

Appendix A

RF Test Data for BT V5.0 (BDR/EDR) (Conducted Measurement)

Product Name: Wireless Earphone

Trade Mark: Ocen

Test Model: U8

Environmental Conditions

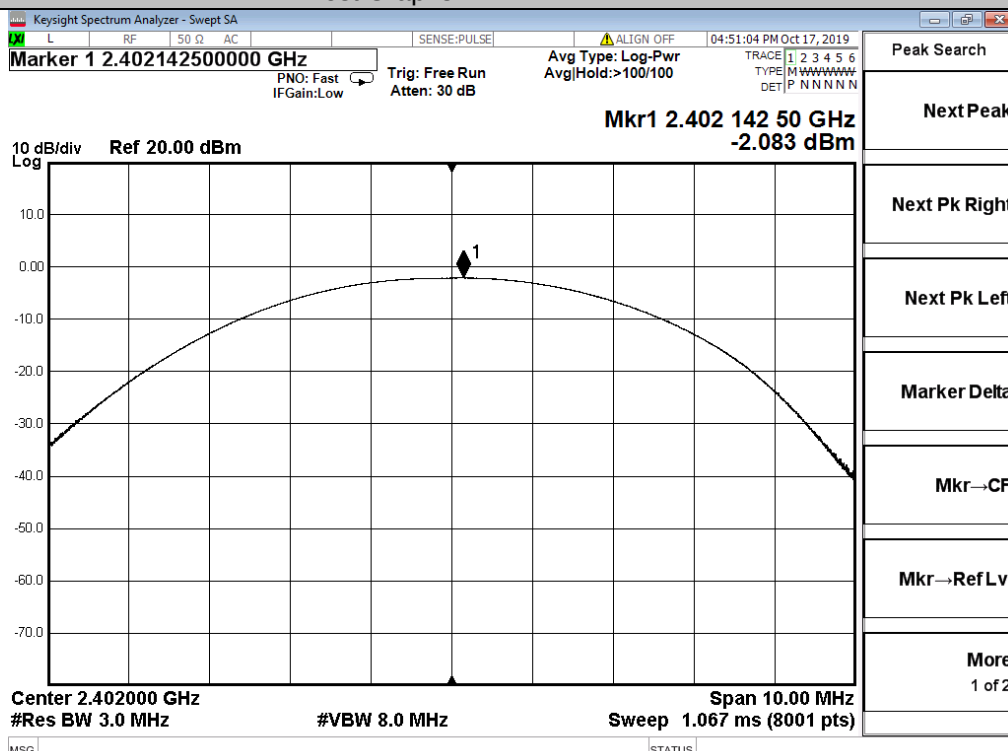
Temperature:	23.5 °C
Relative Humidity:	55%
ATM Pressure:	100.0 kPa
Test Engineer:	Harry Ye
Supervised by:	Jayden.Zhuo

A.1 Maximum Conducted Peak Output Power

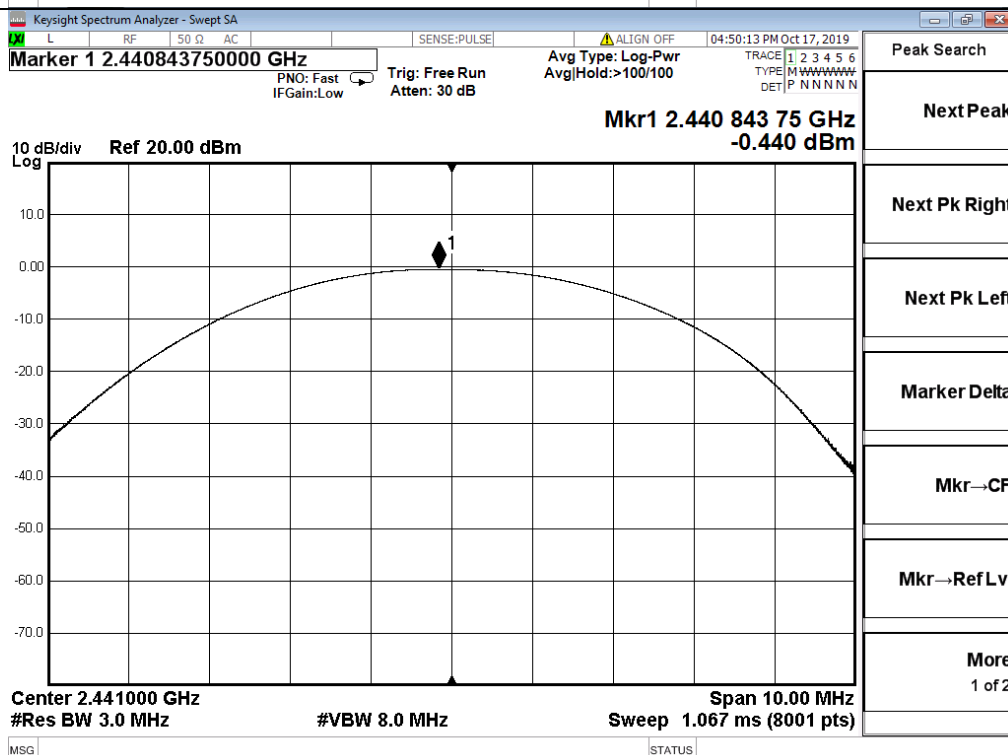
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-2.083	21	PASS
	MCH	-0.440	21	PASS
	HCH	-0.218	21	PASS
$\pi/4$ DQPSK	LCH	-3.538	21	PASS
	MCH	-1.698	21	PASS
	HCH	-1.474	21	PASS
8DPSK	LCH	-3.156	21	PASS
	MCH	-1.328	21	PASS
	HCH	-1.120	21	PASS

Test Graphs

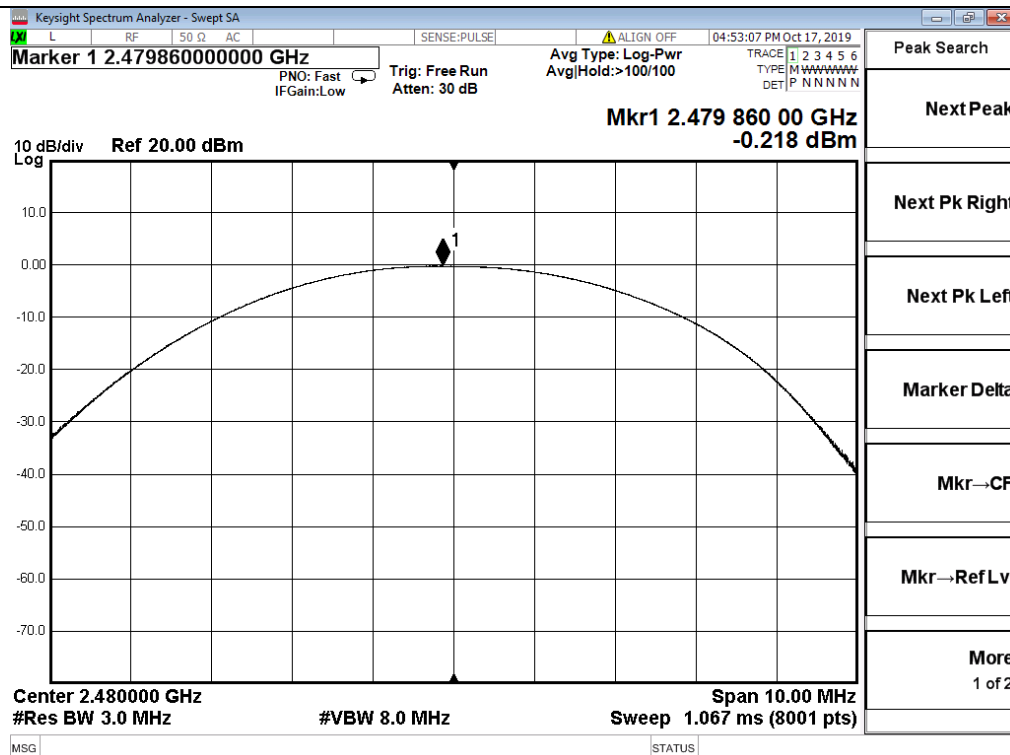
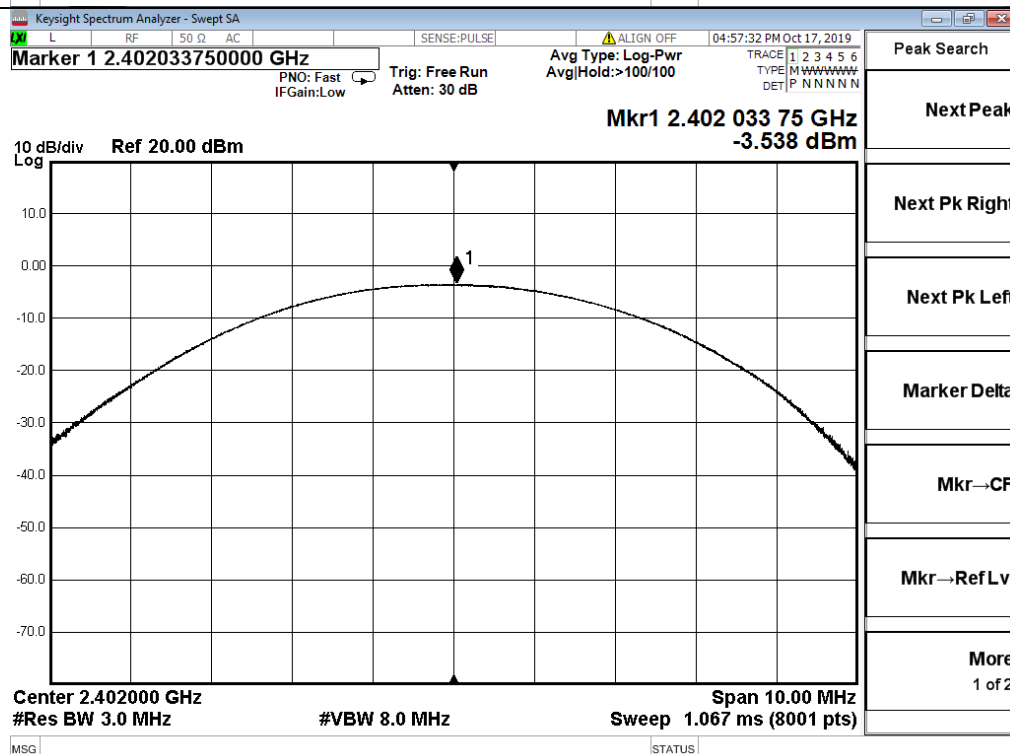
GFSK/LCH

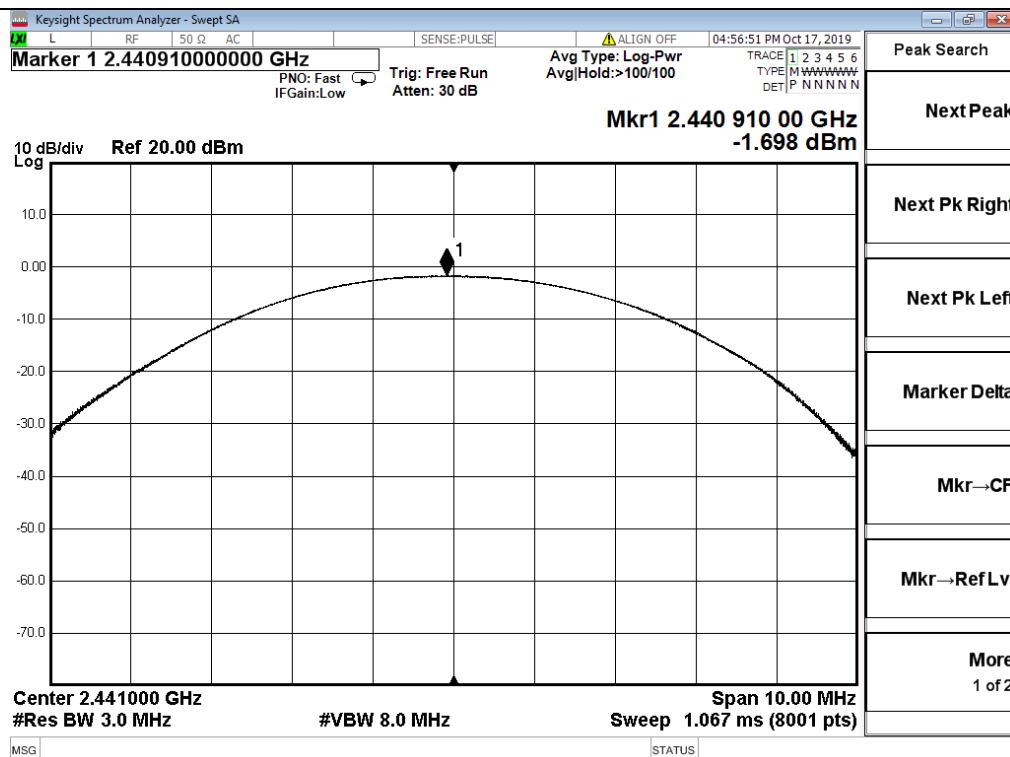
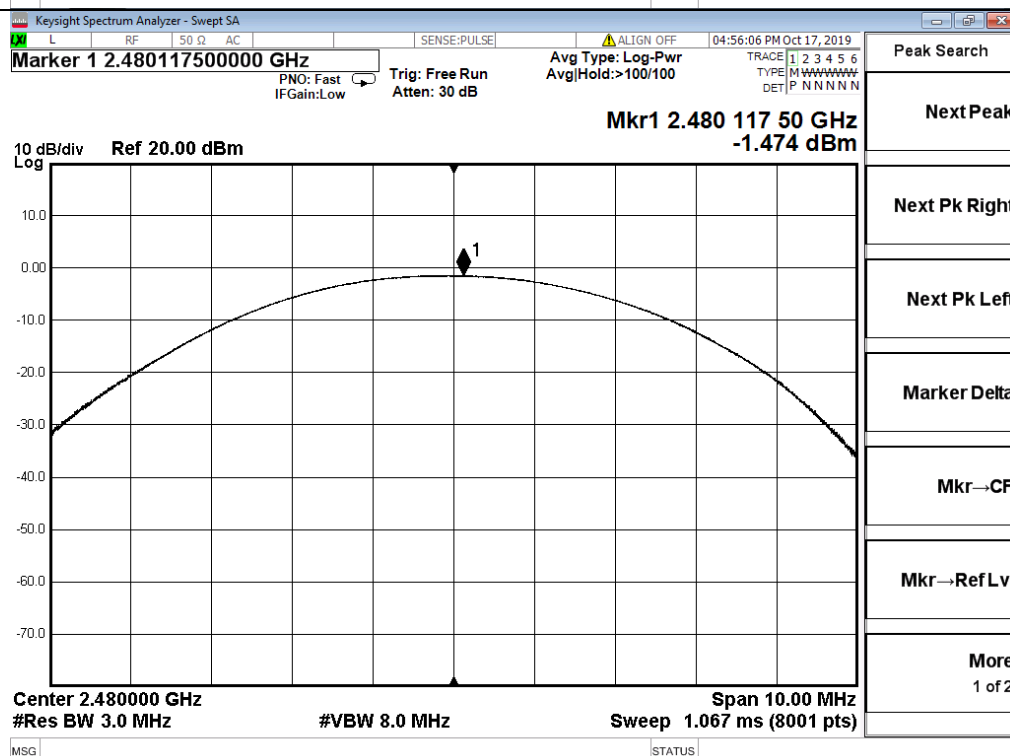


GFSK/MCH

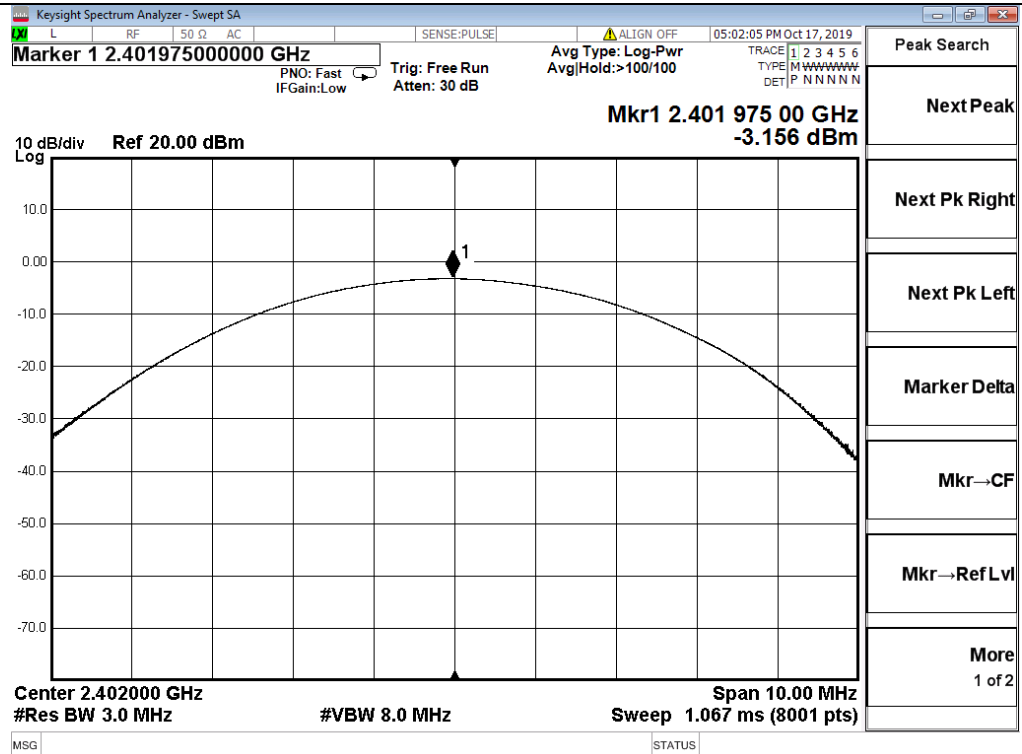


GFSK/HCH

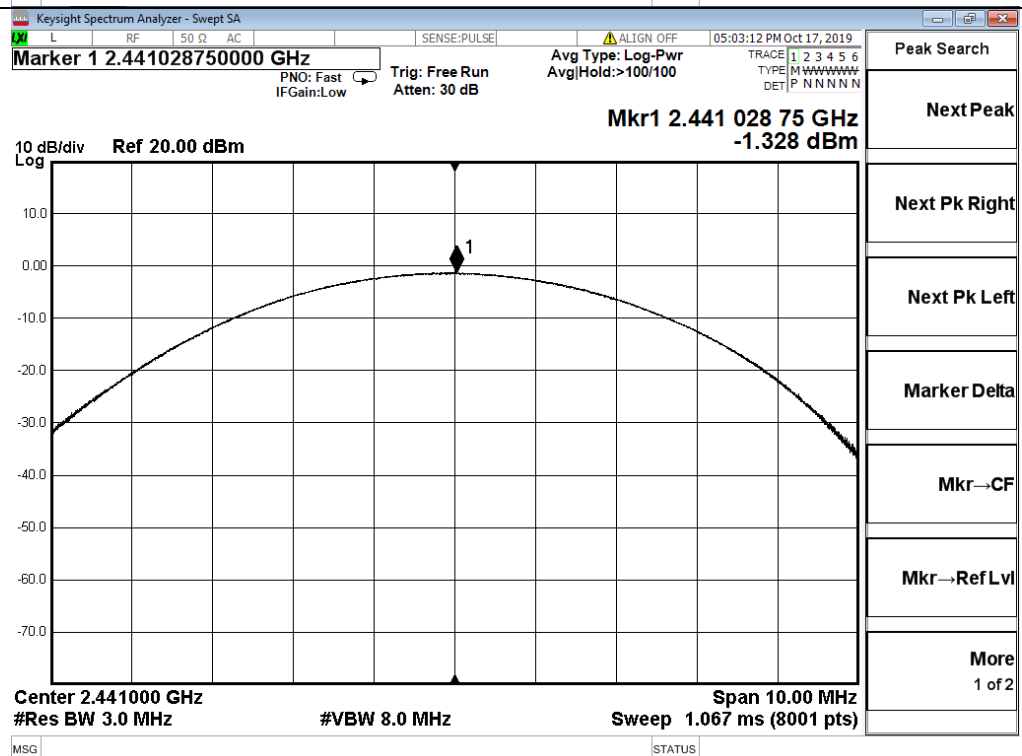
 π /4DQPSK/LCH

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

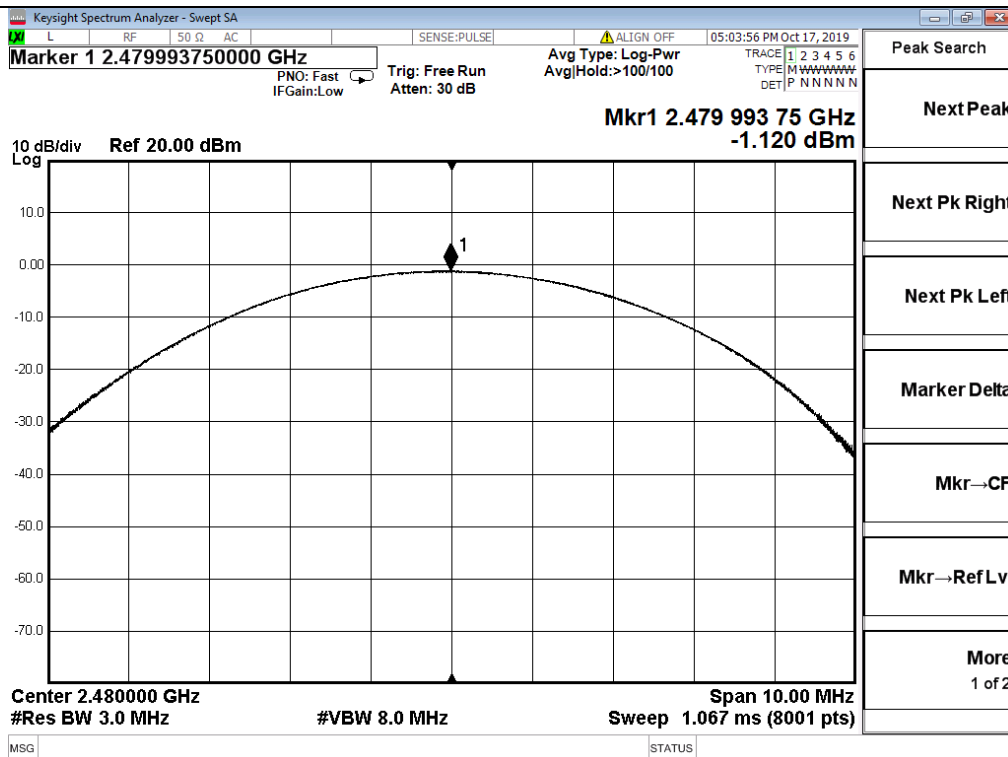
8DPSK/LCH



8DPSK/MCH

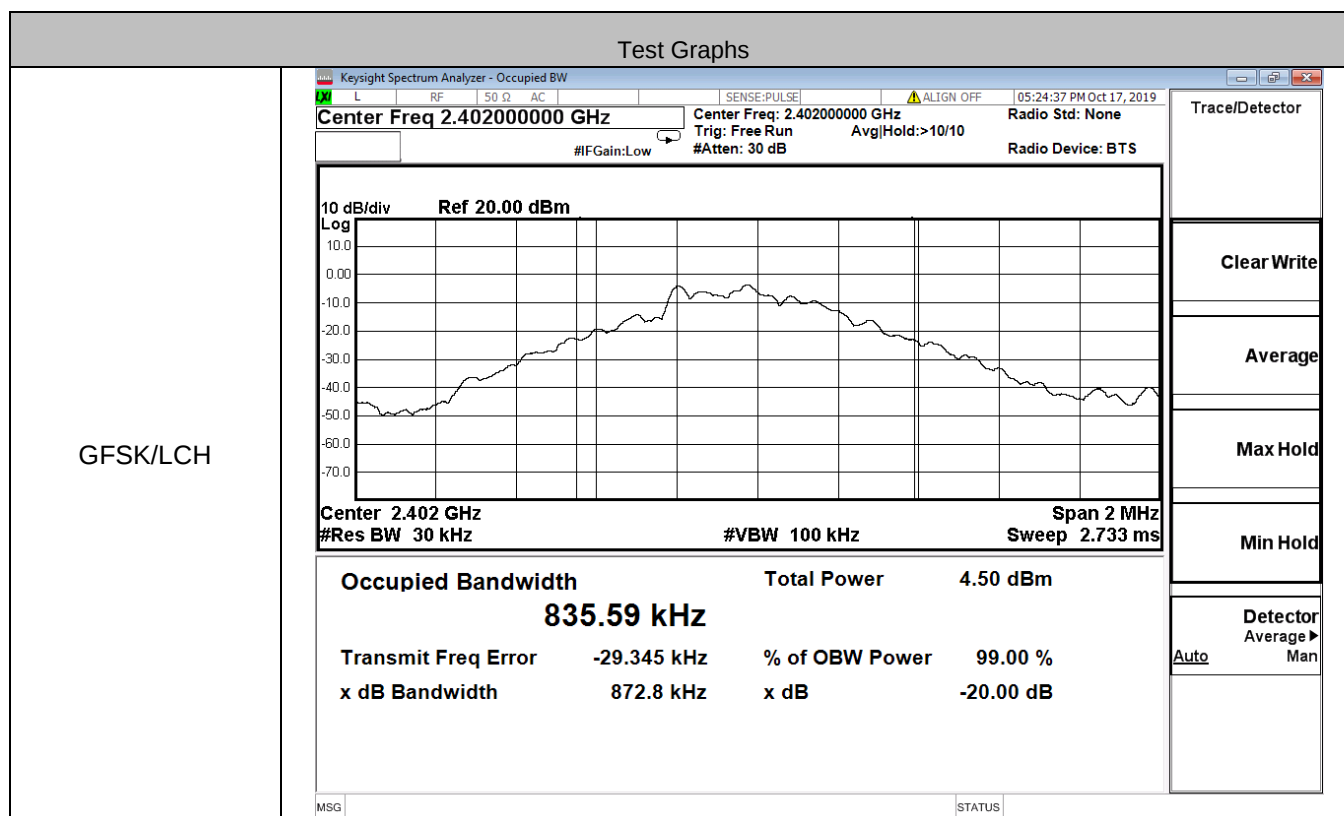


8DPSK/HCH

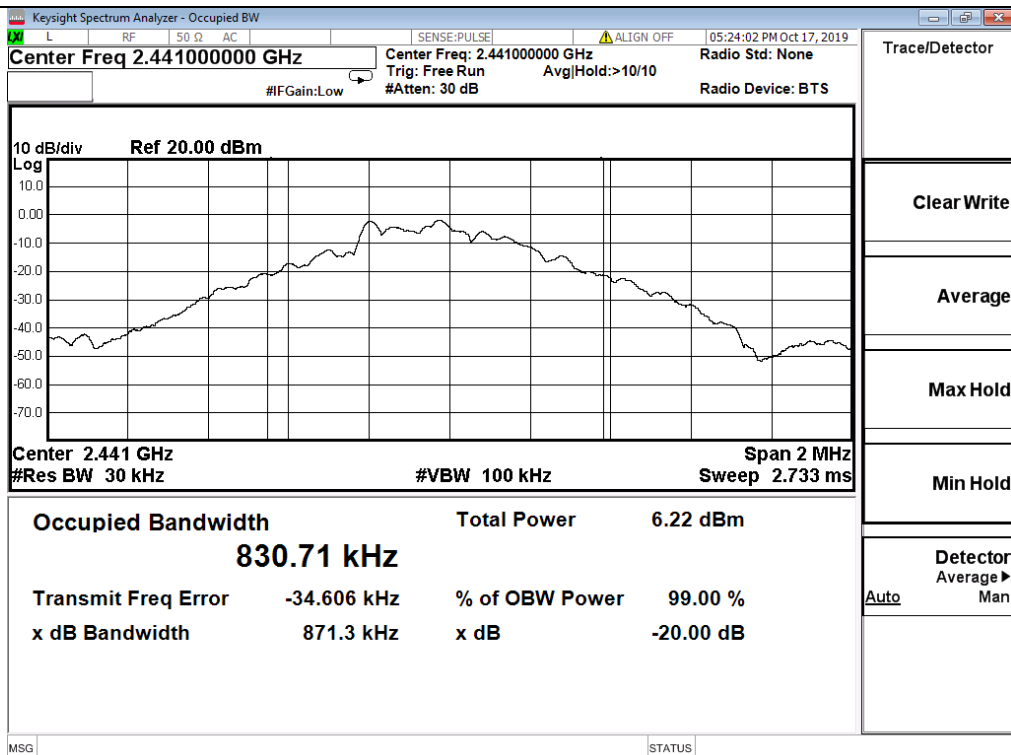


A.2 99% and 20dB Bandwidth

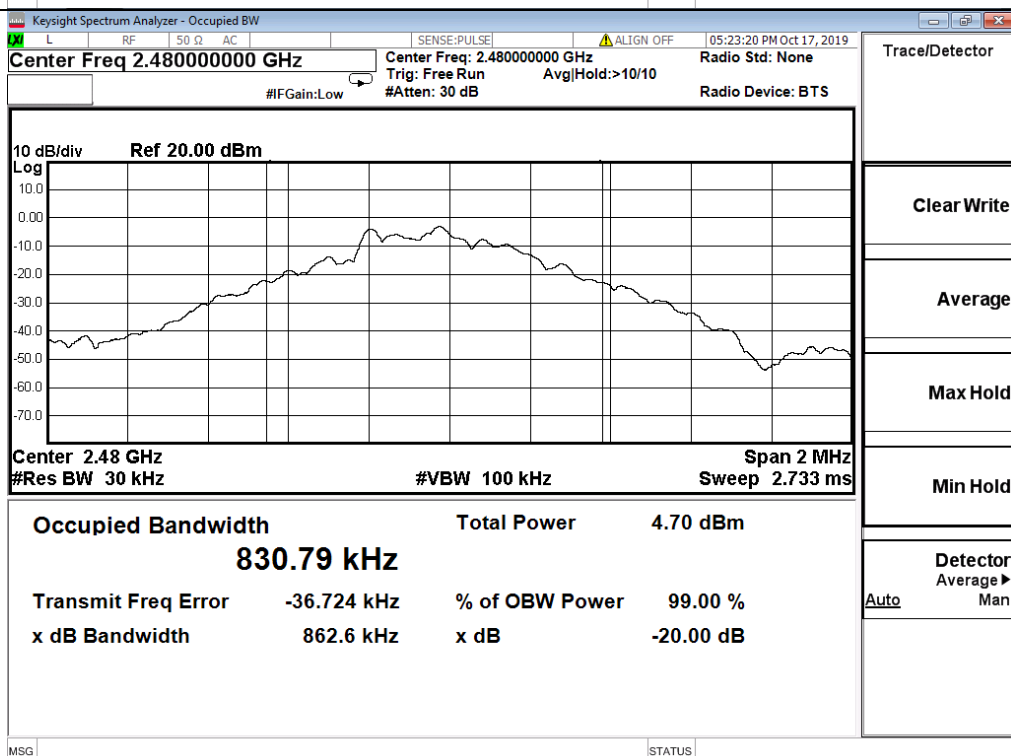
Mode	Channel.	99% Bandwidth [MHz]	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.83559	0.8728	Not Specified	PASS
	MCH	0.83071	0.8713	Not Specified	PASS
	HCH	0.83079	0.8626	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.1464	1.209	Not Specified	PASS
	MCH	1.1674	1.220	Not Specified	PASS
	HCH	1.1667	1.220	Not Specified	PASS
8DPSK	LCH	1.1464	1.209	Not Specified	PASS
	MCH	1.1510	1.195	Not Specified	PASS
	HCH	1.1510	1.211	Not Specified	PASS

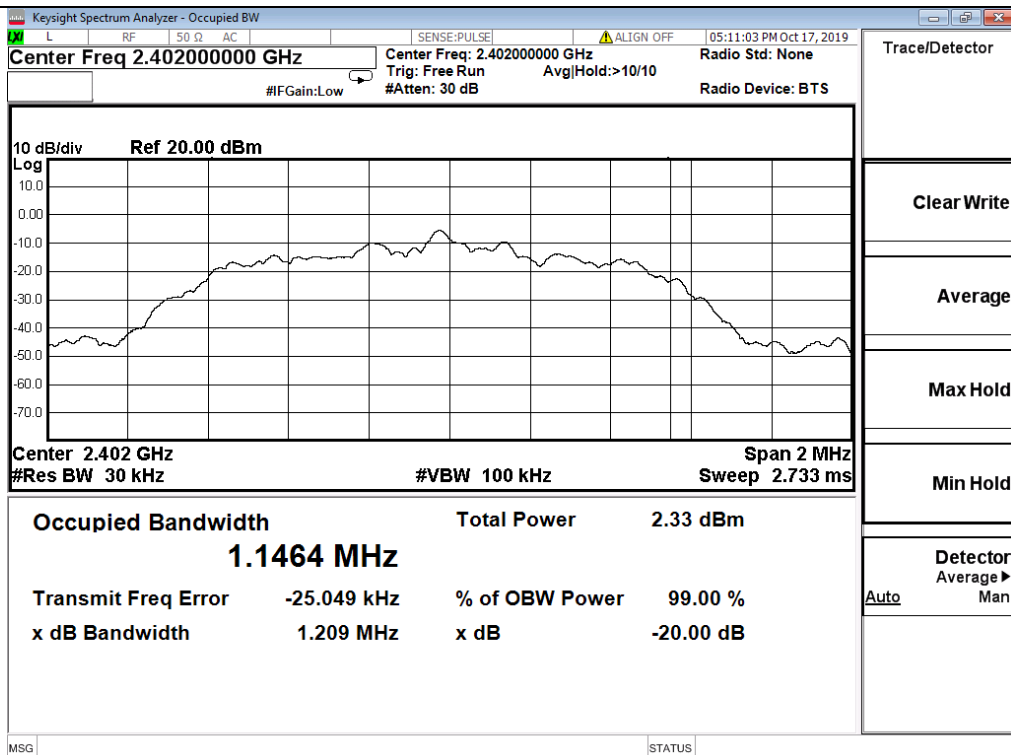
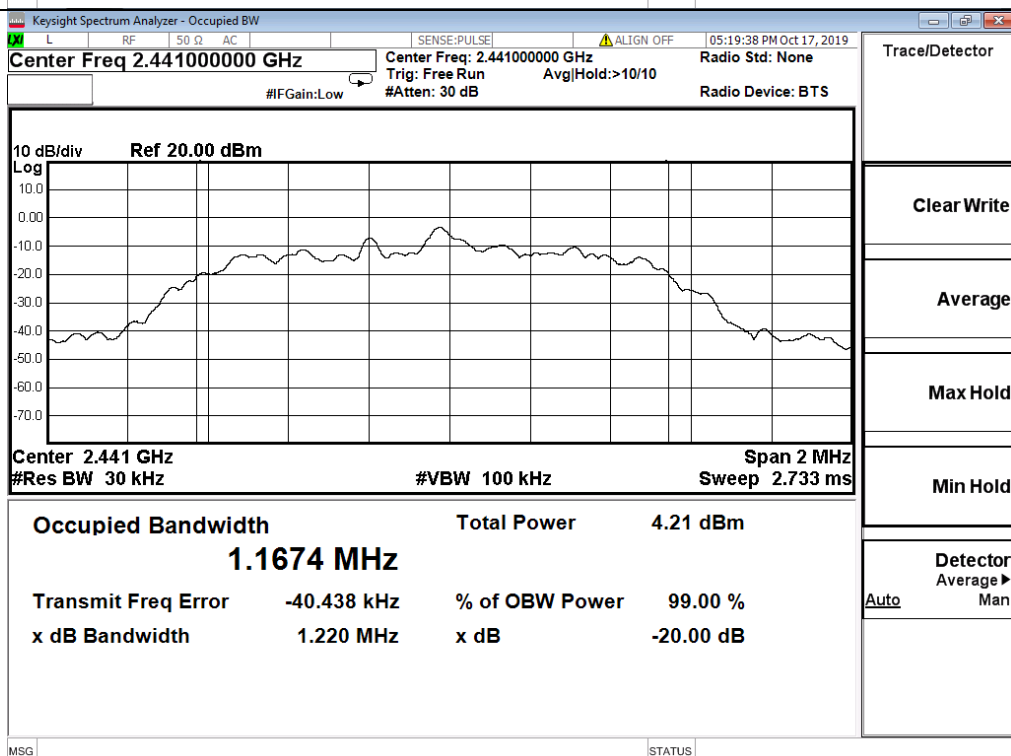


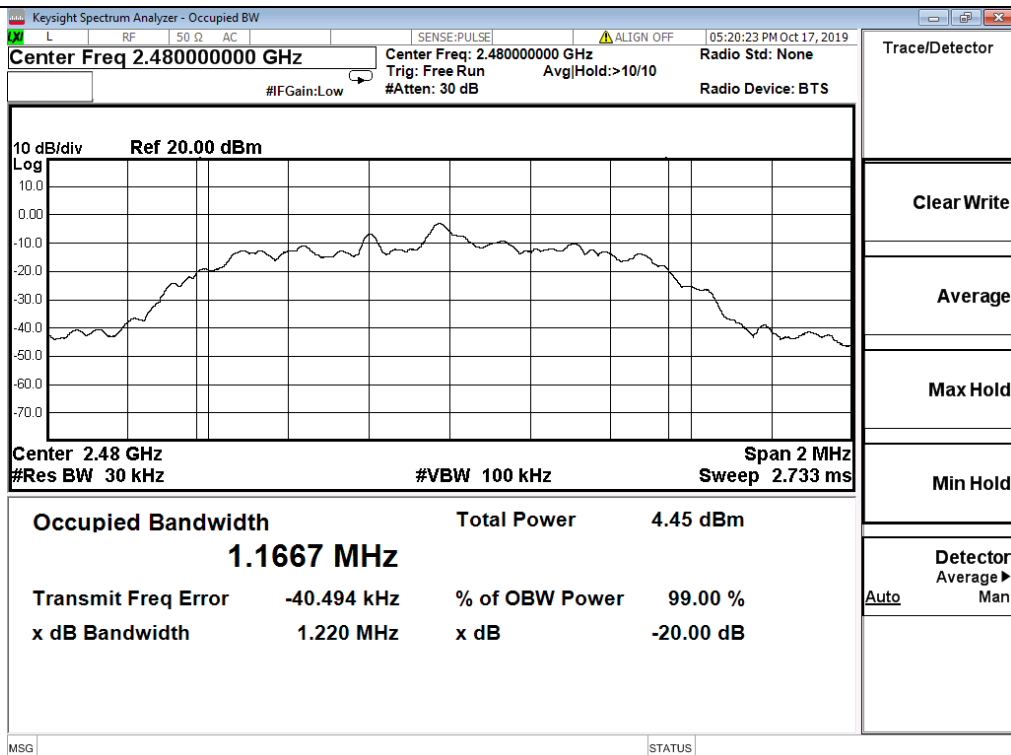
GFSK/MCH



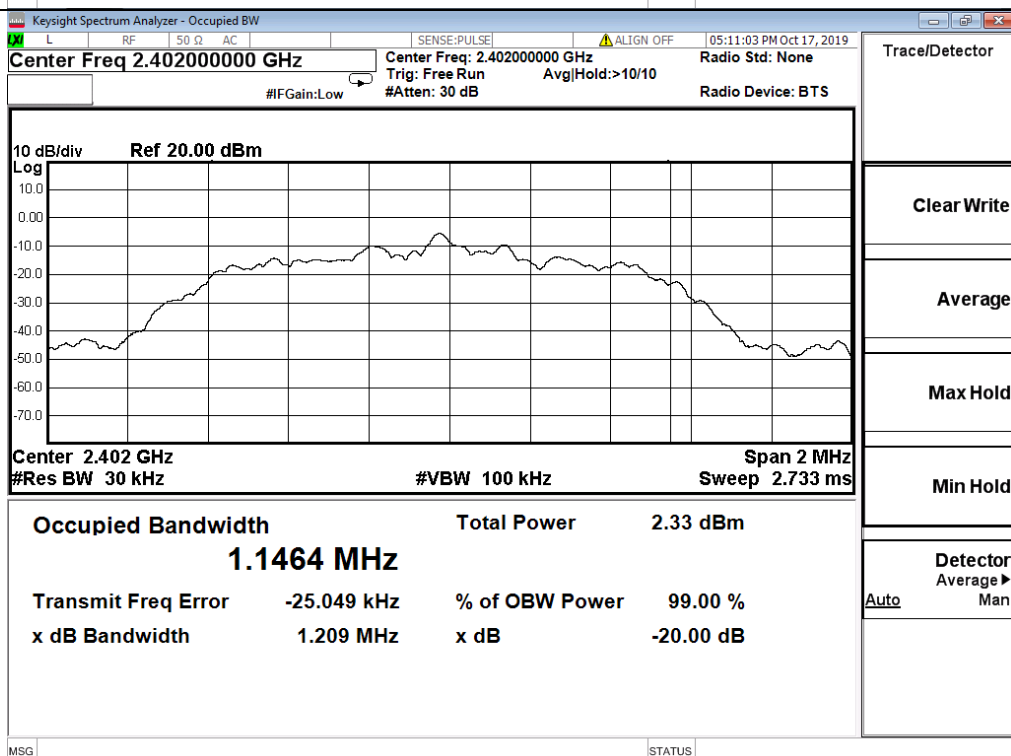
GFSK/HCH



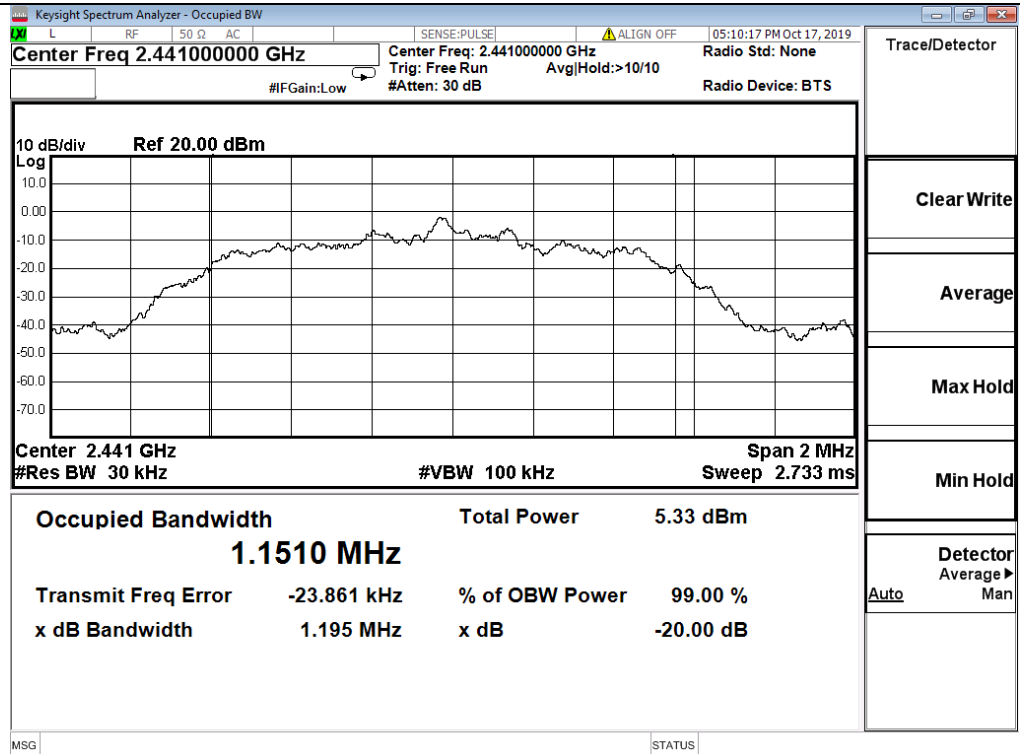
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

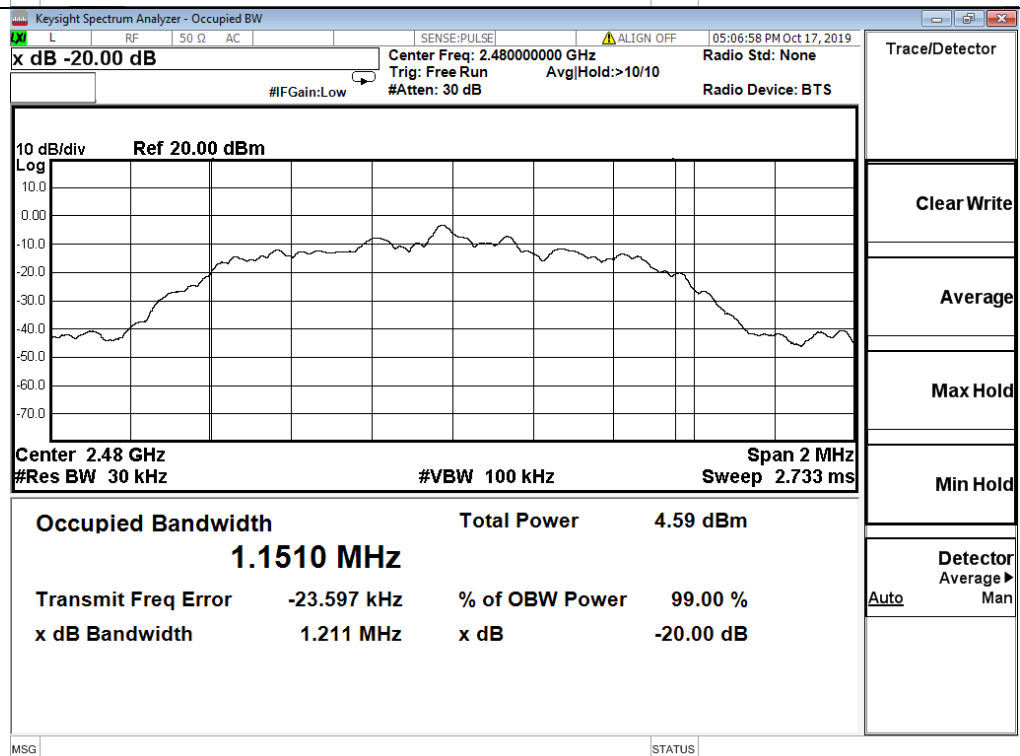
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

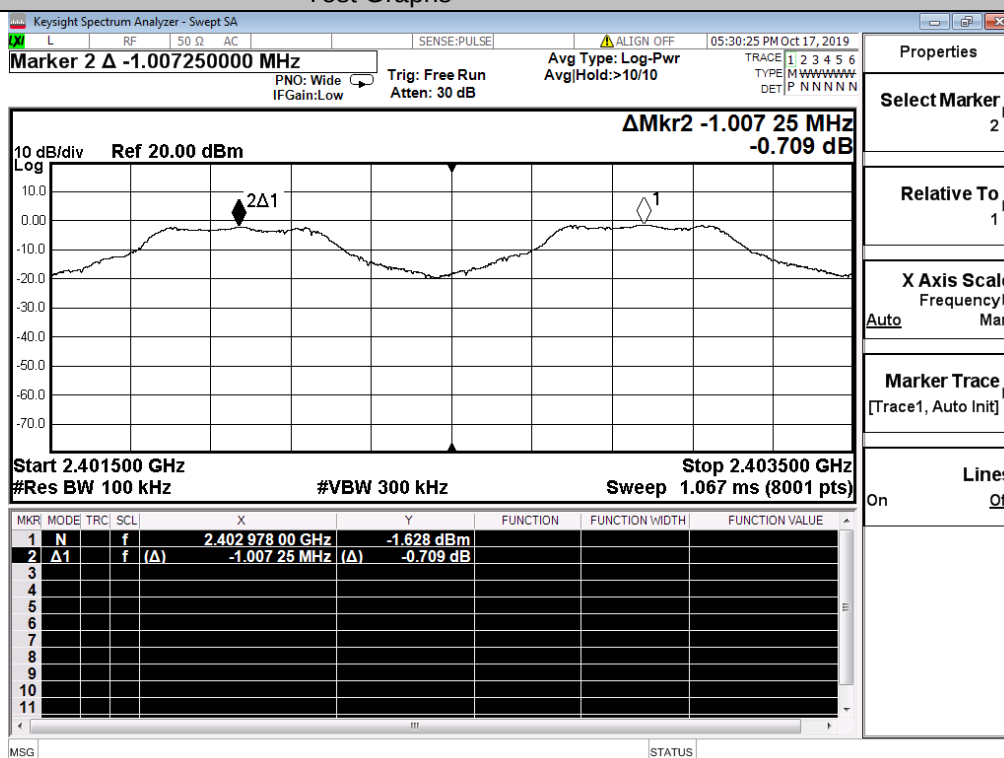


A.3 Carrier Frequency Separation

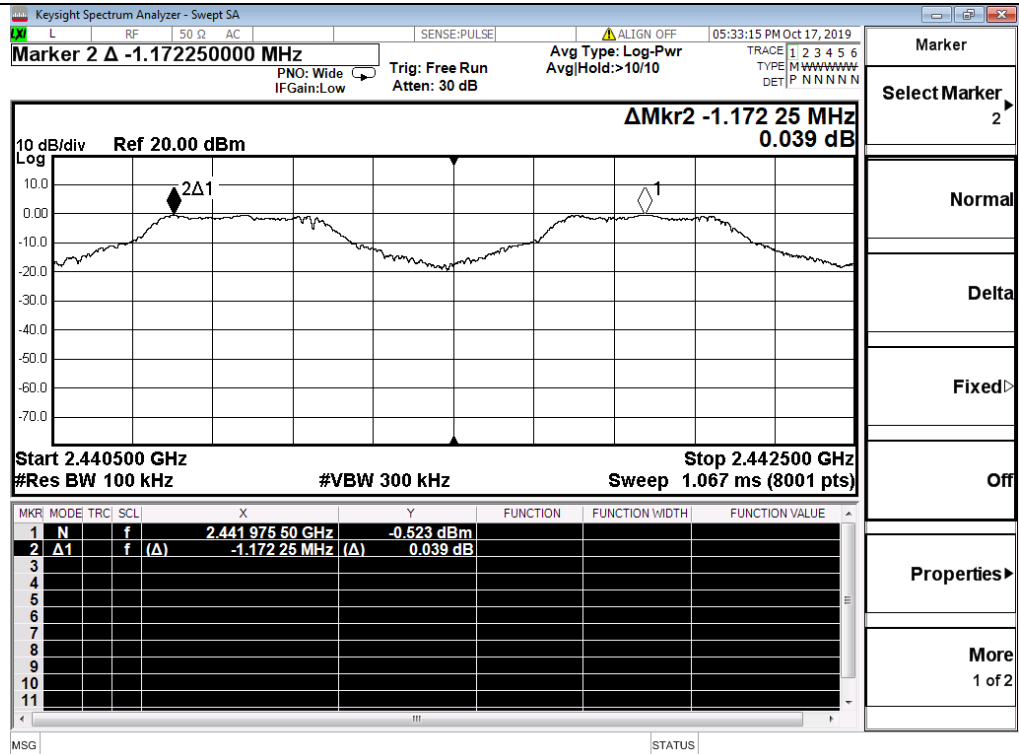
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.007	0.58	PASS
	MCH	1.172	0.58	PASS
	HCH	1.004	0.58	PASS
$\pi/4$ DQPSK	LCH	1.010	0.81	PASS
	MCH	1.012	0.81	PASS
	HCH	1.002	0.81	PASS
8DPSK	LCH	0.992	0.81	PASS
	MCH	1.001	0.80	PASS
	HCH	1.018	0.81	PASS

Test Graphs

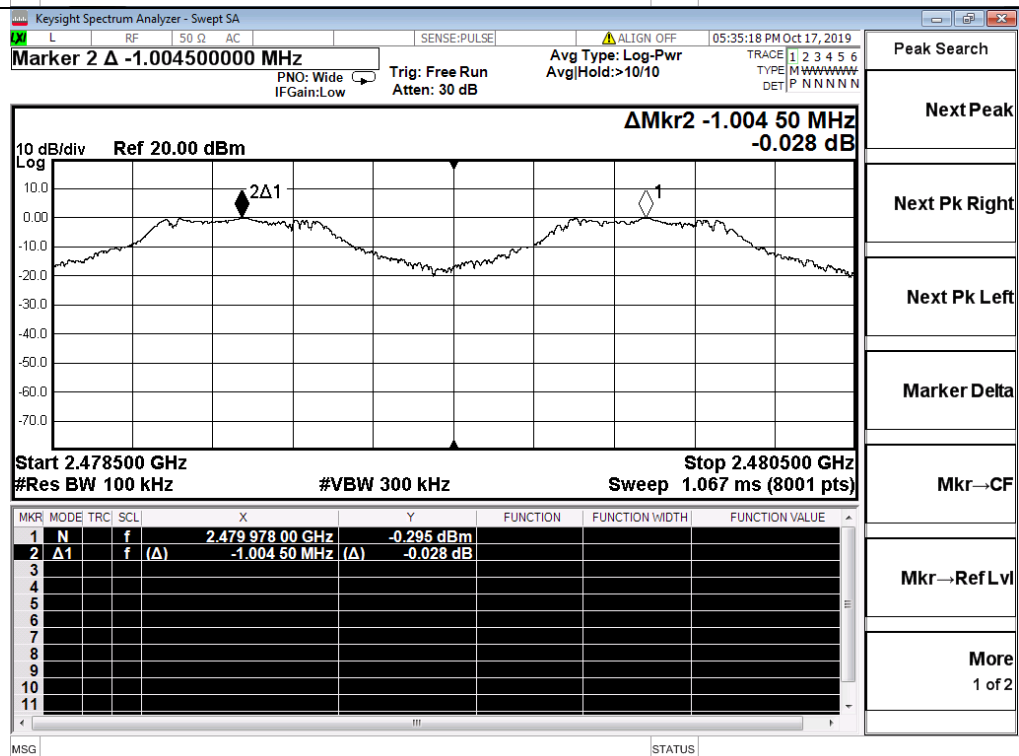
GFSK/LCH

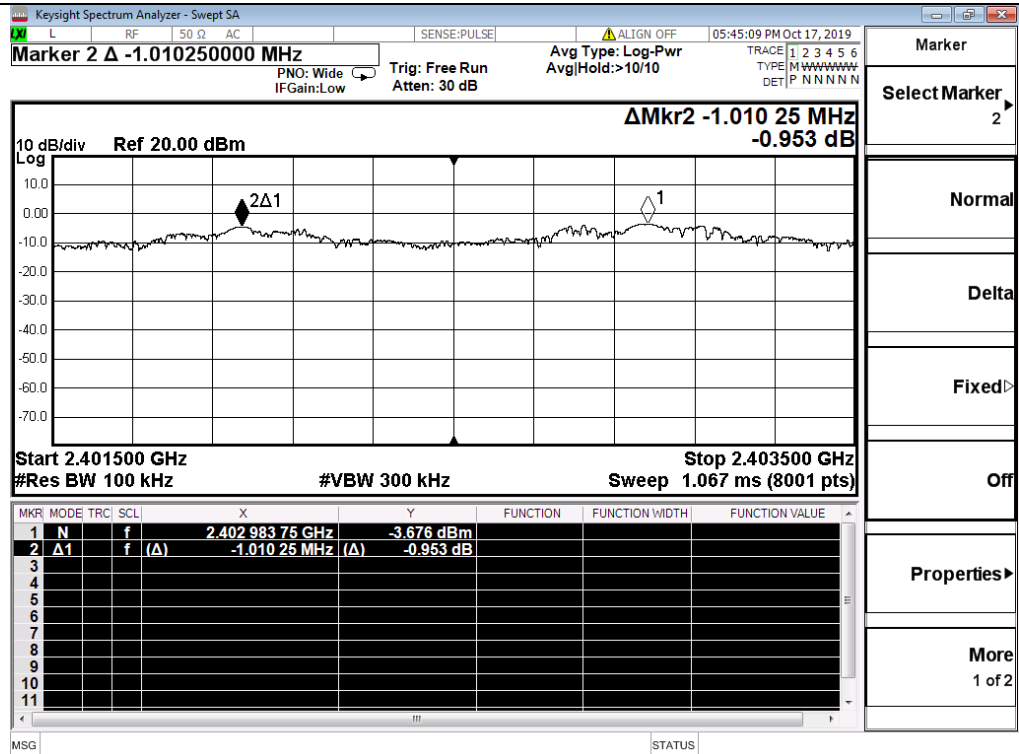
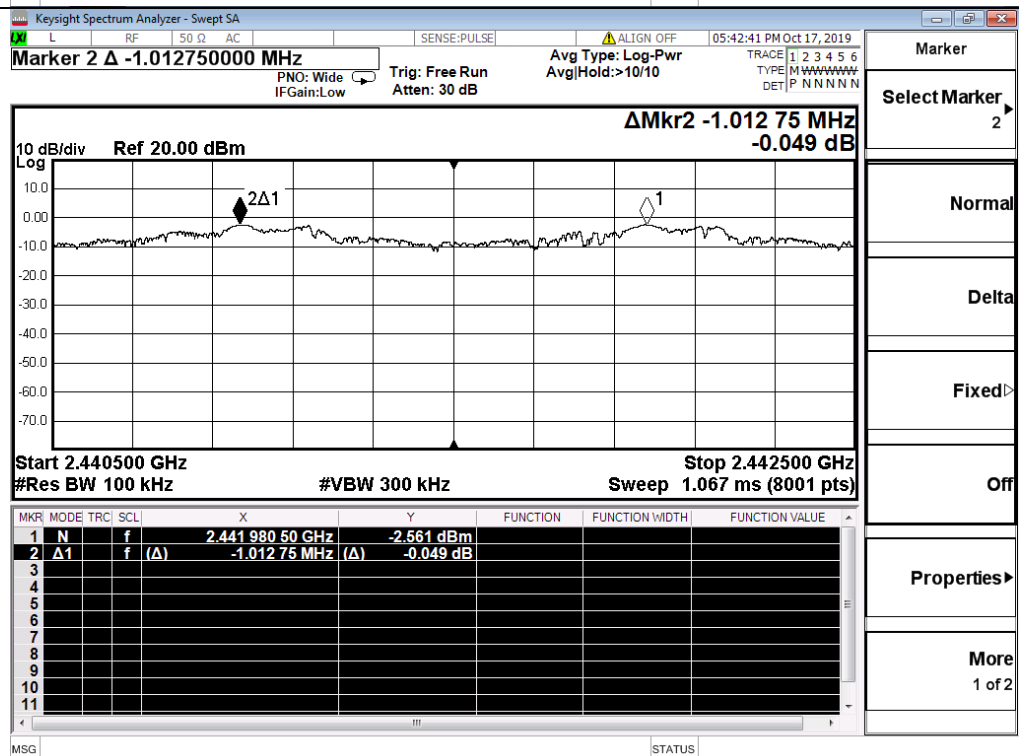


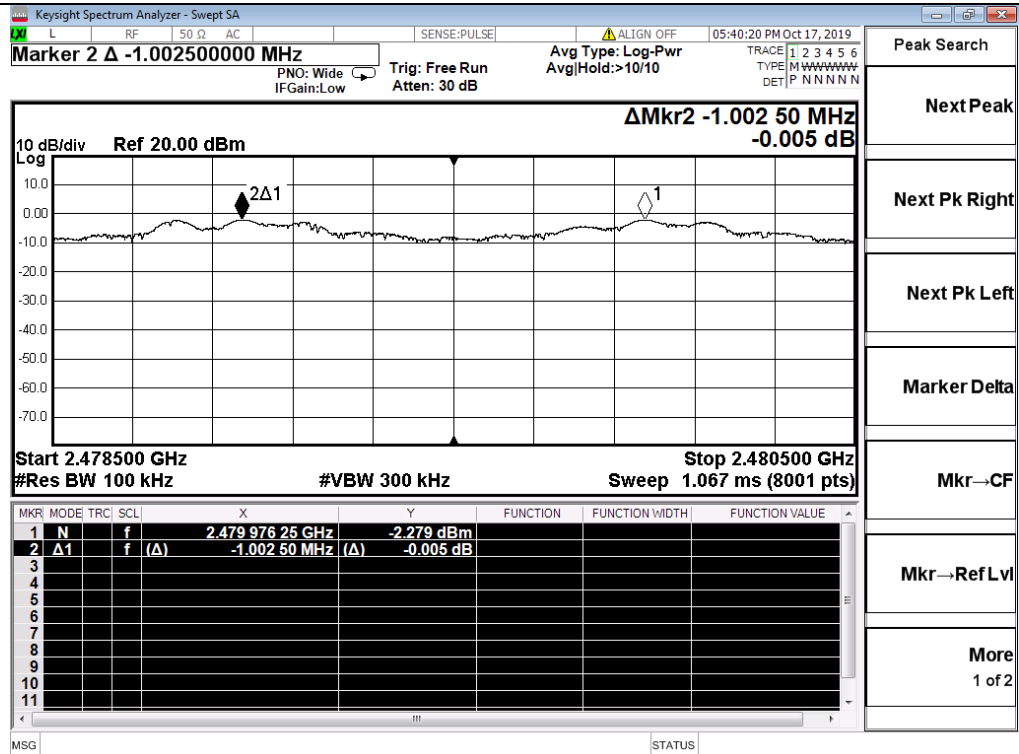
GFSK/MCH



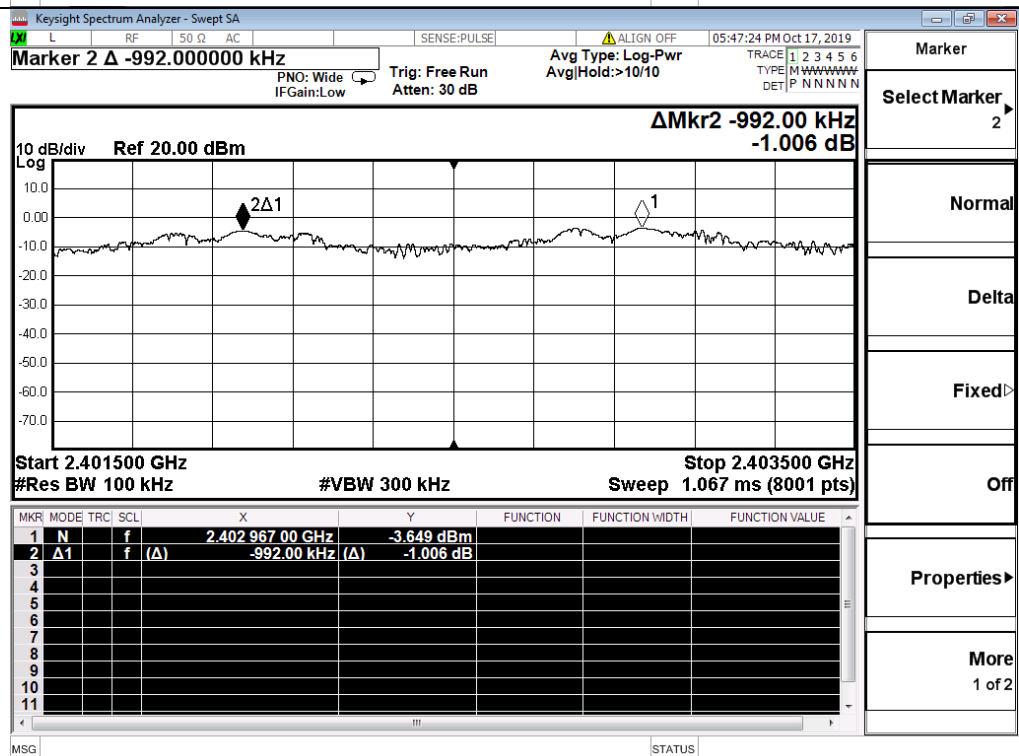
GFSK/HCH



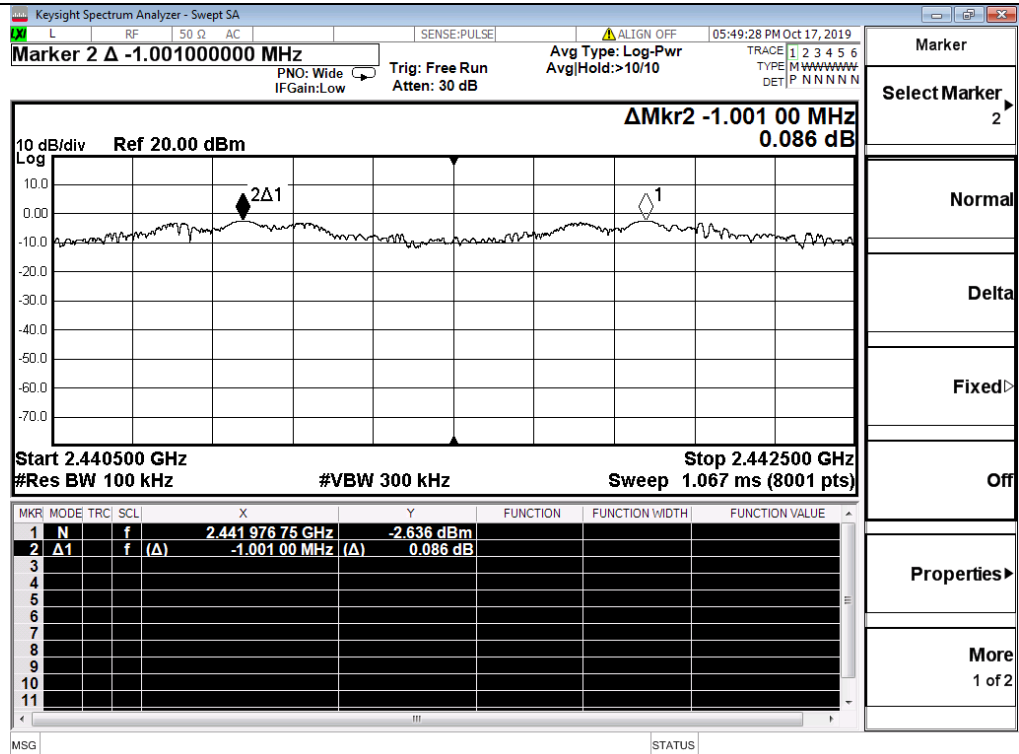
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

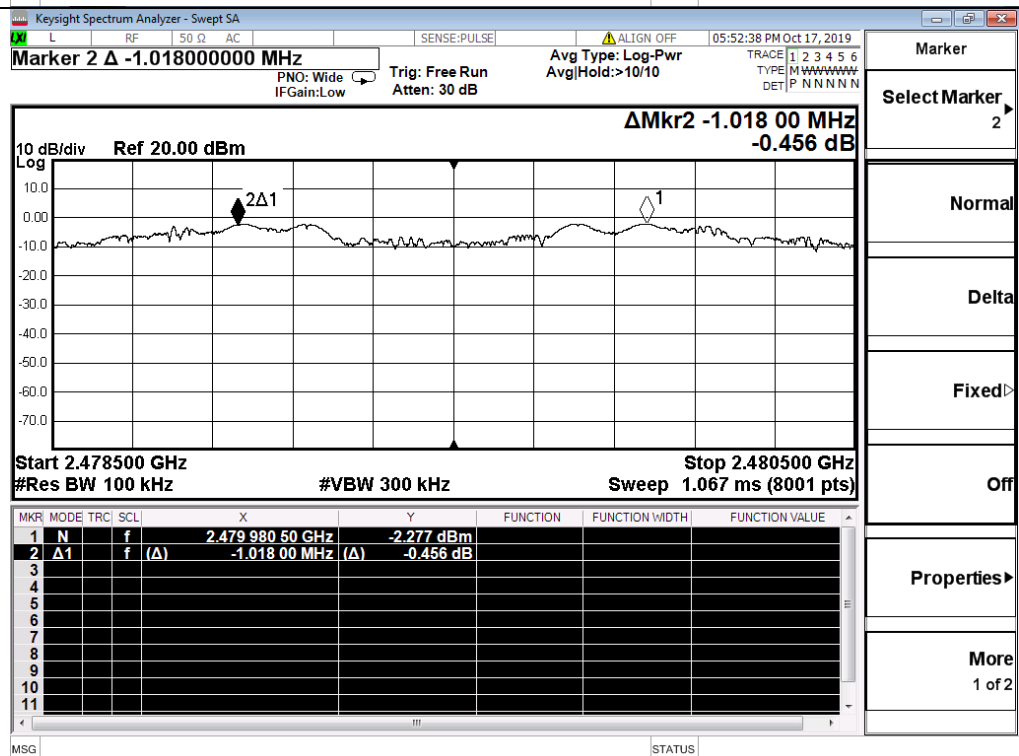
8DPSK/LCH



8DPSK/MCH

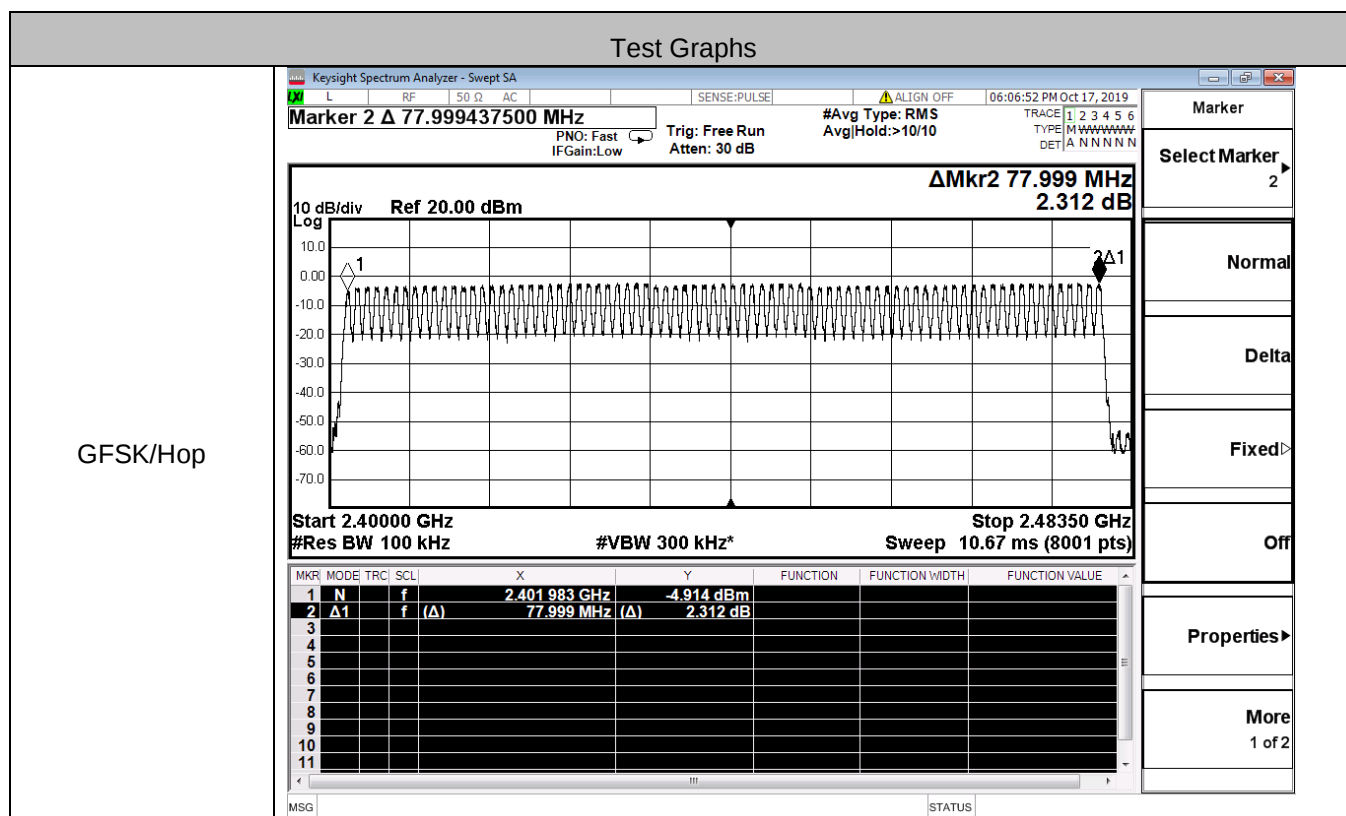


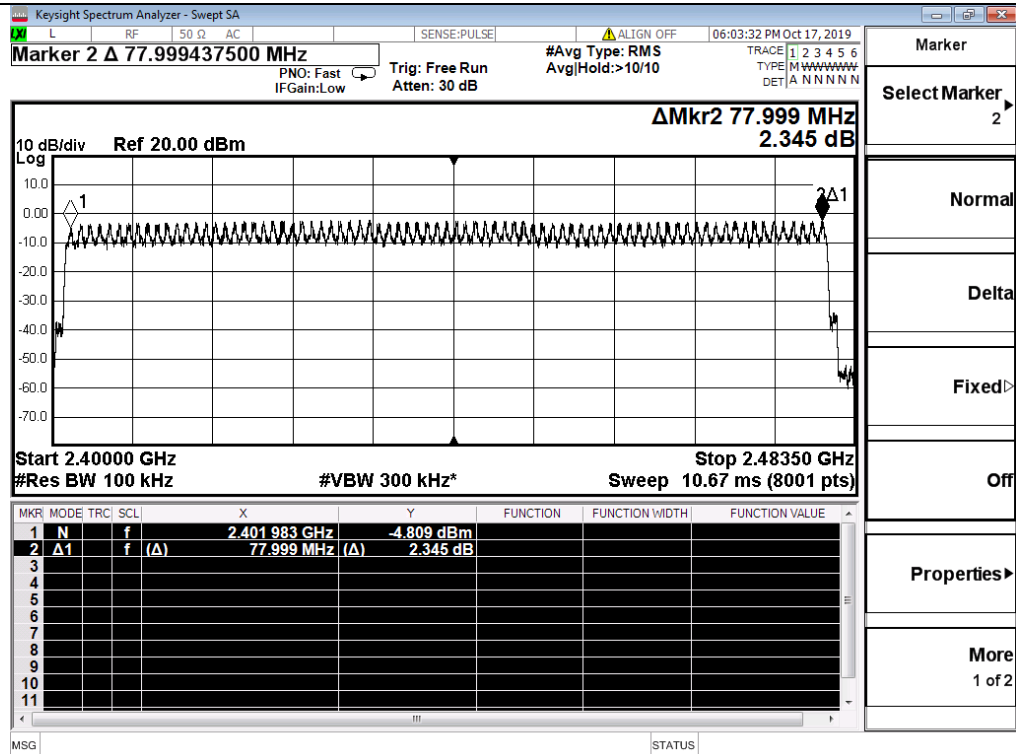
8DPSK/HCH



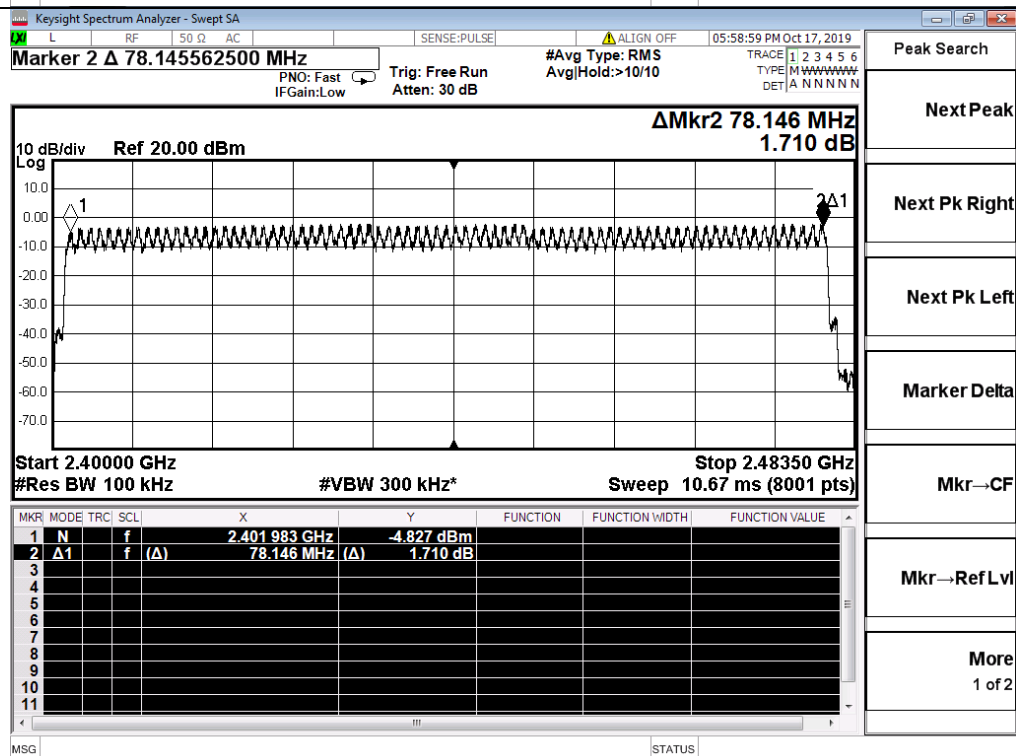
A.4 Hopping Channel Number

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



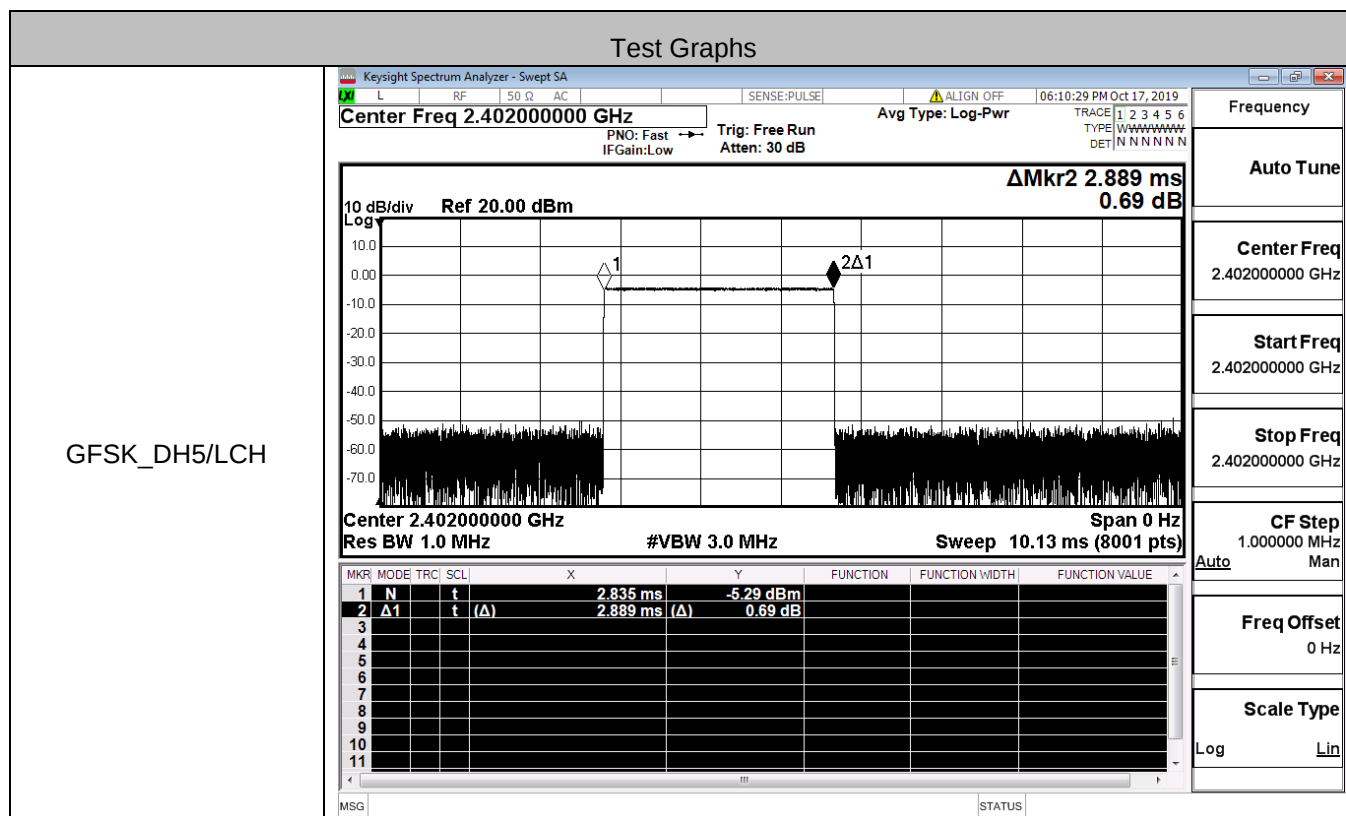
$\pi/4$ DQPSK/Hop

8DPSK/Hop

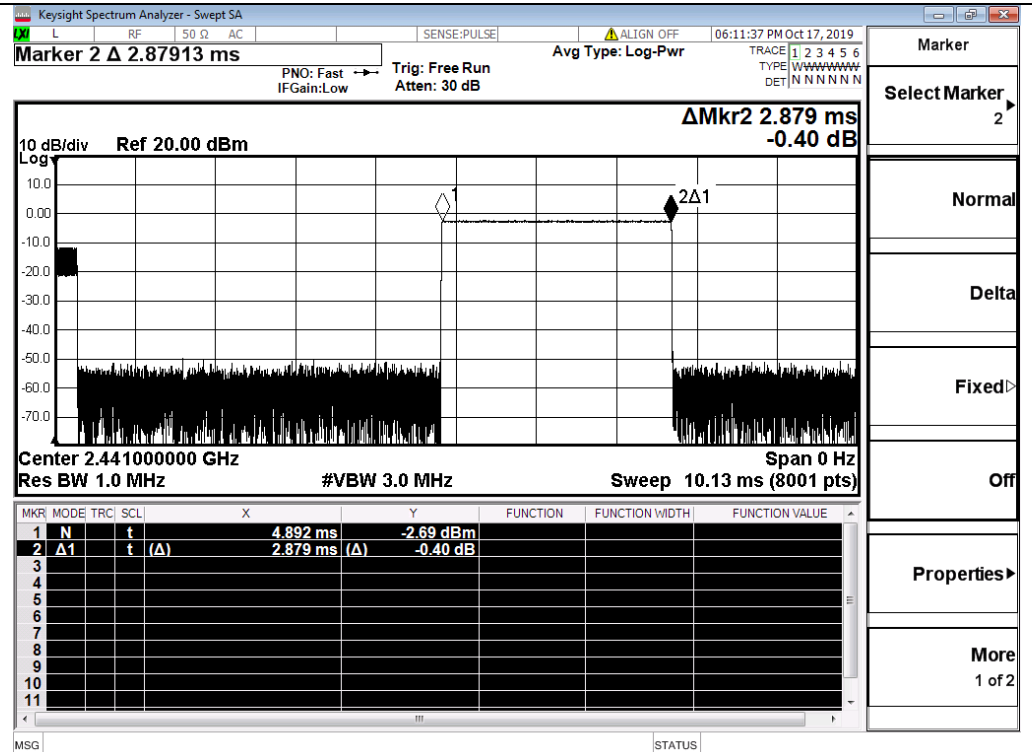


A.5 Dwell Time

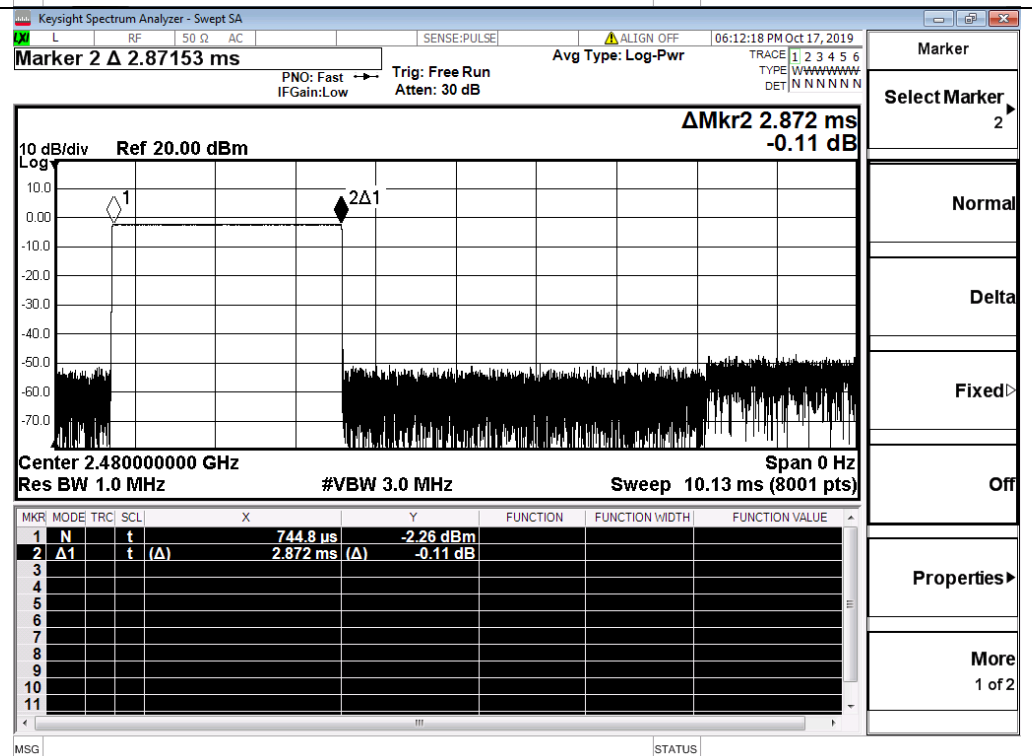
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.889	106.7	0.31	0.4	PASS
	DH5	MCH	2.879	106.7	0.31	0.4	PASS
	DH5	HCH	2.872	106.7	0.31	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.850	106.7	0.30	0.4	PASS
	2DH5	MCH	2.883	106.7	0.31	0.4	PASS
	2DH5	HCH	2.883	106.7	0.31	0.4	PASS
8DPSK	3DH5	LCH	2.885	106.7	0.31	0.4	PASS
	3DH5	MCH	2.874	106.7	0.31	0.4	PASS
	3DH5	HCH	2.892	106.7	0.31	0.4	PASS



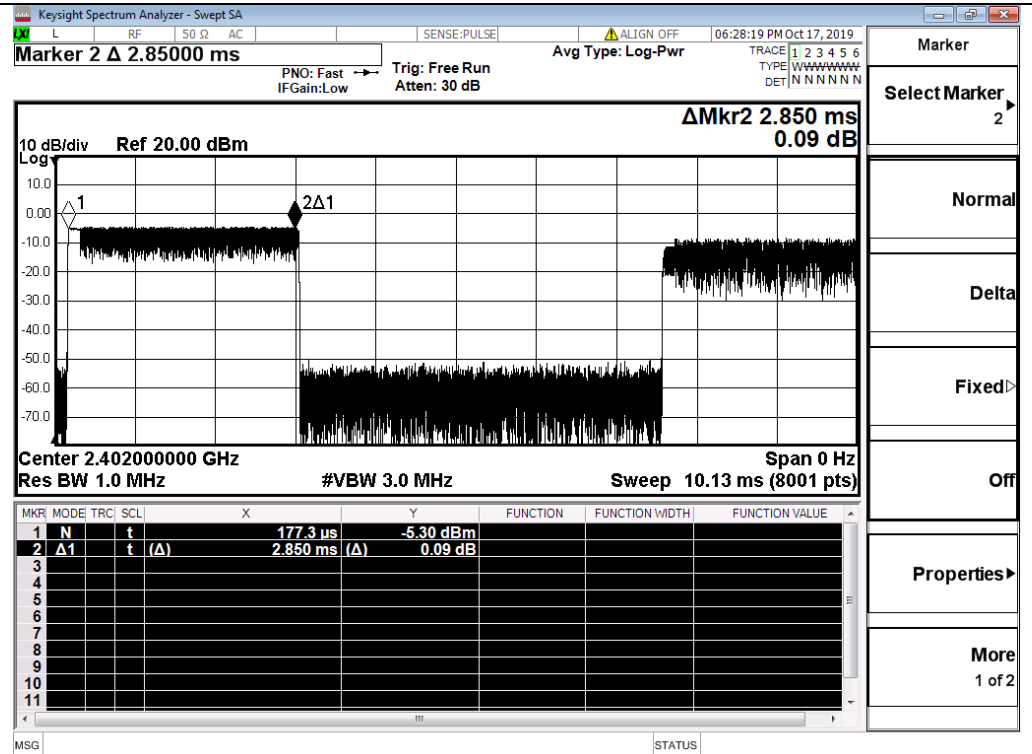
GFSK_DH5/MCH



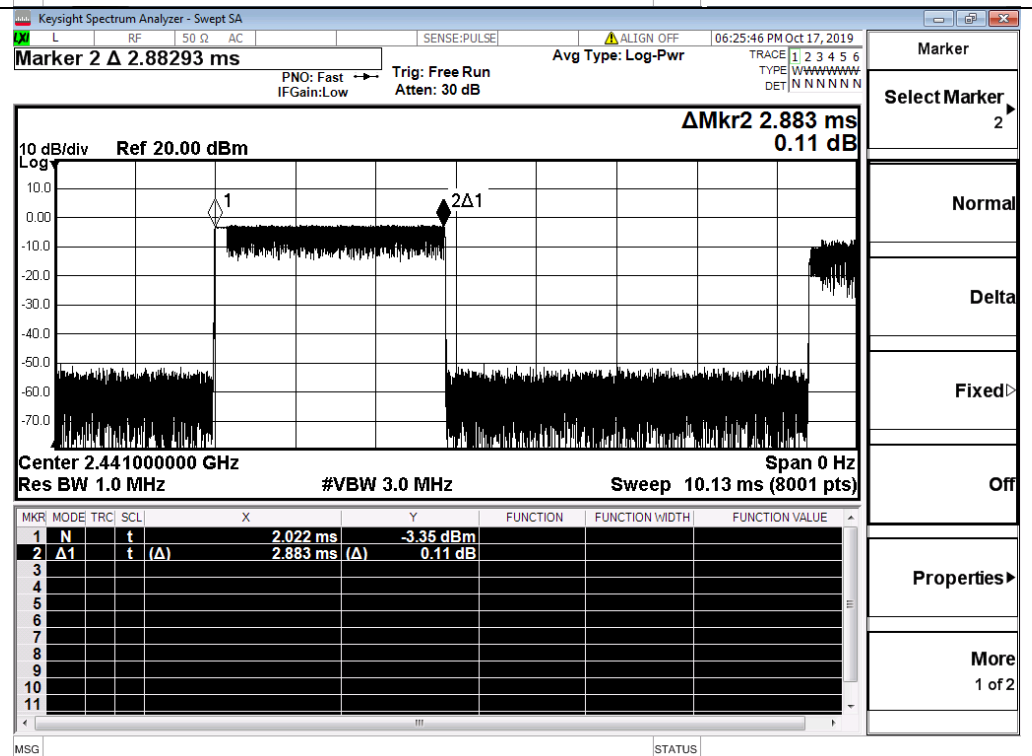
GFSK_DH5/HCH



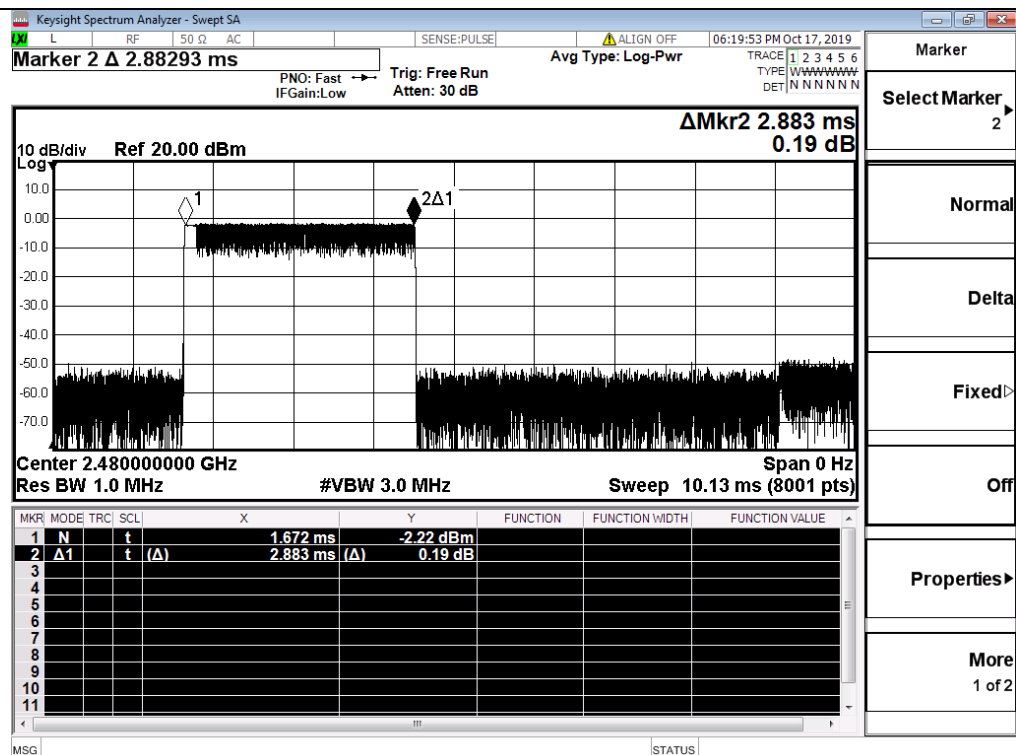
$\pi/4$ DQPSK
_2DH5/LCH



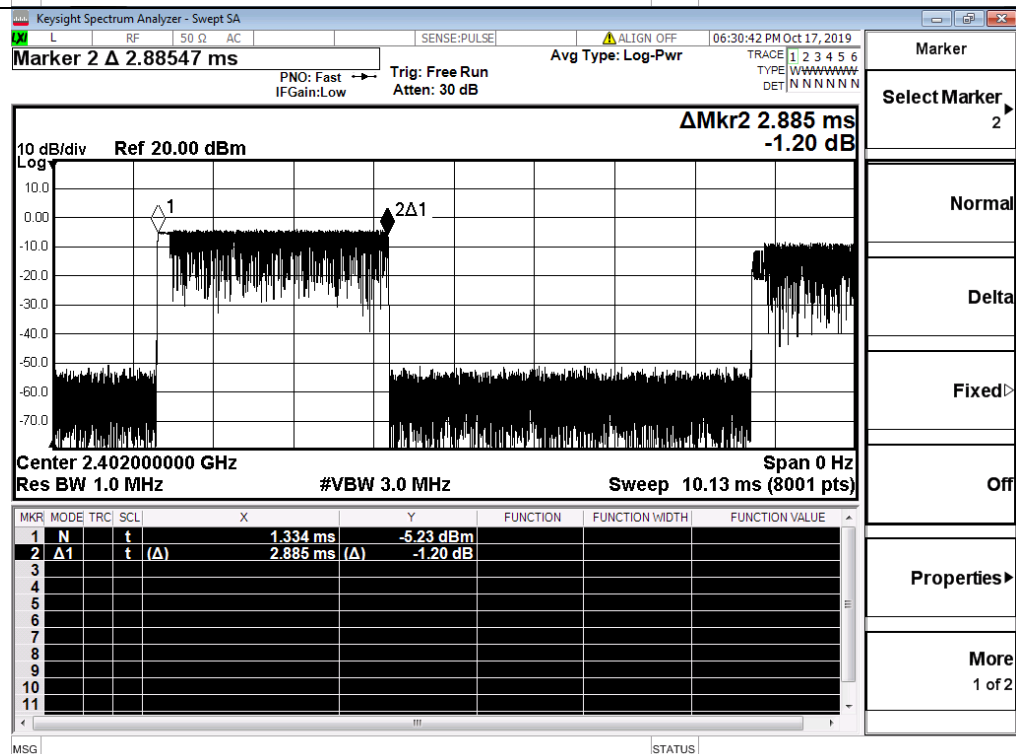
$\pi/4$ DQPSK
_2DH5/MCH



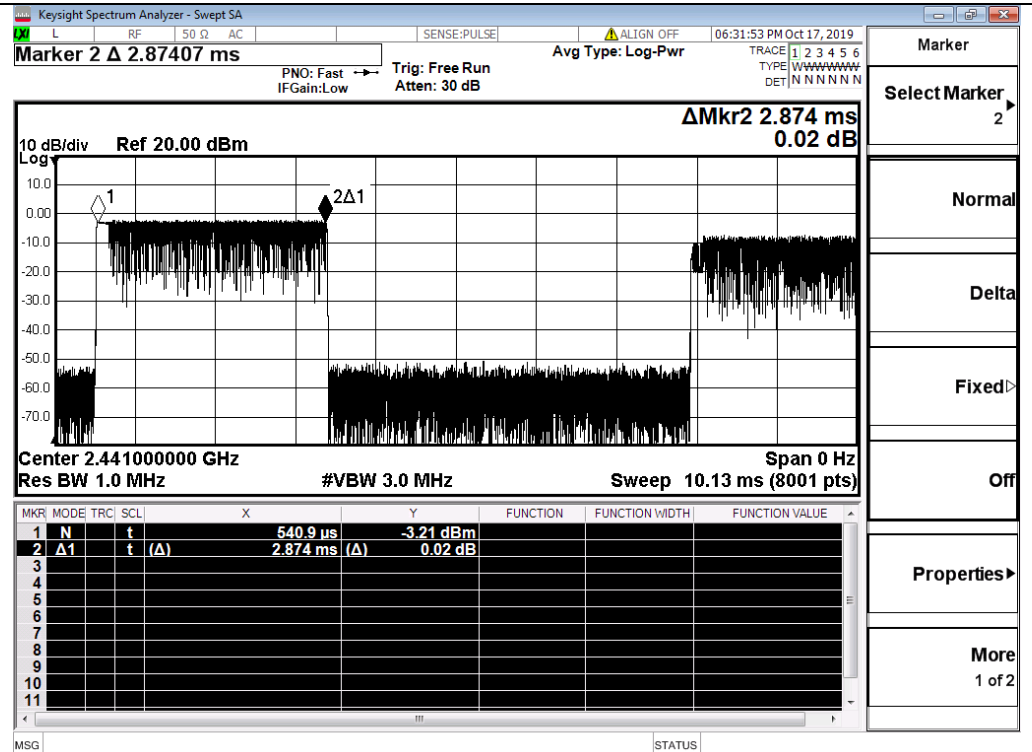
$\pi/4$ DQPSK
_2DH5/HCH



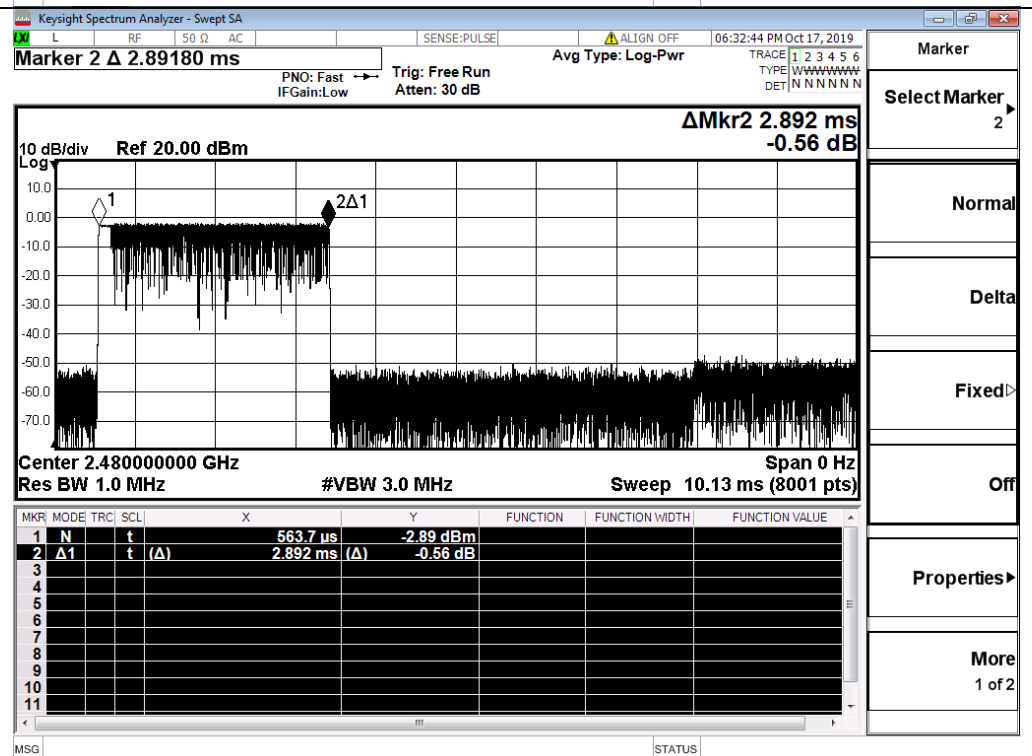
8DPSK _3DH5/LCH



8DPSK_3DH5/MCH



8DPSK_3DH5/HCH

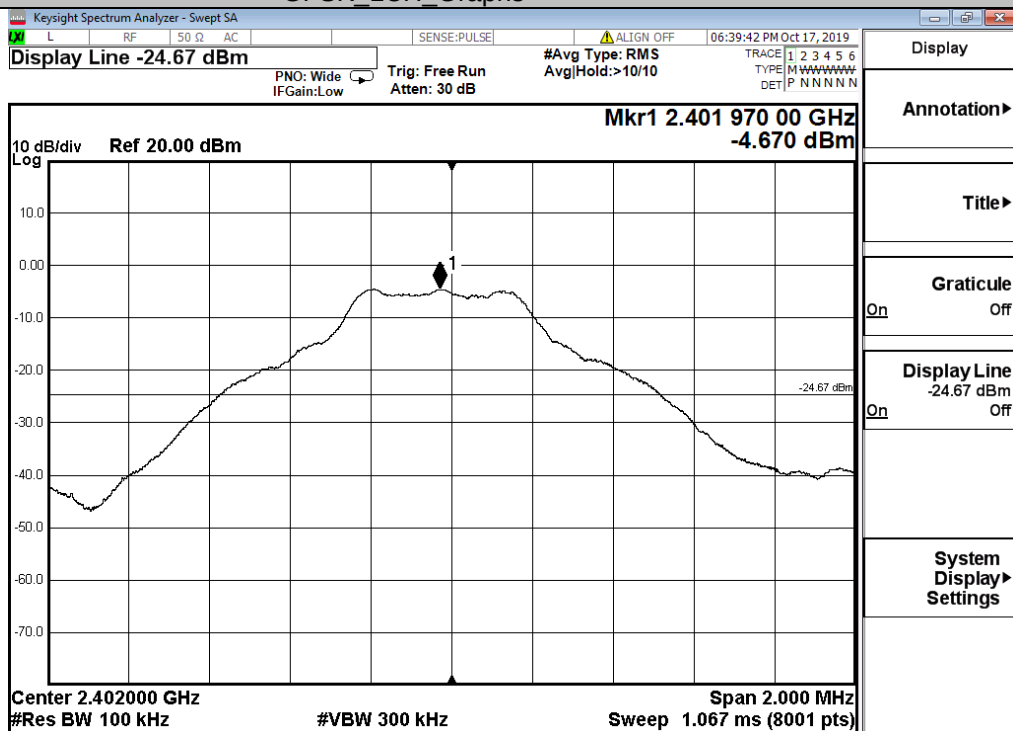


A.6 RF Conducted Spurious Emissions

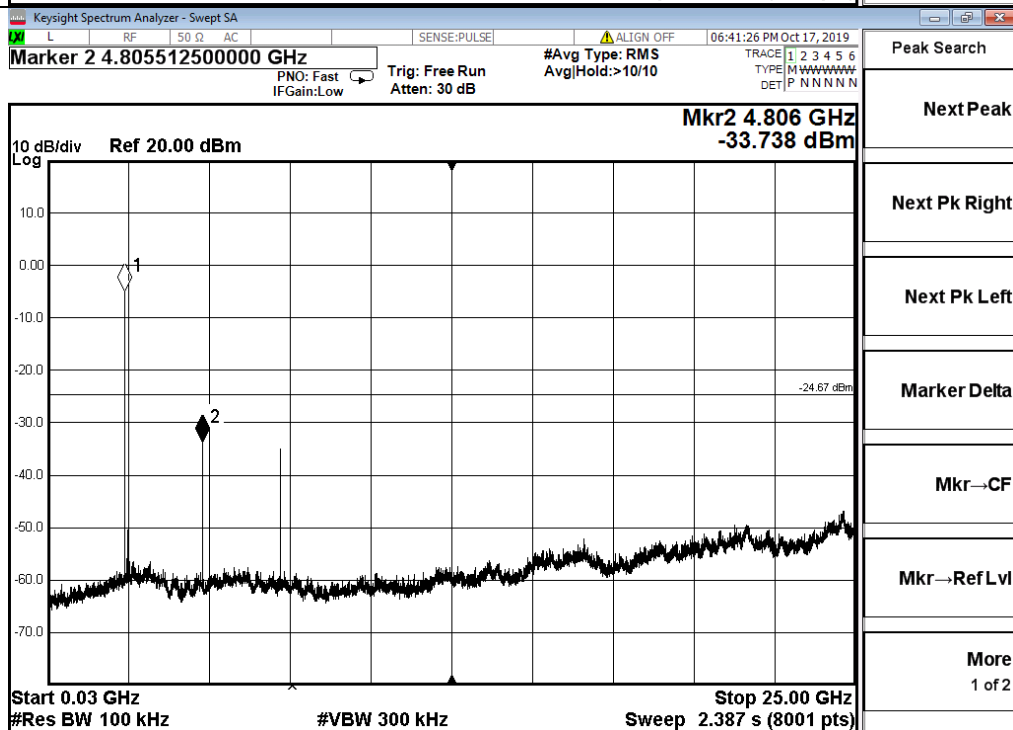
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-4.670	-33.738	-24.67	PASS
	MCH	-2.428	-31.178	-22.42	PASS
	HCH	-2.122	-32.464	-22.12	PASS
$\pi/4$ DQPSK	LCH	-4.605	-38.227	-24.62	PASS
	MCH	-2.515	-38.133	-22.51	PASS
	HCH	-2.414	-39.368	-22.41	PASS
8DPSK	LCH	-4.922	-36.413	-24.92	PASS
	MCH	-2.852	-38.162	-22.85	PASS
	HCH	-2.607	-36.358	-22.60	PASS

GFSK_LCH_Graphs

Pref

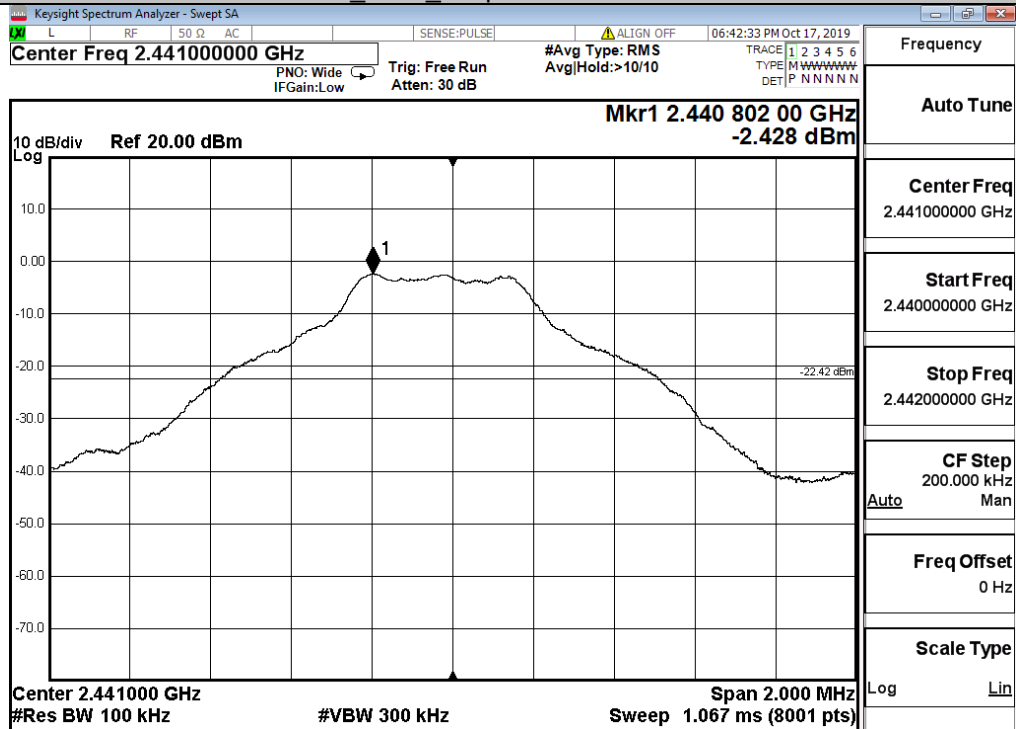


Puw

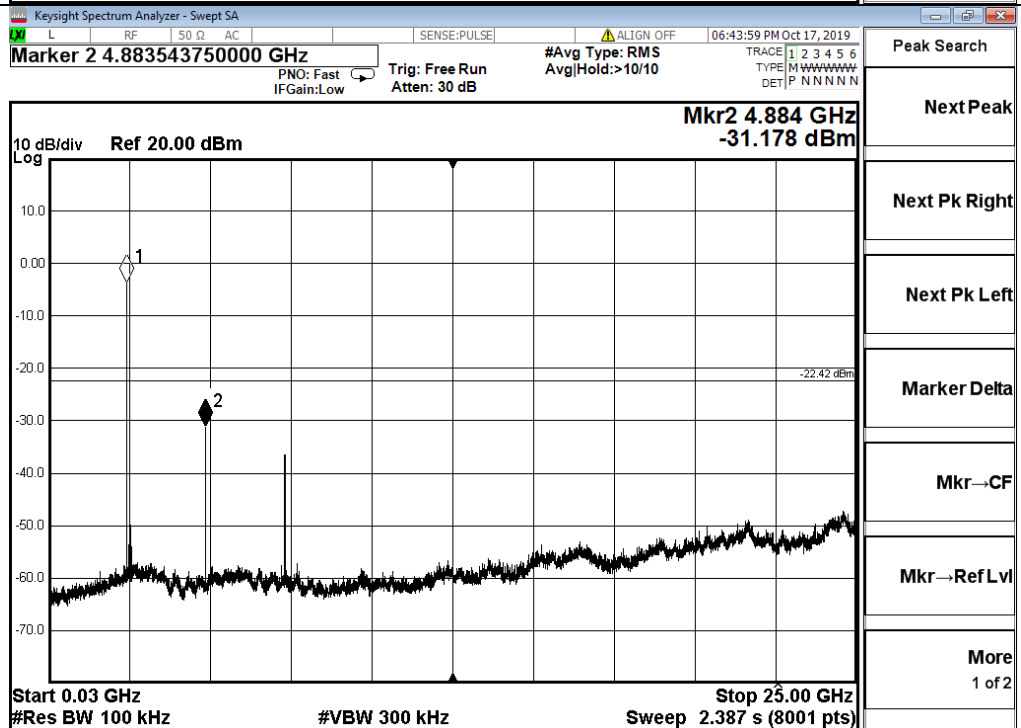


GFSK_MCH_Graphs

Pref

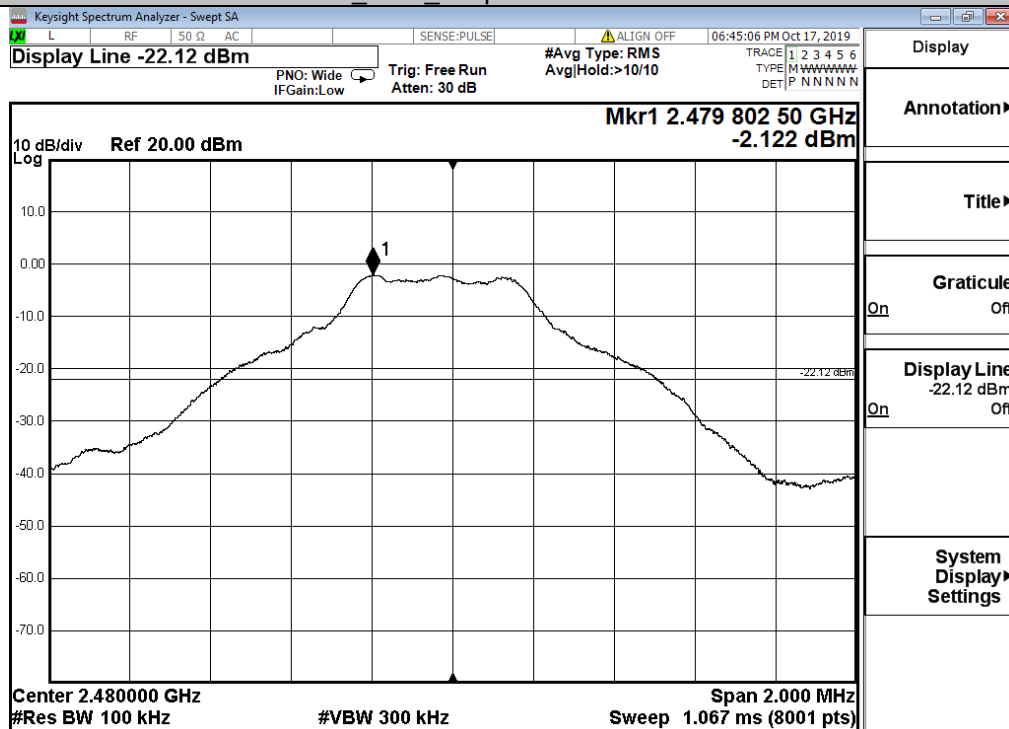


Puw

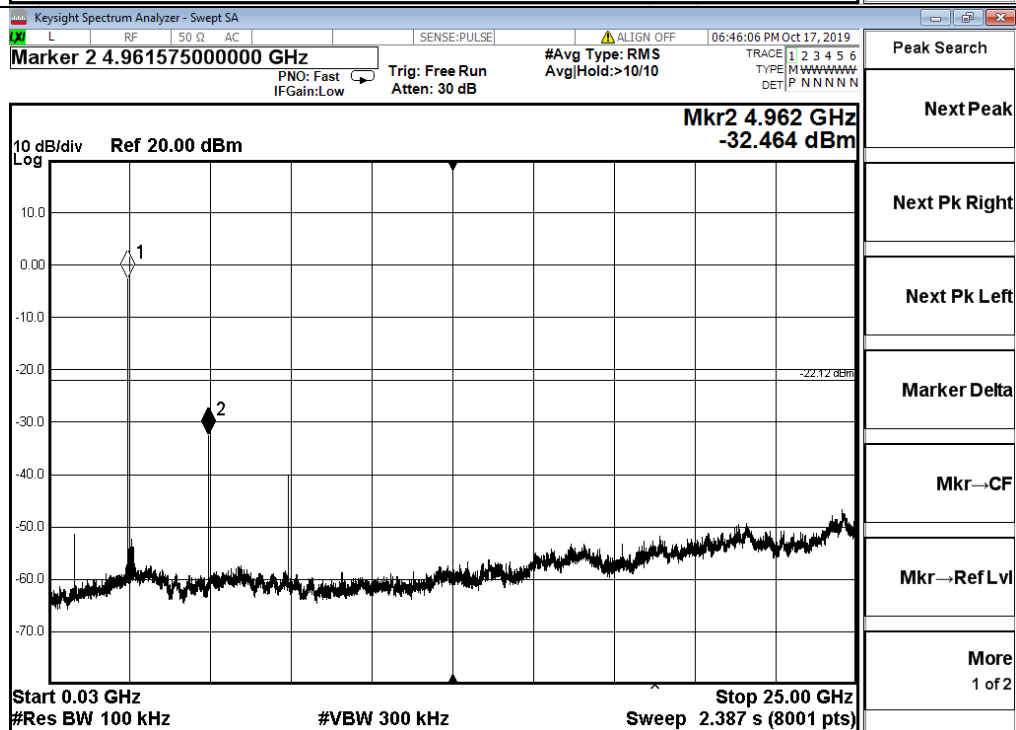


GFSK_HCH_Graphs

Pref

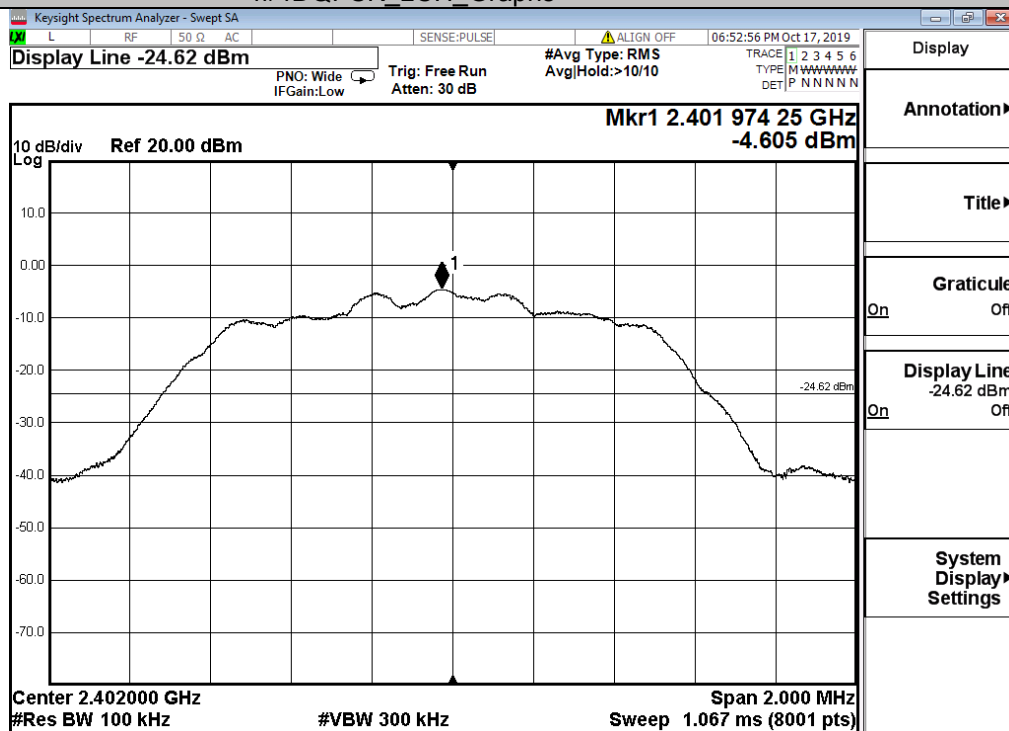


Puw

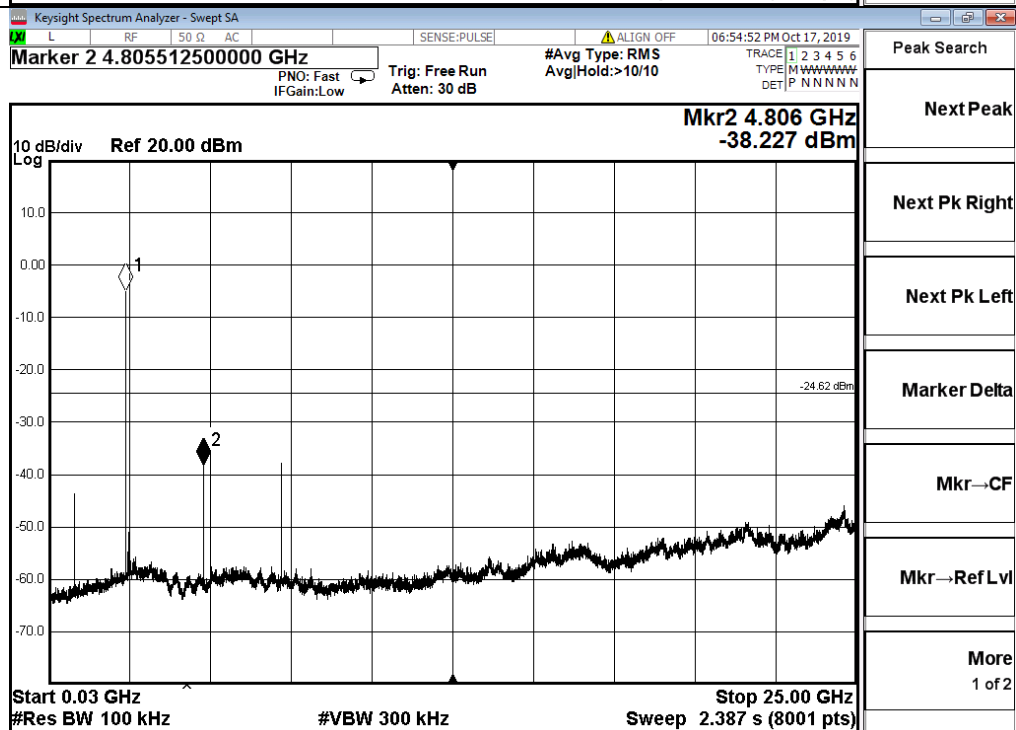


$\pi/4$ DQPSK_LCH_Graphs

Pref

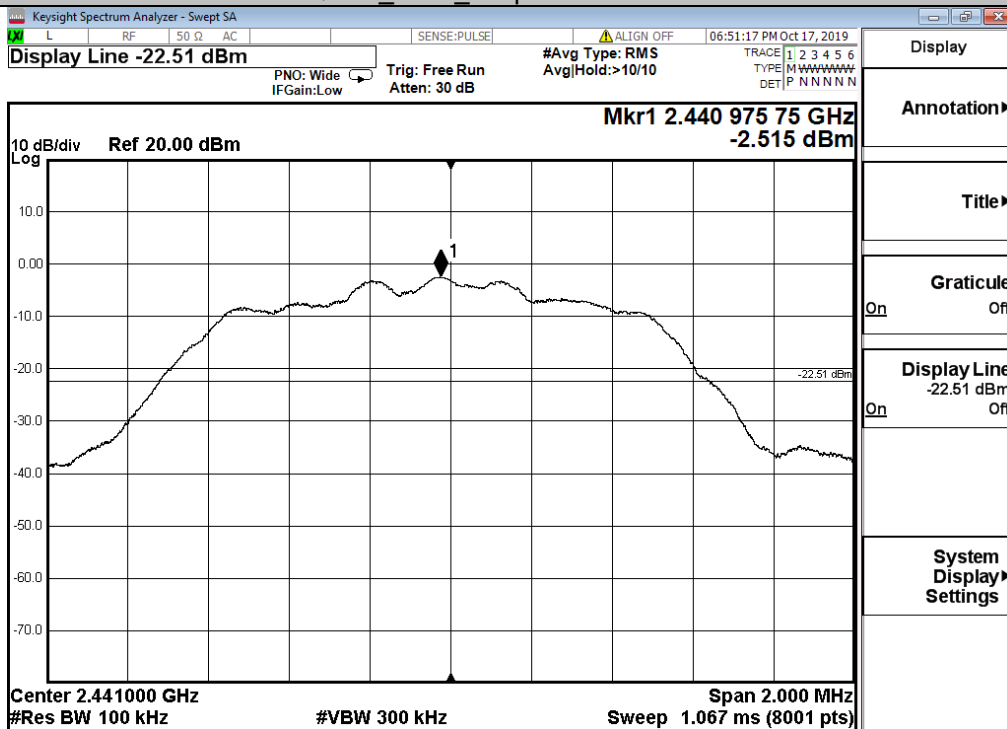


Puw

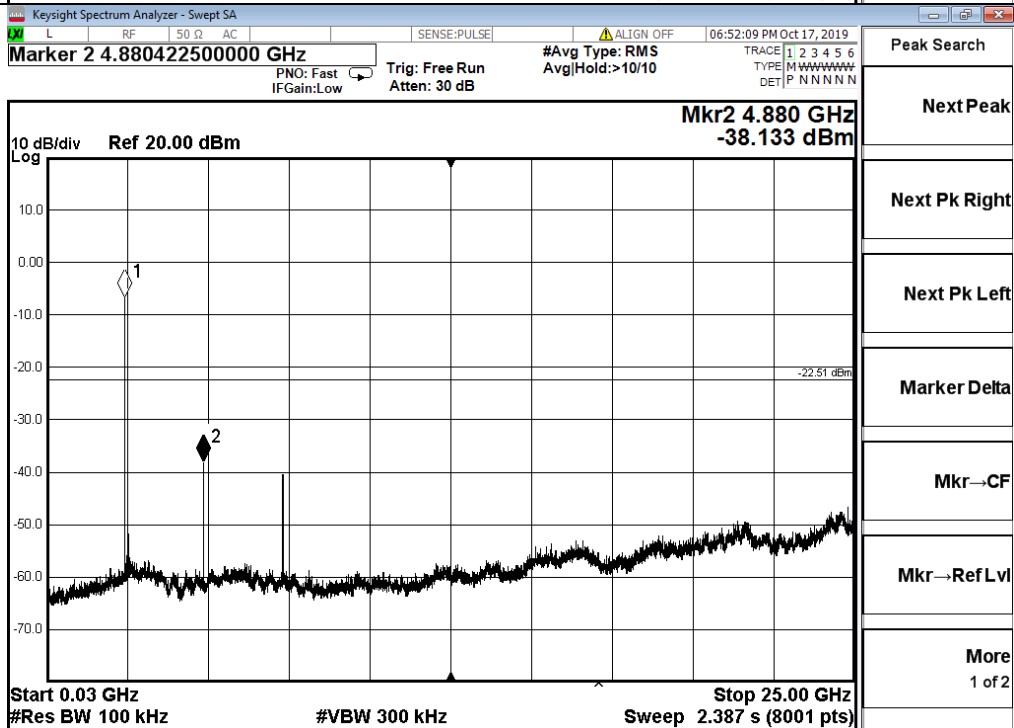


$\pi/4$ DQPSK_MCH_Graphs

Pref

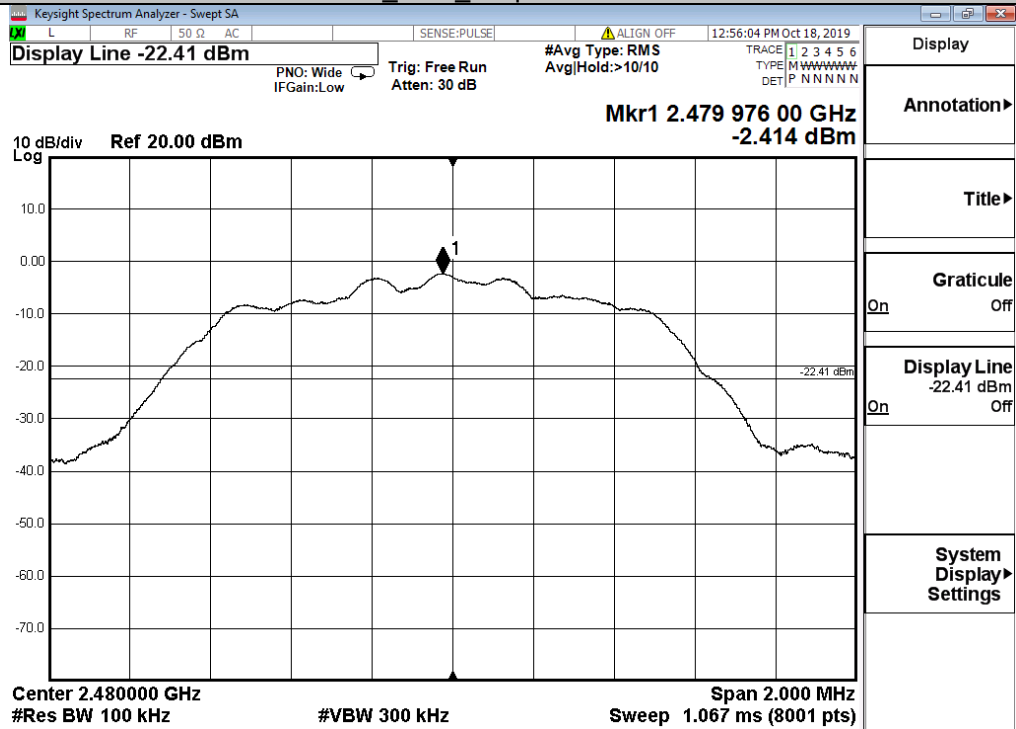


Puw

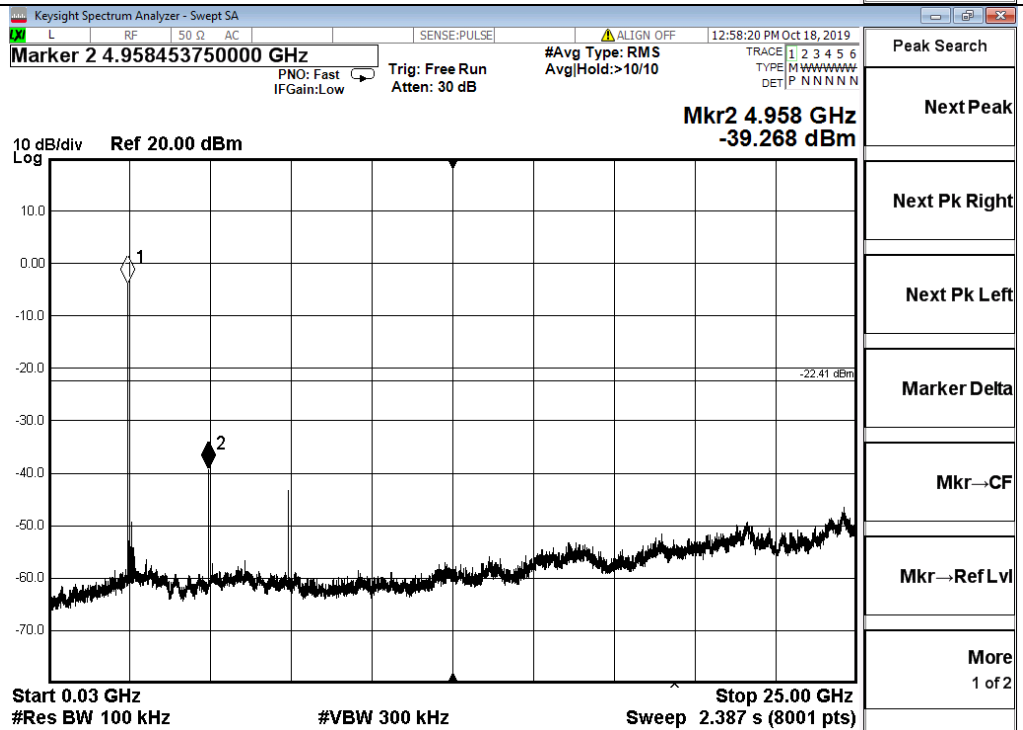


$\pi/4$ DQPSK_HCH_Graphs

Pref

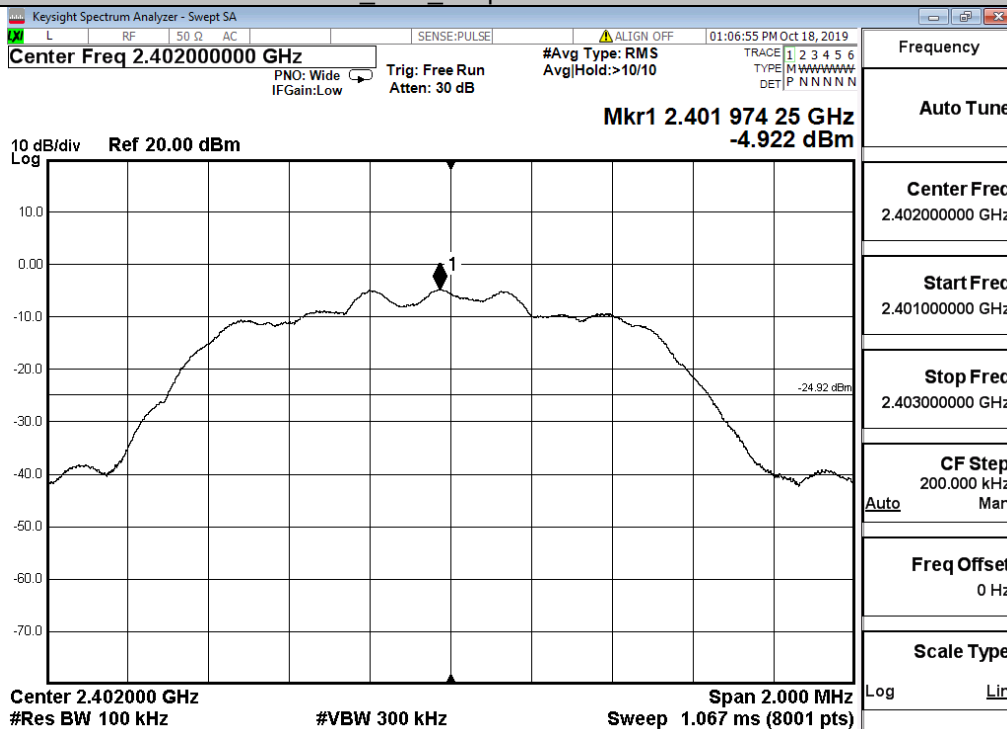


Puw

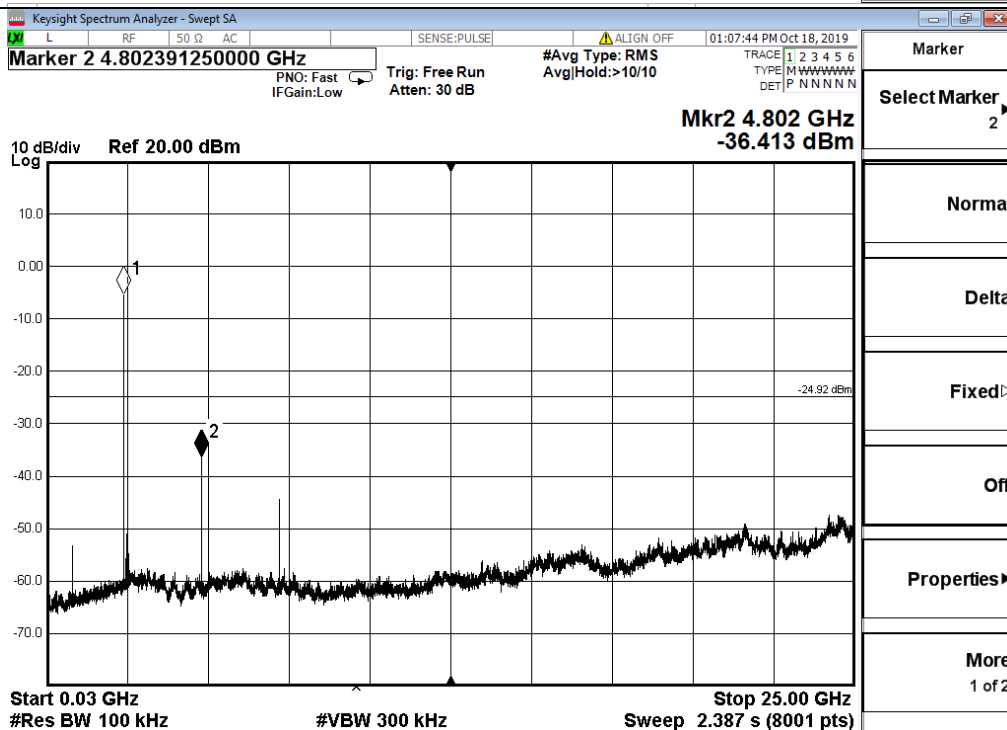


8DPSK_LCH_Graphs

Pref

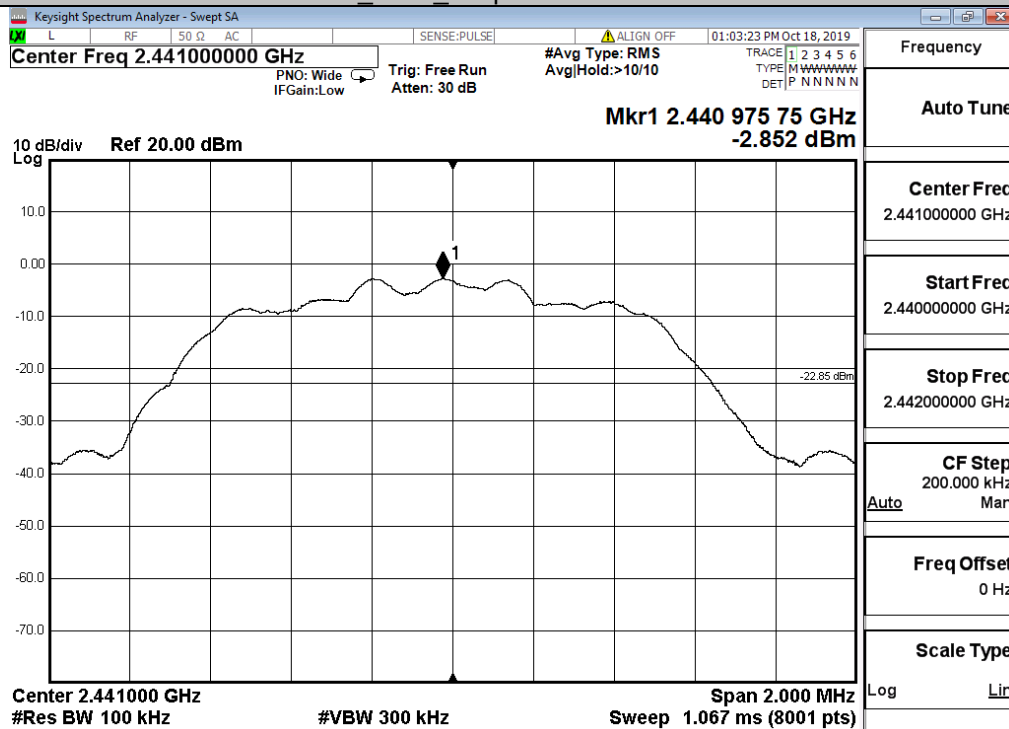


Puw

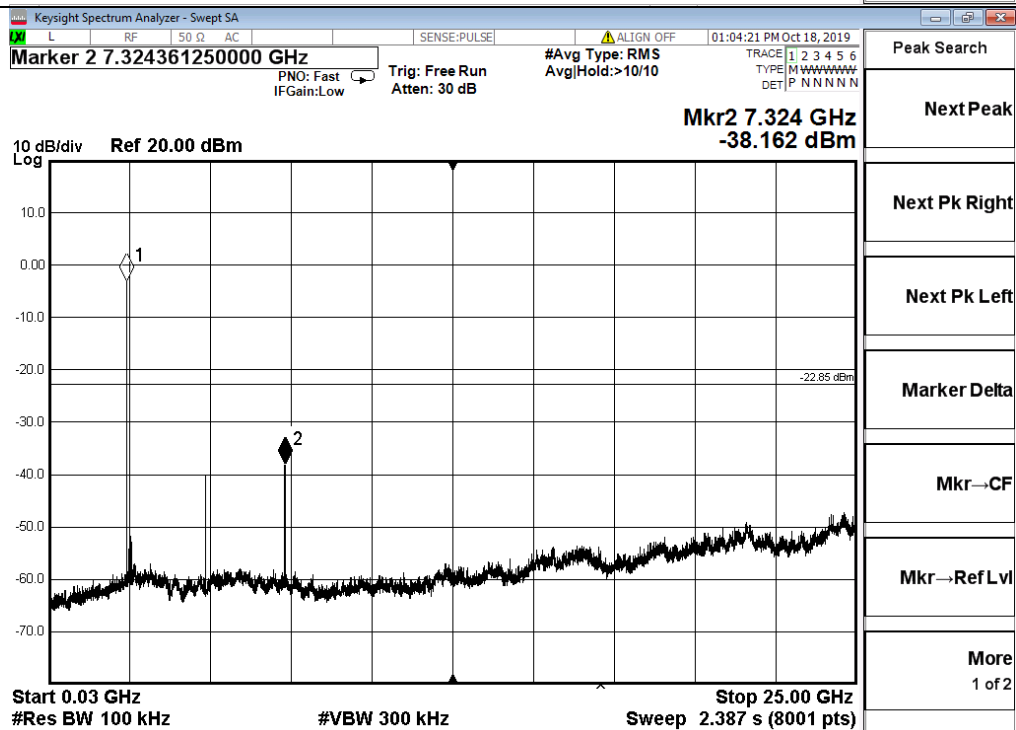


8DPSK_MCH_Graphs

Pref

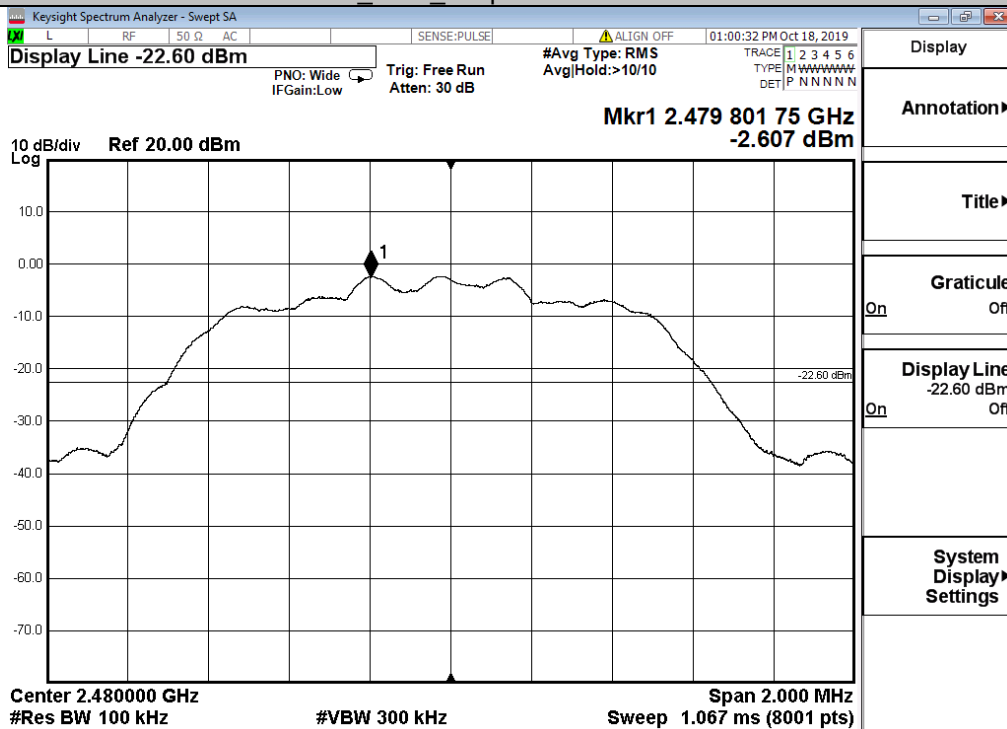


Puw

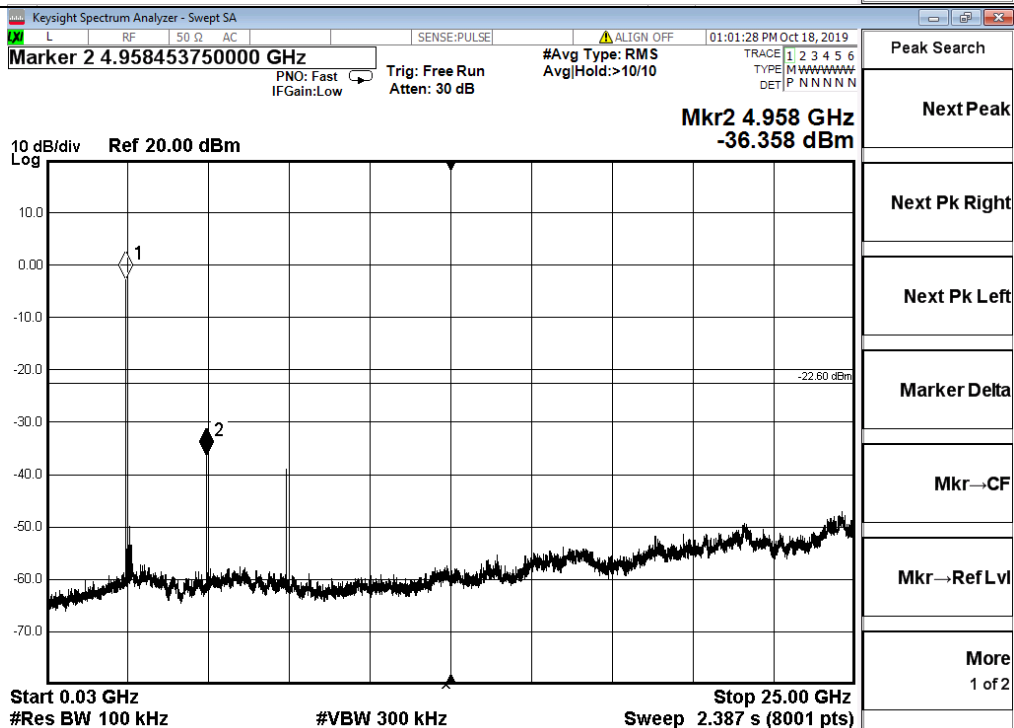


8DPSK_HCH_Graphs

Pref



Puw

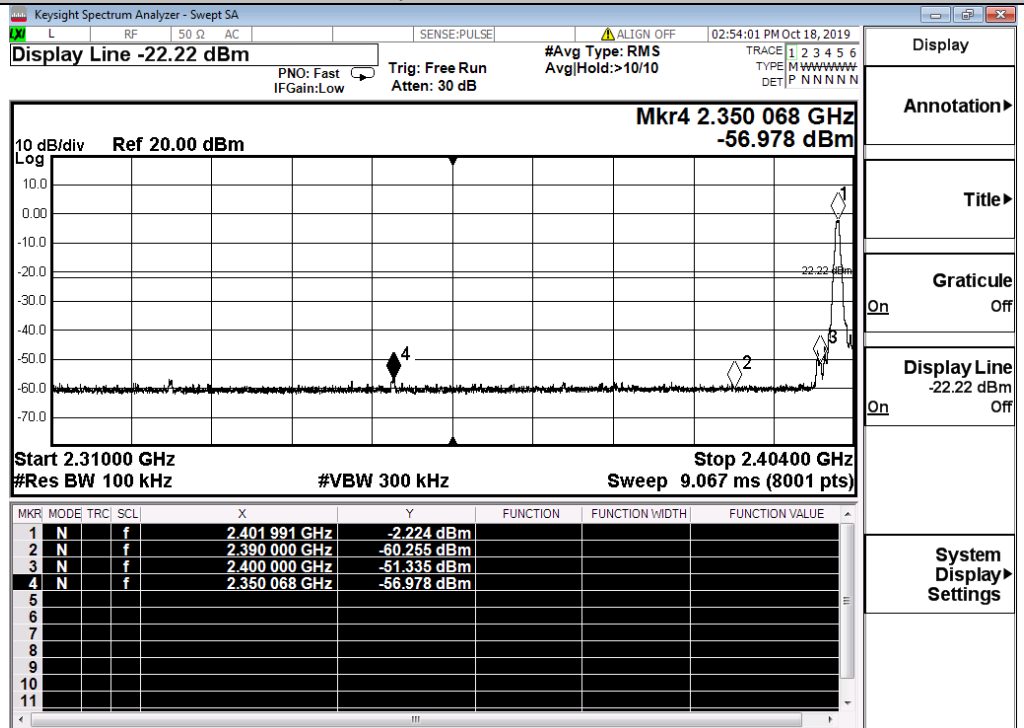


A.7 Band-edge for RF Conducted Emissions

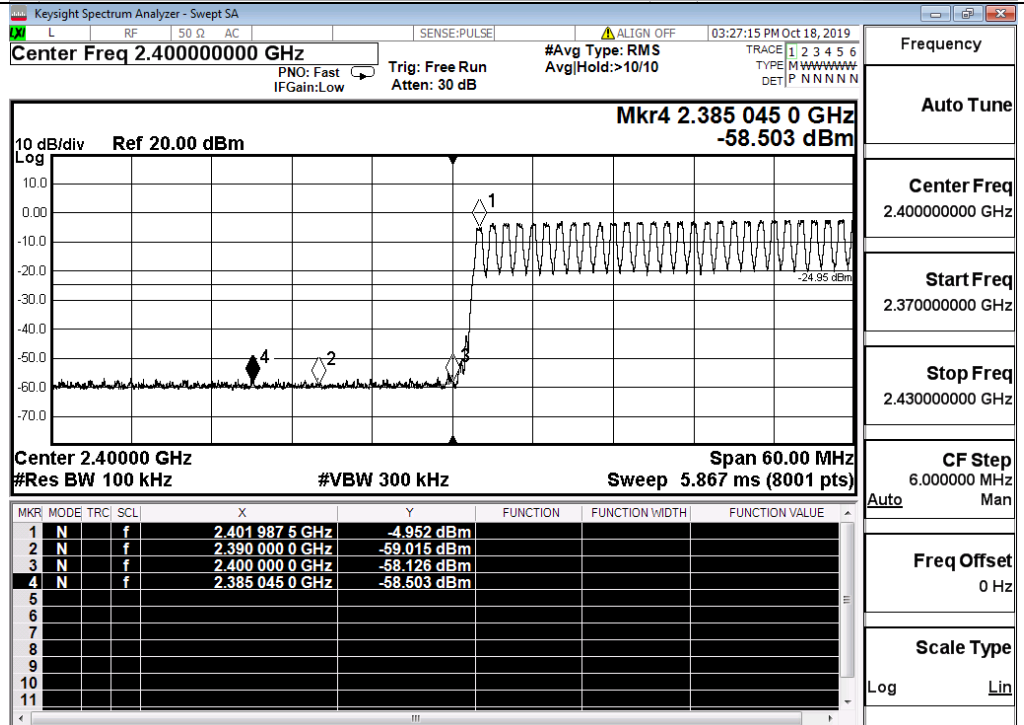
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-2.224	Off	-56.978	-22.22	PASS
			-4.952	On	-58.503	-24.95	PASS
	HCH	2480	-2.343	Off	-59.782	-22.34	PASS
			-1.272	On	-54.059	-21.27	PASS
$\pi/4$ DQPSK	LCH	2402	-4.548	Off	-57.357	-24.54	PASS
			-4.952	On	-60.461	-24.95	PASS
	HCH	2480	-2.109	Off	-60.426	-22.10	PASS
			-2.980	On	-53.582	-22.90	PASS
8DPSK	LCH	2402	-4.624	Off	-58.521	-24.62	PASS
			-5.091	On	-57.344	-25.09	PASS
	HCH	2480	-2.210	Off	-59.215	-22.10	PASS
			-2.654	On	-53.674	-22.65	PASS

Test Graphs

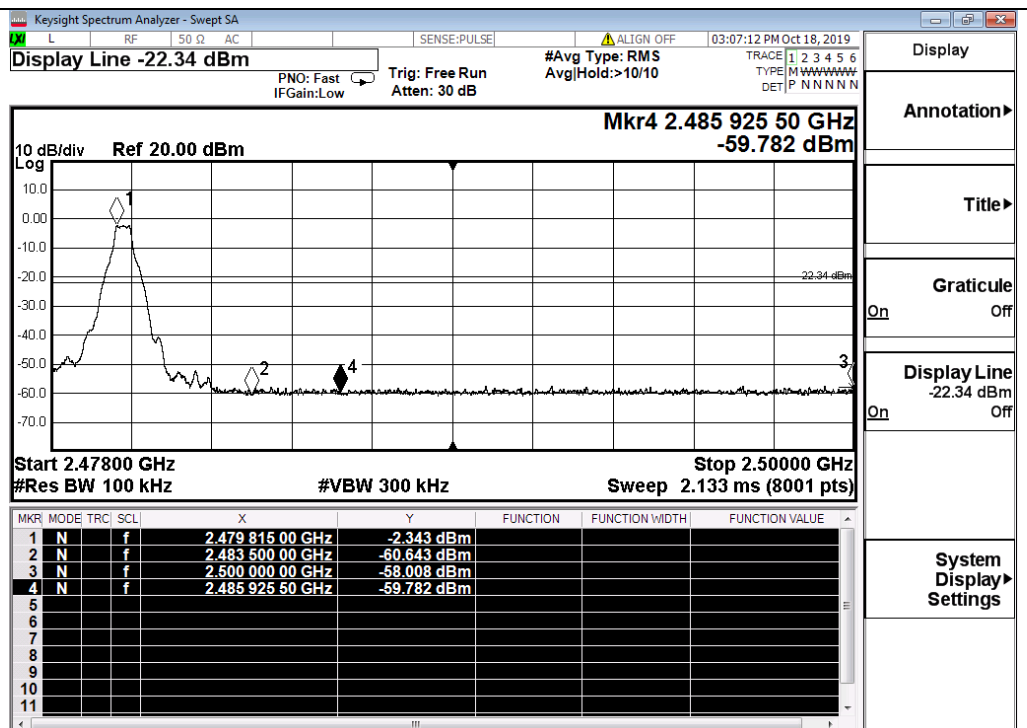
GFSK/LCH/No Hop



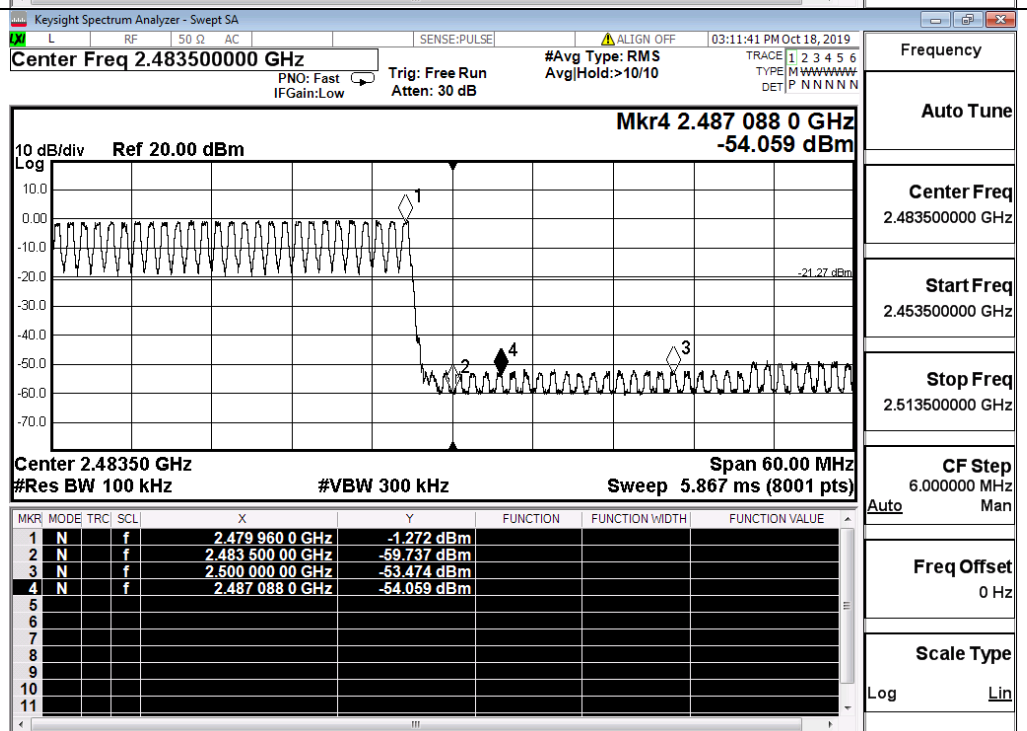
GFSK/LCH/Hop



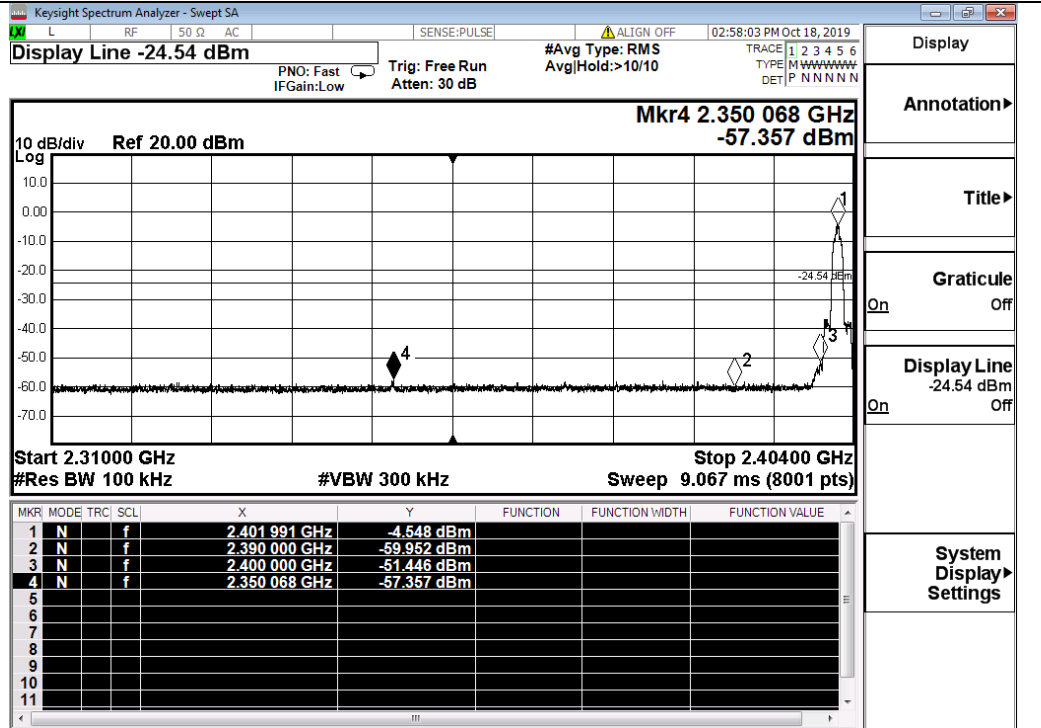
GFSK/HCH/No Hop



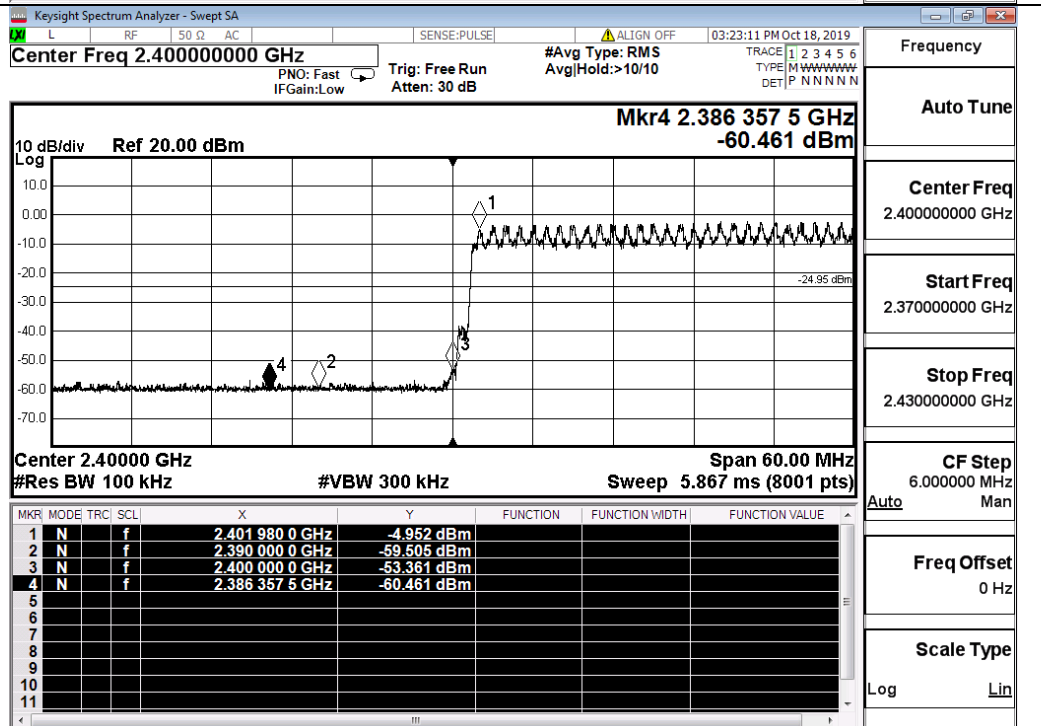
GFSK/HCH/Hop



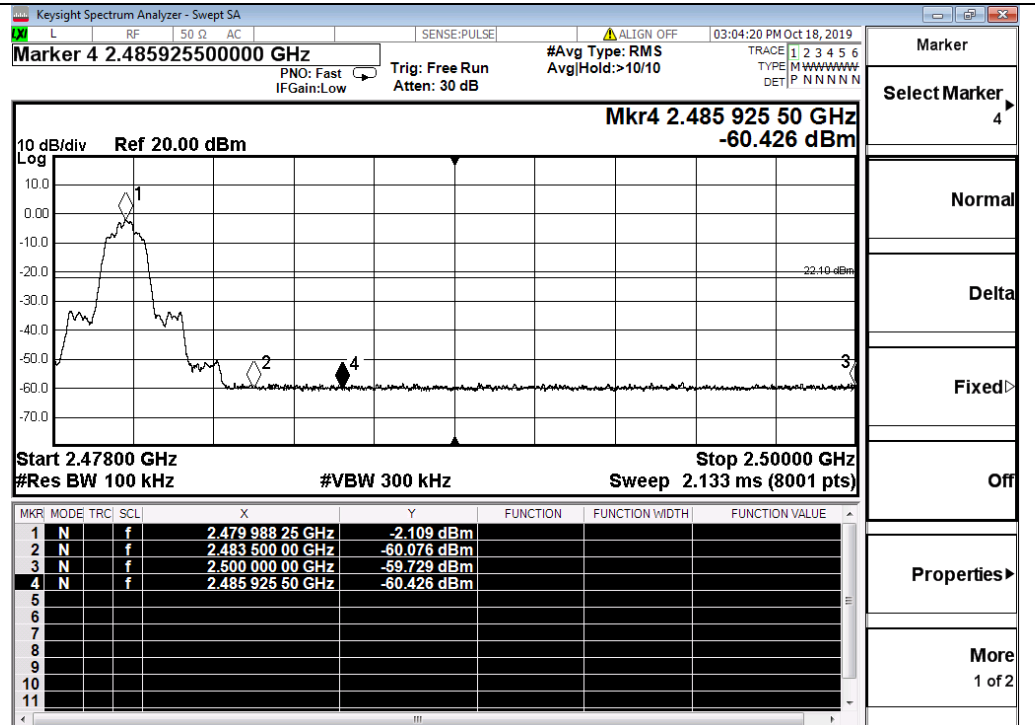
$\pi/4$ DQPSK/LCH/No
Hop



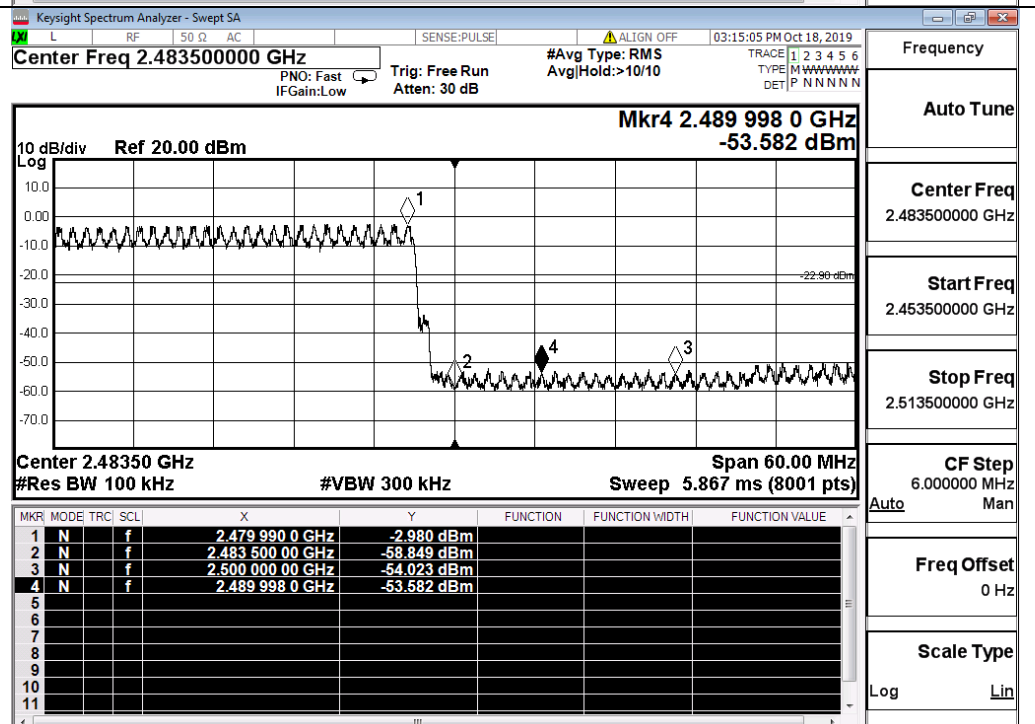
$\pi/4$ DQPSK/LCH/Hop



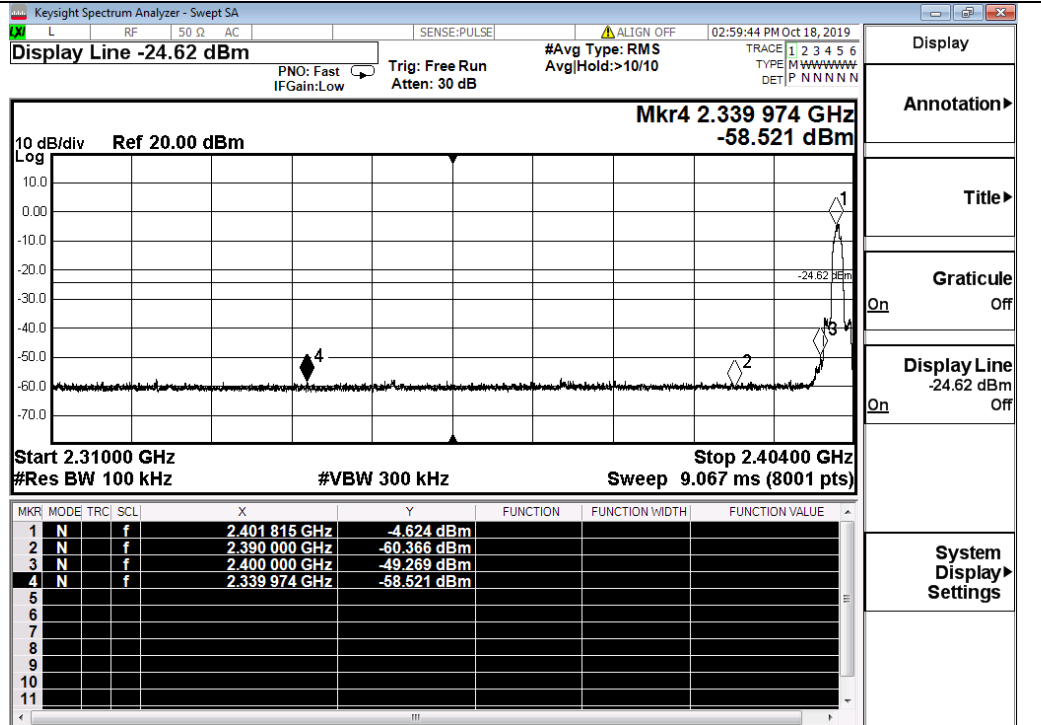
$\pi/4$ DQPSK/HCH/No
Hop



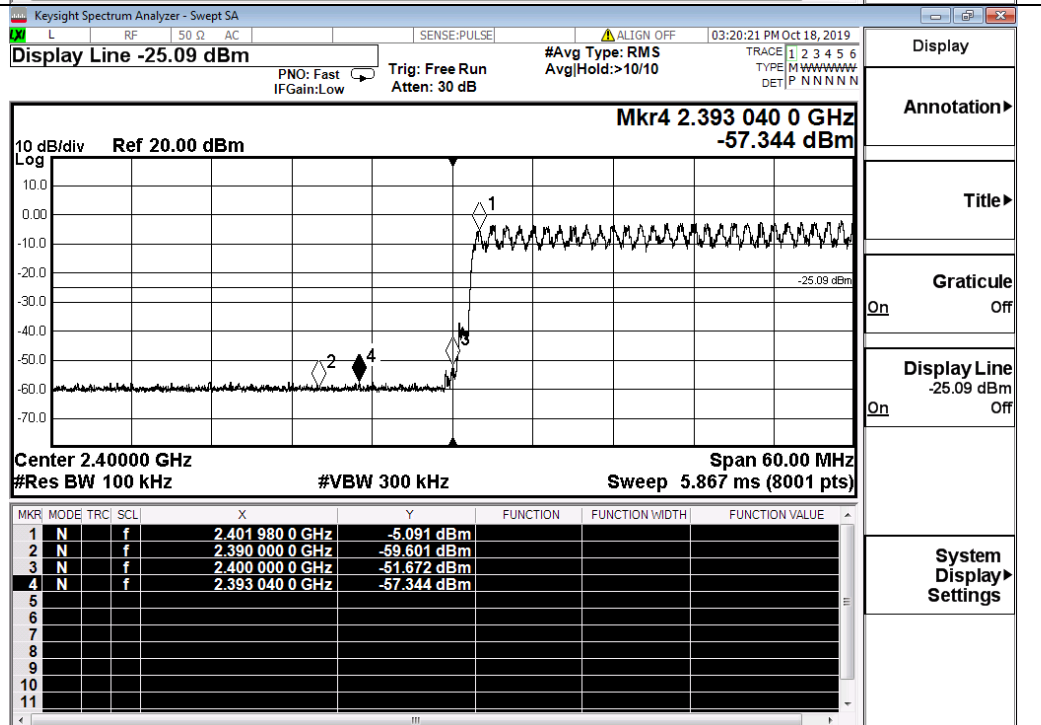
$\pi/4$ DQPSK/HCH/Hop



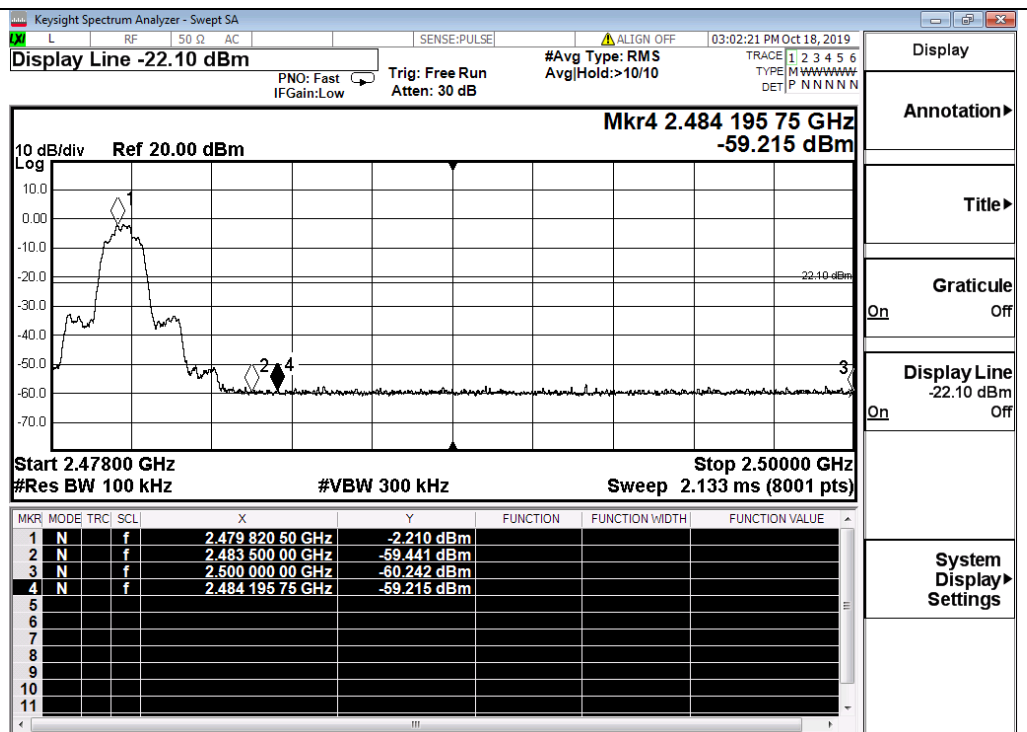
8DPSK/LCH/No Hop



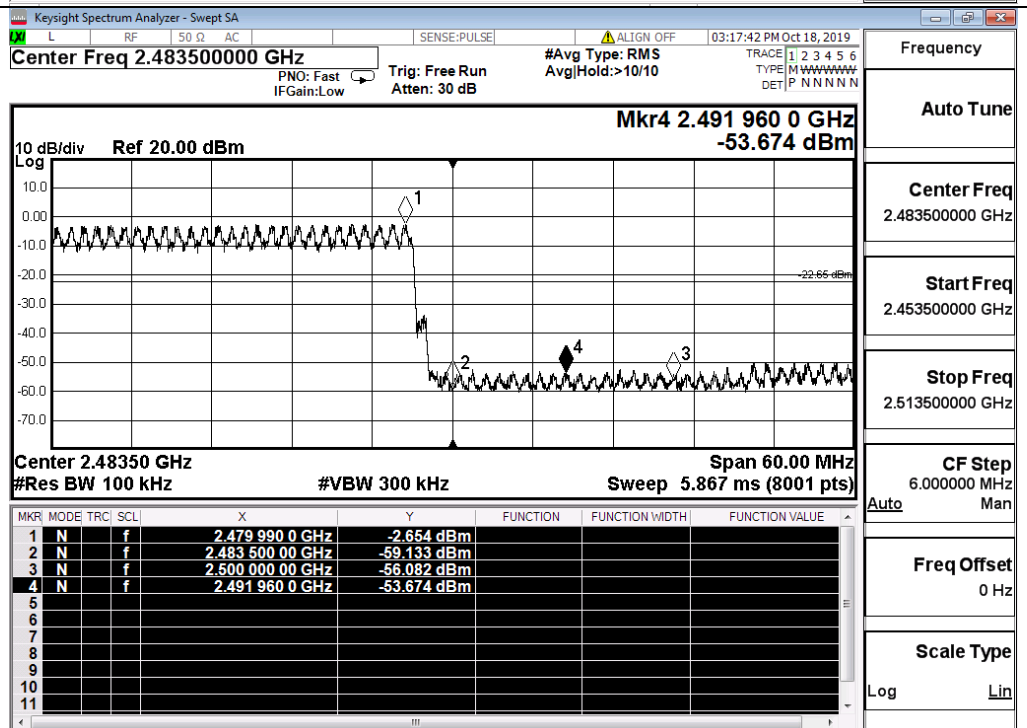
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



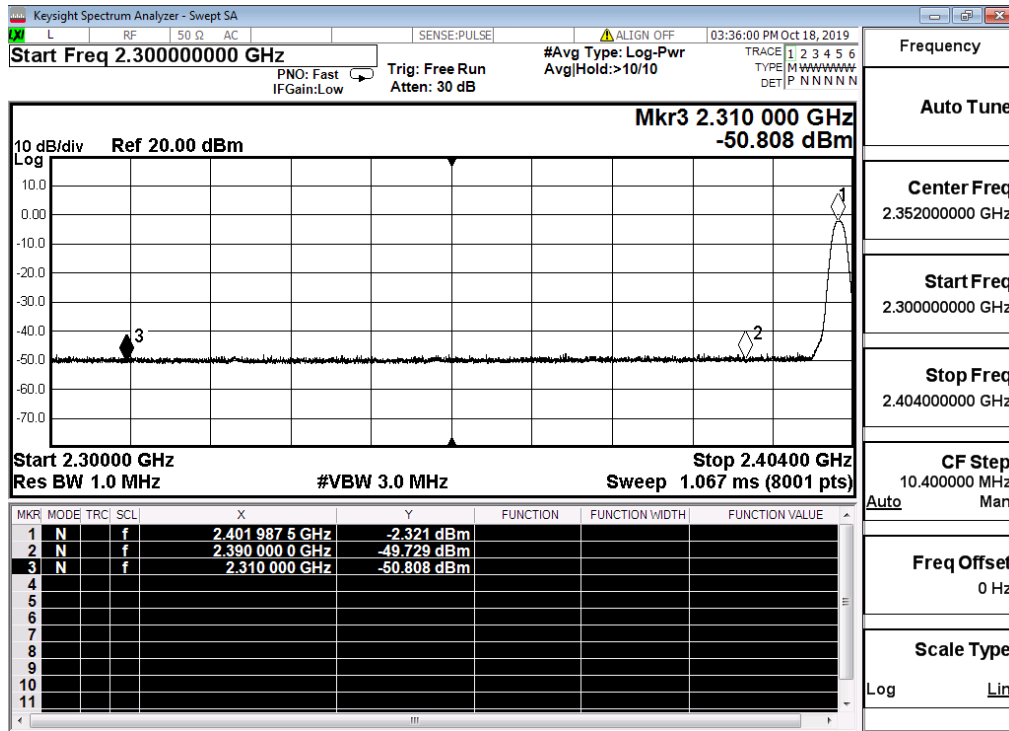
8DPSK/HCH/Hop



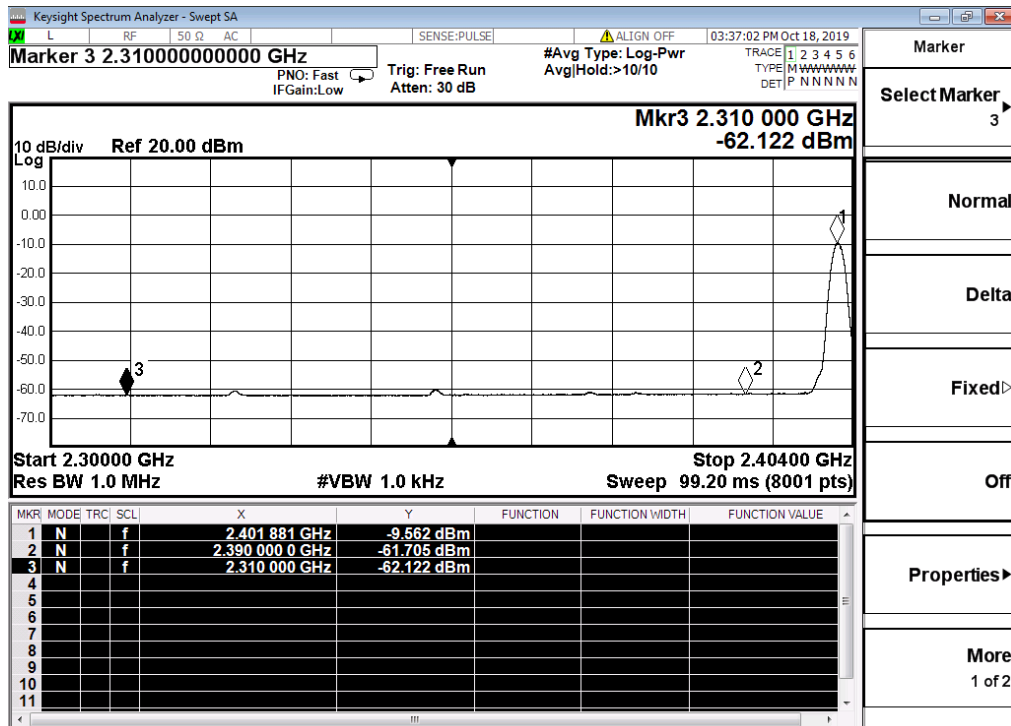
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-50.808	2	0	46.45	PEAK	74	PASS
	Off	2310.0	-62.122	2	0	35.14	AV	54	PASS
	Off	2390.0	-49.729	2	0	47.53	PEAK	74	PASS
	Off	2390.0	-61.705	2	0	35.56	AV	54	PASS
	Off	2483.5	-50.597	2	0	46.66	PEAK	74	PASS
	Off	2483.5	-61.168	2	0	36.09	AV	54	PASS
	Off	2500.0	-50.701	2	0	46.56	PEAK	74	PASS
	Off	2500.0	-61.305	2	0	35.96	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-50.542	2	0	46.72	PEAK	74	PASS
	Off	2310.0	-62.064	2	0	35.20	AV	54	PASS
	Off	2390.0	-51.410	2	0	45.85	PEAK	74	PASS
	Off	2390.0	-61.789	2	0	35.47	AV	54	PASS
	Off	2483.5	-49.812	2	0	47.45	PEAK	74	PASS
	Off	2483.5	-61.108	2	0	36.15	AV	54	PASS
	Off	2500.0	-49.829	2	0	47.43	PEAK	74	PASS
	Off	2500.0	-61.268	2	0	35.99	AV	54	PASS
8DPSK	Off	2310.0	-51.665	2	0	45.60	PEAK	74	PASS
	Off	2310.0	-62.158	2	0	35.10	AV	54	PASS
	Off	2390.0	-51.102	2	0	46.16	PEAK	74	PASS
	Off	2390.0	-61.626	2	0	35.63	AV	54	PASS
	Off	2483.5	-50.617	2	0	46.64	PEAK	74	PASS
	Off	2483.5	-61.082	2	0	36.18	AV	54	PASS
	Off	2500.0	-50.025	2	0	47.24	PEAK	74	PASS
	Off	2500.0	-61.445	2	0	35.82	AV	54	PASS

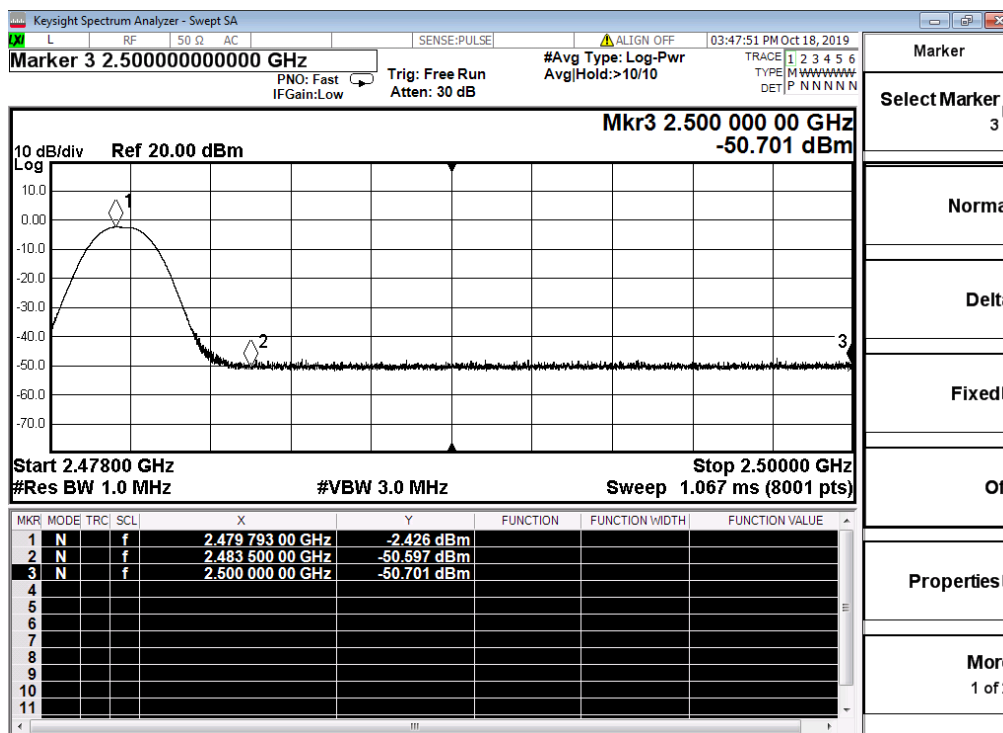
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



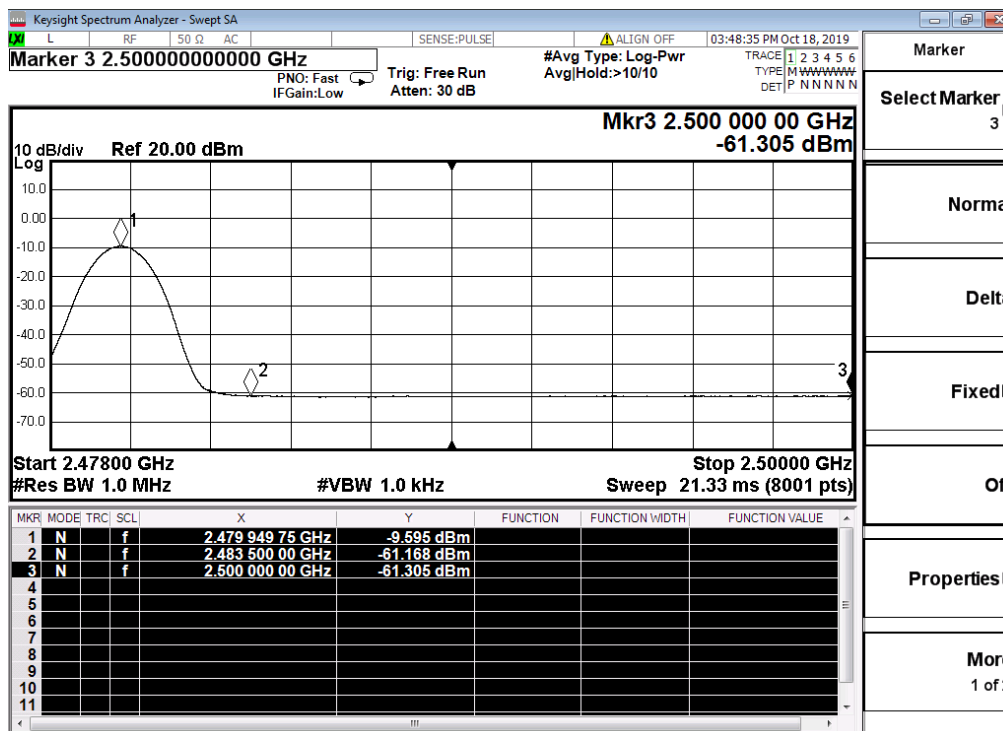
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

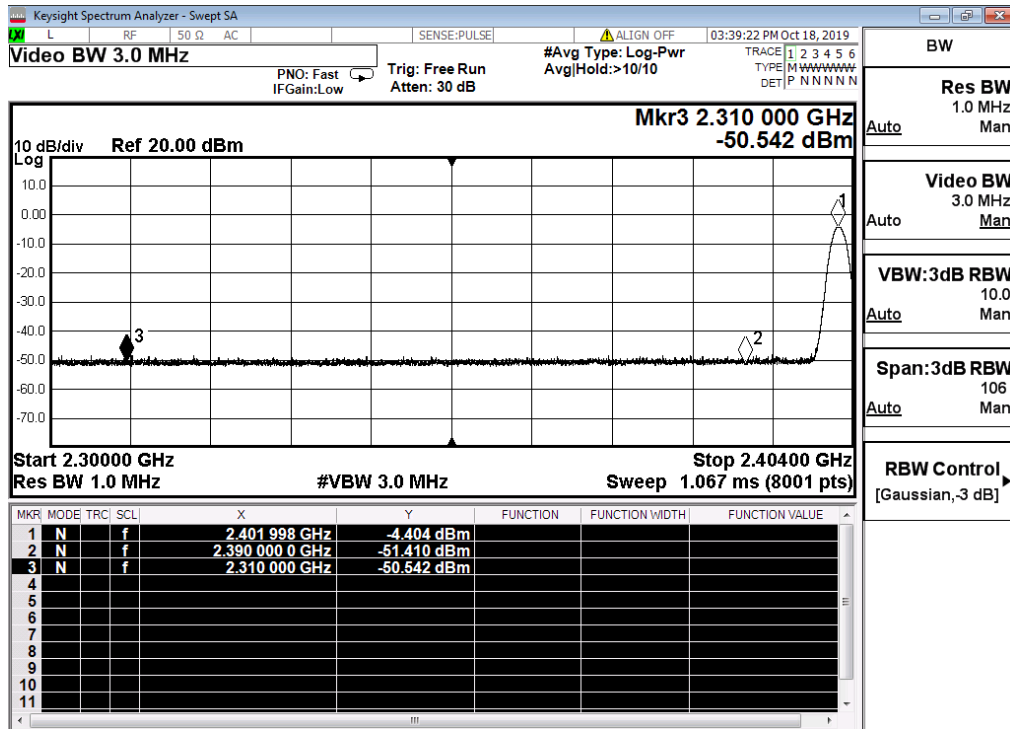
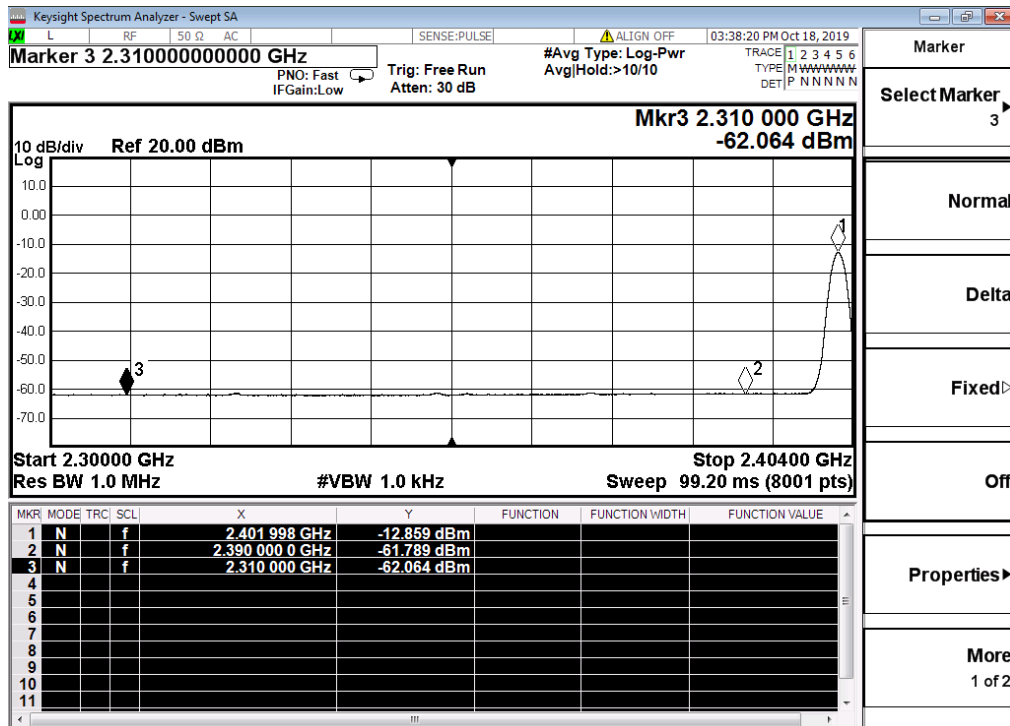


Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)

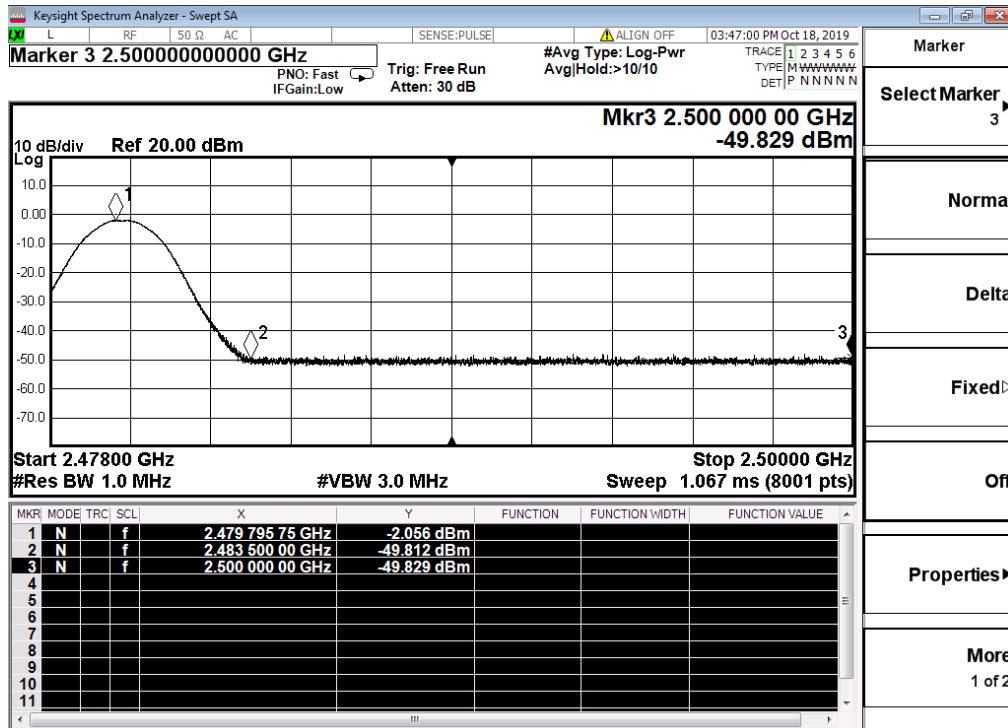


Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)

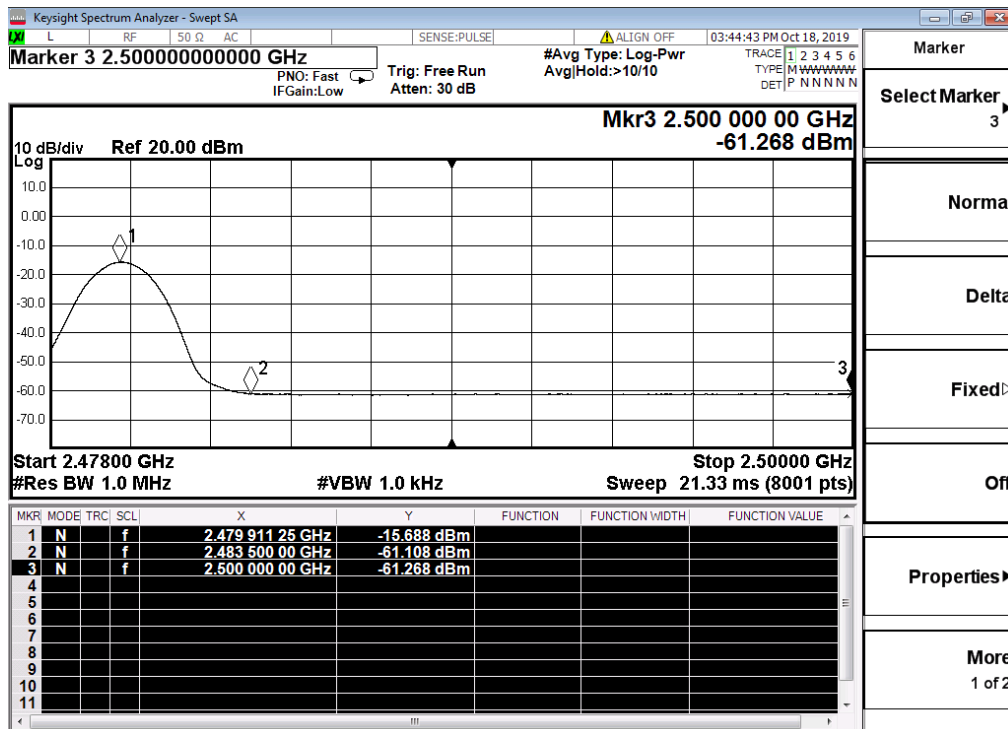


Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

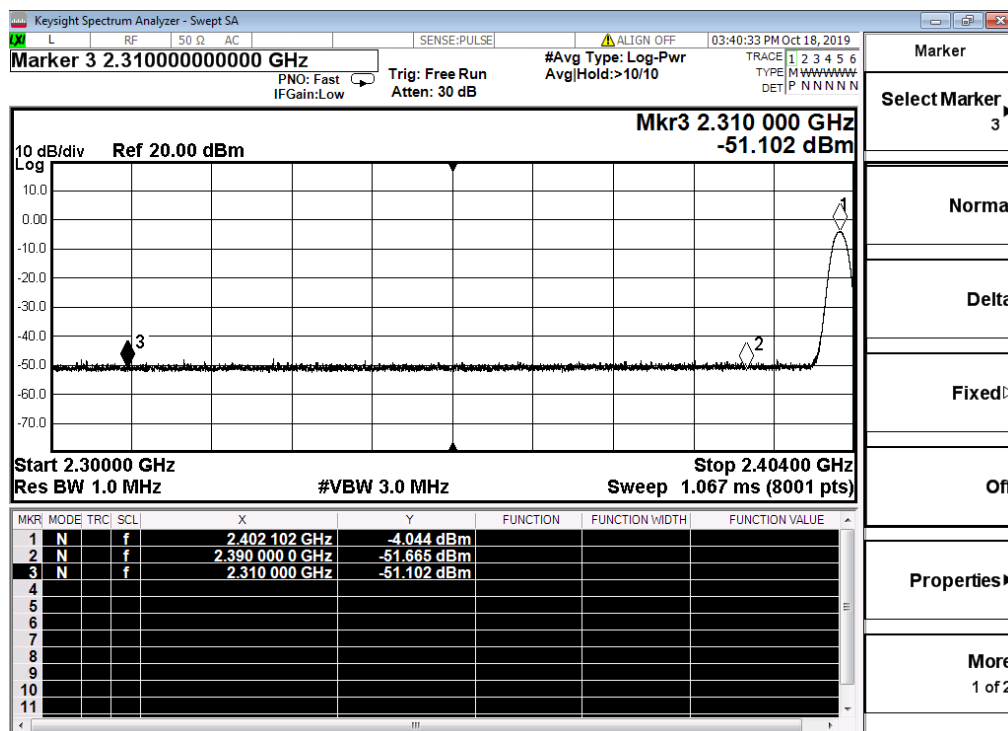
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



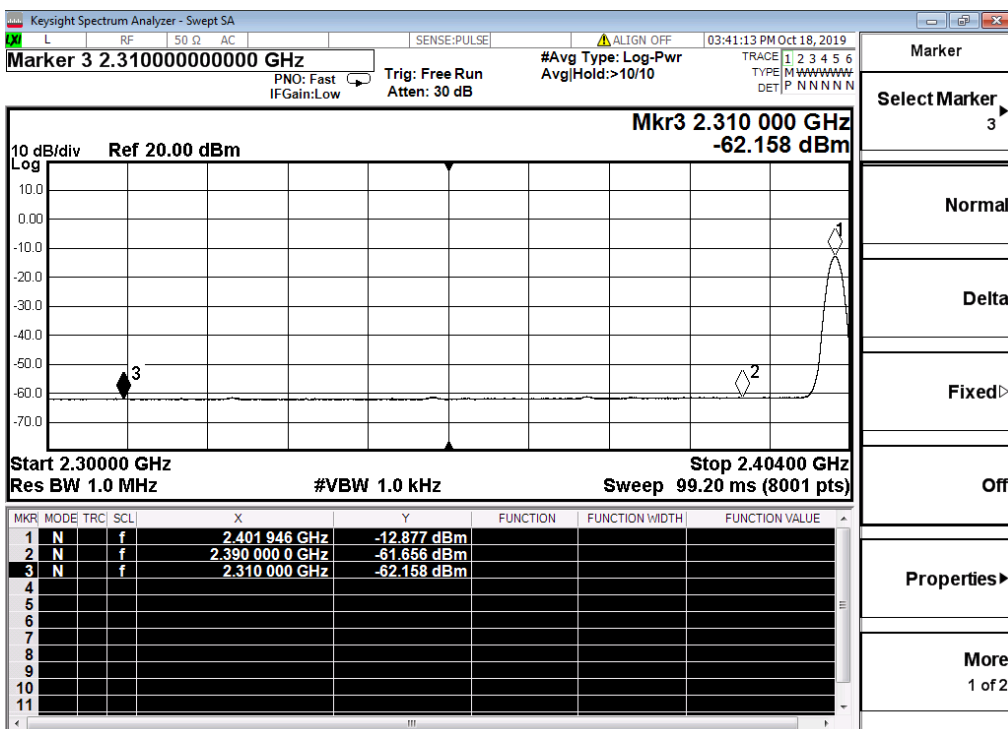
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



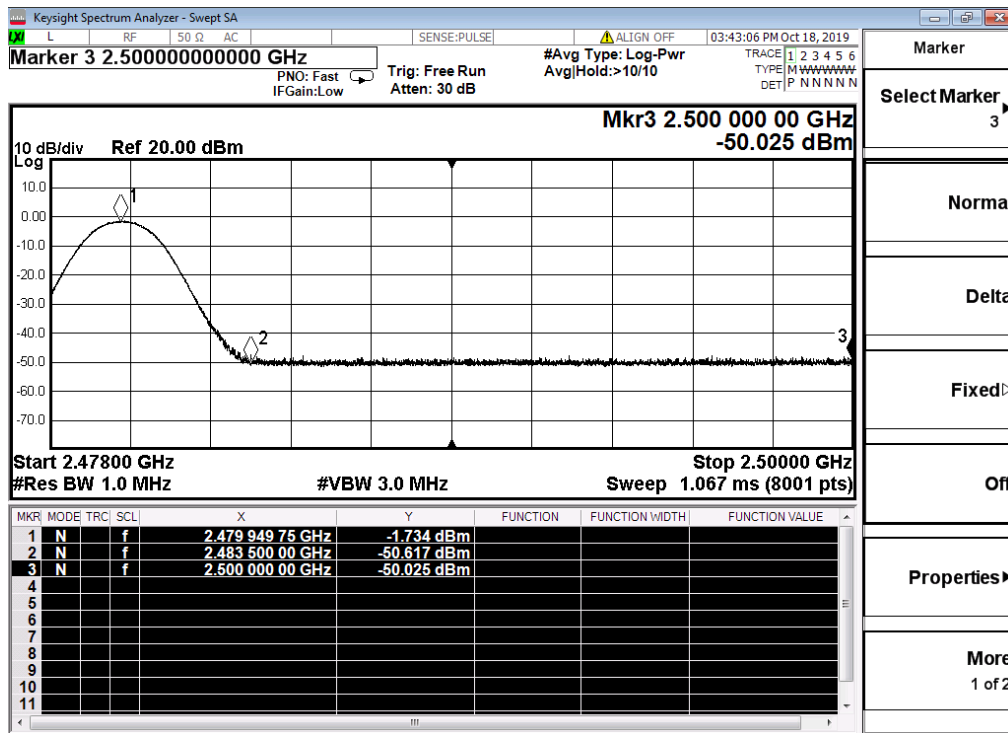
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

