

## Appendix A

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

Product Name: Air purifier

Trade Mark: N/A

Test Model: LAF8013D

#### Environmental Conditions

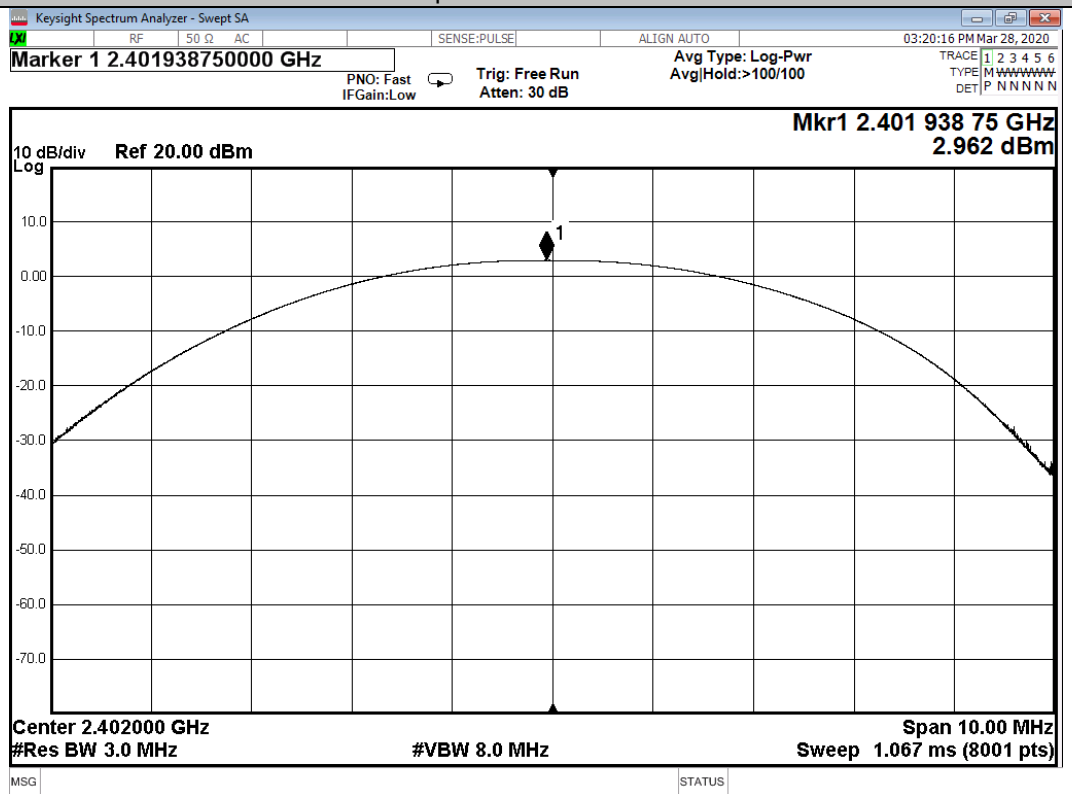
Temperature:	23.5 ° C
Relative Humidity:	54%
ATM Pressure:	100.0 kPa
Test Engineer:	CHUANG WANG
Supervised by:	JAYDEN ZHUO

#### A.1 Maximum Conducted Peak Output Power

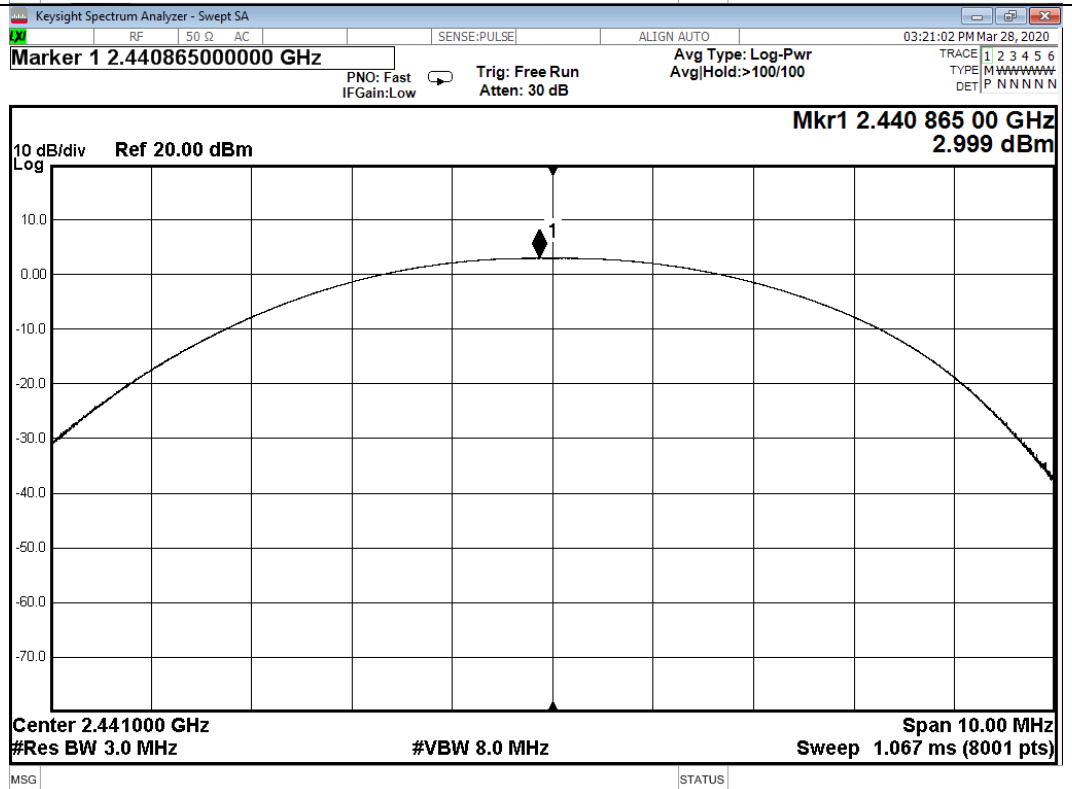
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2.962	21	PASS
	MCH	2.999	21	PASS
	HCH	2.822	21	PASS
$\pi/4$ DQPSK	LCH	1.180	21	PASS
	MCH	0.184	21	PASS
	HCH	-0.835	21	PASS
8-DPSK	LCH	-3.255	21	PASS
	MCH	-0.289	21	PASS
	HCH	-0.472	21	PASS

Test Graphs

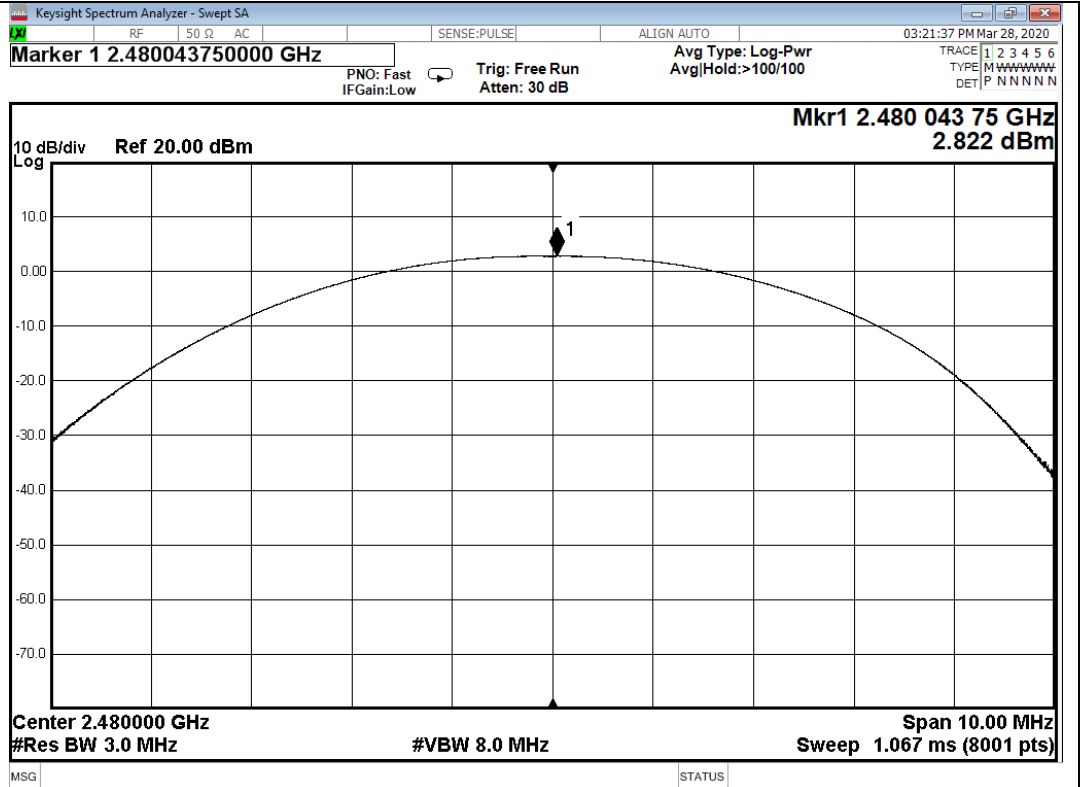
GFSK/LCH



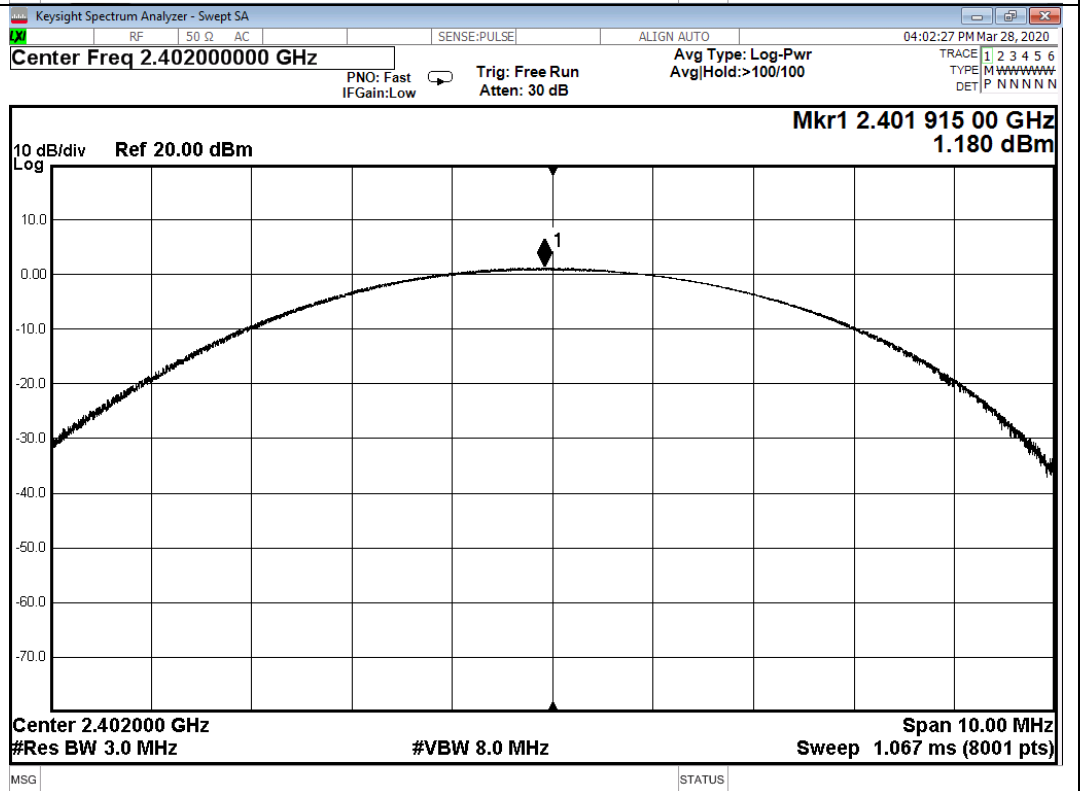
GFSK/MCH



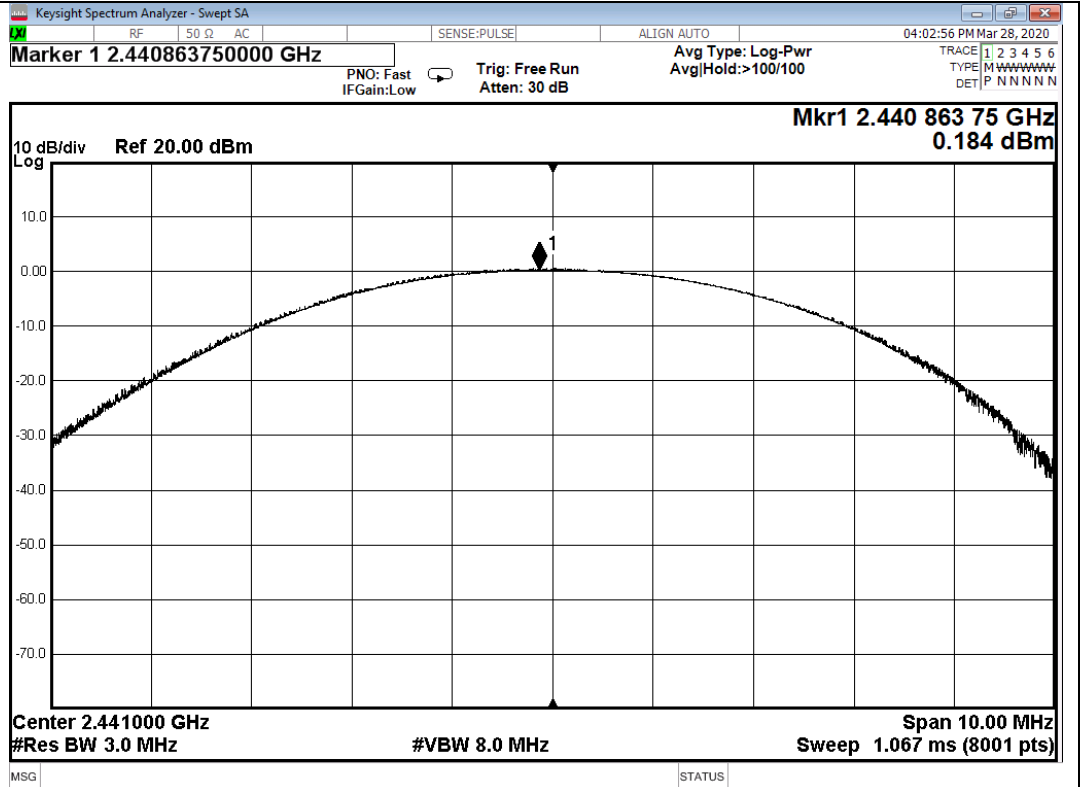
GFSK/HCH



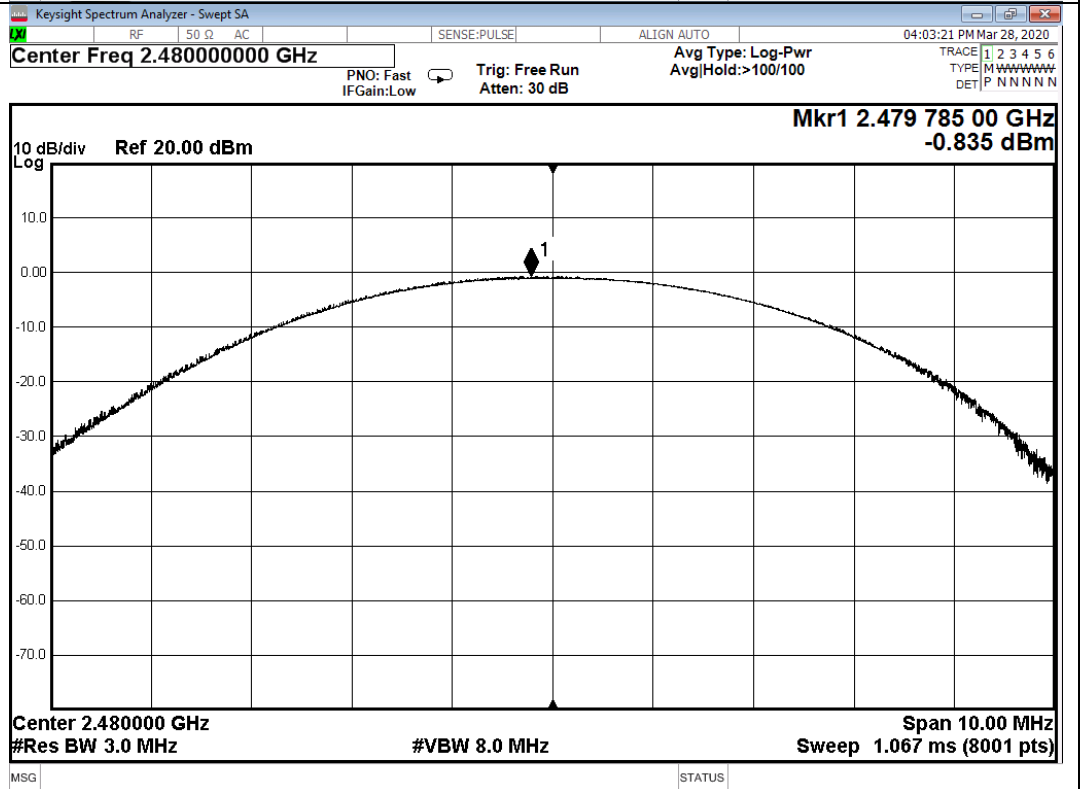
$\pi/4$ DQPSK/LCH



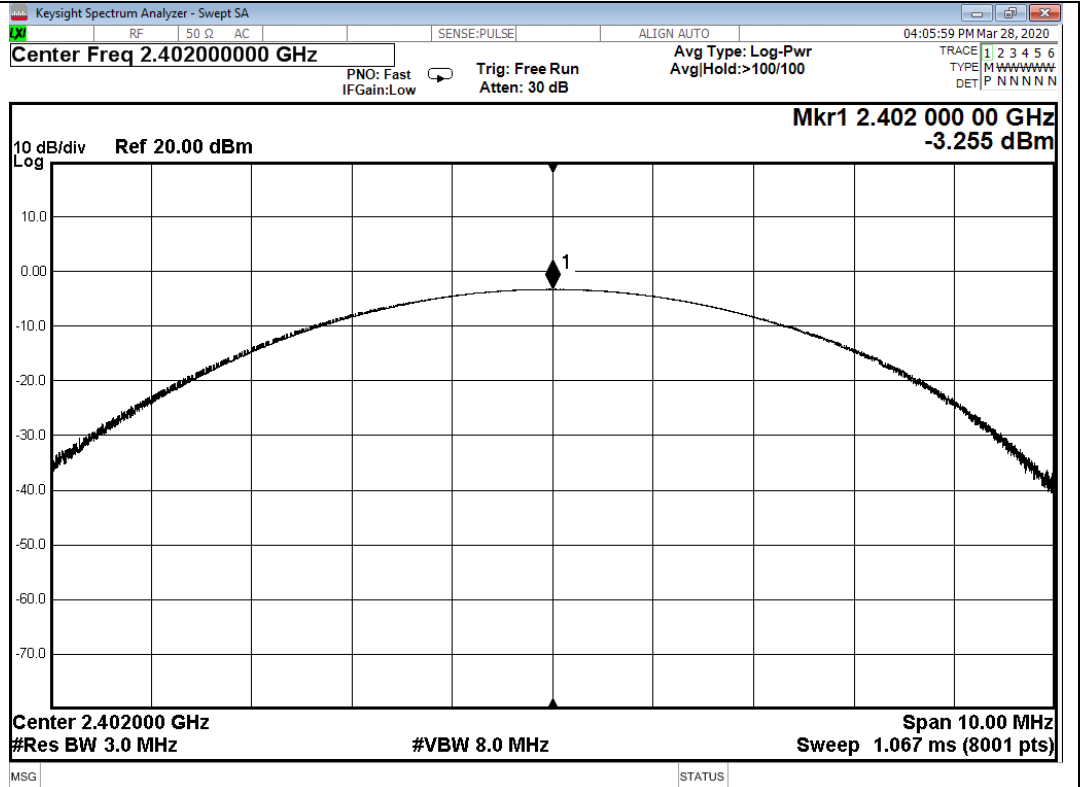
$\pi/4$ DQPSK/MCH



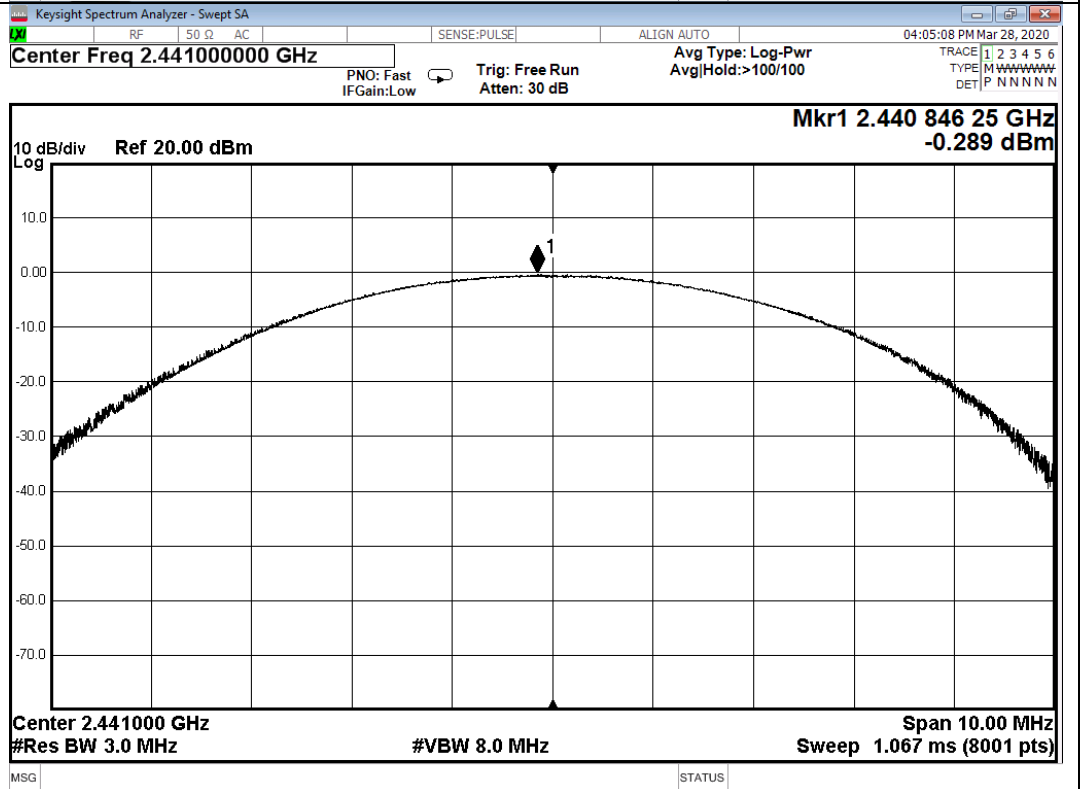
$\pi/4$ DQPSK/HCH



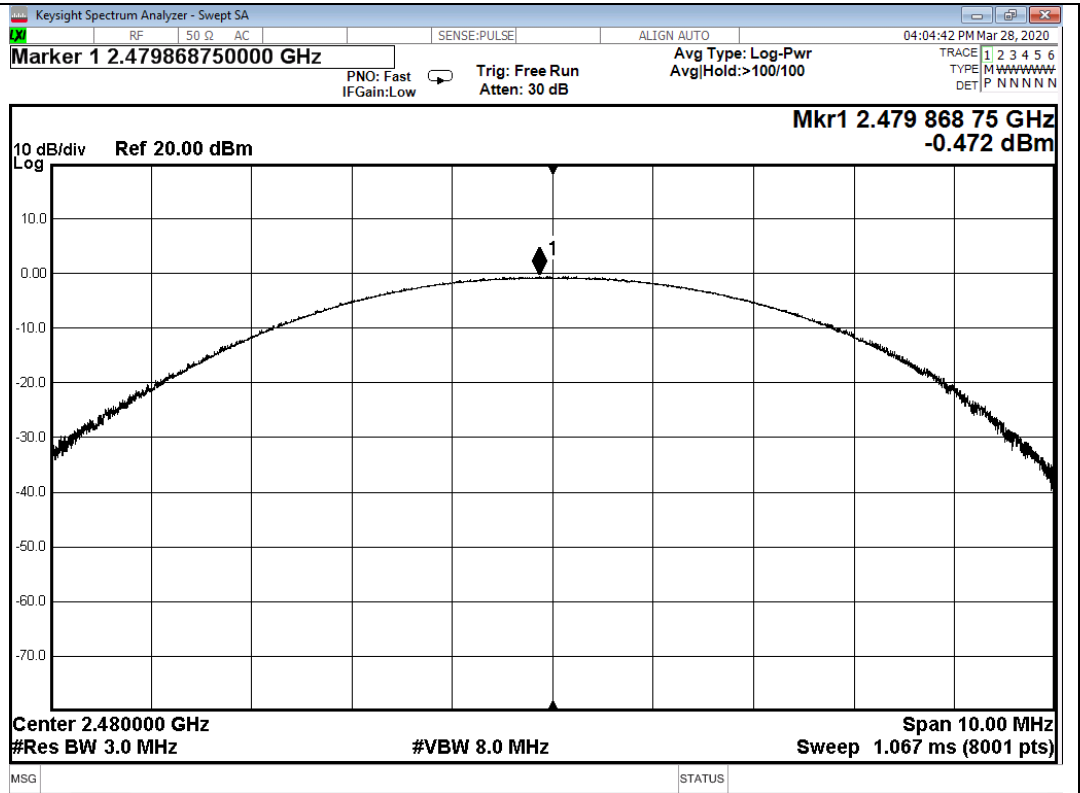
8-DPSK/LCH



8-DPSK/MCH

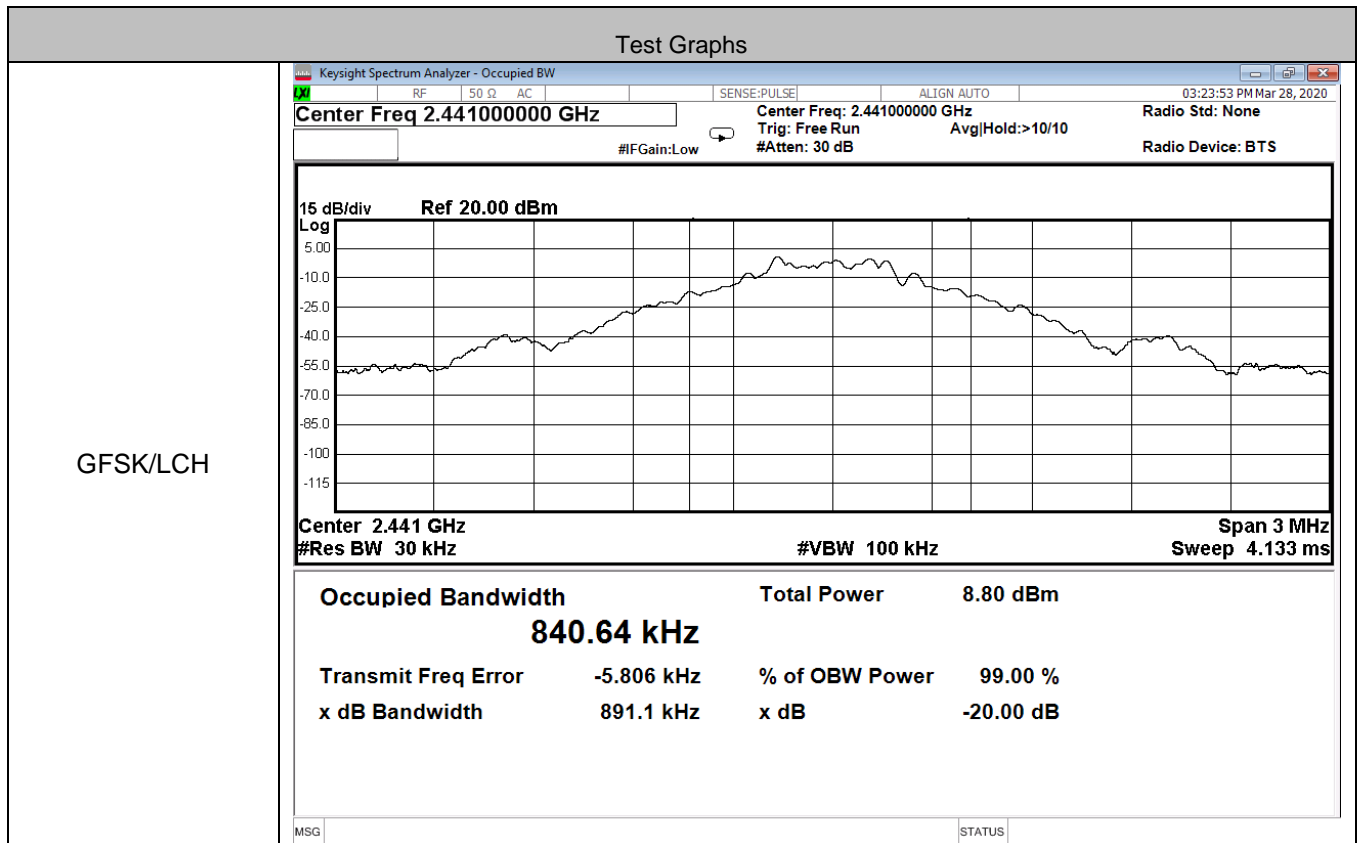


8-DPSK/HCH

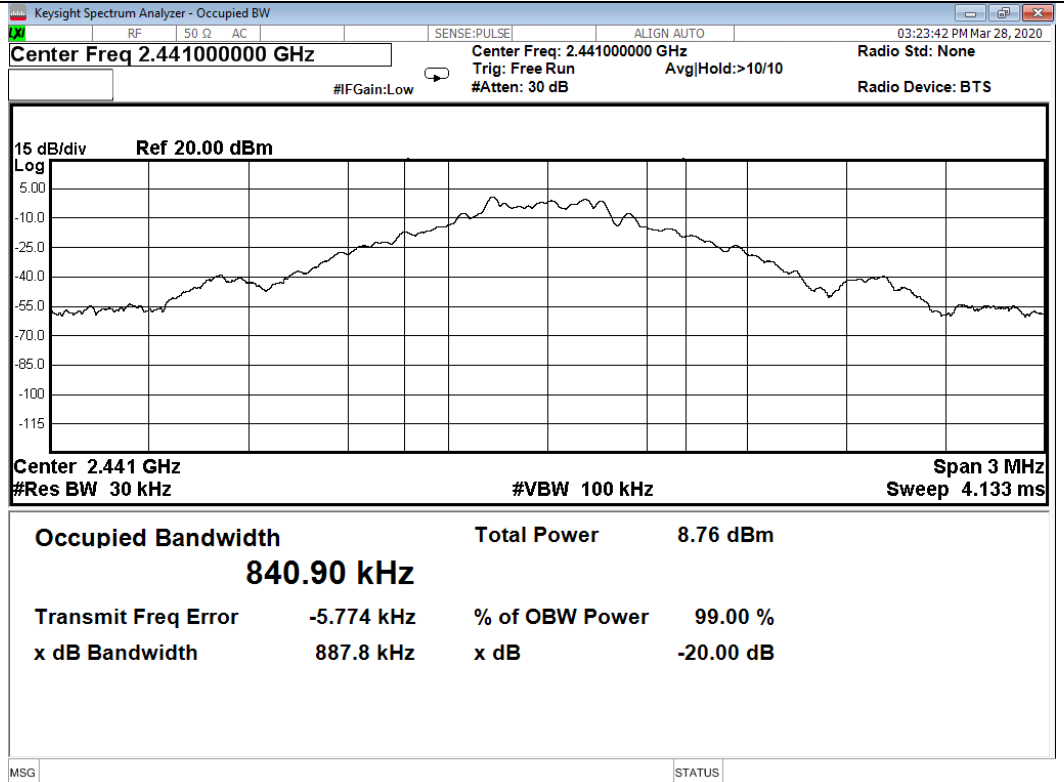


**A.2 99% and 20dB Bandwidth**

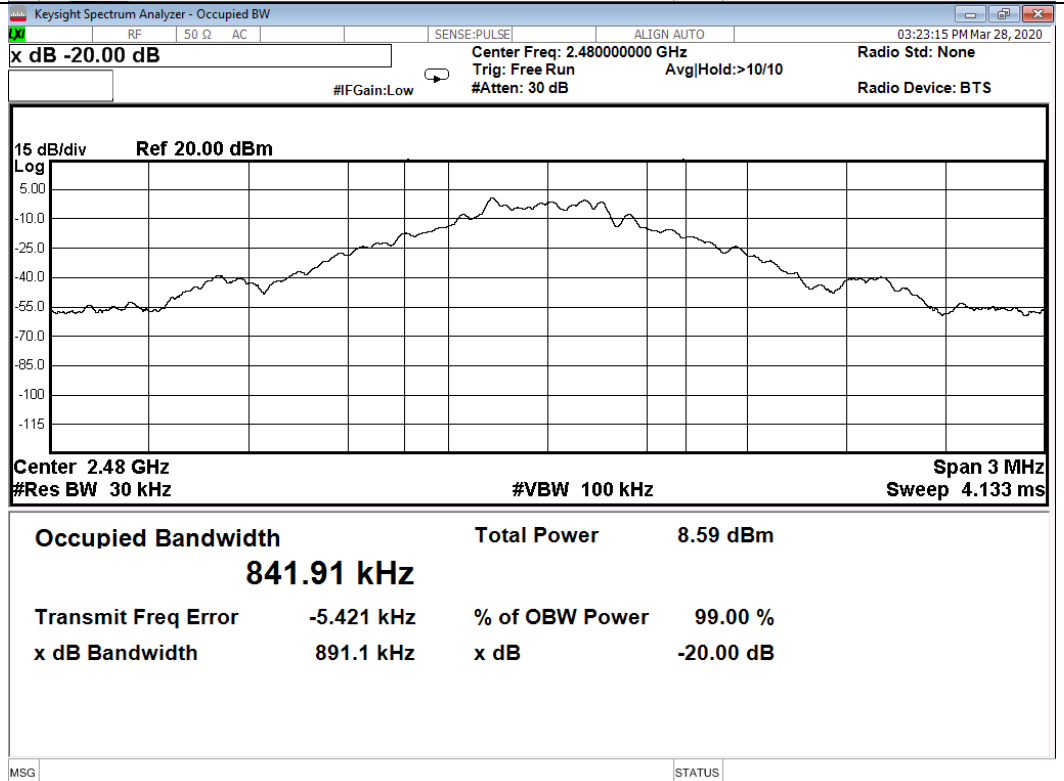
Mode	Channel.	99% Bandwidth [MHz]	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.84064	0.8911	Not Specified	PASS
	MCH	0.84090	0.8878	Not Specified	PASS
	HCH	0.84191	0.8911	Not Specified	PASS
π/4DQPSK	LCH	1.0624	1.112	Not Specified	PASS
	MCH	1.0633	1.112	Not Specified	PASS
	HCH	1.1868	1.289	Not Specified	PASS
8-DPSK	LCH	1.1293	1.276	Not Specified	PASS
	MCH	1.1349	1.279	Not Specified	PASS
	HCH	1.1331	1.278	Not Specified	PASS



GFSK/MCH

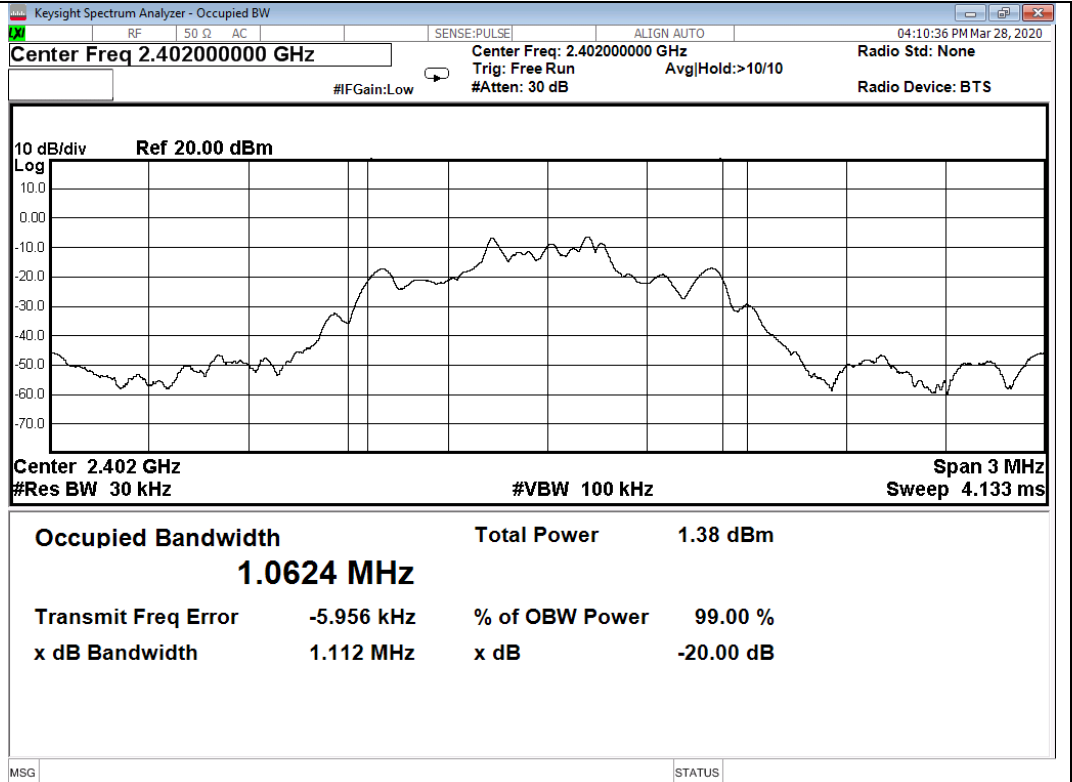


GFSK/HCH

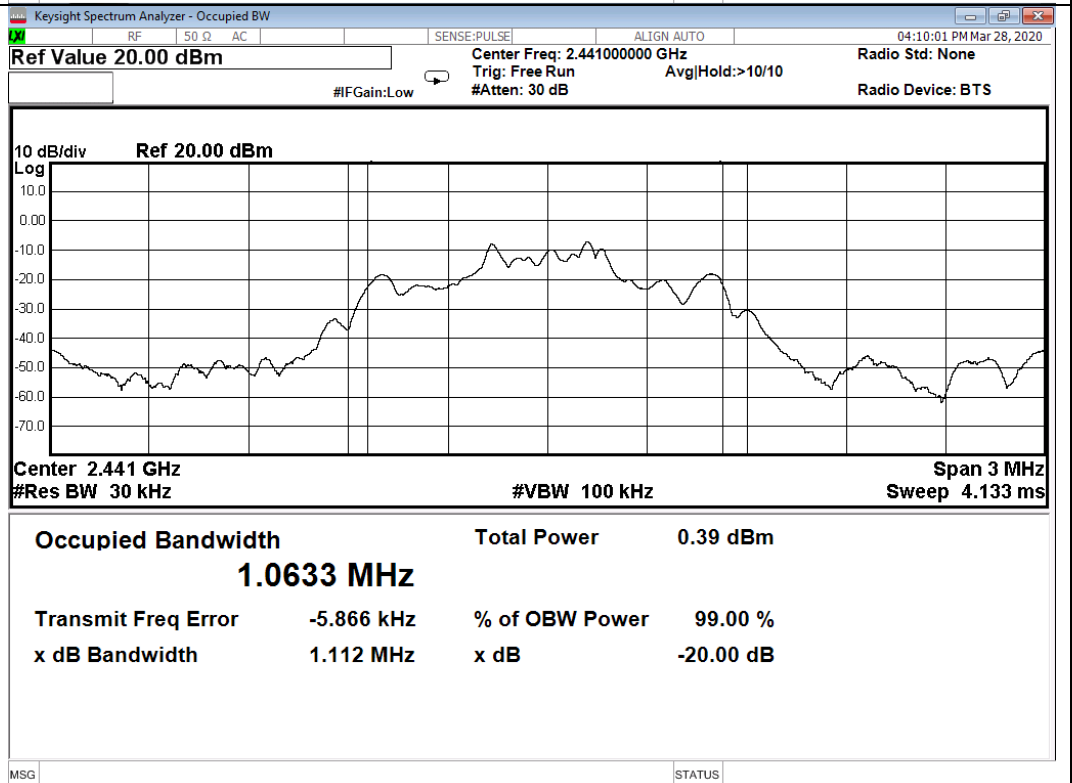




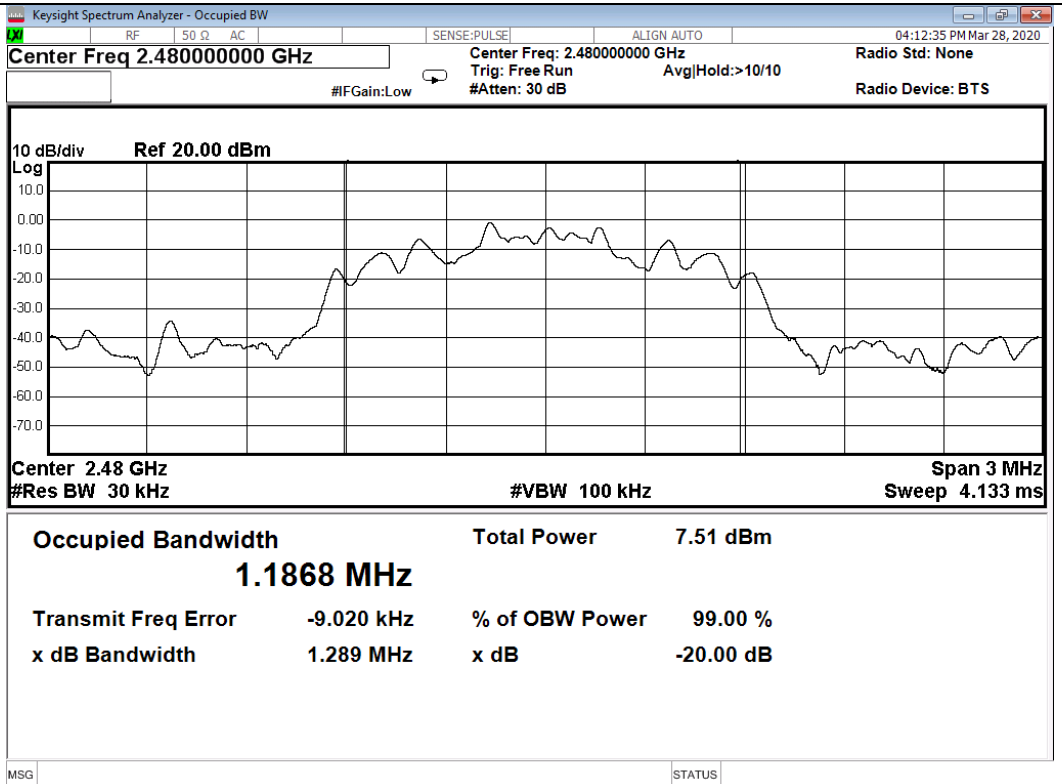
$\pi/4$ DQPSK/LCH



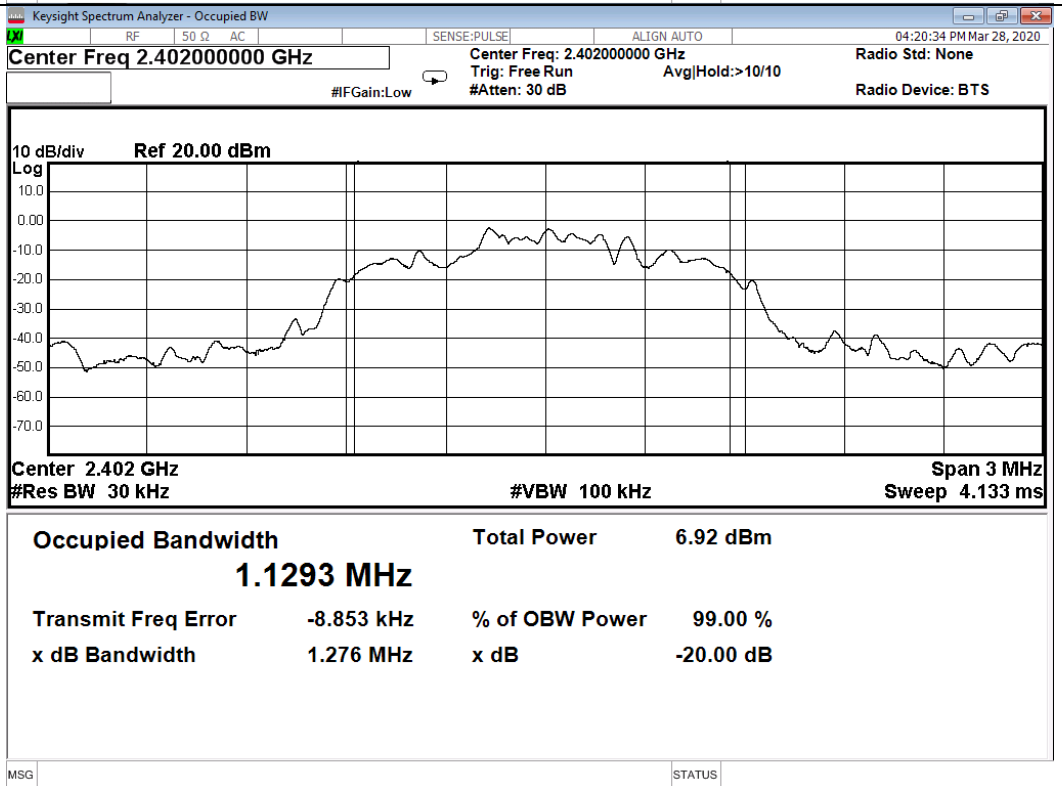
$\pi/4$ DQPSK/MCH



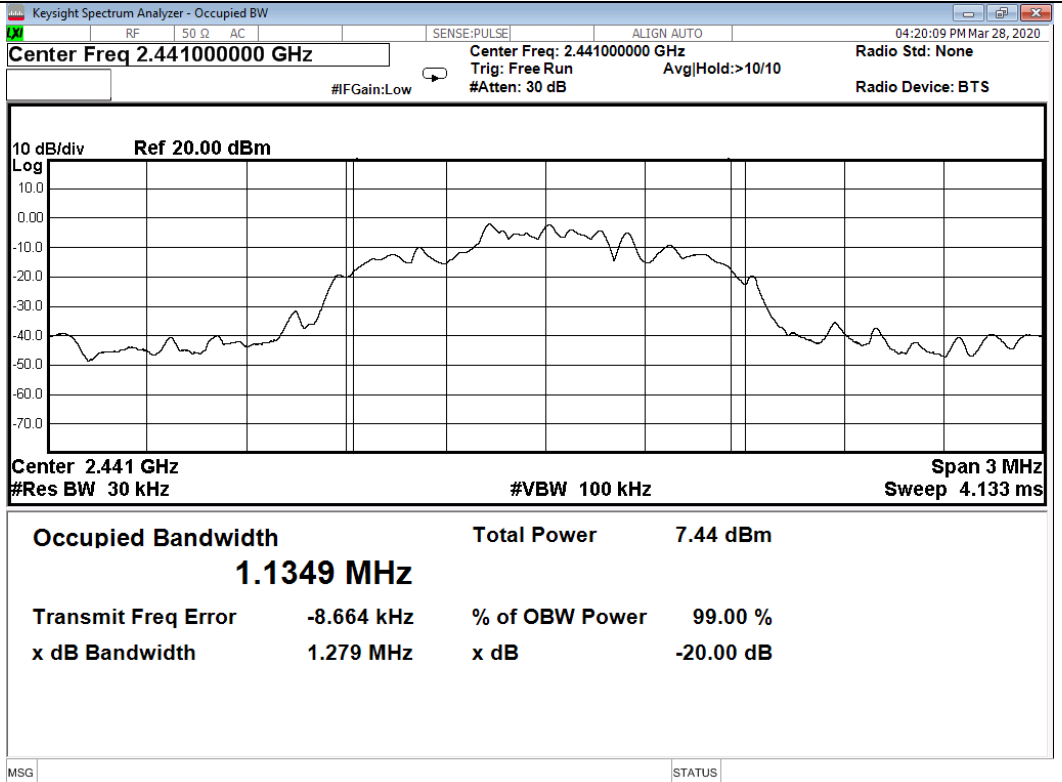
$\pi/4$ DQPSK/HCH



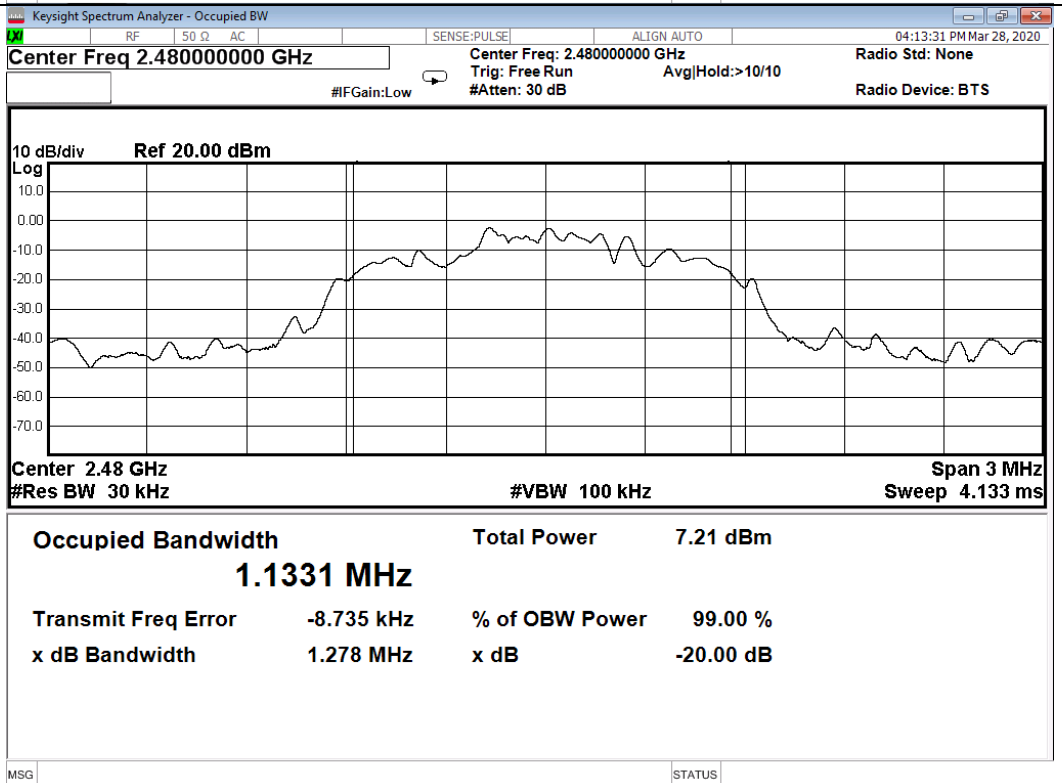
8-DPSK/LCH



8-DPSK/MCH

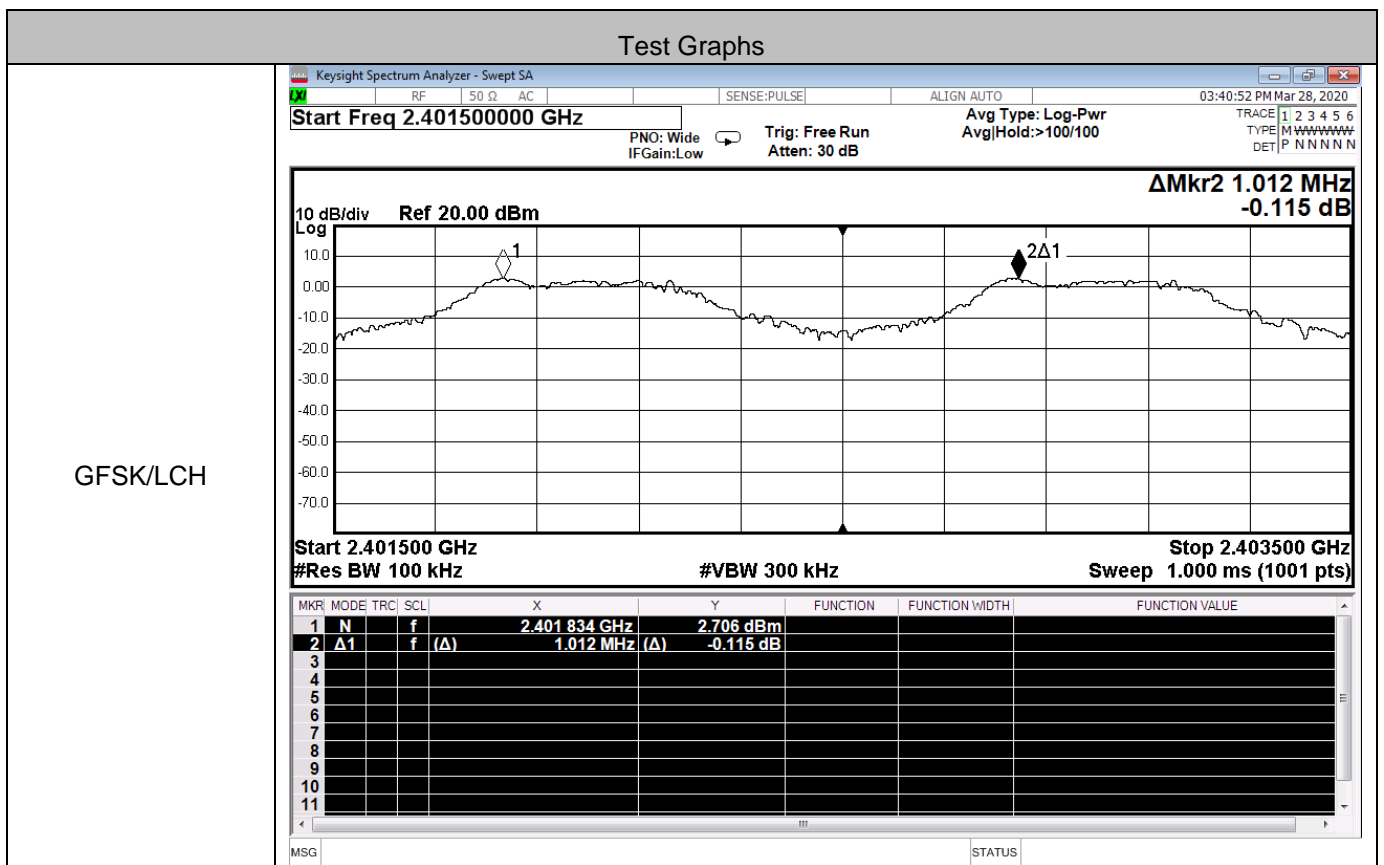


8-DPSK/HCH

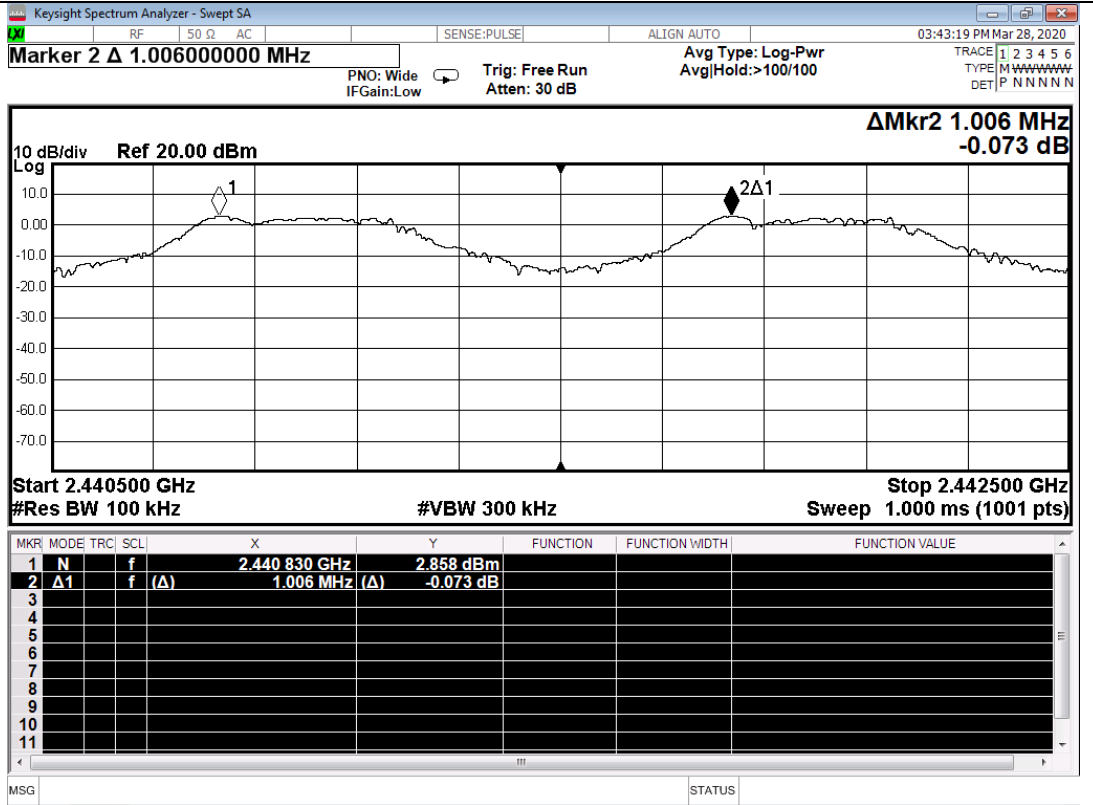


### A.3 Carrier Frequency Separation

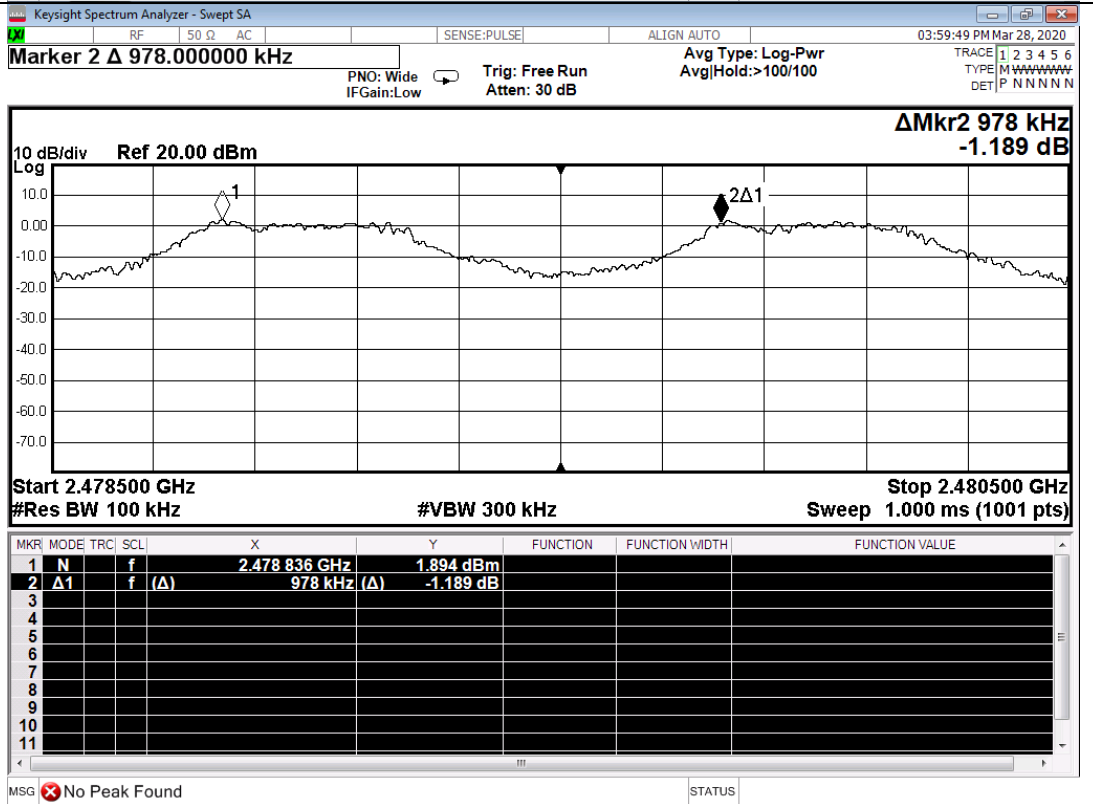
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz] 2/3*20dB Bandwidth	Verdict
GFSK	LCH	1.012	0.594	PASS
	MCH	1.006	0.592	PASS
	HCH	0.978	0.594	PASS
π/4DQPSK	LCH	1.008	0.741	PASS
	MCH	0.990	0.741	PASS
	HCH	1.000	0.859	PASS
8-DPSK	LCH	1.002	0.851	PASS
	MCH	1.018	0.853	PASS
	HCH	1.002	0.852	PASS



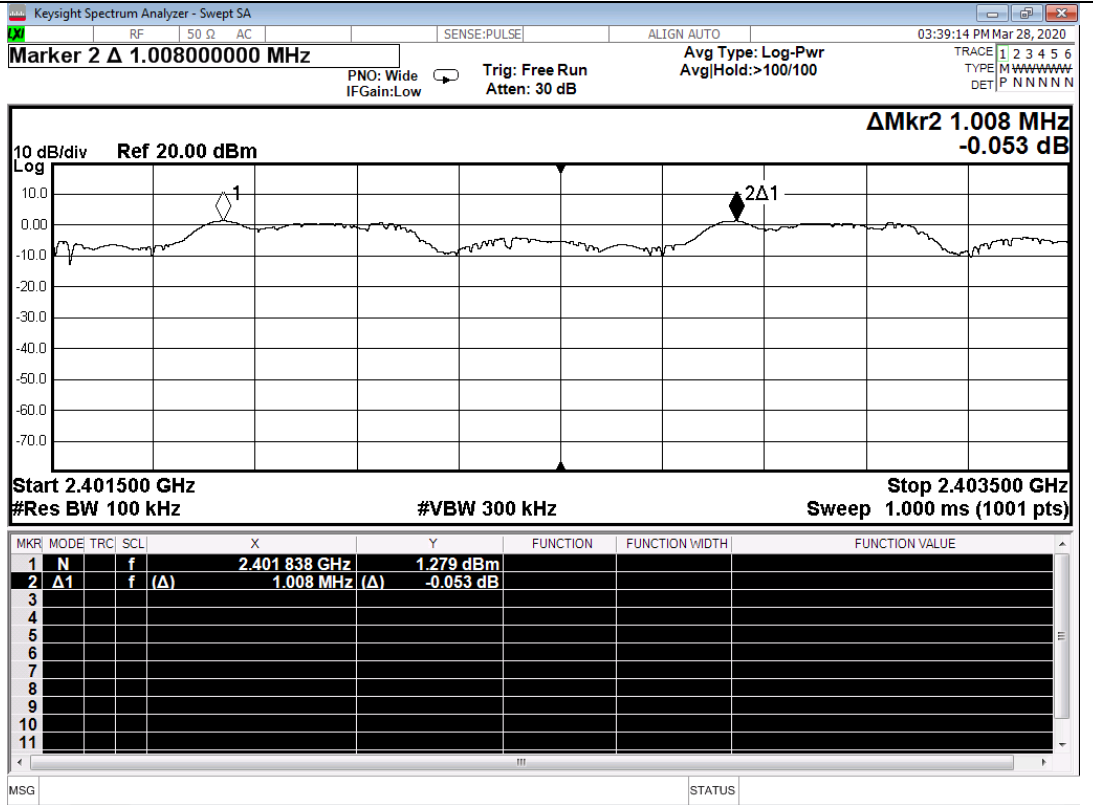
GFSK/MCH



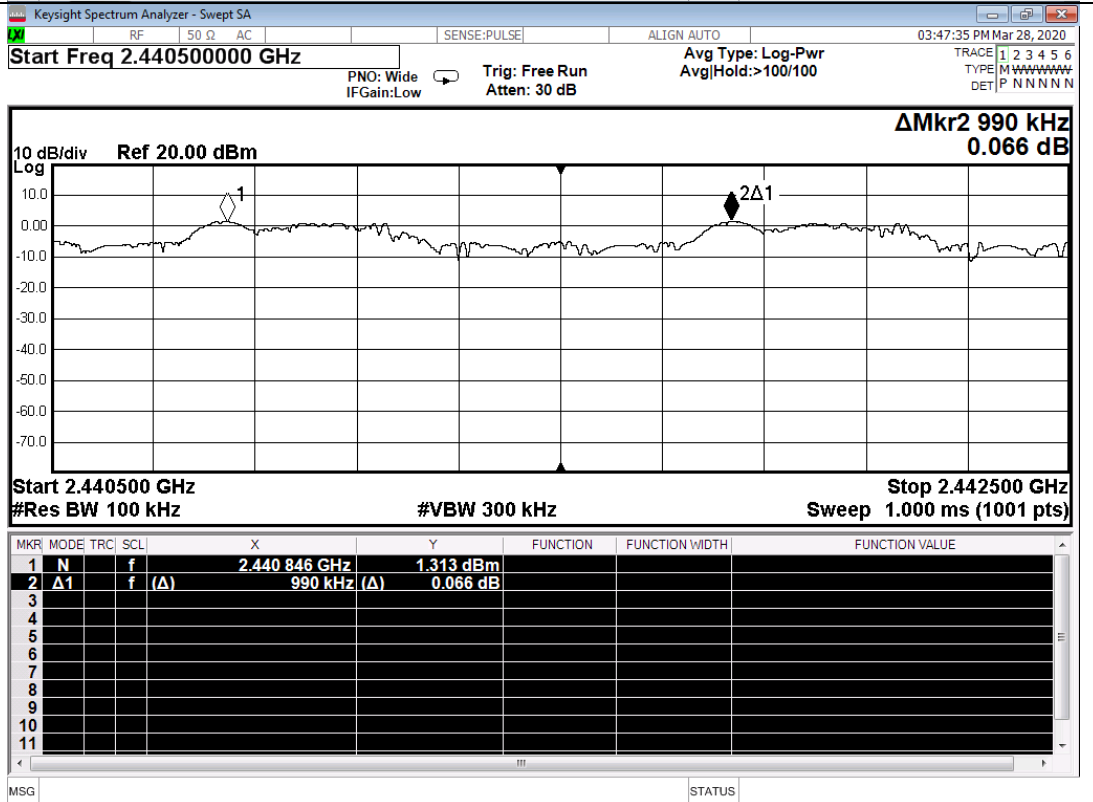
GFSK/HCH



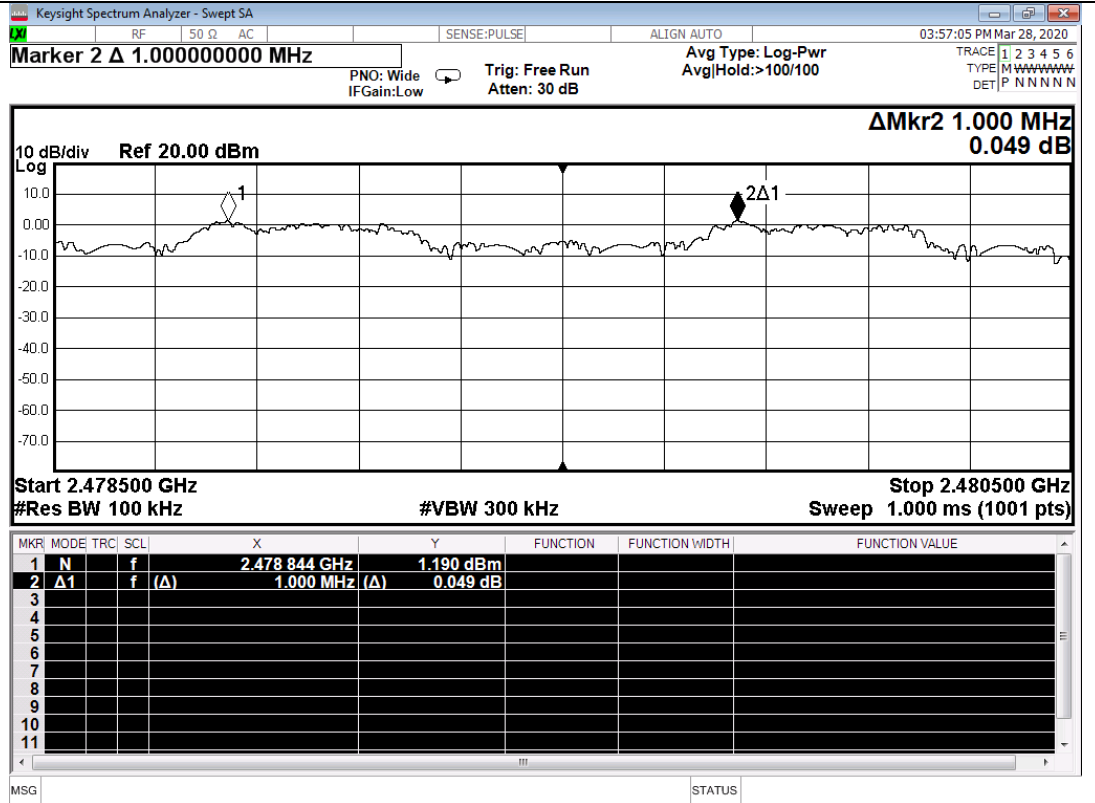
$\pi/4$ DQPSK/LCH



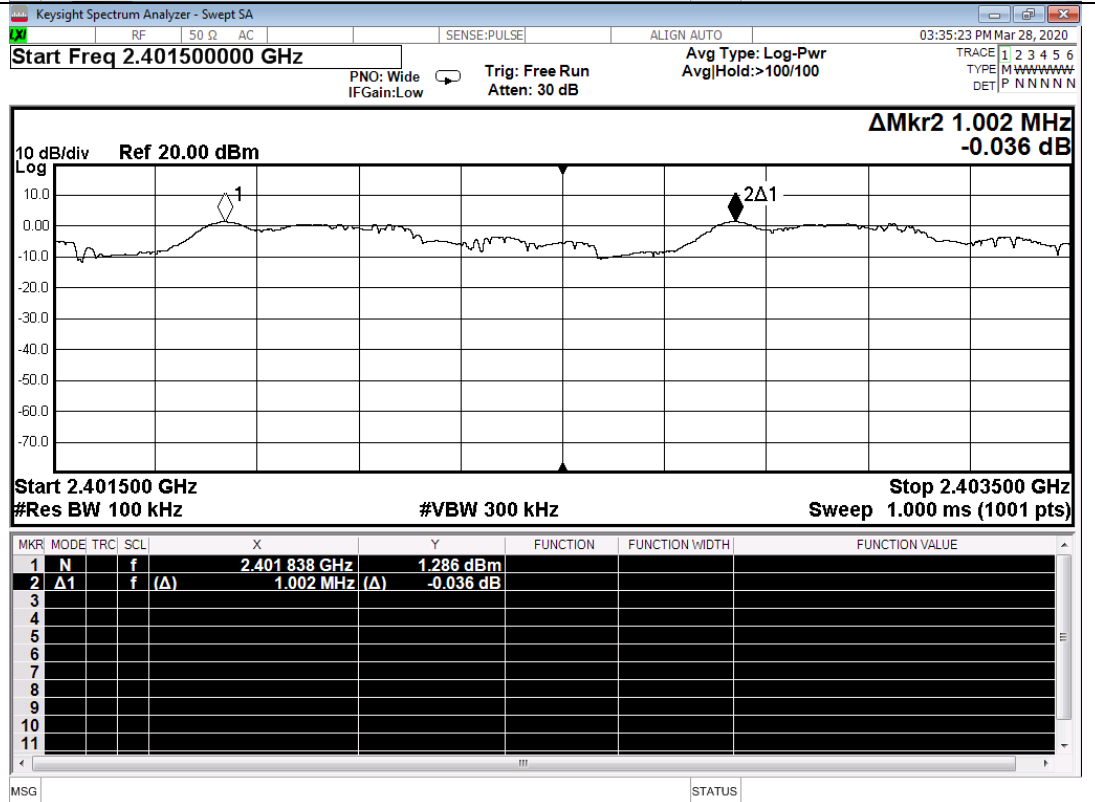
$\pi/4$ DQPSK/MCH



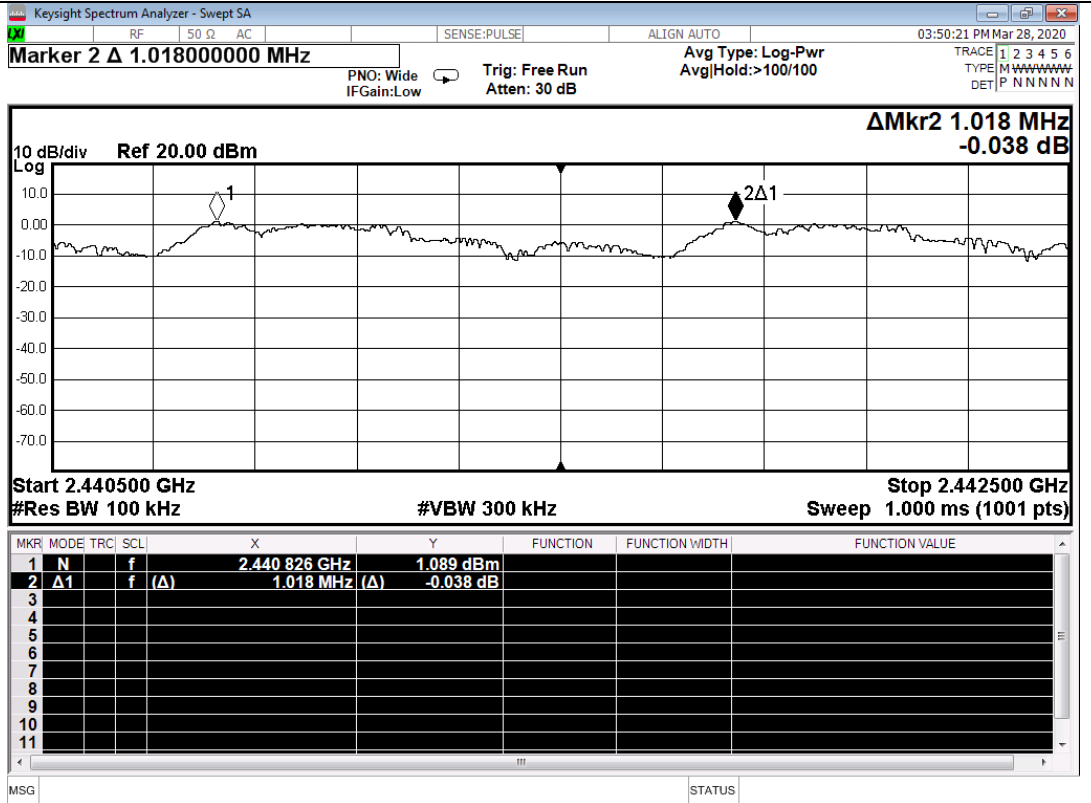
$\pi/4$ DQPSK/HCH



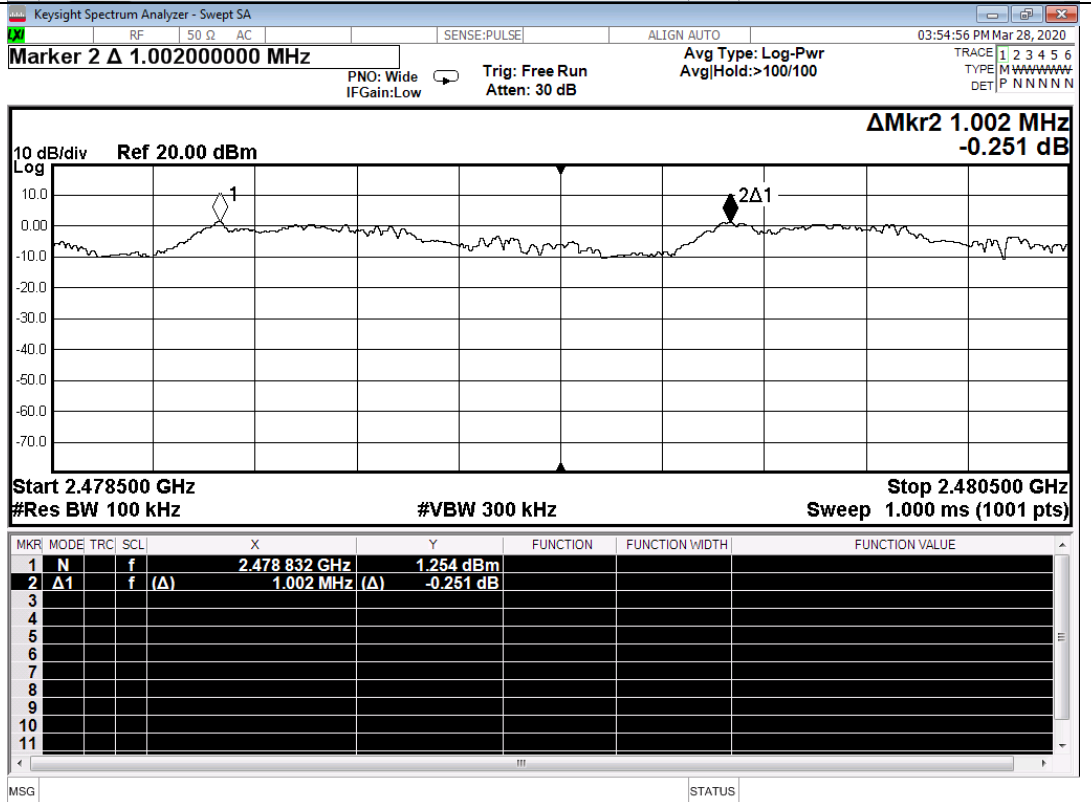
8-DPSK/LCH



8-DPSK/MCH



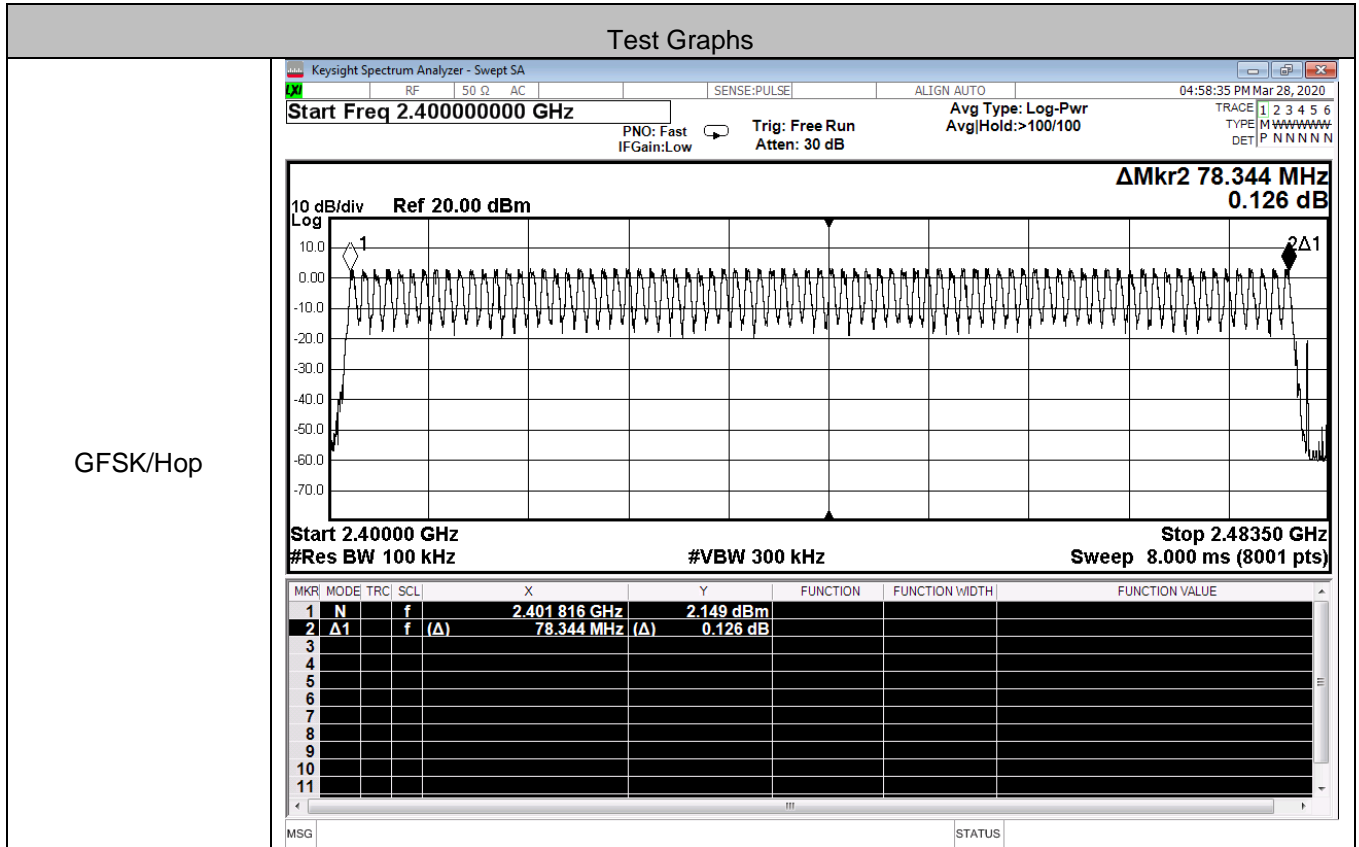
8-DPSK/HCH



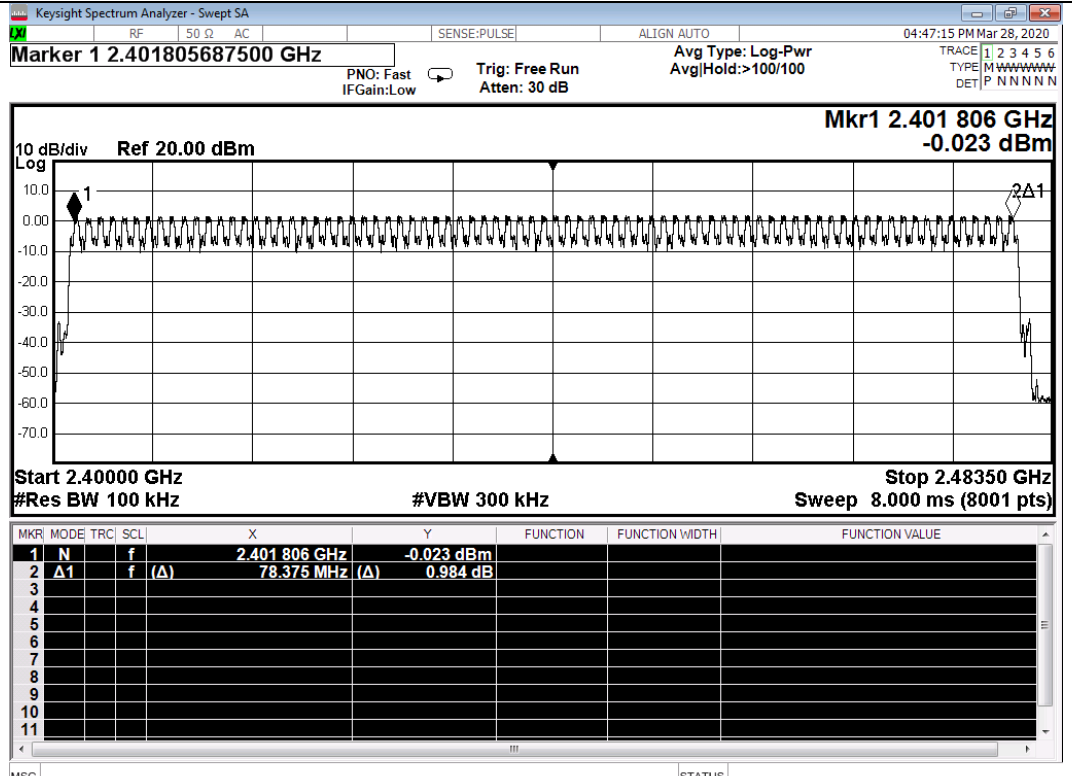


### A.4 Hopping Channel Number

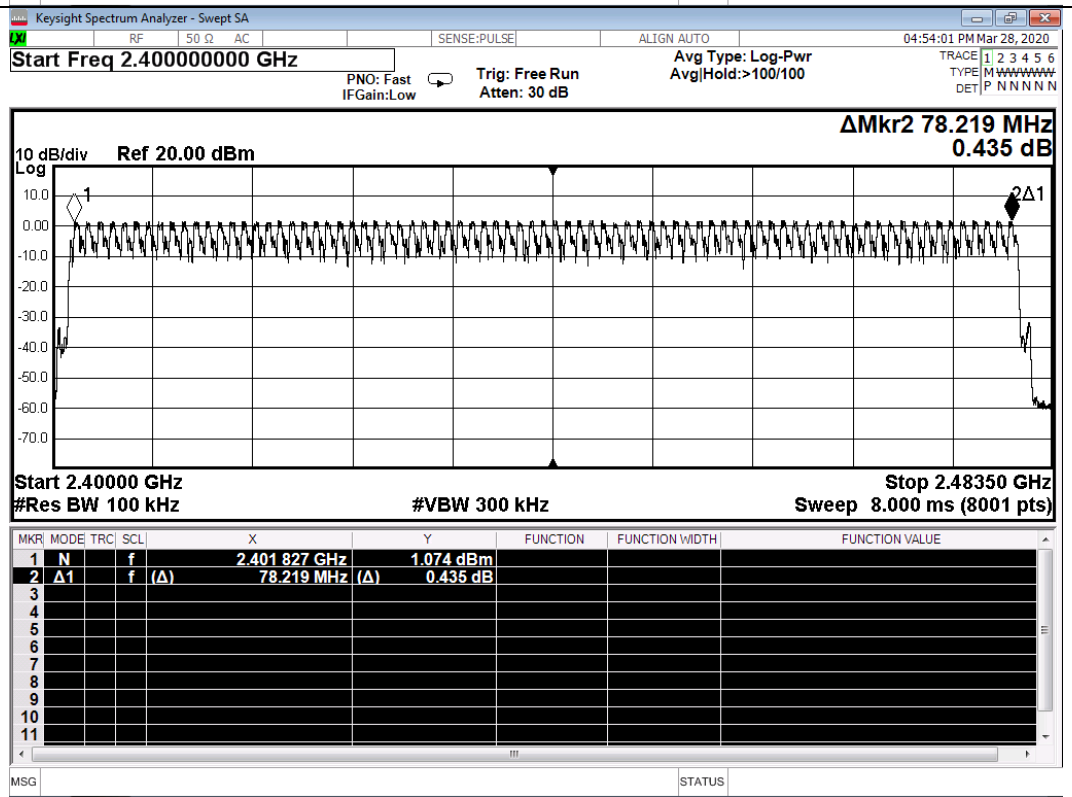
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8-DPSK	Hop	79	>=15	PASS



$\pi/4$ DQPSK/Hop

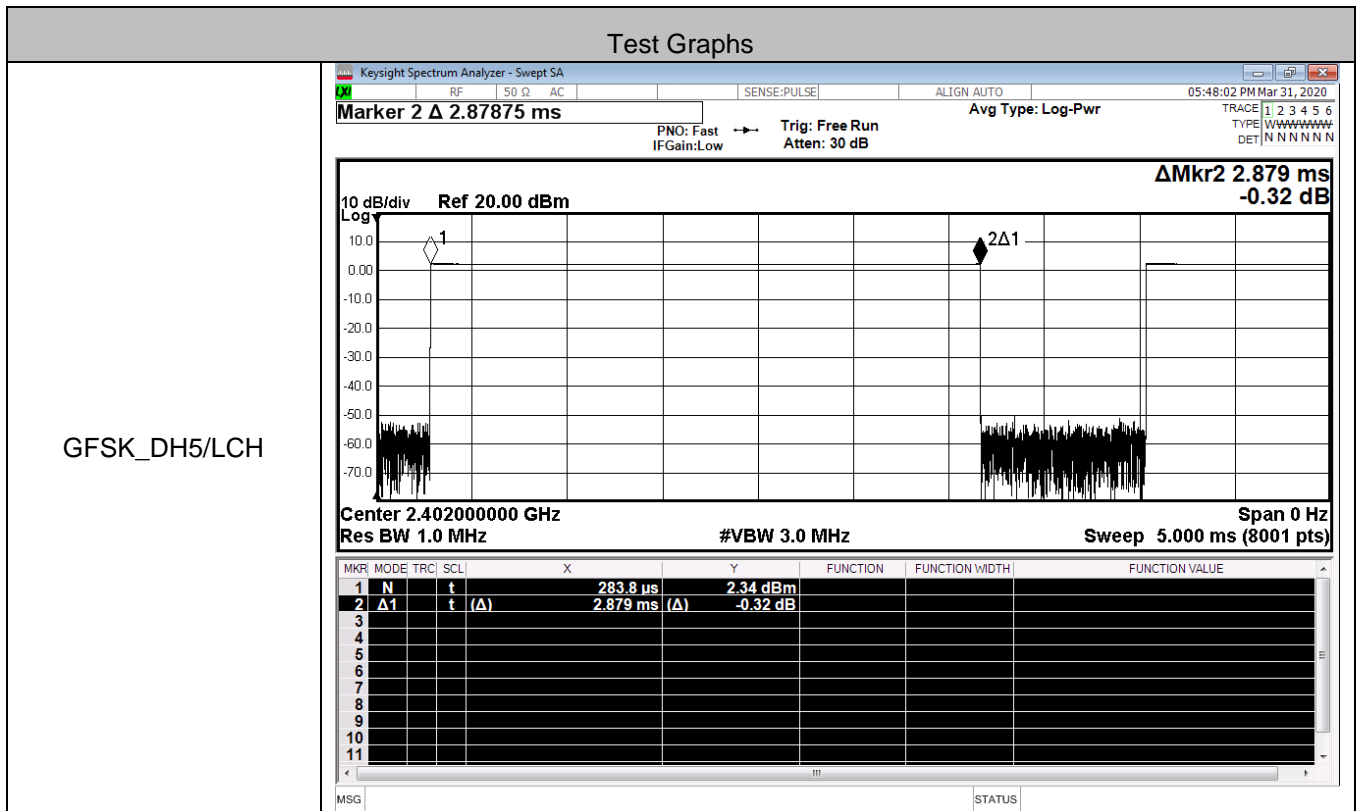


8-DPSK/Hop

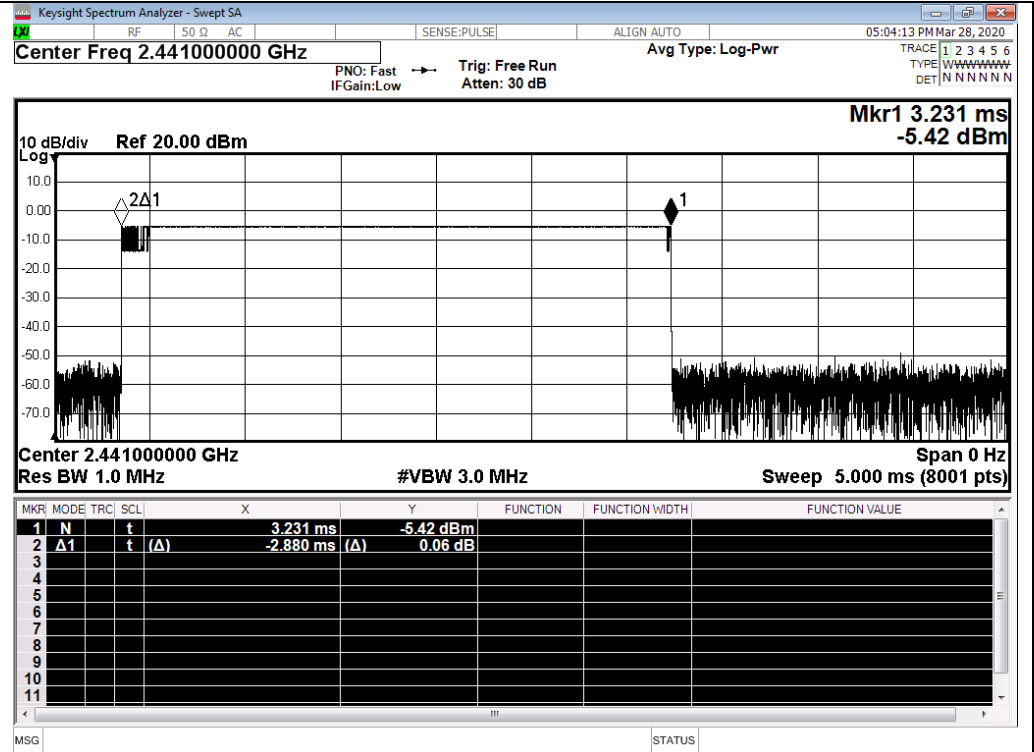


### A.5 Dwell Time

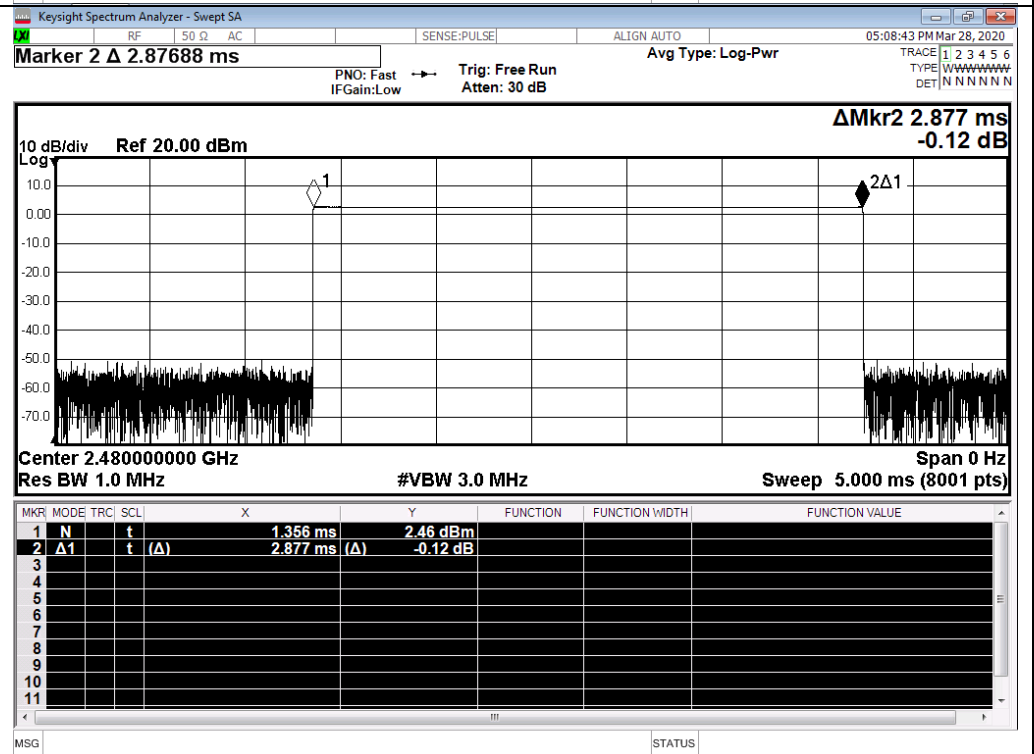
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.308	0.4	PASS
	DH5	MCH	2.88	106.7	0.308	0.4	PASS
	DH5	HCH	2.88	106.7	0.308	0.4	PASS
π/4DQPSK	2DH5	LCH	2.88	106.7	0.308	0.4	PASS
	2DH5	MCH	2.88	106.7	0.308	0.4	PASS
	2DH5	HCH	2.88	106.7	0.308	0.4	PASS
8-DPSK	3DH5	LCH	2.87	106.7	0.306	0.4	PASS
	3DH5	MCH	2.87	106.7	0.306	0.4	PASS
	3DH5	HCH	2.87	106.7	0.306	0.4	PASS



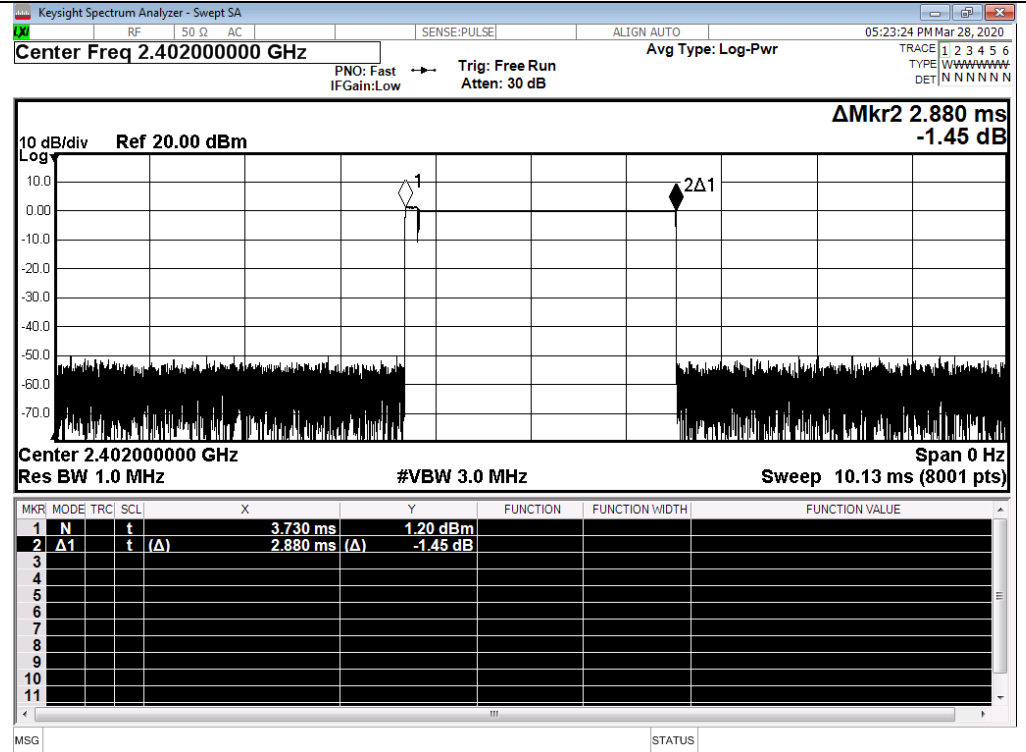
GFSK\_DH5/MCH



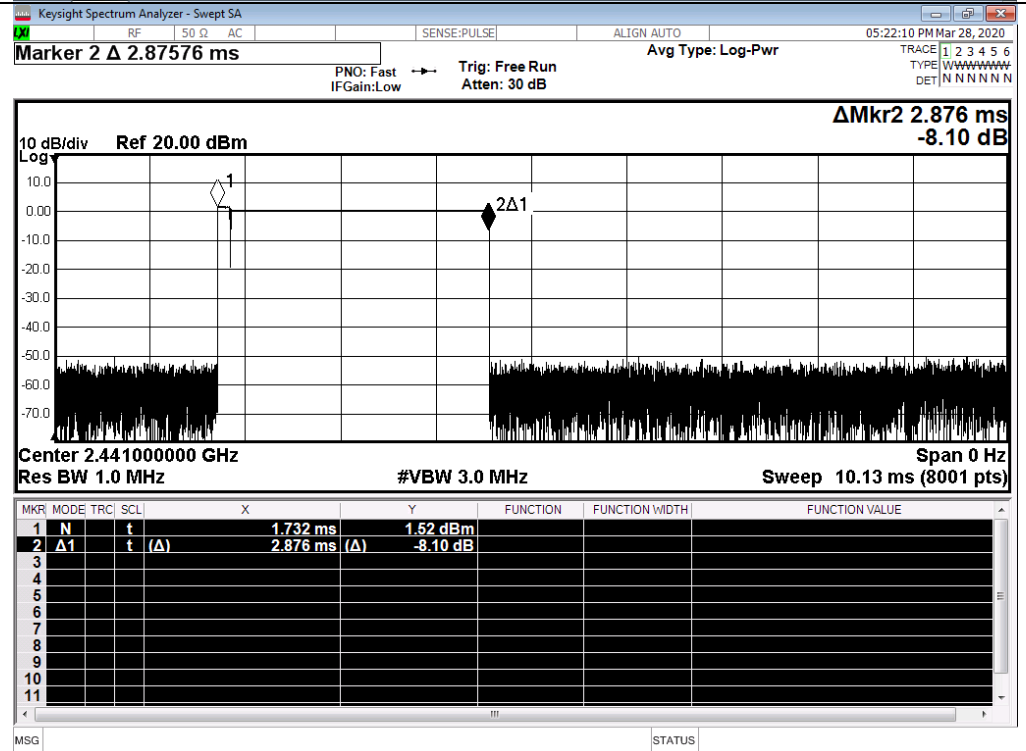
GFSK\_DH5/HCH



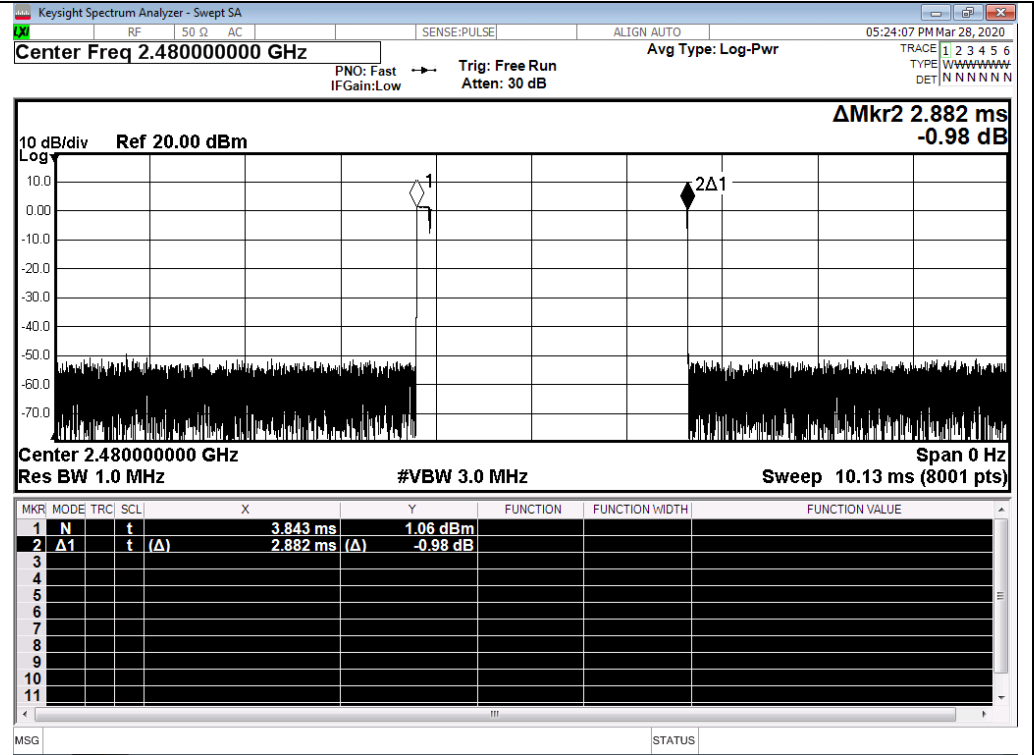
$\pi/4$ DQPSK  
\_2DH5/LCH



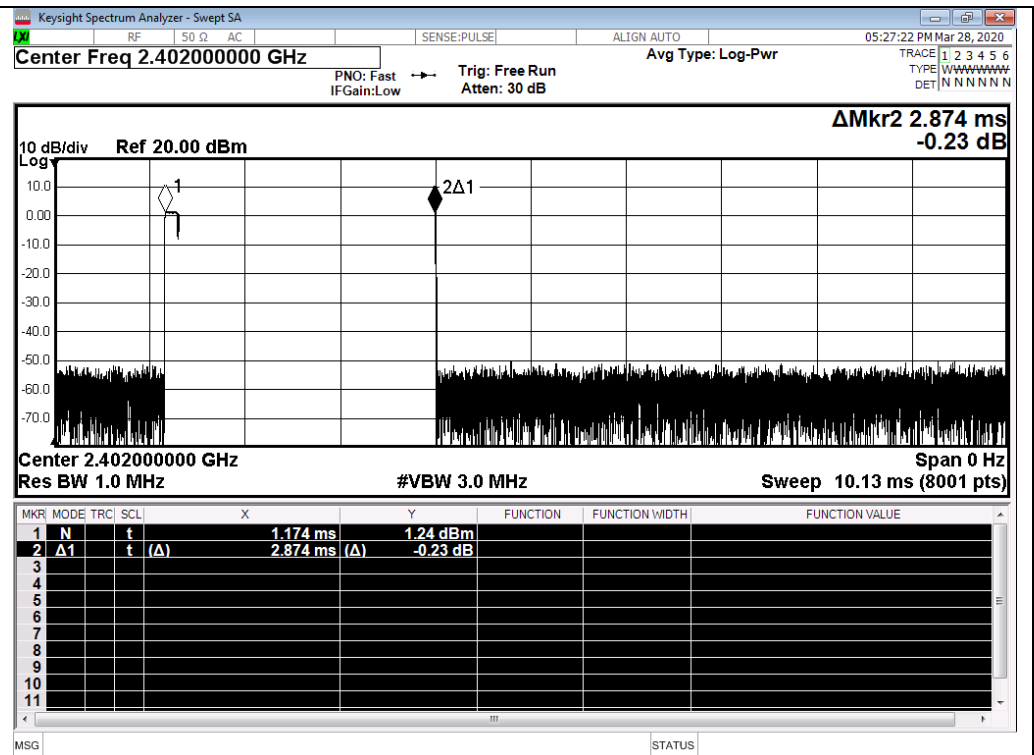
$\pi/4$ DQPSK  
\_2DH5/MCH



$\pi/4$ DQPSK  
\_2DH5/HCH



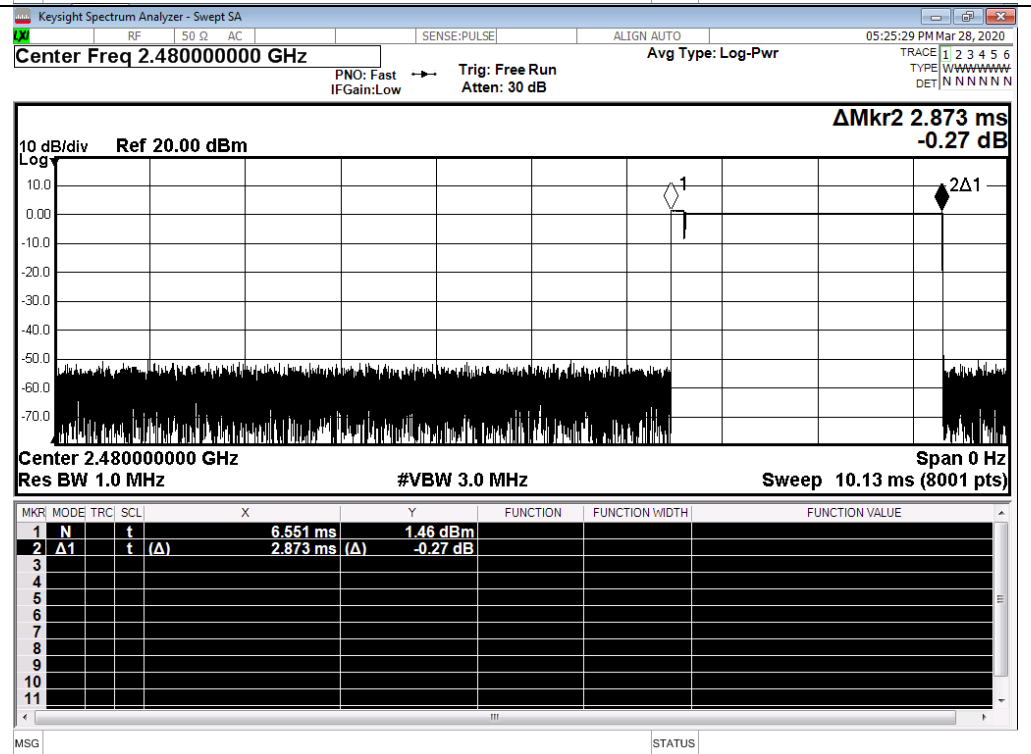
8-DPSK\_3DH5/LCH



8-DPSK\_3DH5/MCH



8-DPSK\_3DH5/HCH



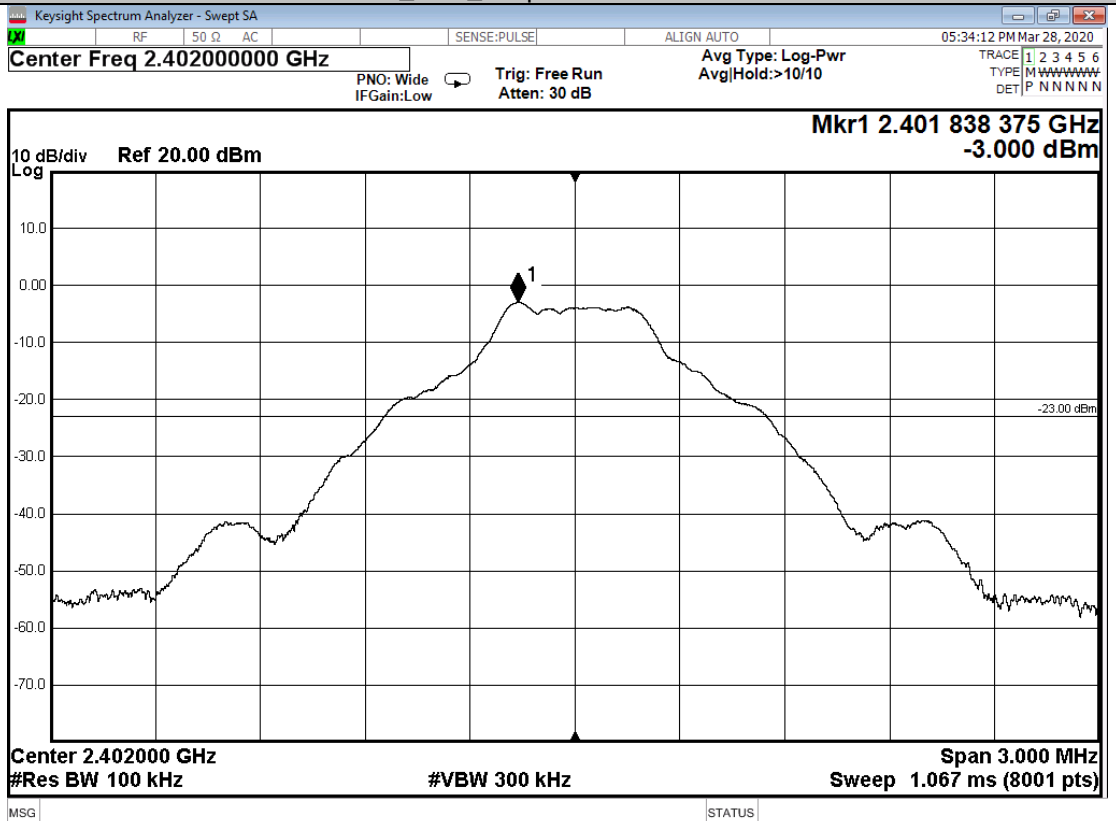
## A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-3.000	-48.073	-23.00	PASS
	MCH	-4.646	-52.758	-24.65	PASS
	HCH	-5.563	-51.289	-25.56	PASS
$\pi/4$ DQPSK	LCH	-4.660	-48.525	-24.66	PASS
	MCH	-6.018	-46.285	-26.02	PASS
	HCH	-7.084	-47.348	-27.08	PASS
8-DPSK	LCH	-4.590	-49.085	-24.59	PASS
	MCH	1.552	-49.010	-18.45	PASS
	HCH	1.247	-46.821	-18.75	PASS

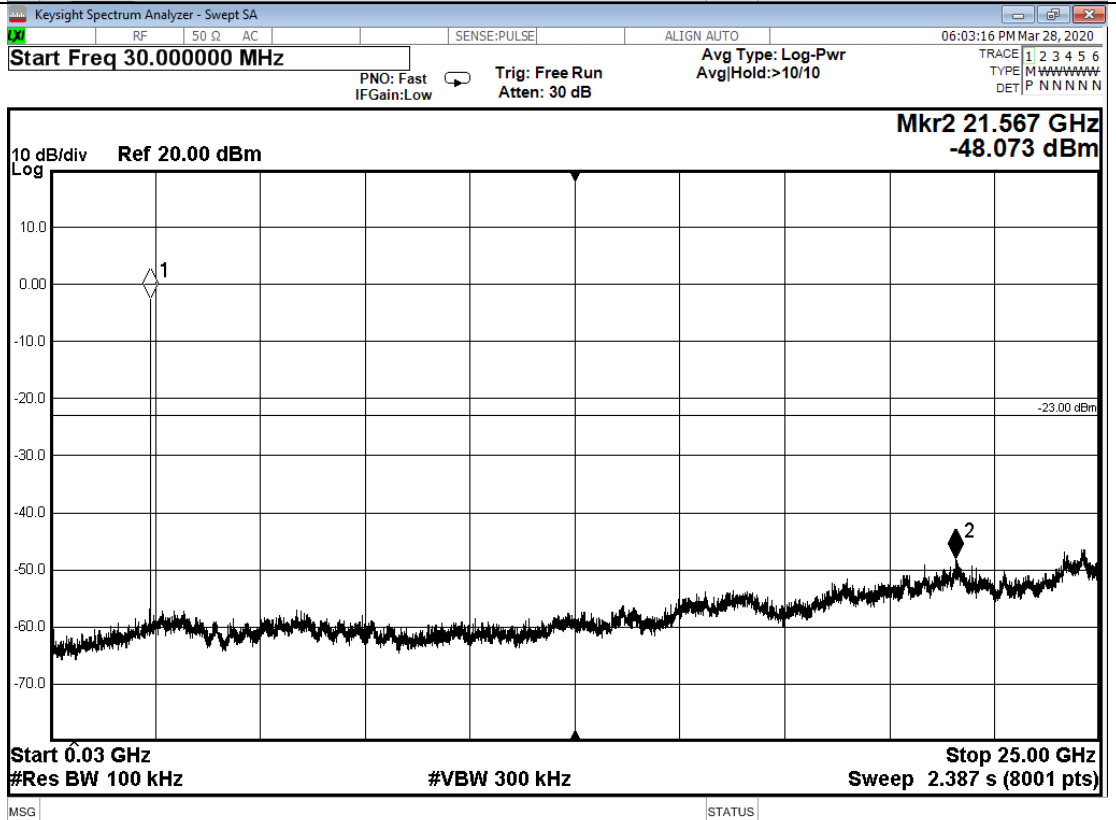


GFSK\_LCH\_Graphs

Pref

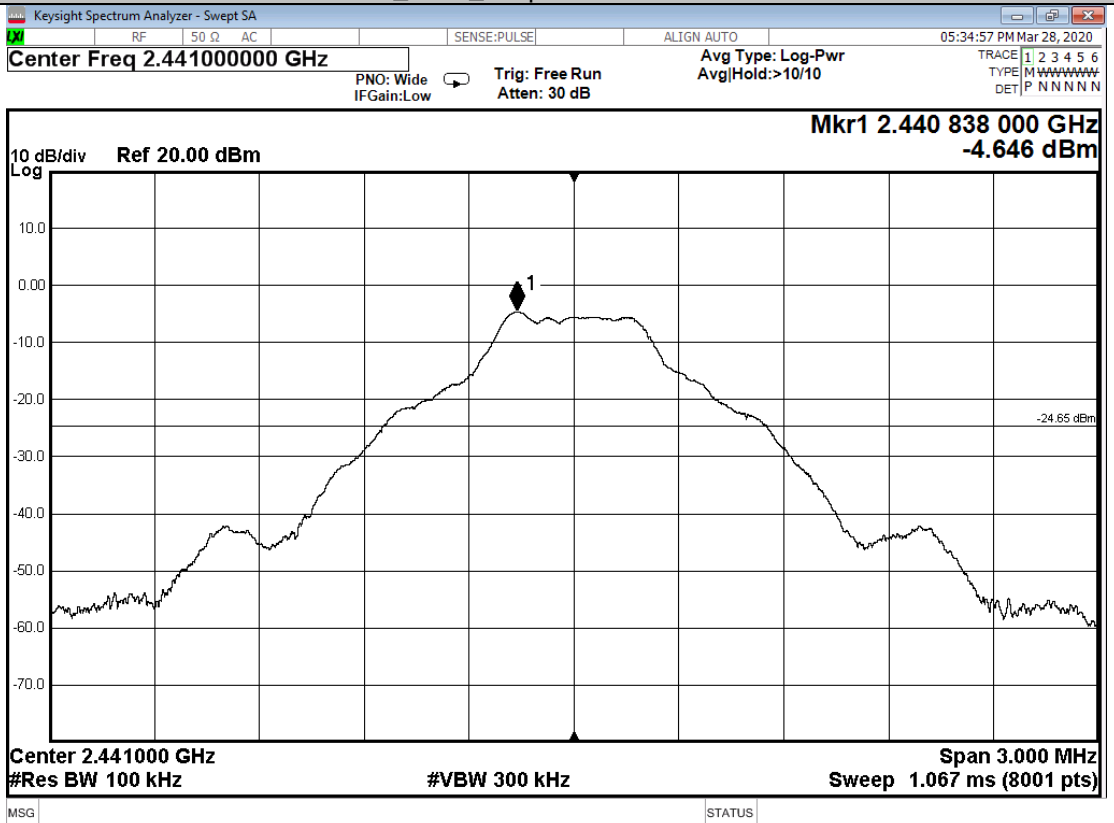


Puw

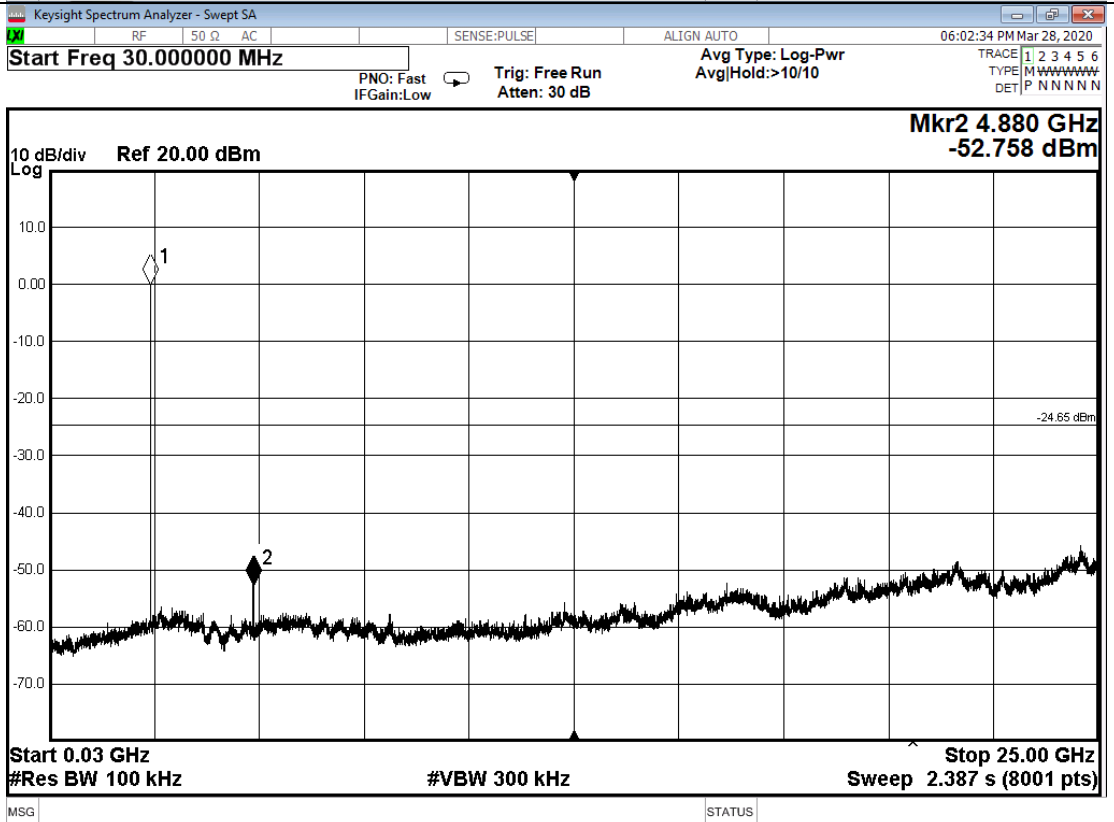


### GFSK\_MCH\_Graphs

Pref

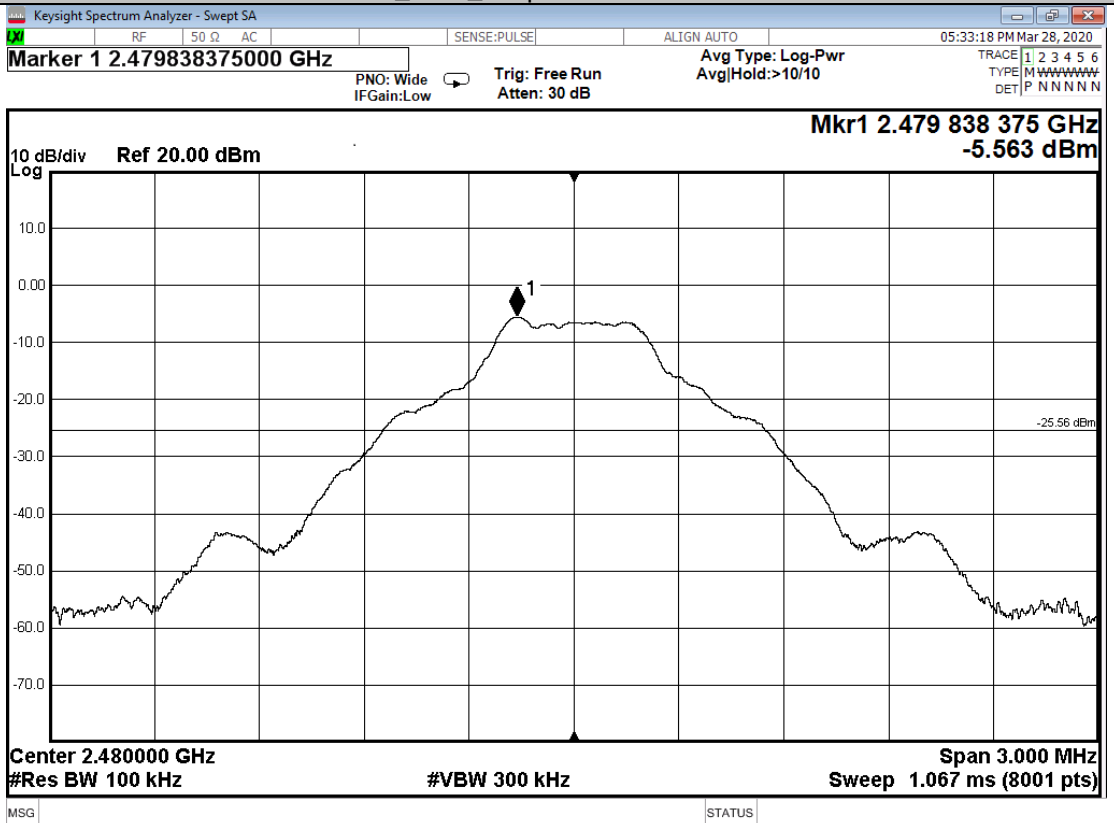


Puw

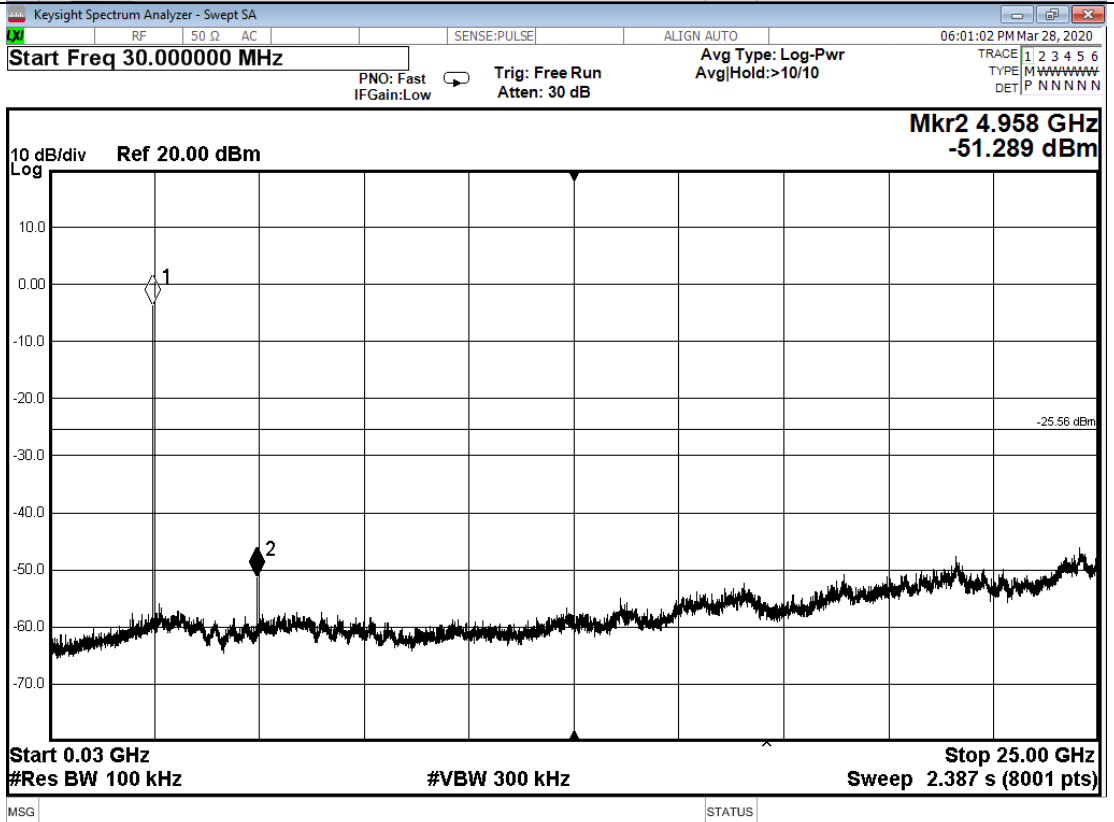


### GFSK\_HCH\_Graphs

Pref

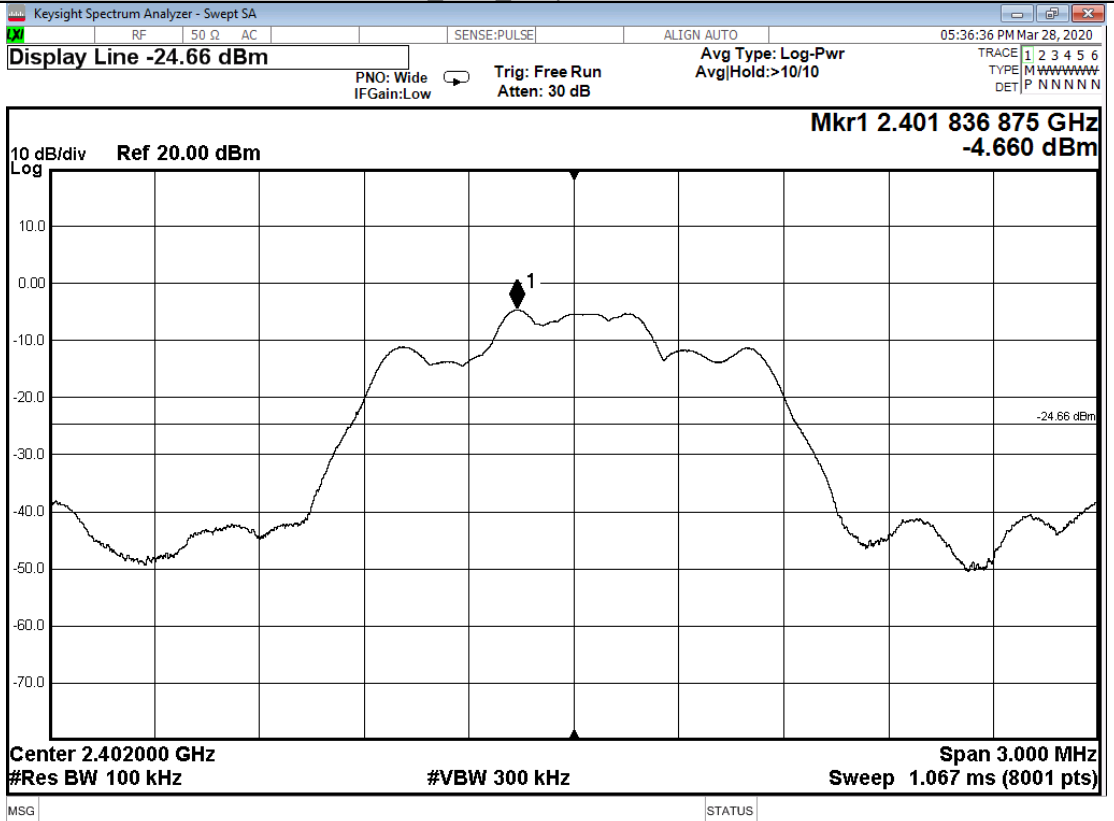


Puw

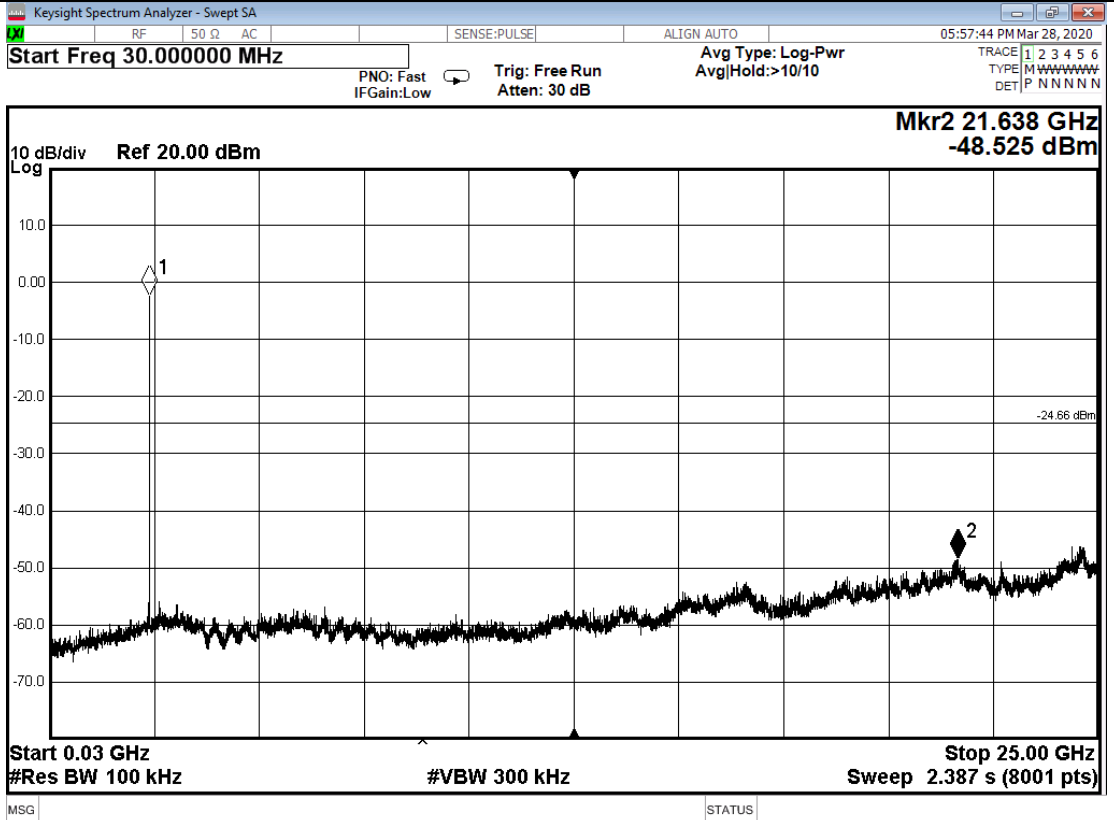


$\pi/4$ DQPSK\_LCH\_Graphs

Pref

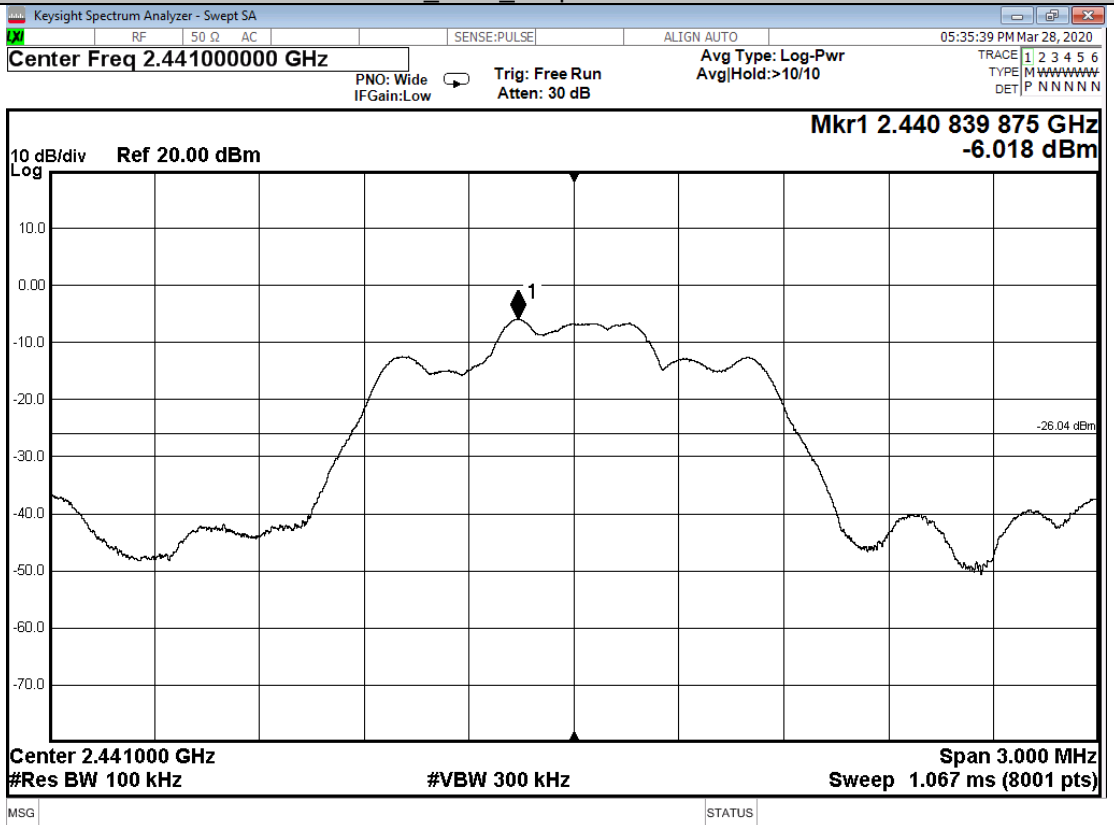


Puw

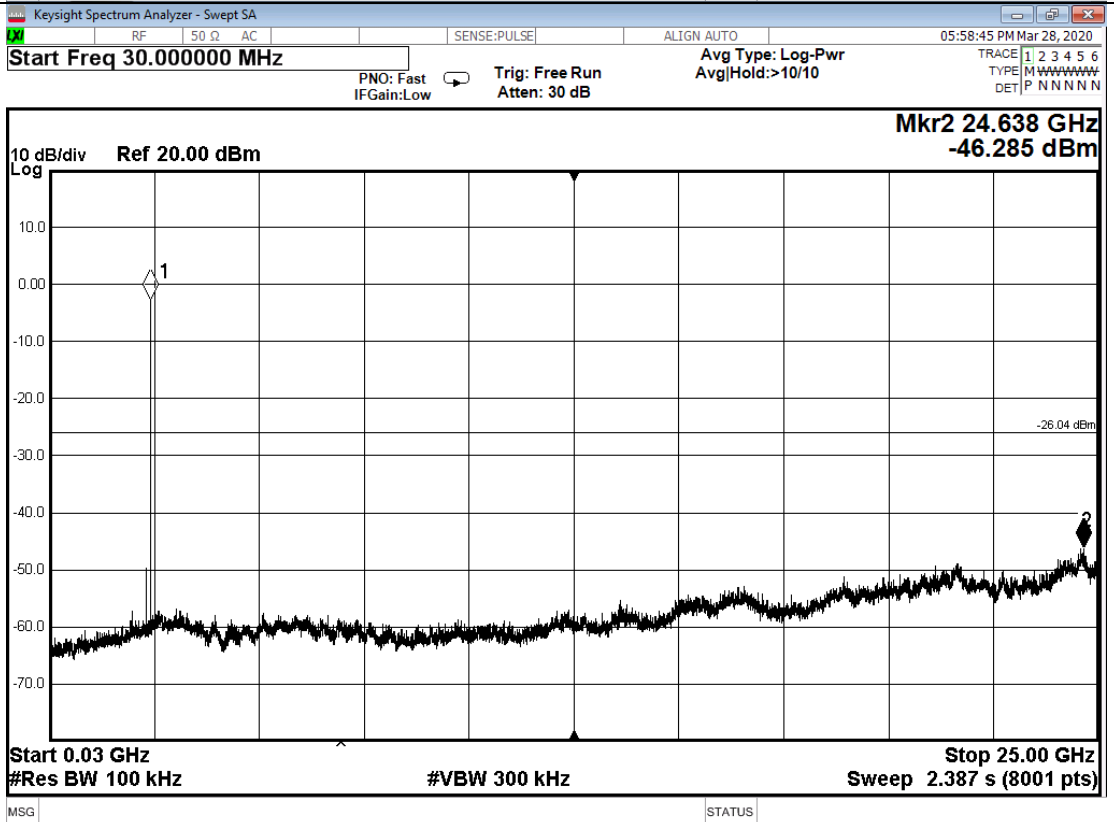


$\pi/4$ DQPSK\_MCH\_Graphs

Pref

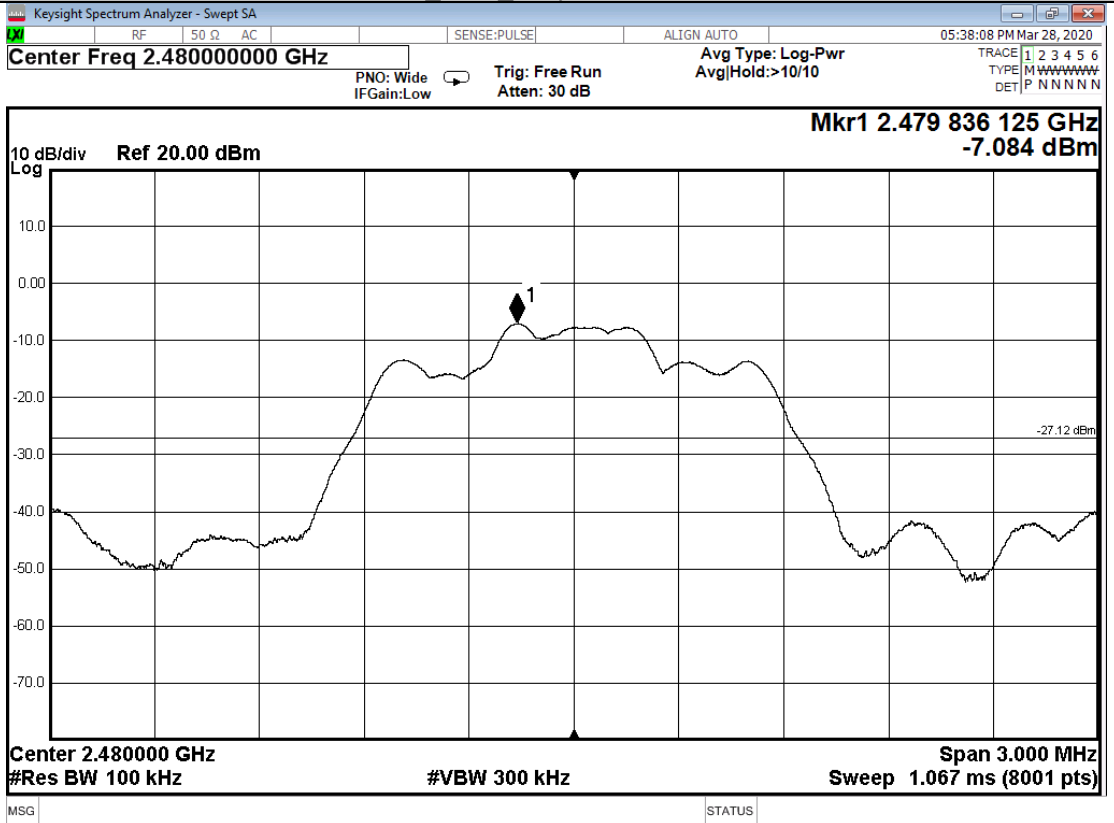


Puw

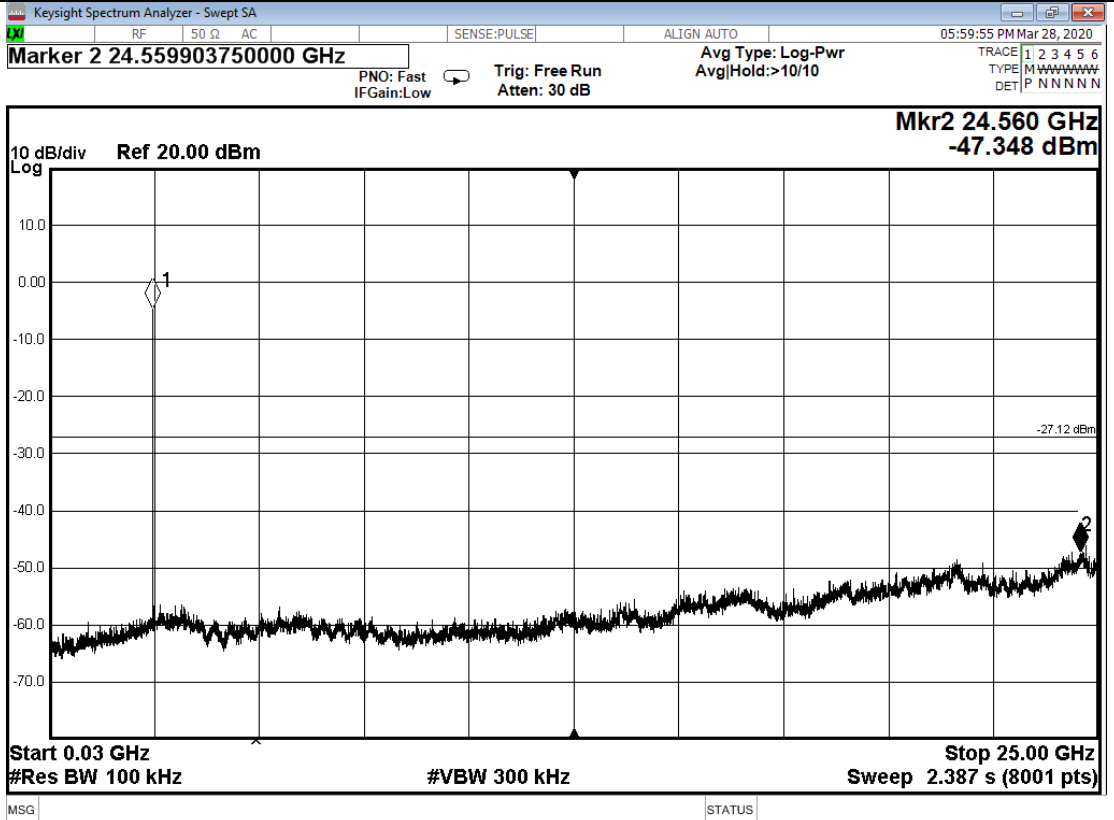


$\pi/4$ DQPSK\_HCH\_Graphs

Pref

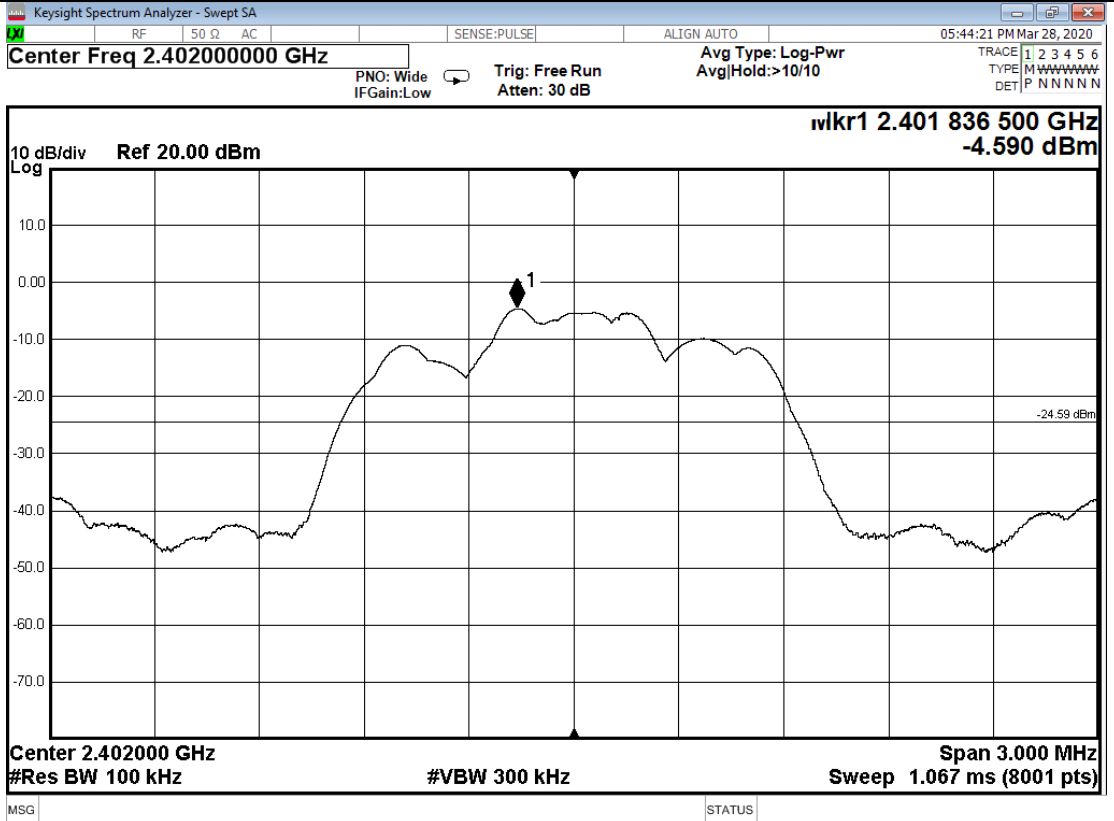


Puw

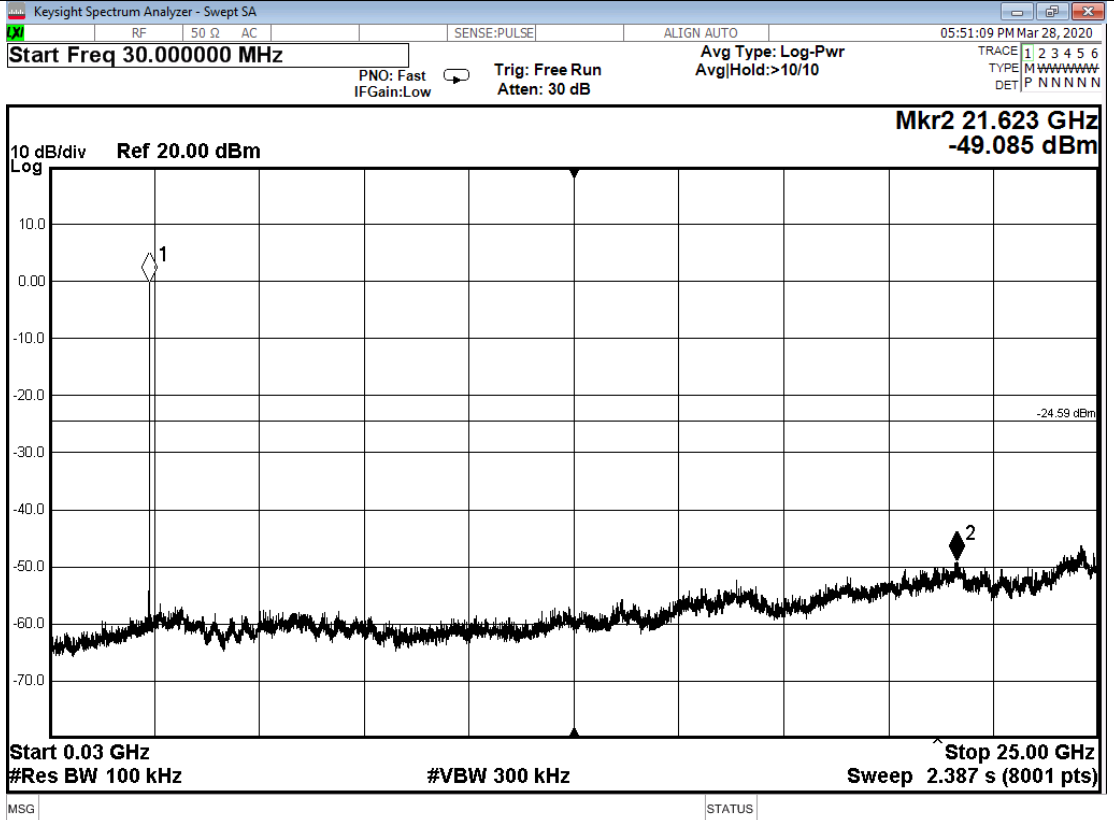


8-DPSK\_LCH\_Graphs

Pref

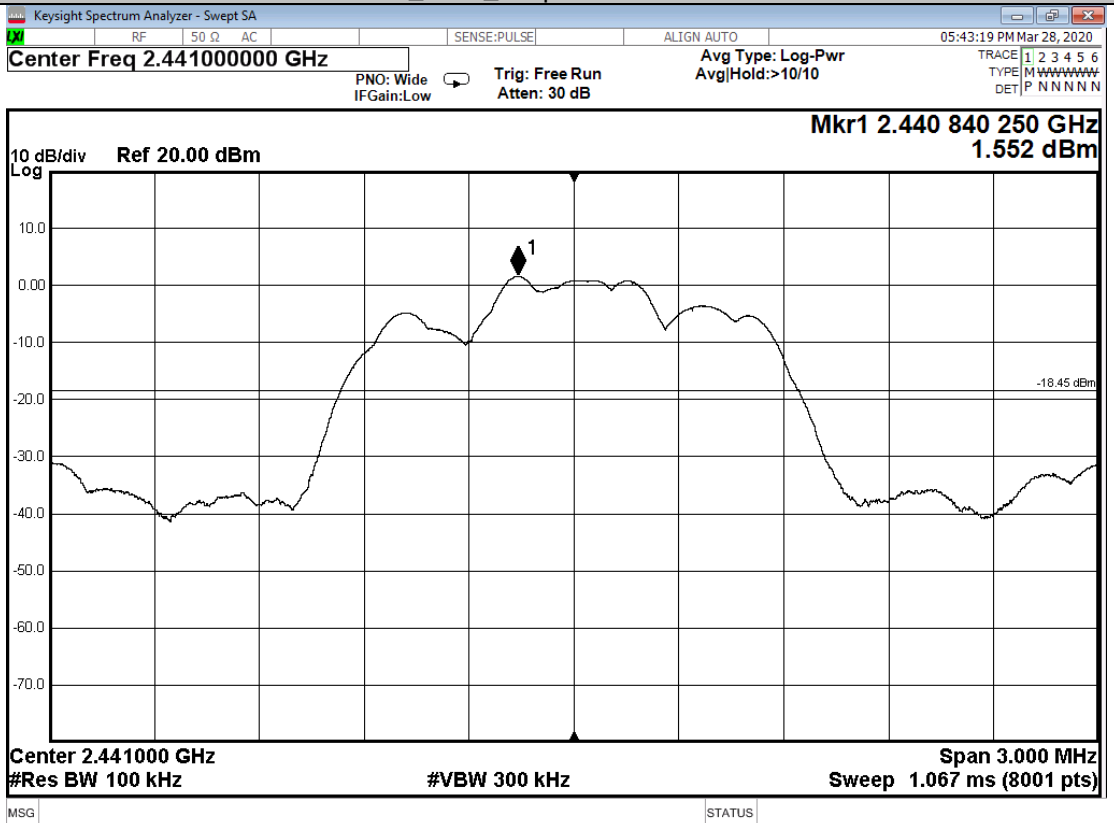


Puw

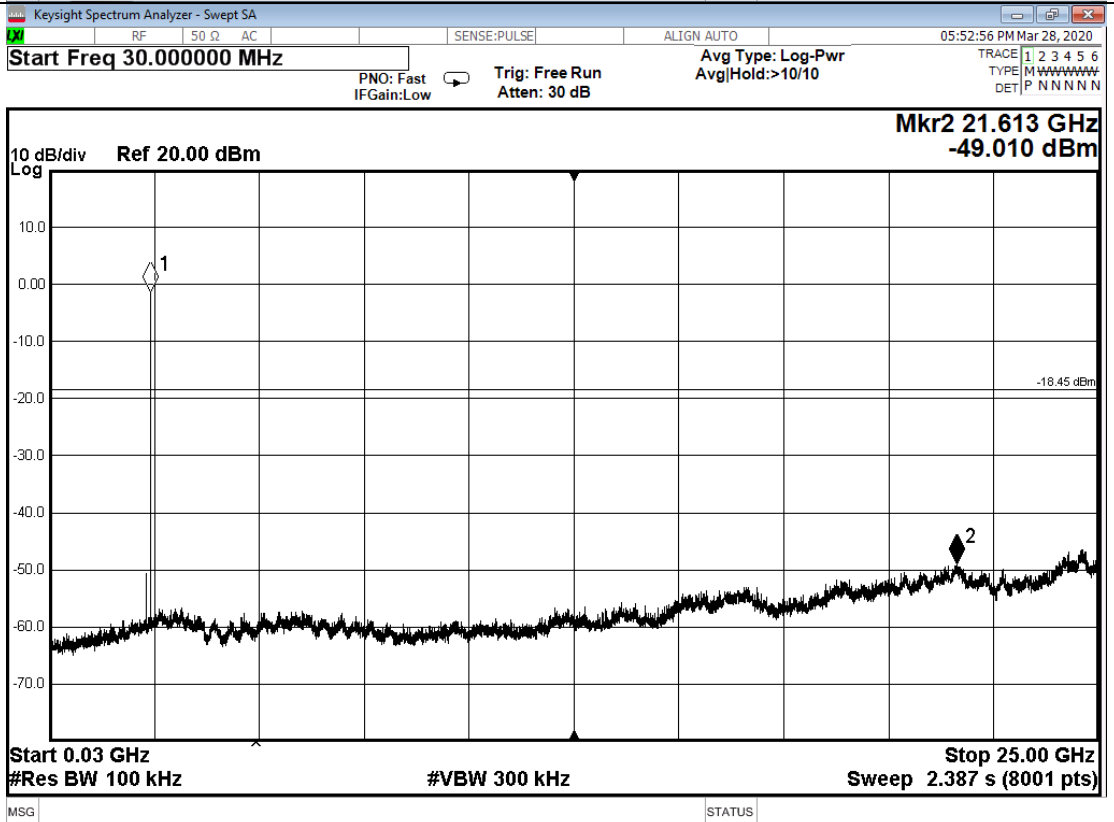


### 8-DPSK\_MCH\_Graphs

Pref



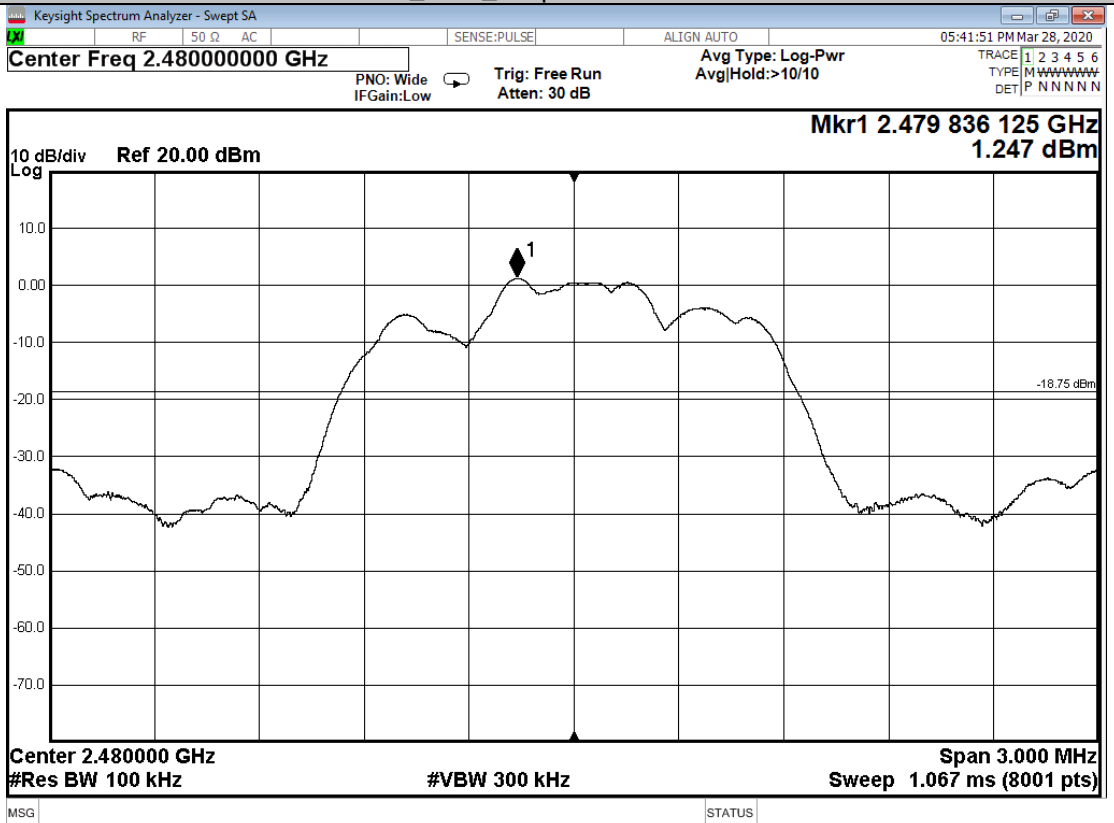
Puw



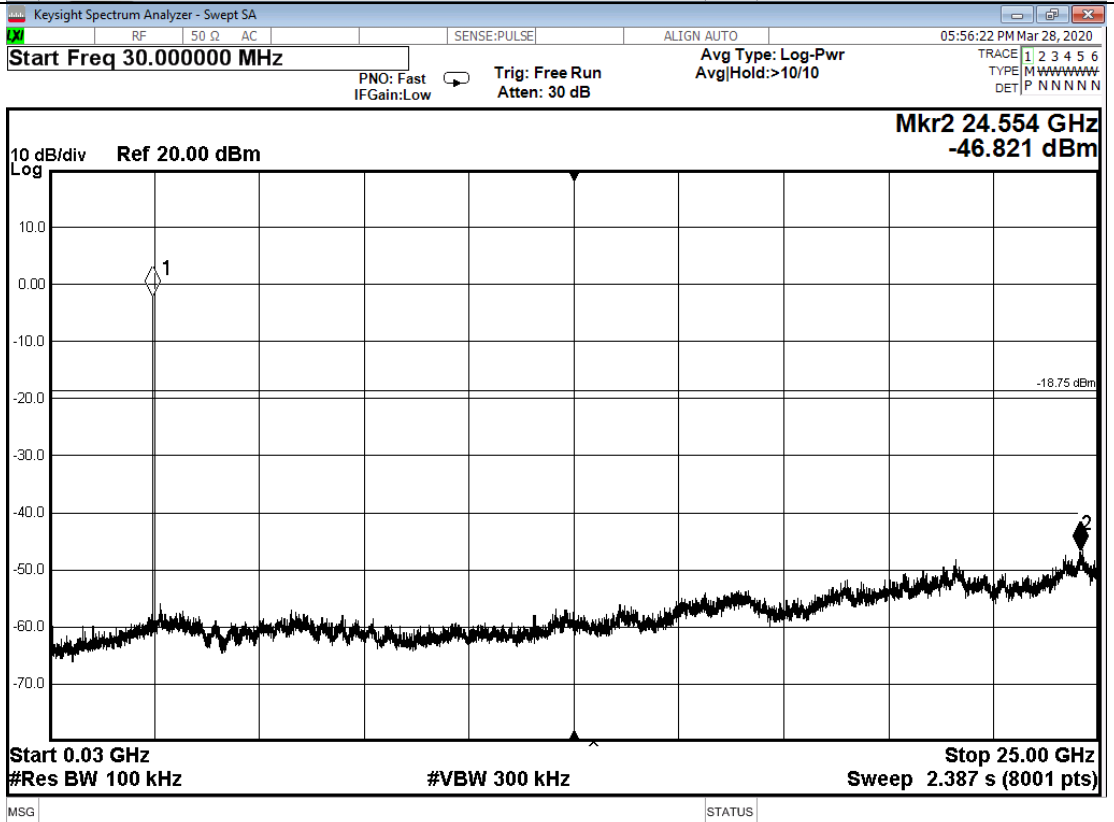


### 8-DPSK\_HCH\_Graphs

Pref



Puw

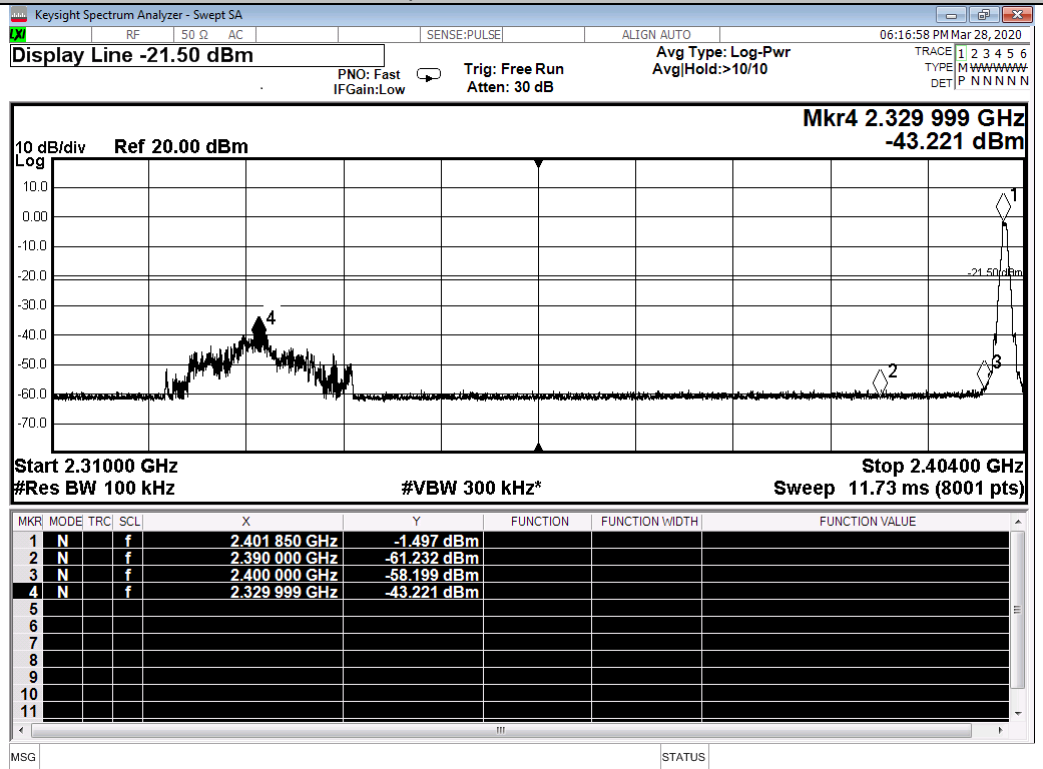


## A.7 Band-edge for RF Conducted Emissions

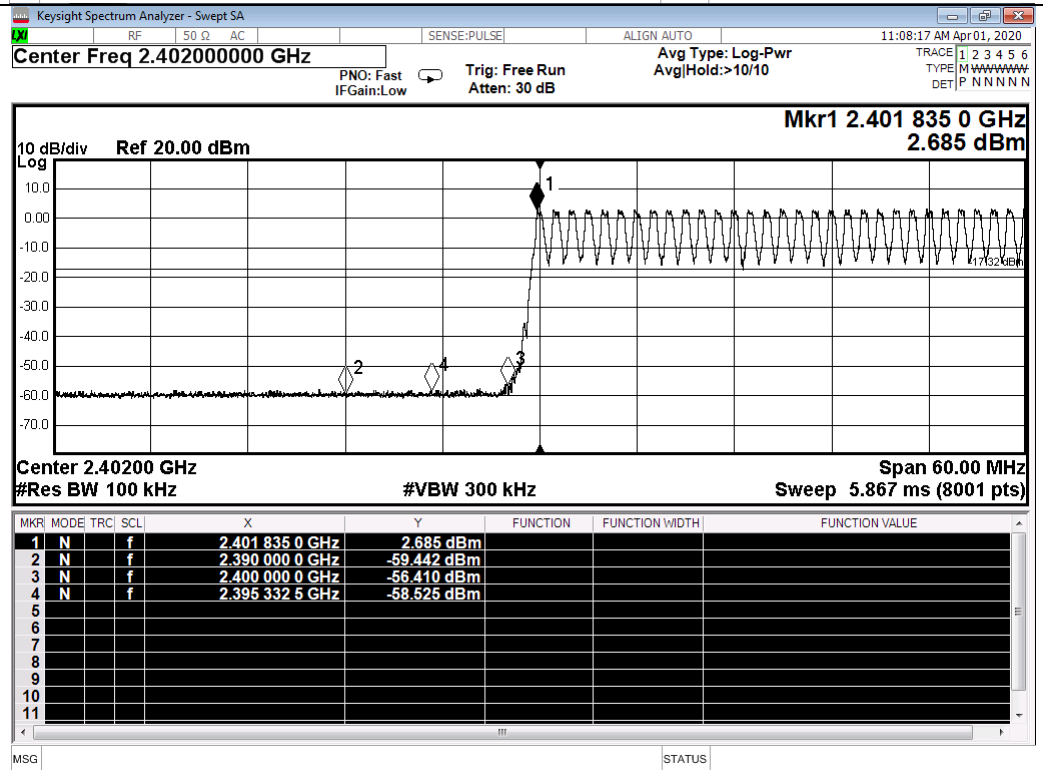
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-1.497	Off	-43.221	-21.50	PASS
			2.685	On	-56.410	-17.32	PASS
	HCH	2480	-5.299	Off	-59.626	-25.30	PASS
			2.836	On	-57.835	-17.16	PASS
$\pi/4$ DQPSK	LCH	2402	-3.249	Off	-46.820	-23.25	PASS
			1.139	On	-57.982	-18.86	PASS
	HCH	2480	-5.957	Off	-60.689	-25.96	PASS
			1.516	On	-58.195	-18.48	PASS
8-DPSK	LCH	2402	-3.249	Off	-46.892	-23.25	PASS
			0.387	On	-55.208	-19.61	PASS
	HCH	2480	-5.037	Off	-61.221	-25.04	PASS
			0.333	On	-59.914	-19.67	PASS

Test Graphs

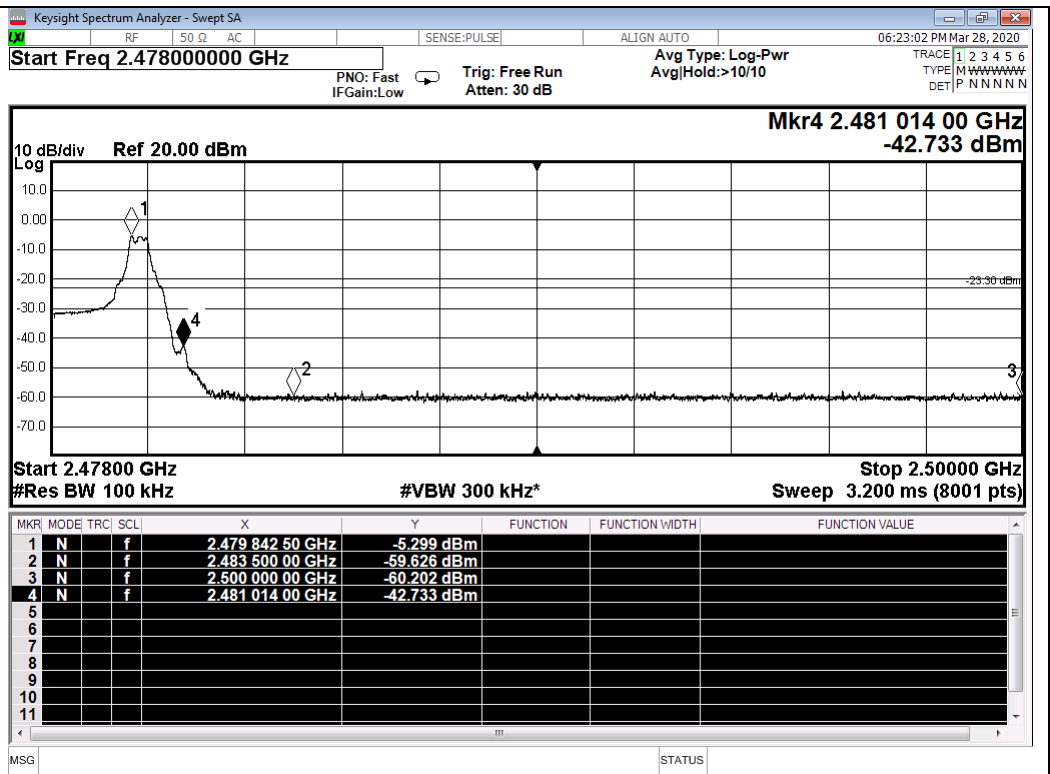
GFSK/LCH/No Hop



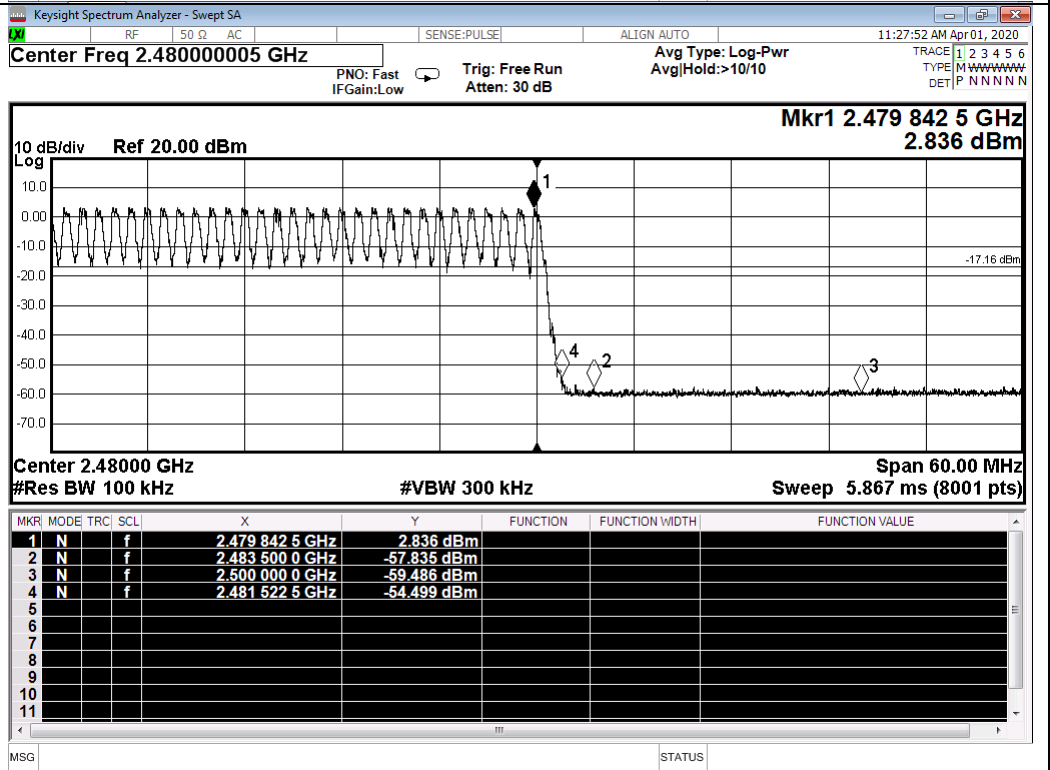
GFSK/LCH/Hop



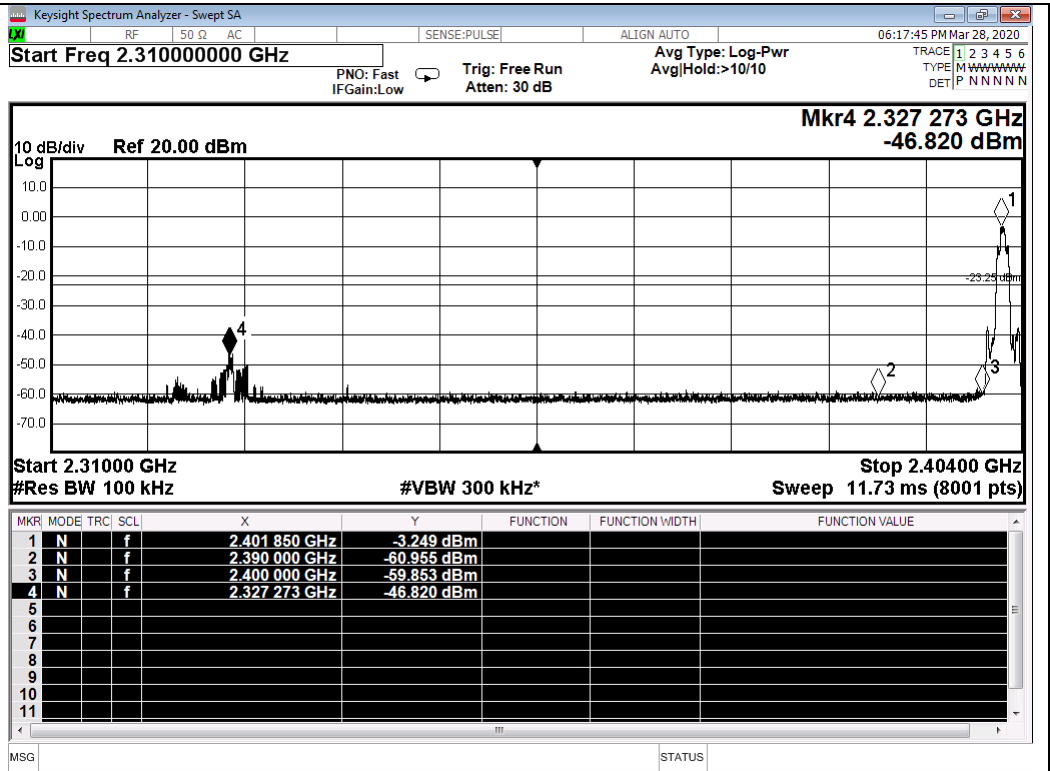
GFSK/HCH/No Hop



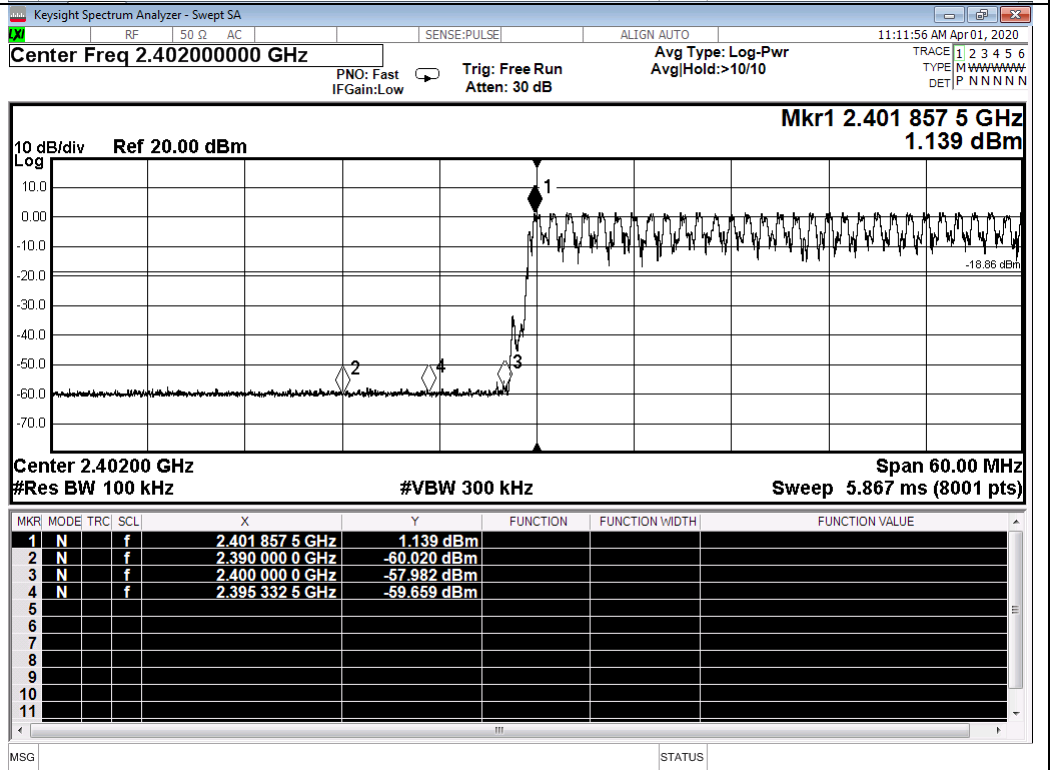
GFSK/HCH/Hop



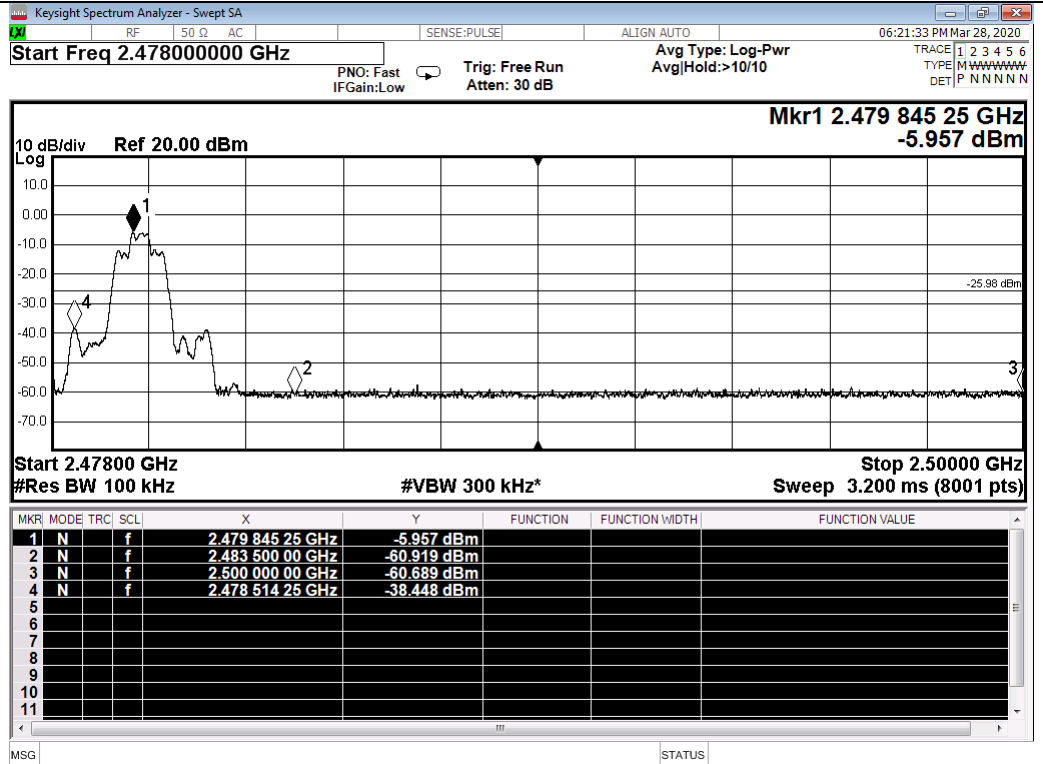
$\pi/4$ DQPSK/LCH/No  
Hop



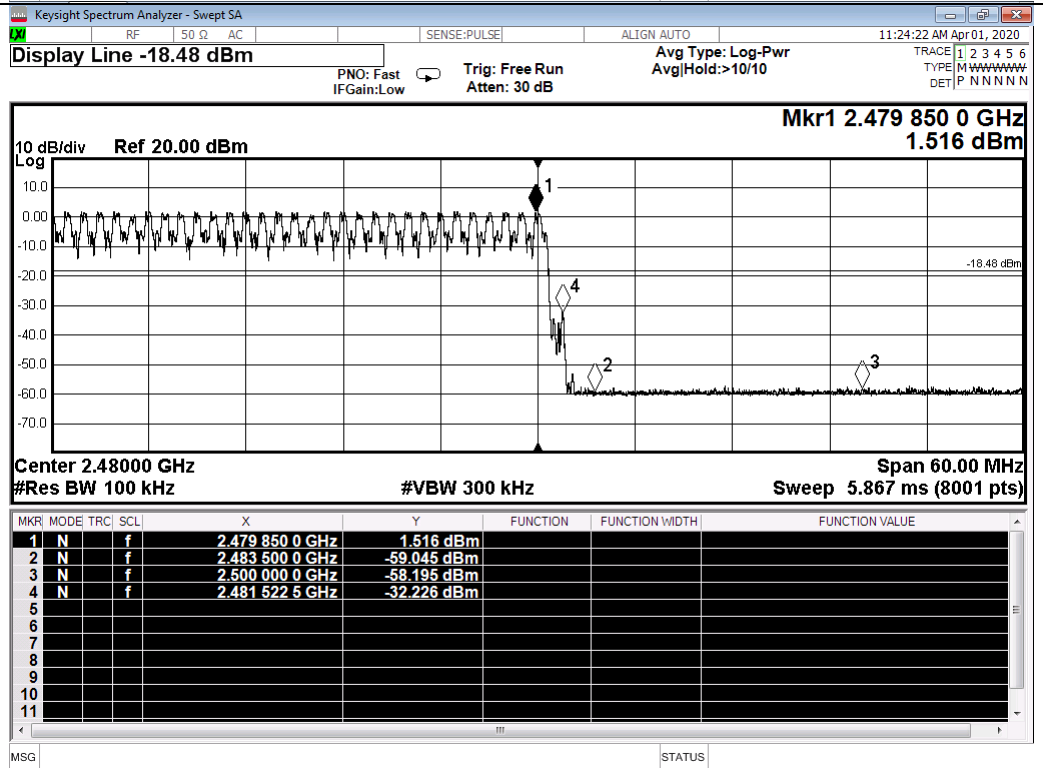
$\pi/4$ DQPSK/LCH/Hop



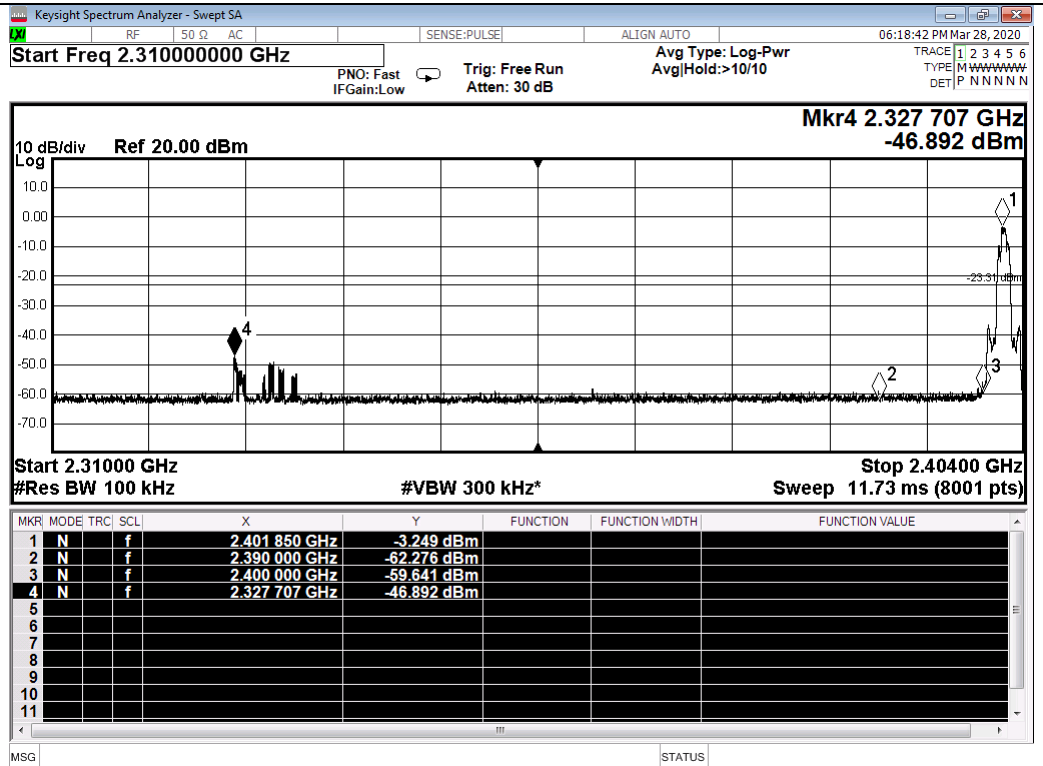
$\pi/4$ DQPSK/HCH/No Hop



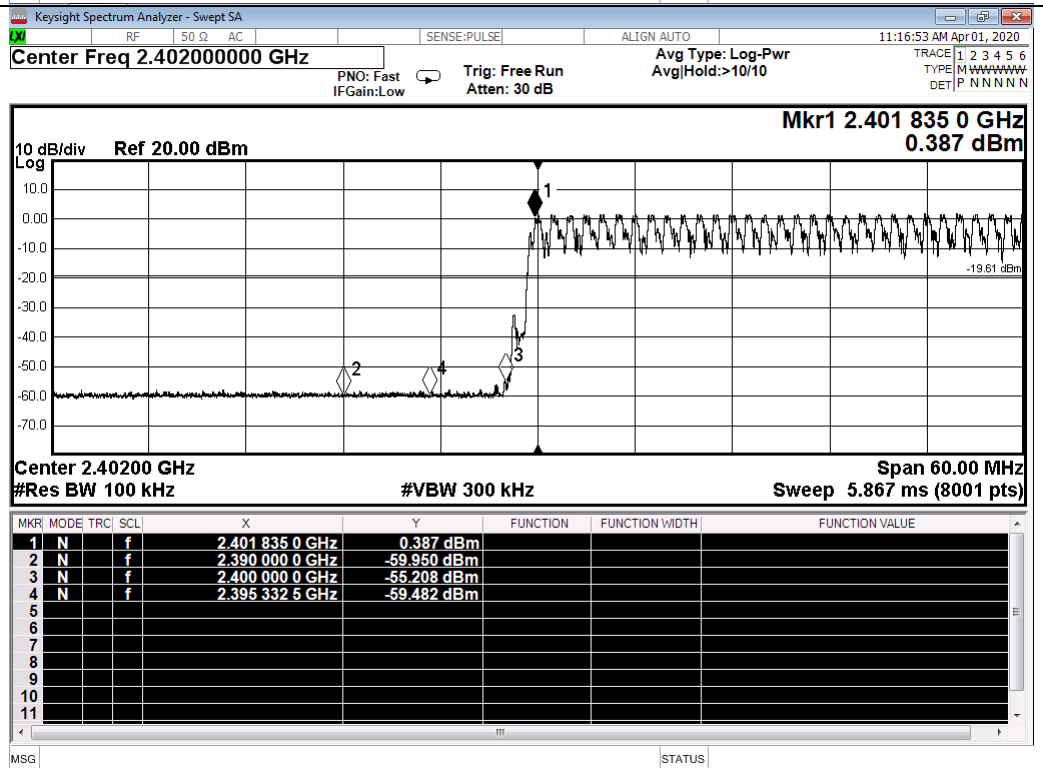
$\pi/4$ DQPSK/HCH/Hop



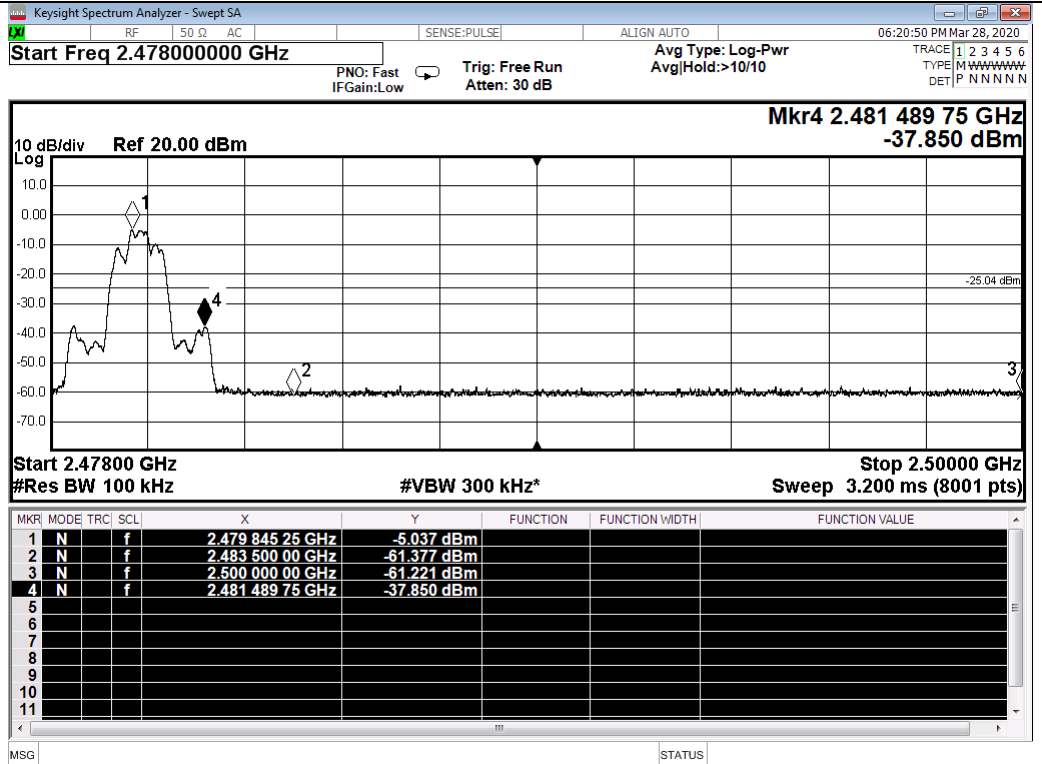
8-DPSK/LCH/No Hop



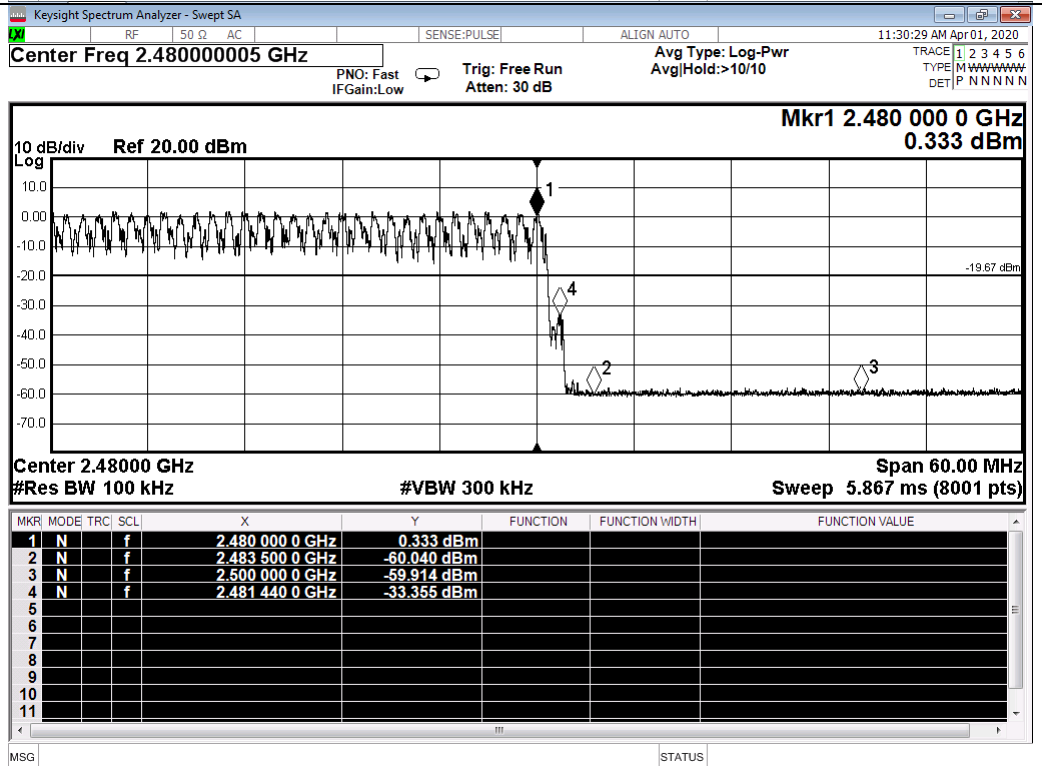
8-DPSK/LCH/Hop



8-DPSK/HCH/No  
Hop



8-DPSK/HCH/Hop

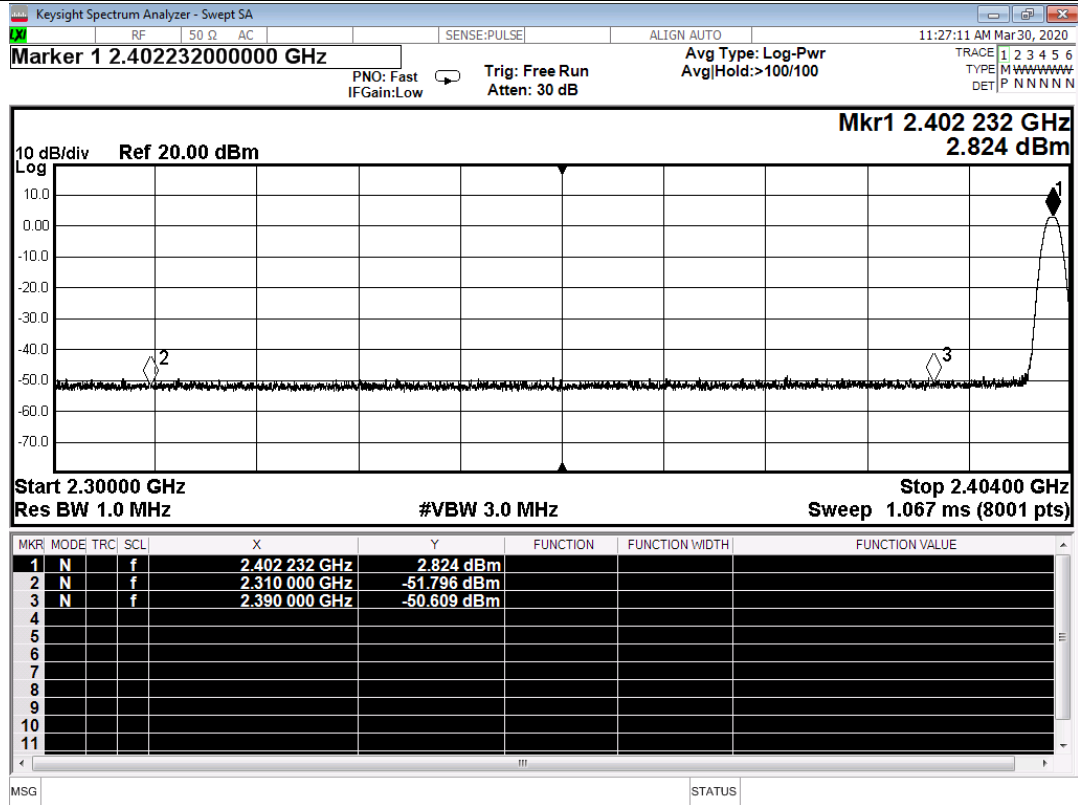




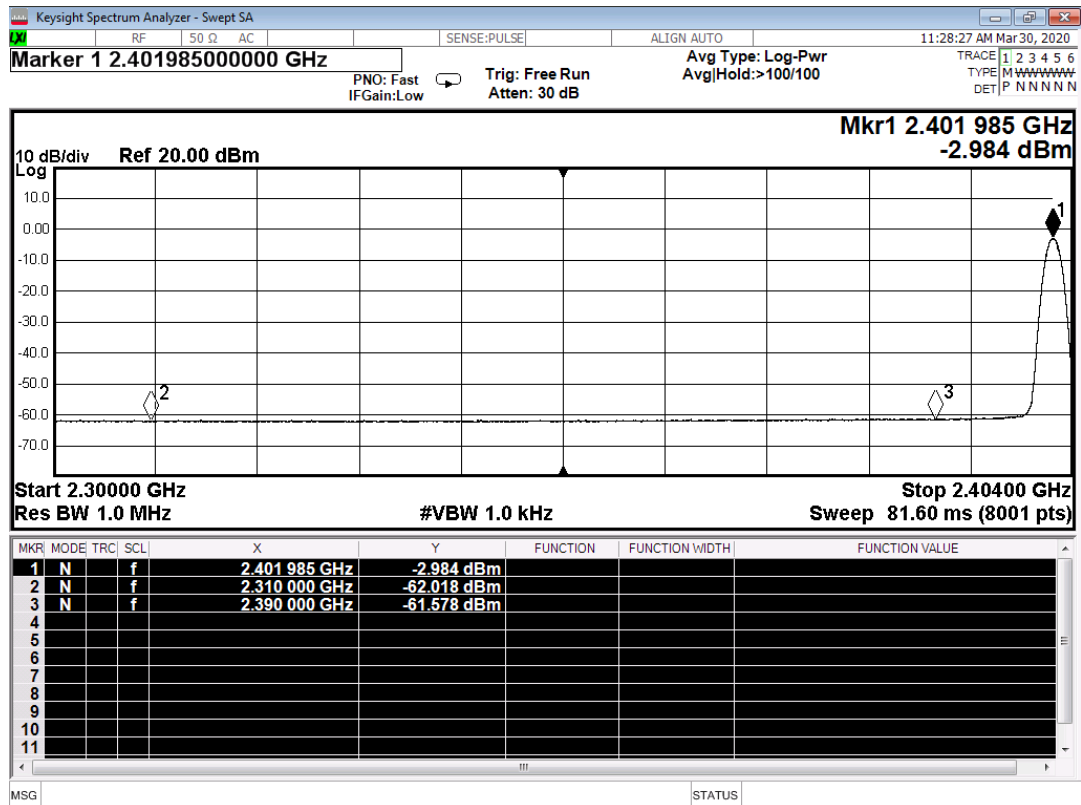
## A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-51.796	2.000	0	45.43	PEAK	74	PASS
	Off	2310.0	-62.018	2.000	0	35.21	AV	54	PASS
	Off	2390.0	-50.609	2.000	0	46.62	PEAK	74	PASS
	Off	2390.0	-61.578	2.000	0	35.65	AV	54	PASS
	Off	2483.5	-51.131	2.000	0	46.10	PEAK	74	PASS
	Off	2483.5	-60.775	2.000	0	36.46	AV	54	PASS
	Off	2500.0	-50.952	2.000	0	46.28	PEAK	74	PASS
	Off	2500.0	-61.220	2.000	0	36.01	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-52.135	2.000	0	45.10	PEAK	74	PASS
	Off	2310.0	-62.059	2.000	0	35.17	AV	54	PASS
	Off	2390.0	-51.626	2.000	0	45.60	PEAK	74	PASS
	Off	2390.0	-61.345	2.000	0	35.89	AV	54	PASS
	Off	2483.5	-50.357	2.000	0	46.87	PEAK	74	PASS
	Off	2483.5	-60.513	2.000	0	36.72	AV	54	PASS
	Off	2500.0	-51.354	2.000	0	45.88	PEAK	74	PASS
	Off	2500.0	-61.312	2.000	0	35.92	AV	54	PASS
8-DPSK	Off	2310.0	-52.307	2.000	0	44.92	PEAK	74	PASS
	Off	2310.0	-62.086	2.000	0	35.14	AV	54	PASS
	Off	2390.0	-51.185	2.000	0	46.05	PEAK	74	PASS
	Off	2390.0	-61.510	2.000	0	35.72	AV	54	PASS
	Off	2483.5	-47.137	2.000	0	50.09	PEAK	74	PASS
	Off	2483.5	-60.419	2.000	0	36.81	AV	54	PASS
	Off	2500.0	-48.586	2.000	0	48.64	PEAK	74	PASS
	Off	2500.0	-61.182	2.000	0	36.05	AV	54	PASS

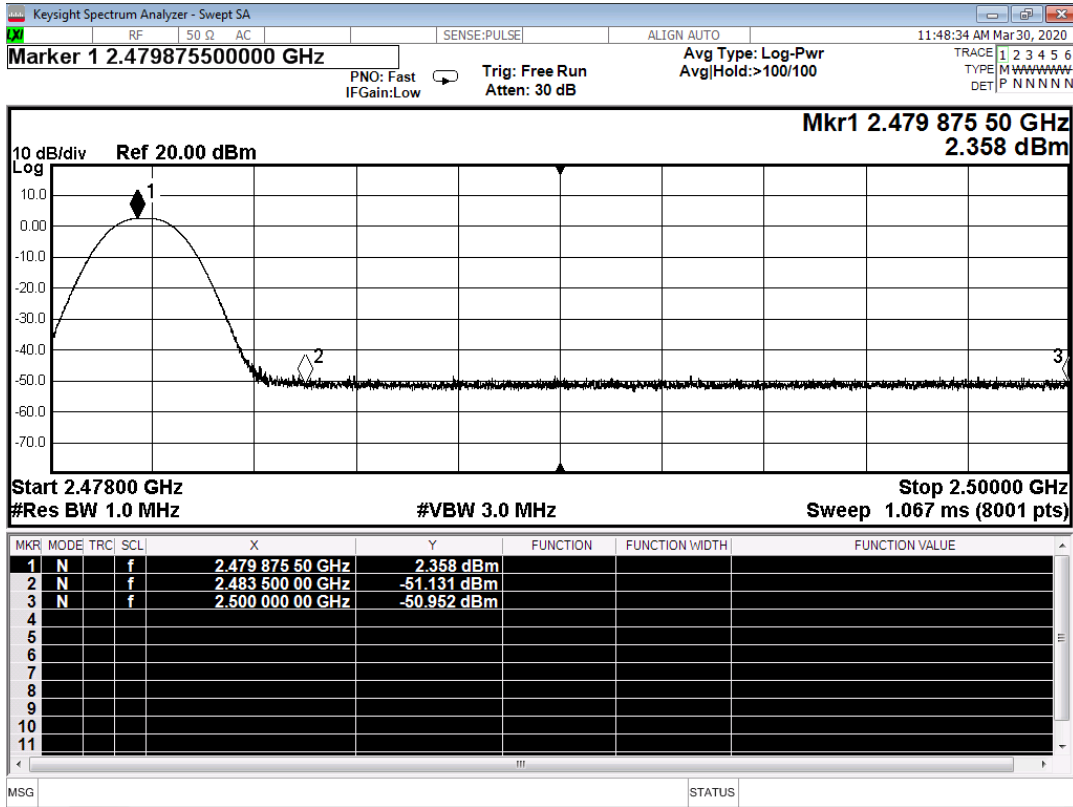
**Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (Low Channel)**



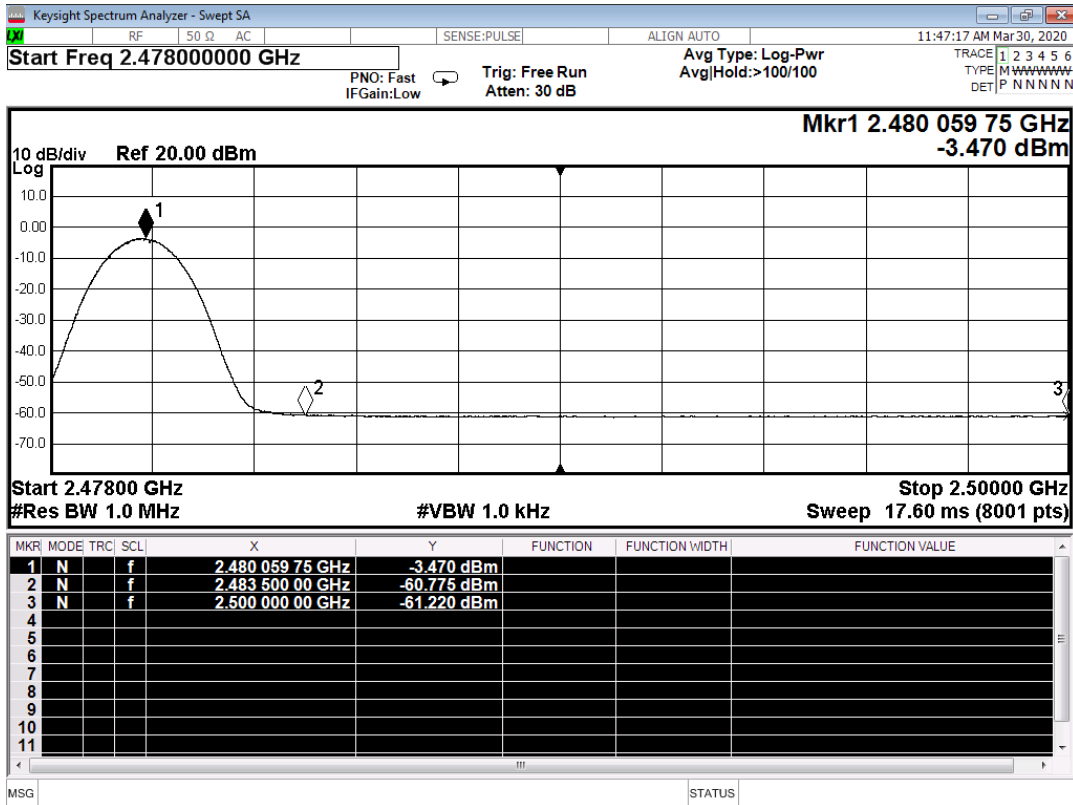
**Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (Low Channel)**



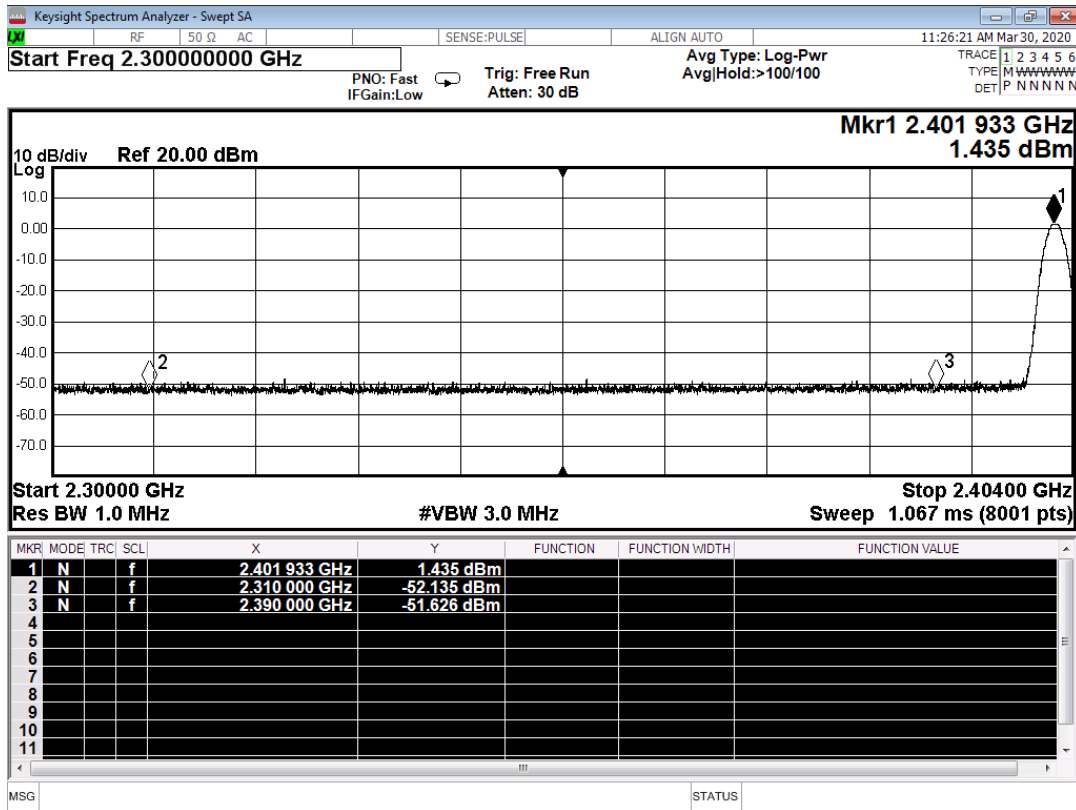
**Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (High Channel)**



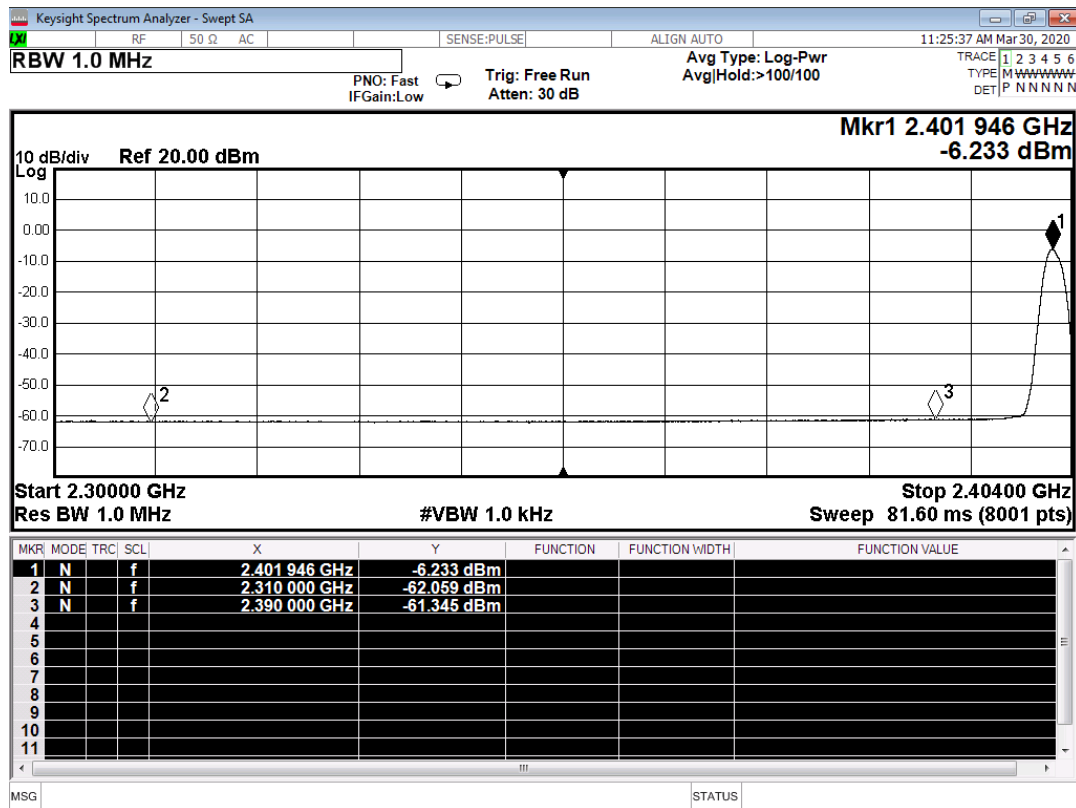
**Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (High Channel)**



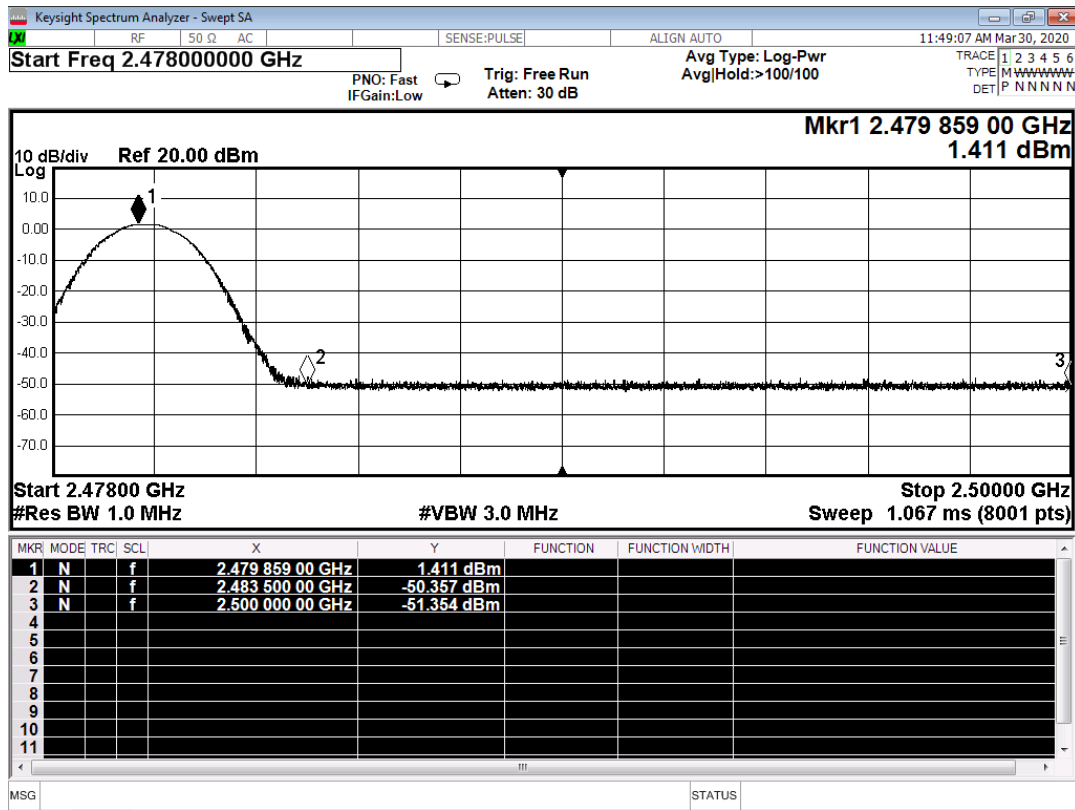
**Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_PEAK (Low Channel)**



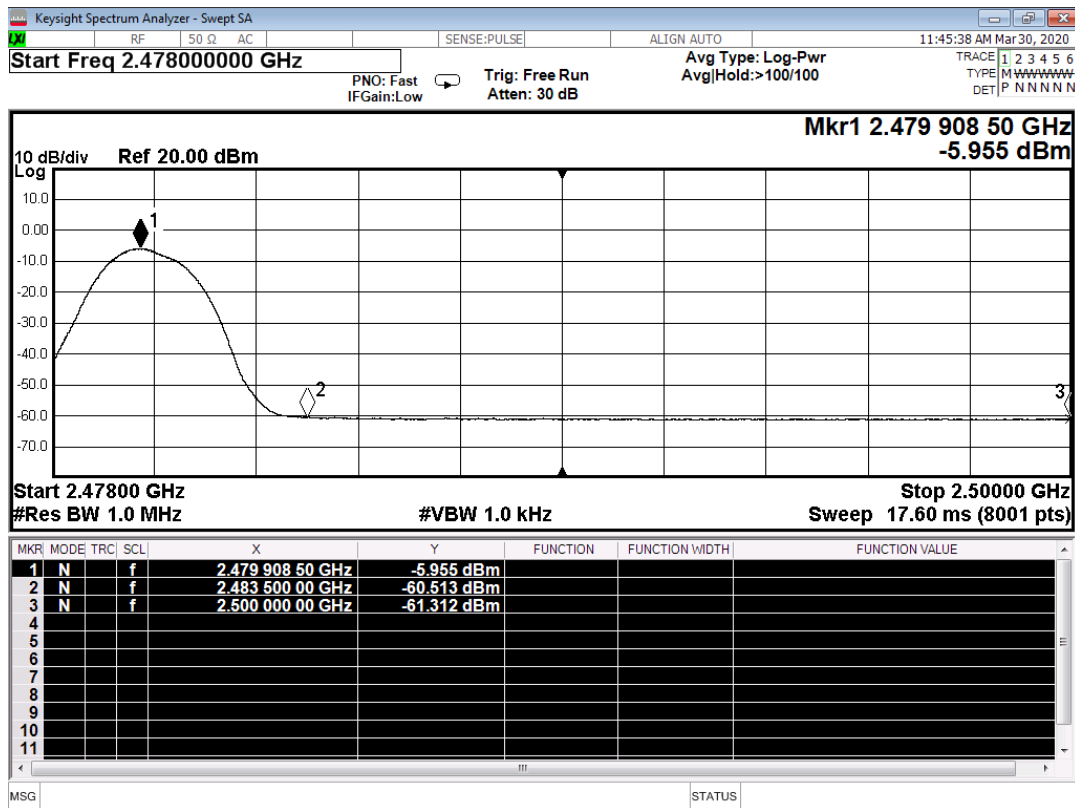
**Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_Average (Low Channel)**



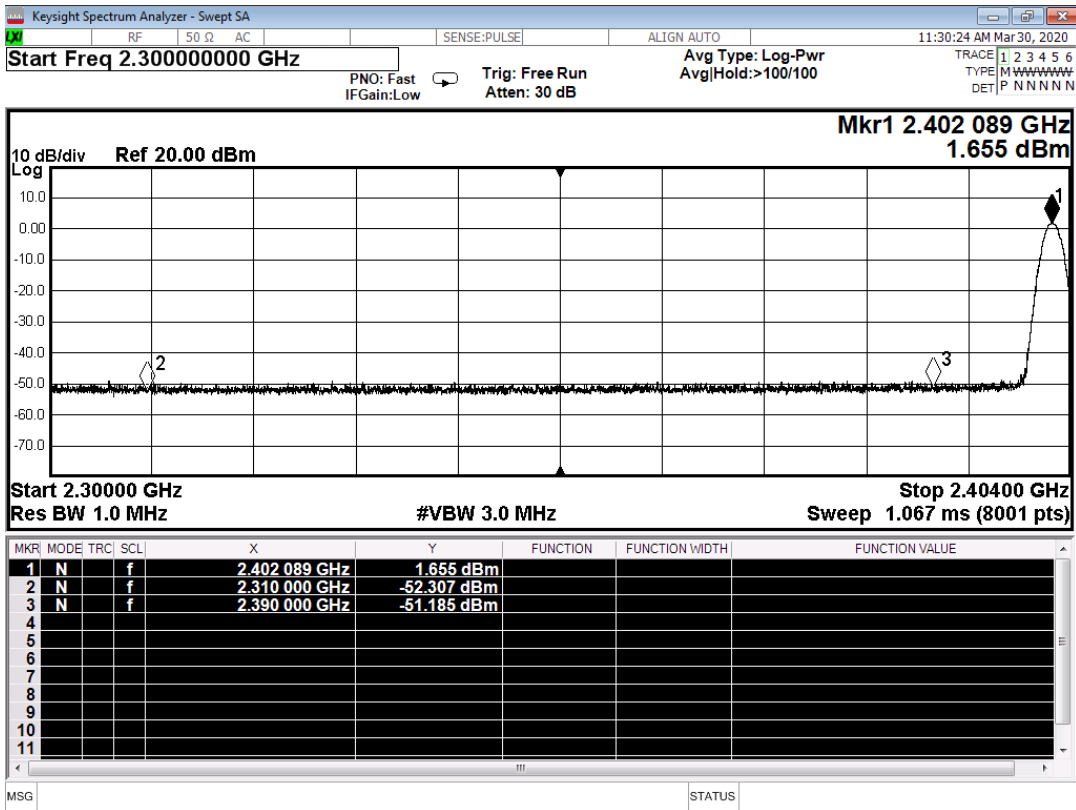
**Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_PEAK (High Channel)**



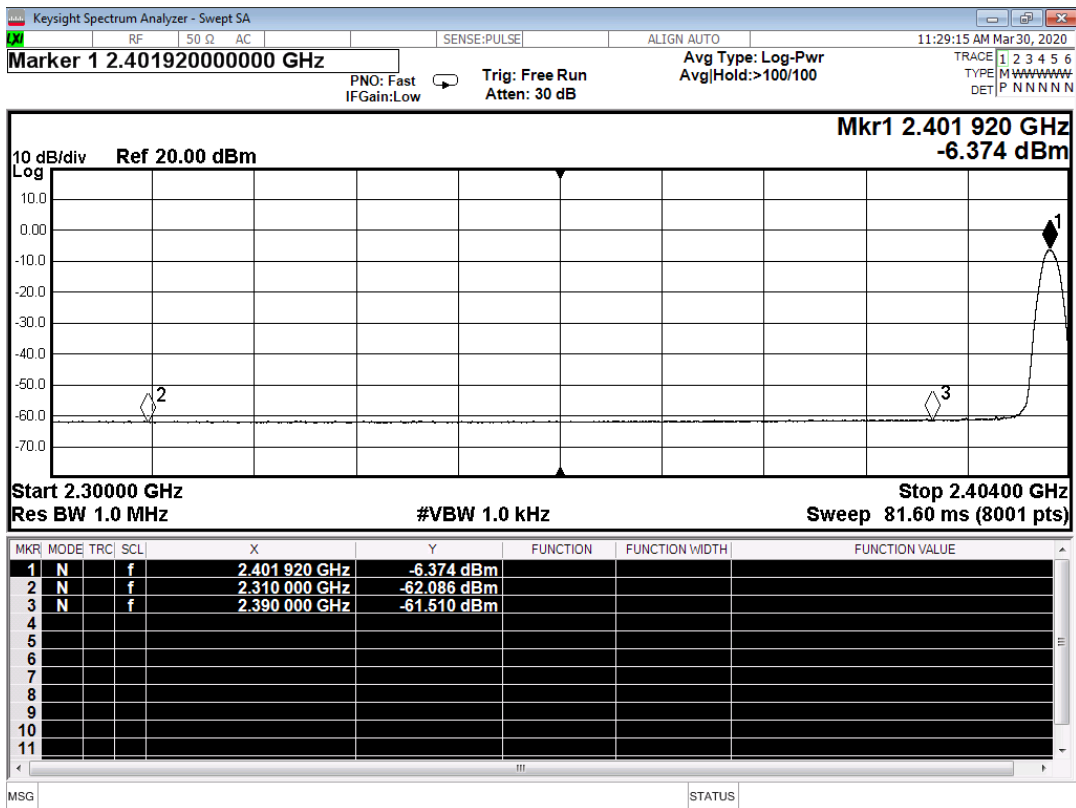
**Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_Average (High Channel)**



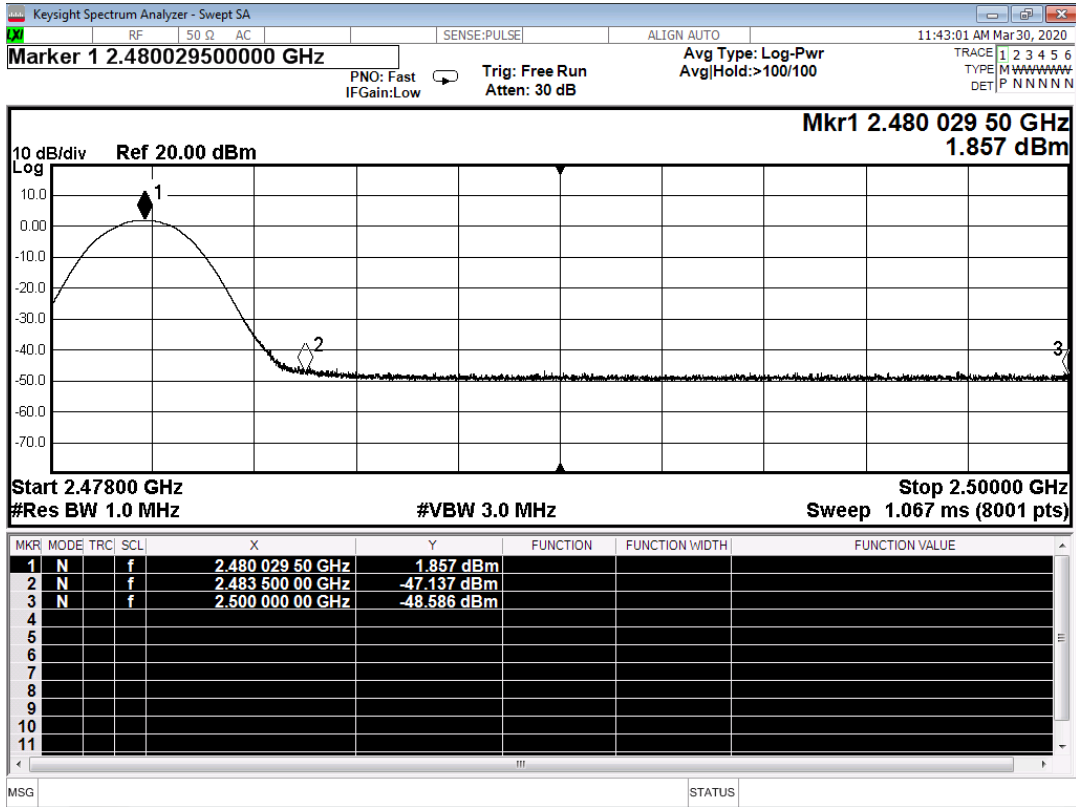
**Restrict-band band-edge measurements\_Hopping Off\_8-DPSK\_PEAK (Low Channel)**



**Restrict-band band-edge measurements\_Hopping Off\_8-DPSK\_Average (Low Channel)**



**Restrict-band band-edge measurements\_Hopping Off\_8-DPSK\_PEAK (High Channel)**



**Restrict-band band-edge measurements\_Hopping Off\_8-DPSK\_Average (High Channel)**

