

Appendix A

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

Product Name: Bluetooth Speaker

Trade Mark: QFX, EARISE, JEFFDAD, MUZE, MAX POWER, IQsound

Test Model: T35

Environmental Conditions

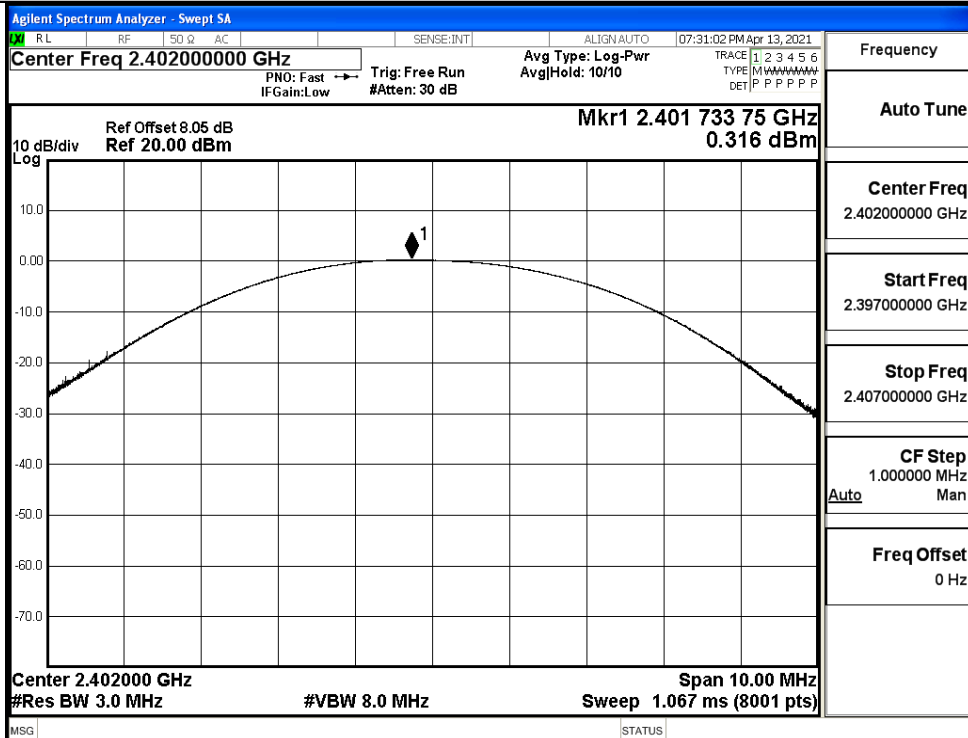
Temperature:	24.6° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Li
Supervised by:	Li Huan

A.1 Maximum Conducted Peak Output Power

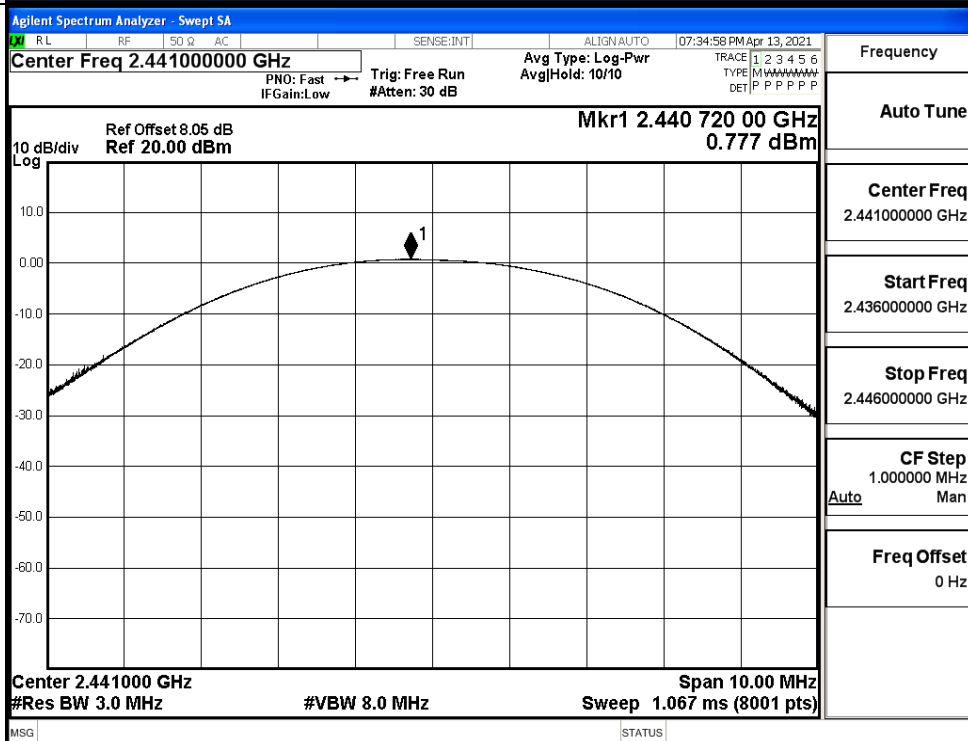
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.316	30	PASS
	MCH	0.777	30	PASS
	HCH	0.525	30	PASS
$\pi/4$ DQPSK	LCH	1.003	21	PASS
	MCH	1.446	21	PASS
	HCH	1.166	21	PASS

Test Graphs

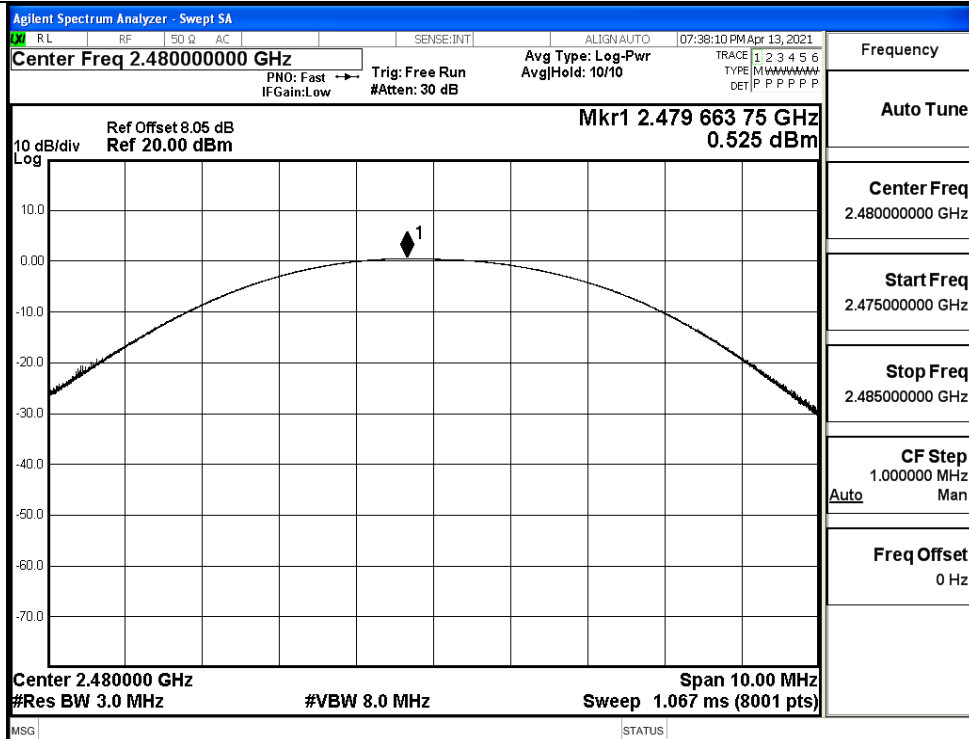
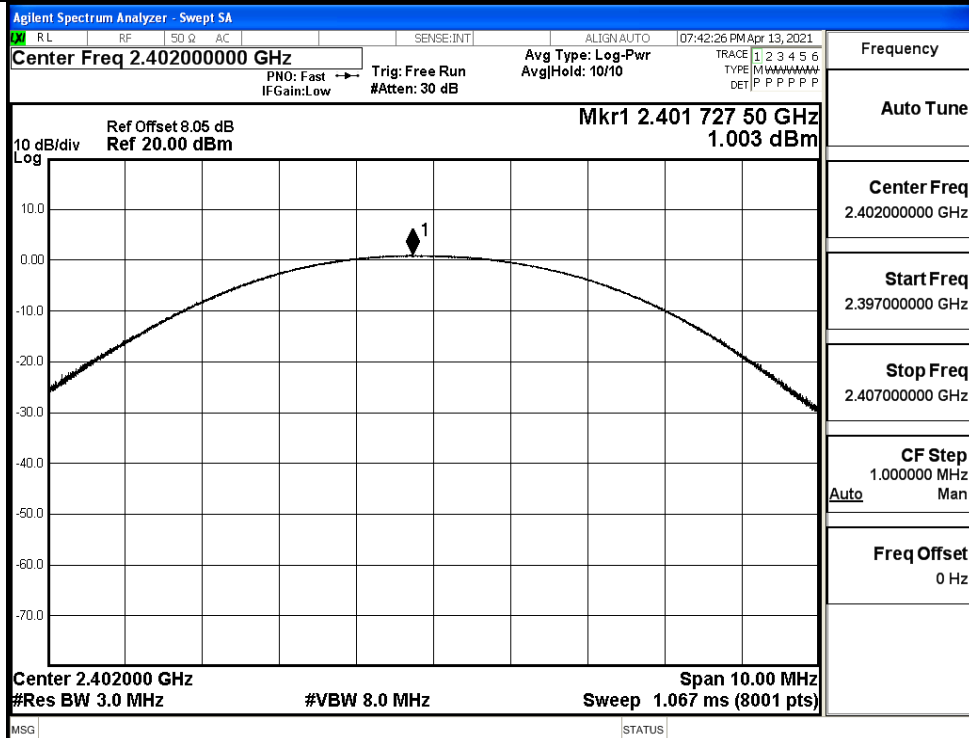
GFSK/LCH

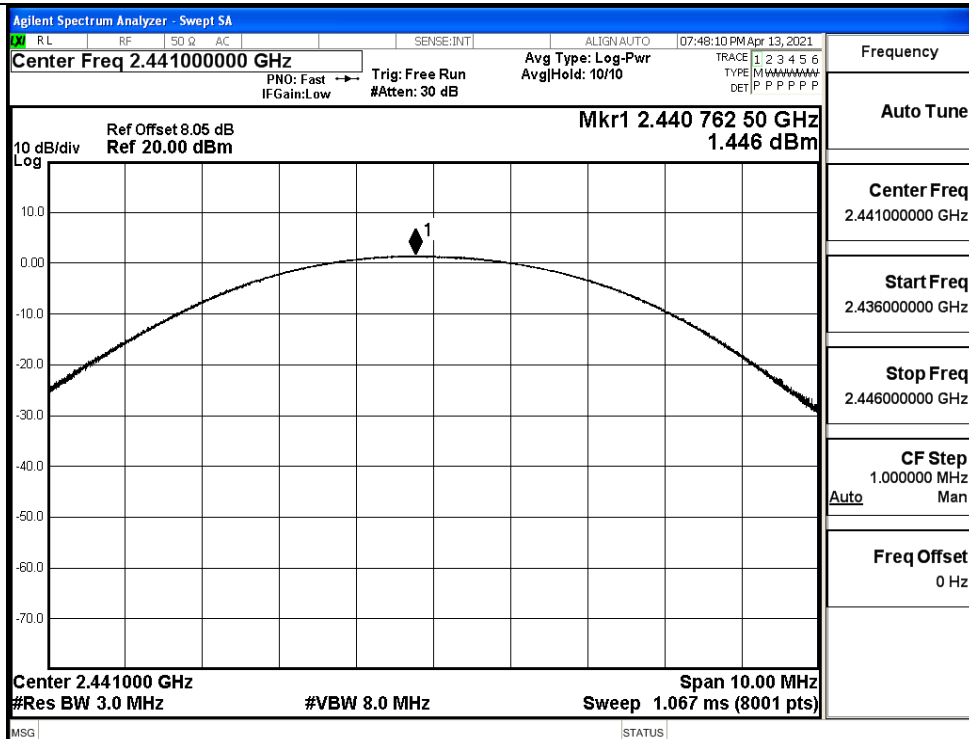
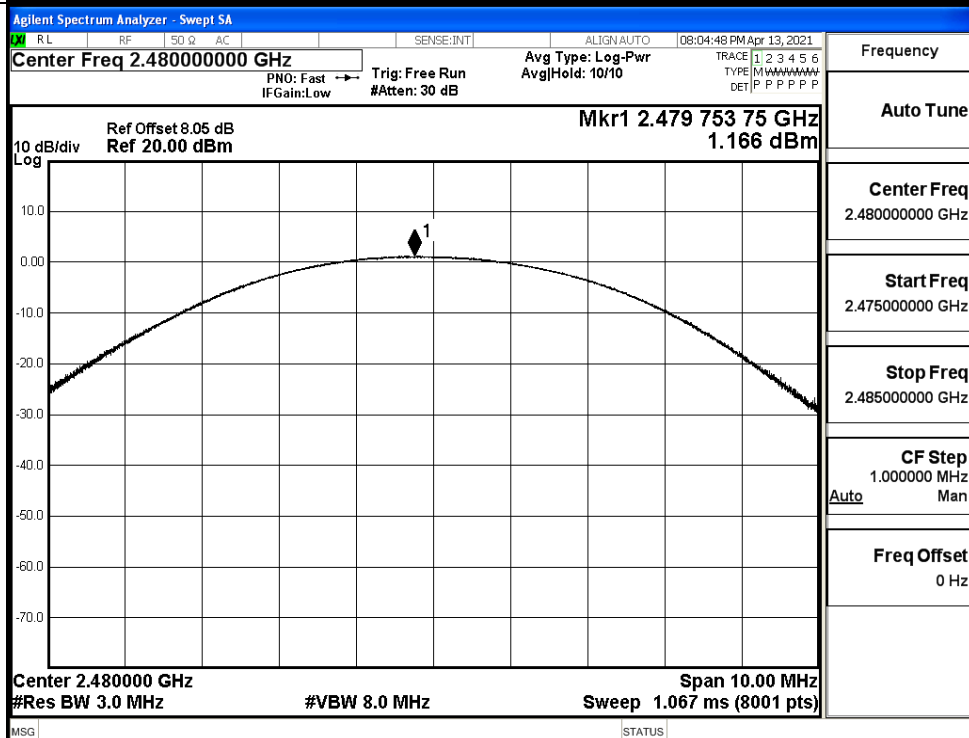


GFSK/MCH



GFSK/HCH

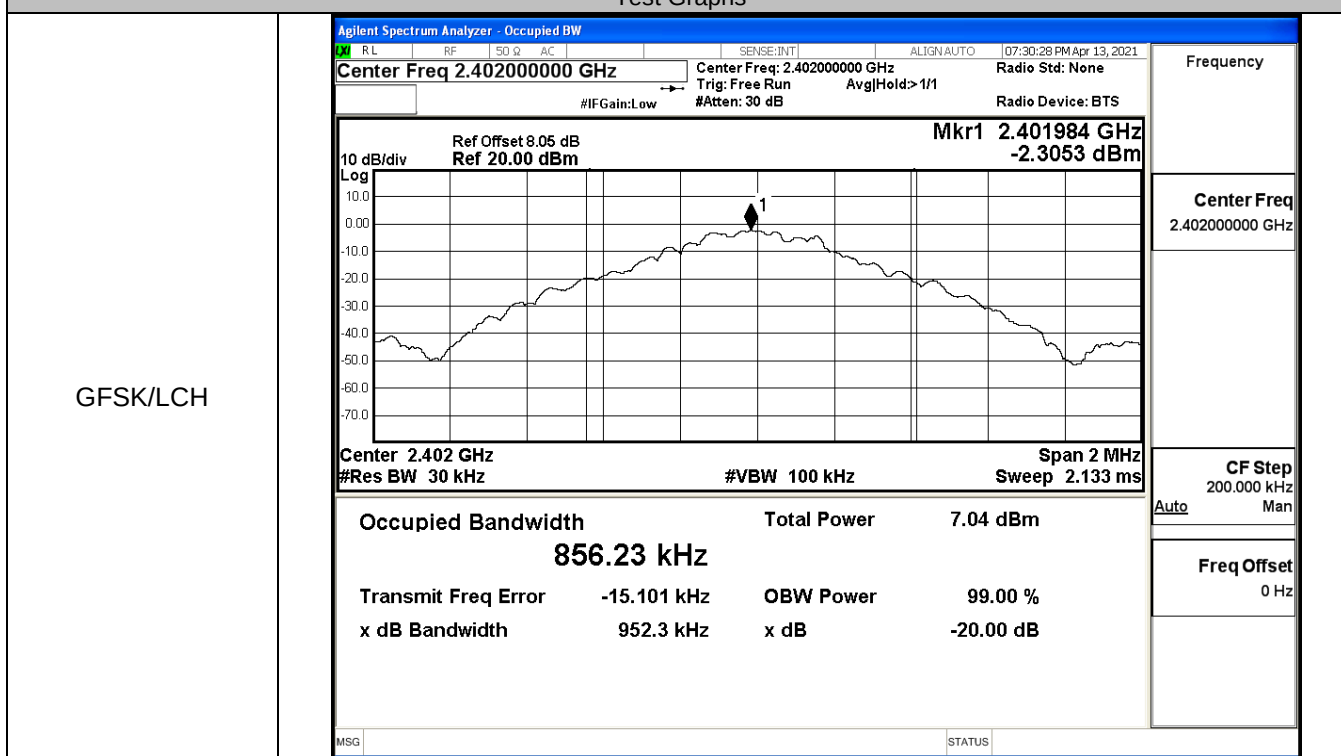
 π /4DQPSK/LCH

$\pi/4$ DQPSK/MCH $\pi/4$ DQPSK/HCH

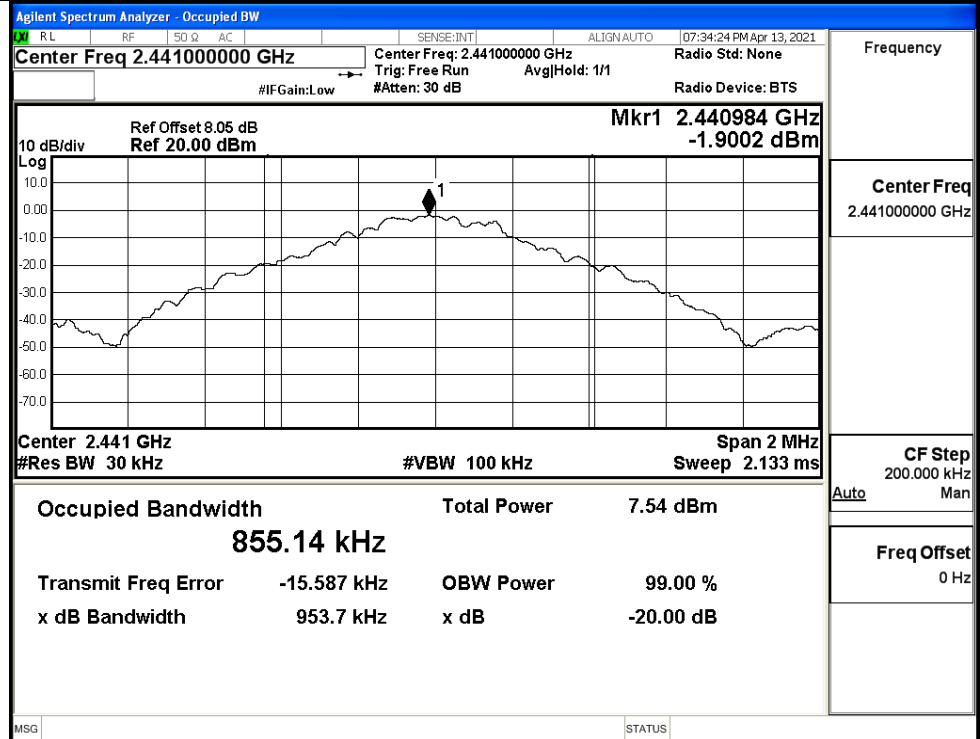
A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9523	Not Specified	PASS
	MCH	0.9537	Not Specified	PASS
	HCH	0.9533	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.313	Not Specified	PASS
	MCH	1.313	Not Specified	PASS
	HCH	1.314	Not Specified	PASS

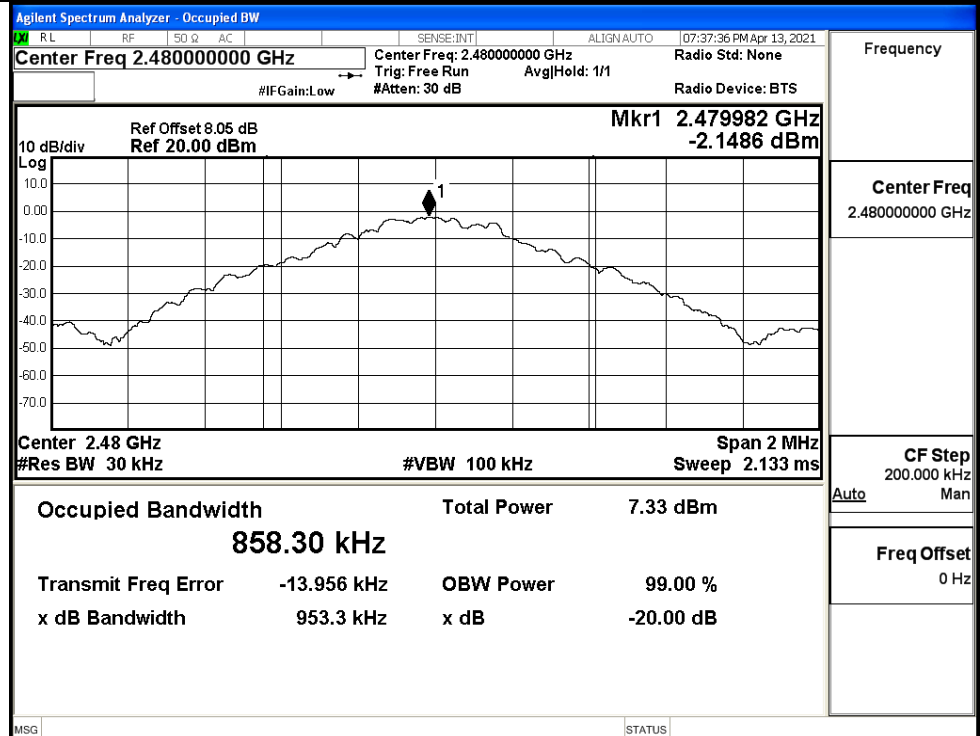
Test Graphs

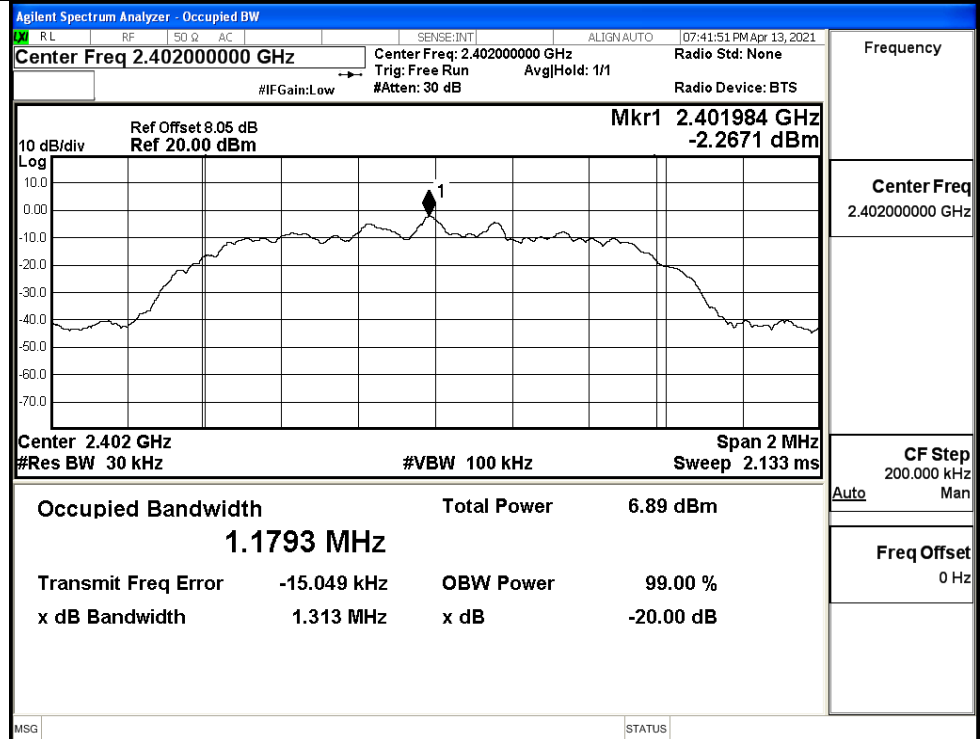
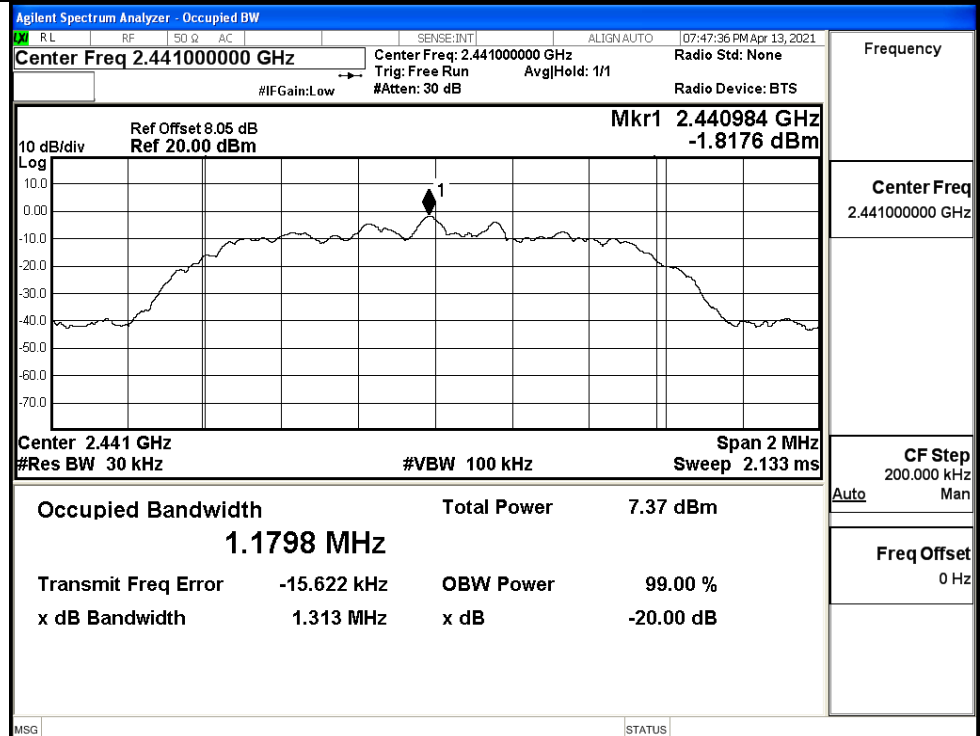


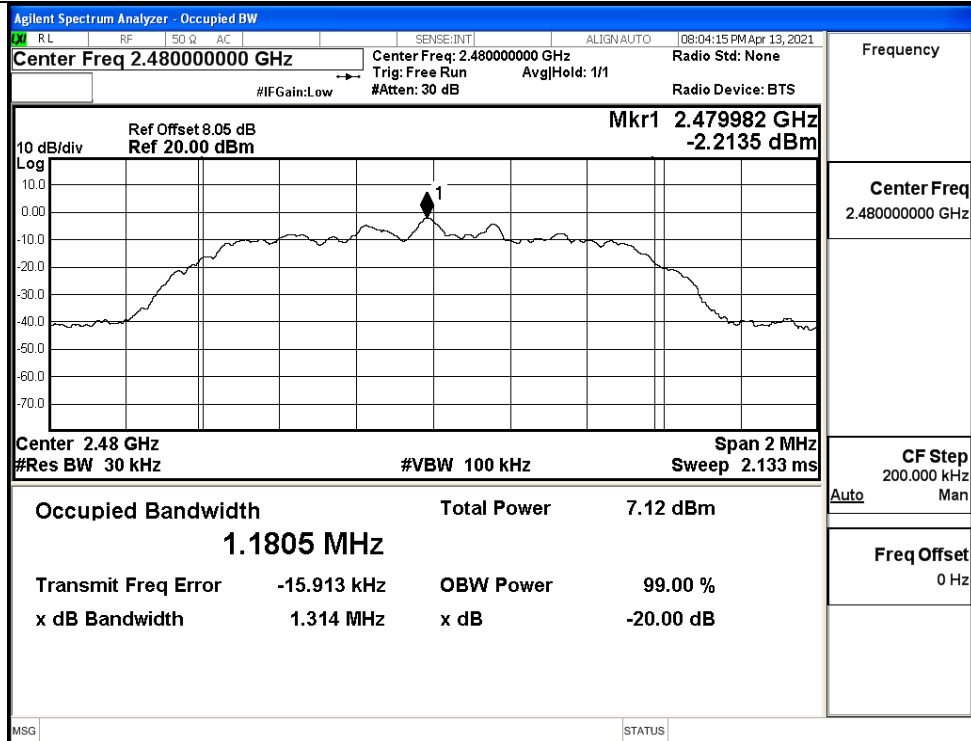
GFSK/MCH



GFSK/HCH



$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

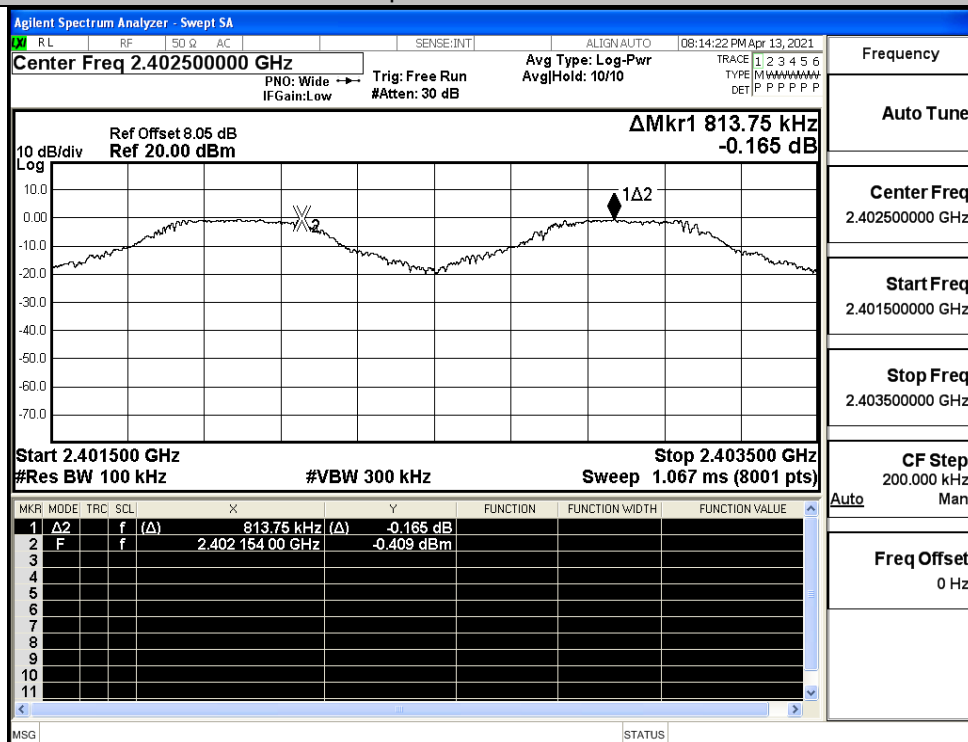
$\pi/4$ DQPSK/HCH

A.3 Carrier Frequency Separation

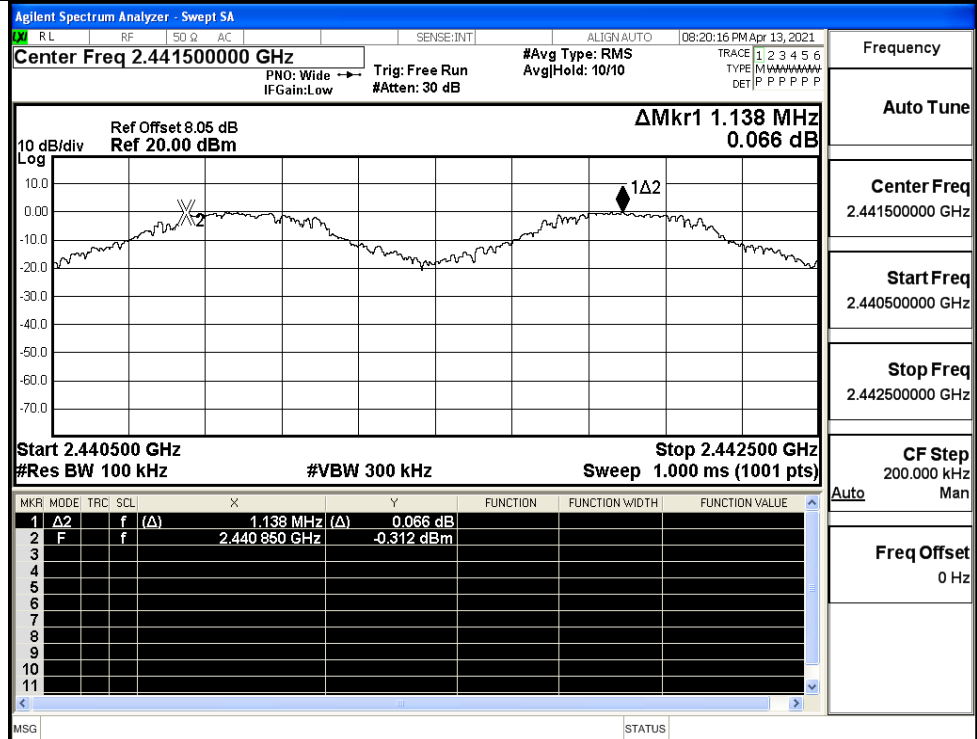
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.814	0.636	PASS
	MCH	1.138	0.636	PASS
	HCH	0.886	0.636	PASS
π /4DQPSK	LCH	0.954	0.876	PASS
	MCH	0.988	0.876	PASS
	HCH	1.036	0.876	PASS

Test Graphs

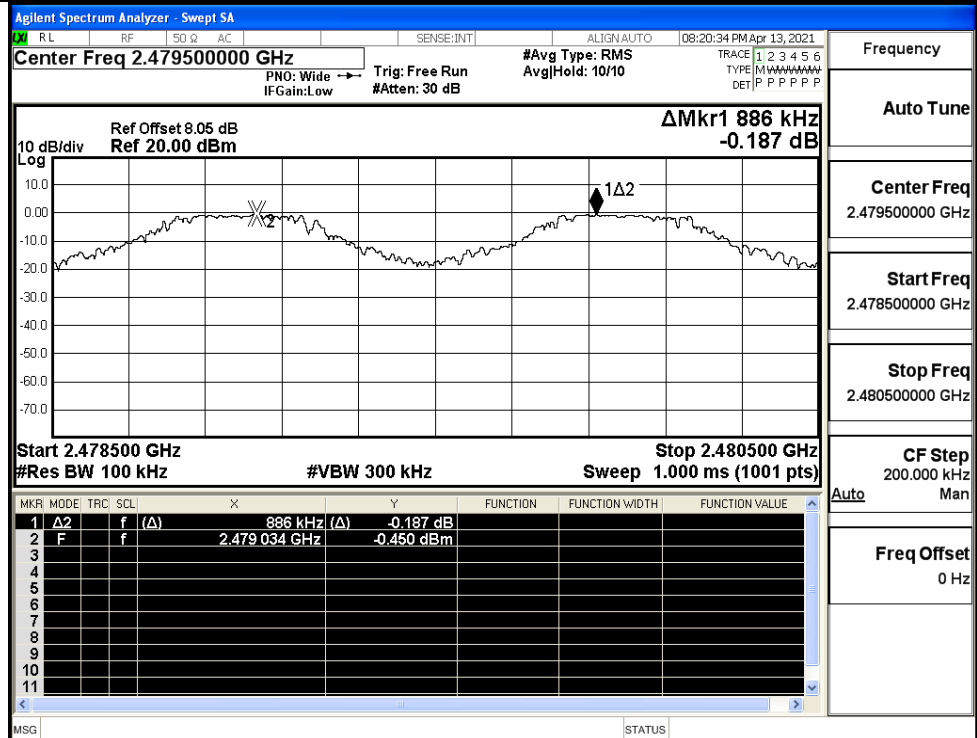
GFSK/LCH

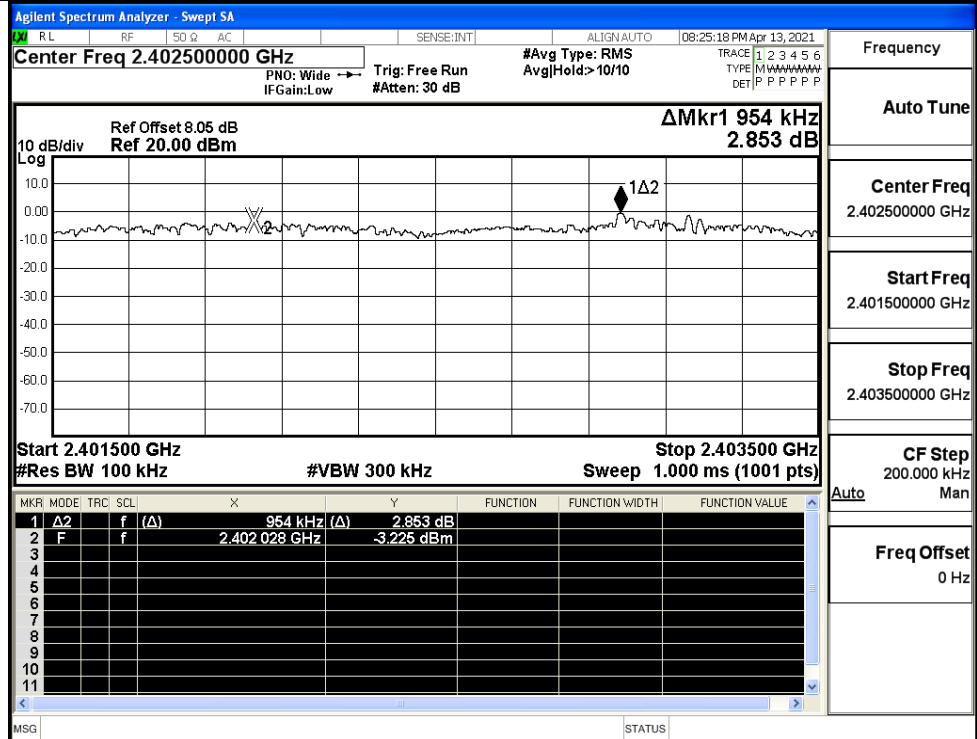
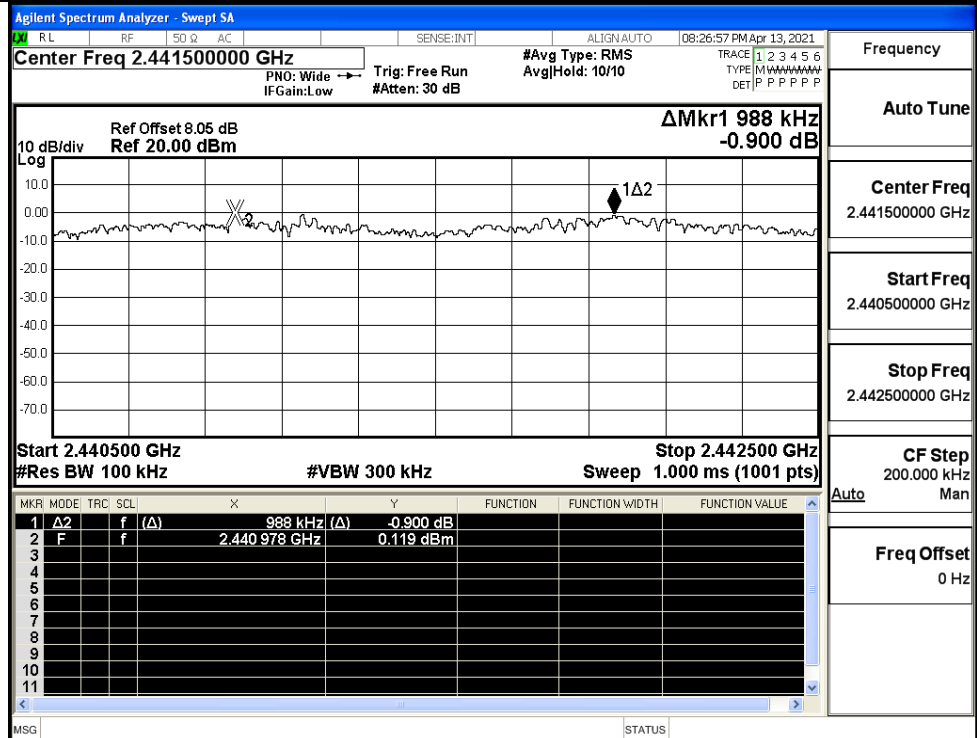


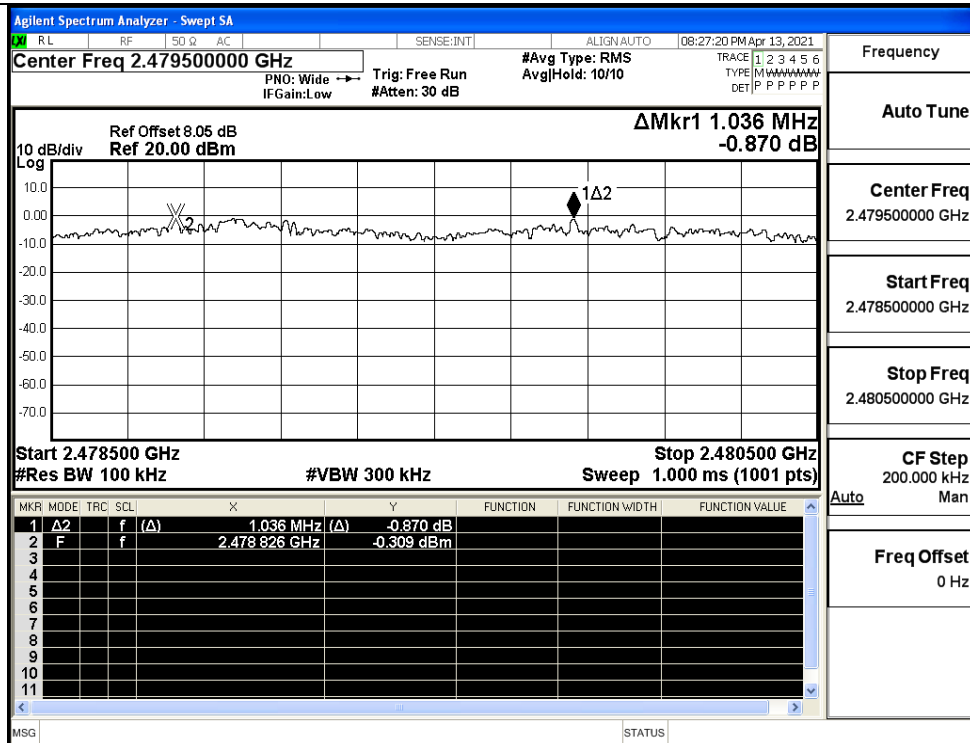
GFSK/MCH



GFSK/HCH



$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

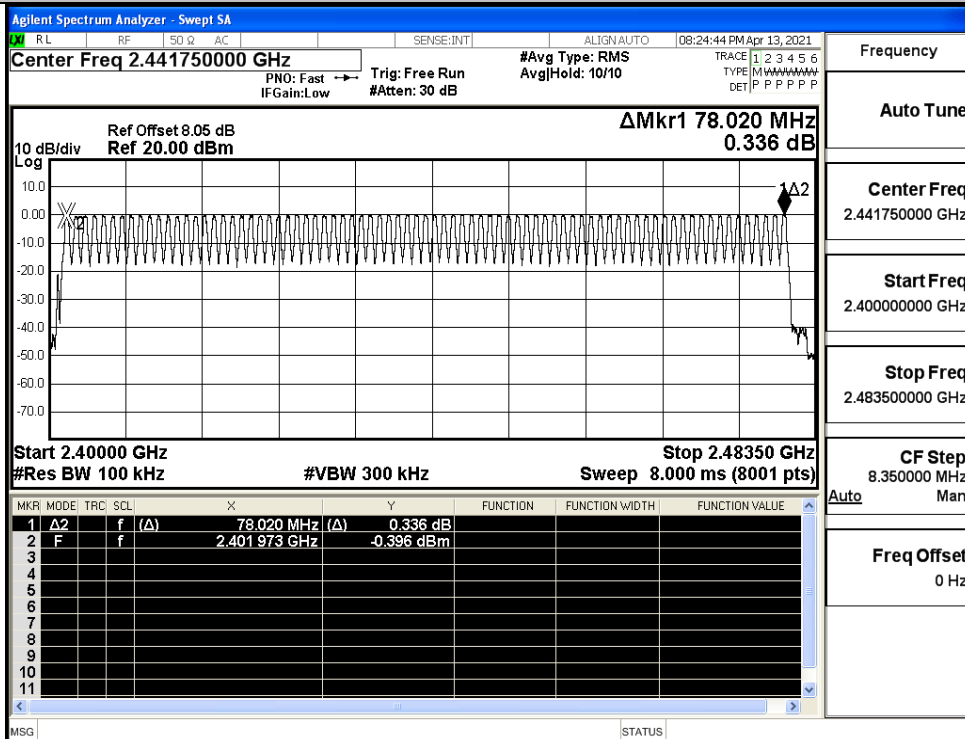
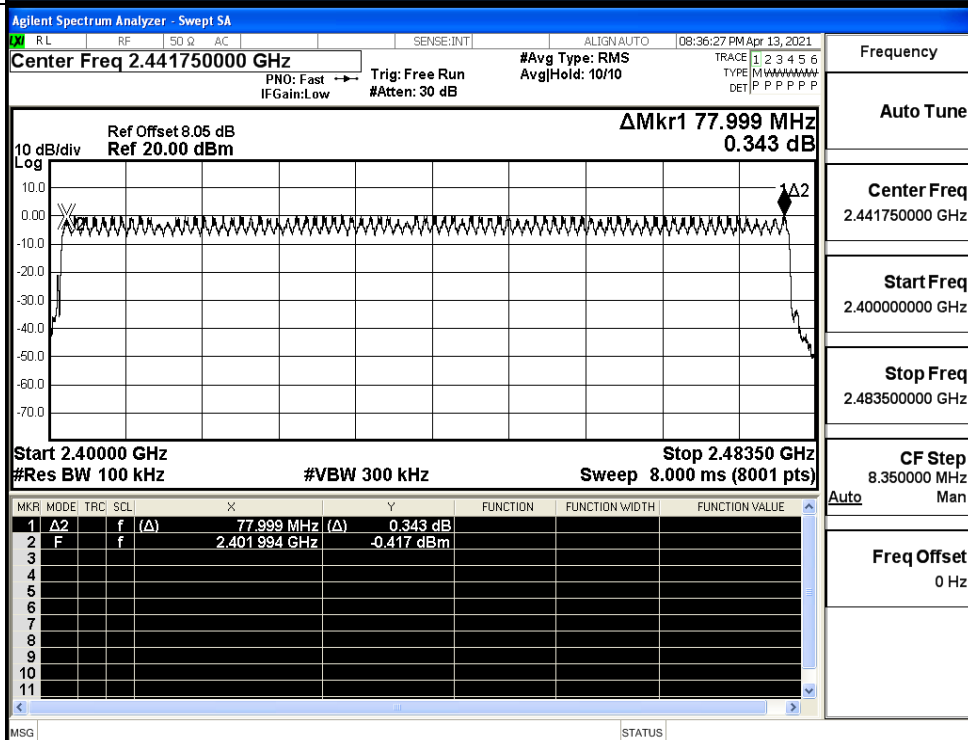
$\pi/4$ DQPSK/HCH

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

Test Graphs

GFSK/Hop

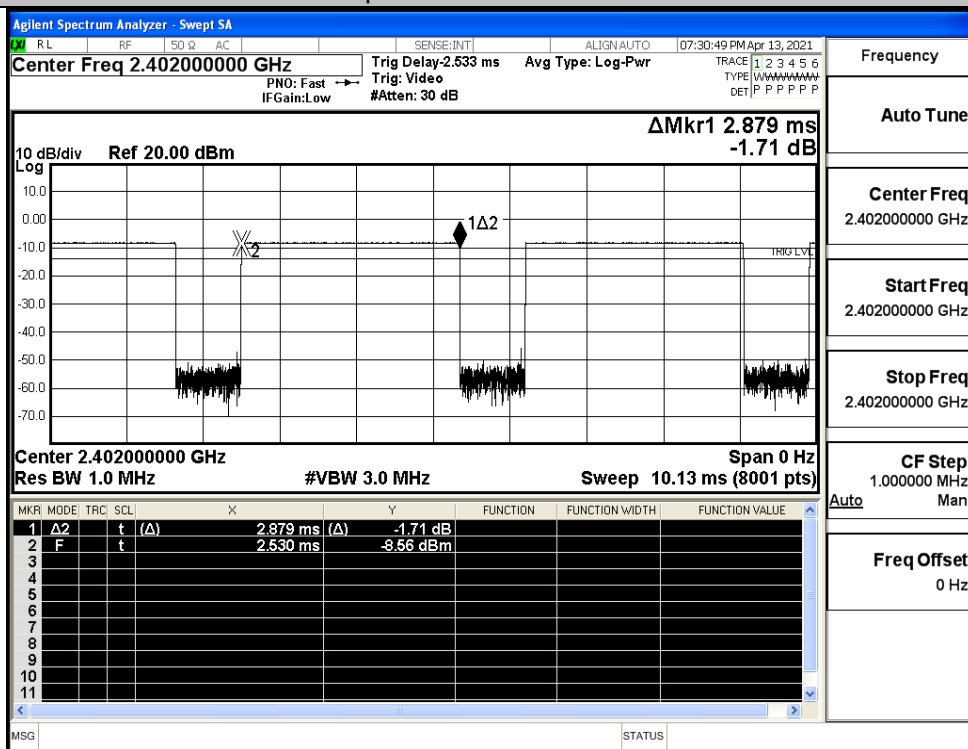
 $\pi/4$ DQPSK/Hop

A.5 Dwell Time

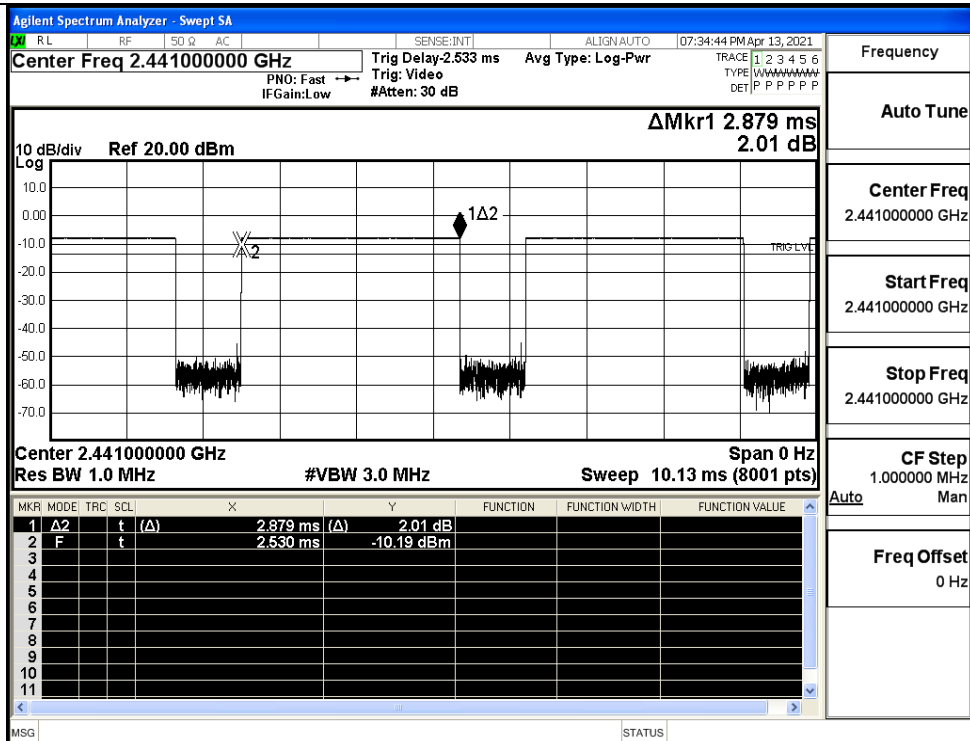
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.308	0.4	PASS
	2DH5	HCH	2.88	106.7	0.307	0.4	PASS

Test Graphs

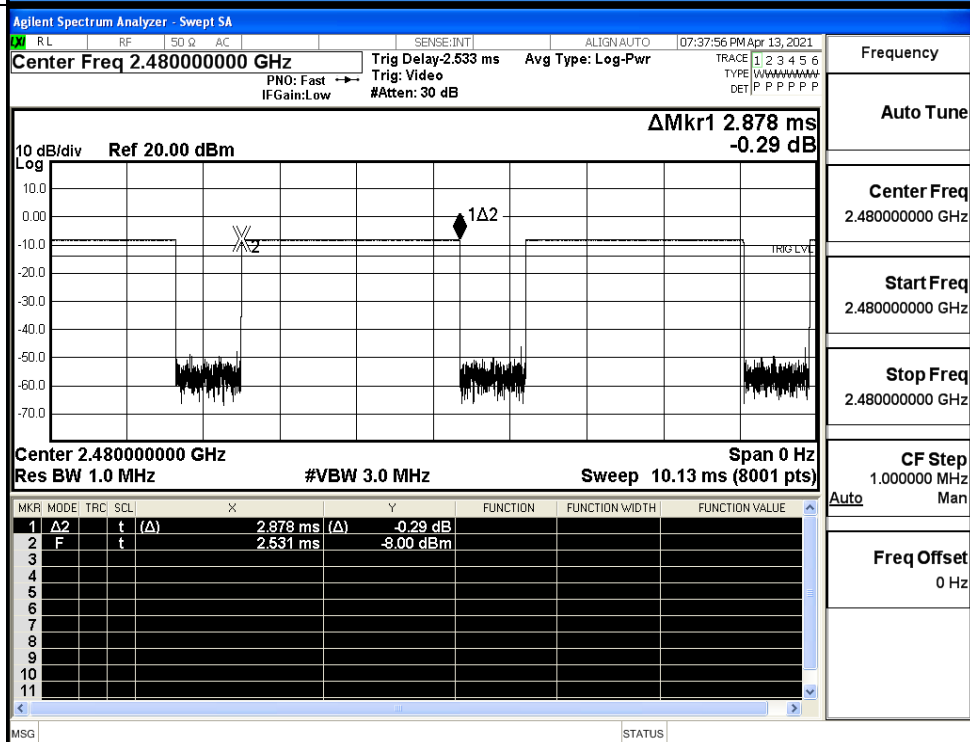
GFSK_DH5/LCH



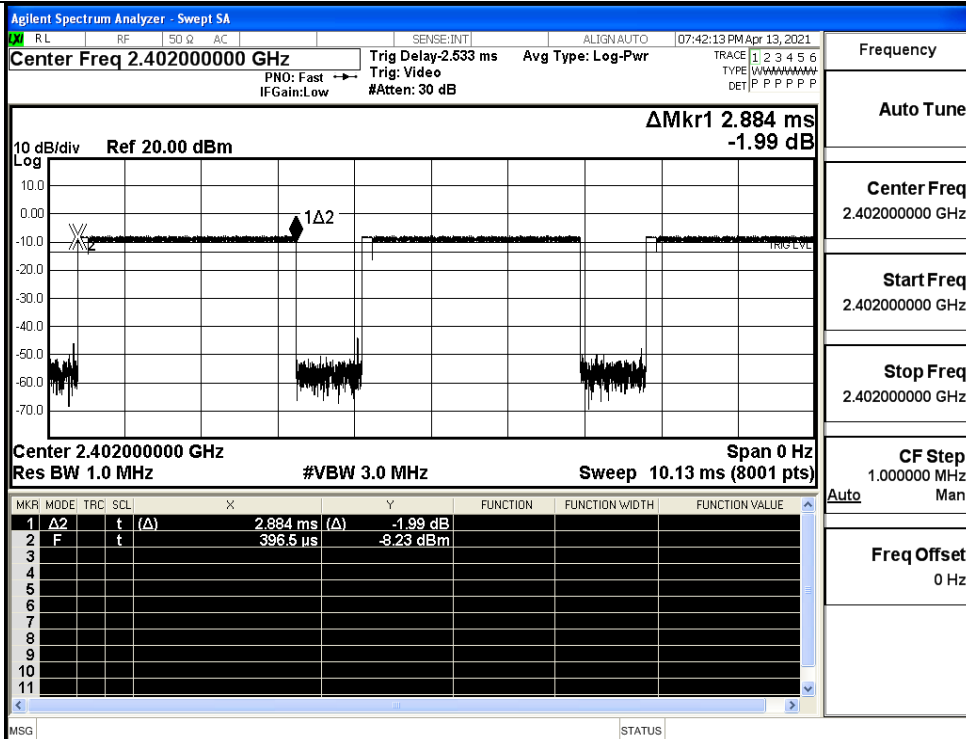
GFSK_DH5/MCH



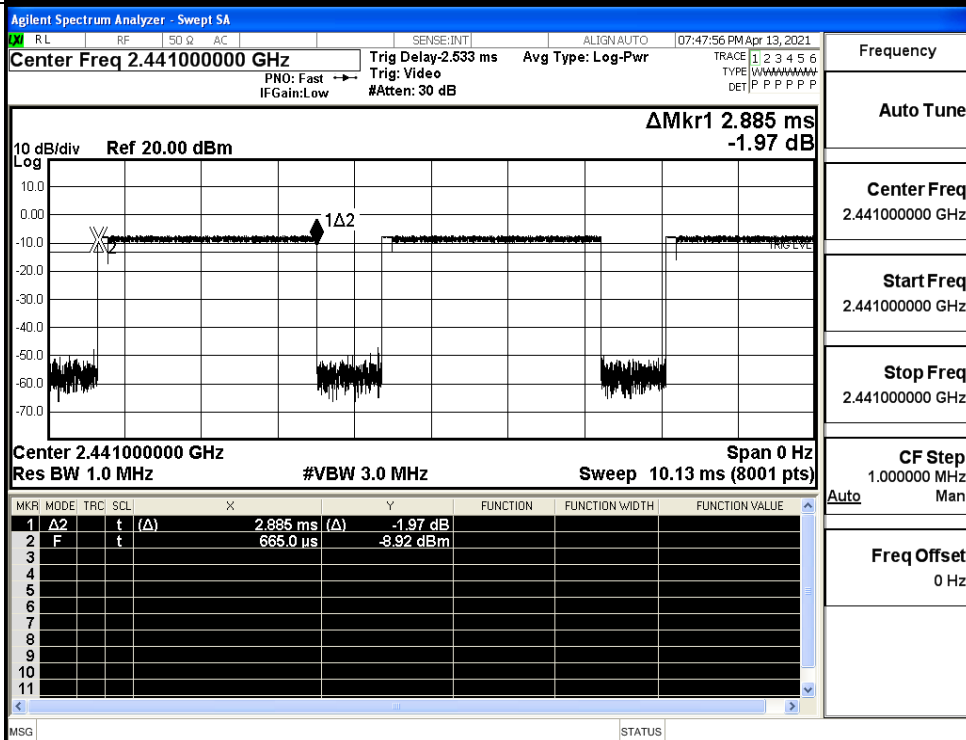
GFSK_DH5/HCH



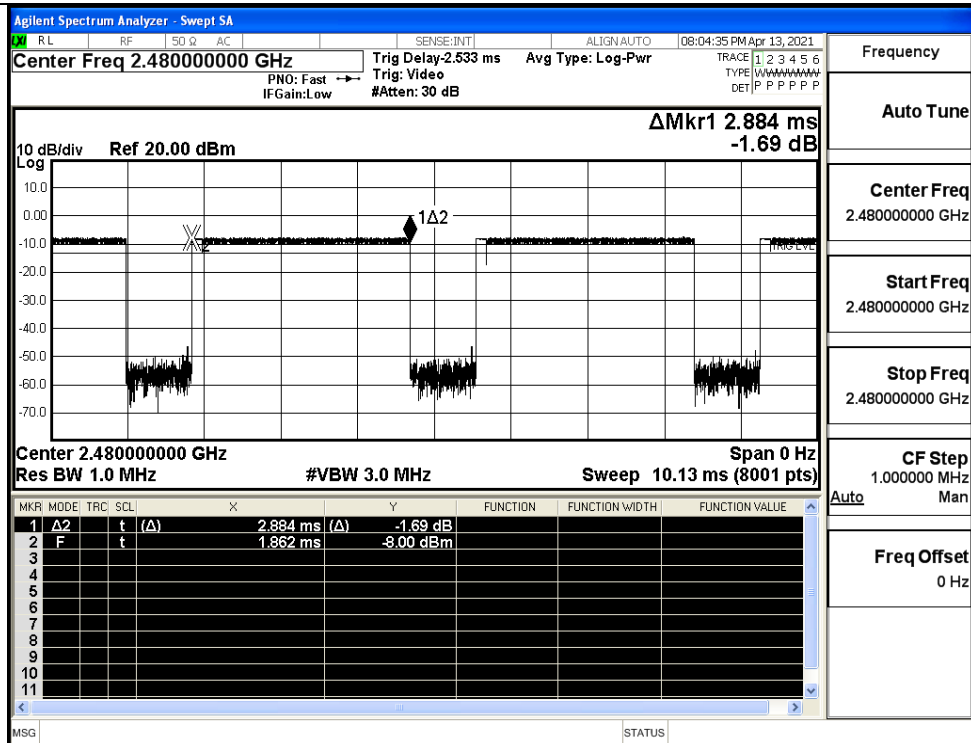
$\pi/4$ DQPSK
_2DH5/LCH



$\pi/4$ DQPSK
_2DH5/MCH



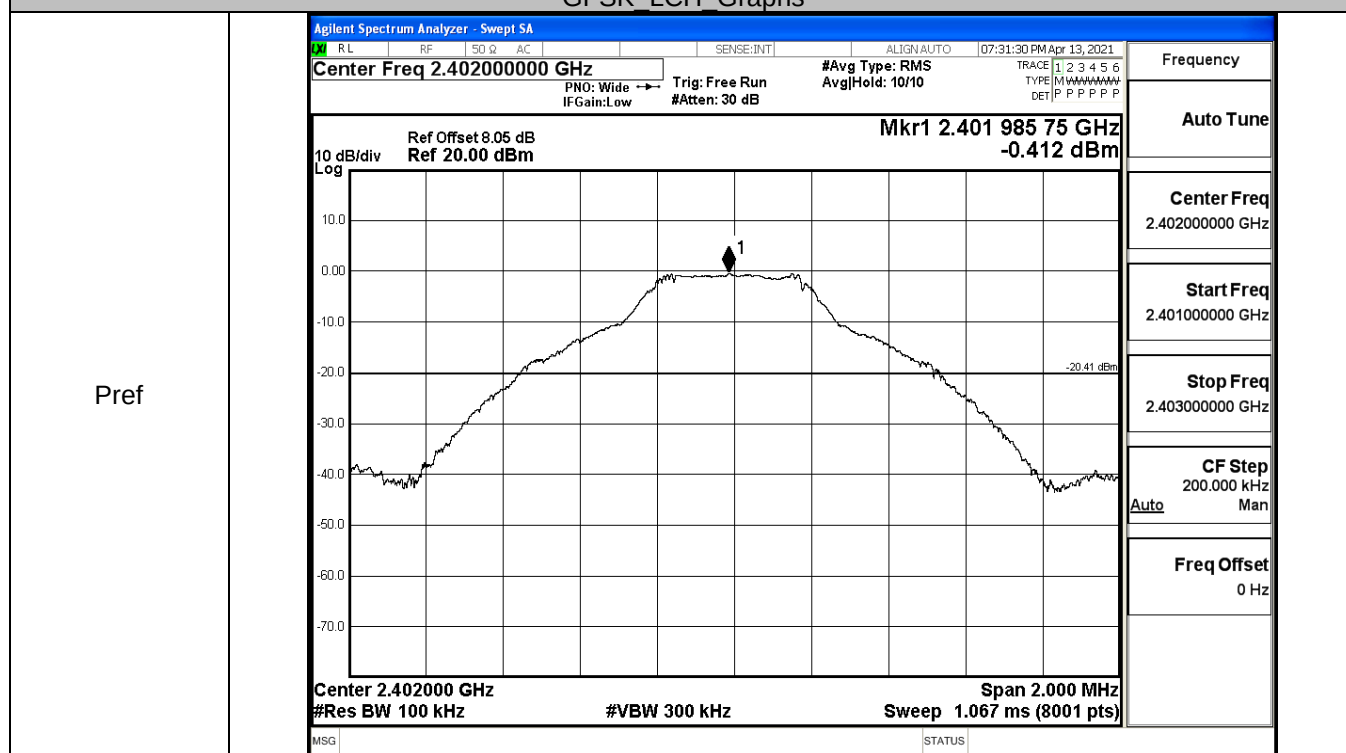
π/4DQPSK
_2DH5/HCH



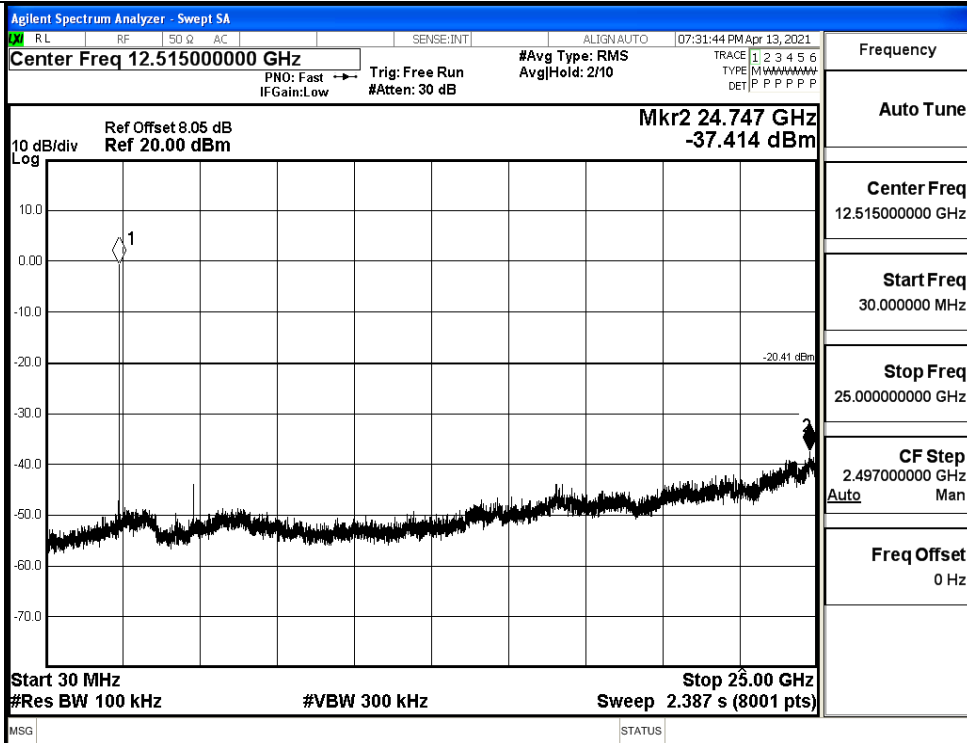
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.412	-37.414	-20.412	PASS
	MCH	0.08	-37.755	-19.920	PASS
	HCH	-0.181	-38.032	-20.181	PASS
$\pi/4$ DQPSK	LCH	-0.352	-38.100	-20.352	PASS
	MCH	0.238	-37.961	-19.762	PASS
	HCH	-0.089	-37.440	-20.089	PASS

GFSK LCH Graphs

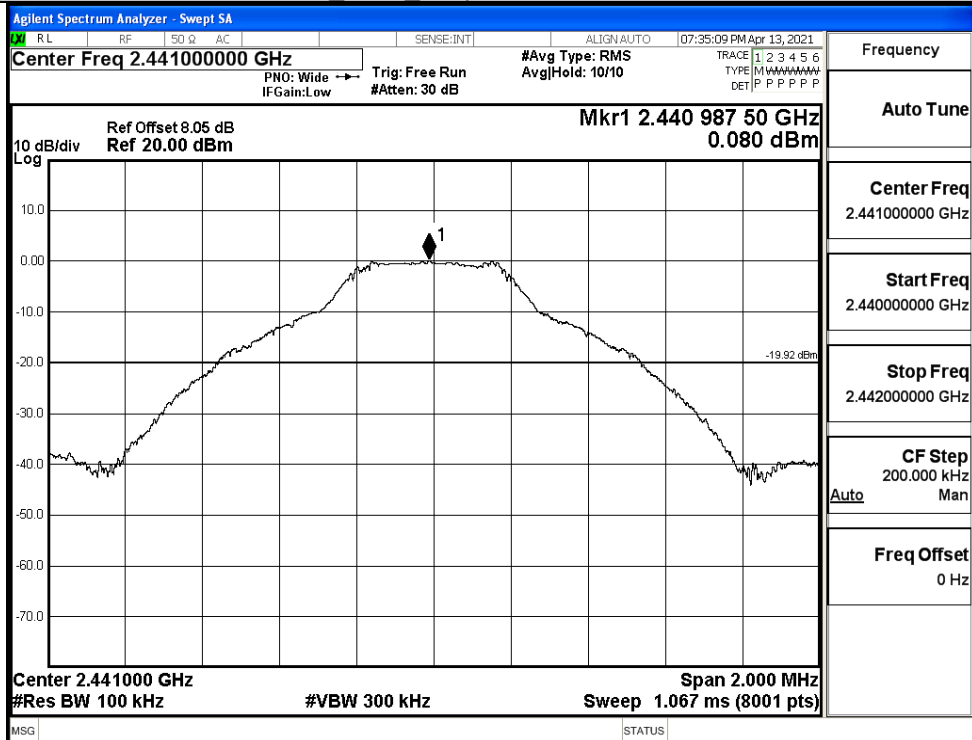


Puw

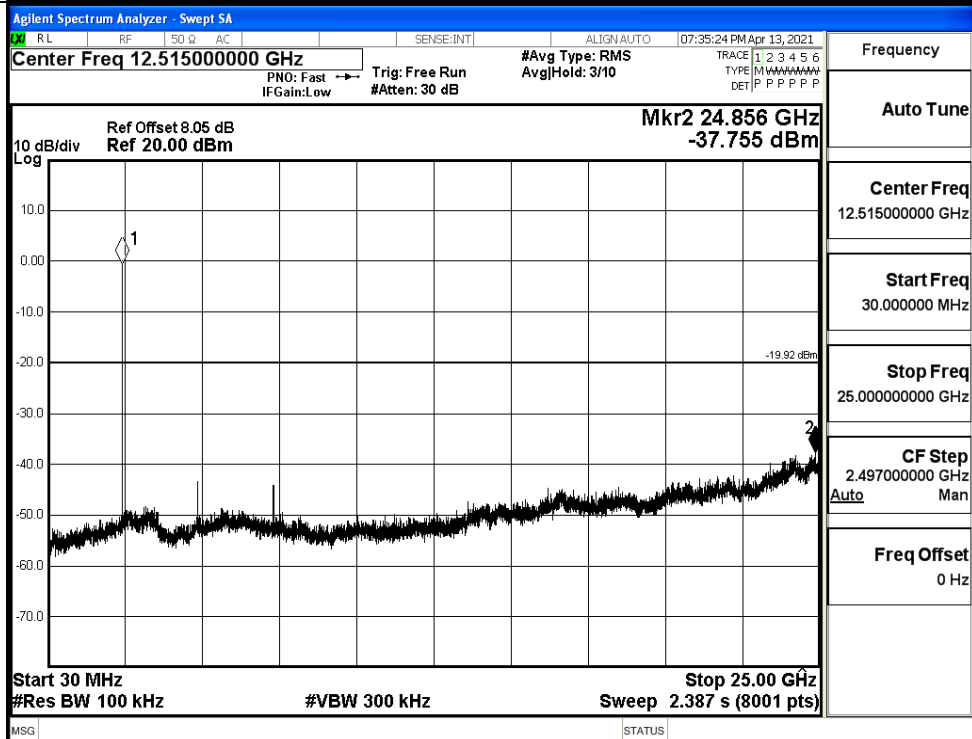


GFSK_MCH_Graphs

Pref

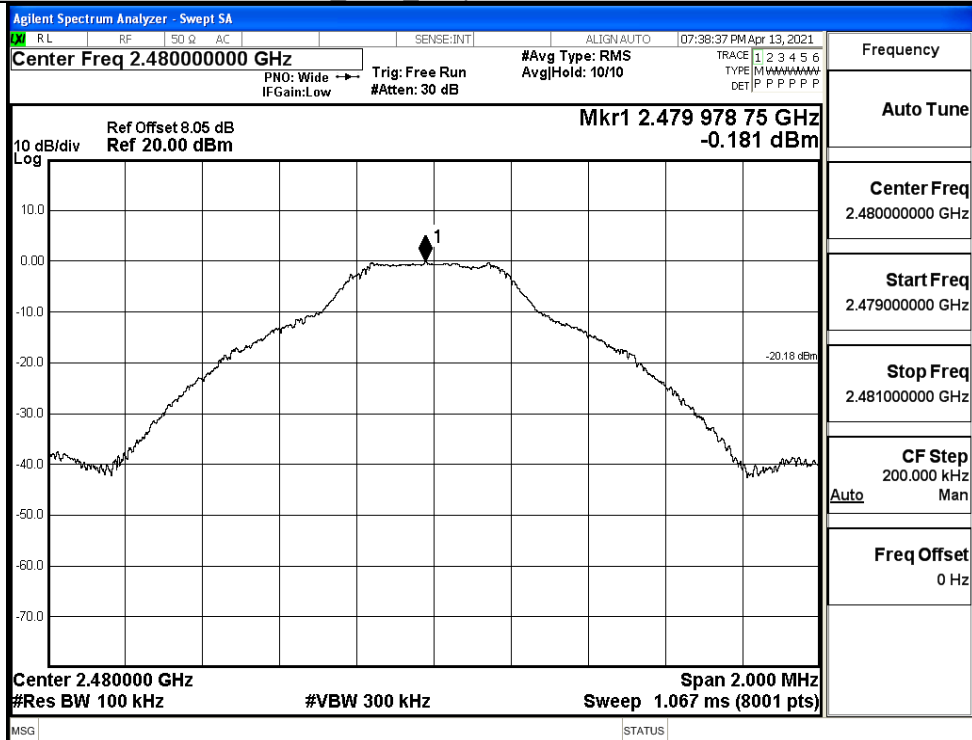


Puw

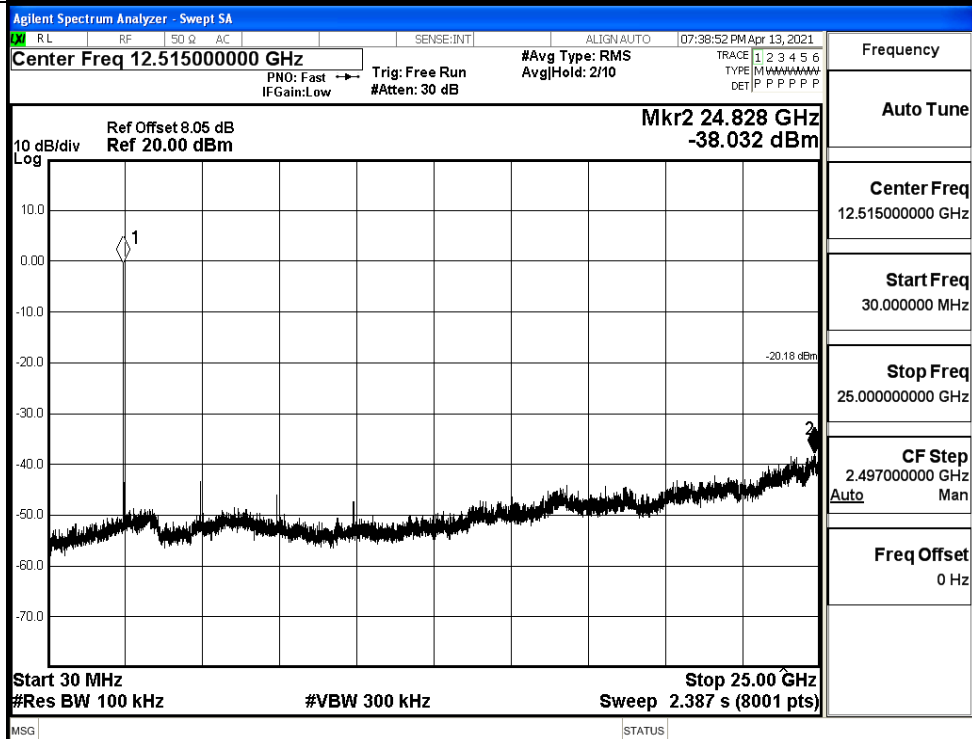


GFSK HCH Graphs

Pref

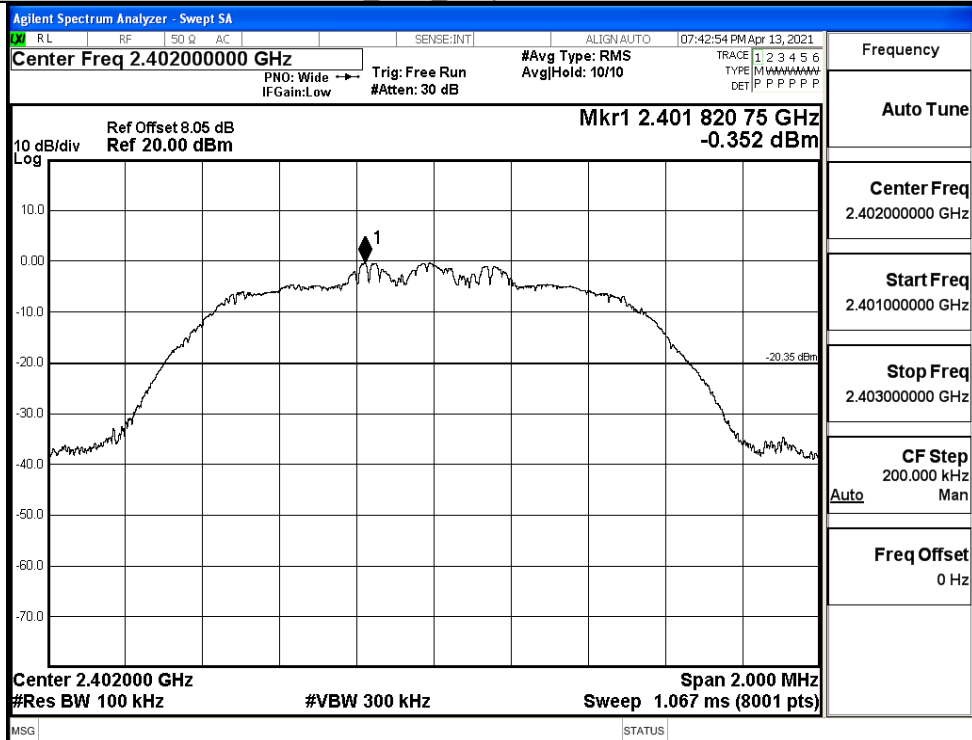


Puw

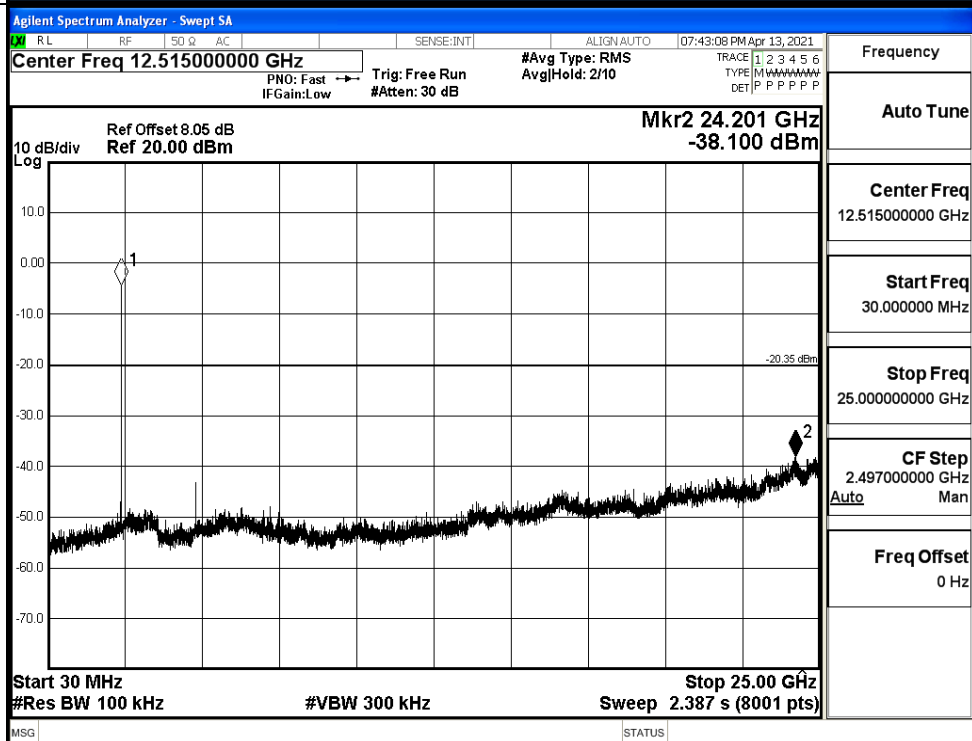


$\pi/4$ DQPSK_LCH_Graphs

Pref

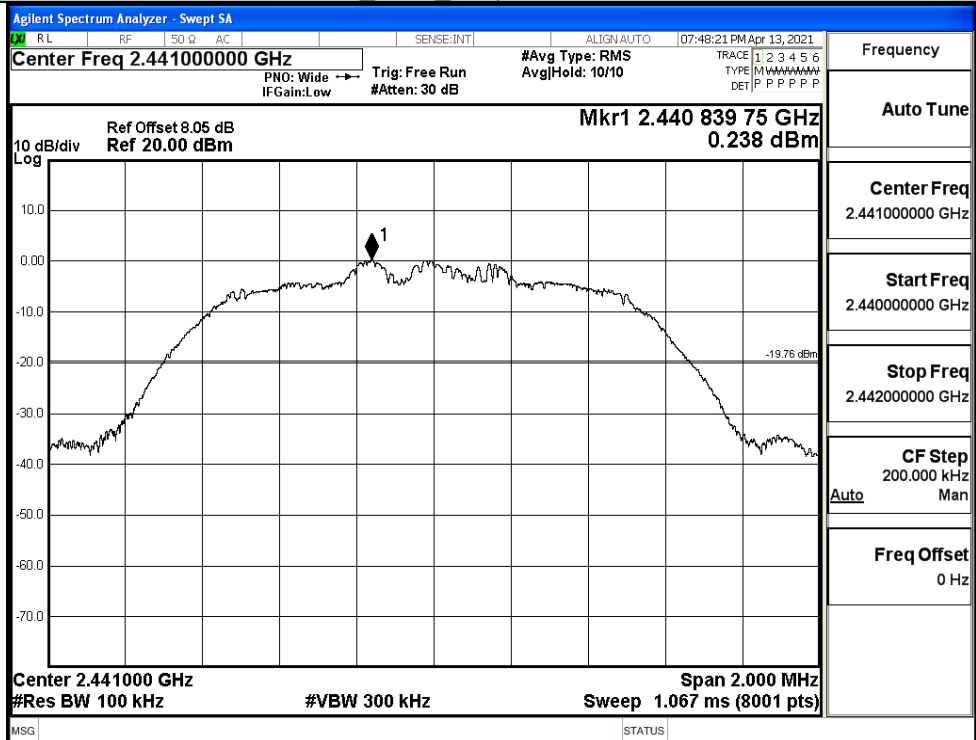


Puw

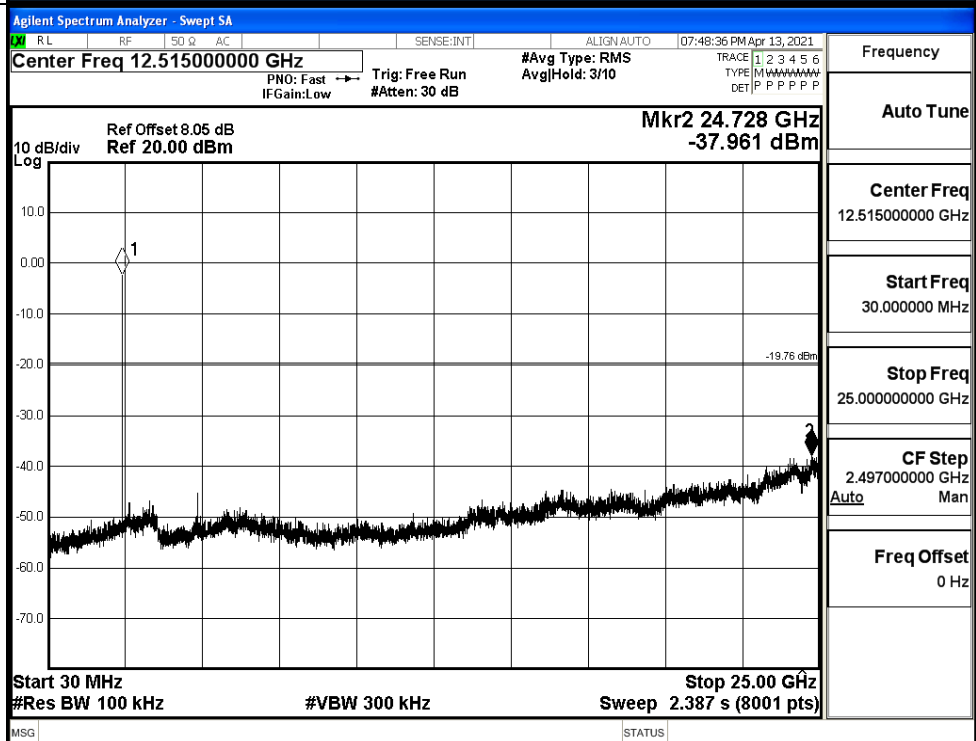


π /4DQPSK_MCH_Graphs

Pref

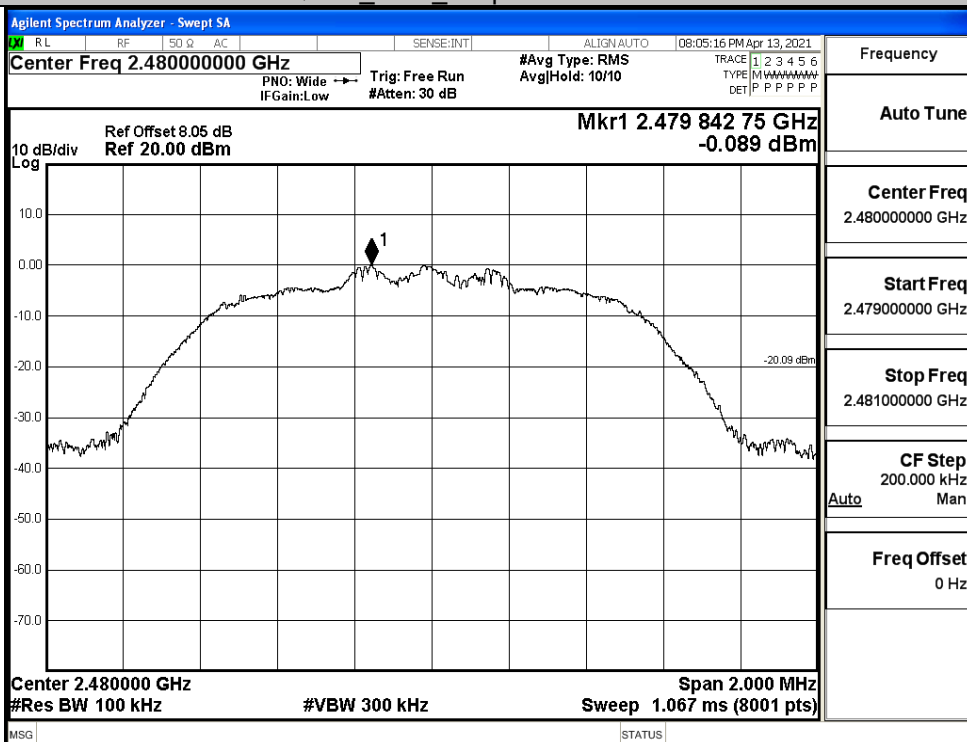


Puw

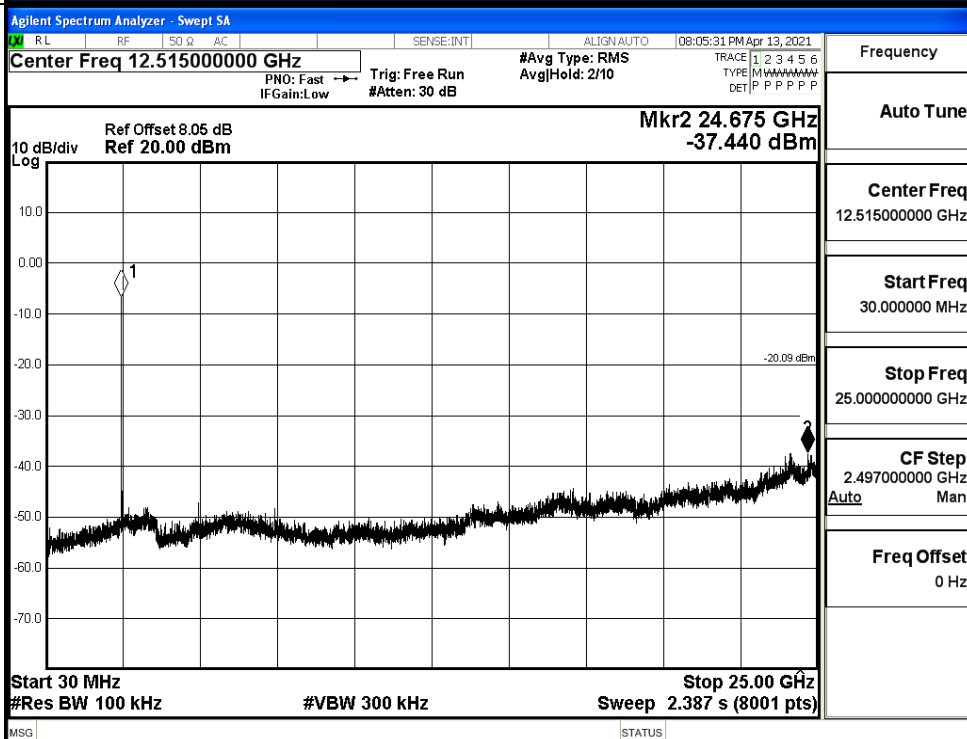


π /4DQPSK_HCH_Graphs

Pref



Puw

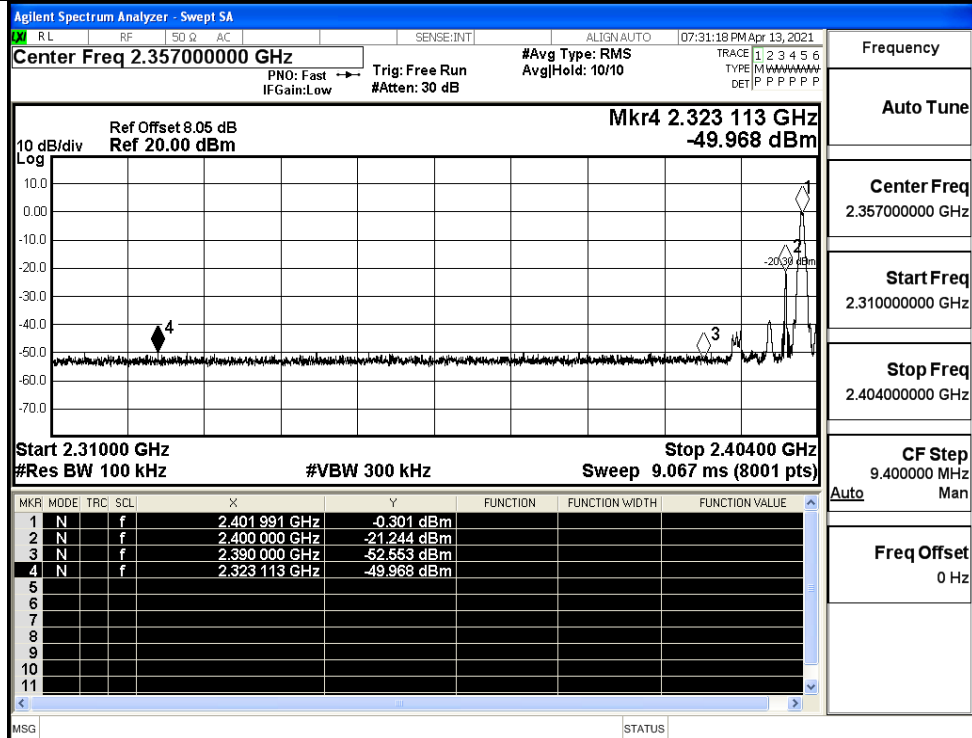


A.7 Band-edge for RF Conducted Emissions

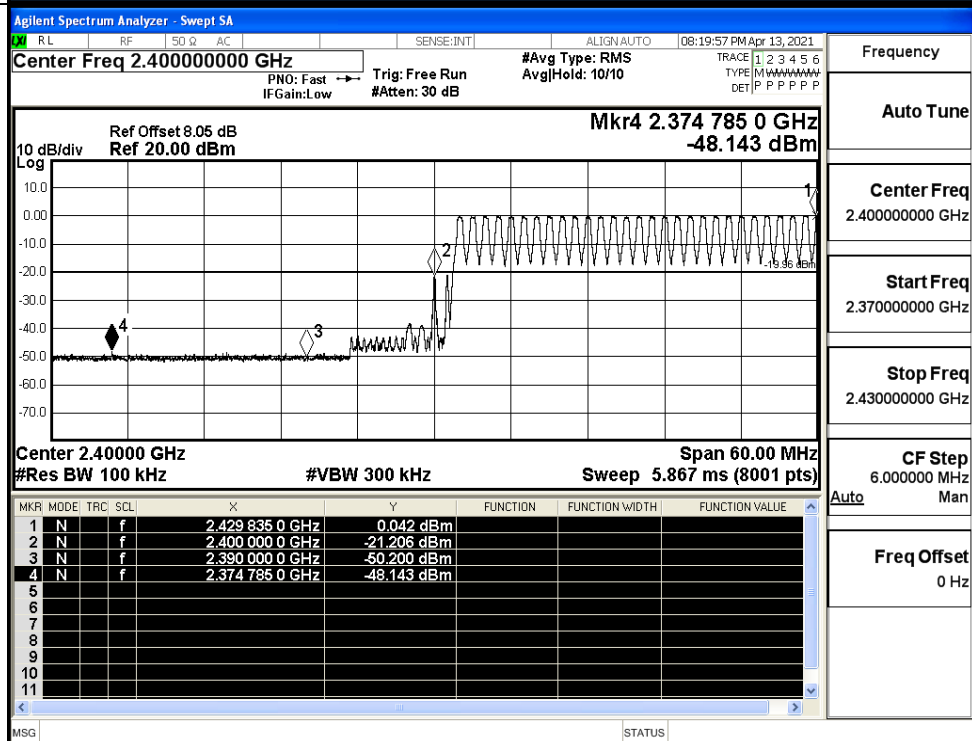
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-0.301	Off	-49.968	-20.3	PASS
			0.042	On	-48.143	-19.96	PASS
	HCH	2480	-0.034	Off	-48.149	-20.03	PASS
			-0.109	On	-48.732	-20.11	PASS
$\pi/4$ DQPSK	LCH	2402	-0.717	Off	-49.476	-20.72	PASS
			0.035	On	-49.116	-19.97	PASS
	HCH	2480	-0.068	Off	-49.129	-20.07	PASS
			0.028	On	-48.601	-19.97	PASS

Test Graphs

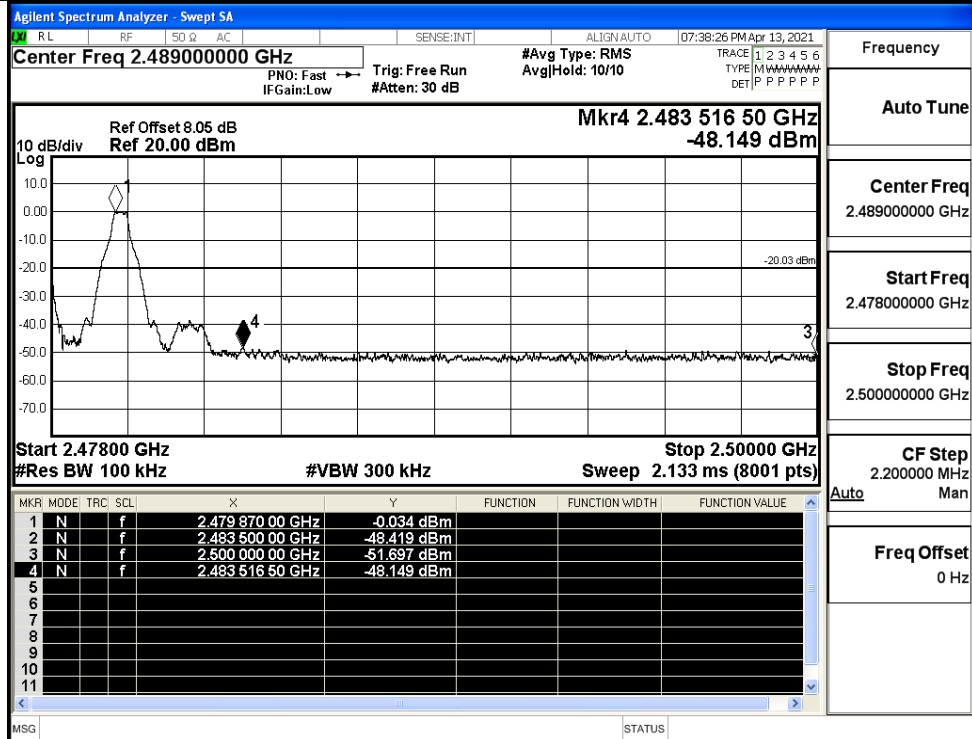
GFSK/LCH/No Hop



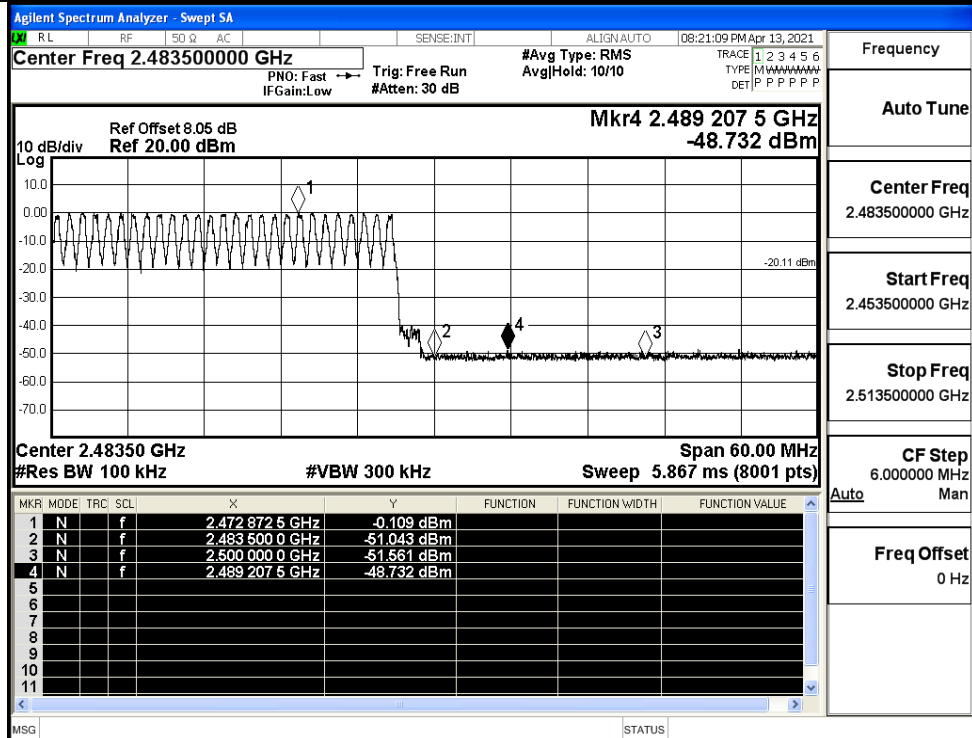
GFSK/LCH/Hop



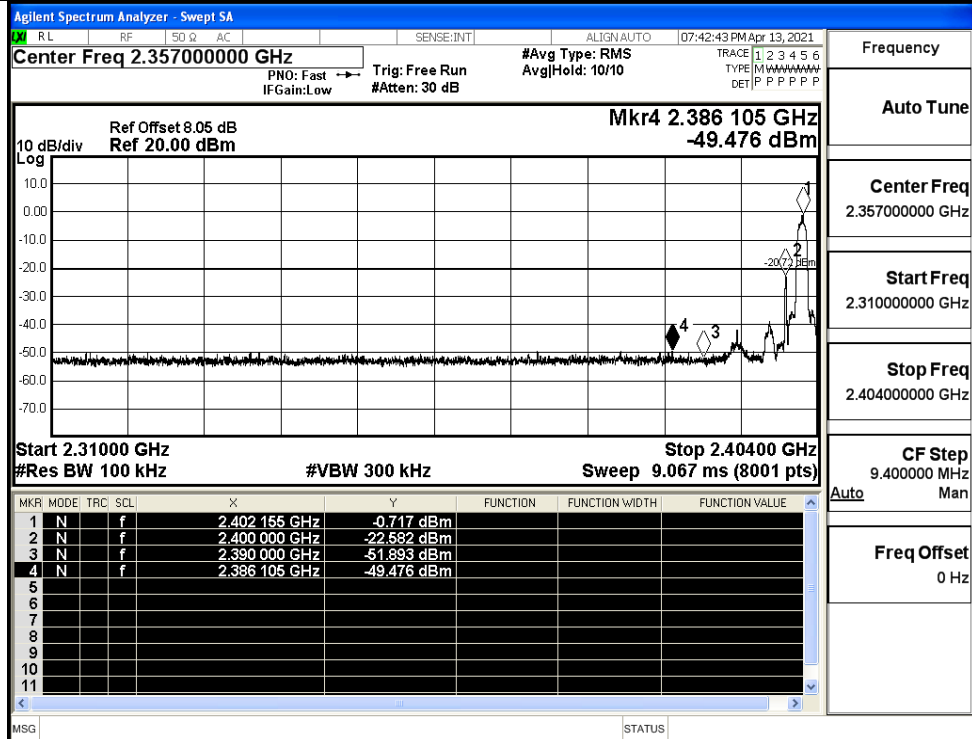
GFSK/HCH/No Hop



GFSK/HCH/Hop



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



Frequency

Auto Tune

Center Freq
2.357000000 GHz

Start Freq
2.310000000 GHz

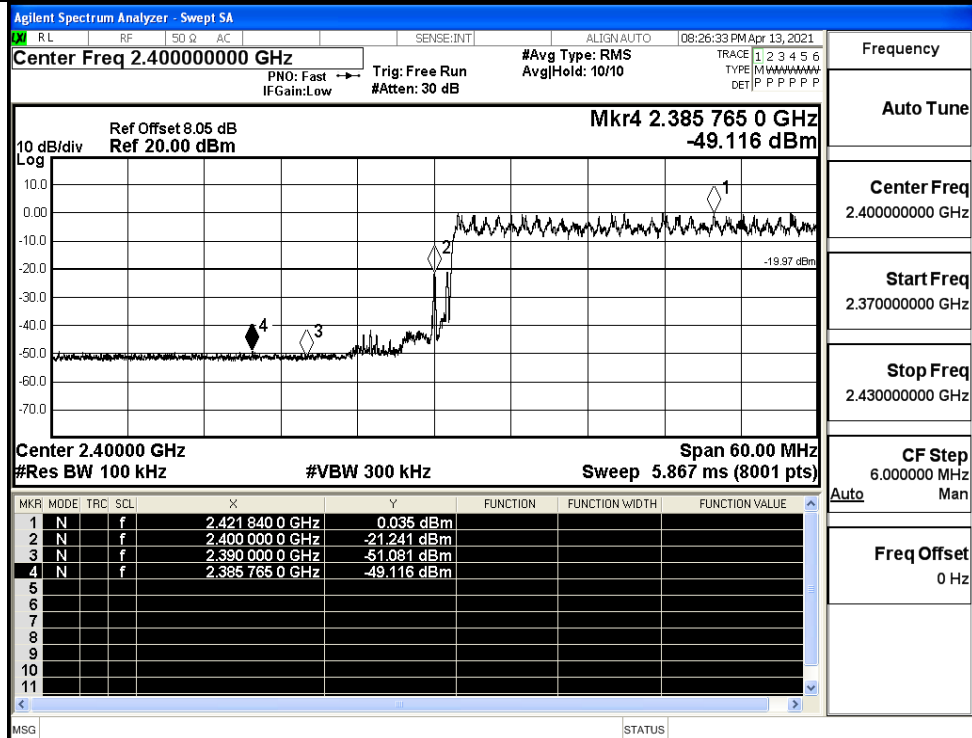
Stop Freq
2.404000000 GHz

CF Step
9.400000 MHz

Auto Man

Freq Offset
0 Hz

$\pi/4$ DQPSK/LCH/Hop



Frequency

Auto Tune

Center Freq
2.400000000 GHz

Start Freq
2.370000000 GHz

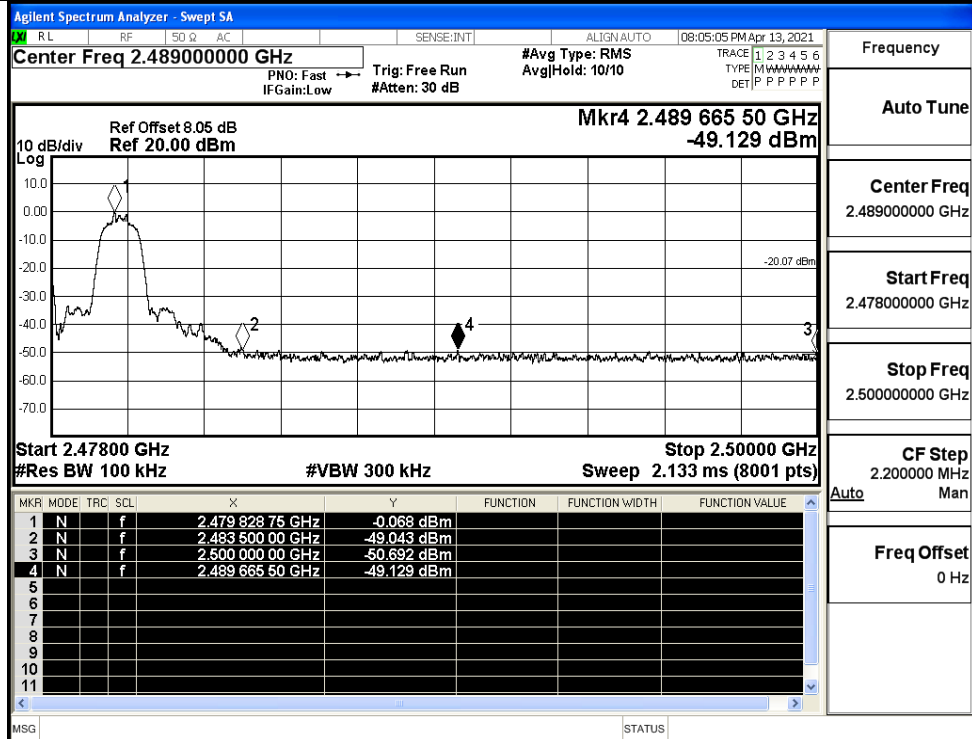
Stop Freq
2.430000000 GHz

CF Step
6.000000 MHz

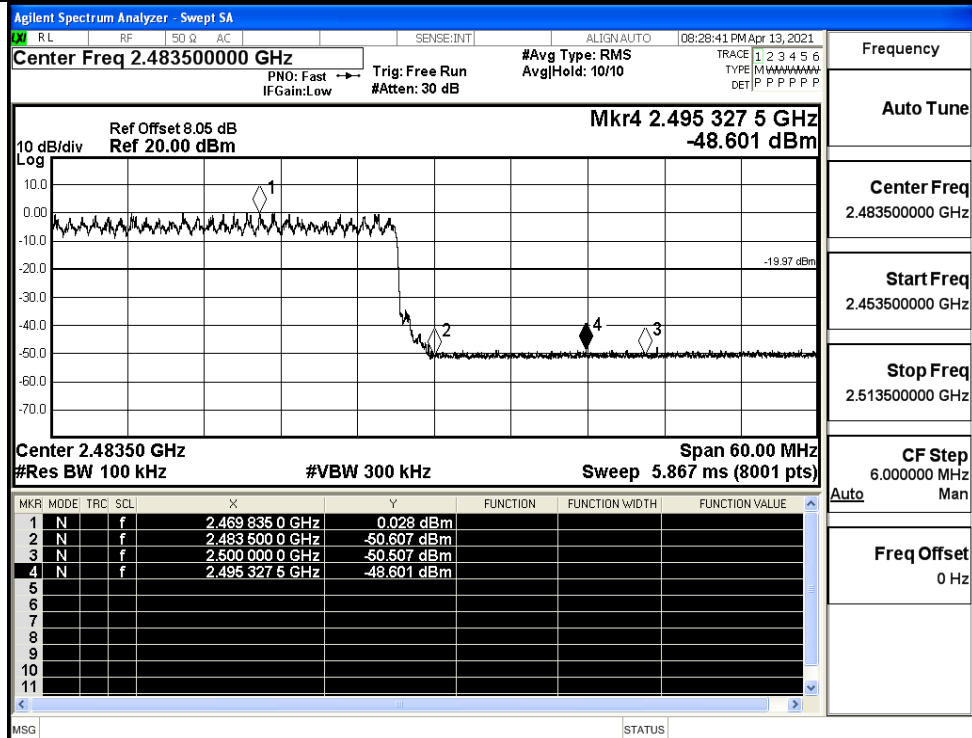
Auto Man

Freq Offset
0 Hz

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



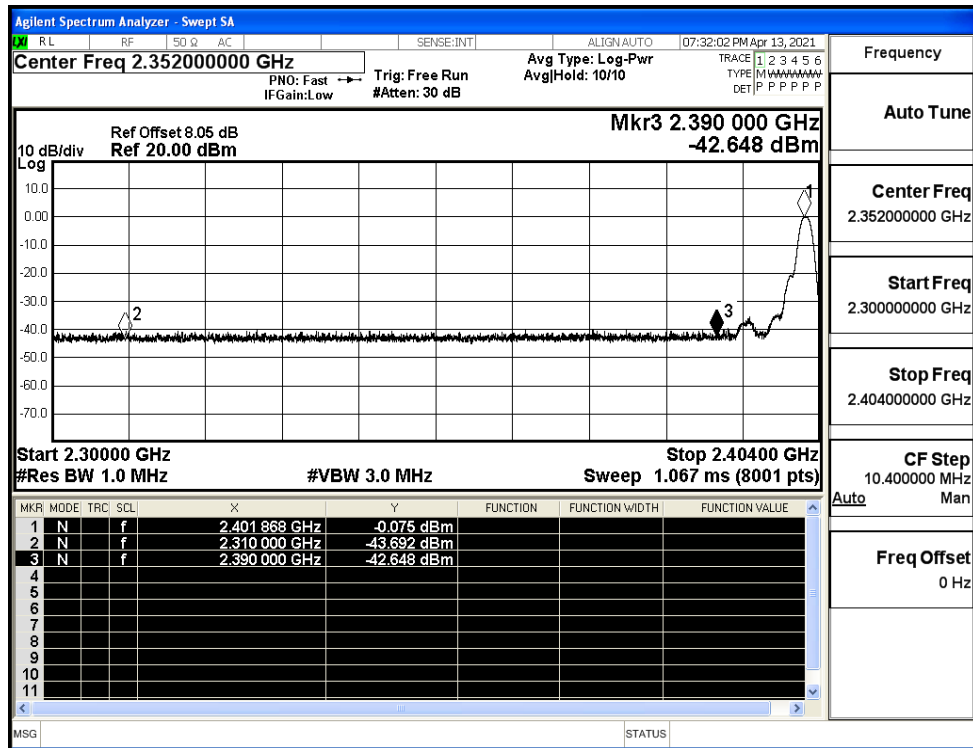
$\pi/4$ DQPSK/HCH/Hop



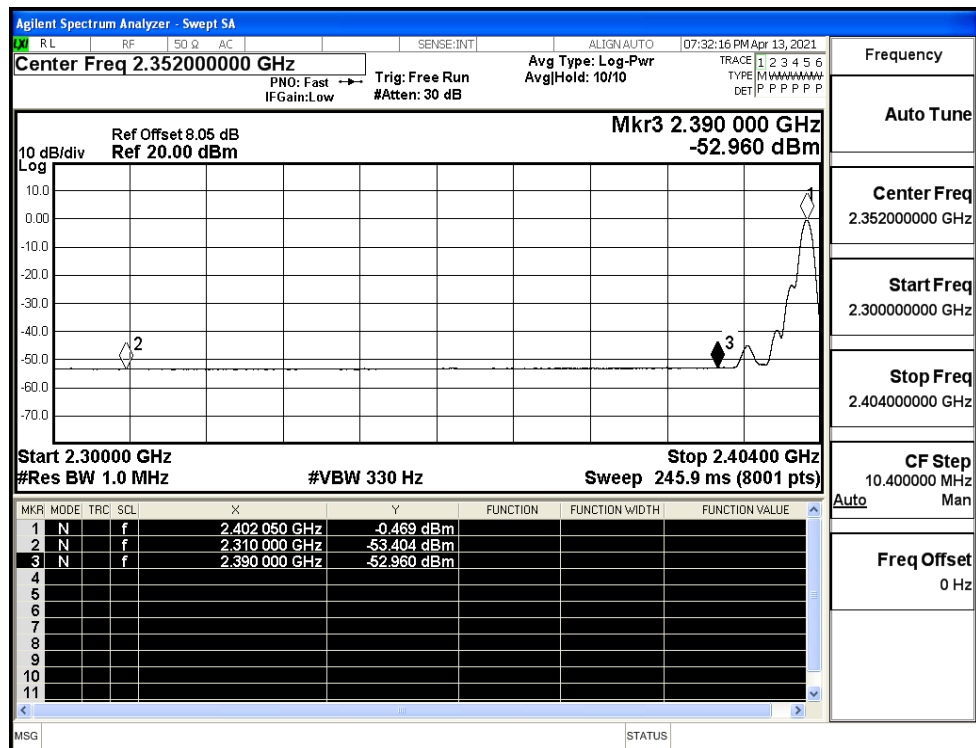
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.69	2.0	0	53.57	PEAK	74	PASS
	Off	2310.0	-53.40	2.0	0	43.86	AV	54	PASS
	Off	2390.0	-42.65	2.0	0	54.61	PEAK	74	PASS
	Off	2390.0	-52.96	2.0	0	44.30	AV	54	PASS
	Off	2483.5	-40.44	2.0	0	56.82	PEAK	74	PASS
	Off	2483.5	-50.16	2.0	0	47.10	AV	54	PASS
	Off	2500.0	-42.31	2.0	0	54.95	PEAK	74	PASS
	Off	2500.0	-52.32	2.0	0	44.94	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.81	2.0	0	53.45	PEAK	74	PASS
	Off	2310.0	-53.46	2.0	0	43.80	AV	54	PASS
	Off	2390.0	-42.29	2.0	0	54.97	PEAK	74	PASS
	Off	2390.0	-52.88	2.0	0	44.38	AV	54	PASS
	Off	2483.5	-39.89	2.0	0	57.37	PEAK	74	PASS
	Off	2483.5	-50.28	2.0	0	46.98	AV	54	PASS
	Off	2500.0	-42.07	2.0	0	55.19	PEAK	74	PASS
	Off	2500.0	-52.38	2.0	0	44.88	AV	54	PASS

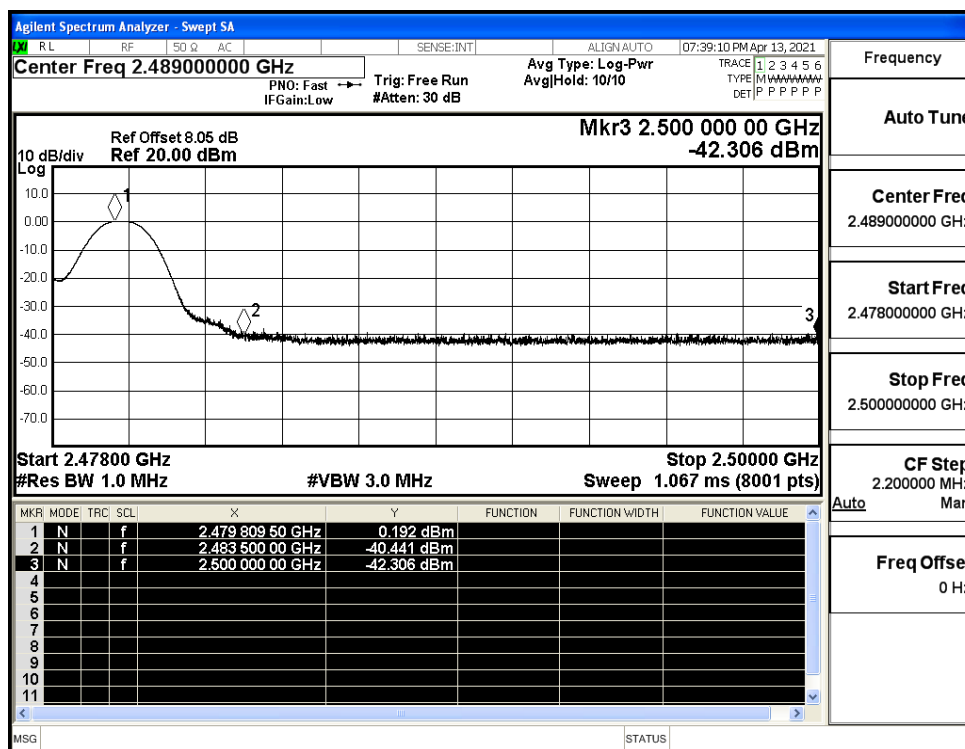
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



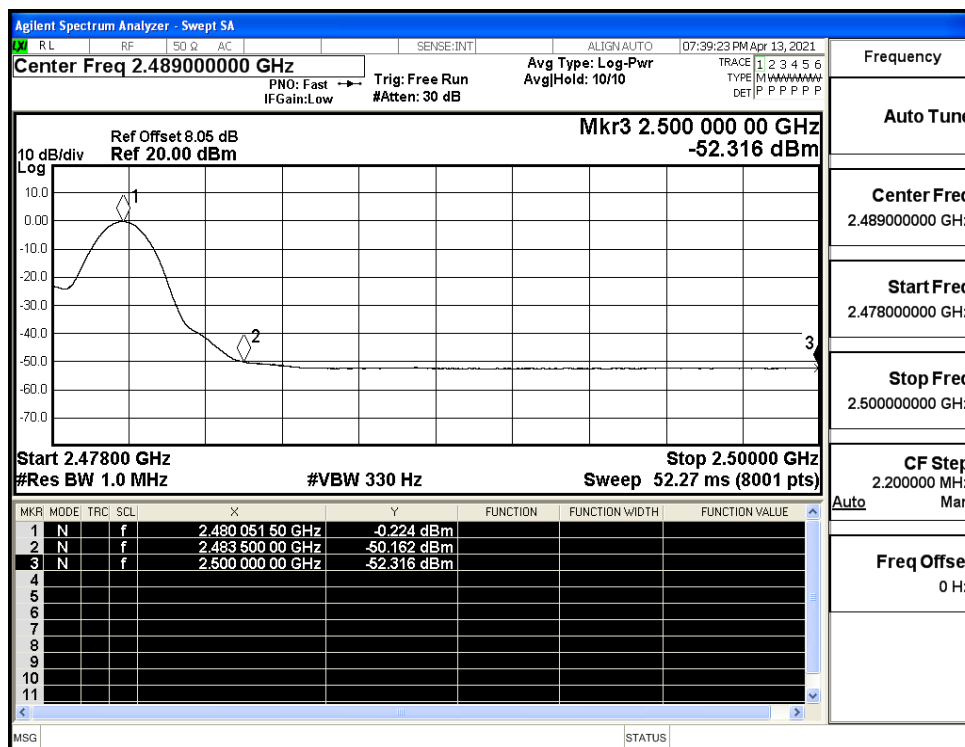
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

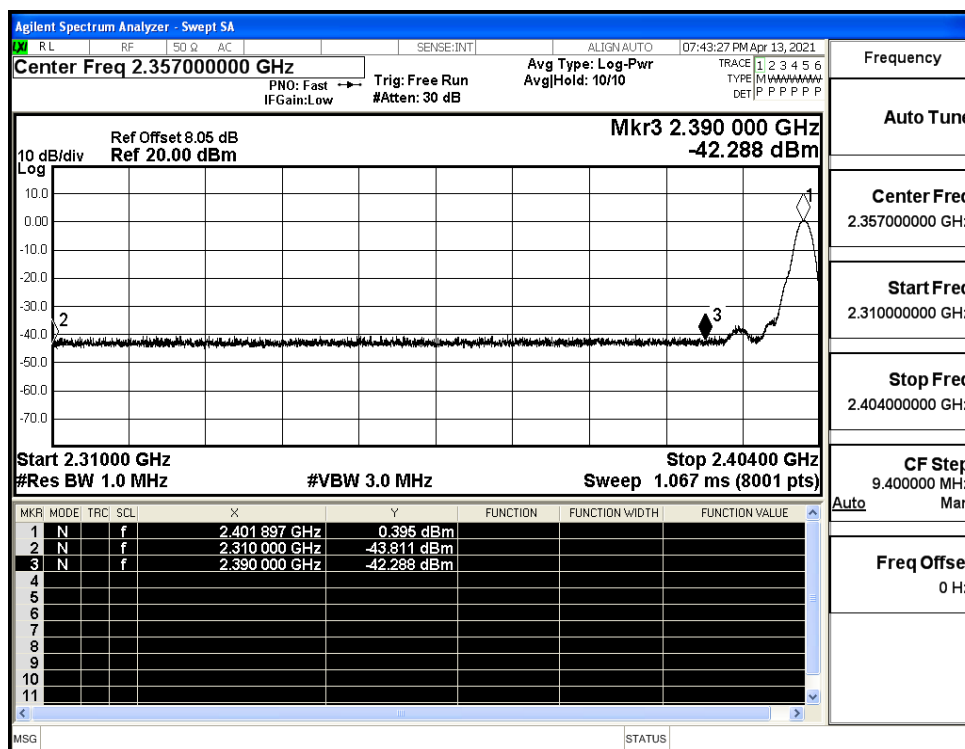
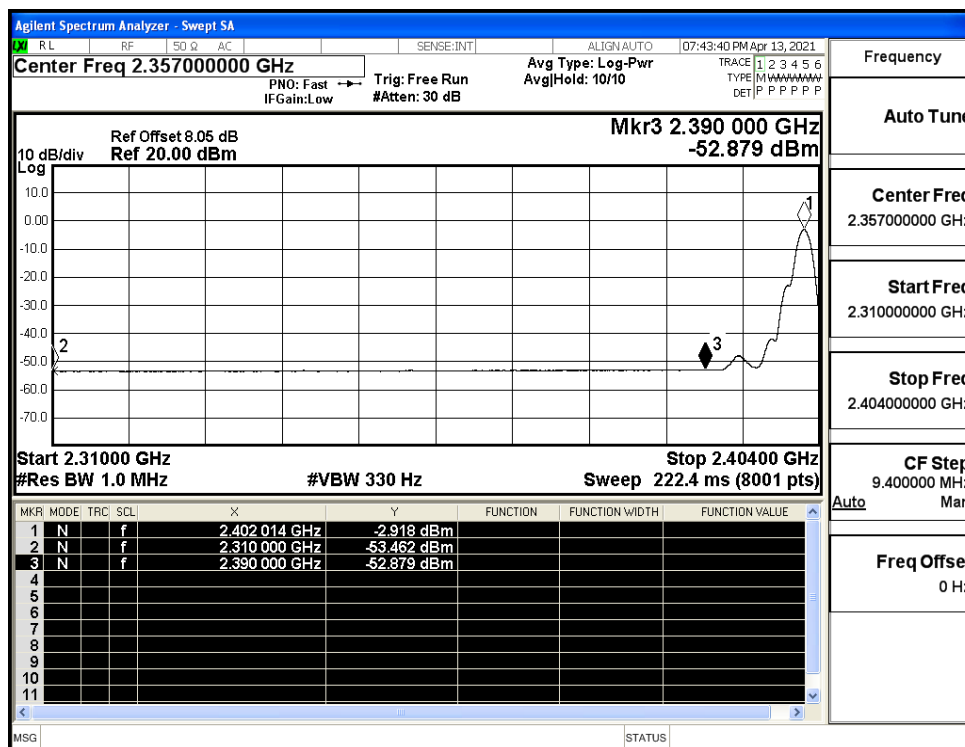


Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)

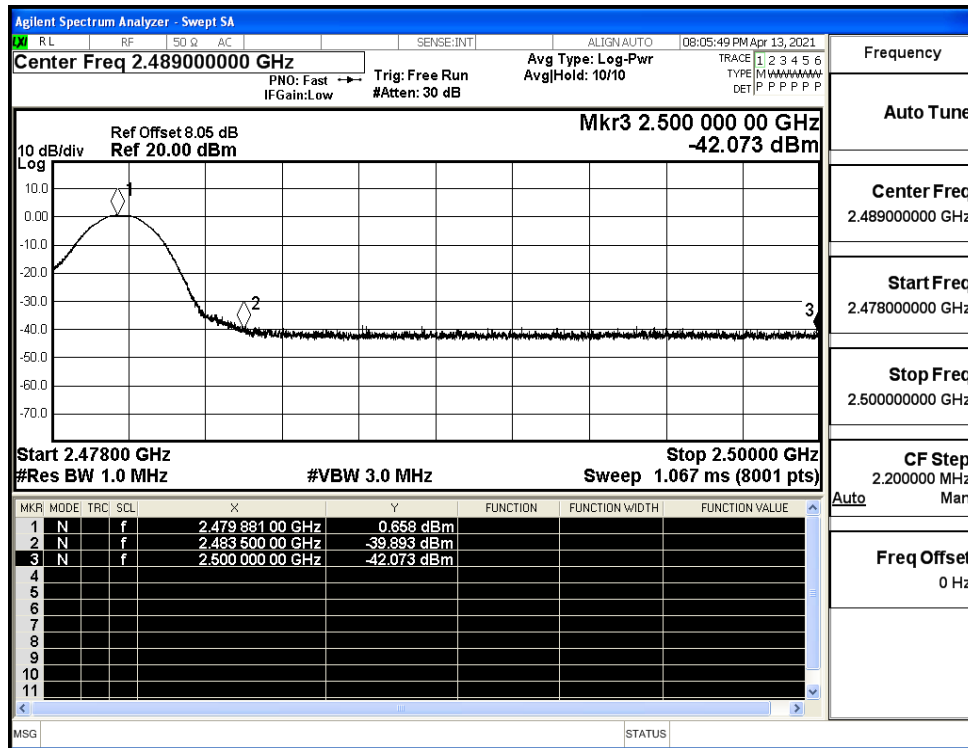


Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



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)

