

Appendix A

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

Product Name: Wireless Speaker

Trade Mark: billboard

Test Model: BB1001

Environmental Conditions

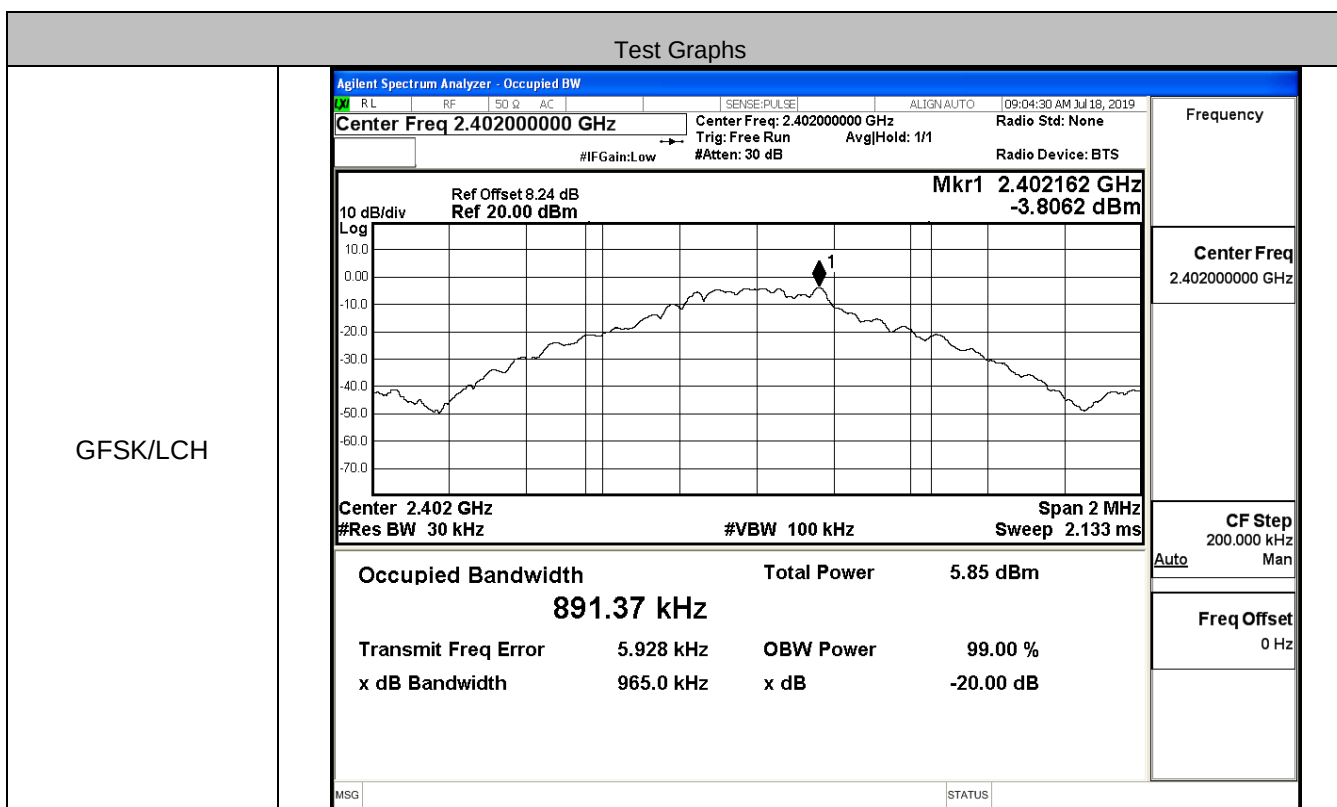
Temperature:	23.4 ° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	SCENT HU
Supervised by:	Wang.Chuang

A.1 Maximum Conducted Peak Output Power

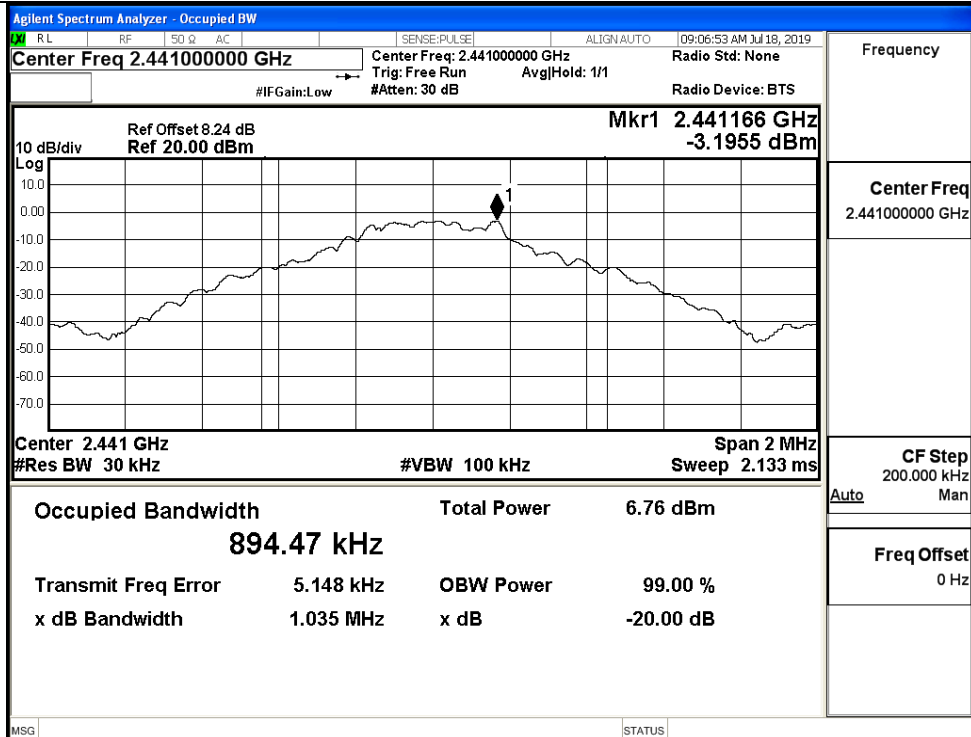
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-1.480	21	PASS
	MCH	-0.626	21	PASS
	HCH	-1.751	21	PASS
$\pi/4$ DQPSK	LCH	-2.106	21	PASS
	MCH	-1.224	21	PASS
	HCH	-2.316	21	PASS

A.2 20dB Bandwidth

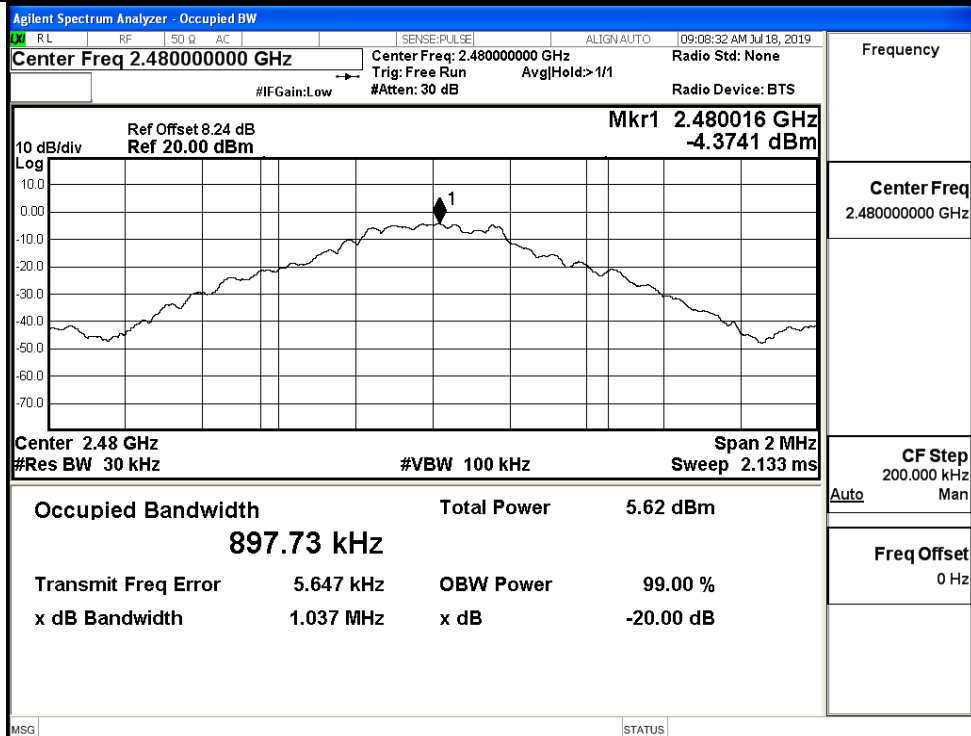
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9650	Not Specified	PASS
	MCH	1.035	Not Specified	PASS
	HCH	1.037	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.292	Not Specified	PASS
	MCH	1.310	Not Specified	PASS
	HCH	1.291	Not Specified	PASS

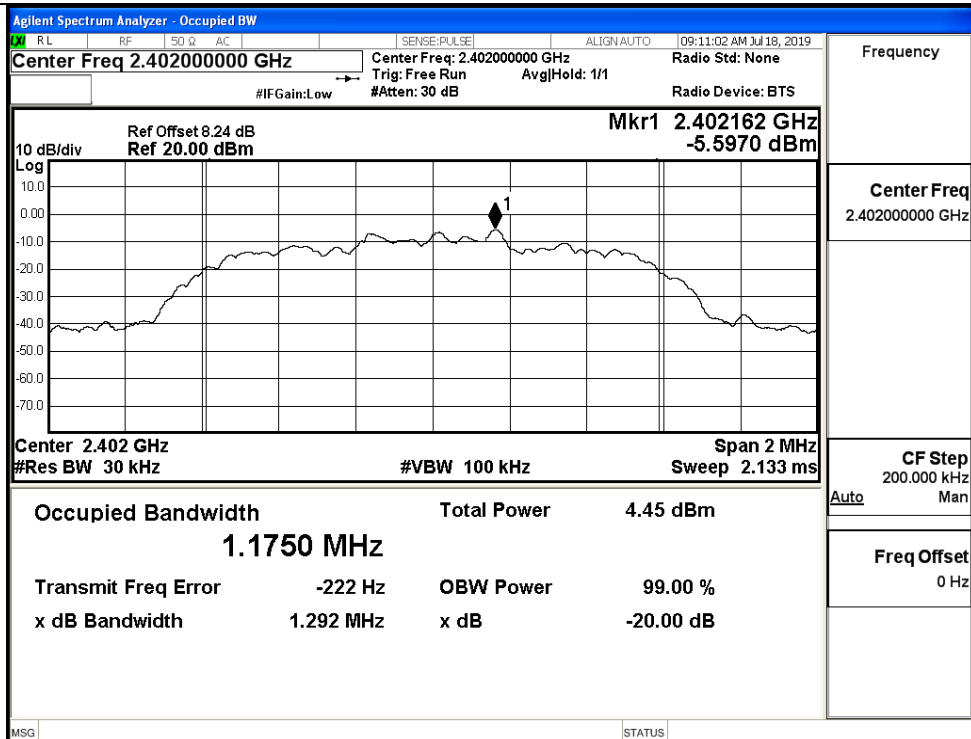
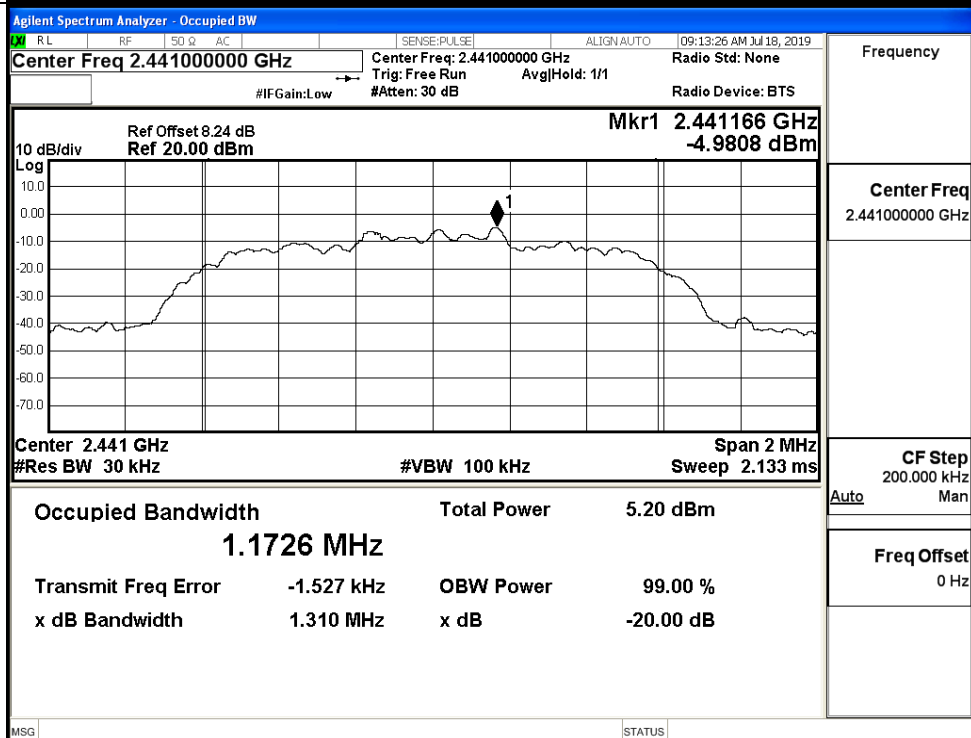


GFSK/MCH

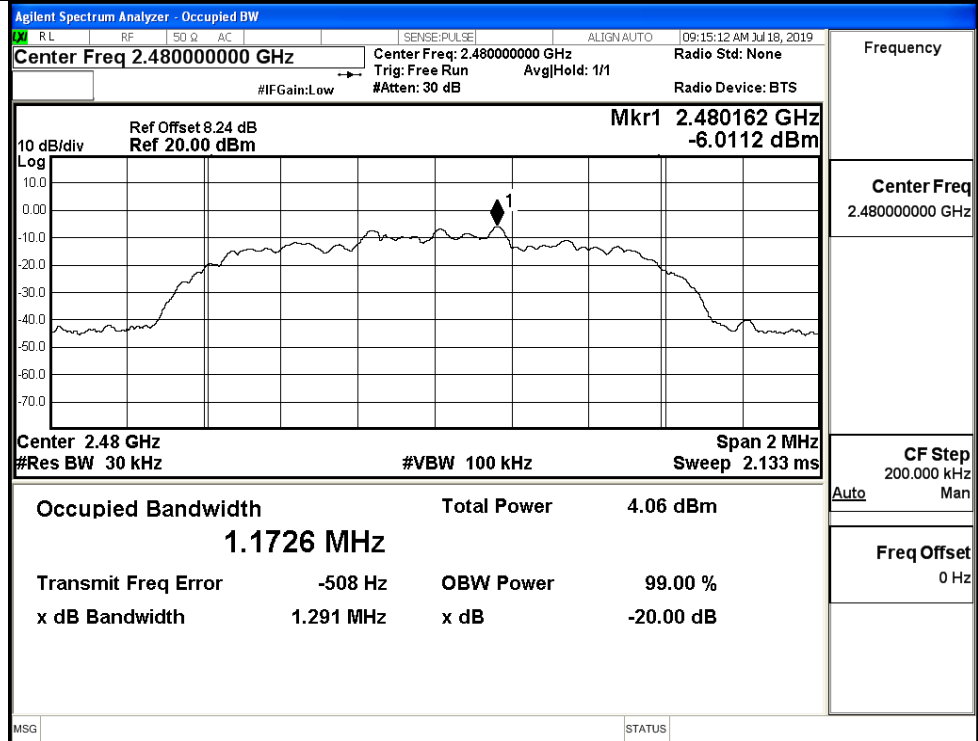


GFSK/HCH



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

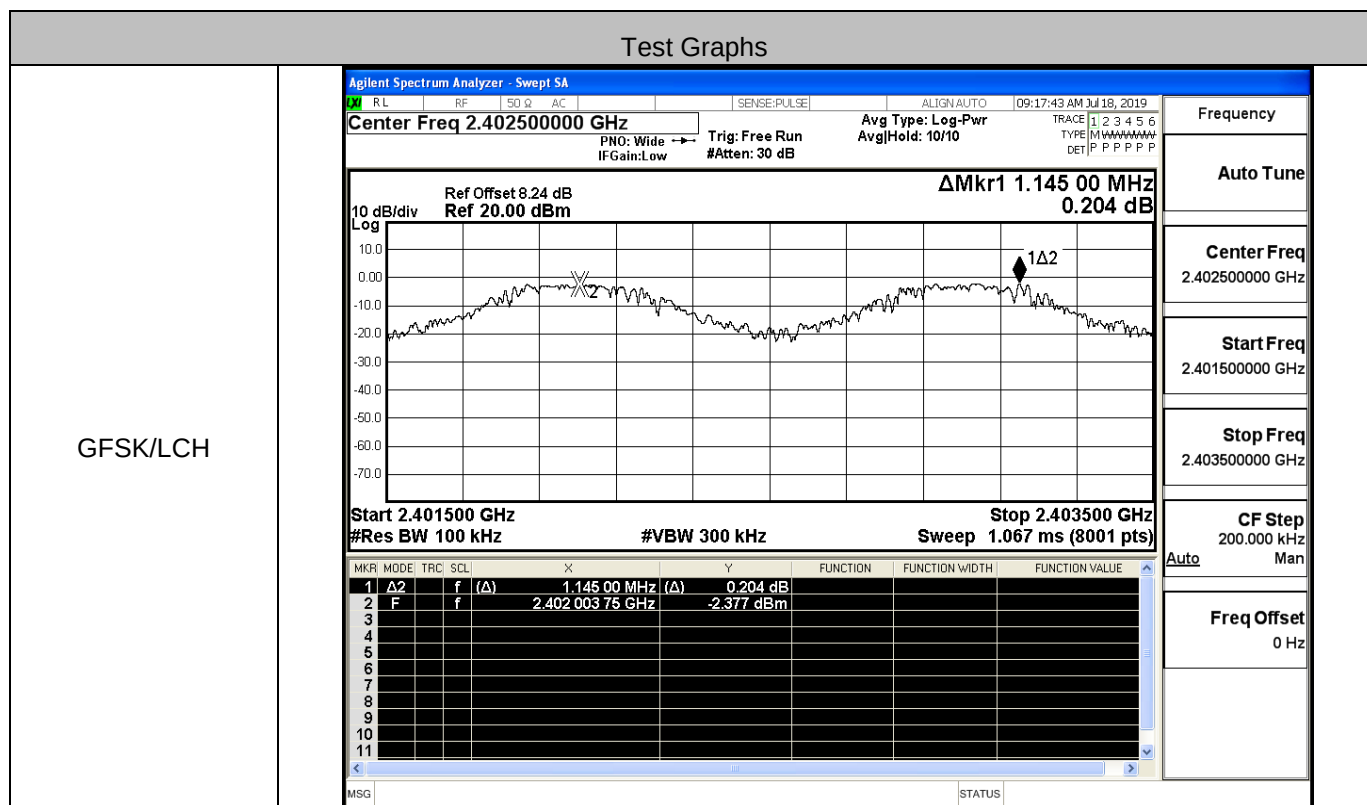
$\pi/4$ DQPSK/HCH



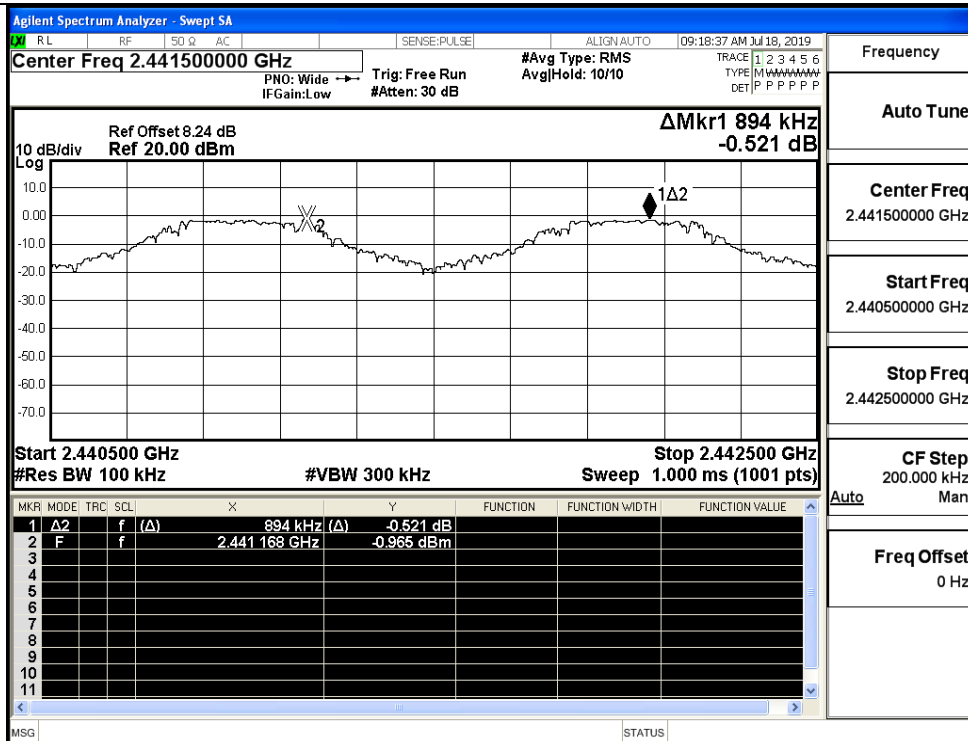
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.145	0.691	PASS
	MCH	0.894	0.691	PASS
	HCH	0.896	0.691	PASS
π /4DQPSK	LCH	1.028	0.873	PASS
	MCH	0.876	0.873	PASS
	HCH	1.304	0.873	PASS

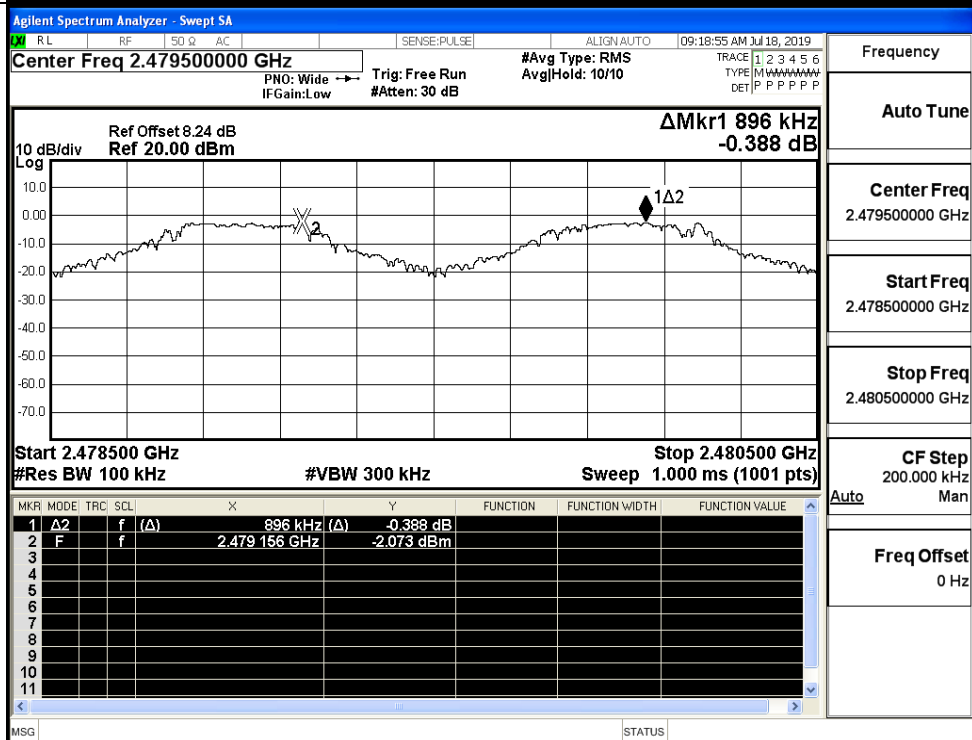
Test Graphs

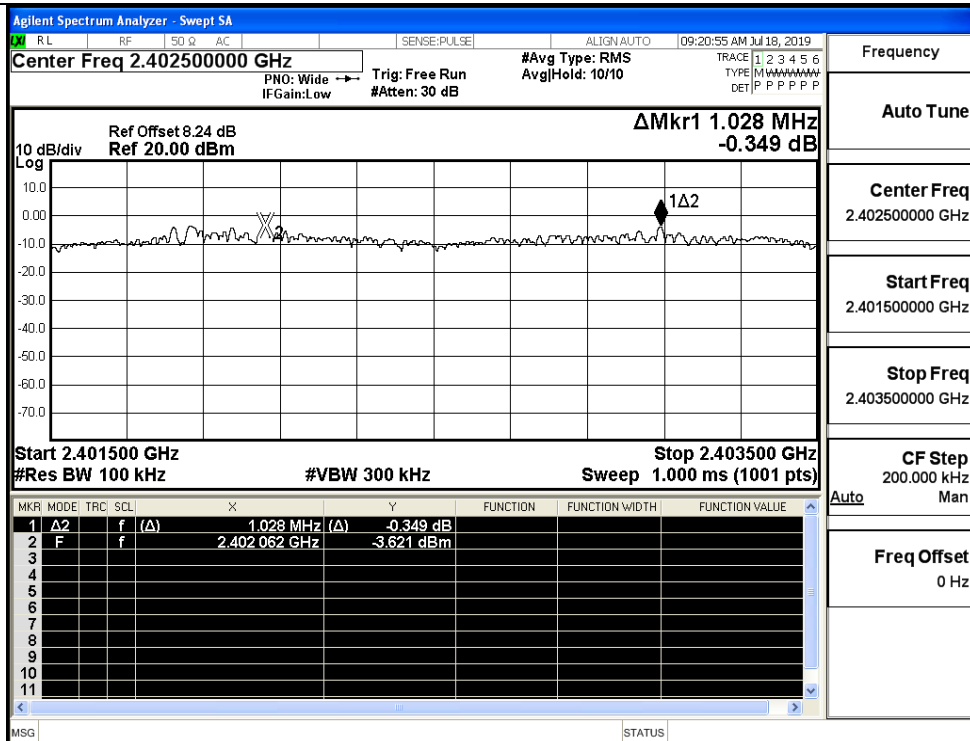


GFSK/MCH



GFSK/HCH



$\pi/4$ DQPSK/LCH

Frequency

Auto Tune

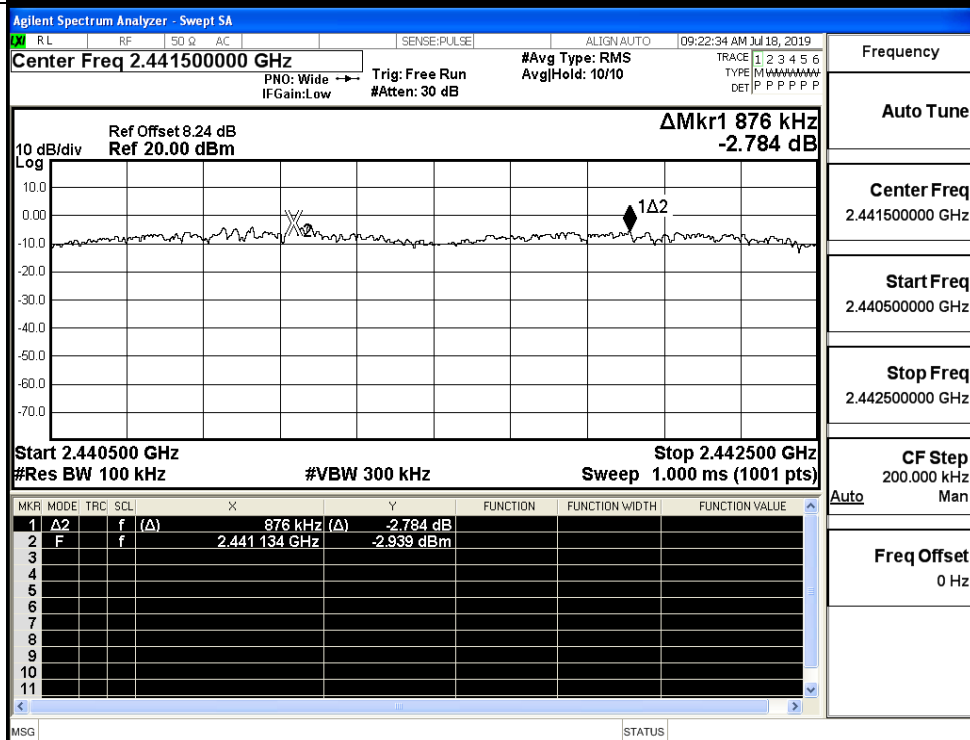
Center Freq
2.402500000 GHz

Start Freq
2.401500000 GHz

Stop Freq
2.403500000 GHz

CF Step
200.000 kHz
Man

Freq Offset
0 Hz

 $\pi/4$ DQPSK/MCH

Frequency

Auto Tune

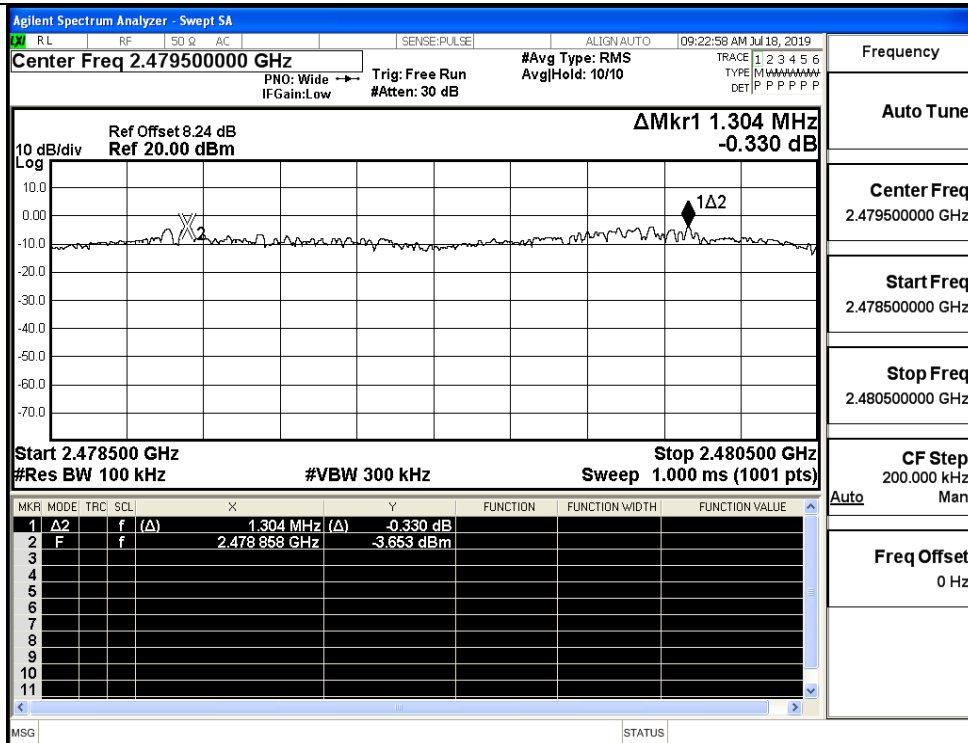
Center Freq
2.441500000 GHz

Start Freq
2.440500000 GHz

Stop Freq
2.442500000 GHz

CF Step
200.000 kHz
Man

Freq Offset
0 Hz

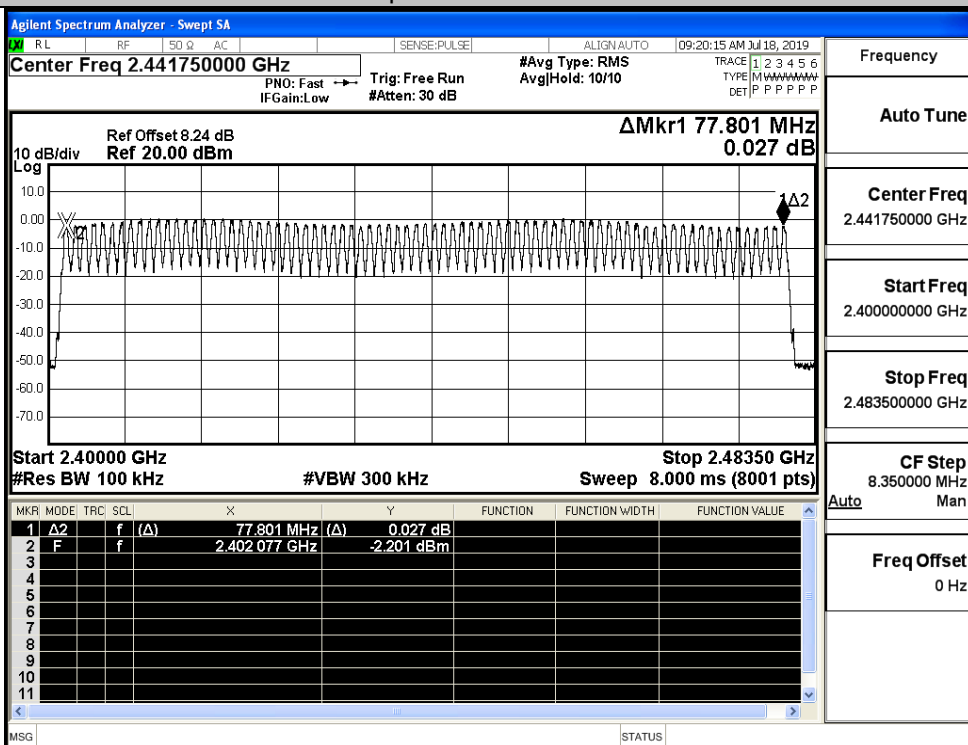
$\pi/4$ DQPSK/HCH

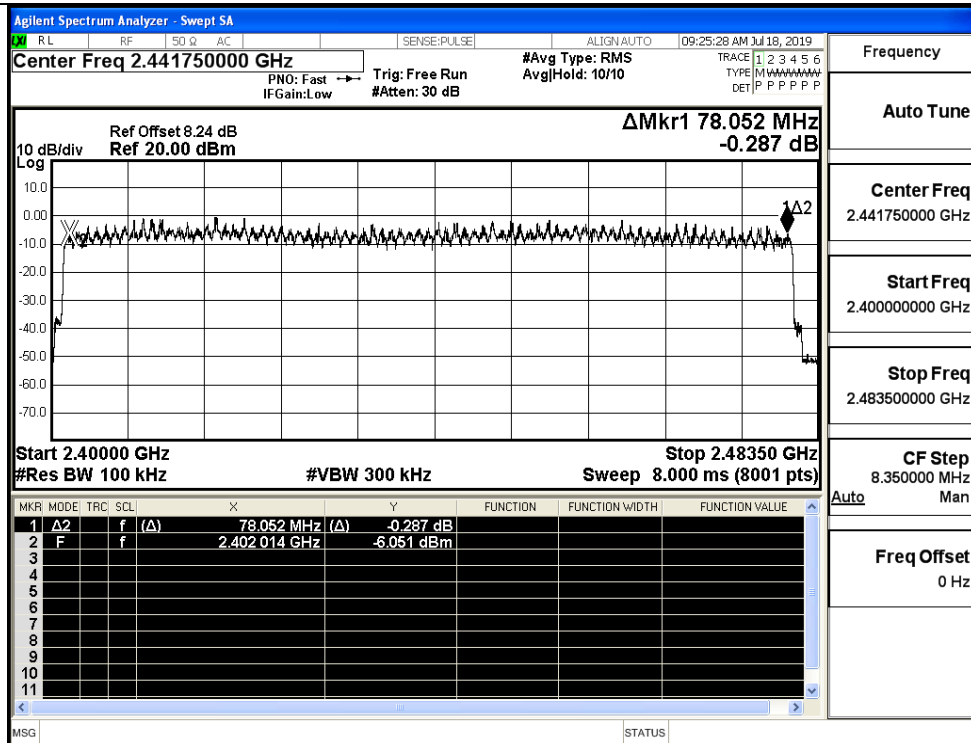
A.4 Hopping Channel Number

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



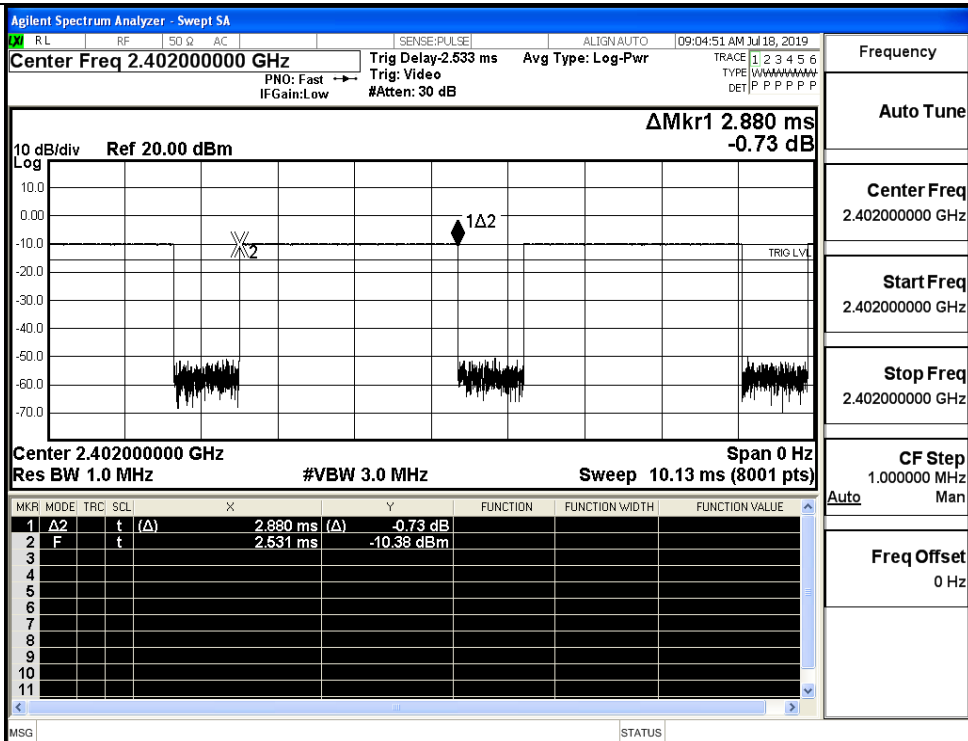
$\pi/4$ DQPSK/Hop

A.5 Dwell Time

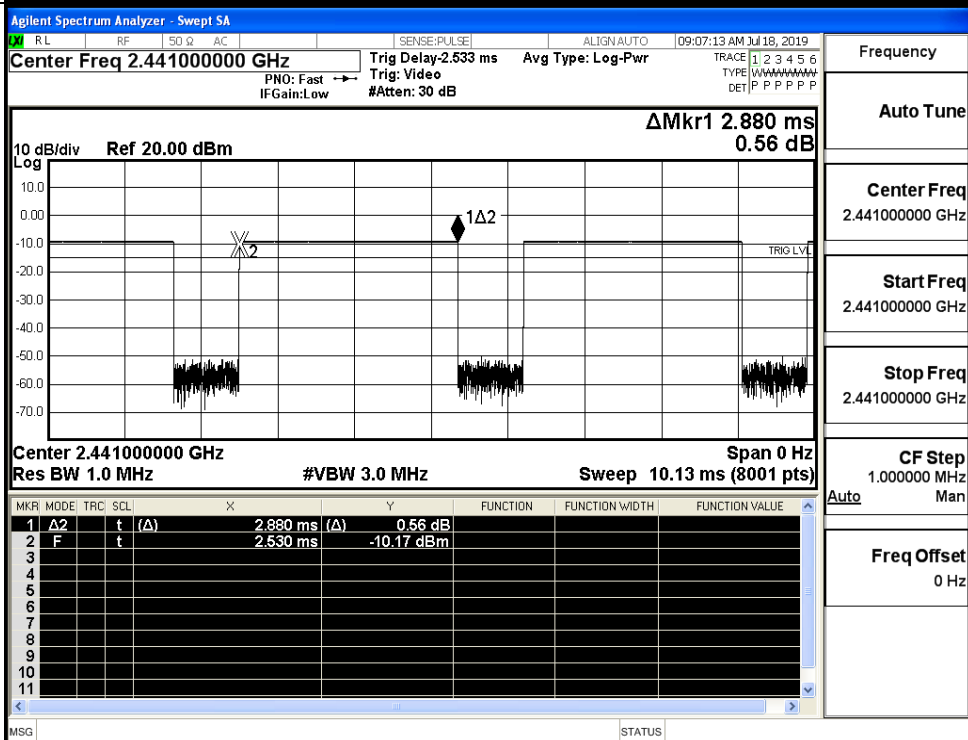
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88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

Test Graphs

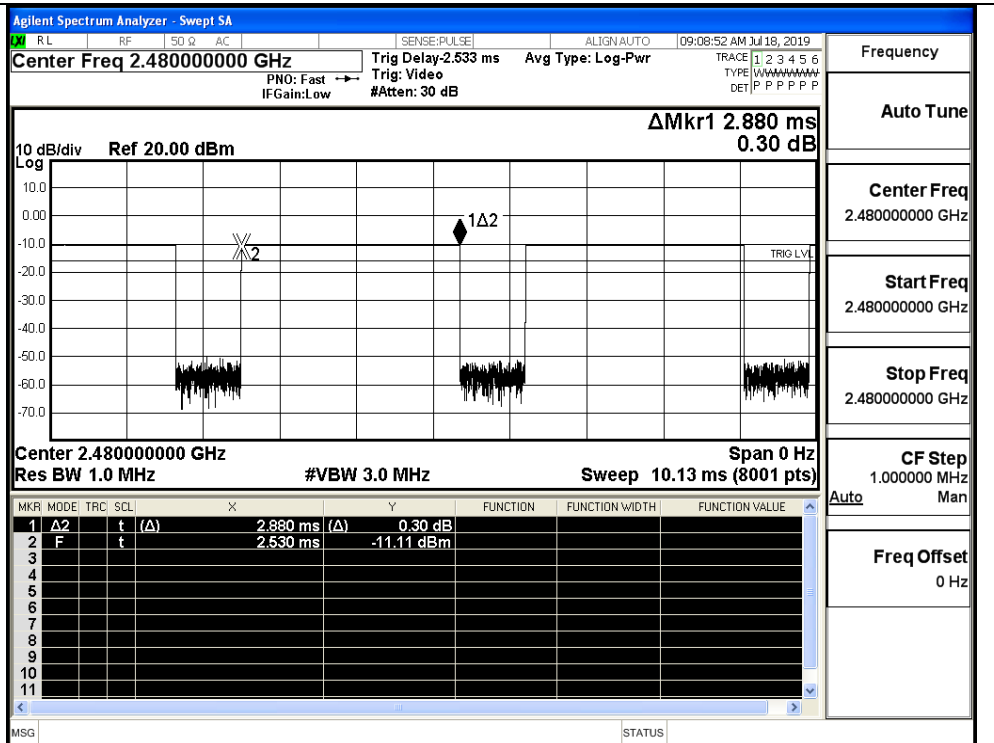
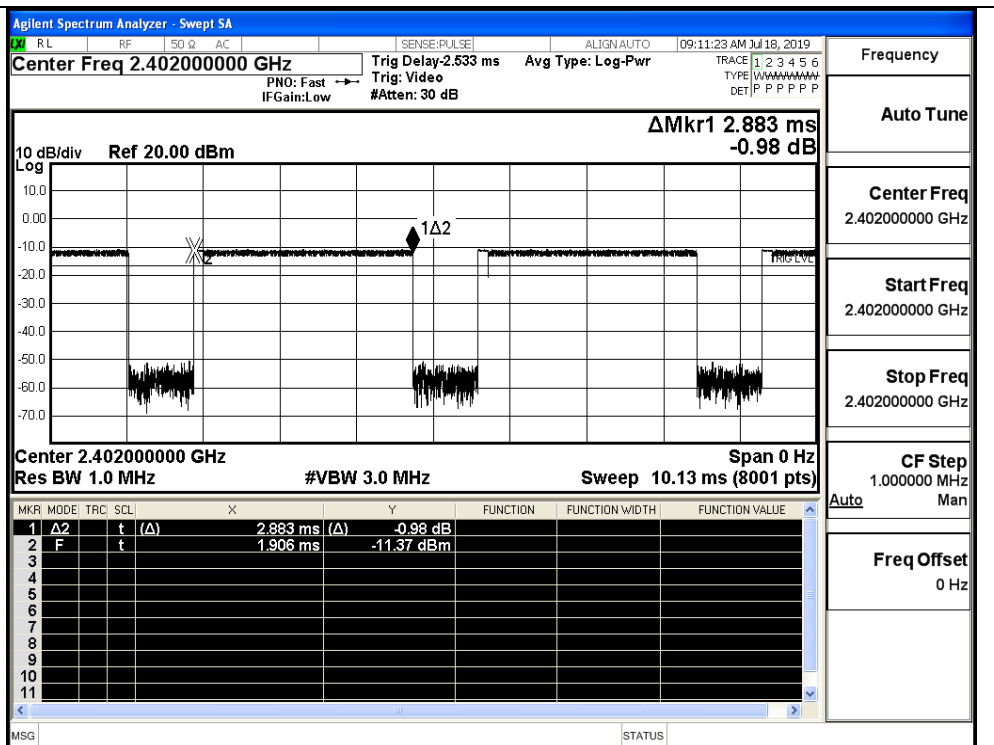
GFSK_DH5/LCH



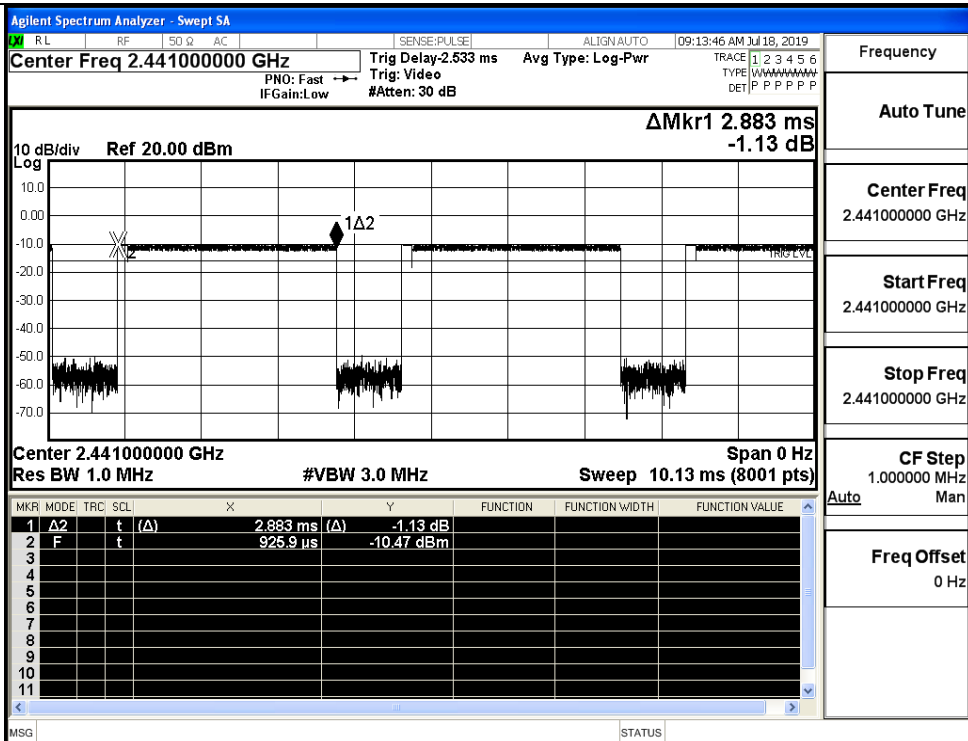
GFSK_DH5/MCH



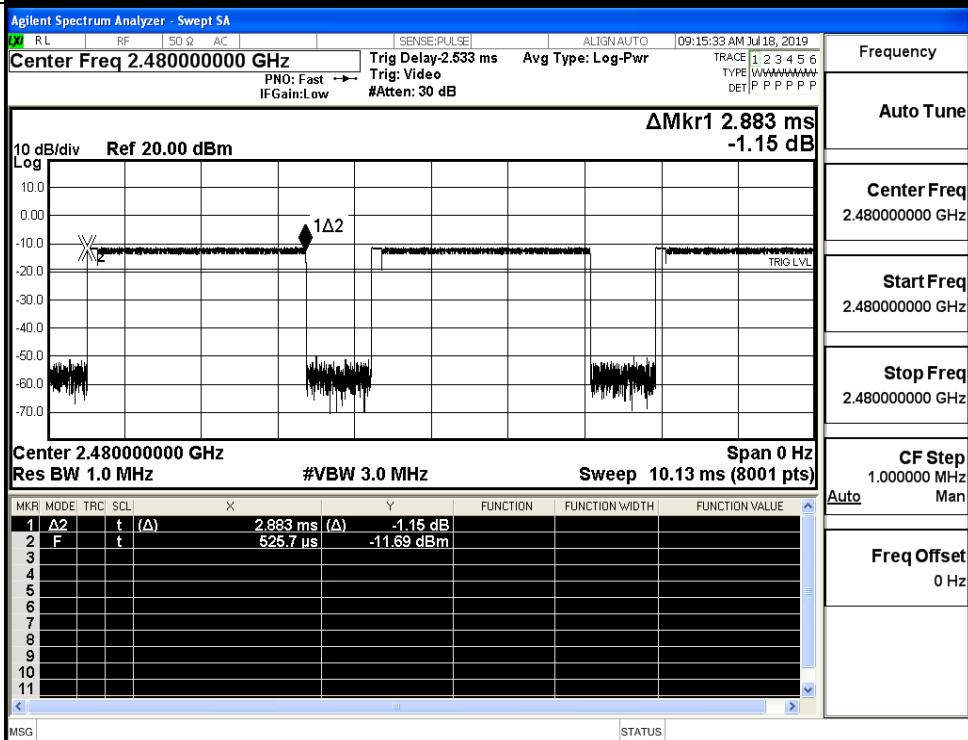
GFSK_DH5/HCH

 π /4DQPSK
_2DH5/LCH

$\pi/4$ DQPSK
_2DH5/MCH

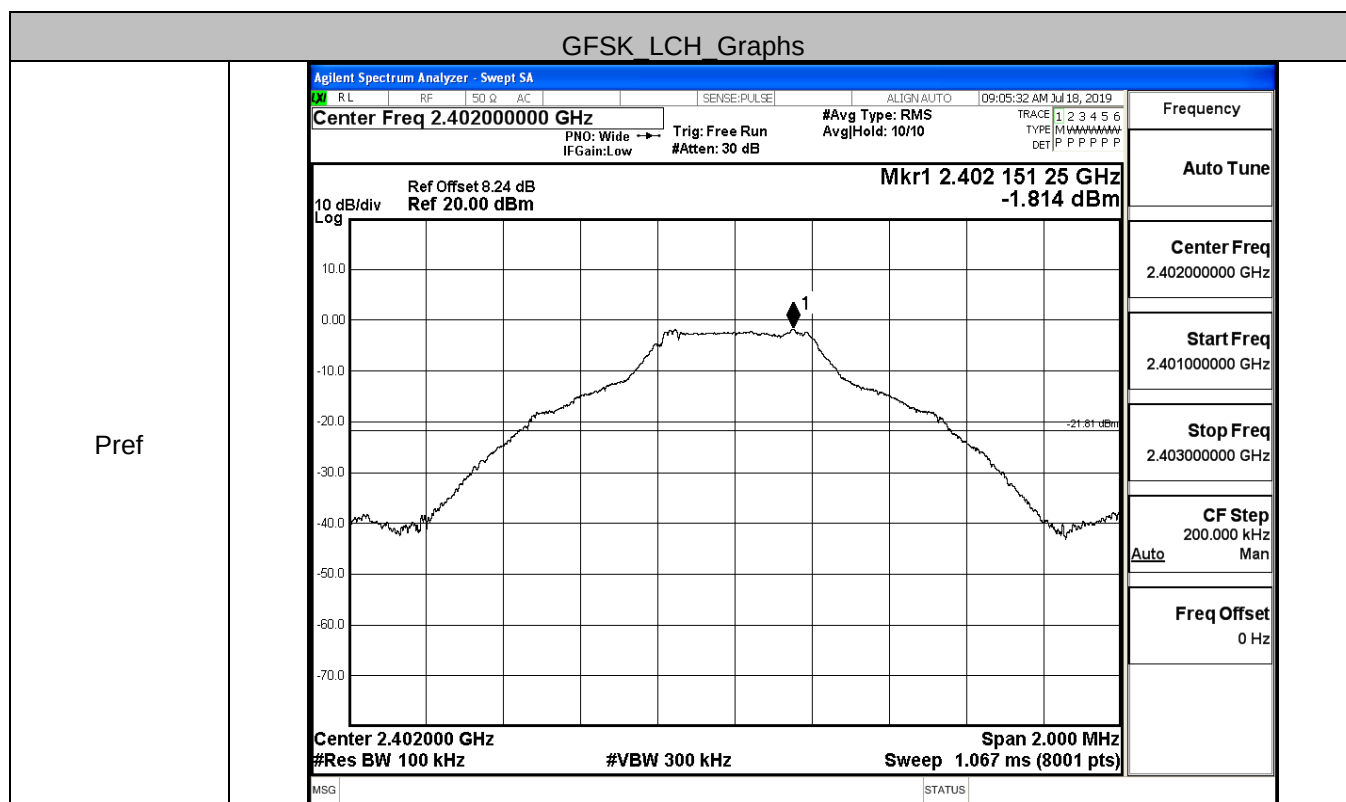


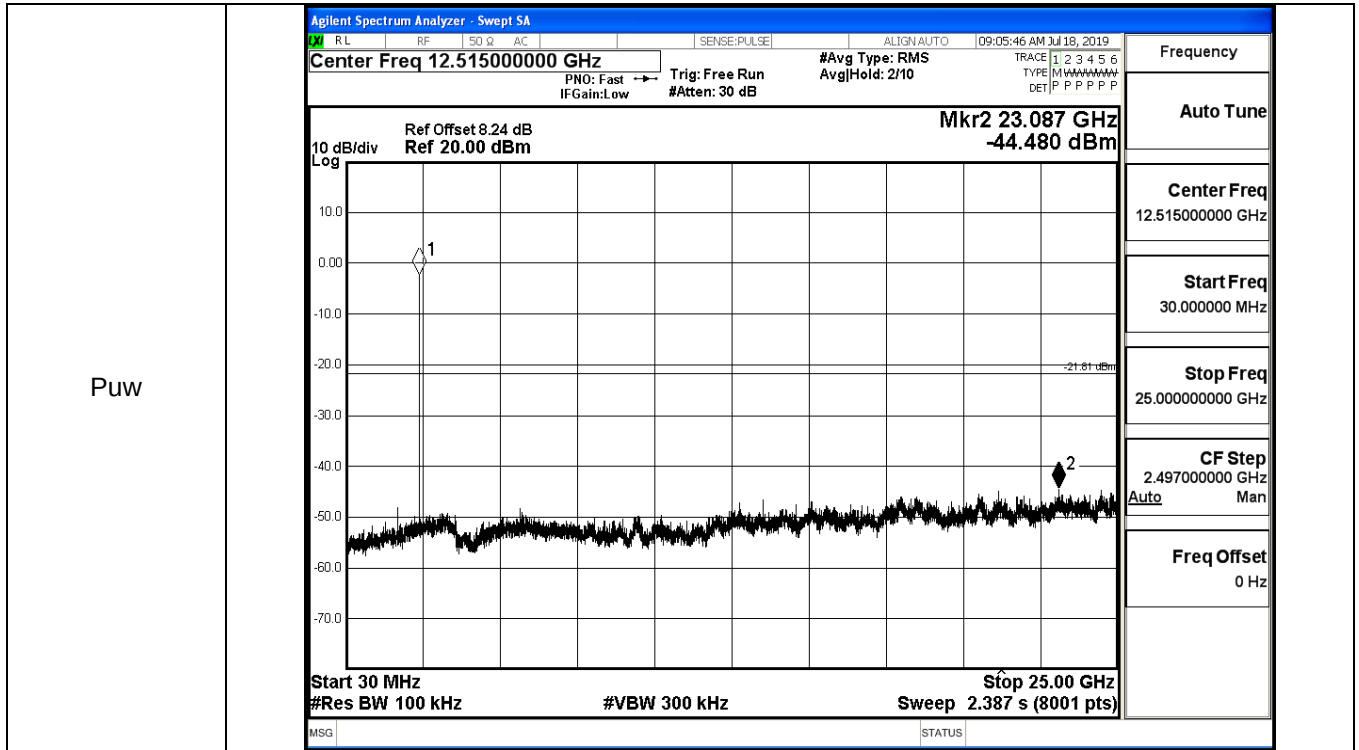
$\pi/4$ DQPSK
_2DH5/HCH



A.6 RF Conducted Spurious Emissions

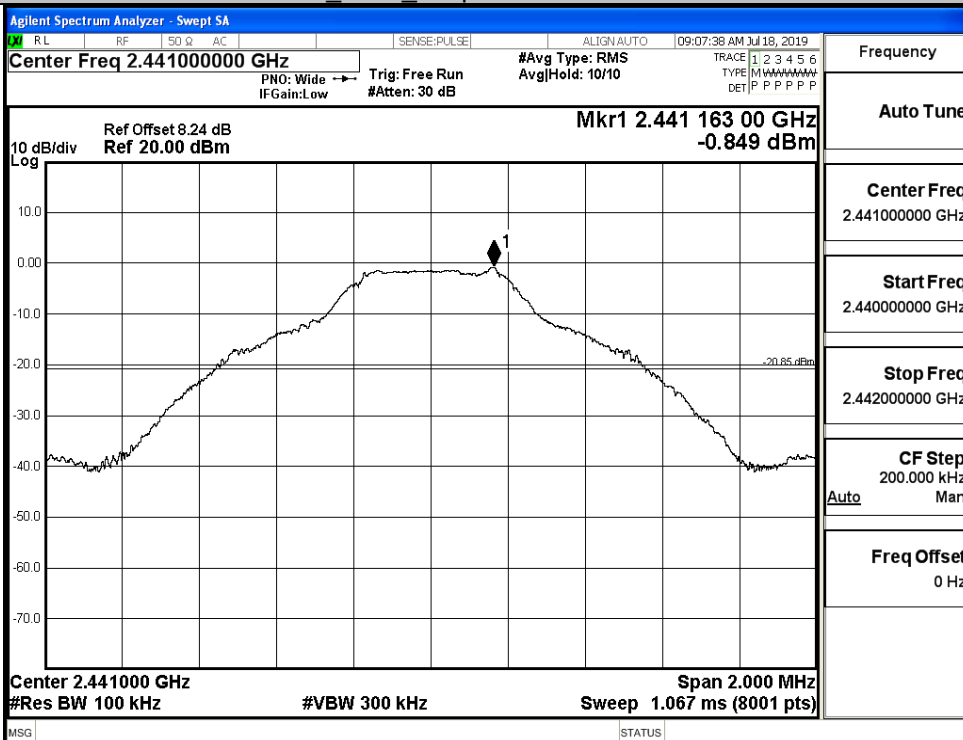
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-1.814	-44.480	-21.814	PASS
	MCH	-0.849	-43.917	-20.849	PASS
	HCH	-2.082	-42.713	-22.082	PASS
$\pi/4$ DQPSK	LCH	-2.966	-44.257	-22.966	PASS
	MCH	-2.241	-45.093	-22.241	PASS
	HCH	-3.338	-44.210	-23.338	PASS



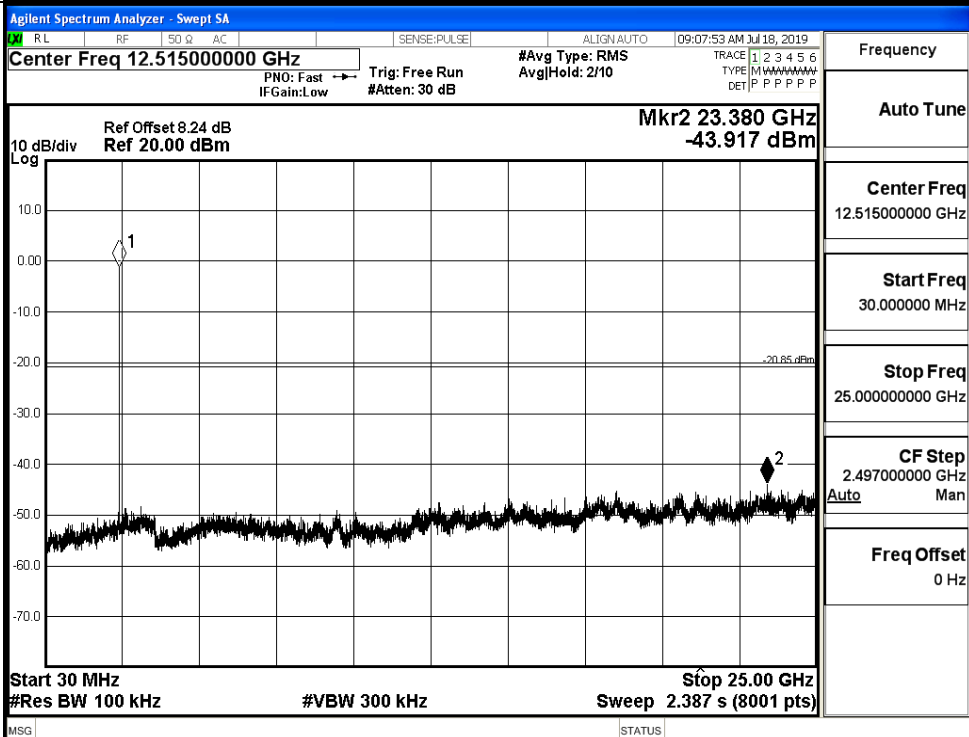


GFSK_MCH_Graphs

Pref

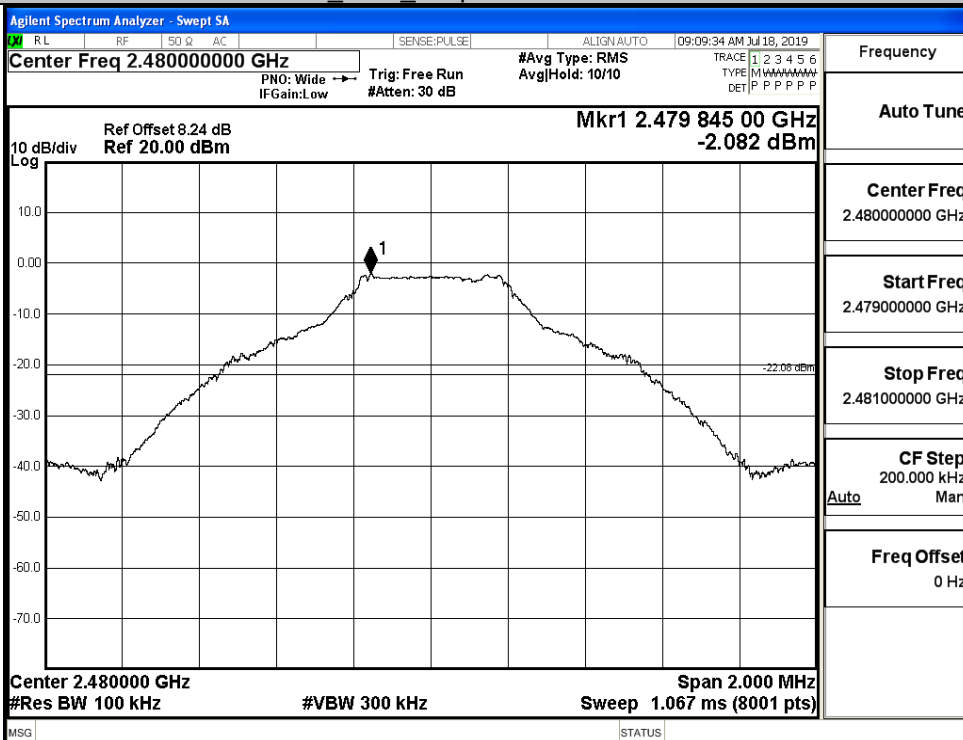


Puw

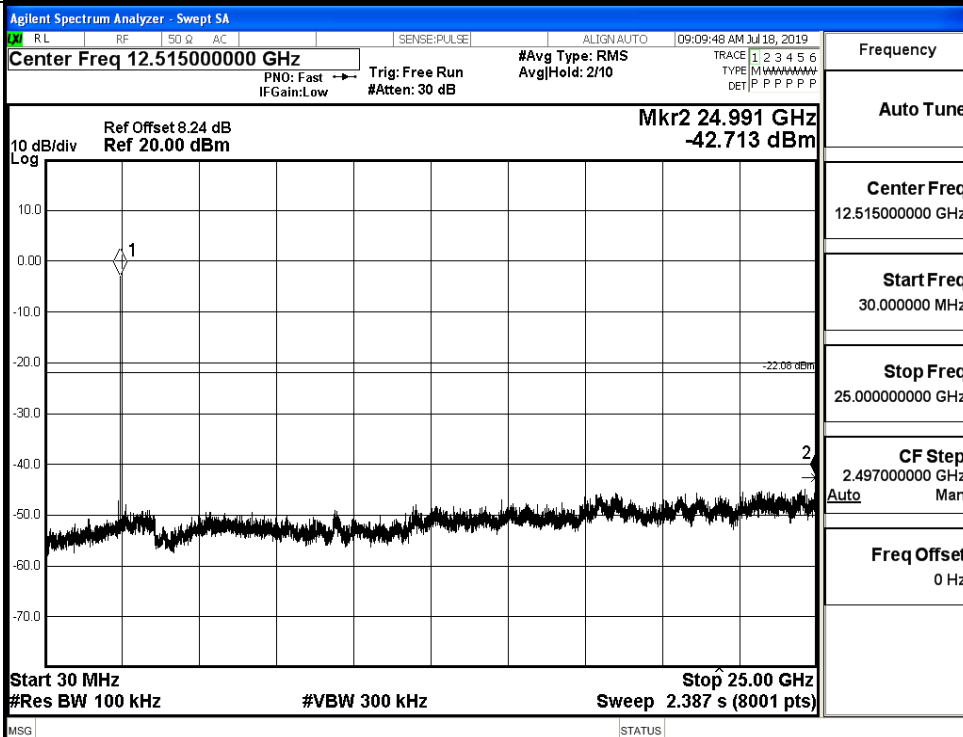


GFSK HCH Graphs

Pref

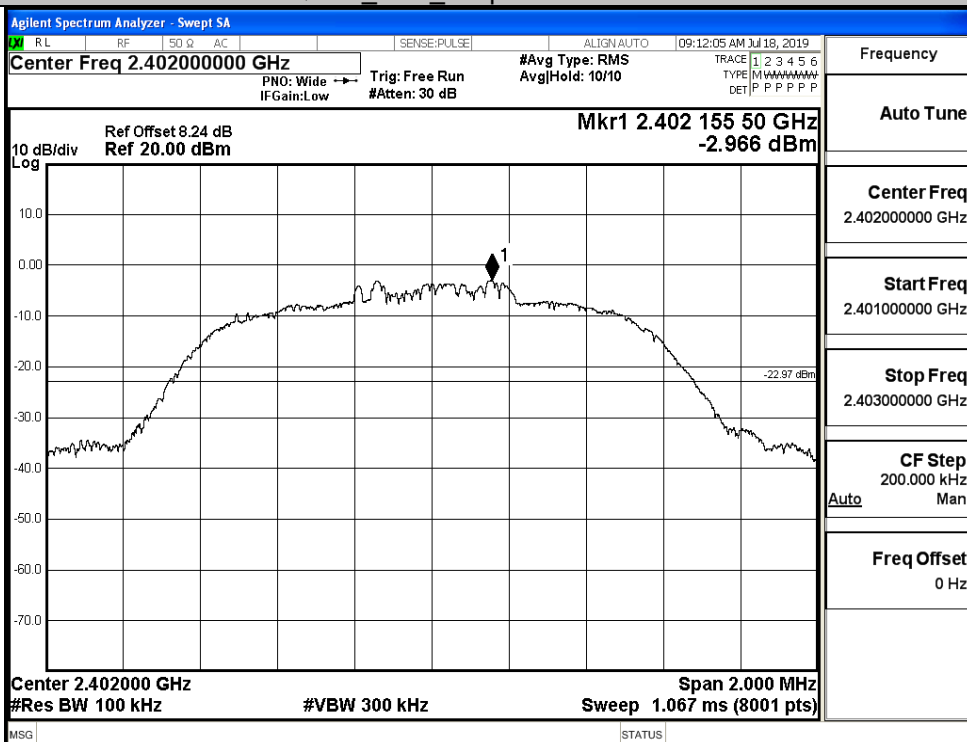


Puw

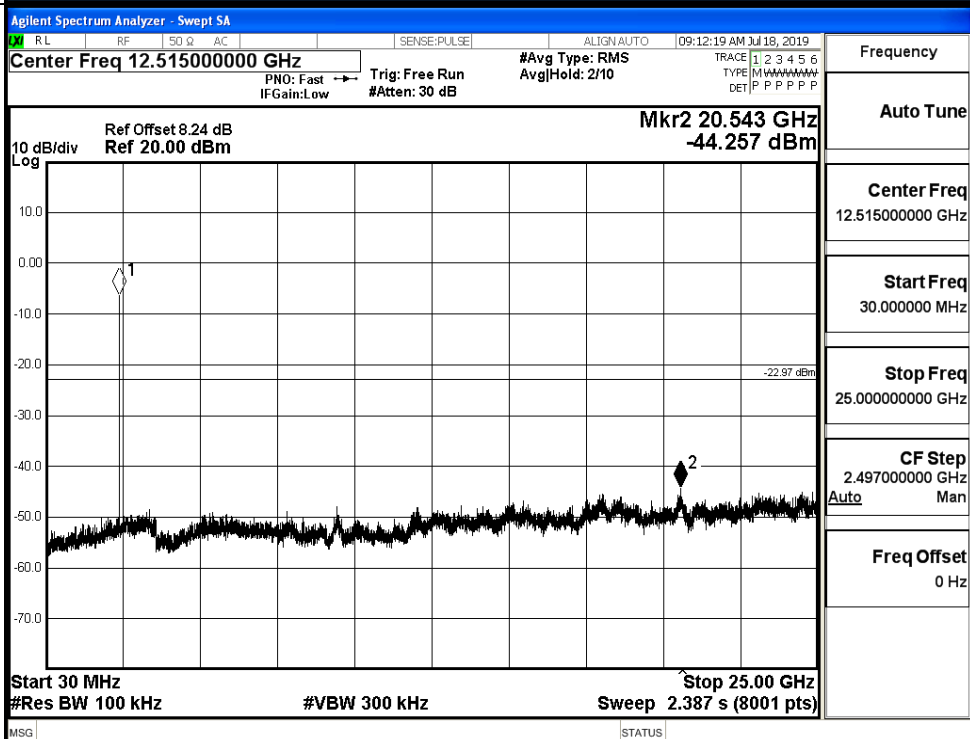


$\pi/4$ DQPSK_LCH_Graphs

Pref

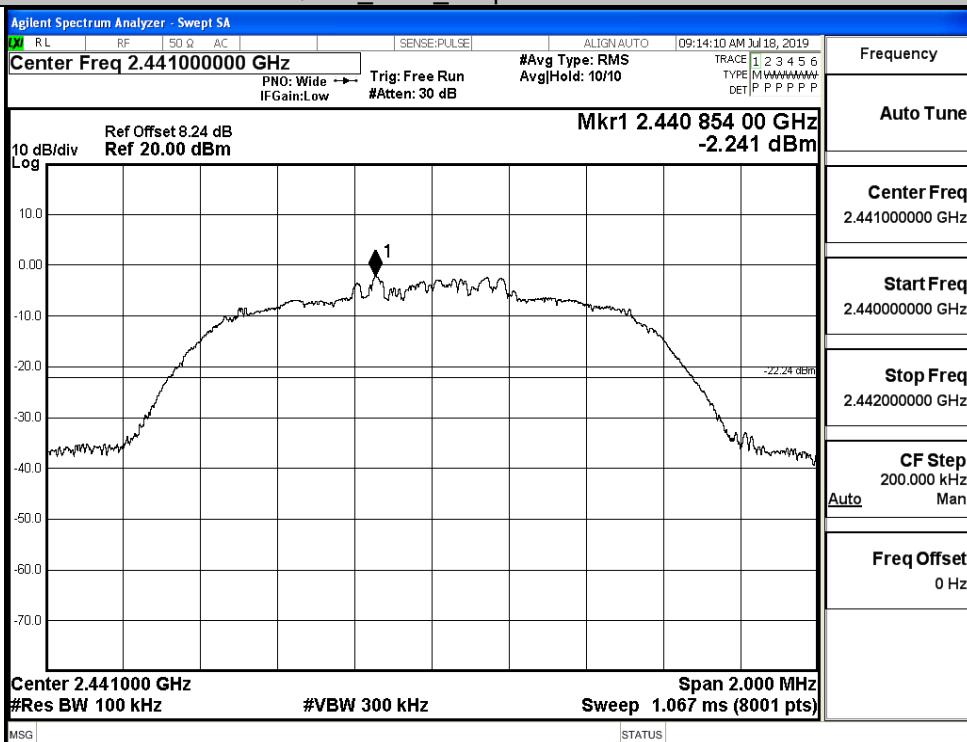


Puw

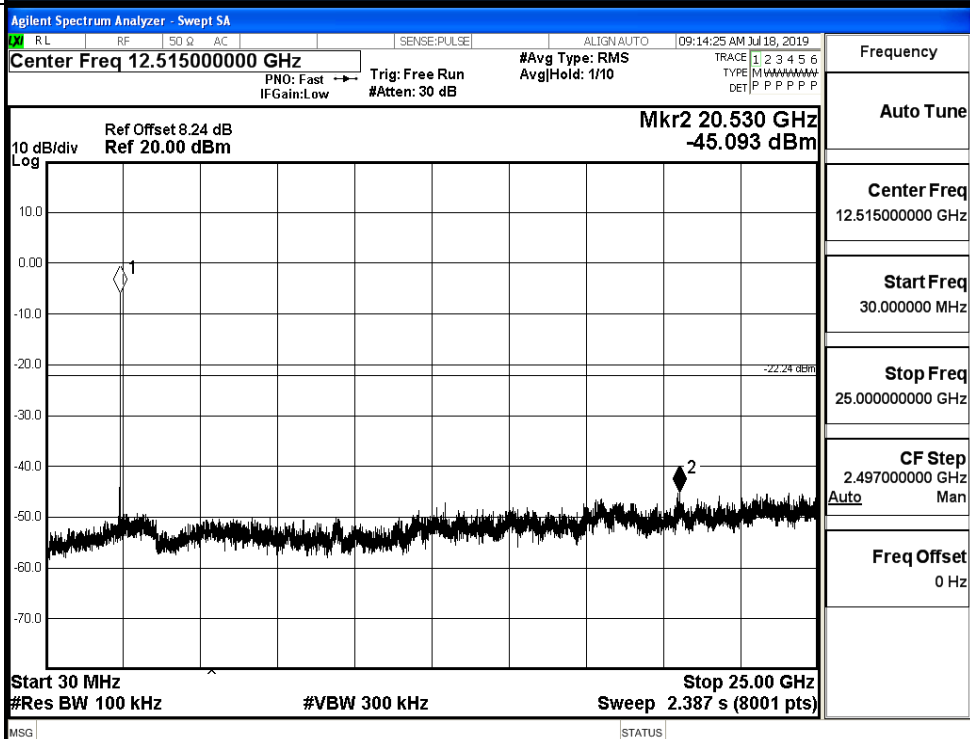


π /4DQPSK_MCH_Graphs

Pref

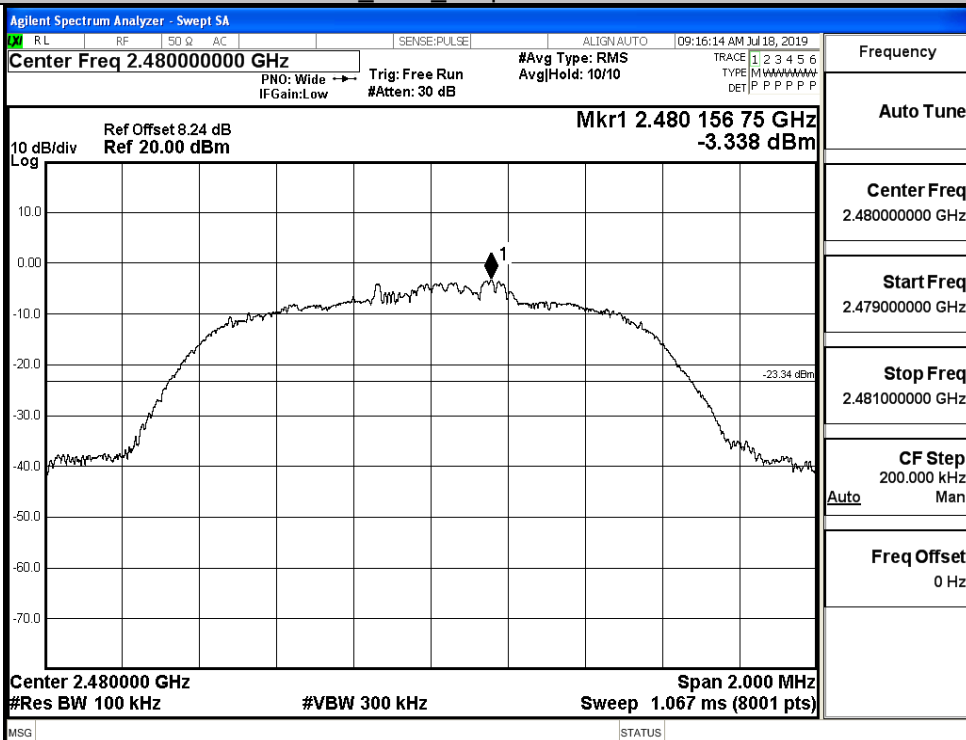


Puw

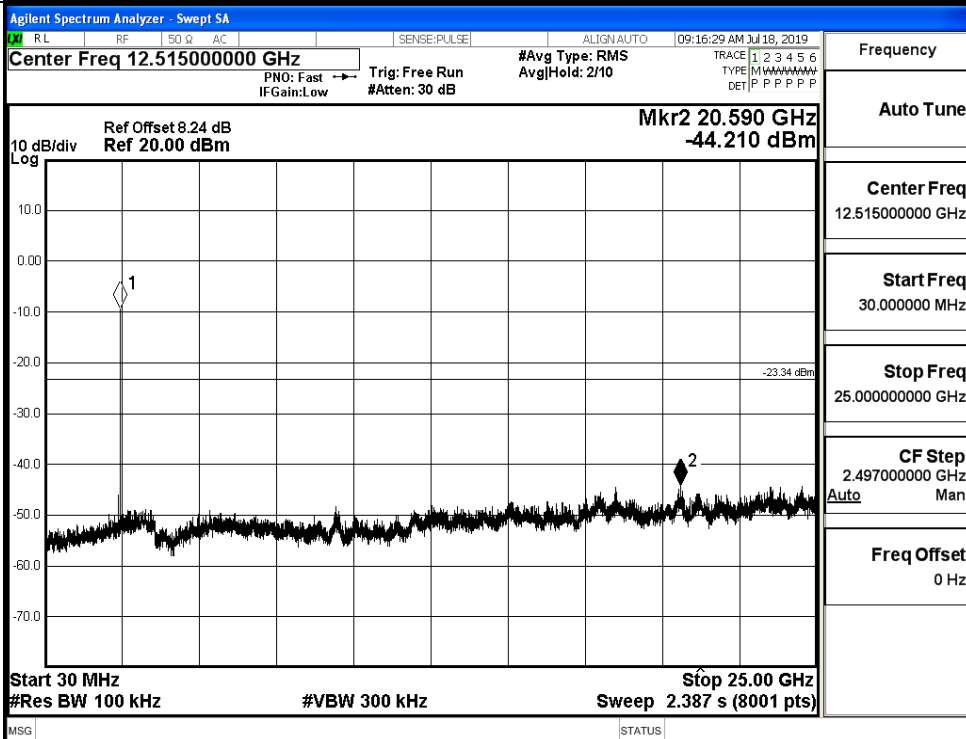


$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw

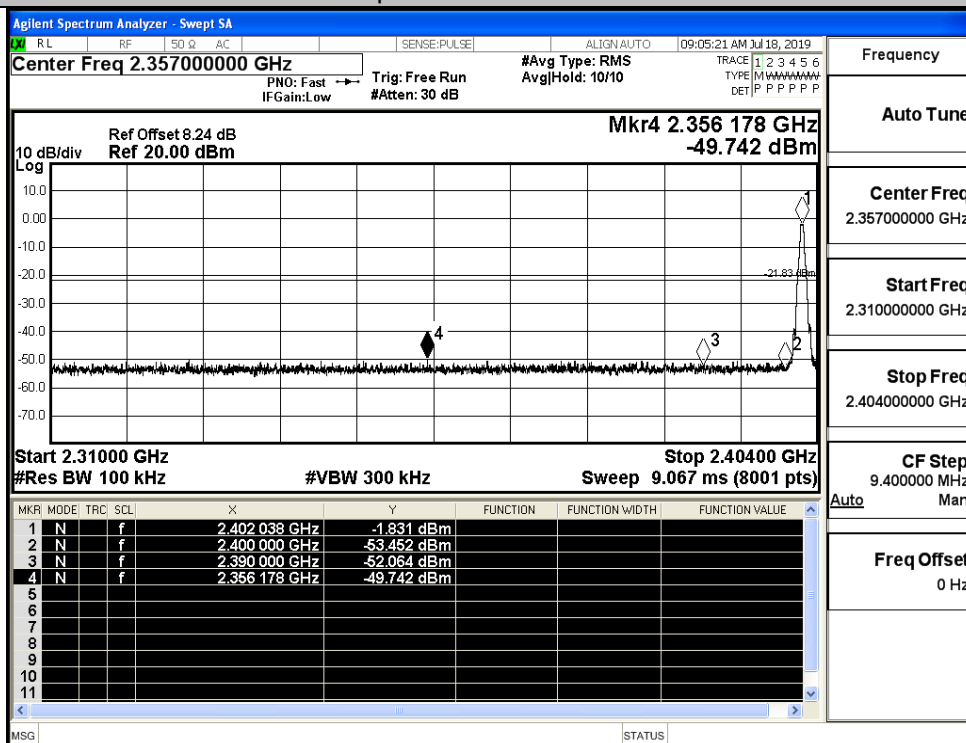


A.7 Band-edge for RF Conducted Emissions

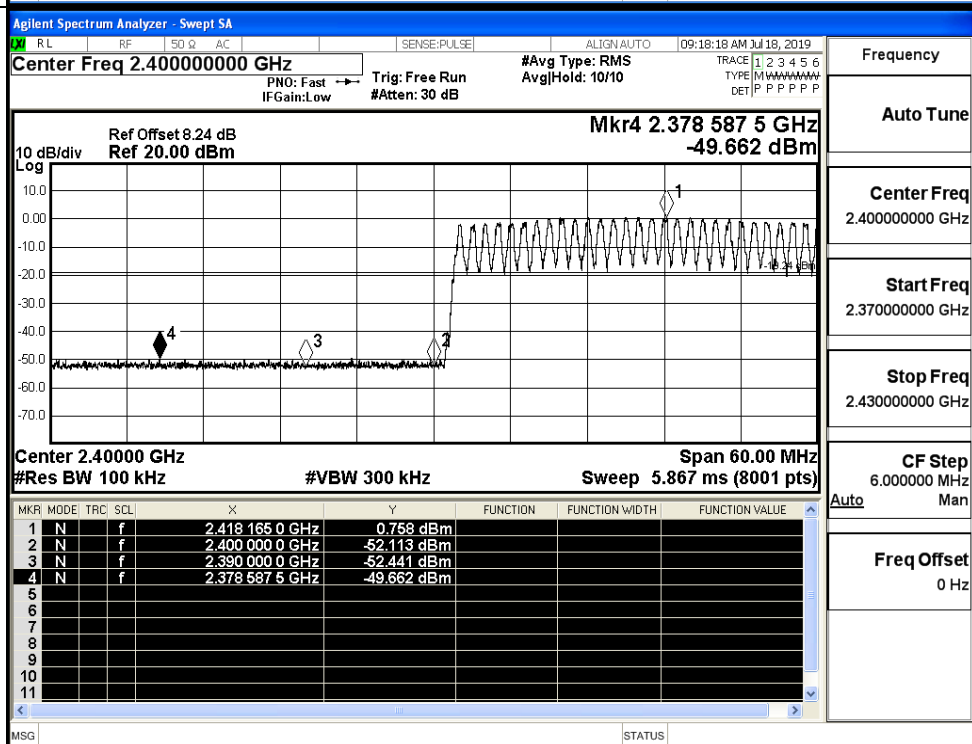
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-1.831	Off	-49.742	-21.83	PASS
			0.758	On	-49.662	-19.24	PASS
	HCH	2480	-2.088	Off	-49.491	-22.09	PASS
			0.525	On	-49.276	-19.48	PASS
$\pi/4$ DQPSK	LCH	2402	-2.801	Off	-49.737	-22.8	PASS
			-0.577	On	-48.723	-20.58	PASS
	HCH	2480	-3.288	Off	-49.385	-23.29	PASS
			-0.843	On	-48.895	-20.84	PASS

Test Graphs

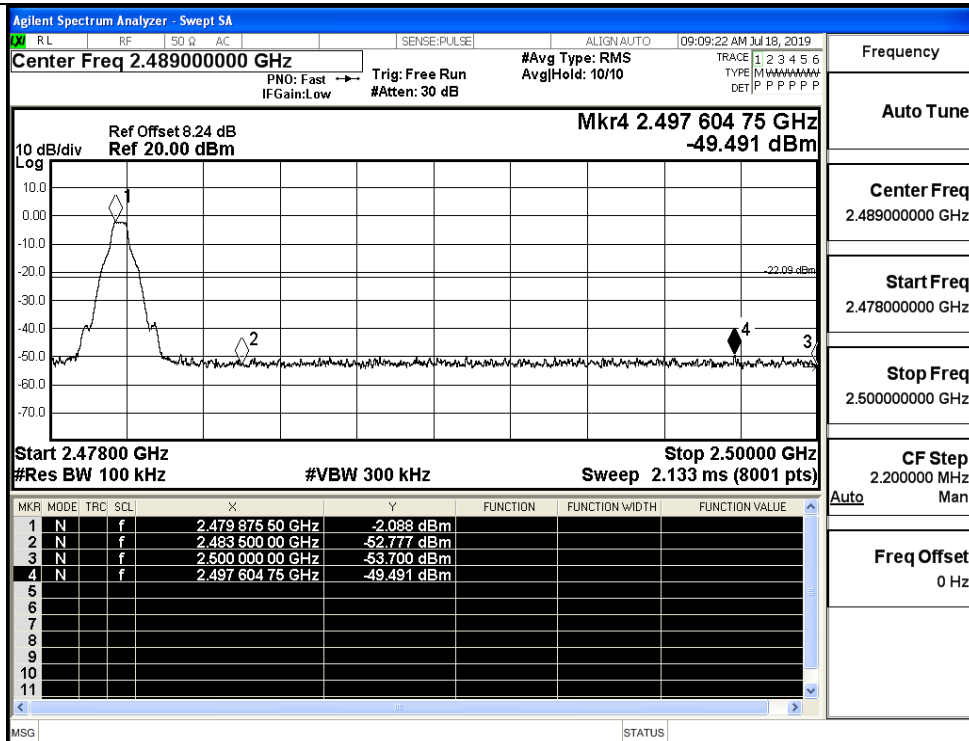
GFSK/LCH/No Hop



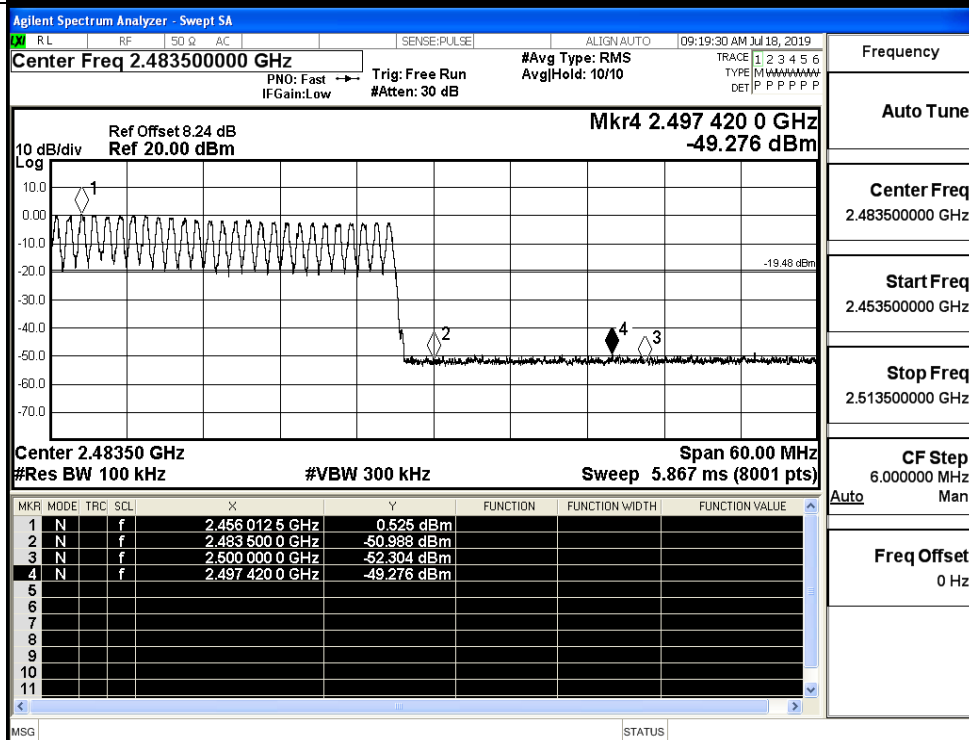
GFSK/LCH/Hop



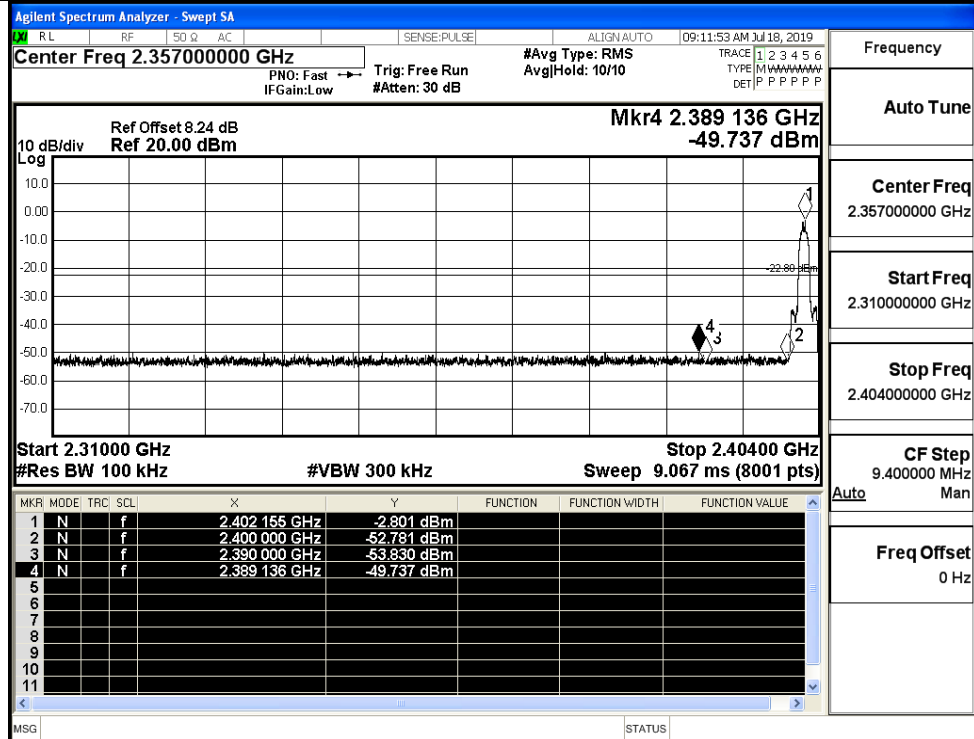
GFSK/HCH/No Hop



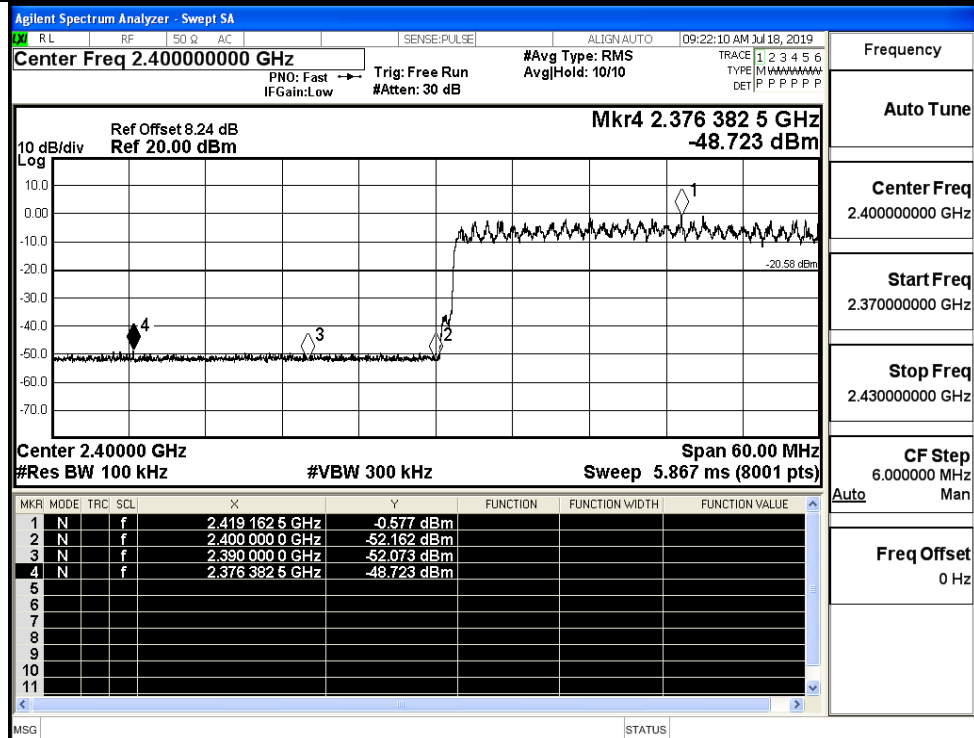
GFSK/HCH/Hop



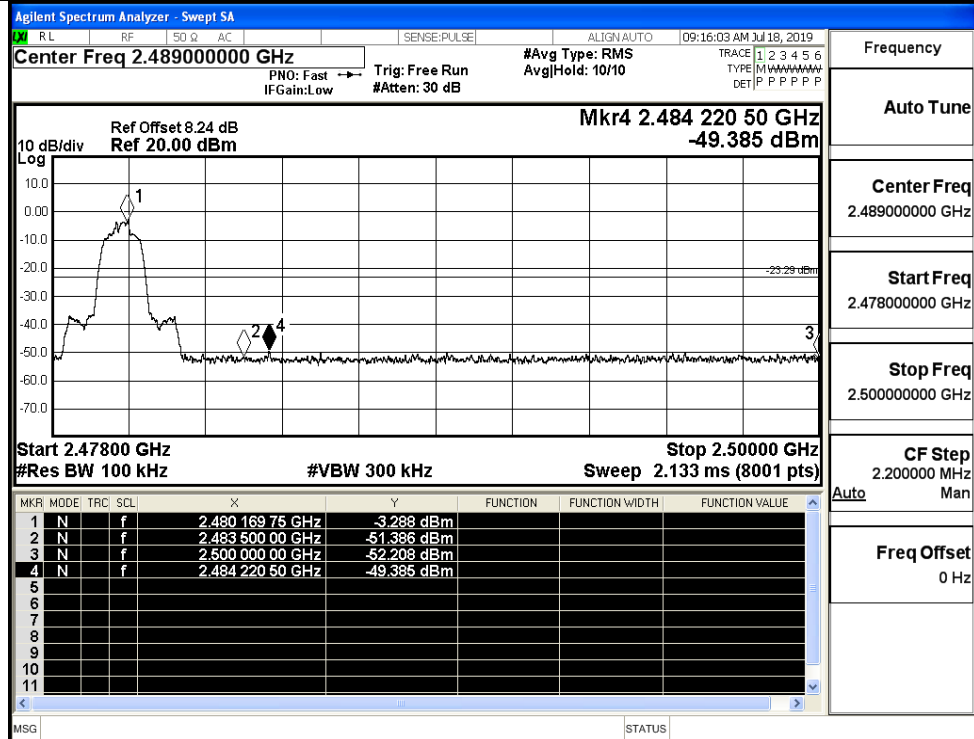
$\pi/4$ DQPSK/LCH/No
Hop



$\pi/4$ DQPSK/LCH/Hop



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

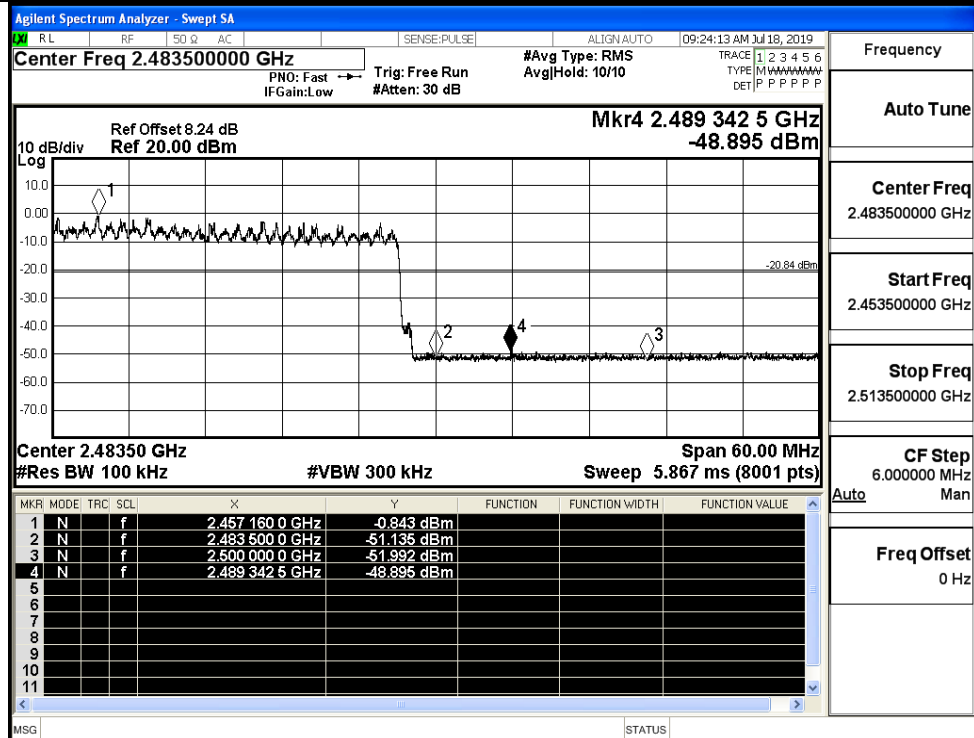


Frequency

Auto Tune

Center Freq
2.489000000 GHzStart Freq
2.478000000 GHzStop Freq
2.500000000 GHzCF Step
2.200000 MHz
Auto ManFreq Offset
0 Hz

$\pi/4$ DQPSK/HCH/Hop



Frequency

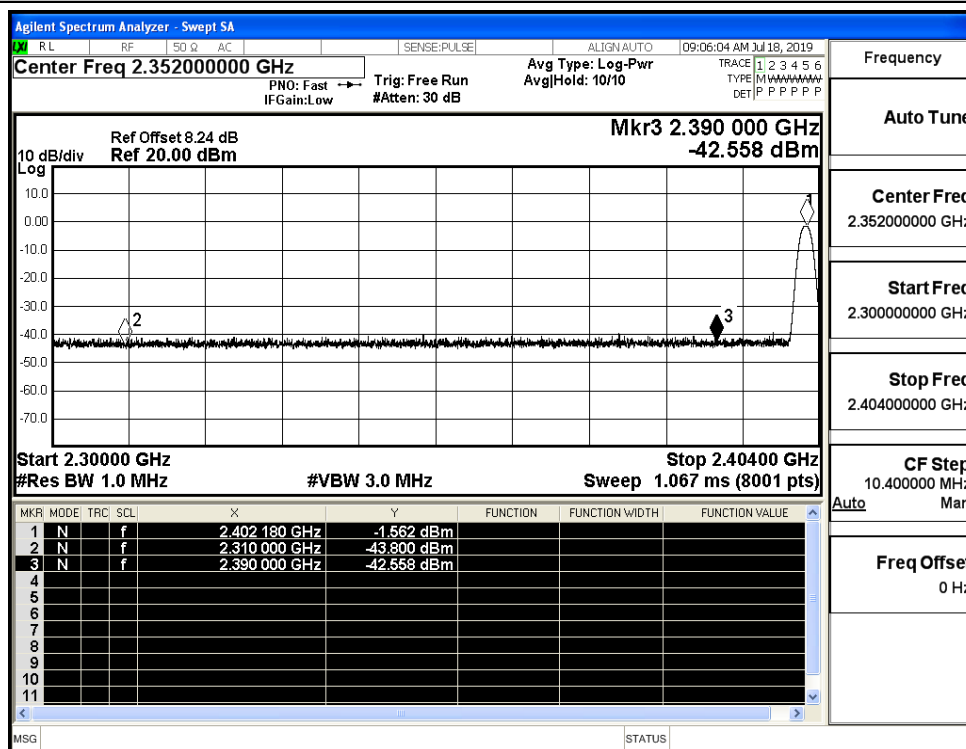
Auto Tune

Center Freq
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2.453500000 GHzStop Freq
2.513500000 GHzCF Step
6.000000 MHz
Auto ManFreq Offset
0 Hz

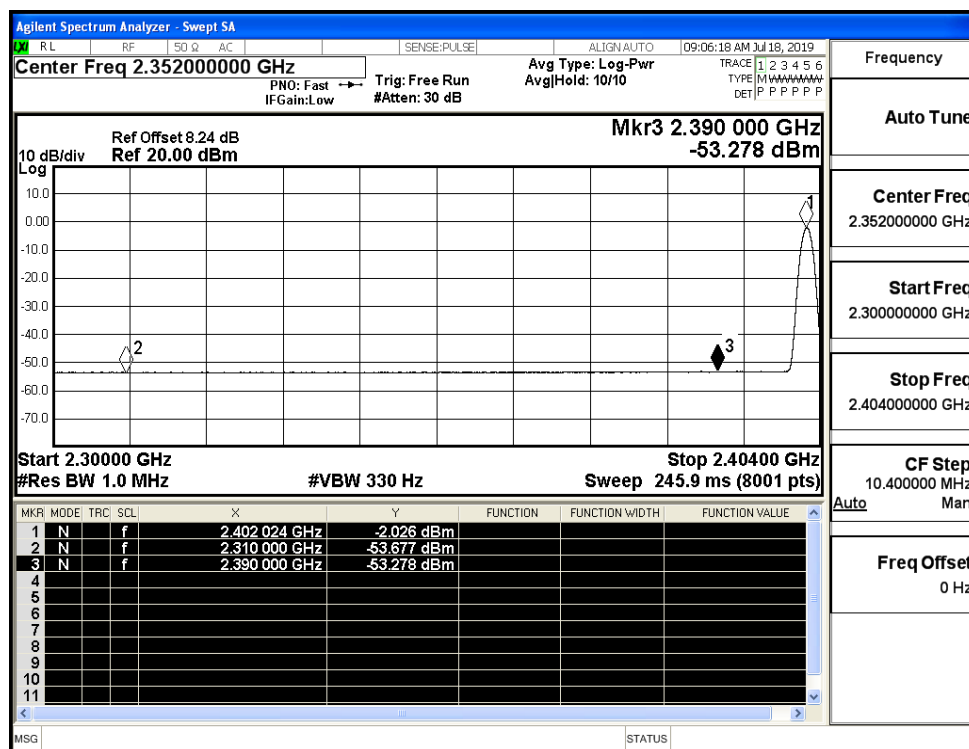
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.80	2.0	0	51.46	PEAK	74	PASS
	Off	2310.0	-53.68	2.0	0	41.58	AV	54	PASS
	Off	2390.0	-42.56	2.0	0	52.70	PEAK	74	PASS
	Off	2390.0	-53.28	2.0	0	41.98	AV	54	PASS
	Off	2483.5	-43.85	2.0	0	51.41	PEAK	74	PASS
	Off	2483.5	-53.08	2.0	0	42.18	AV	54	PASS
	Off	2500.0	-42.54	2.0	0	52.72	PEAK	74	PASS
	Off	2500.0	-52.73	2.0	0	42.53	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-42.88	2.0	0	52.37	PEAK	74	PASS
	Off	2310.0	-53.56	2.0	0	41.70	AV	54	PASS
	Off	2390.0	-42.60	2.0	0	52.66	PEAK	74	PASS
	Off	2390.0	-53.18	2.0	0	42.08	AV	54	PASS
	Off	2483.5	-43.52	2.0	0	51.74	PEAK	74	PASS
	Off	2483.5	-52.97	2.0	0	42.28	AV	54	PASS
	Off	2500.0	-41.86	2.0	0	53.40	PEAK	74	PASS
	Off	2500.0	-52.67	2.0	0	42.58	AV	54	PASS

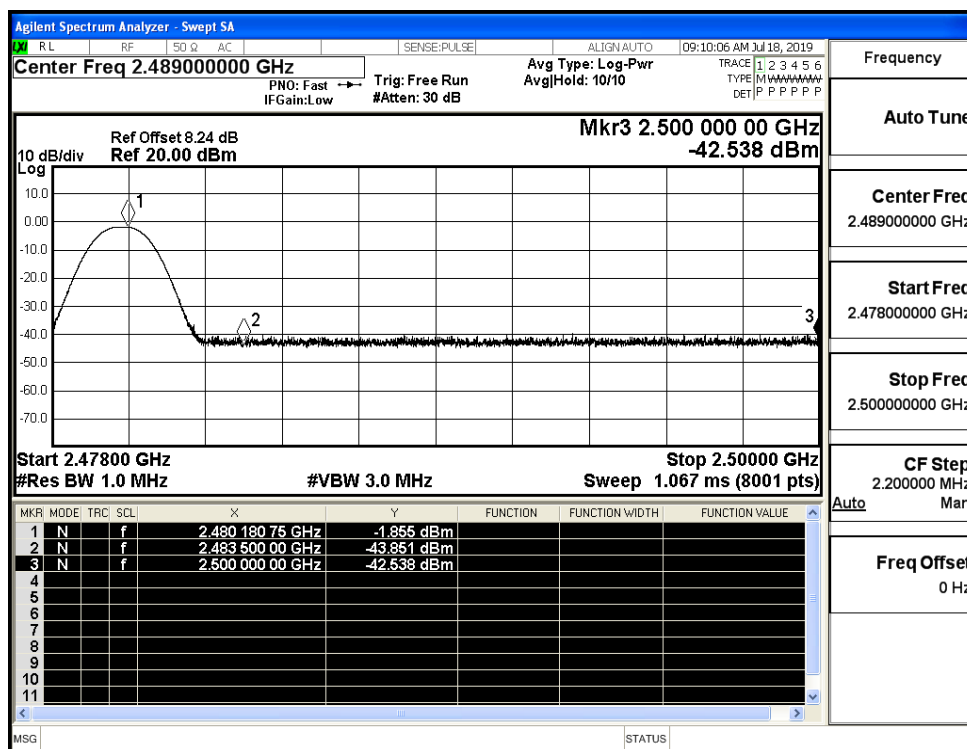
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



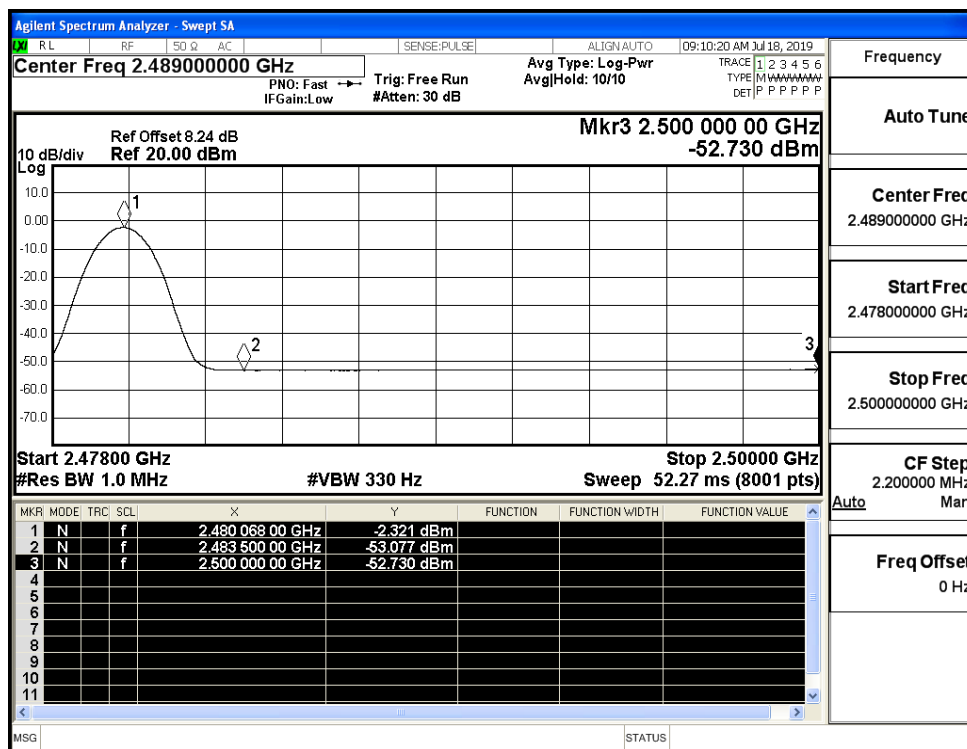
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

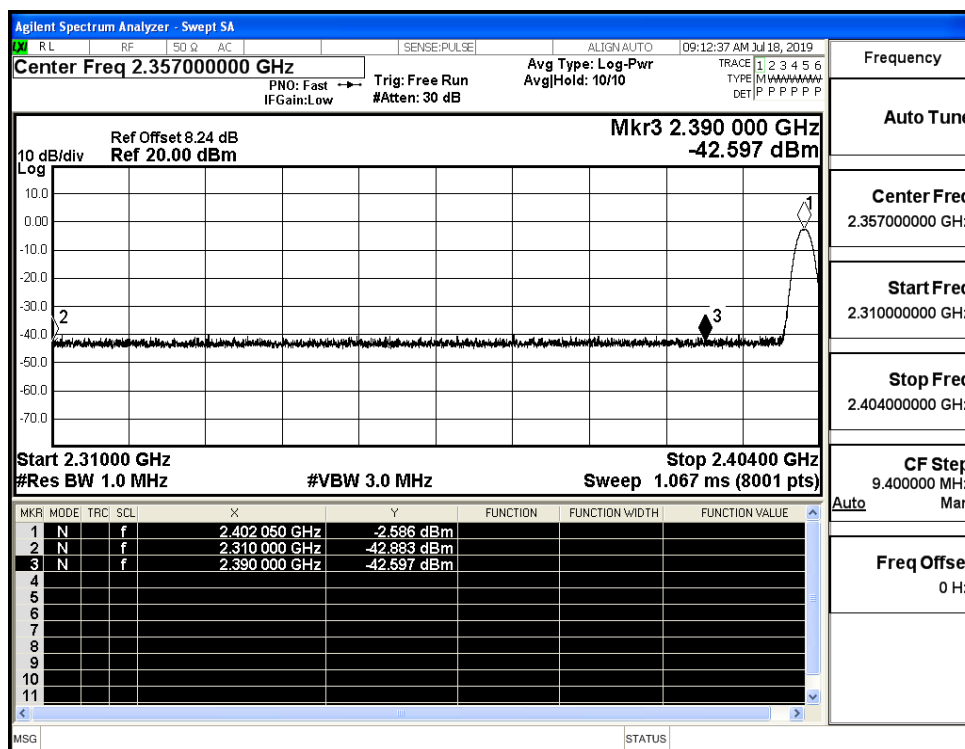
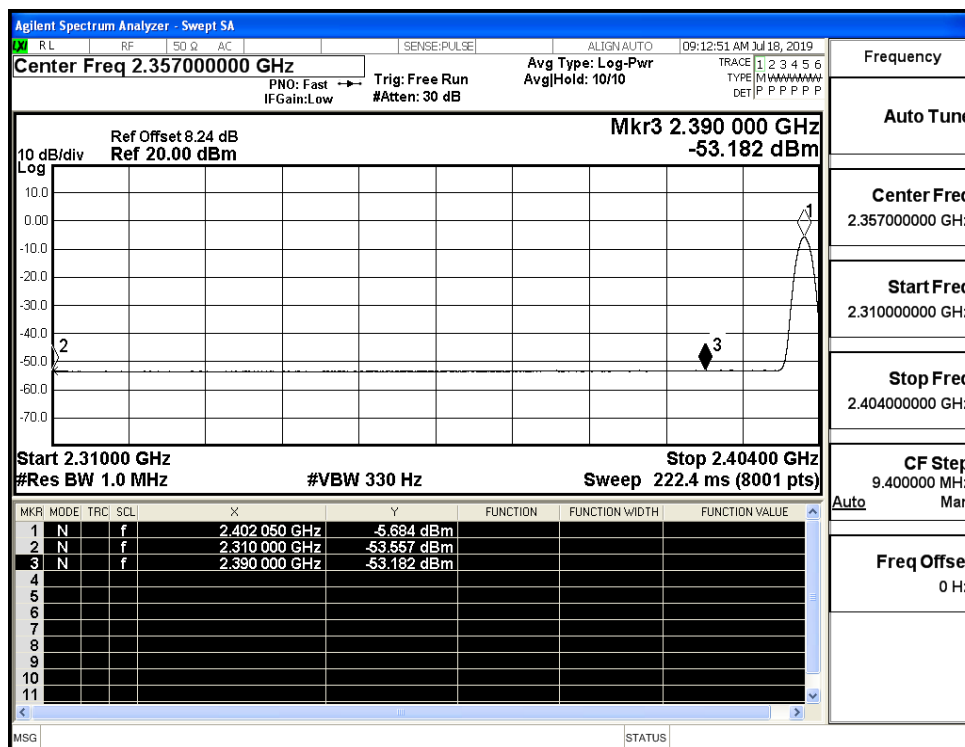


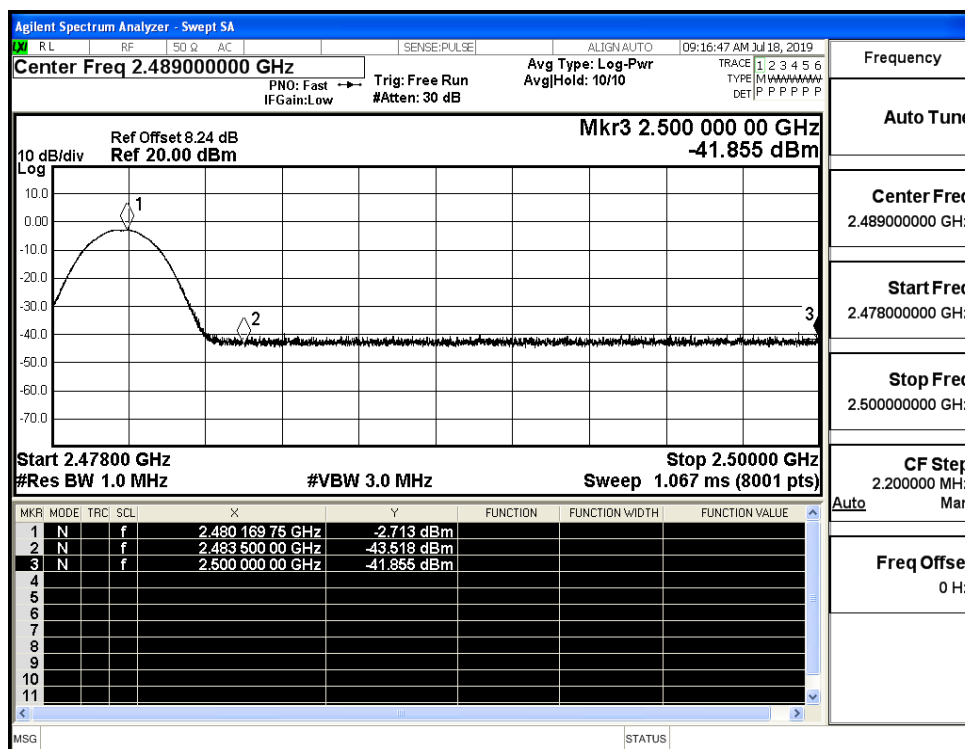
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



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