

Appendix A

RF Test Data for BT V4.0(BDR/EDR) (Conducted Measurement)

Product Name: Smart phone

Trade Mark: S SMOOTH

Test Model: SMOOTH 5.5

Environmental Conditions

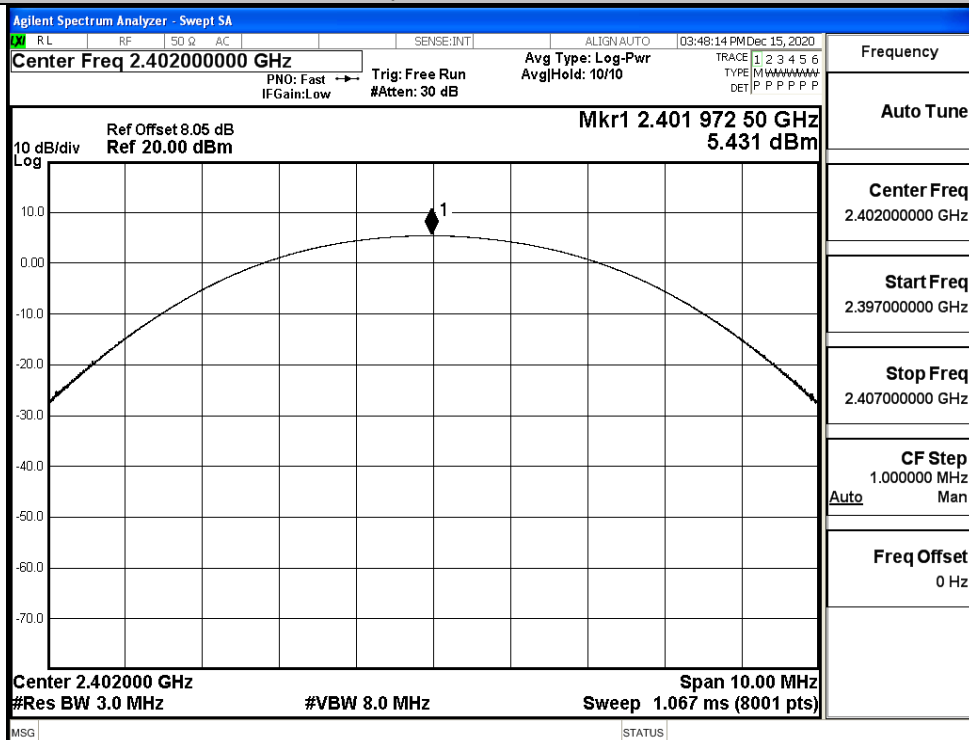
Temperature:	22.5° C
Relative Humidity:	53.7%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond Lu
Supervised by:	Li Huan

A.1 Maximum Conducted Peak Output Power

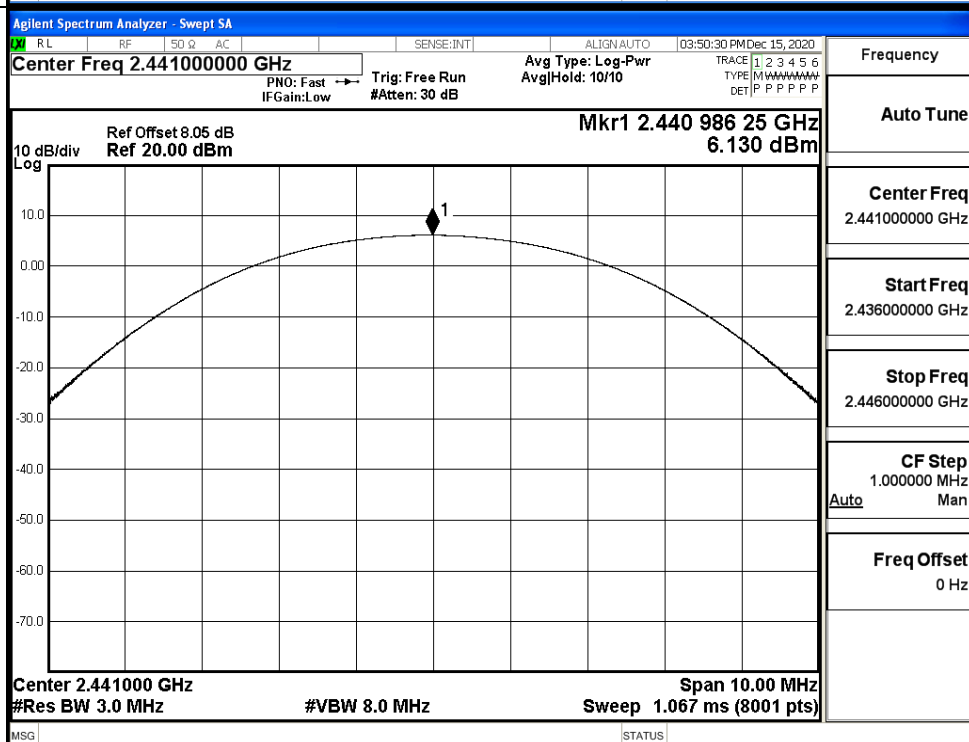
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	5.431	21	PASS
	MCH	6.130	21	PASS
	HCH	5.415	21	PASS
$\pi/4$ DQPSK	LCH	4.383	21	PASS
	MCH	5.482	21	PASS
	HCH	4.743	21	PASS
8DPSK	LCH	4.404	21	PASS
	MCH	5.511	21	PASS
	HCH	4.766	21	PASS

Test Graphs

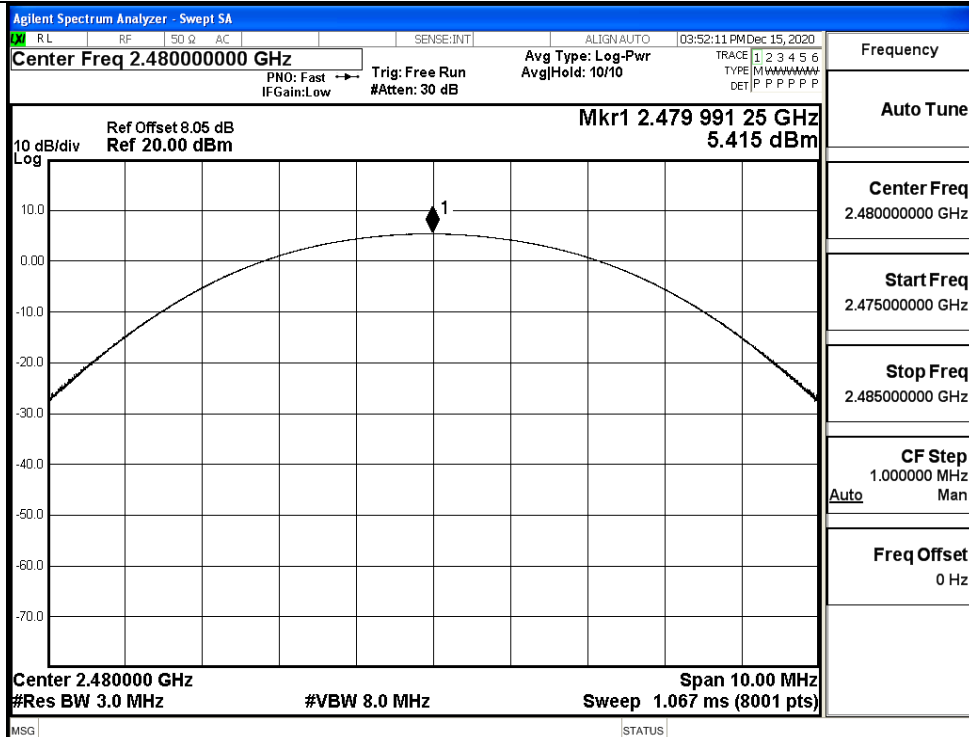
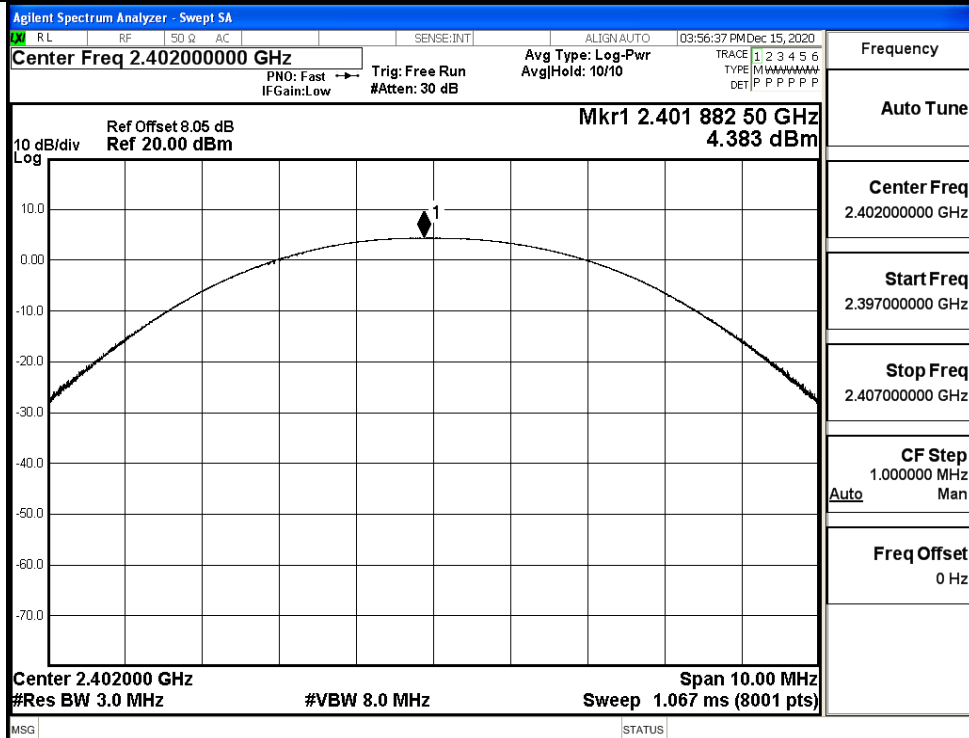
GFSK/LCH

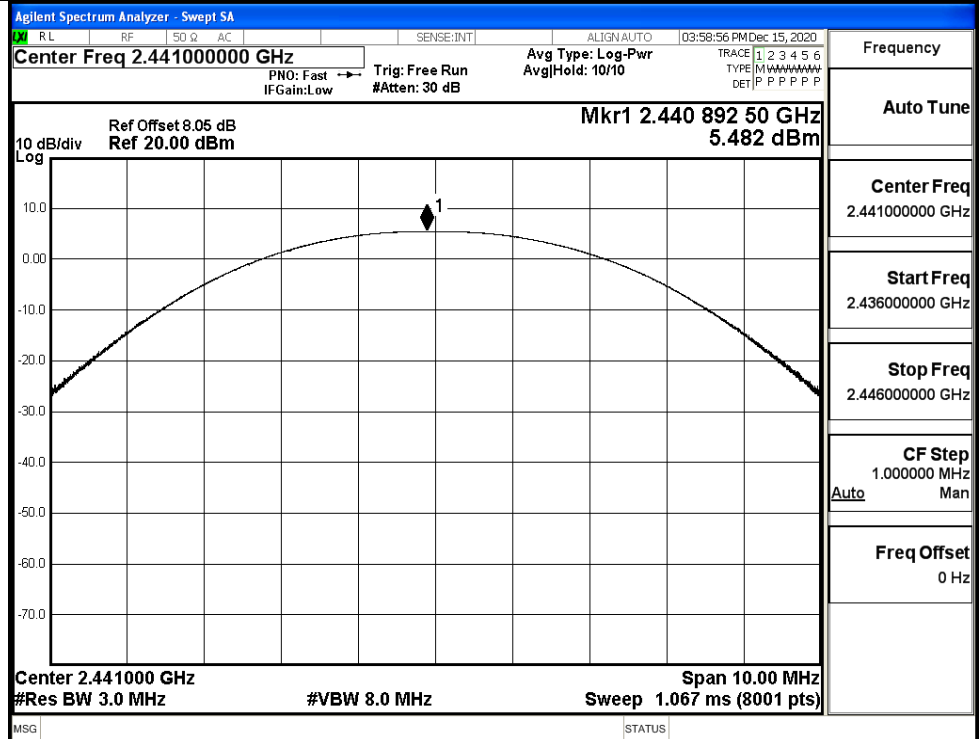
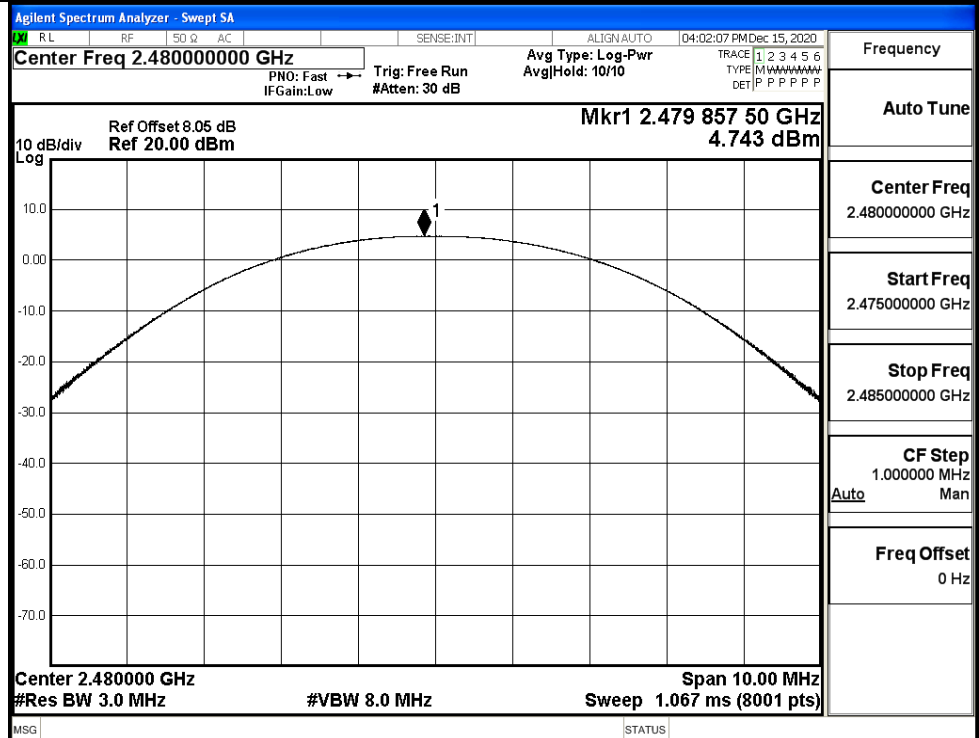


GFSK/MCH

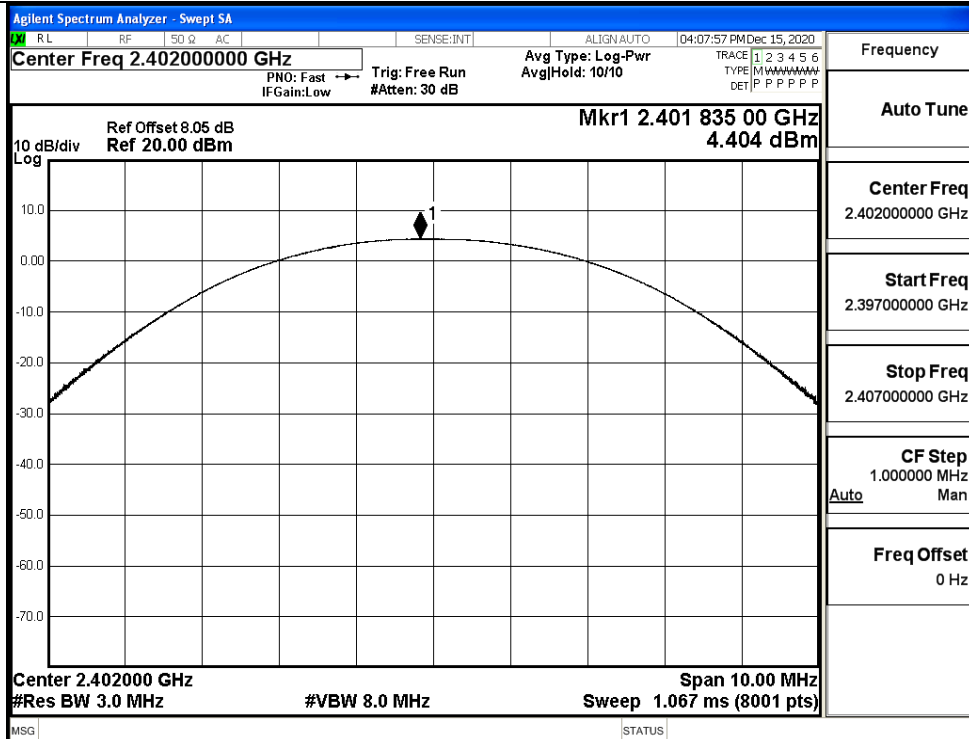


GFSK/HCH

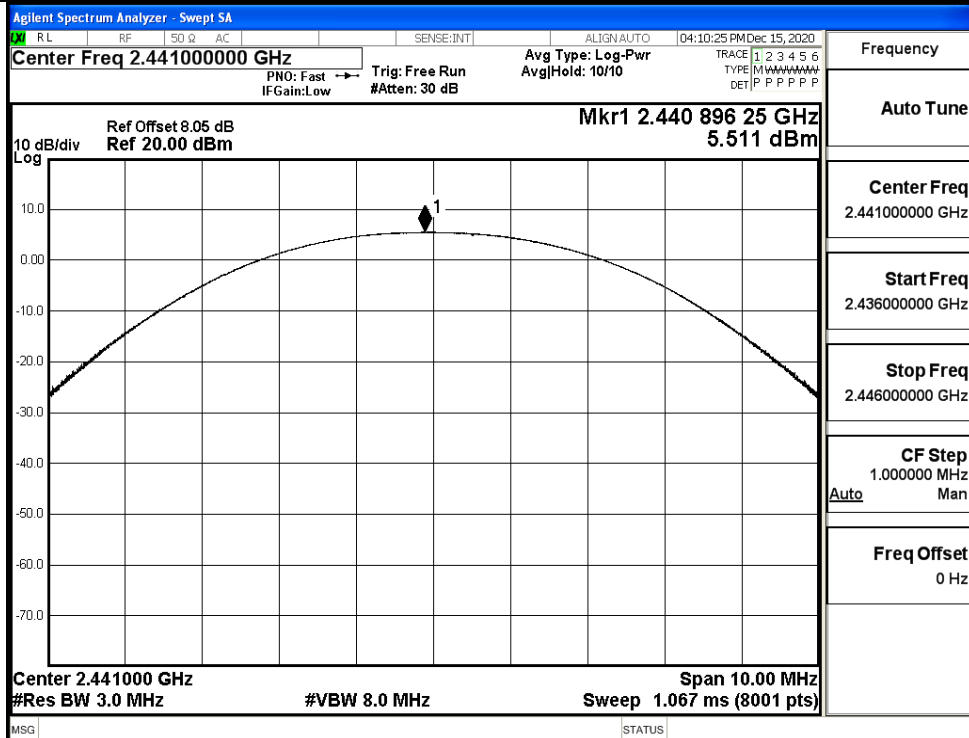
 $\pi/4$ DQPSK/LCH

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

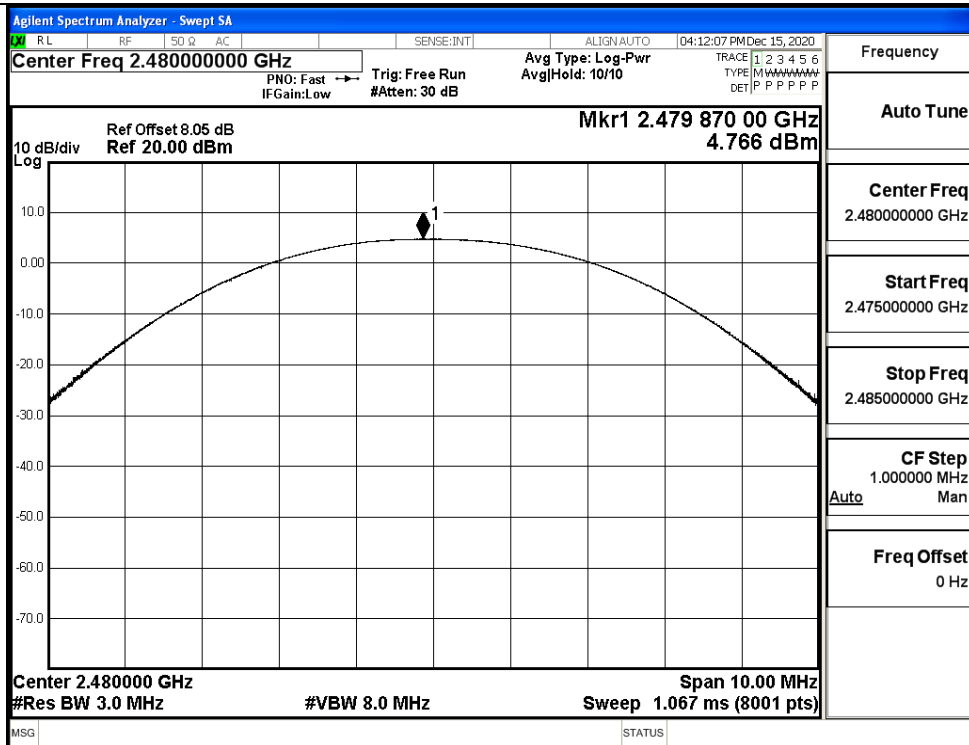
8DPSK/LCH



8DPSK/MCH



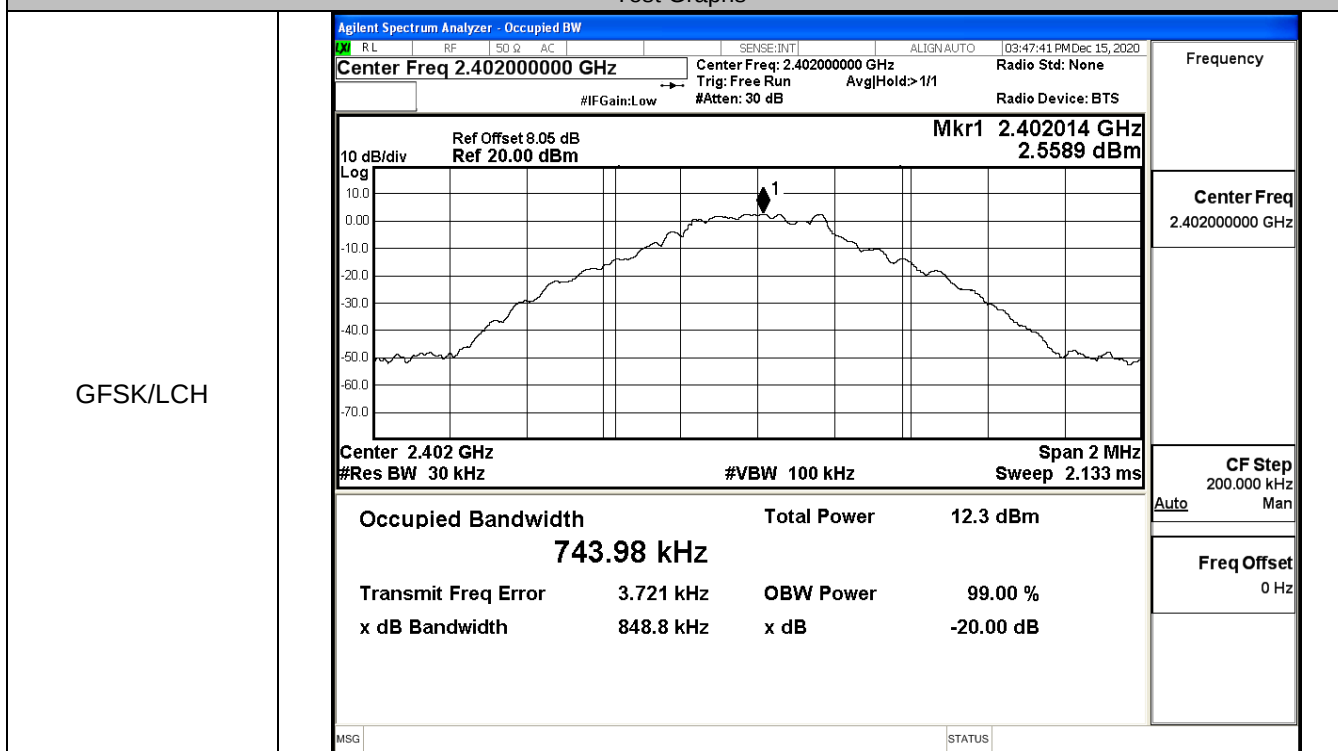
8DPSK/HCH



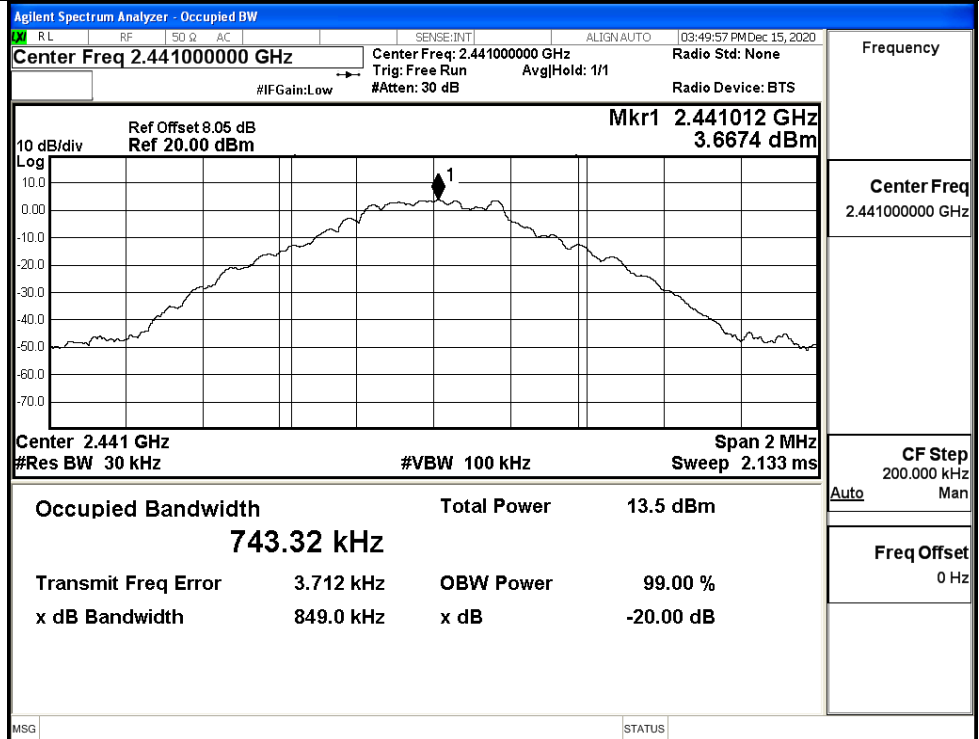
A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.8488	Not Specified	PASS
	MCH	0.8490	Not Specified	PASS
	HCH	0.8565	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.267	Not Specified	PASS
	MCH	1.272	Not Specified	PASS
	HCH	1.272	Not Specified	PASS
8DPSK	LCH	1.266	Not Specified	PASS
	MCH	1.272	Not Specified	PASS
	HCH	1.266	Not Specified	PASS

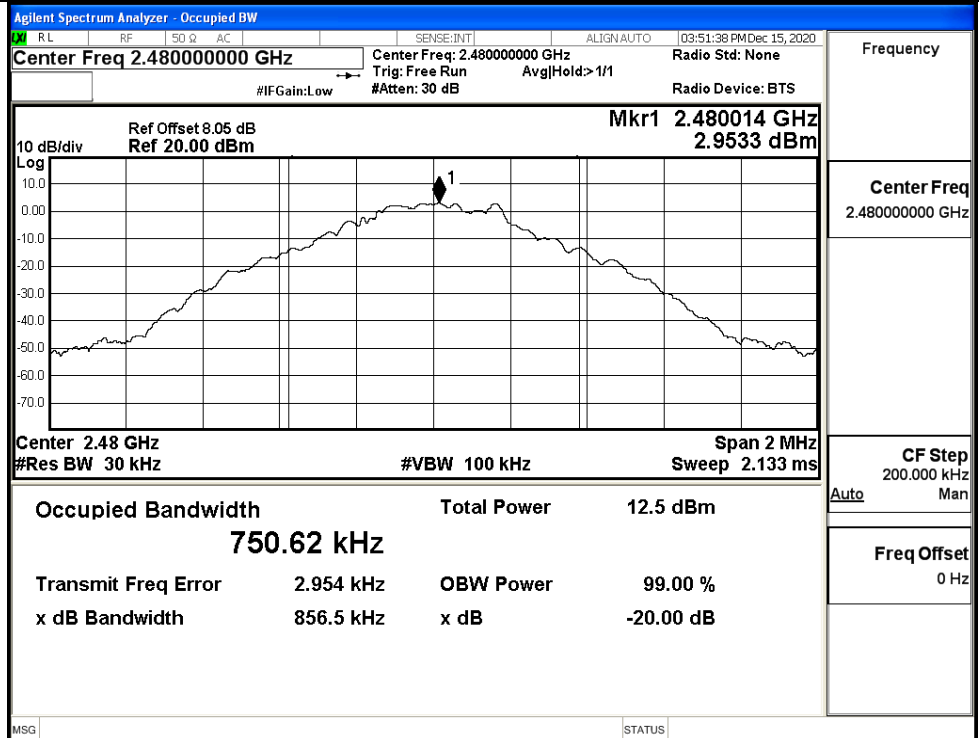
Test Graphs

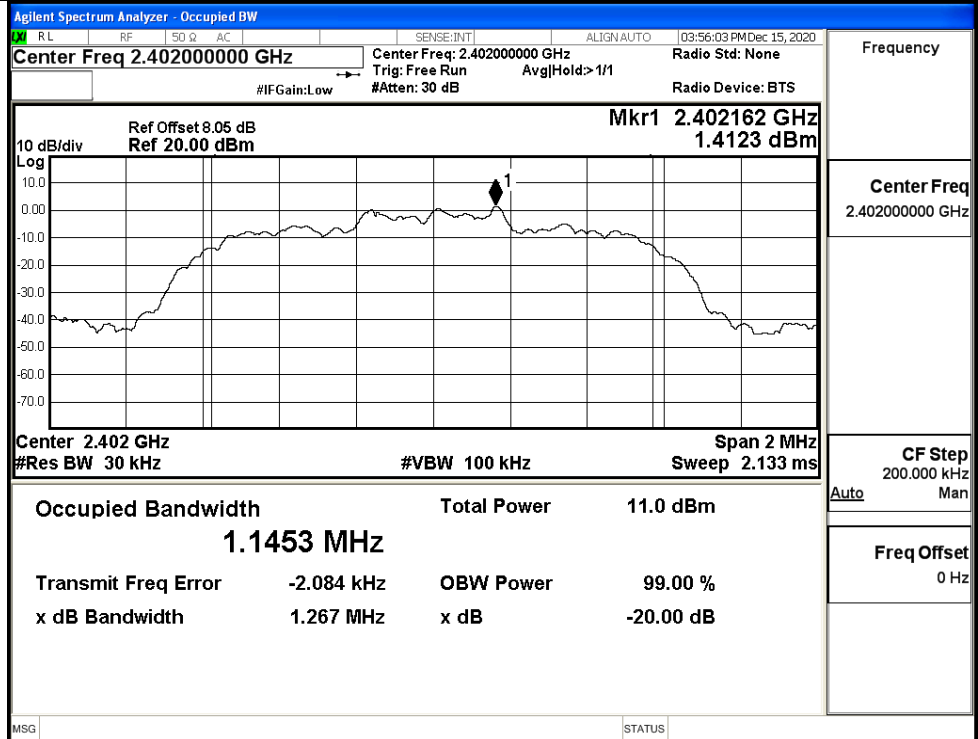
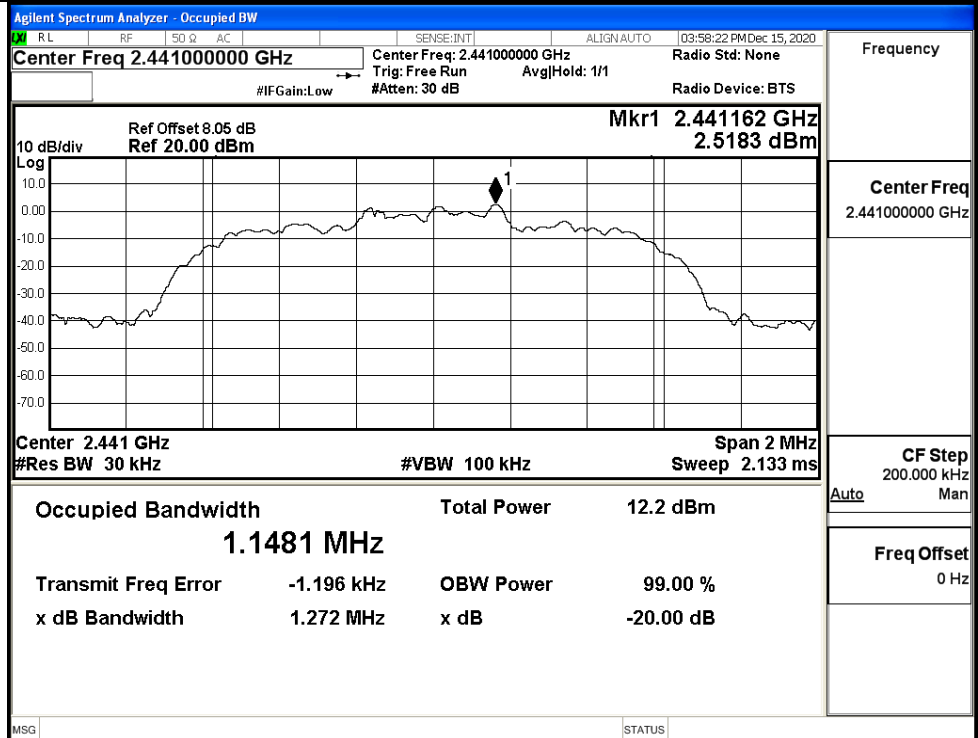


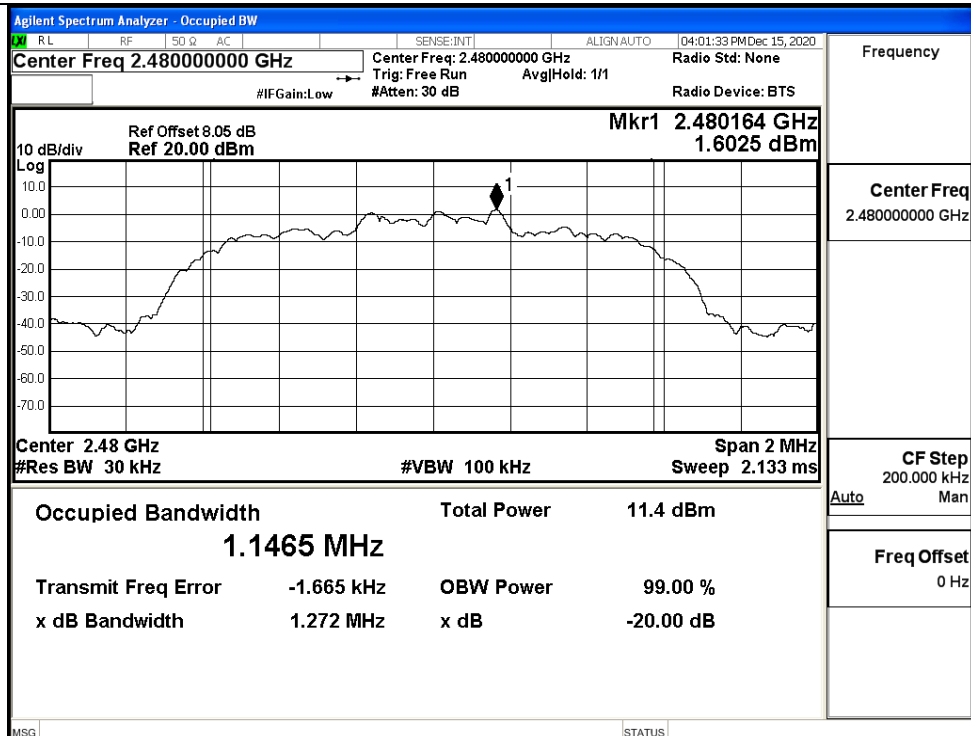
GFSK/MCH



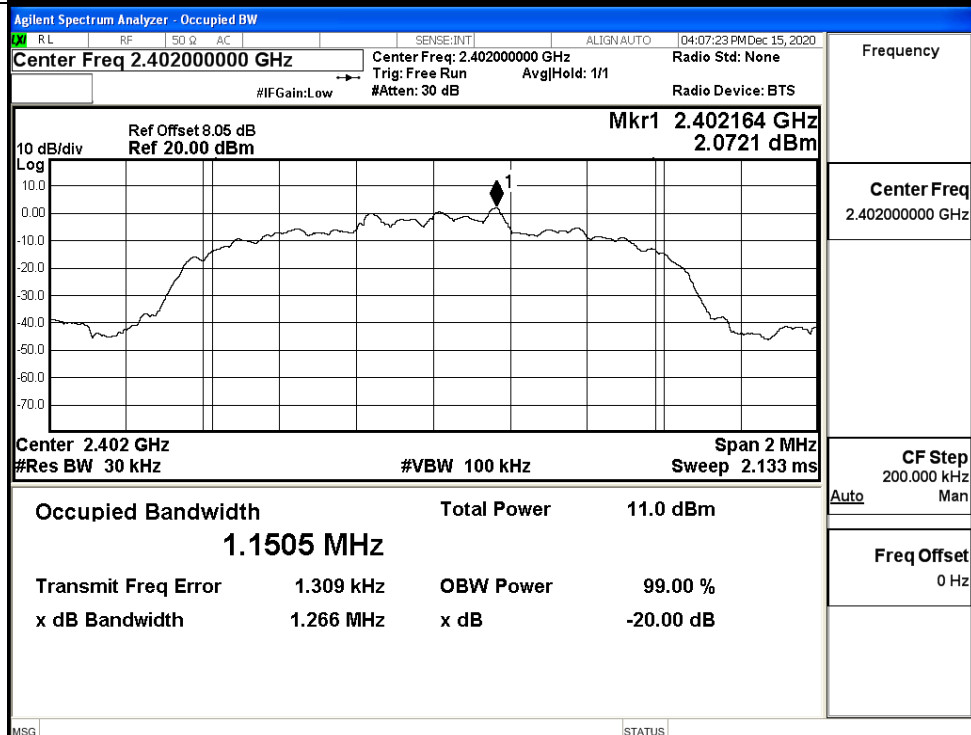
GFSK/HCH



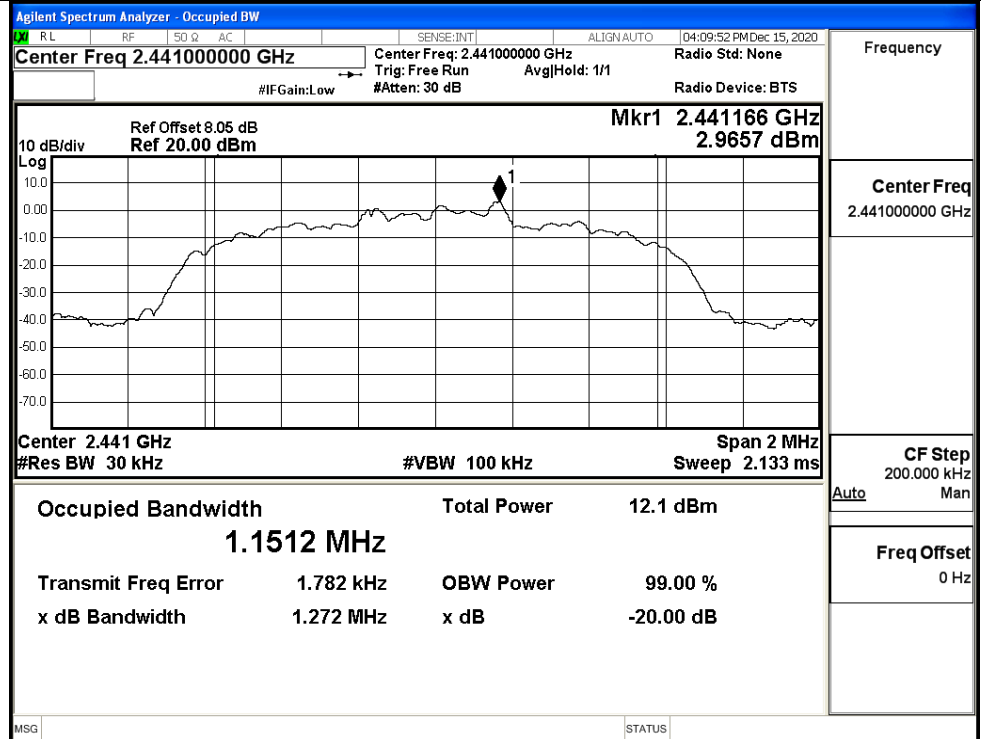
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

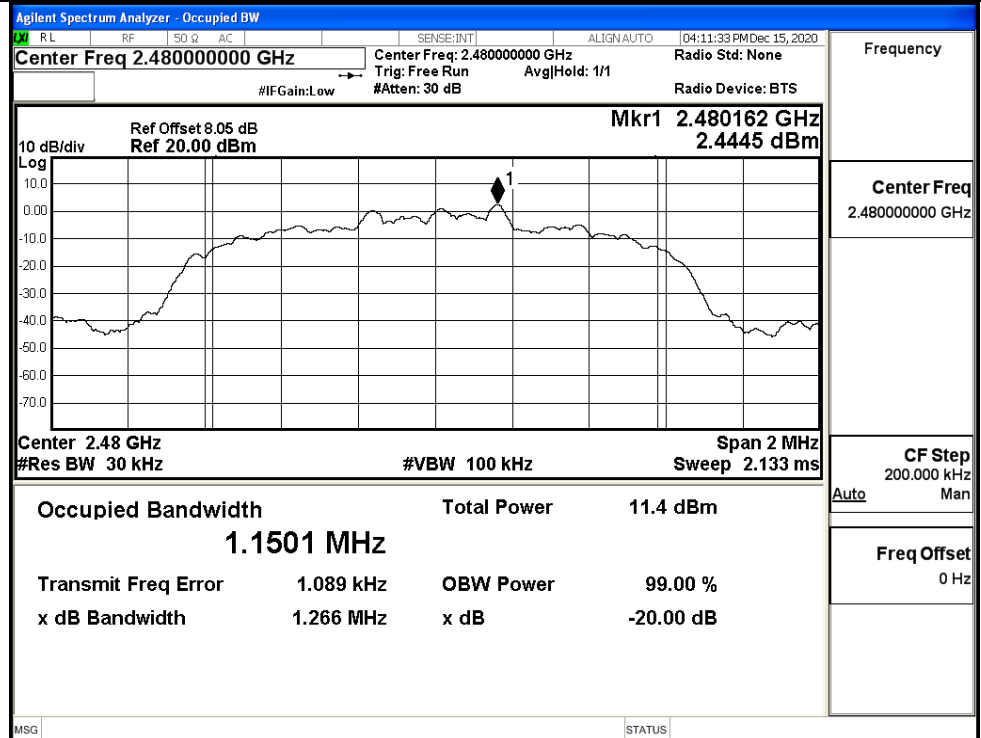
8DPSK/LCH



8DPSK/MCH



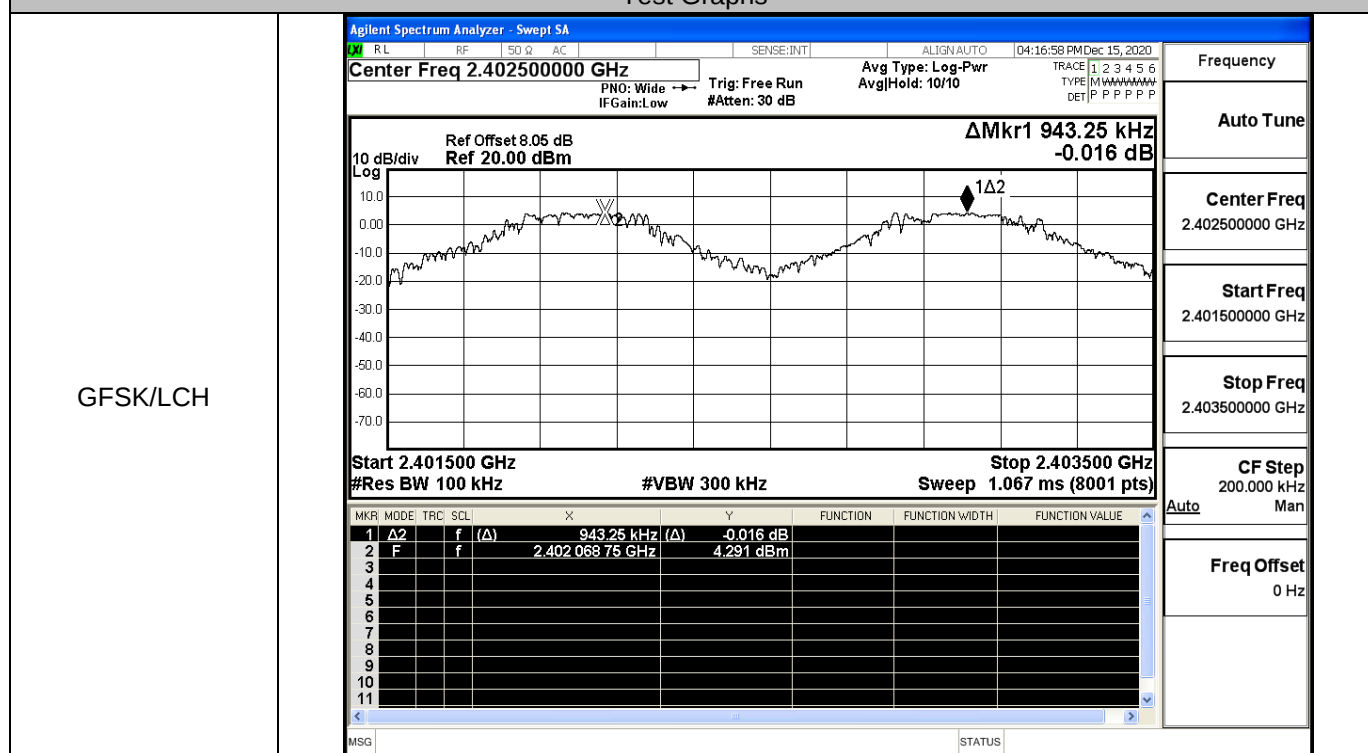
8DPSK/HCH



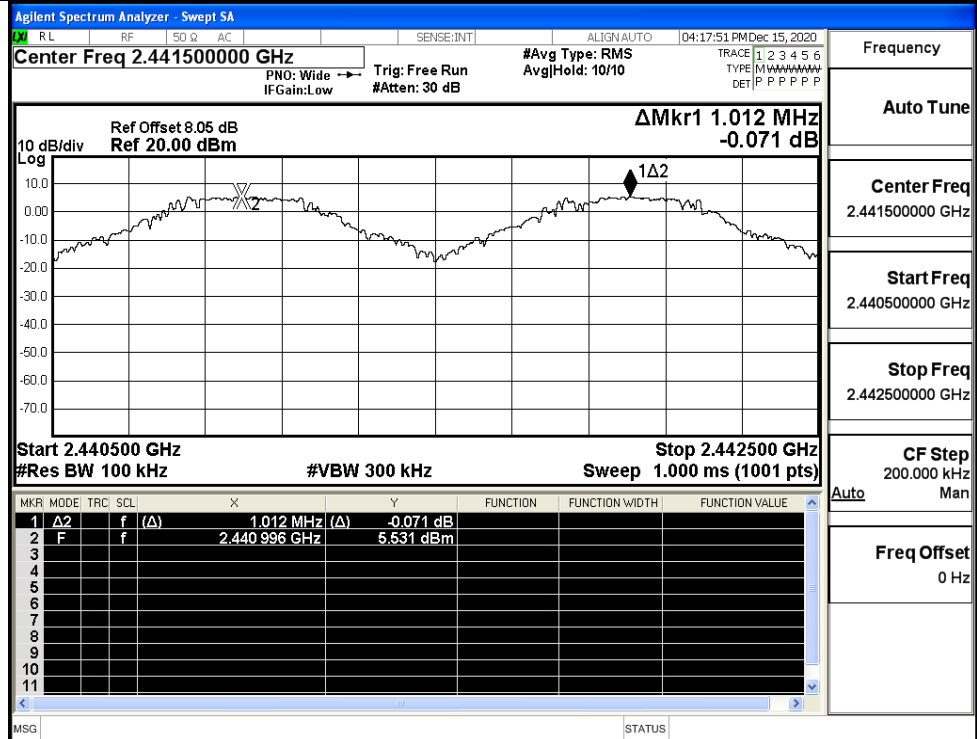
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.943	0.571	PASS
	MCH	1.012	0.571	PASS
	HCH	1.036	0.571	PASS
$\pi/4$ DQPSK	LCH	1.040	0.848	PASS
	MCH	1.106	0.848	PASS
	HCH	1.242	0.848	PASS
8DPSK	LCH	0.998	0.848	PASS
	MCH	1.068	0.848	PASS
	HCH	0.874	0.848	PASS

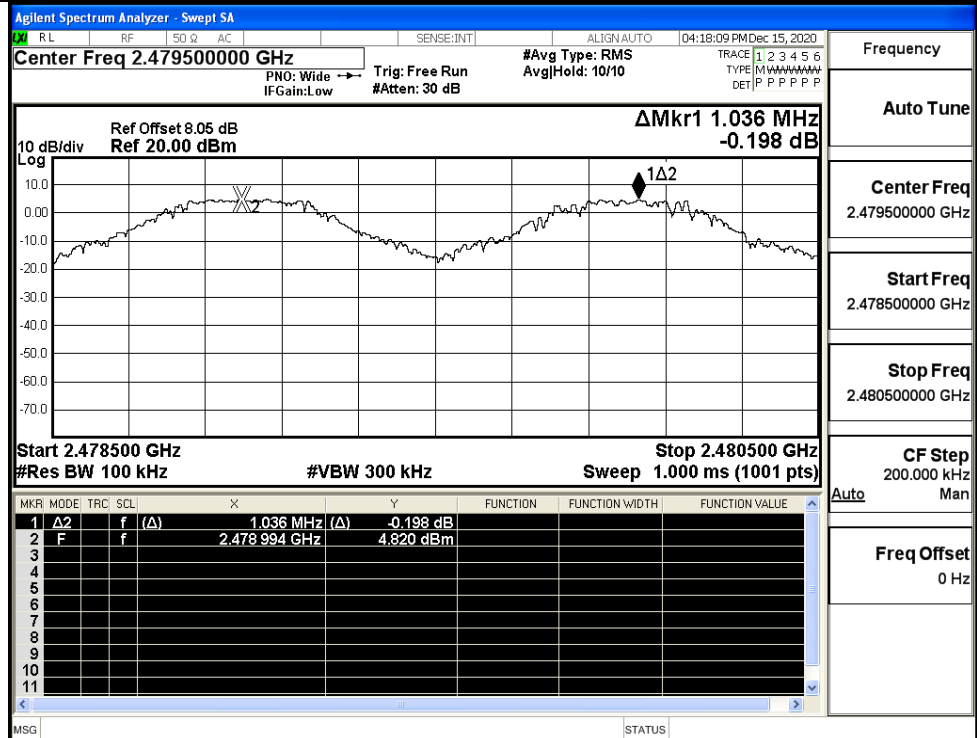
Test Graphs

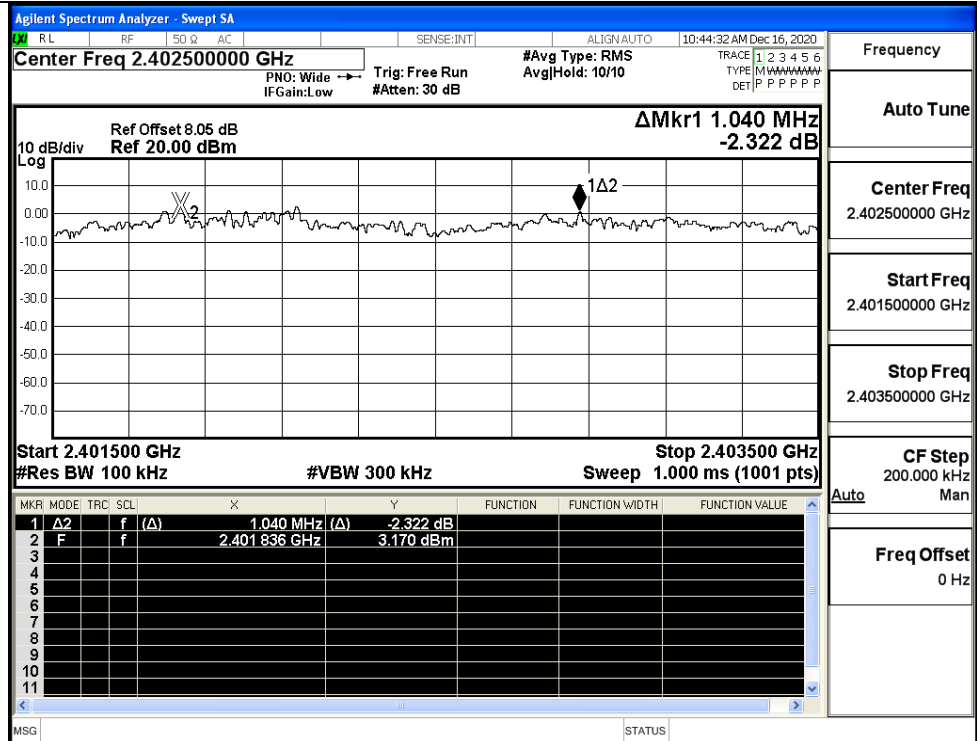
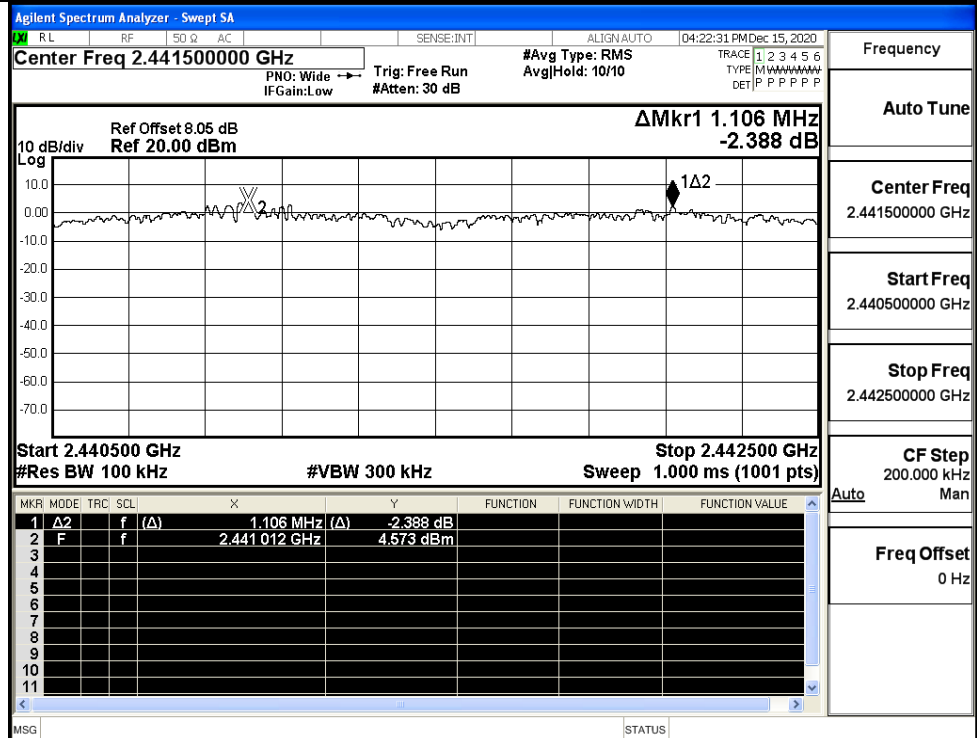


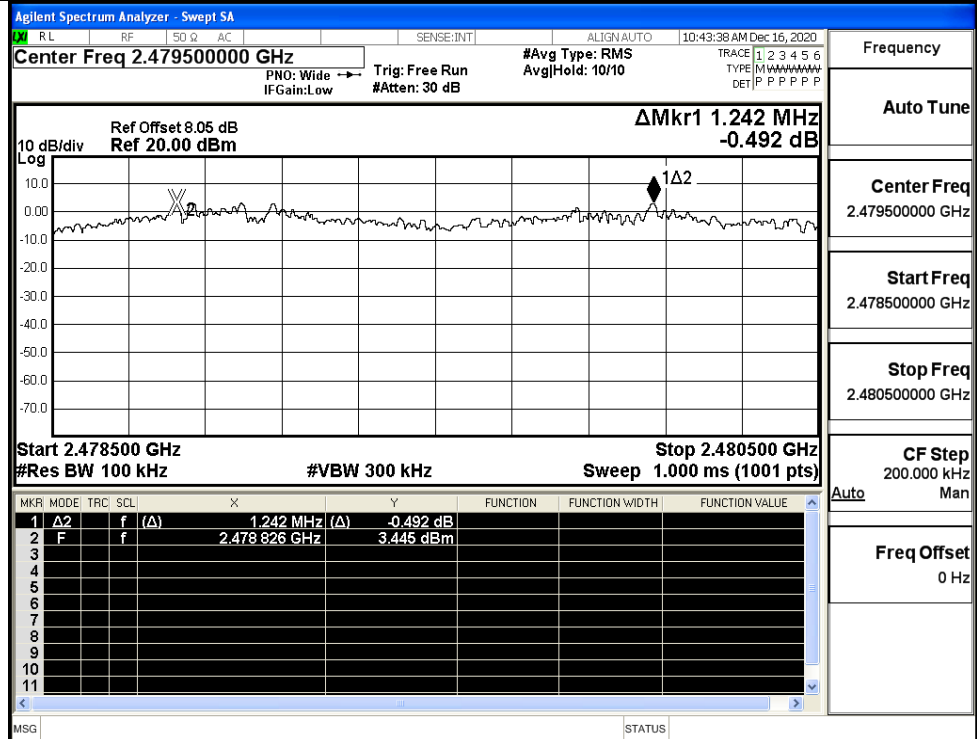
GFSK/MCH



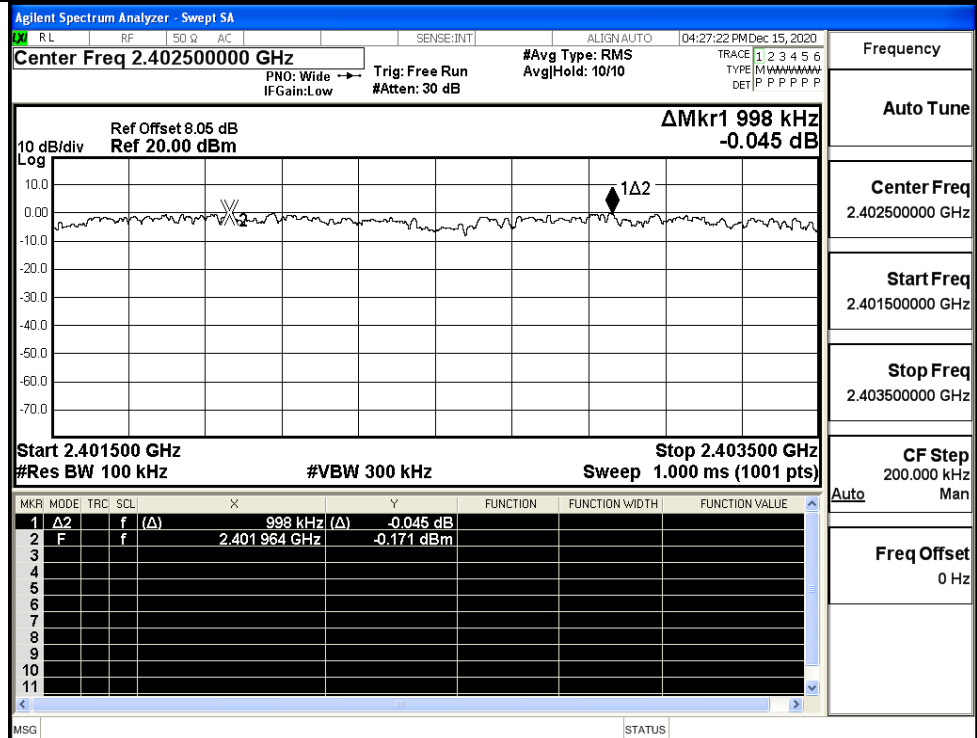
GFSK/HCH

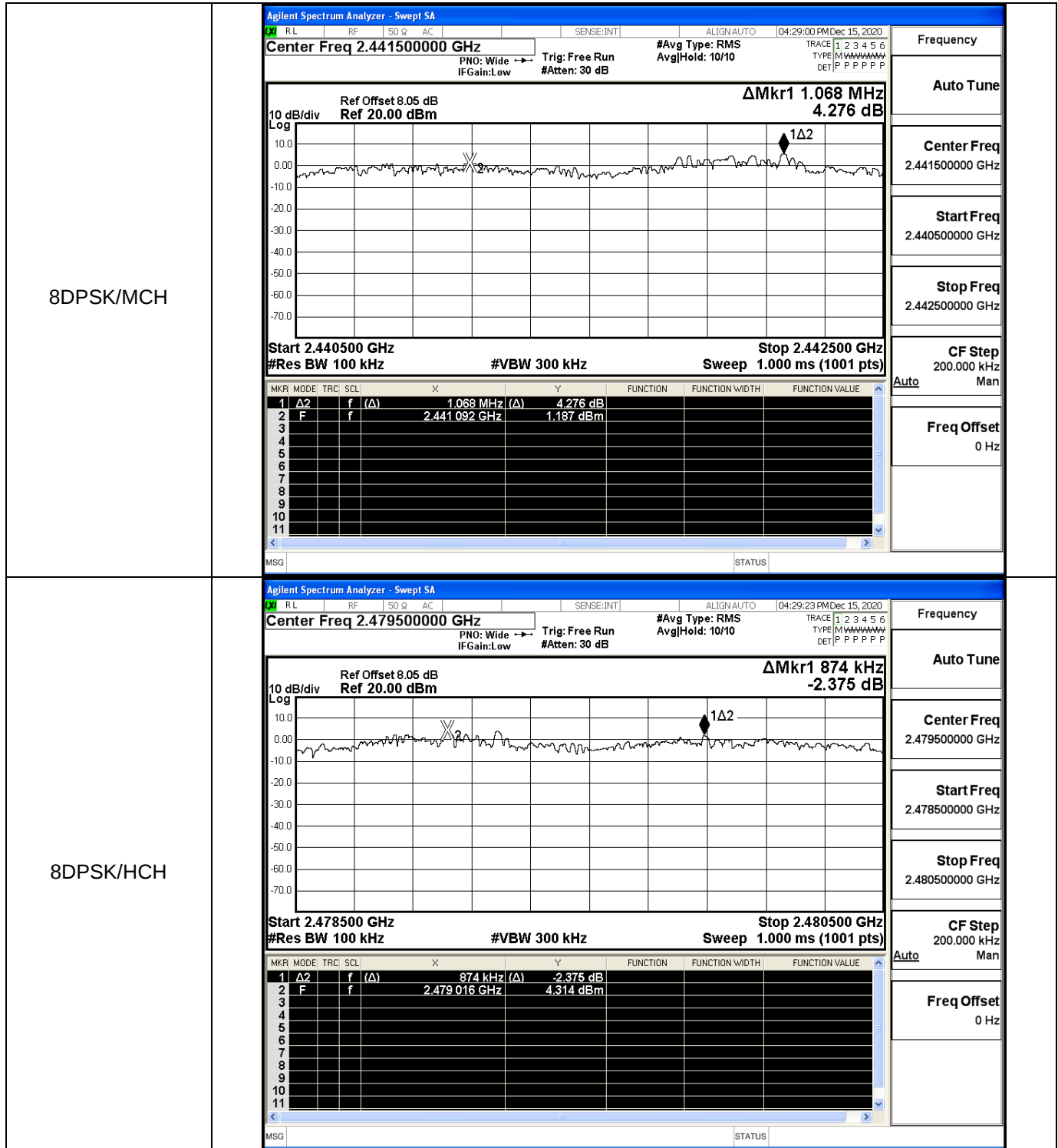


$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

8DPSK/LCH



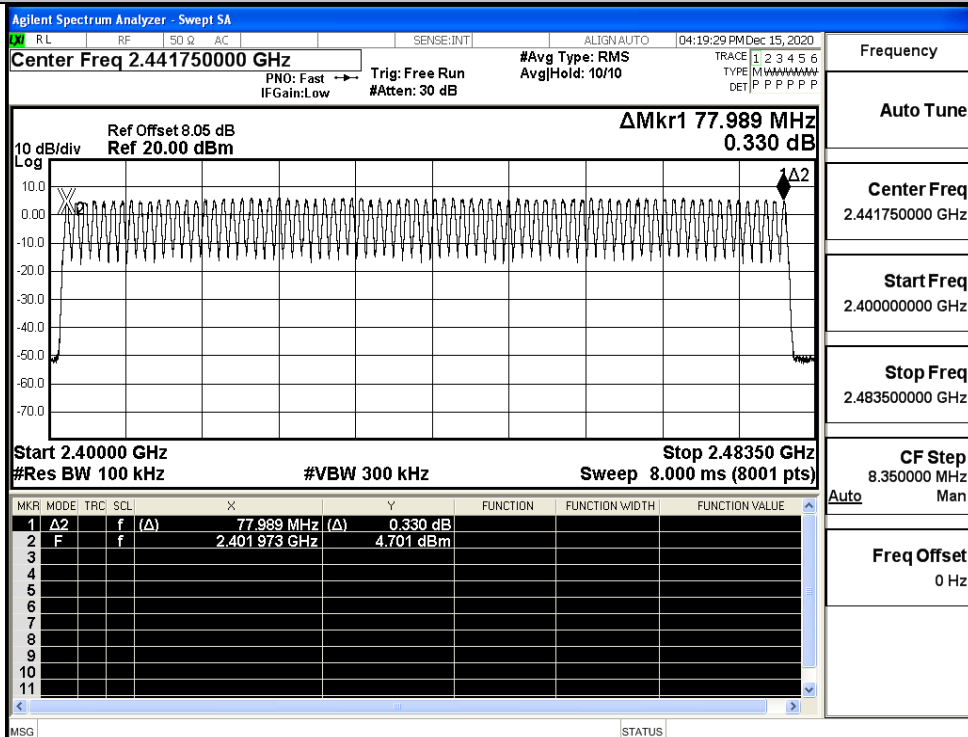
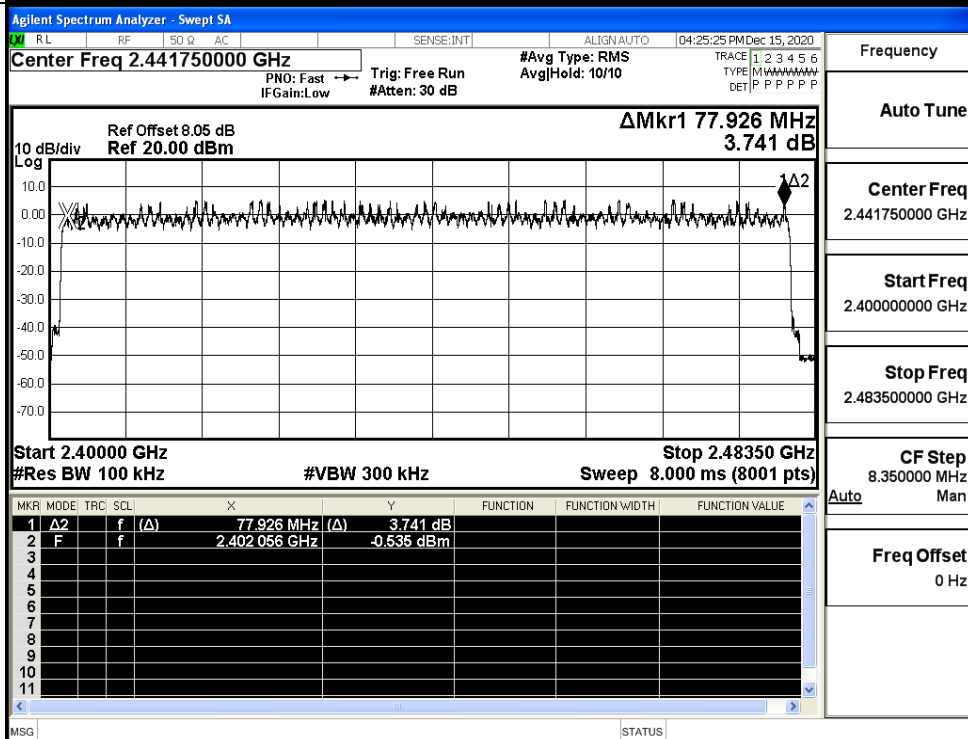


A.4 Hopping Channel Number

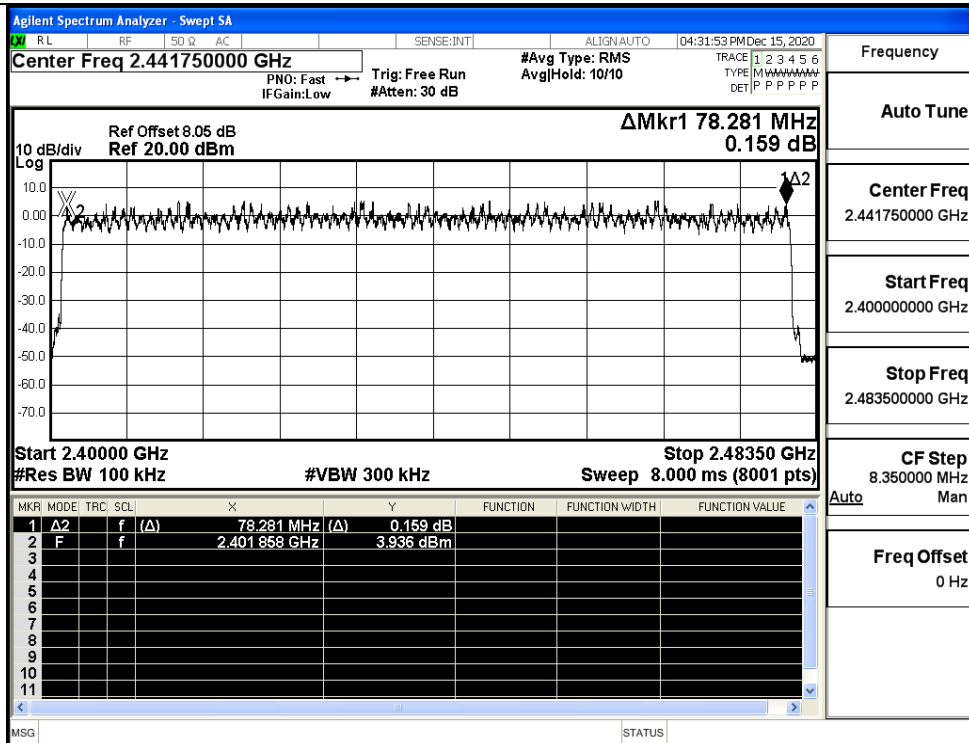
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

Test Graphs

GFSK/Hop

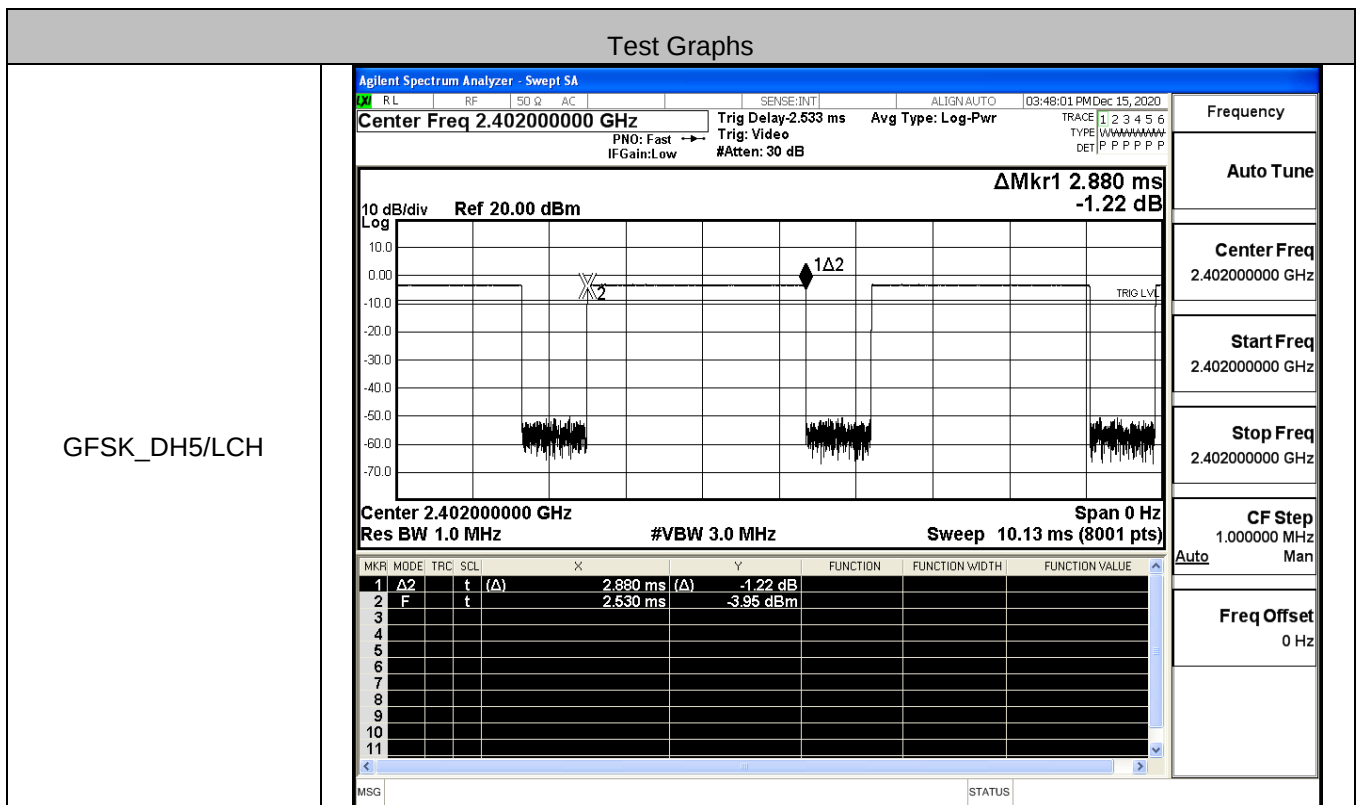
 $\pi/4$ DQPSK/Hop

8DPSK/Hop

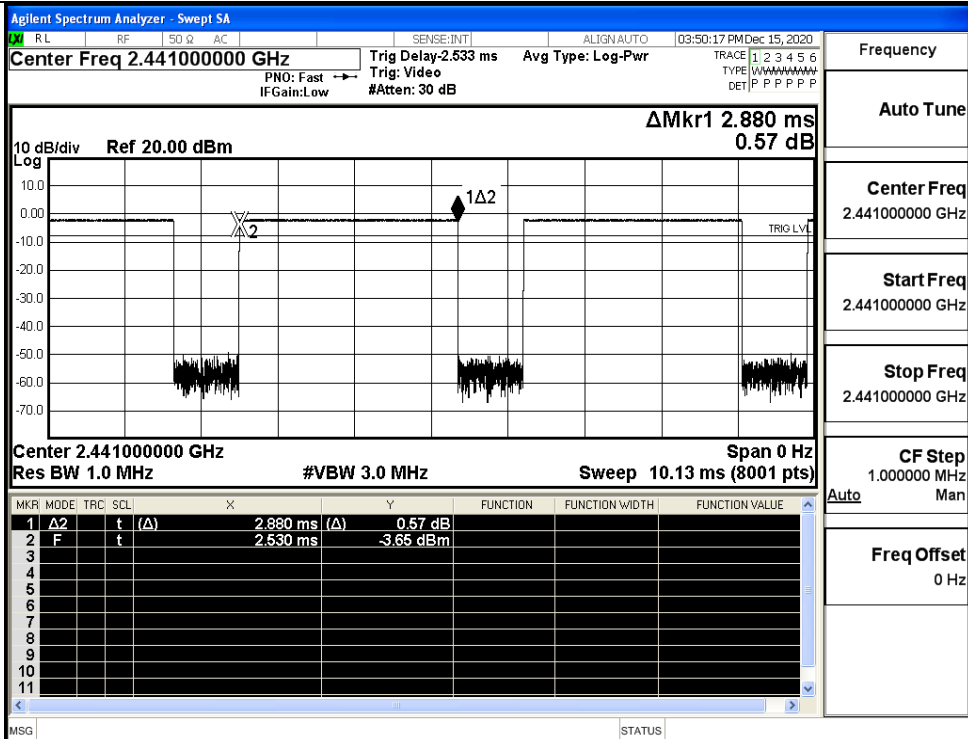


A.5 Dwell Time

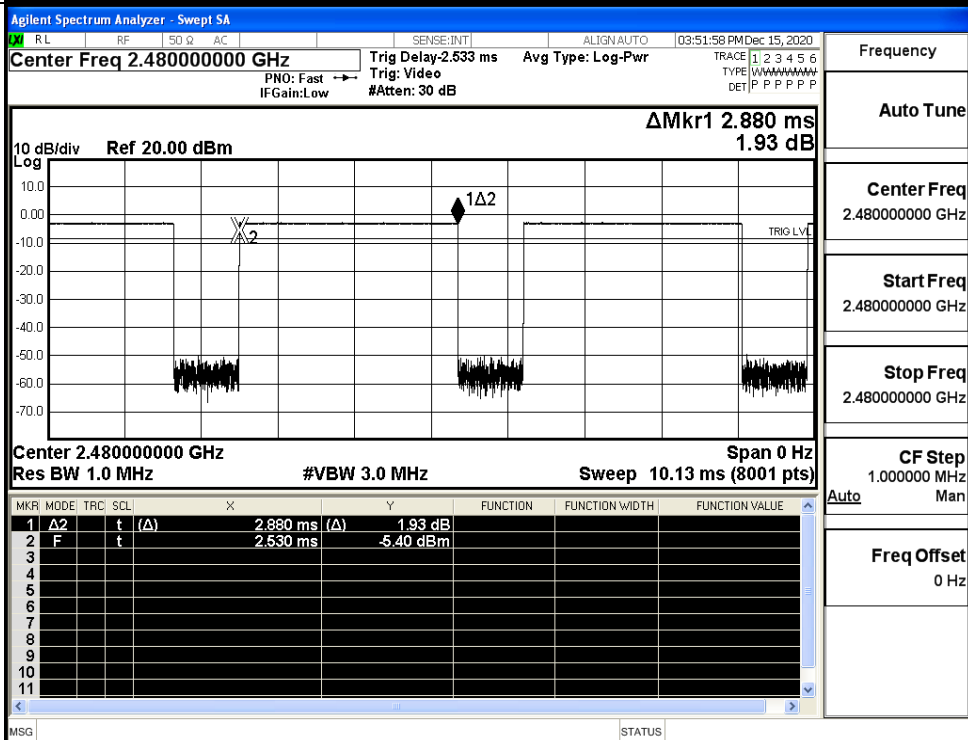
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88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



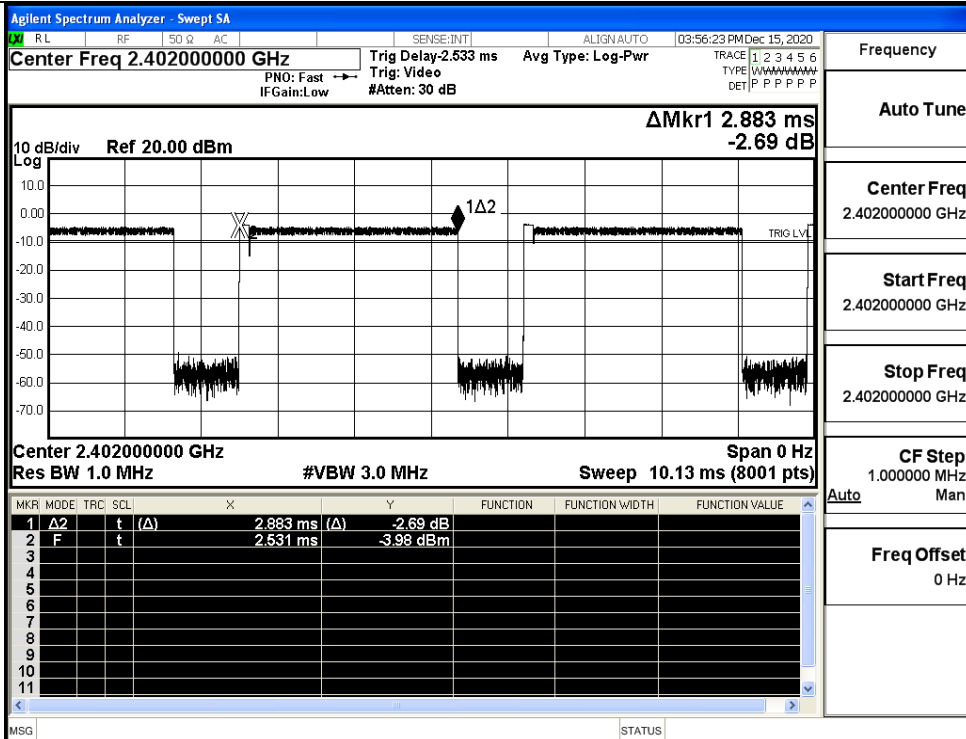
GFSK_DH5/MCH



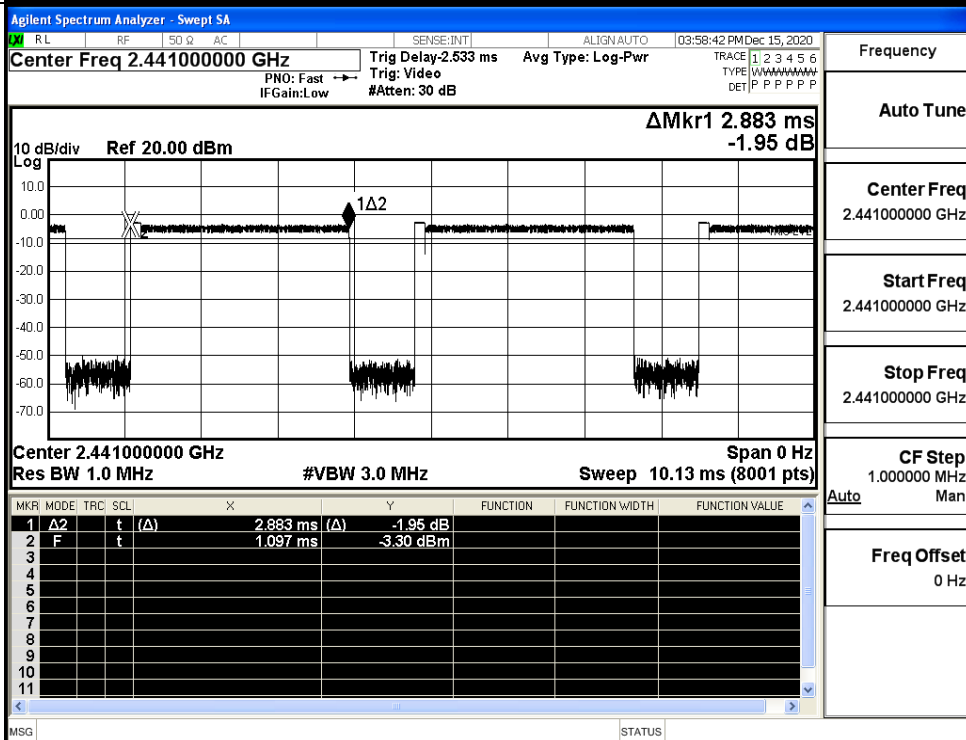
GFSK_DH5/HCH



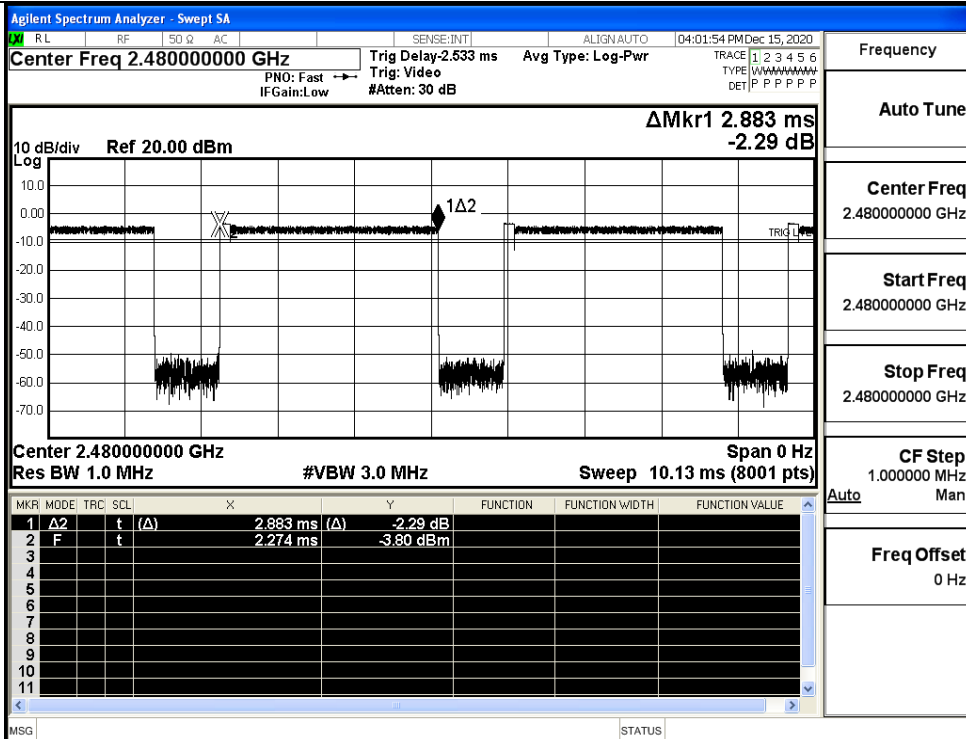
$\pi/4$ DQPSK
_2DH5/LCH



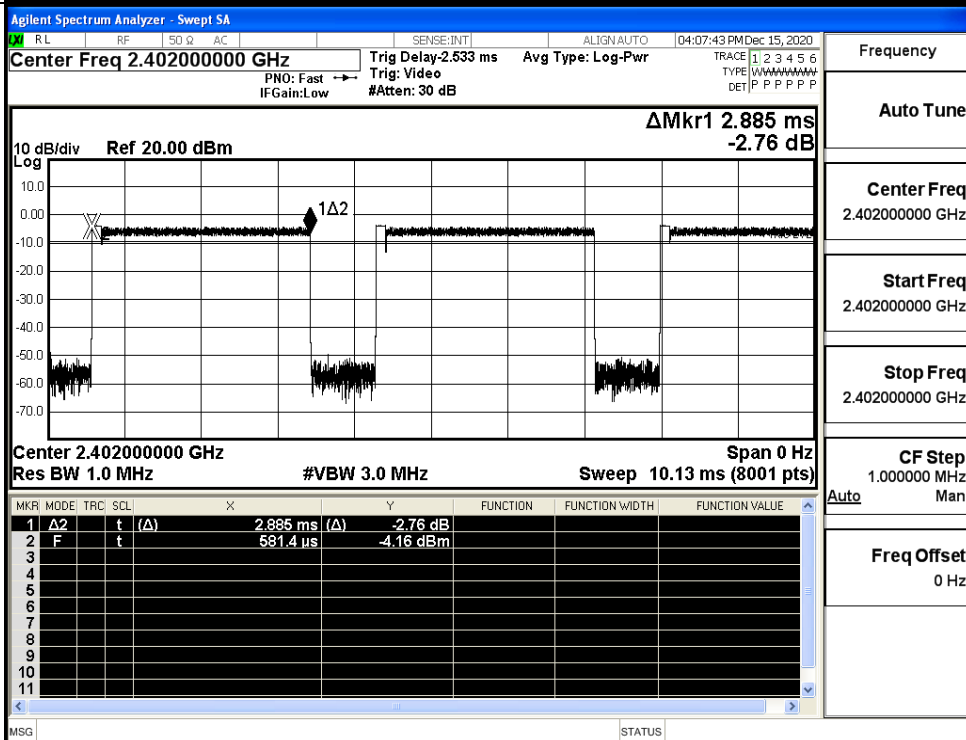
$\pi/4$ DQPSK
_2DH5/MCH



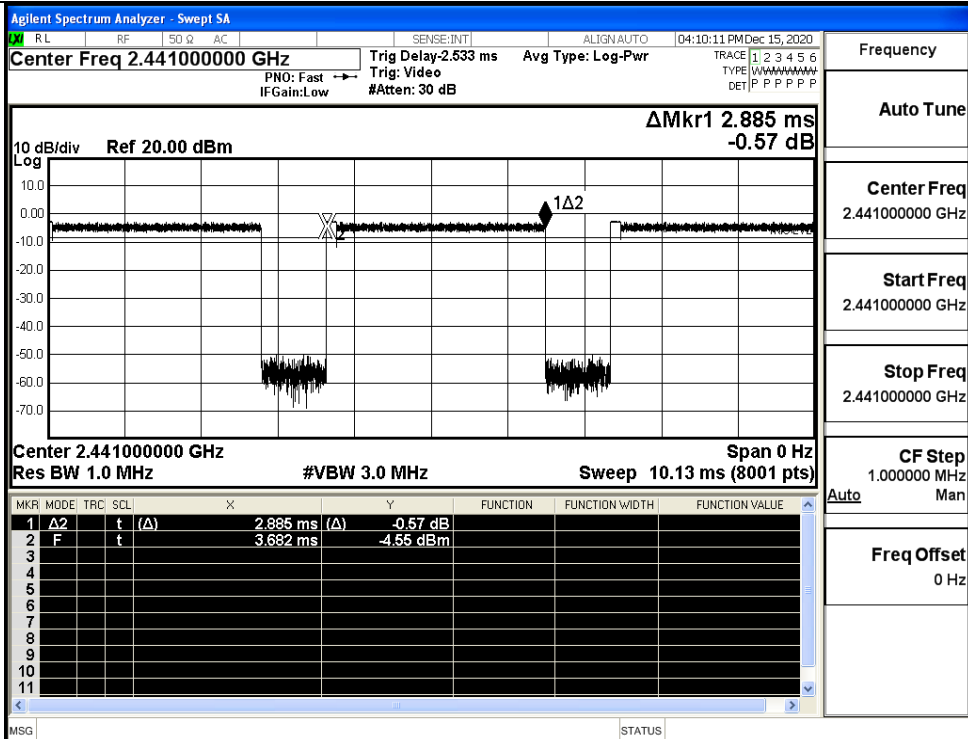
$\pi/4$ DQPSK
_2DH5/HCH



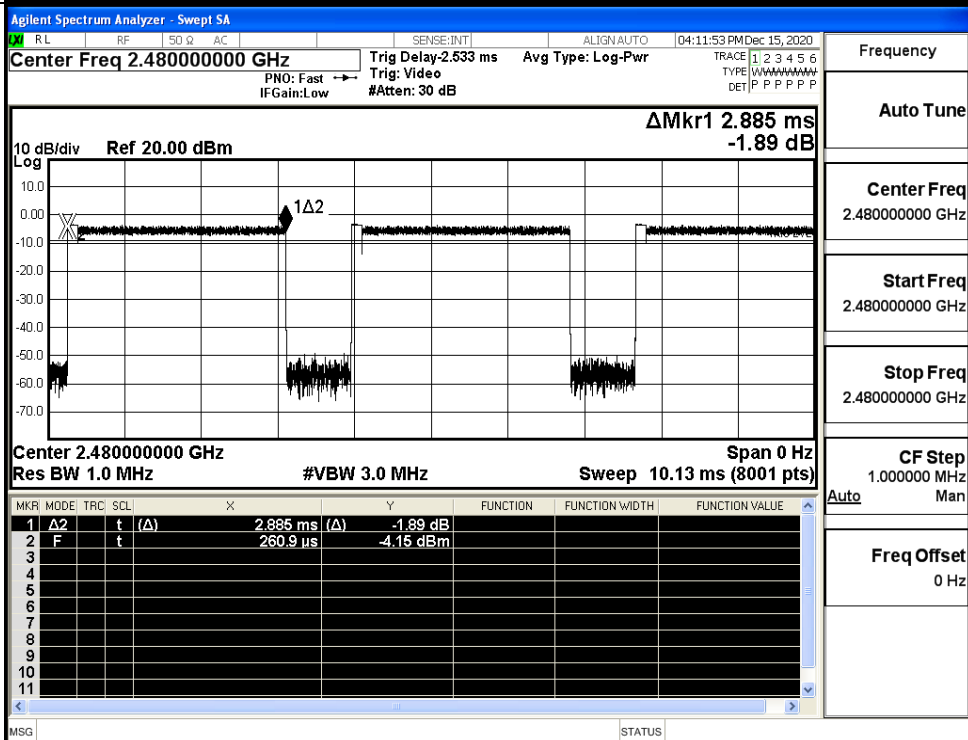
8DPSK _3DH5/LCH



8DPSK_3DH5/MCH



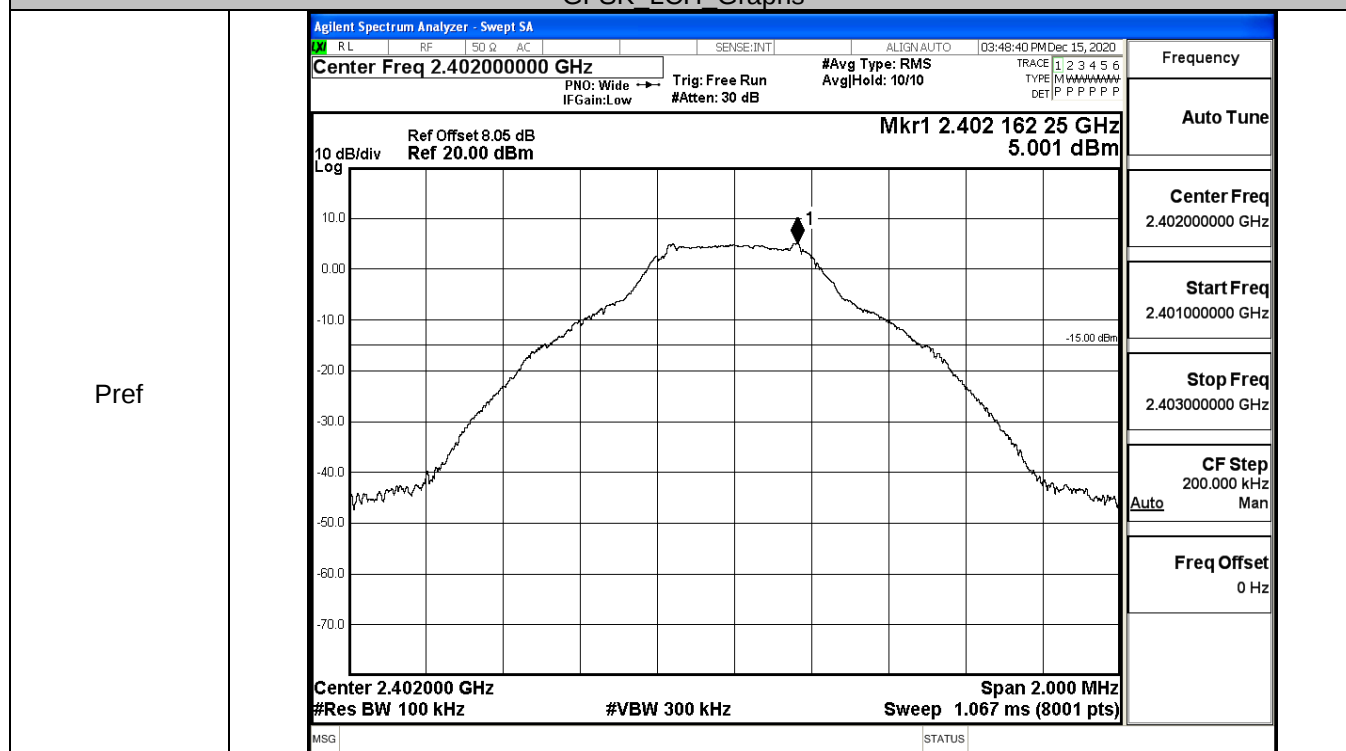
8DPSK_3DH5/HCH

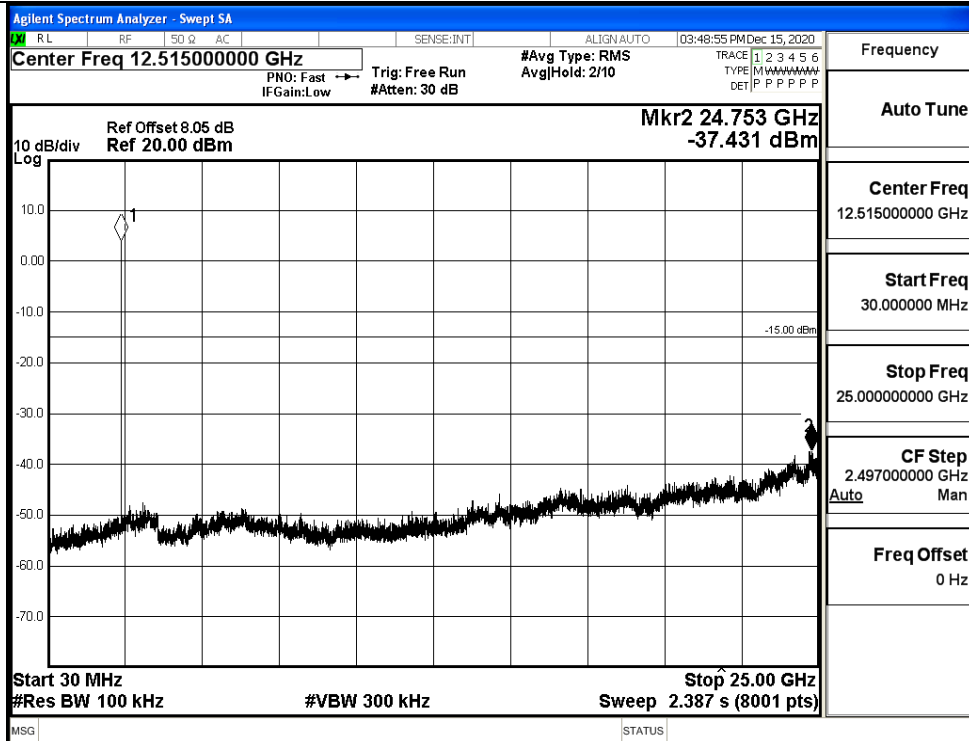


A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	5.001	-37.431	-14.999	PASS
	MCH	5.665	-37.764	-14.335	PASS
	HCH	4.97	-37.786	-15.030	PASS
$\pi/4$ DQPSK	LCH	3.738	-36.633	-16.262	PASS
	MCH	4.617	-38.017	-15.383	PASS
	HCH	4.55	-37.686	-15.450	PASS
8DPSK	LCH	4.131	-37.780	-15.869	PASS
	MCH	5.285	-37.287	-14.715	PASS
	HCH	3.858	-38.097	-16.142	PASS

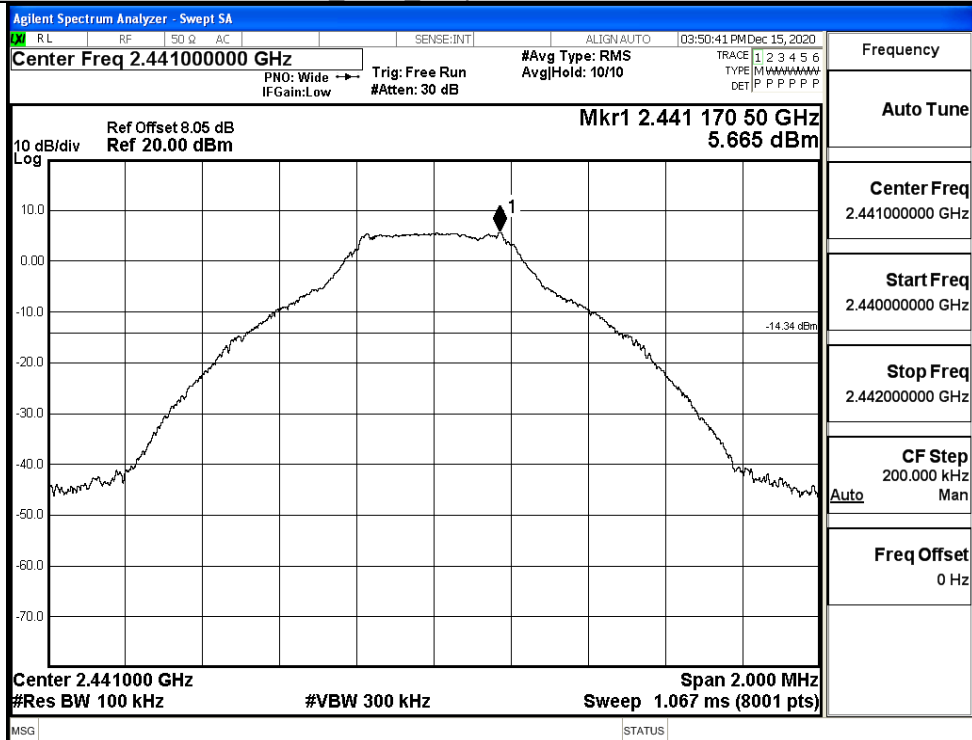
GFSK LCH Graphs



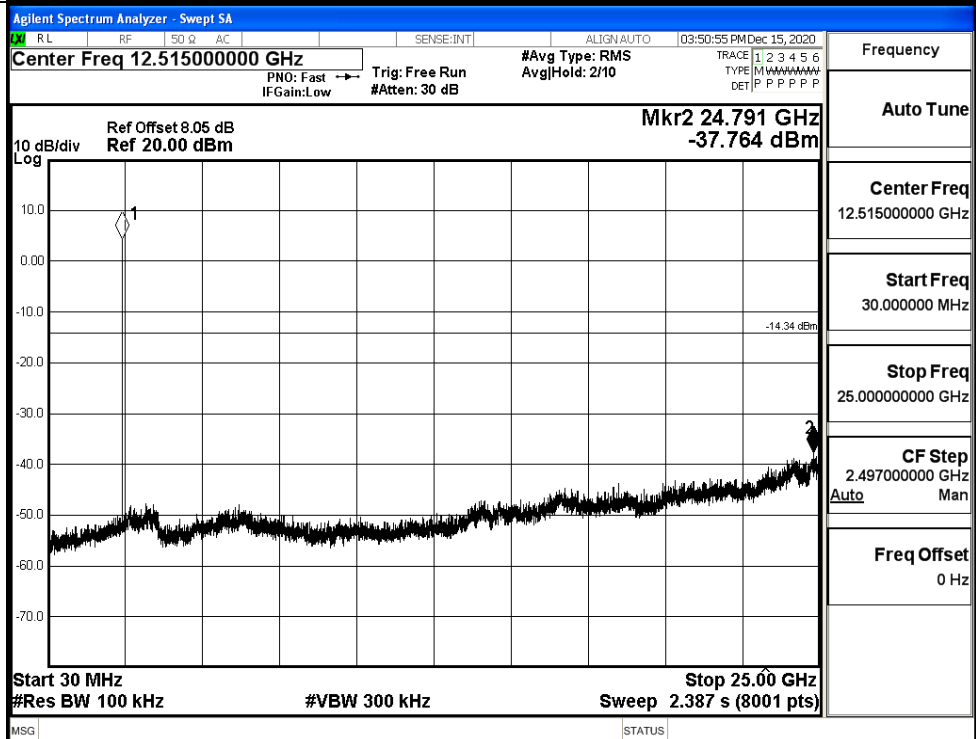
P_{uw}

GFSK_MCH_Graphs

Pref

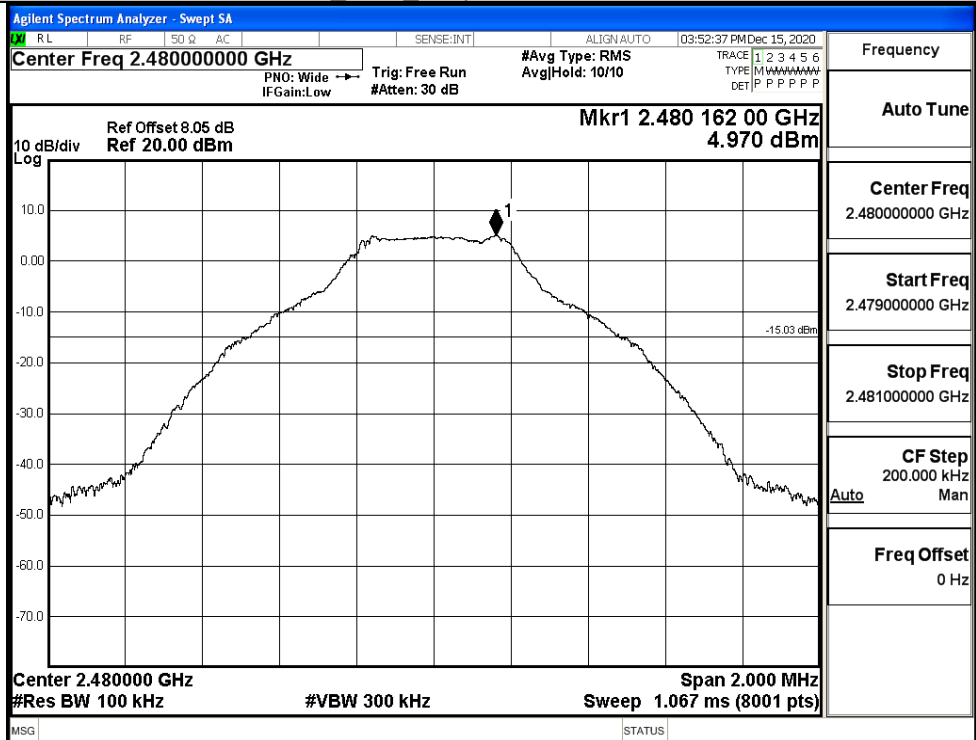


Puw

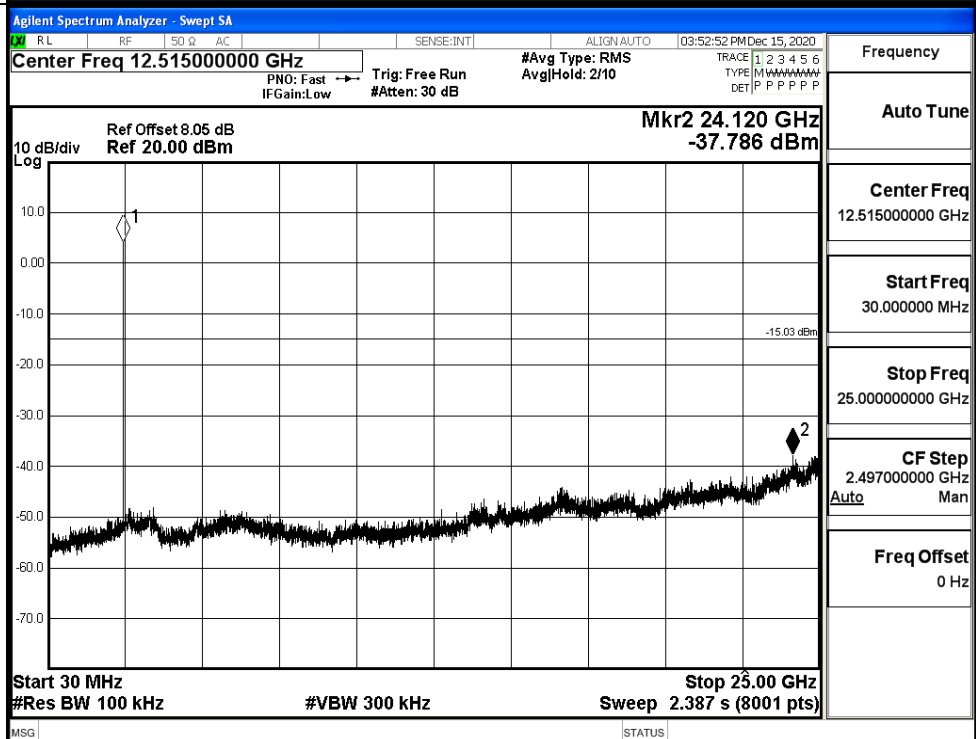


GFSK_HCH_Graphs

Pref

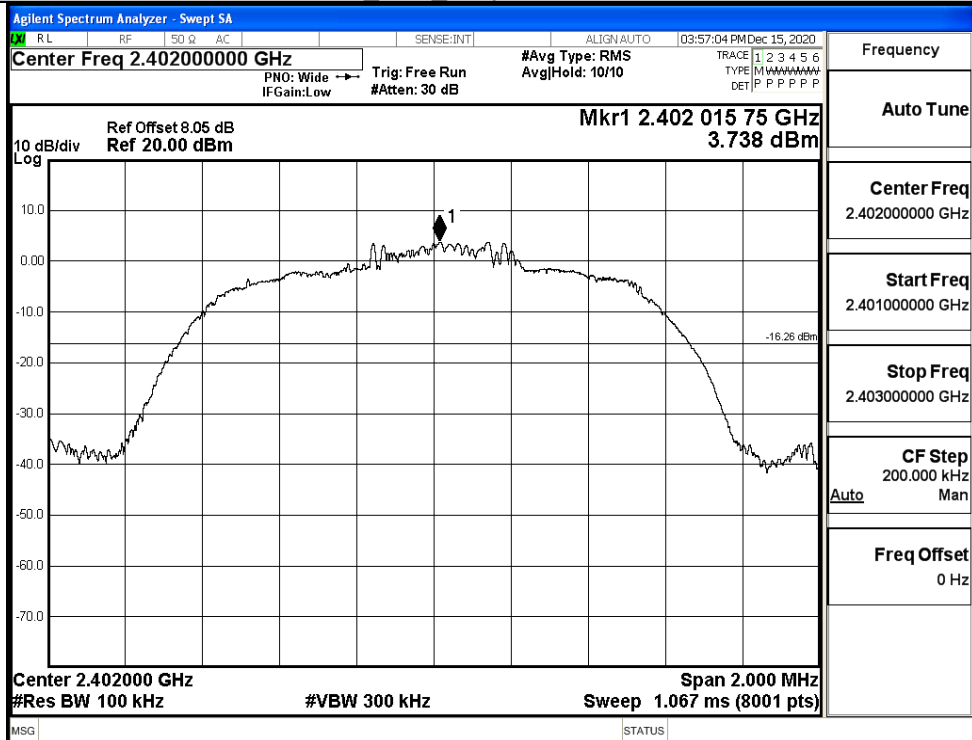


Puw

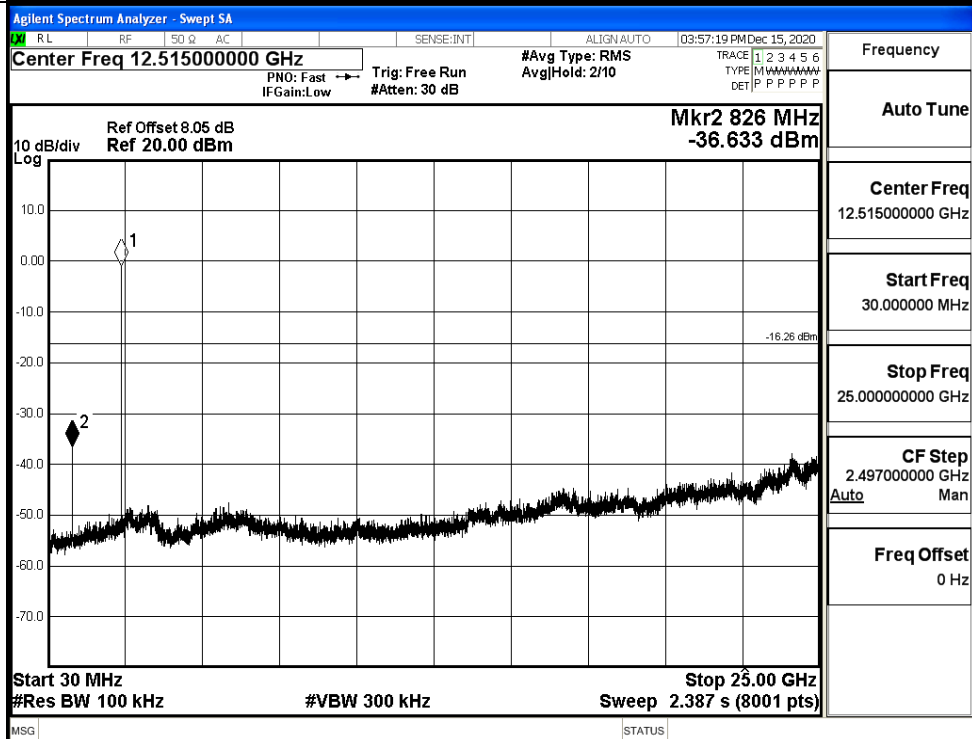


$\pi/4$ DQPSK_LCH_Graphs

Pref

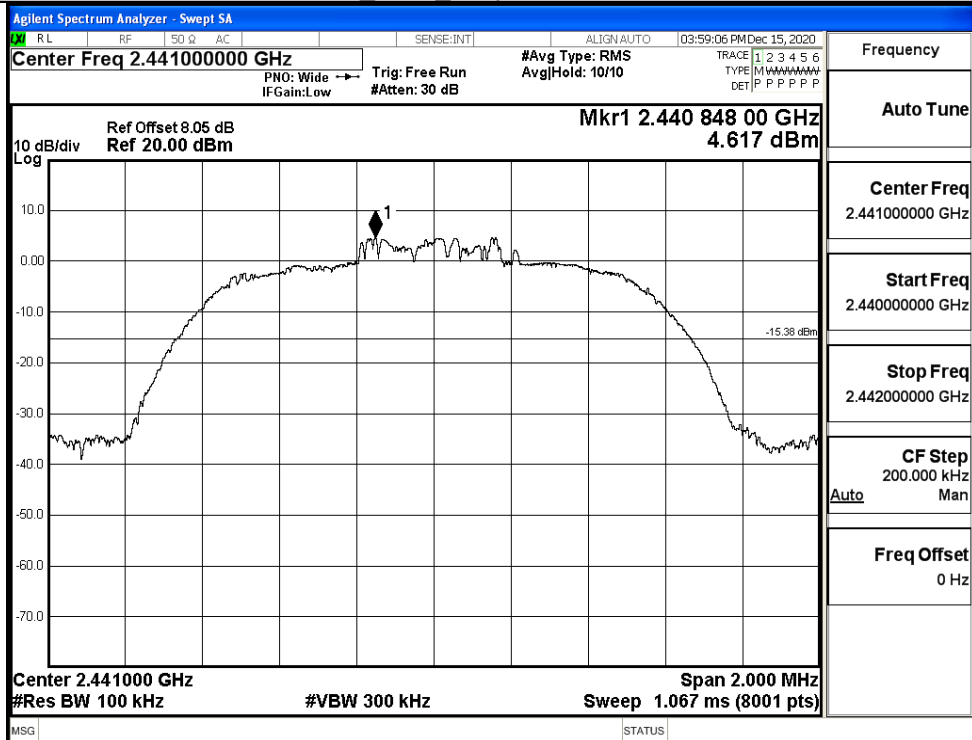


Puw

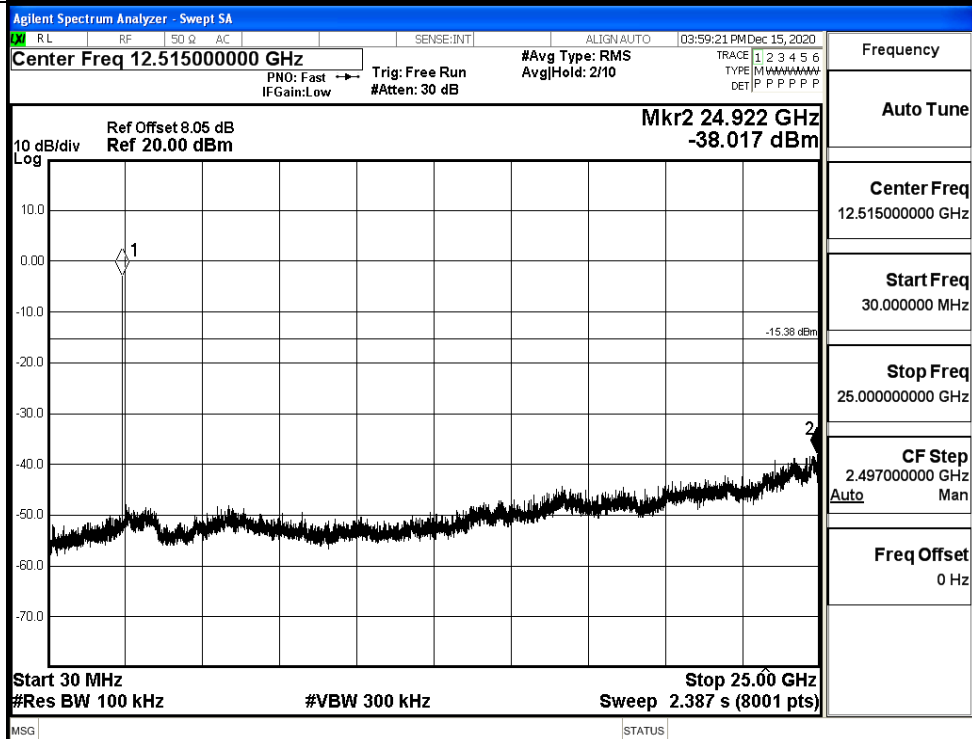


π /4DQPSK_MCH_Graphs

Pref

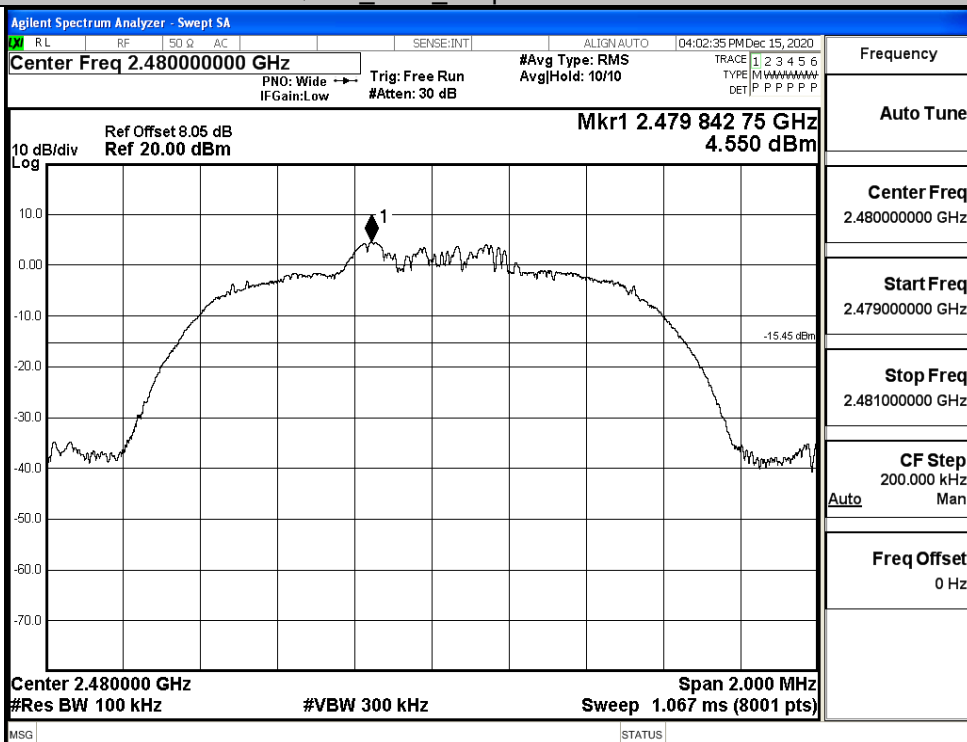


Puw

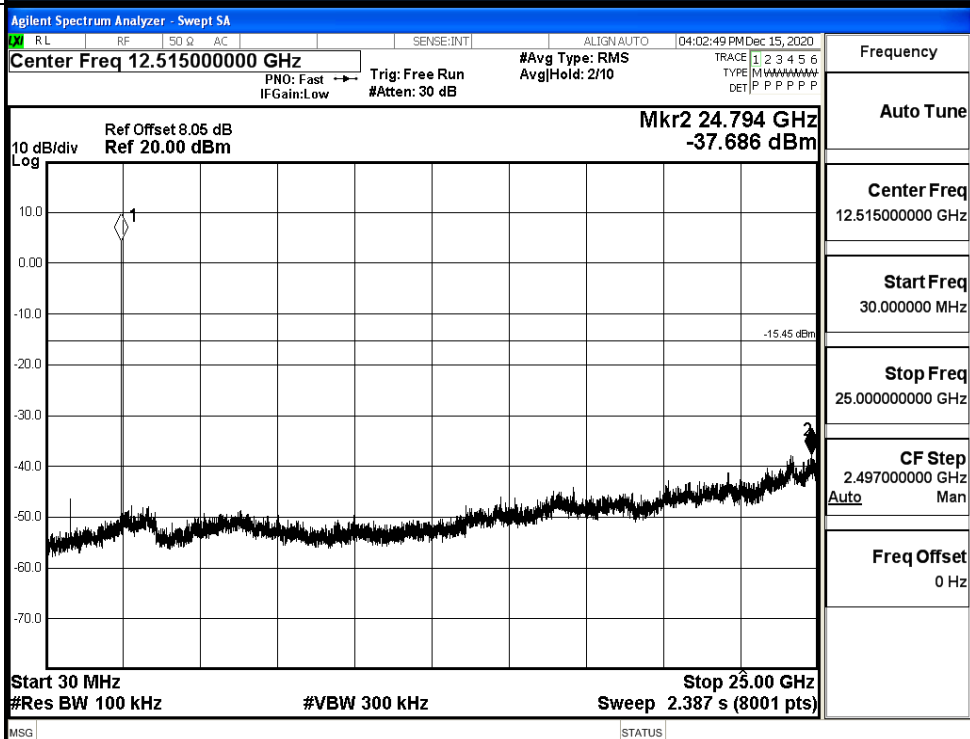


π /4DQPSK_HCH_Graphs

Pref

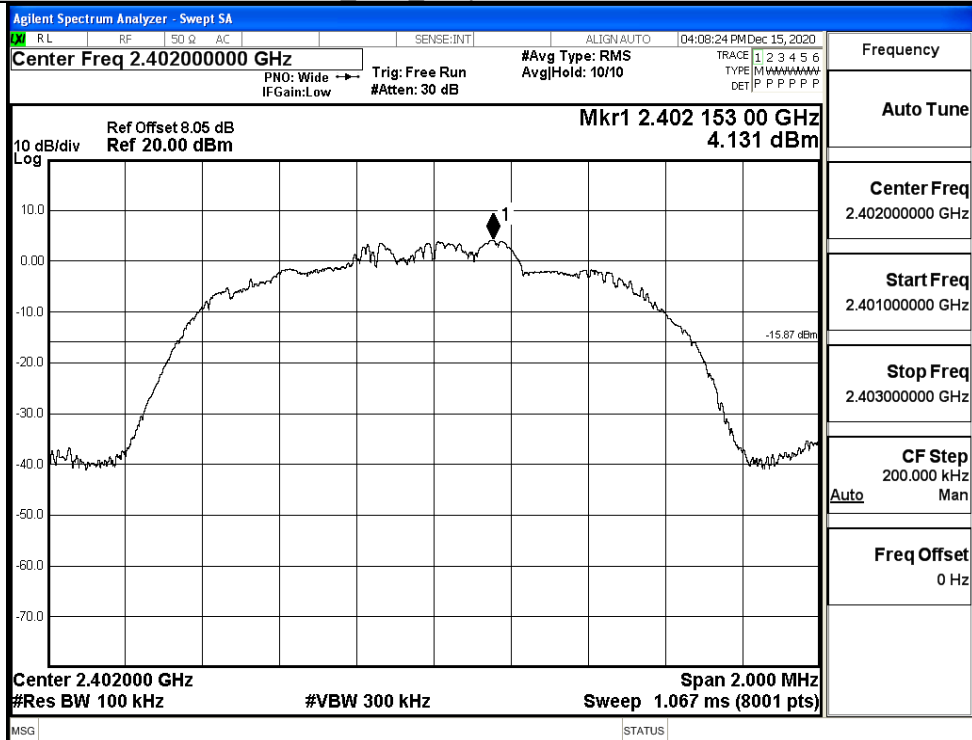


Puw

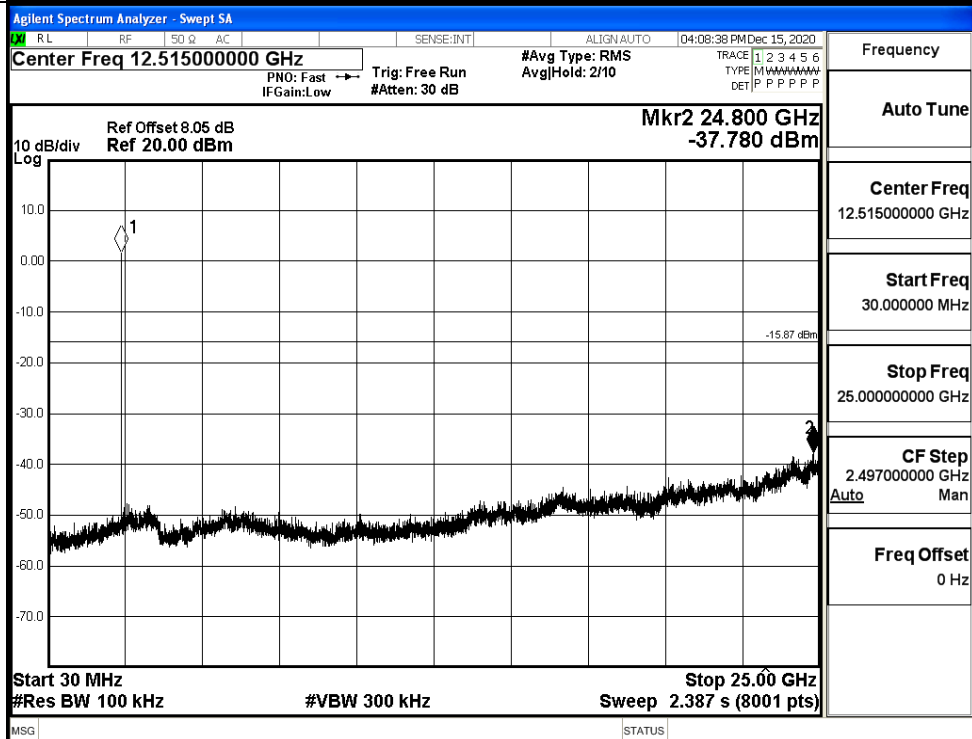


8DPSK_LCH_Graphs

Pref

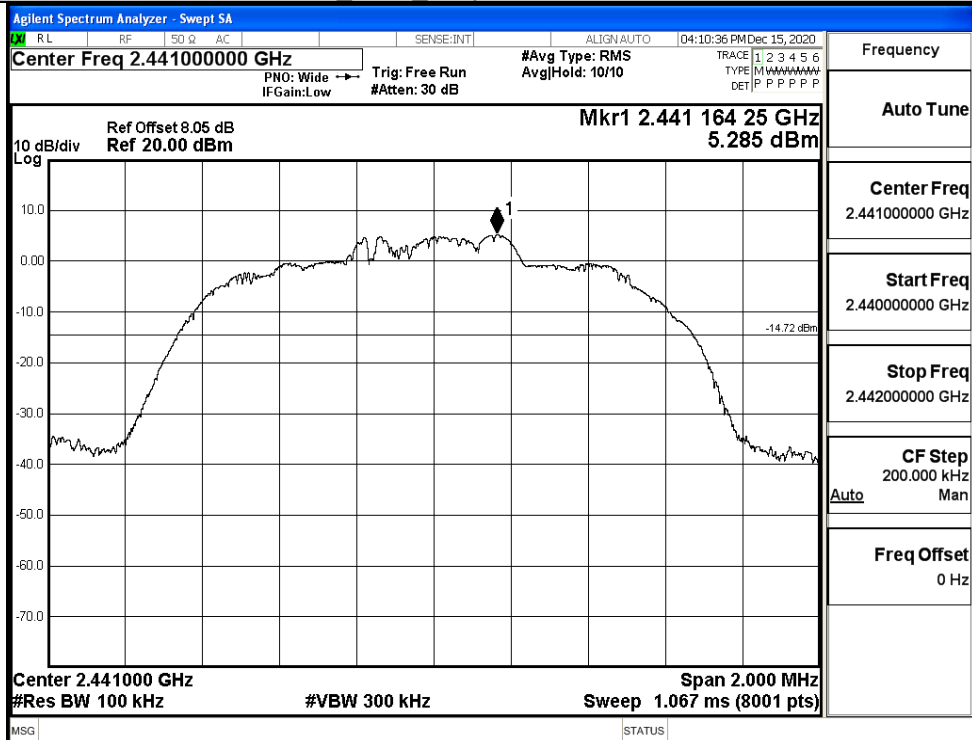


Puw

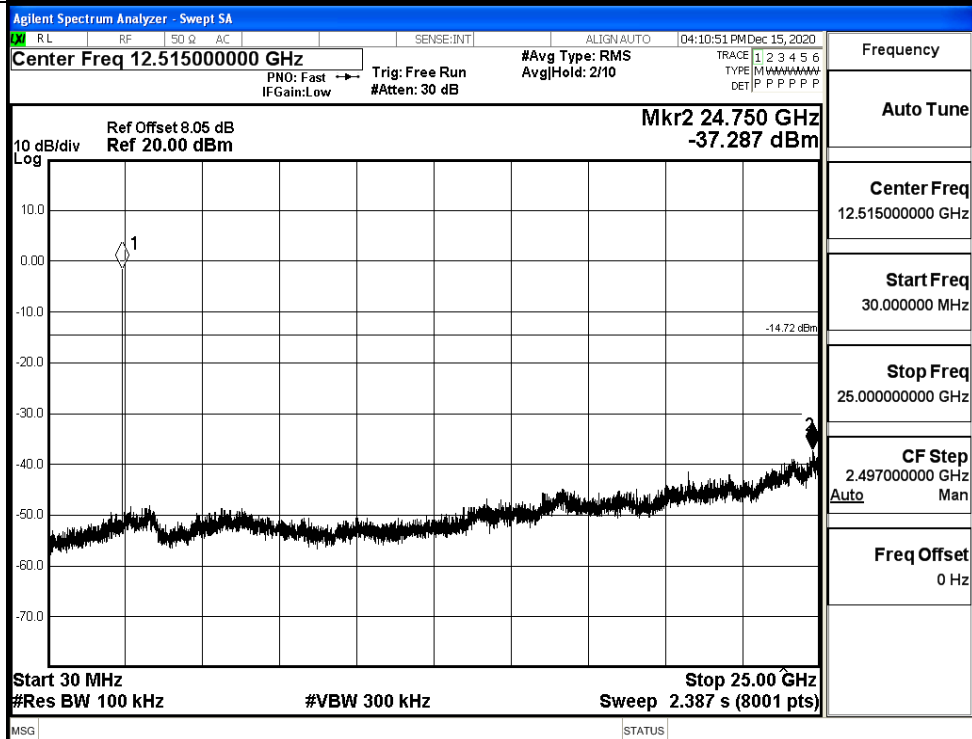


8DPSK_MCH_Graphs

Pref

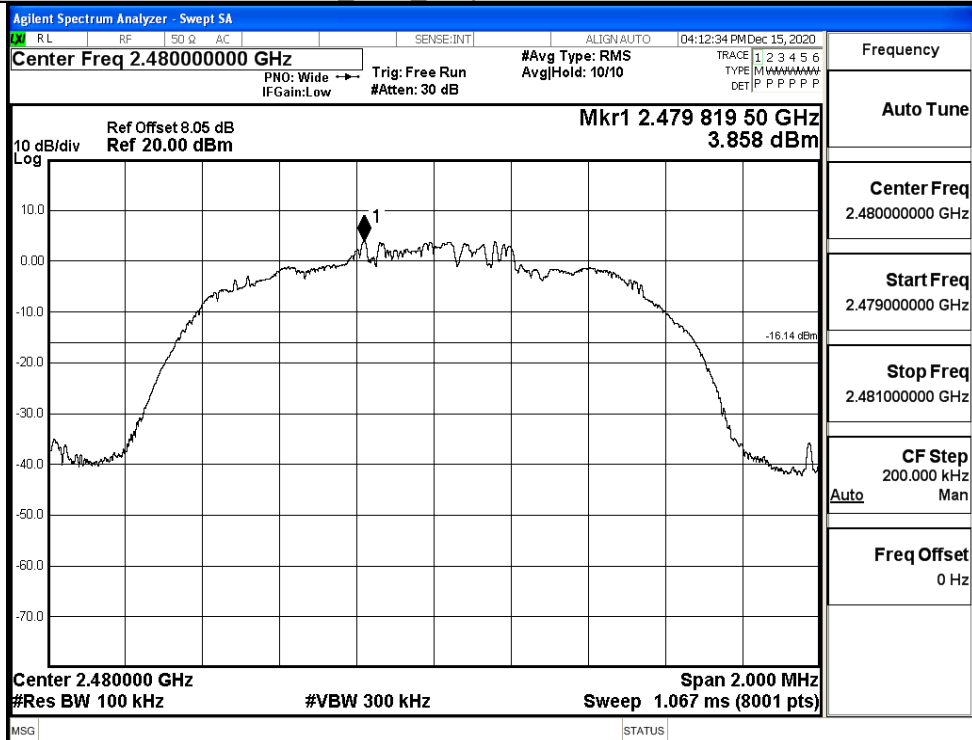


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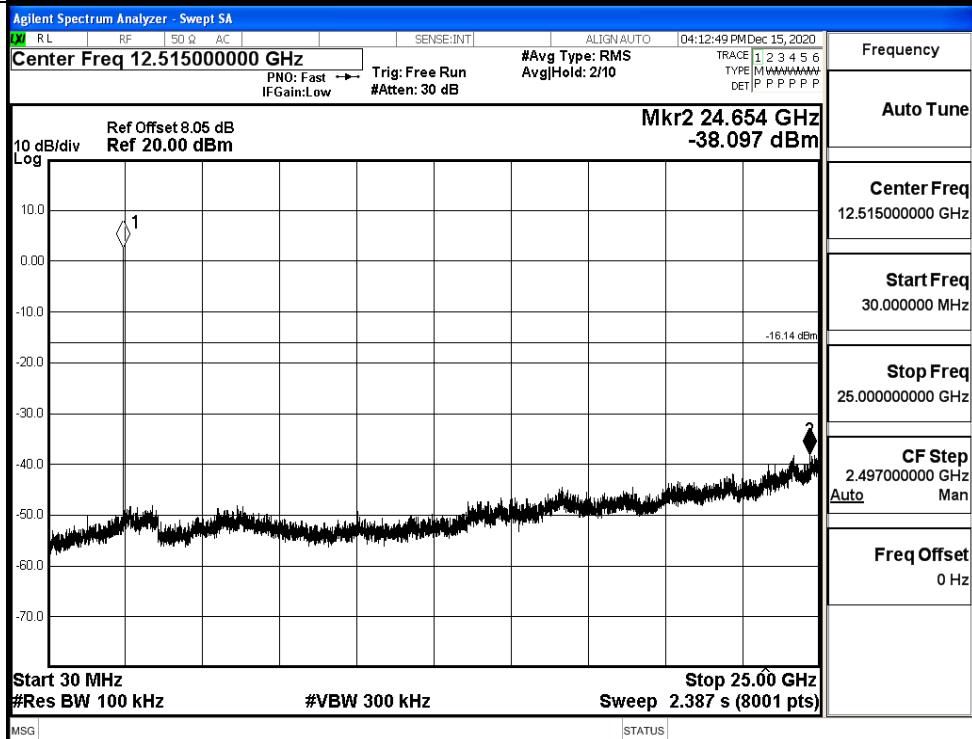


8DPSK_HCH_Graphs

Pref



Puw

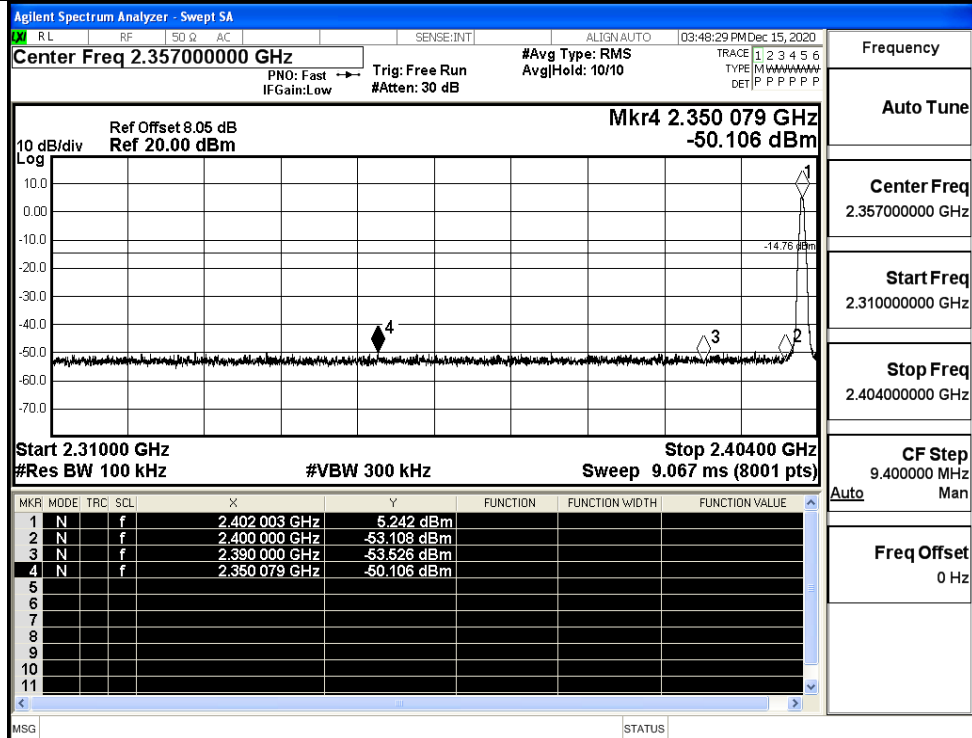


A.7 Band-edge for RF Conducted Emissions

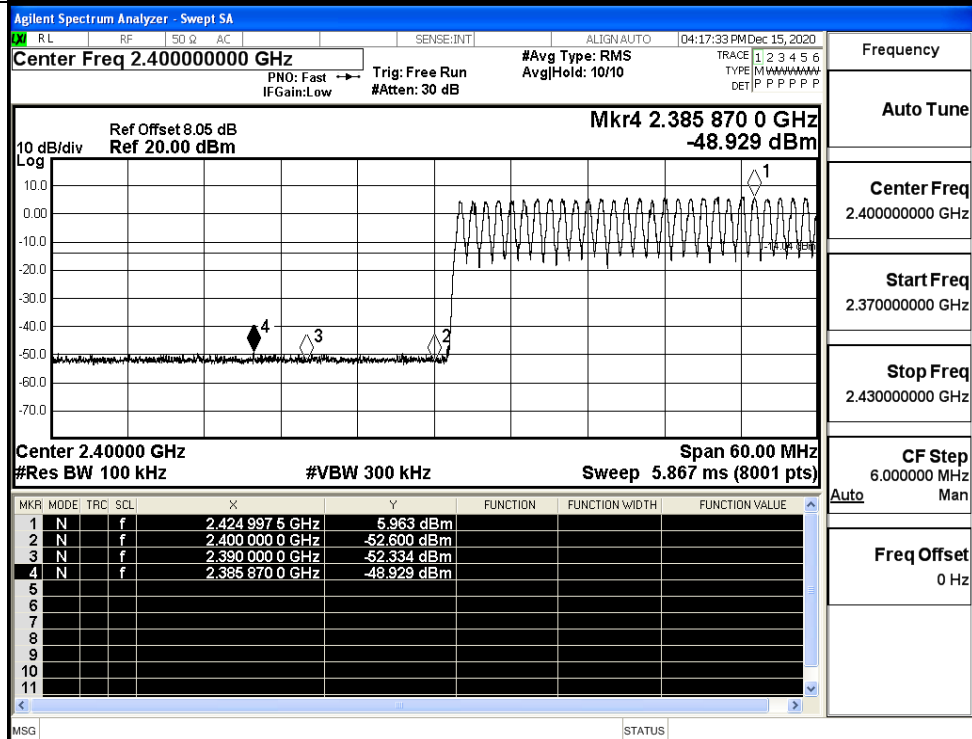
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	5.242	Off	-50.106	-14.76	PASS
			5.963	On	-48.929	-14.04	PASS
	HCH	2480	5.079	Off	-48.981	-14.92	PASS
			5.906	On	-48.950	-14.09	PASS
$\pi/4$ DQPSK	LCH	2402	4.259	Off	-49.276	-15.74	PASS
			5.515	On	-49.235	-14.49	PASS
	HCH	2480	4.626	Off	-49.388	-15.37	PASS
			5.297	On	-48.349	-14.7	PASS
8DPSK	LCH	2402	4.254	Off	-49.071	-15.75	PASS
			5.466	On	-48.638	-14.53	PASS
	HCH	2480	4.048	Off	-48.991	-15.95	PASS
			5.531	On	-48.576	-14.47	PASS

Test Graphs

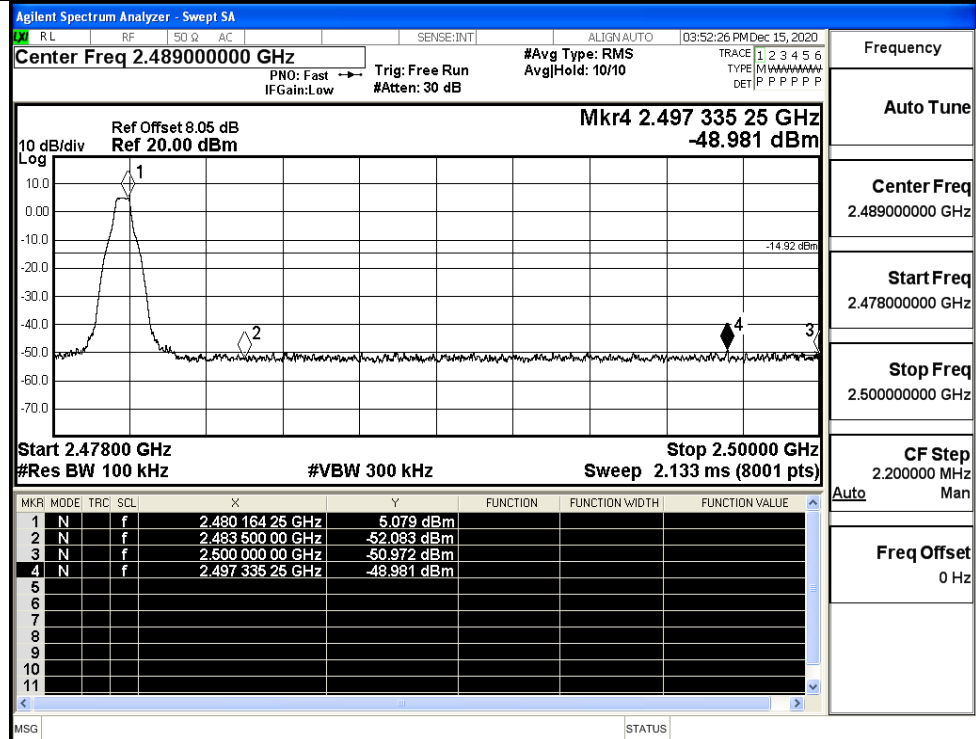
GFSK/LCH/No Hop



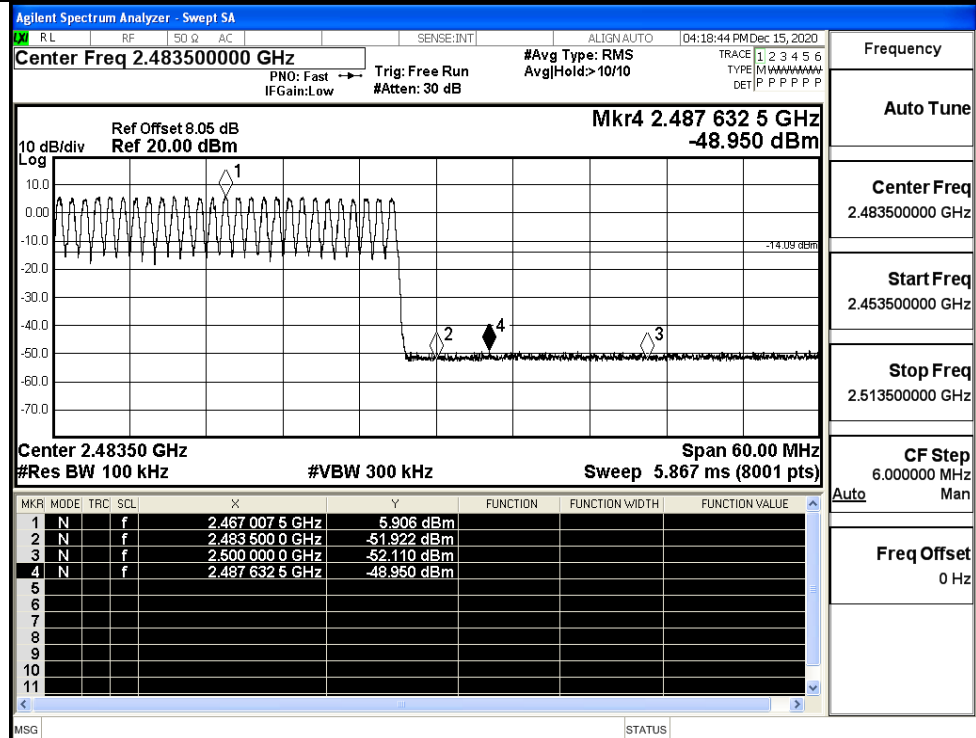
GFSK/LCH/Hop



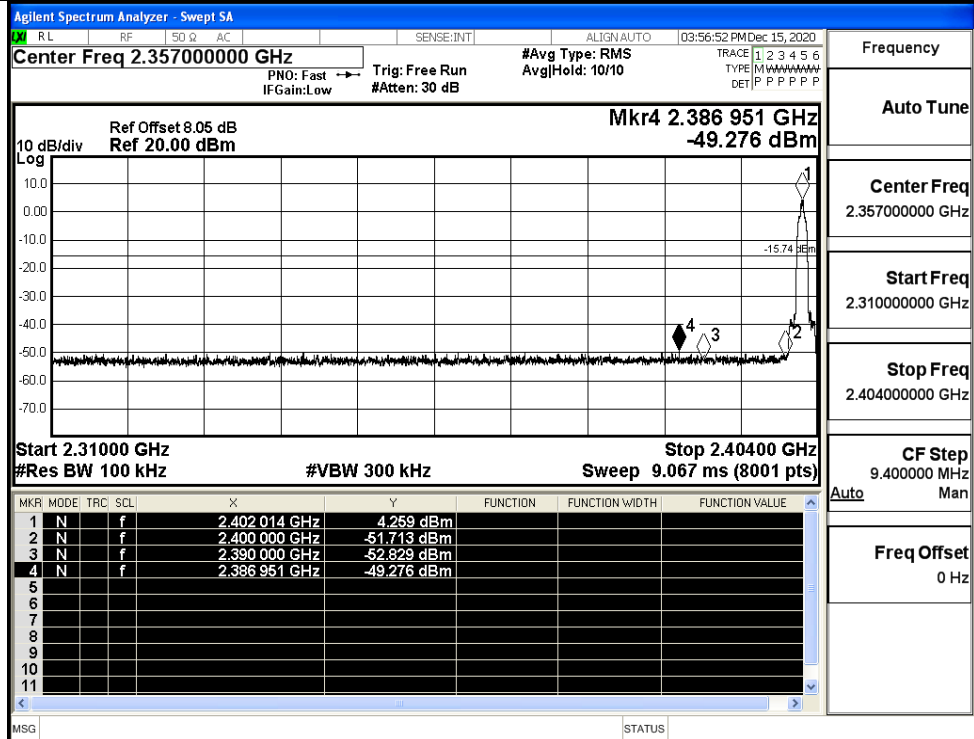
GFSK/HCH/No Hop



GFSK/HCH/Hop



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



Frequency

Auto Tune

Center Freq
2.357000000 GHz

Start Freq
2.310000000 GHz

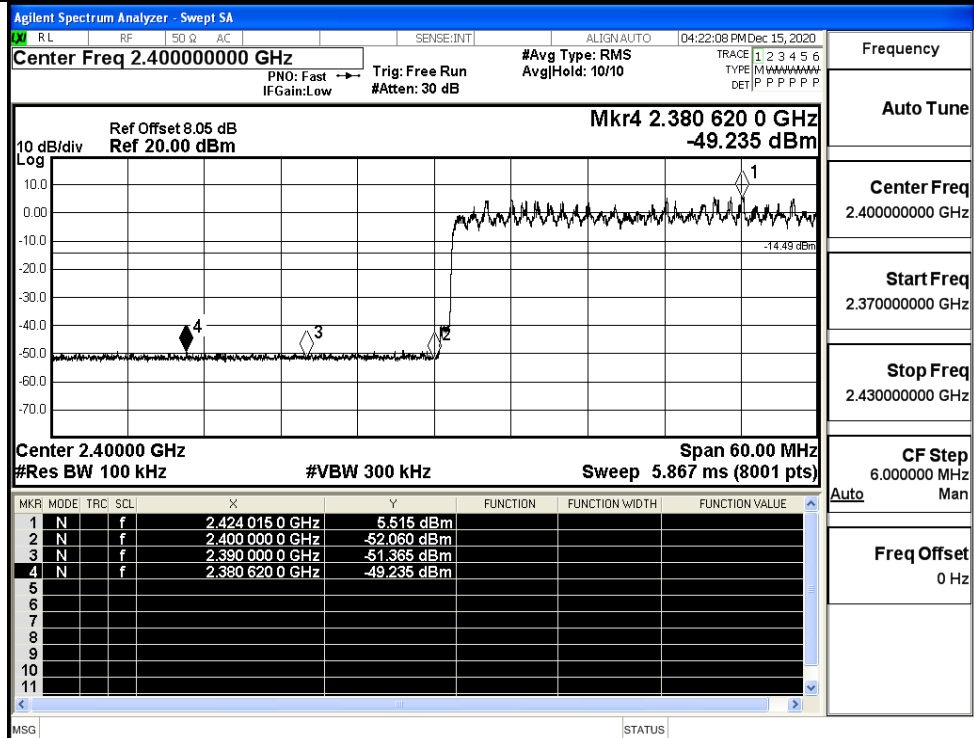
Stop Freq
2.404000000 GHz

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

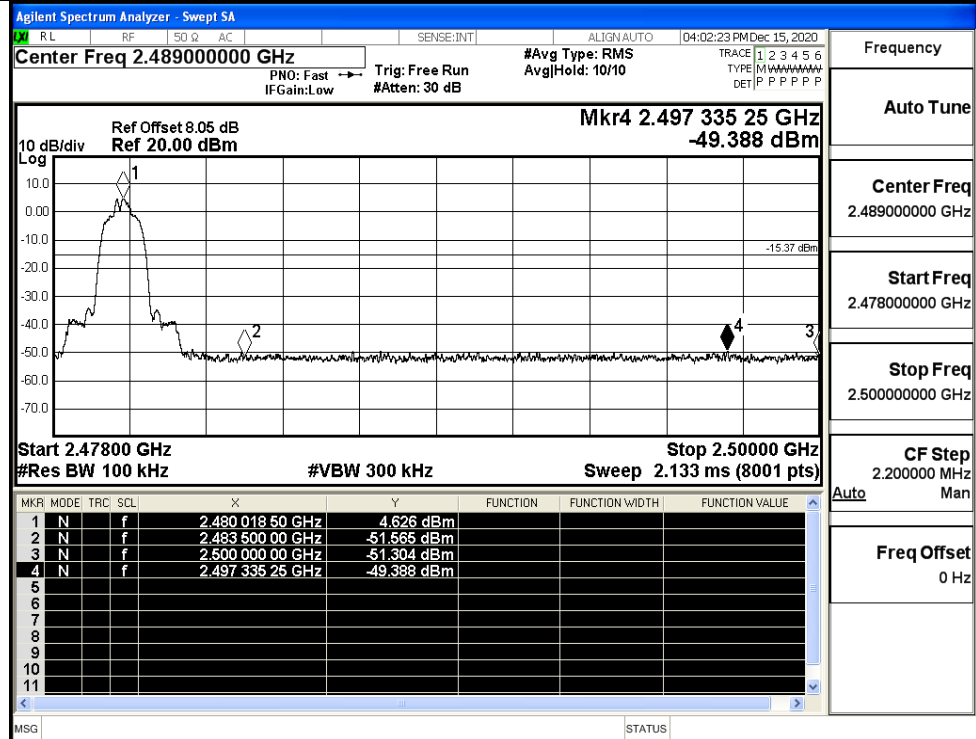
Stop Freq
2.430000000 GHz

CF Step
6.000000 MHz

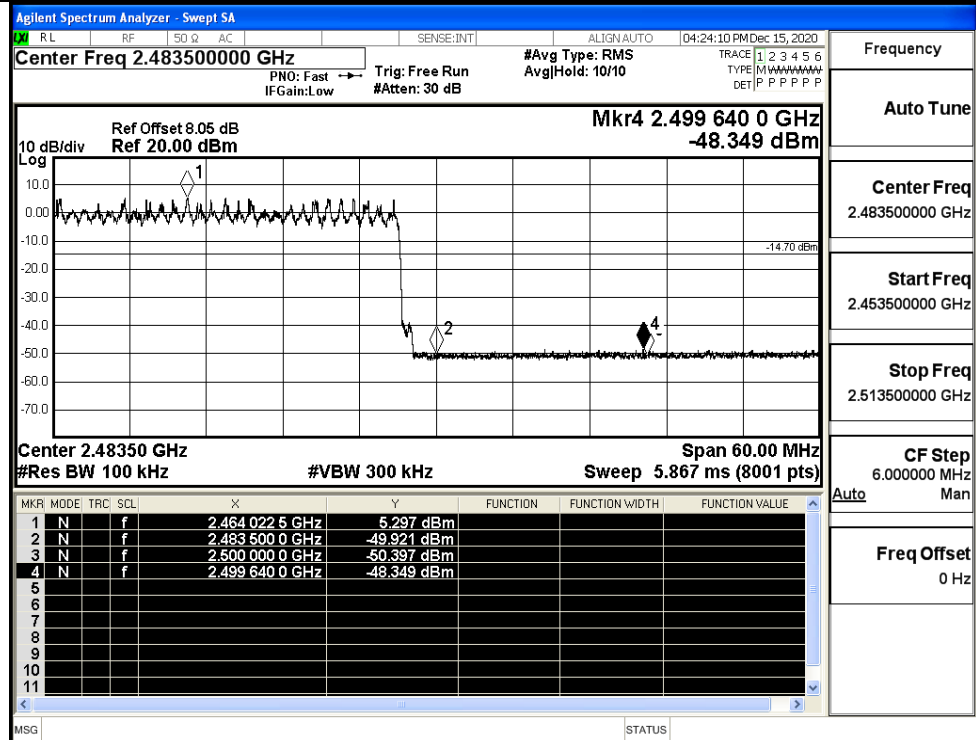
Auto Man

Freq Offset
0 Hz

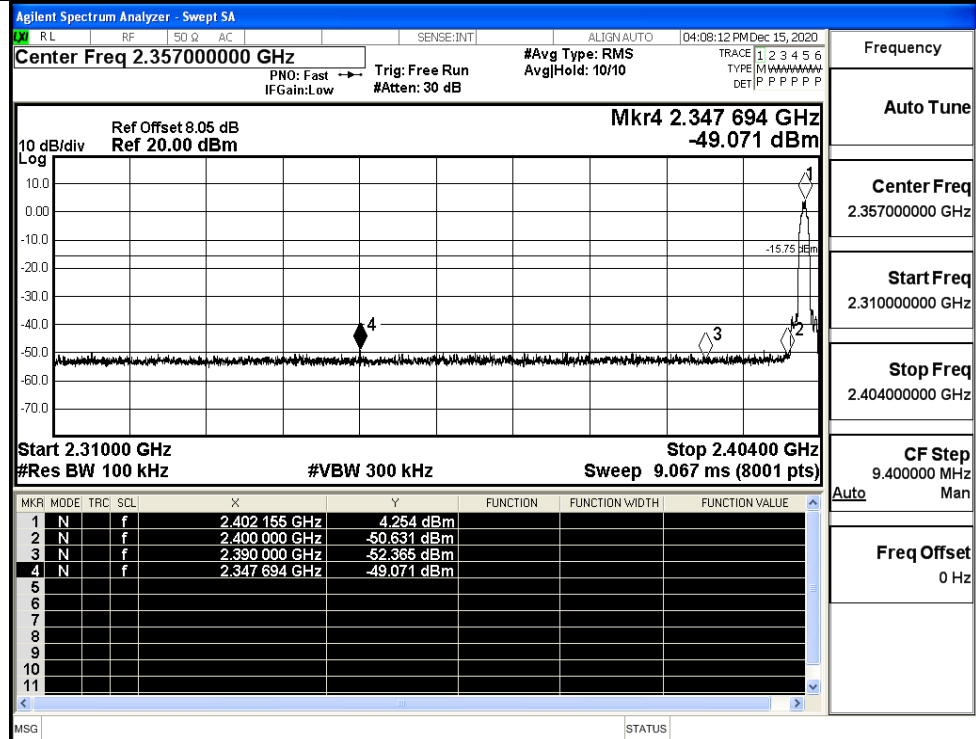
$\pi/4$ DQPSK/HCH/No
Hop



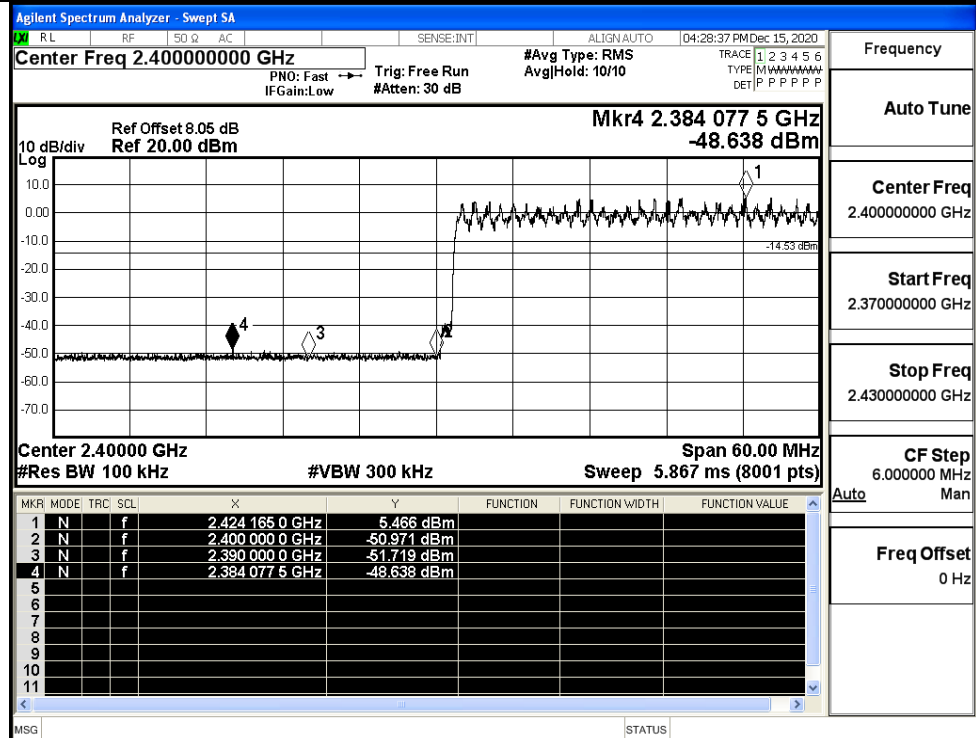
$\pi/4$ DQPSK/HCH/Hop



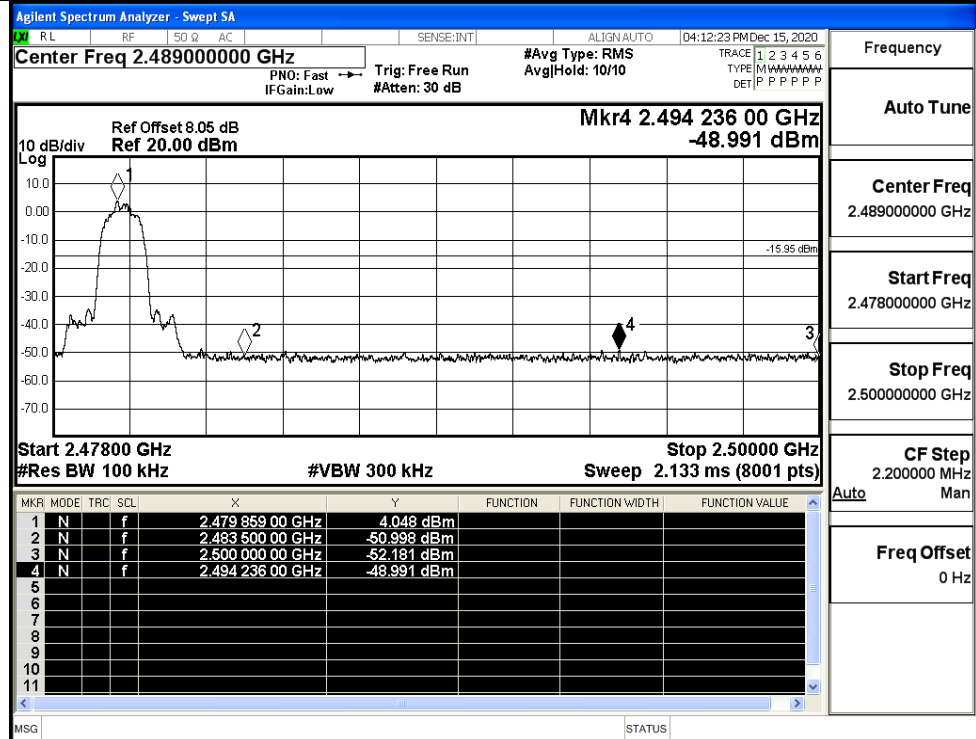
8DPSK/LCH/No Hop



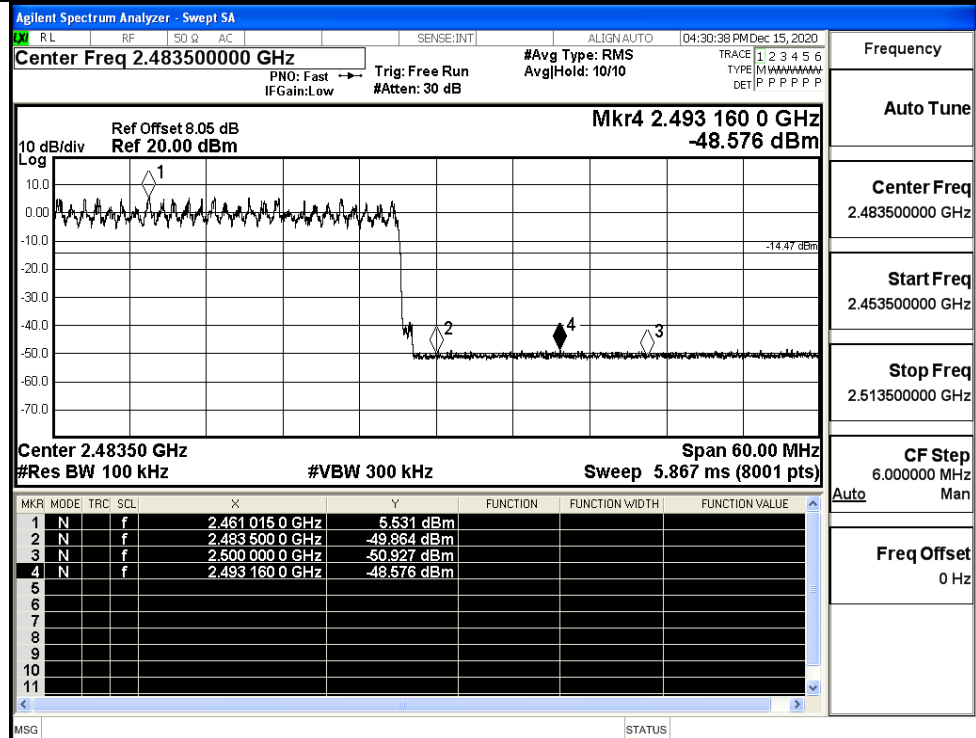
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



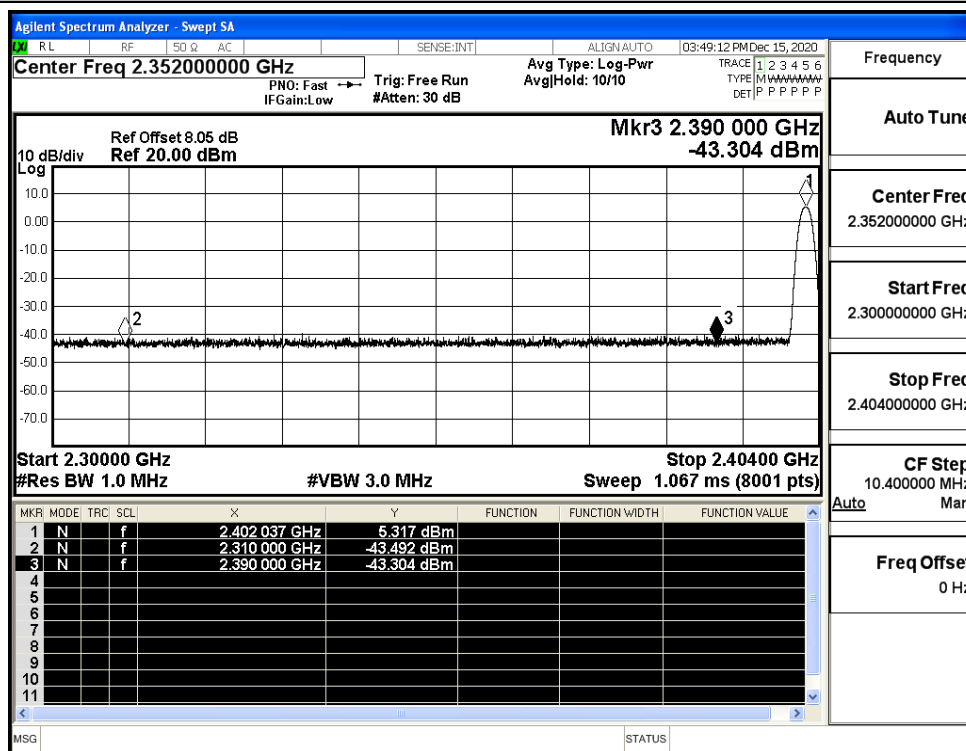
8DPSK/HCH/Hop



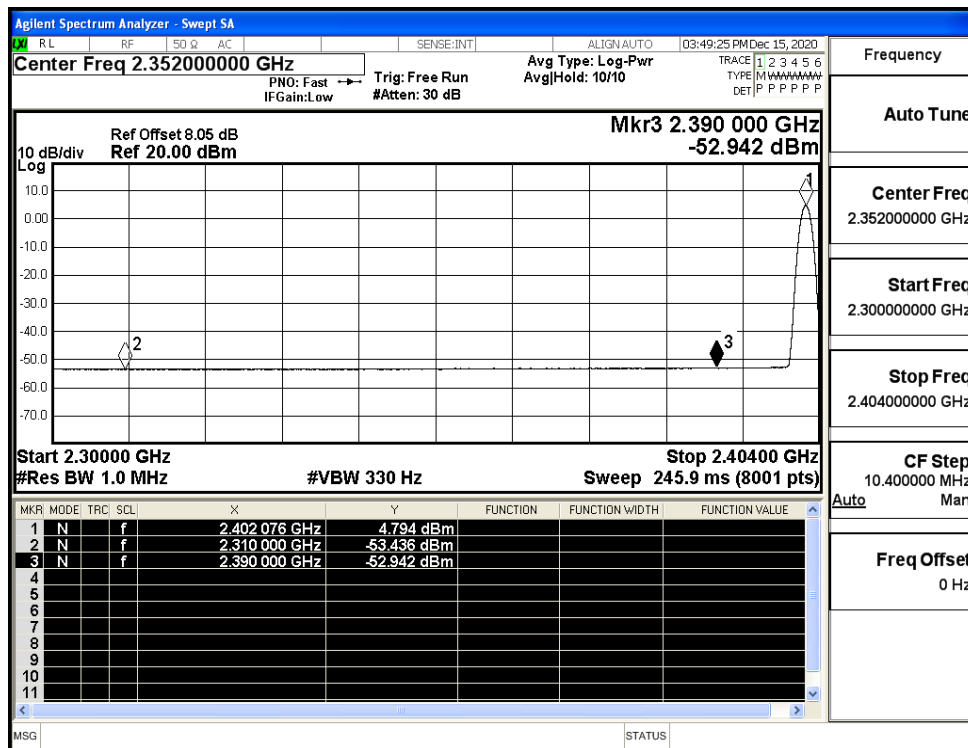
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.49	2.0	0	51.77	PEAK	74	PASS
	Off	2310.0	-53.44	2.0	0	41.82	AV	54	PASS
	Off	2390.0	-43.30	2.0	0	51.95	PEAK	74	PASS
	Off	2390.0	-52.94	2.0	0	42.32	AV	54	PASS
	Off	2483.5	-42.83	2.0	0	52.43	PEAK	74	PASS
	Off	2483.5	-52.50	2.0	0	42.76	AV	54	PASS
	Off	2500.0	-43.17	2.0	0	52.09	PEAK	74	PASS
	Off	2500.0	-52.43	2.0	0	42.83	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.83	2.0	0	51.43	PEAK	74	PASS
	Off	2310.0	-53.38	2.0	0	41.88	AV	54	PASS
	Off	2390.0	-42.82	2.0	0	52.43	PEAK	74	PASS
	Off	2390.0	-53.03	2.0	0	42.22	AV	54	PASS
	Off	2483.5	-43.60	2.0	0	51.65	PEAK	74	PASS
	Off	2483.5	-52.39	2.0	0	42.87	AV	54	PASS
	Off	2500.0	-42.95	2.0	0	52.31	PEAK	74	PASS
	Off	2500.0	-52.44	2.0	0	42.82	AV	54	PASS
8DPSK	Off	2310.0	-42.38	2.0	0	52.88	PEAK	74	PASS
	Off	2310.0	-53.41	2.0	0	41.85	AV	54	PASS
	Off	2390.0	-42.93	2.0	0	52.33	PEAK	74	PASS
	Off	2390.0	-52.93	2.0	0	42.33	AV	54	PASS
	Off	2483.5	-41.47	2.0	0	53.79	PEAK	74	PASS
	Off	2483.5	-52.35	2.0	0	42.90	AV	54	PASS
	Off	2500.0	-42.23	2.0	0	53.02	PEAK	74	PASS
	Off	2500.0	-52.48	2.0	0	42.78	AV	54	PASS

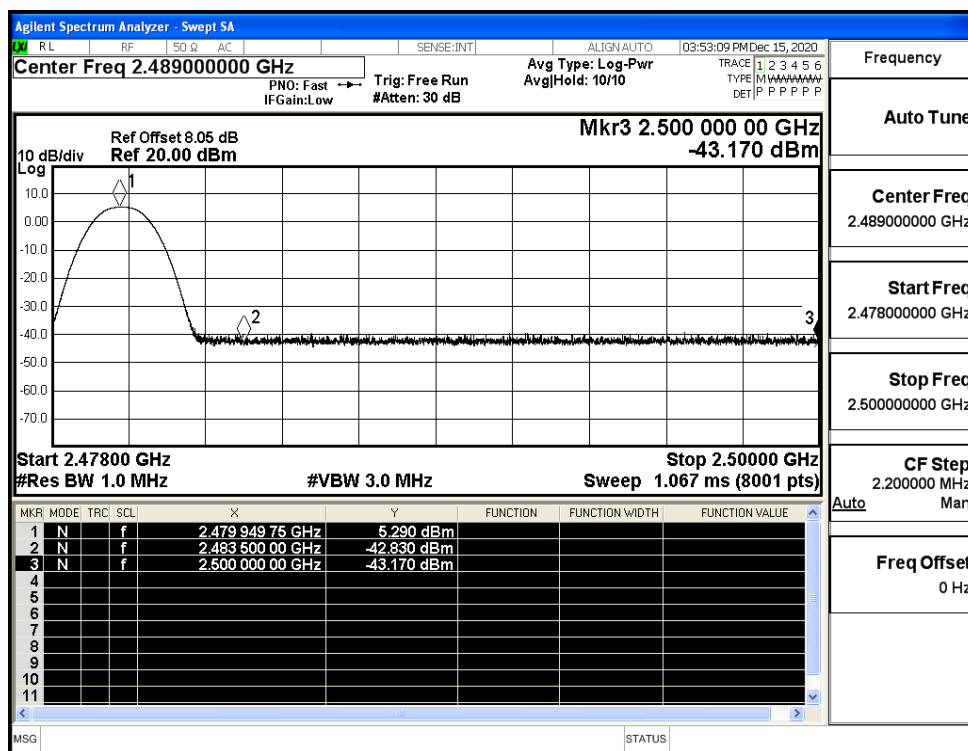
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



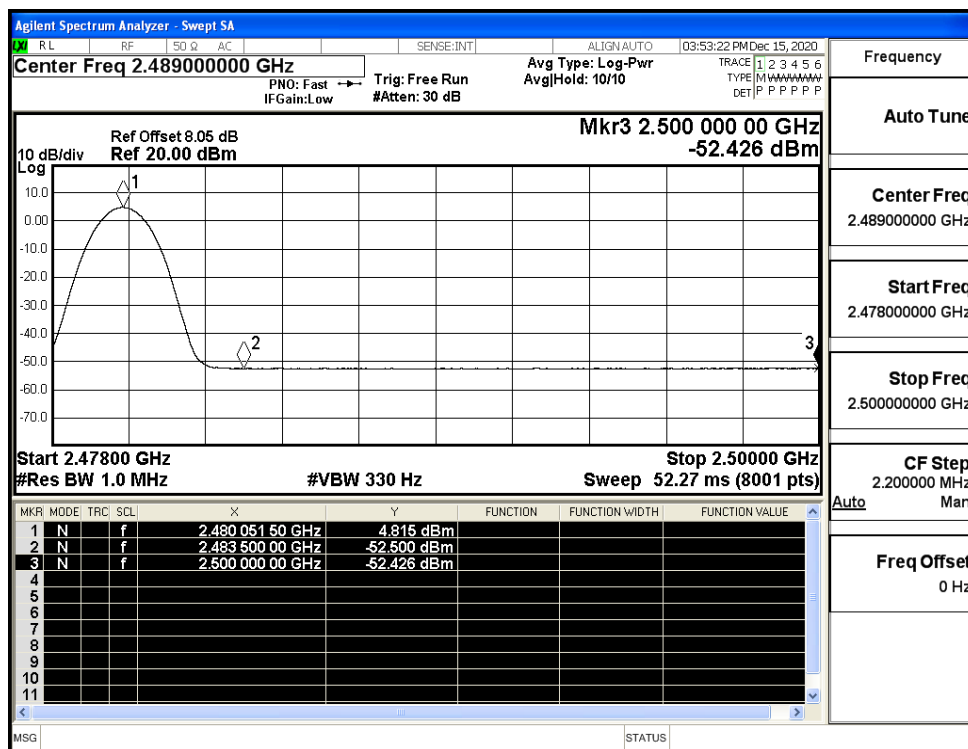
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

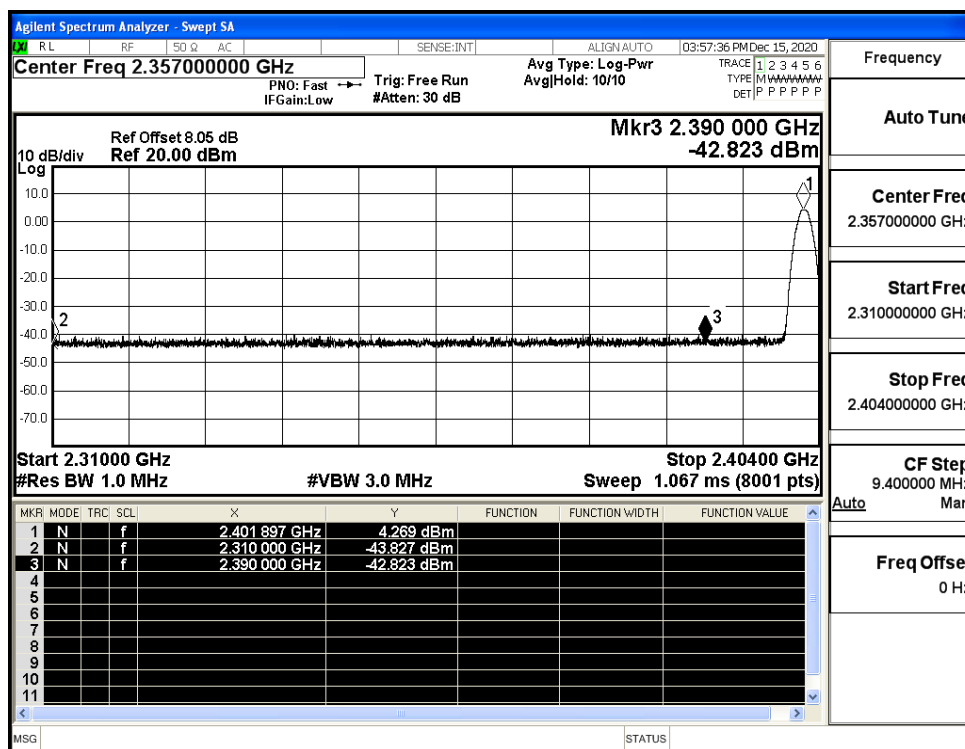
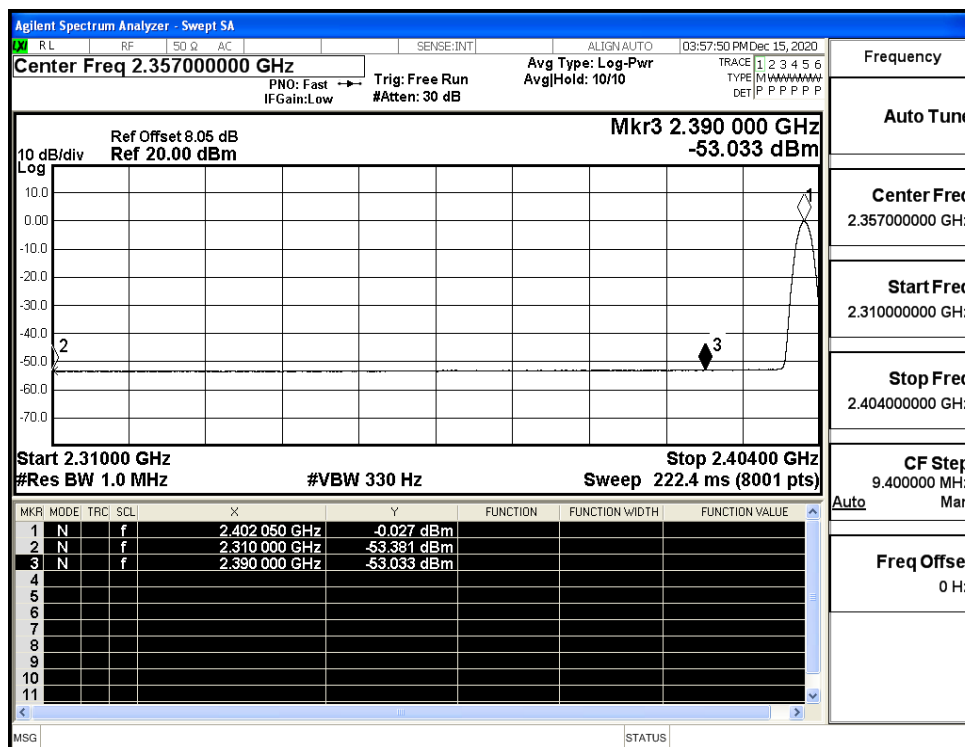


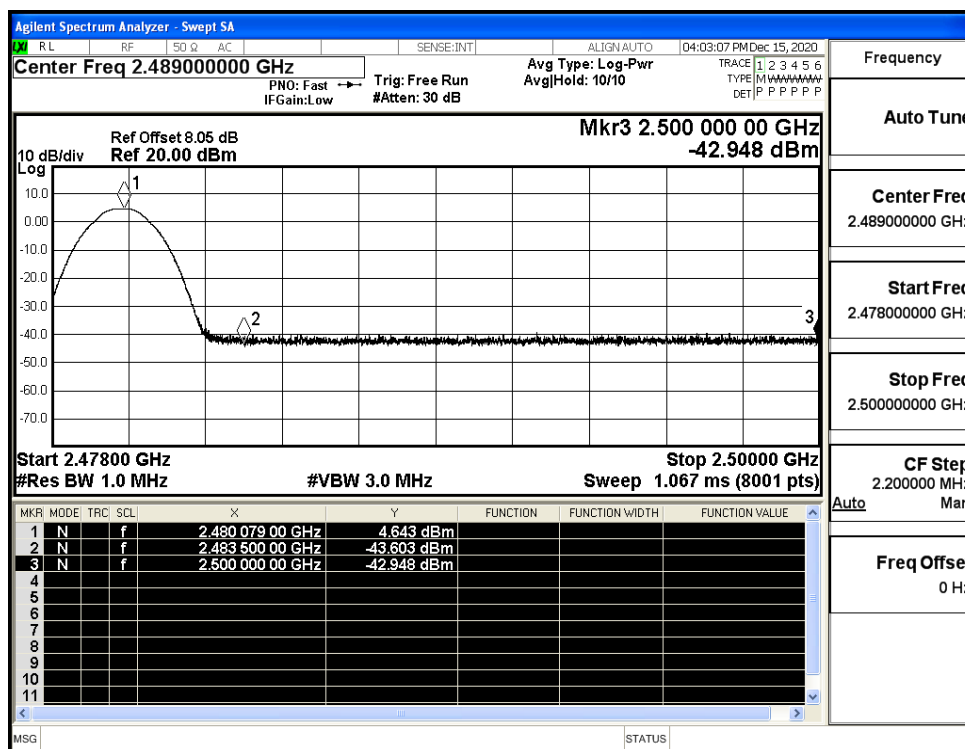
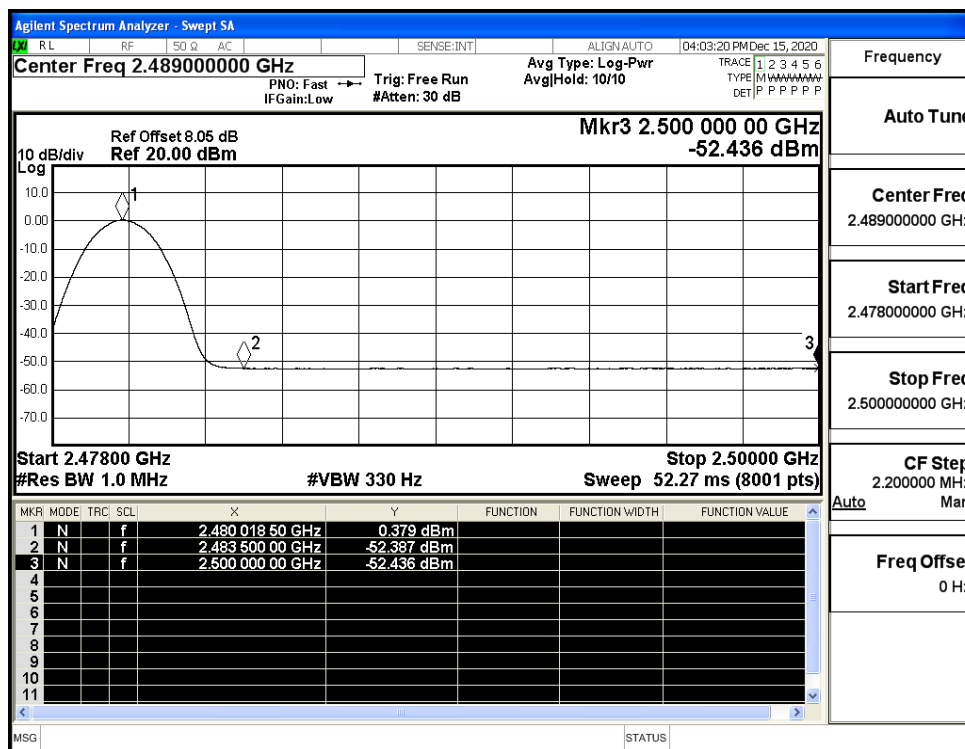
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



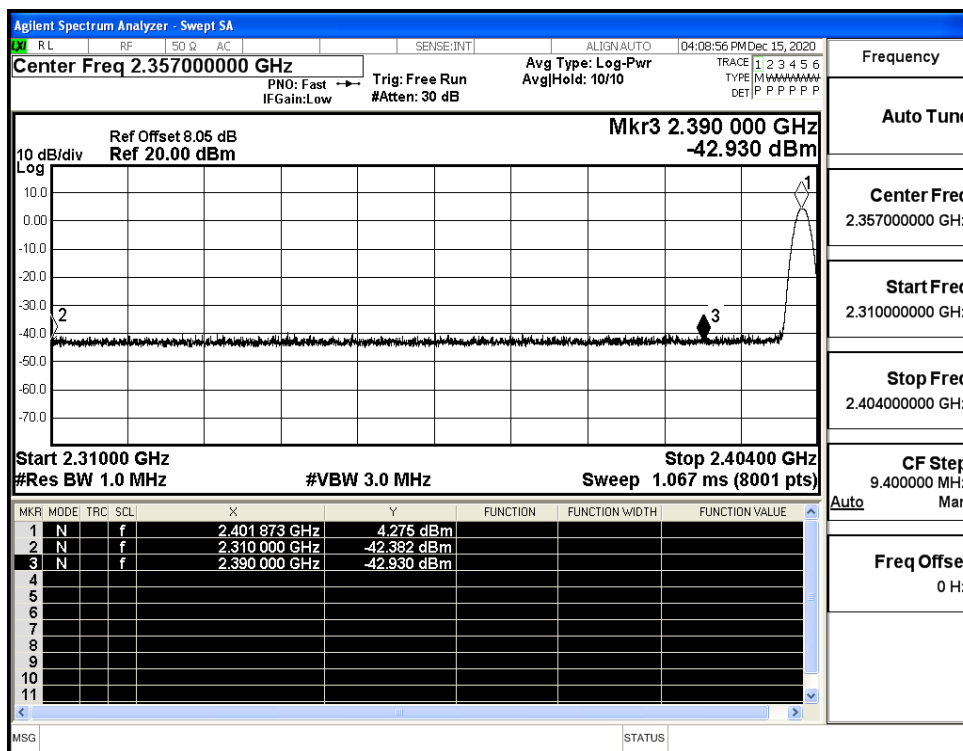
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



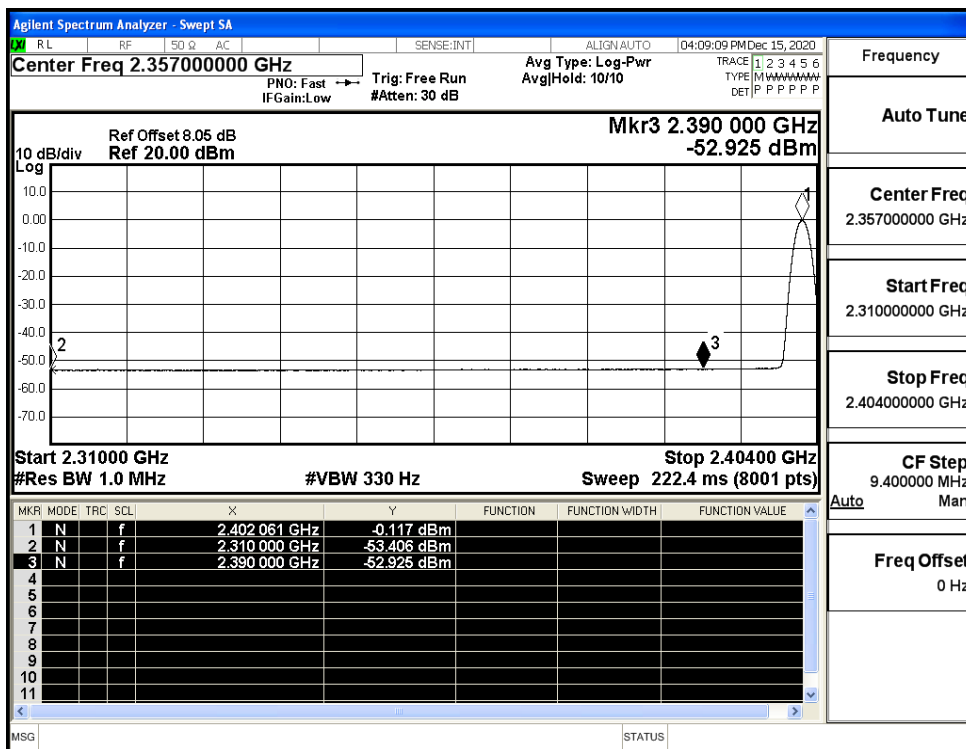
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

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)

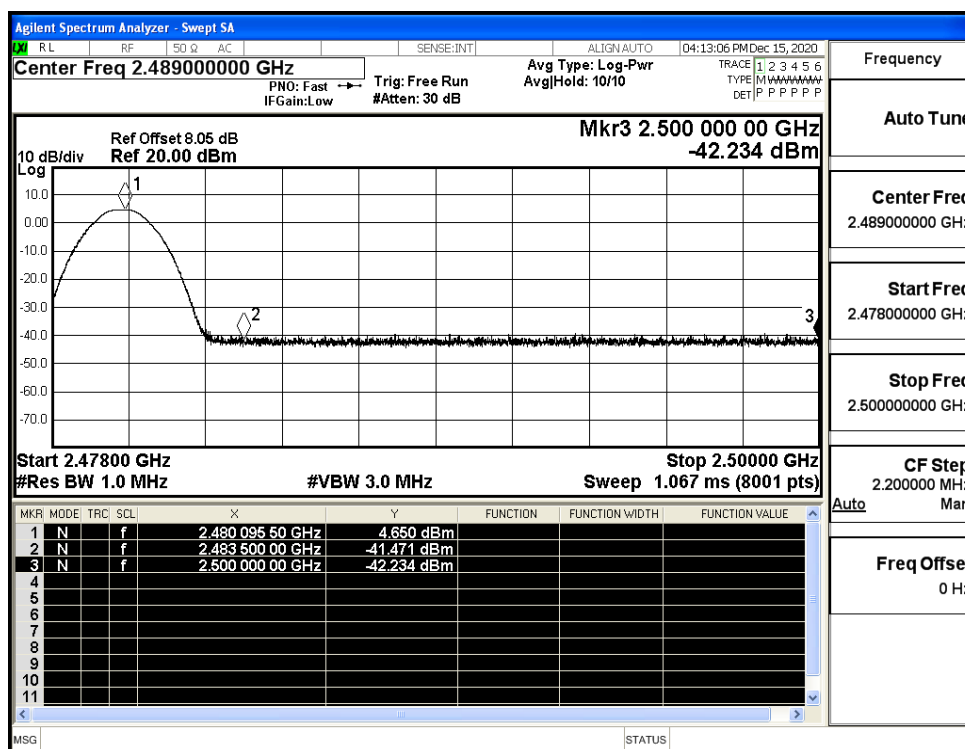
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

