

Appendix A

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

Product Name: Wireless Charging with Bluetooth Speaker

Trade Mark: KINGYUK

Test Model: BS1301

Environmental Conditions

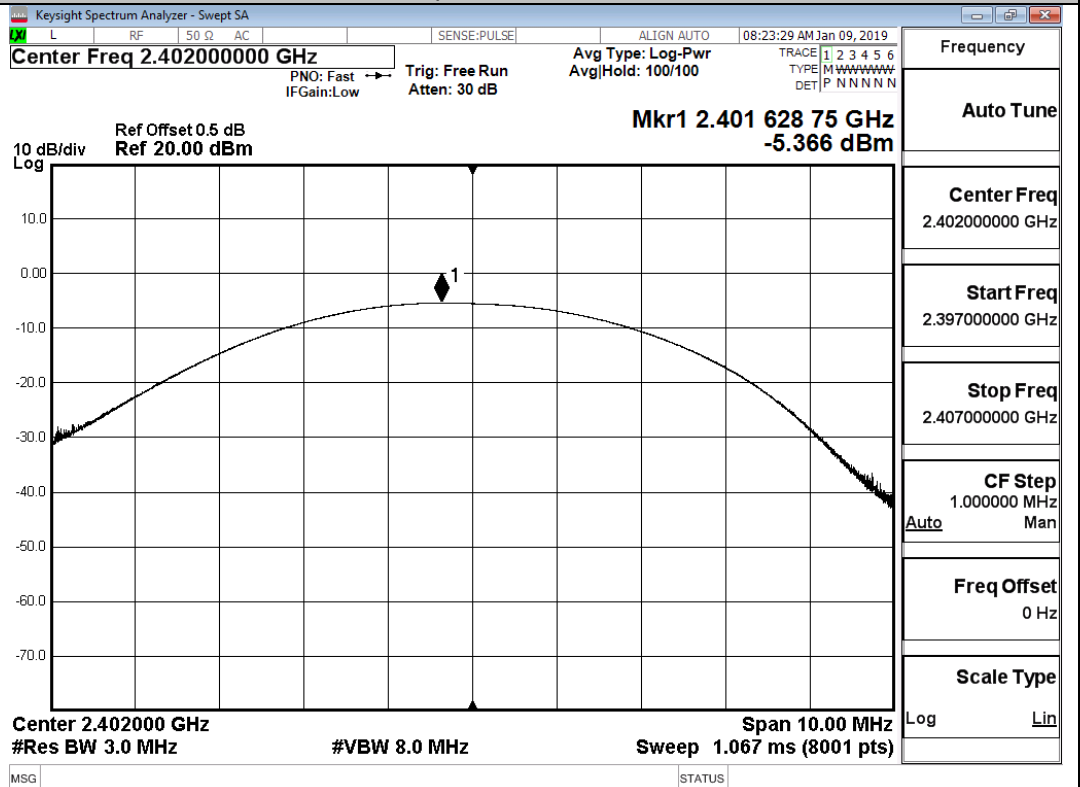
Temperature:	23.5 ° C
Relative Humidity:	66%
ATM Pressure:	100.0 kPa
Test Engineer:	AKING JIN
Supervised by:	JAYDEN ZHUO

A.1 Maximum Conducted Peak Output Power

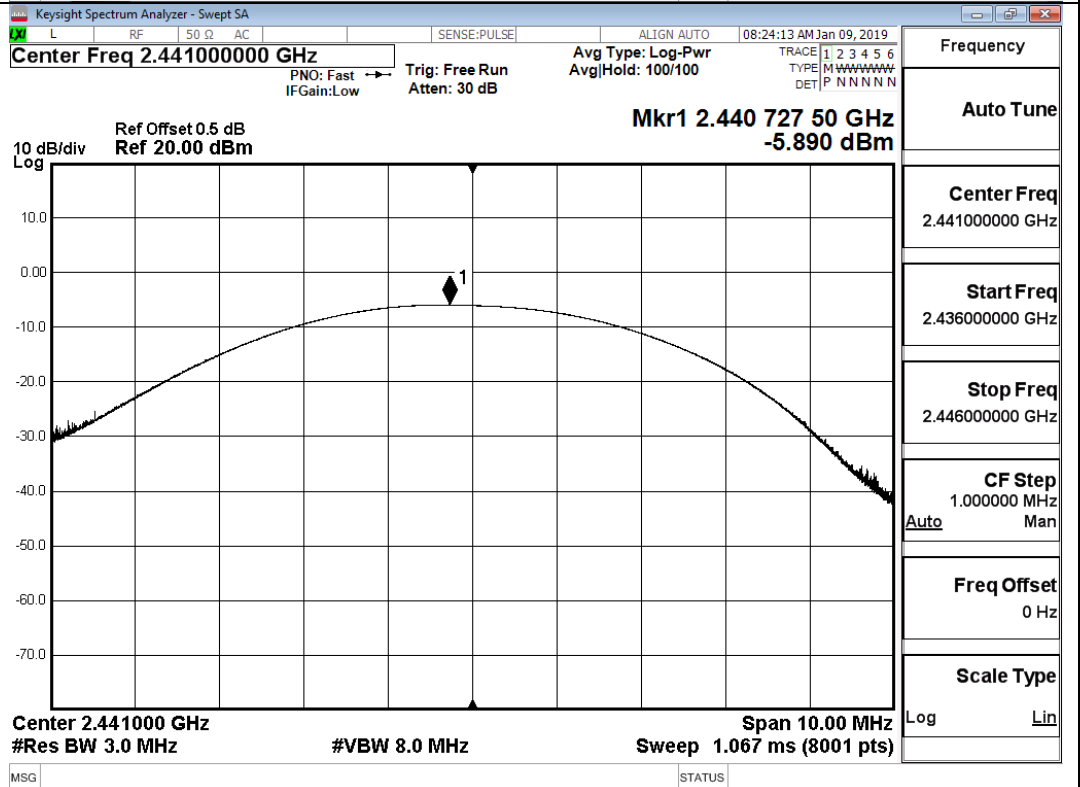
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-5.37	21	PASS
	MCH	-5.89	21	PASS
	HCH	-6.40	21	PASS
$\pi/4$ DQPSK	LCH	-4.66	21	PASS
	MCH	-5.20	21	PASS
	HCH	-5.70	21	PASS

Test Graphs

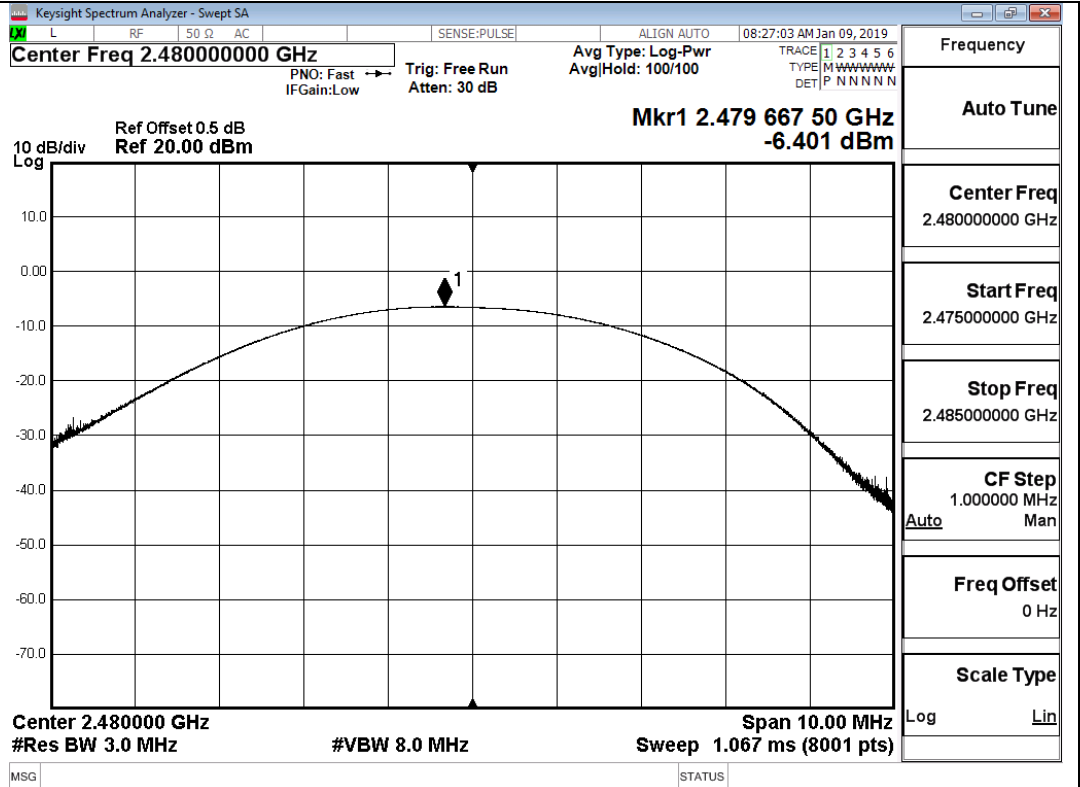
GFSK/LCH



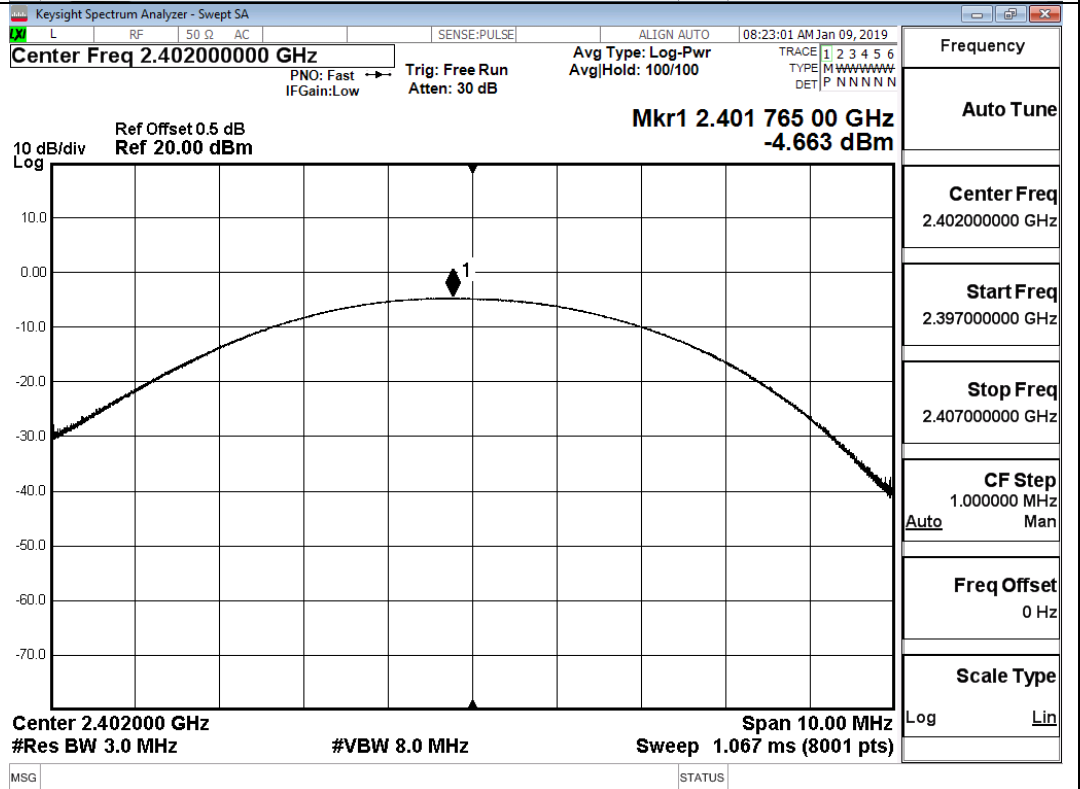
GFSK/MCH



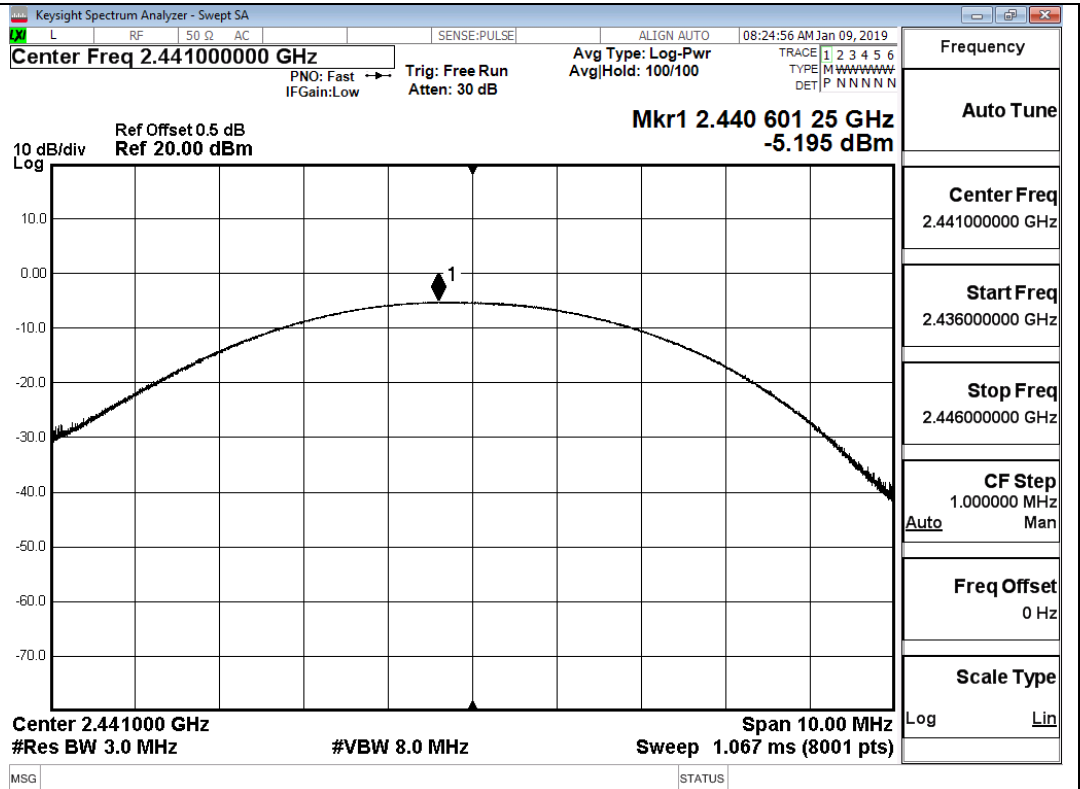
GFSK/HCH



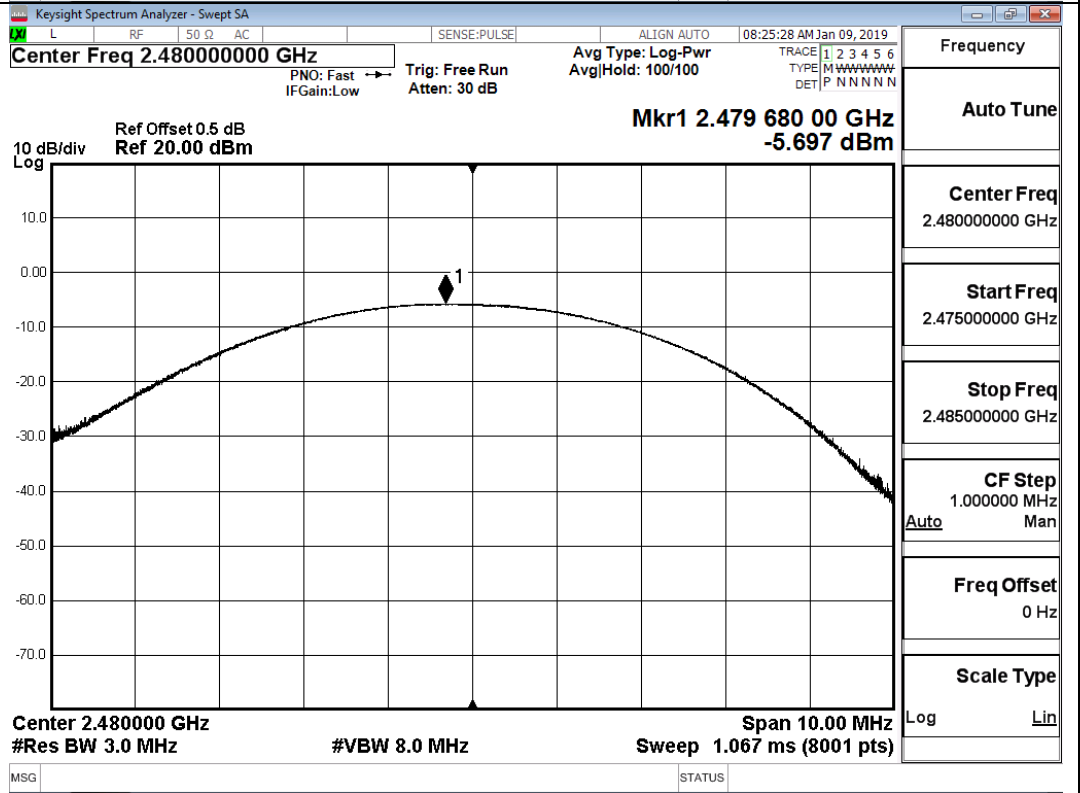
π /4DQPSK/LCH



$\pi/4$ DQPSK/MCH

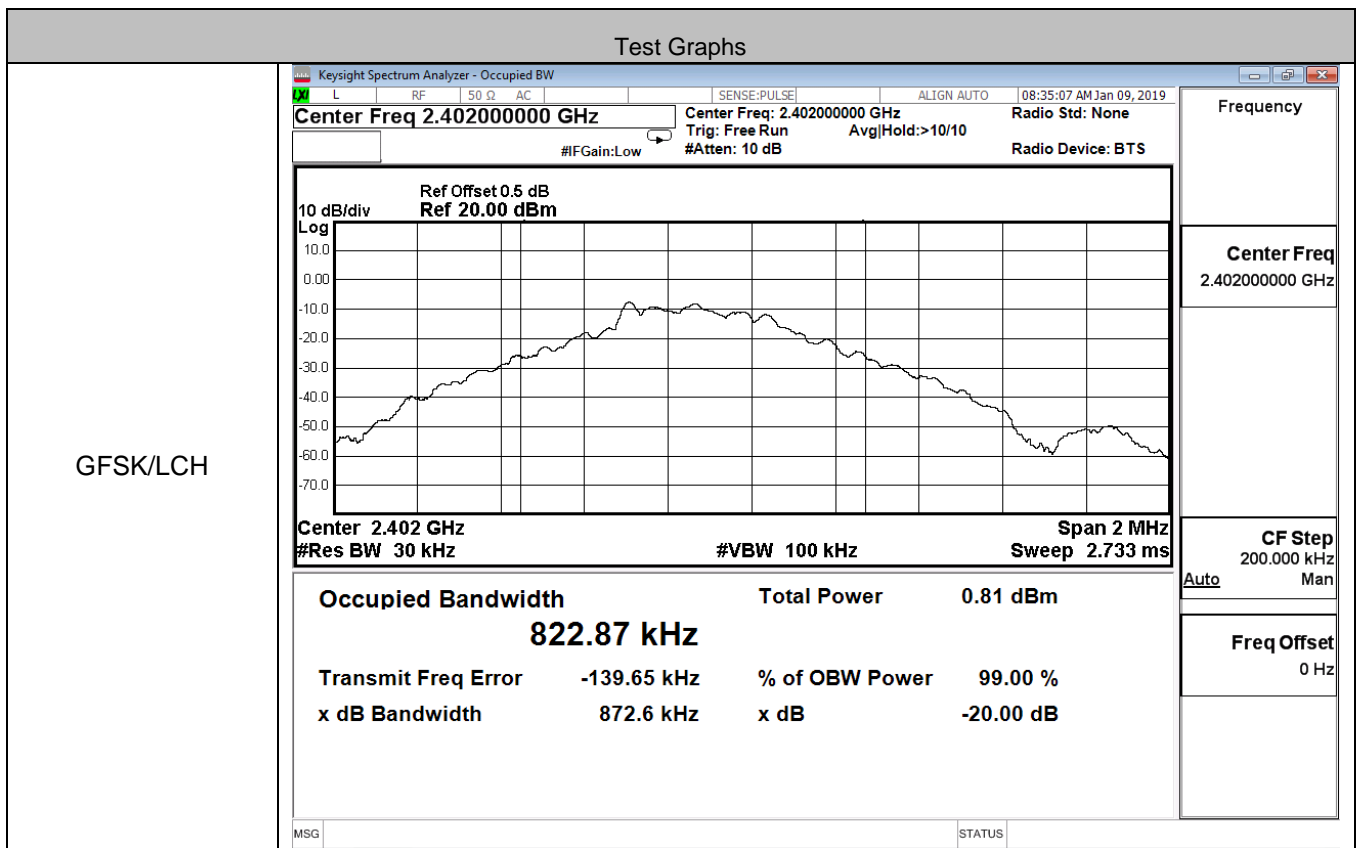


$\pi/4$ DQPSK/HCH

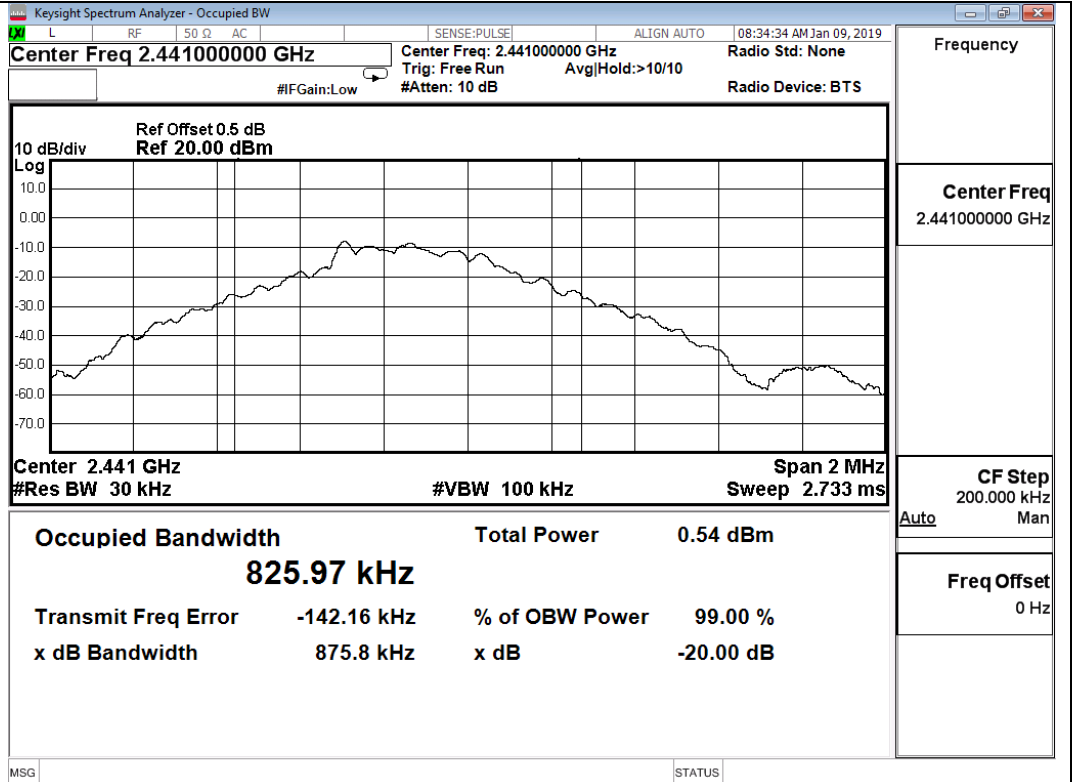


A.2 20dB Bandwidth

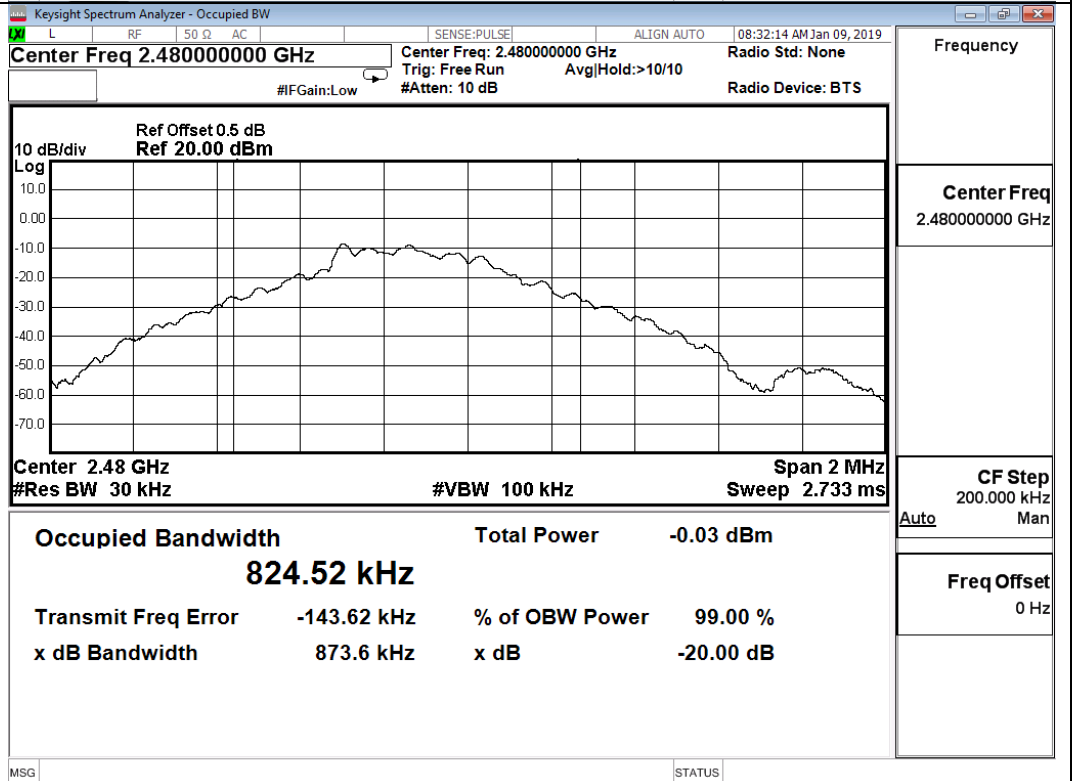
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.873	Not Specified	PASS
	MCH	0.876	Not Specified	PASS
	HCH	0.874	Not Specified	PASS
π/4DQPSK	LCH	1.252	Not Specified	PASS
	MCH	1.252	Not Specified	PASS
	HCH	1.230	Not Specified	PASS



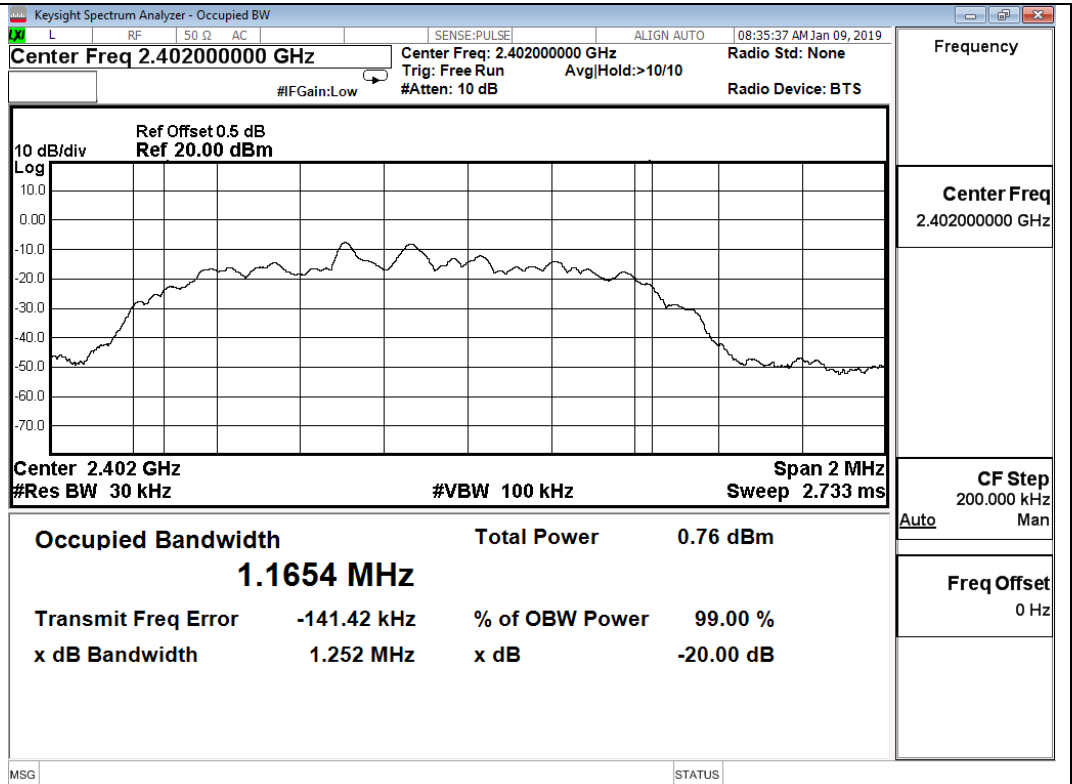
GFSK/MCH



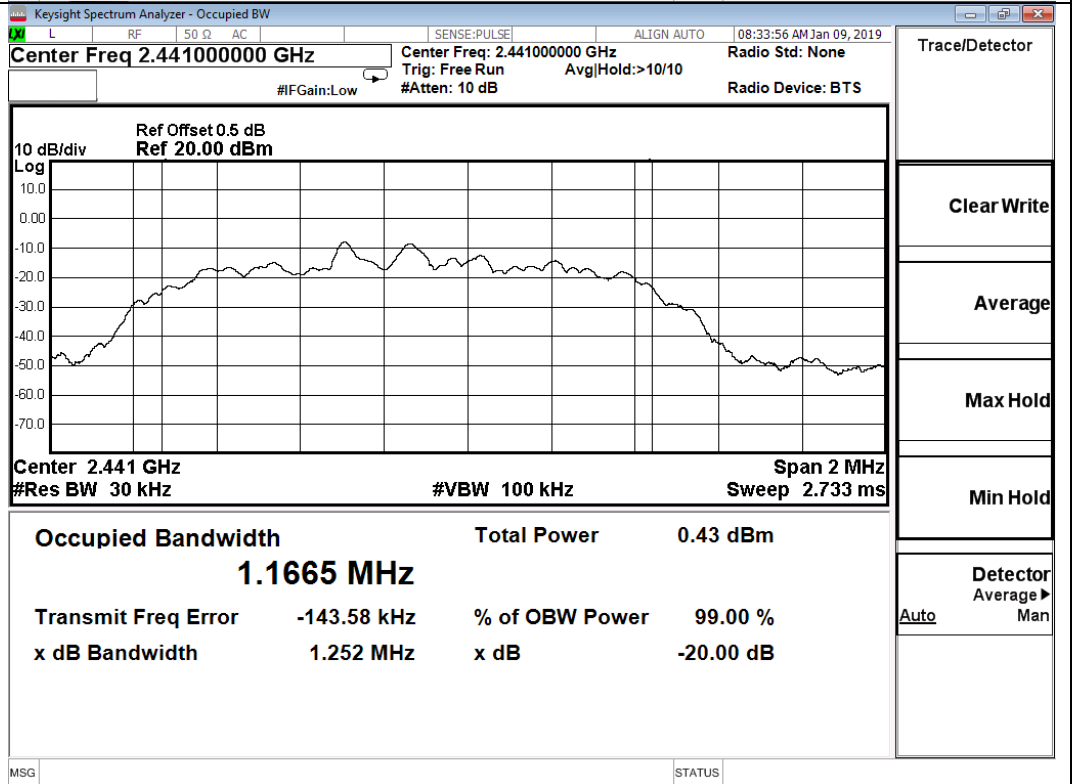
GFSK/HCH



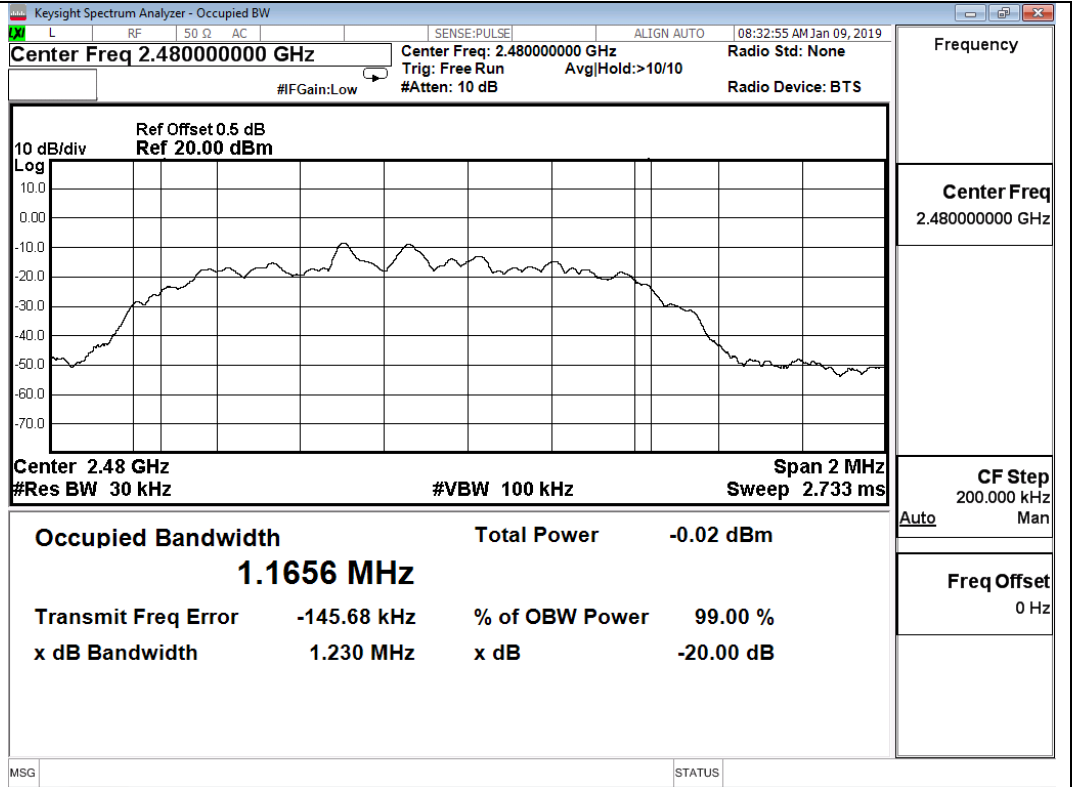
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH

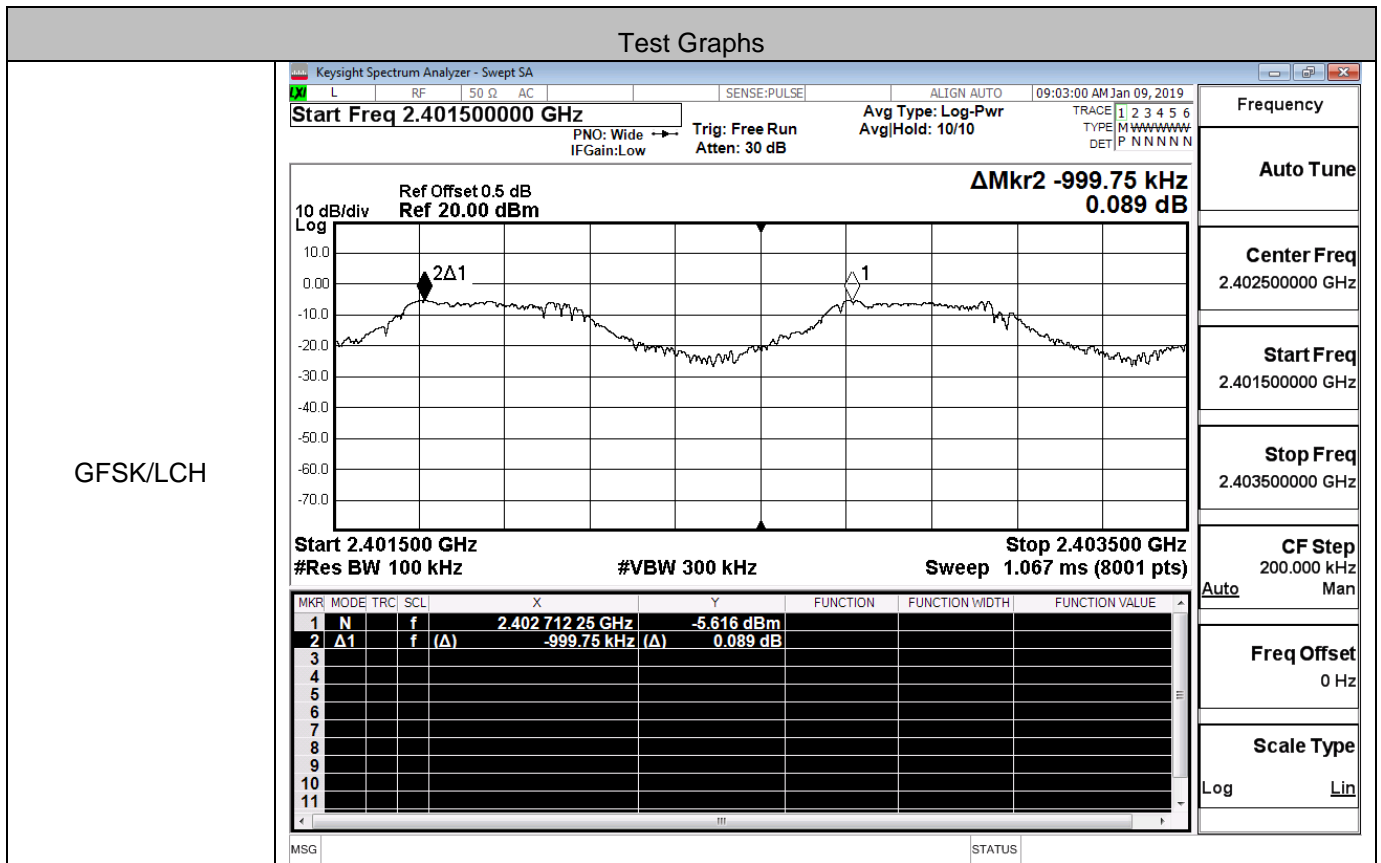


$\pi/4$ DQPSK/HCH

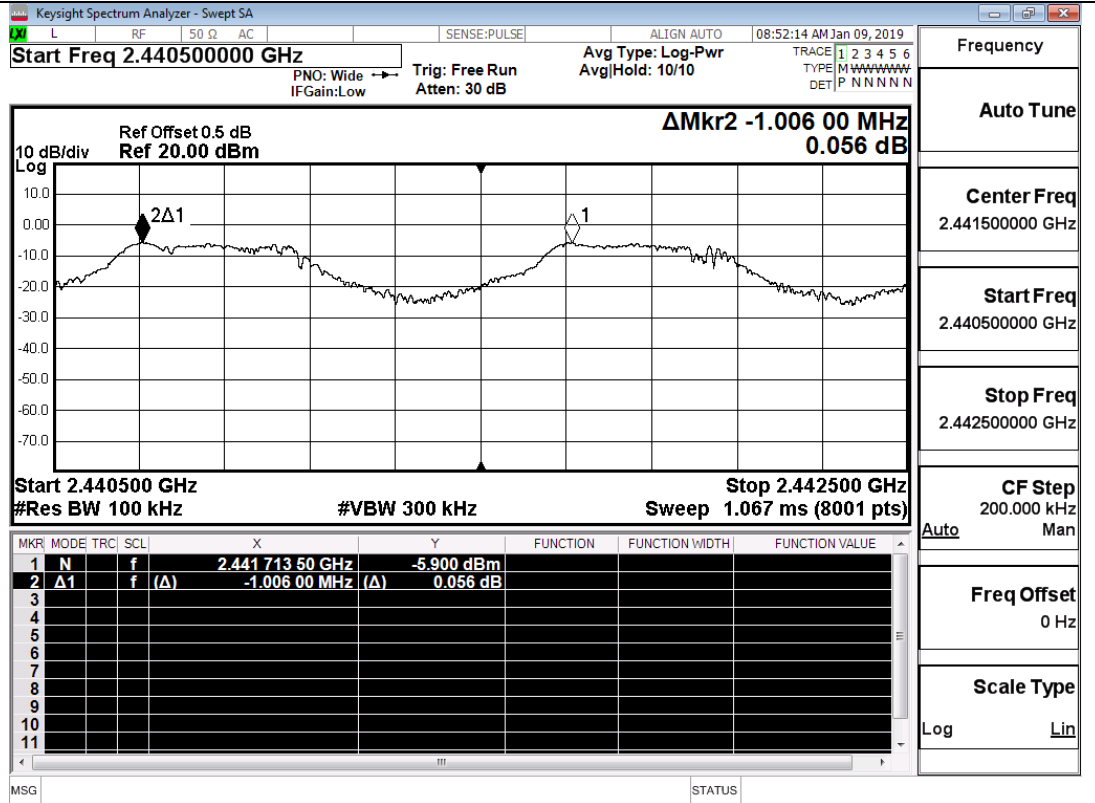


A.3 Carrier Frequency Separation

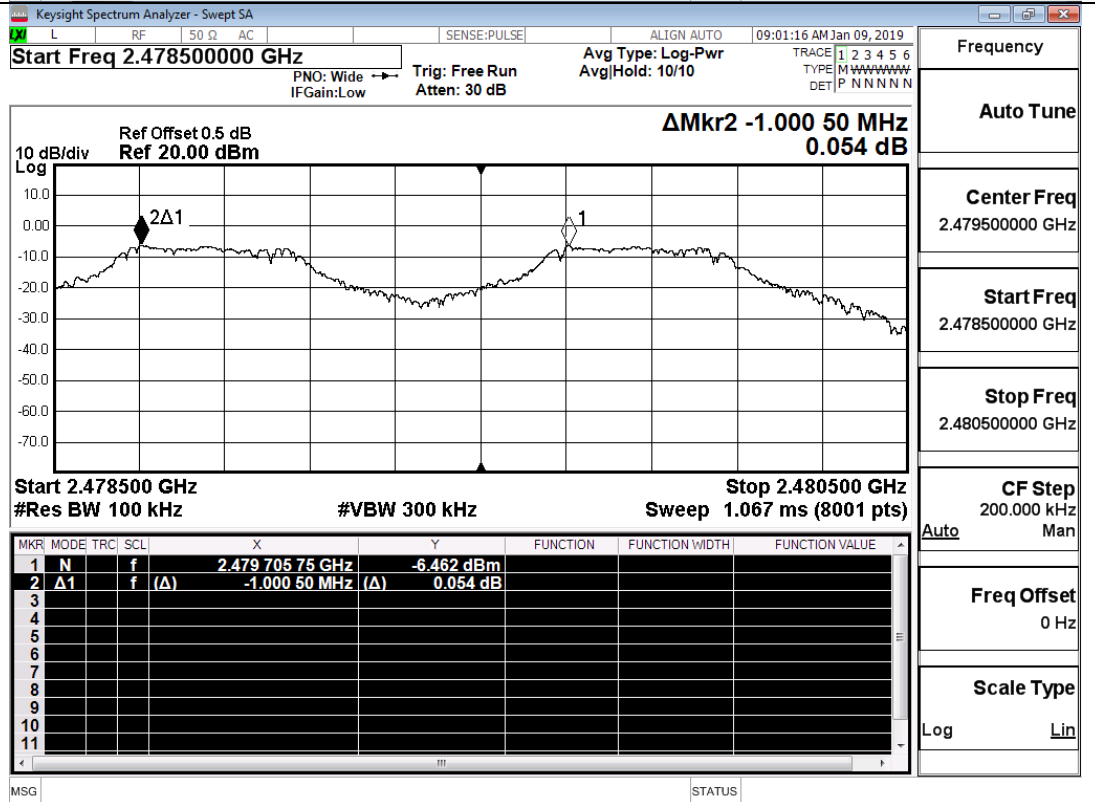
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz] 2/3*20dB Bandwidth	Verdict
GFSK	LCH	1.000	0.582	PASS
	MCH	1.006	0.584	PASS
	HCH	1.001	0.583	PASS
π/4DQPSK	LCH	1.001	0.835	PASS
	MCH	1.006	0.835	PASS
	HCH	1.000	0.820	PASS



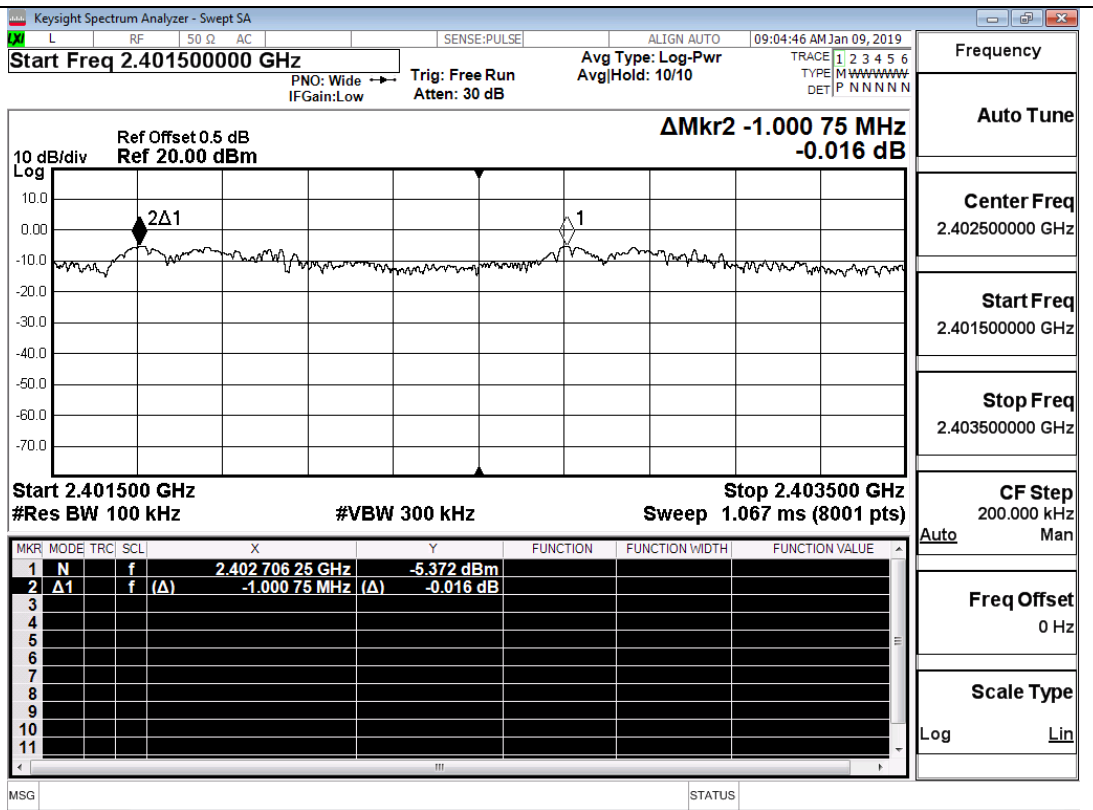
GFSK/MCH



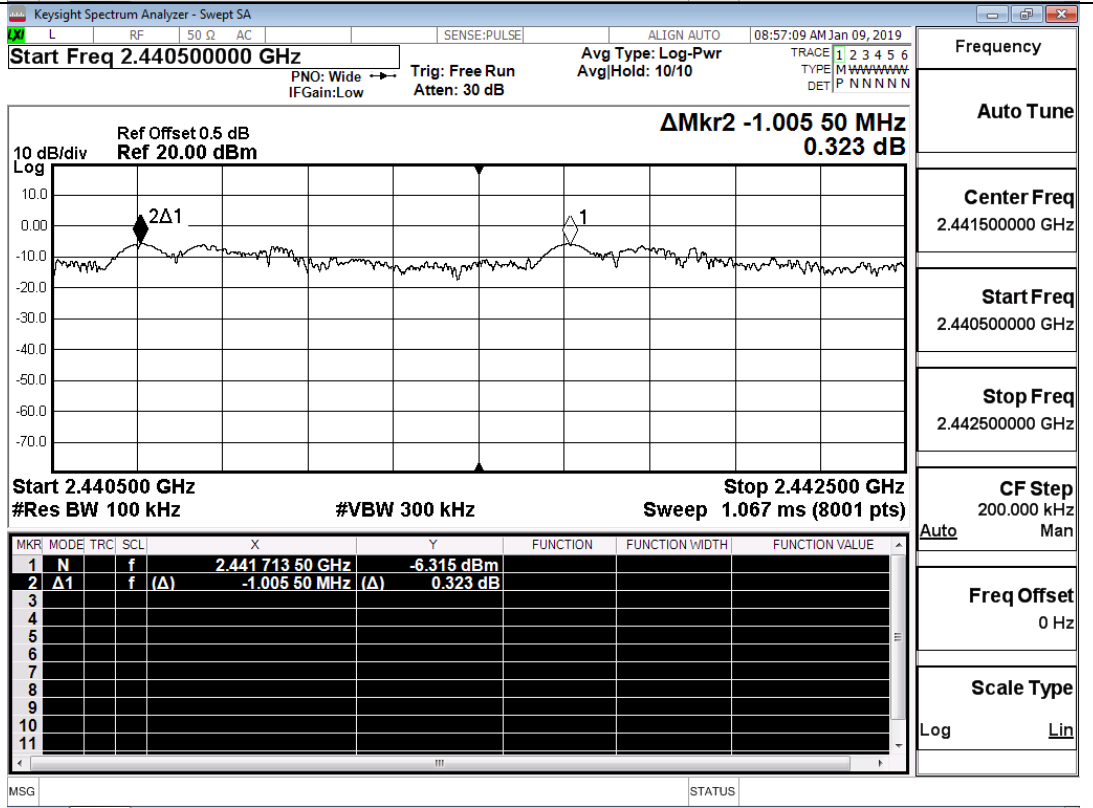
GFSK/HCH



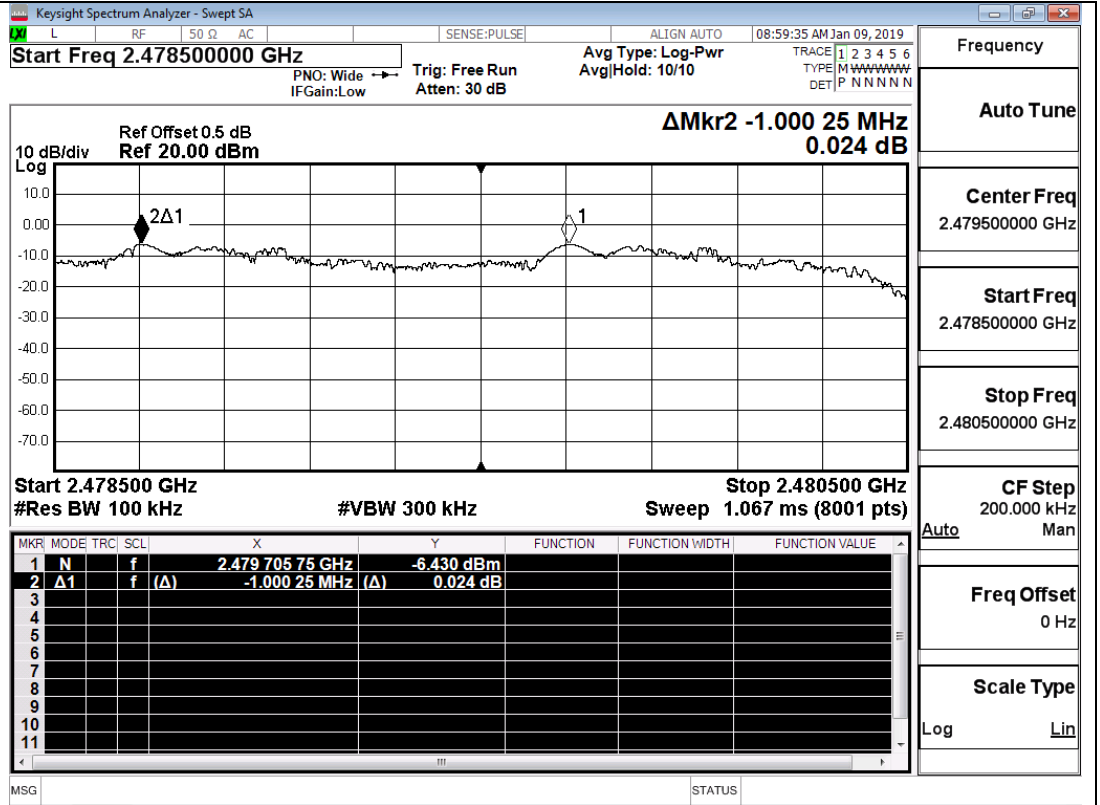
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



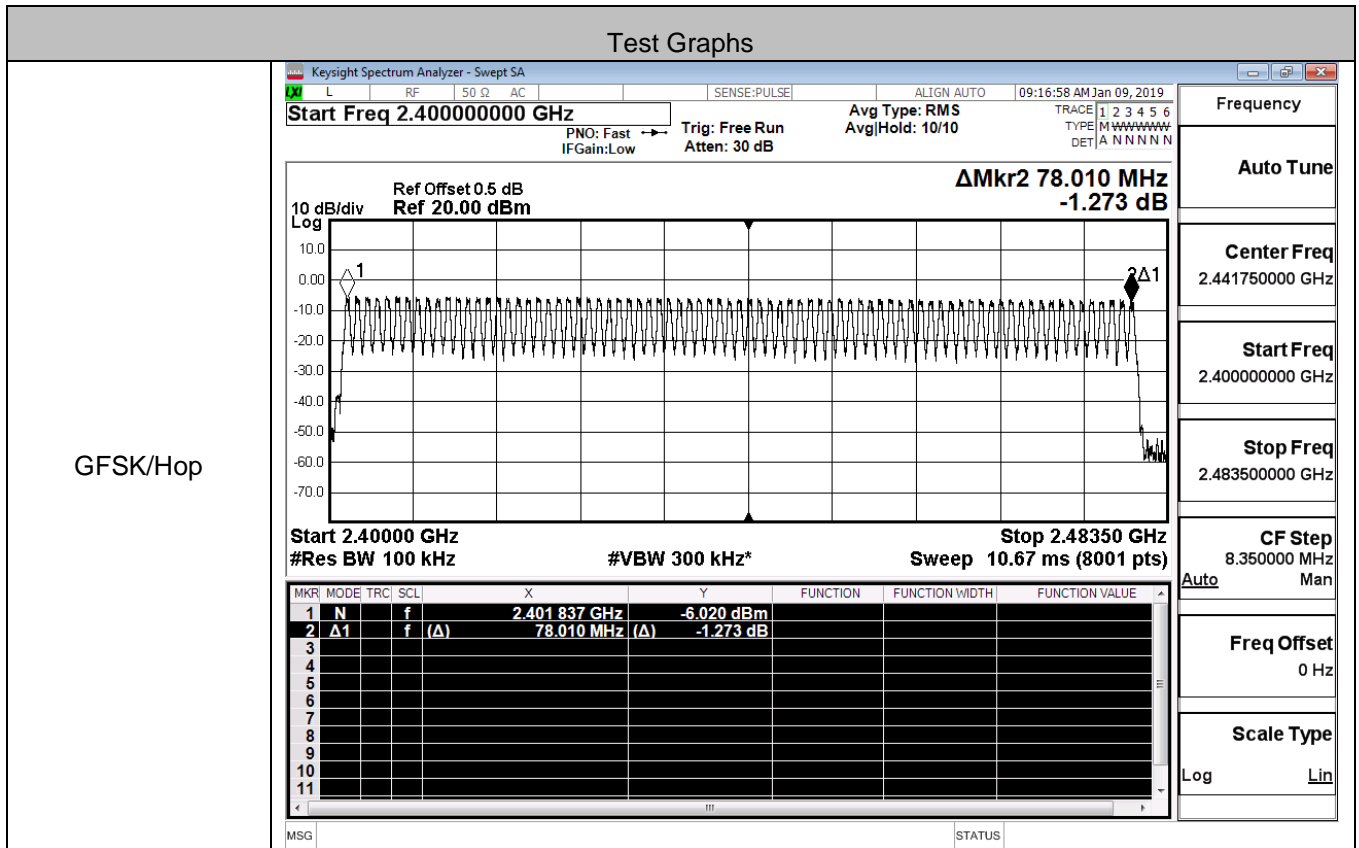
$\pi/4$ DQPSK/HCH



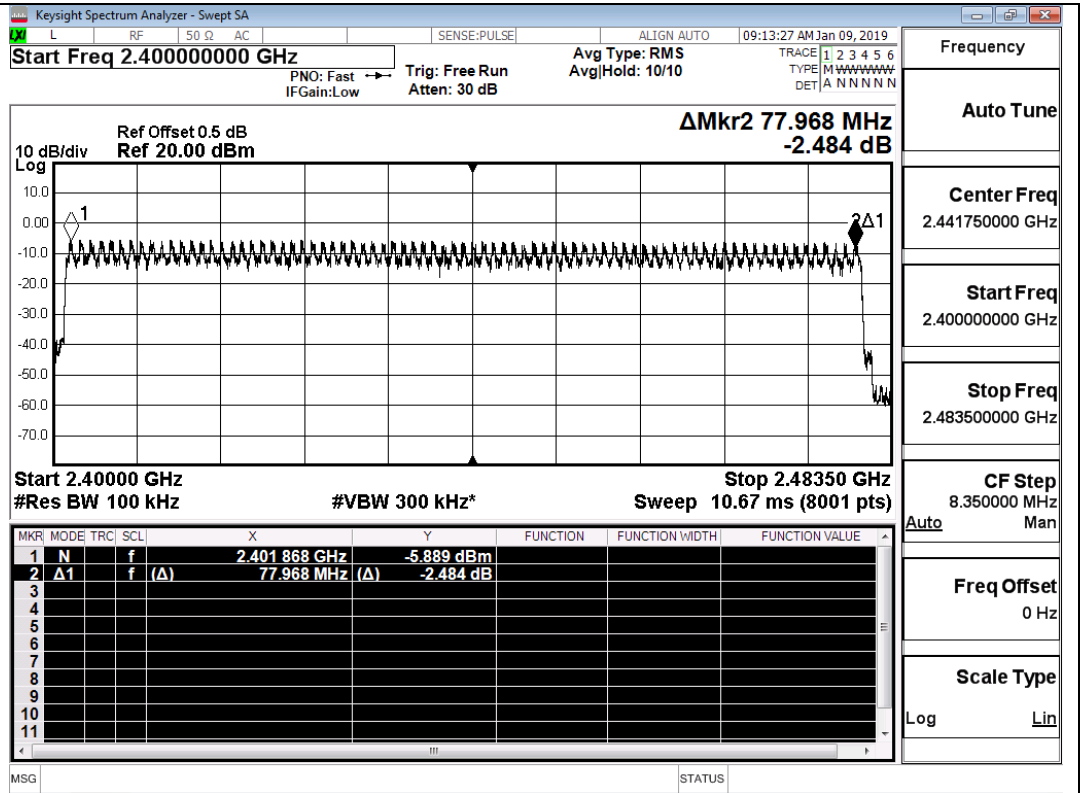
Frequency
Auto Tune
Center Freq 2.479500000 GHz
Start Freq 2.478500000 GHz
Stop Freq 2.480500000 GHz
CF Step 200.000 kHz Auto Man
Freq Offset 0 Hz
Scale Type Log Lin

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

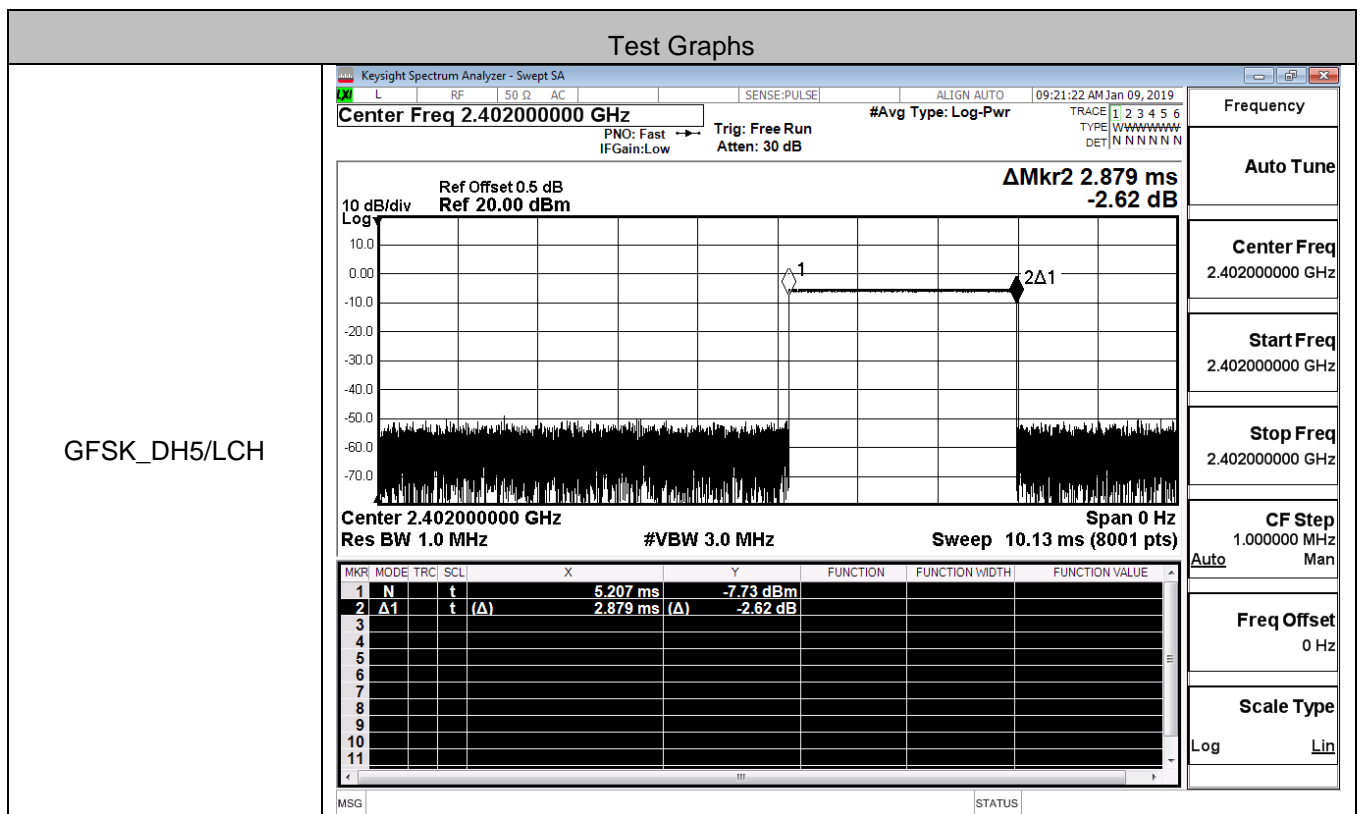


$\pi/4$ DQPSK/Hop

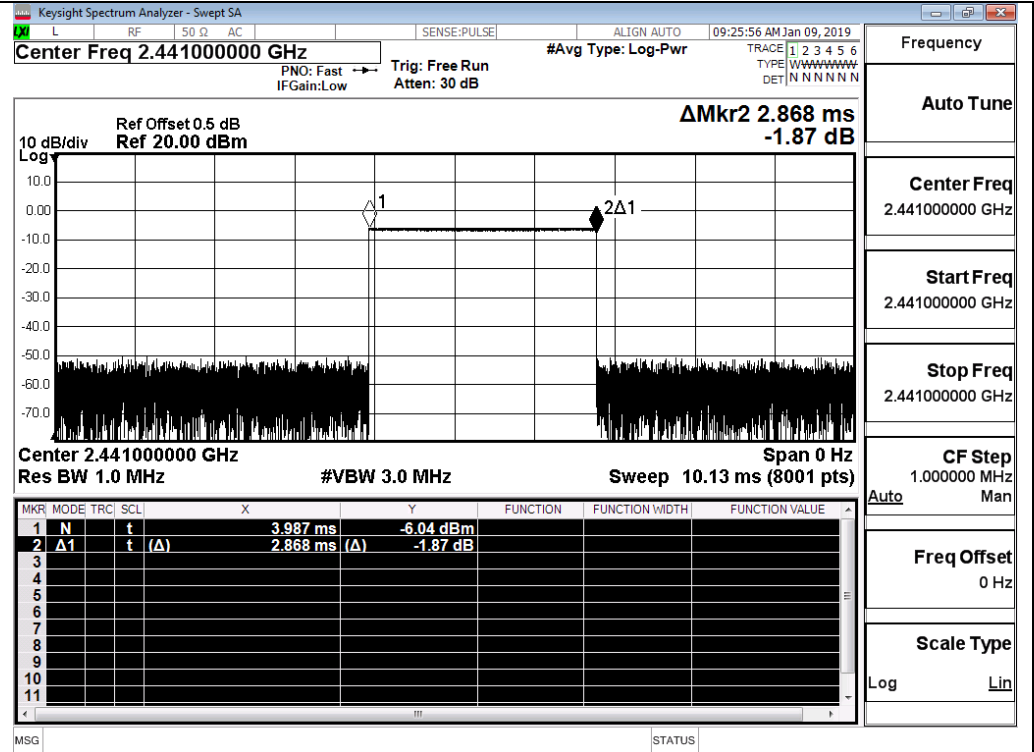


A.5 Dwell Time

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.9	106.7	0.31	0.4	PASS
	DH5	MCH	2.9	106.7	0.31	0.4	PASS
	DH5	HCH	2.9	106.7	0.31	0.4	PASS
π/4DQPSK	2DH5	LCH	2.9	106.7	0.31	0.4	PASS
	2DH5	MCH	2.9	106.7	0.31	0.4	PASS
	2DH5	HCH	2.9	106.7	0.31	0.4	PASS

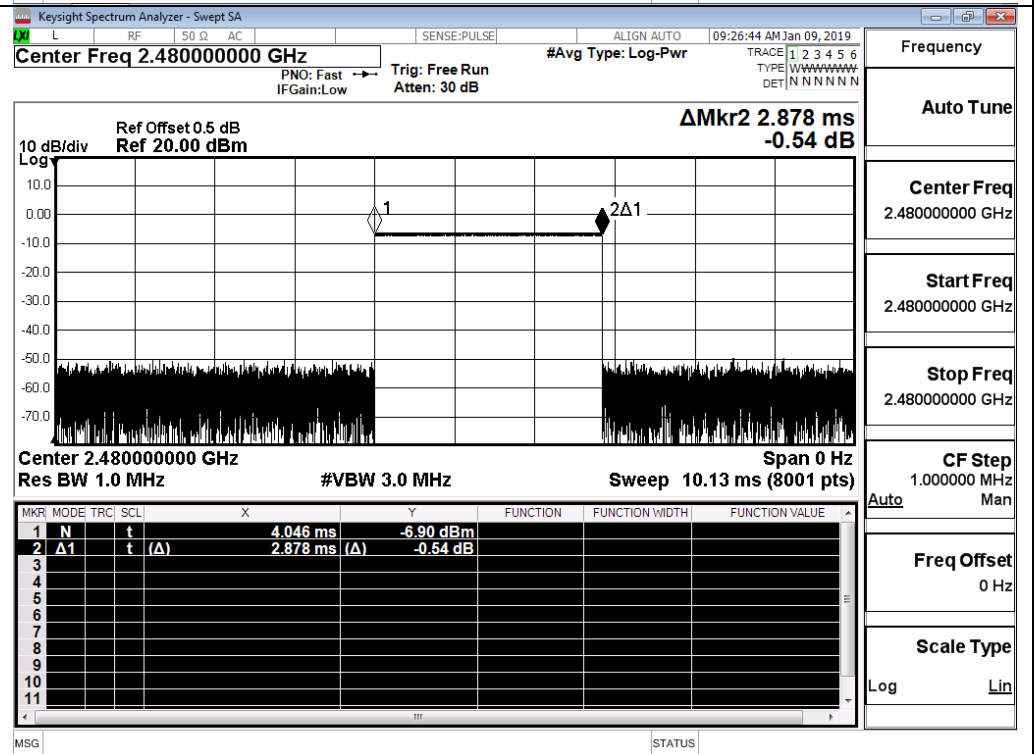


GFSK_DH5/MCH



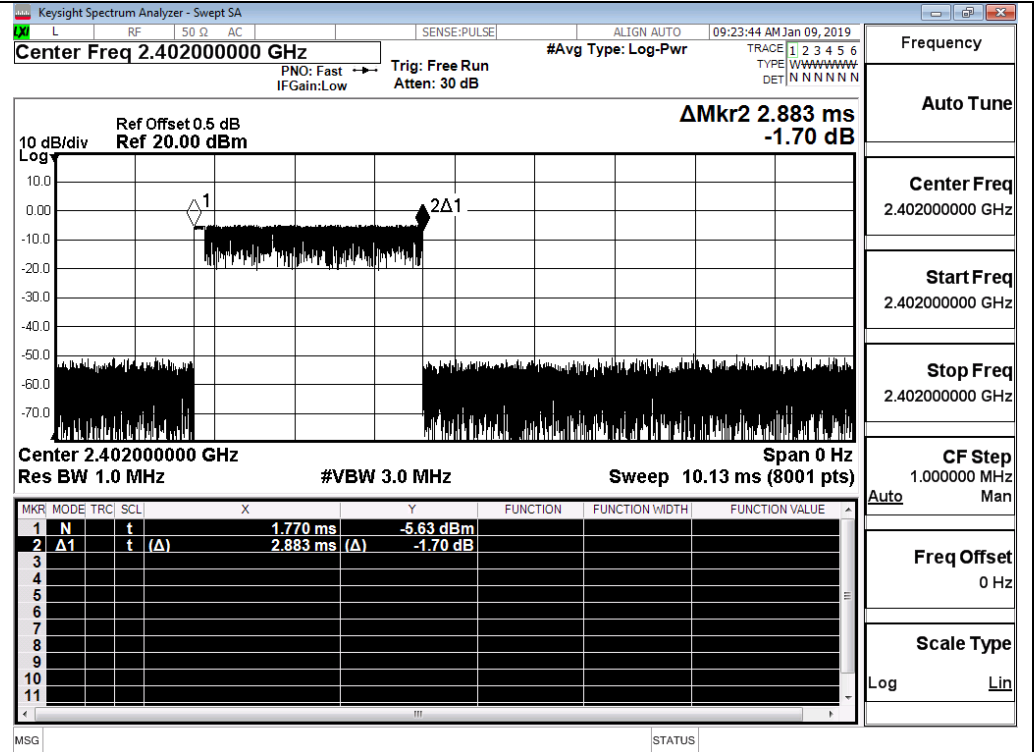
Frequency
Auto Tune
Center Freq 2.441000000 GHz
Start Freq 2.441000000 GHz
Stop Freq 2.441000000 GHz
CF Step 1.000000 MHz Auto Man
Freq Offset 0 Hz
Scale Type Log Lin

GFSK_DH5/HCH

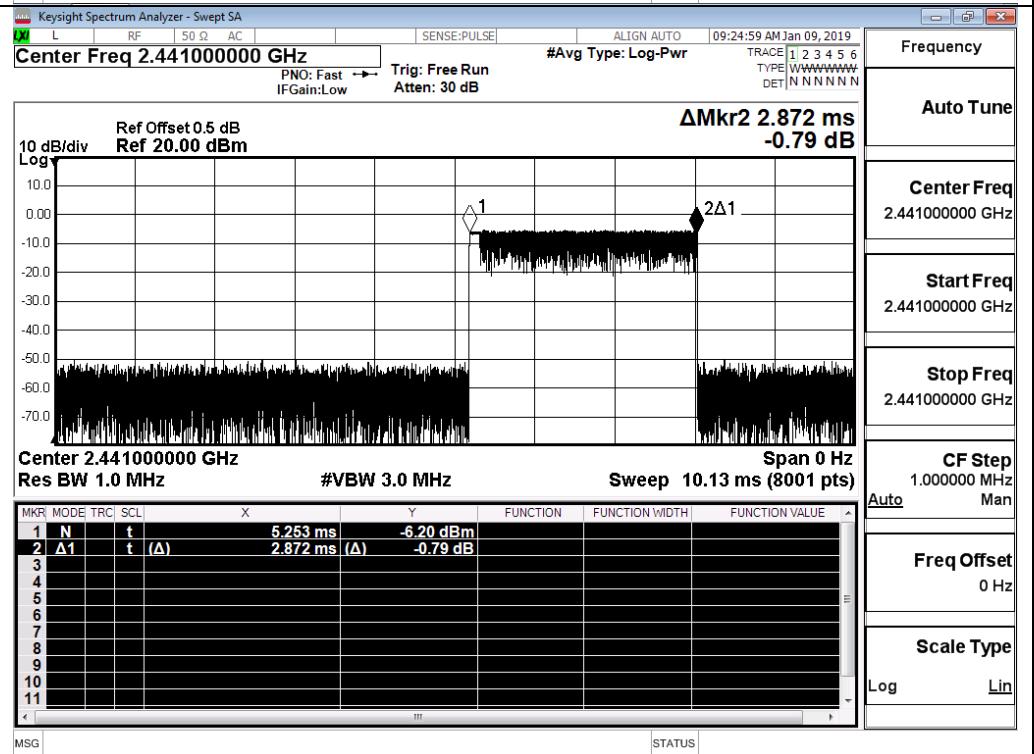


Frequency
Auto Tune
Center Freq 2.480000000 GHz
Start Freq 2.480000000 GHz
Stop Freq 2.480000000 GHz
CF Step 1.000000 MHz Auto Man
Freq Offset 0 Hz
Scale Type Log Lin

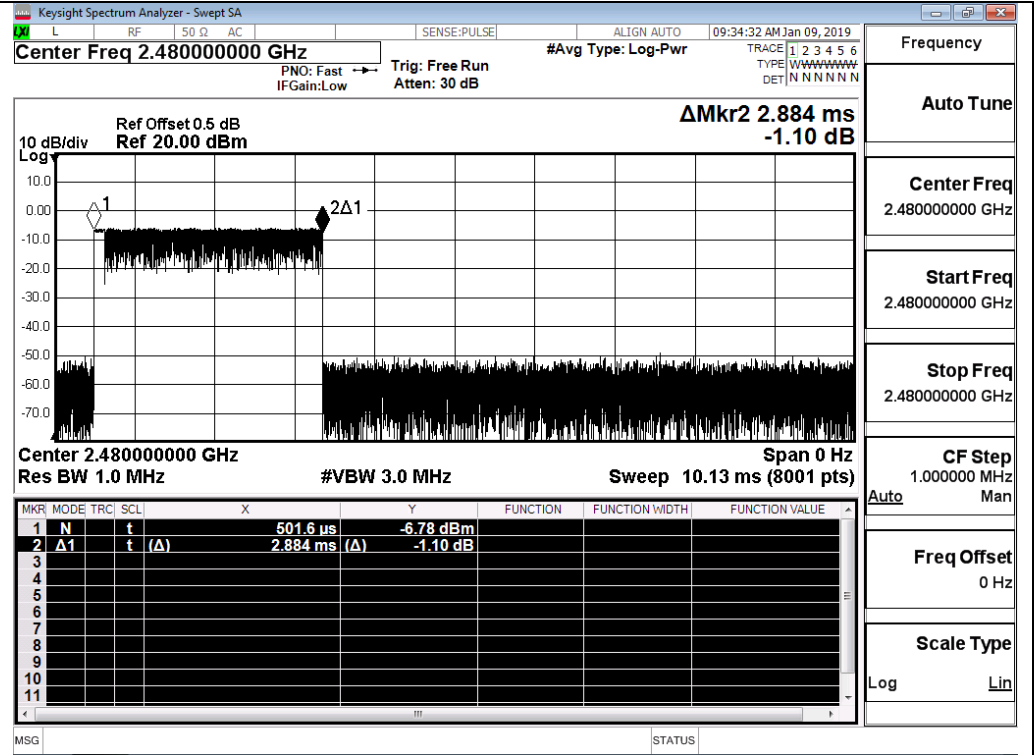
$\pi/4$ DQPSK
_2DH5/LCH



$\pi/4$ DQPSK
_2DH5/MCH



$\pi/4$ DQPSK
_2DH5/HCH



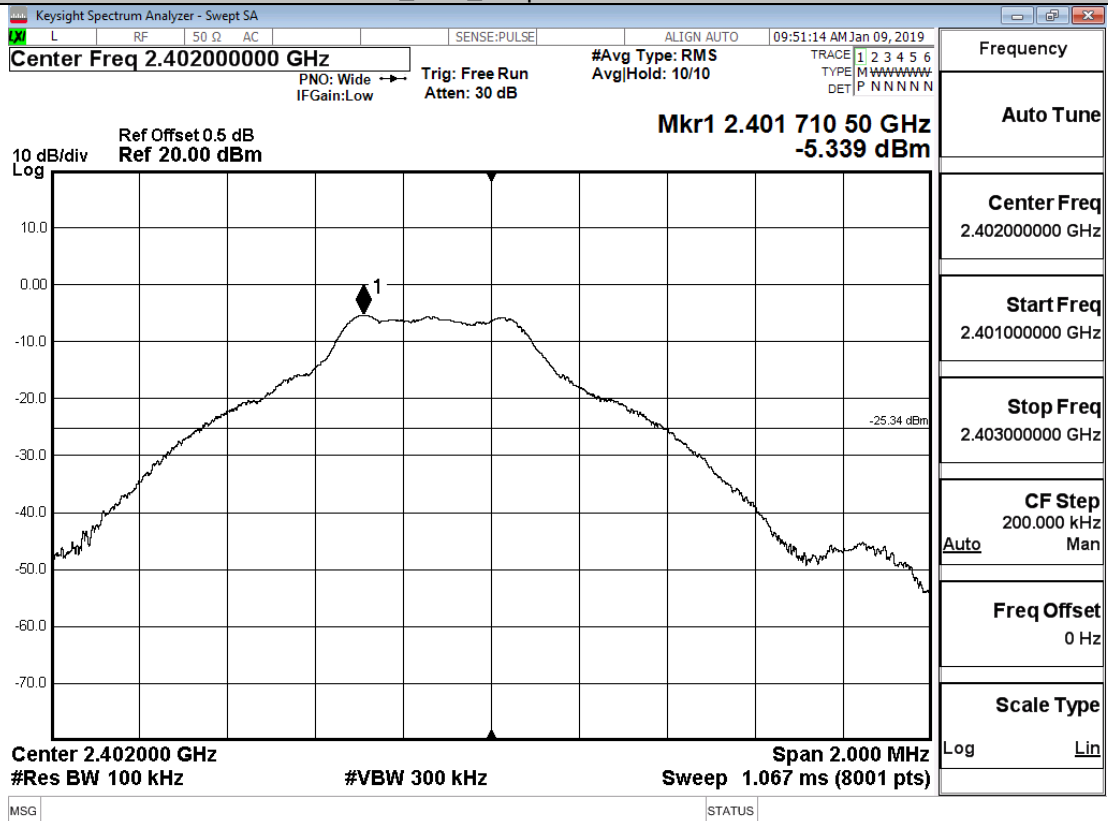
Frequency
Auto Tune
Center Freq 2.480000000 GHz
Start Freq 2.480000000 GHz
Stop Freq 2.480000000 GHz
CF Step 1.000000 MHz Auto Man
Freq Offset 0 Hz
Scale Type Log Lin

A.6 RF Conducted Spurious Emissions

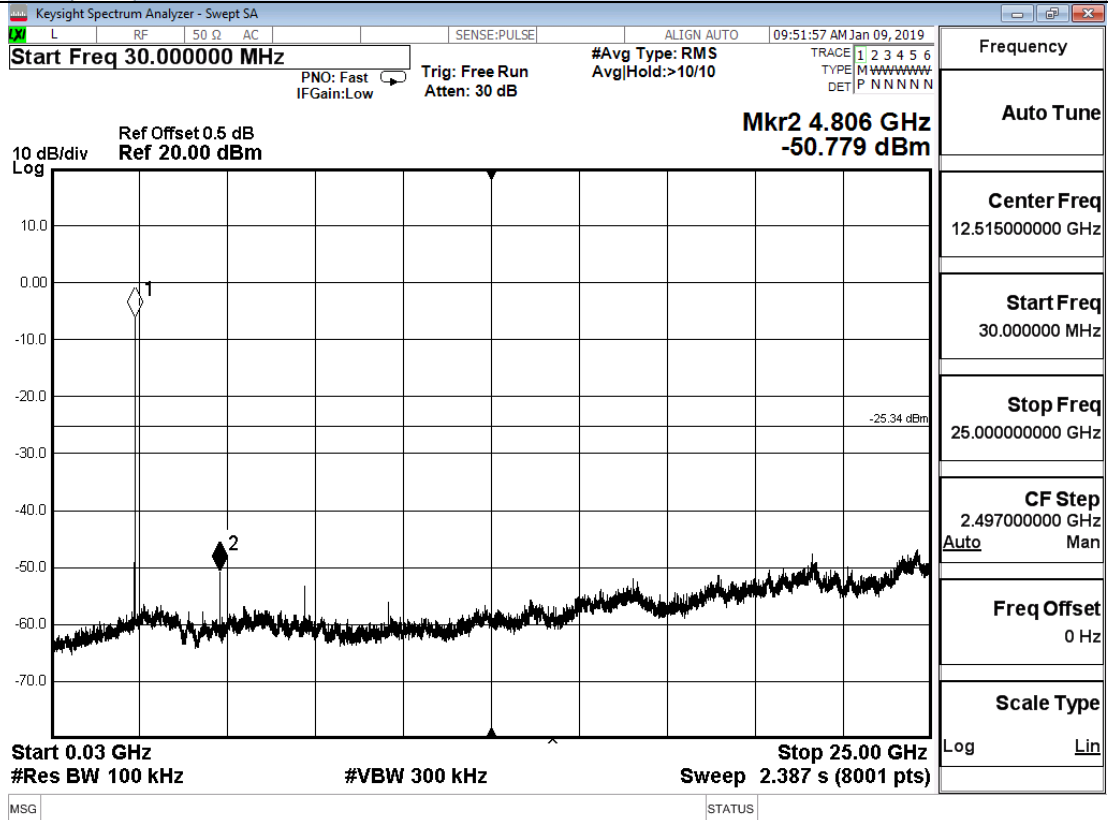
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-5.339	-50.779	-25.339	PASS
	MCH	-5.799	-47.880	-25.799	PASS
	HCH	-6.295	-47.288	-26.295	PASS
$\pi/4$ DQPSK	LCH	-5.297	-44.260	-25.297	PASS
	MCH	-5.819	-48.454	-25.819	PASS
	HCH	-6.313	-49.489	-26.313	PASS

GFSK_LCH_Graphs

Pref

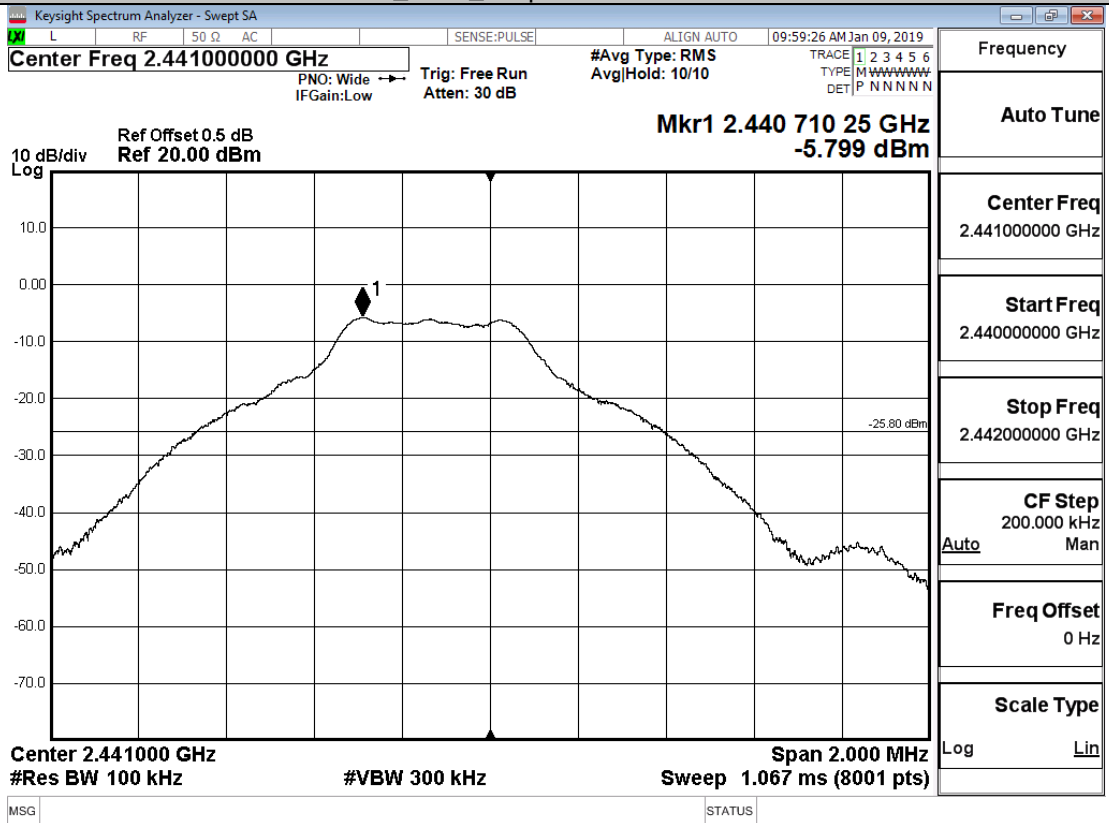


Puw

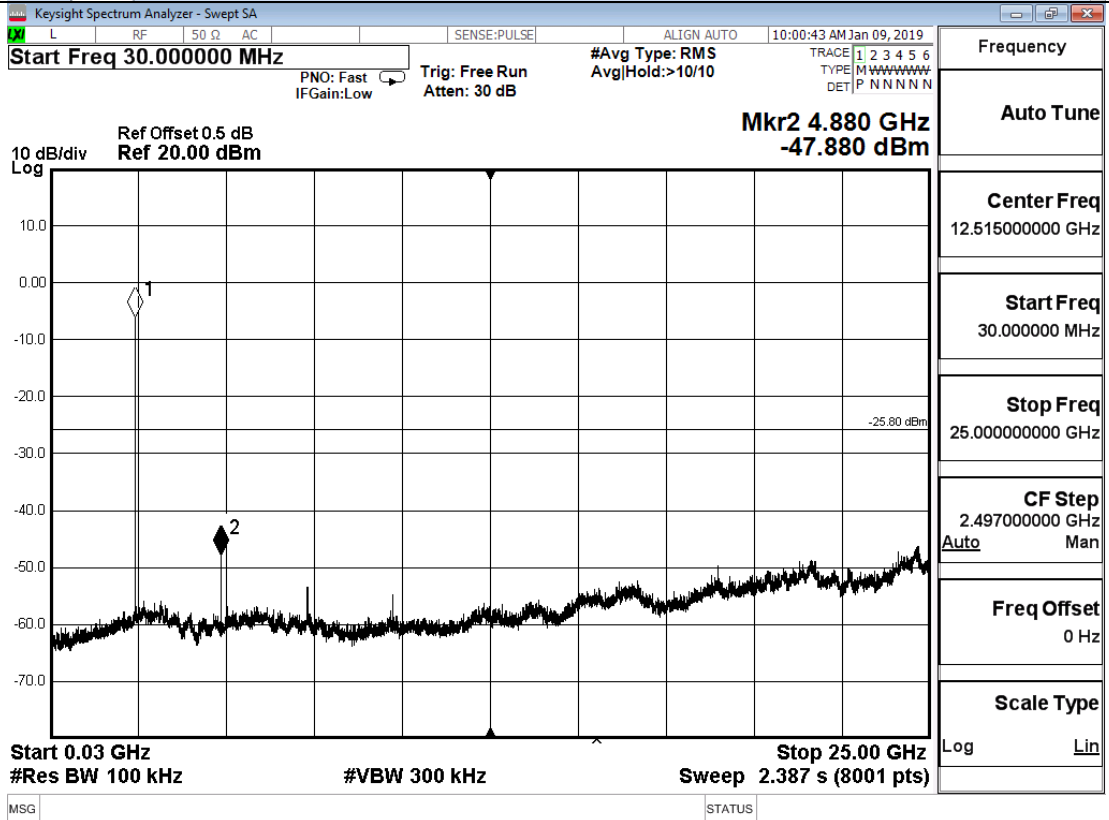


GFSK_MCH_Graphs

Pref

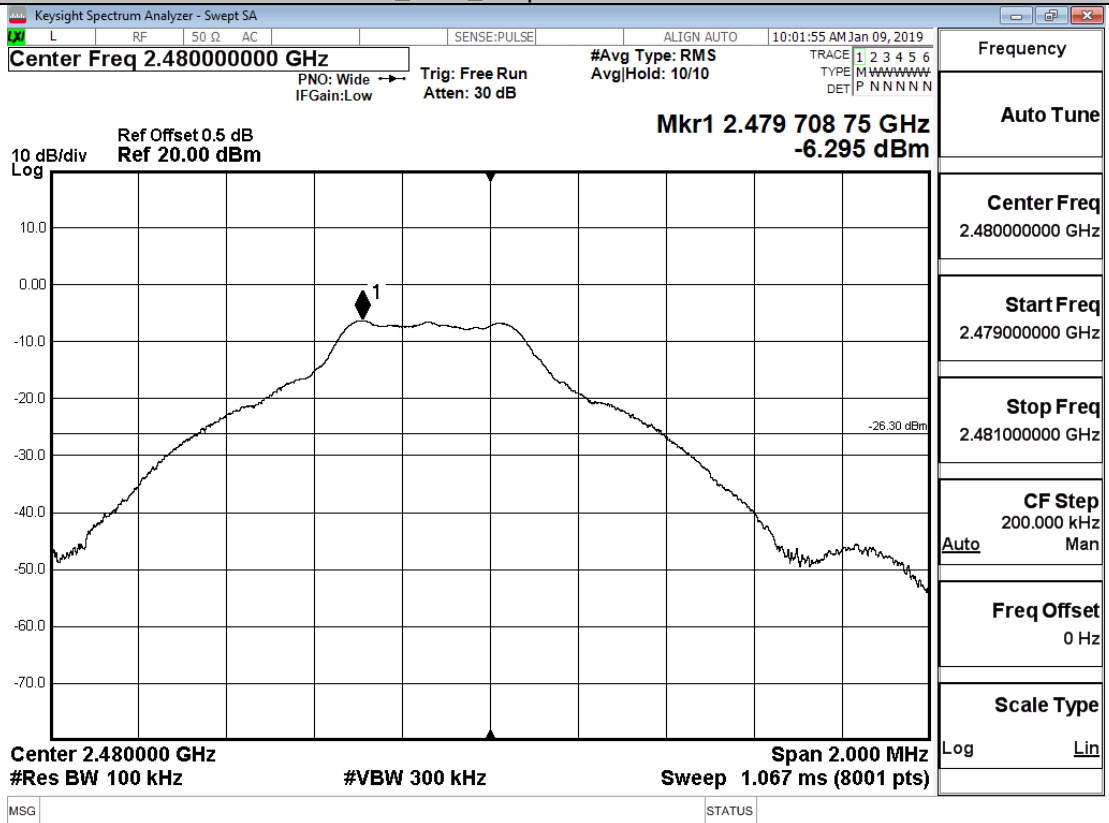


Puw

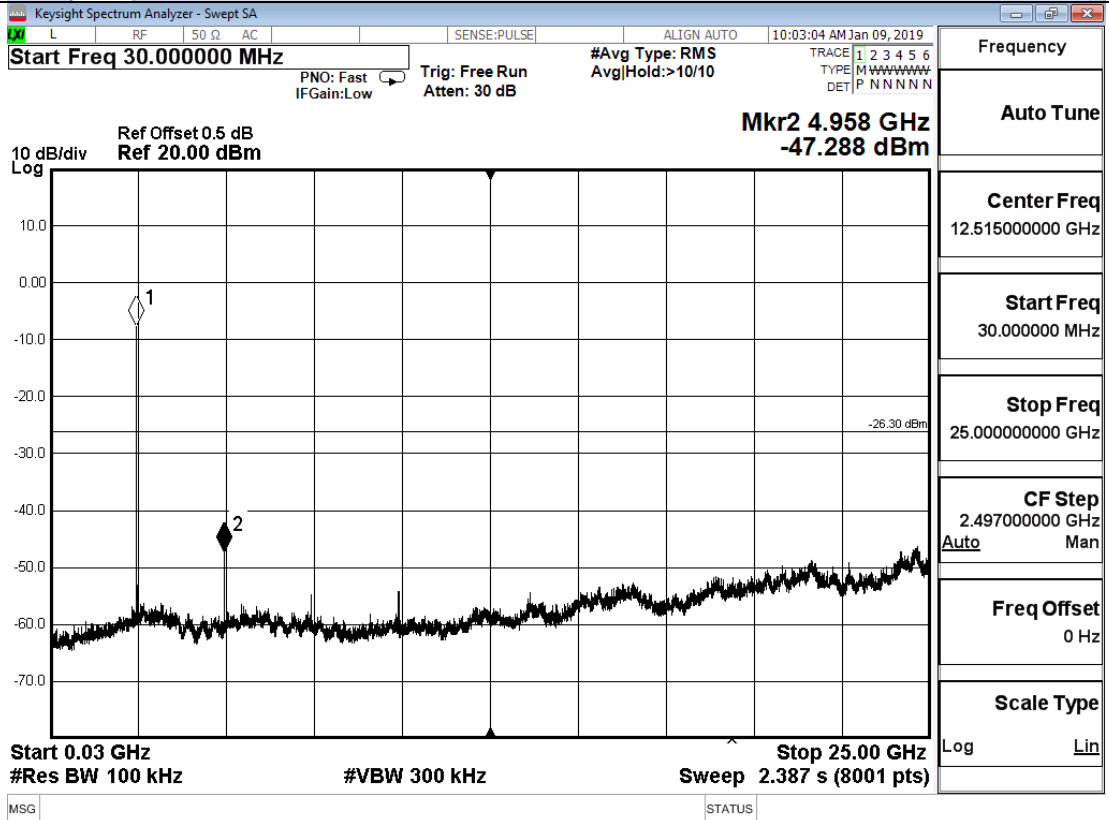


GFSK_HCH_Graphs

Pref

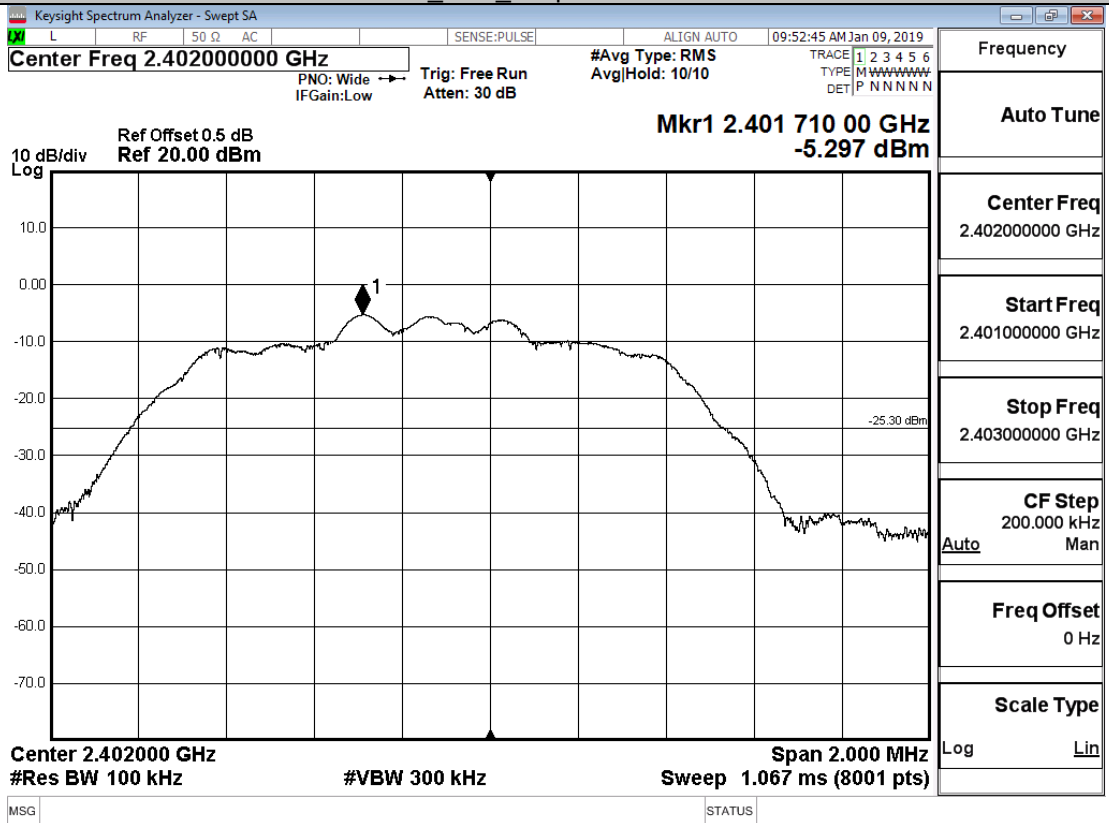


Puw

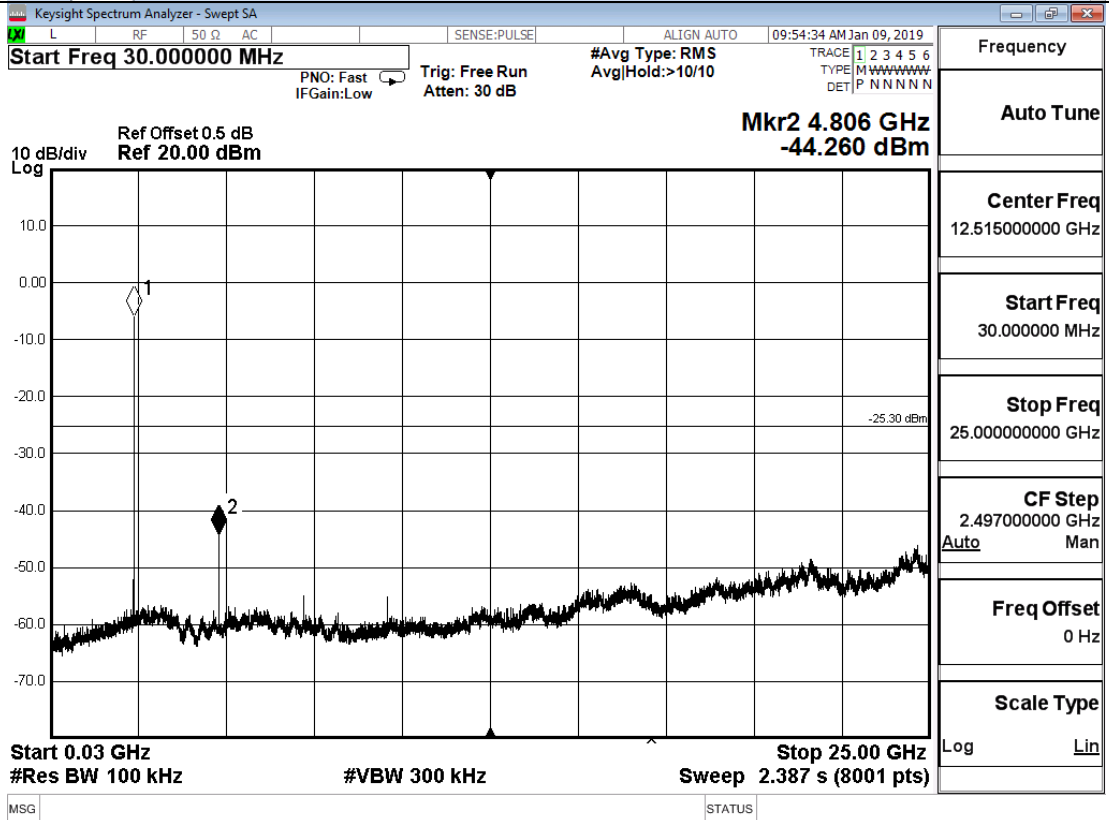


$\pi/4$ DQPSK_LCH_Graphs

Pref

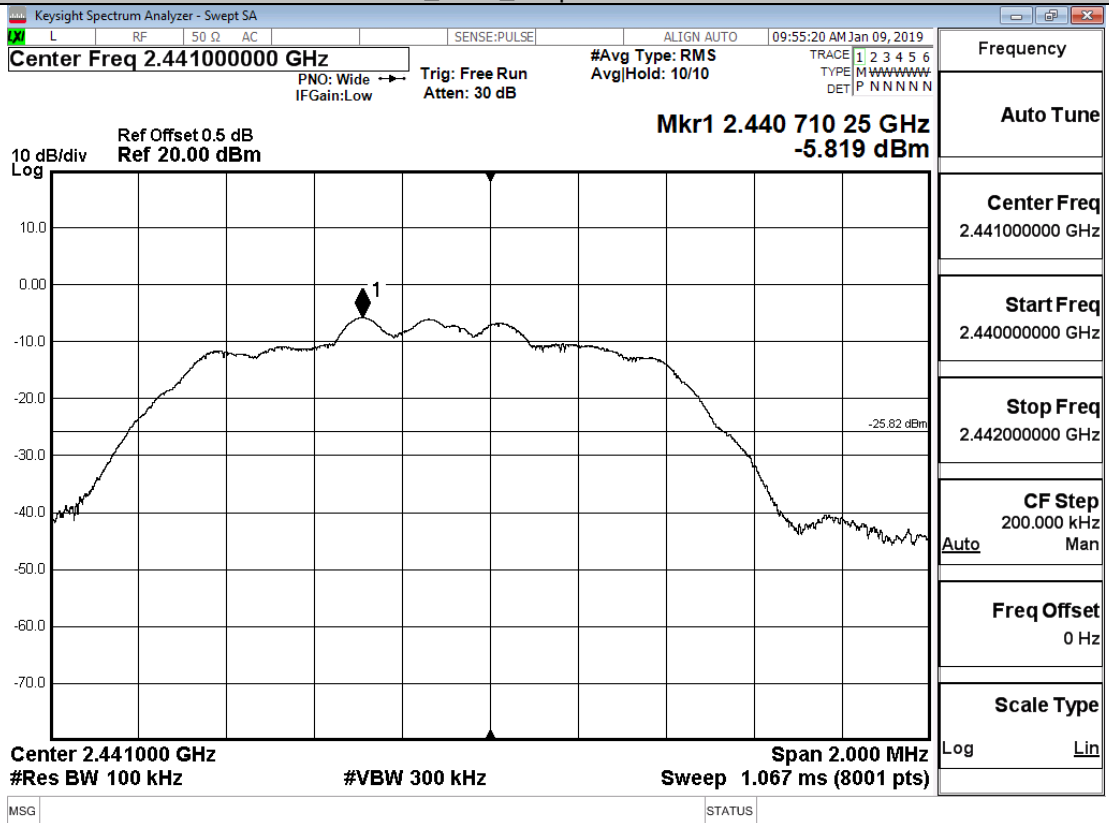


Puw

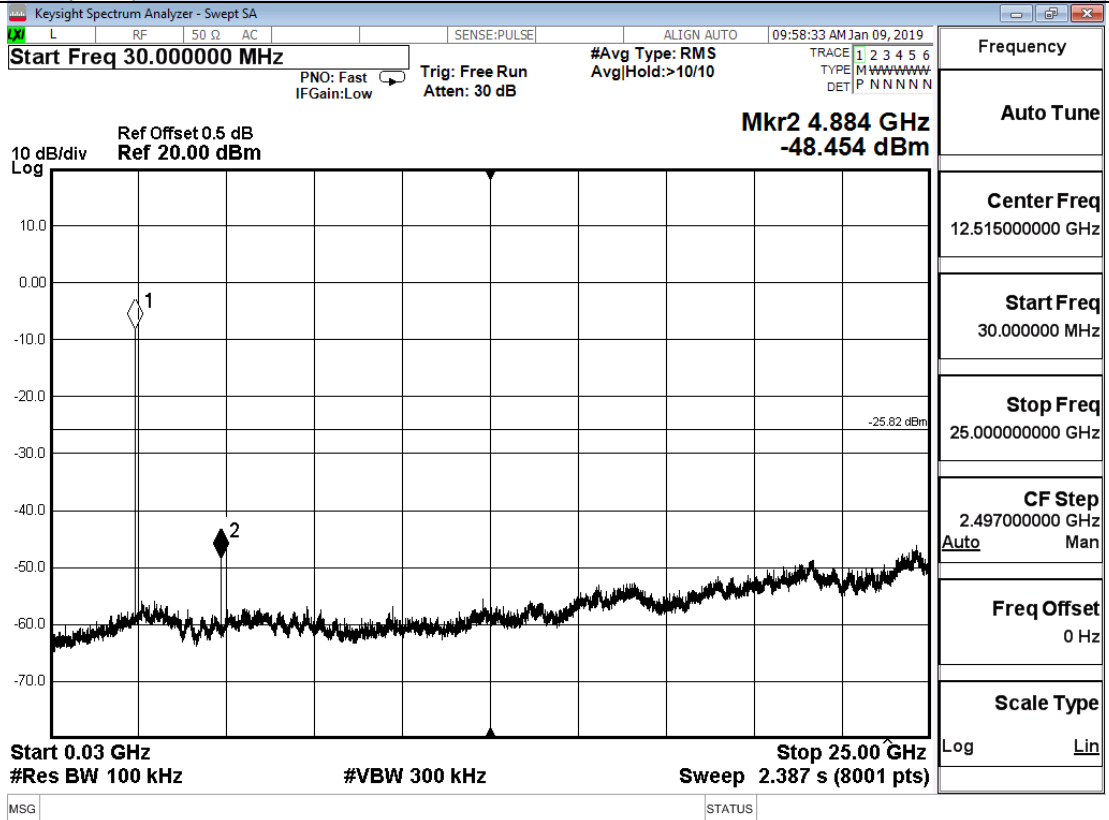


$\pi/4$ DQPSK_MCH_Graphs

Pref

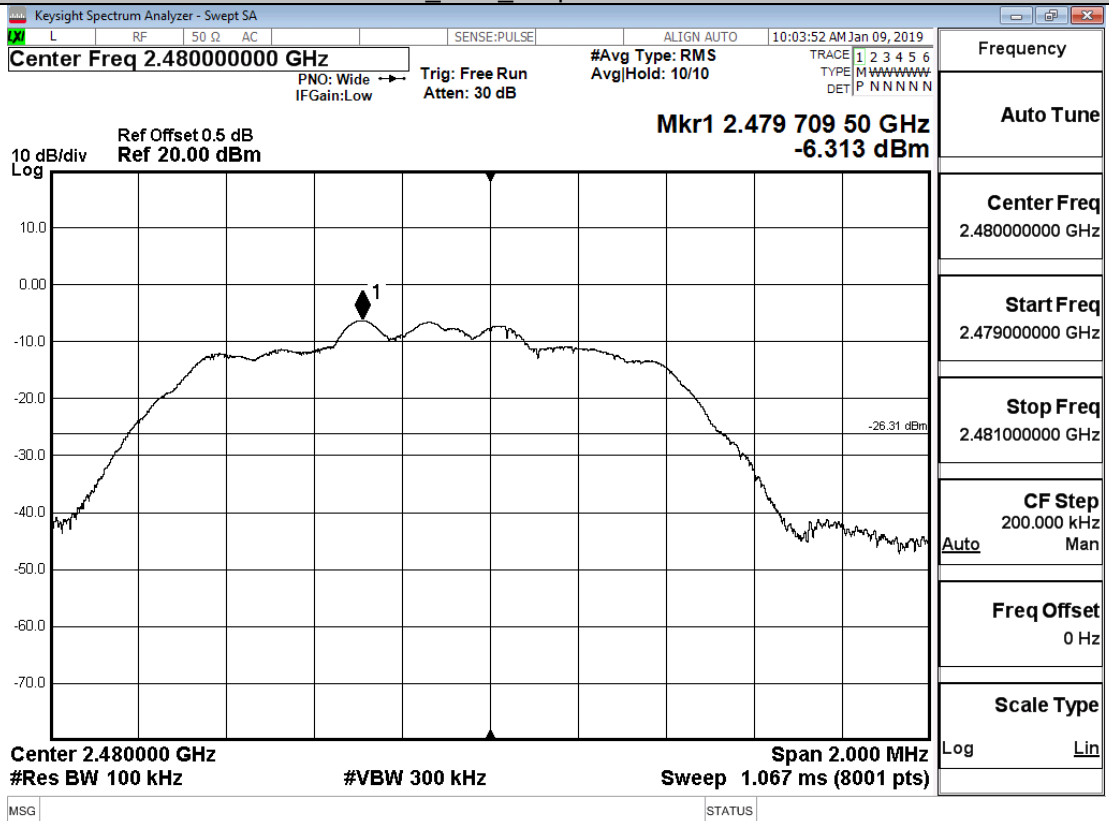


Puw

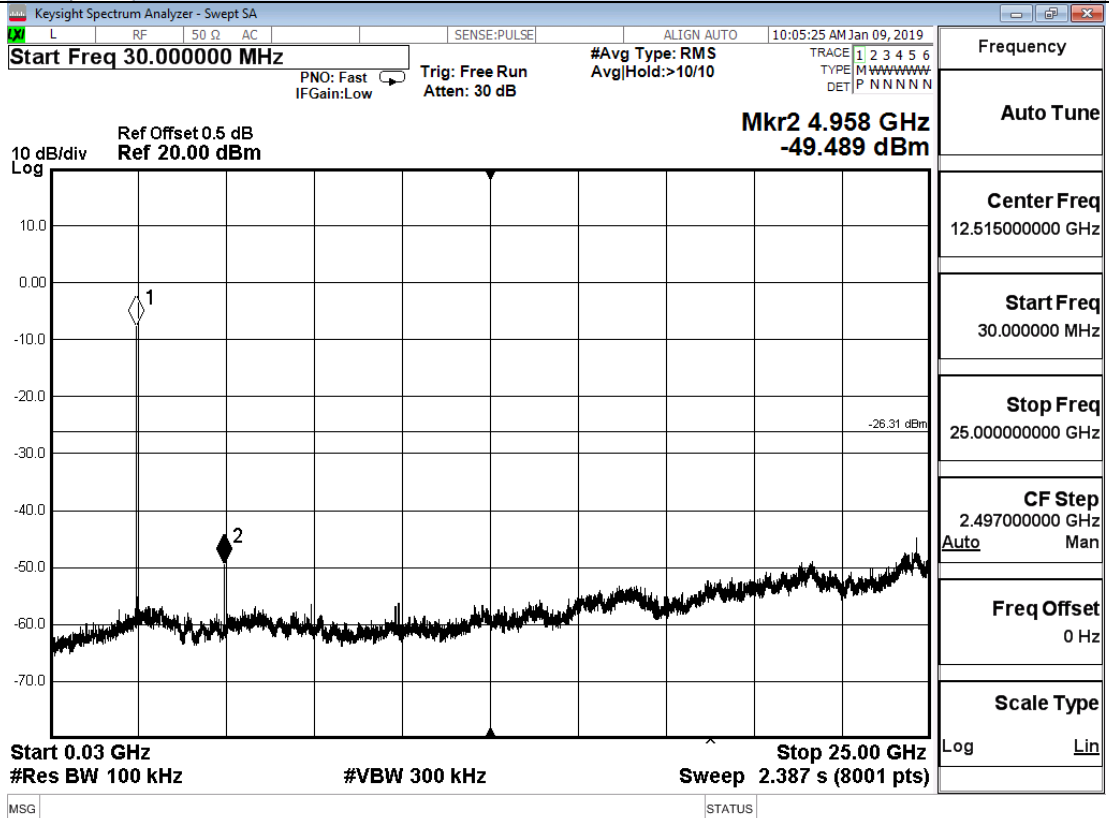


$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw

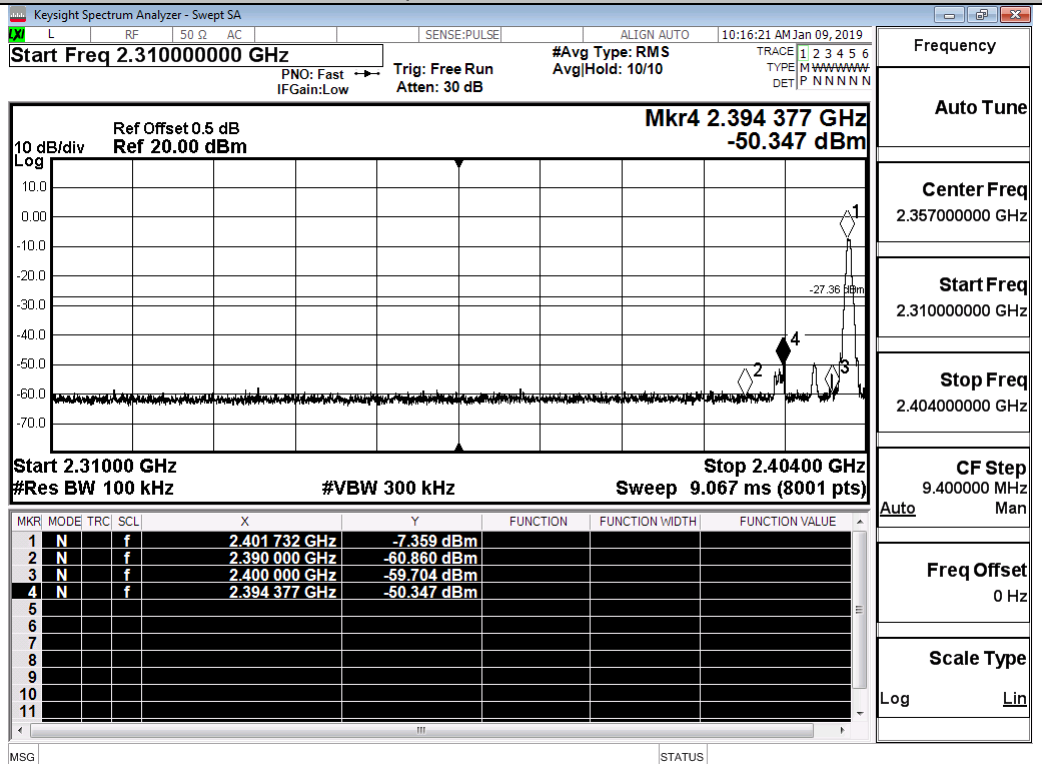


A.7 Band-edge for RF Conducted Emissions

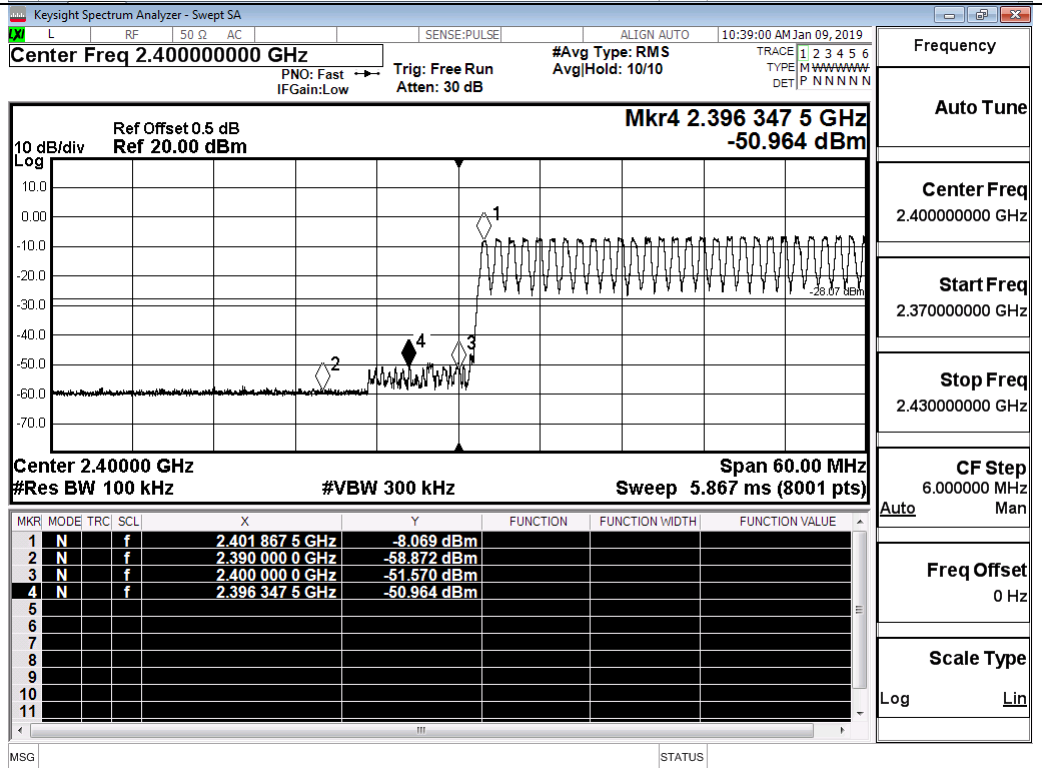
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-7.359	Off	-50.347	-27.359	PASS
			-8.069	On	-50.964	-28.069	PASS
	HCH	2480	-5.036	Off	-57.481	-25.036	PASS
			-5.525	On	-57.575	-25.525	PASS
$\pi/4$ DQPSK	LCH	2402	-7.375	Off	-51.258	-27.375	PASS
			-7.442	On	-49.874	-27.442	PASS
	HCH	2480	-5.018	Off	-56.633	-25.018	PASS
			-5.364	On	-58.642	-25.364	PASS

Test Graphs

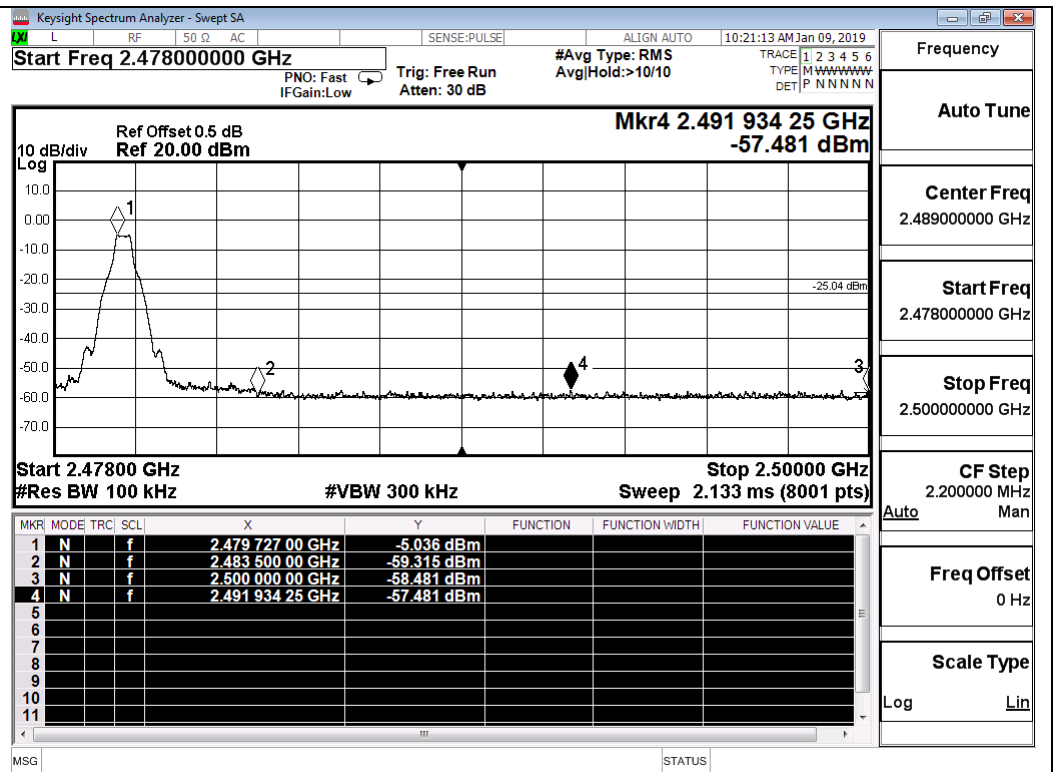
GFSK/LCH/No Hop



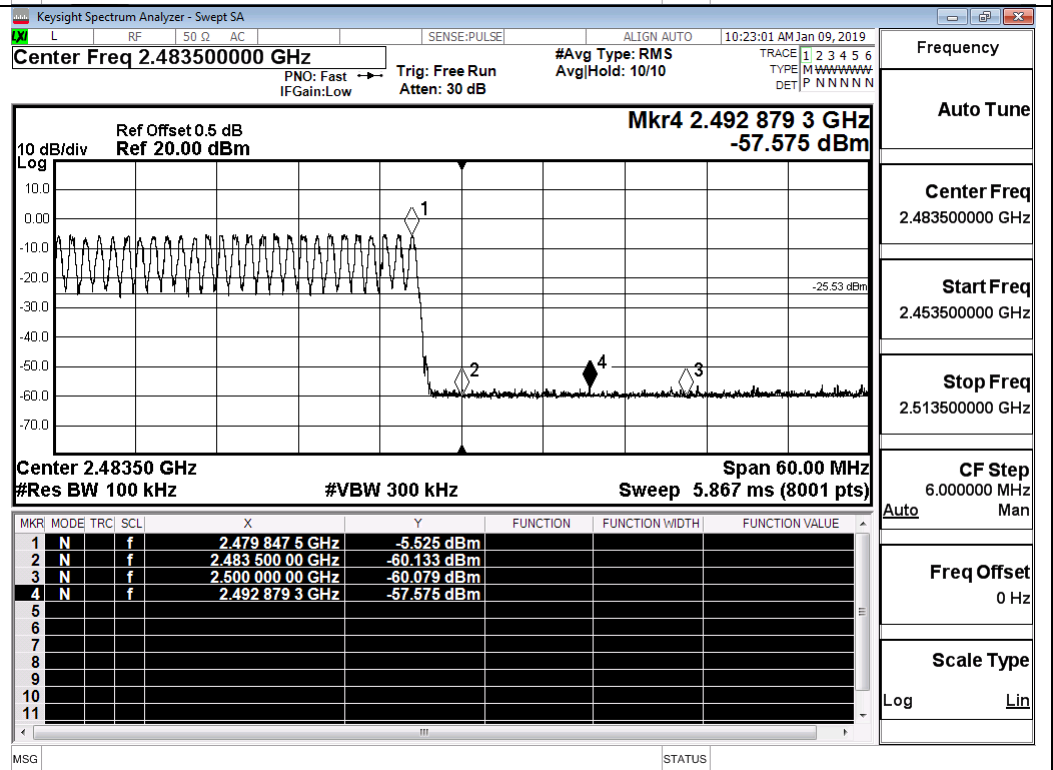
GFSK/LCH/Hop



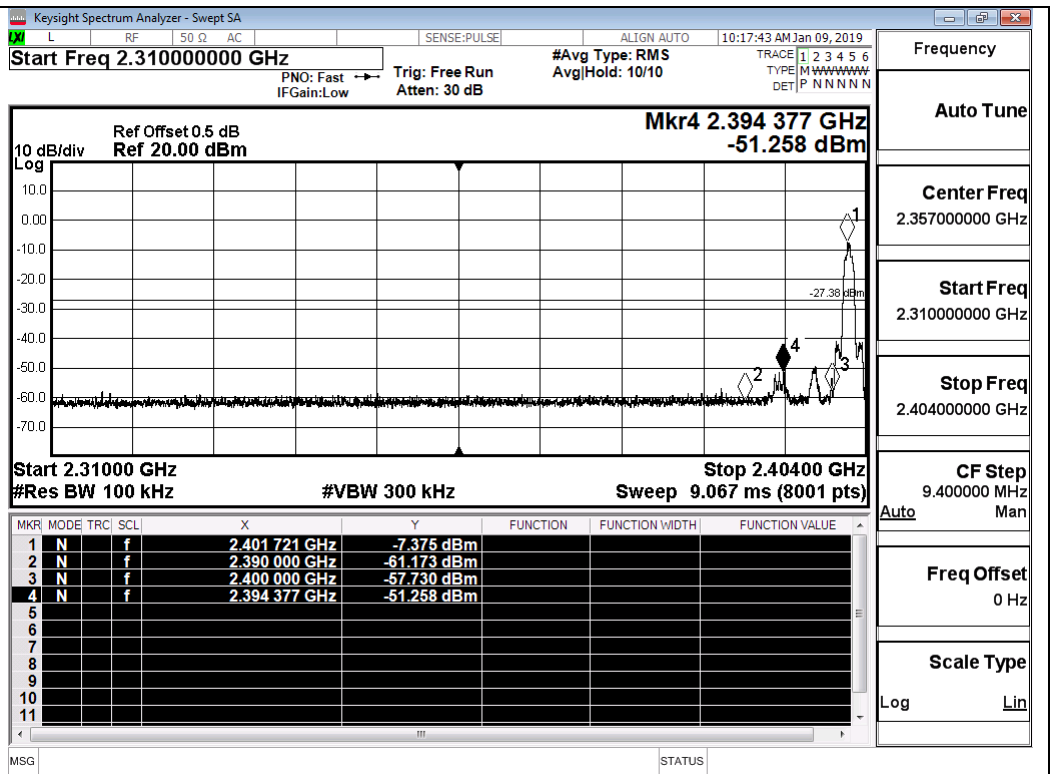
GFSK/HCH/No Hop



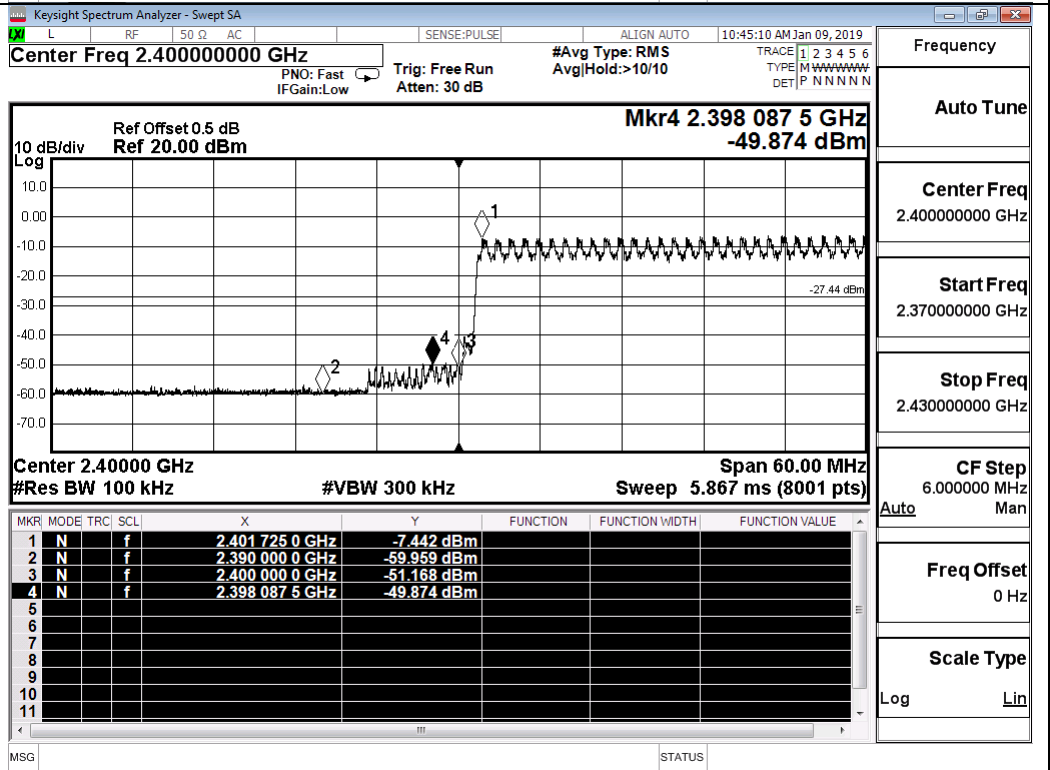
GFSK/HCH/Hop



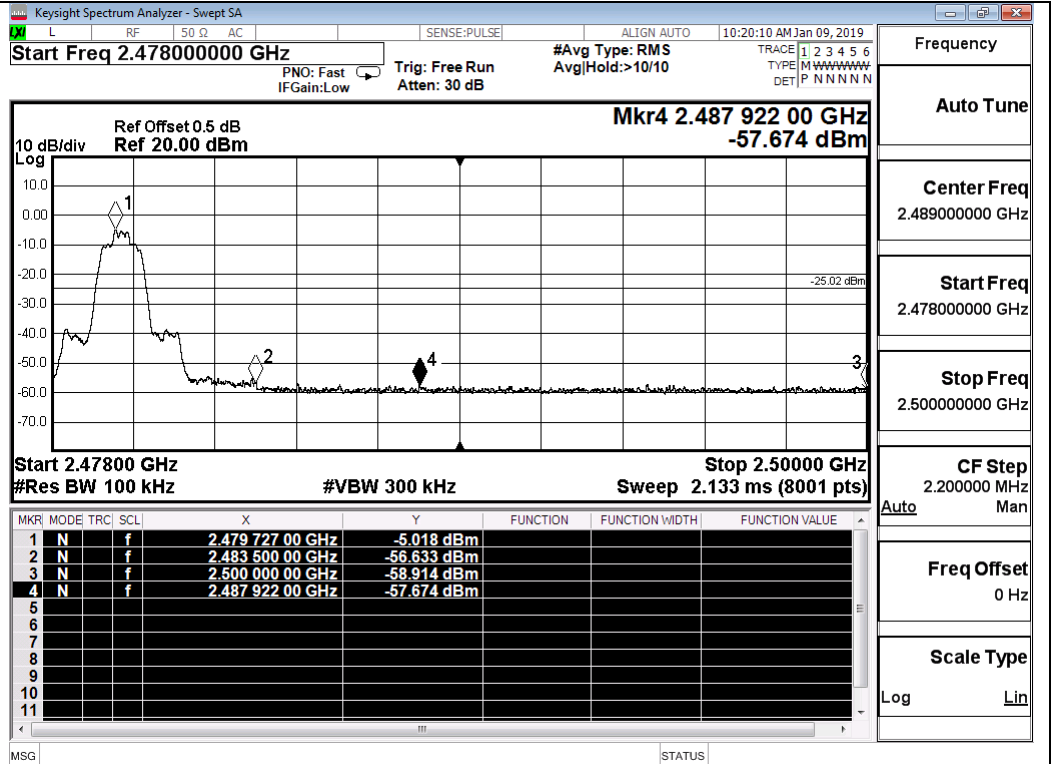
$\pi/4$ DQPSK/LCH/No Hop



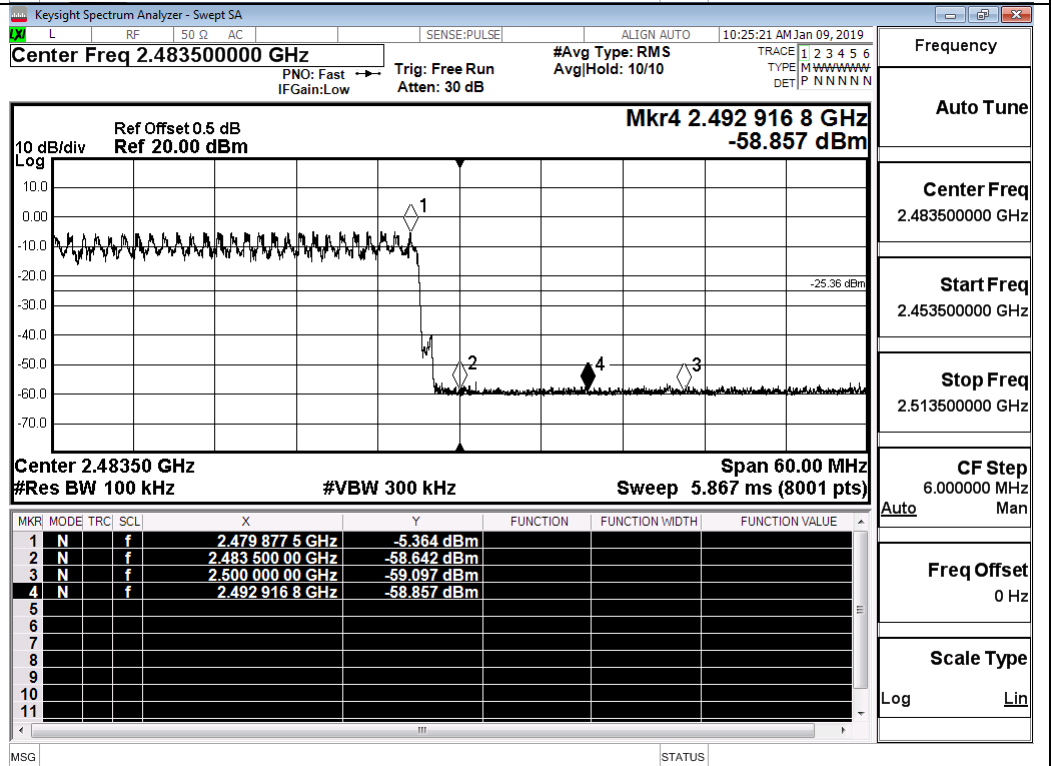
$\pi/4$ DQPSK/LCH/Hop



π /4DQPSK/HCH/No Hop



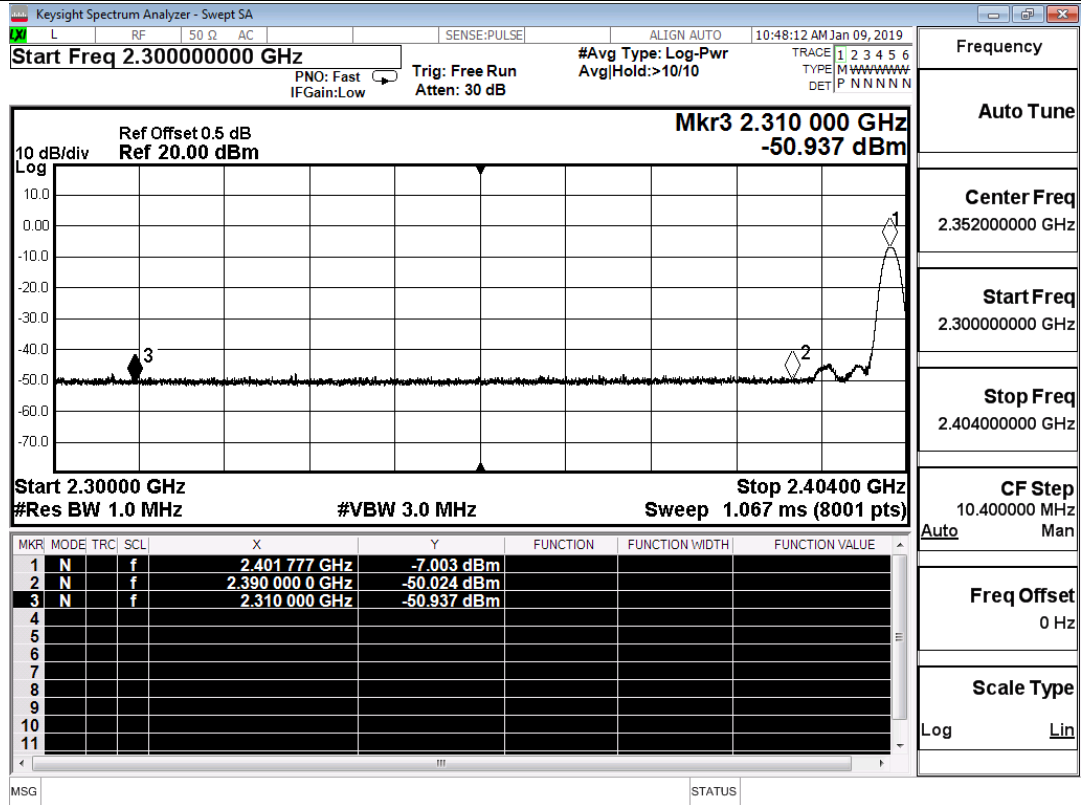
π /4DQPSK/HCH/Hop



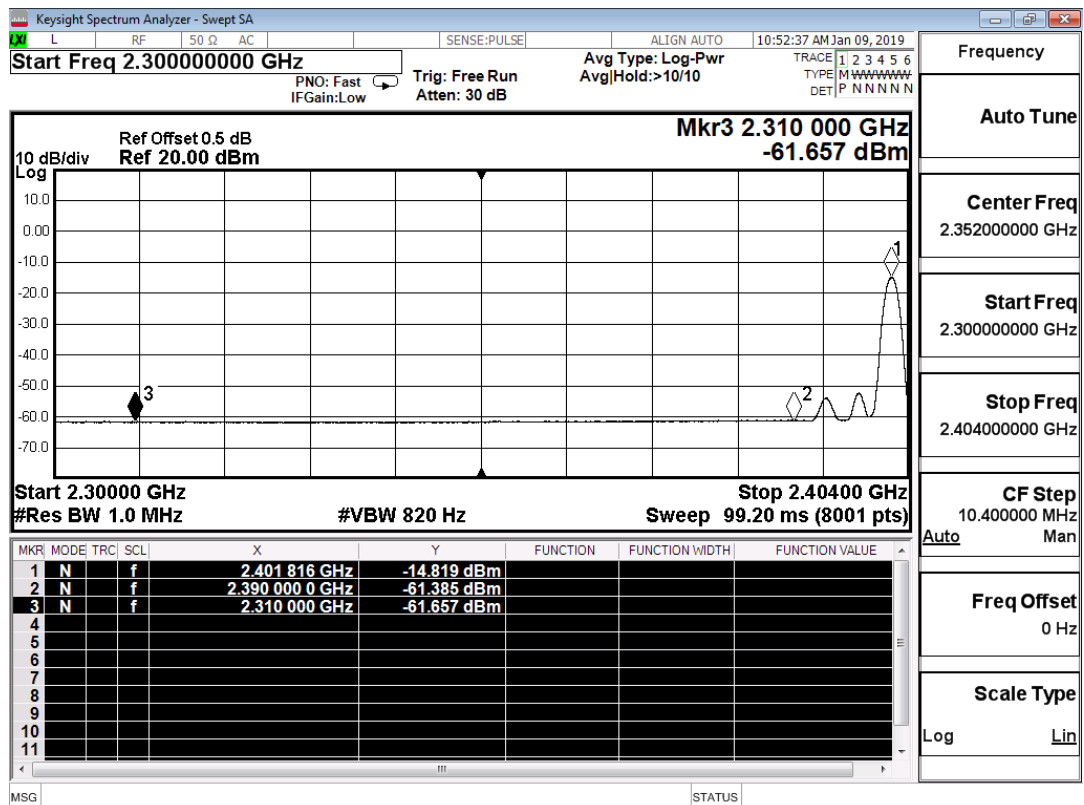
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-50.94	0	95.26	46.32	PEAK	74	PASS
	Off	2310.0	-61.66	0	95.26	35.60	AV	54	PASS
	Off	2390.0	-50.02	0	95.26	47.24	PEAK	74	PASS
	Off	2390.0	-61.39	0	95.26	35.87	AV	54	PASS
	Off	2483.5	-48.89	0	95.26	48.37	PEAK	74	PASS
	Off	2483.5	-59.42	0	95.26	37.84	AV	54	PASS
	Off	2500.0	-50.14	0	95.26	47.12	PEAK	74	PASS
	Off	2500.0	-60.83	0	95.26	36.43	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-50.63	0	95.26	46.63	PEAK	74	PASS
	Off	2310.0	-61.70	0	95.26	35.56	AV	54	PASS
	Off	2390.0	-49.40	0	95.26	47.86	PEAK	74	PASS
	Off	2390.0	-61.39	0	95.26	35.87	AV	54	PASS
	Off	2483.5	-48.06	0	95.26	49.20	PEAK	74	PASS
	Off	2483.5	-59.57	0	95.26	37.69	AV	54	PASS
	Off	2500.0	-50.04	0	95.26	47.22	PEAK	74	PASS
	Off	2500.0	-60.96	0	95.26	36.30	AV	54	PASS

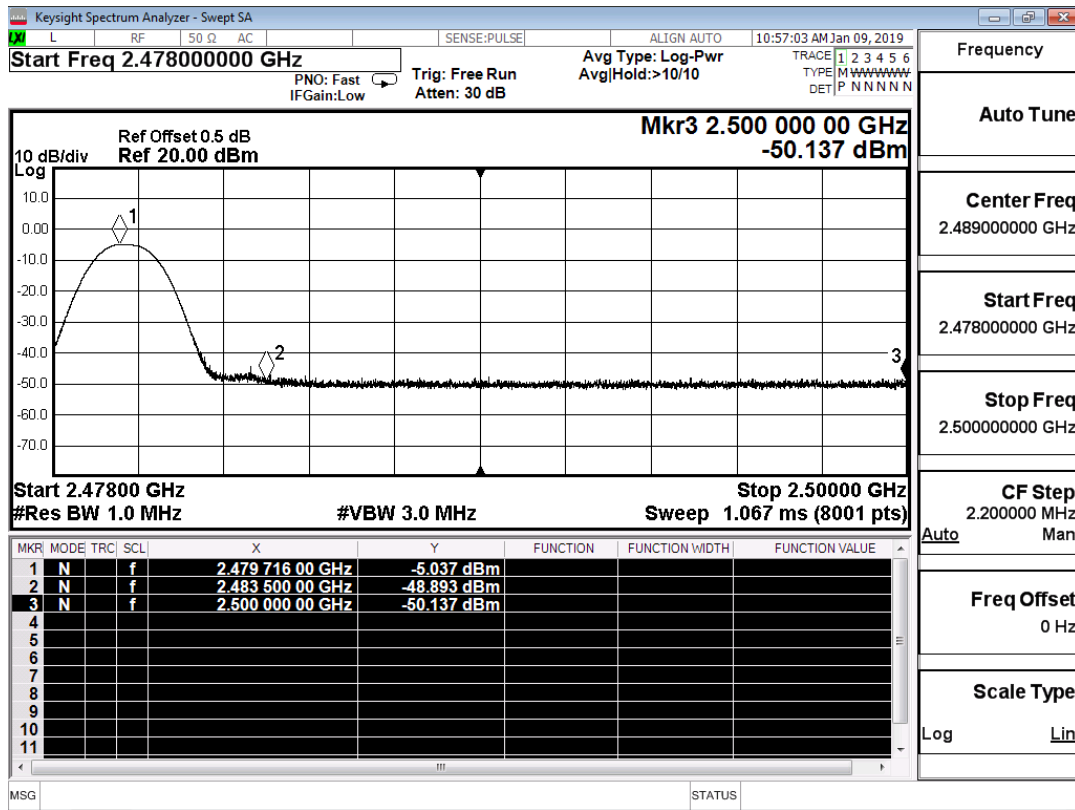
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



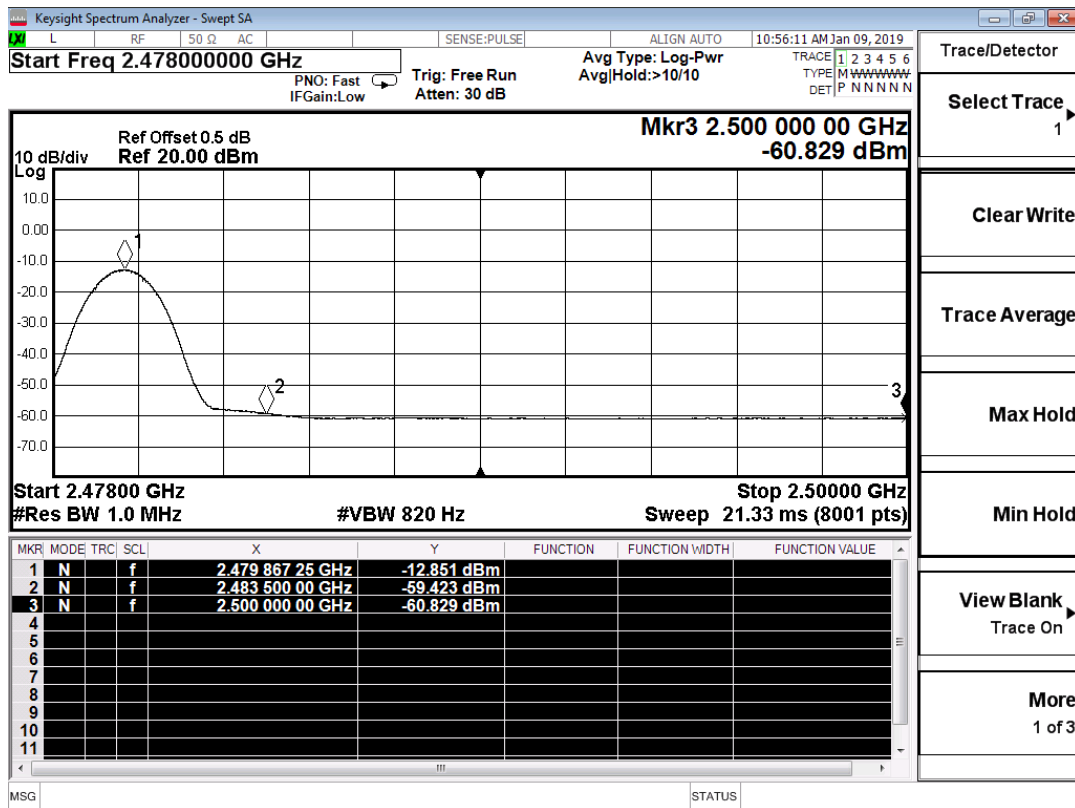
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



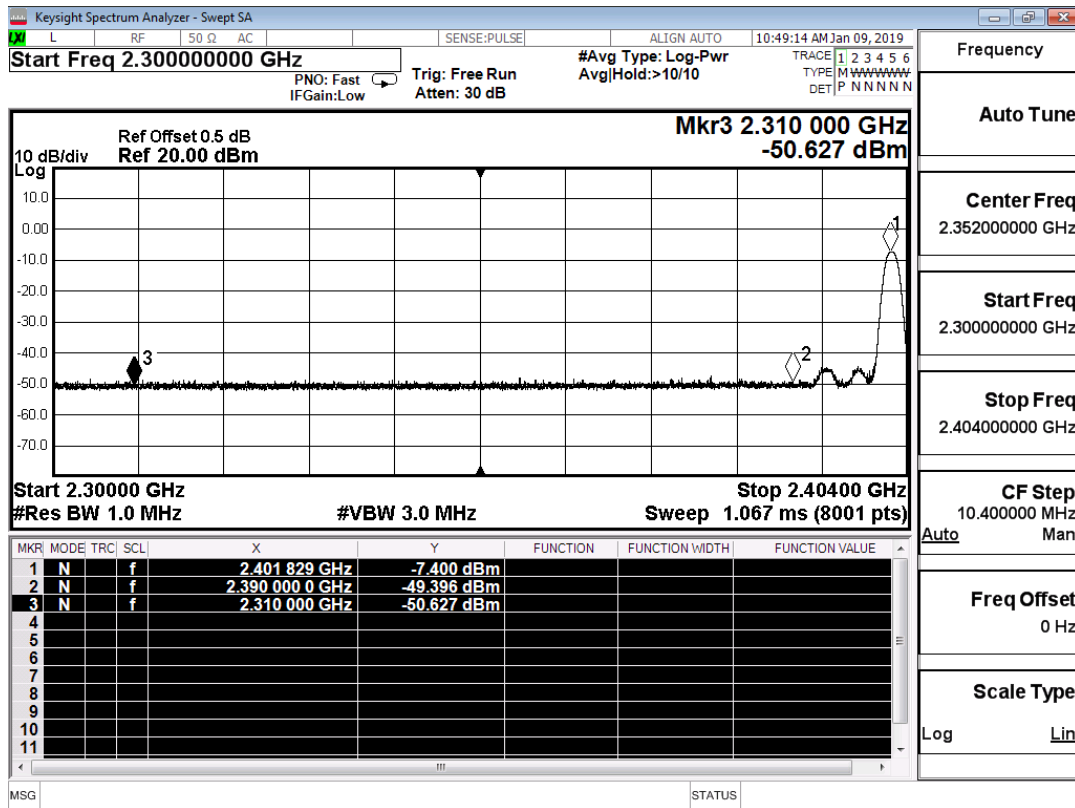
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



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

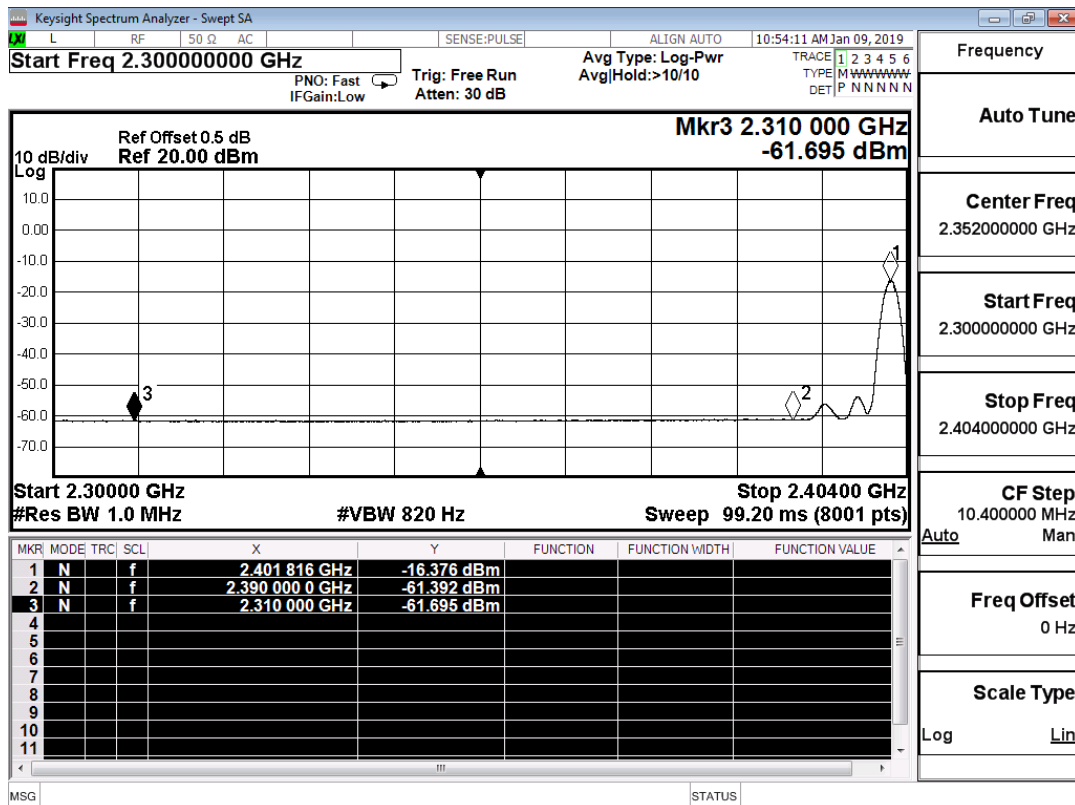


Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



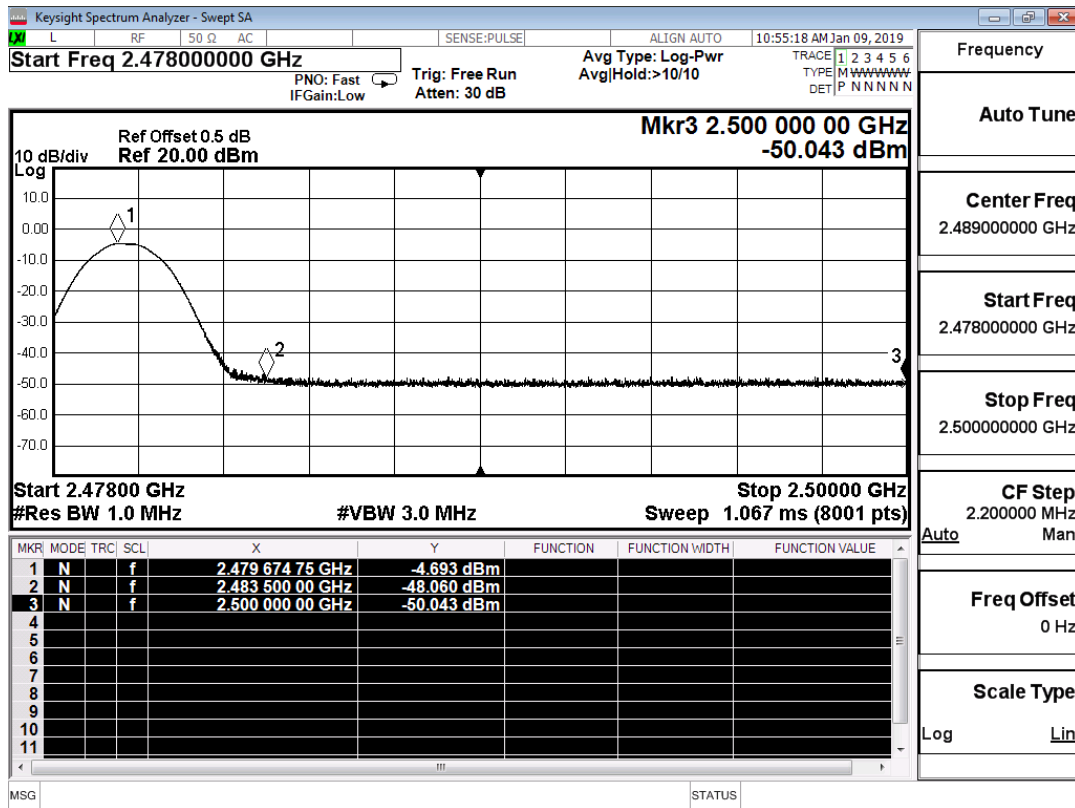
Frequency	
Auto Tune	
Center Freq	2.352000000 GHz
Start Freq	2.300000000 GHz
Stop Freq	2.404000000 GHz
CF Step	10.400000 MHz
Auto	Man
Freq Offset	0 Hz
Scale Type	Log Lin

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



Frequency	
Auto Tune	
Center Freq	2.352000000 GHz
Start Freq	2.300000000 GHz
Stop Freq	2.404000000 GHz
CF Step	10.400000 MHz
Auto	Man
Freq Offset	0 Hz
Scale Type	Log Lin

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)

