

Appendix A

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

Product Name: In-lane Exit Kiosk

Trade Mark: N/A

Test Model: REEF-US-LKS8343B

Environmental Conditions

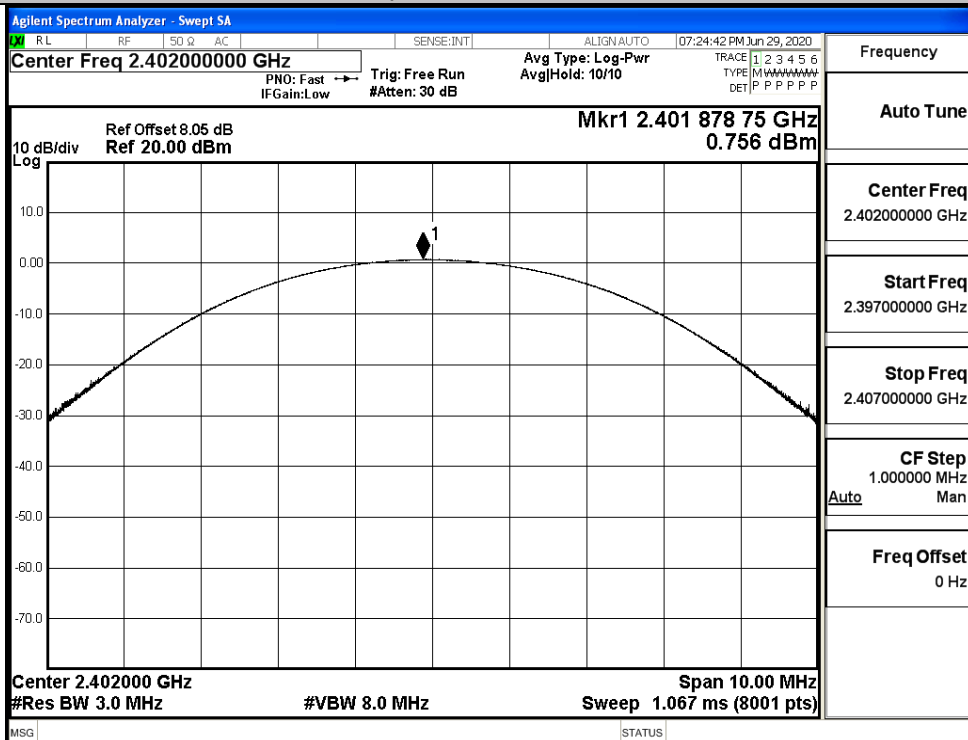
Temperature:	23.8° C
Relative Humidity:	53.7%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Li
Supervised by:	Tom.Liu

A.1 Maximum Conducted Peak Output Power

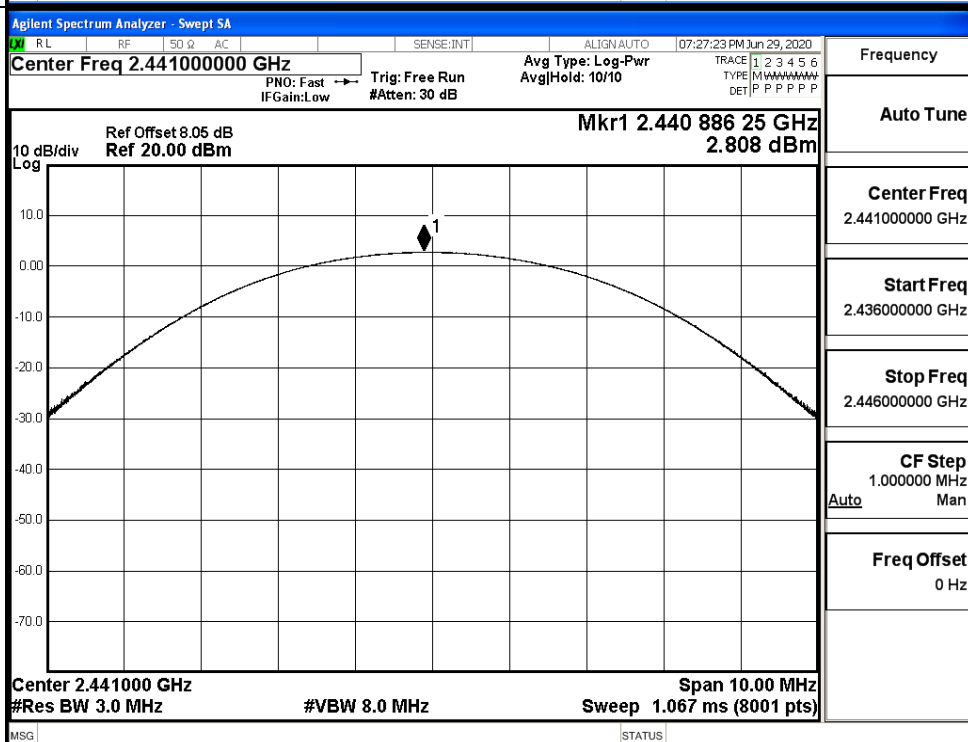
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.756	21	PASS
	MCH	2.808	21	PASS
	HCH	0.628	21	PASS
$\pi/4$ DQPSK	LCH	0.115	21	PASS
	MCH	2.155	21	PASS
	HCH	1.079	21	PASS
8DPSK	LCH	1.062	21	PASS
	MCH	2.152	21	PASS
	HCH	1.069	21	PASS

Test Graphs

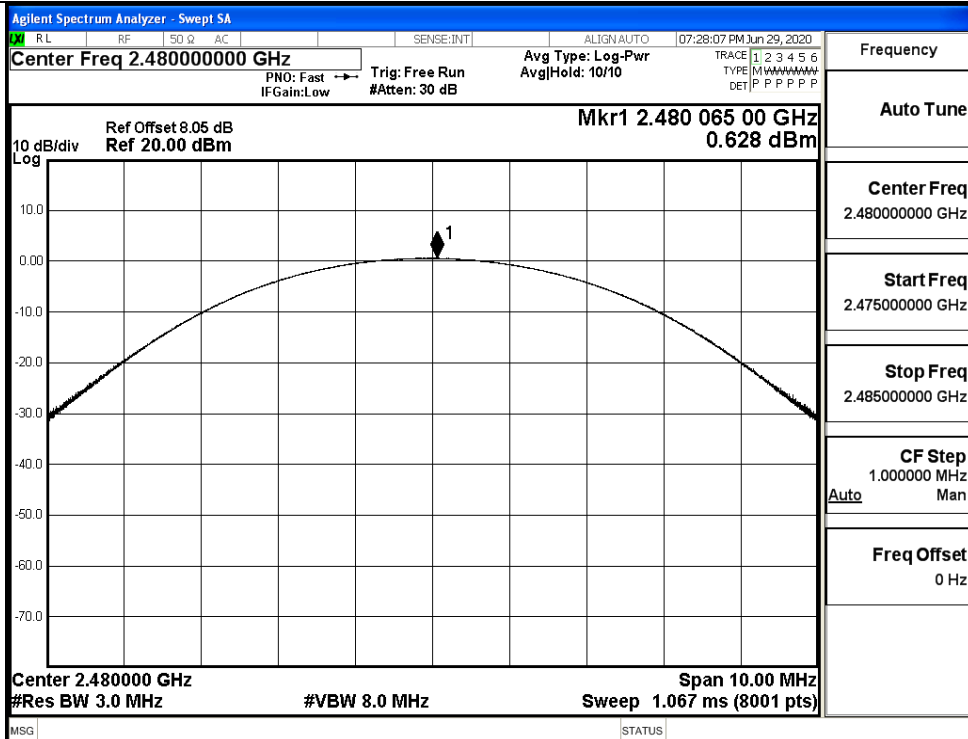
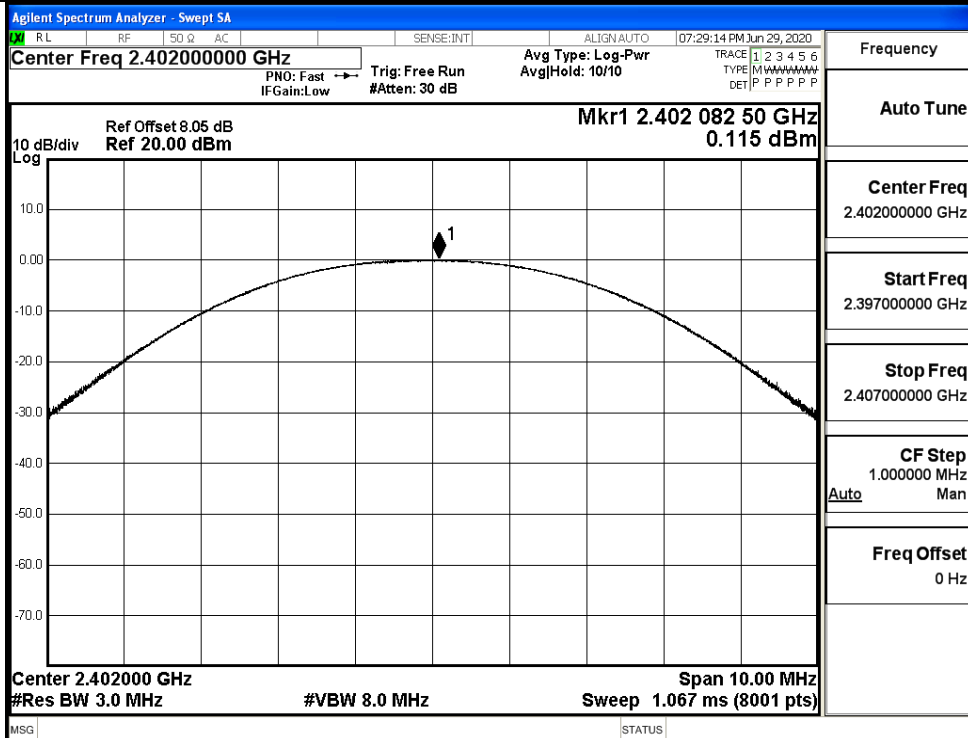
GFSK/LCH

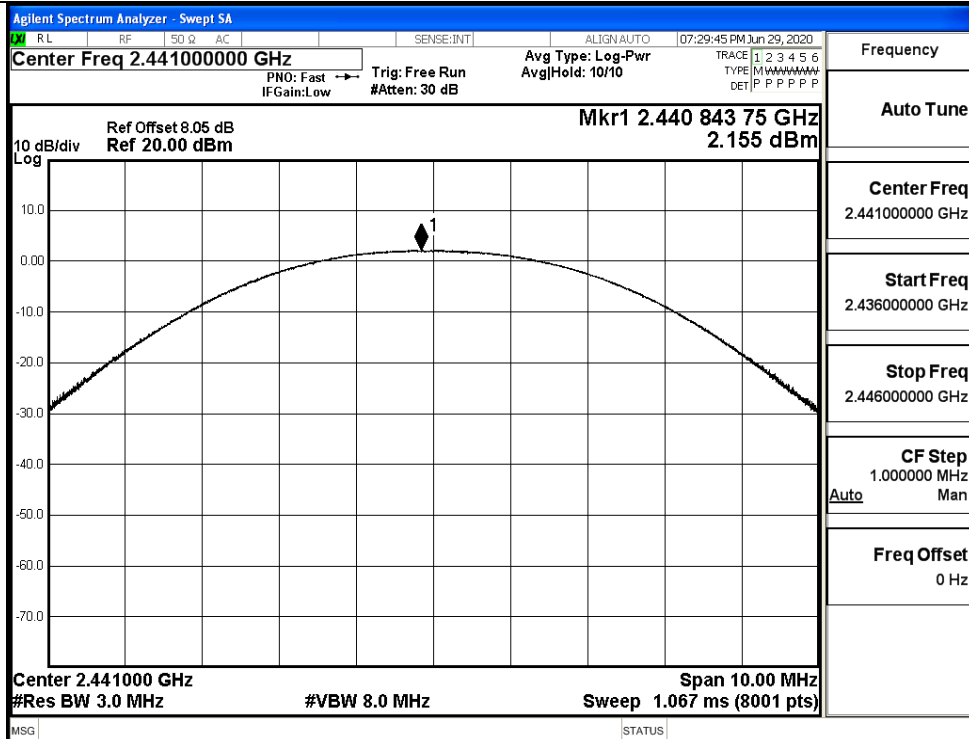
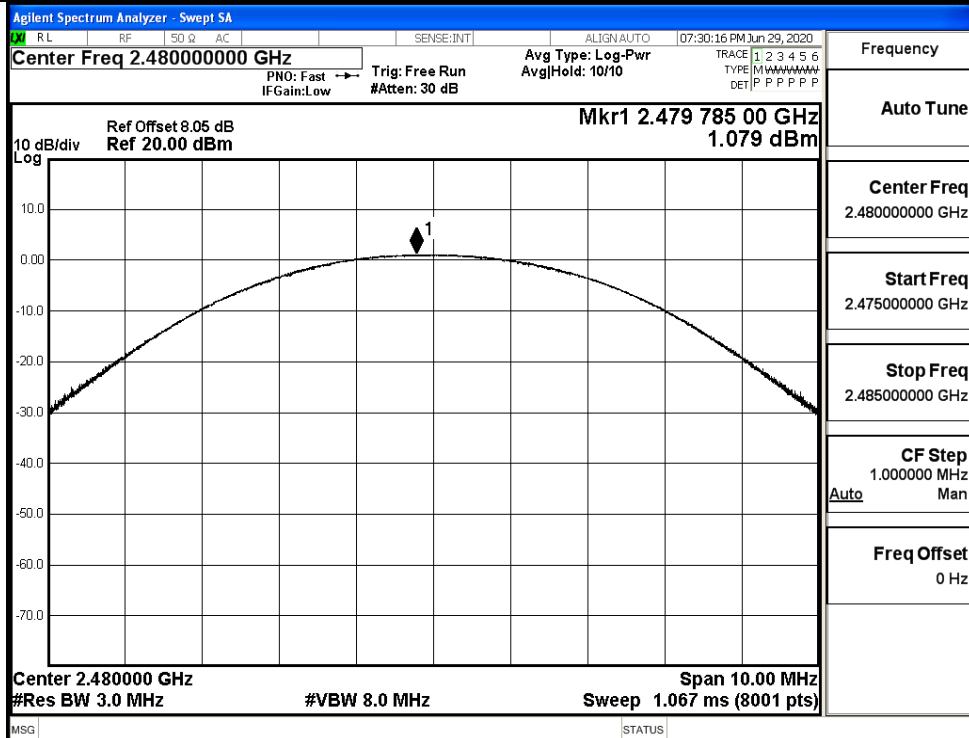


GFSK/MCH

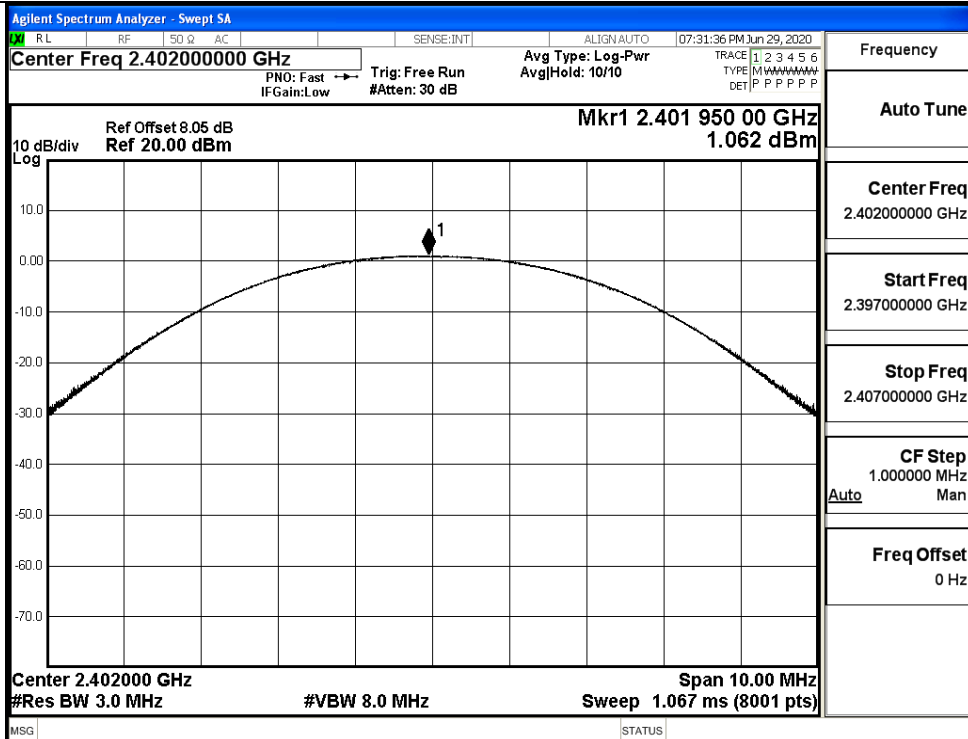


GFSK/HCH

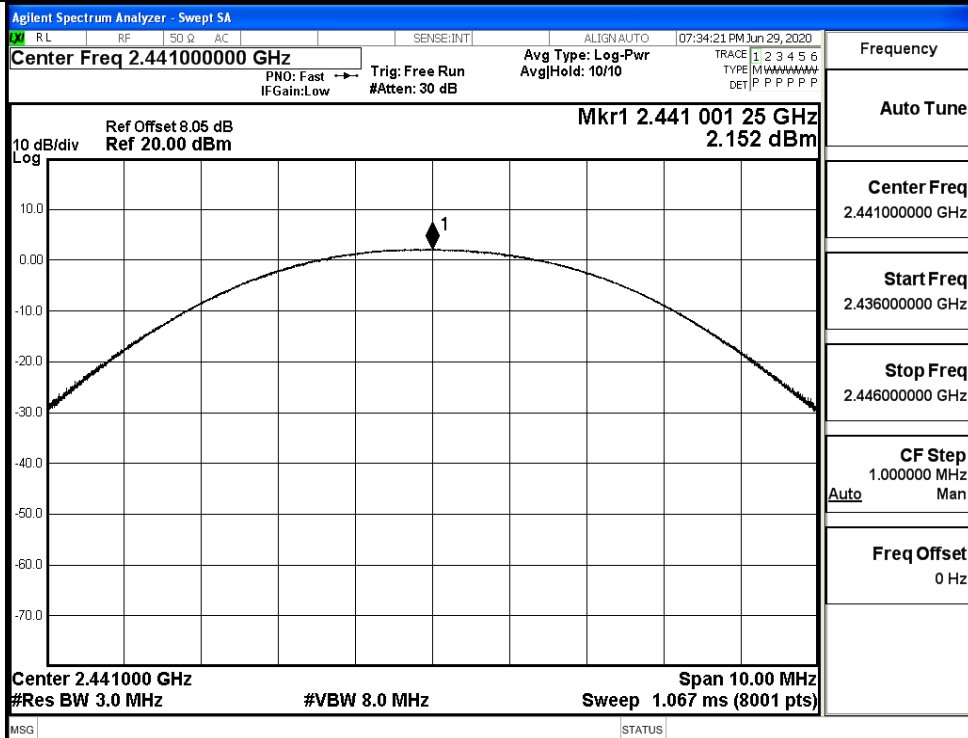
 $\pi/4$ DQPSK/LCH

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

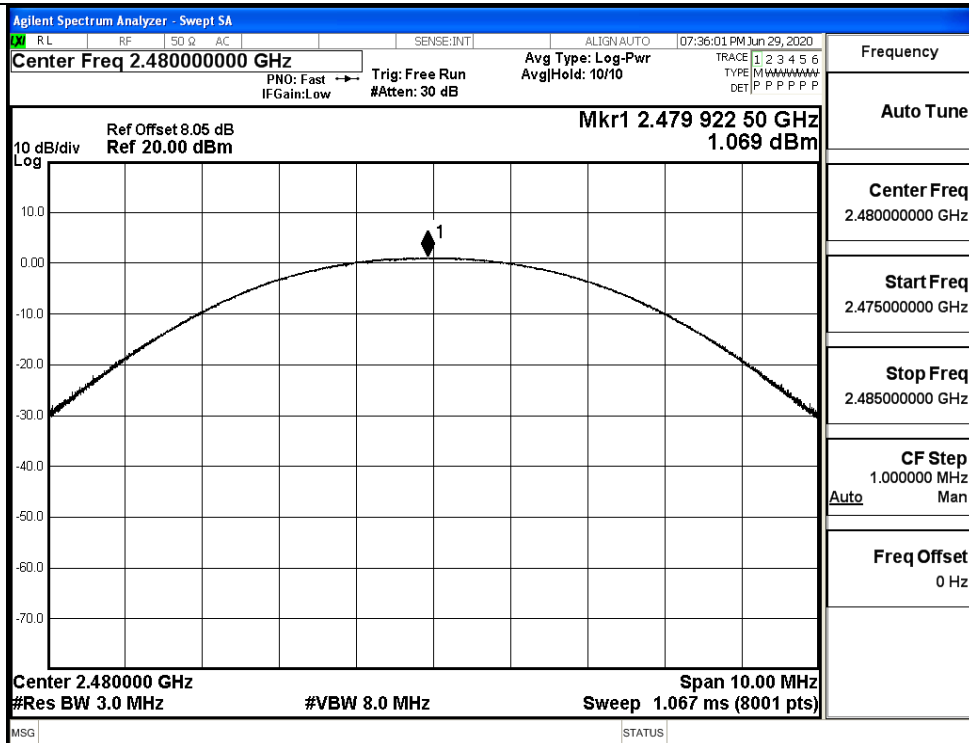
8DPSK/LCH



8DPSK/MCH



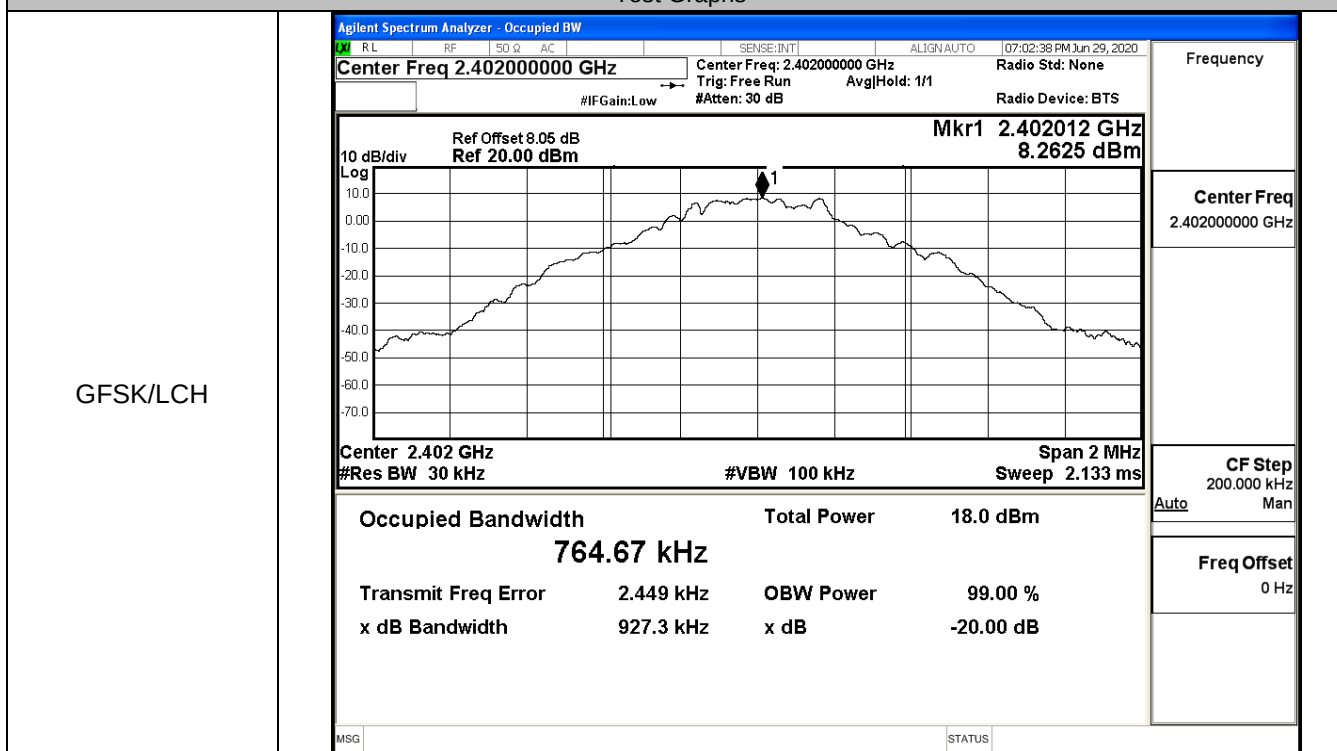
8DPSK/HCH



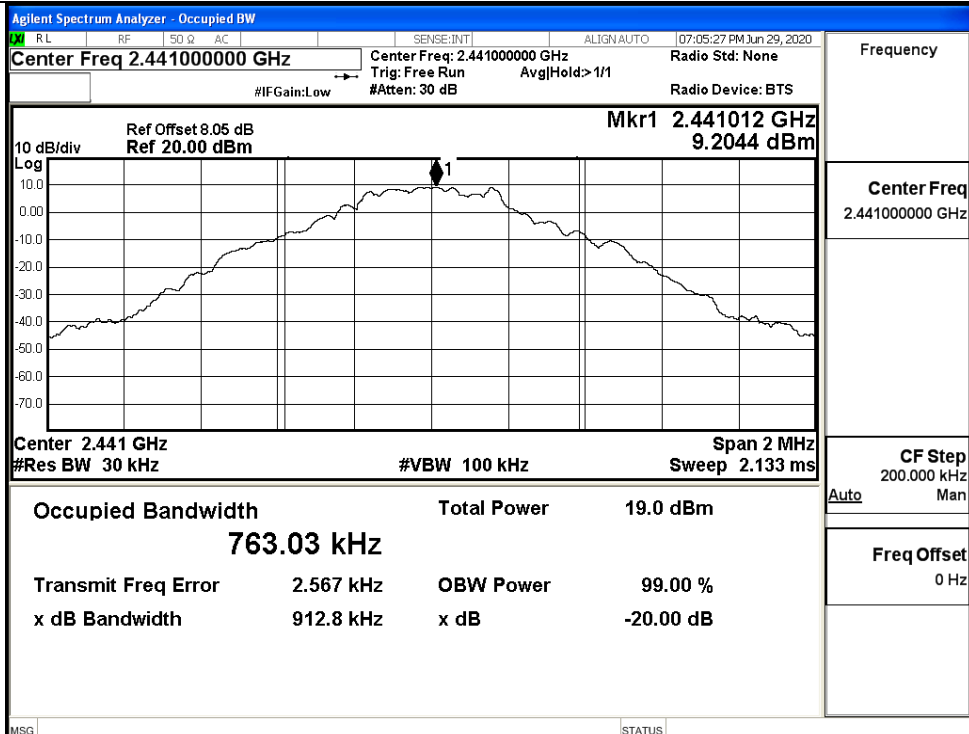
A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9273	Not Specified	PASS
	MCH	0.9128	Not Specified	PASS
	HCH	0.9331	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.276	Not Specified	PASS
	MCH	1.280	Not Specified	PASS
	HCH	1.276	Not Specified	PASS
8DPSK	LCH	1.279	Not Specified	PASS
	MCH	1.278	Not Specified	PASS
	HCH	1.280	Not Specified	PASS

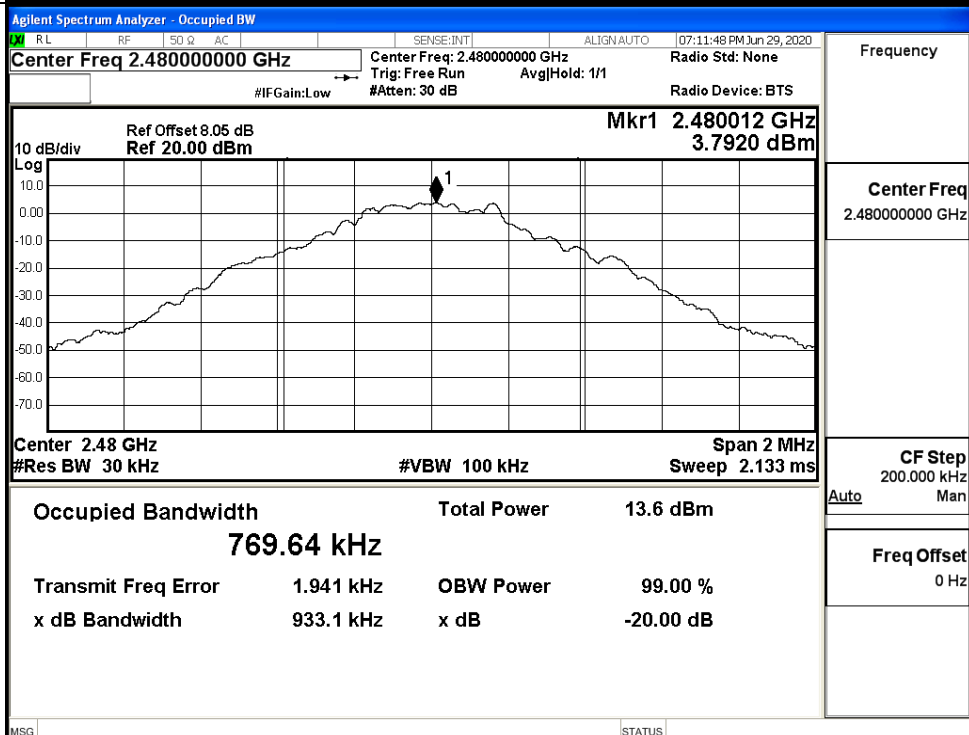
Test Graphs

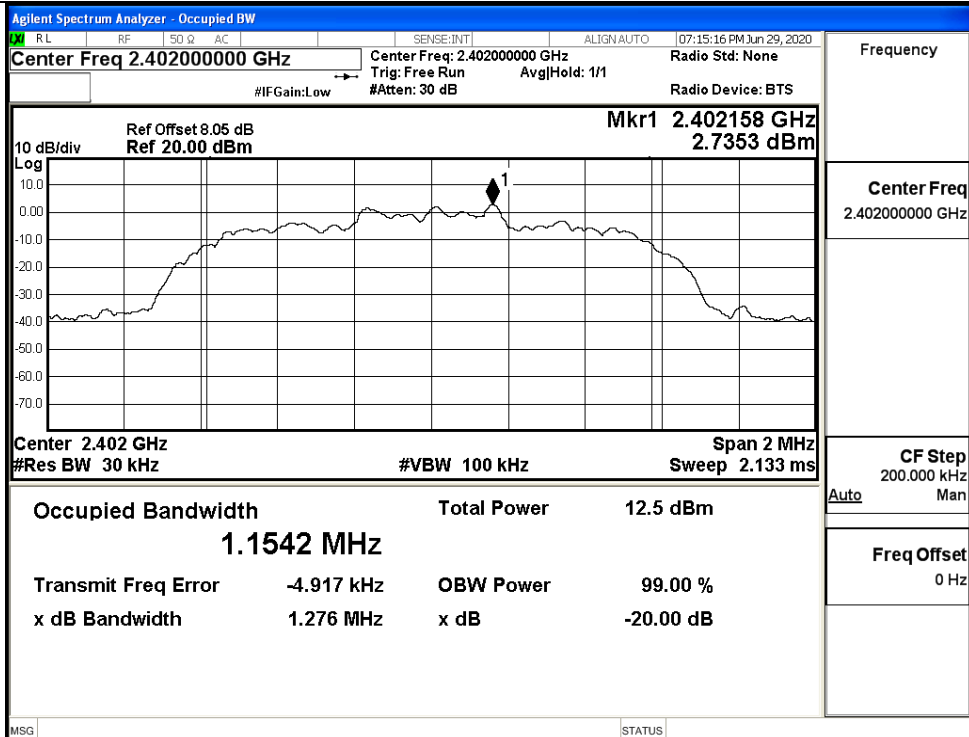
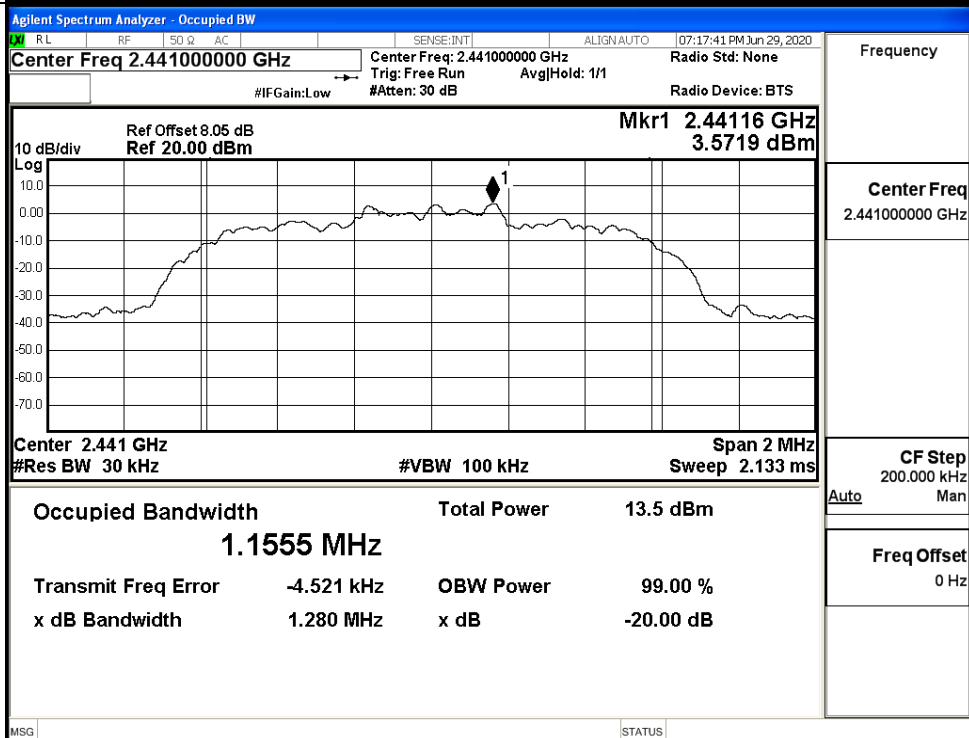


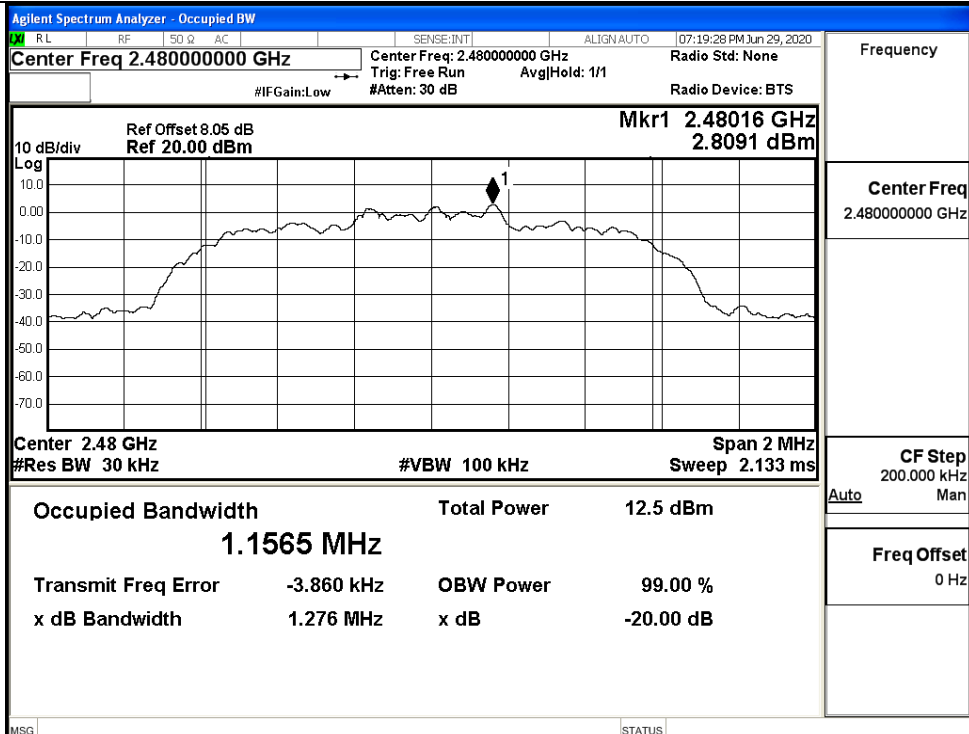
GFSK/MCH



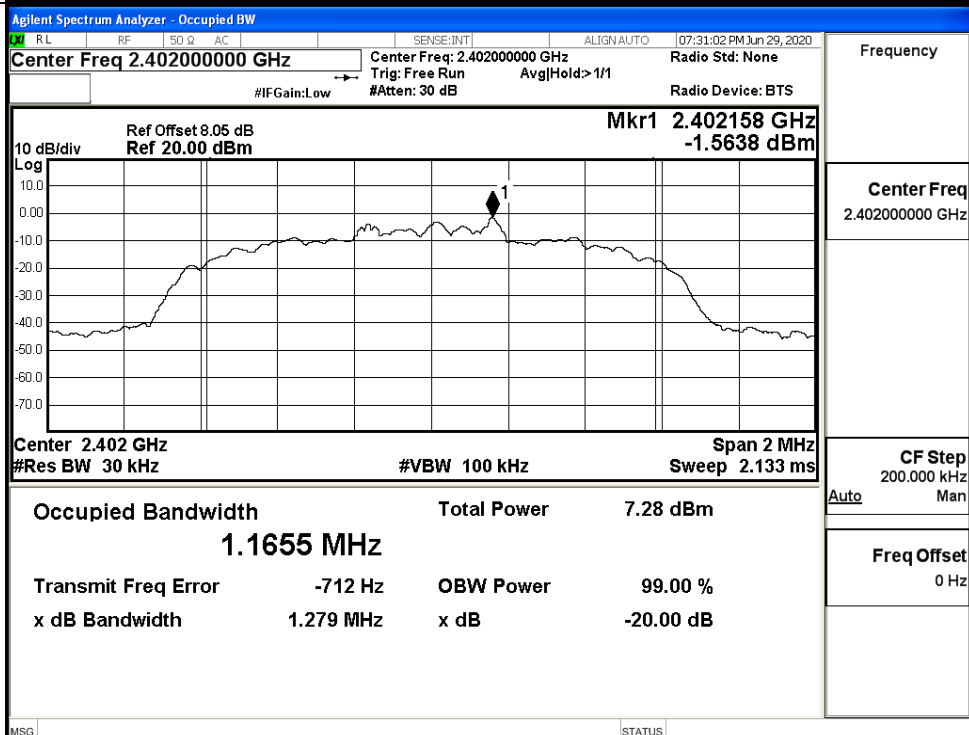
GFSK/HCH



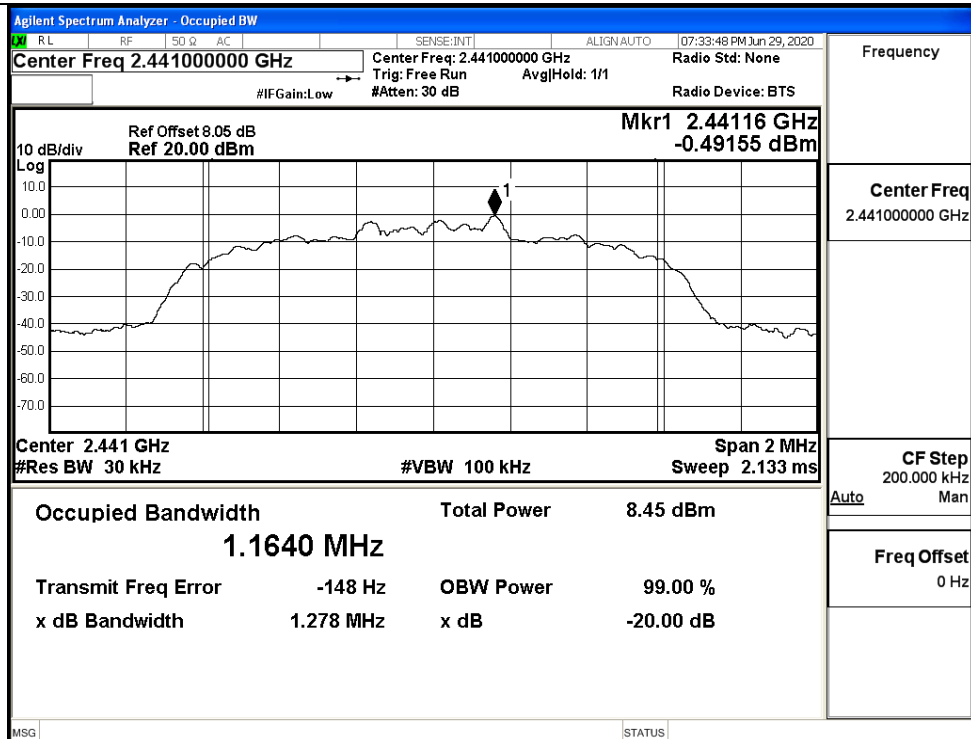
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

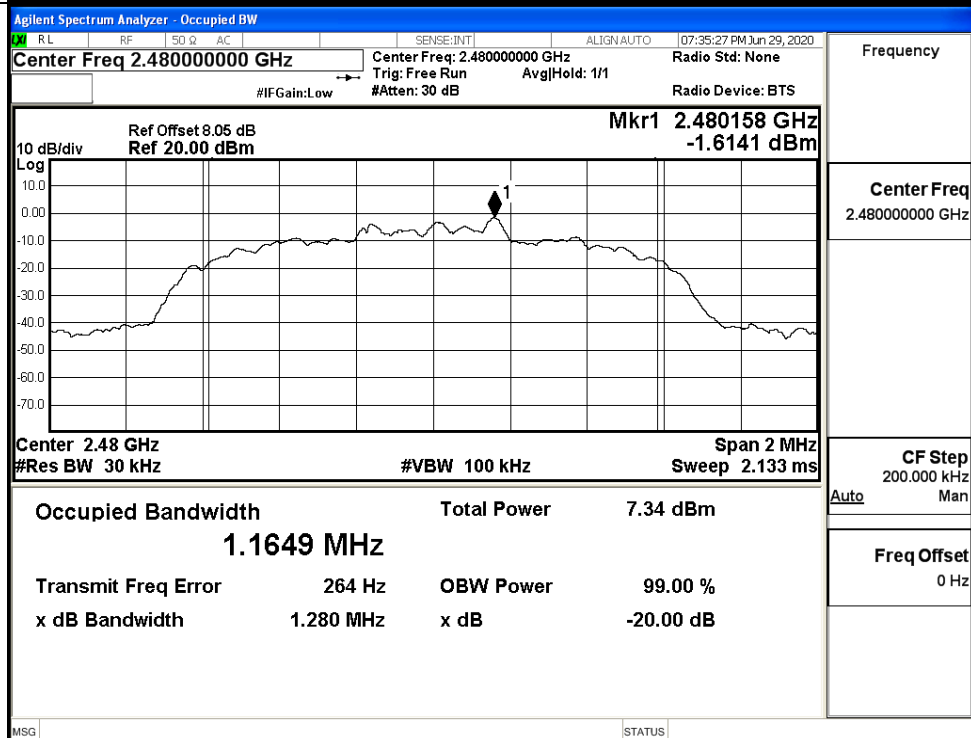
8DPSK/LCH



8DPSK/MCH



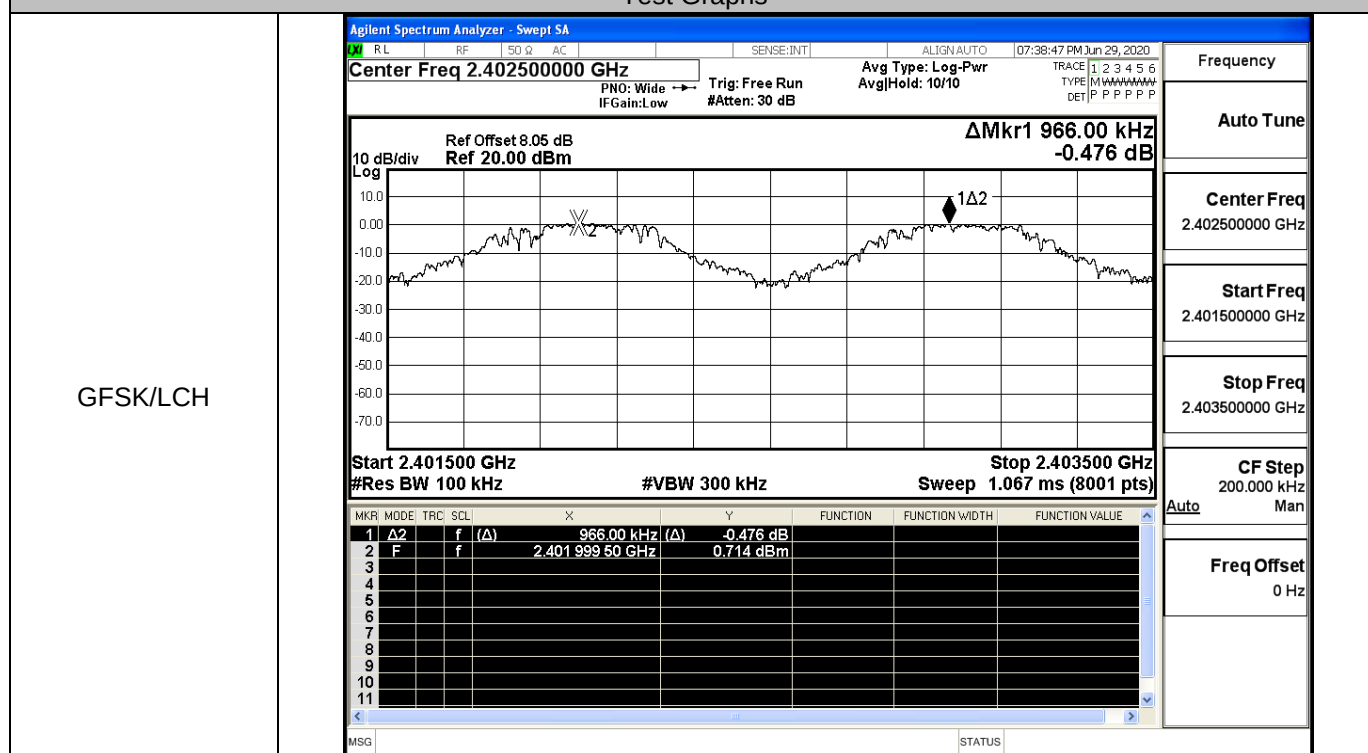
8DPSK/HCH



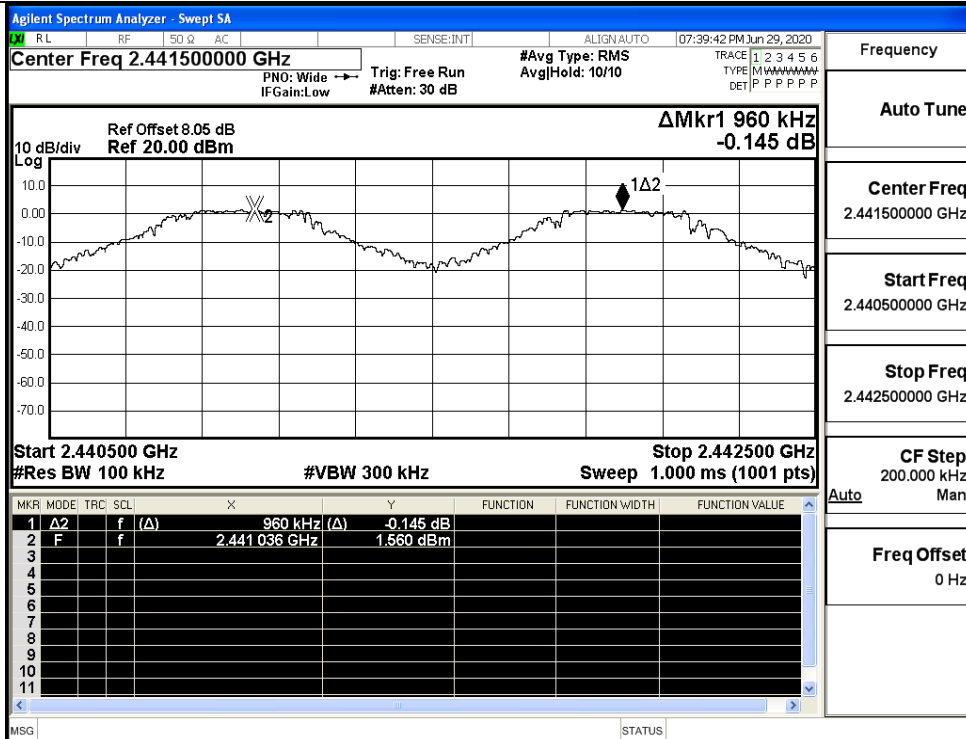
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.966	0.618	PASS
	MCH	0.960	0.609	PASS
	HCH	1.086	0.622	PASS
$\pi/4$ DQPSK	LCH	1.060	0.851	PASS
	MCH	0.880	0.853	PASS
	HCH	1.082	0.851	PASS
8DPSK	LCH	0.990	0.853	PASS
	MCH	1.018	0.852	PASS
	HCH	0.986	0.853	PASS

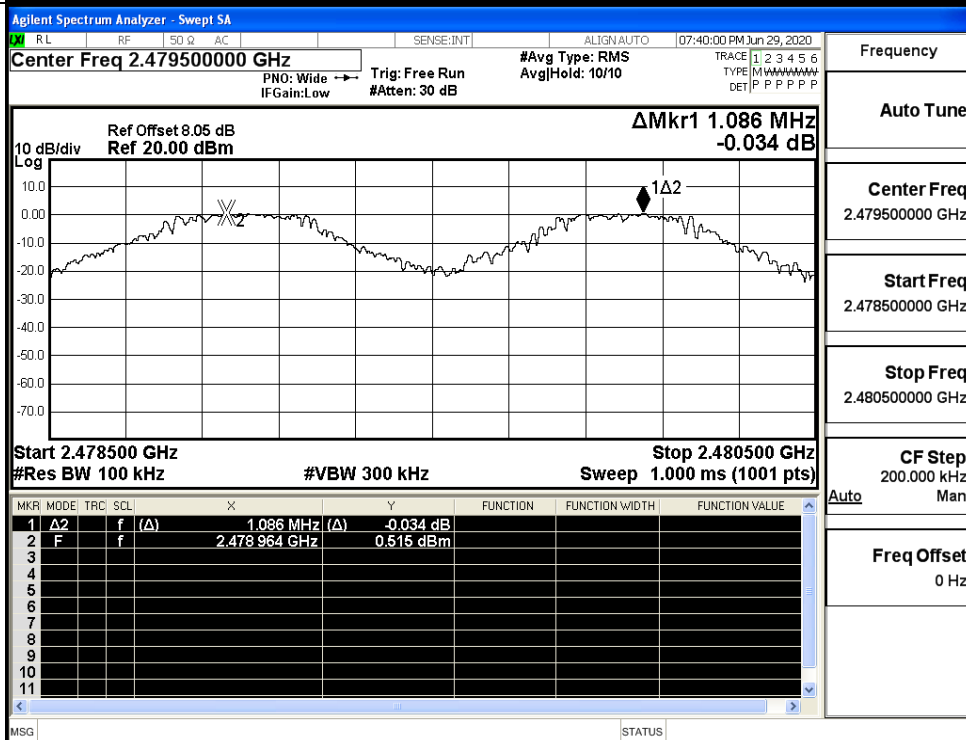
Test Graphs

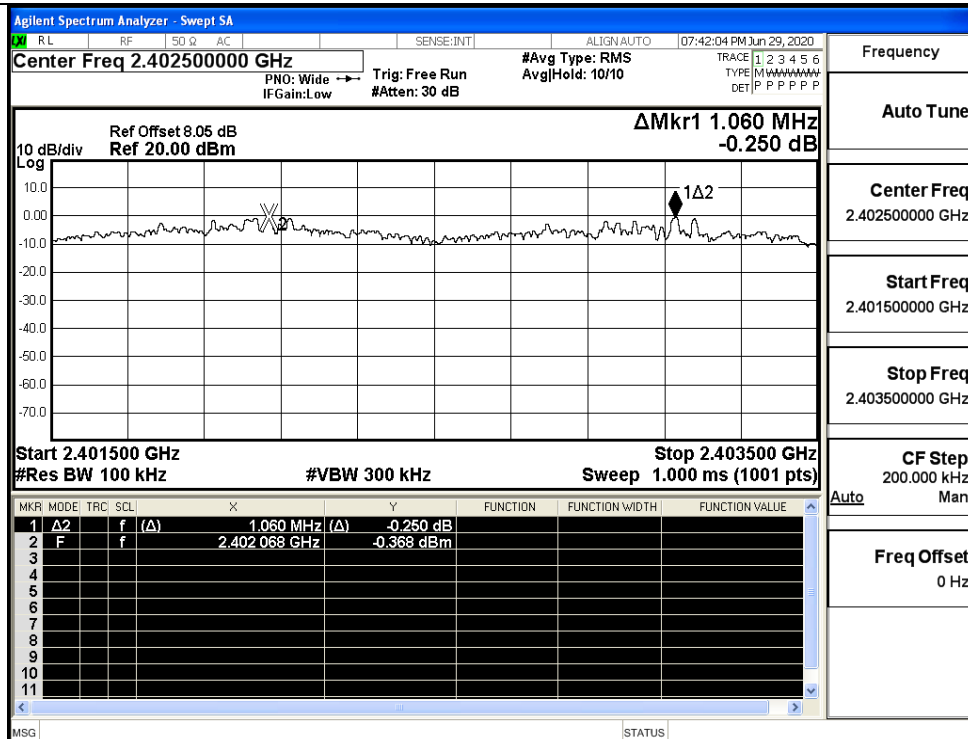
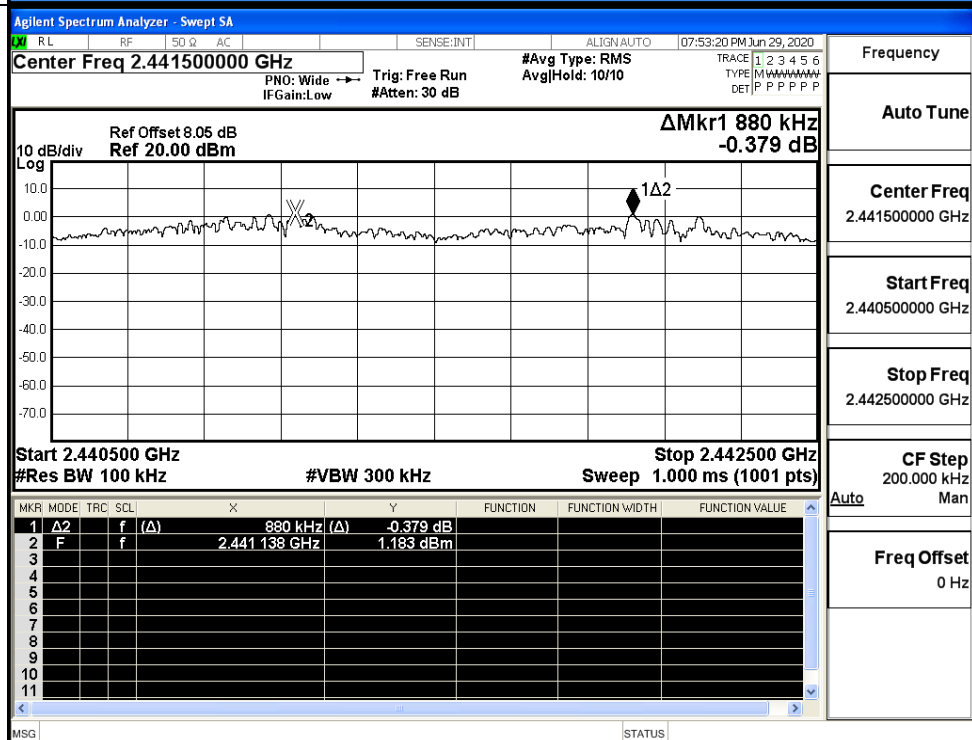


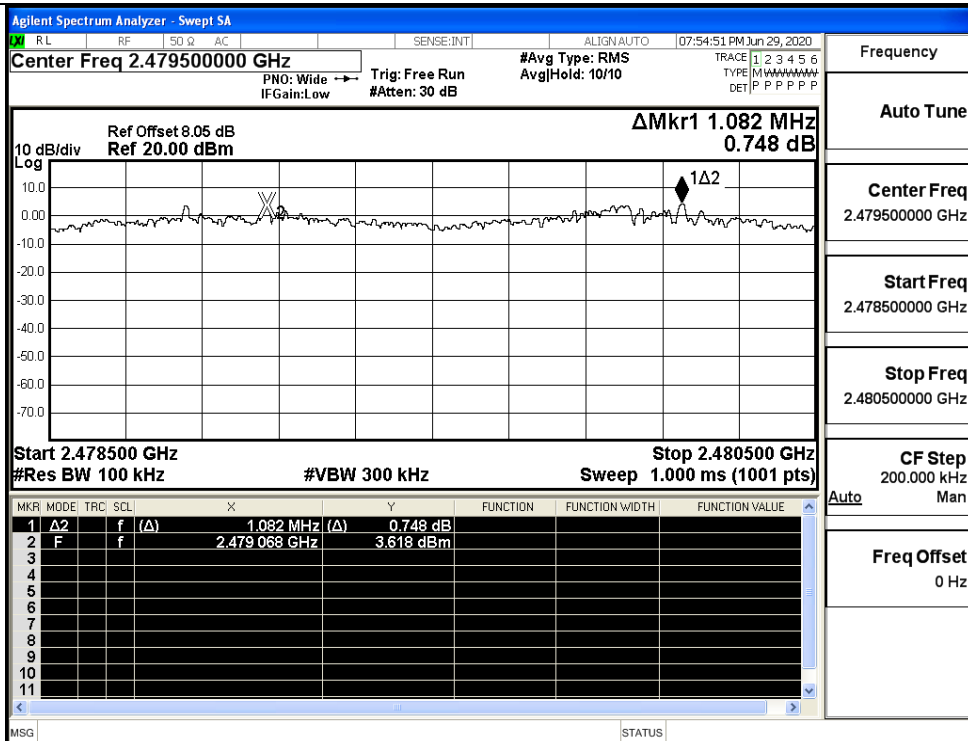
GFSK/MCH



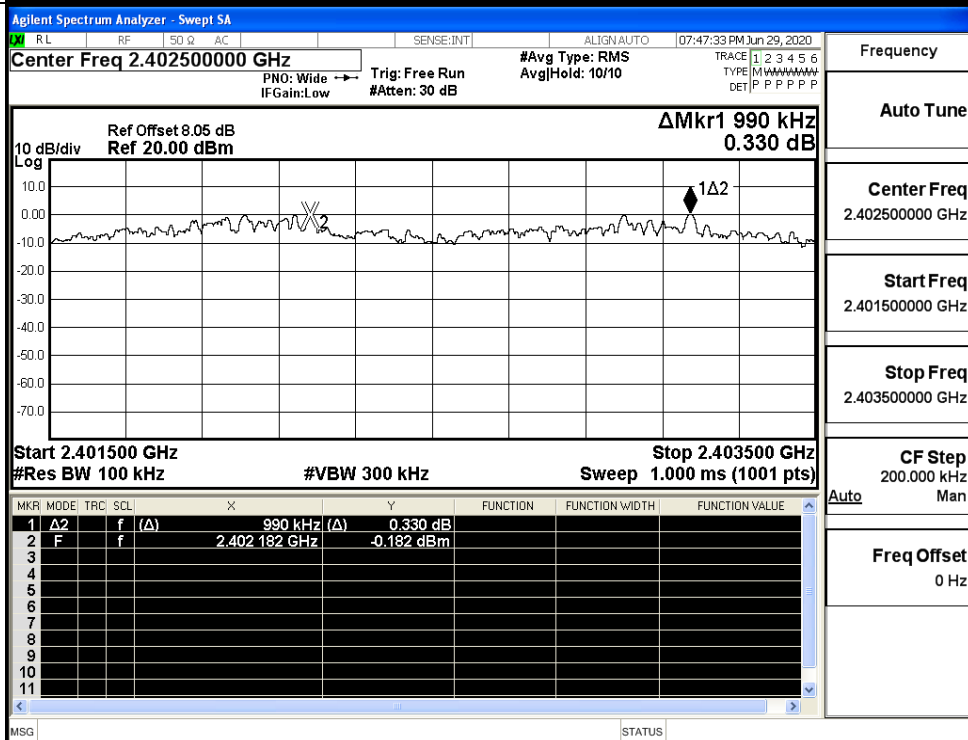
GFSK/HCH



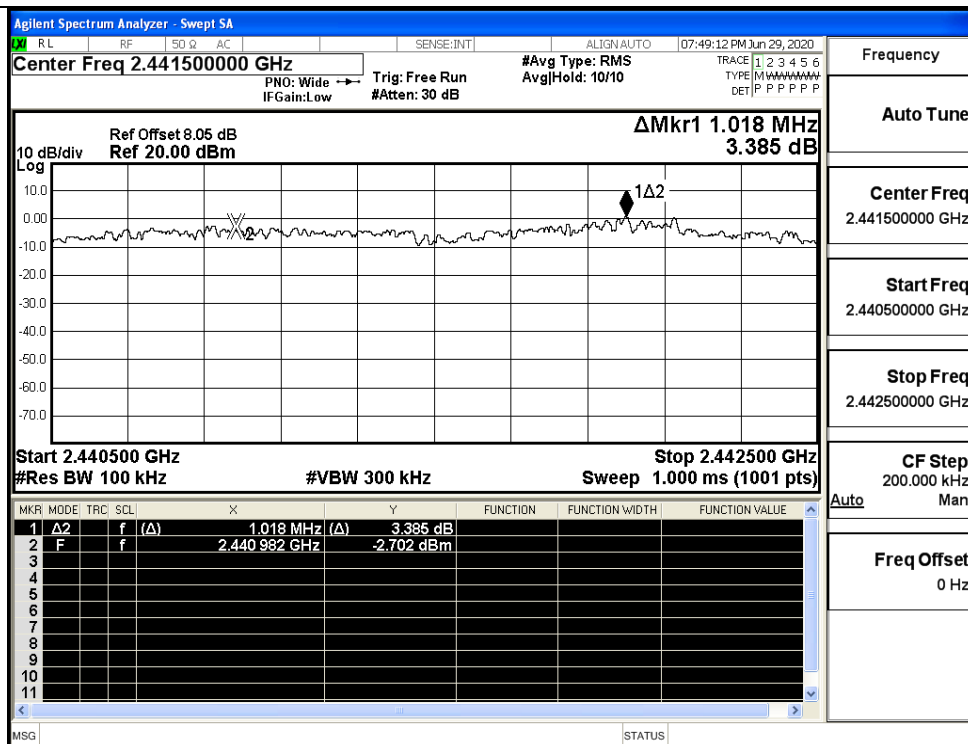
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

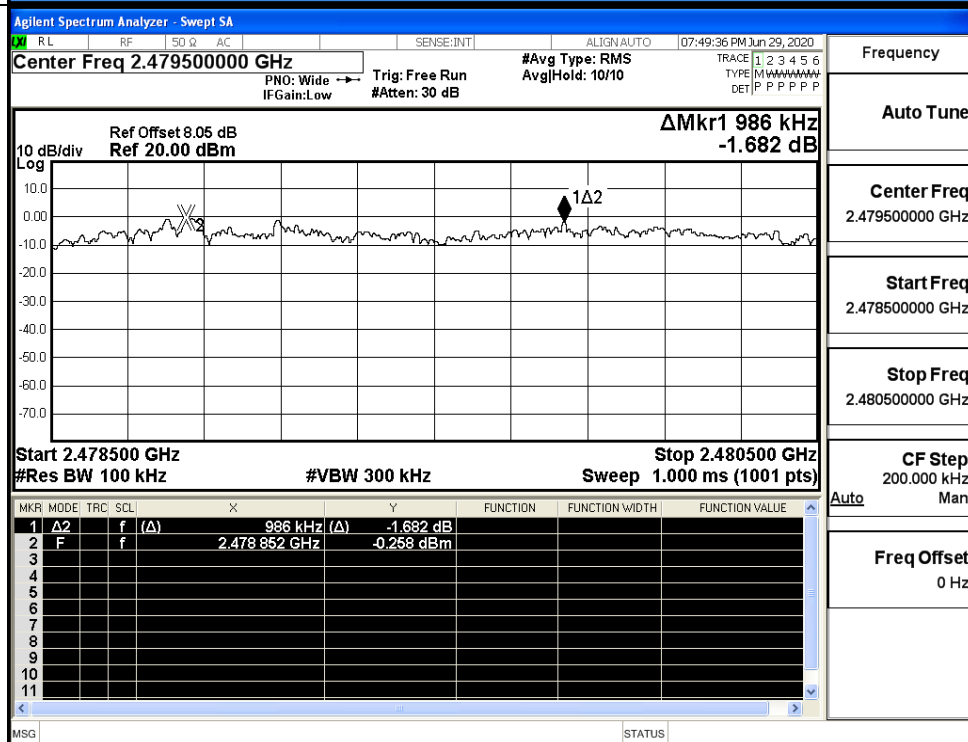
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

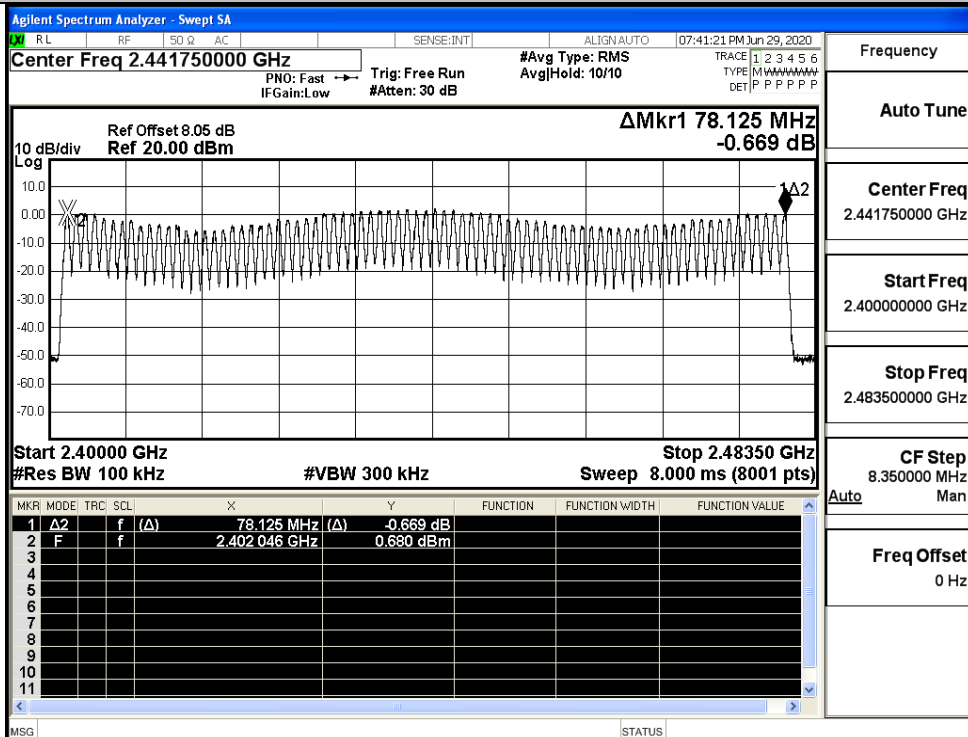


A.4 Hopping Channel Number

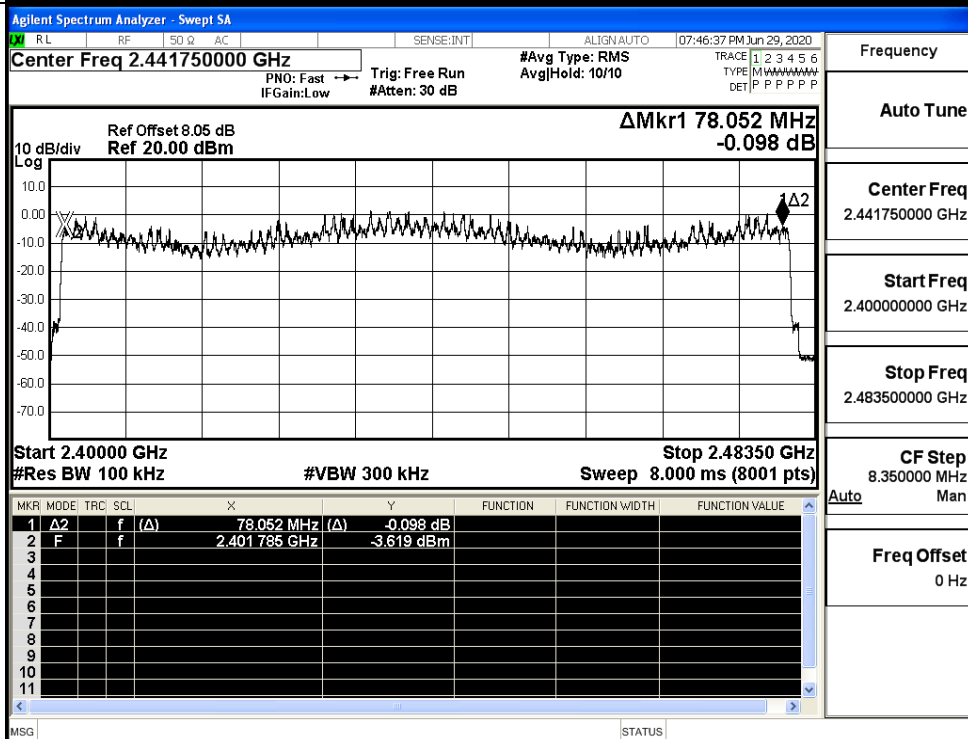
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

Test Graphs

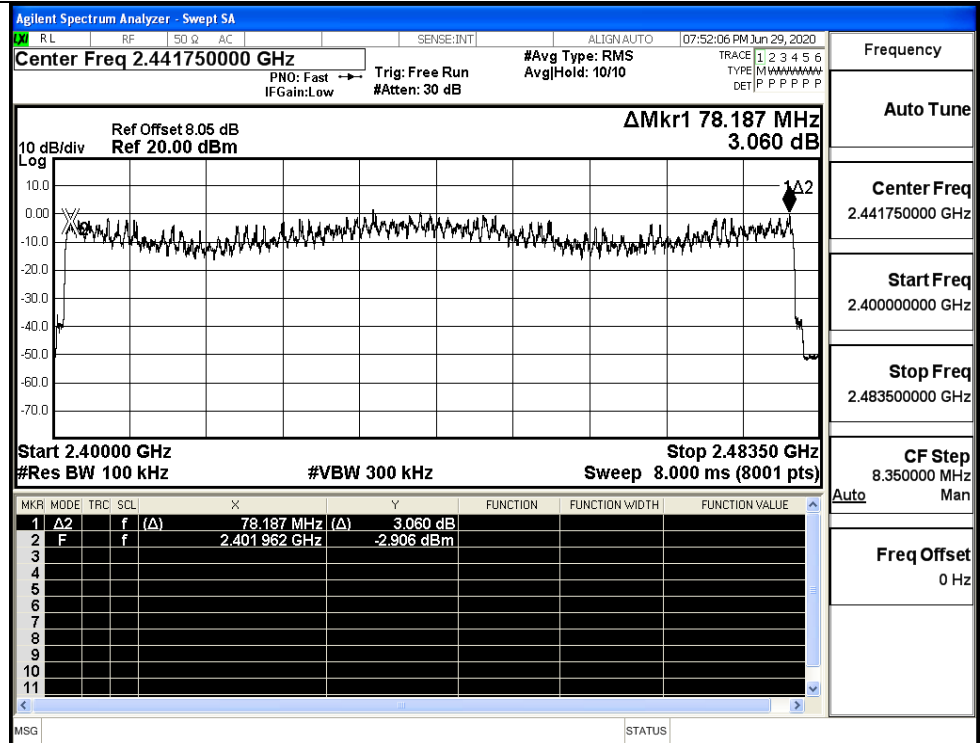
GFSK/Hop



π/4DQPSK/Hop



8DPSK/Hop

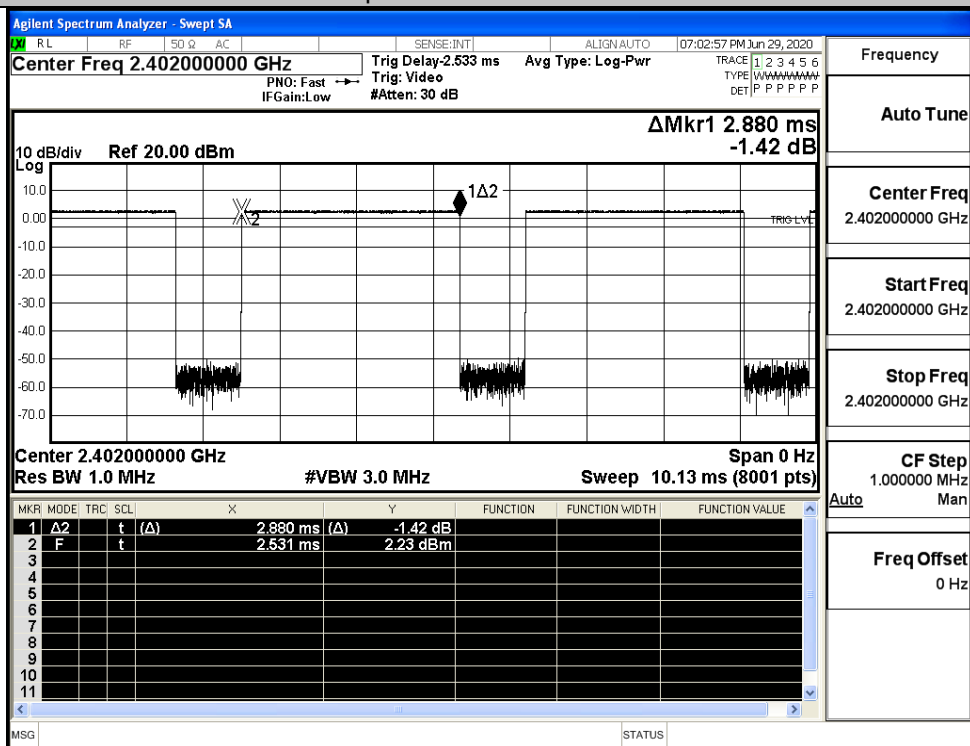


A.5 Dwell Time

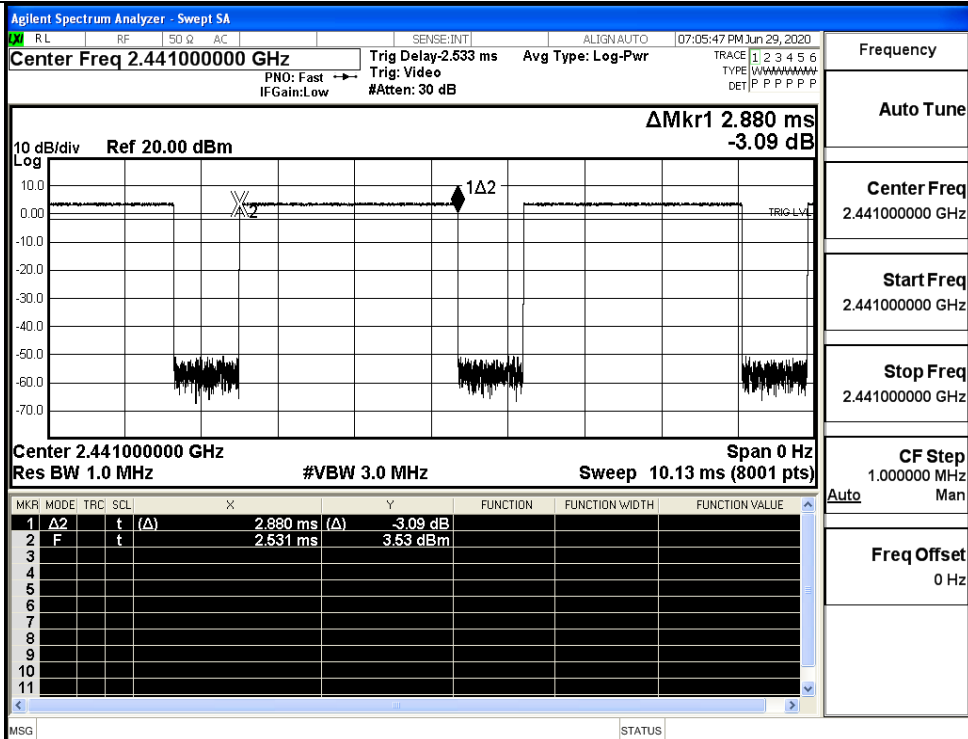
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88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

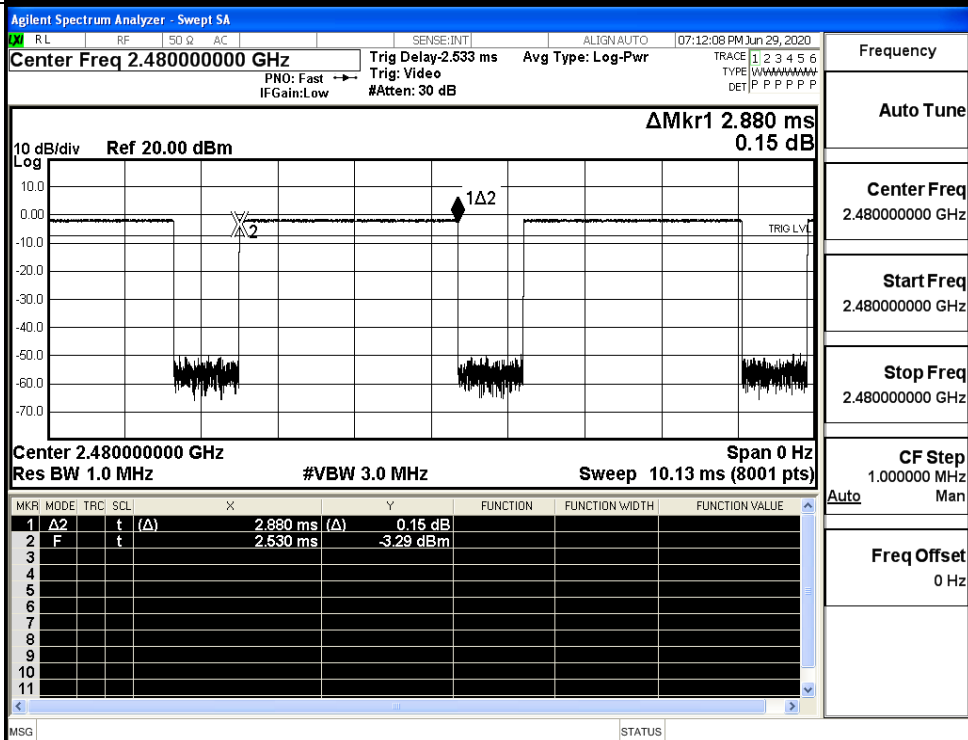
GFSK_DH5/LCH



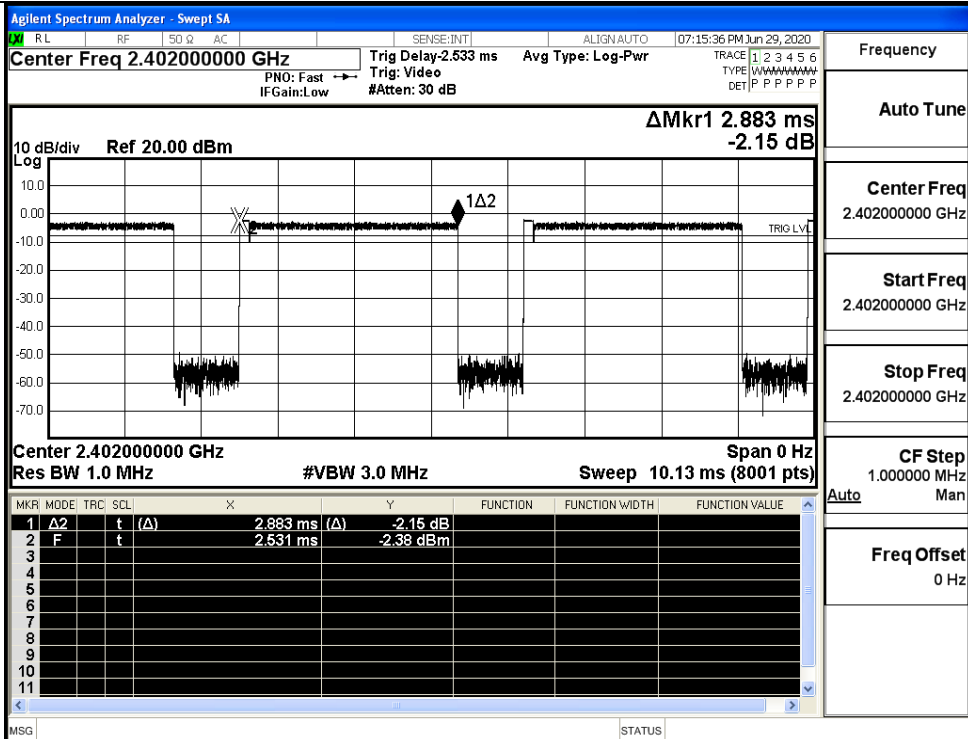
GFSK_DH5/MCH



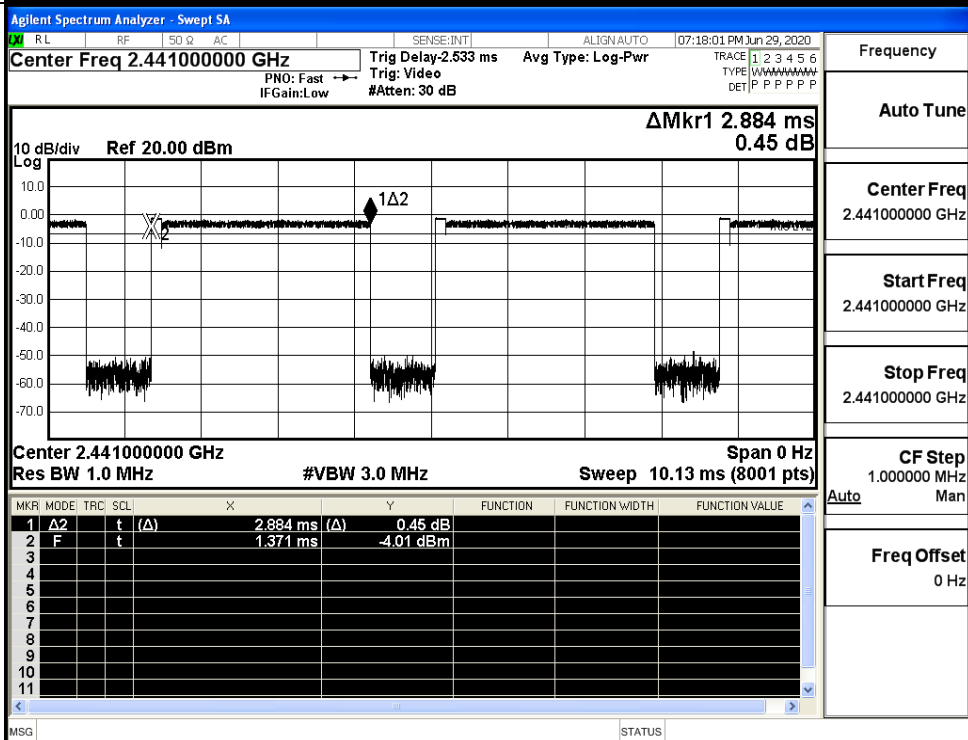
GFSK_DH5/HCH



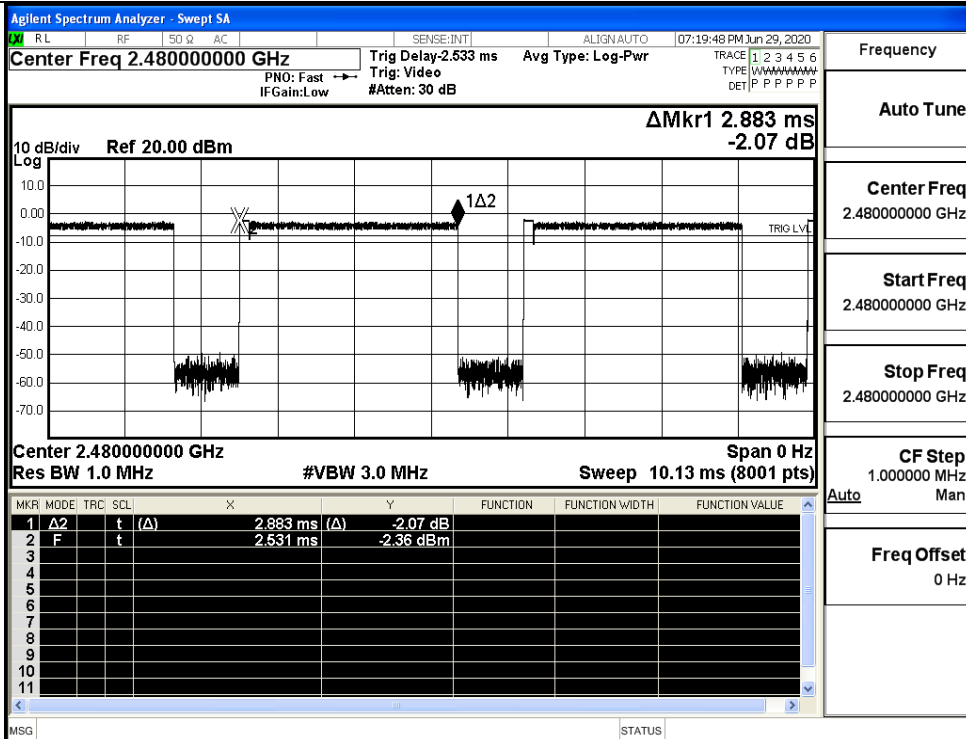
$\pi/4$ DQPSK
_2DH5/LCH



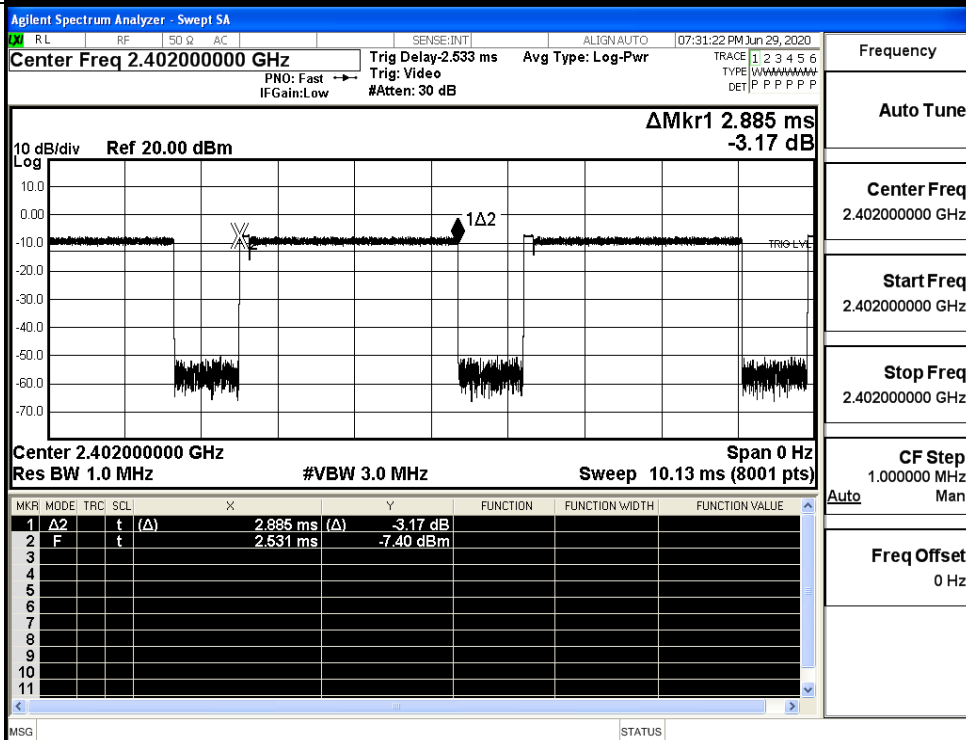
$\pi/4$ DQPSK
_2DH5/MCH



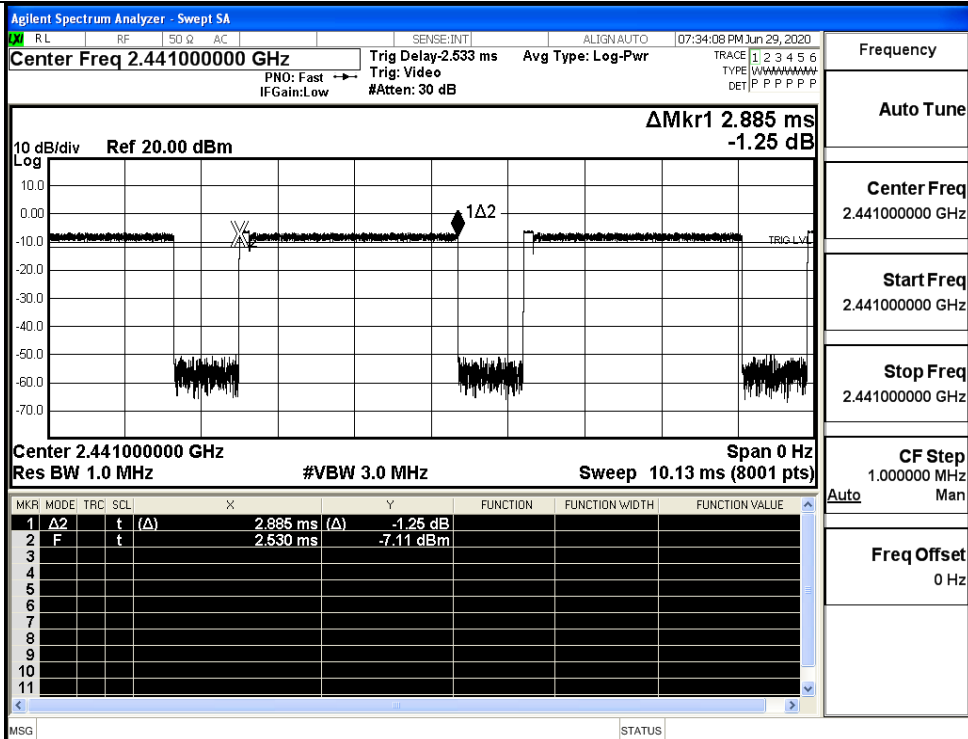
$\pi/4$ DQPSK
_2DH5/HCH



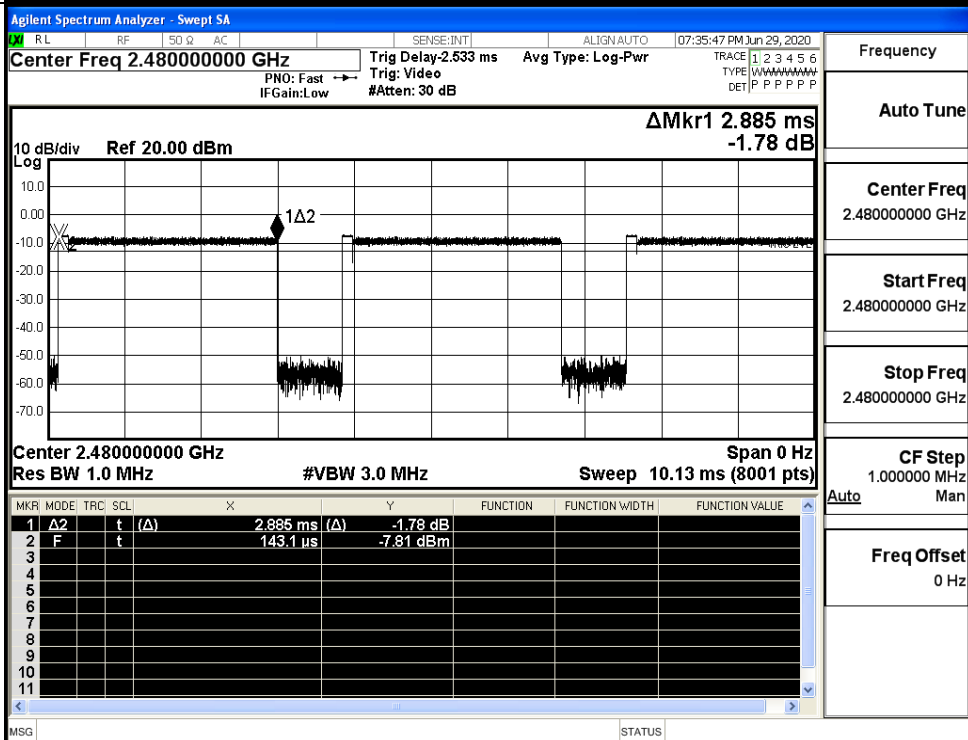
8DPSK _3DH5/LCH



8DPSK_3DH5/MCH



8DPSK_3DH5/HCH

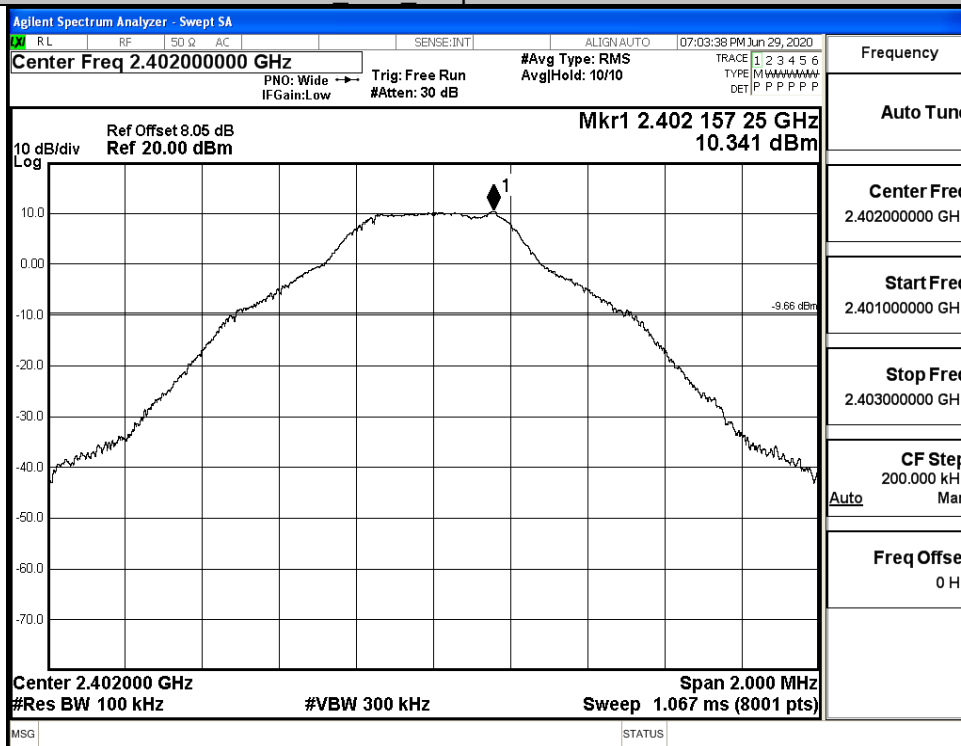


A.6 RF Conducted Spurious Emissions

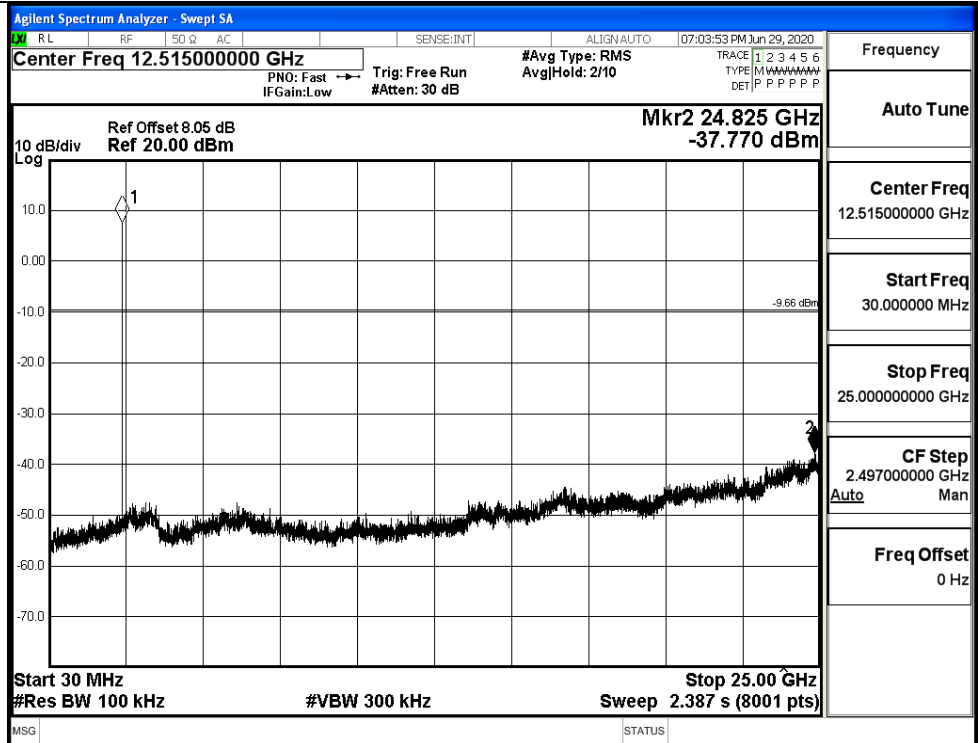
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	10.341	-37.770	-9.659	PASS
	MCH	11.323	-37.960	-8.677	PASS
	HCH	5.858	-37.535	-14.142	PASS
$\pi/4$ DQPSK	LCH	5.628	-37.782	-14.372	PASS
	MCH	6.473	-37.029	-13.527	PASS
	HCH	5.389	-38.027	-14.611	PASS
8DPSK	LCH	0.543	-37.821	-19.457	PASS
	MCH	1.559	-37.491	-18.441	PASS
	HCH	0.401	-37.682	-19.599	PASS

GFSK LCH Graphs

Pref

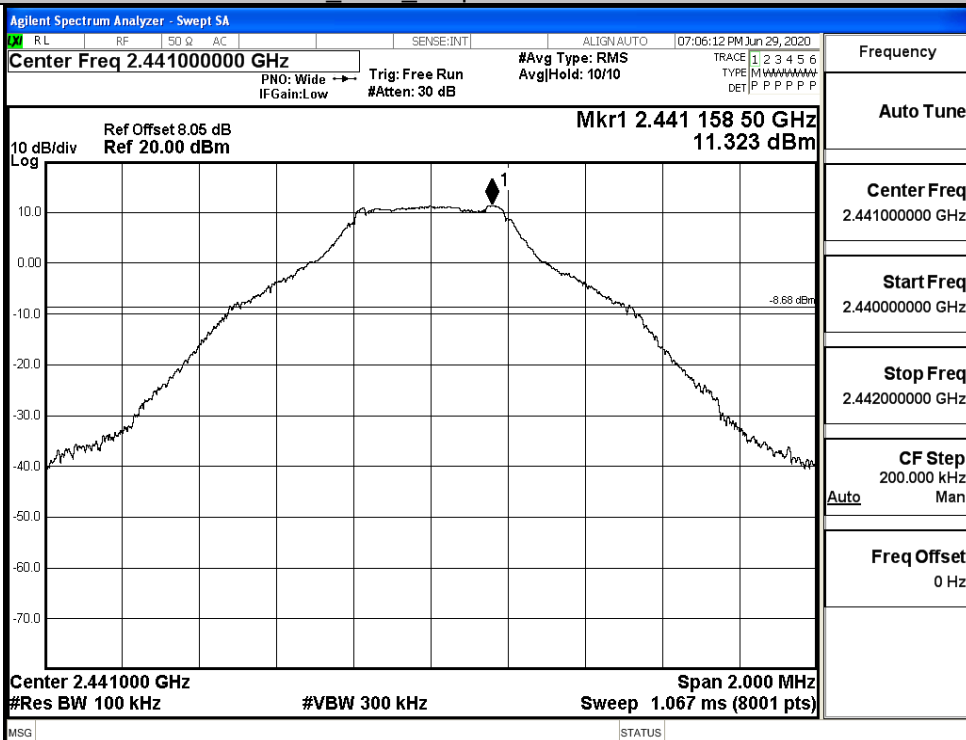


Puw

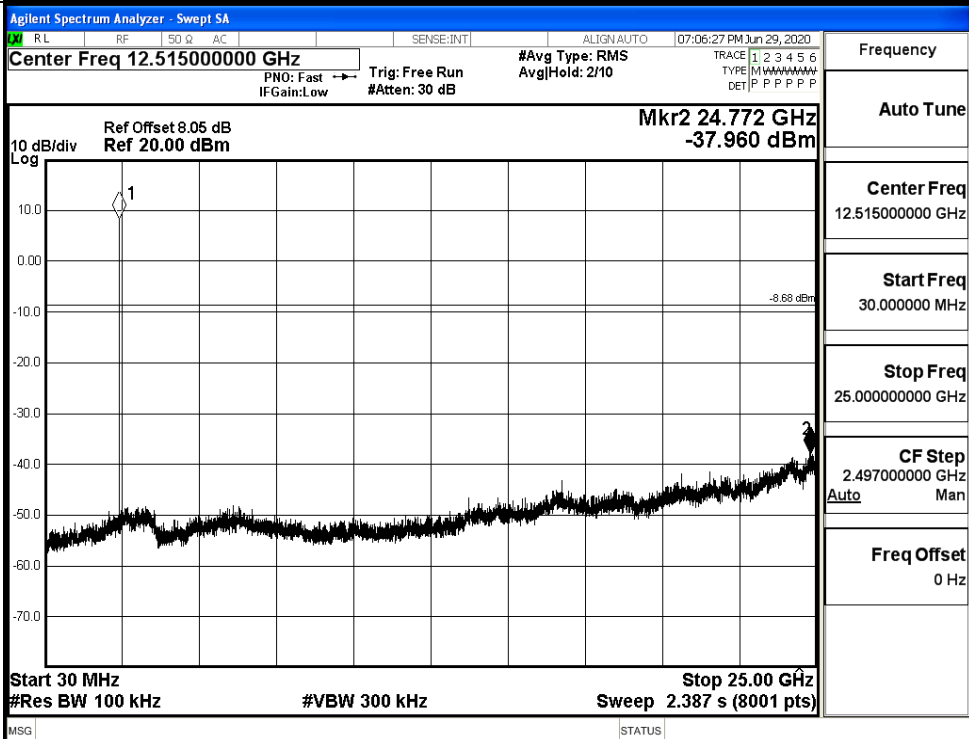


GFSK_MCH_Graphs

Pref

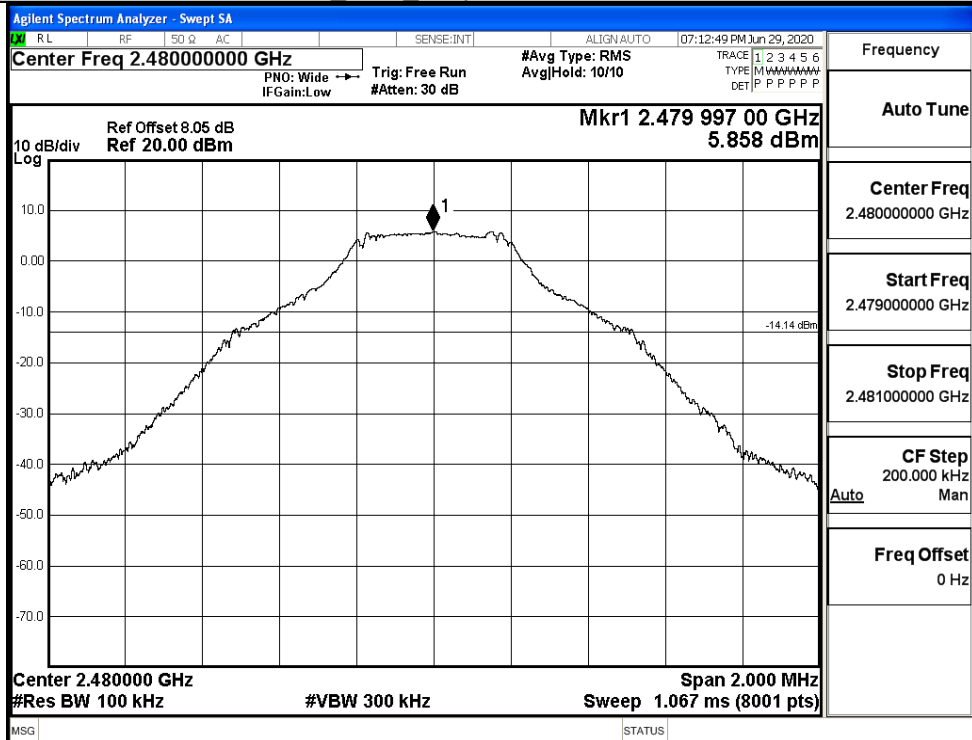


Puw

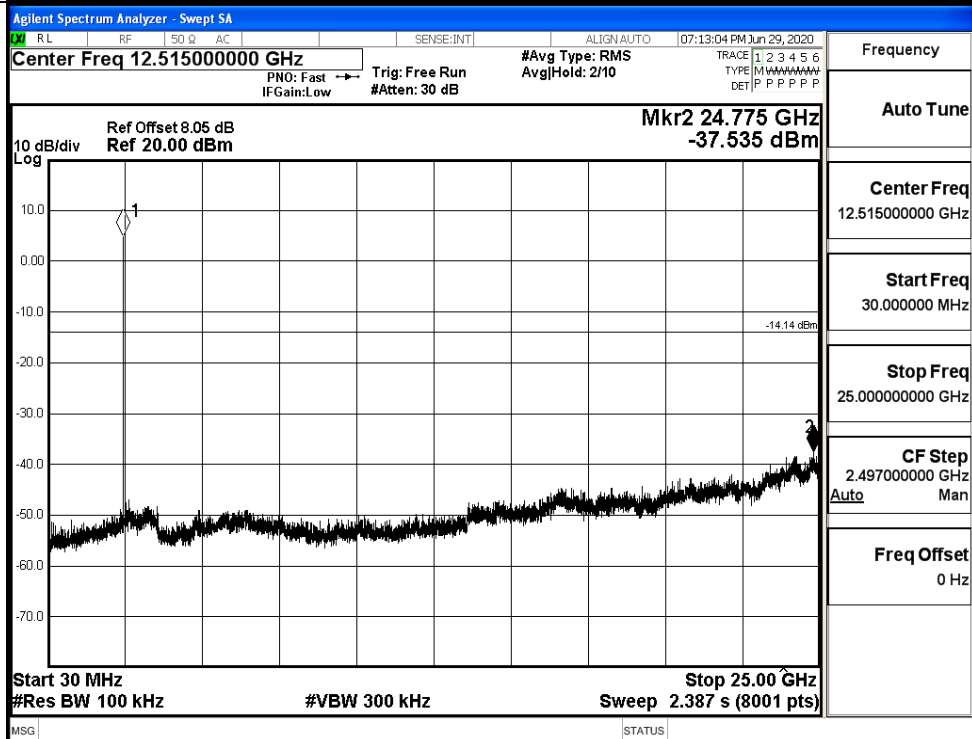


GFSK HCH_Graphs

Pref

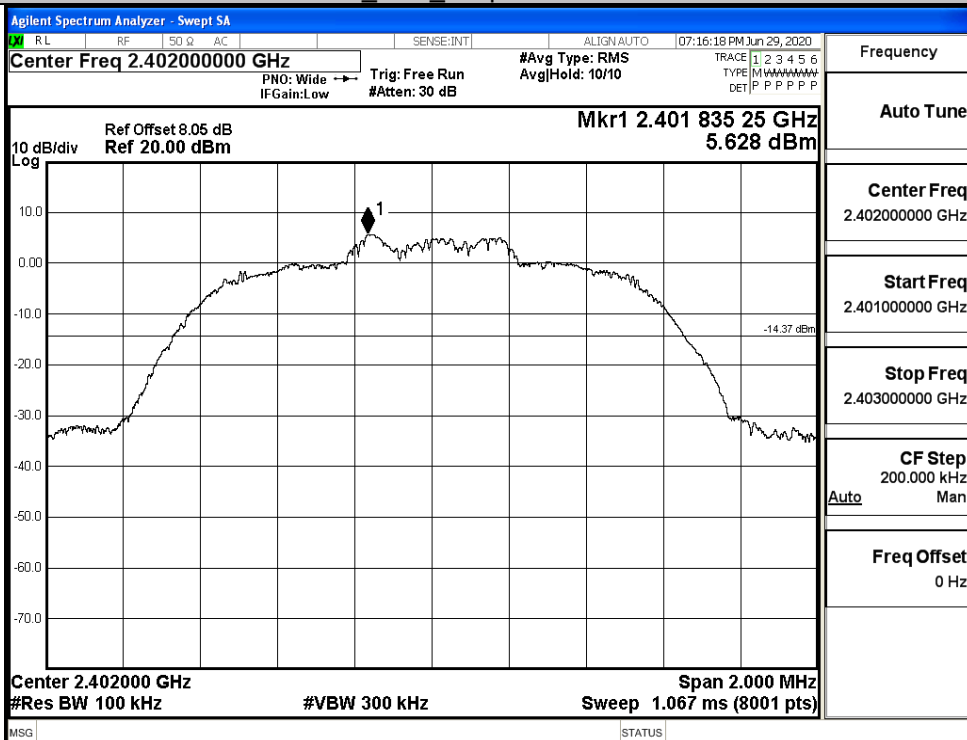


Puw

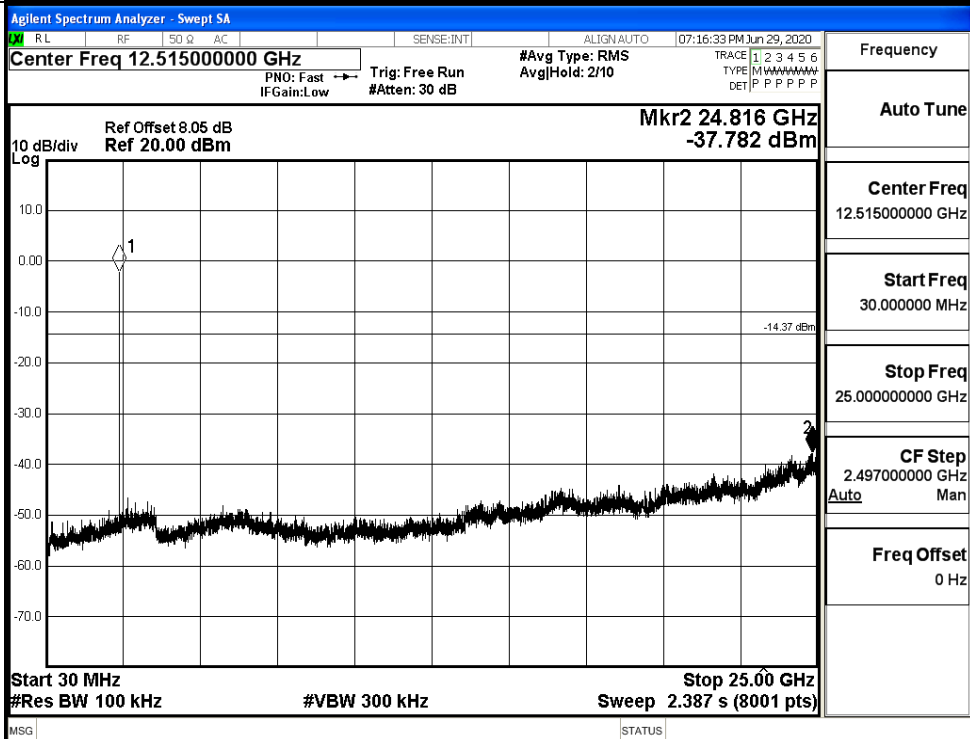


$\pi/4$ DQPSK_LCH_Graphs

Pref

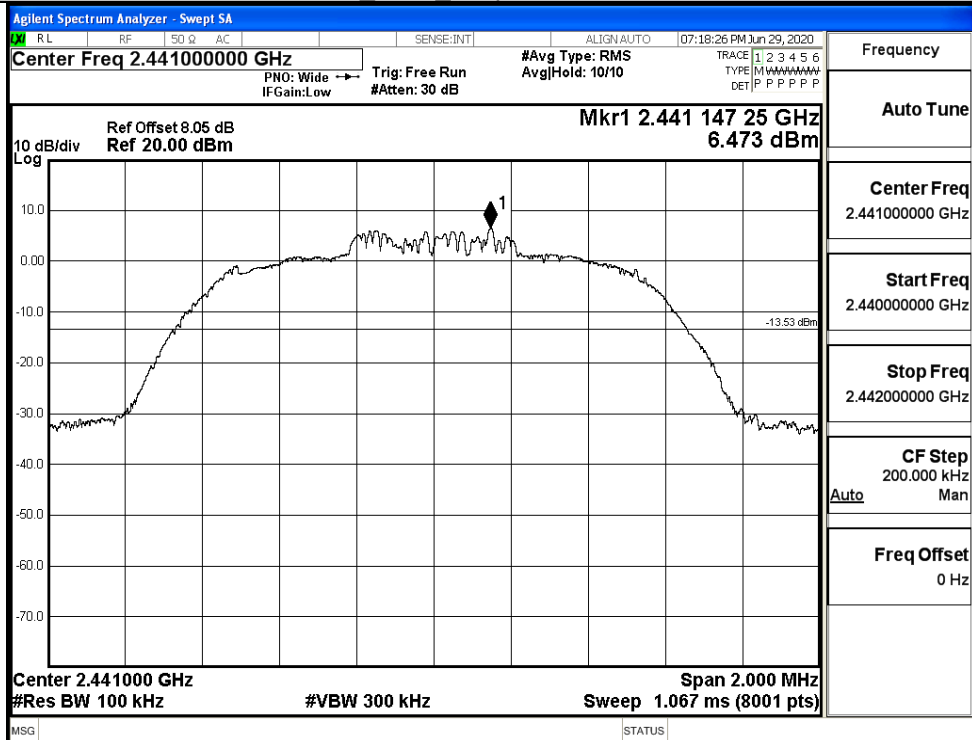


Puw

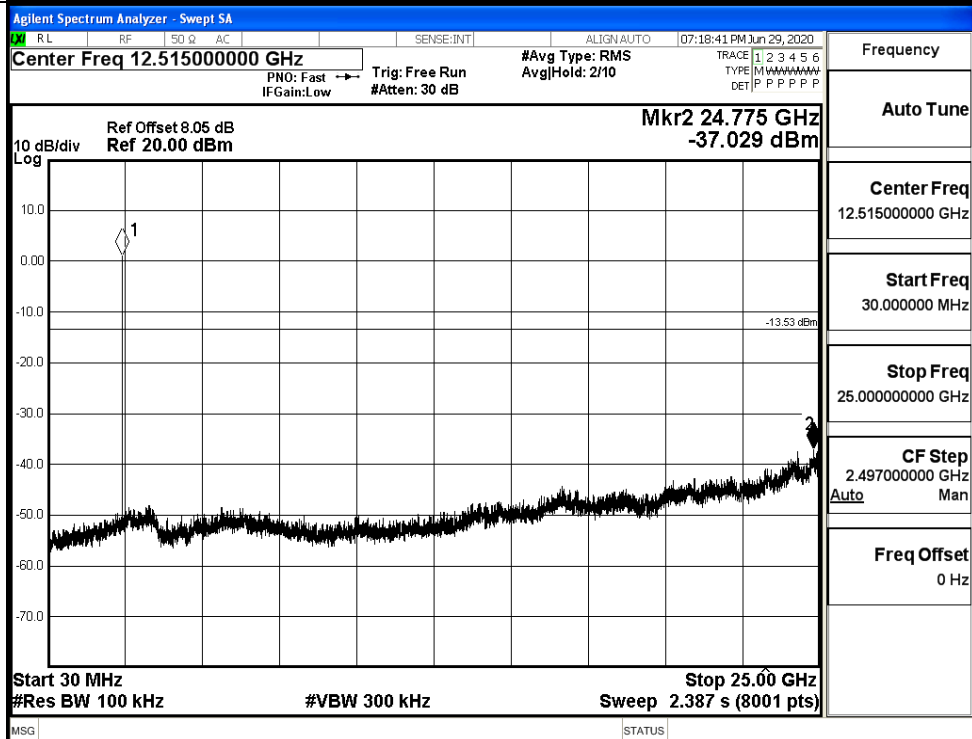


π /4DQPSK_MCH_Graphs

Pref

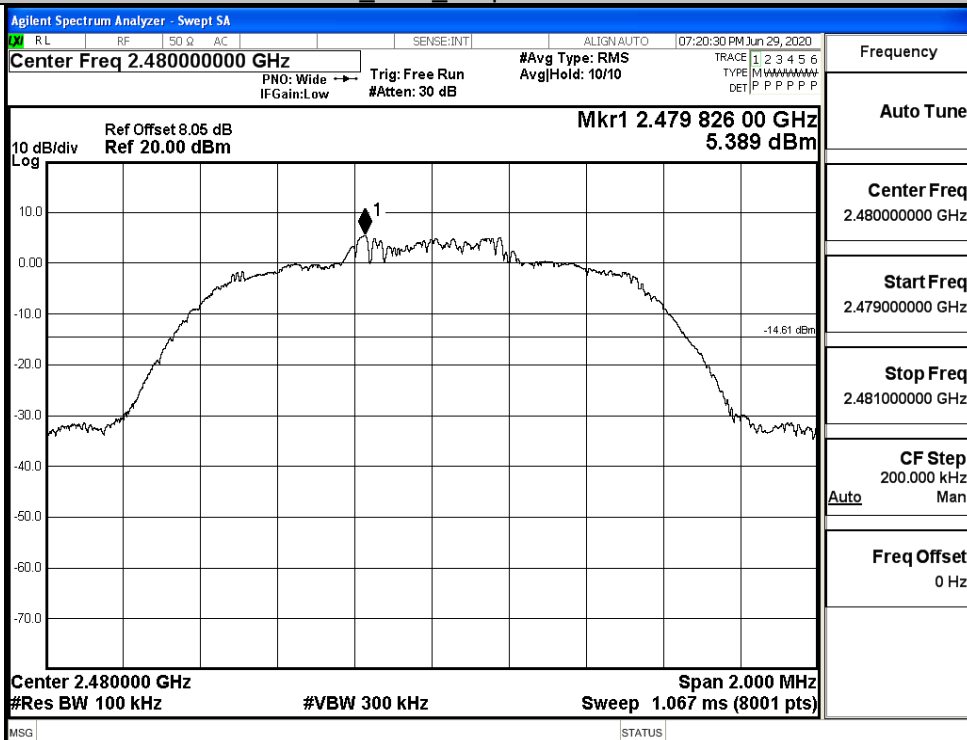


Puw

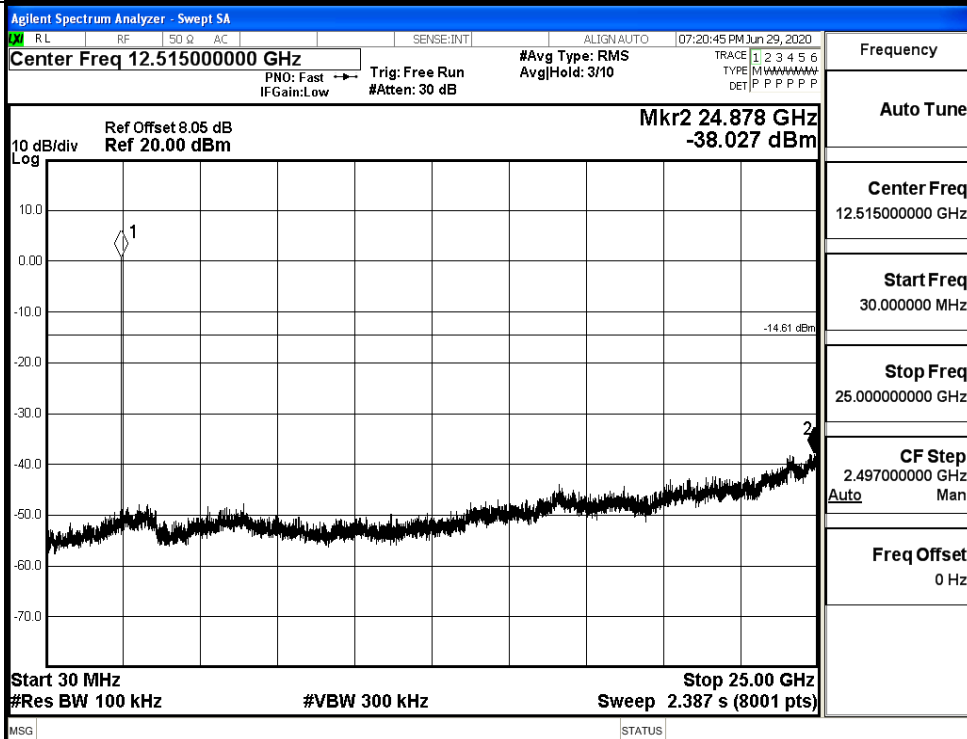


$\pi/4$ DQPSK_HCH_Graphs

Pref

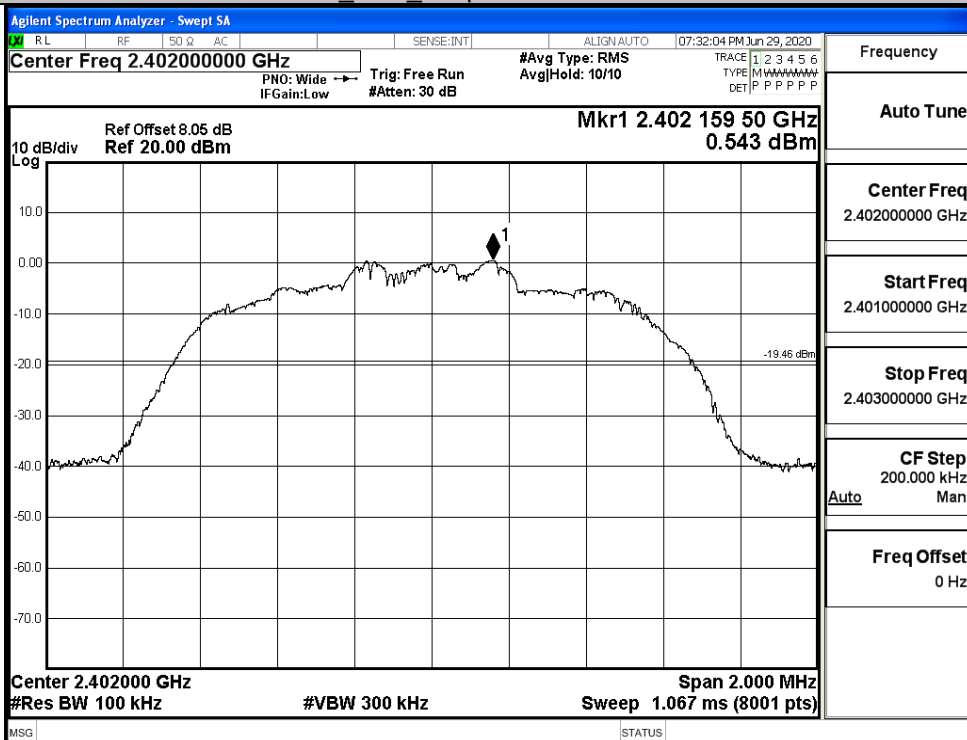


Puw

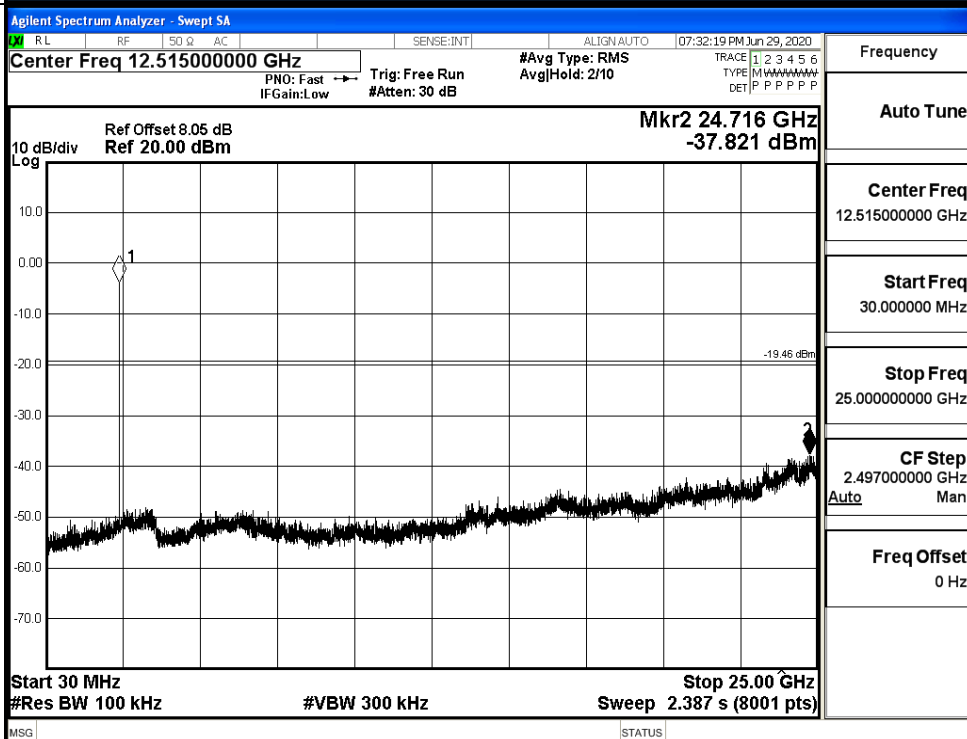


8DPSK_LCH_Graphs

Pref

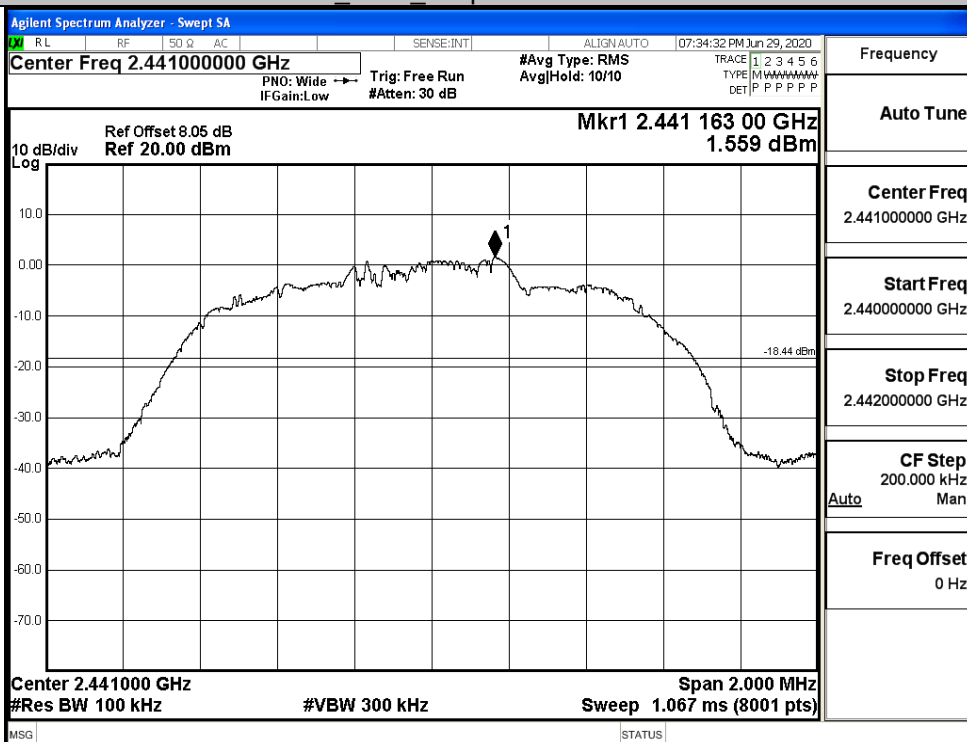


Puw

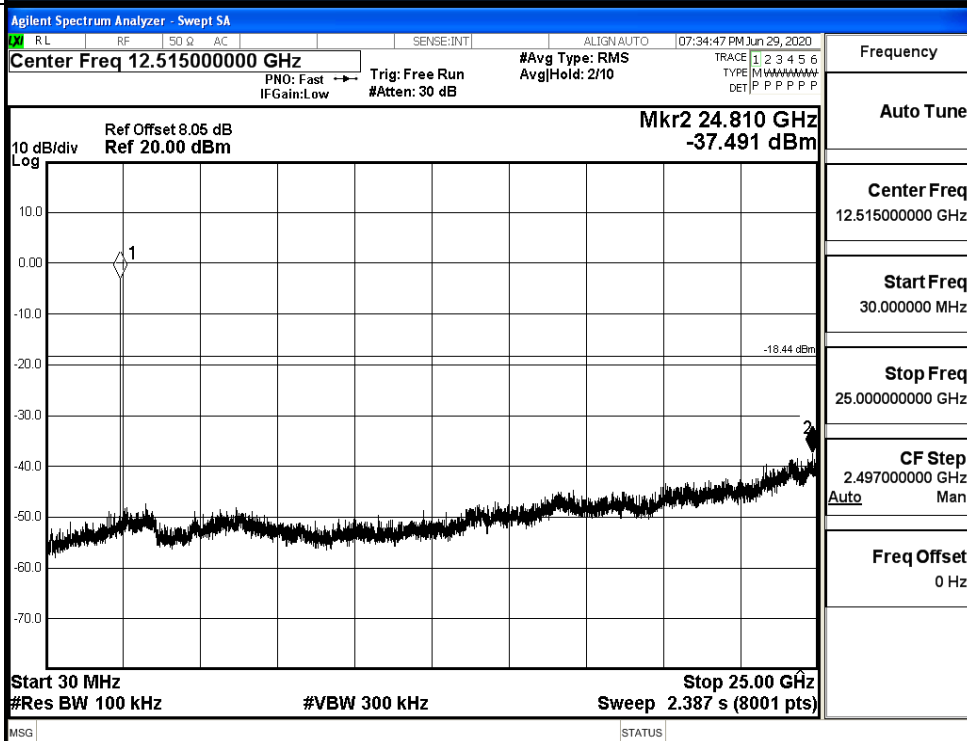


8DPSK_MCH_Graphs

Pref

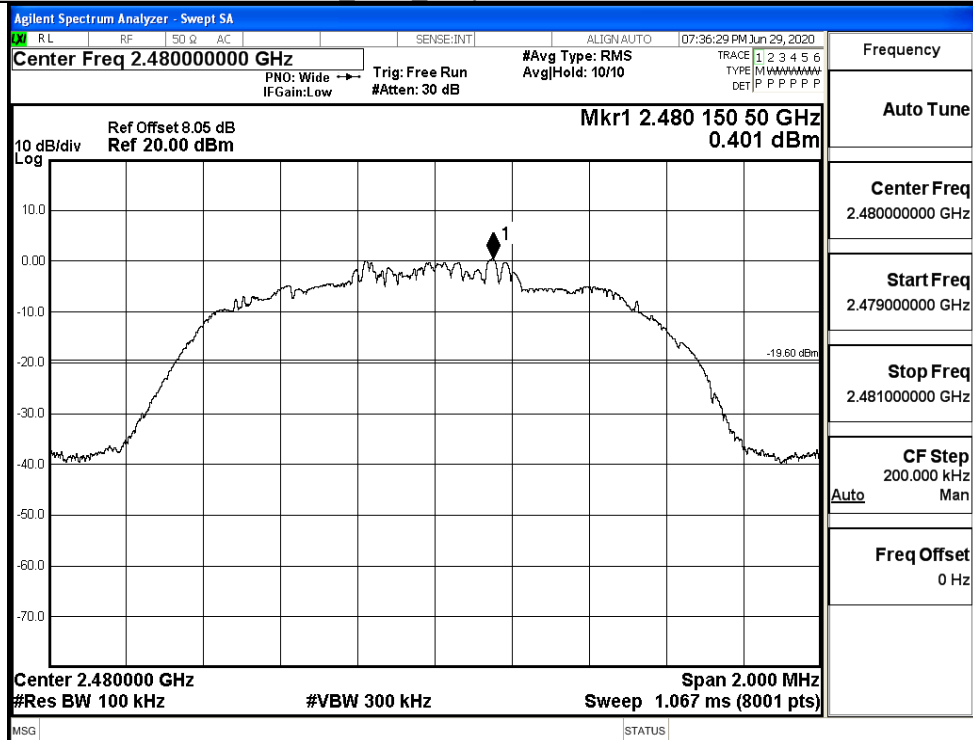


Puw

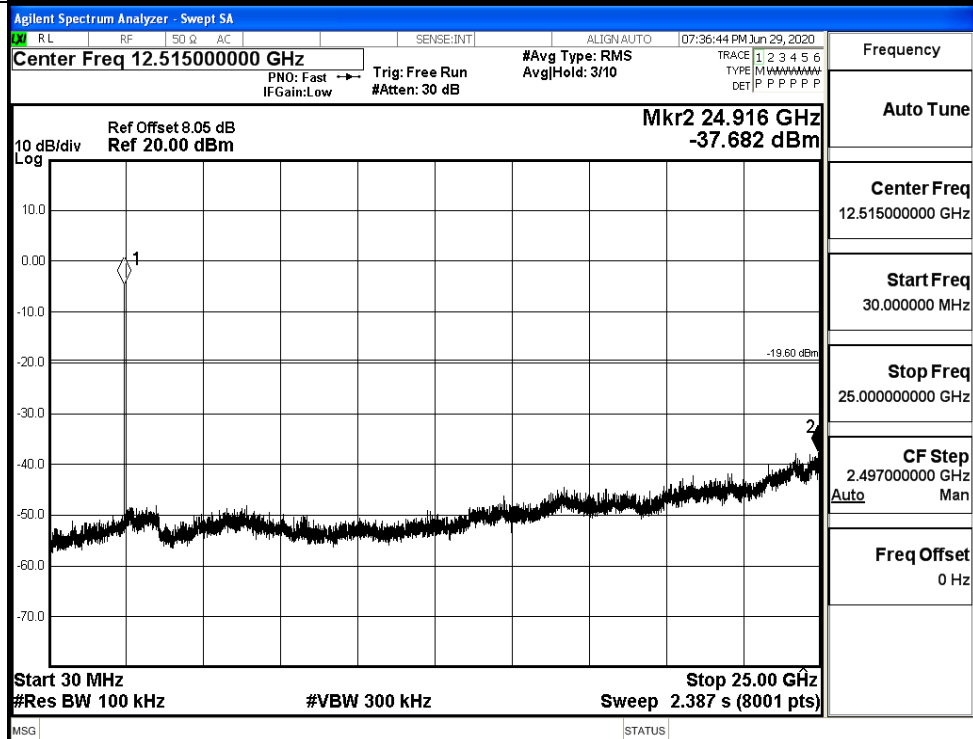


8DPSK_HCH_Graphs

Pref



Puw

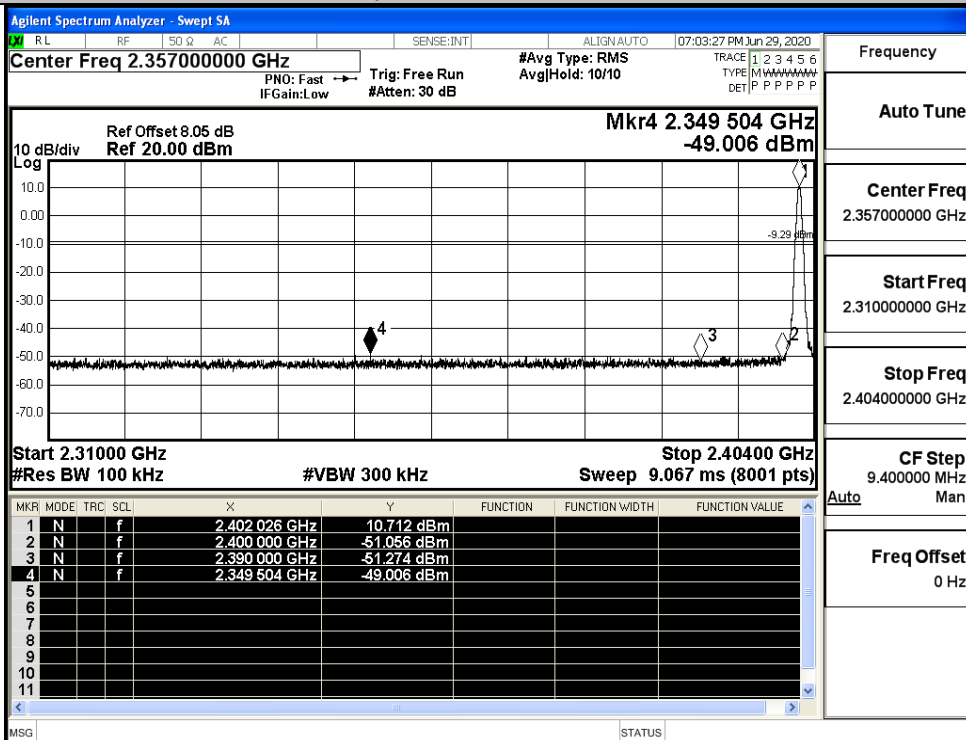


A.7 Band-edge for RF Conducted Emissions

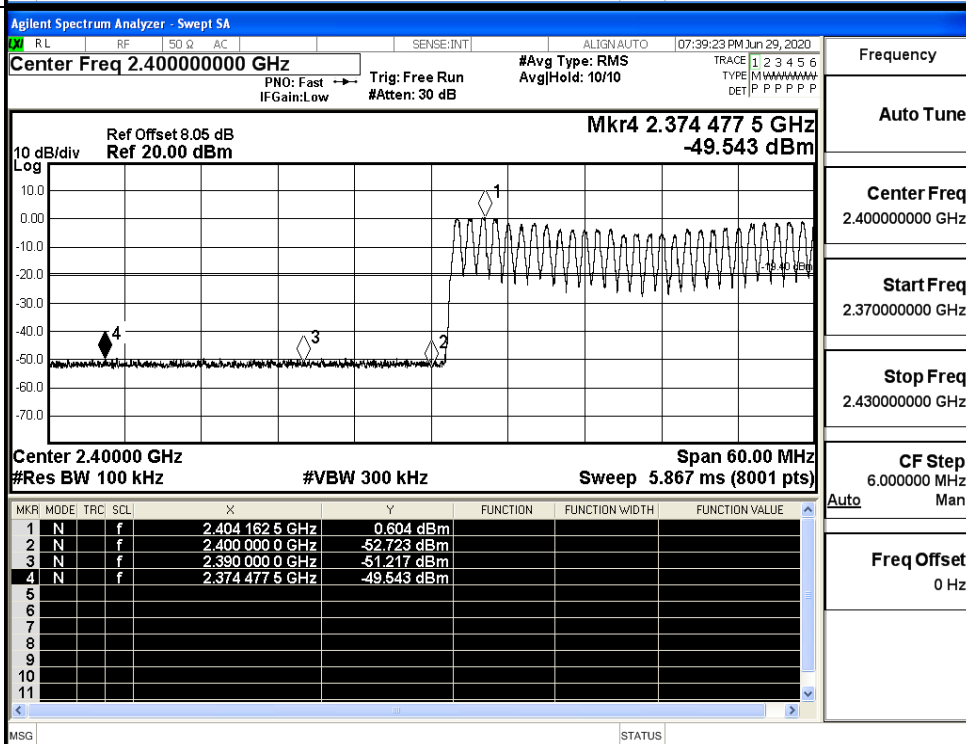
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	10.712	Off	-49.006	-9.29	PASS
			0.604	On	-49.543	-19.4	PASS
	HCH	2480	6.233	Off	-48.953	-13.77	PASS
			0.734	On	-47.969	-19.27	PASS
$\pi/4$ DQPSK	LCH	2402	5.608	Off	-49.357	-14.39	PASS
			-0.817	On	-49.065	-20.82	PASS
	HCH	2480	5.250	Off	-49.047	-14.75	PASS
			-1.341	On	-48.363	-21.34	PASS
8DPSK	LCH	2402	0.550	Off	-49.674	-19.45	PASS
			-0.220	On	-48.674	-20.22	PASS
	HCH	2480	0.544	Off	-48.937	-19.46	PASS
			0.508	On	-48.498	-19.49	PASS

Test Graphs

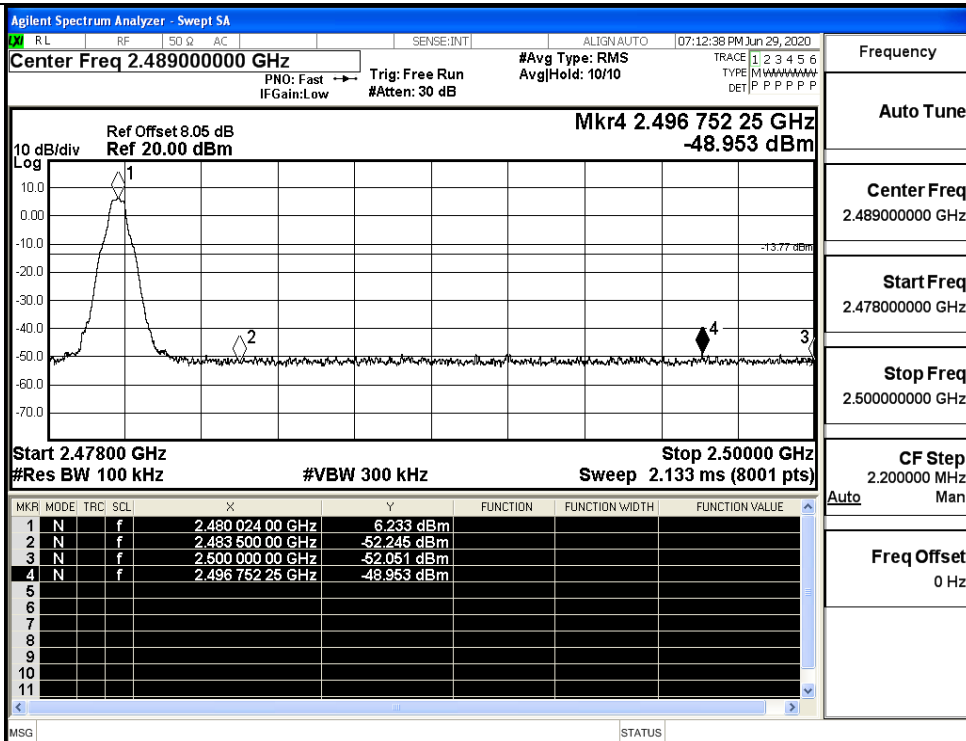
GFSK/LCH/No Hop



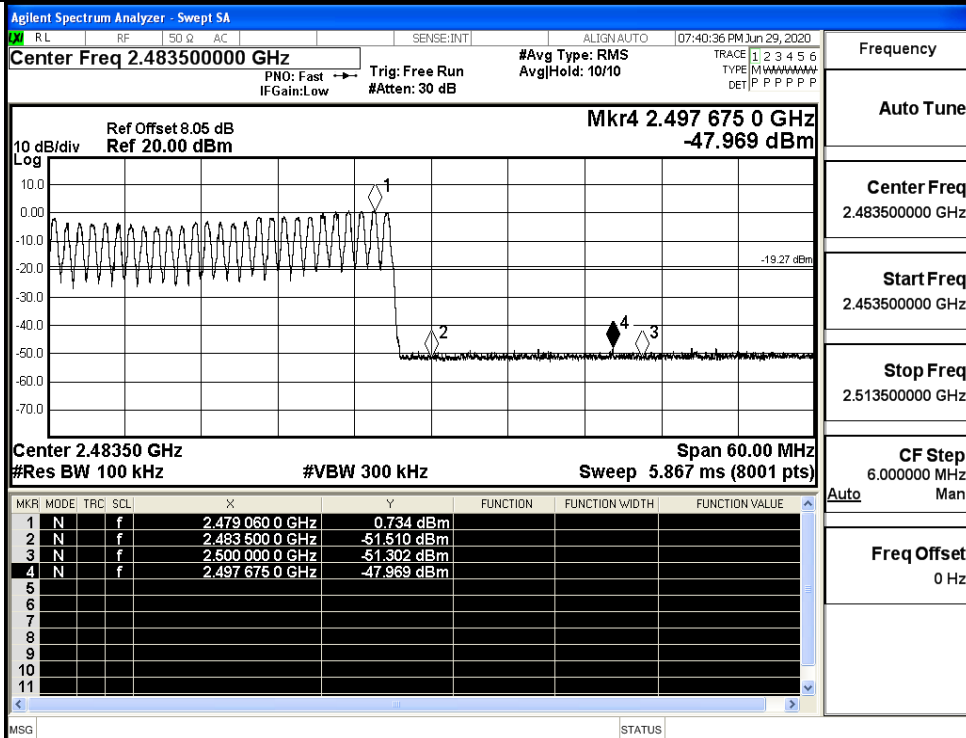
GFSK/LCH/Hop



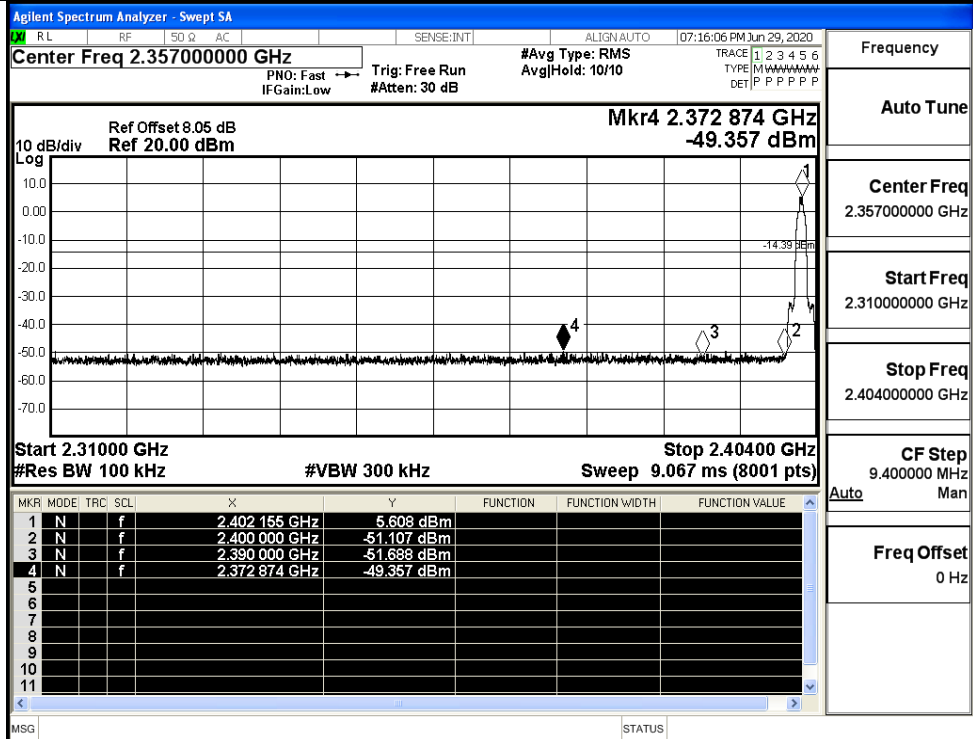
GFSK/HCH/No Hop



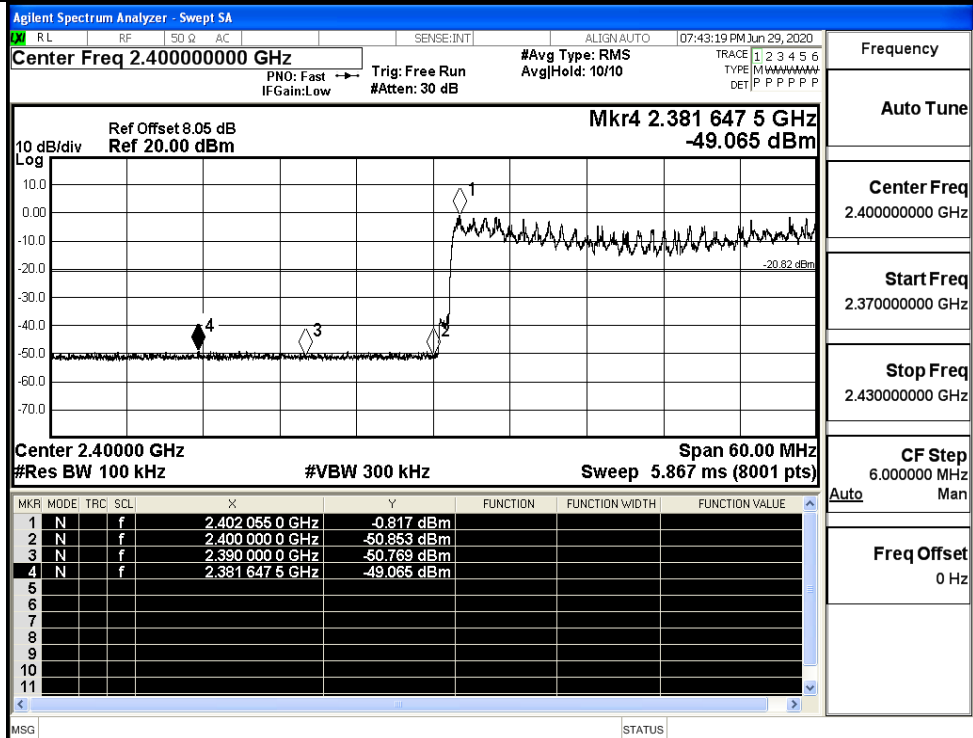
GFSK/HCH/Hop



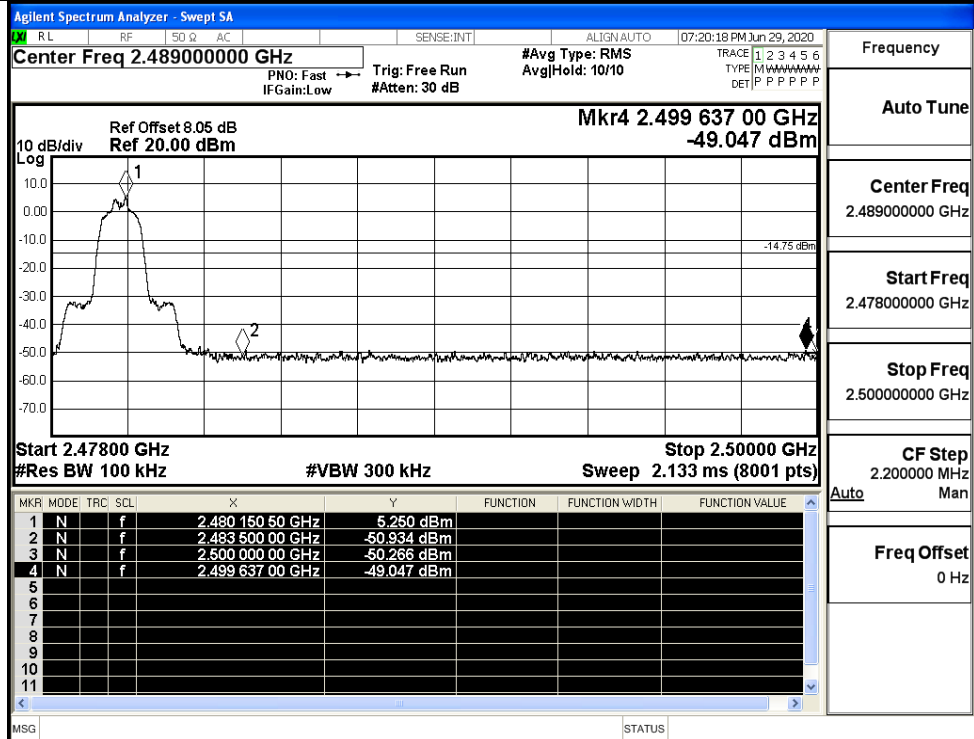
$\pi/4$ DQPSK/LCH/No
Hop



$\pi/4$ DQPSK/LCH/Hop



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



Frequency

Auto Tune

Center Freq
2.489000000 GHz

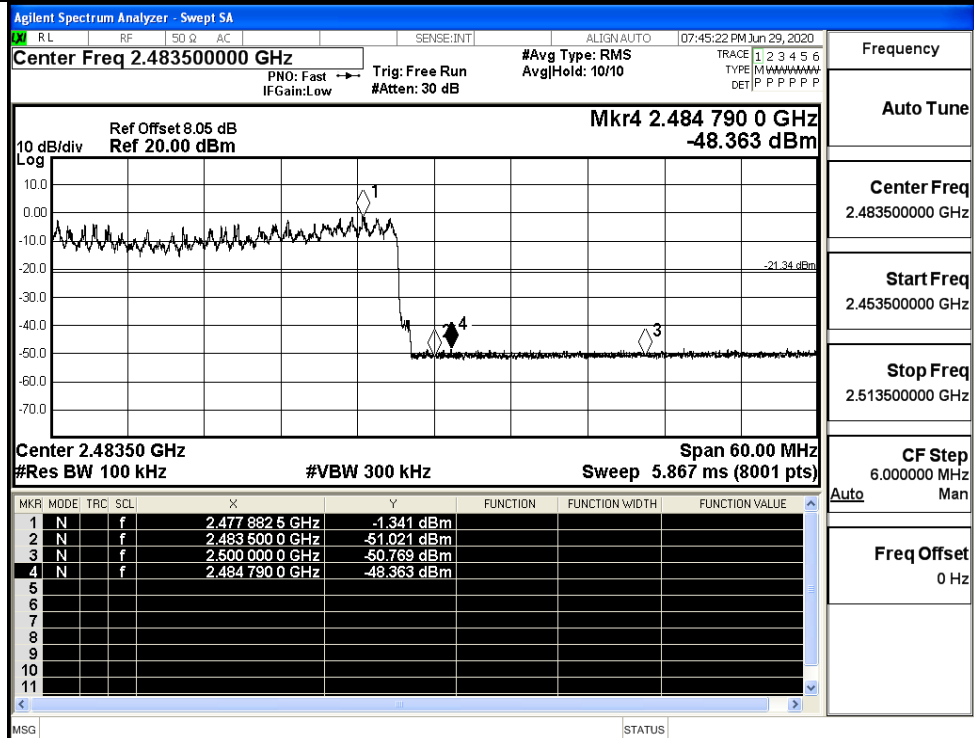
Start Freq
2.478000000 GHz

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

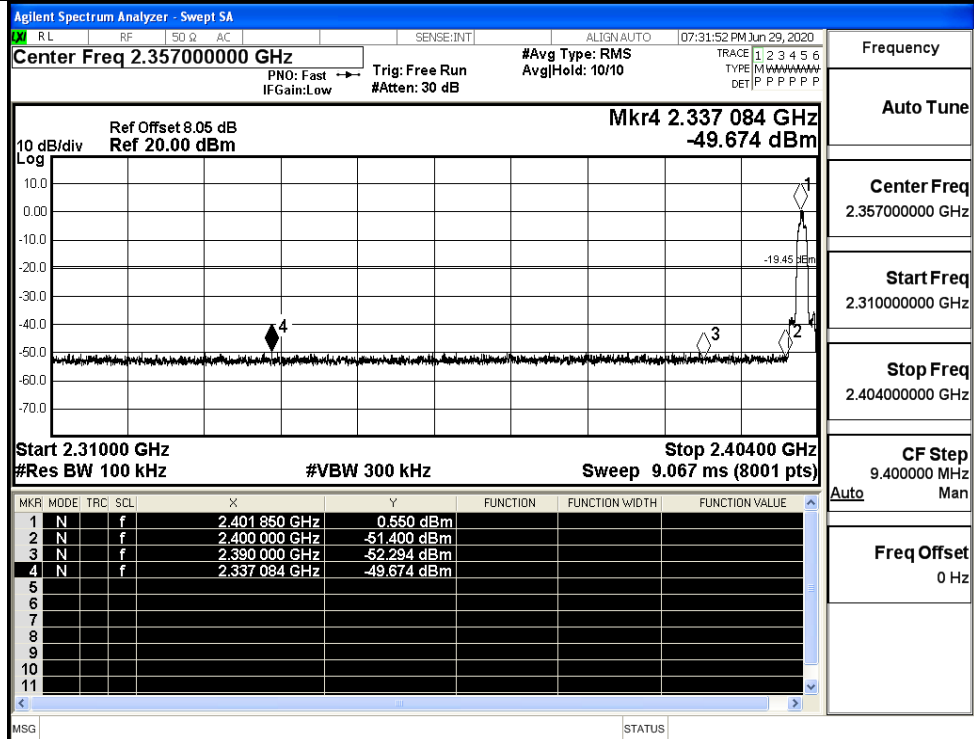
Start Freq
2.453500000 GHz

Stop Freq
2.513500000 GHz

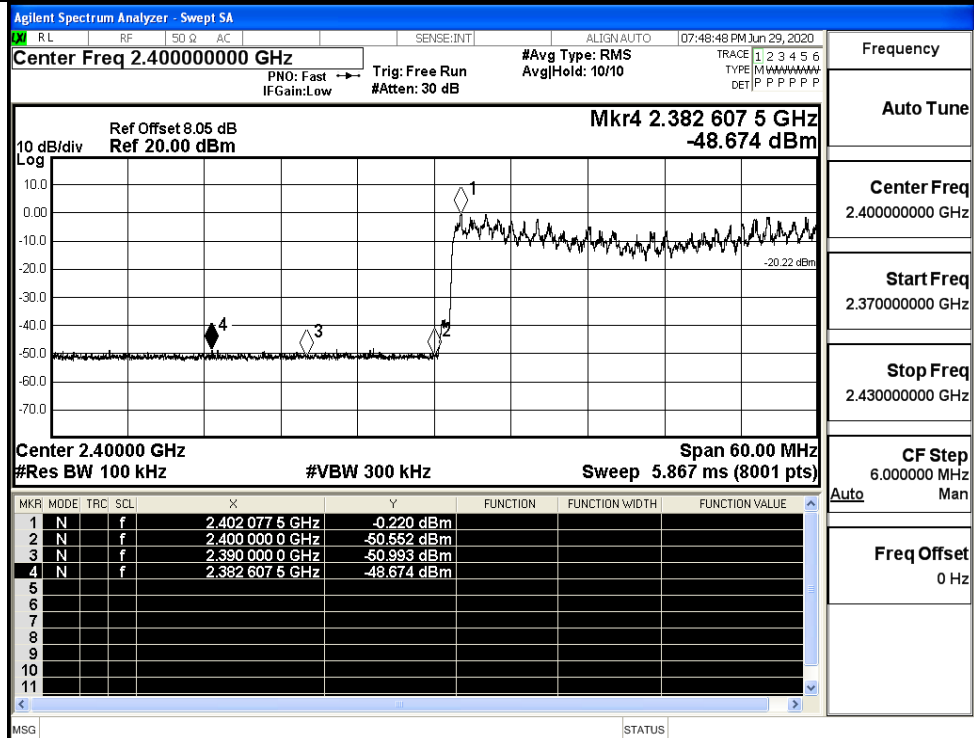
CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

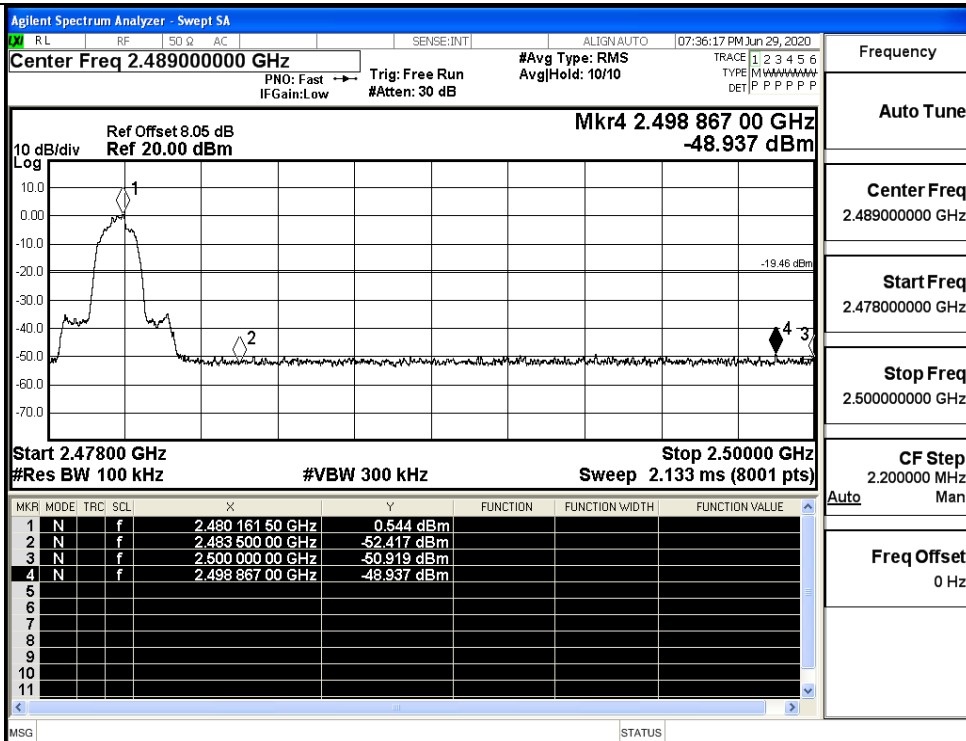
8DPSK/LCH/No Hop



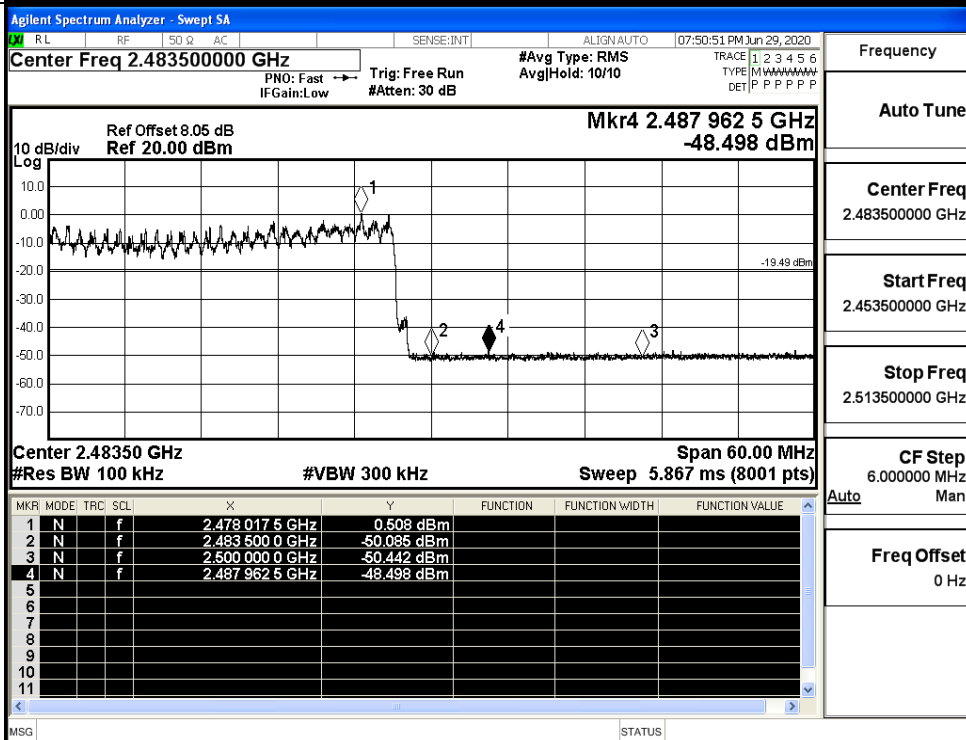
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



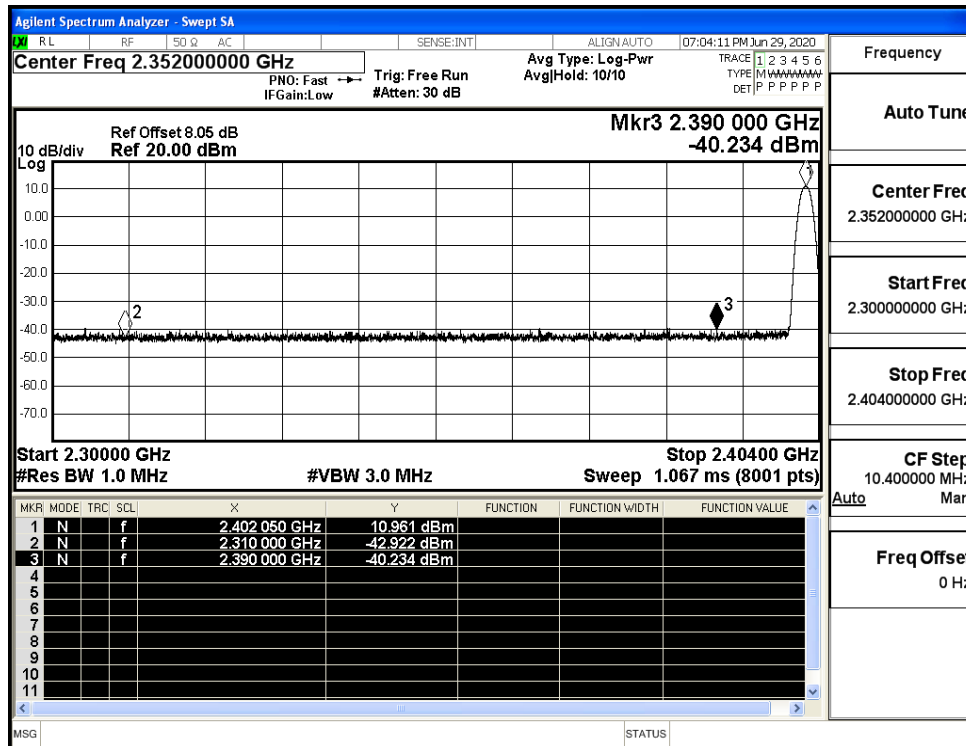
8DPSK/HCH/Hop



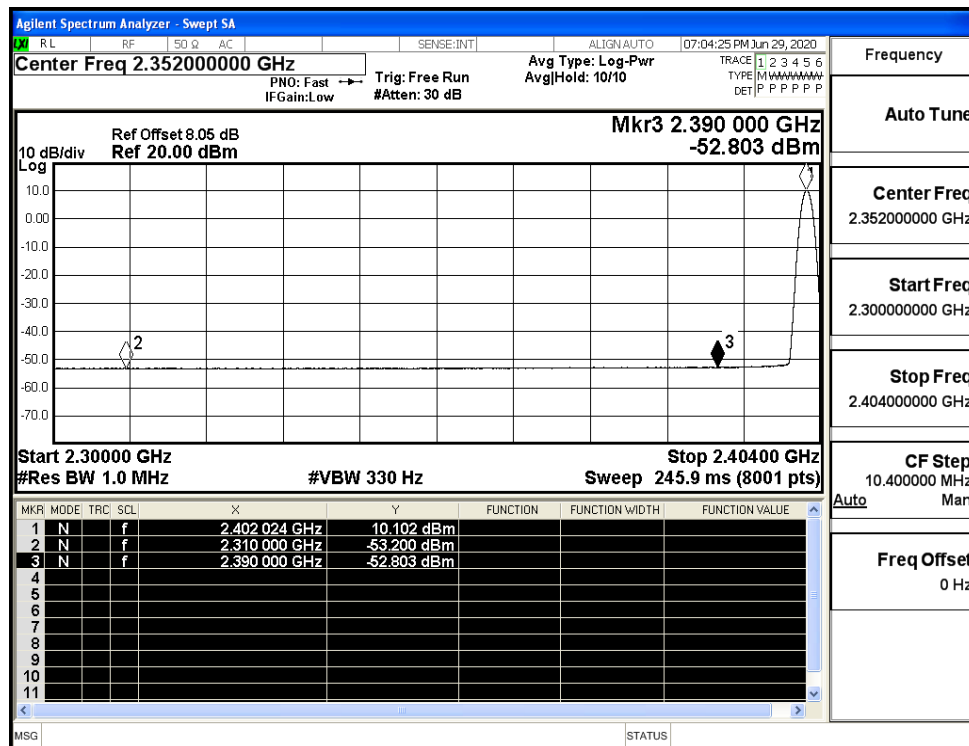
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-42.92	2.0	0	54.31	PEAK	74	PASS
	Off	2310.0	-53.20	2.0	0	44.03	AV	54	PASS
	Off	2390.0	-40.23	2.0	0	57.00	PEAK	74	PASS
	Off	2390.0	-52.80	2.0	0	44.43	AV	54	PASS
	Off	2483.5	-42.65	2.0	0	54.58	PEAK	74	PASS
	Off	2483.5	-52.25	2.0	0	44.98	AV	54	PASS
	Off	2500.0	-41.20	2.0	0	56.03	PEAK	74	PASS
	Off	2500.0	-52.22	2.0	0	45.01	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-41.90	2.0	0	55.33	PEAK	74	PASS
	Off	2310.0	-53.14	2.0	0	44.09	AV	54	PASS
	Off	2390.0	-42.22	2.0	0	55.01	PEAK	74	PASS
	Off	2390.0	-52.78	2.0	0	44.45	AV	54	PASS
	Off	2483.5	-42.55	2.0	0	54.68	PEAK	74	PASS
	Off	2483.5	-52.01	2.0	0	45.22	AV	54	PASS
	Off	2500.0	-41.92	2.0	0	55.31	PEAK	74	PASS
	Off	2500.0	-52.13	2.0	0	45.10	AV	54	PASS
8DPSK	Off	2310.0	-43.30	2.0	0	53.93	PEAK	74	PASS
	Off	2310.0	-53.19	2.0	0	44.04	AV	54	PASS
	Off	2390.0	-43.08	2.0	0	54.15	PEAK	74	PASS
	Off	2390.0	-52.74	2.0	0	44.49	AV	54	PASS
	Off	2483.5	-42.68	2.0	0	54.55	PEAK	74	PASS
	Off	2483.5	-52.32	2.0	0	44.91	AV	54	PASS
	Off	2500.0	-42.43	2.0	0	54.80	PEAK	74	PASS
	Off	2500.0	-52.22	2.0	0	45.01	AV	54	PASS

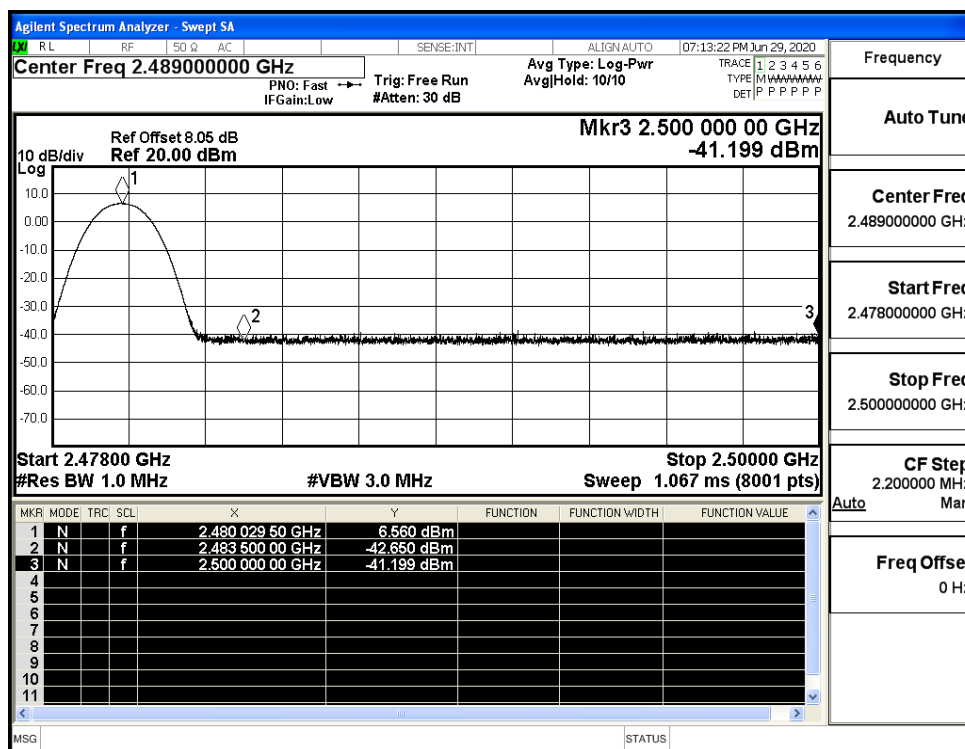
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



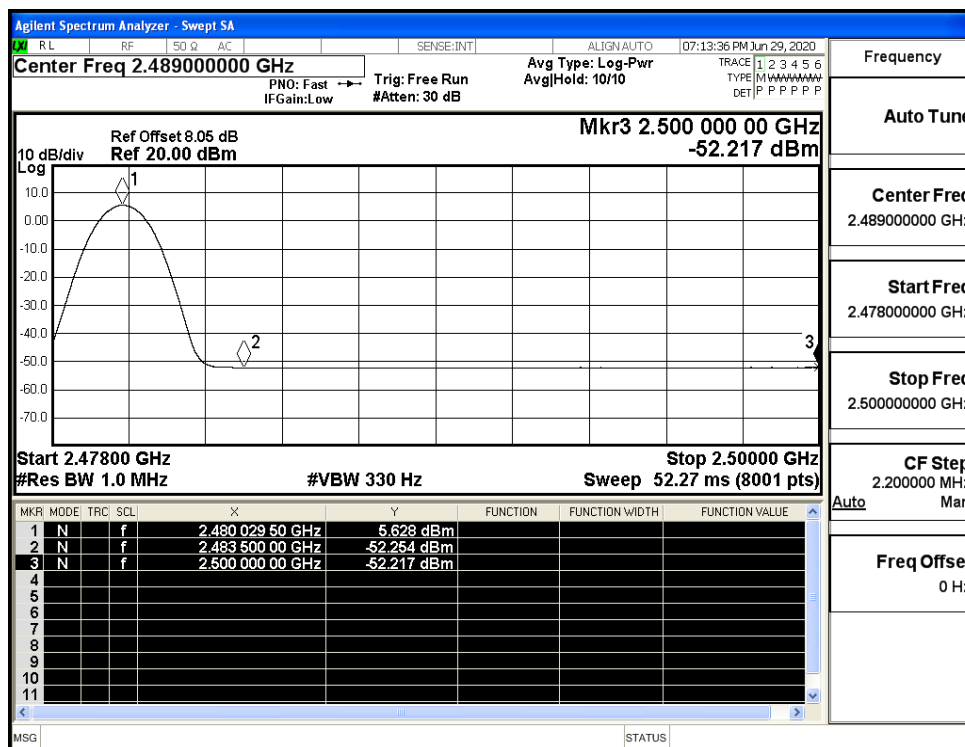
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

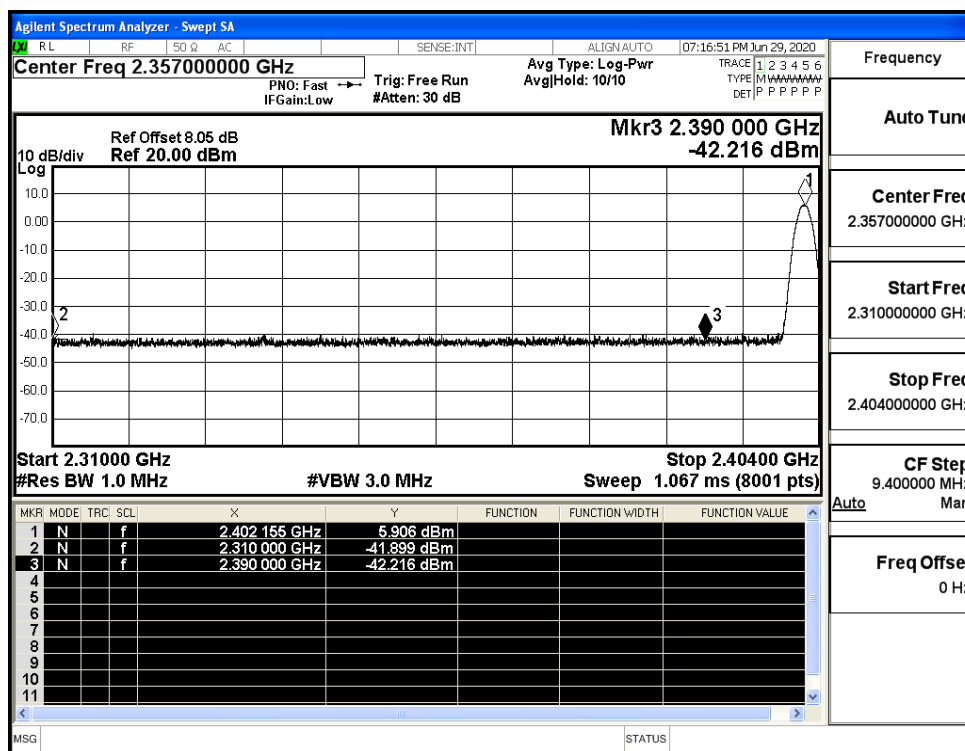
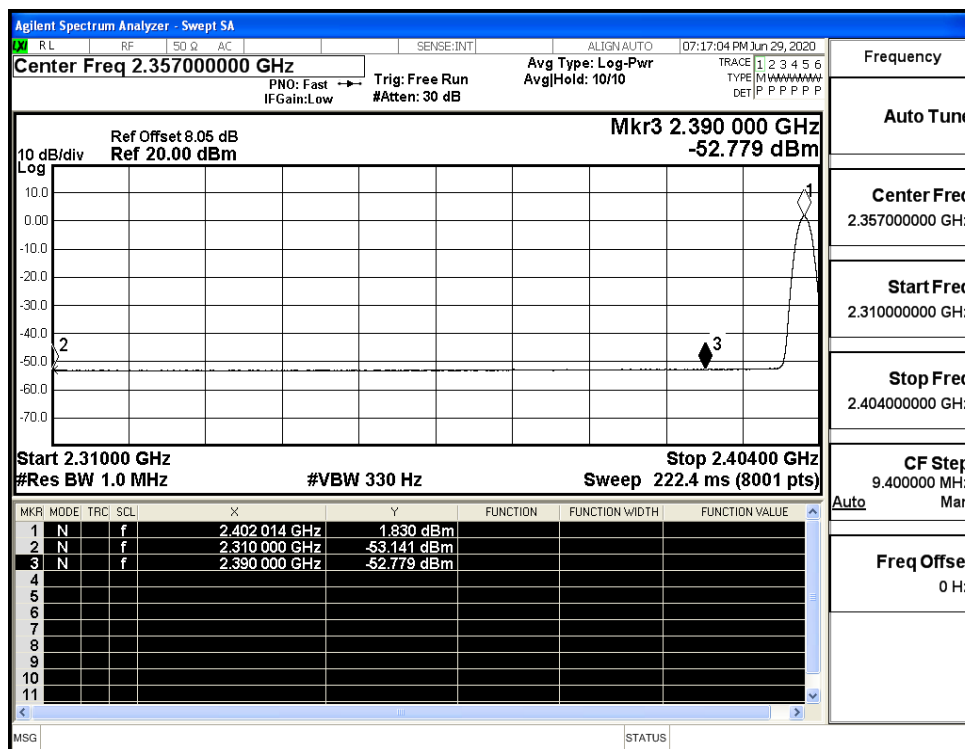


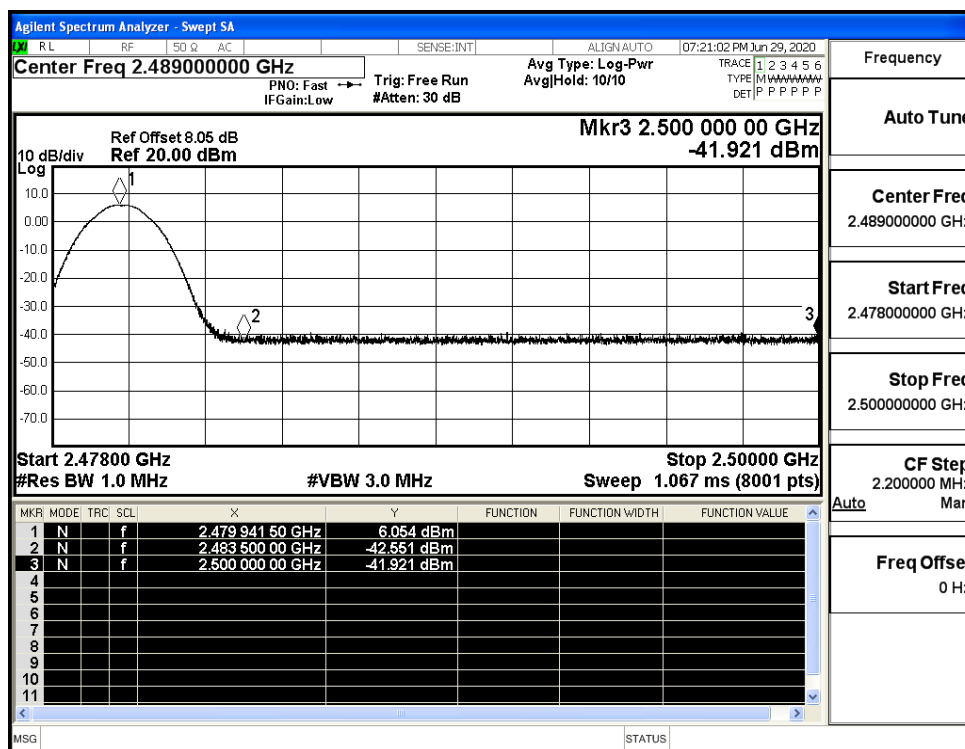
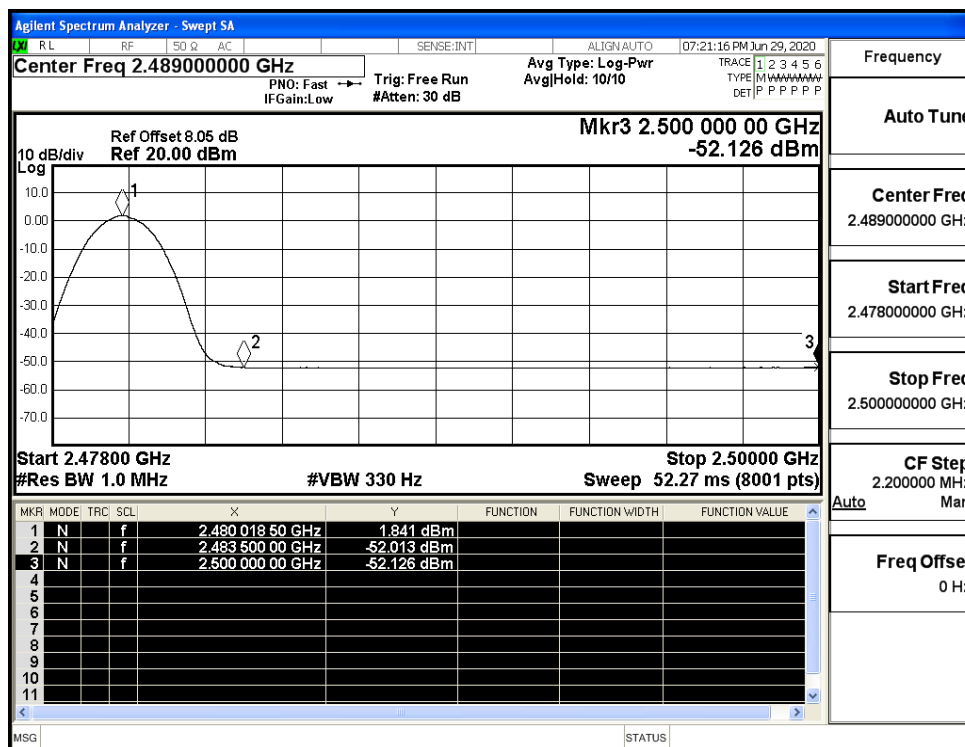
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



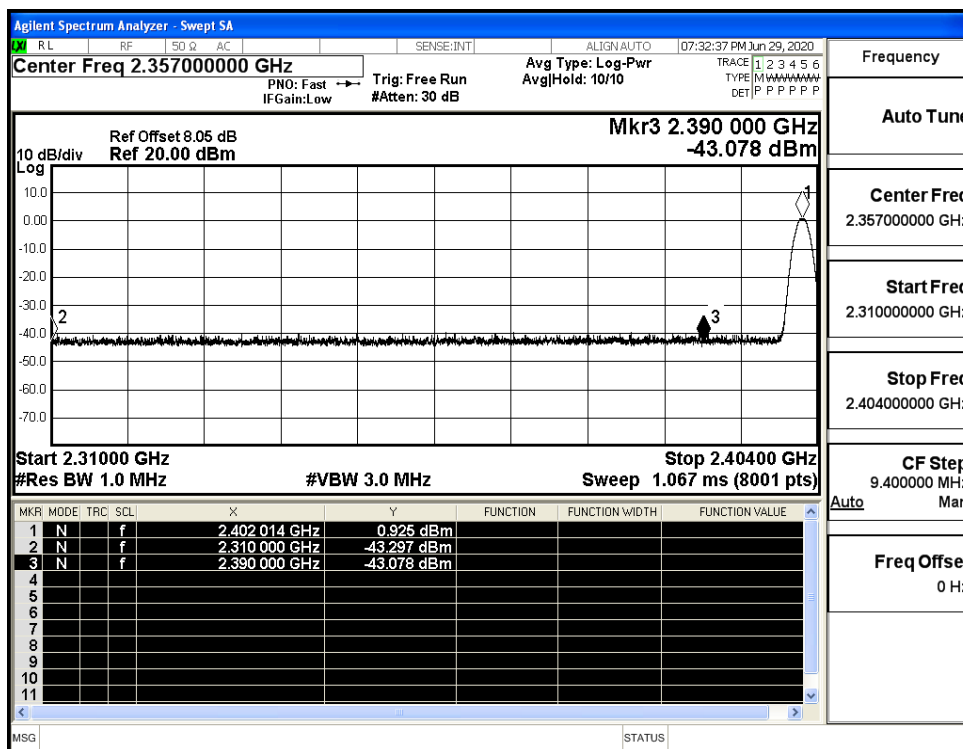
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



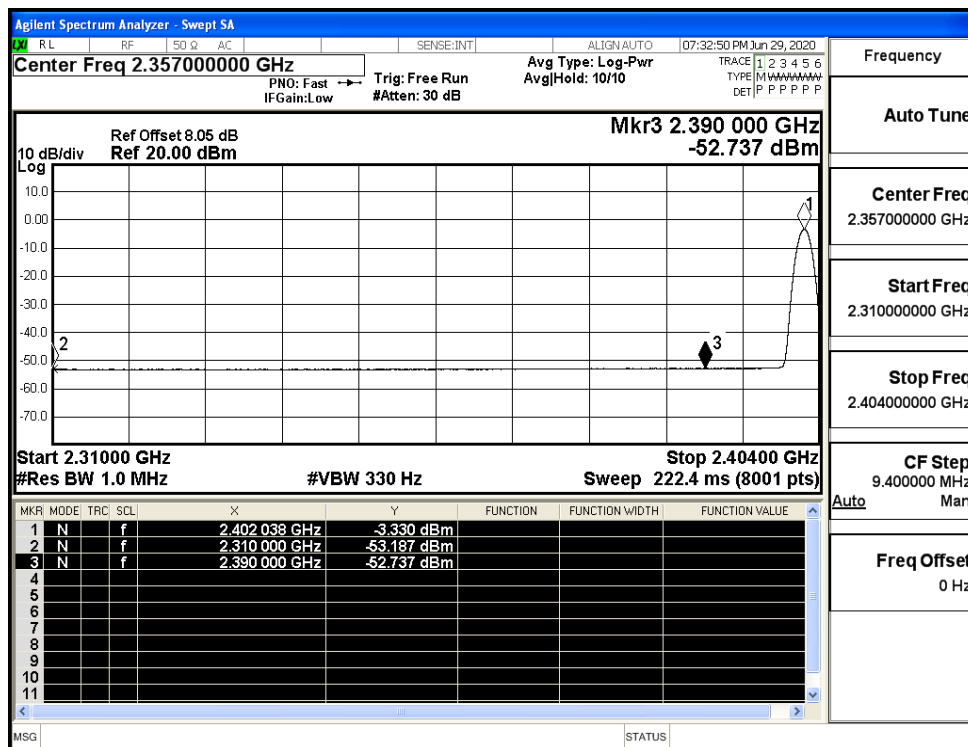
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

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)

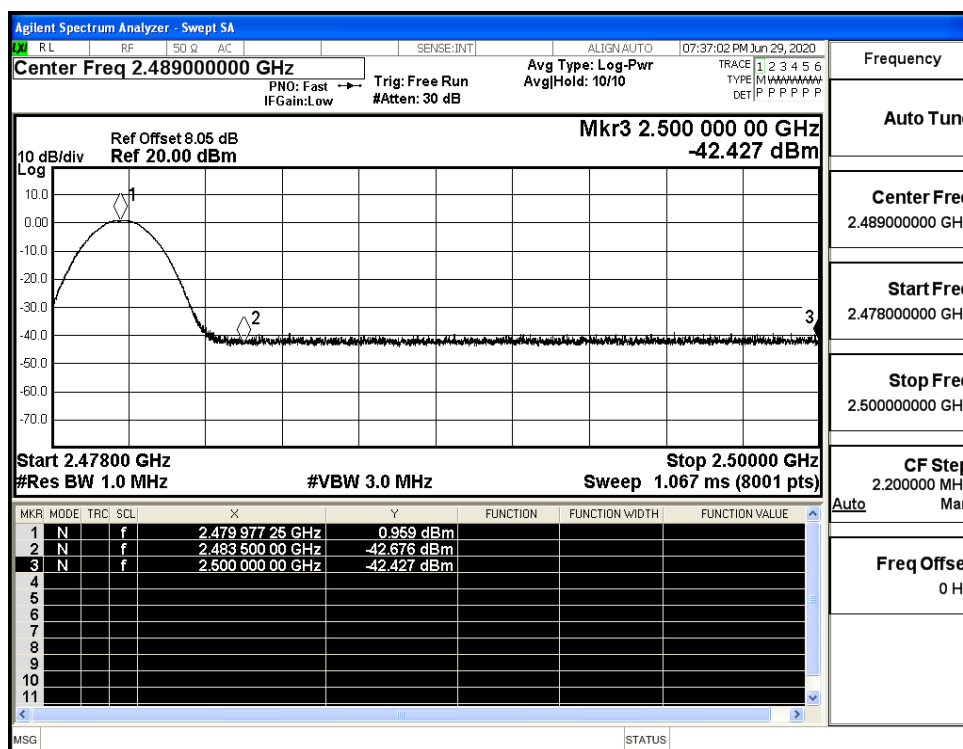
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

