

Appendix A

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

Product Name: NovoConnect Wireless Collaboration System

Trade Mark: DELTA, Vivitek

Test Model: NC-X900

Environmental Conditions

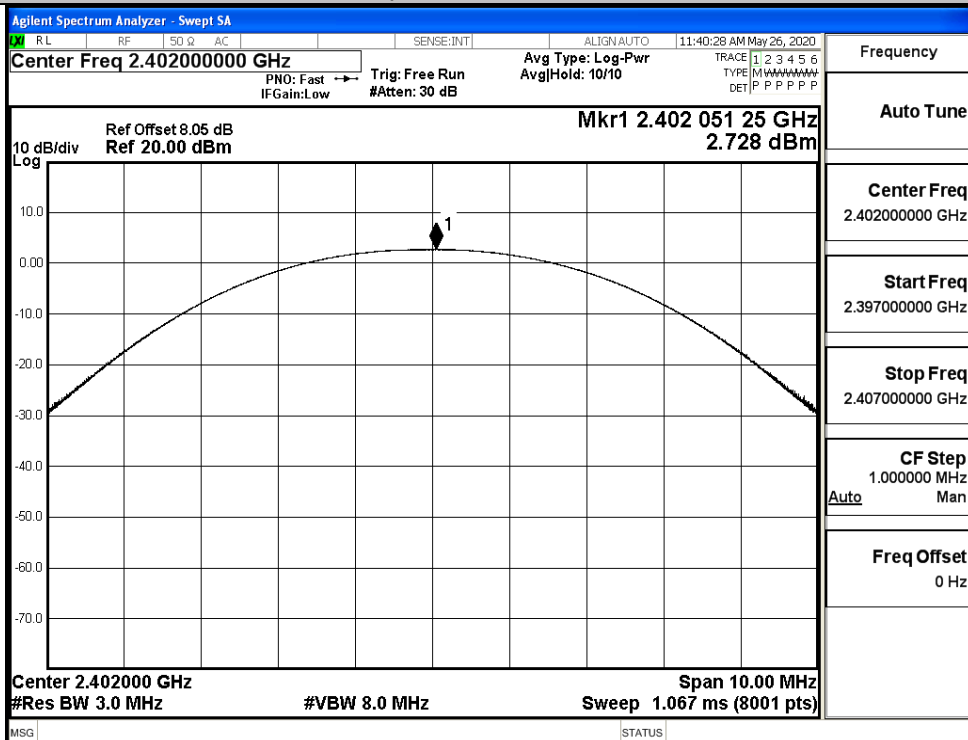
Temperature:	23.8 ° C
Relative Humidity:	53.7%
ATM Pressure:	100.0 kPa
Test Engineer:	Li Huan
Supervised by:	Tom Liu

A.1 Maximum Conducted Peak Output Power

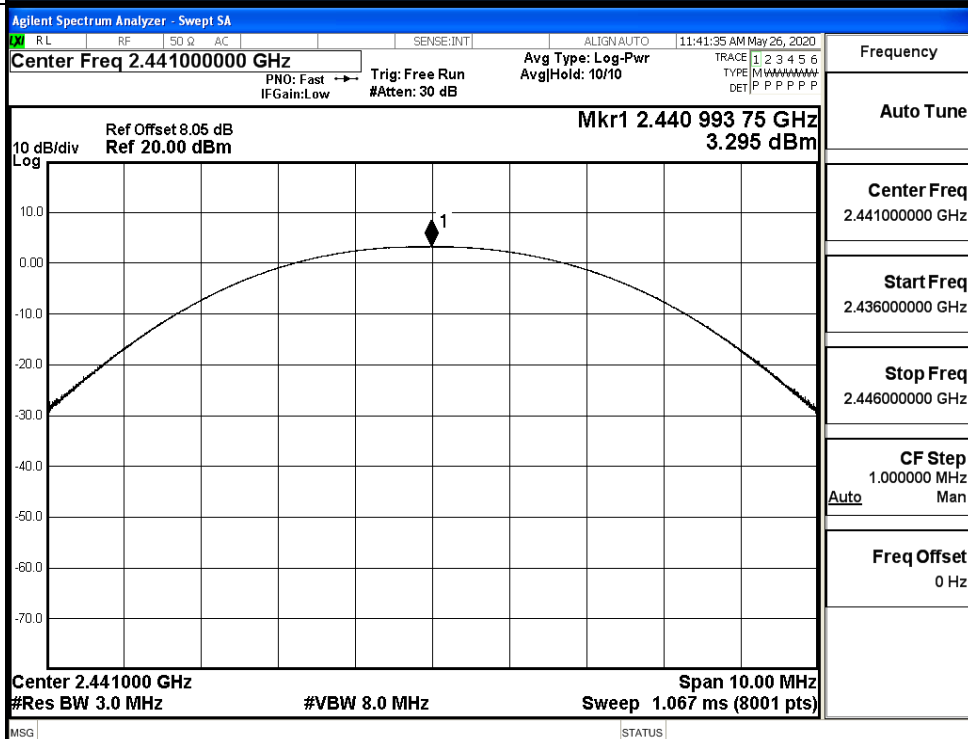
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2.728	21	PASS
	MCH	3.295	21	PASS
	HCH	3.255	21	PASS
$\pi/4$ DQPSK	LCH	2.578	21	PASS
	MCH	3.164	21	PASS
	HCH	3.131	21	PASS
8DPSK	LCH	2.557	21	PASS
	MCH	3.054	21	PASS
	HCH	3.014	21	PASS

Test Graphs

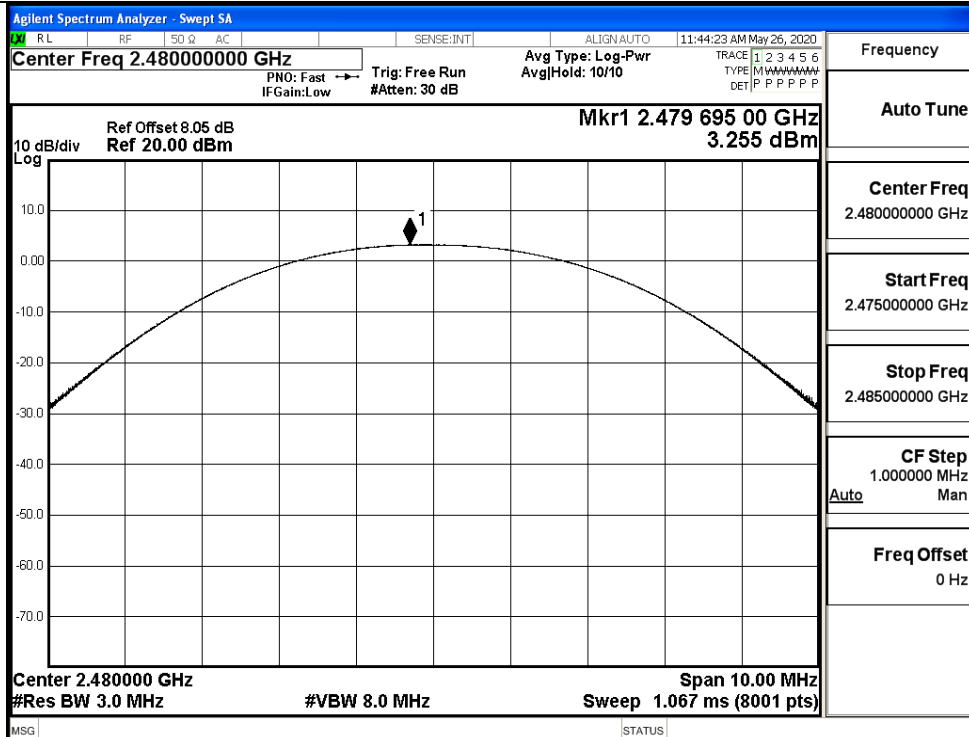
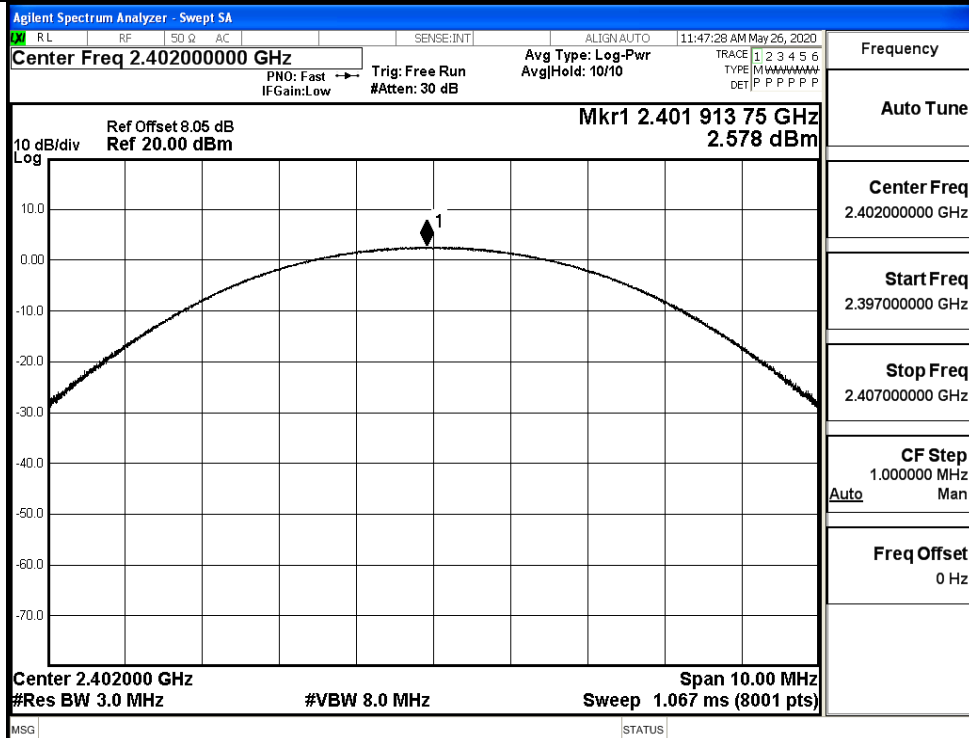
GFSK/LCH

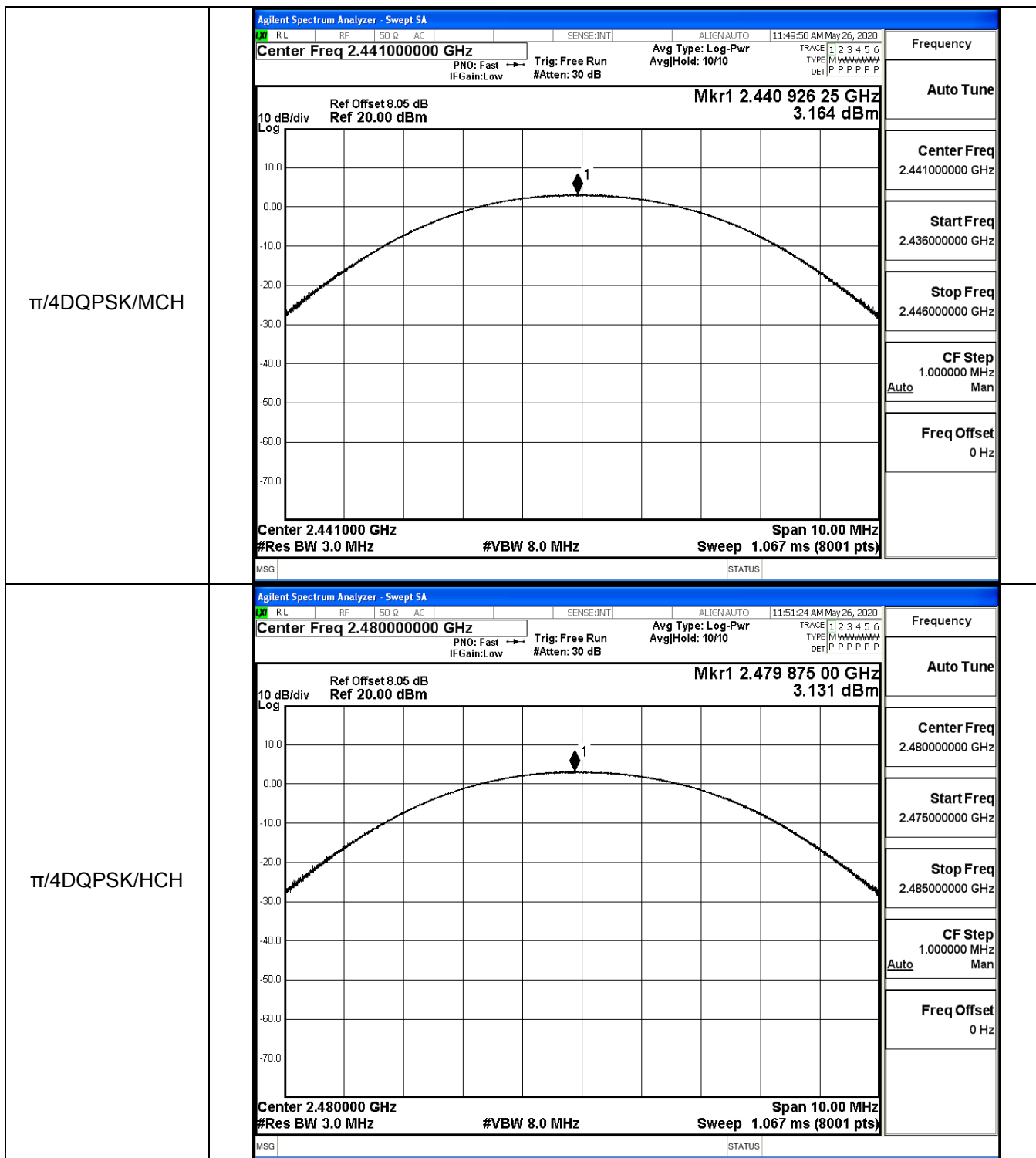


GFSK/MCH

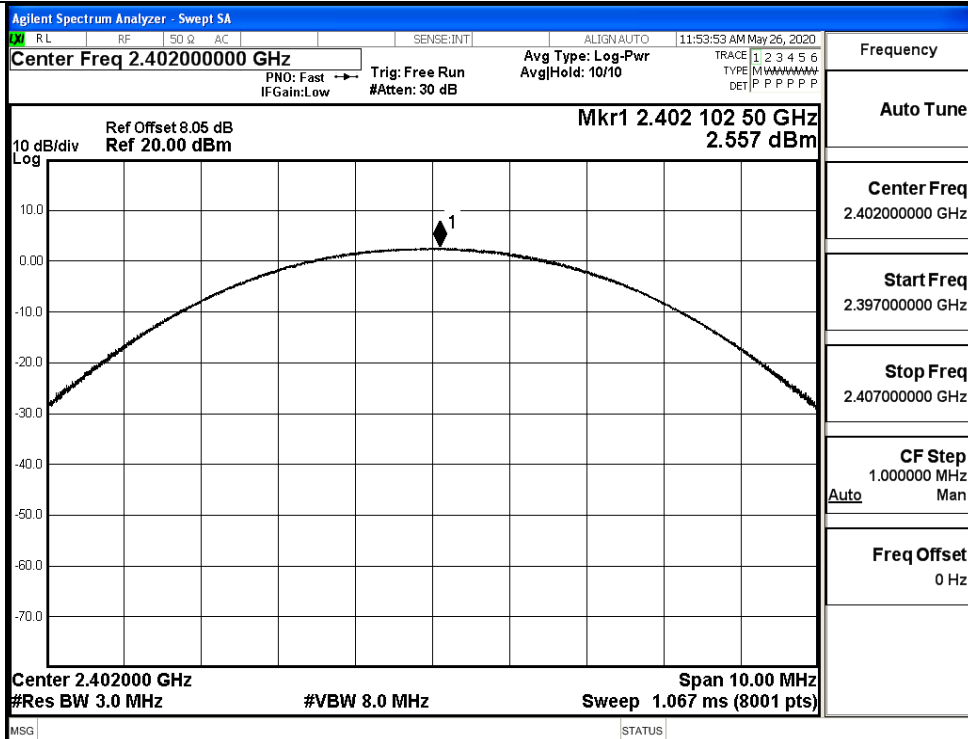


GFSK/HCH

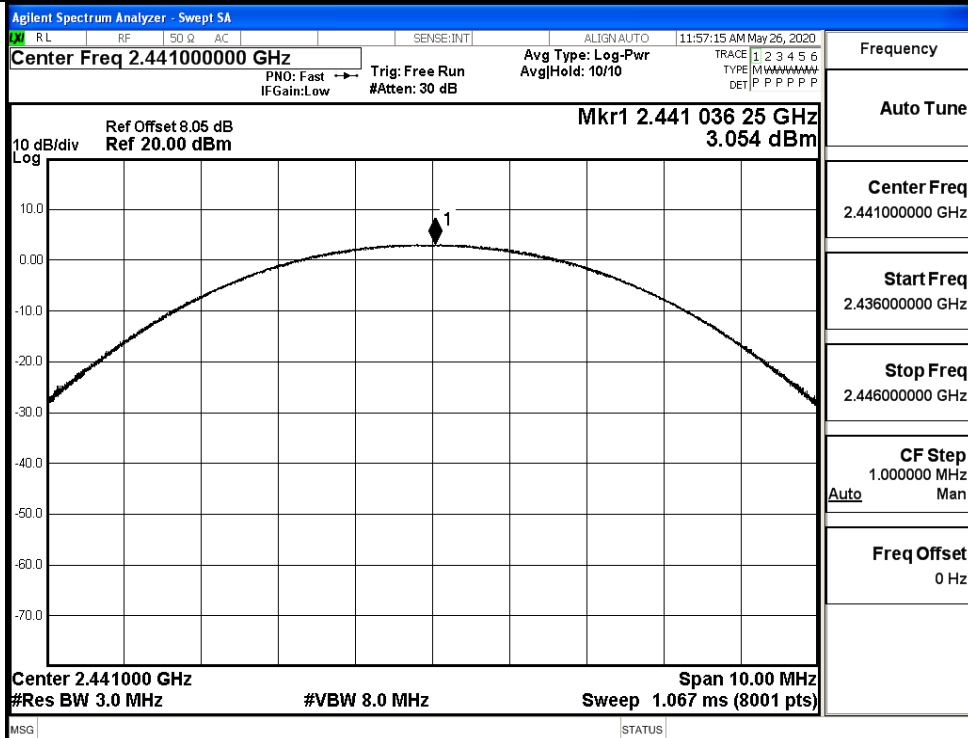
 $\pi/4$ DQPSK/LCH



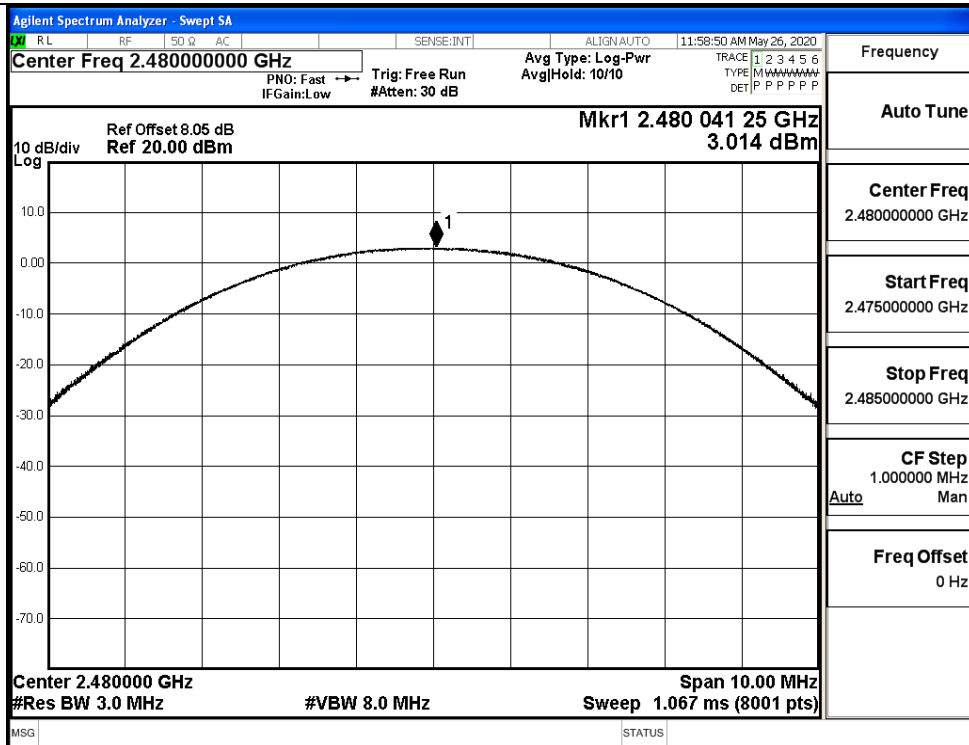
8DPSK/LCH



8DPSK/MCH



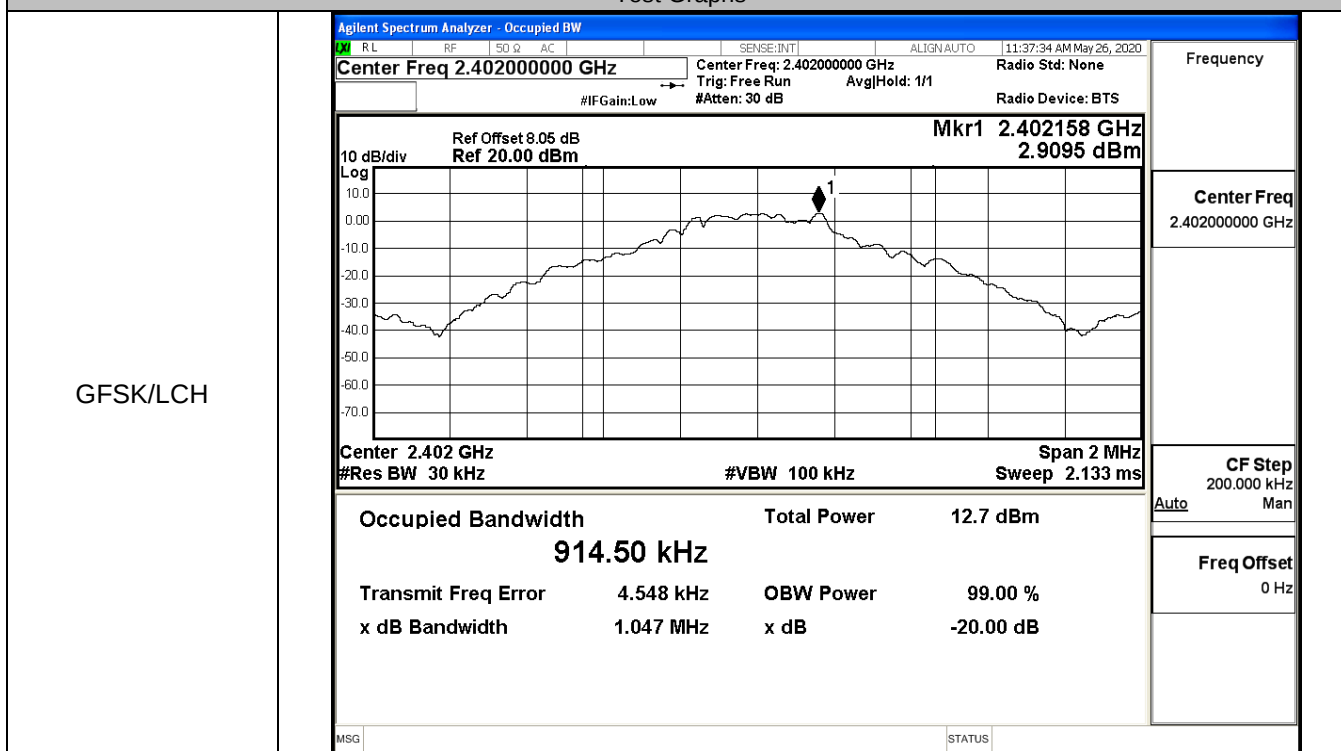
8DPSK/HCH



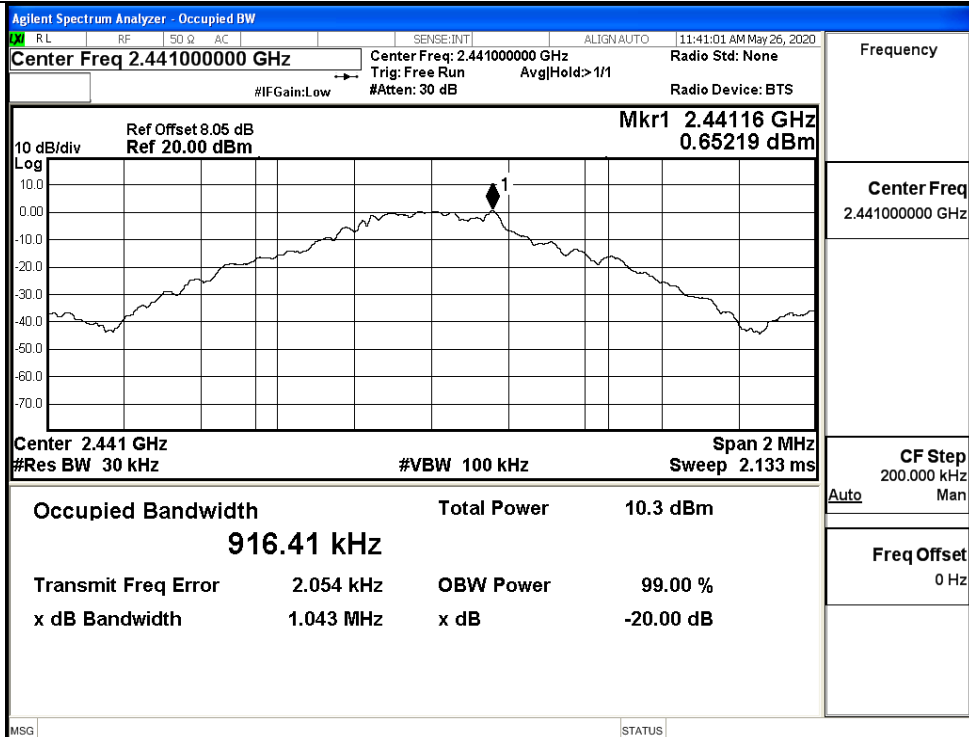
A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.047	Not Specified	PASS
	MCH	1.043	Not Specified	PASS
	HCH	1.044	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.291	Not Specified	PASS
	MCH	1.310	Not Specified	PASS
	HCH	1.317	Not Specified	PASS
8DPSK	LCH	1.301	Not Specified	PASS
	MCH	1.299	Not Specified	PASS
	HCH	1.301	Not Specified	PASS

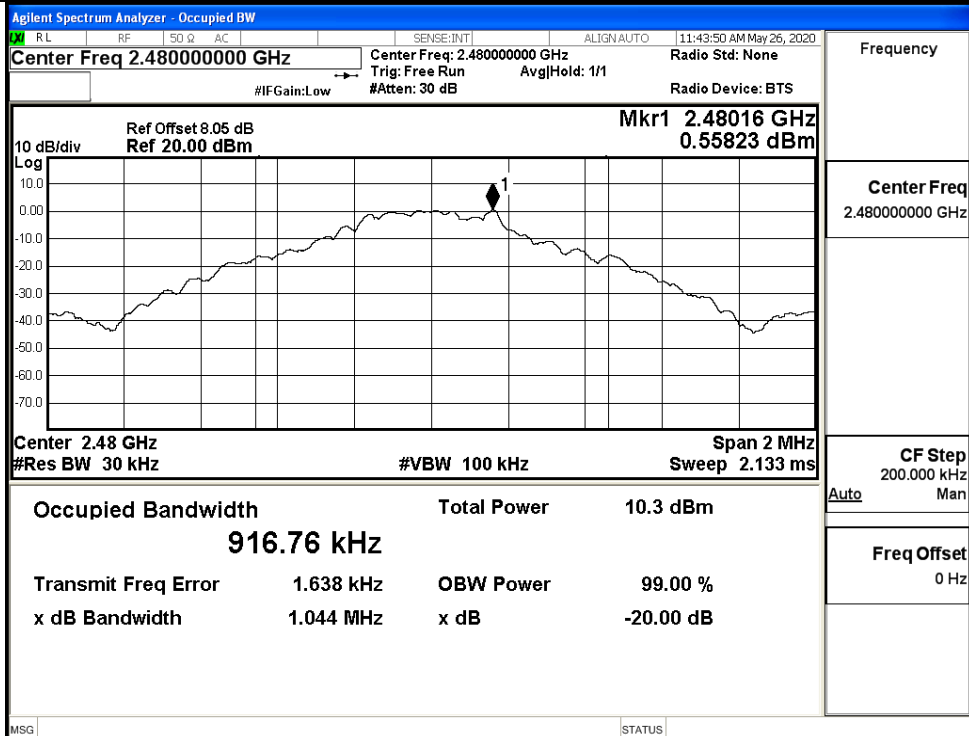
Test Graphs

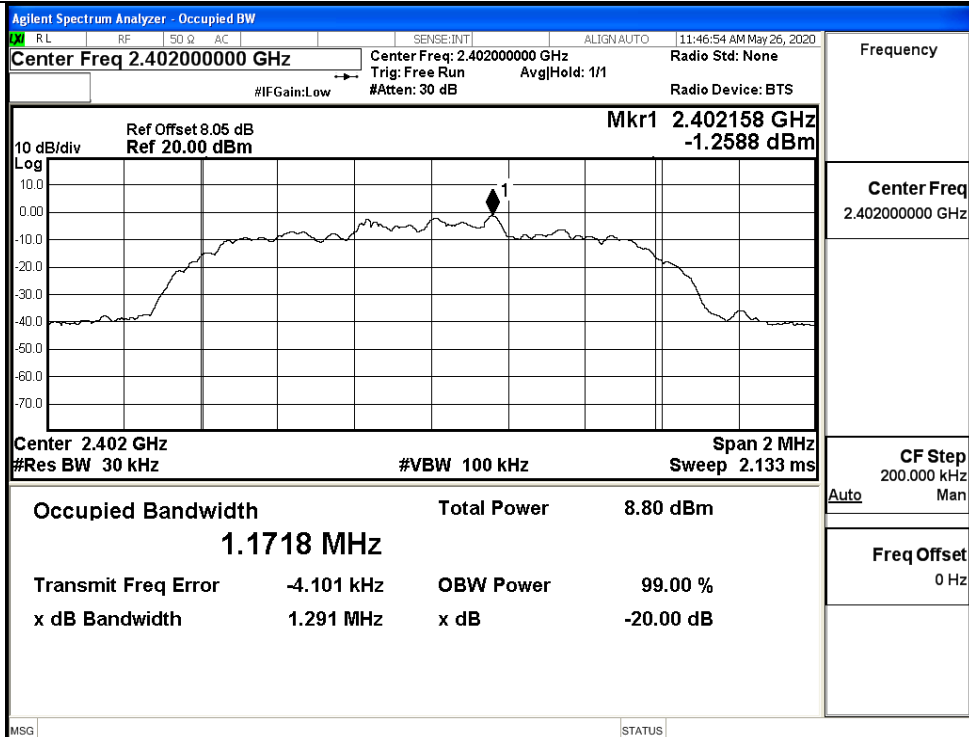


GFSK/MCH



GFSK/HCH

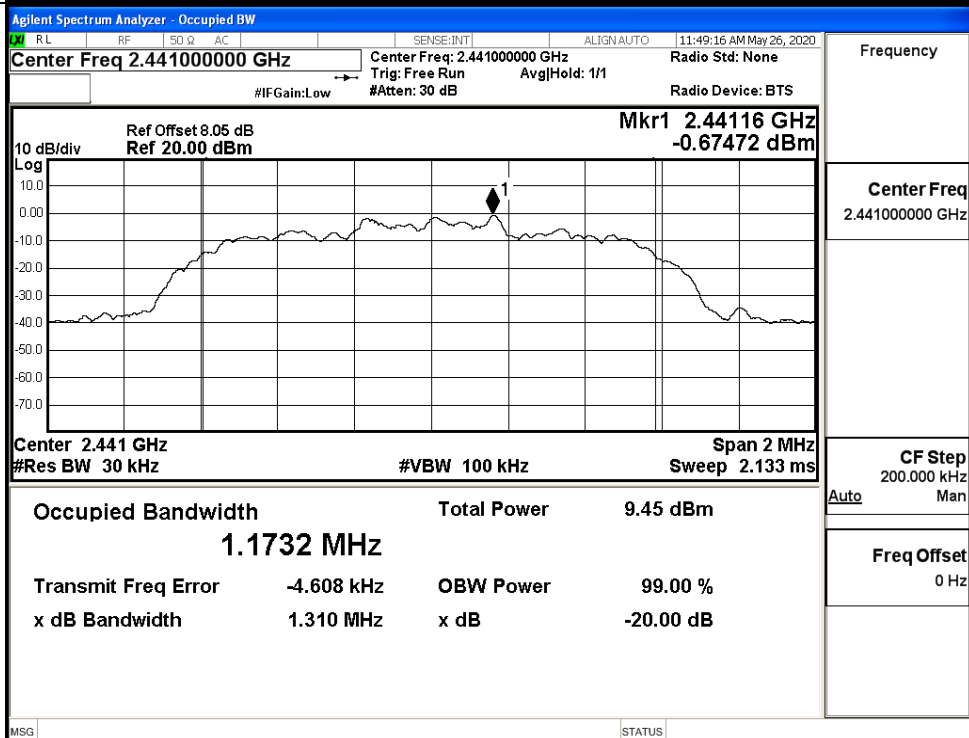


$\pi/4$ DQPSK/LCH

Frequency

Center Freq
2.40200000 GHzCF Step
200.000 kHz
Man

Auto

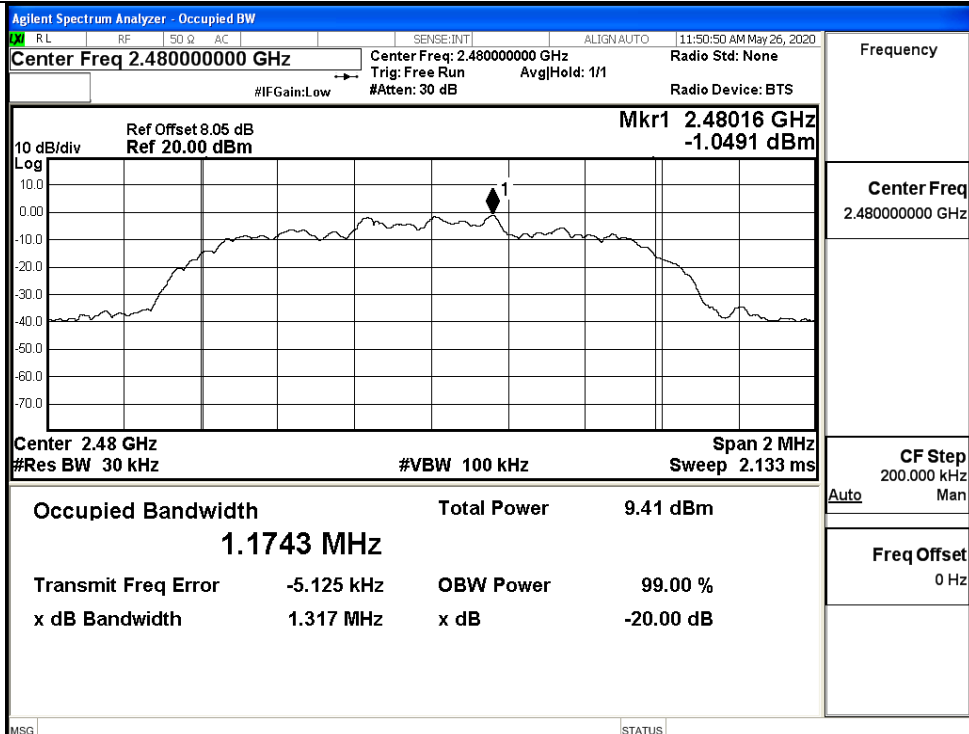
Freq Offset
0 Hz $\pi/4$ DQPSK/MCH

Frequency

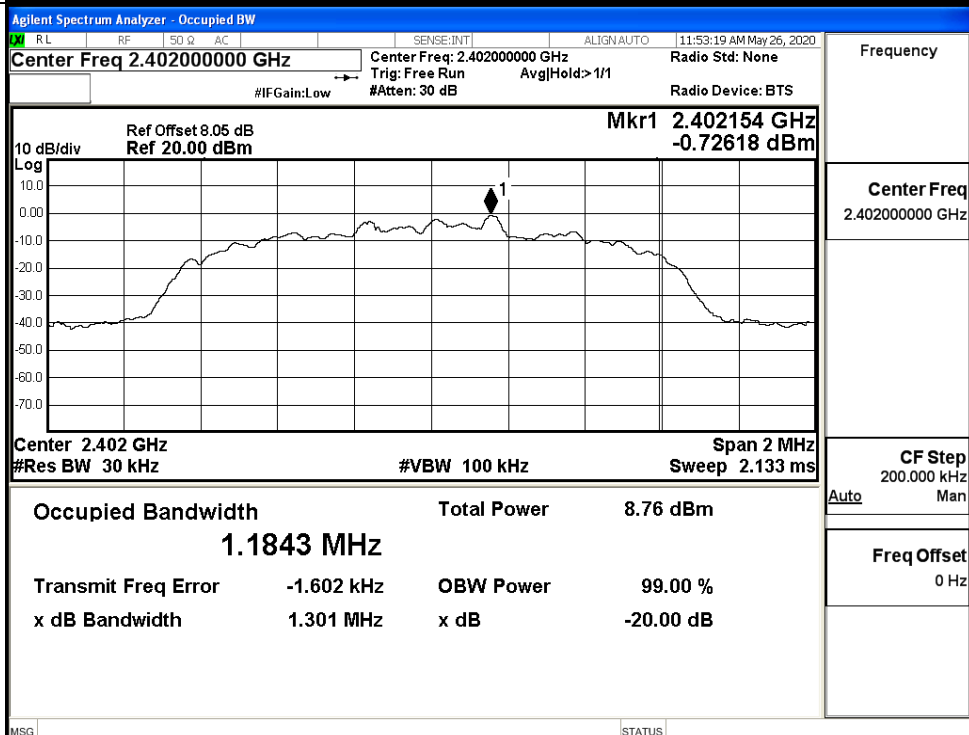
Center Freq
2.44100000 GHzCF Step
200.000 kHz
Man

Auto

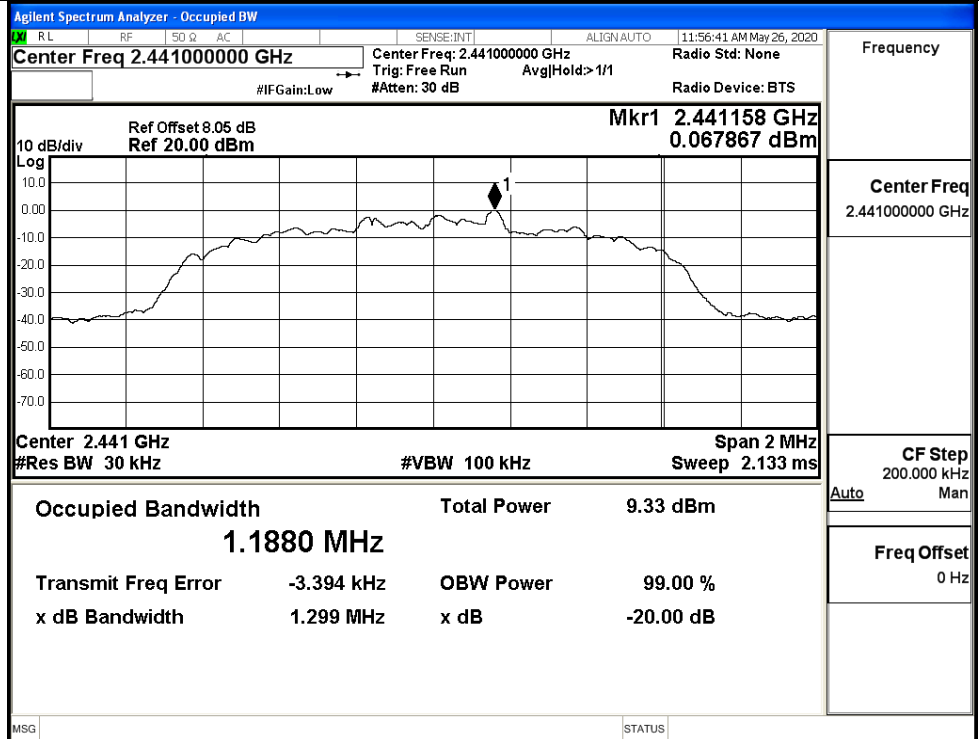
Freq Offset
0 Hz

$\pi/4$ DQPSK/HCH

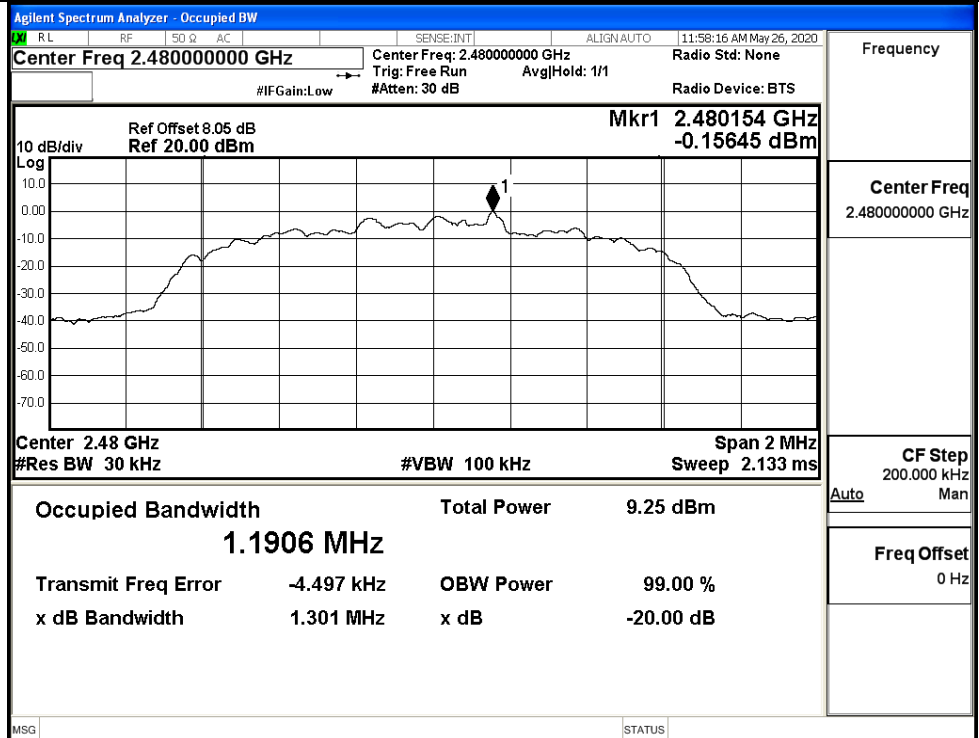
8DPSK/LCH



8DPSK/MCH



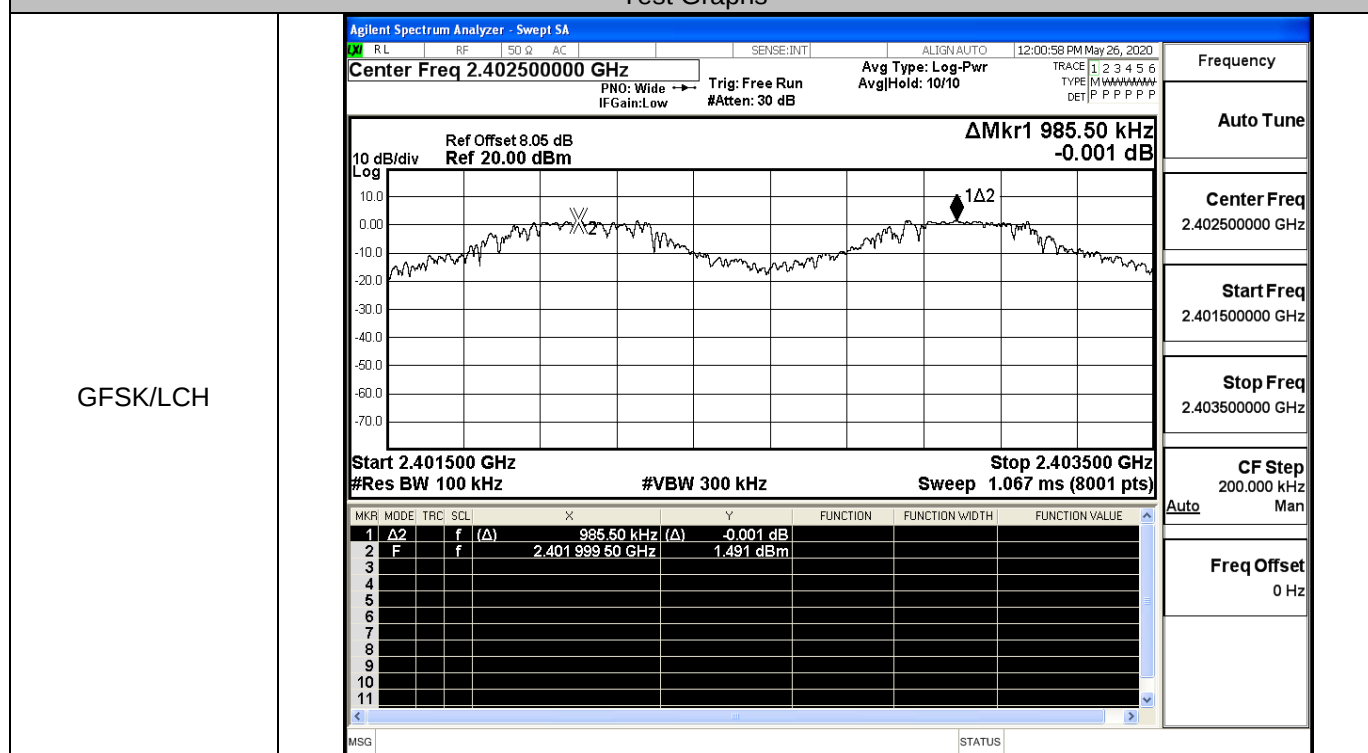
8DPSK/HCH



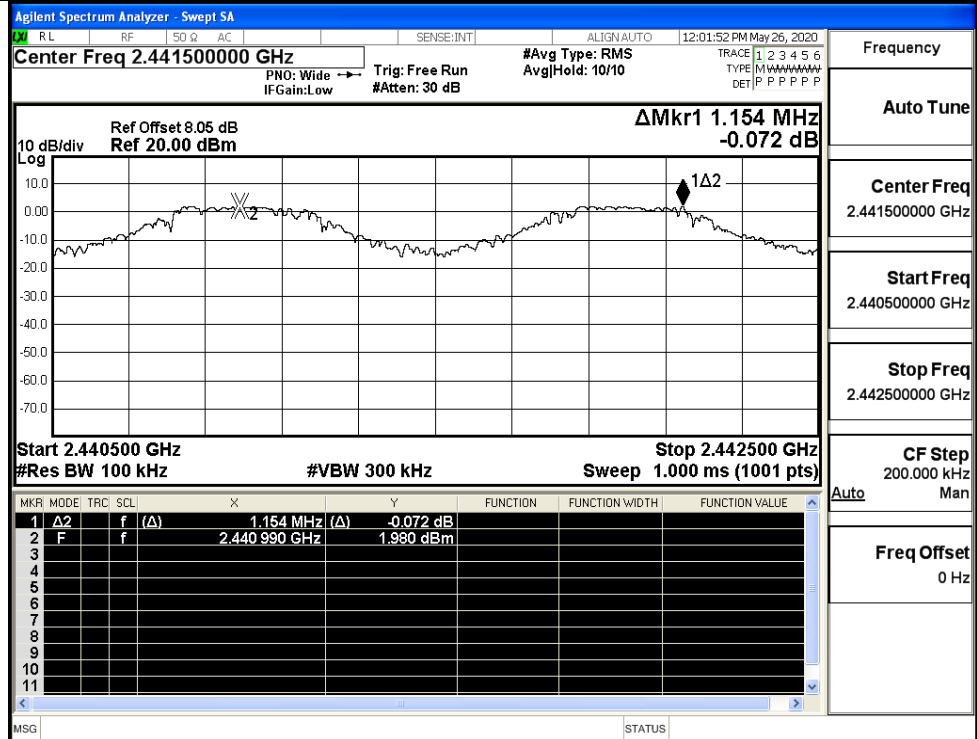
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.986	0.698	PASS
	MCH	1.154	0.695	PASS
	HCH	1.000	0.696	PASS
$\pi/4$ DQPSK	LCH	1.234	0.861	PASS
	MCH	1.010	0.873	PASS
	HCH	1.138	0.878	PASS
8DPSK	LCH	1.212	0.867	PASS
	MCH	0.990	0.866	PASS
	HCH	1.008	0.867	PASS

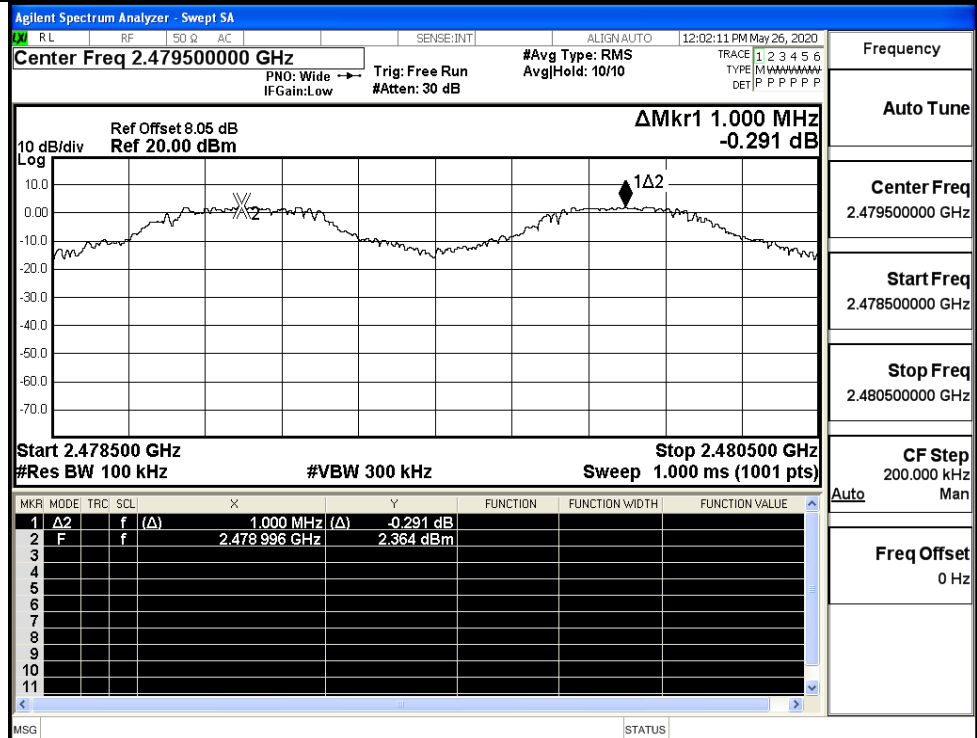
Test Graphs

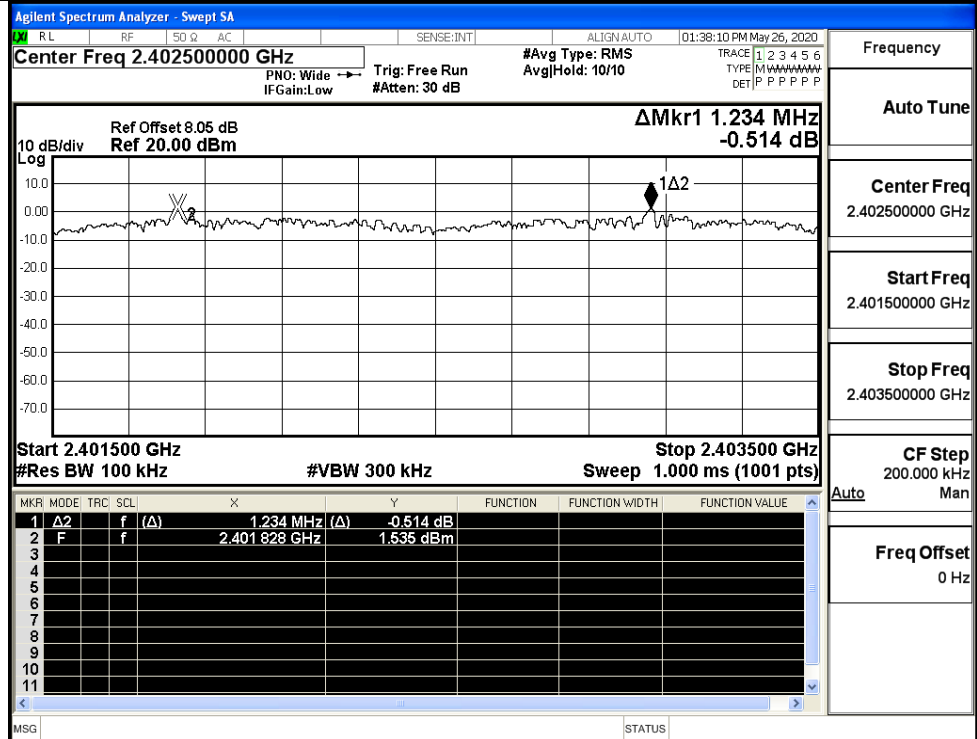
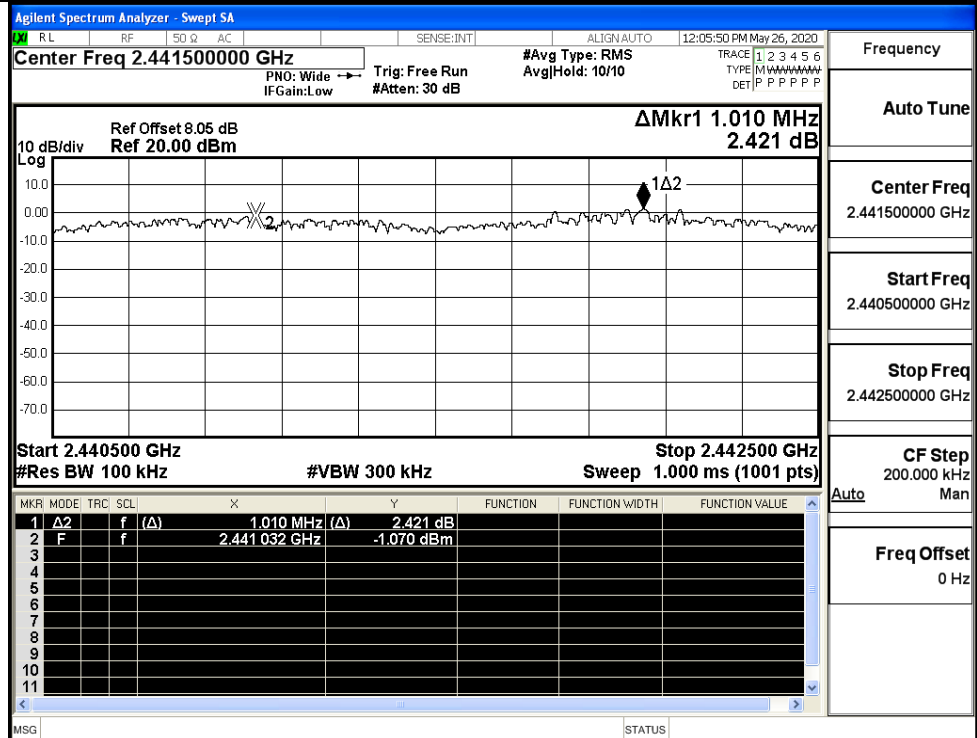


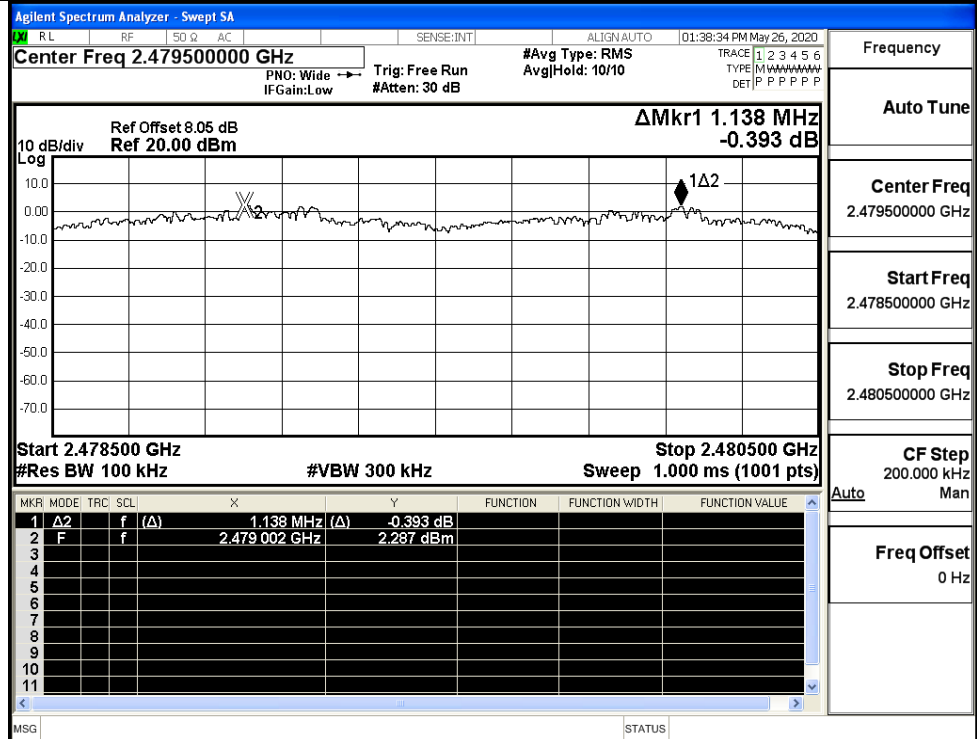
GFSK/MCH



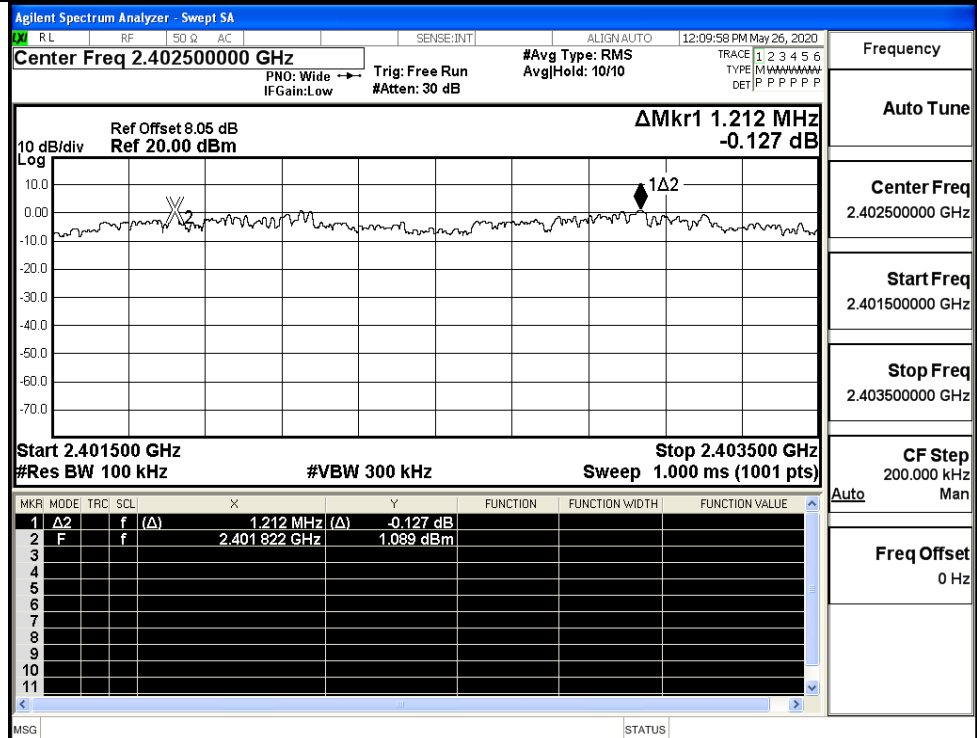
GFSK/HCH



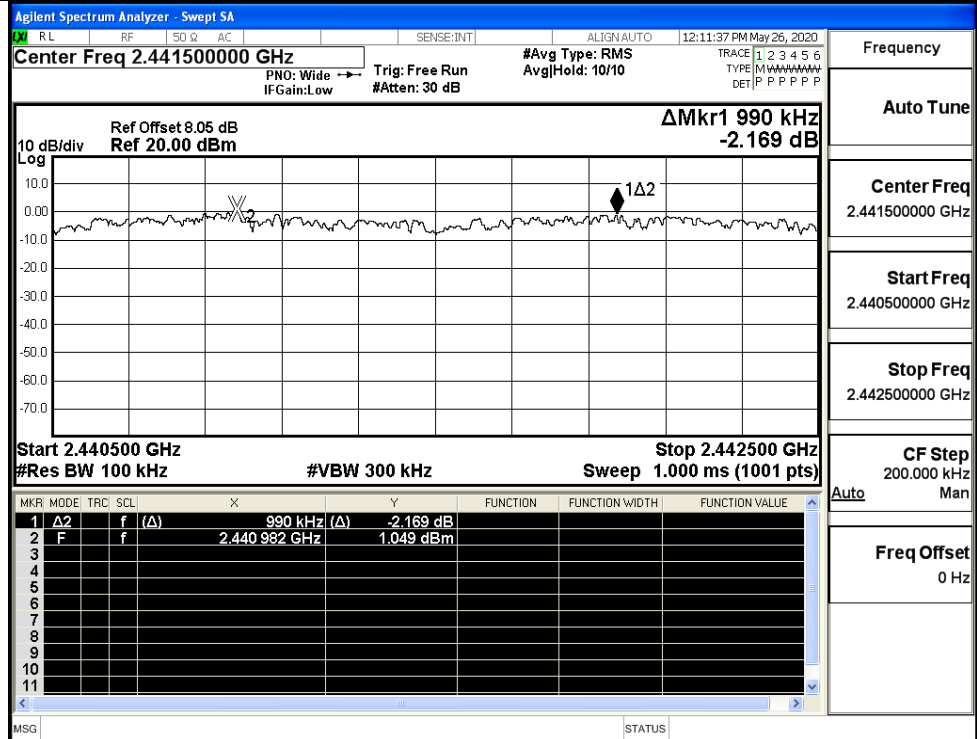
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

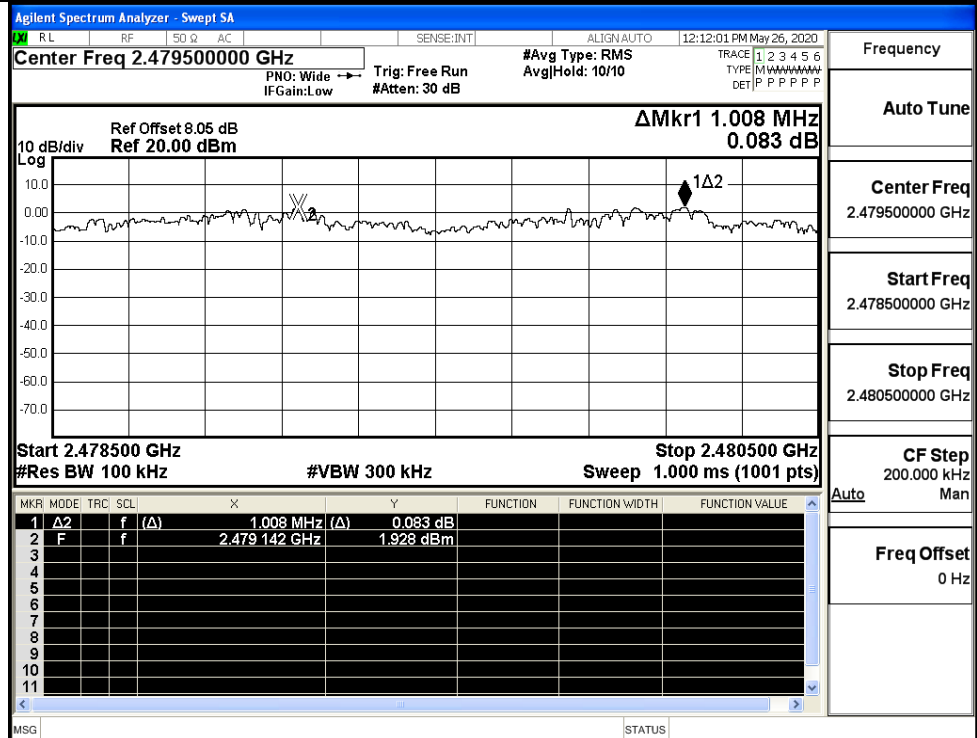
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

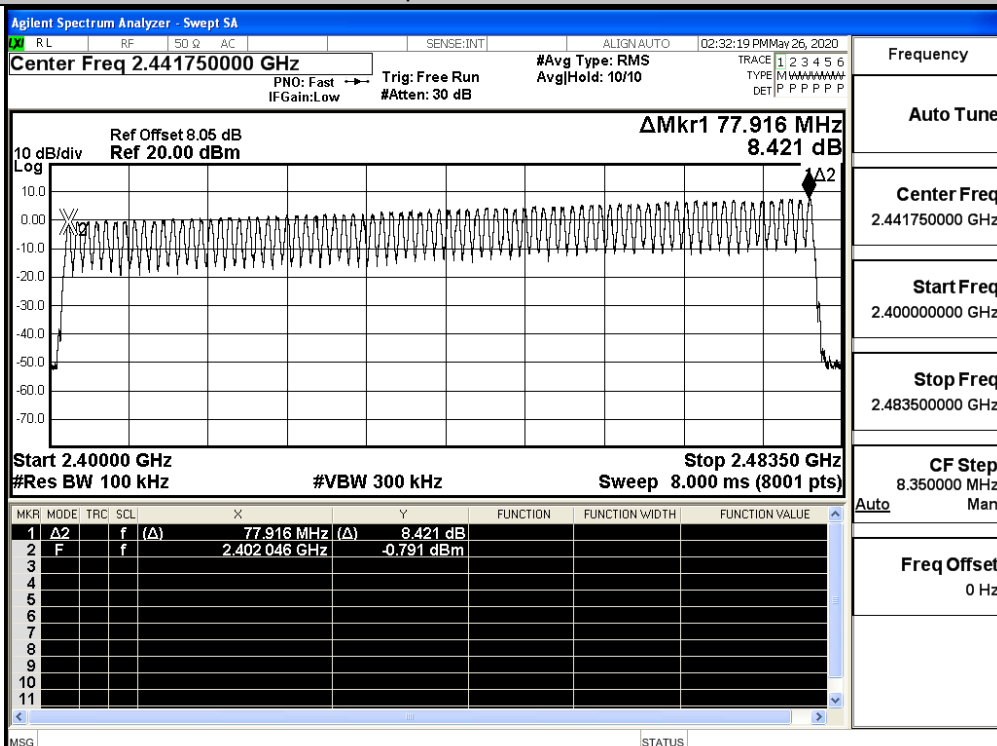


A.4 Hopping Channel Number

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

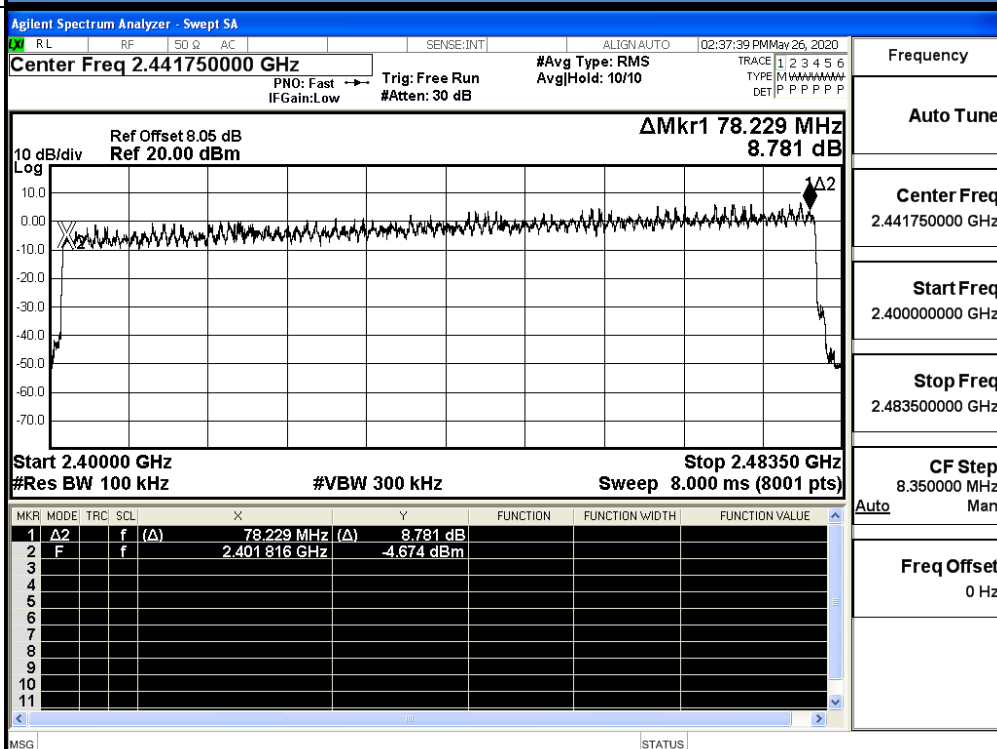
Test Graphs

GFSK/Hop



Frequency

Auto Tune

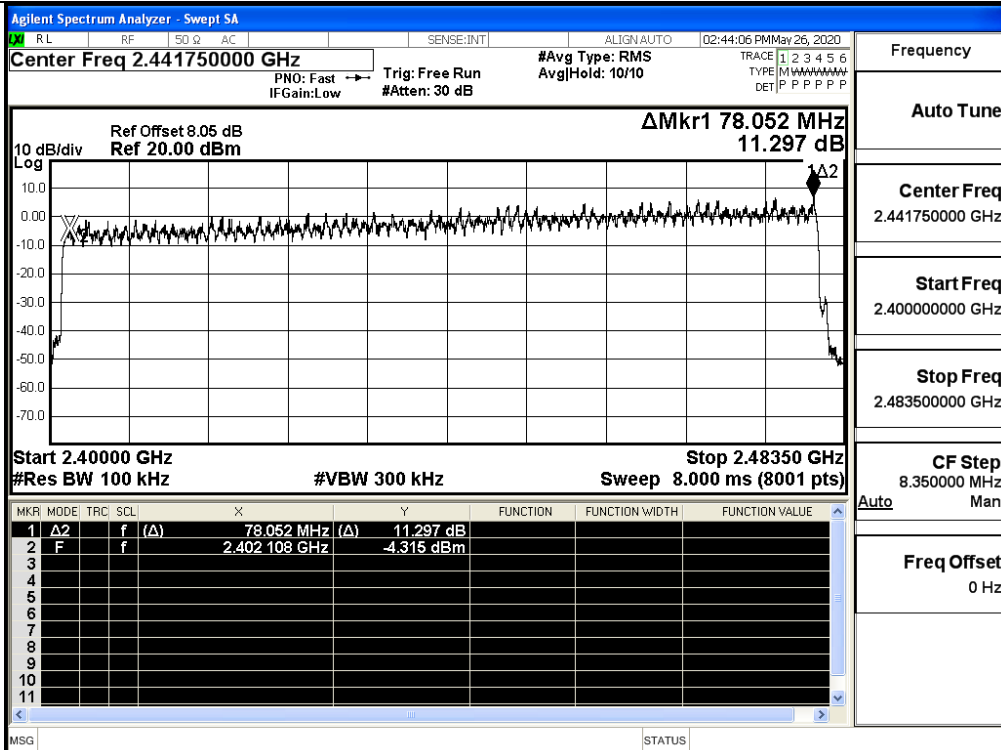
Center Freq
2.441750000 GHzStart Freq
2.400000000 GHzStop Freq
2.483500000 GHzCF Step
8.350000 MHz
Auto ManFreq Offset
0 Hz $\pi/4$ DQPSK/Hop

Frequency

Auto Tune

Center Freq
2.441750000 GHzStart Freq
2.400000000 GHzStop Freq
2.483500000 GHzCF Step
8.350000 MHz
Auto ManFreq Offset
0 Hz

8DPSK/Hop

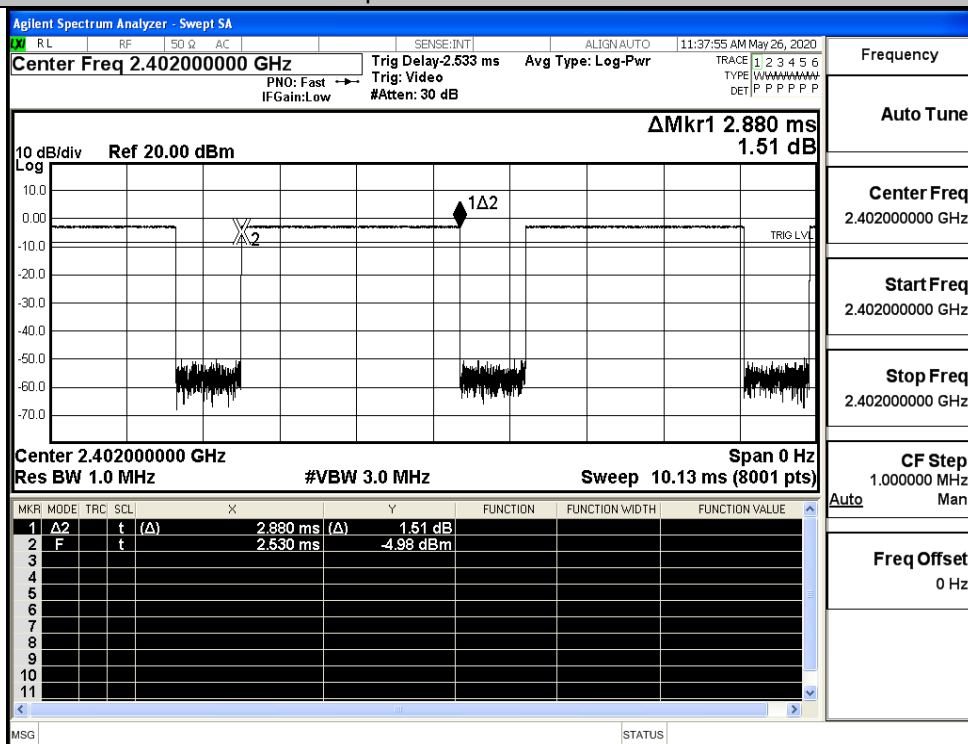


A.5 Dwell Time

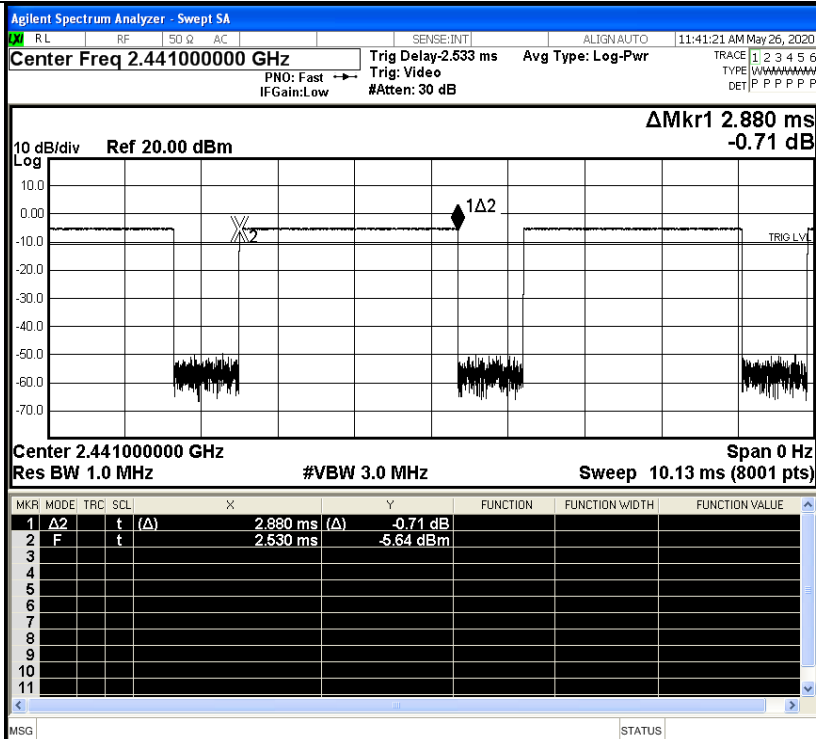
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88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

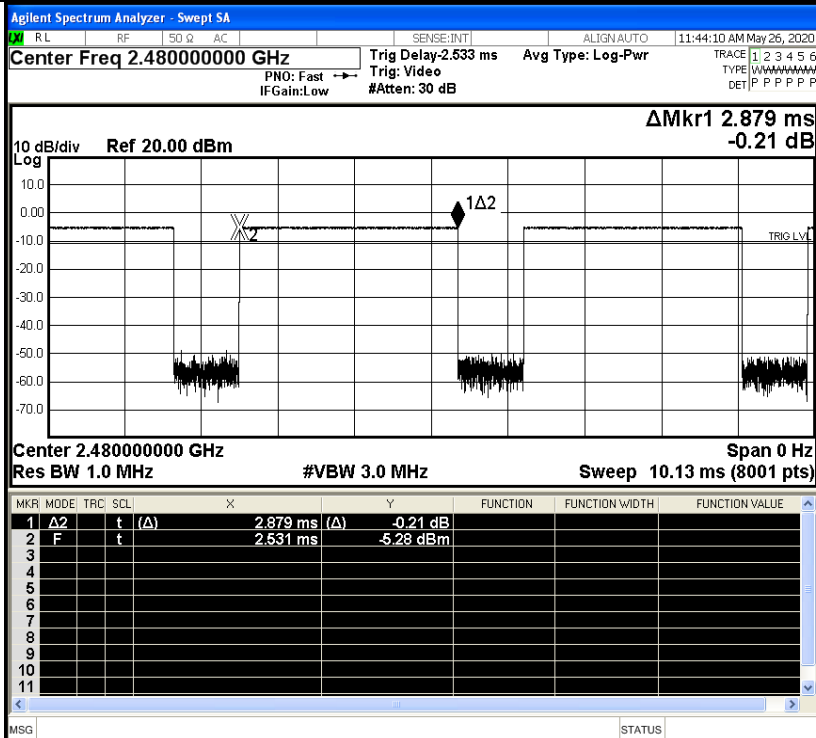


Frequency

Auto Tune

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

GFSK_DH5/HCH

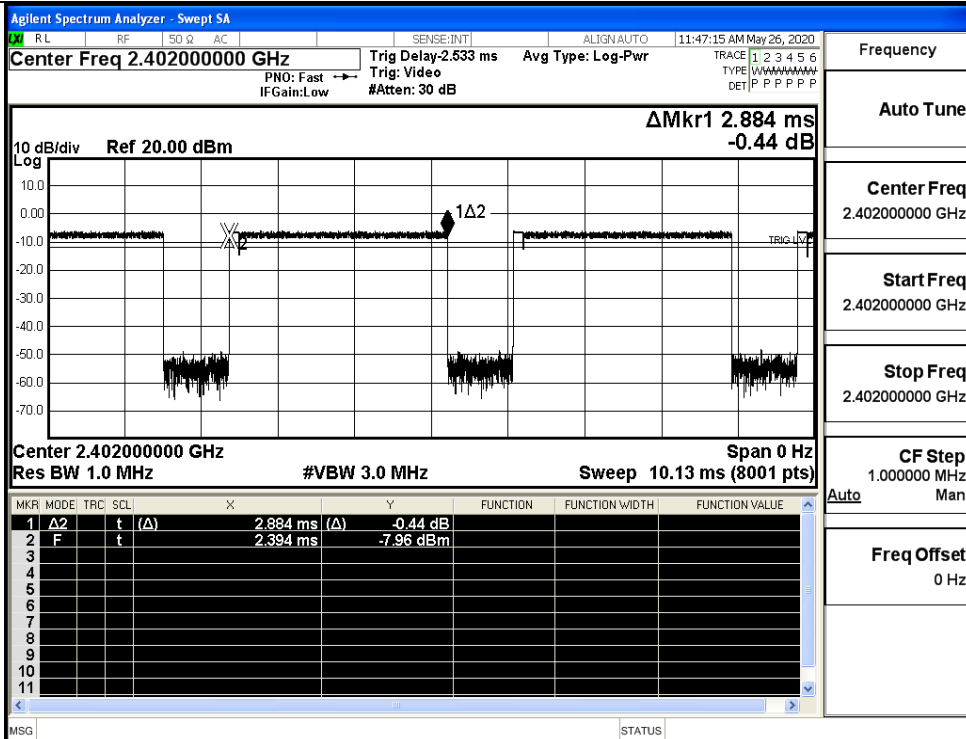


Frequency

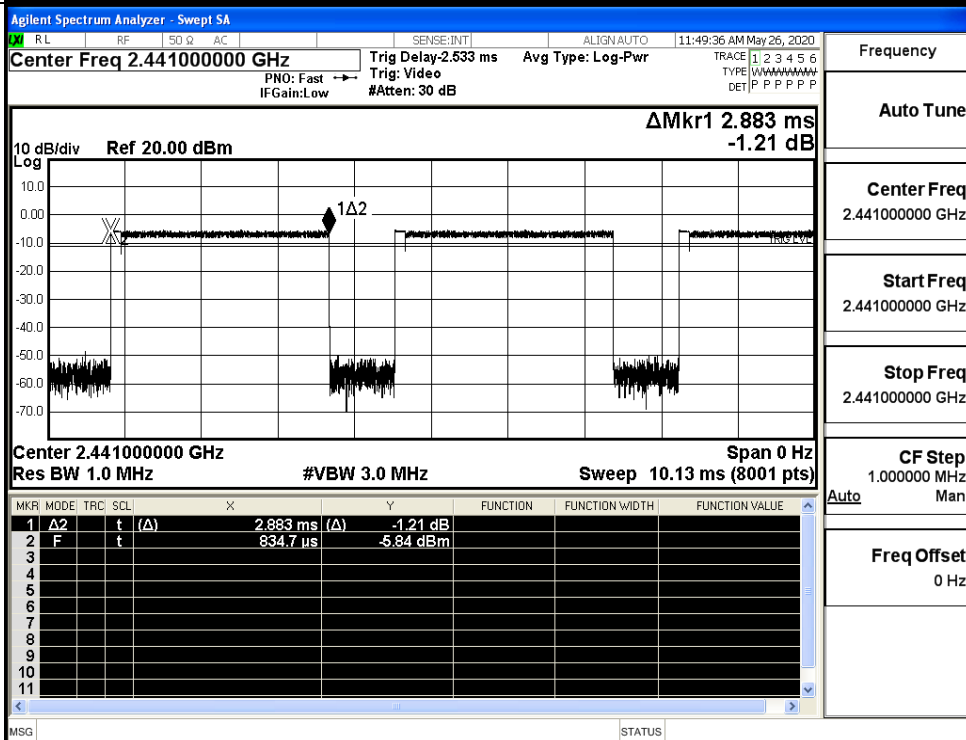
Auto Tune

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

$\pi/4$ DQPSK
_2DH5/LCH



$\pi/4$ DQPSK
_2DH5/MCH



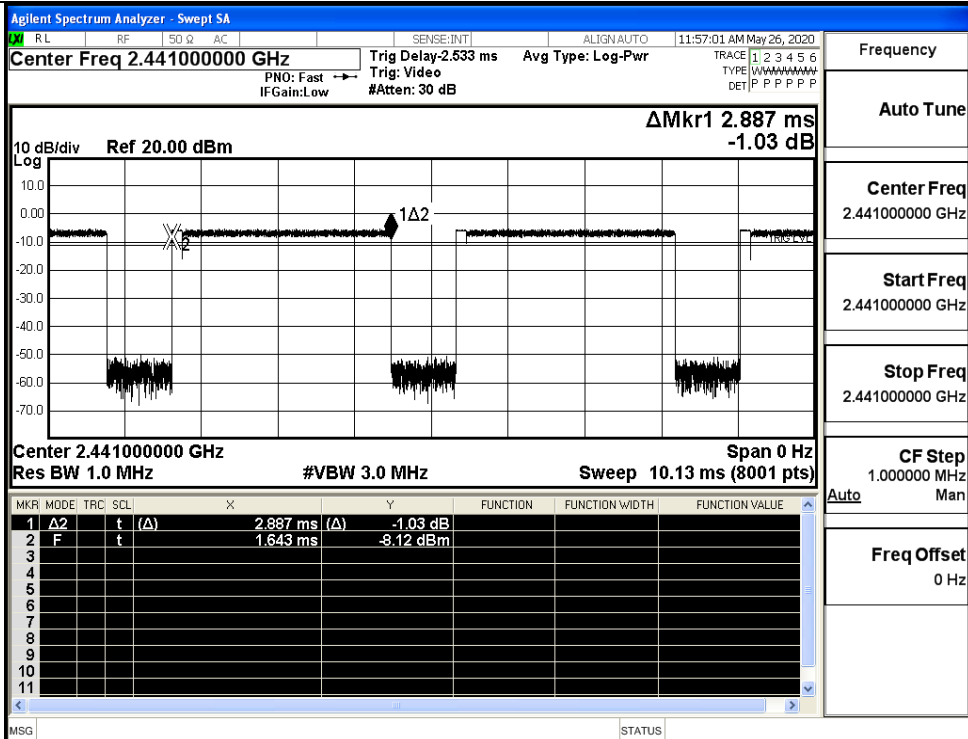
[illegible]

Frequency
Auto Tune
Center Freq 2.480000000 GHz
Start Freq 2.480000000 GHz
Stop Freq 2.480000000 GHz
CF Step 1.000000 MHz <u>Auto</u> Man
Freq Offset 0 Hz

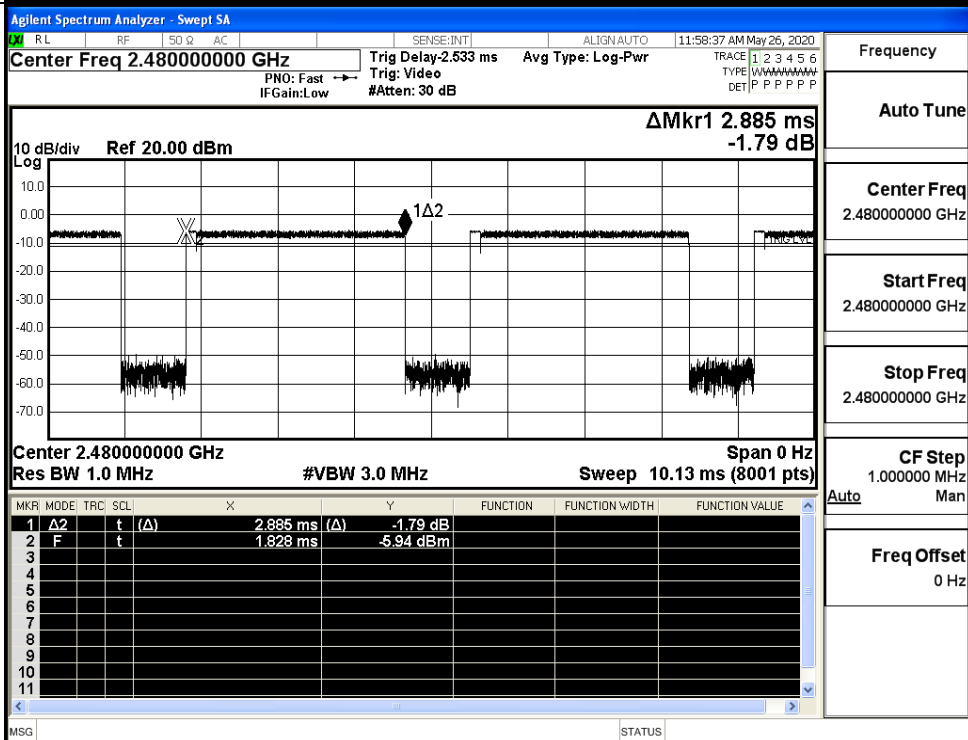
[illegible]

Frequency
Auto Tune
Center Freq 2.402000000 GHz
Start Freq 2.402000000 GHz
Stop Freq 2.402000000 GHz
CF Step 1.000000 MHz <u>Auto</u> Man
Freq Offset 0 Hz

8DPSK_3DH5/MCH



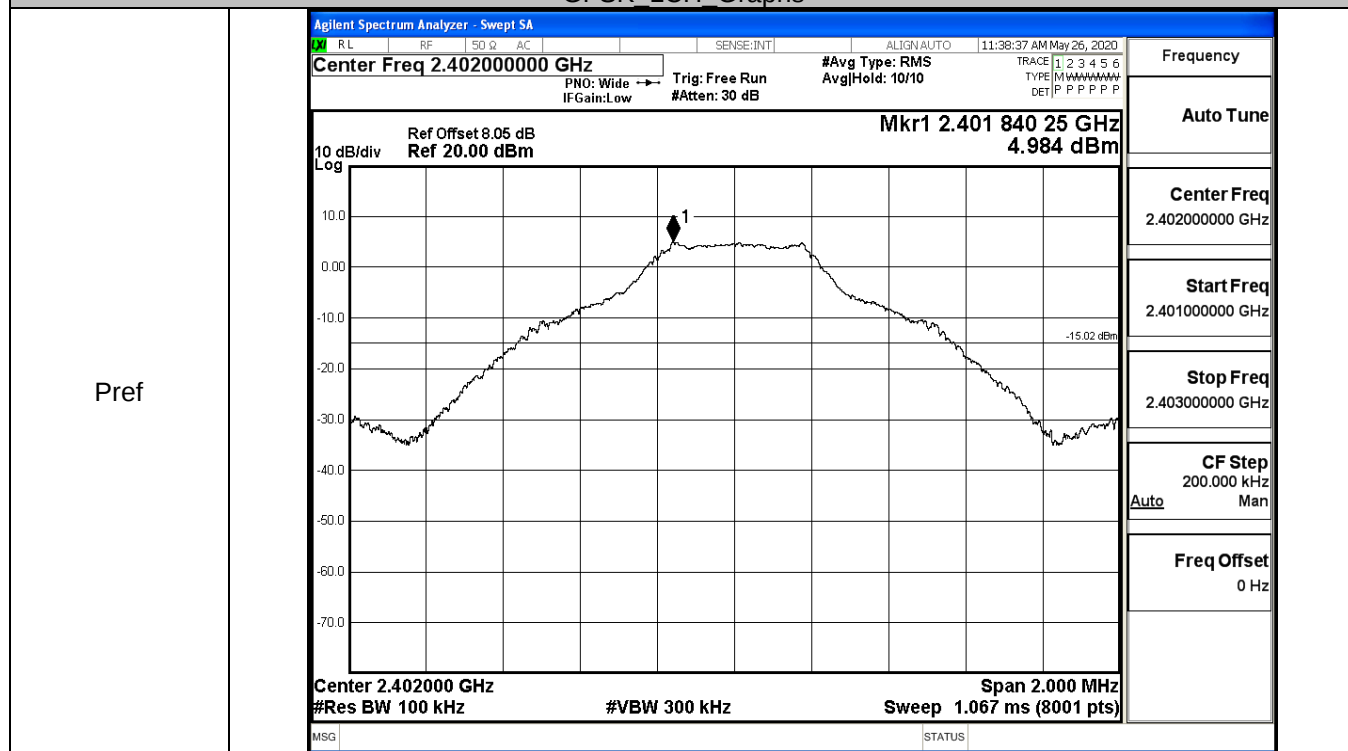
8DPSK_3DH5/HCH



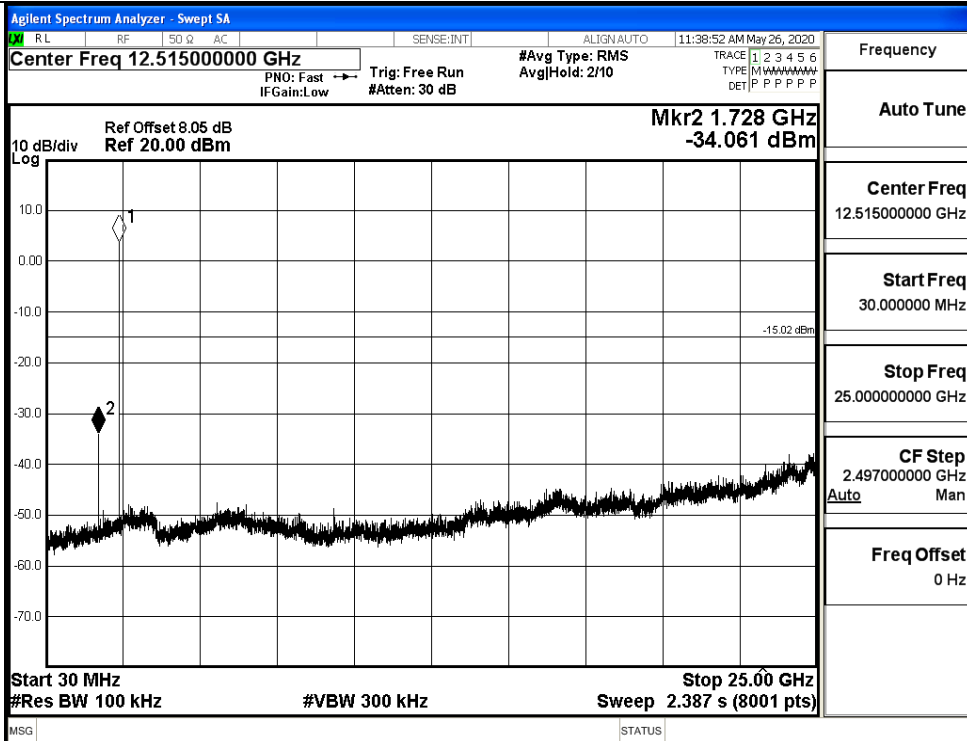
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	4.984	-34.061	-15.016	PASS
	MCH	2.687	-37.443	-17.313	PASS
	HCH	2.661	-38.256	-17.339	PASS
$\pi/4$ DQPSK	LCH	1.4	-37.202	-18.600	PASS
	MCH	1.868	-38.195	-18.132	PASS
	HCH	1.974	-37.372	-18.026	PASS
8DPSK	LCH	1.306	-38.092	-18.694	PASS
	MCH	2.06	-38.337	-17.940	PASS
	HCH	2.05	-38.170	-17.950	PASS

GFSK LCH Graphs

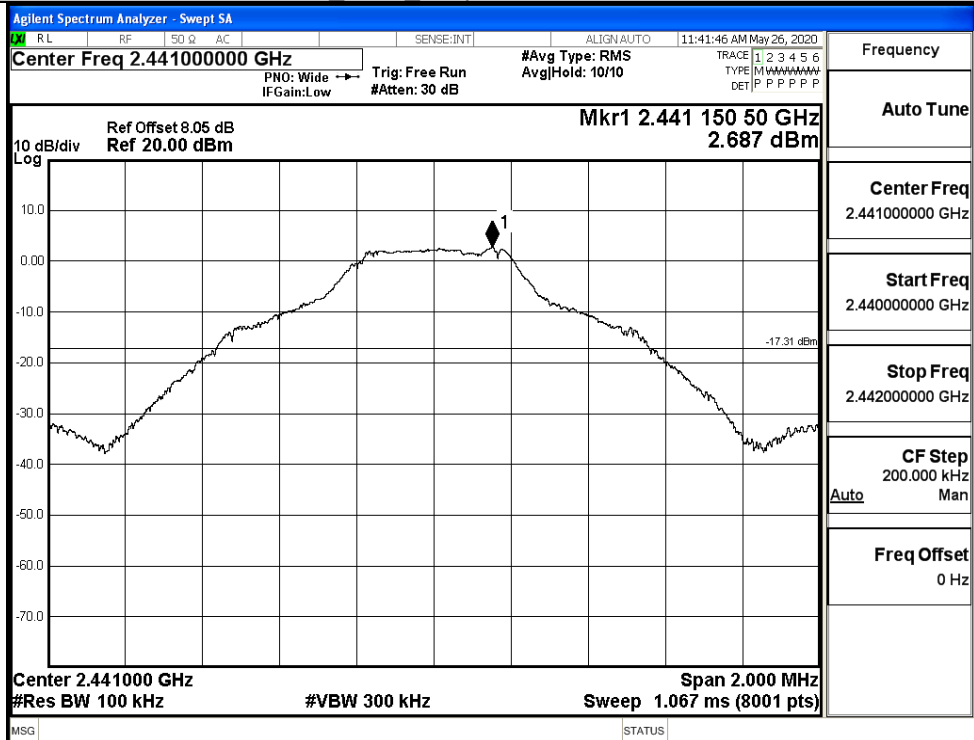


Puw

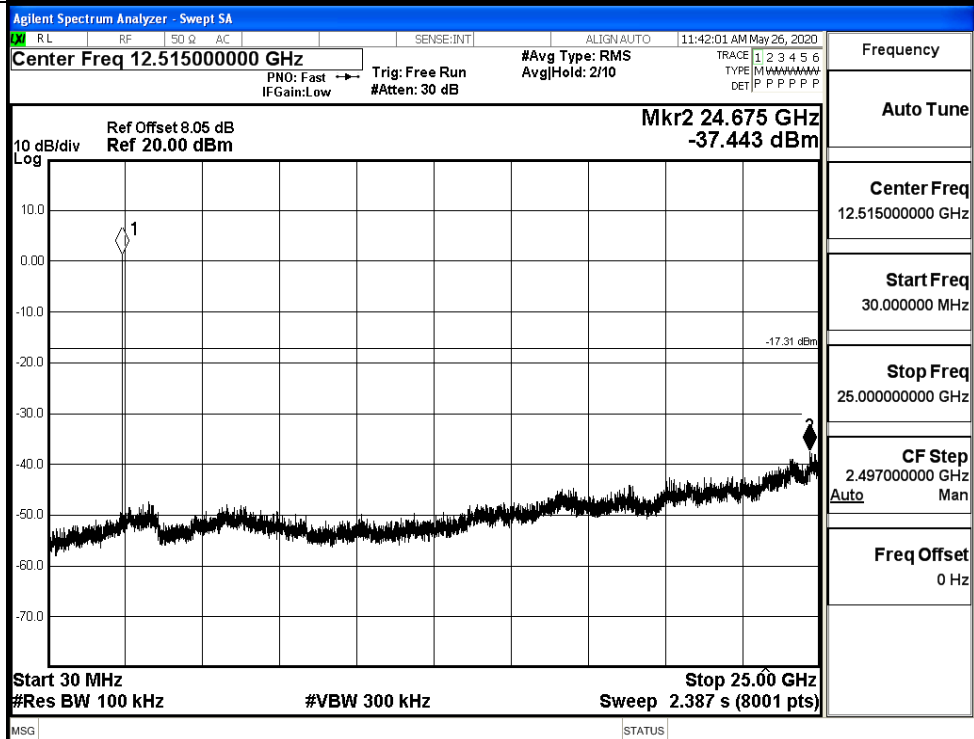


GFSK_MCH_Graphs

Pref

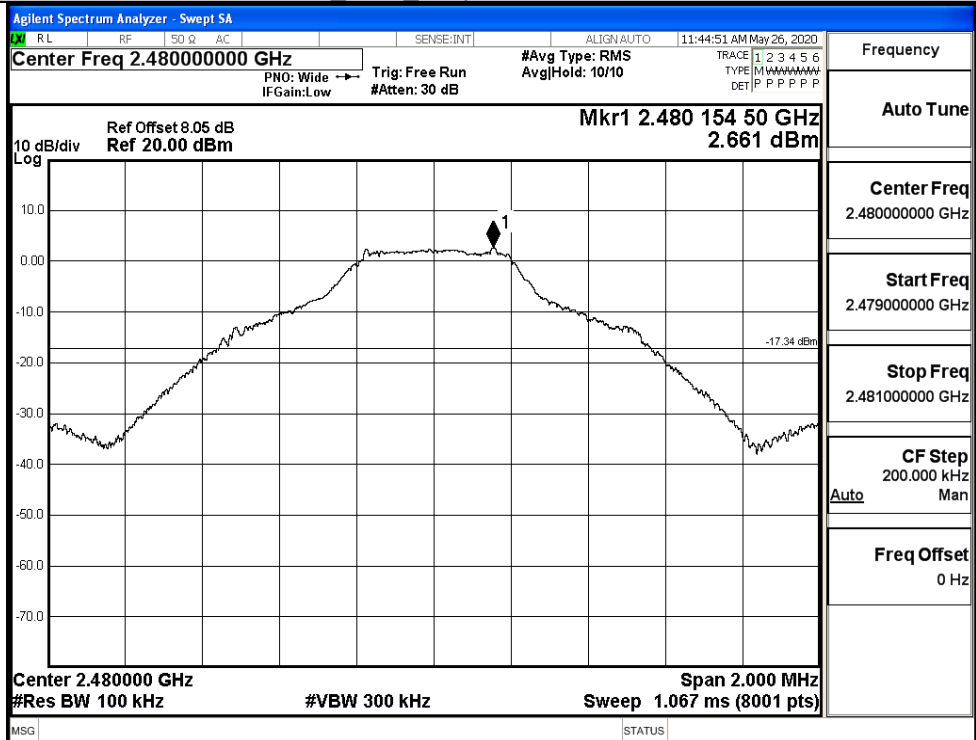


Puw

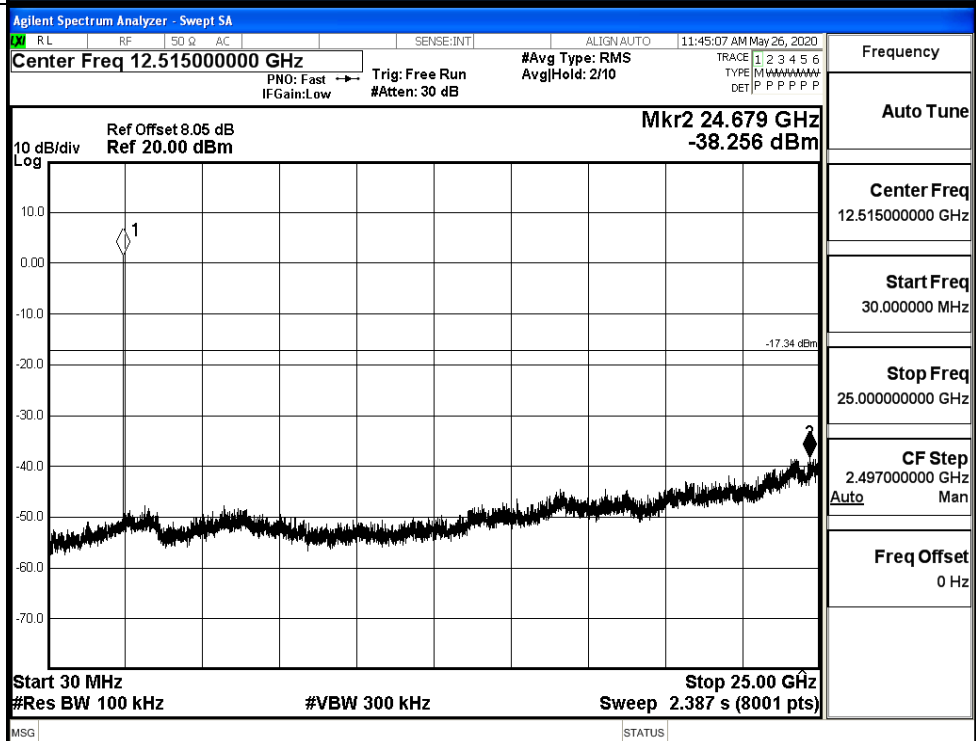


GFSK HCH Graphs

Pref

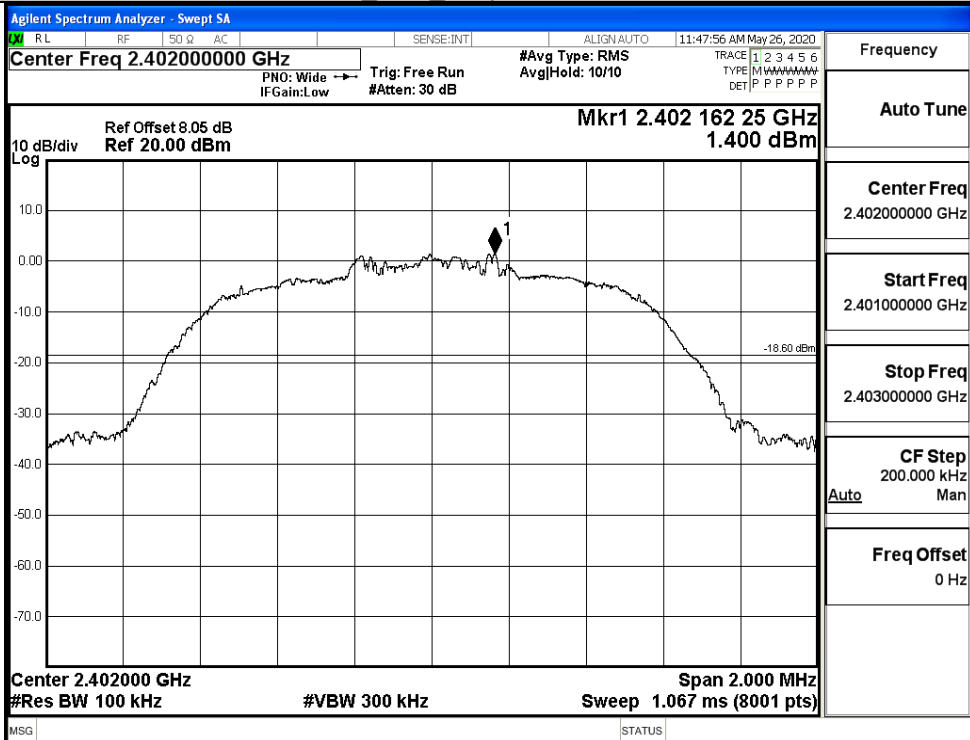


Puw

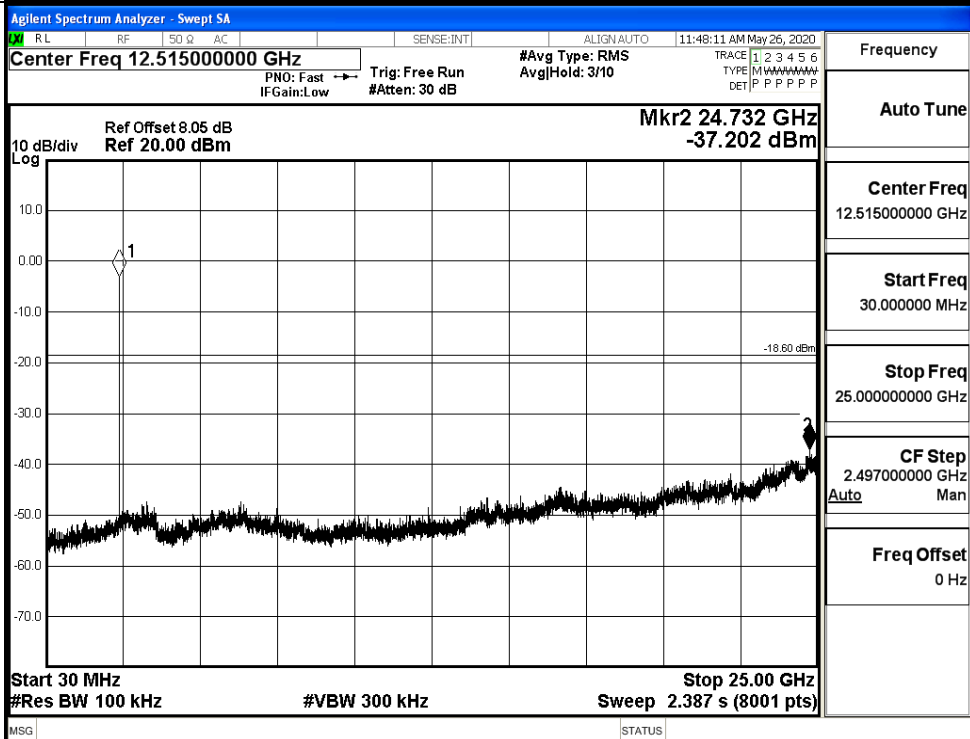


$\pi/4$ DQPSK_LCH_Graphs

Pref

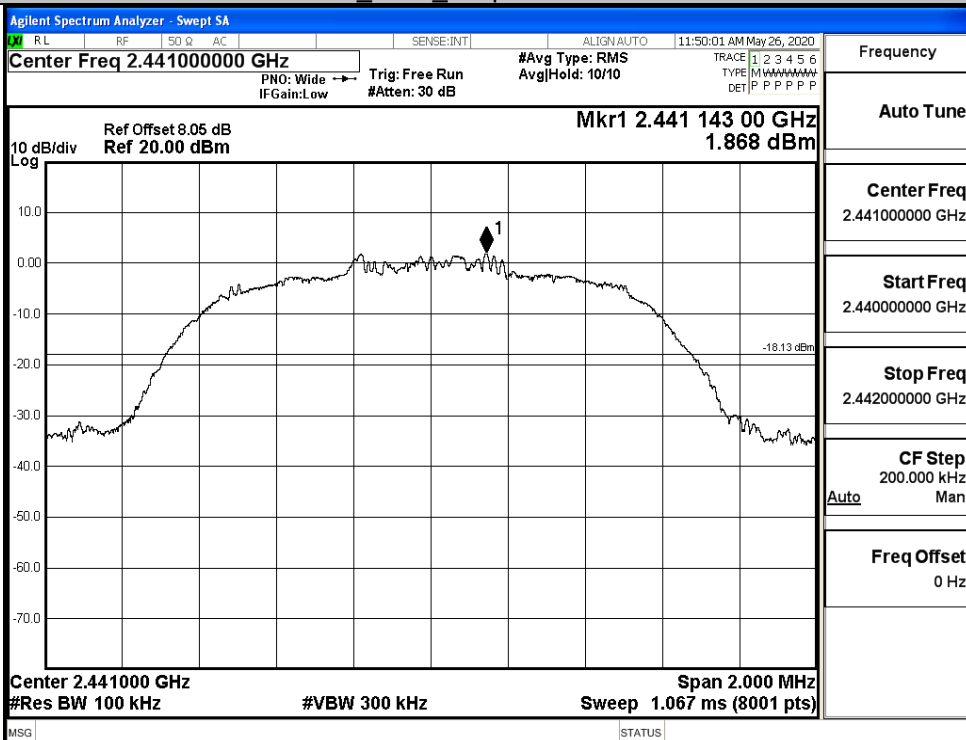


Puw

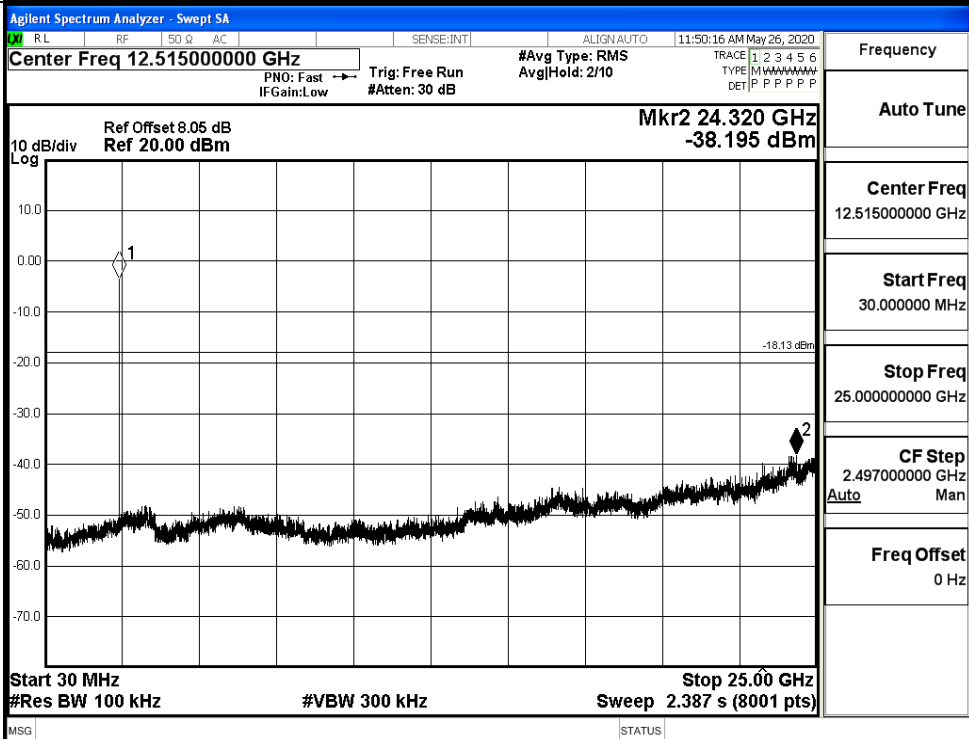


π /4DQPSK_MCH_Graphs

Pref

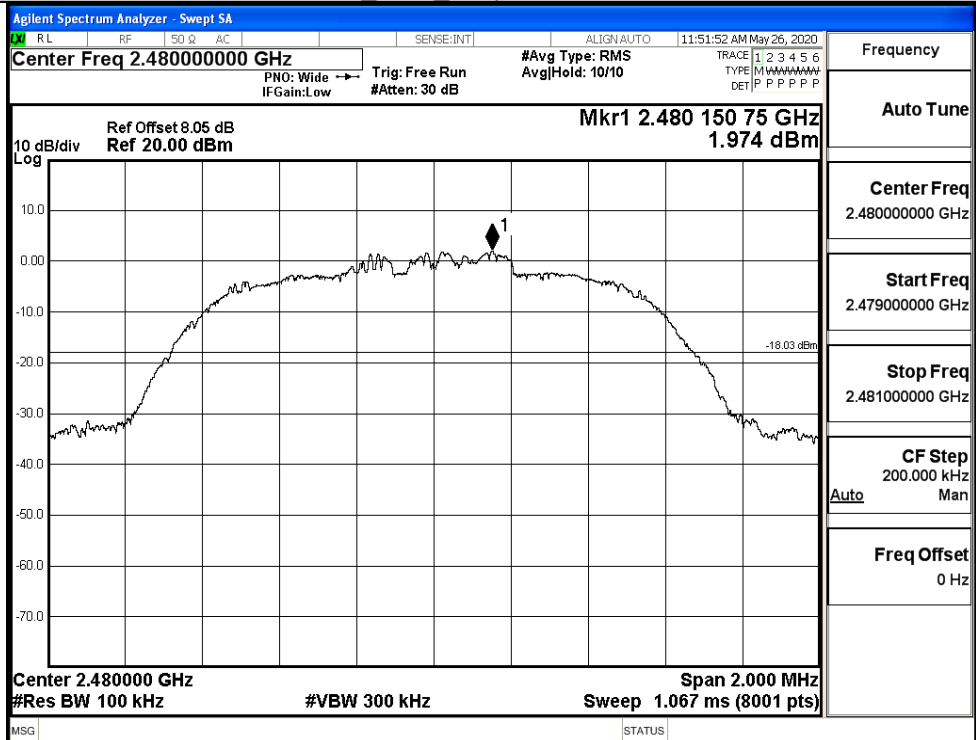


Puw

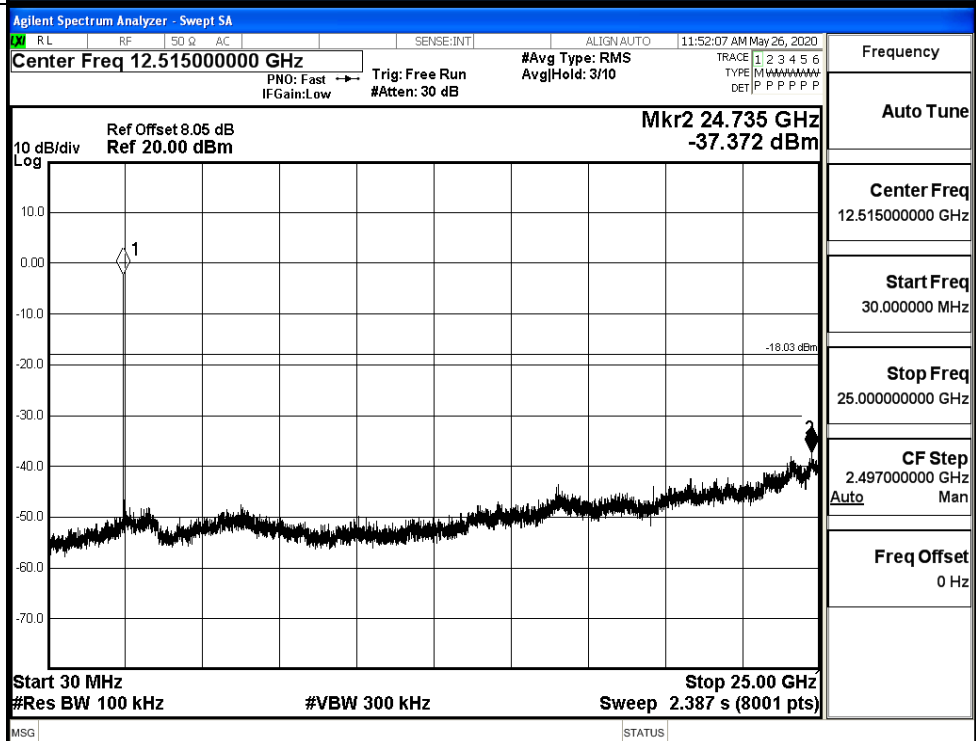


π /4DQPSK_HCH_Graphs

Pref

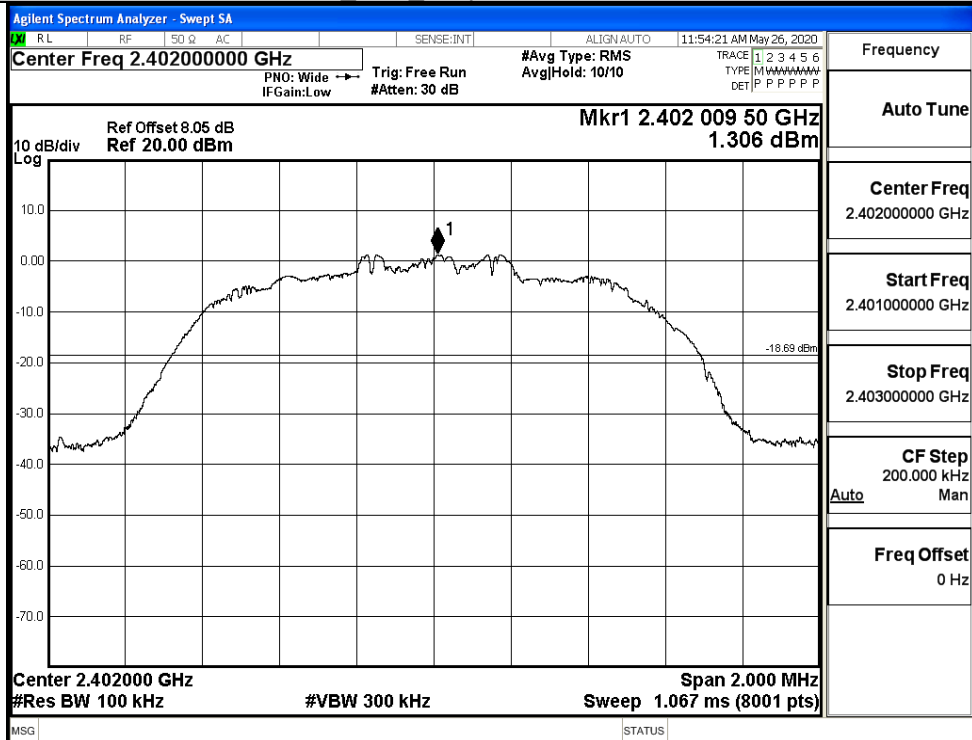


Puw

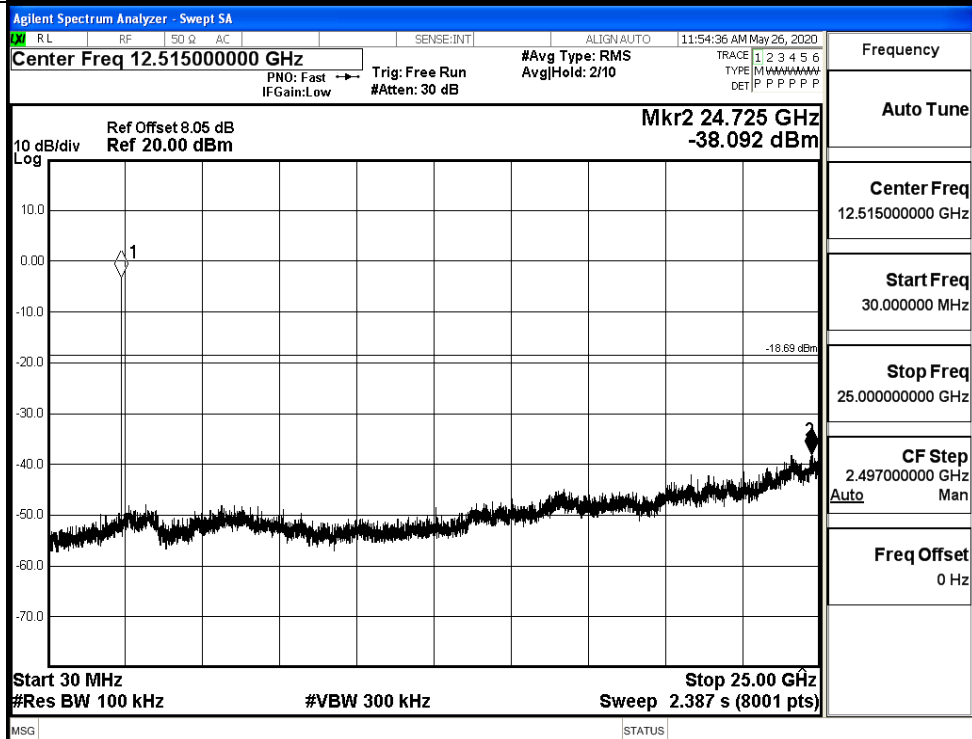


8DPSK_LCH_Graphs

Pref

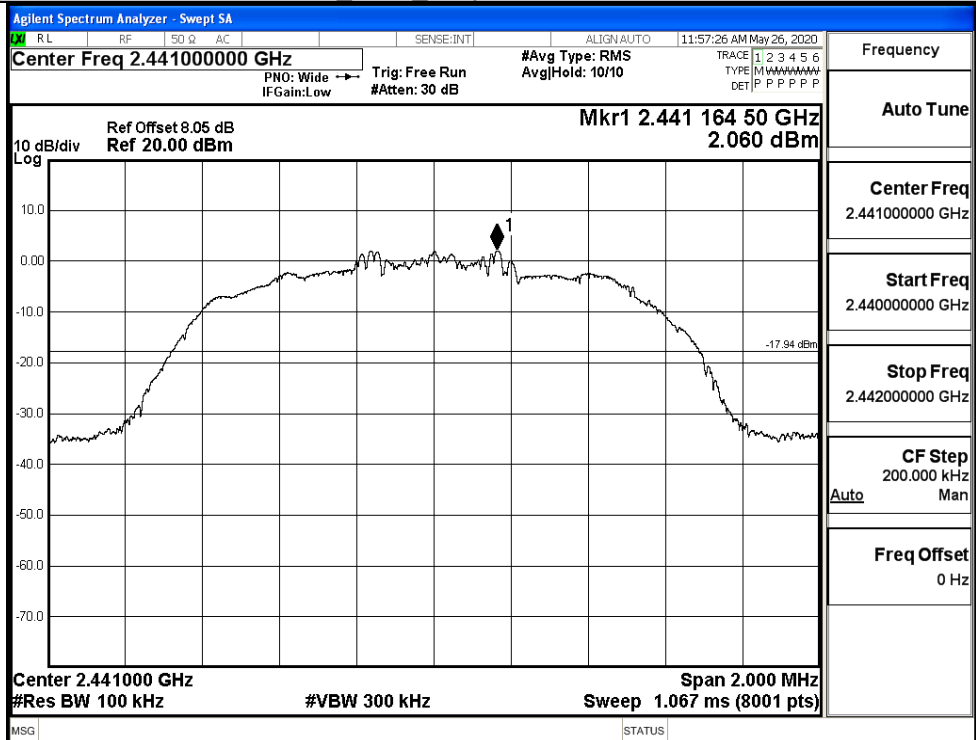


Puw

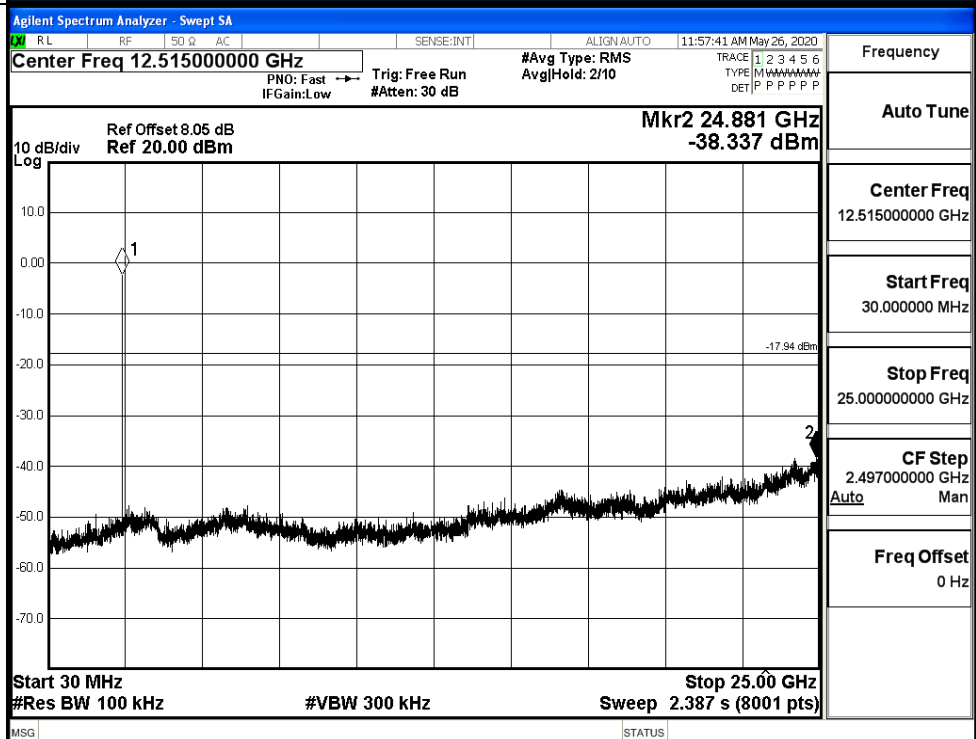


8DPSK_MCH_Graphs

Pref

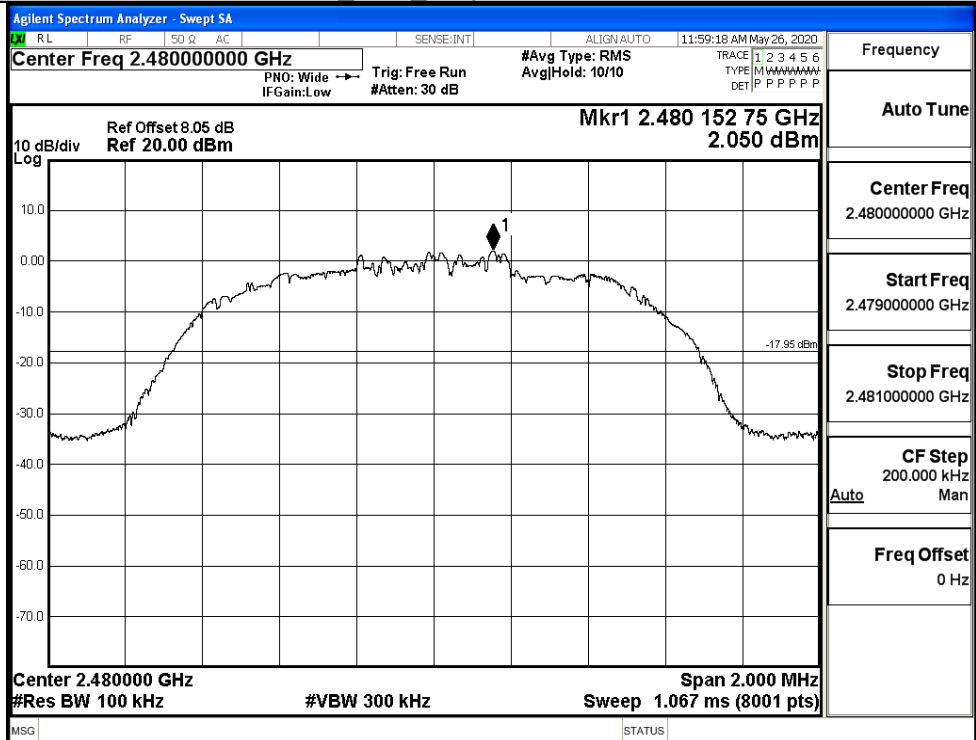


Puw

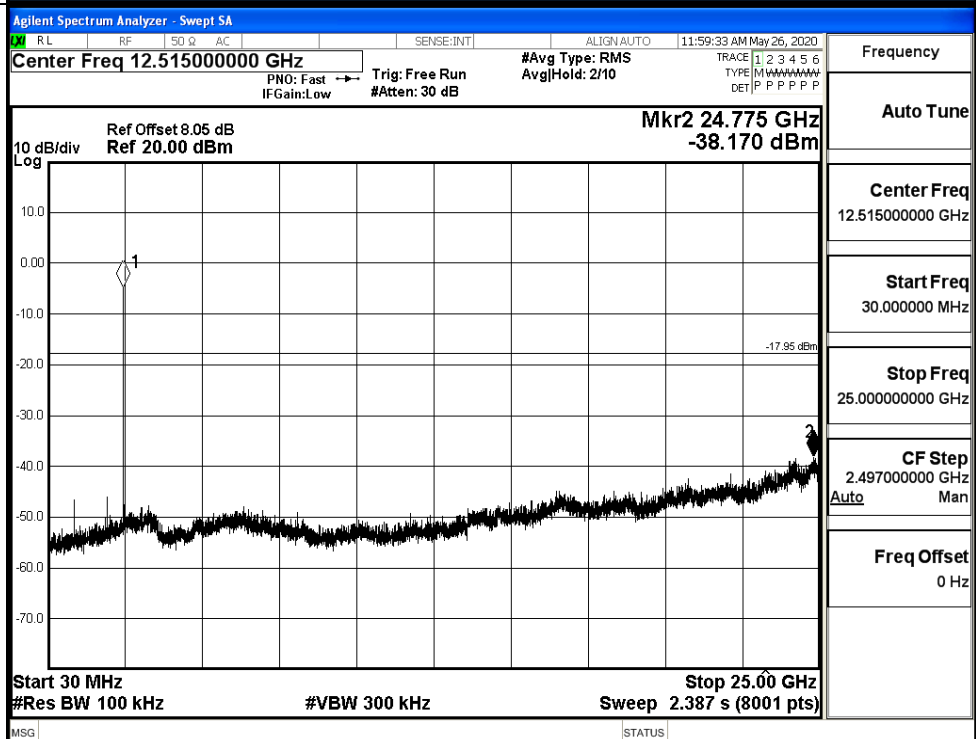


8DPSK_HCH_Graphs

Pref



Puw

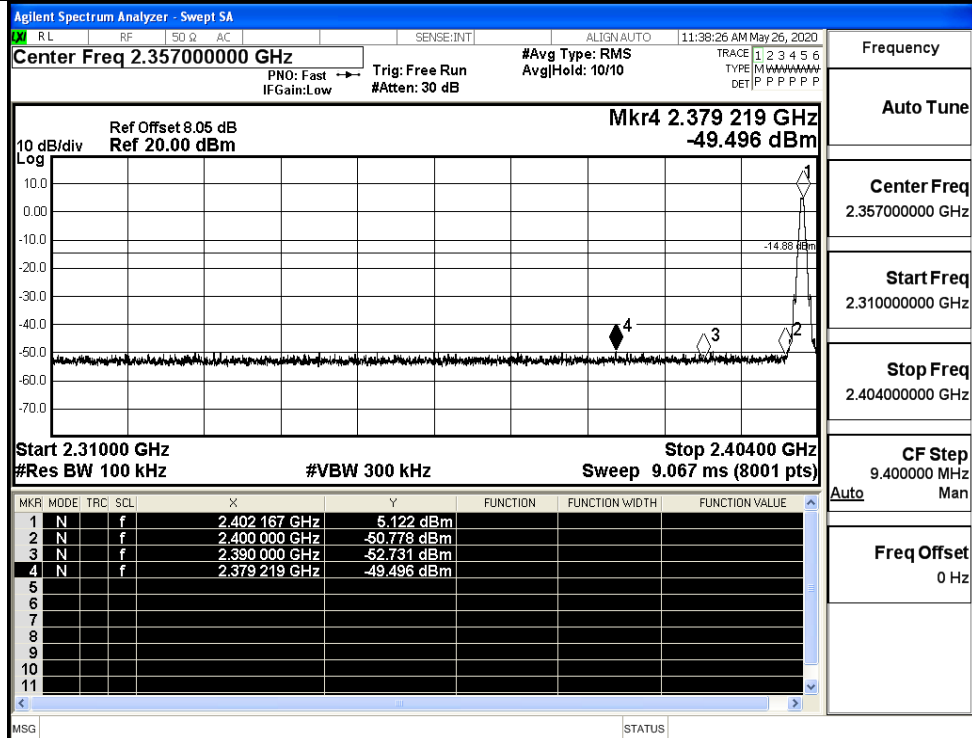


A.7 Band-edge for RF Conducted Emissions

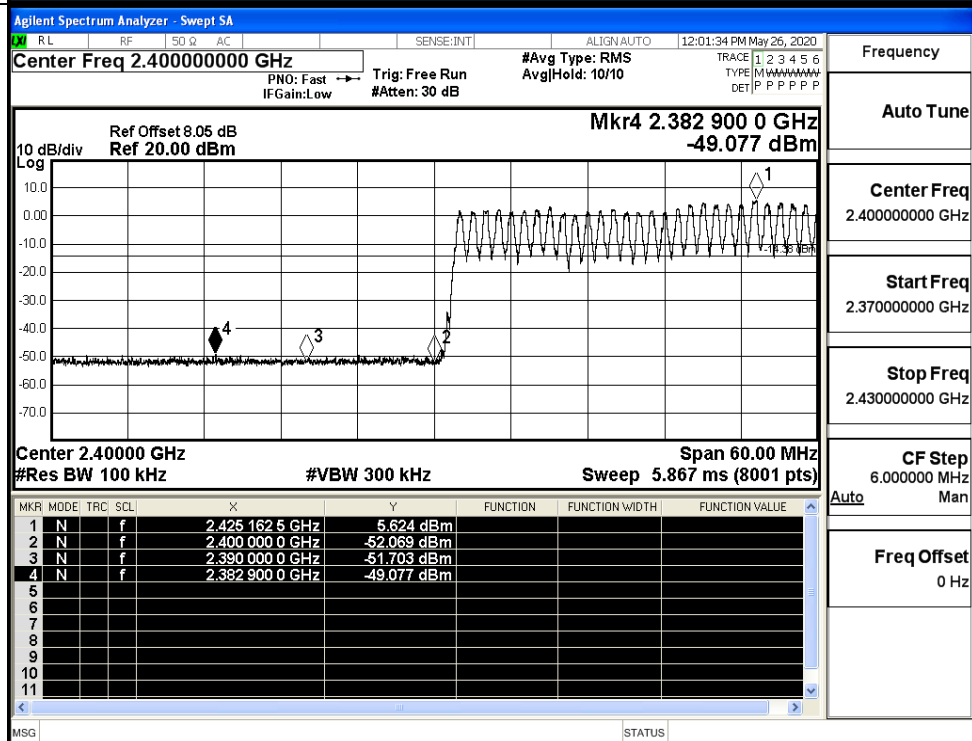
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	5.122	Off	-49.496	-14.88	PASS
			5.624	On	-49.077	-14.38	PASS
	HCH	2480	2.601	Off	-48.276	-17.4	PASS
			4.708	On	-49.178	-15.29	PASS
$\pi/4$ DQPSK	LCH	2402	1.614	Off	-49.066	-18.39	PASS
			2.979	On	-48.747	-17.02	PASS
	HCH	2480	2.168	Off	-49.130	-17.83	PASS
			3.349	On	-48.449	-16.65	PASS
8DPSK	LCH	2402	1.149	Off	-50.110	-18.85	PASS
			4.356	On	-48.911	-15.64	PASS
	HCH	2480	2.121	Off	-49.543	-17.88	PASS
			4.226	On	-47.888	-15.77	PASS

Test Graphs

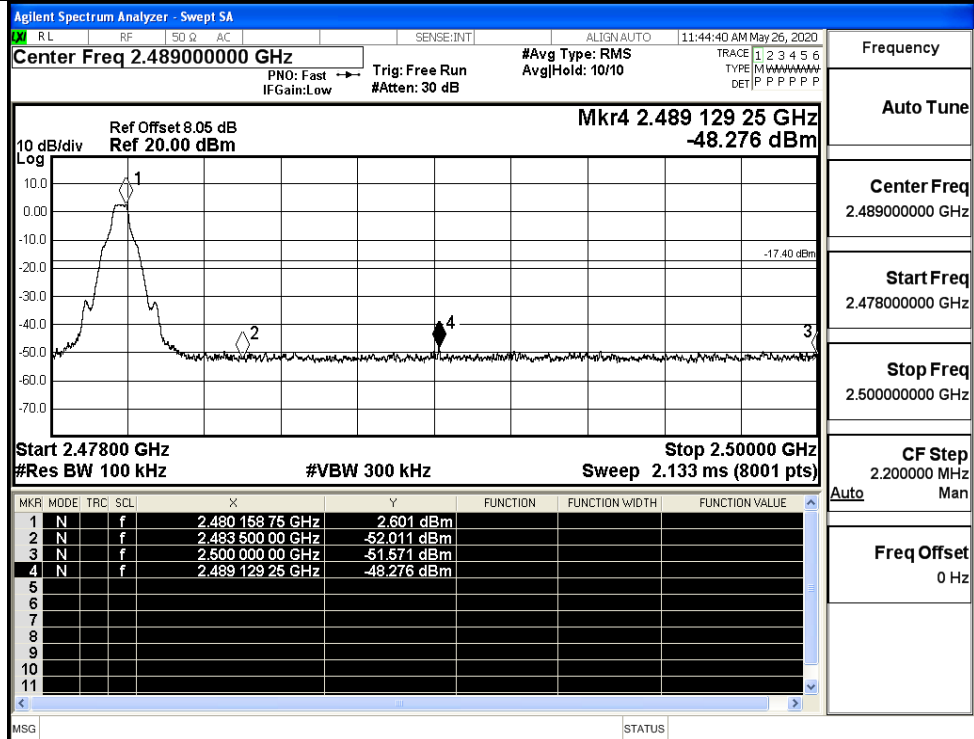
GFSK/LCH/No Hop



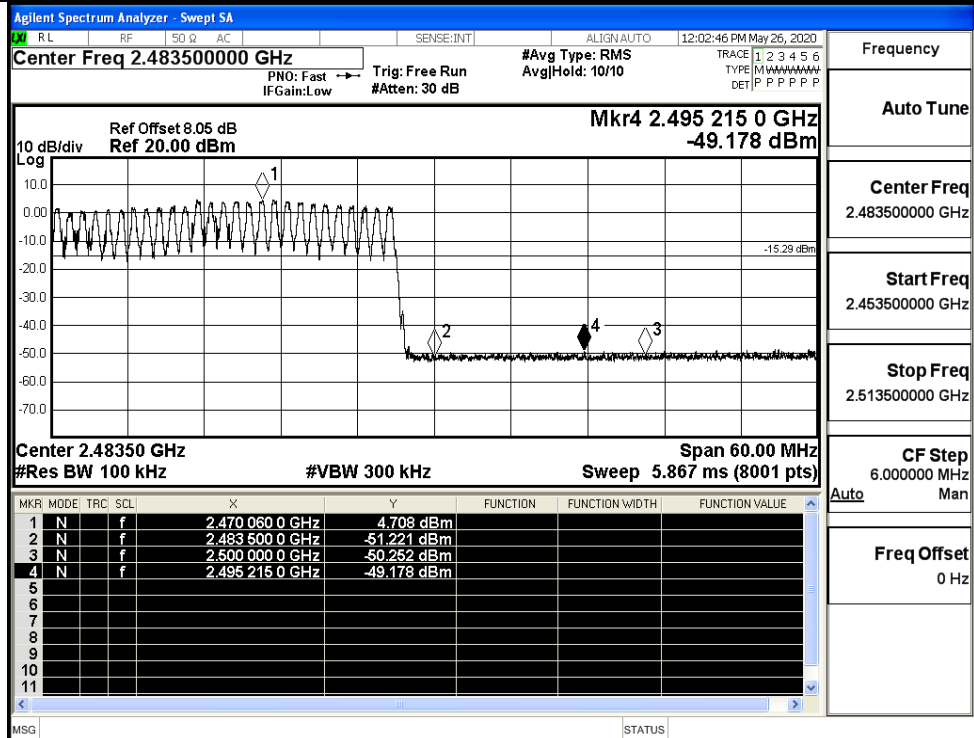
GFSK/LCH/Hop



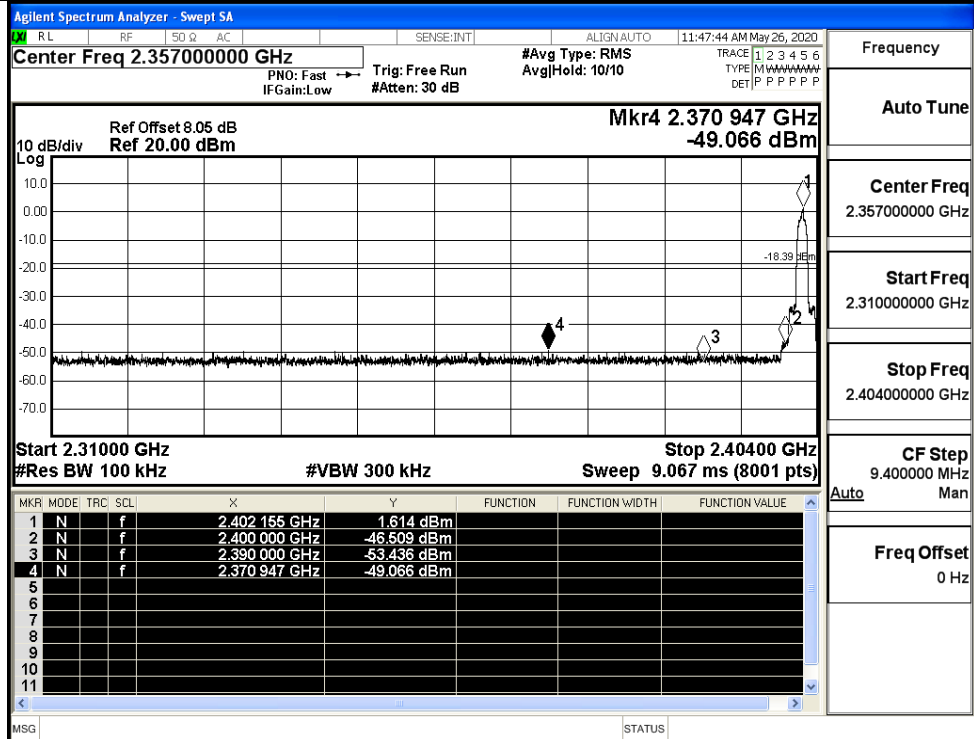
GFSK/HCH/No Hop



GFSK/HCH/Hop



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



Frequency

Auto Tune

Center Freq
2.357000000 GHz

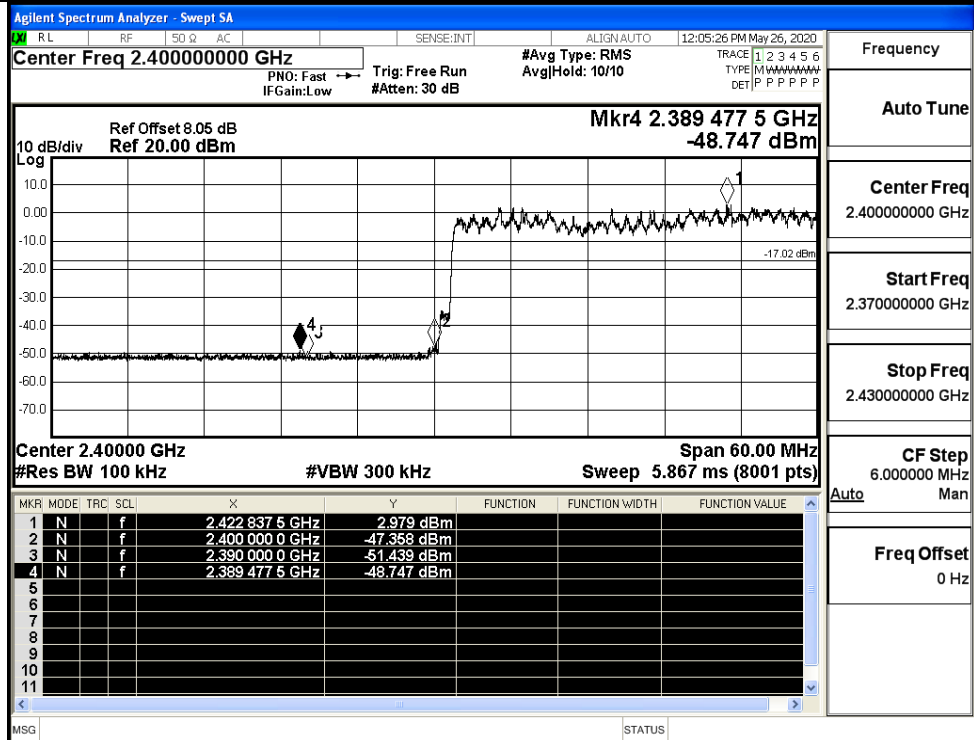
Start Freq
2.310000000 GHz

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

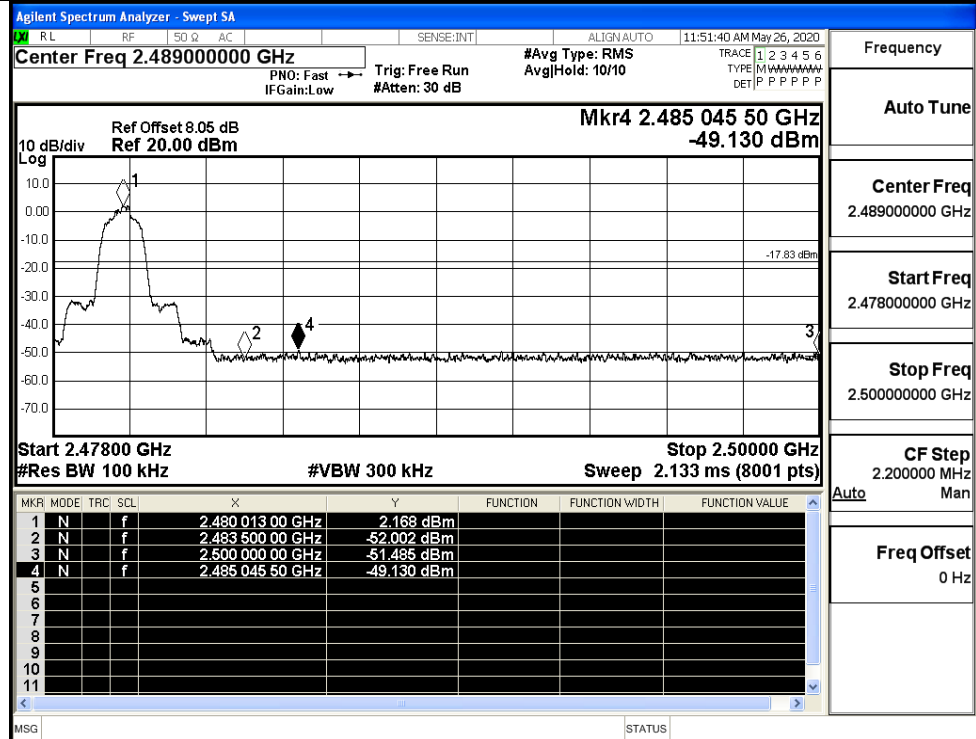
Start Freq
2.370000000 GHz

Stop Freq
2.430000000 GHz

CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

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



Frequency

Auto Tune

Center Freq
2.489000000 GHz

Start Freq
2.478000000 GHz

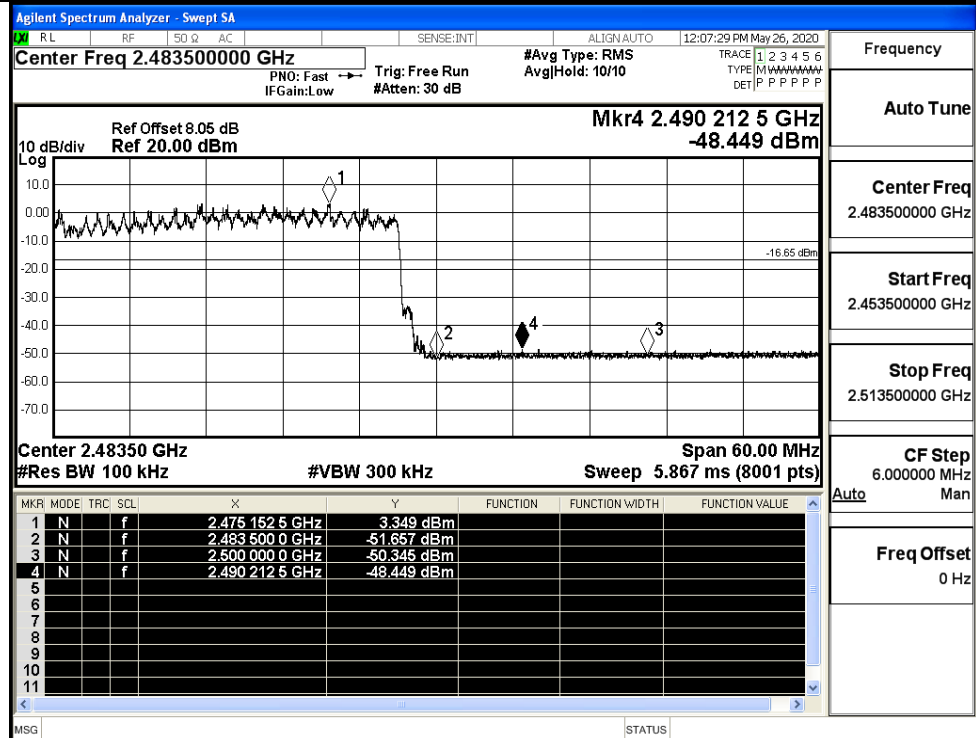
Stop Freq
2.500000000 GHz

CF Step
2.200000 MHz

Auto Man

Freq Offset
0 Hz

$\pi/4$ DQPSK/HCH/Hop



Frequency

Auto Tune

Center Freq
2.483500000 GHz

Start Freq
2.453500000 GHz

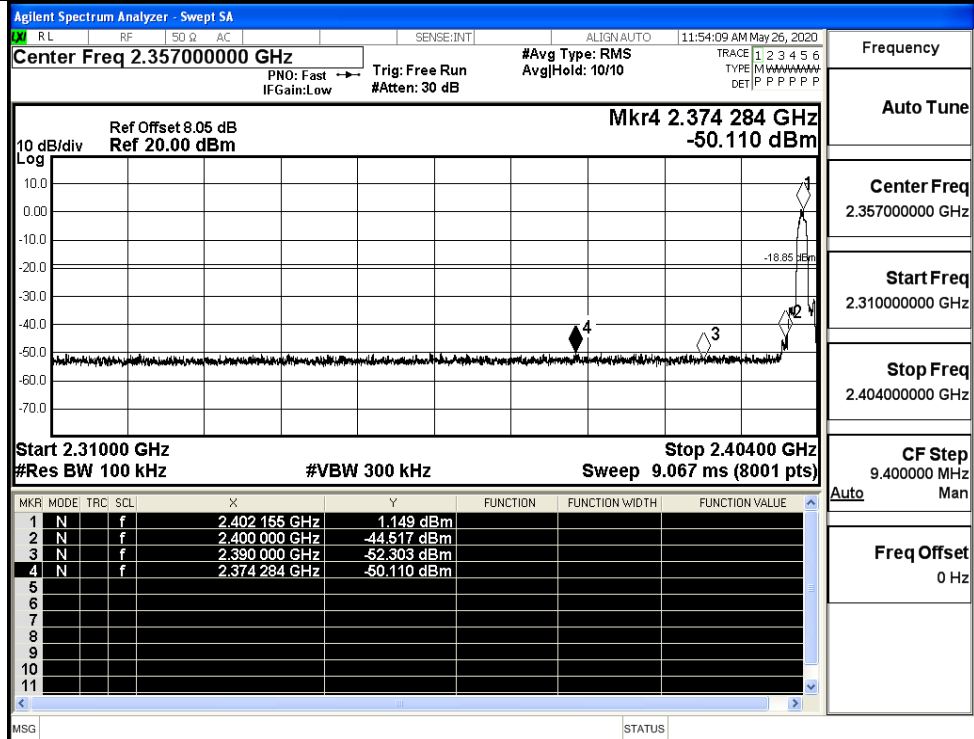
Stop Freq
2.513500000 GHz

CF Step
6.000000 MHz

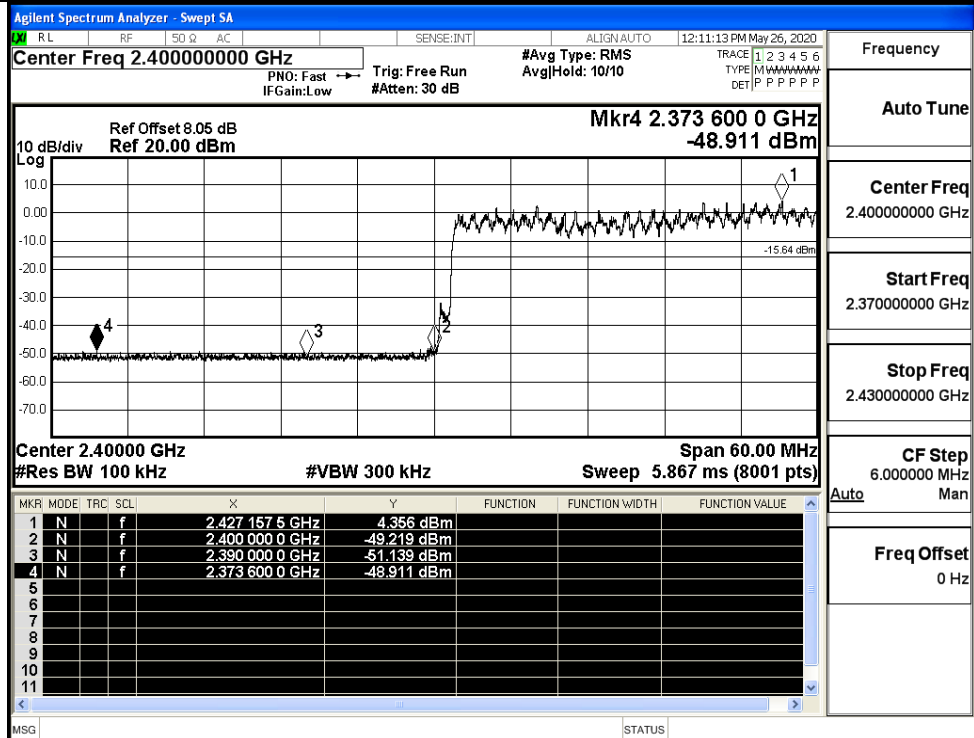
Auto Man

Freq Offset
0 Hz

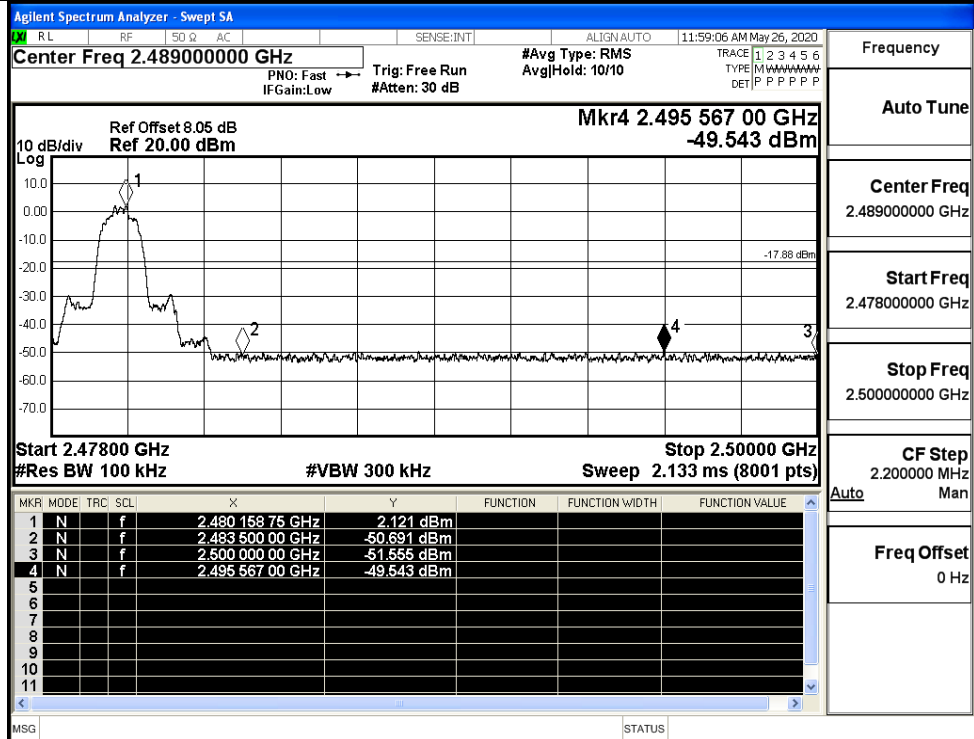
8DPSK/LCH/No Hop



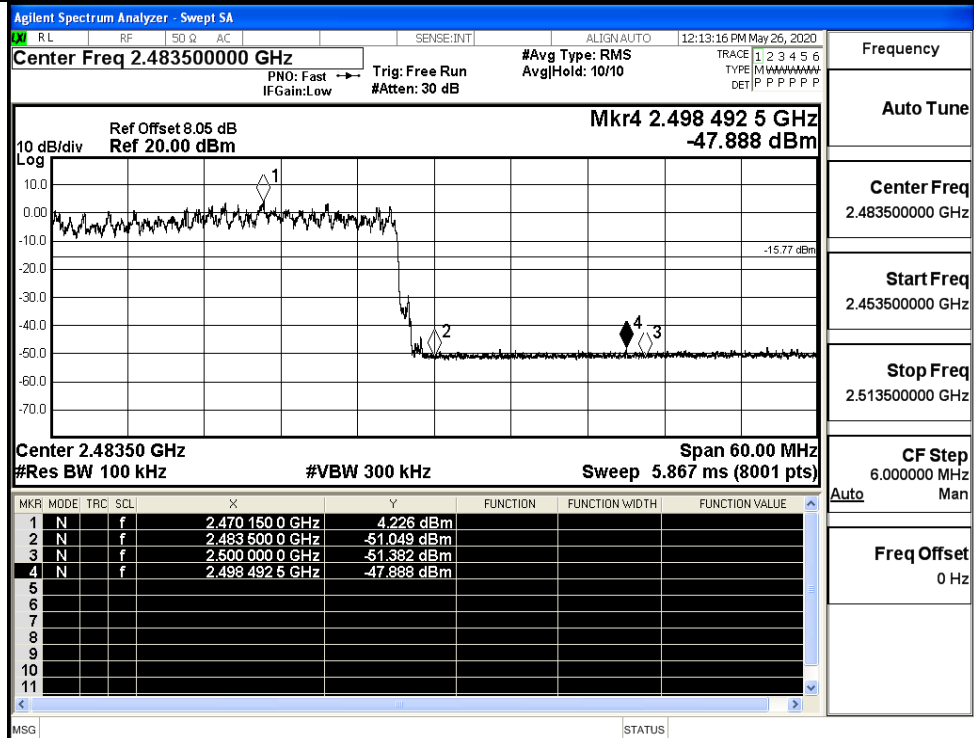
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



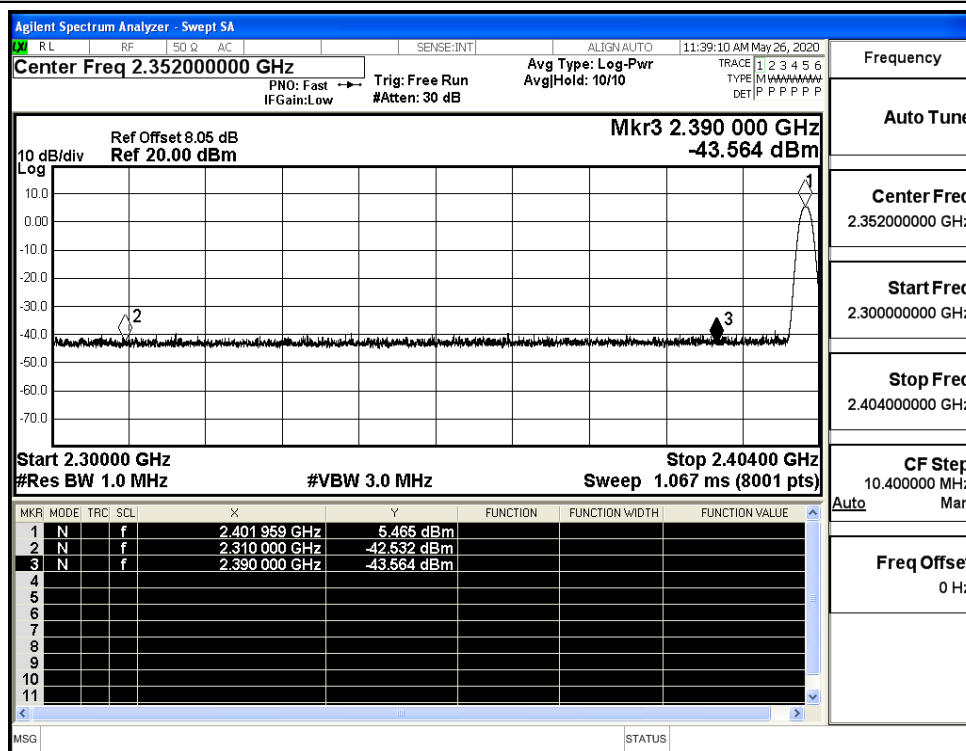
8DPSK/HCH/Hop



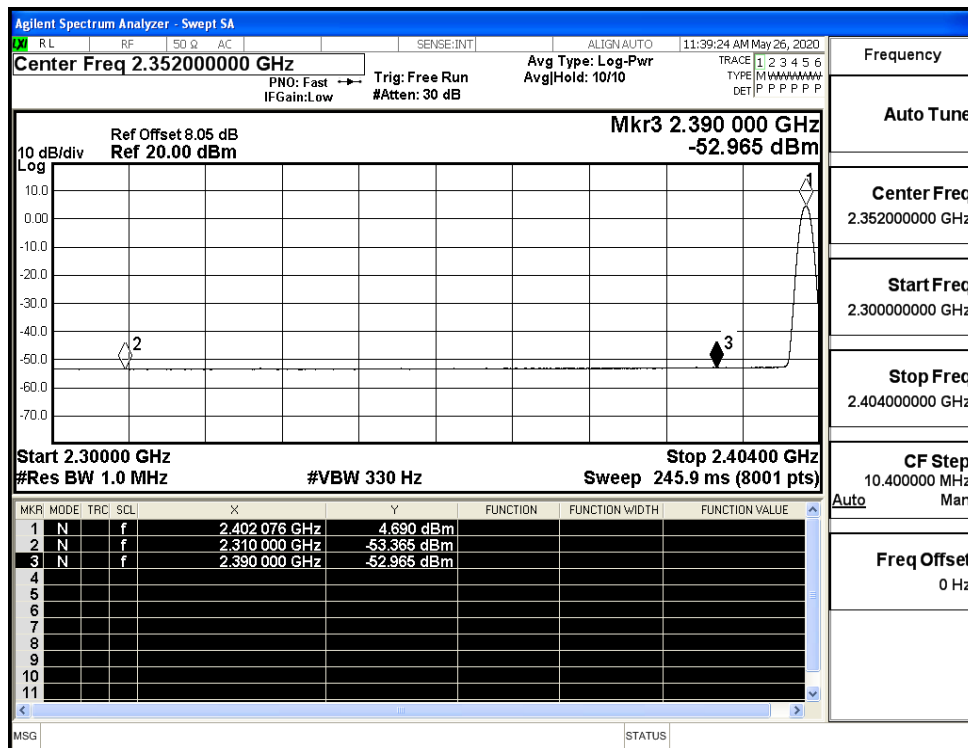
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-42.53	3.0	0	53.73	PEAK	74	PASS
	Off	2310.0	-53.37	3.0	0	42.89	AV	54	PASS
	Off	2390.0	-43.56	3.0	0	52.69	PEAK	74	PASS
	Off	2390.0	-52.97	3.0	0	43.29	AV	54	PASS
	Off	2483.5	-42.20	3.0	0	54.06	PEAK	74	PASS
	Off	2483.5	-52.44	3.0	0	43.82	AV	54	PASS
	Off	2500.0	-41.52	3.0	0	54.74	PEAK	74	PASS
	Off	2500.0	-52.35	3.0	0	43.91	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.48	3.0	0	52.78	PEAK	74	PASS
	Off	2310.0	-53.37	3.0	0	42.89	AV	54	PASS
	Off	2390.0	-43.37	3.0	0	52.89	PEAK	74	PASS
	Off	2390.0	-52.96	3.0	0	43.30	AV	54	PASS
	Off	2483.5	-42.62	3.0	0	53.64	PEAK	74	PASS
	Off	2483.5	-52.17	3.0	0	44.09	AV	54	PASS
	Off	2500.0	-41.49	3.0	0	54.77	PEAK	74	PASS
	Off	2500.0	-52.36	3.0	0	43.90	AV	54	PASS
8DPSK	Off	2310.0	-43.89	3.0	0	52.37	PEAK	74	PASS
	Off	2310.0	-53.29	3.0	0	42.96	AV	54	PASS
	Off	2390.0	-43.16	3.0	0	53.10	PEAK	74	PASS
	Off	2390.0	-52.99	3.0	0	43.27	AV	54	PASS
	Off	2483.5	-38.90	3.0	0	57.35	PEAK	74	PASS
	Off	2483.5	-52.25	3.0	0	44.01	AV	54	PASS
	Off	2500.0	-42.85	3.0	0	53.41	PEAK	74	PASS
	Off	2500.0	-52.33	3.0	0	43.93	AV	54	PASS

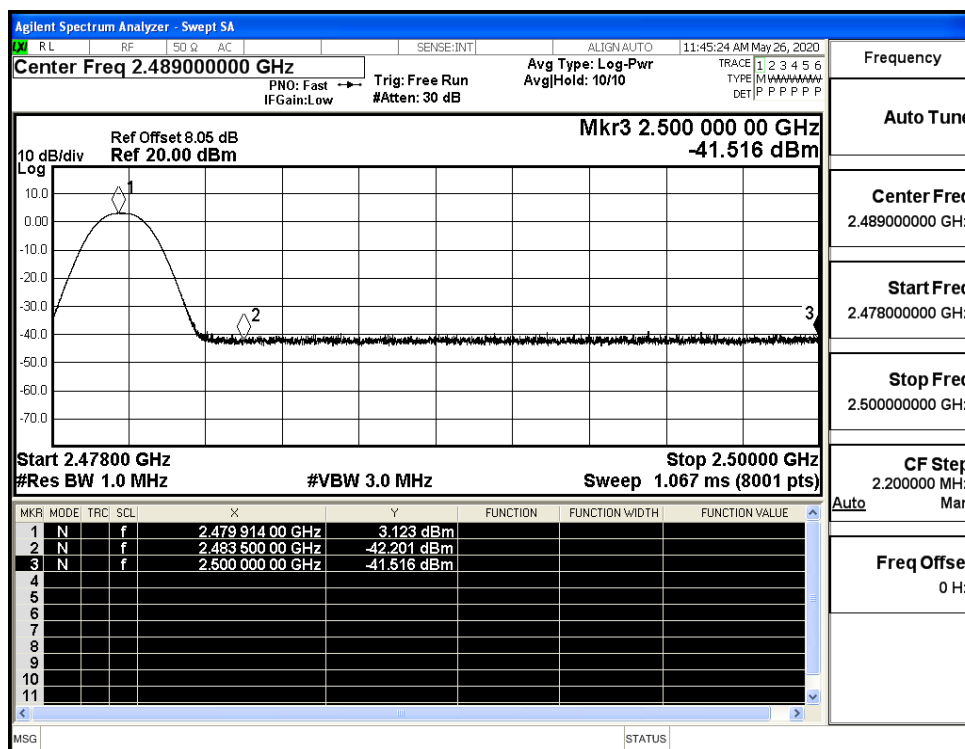
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



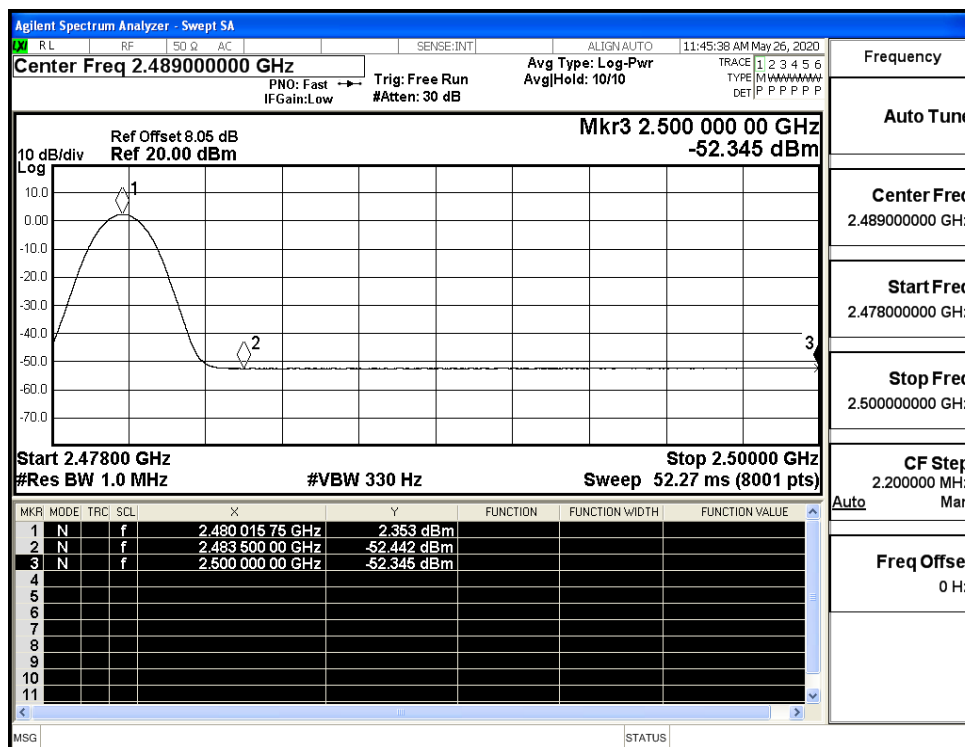
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

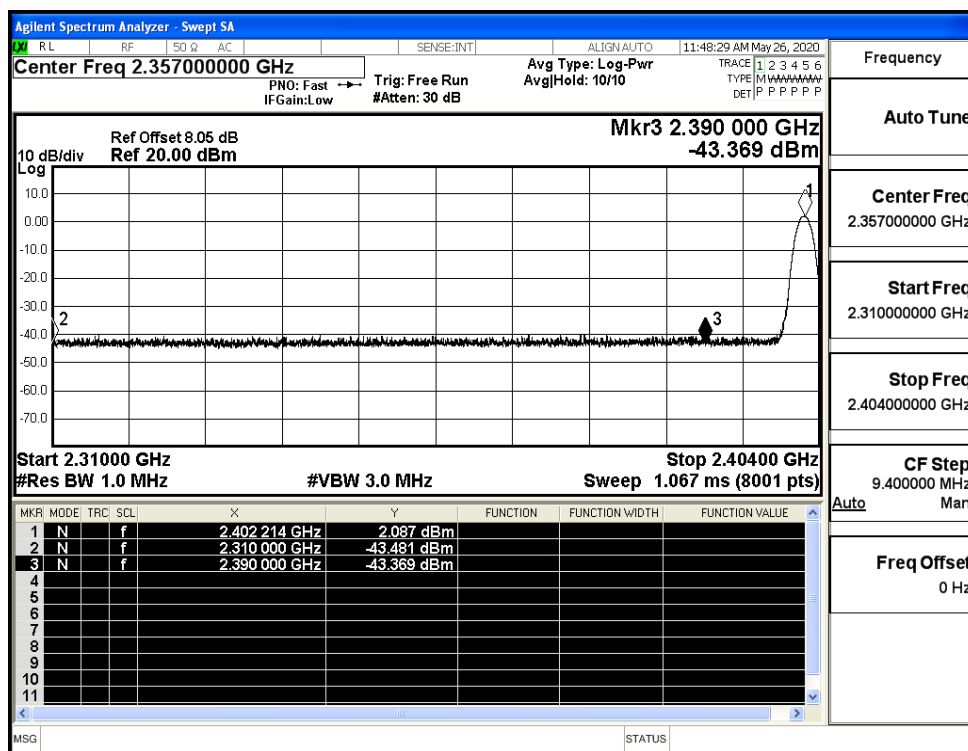
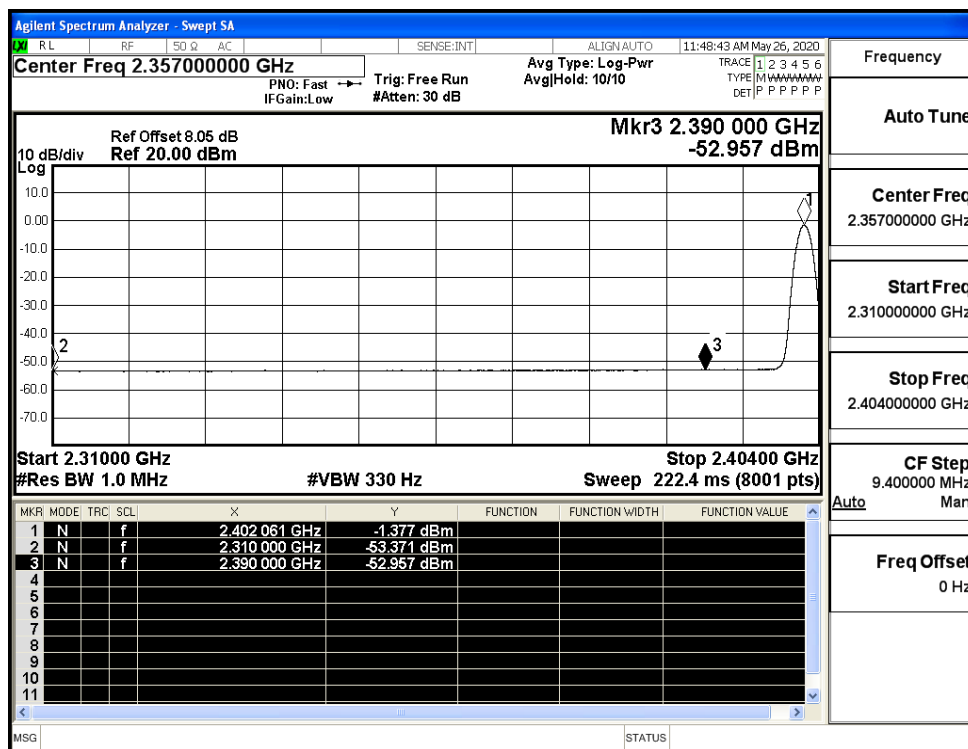


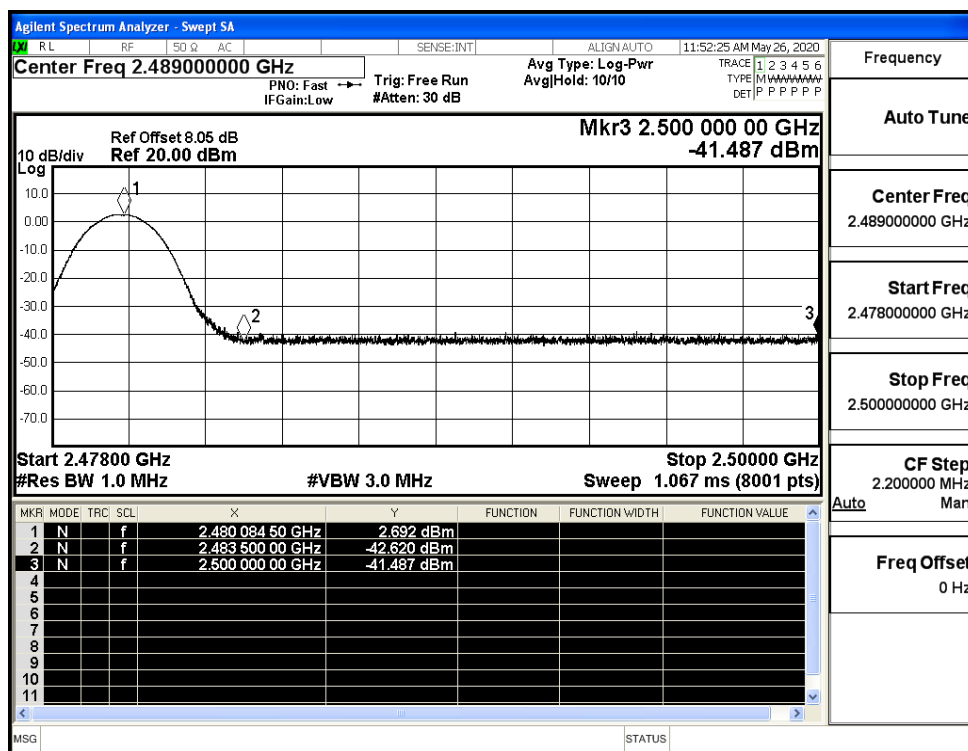
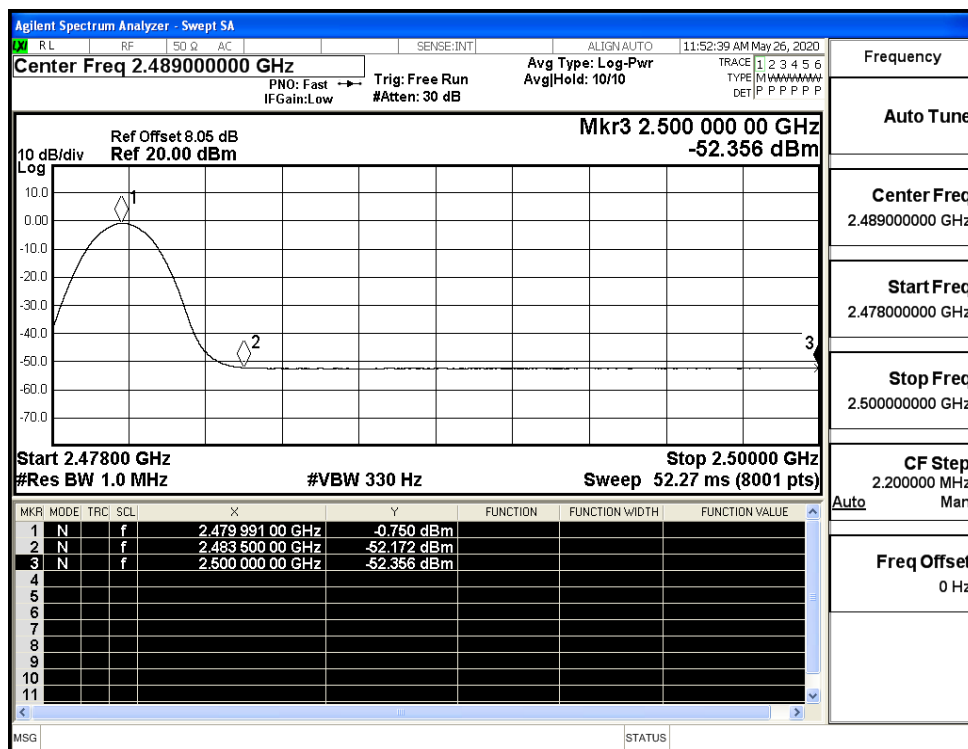
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



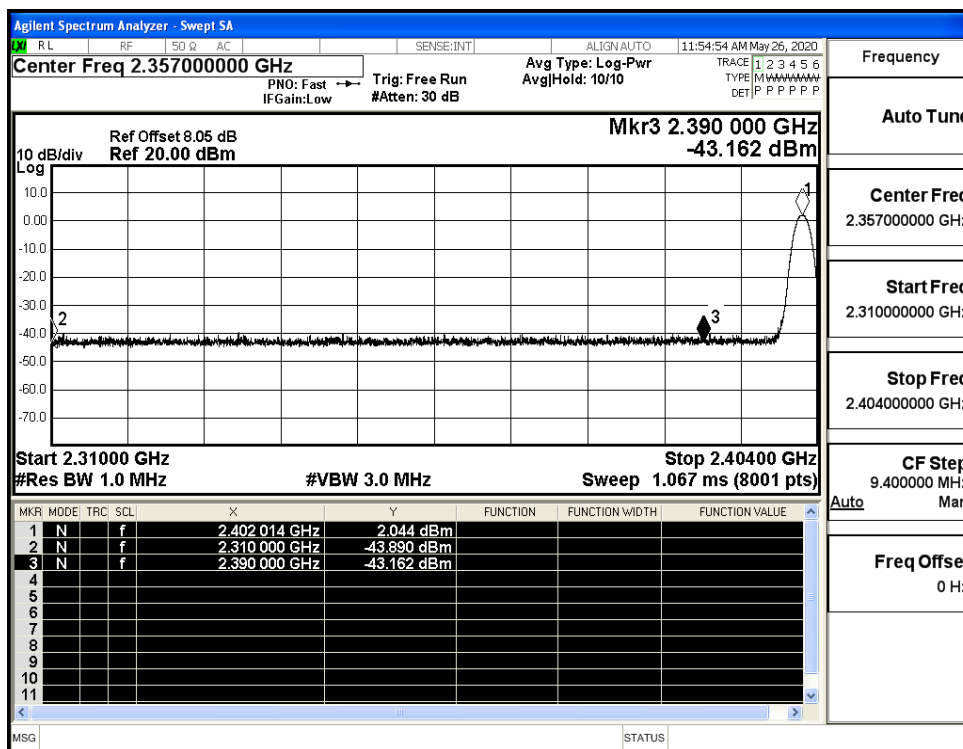
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



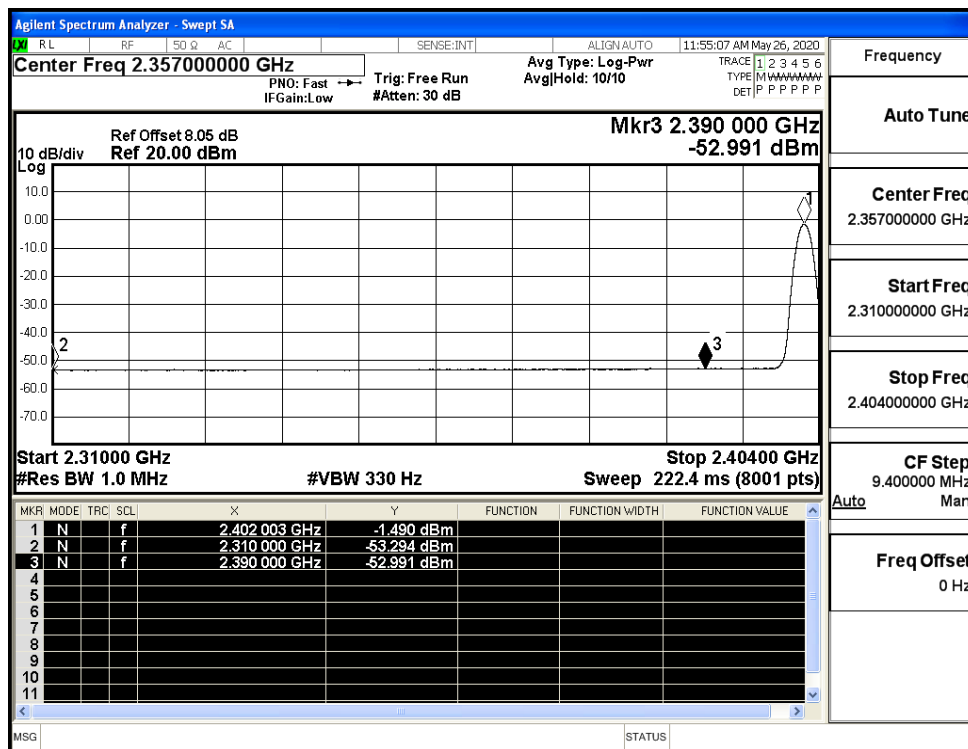
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

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)

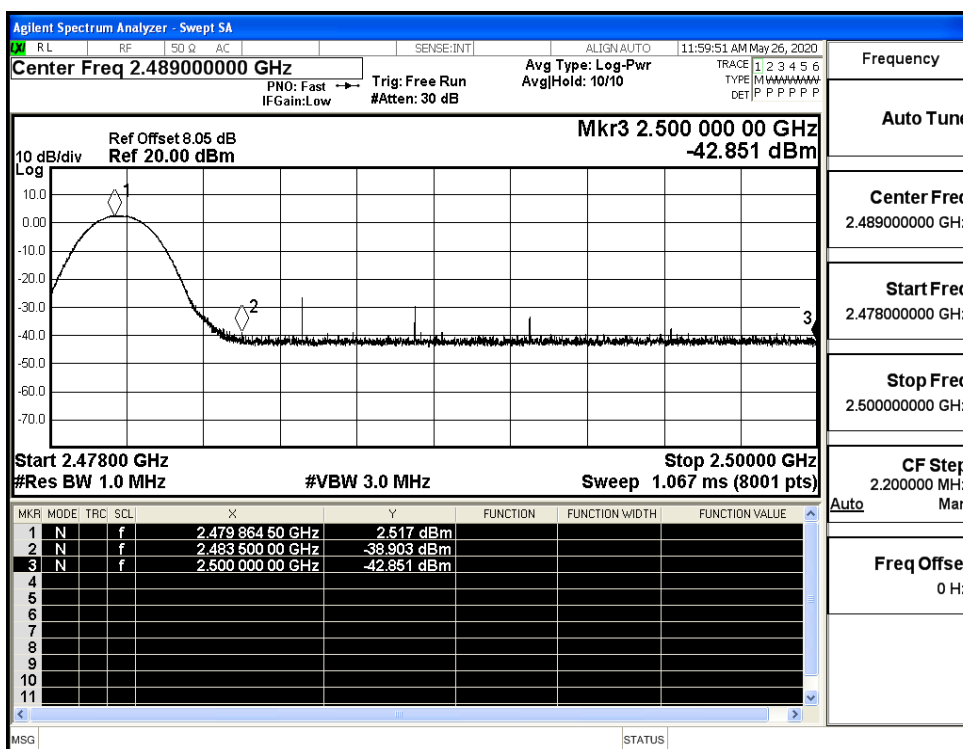
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

