

Appendix A

RF Test Data for BT V4.2 (BDR/EDR) (Conducted Measurement)

Product Name: Neckband Wireless Sport Earphones

Trade Mark: AWEI

Test Model: G10BL

Environmental Conditions

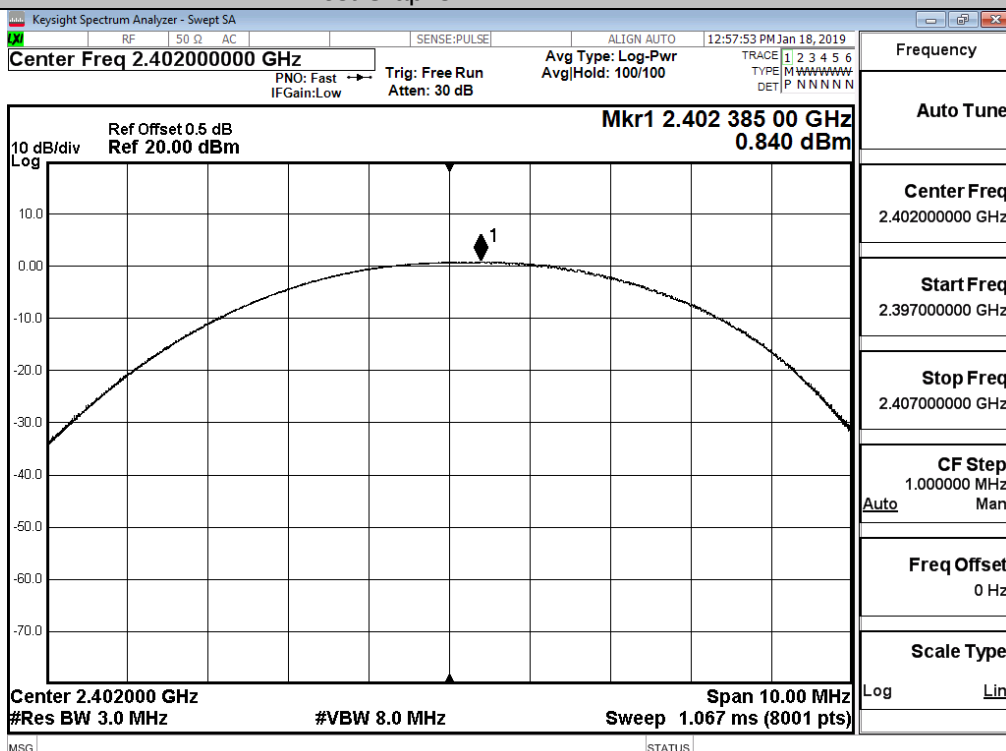
Temperature:	23.5 °C
Relative Humidity:	55%
ATM Pressure:	100.0 kPa
Test Engineer:	Mina.Xu
Supervised by:	Jayden.Zhuo

A.1 Maximum Conducted Peak Output Power

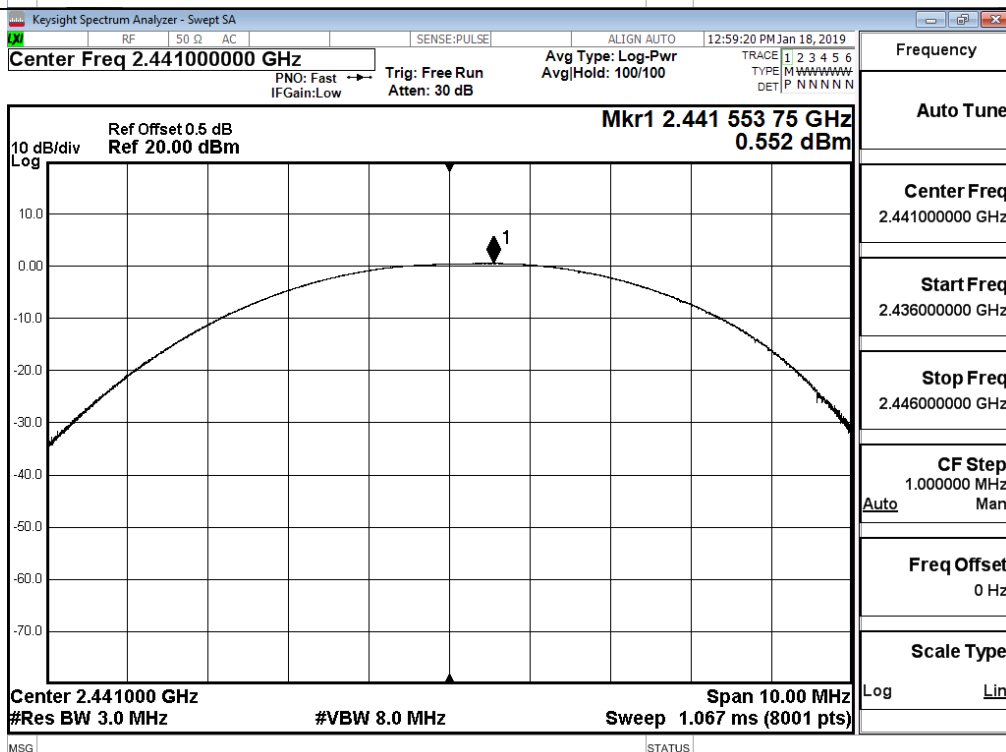
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.840	21	PASS
	MCH	0.552	21	PASS
	HCH	0.542	21	PASS
$\pi/4$ DQPSK	LCH	-0.776	21	PASS
	MCH	-0.717	21	PASS
	HCH	-0.752	21	PASS
8DPSK	LCH	1.499	21	PASS
	MCH	-0.518	21	PASS
	HCH	-0.557	21	PASS

Test Graphs

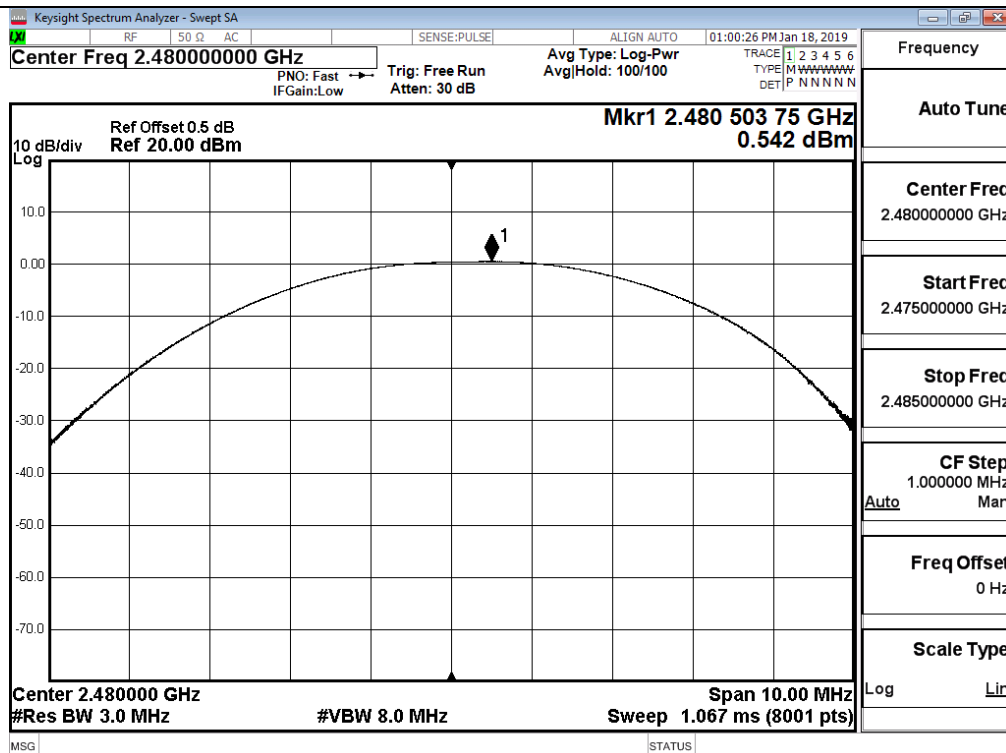
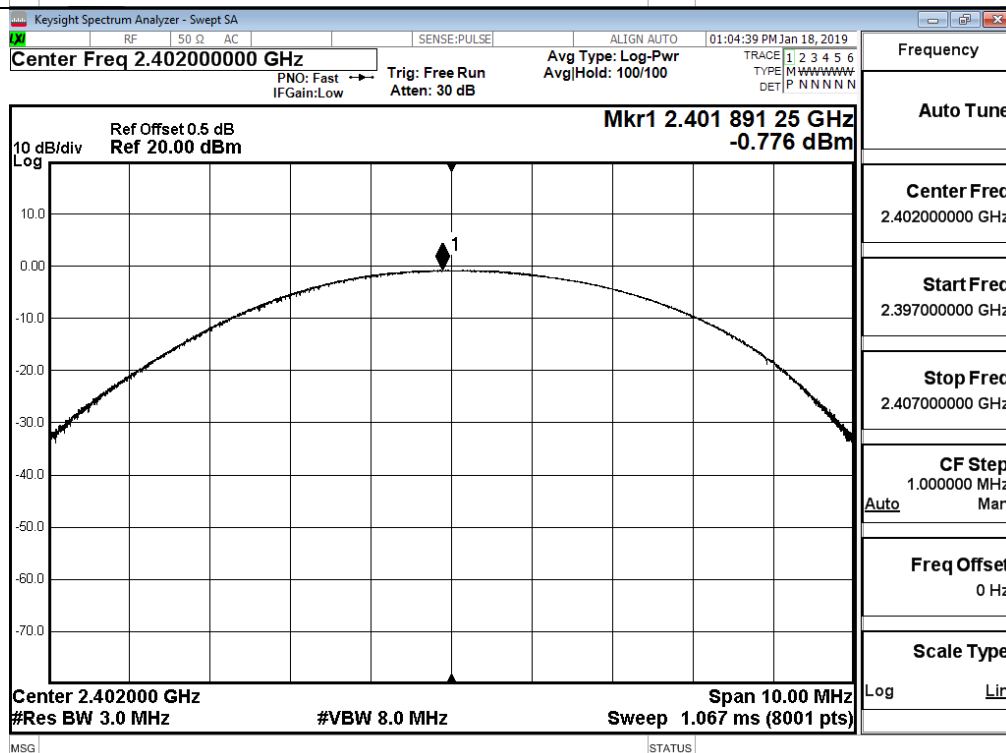
GFSK/LCH

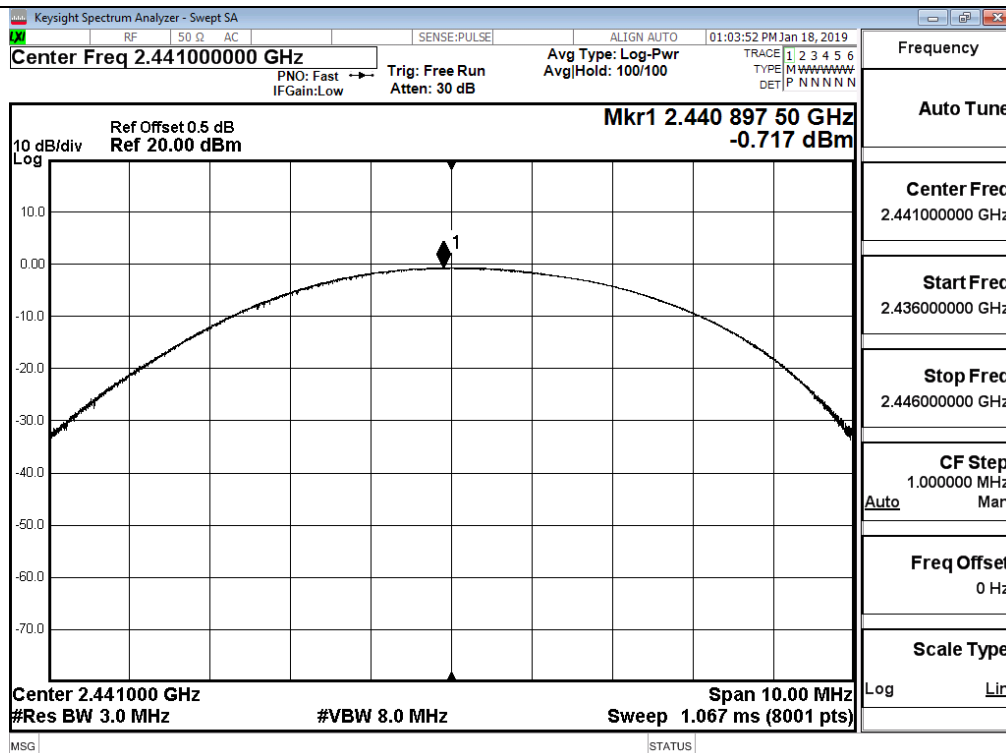
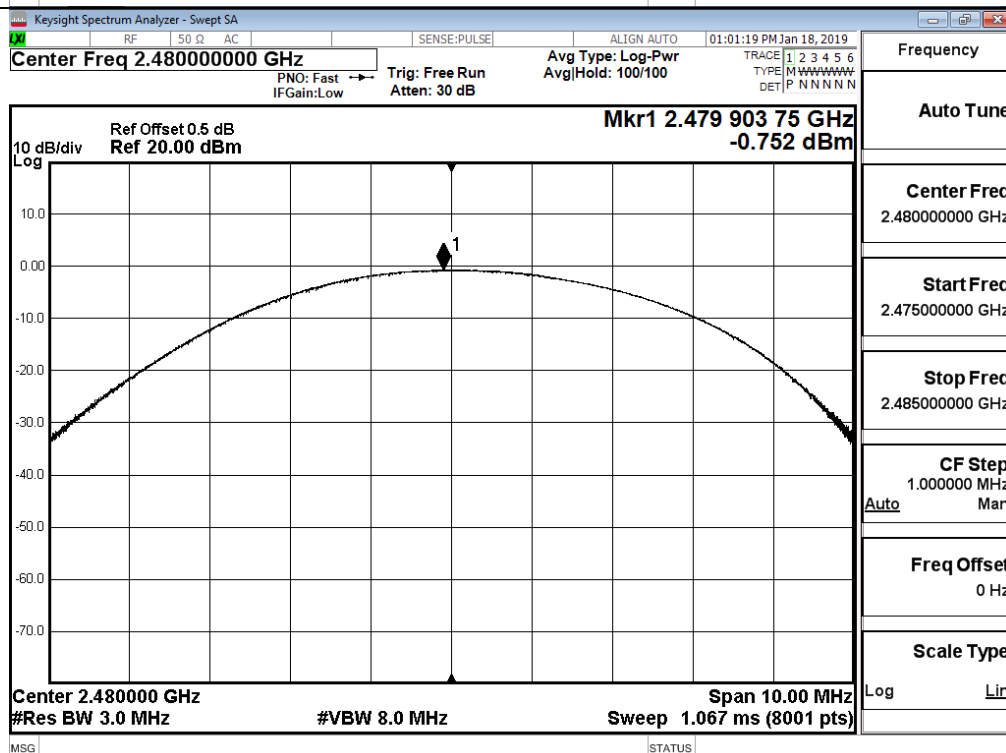


GFSK/MCH

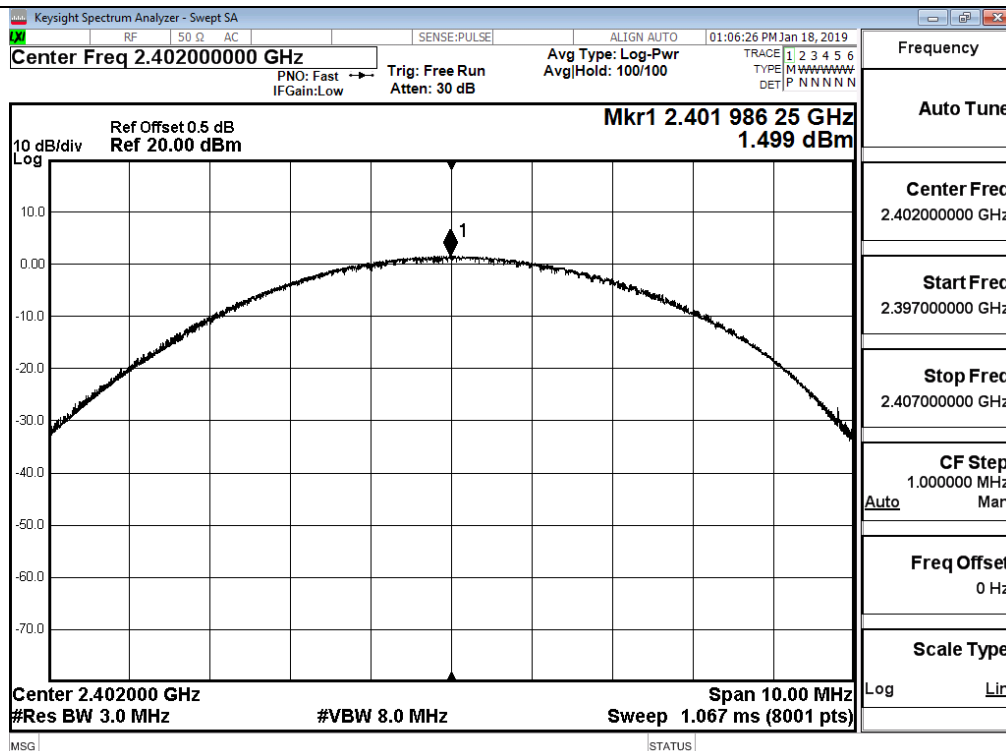


GFSK/HCH

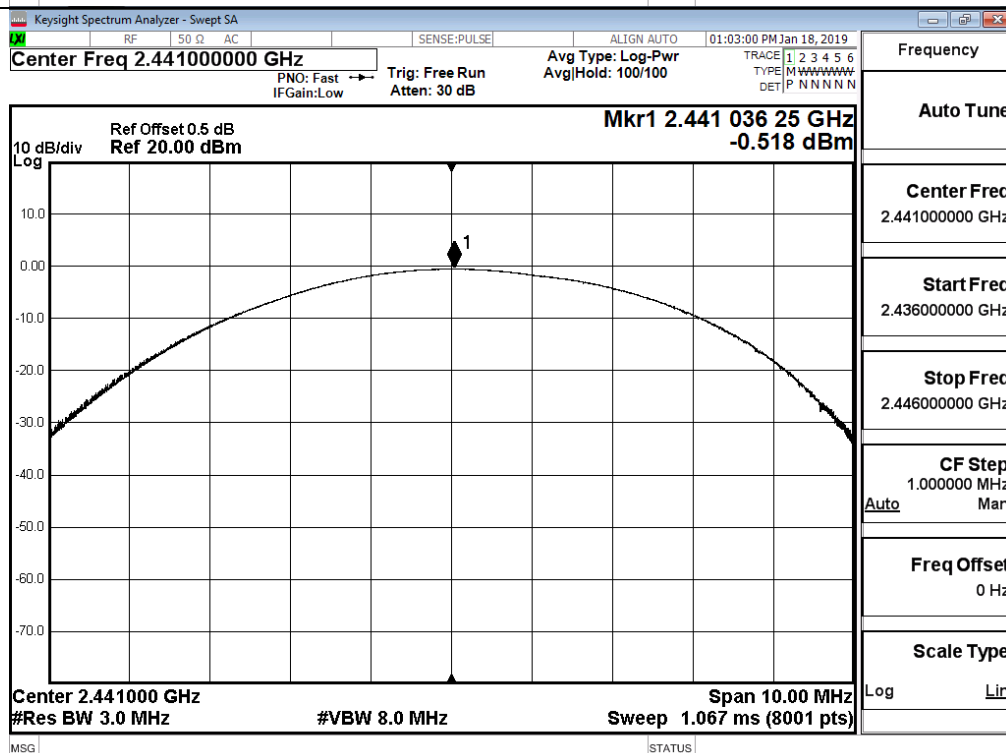
 $\pi/4$ DQPSK/LCH

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

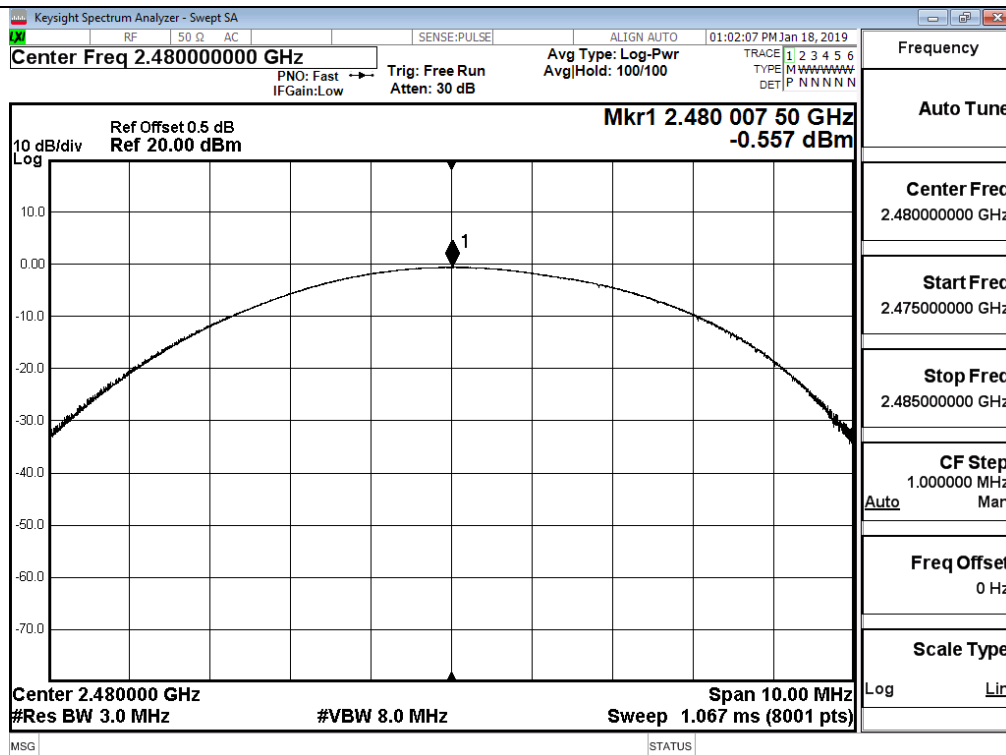
8DPSK/LCH



8DPSK/MCH

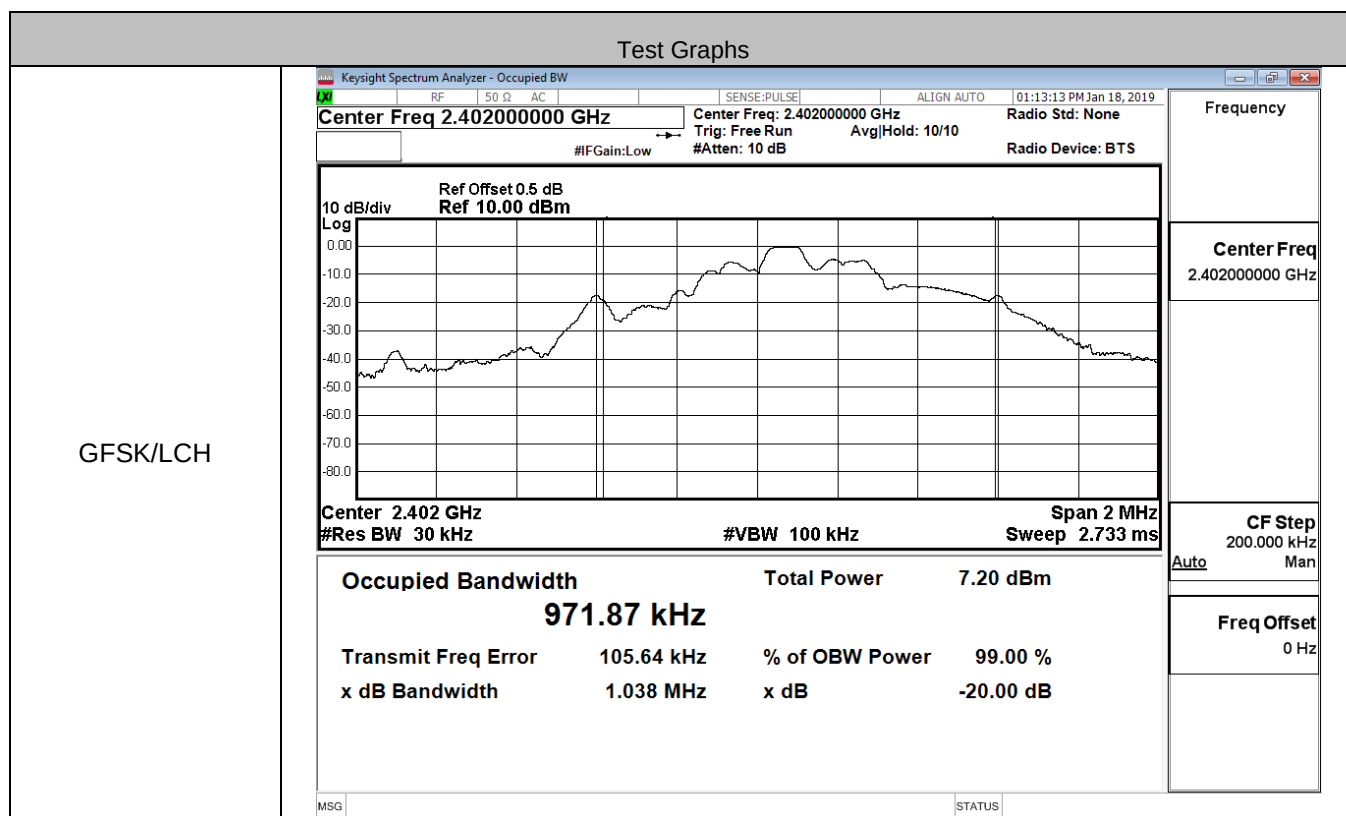


8DPSK/HCH

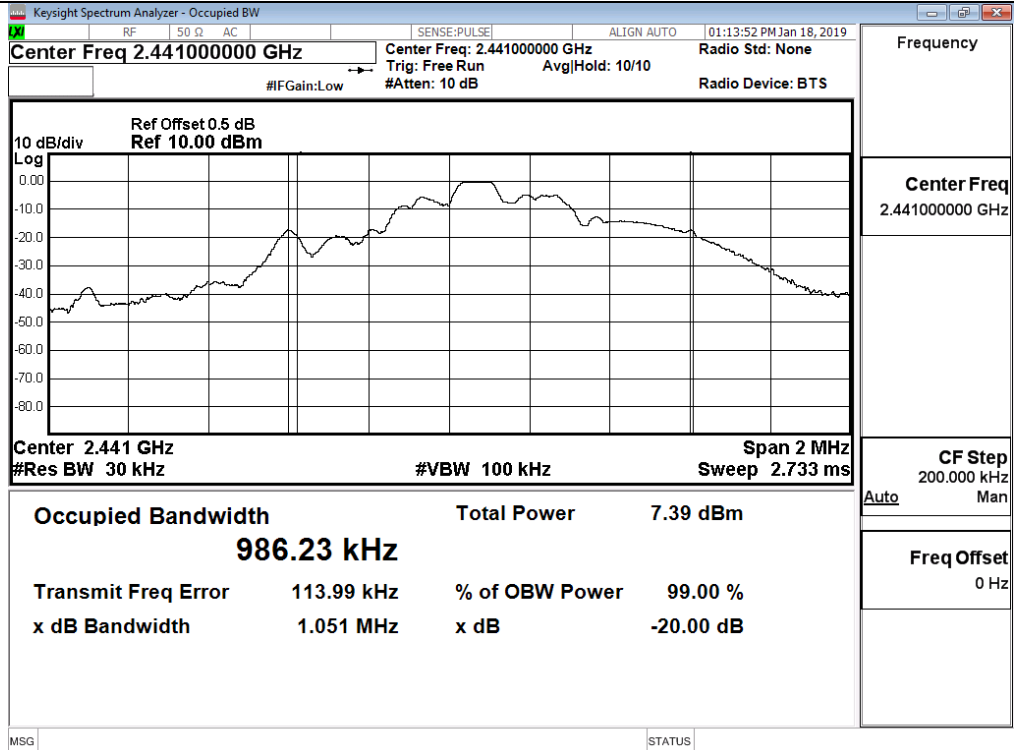


A.2 99% and 20dB Bandwidth

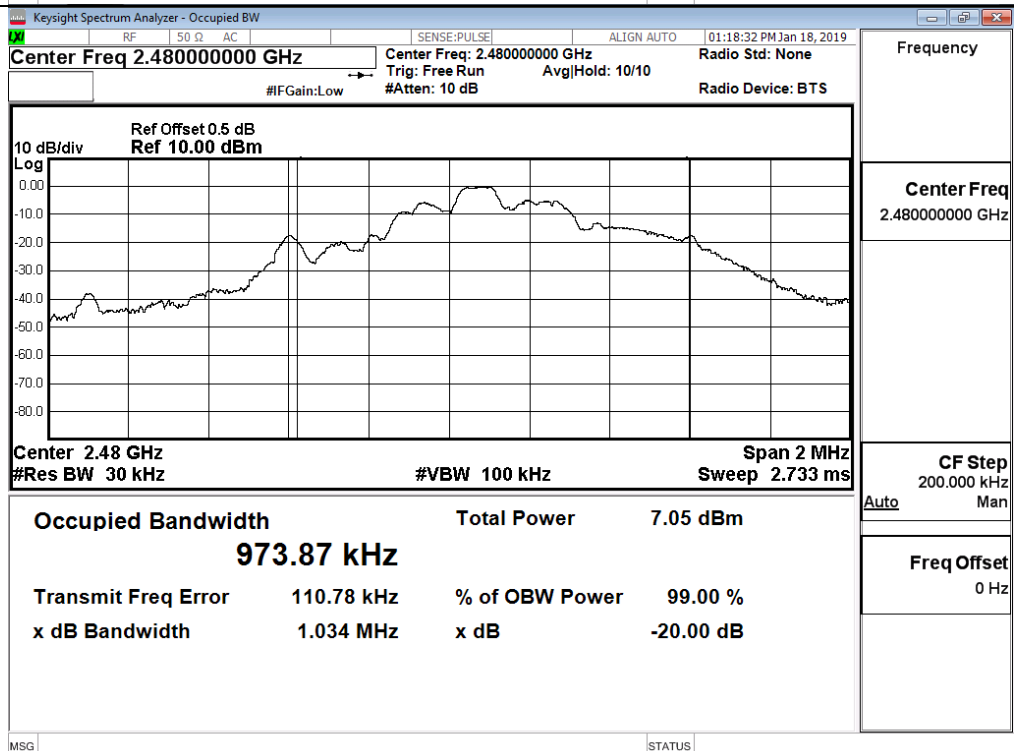
Mode	Channel.	99% Bandwidth [MHz]	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.97187	1.038	Not Specified	PASS
	MCH	0.98623	1.051	Not Specified	PASS
	HCH	0.97387	1.034	Not Specified	PASS
π /4DQPSK	LCH	1.0534	1.110	Not Specified	PASS
	MCH	1.0503	1.107	Not Specified	PASS
	HCH	1.0499	1.108	Not Specified	PASS
8DPSK	LCH	1.1241	1.187	Not Specified	PASS
	MCH	1.1202	1.186	Not Specified	PASS
	HCH	1.1271	1.175	Not Specified	PASS

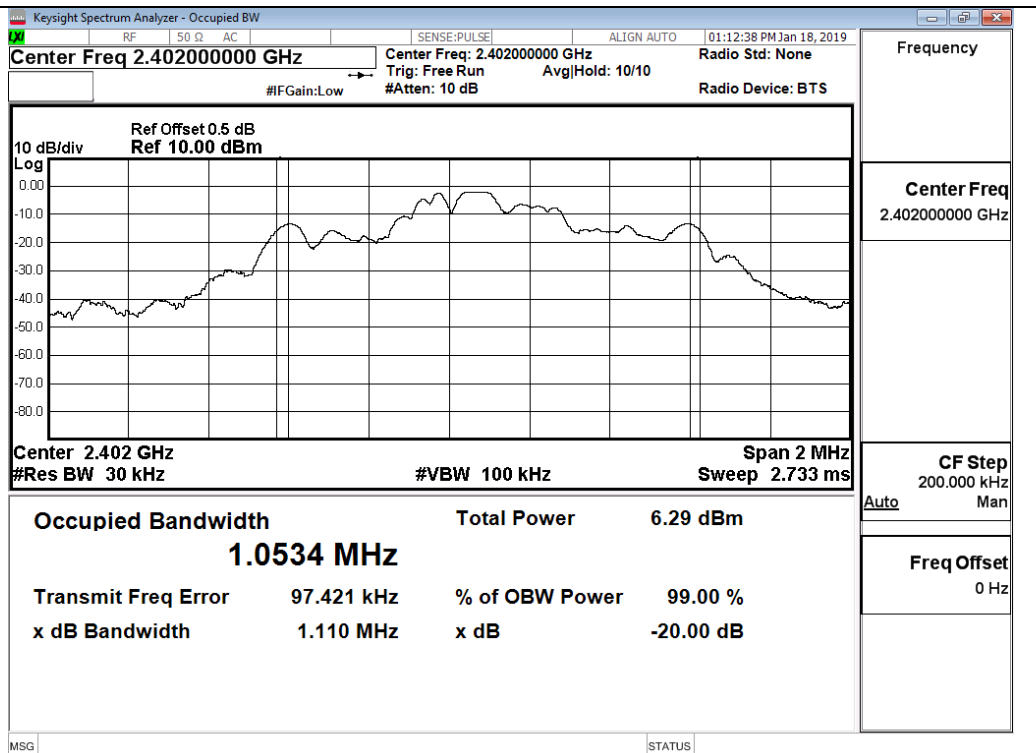
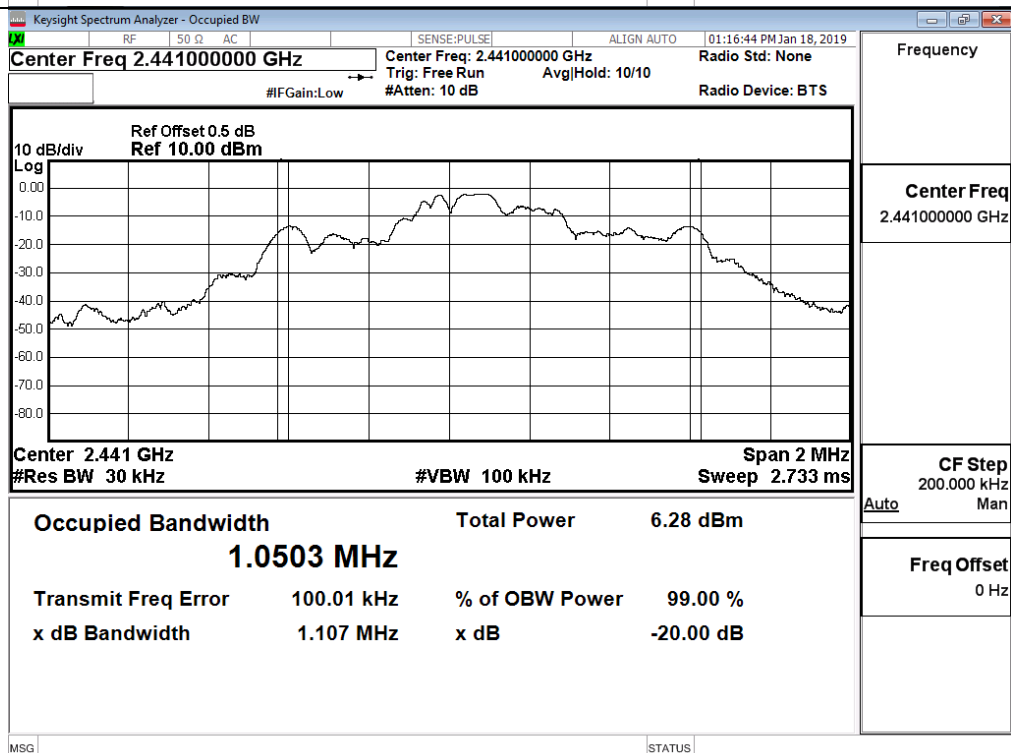


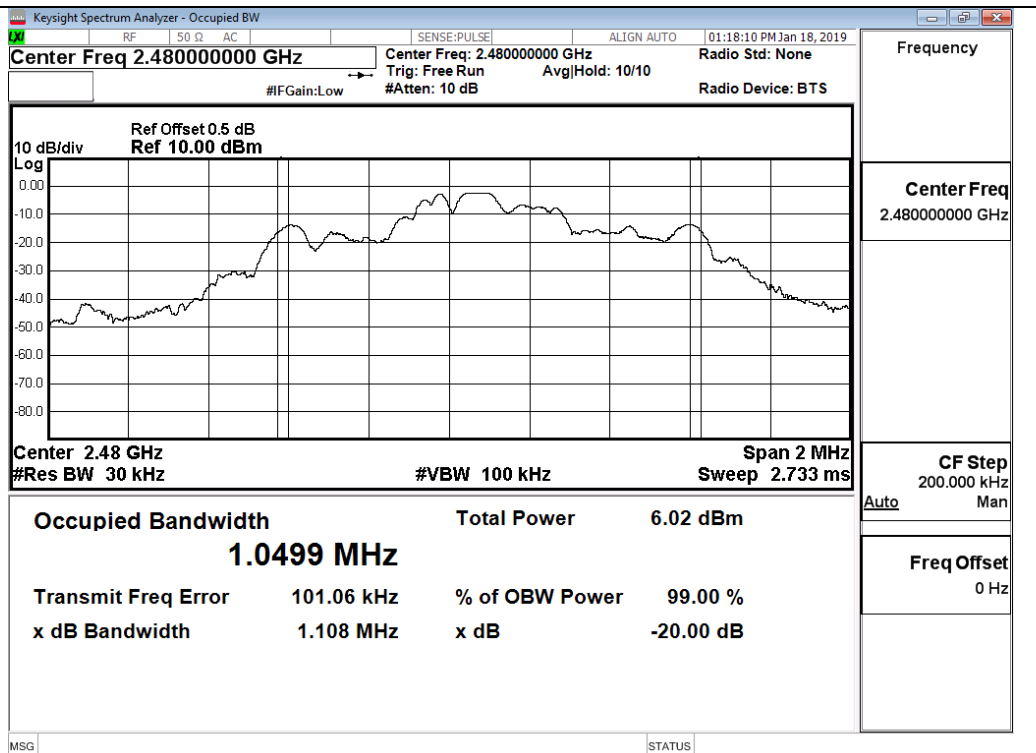
GFSK/MCH



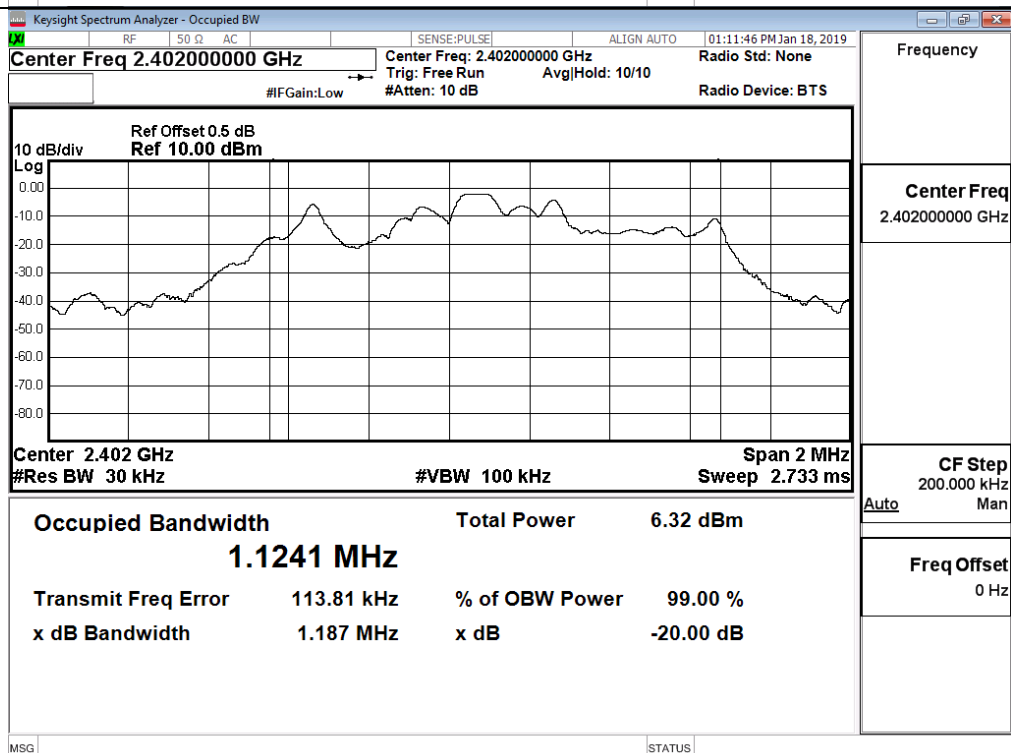
GFSK/HCH



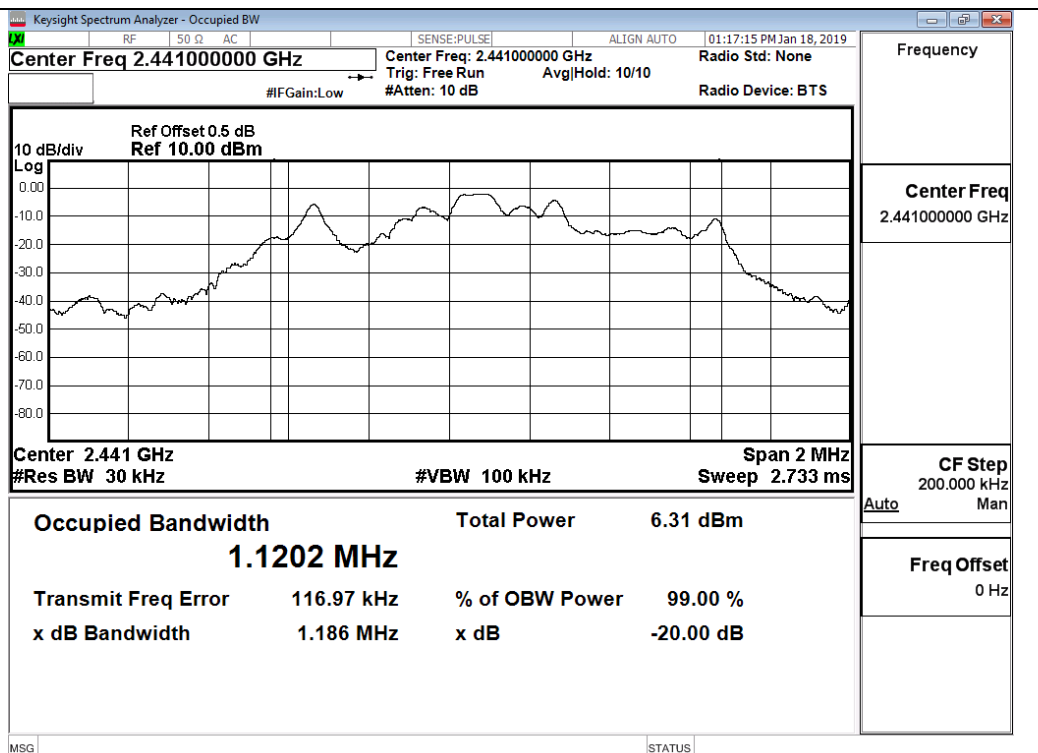
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

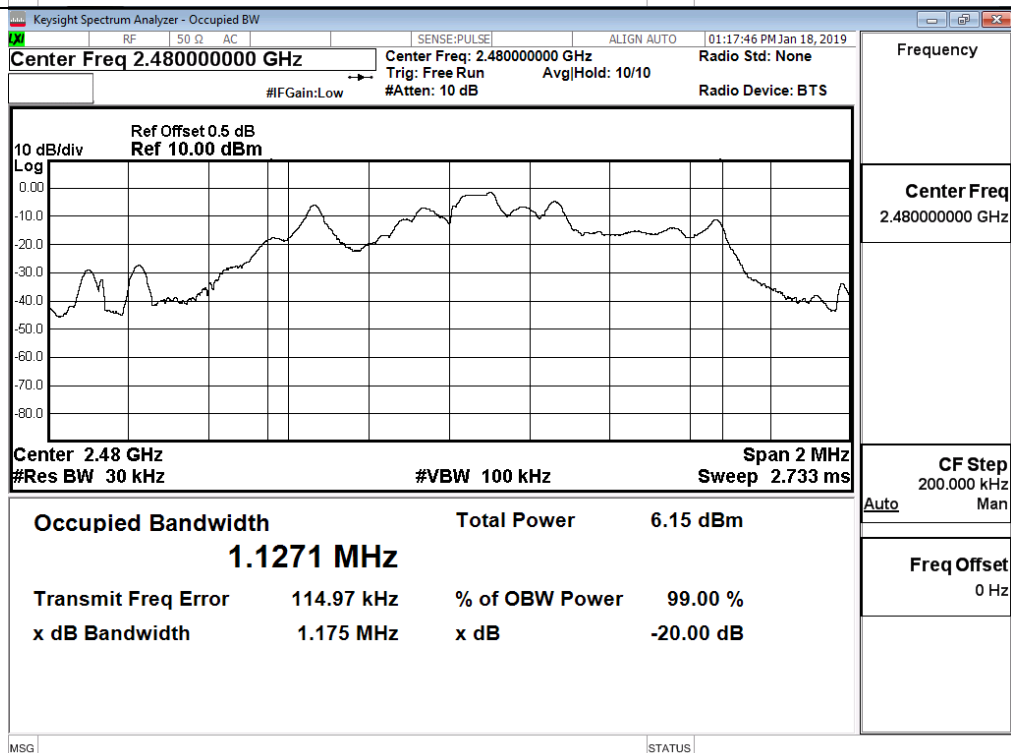
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH



Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.000	0.6920	PASS
	MCH	1.002	0.7047	PASS
	HCH	1.006	0.6893	PASS
$\pi/4$ DQPSK	LCH	1.001	0.740	PASS
	MCH	1.004	0.738	PASS
	HCH	1.001	0.739	PASS
8DPSK	LCH	1.001	0.791	PASS
	MCH	0.999	0.791	PASS
	HCH	1.003	0.783	PASS

Test Graphs

Keysight Spectrum Analyzer - Swept SA

Start Freq 2.401500000 GHz

Stop Freq 2.403500000 GHz

Center Freq 2.402500000 GHz

Ref Offset 0.5 dB

Ref 20.00 dBm

ΔMkr2 -1.000 25 MHz

-0.070 dB

10 dB/div

Log

2Δ1

Start 2.401500 GHz

#Res BW 100 kHz

#VBW 300 kHz

Stop 2.403500 GHz

Sweep 1.067 ms (8001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	f		2.403 030 50 GHz	-0.294 dBm			
2	Δ1	f	(Δ)	-1.000 25 MHz (Δ)	-0.070 dB			
3								
4								
5								
6								
7								
8								
9								
10								
11								

MSG

STATUS

Frequency

Auto Tune

Center Freq

Start Freq

Stop Freq

CF Step

Auto

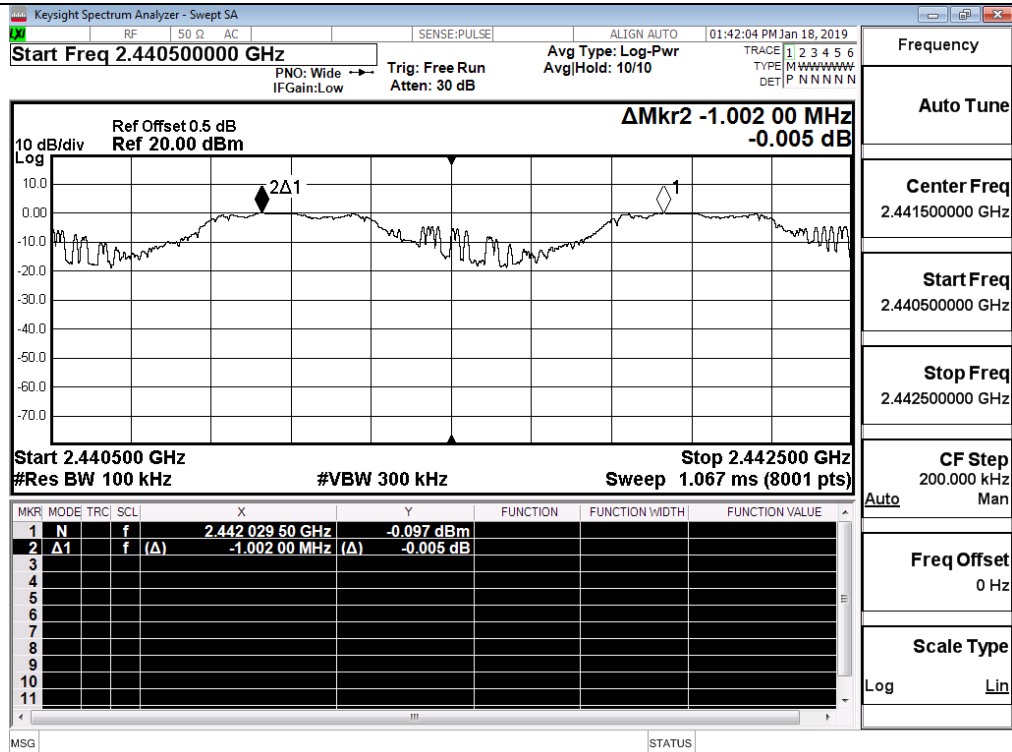
Freq Offset

Scale Type

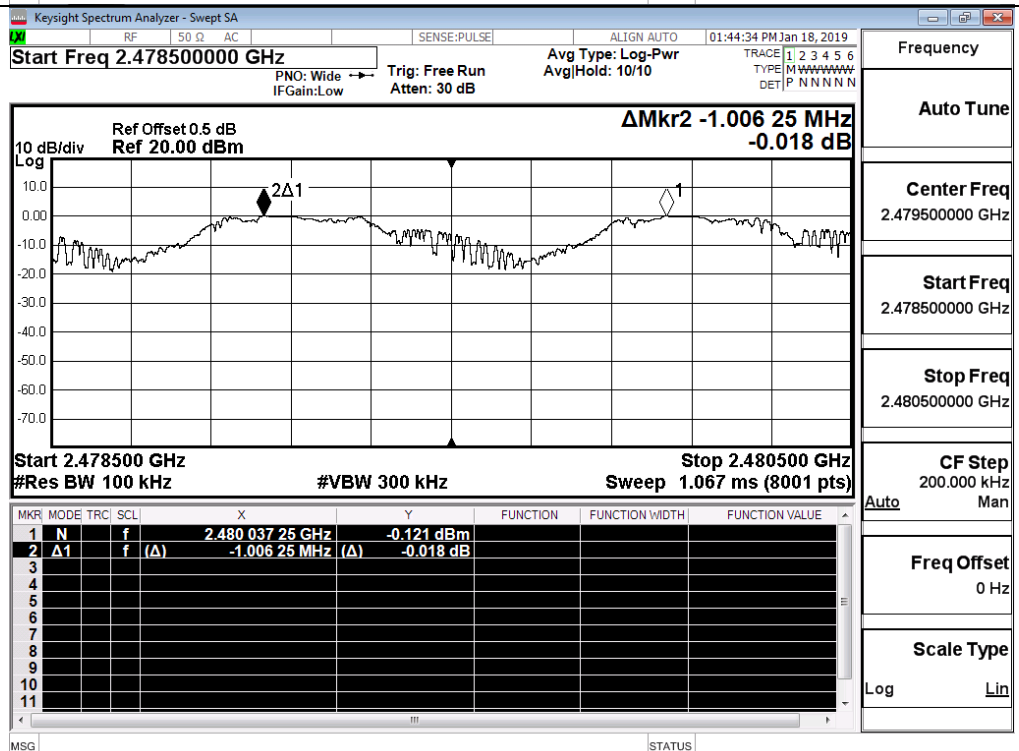
Log

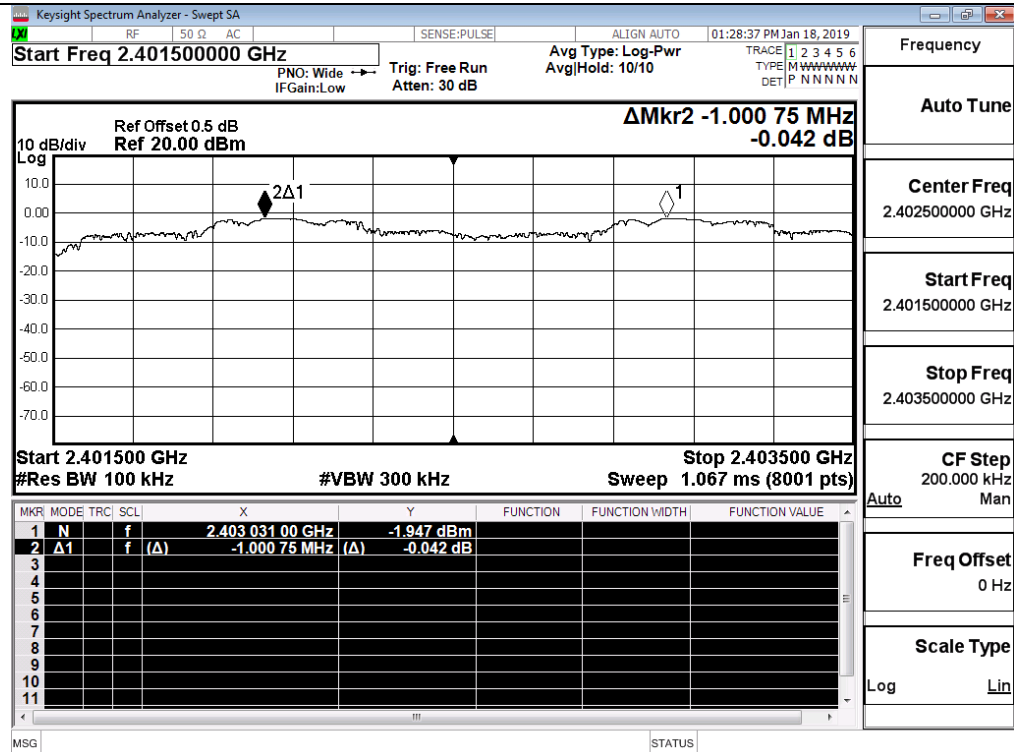
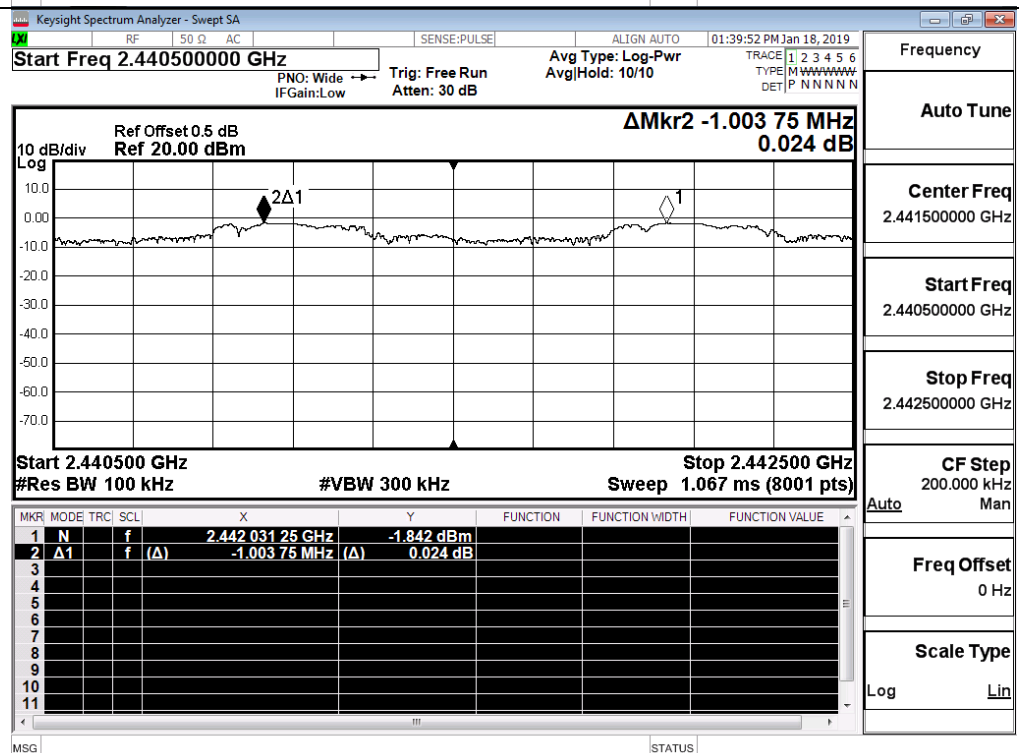
Lin

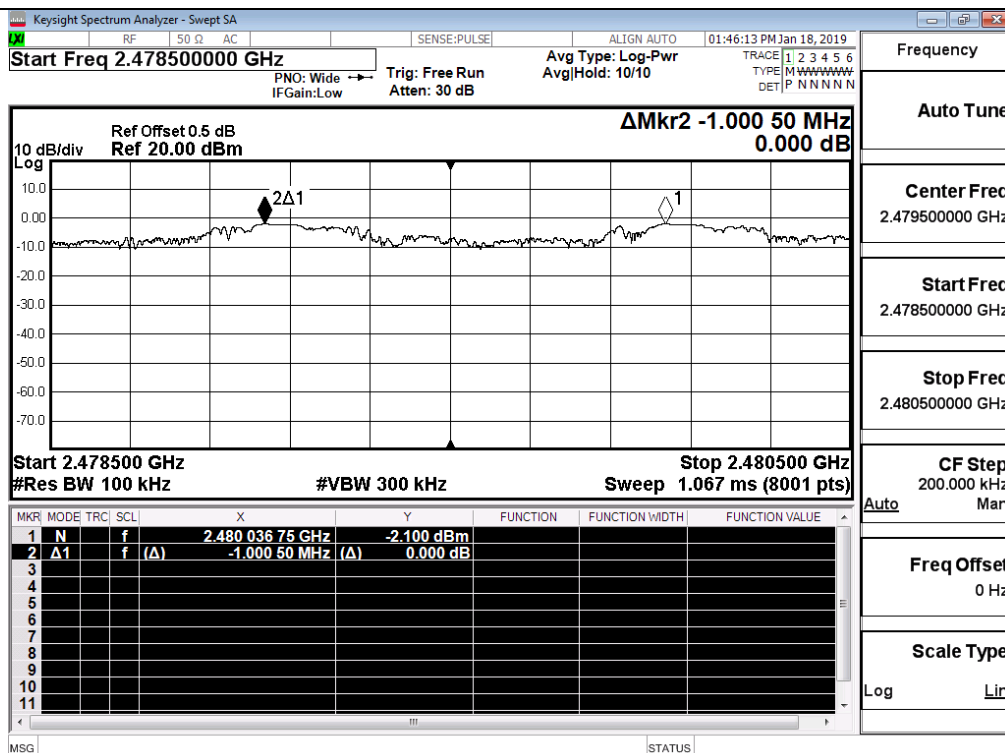
GFSK/MCH



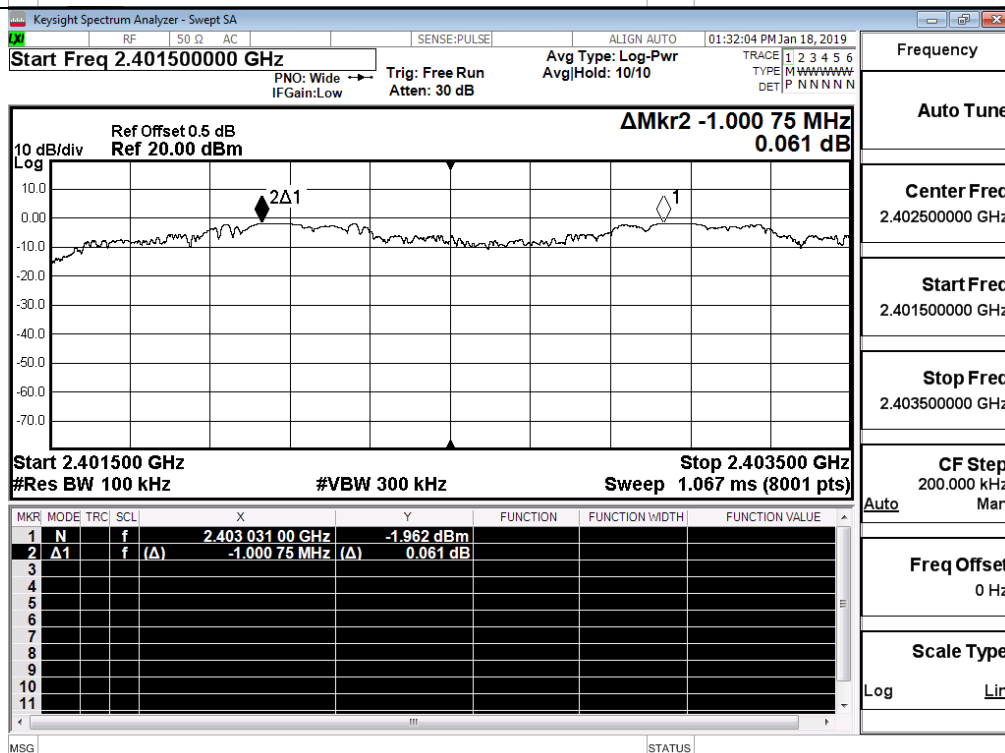
GFSK/HCH



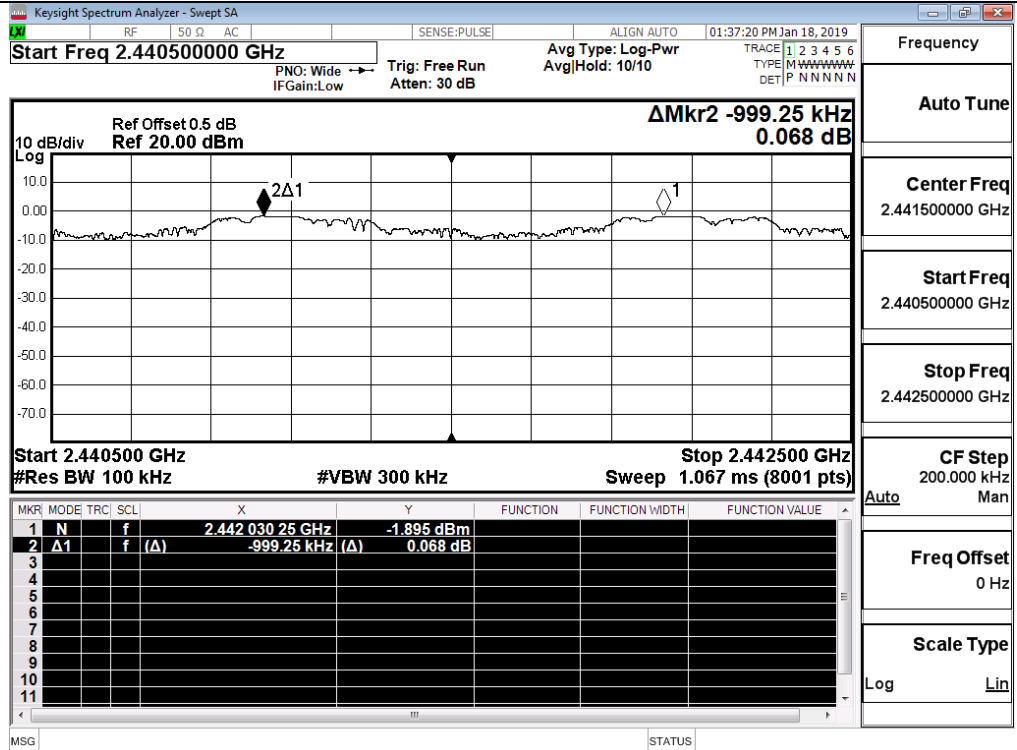
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

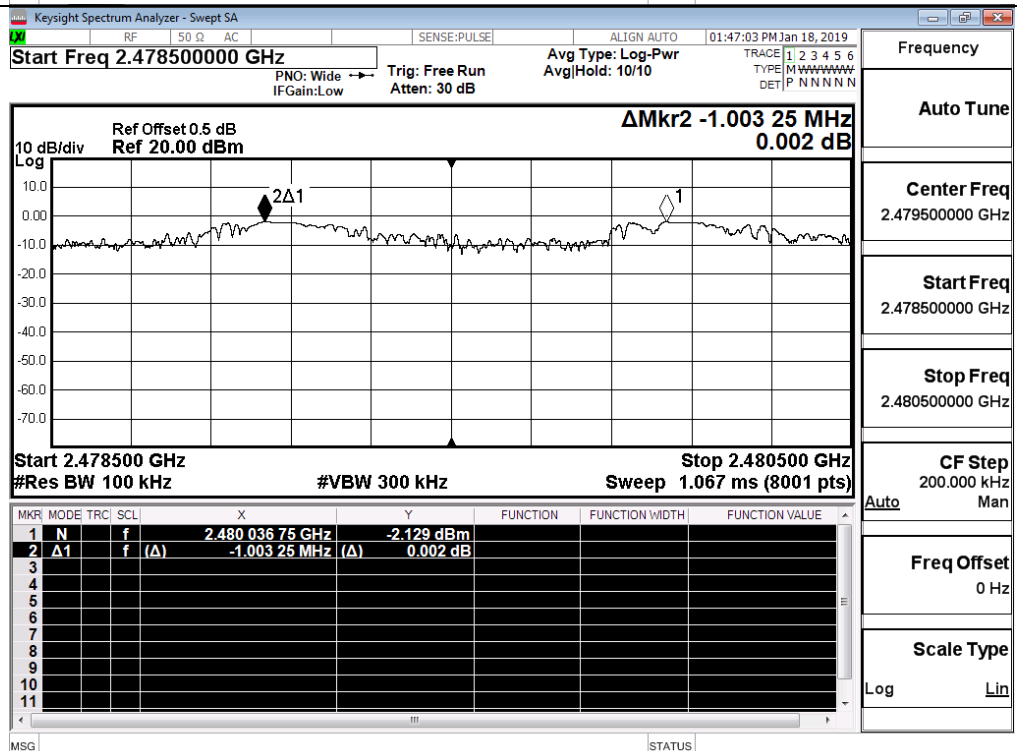
8DPSK/LCH

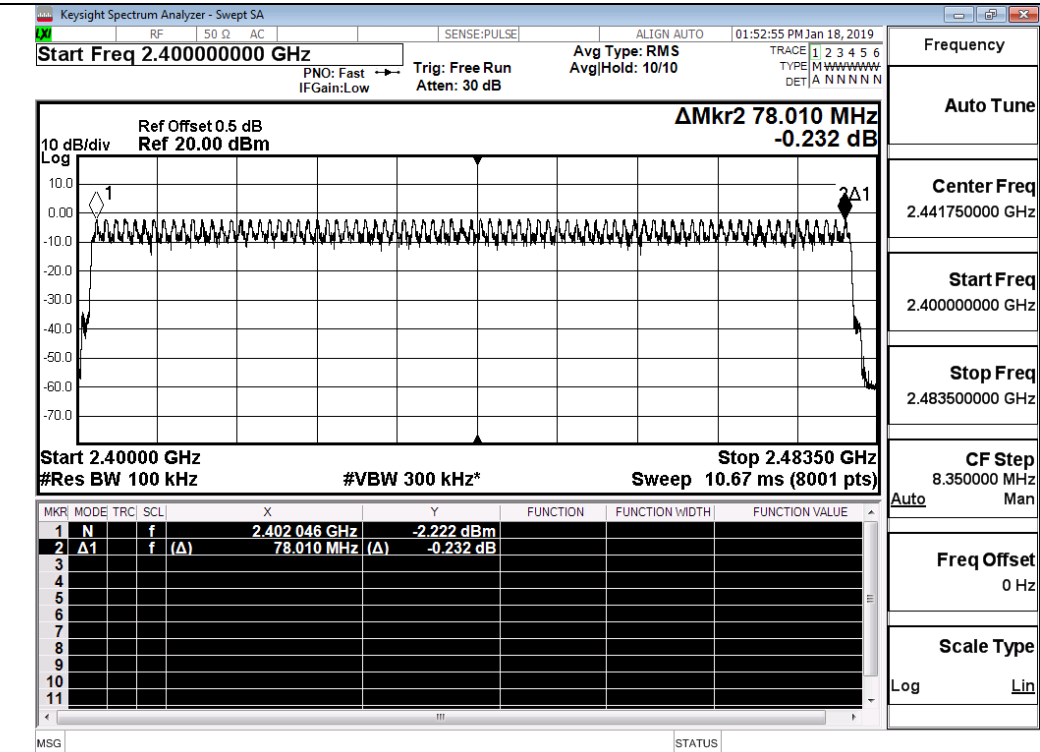


8DPSK/MCH

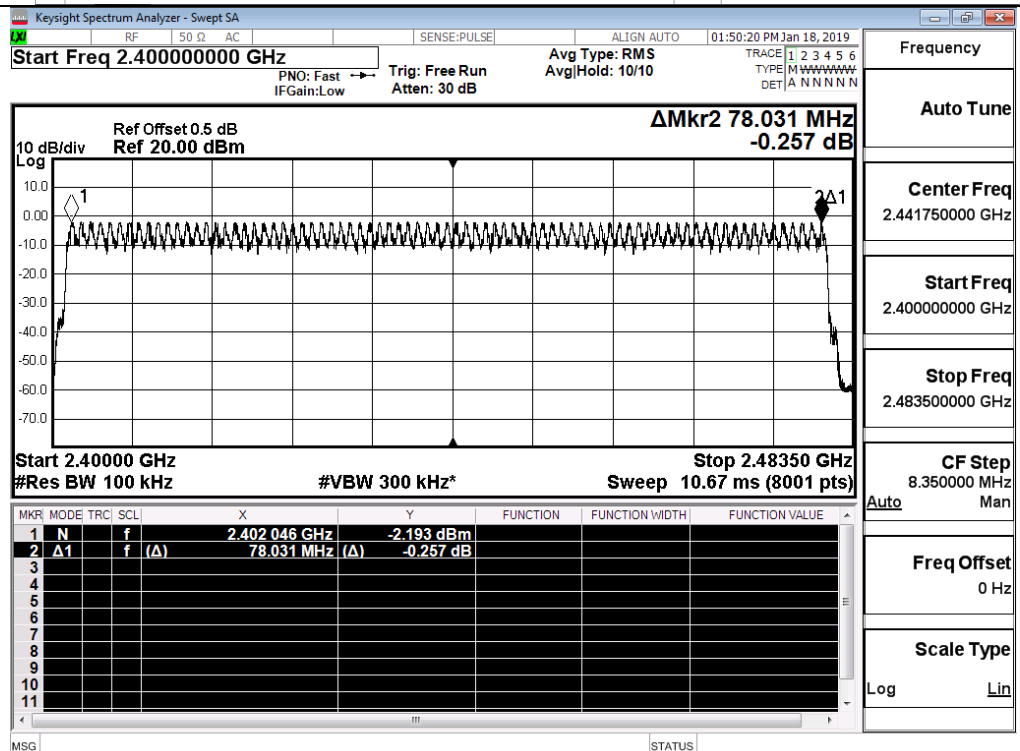


8DPSK/HCH



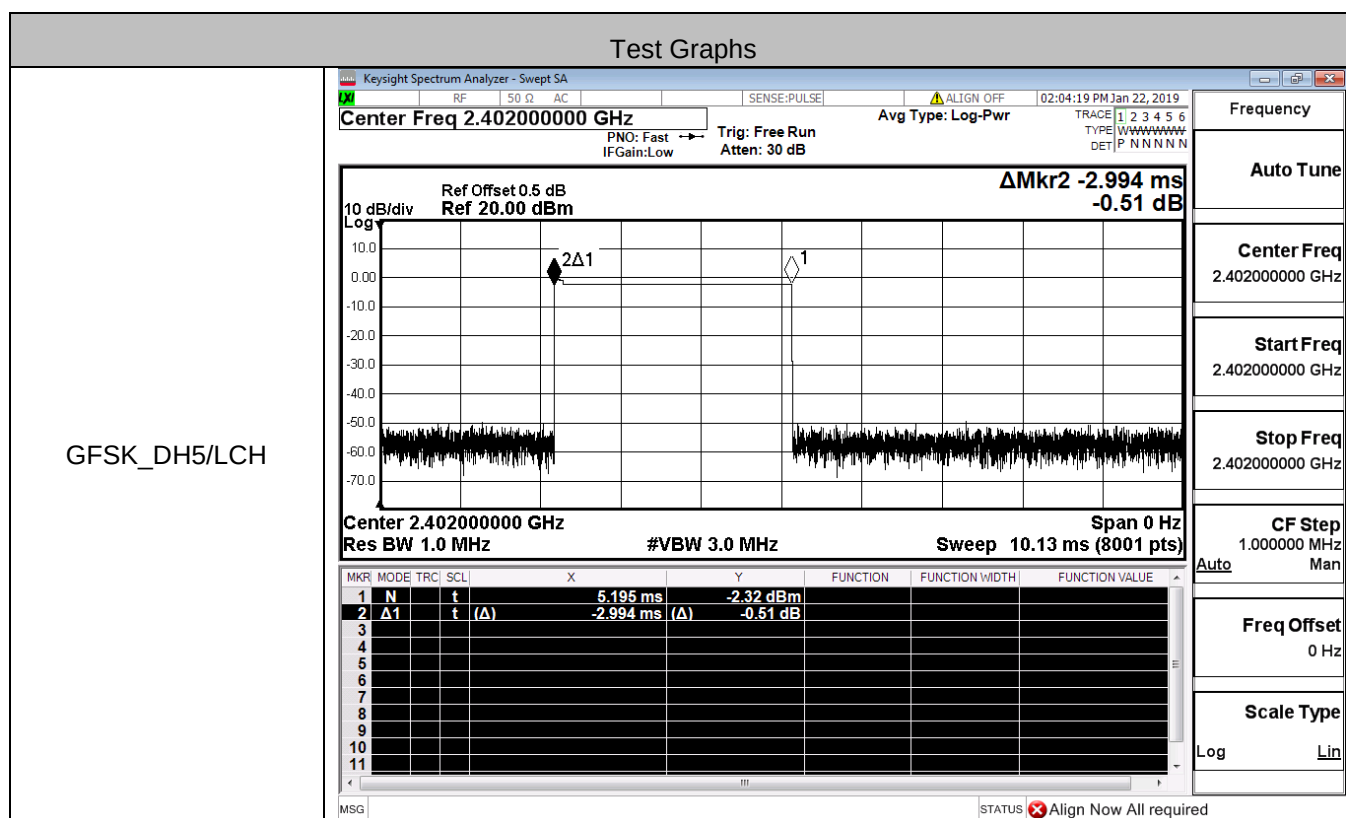
$\pi/4$ DQPSK/Hop

8DPSK/Hop

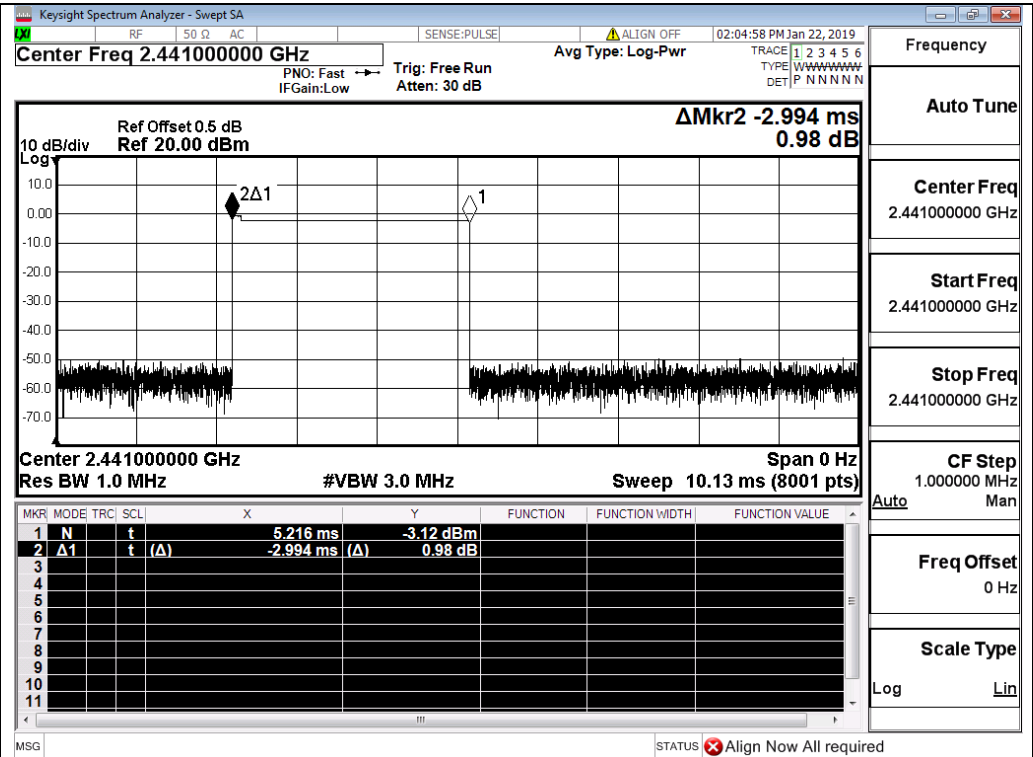


A.5 Dwell Time

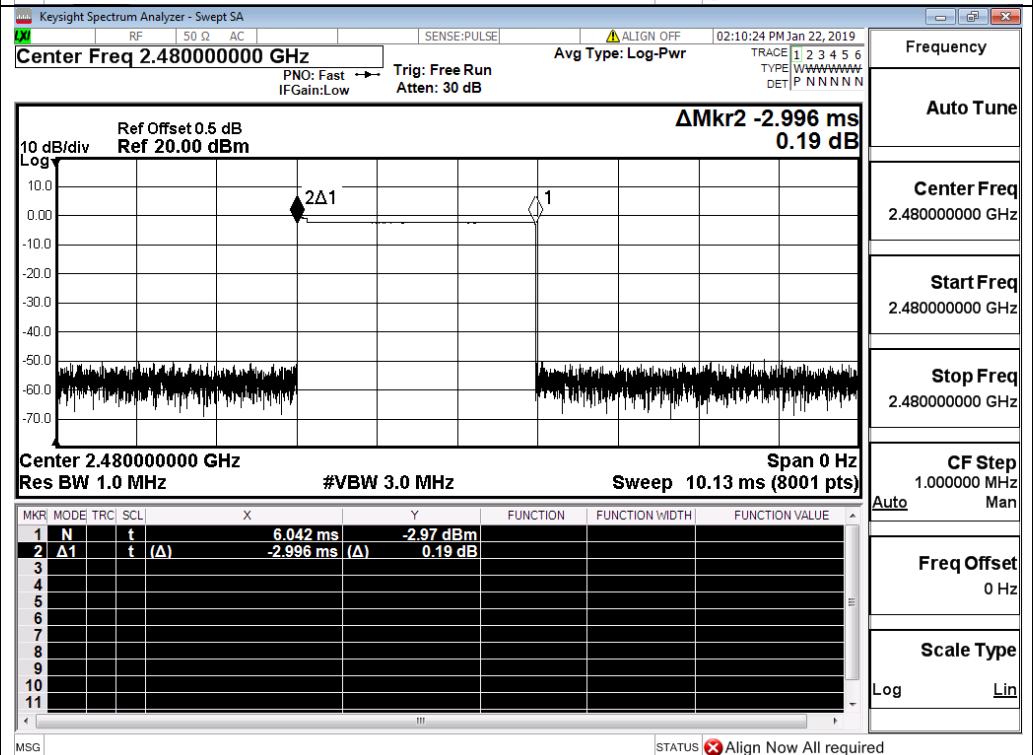
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.994	106.7	0.319	0.4	PASS
	DH5	MCH	2.994	106.7	0.319	0.4	PASS
	DH5	HCH	2.996	106.7	0.320	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	3.002	106.7	0.320	0.4	PASS
	2DH5	MCH	2.999	106.7	0.320	0.4	PASS
	2DH5	HCH	3.002	106.7	0.320	0.4	PASS
8DPSK	3DH5	LCH	2.998	106.7	0.320	0.4	PASS
	3DH5	MCH	2.986	106.7	0.319	0.4	PASS
	3DH5	HCH	2.993	106.7	0.319	0.4	PASS



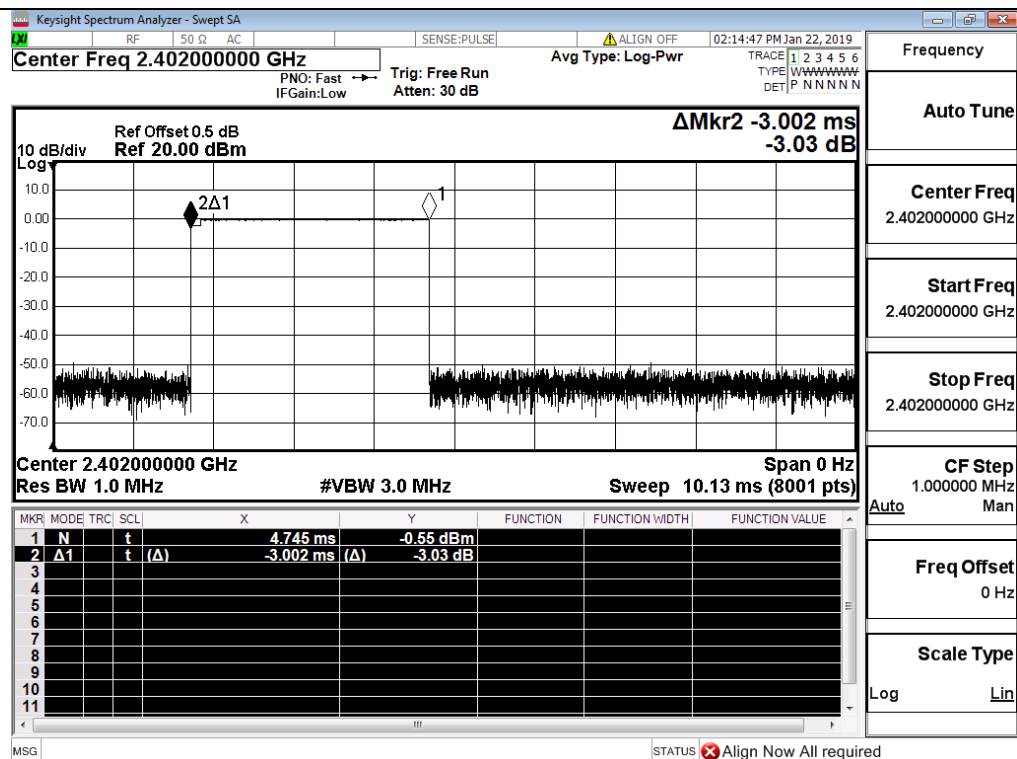
GFSK_DH5/MCH



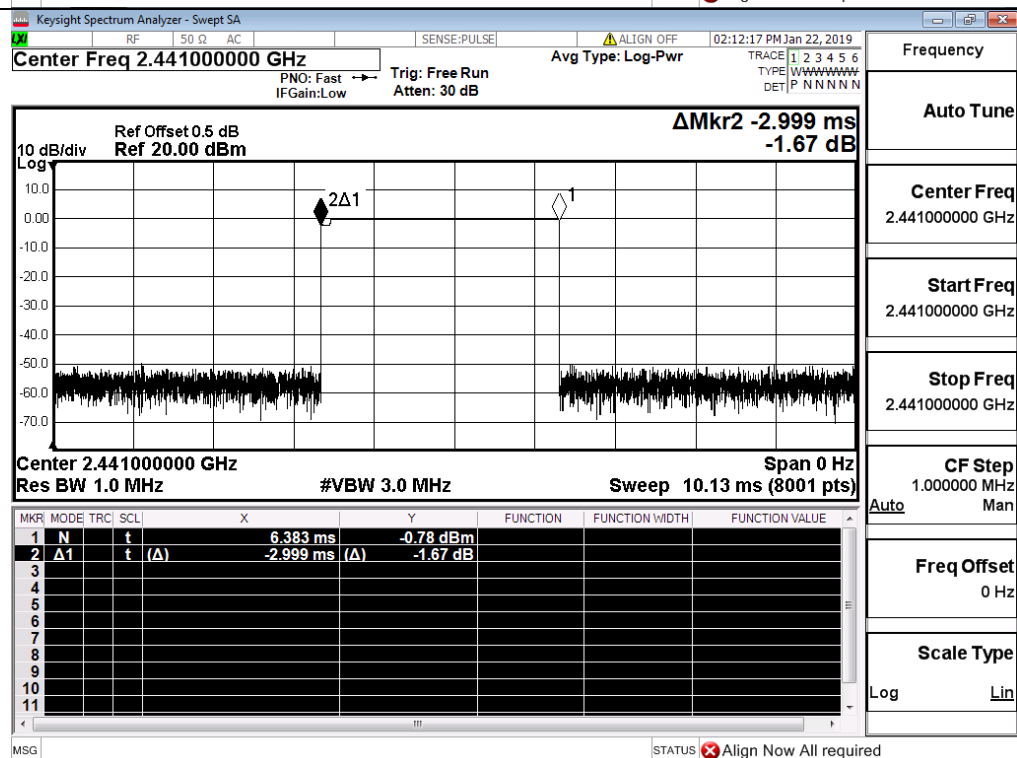
GFSK_DH5/HCH



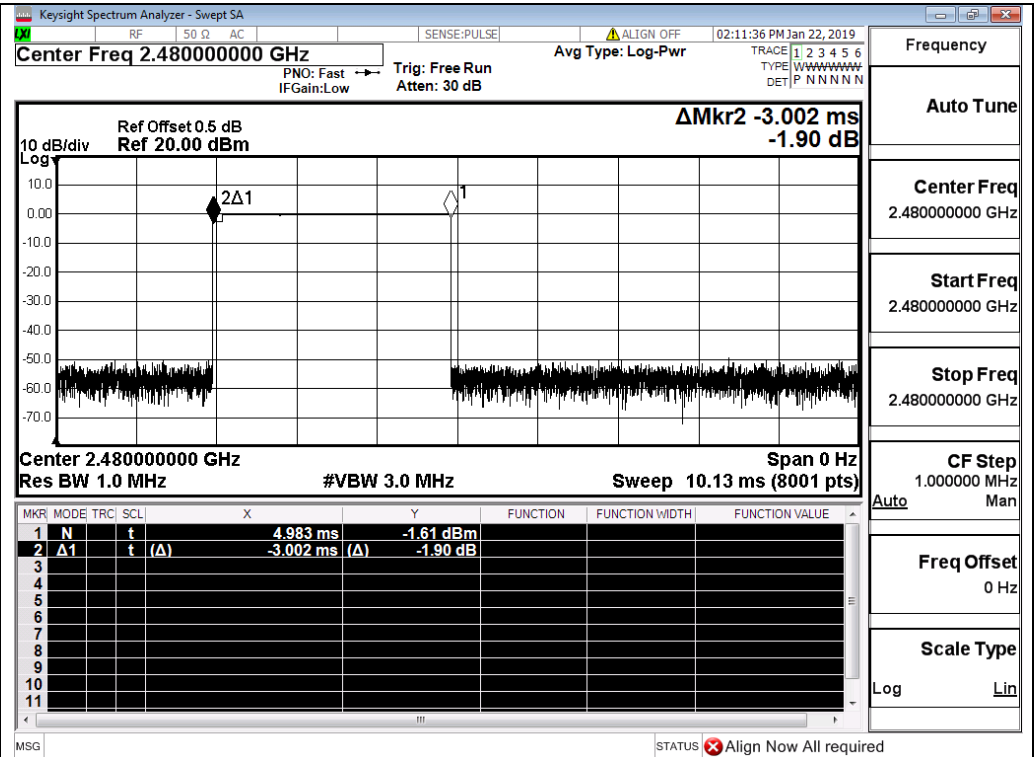
$\pi/4$ DQPSK
_2DH5/LCH



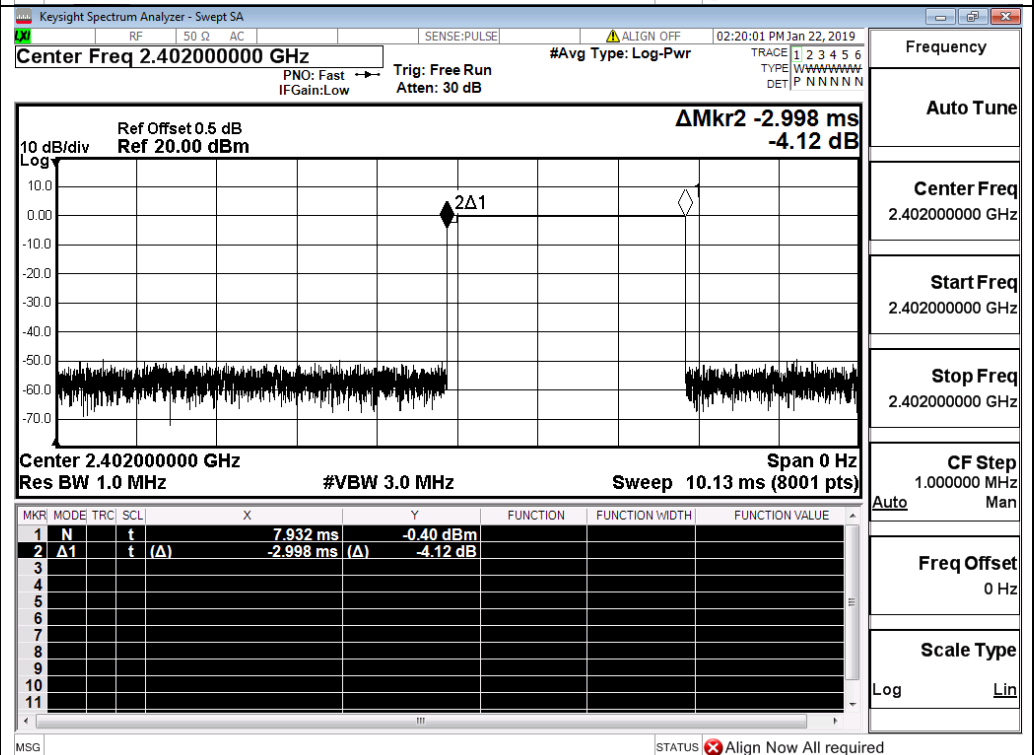
$\pi/4$ DQPSK
_2DH5/MCH



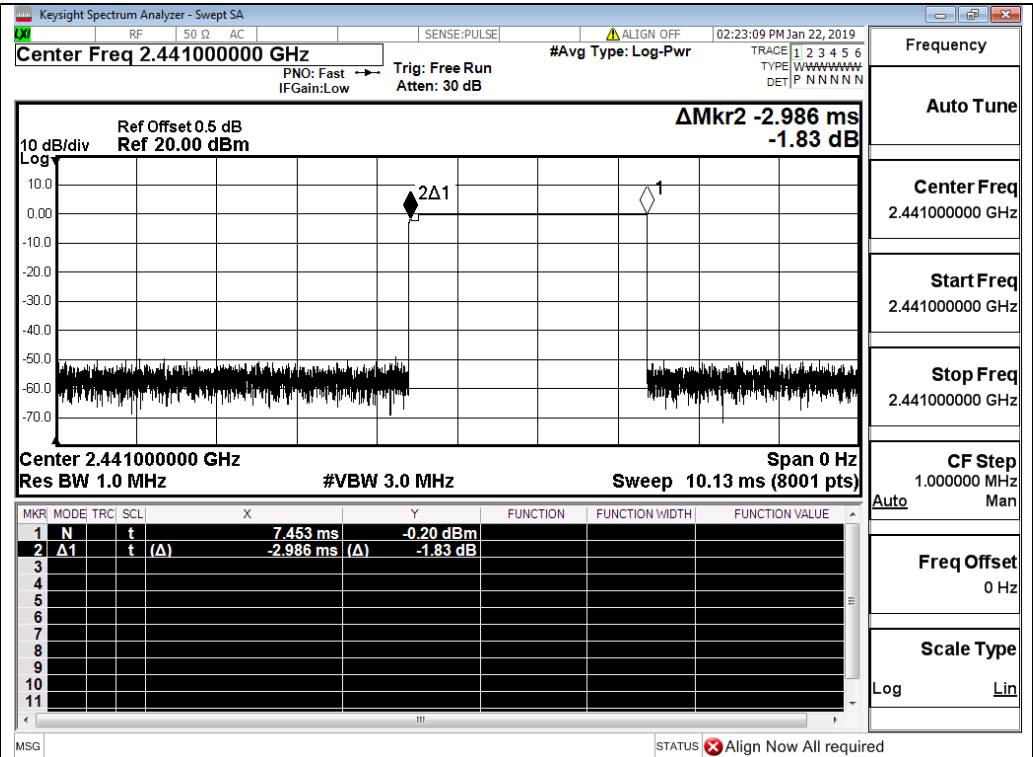
$\pi/4$ DQPSK
_2DH5/HCH



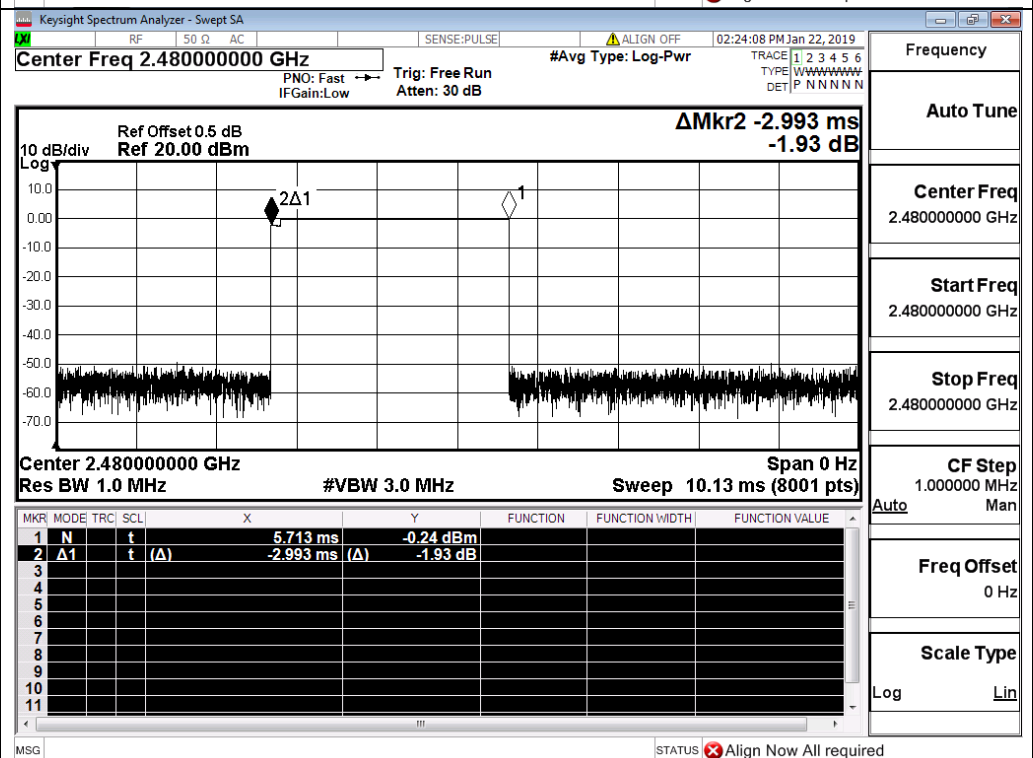
8DPSK _3DH5/LCH



8DPSK_3DH5/MCH



8DPSK_3DH5/HCH

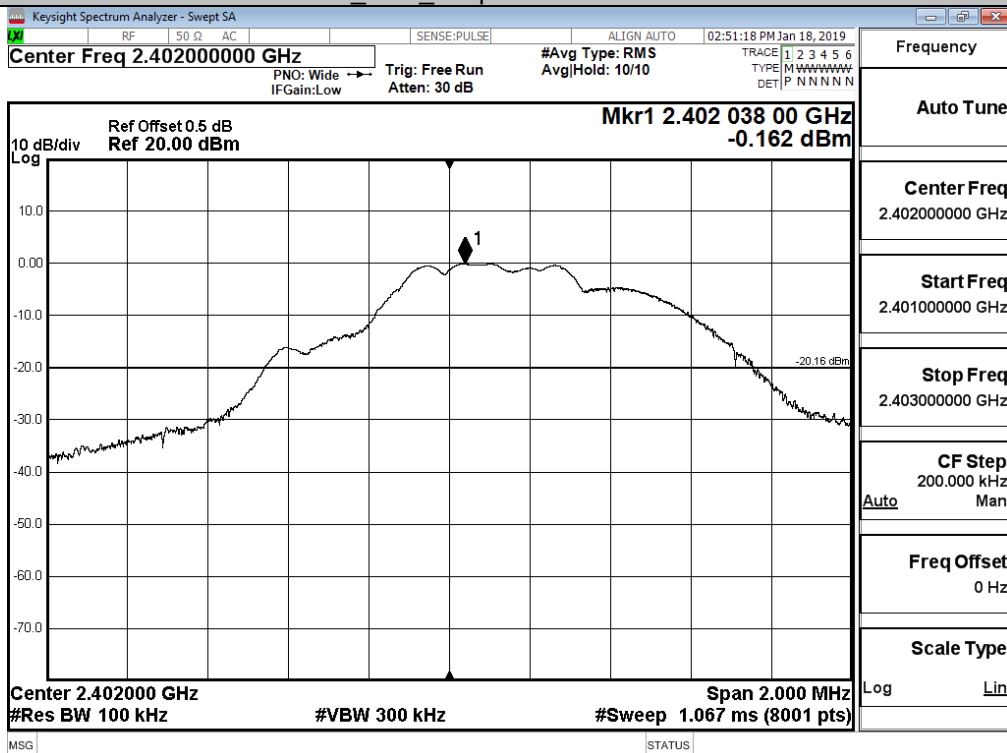


A.6 RF Conducted Spurious Emissions

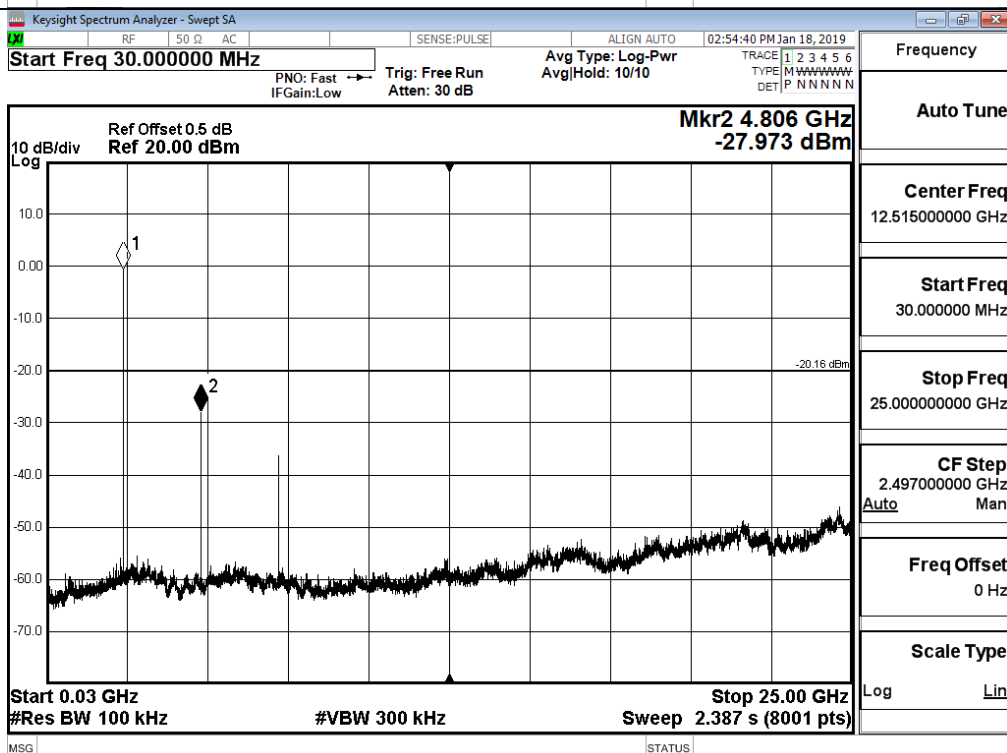
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.162	-27.973	-20.16	PASS
	MCH	-0.067	-30.989	-20.07	PASS
	HCH	-0.058	-34.843	-20.06	PASS
$\pi/4$ DQPSK	LCH	-1.799	-33.448	-21.80	PASS
	MCH	-1.873	-35.402	-20.87	PASS
	HCH	-2.061	-39.447	-22.06	PASS
8DPSK	LCH	-0.093	-34.496	-20.09	PASS
	MCH	-1.887	-37.109	-21.89	PASS
	HCH	-2.067	-38.418	-22.07	PASS

GFSK_LCH_Graphs

Pref

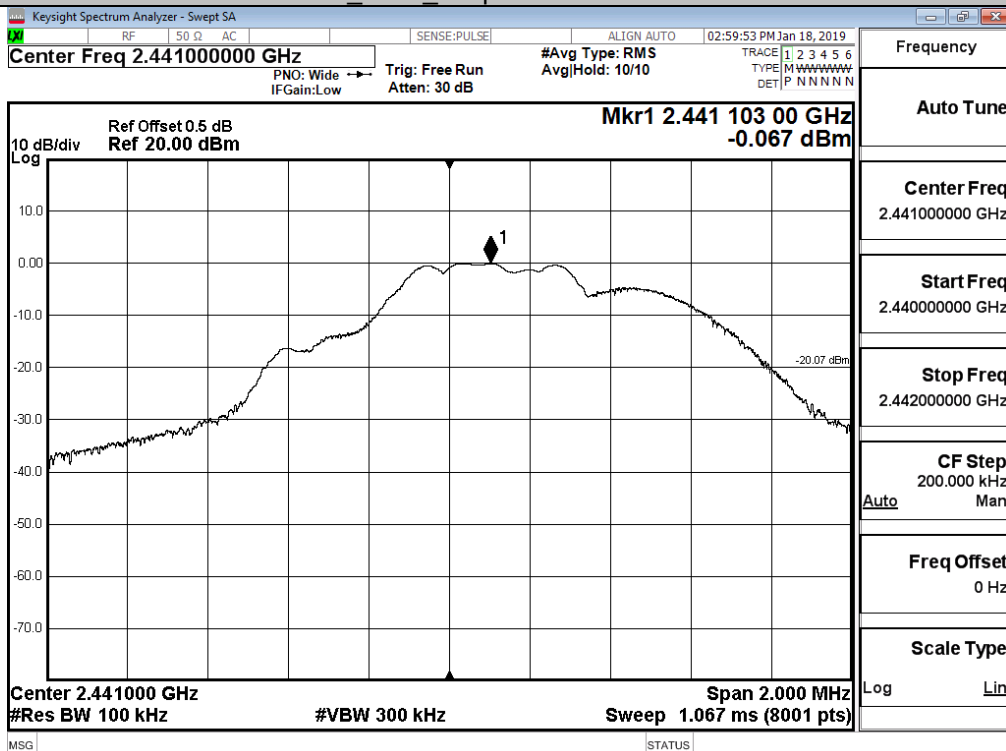


Puw

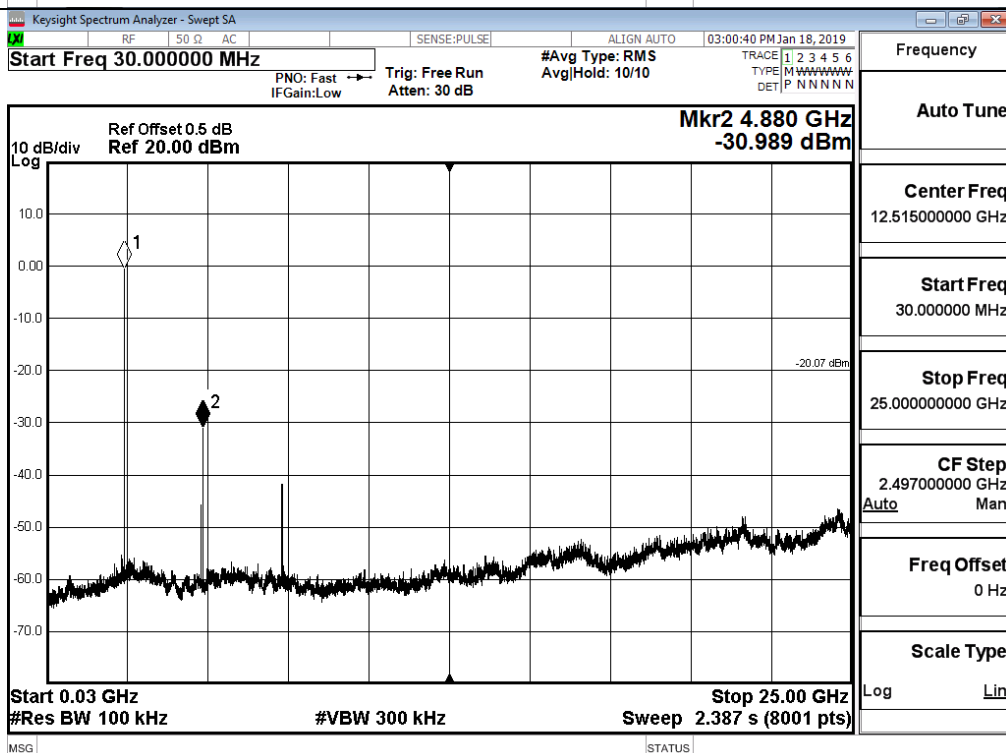


GFSK_MCH_Graphs

Pref

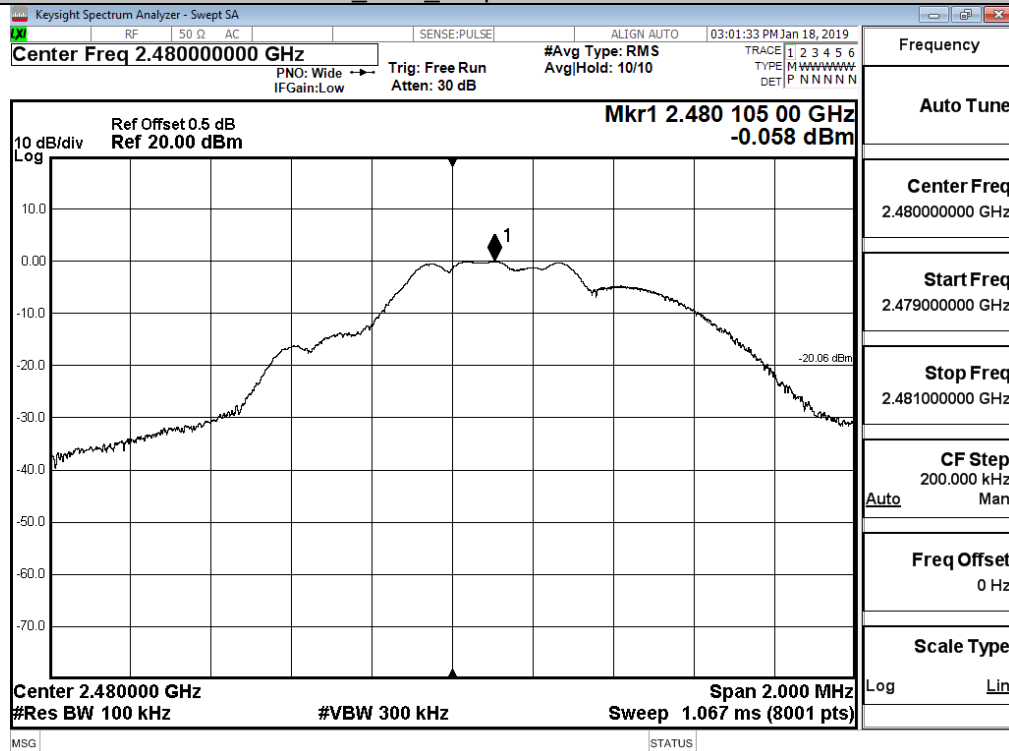


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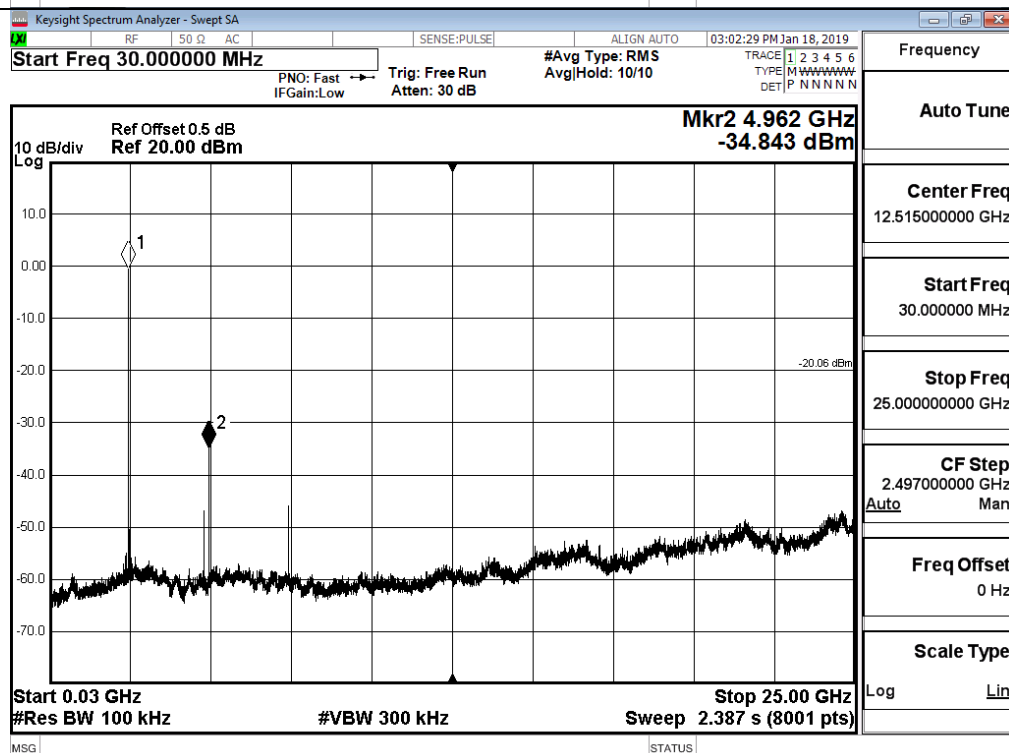


GFSK_HCH_Graphs

Pref

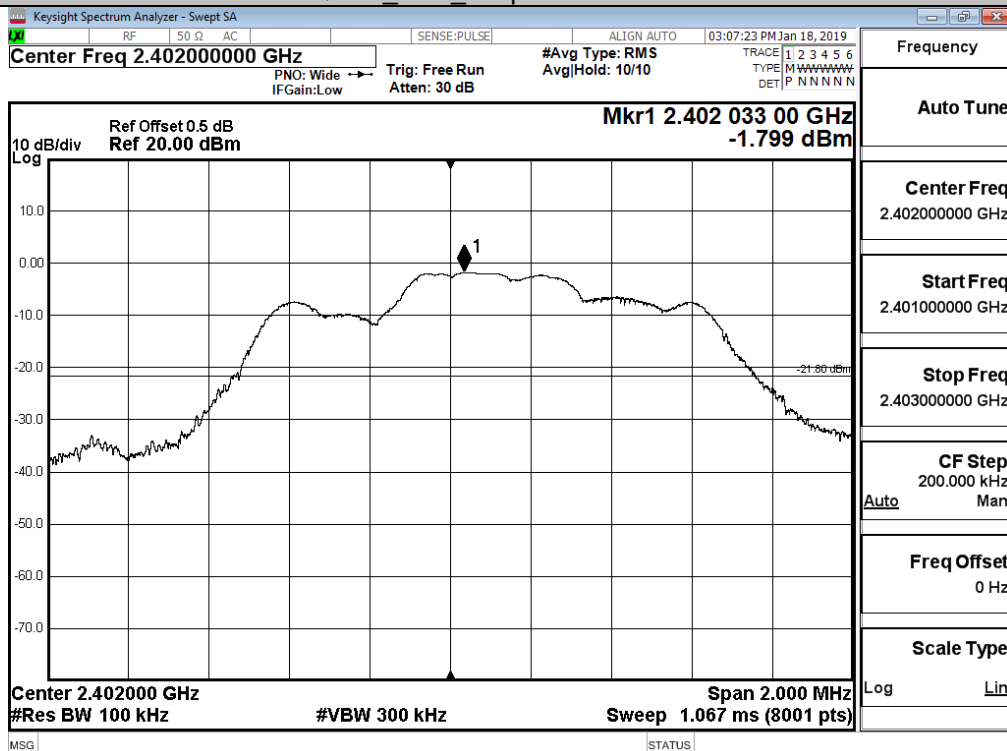


Puw

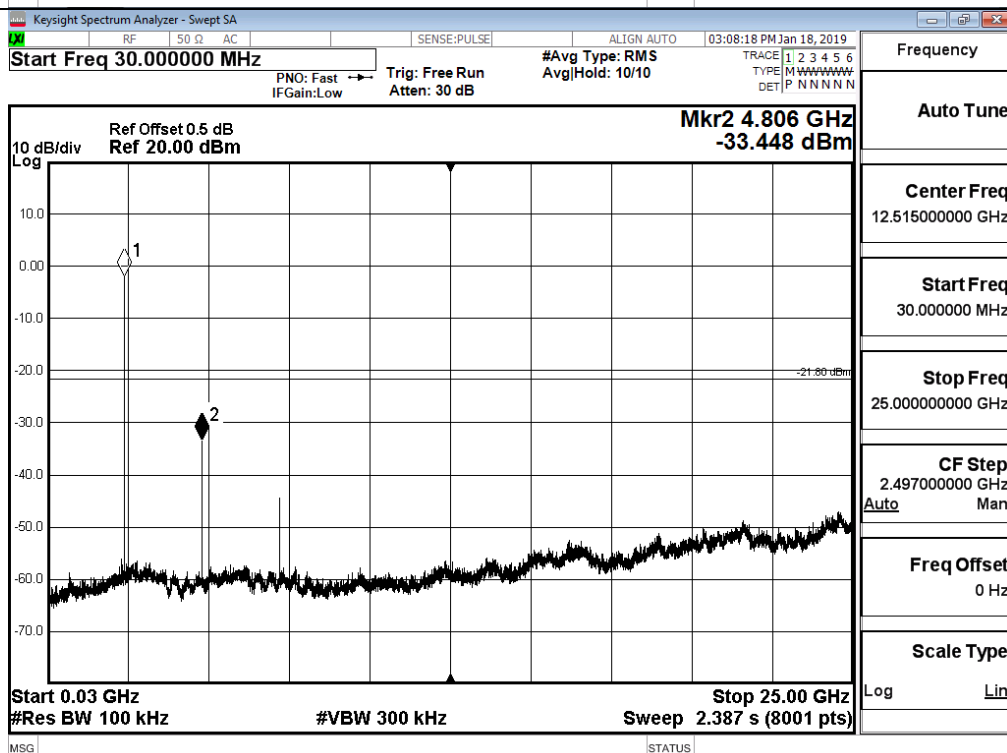


$\pi/4$ DQPSK_LCH_Graphs

Pref

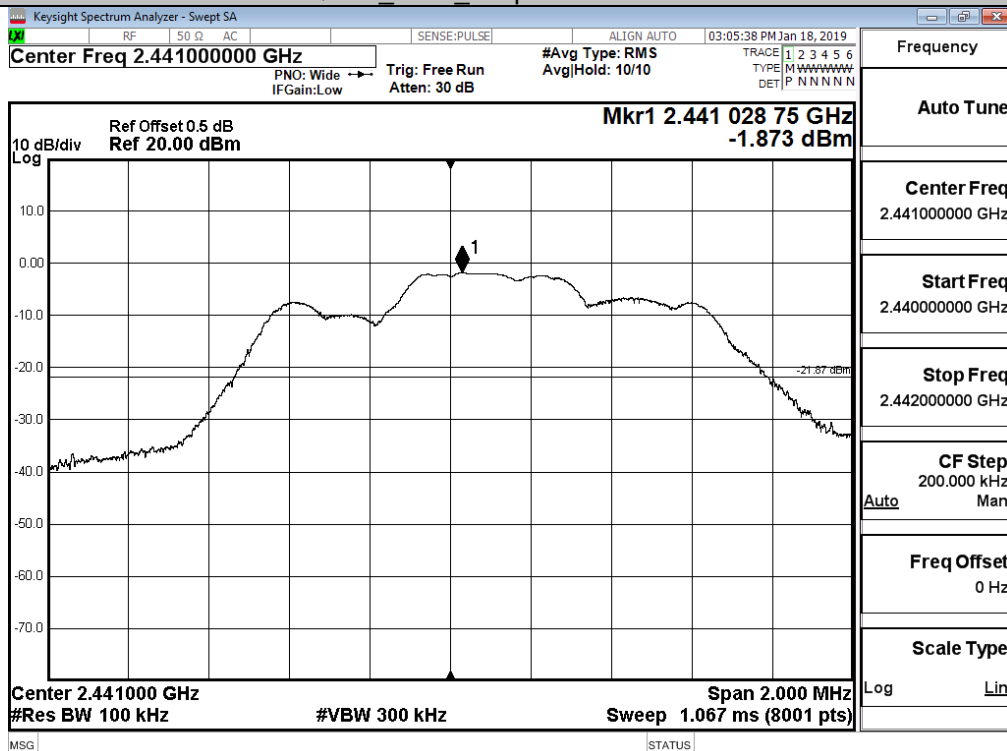


Puw

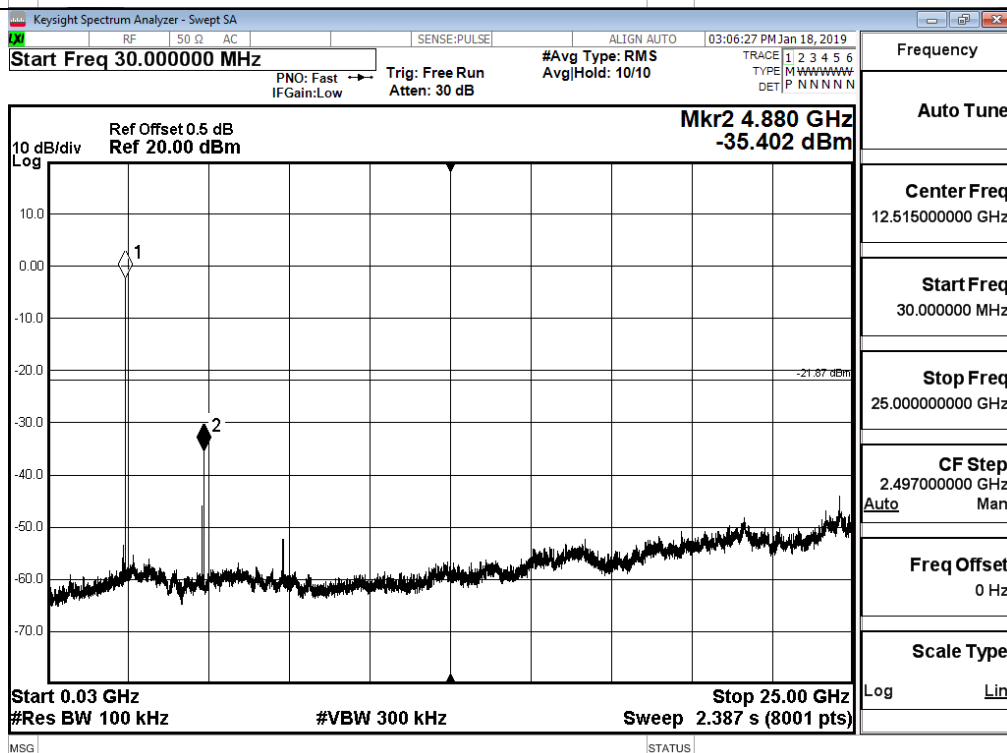


$\pi/4$ DQPSK_MCH_Graphs

Pref

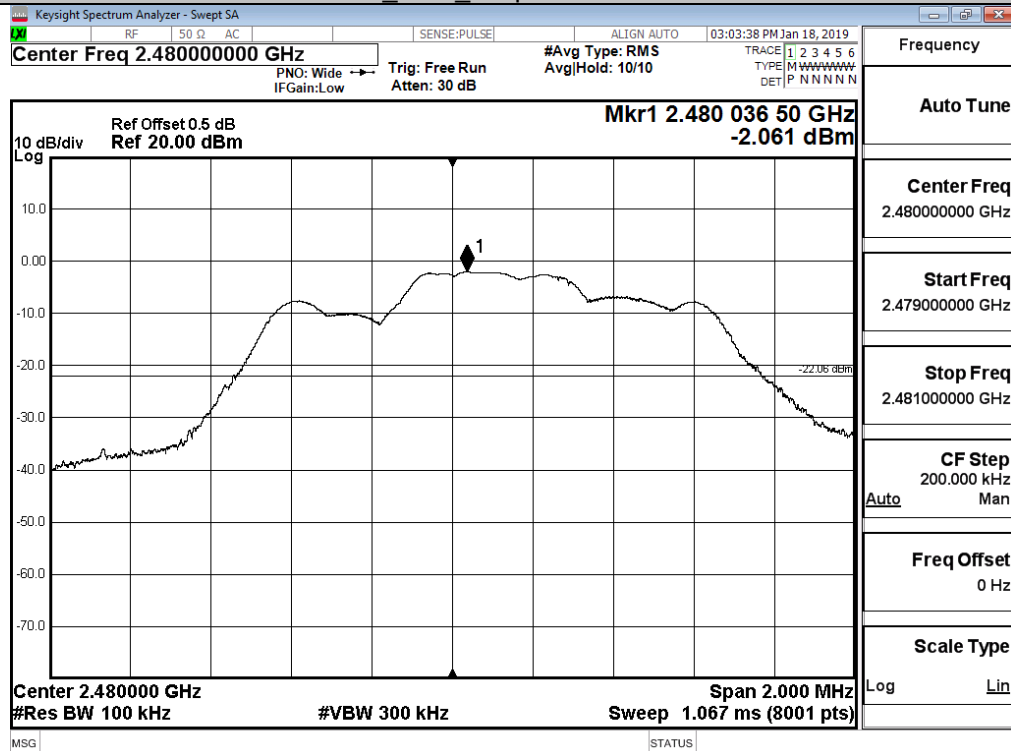


Puw

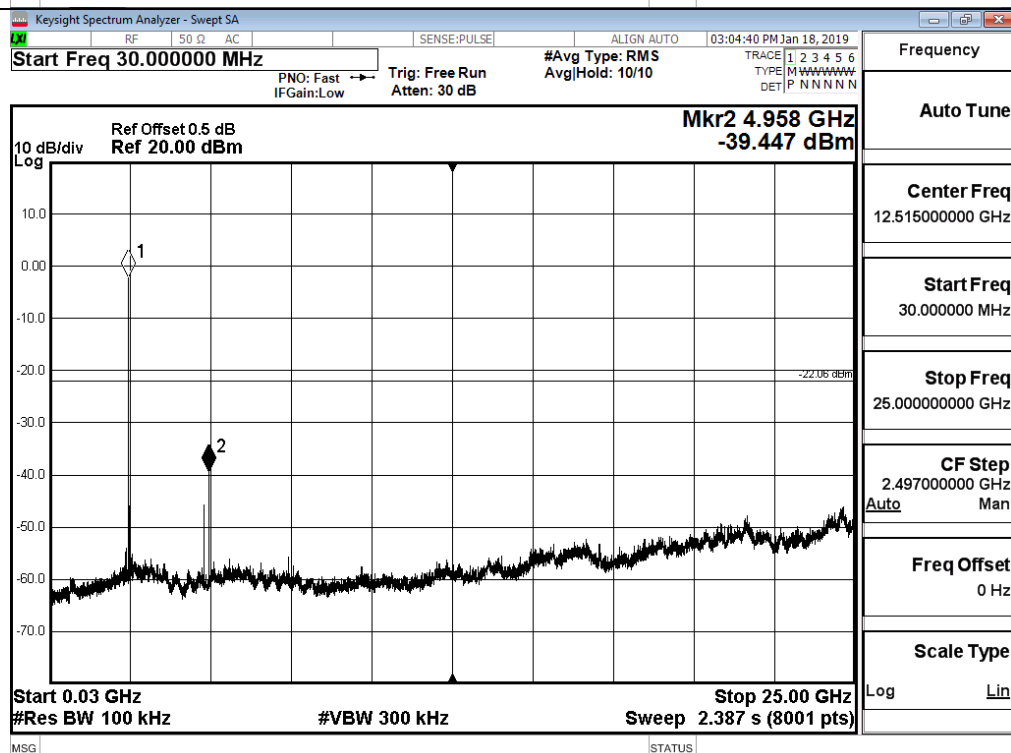


$\pi/4$ DQPSK_HCH_Graphs

Pref

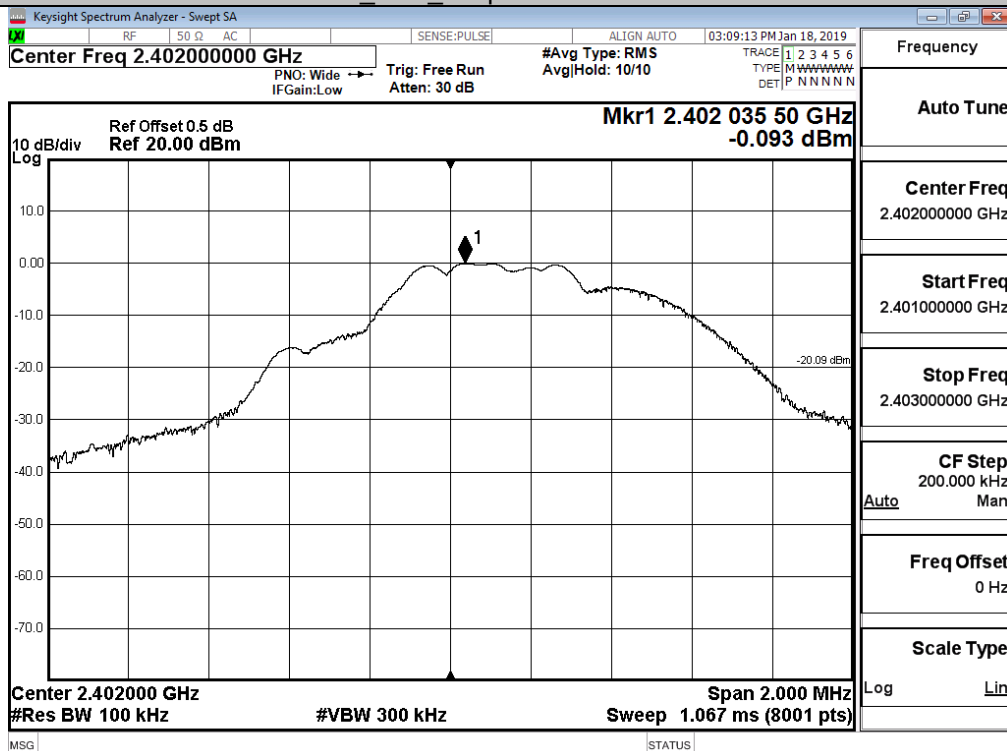


Puw

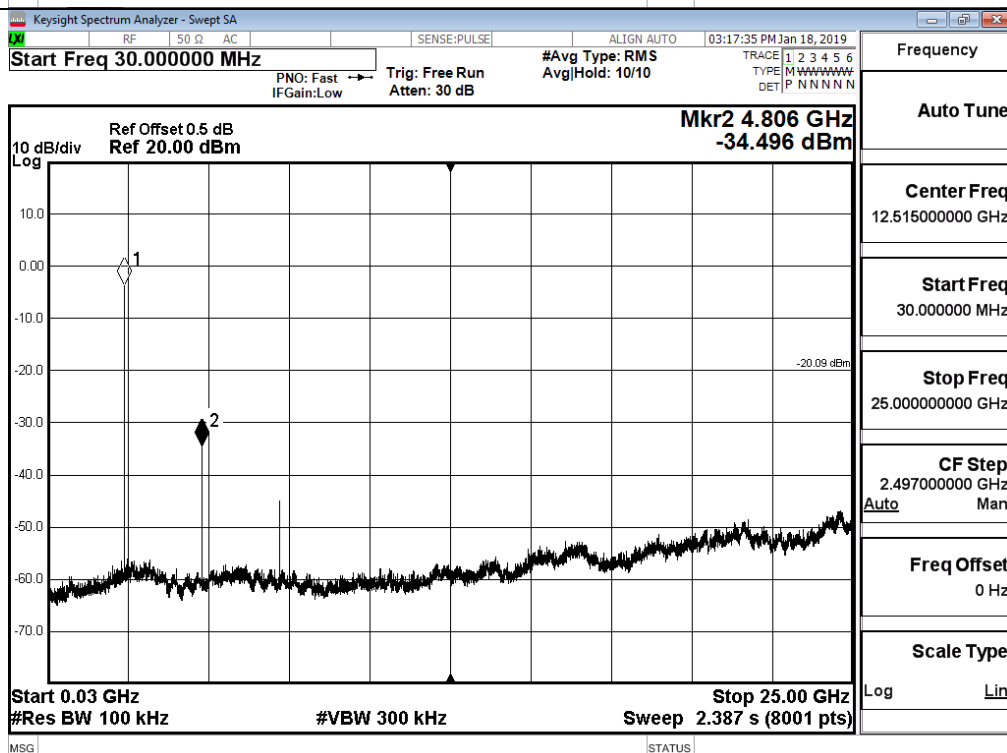


8DPSK_LCH_Graphs

Pref

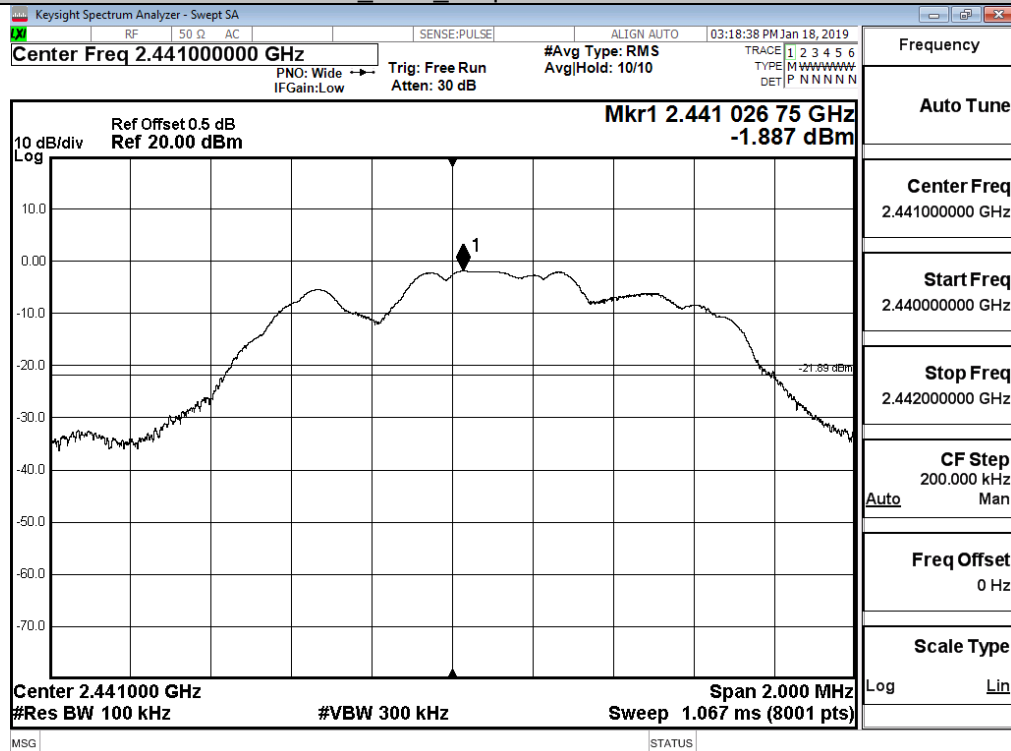


Puw

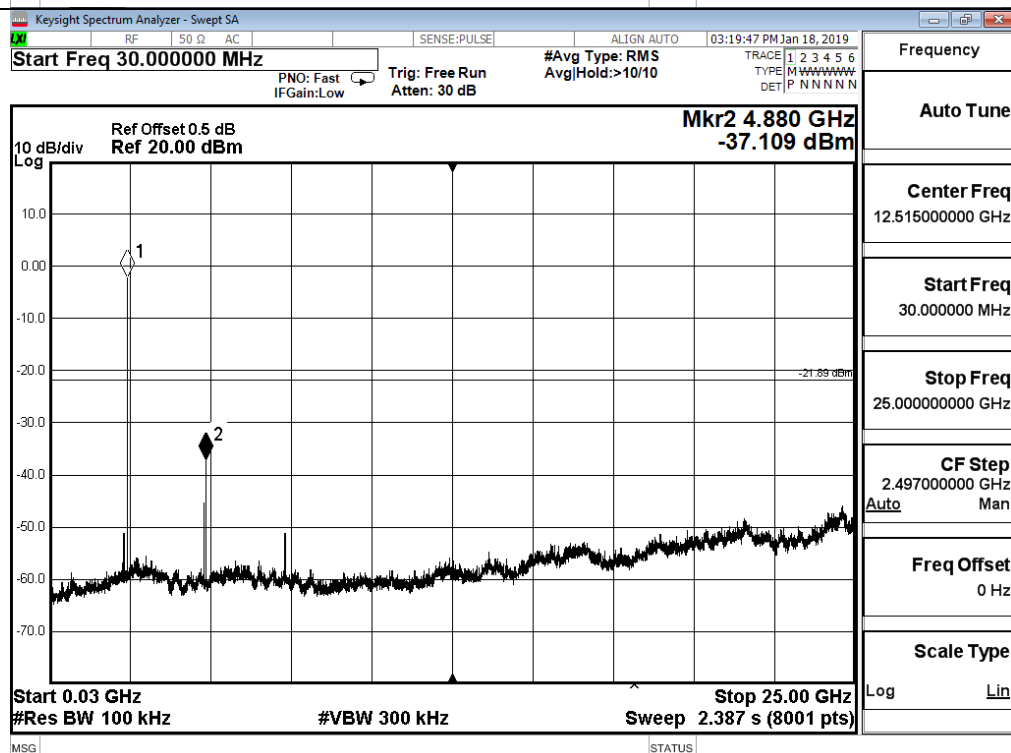


8DPSK_MCH_Graphs

Pref

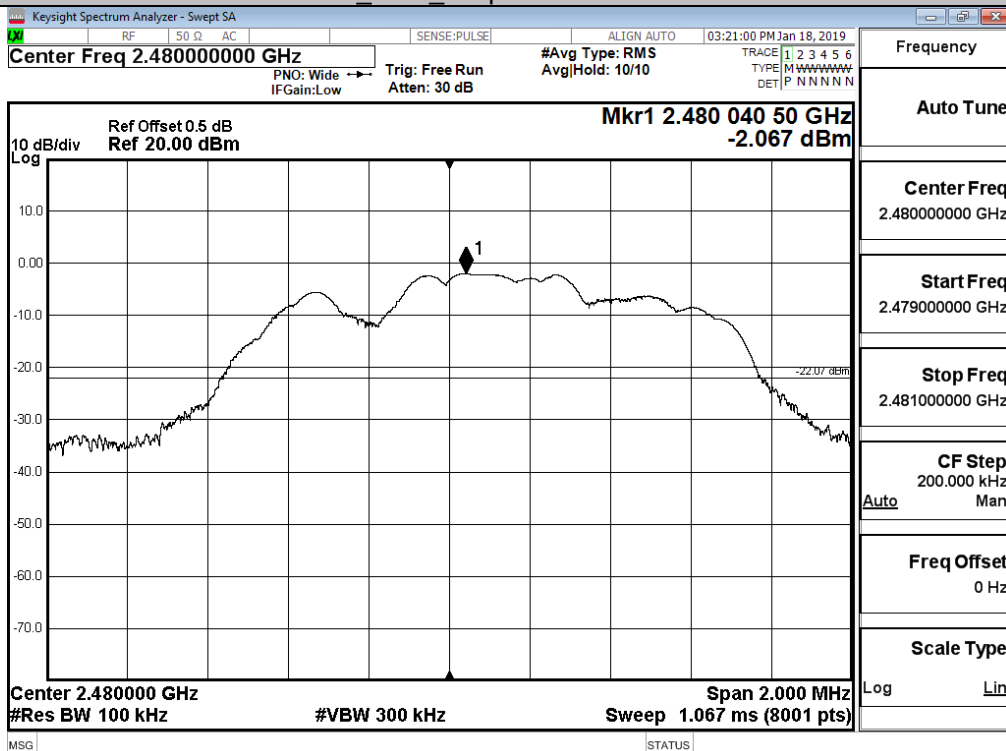


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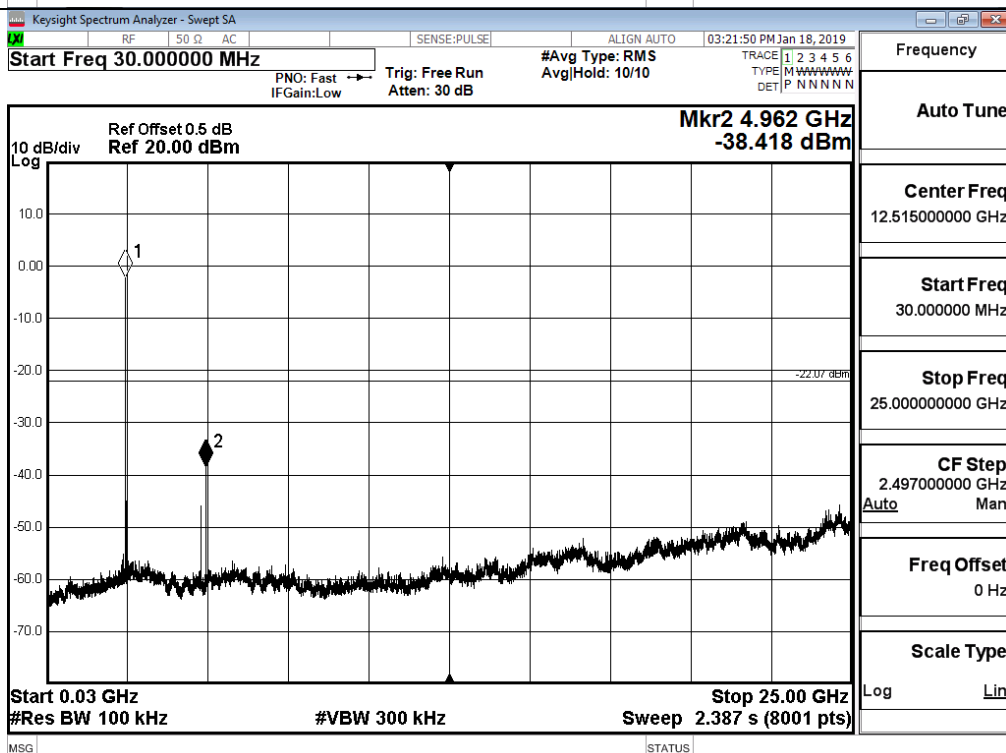


8DPSK_HCH_Graphs

Pref



Puw

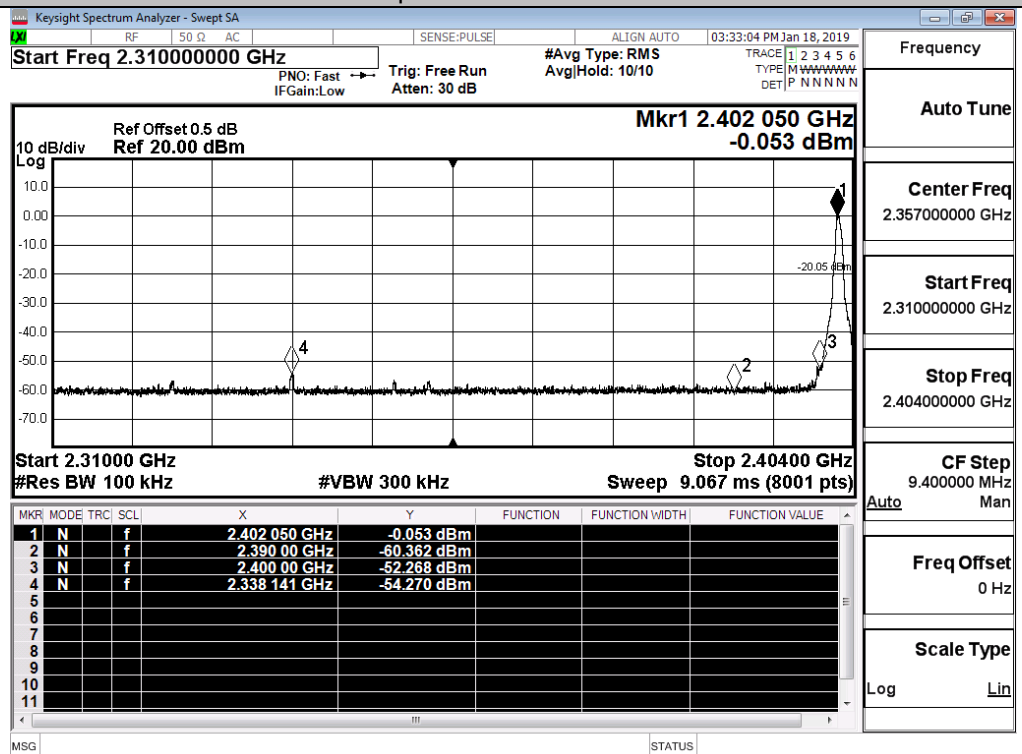


A.7 Band-edge for RF Conducted Emissions

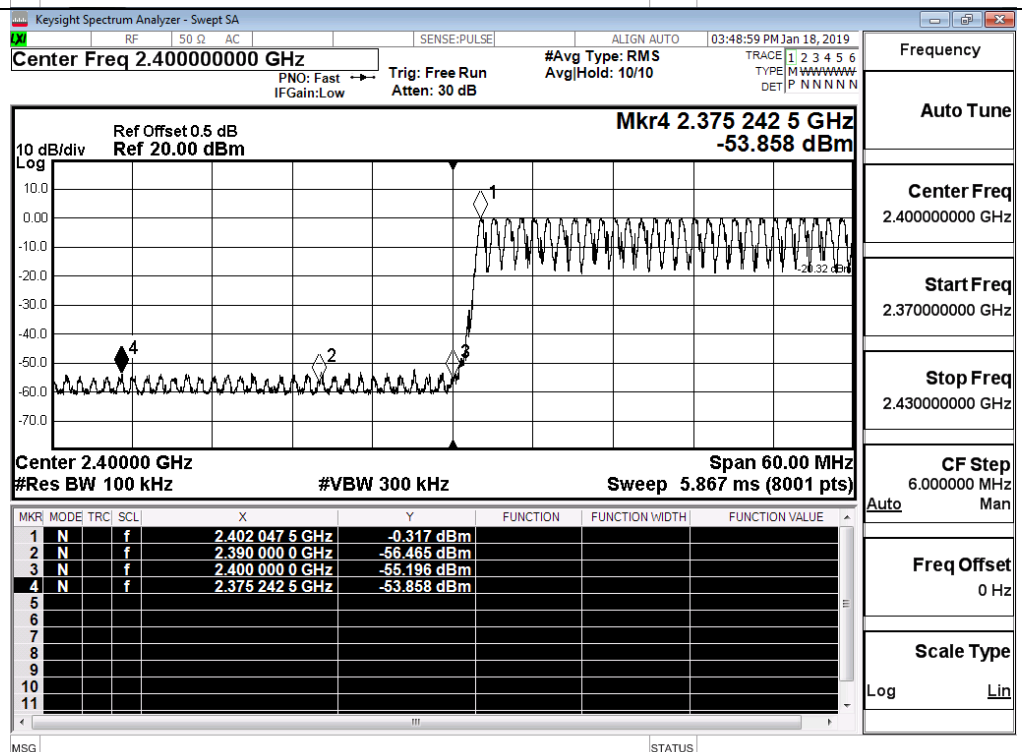
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-0.053	Off	-54.270	-20.05	PASS
			-0.317	On	-53.858	-20.32	PASS
	HCH	2480	0.205	Off	-56.435	-19.80	PASS
			0.129	On	-59.272	-19.87	PASS
$\pi/4$ DQPSK	LCH	2402	-1.820	Off	-54.453	-21.82	PASS
			-1.826	On	-54.693	-21.83	PASS
	HCH	2480	-1.858	Off	-56.661	-21.86	PASS
			-2.089	On	-55.371	-22.09	PASS
8DPSK	LCH	2402	-1.729	Off	-55.784	-21.73	PASS
			-1.989	On	-53.878	-21.99	PASS
	HCH	2480	-1.778	Off	-57.225	-21.78	PASS
			-1.950	On	-55.374	-21.95	PASS

Test Graphs

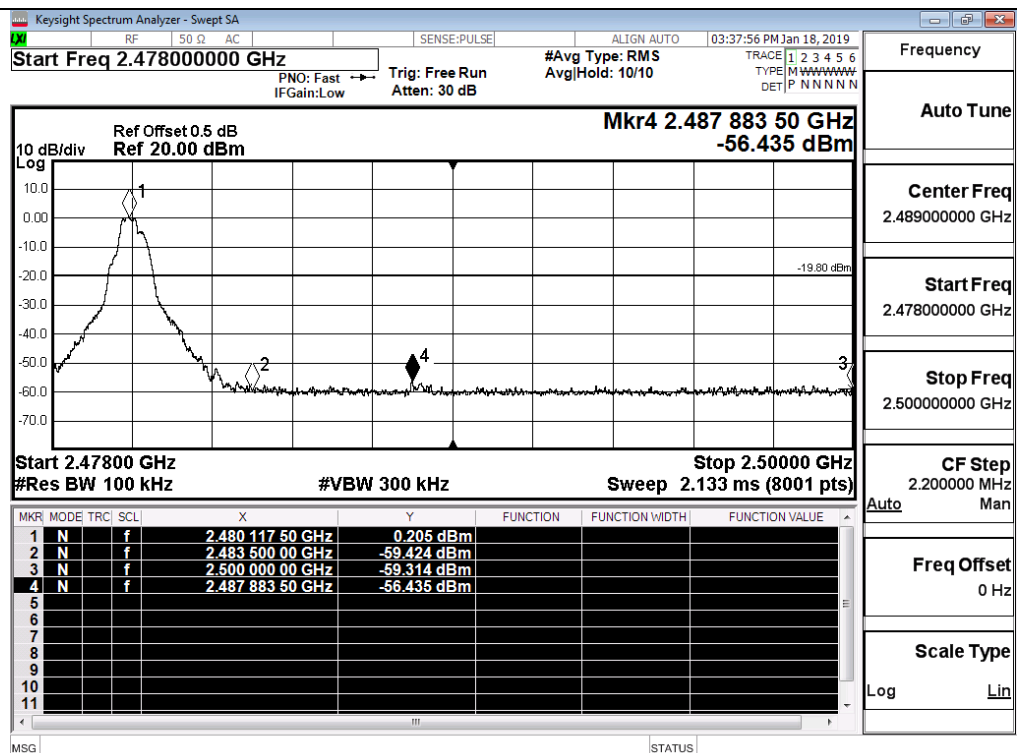
GFSK/LCH/No Hop



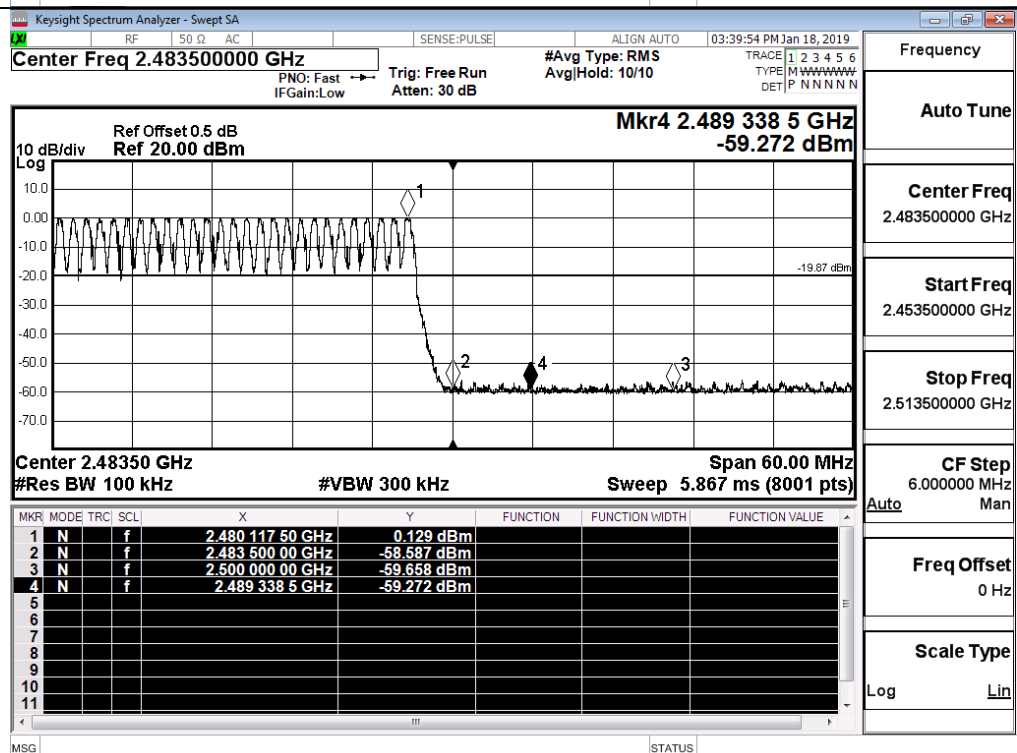
GFSK/LCH/Hop



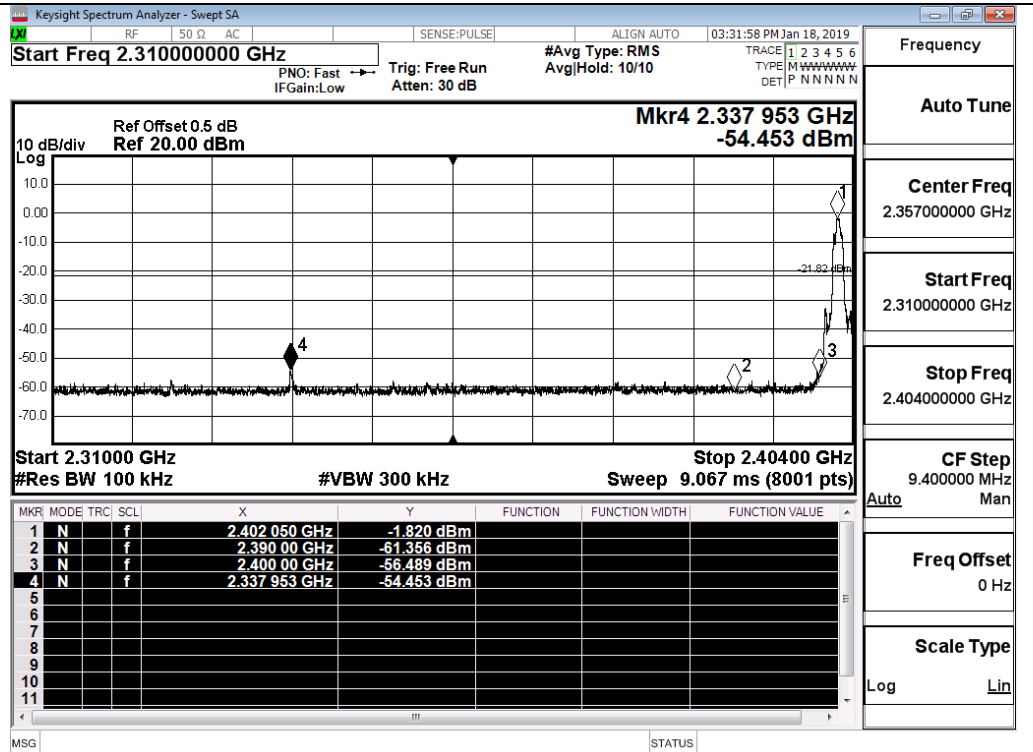
GFSK/HCH/No Hop



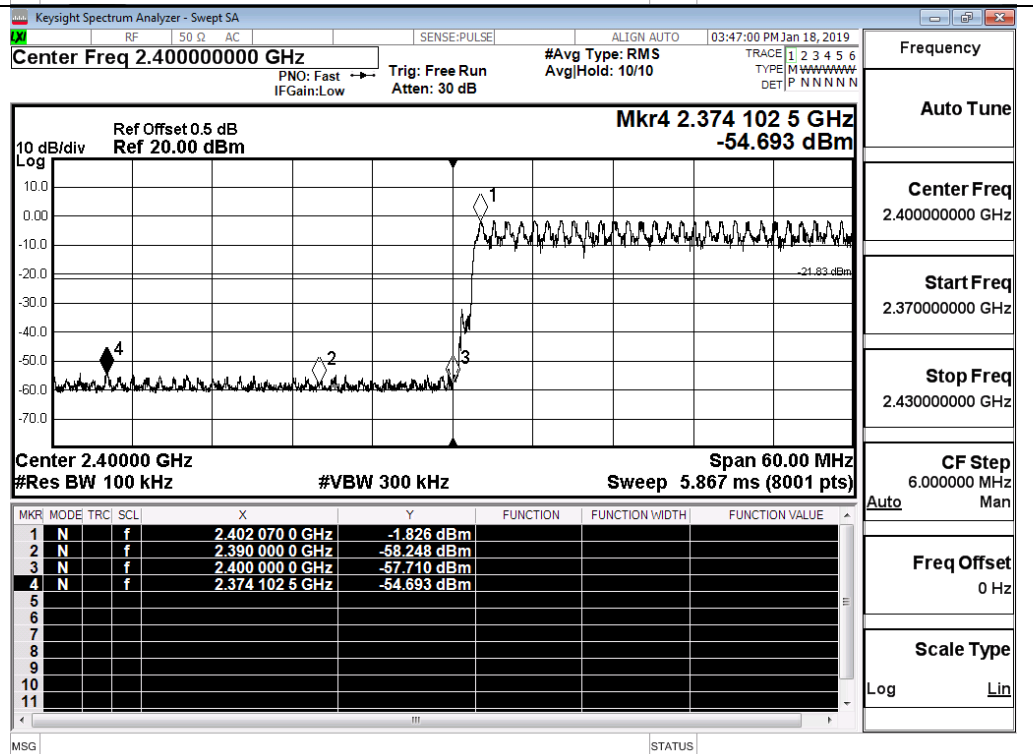
GFSK/HCH/Hop



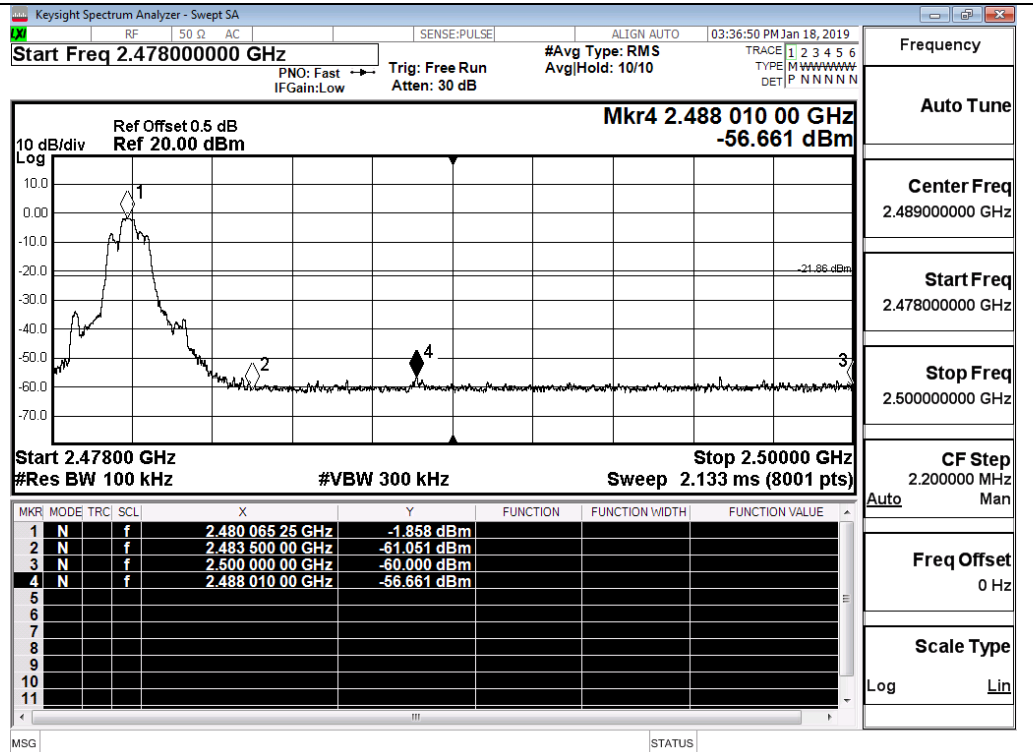
$\pi/4$ DQPSK/LCH/No
Hop



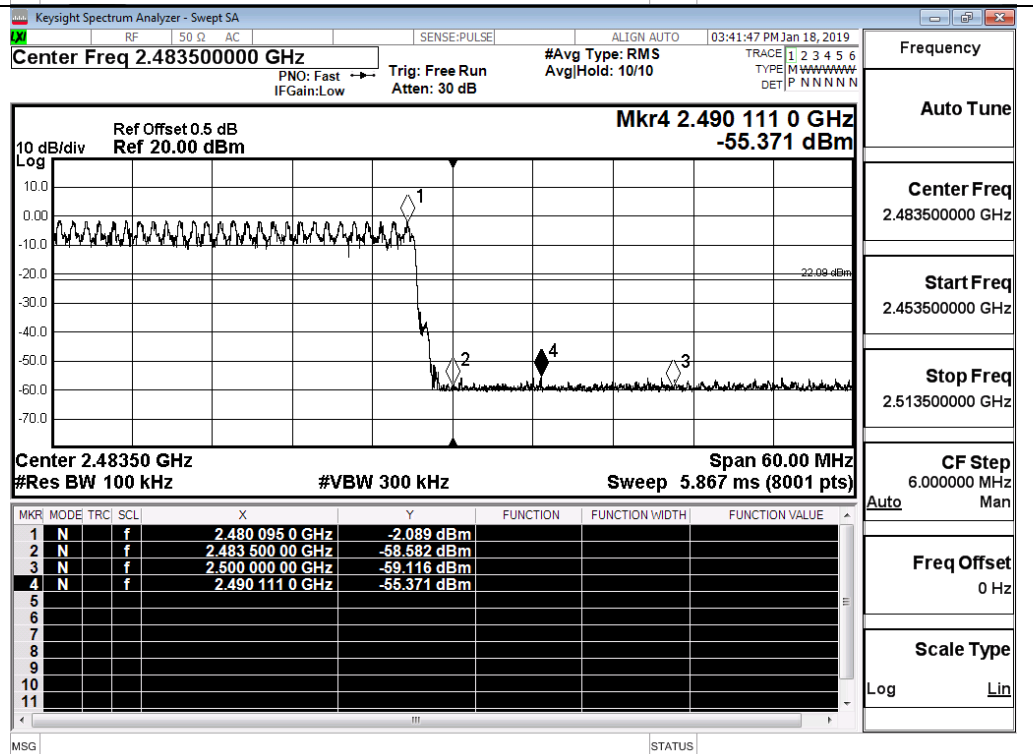
$\pi/4$ DQPSK/LCH/Hop



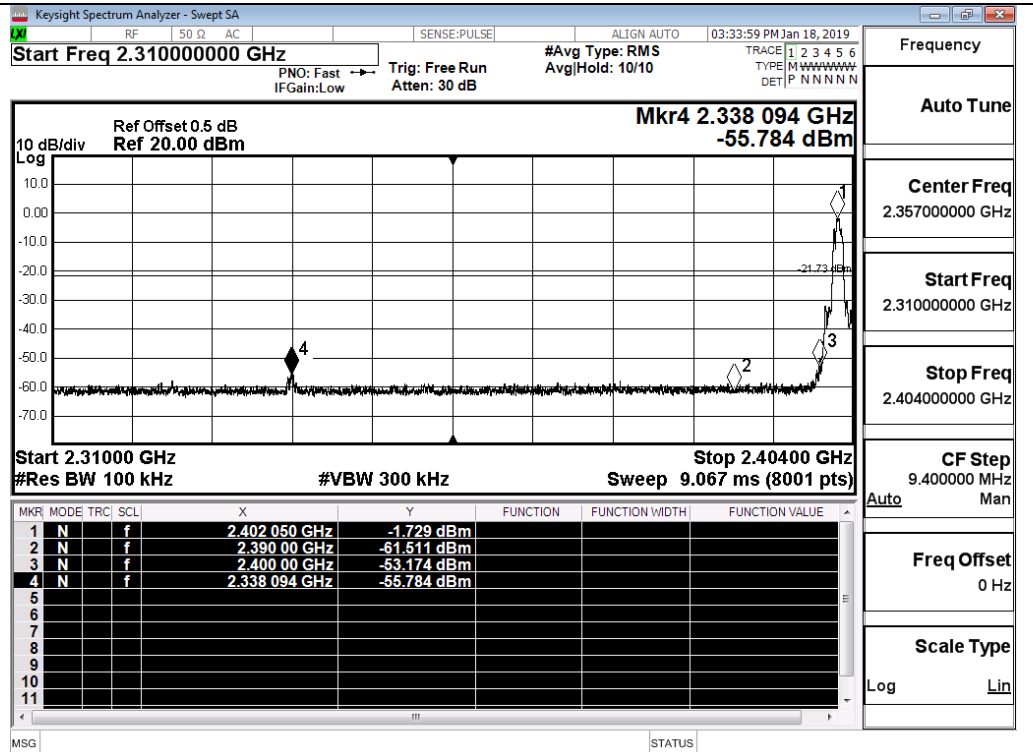
$\pi/4$ DQPSK/HCH/No
Hop



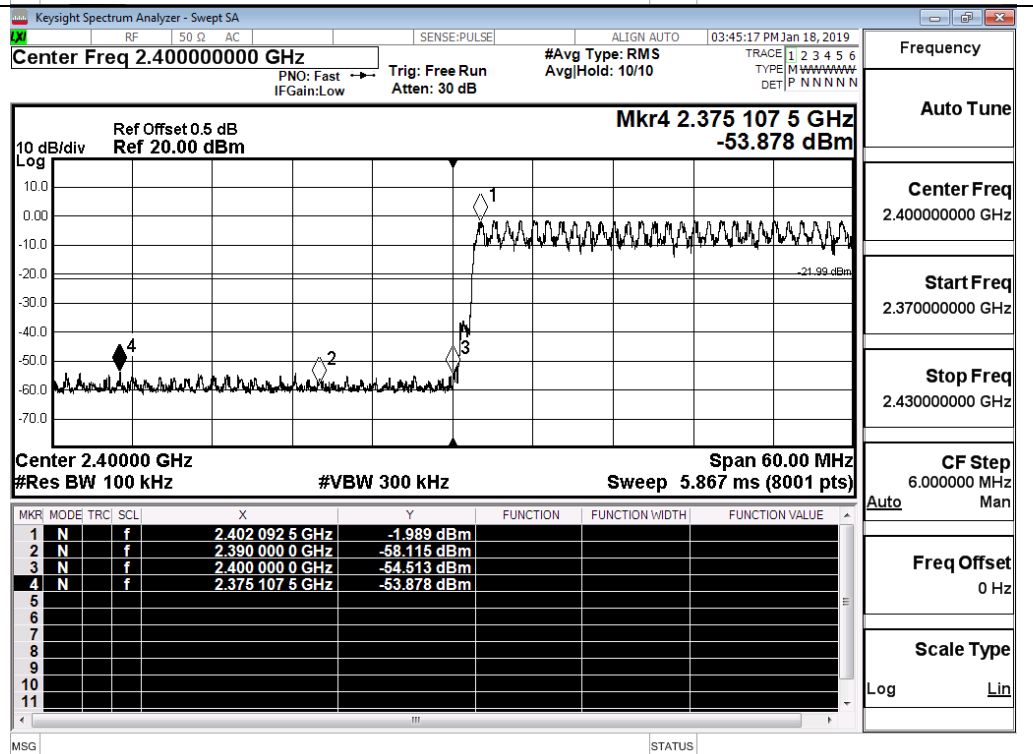
$\pi/4$ DQPSK/HCH/Hop



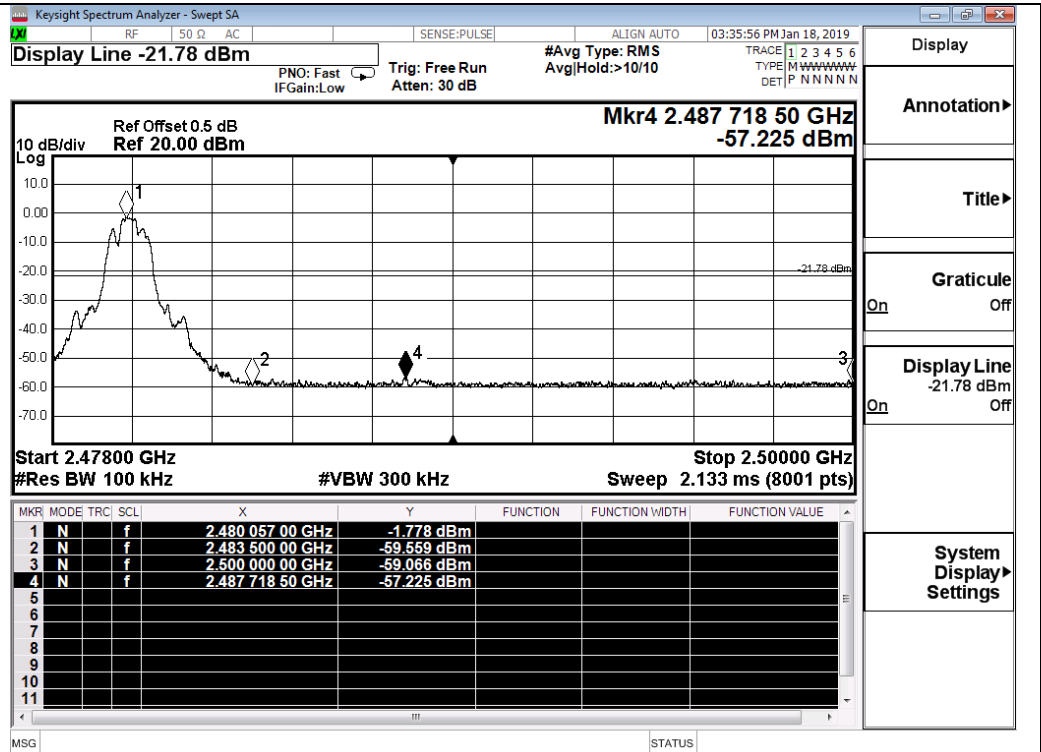
8DPSK/LCH/No Hop



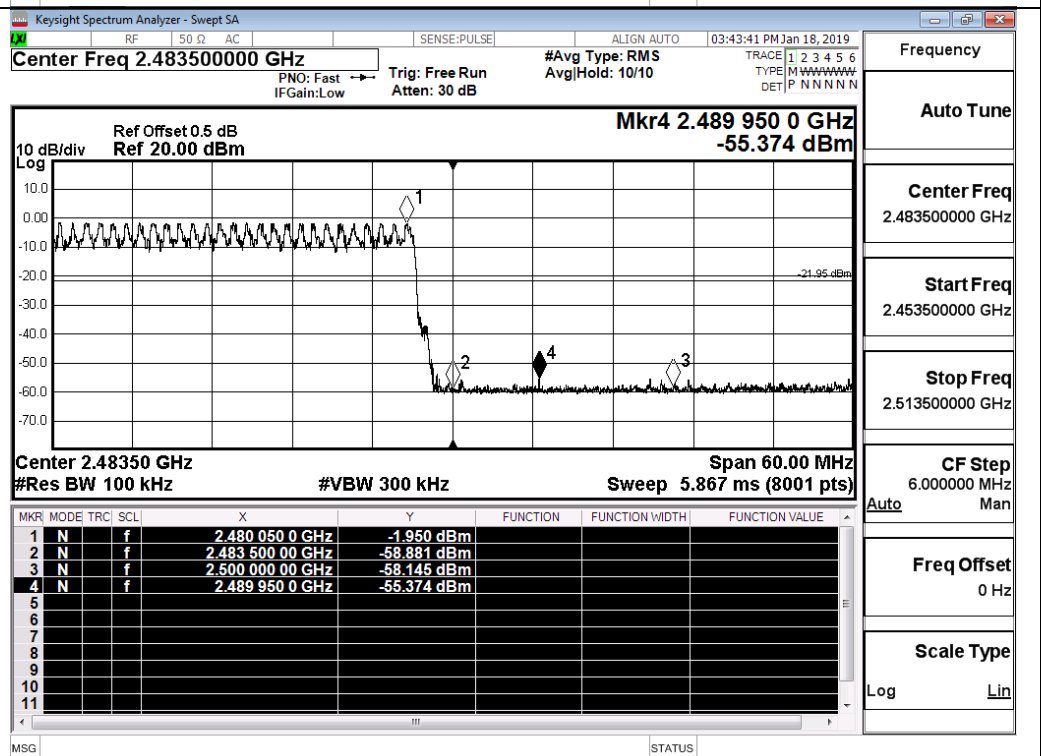
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



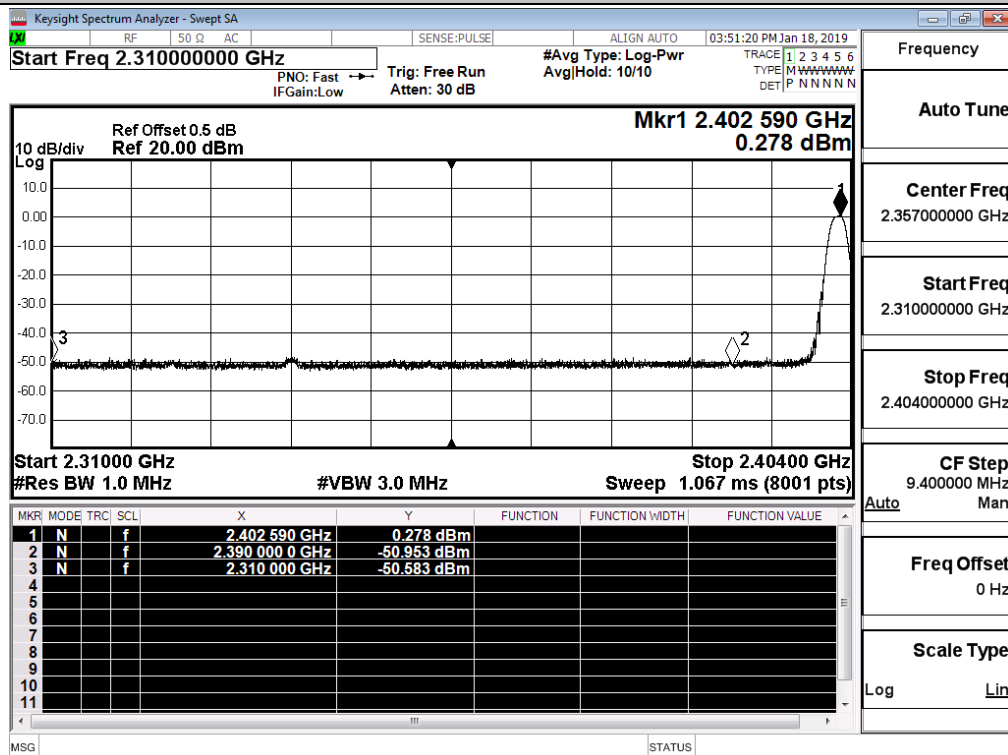
8DPSK/HCH/Hop



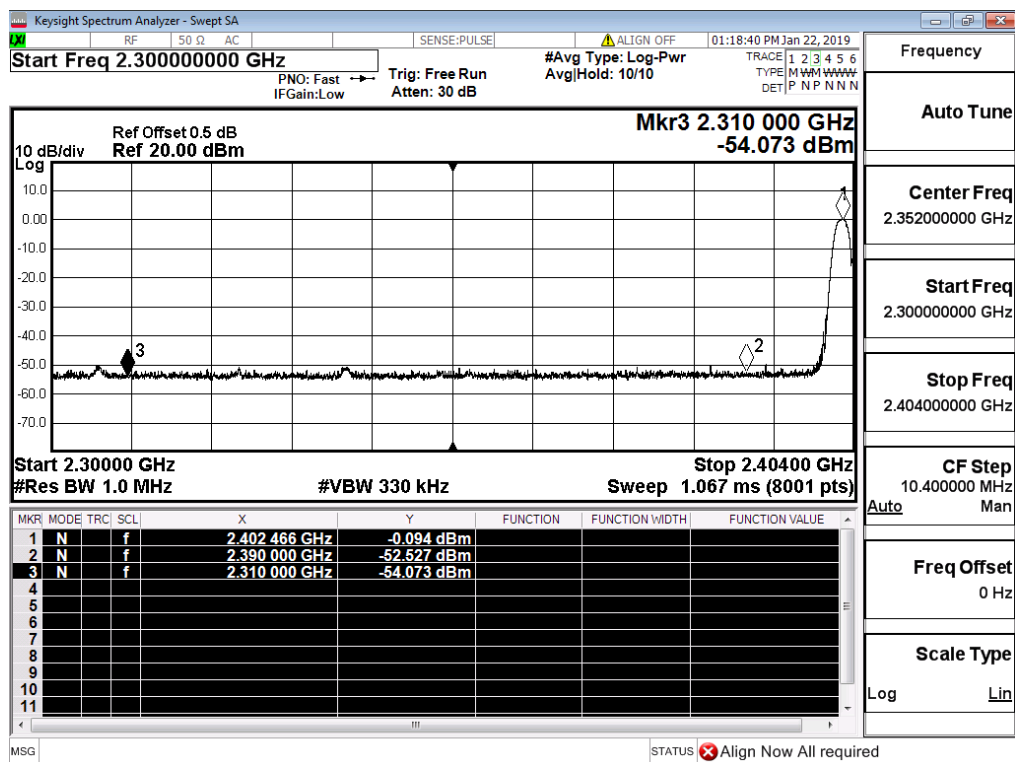
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-50.583	2	0	46.68	PEAK	74	PASS
	Off	2310.0	-54.073	2	0	43.19	AV	54	PASS
	Off	2390.0	-50.953	2	0	46.31	PEAK	74	PASS
	Off	2390.0	-52.527	2	0	44.73	AV	54	PASS
	Off	2483.5	-45.288	2	0	51.97	PEAK	74	PASS
	Off	2483.5	-51.004	2	0	46.26	AV	54	PASS
	Off	2500.0	-50.055	2	0	47.21	PEAK	74	PASS
	Off	2500.0	-52.855	2	0	44.41	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-51.584	2	0	45.68	PEAK	74	PASS
	Off	2310.0	-54.293	2	0	42.97	AV	54	PASS
	Off	2390.0	-51.117	2	0	46.14	PEAK	74	PASS
	Off	2390.0	-54.503	2	0	42.76	AV	54	PASS
	Off	2483.5	-47.098	2	0	50.16	PEAK	74	PASS
	Off	2483.5	-50.958	2	0	46.30	AV	54	PASS
	Off	2500.0	-48.968	2	0	48.29	PEAK	74	PASS
	Off	2500.0	-51.867	2	0	45.39	AV	54	PASS
8DPSK	Off	2310.0	-51.804	2	0	45.46	PEAK	74	PASS
	Off	2310.0	-54.082	2	0	43.18	AV	54	PASS
	Off	2390.0	-50.532	2	0	46.73	PEAK	74	PASS
	Off	2390.0	-53.461	2	0	43.80	AV	54	PASS
	Off	2483.5	-46.167	2	0	51.09	PEAK	74	PASS
	Off	2483.5	-50.569	2	0	46.69	AV	54	PASS
	Off	2500.0	-49.484	2	0	47.78	PEAK	74	PASS
	Off	2500.0	-52.796	2	0	44.46	AV	54	PASS

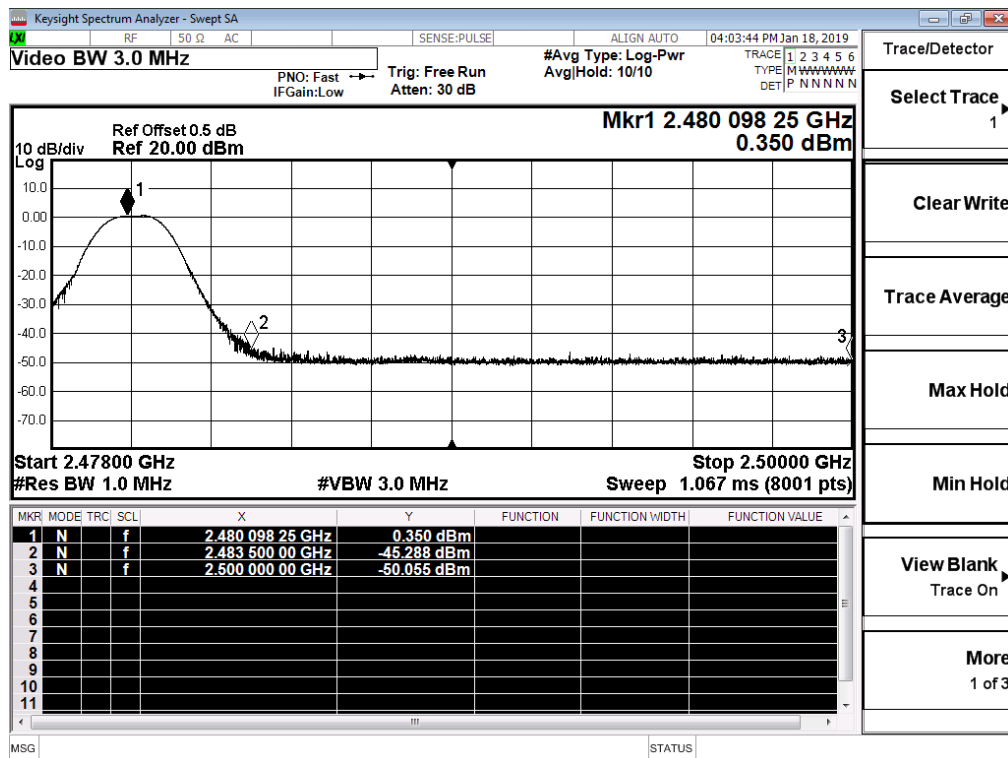
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



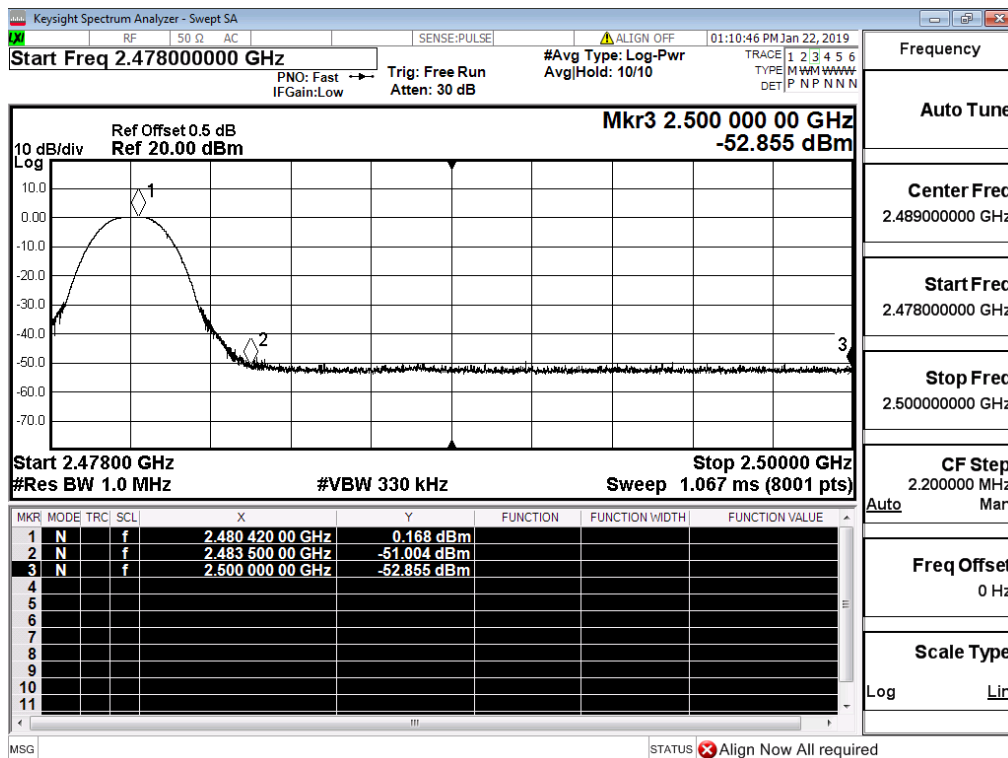
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

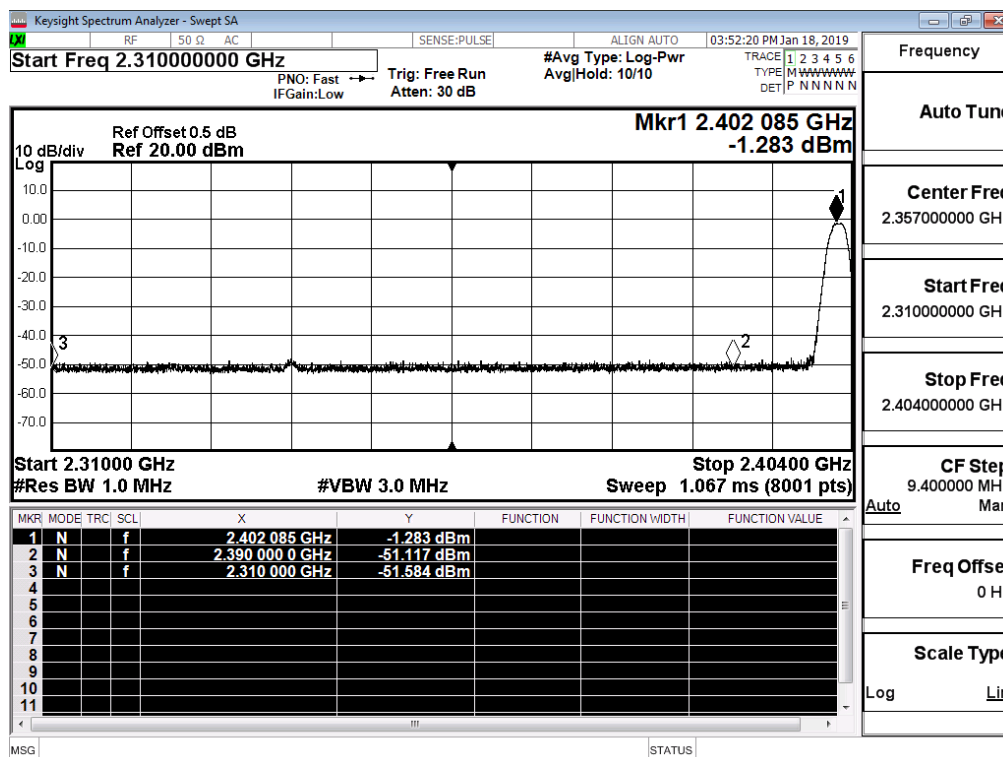
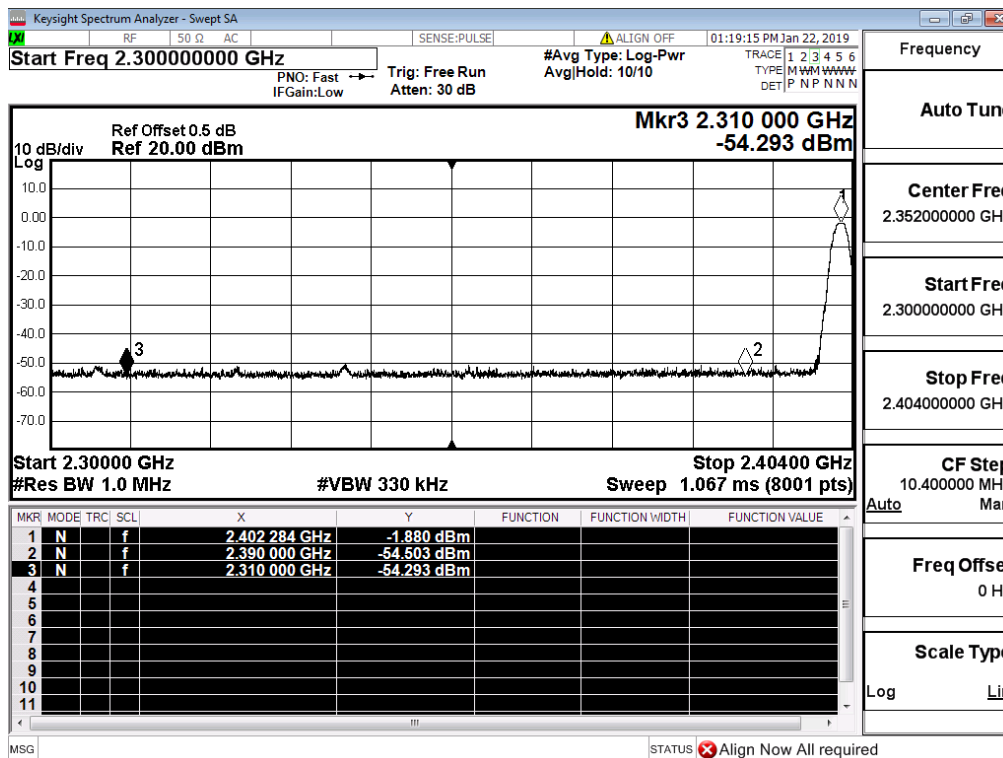


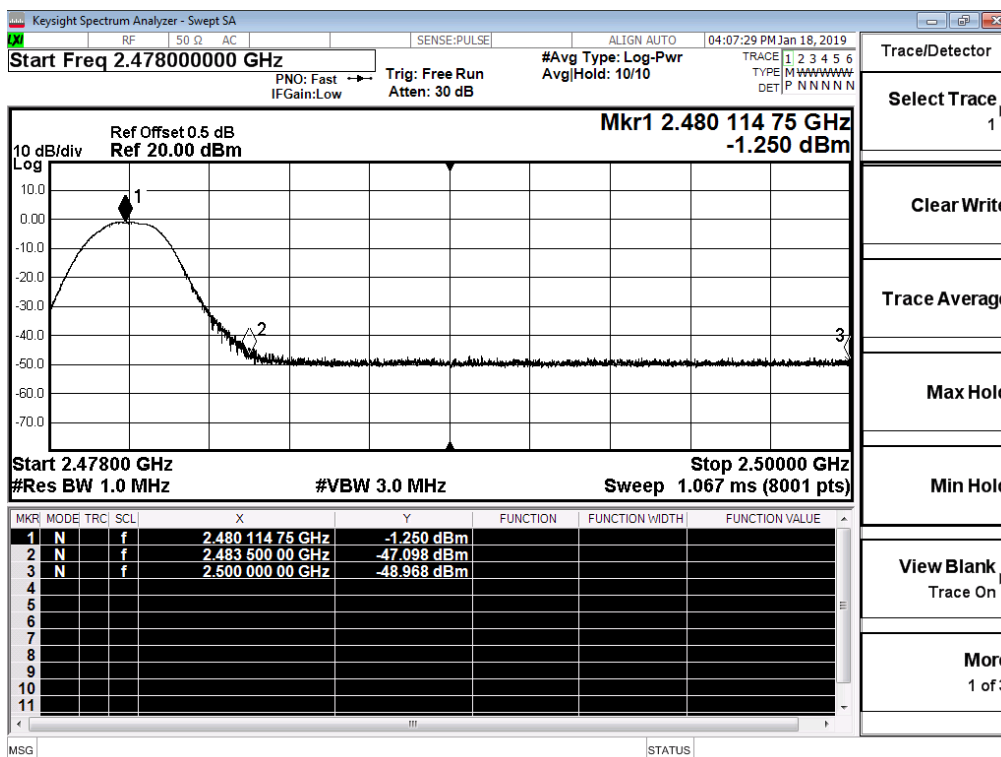
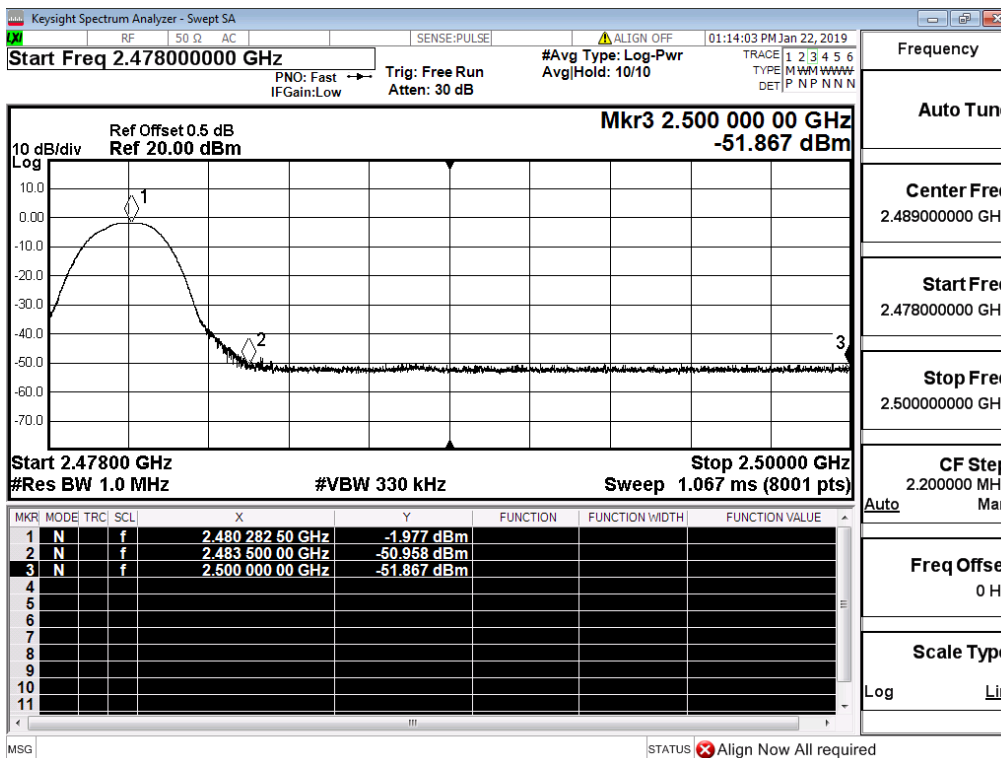
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



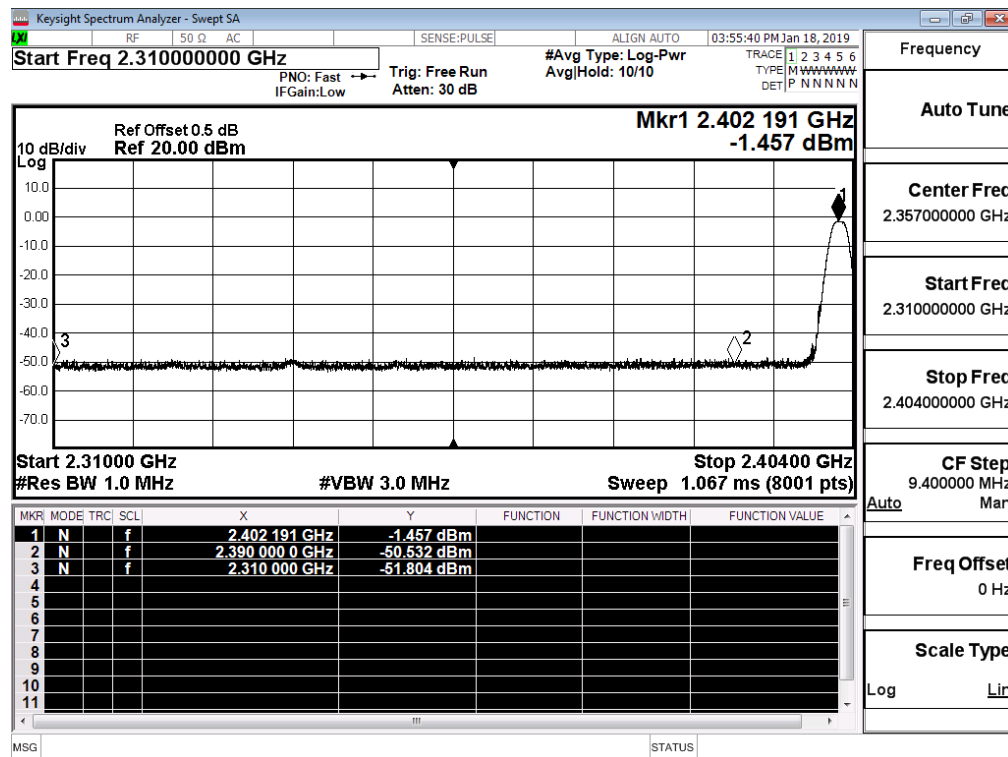
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



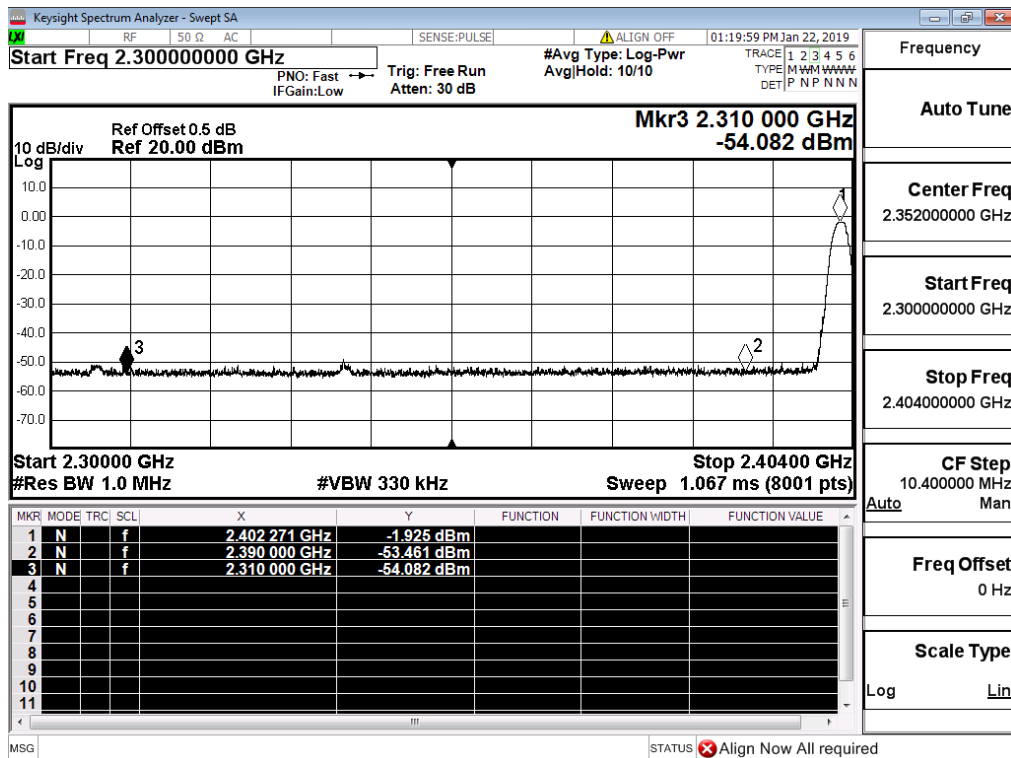
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

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)

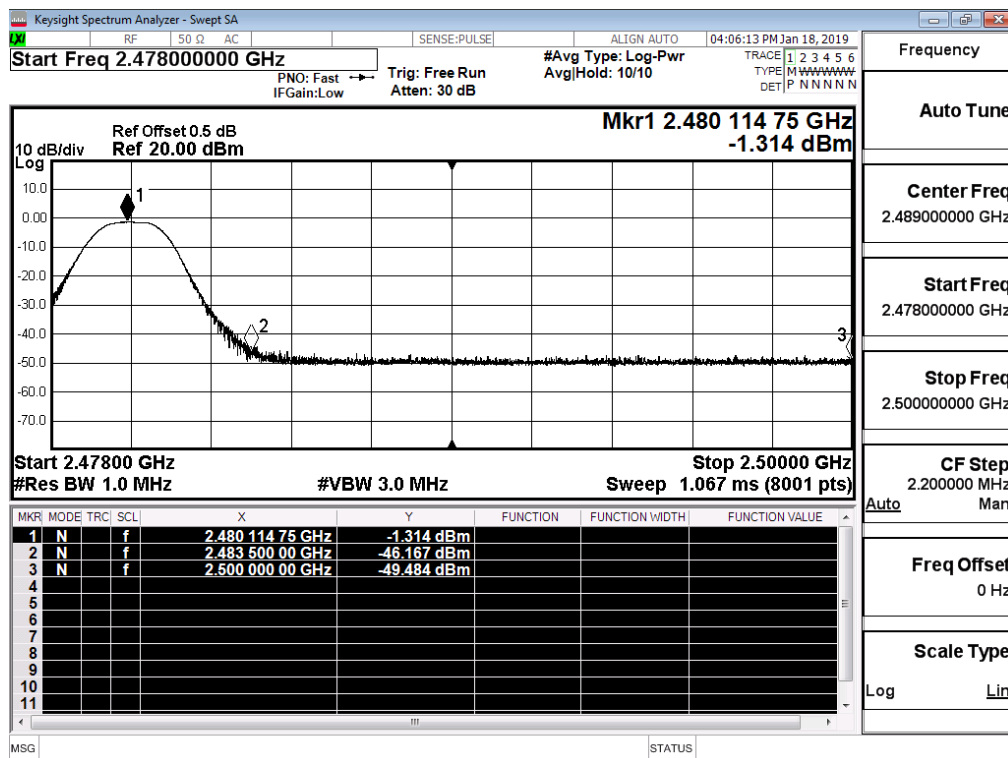
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

