

Appendix A

RF Test Data for BT V2.1+EDR (Conducted Measurement)

Product Name: Bluetooth HEADSET

Trade Mark: INVONS

Test Model: h-BT600

Environmental Conditions

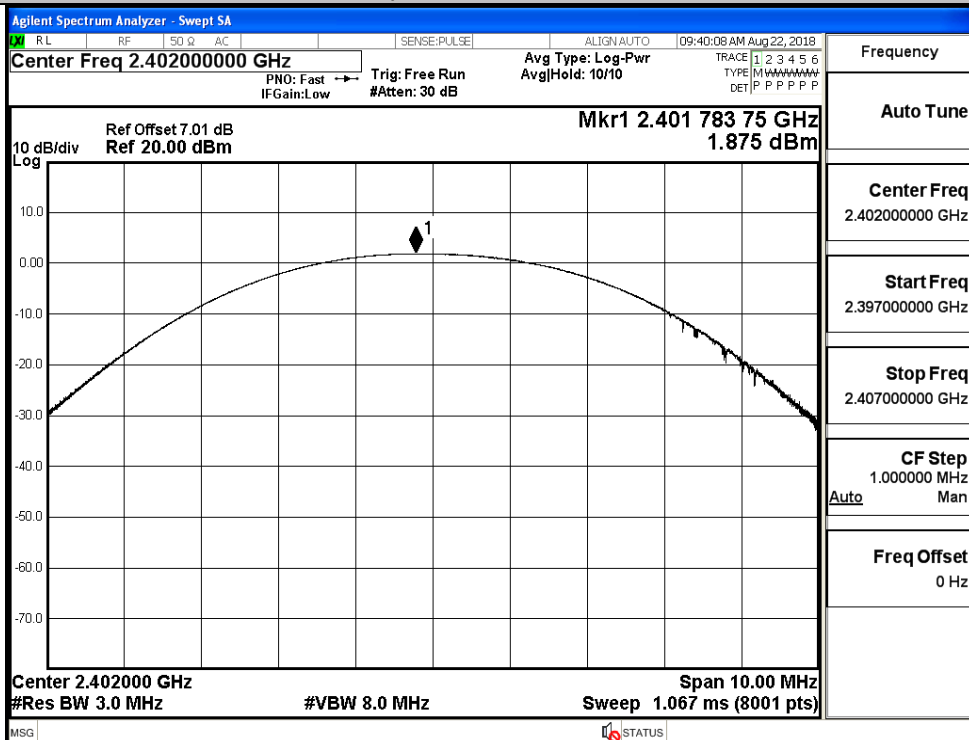
Temperature:	23.6 ° C
Relative Humidity:	53.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Mina.Xu
Supervised by:	Jayden.Zhuo

A.1 Maximum Conducted Peak Output Power

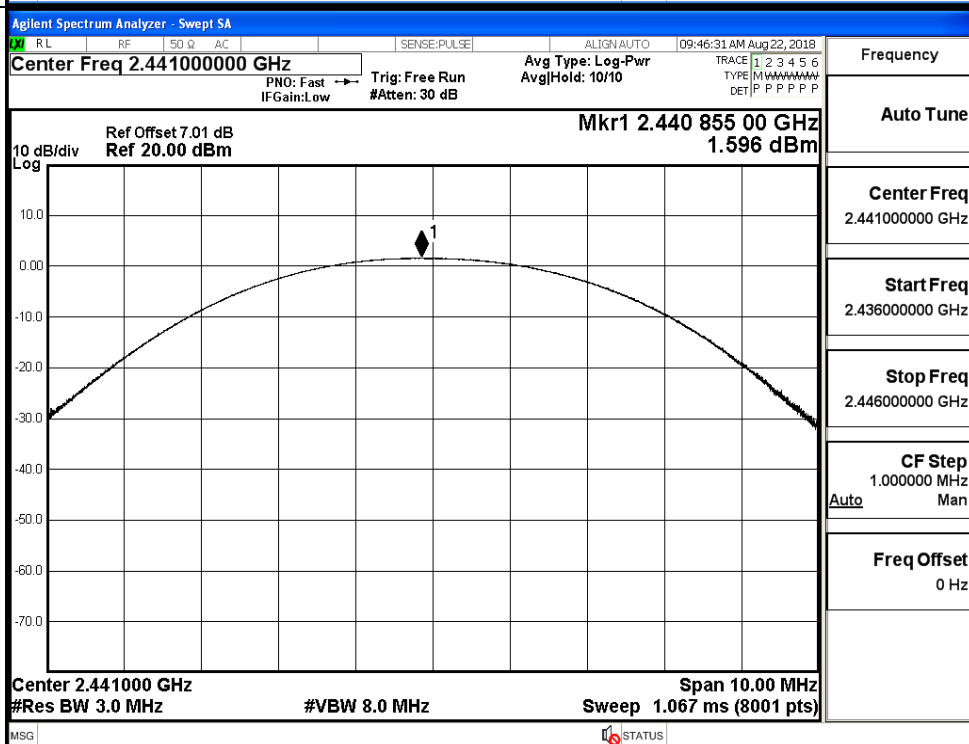
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	1.875	21	PASS
	MCH	1.596	21	PASS
	HCH	1.555	21	PASS
$\pi/4$ DQPSK	LCH	2.286	21	PASS
	MCH	2.092	21	PASS
	HCH	2.065	21	PASS
8DPSK	LCH	2.173	21	PASS
	MCH	2.019	21	PASS
	HCH	2.033	21	PASS

Test Graphs

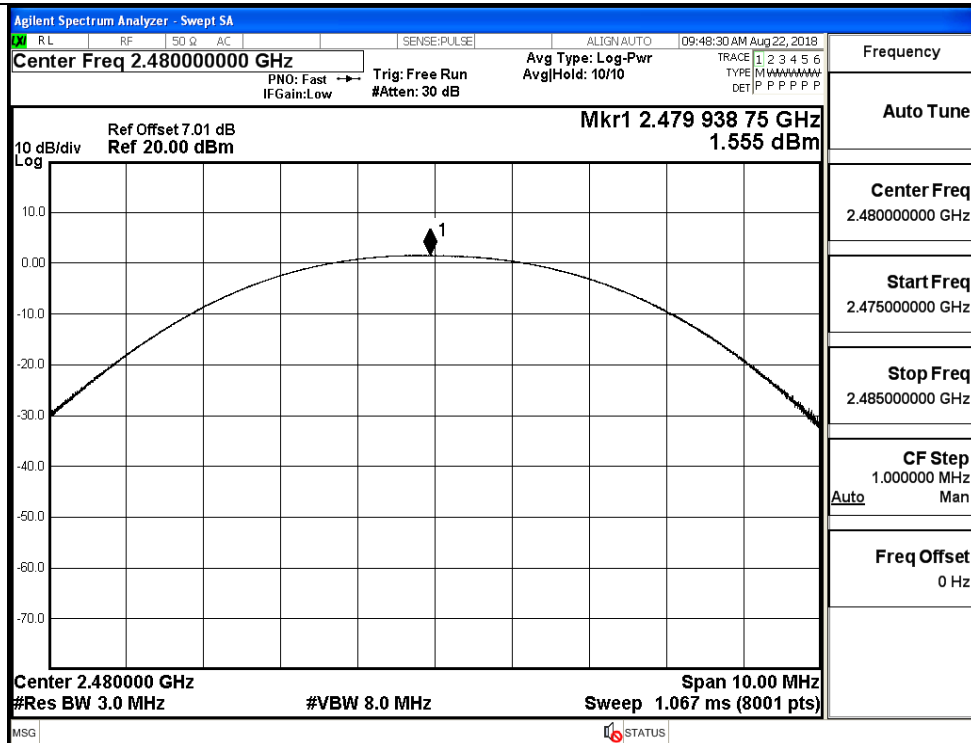
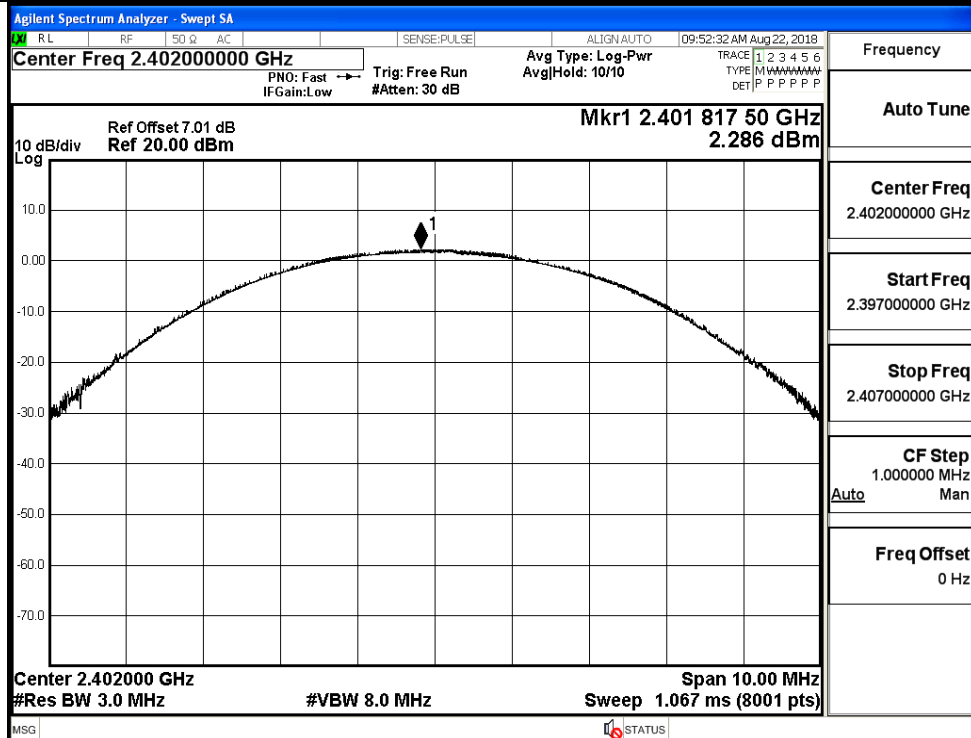
GFSK/LCH

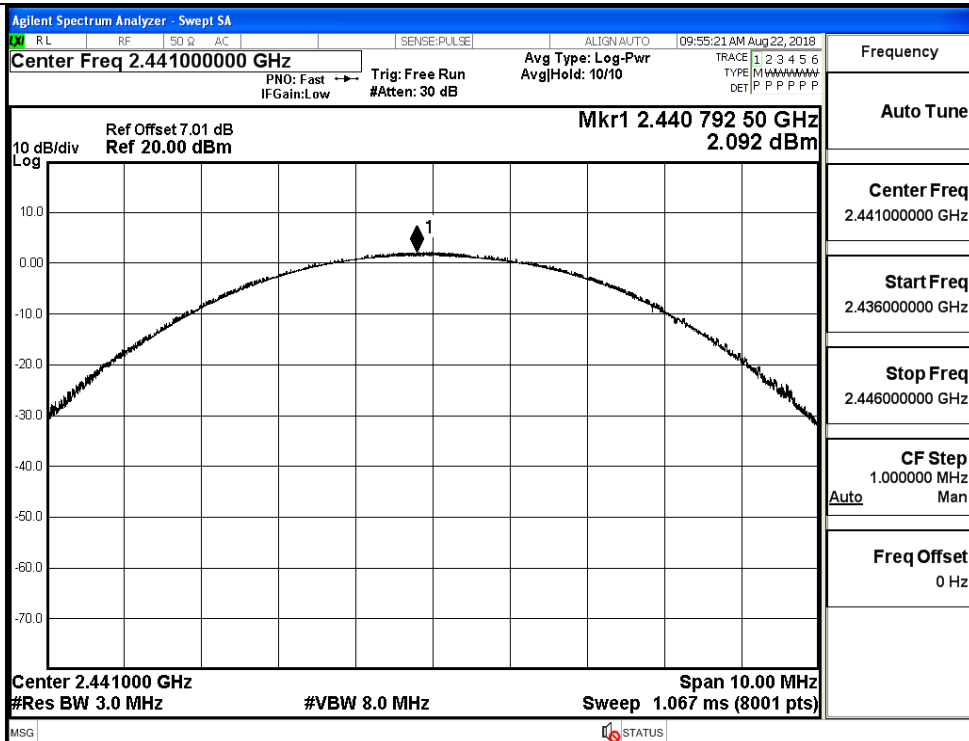
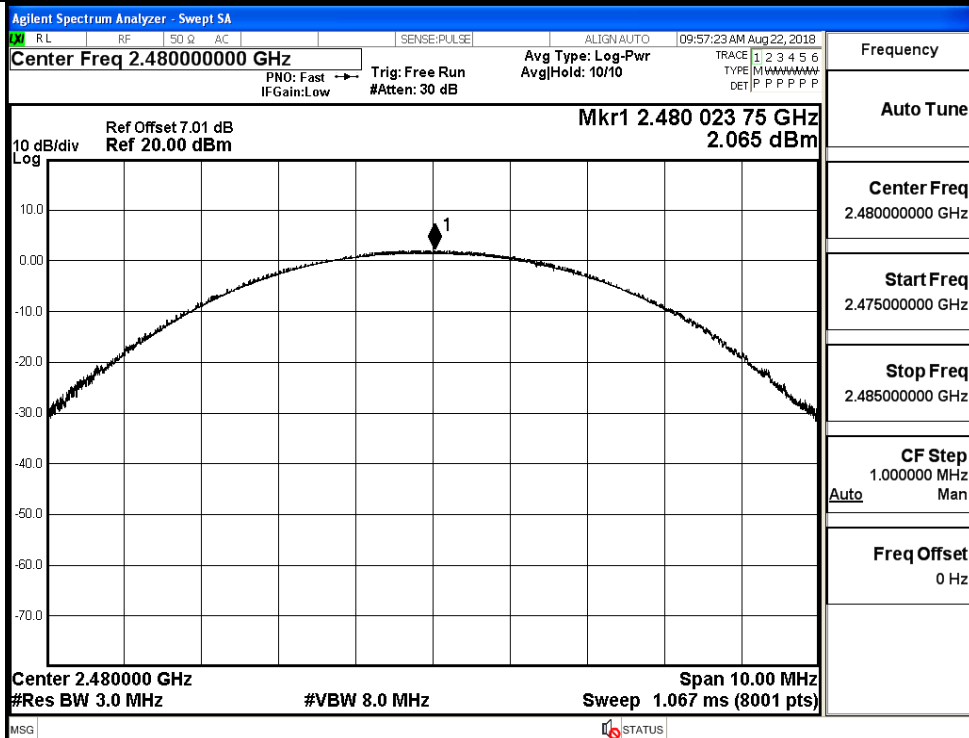


GFSK/MCH

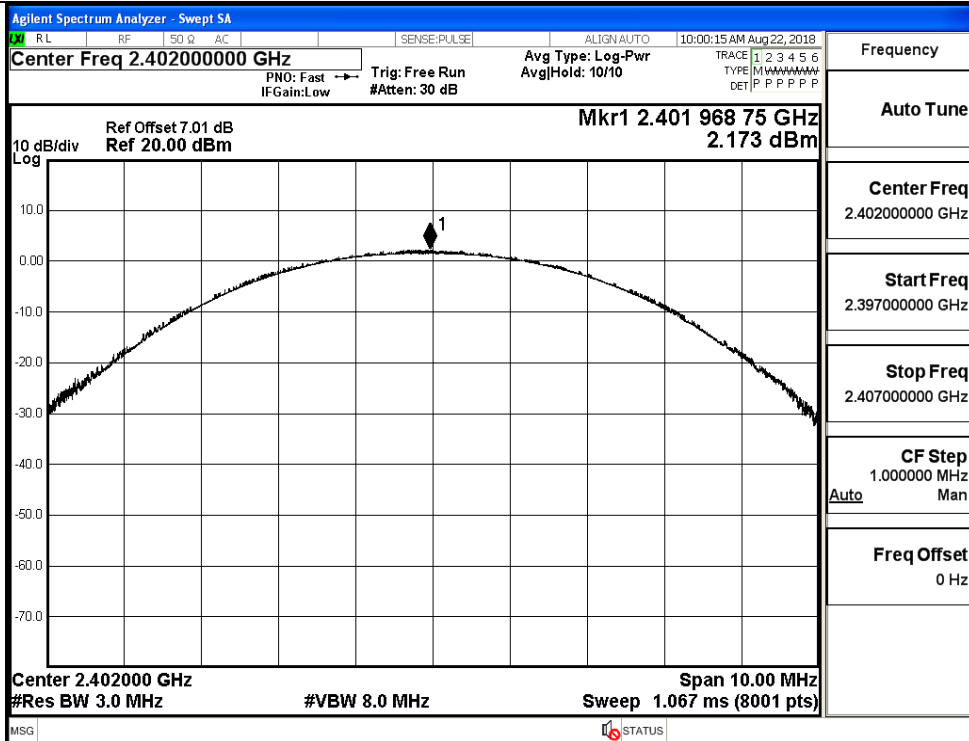


GFSK/HCH

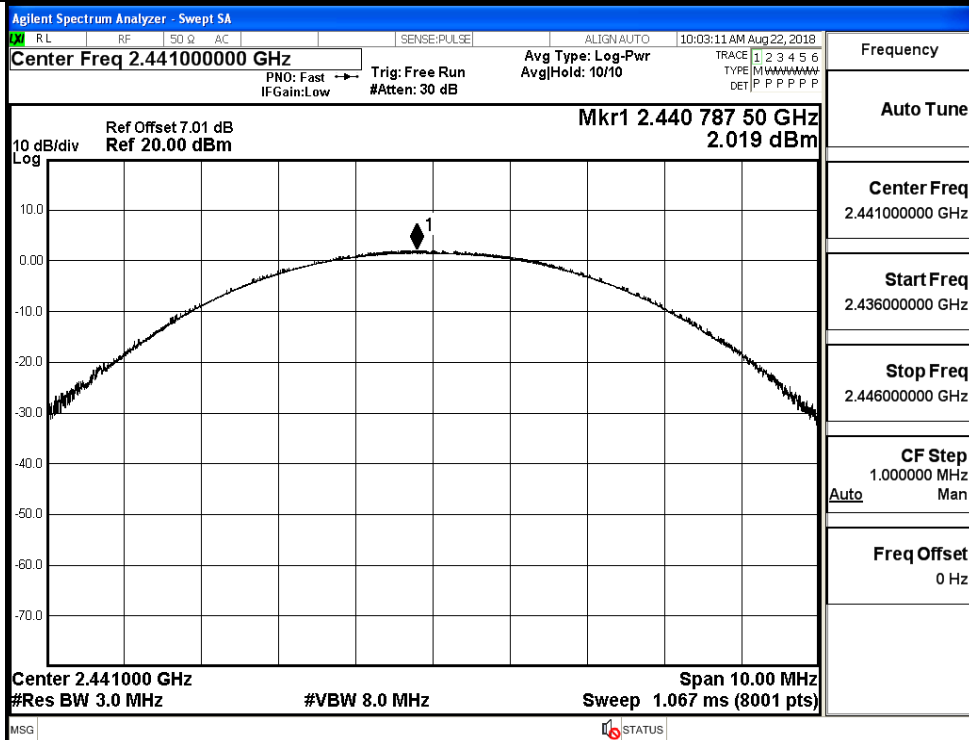
 π /4DQPSK/LCH

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

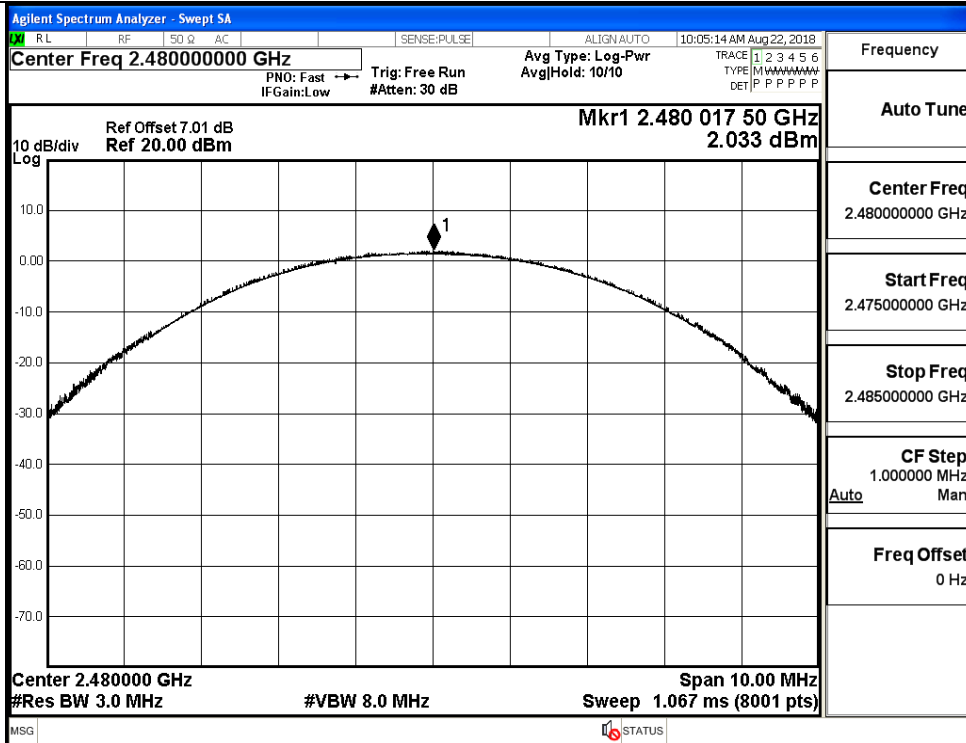
8DPSK/LCH



8DPSK/MCH



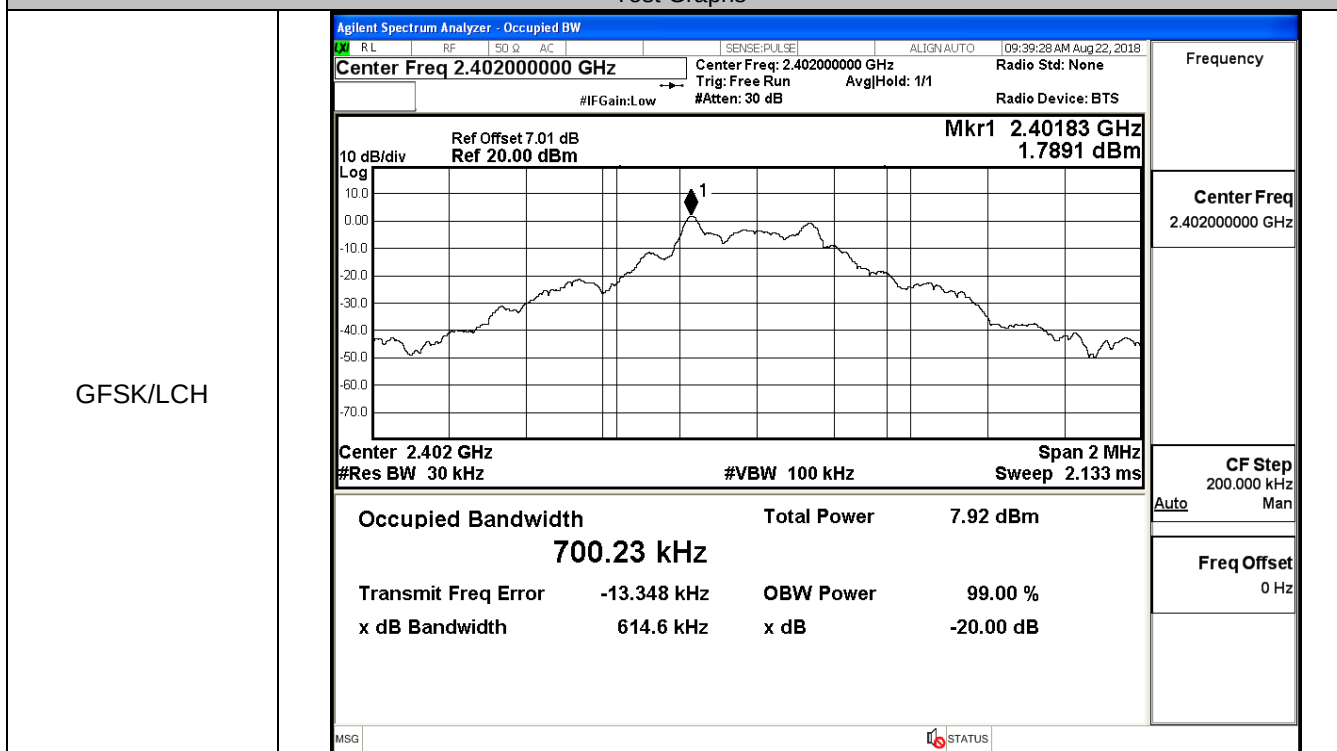
8DPSK/HCH



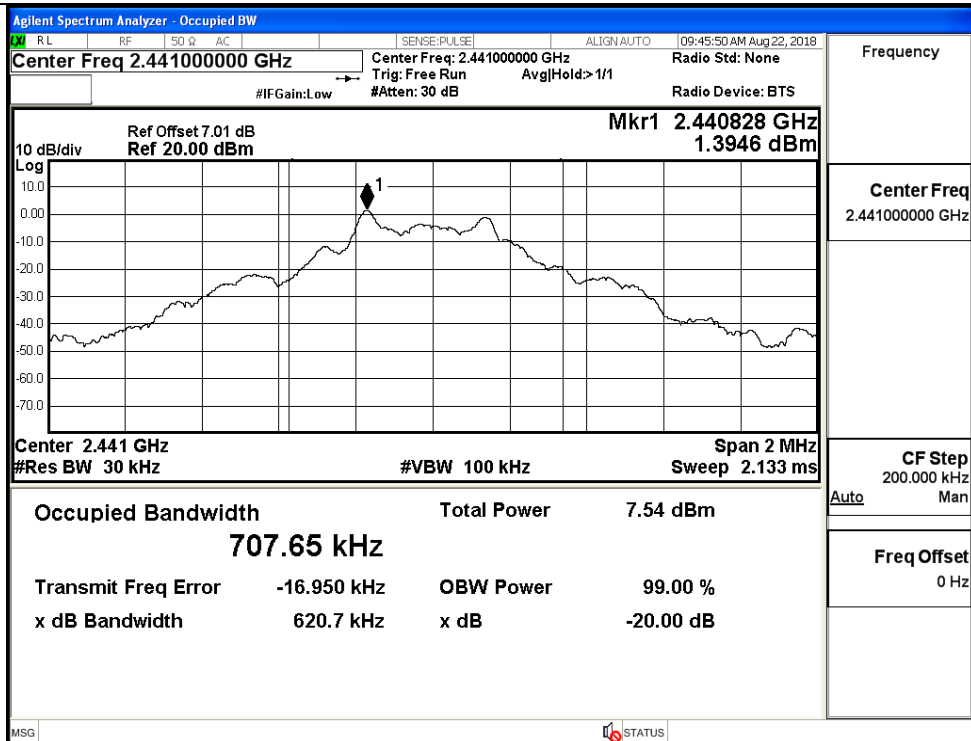
A.2 99% and 20dB Bandwidth

Mode	Channel.	99% Bandwidth [MHz]	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.70023	0.6146	Not Specified	PASS
	MCH	0.70765	0.6207	Not Specified	PASS
	HCH	0.71140	0.6180	Not Specified	PASS
π /4DQPSK	LCH	1.0741	1.152	Not Specified	PASS
	MCH	1.0750	1.155	Not Specified	PASS
	HCH	1.0756	1.154	Not Specified	PASS
8DPSK	LCH	1.0706	1.142	Not Specified	PASS
	MCH	1.0706	1.147	Not Specified	PASS
	HCH	1.0703	1.155	Not Specified	PASS

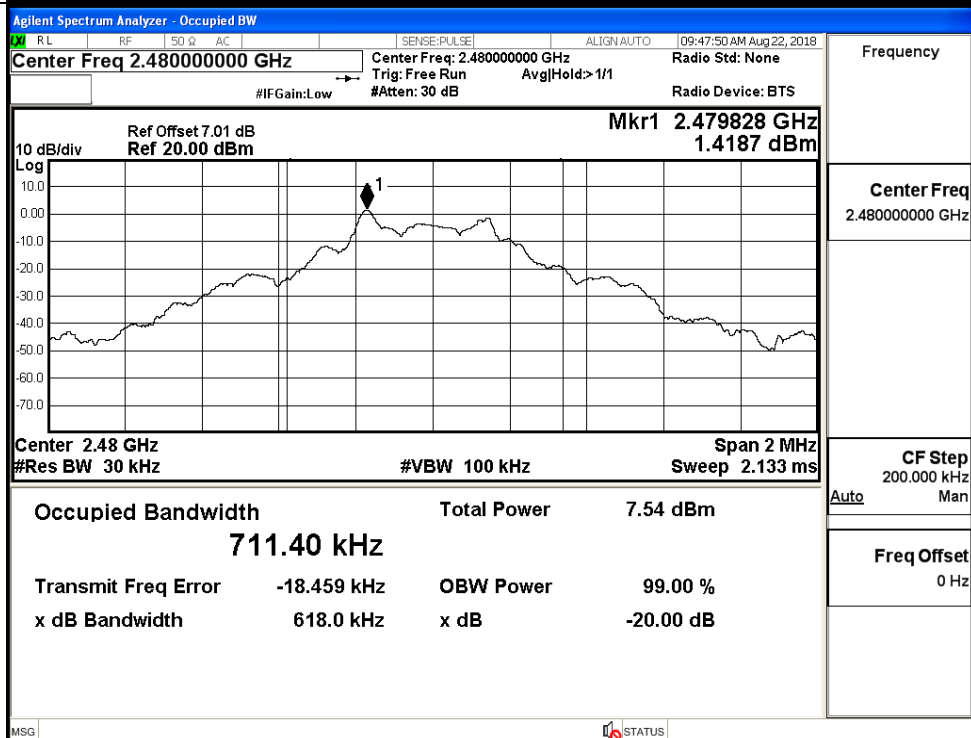
Test Graphs

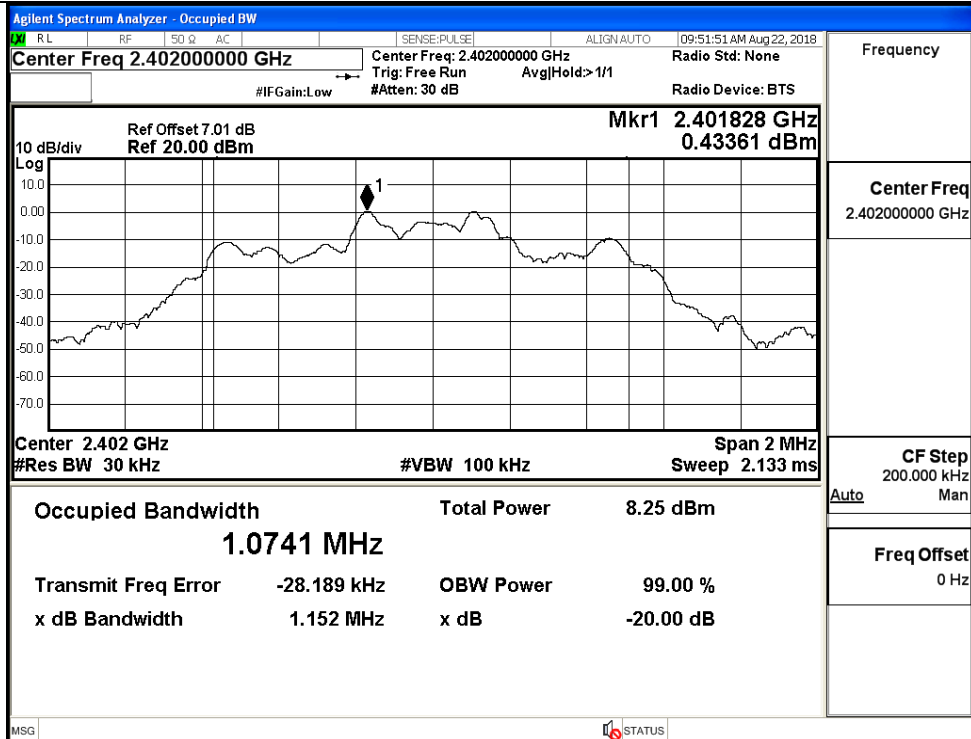
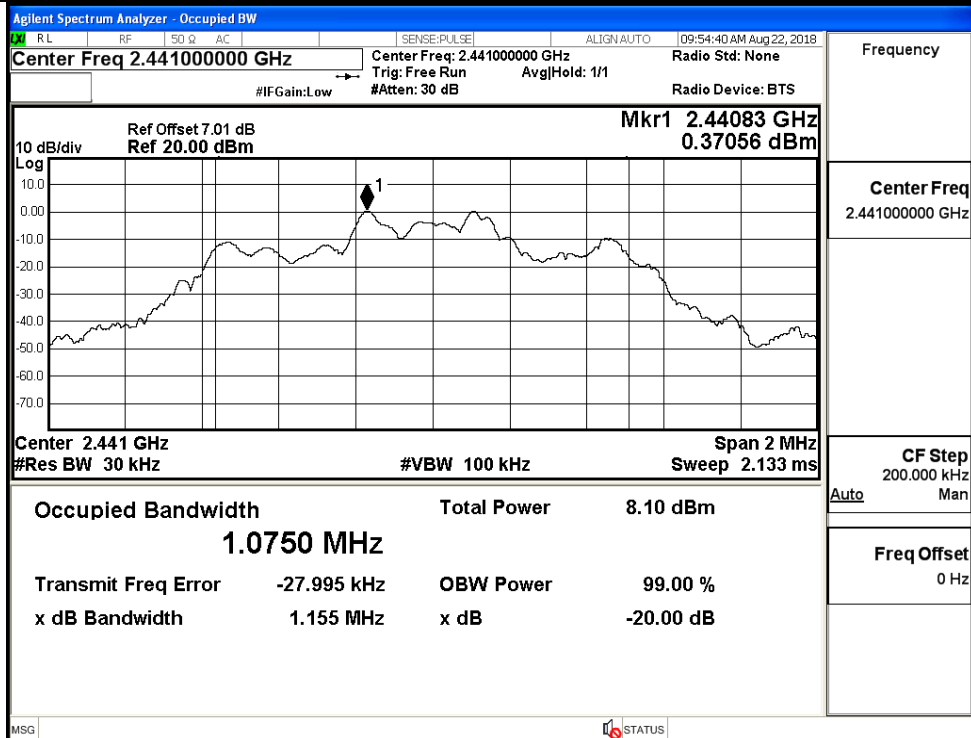


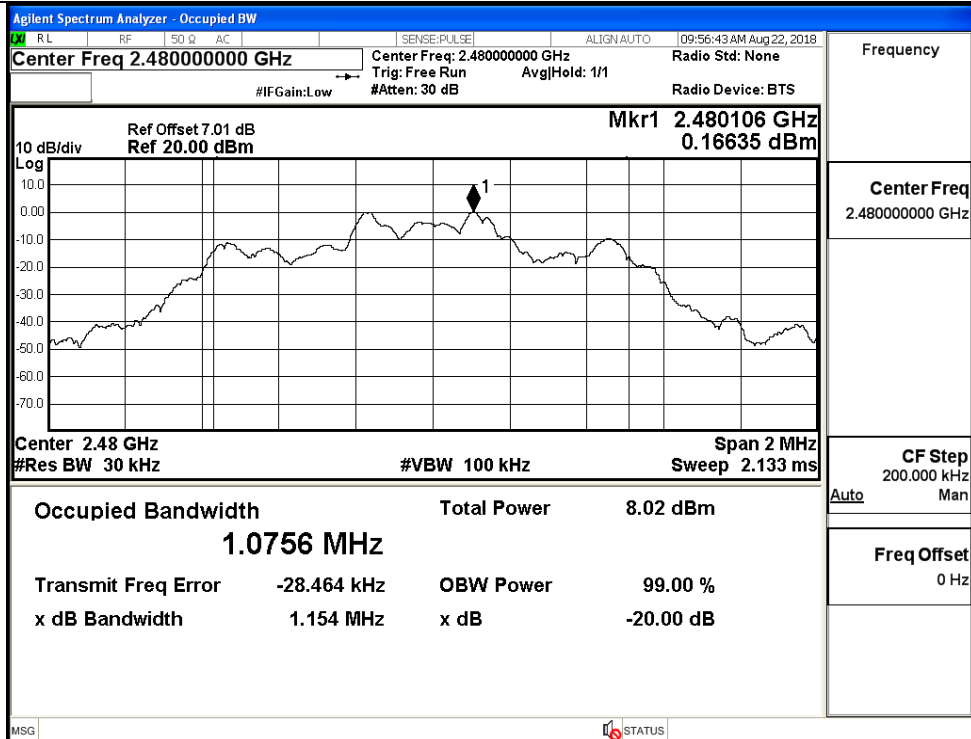
GFSK/MCH



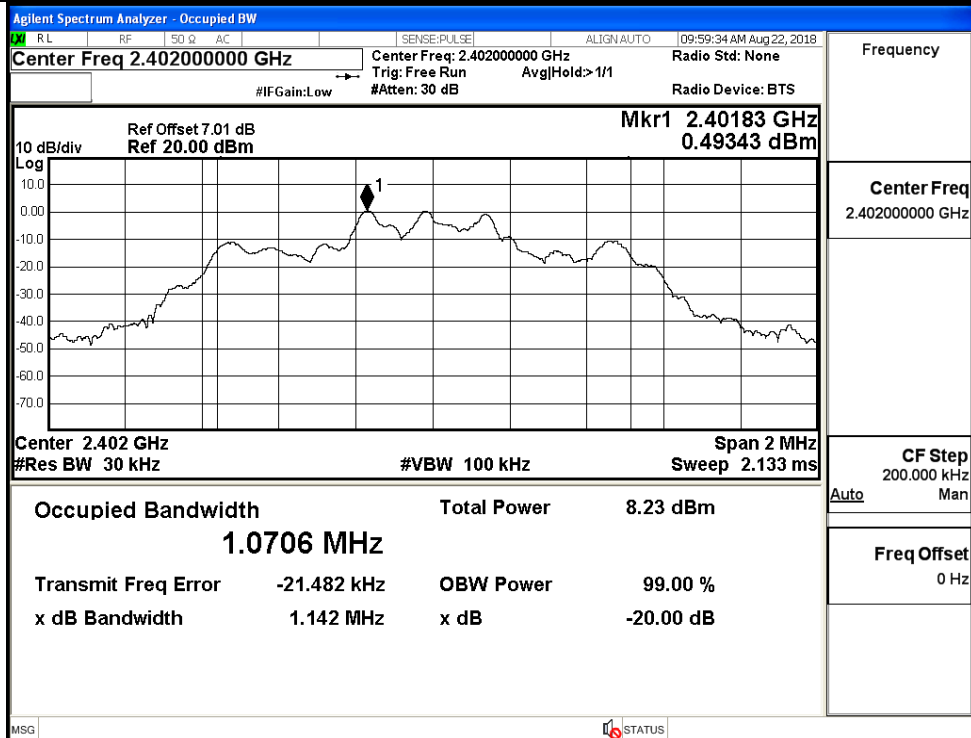
GFSK/HCH



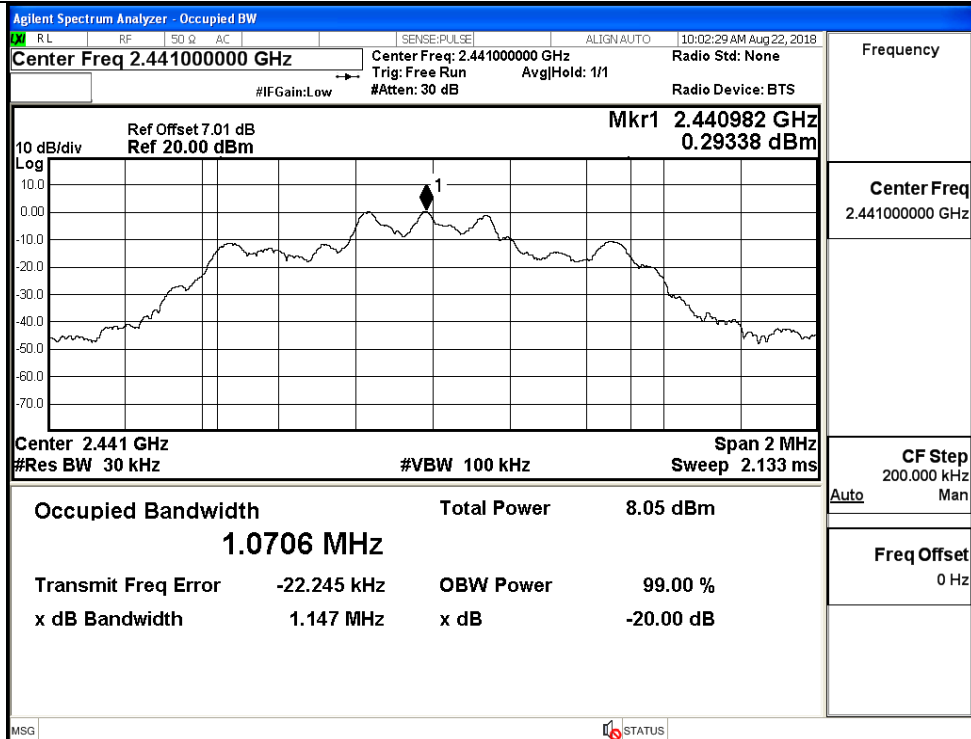
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

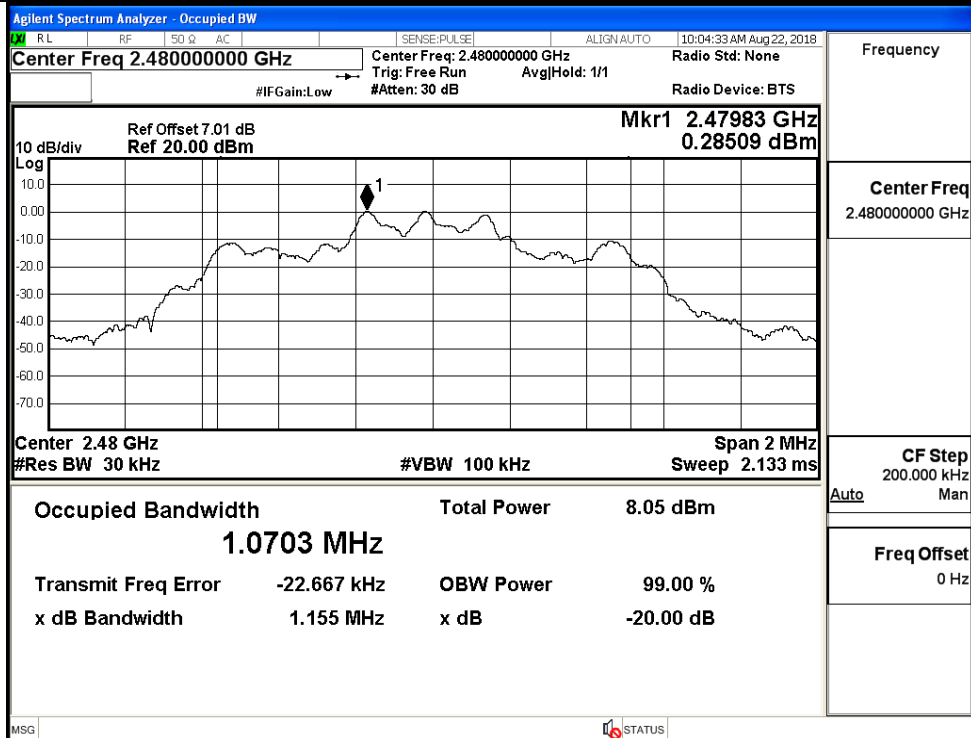
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

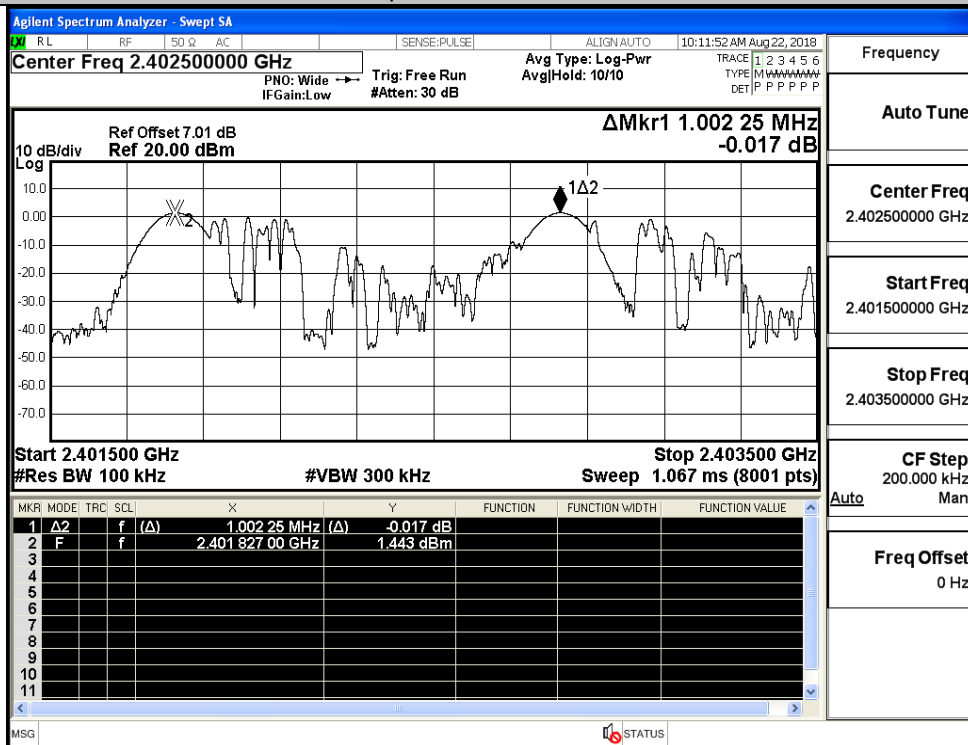


A.3 Carrier Frequency Separation

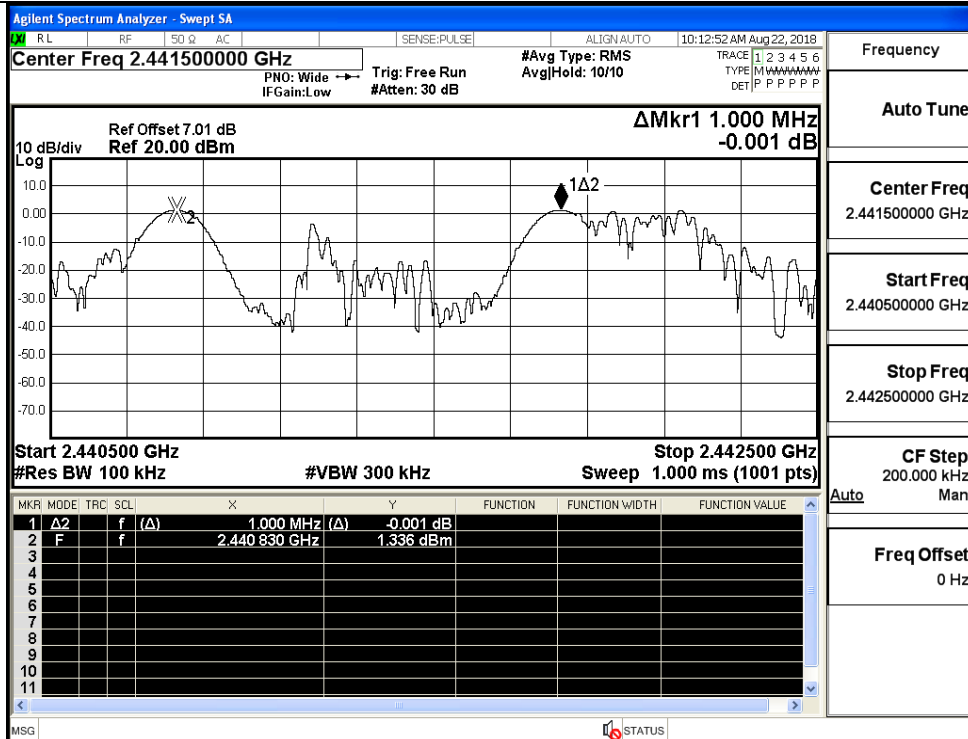
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.002	0.414	PASS
	MCH	1.000	0.414	PASS
	HCH	1.000	0.414	PASS
$\pi/4$ DQPSK	LCH	0.874	0.770	PASS
	MCH	0.976	0.770	PASS
	HCH	0.892	0.770	PASS
8DPSK	LCH	1.004	0.770	PASS
	MCH	0.860	0.770	PASS
	HCH	0.870	0.770	PASS

Test Graphs

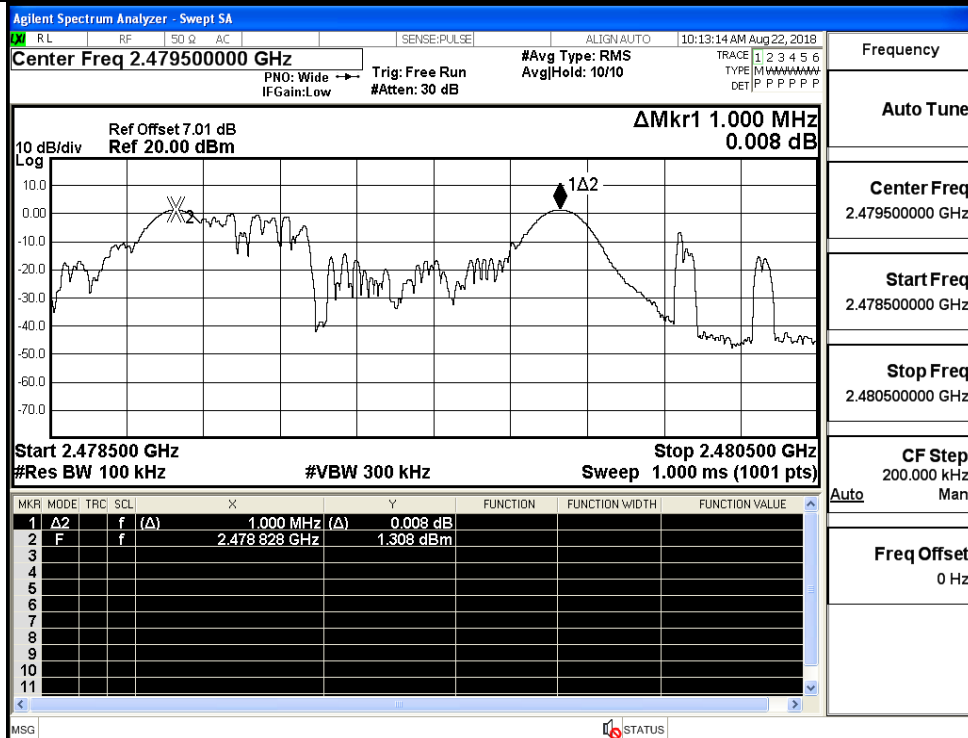
GFSK/LCH

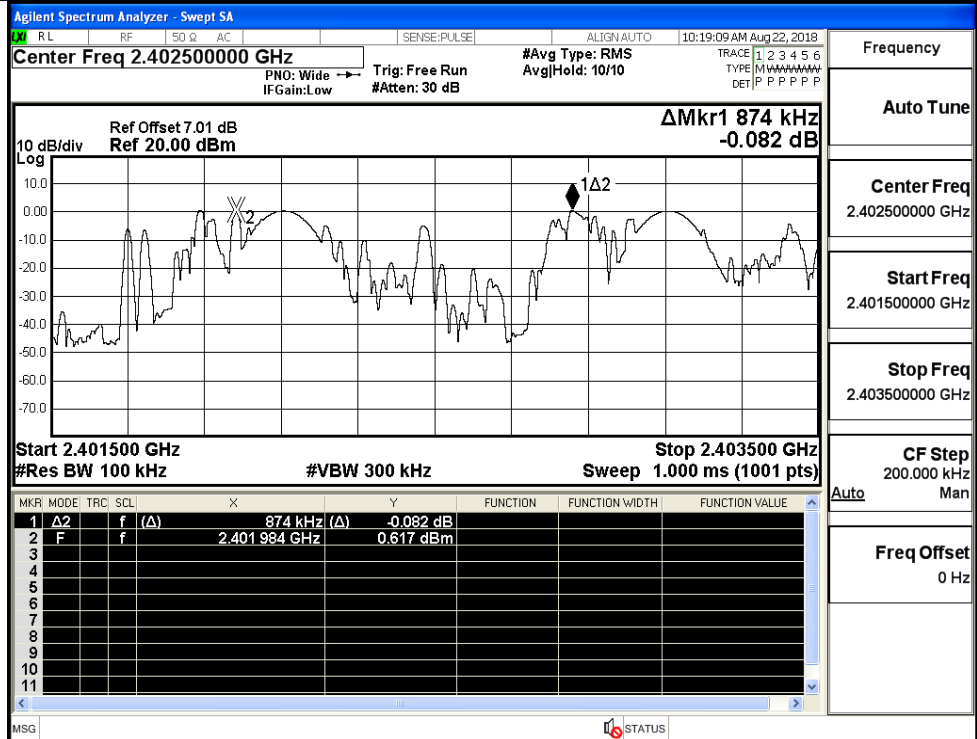
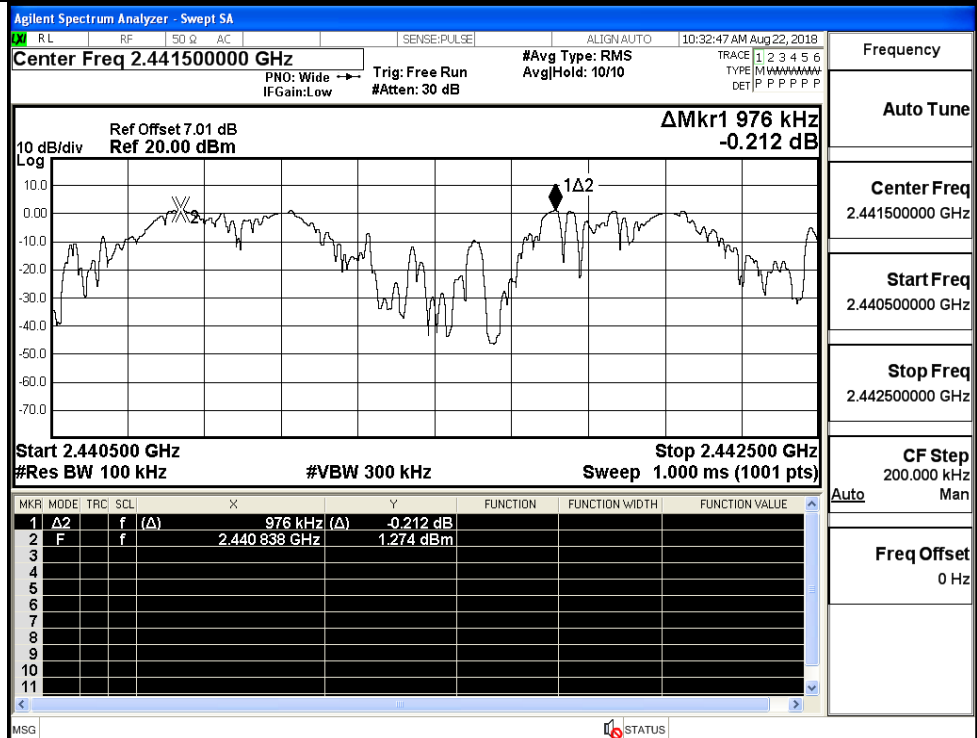


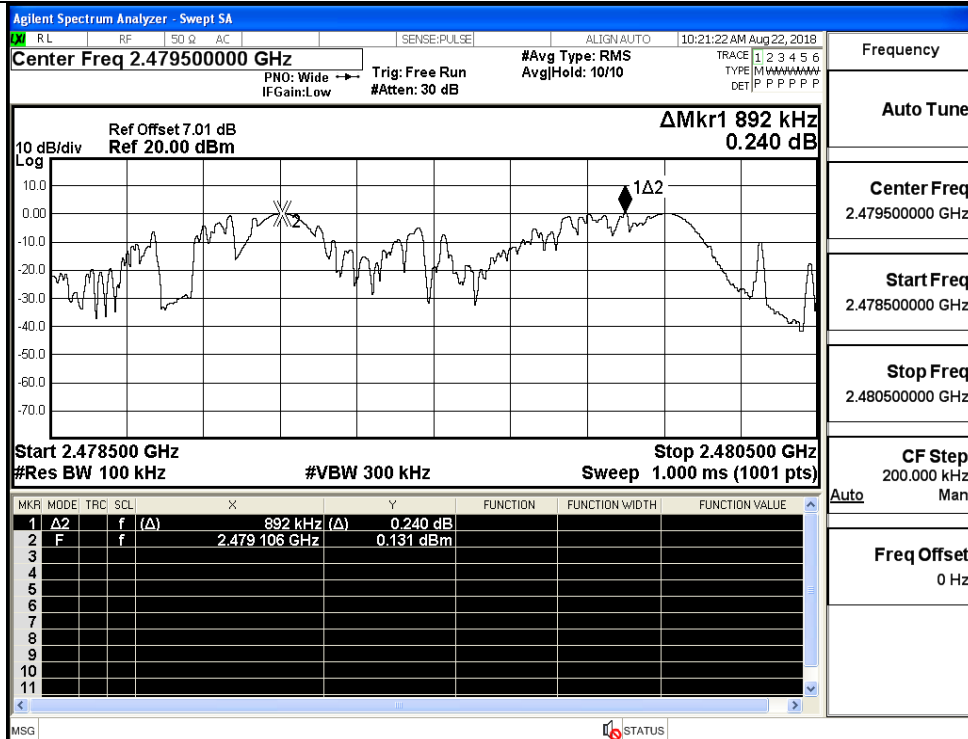
GFSK/MCH



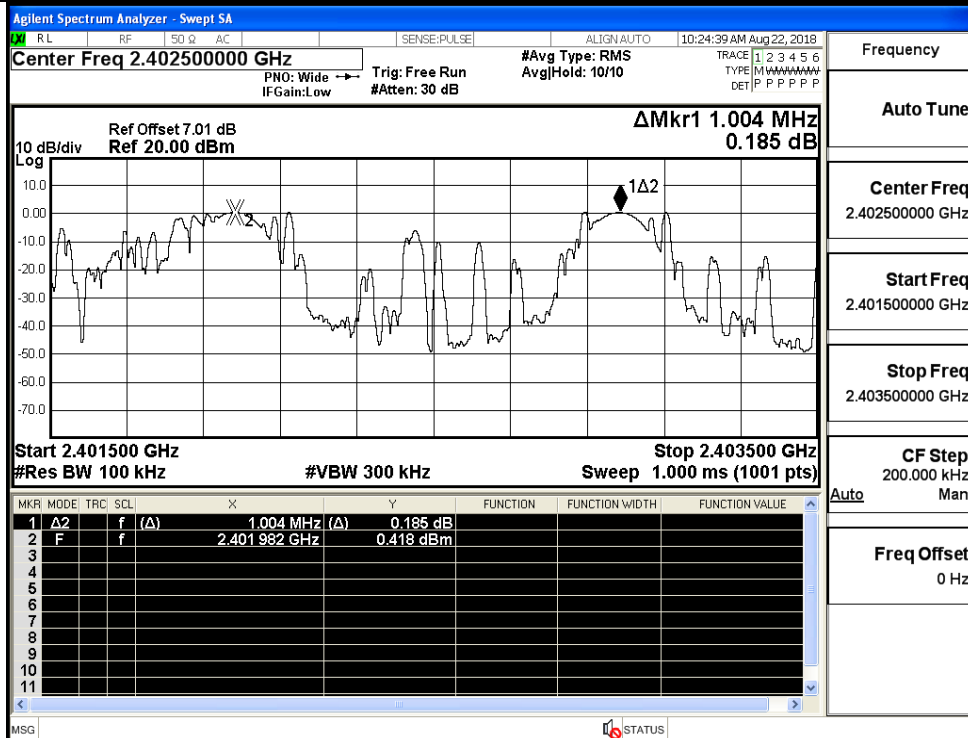
GFSK/HCH



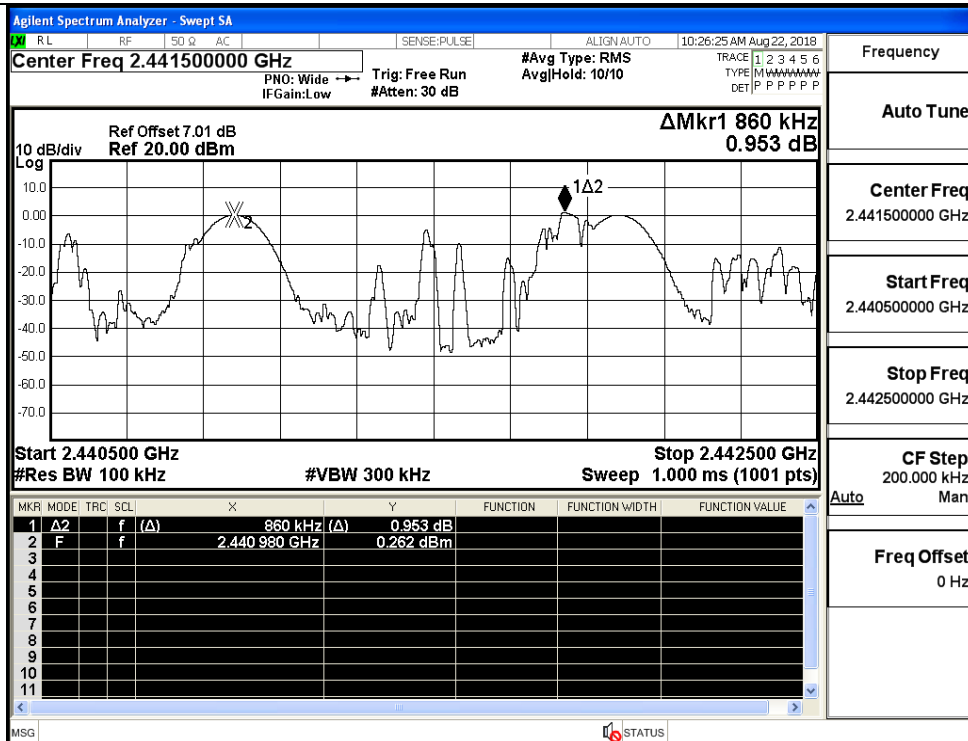
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

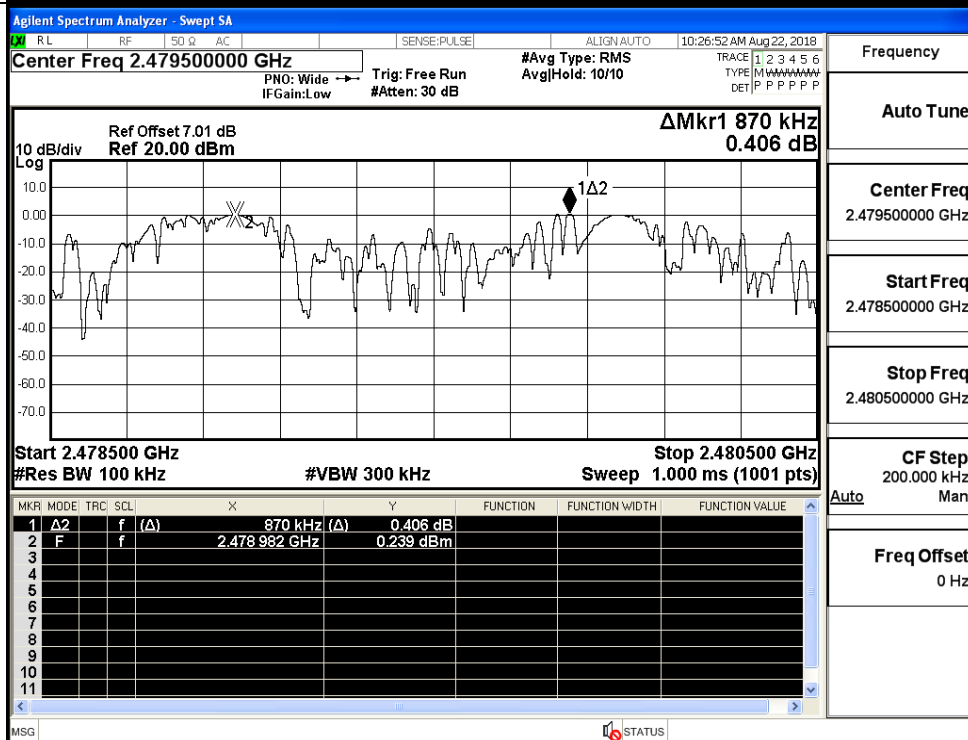
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

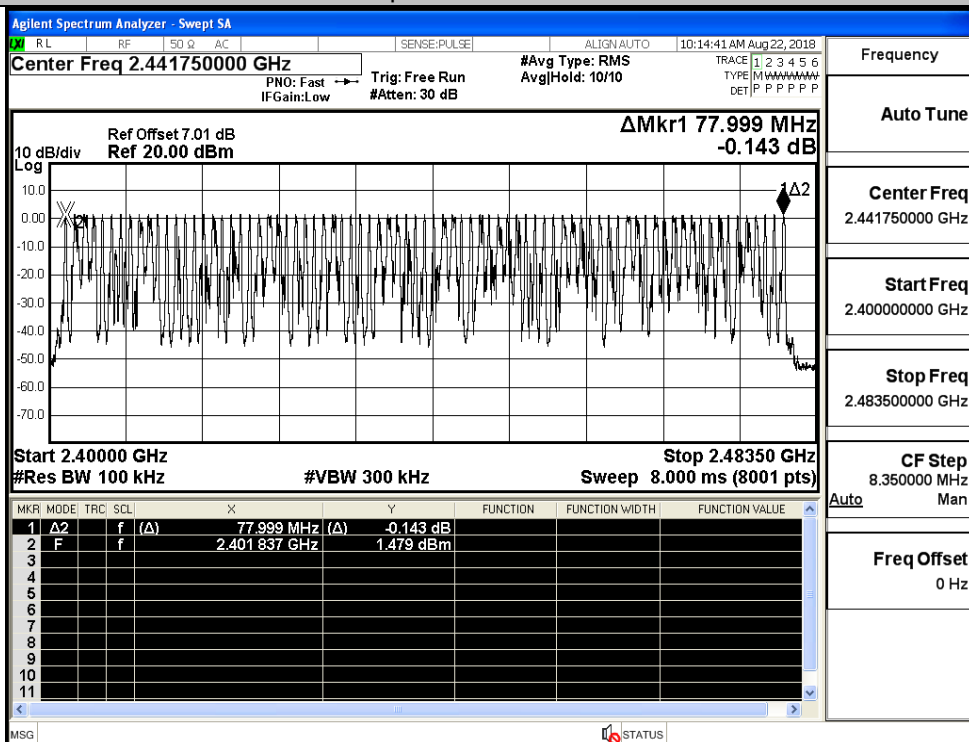


A.4 Hopping Channel Number

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

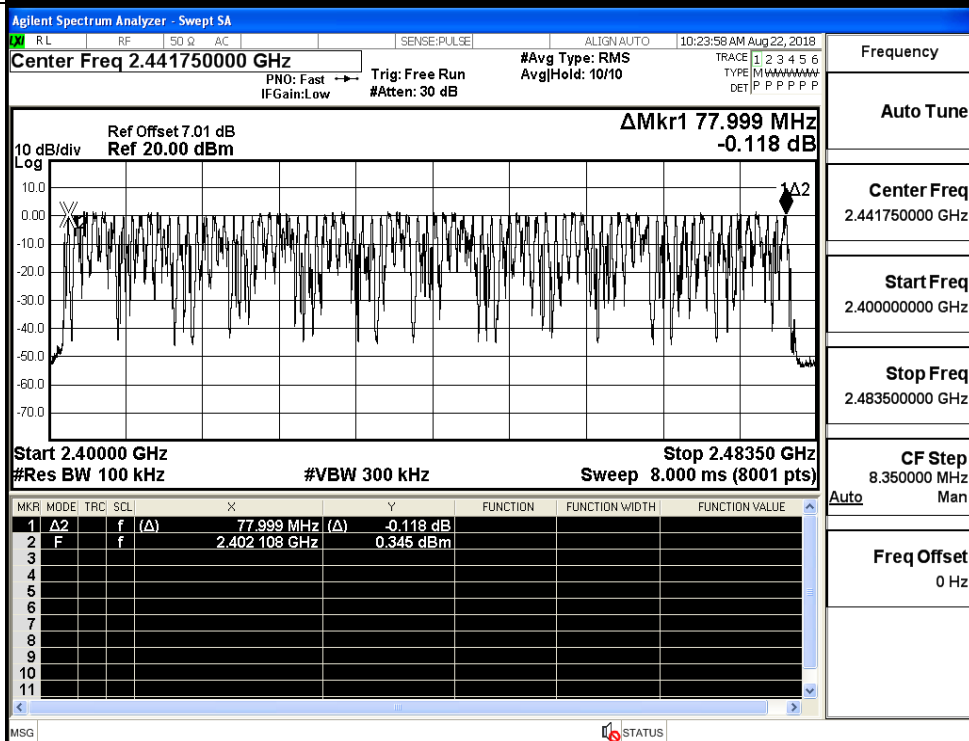
Test Graphs

GFSK/Hop



Frequency

Auto Tune

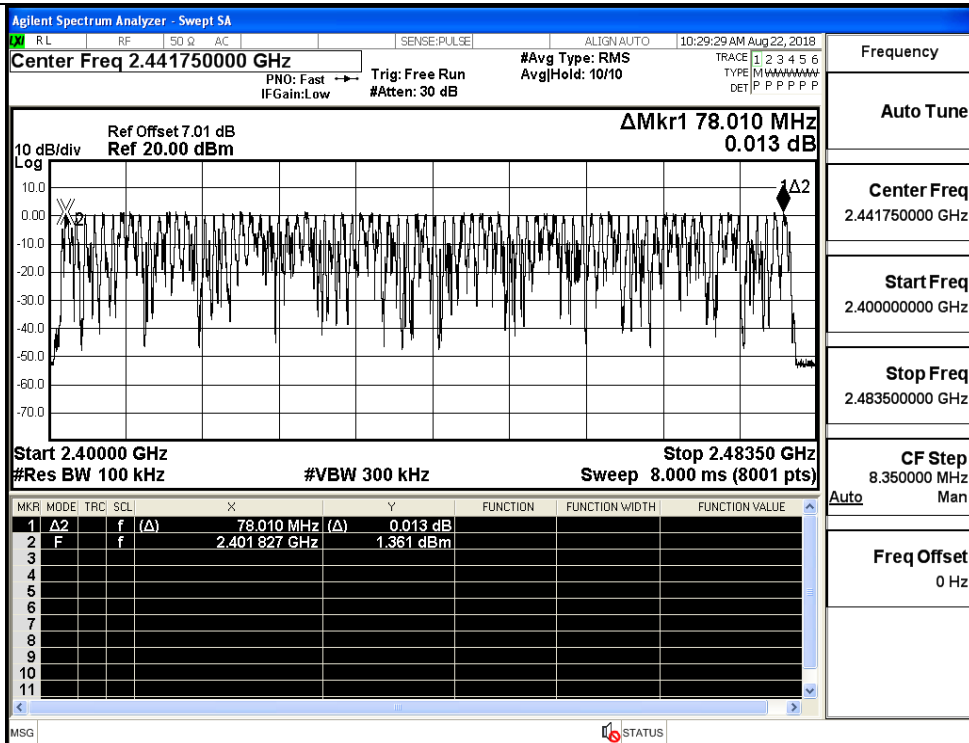
Center Freq
2.441750000 GHzStart Freq
2.400000000 GHzStop Freq
2.483500000 GHzCF Step
8.350000 MHz
ManFreq Offset
0 Hz $\pi/4$ DQPSK/Hop

Frequency

Auto Tune

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

8DPSK/Hop

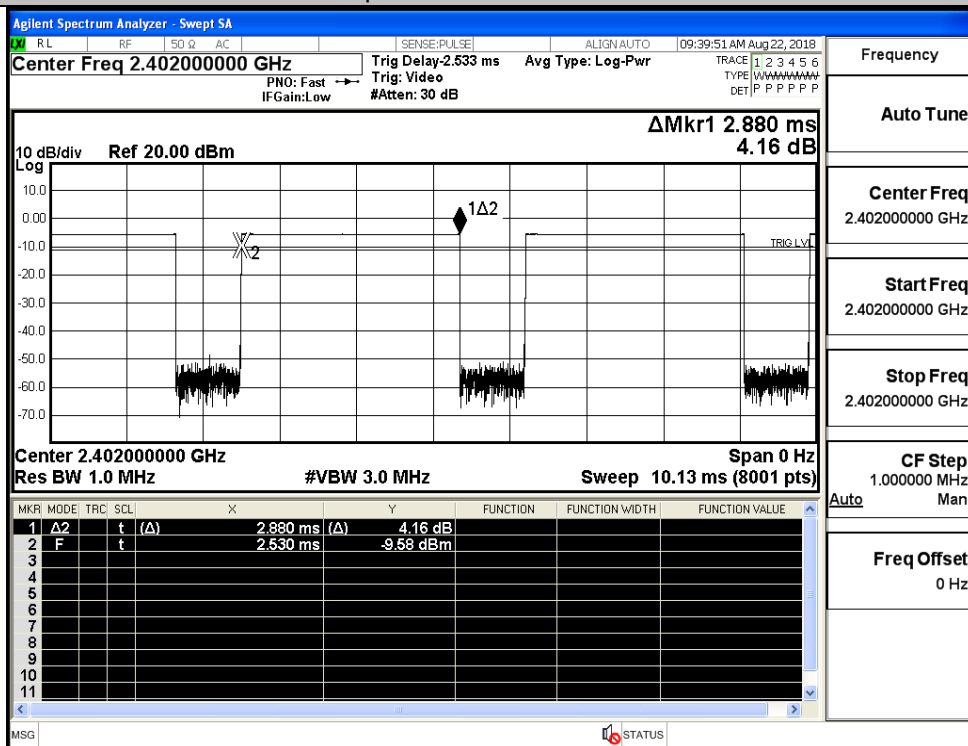


A.5 Dwell Time

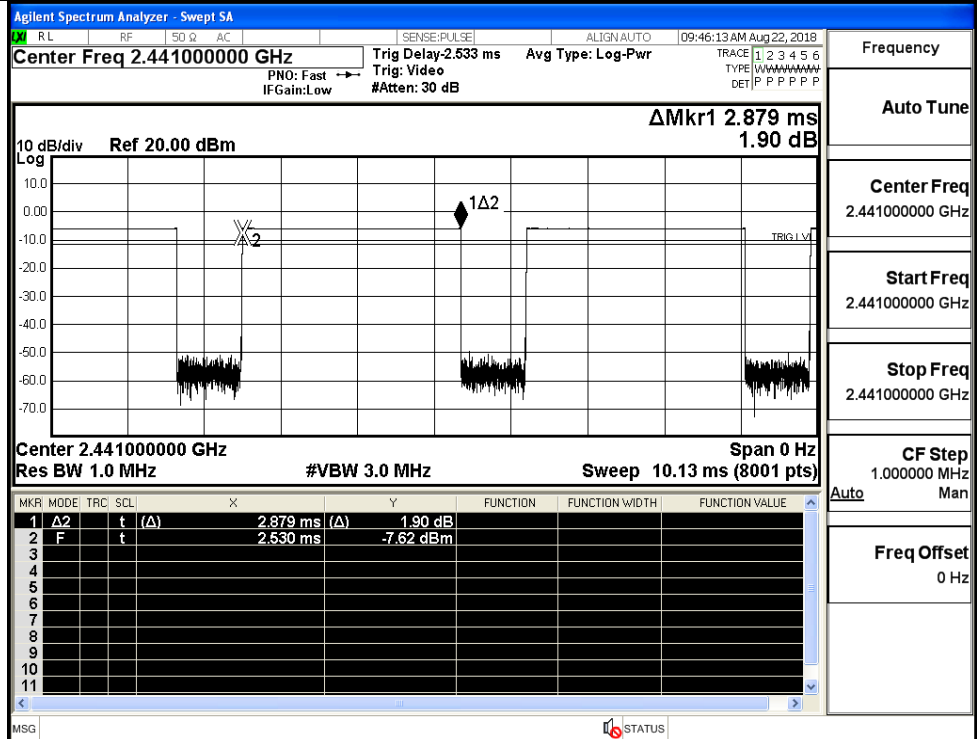
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88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

Test Graphs

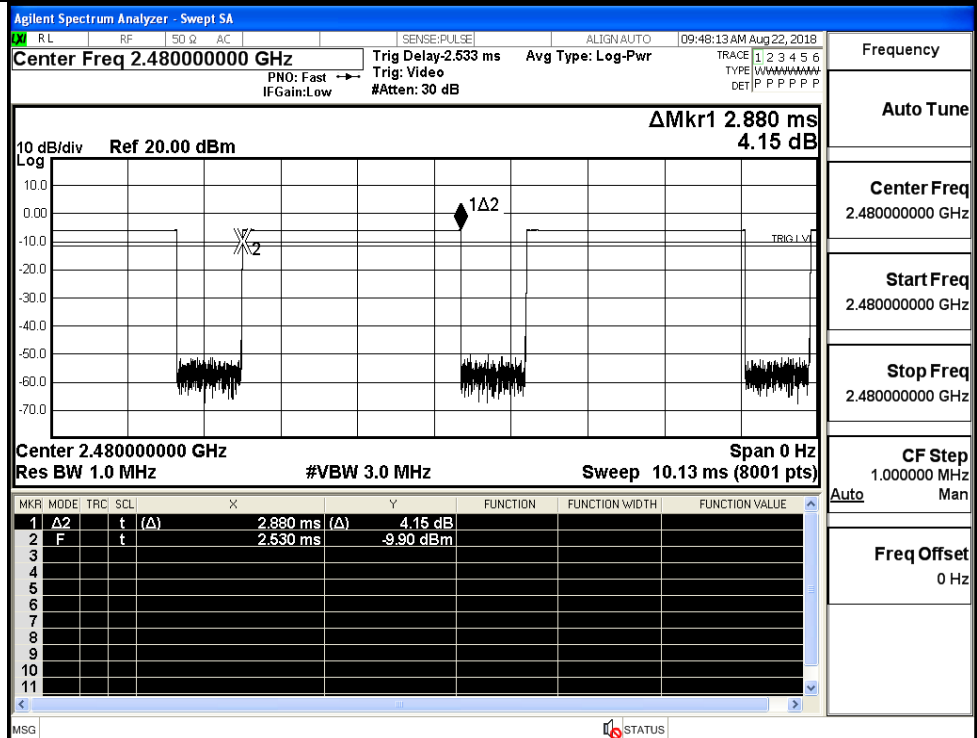
GFSK_DH5/LCH



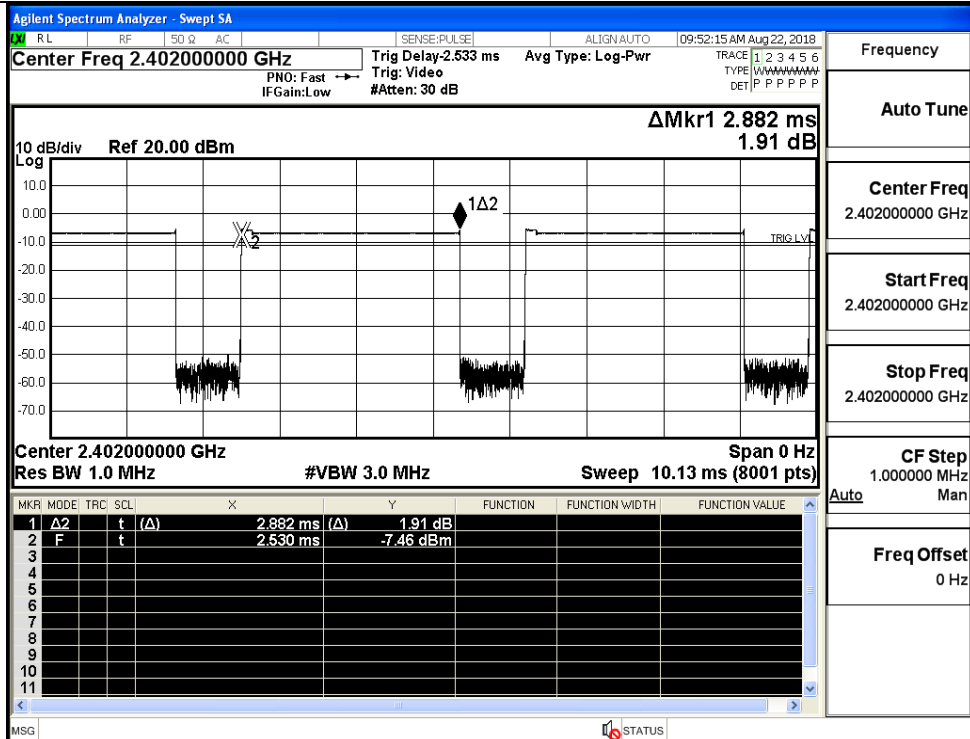
GFSK_DH5/MCH



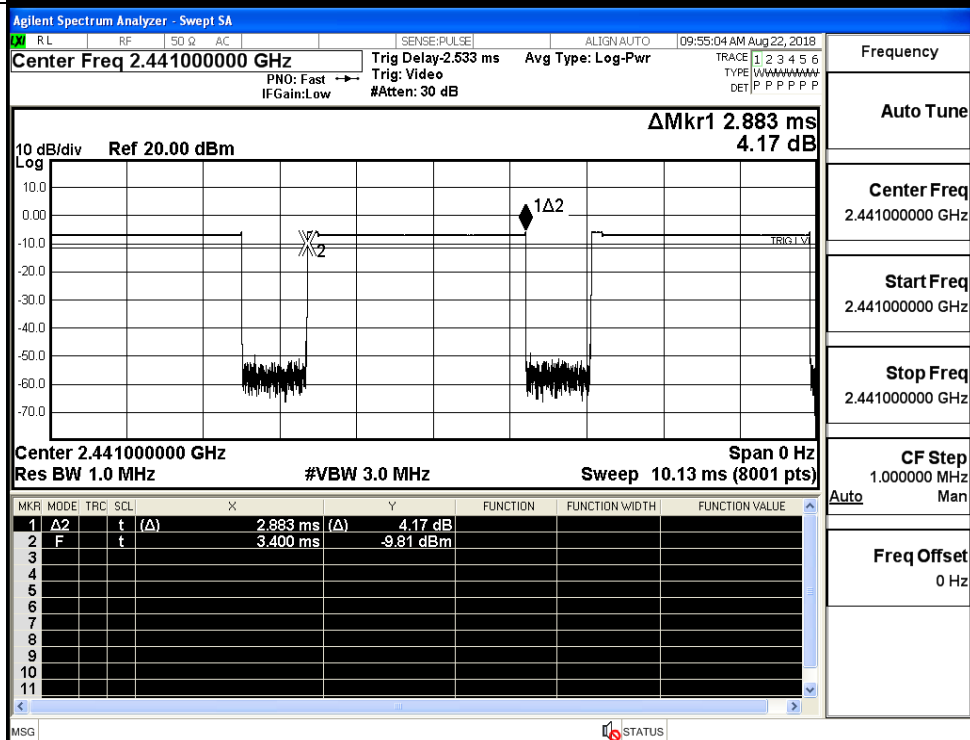
GFSK_DH5/HCH



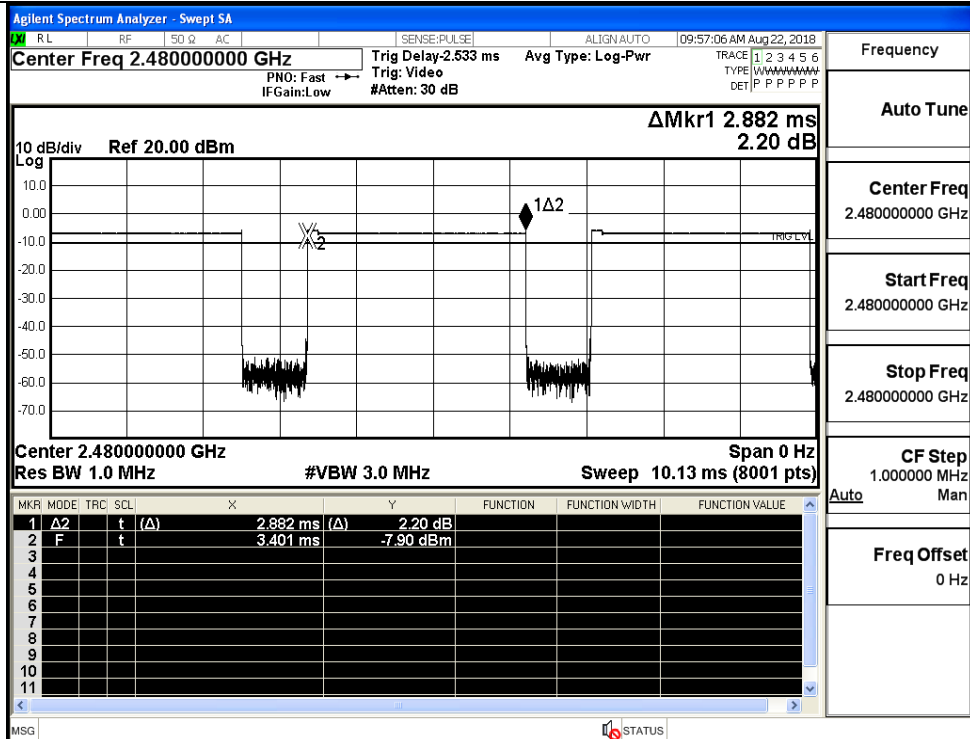
$\pi/4$ DQPSK
_2DH5/LCH



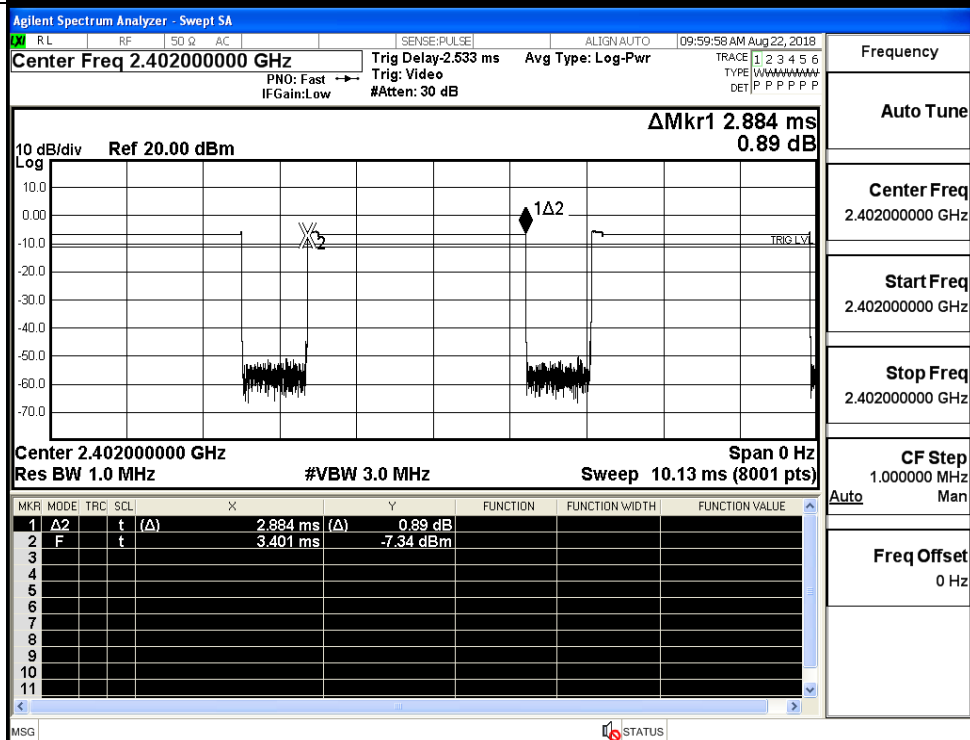
$\pi/4$ DQPSK
_2DH5/MCH



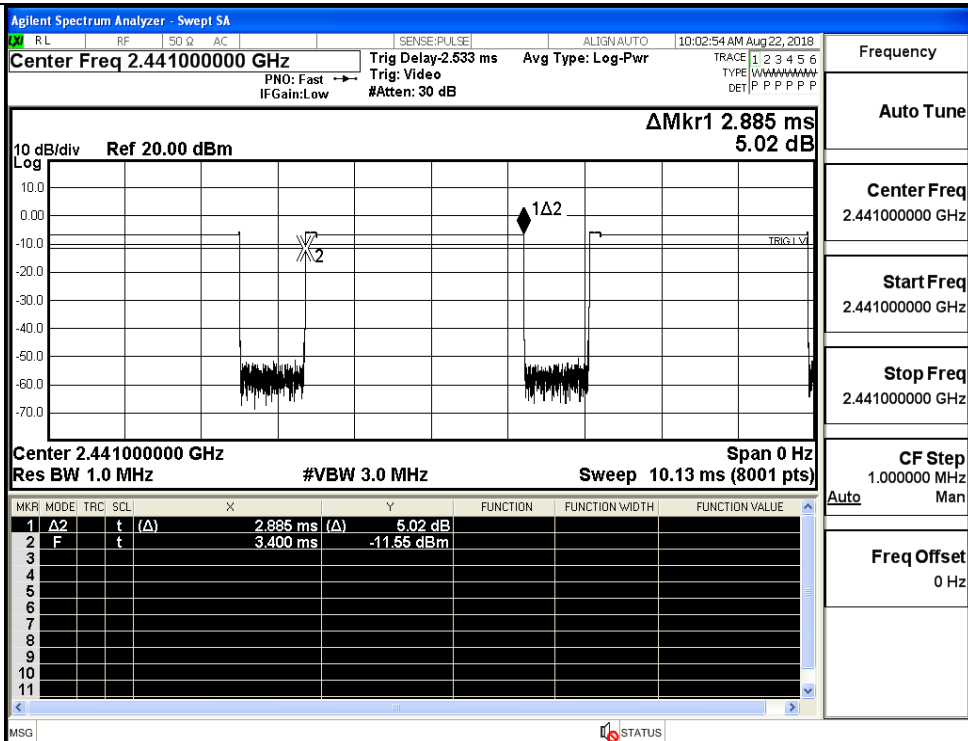
$\pi/4$ DQPSK
_2DH5/HCH



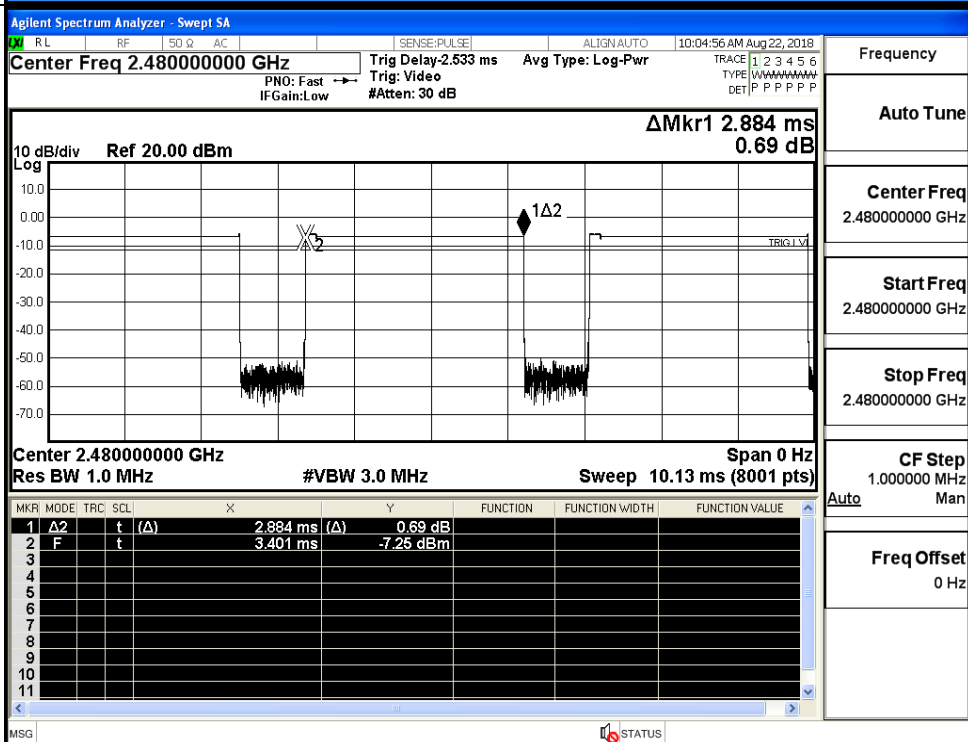
8DPSK _3DH5/LCH



8DPSK_3DH5/MCH



8DPSK_3DH5/HCH



A.6 RF Conducted Spurious Emissions

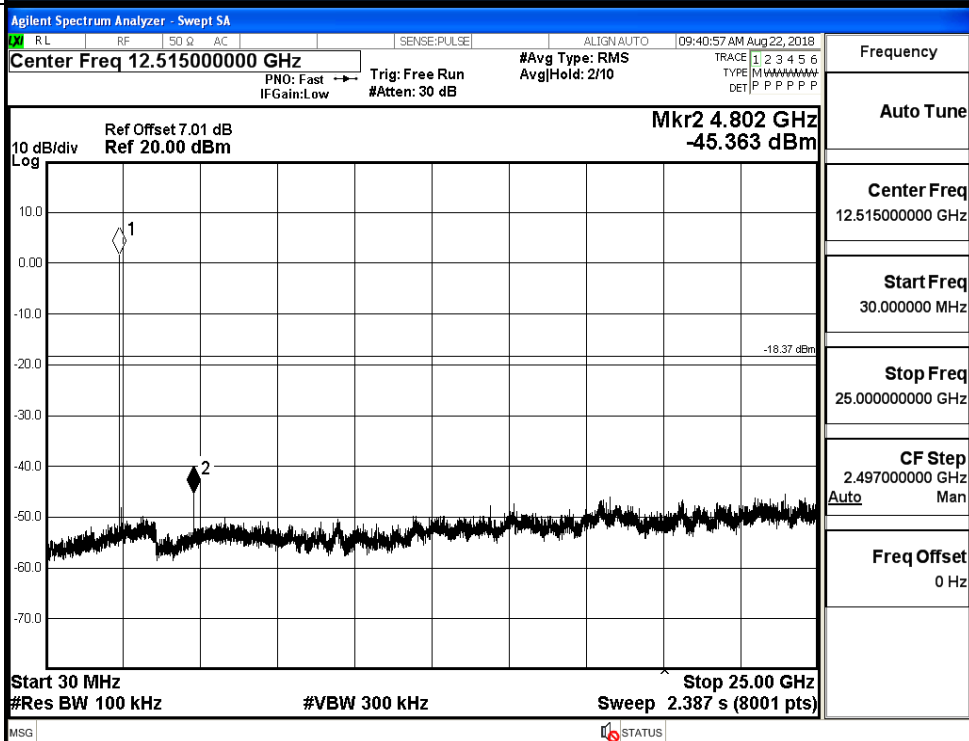
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	1.632	-45.363	-18.368	PASS
	MCH	1.376	-45.354	-18.624	PASS
	HCH	1.325	-45.423	-18.675	PASS
$\pi/4$ DQPSK	LCH	1.457	-46.042	-18.543	PASS
	MCH	1.333	-45.555	-18.667	PASS
	HCH	1.298	-45.735	-18.702	PASS
8DPSK	LCH	1.449	-44.593	-18.551	PASS
	MCH	1.301	-44.820	-18.699	PASS
	HCH	1.283	-45.019	-18.717	PASS

GFSK LCH Graphs

Pref

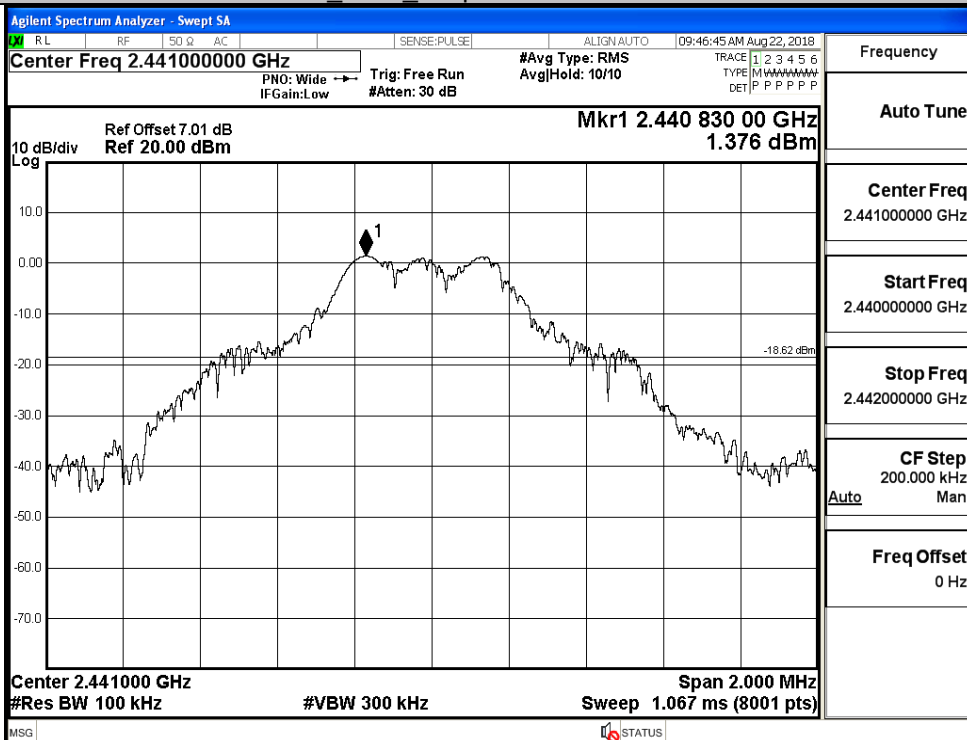


Puw

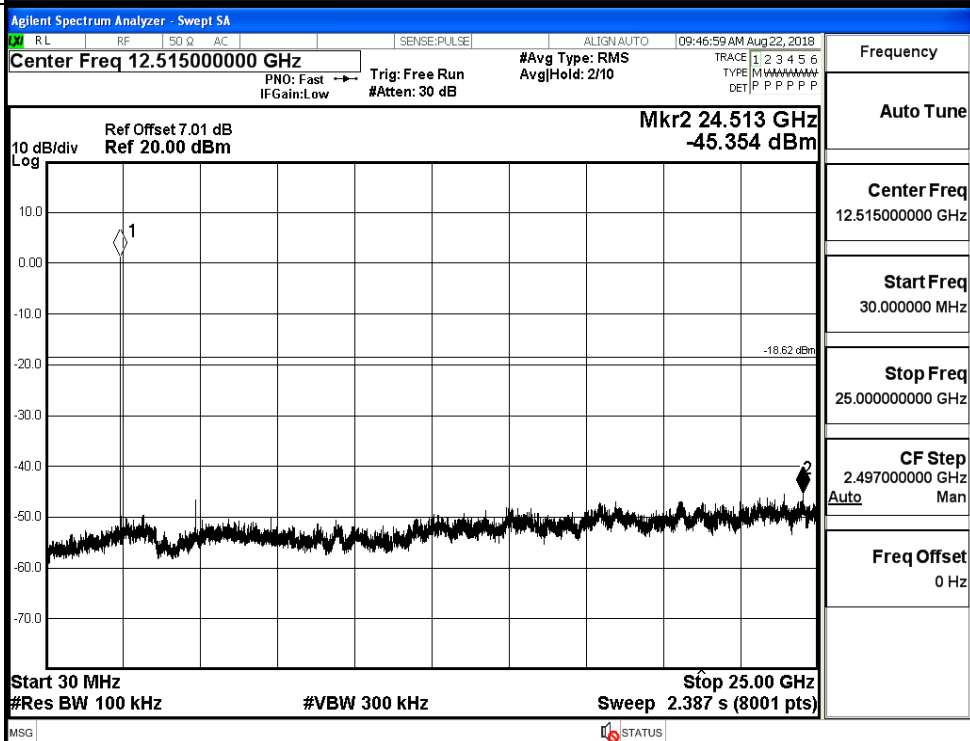


GFSK_MCH_Graphs

Pref

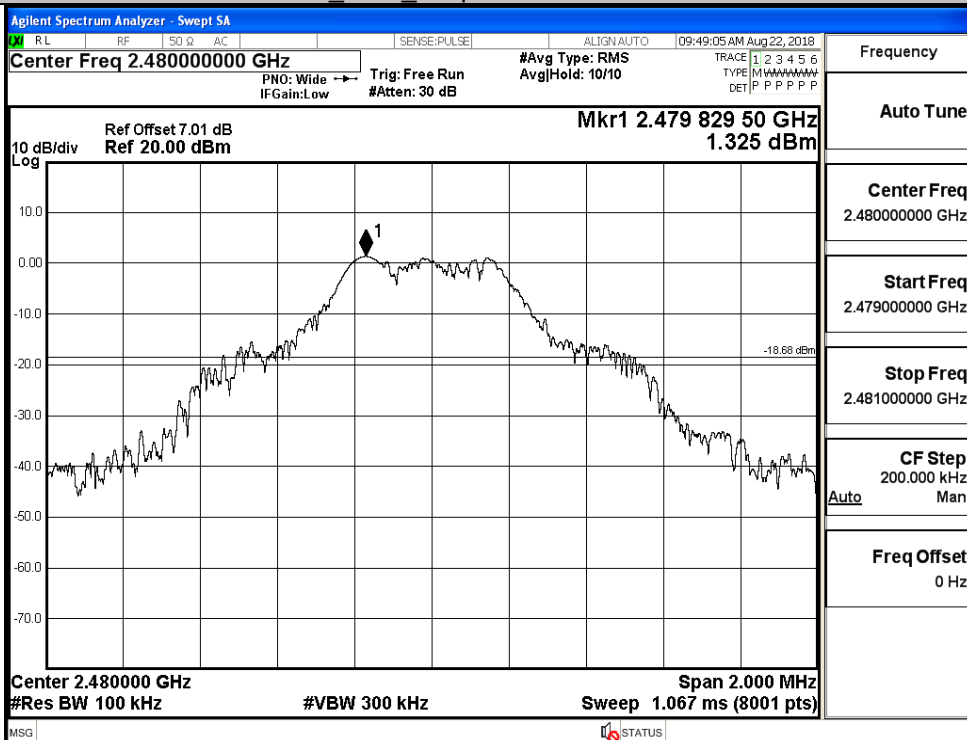


Puw

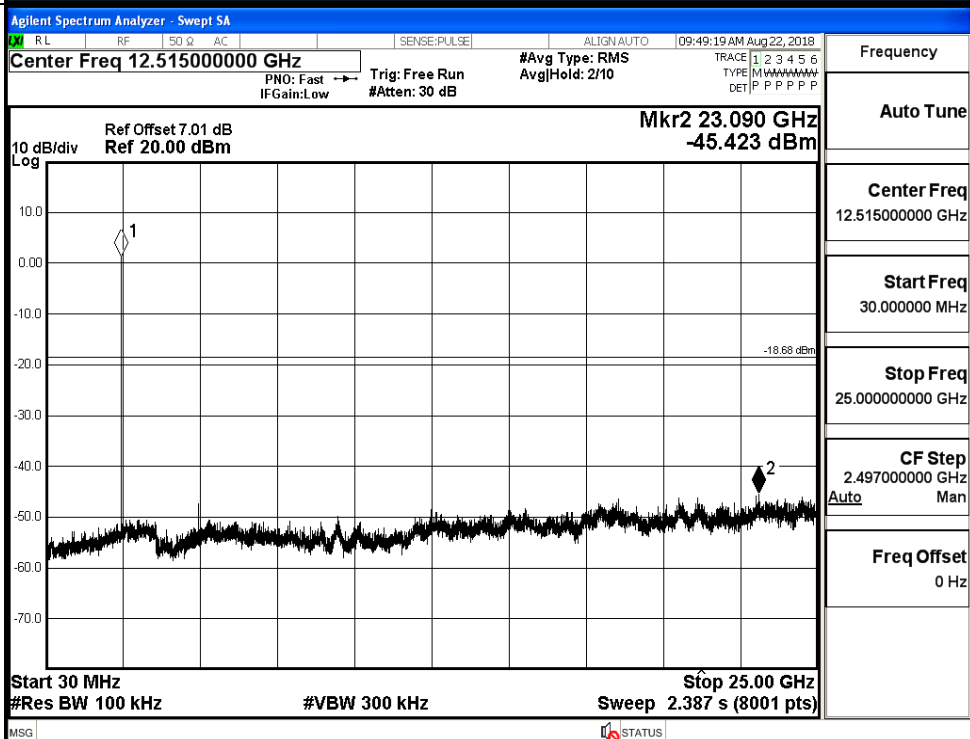


GFSK HCH Graphs

Pref

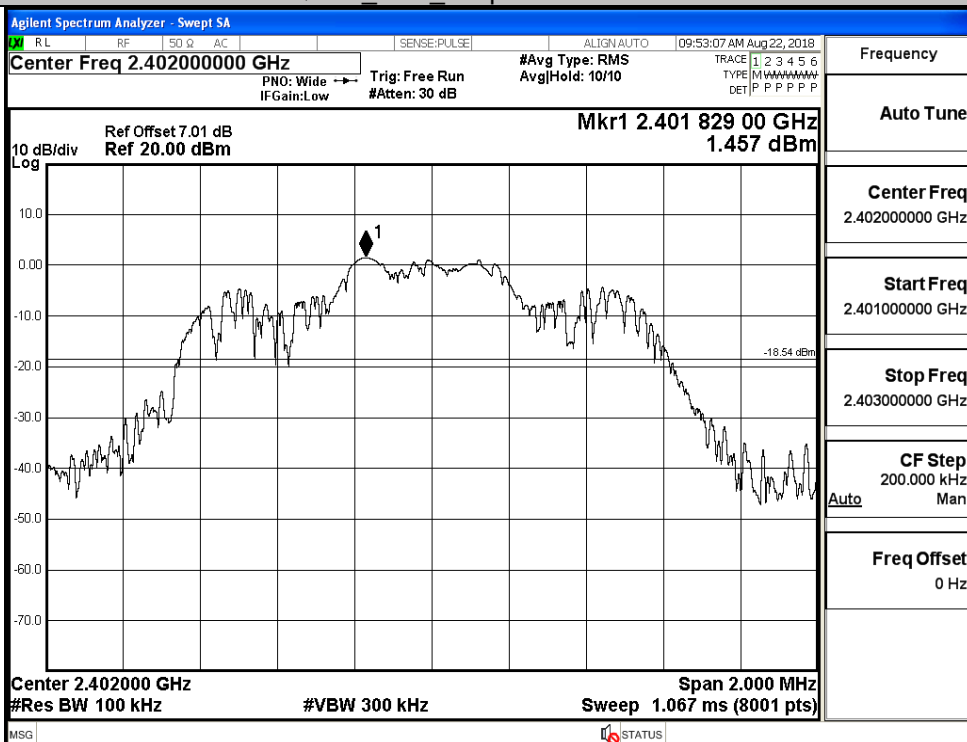


Puw

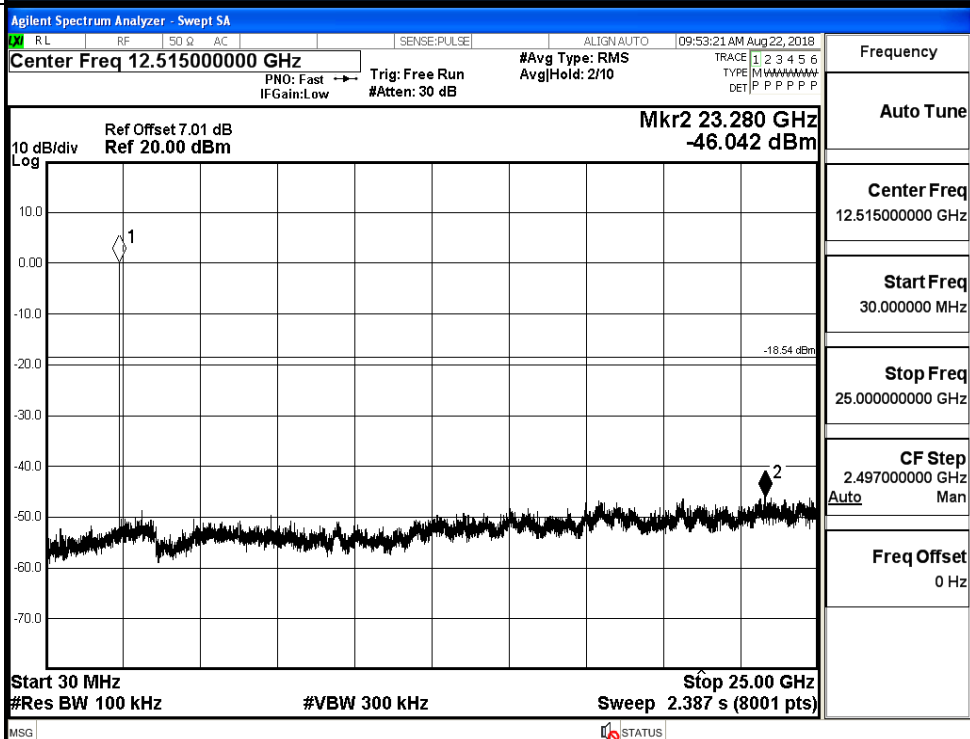


π /4DQPSK_LCH_Graphs

Pref

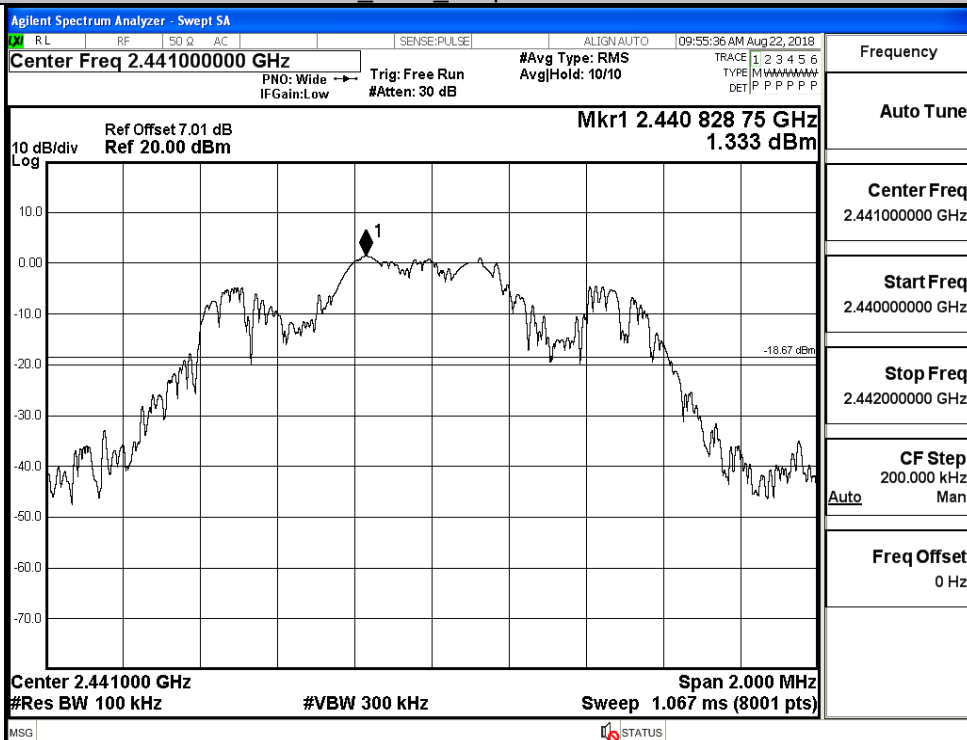


Puw

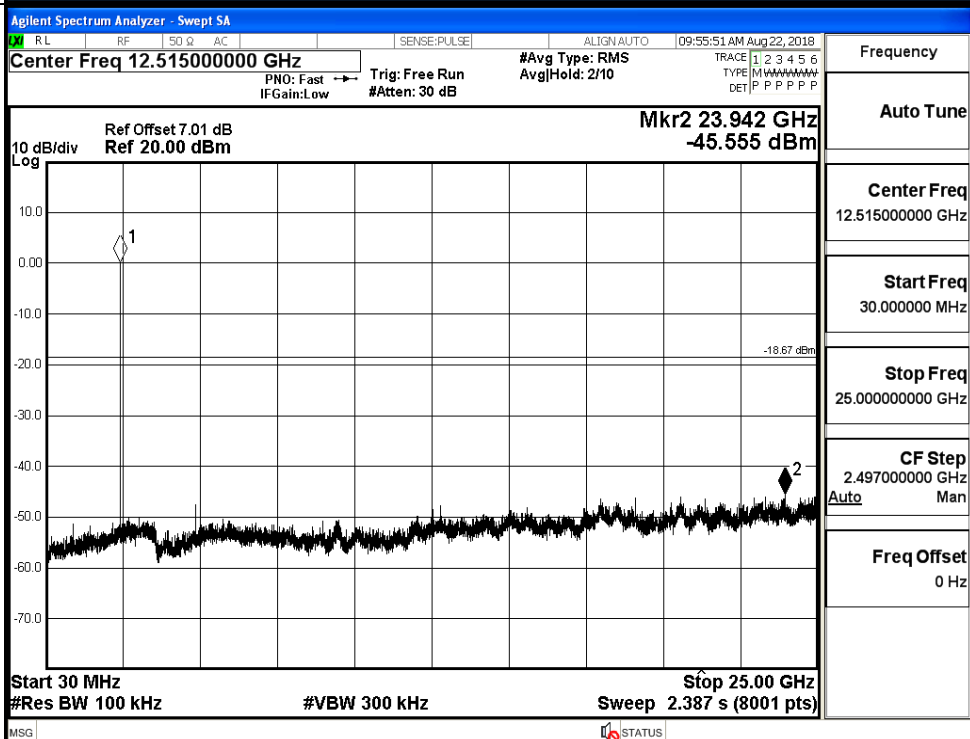


π /4DQPSK_MCH_Graphs

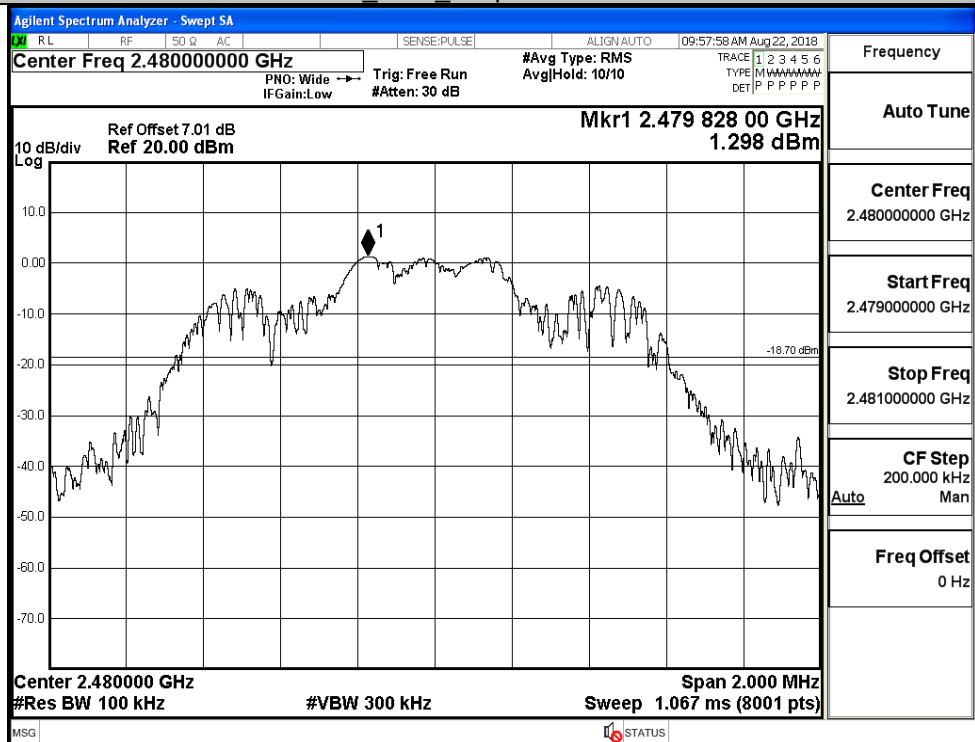
Pref



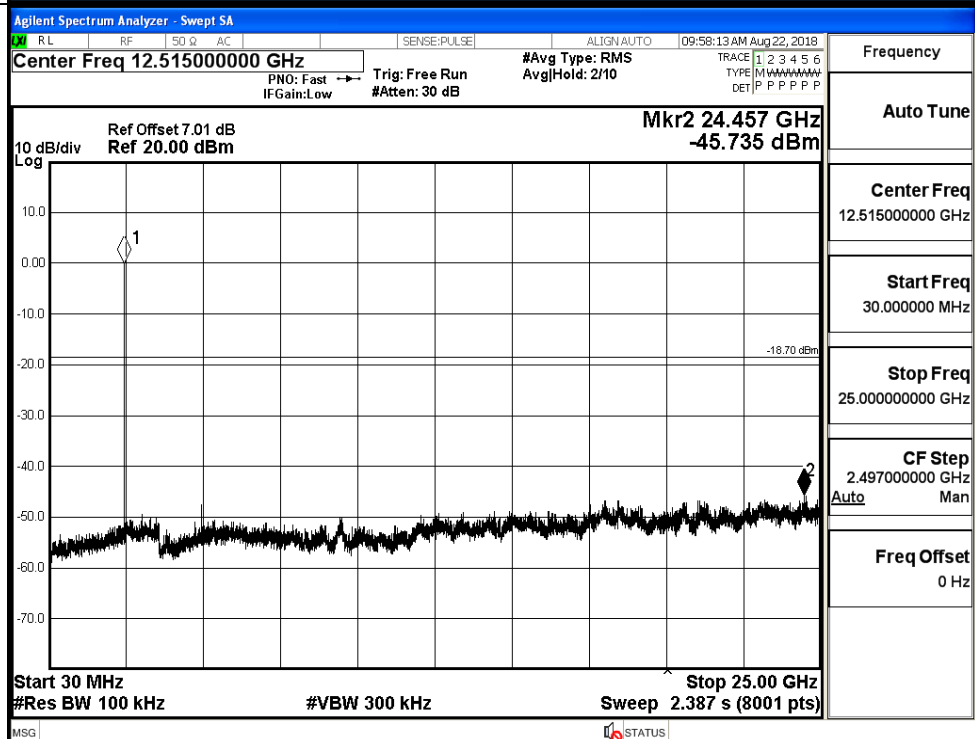
Puw



Pref

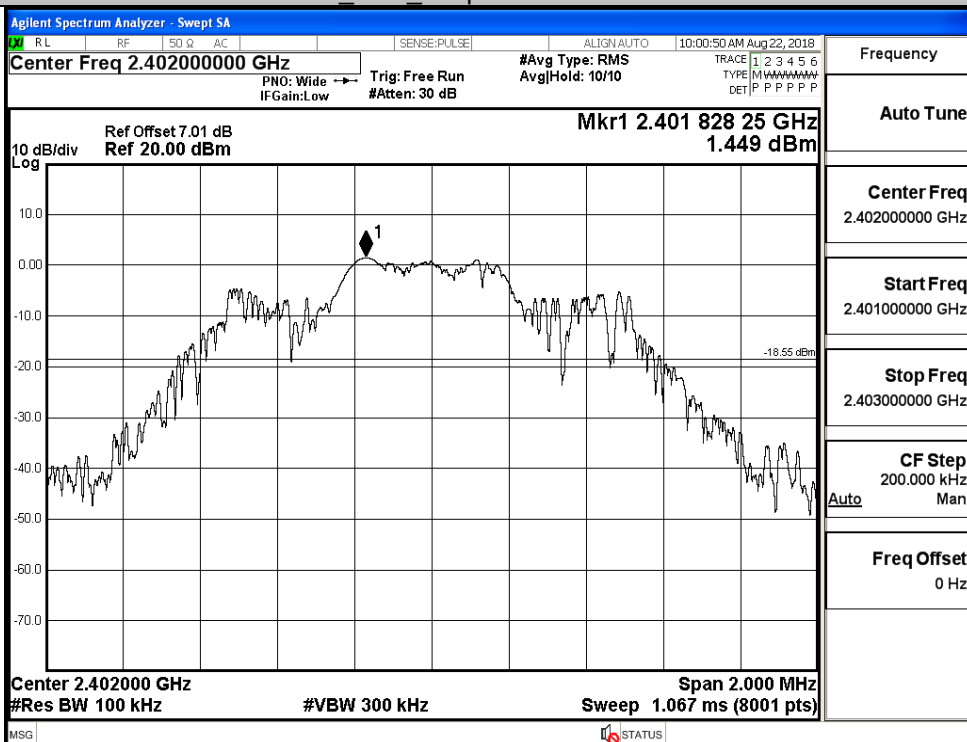


Puw

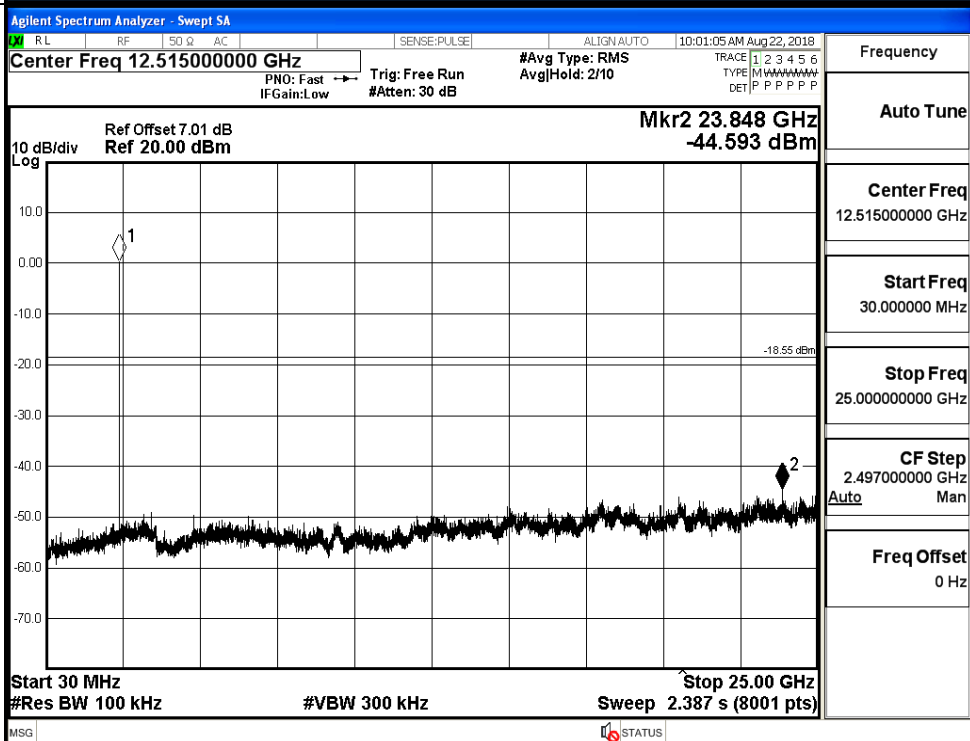


8DPSK_LCH_Graphs

Pref

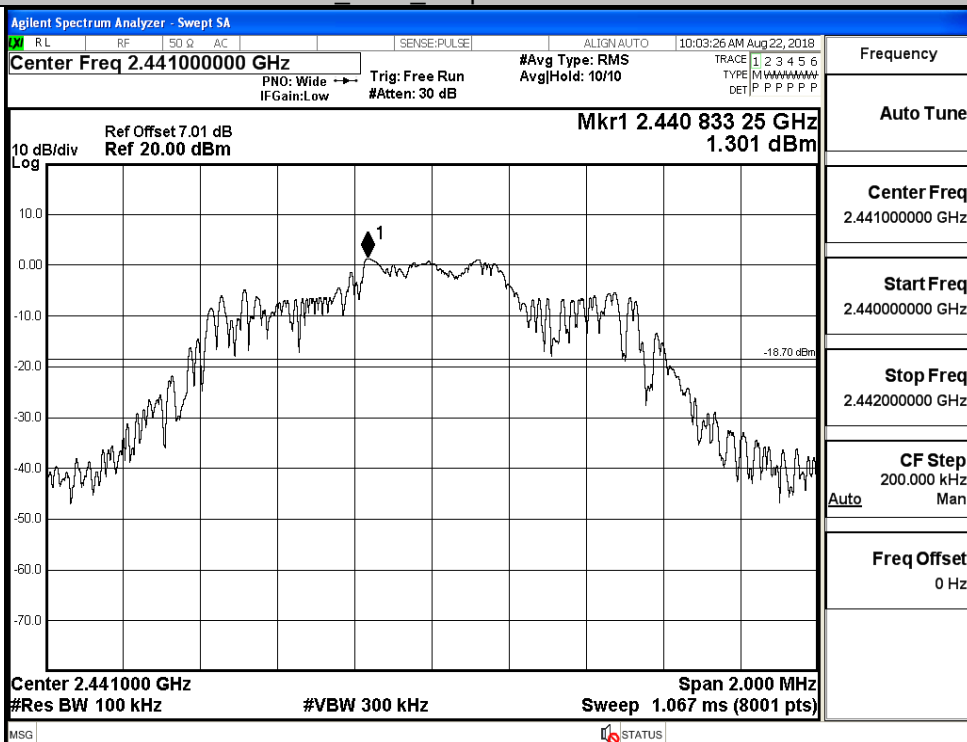


Puw

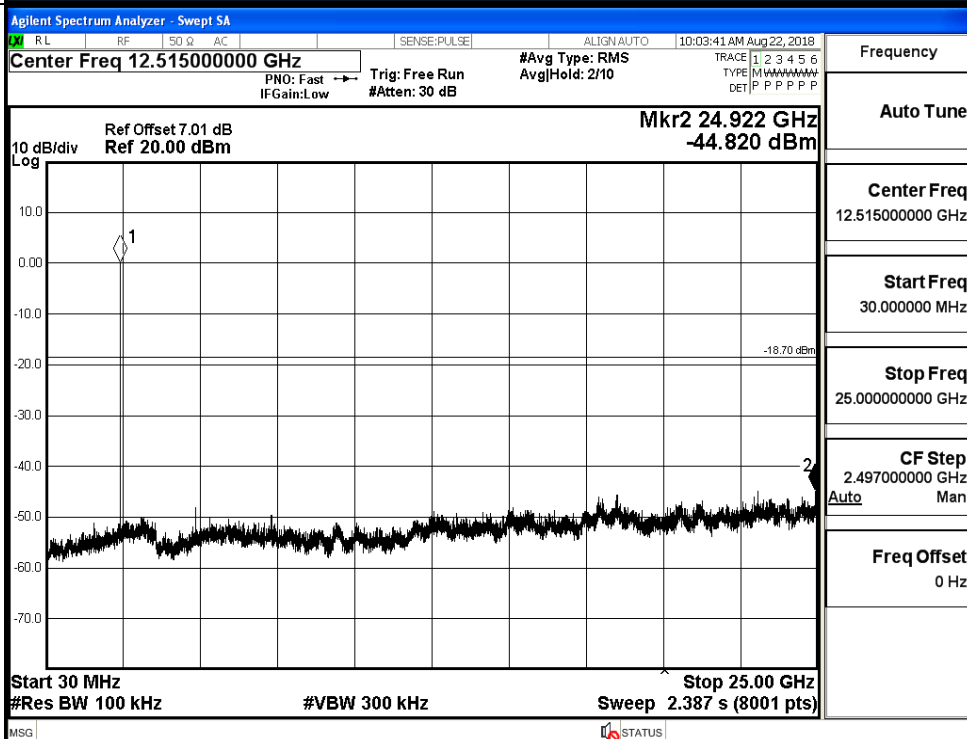


8DPSK_MCH_Graphs

Pref

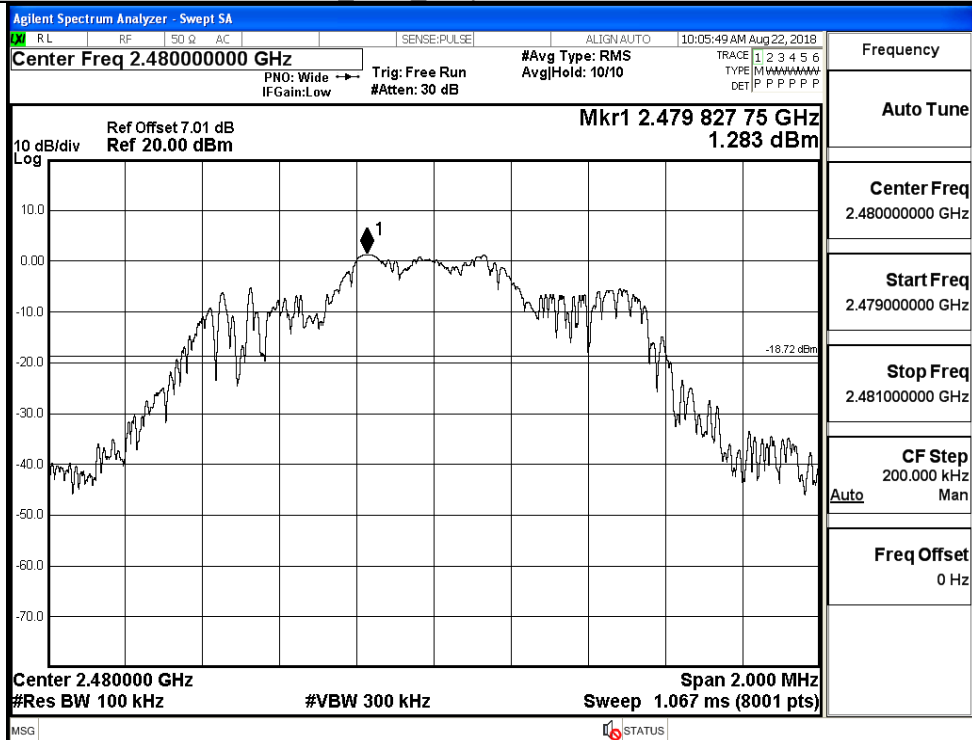


Puw

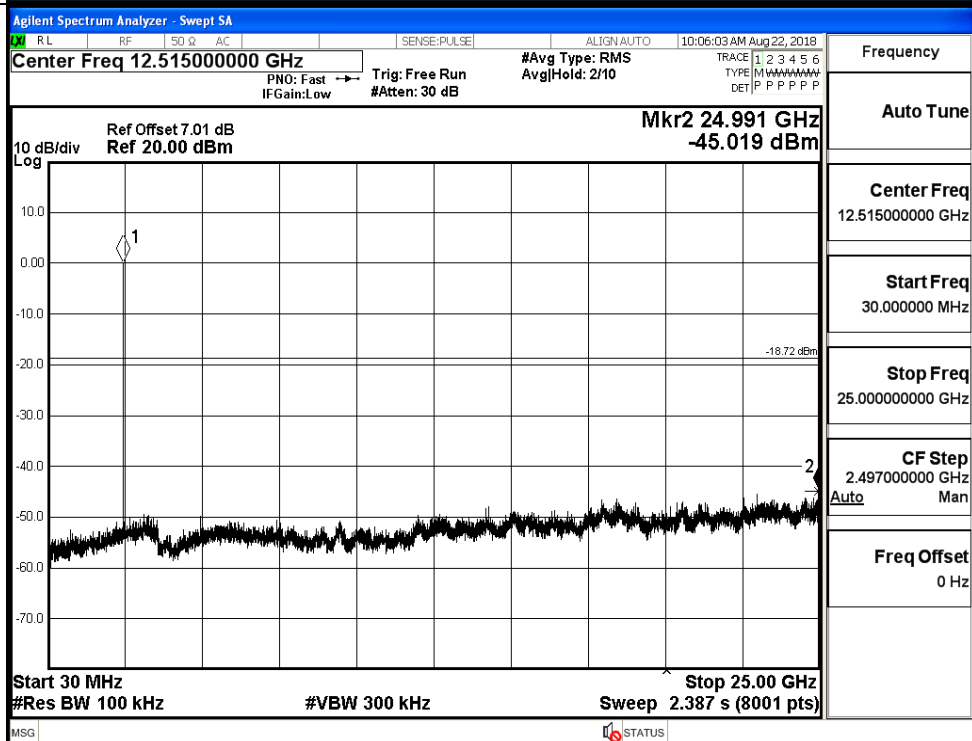


8DPSK_HCH_Graphs

Pref



Puw

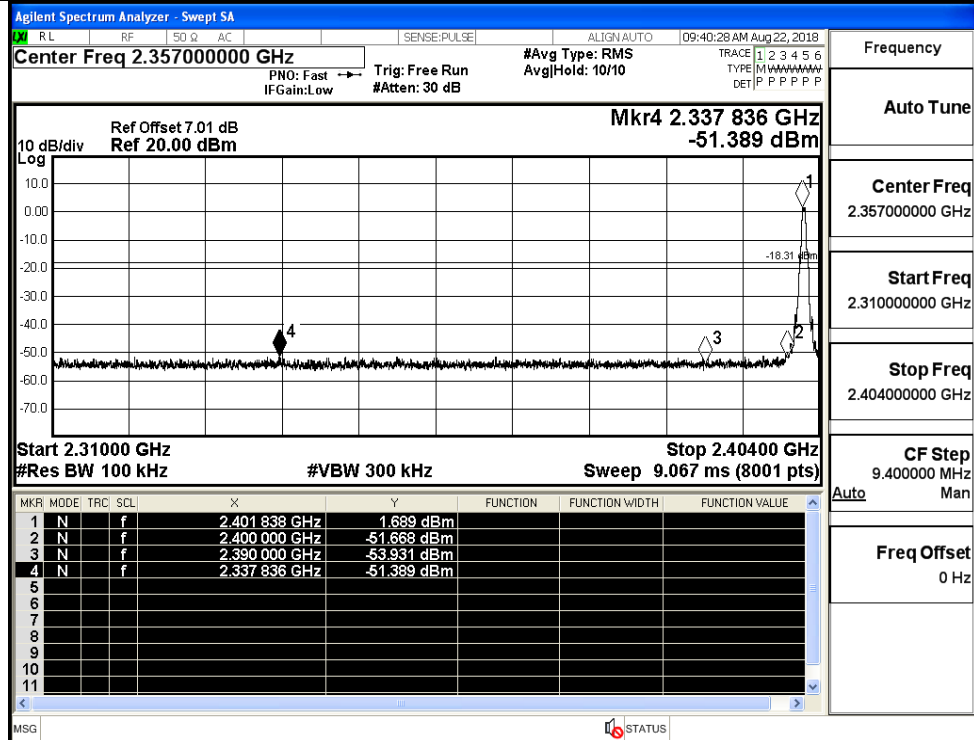


A.7 Band-edge for RF Conducted Emissions

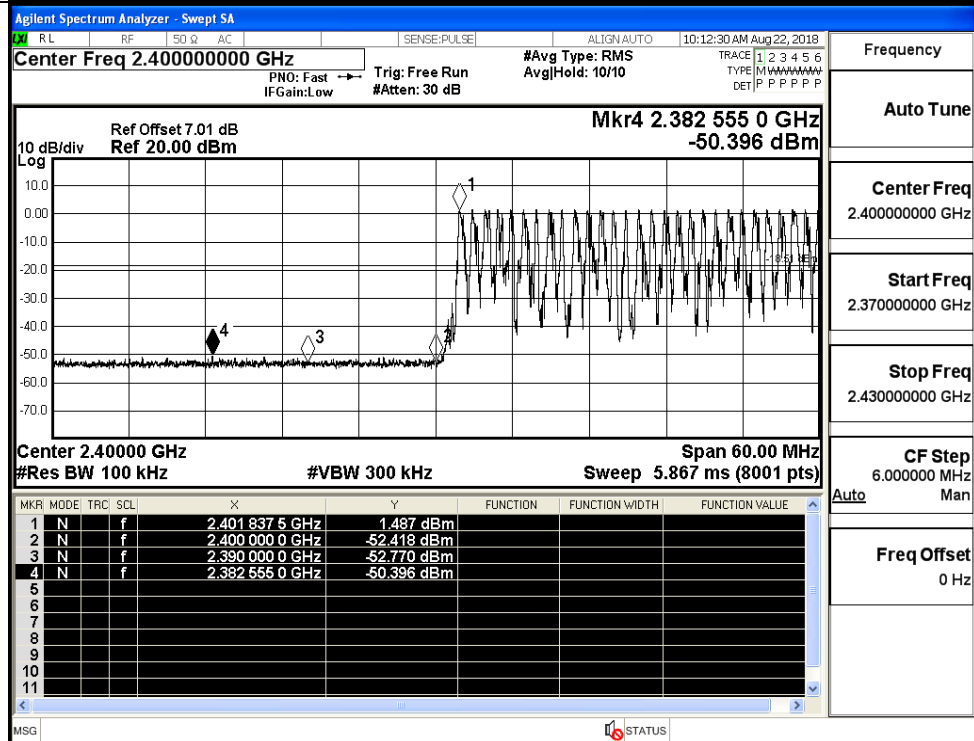
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	1.689	Off	-51.389	-18.31	PASS
			1.487	On	-50.396	-18.51	PASS
	HCH	2480	1.389	Off	-50.614	-18.61	PASS
			1.364	On	-49.963	-18.64	PASS
$\pi/4$ DQPSK	LCH	2402	0.611	Off	-49.917	-19.39	PASS
			1.465	On	-50.219	-18.54	PASS
	HCH	2480	1.326	Off	-51.003	-18.67	PASS
			1.391	On	-50.482	-18.61	PASS
8DPSK	LCH	2402	1.331	Off	-50.277	-18.67	PASS
			1.388	On	-50.594	-18.61	PASS
	HCH	2480	1.076	Off	-50.319	-18.92	PASS
			1.428	On	-50.359	-18.57	PASS

Test Graphs

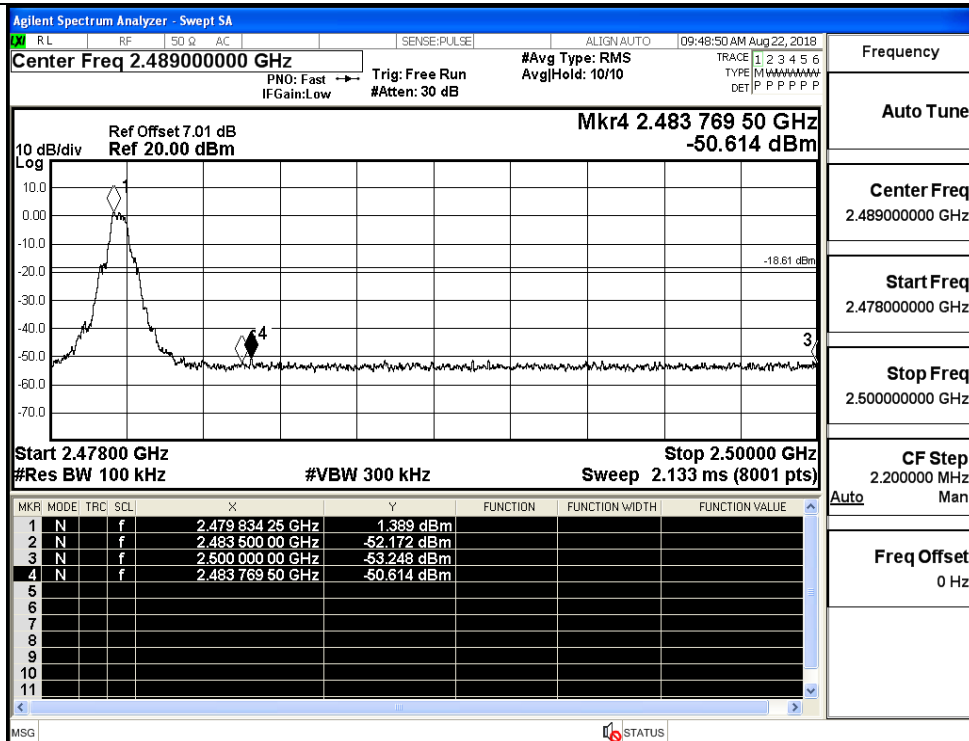
GFSK/LCH/No Hop



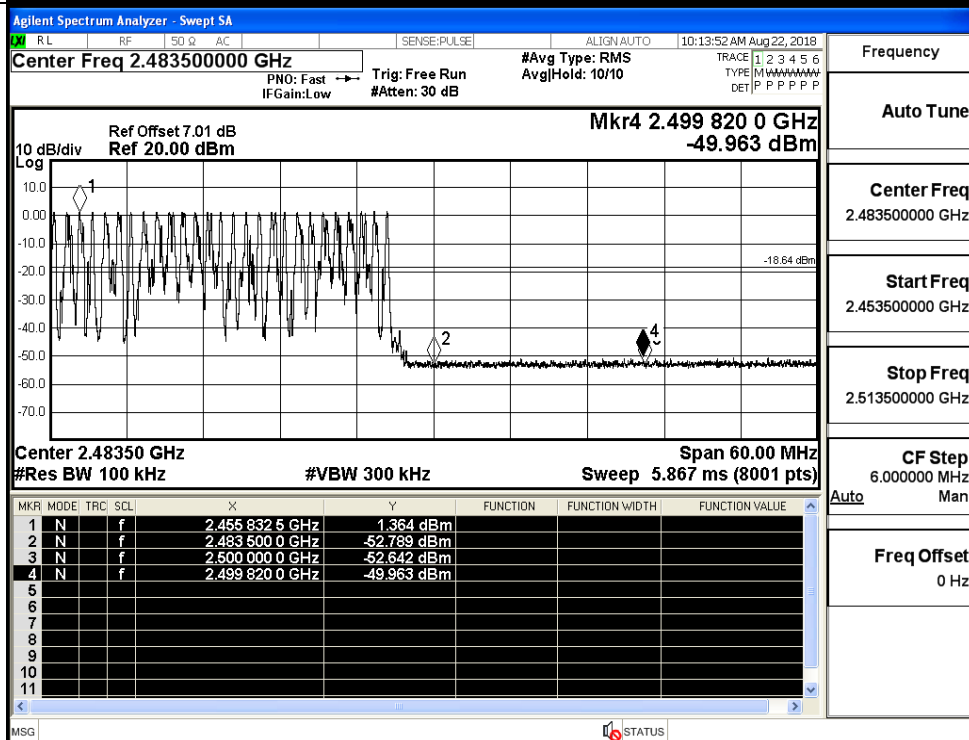
GFSK/LCH/Hop



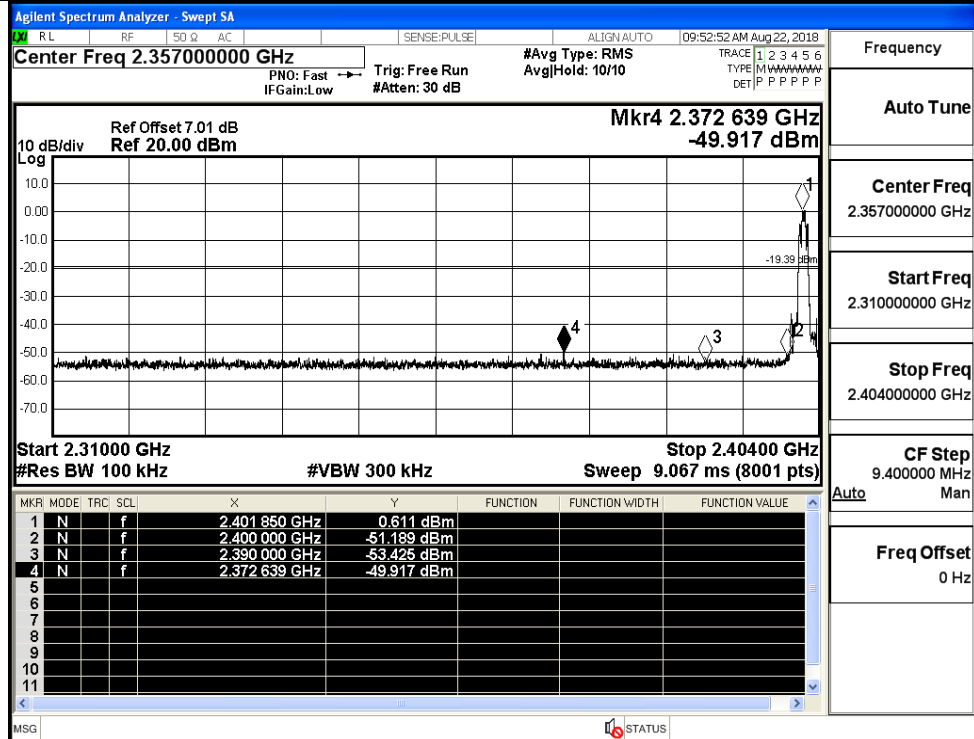
GFSK/HCH/No Hop



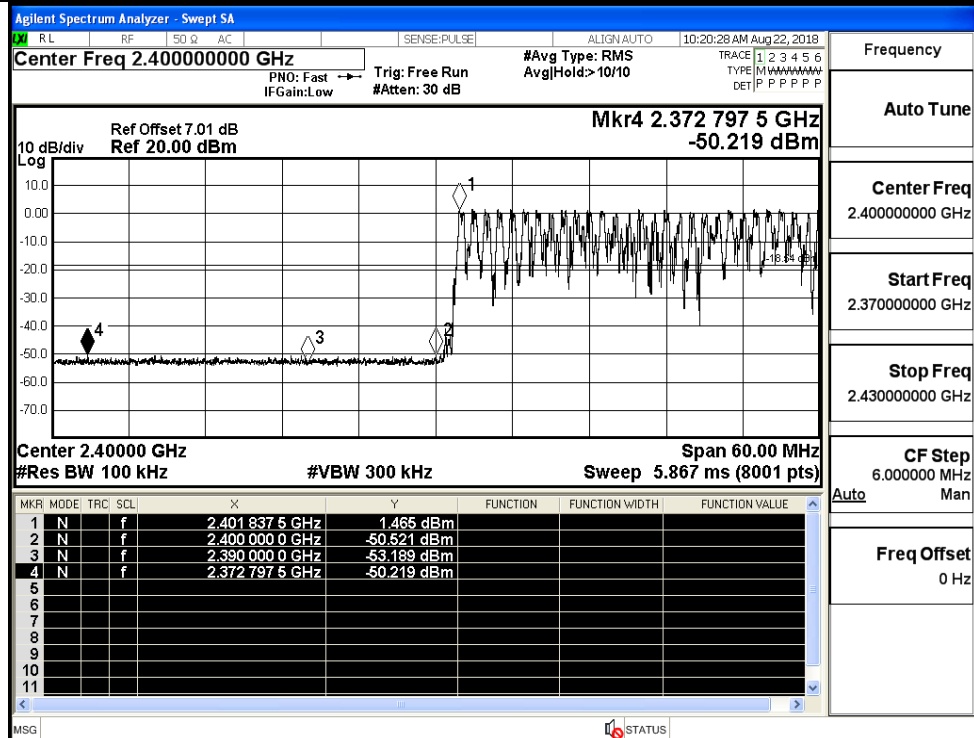
GFSK/HCH/Hop



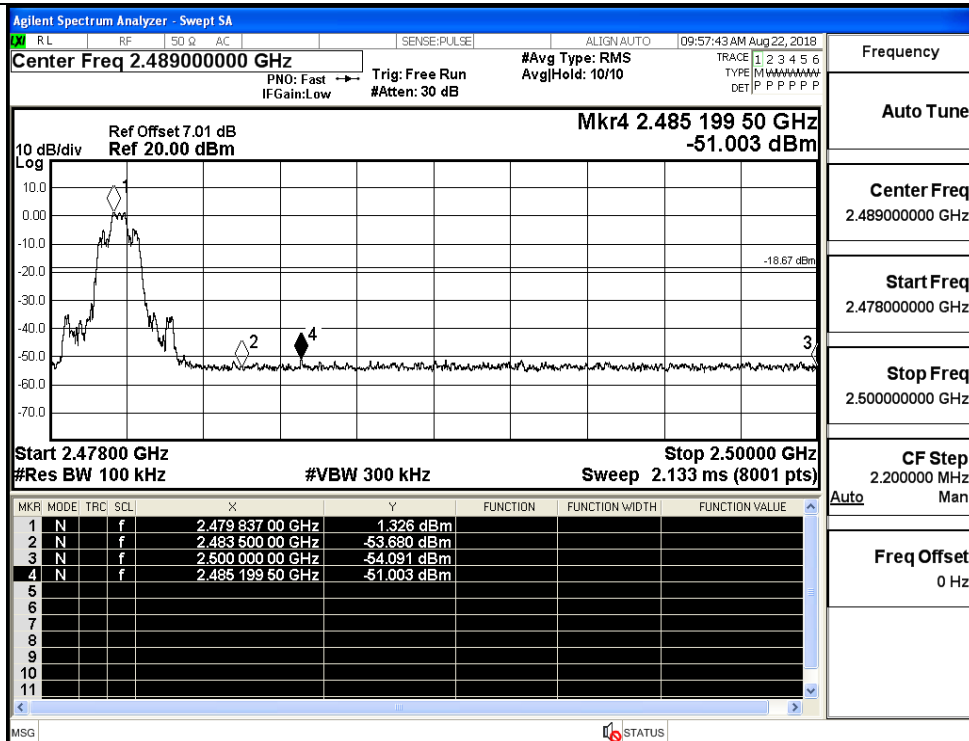
$\pi/4$ DQPSK/LCH/No
Hop



$\pi/4$ DQPSK/LCH/Hop



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

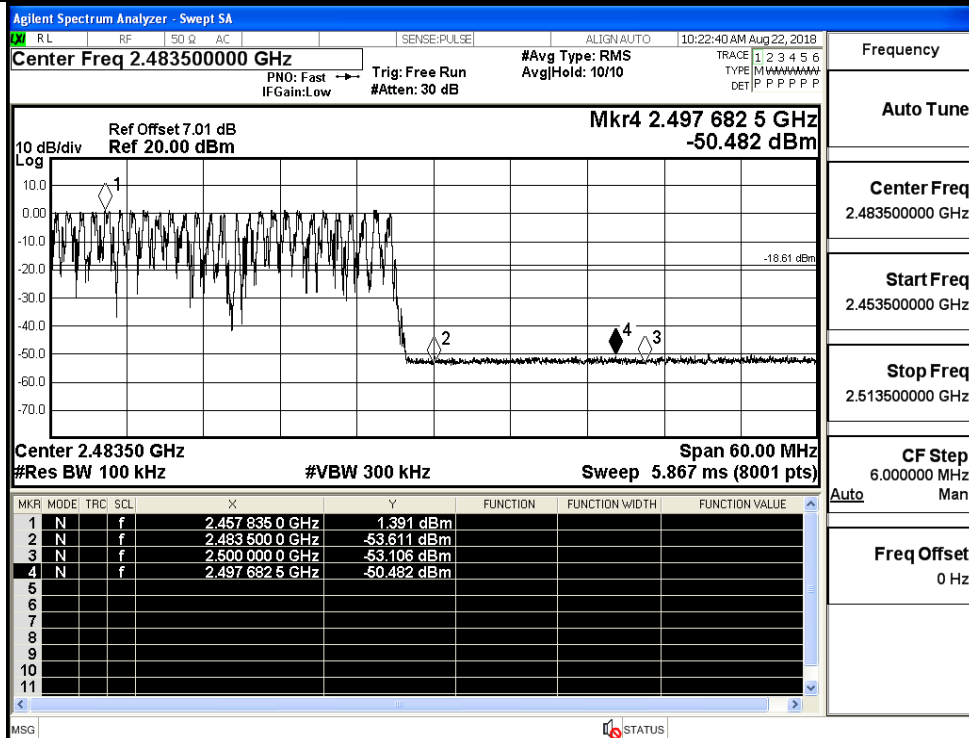


Frequency

Auto Tune

Center Freq
2.489000000 GHzStart Freq
2.478000000 GHzStop Freq
2.500000000 GHzCF Step
2.200000 MHz
Auto ManFreq Offset
0 Hz

$\pi/4$ DQPSK/HCH/Hop

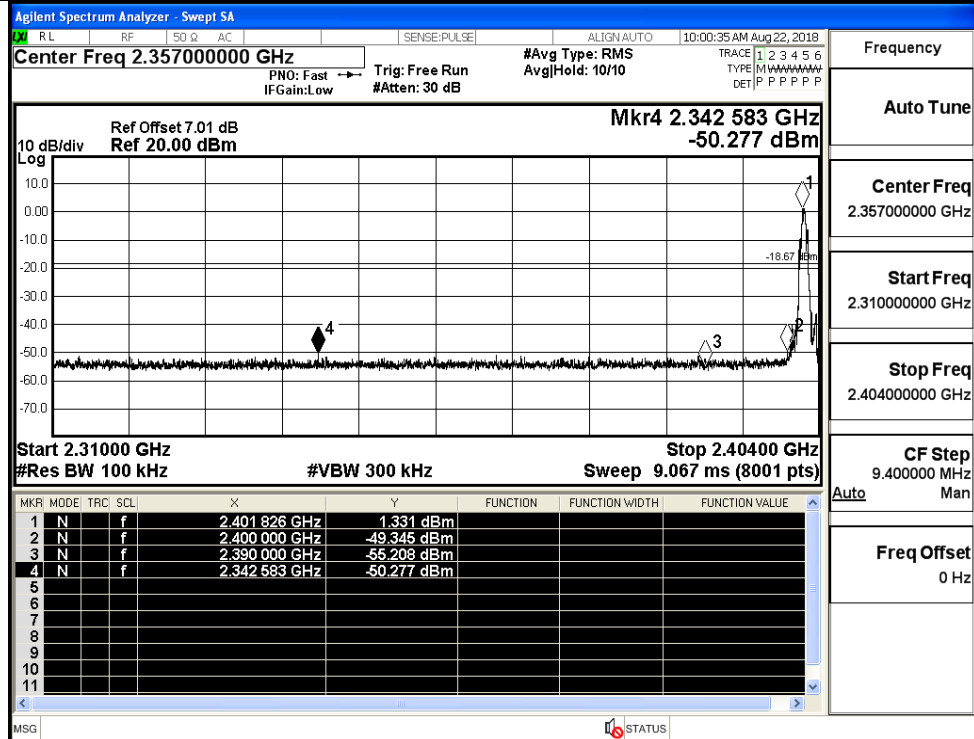


Frequency

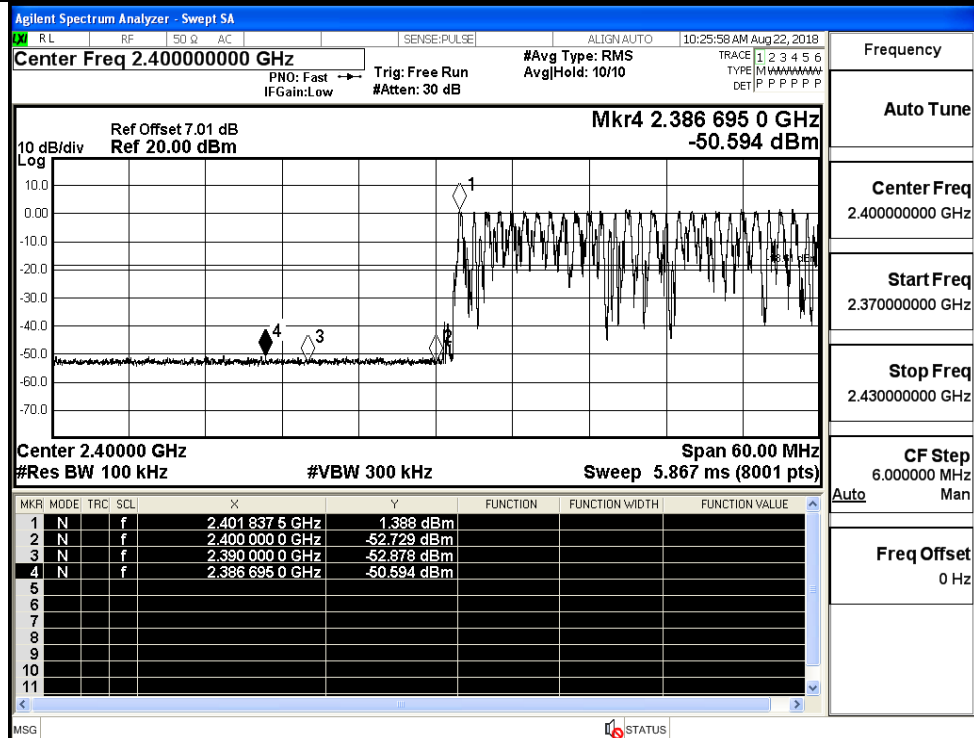
Auto Tune

Center Freq
2.483500000 GHzStart Freq
2.453500000 GHzStop Freq
2.513500000 GHzCF Step
6.000000 MHz
Auto ManFreq Offset
0 Hz

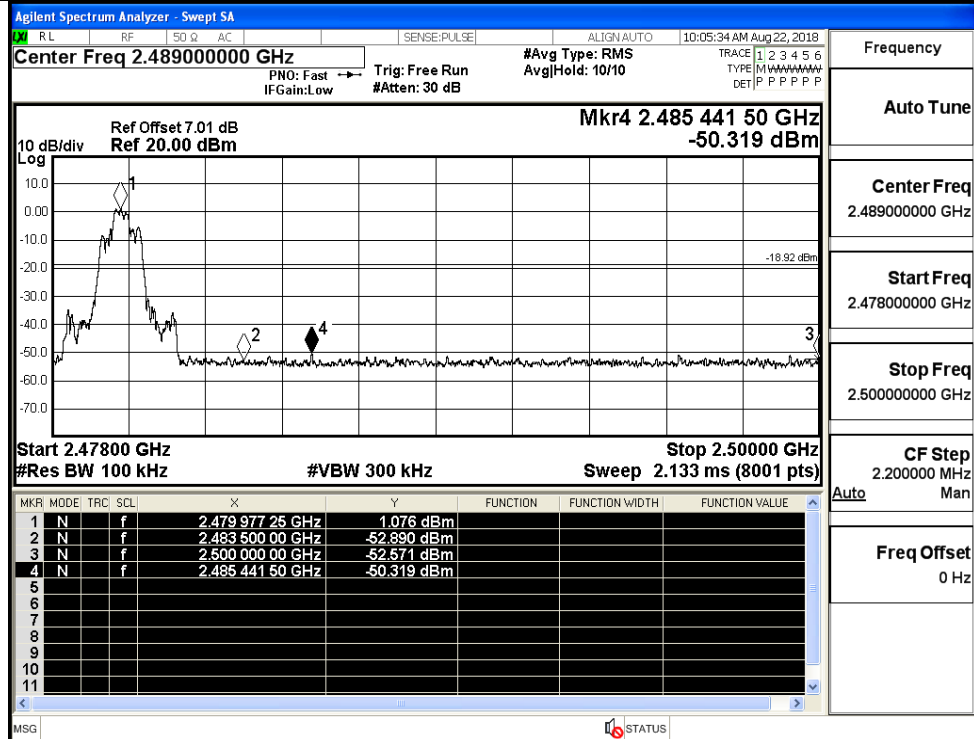
8DPSK/LCH/No Hop



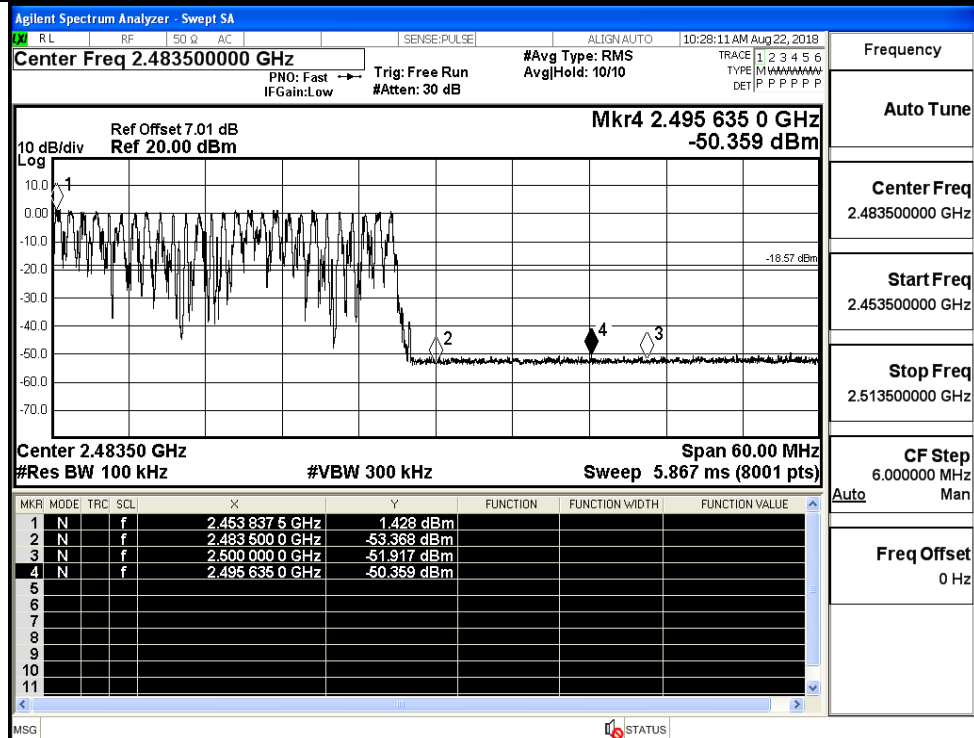
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



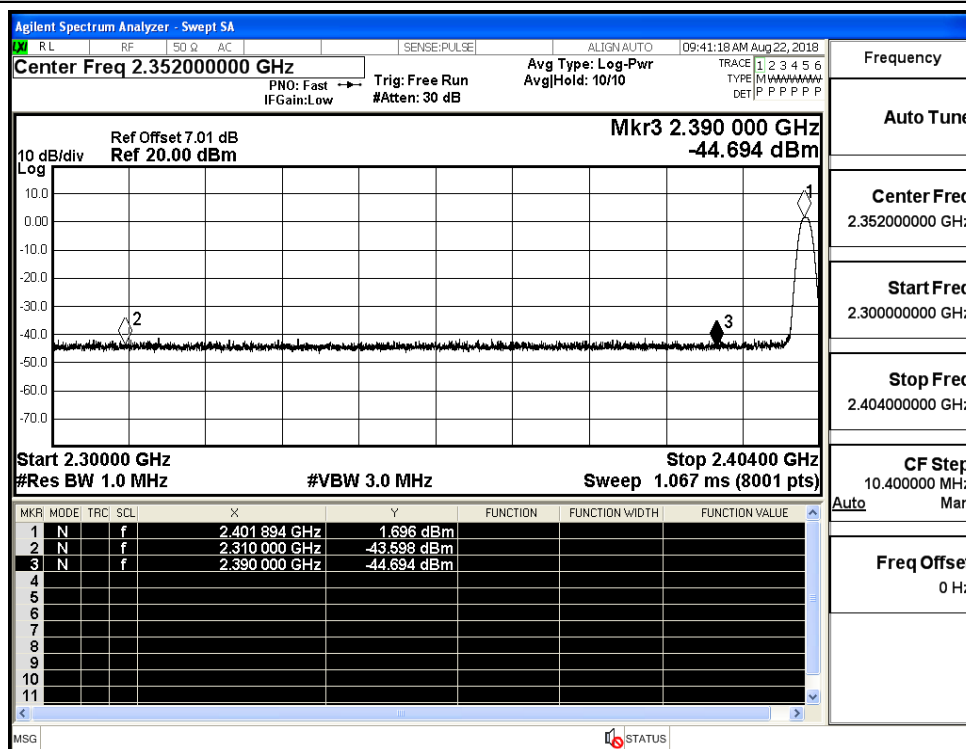
8DPSK/HCH/Hop



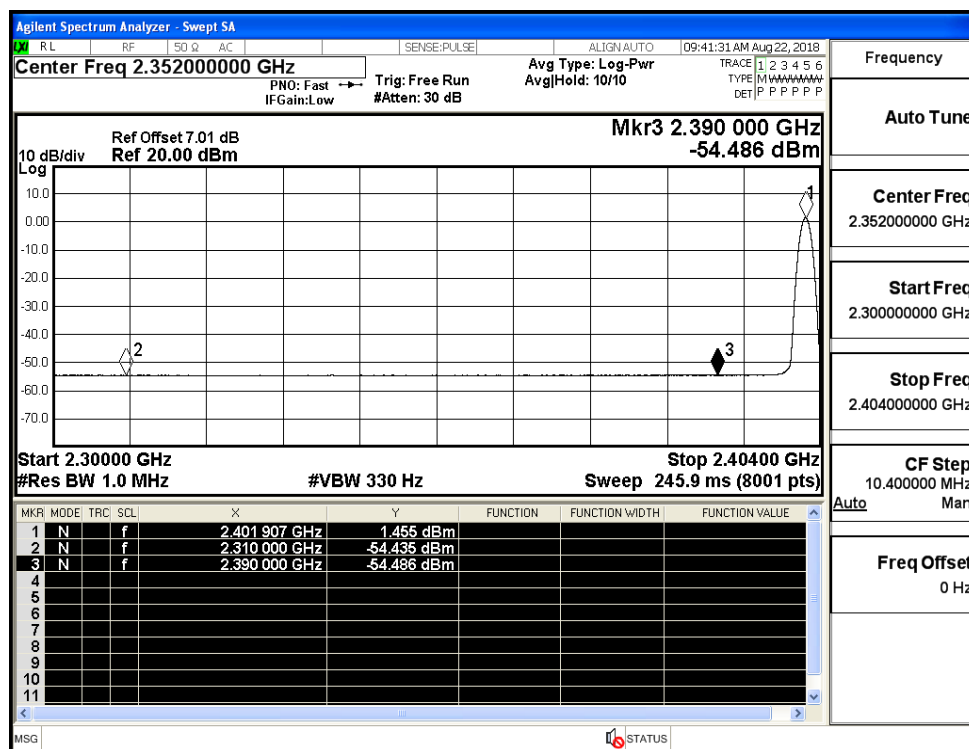
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.60	2.0	0	53.66	PEAK	74	PASS
	Off	2310.0	-54.44	2.0	0	42.82	AV	54	PASS
	Off	2390.0	-44.69	2.0	0	52.56	PEAK	74	PASS
	Off	2390.0	-54.49	2.0	0	42.77	AV	54	PASS
	Off	2483.5	-43.06	2.0	0	54.19	PEAK	74	PASS
	Off	2483.5	-54.03	2.0	0	43.23	AV	54	PASS
	Off	2500.0	-43.86	2.0	0	53.40	PEAK	74	PASS
	Off	2500.0	-54.08	2.0	0	43.17	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.02	2.0	0	54.24	PEAK	74	PASS
	Off	2310.0	-54.71	2.0	0	42.54	AV	54	PASS
	Off	2390.0	-42.83	2.0	0	54.43	PEAK	74	PASS
	Off	2390.0	-54.48	2.0	0	42.78	AV	54	PASS
	Off	2483.5	-44.60	2.0	0	52.66	PEAK	74	PASS
	Off	2483.5	-54.05	2.0	0	43.21	AV	54	PASS
	Off	2500.0	-44.12	2.0	0	53.13	PEAK	74	PASS
	Off	2500.0	-54.04	2.0	0	43.22	AV	54	PASS
8DPSK	Off	2310.0	-44.54	2.0	0	52.72	PEAK	74	PASS
	Off	2310.0	-54.57	2.0	0	42.69	AV	54	PASS
	Off	2390.0	-45.04	2.0	0	52.22	PEAK	74	PASS
	Off	2390.0	-54.45	2.0	0	42.81	AV	54	PASS
	Off	2483.5	-43.67	2.0	0	53.59	PEAK	74	PASS
	Off	2483.5	-54.20	2.0	0	43.06	AV	54	PASS
	Off	2500.0	-43.19	2.0	0	54.07	PEAK	74	PASS
	Off	2500.0	-54.07	2.0	0	43.19	AV	54	PASS

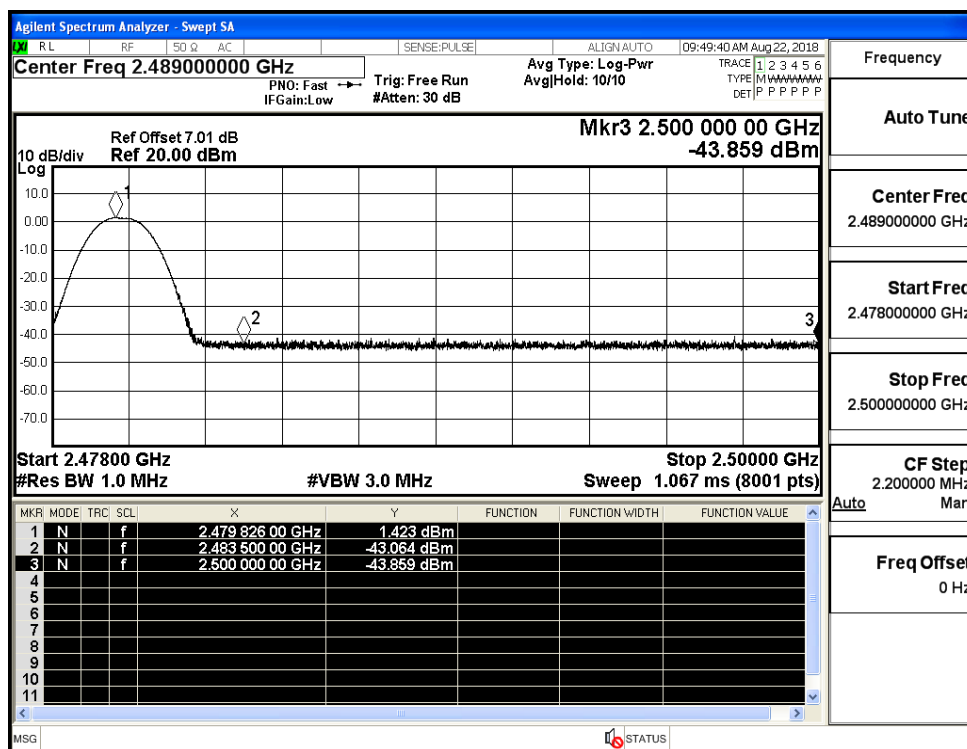
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



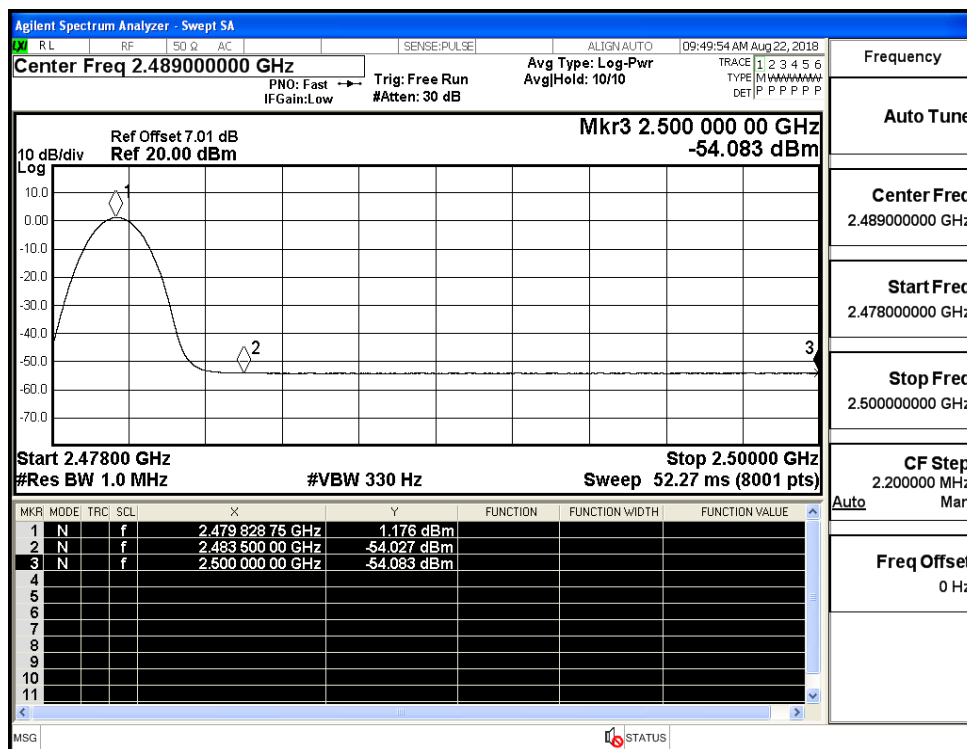
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

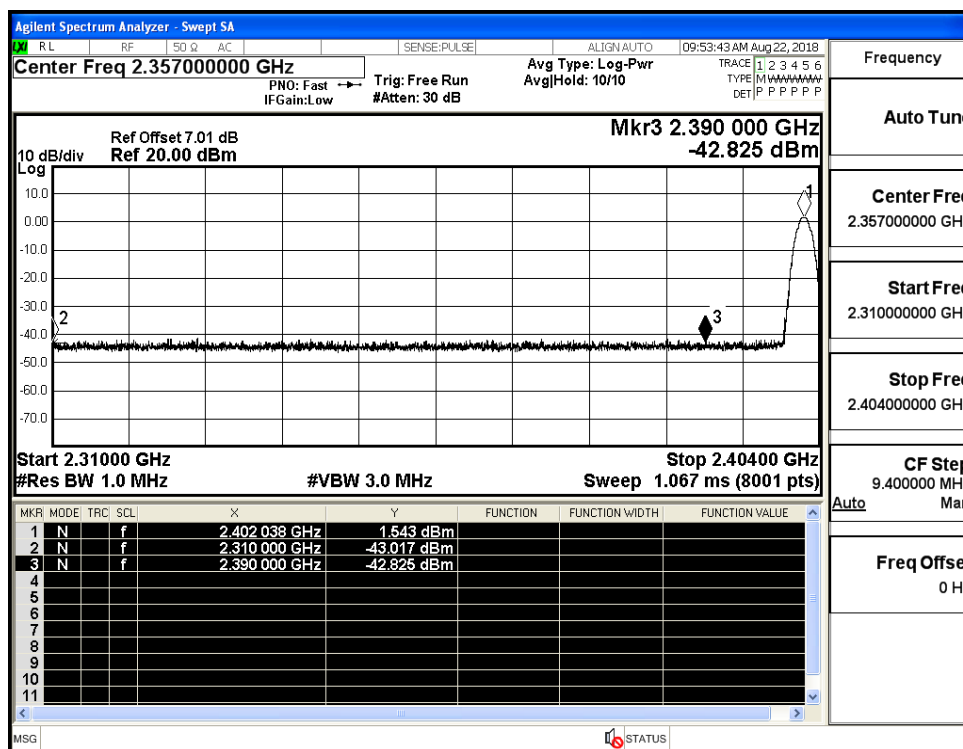
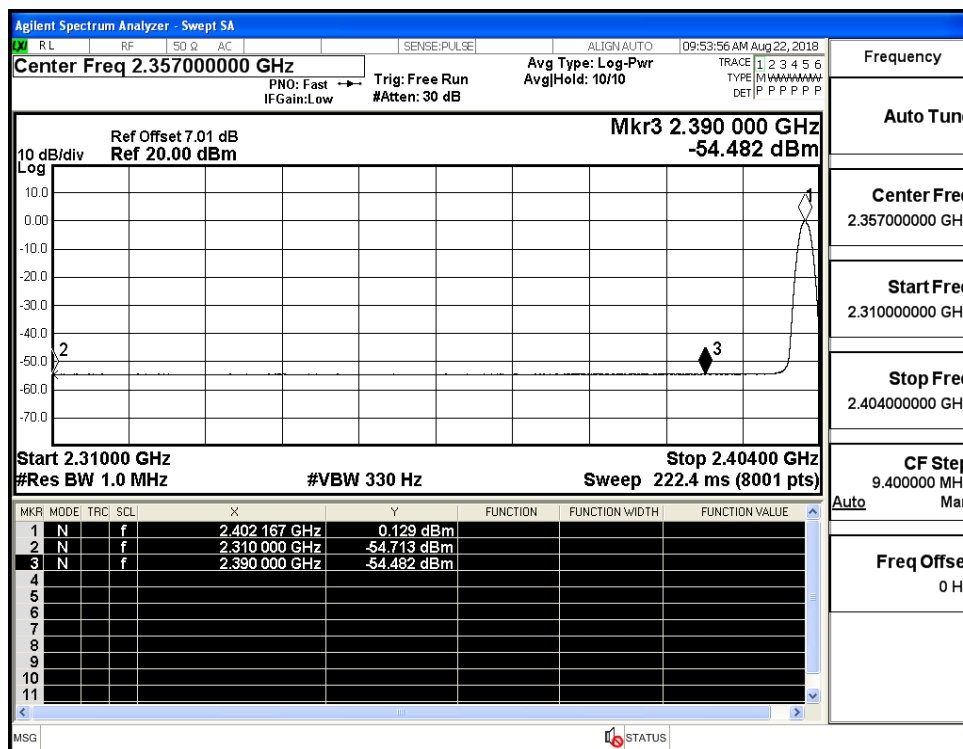


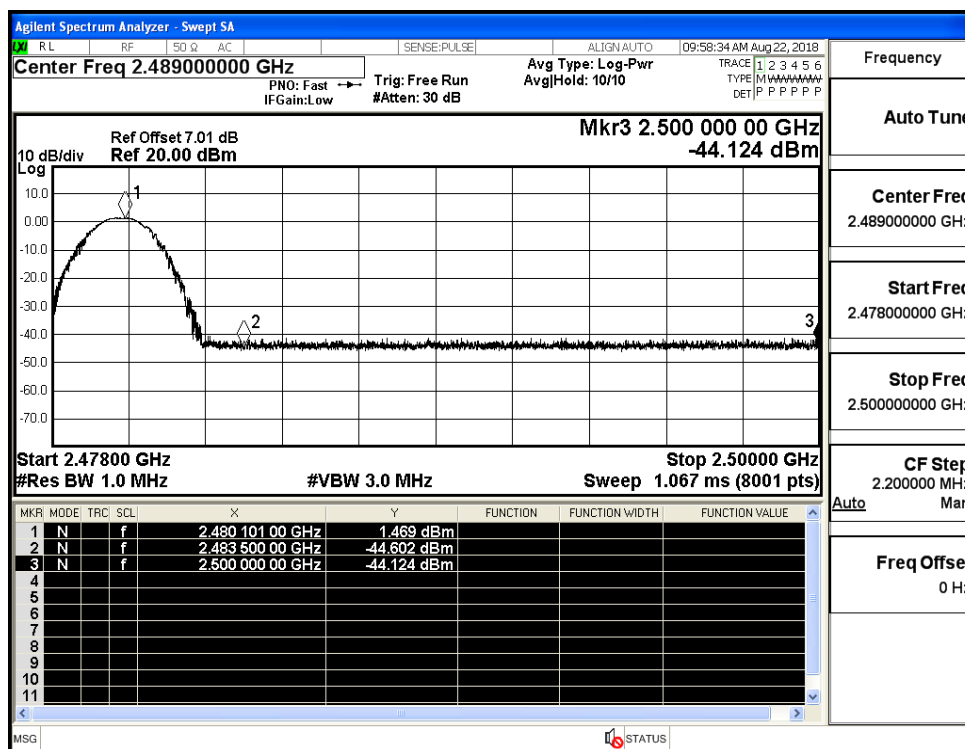
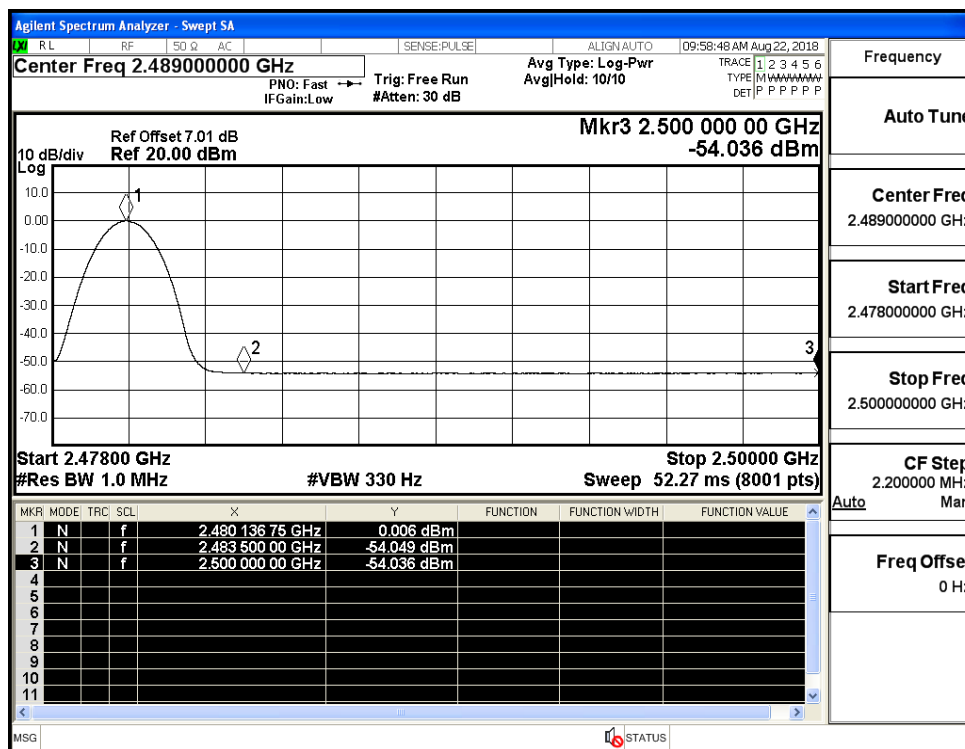
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



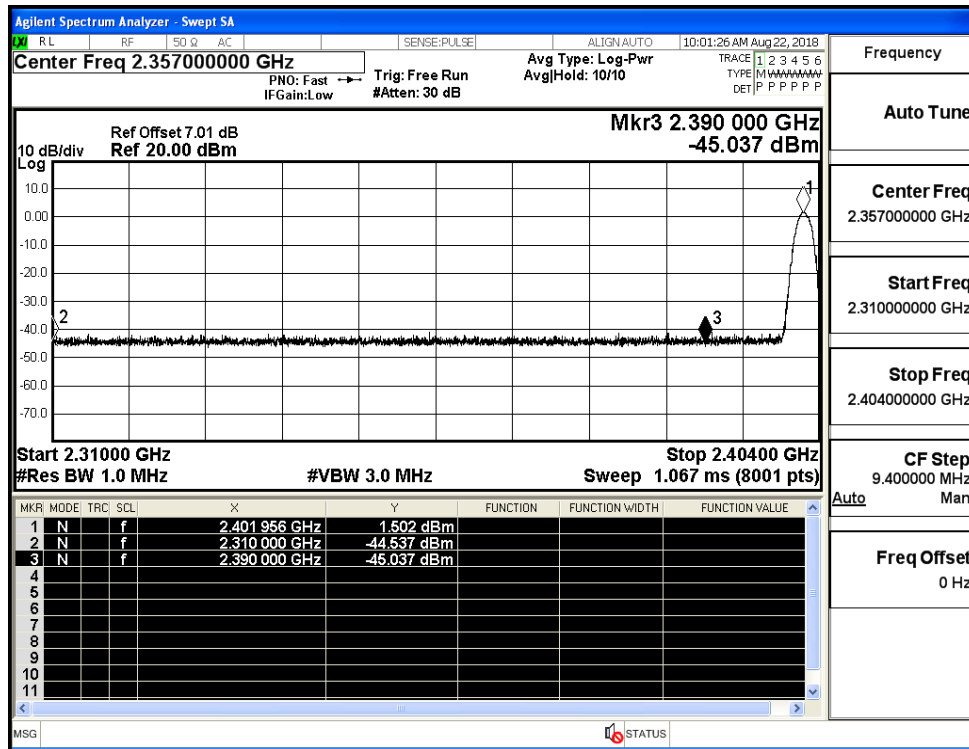
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



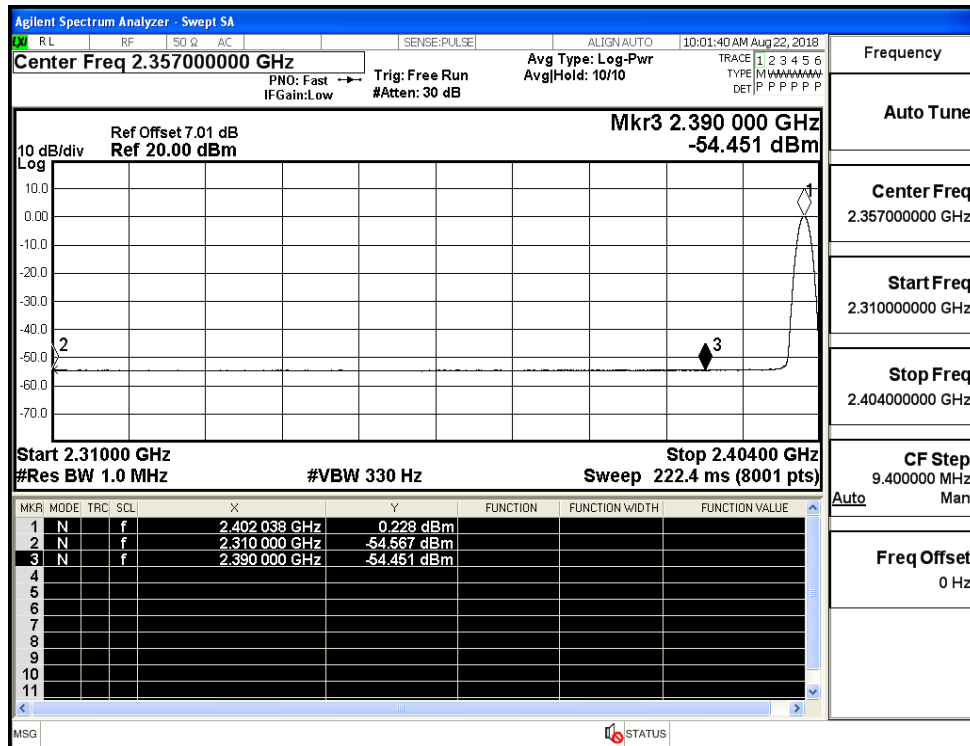
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

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)

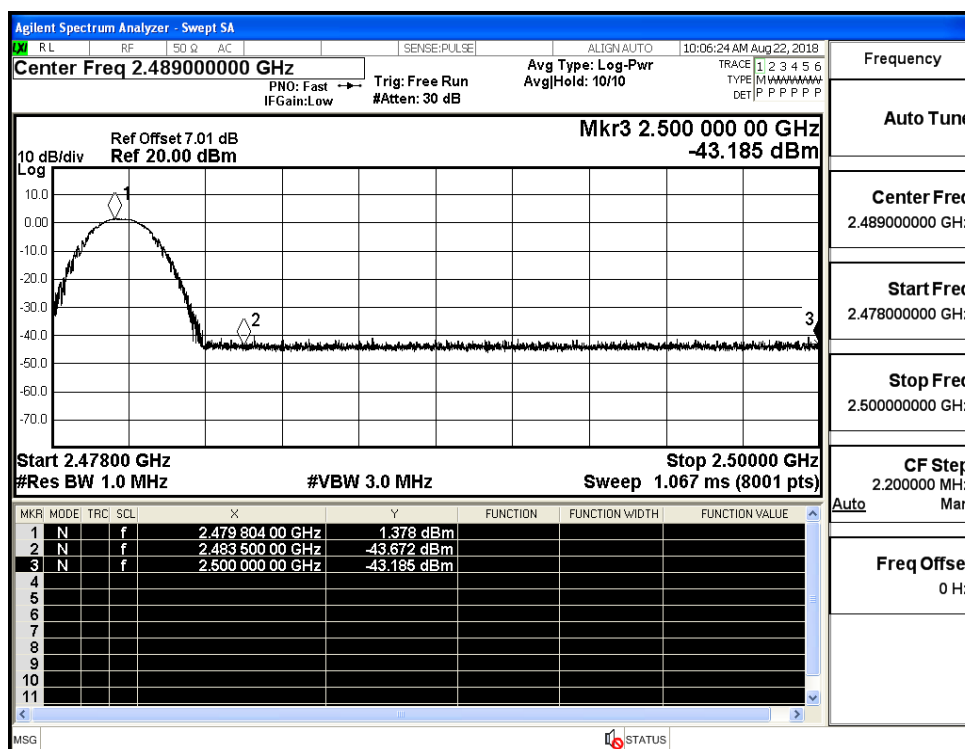
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

