
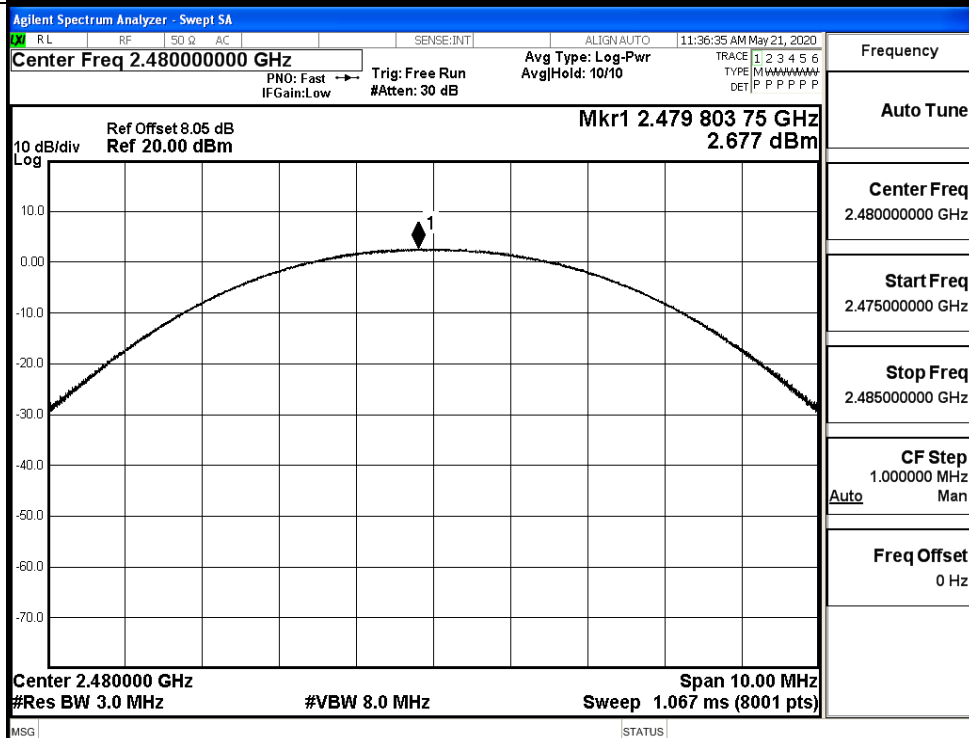


GFSK/MCH

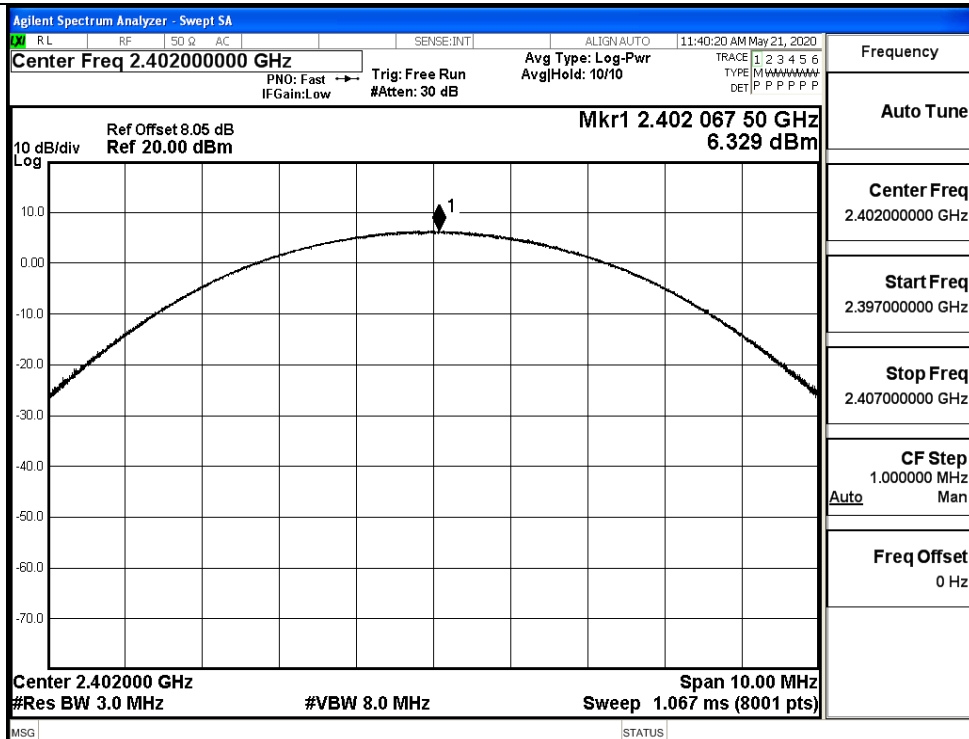


GFSK/HCH

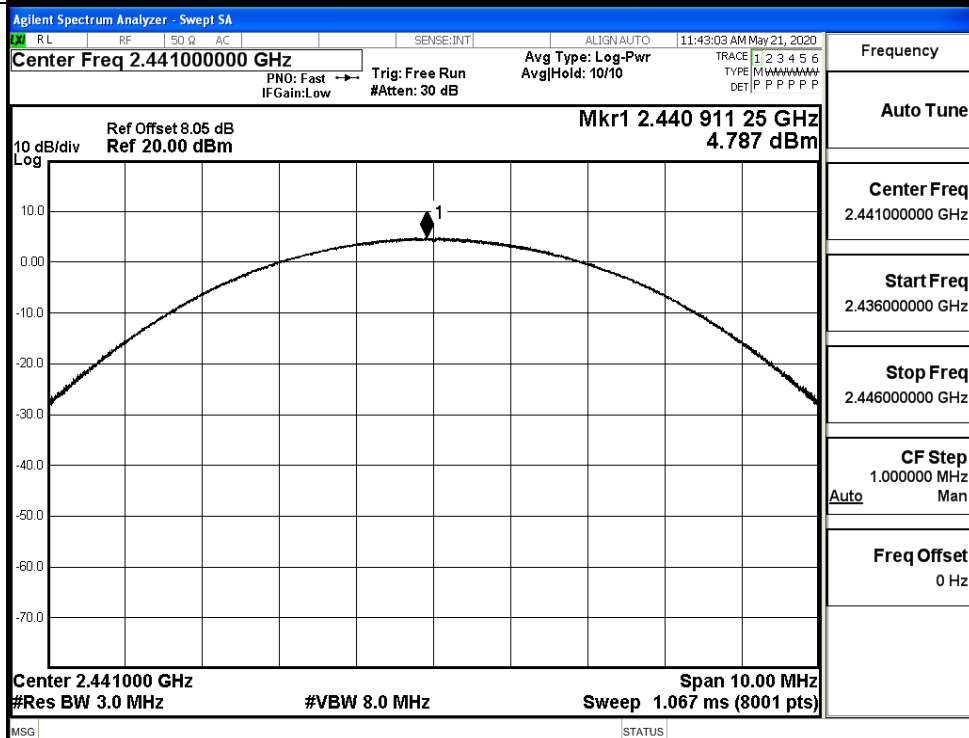
 $\pi/4$ DQPSK/LCH

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

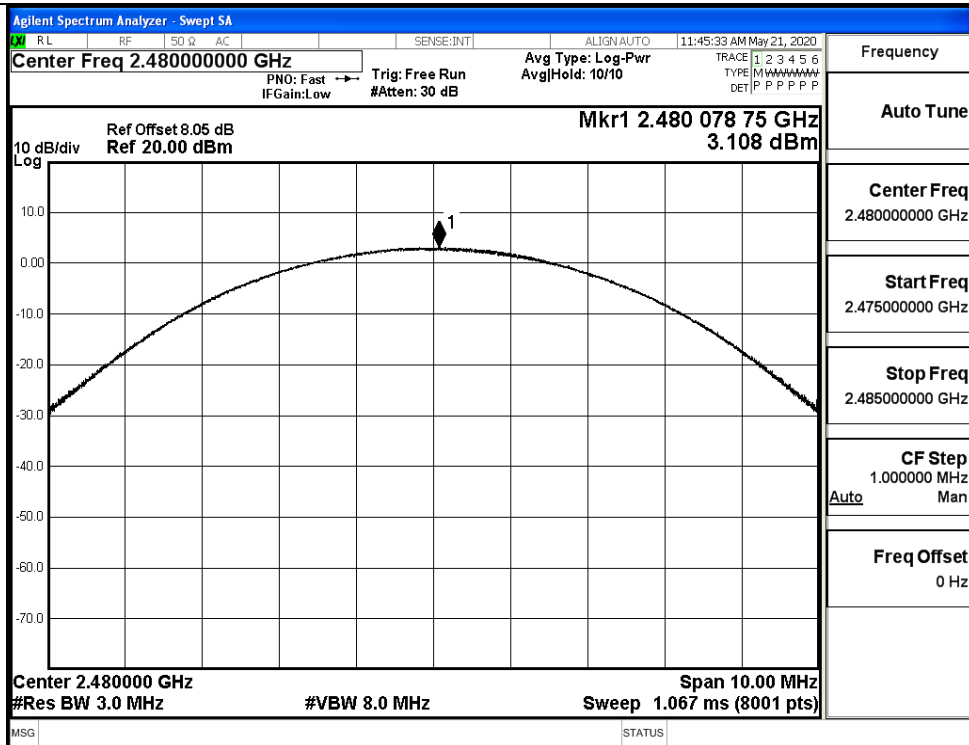
8DPSK/LCH



8DPSK/MCH



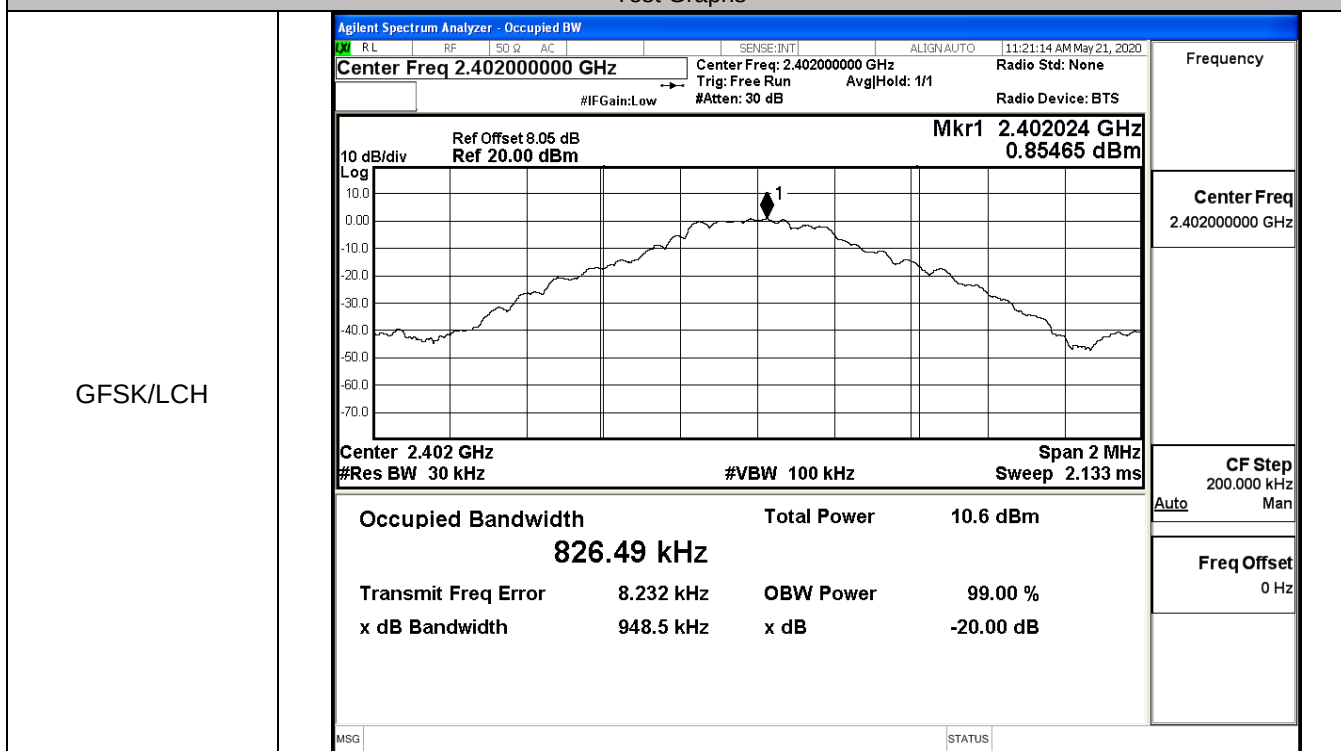
8DPSK/HCH



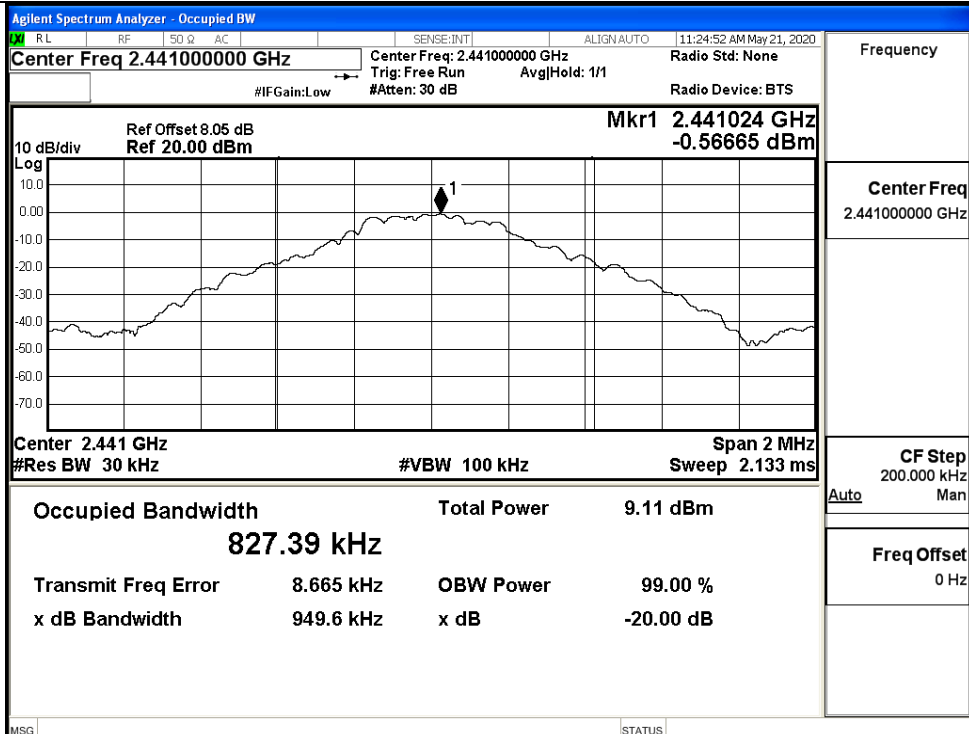
A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9485	Not Specified	PASS
	MCH	0.9496	Not Specified	PASS
	HCH	0.9481	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.321	Not Specified	PASS
	MCH	1.322	Not Specified	PASS
	HCH	1.323	Not Specified	PASS
8DPSK	LCH	1.290	Not Specified	PASS
	MCH	1.292	Not Specified	PASS
	HCH	1.296	Not Specified	PASS

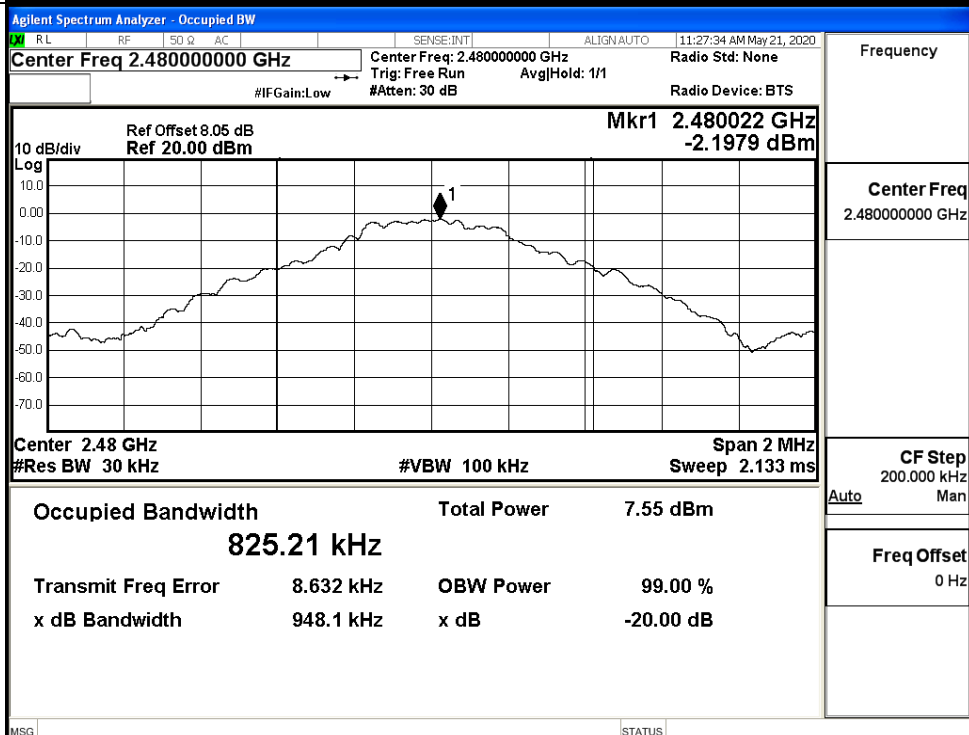
Test Graphs

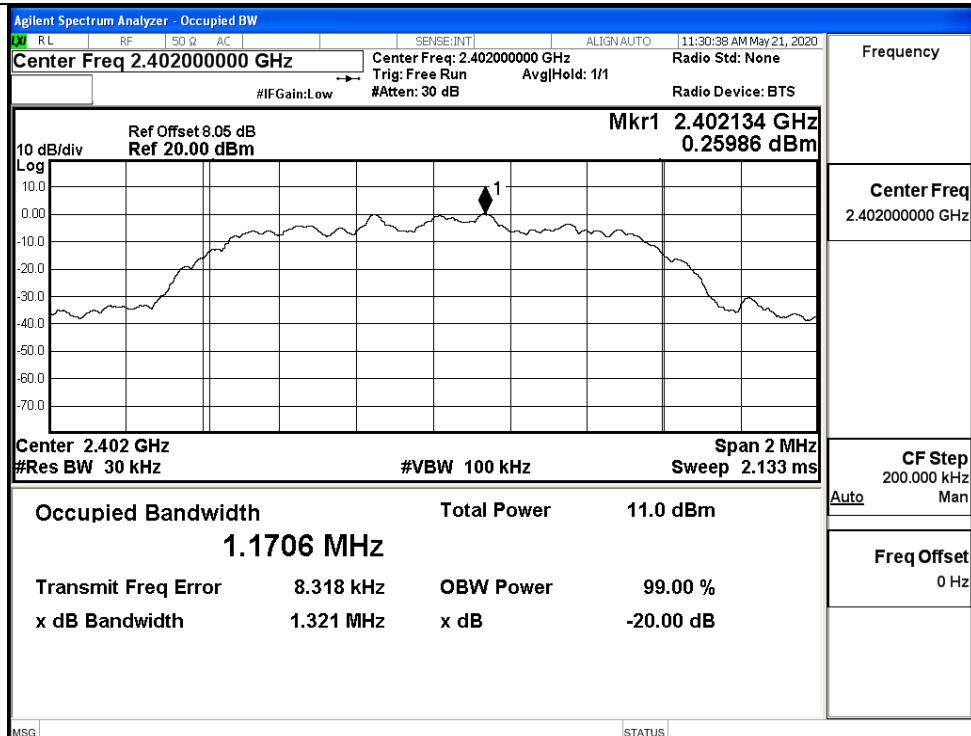


GFSK/MCH



GFSK/HCH

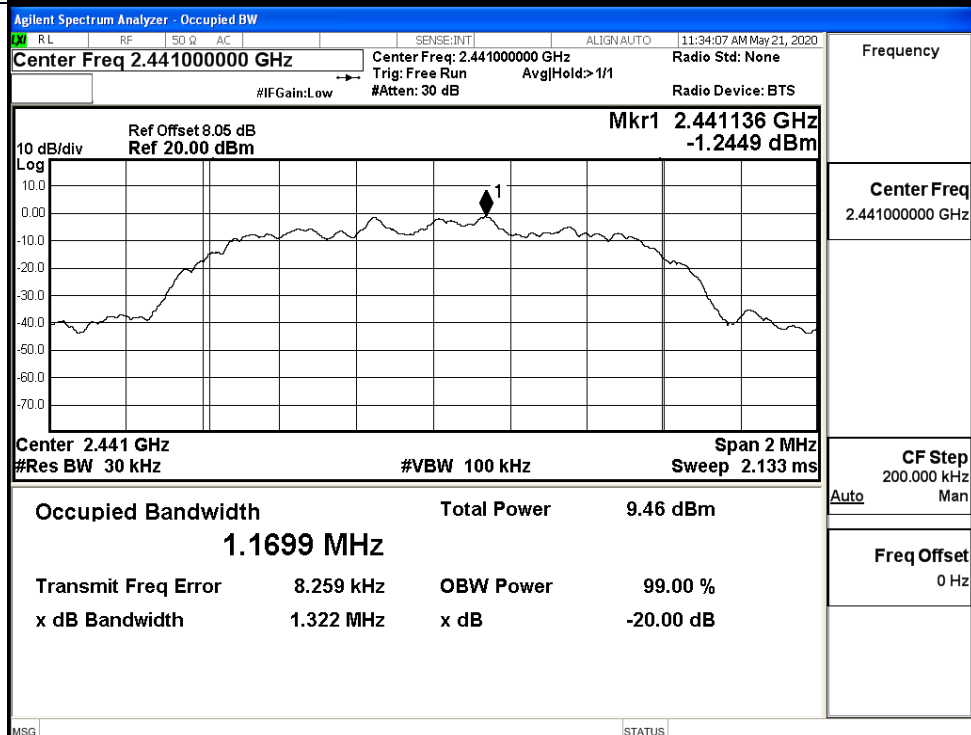


$\pi/4$ DQPSK/LCH

Frequency

Center Freq
2.40200000 GHzCF Step
200.000 kHz
Man

Auto

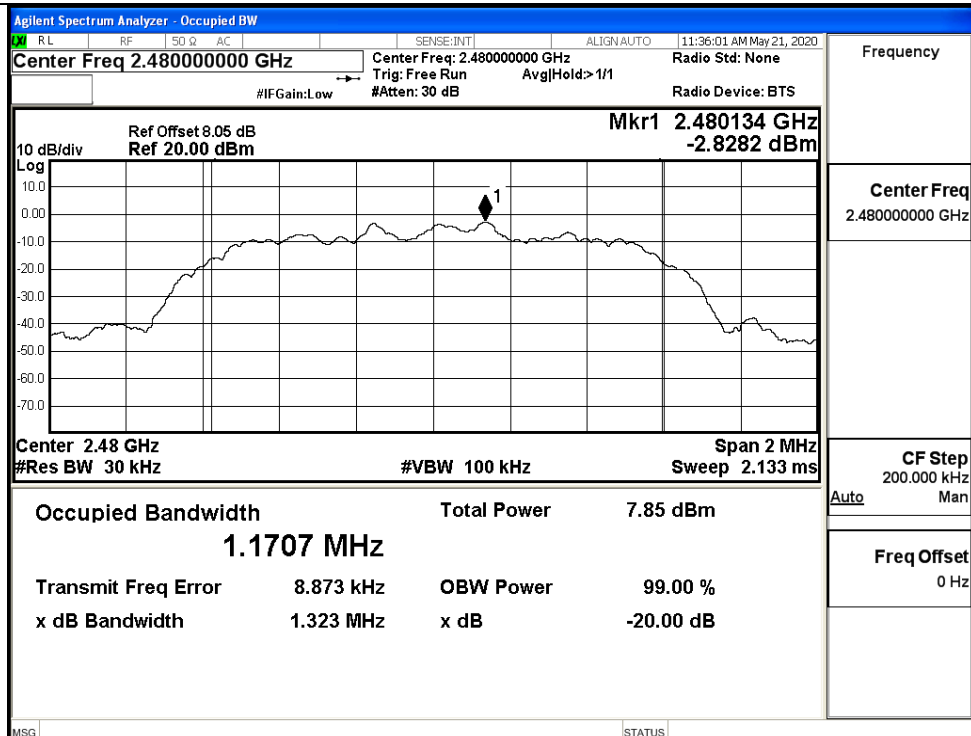
Freq Offset
0 Hz $\pi/4$ DQPSK/MCH

Frequency

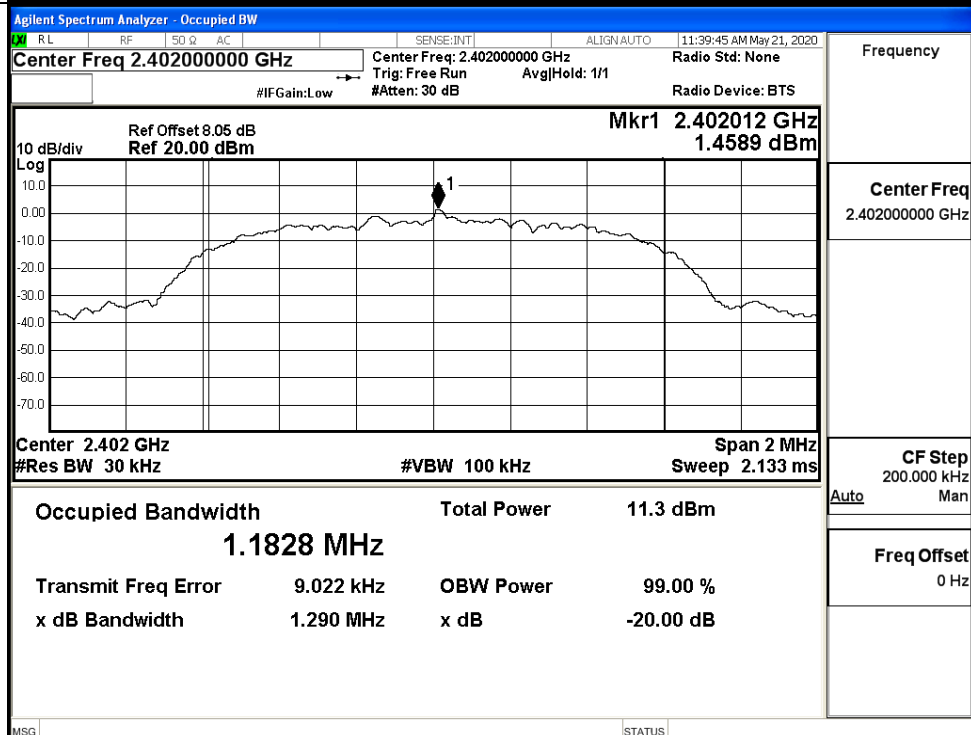
Center Freq
2.44100000 GHzCF Step
200.000 kHz
Man

Auto

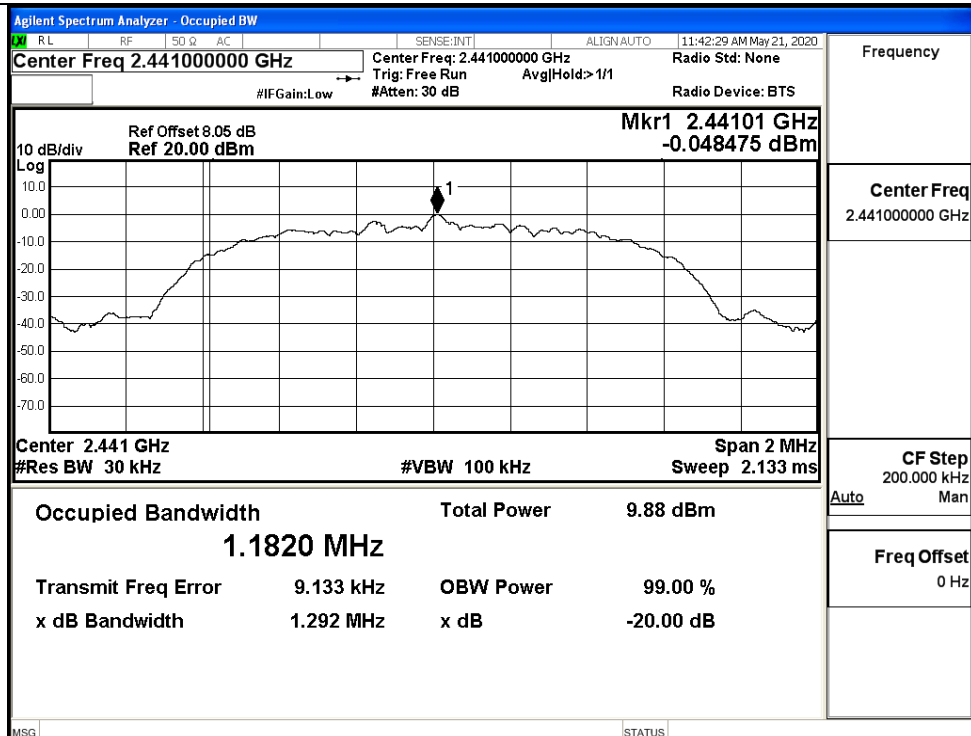
Freq Offset
0 Hz

$\pi/4$ DQPSK/HCH

8DPSK/LCH



8DPSK/MCH



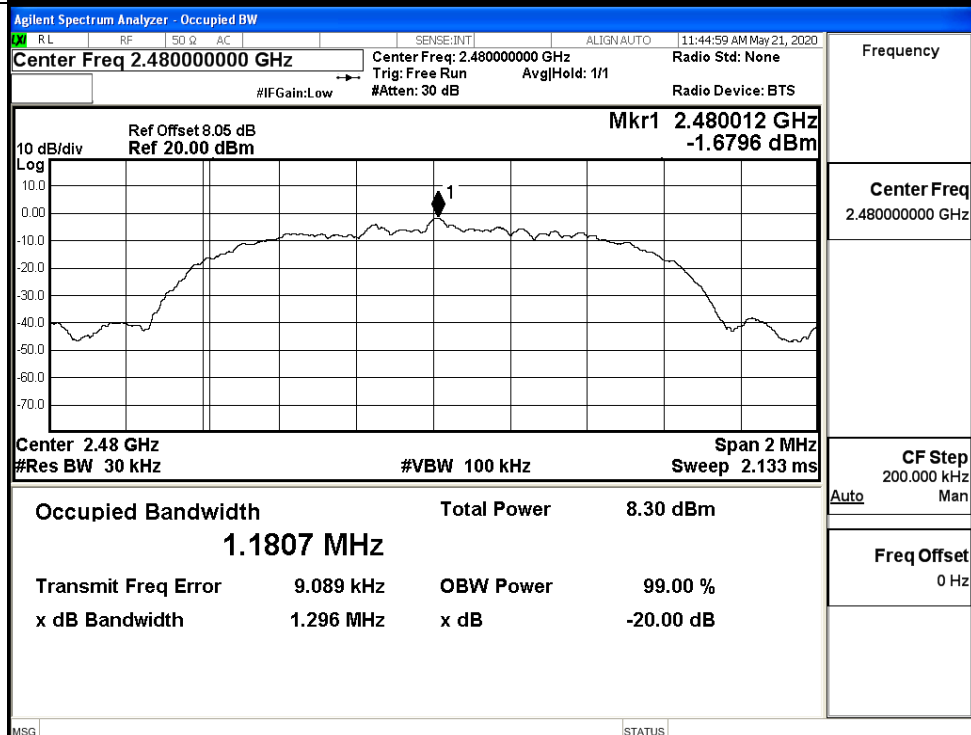
Frequency

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

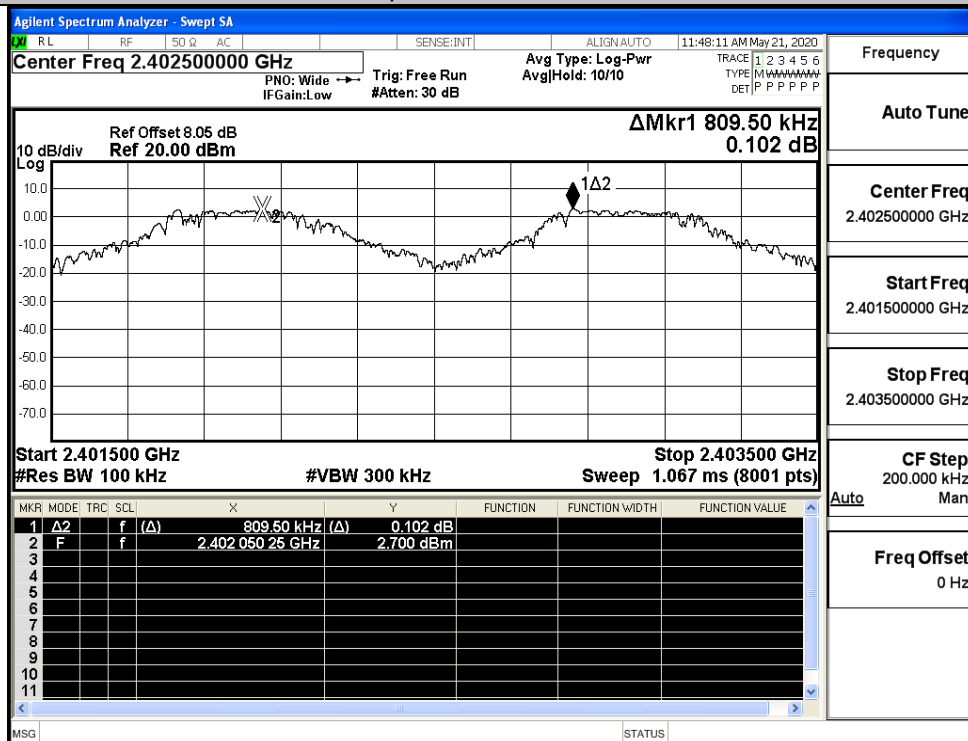
Freq Offset
0 Hz

A.3 Carrier Frequency Separation

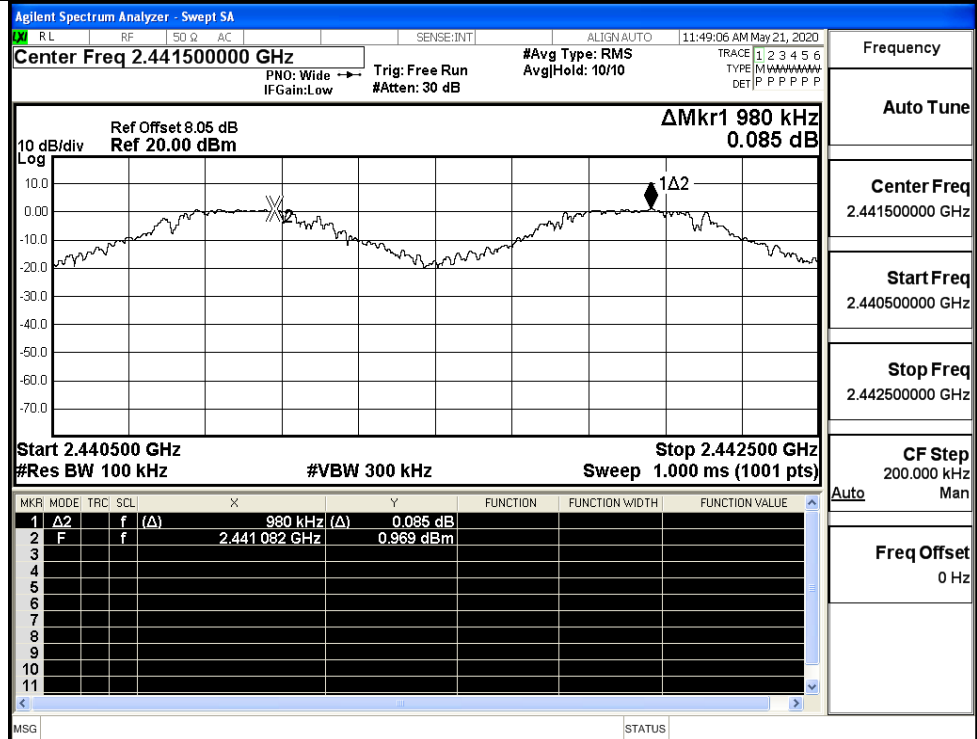
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.810	0.633	PASS
	MCH	0.980	0.633	PASS
	HCH	0.834	0.633	PASS
$\pi/4$ DQPSK	LCH	1.152	0.882	PASS
	MCH	1.238	0.882	PASS
	HCH	0.998	0.882	PASS
8DPSK	LCH	0.868	0.864	PASS
	MCH	0.872	0.864	PASS
	HCH	0.970	0.864	PASS

Test Graphs

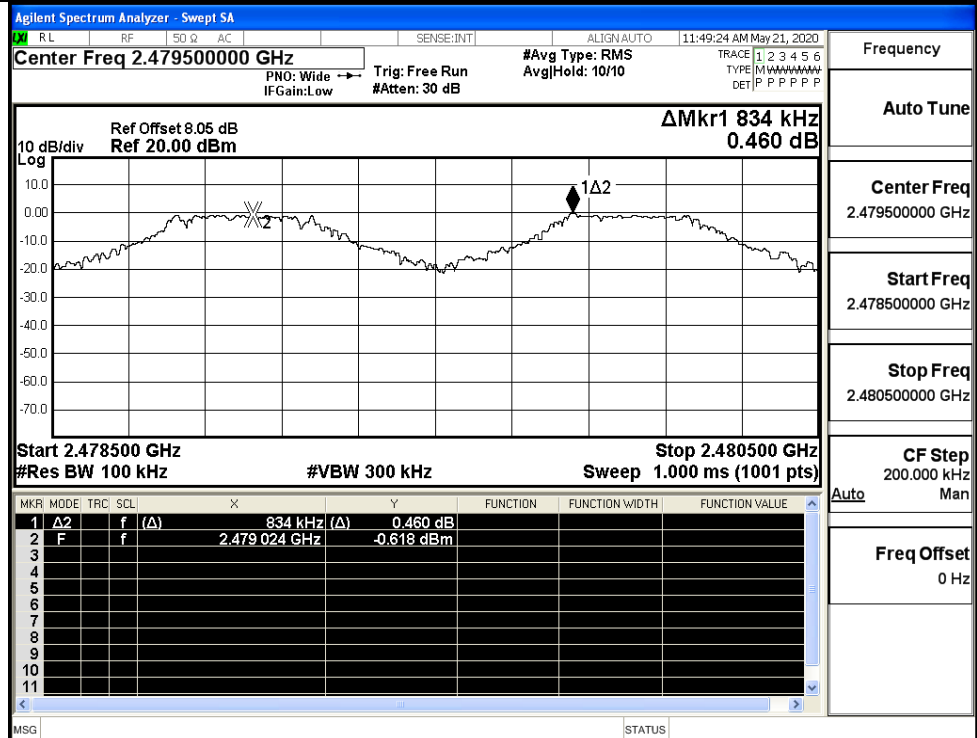
GFSK/LCH

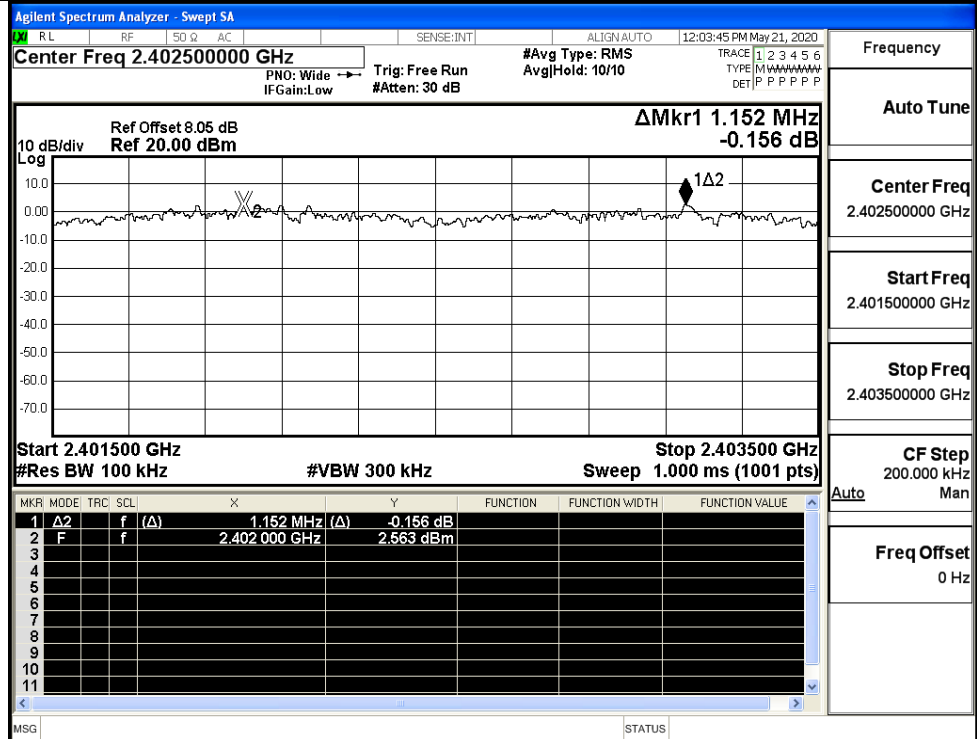
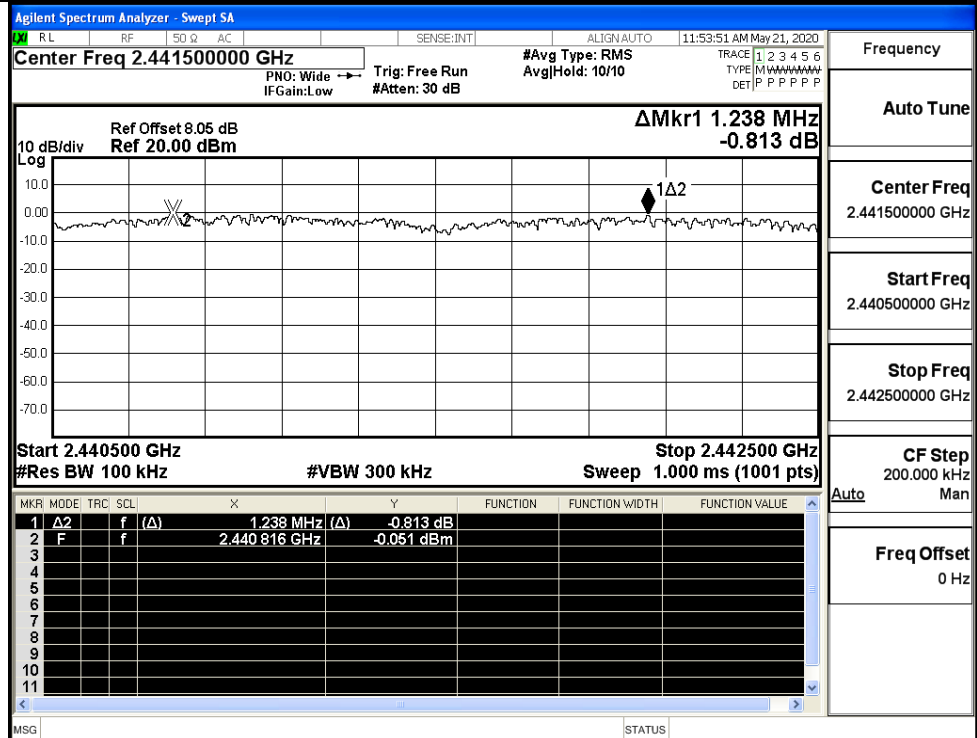


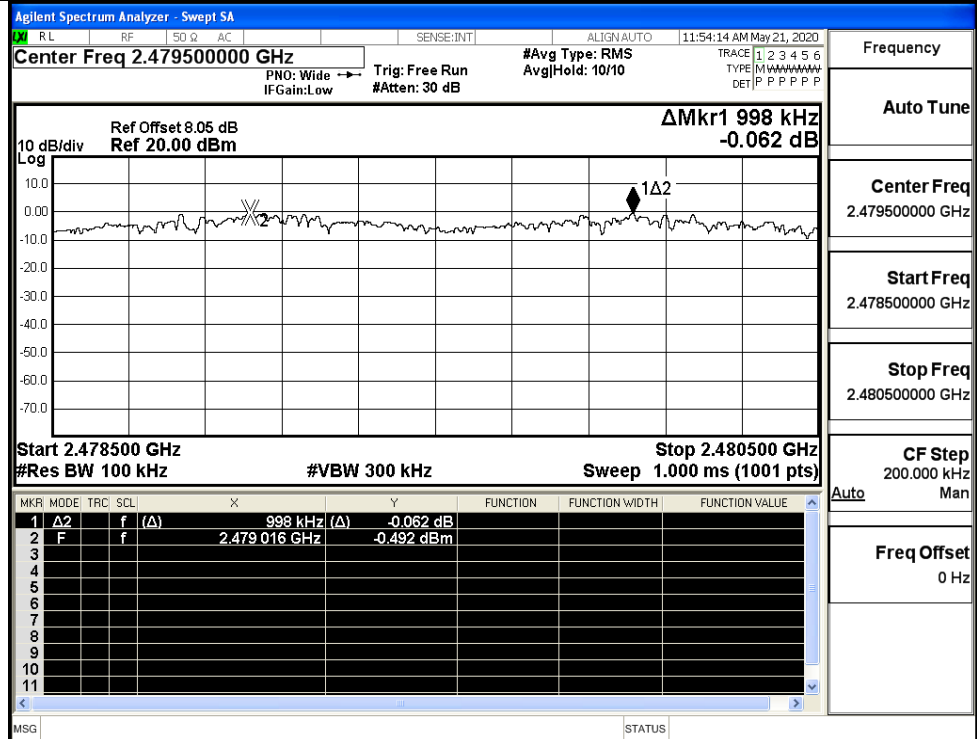
GFSK/MCH



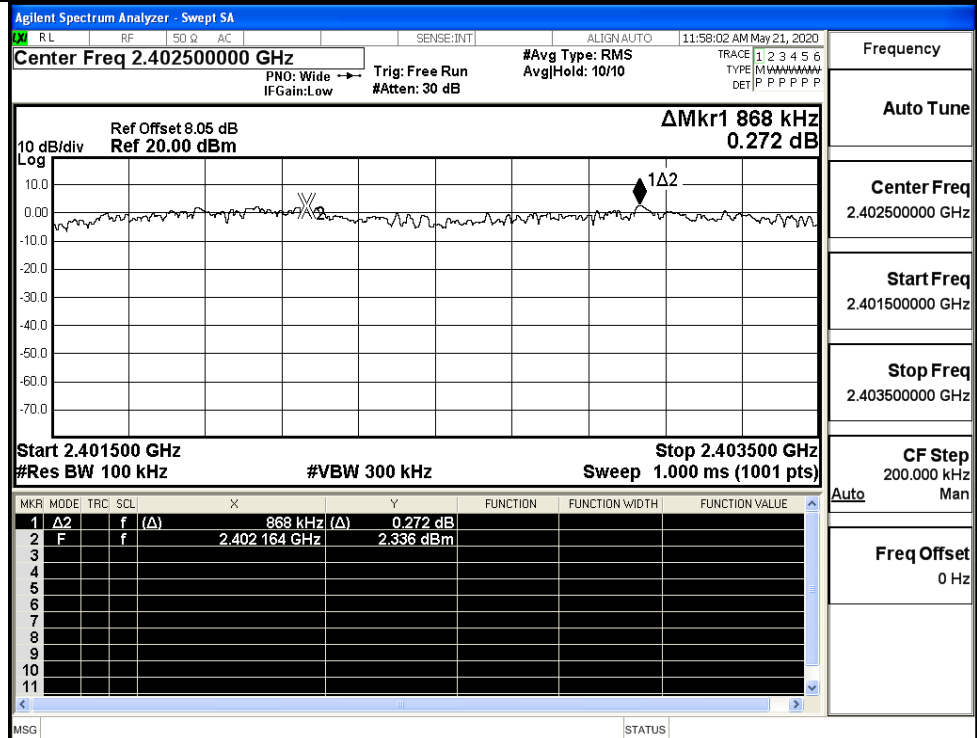
GFSK/HCH



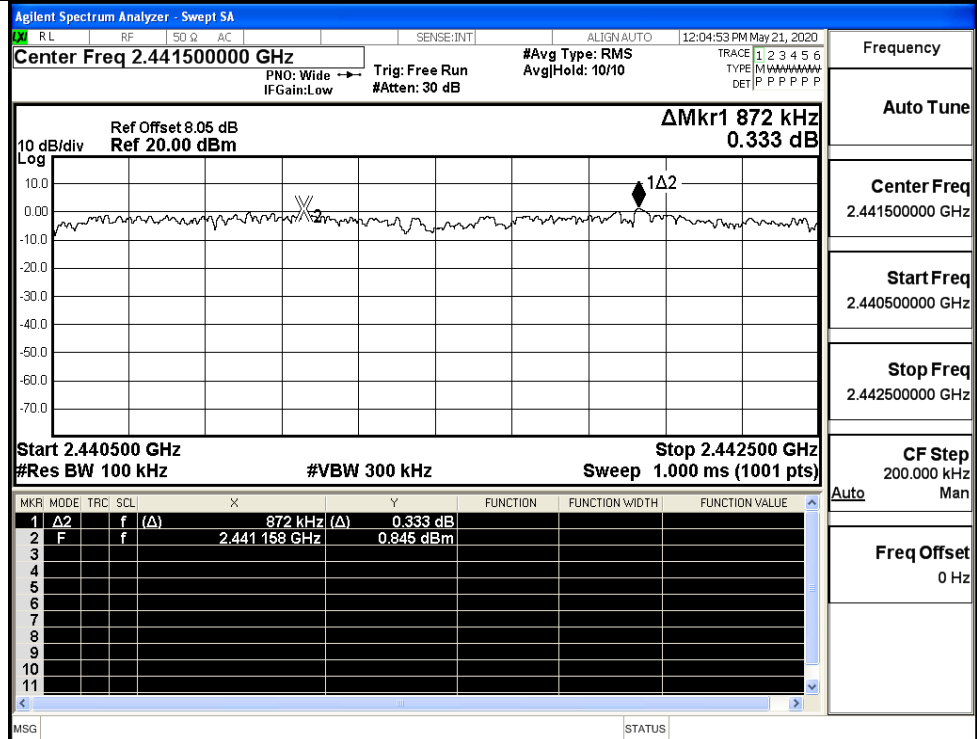
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

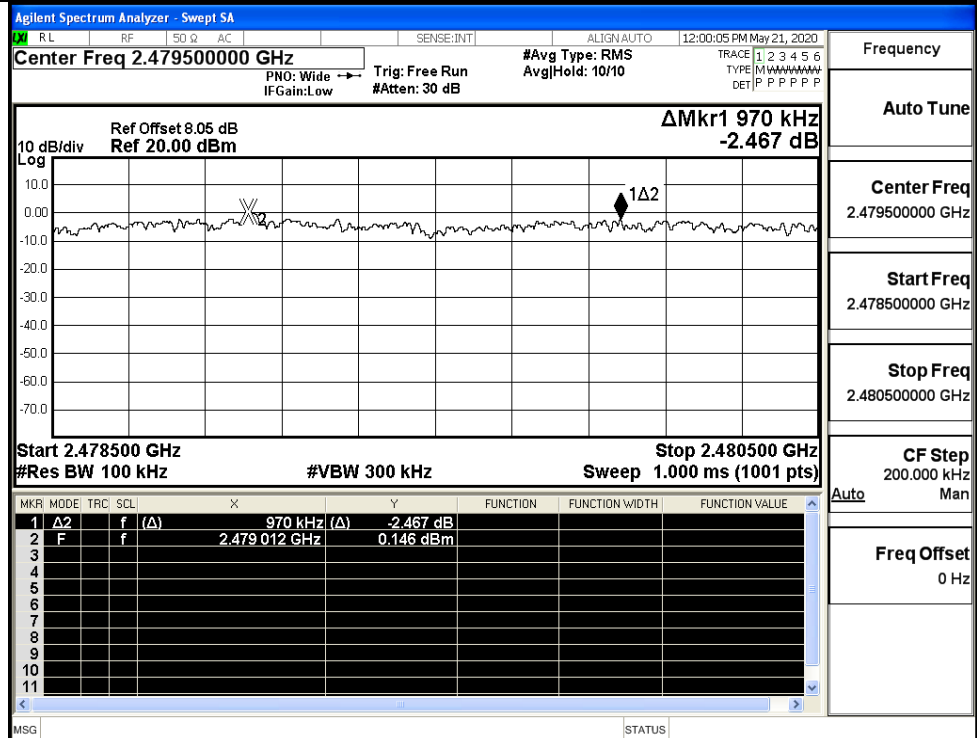
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

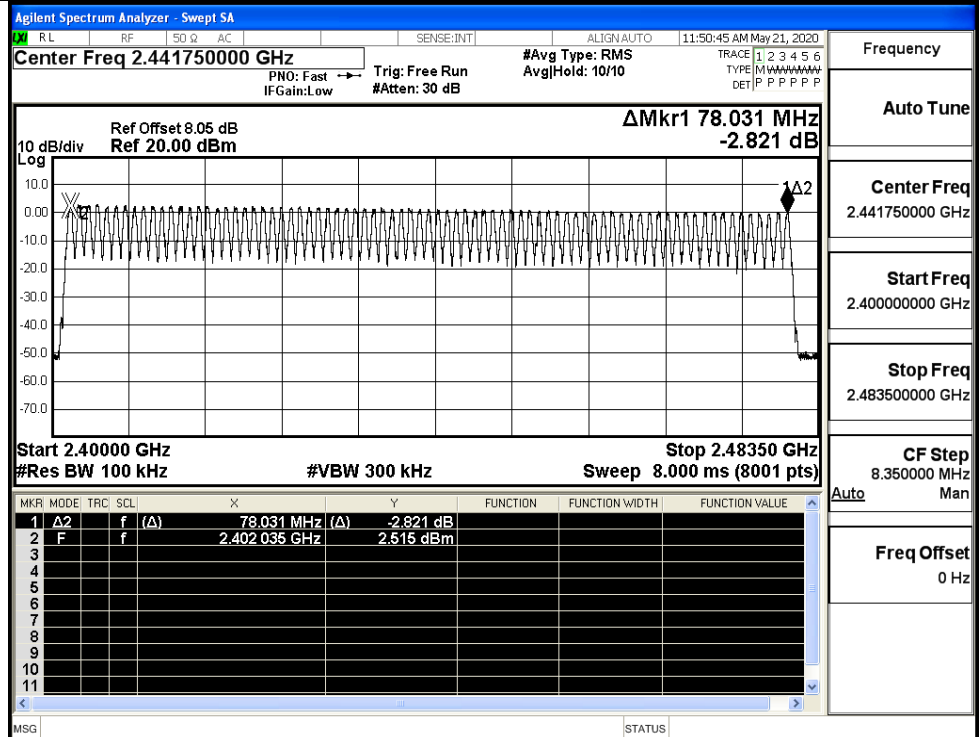
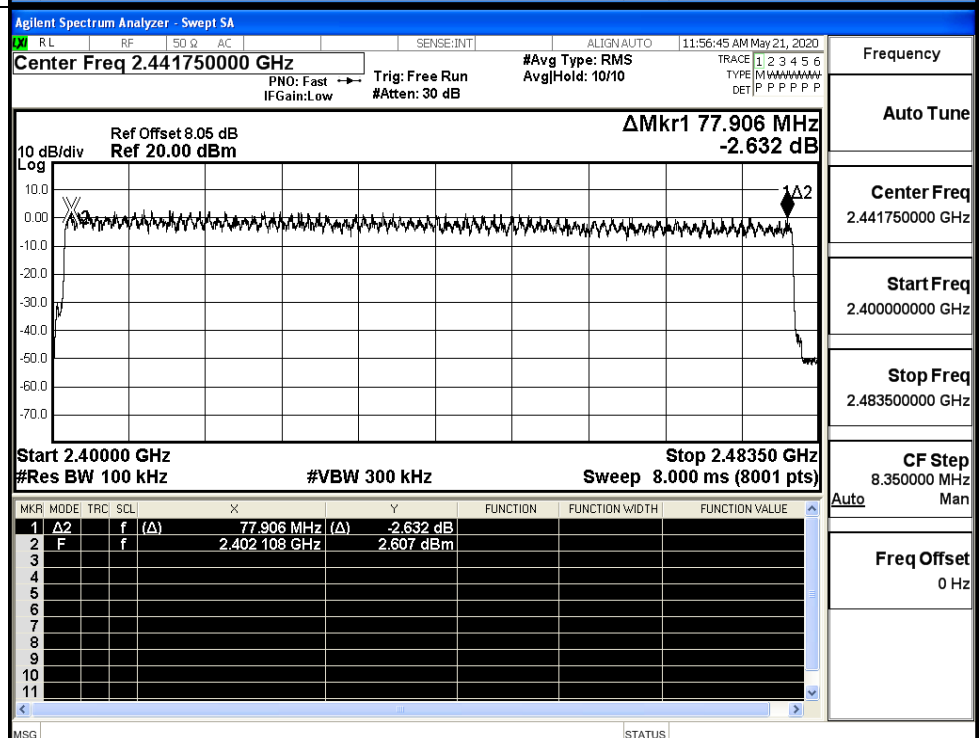


A.4 Hopping Channel Number

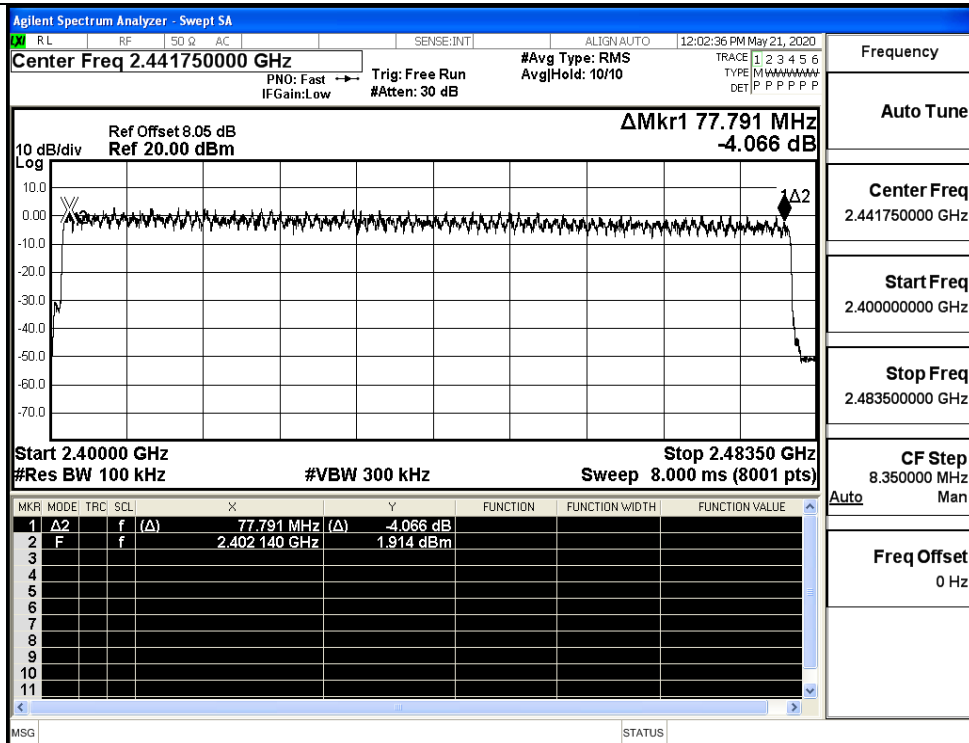
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	≥ 15	PASS
$\pi/4$ DQPSK	Hop	79	≥ 15	PASS
8DPSK	Hop	79	≥ 15	PASS

Test Graphs

GFSK/Hop

 $\pi/4$ DQPSK/Hop

8DPSK/Hop

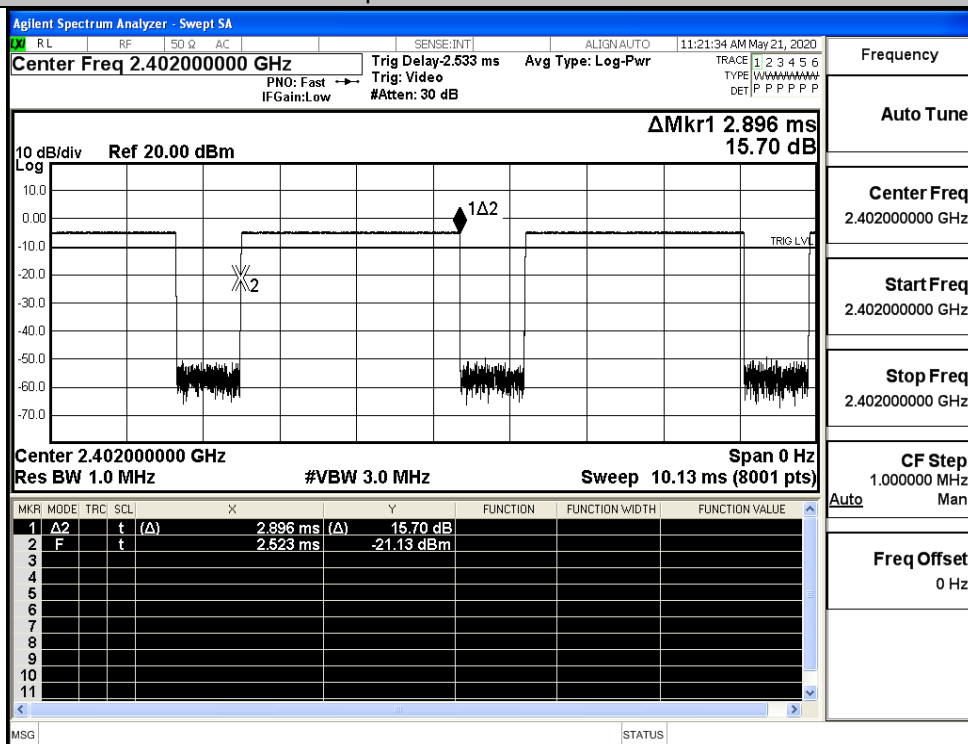


A.5 Dwell Time

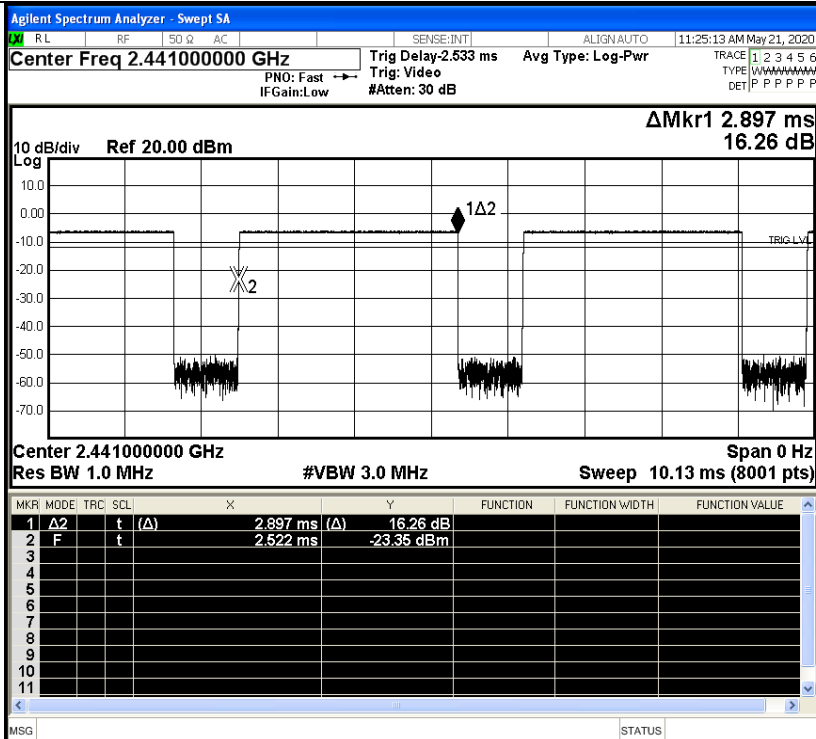
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.9	106.7	0.309	0.4	PASS
	DH5	MCH	2.9	106.7	0.309	0.4	PASS
	DH5	HCH	2.9	106.7	0.309	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.9	106.7	0.309	0.4	PASS
	2DH5	MCH	2.9	106.7	0.309	0.4	PASS
	2DH5	HCH	2.9	106.7	0.309	0.4	PASS
8DPSK	3DH5	LCH	2.9	106.7	0.309	0.4	PASS
	3DH5	MCH	2.9	106.7	0.309	0.4	PASS
	3DH5	HCH	2.9	106.7	0.309	0.4	PASS

Test Graphs

GFSK_DH5/LCH



GFSK_DH5/MCH

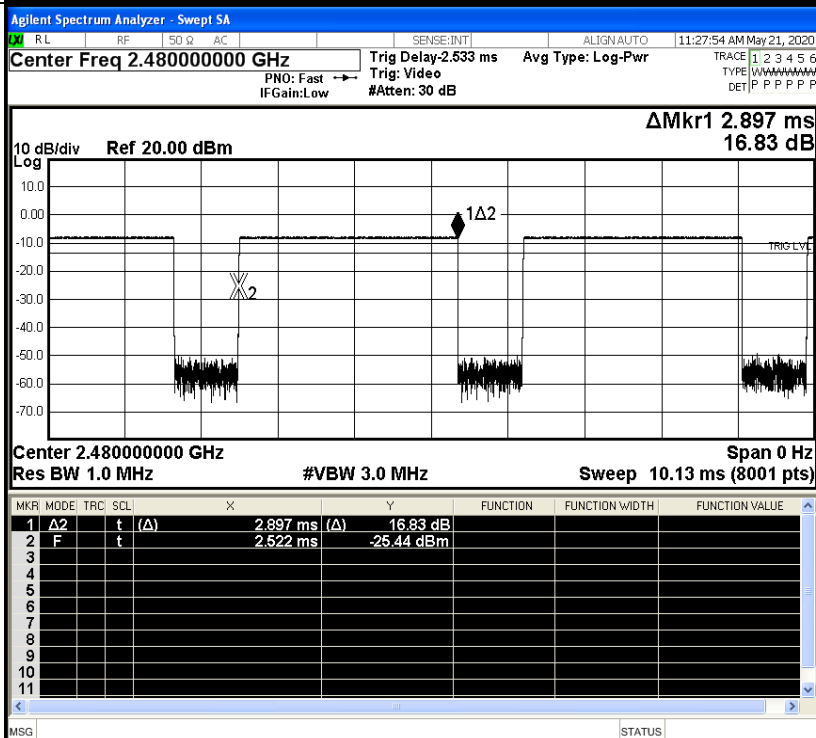


Frequency

Auto Tune

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

GFSK_DH5/HCH

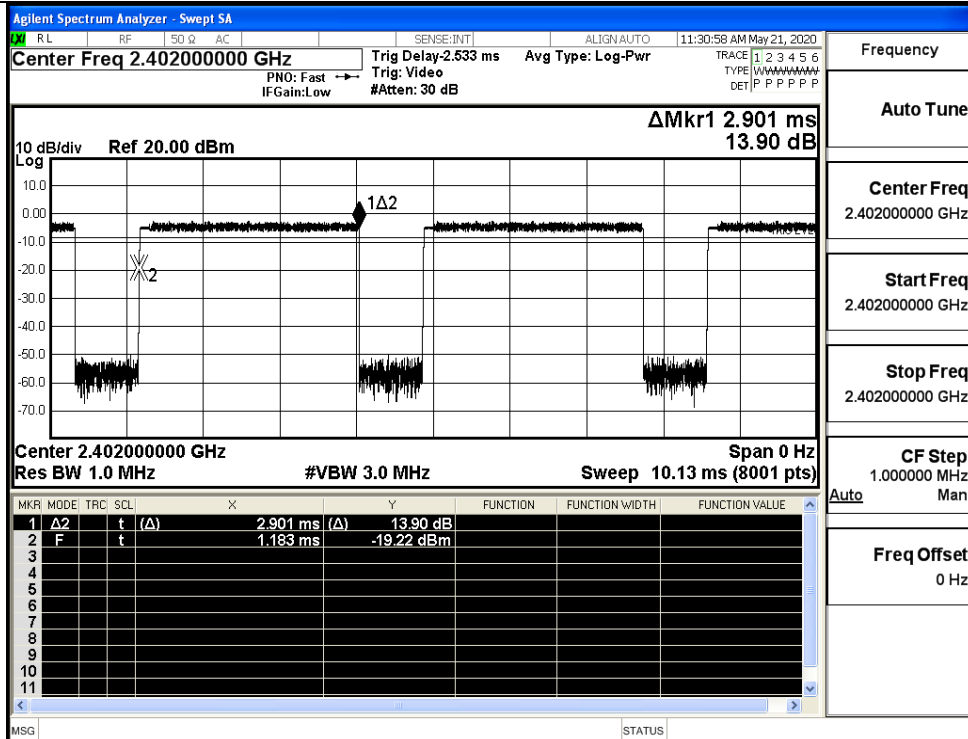


Frequency

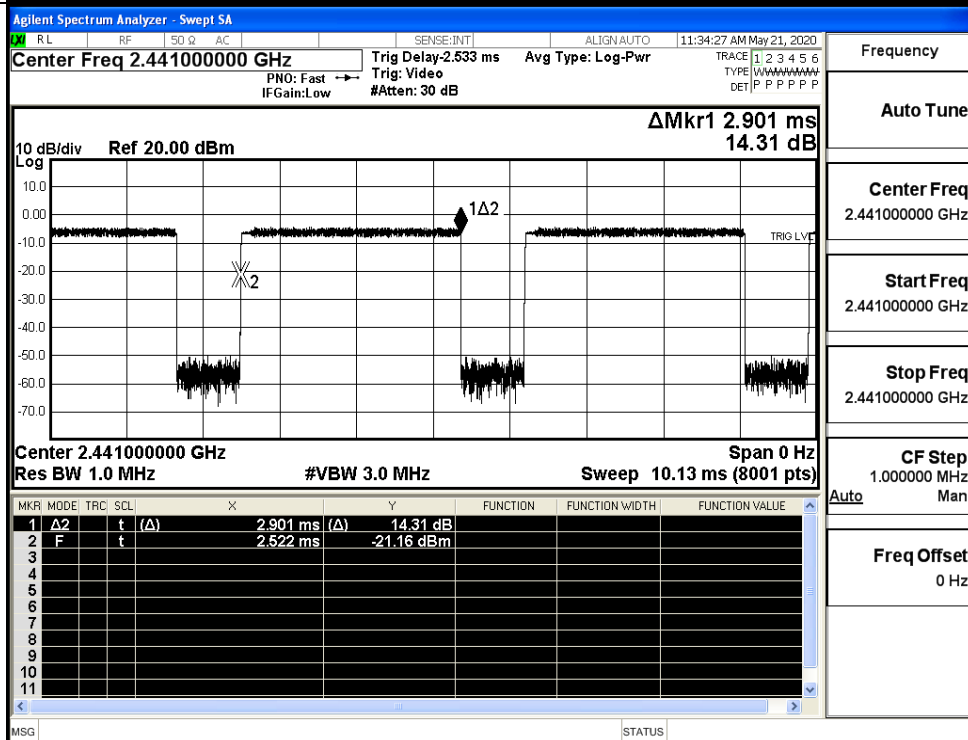
Auto Tune

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

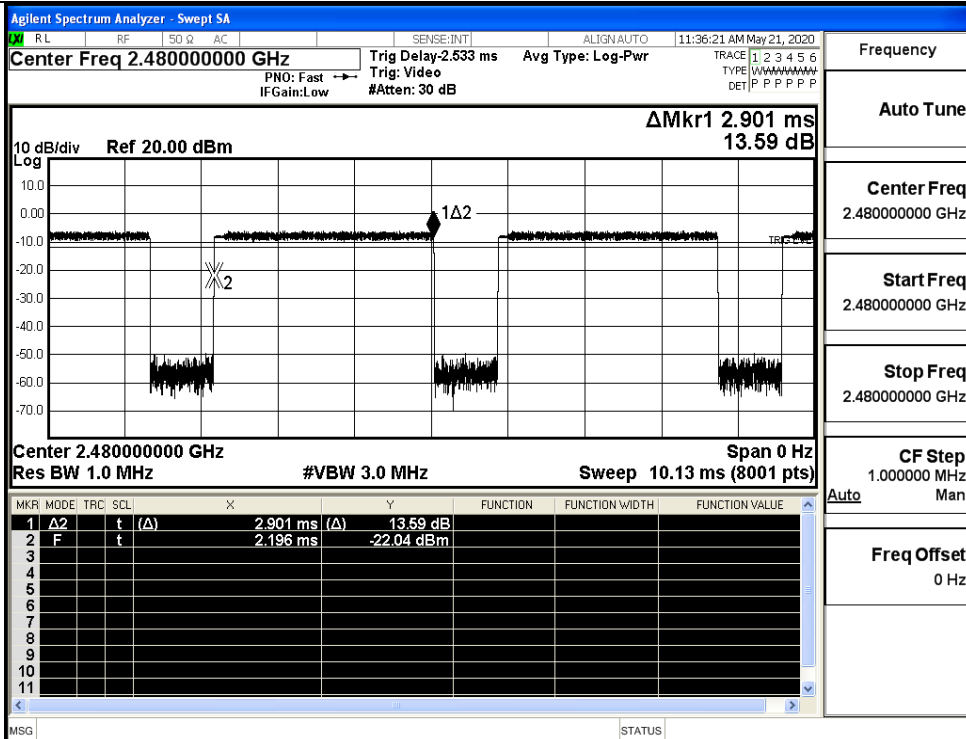
$\pi/4$ DQPSK
_2DH5/LCH



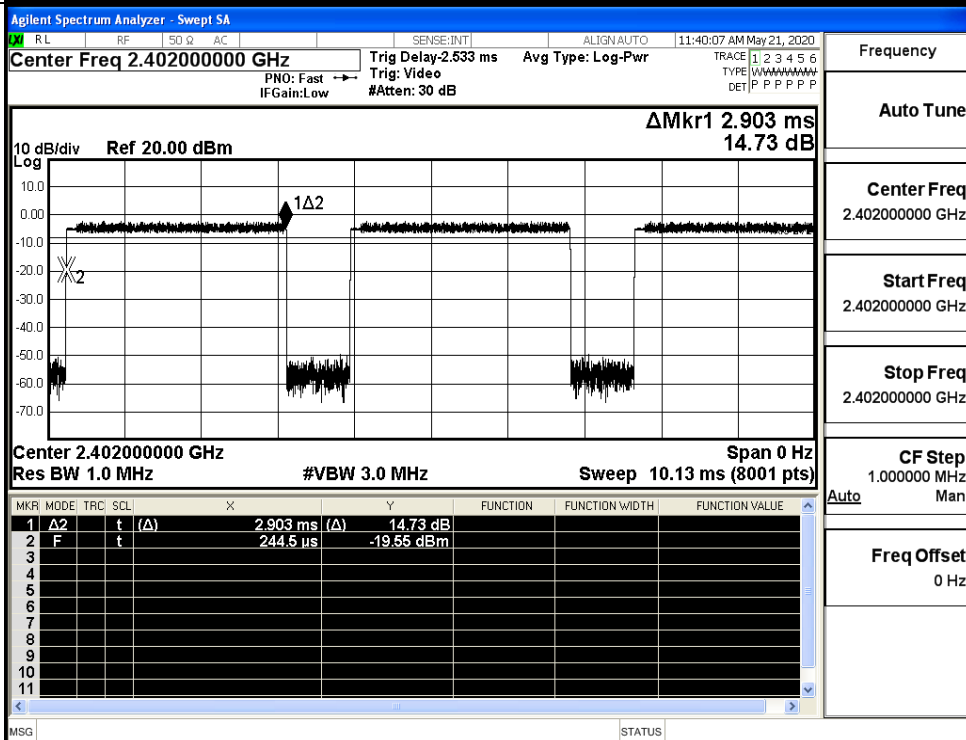
$\pi/4$ DQPSK
_2DH5/MCH



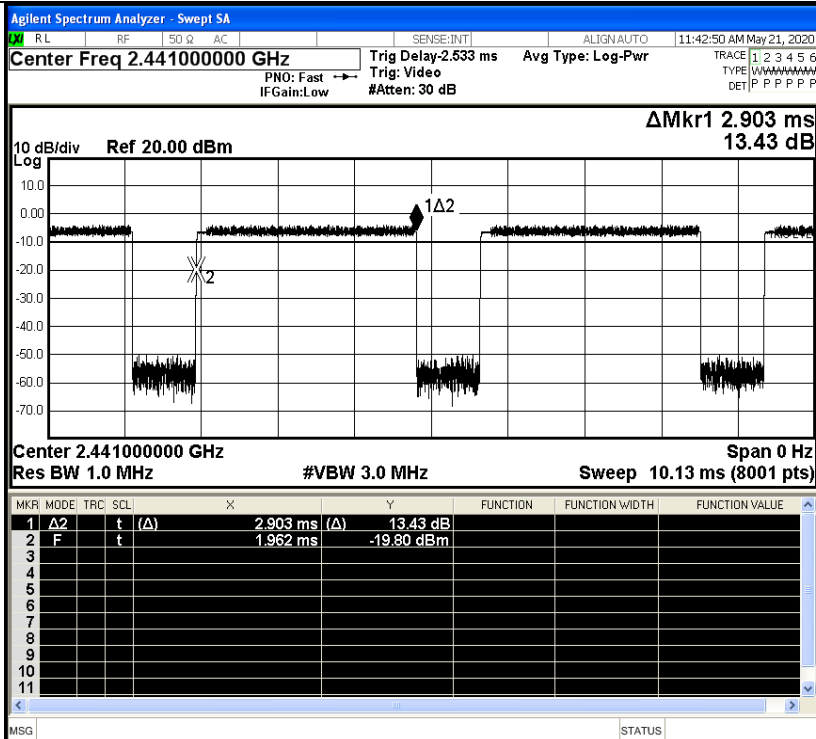
$\pi/4$ DQPSK
_2DH5/HCH



8DPSK _3DH5/LCH



8DPSK_3DH5/MCH

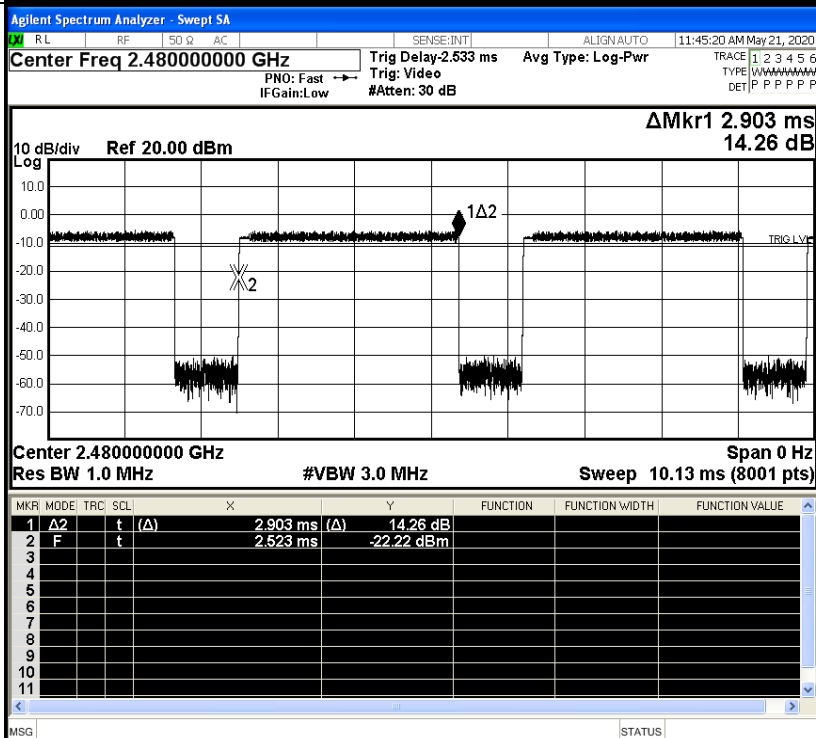


Frequency

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

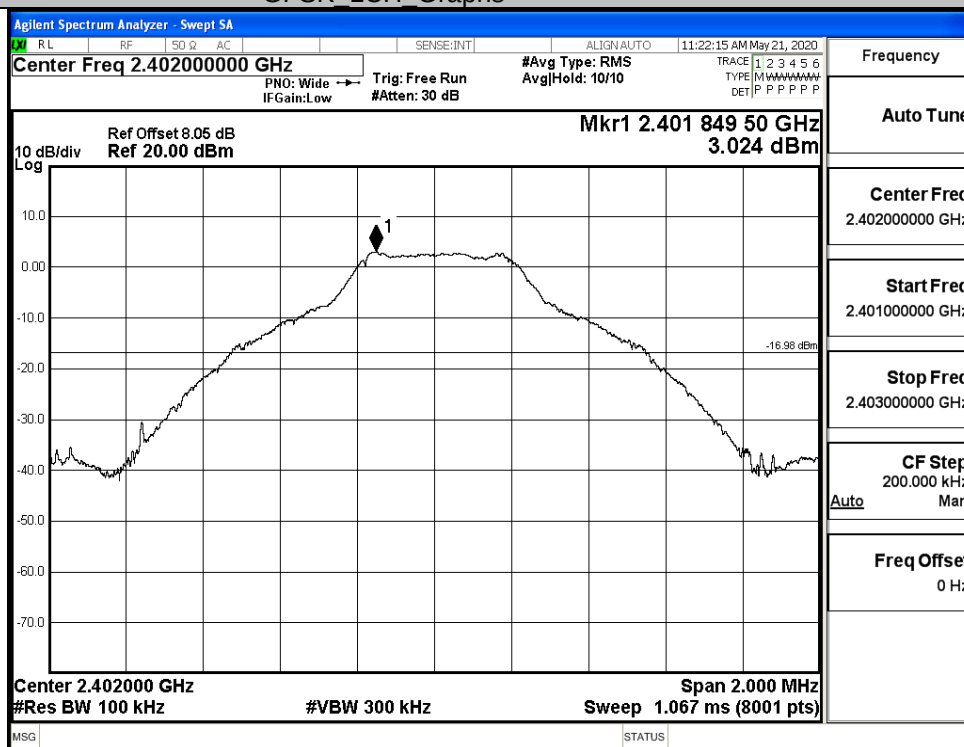
Center Freq
2.480000000 GHzStart Freq
2.480000000 GHzStop Freq
2.480000000 GHzCF Step
1.000000 MHz
Auto ManFreq Offset
0 Hz

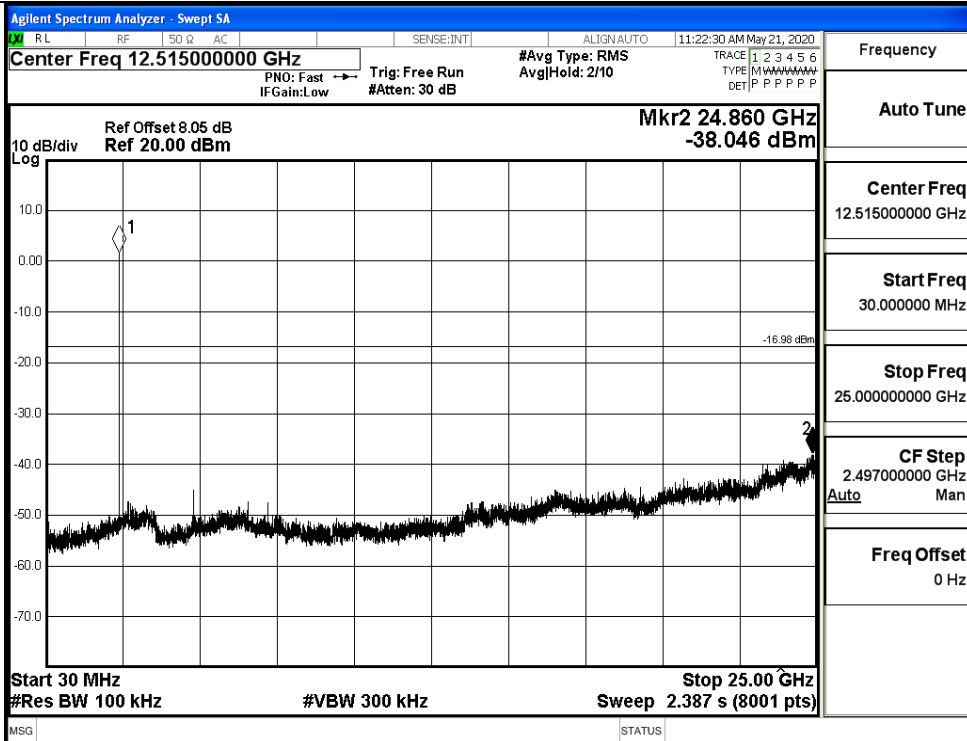
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	3.024	-38.046	-16.976	PASS
	MCH	1.462	-38.179	-18.538	PASS
	HCH	-0.003	-37.180	-20.003	PASS
$\pi/4$ DQPSK	LCH	2.896	-37.658	-17.104	PASS
	MCH	1.418	-37.329	-18.582	PASS
	HCH	-0.275	-37.807	-20.275	PASS
8DPSK	LCH	3.169	-36.943	-16.831	PASS
	MCH	1.68	-37.942	-18.320	PASS
	HCH	0.056	-38.379	-19.944	PASS

GFSK LCH Graphs

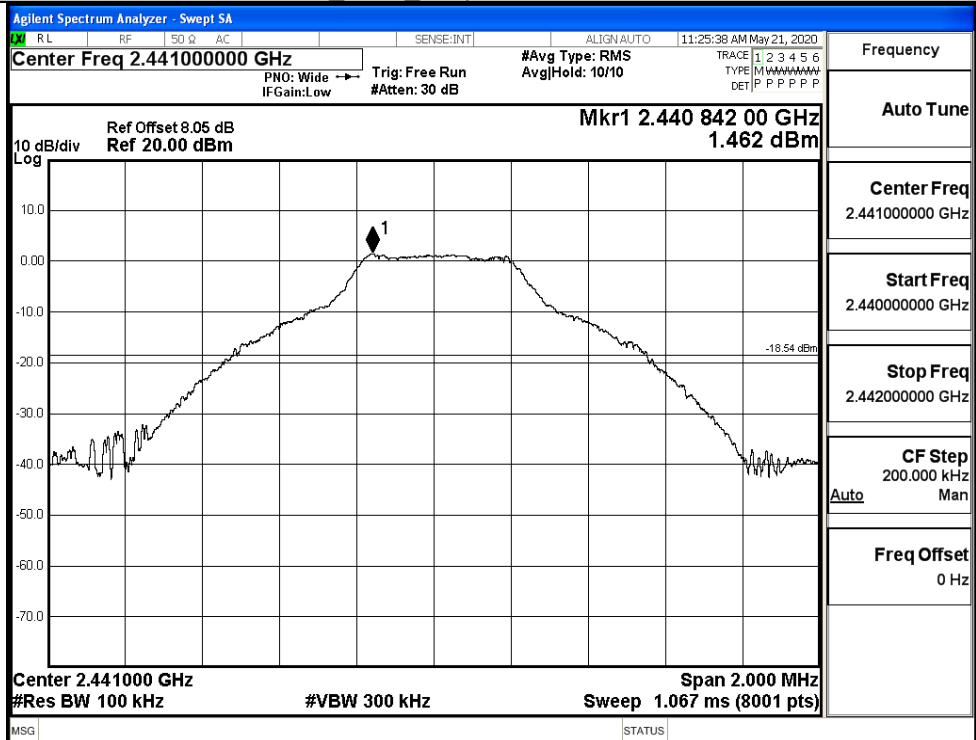
Pref



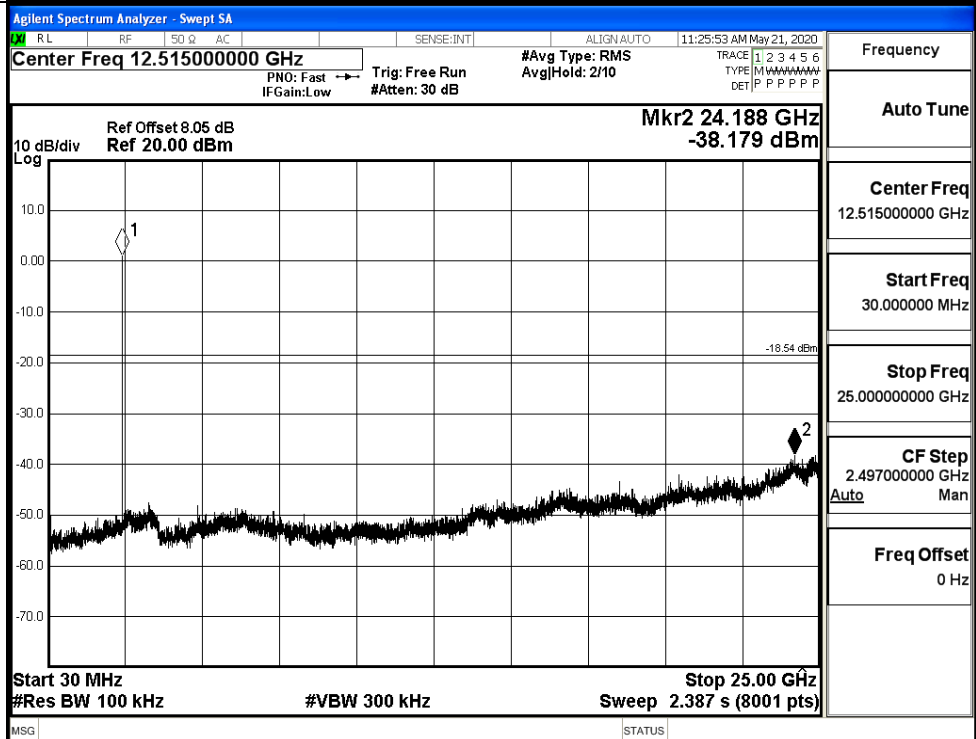
P_uw

GFSK_MCH_Graphs

Pref

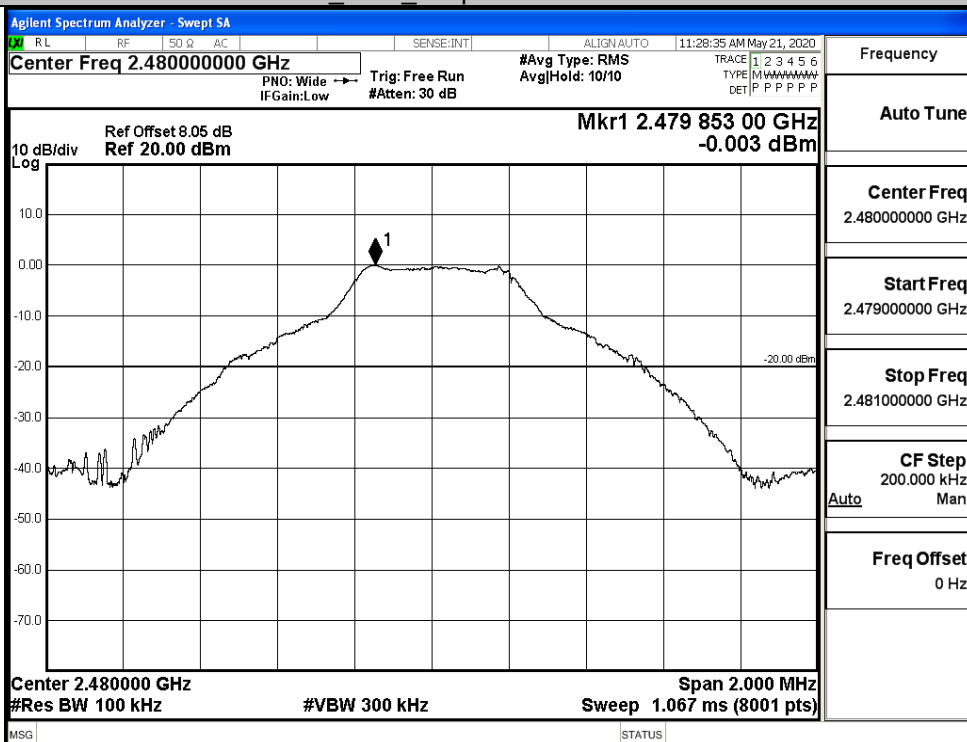


Puw

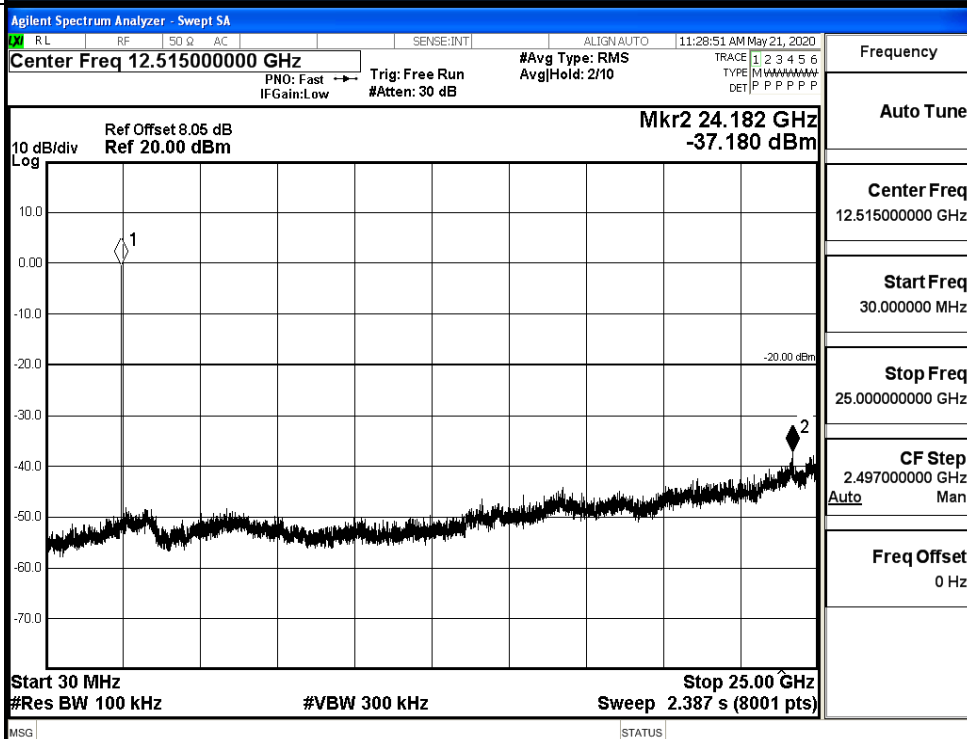


GFSK HCH Graphs

Pref

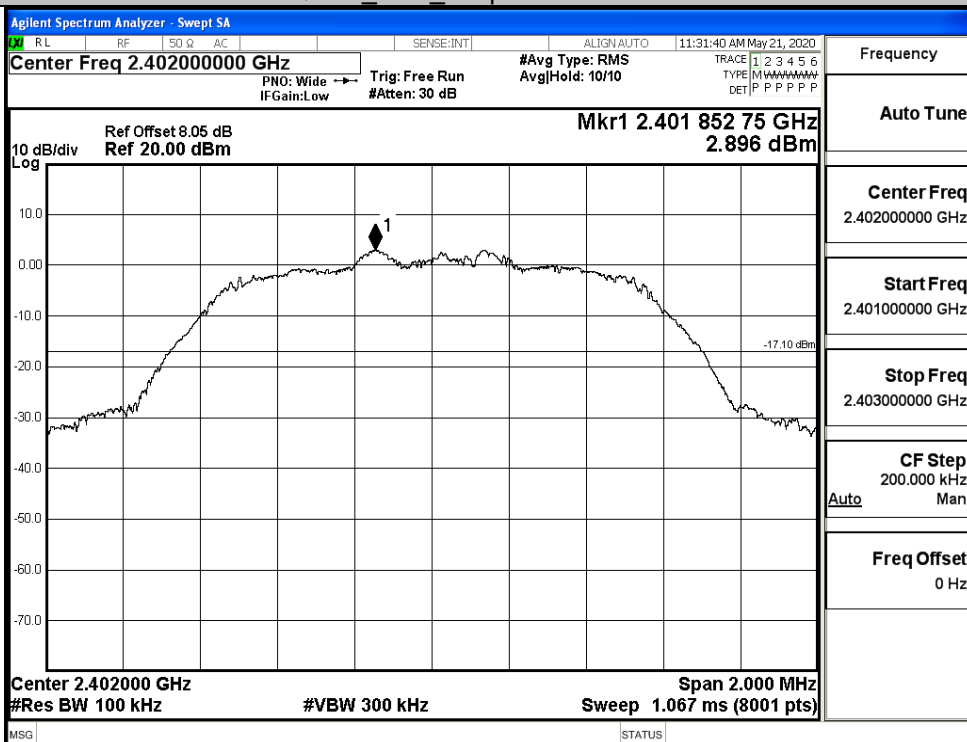


Puw

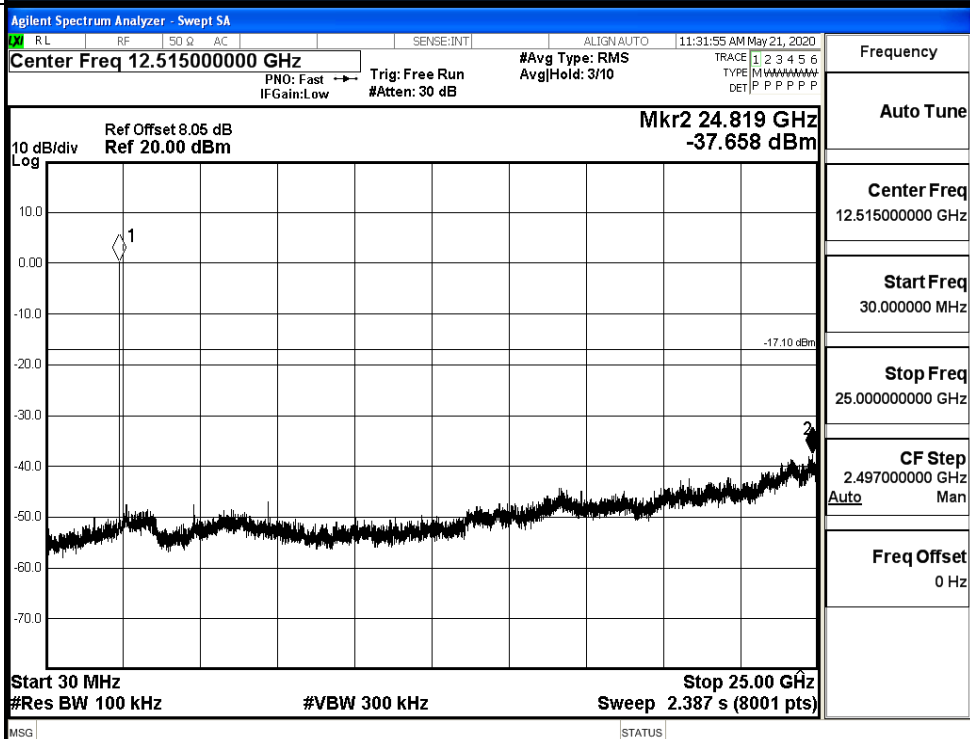


π /4DQPSK_LCH_Graphs

Pref

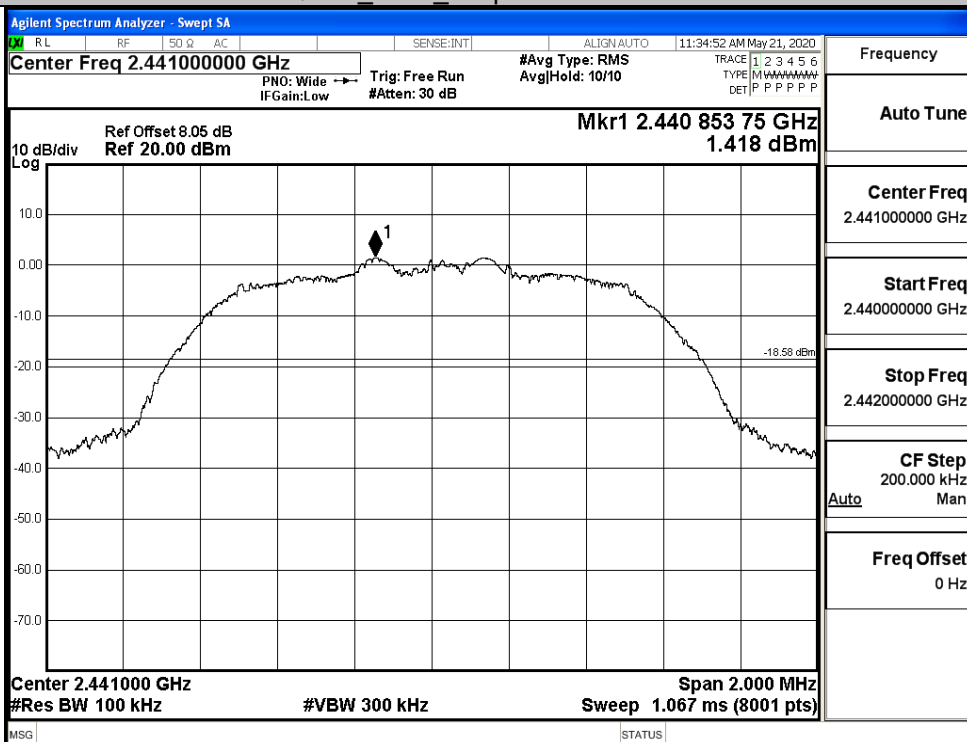


Puw

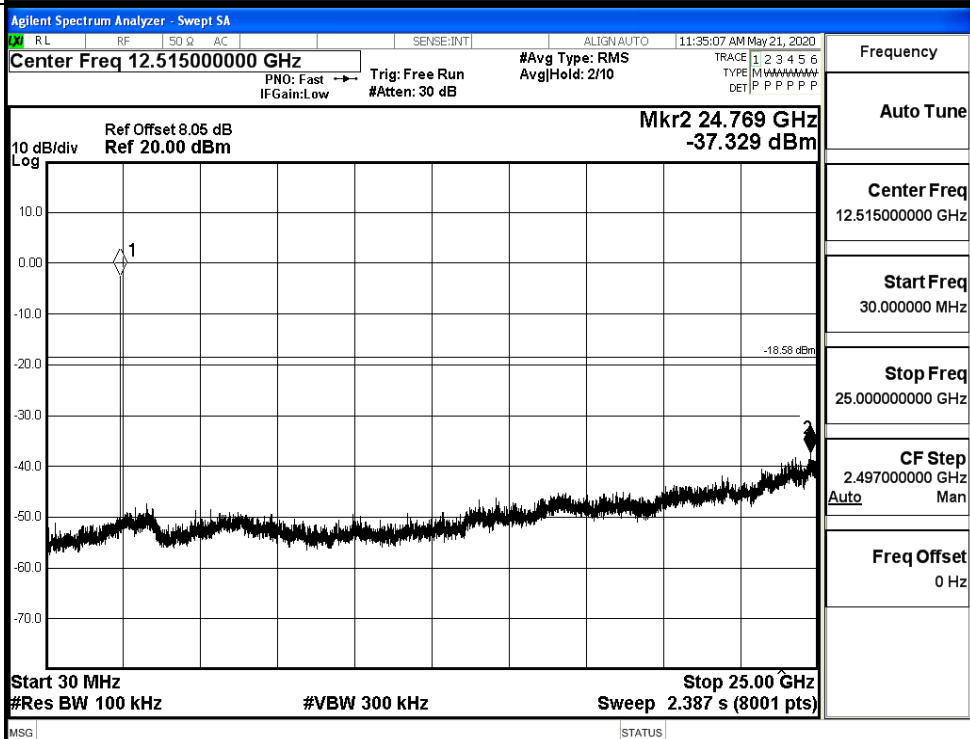


π /4DQPSK_MCH_Graphs

Pref

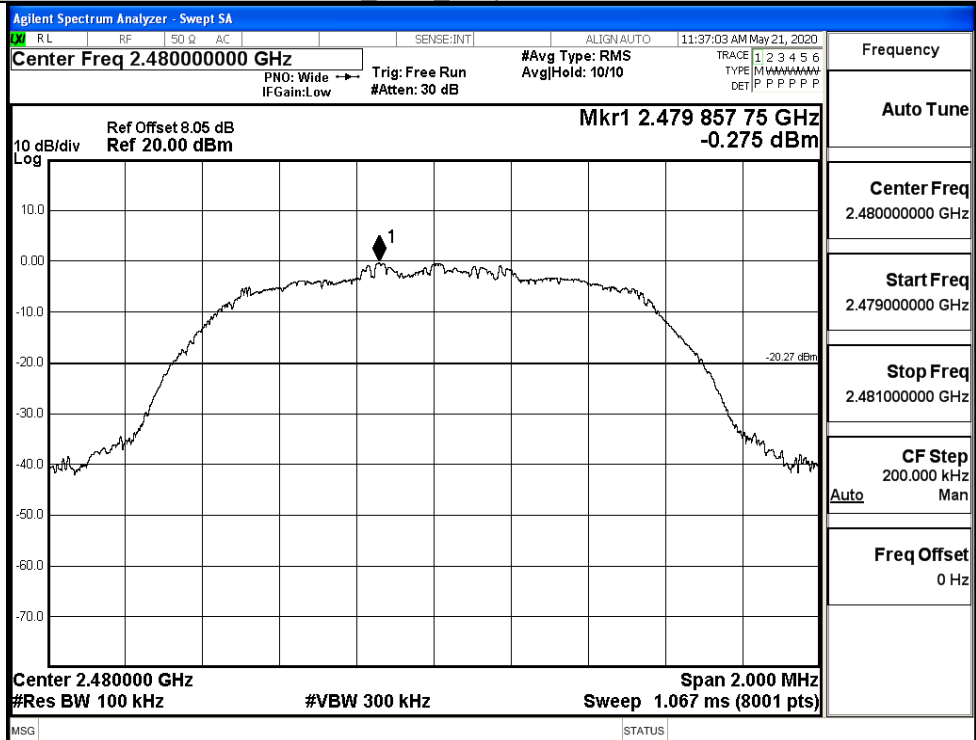


Puw

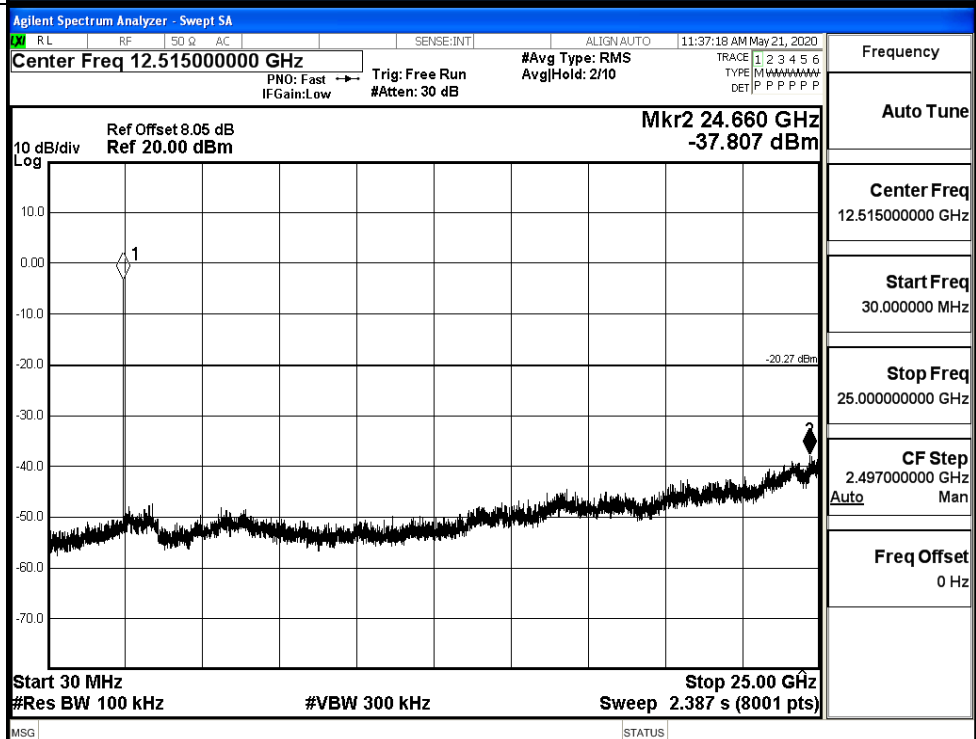


$\pi/4$ DQPSK_HCH_Graphs

Pref

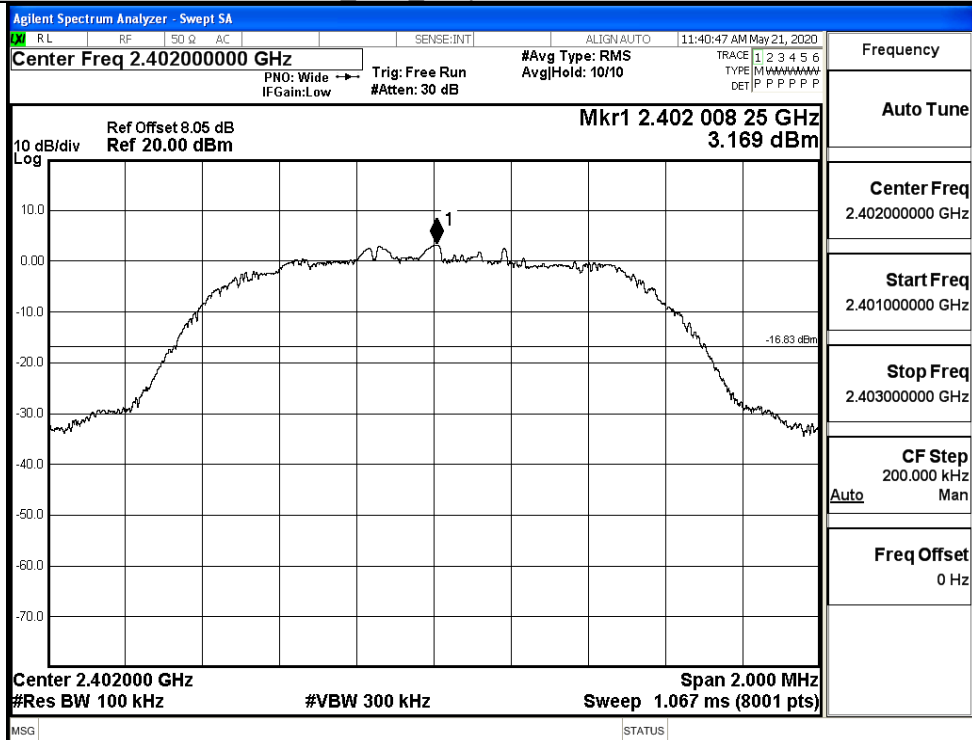


Puw

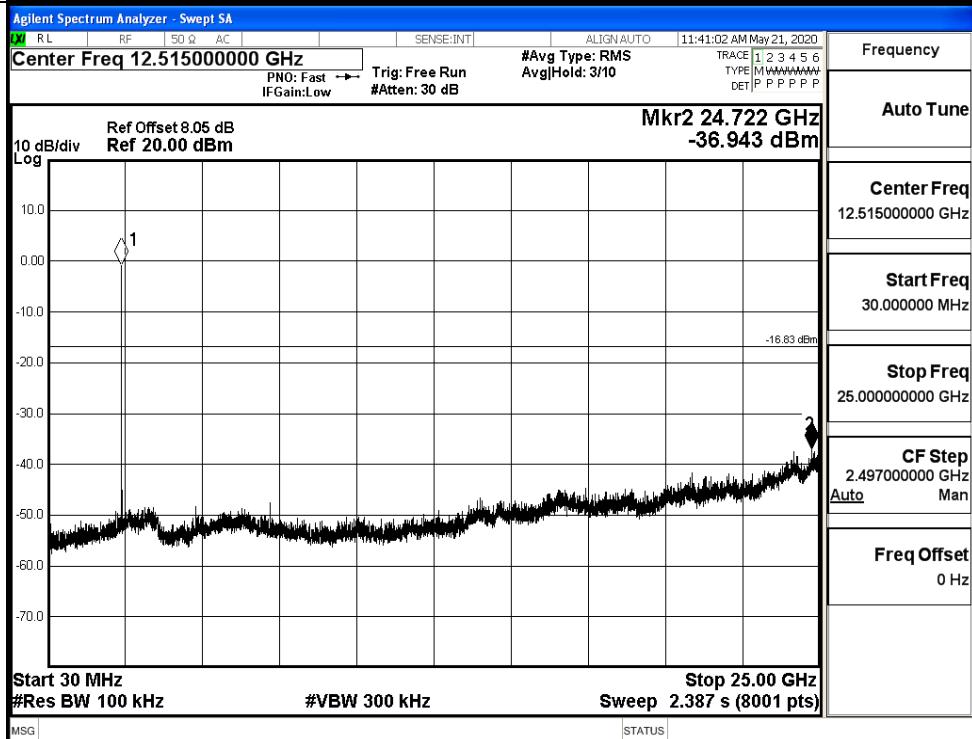


8DPSK_LCH_Graphs

Pref

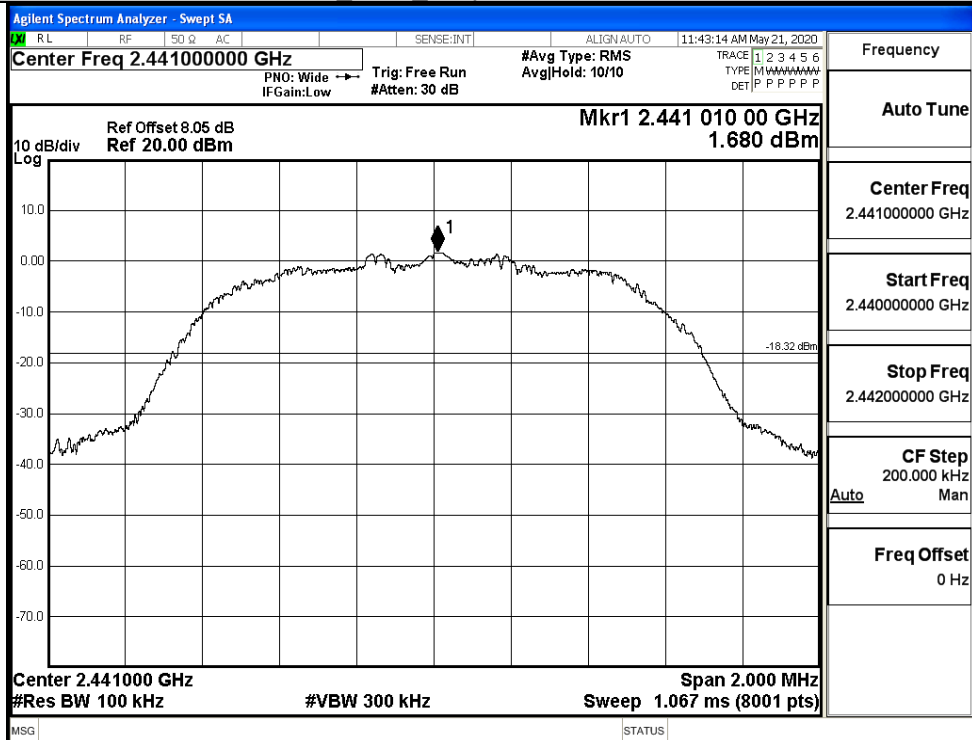


Puw

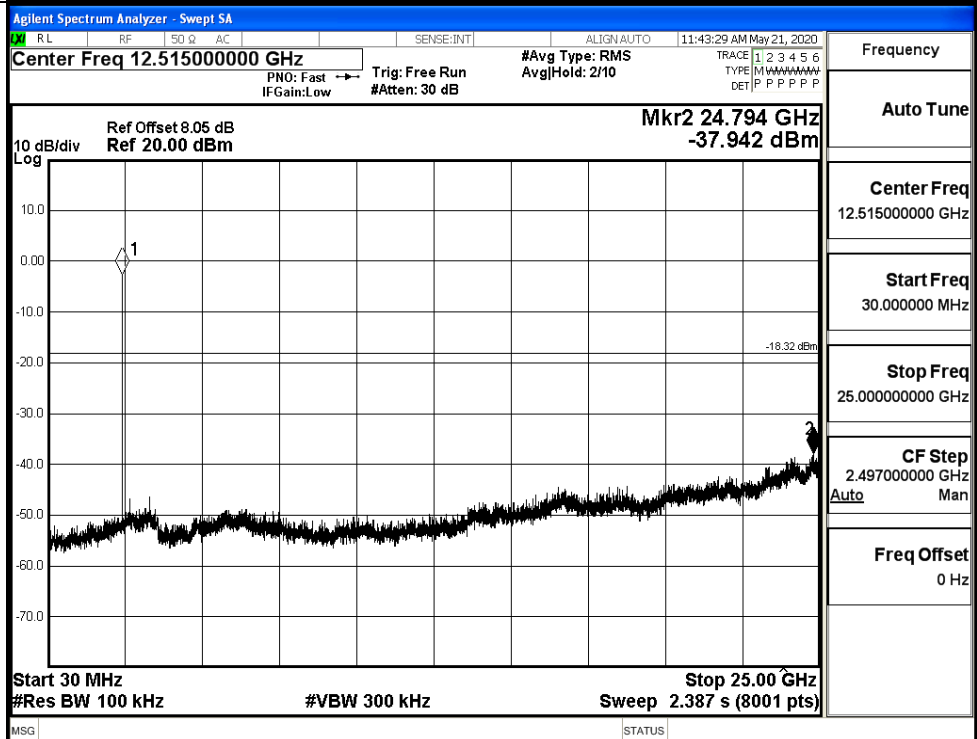


8DPSK_MCH_Graphs

Pref

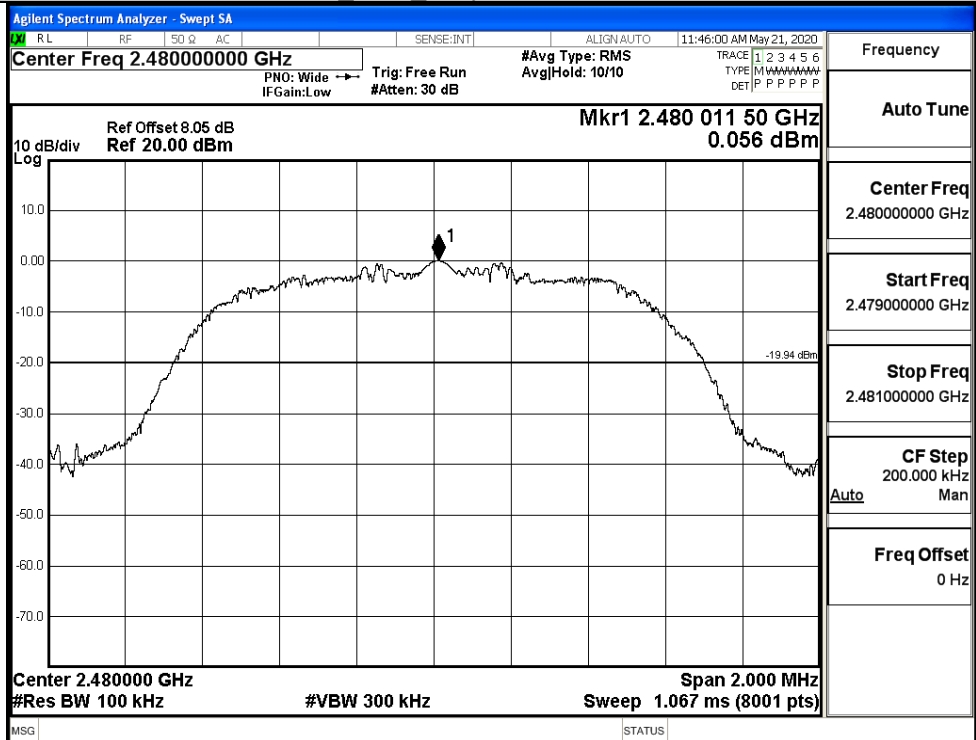


Puw



8DPSK_HCH_Graphs

Pref



Puw

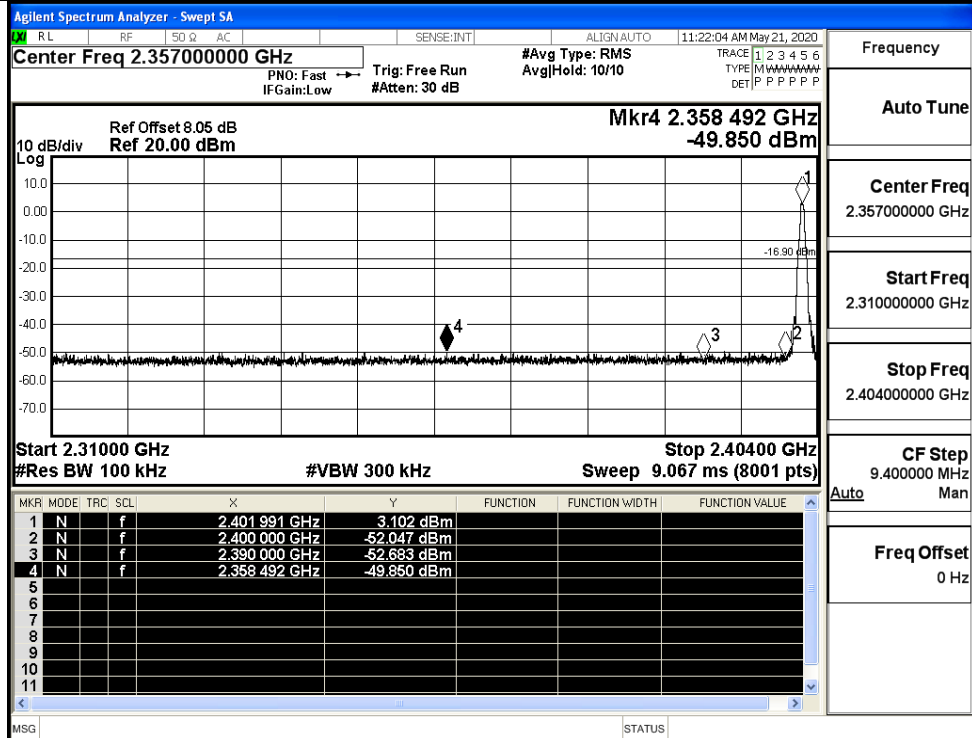


A.7 Band-edge for RF Conducted Emissions

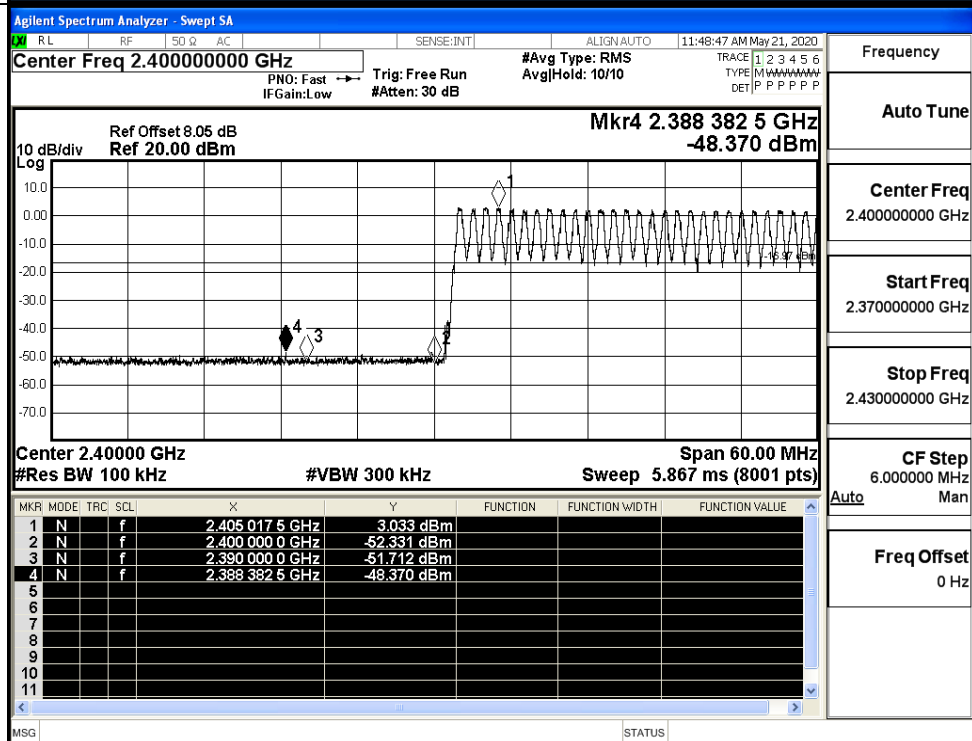
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	3.102	Off	-49.850	-16.9	PASS
			3.033	On	-48.370	-16.97	PASS
	HCH	2480	0.036	Off	-49.278	-19.96	PASS
			0.615	On	-48.731	-19.39	PASS
$\pi/4$ DQPSK	LCH	2402	2.954	Off	-49.184	-17.05	PASS
			2.991	On	-48.291	-17.01	PASS
	HCH	2480	-0.033	Off	-48.342	-20.03	PASS
			0.743	On	-48.628	-19.26	PASS
8DPSK	LCH	2402	3.208	Off	-49.137	-16.79	PASS
			3.221	On	-49.173	-16.78	PASS
	HCH	2480	0.086	Off	-49.062	-19.91	PASS
			0.894	On	-48.194	-19.11	PASS

Test Graphs

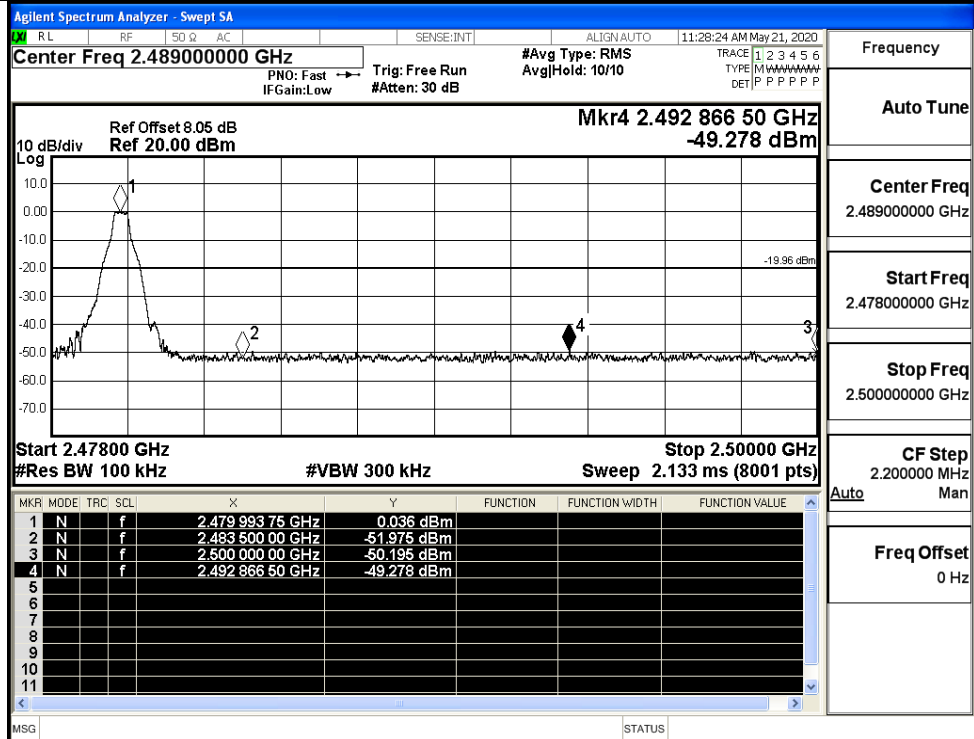
GFSK/LCH/No Hop



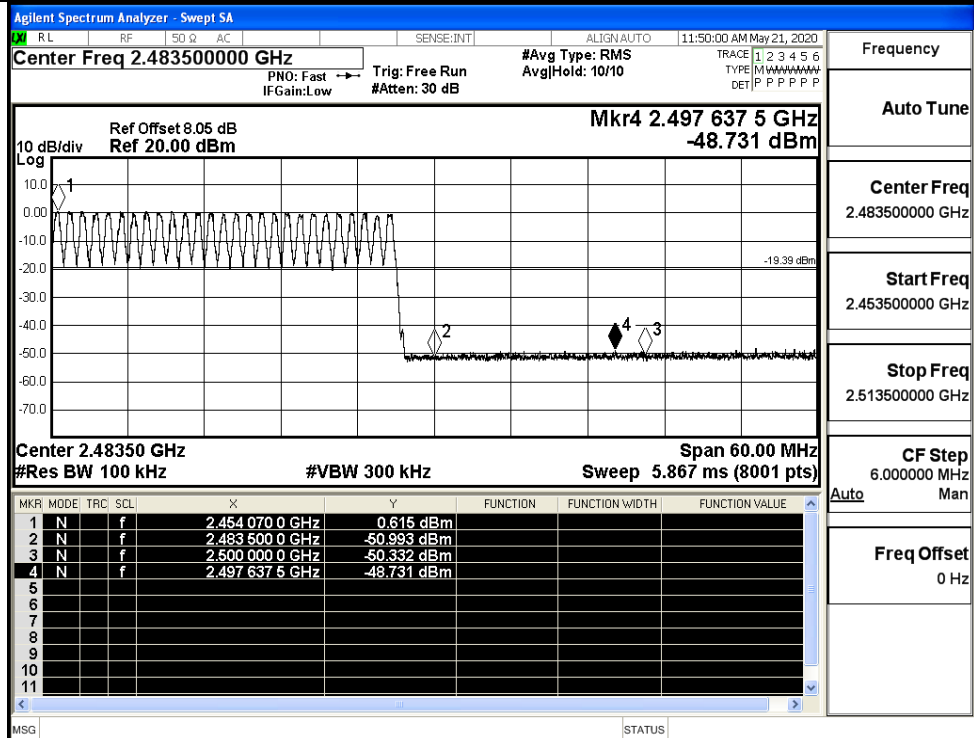
GFSK/LCH/Hop



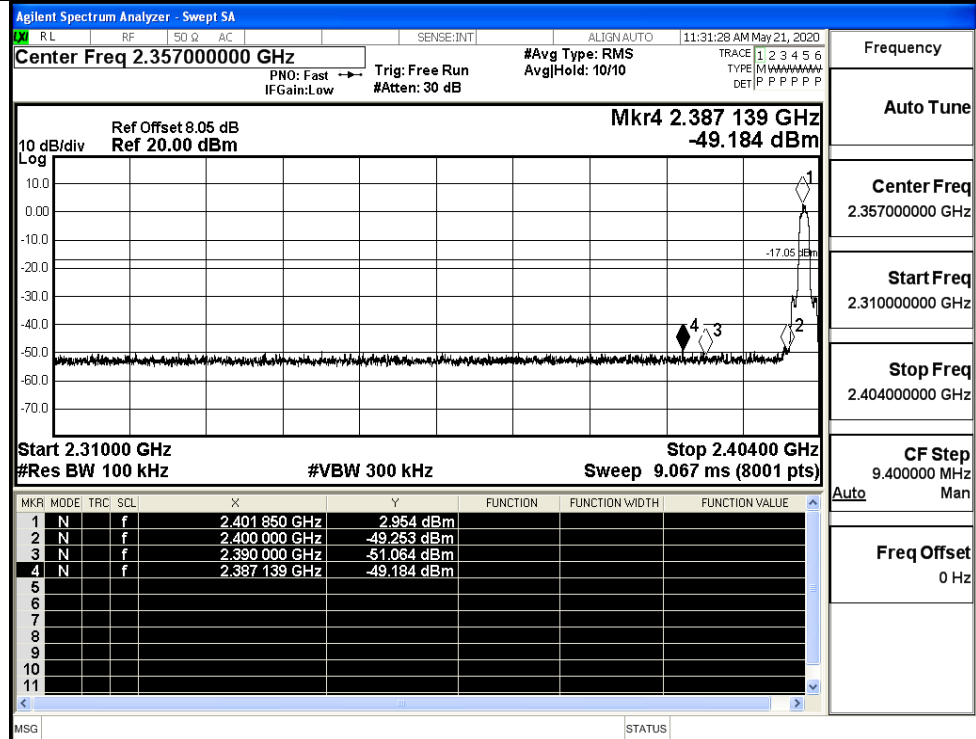
GFSK/HCH/No Hop



GFSK/HCH/Hop



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



Frequency

Auto Tune

Center Freq
2.357000000 GHz

Start Freq
2.310000000 GHz

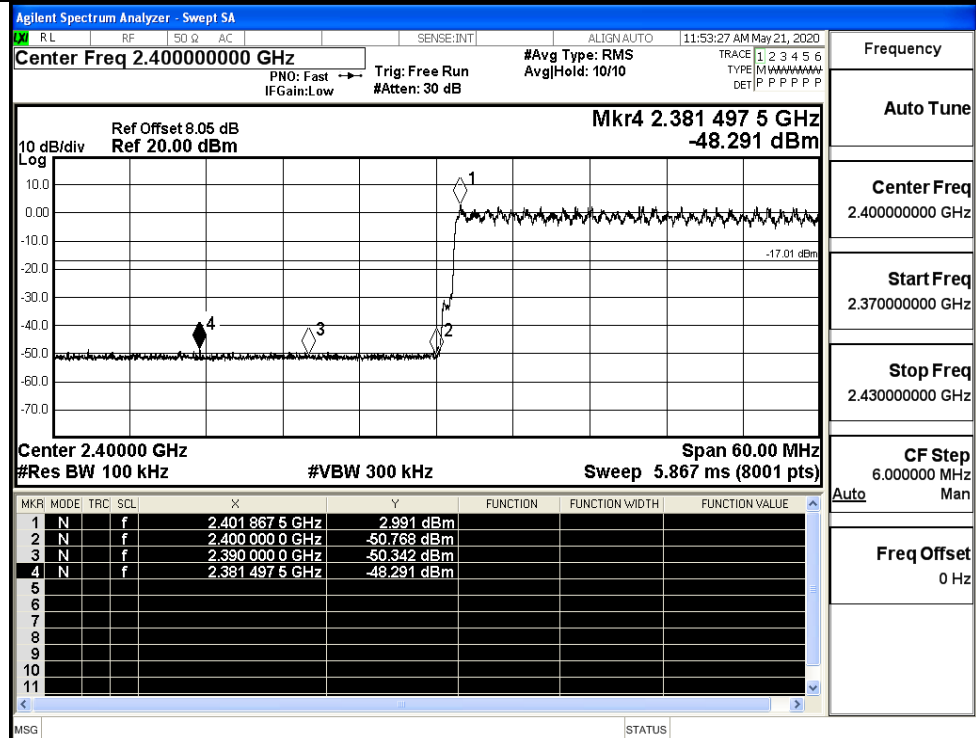
Stop Freq
2.404000000 GHz

CF Step
9.400000 MHz

Auto Man

Freq Offset
0 Hz

$\pi/4$ DQPSK/LCH/Hop



Frequency

Auto Tune

Center Freq
2.400000000 GHz

Start Freq
2.370000000 GHz

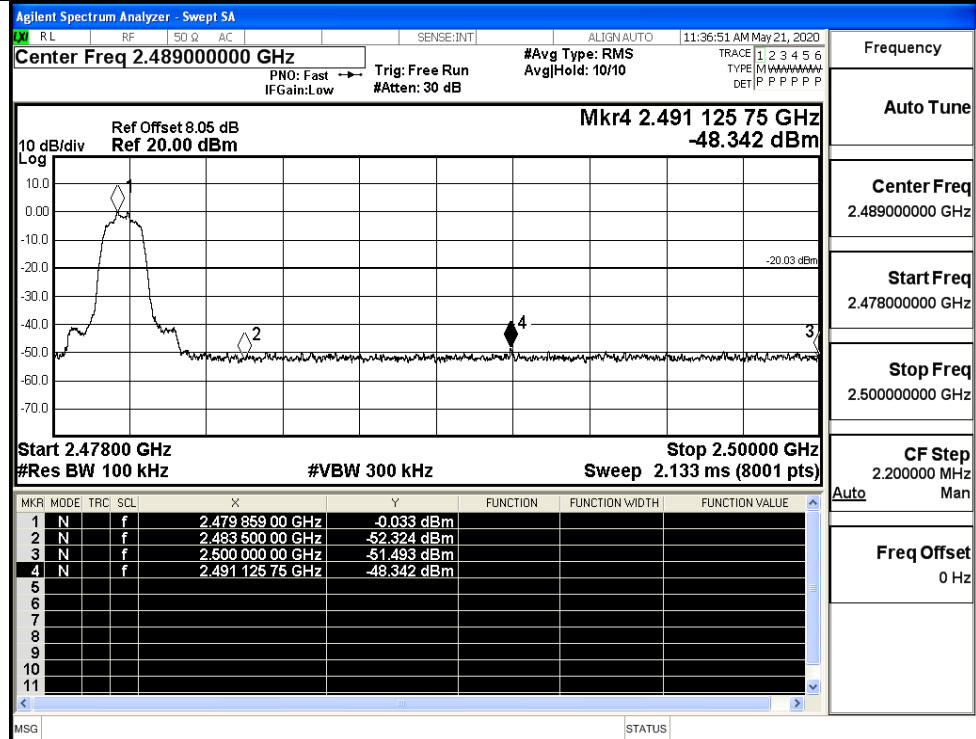
Stop Freq
2.430000000 GHz

CF Step
6.000000 MHz

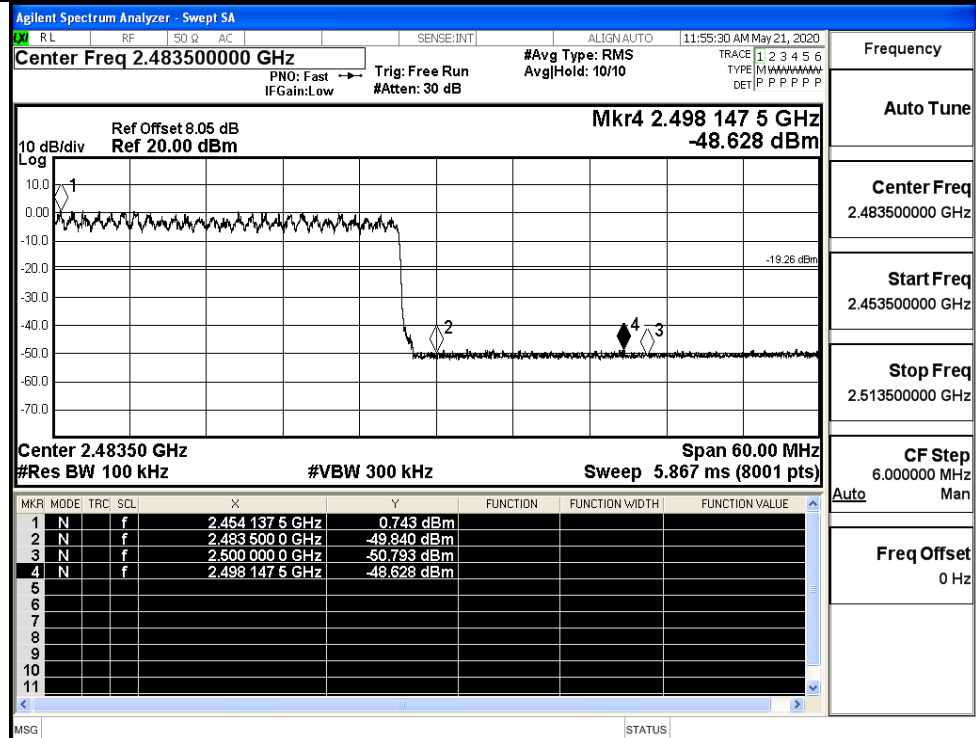
Auto Man

Freq Offset
0 Hz

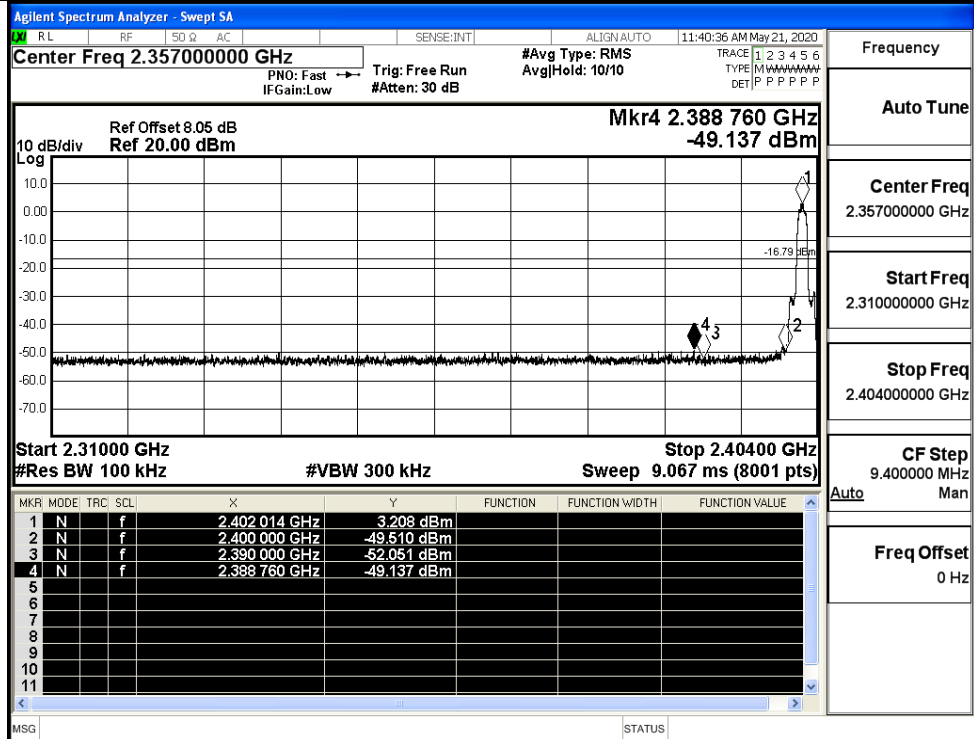
$\pi/4$ DQPSK/HCH/No
Hop



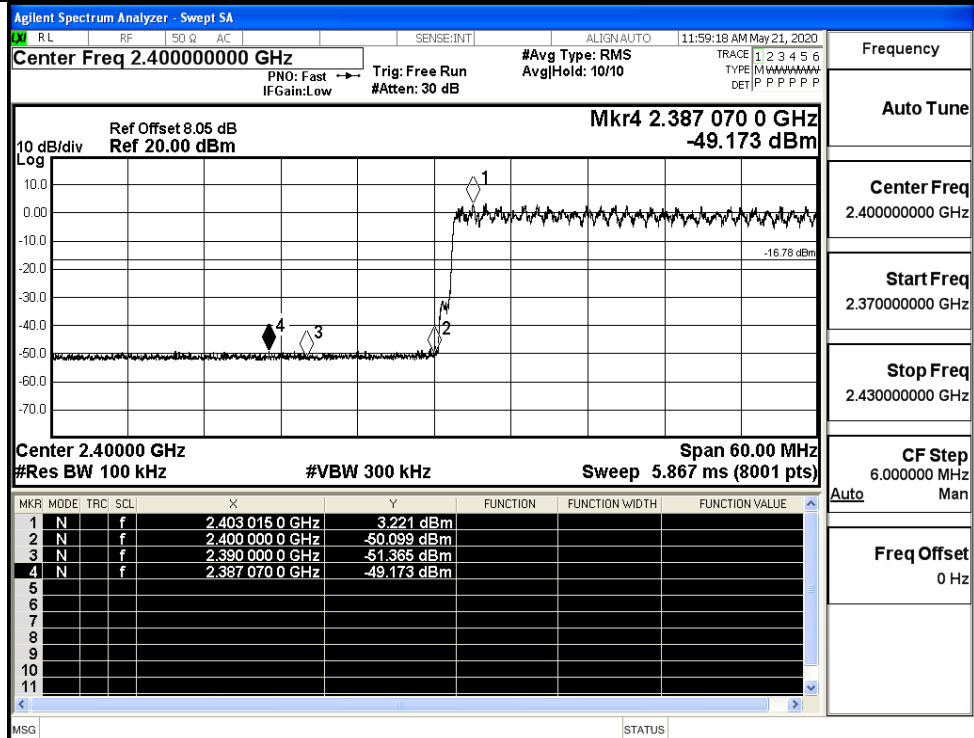
$\pi/4$ DQPSK/HCH/Hop



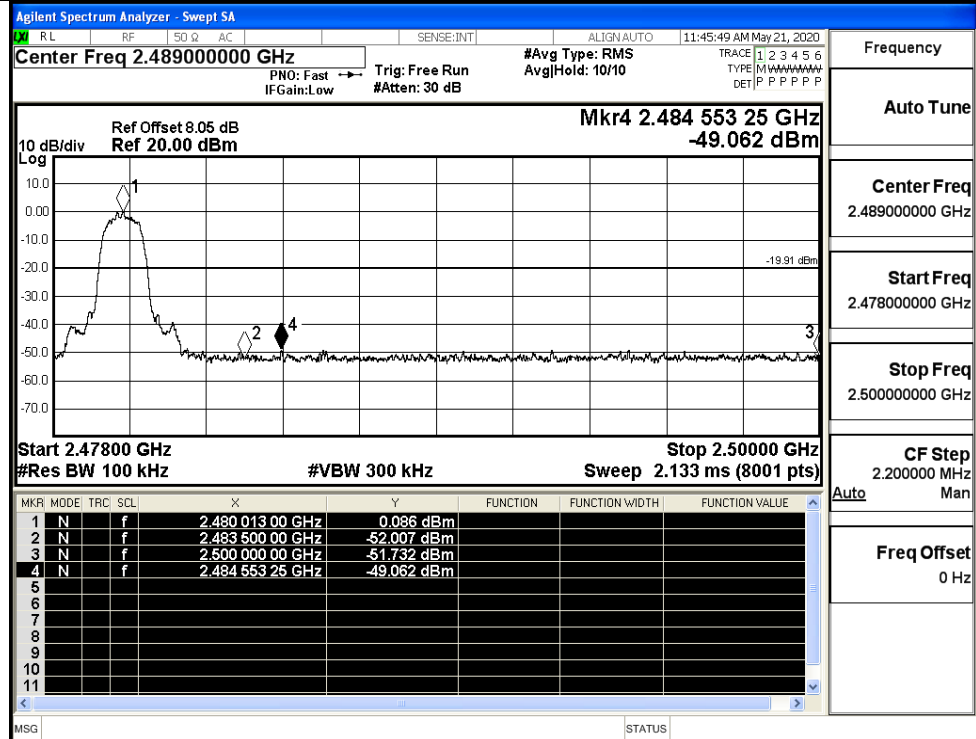
8DPSK/LCH/No Hop



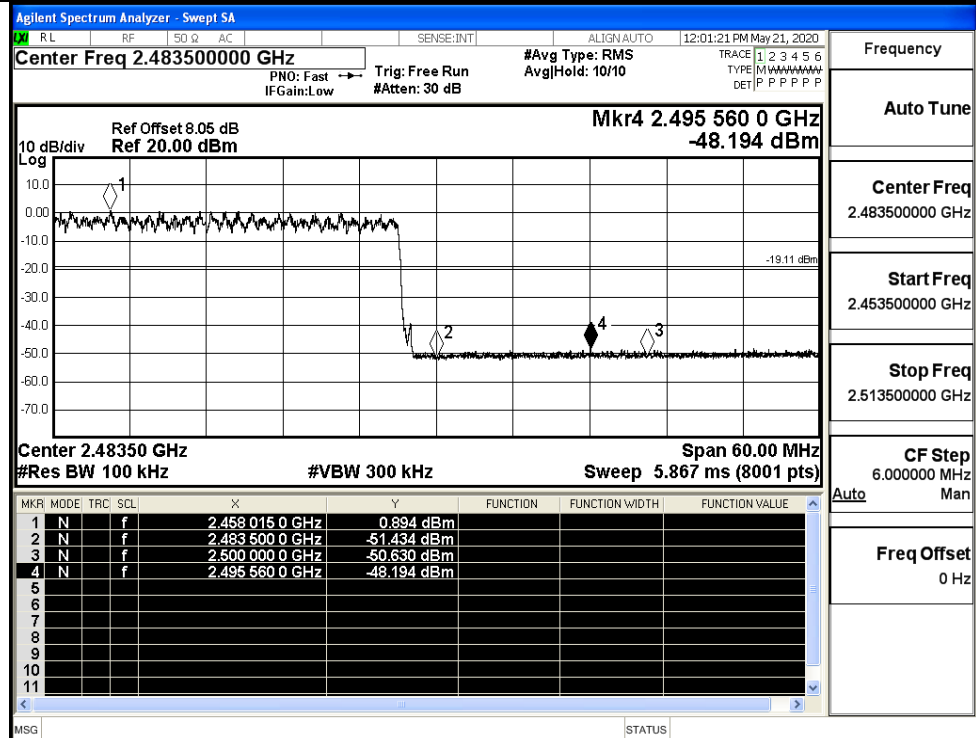
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



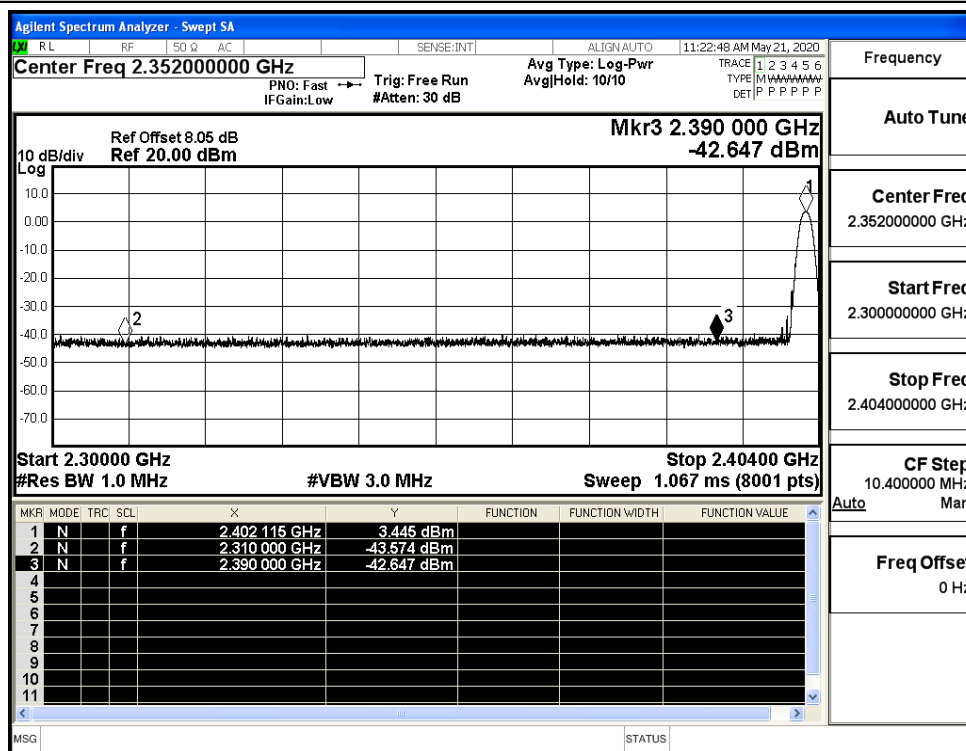
8DPSK/HCH/Hop



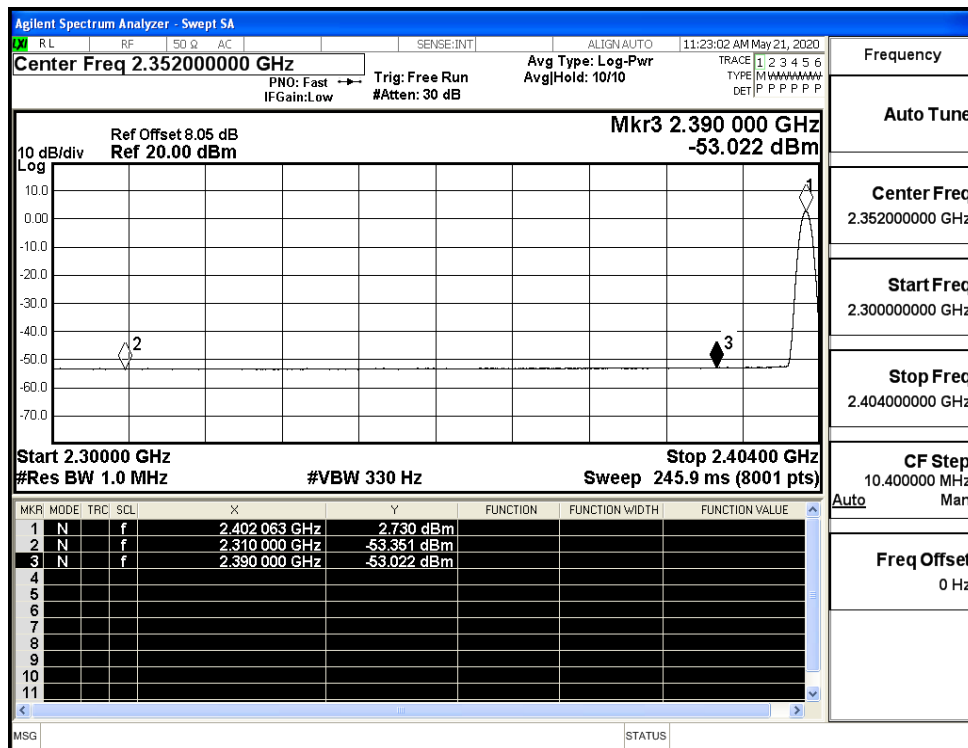
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.57	2.0	0	53.66	PEAK	74	PASS
	Off	2310.0	-53.35	2.0	0	43.88	AV	54	PASS
	Off	2390.0	-42.65	2.0	0	54.58	PEAK	74	PASS
	Off	2390.0	-53.02	2.0	0	44.21	AV	54	PASS
	Off	2483.5	-43.35	2.0	0	53.88	PEAK	74	PASS
	Off	2483.5	-52.37	2.0	0	44.86	AV	54	PASS
	Off	2500.0	-41.92	2.0	0	55.31	PEAK	74	PASS
	Off	2500.0	-52.26	2.0	0	44.97	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.81	2.0	0	53.42	PEAK	74	PASS
	Off	2310.0	-53.44	2.0	0	43.79	AV	54	PASS
	Off	2390.0	-43.16	2.0	0	54.07	PEAK	74	PASS
	Off	2390.0	-52.91	2.0	0	44.32	AV	54	PASS
	Off	2483.5	-42.62	2.0	0	54.61	PEAK	74	PASS
	Off	2483.5	-52.48	2.0	0	44.75	AV	54	PASS
	Off	2500.0	-41.67	2.0	0	55.56	PEAK	74	PASS
	Off	2500.0	-52.34	2.0	0	44.89	AV	54	PASS
8DPSK	Off	2310.0	-42.39	2.0	0	54.84	PEAK	74	PASS
	Off	2310.0	-53.31	2.0	0	43.92	AV	54	PASS
	Off	2390.0	-42.81	2.0	0	54.42	PEAK	74	PASS
	Off	2390.0	-52.93	2.0	0	44.30	AV	54	PASS
	Off	2483.5	-41.67	2.0	0	55.56	PEAK	74	PASS
	Off	2483.5	-52.37	2.0	0	44.86	AV	54	PASS
	Off	2500.0	-41.27	2.0	0	55.96	PEAK	74	PASS
	Off	2500.0	-52.26	2.0	0	44.97	AV	54	PASS

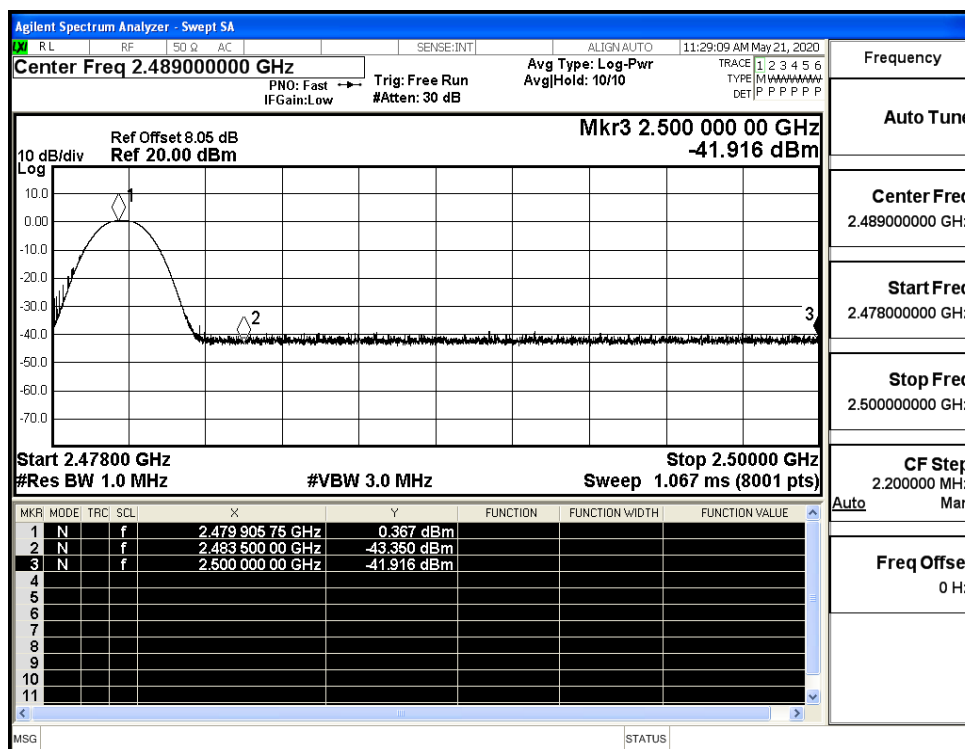
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



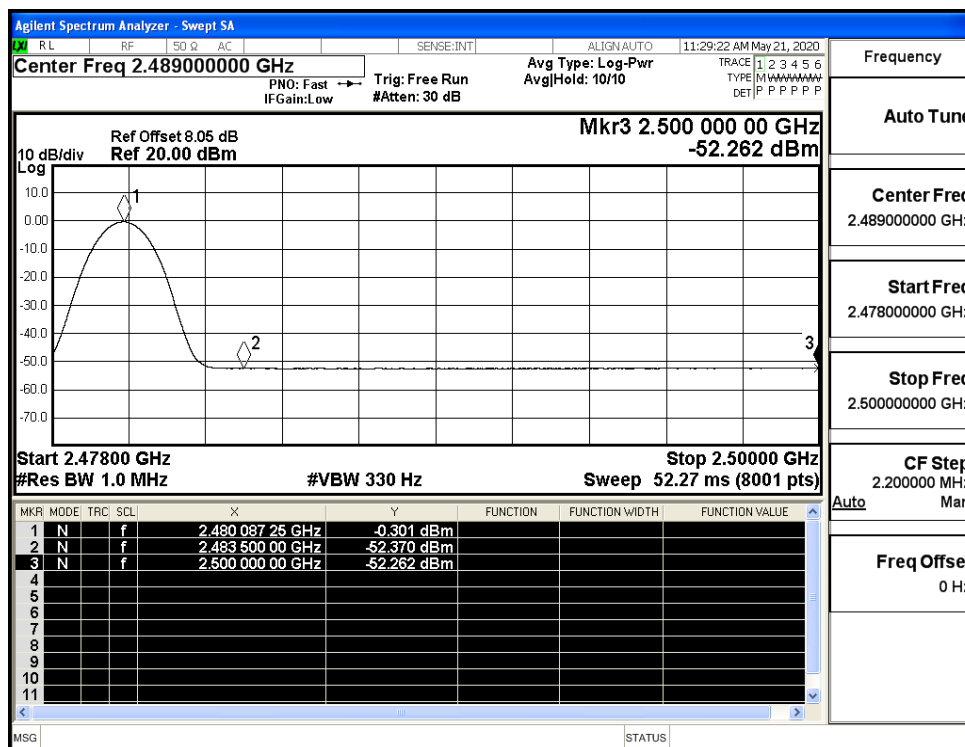
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

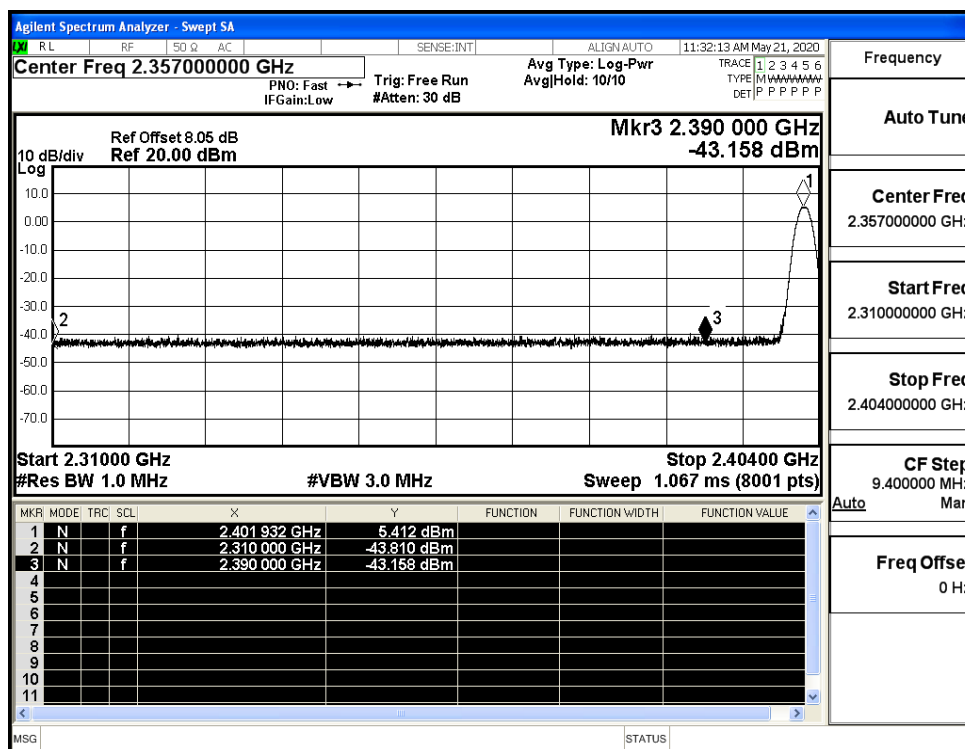
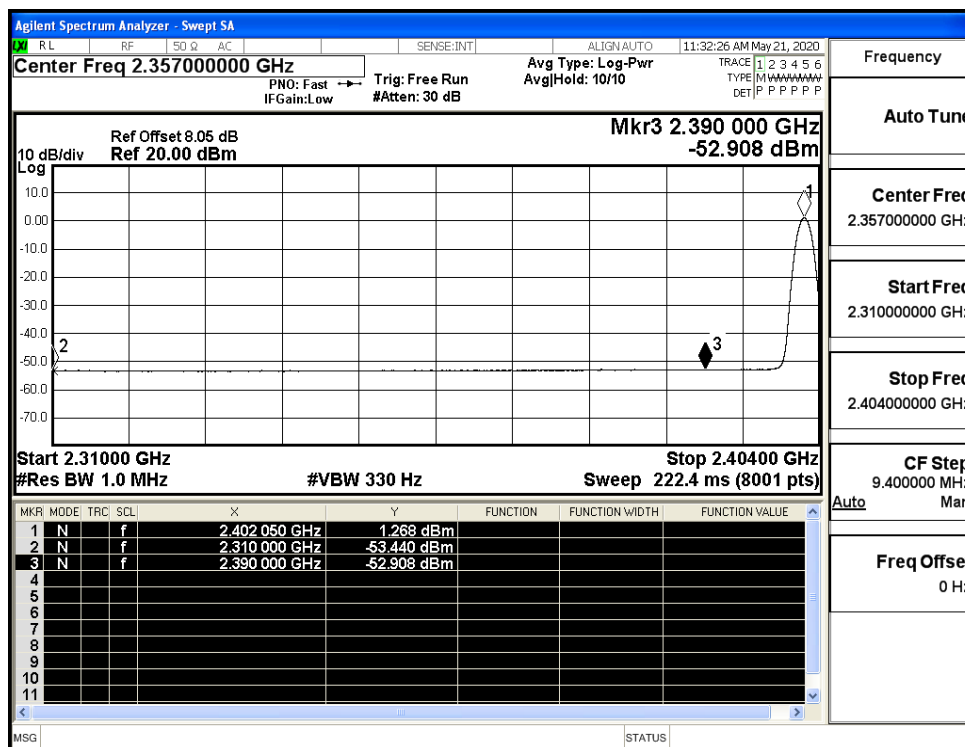


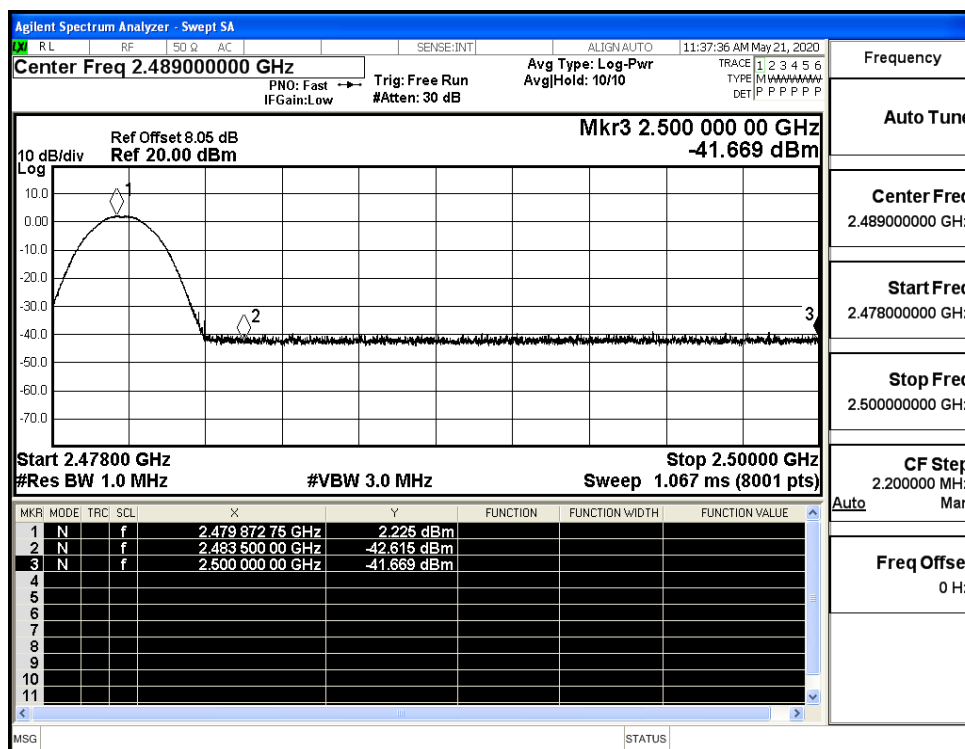
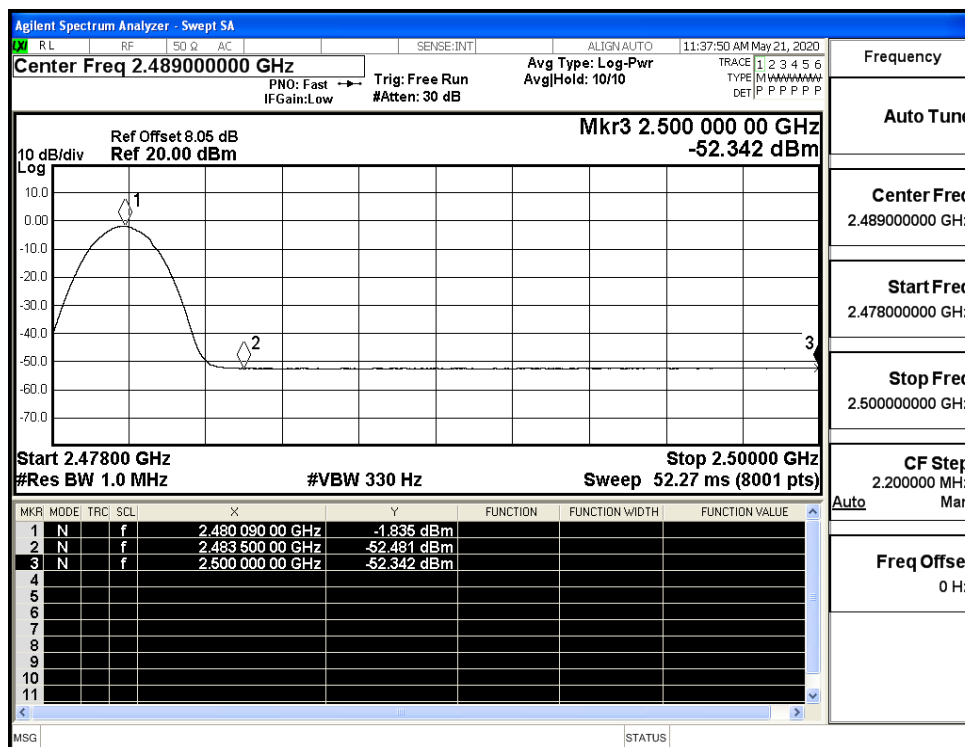
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



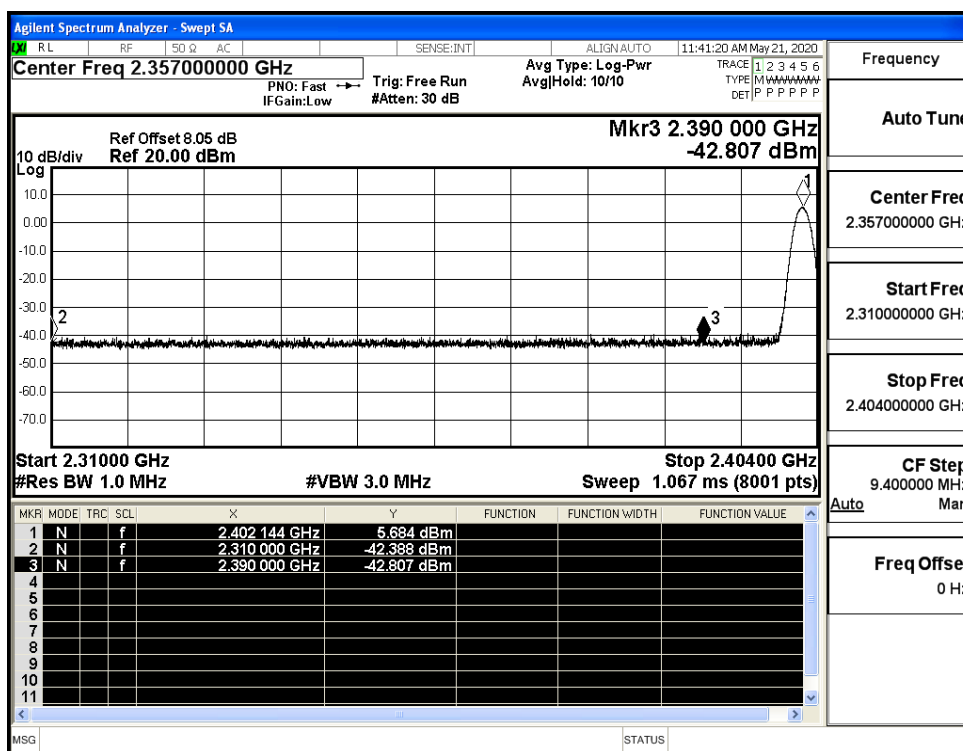
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



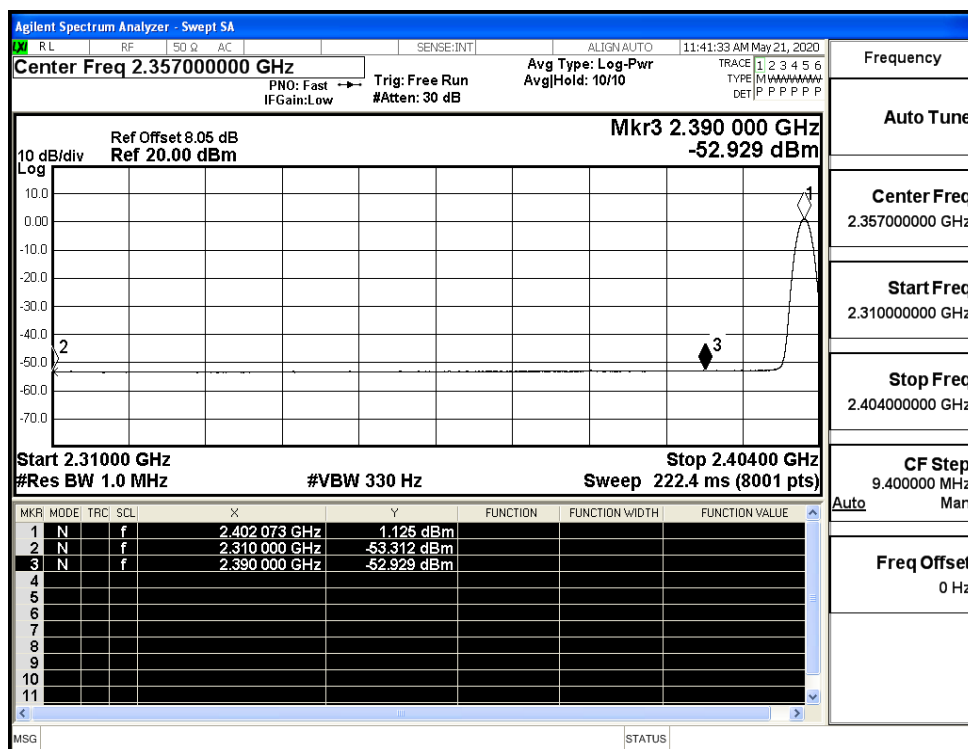
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

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)

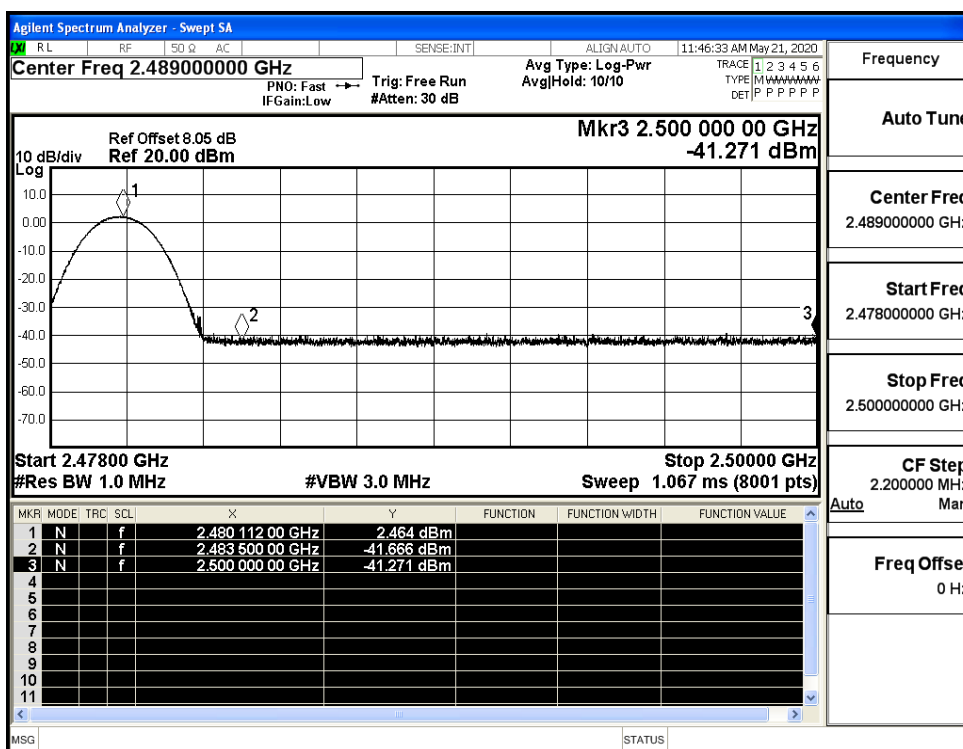
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

