

Appendix A

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

Product Name: Wireless Speaker

Trade Mark: N/A

Test Model: HT-1316

Environmental Conditions

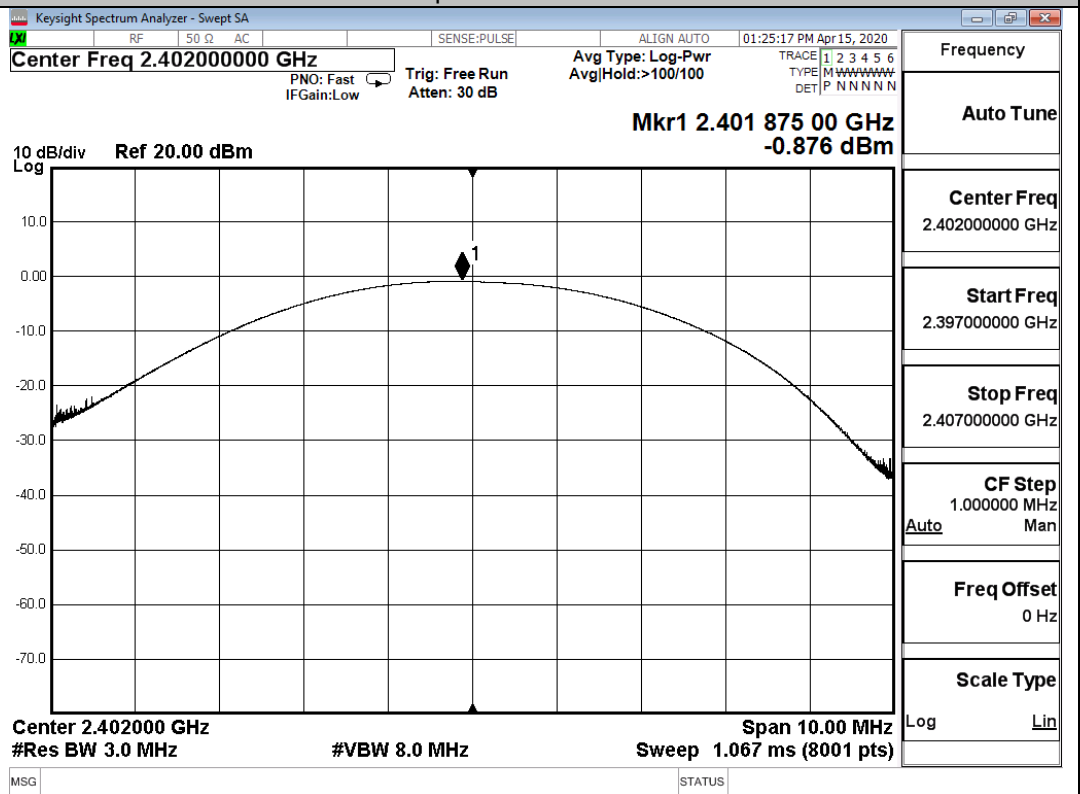
Temperature:	23.5 ° C
Relative Humidity:	55%
ATM Pressure:	100.0 kPa
Test Engineer:	CHUANG WANG
Supervised by:	JAYDEN ZHUO

A.1 Maximum Conducted Peak Output Power

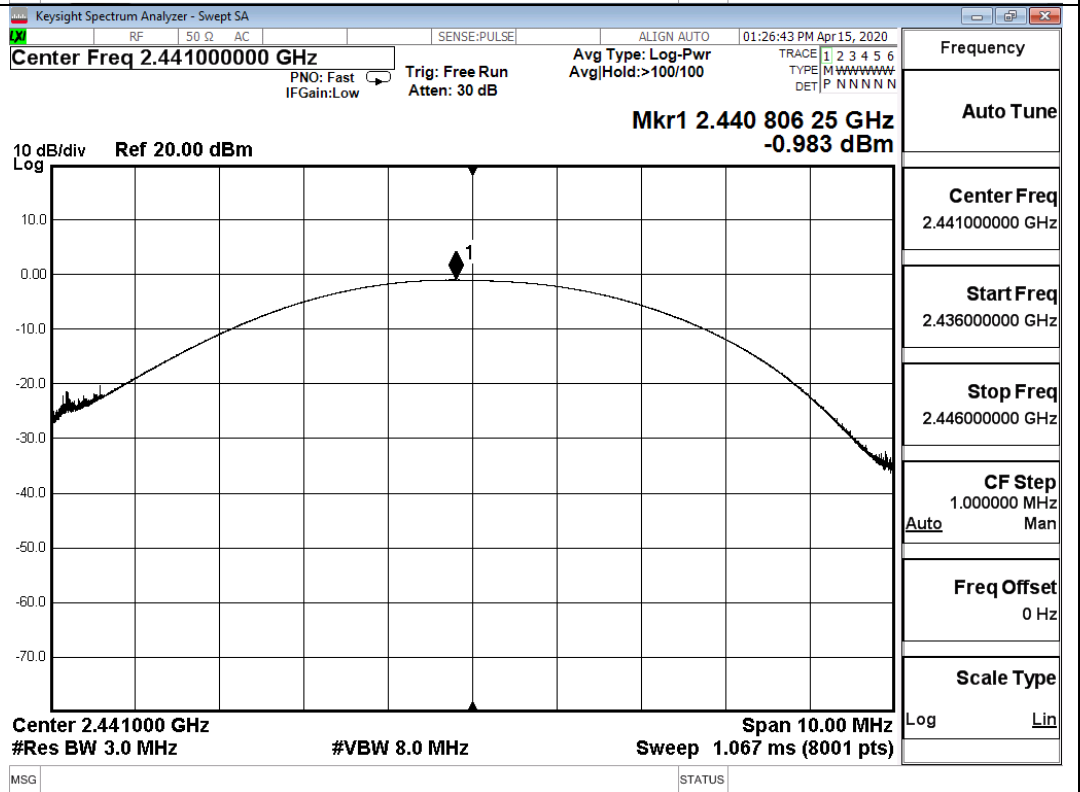
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.876	21	PASS
	MCH	-0.983	21	PASS
	HCH	-0.900	21	PASS
$\pi/4$ DQPSK	LCH	-0.172	21	PASS
	MCH	-0.265	21	PASS
	HCH	-0.208	21	PASS

Test Graphs

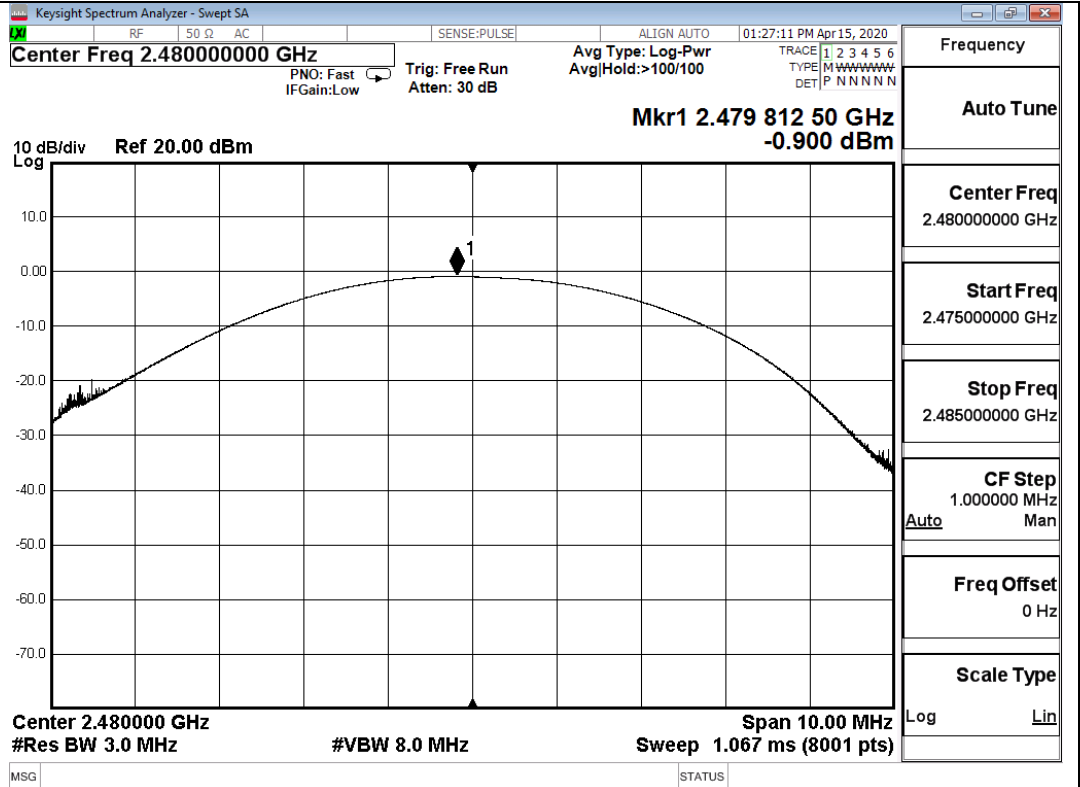
GFSK/LCH



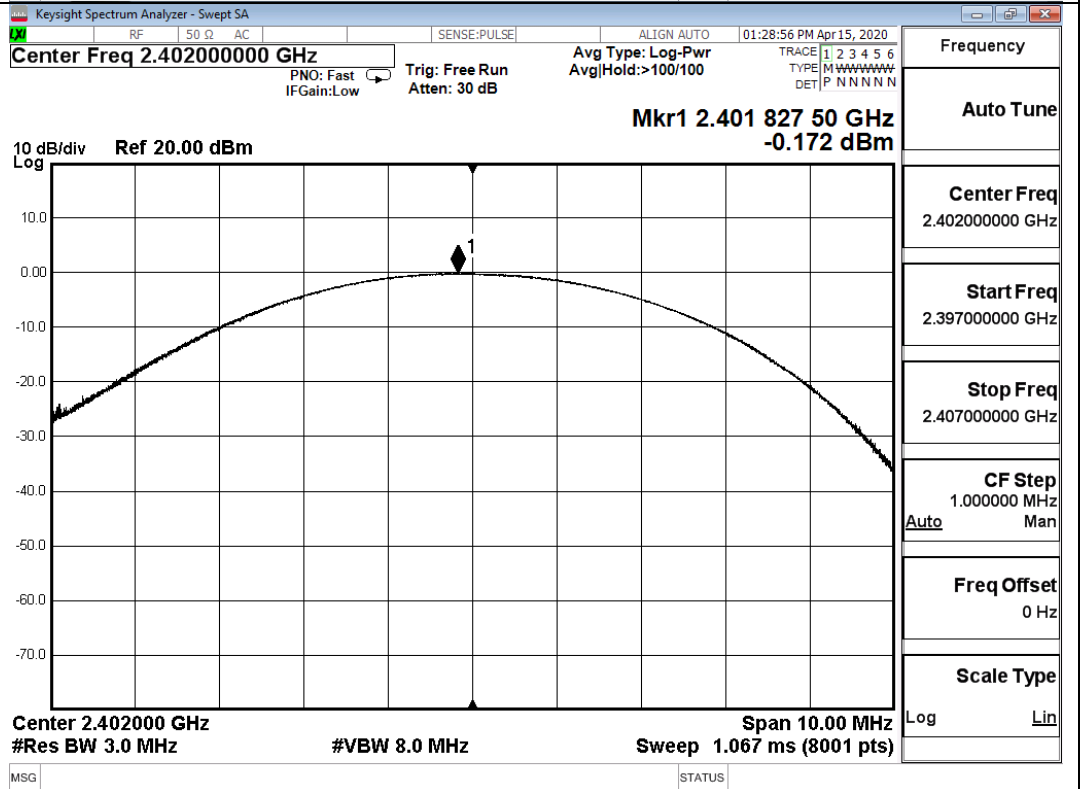
GFSK/MCH



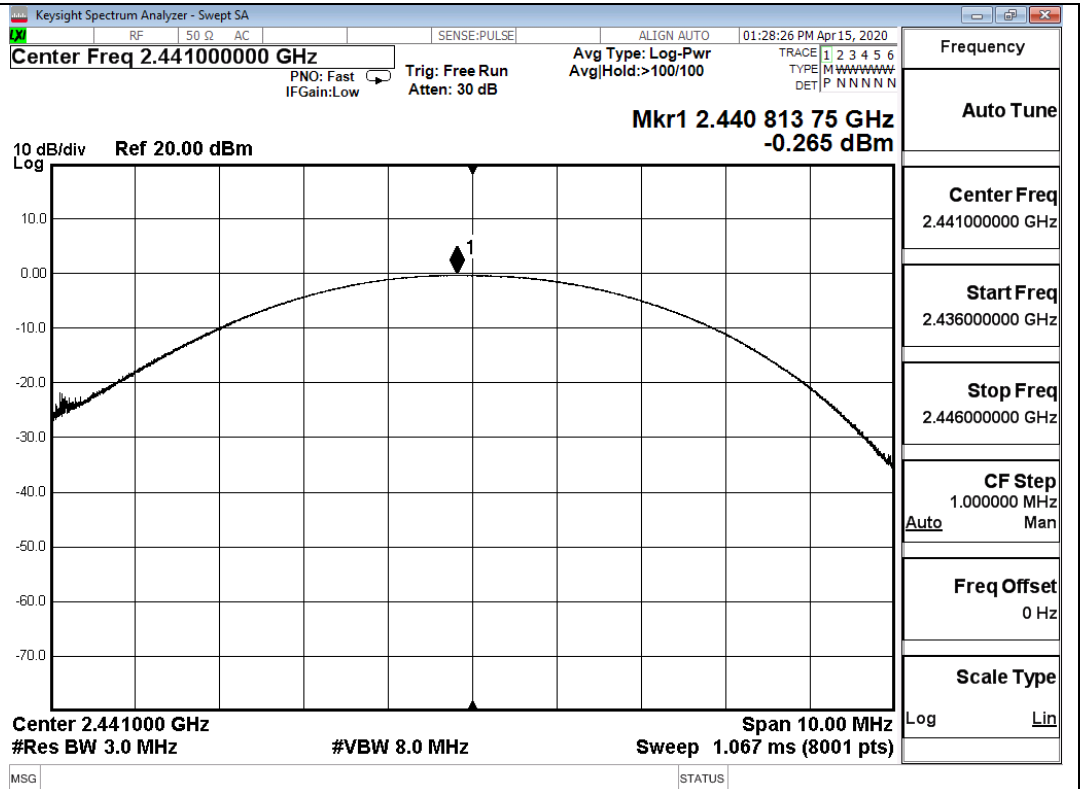
GFSK/HCH



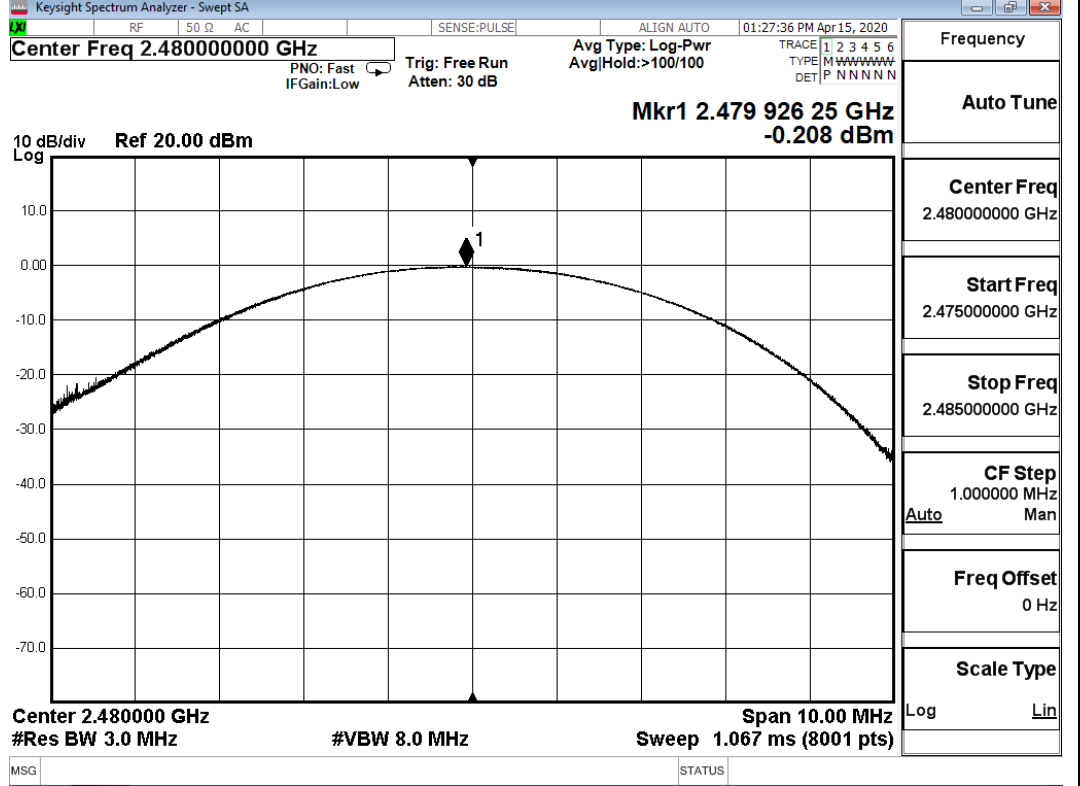
π /4DQPSK/LCH



$\pi/4$ DQPSK/MCH

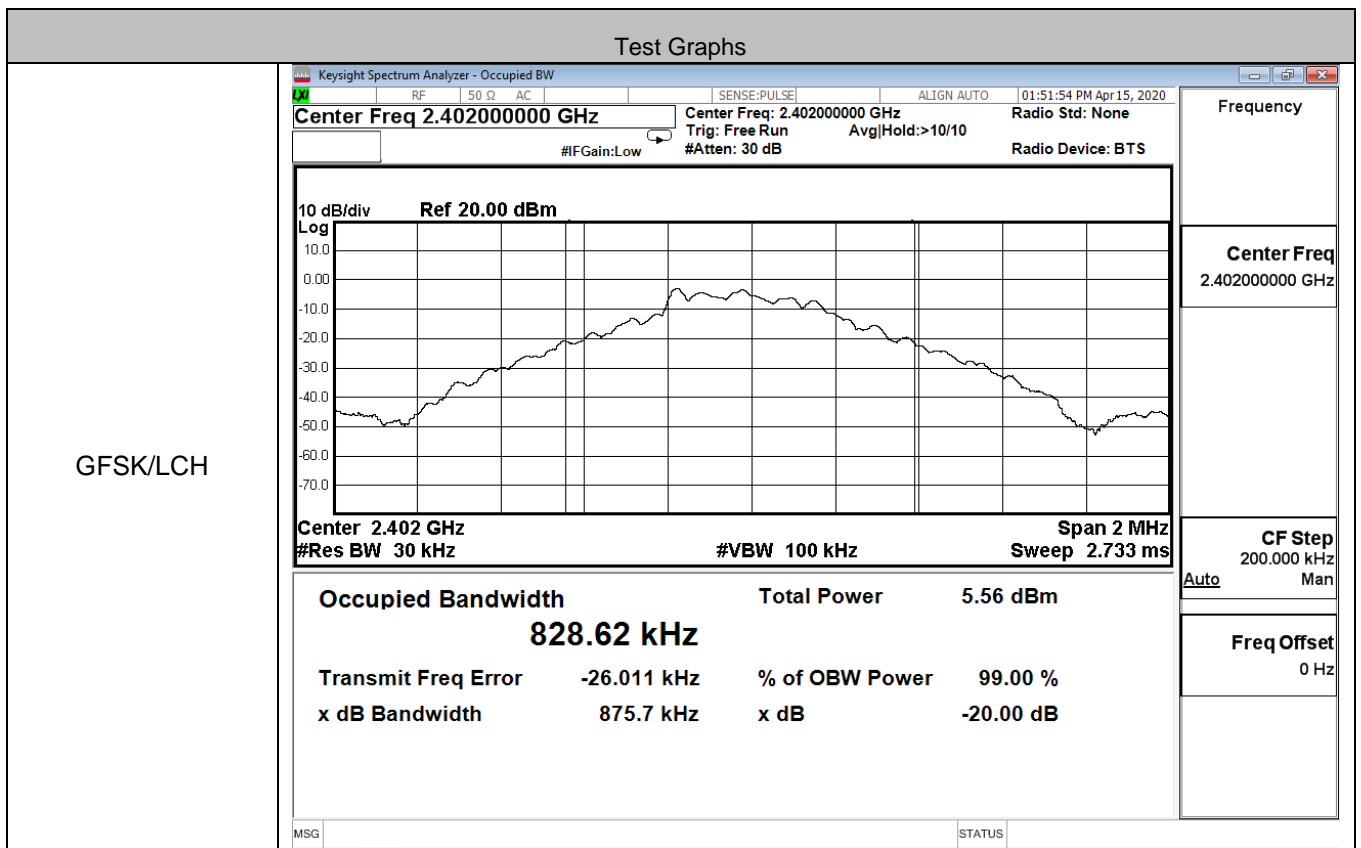


$\pi/4$ DQPSK/HCH

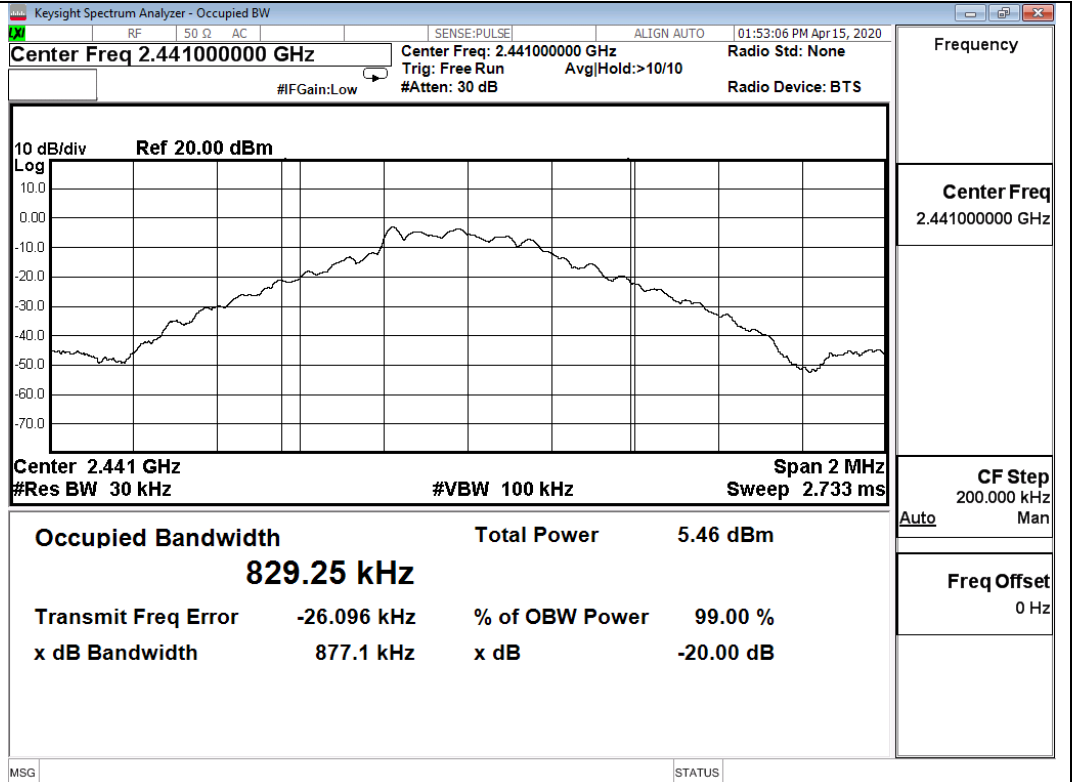


A.2 99% and 20dB Bandwidth

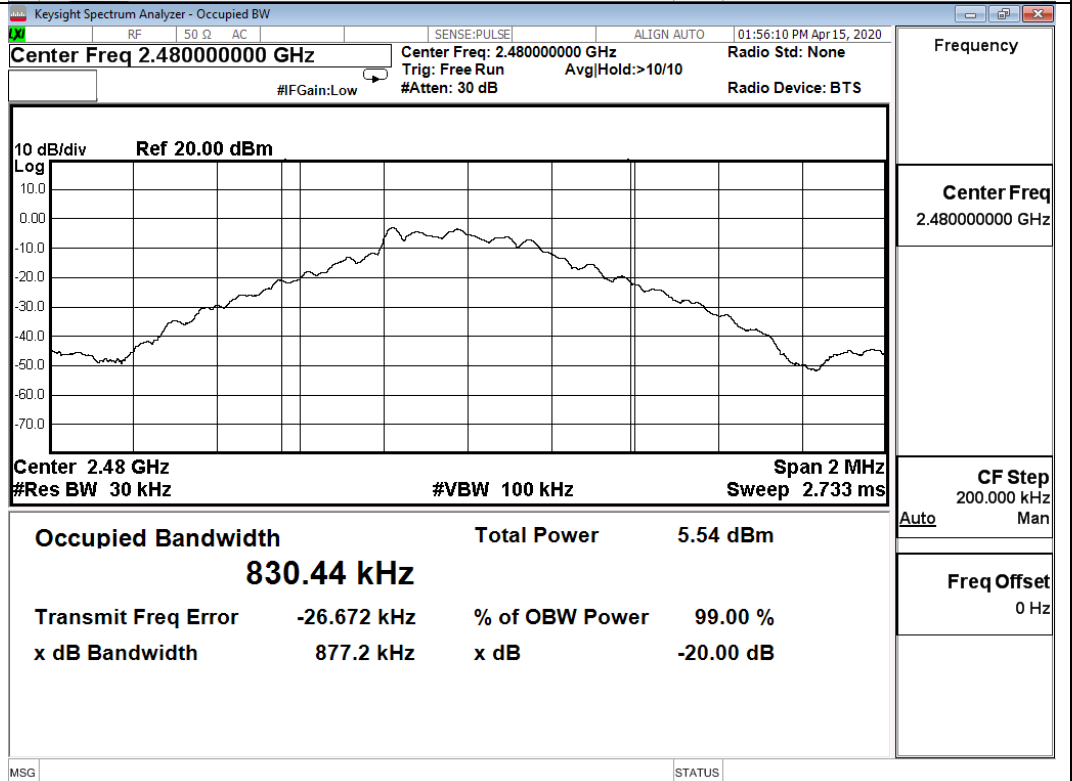
Mode	Channel.	99% Bandwidth [MHz]	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.82862	0.8757	Not Specified	PASS
	MCH	0.82925	0.8771	Not Specified	PASS
	HCH	0.83044	0.8772	Not Specified	PASS
π/4DQPSK	LCH	1.1670	1.253	Not Specified	PASS
	MCH	1.1682	1.254	Not Specified	PASS
	HCH	1.1681	1.255	Not Specified	PASS

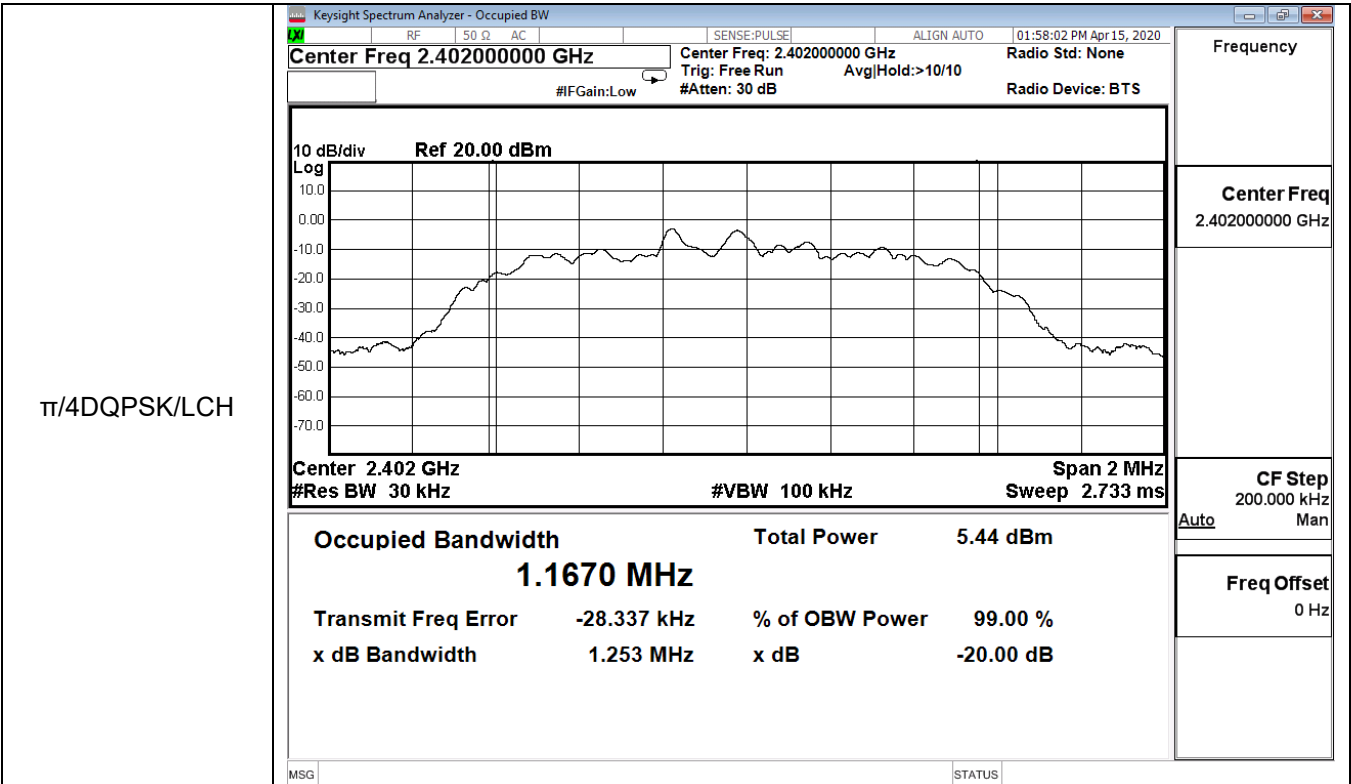


GFSK/MCH

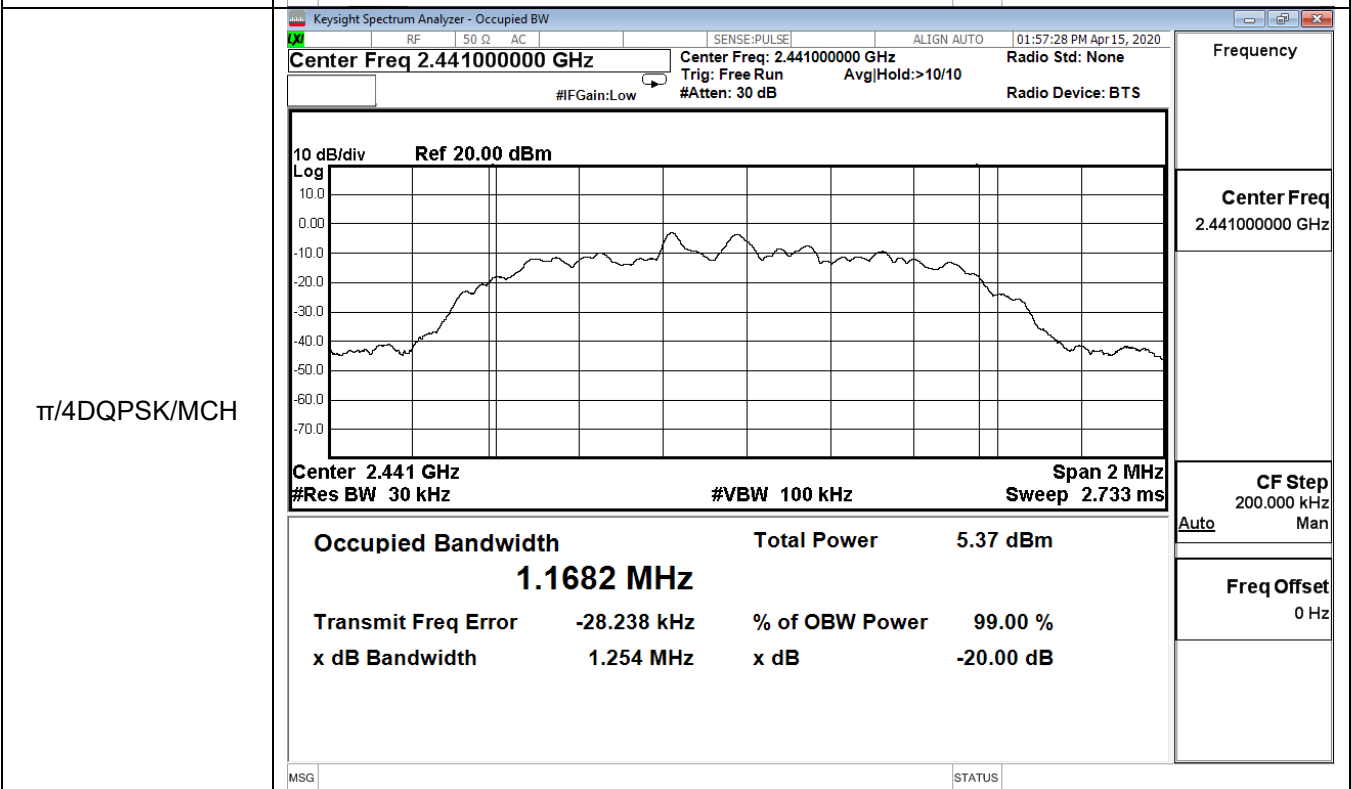


GFSK/HCH

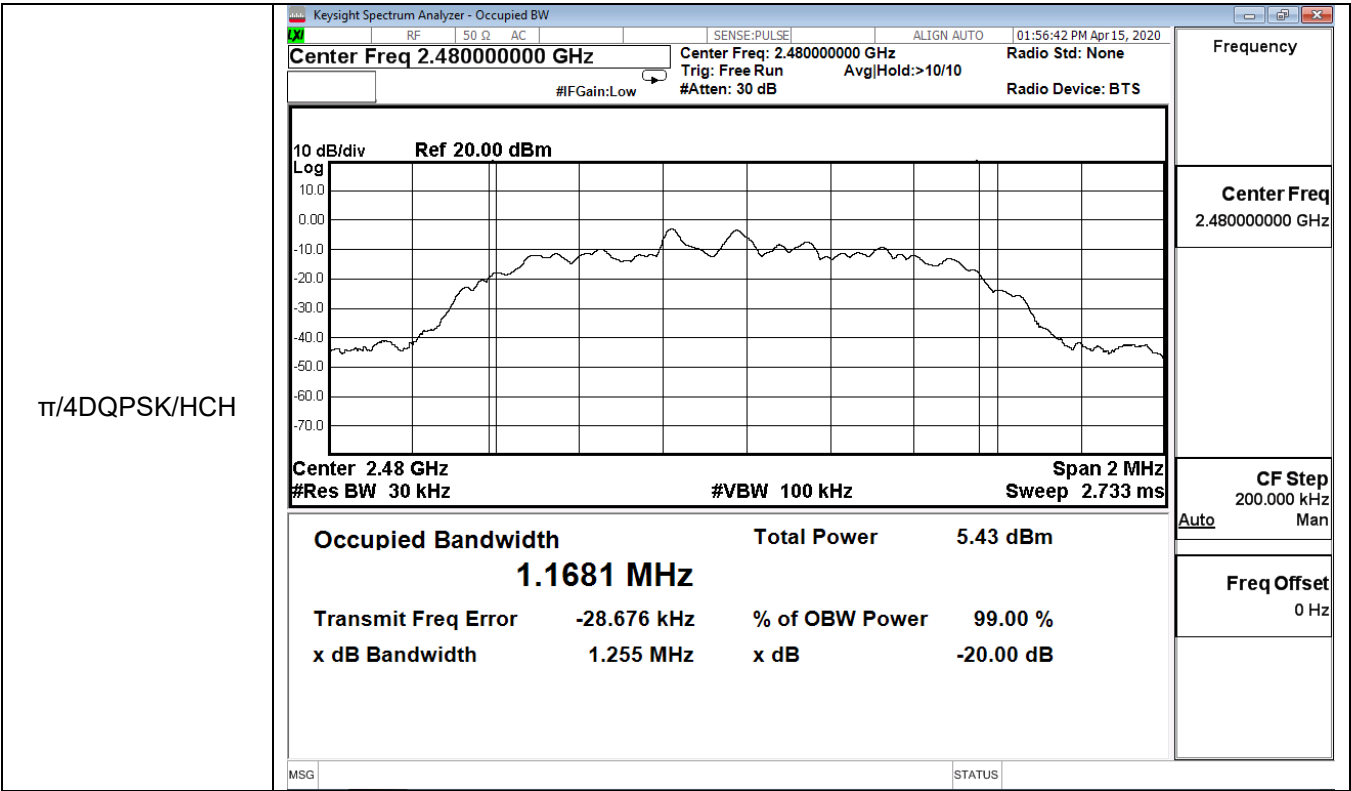




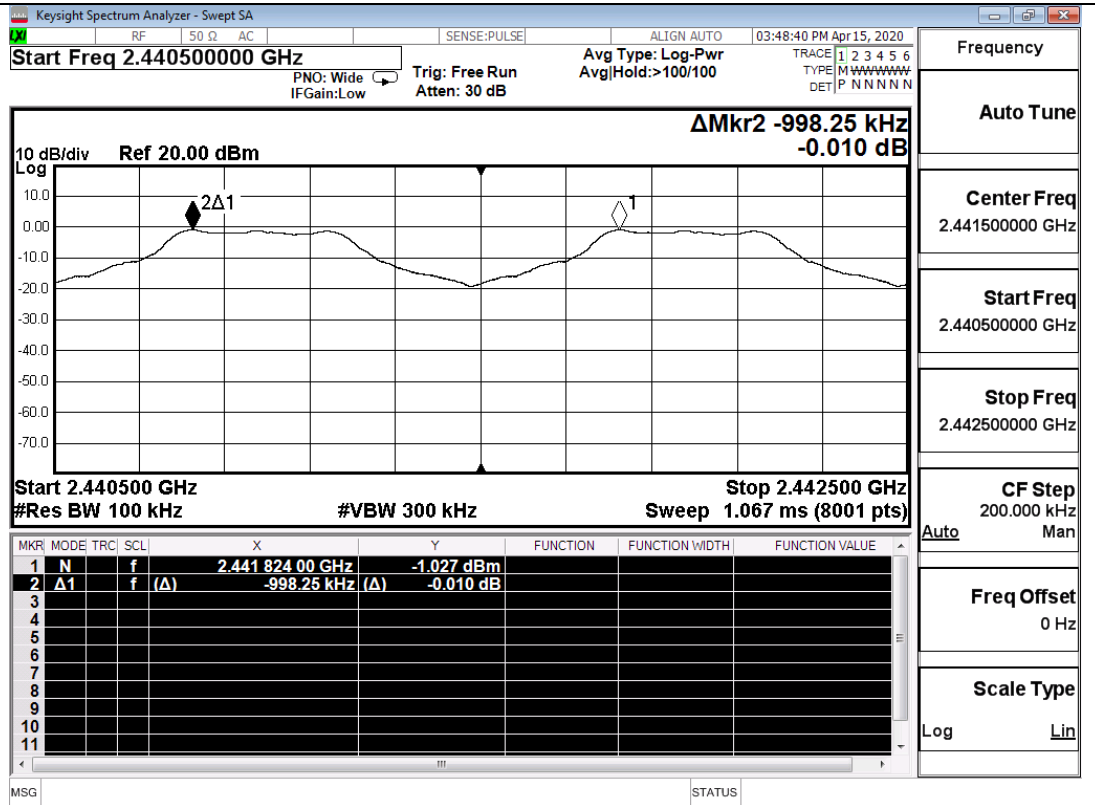
π/4DQPSK/LCH



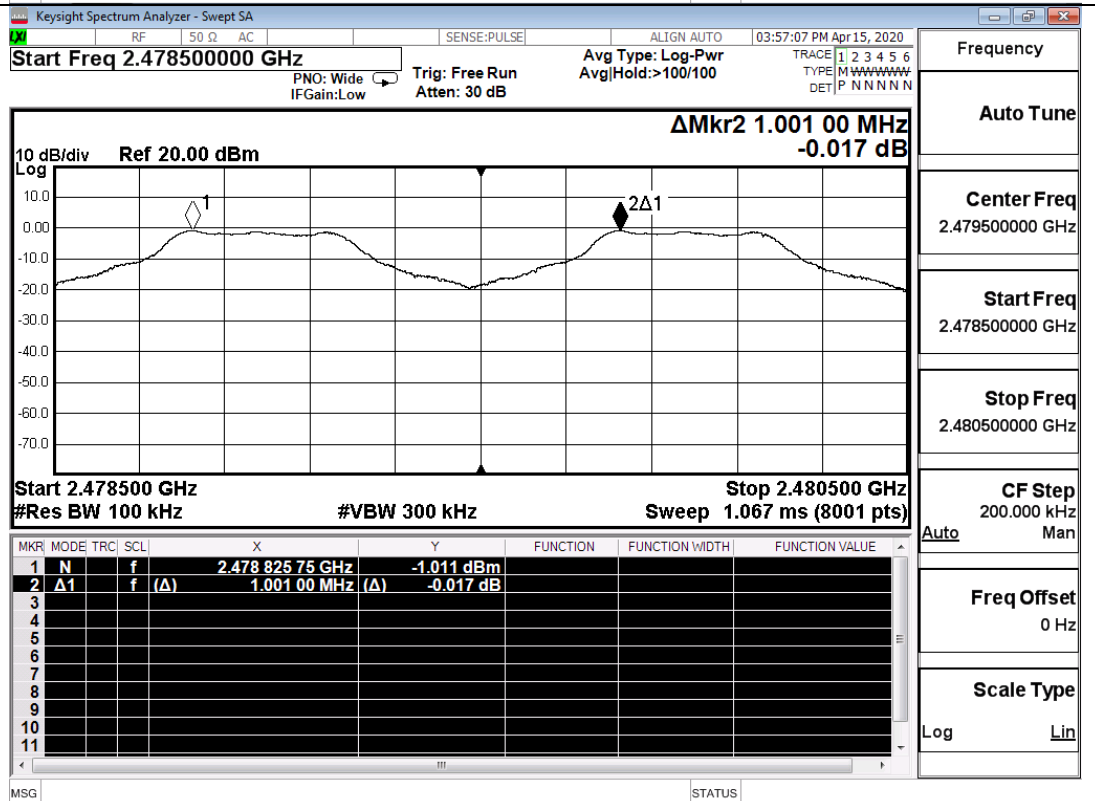
π/4DQPSK/MCH



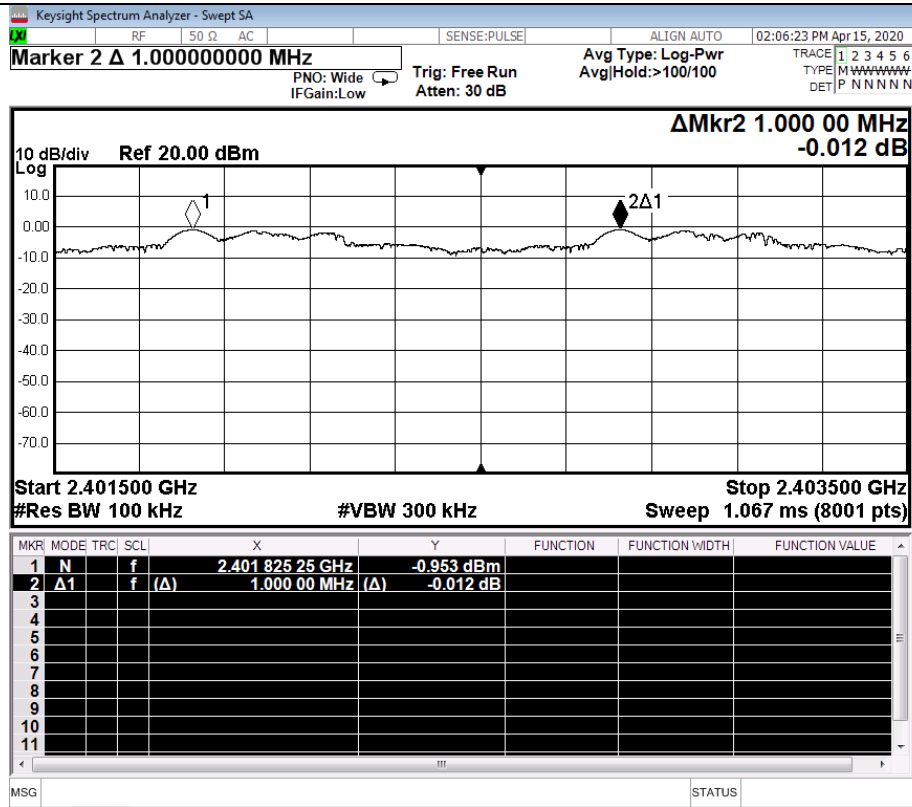
GFSK/MCH



GFSK/HCH



$\pi/4$ DQPSK/LCH



Peak Search

Next Peak

Next Pk Right

Next Pk Left

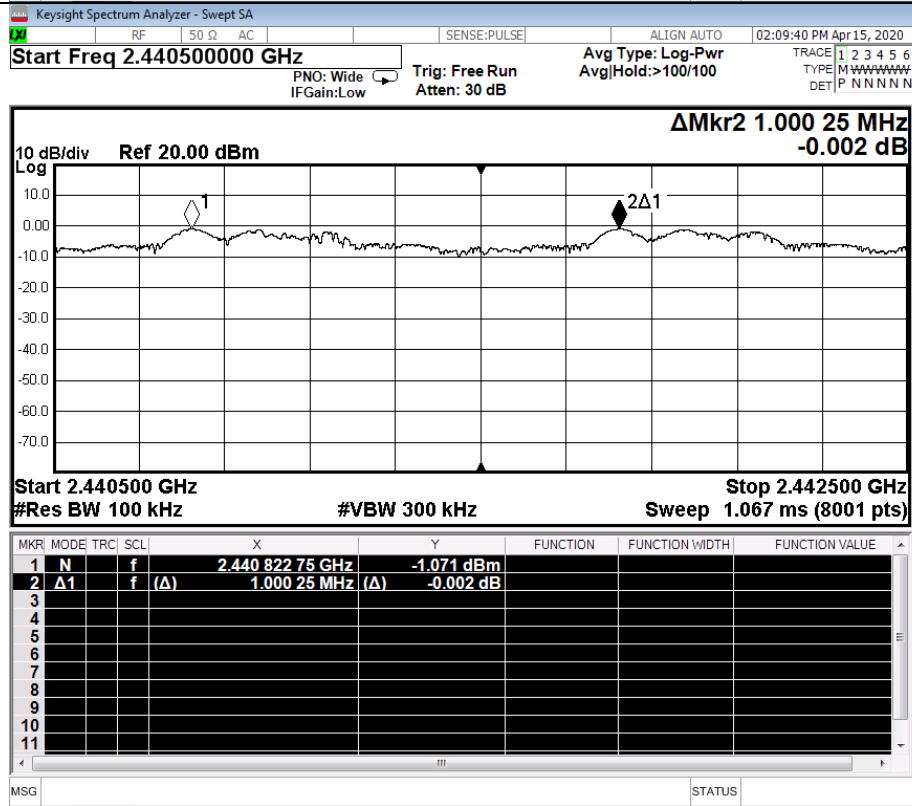
Marker Delta

Mkr→CF

Mkr→Ref Lvl

More
1 of 2

$\pi/4$ DQPSK/MCH



Frequency

Auto Tune

Center Freq
2.441500000 GHz

Start Freq
2.440500000 GHz

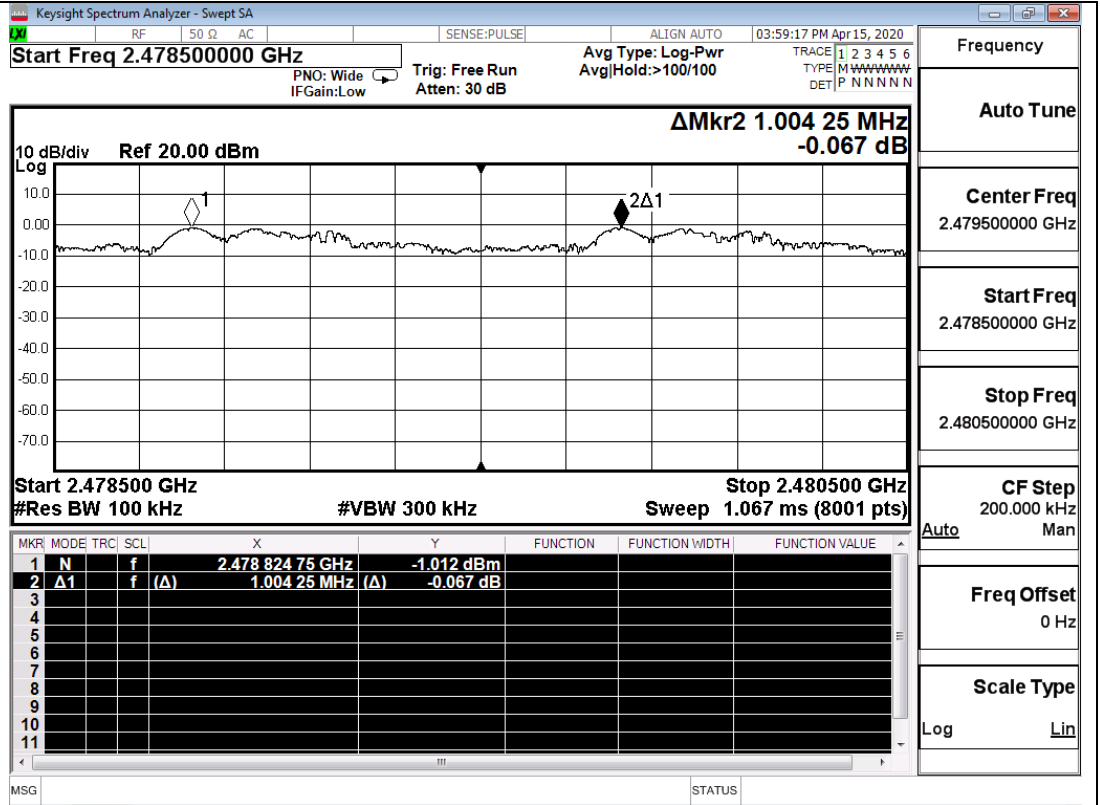
Stop Freq
2.442500000 GHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

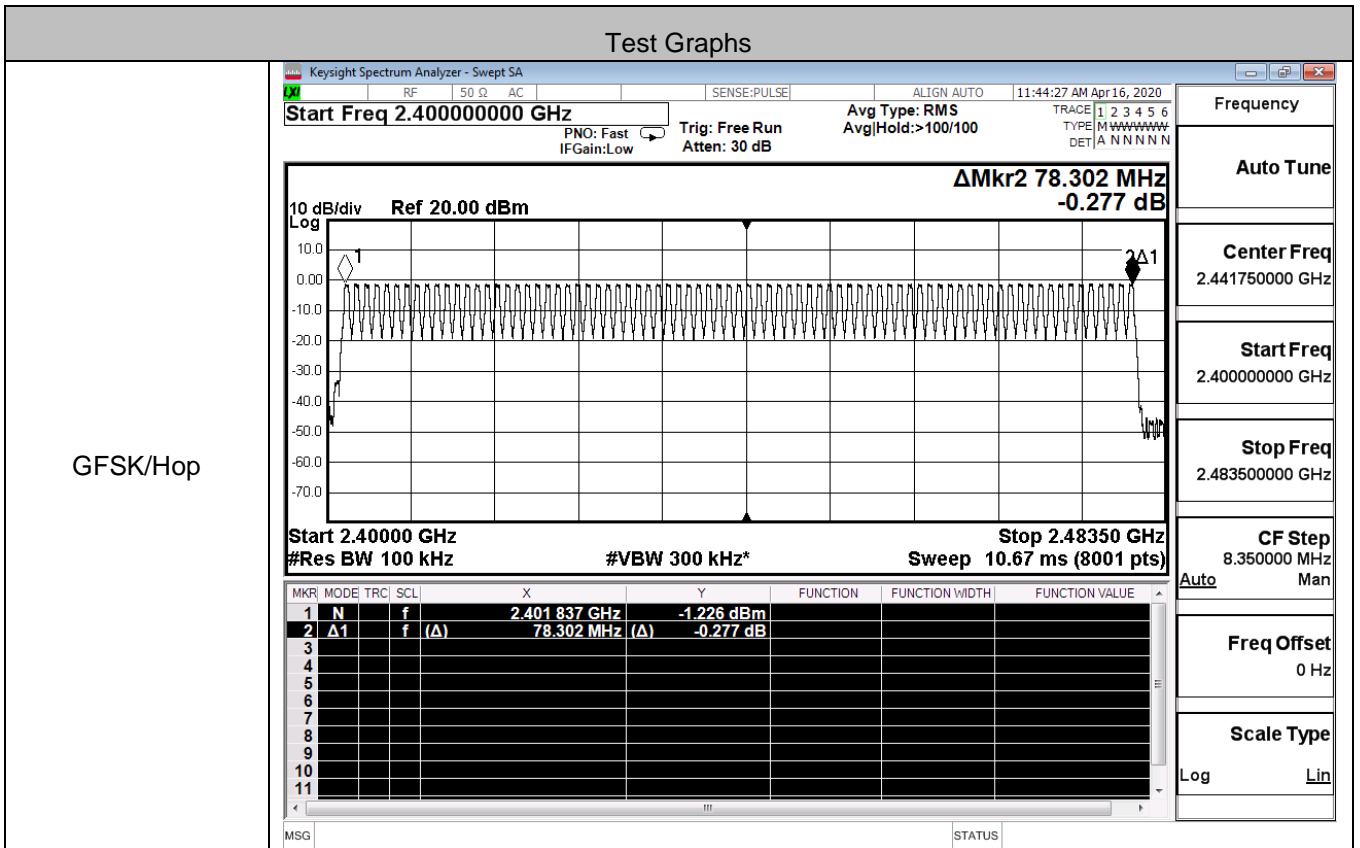
Scale Type
Log Lin

$\pi/4$ DQPSK/HCH

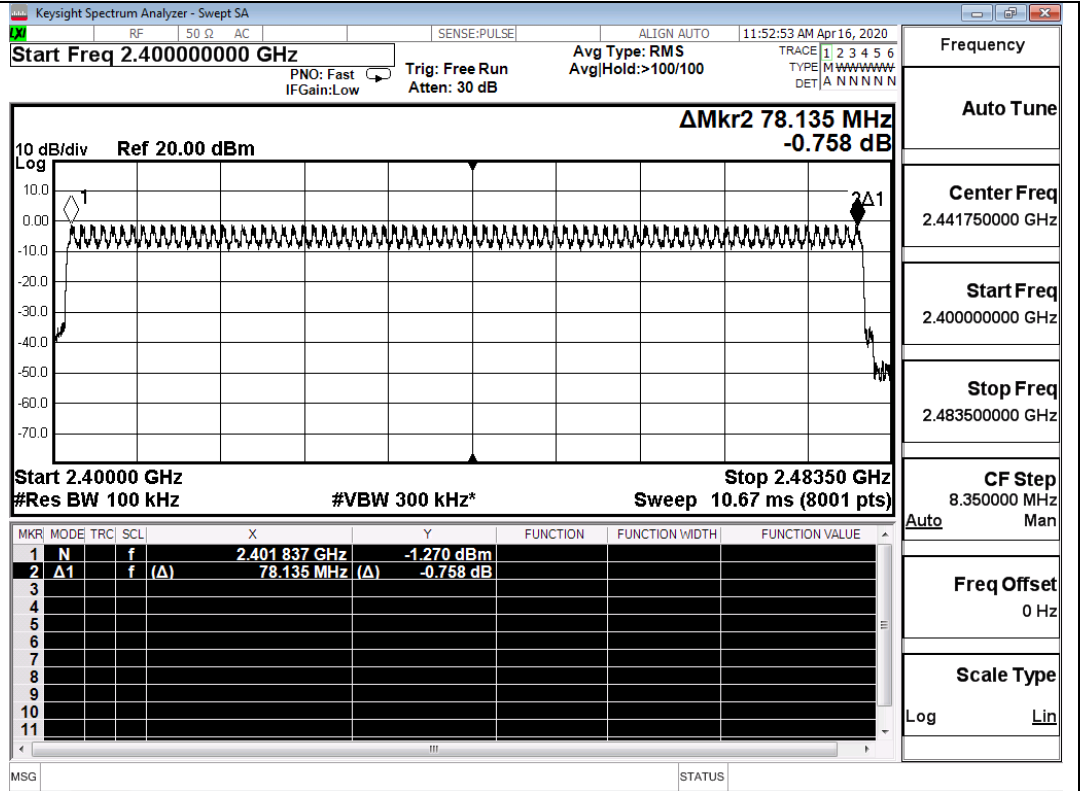


A.4 Hopping Channel Number

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

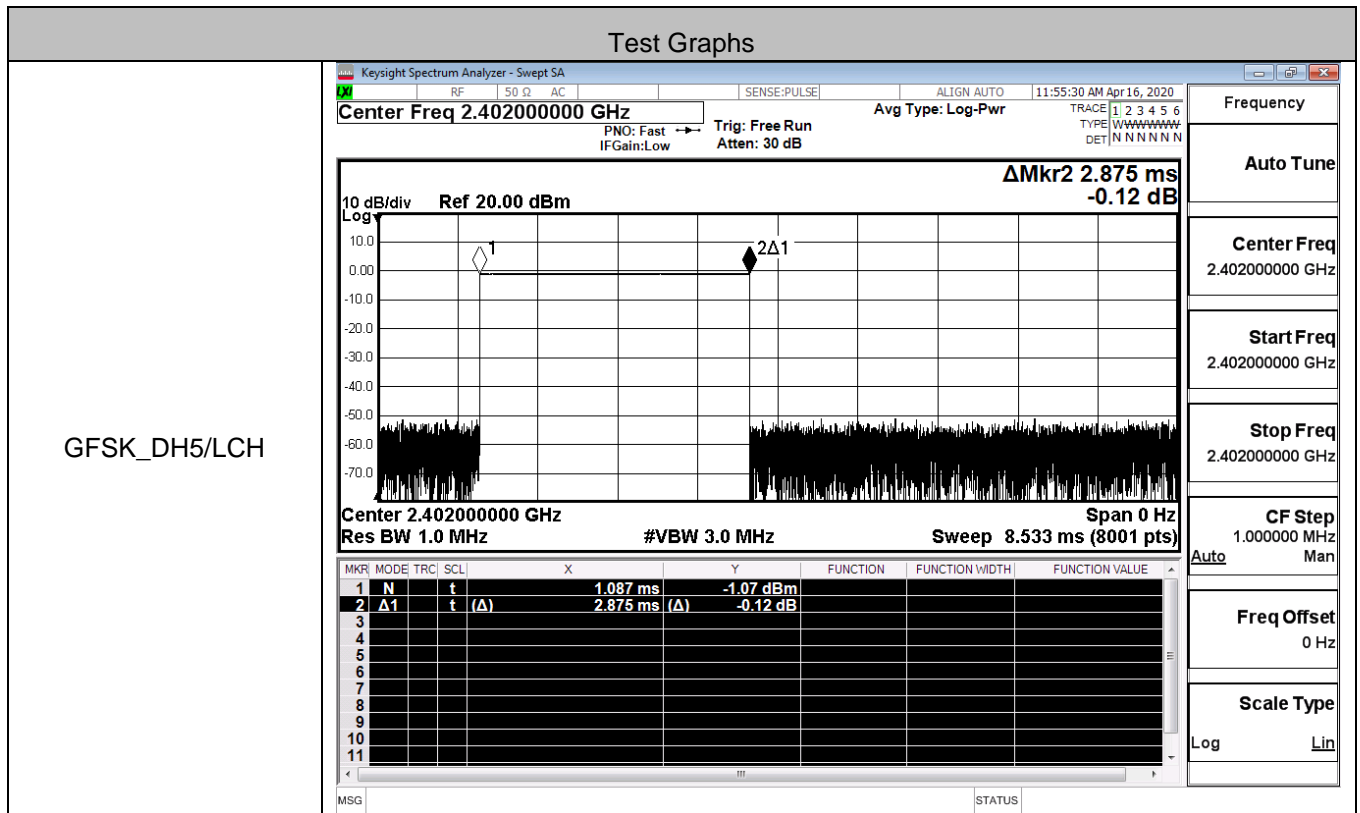


$\pi/4$ DQPSK/Hop

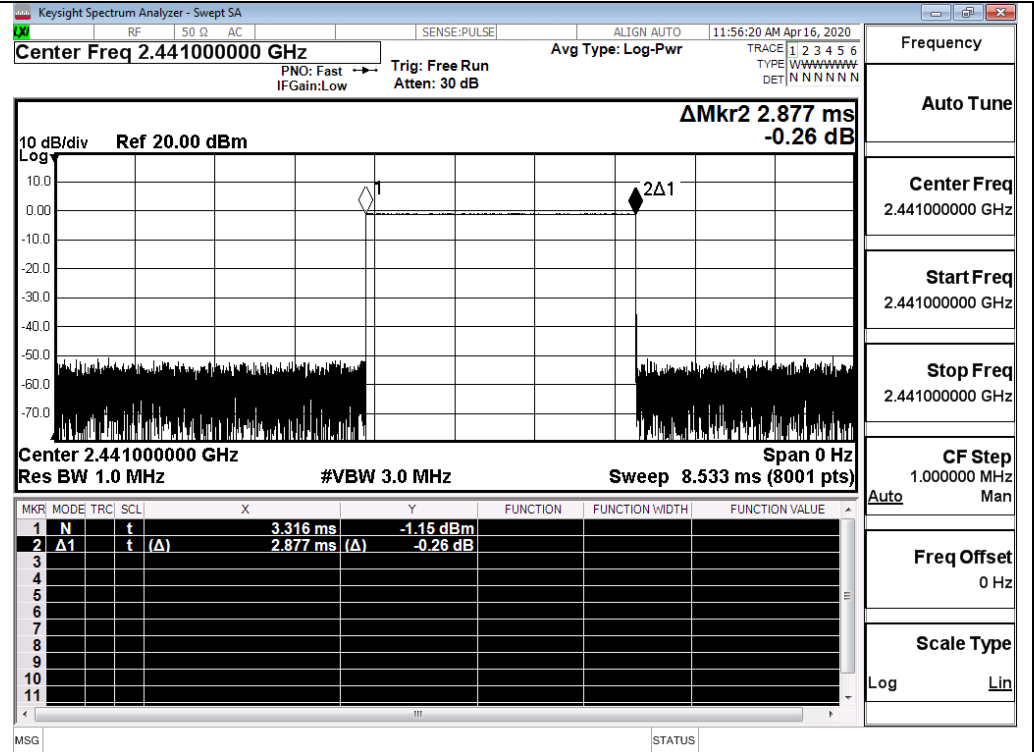


A.5 Dwell Time

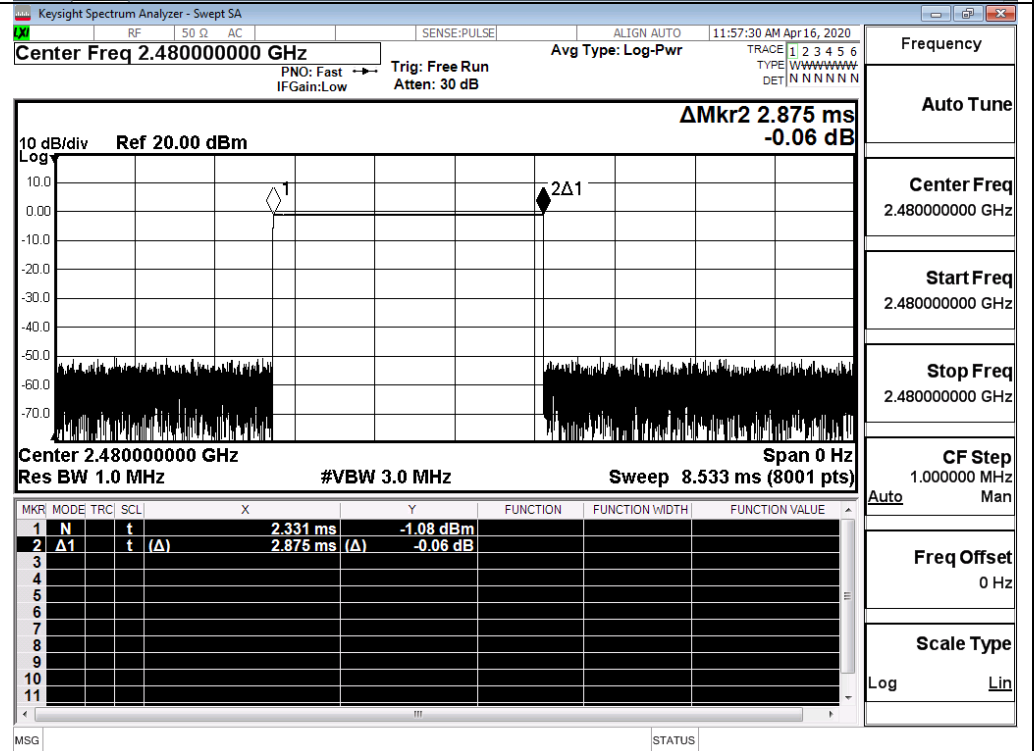
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
π/4DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7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



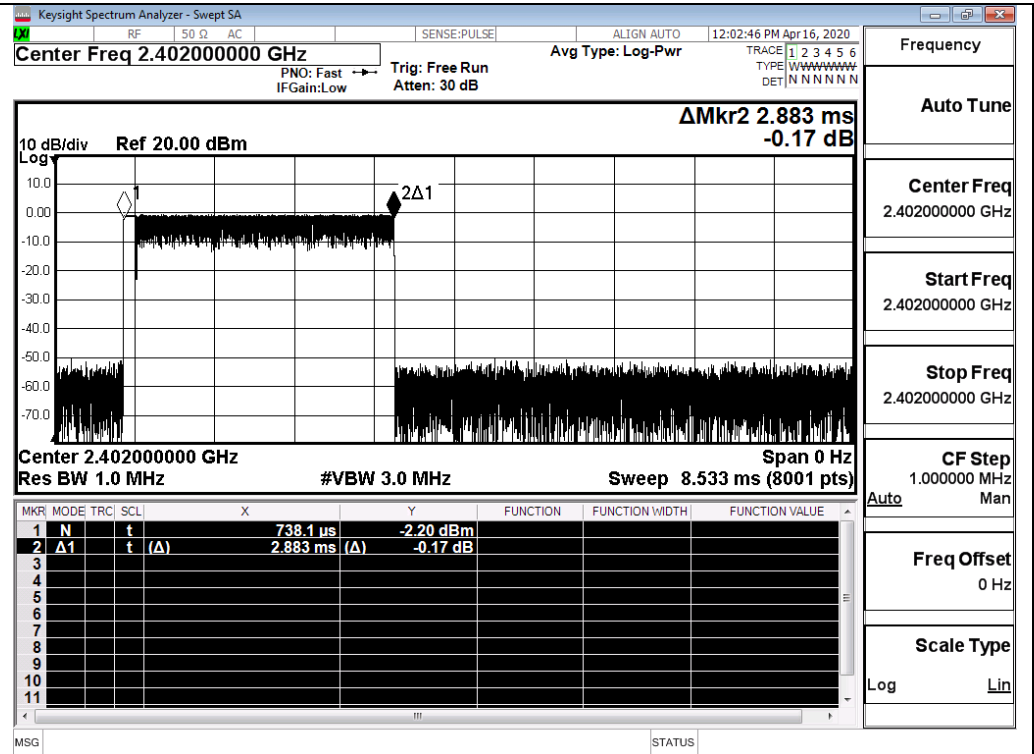
GFSK_DH5/MCH



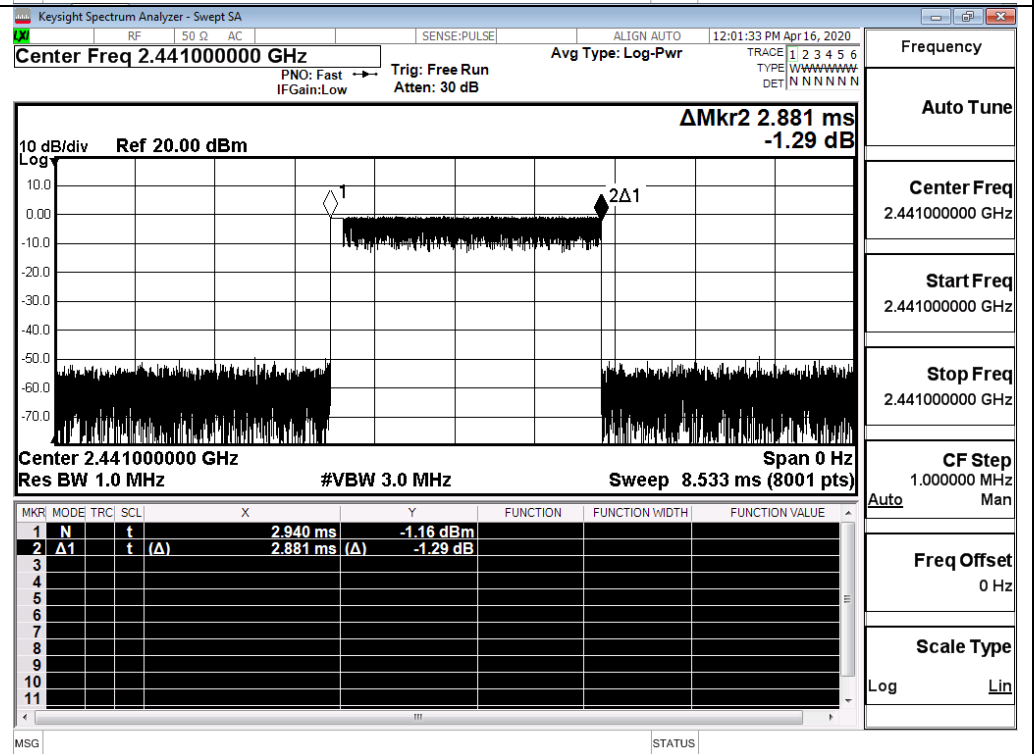
GFSK_DH5/HCH



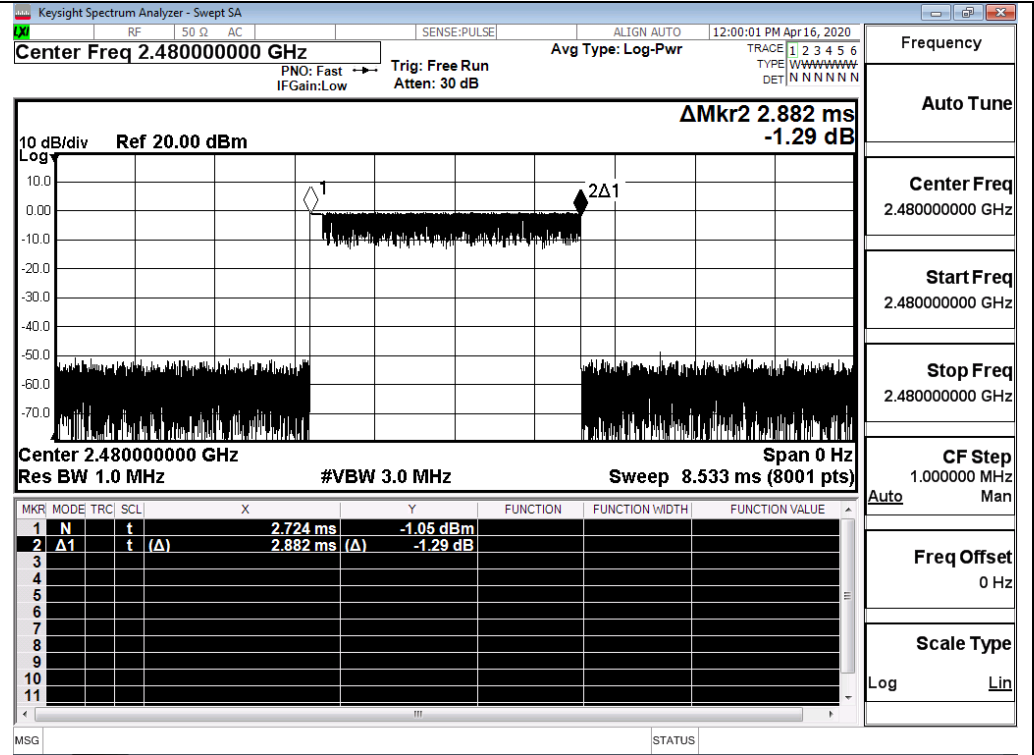
$\pi/4$ DQPSK
_2DH5/LCH



$\pi/4$ DQPSK
_2DH5/MCH



$\pi/4$ DQPSK
_2DH5/HCH

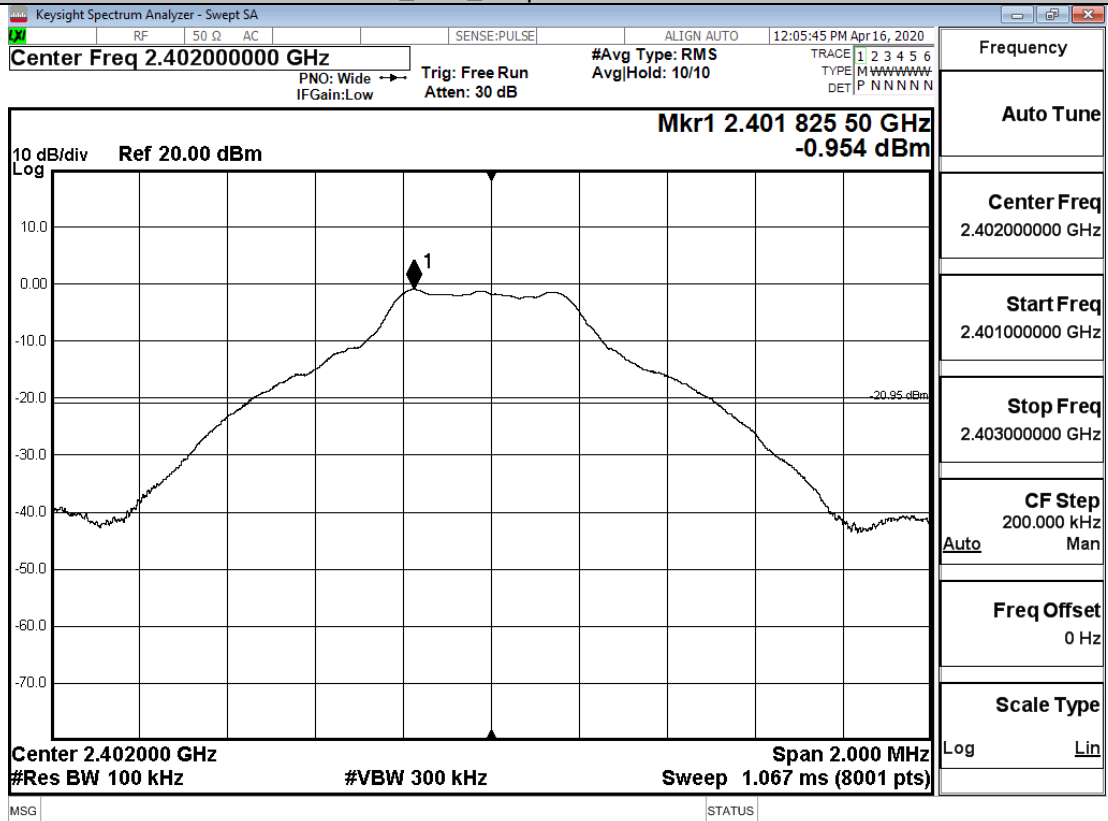


A.6 RF Conducted Spurious Emissions

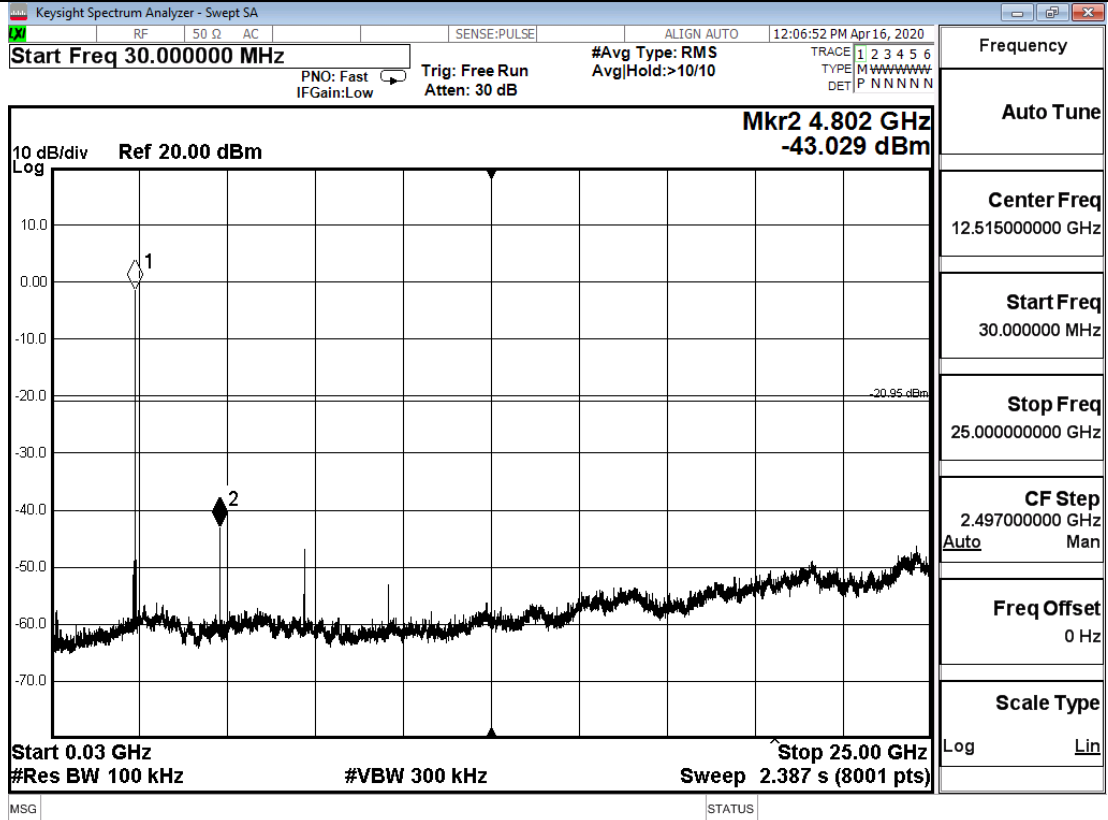
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.954	-43.029	-20.95	PASS
	MCH	-1.067	-41.865	-21.07	PASS
	HCH	-0.993	-43.322	-20.99	PASS
$\pi/4$ DQPSK	LCH	-0.900	-43.367	-20.90	PASS
	MCH	-1.076	-41.875	-21.08	PASS
	HCH	-1.020	-41.923	-21.02	PASS

GFSK_LCH_Graphs

Pref

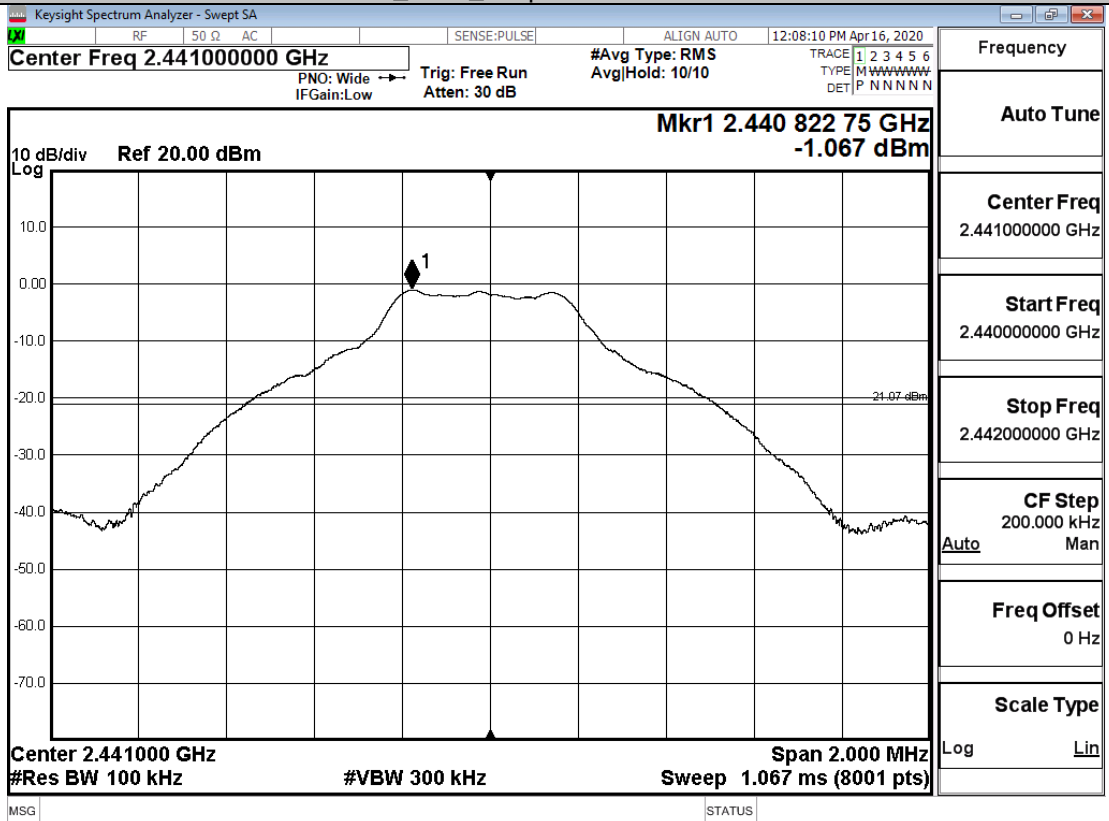


Puw

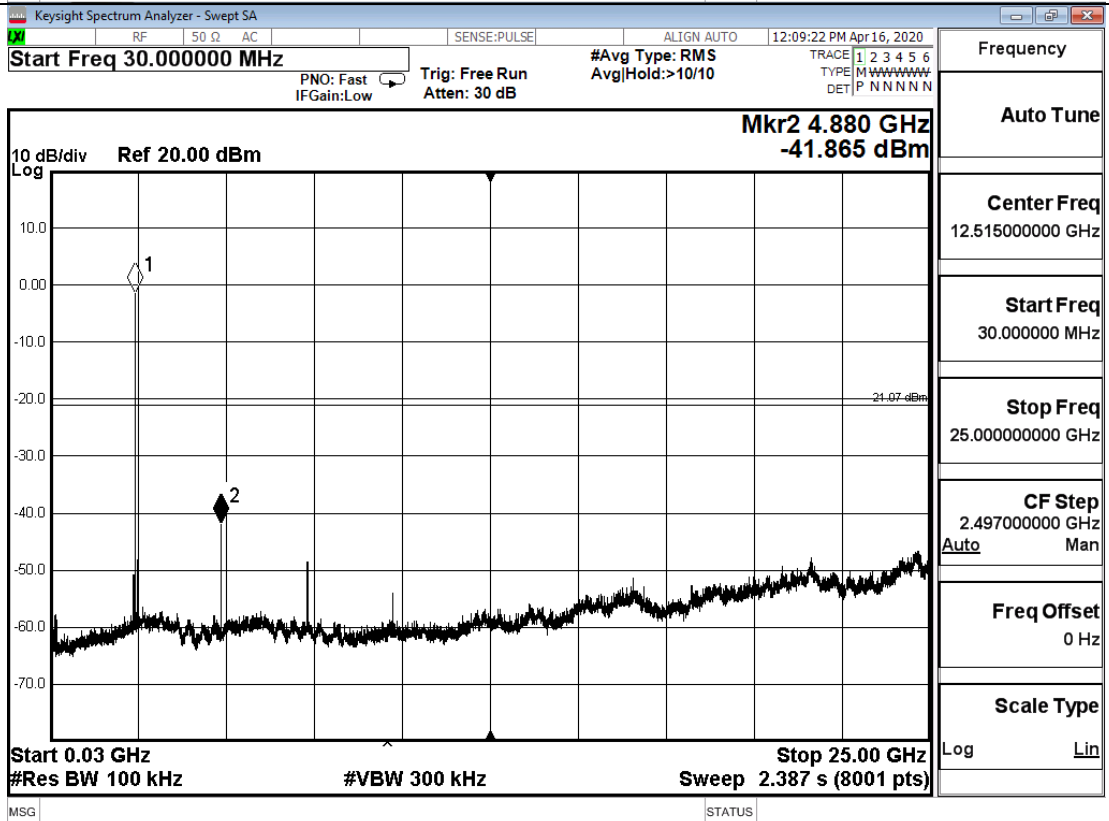


GFSK_MCH_Graphs

Pref

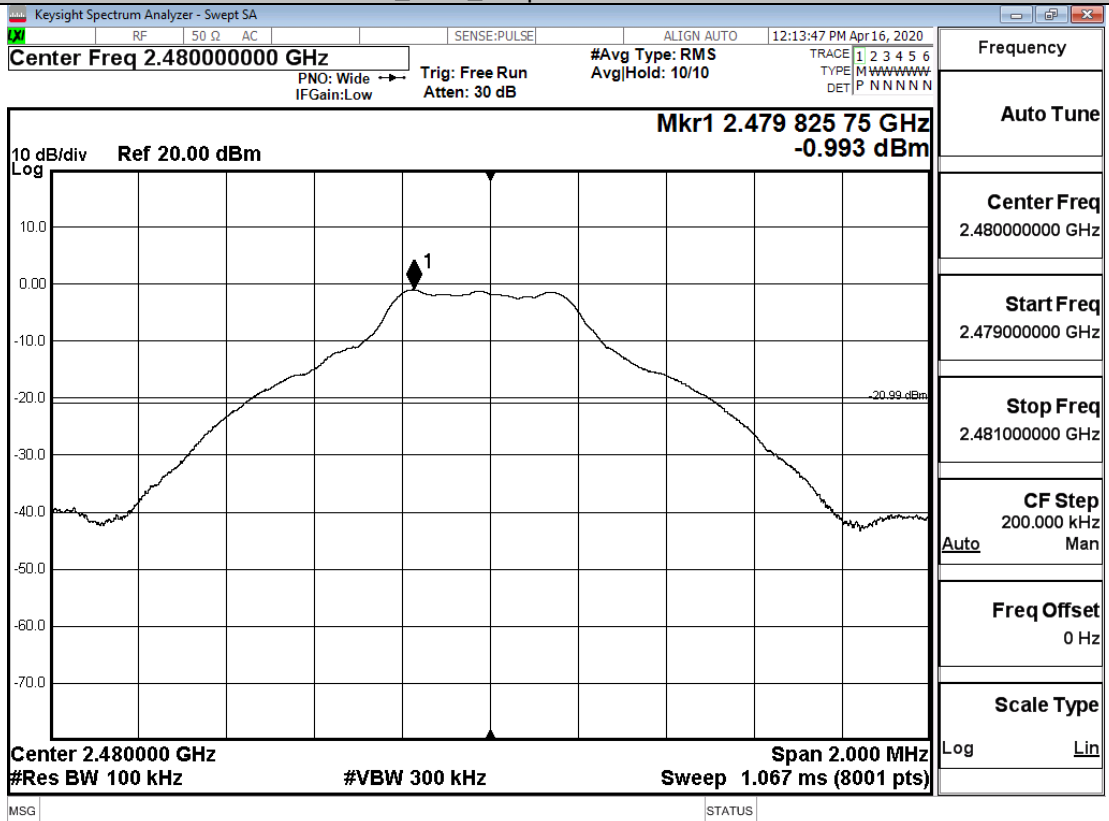


Puw

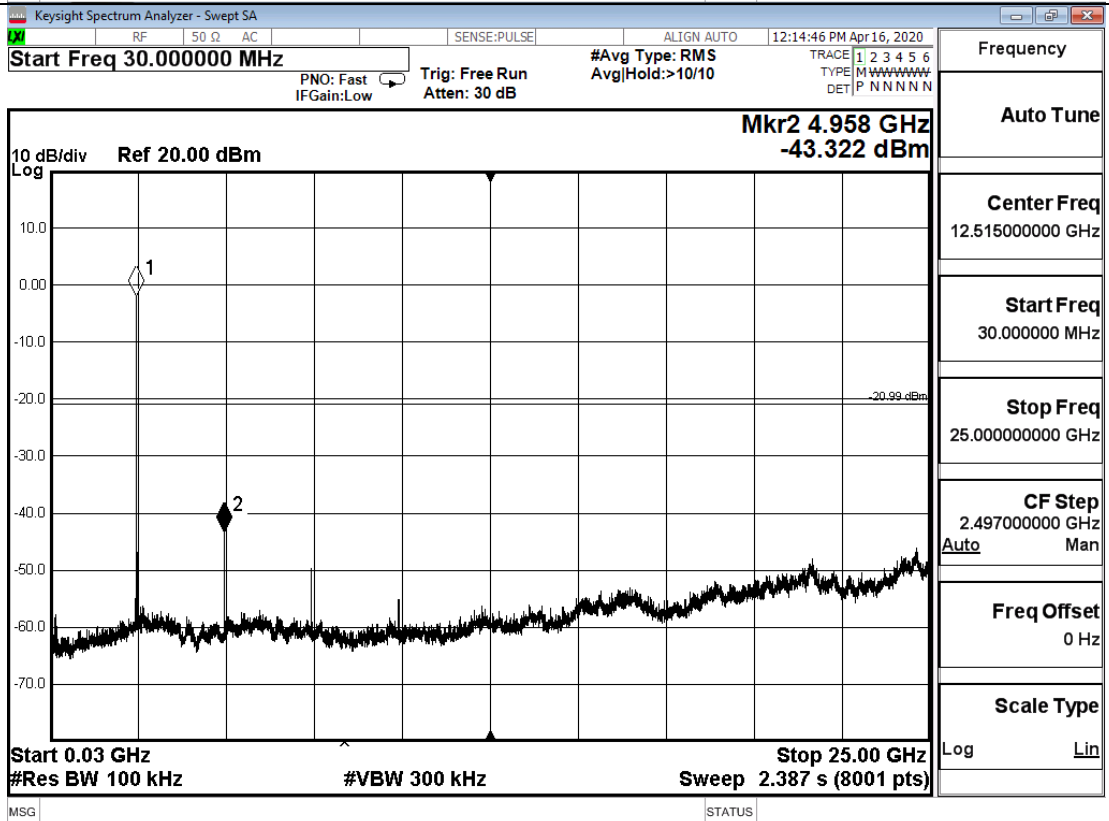


GFSK_HCH_Graphs

Pref

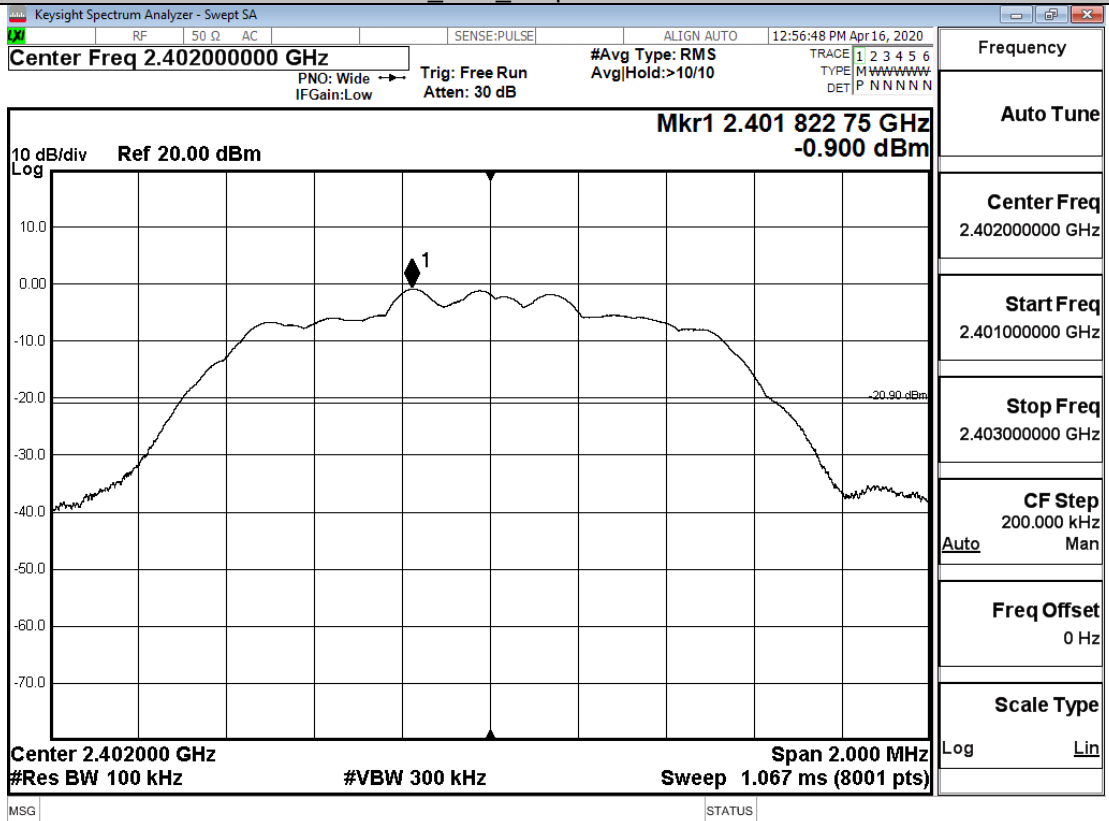


Puw

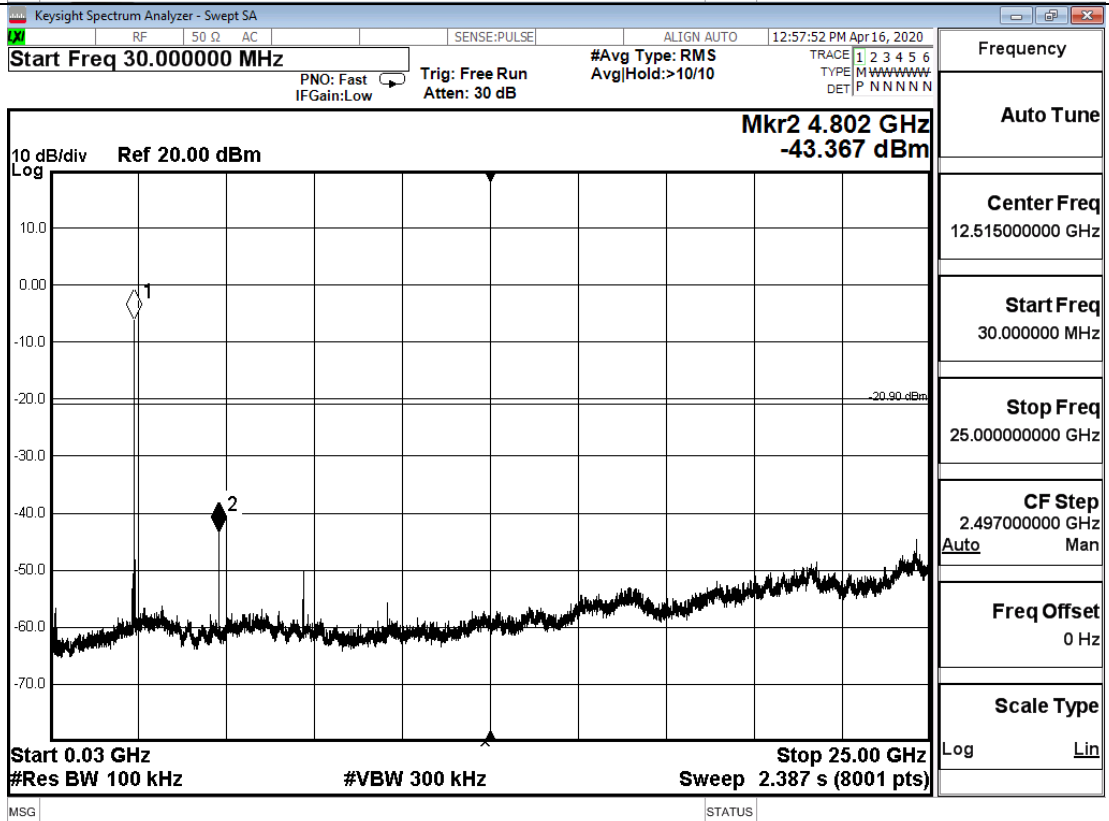


$\pi/4$ DQPSK_LCH_Graphs

Pref

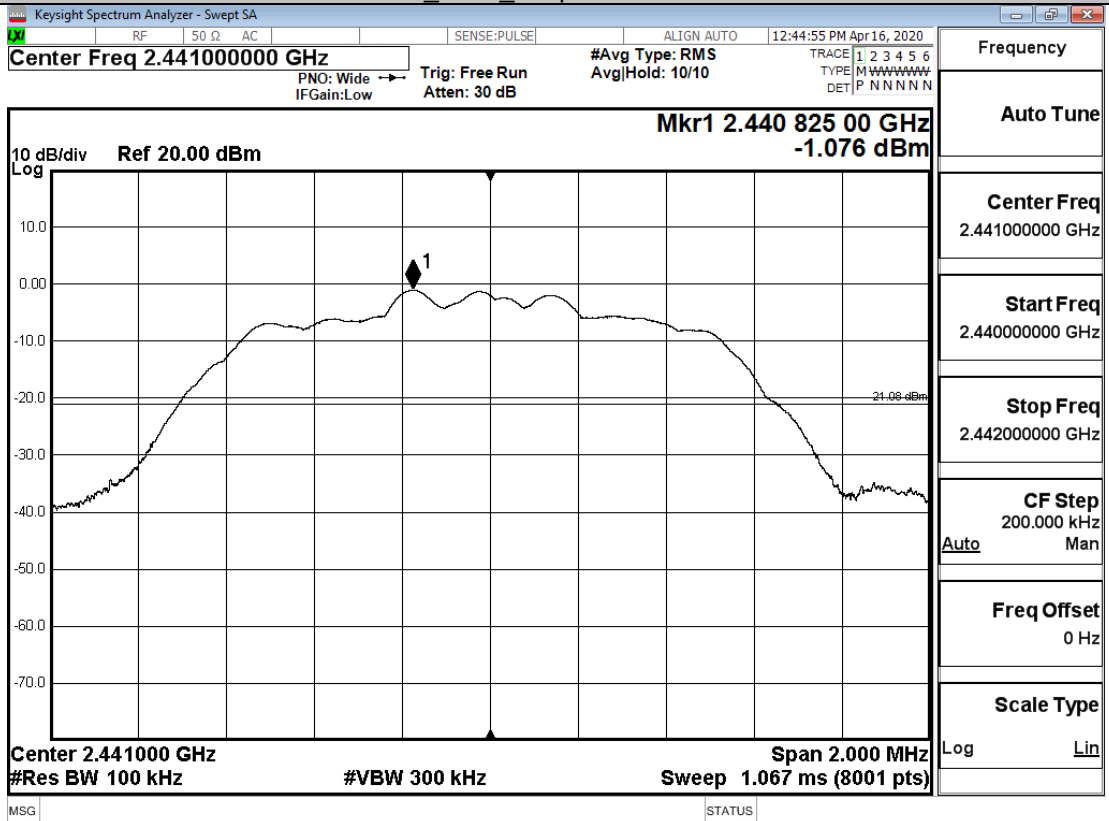


Puw

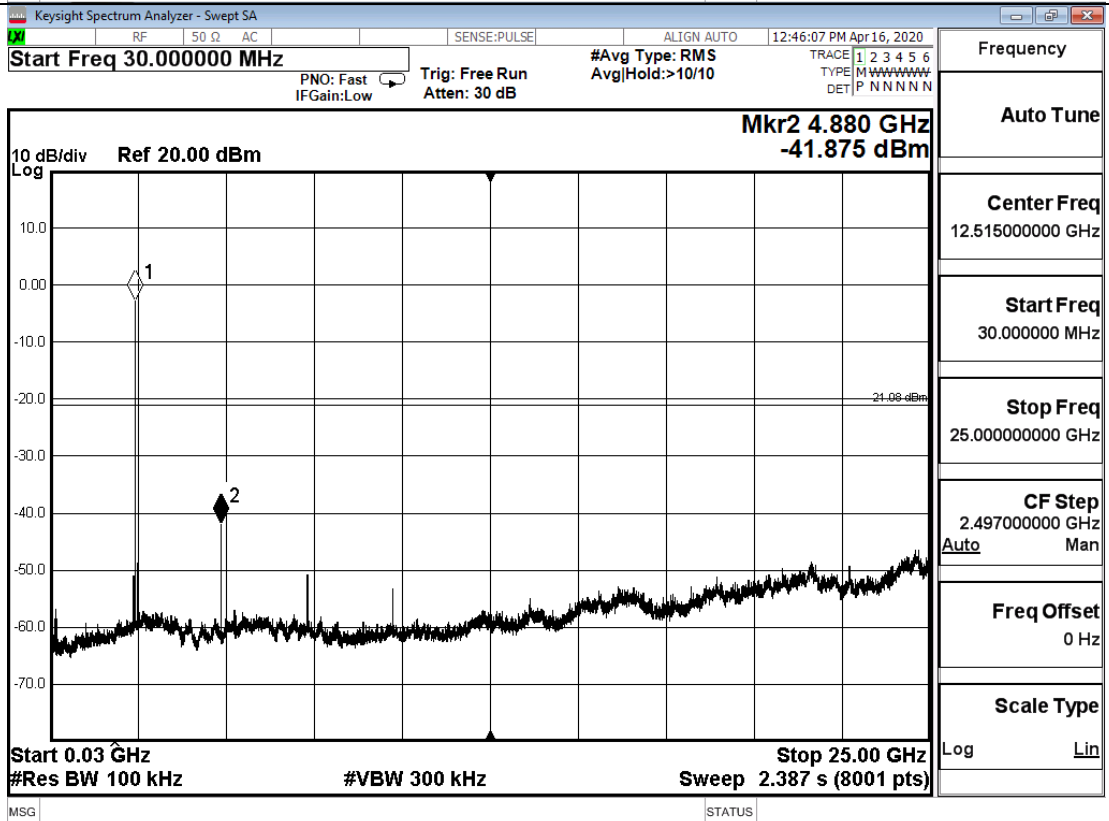


$\pi/4$ DQPSK_MCH_Graphs

Pref

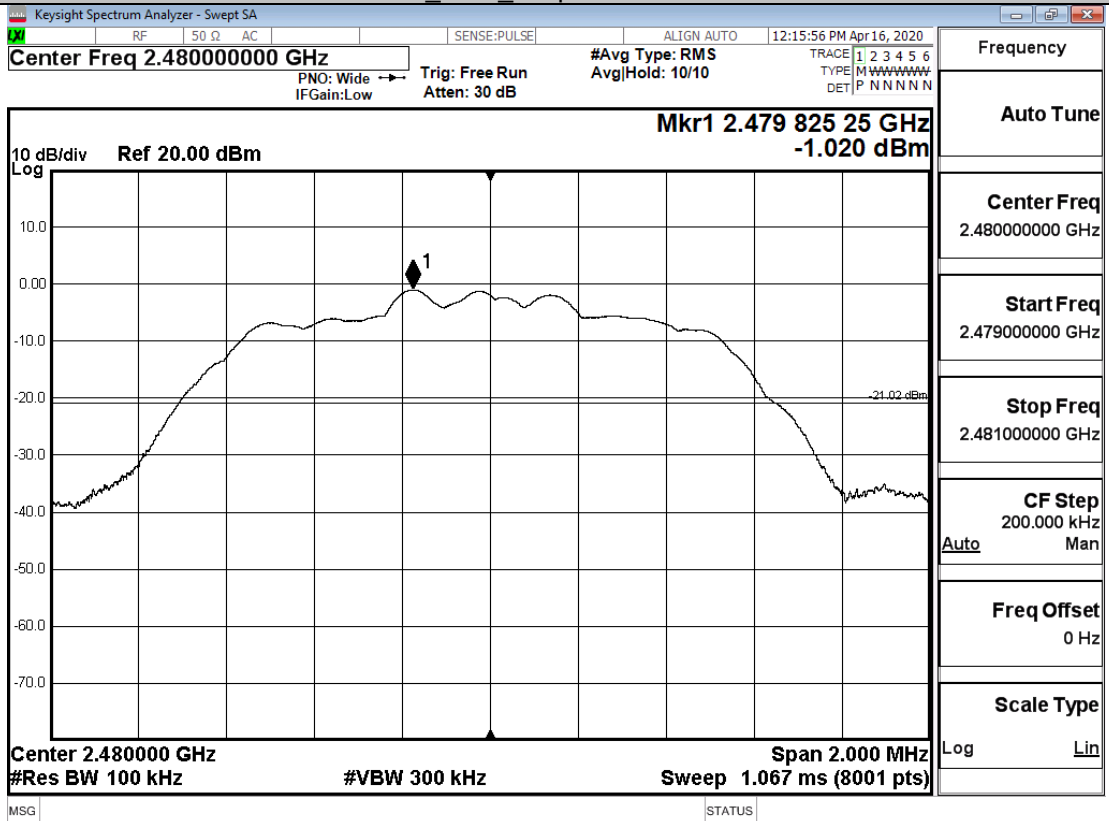


Puw

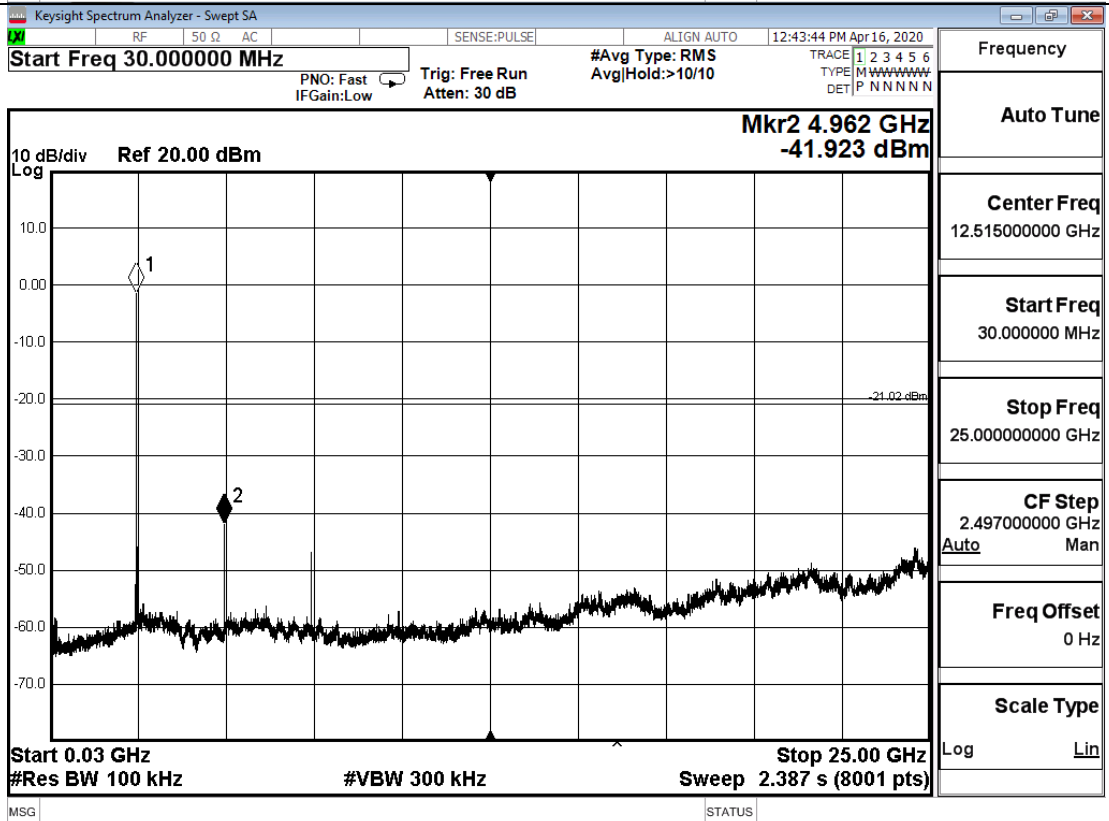


$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw

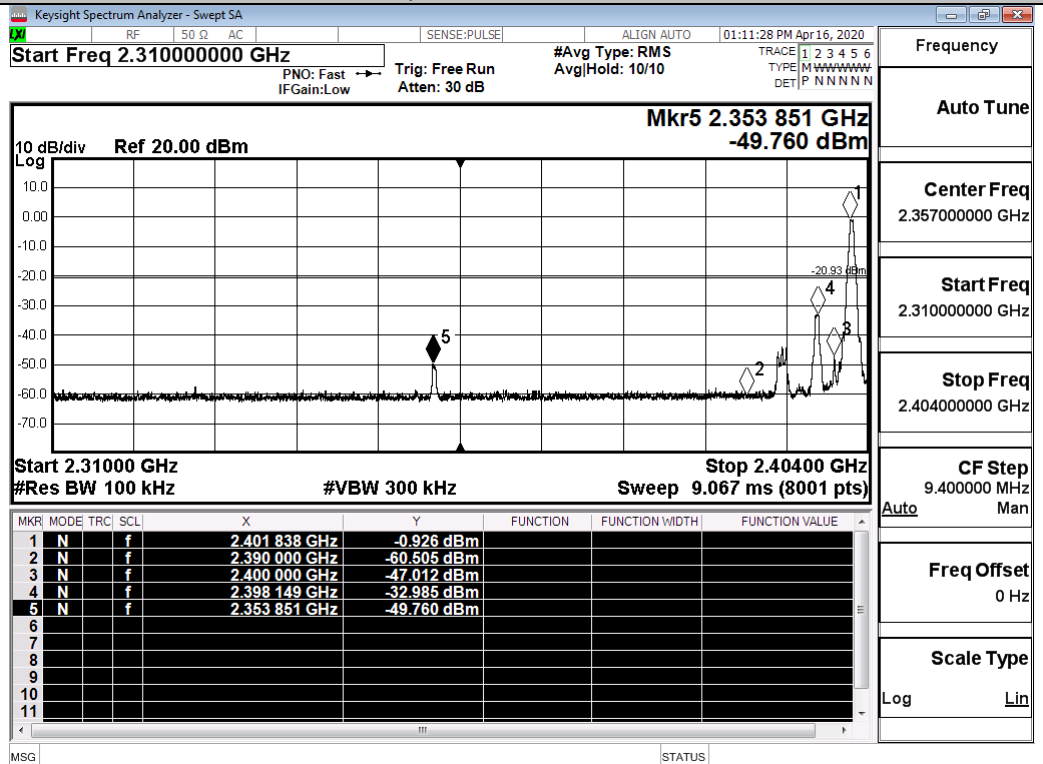


A.7 Band-edge for RF Conducted Emissions

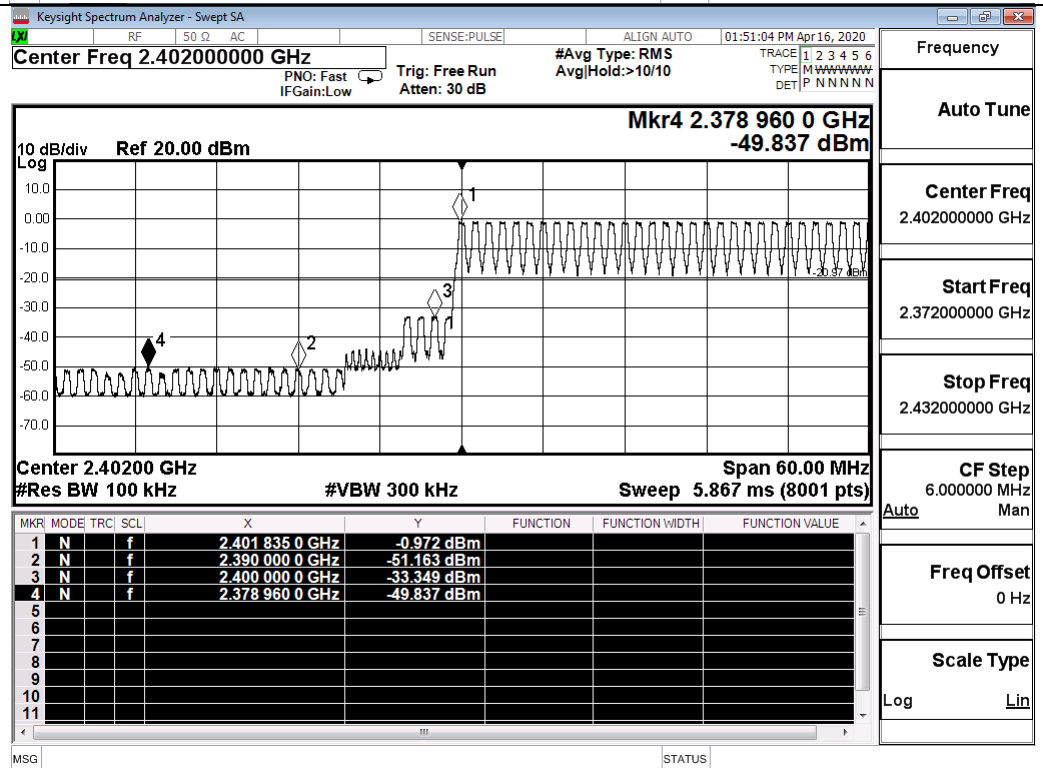
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-0.926	Off	-32.985	-20.93	PASS
			-0.972	On	-33.349	-20.97	PASS
	HCH	2480	-0.930	Off	-45.232	-20.93	PASS
			-0.956	On	-45.977	-20.96	PASS
$\pi/4$ DQPSK	LCH	2402	-0.937	Off	-32.911	-20.94	PASS
			-0.939	On	-33.190	-20.94	PASS
	HCH	2480	-0.936	Off	-44.997	-20.94	PASS
			-0.947	On	-45.827	-20.95	PASS

Test Graphs

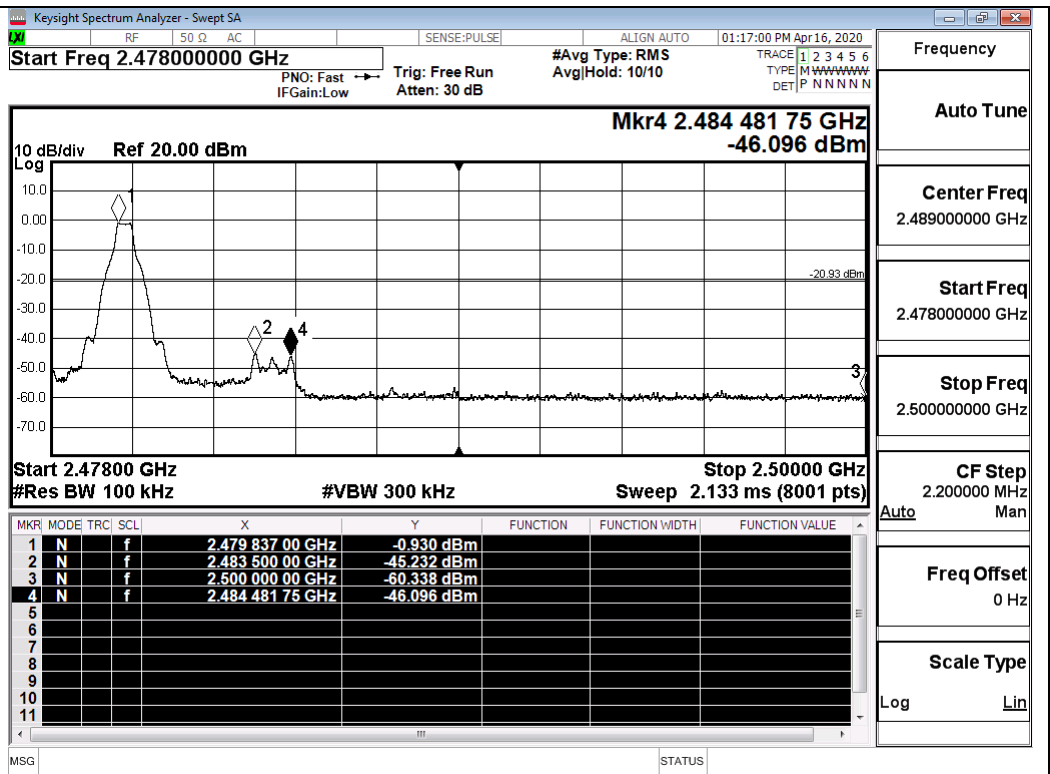
GFSK/LCH/No Hop



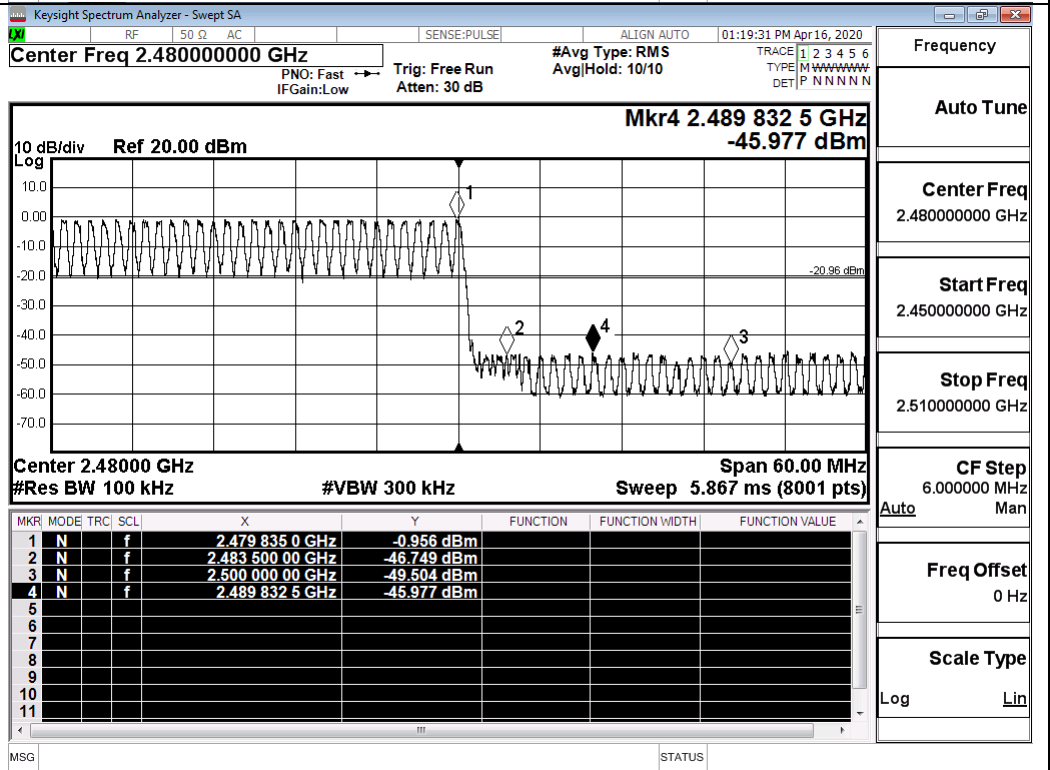
GFSK/LCH/Hop



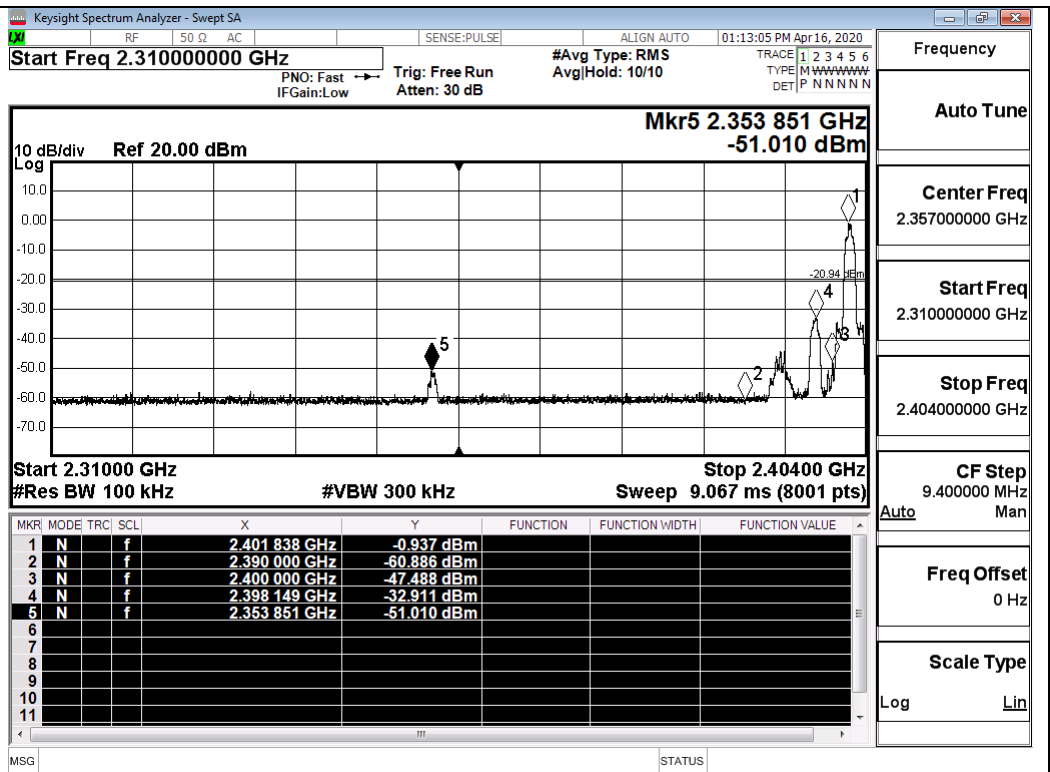
GFSK/HCH/No Hop



GFSK/HCH/Hop

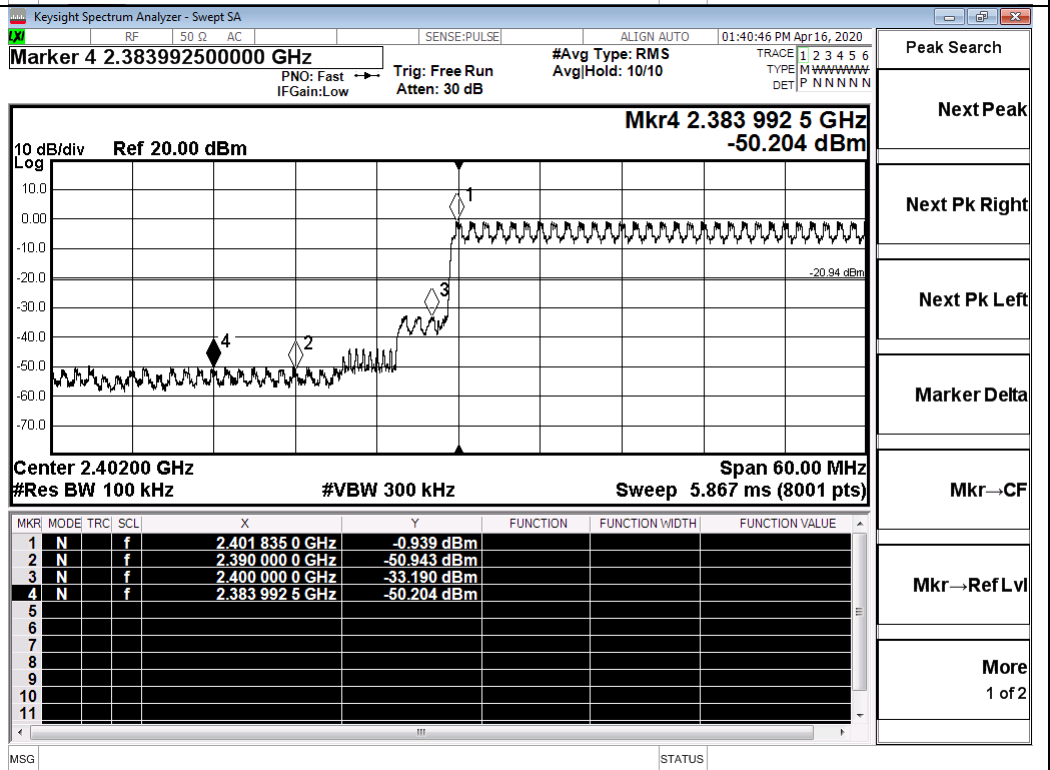


$\pi/4$ DQPSK/LCH/No Hop



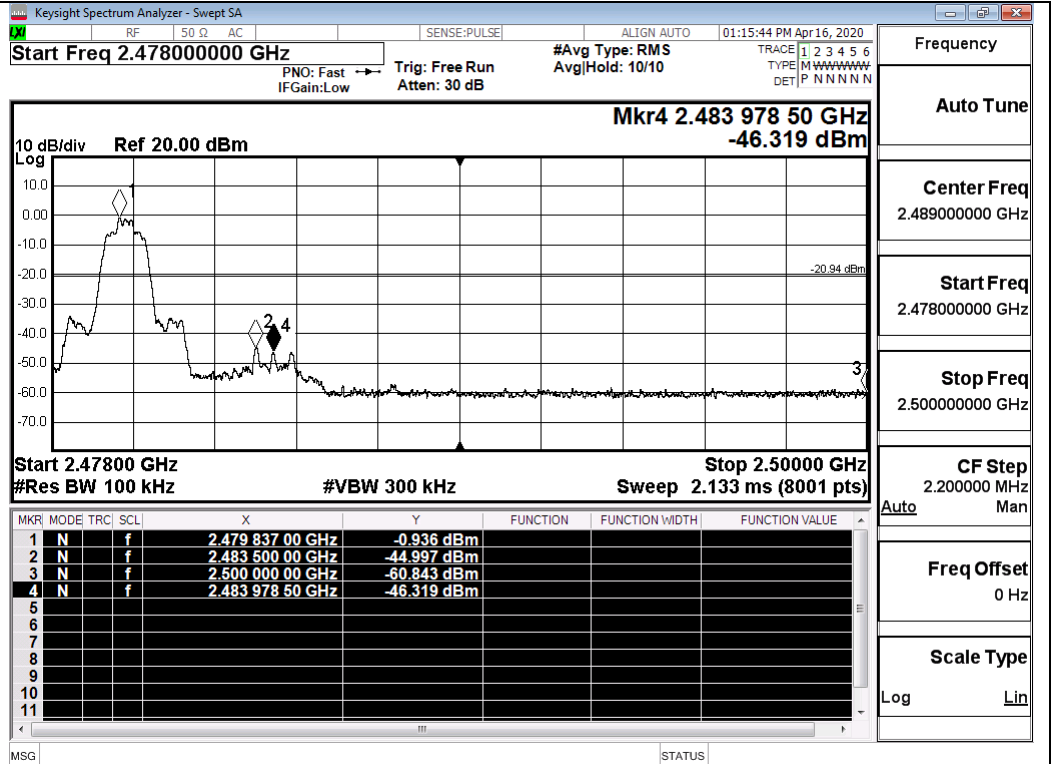
Frequency	
Auto Tune	
Center Freq	2.357000000 GHz
Start Freq	2.310000000 GHz
Stop Freq	2.404000000 GHz
CF Step	9.400000 MHz
Auto	Man
Freq Offset	0 Hz
Scale Type	Log Lin

$\pi/4$ DQPSK/LCH/Hop



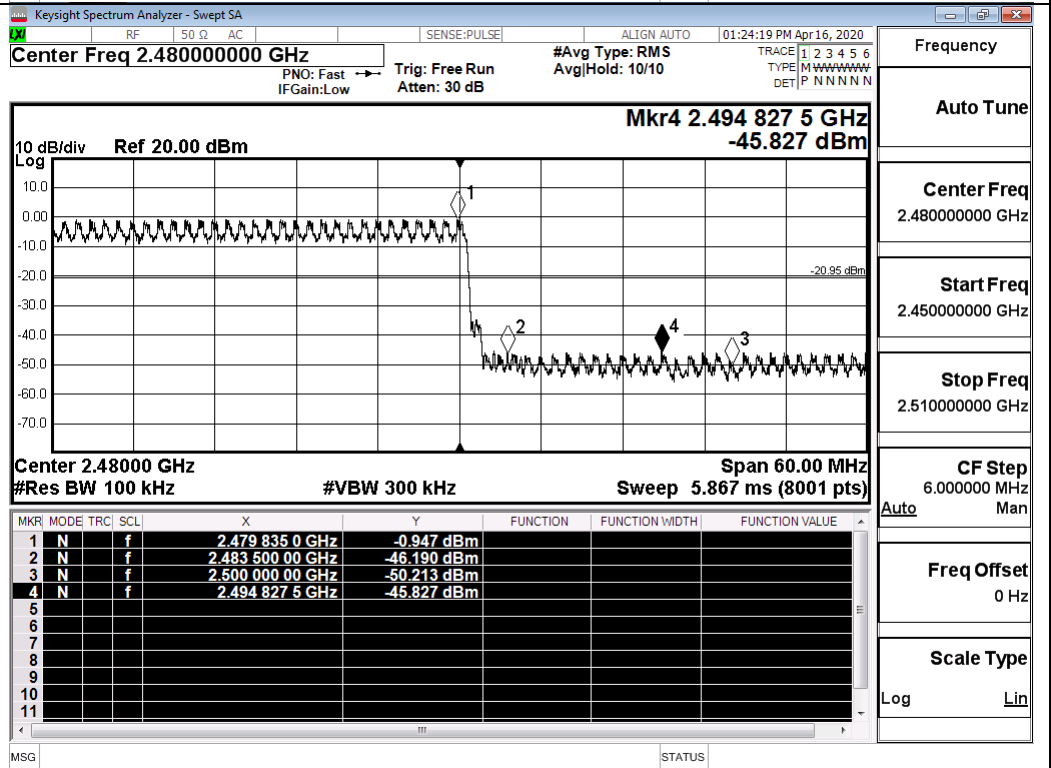
Peak Search	
Next Peak	
Next Pk Right	
Next Pk Left	
Marker Delta	
Mkr→CF	
Mkr→Ref Lvl	
More	1 of 2

π /4DQPSK/HCH/No Hop



Frequency	Auto Tune
Center Freq	2.489000000 GHz
Start Freq	2.478000000 GHz
Stop Freq	2.500000000 GHz
CF Step	2.200000 MHz
Freq Offset	0 Hz
Scale Type	Log Lin

π /4DQPSK/HCH/Hop

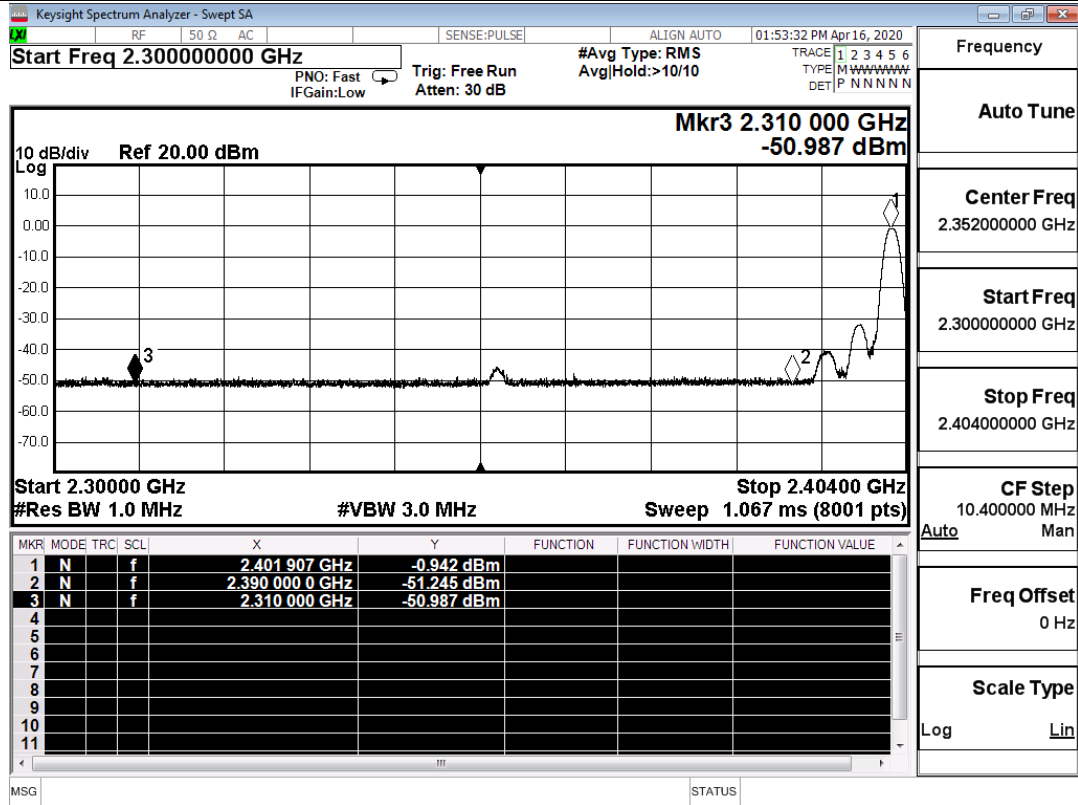


Frequency	Auto Tune
Center Freq	2.480000000 GHz
Start Freq	2.450000000 GHz
Stop Freq	2.510000000 GHz
CF Step	6.000000 MHz
Freq Offset	0 Hz
Scale Type	Log Lin

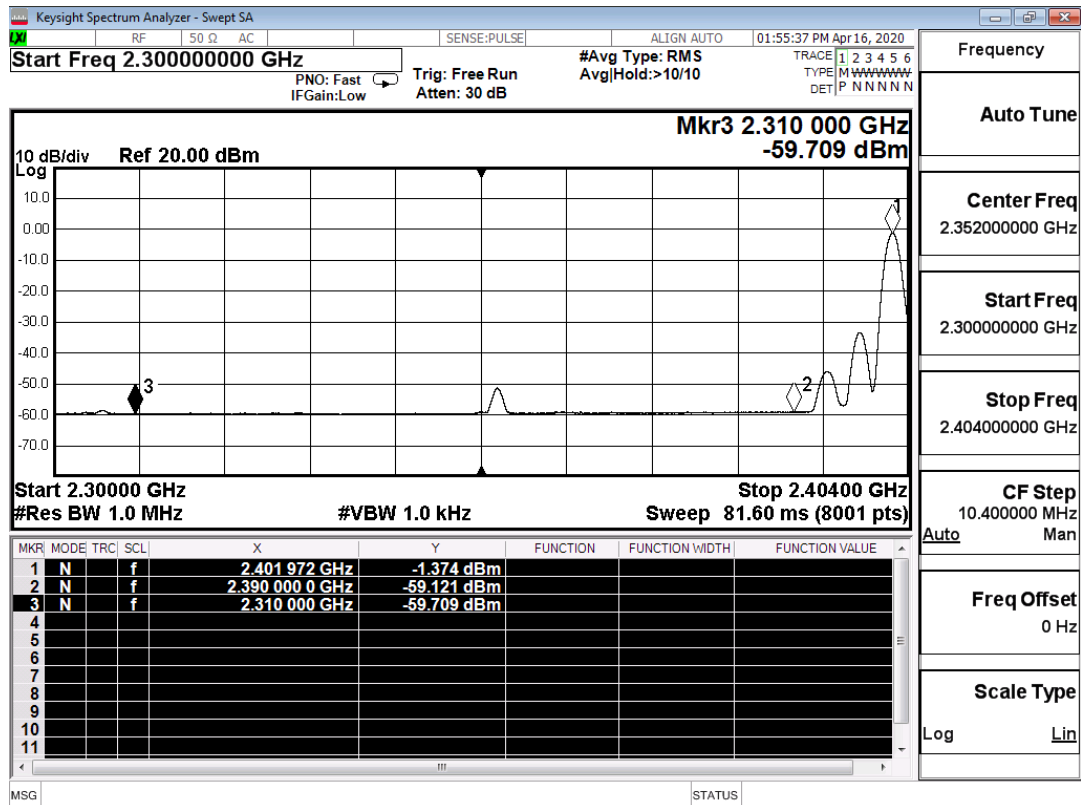
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-50.987	2.000	0	46.24	PEAK	74	PASS
	Off	2310.0	-59.709	2.000	0	37.52	AV	54	PASS
	Off	2390.0	-51.245	2.000	0	45.99	PEAK	74	PASS
	Off	2390.0	-59.121	2.000	0	38.11	AV	54	PASS
	Off	2483.5	-42.414	2.000	0	54.82	PEAK	74	PASS
	Off	2483.5	-47.558	2.000	0	49.67	AV	54	PASS
	Off	2500.0	-49.862	2.000	0	47.37	PEAK	74	PASS
	Off	2500.0	-58.801	2.000	0	38.43	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-51.532	2.000	0	45.70	PEAK	74	PASS
	Off	2310.0	-59.669	2.000	0	37.56	AV	54	PASS
	Off	2390.0	-51.289	2.000	0	45.94	PEAK	74	PASS
	Off	2390.0	-59.037	2.000	0	38.19	AV	54	PASS
	Off	2483.5	-41.005	2.000	0	56.23	PEAK	74	PASS
	Off	2483.5	-48.916	2.000	0	48.31	AV	54	PASS
	Off	2500.0	-49.833	2.000	0	47.40	PEAK	74	PASS
	Off	2500.0	-58.917	2.000	0	38.31	AV	54	PASS

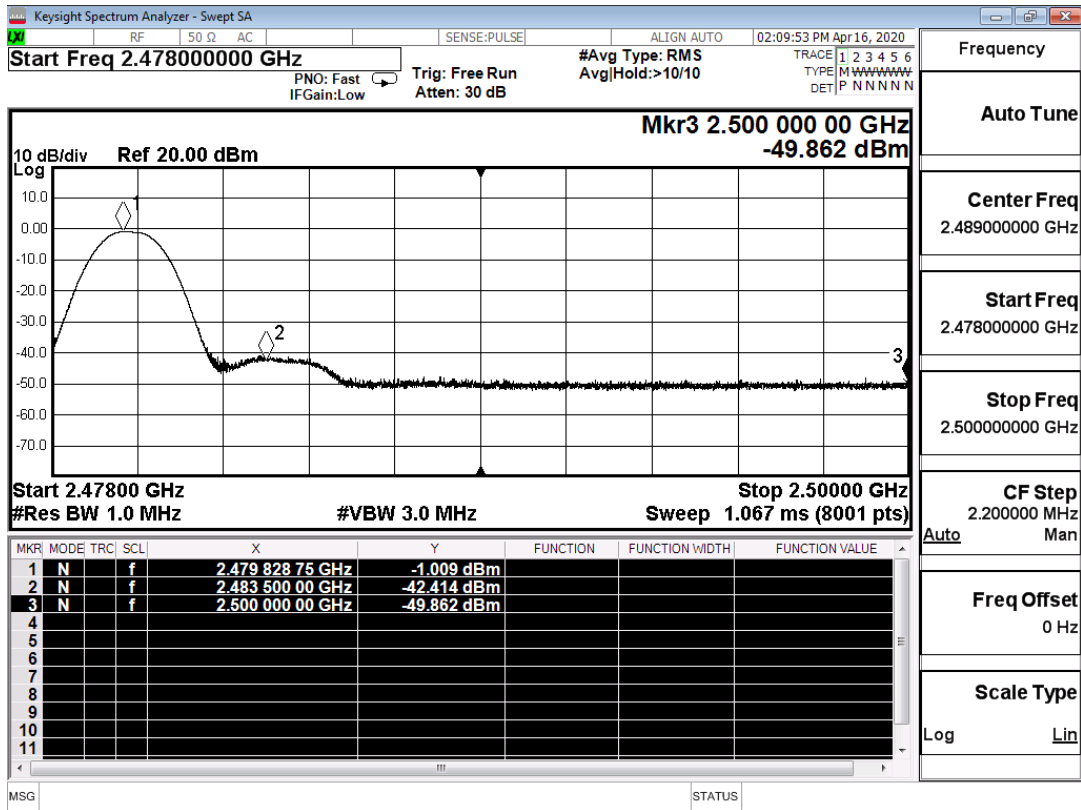
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



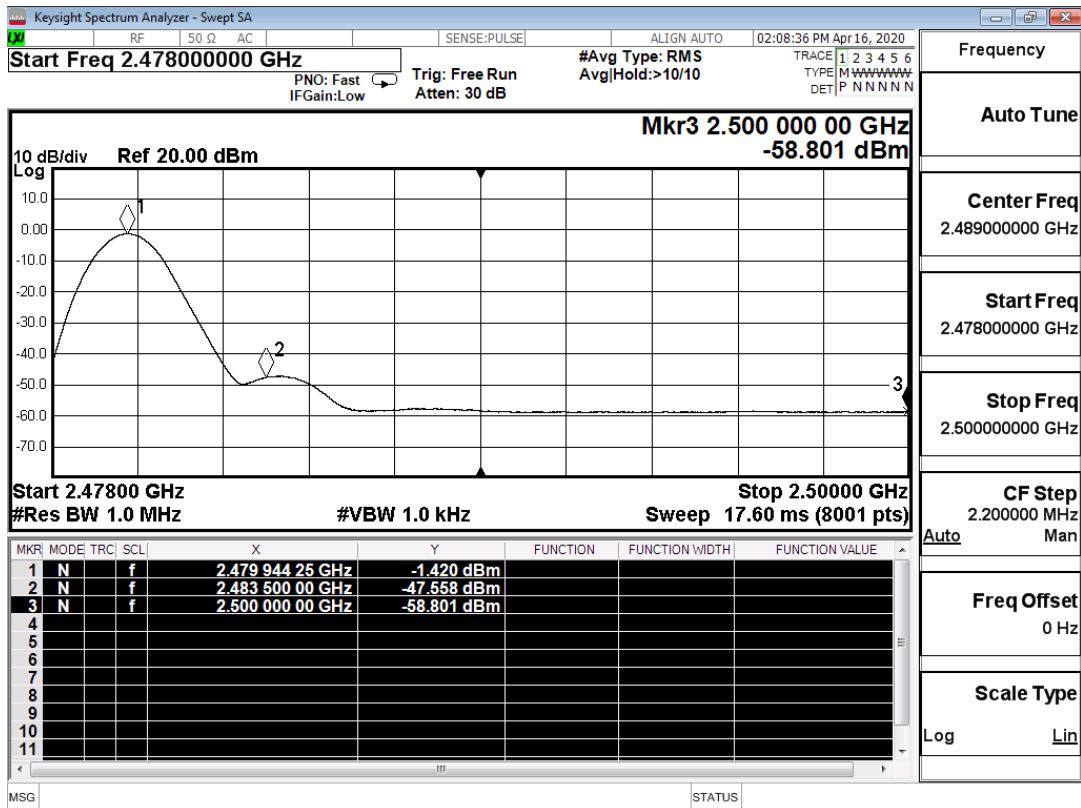
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



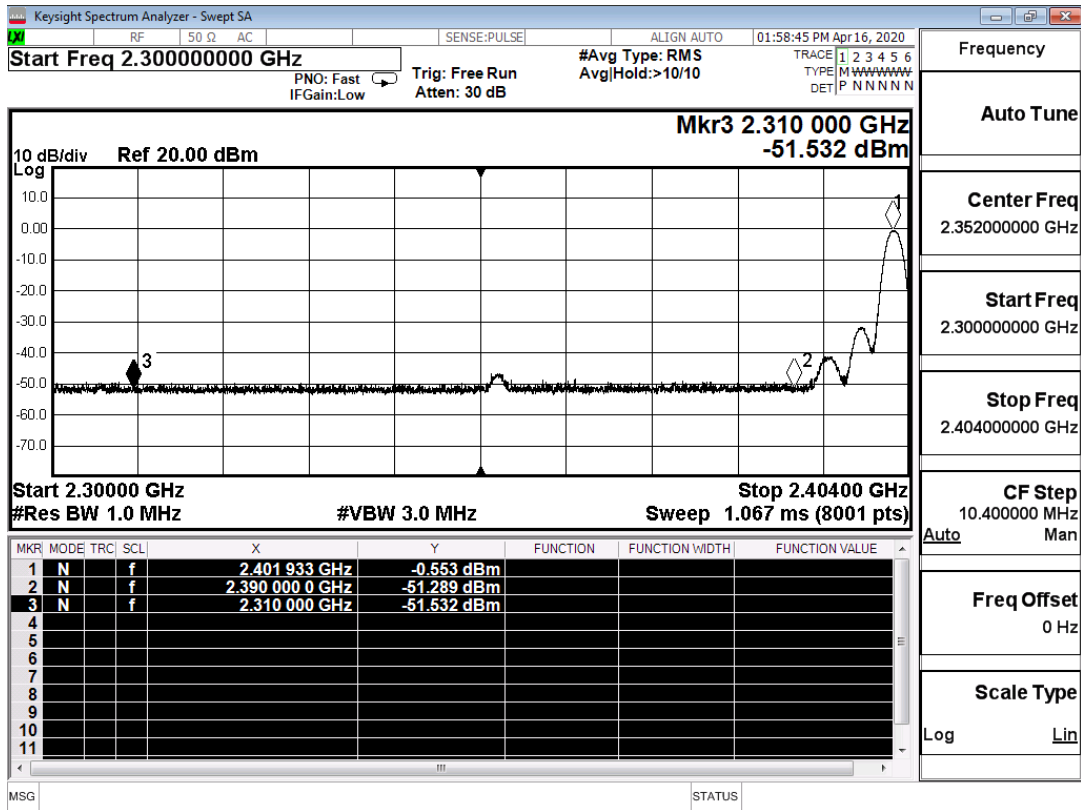
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



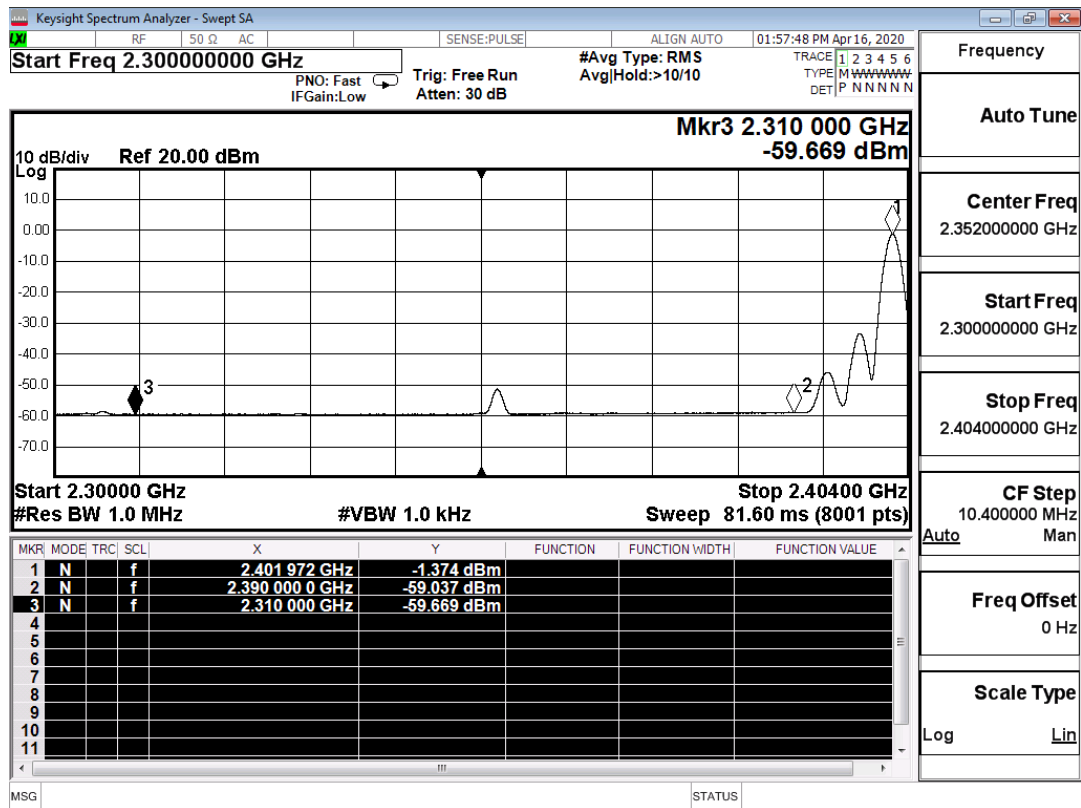
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



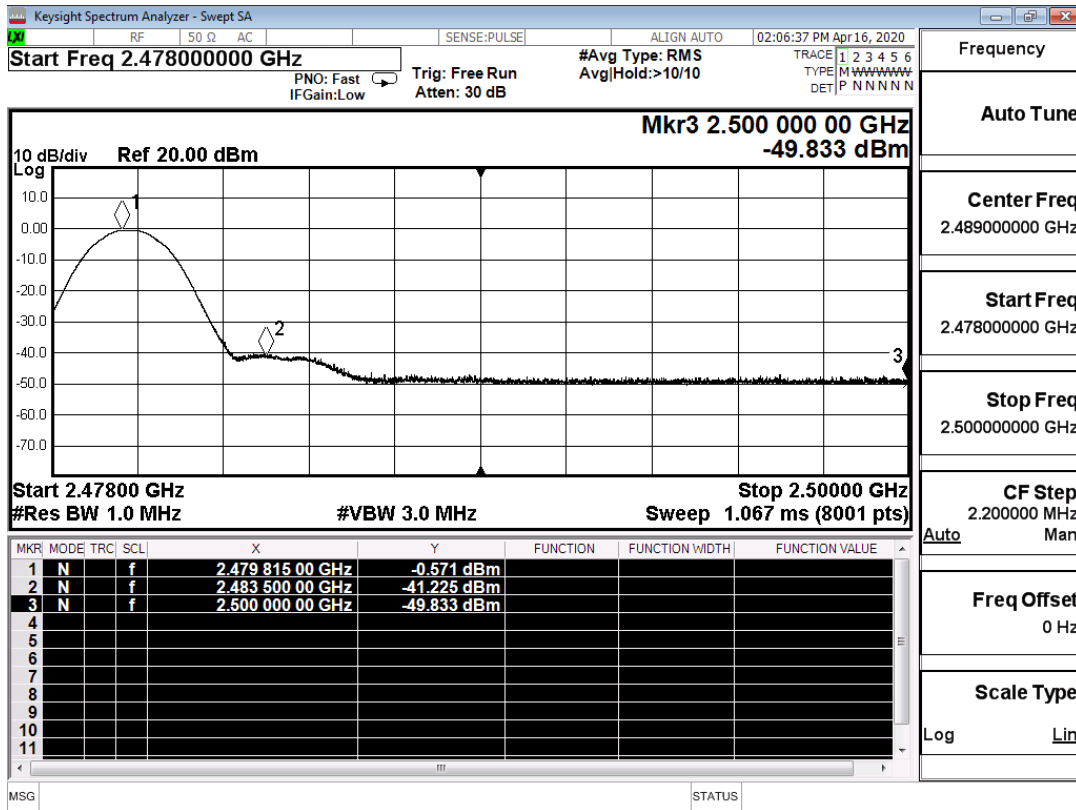
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)



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)

