

Appendix A

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

Product Name: Monster FLAME

Trade Mark: Monster

Test Model: MNFLAME

Environmental Conditions

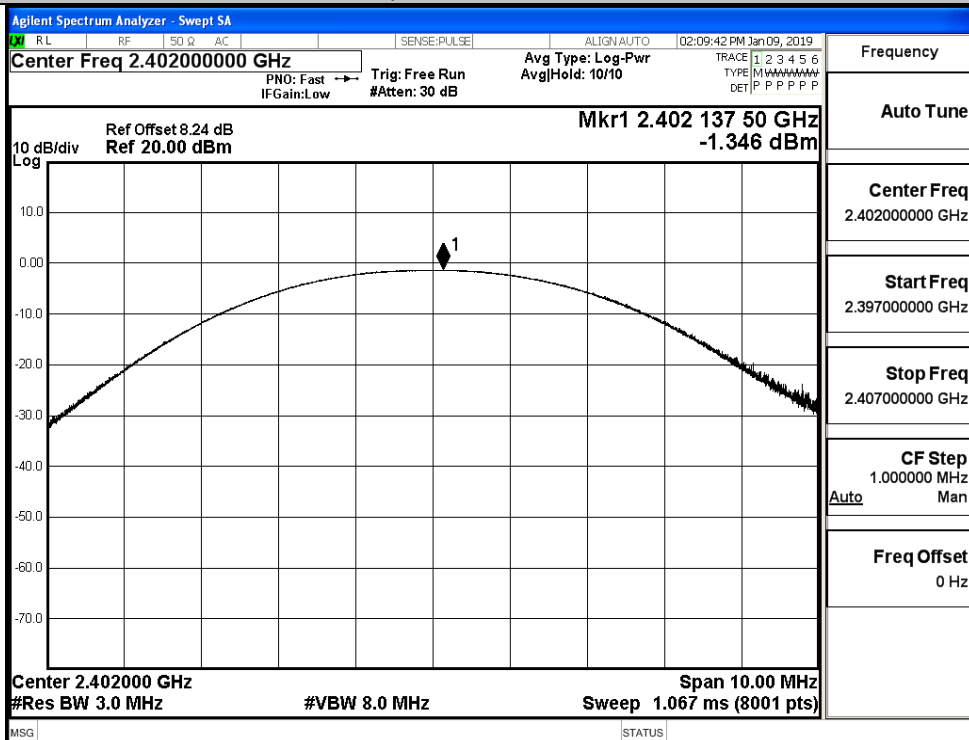
Temperature:	23.3 ° C
Relative Humidity:	52.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond.Lu
Supervised by:	Jayden.Zhuo

A.1 Maximum Conducted Peak Output Power

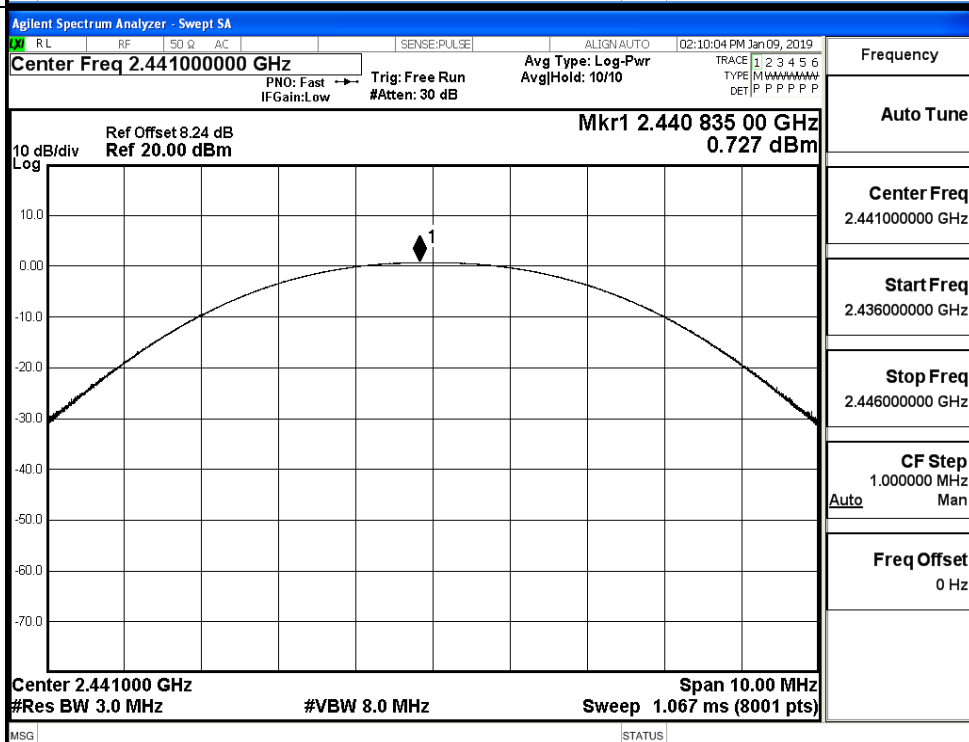
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-1.346	30	PASS
	MCH	0.727	30	PASS
	HCH	-2.140	30	PASS
$\pi/4$ DQPSK	LCH	-2.110	21	PASS
	MCH	0.010	21	PASS
	HCH	-2.976	21	PASS
8DPSK	LCH	-2.016	21	PASS
	MCH	0.010	21	PASS
	HCH	-2.920	21	PASS

Test Graphs

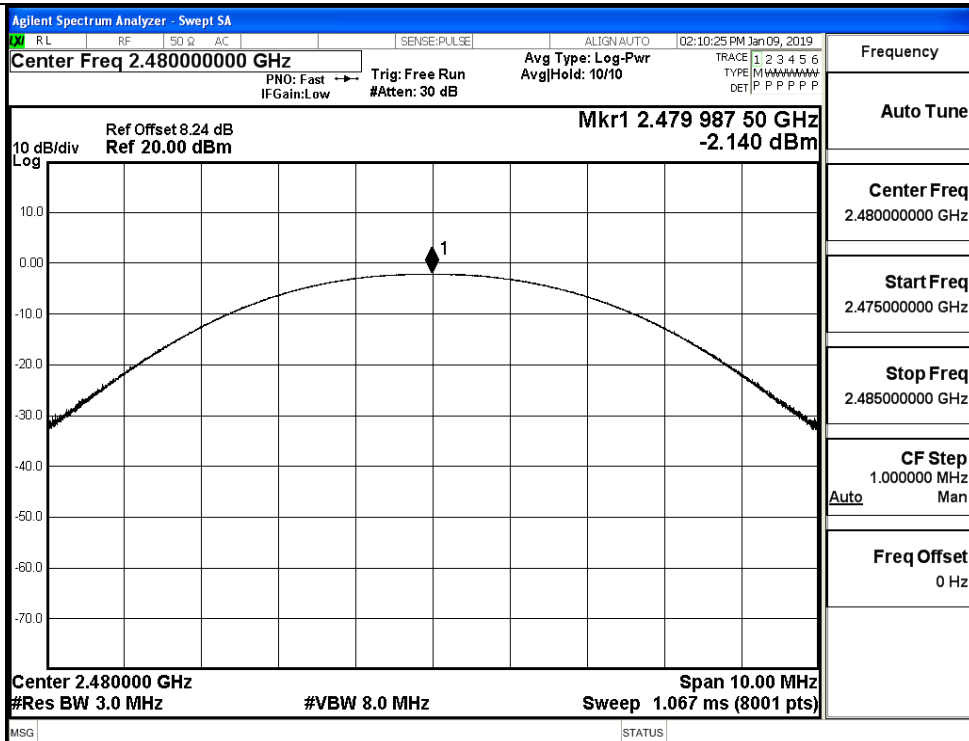
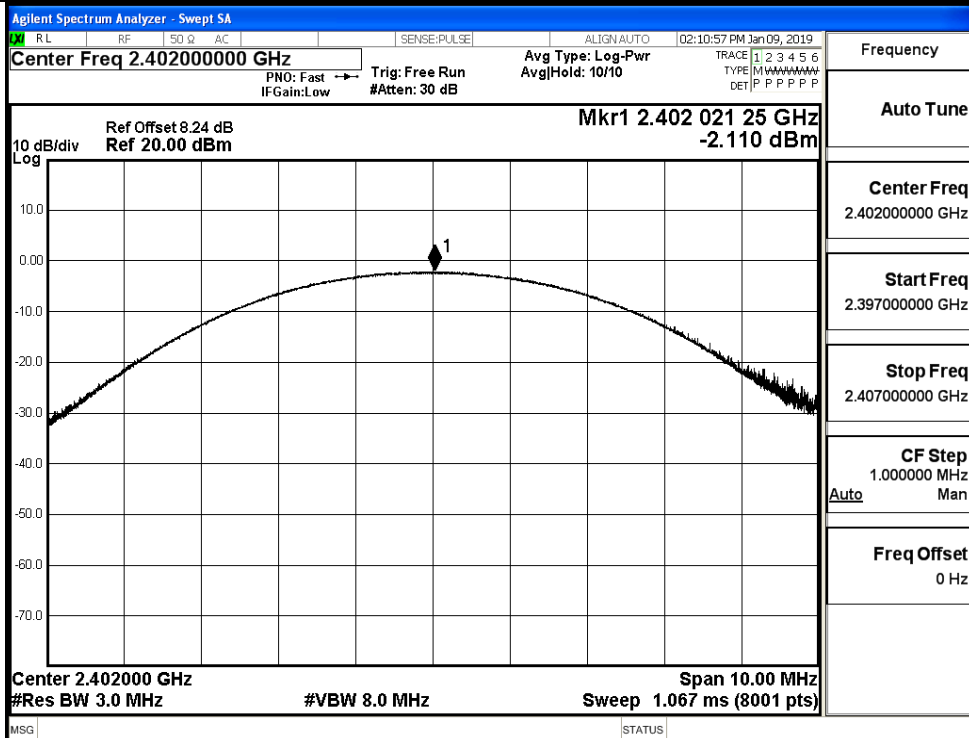
GFSK/LCH

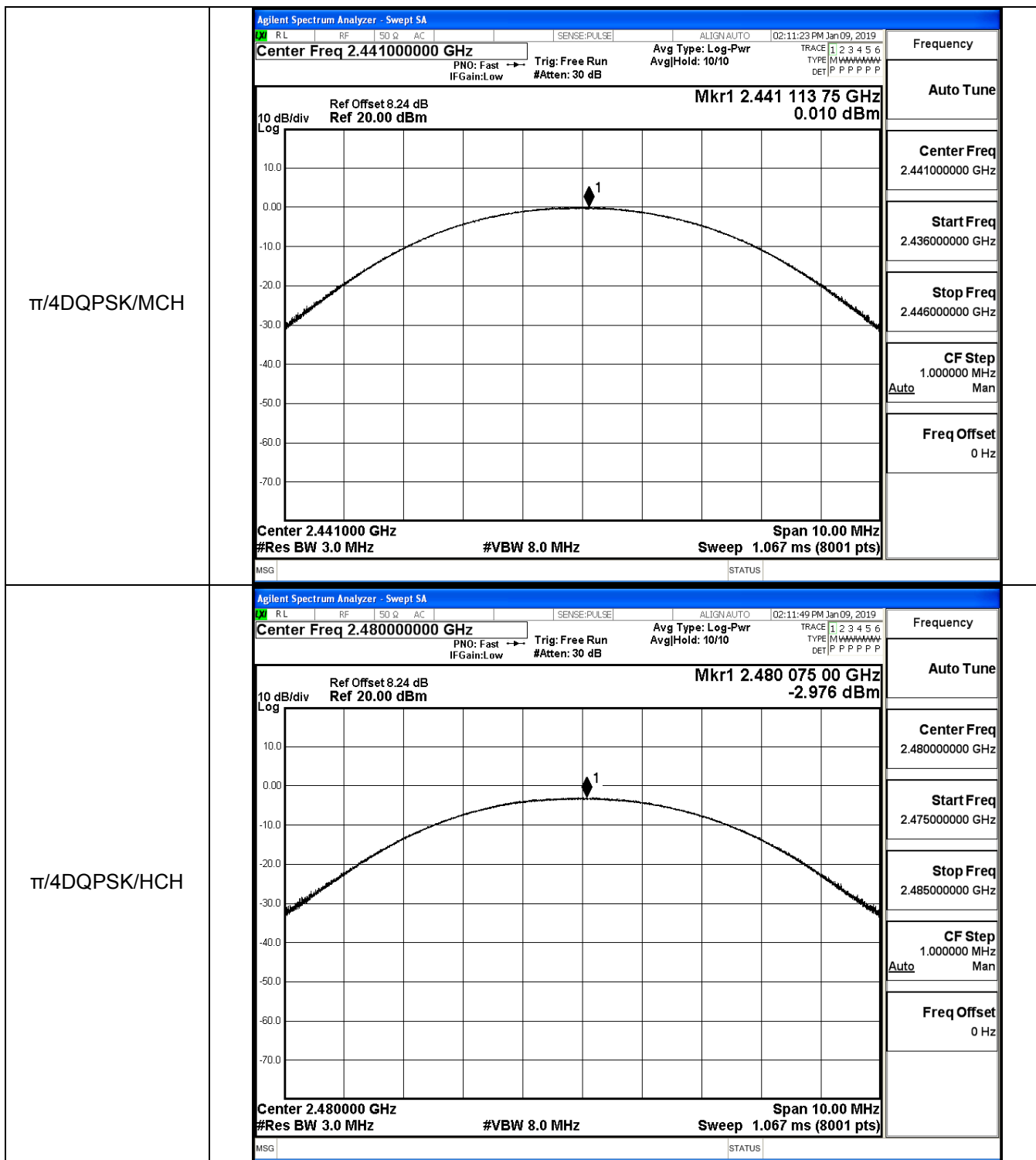


GFSK/MCH

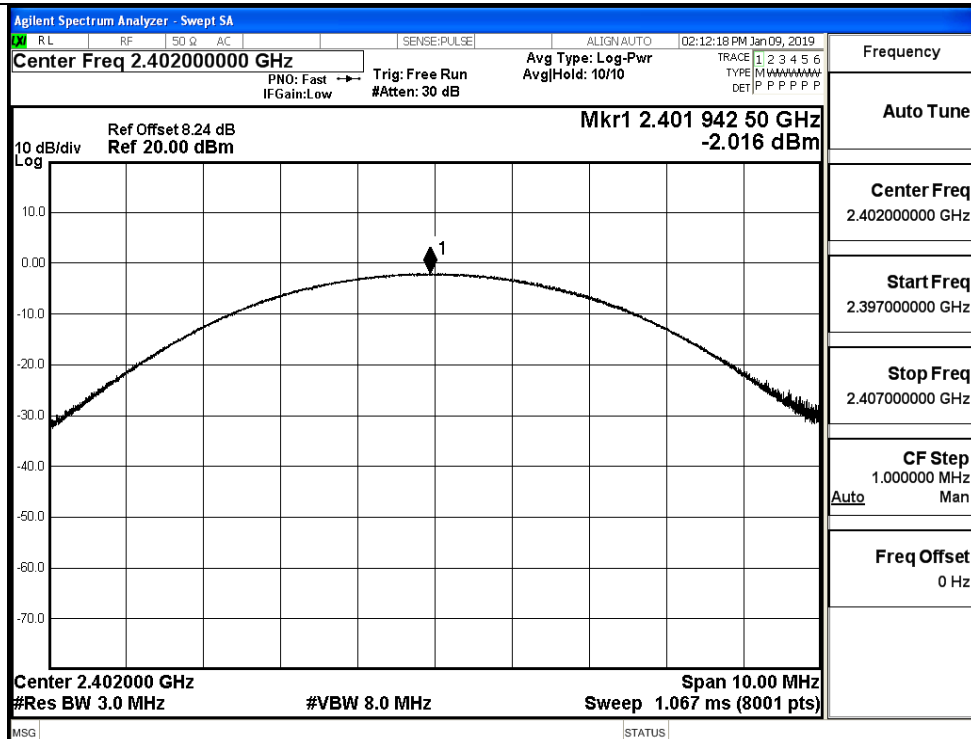


GFSK/HCH

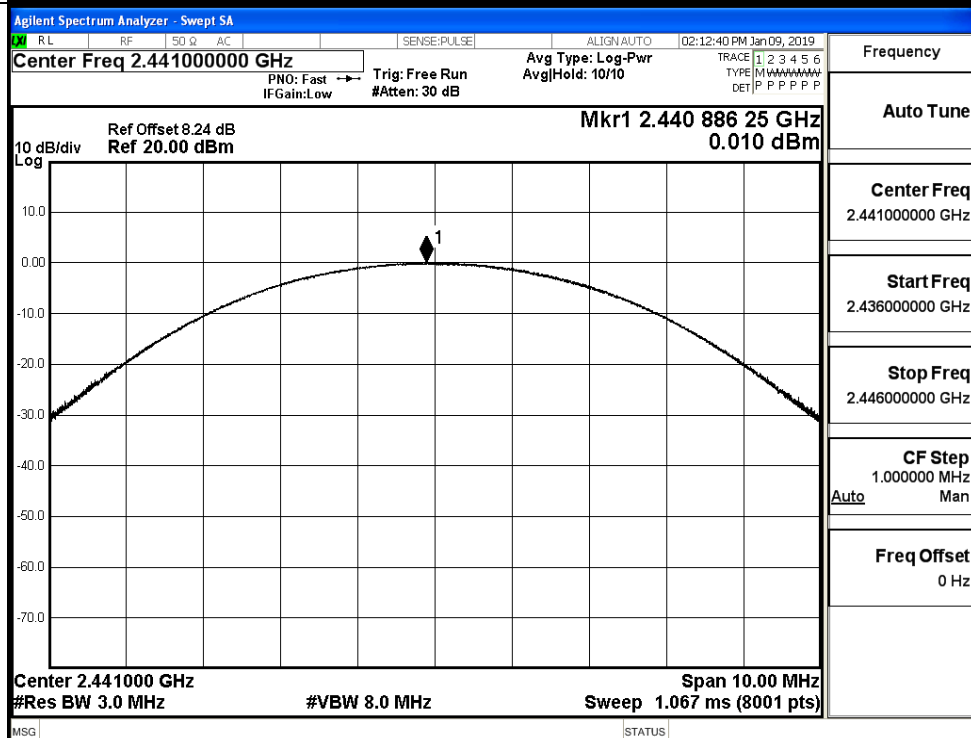
 $\pi/4$ DQPSK/LCH



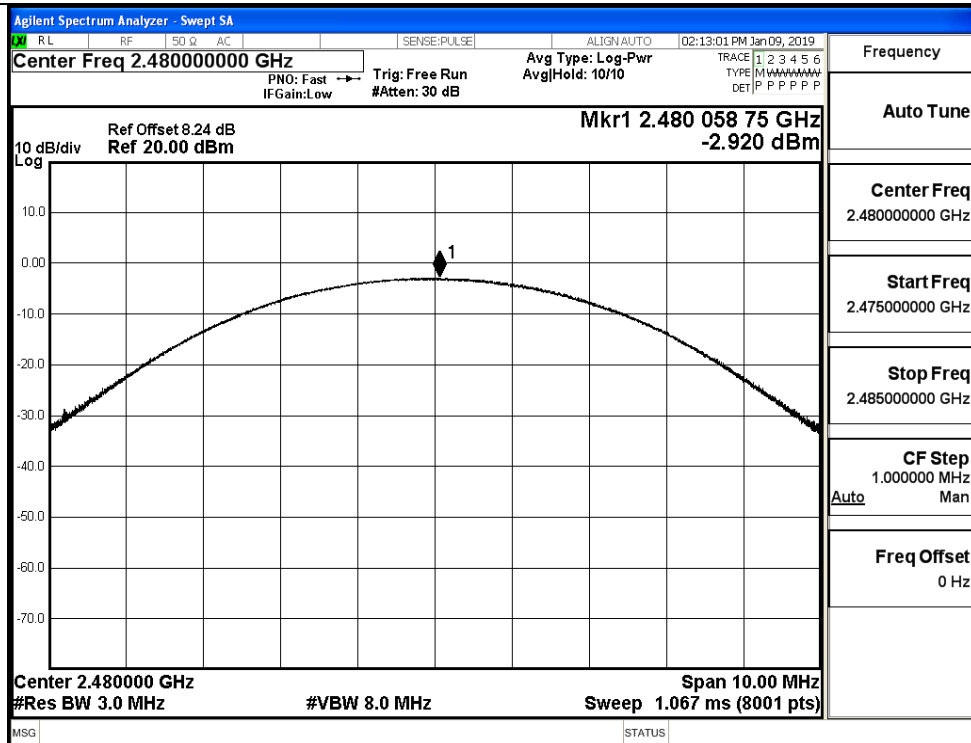
8DPSK/LCH



8DPSK/MCH



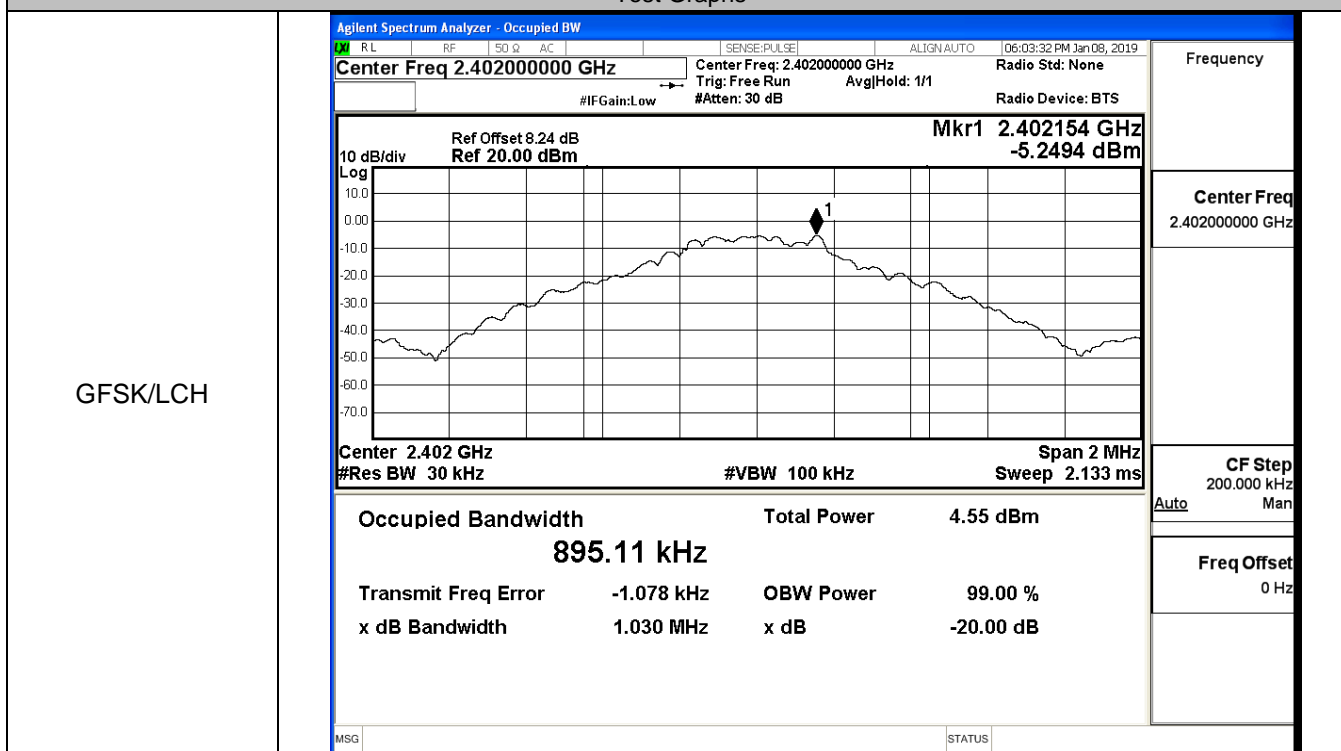
8DPSK/HCH



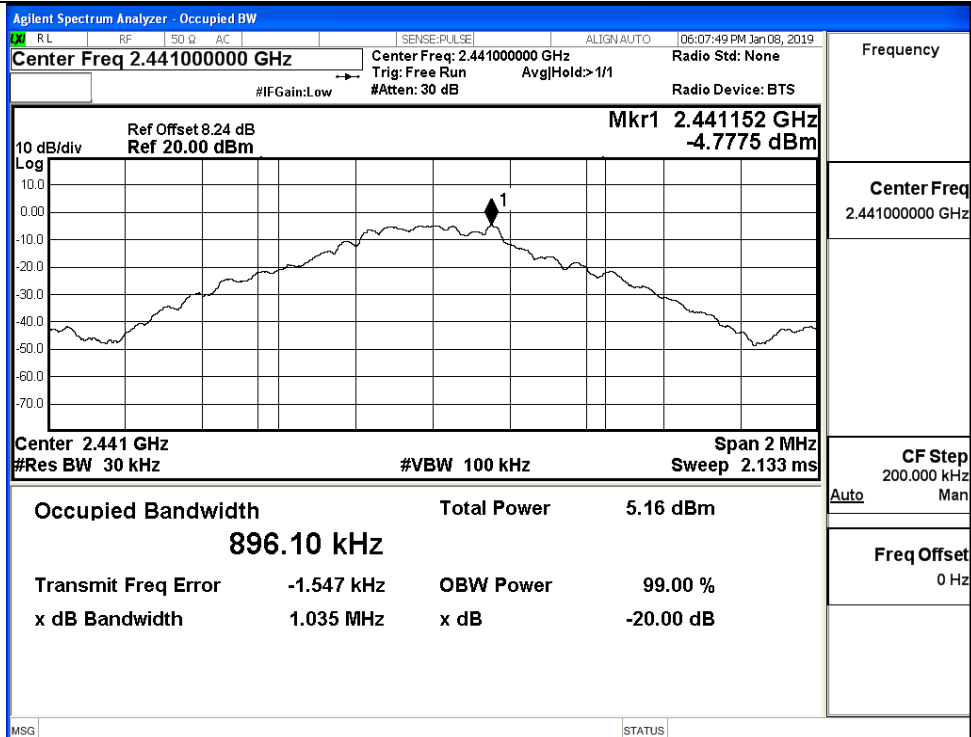
A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.030	Not Specified	PASS
	MCH	1.035	Not Specified	PASS
	HCH	1.029	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.290	Not Specified	PASS
	MCH	1.292	Not Specified	PASS
	HCH	1.291	Not Specified	PASS
8DPSK	LCH	1.294	Not Specified	PASS
	MCH	1.294	Not Specified	PASS
	HCH	1.292	Not Specified	PASS

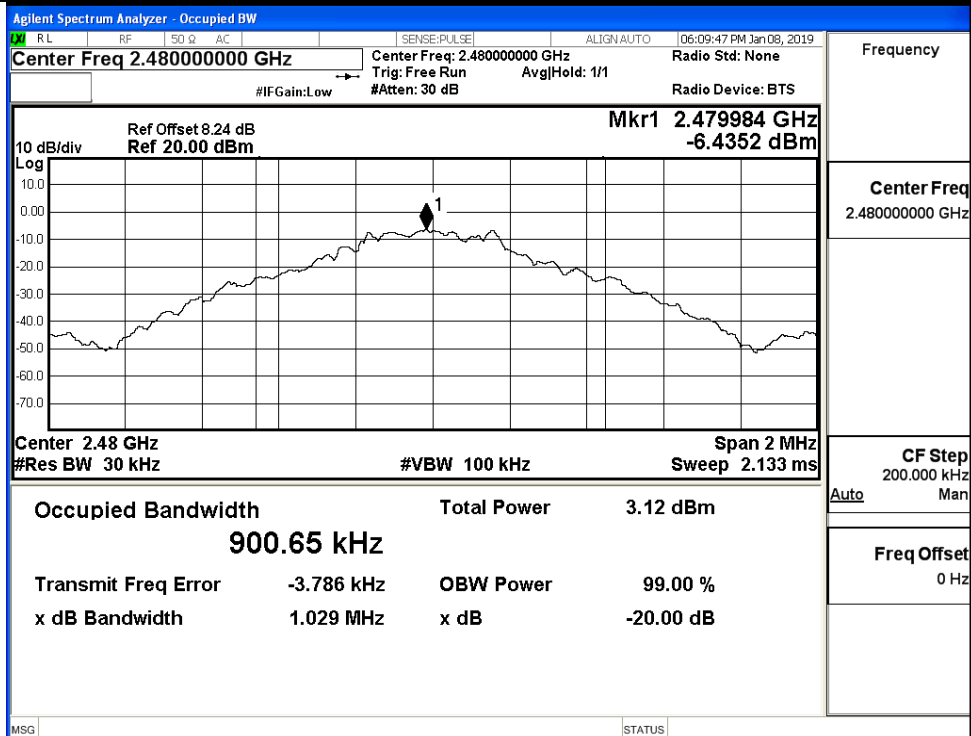
Test Graphs

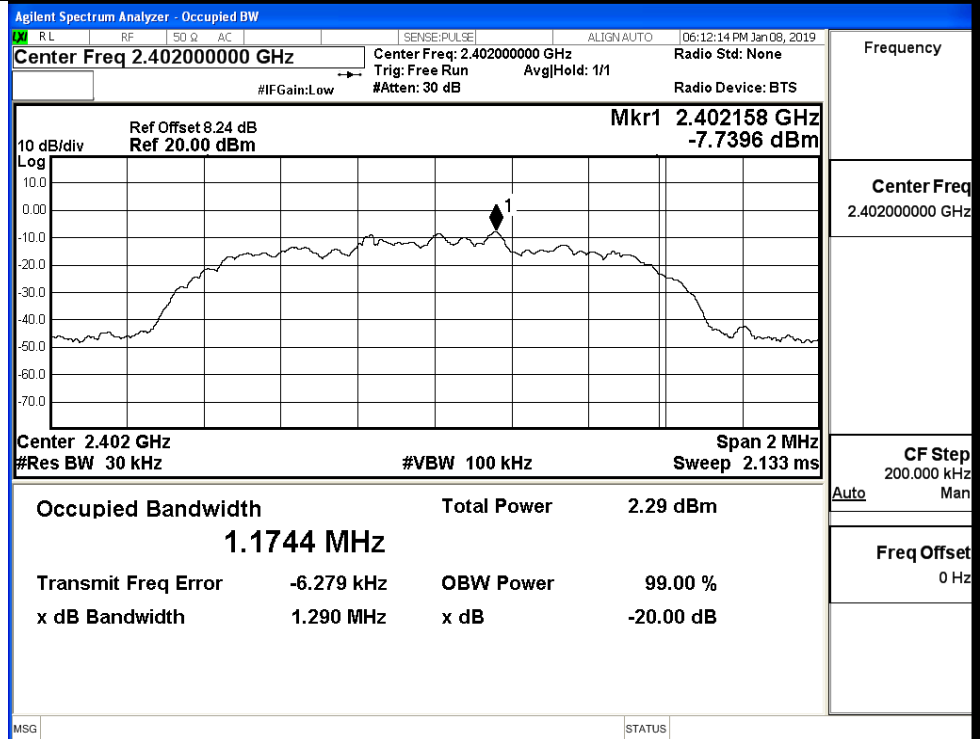
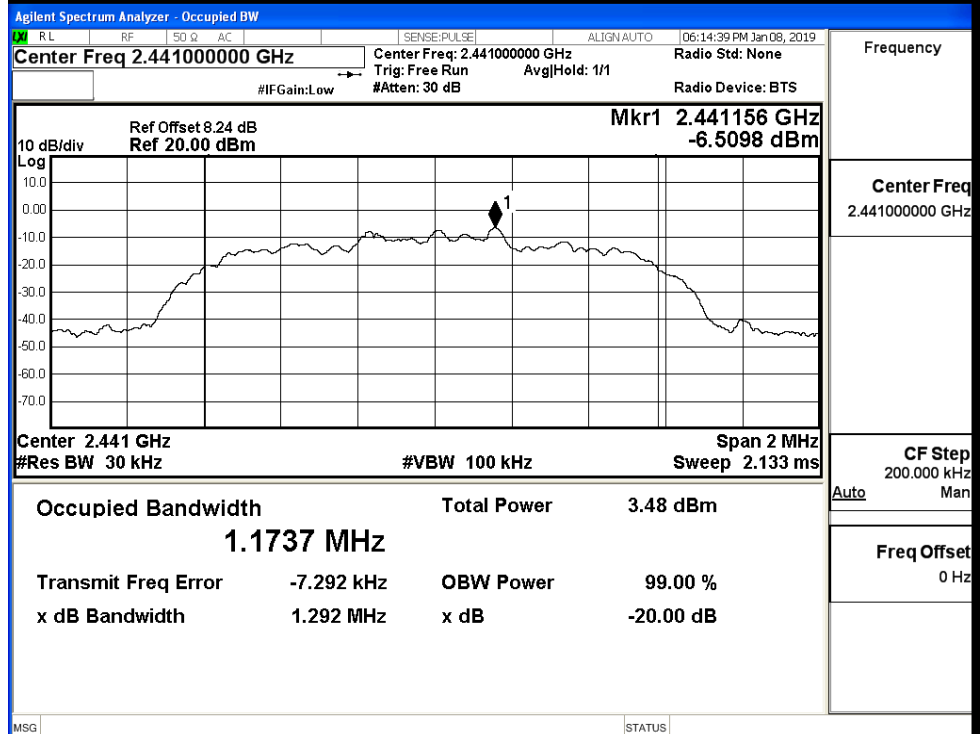


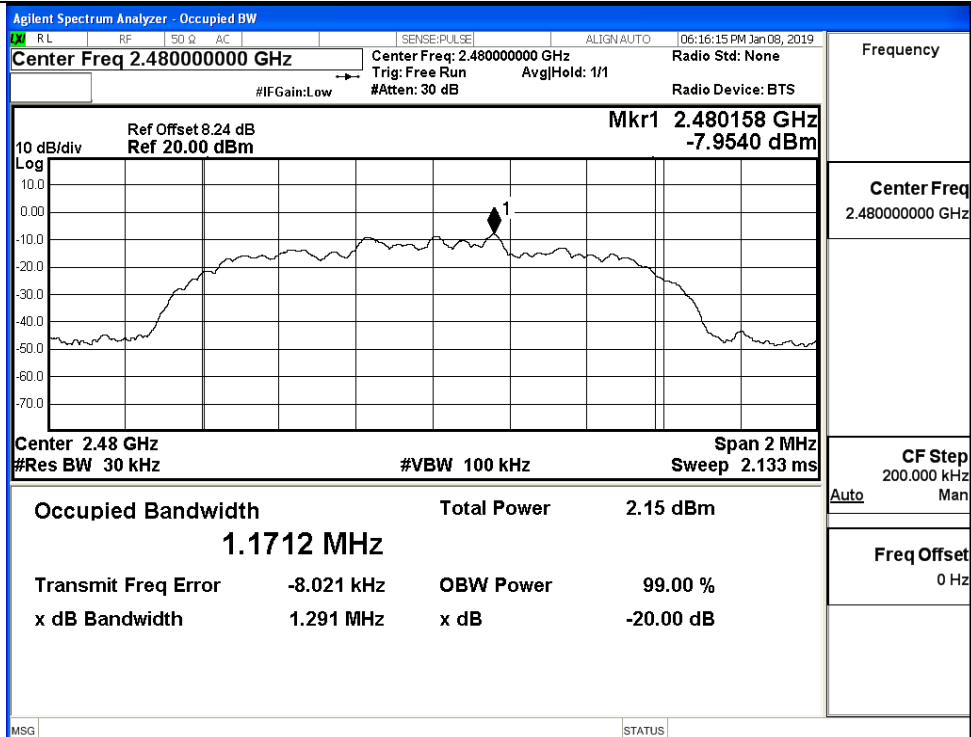
GFSK/MCH



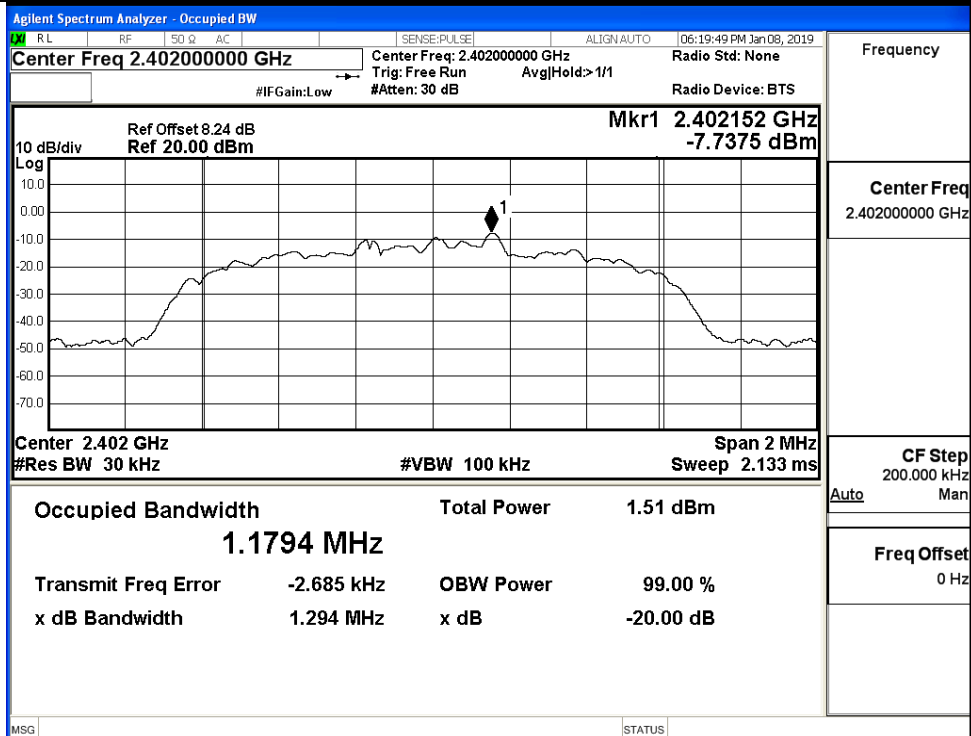
GFSK/HCH



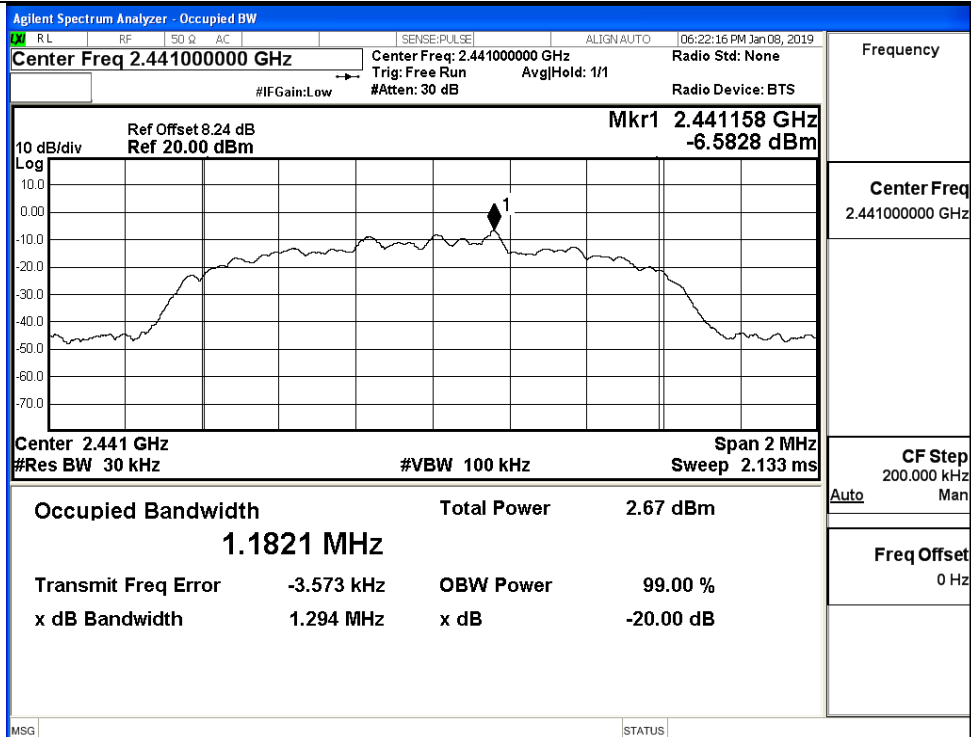
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

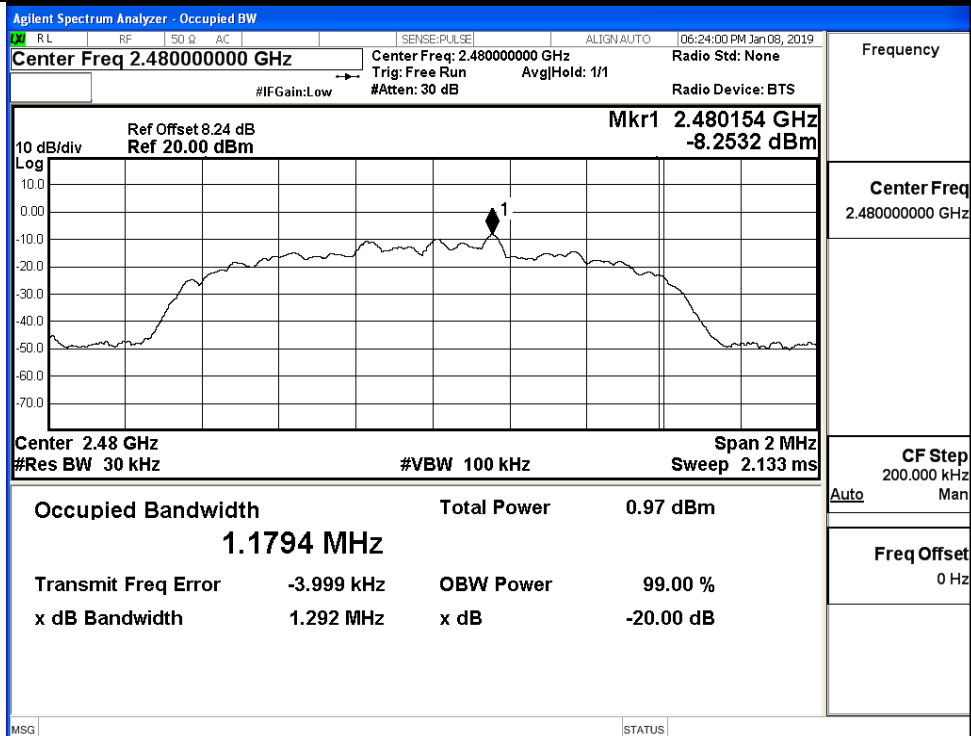
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

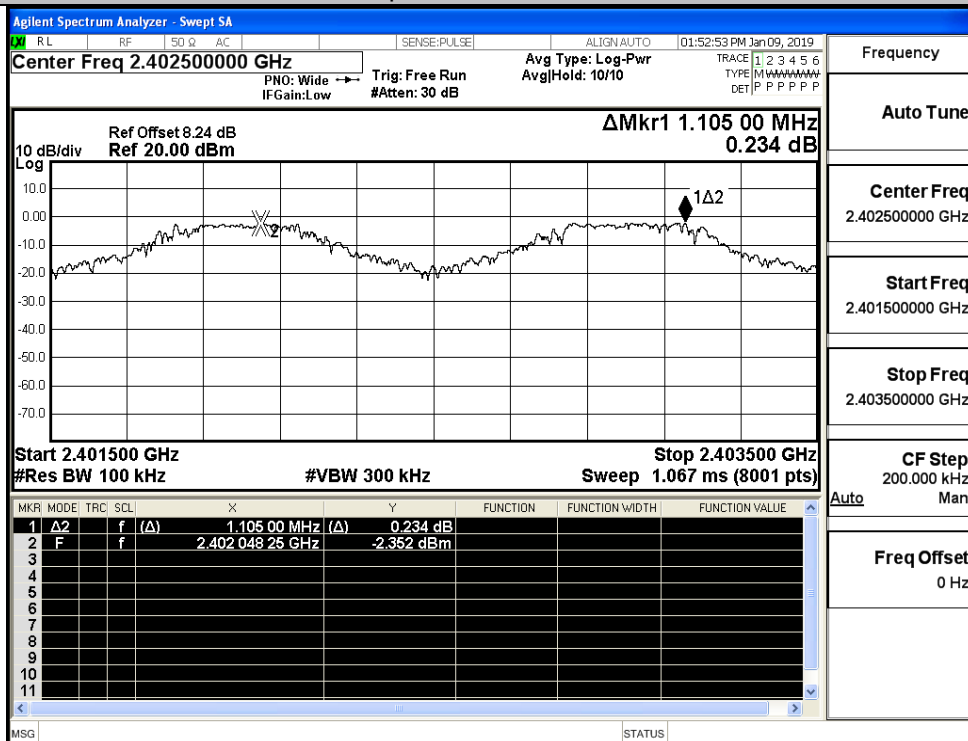


A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.105	0.690	PASS
	MCH	0.694	0.690	PASS
	HCH	1.010	0.690	PASS
$\pi/4$ DQPSK	LCH	1.012	0.861	PASS
	MCH	1.022	0.861	PASS
	HCH	0.970	0.861	PASS
8DPSK	LCH	0.988	0.863	PASS
	MCH	0.942	0.863	PASS
	HCH	1.040	0.863	PASS

Test Graphs

GFSK/LCH



Frequency

Auto Tune

Center Freq

2.402500000 GHz

Start Freq

2.401500000 GHz

Stop Freq

2.403500000 GHz

CF Step

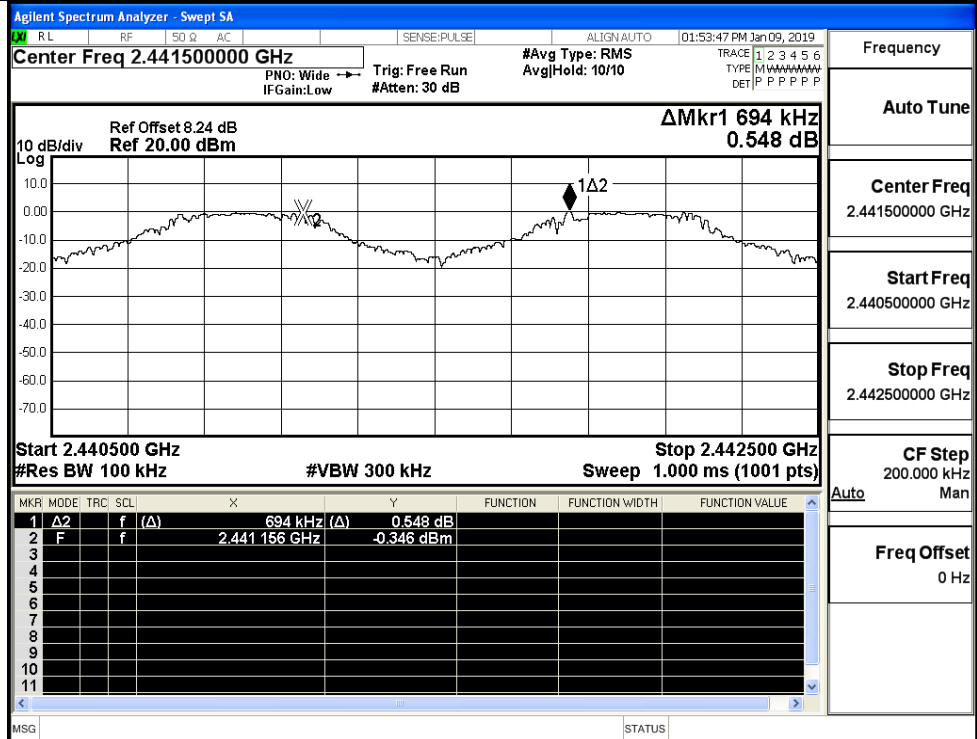
200.000 kHz

Man

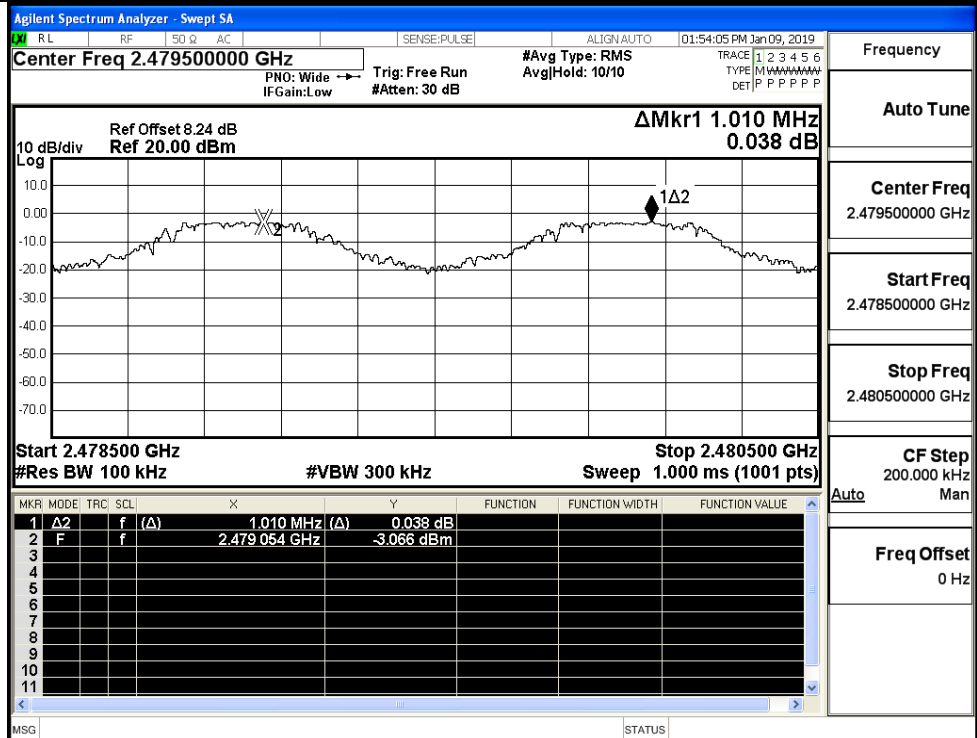
Freq Offset

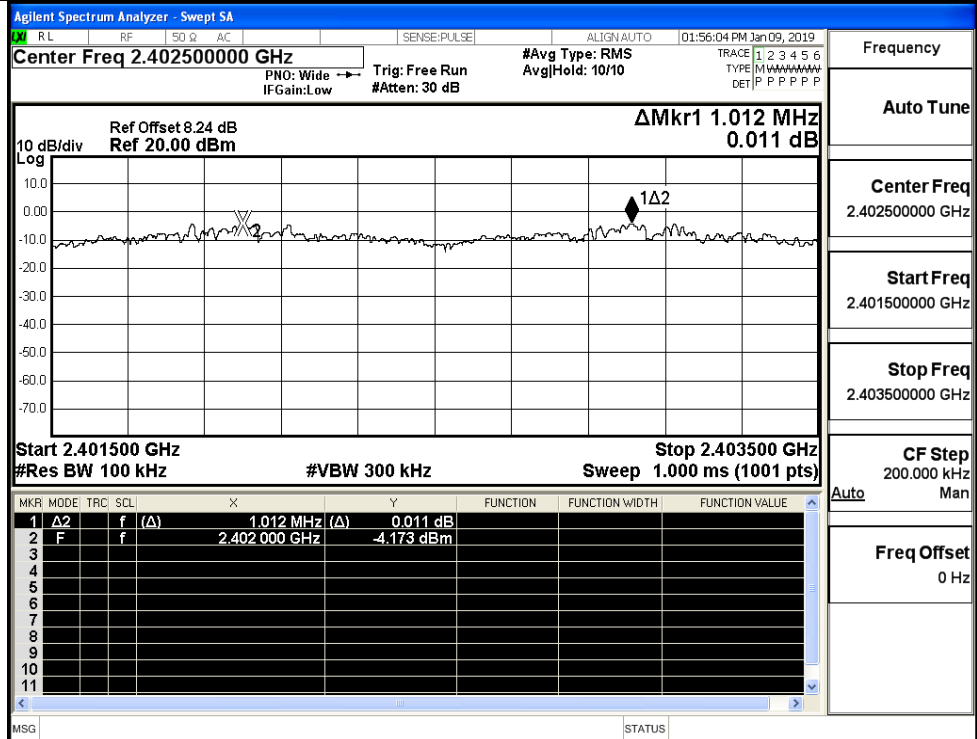
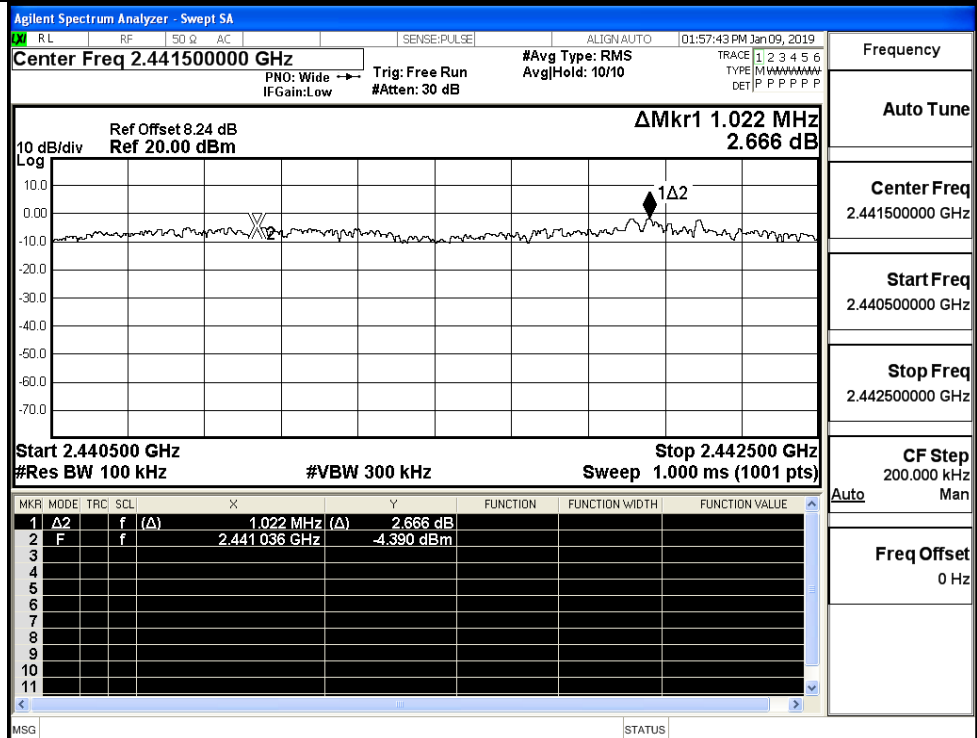
0 Hz

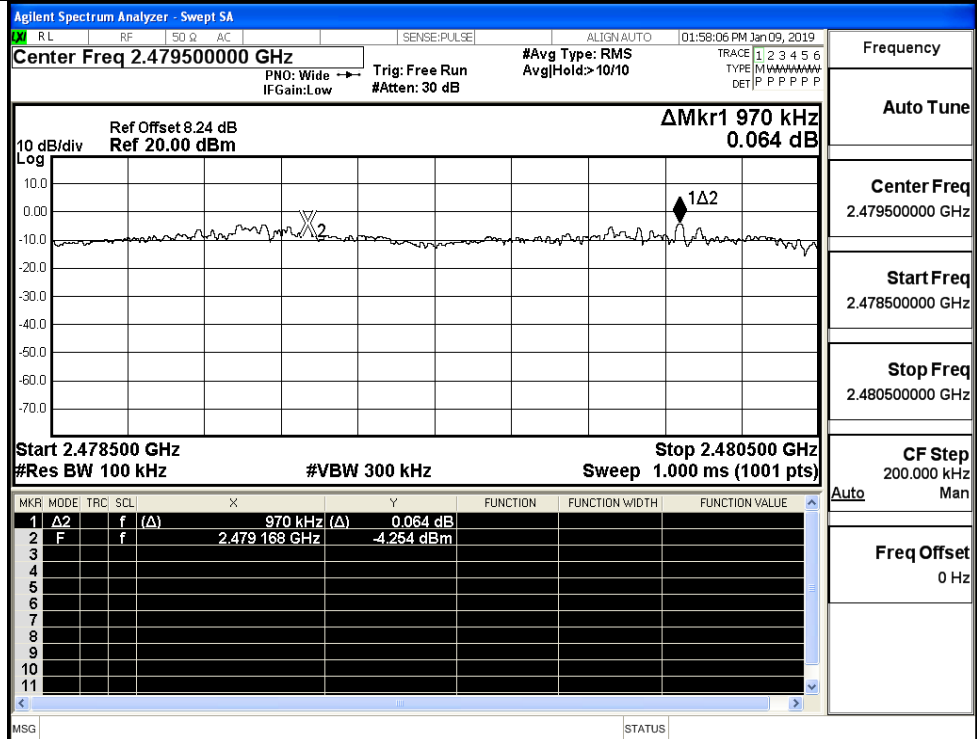
GFSK/MCH



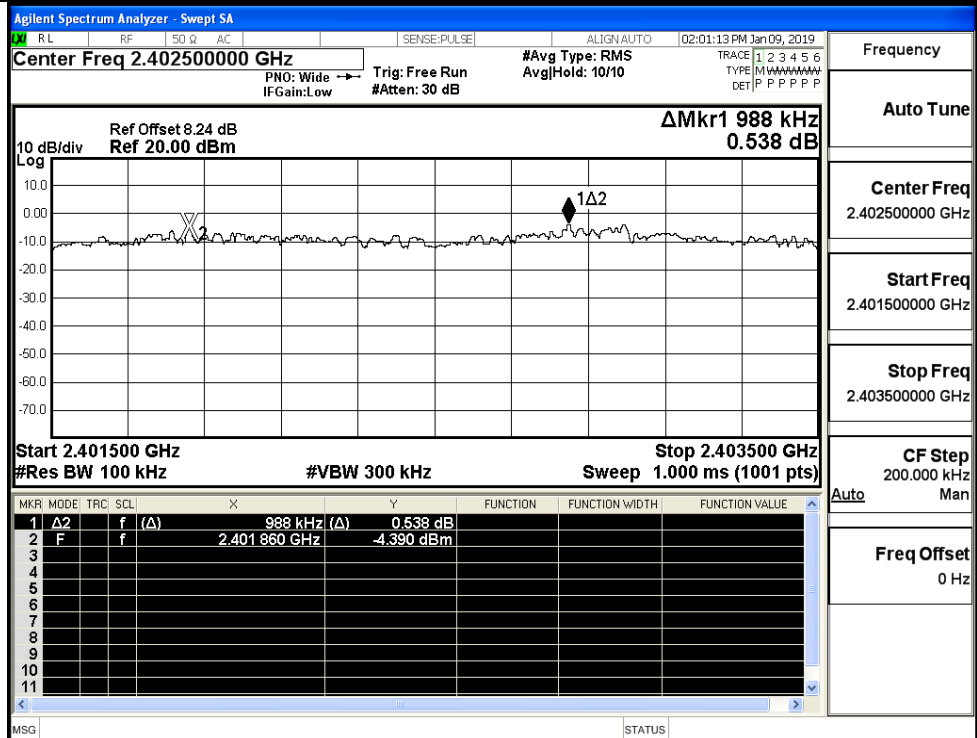
GFSK/HCH



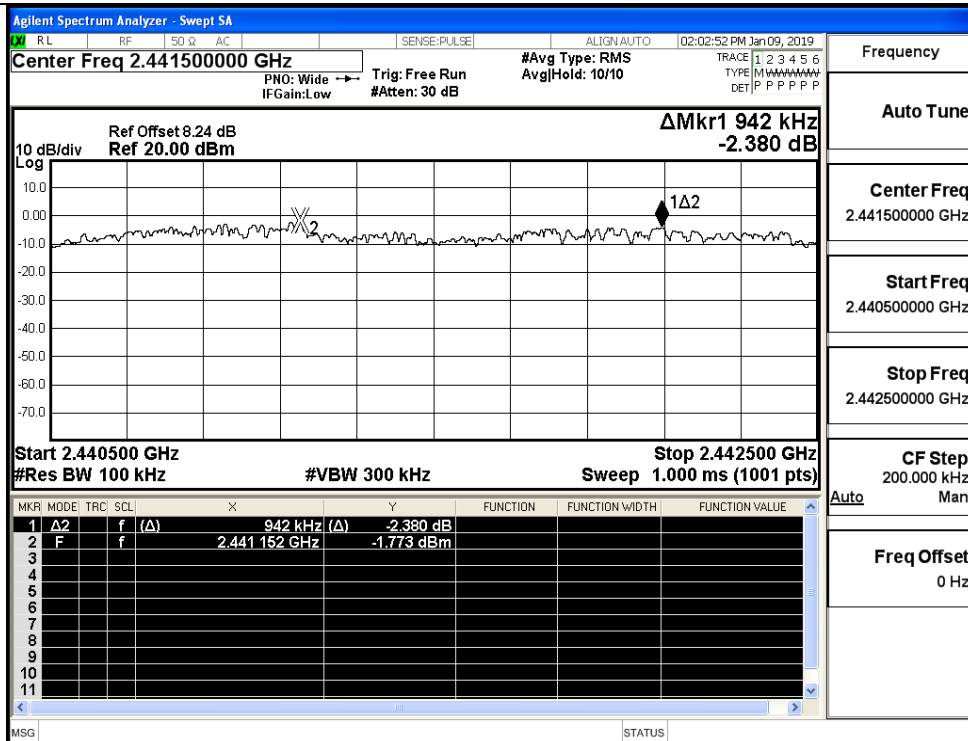
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

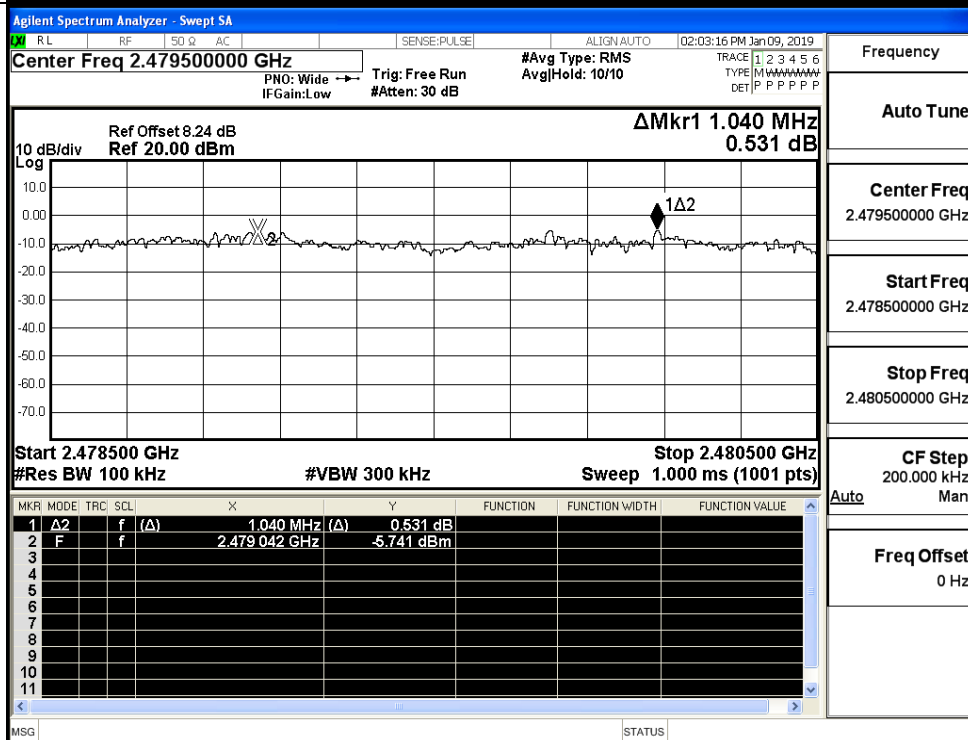
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

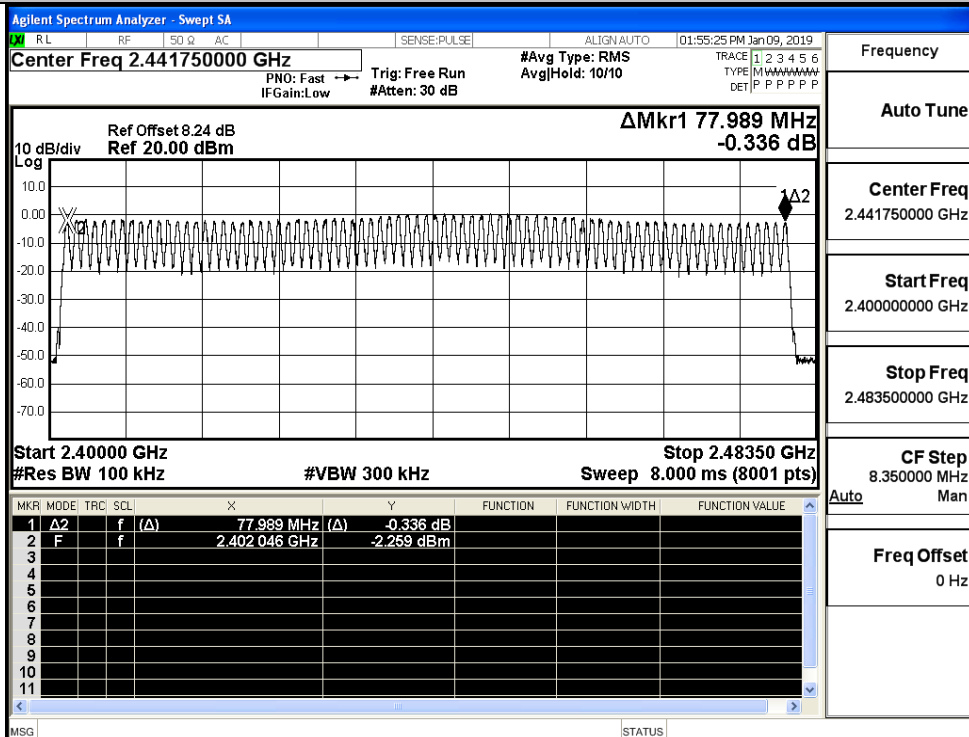
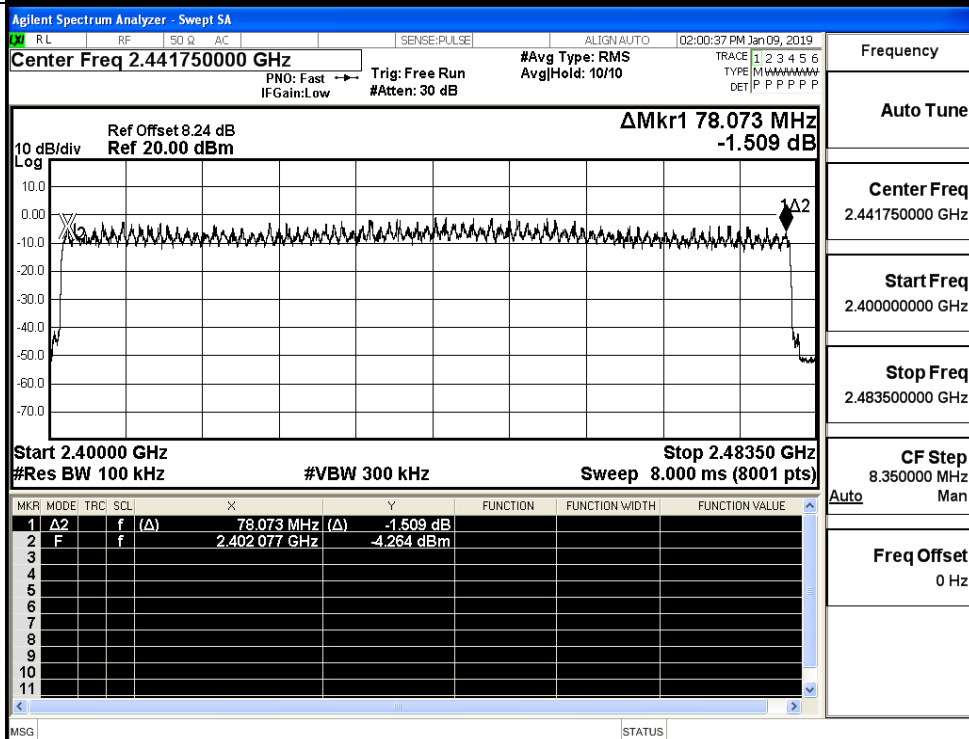


A.4 Hopping Channel Number

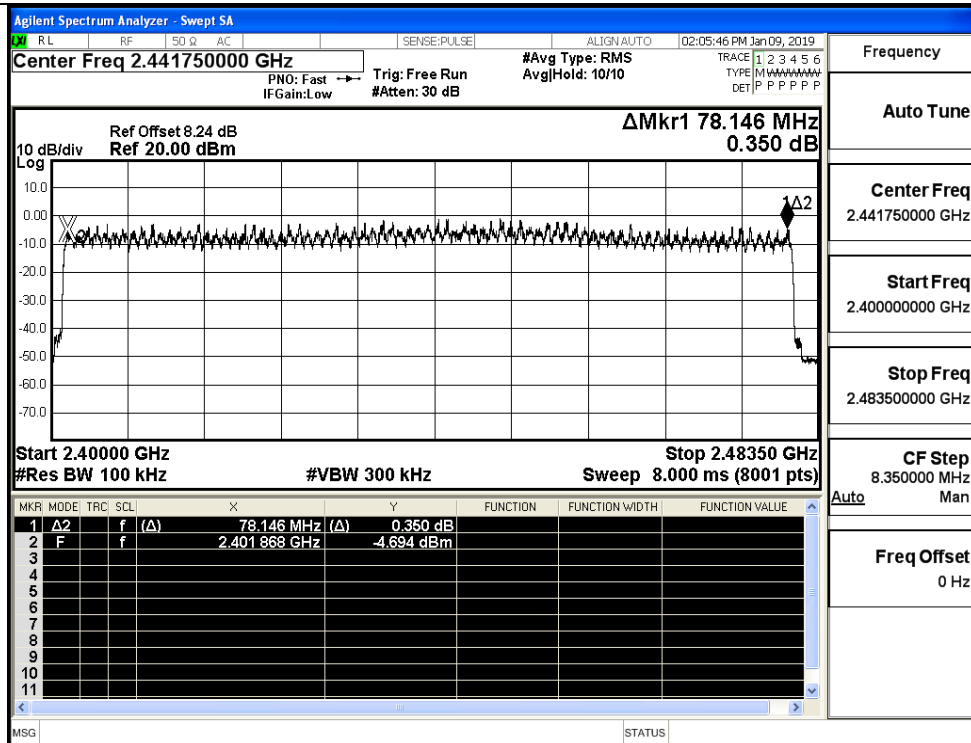
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

Test Graphs

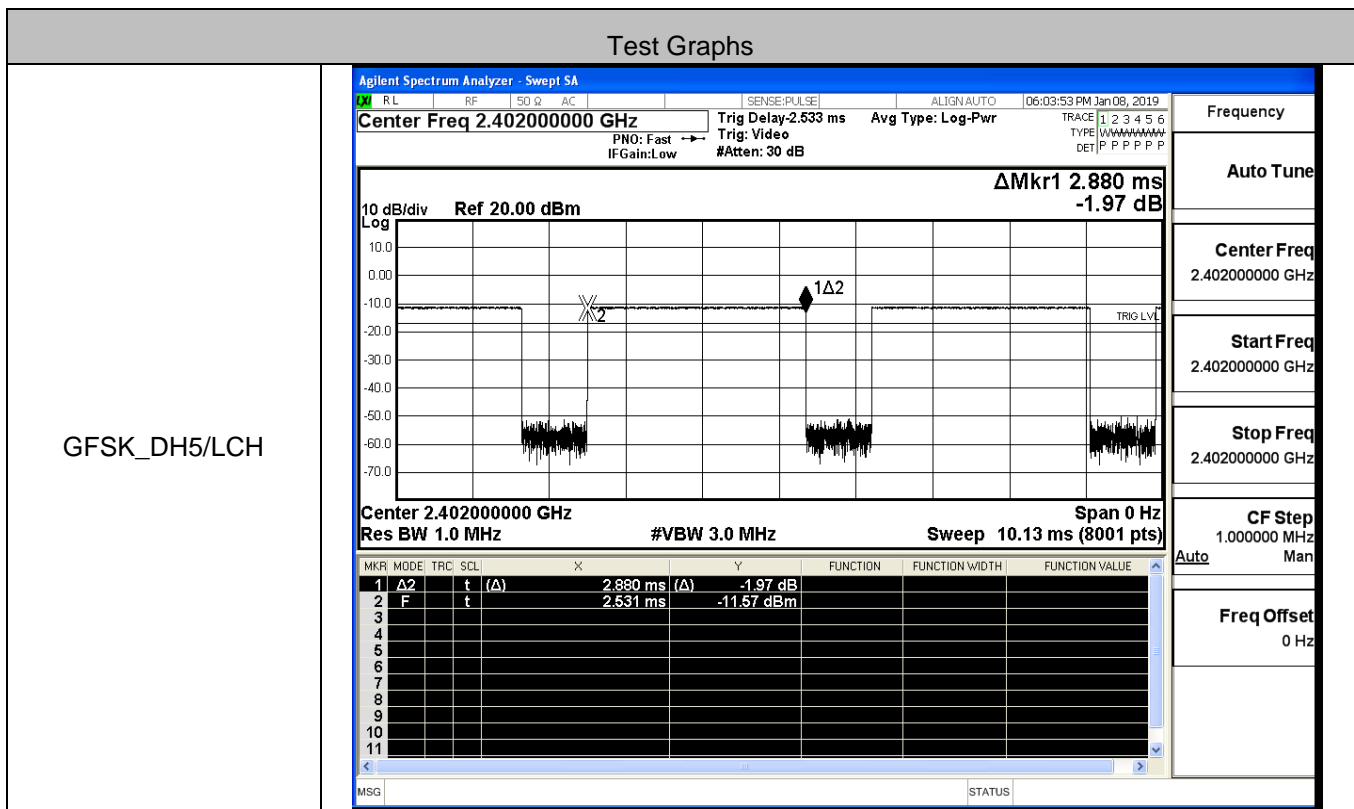
GFSK/Hop

 $\pi/4$ DQPSK/Hop

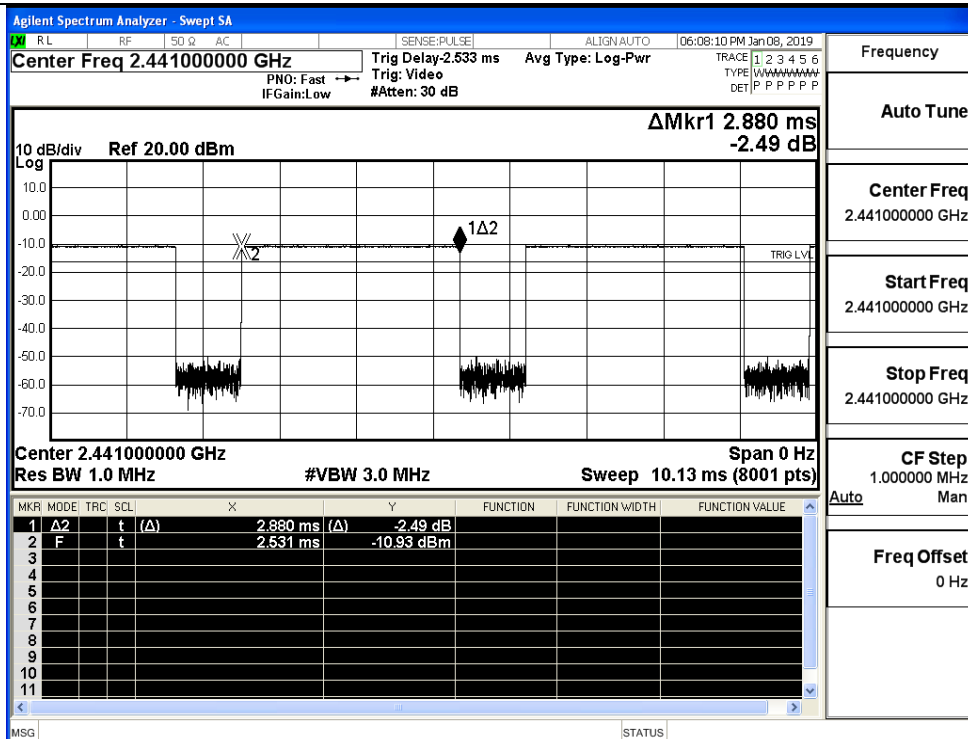
8DPSK/Hop



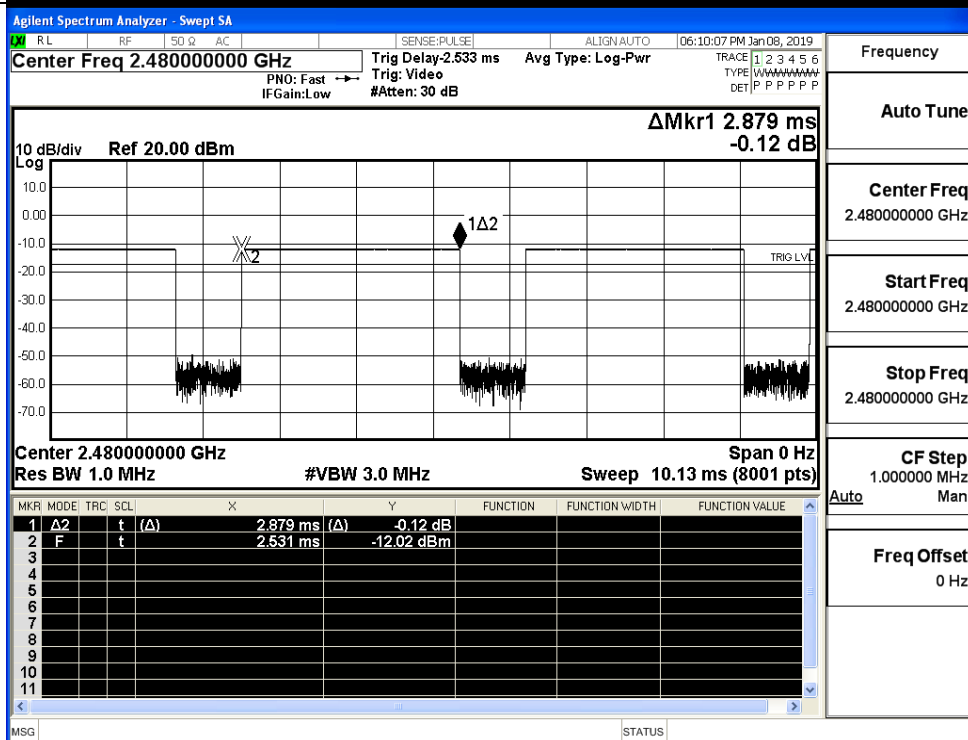
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88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



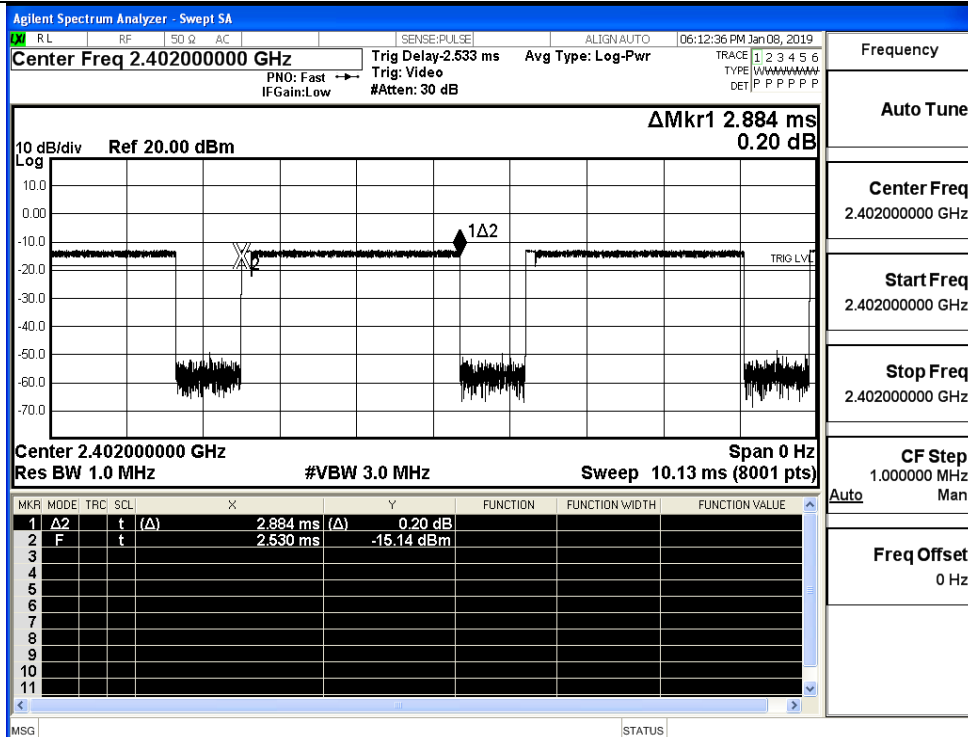
GFSK_DH5/MCH



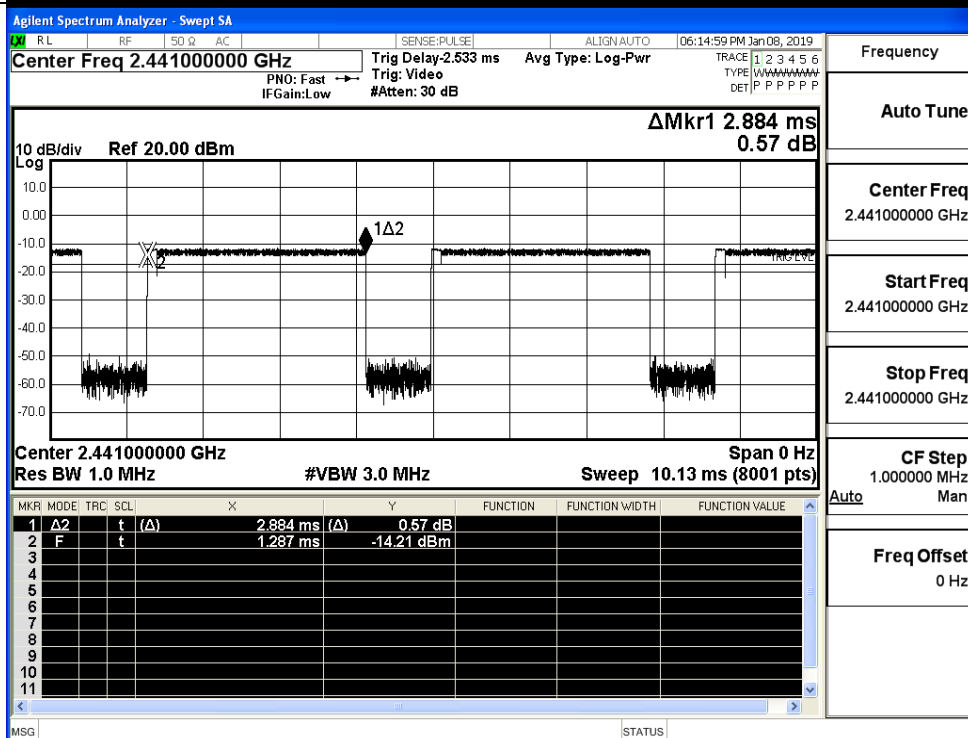
GFSK_DH5/HCH



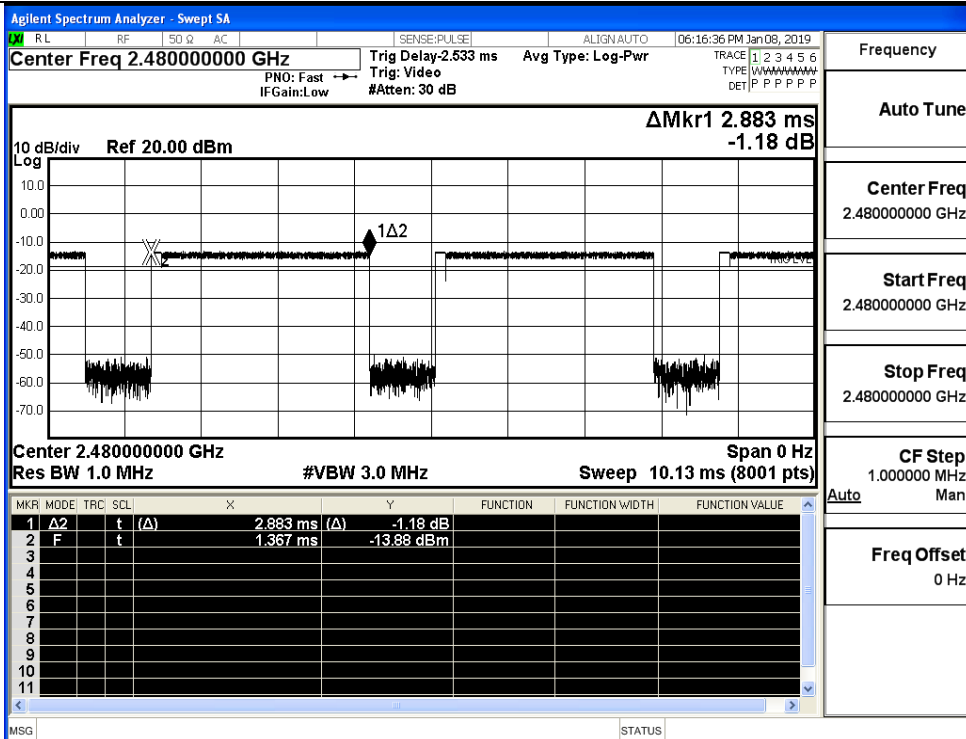
$\pi/4$ DQPSK
_2DH5/LCH



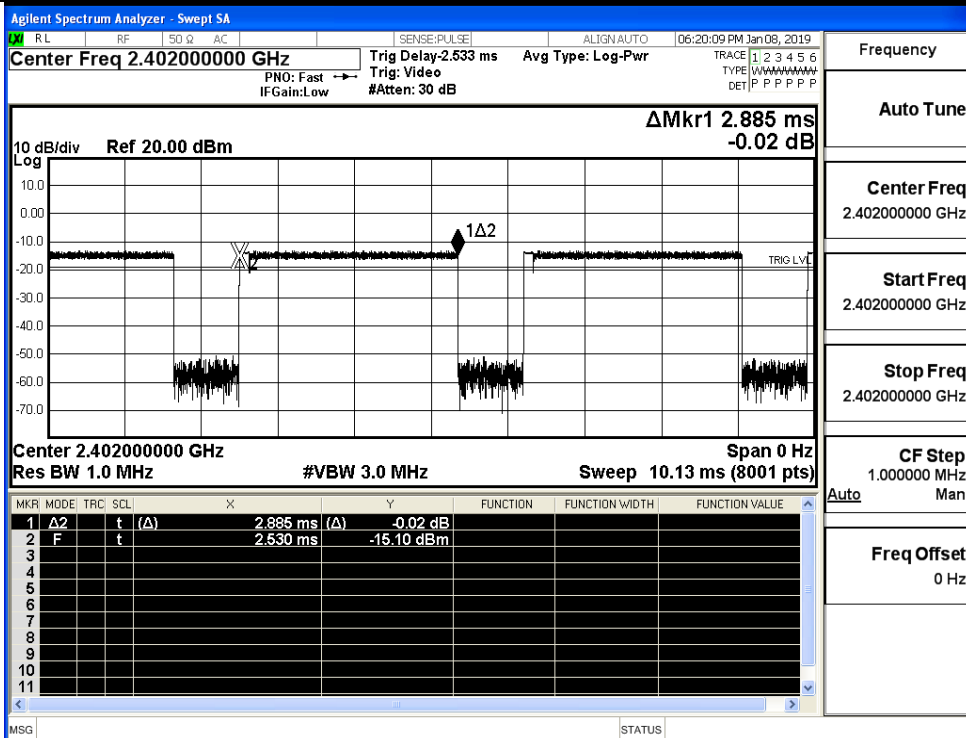
$\pi/4$ DQPSK
_2DH5/MCH



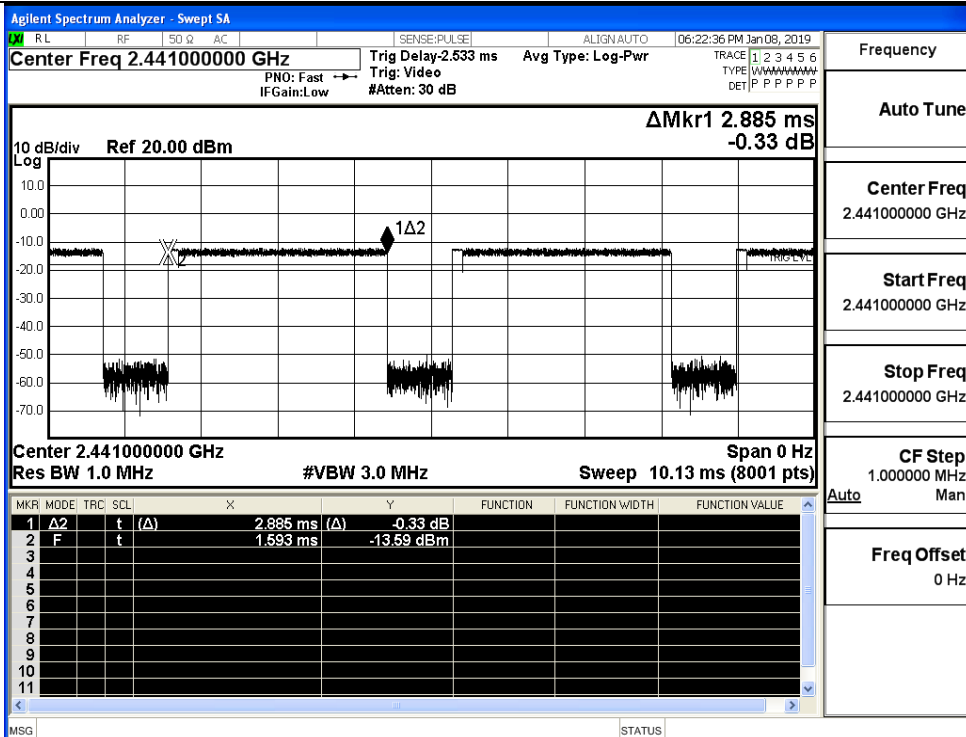
$\pi/4$ DQPSK
_2DH5/HCH



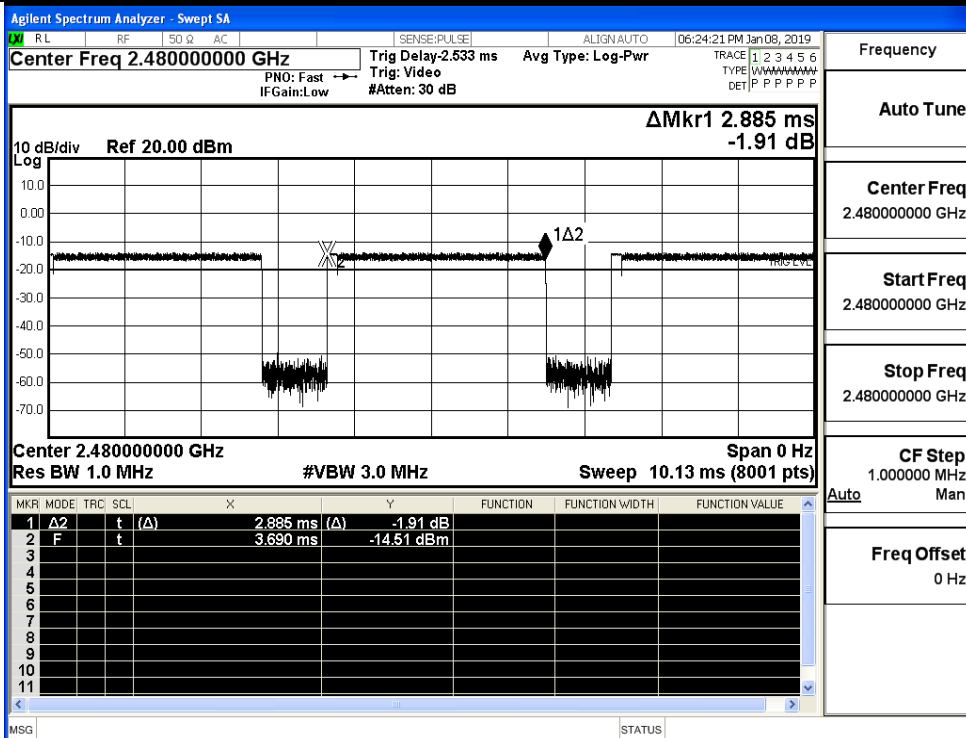
8DPSK _3DH5/LCH



8DPSK_3DH5/MCH



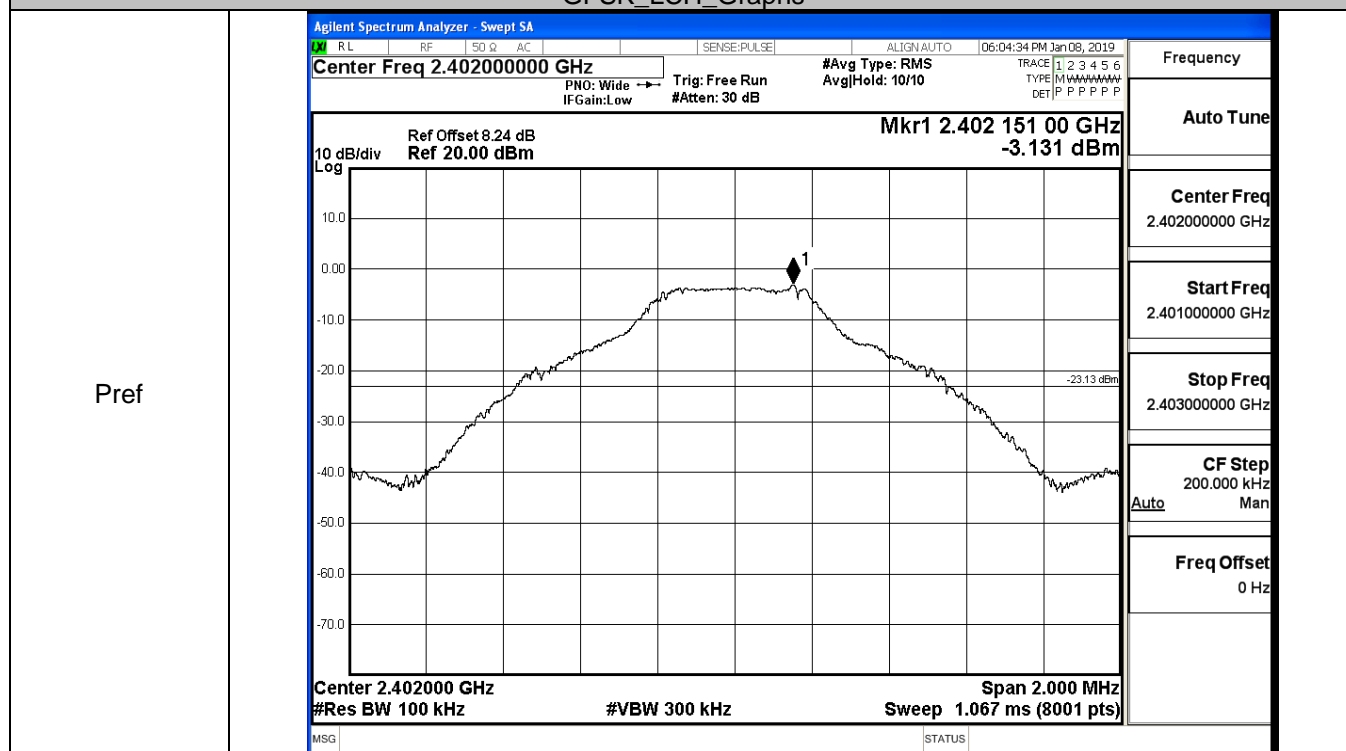
8DPSK_3DH5/HCH

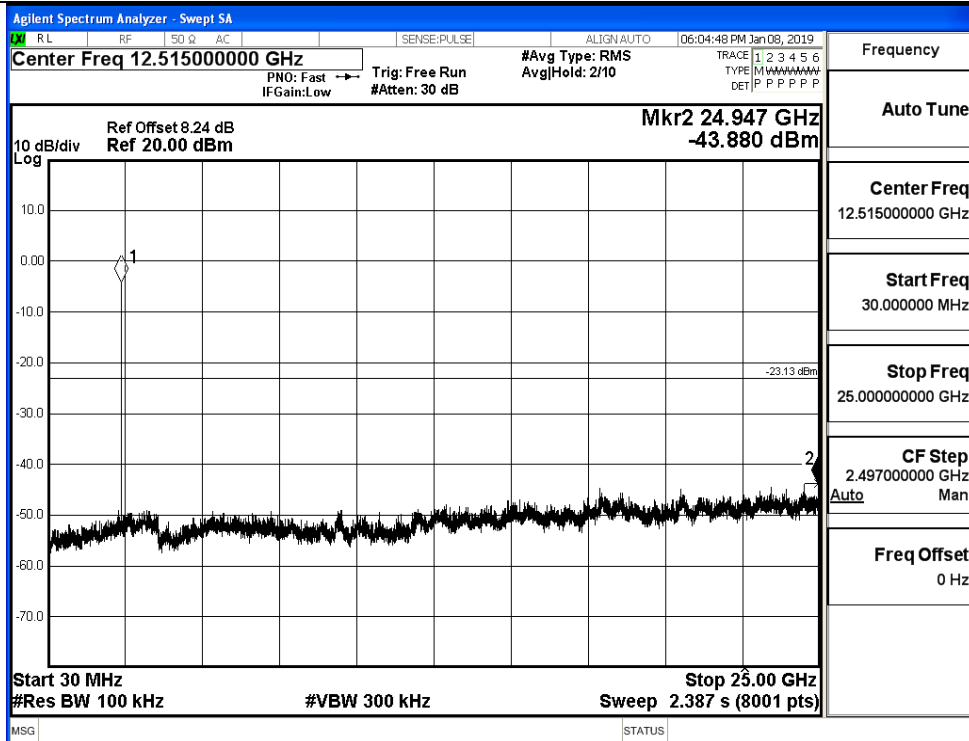


A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-3.131	-43.880	-23.131	PASS
	MCH	-2.534	-44.543	-22.534	PASS
	HCH	-3.967	-44.430	-23.967	PASS
$\pi/4$ DQPSK	LCH	-4.949	-41.628	-24.949	PASS
	MCH	-3.793	-43.745	-23.793	PASS
	HCH	-6.282	-37.065	-26.282	PASS
8DPSK	LCH	-5.597	-44.219	-25.597	PASS
	MCH	-4.448	-43.708	-24.448	PASS
	HCH	-6.192	-44.159	-26.192	PASS

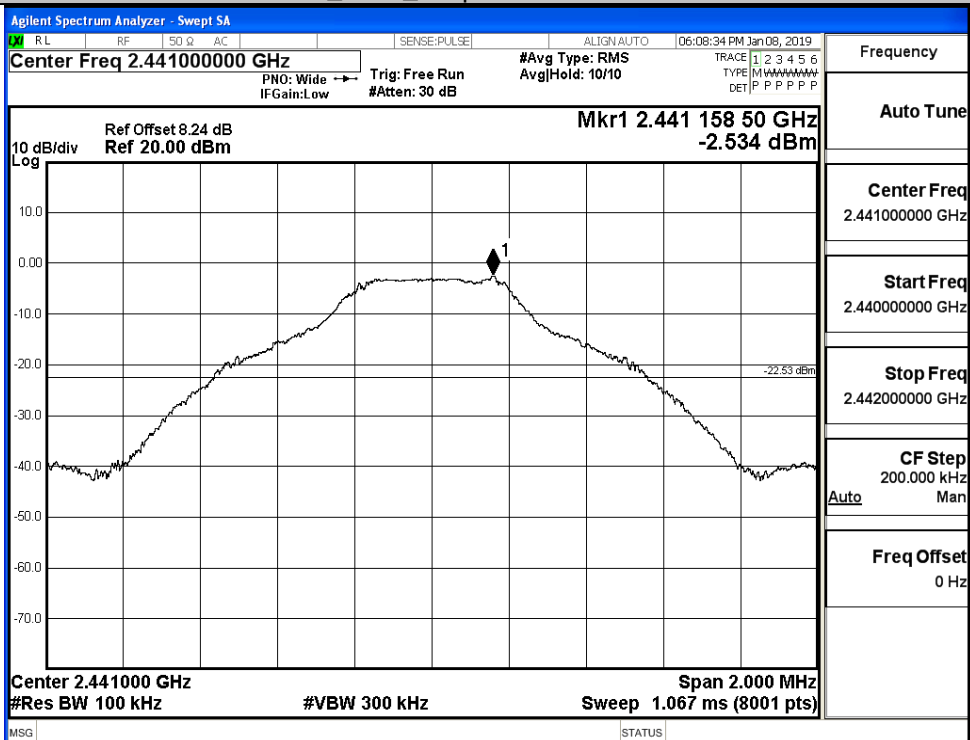
GFSK_LCH_Graphs



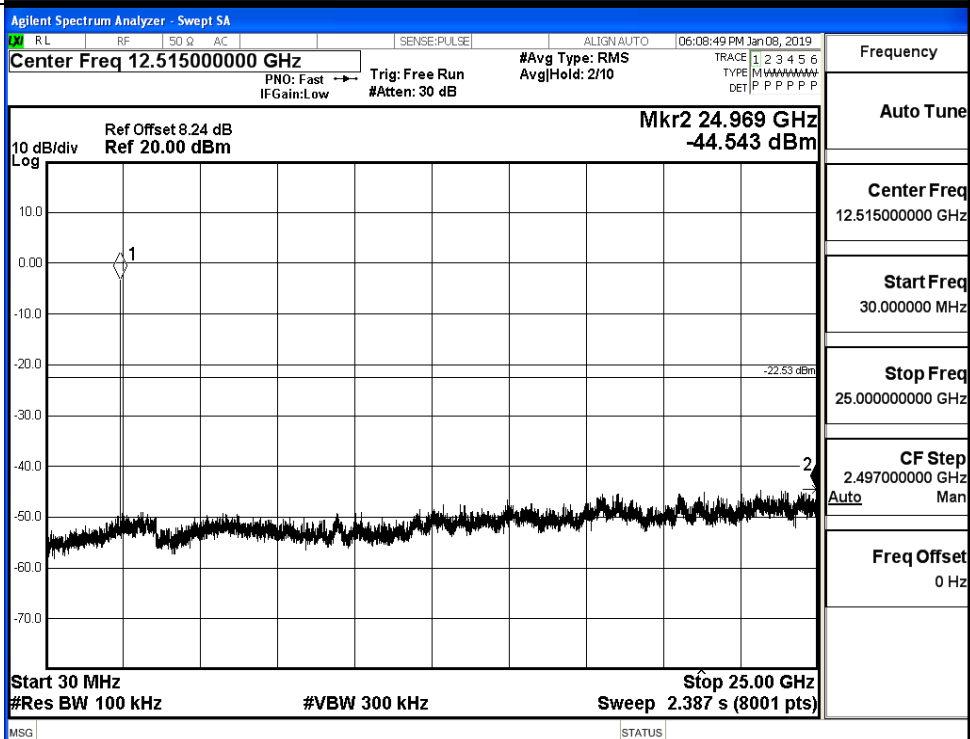
P_uw

GFSK_MCH_Graphs

Pref

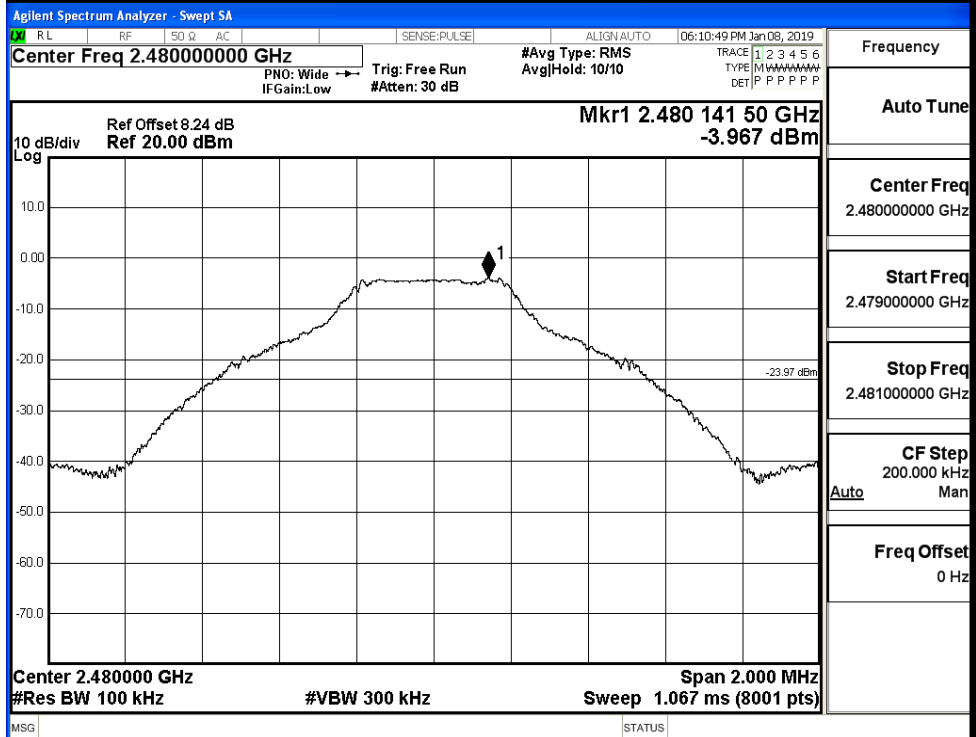


Puw

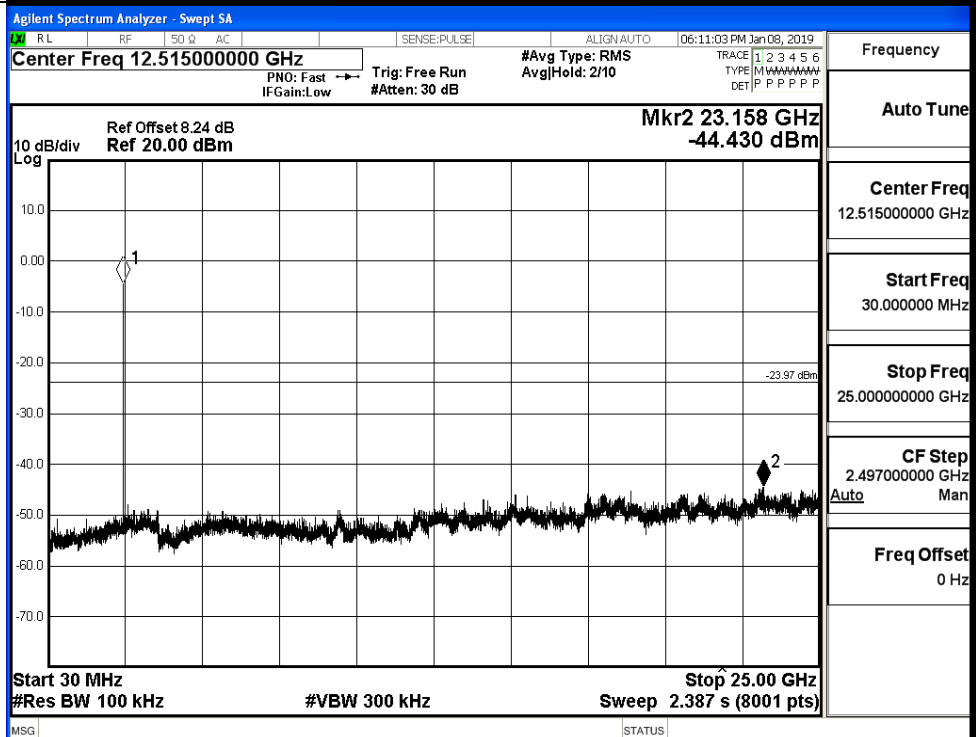


GFSK_HCH_Graphs

Pref

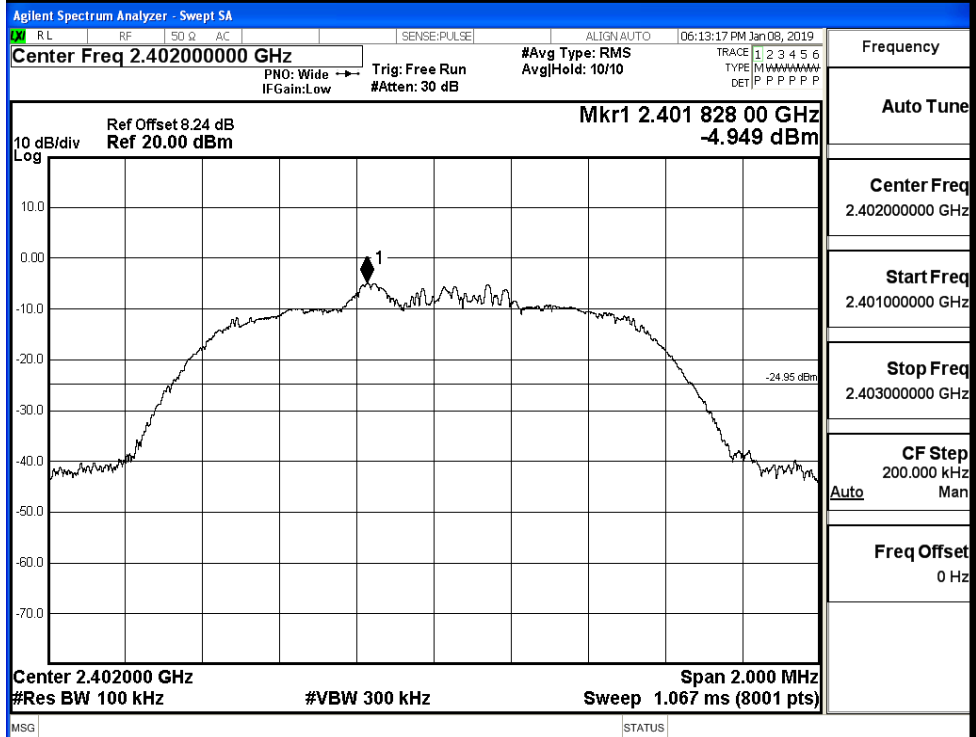


Puw

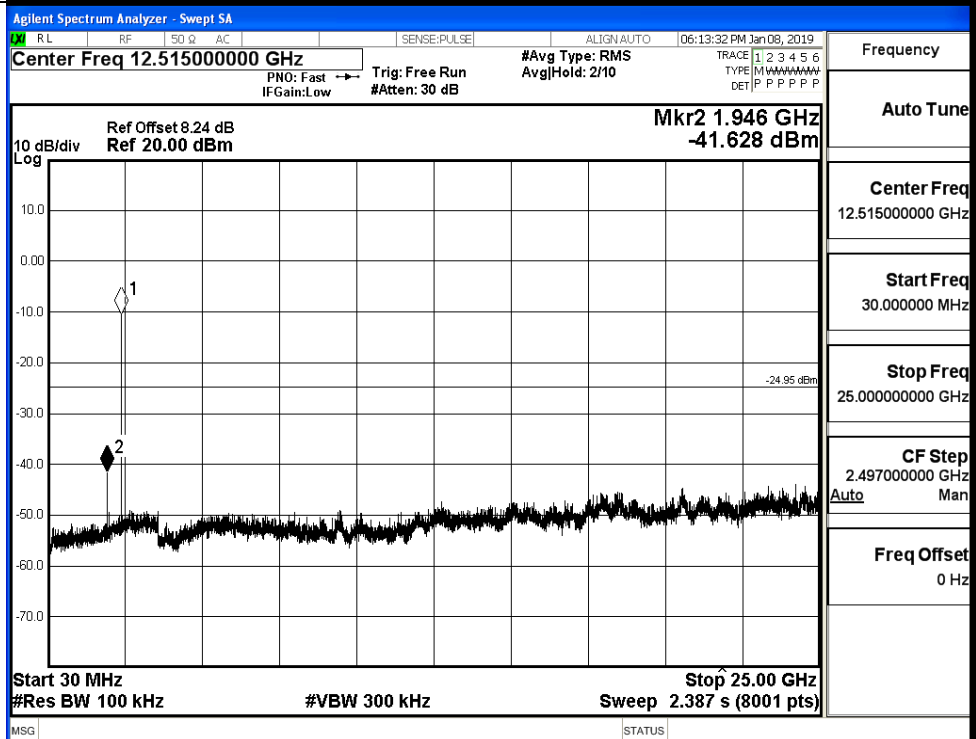


$\pi/4$ DQPSK_LCH_Graphs

Pref

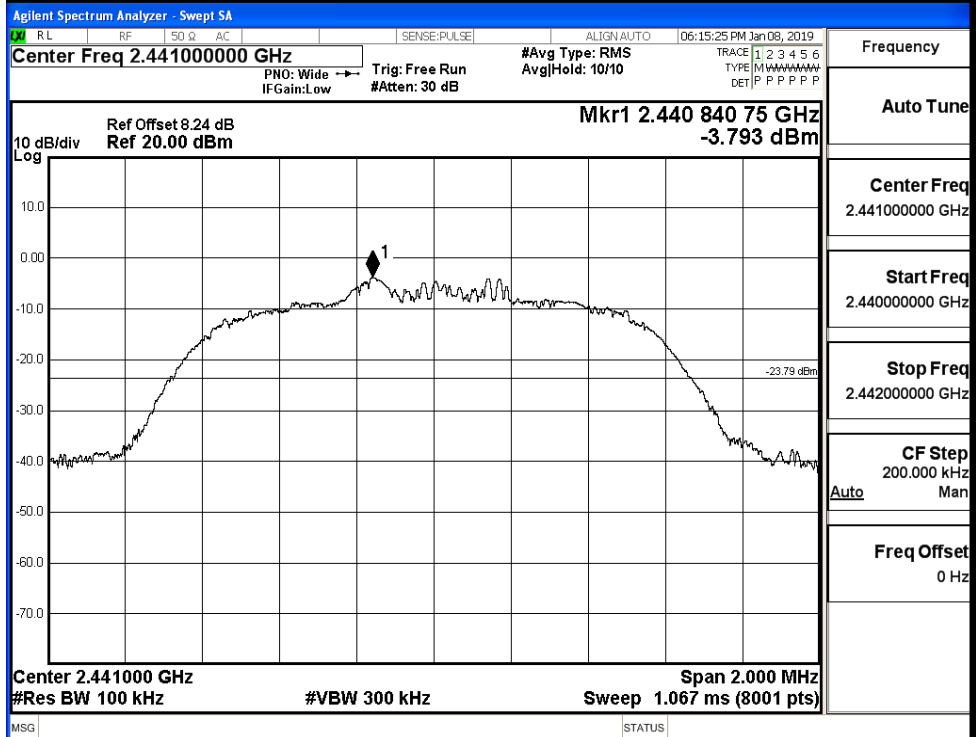


Puw

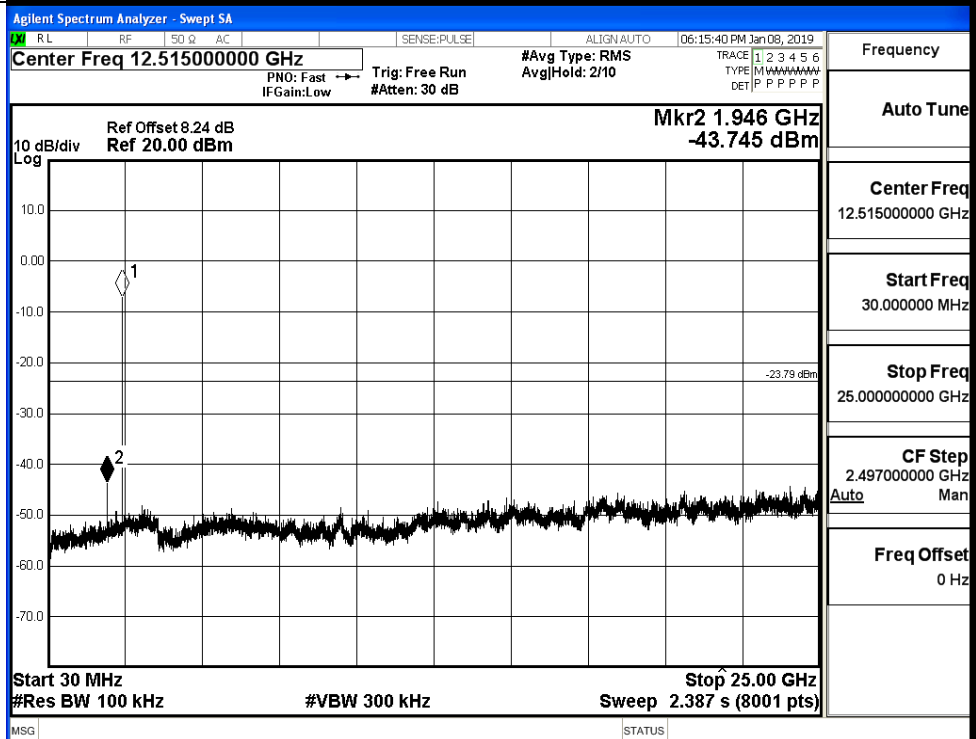


π /4DQPSK_MCH_Graphs

Pref

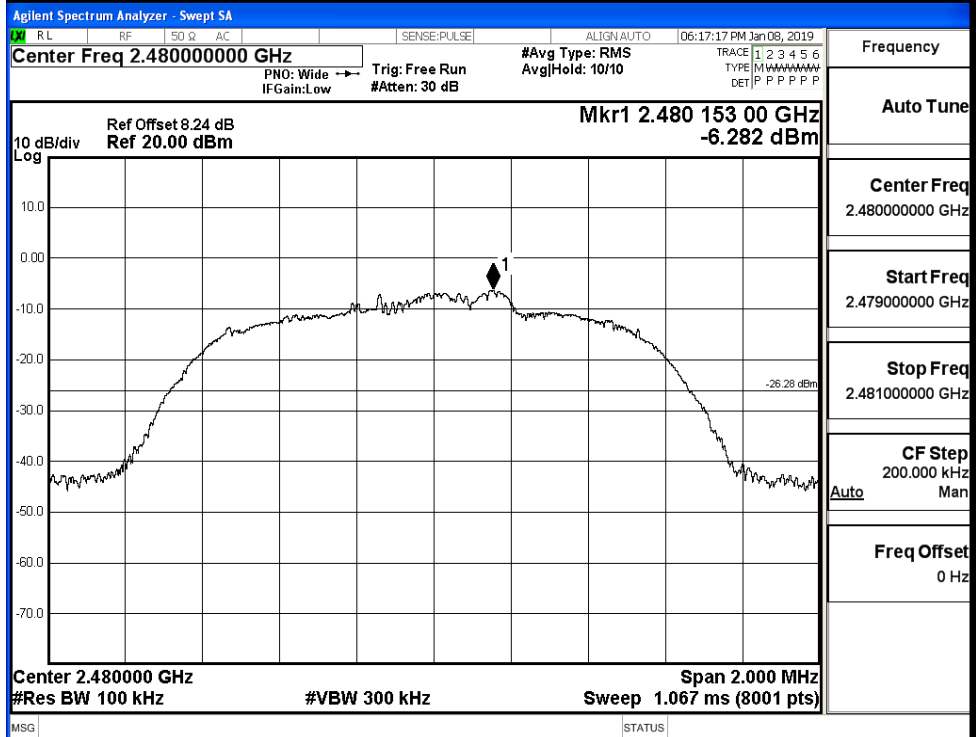


Puw

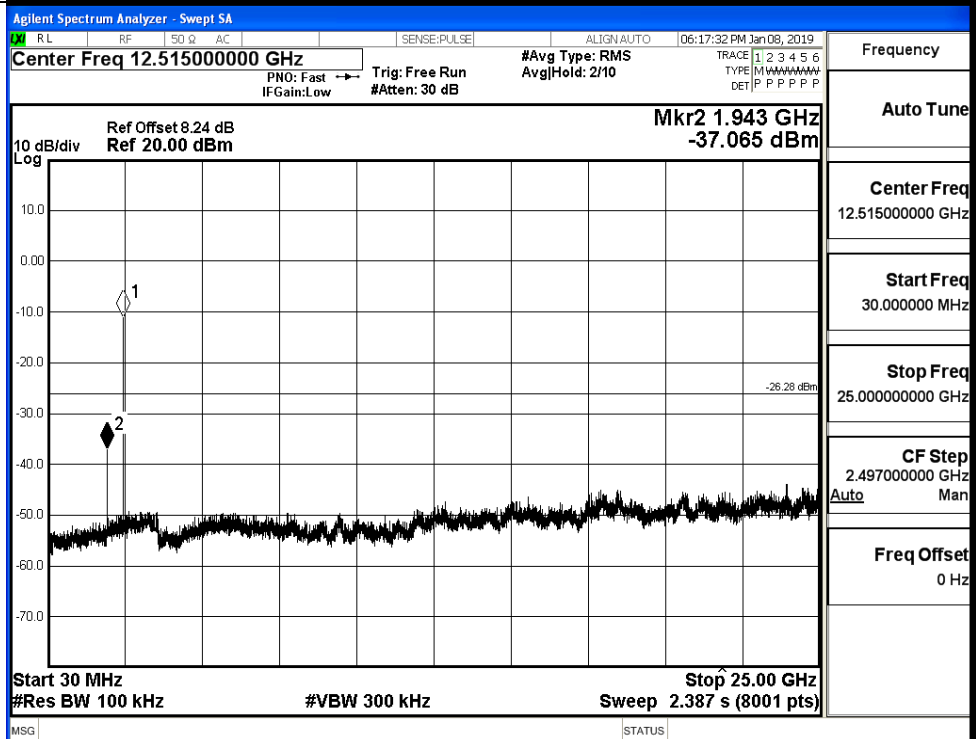


$\pi/4$ DQPSK_HCH_Graphs

Pref

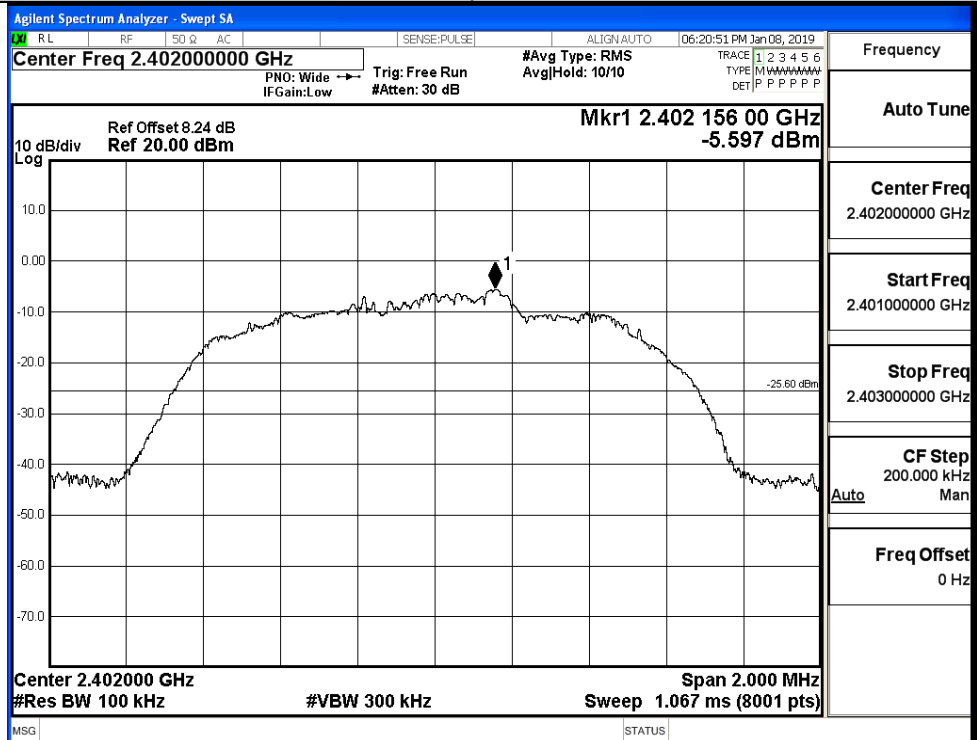


Puw

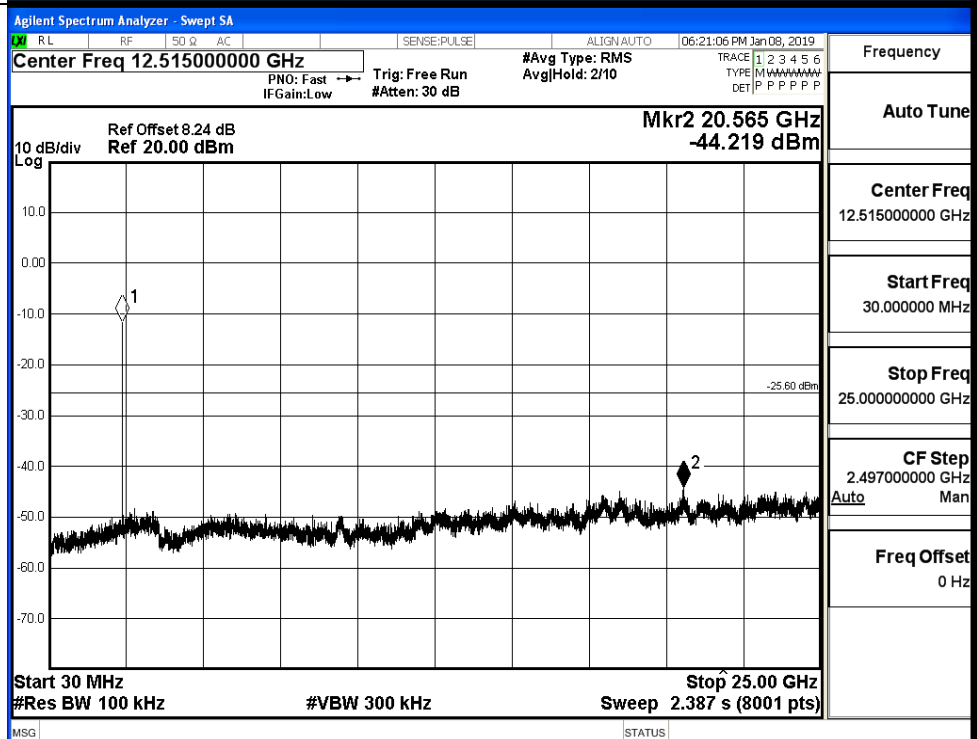


8DPSK_LCH_Graphs

Pref

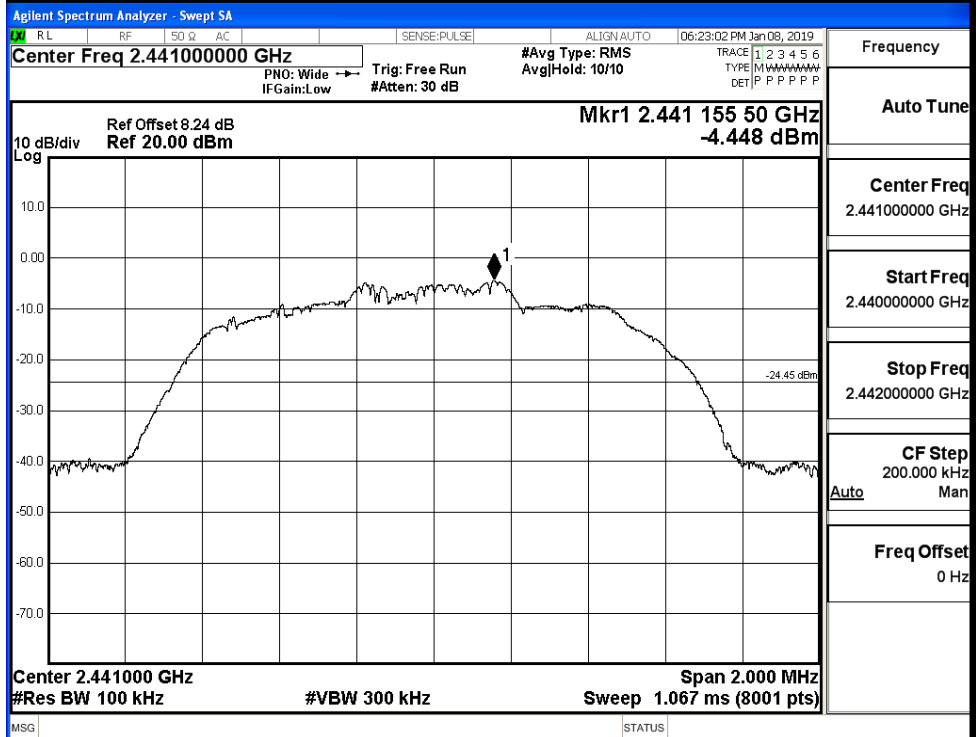


Puw

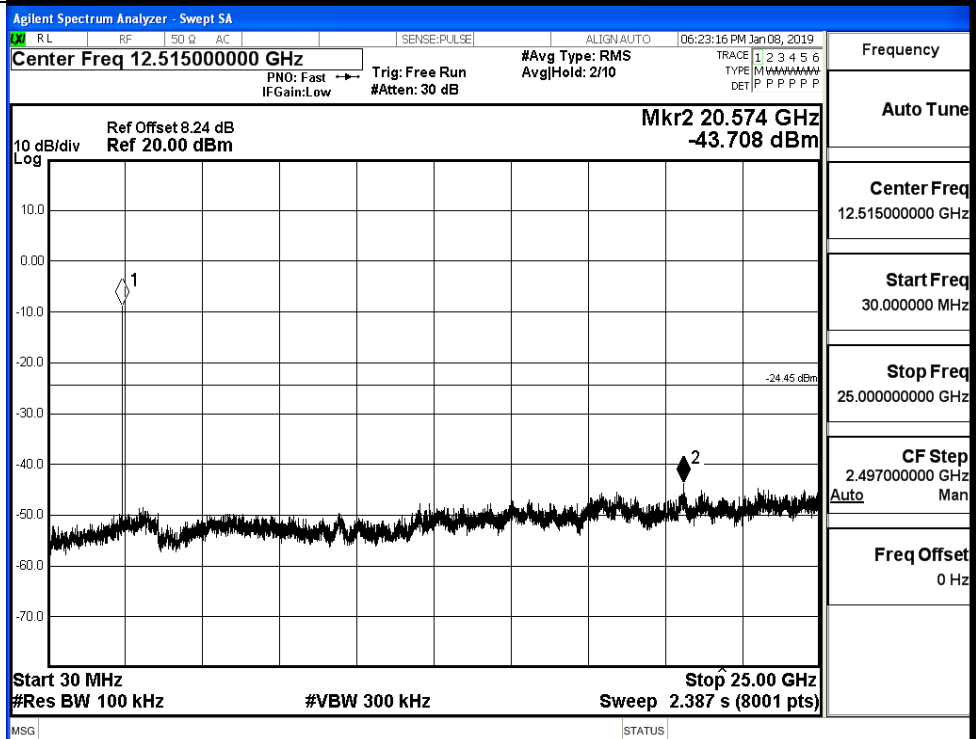


8DPSK_MCH_Graphs

Pref

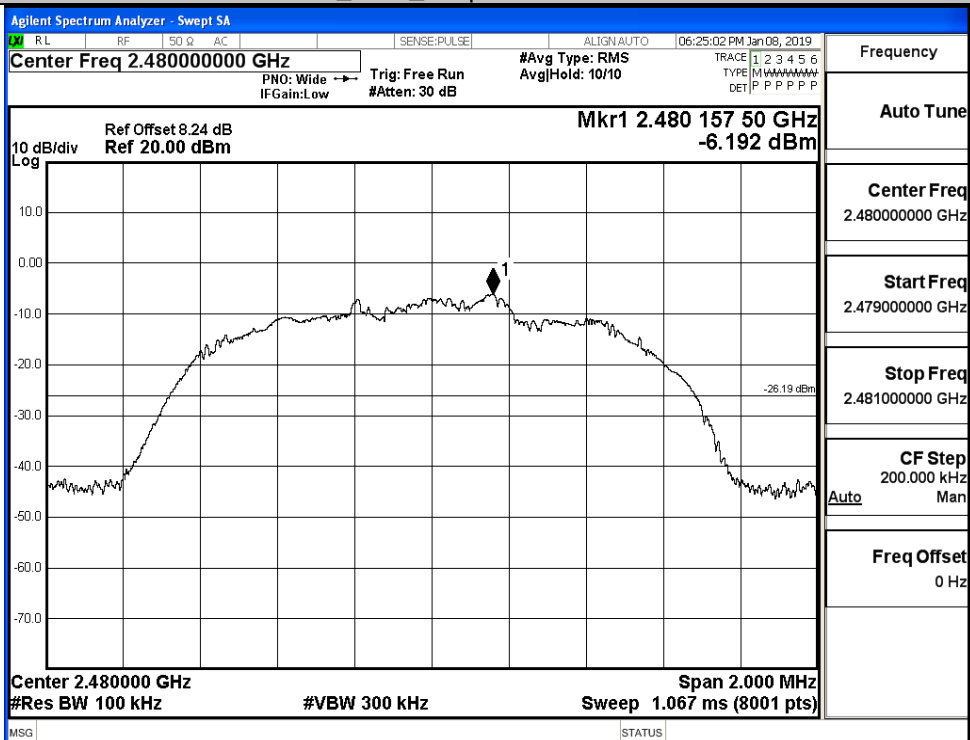


Puw

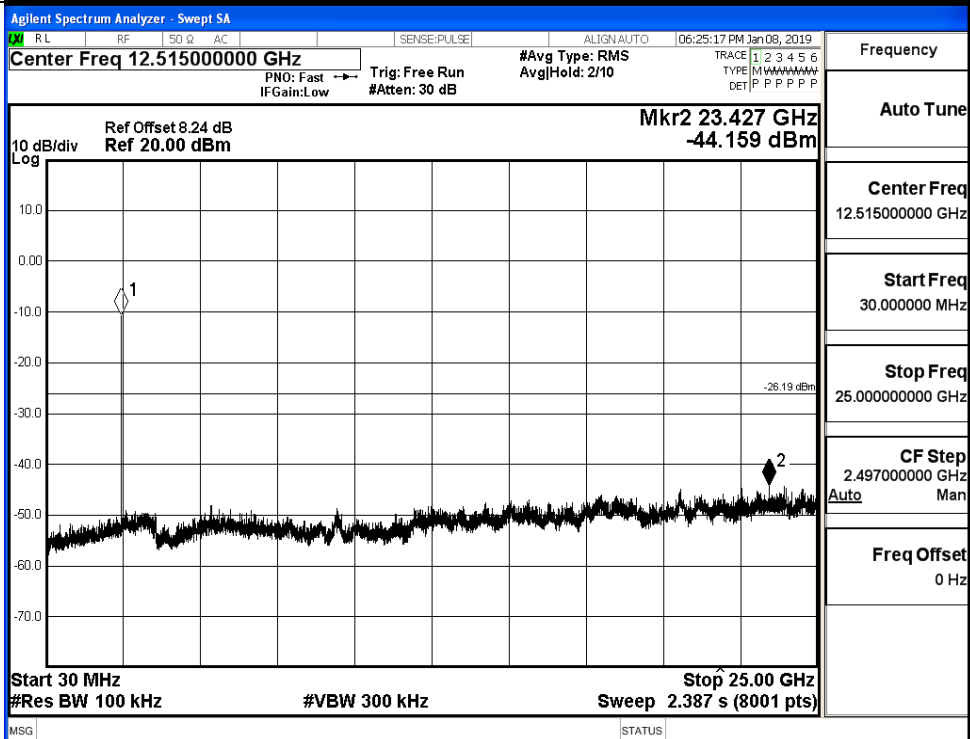


8DPSK_HCH_Graphs

Pref



Puw

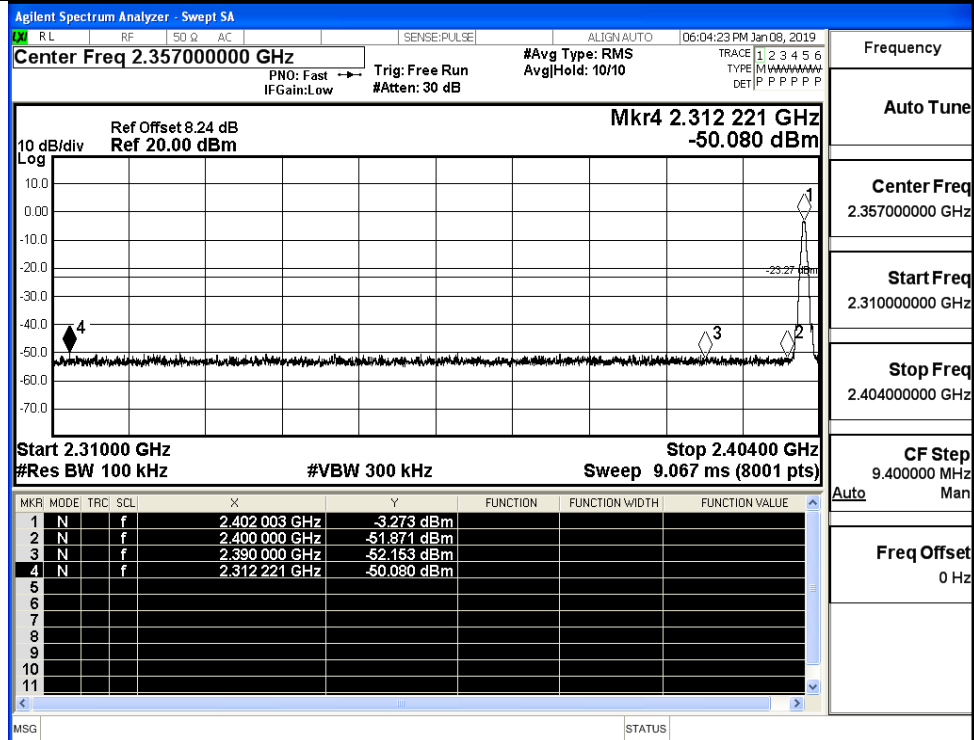


A.7 Band-edge for RF Conducted Emissions

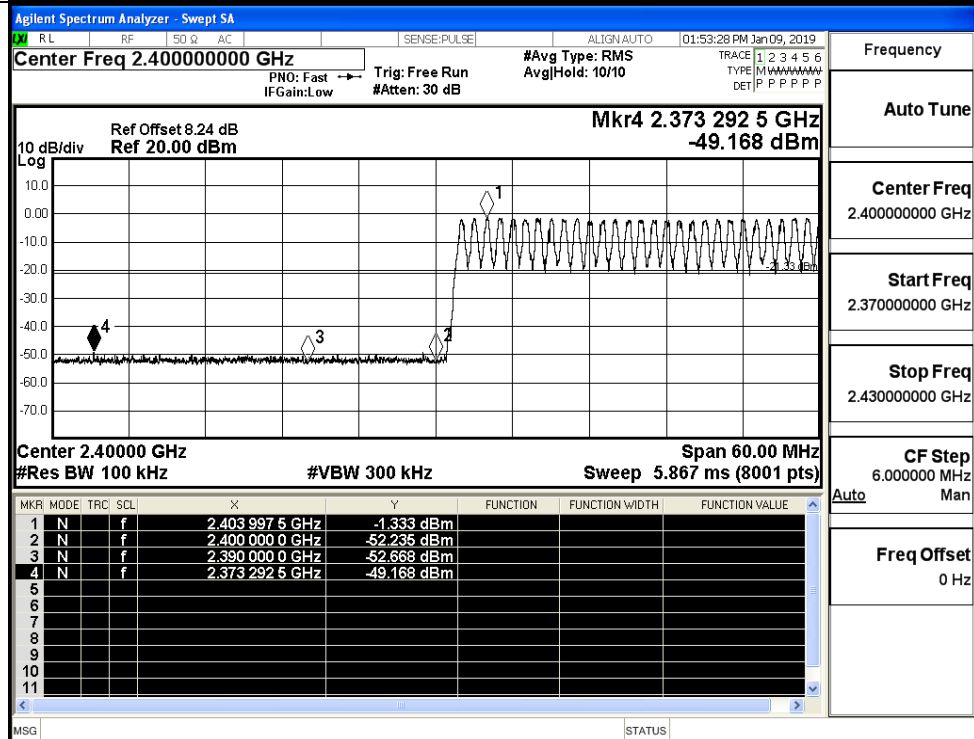
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-3.273	Off	-50.080	-23.27	PASS
			-1.333	On	-49.168	-21.33	PASS
	HCH	2480	-3.681	Off	-49.641	-23.68	PASS
			-0.458	On	-49.269	-20.46	PASS
$\pi/4$ DQPSK	LCH	2402	-4.810	Off	-50.228	-24.81	PASS
			-2.685	On	-49.376	-22.69	PASS
	HCH	2480	-6.078	Off	-49.511	-26.08	PASS
			-1.790	On	-48.769	-21.79	PASS
8DPSK	LCH	2402	-7.224	Off	-49.676	-27.22	PASS
			-2.446	On	-49.216	-22.45	PASS
	HCH	2480	-6.122	Off	-49.609	-26.12	PASS
			-2.125	On	-49.167	-22.13	PASS

Test Graphs

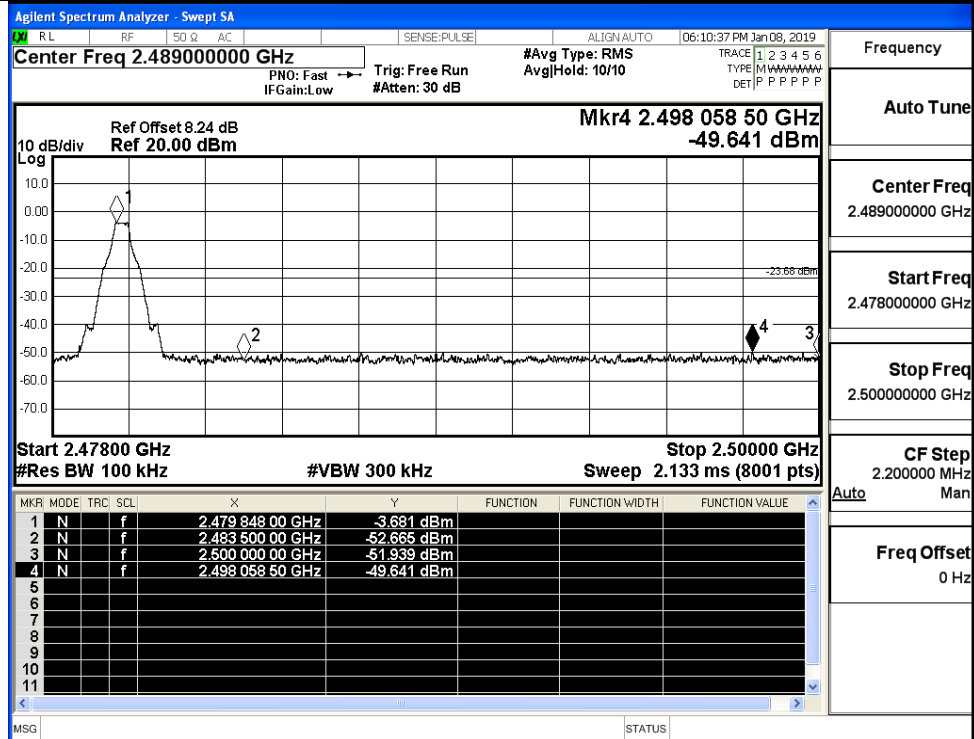
GFSK/LCH/No Hop



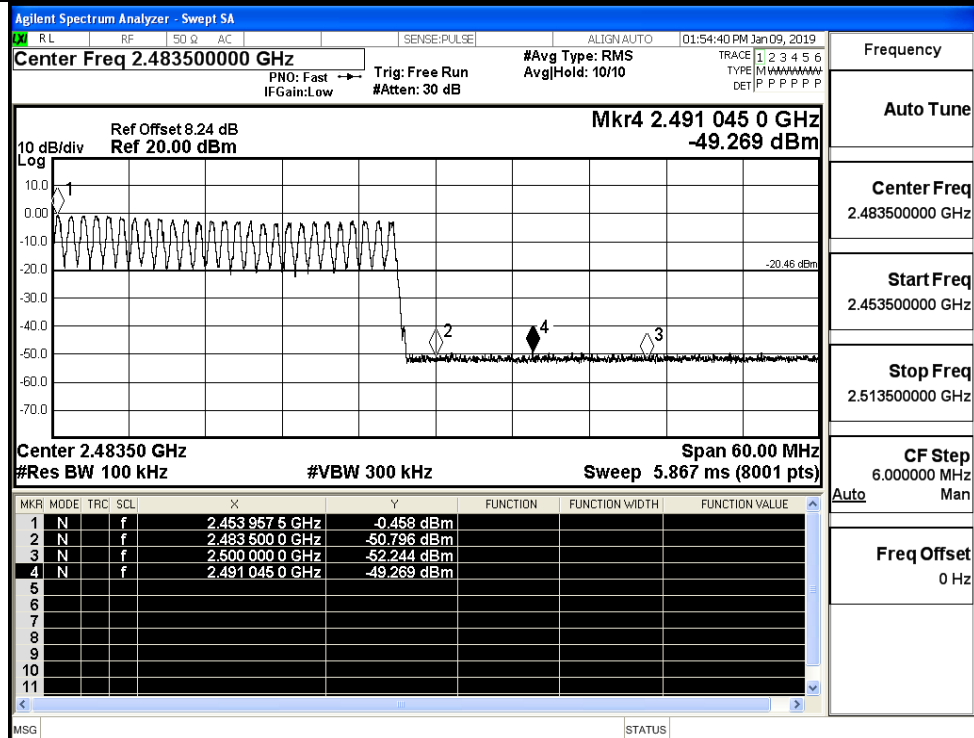
GFSK/LCH/Hop



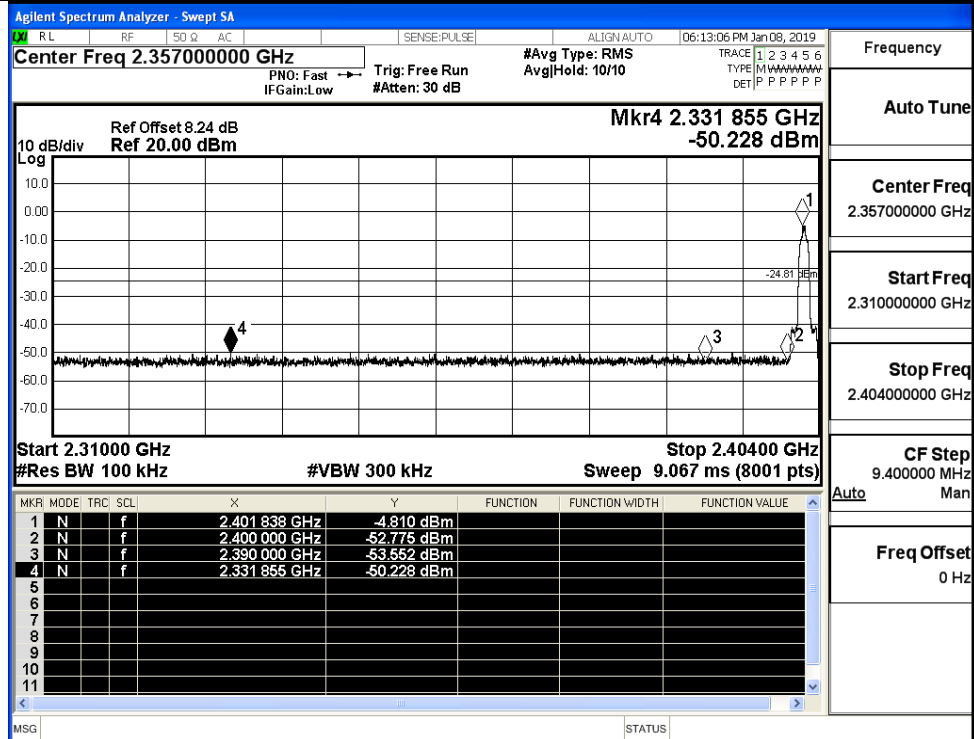
GFSK/HCH/No Hop



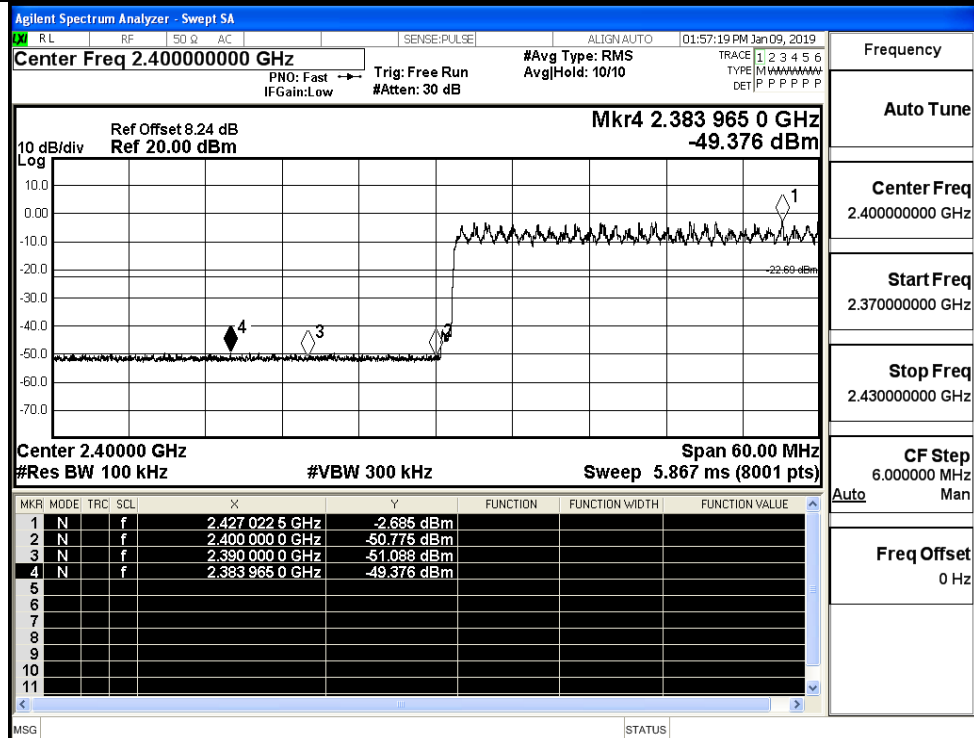
GFSK/HCH/Hop



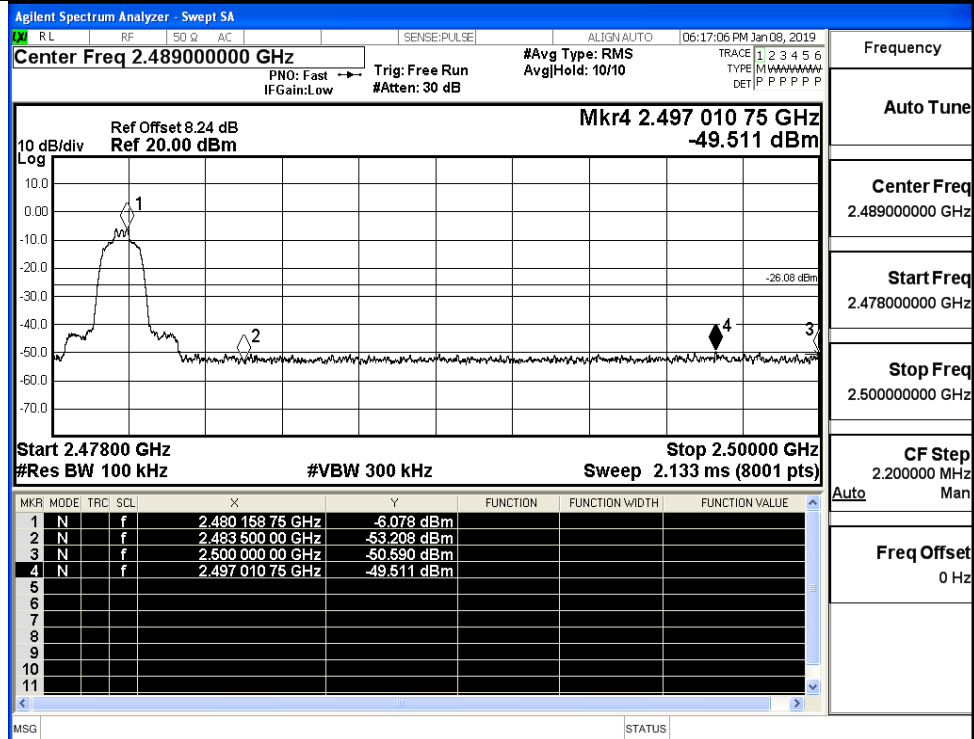
$\pi/4$ DQPSK/LCH/No
Hop



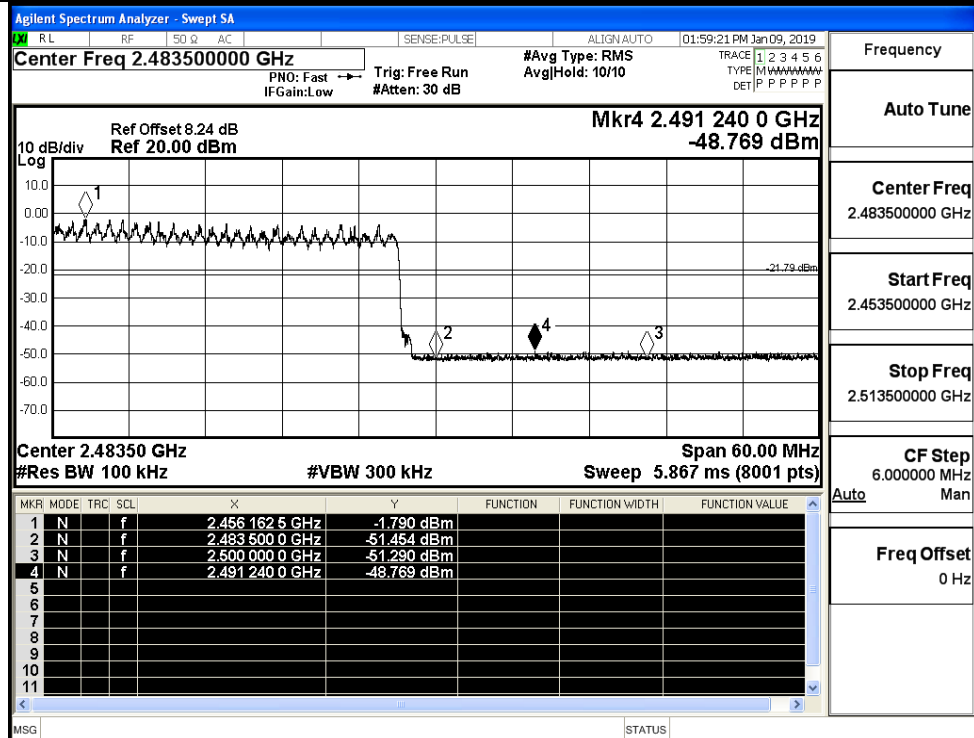
$\pi/4$ DQPSK/LCH/Hop



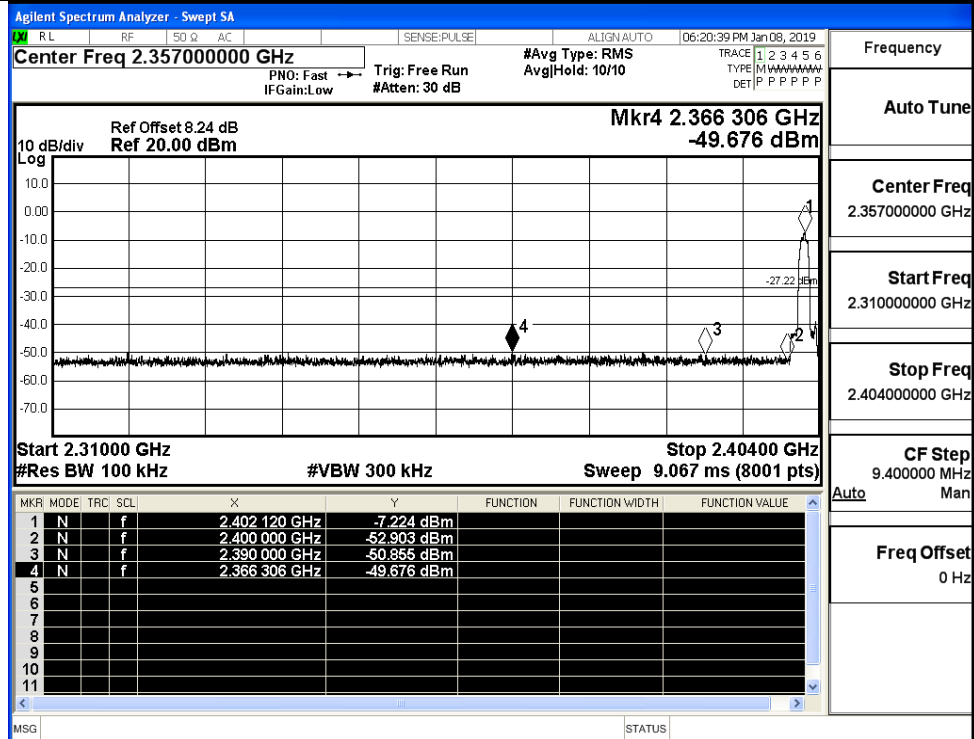
$\pi/4$ DQPSK/HCH/No
Hop



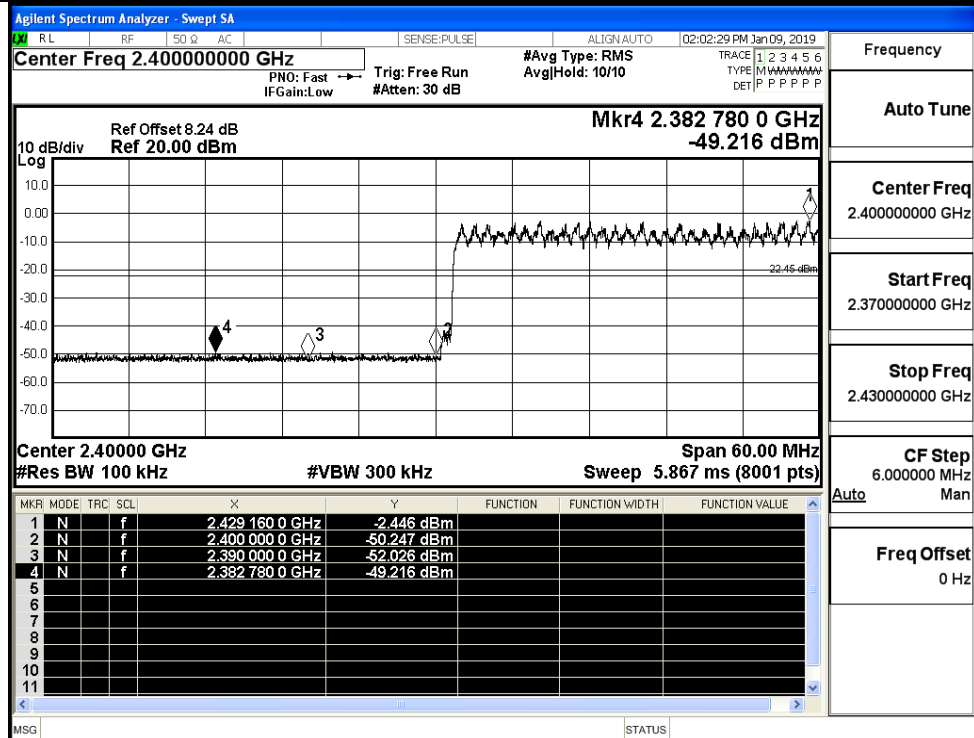
$\pi/4$ DQPSK/HCH/Hop



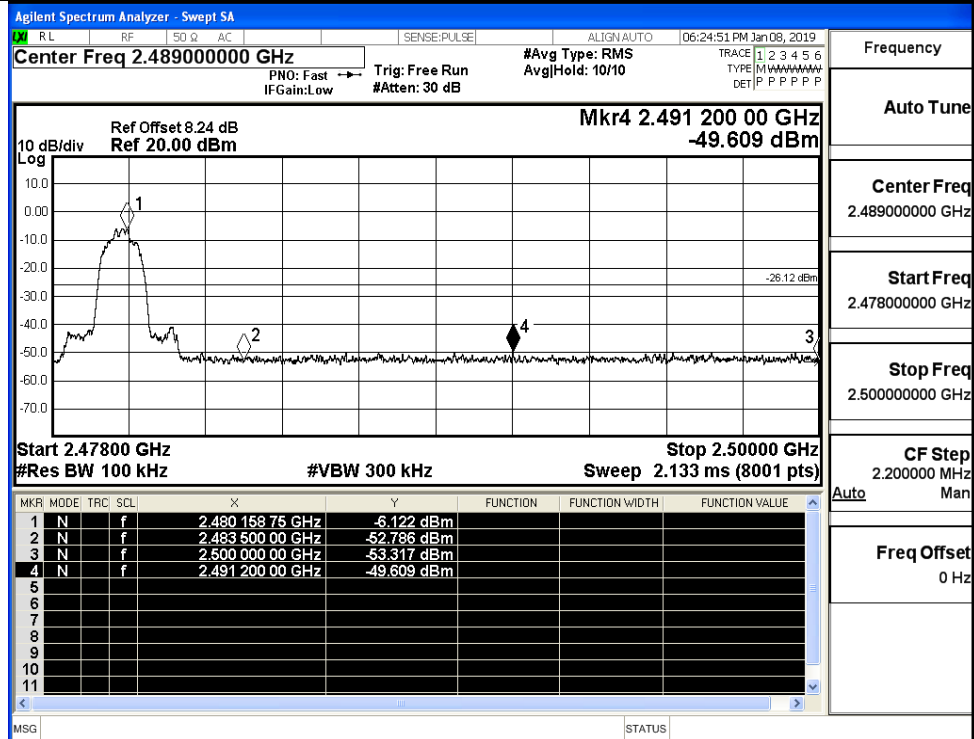
8DPSK/LCH/No Hop



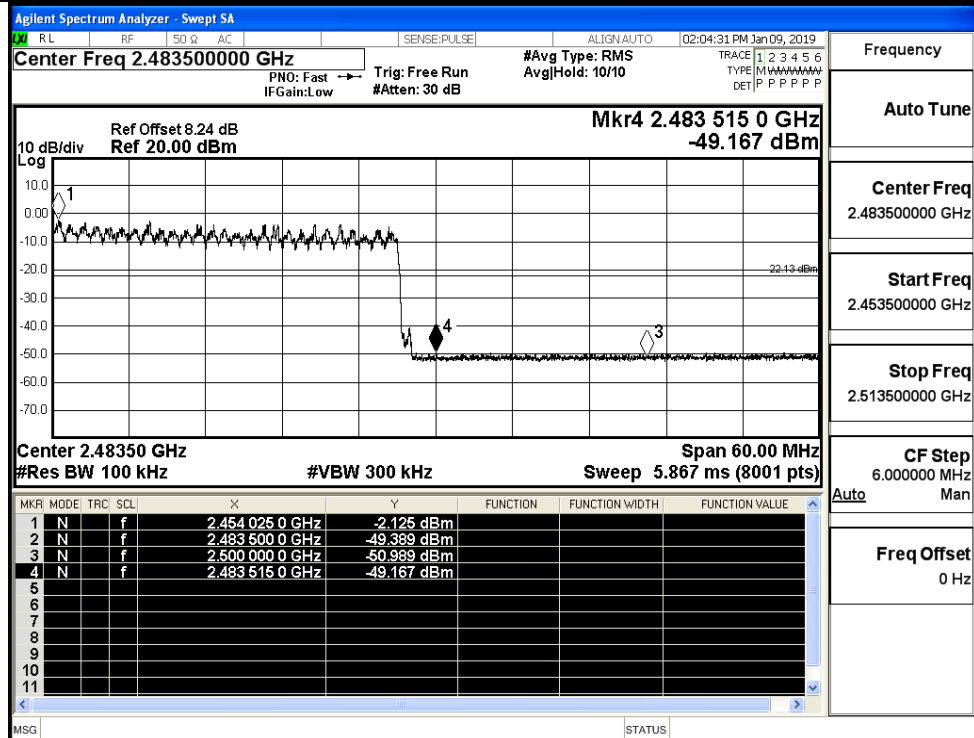
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



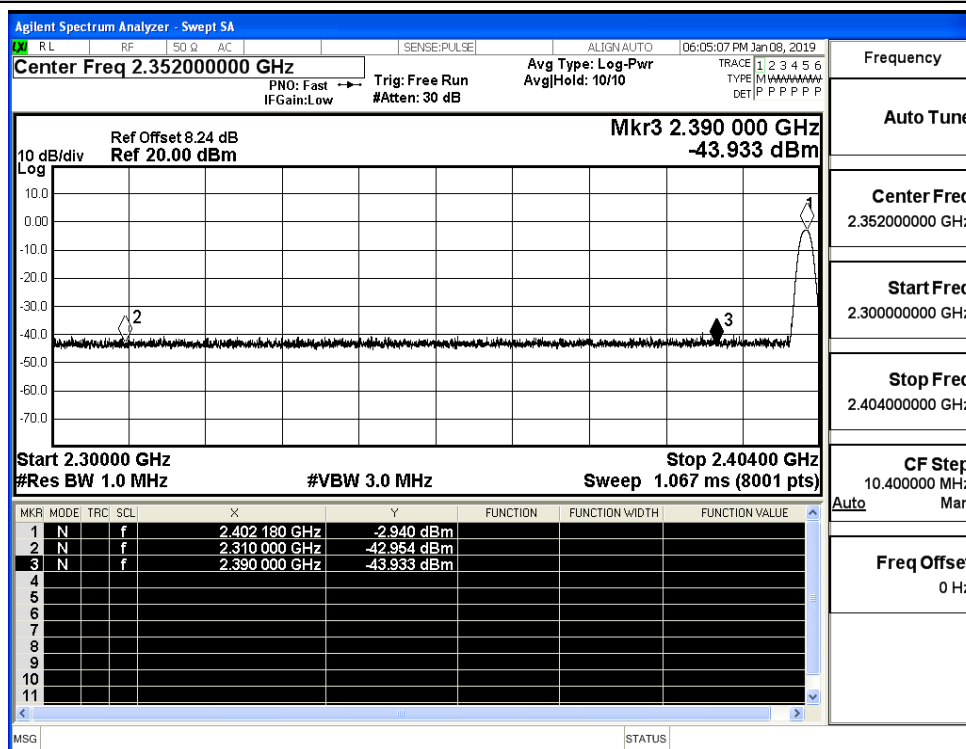
8DPSK/HCH/Hop



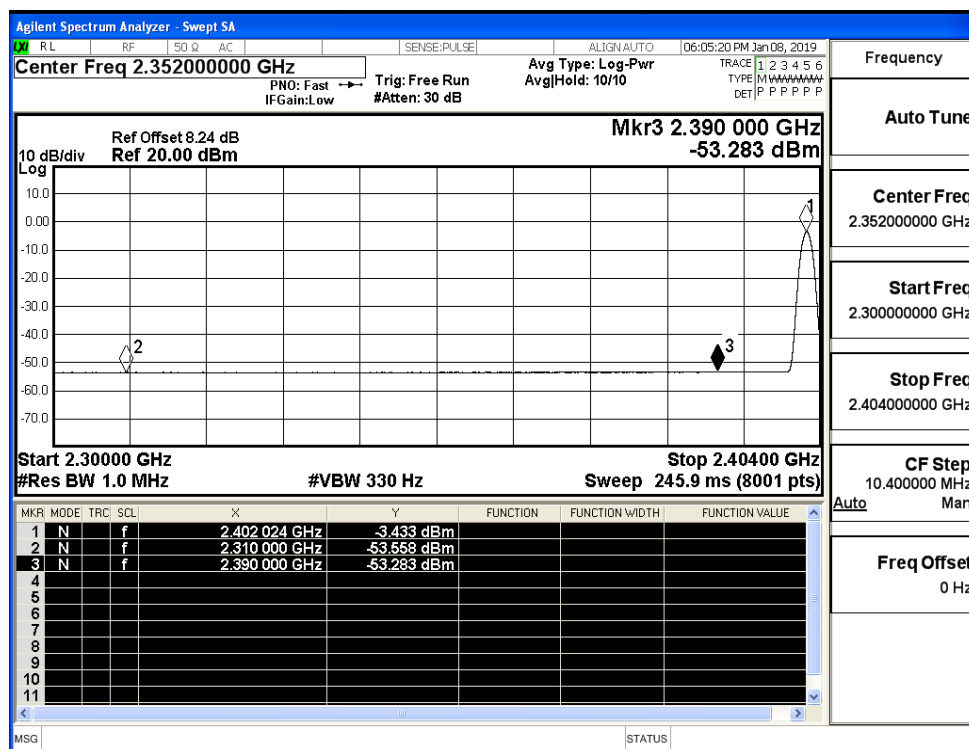
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-42.95	4.0	0	56.31	PEAK	74	PASS
	Off	2310.0	-53.56	4.0	0	45.70	AV	54	PASS
	Off	2390.0	-43.93	4.0	0	55.33	PEAK	74	PASS
	Off	2390.0	-53.28	4.0	0	45.98	AV	54	PASS
	Off	2483.5	-42.66	4.0	0	56.60	PEAK	74	PASS
	Off	2483.5	-53.12	4.0	0	46.14	AV	54	PASS
	Off	2500.0	-43.63	4.0	0	55.63	PEAK	74	PASS
	Off	2500.0	-52.95	4.0	0	46.31	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-42.55	4.0	0	56.71	PEAK	74	PASS
	Off	2310.0	-53.62	4.0	0	45.64	AV	54	PASS
	Off	2390.0	-42.17	4.0	0	57.09	PEAK	74	PASS
	Off	2390.0	-53.28	4.0	0	45.98	AV	54	PASS
	Off	2483.5	-43.85	4.0	0	55.41	PEAK	74	PASS
	Off	2483.5	-53.13	4.0	0	46.13	AV	54	PASS
	Off	2500.0	-41.65	4.0	0	57.61	PEAK	74	PASS
	Off	2500.0	-53.00	4.0	0	46.26	AV	54	PASS
8DPSK	Off	2310.0	-43.30	4.0	0	55.96	PEAK	74	PASS
	Off	2310.0	-53.40	4.0	0	45.86	AV	54	PASS
	Off	2390.0	-41.84	4.0	0	57.42	PEAK	74	PASS
	Off	2390.0	-53.32	4.0	0	45.94	AV	54	PASS
	Off	2483.5	-42.56	4.0	0	56.70	PEAK	74	PASS
	Off	2483.5	-53.06	4.0	0	46.20	AV	54	PASS
	Off	2500.0	-42.62	4.0	0	56.64	PEAK	74	PASS
	Off	2500.0	-52.99	4.0	0	46.27	AV	54	PASS

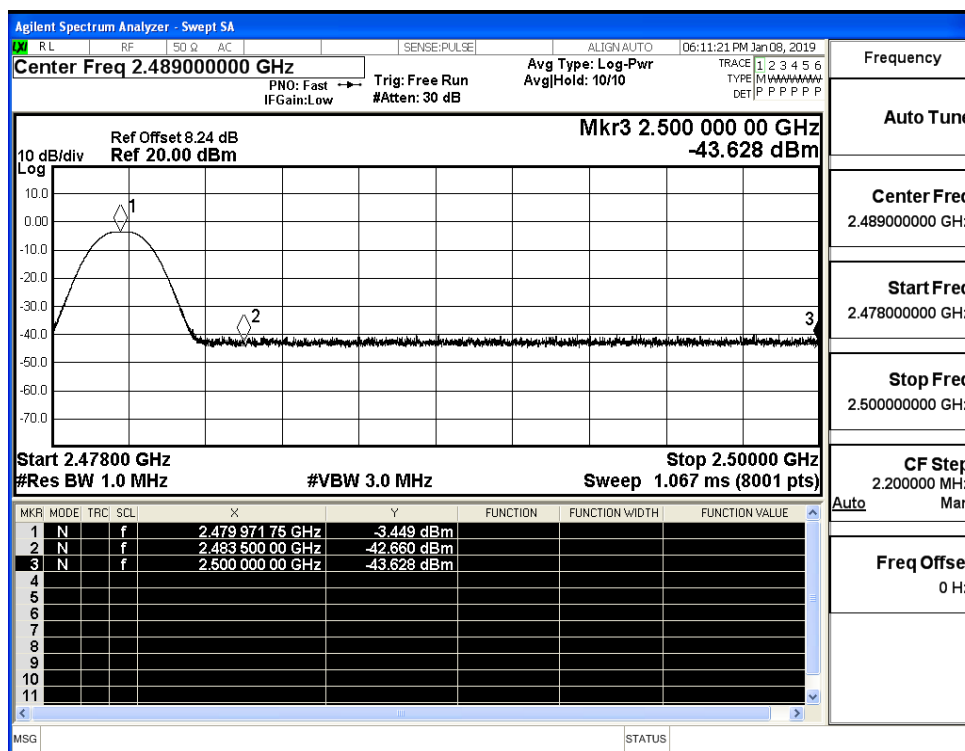
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



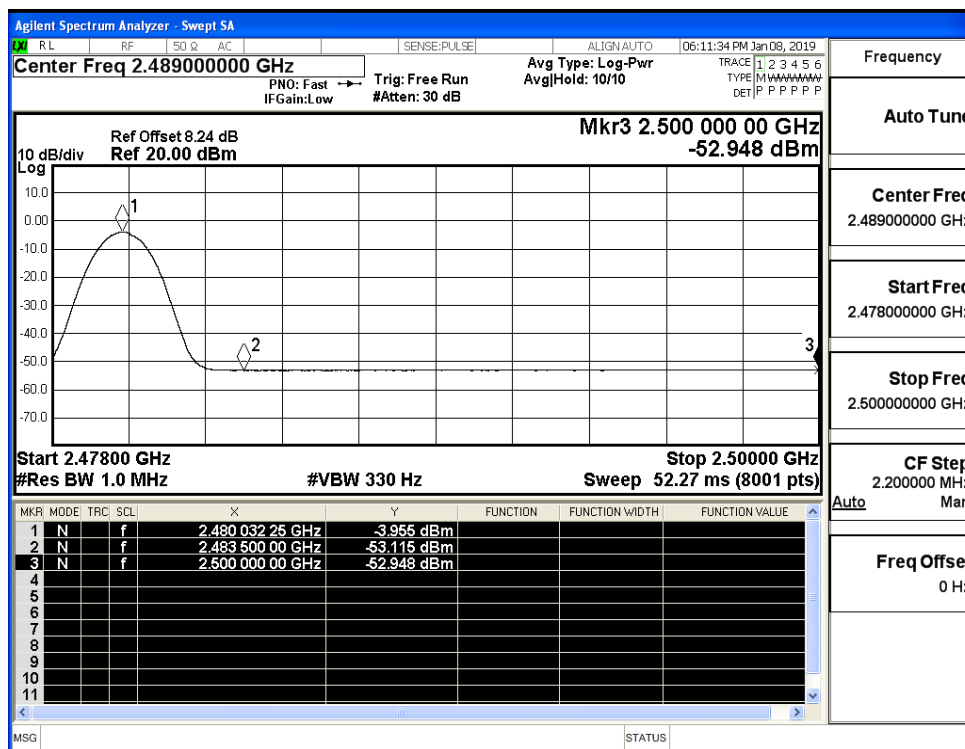
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)

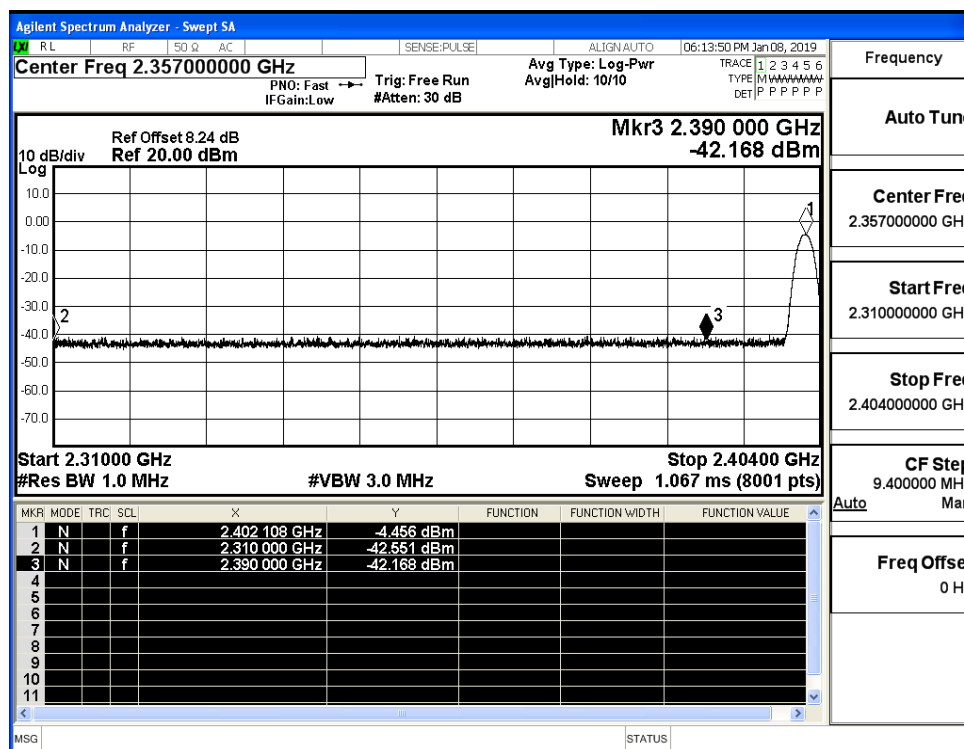
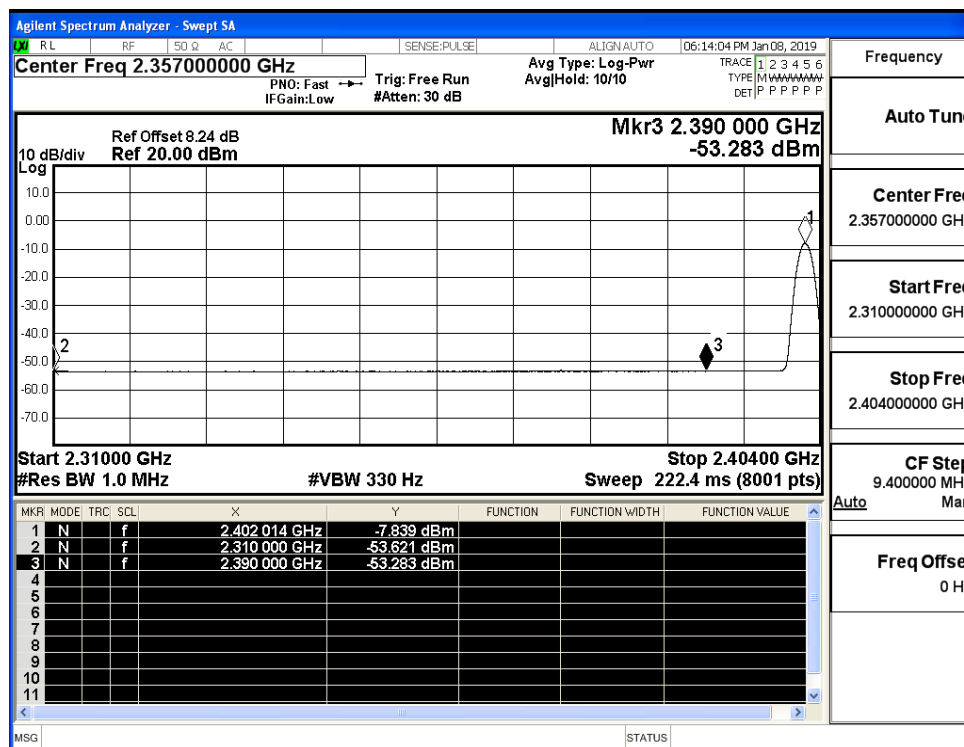


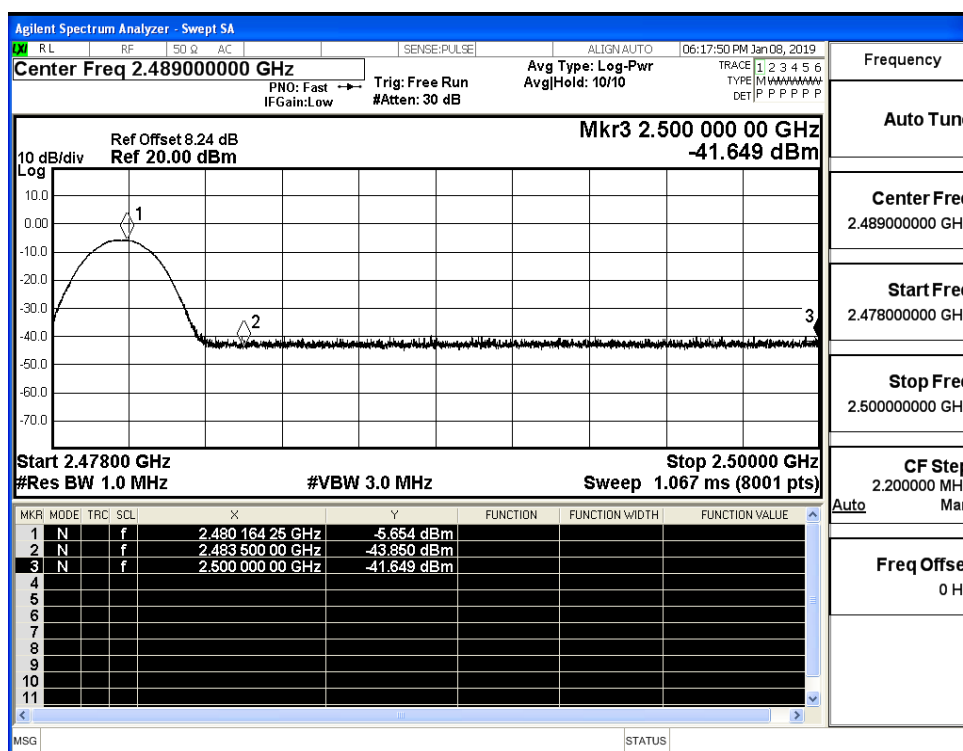
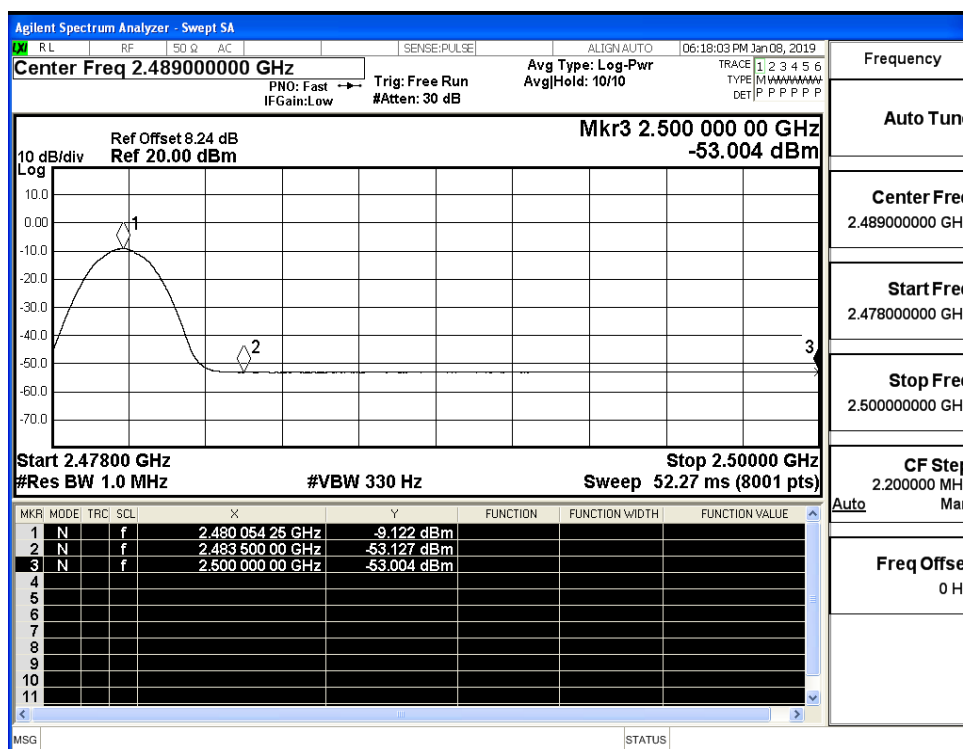
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



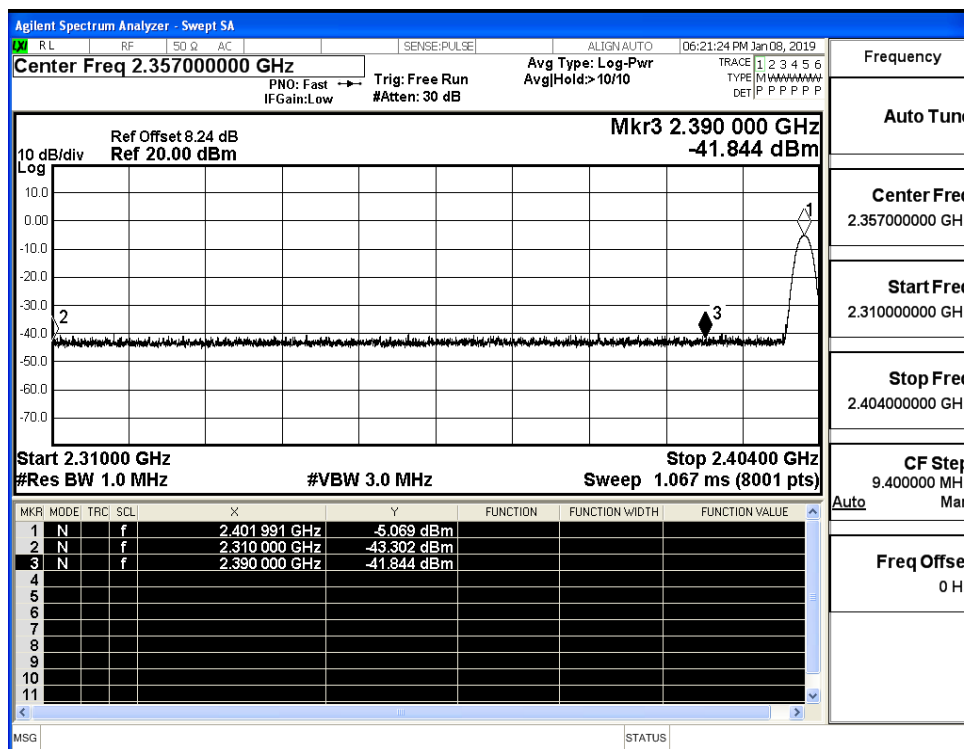
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



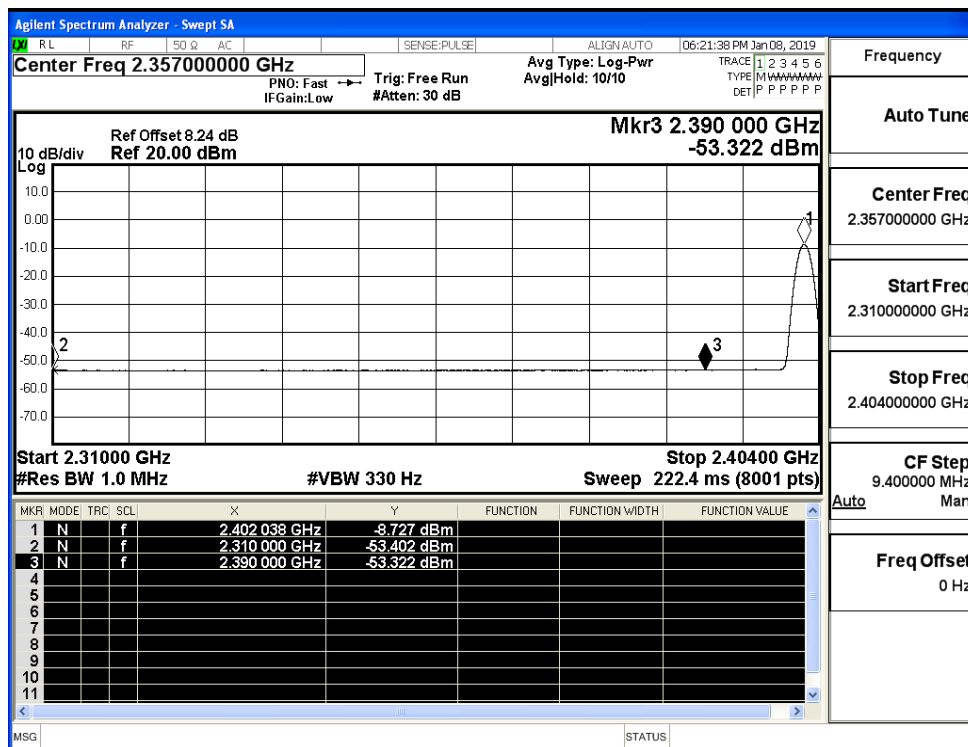
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

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)

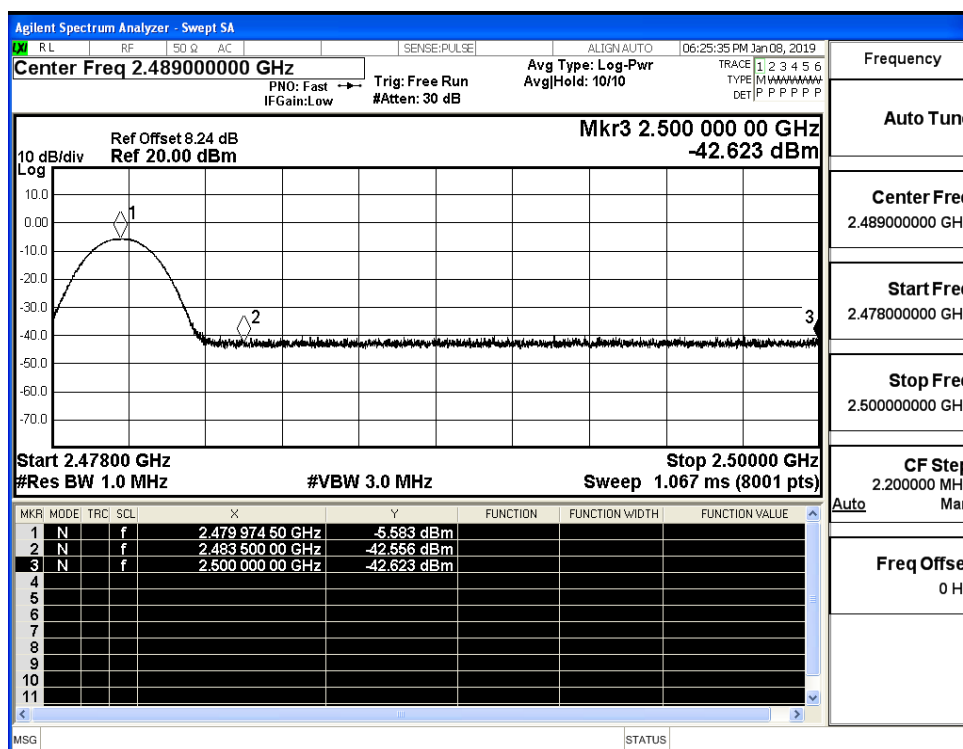
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

