

Appendix A

RF Test Data for BT V5.0(DSS) (Conducted Measurement)

Product Name: Naztech Xpods True wireless Earbuds

Trade Mark: HyperGear

Test Model: 14261

Environmental Conditions

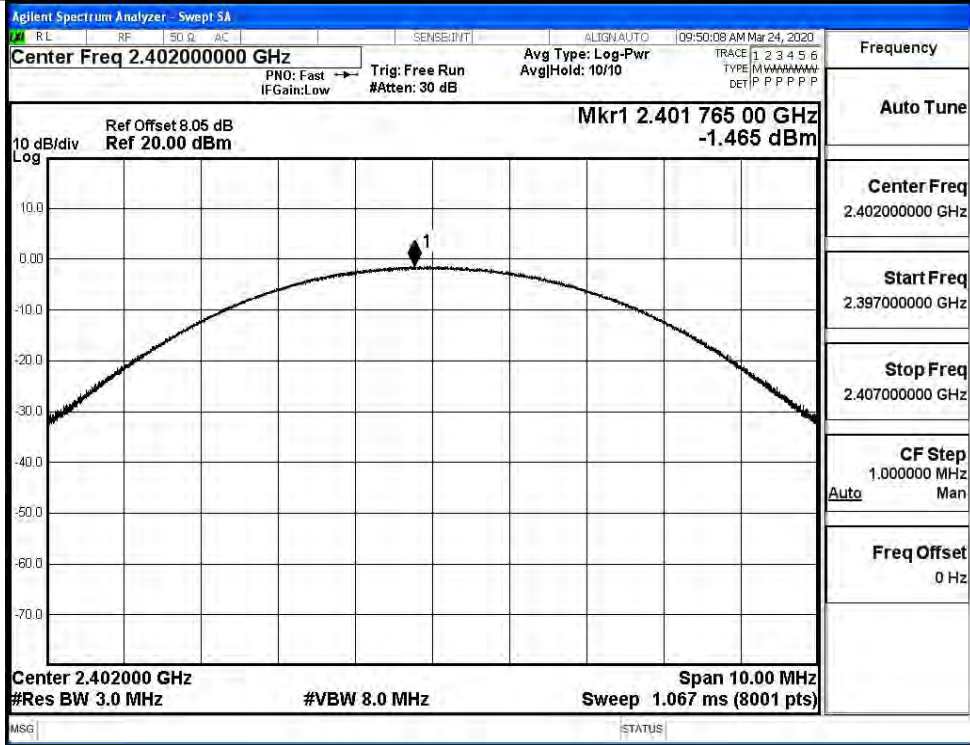
Temperature:	23.1 ° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond.Lu
Supervised by:	Wang Chuang

A.1 Maximum Conducted Peak Output Power

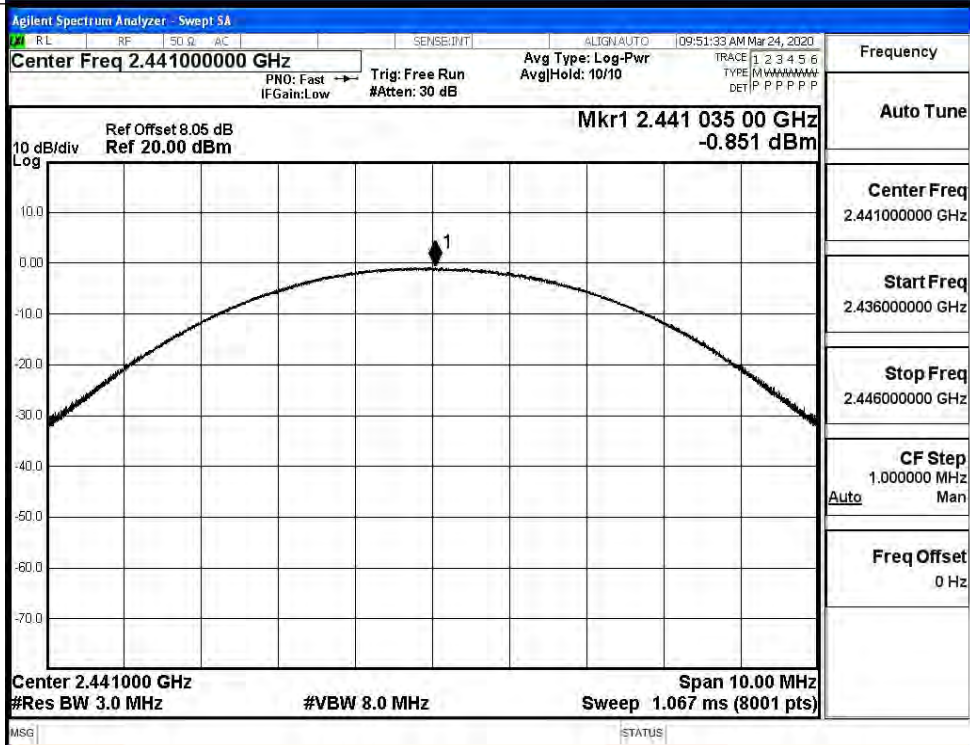
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-1.465	21	PASS
	MCH	-0.851	21	PASS
	HCH	-1.173	21	PASS
$\pi/4$ DQPSK	LCH	-1.451	21	PASS
	MCH	-0.828	21	PASS
	HCH	-1.114	21	PASS

Test Graphs

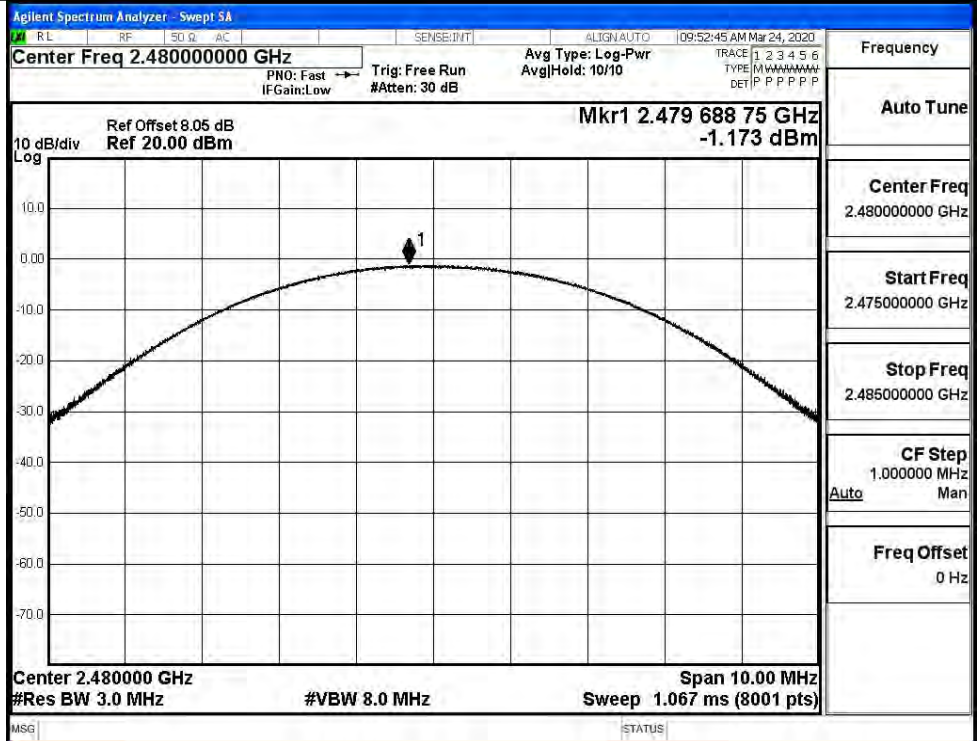
GFSK/LCH



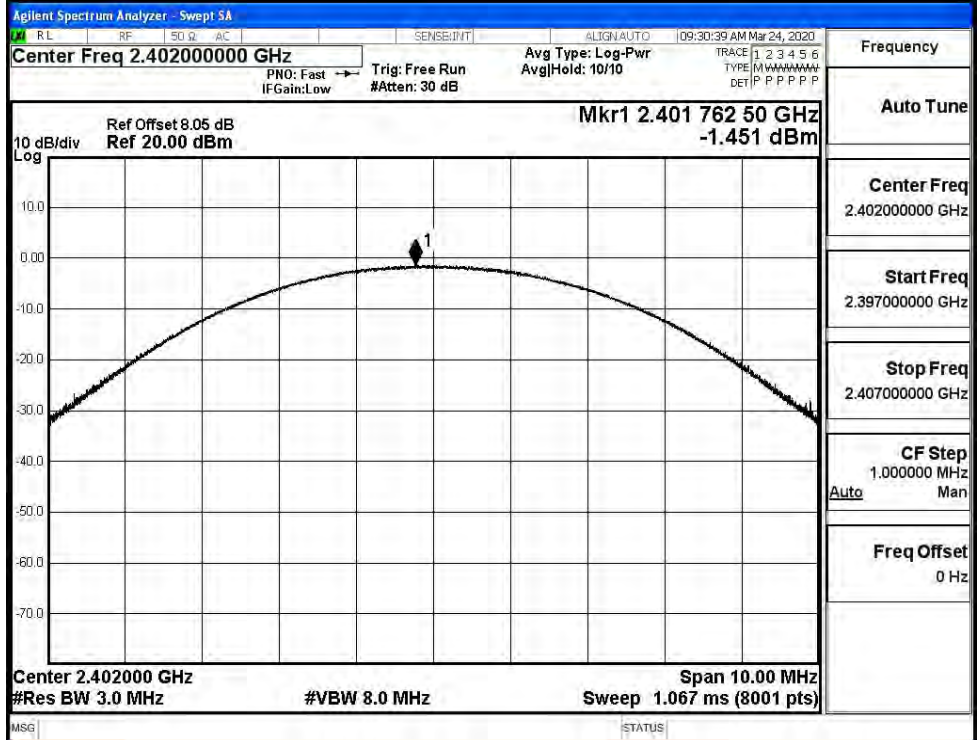
GFSK/MCH



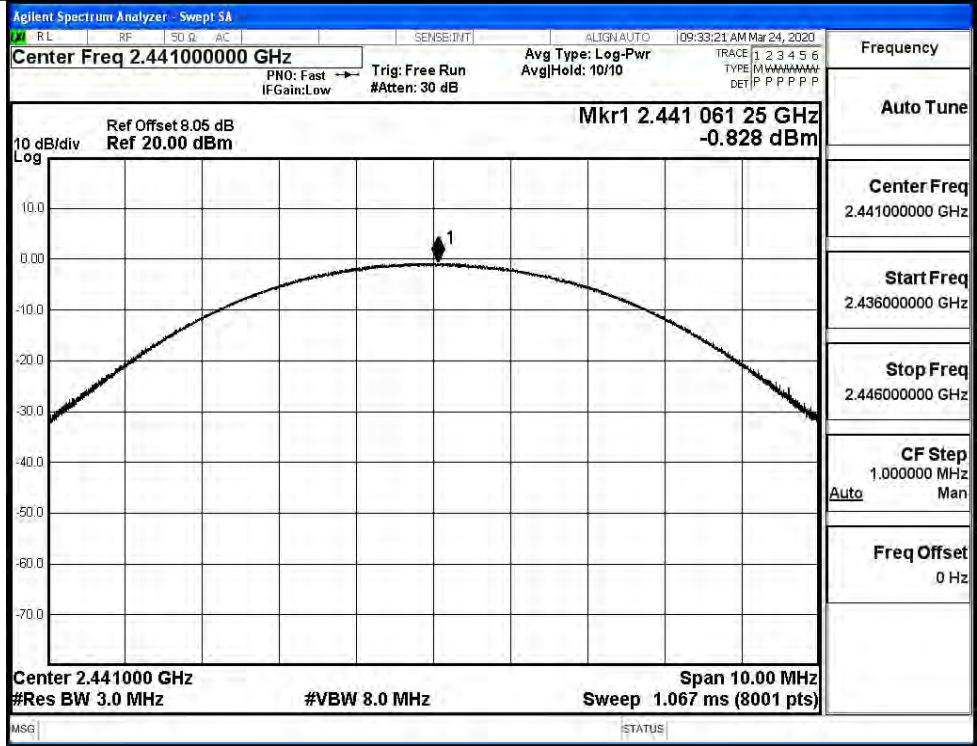
GFSK/HCH



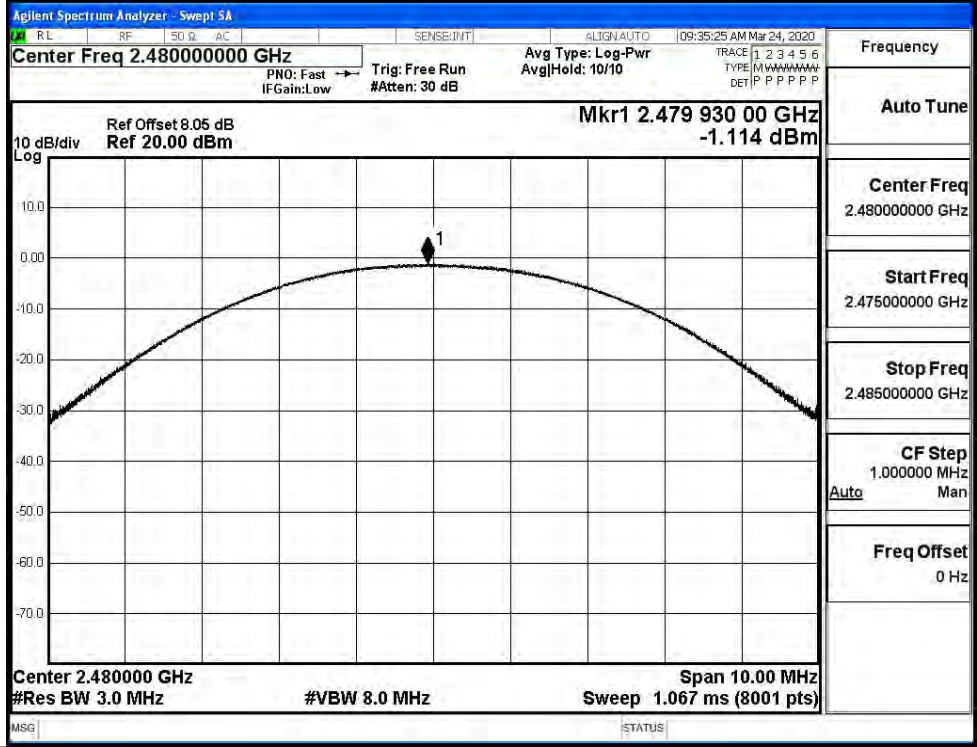
π /4DQPSK/LCH



π /4DQPSK/MCH

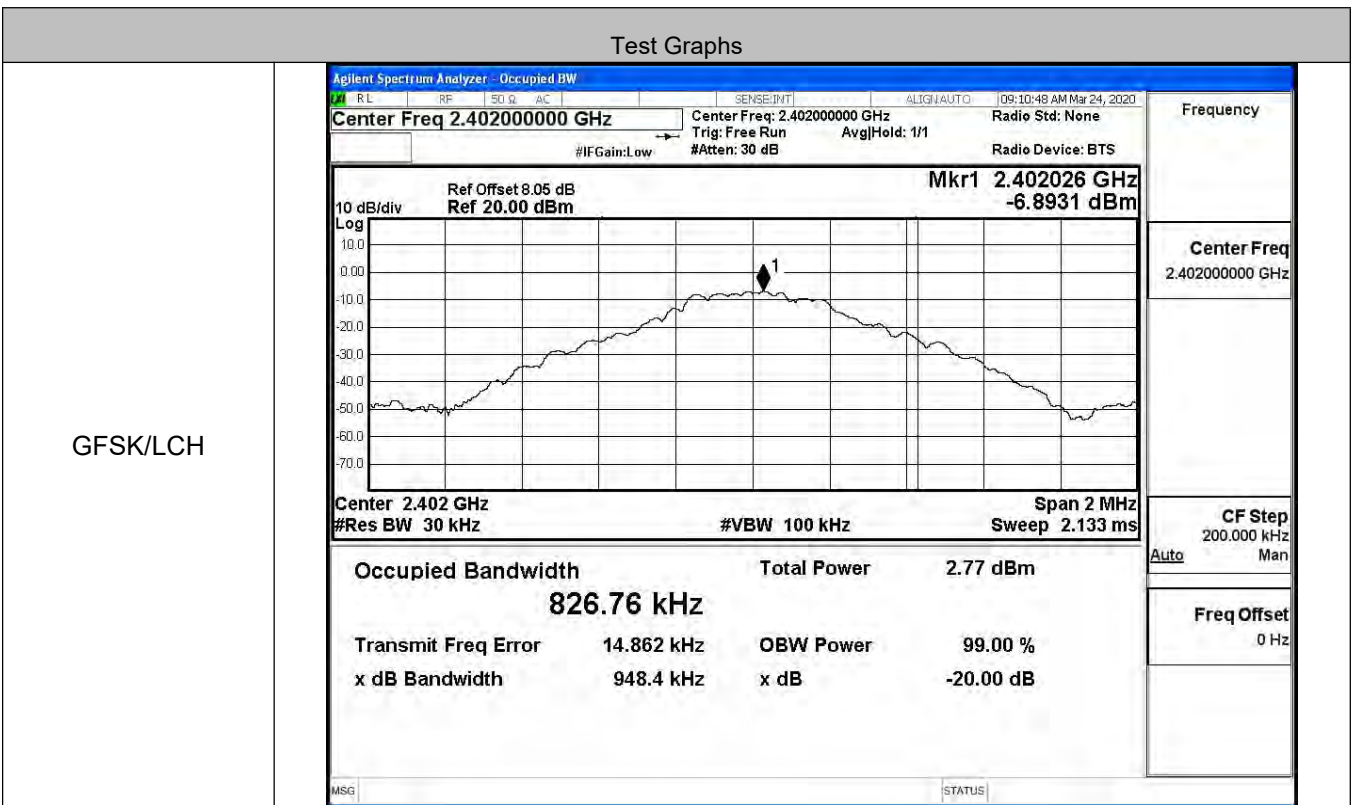


π /4DQPSK/HCH

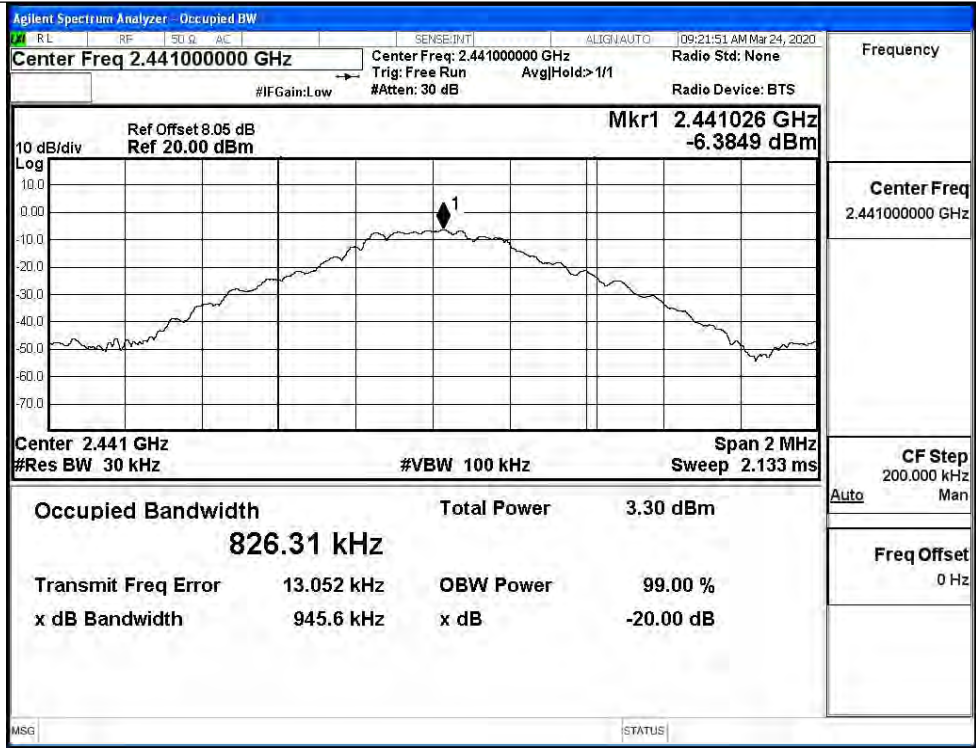


A.2 20dB Bandwidth

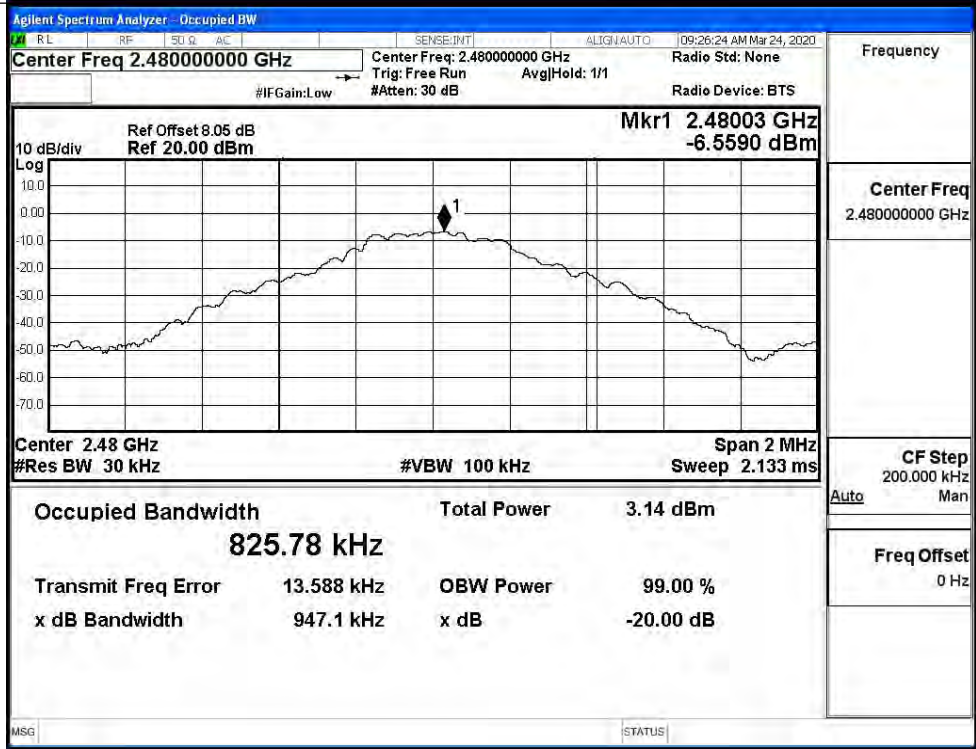
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9484	Not Specified	PASS
	MCH	0.9456	Not Specified	PASS
	HCH	0.9471	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.322	Not Specified	PASS
	MCH	1.322	Not Specified	PASS
	HCH	1.323	Not Specified	PASS



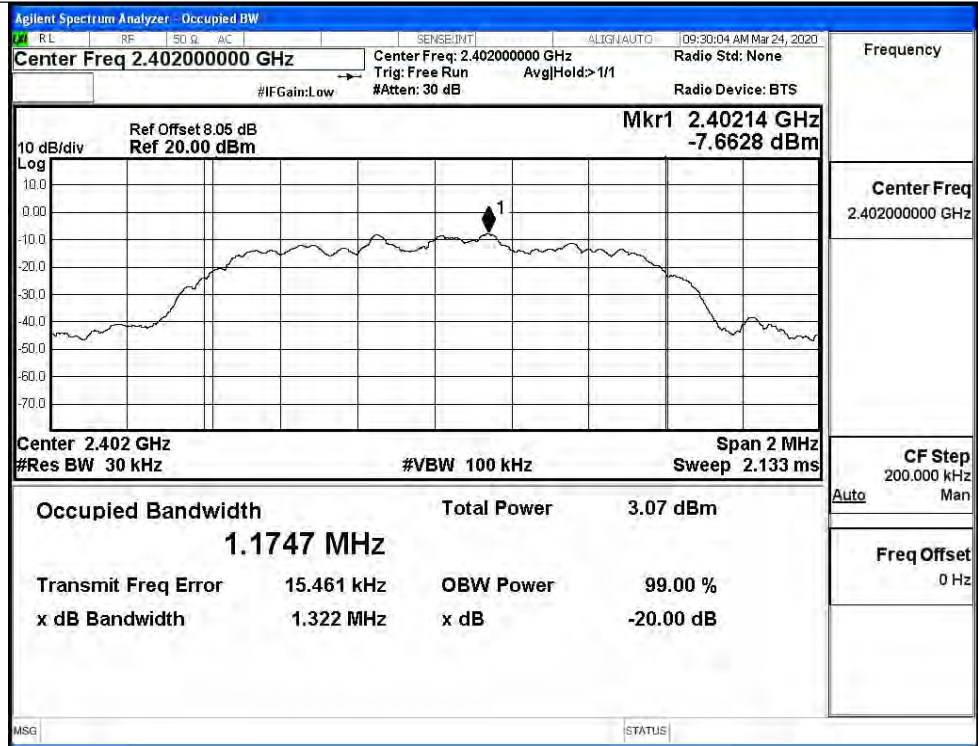
GFSK/MCH



GFSK/HCH

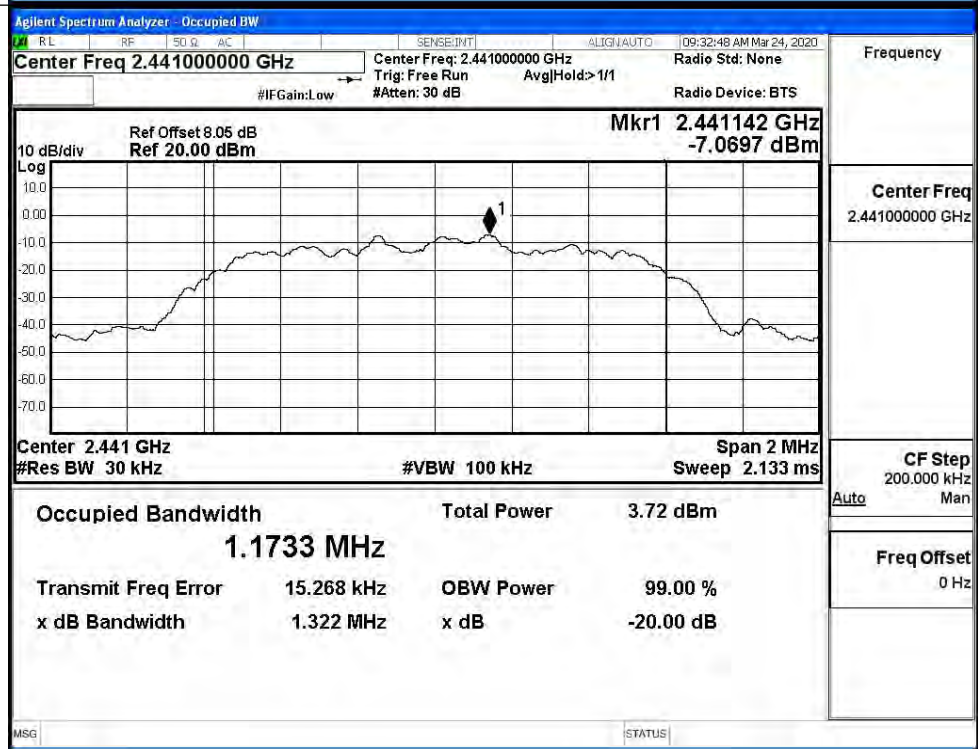


$\pi/4$ DQPSK/LCH



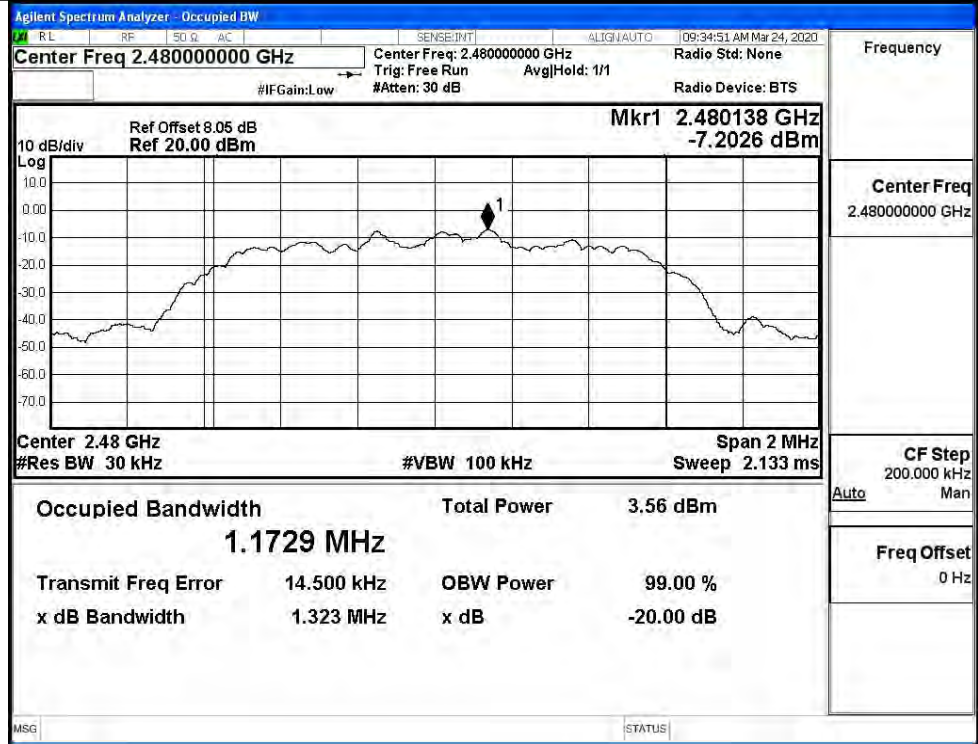
Frequency	2.40200000 GHz
Center Freq	2.40200000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

$\pi/4$ DQPSK/MCH



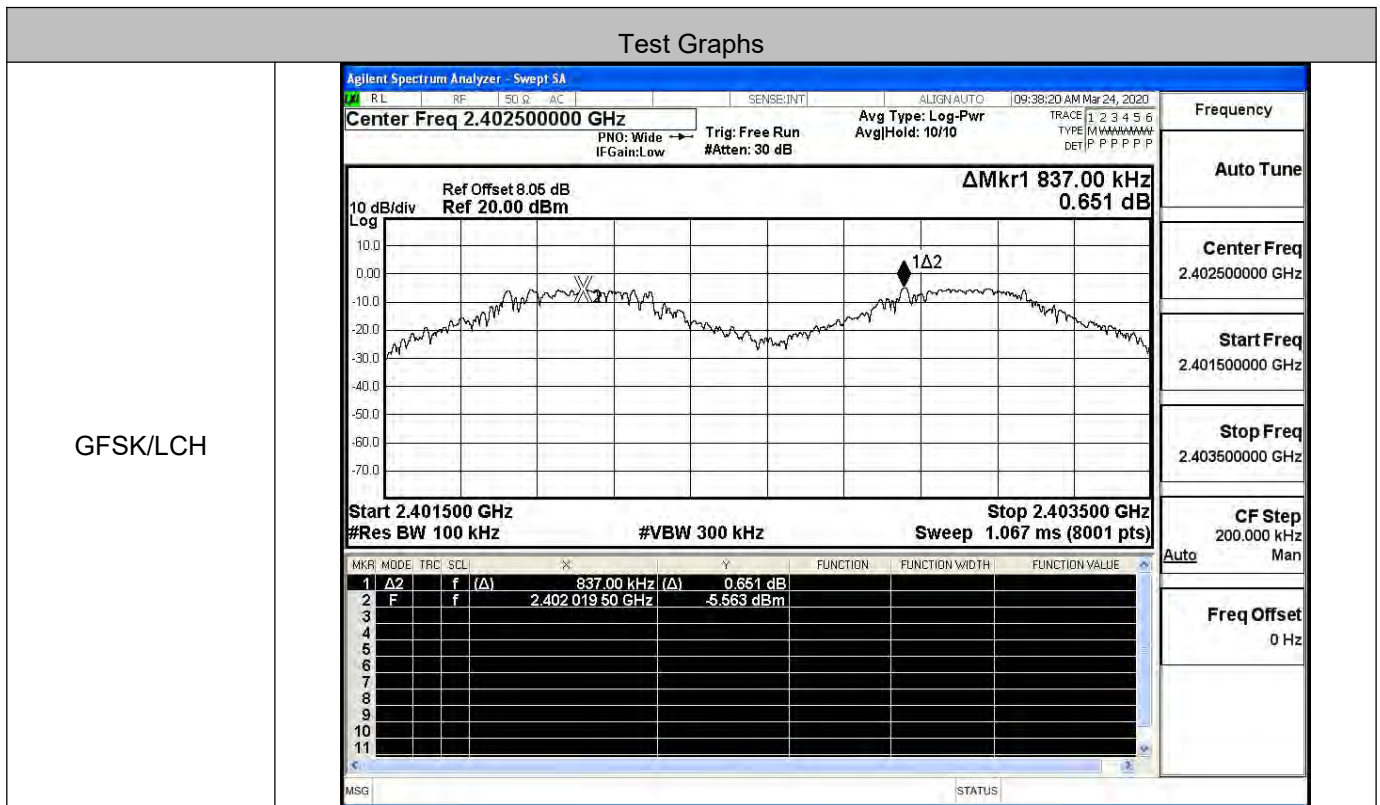
Frequency	2.44100000 GHz
Center Freq	2.44100000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

$\pi/4$ DQPSK/HCH

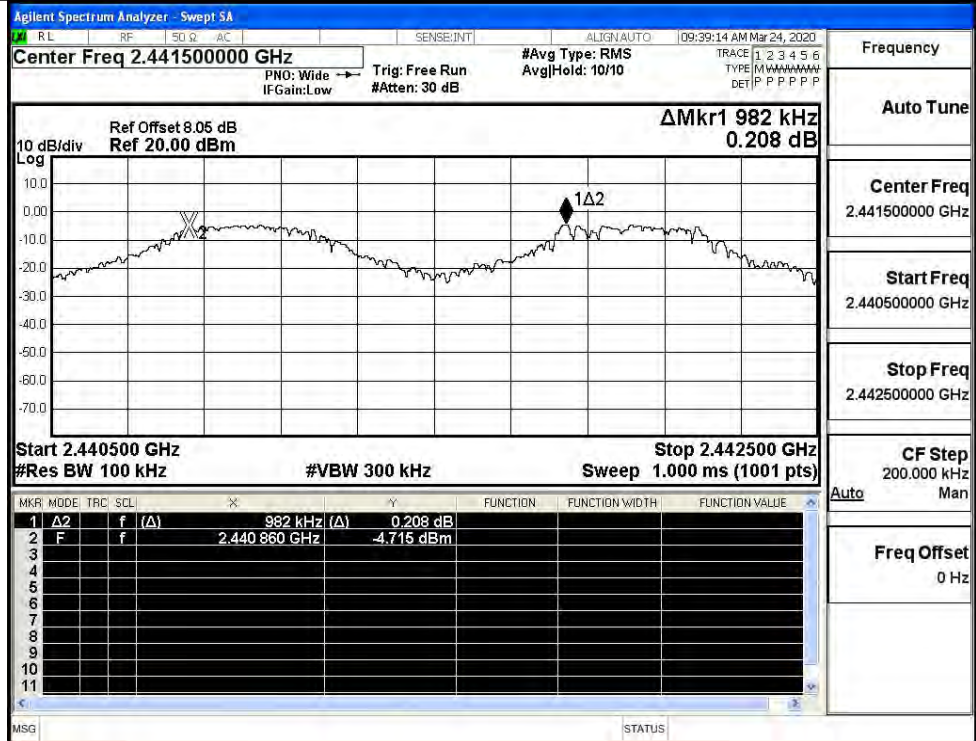


A.3 Carrier Frequency Separation

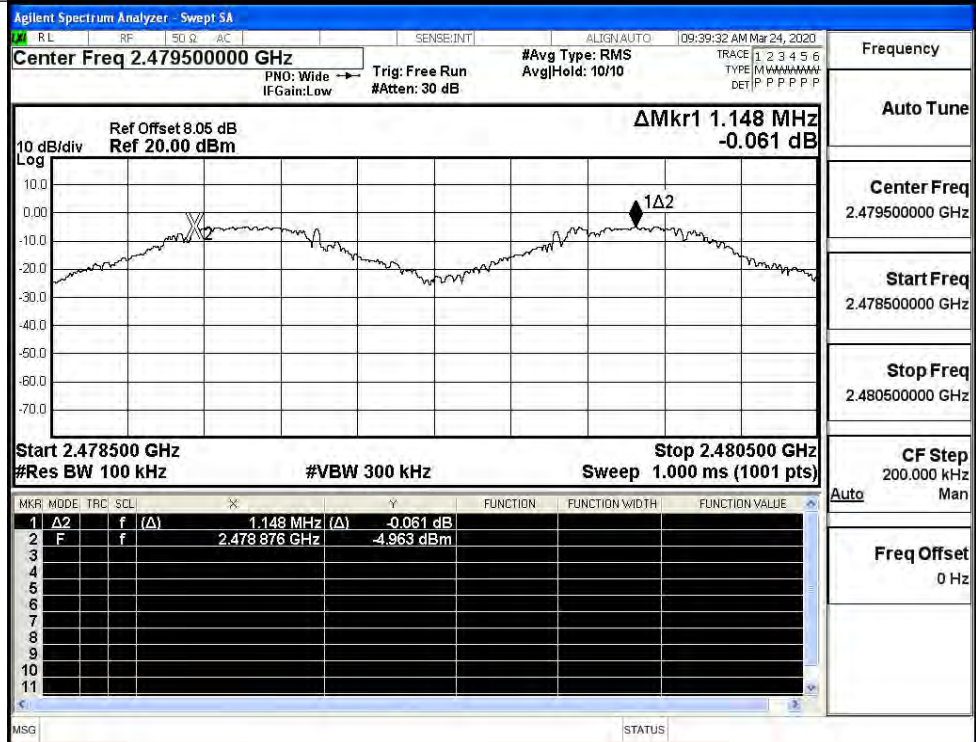
Mode	Channel	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.837	0.632	PASS
	MCH	0.982	0.630	PASS
	HCH	1.148	0.631	PASS
π/4DQPSK	LCH	1.242	0.881	PASS
	MCH	1.178	0.881	PASS
	HCH	0.998	0.882	PASS



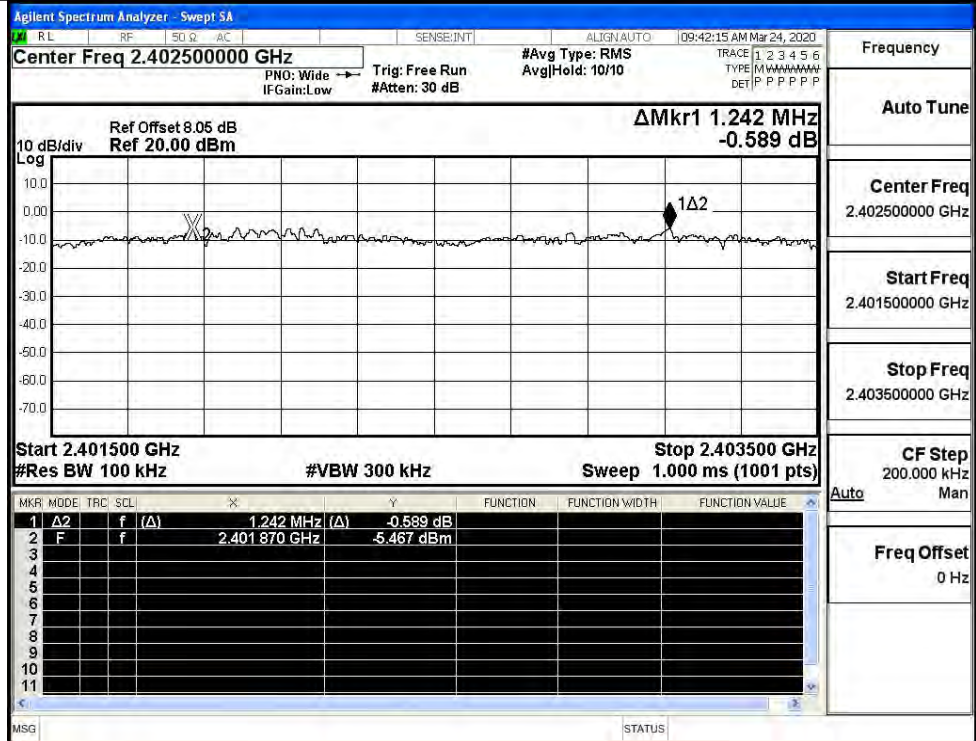
GFSK/MCH



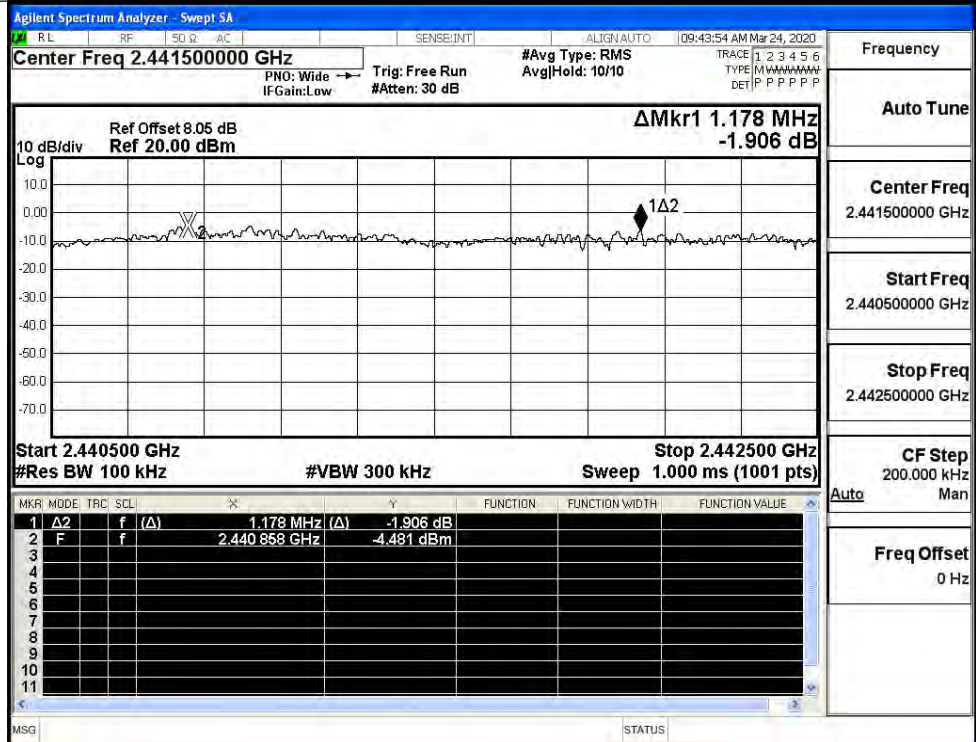
GFSK/HCH

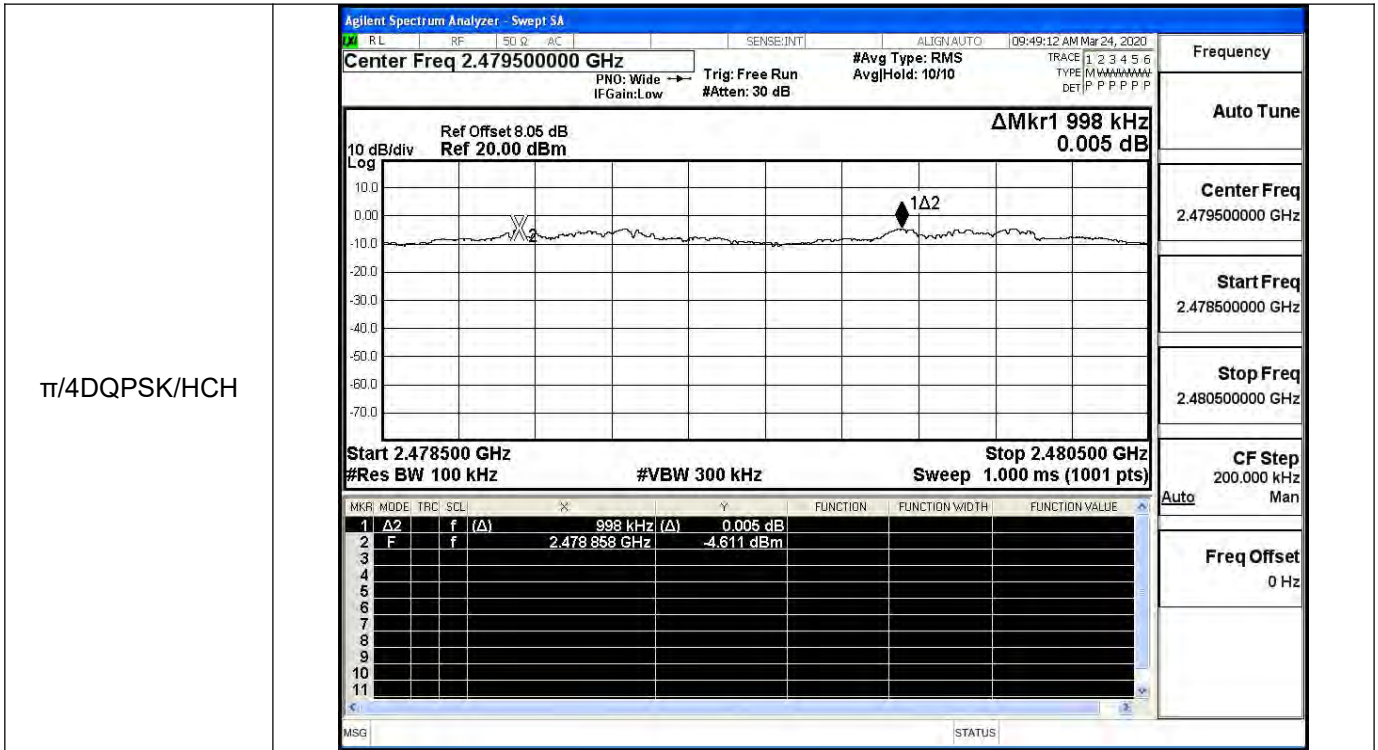


$\pi/4$ DQPSK/LCH



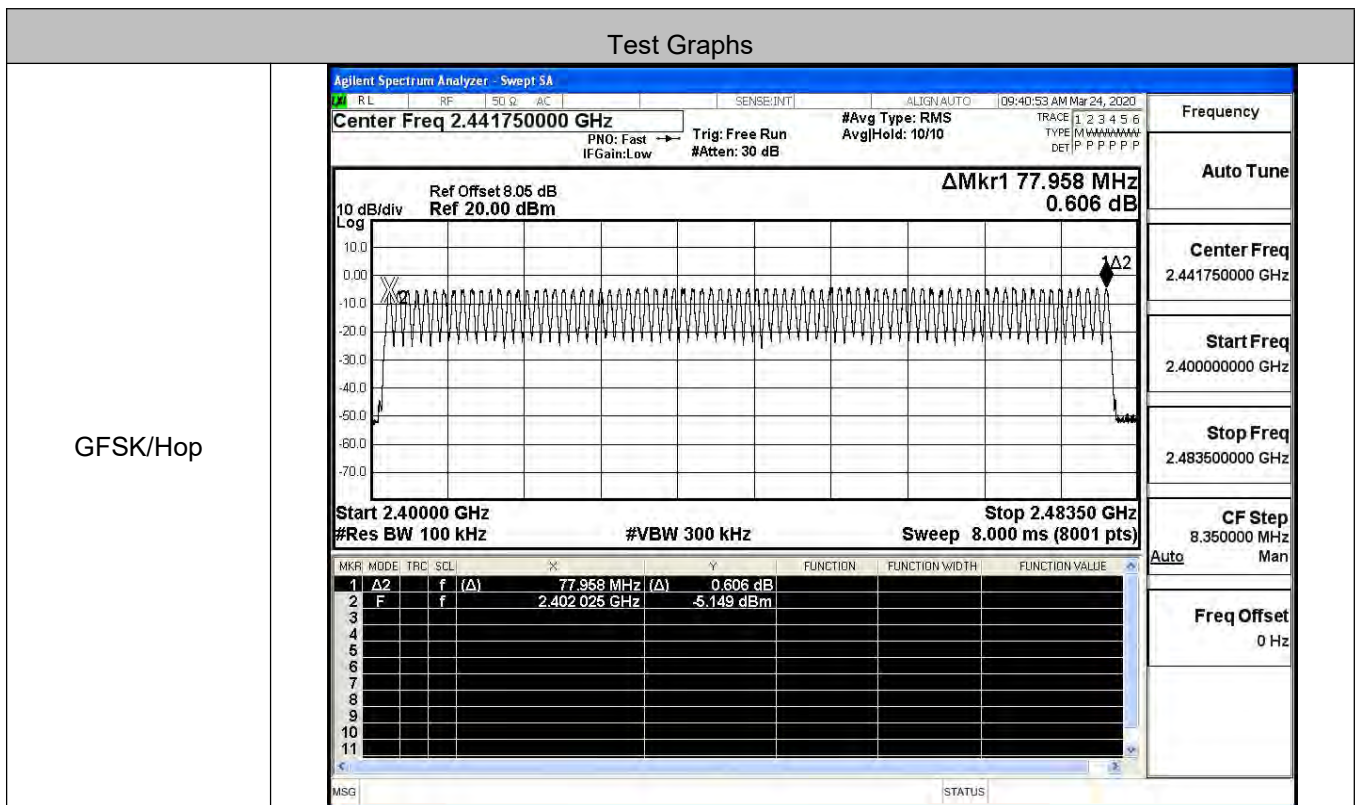
$\pi/4$ DQPSK/MCH



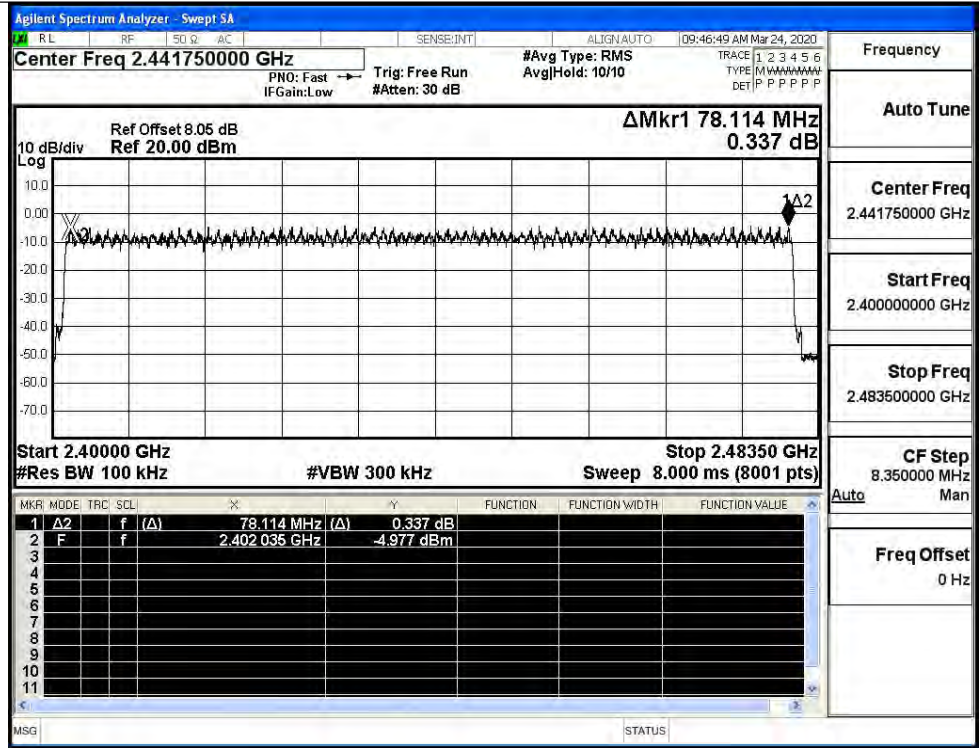


A.4 Hopping Channel Number

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

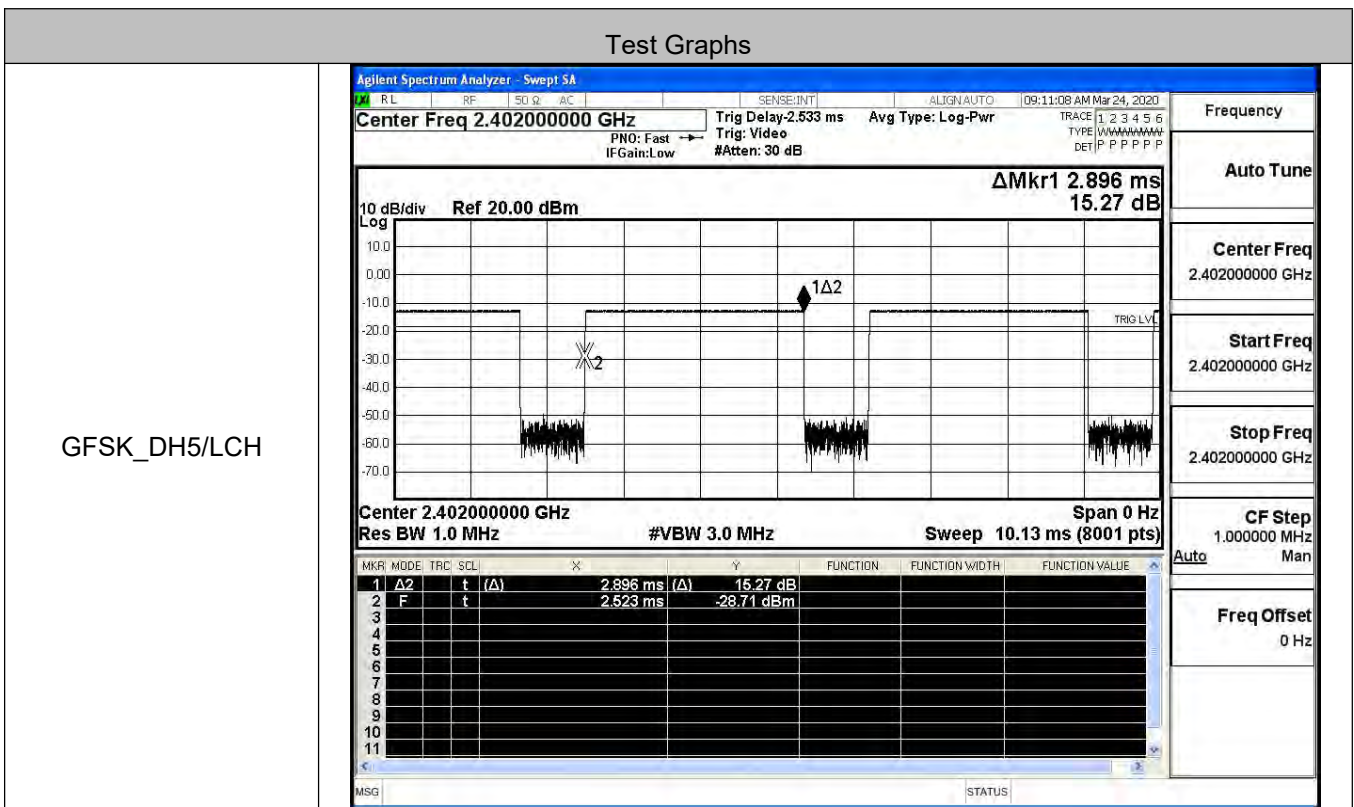


$\pi/4$ DQPSK/Hop

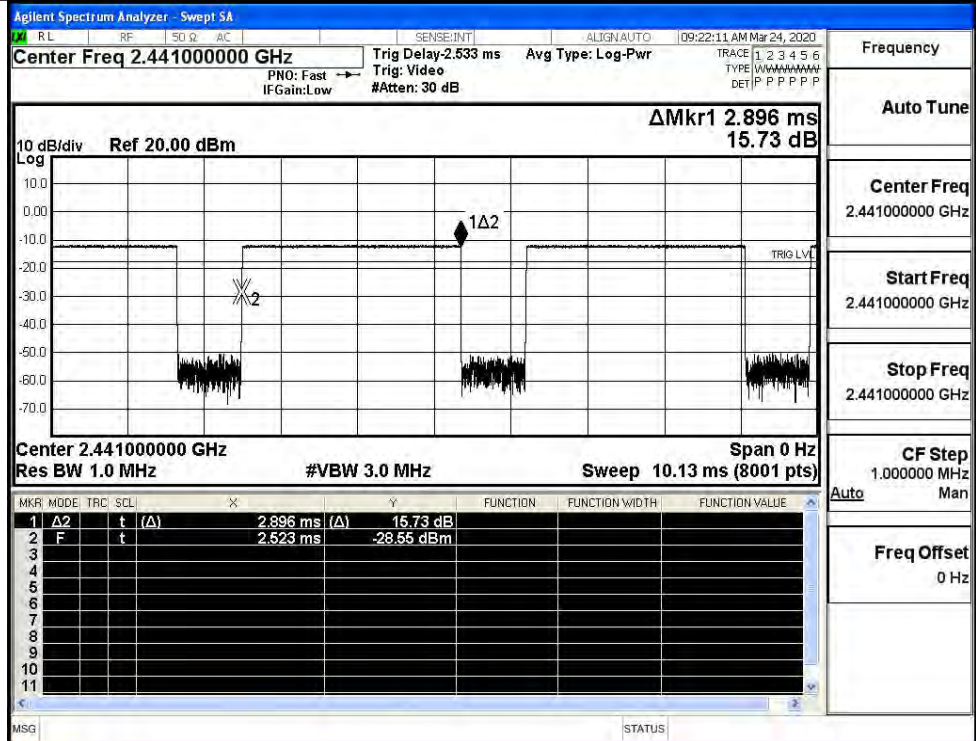


A.5 Dwell Time

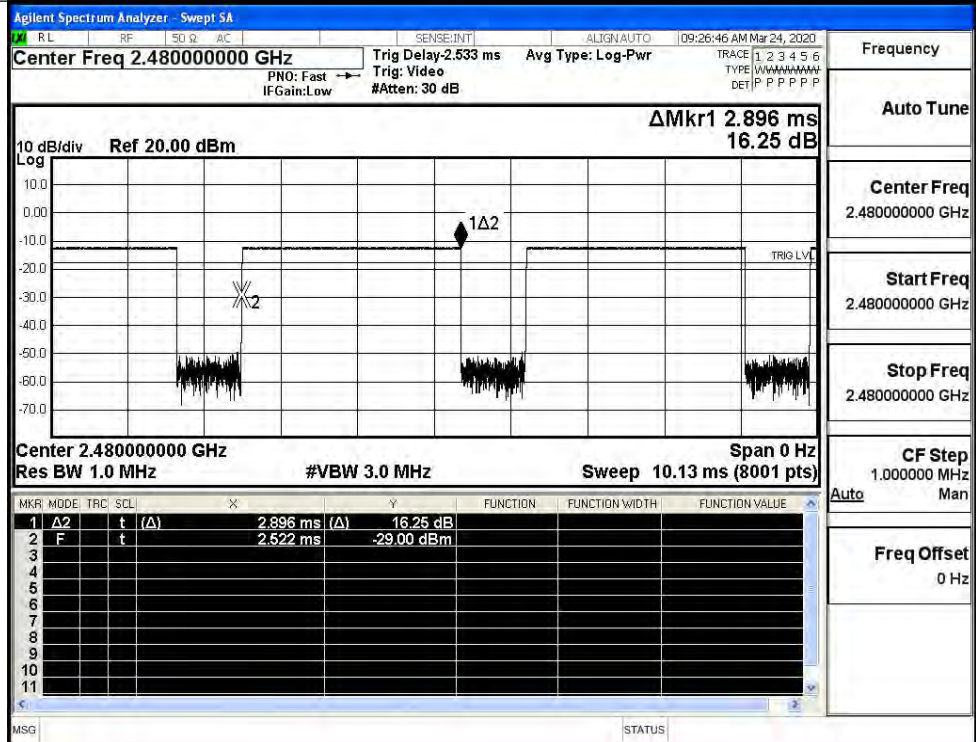
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.9	106.7	0.309	0.4	PASS
	DH5	MCH	2.9	106.7	0.309	0.4	PASS
	DH5	HCH	2.9	106.7	0.309	0.4	PASS
π/4DQPSK	2DH5	LCH	2.9	106.7	0.309	0.4	PASS
	2DH5	MCH	2.9	106.7	0.309	0.4	PASS
	2DH5	HCH	2.9	106.7	0.309	0.4	PASS



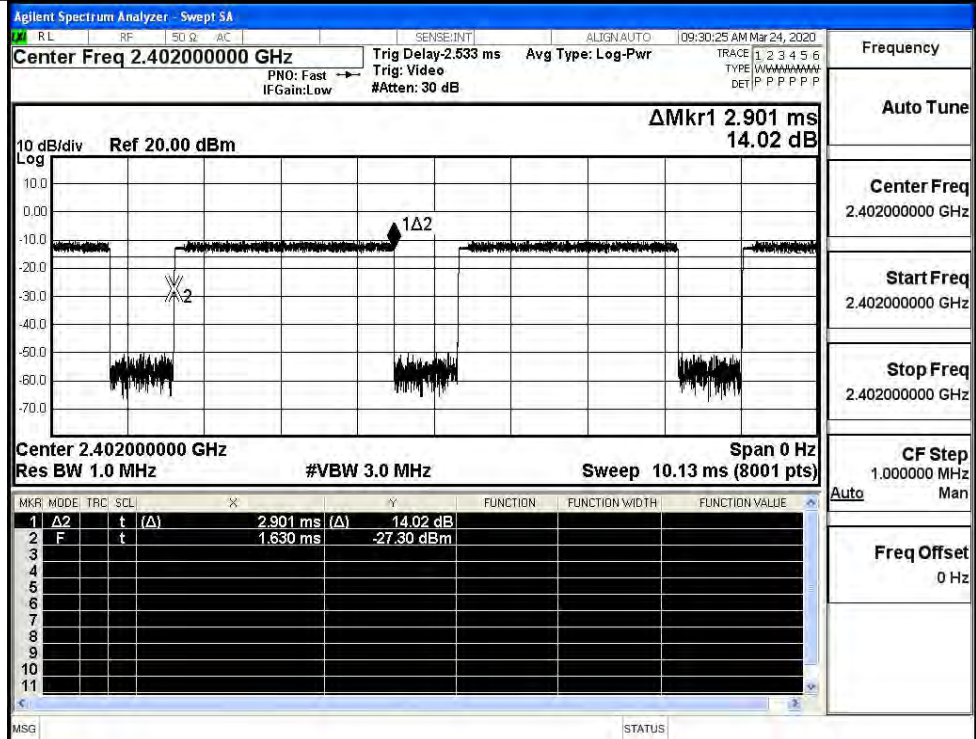
GFSK_DH5/MCH



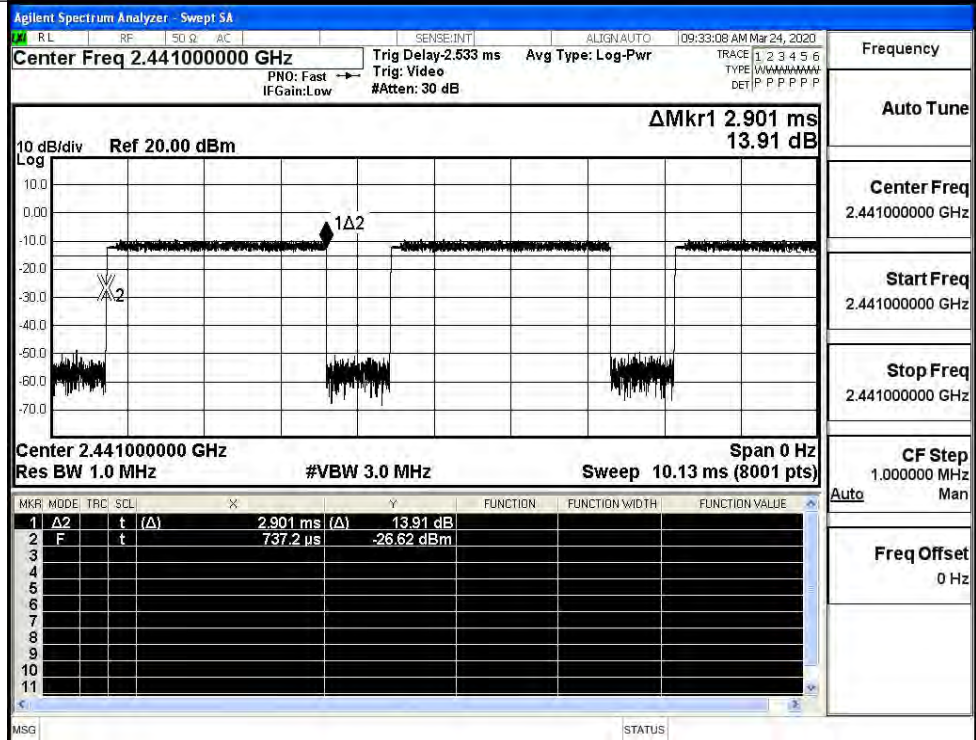
GFSK_DH5/HCH



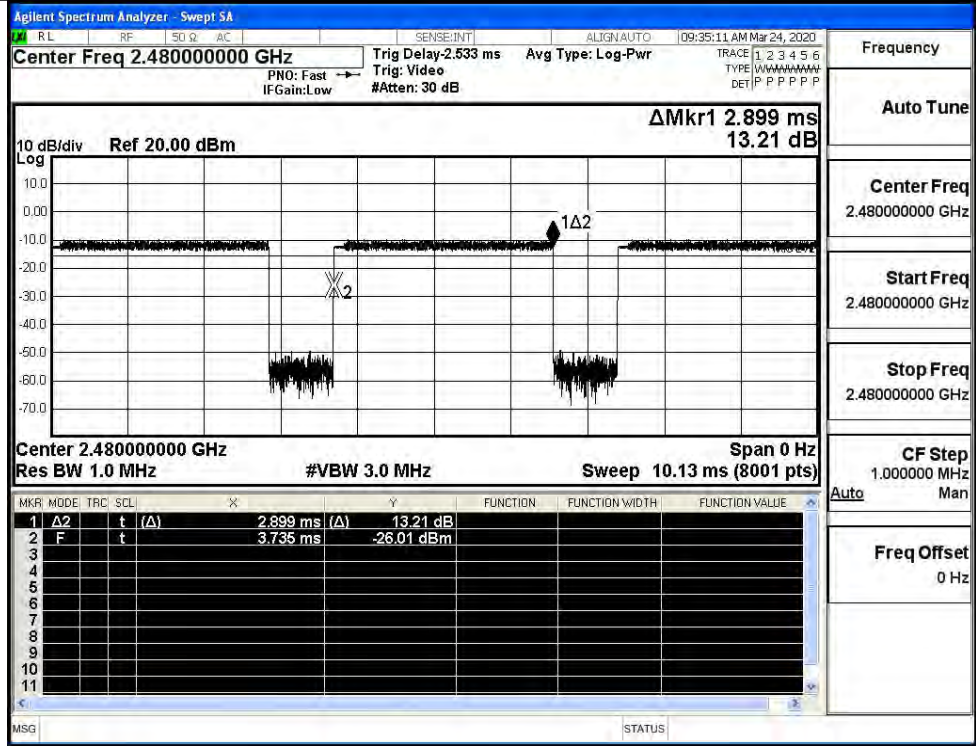
$\pi/4$ DQPSK
_2DH5/LCH



$\pi/4$ DQPSK
_2DH5/MCH



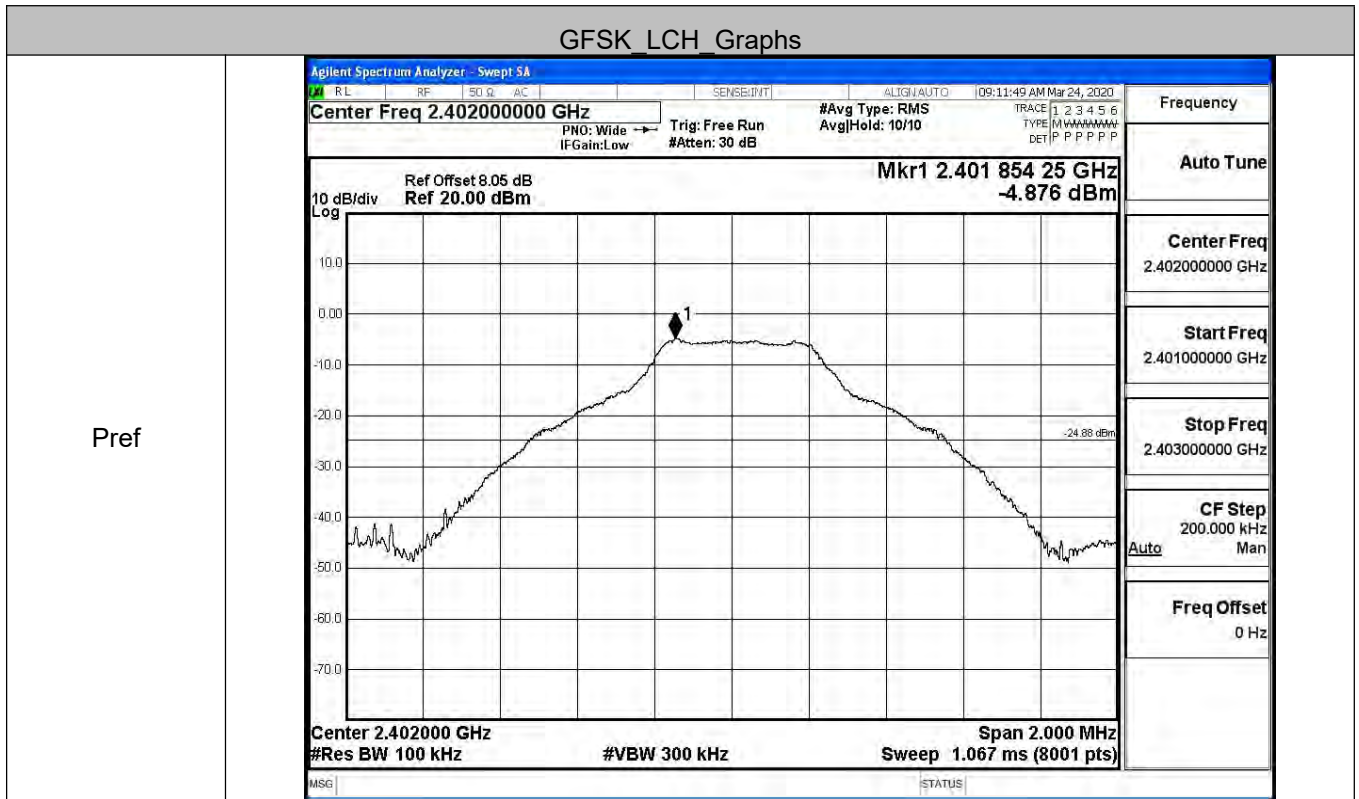
$\pi/4$ DQPSK
_2DH5/HCH

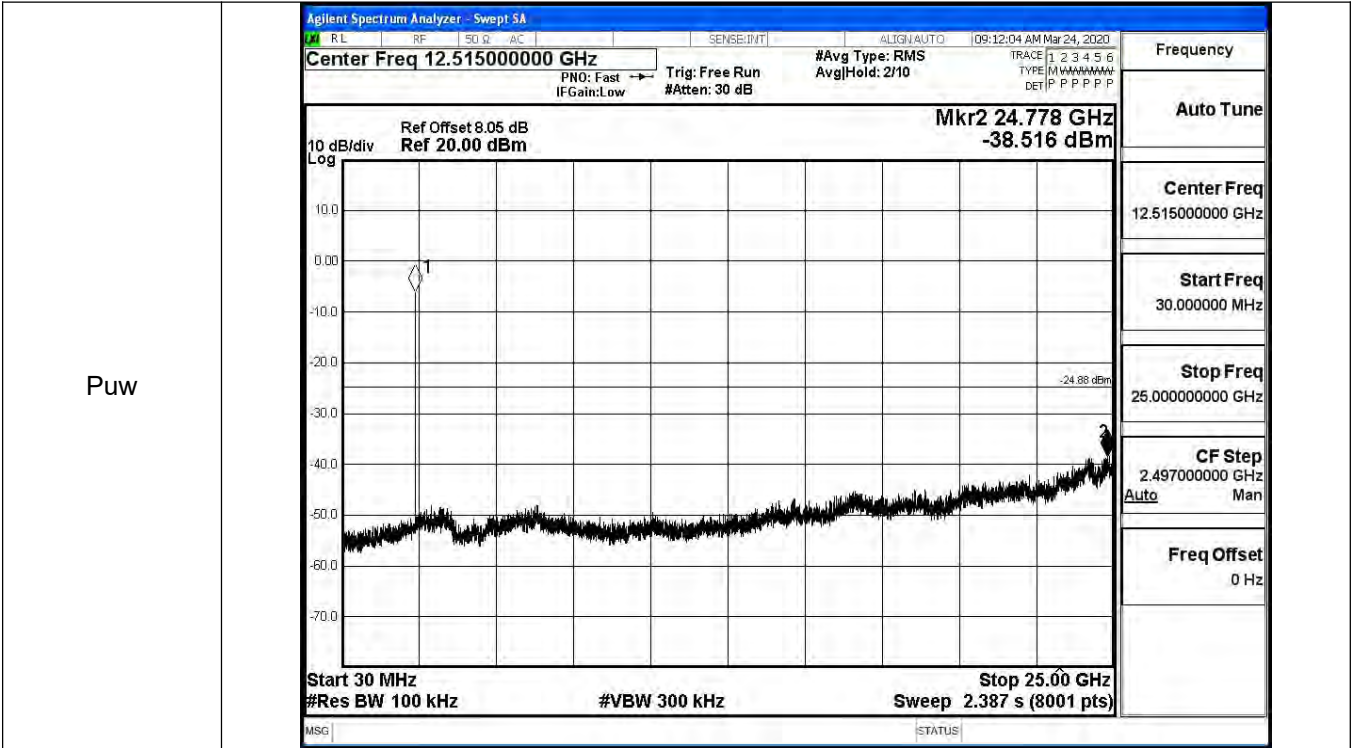


A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-4.876	-38.516	-24.876	PASS
	MCH	-4.325	-38.042	-24.325	PASS
	HCH	-4.643	-37.920	-24.643	PASS
π/4DQPSK	LCH	-5.146	-37.218	-25.146	PASS
	MCH	-4.432	-38.366	-24.432	PASS
	HCH	-4.738	-38.385	-24.738	PASS

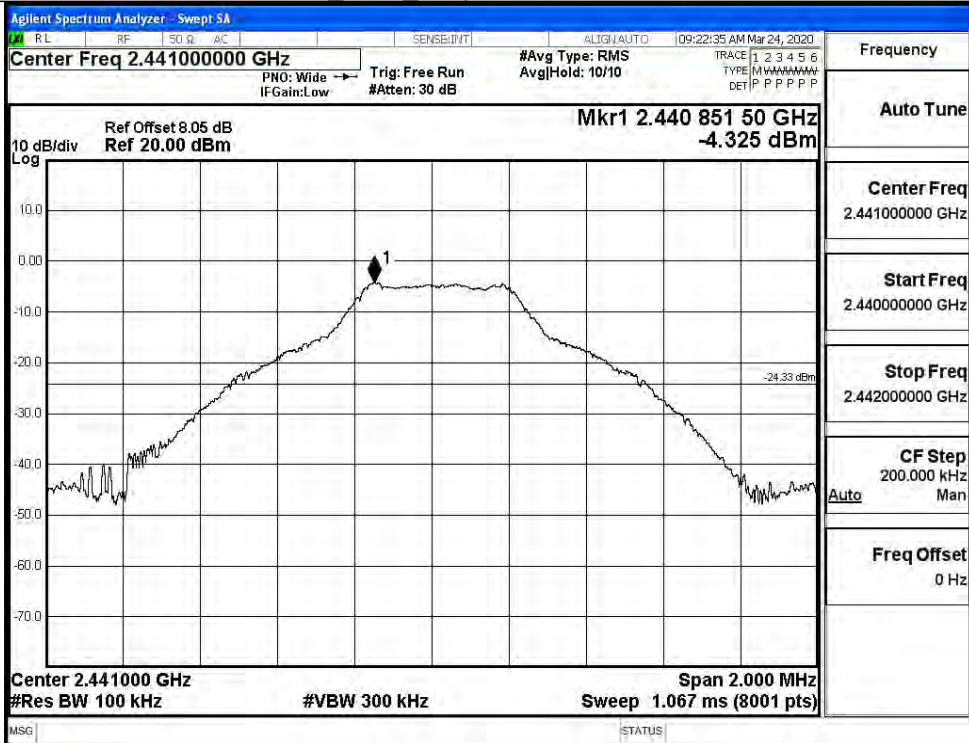
GFSK LCH Graphs



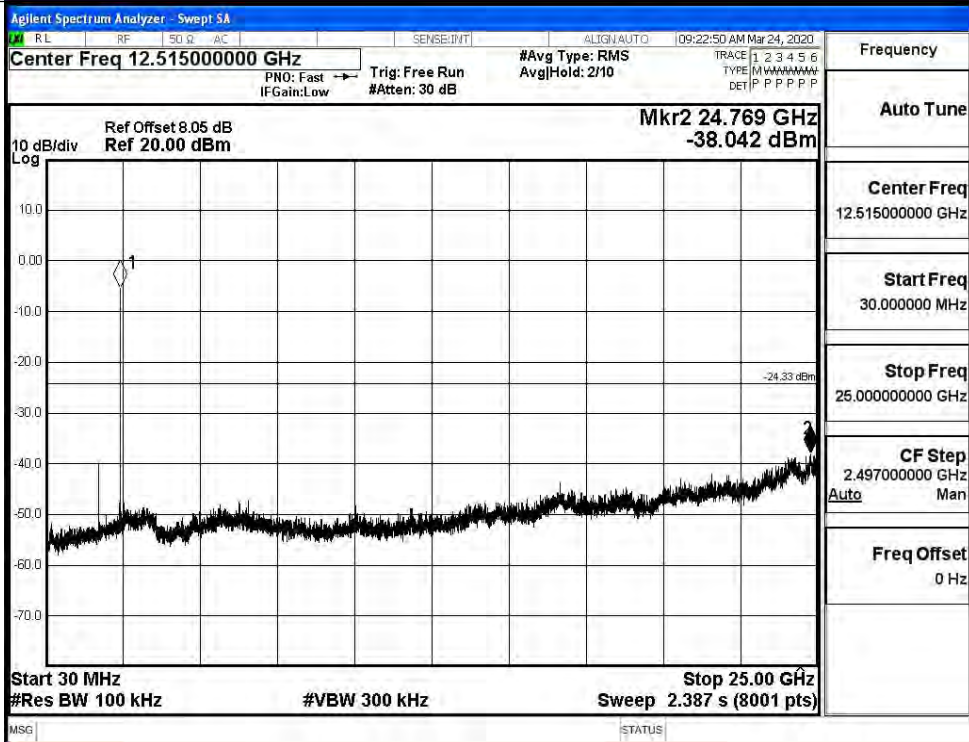


GFSK MCH Graphs

Pref

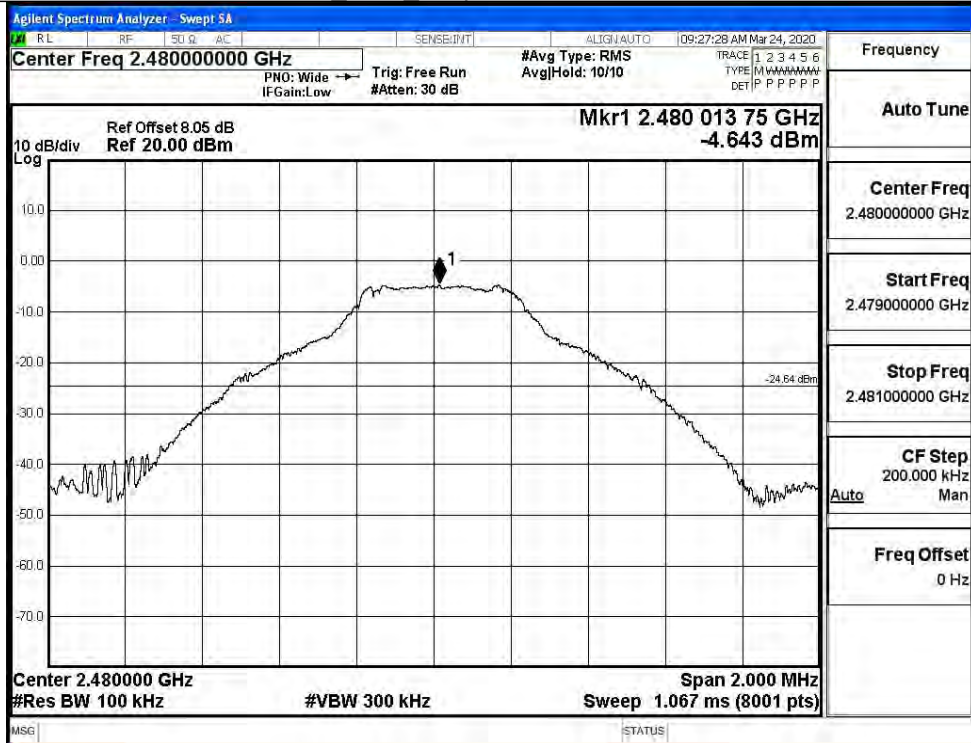


Puw

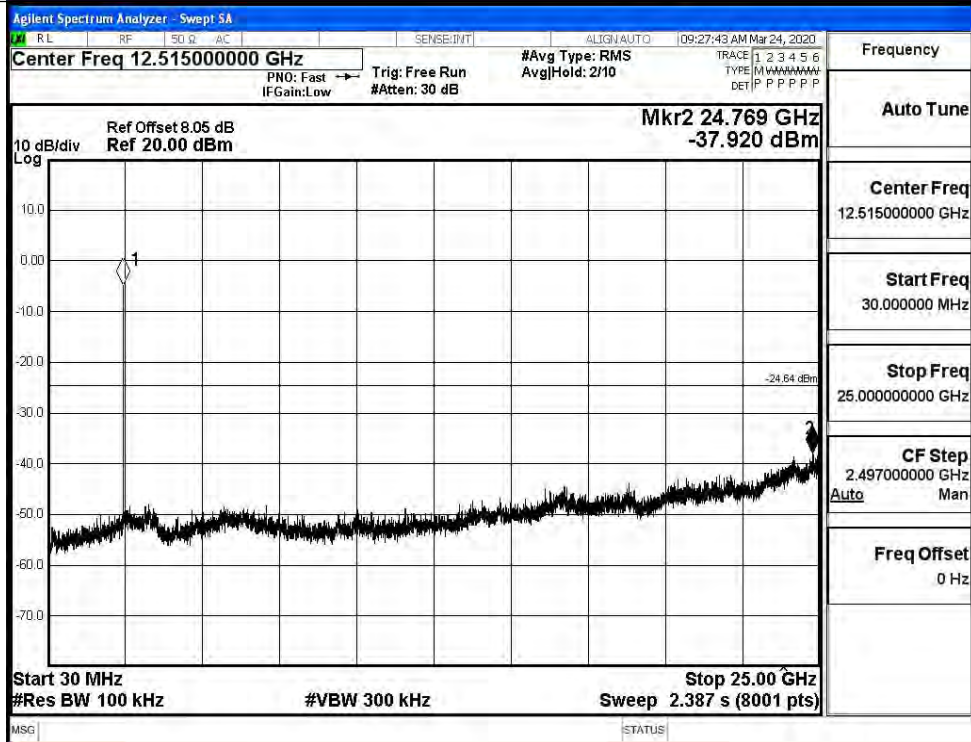


GFSK HCH_Graphs

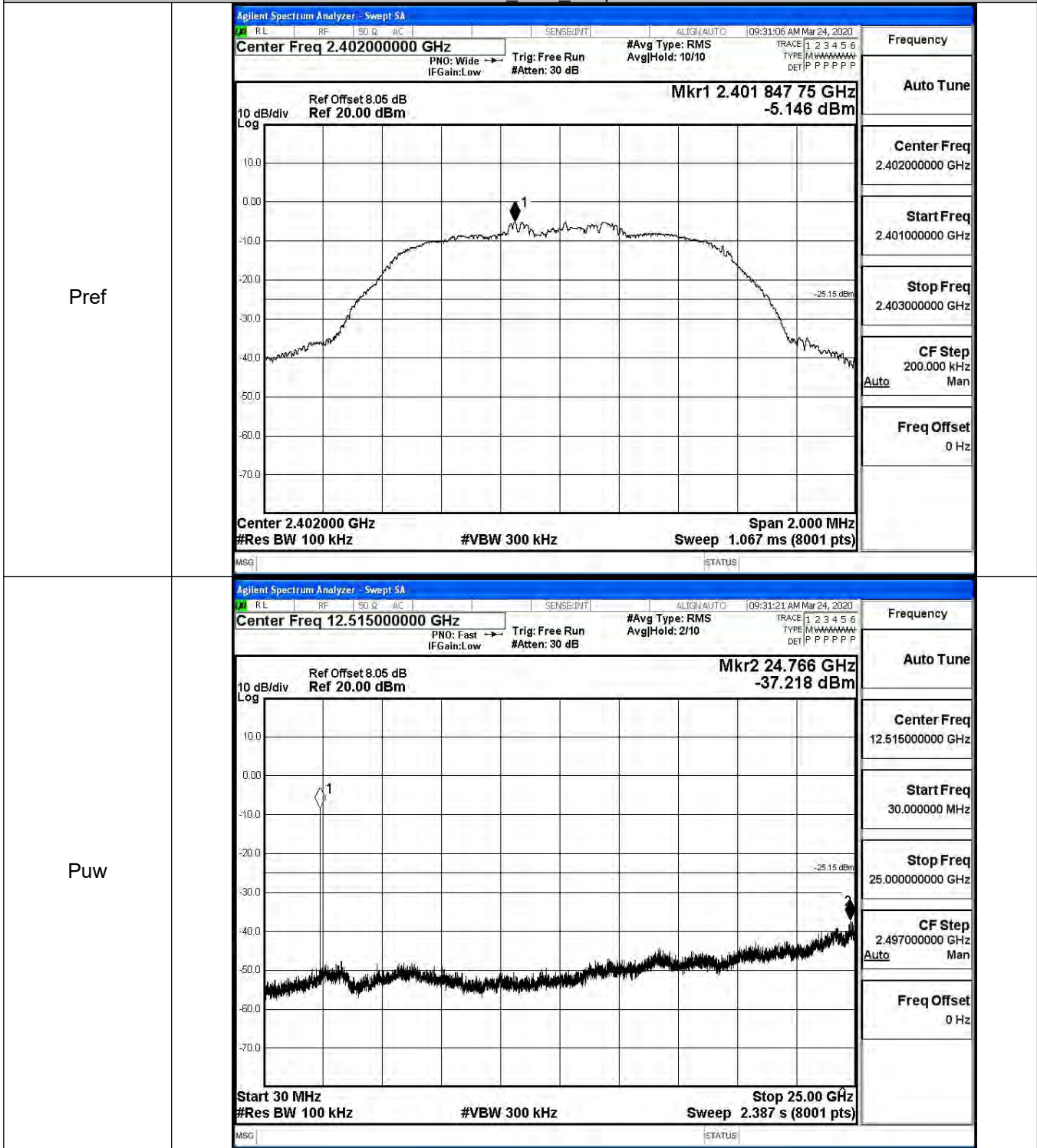
Pref



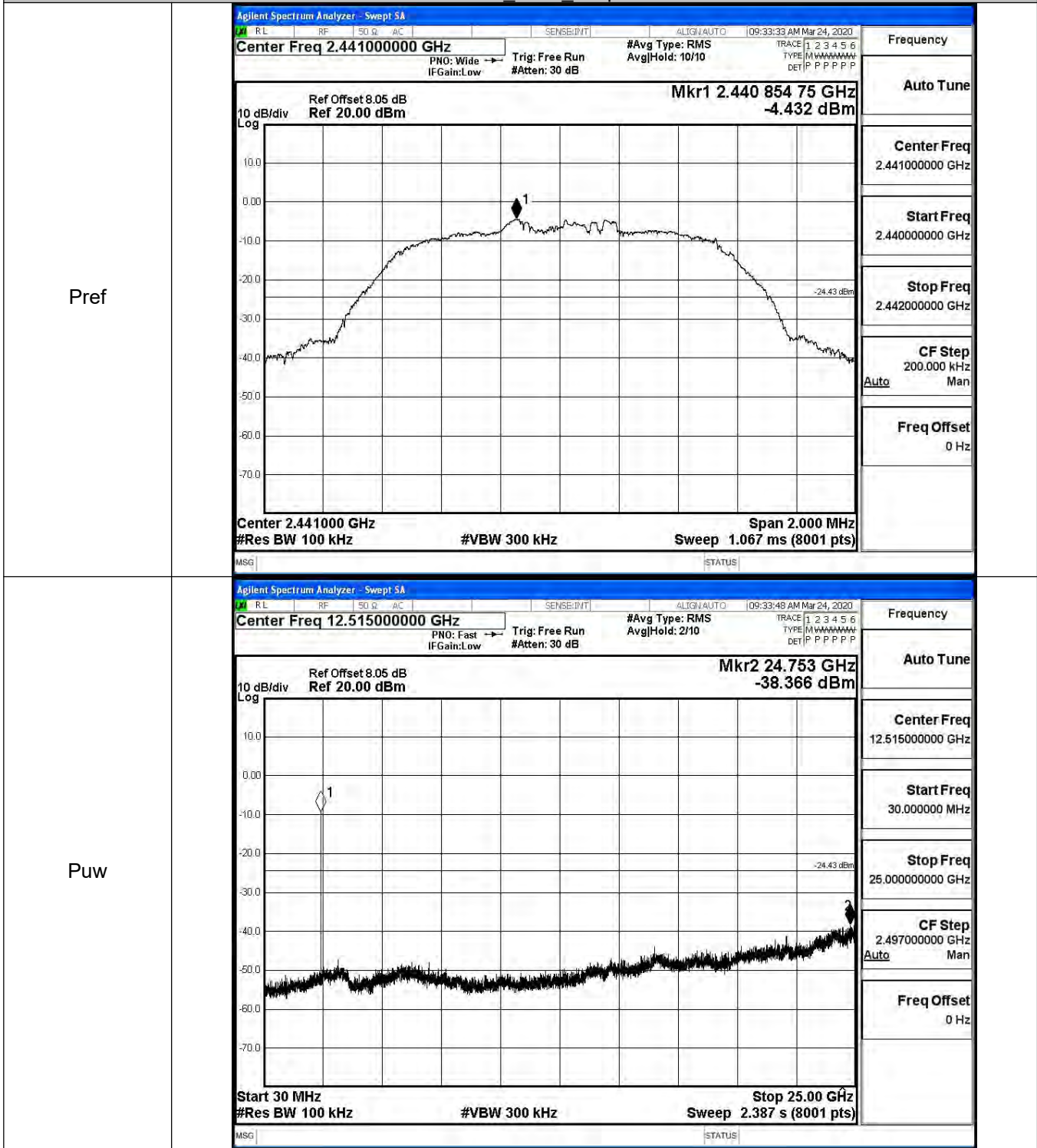
Puw



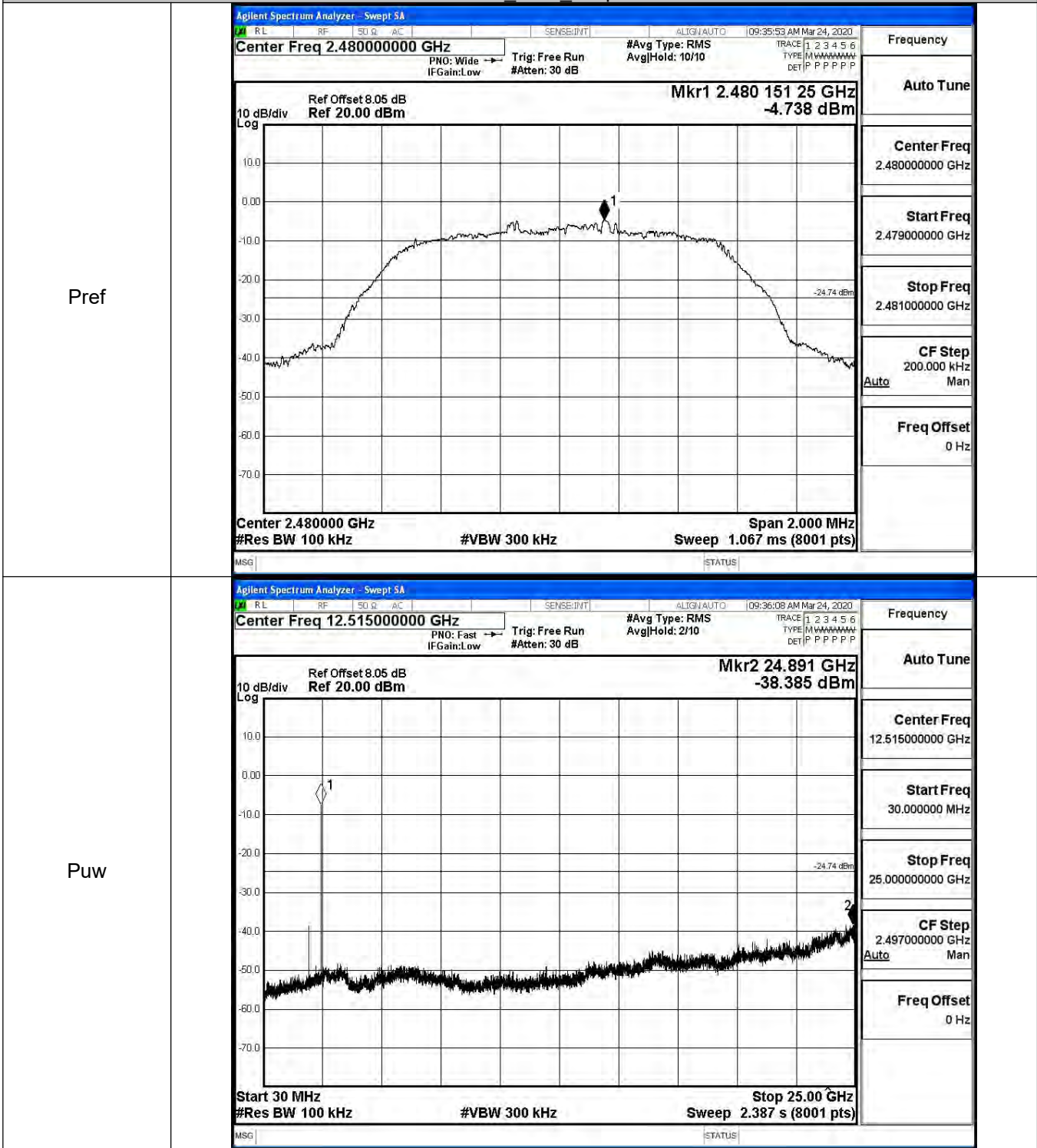
$\pi/4$ DQPSK LCH_Graphs



$\pi/4$ DQPSK MCH Graphs



$\pi/4$ DQPSK HCH_Graphs

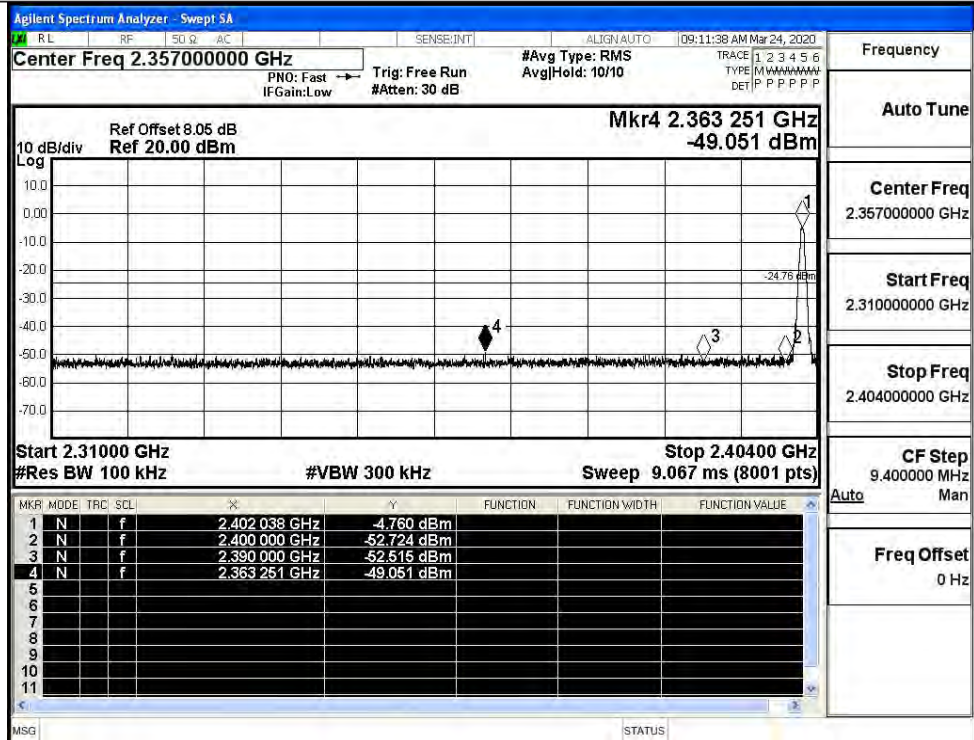


A.7 Band-edge for RF Conducted Emissions

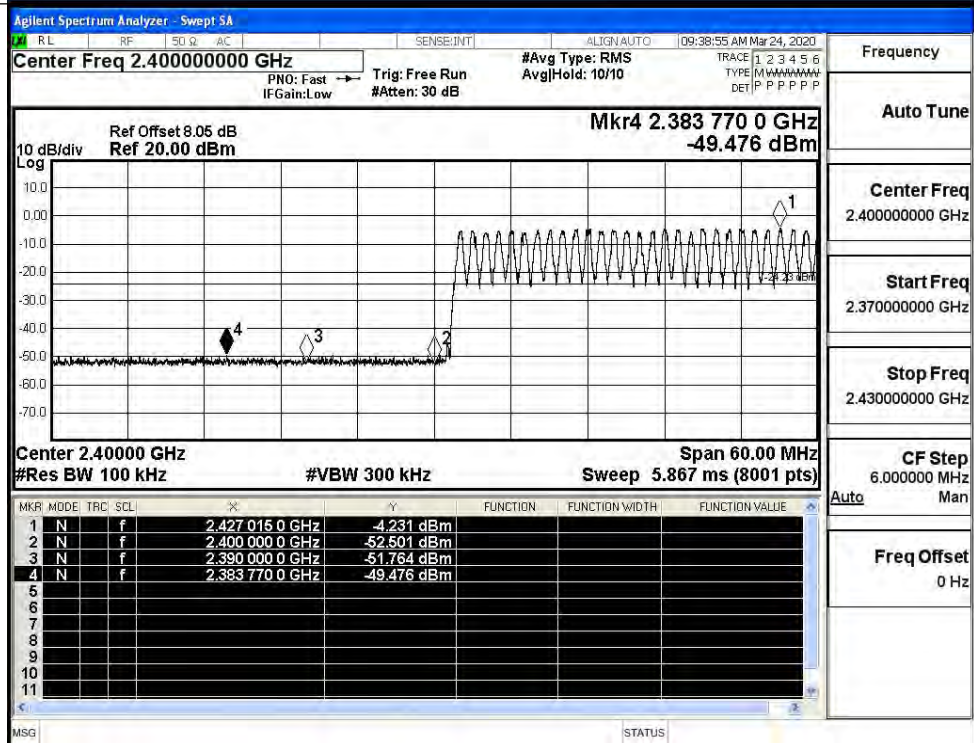
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-4.760	Off	-49.051	-24.76	PASS
			-4.231	On	-49.476	-24.23	PASS
	HCH	2480	-4.479	Off	-49.541	-24.48	PASS
			-4.199	On	-49.310	-24.2	PASS
$\pi/4$ DQPSK	LCH	2402	-6.236	Off	-49.691	-26.24	PASS
			-4.473	On	-49.167	-24.47	PASS
	HCH	2480	-4.221	Off	-48.940	-24.22	PASS
			-4.252	On	-48.703	-24.25	PASS

Test Graphs

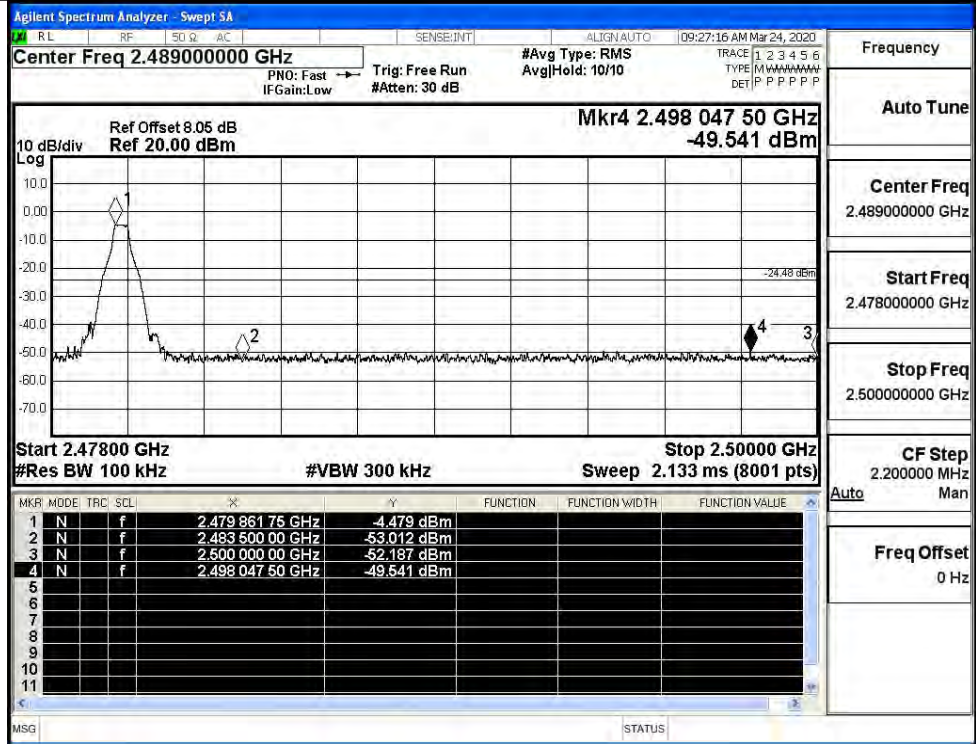
GFSK/LCH/No Hop



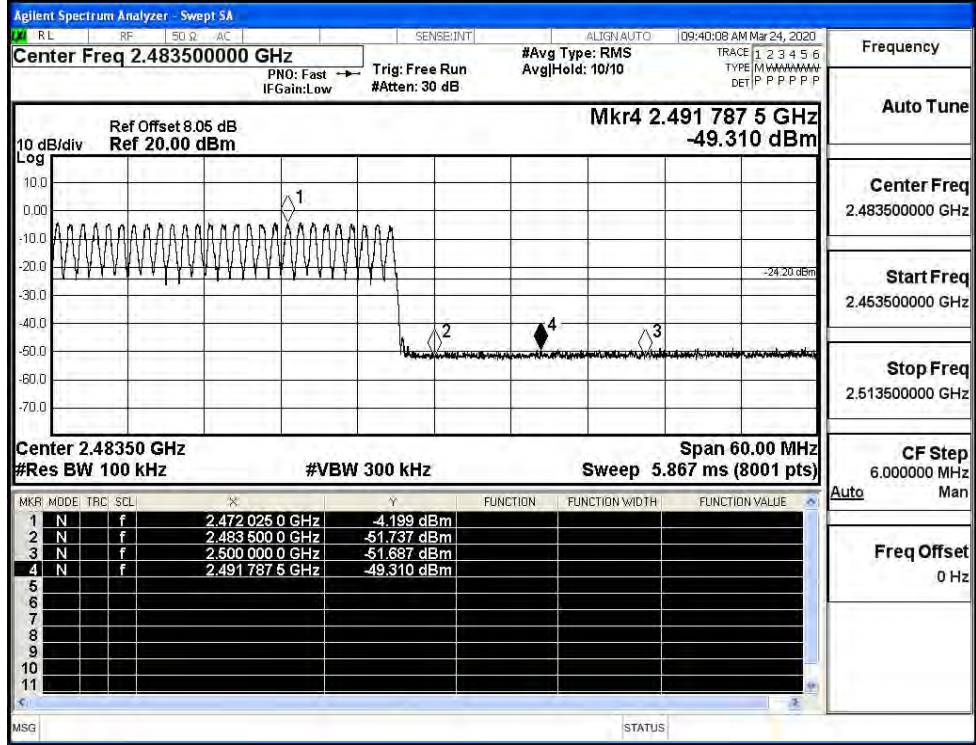
GFSK/LCH/Hop



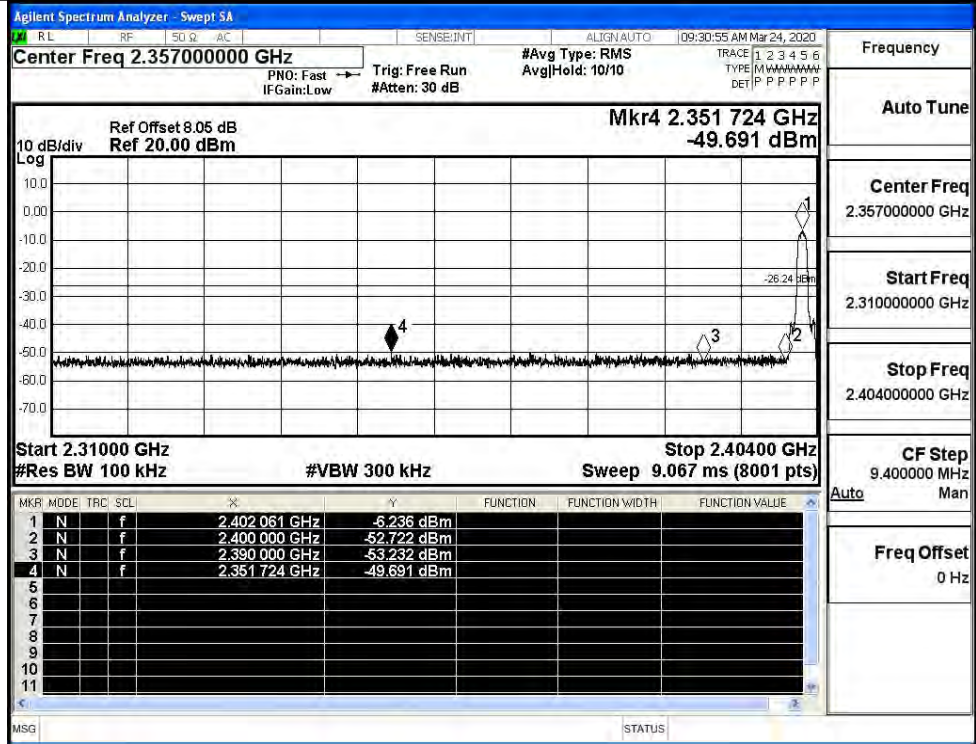
GFSK/HCH/No Hop



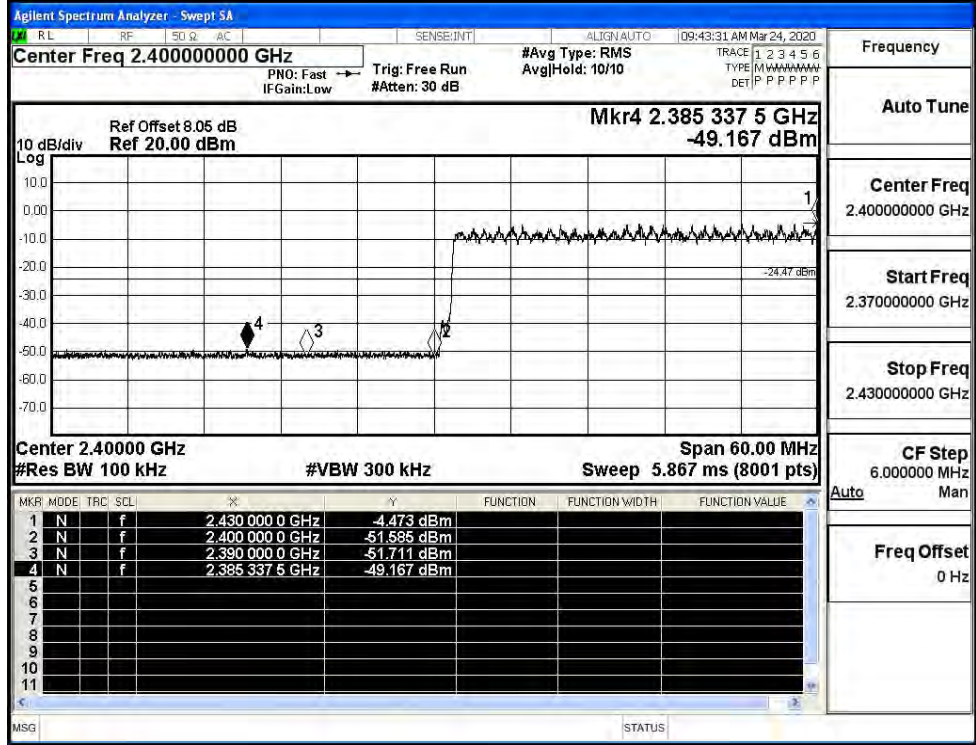
GFSK/HCH/Hop



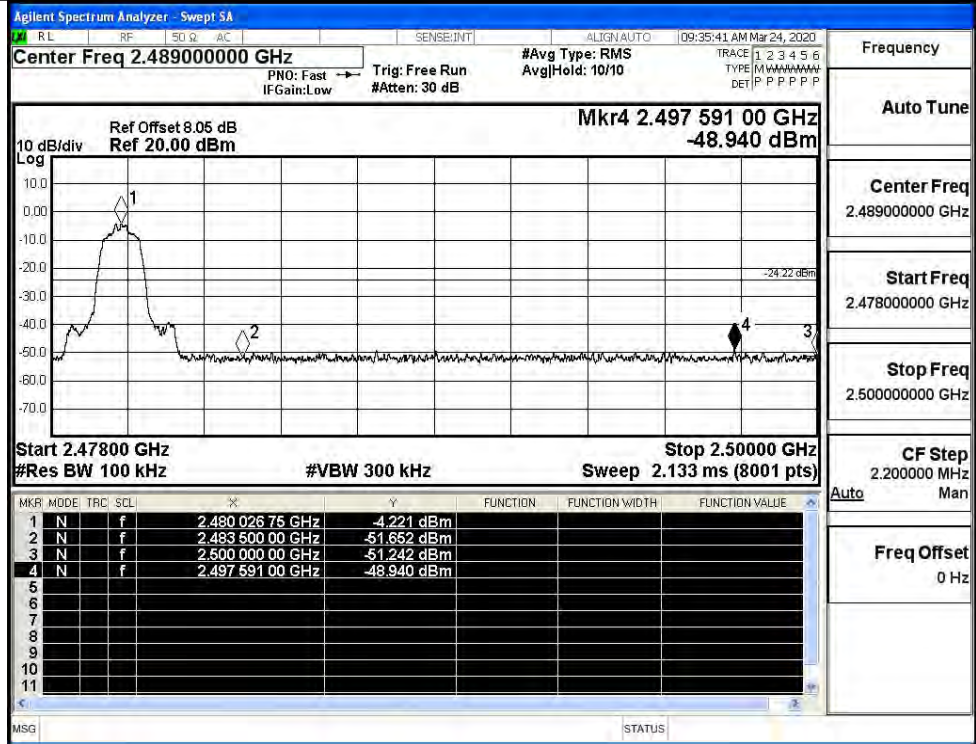
$\pi/4$ DQPSK/LCH/No Hop



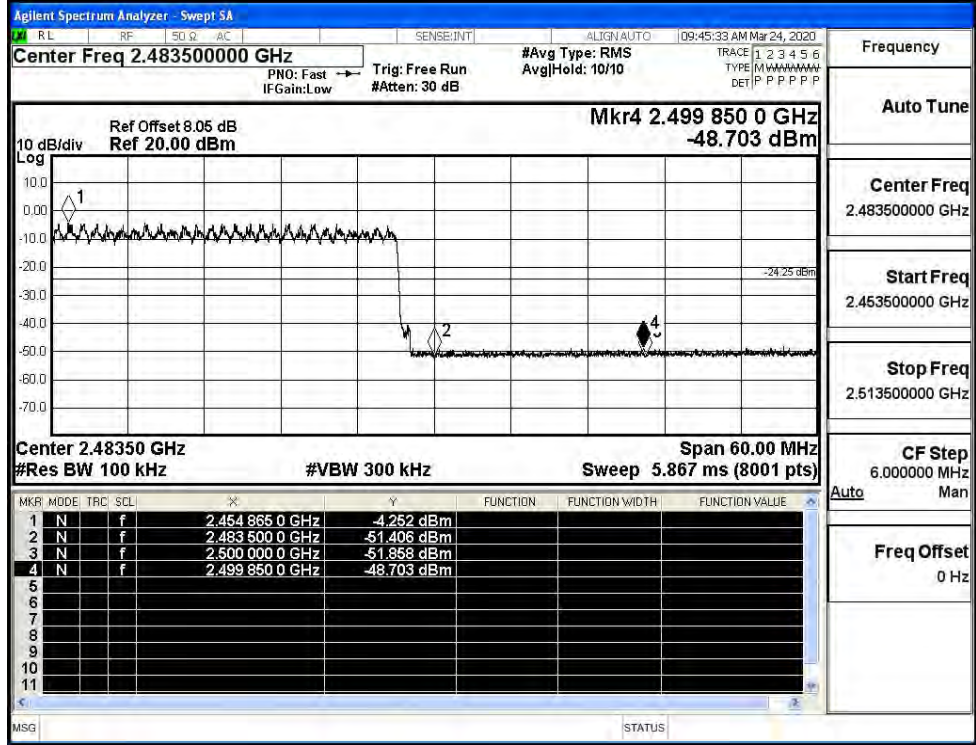
$\pi/4$ DQPSK/LCH/Hop



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



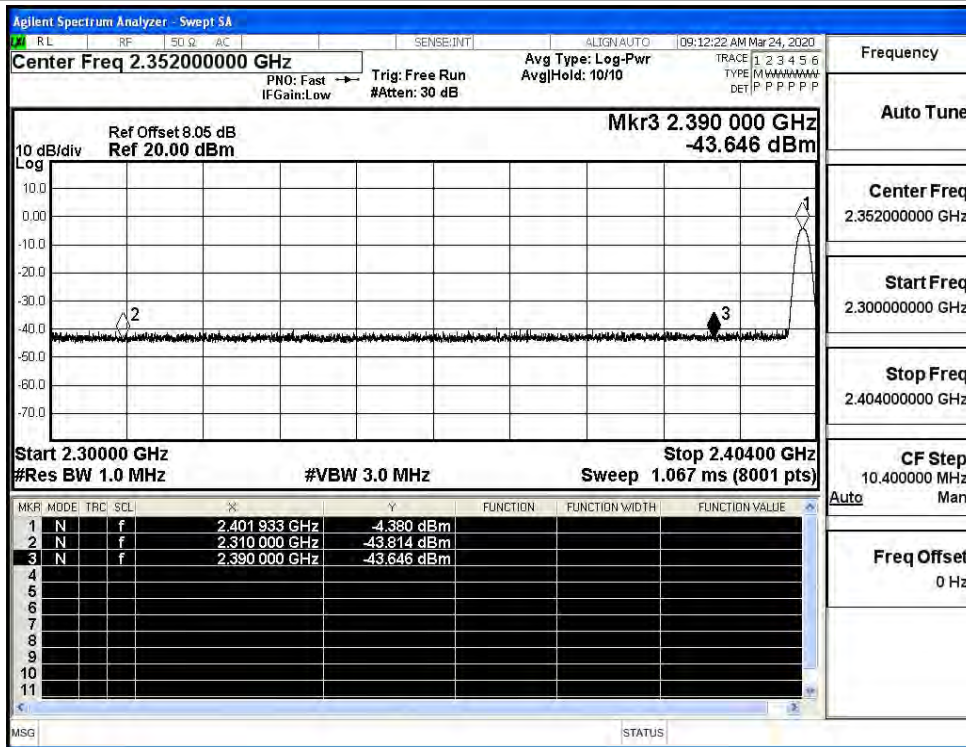
$\pi/4$ DQPSK/HCH/Hop



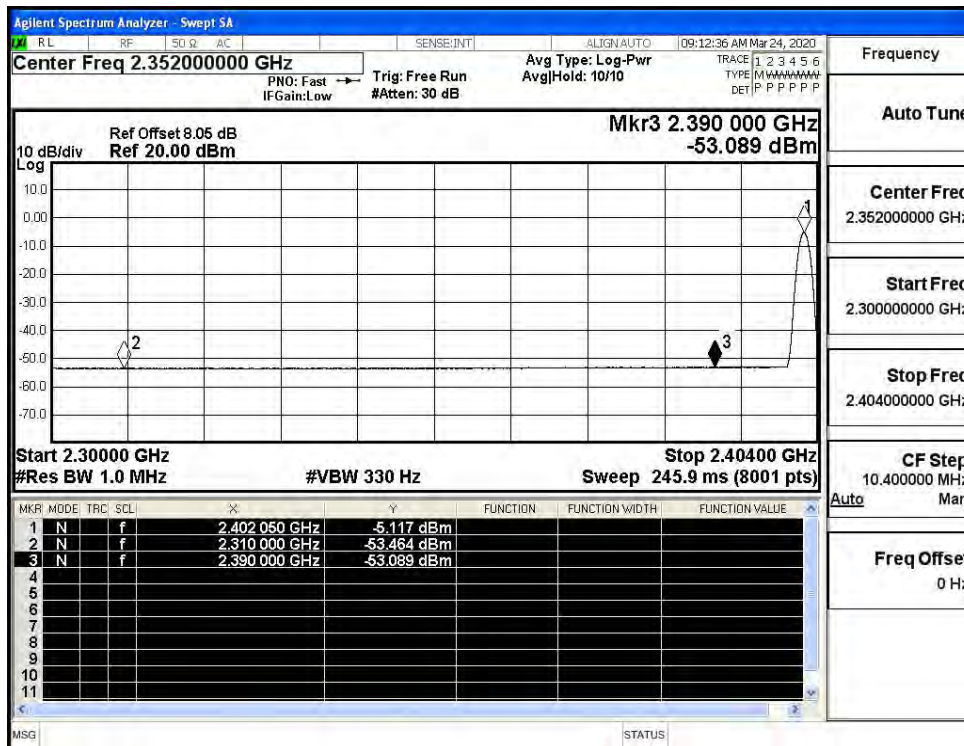
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.81	2.0	0	51.44	PEAK	74	PASS
	Off	2310.0	-53.46	2.0	0	41.79	AV	54	PASS
	Off	2390.0	-43.65	2.0	0	51.61	PEAK	74	PASS
	Off	2390.0	-53.09	2.0	0	42.17	AV	54	PASS
	Off	2483.5	-42.43	2.0	0	52.83	PEAK	74	PASS
	Off	2483.5	-52.57	2.0	0	42.69	AV	54	PASS
	Off	2500.0	-41.71	2.0	0	53.55	PEAK	74	PASS
	Off	2500.0	-52.40	2.0	0	42.86	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-42.27	2.0	0	52.99	PEAK	74	PASS
	Off	2310.0	-53.49	2.0	0	41.76	AV	54	PASS
	Off	2390.0	-42.51	2.0	0	52.75	PEAK	74	PASS
	Off	2390.0	-53.08	2.0	0	42.17	AV	54	PASS
	Off	2483.5	-42.76	2.0	0	52.50	PEAK	74	PASS
	Off	2483.5	-52.55	2.0	0	42.71	AV	54	PASS
	Off	2500.0	-42.62	2.0	0	52.64	PEAK	74	PASS
	Off	2500.0	-52.37	2.0	0	42.89	AV	54	PASS

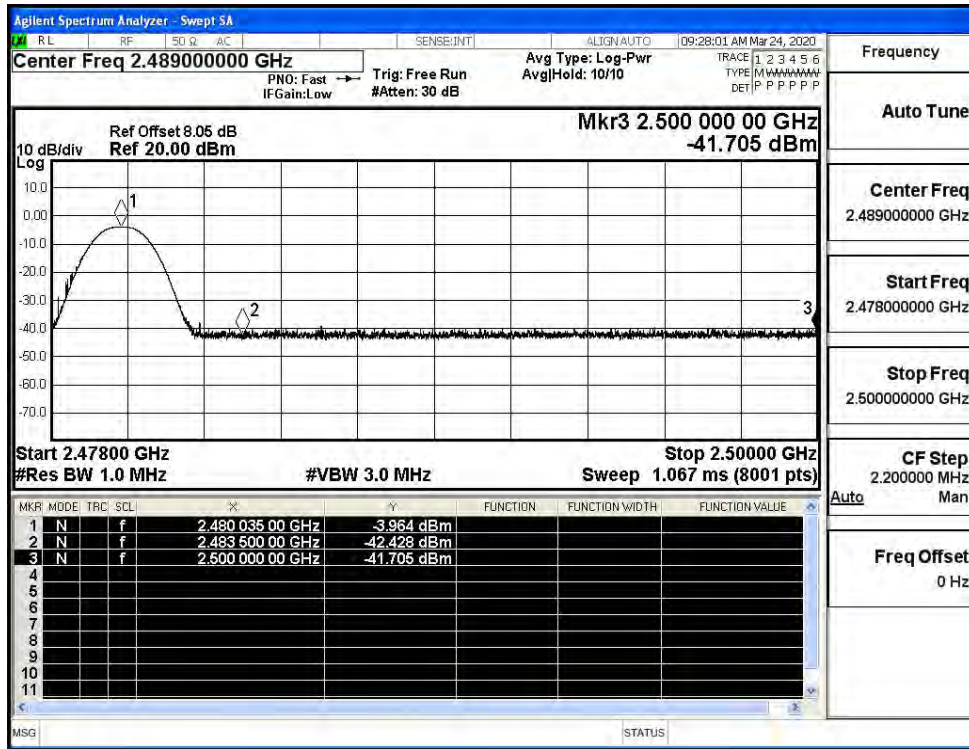
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



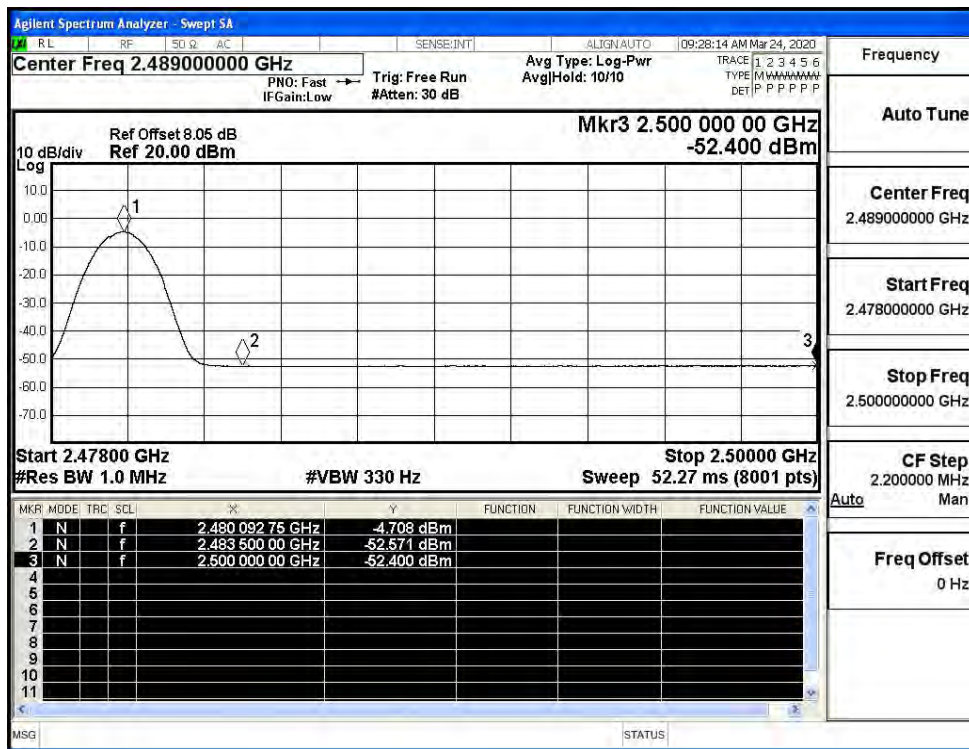
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



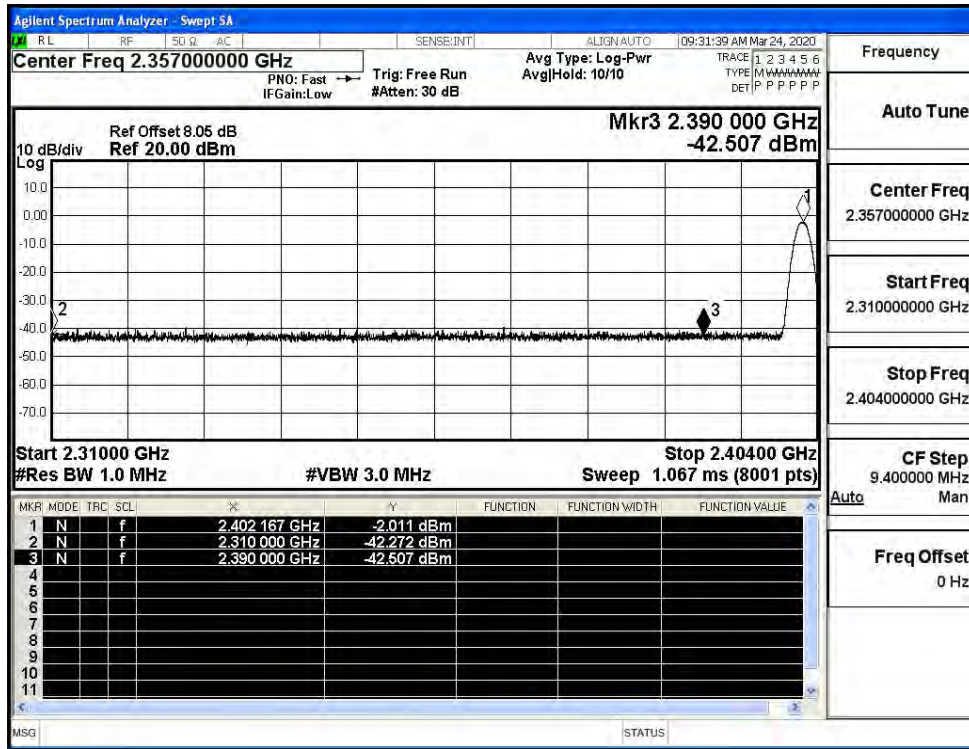
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



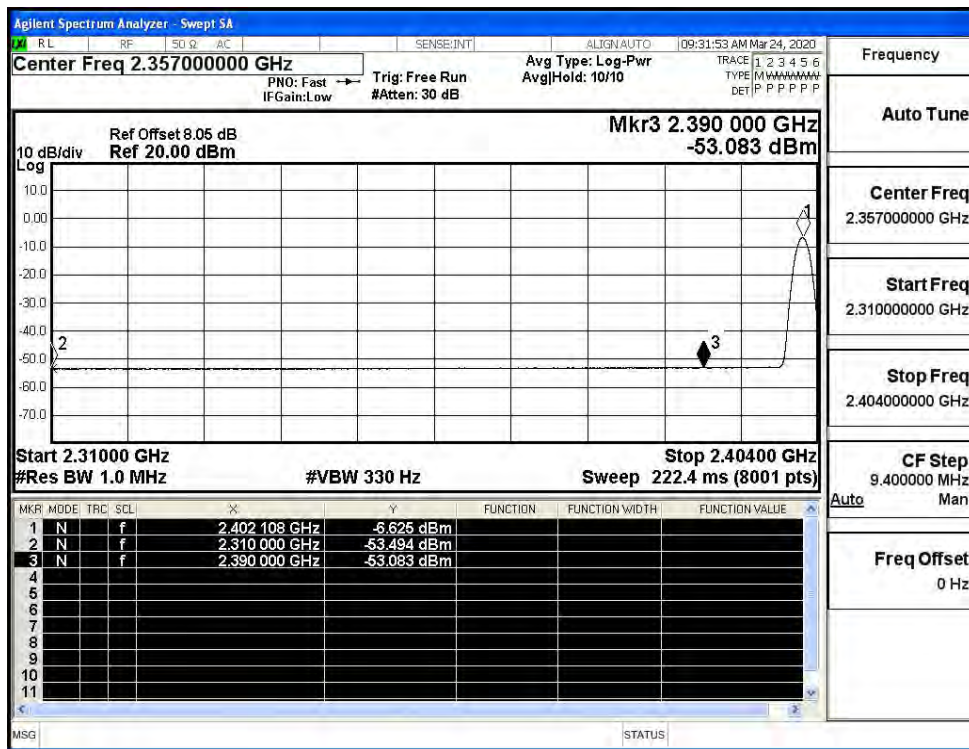
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



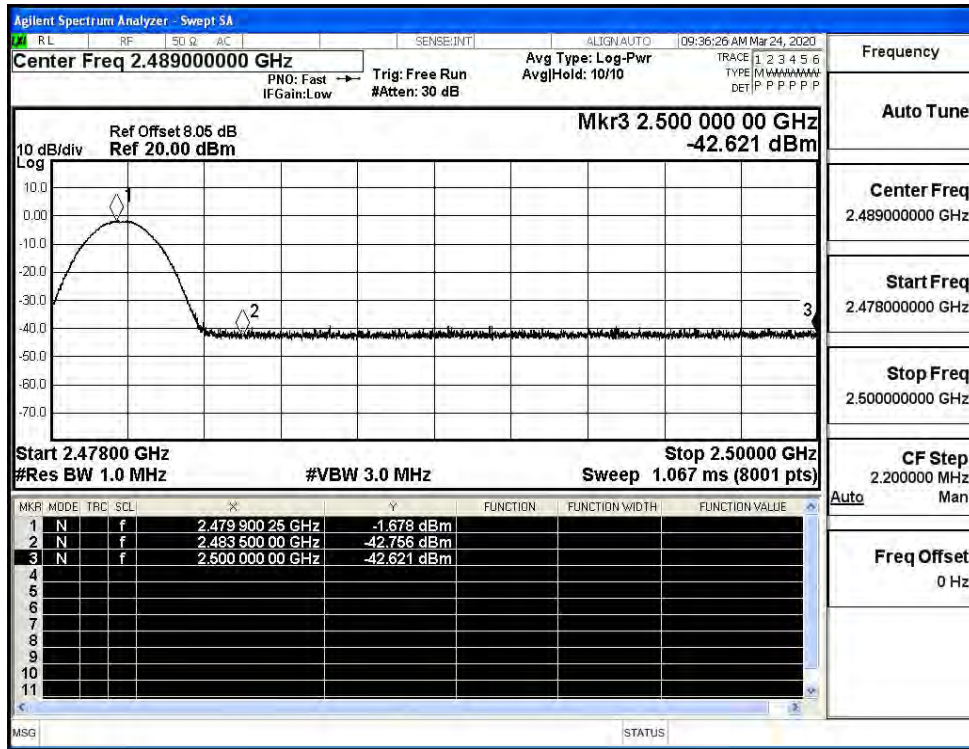
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



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)

