

Appendix A

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

Product Name: Bluetooth headphone

Trade Mark: N/A

Test Model: SW-B130

Environmental Conditions

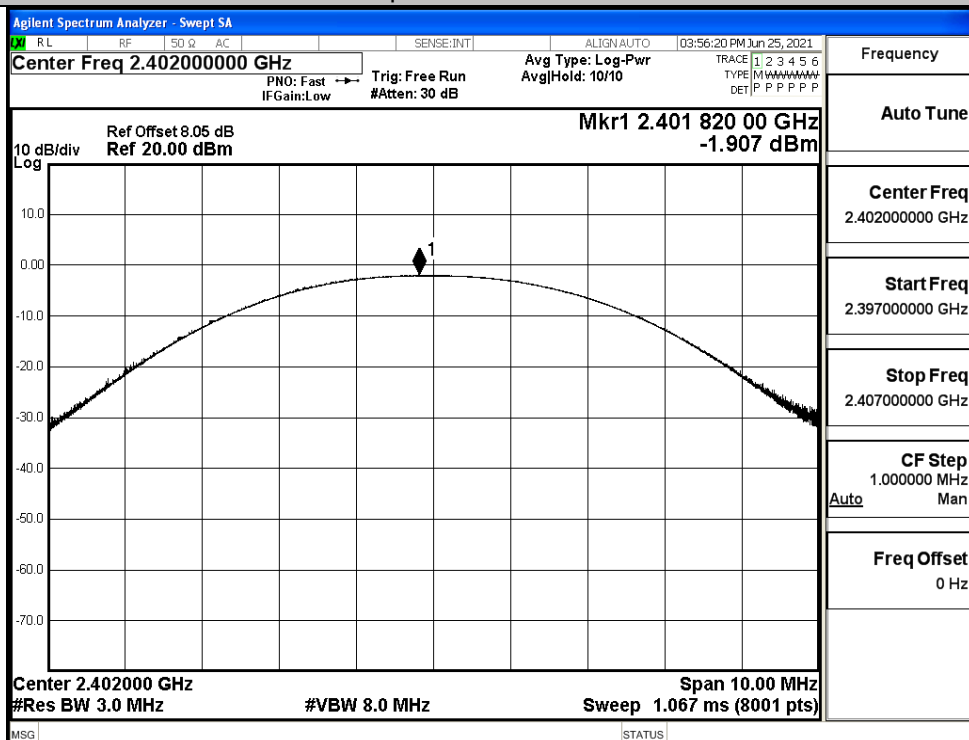
Temperature:	24.6 ° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Ken He
Supervised by:	Li Huan

A.1 Maximum Conducted Peak Output Power

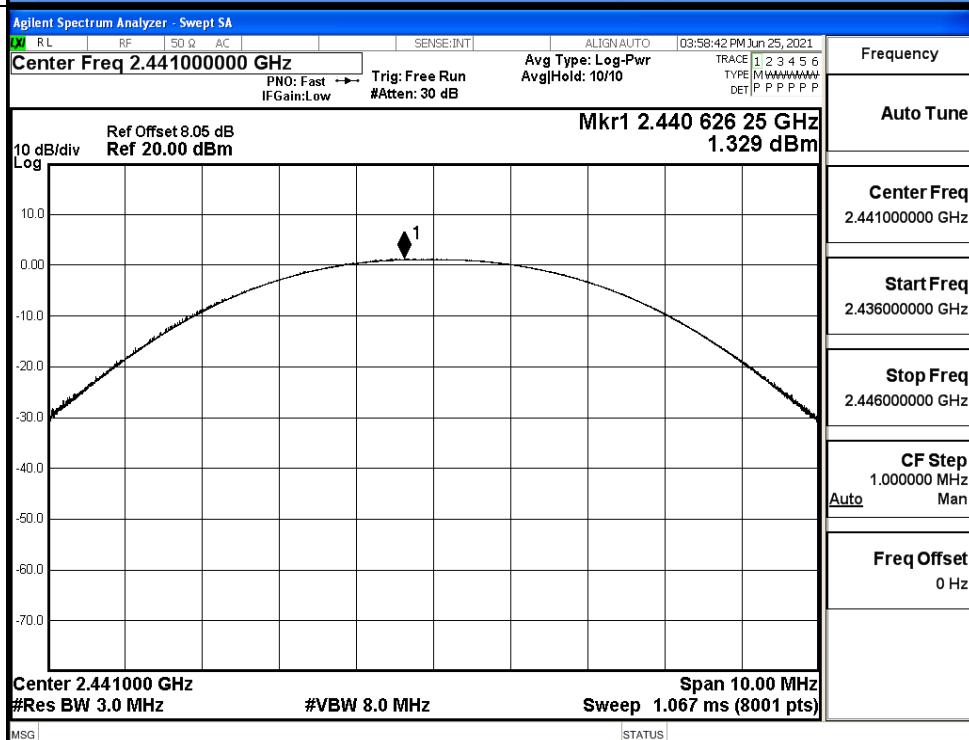
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-1.907	21	PASS
	MCH	1.329	21	PASS
	HCH	0.863	21	PASS
$\pi/4$ DQPSK	LCH	0.033	21	PASS
	MCH	3.254	21	PASS
	HCH	2.709	21	PASS

Test Graphs

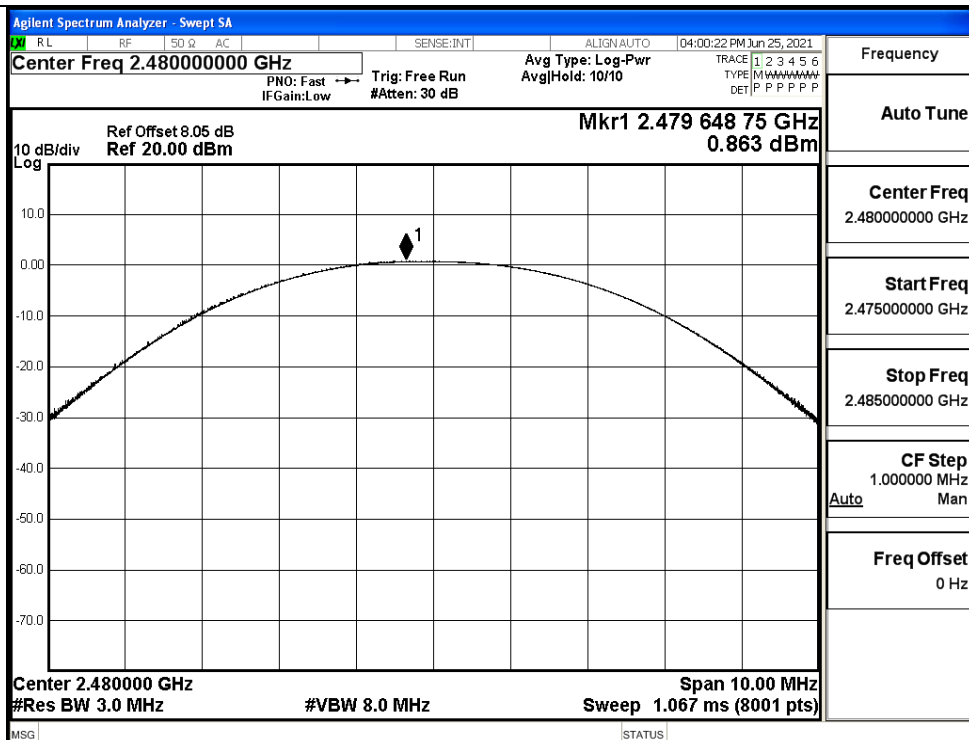
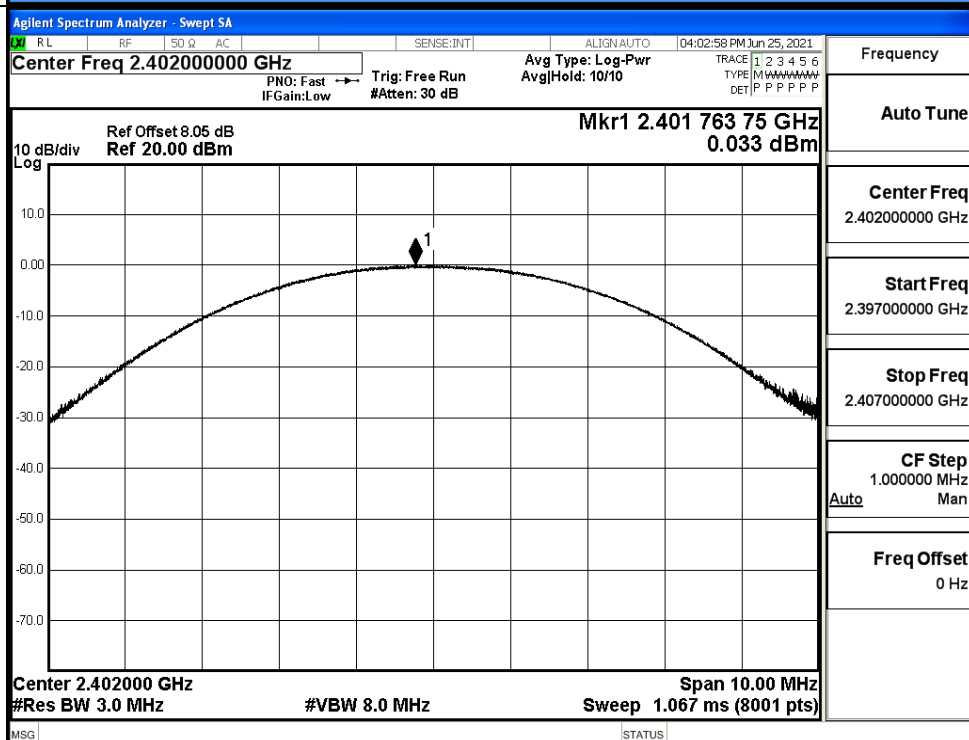
GFSK/LCH

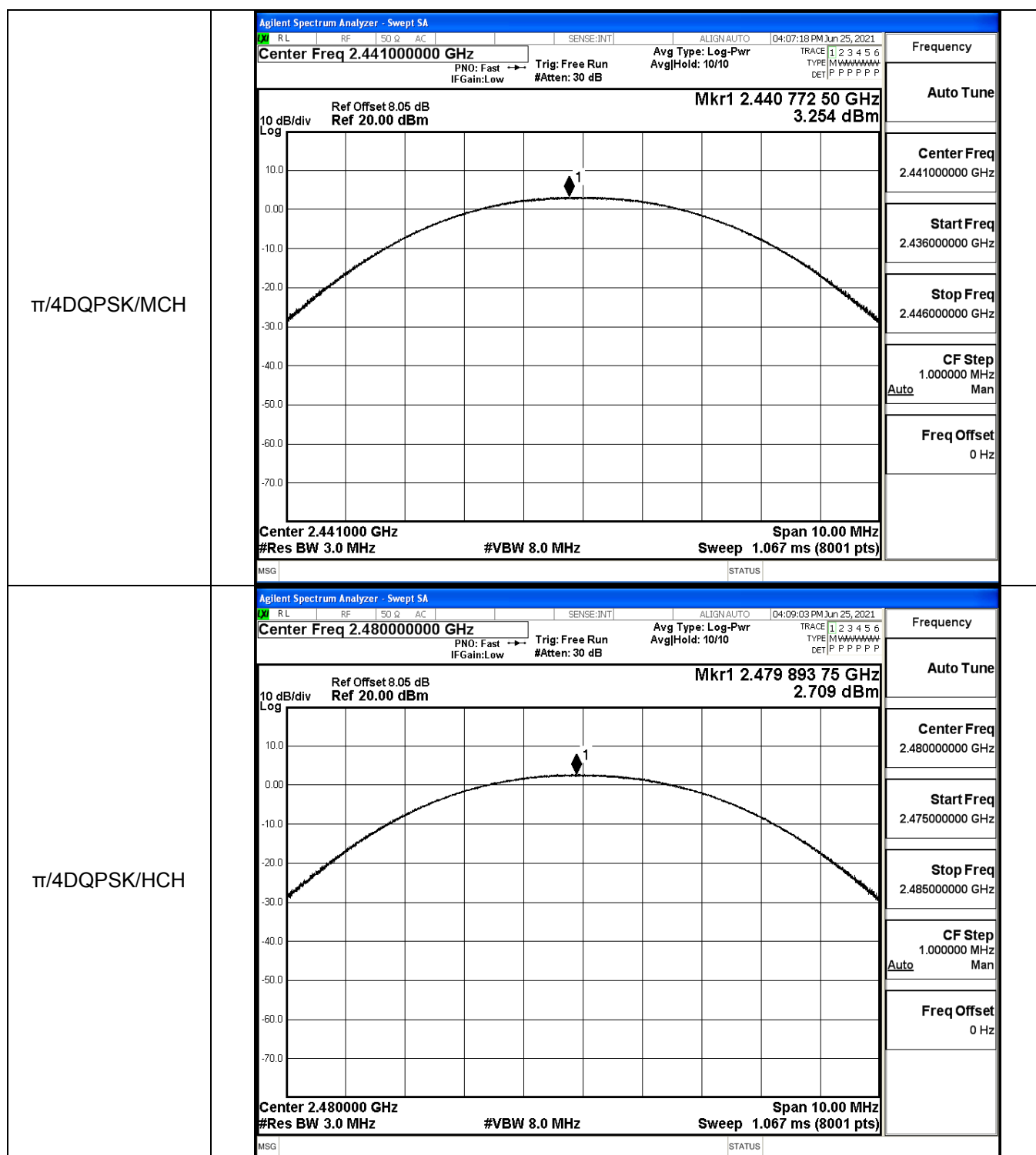


GFSK/MCH



GFSK/HCH

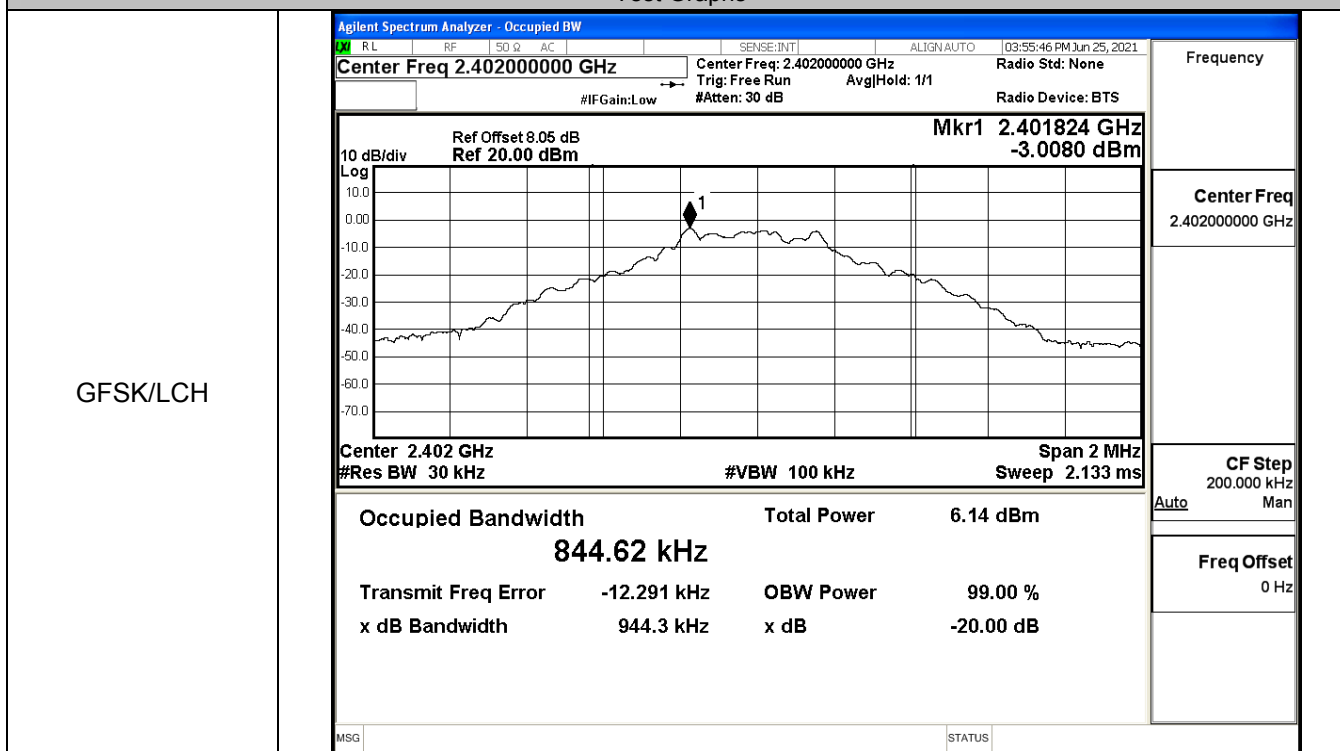
 π /4DQPSK/LCH



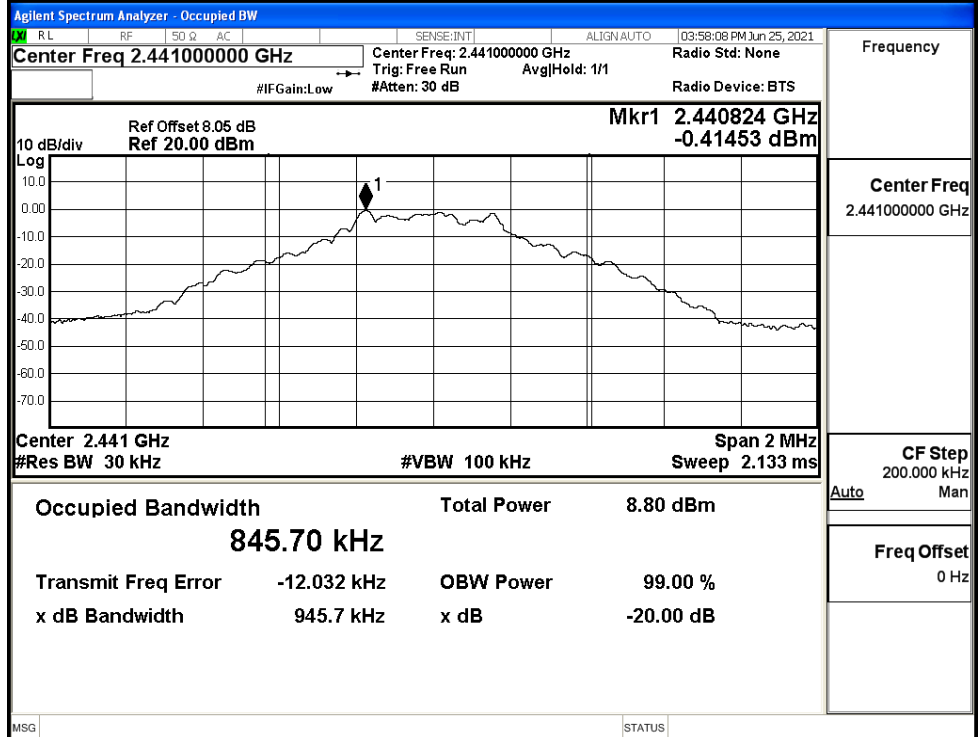
A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9443	Not Specified	PASS
	MCH	0.9457	Not Specified	PASS
	HCH	0.9459	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.289	Not Specified	PASS
	MCH	1.290	Not Specified	PASS
	HCH	1.289	Not Specified	PASS

Test Graphs



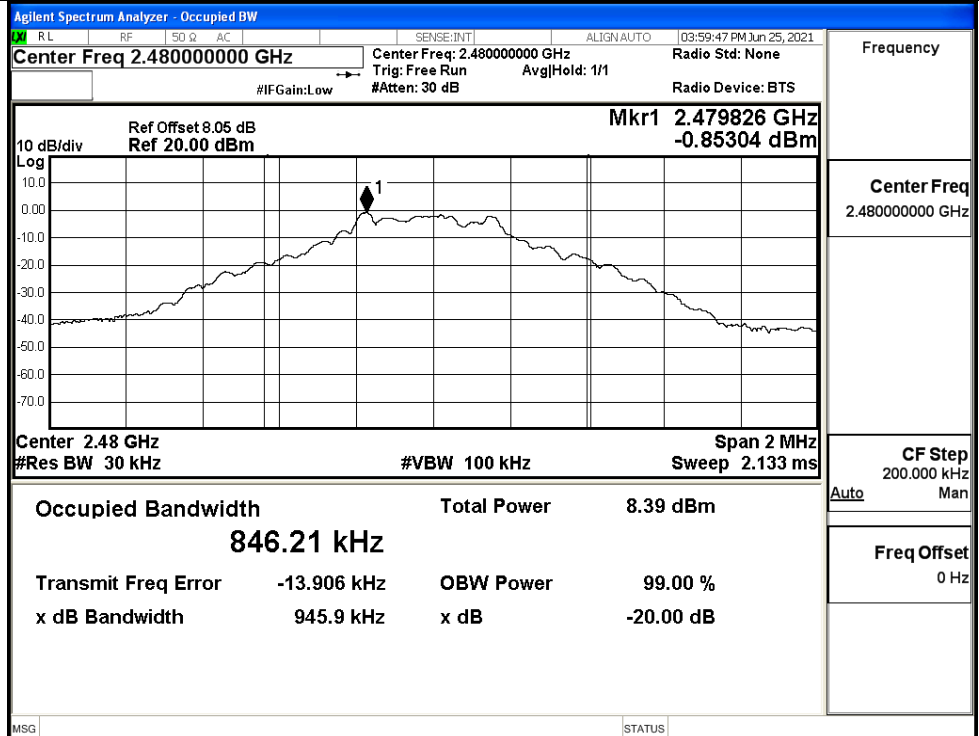
GFSK/MCH



Frequency

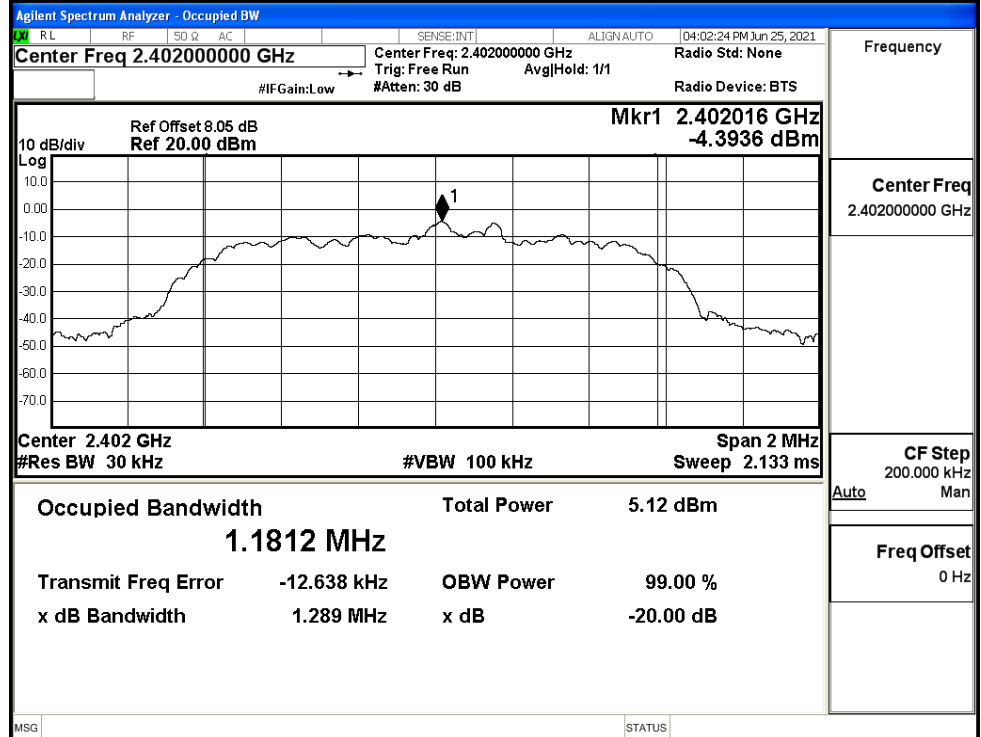
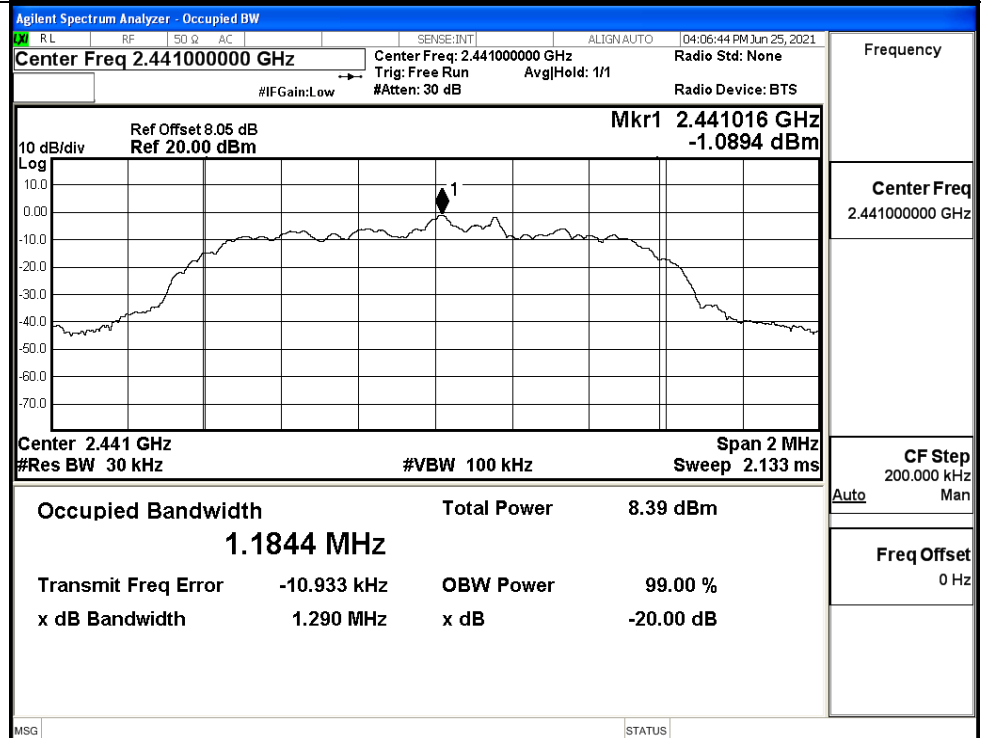
Center Freq
2.441000000 GHzCF Step
200.000 kHz
ManFreq Offset
0 Hz

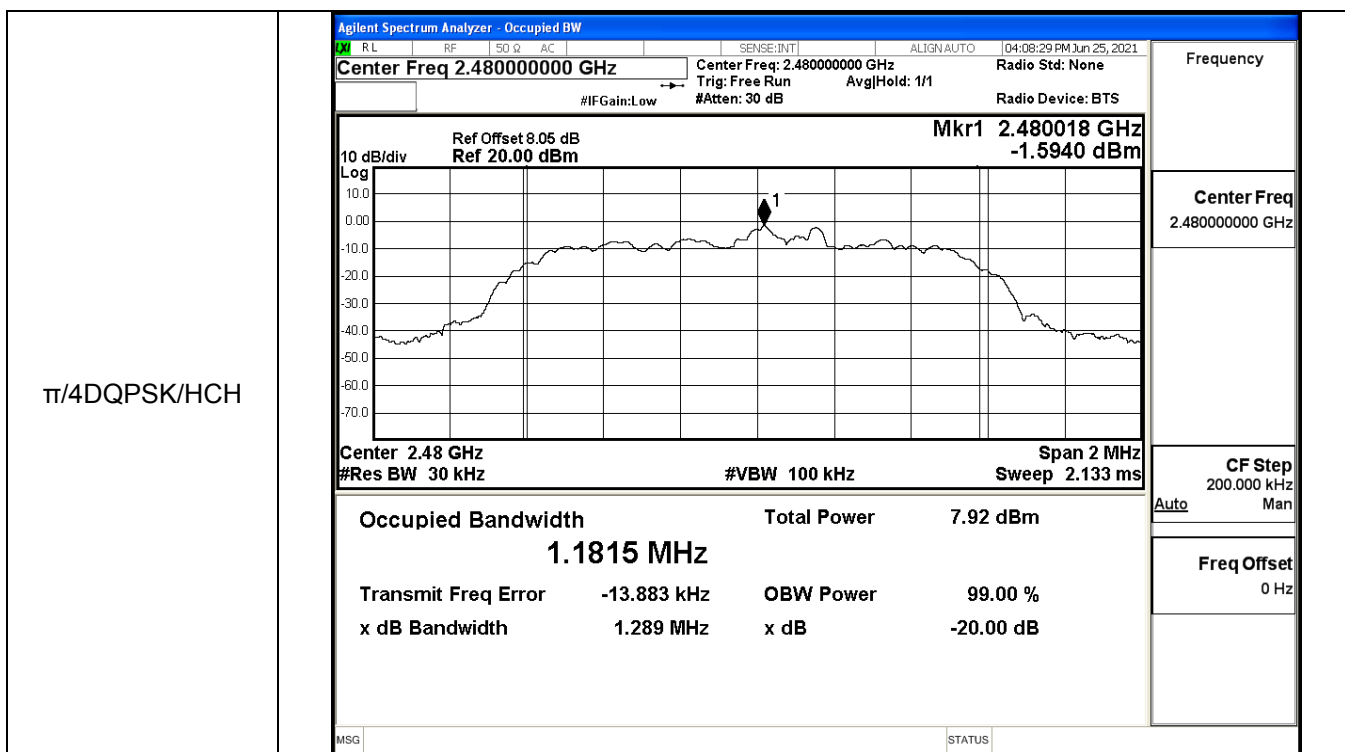
GFSK/HCH



Frequency

Center Freq
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200.000 kHz
ManFreq Offset
0 Hz

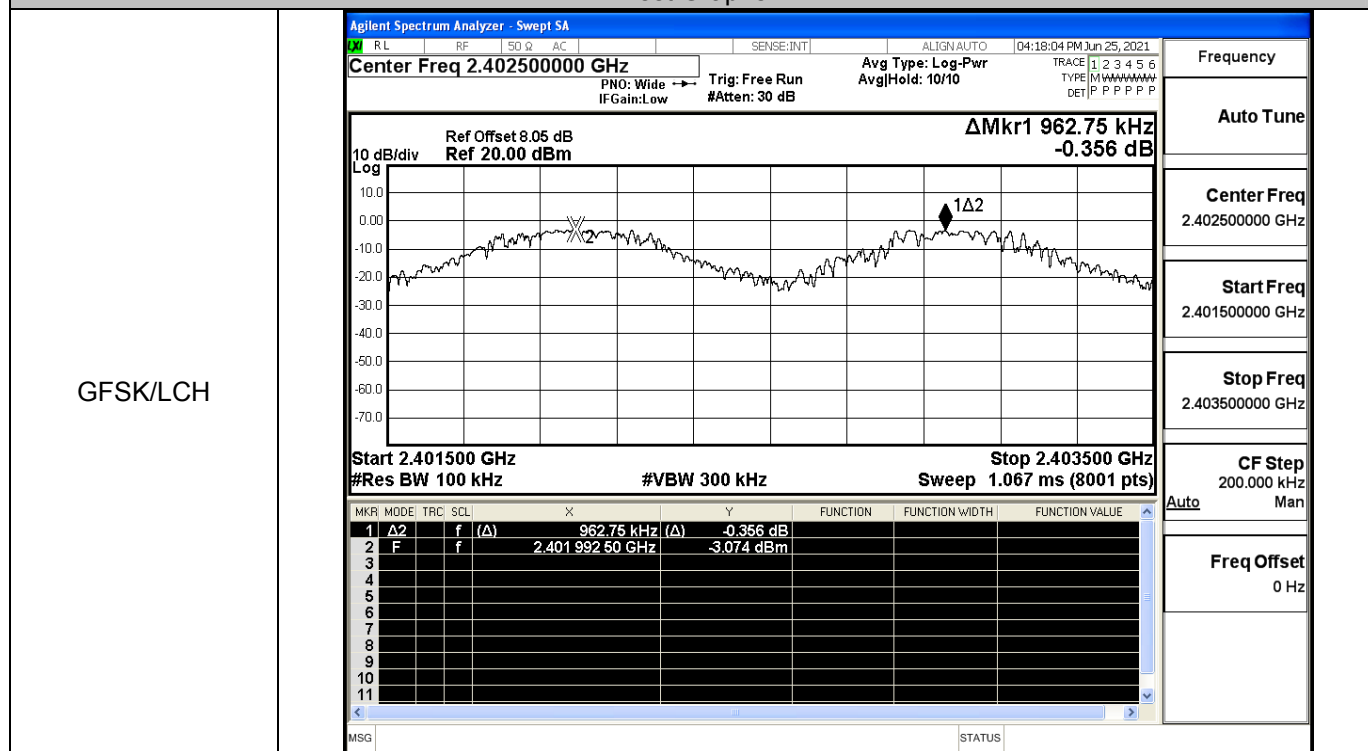
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH



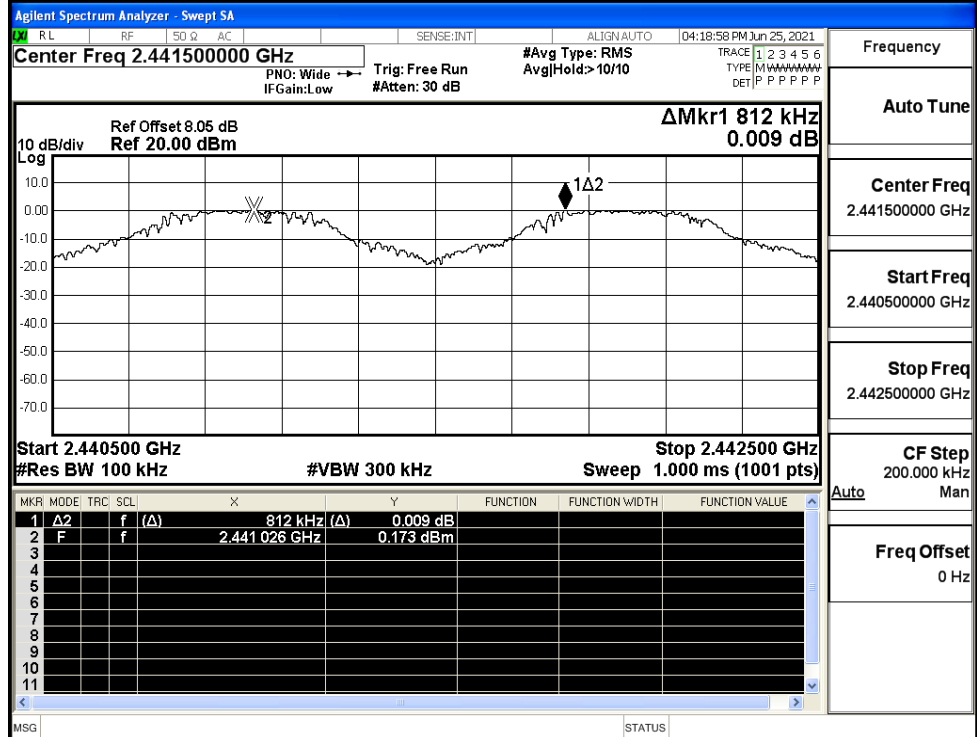
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.963	0.631	PASS
	MCH	0.812	0.631	PASS
	HCH	0.672	0.631	PASS
π /4DQPSK	LCH	1.008	0.860	PASS
	MCH	0.862	0.860	PASS
	HCH	1.206	0.860	PASS

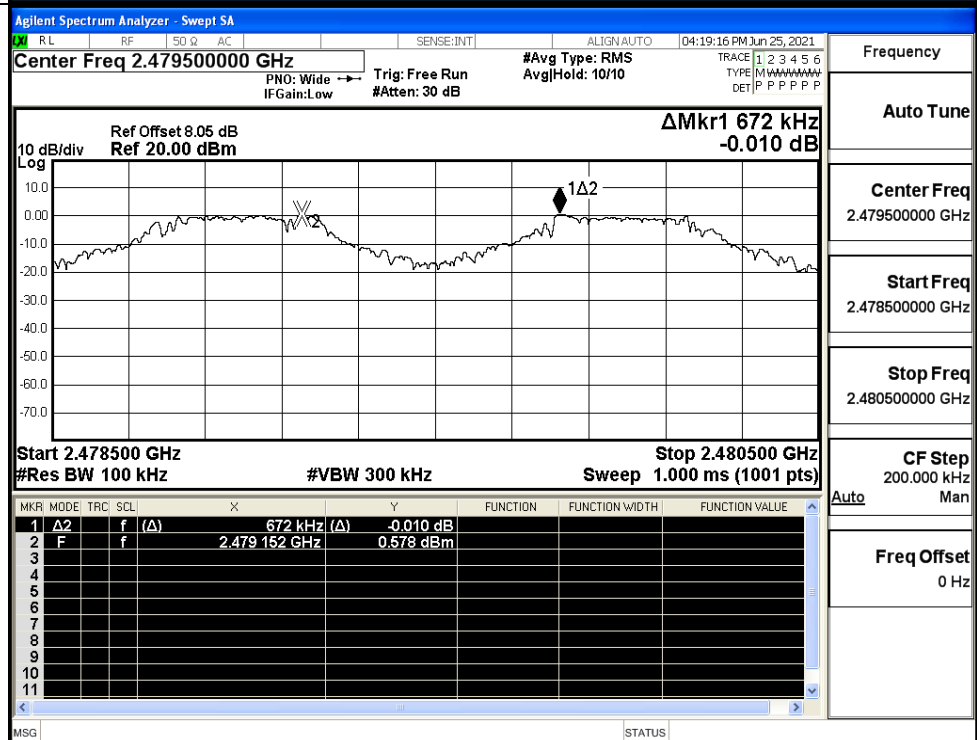
Test Graphs

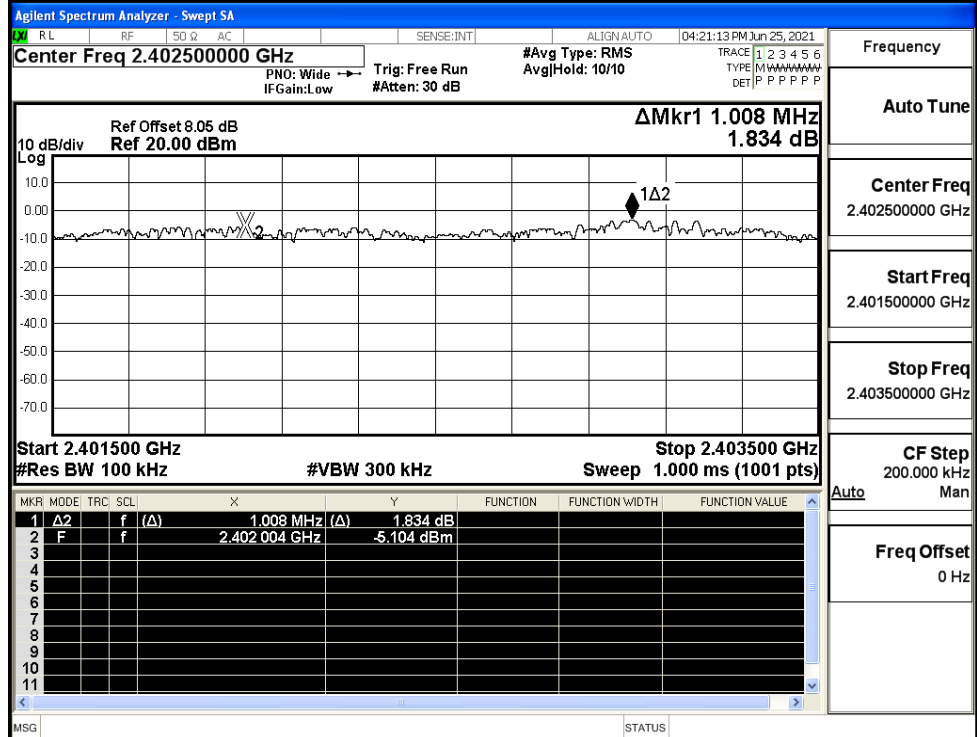
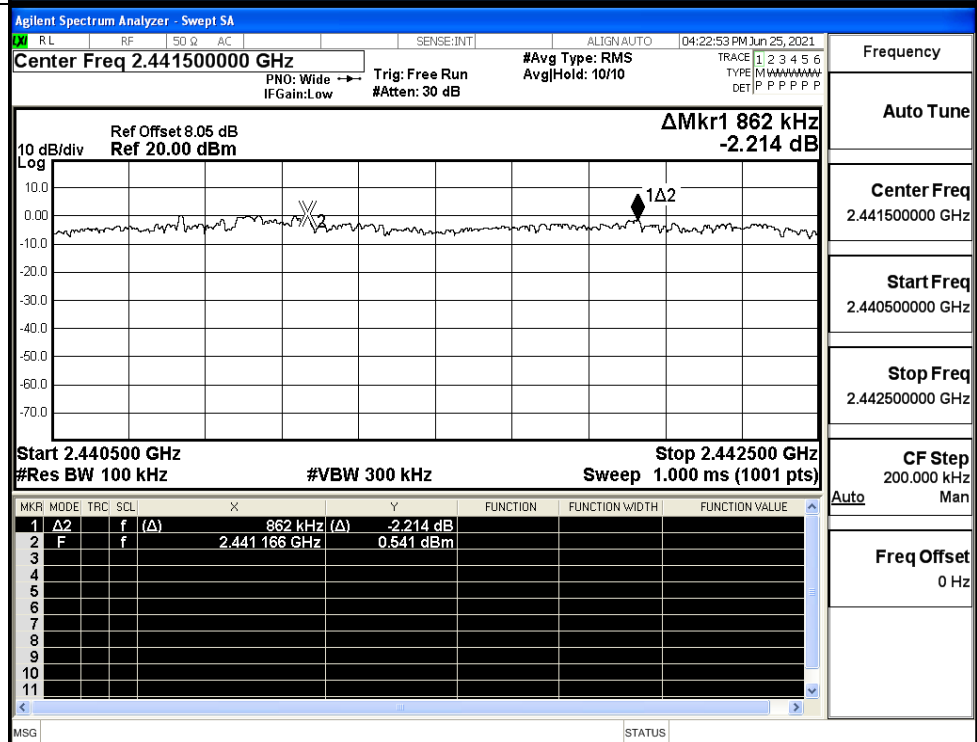


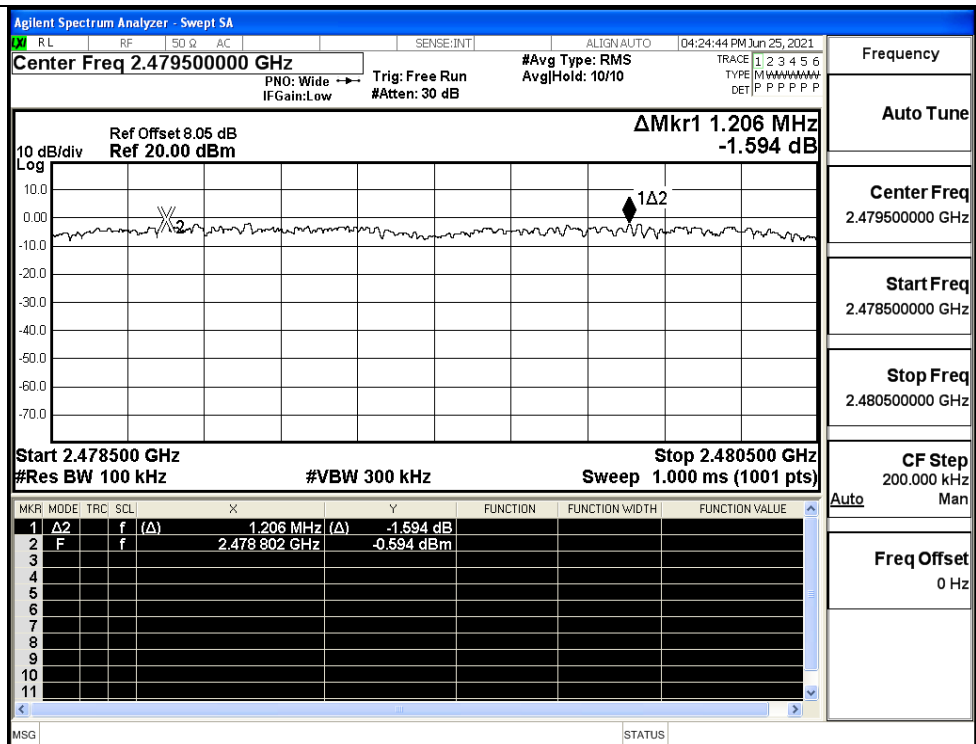
GFSK/MCH



GFSK/HCH



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

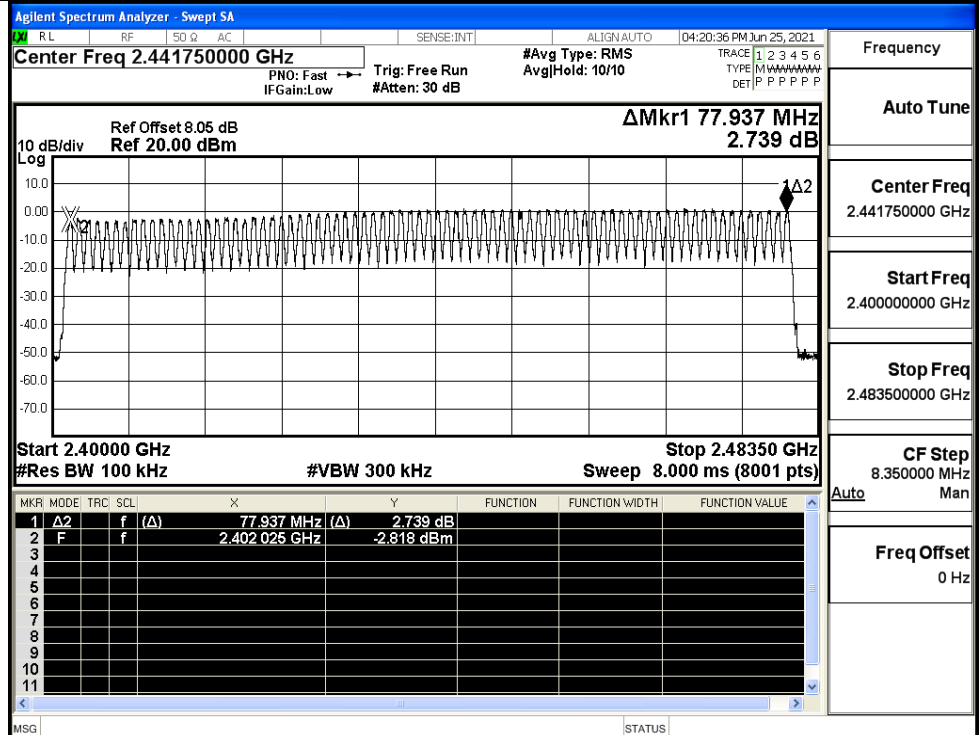
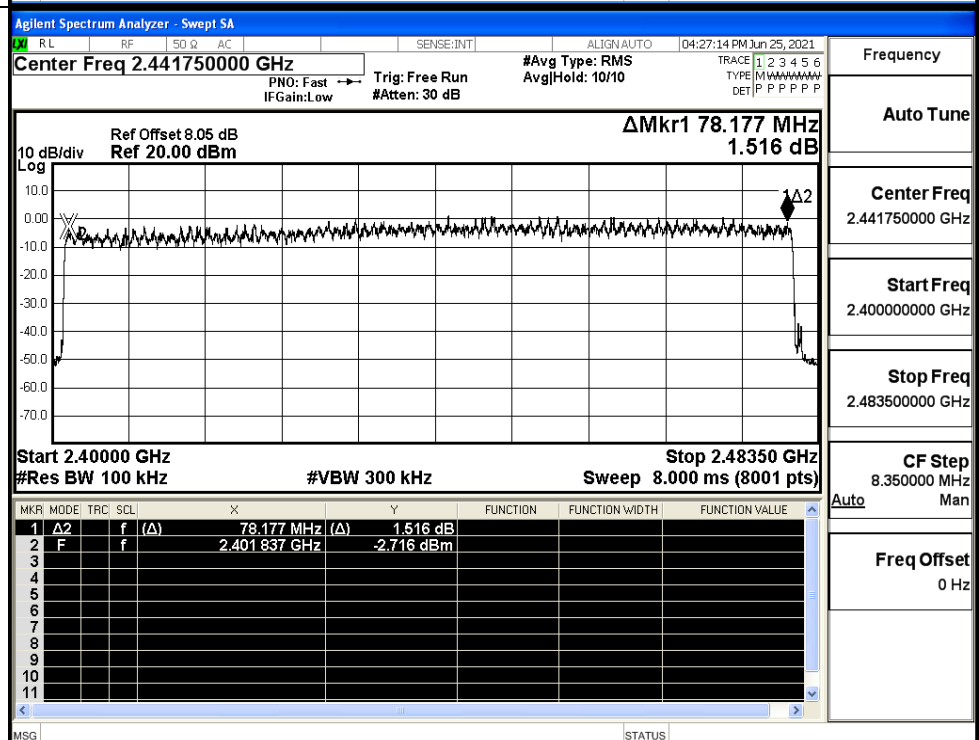
$\pi/4$ DQPSK/HCH

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

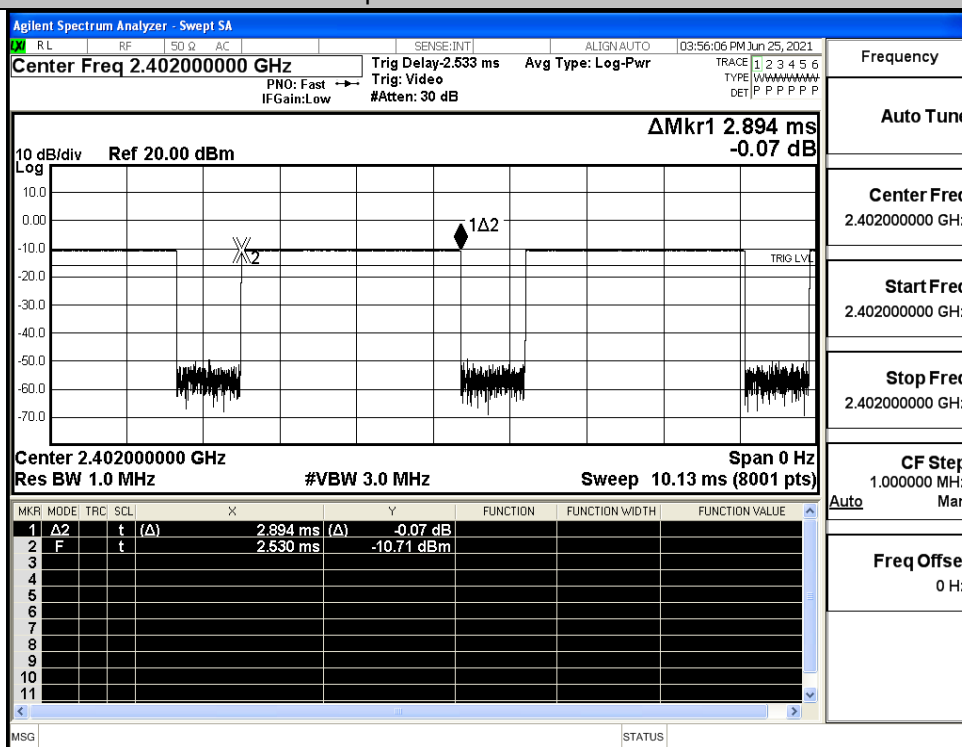
 $\pi/4$ DQPSK/Hop

A.5 Dwell Time

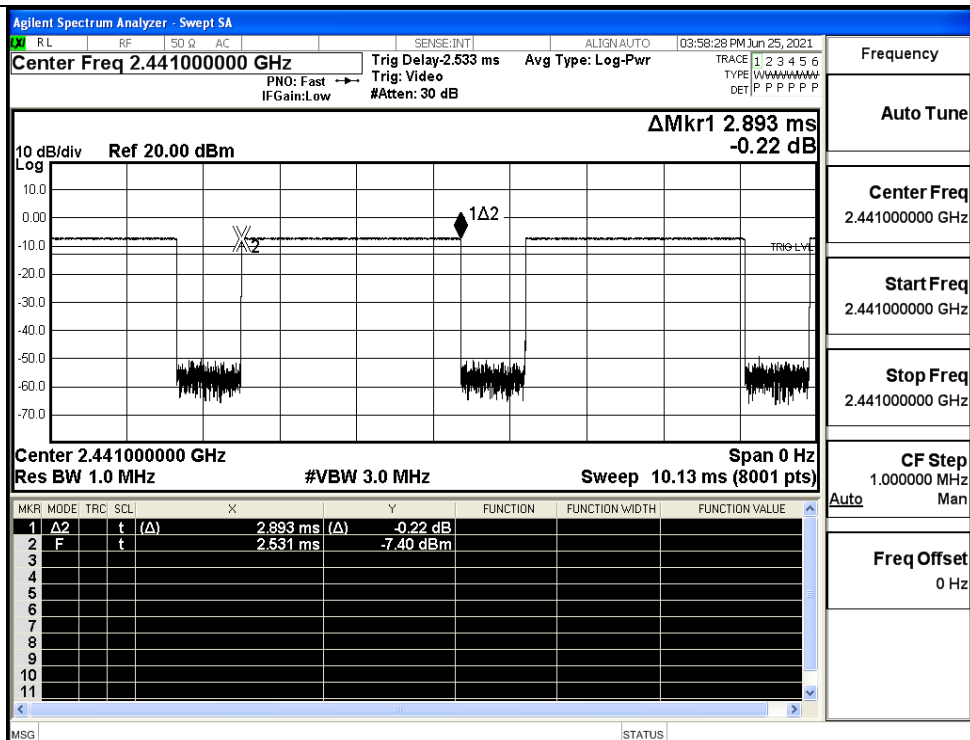
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.89	106.7	0.308	0.4	PASS
	DH5	MCH	2.89	106.7	0.308	0.4	PASS
	DH5	HCH	2.89	106.7	0.308	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.89	106.7	0.307	0.4	PASS
	2DH5	MCH	2.89	106.7	0.307	0.4	PASS
	2DH5	HCH	2.89	106.7	0.307	0.4	PASS

Test Graphs

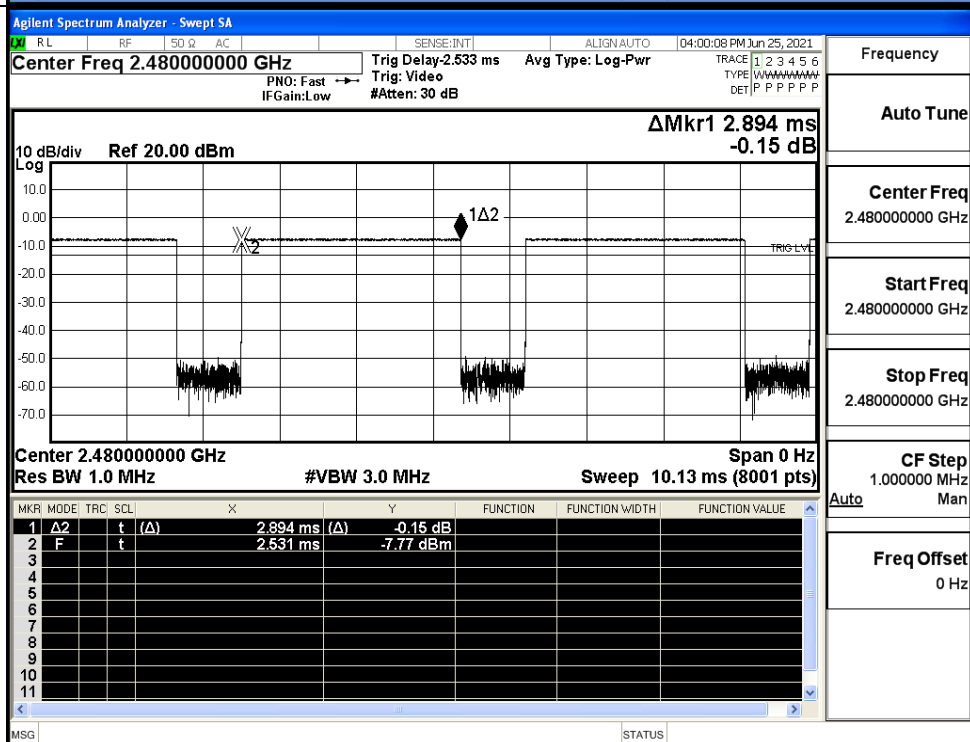
GFSK_DH5/LCH

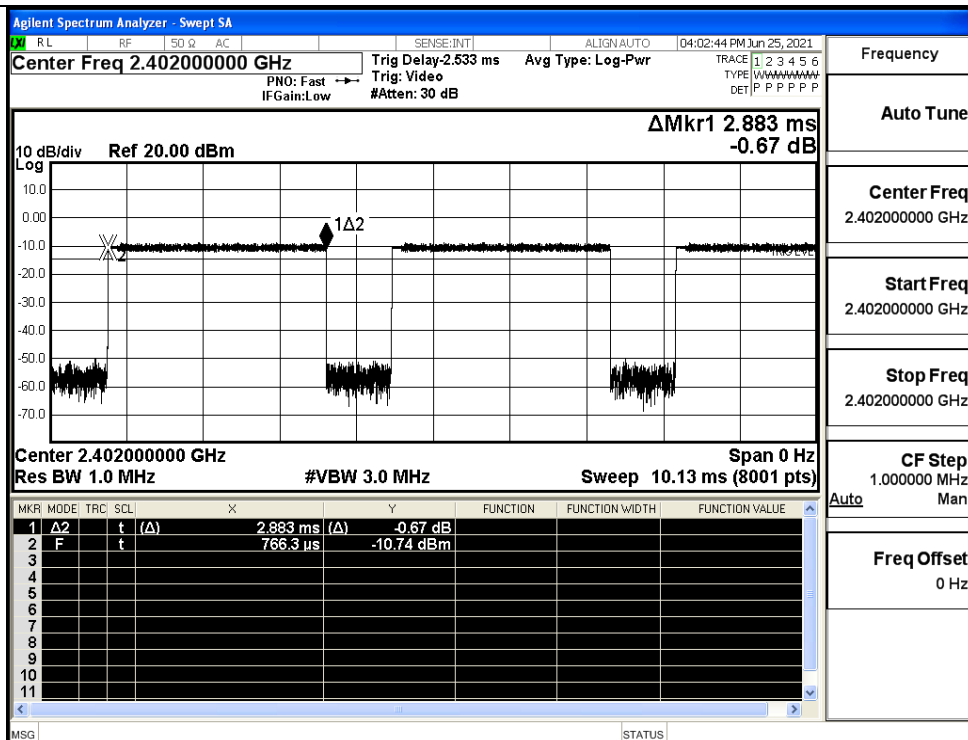


GFSK_DH5/MCH



GFSK_DH5/HCH



$\pi/4$ DQPSK
_2DH5/LCH

Frequency

Auto Tune

Center Freq

2.402000000 GHz

Start Freq

2.402000000 GHz

Stop Freq

2.402000000 GHz

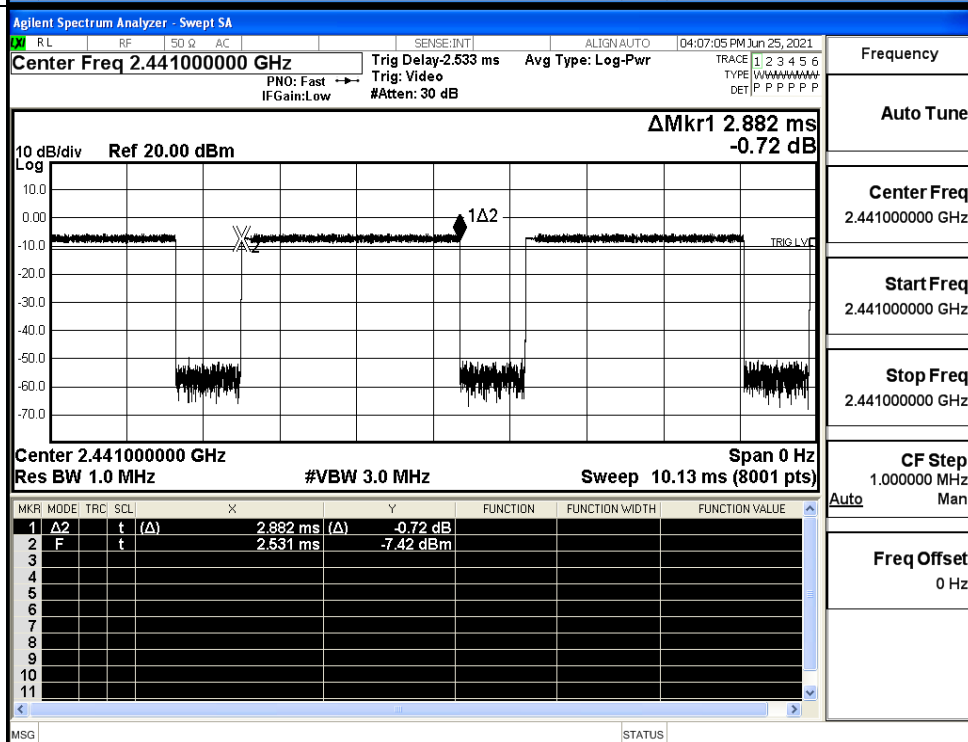
CF Step

1.000000 MHz

Auto Man

Freq Offset

0 Hz

 $\pi/4$ DQPSK
_2DH5/MCH

Frequency

Auto Tune

Center Freq

2.441000000 GHz

Start Freq

2.441000000 GHz

Stop Freq

2.441000000 GHz

CF Step

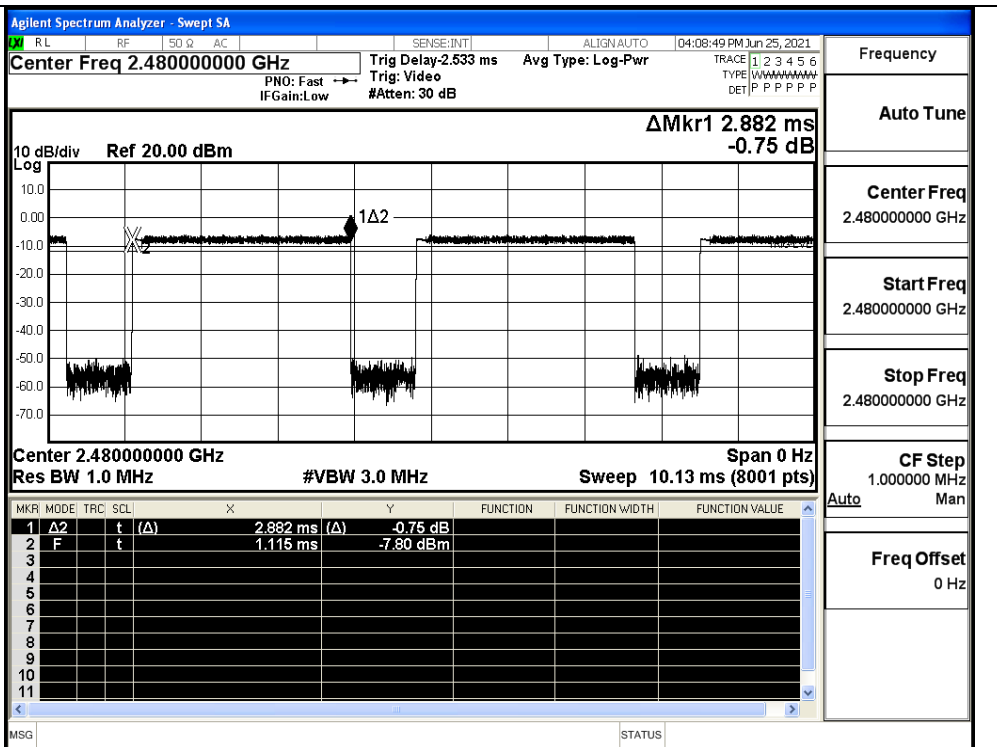
1.000000 MHz

Auto Man

Freq Offset

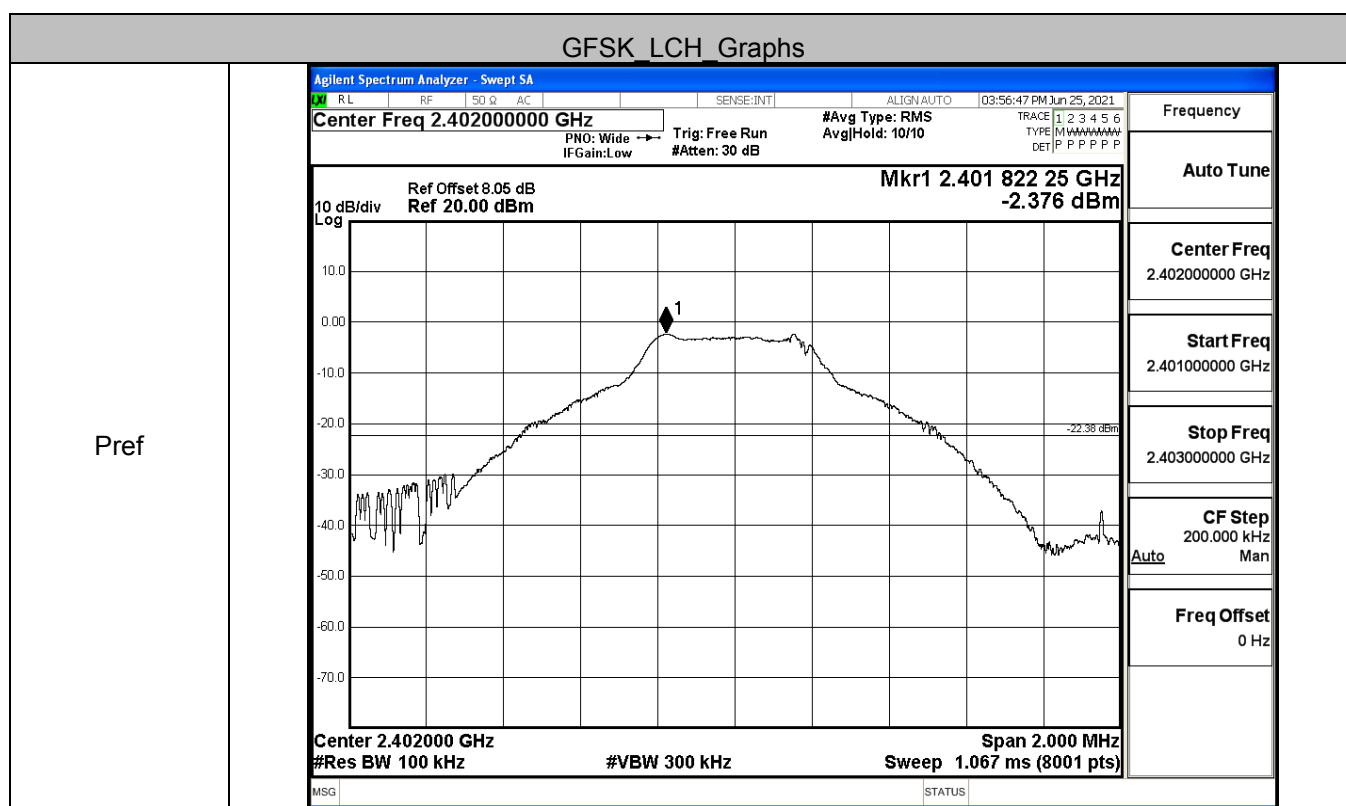
0 Hz

$\pi/4$ DQPSK
_2DH5/HCH

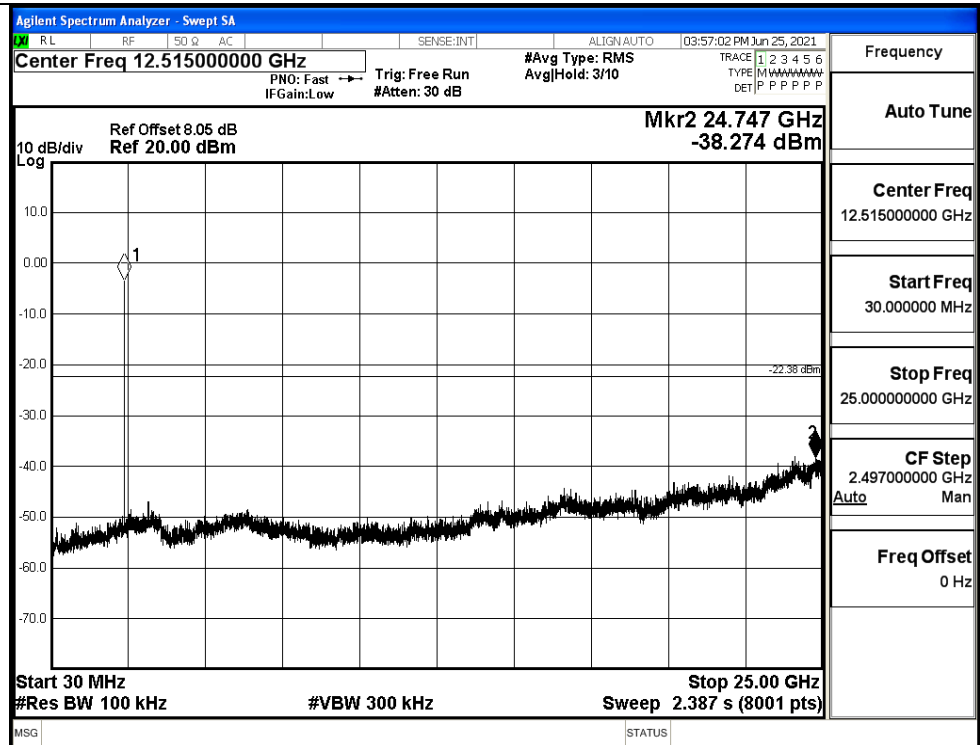


A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-2.376	-38.274	-22.376	PASS
	MCH	0.868	-37.945	-19.132	PASS
	HCH	0.48	-38.382	-19.520	PASS
π /4DQPSK	LCH	-3.121	-38.409	-23.121	PASS
	MCH	0.246	-37.859	-19.754	PASS
	HCH	-0.241	-38.065	-20.241	PASS

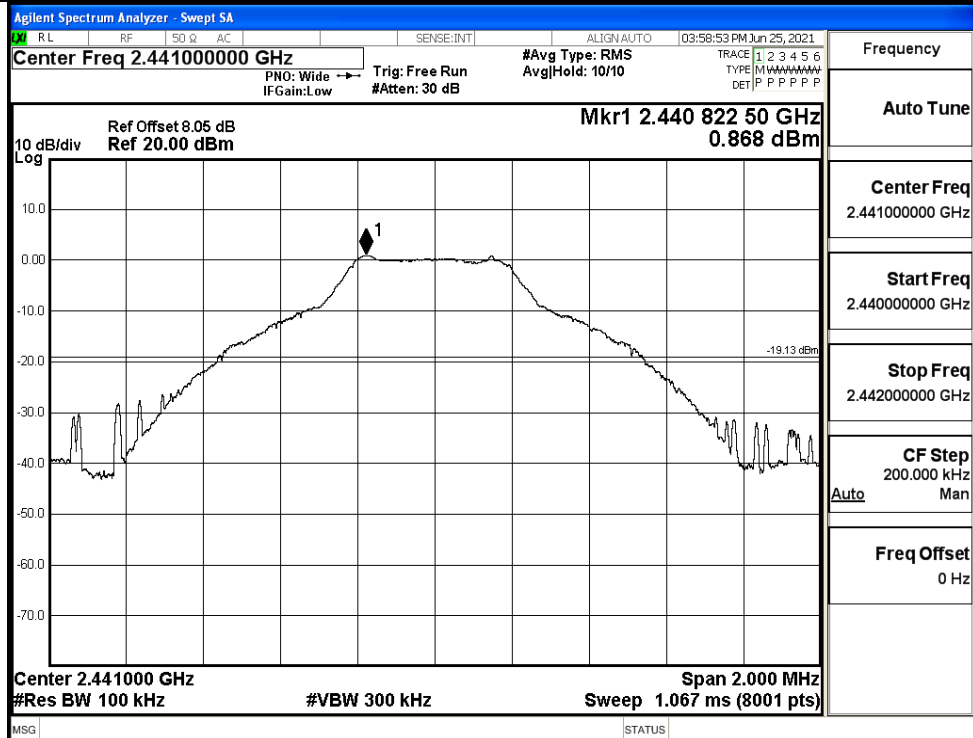


P_{uw}

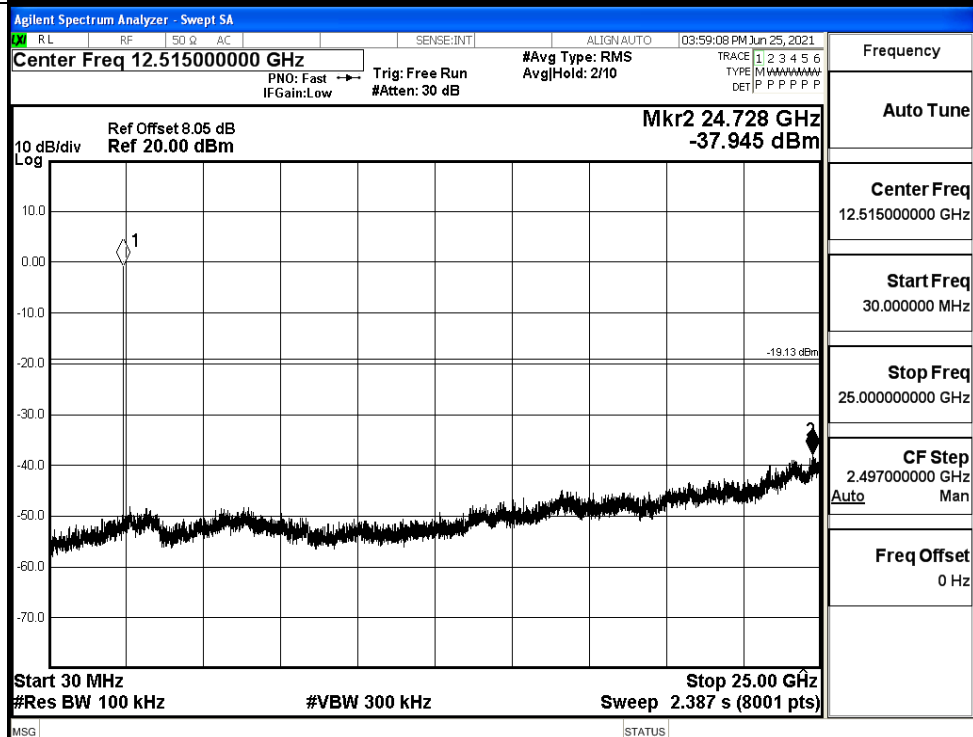


GFSK_MCH_Graphs

Pref

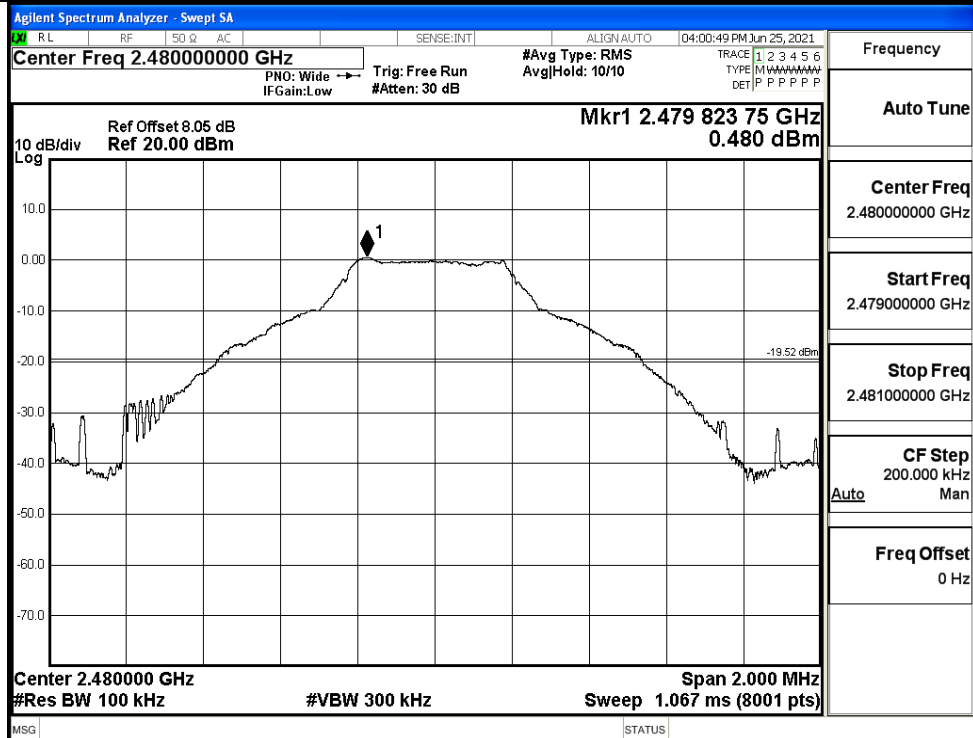


Puw

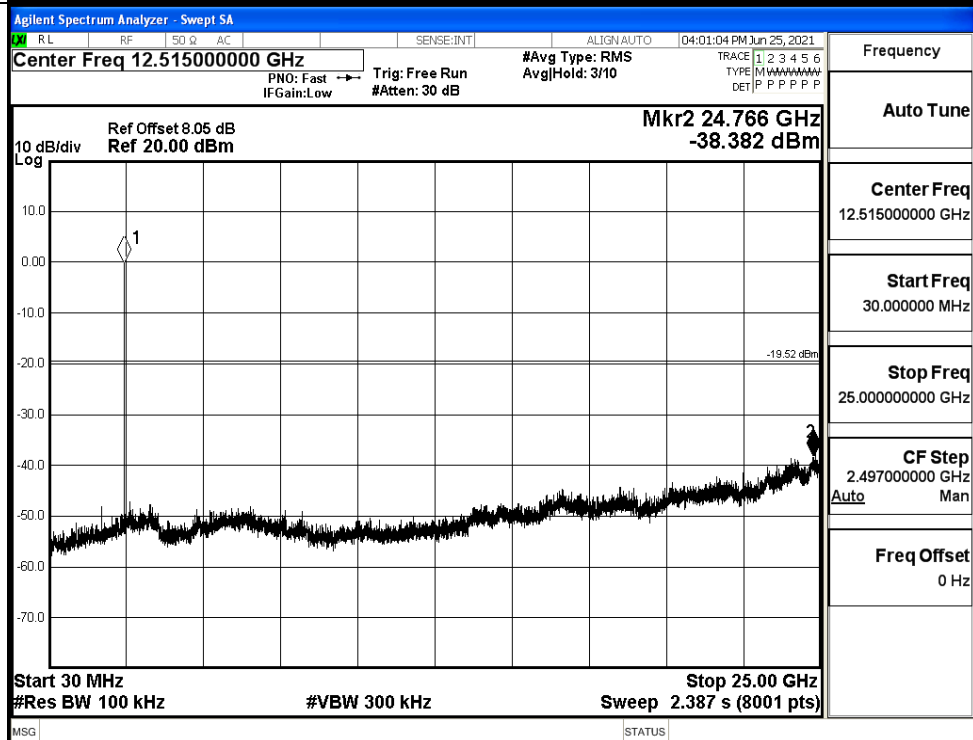


GFSK HCH_Graphs

Pref

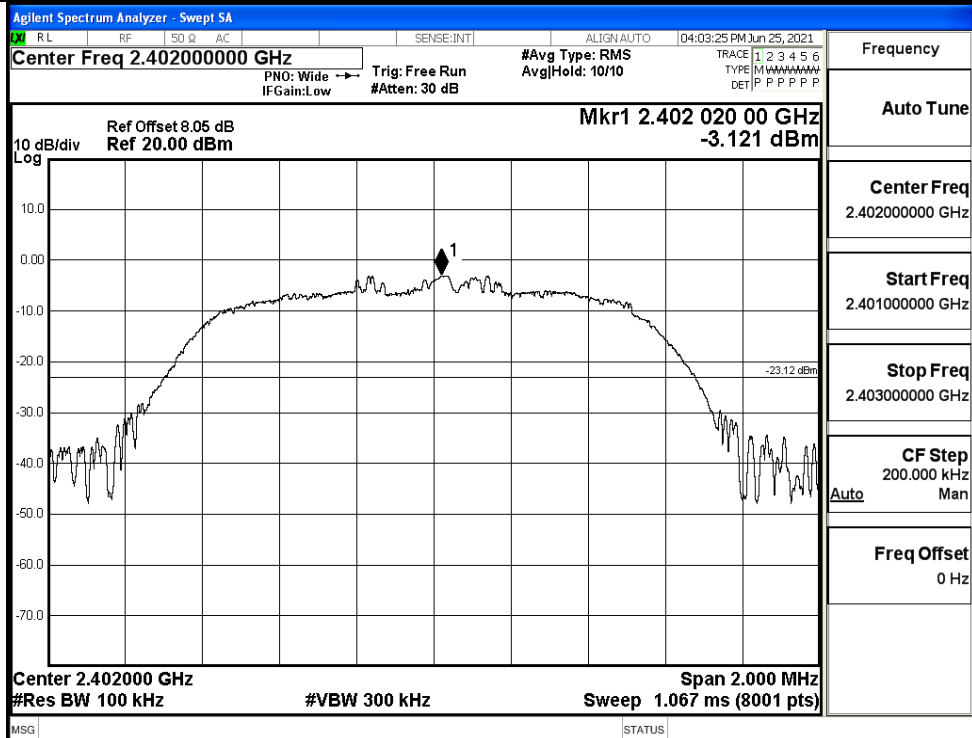


Puw

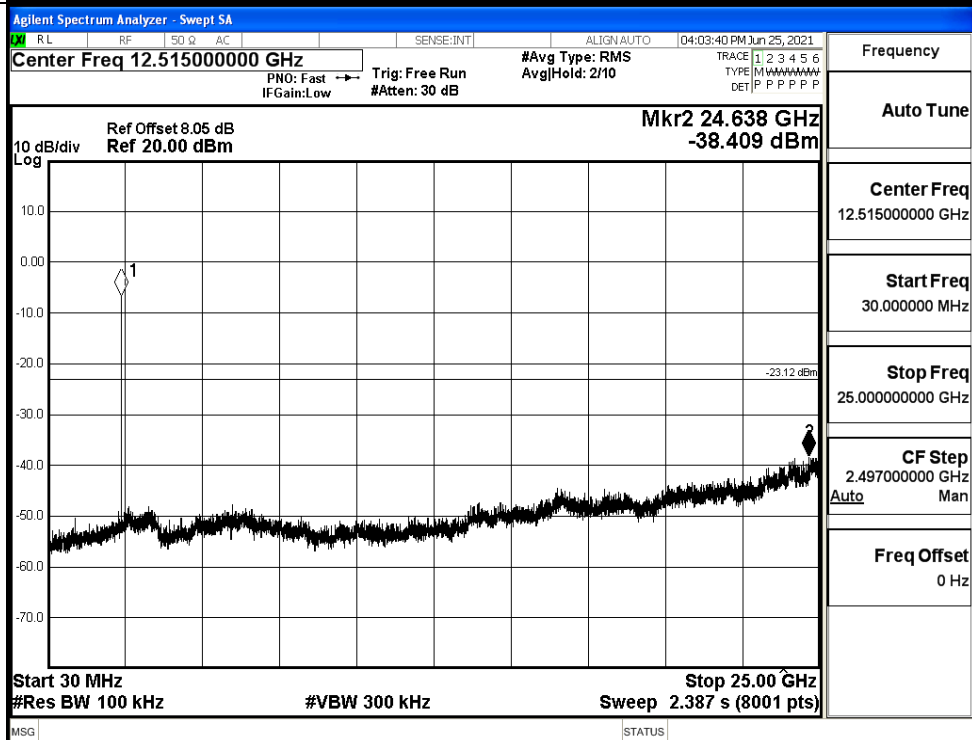


$\pi/4$ DQPSK LCH_Graphs

Pref

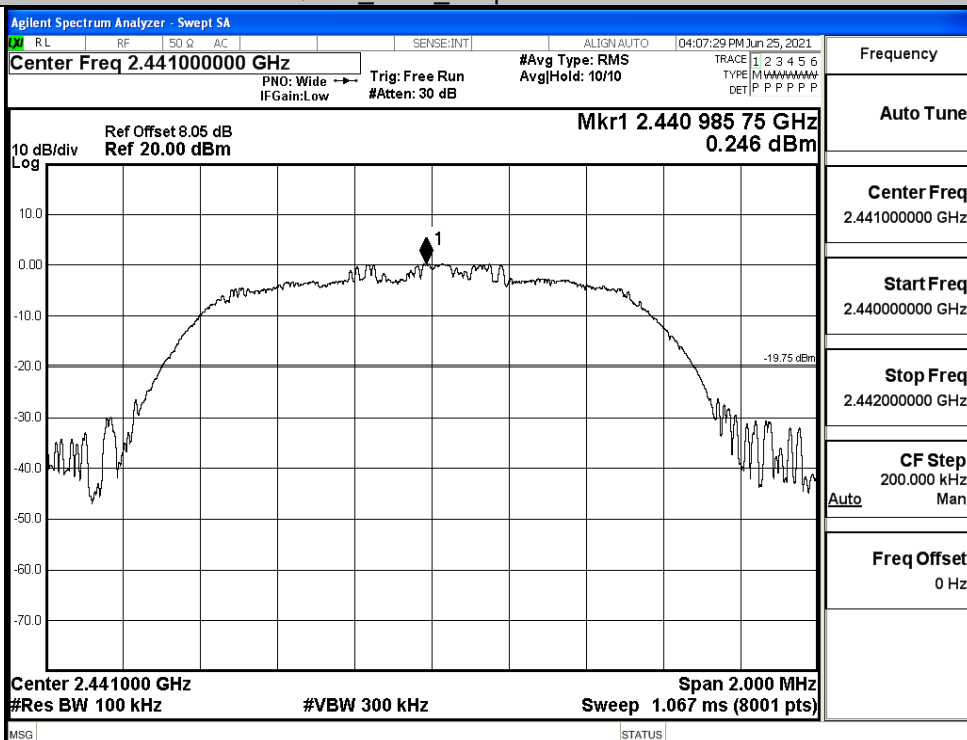


Puw

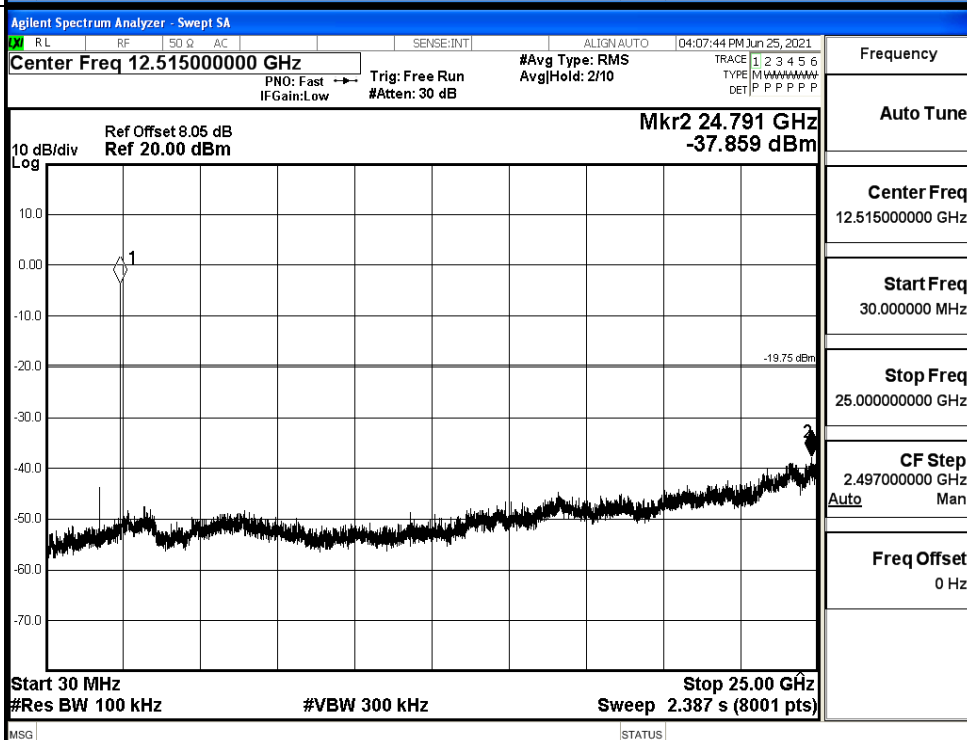


$\pi/4$ DQPSK_MCH_Graphs

Pref

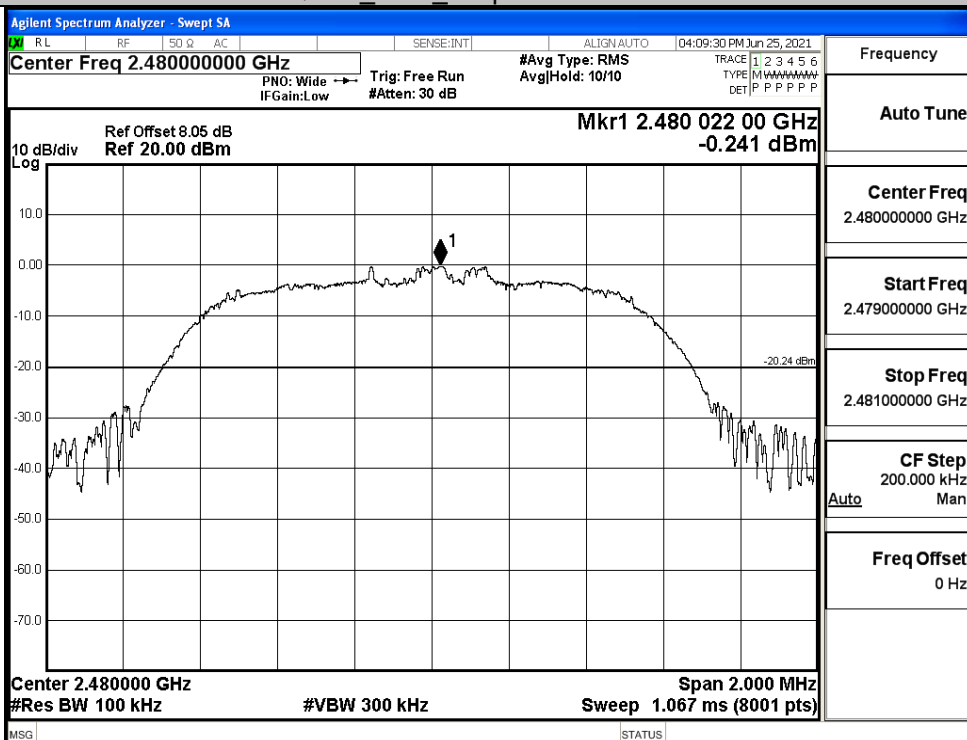


Puw

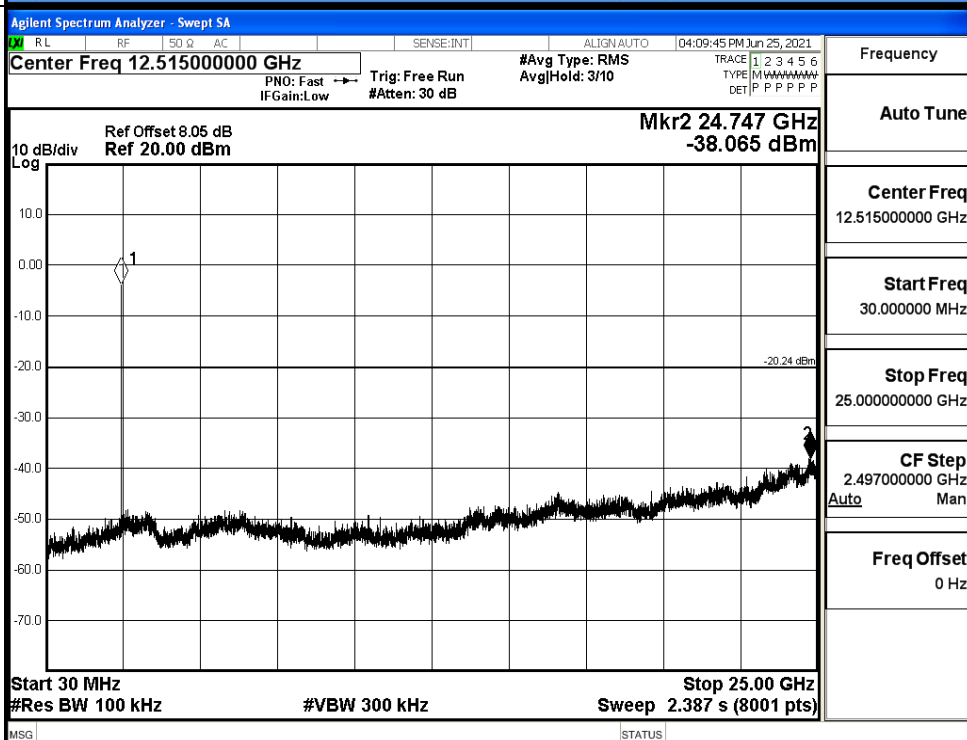


$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw

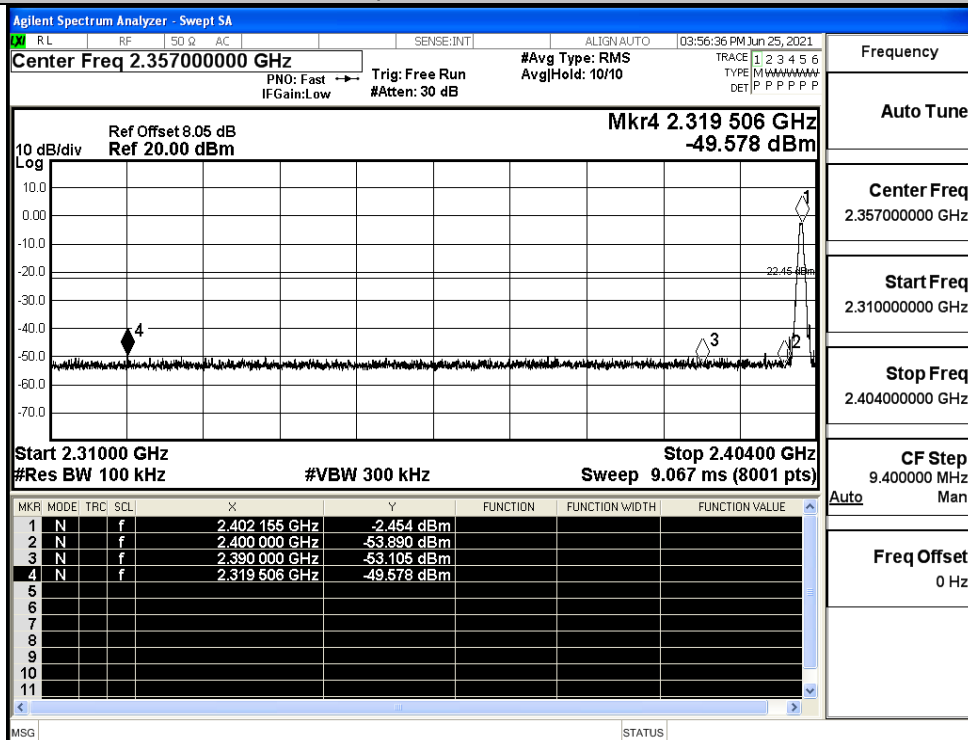


A.7 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-2.454	Off	-49.578	-22.45	PASS
			-0.198	On	-50.031	-20.2	PASS
	HCH	2480	0.539	Off	-49.150	-19.46	PASS
			1.055	On	-49.187	-18.95	PASS
$\pi/4$ DQPSK	LCH	2402	-2.380	Off	-49.240	-22.38	PASS
			-0.685	On	-49.050	-20.69	PASS
	HCH	2480	0.389	Off	-49.216	-19.61	PASS
			0.807	On	-48.160	-19.19	PASS

Test Graphs

GFSK/LCH/No Hop

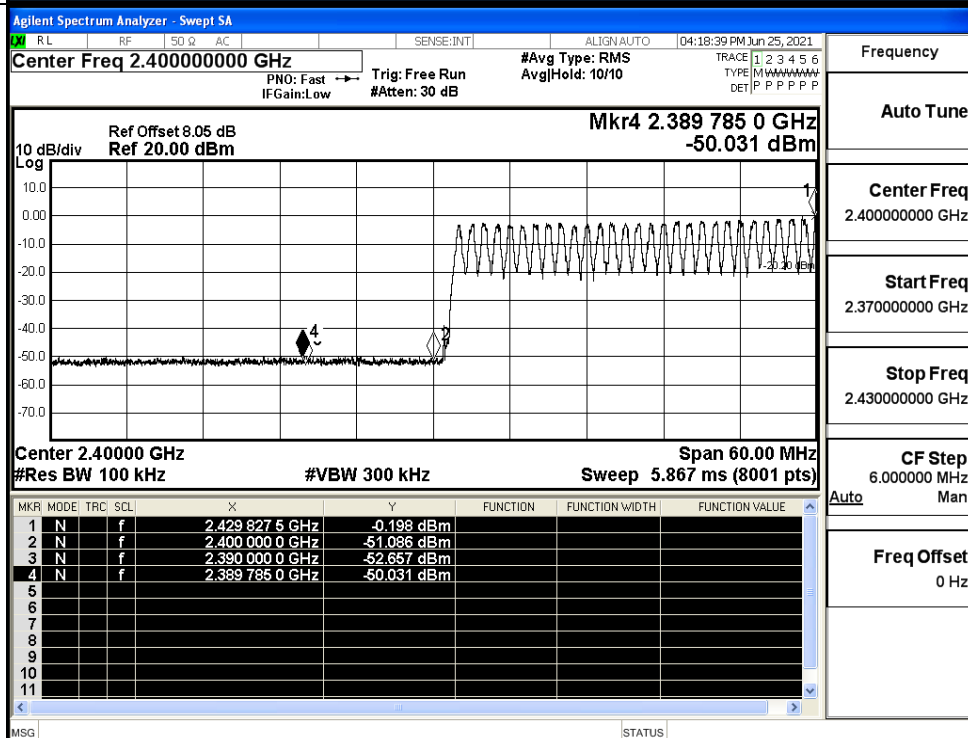


Frequency

Auto Tune

Center Freq
2.357000000 GHzStart Freq
2.310000000 GHzStop Freq
2.404000000 GHzCF Step
9.400000 MHz
ManFreq Offset
0 Hz

GFSK/LCH/Hop

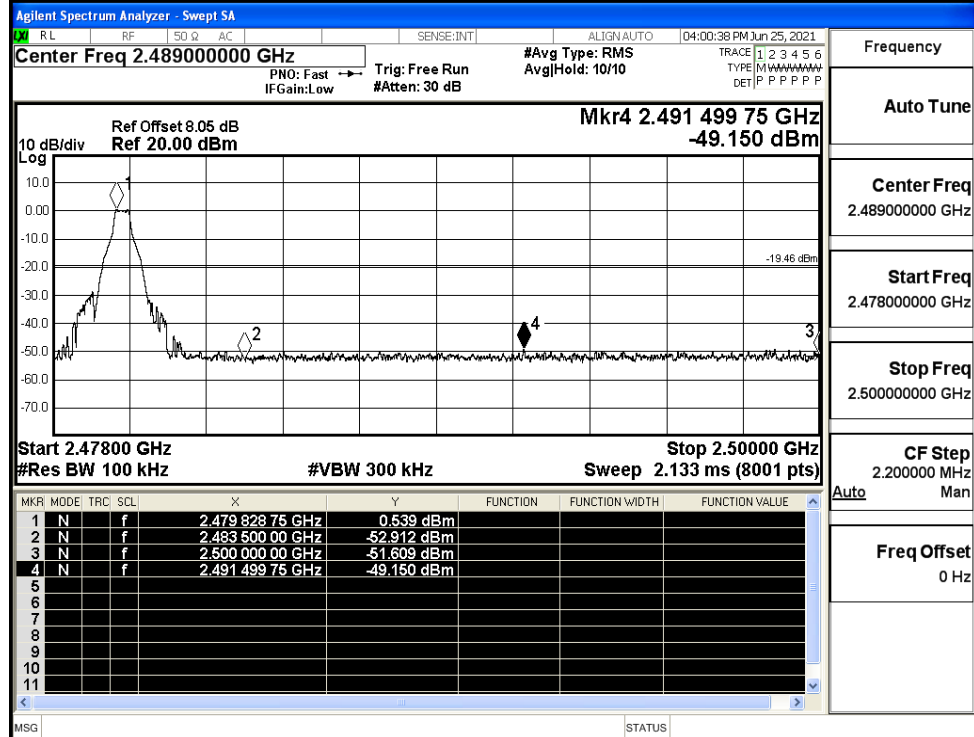


Frequency

Auto Tune

Center Freq
2.400000000 GHzStart Freq
2.370000000 GHzStop Freq
2.430000000 GHzCF Step
6.000000 MHz
ManFreq Offset
0 Hz

GFSK/HCH/No Hop

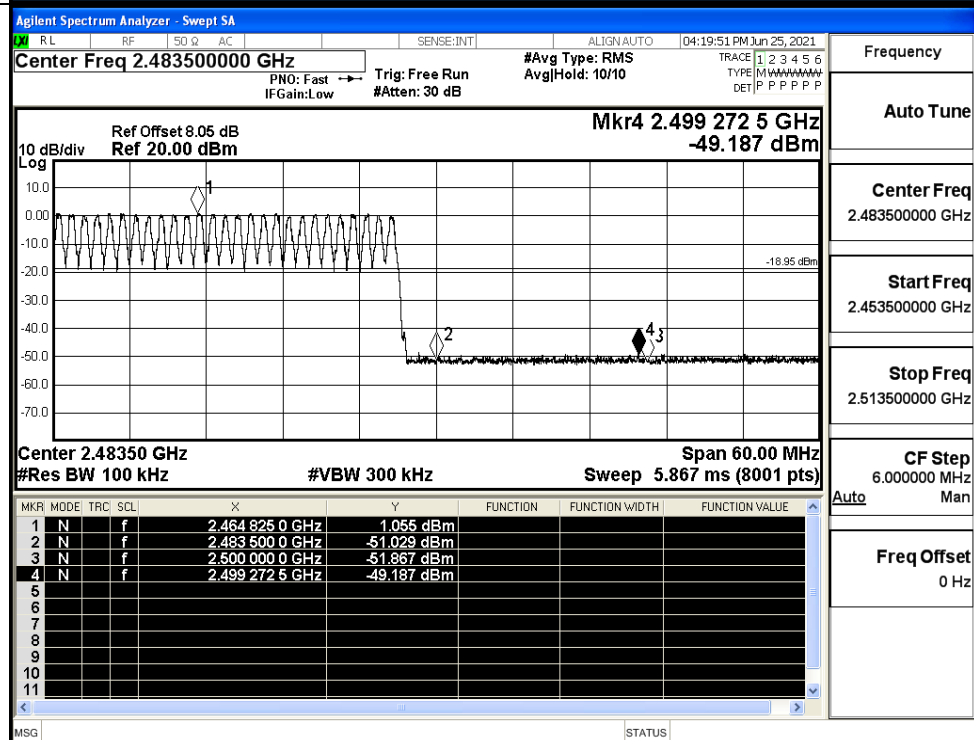


Frequency

Auto Tune

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

GFSK/HCH/Hop

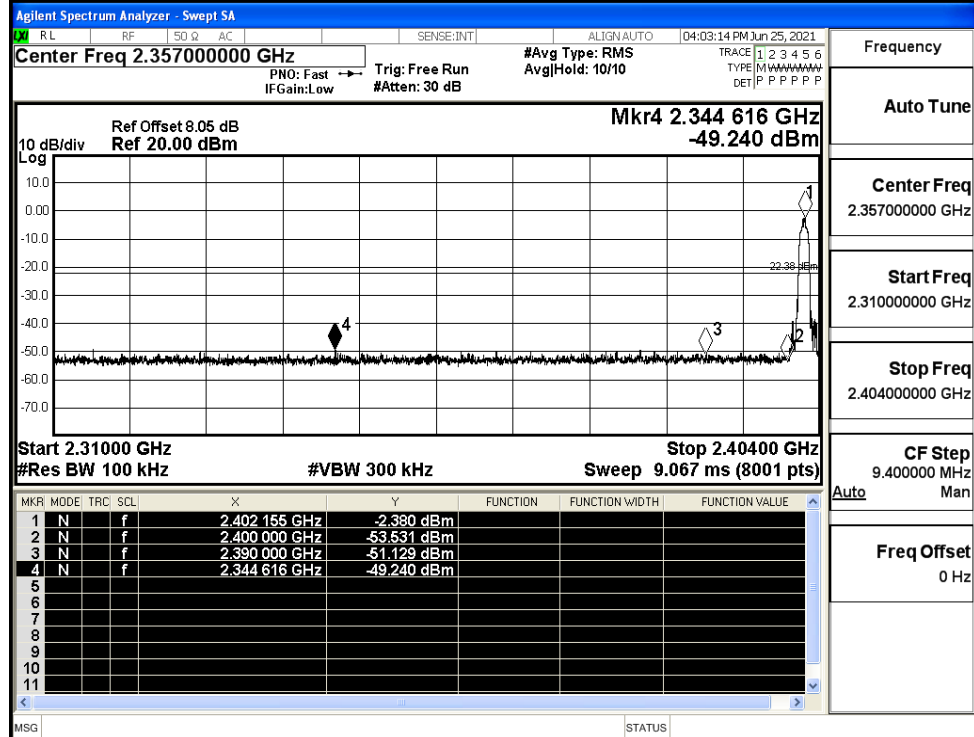


Frequency

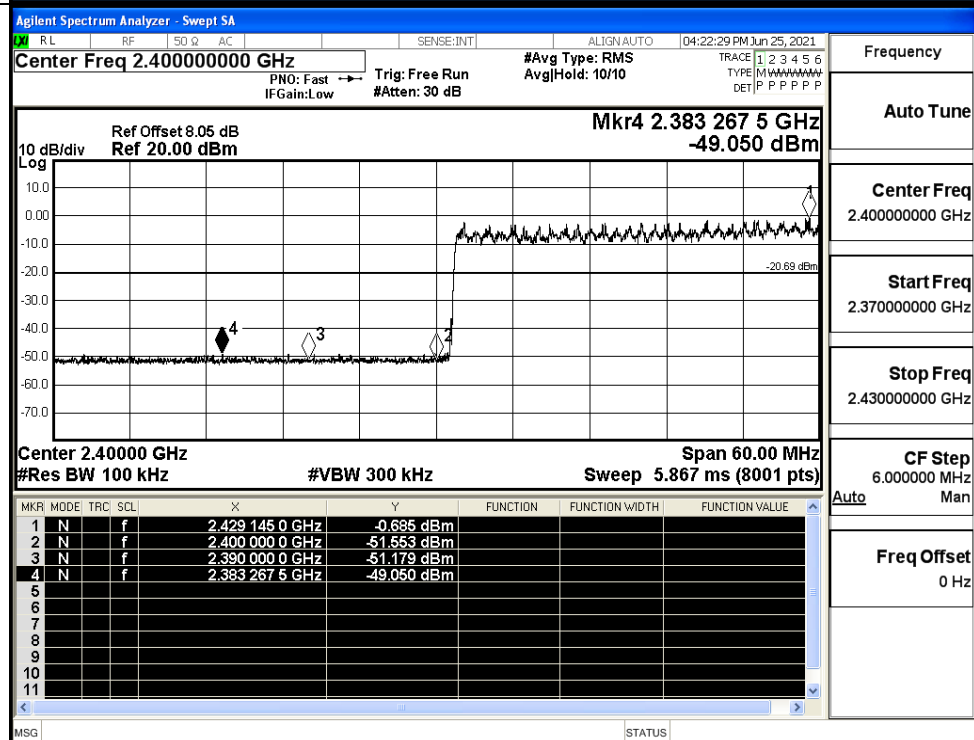
Auto Tune

Center Freq
2.483500000 GHzStart Freq
2.453500000 GHzStop Freq
2.513500000 GHzCF Step
6.000000 MHz
Auto ManFreq Offset
0 Hz

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



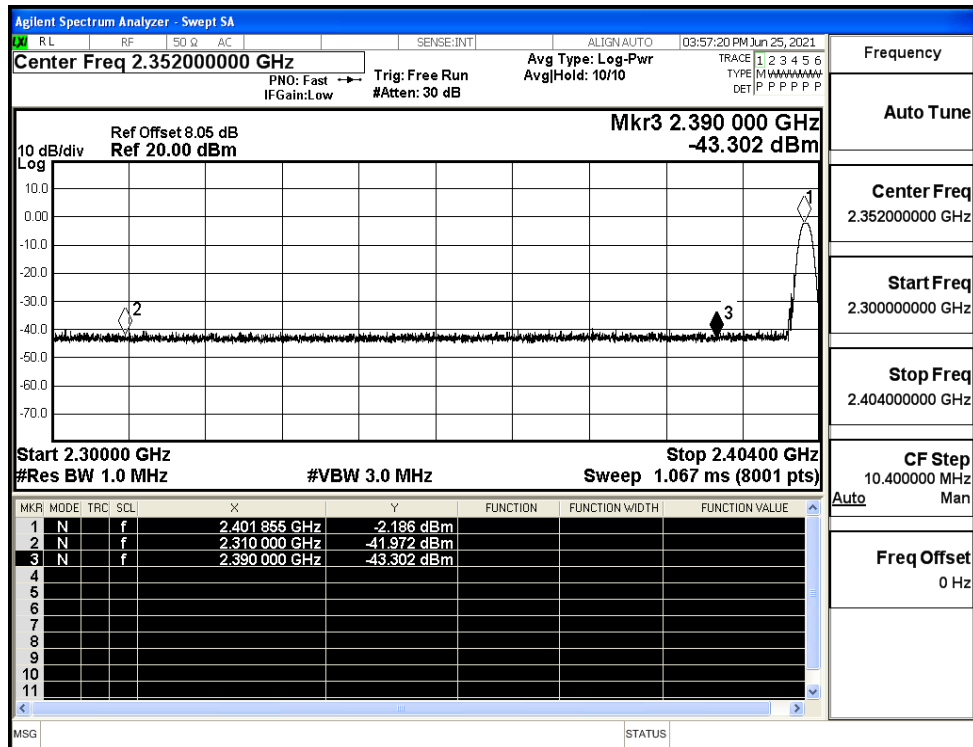
$\pi/4$ DQPSK/LCH/Hop



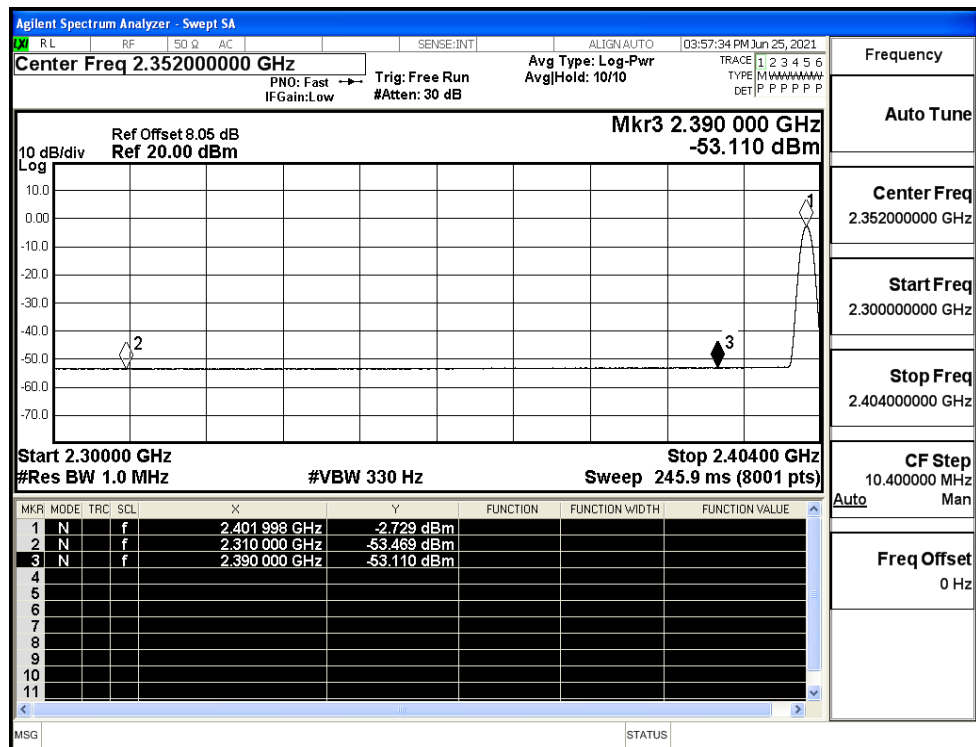
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-41.97	2.0	0	53.29	PEAK	74	PASS
	Off	2310.0	-53.47	2.0	0	41.79	AV	54	PASS
	Off	2390.0	-43.30	2.0	0	51.96	PEAK	74	PASS
	Off	2390.0	-53.11	2.0	0	42.15	AV	54	PASS
	Off	2483.5	-41.93	2.0	0	53.33	PEAK	74	PASS
	Off	2483.5	-52.51	2.0	0	42.74	AV	54	PASS
	Off	2500.0	-42.61	2.0	0	52.65	PEAK	74	PASS
	Off	2500.0	-52.39	2.0	0	42.87	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-42.58	2.0	0	52.68	PEAK	74	PASS
	Off	2310.0	-53.42	2.0	0	41.84	AV	54	PASS
	Off	2390.0	-43.28	2.0	0	51.98	PEAK	74	PASS
	Off	2390.0	-53.09	2.0	0	42.17	AV	54	PASS
	Off	2483.5	-42.91	2.0	0	52.35	PEAK	74	PASS
	Off	2483.5	-52.19	2.0	0	43.07	AV	54	PASS
	Off	2500.0	-42.26	2.0	0	53.00	PEAK	74	PASS
	Off	2500.0	-52.38	2.0	0	42.88	AV	54	PASS

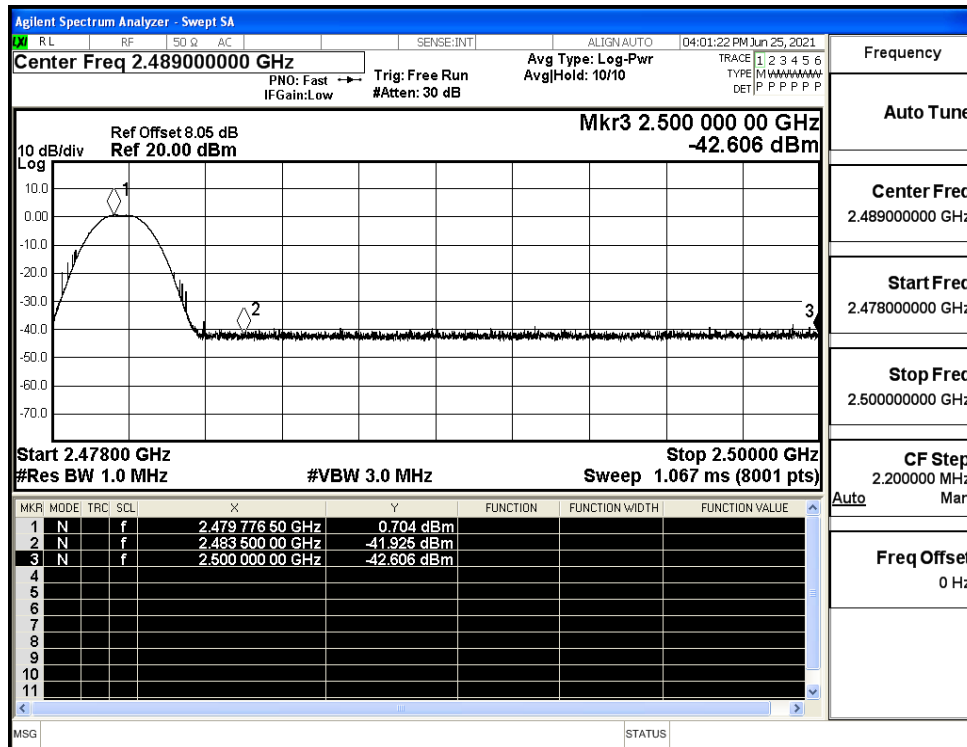
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



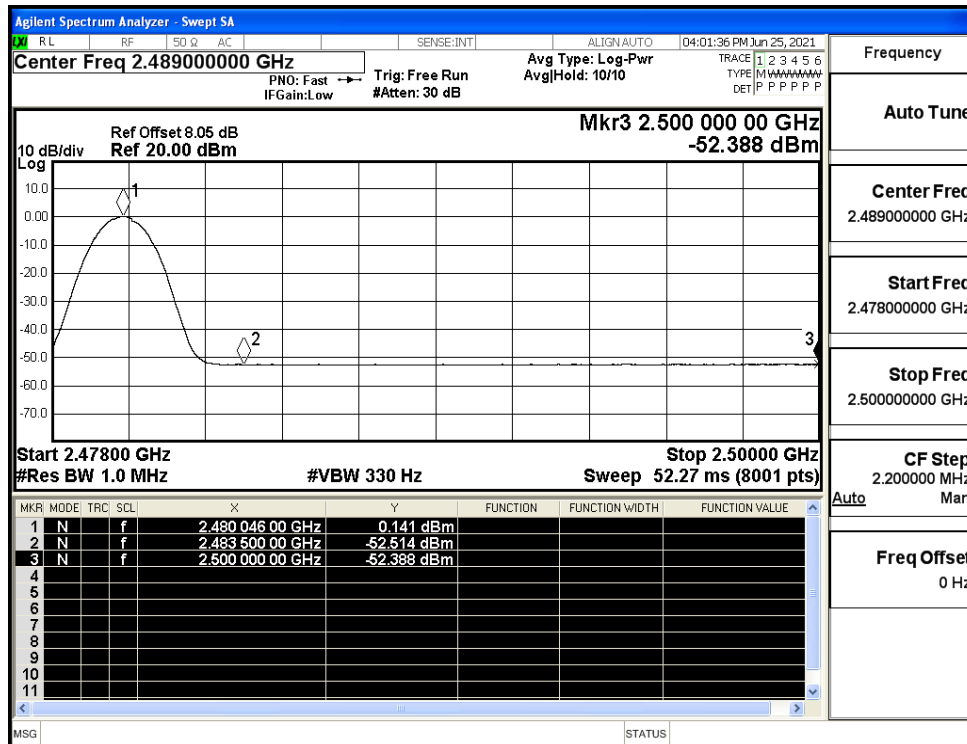
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



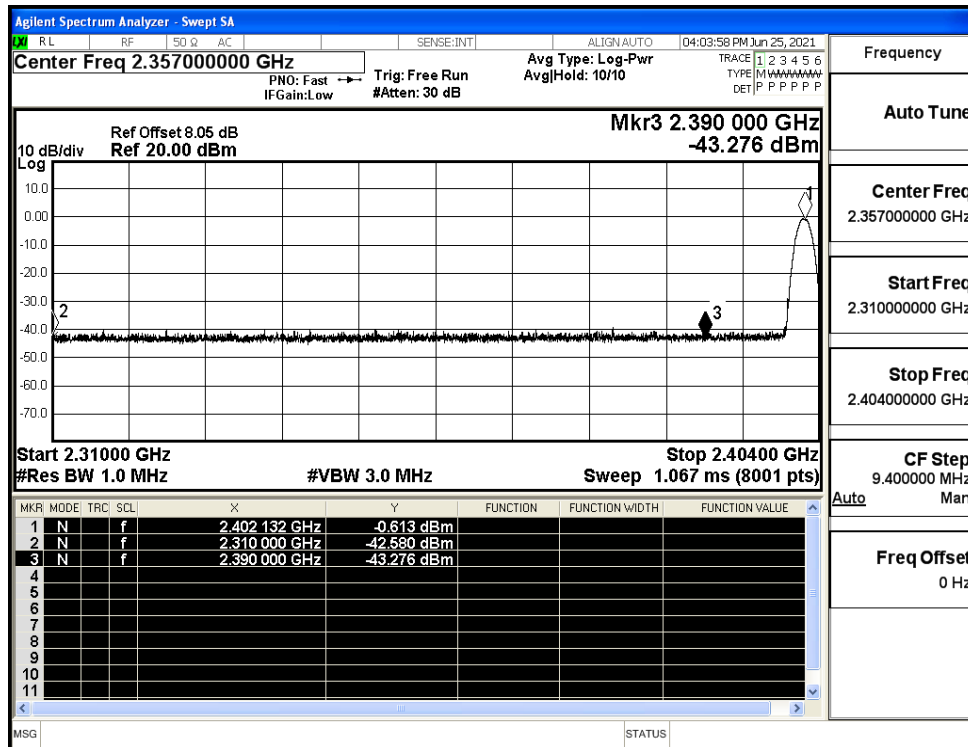
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



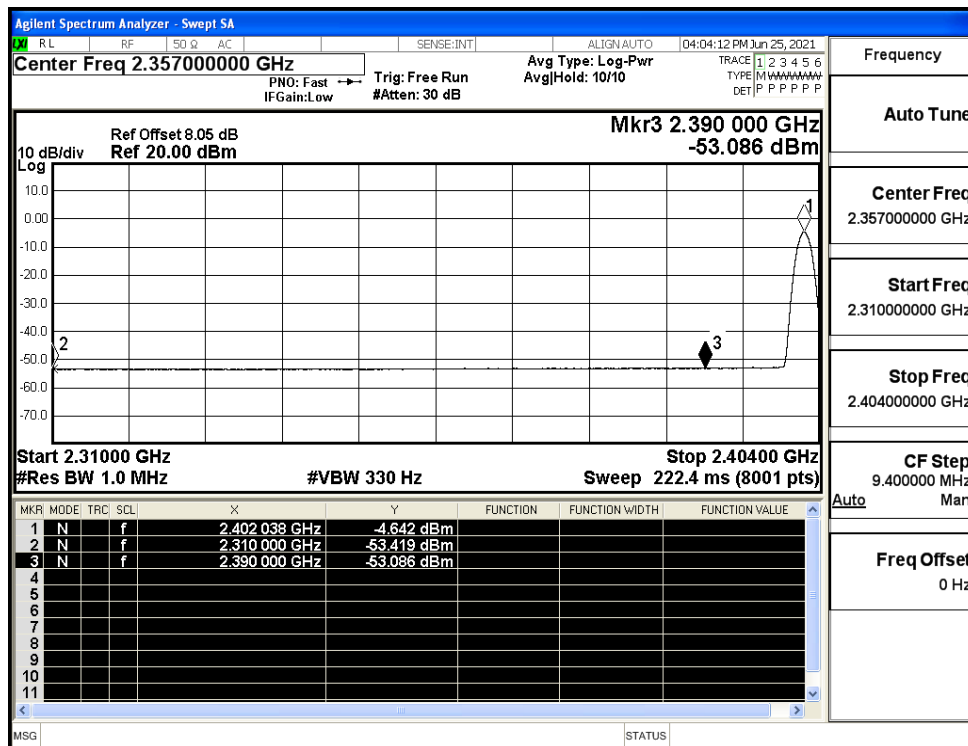
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



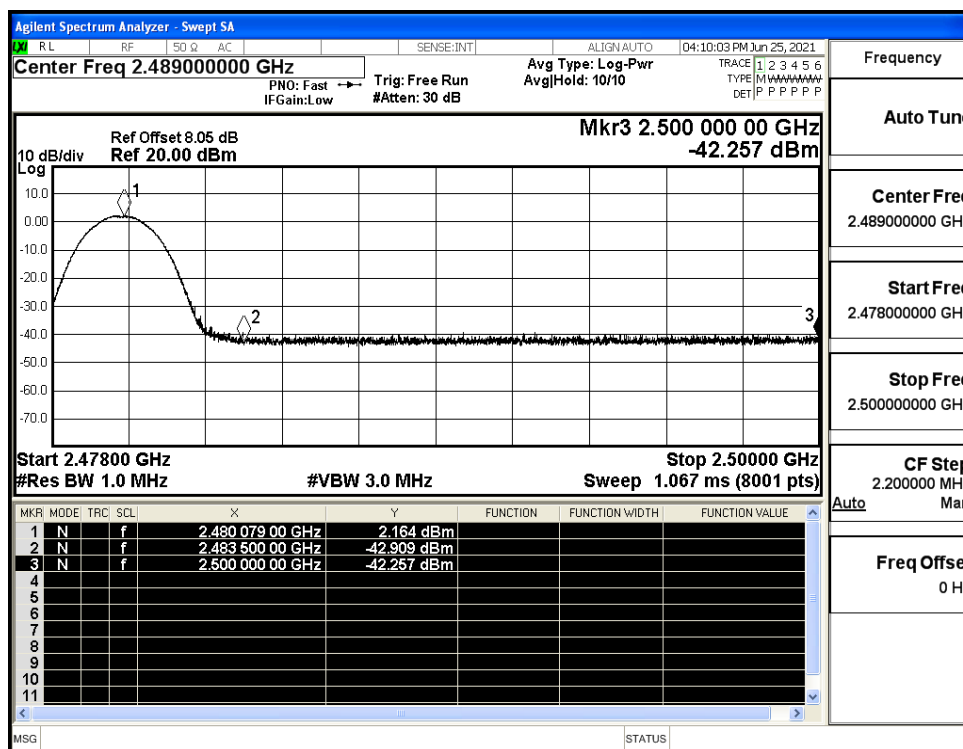
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



Restrict-band band-edge measurements_Hopping Off_π/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)

