

Appendix A

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

Product Name: LED Vanity Mirror+Speaker

Trade Mark: atomi

Test Model: AT1350

Environmental Conditions

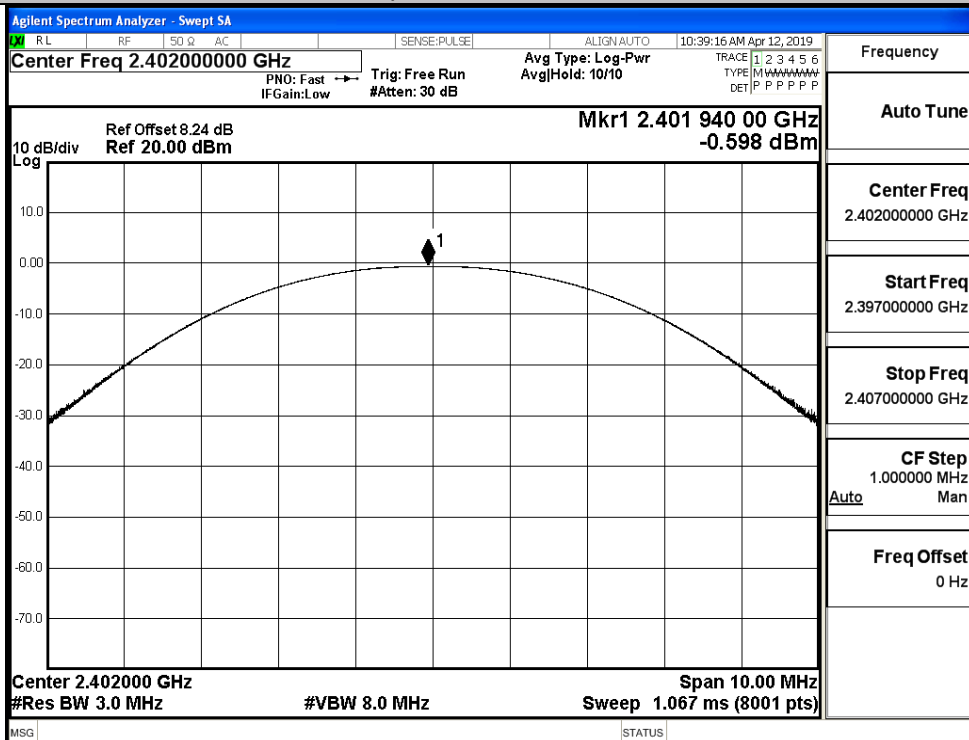
Temperature:	24.2 ° C
Relative Humidity:	53.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond.Lu
Supervised by:	Tom.Liu

A.1 Maximum Conducted Peak Output Power

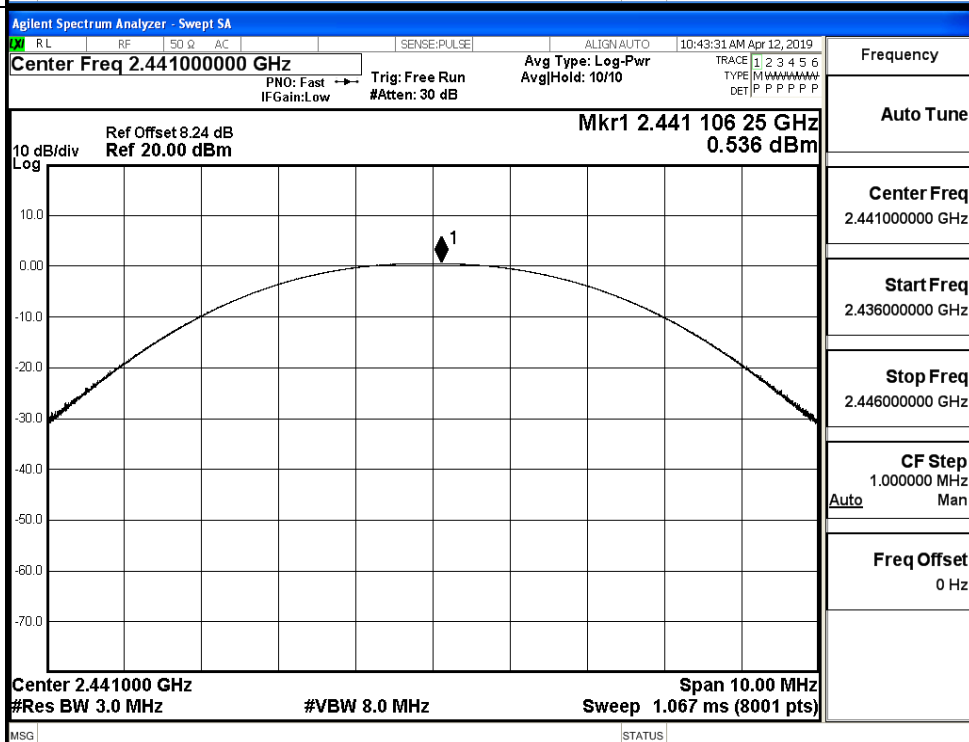
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.598	21	PASS
	MCH	0.536	21	PASS
	HCH	-0.155	21	PASS
$\pi/4$ DQPSK	LCH	-1.215	21	PASS
	MCH	-0.113	21	PASS
	HCH	-0.788	21	PASS

Test Graphs

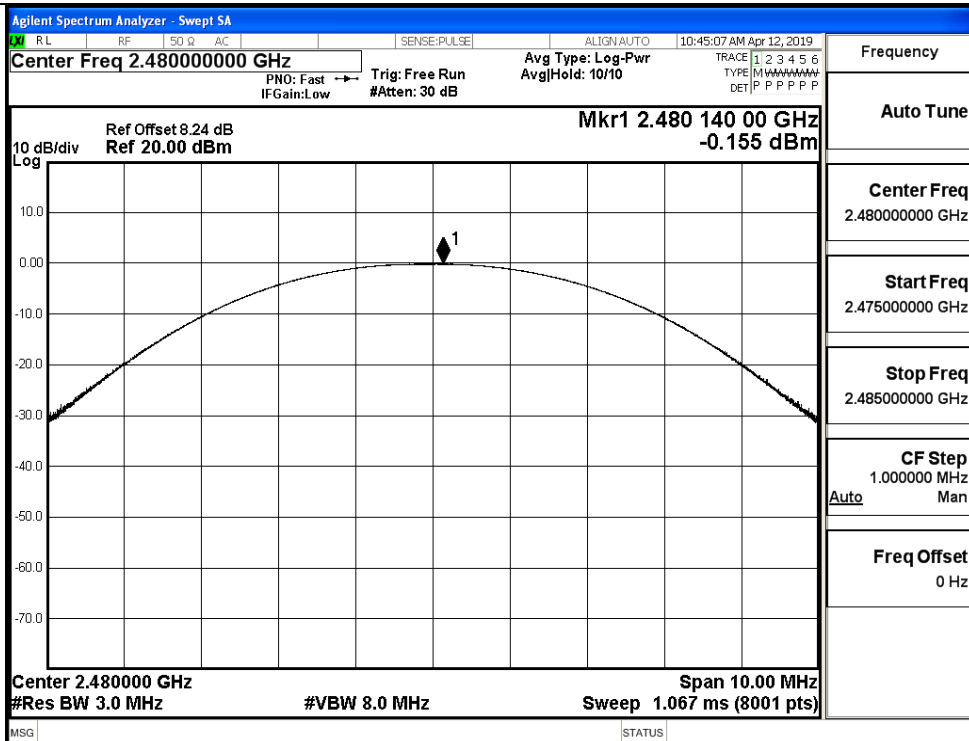
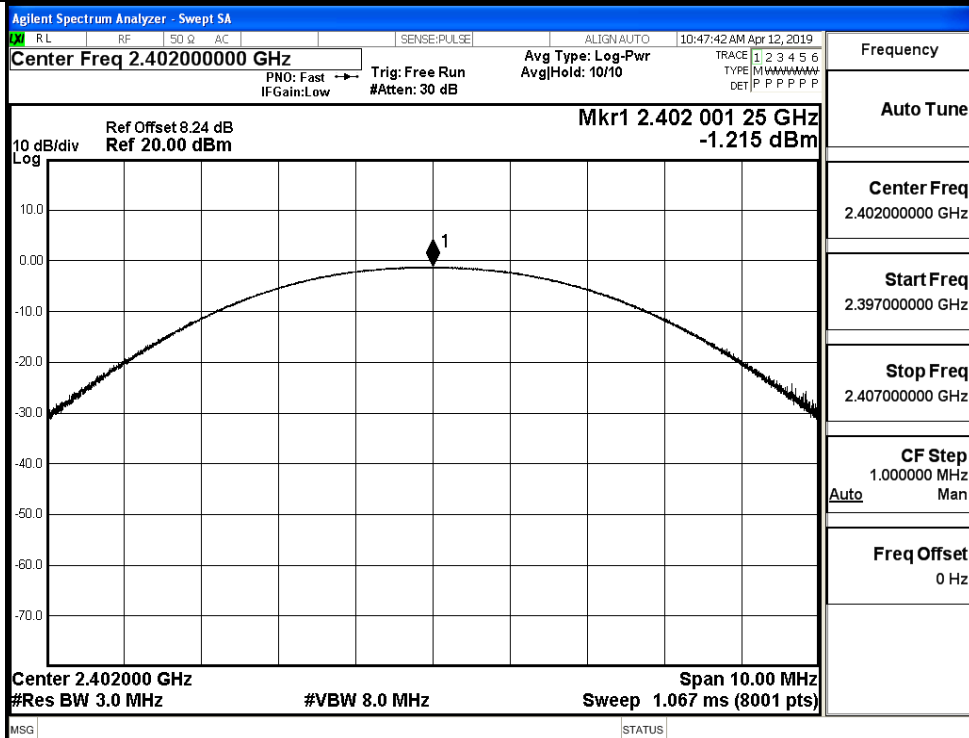
GFSK/LCH

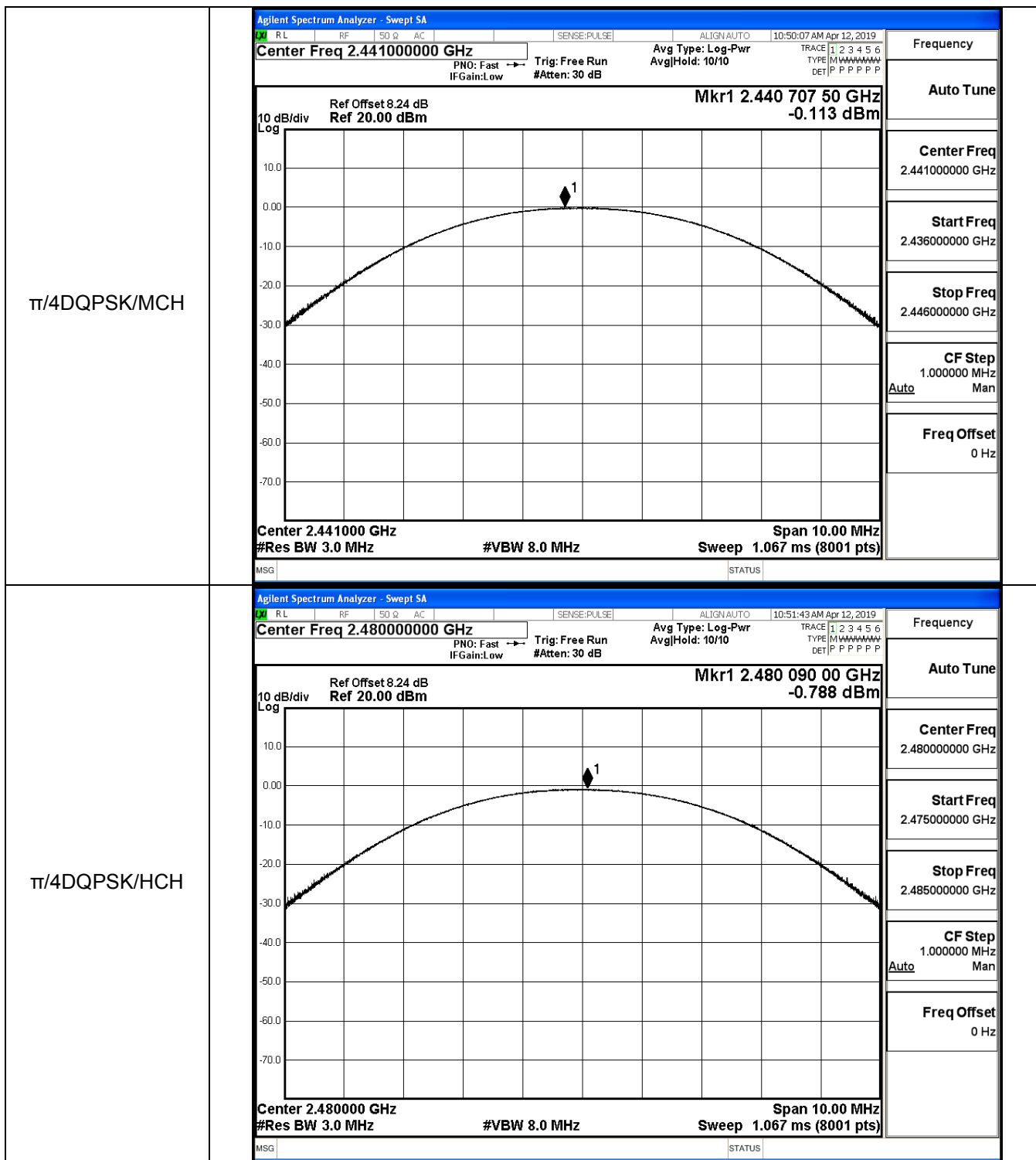


GFSK/MCH



GFSK/HCH

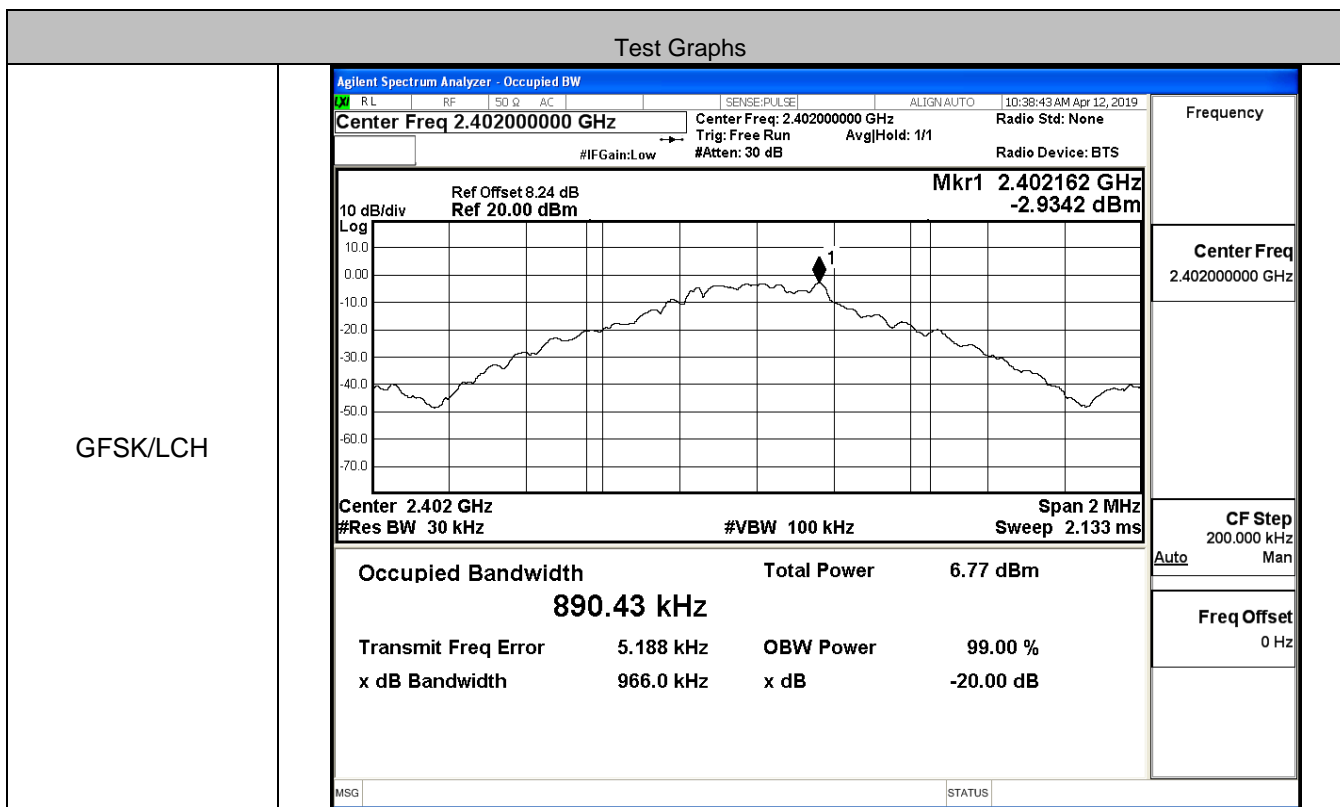
 $\pi/4$ DQPSK/LCH



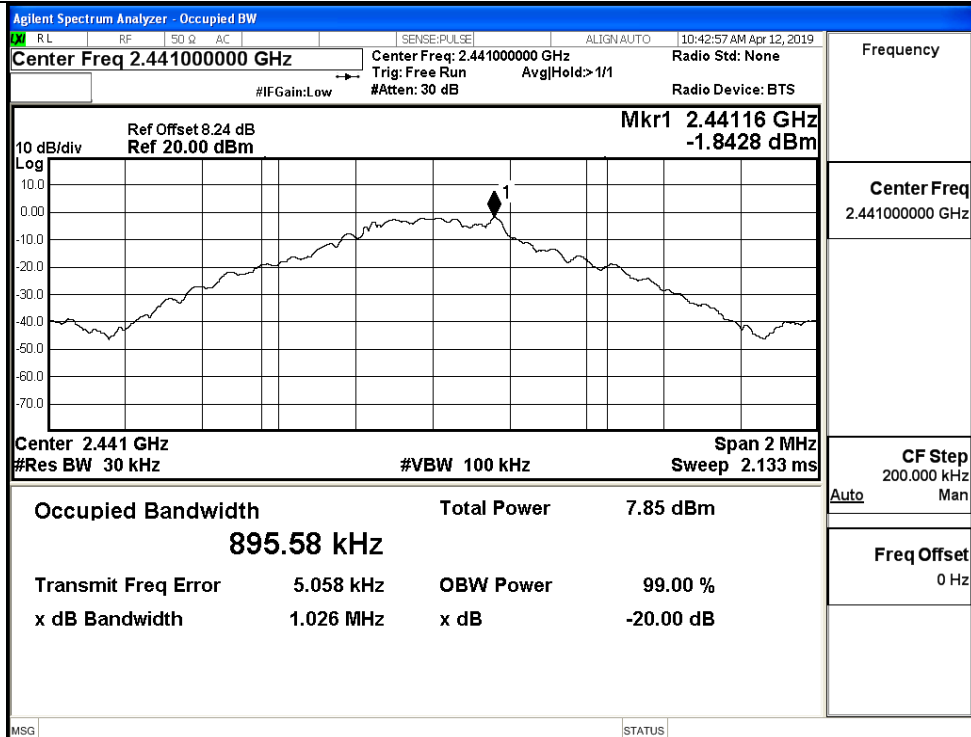
A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9660	Not Specified	PASS
	MCH	1.026	Not Specified	PASS
	HCH	1.026	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.293	Not Specified	PASS
	MCH	1.293	Not Specified	PASS
	HCH	1.292	Not Specified	PASS

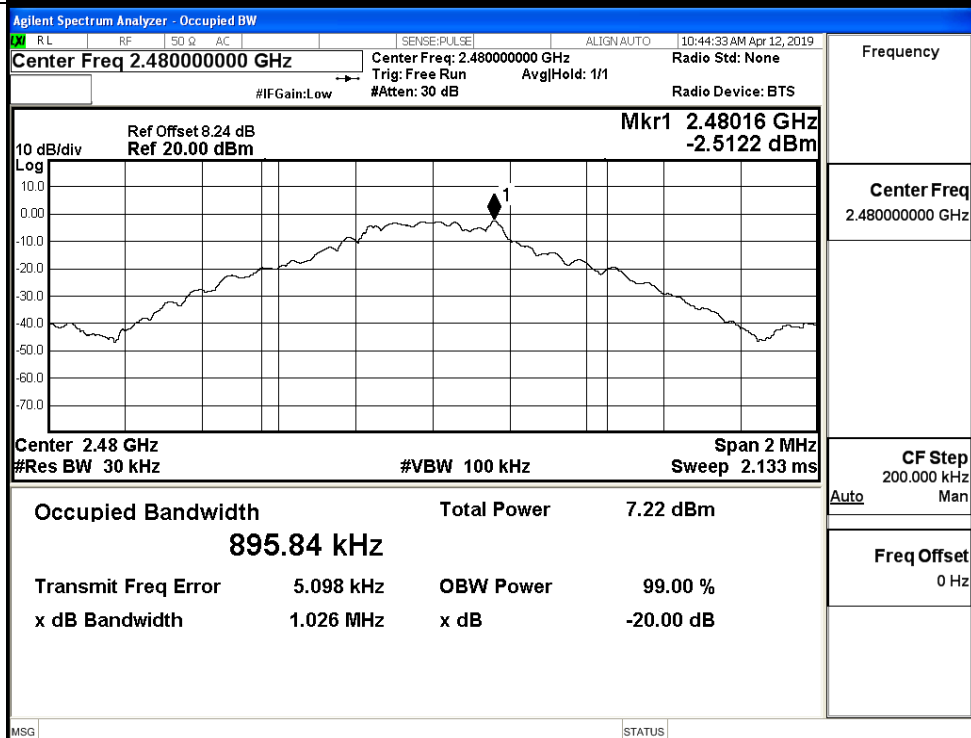
Test Graphs

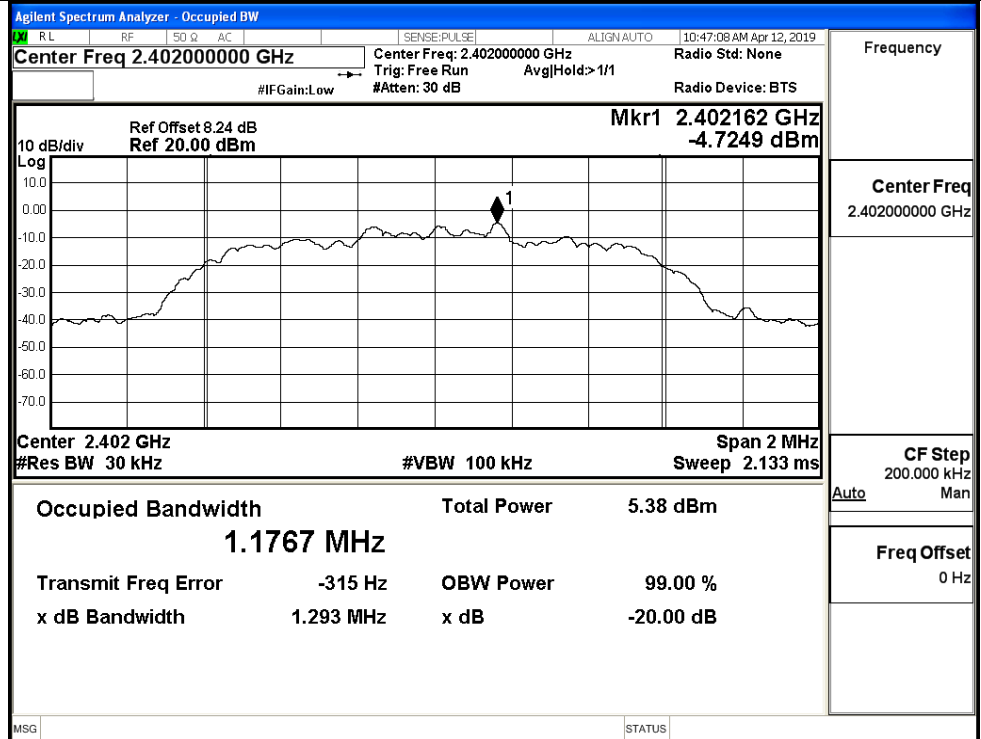
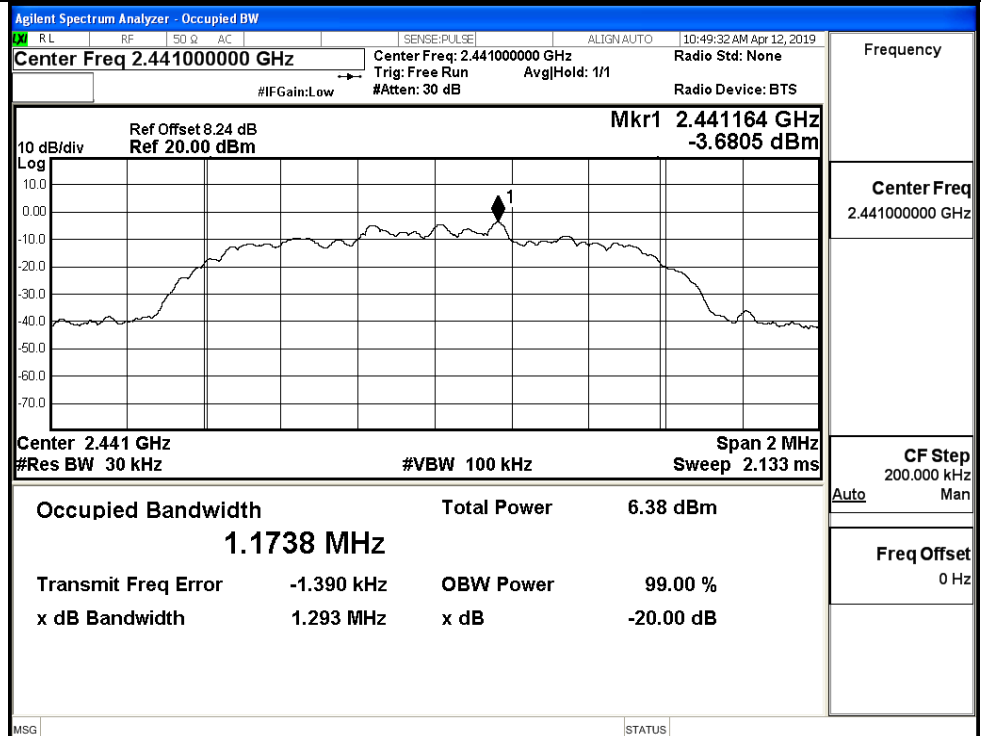


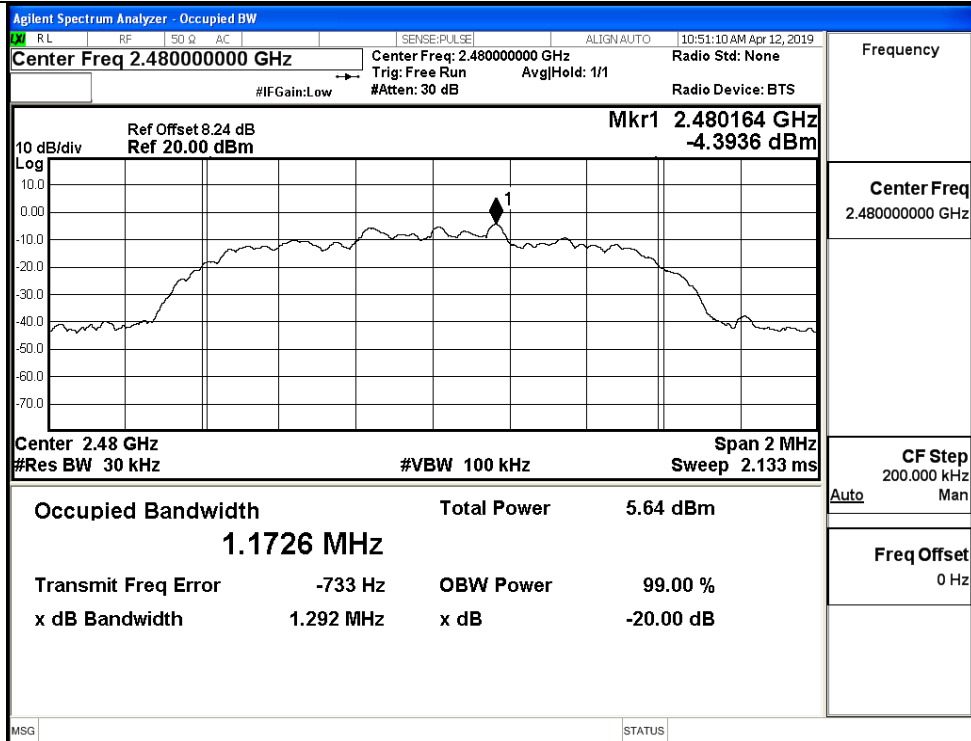
GFSK/MCH



GFSK/HCH



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

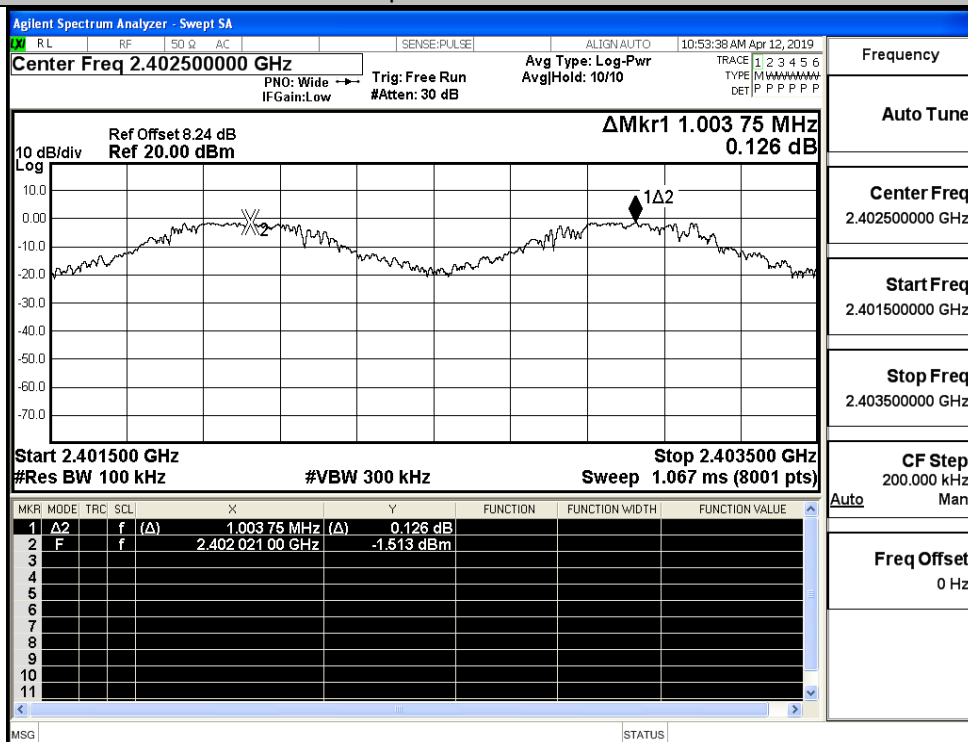
$\pi/4$ DQPSK/HCH

A.3 Carrier Frequency Separation

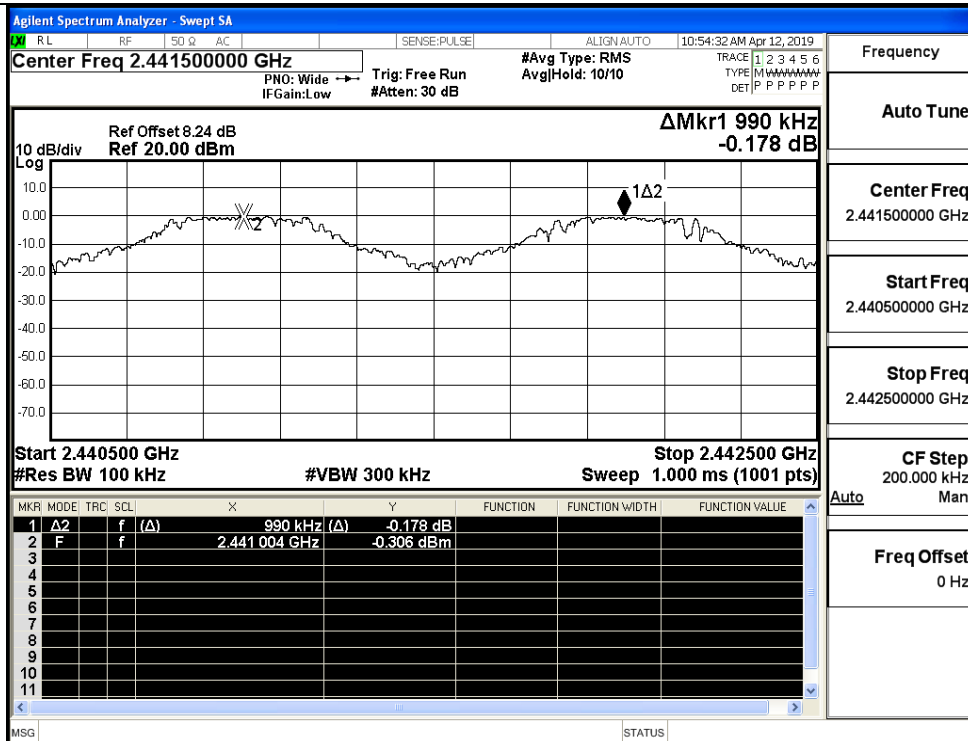
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.004	0.684	PASS
	MCH	0.990	0.684	PASS
	HCH	1.080	0.684	PASS
π /4DQPSK	LCH	1.126	0.862	PASS
	MCH	0.982	0.862	PASS
	HCH	0.986	0.862	PASS

Test Graphs

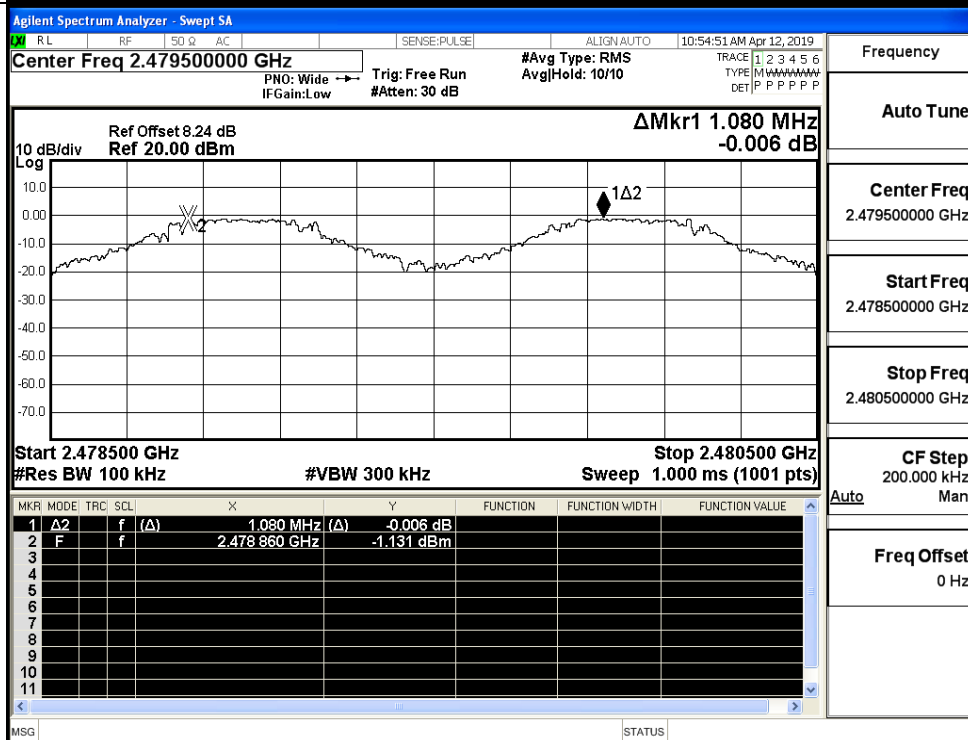
GFSK/LCH

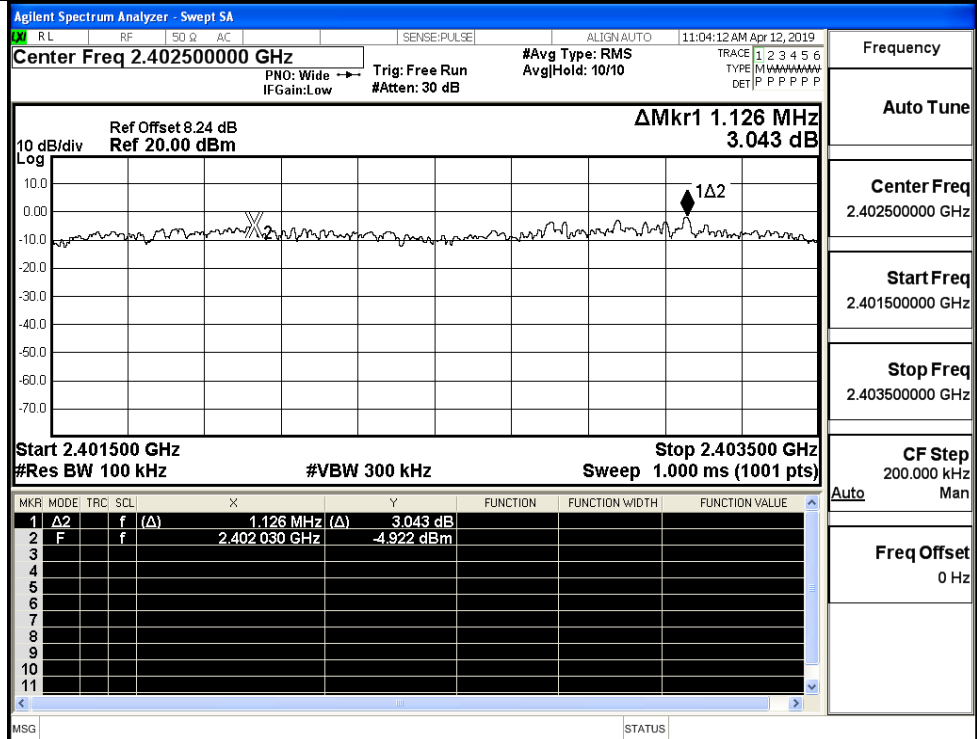
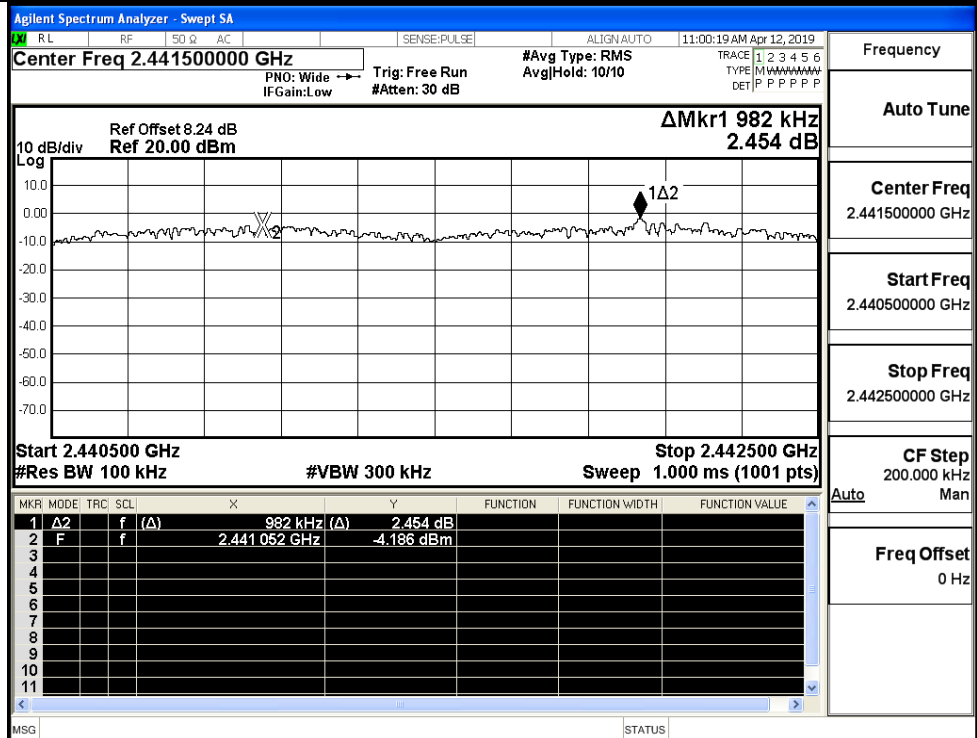


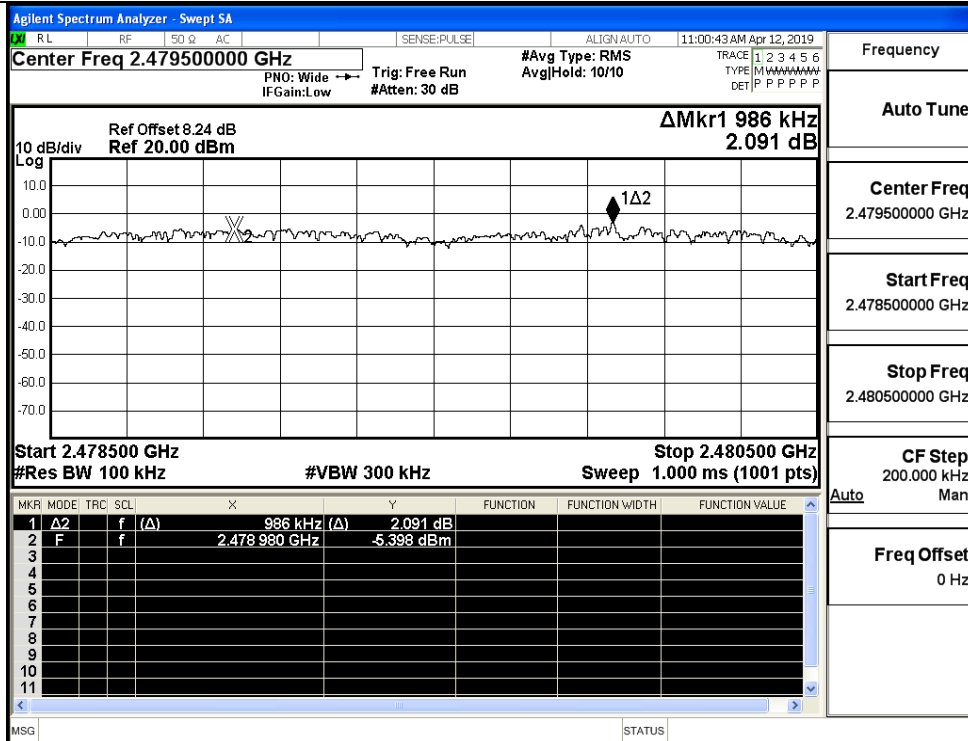
GFSK/MCH



GFSK/HCH



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

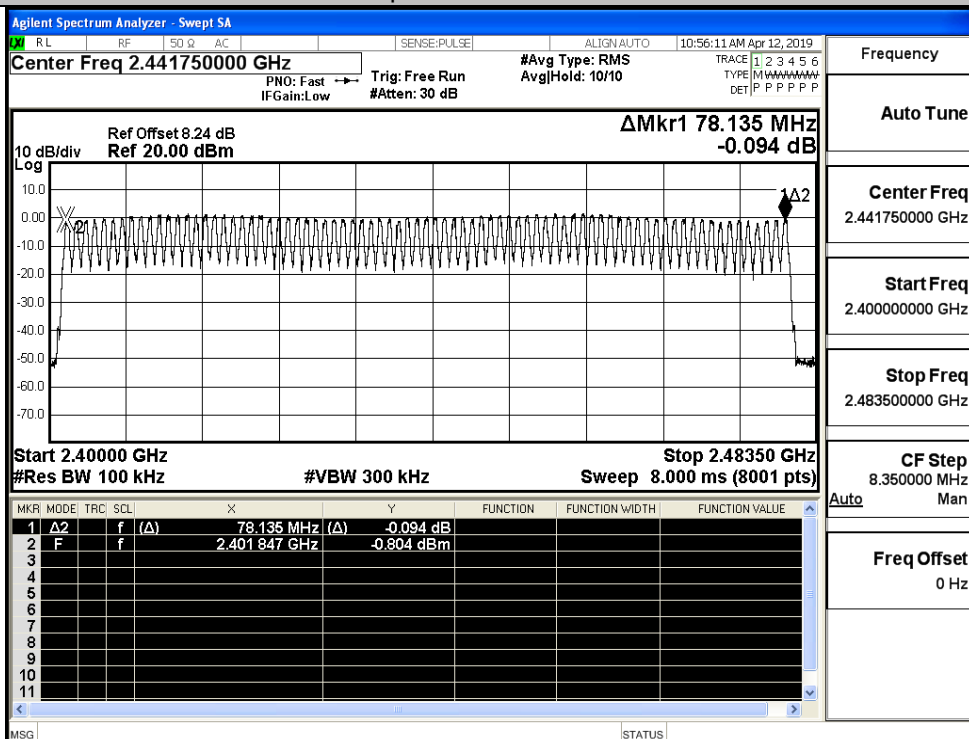
$\pi/4$ DQPSK/HCH

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



Frequency

Auto Tune

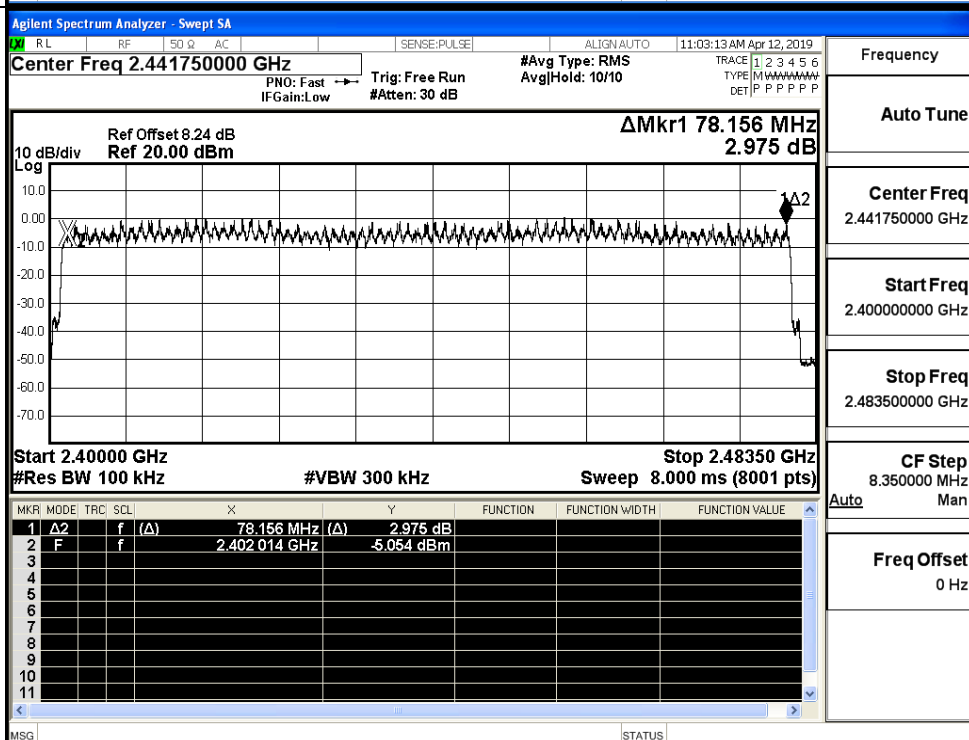
Center Freq
2.441750000 GHz

Start Freq
2.400000000 GHz

Stop Freq
2.483500000 GHz

CF Step
8.350000 MHz
Man

Freq Offset
0 Hz

 $\pi/4$ DQPSK/Hop

Frequency

Auto Tune

Center Freq
2.441750000 GHz

Start Freq
2.400000000 GHz

Stop Freq
2.483500000 GHz

CF Step
8.350000 MHz
Man

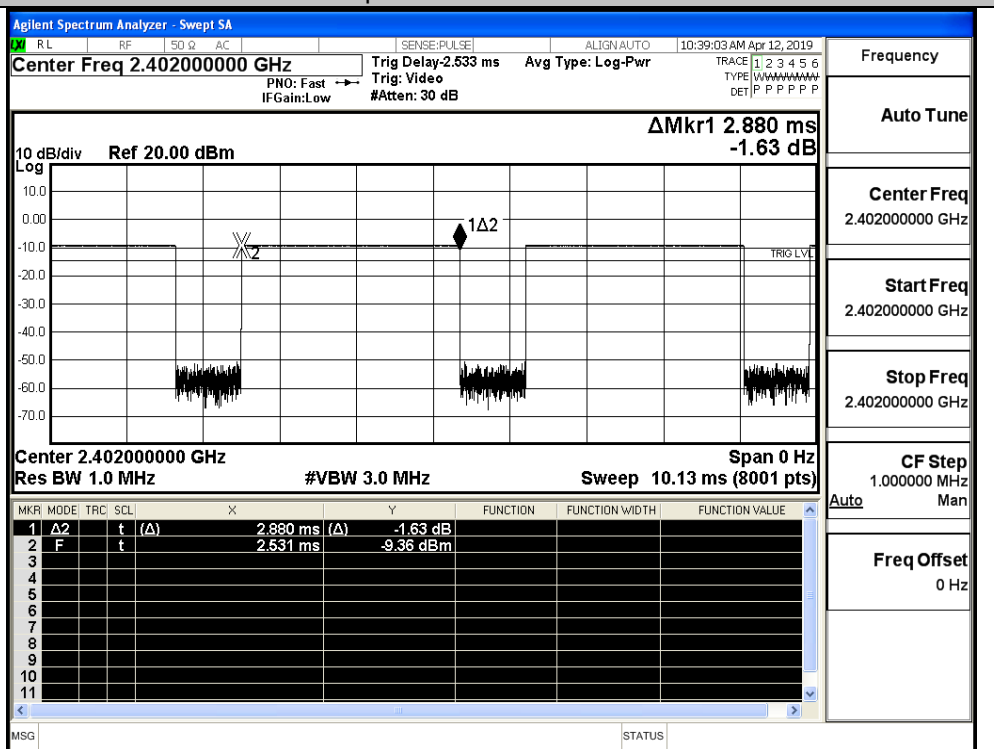
Freq Offset
0 Hz

A.5 Dwell Time

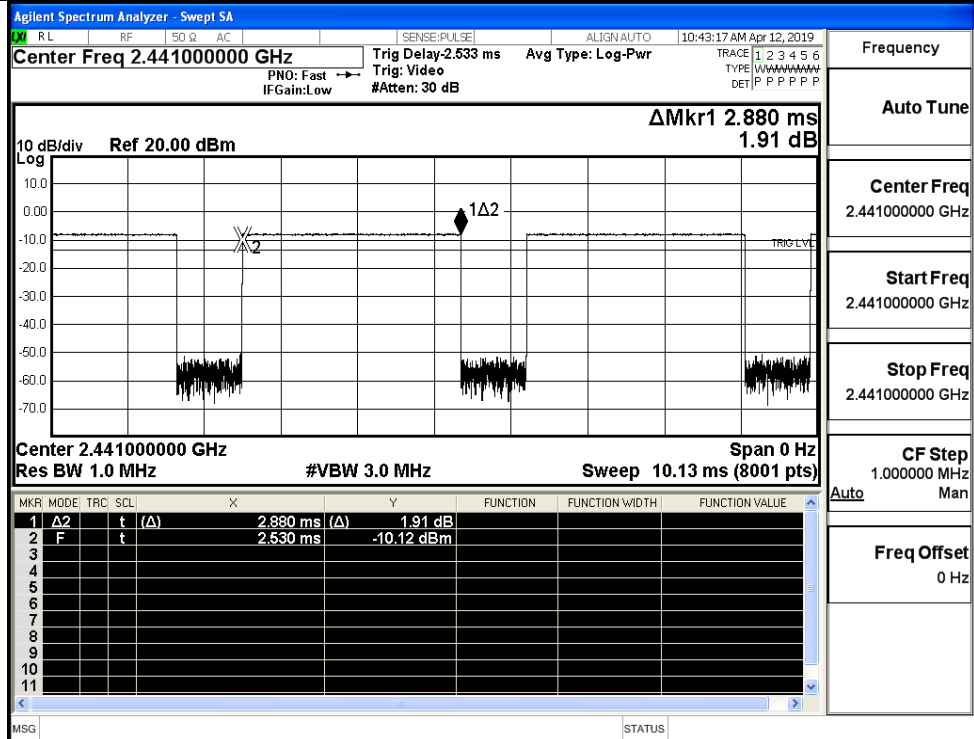
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88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

Test Graphs

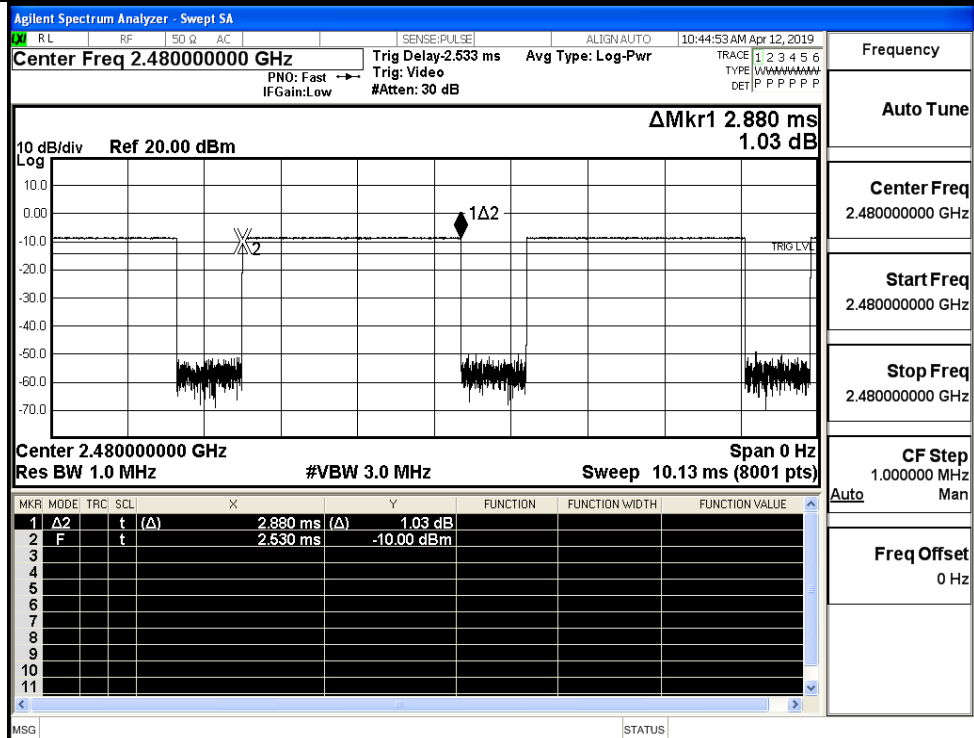
GFSK_DH5/LCH



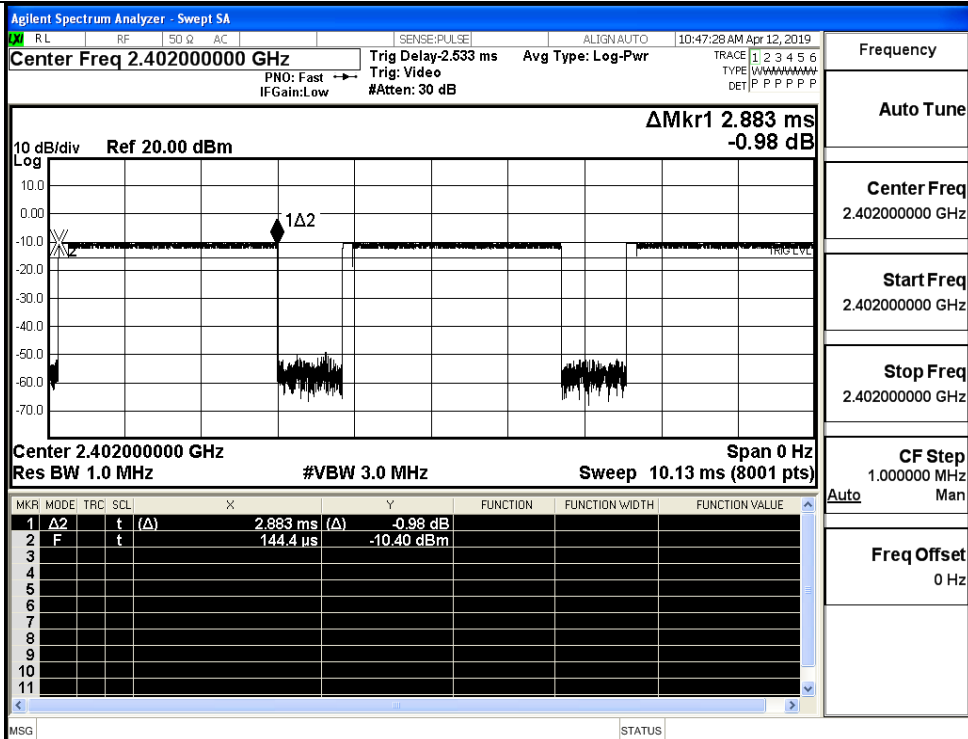
GFSK_DH5/MCH



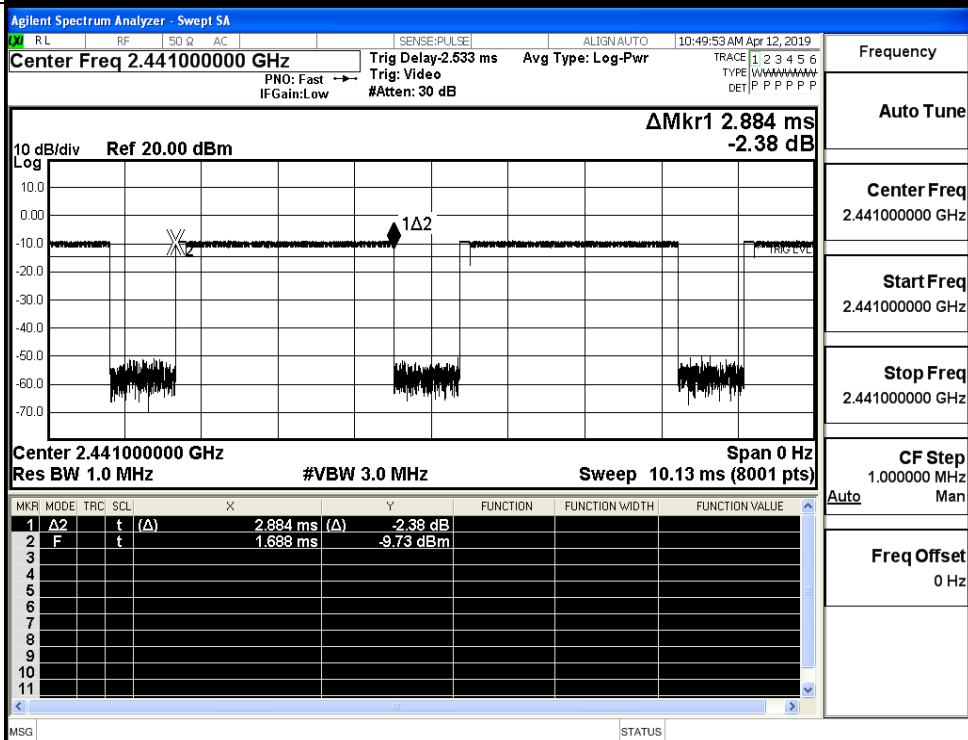
GFSK_DH5/HCH



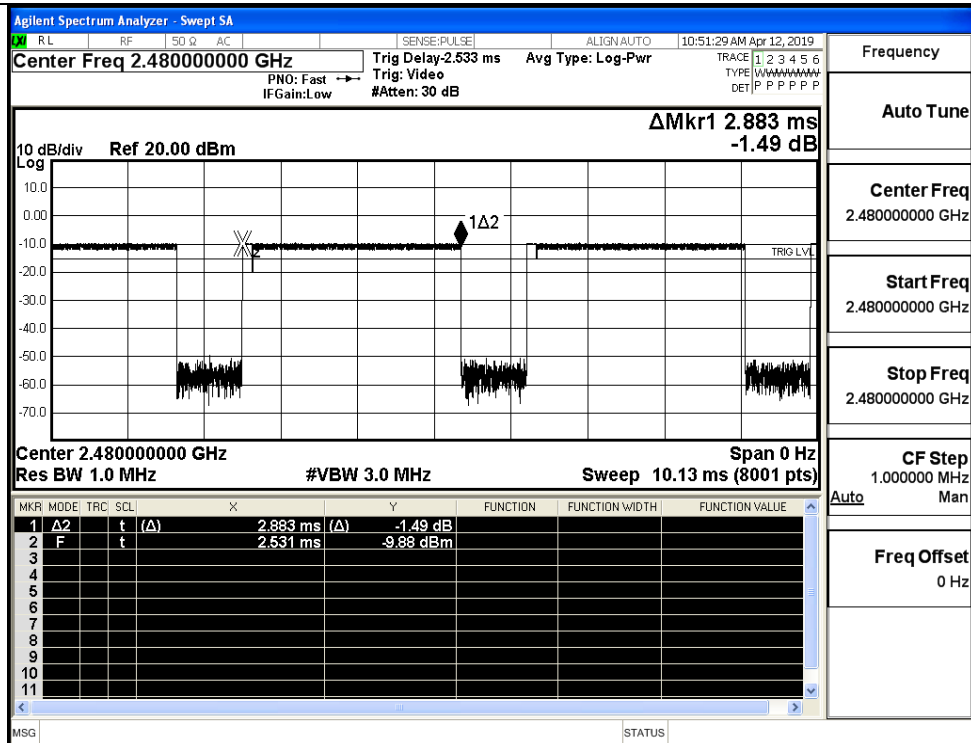
$\pi/4$ DQPSK
_2DH5/LCH



$\pi/4$ DQPSK
_2DH5/MCH



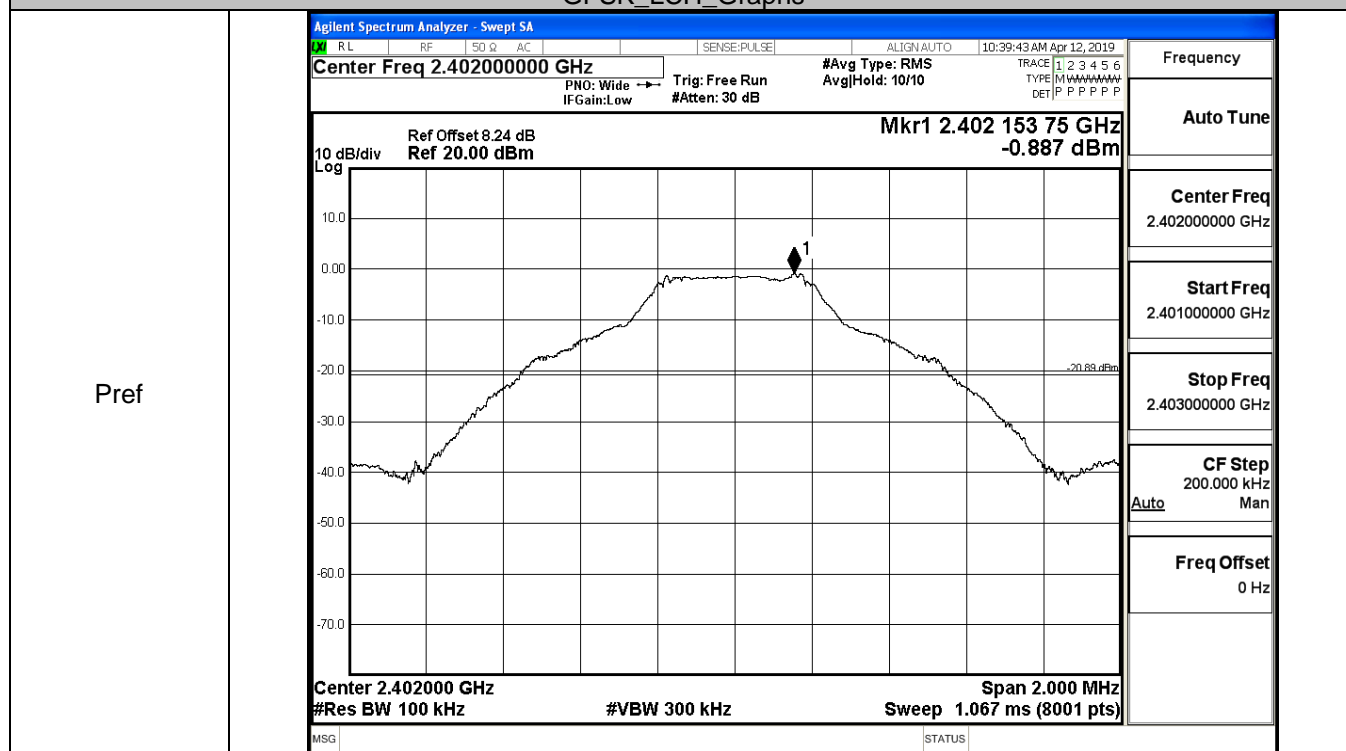
π/4DQPSK
_2DH5/HCH

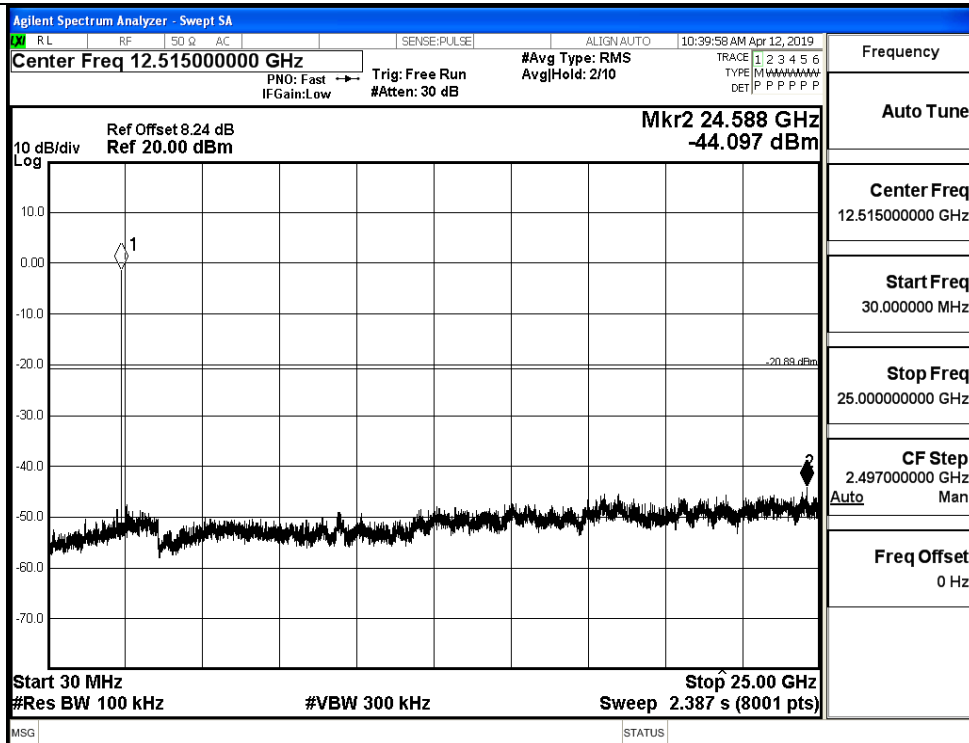


A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.887	-44.097	-20.887	PASS
	MCH	0.29	-44.629	-19.710	PASS
	HCH	-0.396	-44.236	-20.396	PASS
$\pi/4$ DQPSK	LCH	-2.098	-44.955	-22.098	PASS
	MCH	-1.086	-44.174	-21.086	PASS
	HCH	-1.977	-44.020	-21.977	PASS

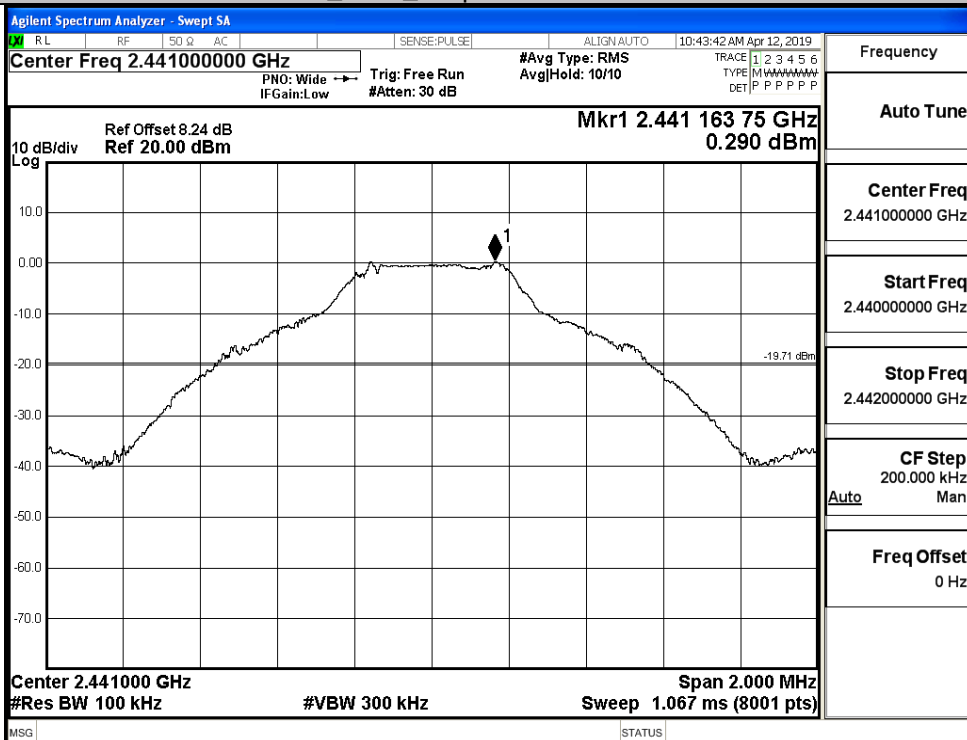
GFSK_LCH_Graphs



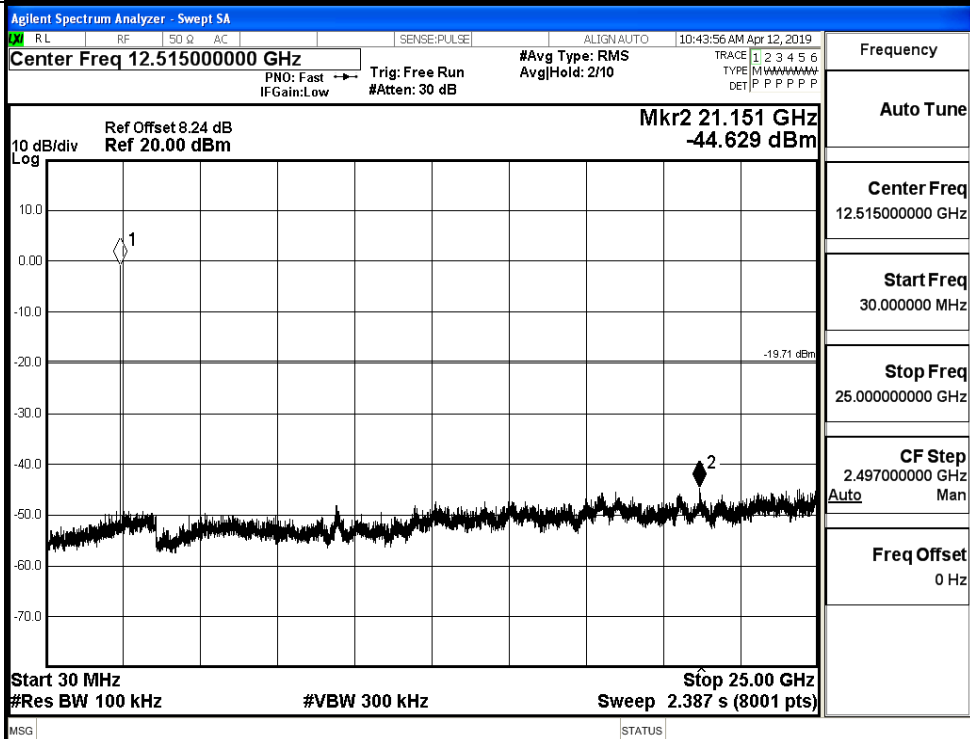
P_uw

GFSK_MCH_Graphs

Pref

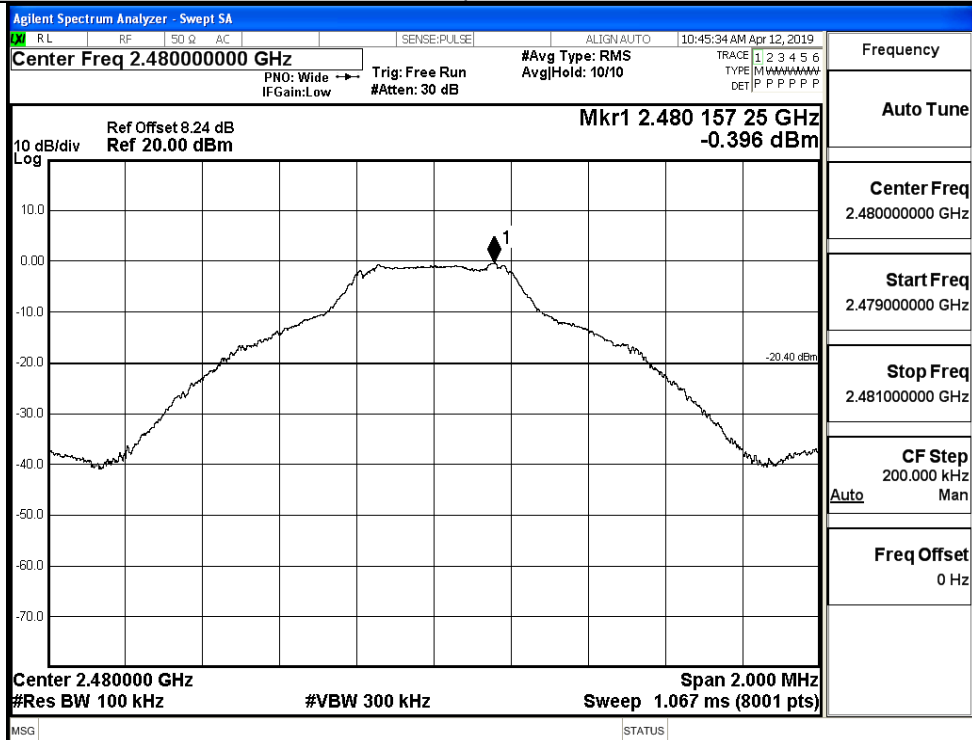


Puw

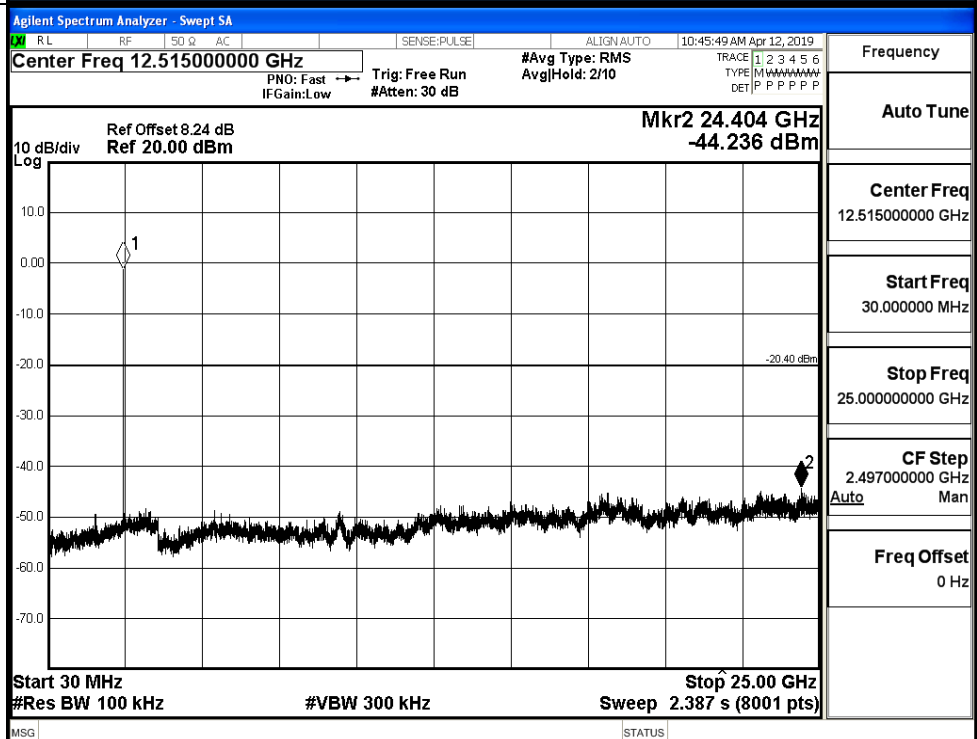


GFSK_HCH_Graphs

Pref

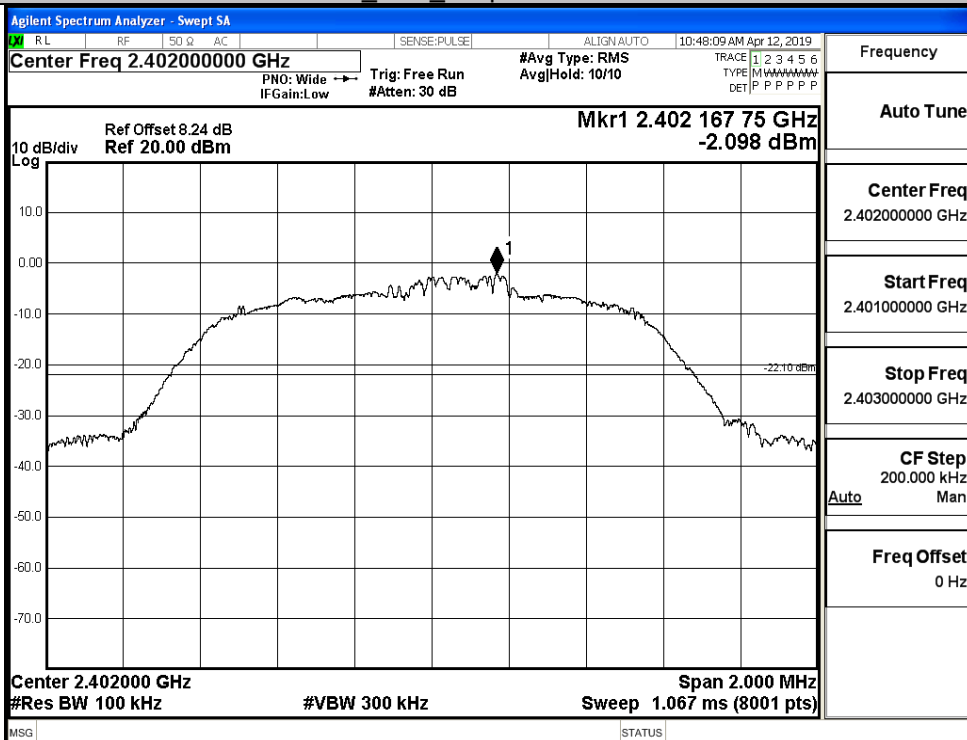


Puw

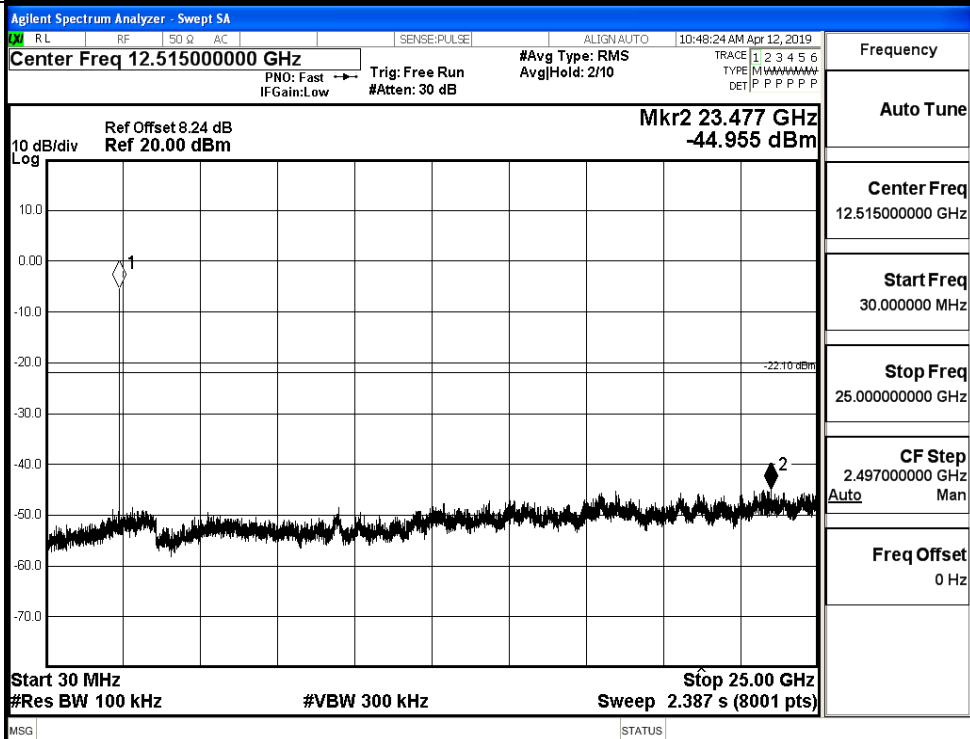


$\pi/4$ DQPSK_LCH_Graphs

Pref

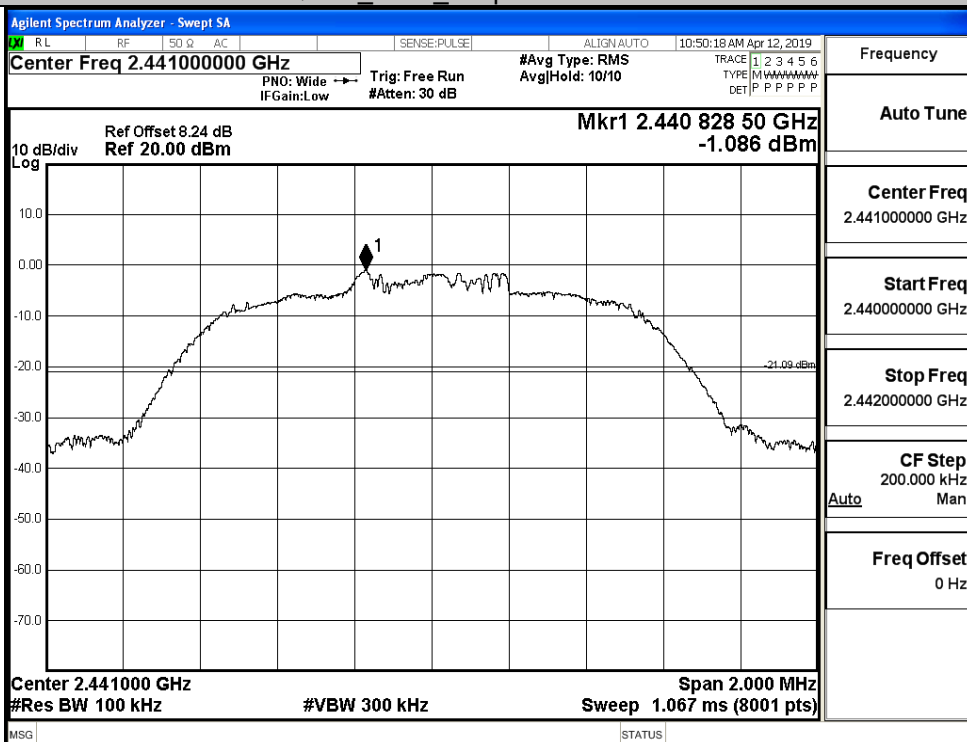


Puw

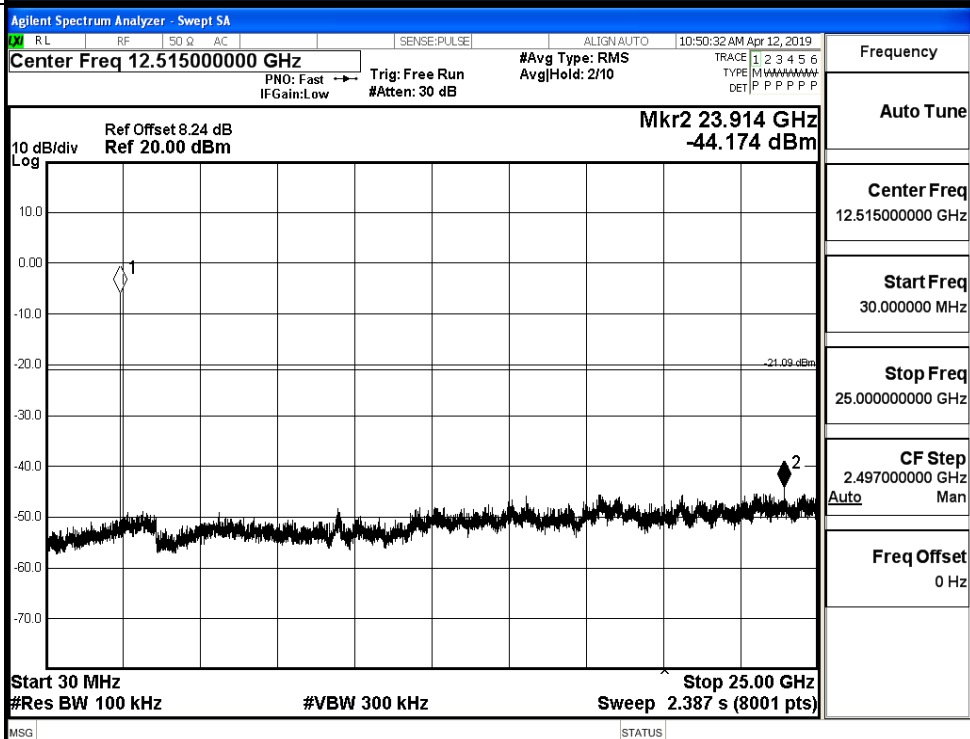


π /4DQPSK_MCH_Graphs

Pref

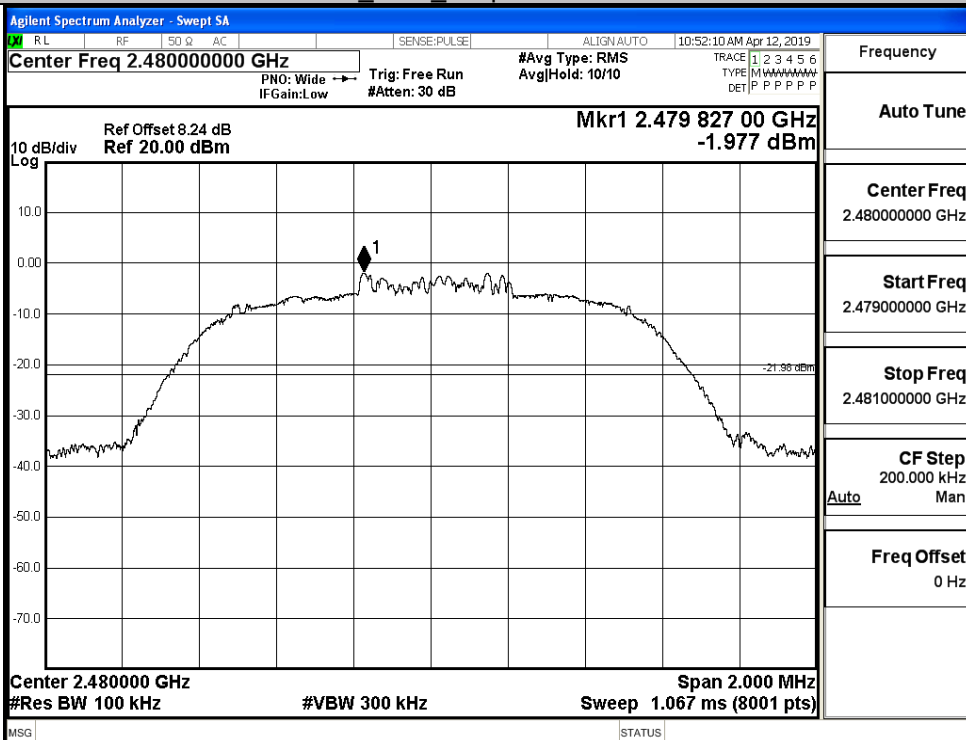


Puw

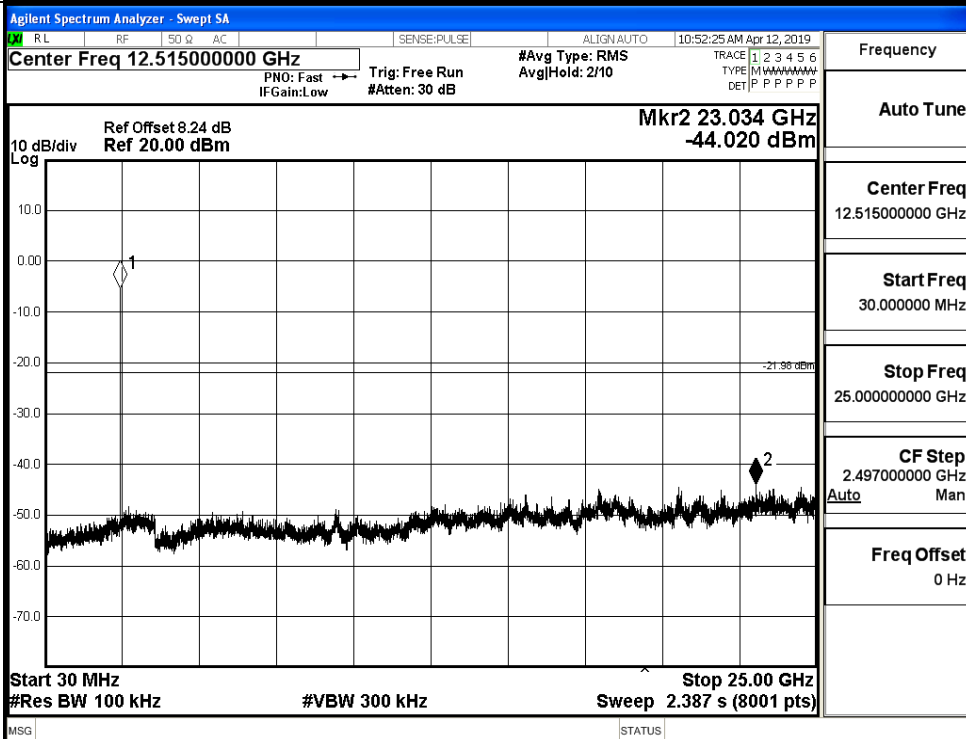


π /4DQPSK_HCH_Graphs

Pref



Puw

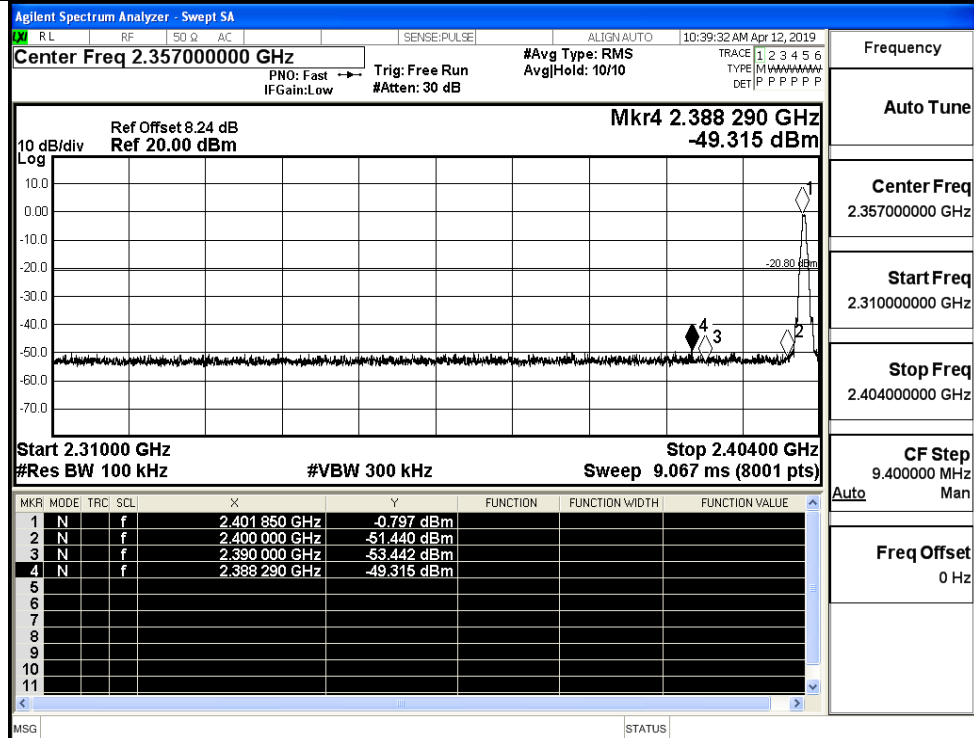


A.7 Band-edge for RF Conducted Emissions

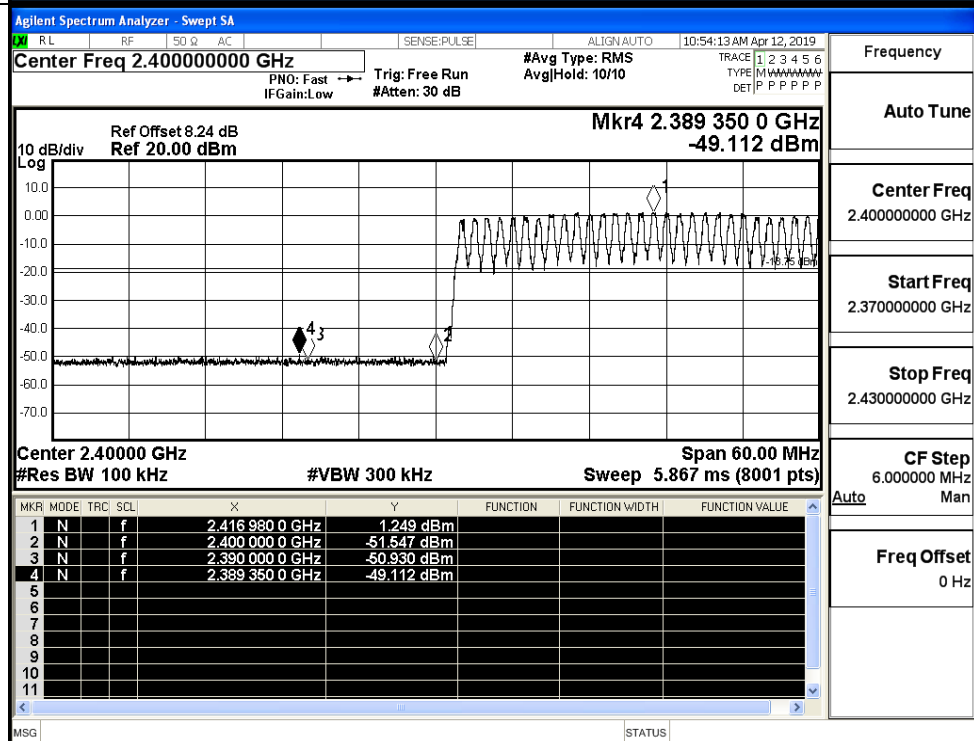
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-0.797	Off	-49.315	-20.8	PASS
			1.249	On	-49.112	-18.75	PASS
	HCH	2480	-0.318	Off	-49.488	-20.32	PASS
			1.674	On	-49.497	-18.33	PASS
$\pi/4$ DQPSK	LCH	2402	-3.433	Off	-49.467	-23.43	PASS
			0.307	On	-49.179	-19.69	PASS
	HCH	2480	-1.551	Off	-49.287	-21.55	PASS
			0.458	On	-48.893	-19.54	PASS

Test Graphs

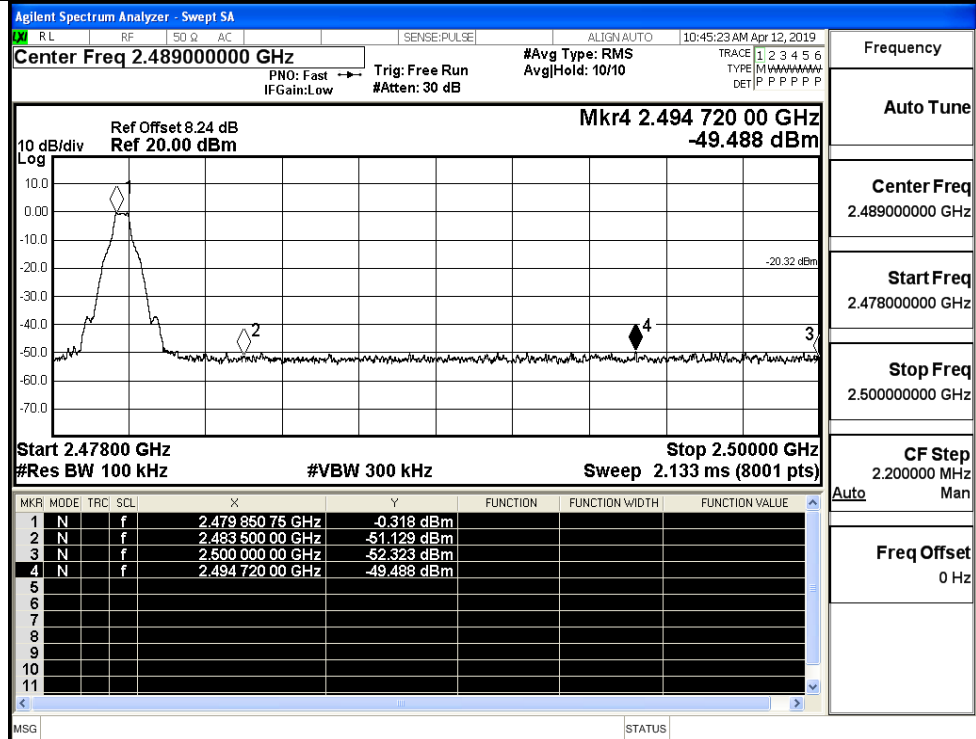
GFSK/LCH/No Hop



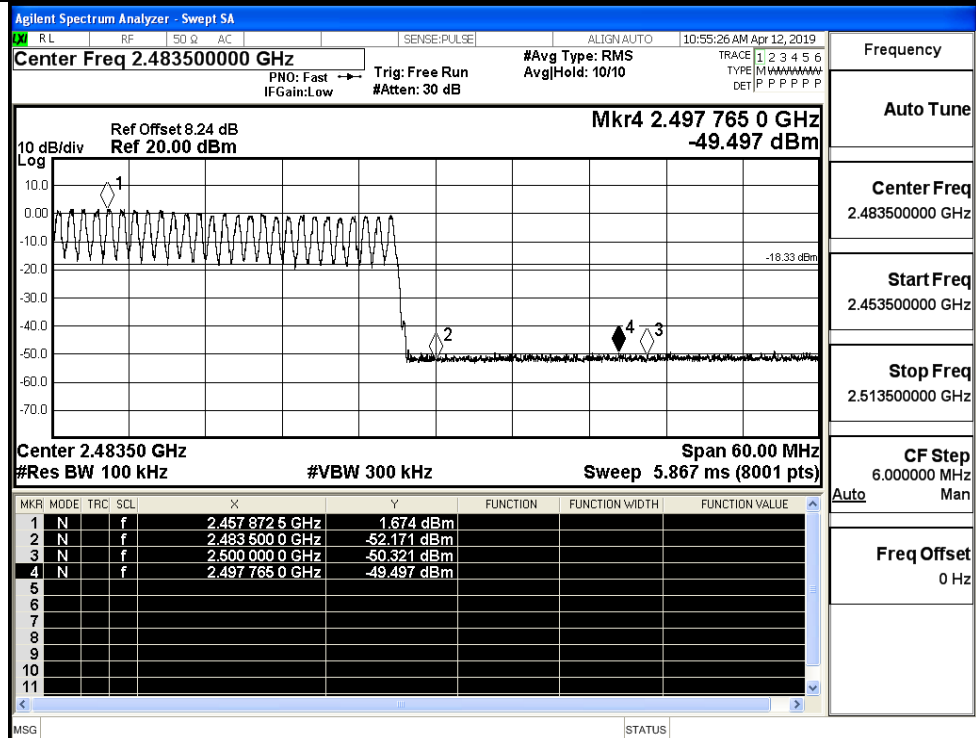
GFSK/LCH/Hop



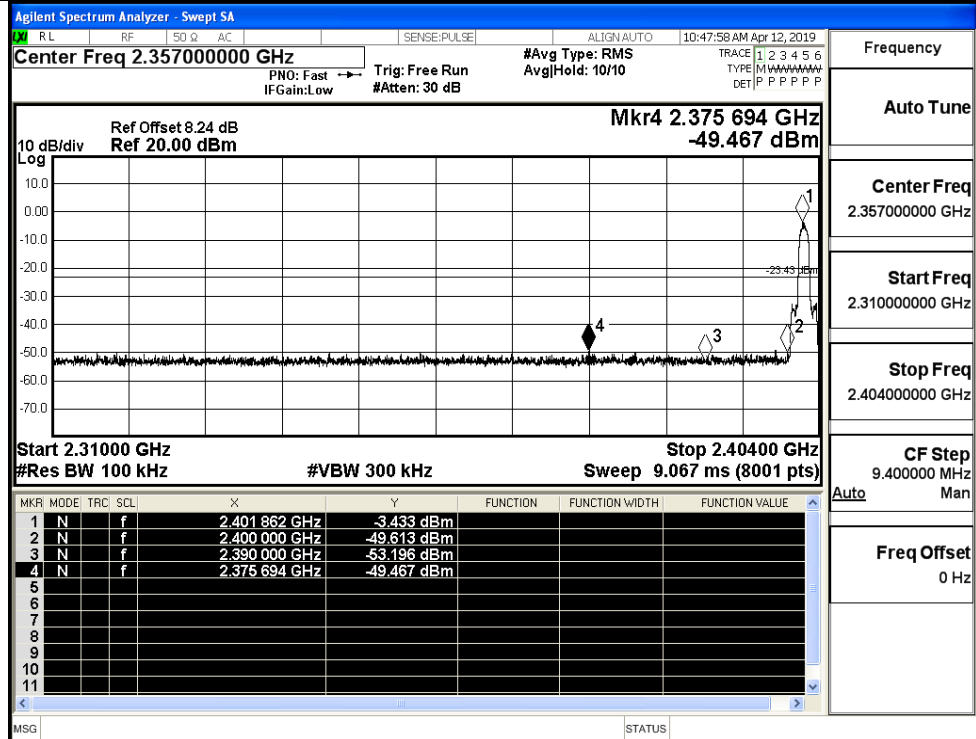
GFSK/HCH/No Hop



GFSK/HCH/Hop



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



Frequency

Auto Tune

Center Freq
2.357000000 GHz

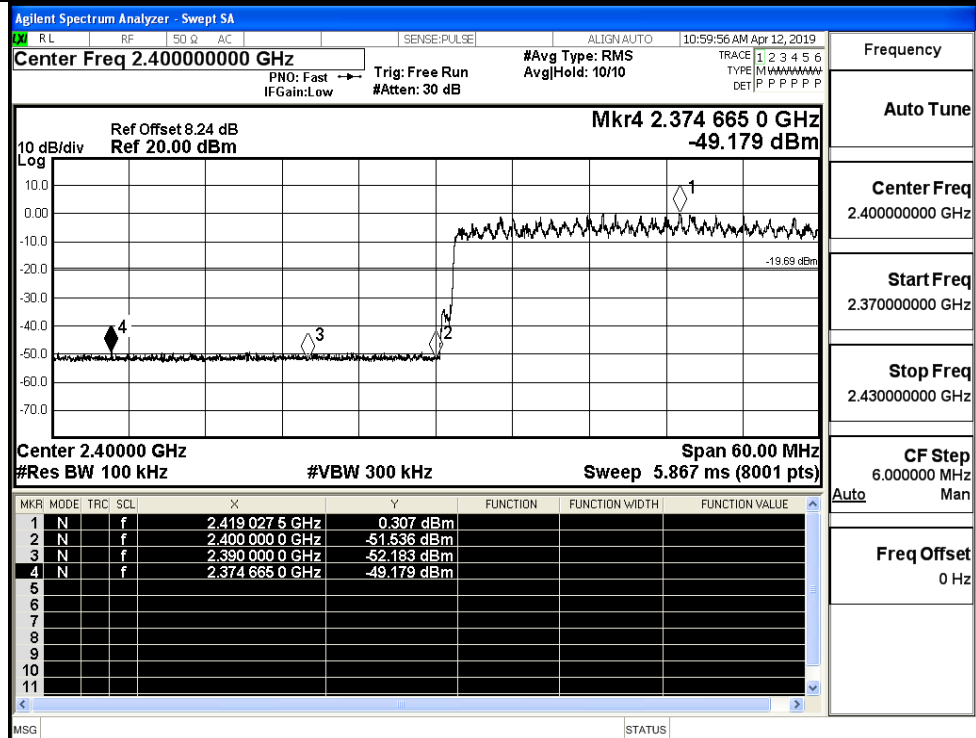
Start Freq
2.310000000 GHz

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

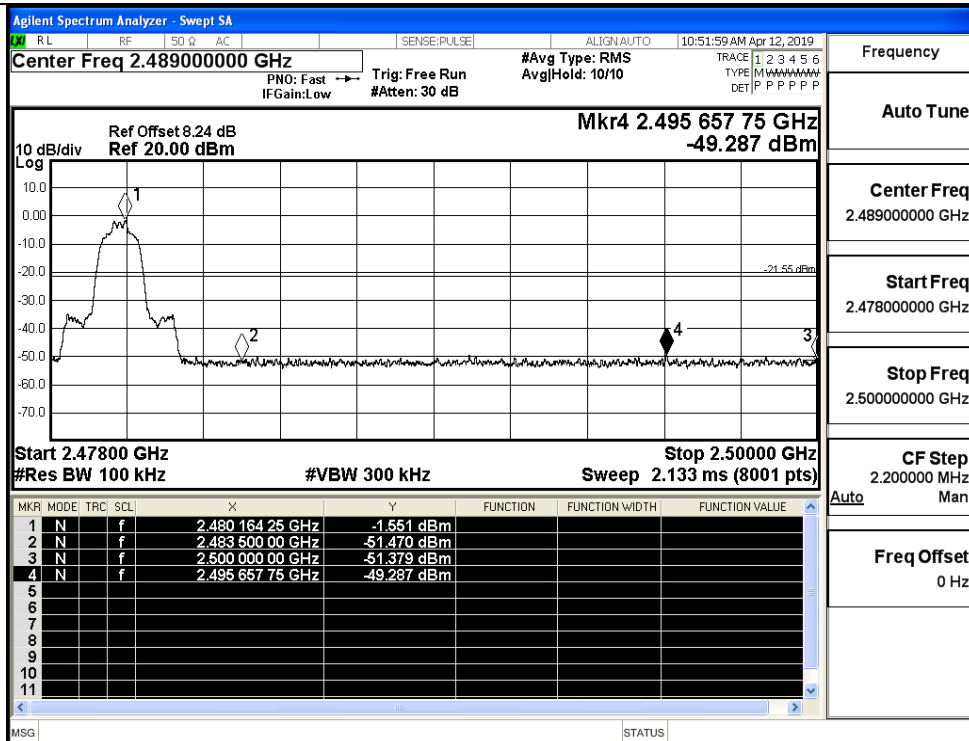
Start Freq
2.370000000 GHz

Stop Freq
2.430000000 GHz

CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

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



Frequency

Auto Tune

Center Freq
2.489000000 GHz

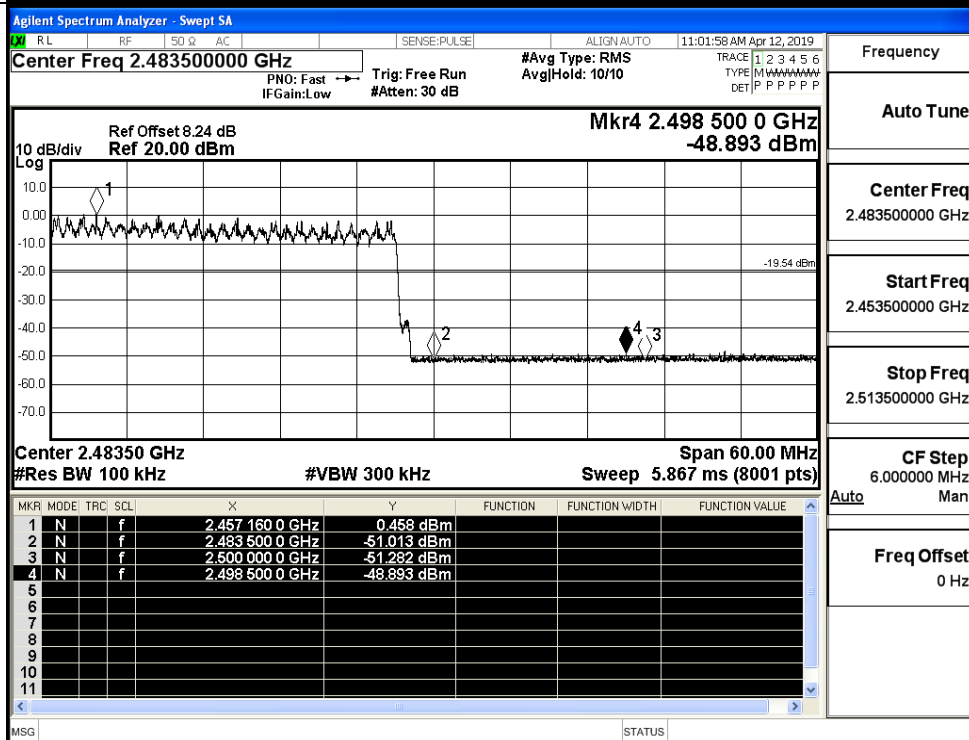
Start Freq
2.478000000 GHz

Stop Freq
2.500000000 GHz

CF Step
2.200000 MHz
Auto Man

Freq Offset
0 Hz

$\pi/4$ DQPSK/HCH/Hop



Frequency

Auto Tune

Center Freq
2.483500000 GHz

Start Freq
2.453500000 GHz

Stop Freq
2.513500000 GHz

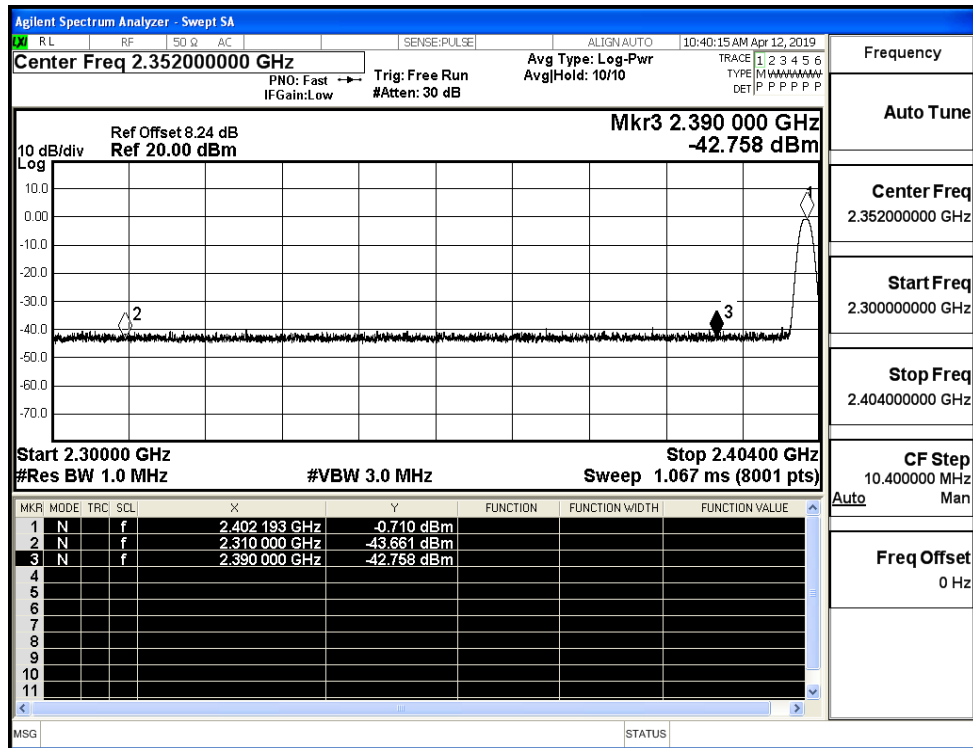
CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

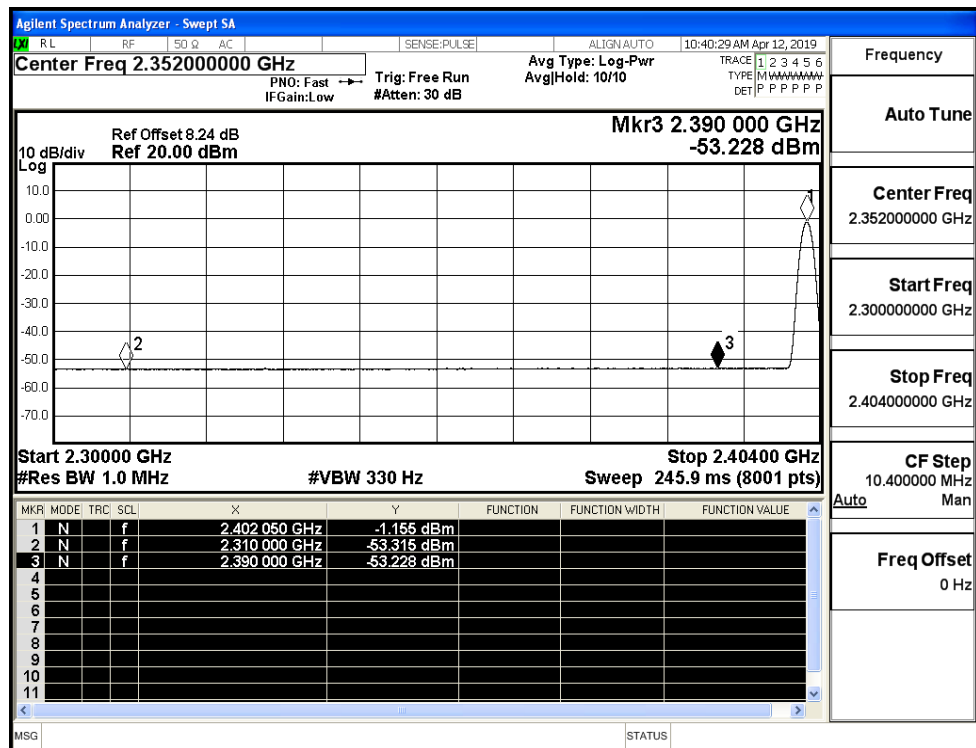
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.66	2.0	0	53.57	PEAK	74	PASS
	Off	2310.0	-53.32	2.0	0	43.91	AV	54	PASS
	Off	2390.0	-42.76	2.0	0	54.47	PEAK	74	PASS
	Off	2390.0	-53.23	2.0	0	44.00	AV	54	PASS
	Off	2483.5	-42.67	2.0	0	54.56	PEAK	74	PASS
	Off	2483.5	-52.75	2.0	0	44.48	AV	54	PASS
	Off	2500.0	-43.20	2.0	0	54.03	PEAK	74	PASS
	Off	2500.0	-52.78	2.0	0	44.45	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.97	2.0	0	53.26	PEAK	74	PASS
	Off	2310.0	-53.46	2.0	0	43.77	AV	54	PASS
	Off	2390.0	-43.61	2.0	0	53.62	PEAK	74	PASS
	Off	2390.0	-52.88	2.0	0	44.35	AV	54	PASS
	Off	2483.5	-43.18	2.0	0	54.05	PEAK	74	PASS
	Off	2483.5	-52.86	2.0	0	44.37	AV	54	PASS
	Off	2500.0	-41.53	2.0	0	55.70	PEAK	74	PASS
	Off	2500.0	-52.66	2.0	0	44.57	AV	54	PASS

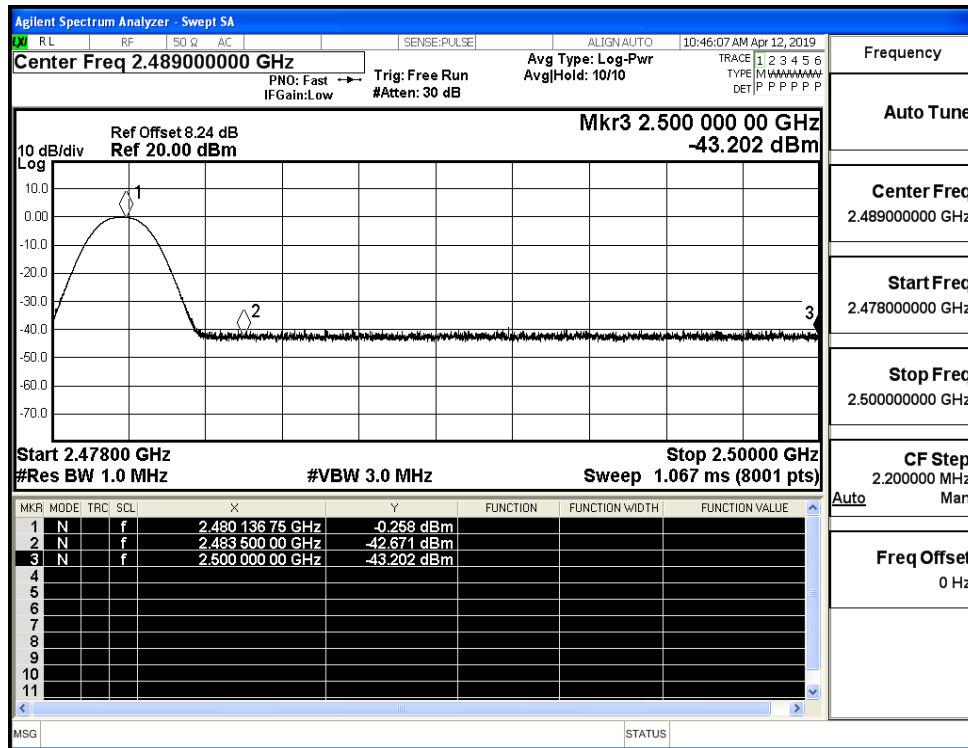
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



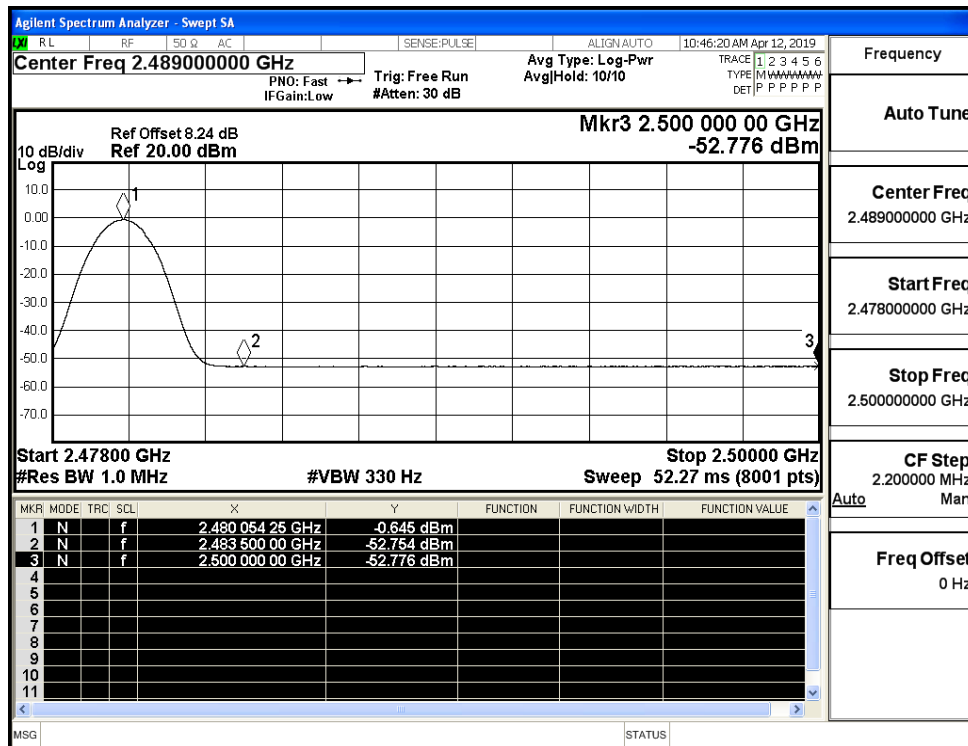
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

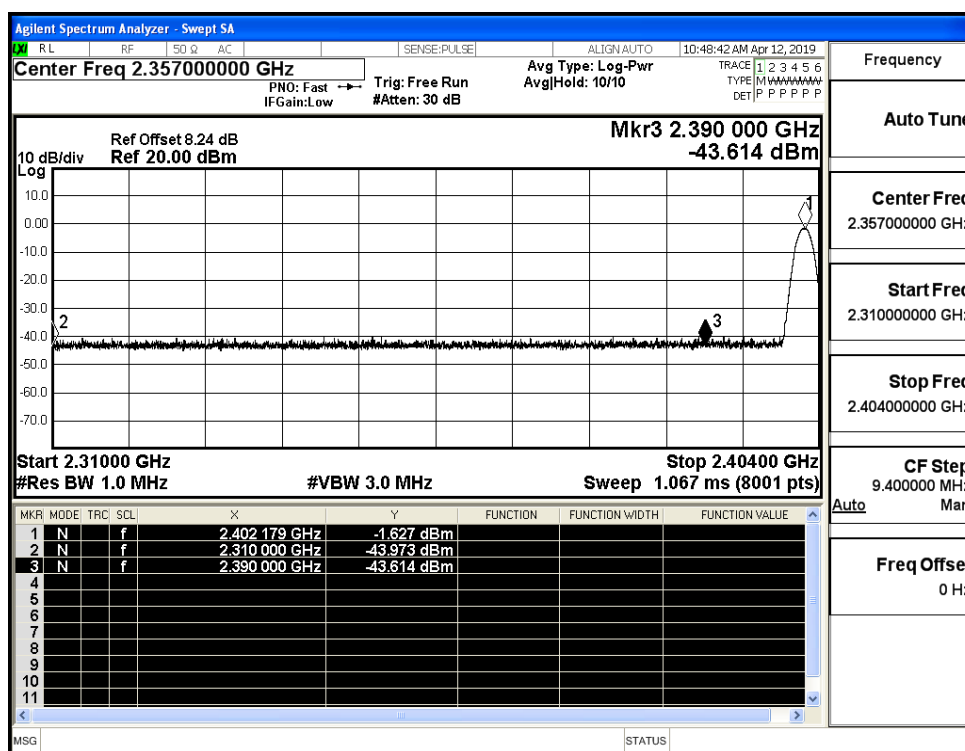
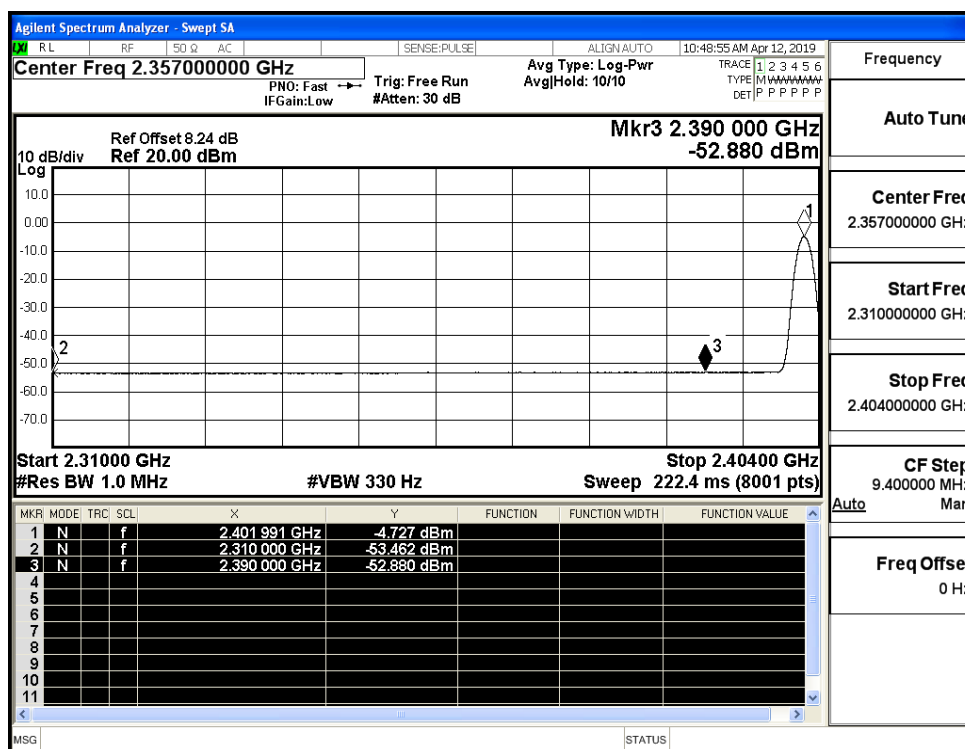


Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)

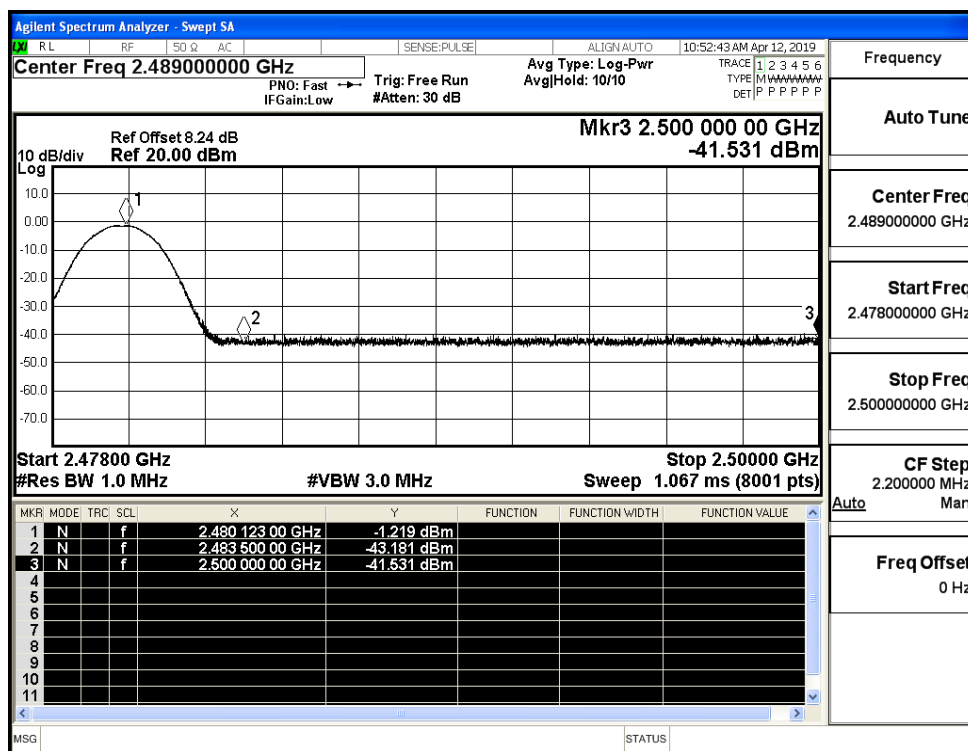


Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



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)

