

Appendix A

RF Test Data for BT V4.2 (BDR/EDR) (Conducted Measurement)

Product Name: Bluetooth speaker

Trade Mark: Altas Mountain

Test Model: SP-006

Environmental Conditions

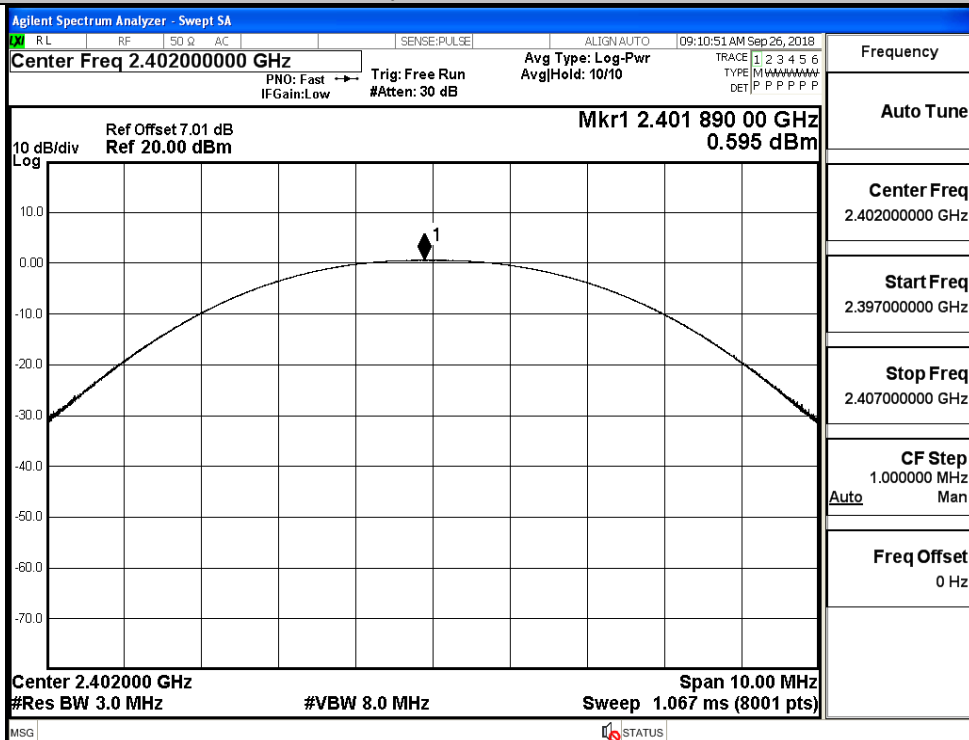
Temperature:	24.3° C
Relative Humidity:	53.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond.Lu
Supervised by:	Jayden.Zhuo

A.1 Maximum Conducted Peak Output Power

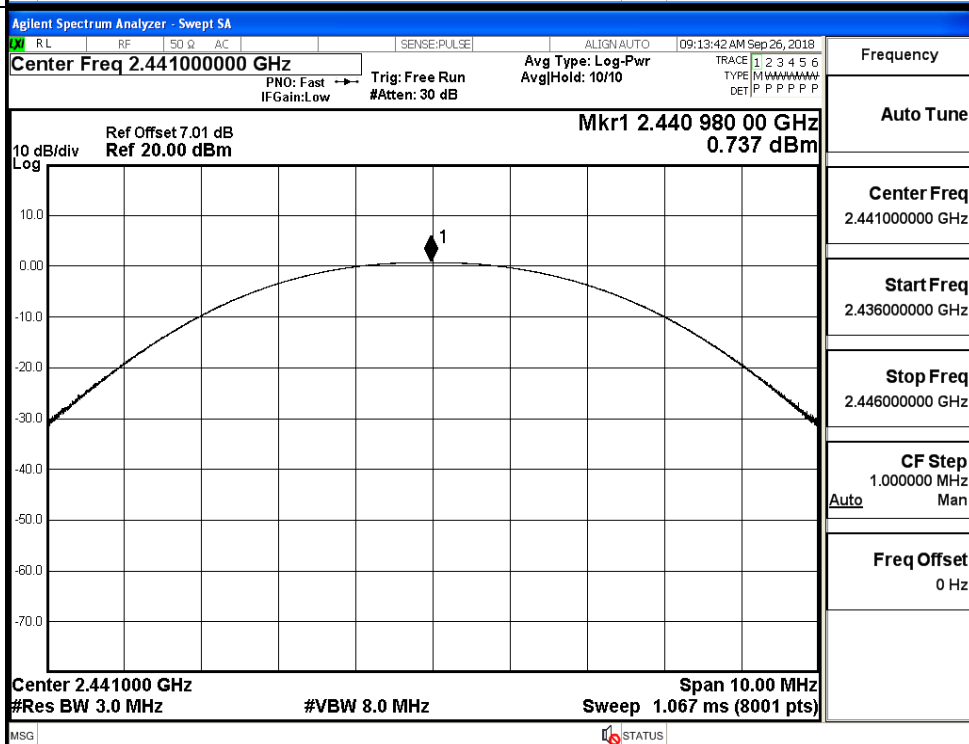
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.595	21	PASS
	MCH	0.737	21	PASS
	HCH	0.294	21	PASS
$\pi/4$ DQPSK	LCH	0.400	21	PASS
	MCH	0.502	21	PASS
	HCH	0.049	21	PASS

Test Graphs

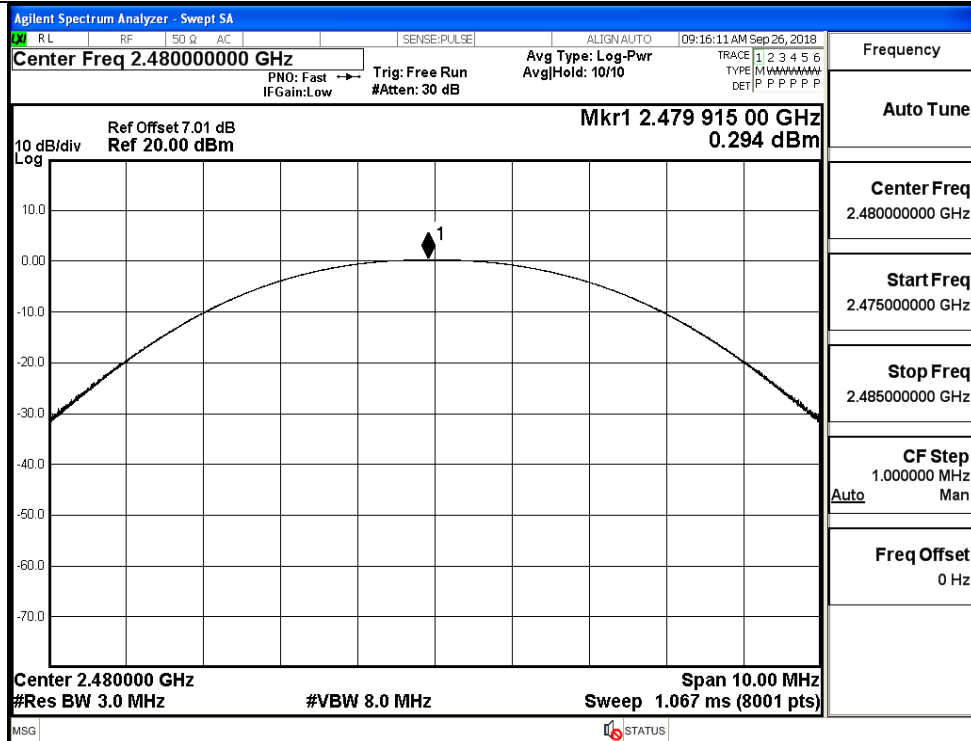
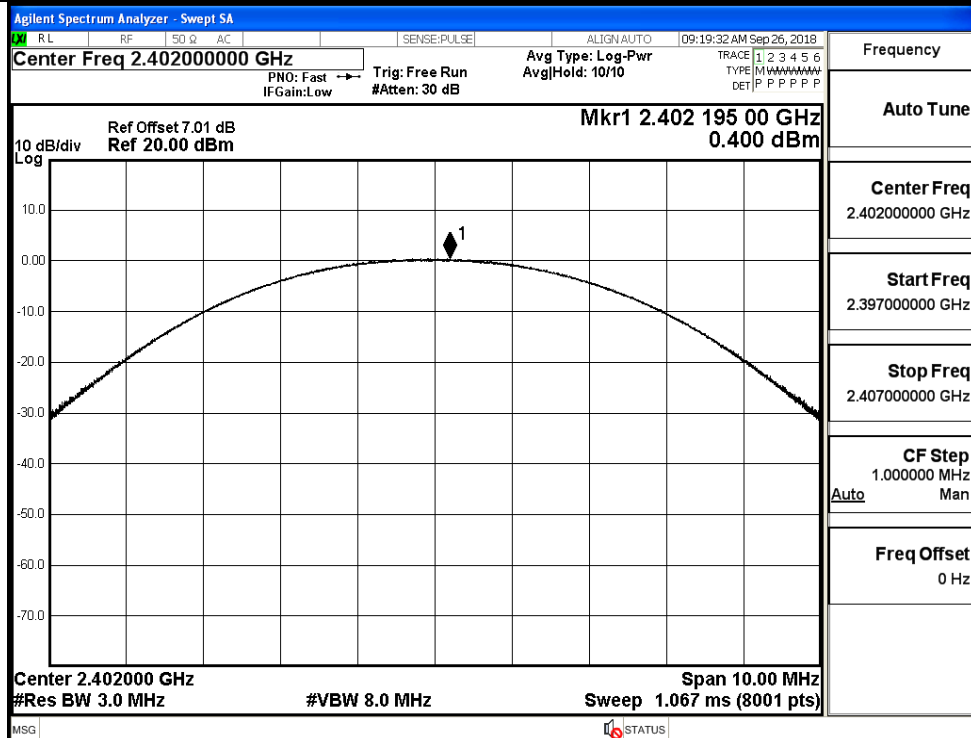
GFSK/LCH

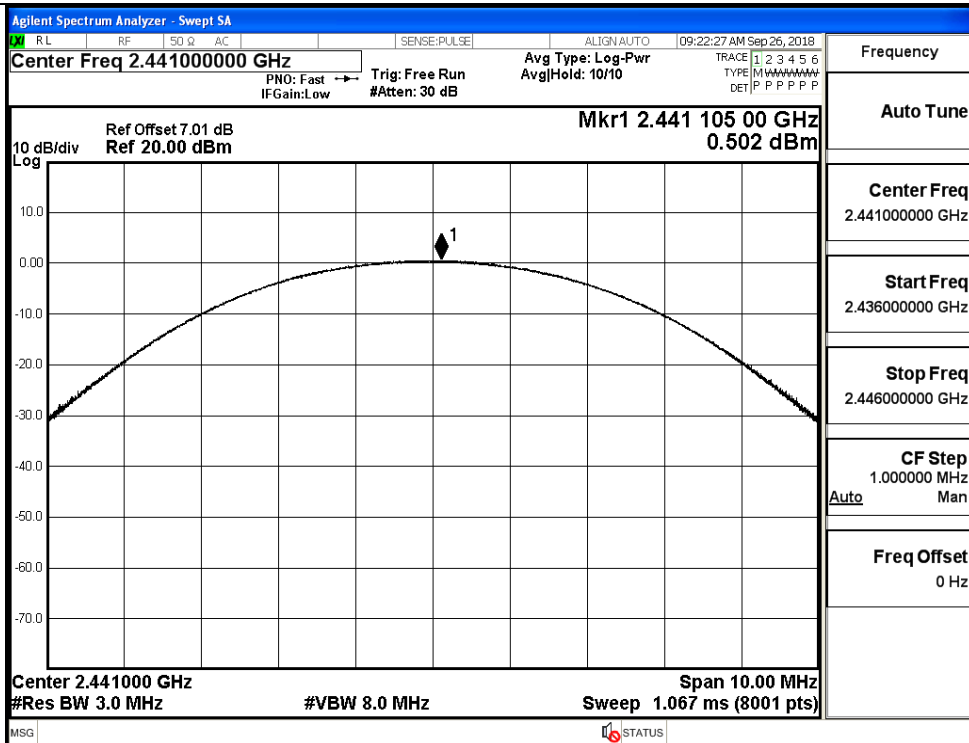
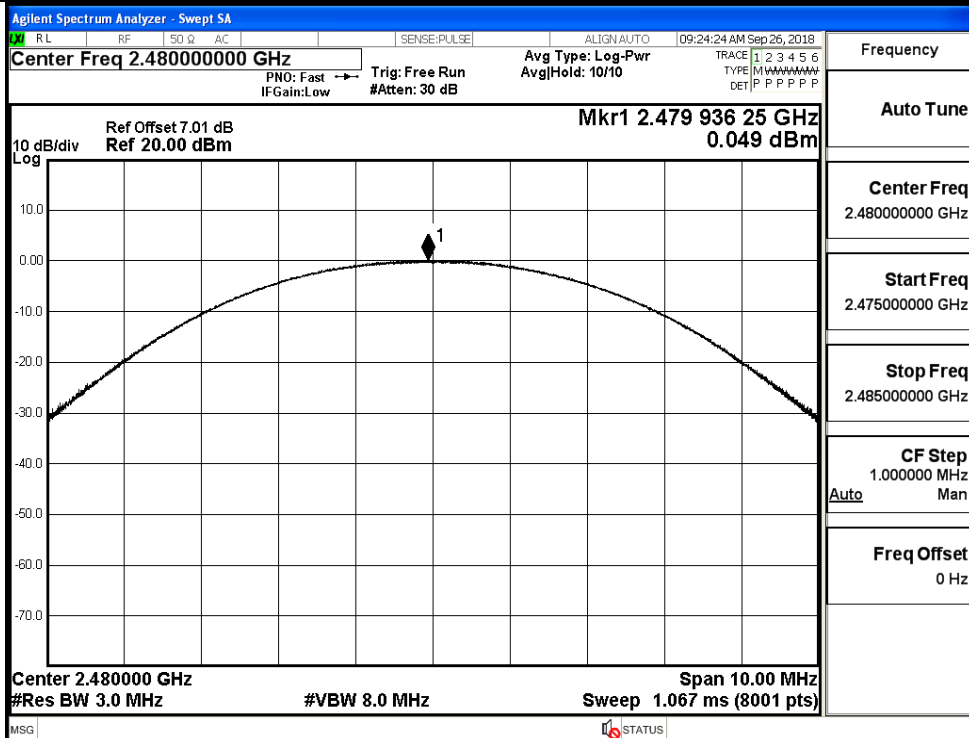


GFSK/MCH



GFSK/HCH

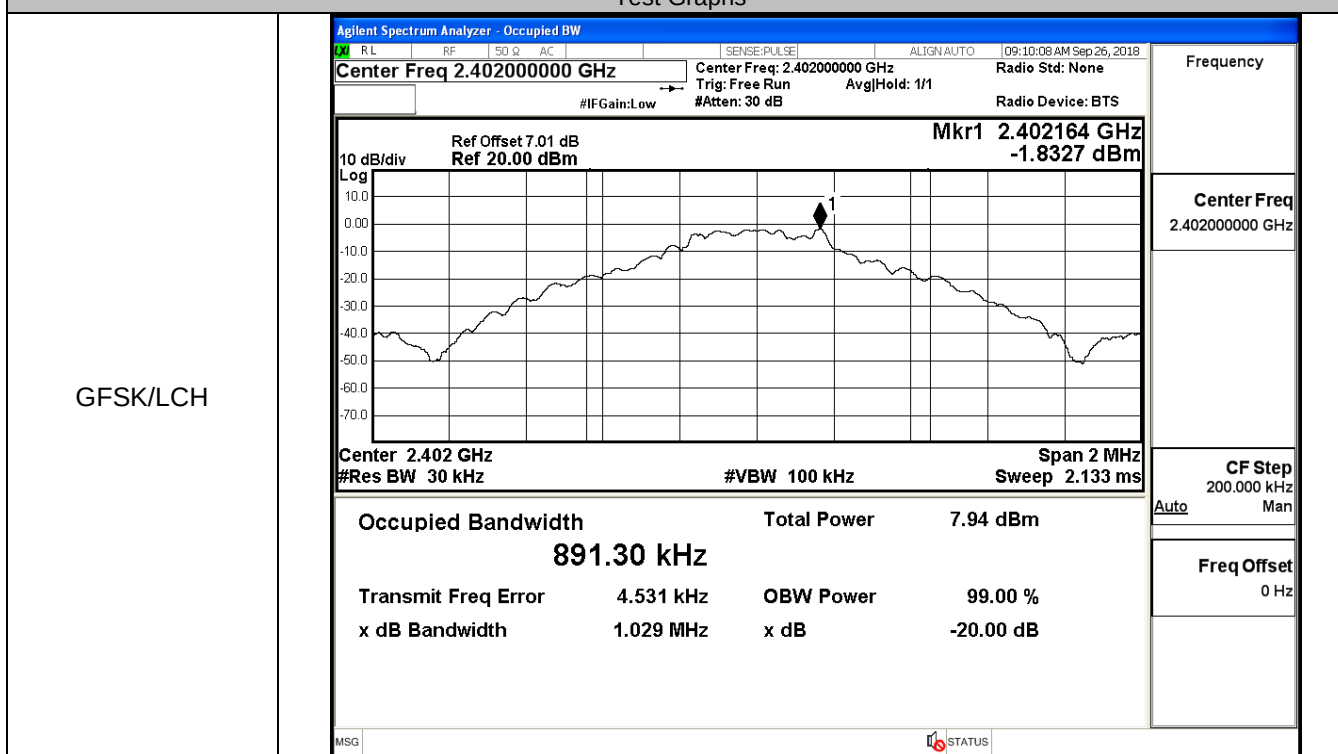
 π /4DQPSK/LCH

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

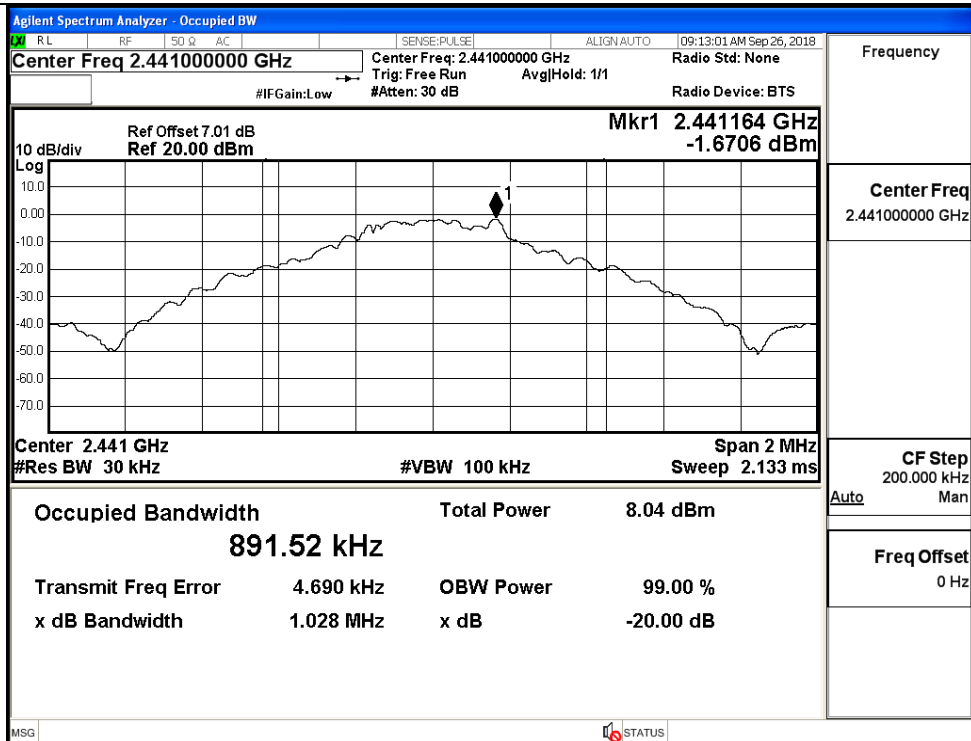
A.2 20dB Bandwidth

Mode	Channel.	99% Bandwidth [MHz]	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.89130	1.029	Not Specified	PASS
	MCH	0.89152	1.028	Not Specified	PASS
	HCH	0.88789	1.021	Not Specified	PASS
π /4DQPSK	LCH	1.1686	1.286	Not Specified	PASS
	MCH	1.1674	1.287	Not Specified	PASS
	HCH	1.1678	1.286	Not Specified	PASS

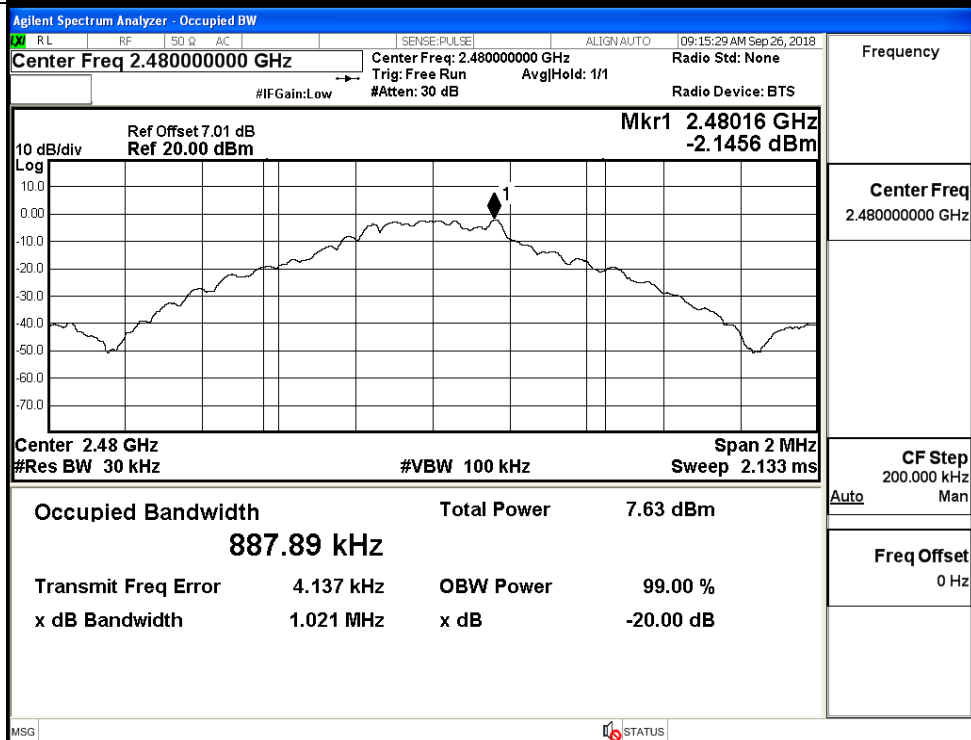
Test Graphs

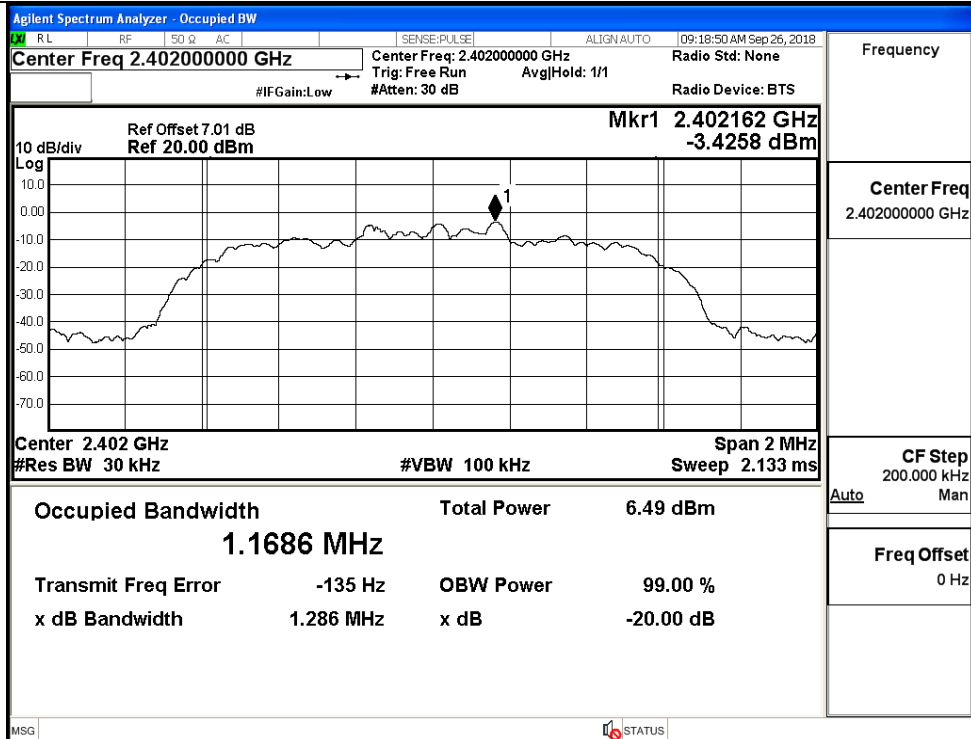
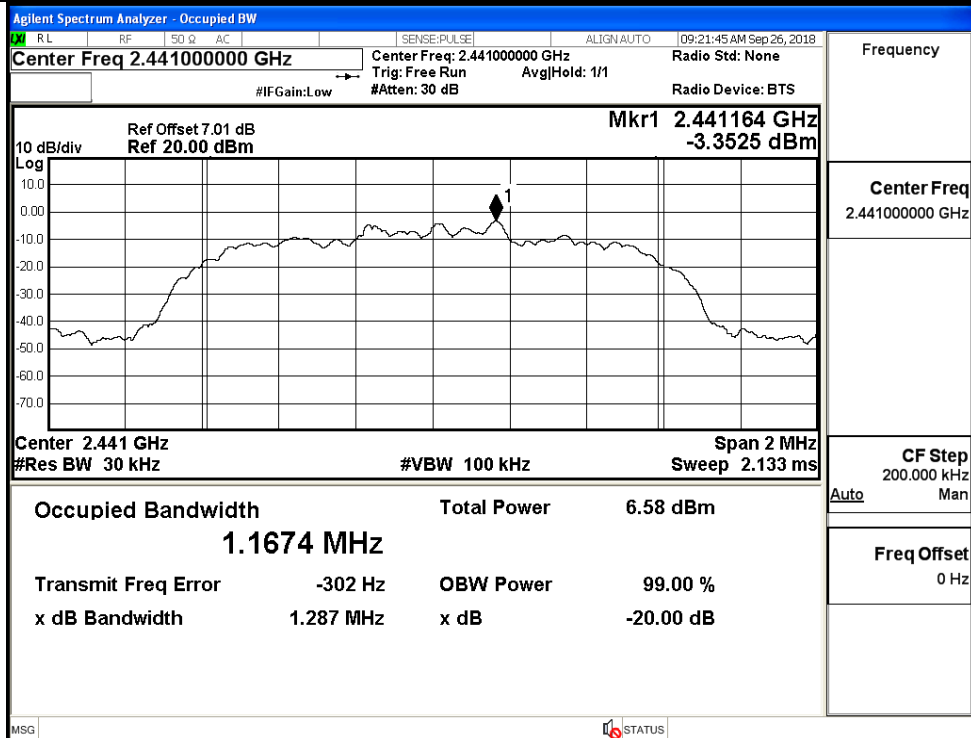


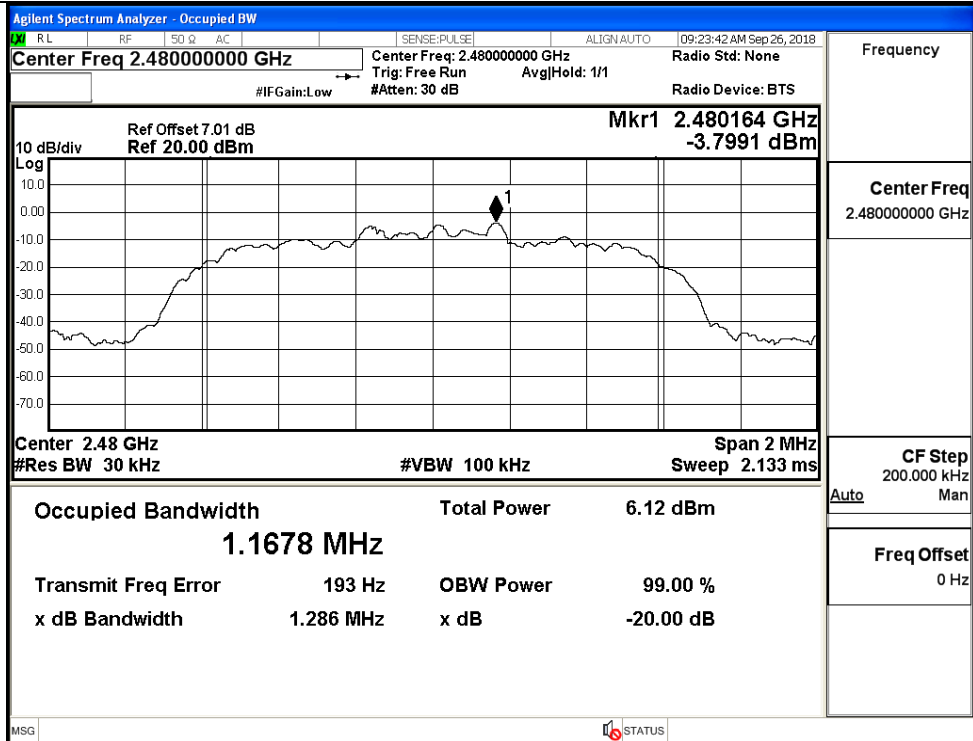
GFSK/MCH



GFSK/HCH



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

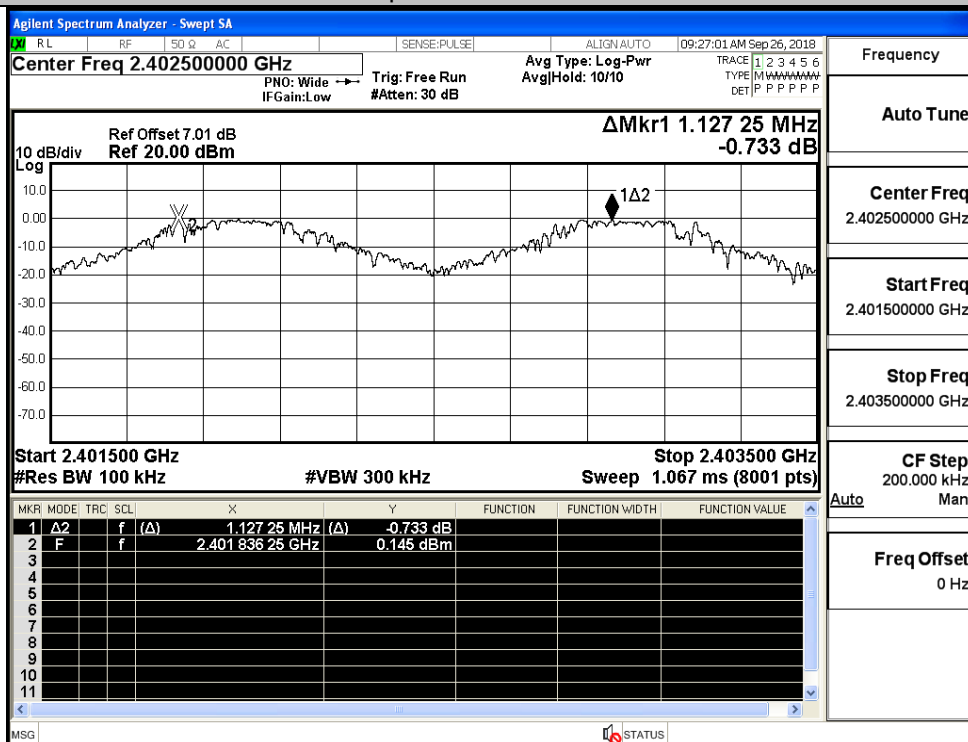
$\pi/4$ DQPSK/HCH

A.3 Carrier Frequency Separation

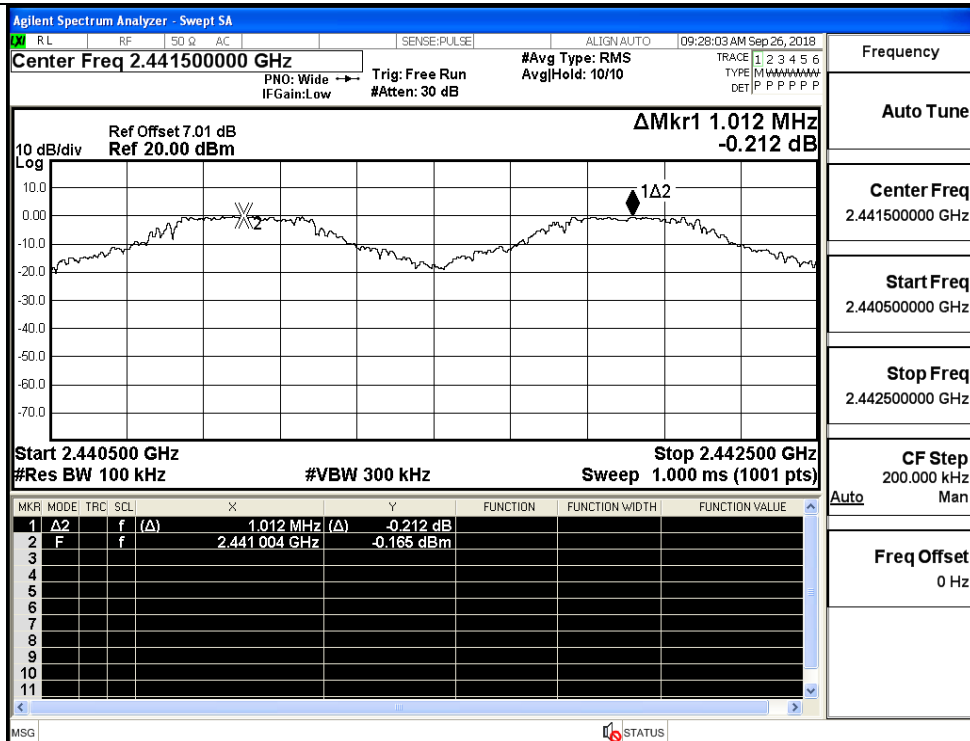
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.127	0.686	PASS
	MCH	1.012	0.686	PASS
	HCH	0.996	0.686	PASS
π /4DQPSK	LCH	0.904	0.858	PASS
	MCH	1.016	0.858	PASS
	HCH	1.020	0.858	PASS

Test Graphs

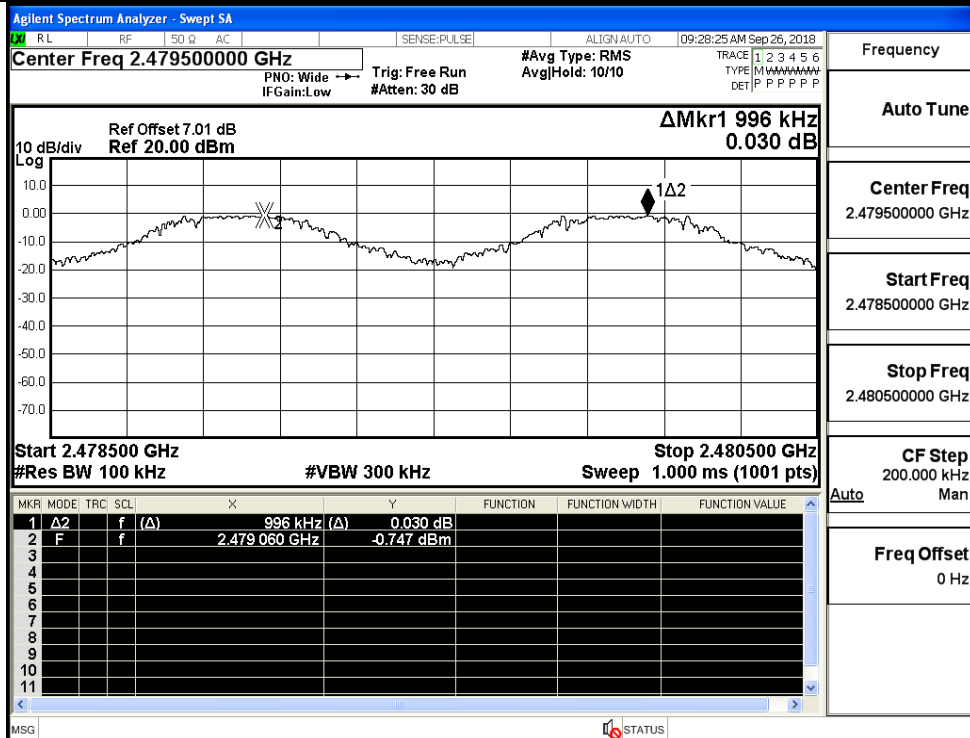
GFSK/LCH

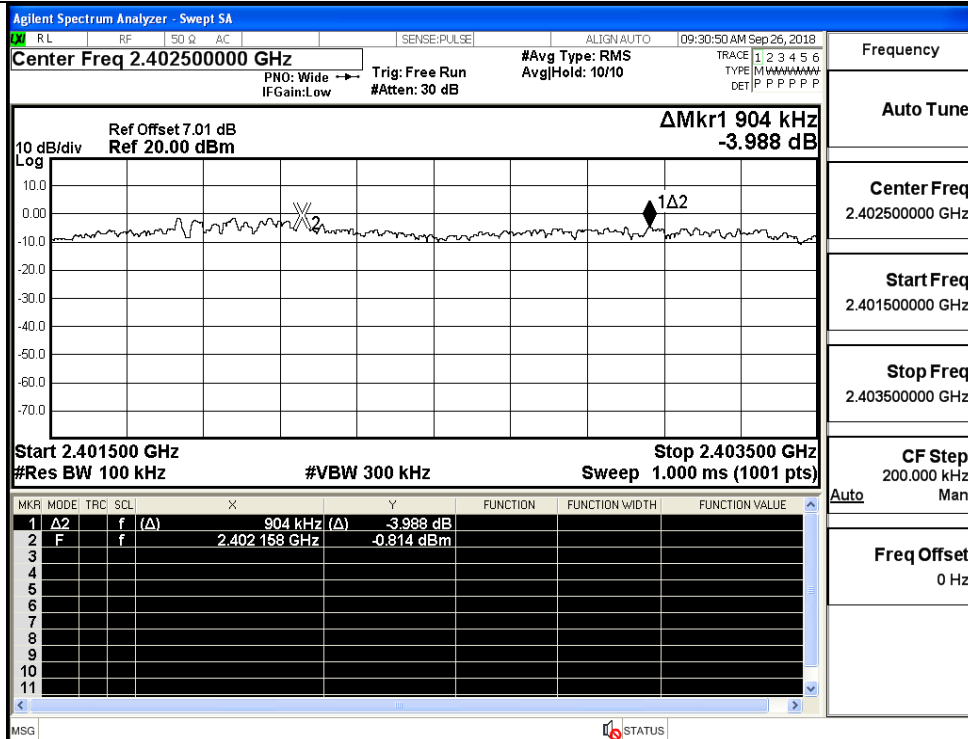
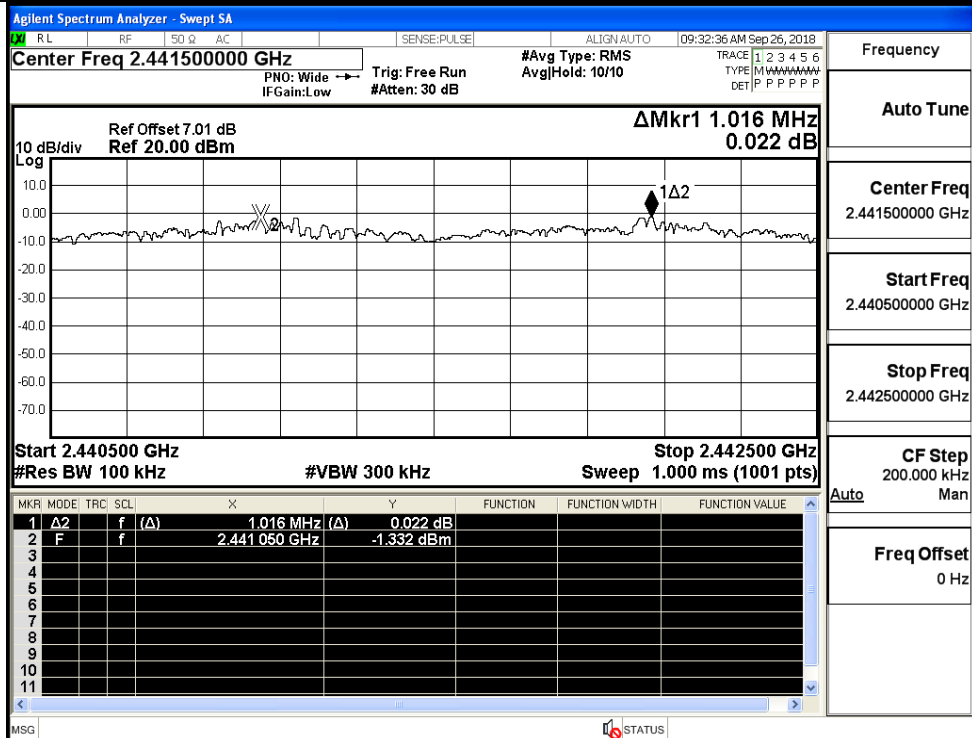


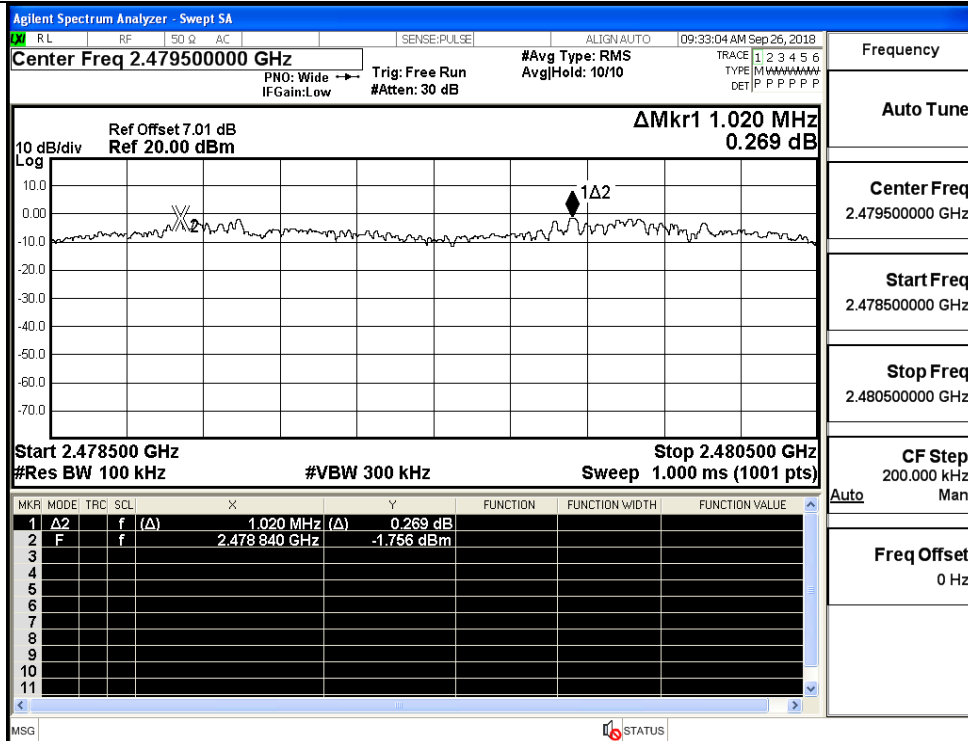
GFSK/MCH



GFSK/HCH



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

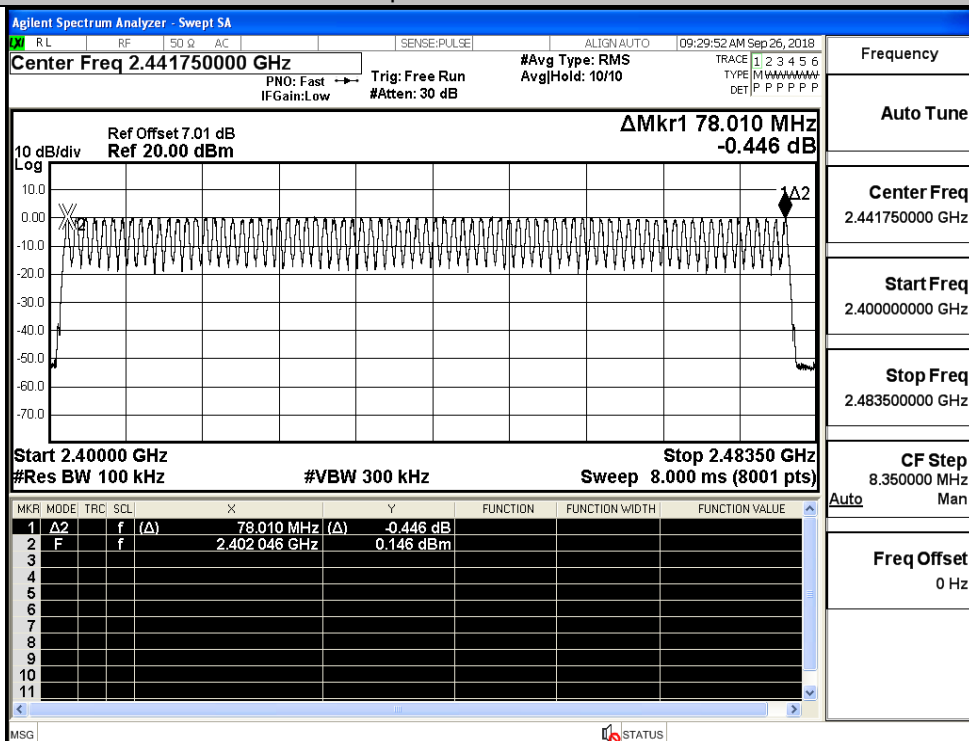
$\pi/4$ DQPSK/HCH

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

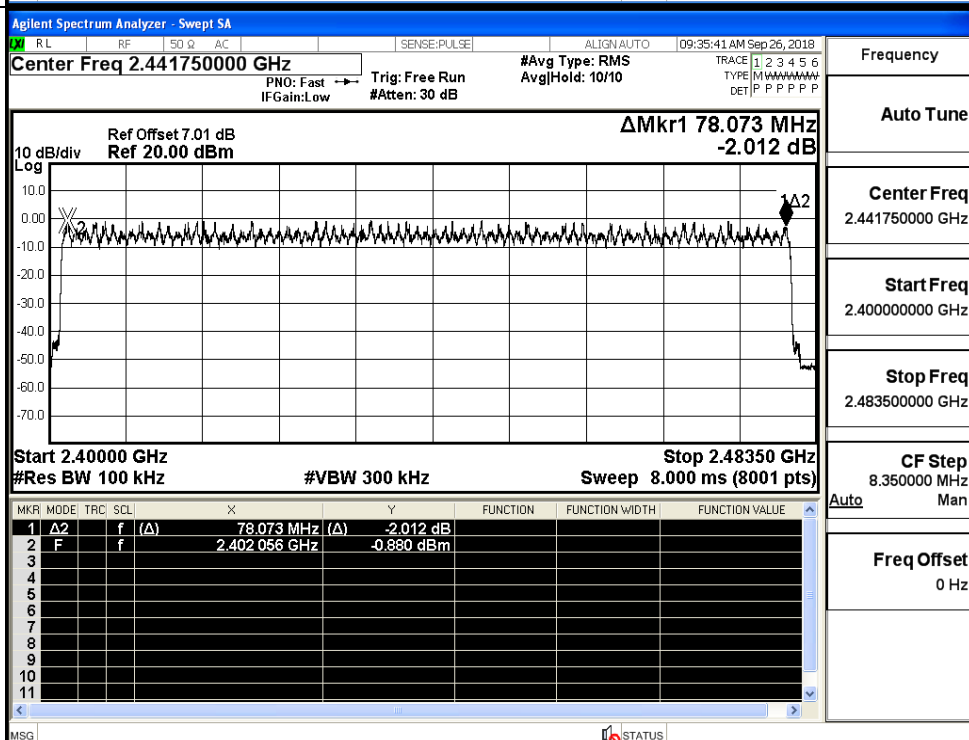
CF Step

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

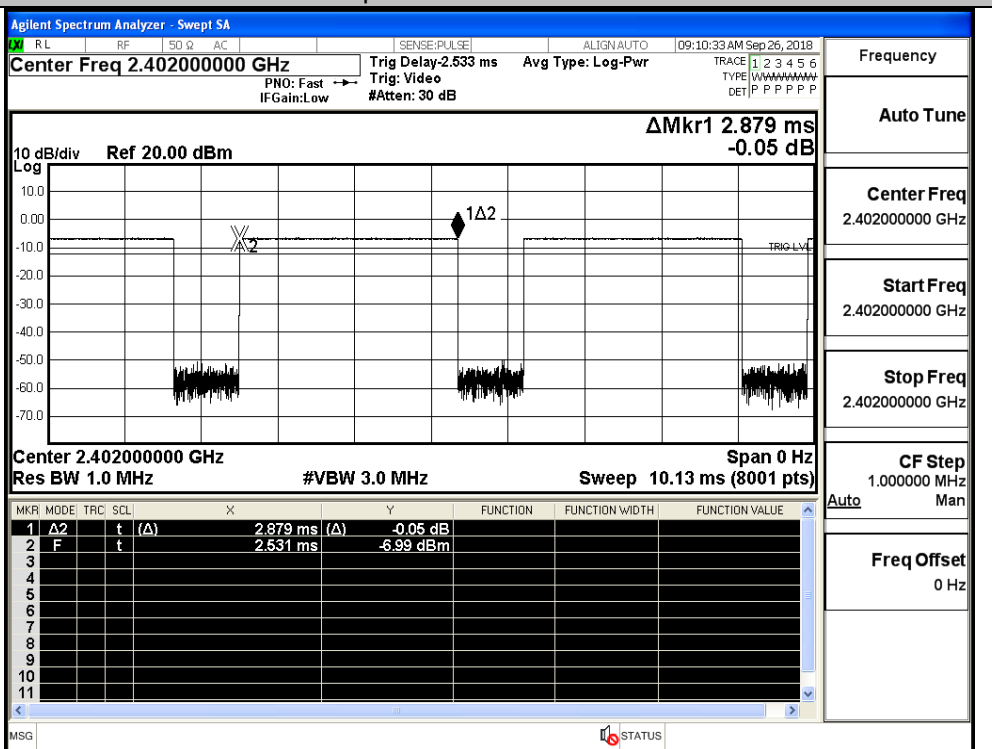
0 Hz

A.5 Dwell Time

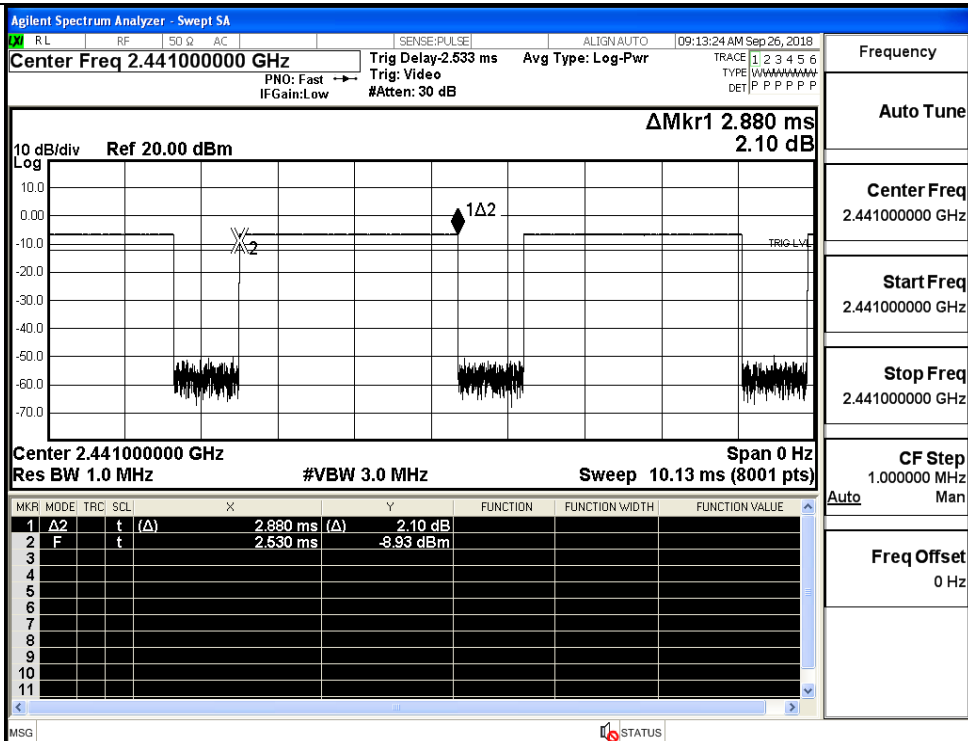
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88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

Test Graphs

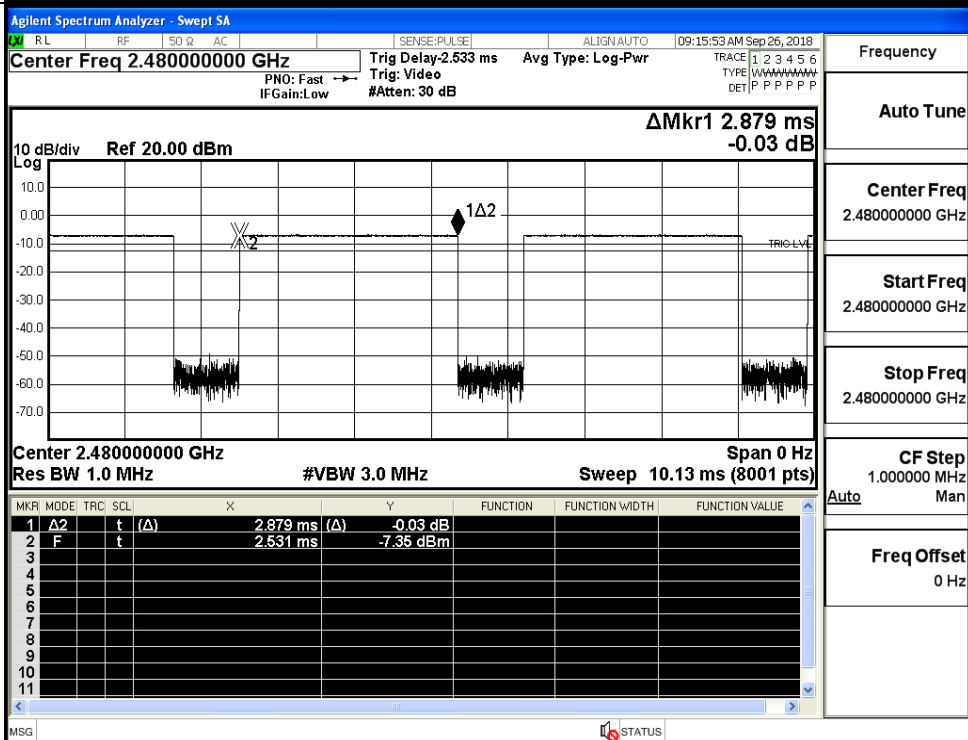
GFSK_DH5/LCH



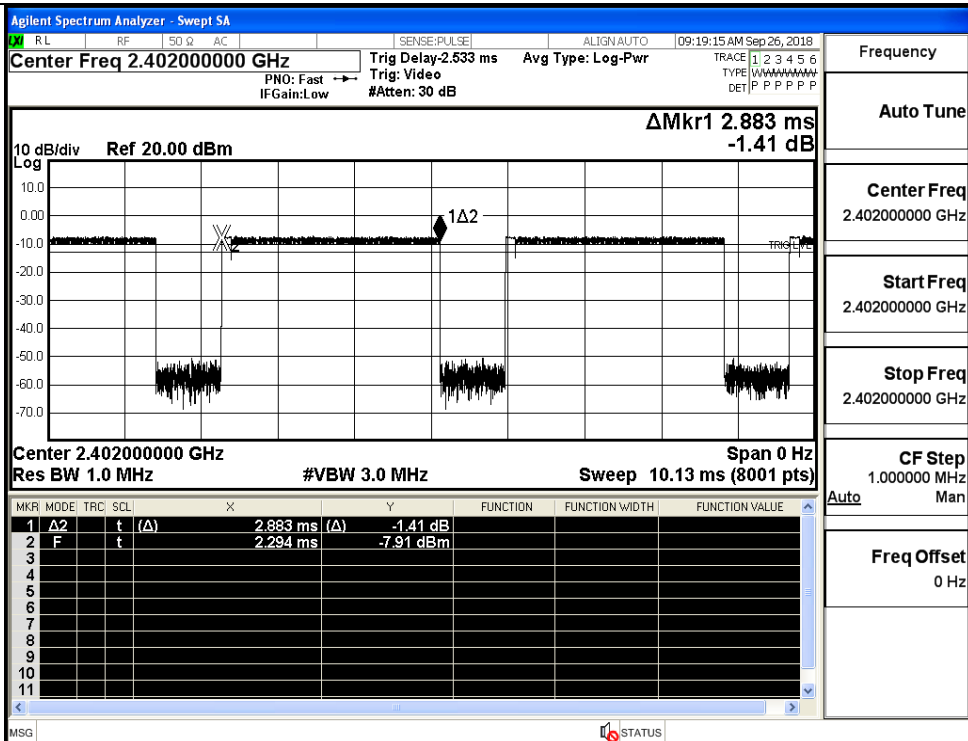
GFSK_DH5/MCH



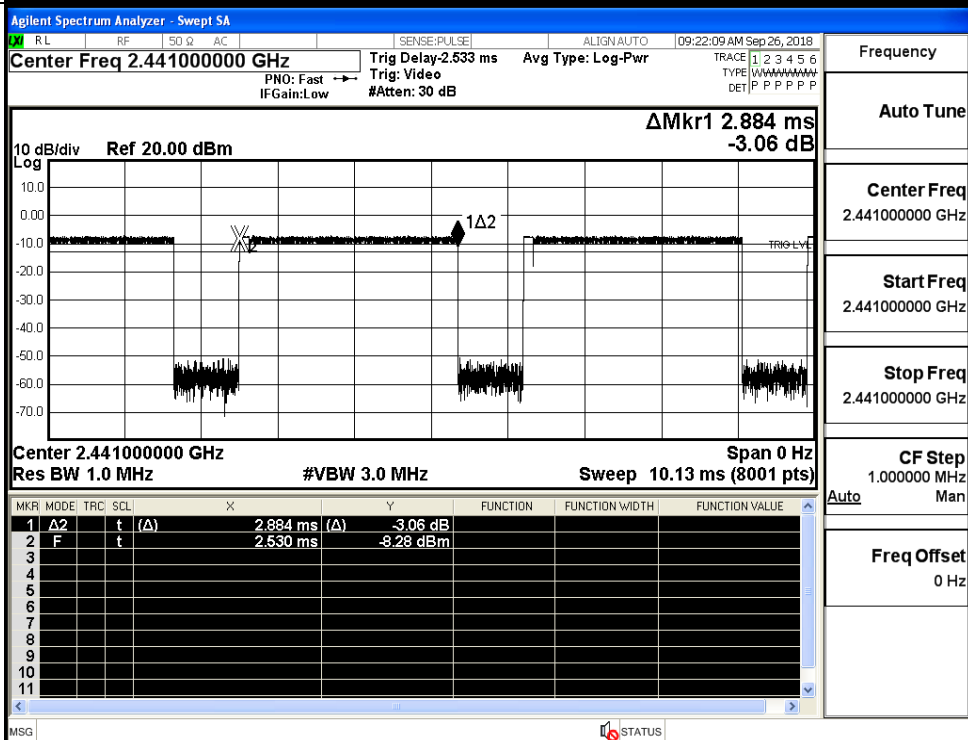
GFSK_DH5/HCH



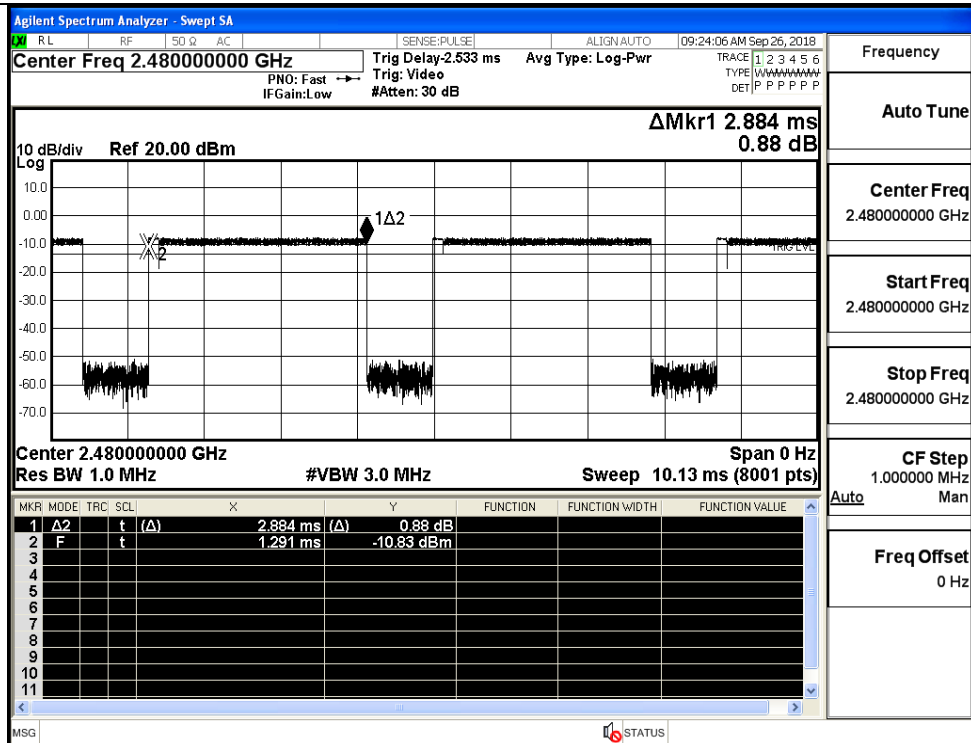
$\pi/4$ DQPSK
_2DH5/LCH



$\pi/4$ DQPSK
_2DH5/MCH



π/4DQPSK
_2DH5/HCH

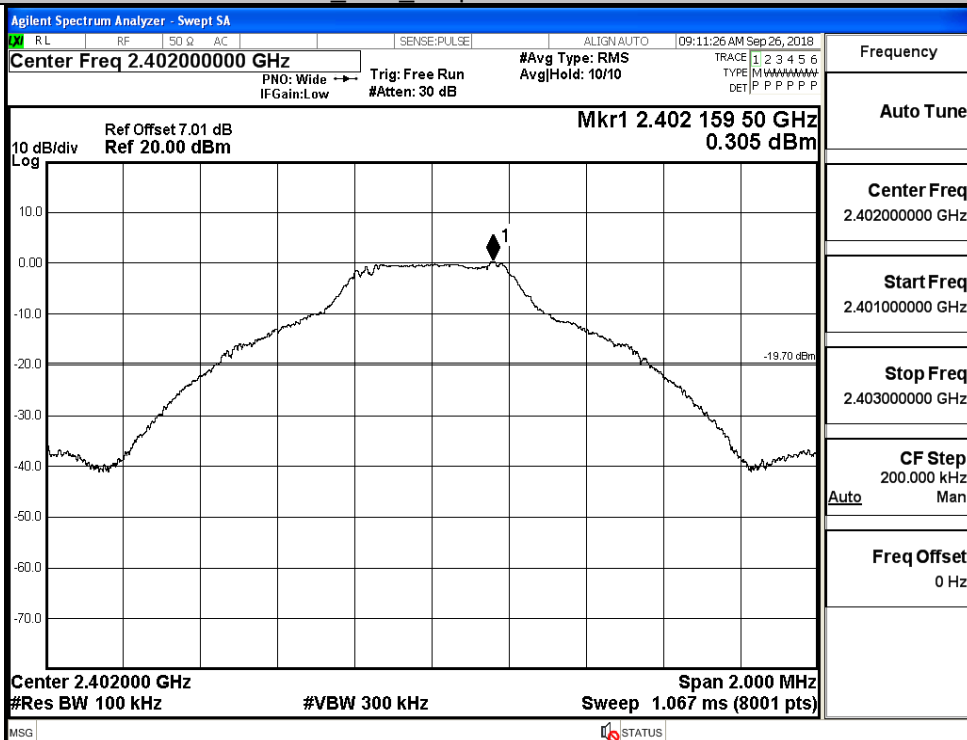


A.6 RF Conducted Spurious Emissions

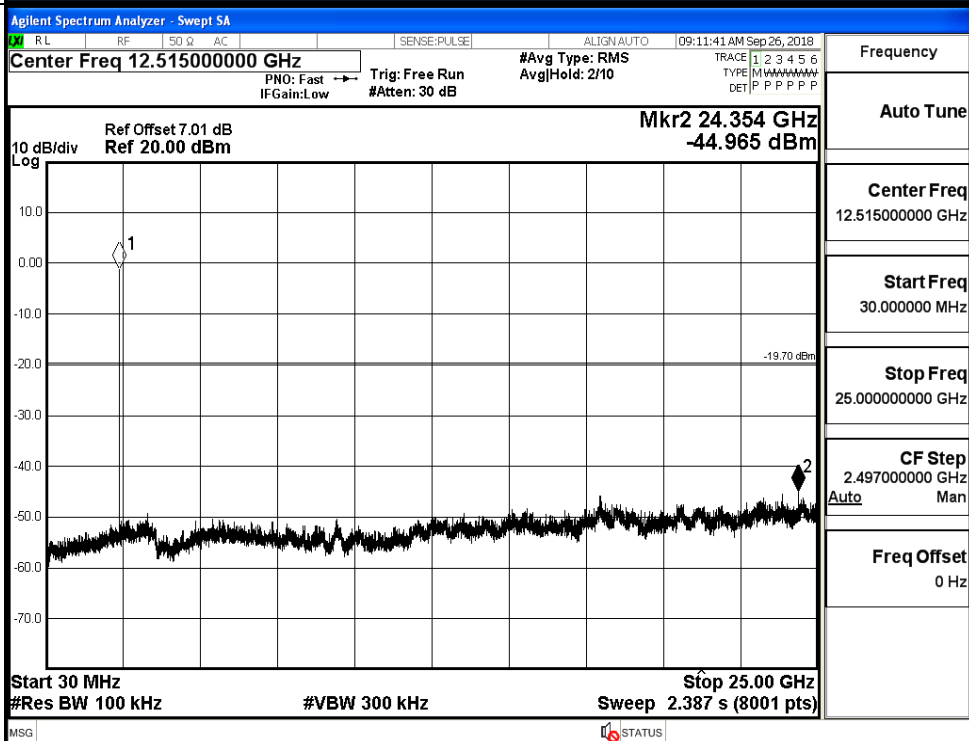
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.305	-44.965	-19.695	PASS
	MCH	0.401	-45.402	-19.599	PASS
	HCH	-0.082	-46.497	-20.082	PASS
$\pi/4$ DQPSK	LCH	-0.799	-45.534	-20.799	PASS
	MCH	-1.32	-46.018	-21.320	PASS
	HCH	-1.045	-45.360	-21.045	PASS

GFSK_LCH_Graphs

Pref

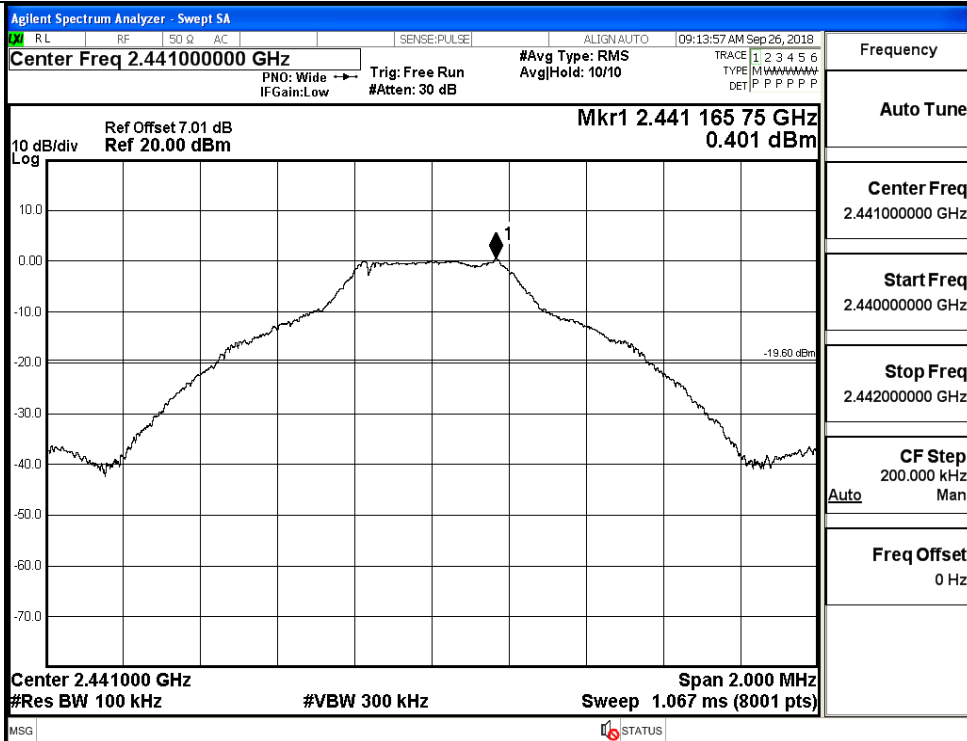


Puw

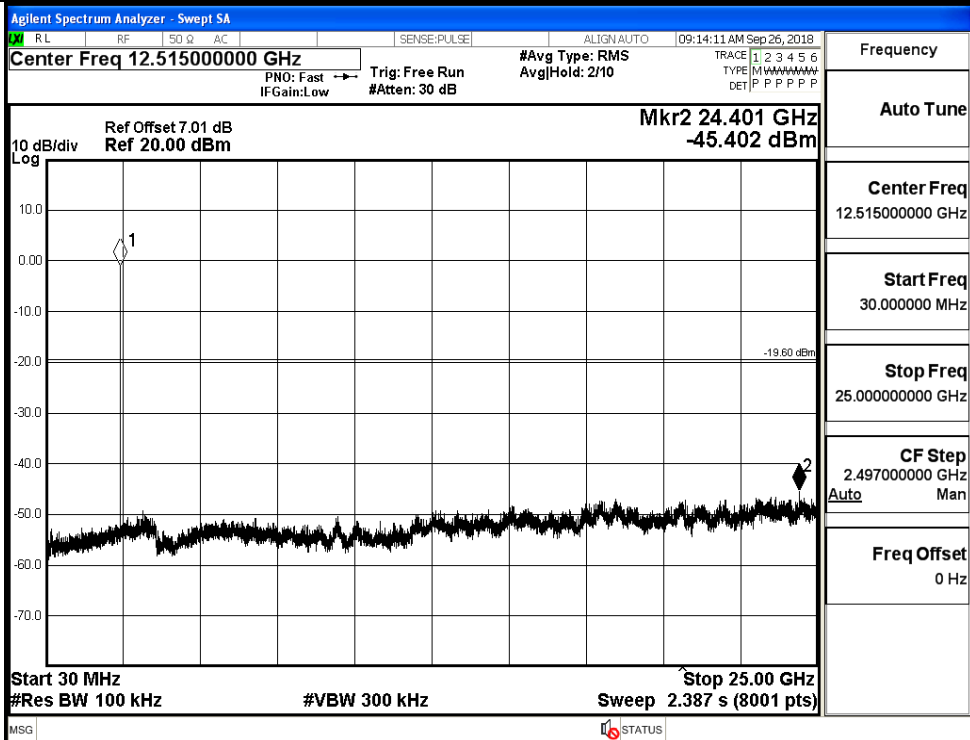


GFSK_MCH_Graphs

Pref

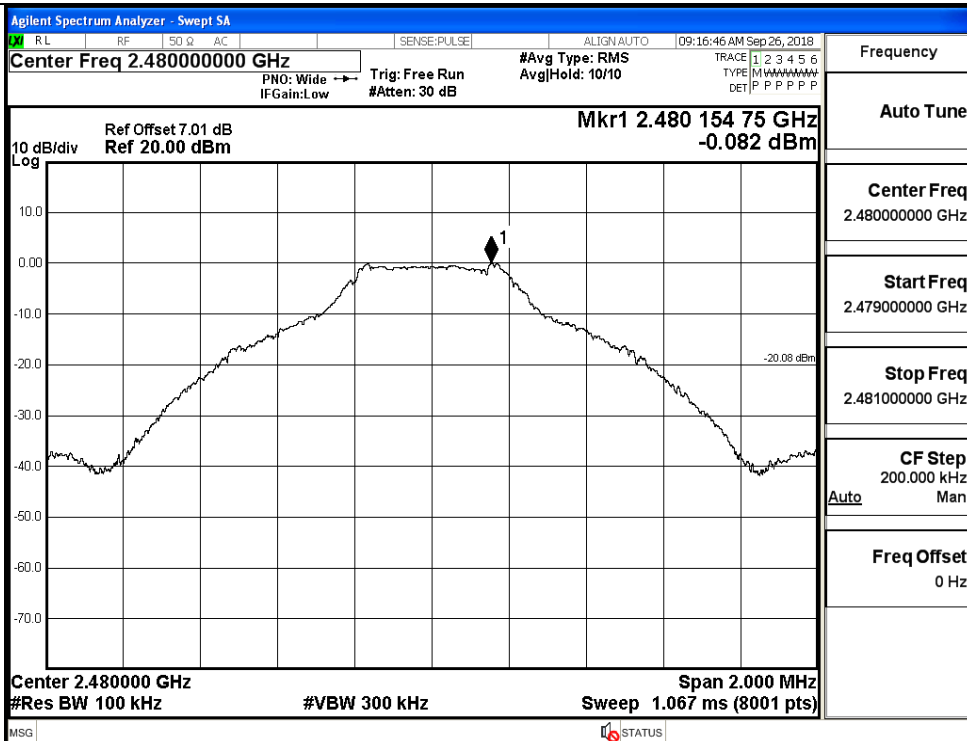


Puw

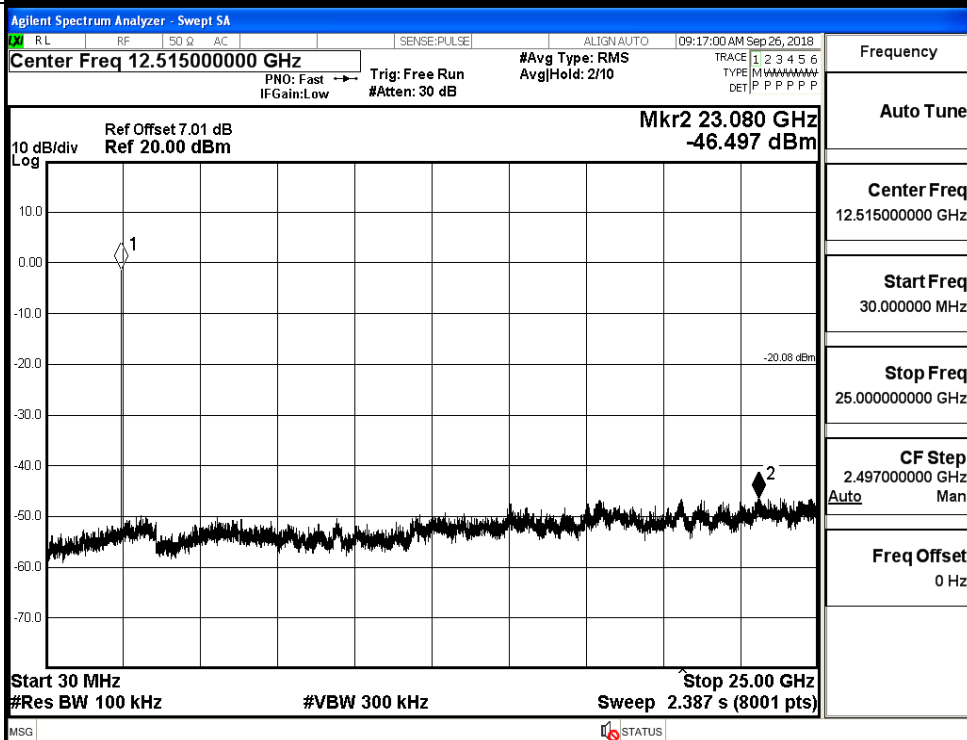


GFSK HCH_Graphs

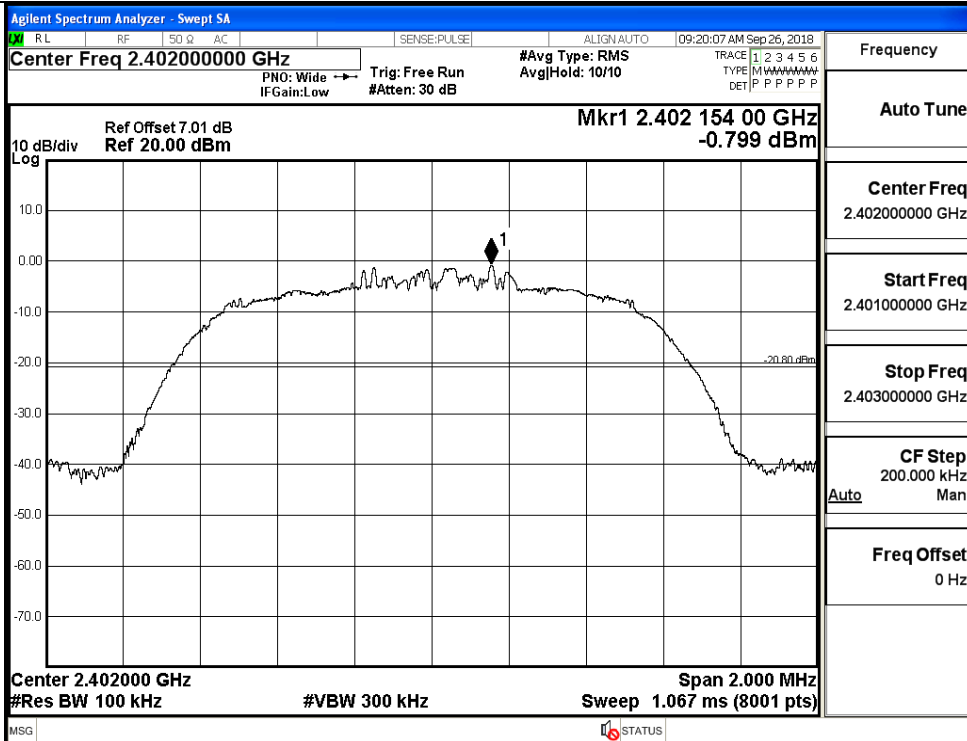
Pref



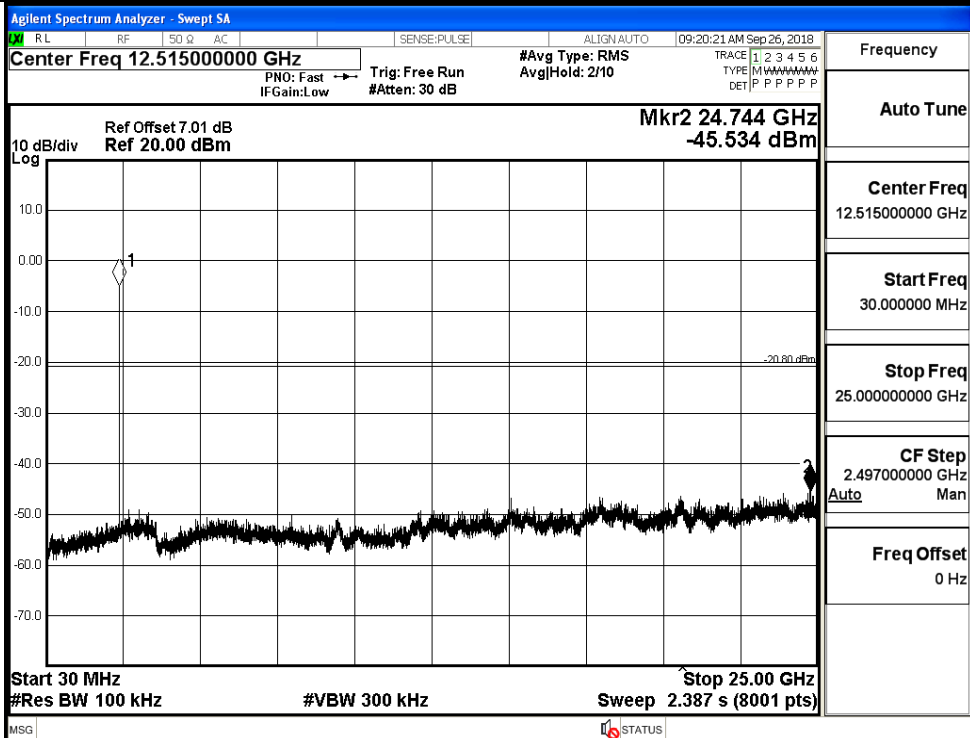
Puw

 $\pi/4$ DQPSK LCH_Graphs

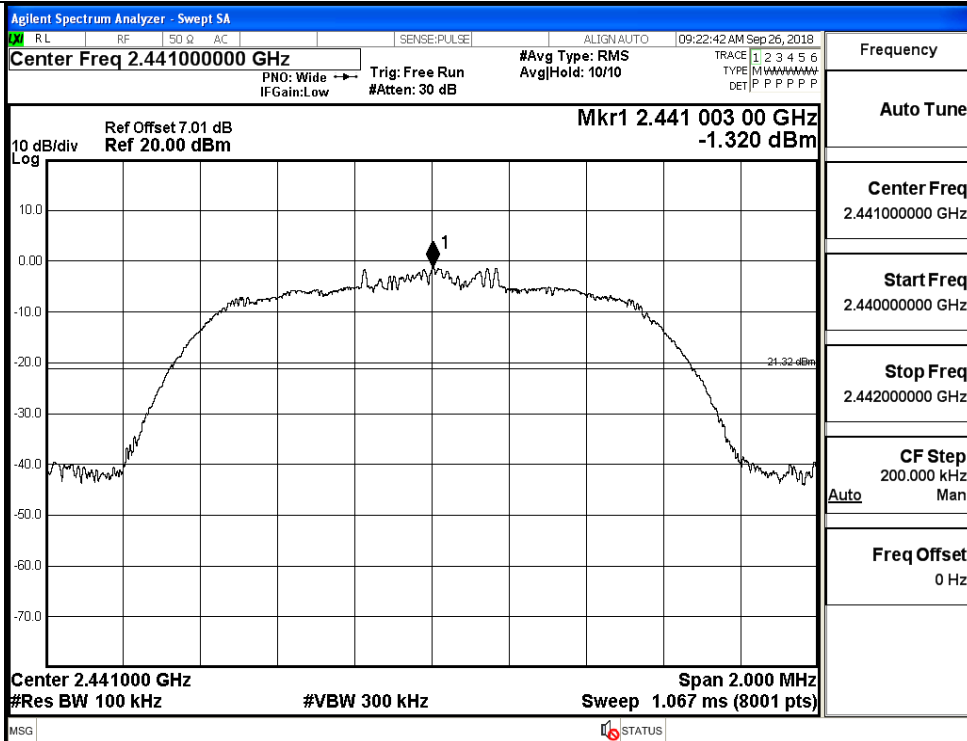
Pref



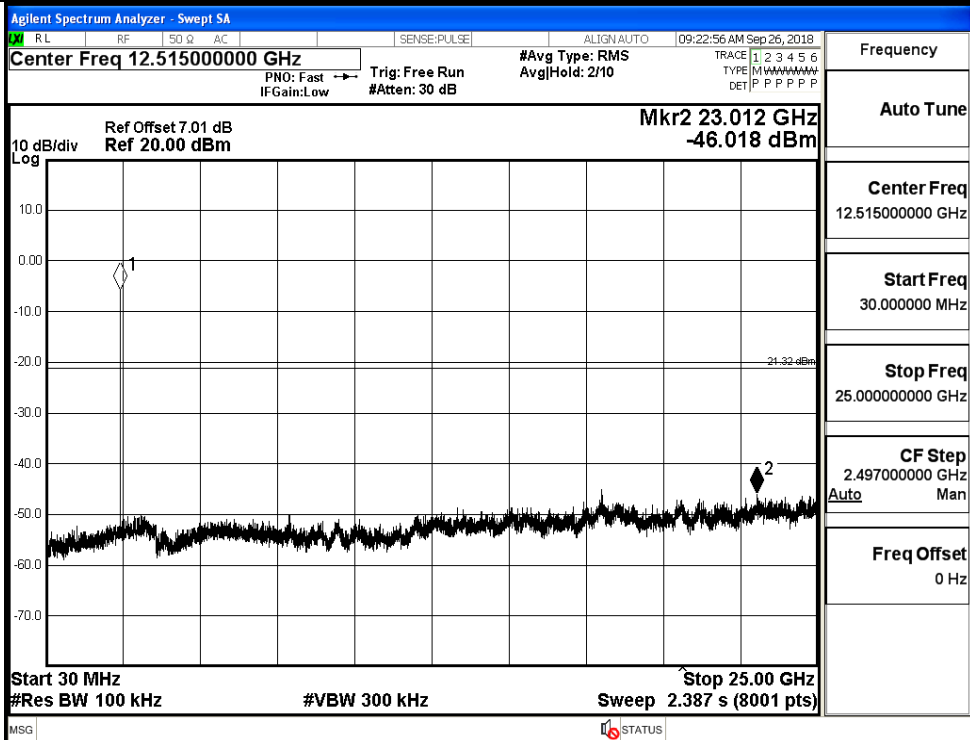
Puw

 $\pi/4$ DQPSK MCH_Graphs

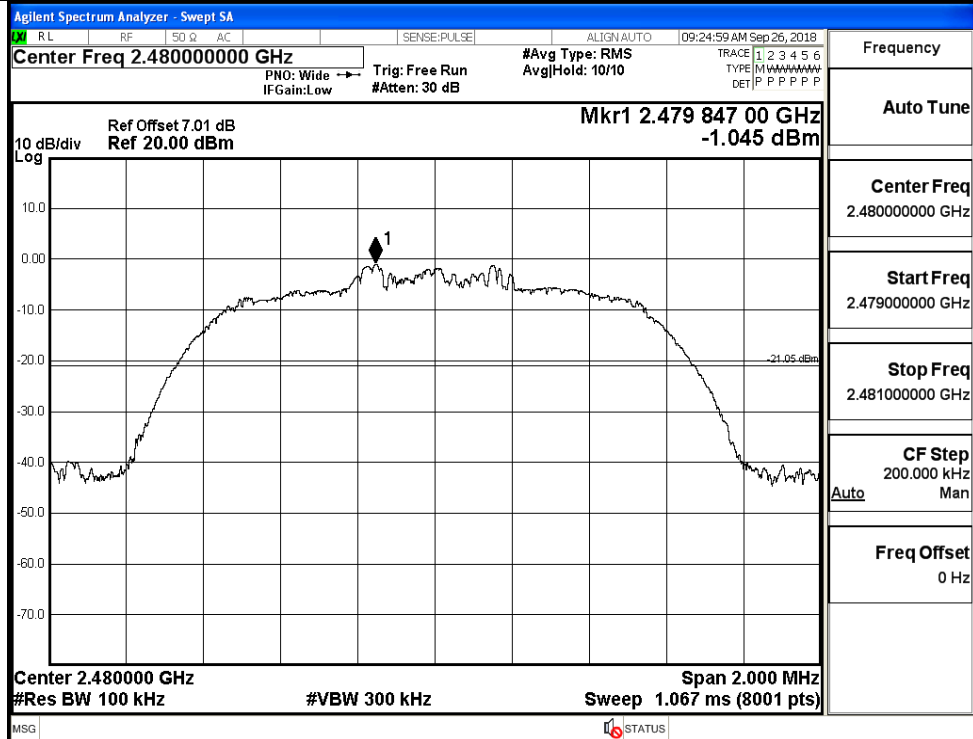
Pref



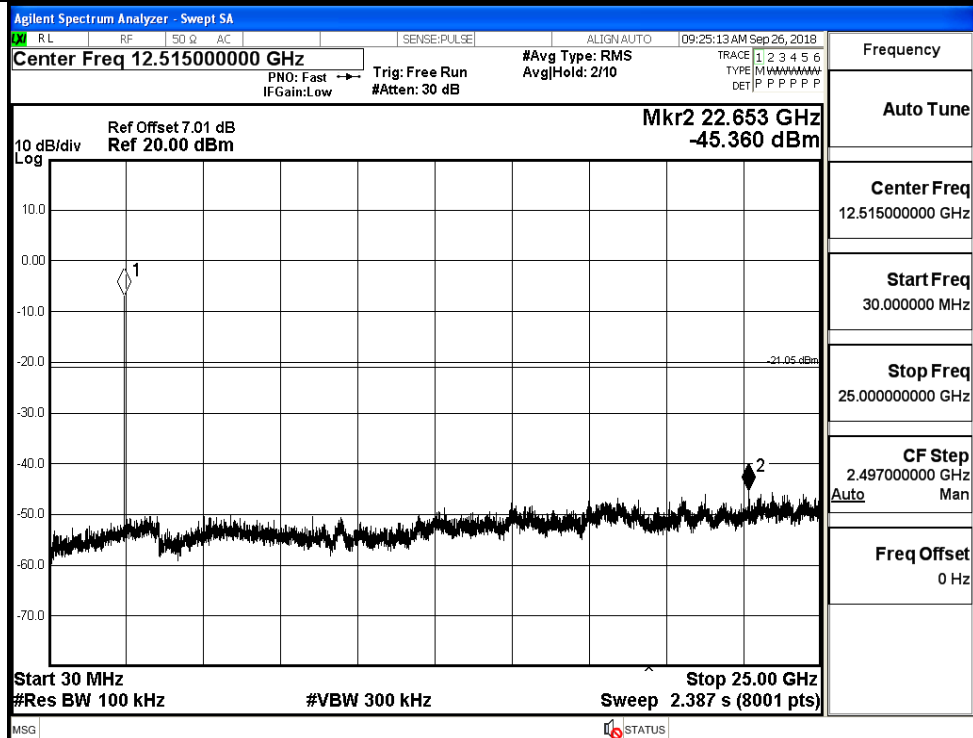
Puw

 $\pi/4$ DQPSK HCH_Graphs

Pref



Puw

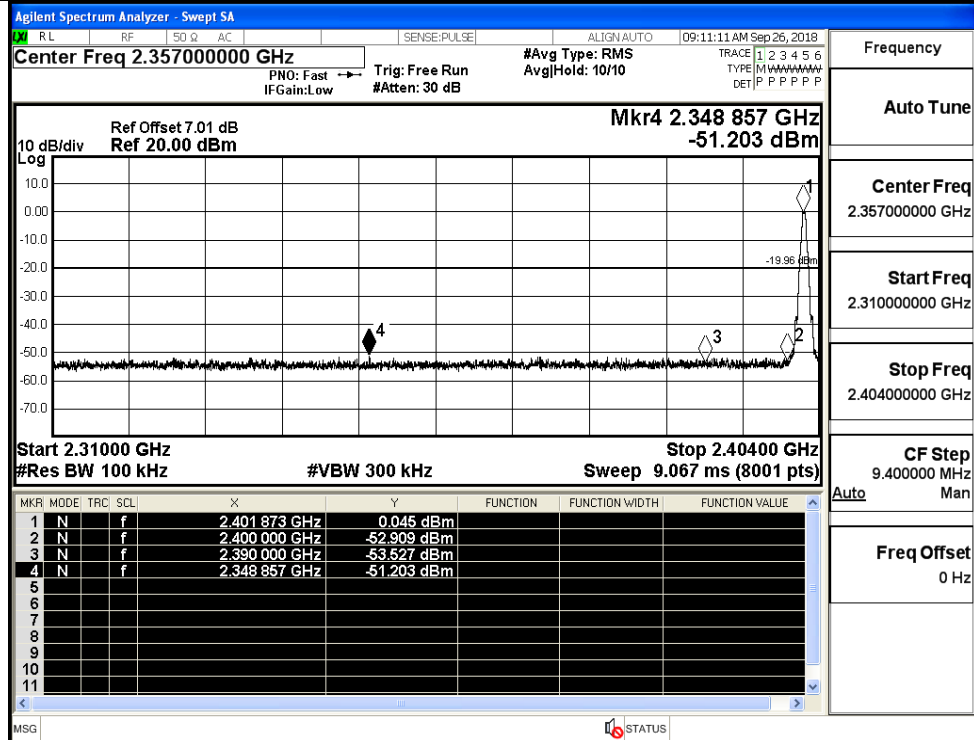


A.7 Band-edge for RF Conducted Emissions

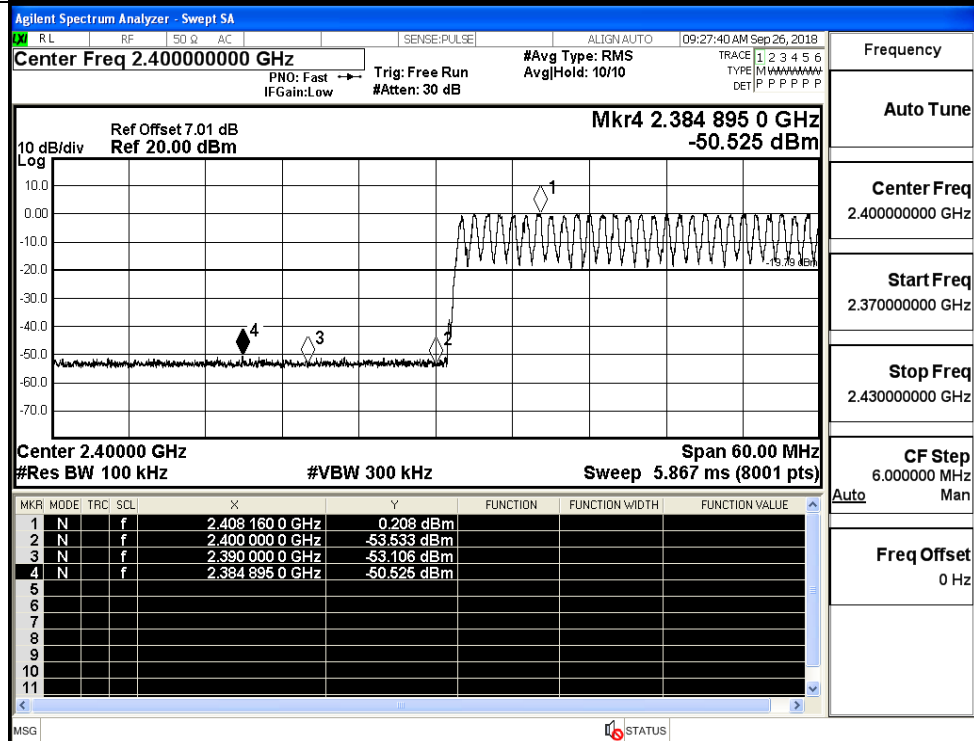
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	0.045	Off	-51.203	-19.96	PASS
			0.208	On	-50.525	-19.79	PASS
	HCH	2480	-0.022	Off	-50.568	-20.02	PASS
			0.051	On	-50.830	-19.95	PASS
$\pi/4$ DQPSK	LCH	2402	-1.687	Off	-51.082	-21.69	PASS
			-0.714	On	-50.797	-20.71	PASS
	HCH	2480	-0.998	Off	-50.972	-21.00	PASS
			-0.909	On	-50.263	-20.91	PASS

Test Graphs

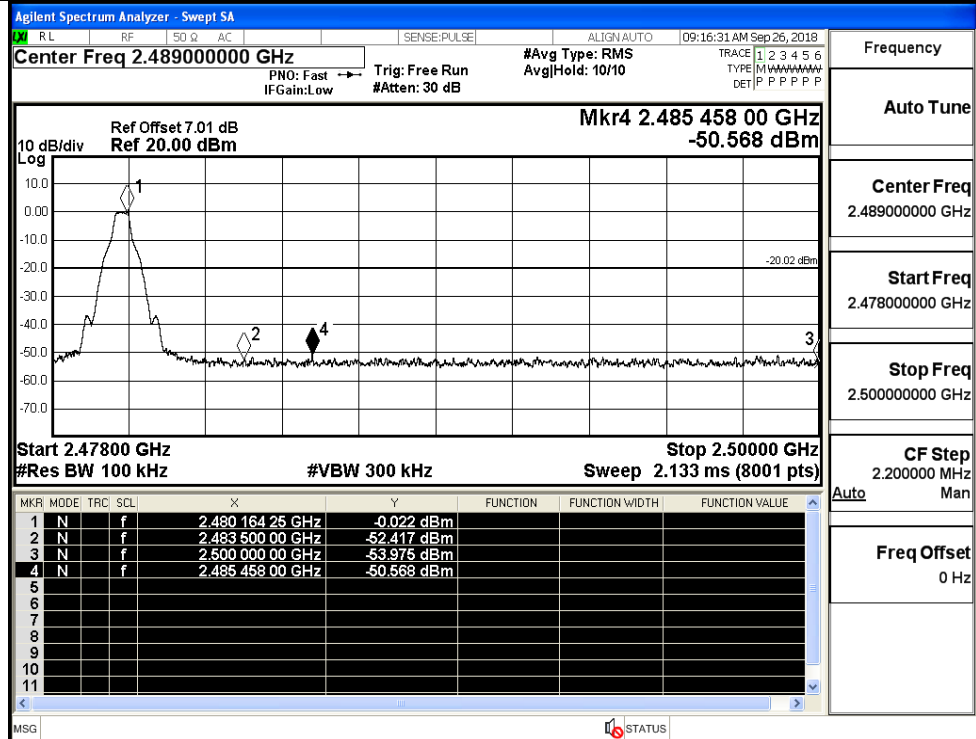
GFSK/LCH/No Hop



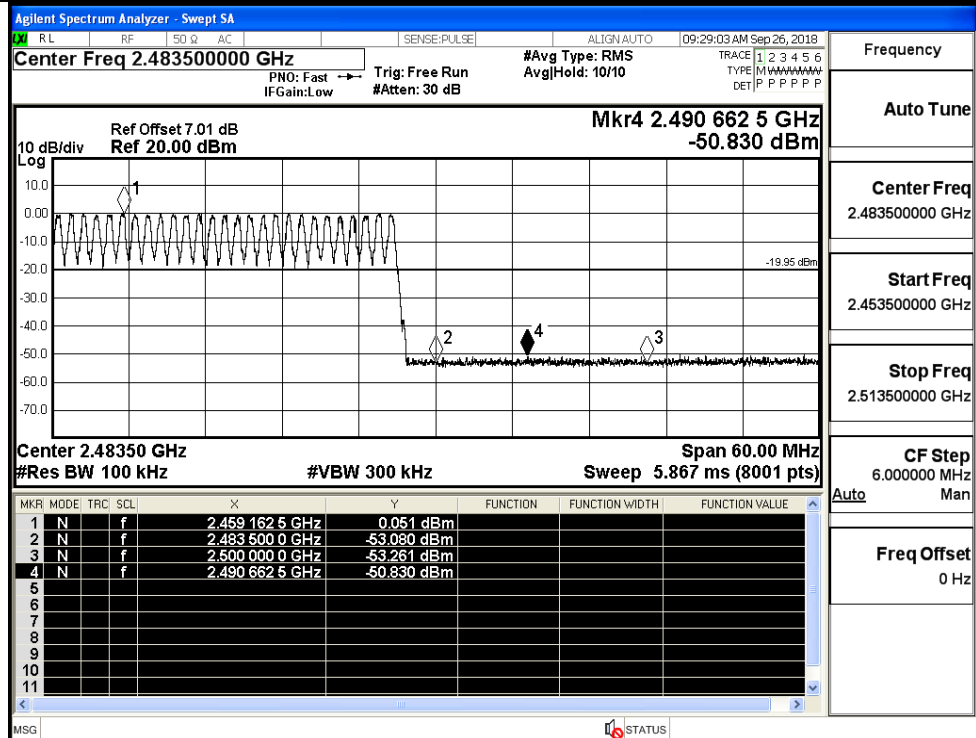
GFSK/LCH/Hop



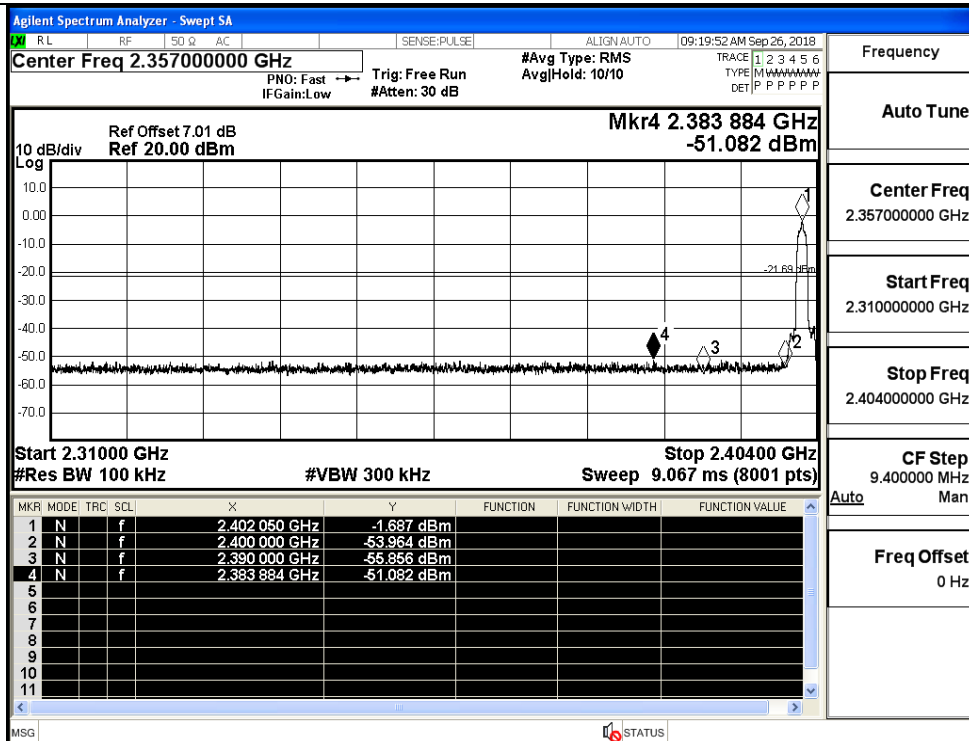
GFSK/HCH/No Hop



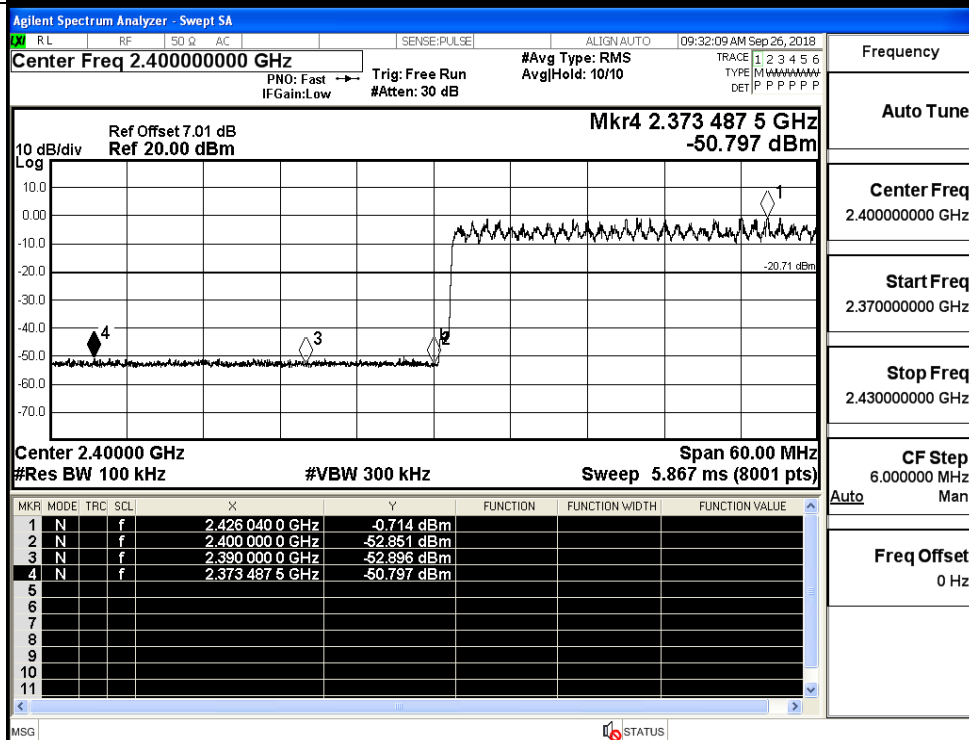
GFSK/HCH/Hop



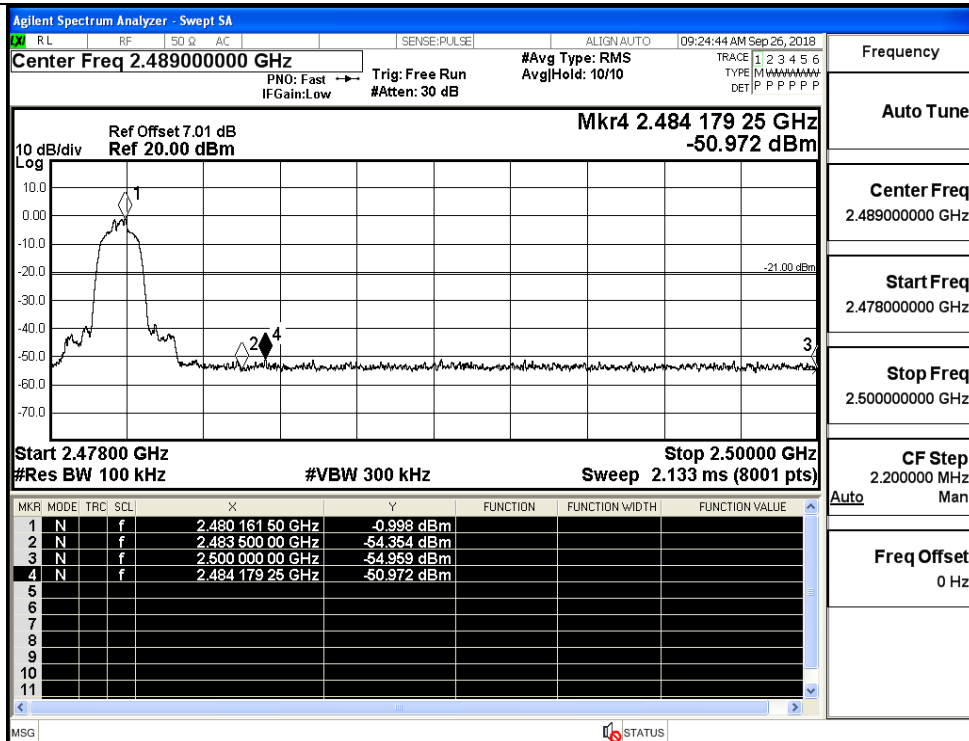
$\pi/4$ DQPSK/LCH/No
Hop



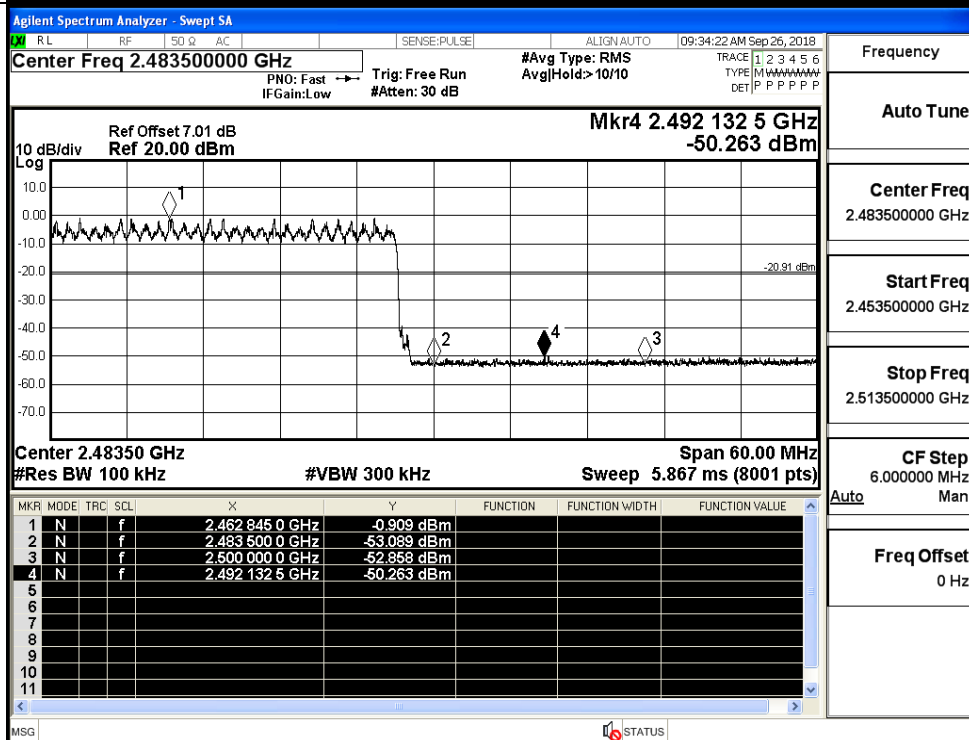
$\pi/4$ DQPSK/LCH/Hop



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



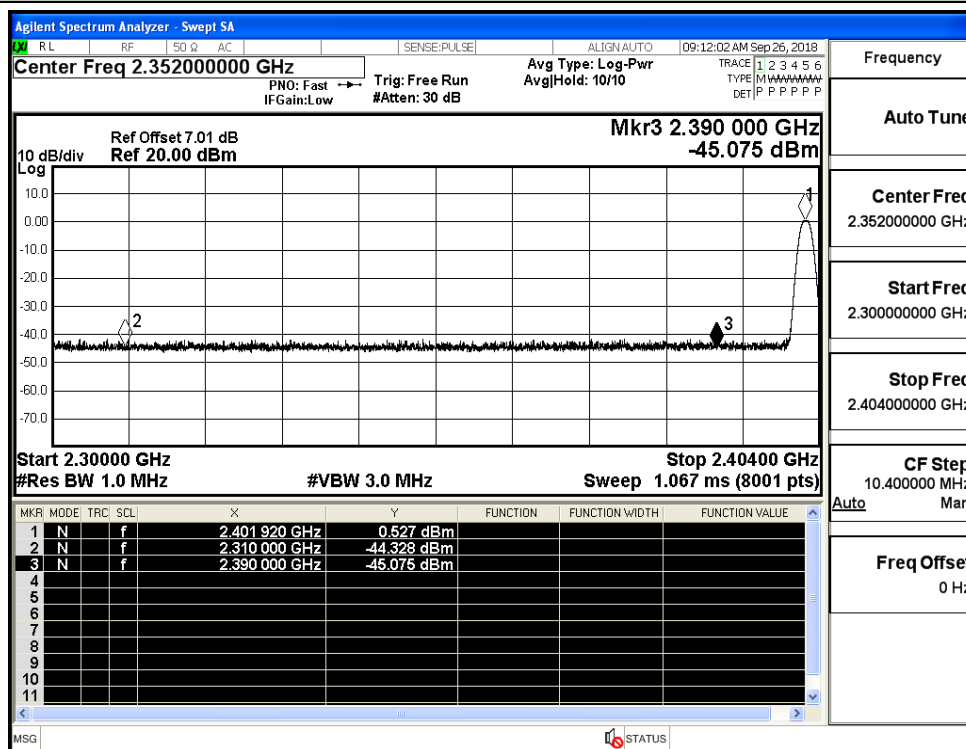
$\pi/4$ DQPSK/HCH/Hop



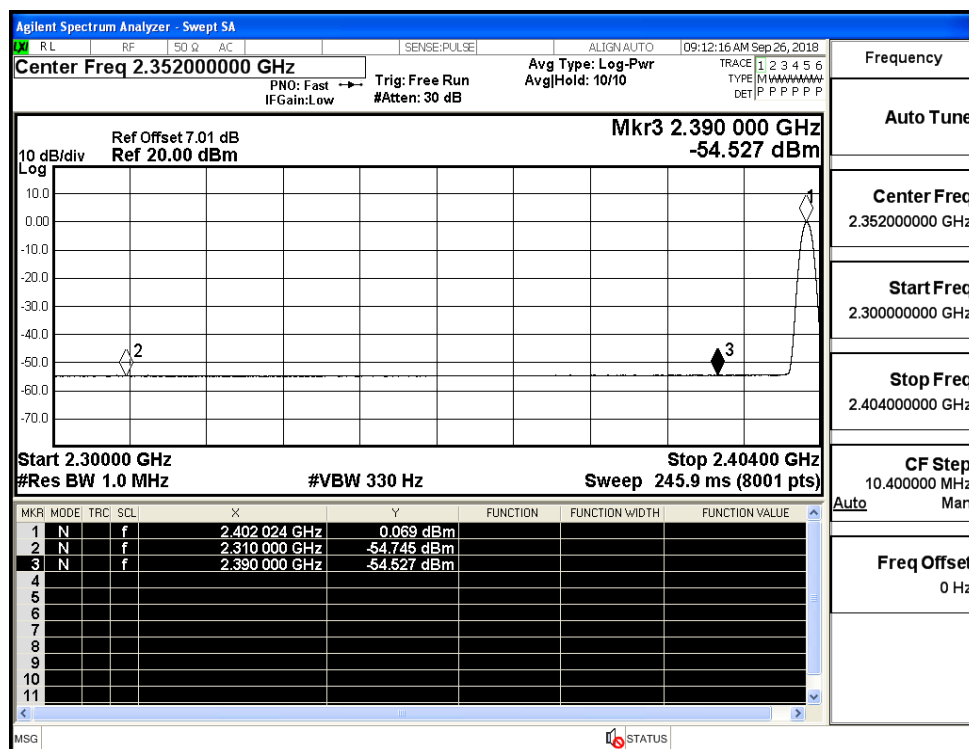
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-44.33	2.0	0	50.93	PEAK	74	PASS
	Off	2310.0	-54.75	2.0	0	40.51	AV	54	PASS
	Off	2390.0	-45.08	2.0	0	50.18	PEAK	74	PASS
	Off	2390.0	-54.53	2.0	0	40.73	AV	54	PASS
	Off	2483.5	-44.04	2.0	0	51.22	PEAK	74	PASS
	Off	2483.5	-54.20	2.0	0	41.06	AV	54	PASS
	Off	2500.0	-44.44	2.0	0	50.81	PEAK	74	PASS
	Off	2500.0	-54.07	2.0	0	41.19	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.97	2.0	0	51.29	PEAK	74	PASS
	Off	2310.0	-54.64	2.0	0	40.62	AV	54	PASS
	Off	2390.0	-43.58	2.0	0	51.67	PEAK	74	PASS
	Off	2390.0	-54.50	2.0	0	40.76	AV	54	PASS
	Off	2483.5	-43.84	2.0	0	51.42	PEAK	74	PASS
	Off	2483.5	-54.23	2.0	0	41.03	AV	54	PASS
	Off	2500.0	-43.23	2.0	0	52.03	PEAK	74	PASS
	Off	2500.0	-54.16	2.0	0	41.10	AV	54	PASS

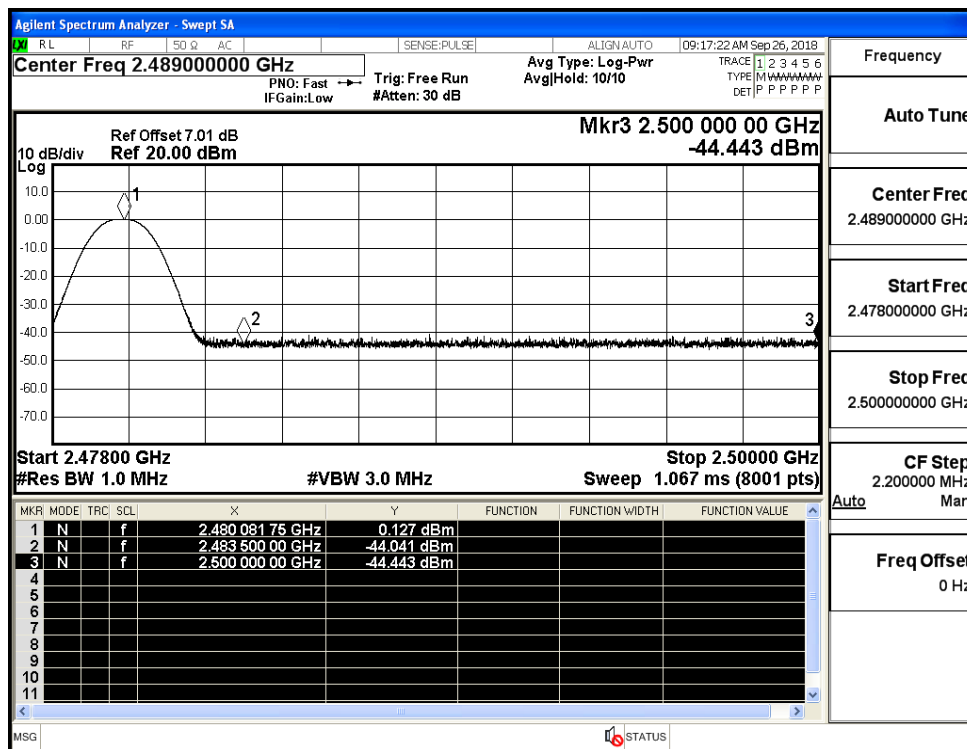
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



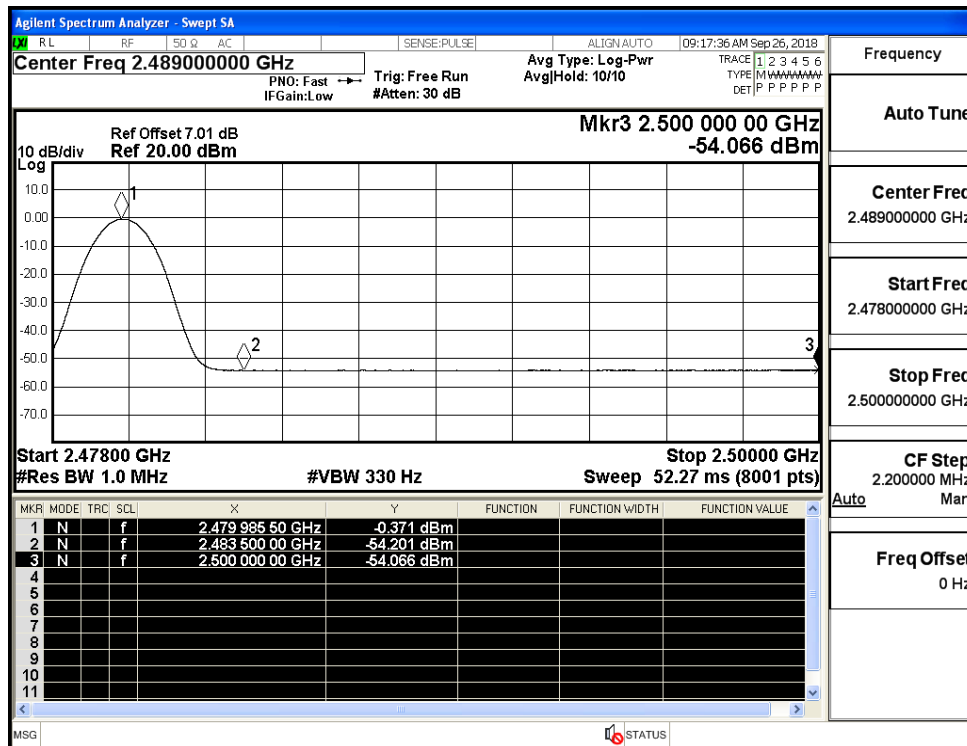
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

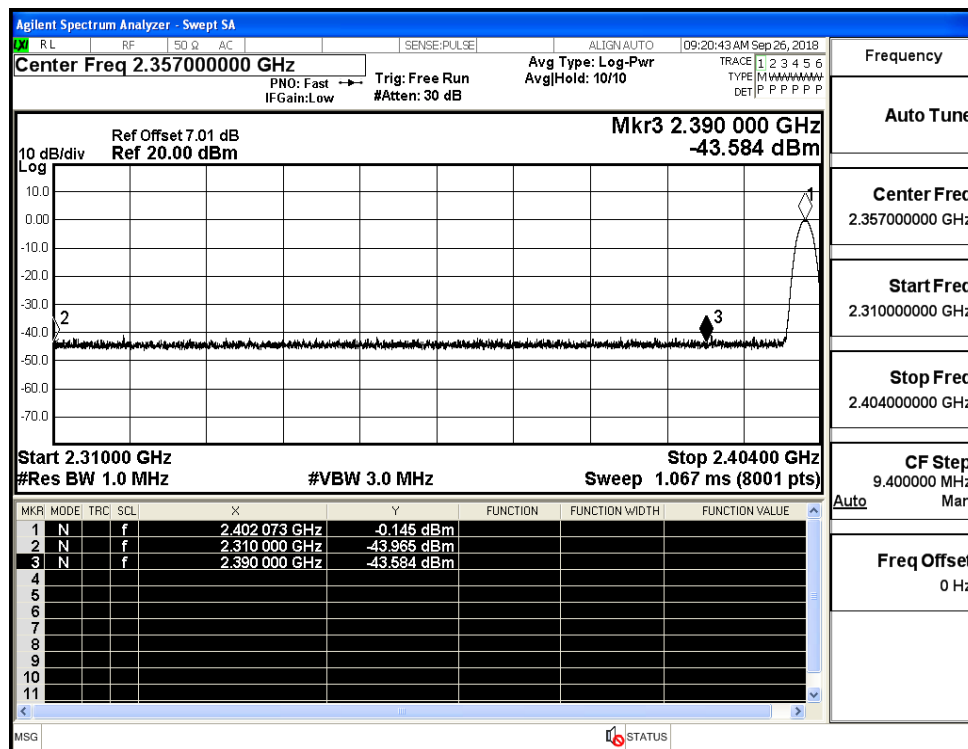
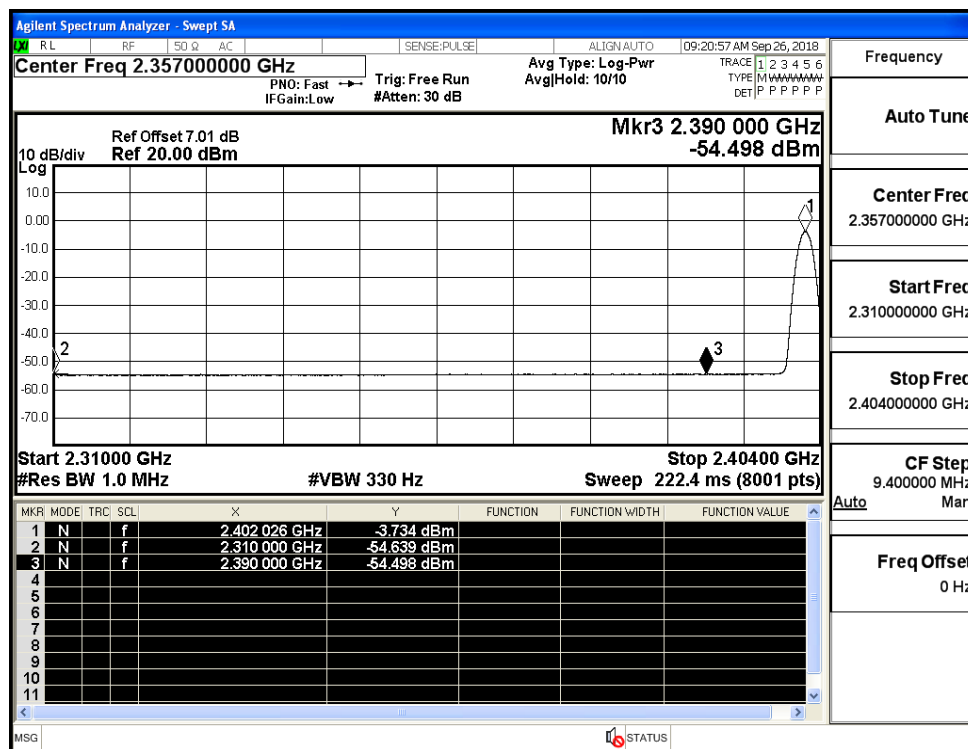


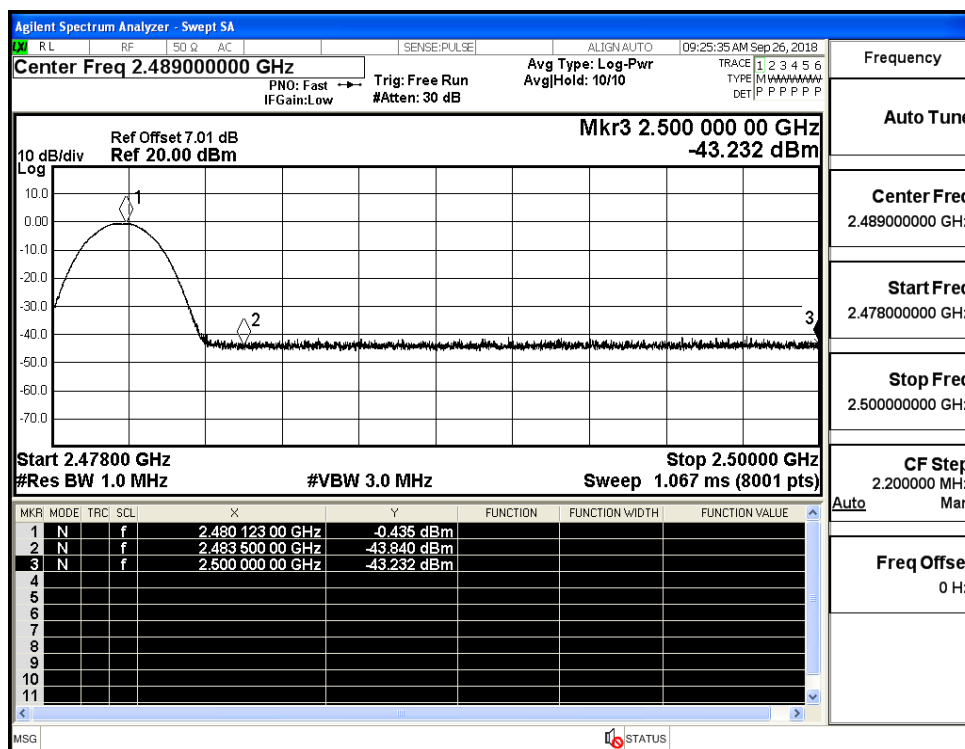
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



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)