

Appendix A

RF Test Data for BT V3.0 (BDR) (Conducted Measurement)

Product Name: Laser Projection Keyboard

Trade Mark: GUARD BIRD

Test Model: M1

Environmental Conditions

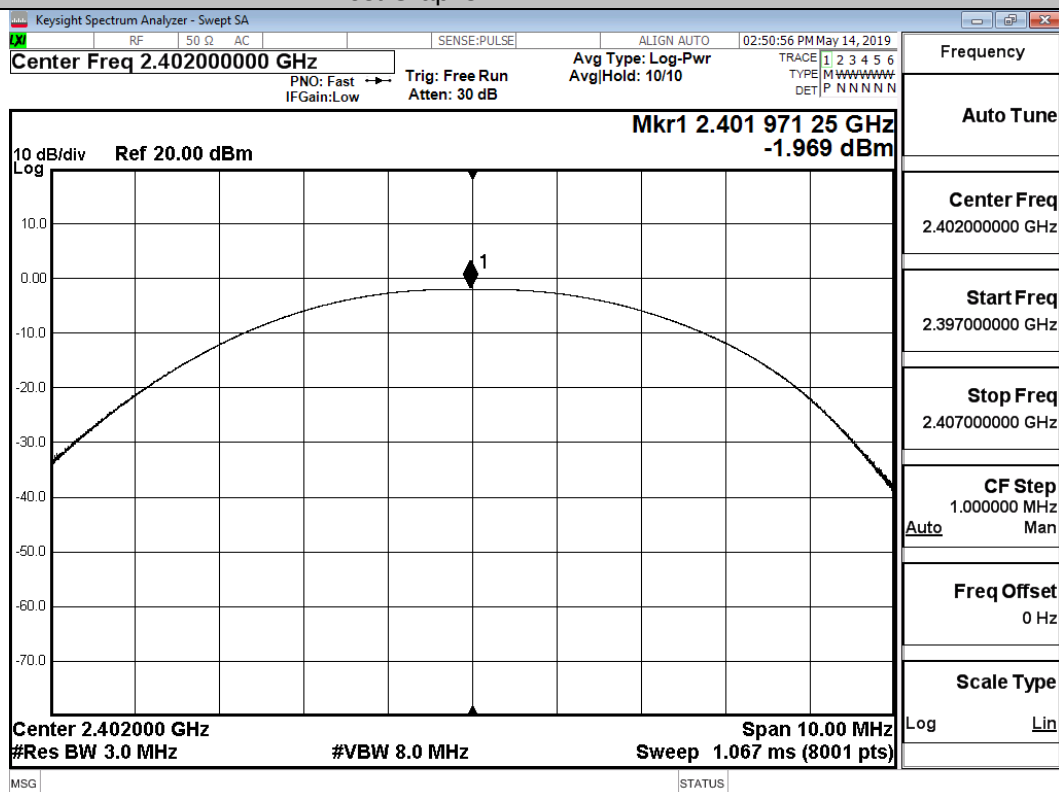
Temperature:	23.5 ° C
Relative Humidity:	65%
ATM Pressure:	100.0 kPa
Test Engineer:	CHUANG WANG
Supervised by:	JAYDEN ZHUO

A.1 Maximum Conducted Peak Output Power

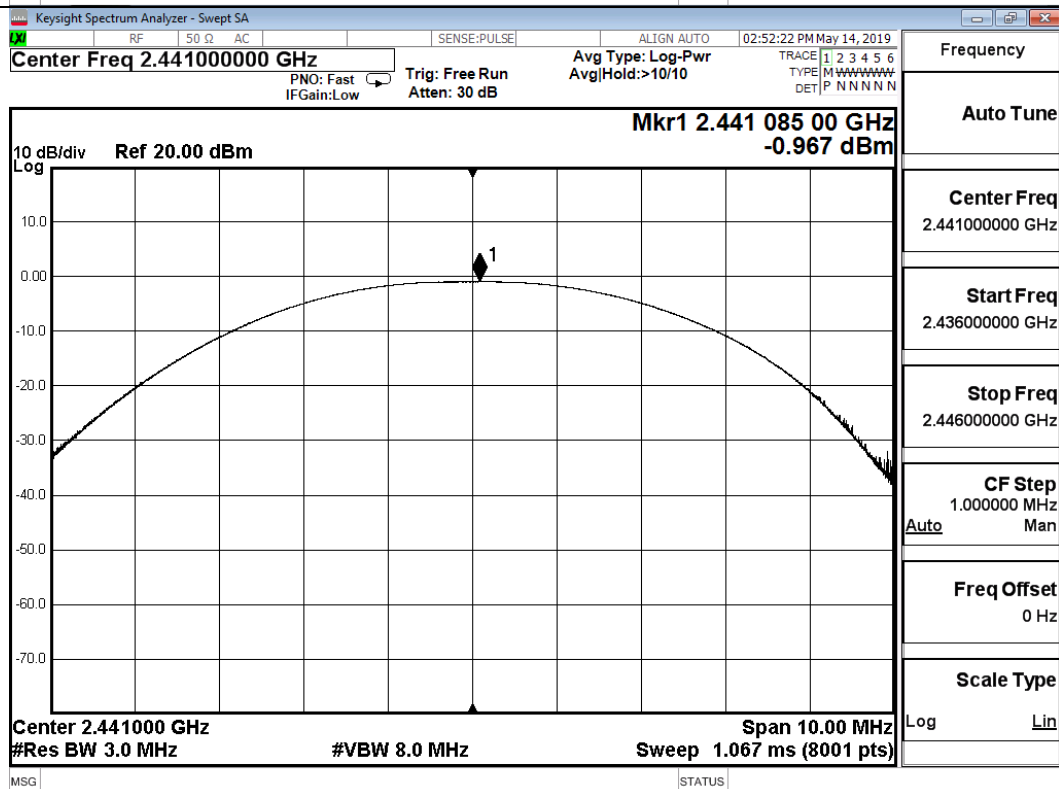
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-1.969	21	PASS
	MCH	-0.967	21	PASS
	HCH	-1.048	21	PASS

Test Graphs

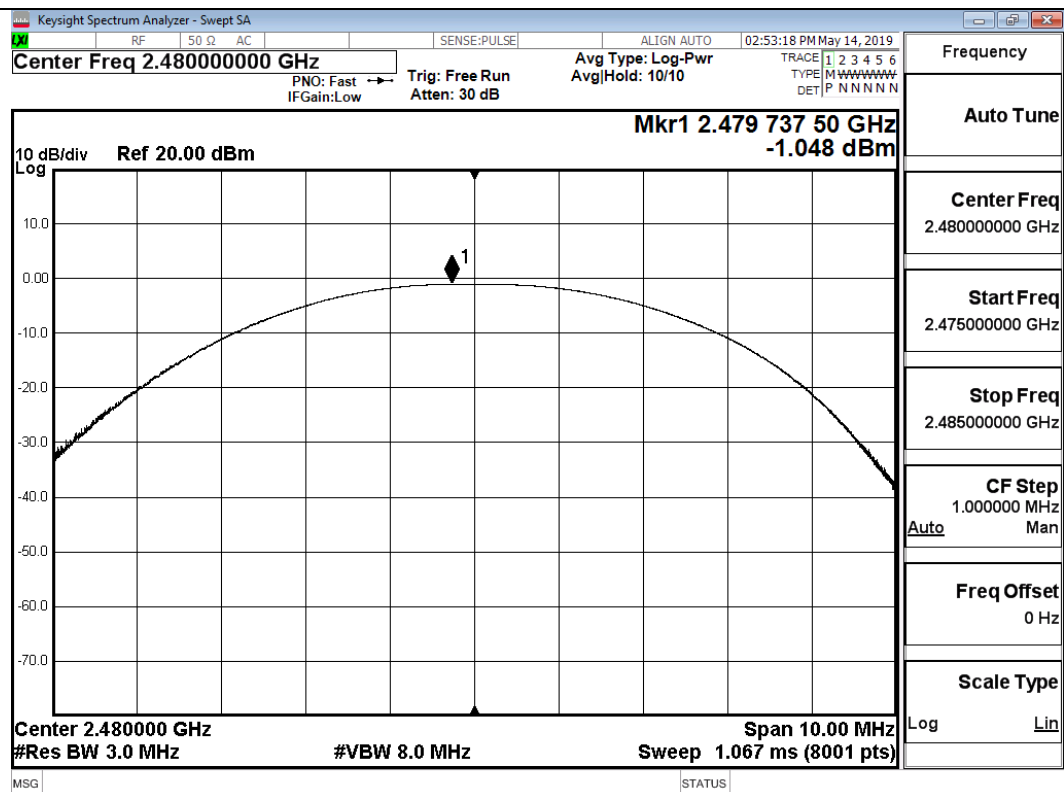
GFSK/LCH



GFSK/MCH

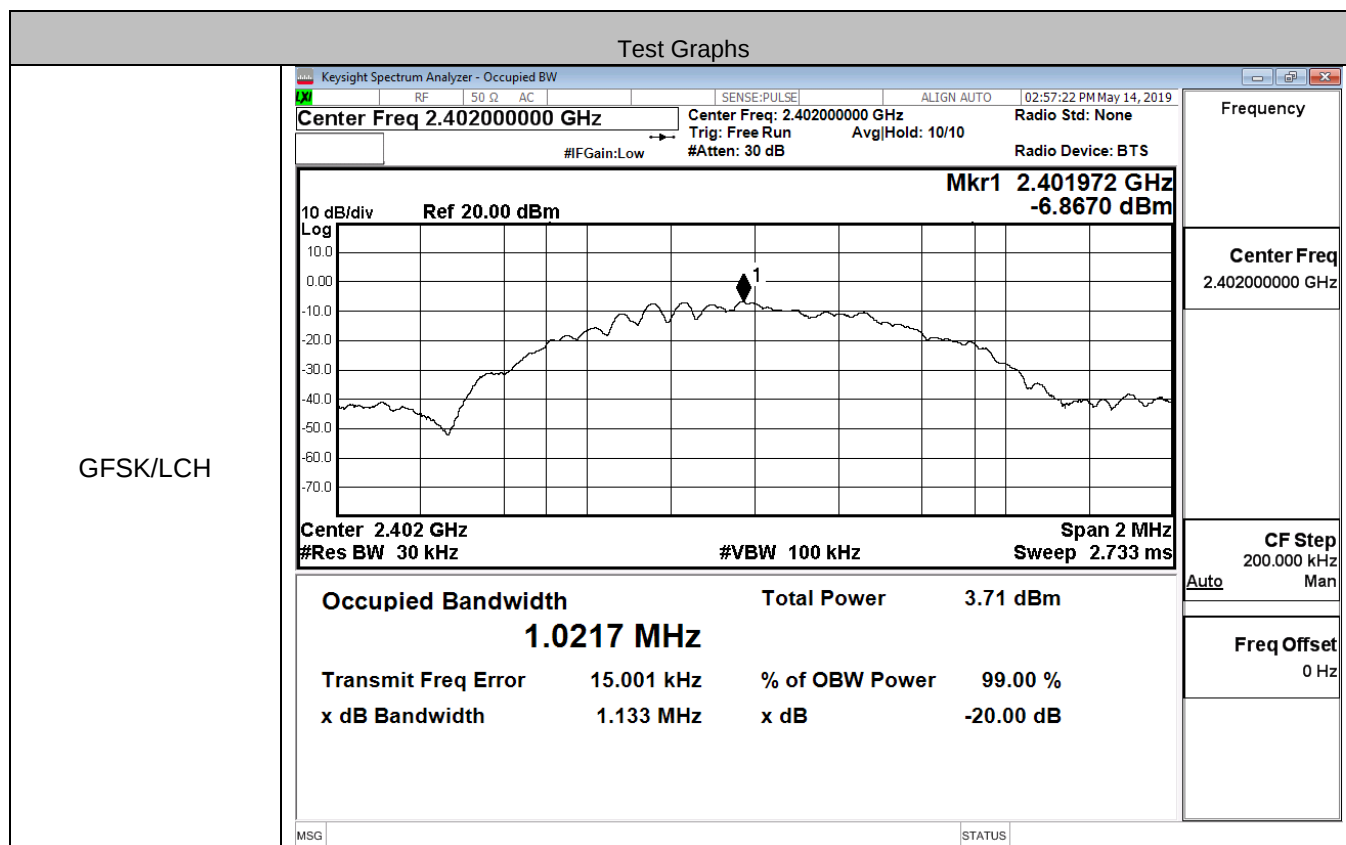


GFSK/HCH

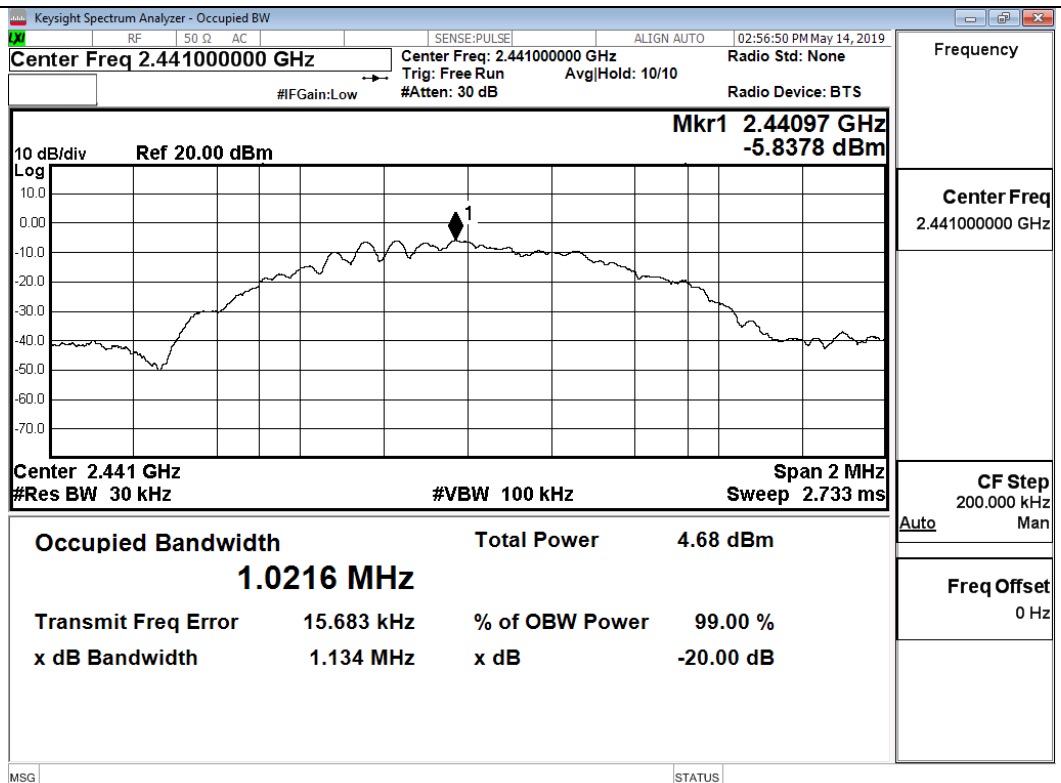


A.2 99% and 20dB Bandwidth

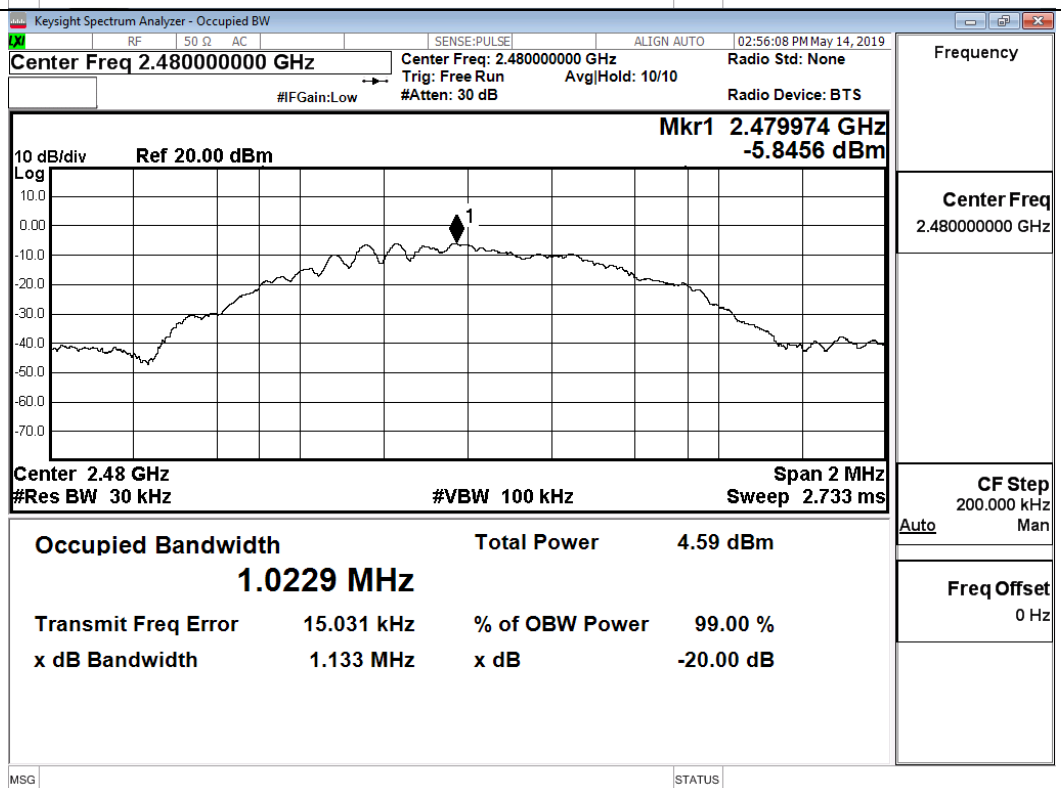
Mode	Channel.	99% Bandwidth [MHz]	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.0217	1.133	Not Specified	PASS
	MCH	1.0216	1.134	Not Specified	PASS
	HCH	1.0229	1.133	Not Specified	PASS



GFSK/MCH

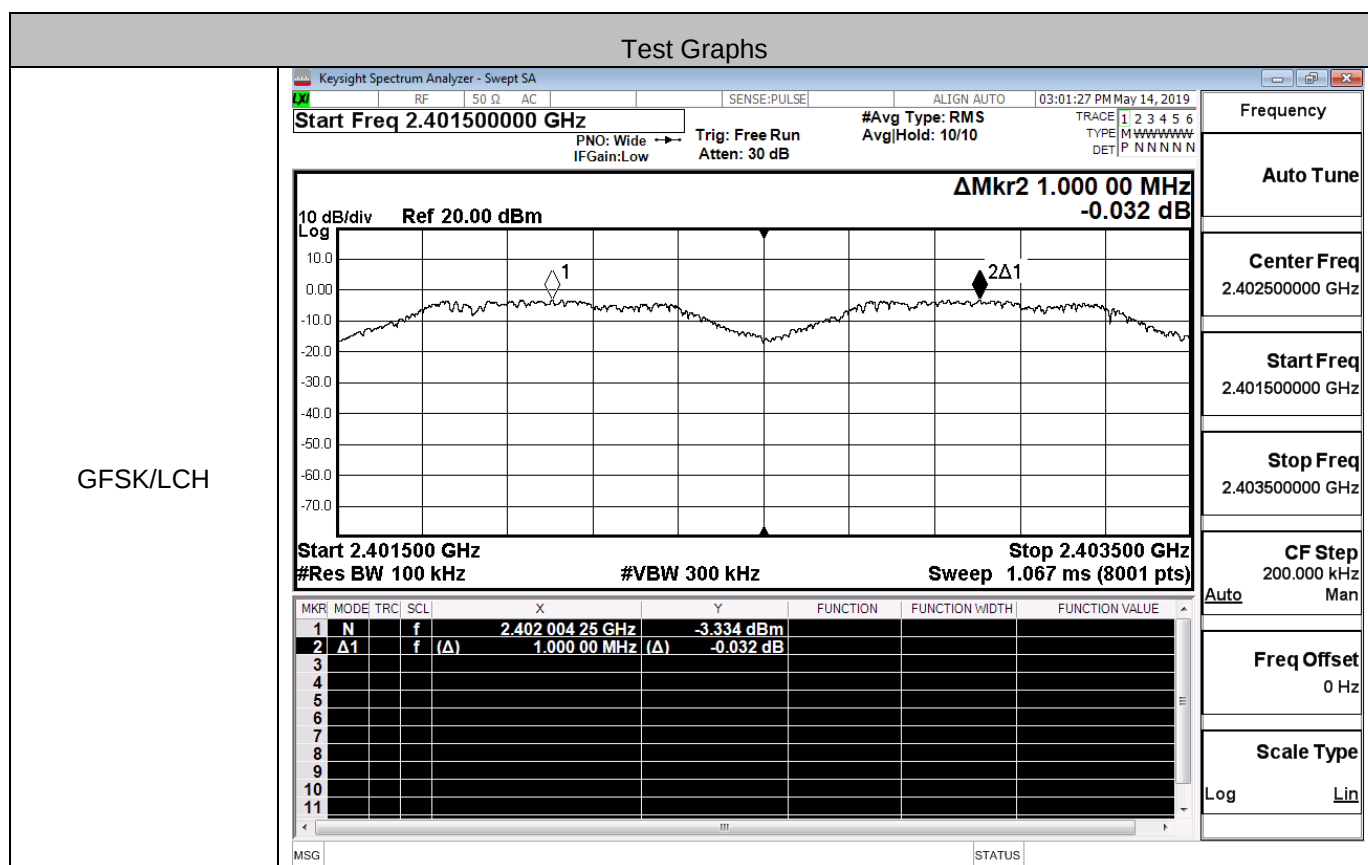


GFSK/HCH

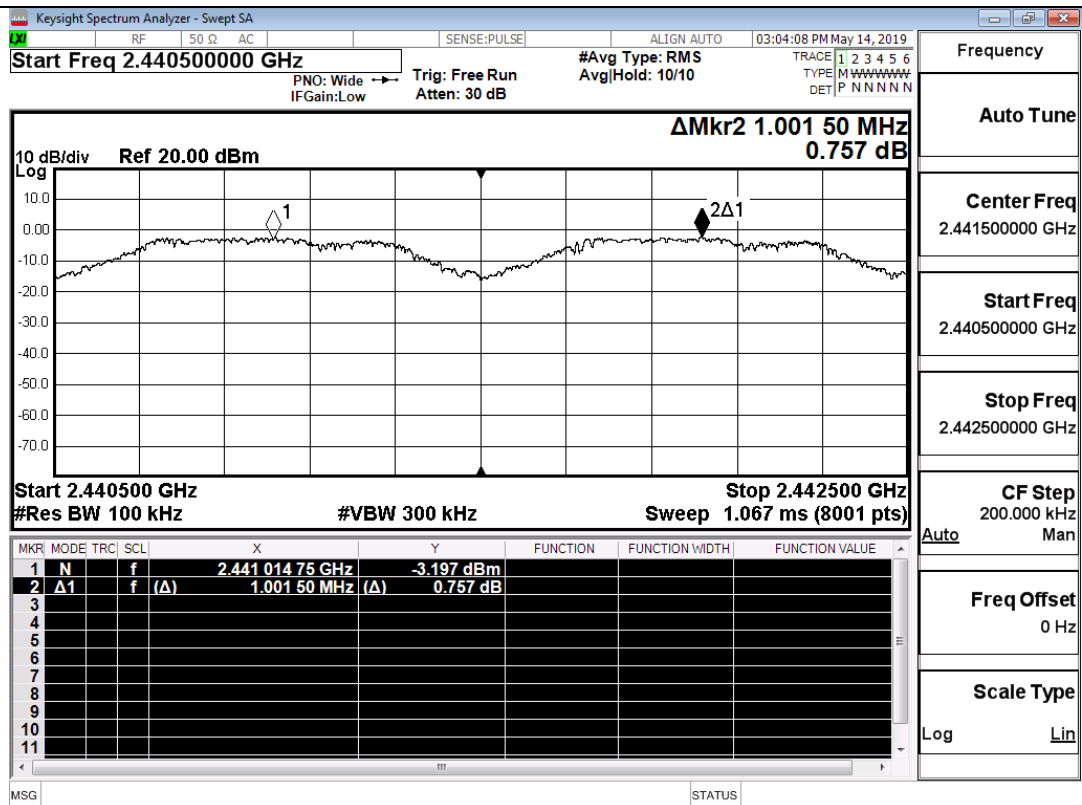


A.3 Carrier Frequency Separation

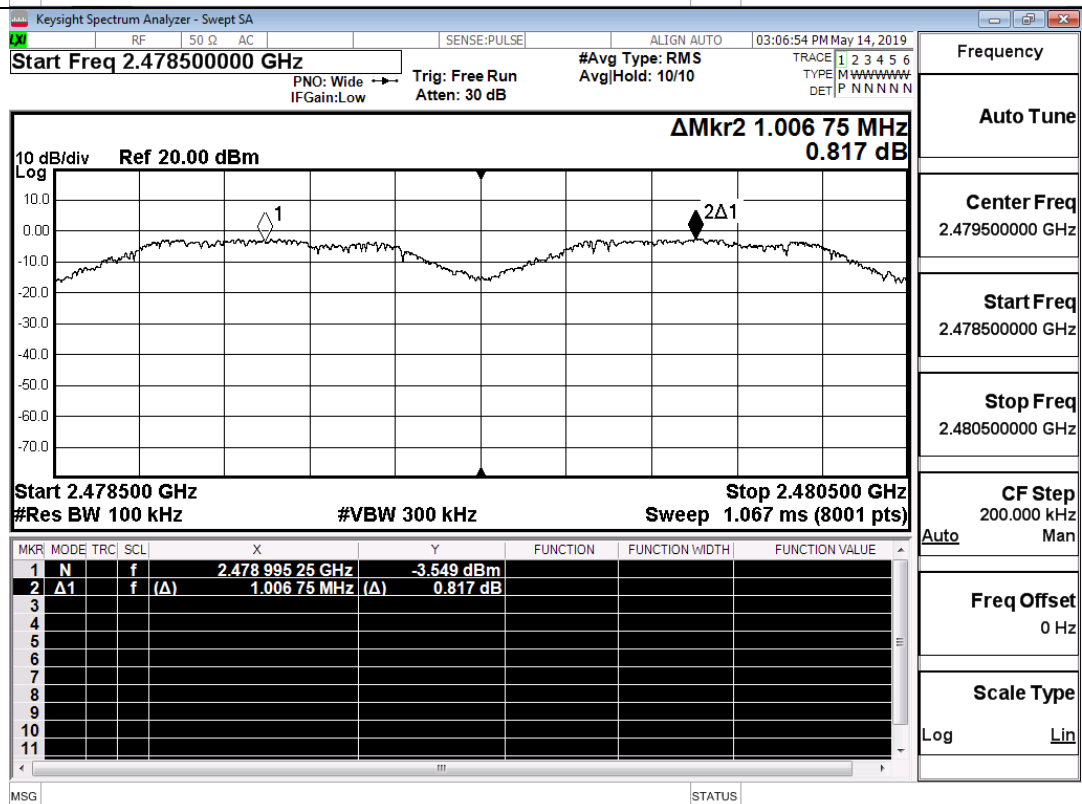
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz] 2/3*20dB Bandwidth	Verdict
GFSK	LCH	1.000	0.755	PASS
	MCH	1.002	0.756	PASS
	HCH	1.007	0.755	PASS



GFSK/MCH

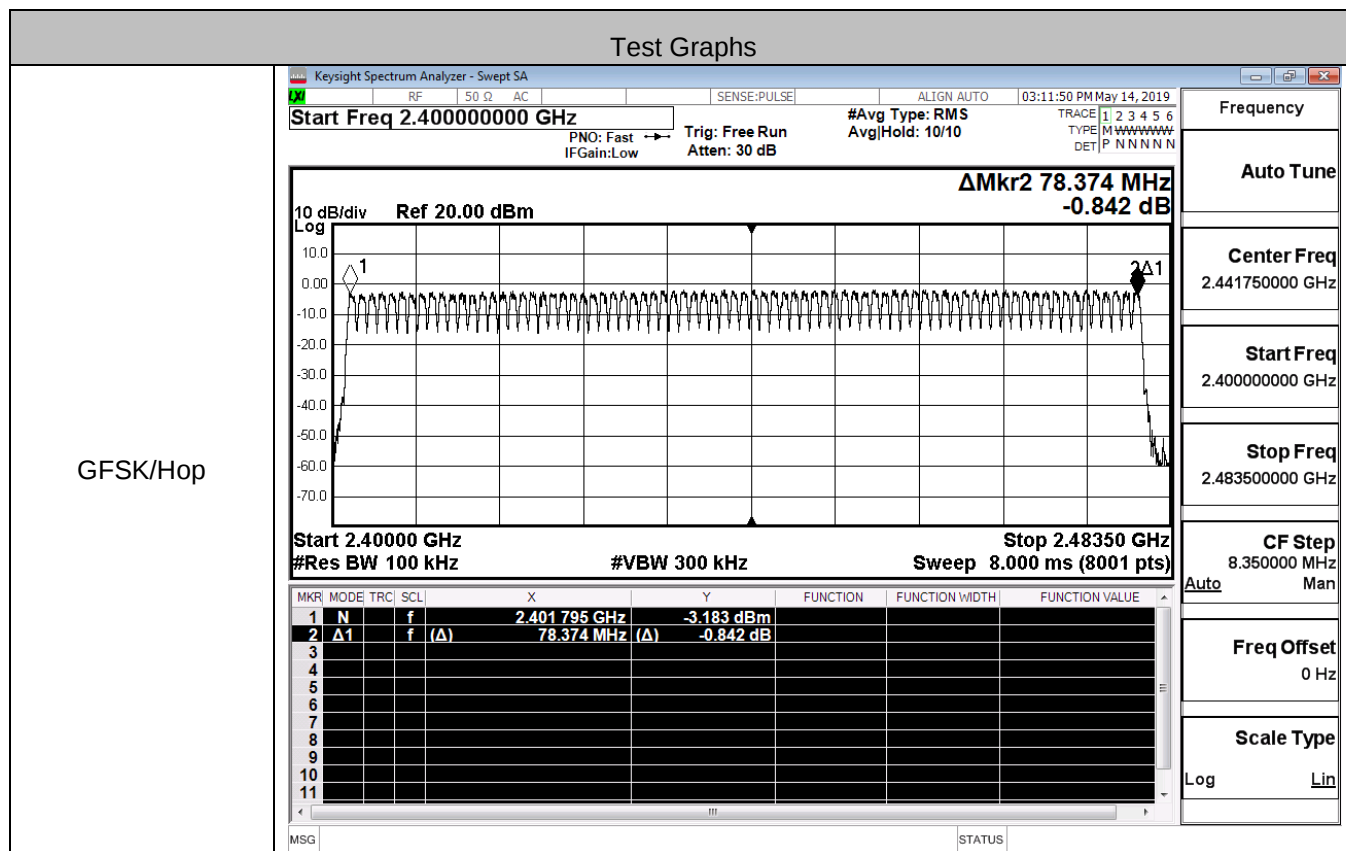


GFSK/HCH



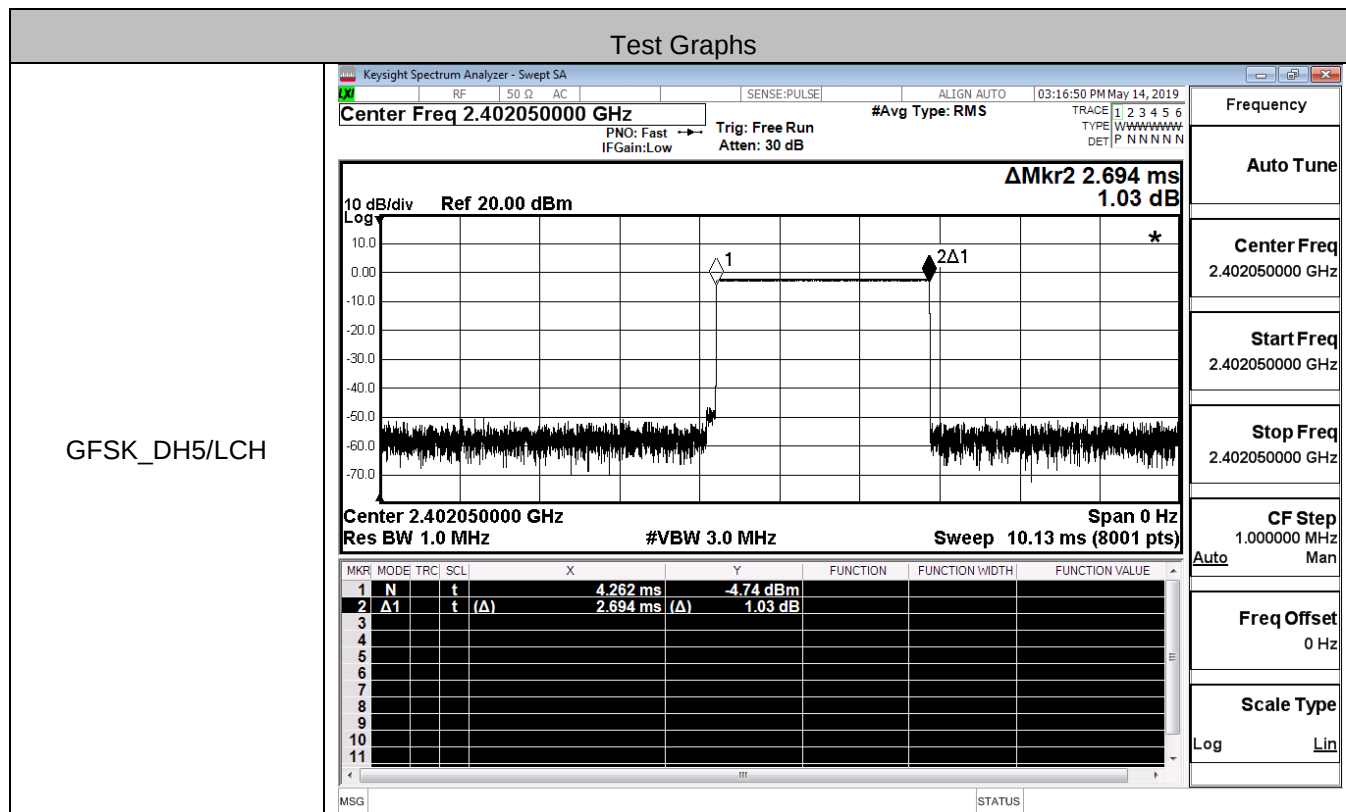
A.4 Hopping Channel Number

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

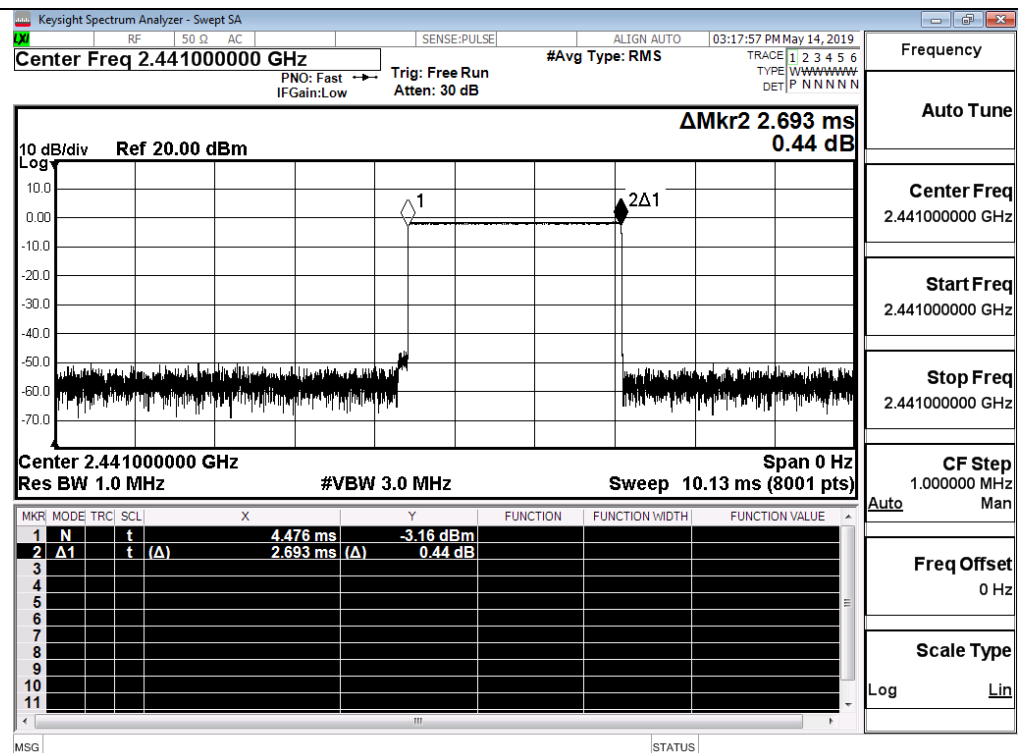


A.5 Dwell Time

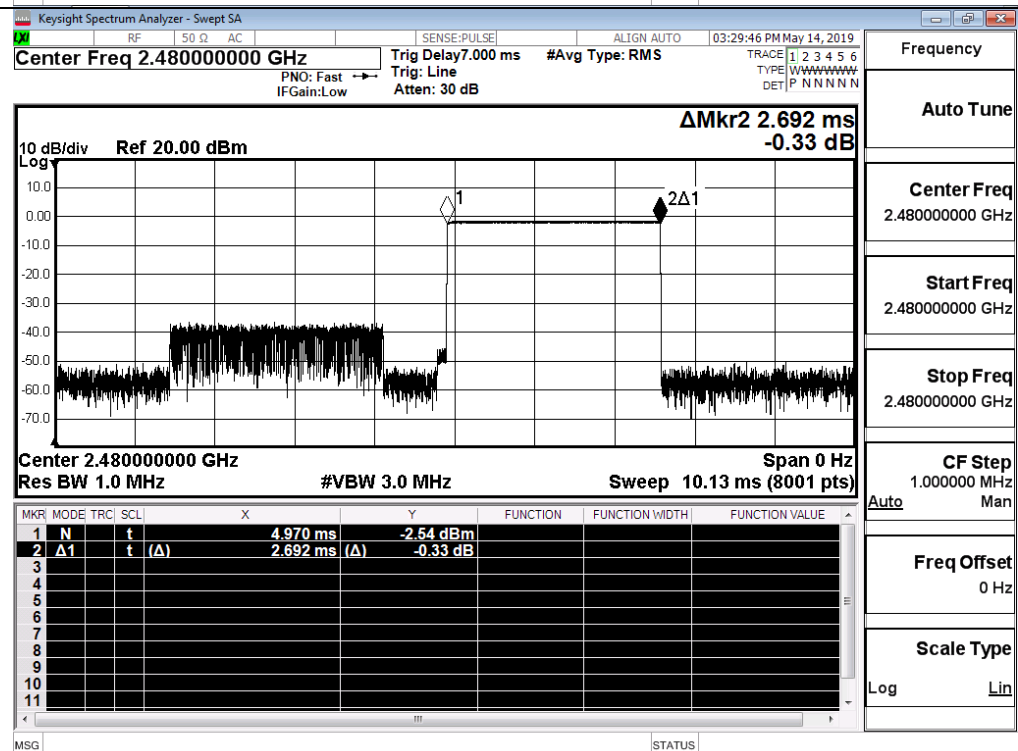
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.69	106.7	0.287	0.4	PASS
	DH5	MCH	2.69	106.7	0.287	0.4	PASS
	DH5	HCH	2.69	106.7	0.287	0.4	PASS



GFSK_DH5/MCH



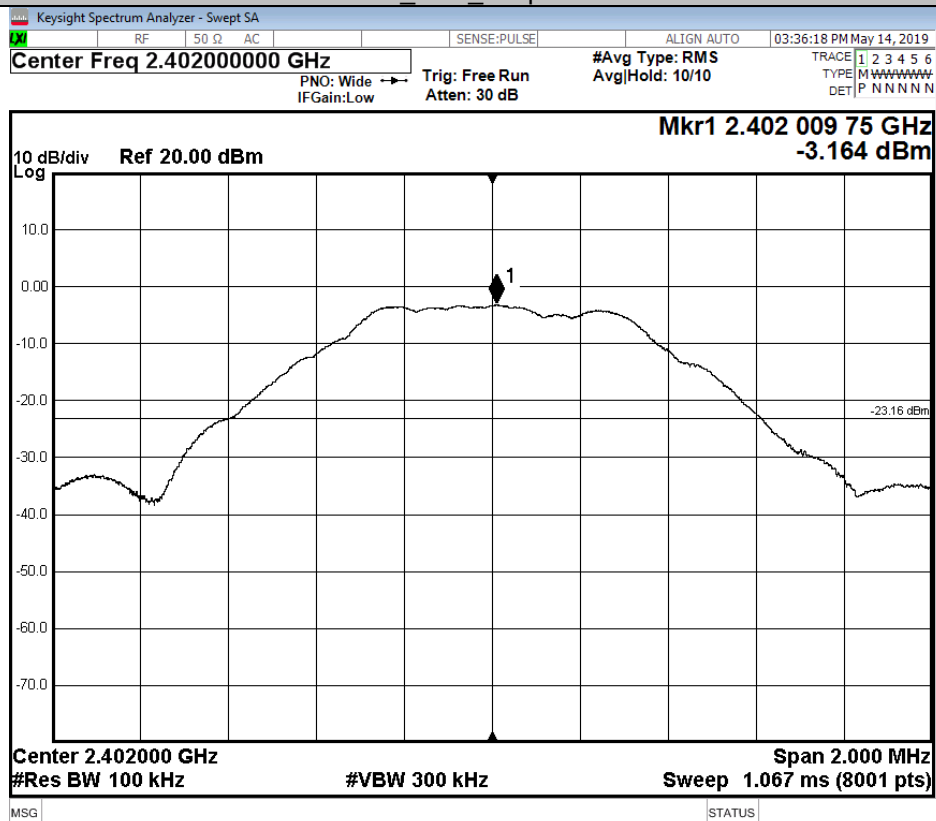
GFSK_DH5/HCH



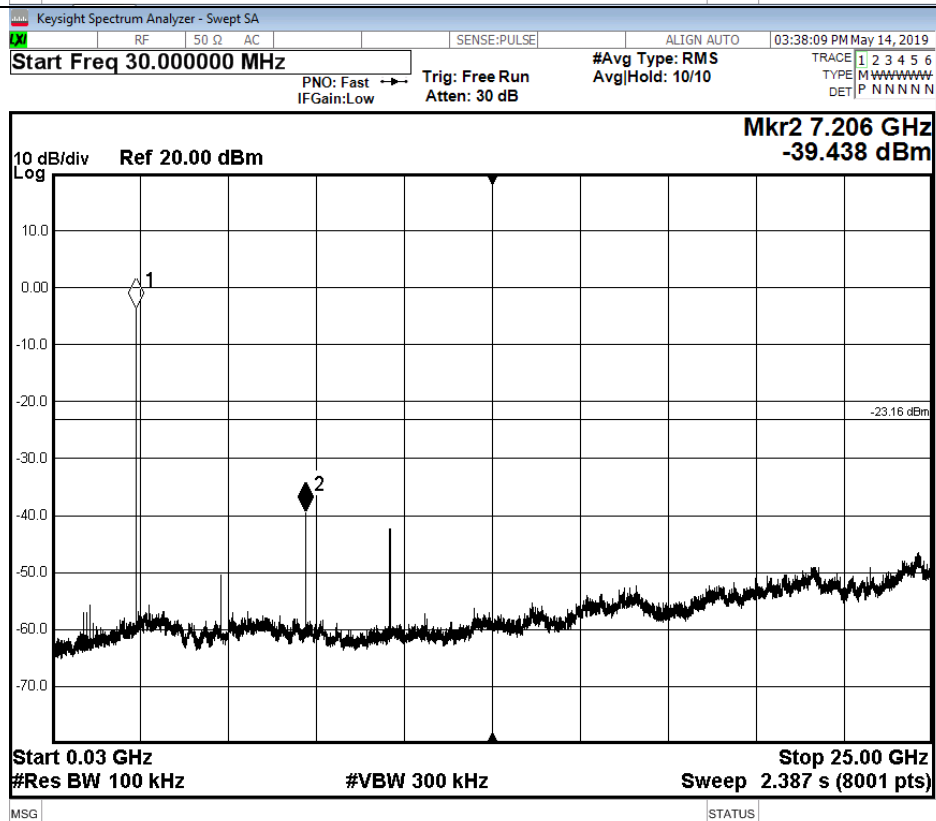
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-3.164	-39.438	-23.164	PASS
	MCH	-2.302	-38.643	-22.302	PASS
	HCH	-2.314	-39.544	-22.314	PASS

Pref

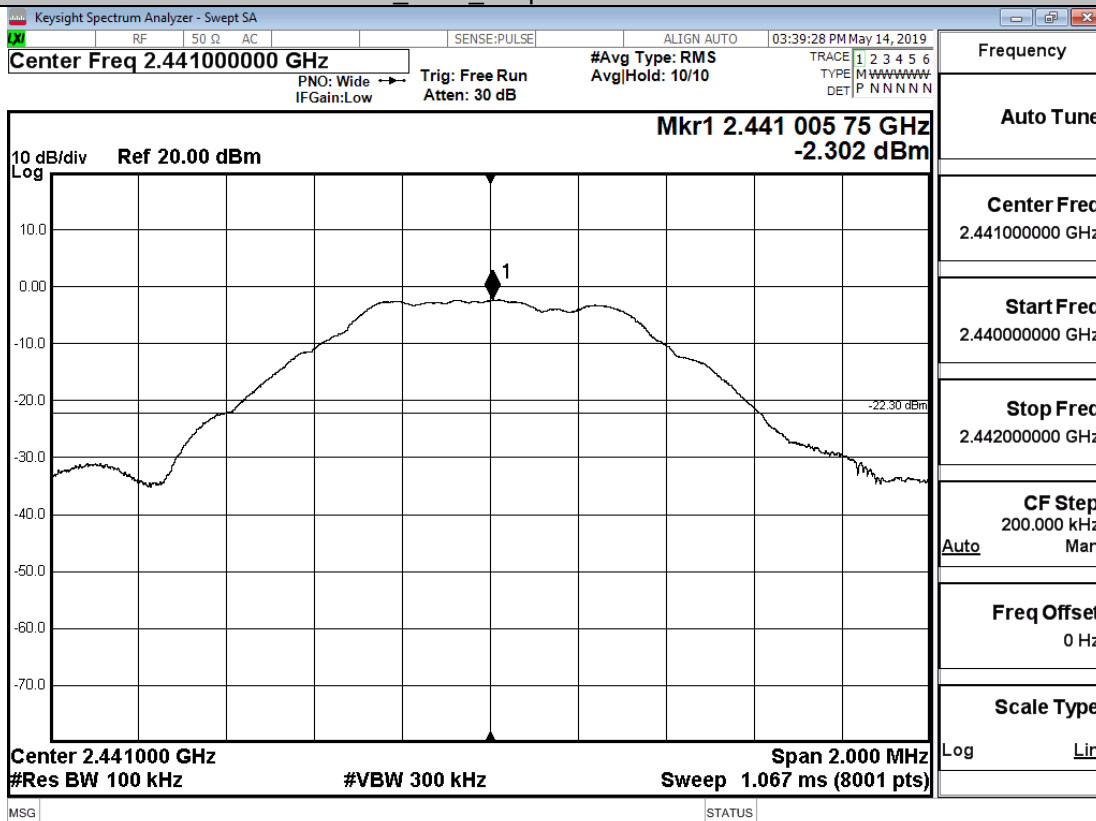


Puw

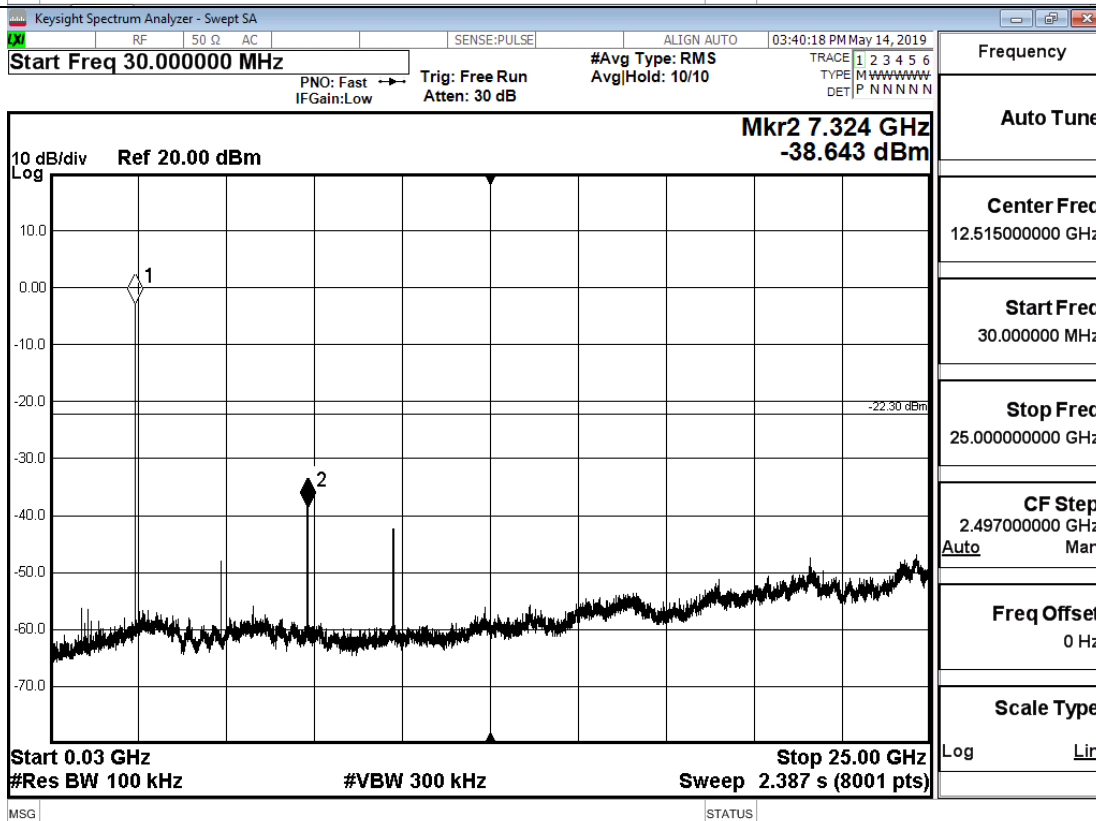


GFSK_MCH_Graphs

Pref

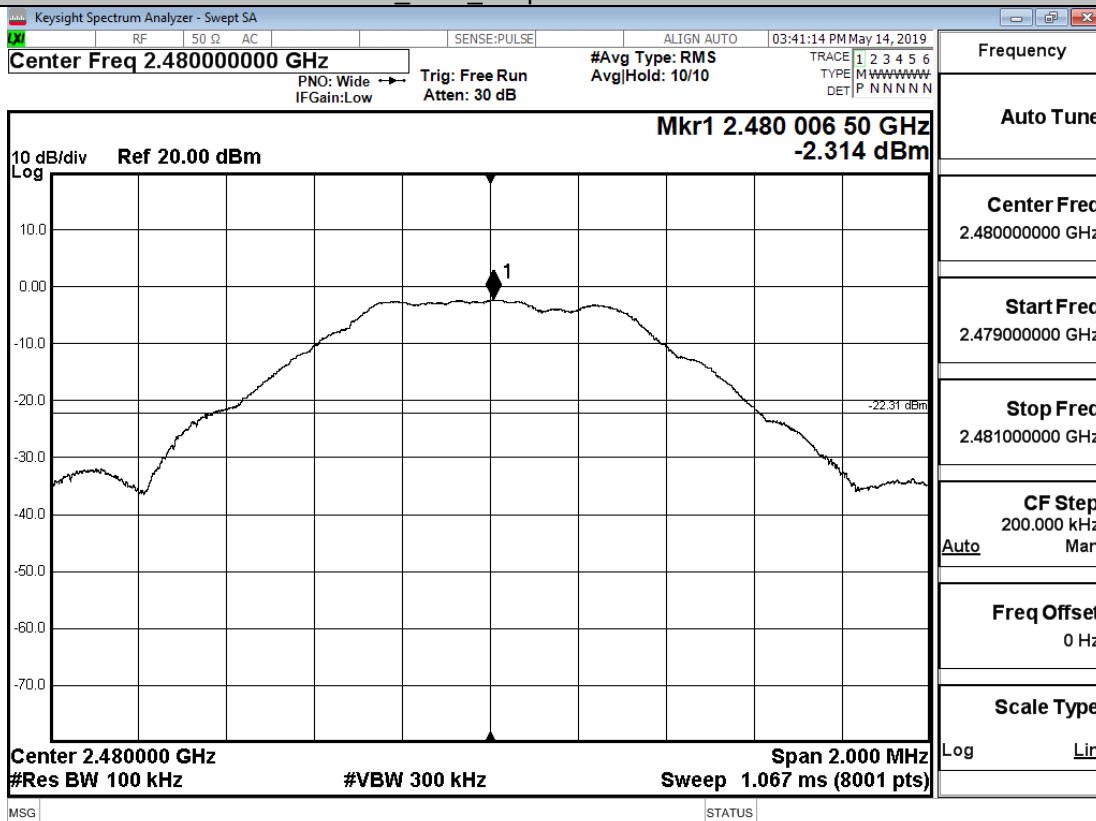


Puw

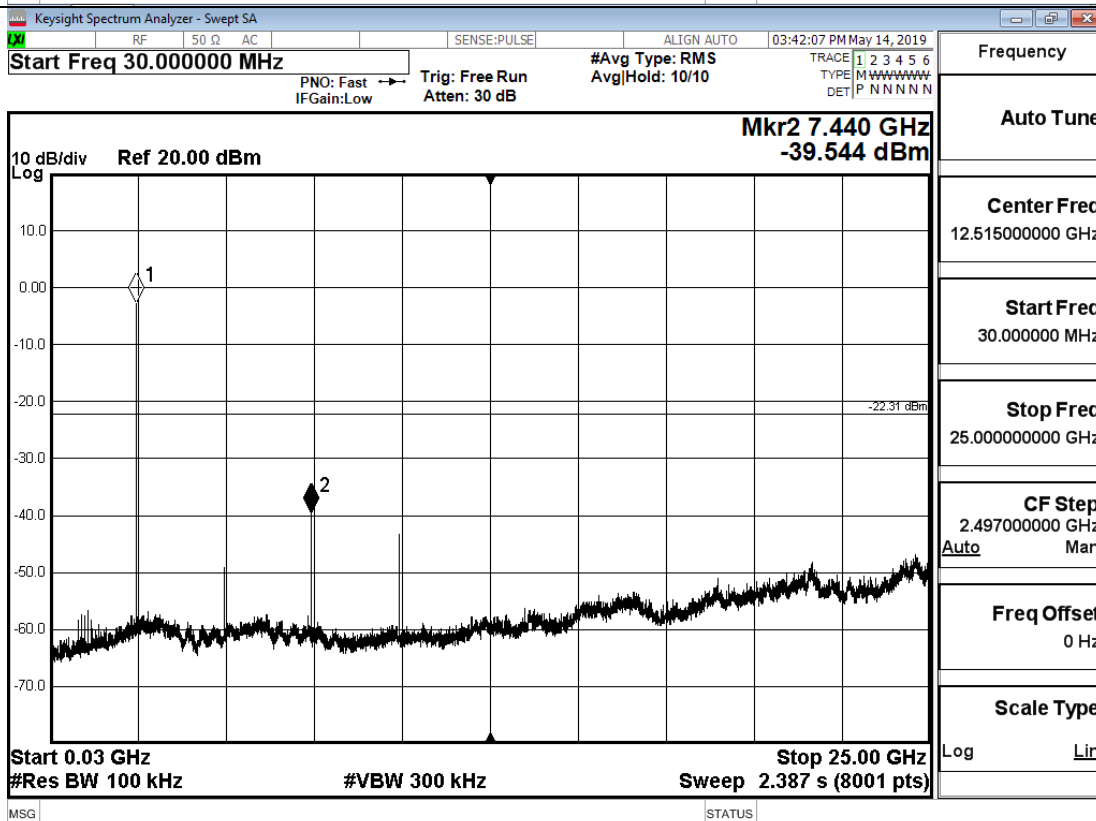


GFSK_HCH_Graphs

Pref



Puw

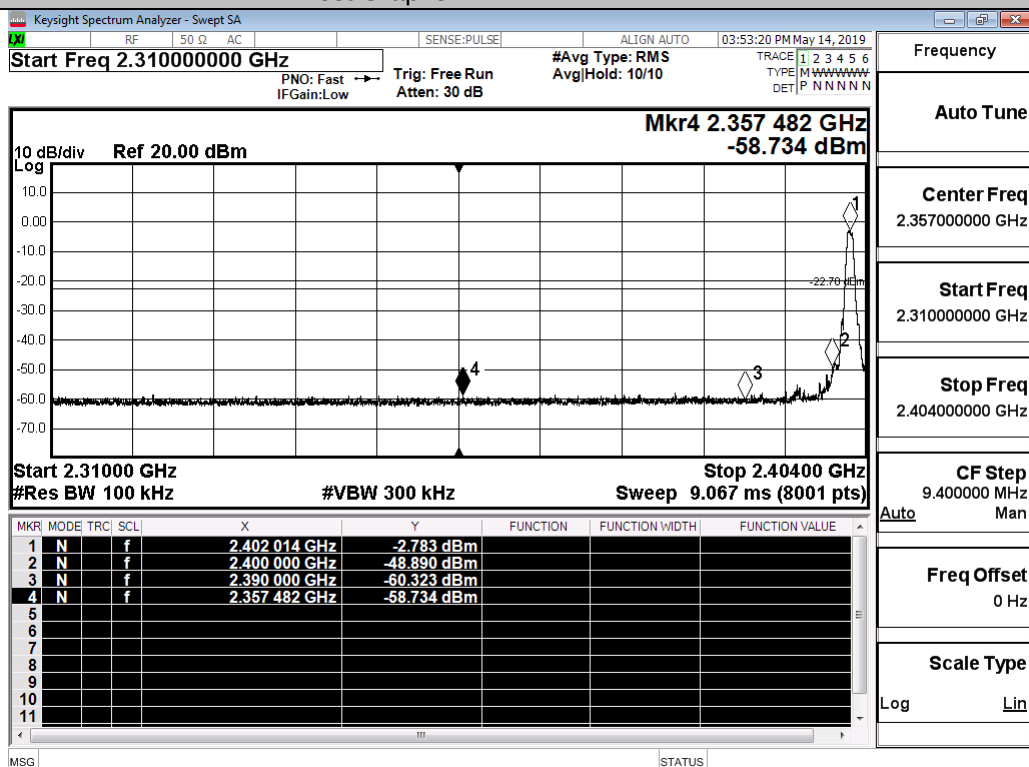


A.7 Band-edge for RF Conducted Emissions

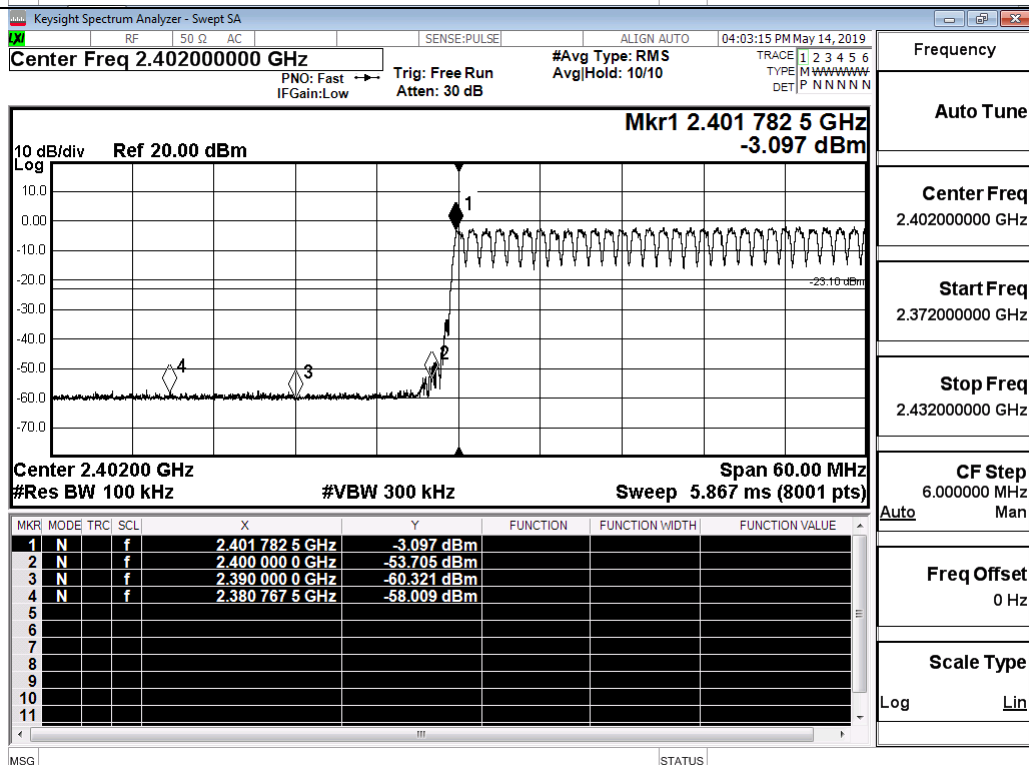
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-2.783	Off	-48.890	-13.88	PASS
			-3.097	On	-53.705	-14.32	PASS
	HCH	2480	-1.640	Off	-57.379	-11.34	PASS
			-1.823	On	-57.379	-11.45	PASS

Test Graphs

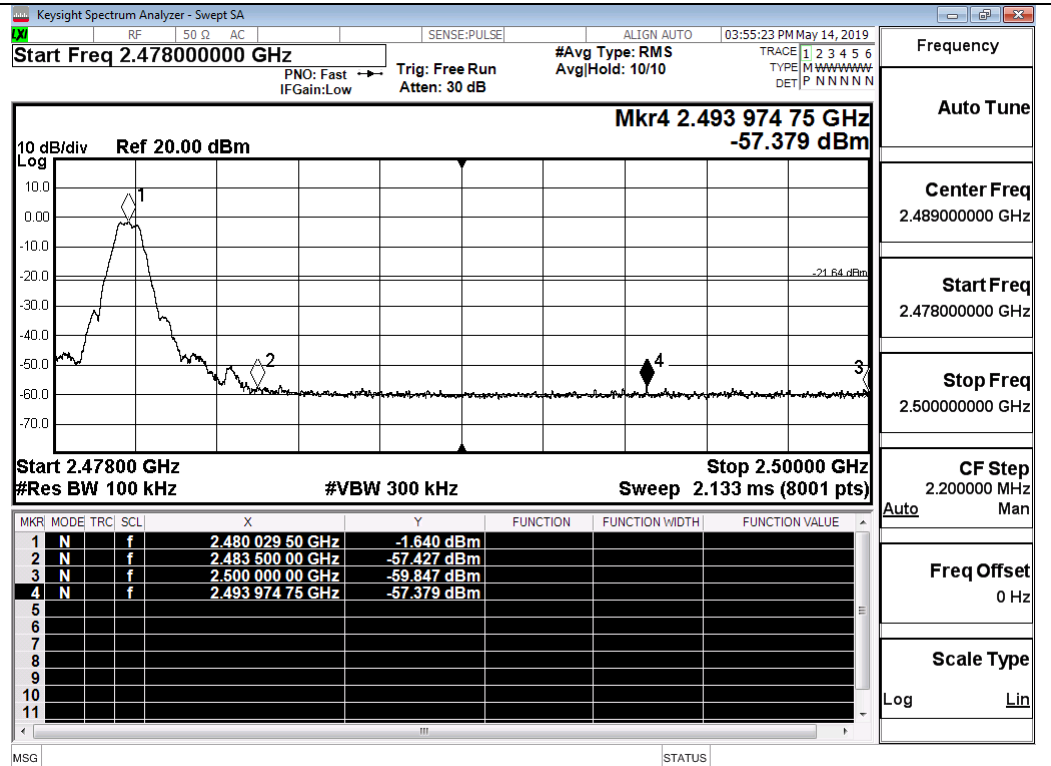
GFSK/LCH/No Hop



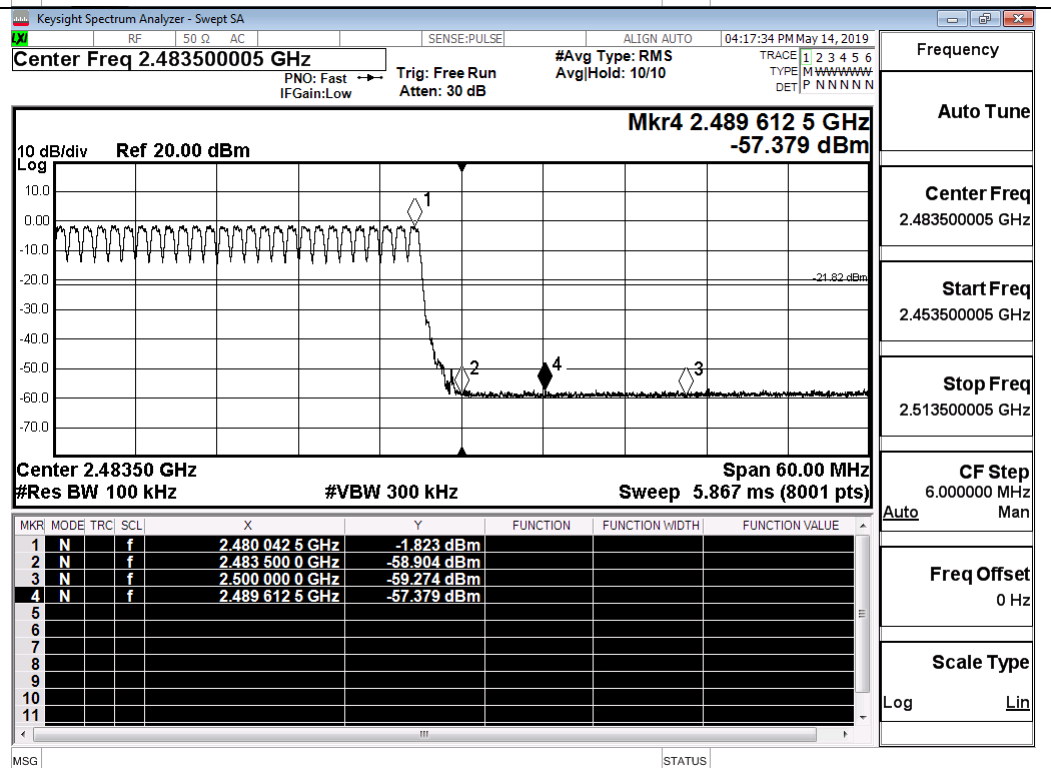
GFSK/LCH/Hop



GFSK/HCH/No Hop



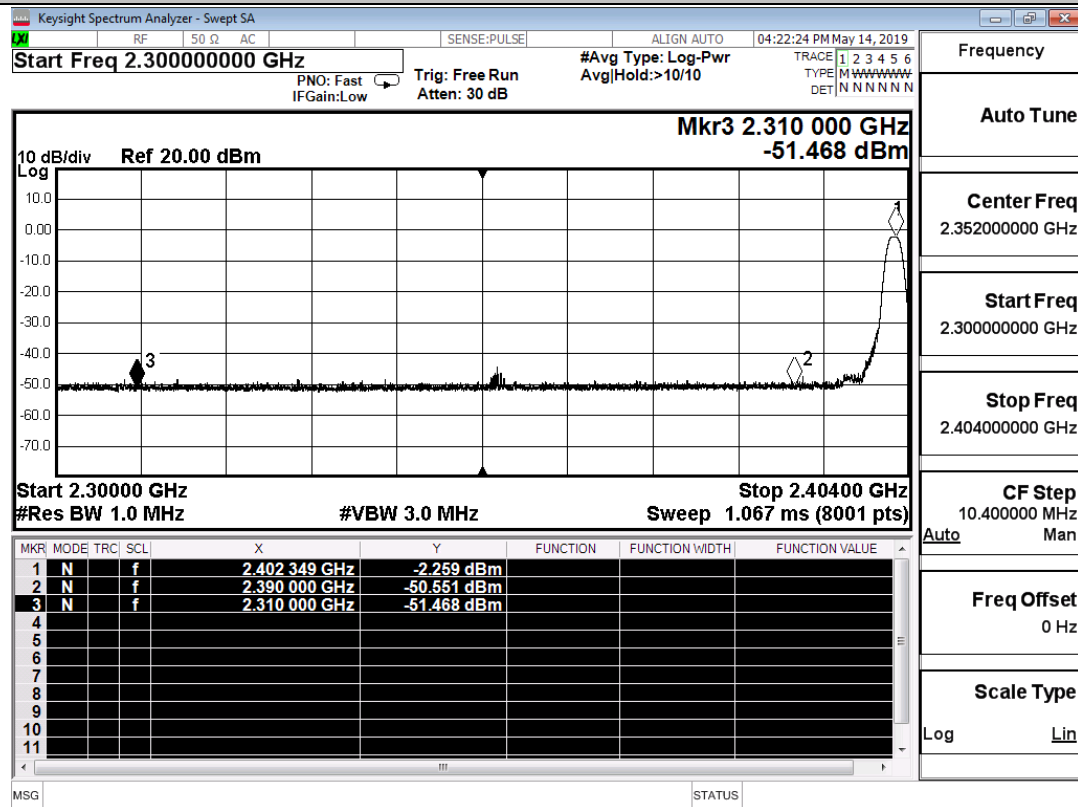
GFSK/HCH/Hop



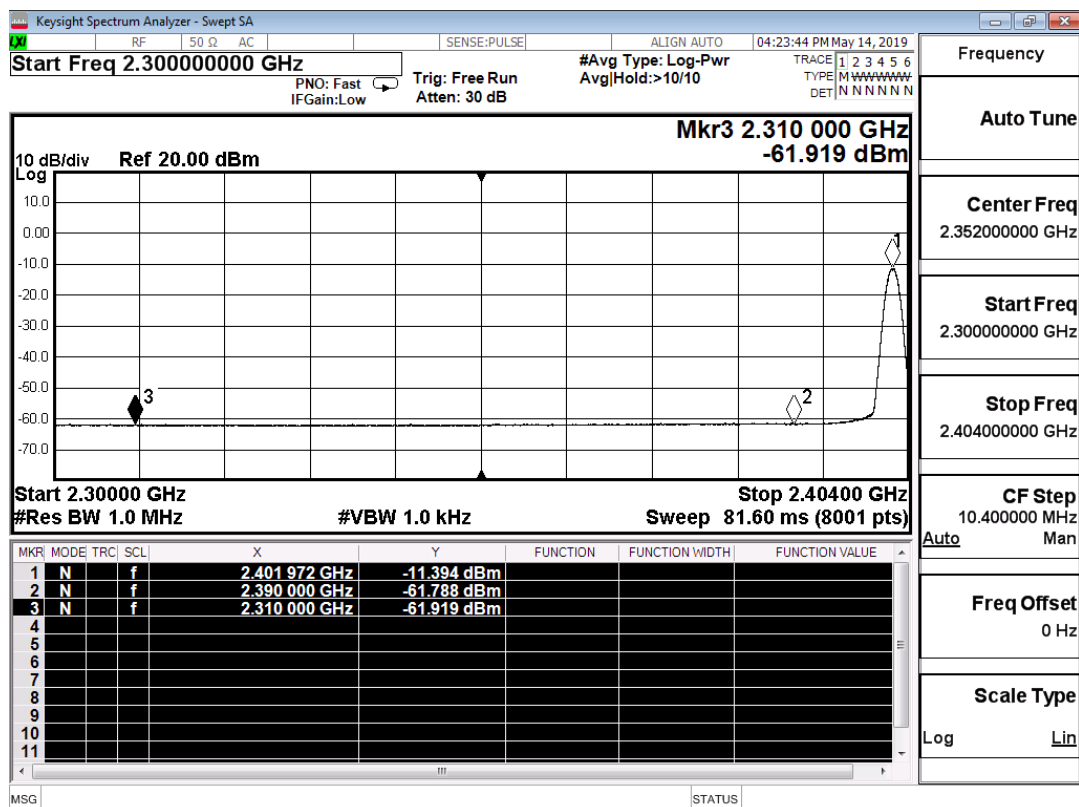
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-51.468	2.0	0	45.76	PEAK	74	PASS
	Off	2310.0	-61.919	2.0	0	35.31	AV	54	PASS
	Off	2390.0	-50.551	2.0	0	46.68	PEAK	74	PASS
	Off	2390.0	-61.788	2.0	0	35.44	AV	54	PASS
	Off	2483.5	-44.940	2.0	0	52.29	PEAK	74	PASS
	Off	2483.5	-59.362	2.0	0	37.87	AV	54	PASS
	Off	2500.0	-50.539	2.0	0	46.69	PEAK	74	PASS
	Off	2500.0	-61.124	2.0	0	36.11	AV	54	PASS

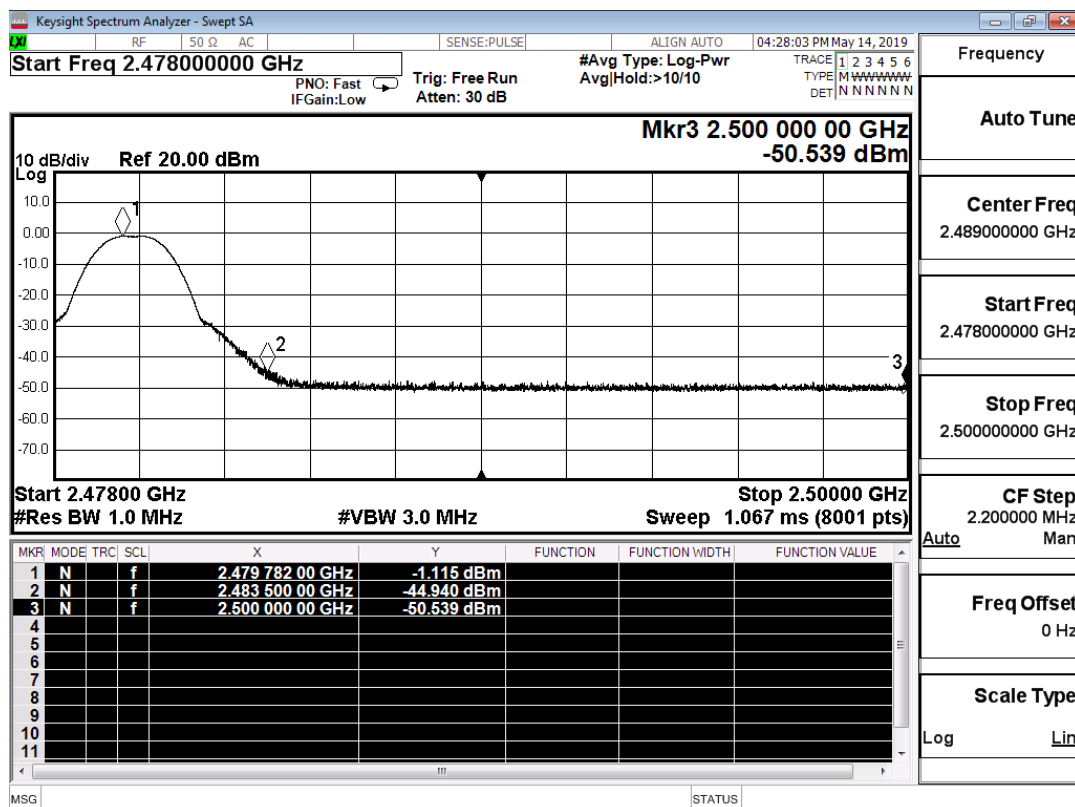
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



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)

