

Appendix A

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

Product Name: Bluetooth Earphone

Trade Mark: N/A

Test Model: T880

Environmental Conditions

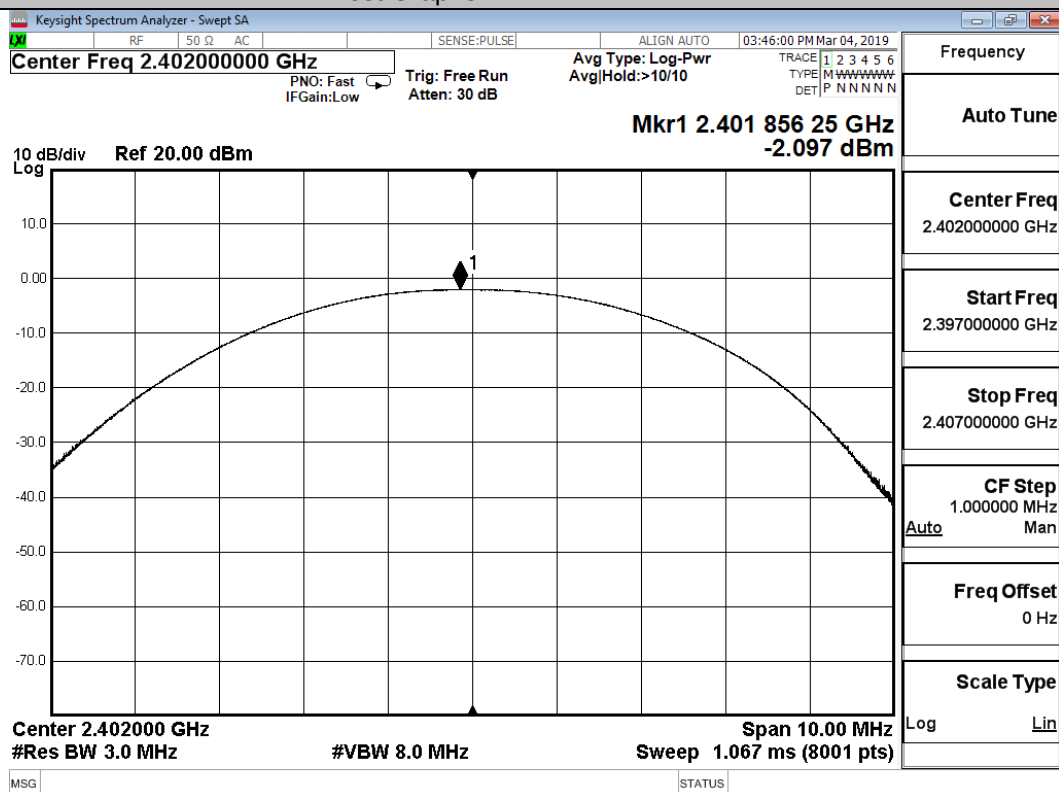
Temperature:	23.6 ° C
Relative Humidity:	60%
ATM Pressure:	100.0 kPa
Test Engineer:	AKING JIN
Supervised by:	JAYDEN ZHUO

A.1 Maximum Conducted Peak Output Power

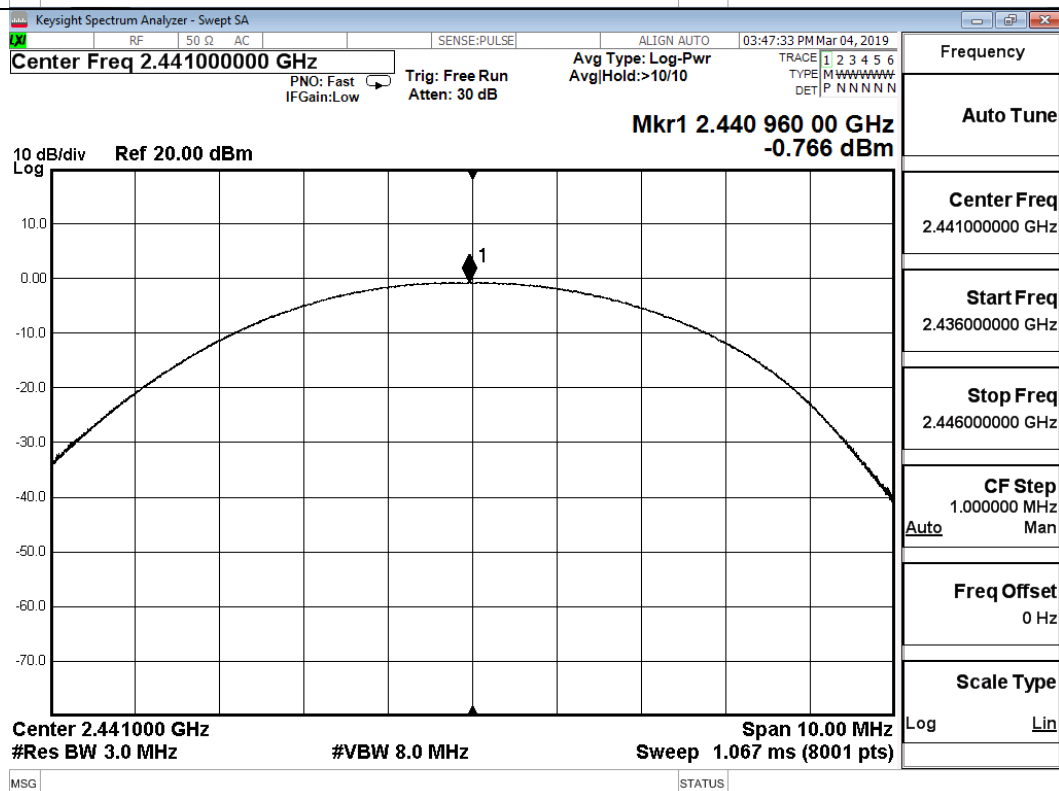
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-2.097	21	PASS
	MCH	-0.766	21	PASS
	HCH	-0.503	21	PASS
$\pi/4$ DQPSK	LCH	0.981	21	PASS
	MCH	1.539	21	PASS
	HCH	1.506	21	PASS
8DPSK	LCH	1.102	21	PASS
	MCH	1.654	21	PASS
	HCH	0.933	21	PASS

Test Graphs

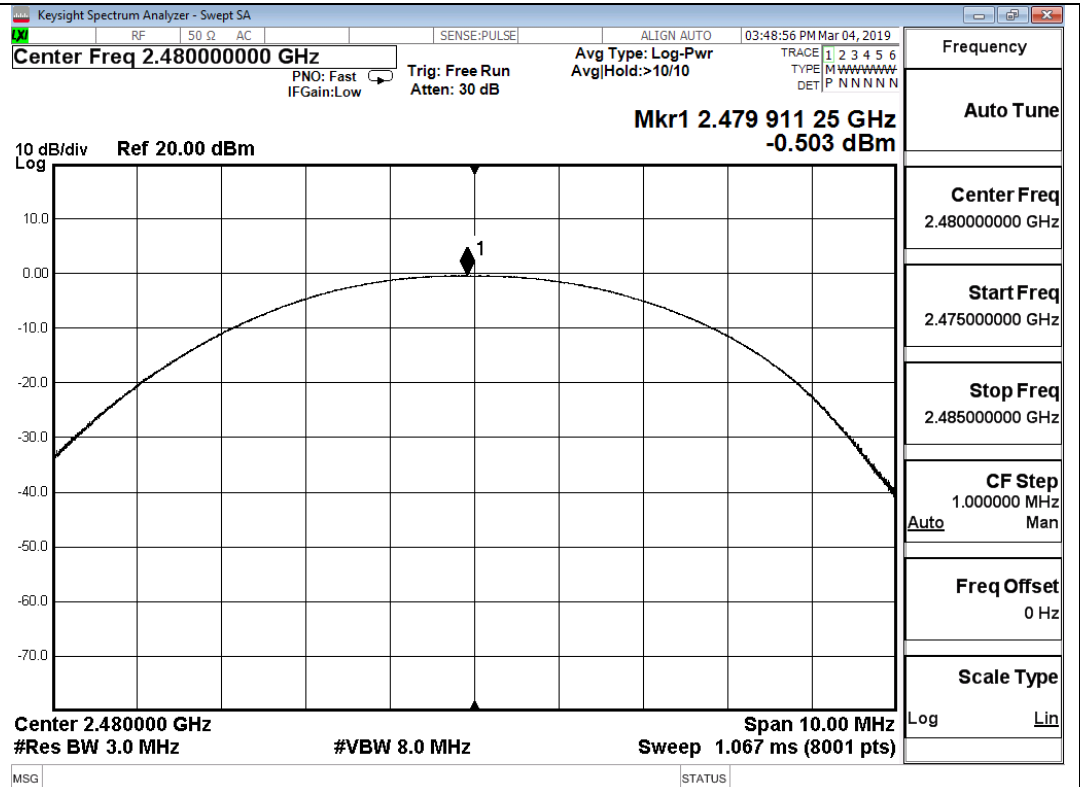
GFSK/LCH



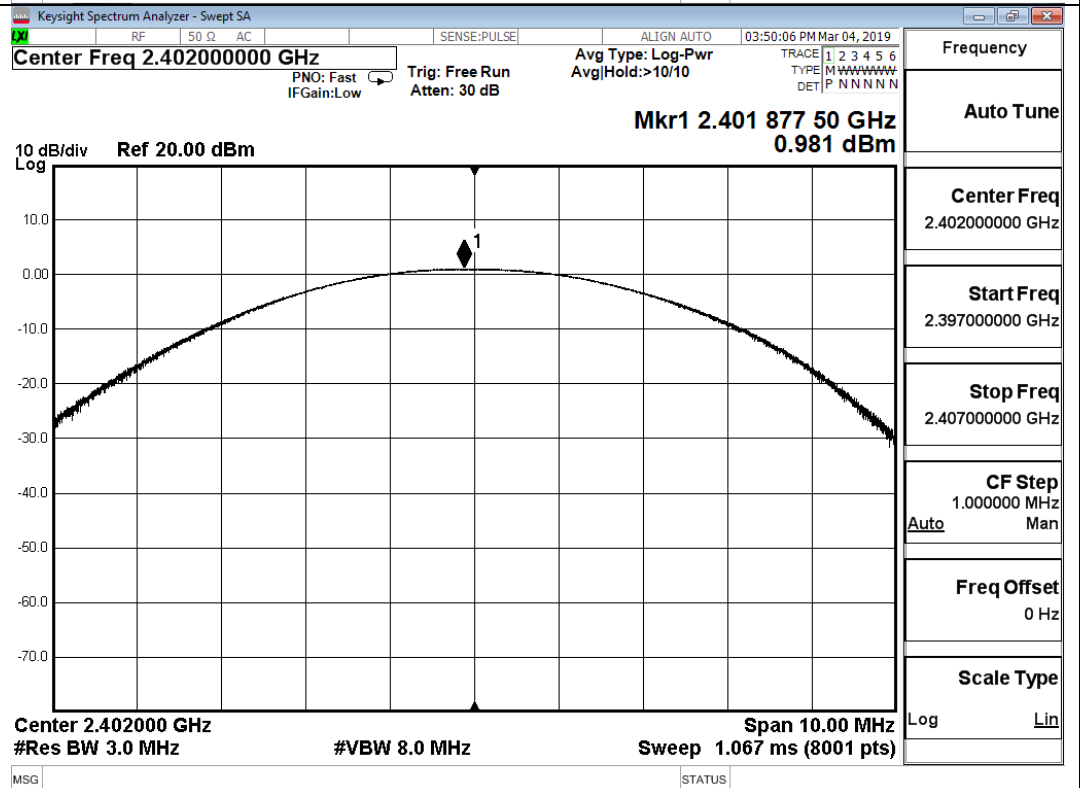
GFSK/MCH

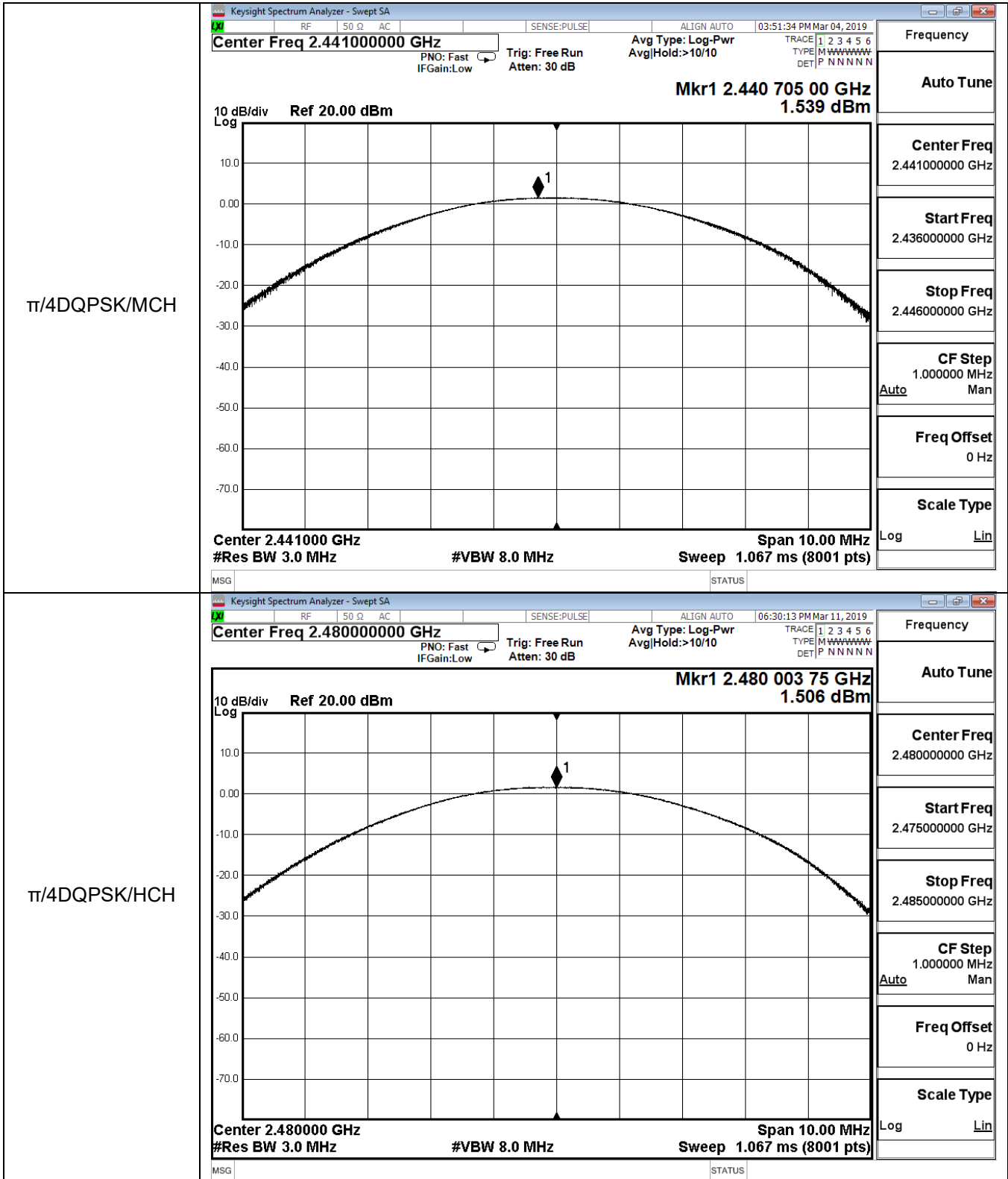


GFSK/HCH

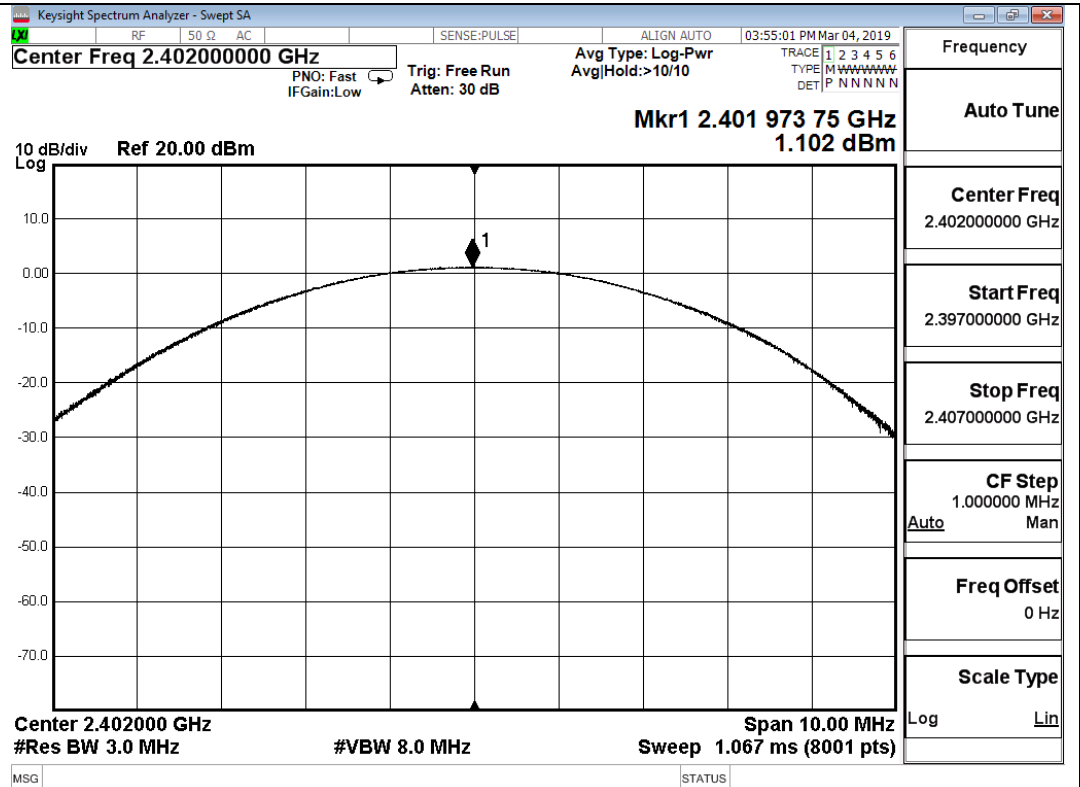


π /4DQPSK/LCH

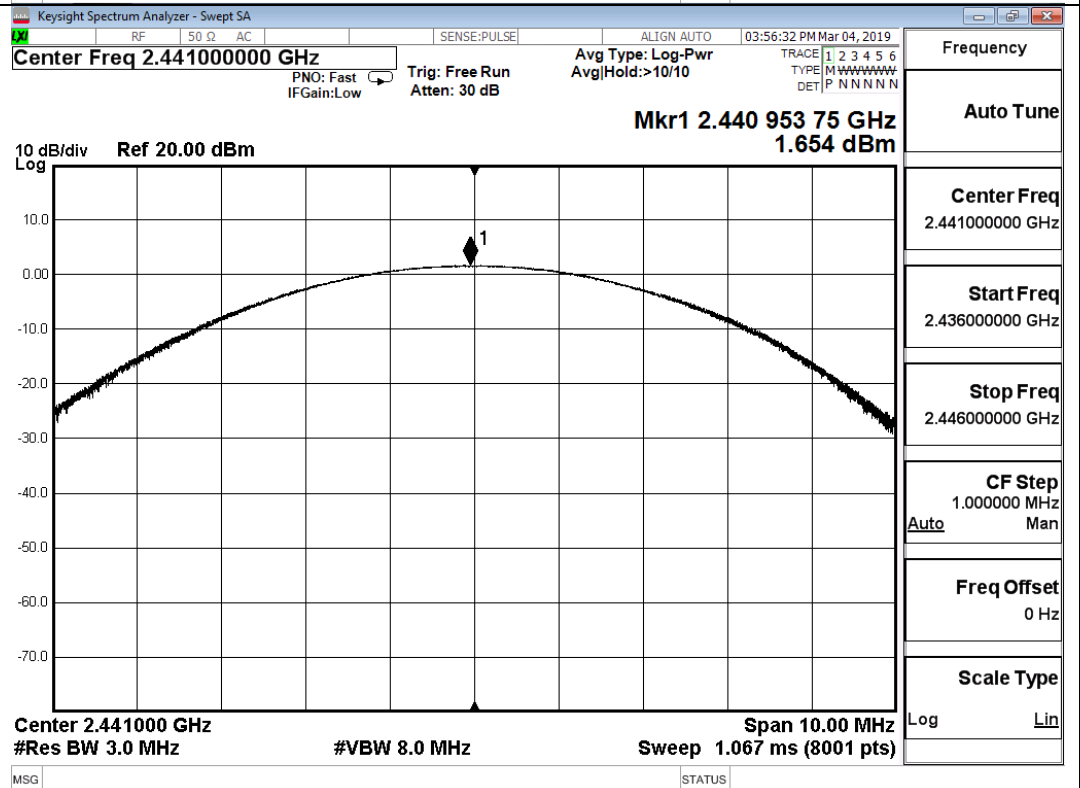




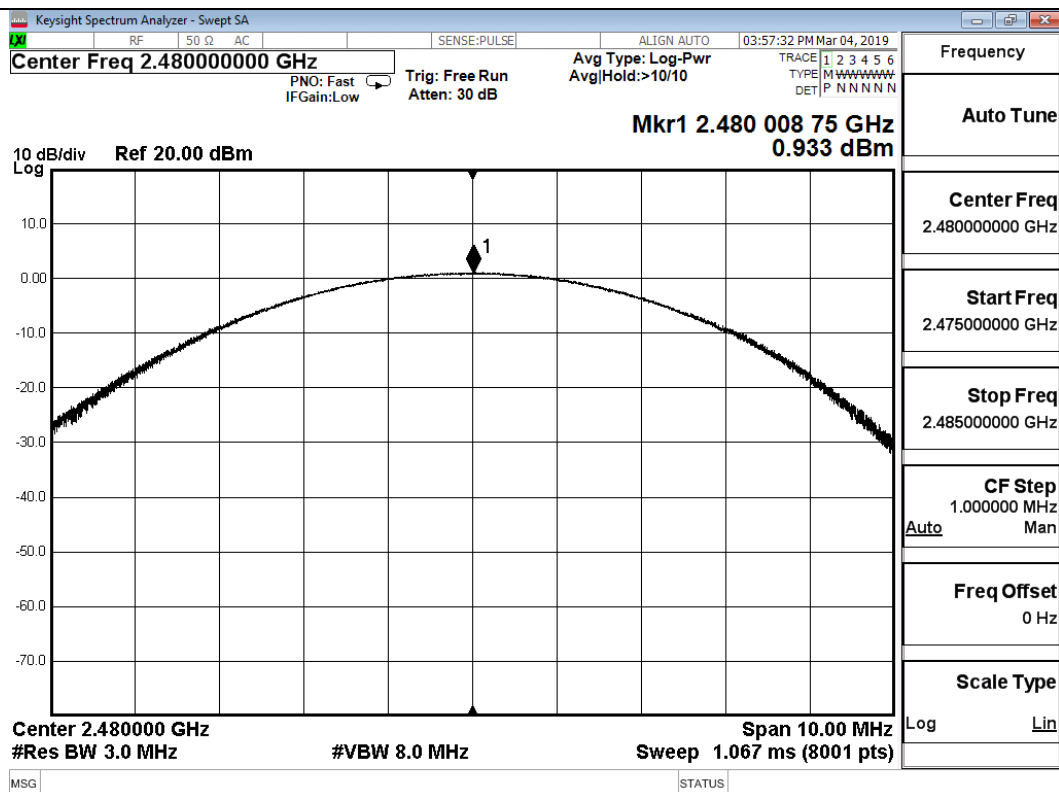
8DPSK/LCH



8DPSK/MCH

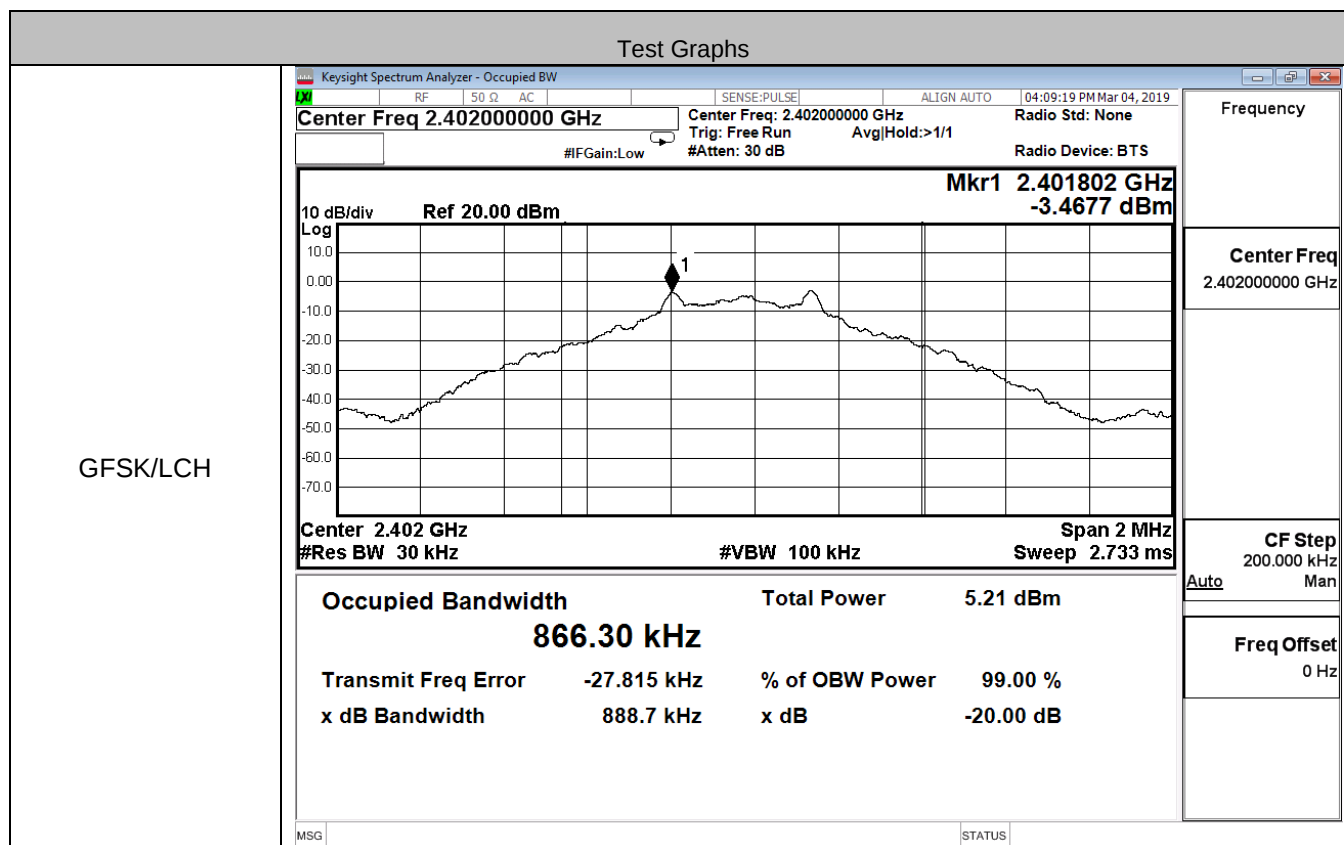


8DPSK/HCH

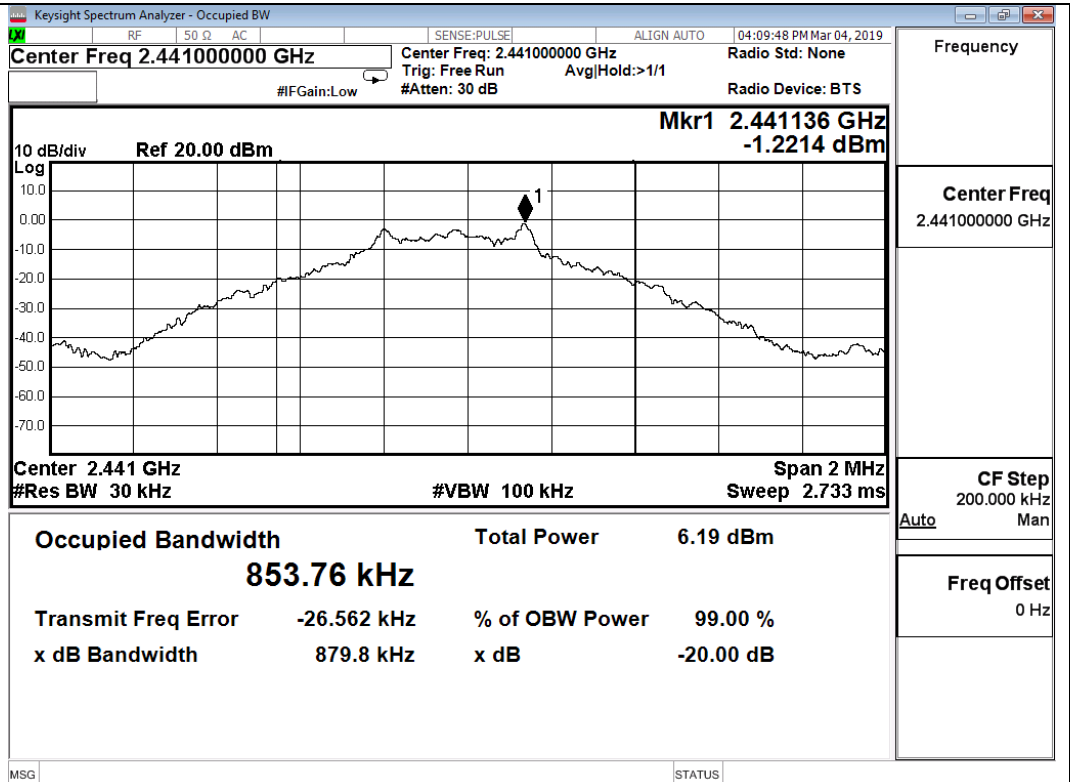


A.2 99% and 20dB Bandwidth

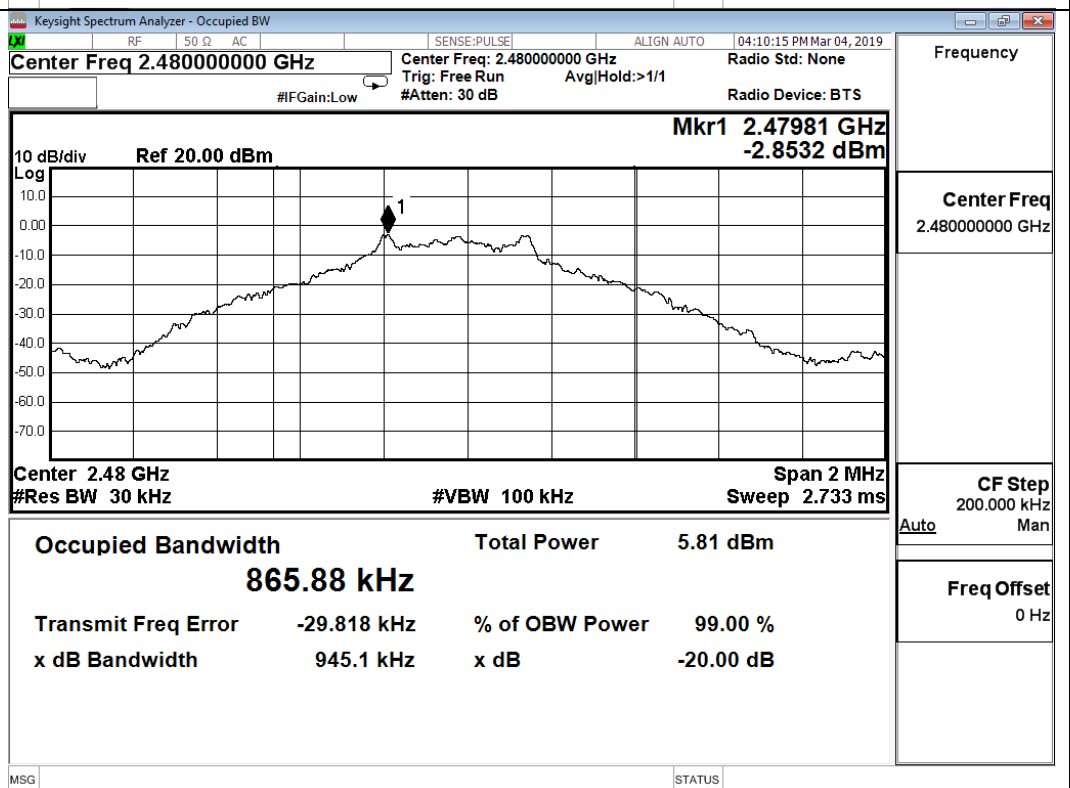
Mode	Channel.	99% Bandwidth [MHz]	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.86630	0.8887	Not Specified	PASS
	MCH	0.85376	0.8798	Not Specified	PASS
	HCH	0.86588	0.9451	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.1498	1.218	Not Specified	PASS
	MCH	1.1555	1.214	Not Specified	PASS
	HCH	1.1523	1.230	Not Specified	PASS
8DPSK	LCH	1.1470	1.263	Not Specified	PASS
	MCH	1.1730	1.267	Not Specified	PASS
	HCH	1.1723	1.267	Not Specified	PASS

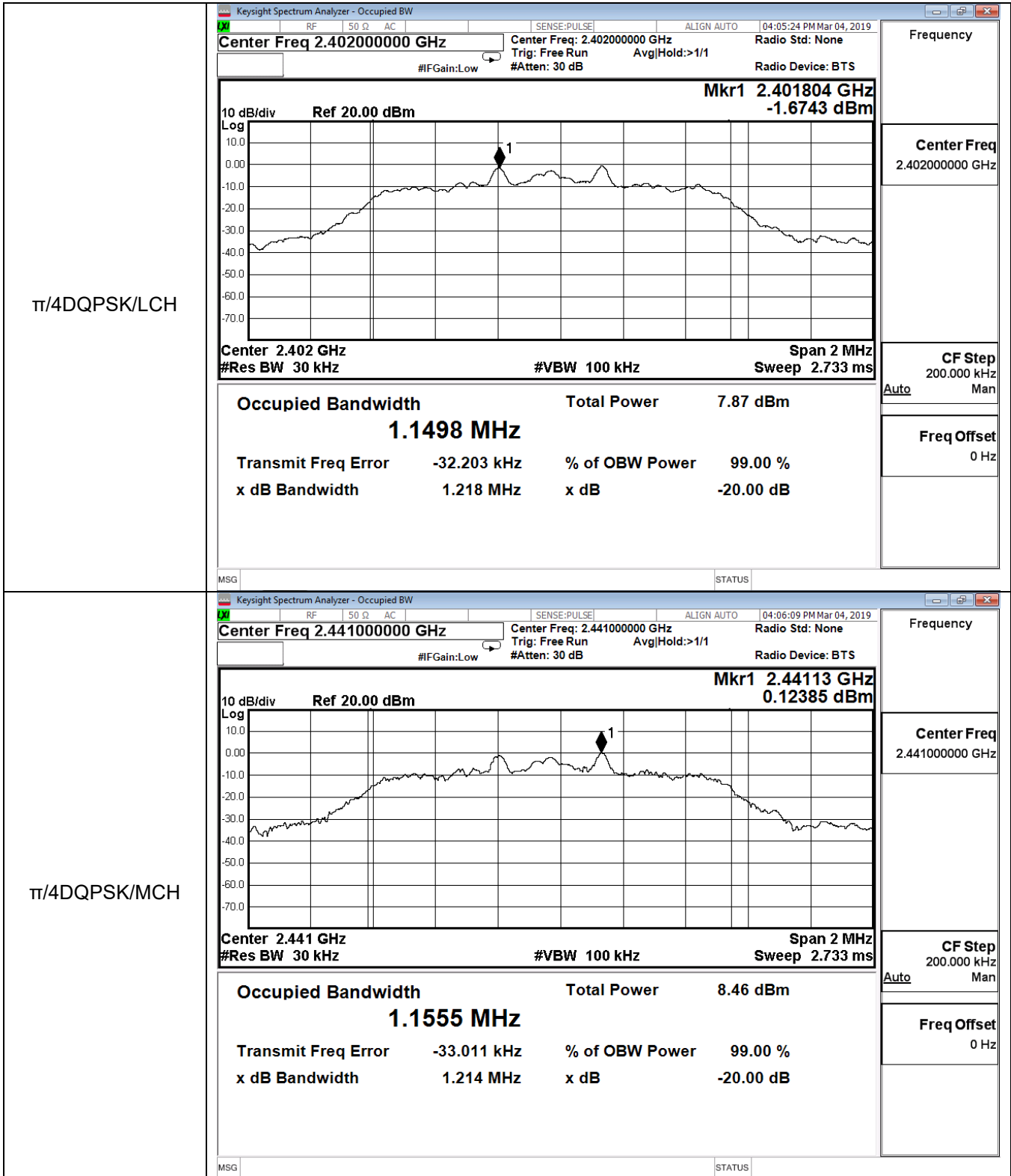


GFSK/MCH

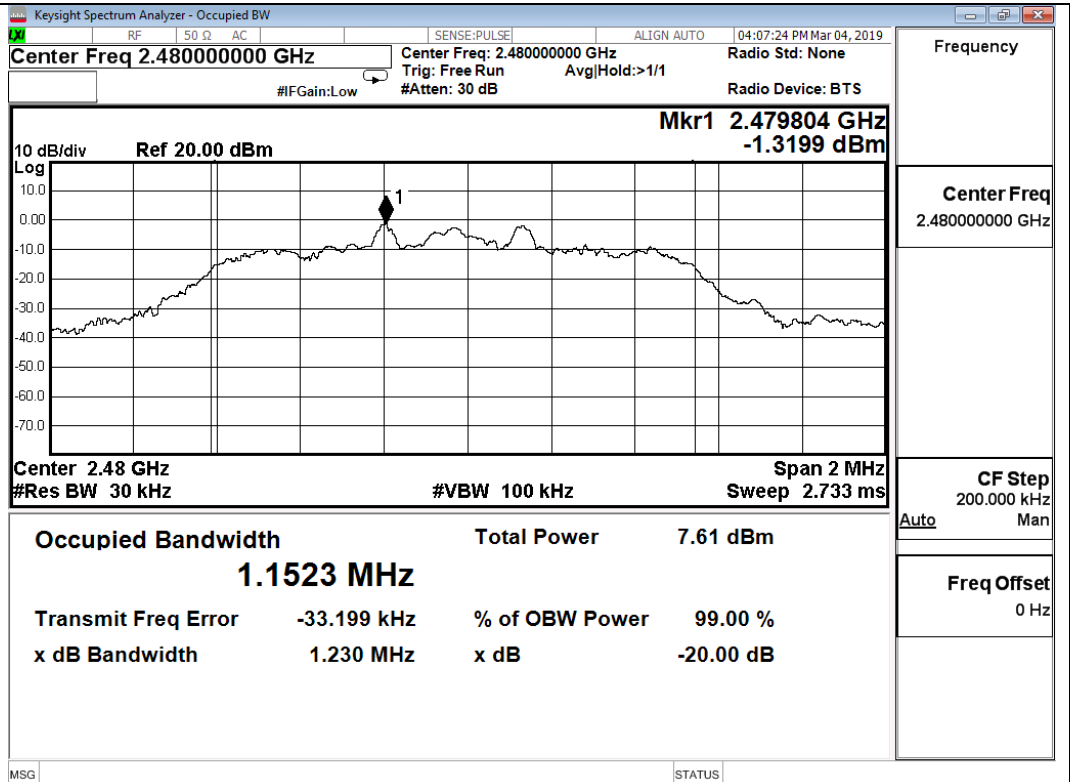


GFSK/HCH

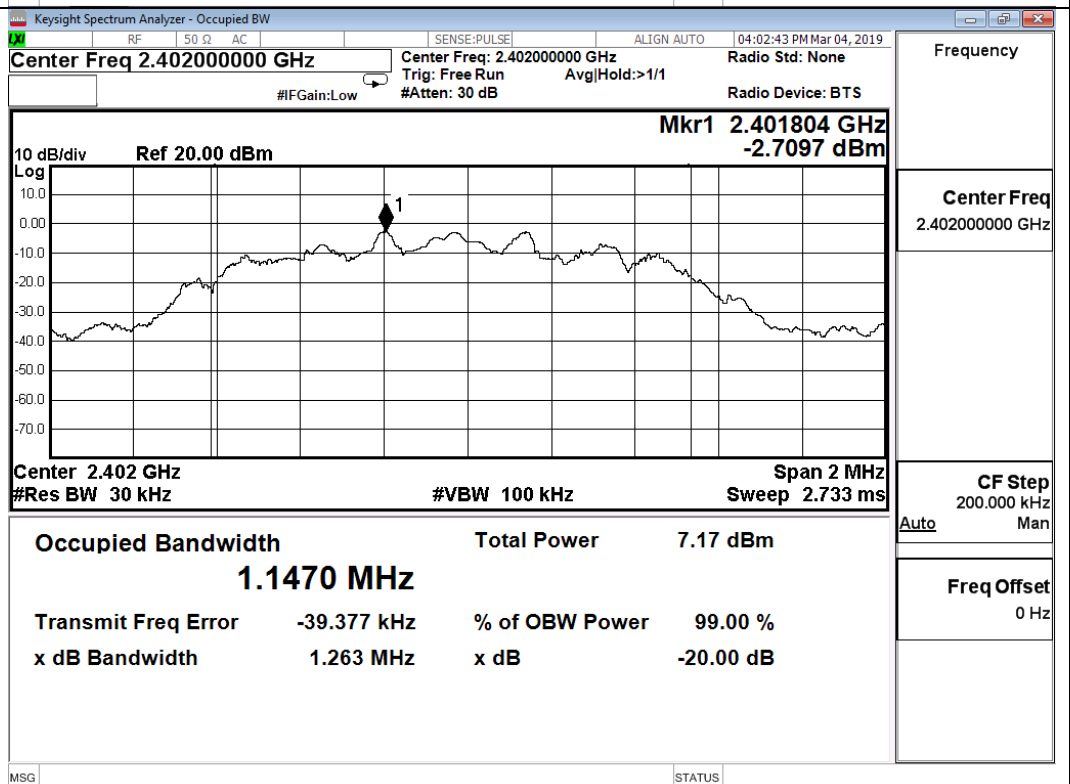




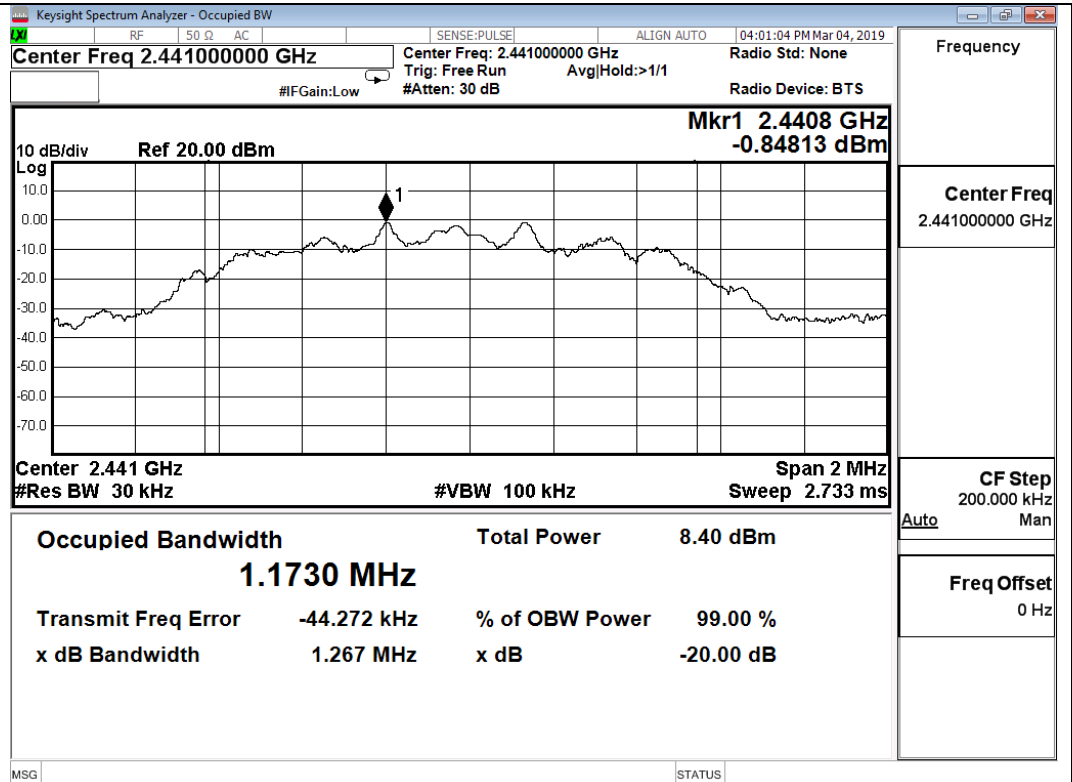
$\pi/4$ DQPSK/HCH



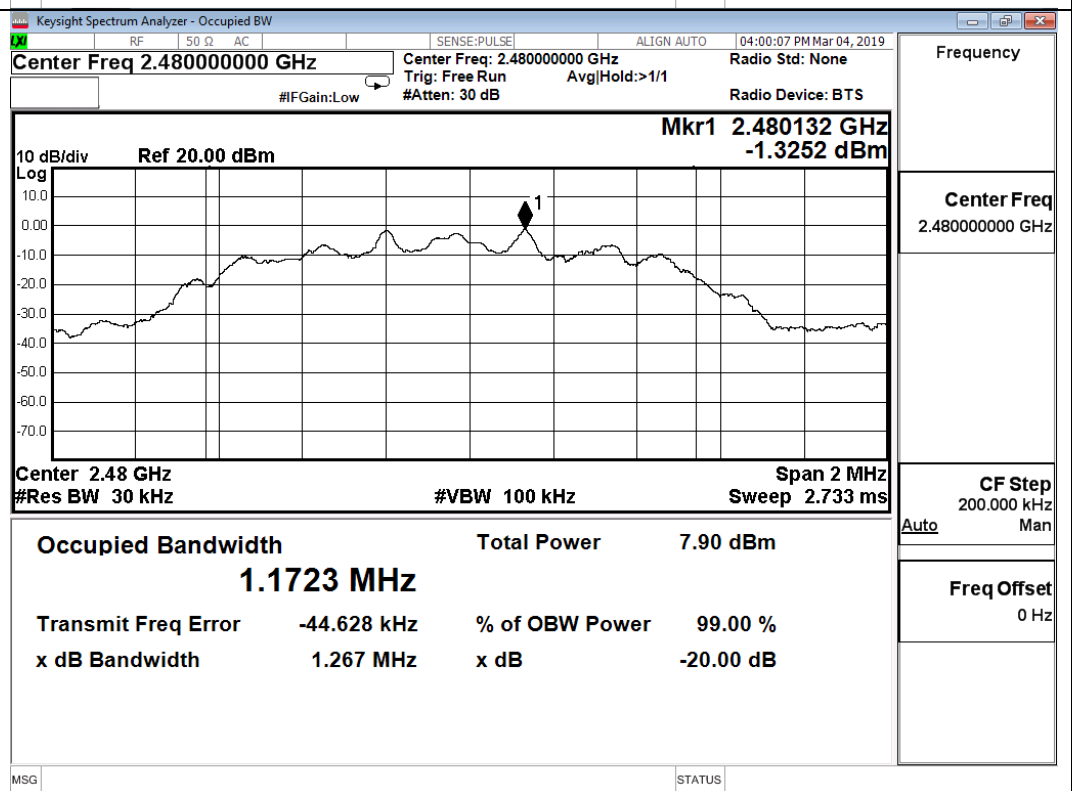
8DPSK/LCH



8DPSK/MCH

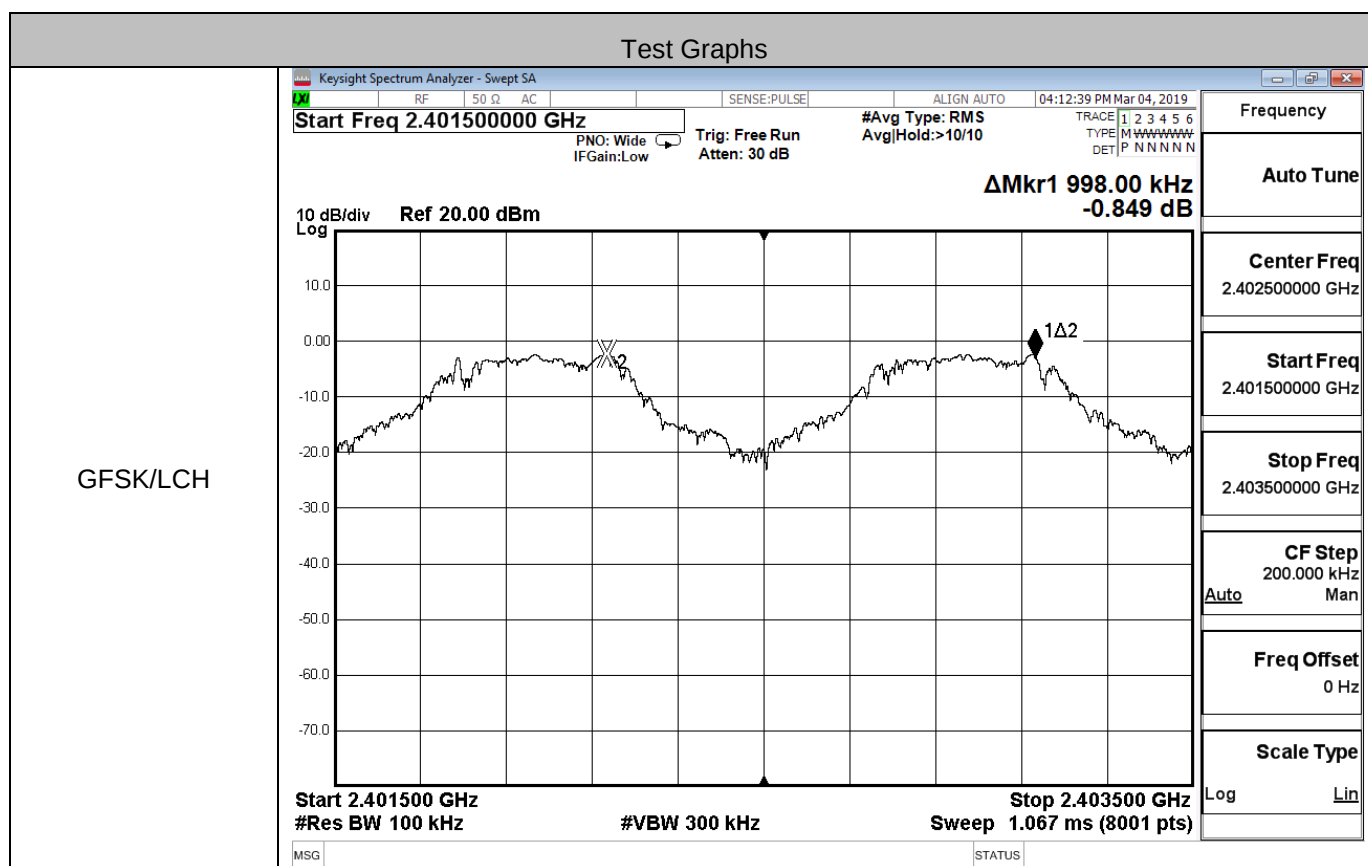


8DPSK/HCH

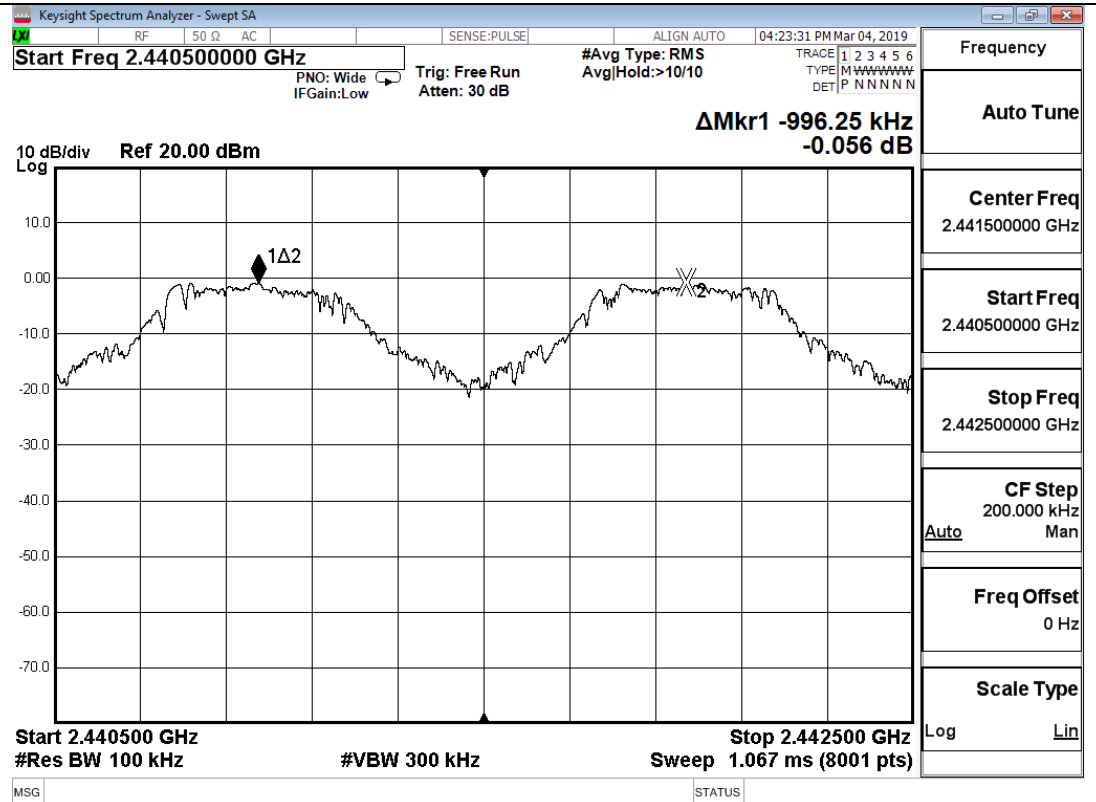


A.3 Carrier Frequency Separation

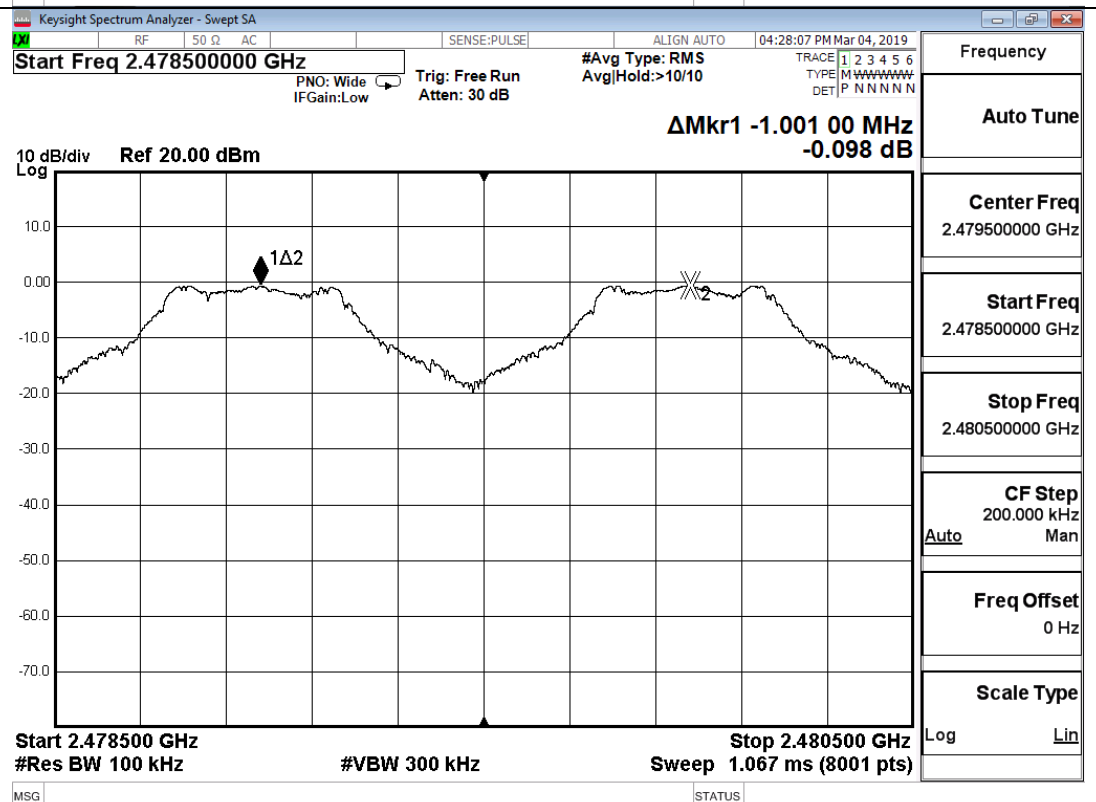
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz] 2/3*20dB Bandwidth	Verdict
GFSK	LCH	0.998	0.630	PASS
	MCH	0.996	0.630	PASS
	HCH	1.001	0.630	PASS
$\pi/4$ DQPSK	LCH	1.000	0.820	PASS
	MCH	1.001	0.820	PASS
	HCH	0.997	0.820	PASS
8DPSK	LCH	0.996	0.845	PASS
	MCH	1.007	0.845	PASS
	HCH	0.999	0.845	PASS



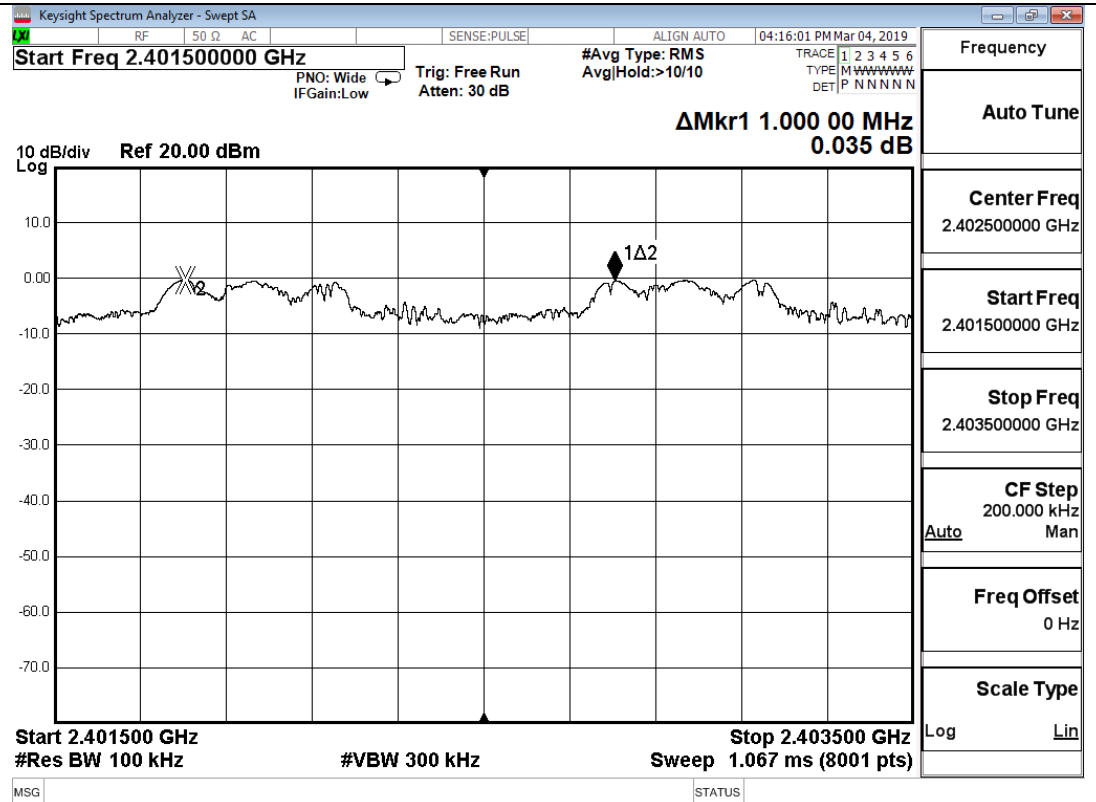
GFSK/MCH



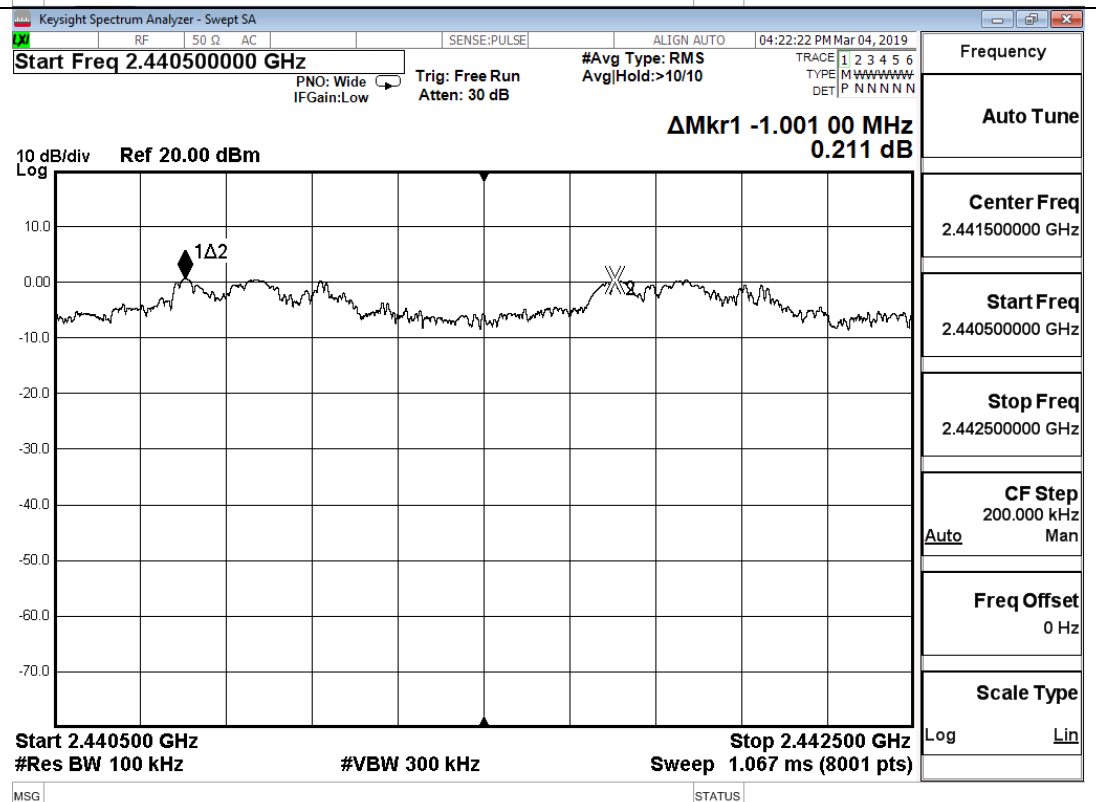
GFSK/HCH



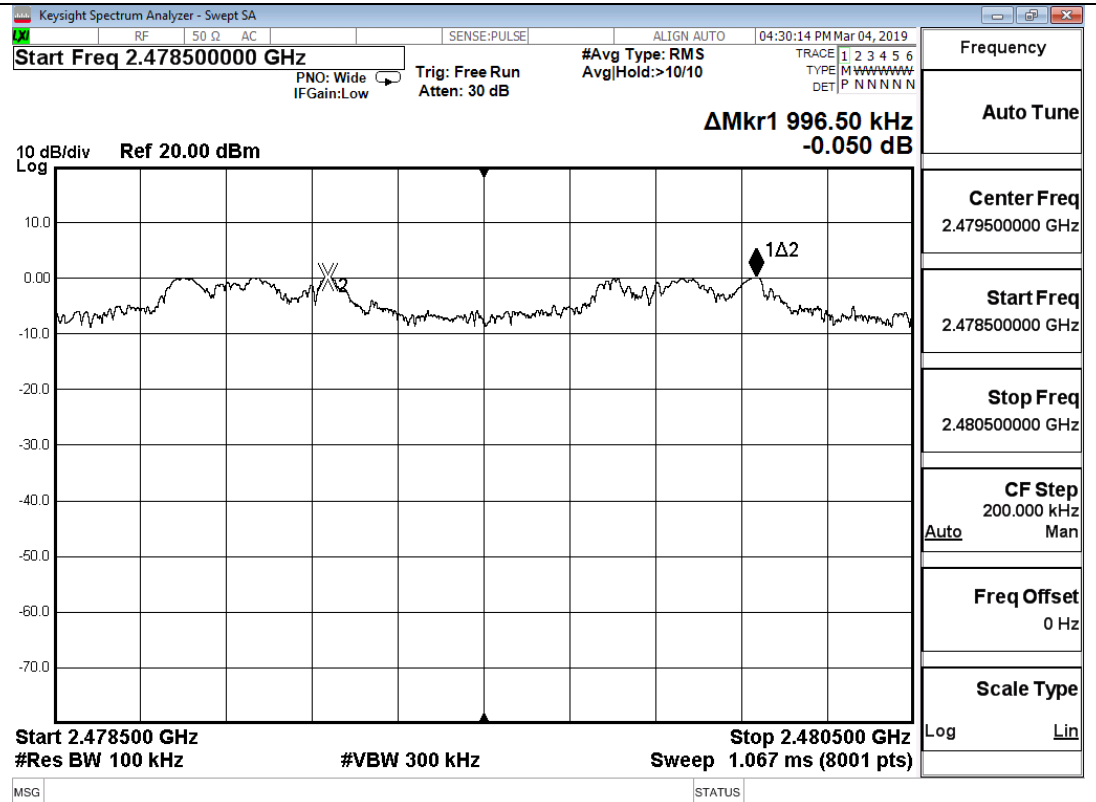
$\pi/4$ DQPSK/LCH



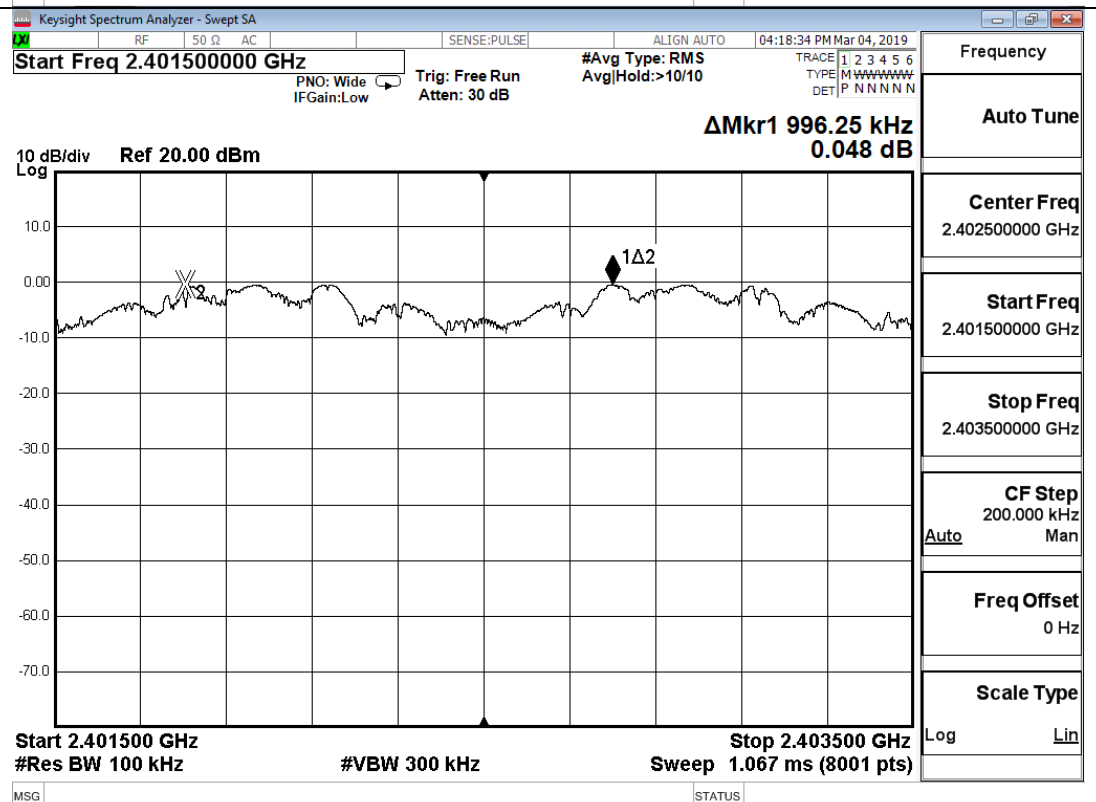
$\pi/4$ DQPSK/MCH



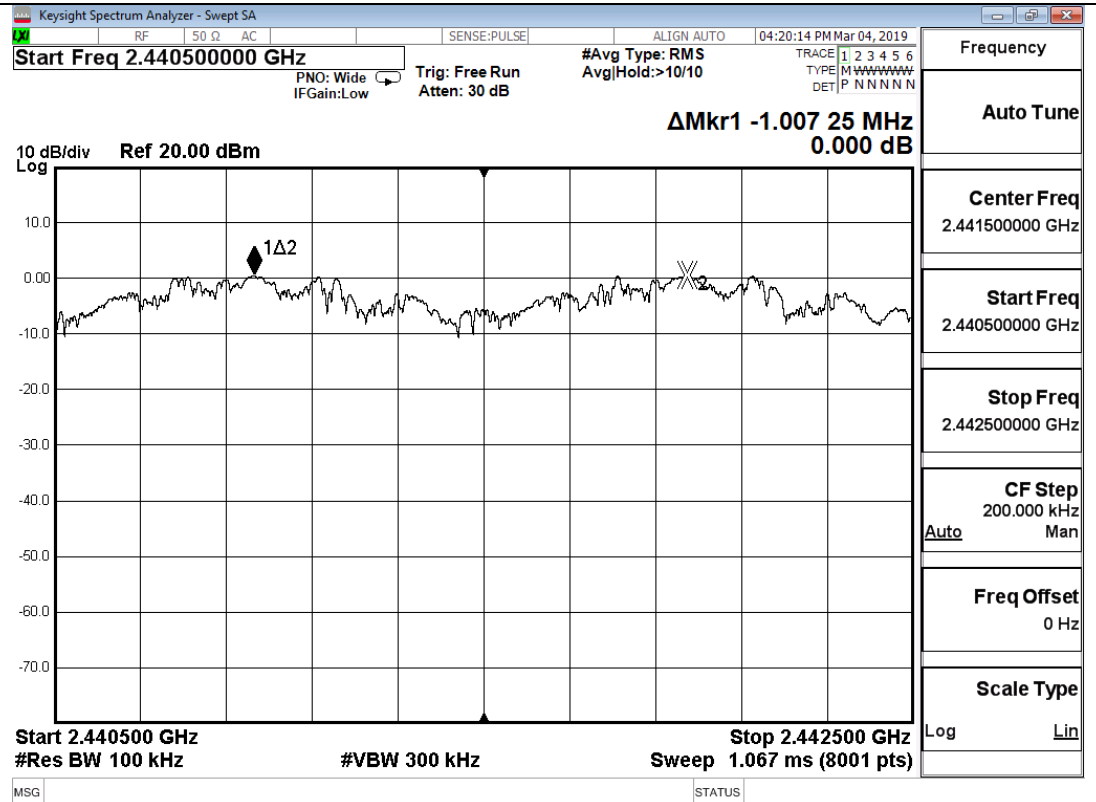
$\pi/4$ DQPSK/HCH



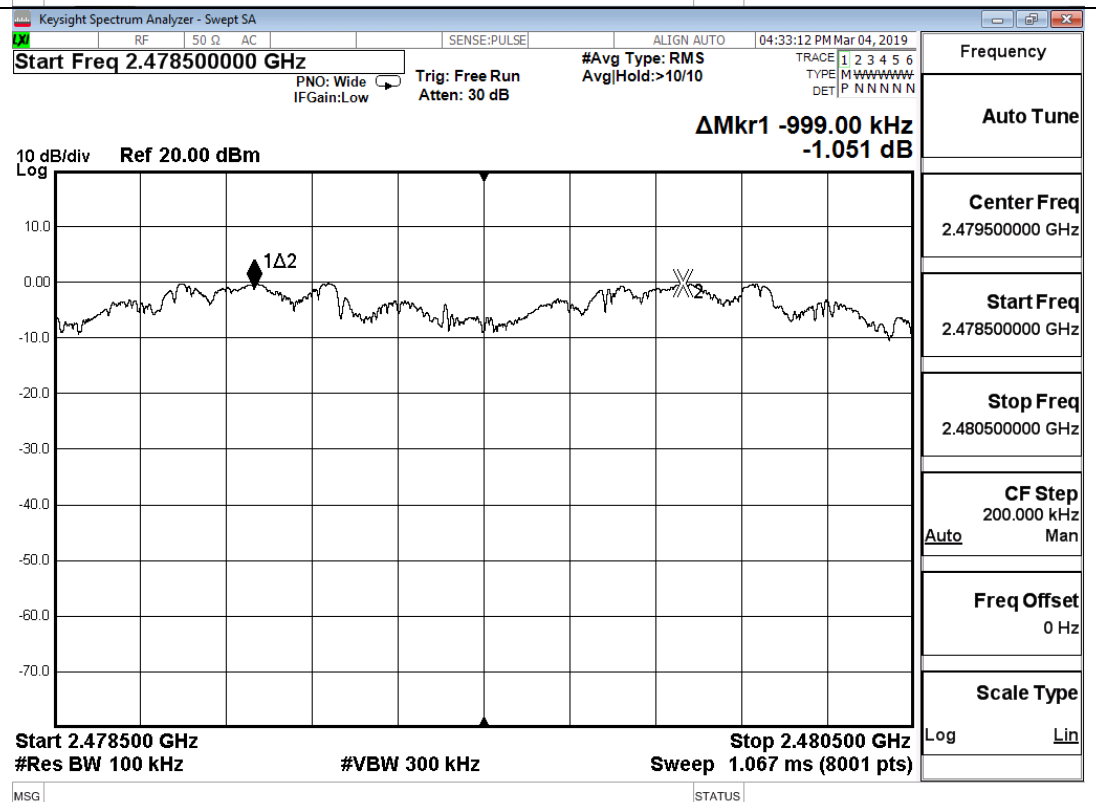
8DPSK/LCH



8DPSK/MCH

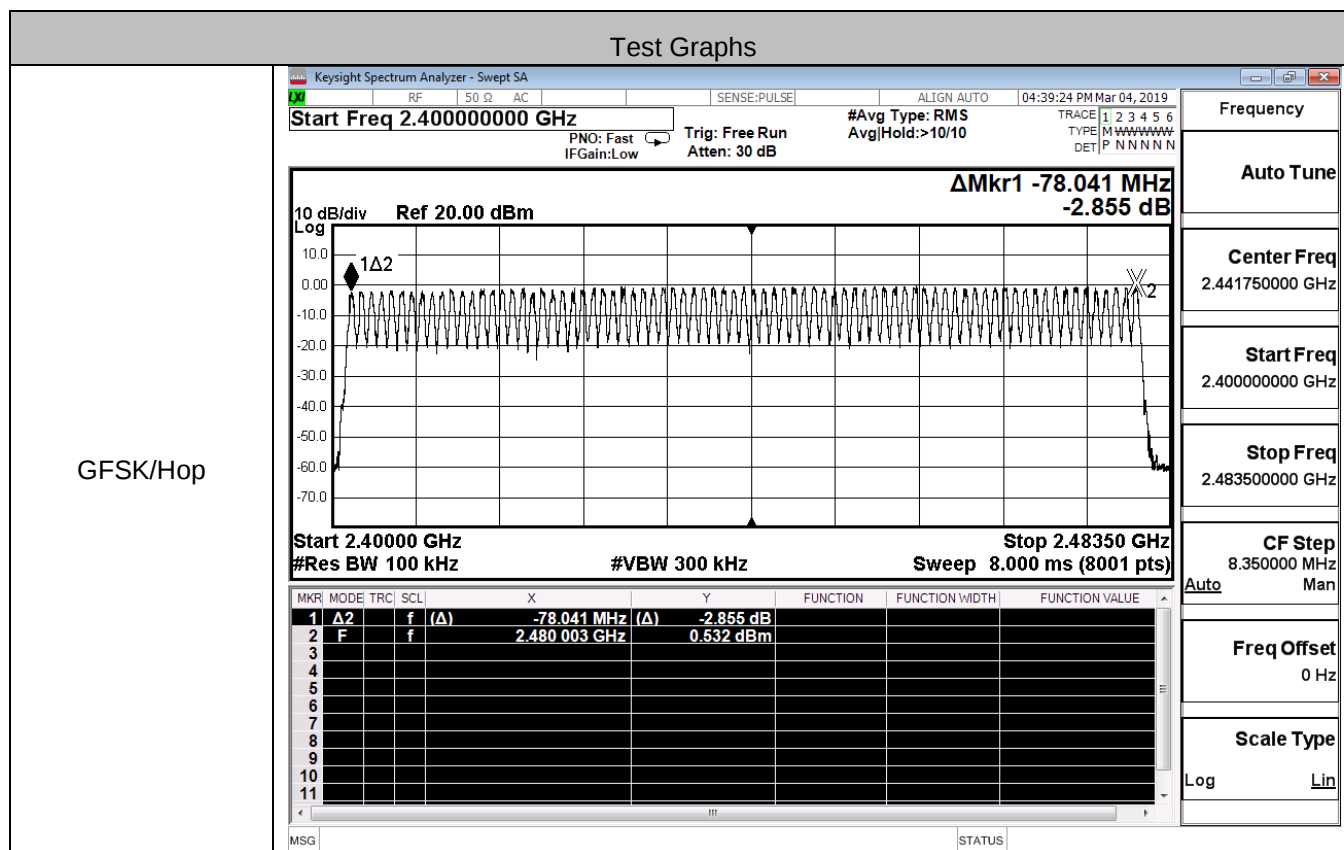


8DPSK/HCH

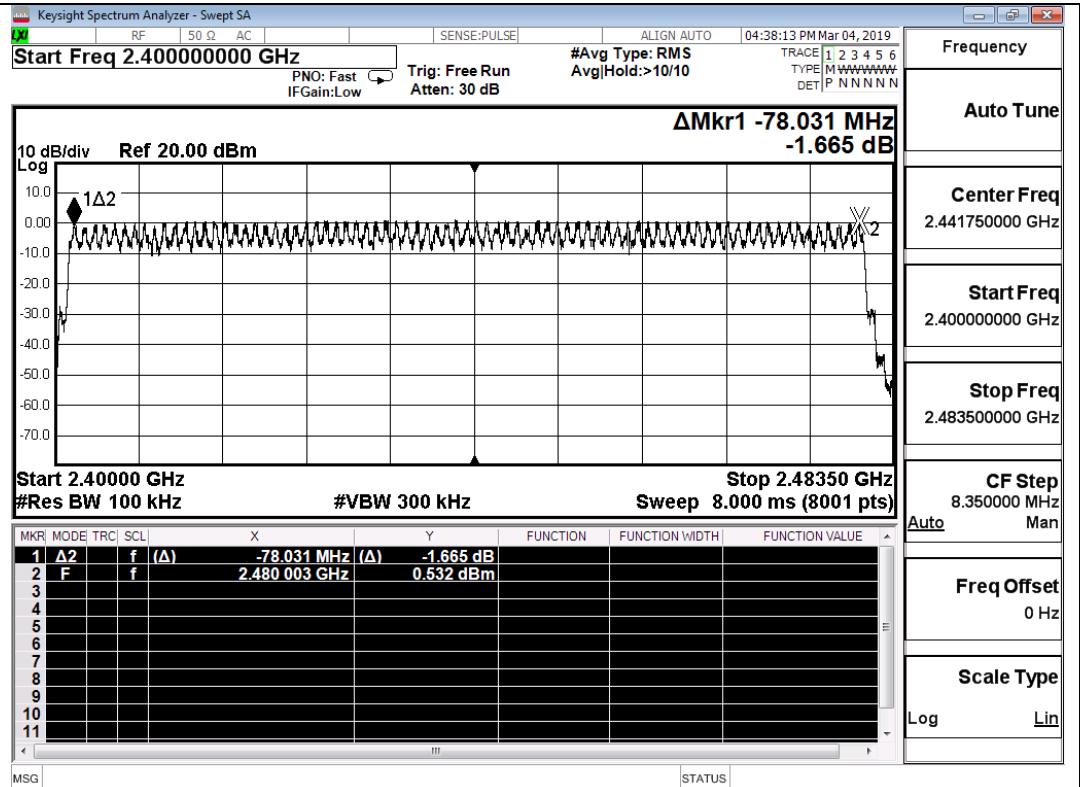


A.4 Hopping Channel Number

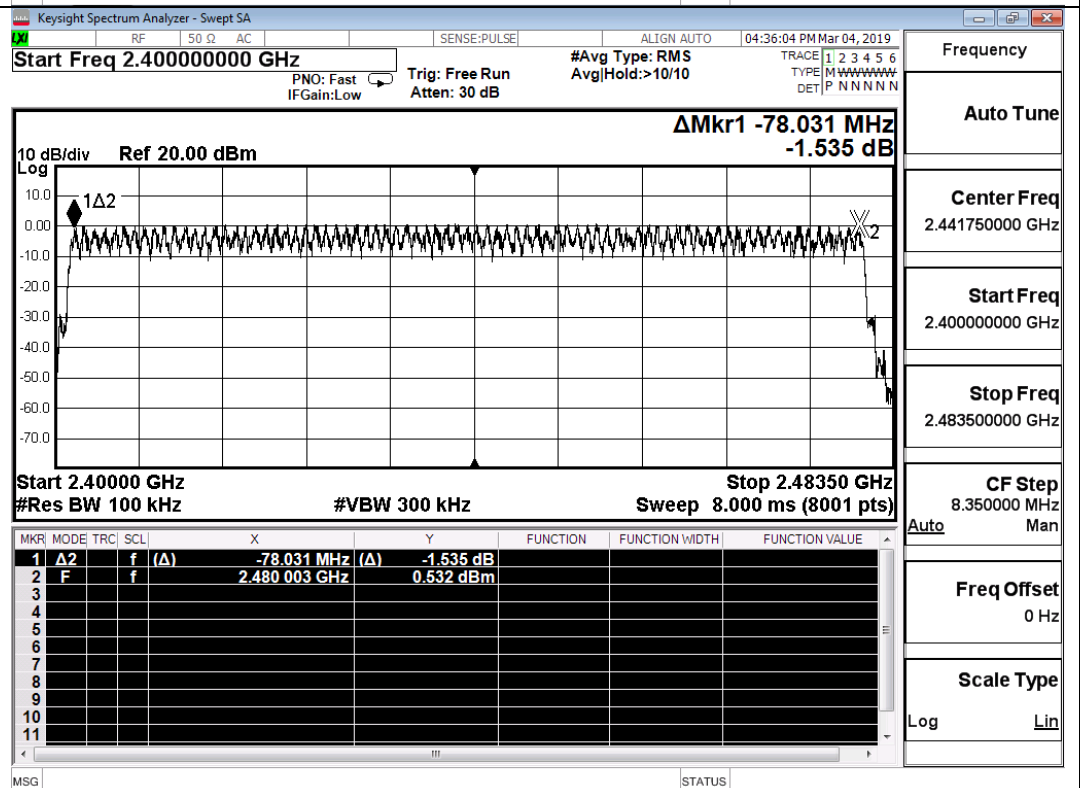
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS



$\pi/4$ DQPSK/Hop



8DPSK/Hop

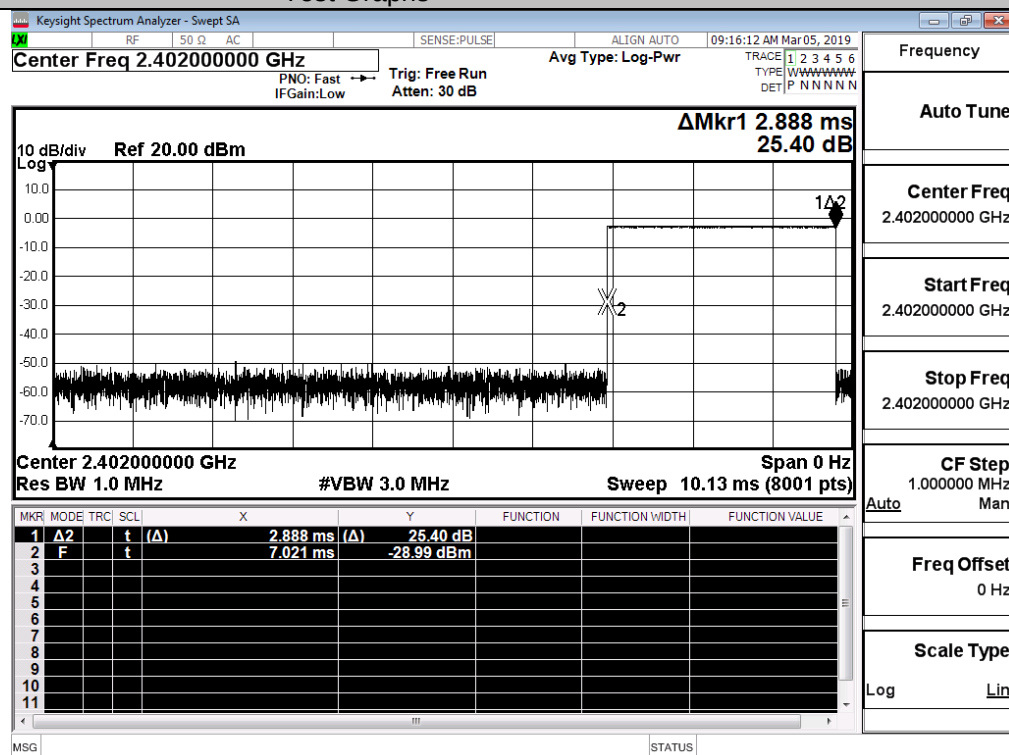


A.5 Dwell Time

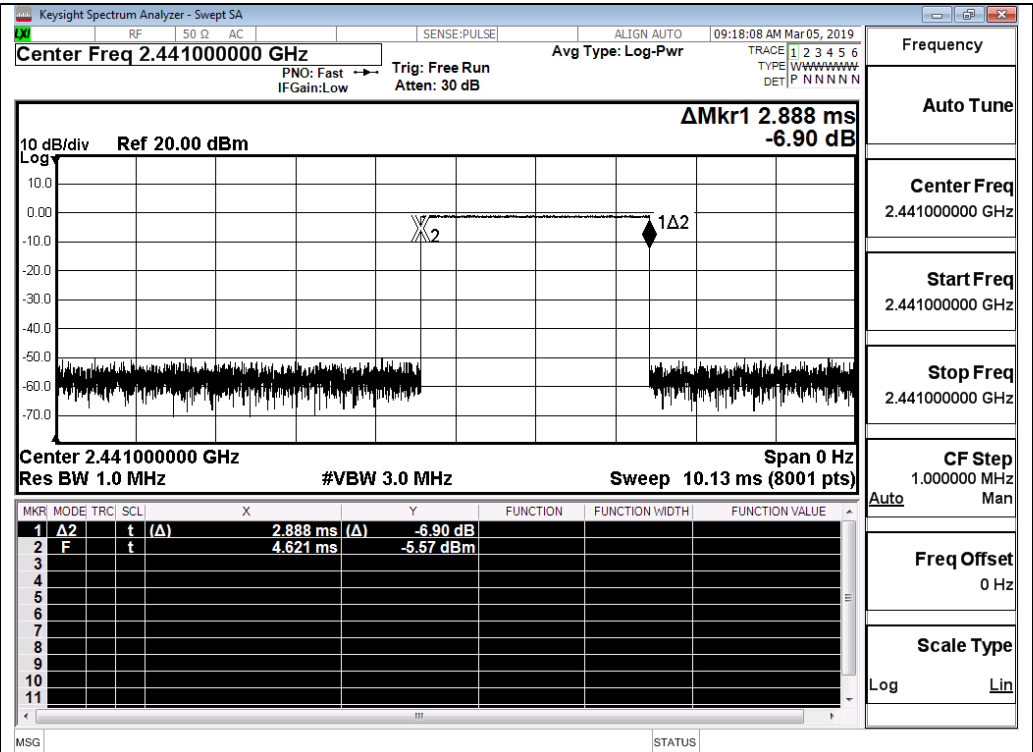
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.888	106.7	0.308	0.4	PASS
	DH5	MCH	2.888	106.7	0.308	0.4	PASS
	DH5	HCH	2.888	106.7	0.308	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.883	106.7	0.308	0.4	PASS
	2DH5	MCH	2.892	106.7	0.308	0.4	PASS
	2DH5	HCH	2.892	106.7	0.308	0.4	PASS
8DPSK	3DH5	LCH	2.896	106.7	0.309	0.4	PASS
	3DH5	MCH	2.893	106.7	0.309	0.4	PASS
	3DH5	HCH	2.891	106.7	0.308	0.4	PASS

Test Graphs

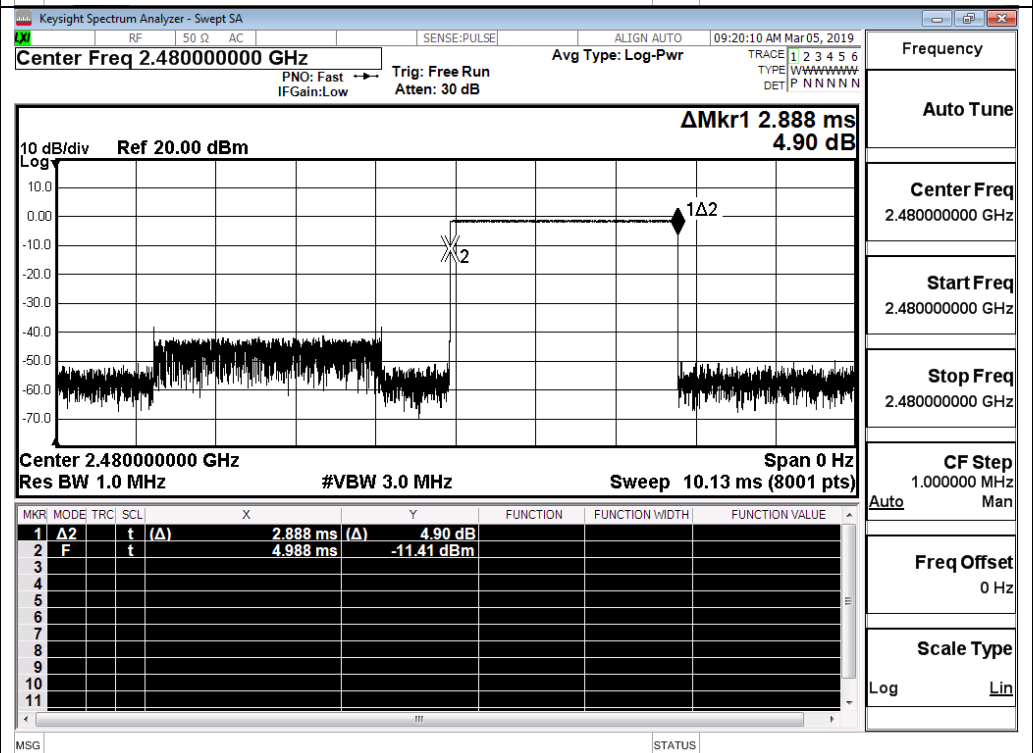
GFSK_DH5/LCH



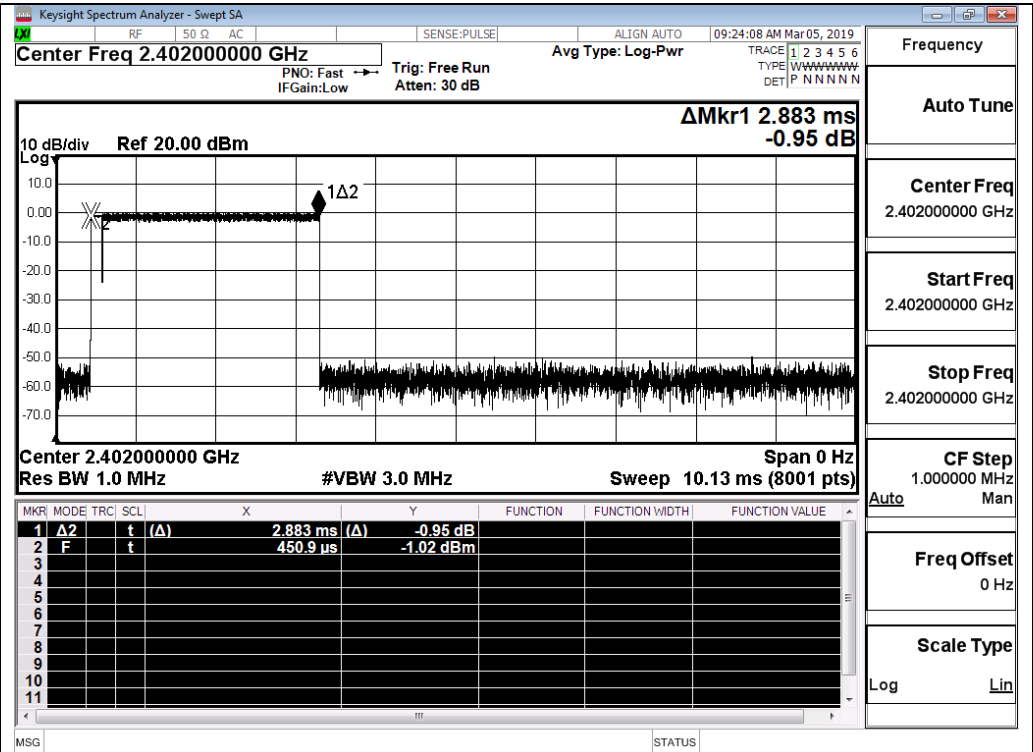
GFSK_DH5/MCH



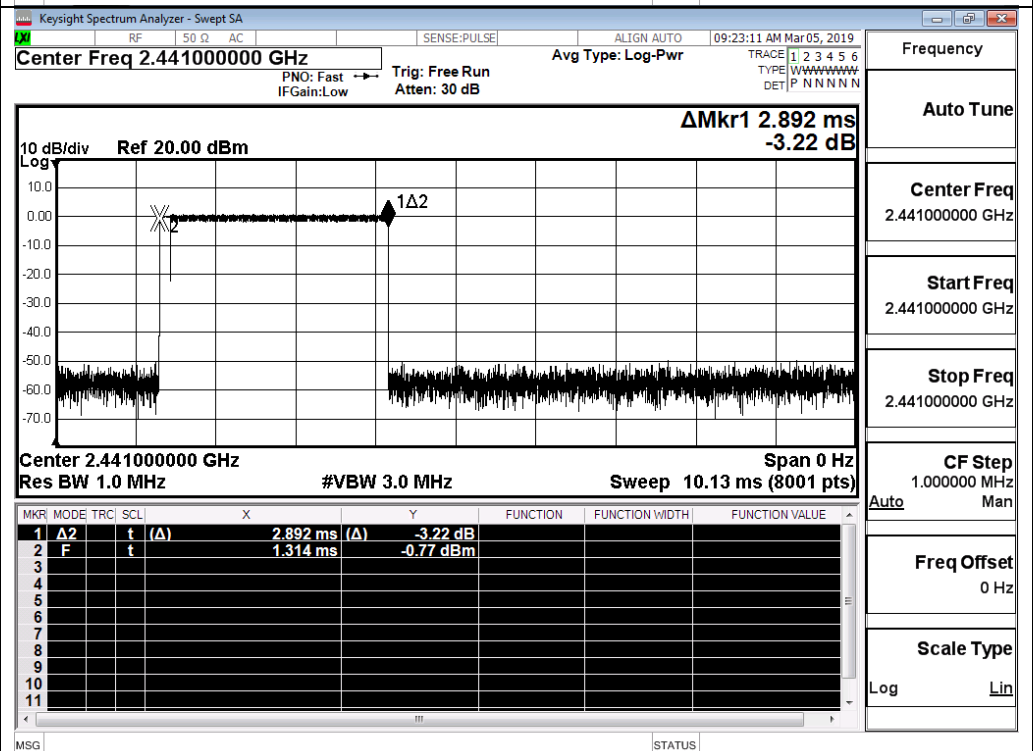
GFSK_DH5/HCH



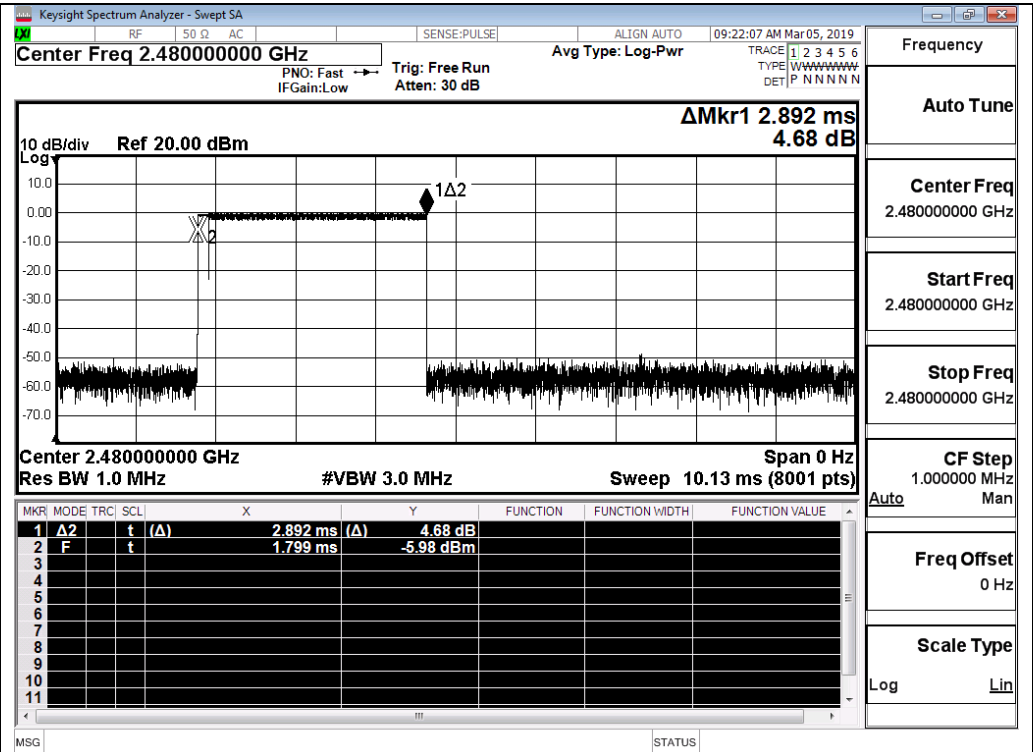
$\pi/4$ DQPSK
_2DH5/LCH



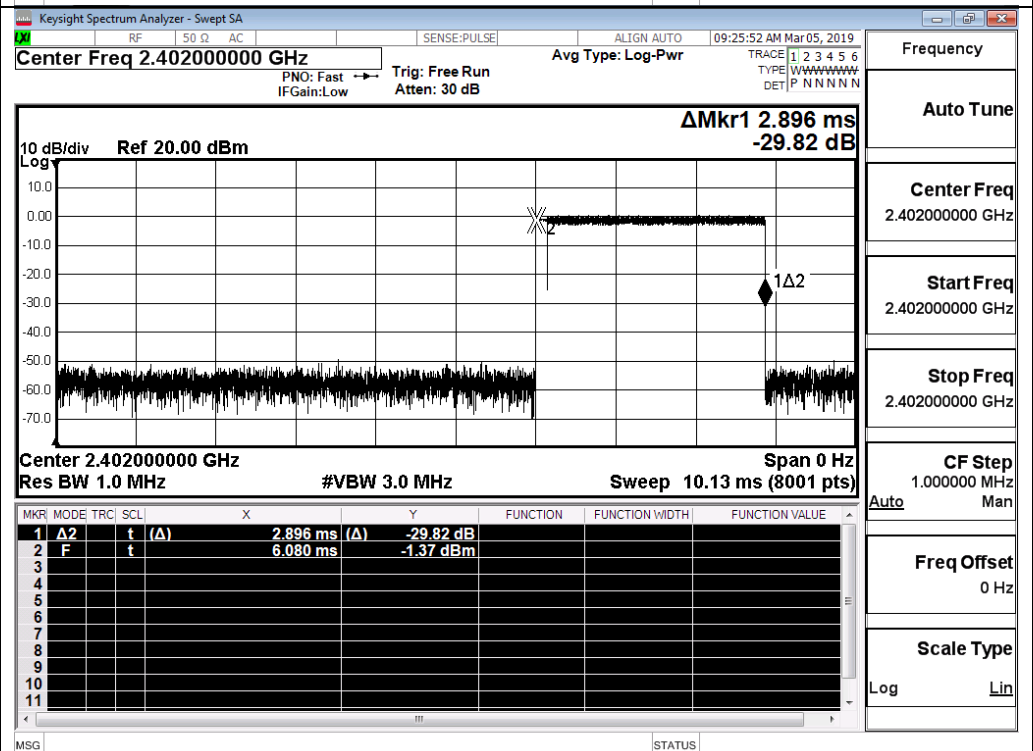
$\pi/4$ DQPSK
_2DH5/MCH



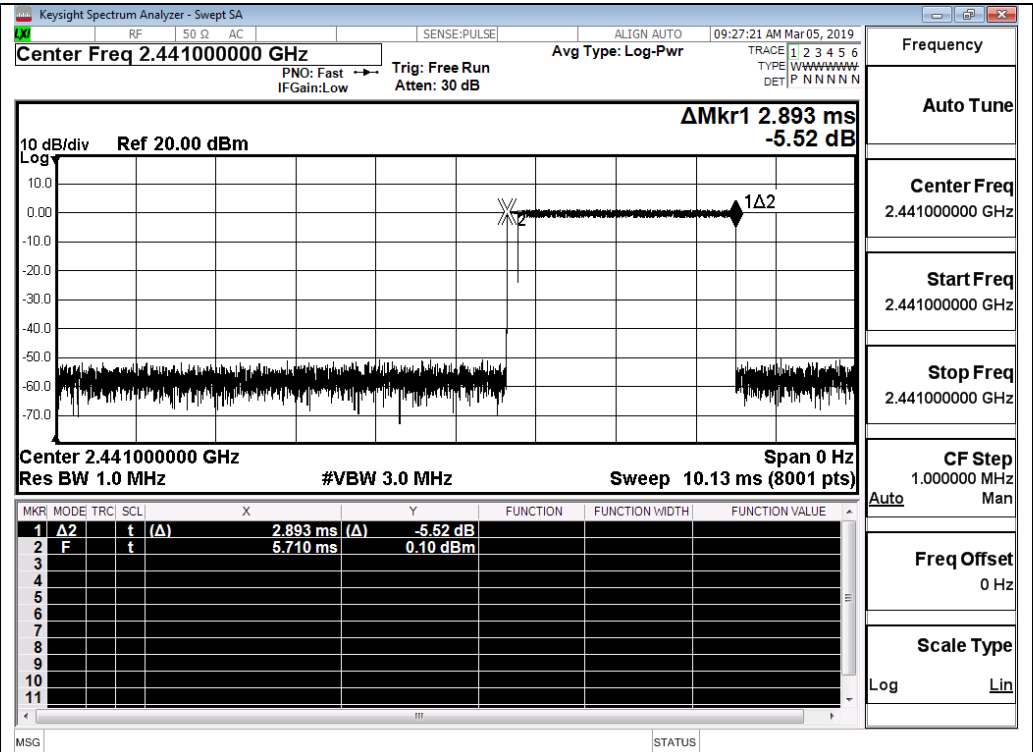
$\pi/4$ DQPSK
_2DH5/HCH



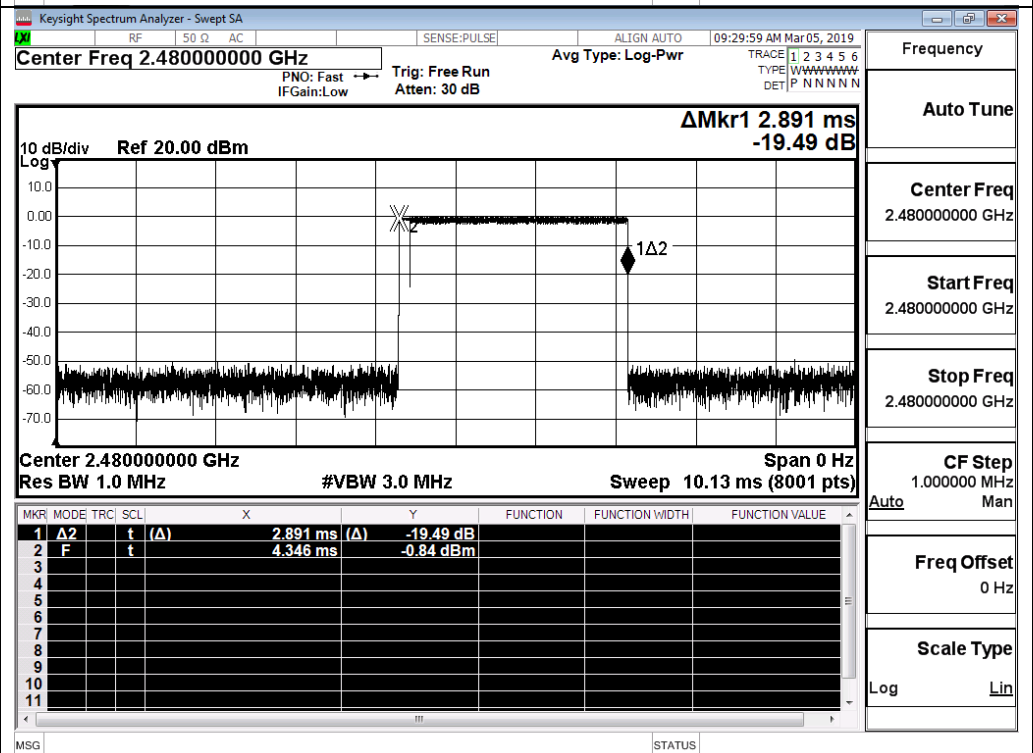
8DPSK _3DH5/LCH



8DPSK_3DH5/MCH



8DPSK_3DH5/HCH

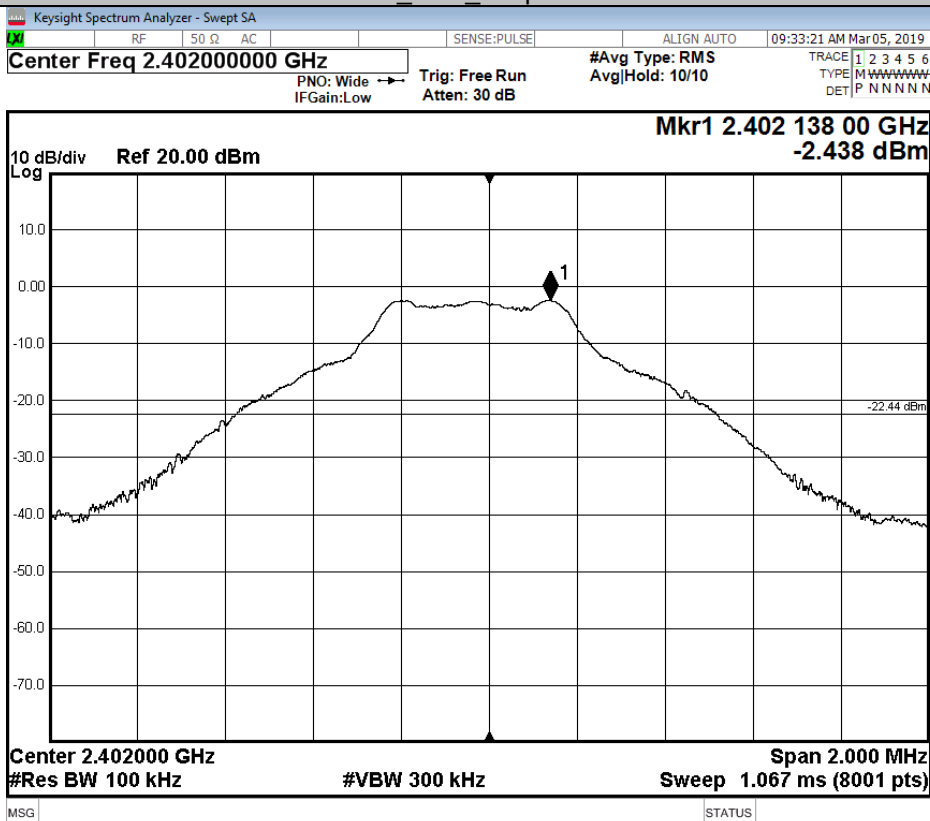


A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-2.438	-47.236	-22.44	PASS
	MCH	-0.781	-46.597	-20.78	PASS
	HCH	-1.300	-46.946	-21.30	PASS
$\pi/4$ DQPSK	LCH	-0.363	-49.181	-20.36	PASS
	MCH	0.618	-49.162	-19.38	PASS
	HCH	-0.391	-49.396	-20.39	PASS
8DPSK	LCH	-0.084	-46.595	-20.08	PASS
	MCH	0.708	-48.391	-19.29	PASS
	HCH	-0.398	-47.126	-20.40	PASS

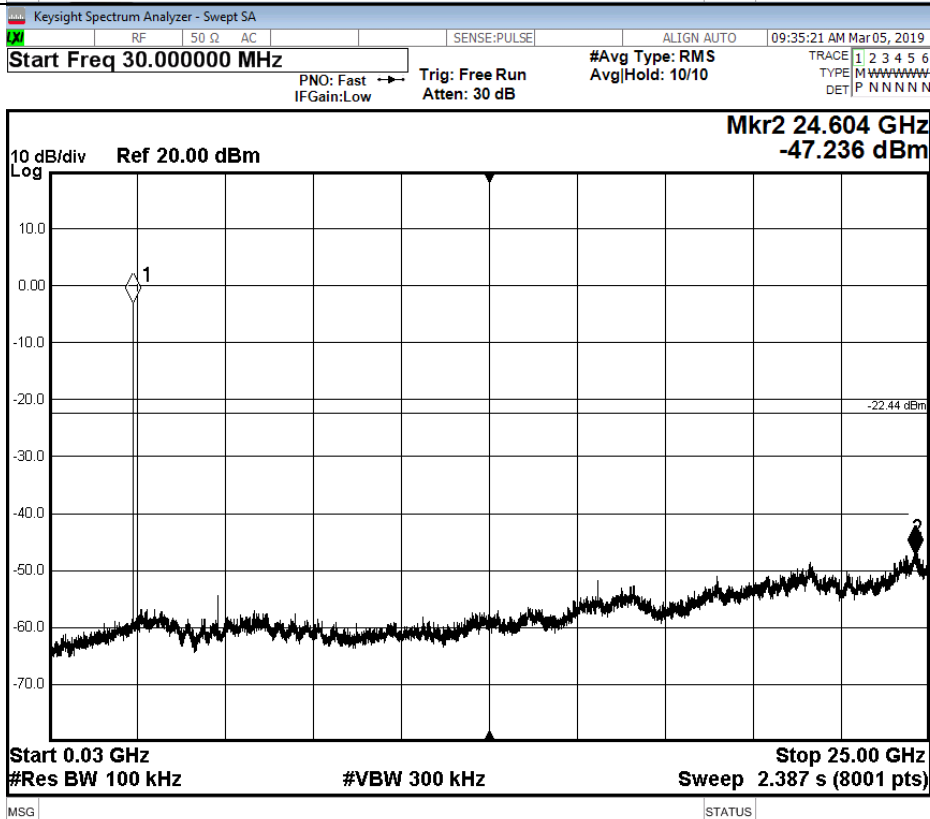
GFSK_LCH_Graphs

Pref



Frequency
Auto Tune
Center Freq 2.402000000 GHz
Start Freq 2.401000000 GHz
Stop Freq 2.403000000 GHz
CF Step 200.000 kHz Auto Man
Freq Offset 0 Hz
Scale Type Log Lin

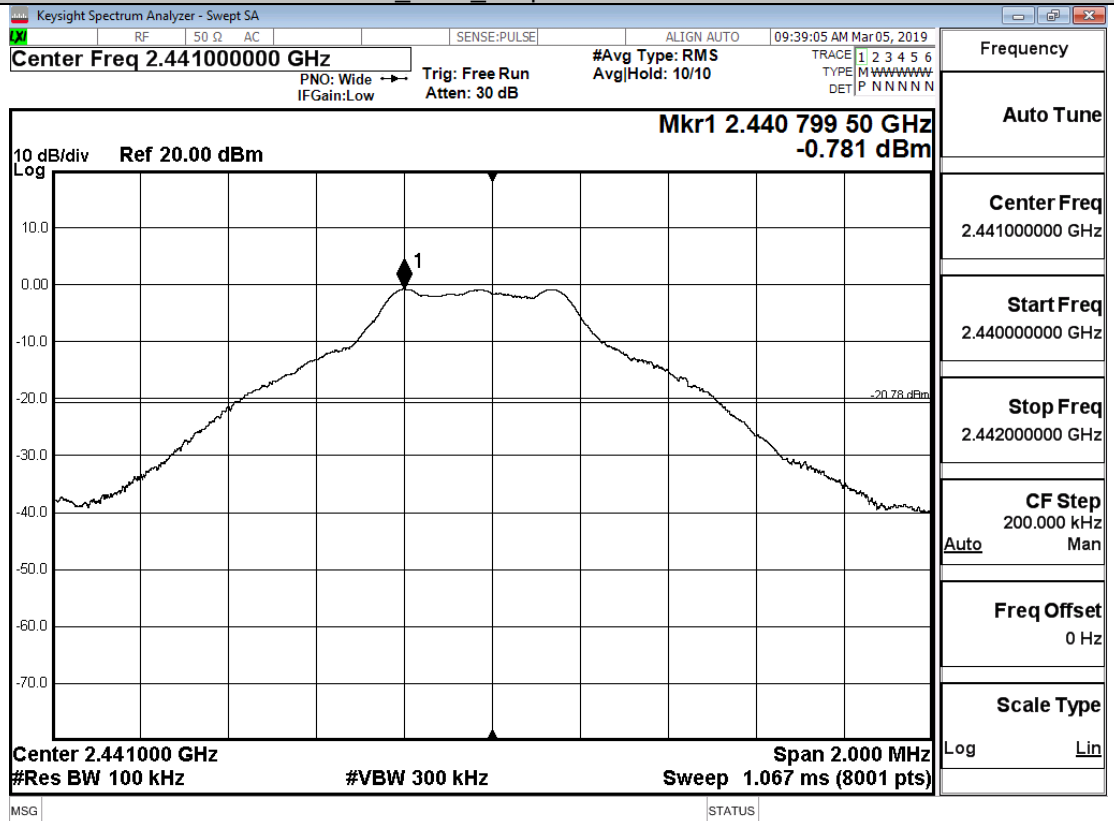
Puw



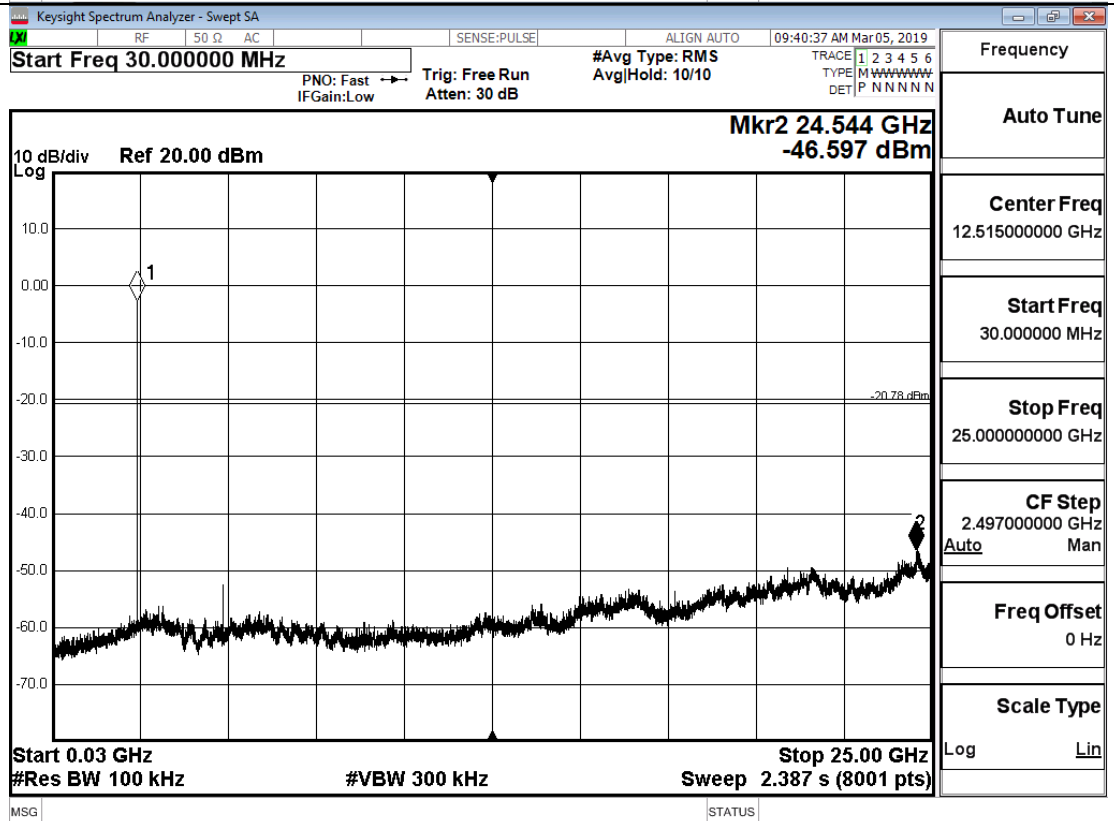
Frequency
Auto Tune
Center Freq 12.515000000 GHz
Start Freq 30.000000 MHz
Stop Freq 25.000000000 GHz
CF Step 2.497000000 GHz Auto Man
Freq Offset 0 Hz
Scale Type Log Lin

GFSK_MCH_Graphs

Pref

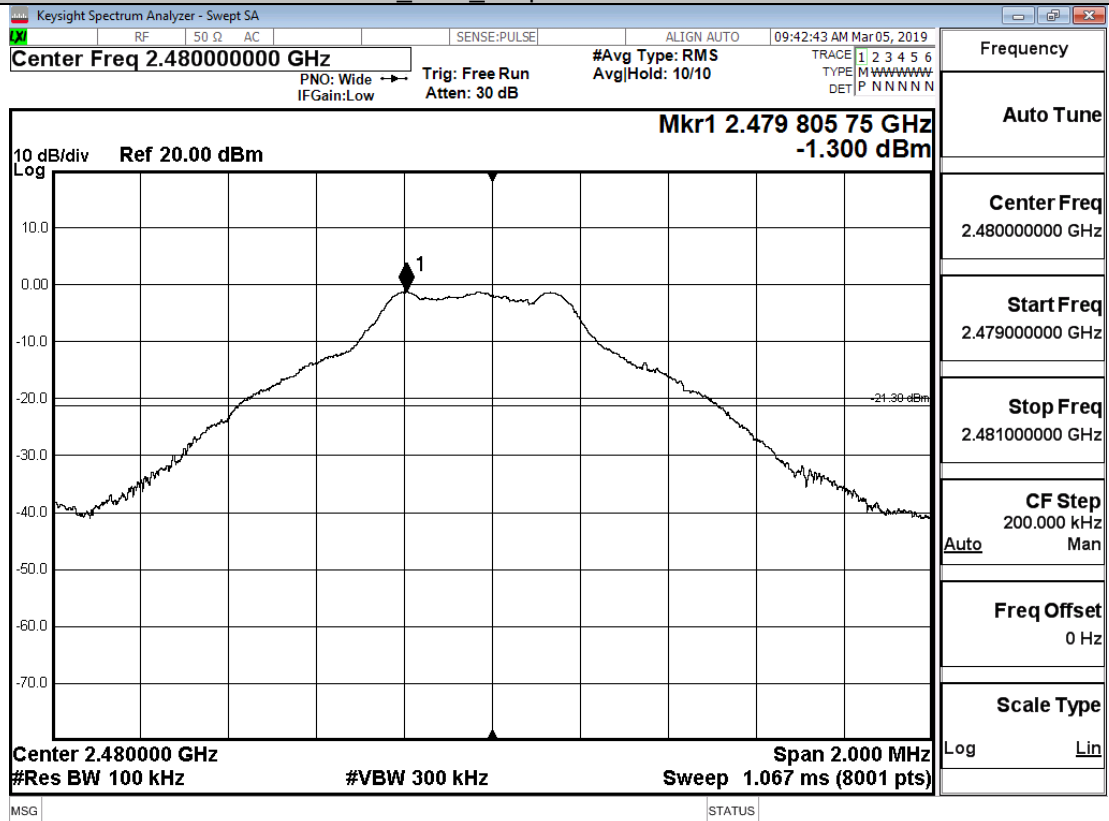


Puw

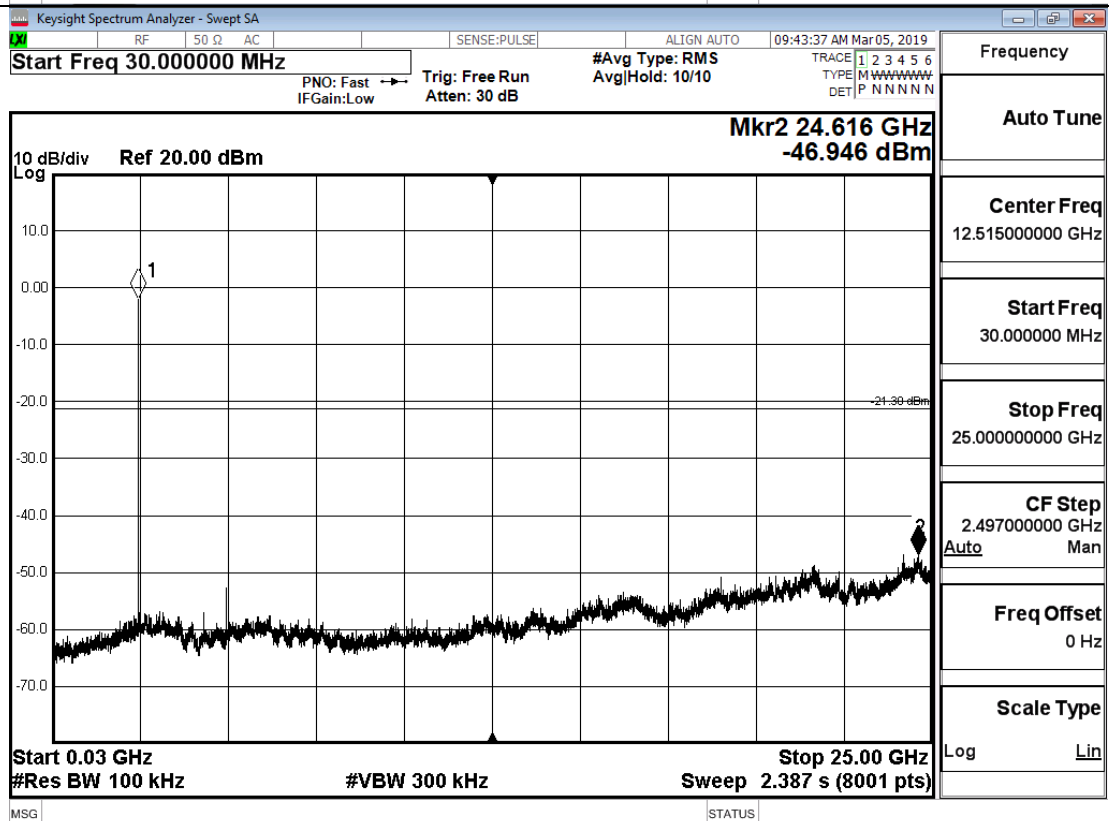


GFSK_HCH_Graphs

Pref

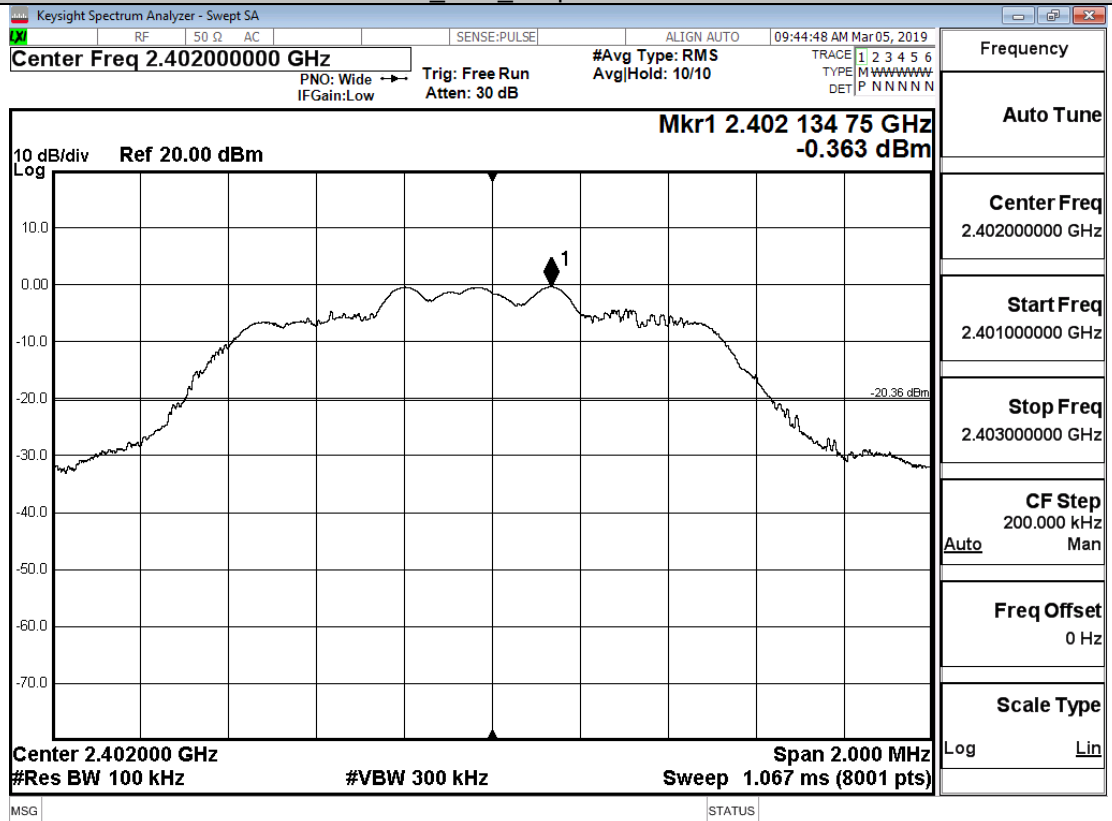


Puw

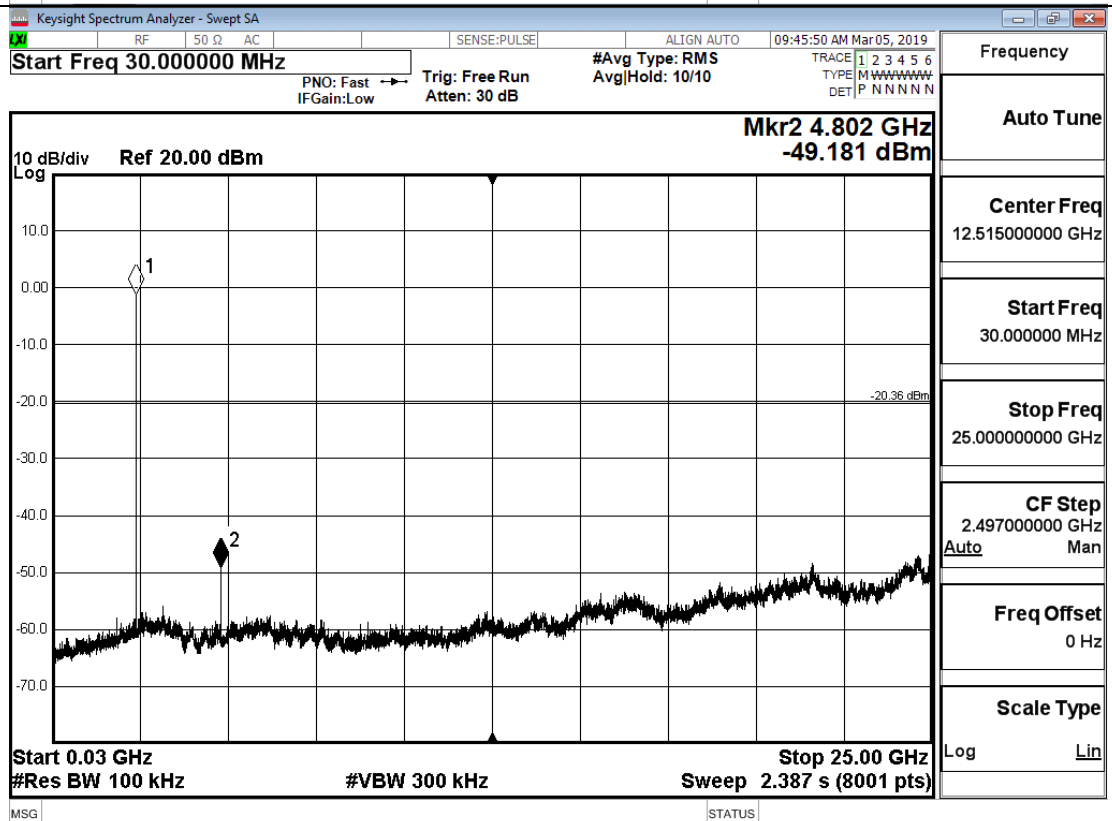


$\pi/4$ DQPSK_LCH_Graphs

Pref

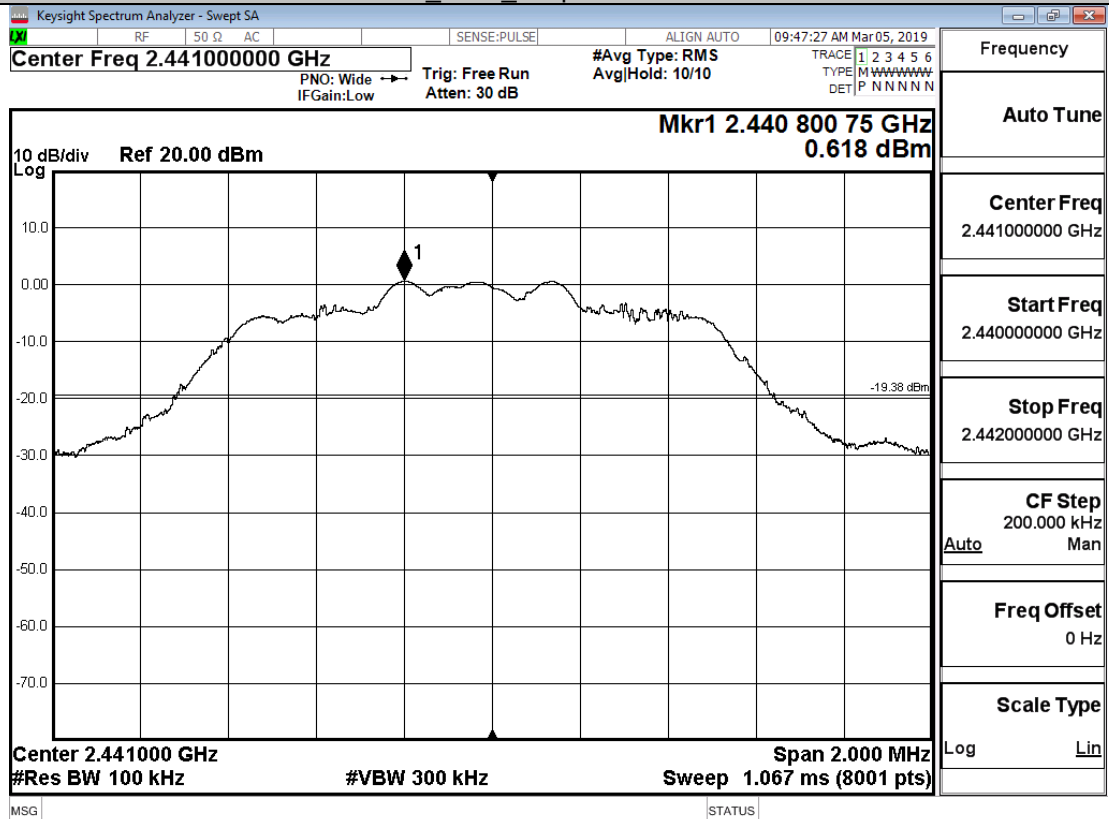


Puw

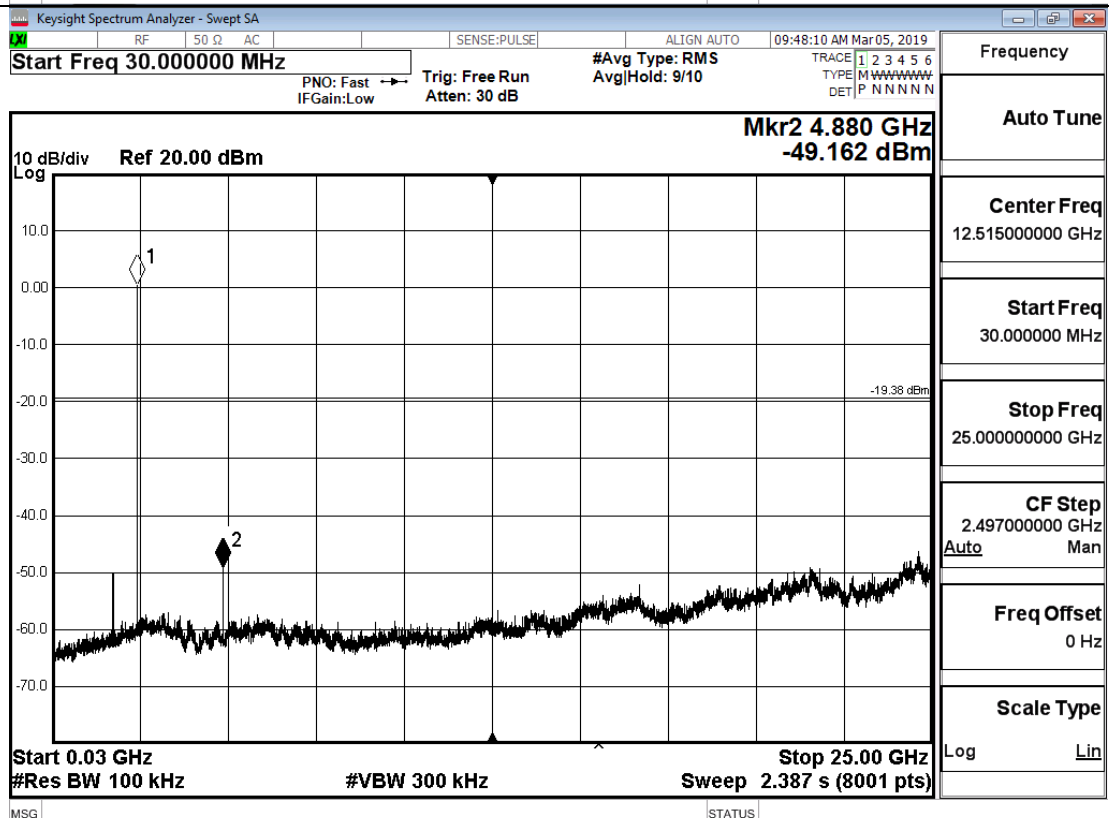


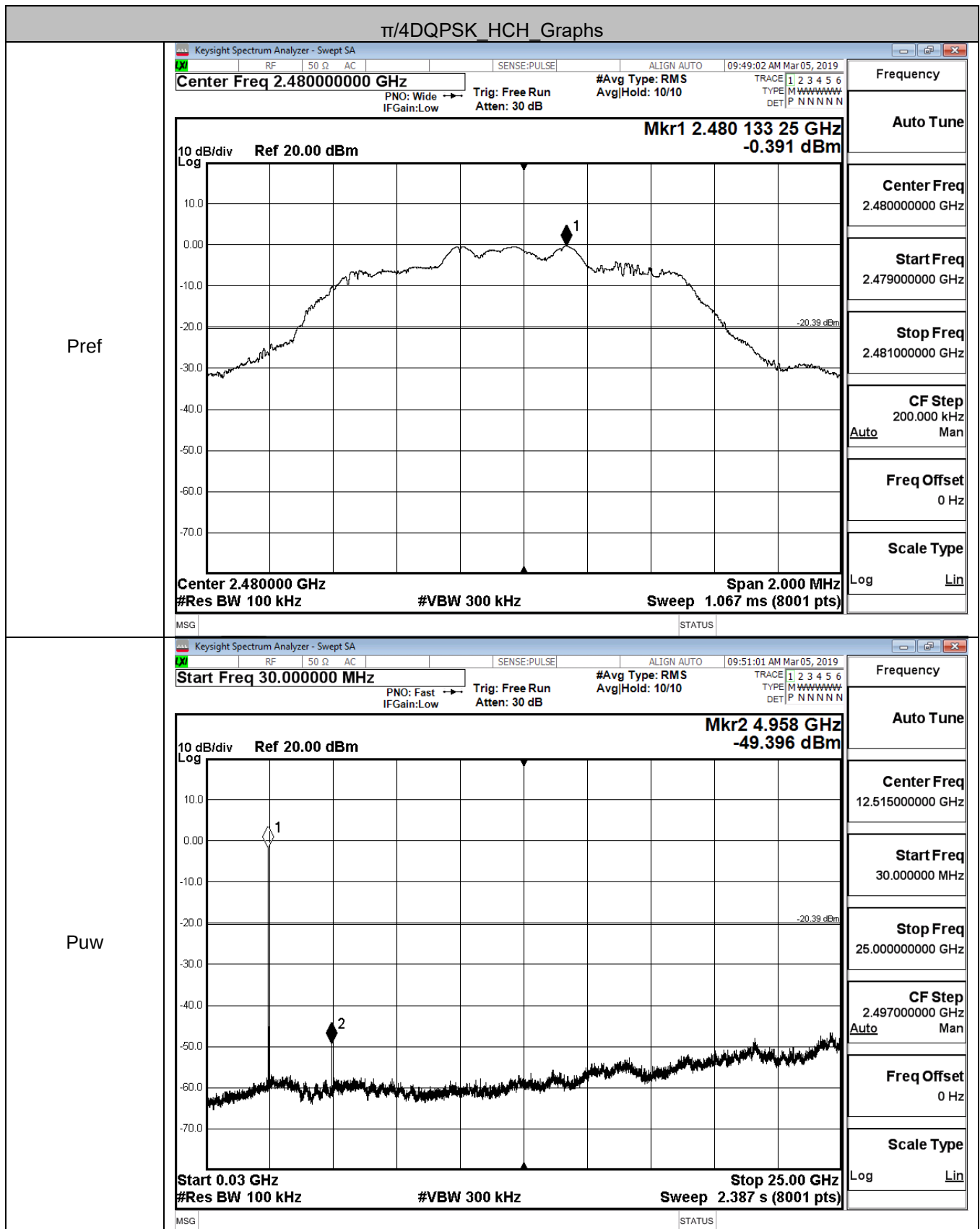
$\pi/4$ DQPSK_MCH_Graphs

Pref



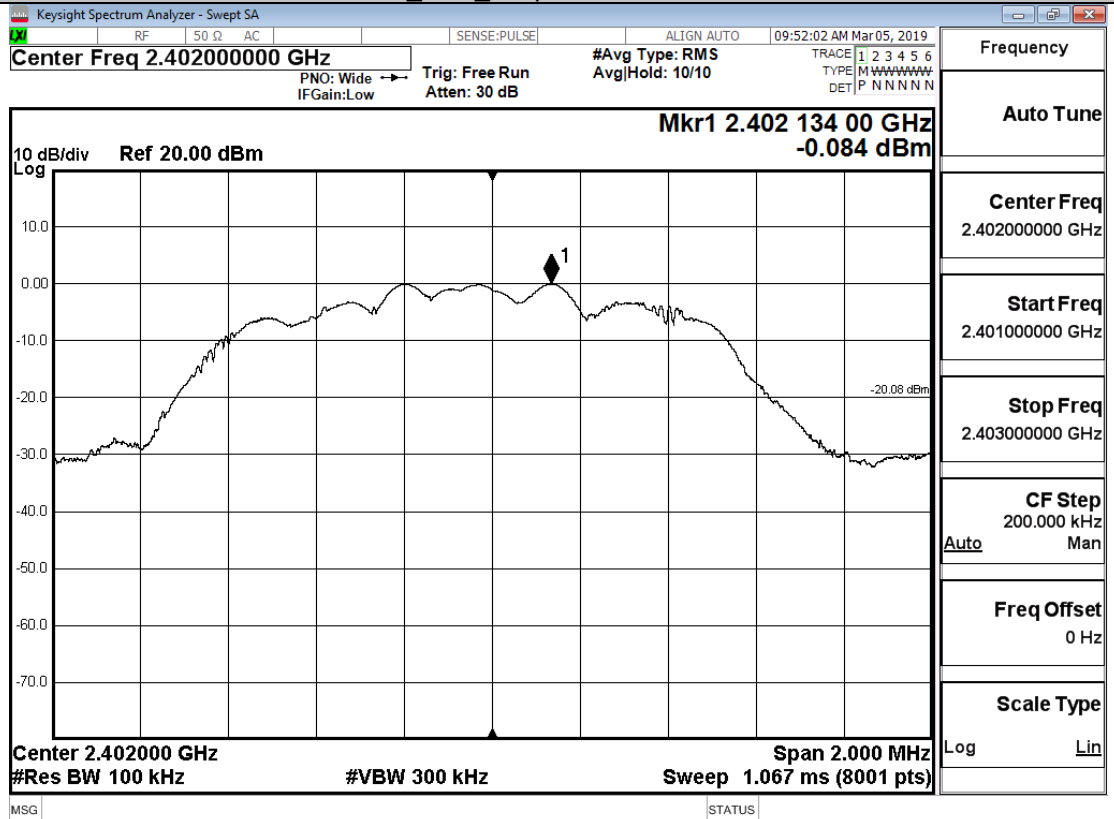
Puw



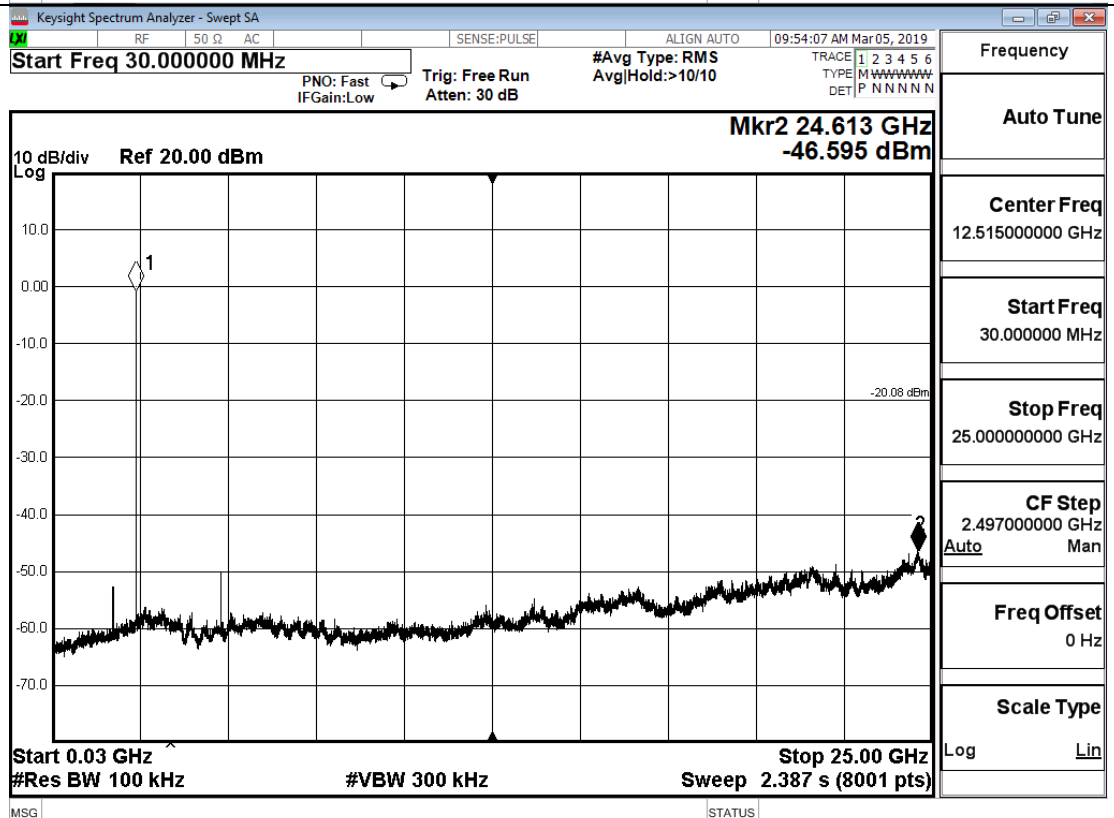


8DPSK_LCH_Graphs

Pref

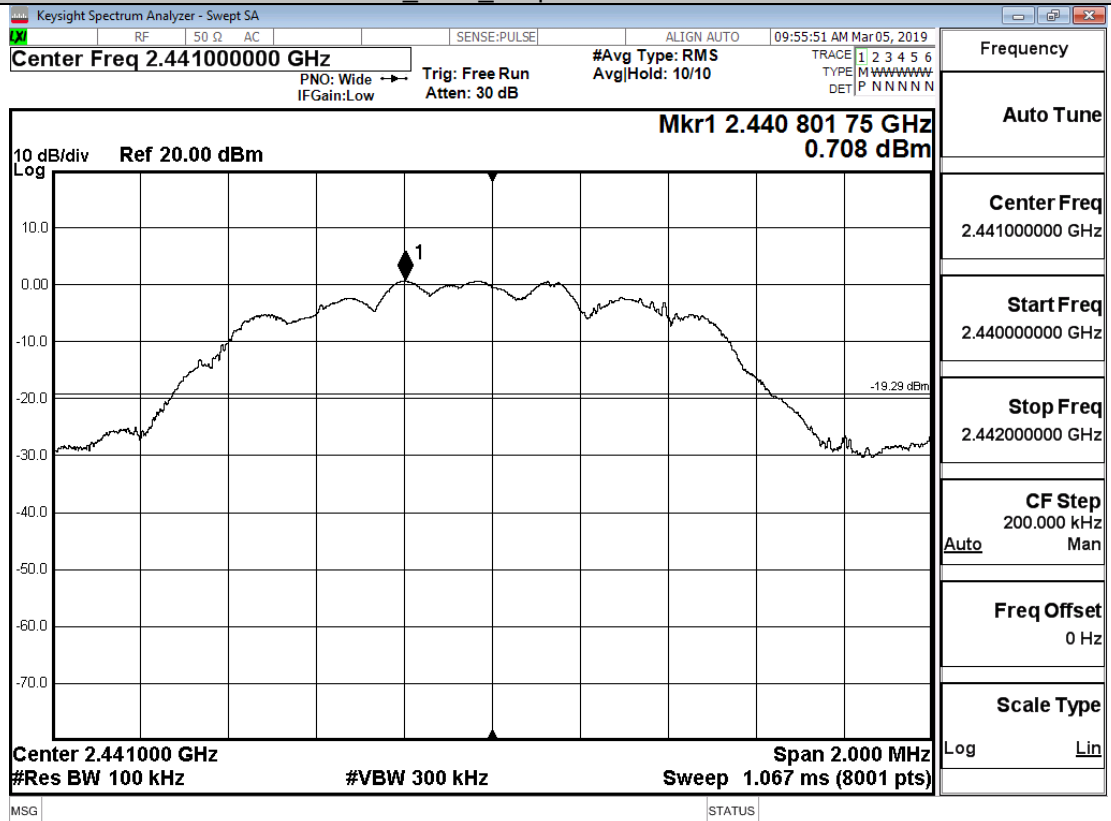


Puw

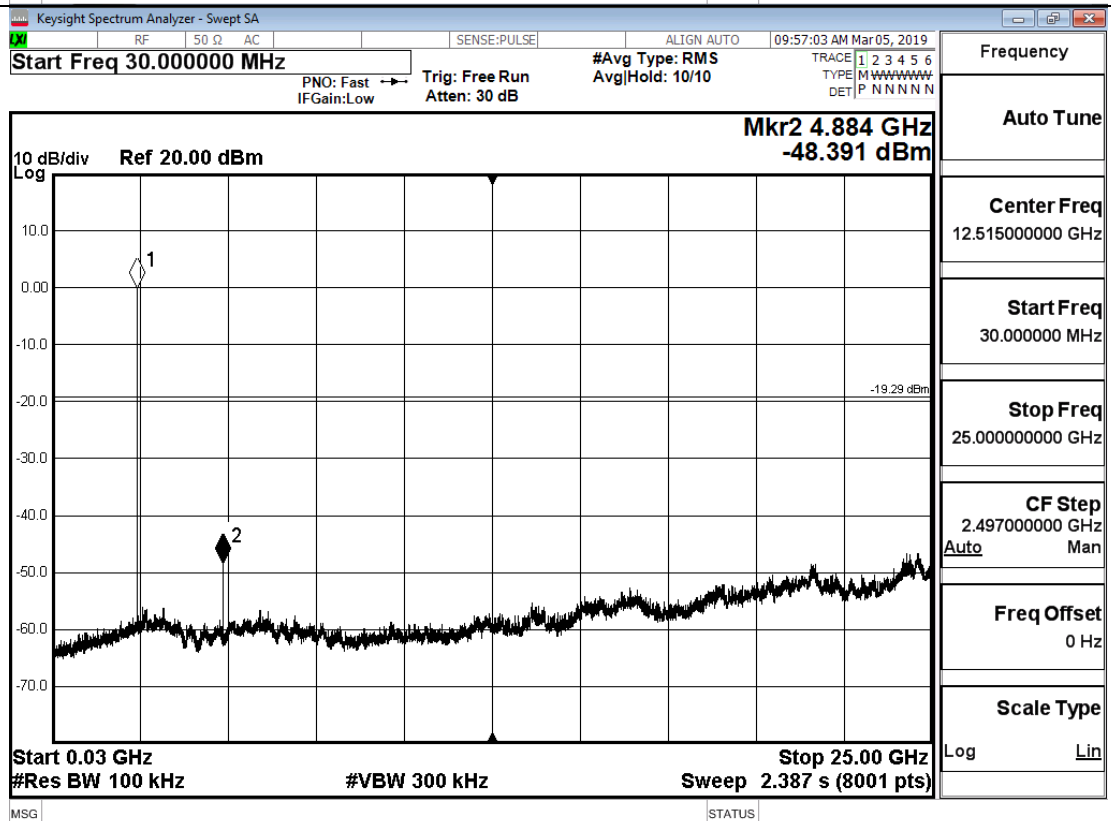


8DPSK_MCH_Graphs

Pref

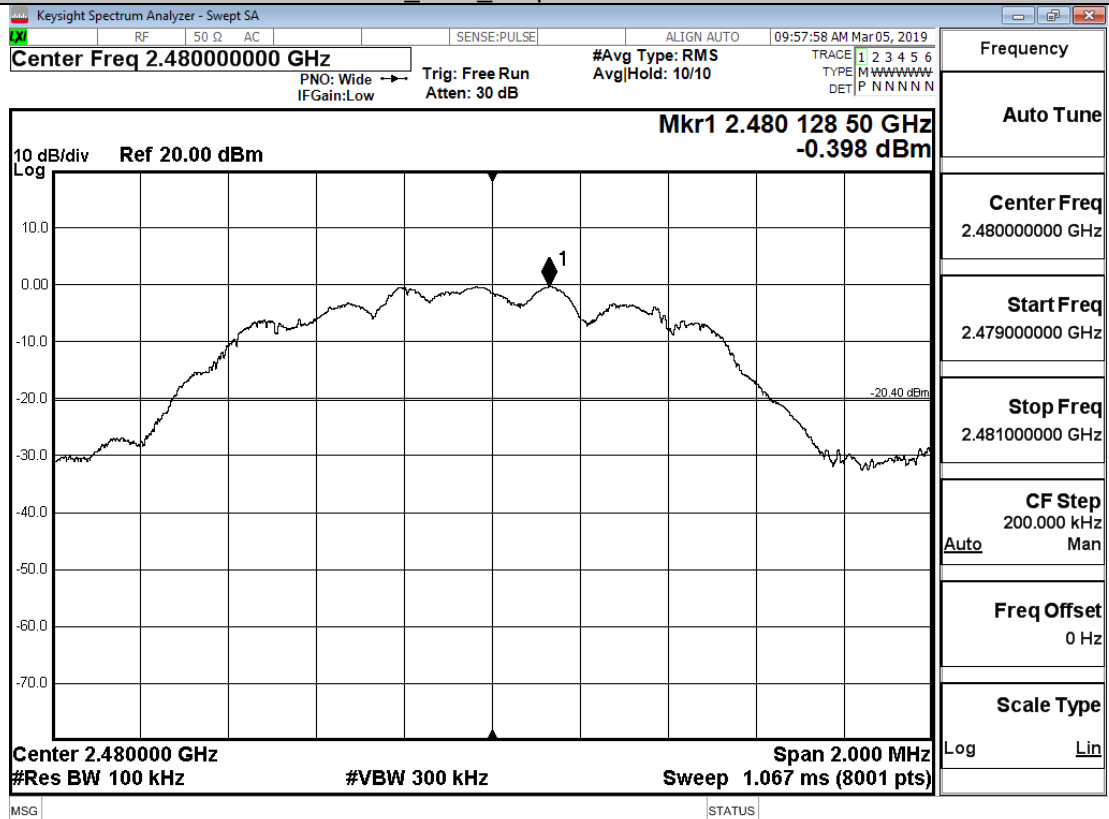


Puw

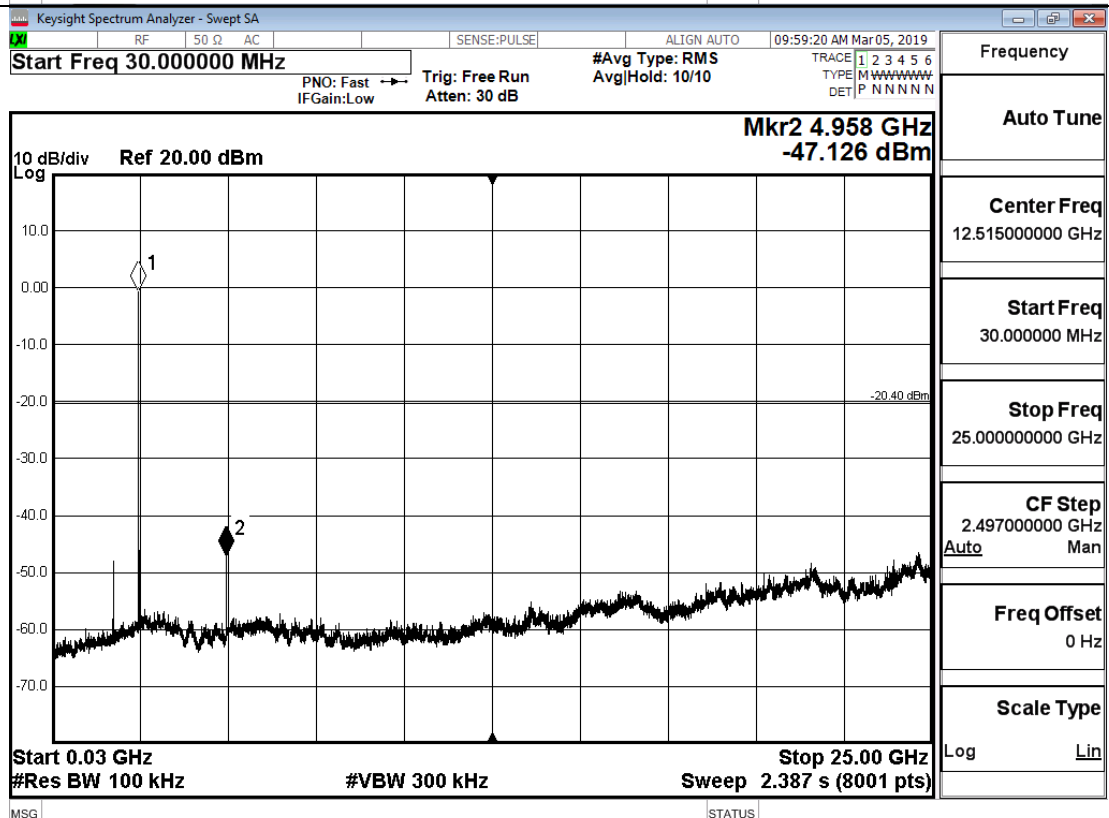


8DPSK_HCH_Graphs

Pref



Puw

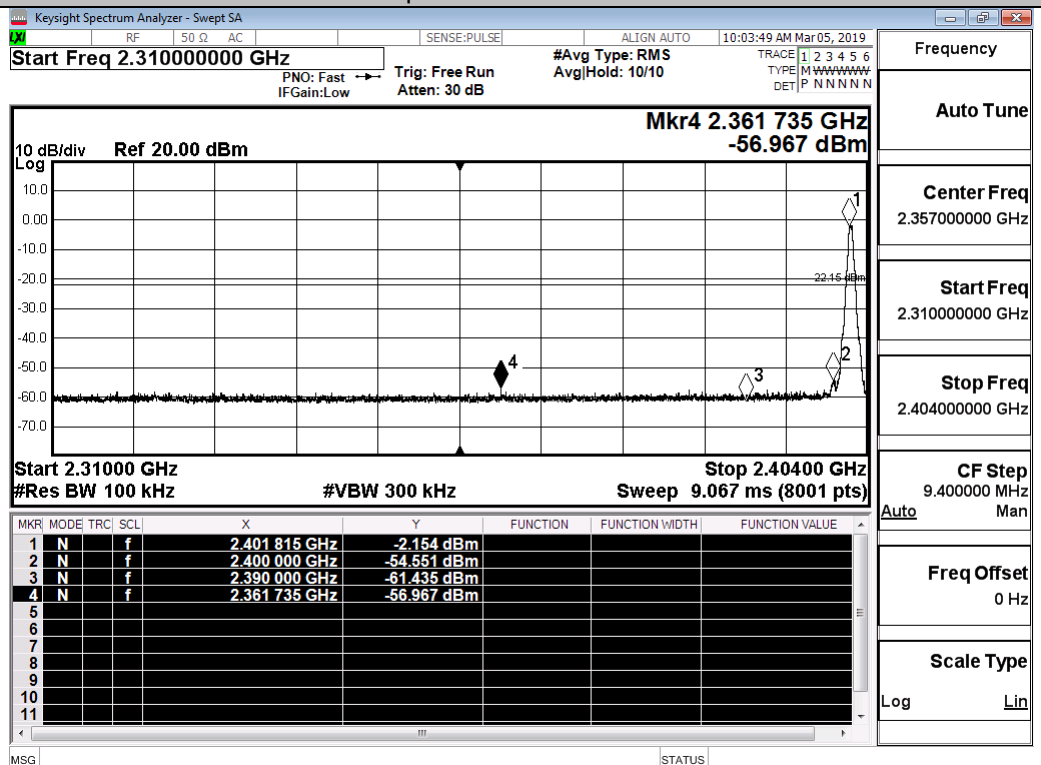


A.7 Band-edge for RF Conducted Emissions

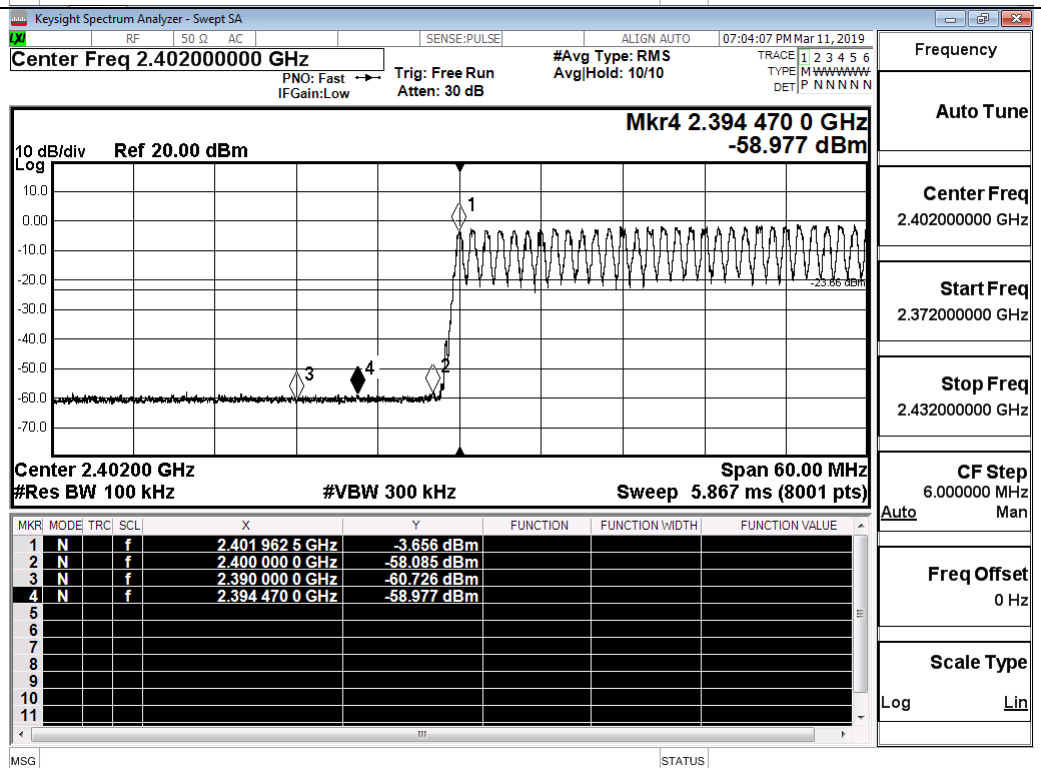
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-2.154	Off	-54.551	-22.15	PASS
			-3.655	On	-58.085	-23.66	PASS
	HCH	2480	-0.549	Off	-51.748	-20.55	PASS
			-1.022	On	-58.756	-21.02	PASS
$\pi/4$ DQPSK	LCH	2402	-0.130	Off	-46.367	-20.13	PASS
			-2.077	On	-48.440	-22.08	PASS
	HCH	2480	-0.415	Off	-51.462	-20.42	PASS
			-1.192	On	-57.772	-21.19	PASS
8DPSK	LCH	2402	-0.466	Off	-46.633	-20.47	PASS
			-0.433	On	-46.510	-20.43	PASS
	HCH	2480	-1.246	Off	-57.607	-21.25	PASS
			-0.279	On	-57.116	-20.28	PASS

Test Graphs

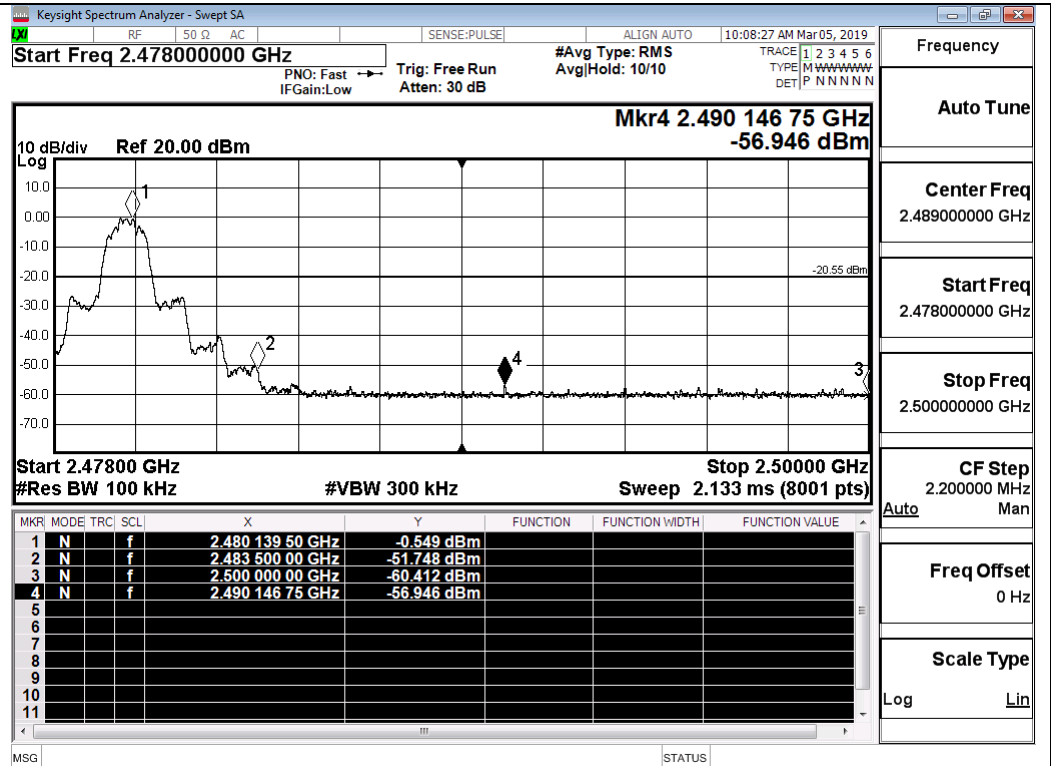
GFSK/LCH/No Hop



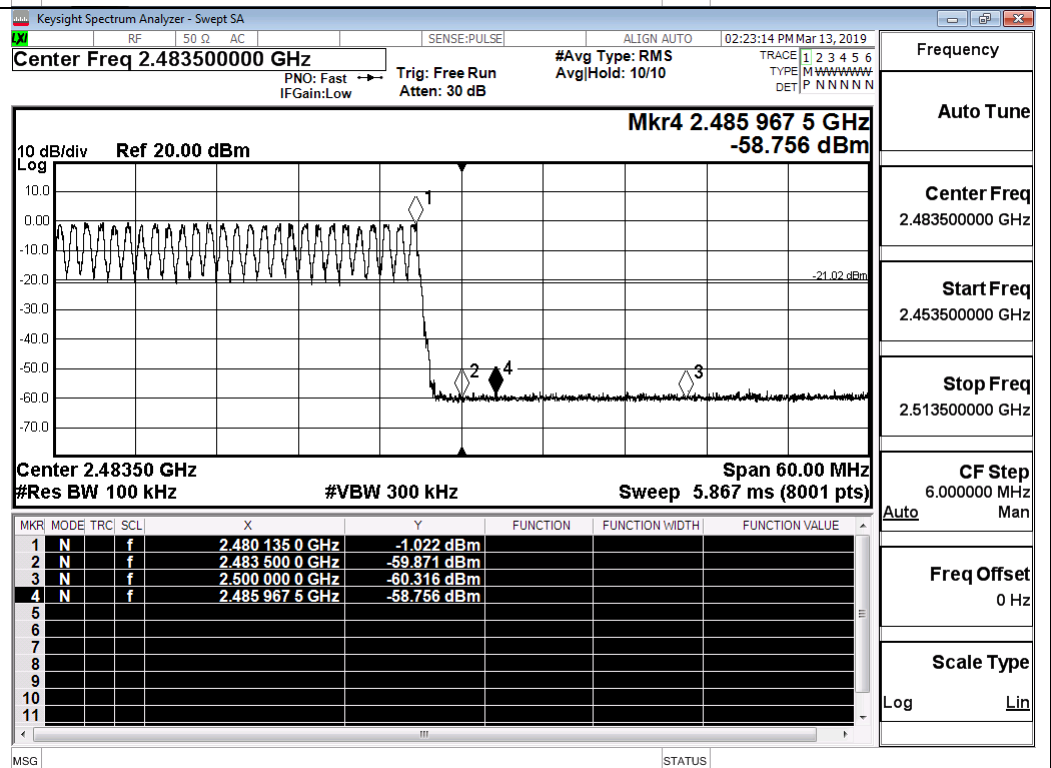
GFSK/LCH/Hop



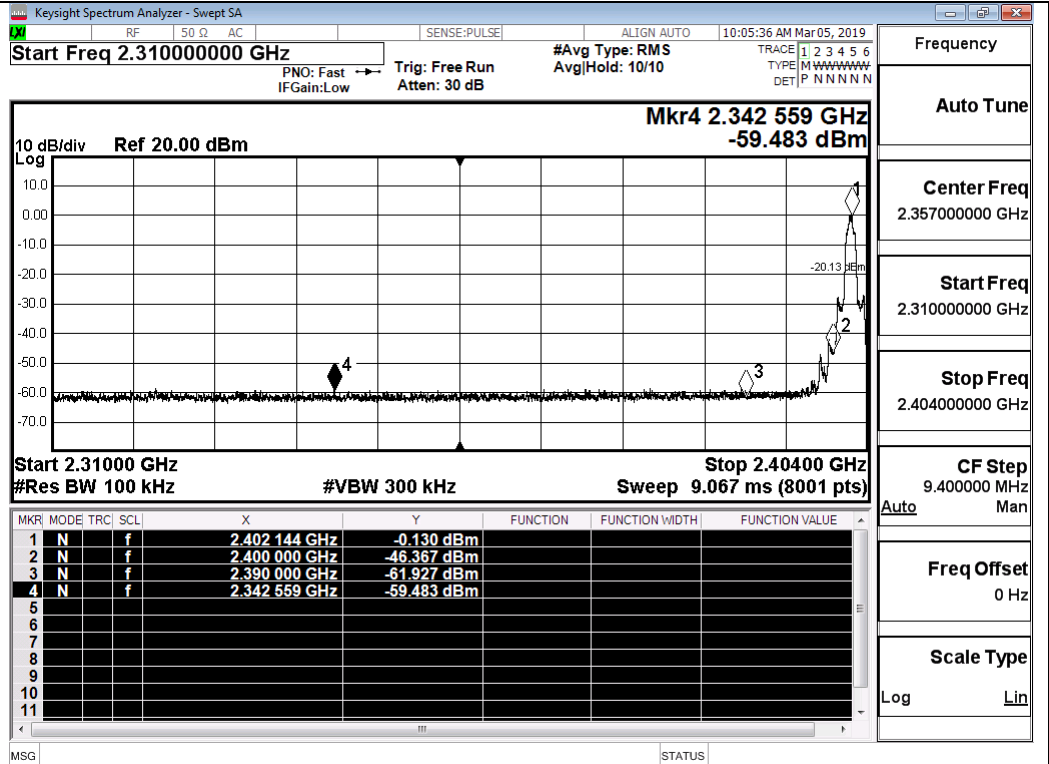
GFSK/HCH/No Hop



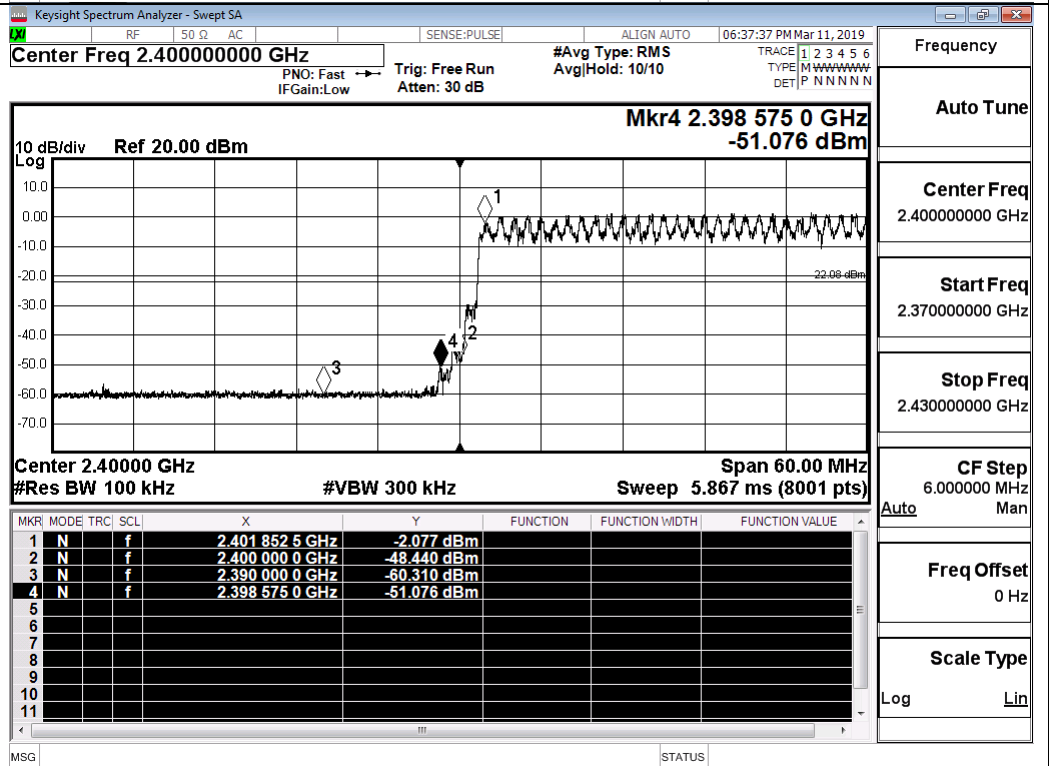
GFSK/HCH/Hop



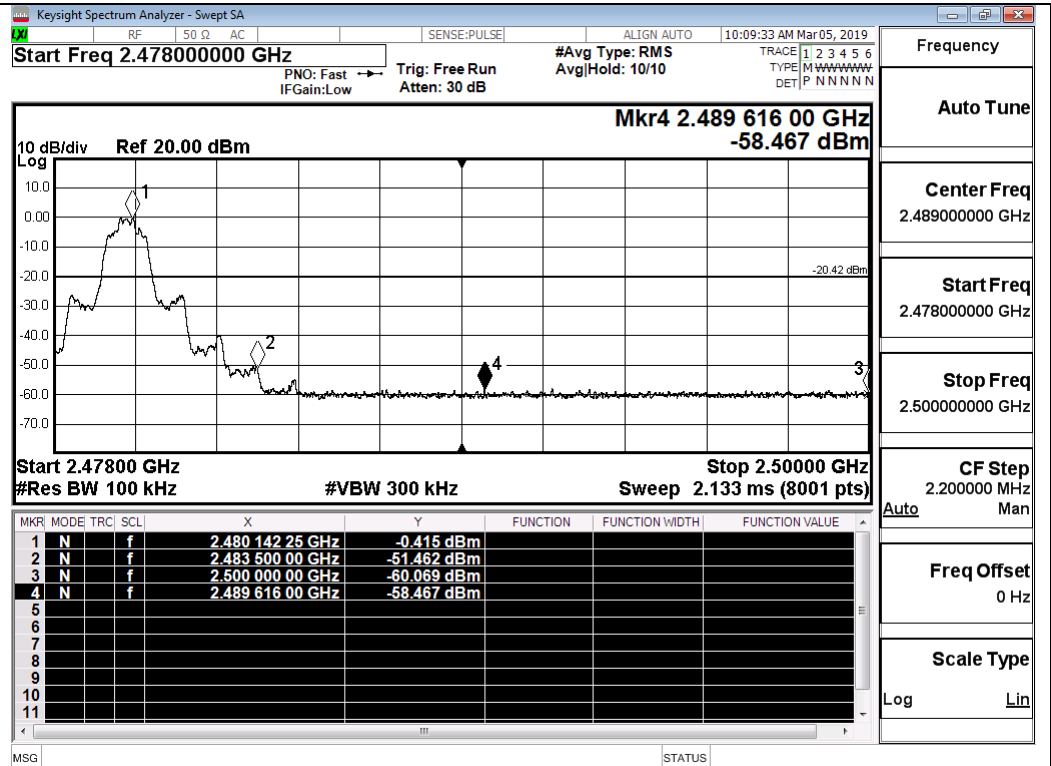
$\pi/4$ DQPSK/LCH/No
Hop



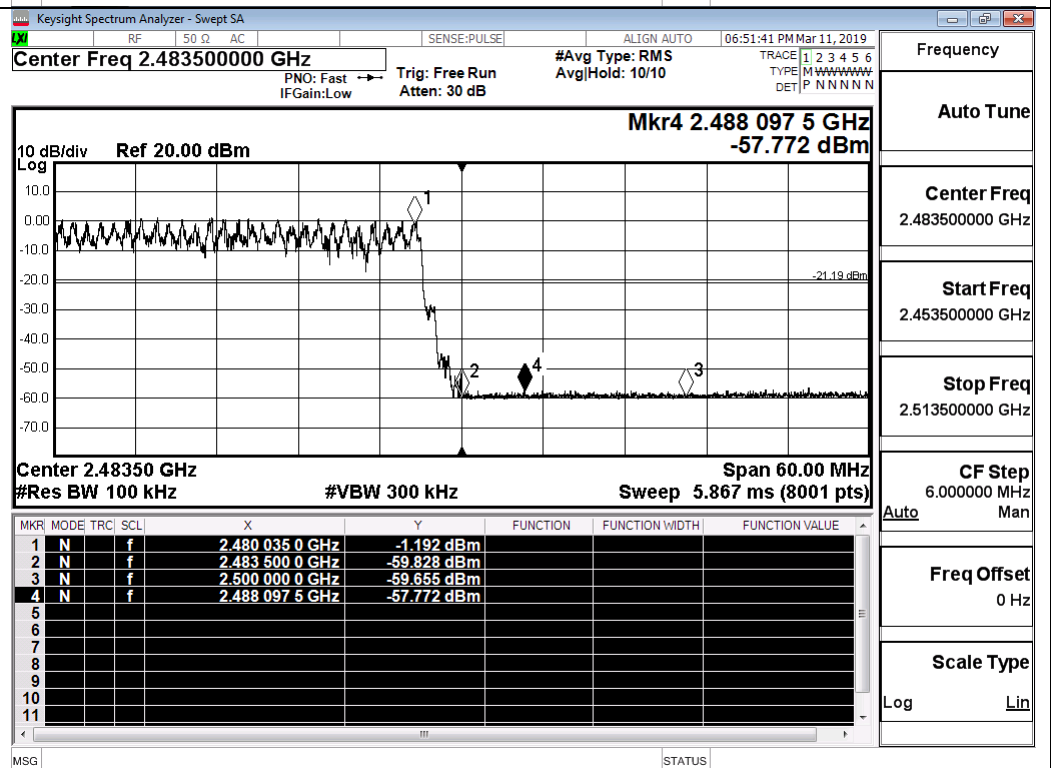
$\pi/4$ DQPSK/LCH/Hop



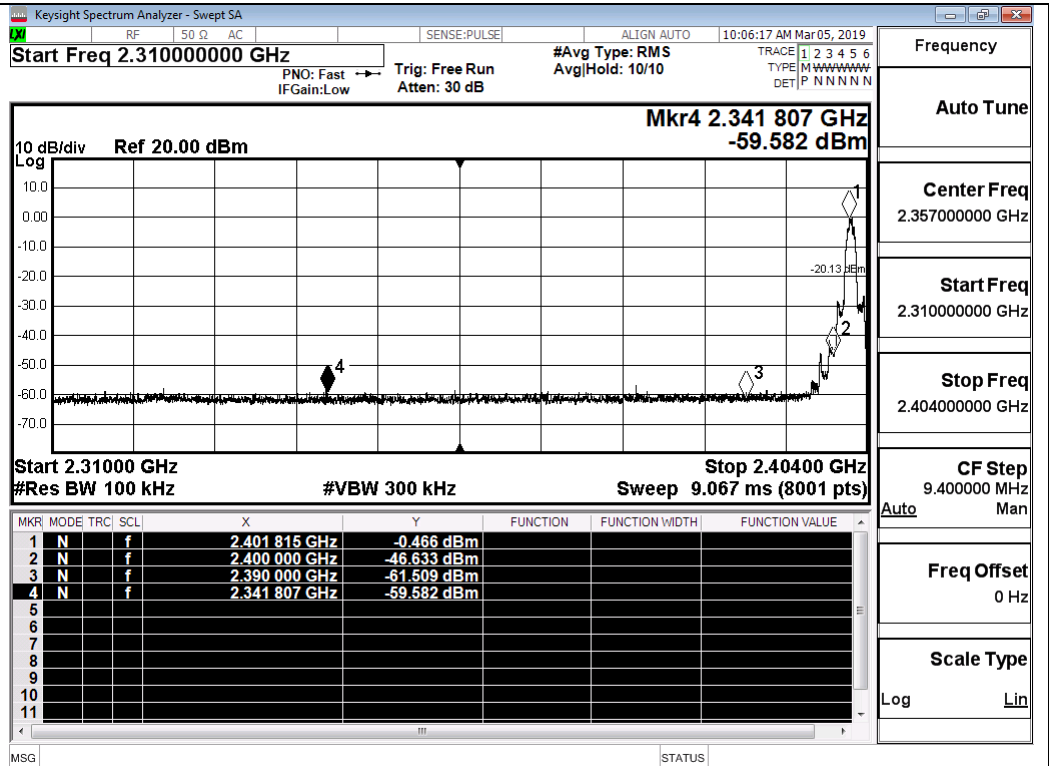
$\pi/4$ DQPSK/HCH/No
Hop



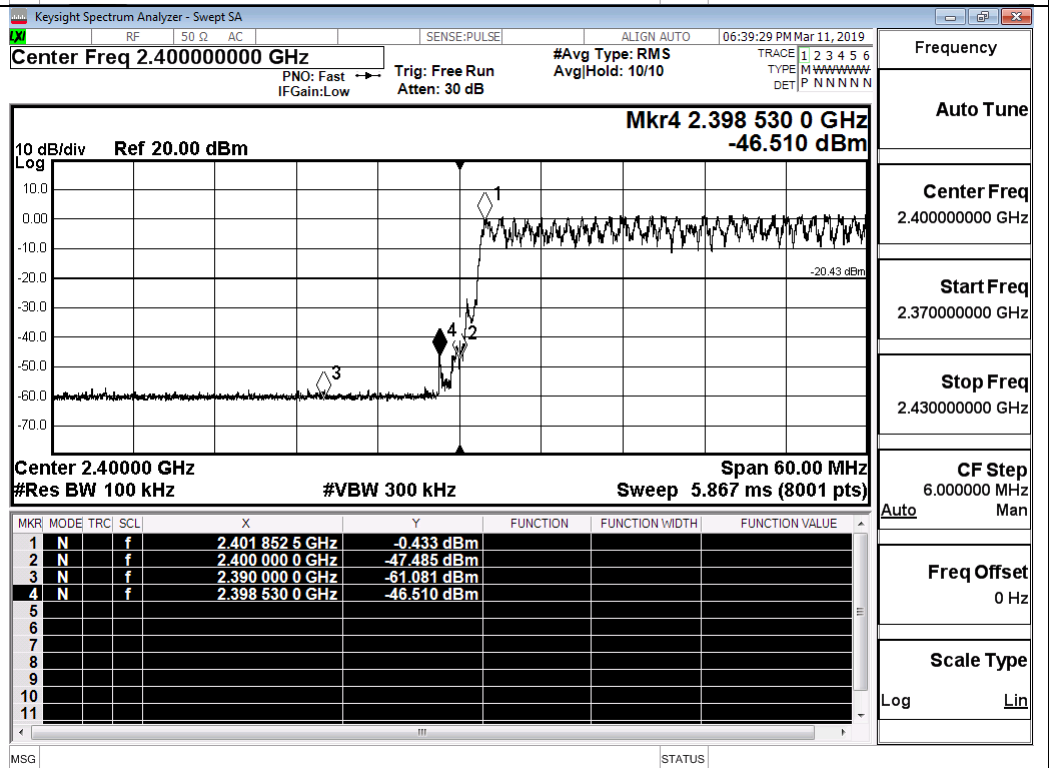
$\pi/4$ DQPSK/HCH/Hop



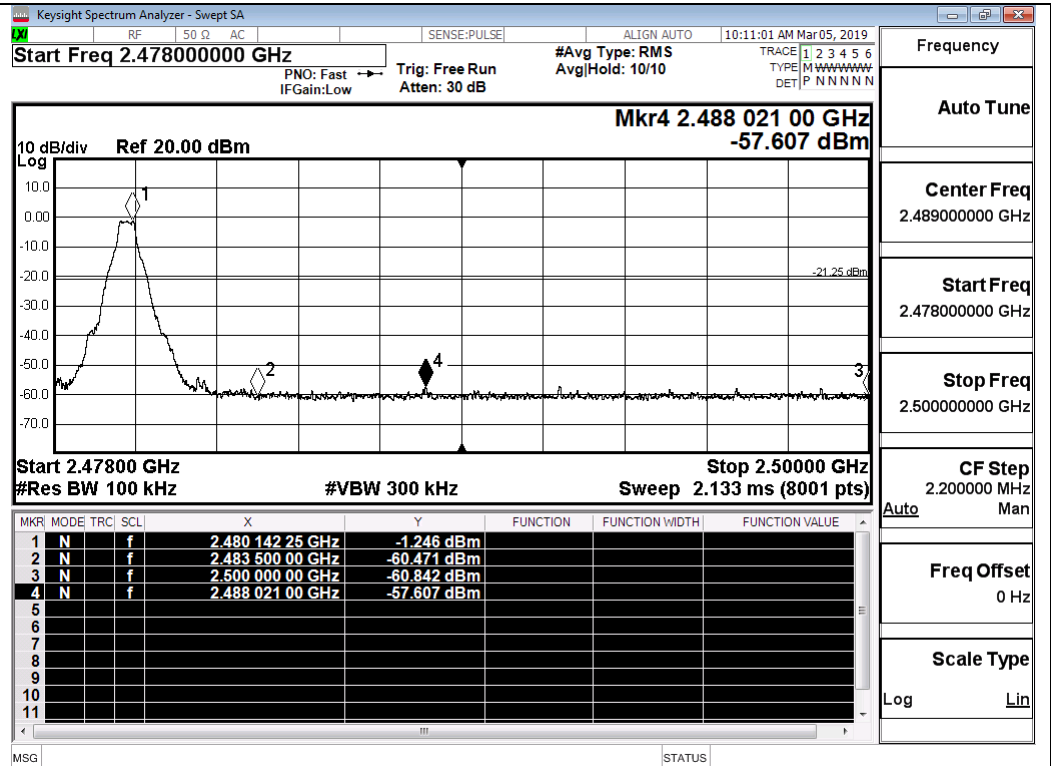
8DPSK/LCH/No Hop



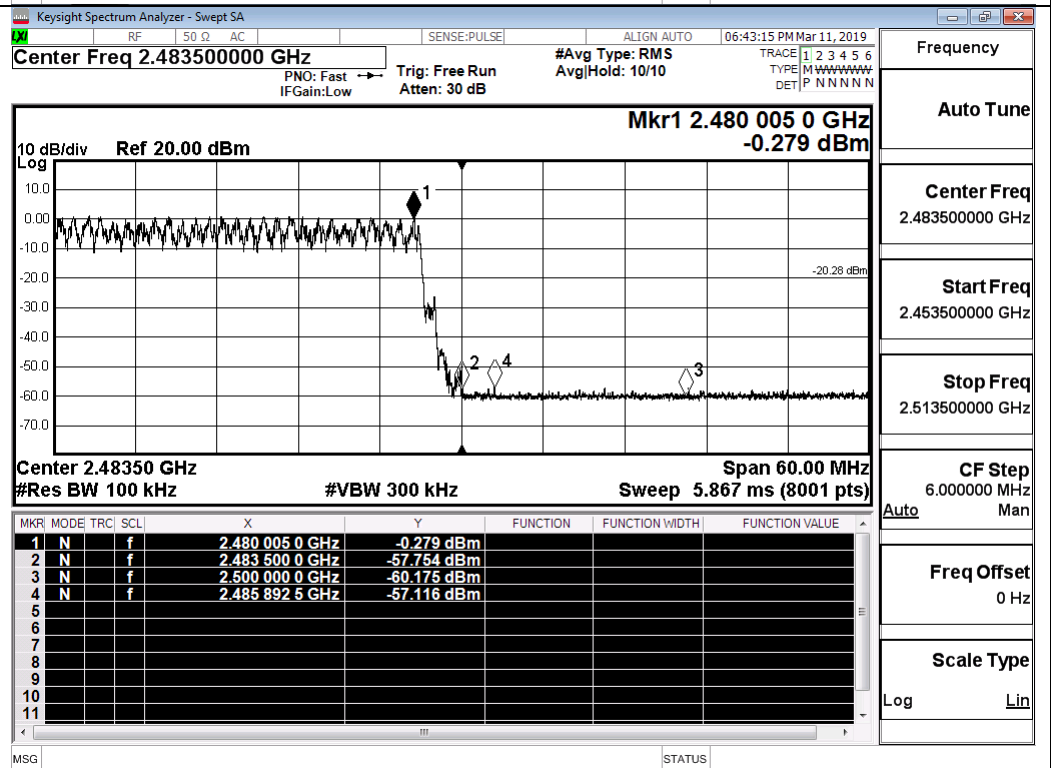
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



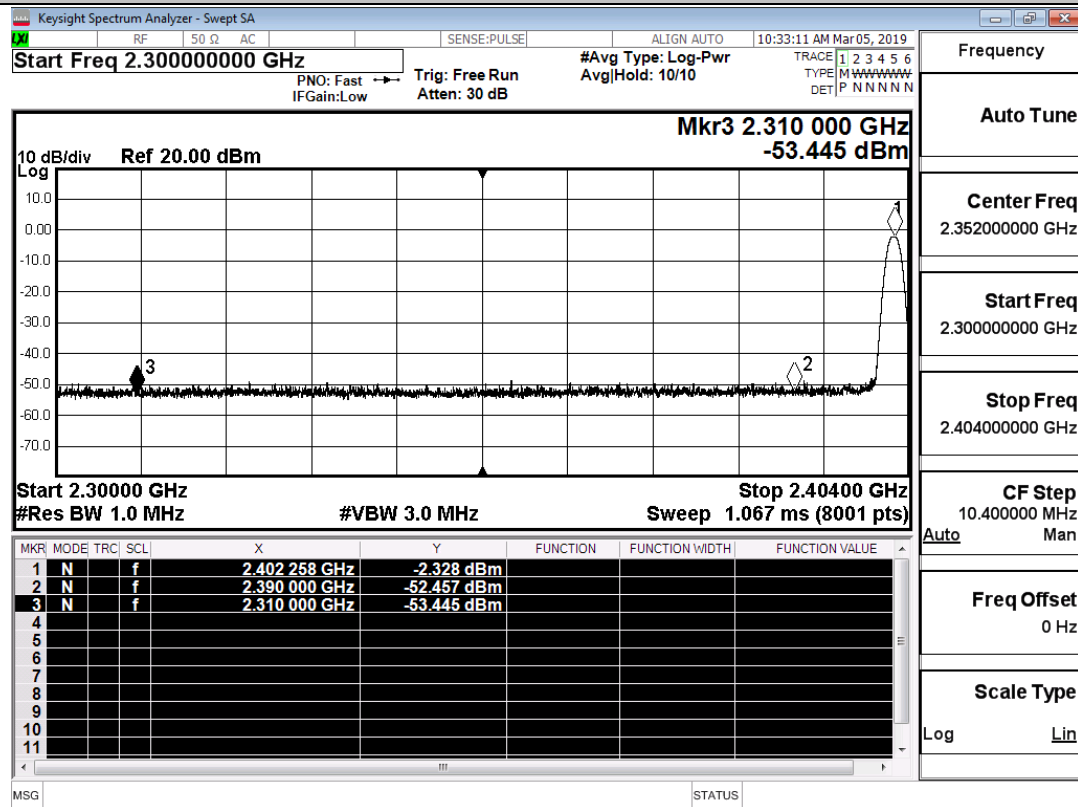
8DPSK/HCH/Hop



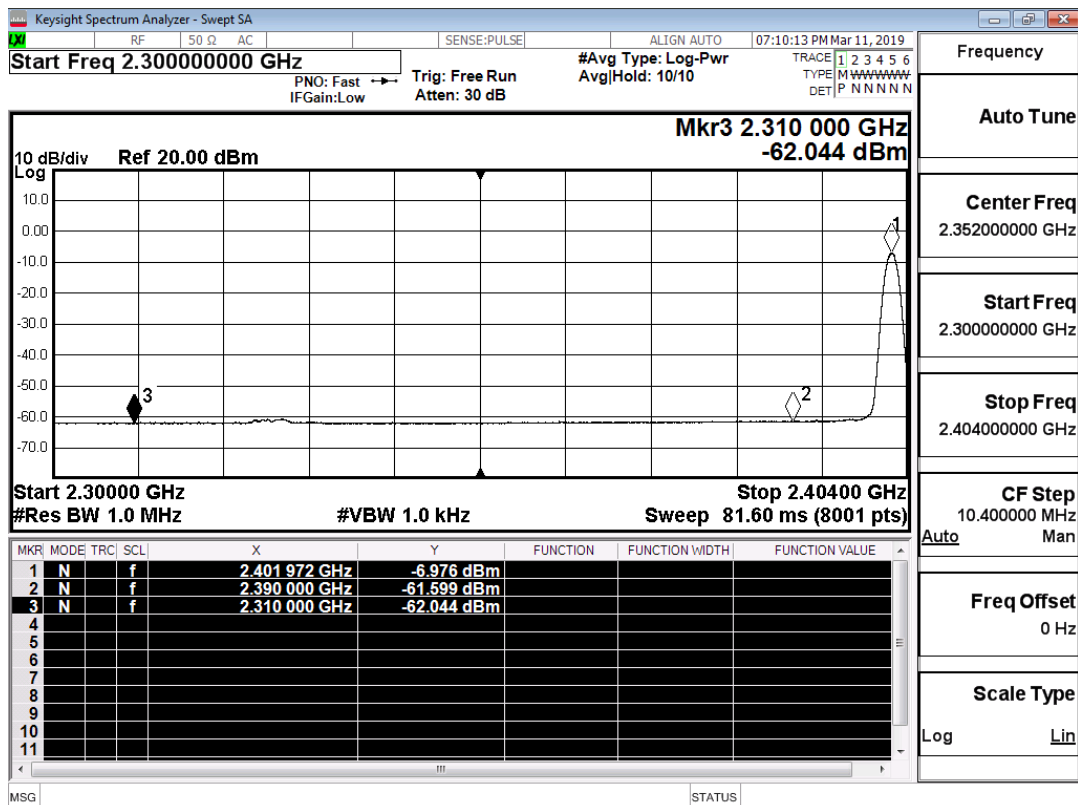
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-53.445	2.000	0	43.79	PEAK	74	PASS
	Off	2310.0	-62.044	2.000	0	35.19	AV	54	PASS
	Off	2390.0	-52.457	2.000	0	44.77	PEAK	74	PASS
	Off	2390.0	-61.599	2.000	0	35.63	AV	54	PASS
	Off	2483.5	-50.939	2.000	0	46.29	PEAK	74	PASS
	Off	2483.5	-60.664	2.000	0	36.57	AV	54	PASS
	Off	2500.0	-50.630	2.000	0	46.60	PEAK	74	PASS
	Off	2500.0	-61.255	2.000	0	35.98	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-53.617	2.000	0	43.61	PEAK	74	PASS
	Off	2310.0	-62.277	2.000	0	34.95	AV	54	PASS
	Off	2390.0	-53.805	2.000	0	43.43	PEAK	74	PASS
	Off	2390.0	-61.723	2.000	0	35.51	AV	54	PASS
	Off	2483.5	-41.622	2.000	0	55.61	PEAK	74	PASS
	Off	2483.5	-57.060	2.000	0	40.17	AV	54	PASS
	Off	2500.0	-51.476	2.000	0	45.75	PEAK	74	PASS
	Off	2500.0	-61.130	2.000	0	36.10	AV	54	PASS
8DPSK	Off	2310.0	-52.758	2.000	0	44.47	PEAK	74	PASS
	Off	2310.0	-62.148	2.000	0	35.08	AV	54	PASS
	Off	2390.0	-51.882	2.000	0	45.35	PEAK	74	PASS
	Off	2390.0	-61.764	2.000	0	35.47	AV	54	PASS
	Off	2483.5	-41.268	2.000	0	55.96	PEAK	74	PASS
	Off	2483.5	-57.730	2.000	0	39.50	AV	54	PASS
	Off	2500.0	-50.537	2.000	0	46.69	PEAK	74	PASS
	Off	2500.0	-61.292	2.000	0	35.94	AV	54	PASS

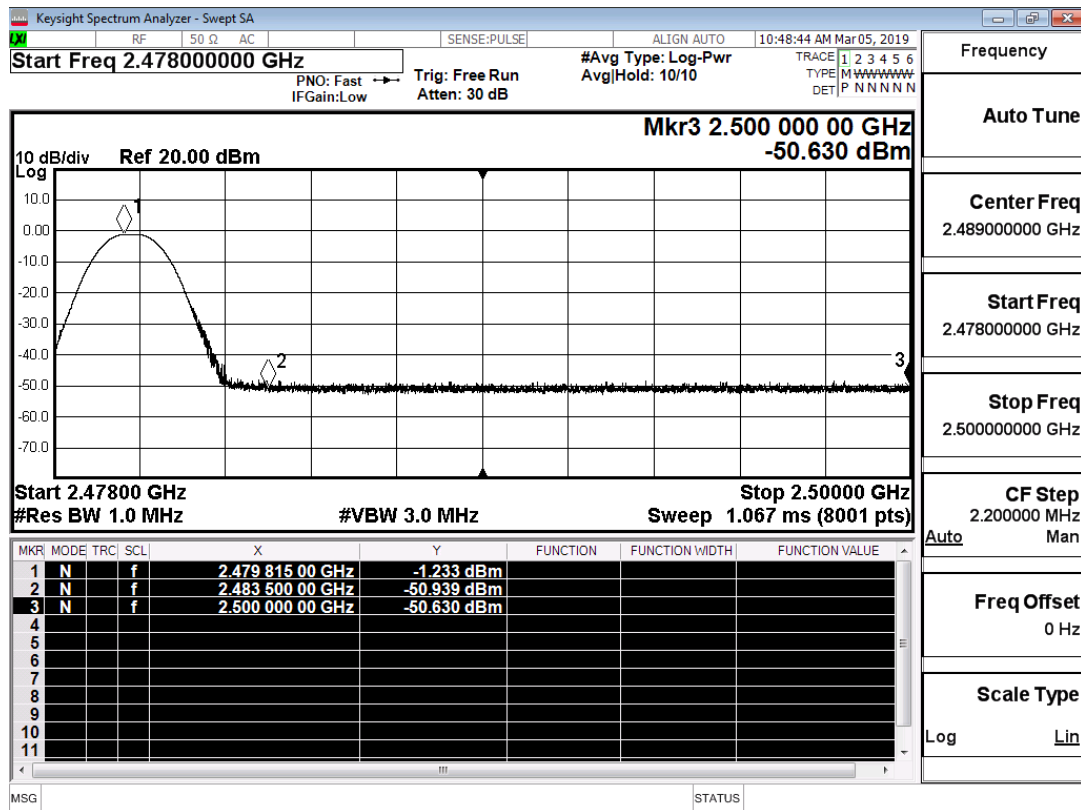
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



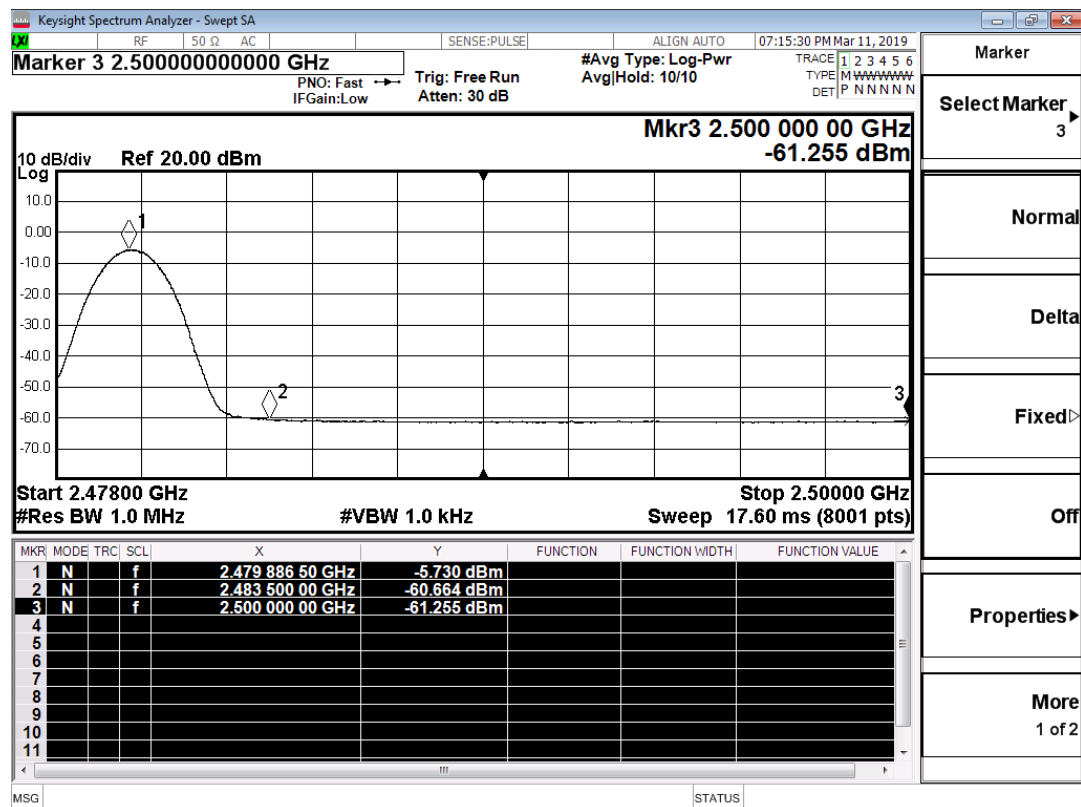
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



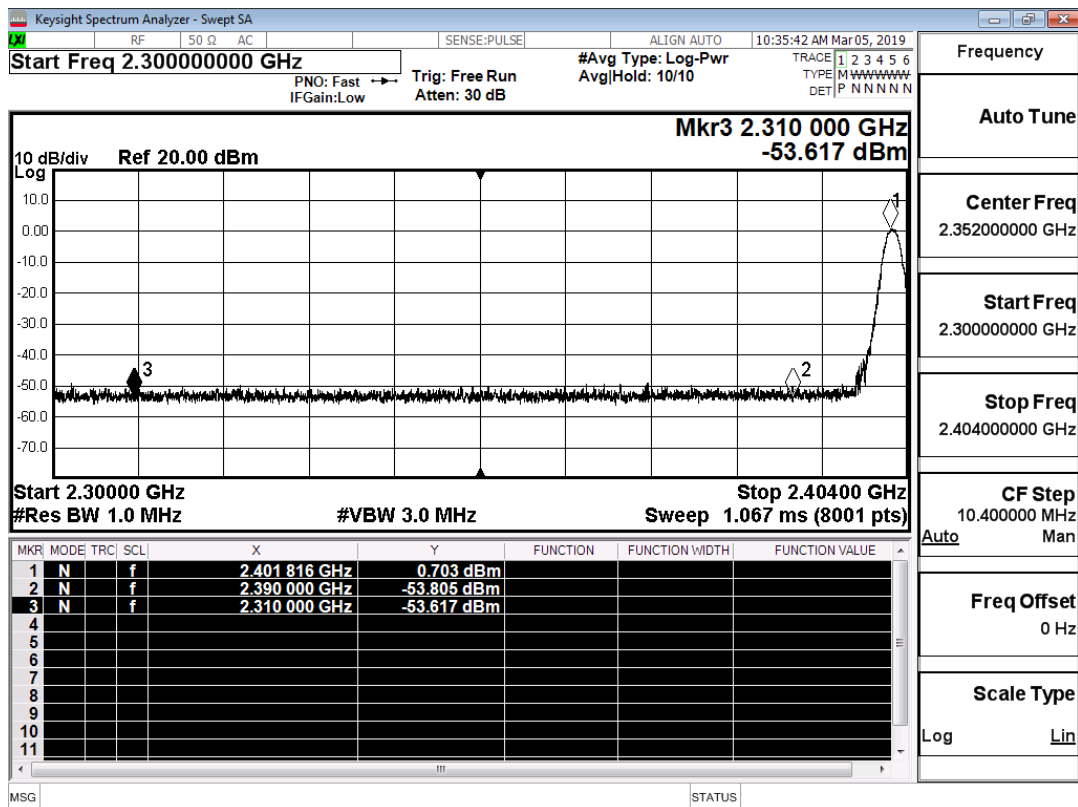
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



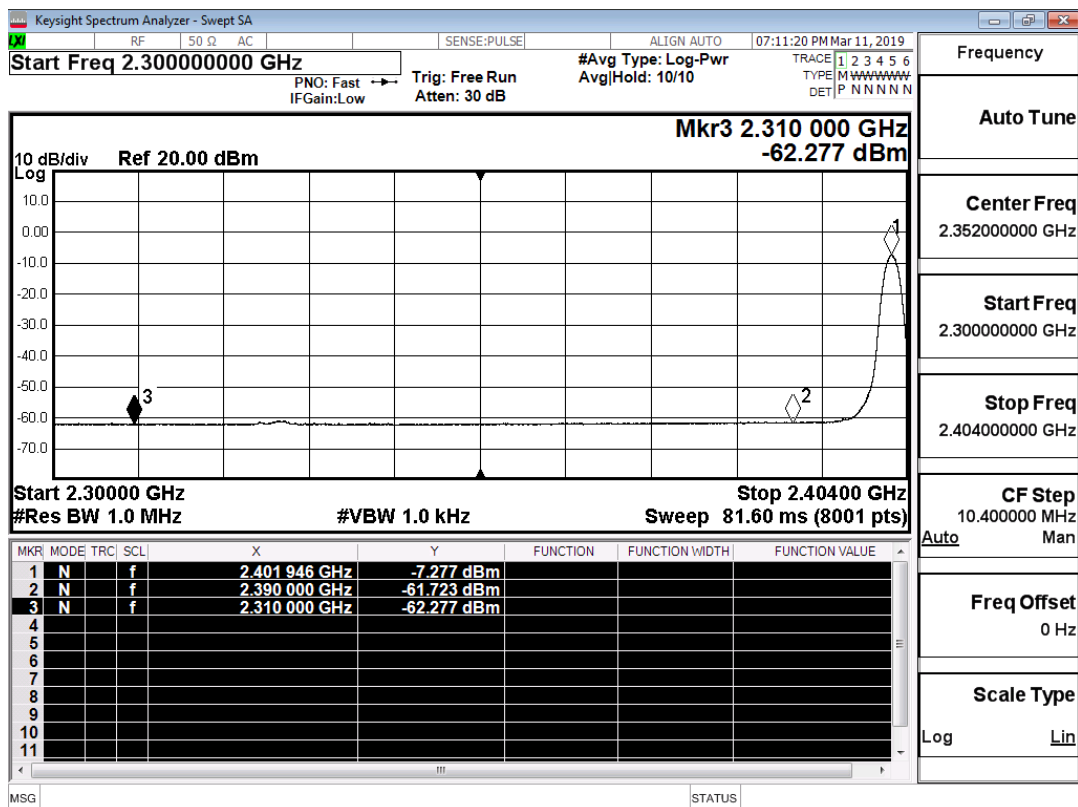
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



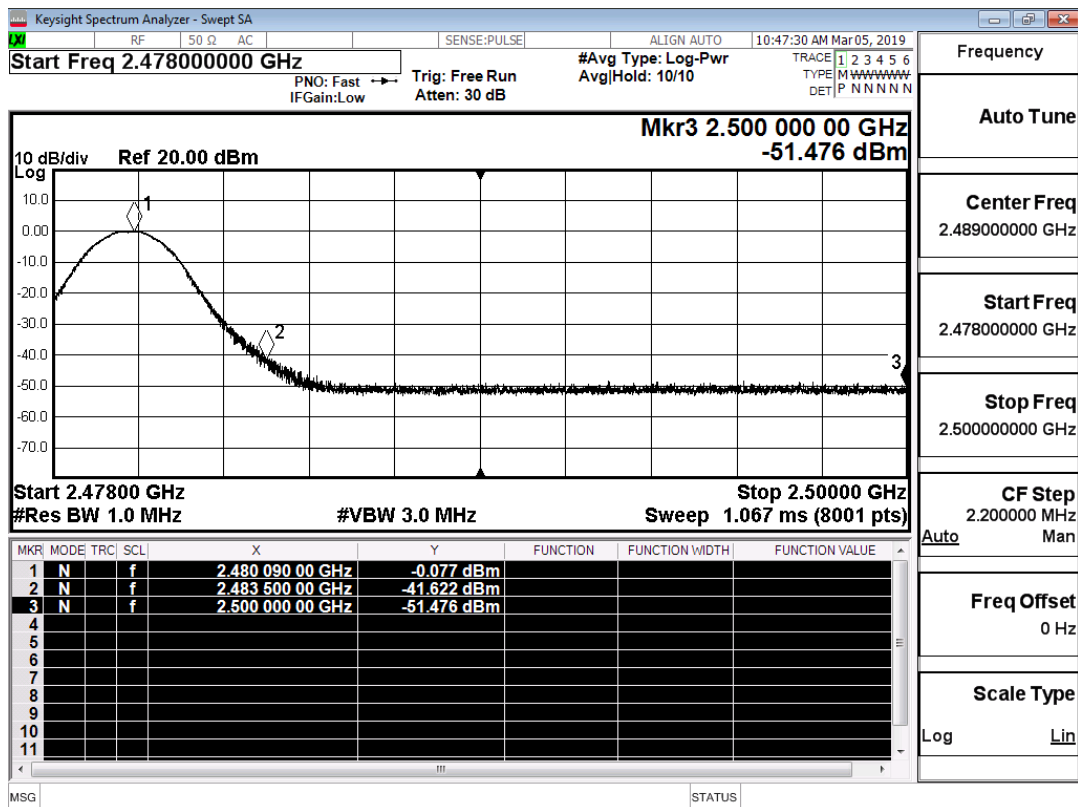
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



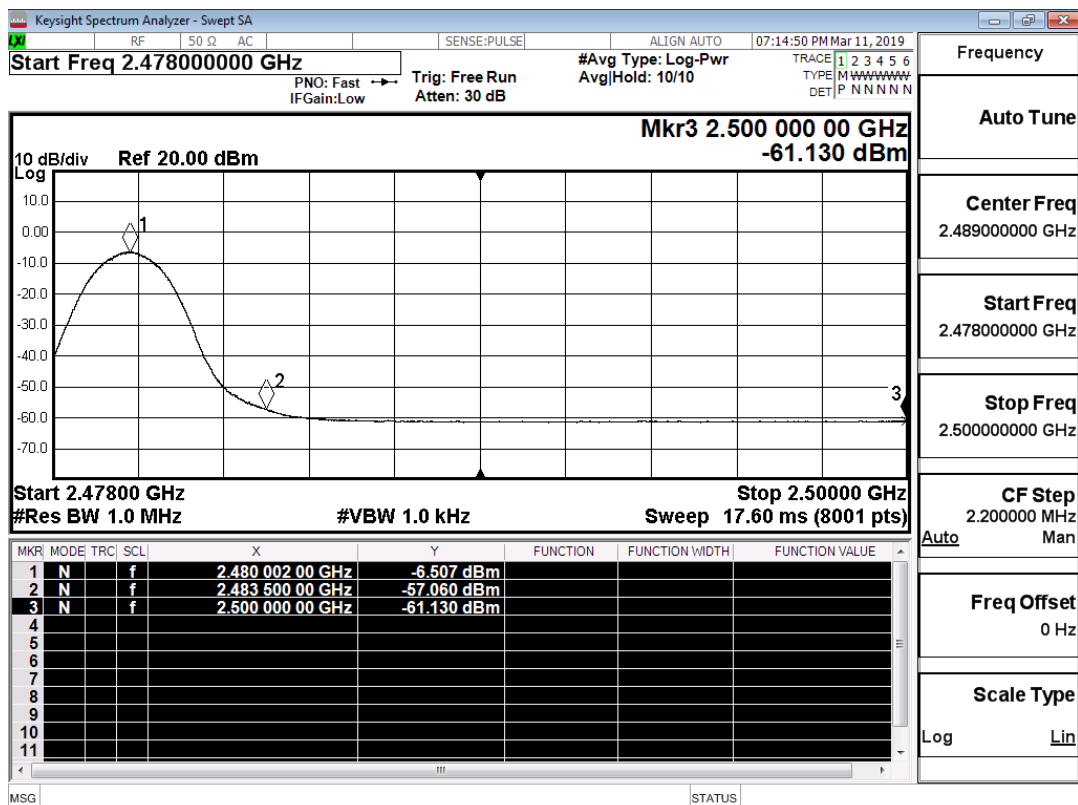
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



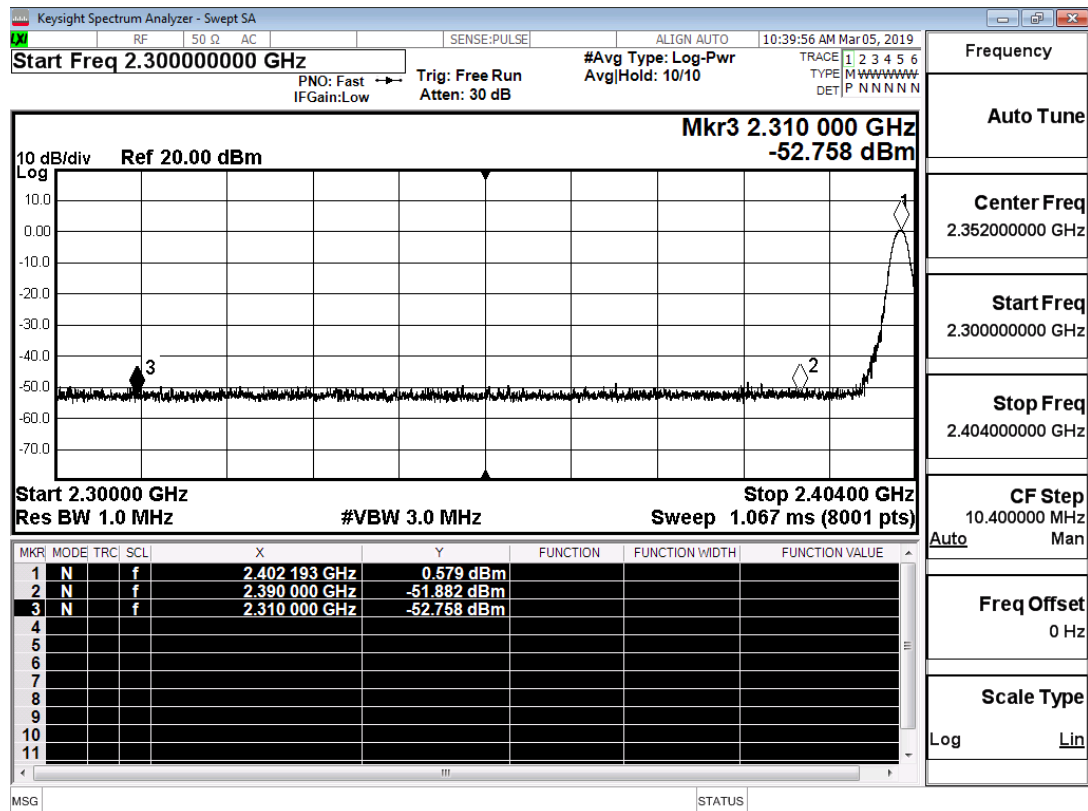
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



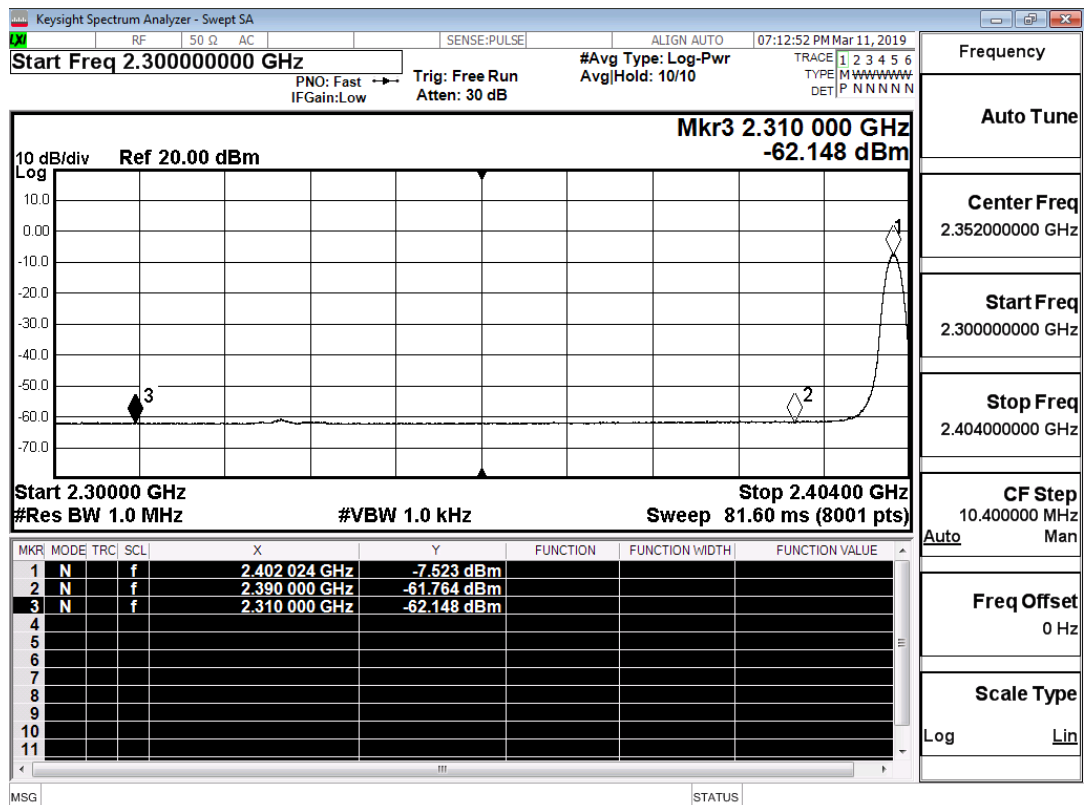
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



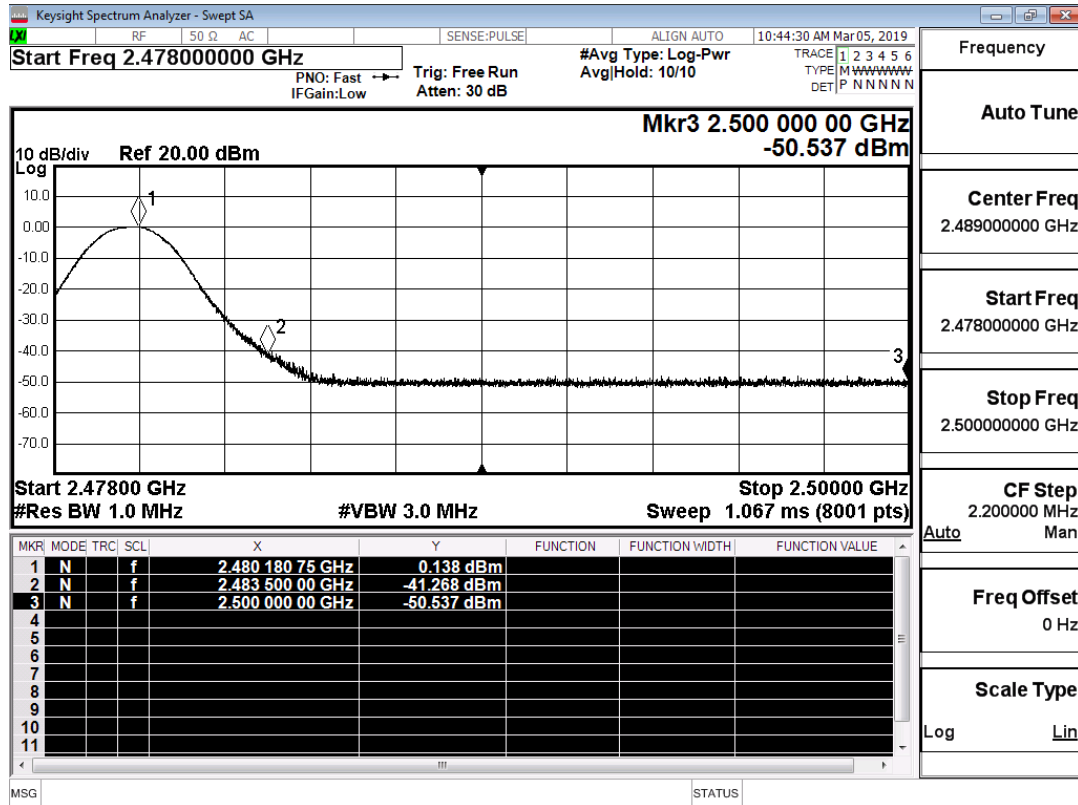
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

