

Appendix A

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

Product Name: Smart phone

Test Model: VSP100

Environmental Conditions

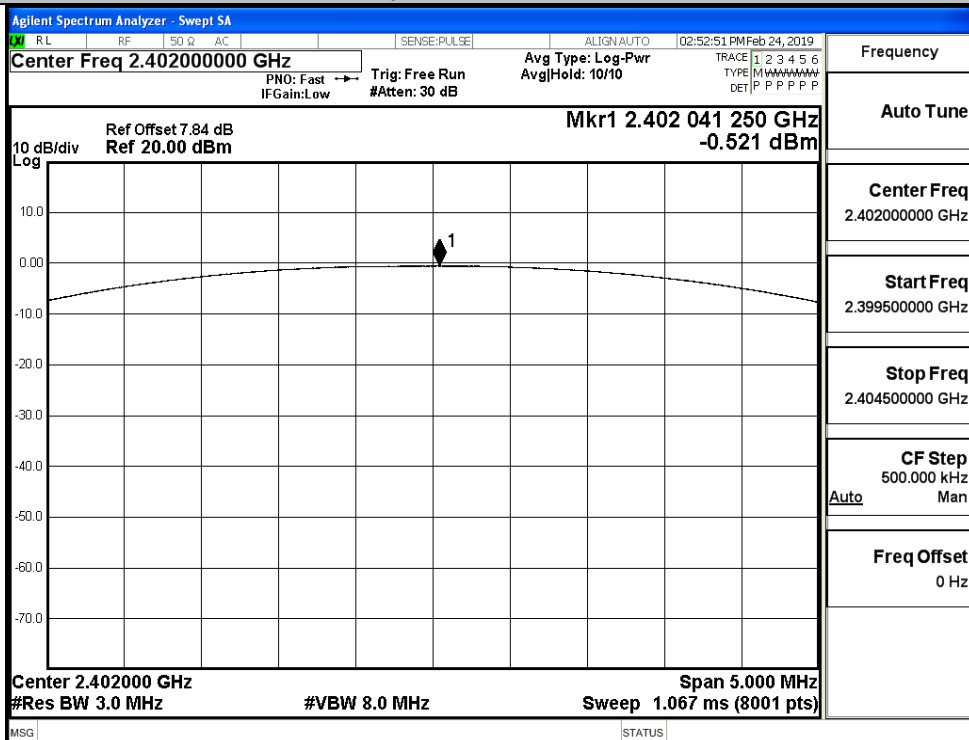
Temperature:	23.6 ° C
Relative Humidity:	51.9%
ATM Pressure:	100.0 kPa
Test Engineer:	Tom.Liu
Supervised by:	Jayden.Zhuo

A.1 Maxmum Conducted Peak Output Power

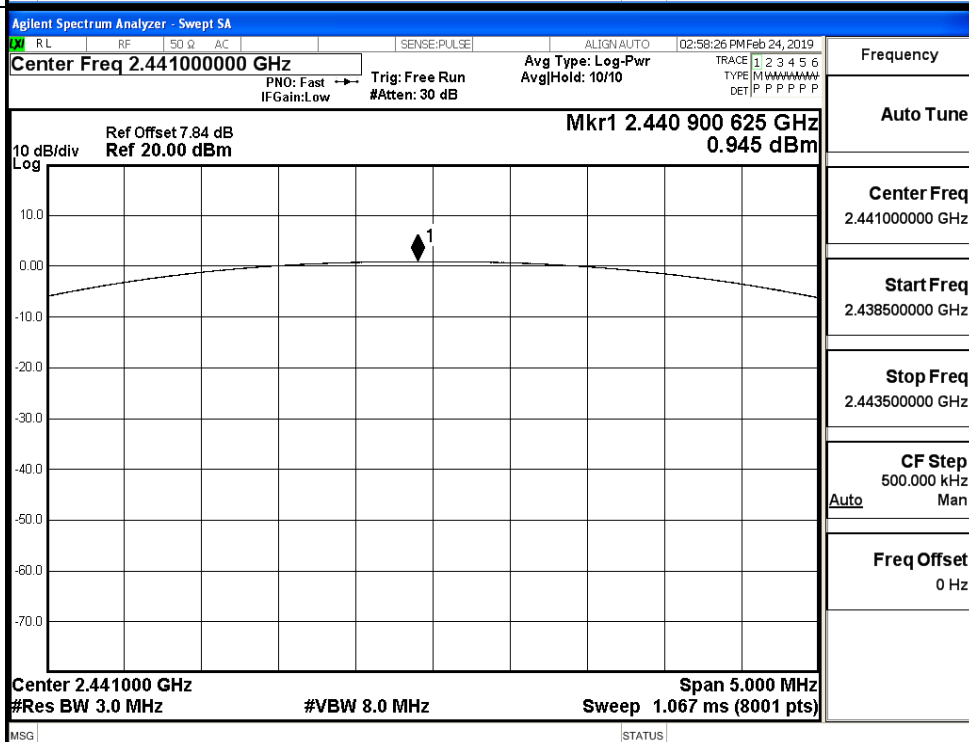
Mode	Channel.	Maximum Peak Output Power [dBm]	Maximum Average Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.521	-0.744	21	PASS
	MCH	0.945	0.791	21	PASS
	HCH	-0.338	-0.521	21	PASS
$\pi/4$ DQPSK	LCH	-0.992	-1.123	21	PASS
	MCH	0.362	0.166	21	PASS
	HCH	-0.900	-1.060	21	PASS
8DPSK	LCH	-0.872	-1.074	21	PASS
	MCH	0.618	0.444	21	PASS
	HCH	-0.674	-0.827	21	PASS

Test Graphs

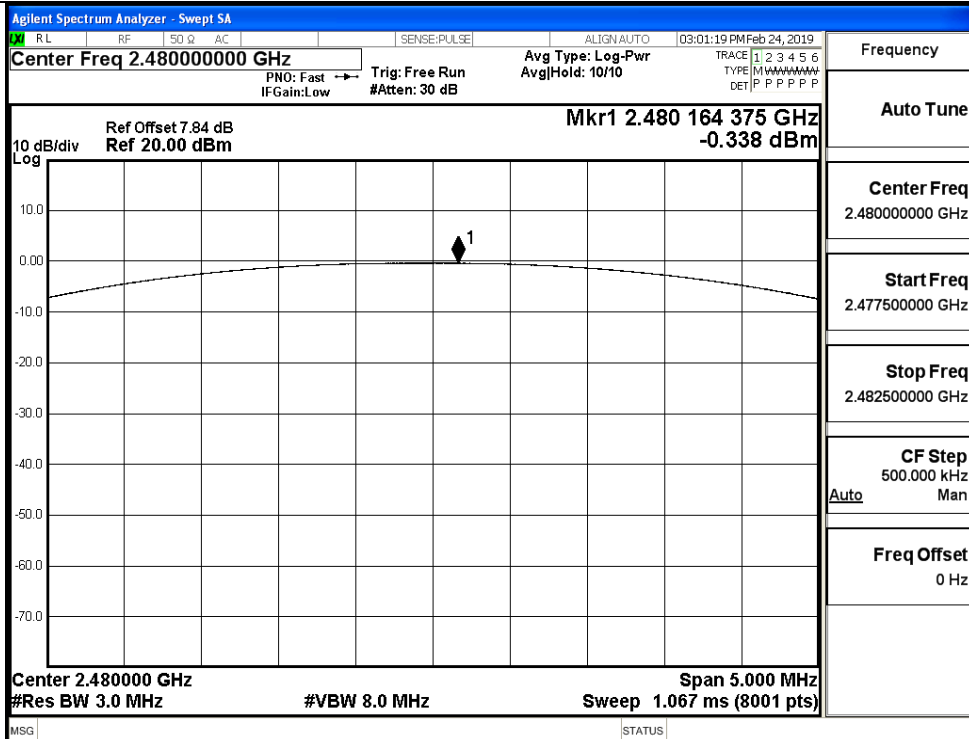
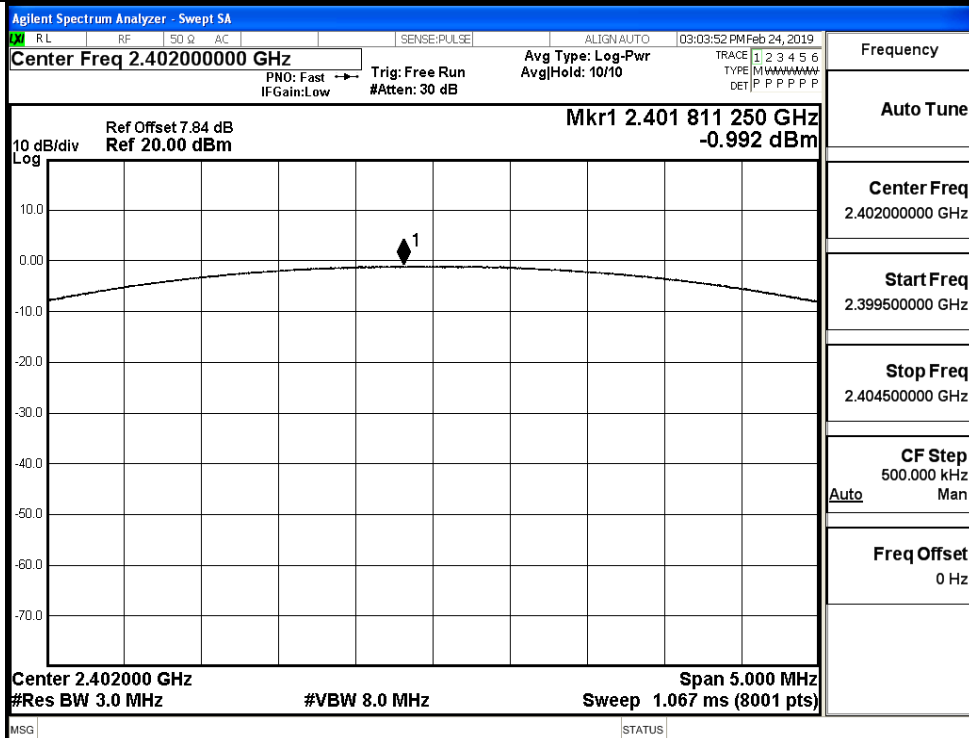
GFSK/LCH

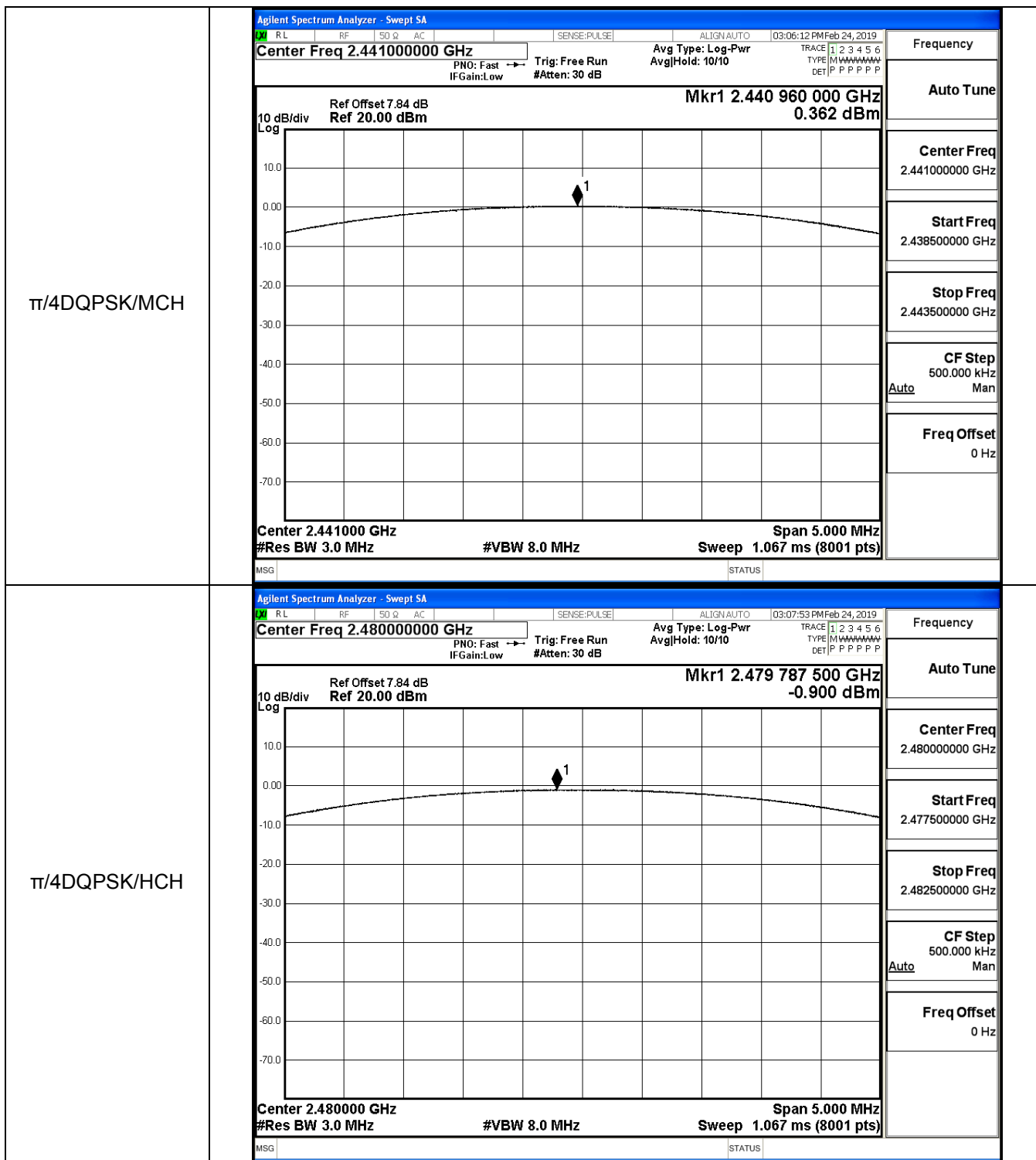


GFSK/MCH

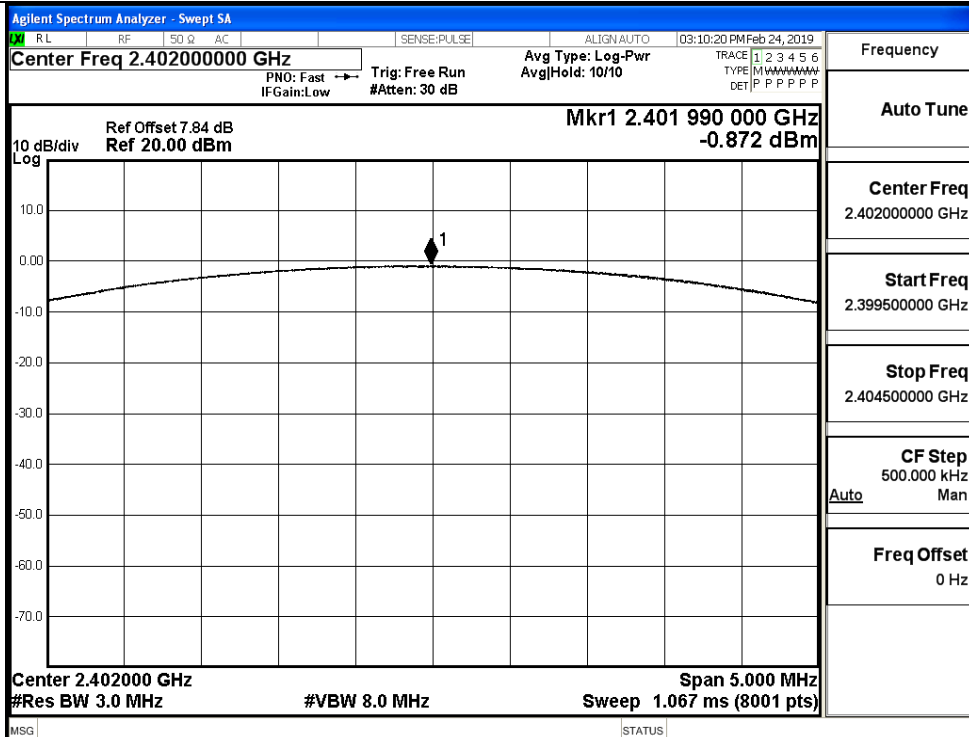


GFSK/HCH

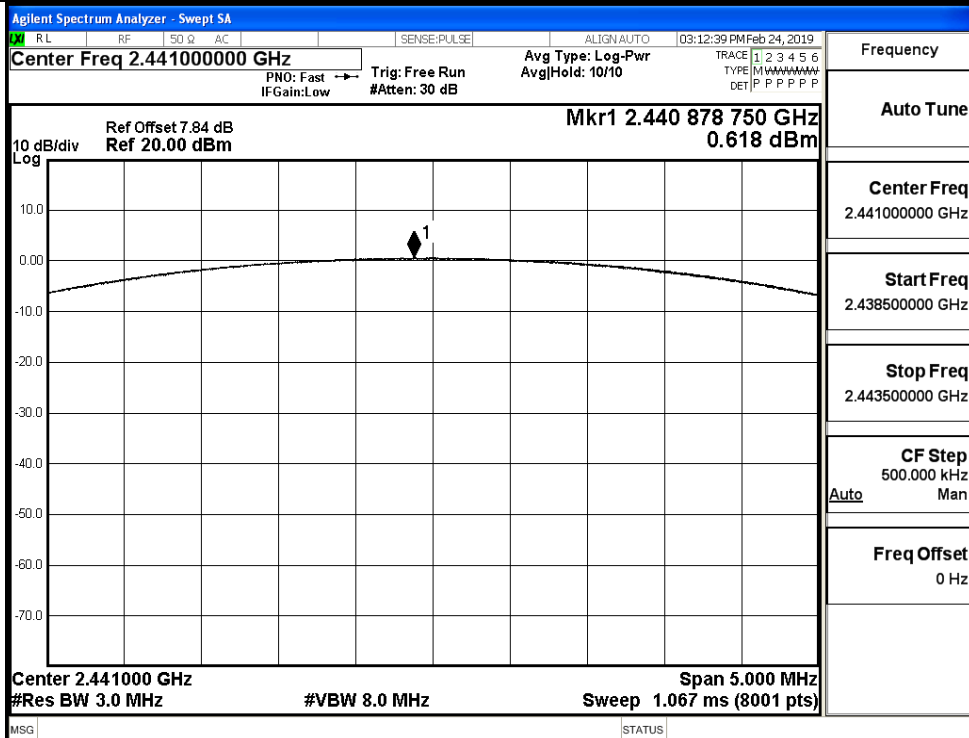
 π /4DQPSK/LCH



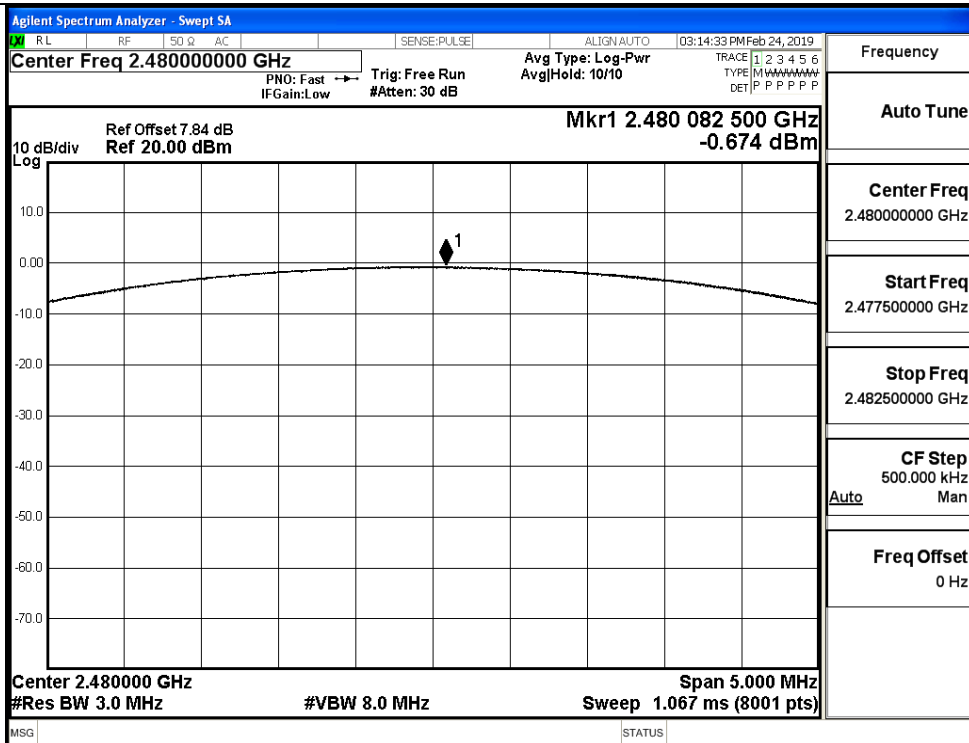
8DPSK/LCH



8DPSK/MCH



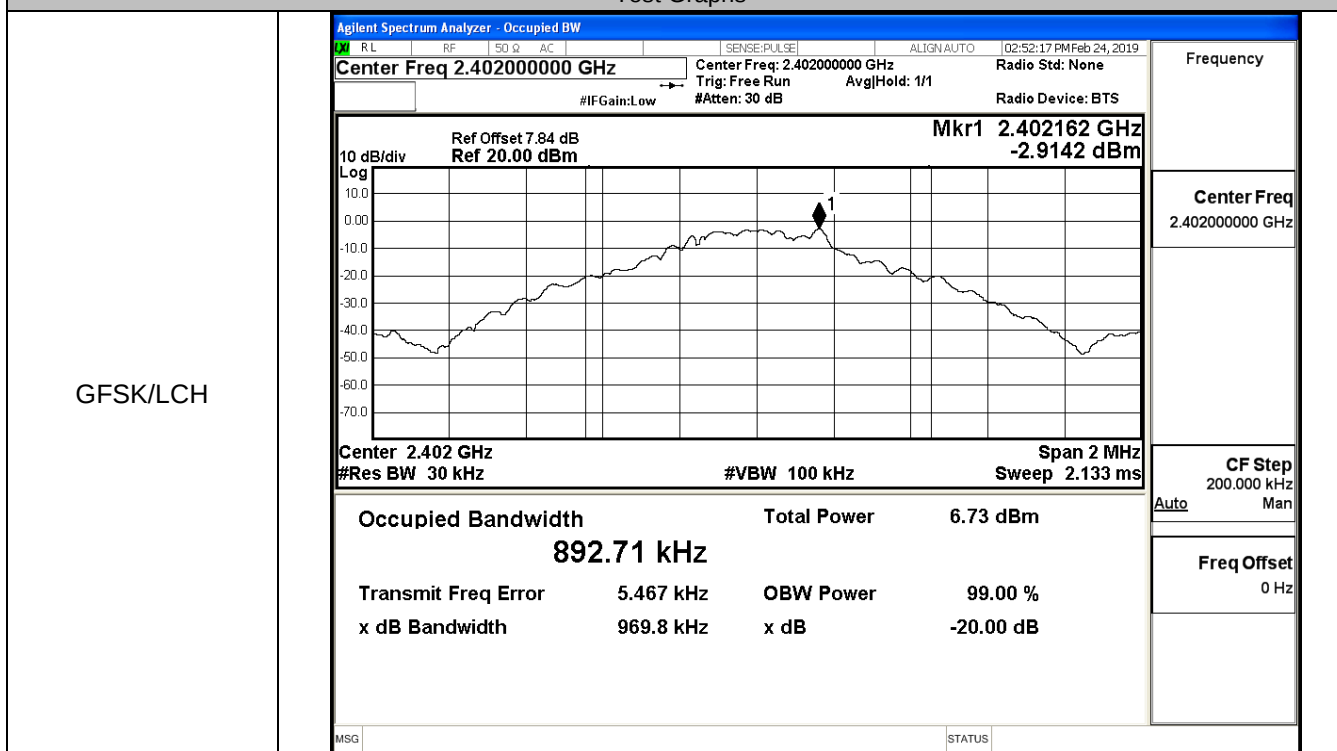
8DPSK/HCH



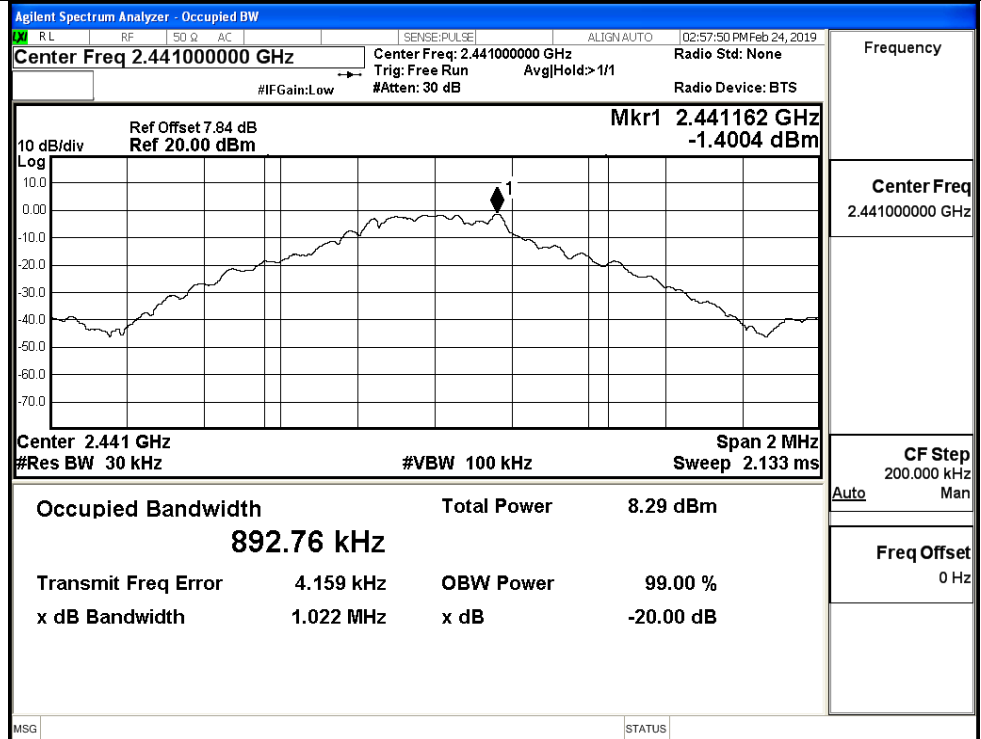
A.2 20dB Bandwidth & Occupied Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9698	Not Specified	PASS
	MCH	1.022	Not Specified	PASS
	HCH	1.030	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.292	Not Specified	PASS
	MCH	1.310	Not Specified	PASS
	HCH	1.292	Not Specified	PASS
8DPSK	LCH	1.298	Not Specified	PASS
	MCH	1.299	Not Specified	PASS
	HCH	1.306	Not Specified	PASS

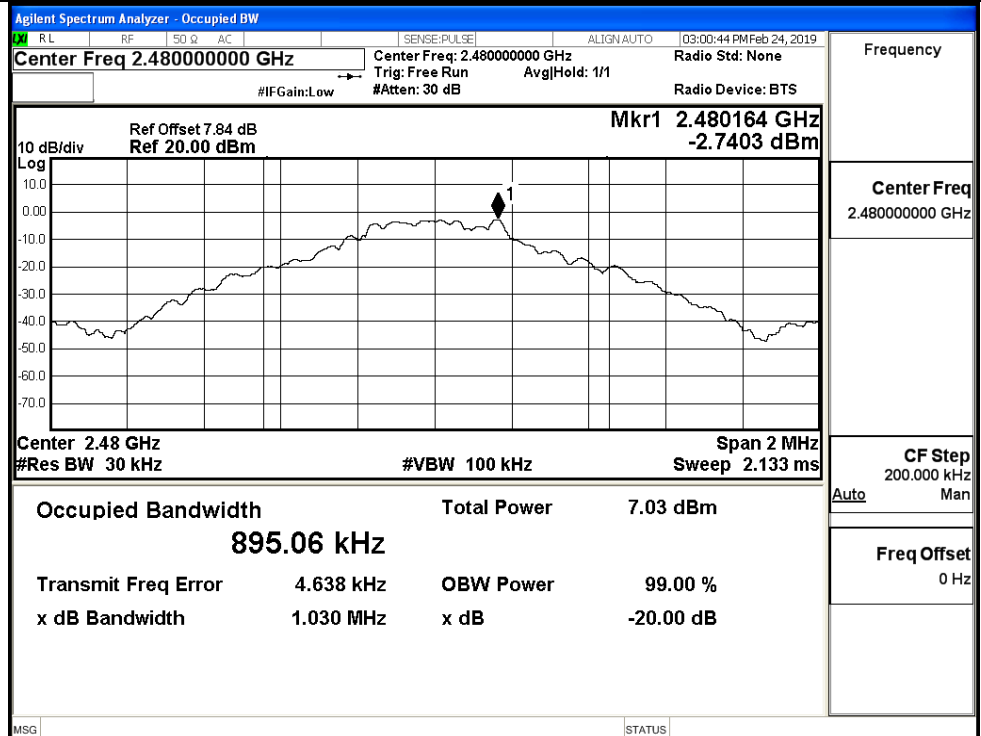
Test Graphs

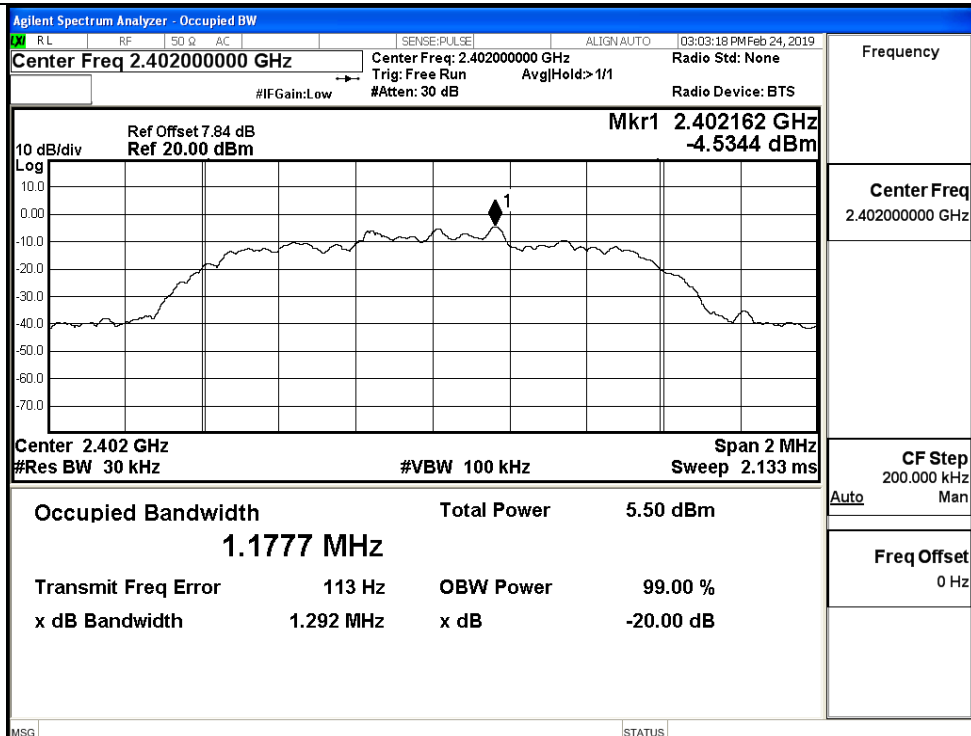
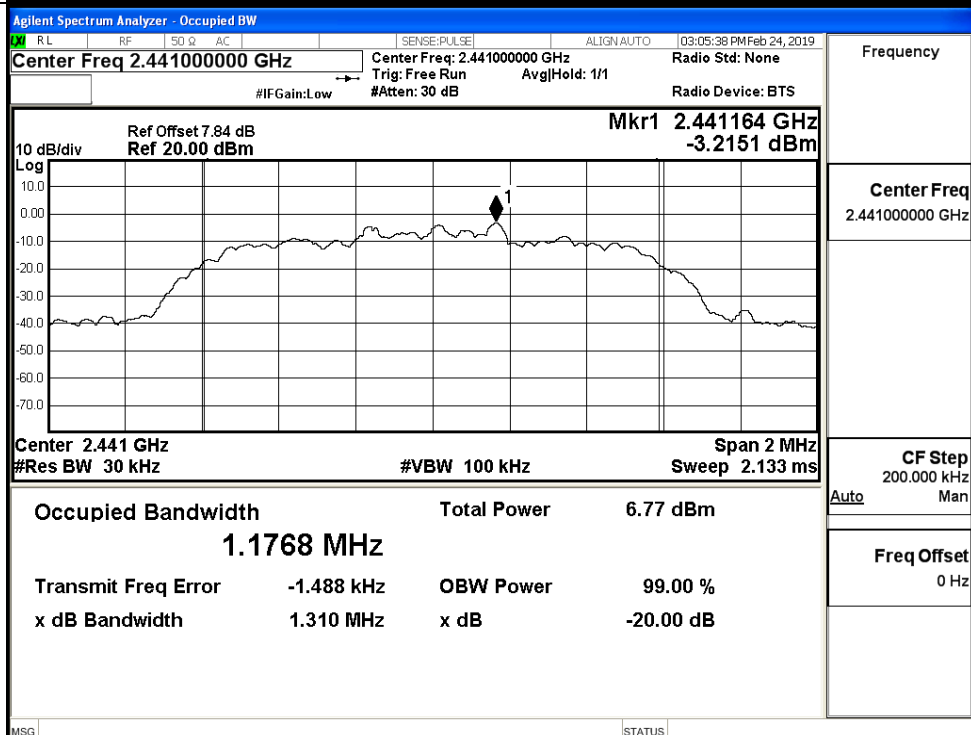


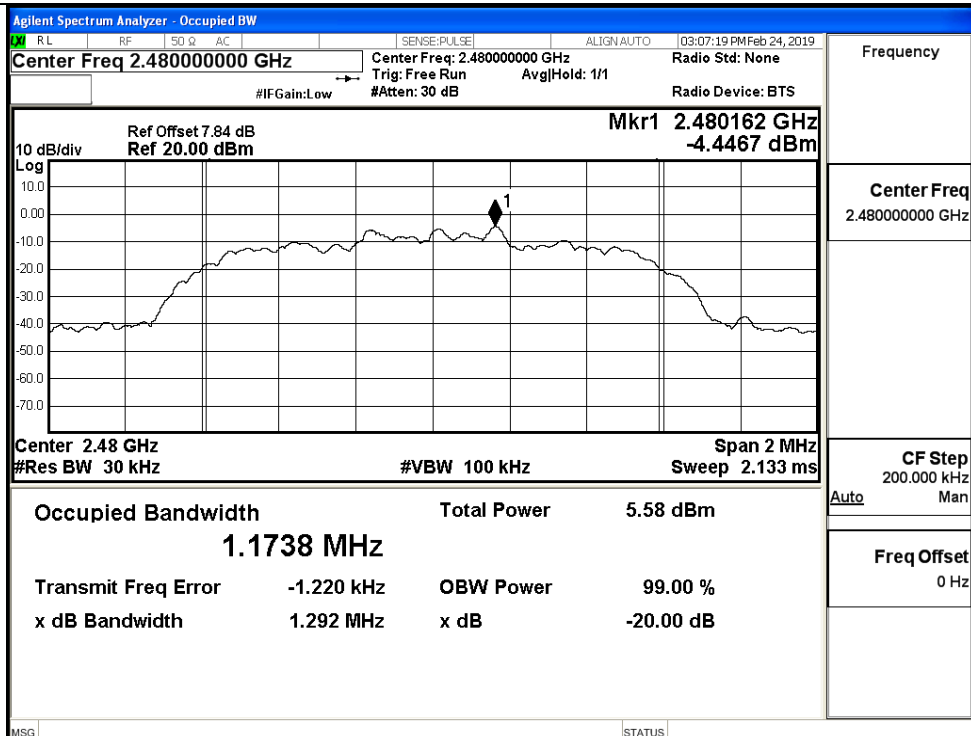
GFSK/MCH



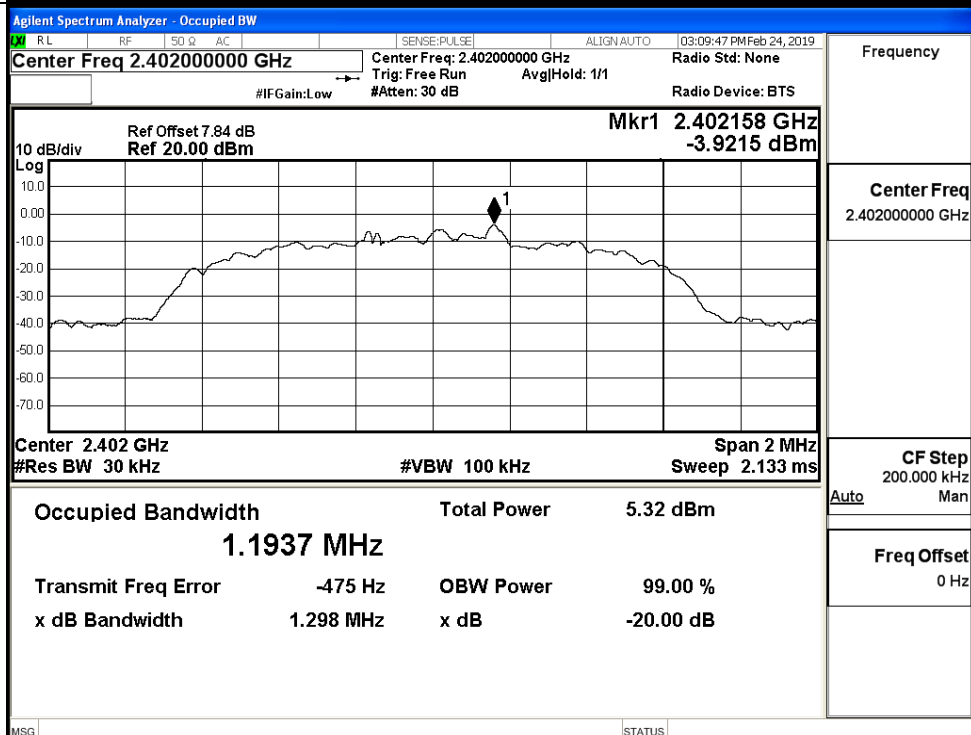
GFSK/HCH



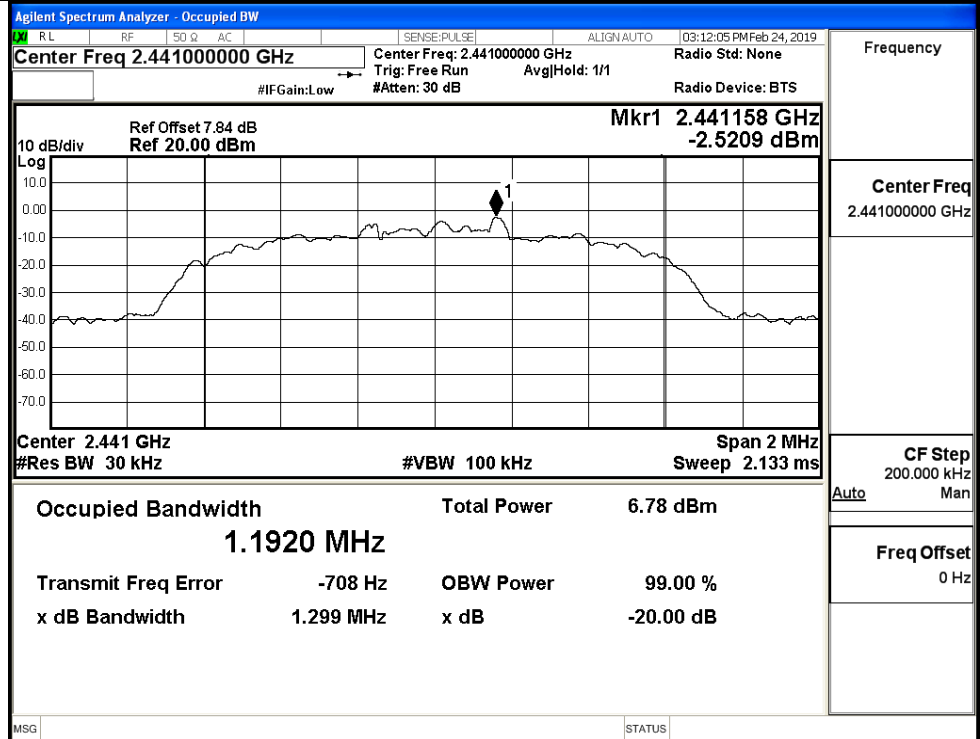
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

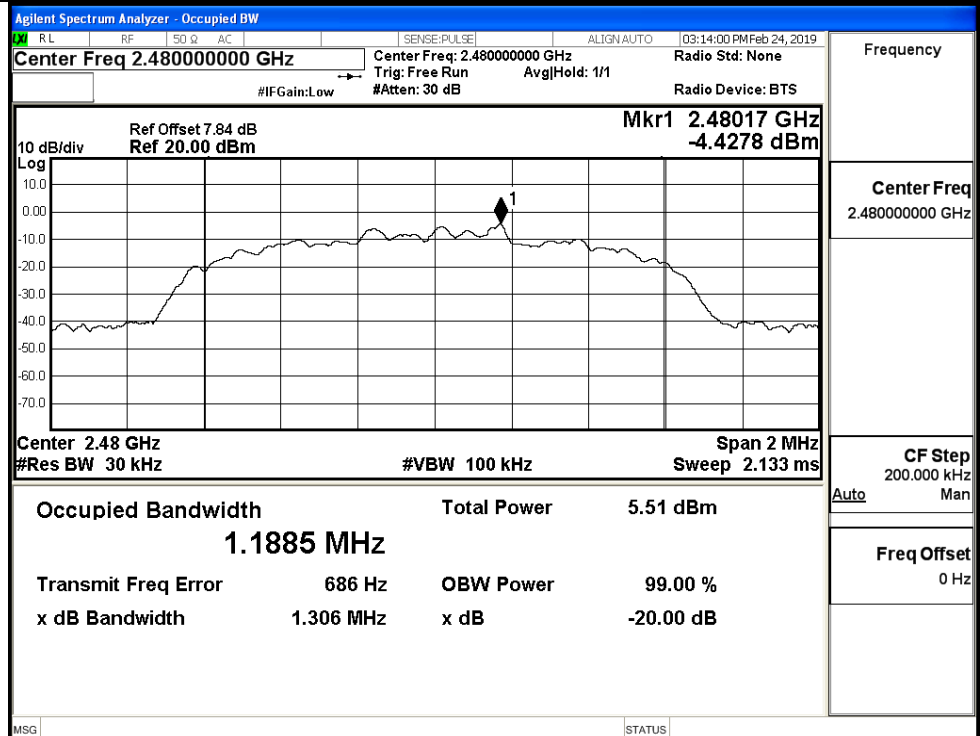
8DPSK/LCH



8DPSK/MCH



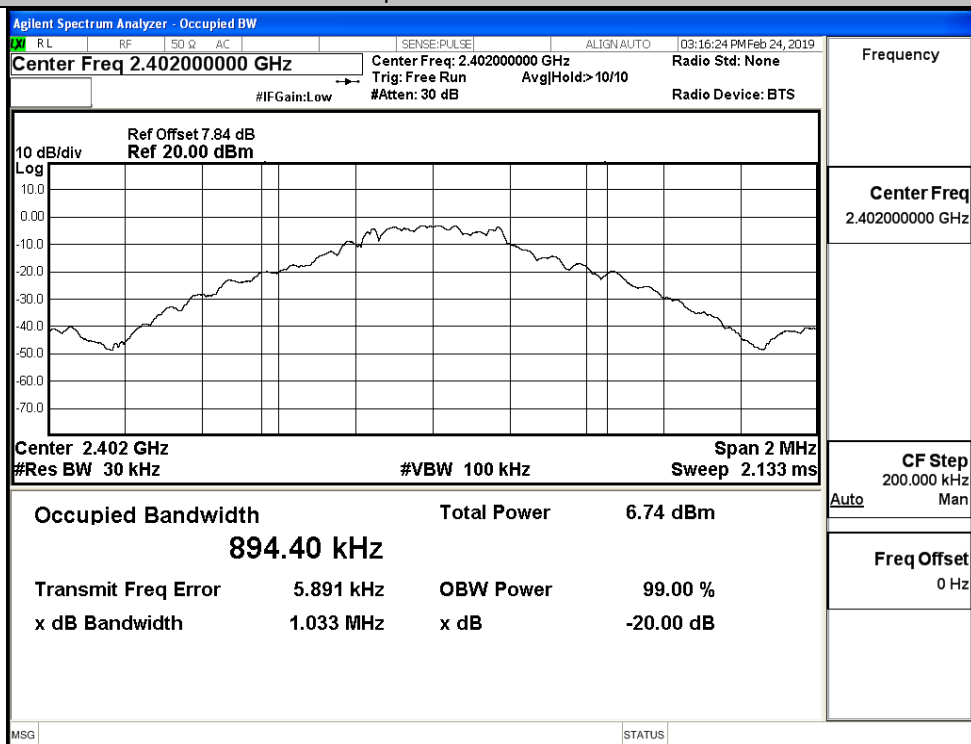
8DPSK/HCH



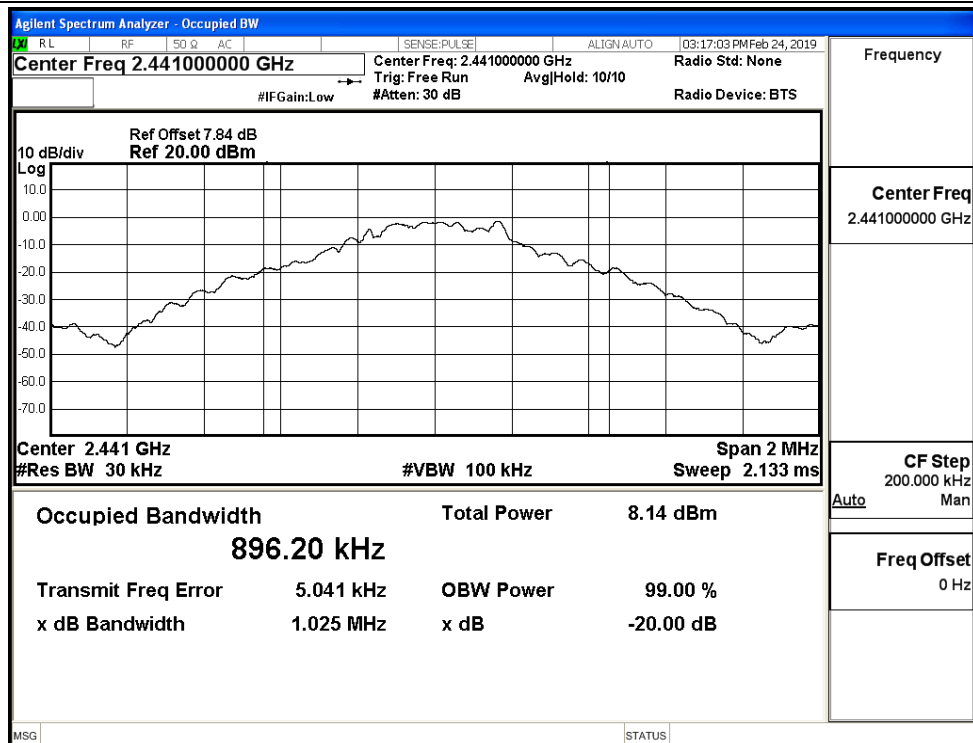
Mode	Channel.	Occupied Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.89440	Not Specified	PASS
	MCH	0.89620	Not Specified	PASS
	HCH	0.89956	Not Specified	PASS
$\pi/4$ DQPSK	LCH	0.89879	Not Specified	PASS
	MCH	1.1773	Not Specified	PASS
	HCH	1.1756	Not Specified	PASS
8DPSK	LCH	1.1929	Not Specified	PASS
	MCH	1.1924	Not Specified	PASS
	HCH	1.1882	Not Specified	PASS

Test Graphs

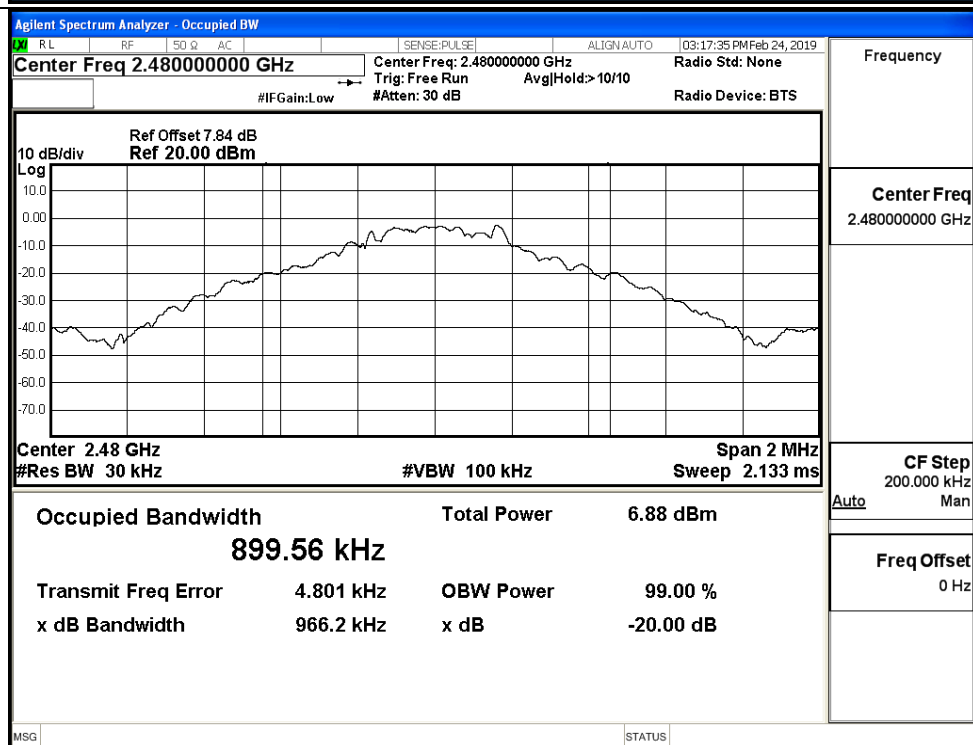
GFSK/LCH

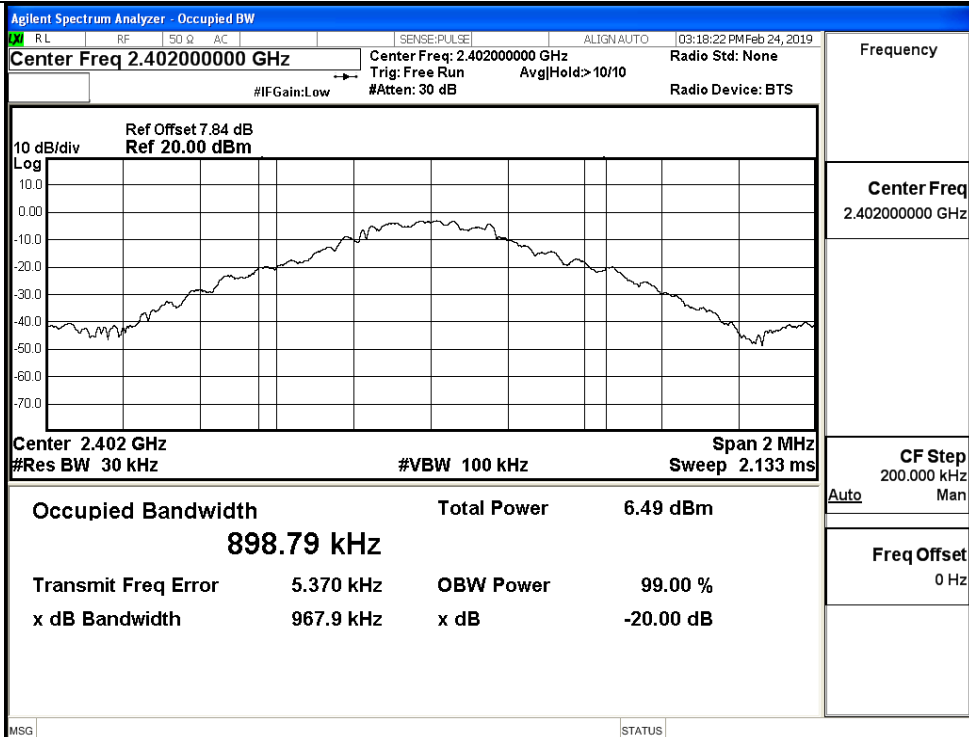


GFSK/MCH

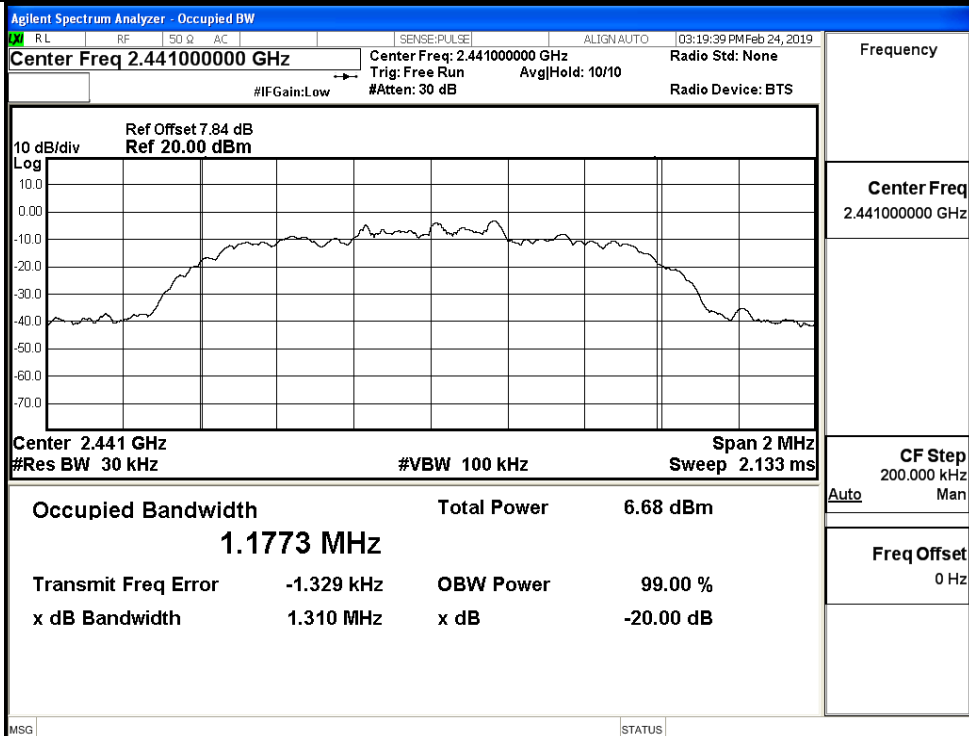


GFSK/HCH



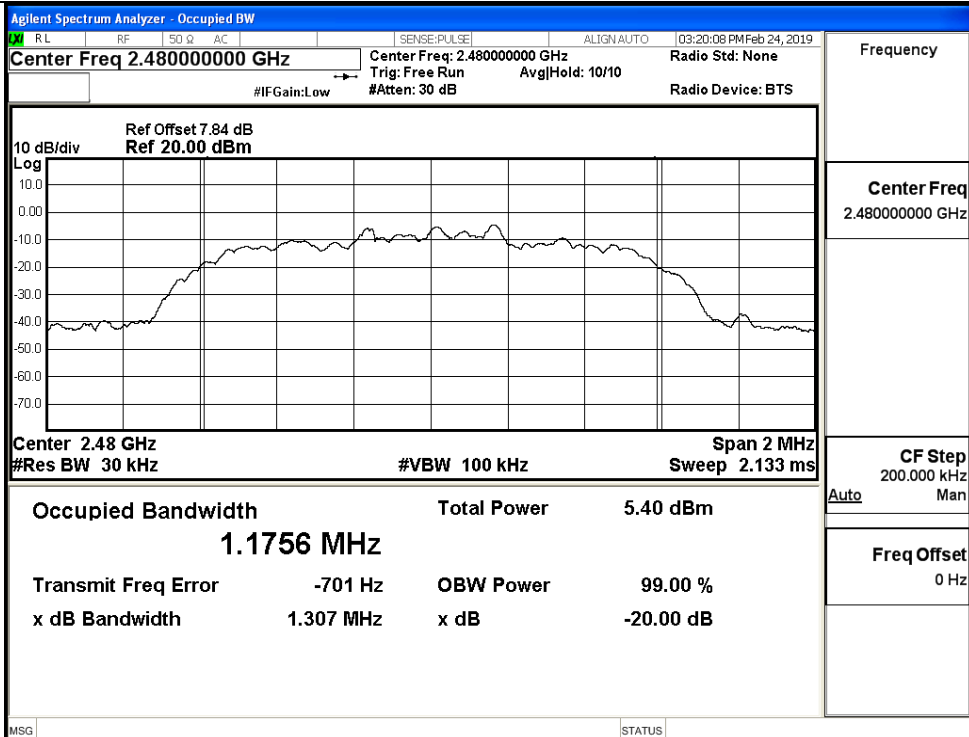
$\pi/4$ DQPSK/LCH

Frequency

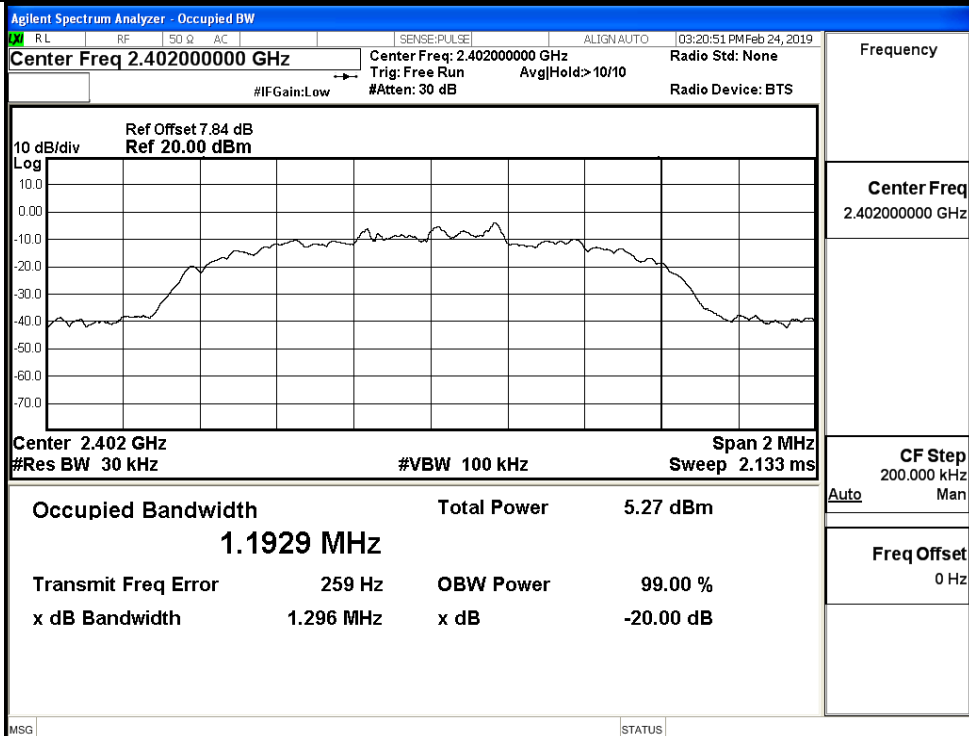
Center Freq
2.40200000 GHzCF Step
200.000 kHz
Auto ManFreq Offset
0 Hz $\pi/4$ DQPSK/MCH

Frequency

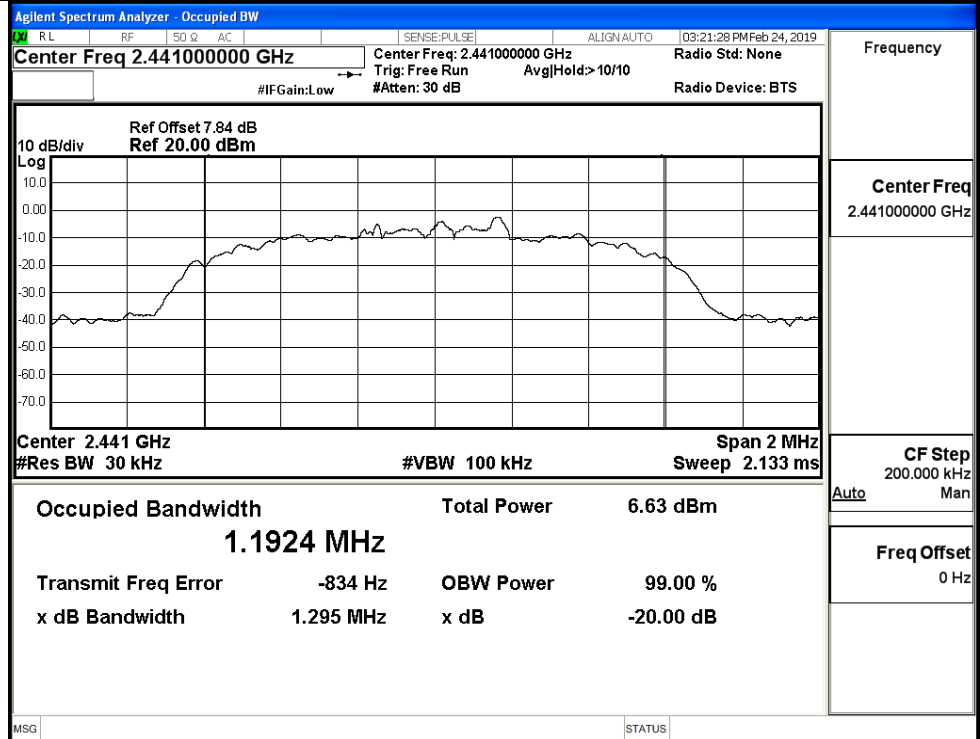
Center Freq
2.441000000 GHzCF Step
200.000 kHz
Auto ManFreq Offset
0 Hz

$\pi/4$ DQPSK/HCH

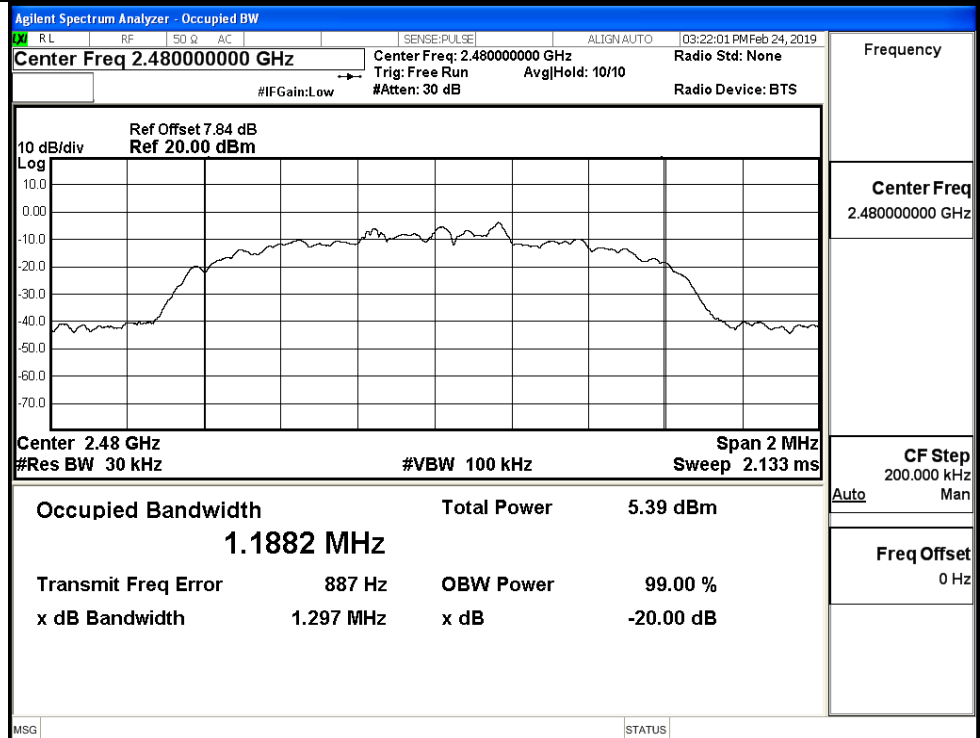
8DPSK/LCH



8DPSK/MCH



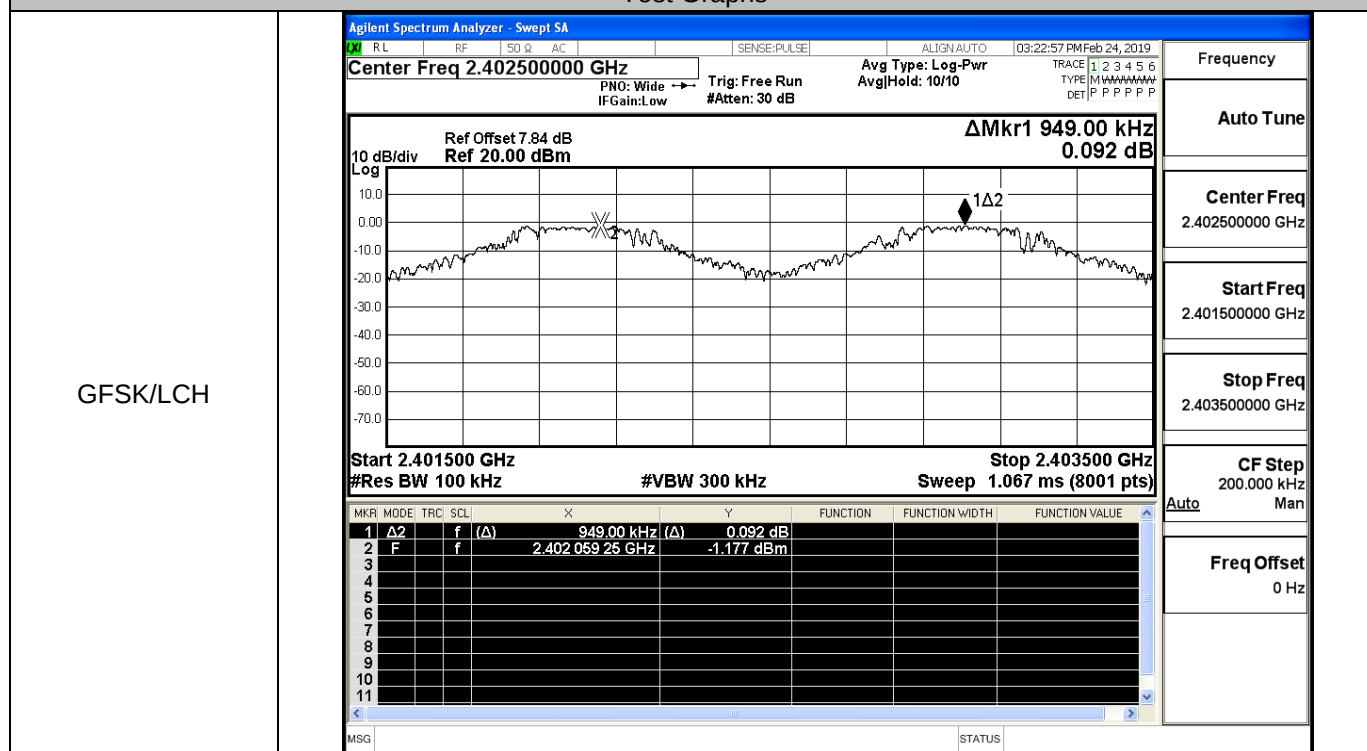
8DPSK/HCH



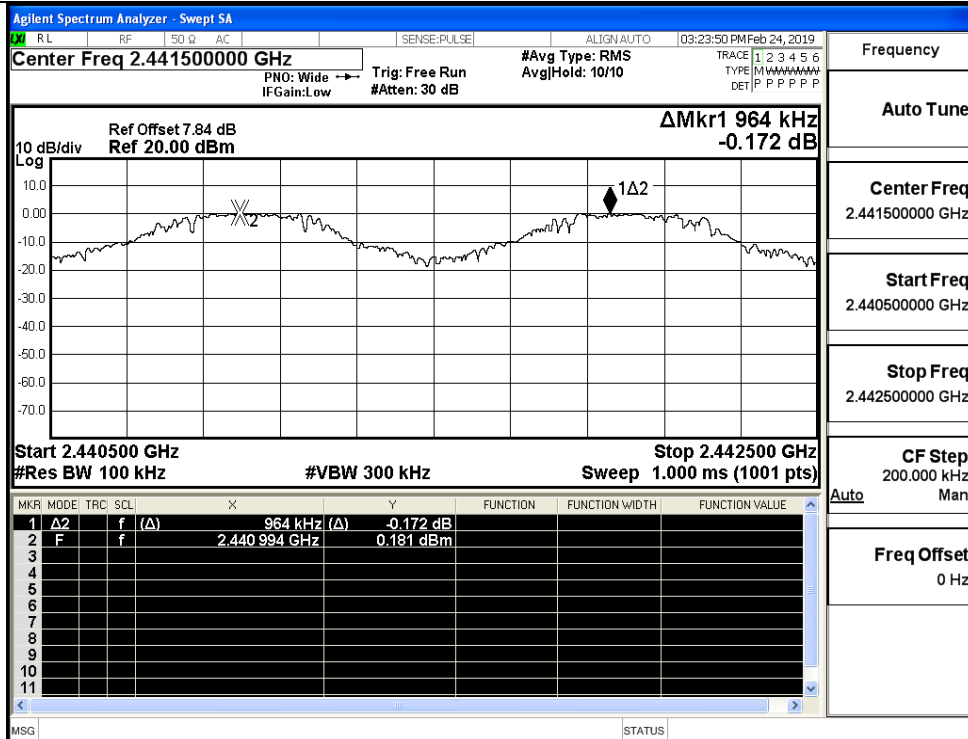
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.949	0.687	PASS
	MCH	0.964	0.687	PASS
	HCH	1.124	0.687	PASS
$\pi/4$ DQPSK	LCH	1.052	0.873	PASS
	MCH	1.074	0.873	PASS
	HCH	1.114	0.873	PASS
8DPSK	LCH	1.328	0.871	PASS
	MCH	1.164	0.871	PASS
	HCH	0.944	0.871	PASS

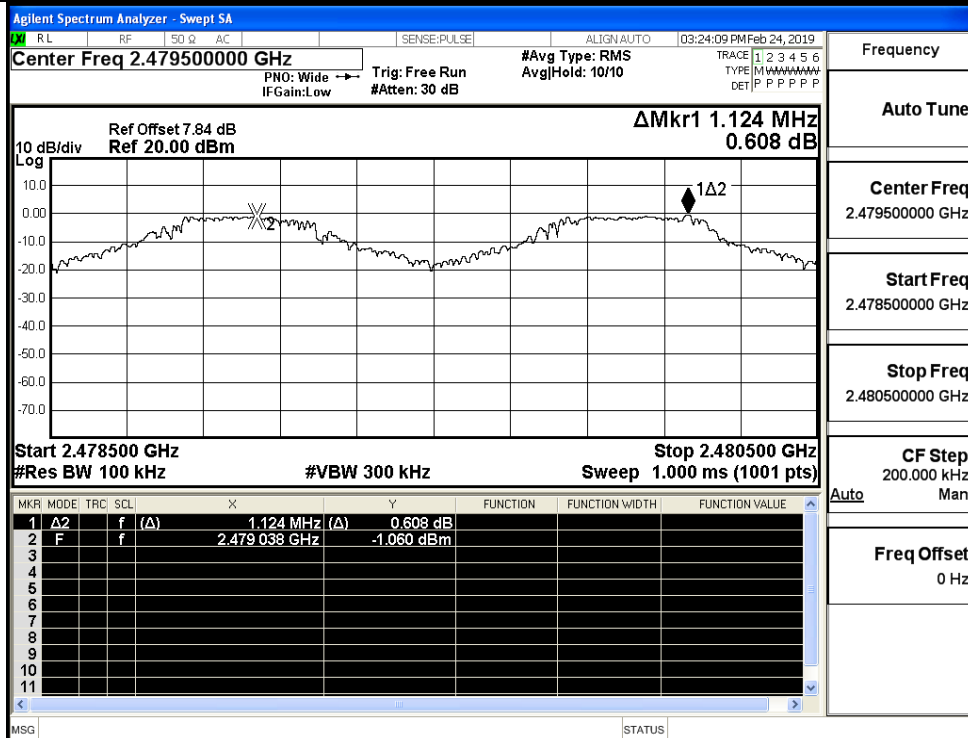
Test Graphs

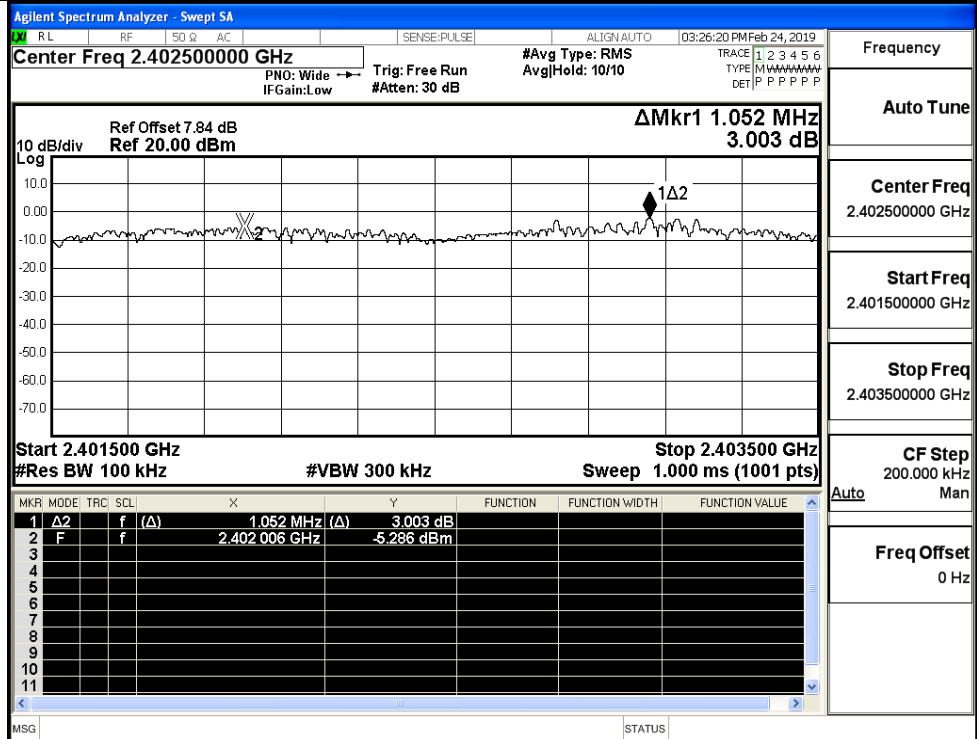
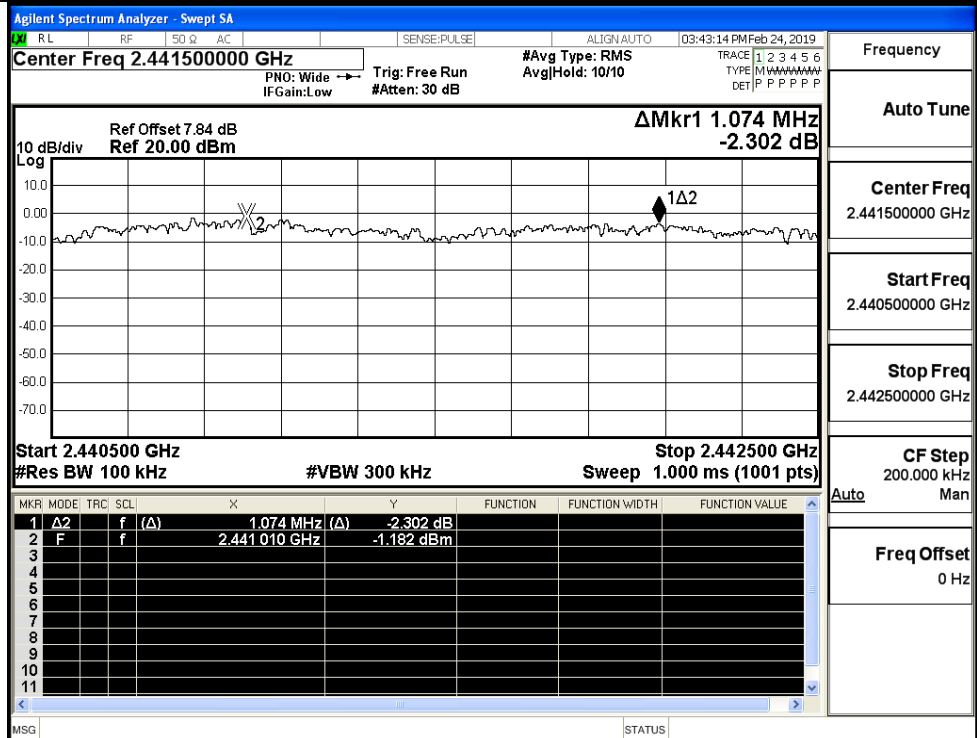


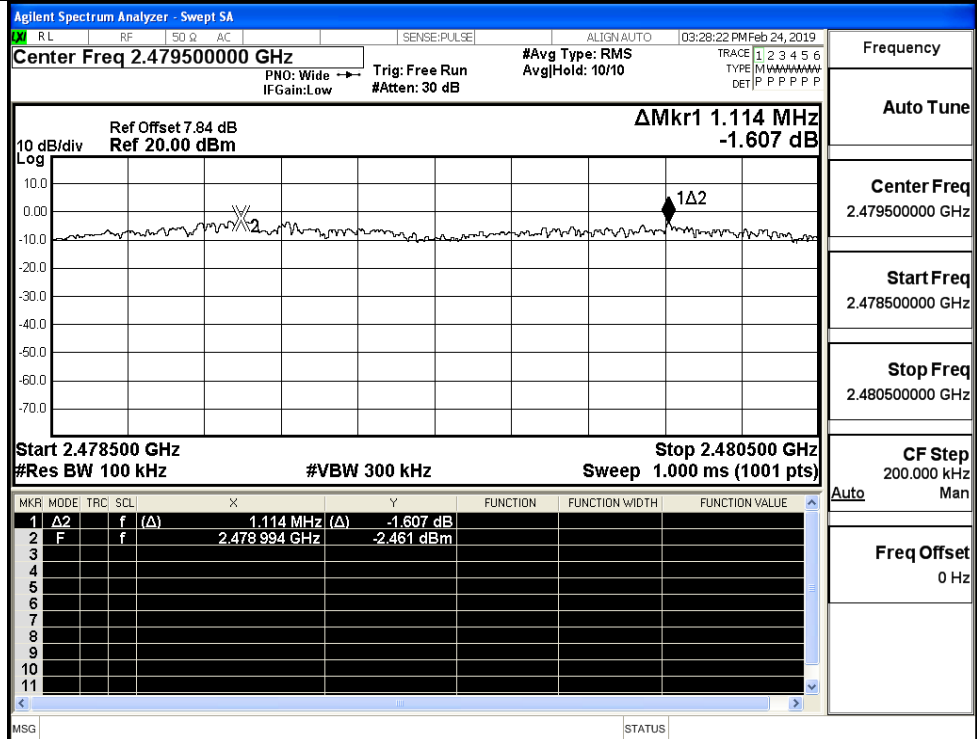
GFSK/MCH



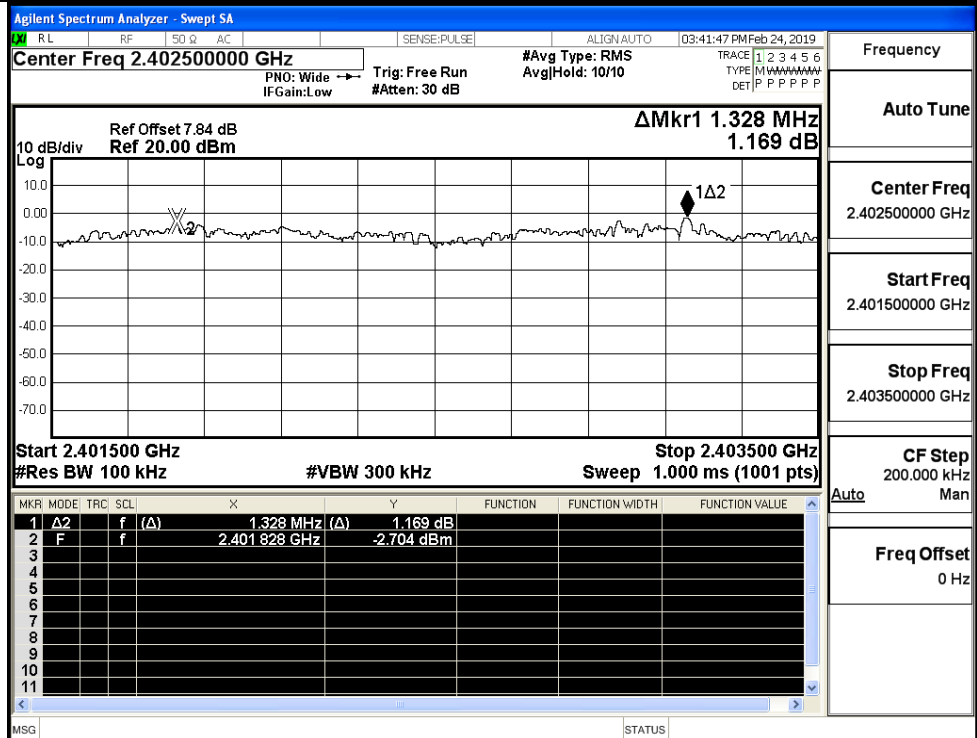
GFSK/HCH



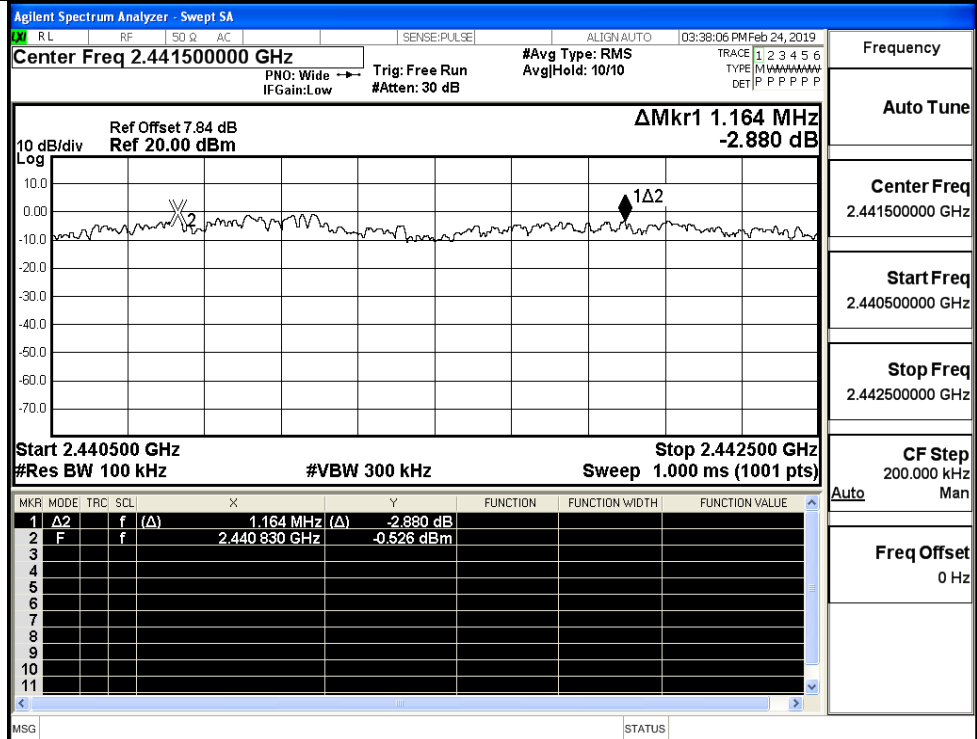
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

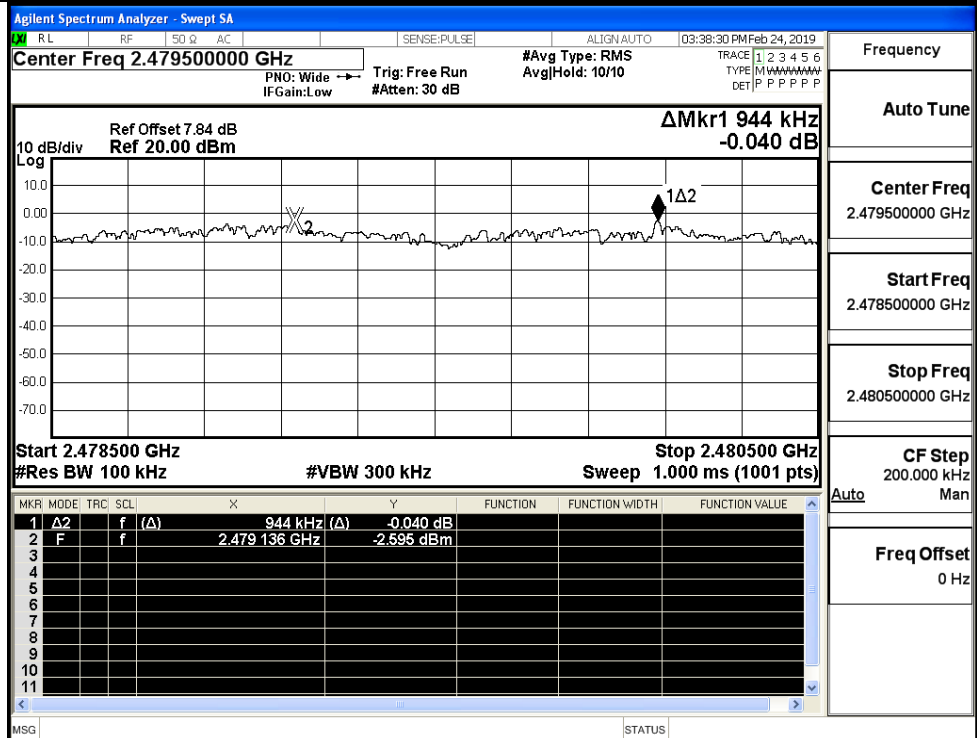
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

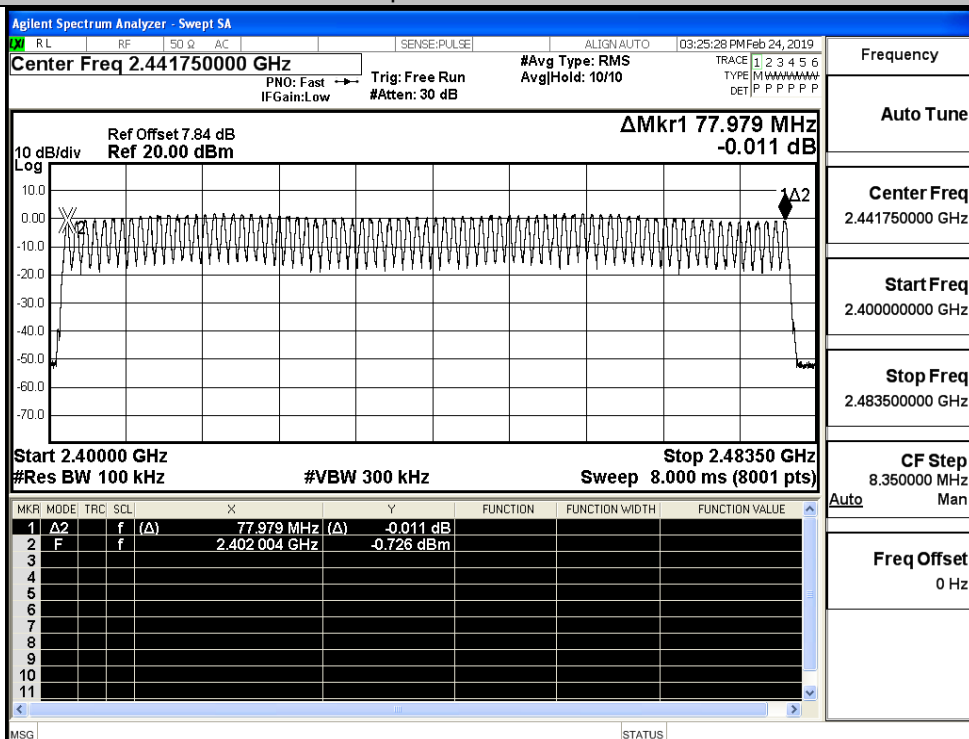
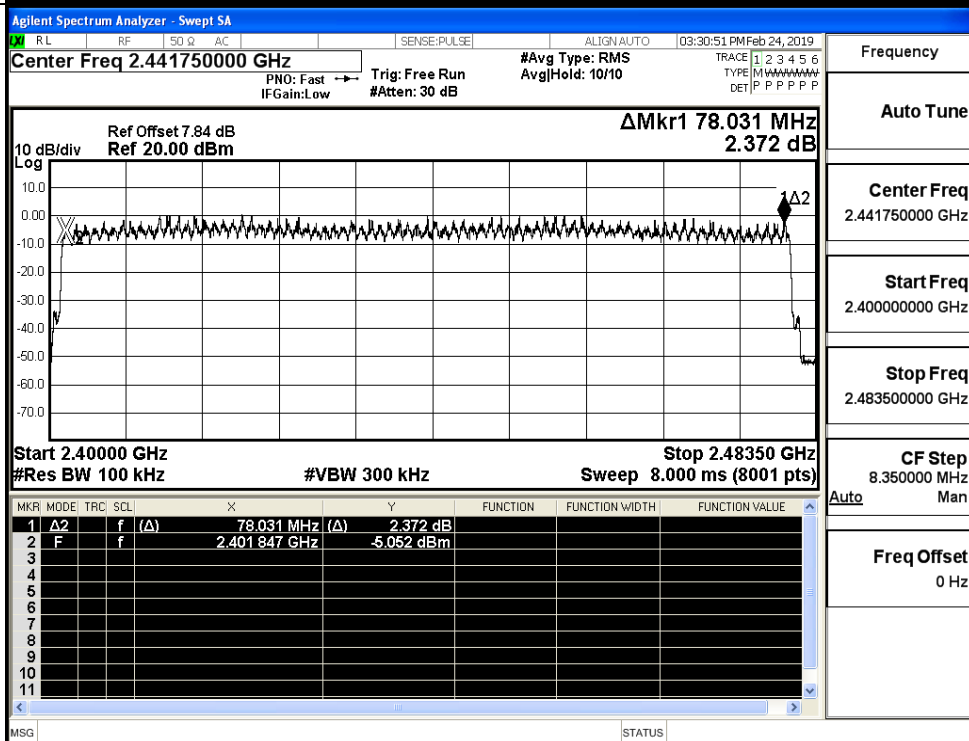


A.4 Hopping Channel Number

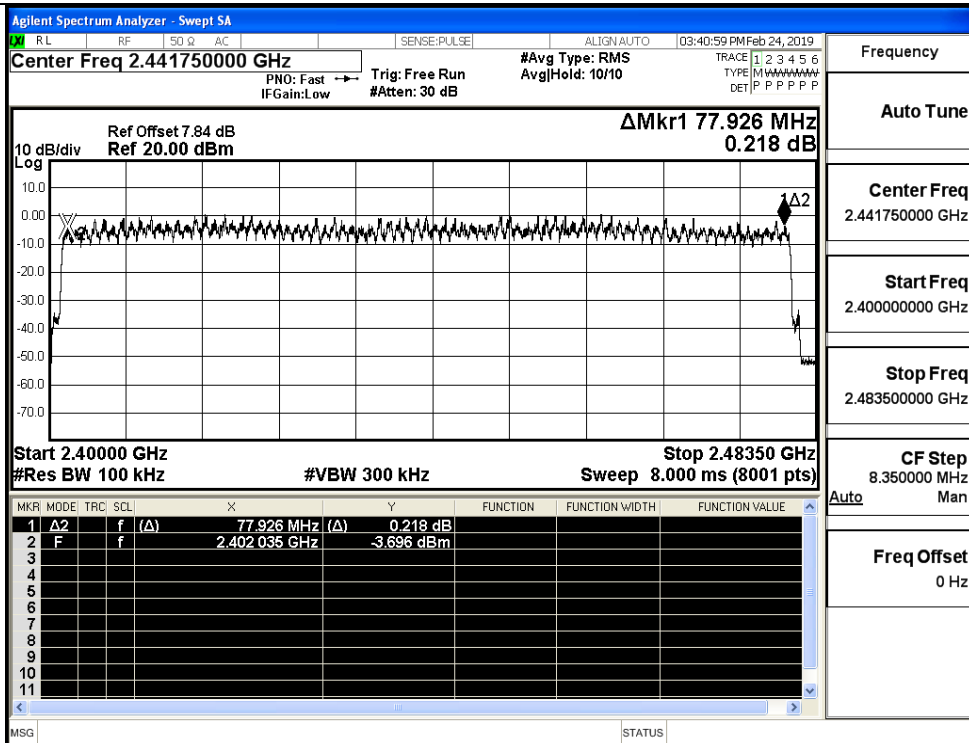
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	≥ 15	PASS
$\pi/4$ DQPSK	Hop	79	≥ 15	PASS
8DPSK	Hop	79	≥ 15	PASS

Test Graphs

GFSK/Hop

 $\pi/4$ DQPSK/Hop

8DPSK/Hop

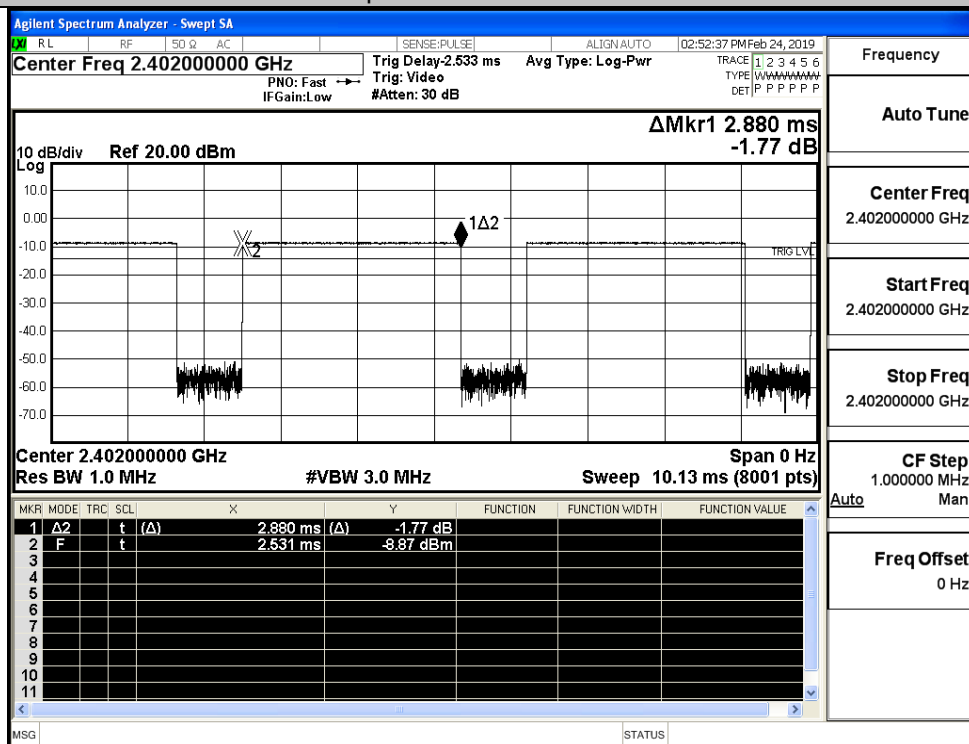


A.5 Dwell Time

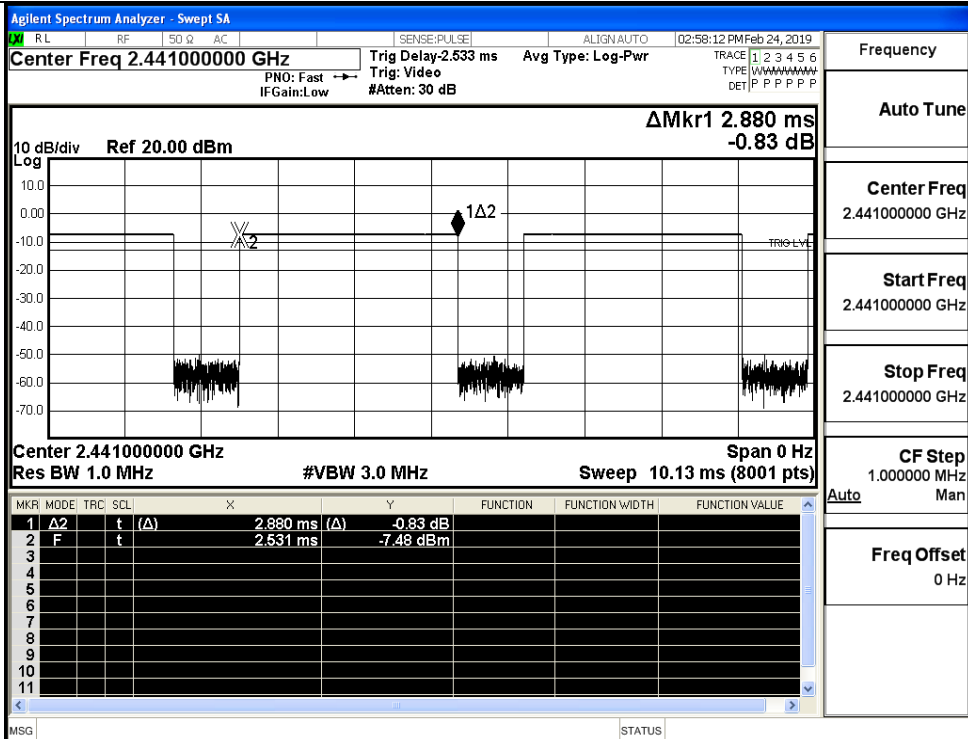
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7	0.307	0.4	PASS
8DPSK	3DH5	LCH	2.89	106.7	0.308	0.4	PASS
	3DH5	MCH	2.89	106.7	0.308	0.4	PASS
	3DH5	HCH	2.89	106.7	0.308	0.4	PASS

Test Graphs

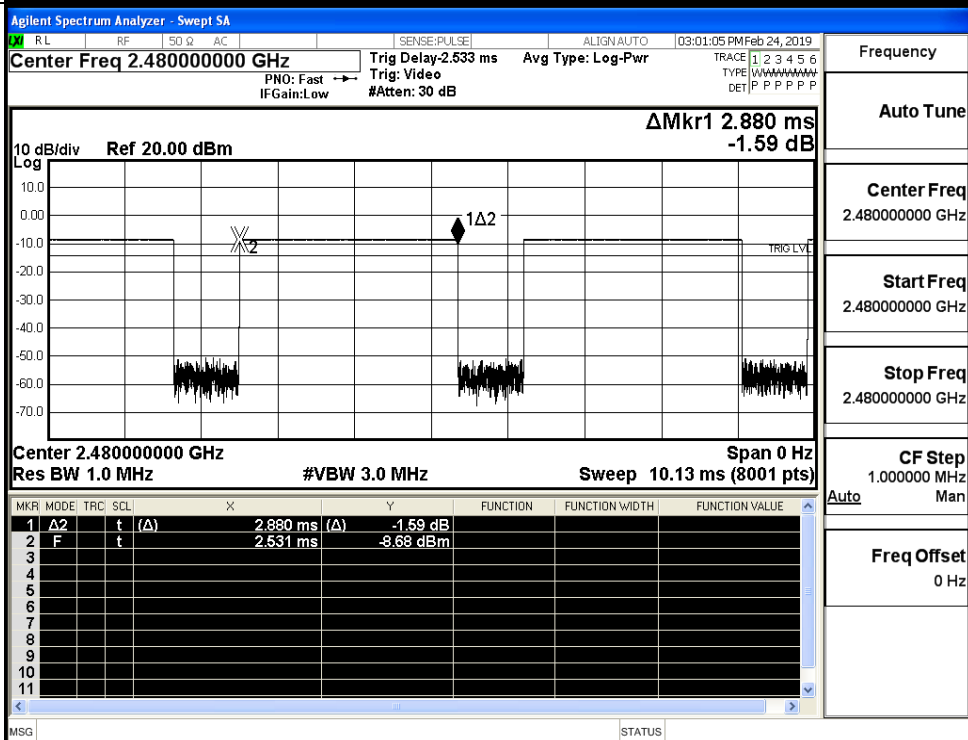
GFSK_DH5/LCH



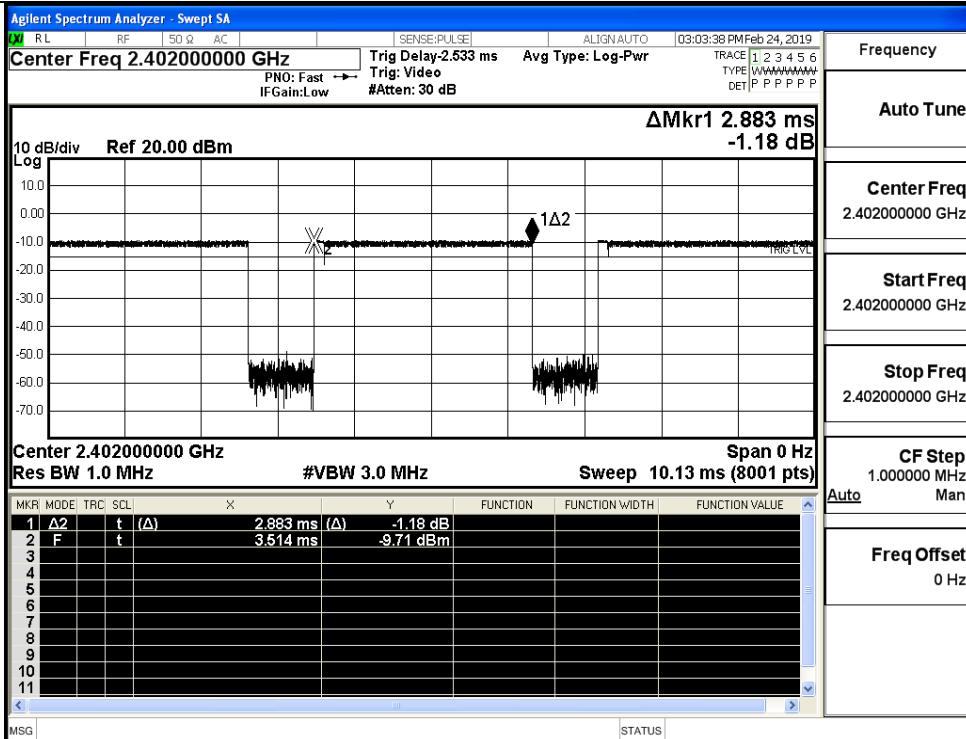
GFSK_DH5/MCH



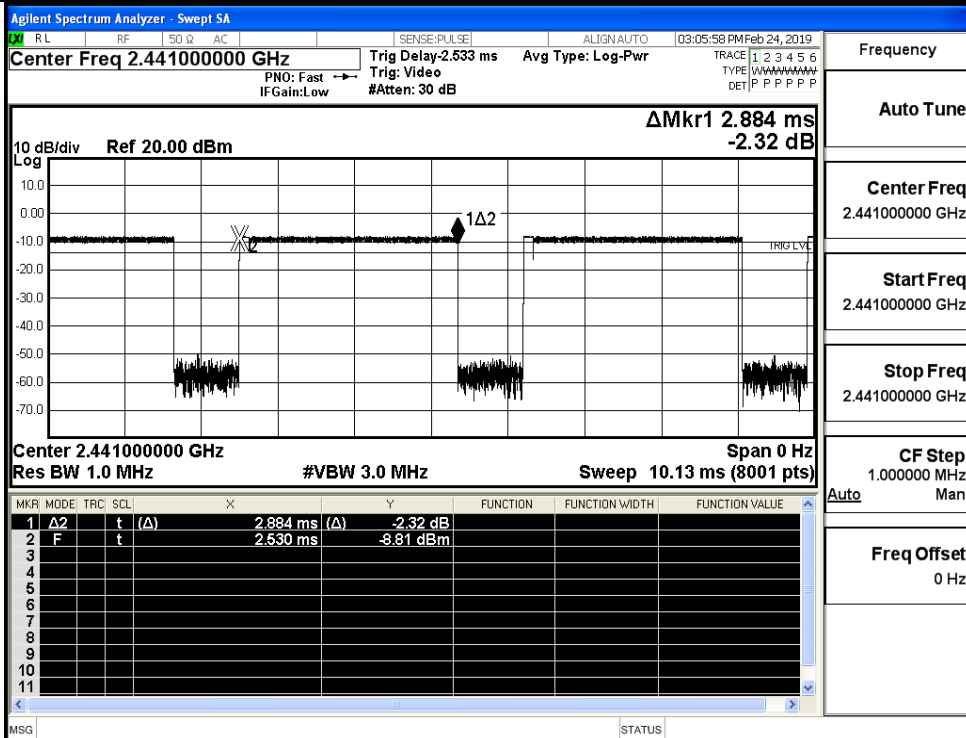
GFSK_DH5/HCH



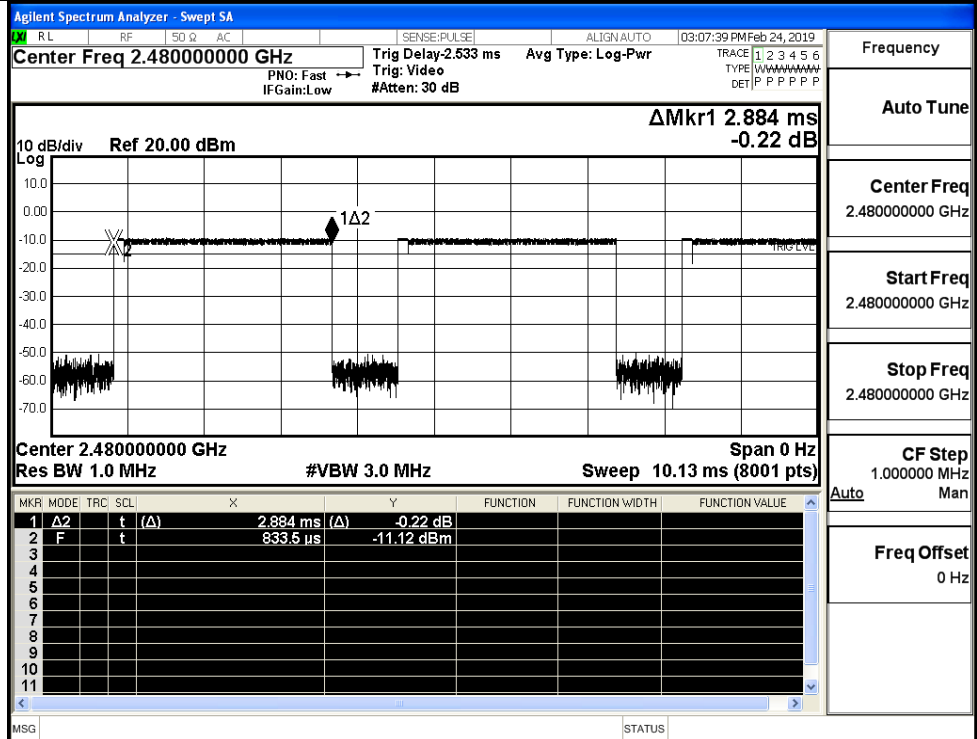
$\pi/4$ DQPSK
_2DH5/LCH



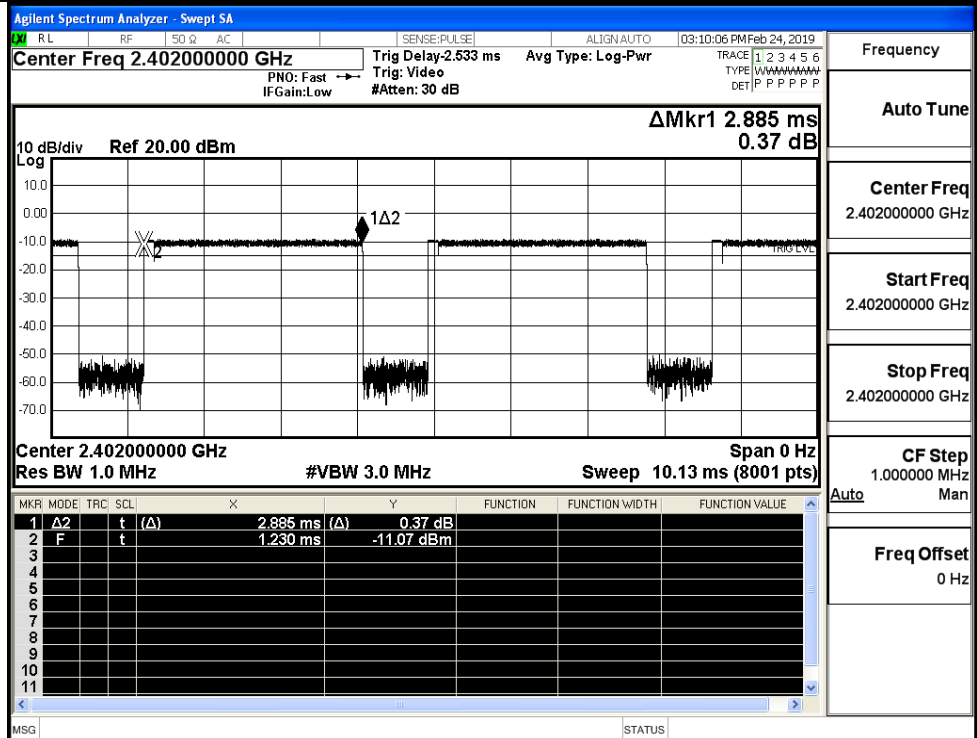
$\pi/4$ DQPSK
_2DH5/MCH



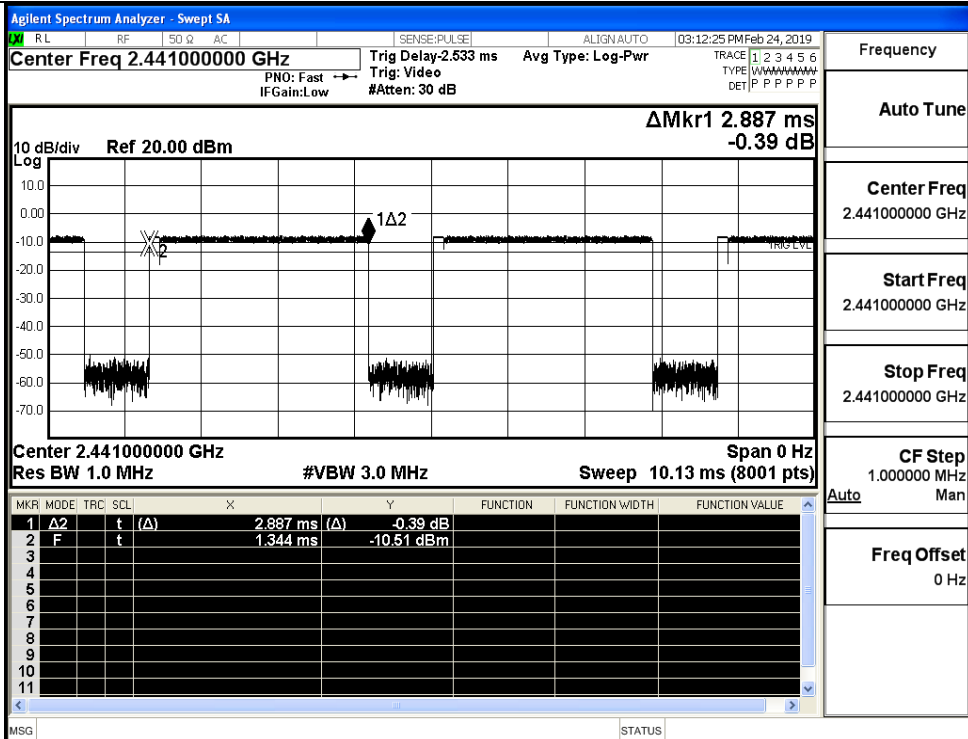
$\pi/4$ DQPSK
_2DH5/HCH



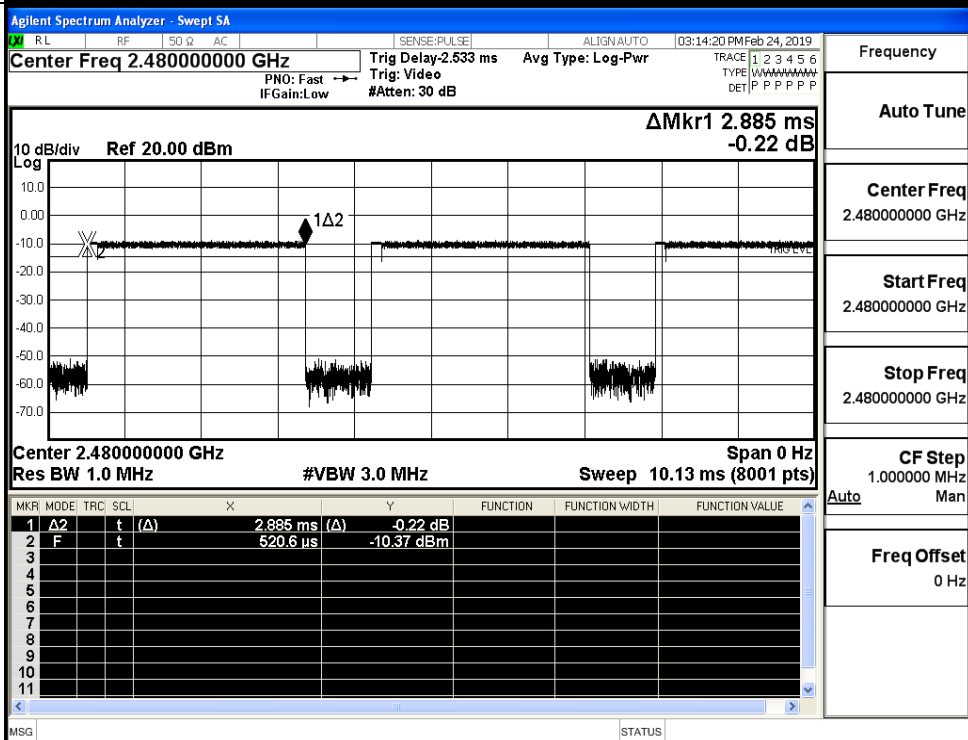
8DPSK _3DH5/LCH



8DPSK_3DH5/MCH



8DPSK_3DH5/HCH

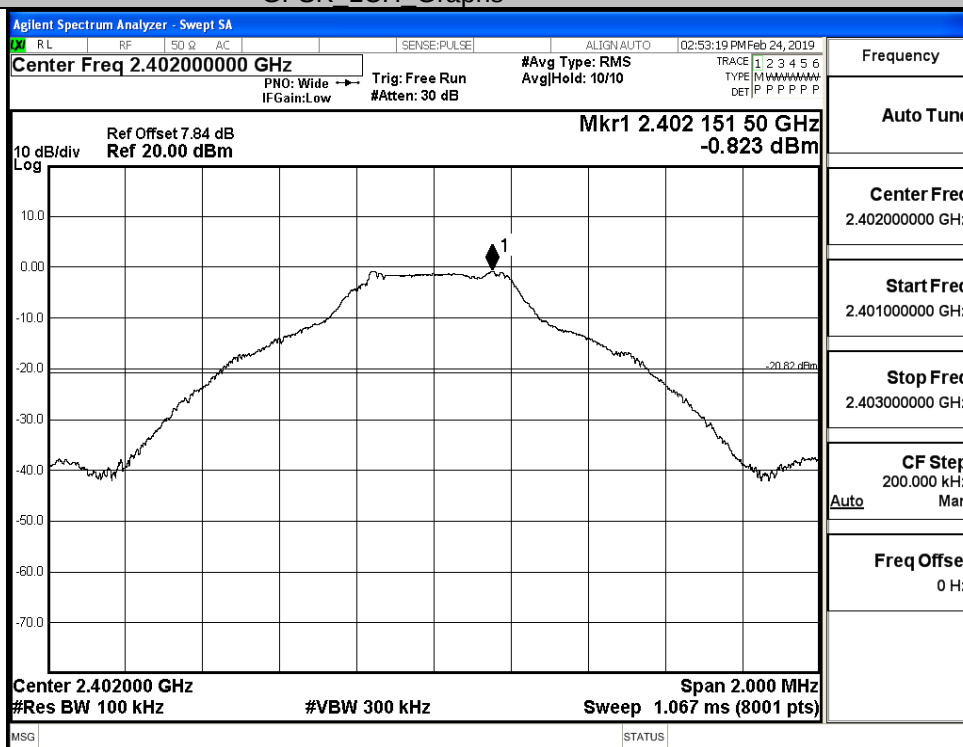


A.6 RF Conducted Spurious Emissions

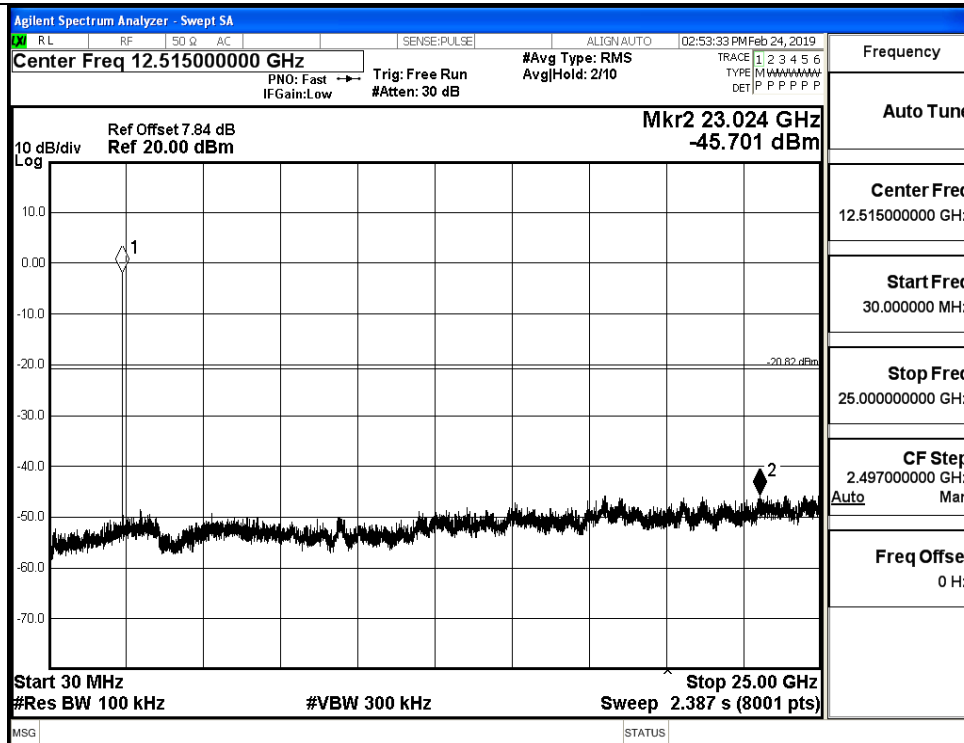
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.823	-45.701	-20.823	PASS
	MCH	0.594	-43.839	-19.406	PASS
	HCH	-1.156	-44.240	-21.156	PASS
$\pi/4$ DQPSK	LCH	-2.002	-44.155	-22.002	PASS
	MCH	-0.512	-44.140	-20.512	PASS
	HCH	-1.892	-45.418	-21.892	PASS
8DPSK	LCH	-1.846	-44.138	-21.846	PASS
	MCH	-0.424	-44.469	-20.424	PASS
	HCH	-1.584	-45.135	-21.584	PASS

GFSK LCH Graphs

Pref

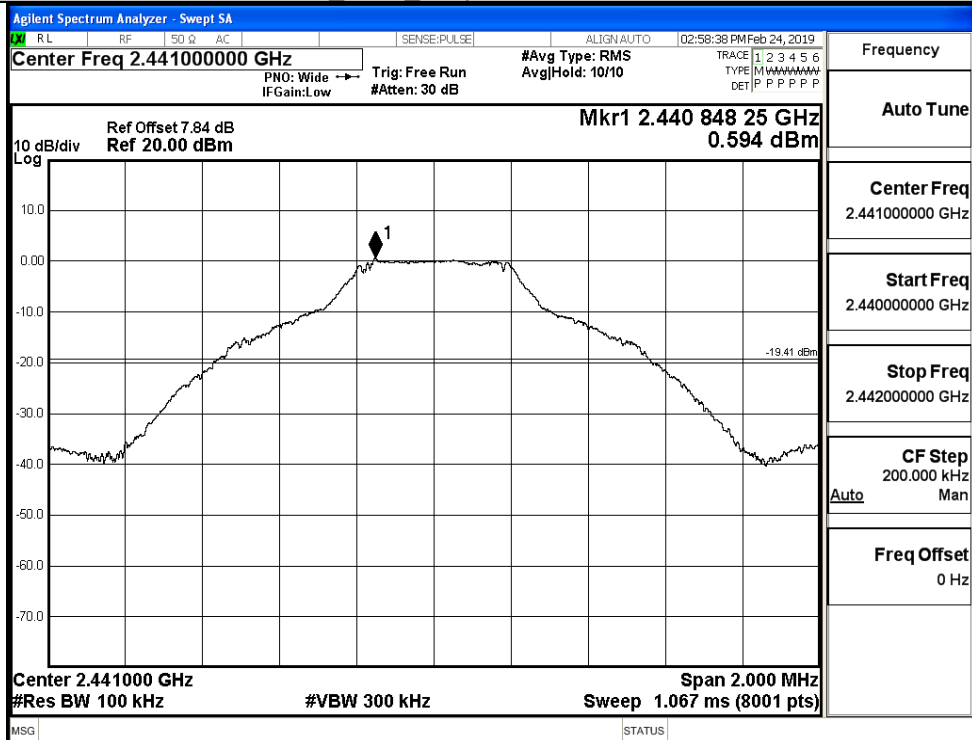


Puw

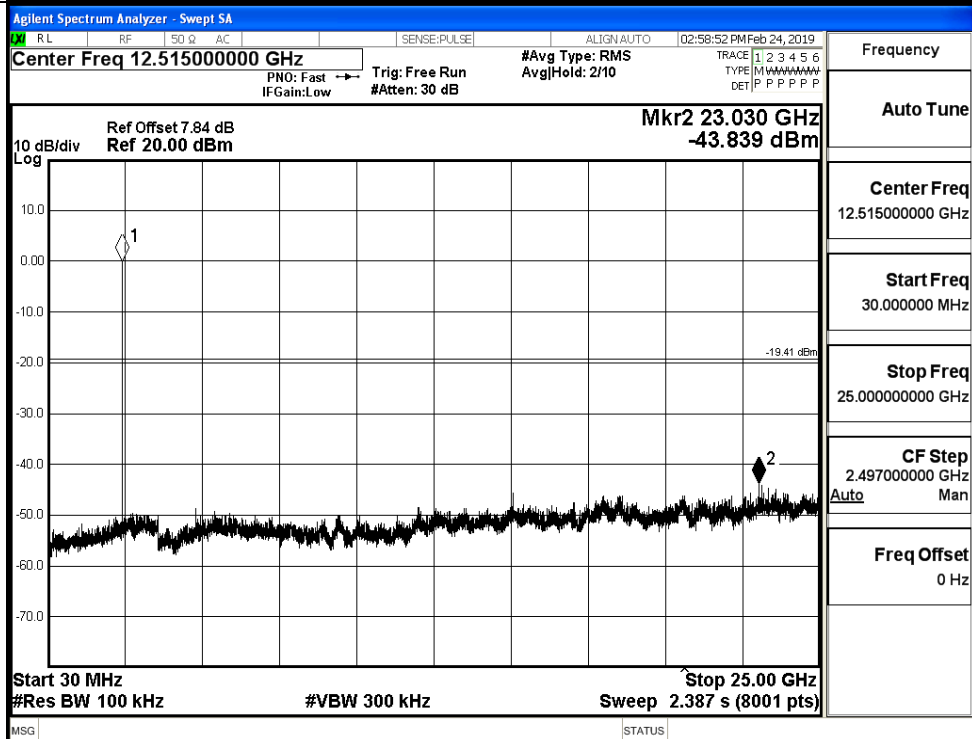


GFSK_MCH_Graphs

Pref

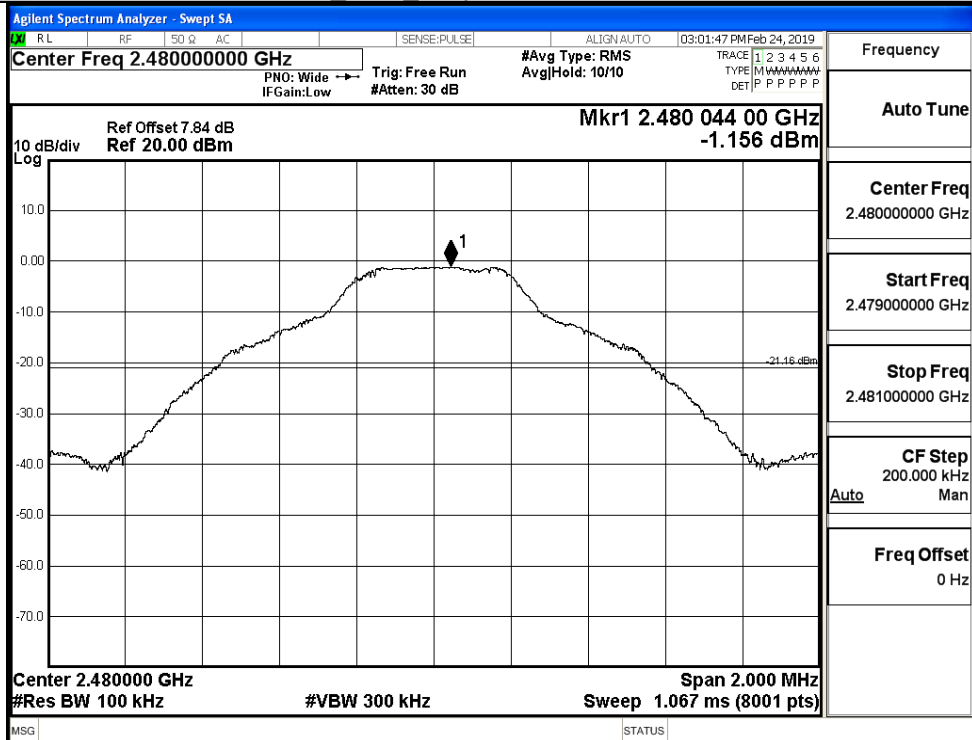


Puw

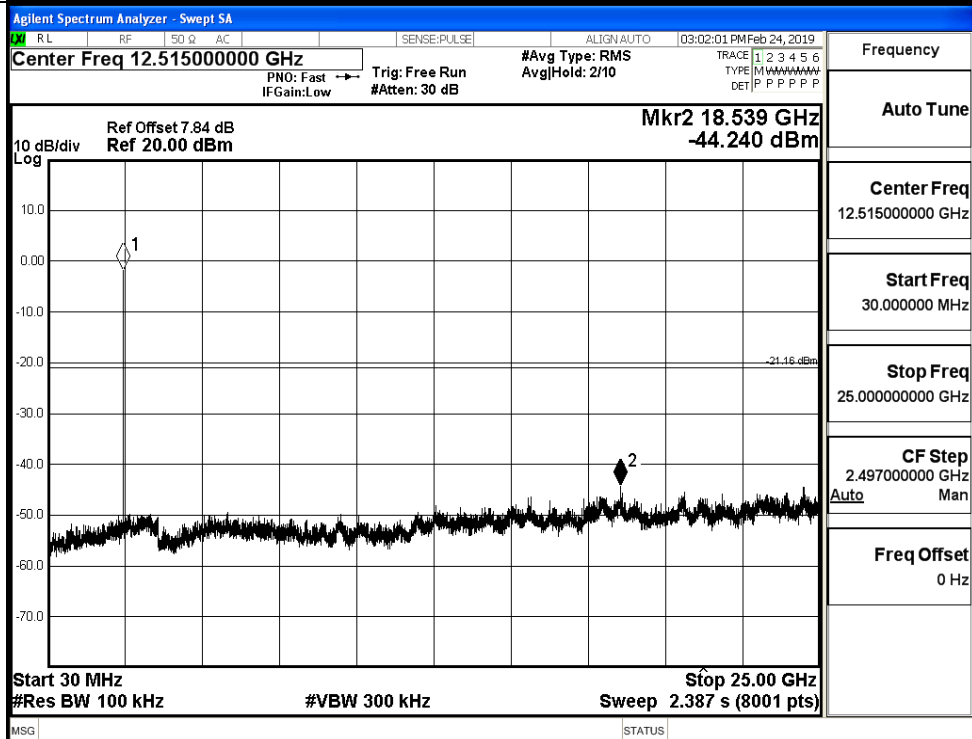


GFSK_HCH_Graphs

Pref

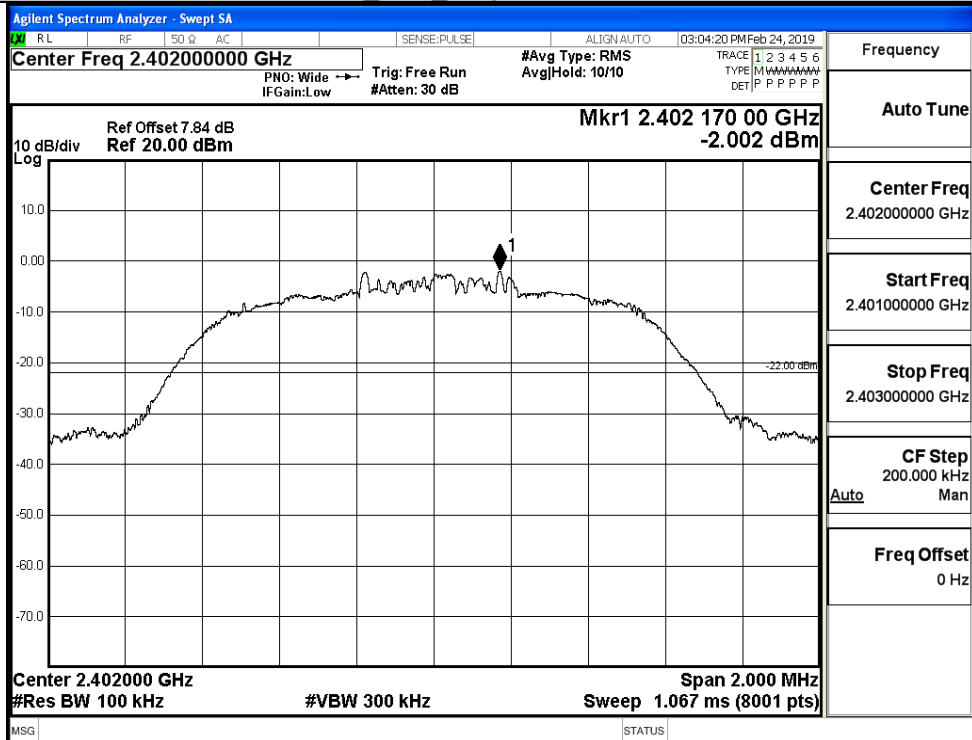


Puw

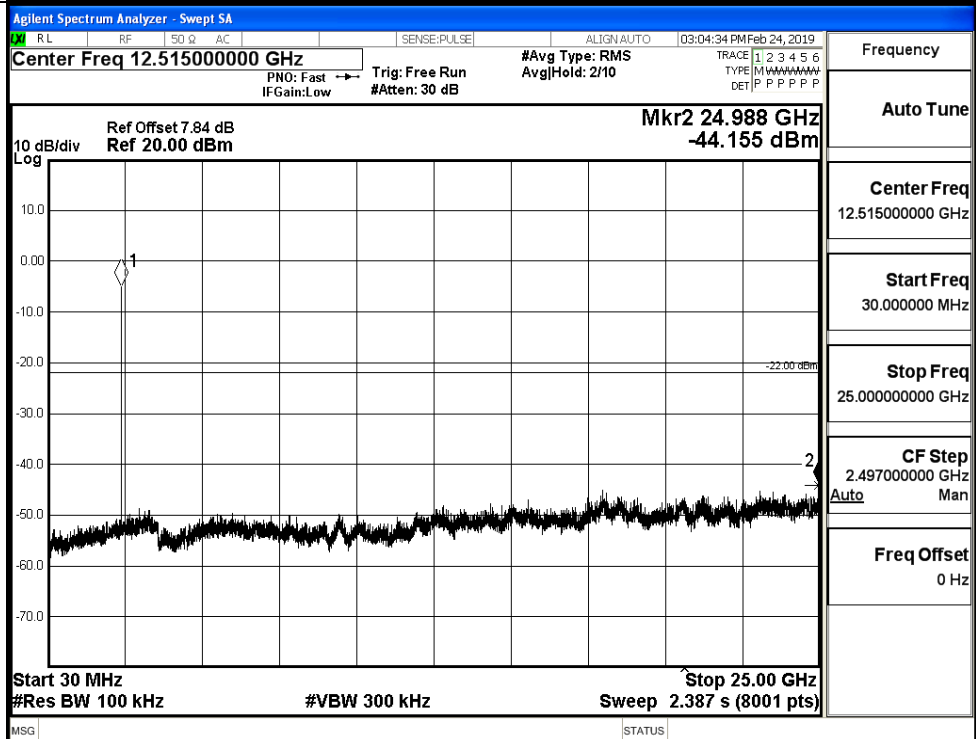


$\pi/4$ DQPSK_LCH_Graphs

Pref

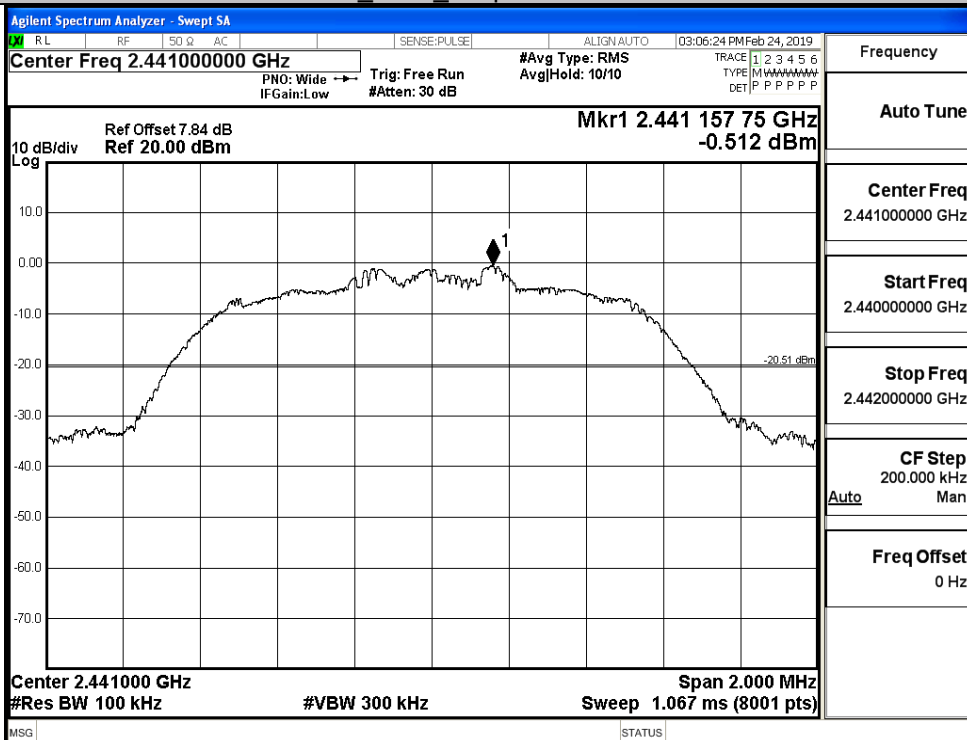


Puw

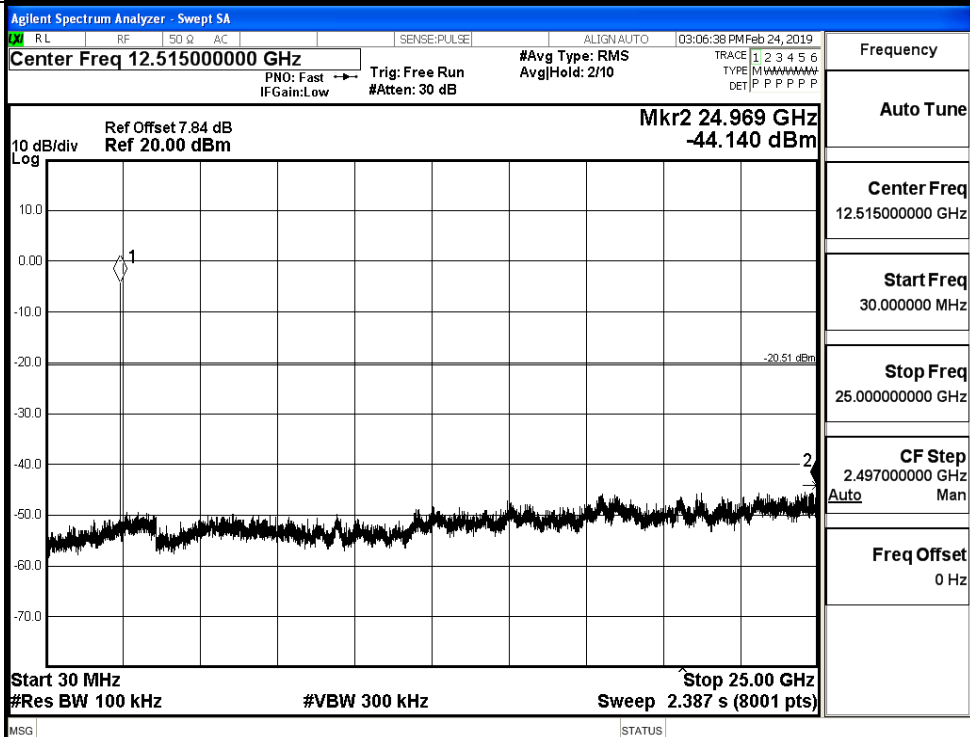


π /4DQPSK_MCH_Graphs

Pref

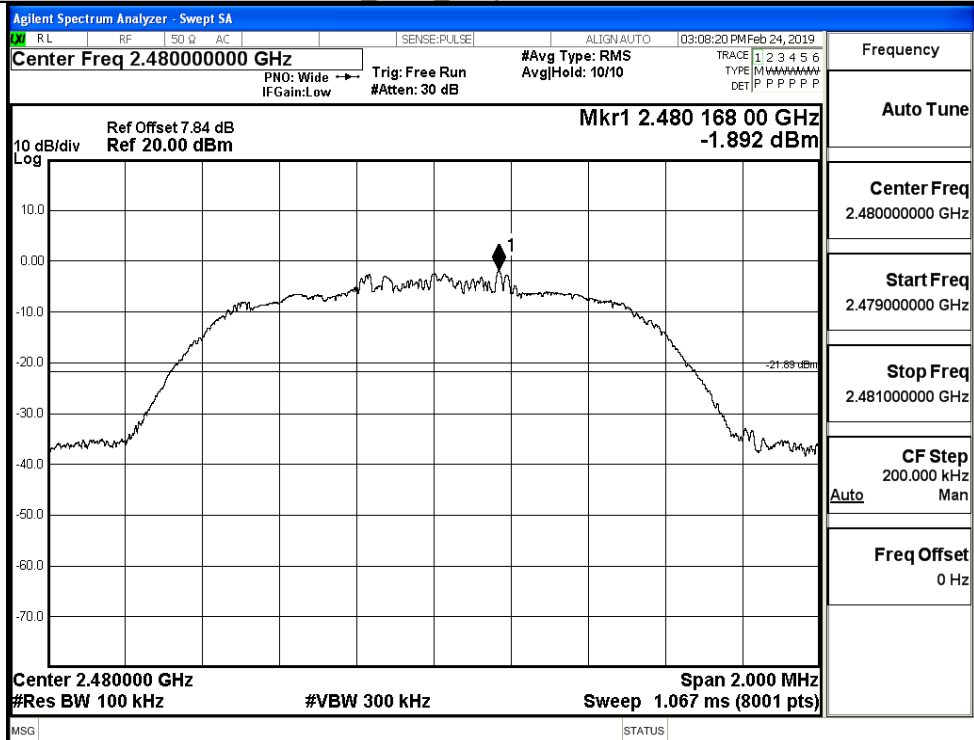


Puw

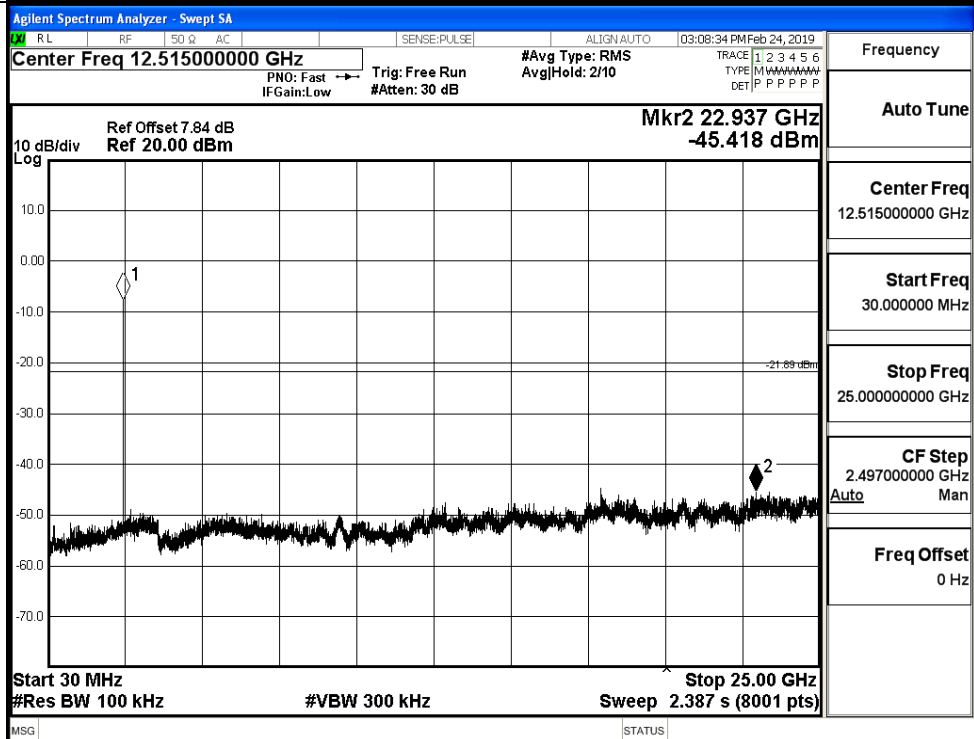


$\pi/4$ DQPSK_HCH_Graphs

Pref

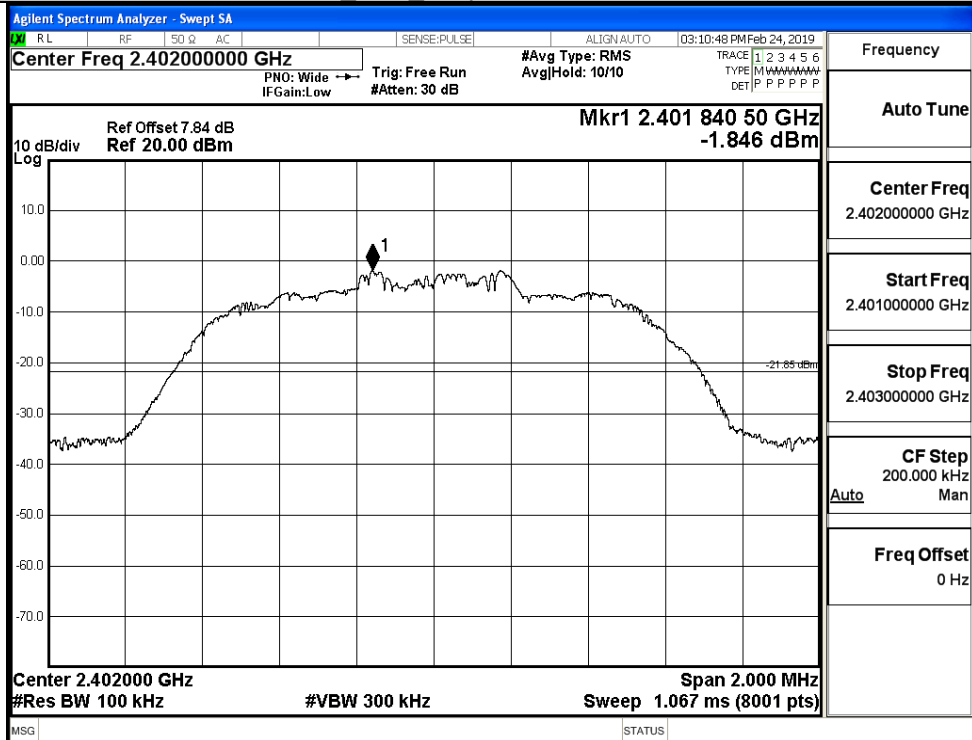


Puw

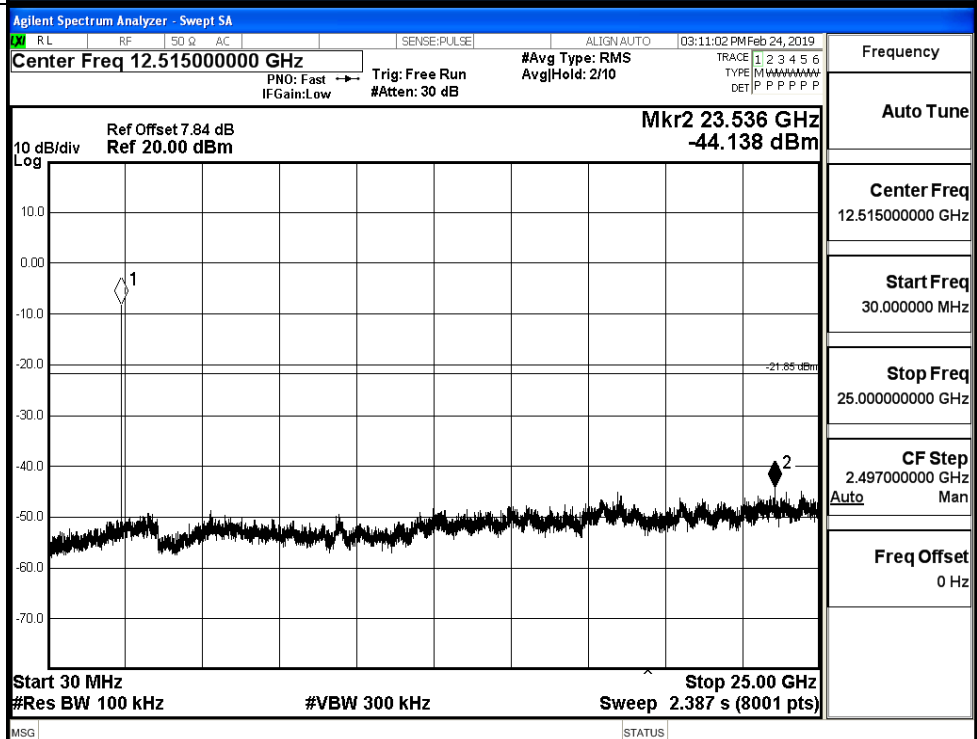


8DPSK_LCH_Graphs

Pref

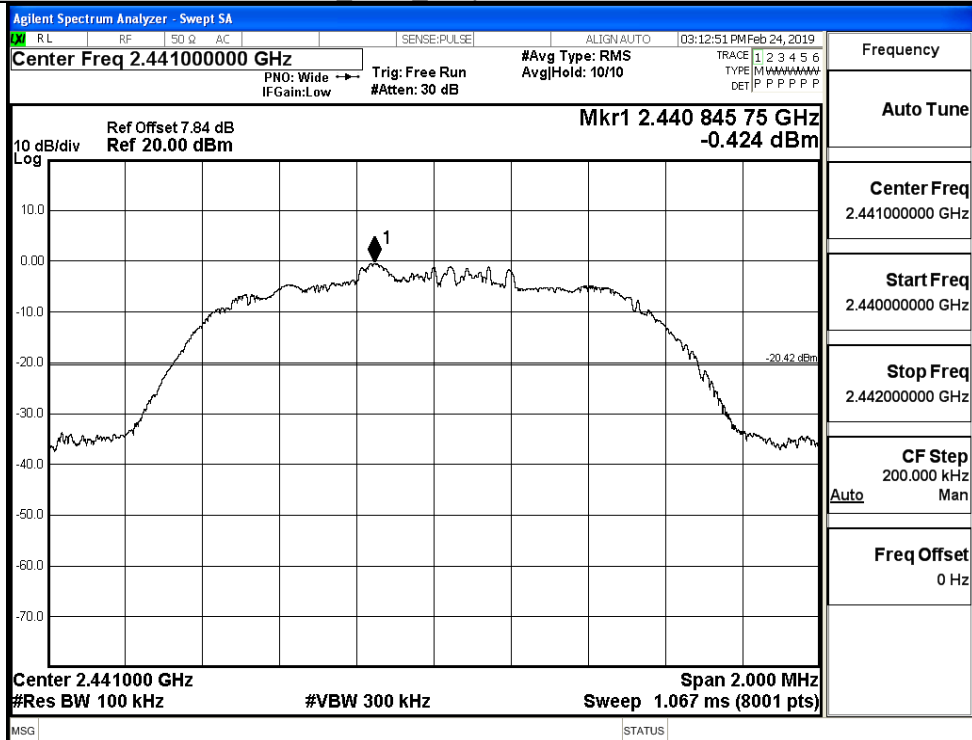


Puw

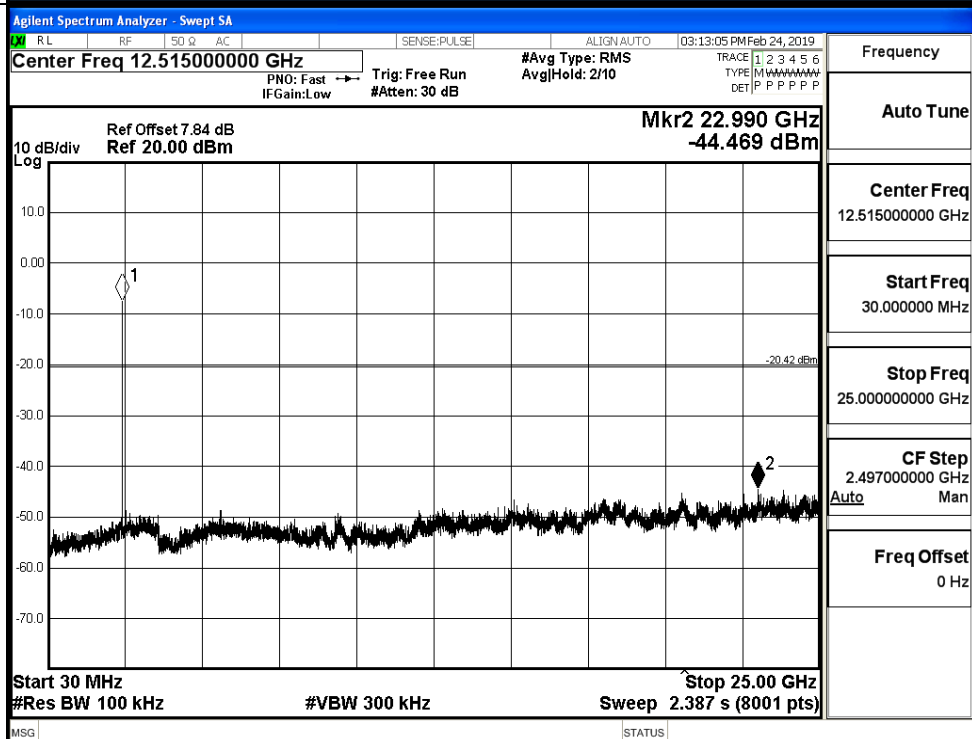


8DPSK_MCH_Graphs

Pref

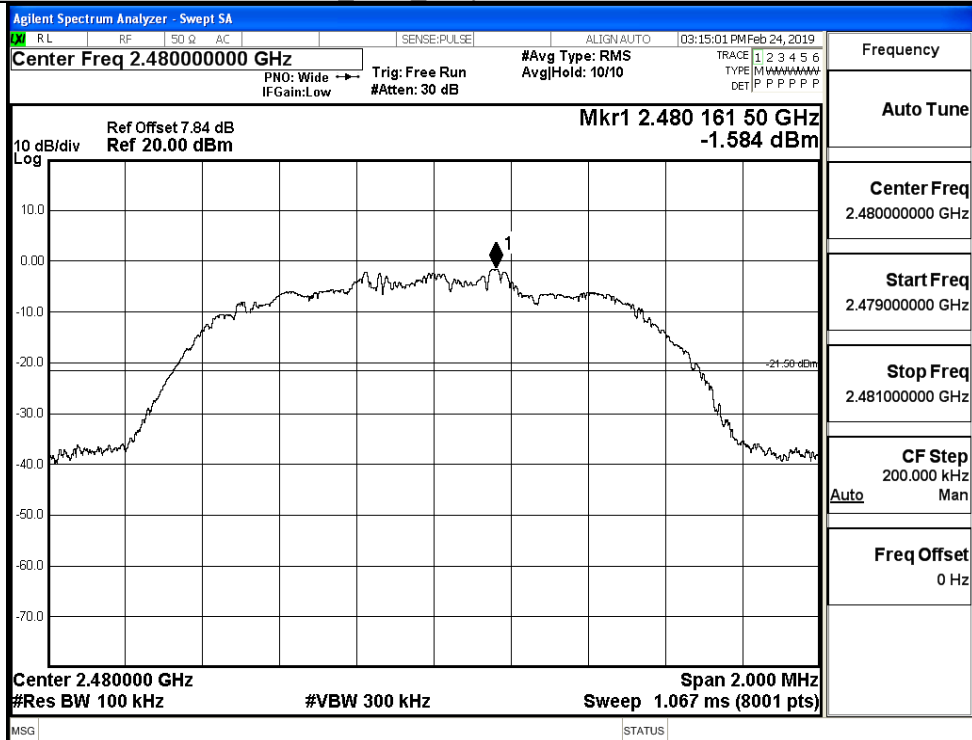


Puw

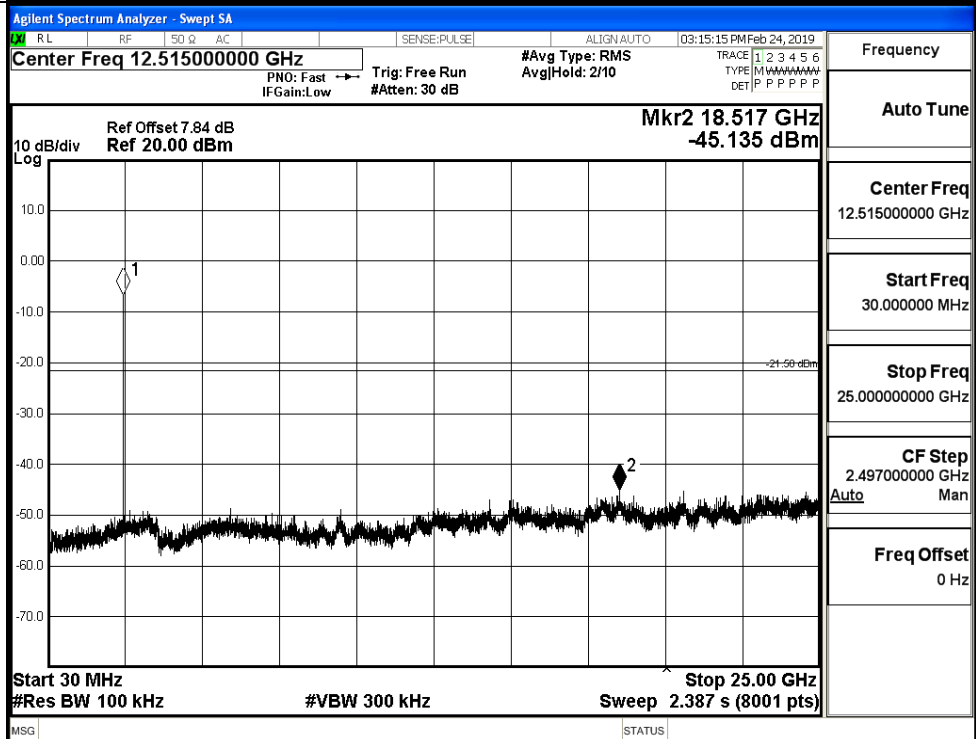


8DPSK_HCH_Graphs

Pref



Puw

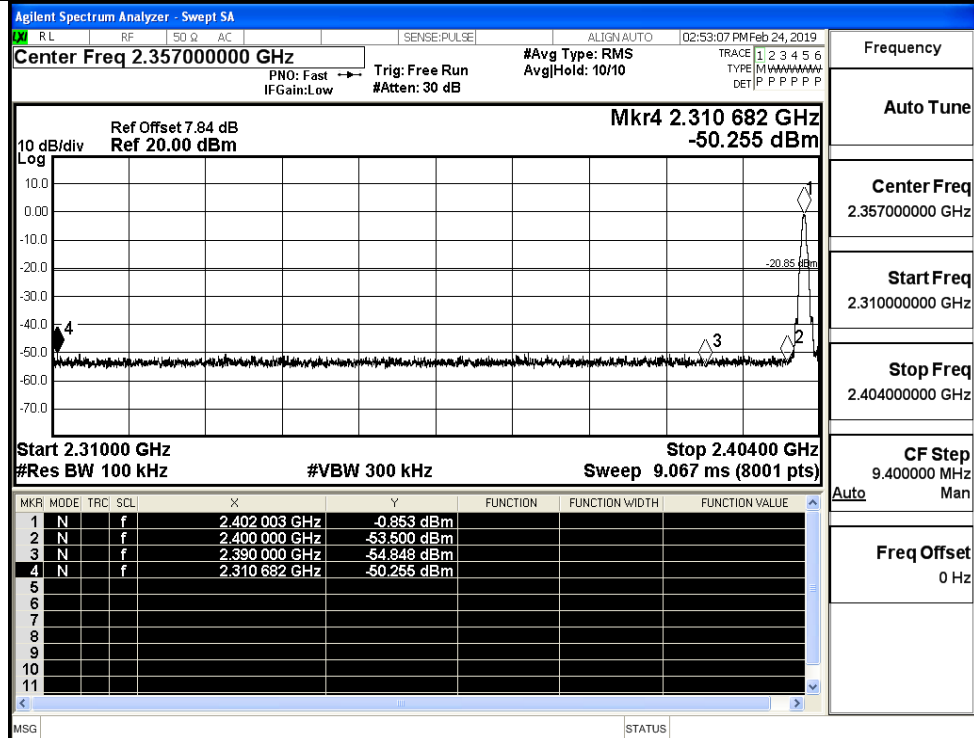


A.7 Band-edge for RF Conducted Emissions

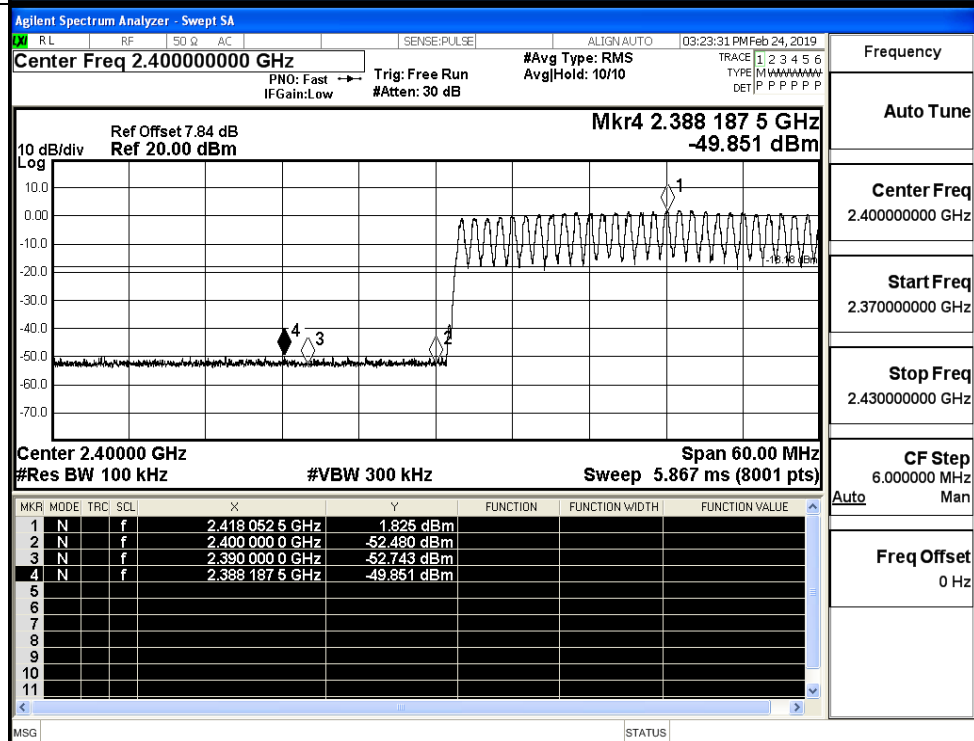
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-0.853	Off	-50.255	-20.85	PASS
			1.825	On	-49.851	-18.18	PASS
	HCH	2480	-0.486	Off	-49.419	-20.49	PASS
			1.705	On	-49.739	-18.3	PASS
$\pi/4$ DQPSK	LCH	2402	-4.058	Off	-50.294	-24.06	PASS
			0.730	On	-49.352	-19.27	PASS
	HCH	2480	-1.627	Off	-50.490	-21.63	PASS
			0.129	On	-49.854	-19.87	PASS
8DPSK	LCH	2402	-3.614	Off	-50.690	-23.61	PASS
			0.498	On	-49.879	-19.5	PASS
	HCH	2480	-1.562	Off	-50.245	-21.56	PASS
			0.089	On	-49.346	-19.91	PASS

Test Graphs

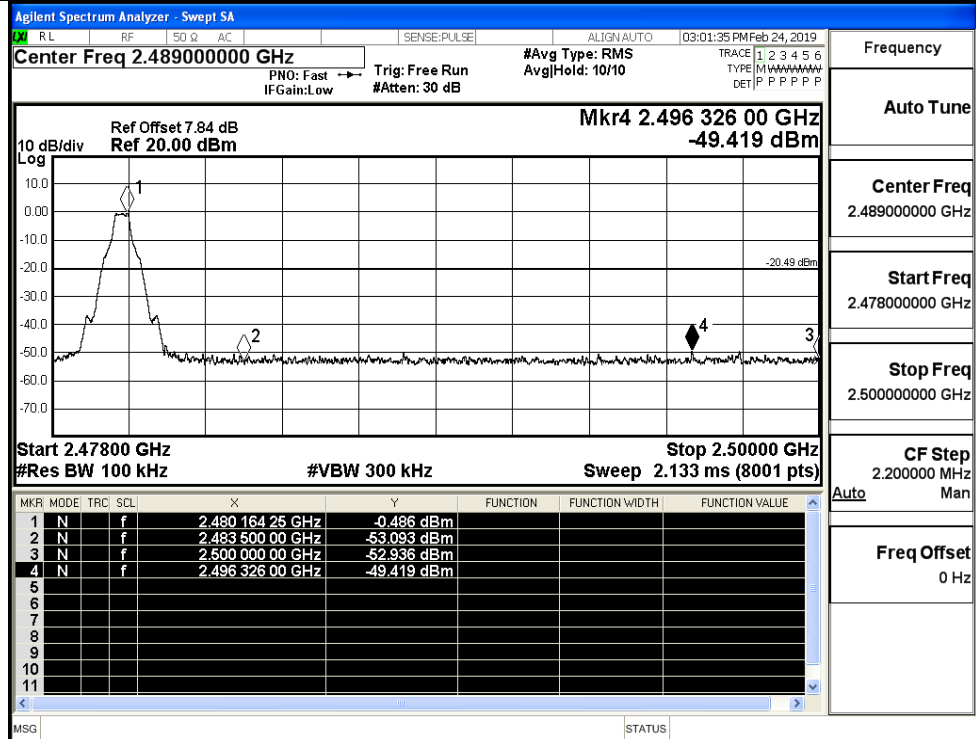
GFSK/LCH/No Hop



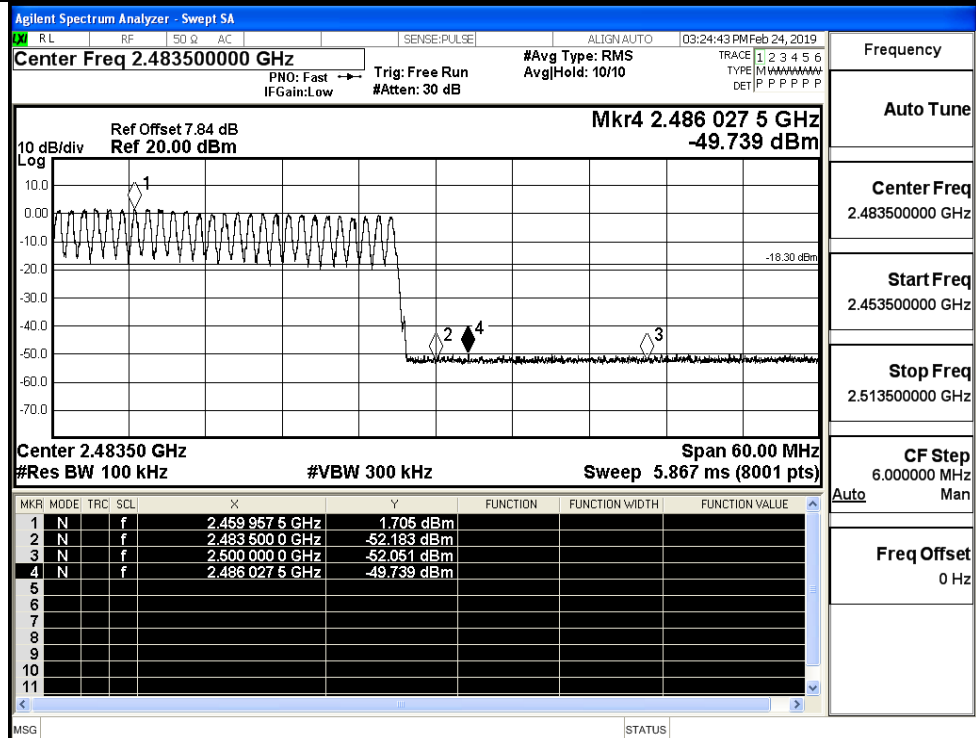
GFSK/LCH/Hop



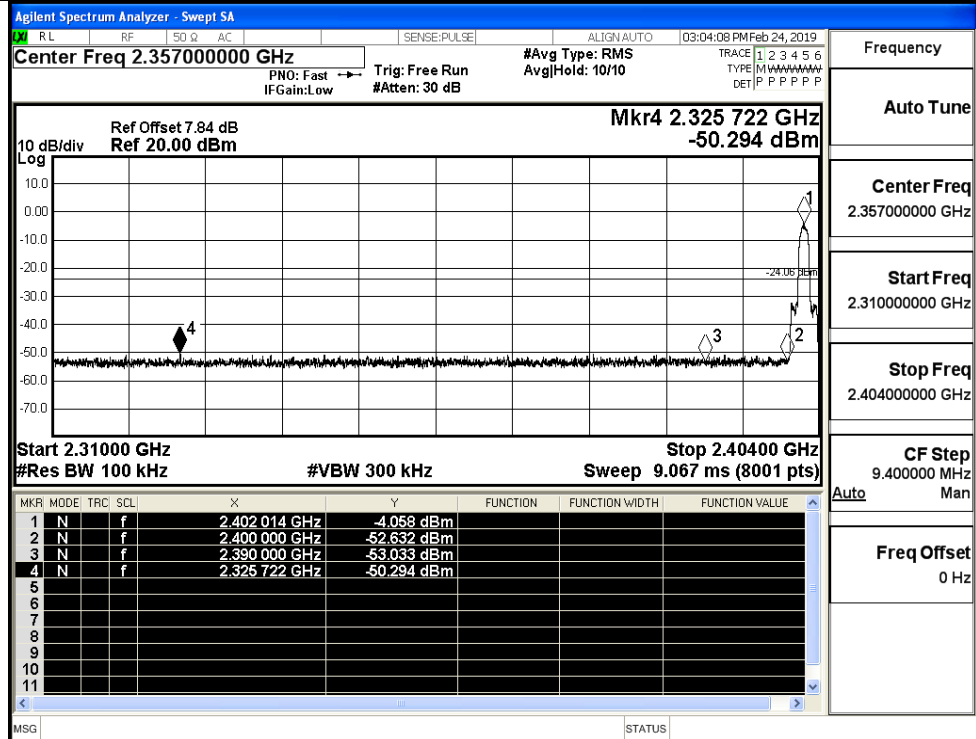
GFSK/HCH/No Hop



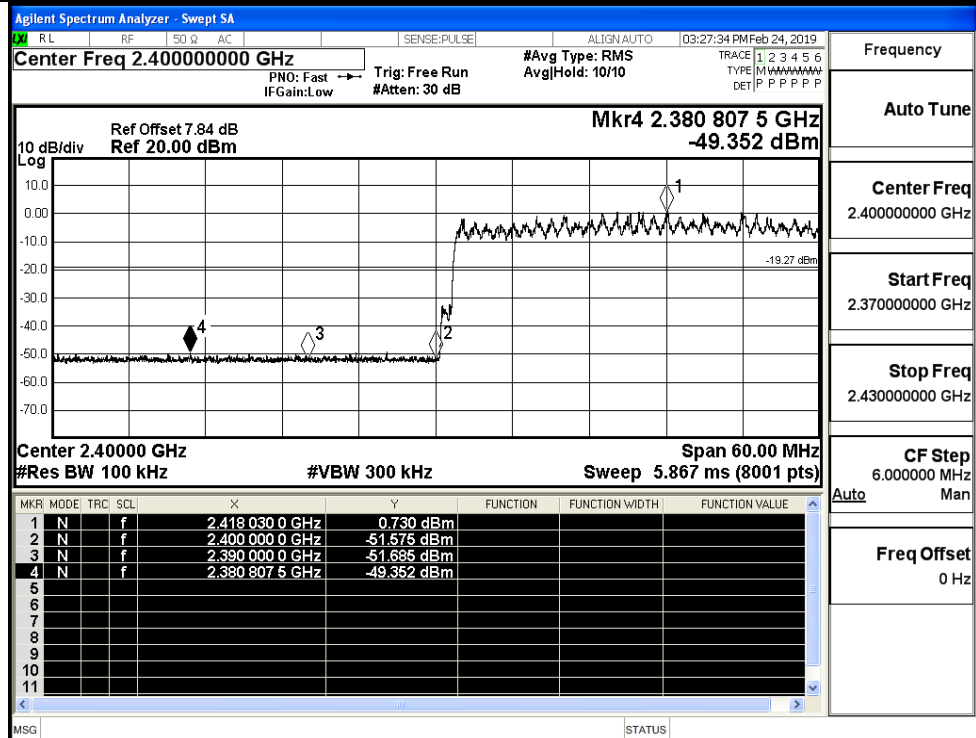
GFSK/HCH/Hop



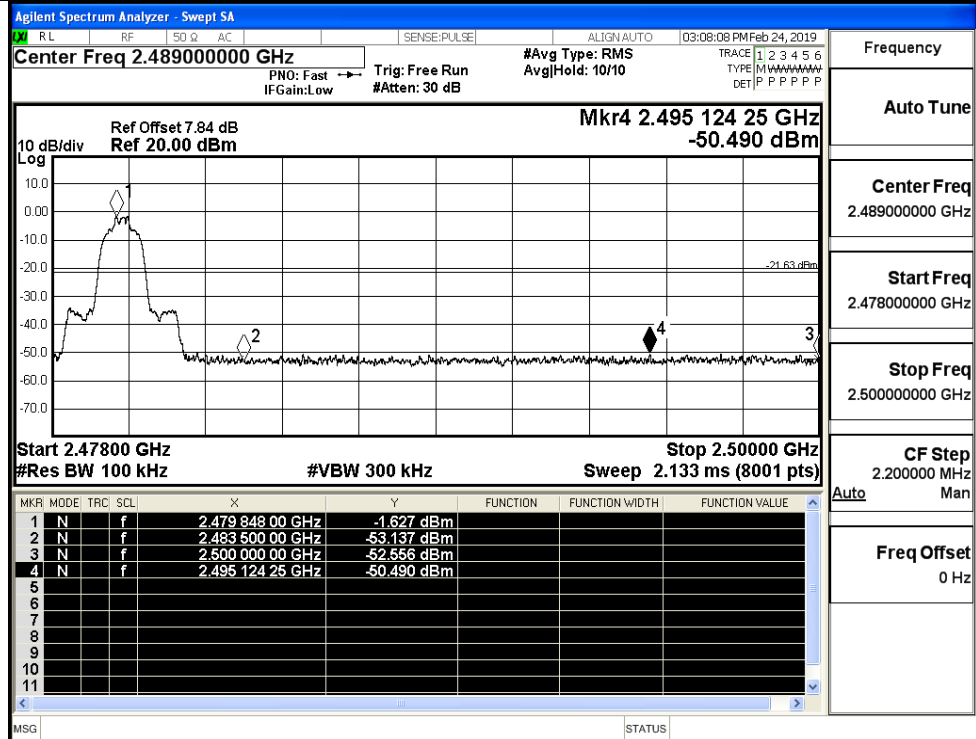
$\pi/4$ DQPSK/LCH/No
Hop



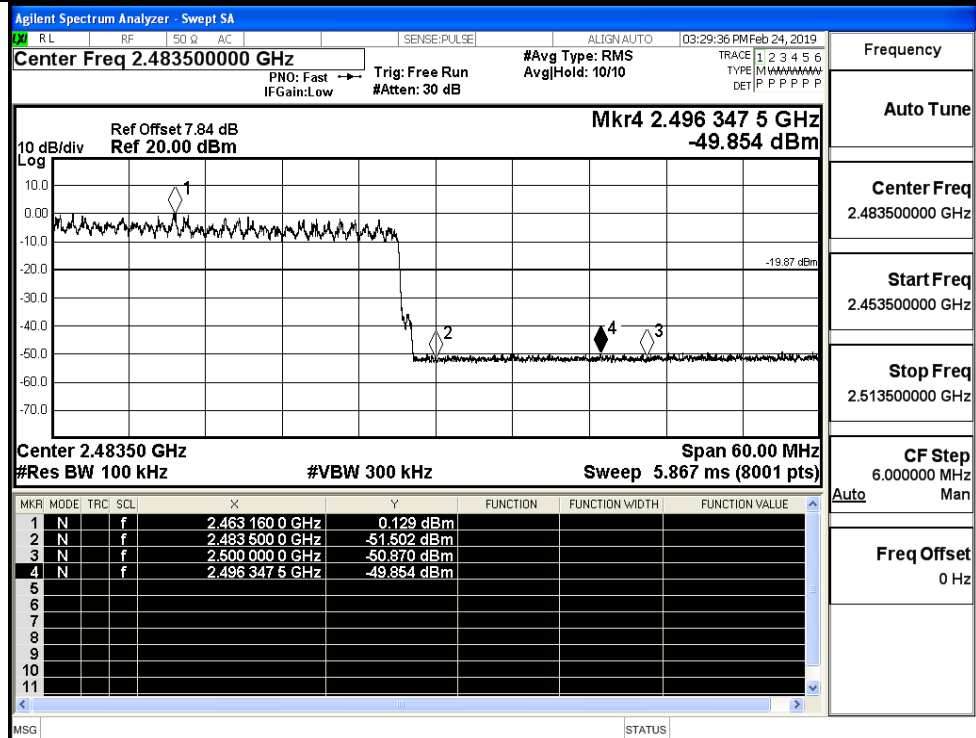
$\pi/4$ DQPSK/LCH/Hop



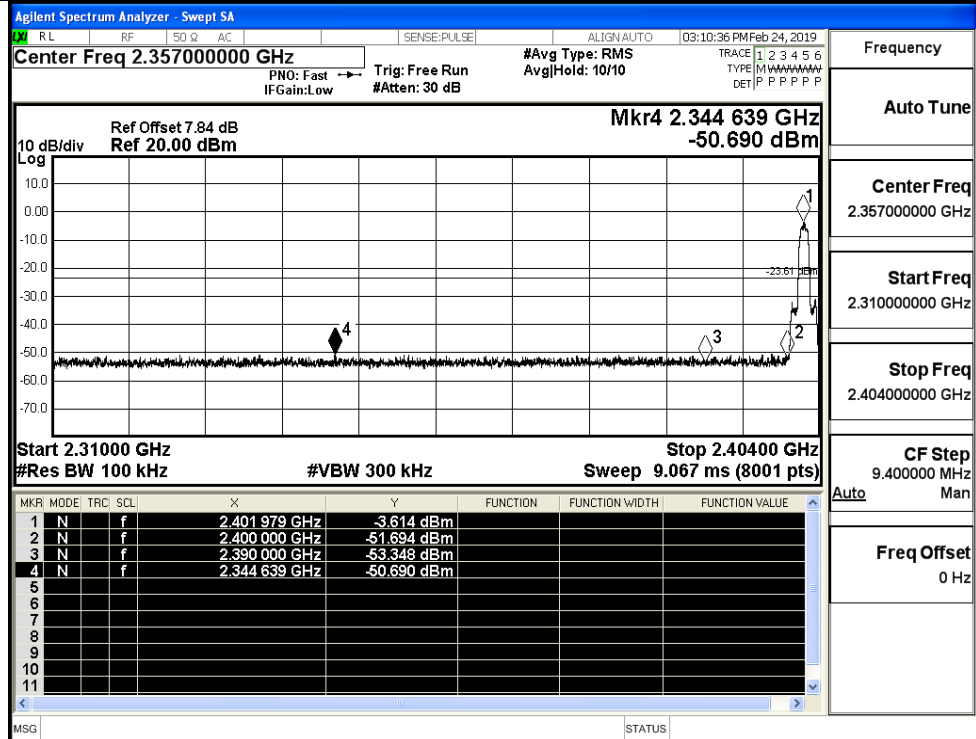
$\pi/4$ DQPSK/HCH/No
Hop



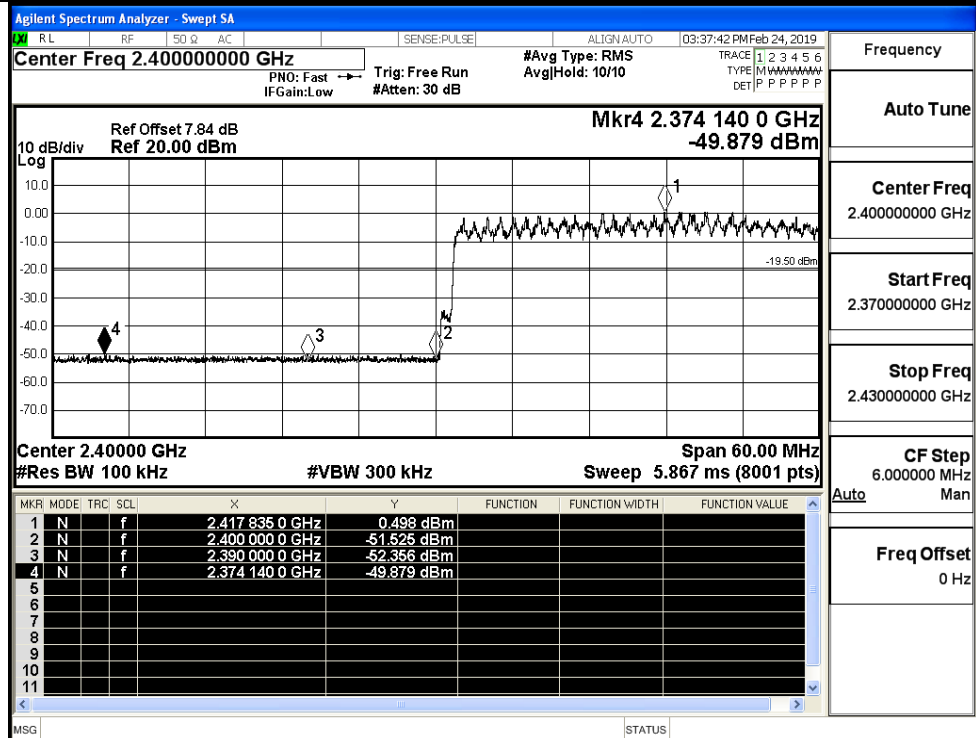
$\pi/4$ DQPSK/HCH/Hop



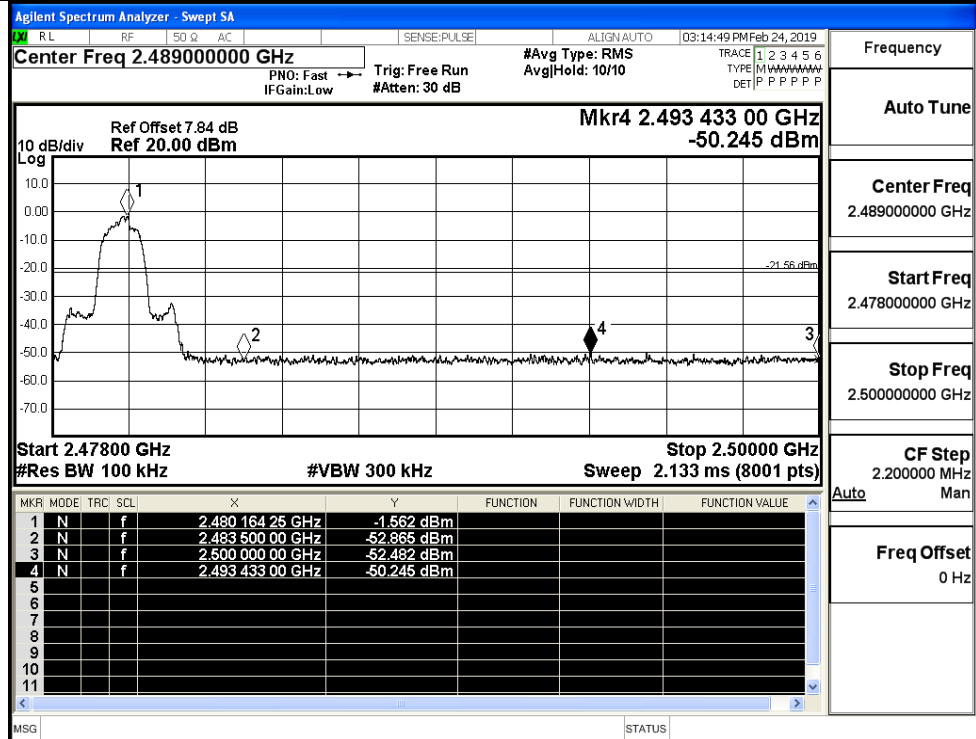
8DPSK/LCH/No Hop



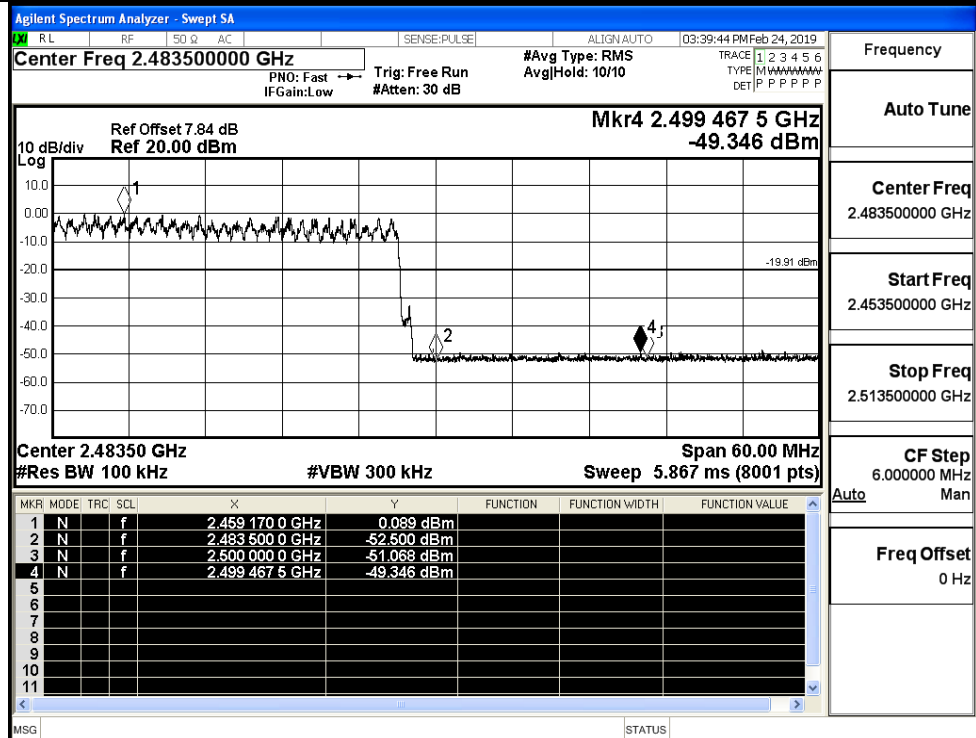
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



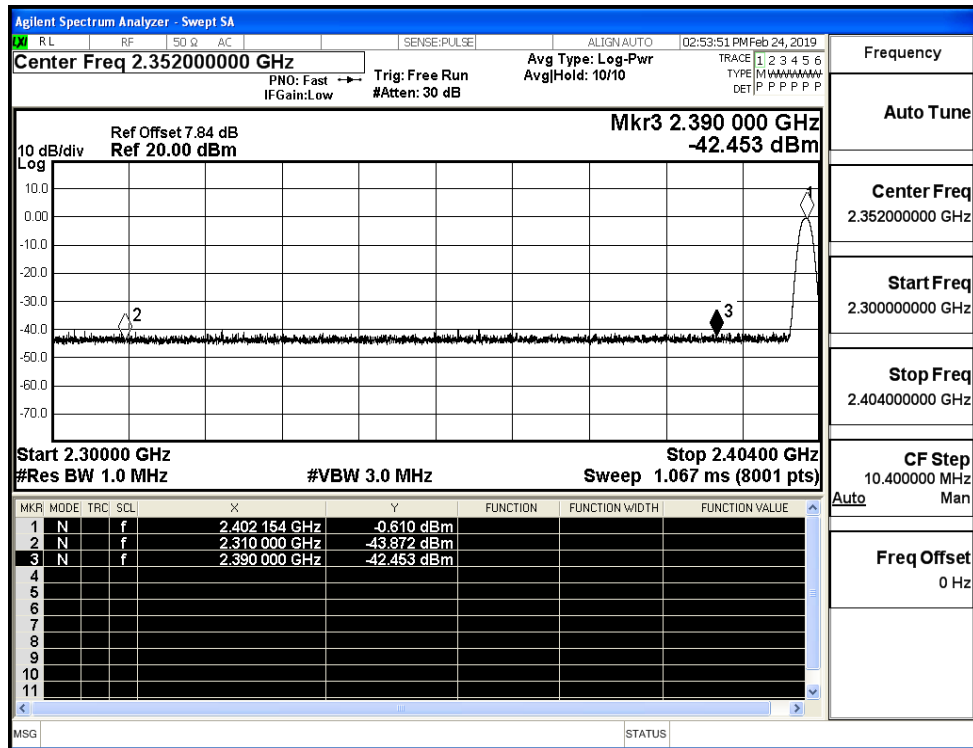
8DPSK/HCH/Hop



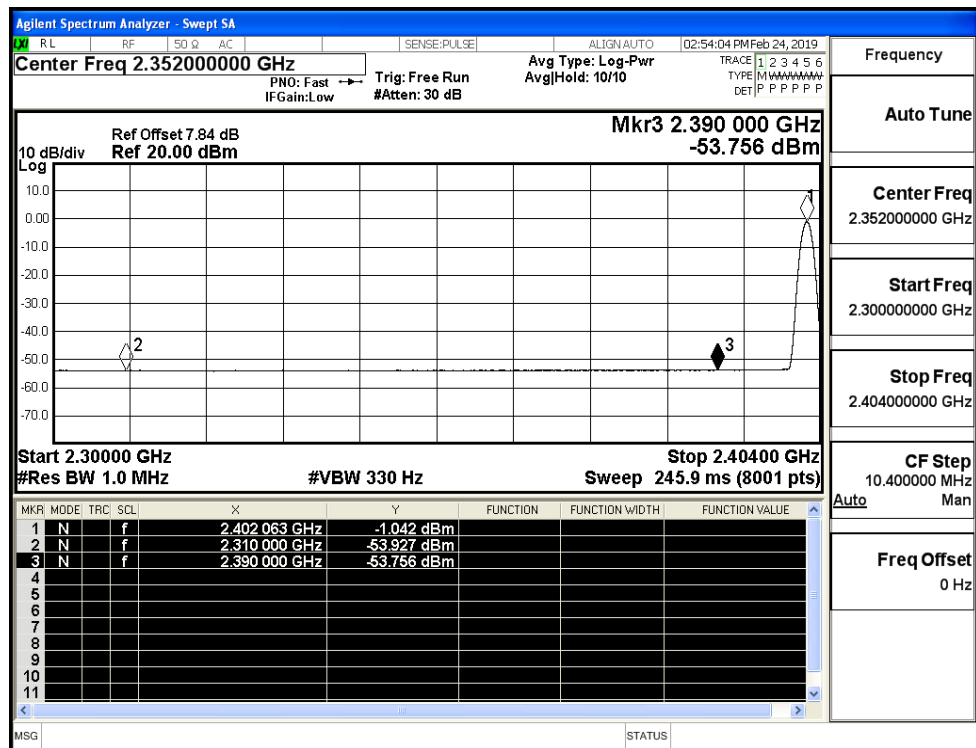
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.87	2.0	0	53.39	PEAK	74	PASS
	Off	2310.0	-53.93	2.0	0	43.33	AV	54	PASS
	Off	2390.0	-42.45	2.0	0	54.80	PEAK	74	PASS
	Off	2390.0	-53.76	2.0	0	43.50	AV	54	PASS
	Off	2483.5	-43.65	2.0	0	53.61	PEAK	74	PASS
	Off	2483.5	-53.44	2.0	0	43.81	AV	54	PASS
	Off	2500.0	-42.97	2.0	0	54.29	PEAK	74	PASS
	Off	2500.0	-53.31	2.0	0	43.95	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.95	2.0	0	53.31	PEAK	74	PASS
	Off	2310.0	-54.03	2.0	0	43.23	AV	54	PASS
	Off	2390.0	-43.22	2.0	0	54.04	PEAK	74	PASS
	Off	2390.0	-53.76	2.0	0	43.49	AV	54	PASS
	Off	2483.5	-41.92	2.0	0	55.34	PEAK	74	PASS
	Off	2483.5	-53.29	2.0	0	43.97	AV	54	PASS
	Off	2500.0	-43.24	2.0	0	54.01	PEAK	74	PASS
	Off	2500.0	-53.29	2.0	0	43.97	AV	54	PASS
8DPSK	Off	2310.0	-43.12	2.0	0	54.14	PEAK	74	PASS
	Off	2310.0	-54.02	2.0	0	43.23	AV	54	PASS
	Off	2390.0	-43.63	2.0	0	53.63	PEAK	74	PASS
	Off	2390.0	-53.79	2.0	0	43.47	AV	54	PASS
	Off	2483.5	-44.02	2.0	0	53.24	PEAK	74	PASS
	Off	2483.5	-53.36	2.0	0	43.89	AV	54	PASS
	Off	2500.0	-42.87	2.0	0	54.39	PEAK	74	PASS
	Off	2500.0	-53.32	2.0	0	43.93	AV	54	PASS

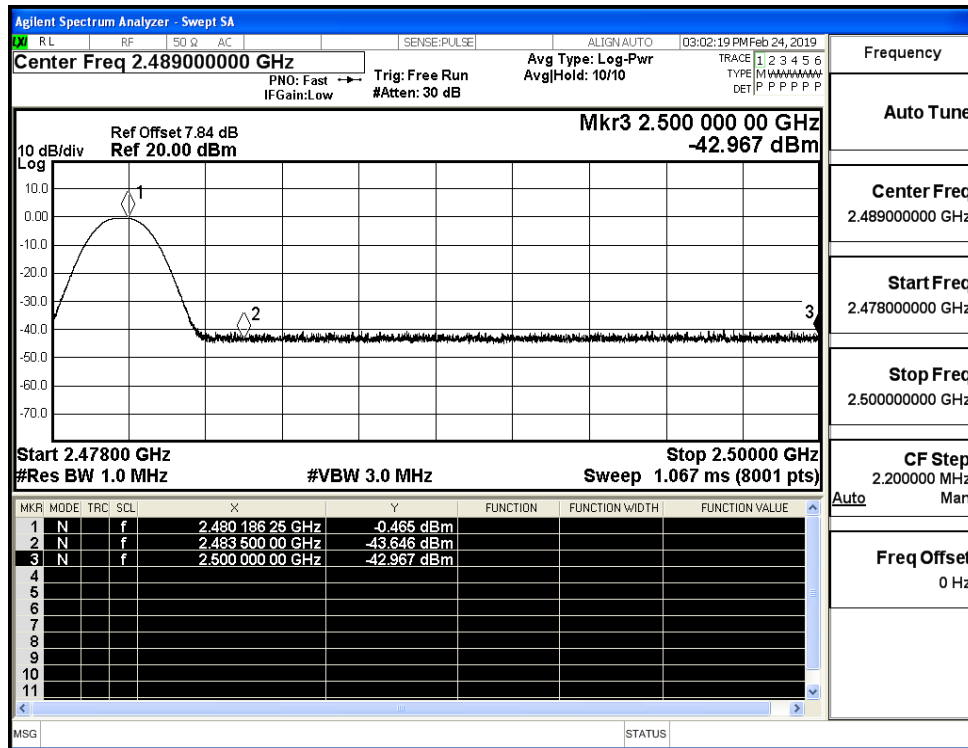
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



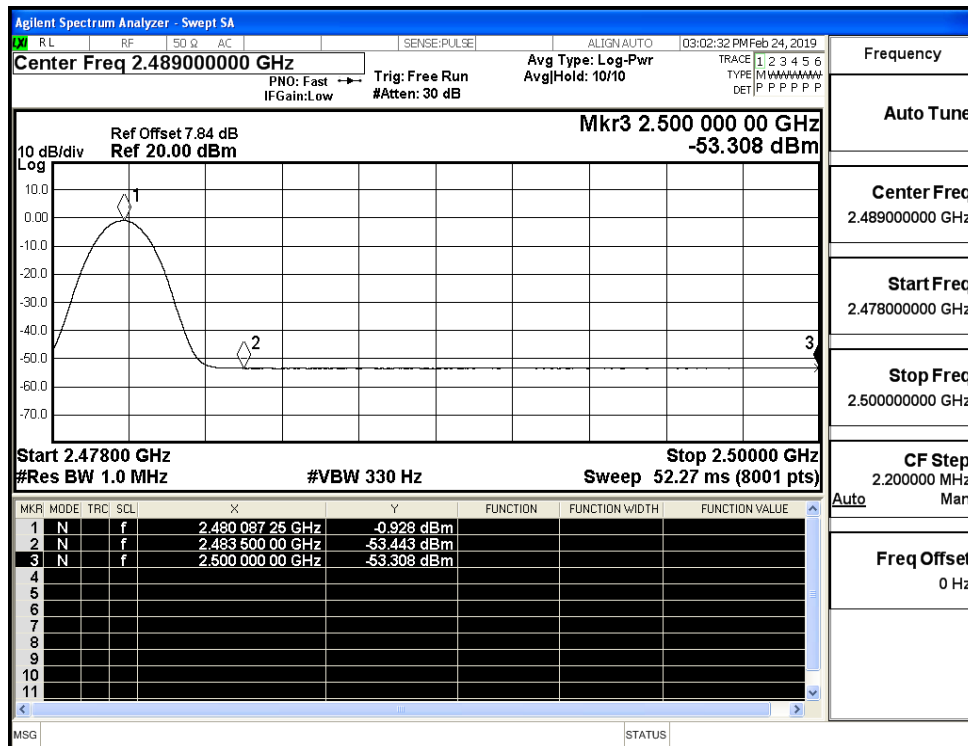
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

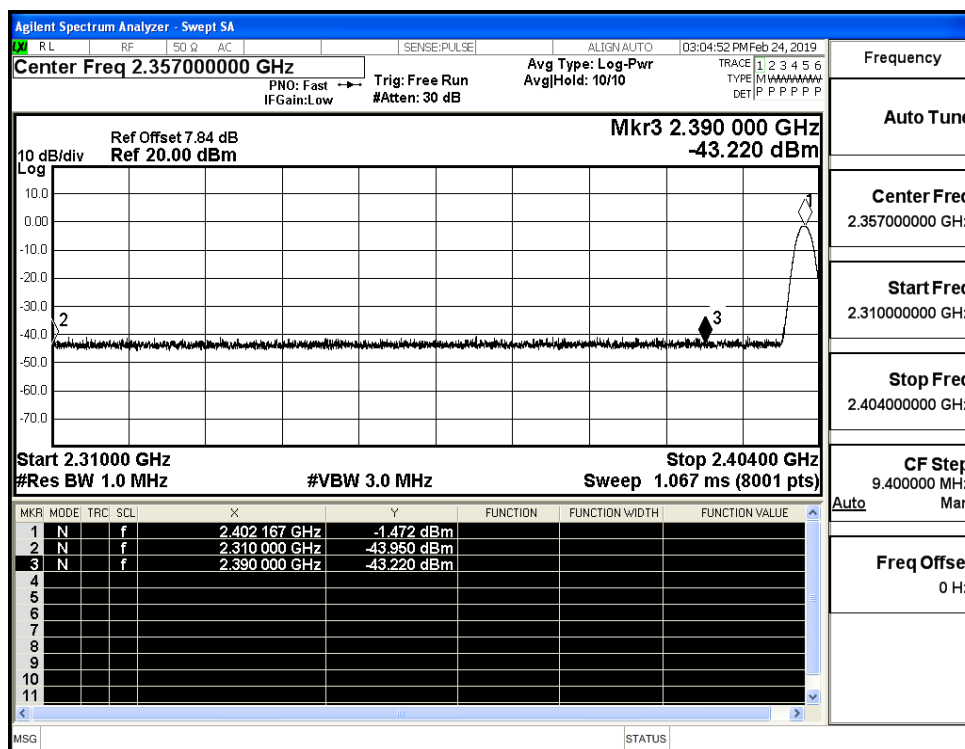
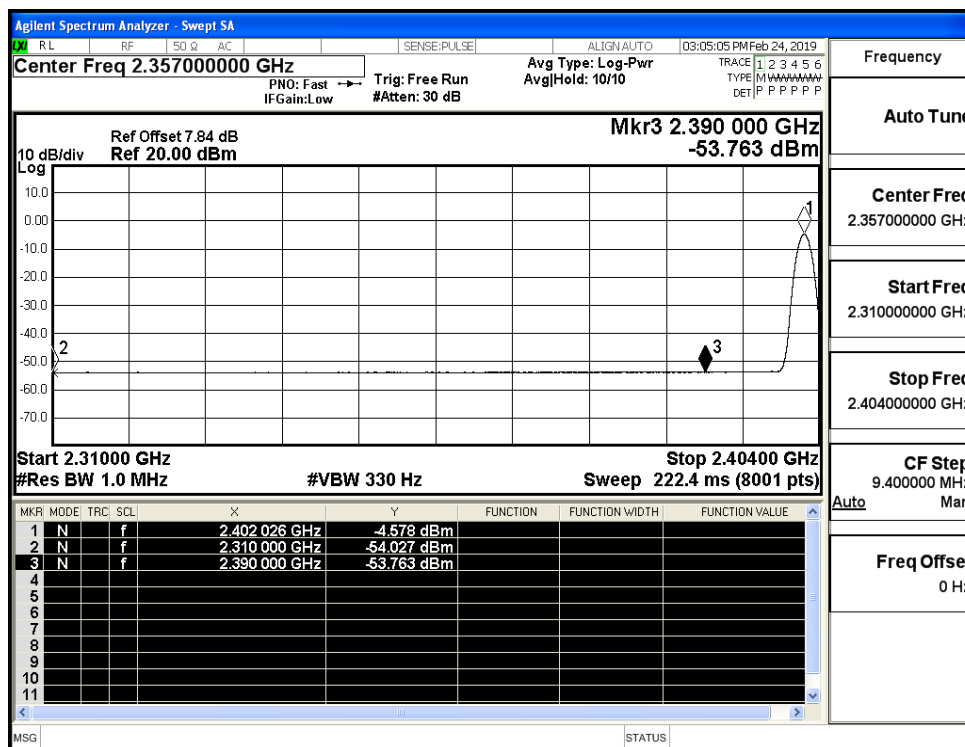


Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)

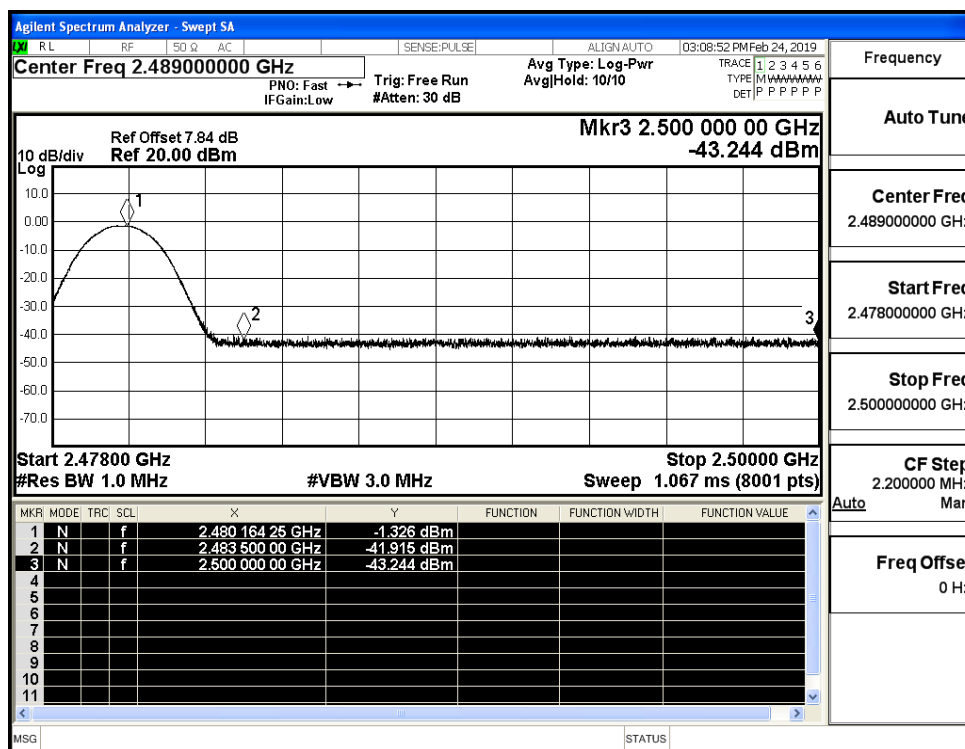


Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)

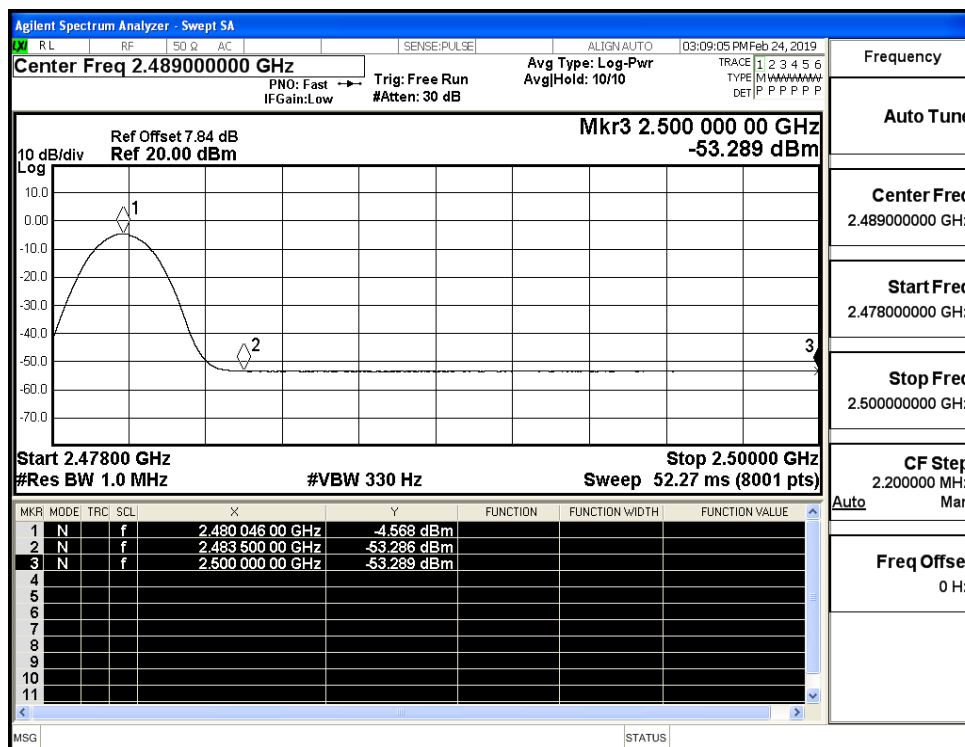


Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

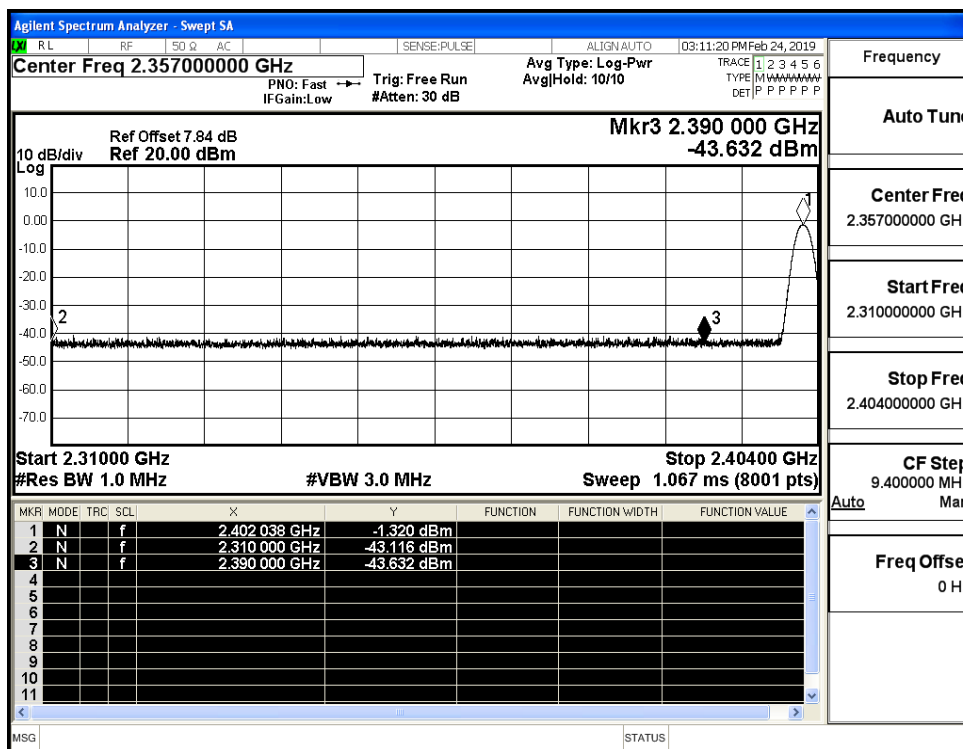
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



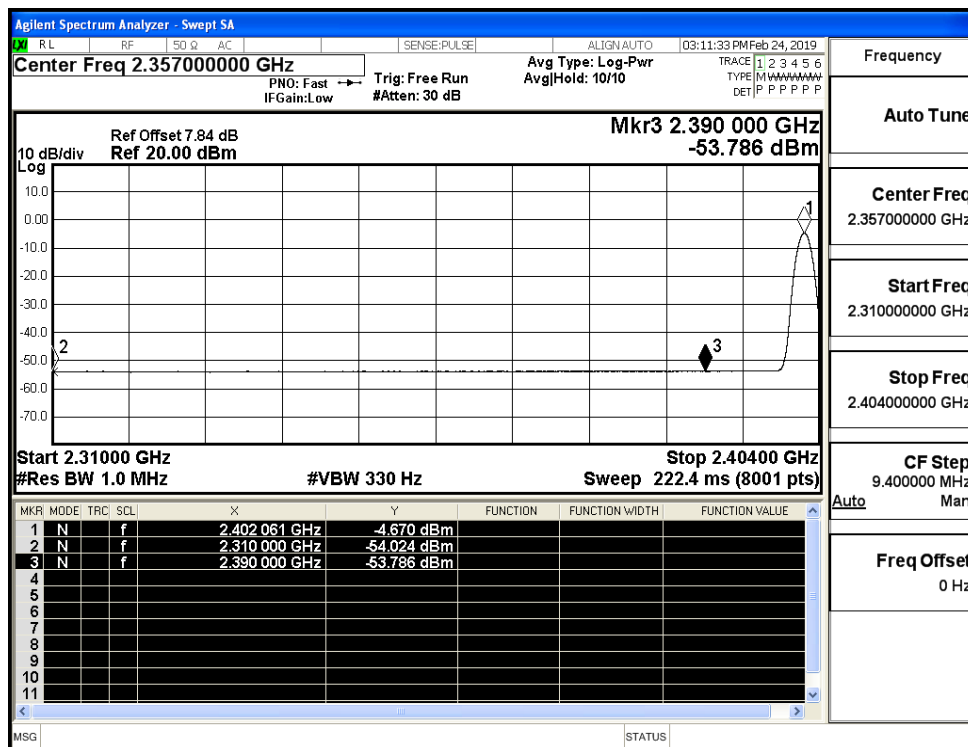
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



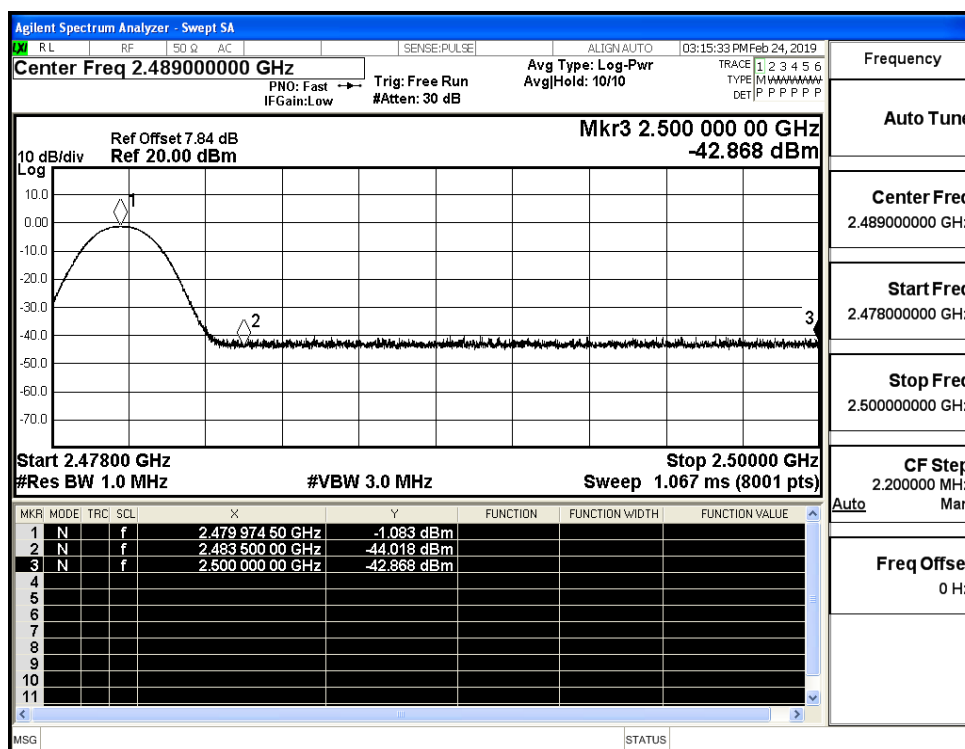
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

