

Appendix A

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

Product Name: PORTABLE SPEAKER

Trade Mark: Iqsound, Supersonic

Test Model: IQ-8015DJBT

Environmental Conditions

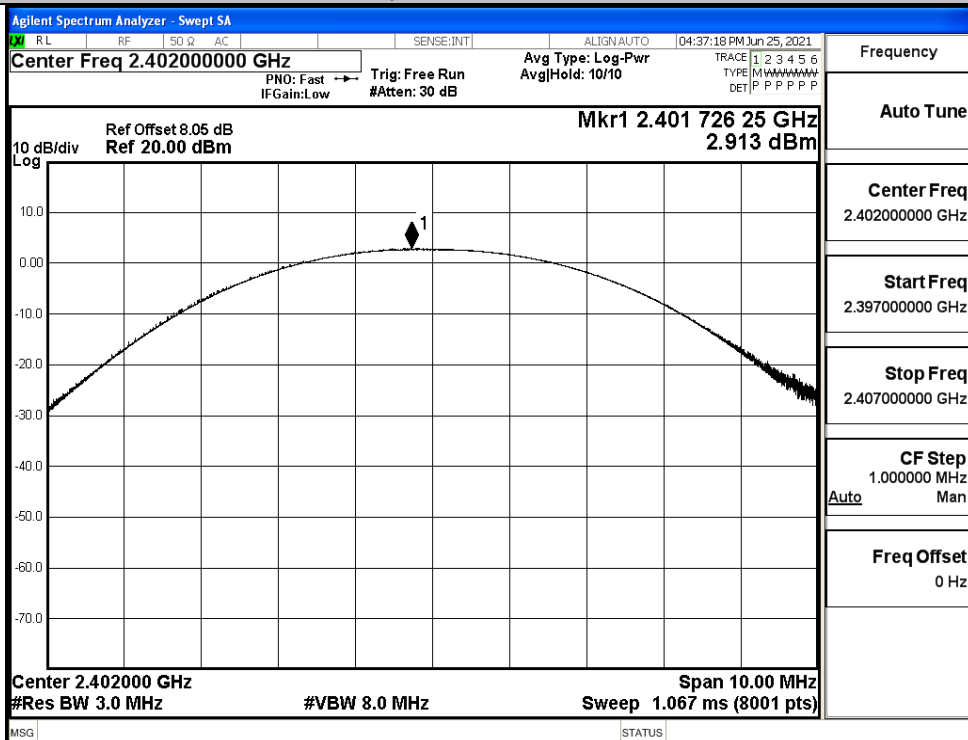
Temperature:	24.2° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Ken He
Supervised by:	Li Huan

A.1 Maximum Conducted Peak Output Power

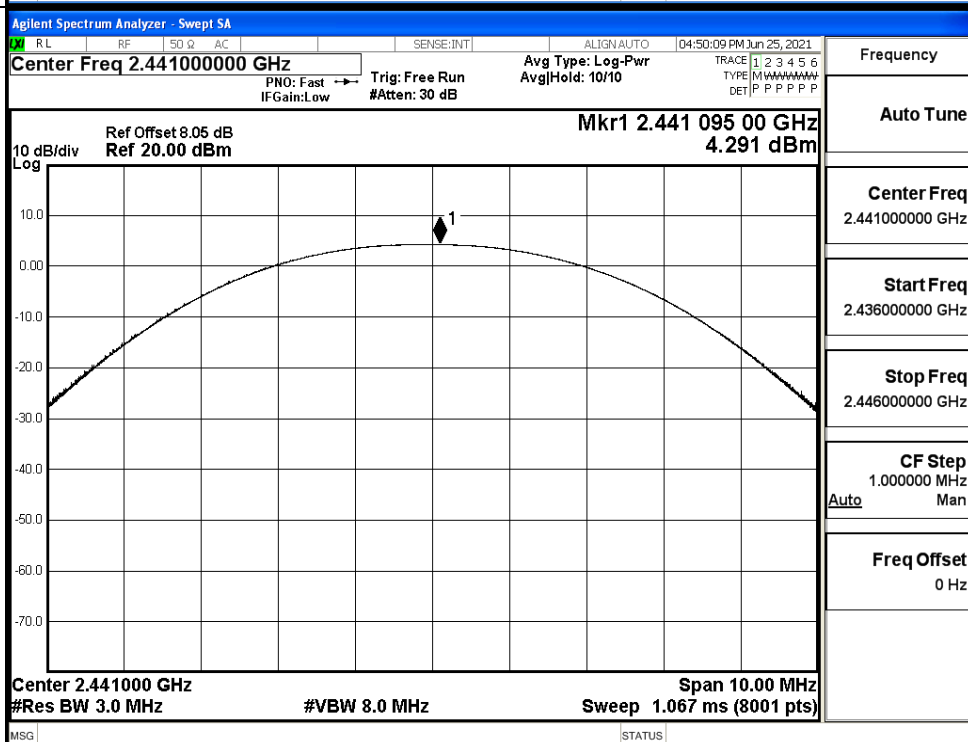
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2.913	30	PASS
	MCH	4.291	30	PASS
	HCH	4.123	30	PASS
$\pi/4$ DQPSK	LCH	3.964	21	PASS
	MCH	5.216	21	PASS
	HCH	4.791	21	PASS
8DPSK	LCH	4.376	21	PASS
	MCH	5.464	21	PASS
	HCH	5.010	21	PASS

Test Graphs

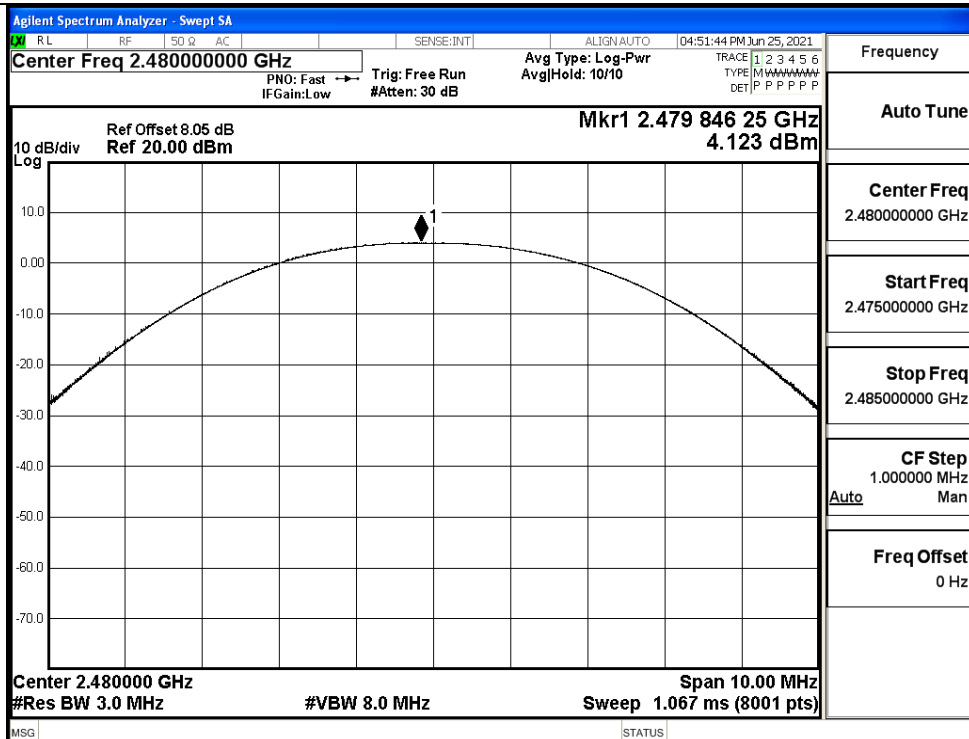
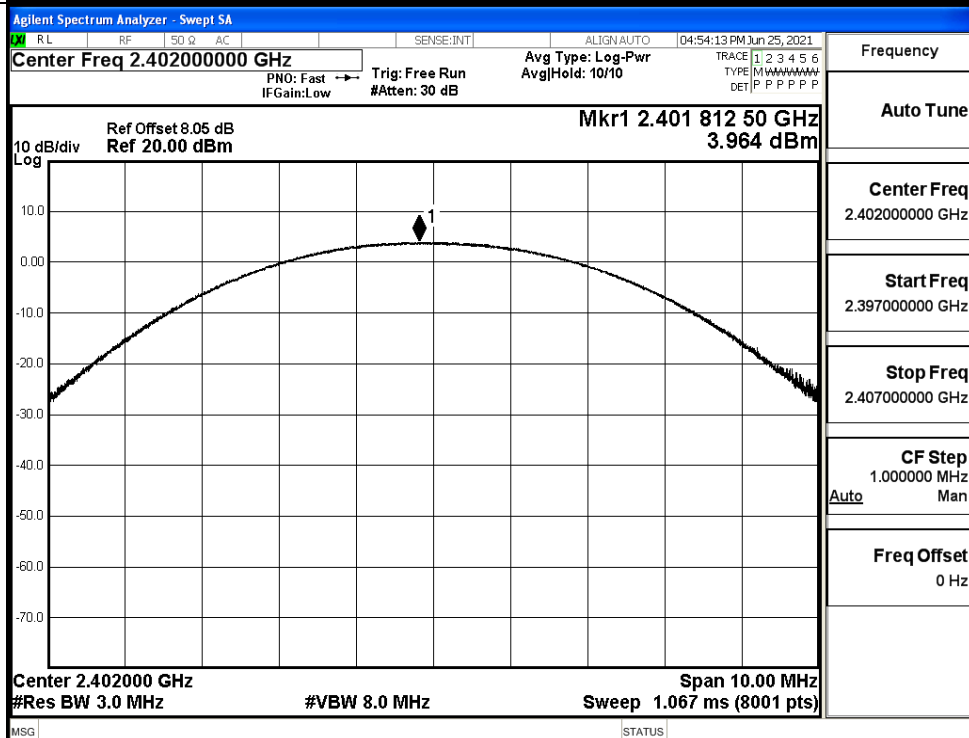
GFSK/LCH

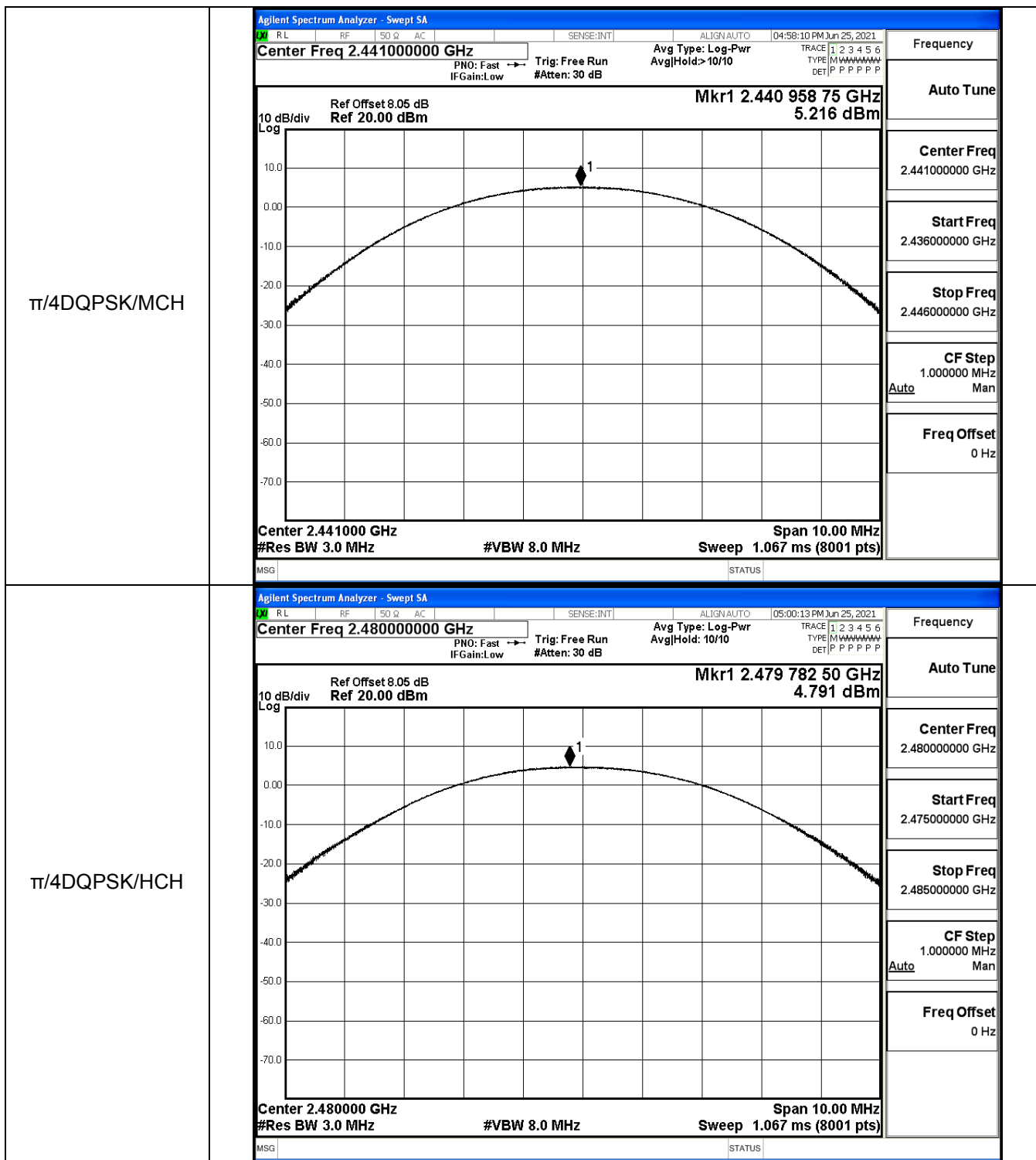


GFSK/MCH

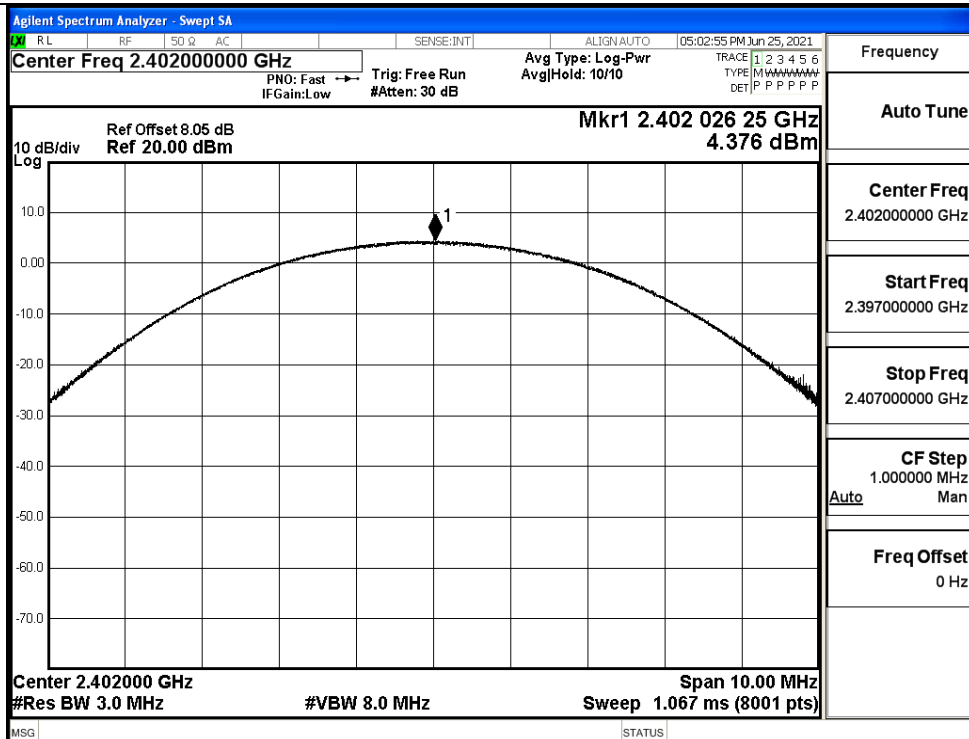


GFSK/HCH

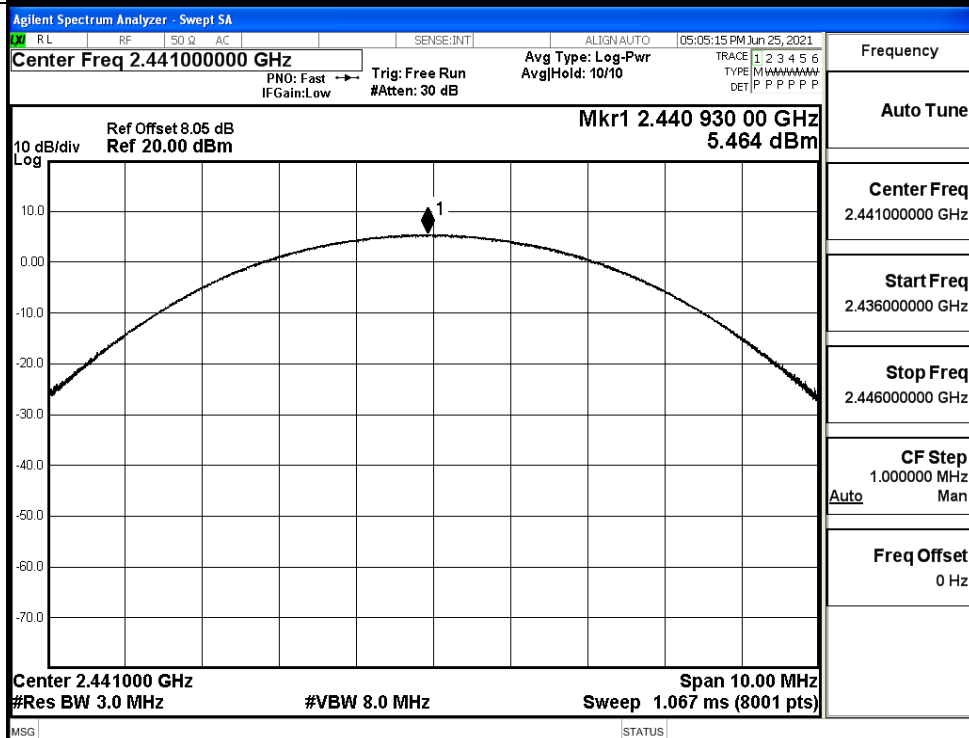
 $\pi/4$ DQPSK/LCH



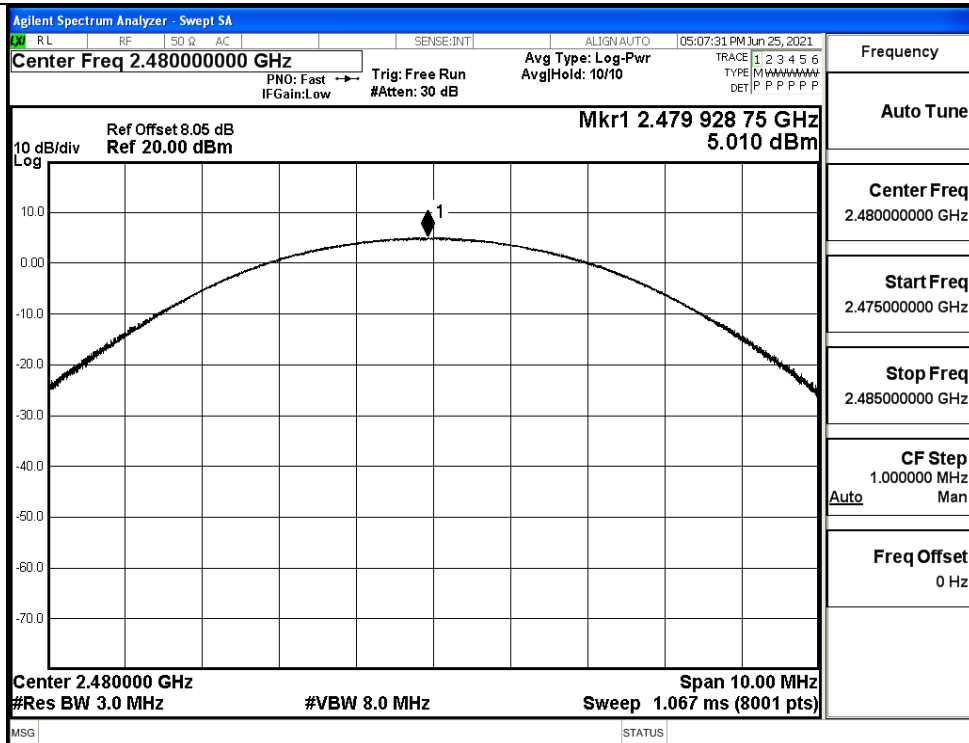
8DPSK/LCH



8DPSK/MCH

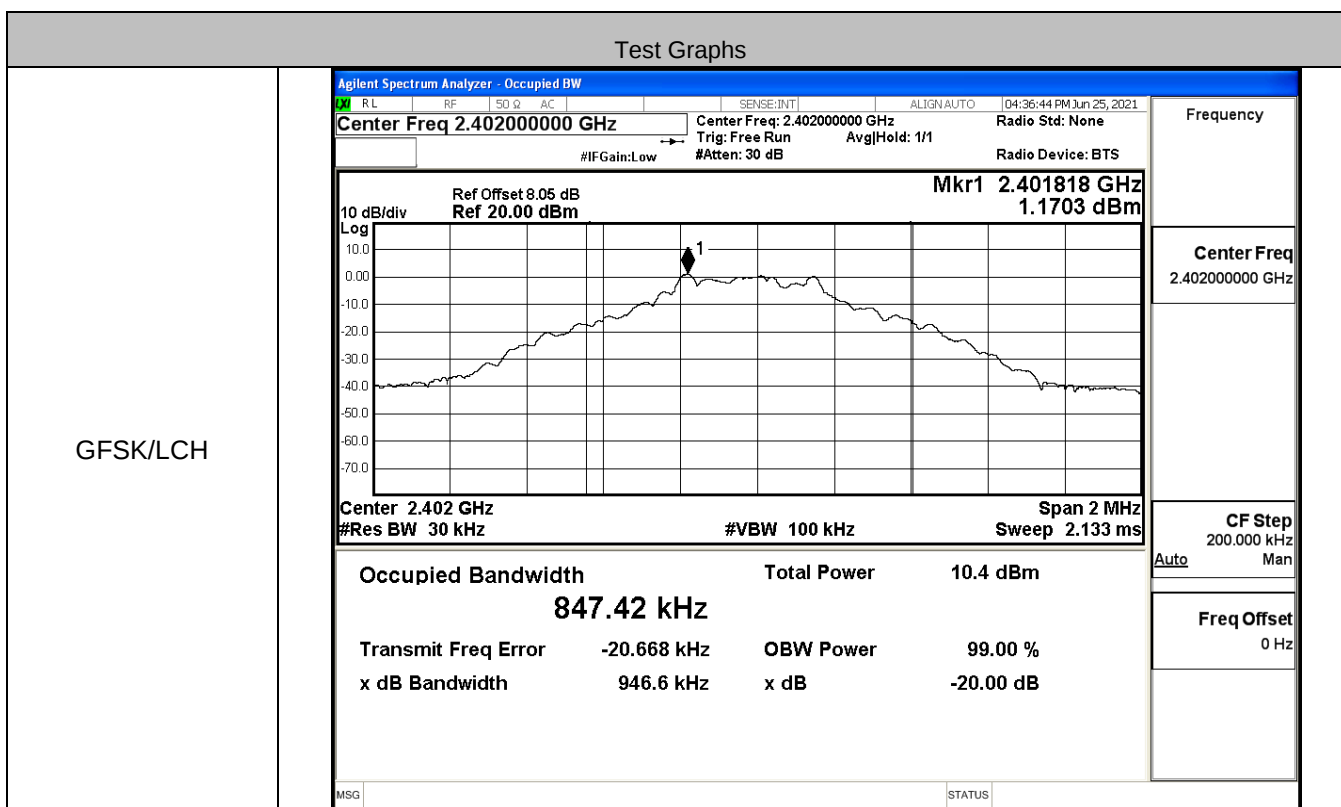


8DPSK/HCH

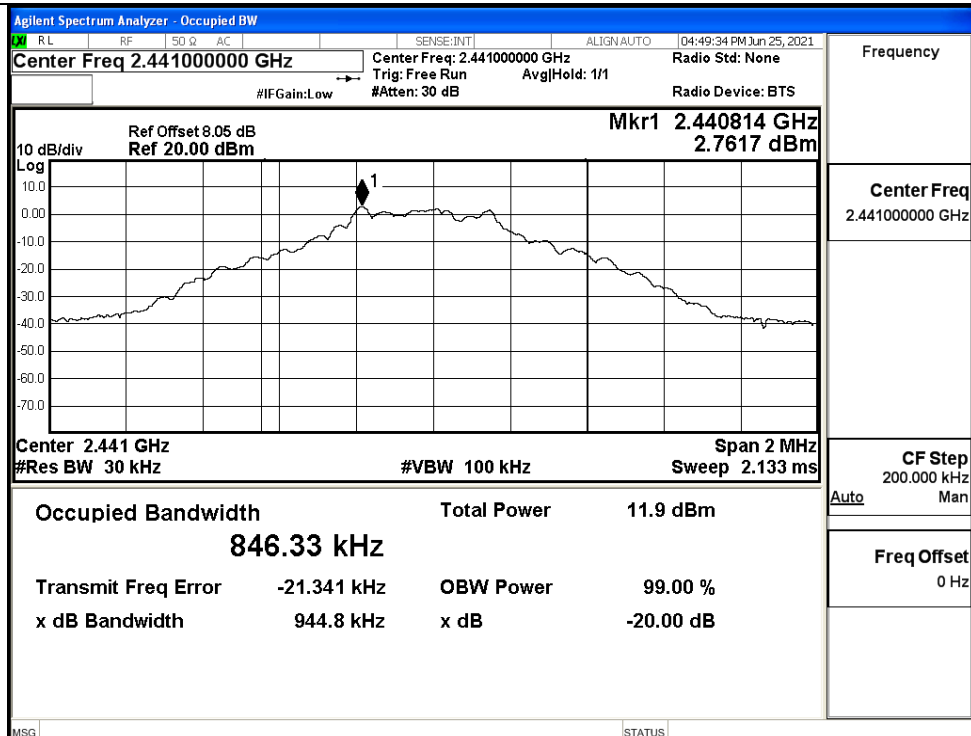


A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9466	Not Specified	PASS
	MCH	0.9448	Not Specified	PASS
	HCH	0.9451	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.288	Not Specified	PASS
	MCH	1.289	Not Specified	PASS
	HCH	1.291	Not Specified	PASS
8DPSK	LCH	1.297	Not Specified	PASS
	MCH	1.297	Not Specified	PASS
	HCH	1.301	Not Specified	PASS



GFSK/MCH



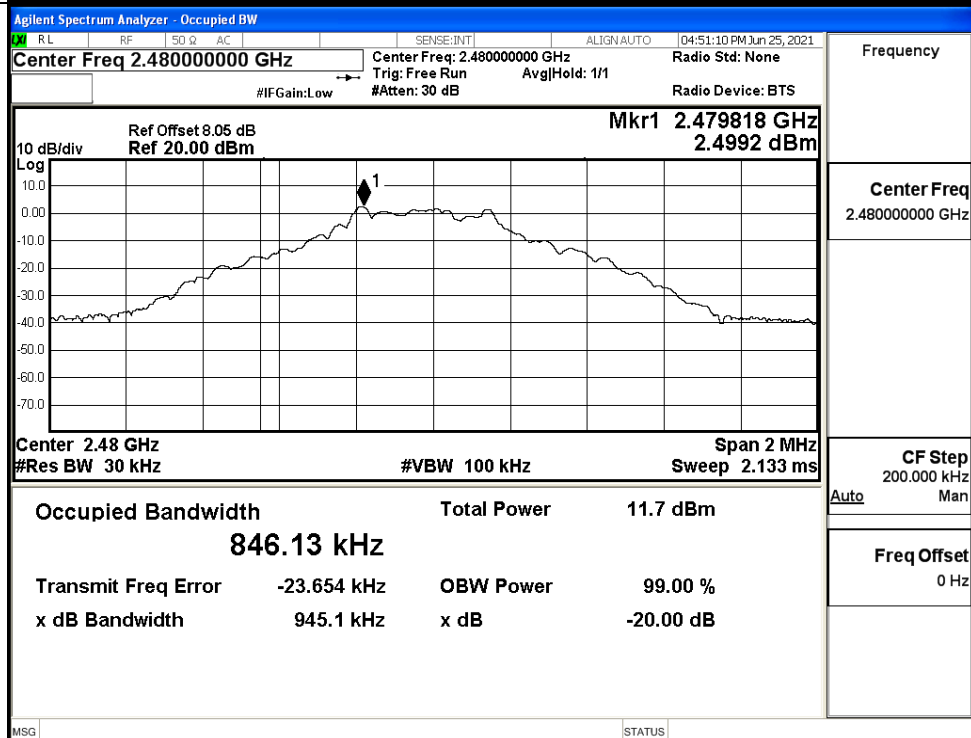
Frequency

Center Freq
2.441000000 GHzCF Step
200.000 kHz
Man

Auto

Freq Offset
0 Hz

GFSK/HCH

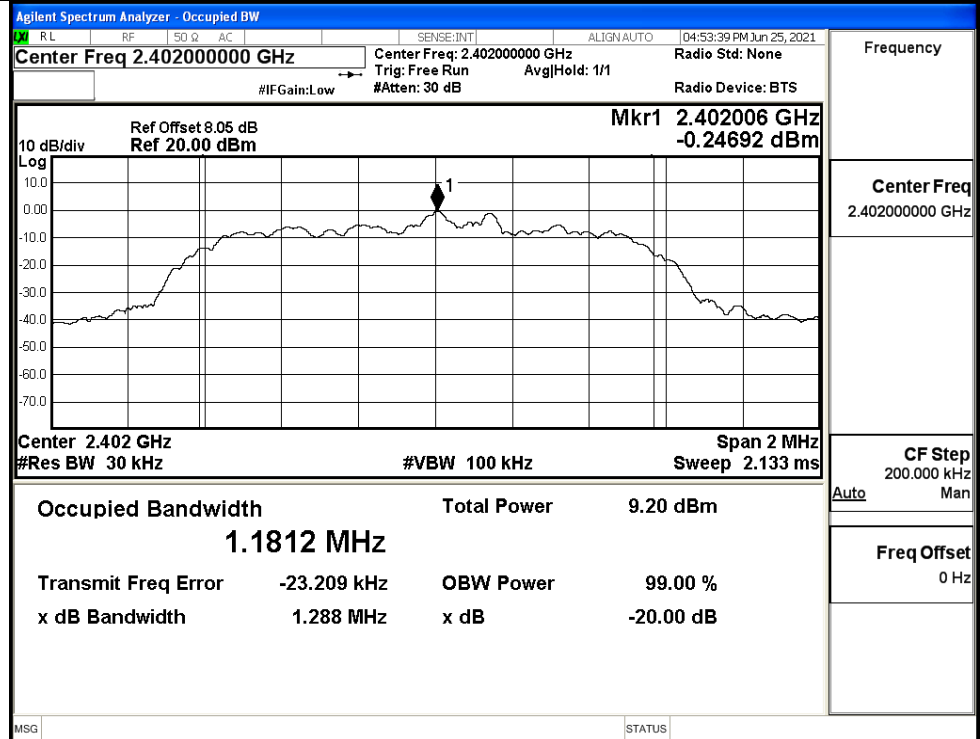
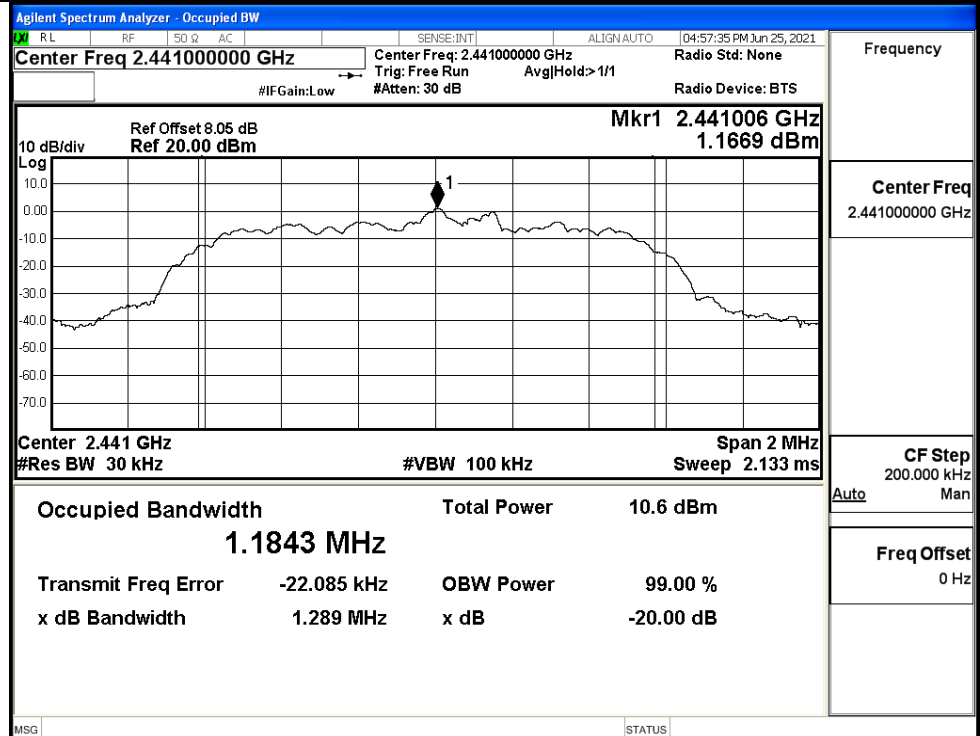


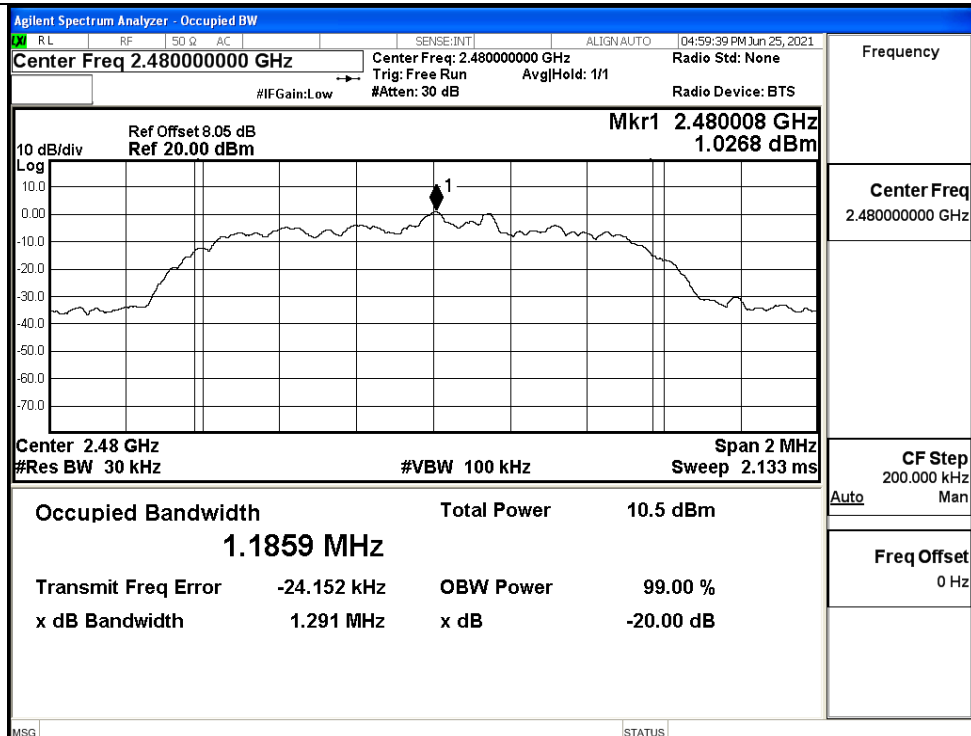
Frequency

Center Freq
2.480000000 GHzCF Step
200.000 kHz
Man

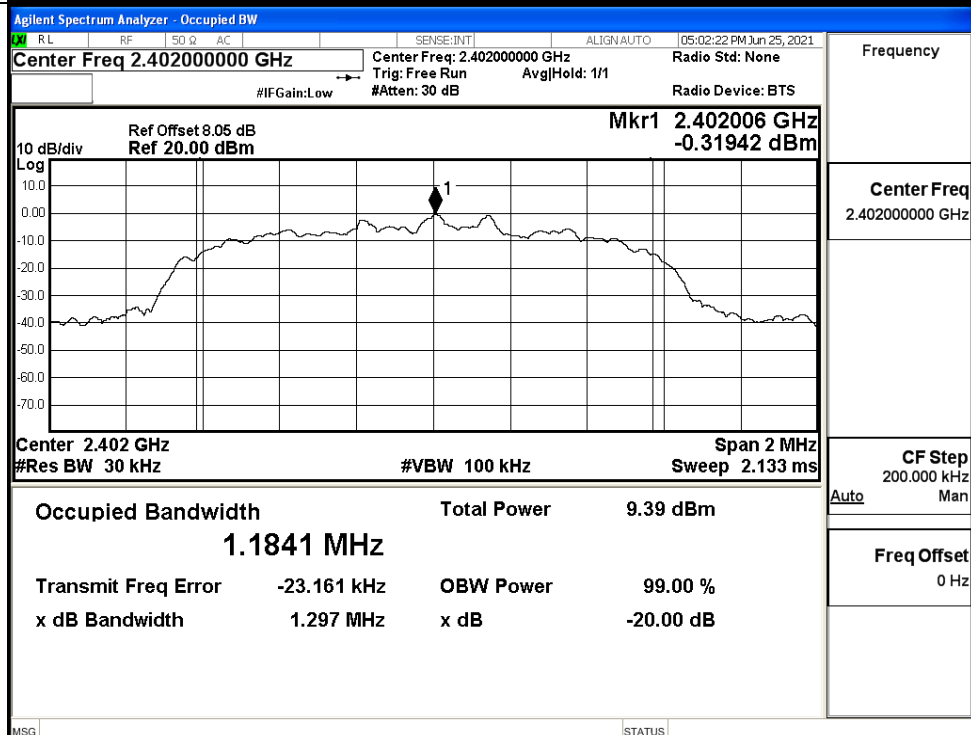
Auto

Freq Offset
0 Hz

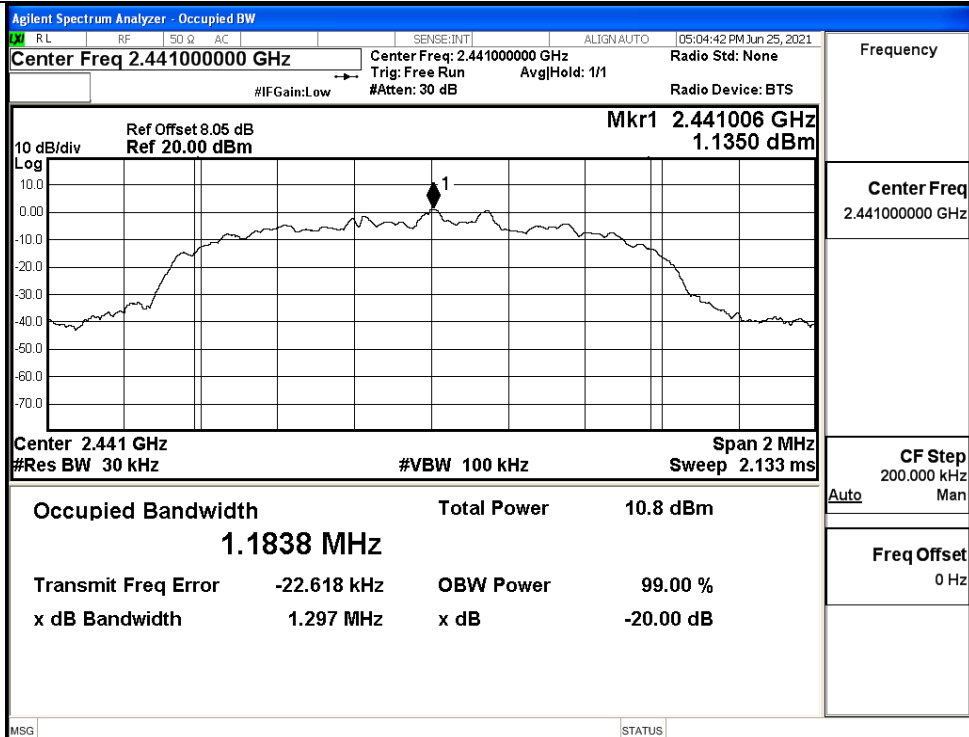
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

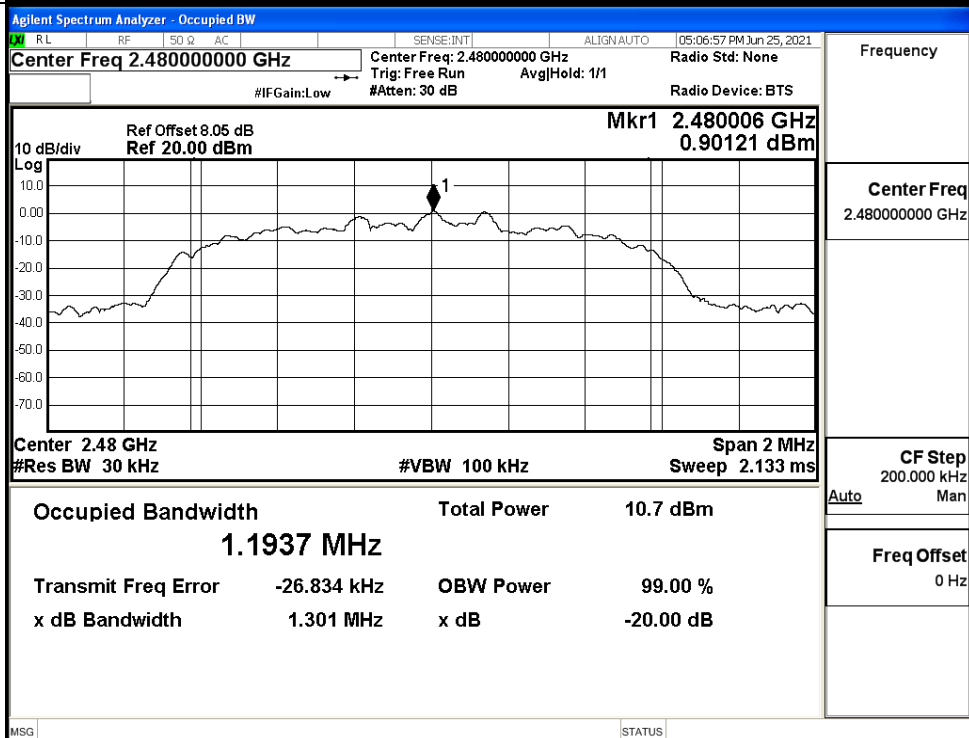
8DPSK/LCH



8DPSK/MCH



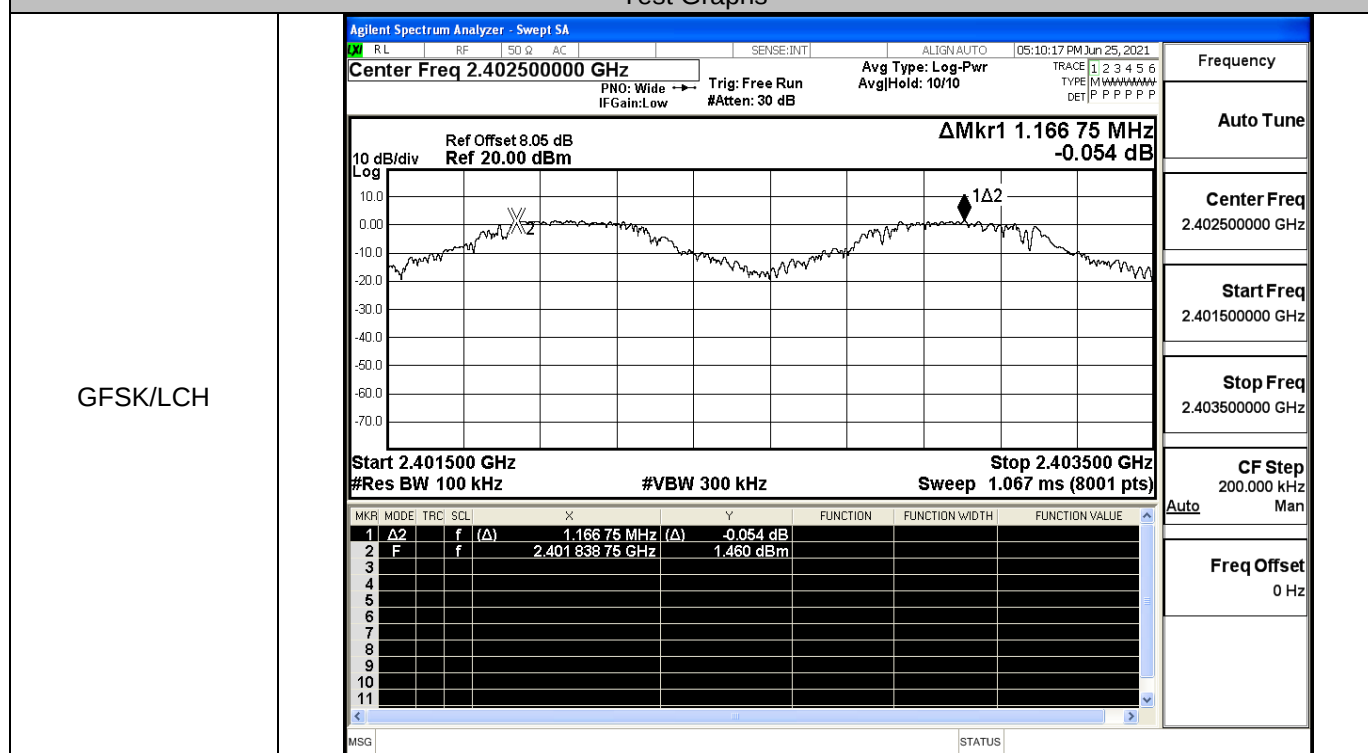
8DPSK/HCH



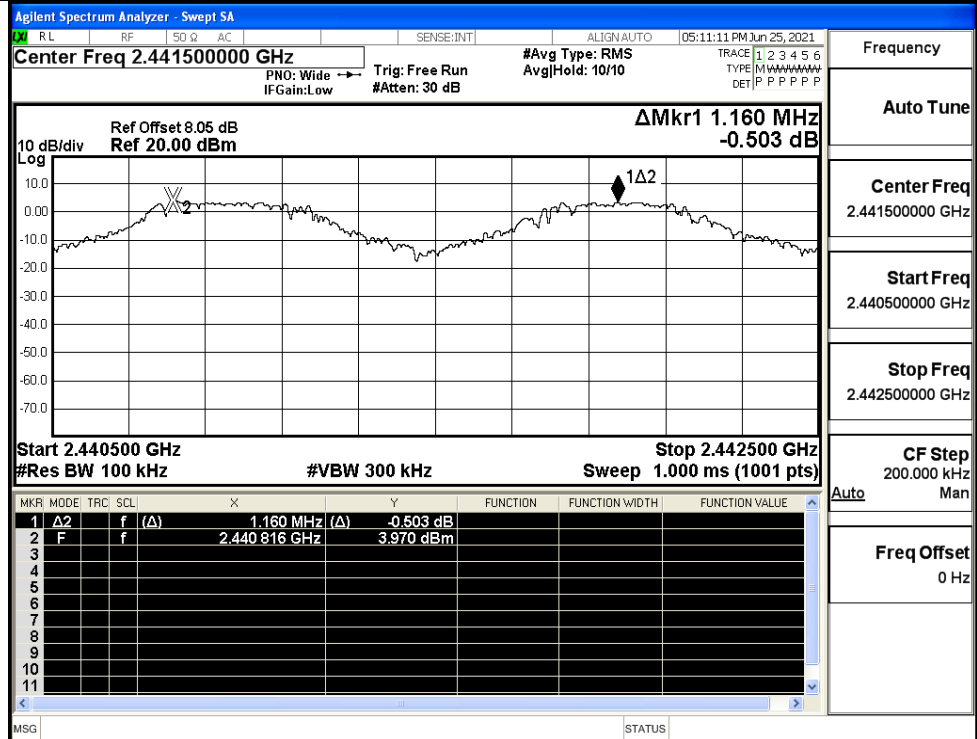
A.4 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.167	0.631	PASS
	MCH	1.160	0.631	PASS
	HCH	1.138	0.631	PASS
$\pi/4$ DQPSK	LCH	1.120	0.861	PASS
	MCH	0.968	0.861	PASS
	HCH	0.972	0.861	PASS
8DPSK	LCH	0.946	0.867	PASS
	MCH	1.238	0.867	PASS
	HCH	0.998	0.867	PASS

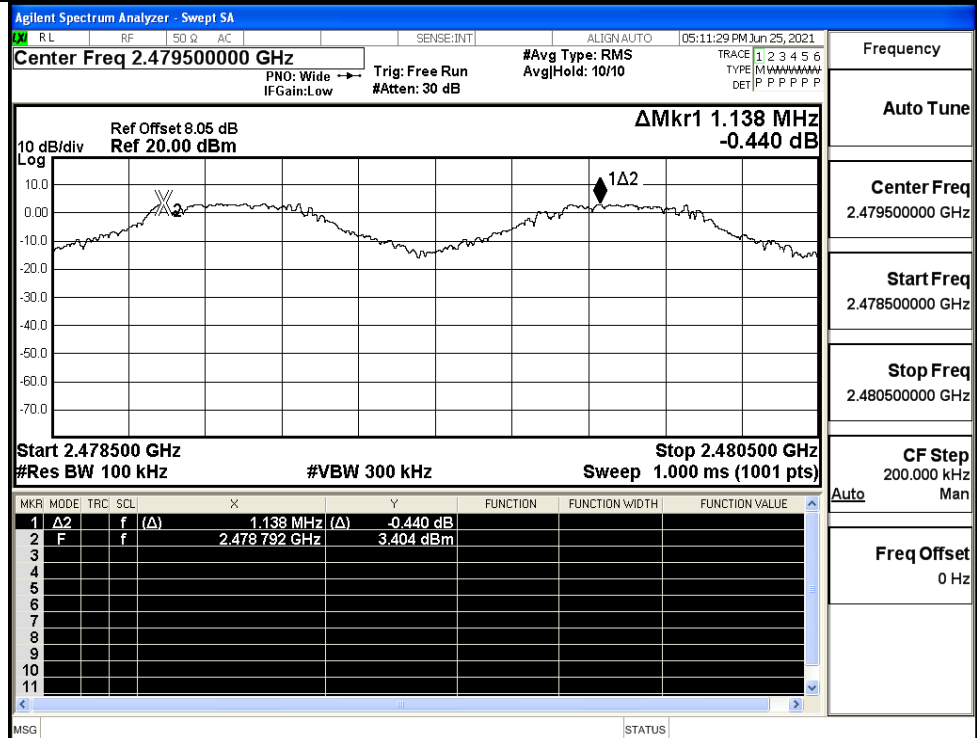
Test Graphs

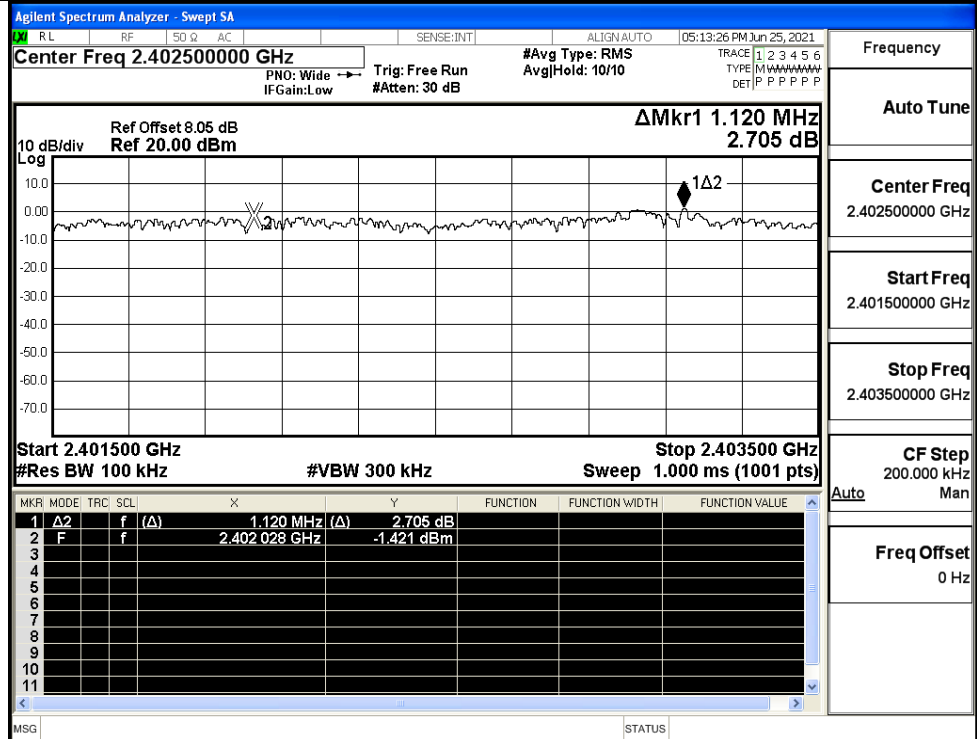
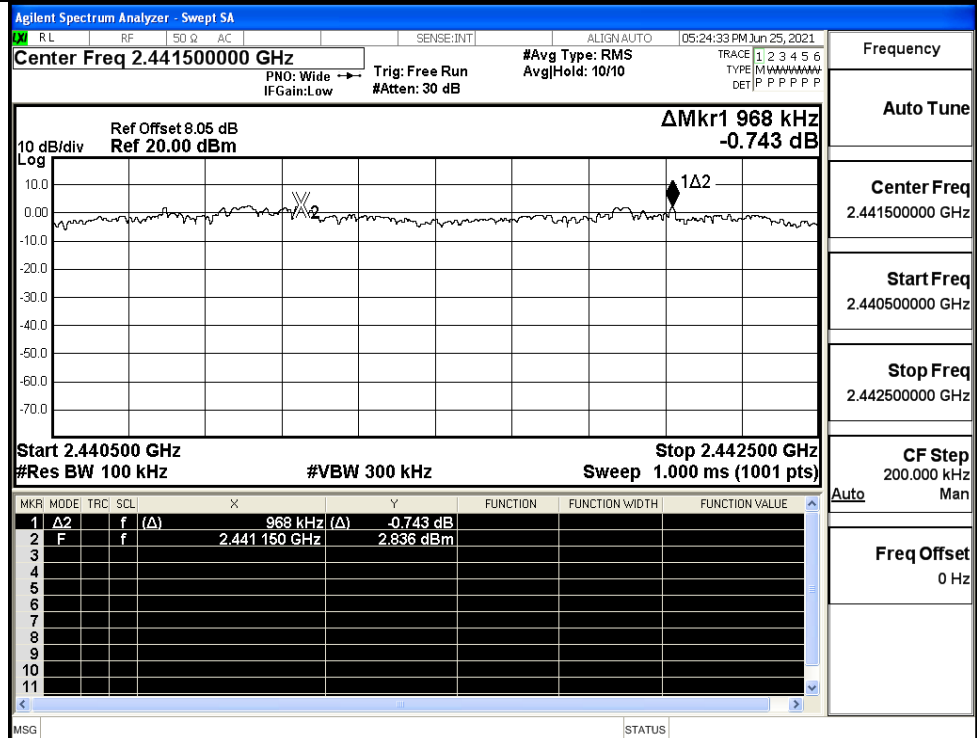


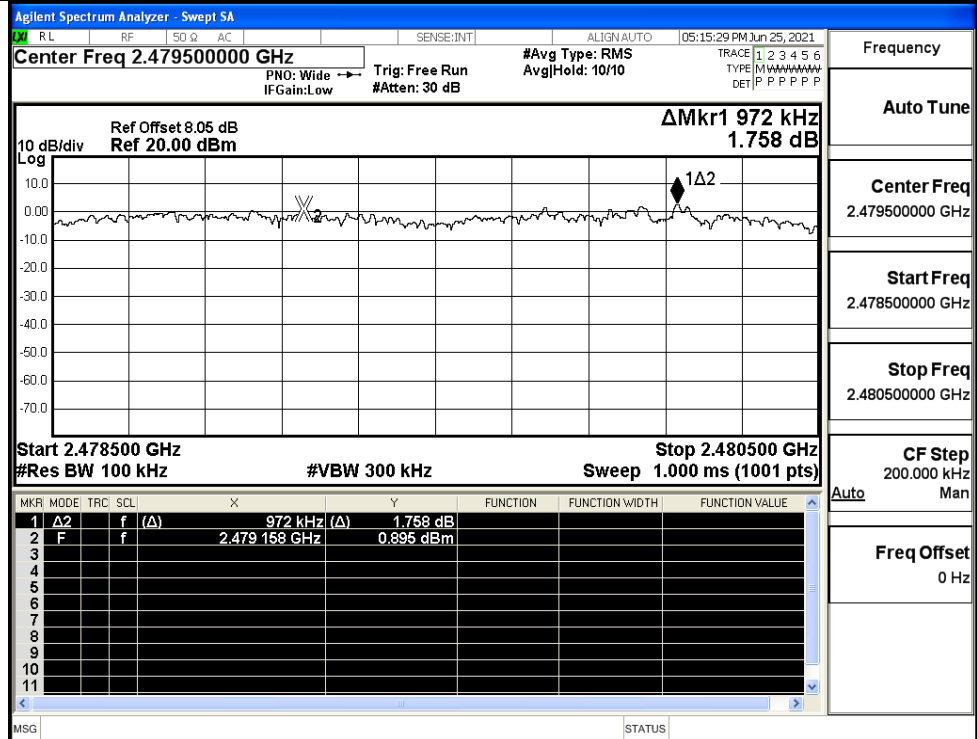
GFSK/MCH



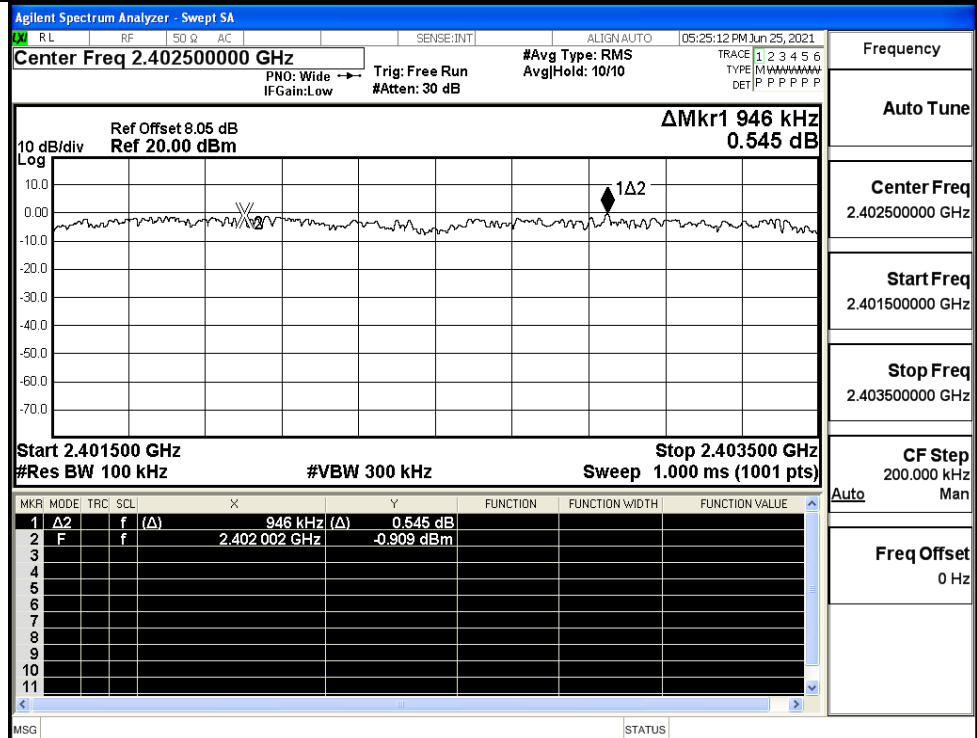
GFSK/HCH



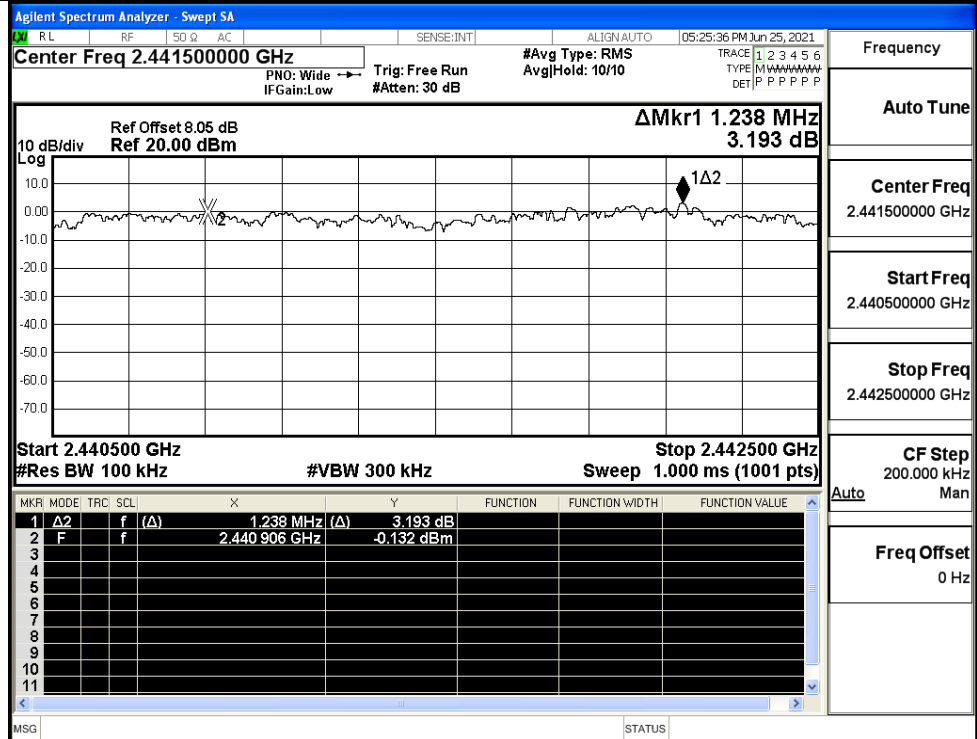
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

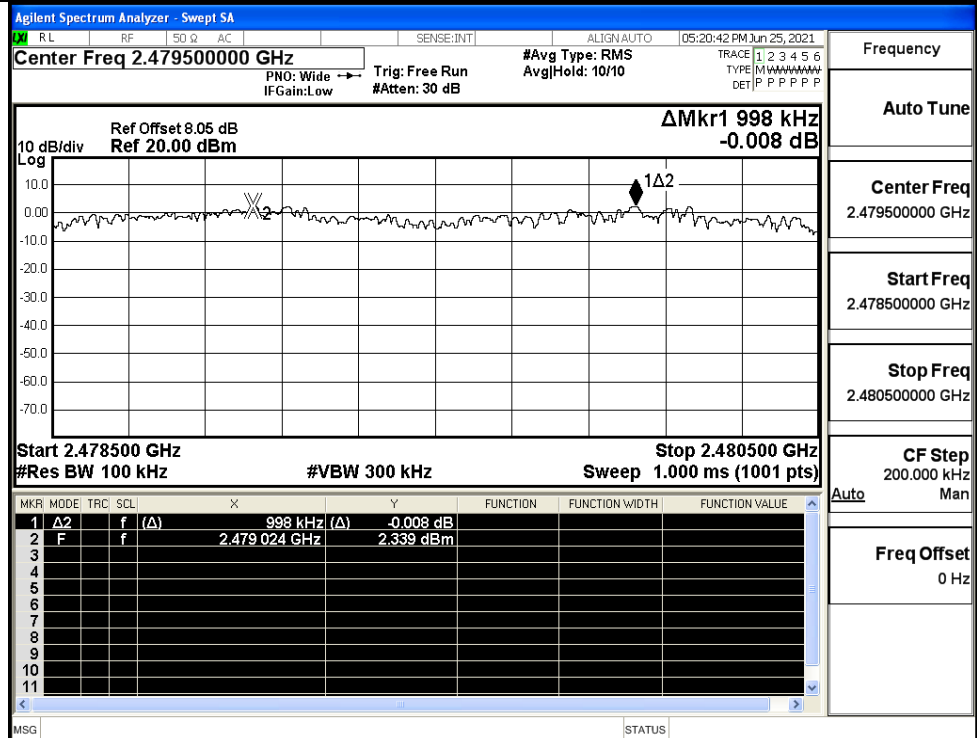
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

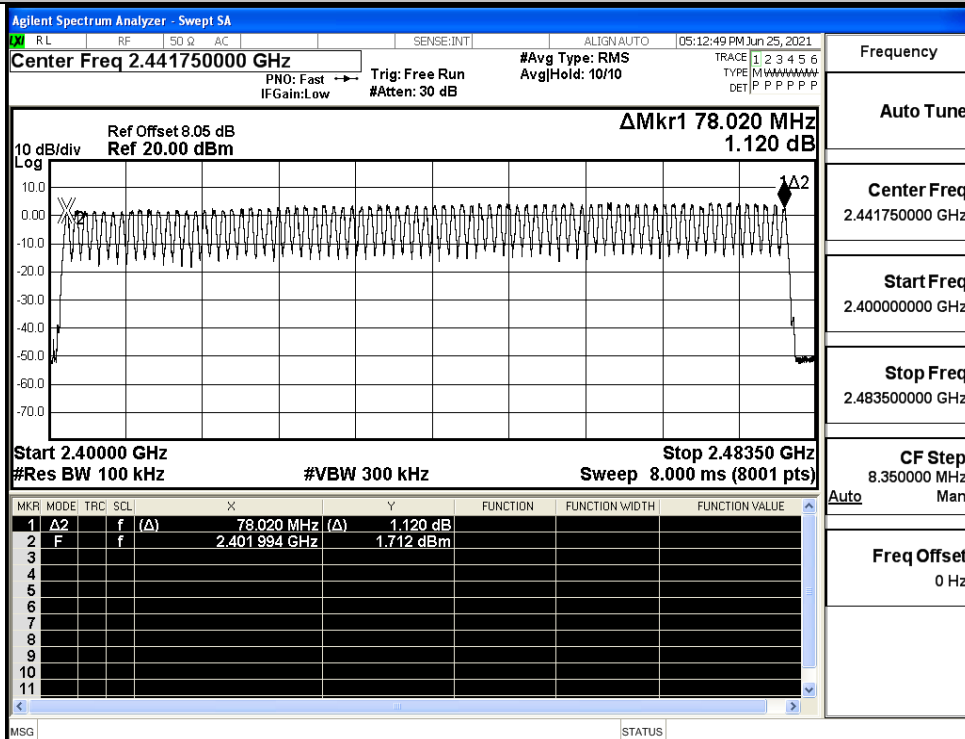
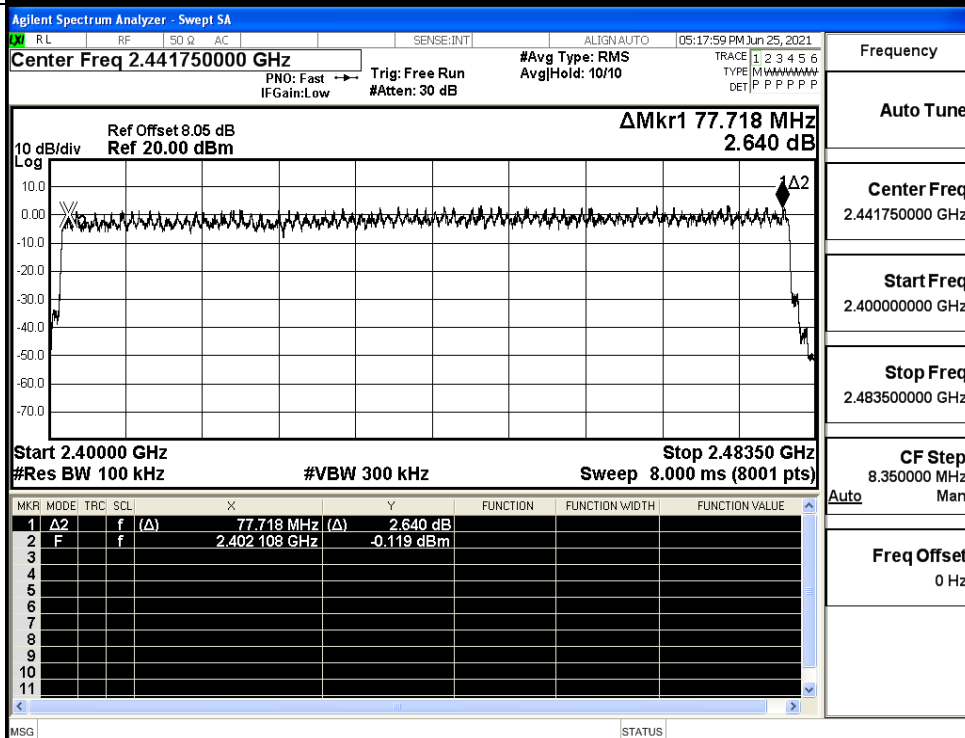


A.5 Hopping Channel Number

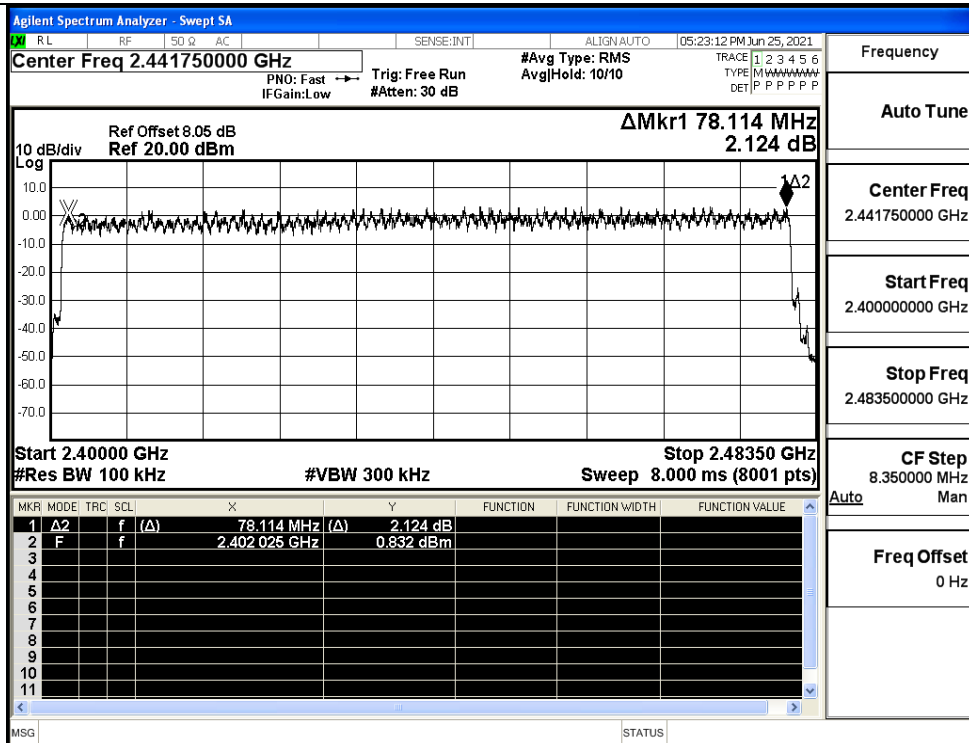
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	≥ 15	PASS
$\pi/4$ DQPSK	Hop	79	≥ 15	PASS
8DPSK	Hop	79	≥ 15	PASS

Test Graphs

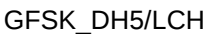
GFSK/Hop

 $\pi/4$ DQPSK/Hop

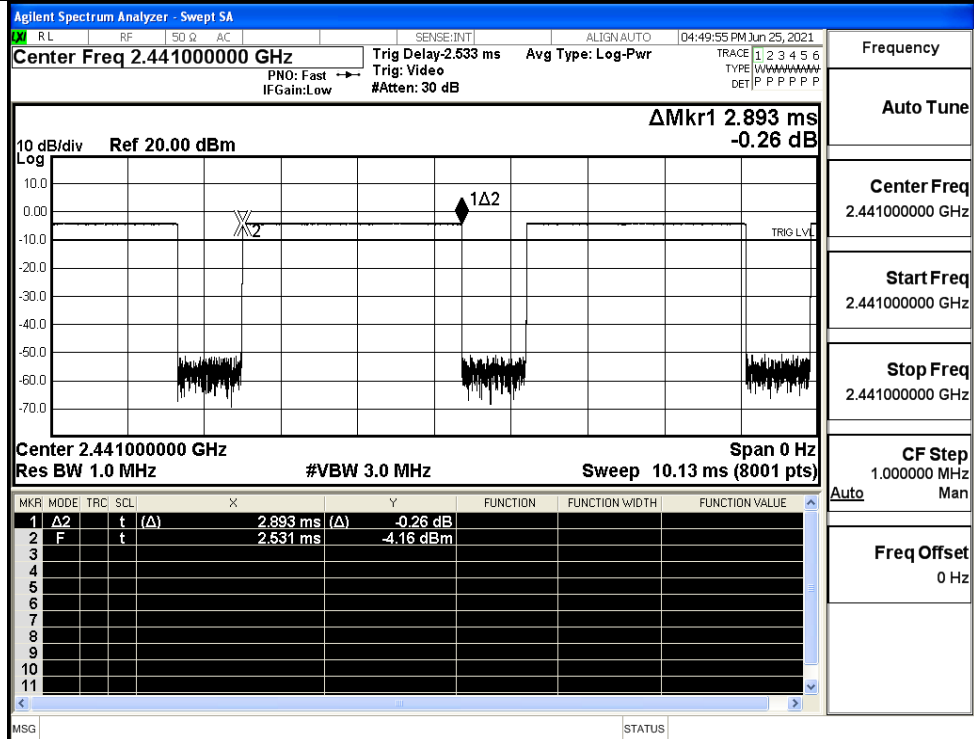
8DPSK/Hop



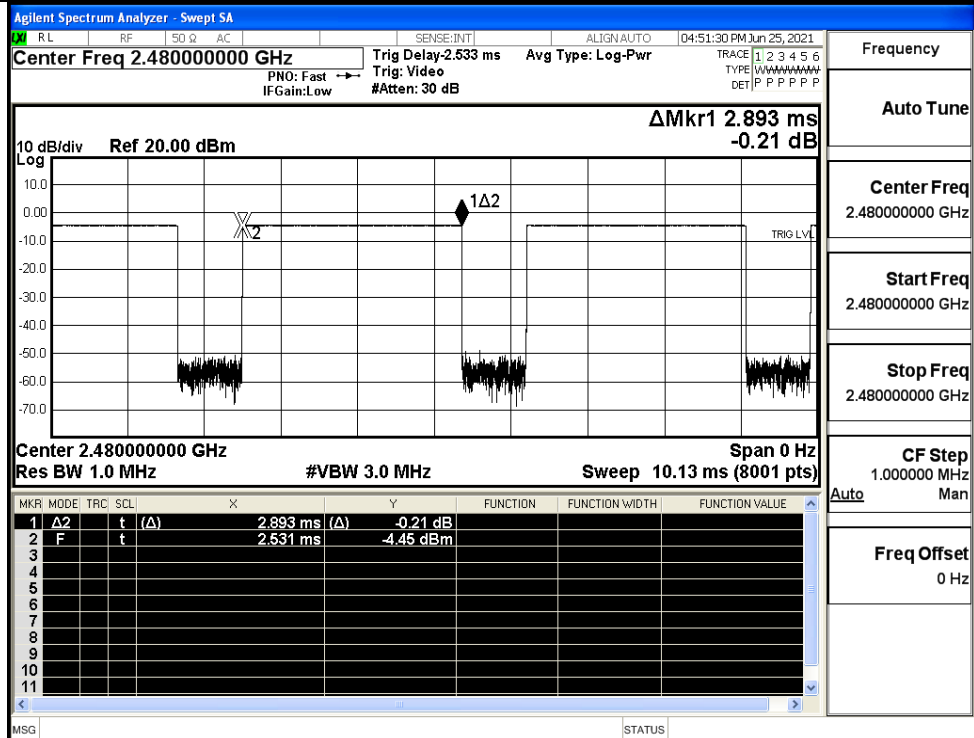
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.89	106.7	0.308	0.4	PASS
	DH5	MCH	2.89	106.7	0.308	0.4	PASS
	DH5	HCH	2.89	106.7	0.308	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.89	106.7	0.307	0.4	PASS
	2DH5	MCH	2.89	106.7	0.307	0.4	PASS
	2DH5	HCH	2.89	106.7	0.307	0.4	PASS
8DPSK	3DH5	LCH	2.89	106.7	0.307	0.4	PASS
	3DH5	MCH	2.89	106.7	0.307	0.4	PASS
	3DH5	HCH	2.89	106.7	0.307	0.4	PASS



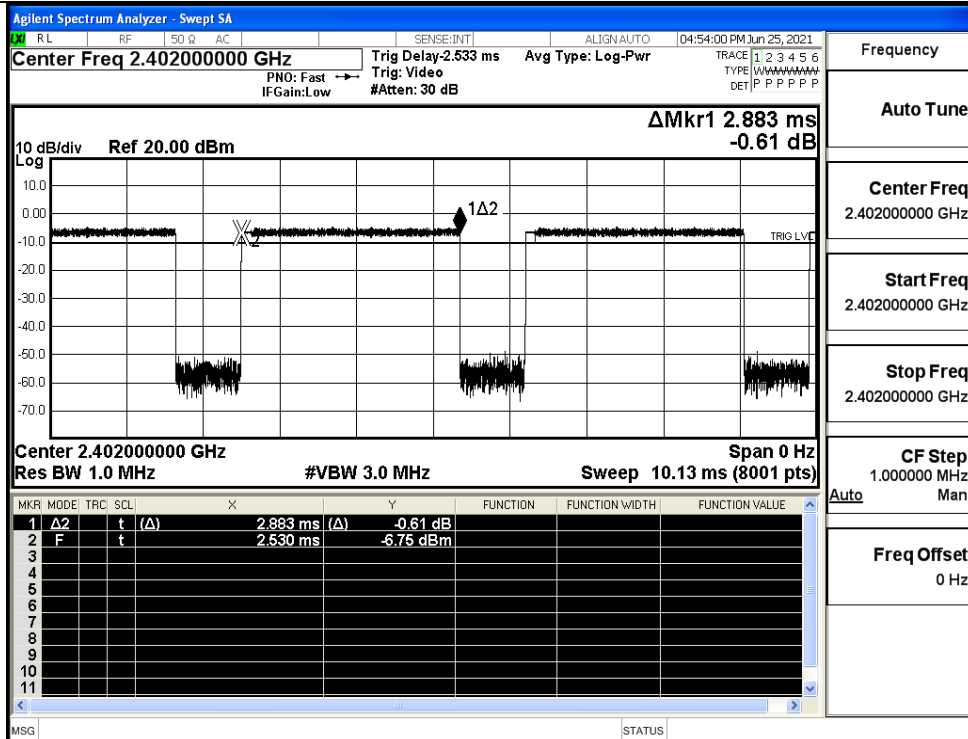
GFSK_DH5/MCH



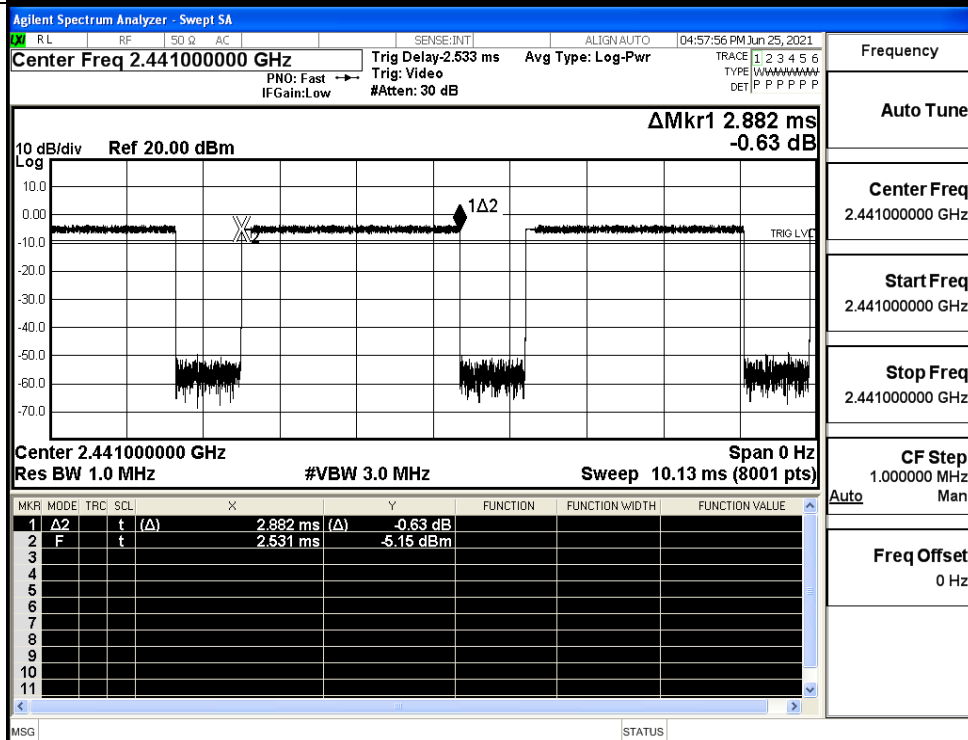
GFSK_DH5/HCH



$\pi/4$ DQPSK
_2DH5/LCH



$\pi/4$ DQPSK
_2DH5/MCH



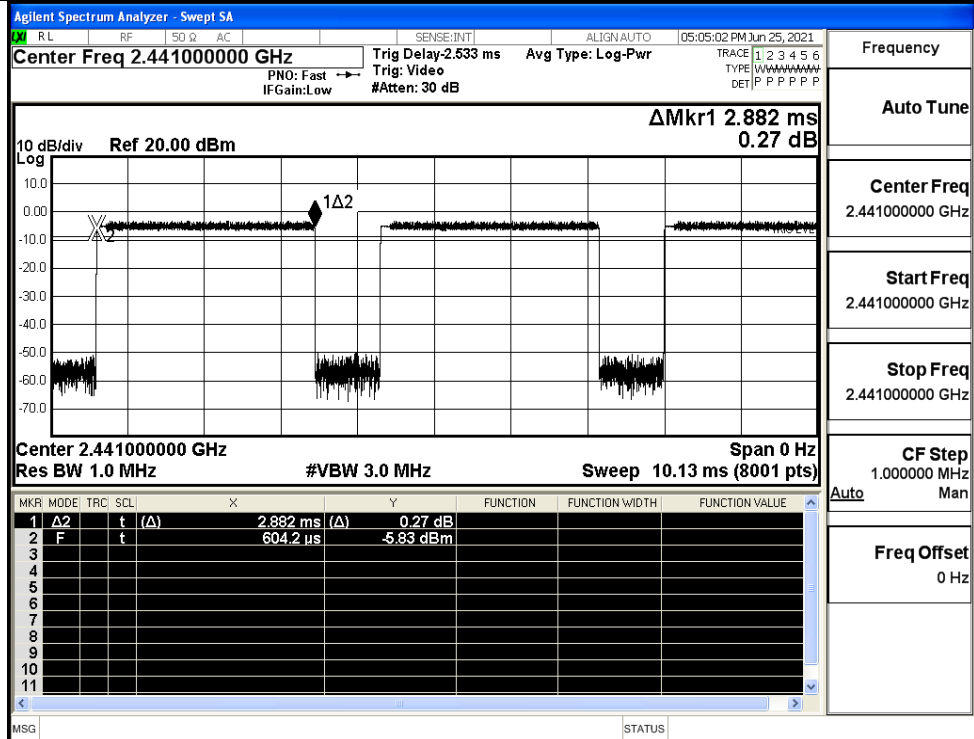
[illegible]

Frequency	
Auto Tune	
Center Freq	2.480000000 GHz
Start Freq	2.480000000 GHz
Stop Freq	2.480000000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

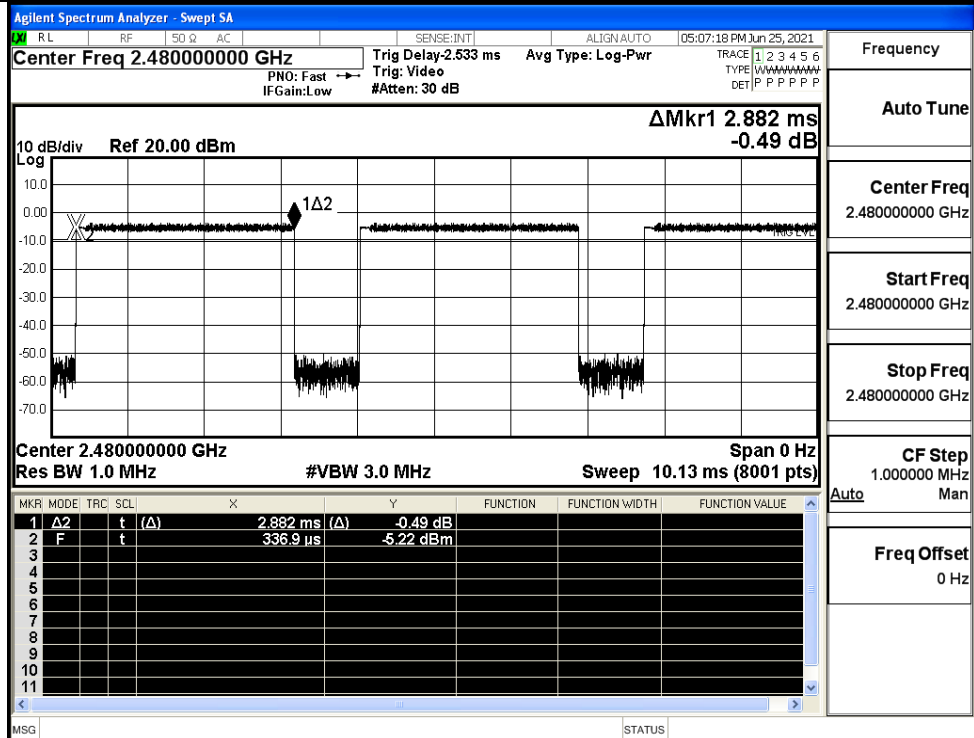
[illegible]

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

8DPSK_3DH5/MCH



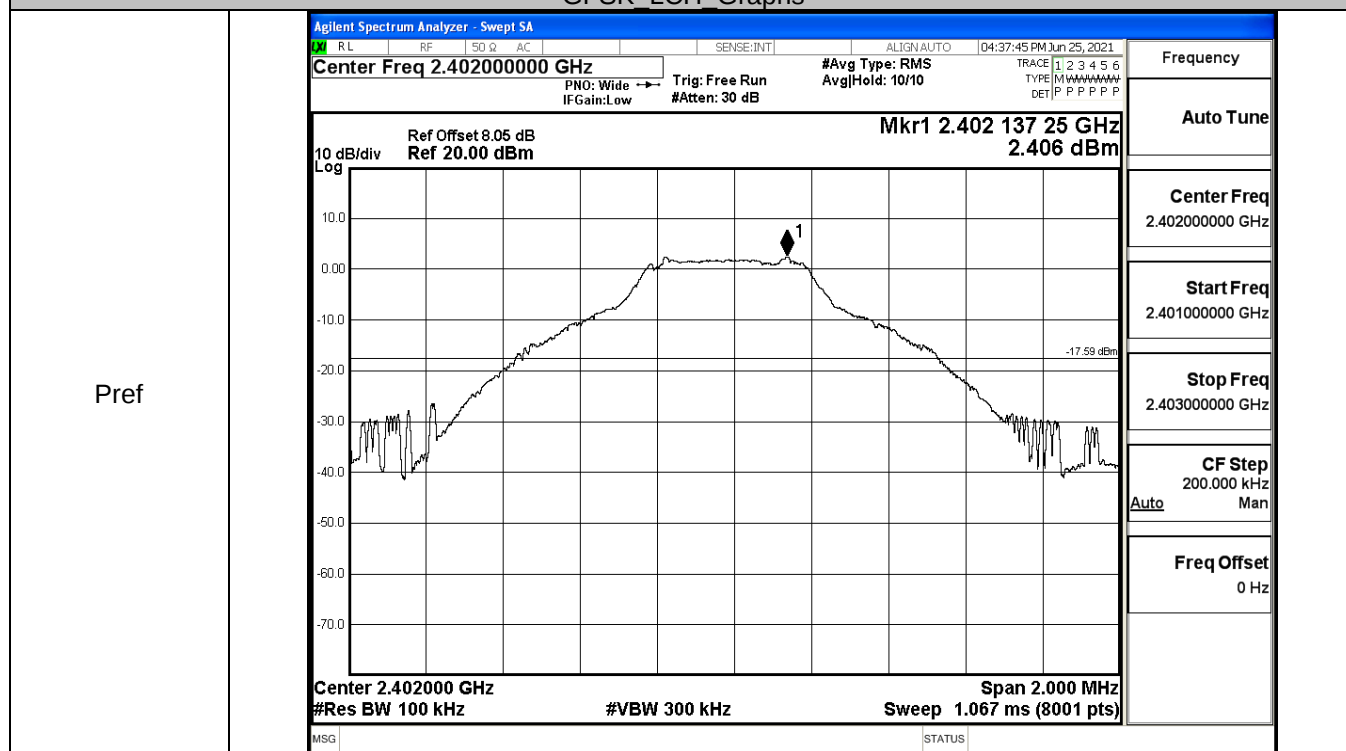
8DPSK_3DH5/HCH



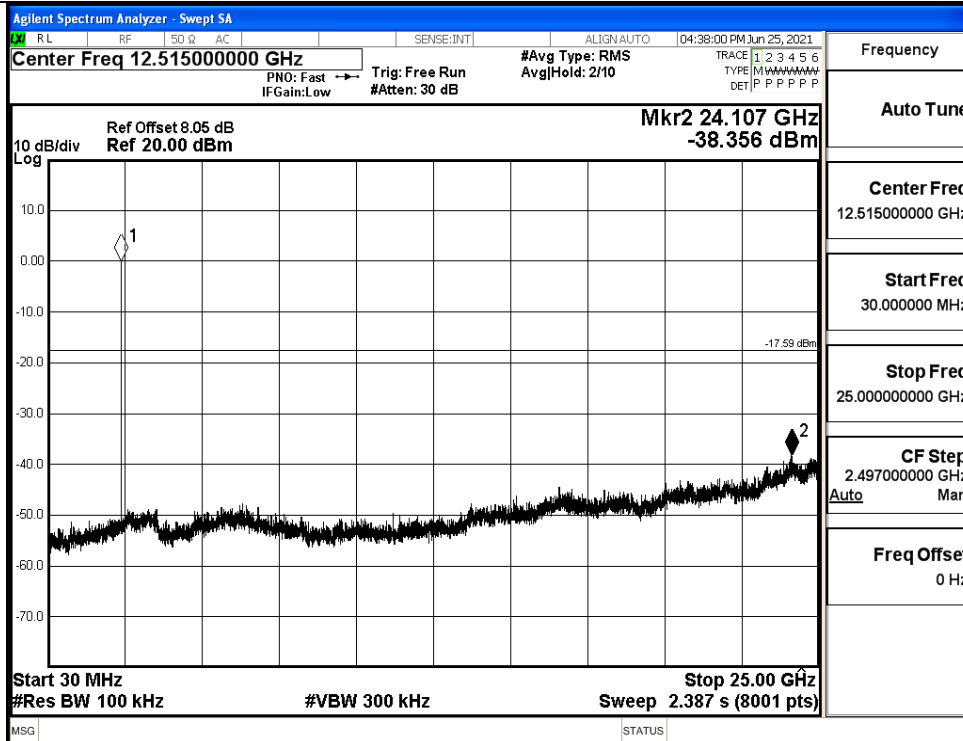
A.7 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2.406	-38.480	-17.594	PASS
	MCH	4.026	-37.869	-15.974	PASS
	HCH	3.714	-37.160	-16.286	PASS
$\pi/4$ DQPSK	LCH	1.549	-37.676	-18.451	PASS
	MCH	2.671	-38.475	-17.329	PASS
	HCH	2.774	-37.861	-17.226	PASS
8DPSK	LCH	1.653	-37.607	-18.347	PASS
	MCH	3.088	-38.081	-16.912	PASS
	HCH	2.776	-37.951	-17.224	PASS

GFSK LCH Graphs

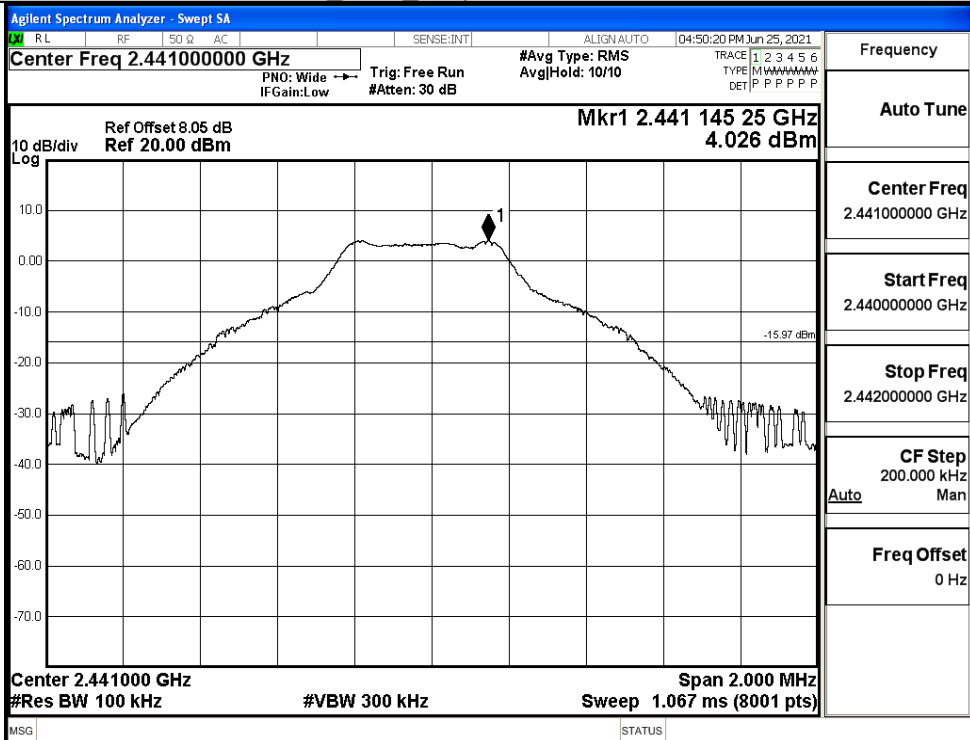


Puw

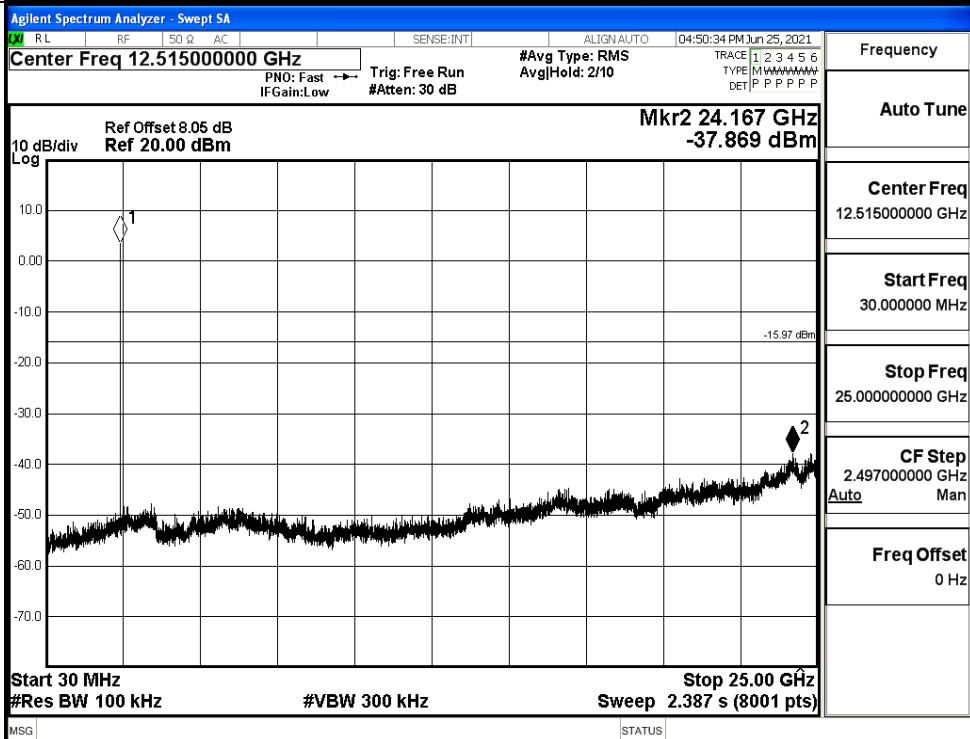


GFSK_MCH_Graphs

Pref

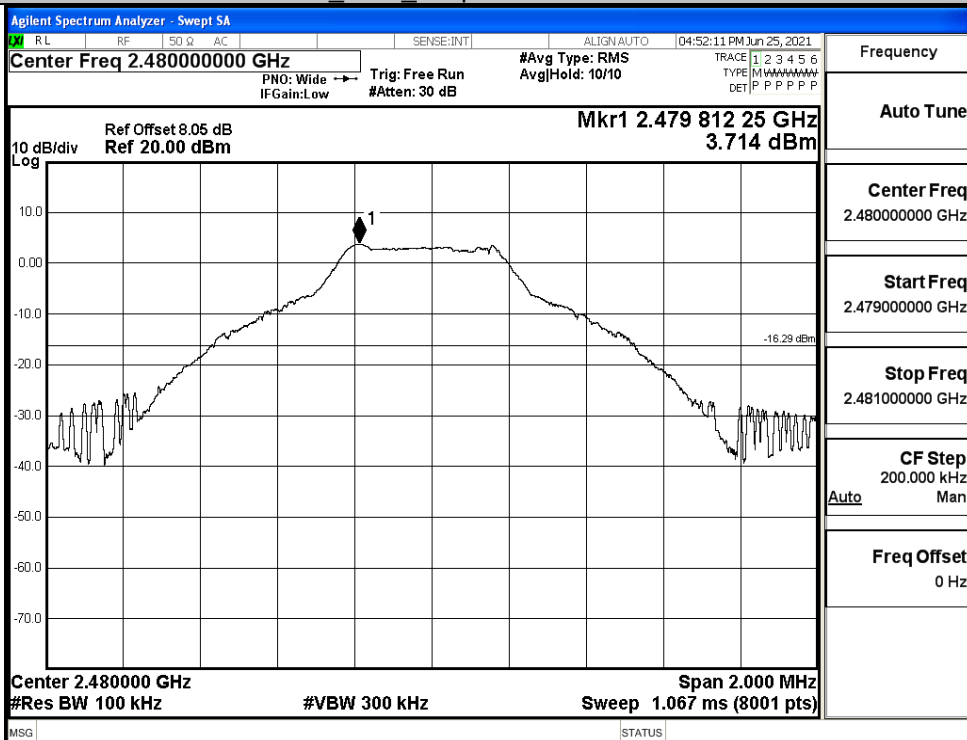


Puw

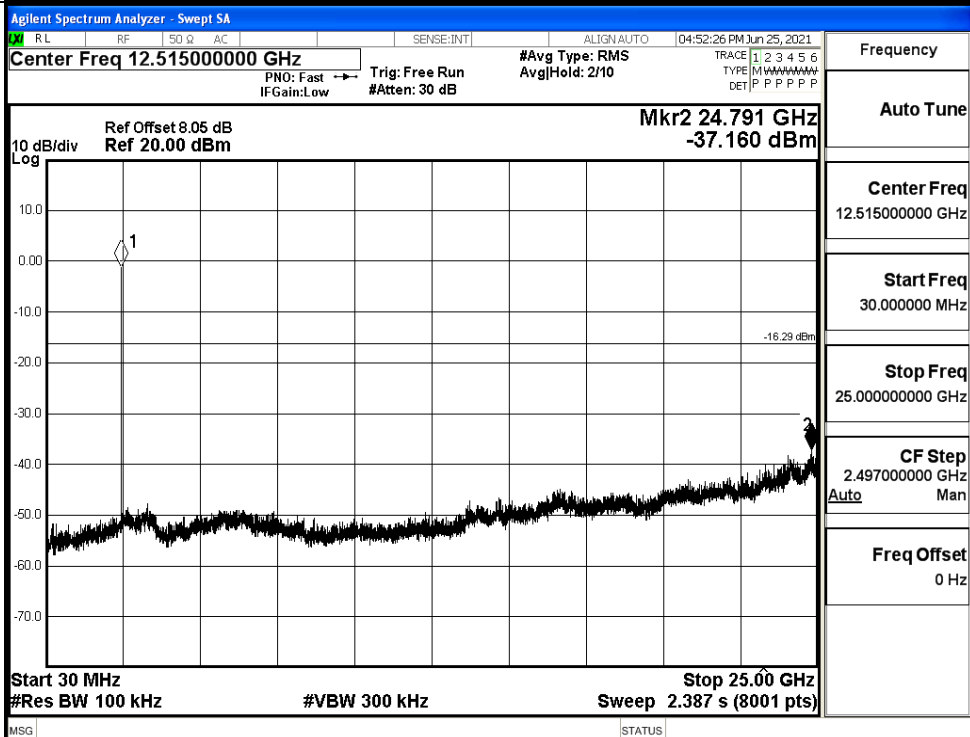


GFSK HCH_Graphs

Pref

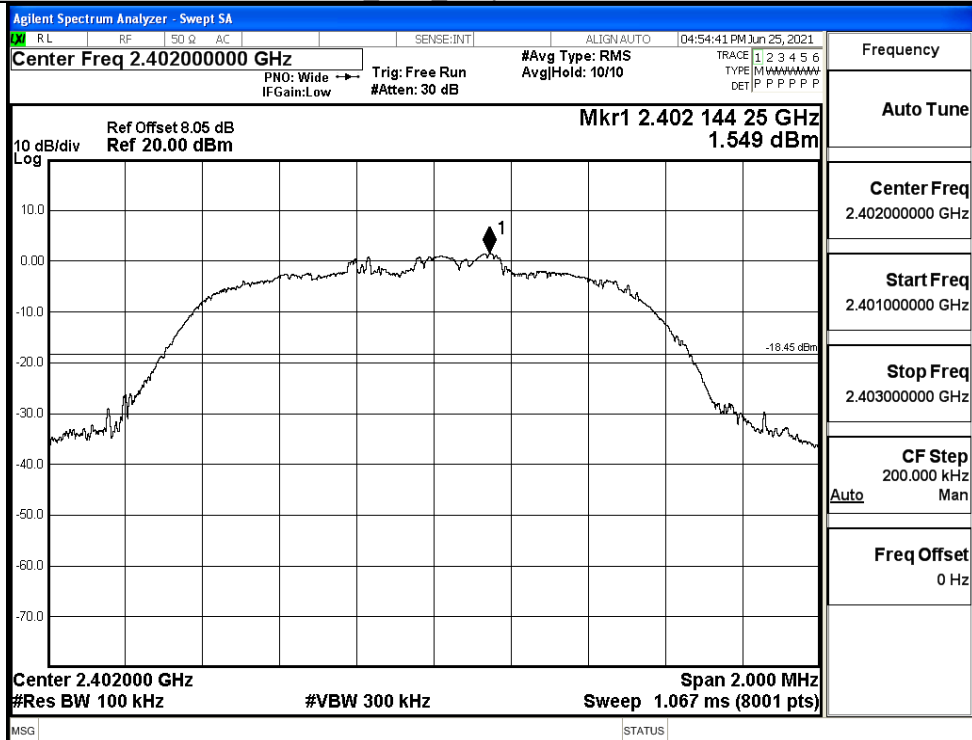


Puw

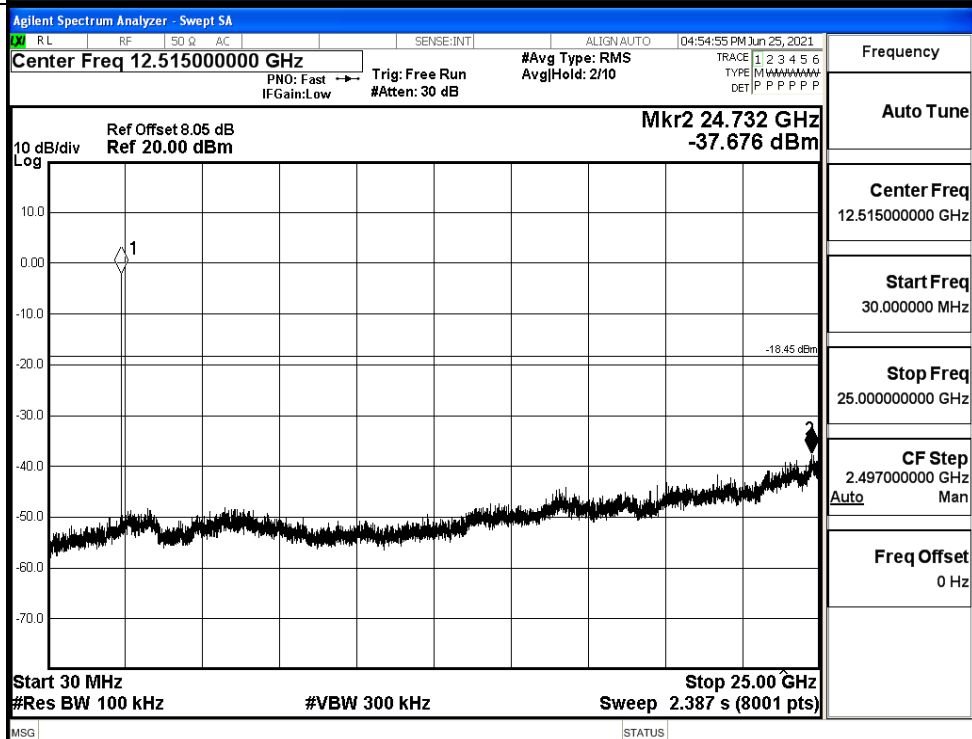


$\pi/4$ DQPSK_LCH_Graphs

Pref

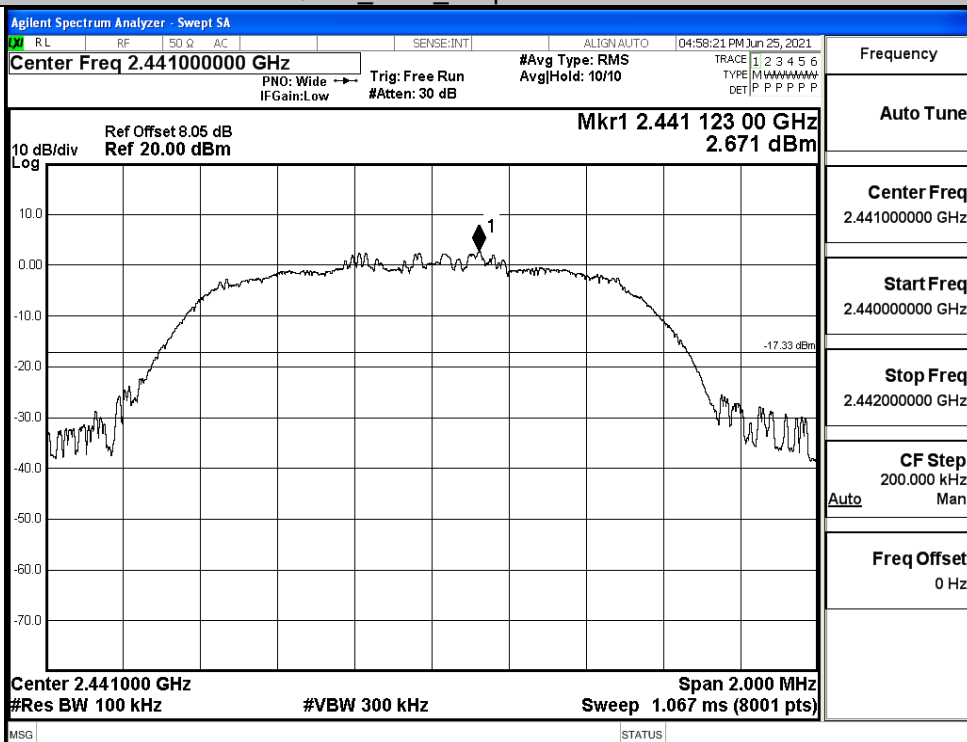


Puw

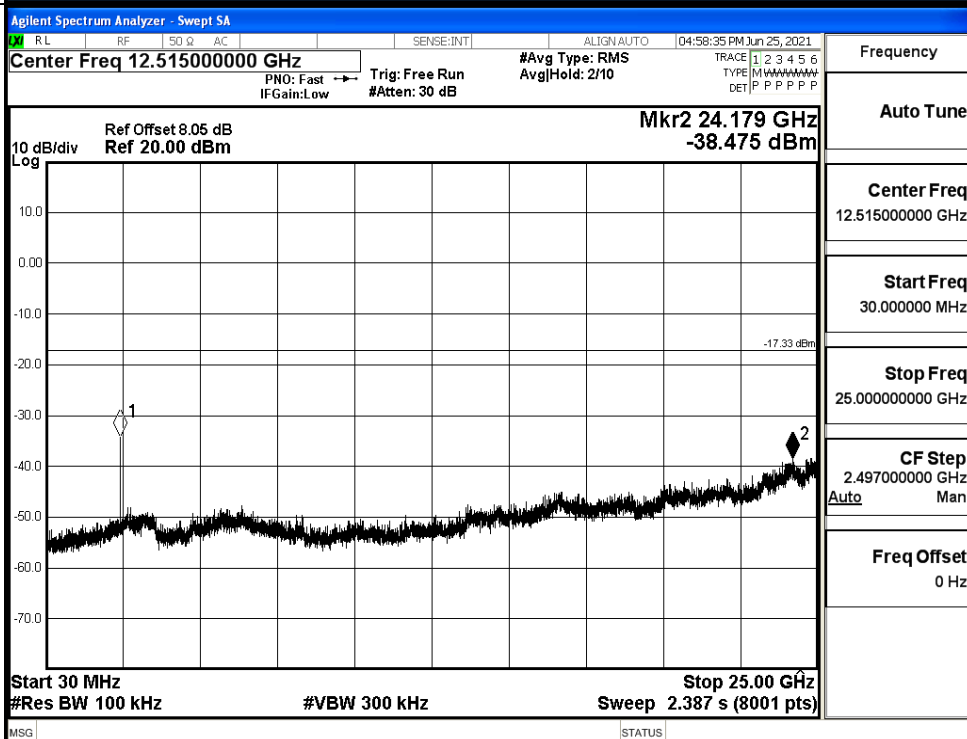


$\pi/4$ DQPSK_MCH_Graphs

Pref

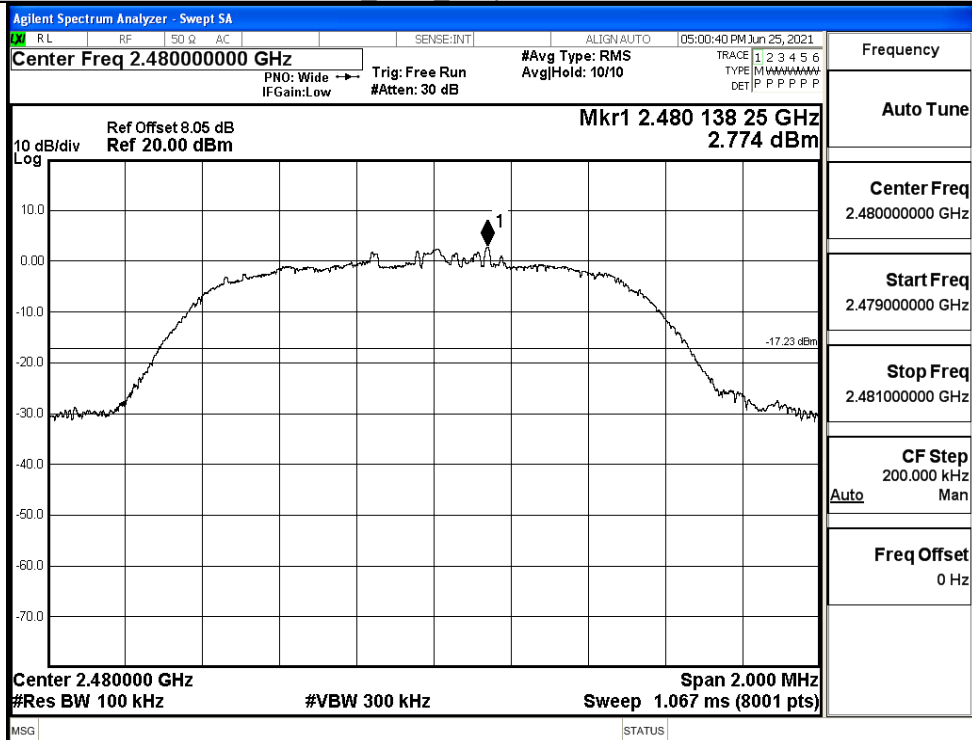


Puw

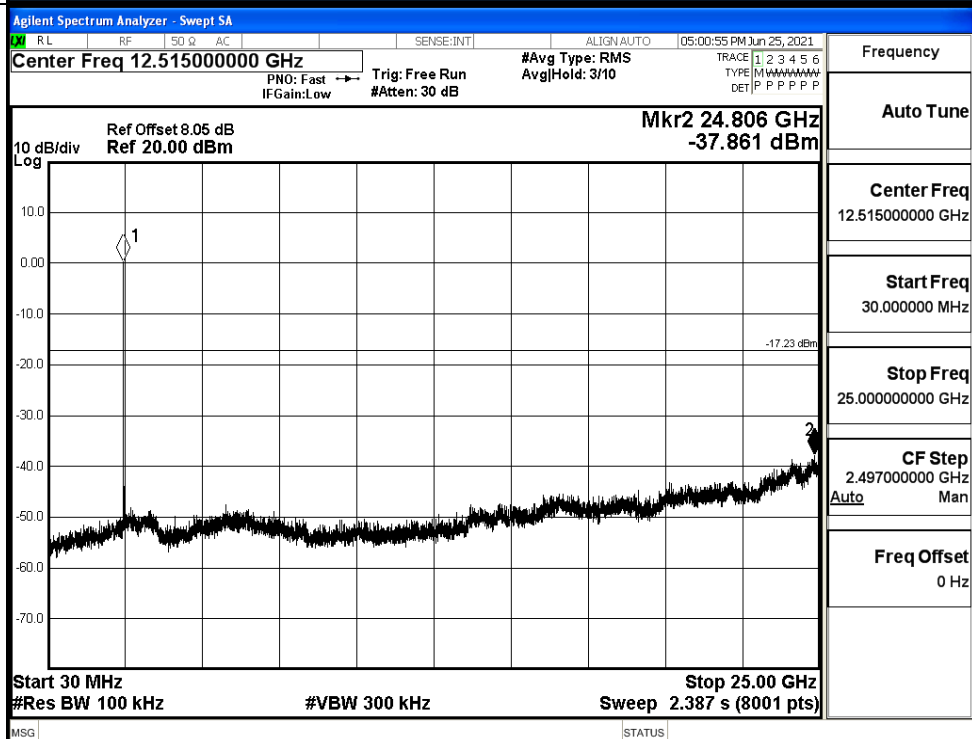


π /4DQPSK_HCH_Graphs

Pref

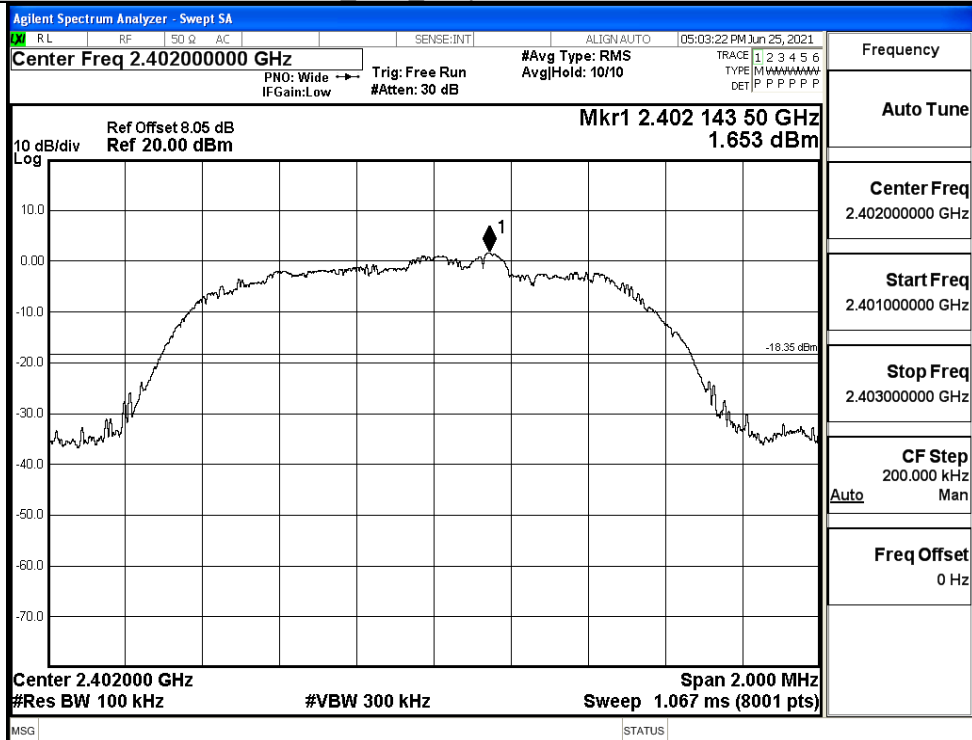


Puw

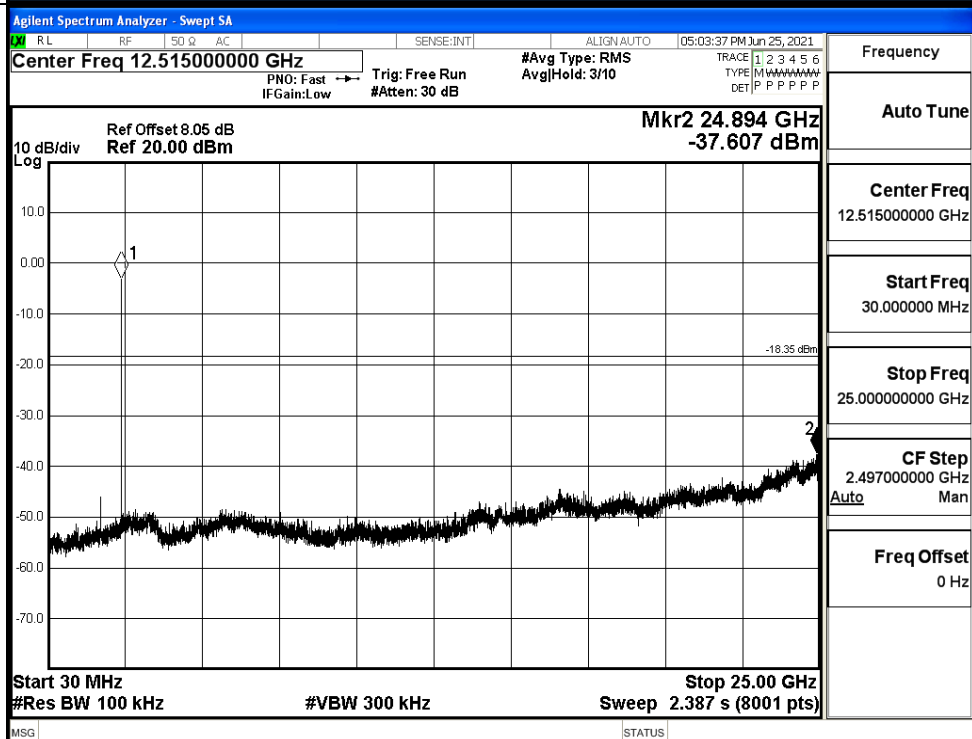


8DPSK_LCH_Graphs

Pref

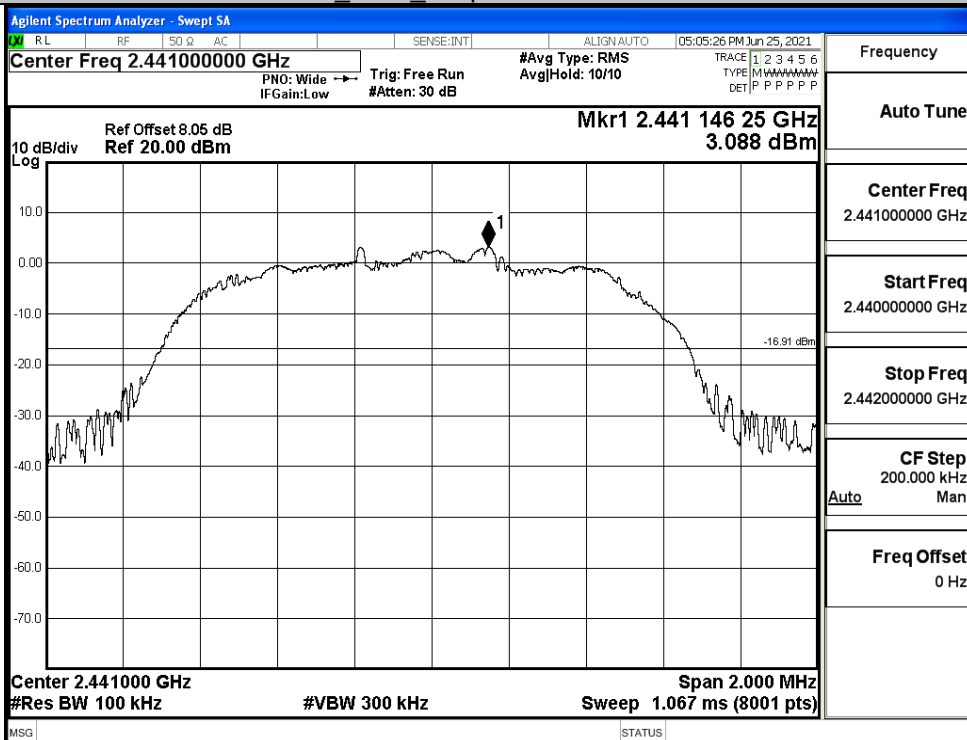


Puw

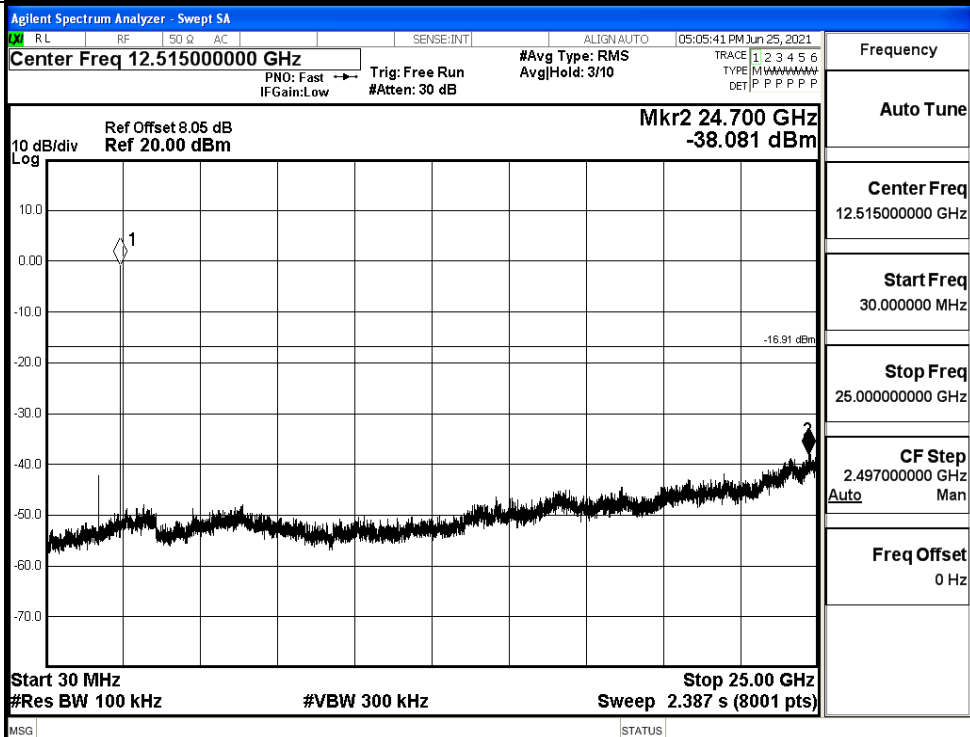


8DPSK_MCH_Graphs

Pref

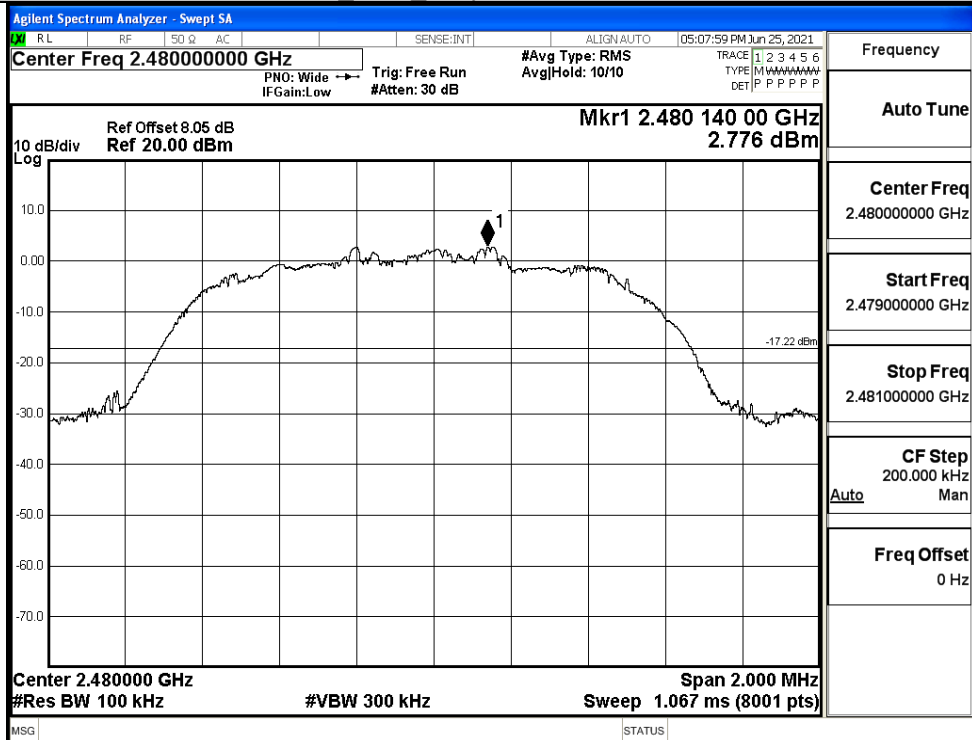


Puw

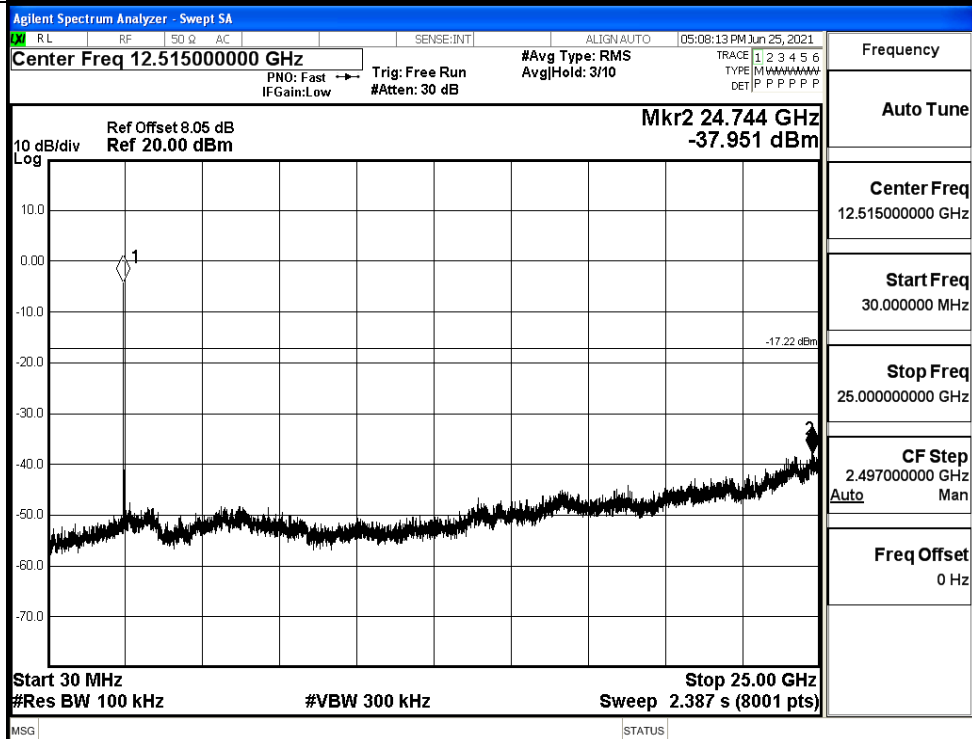


8DPSK_HCH_Graphs

Pref



Puw

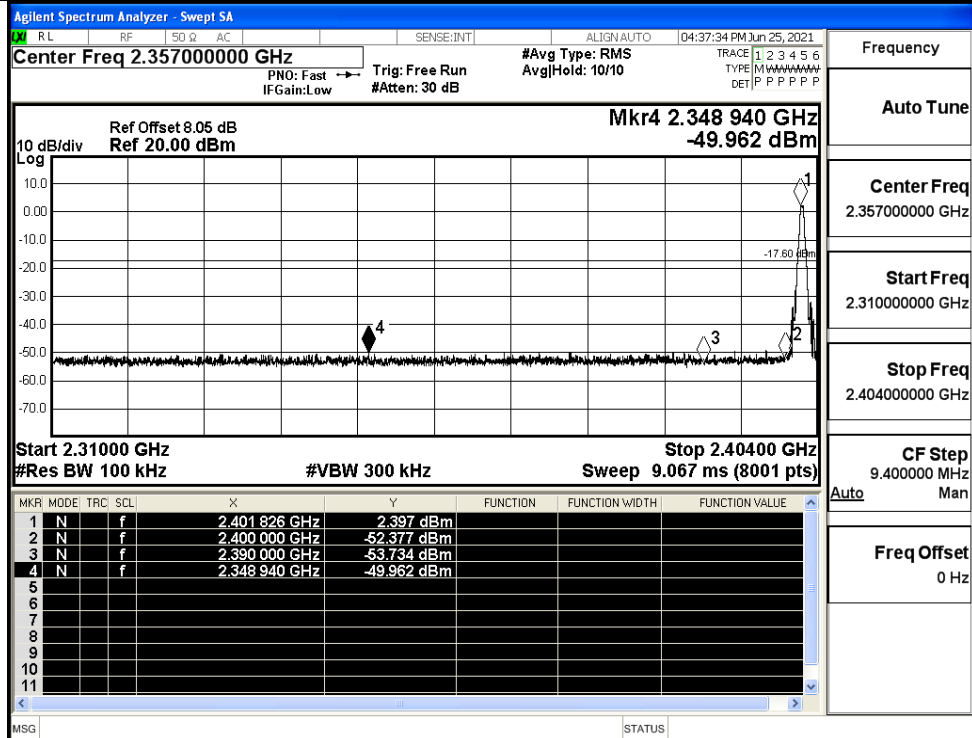


A.8 Band-edge for RF Conducted Emissions

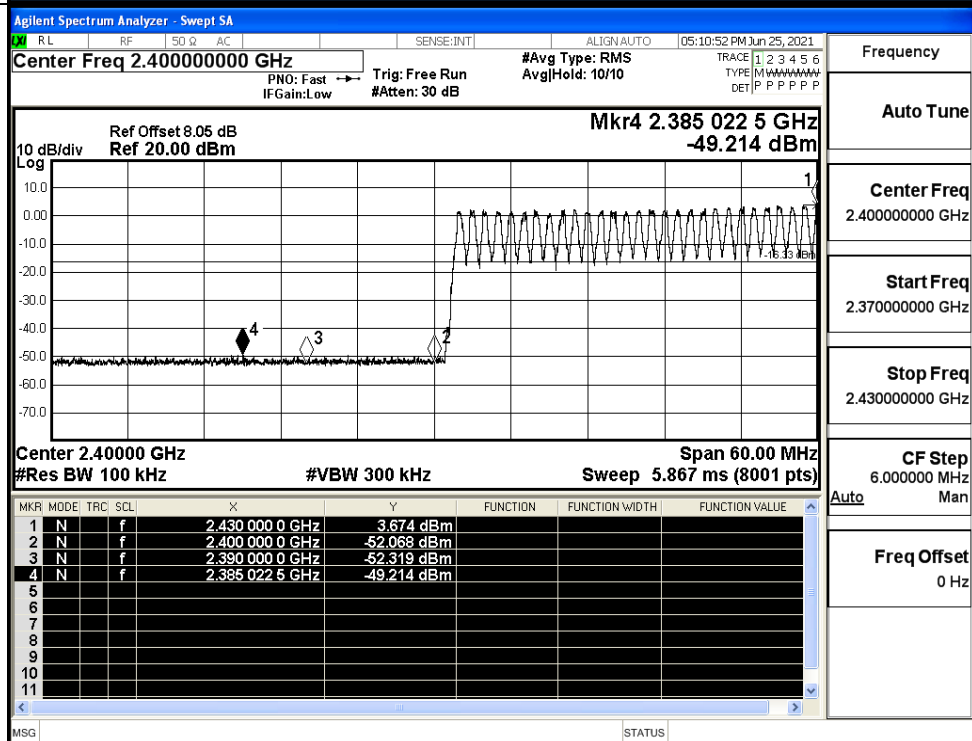
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	2.397	Off	-49.962	-17.6	PASS
			3.674	On	-49.214	-16.33	PASS
	HCH	2480	3.829	Off	-49.260	-16.17	PASS
			4.536	On	-48.622	-15.46	PASS
$\pi/4$ DQPSK	LCH	2402	1.598	Off	-49.382	-18.4	PASS
			1.961	On	-48.145	-18.04	PASS
	HCH	2480	2.537	Off	-49.639	-17.46	PASS
			3.119	On	-48.735	-16.88	PASS
8DPSK	LCH	2402	1.529	Off	-49.798	-18.47	PASS
			2.155	On	-49.168	-17.85	PASS
	HCH	2480	2.953	Off	-49.042	-17.05	PASS
			3.617	On	-48.508	-16.38	PASS

Test Graphs

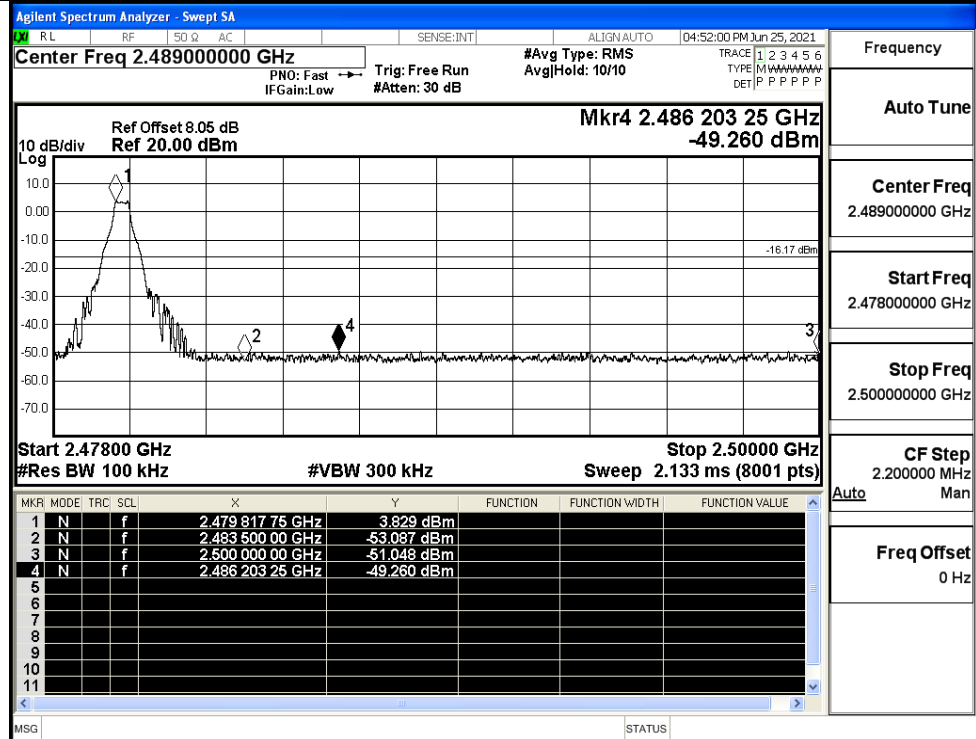
GFSK/LCH/No Hop



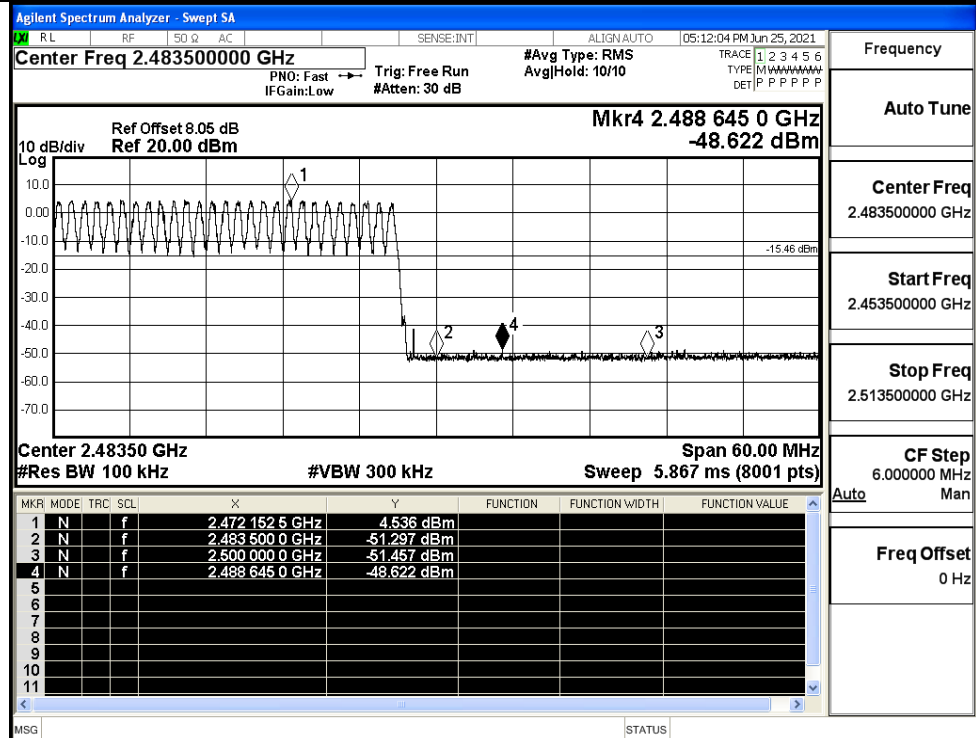
GFSK/LCH/Hop



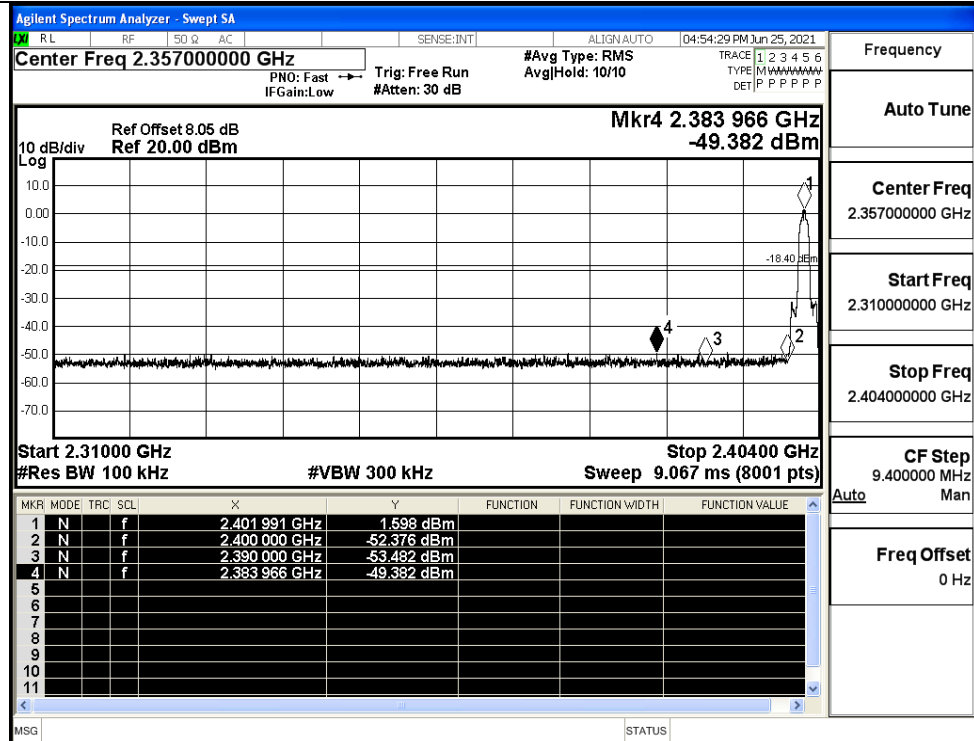
GFSK/HCH/No Hop



GFSK/HCH/Hop



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



Frequency

Auto Tune

Center Freq
2.357000000 GHz

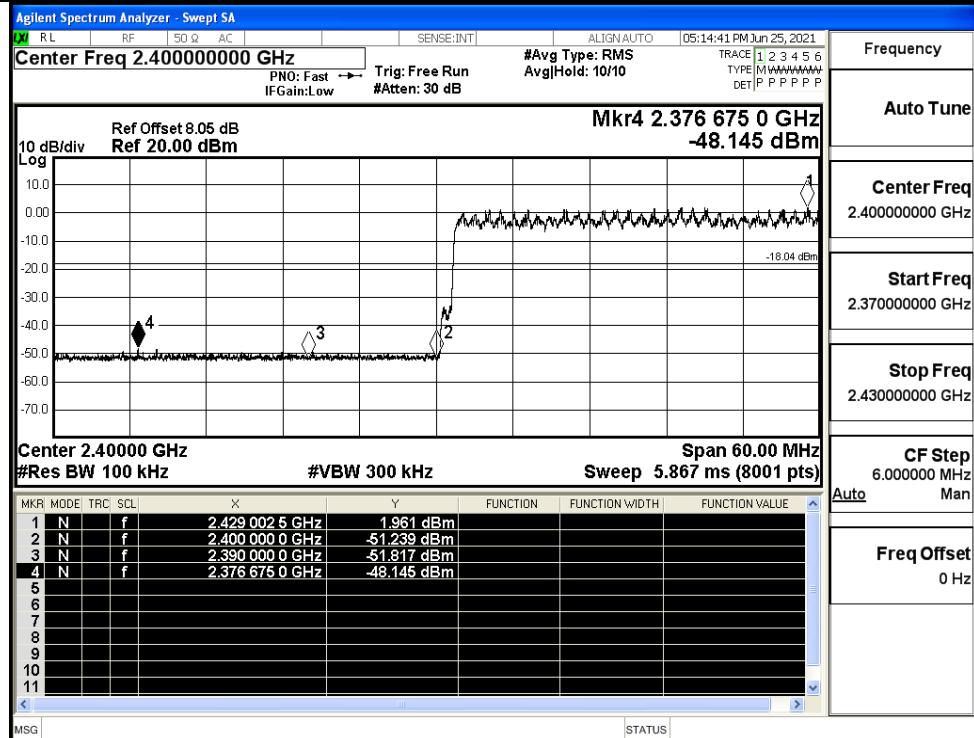
Start Freq
2.310000000 GHz

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

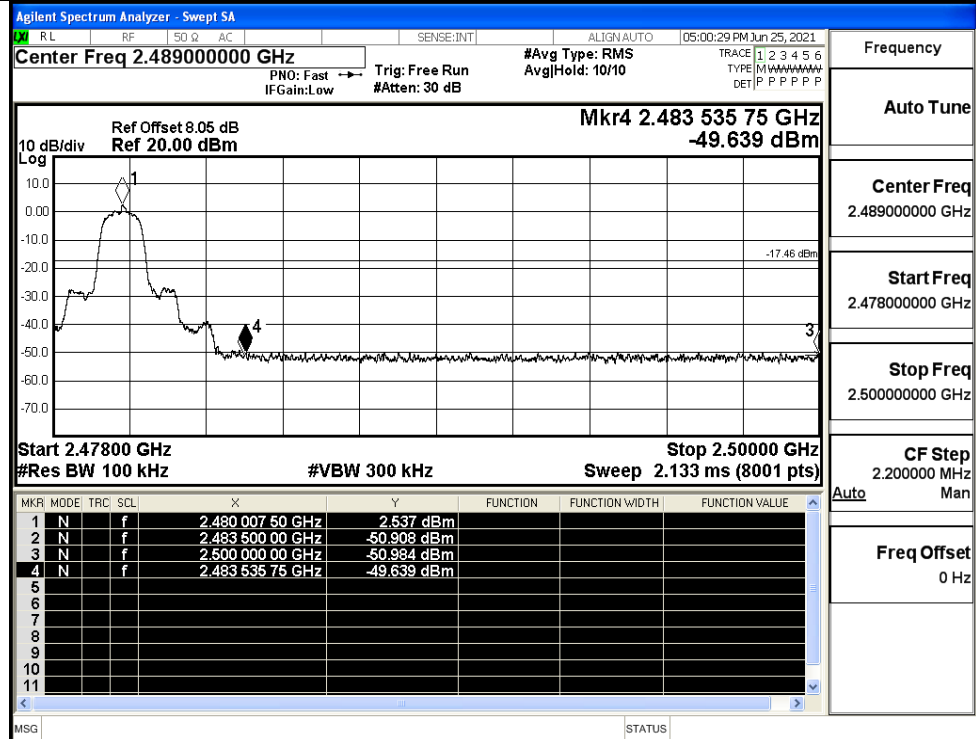
Start Freq
2.370000000 GHz

Stop Freq
2.430000000 GHz

CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

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

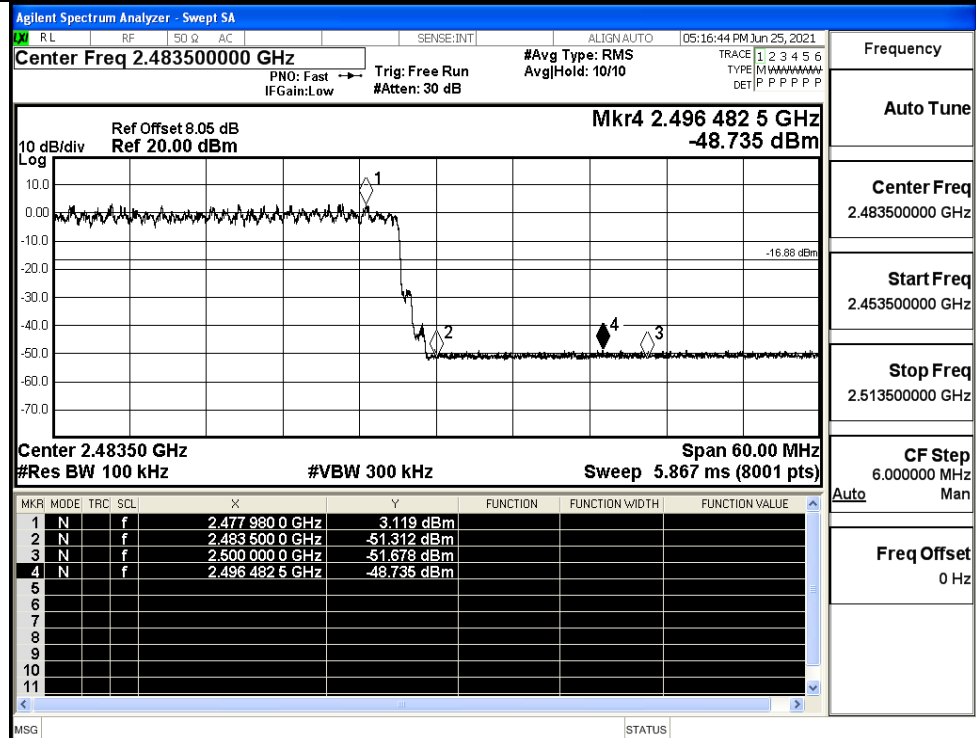


Frequency

Auto Tune

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

$\pi/4$ DQPSK/HCH/Hop

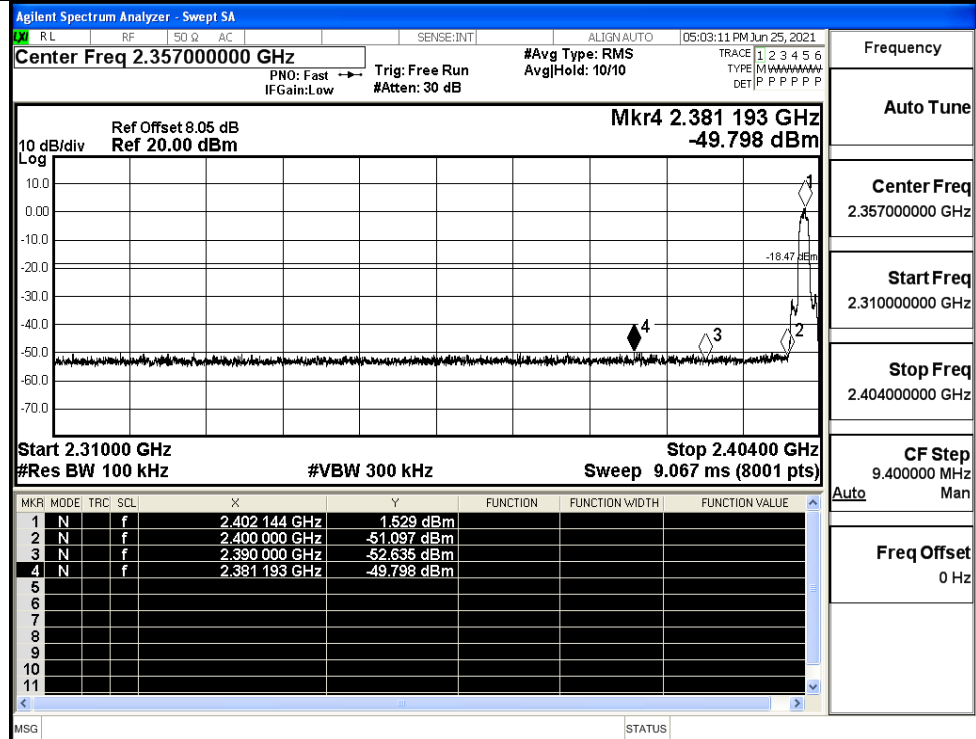


Frequency

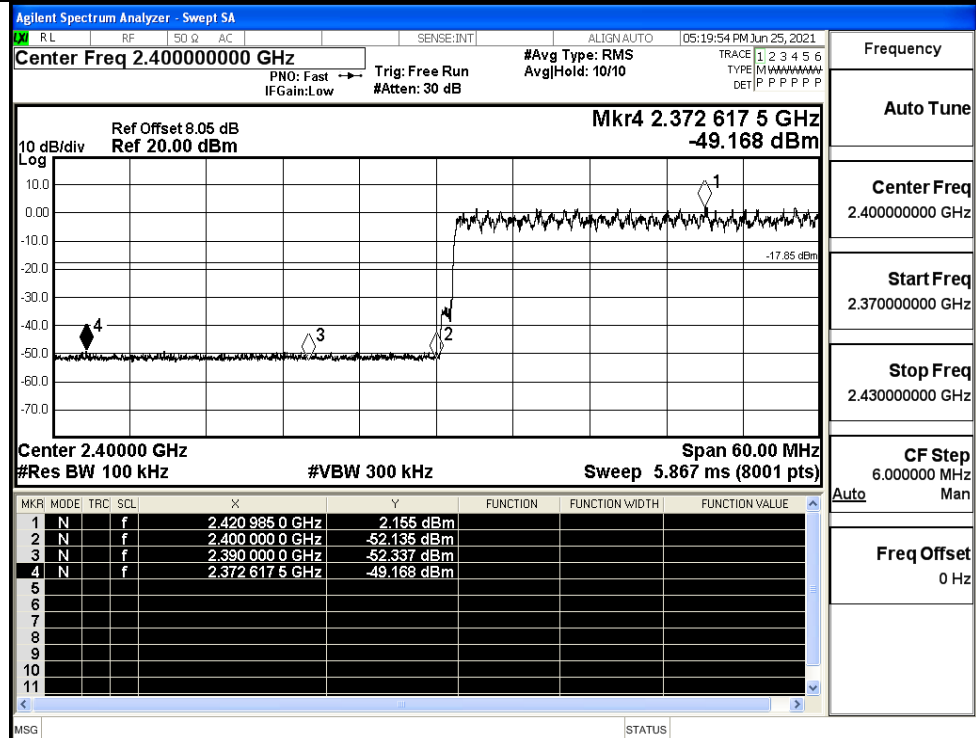
Auto Tune

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

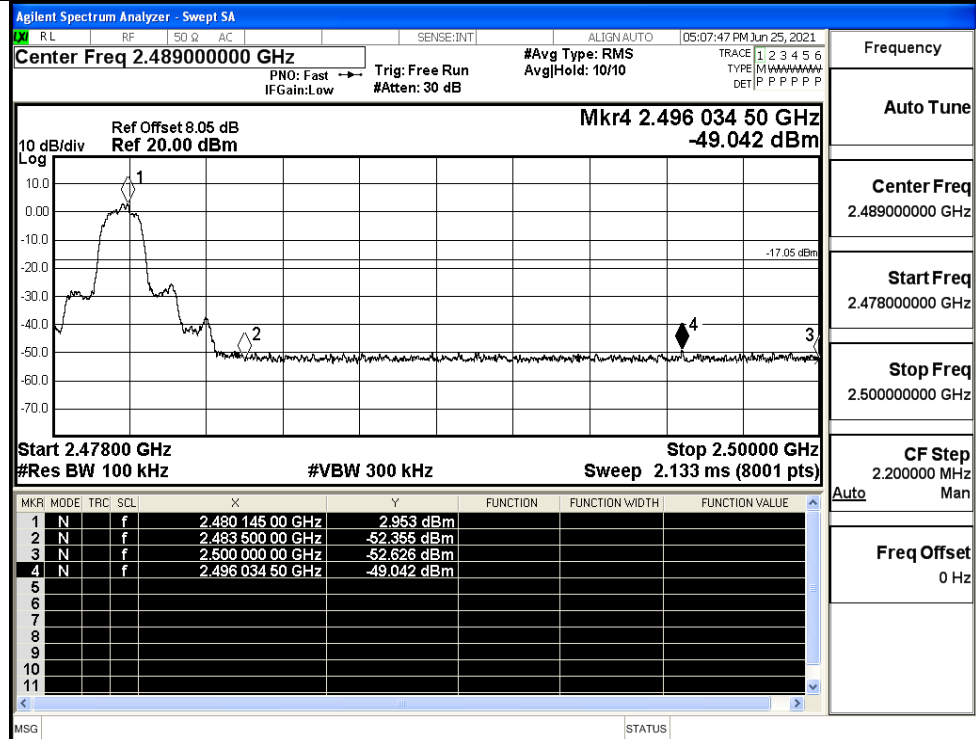
8DPSK/LCH/No Hop



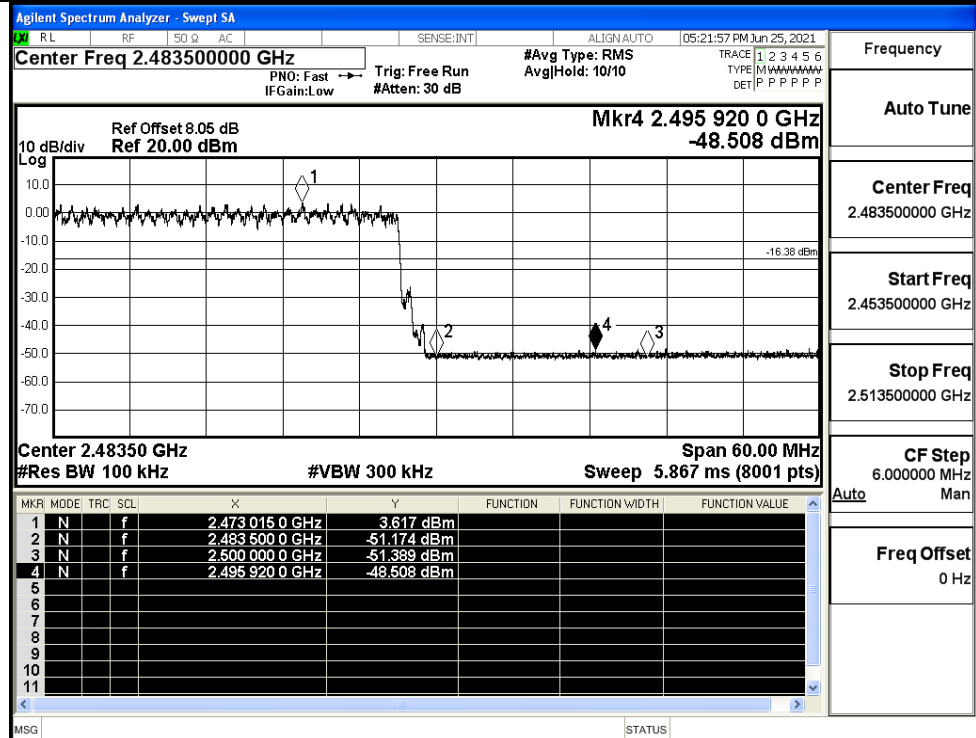
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



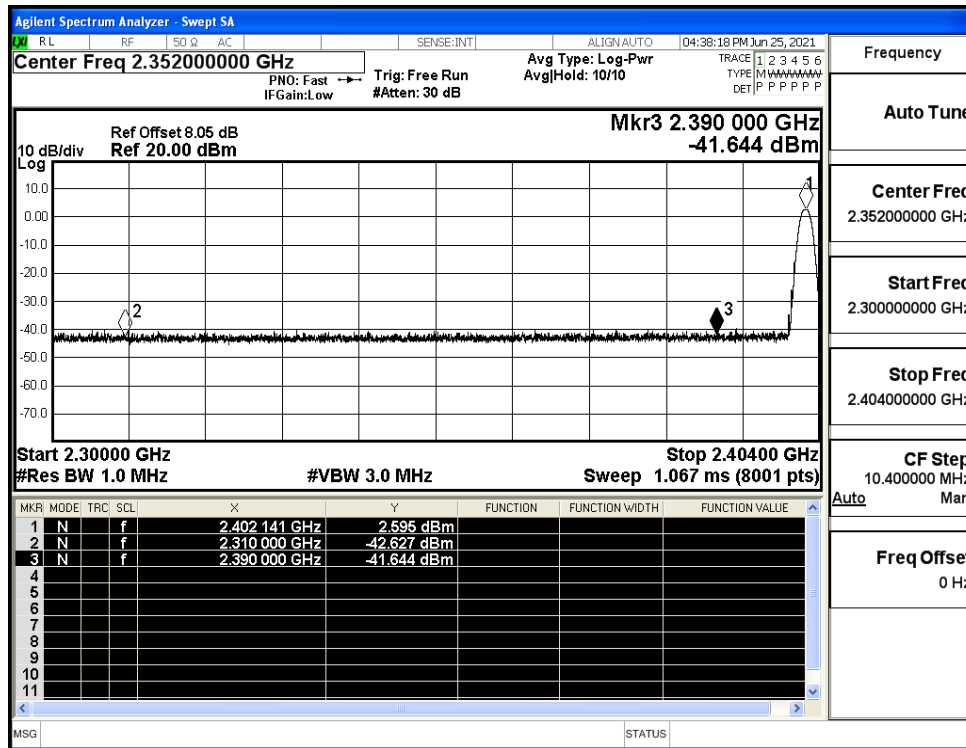
8DPSK/HCH/Hop



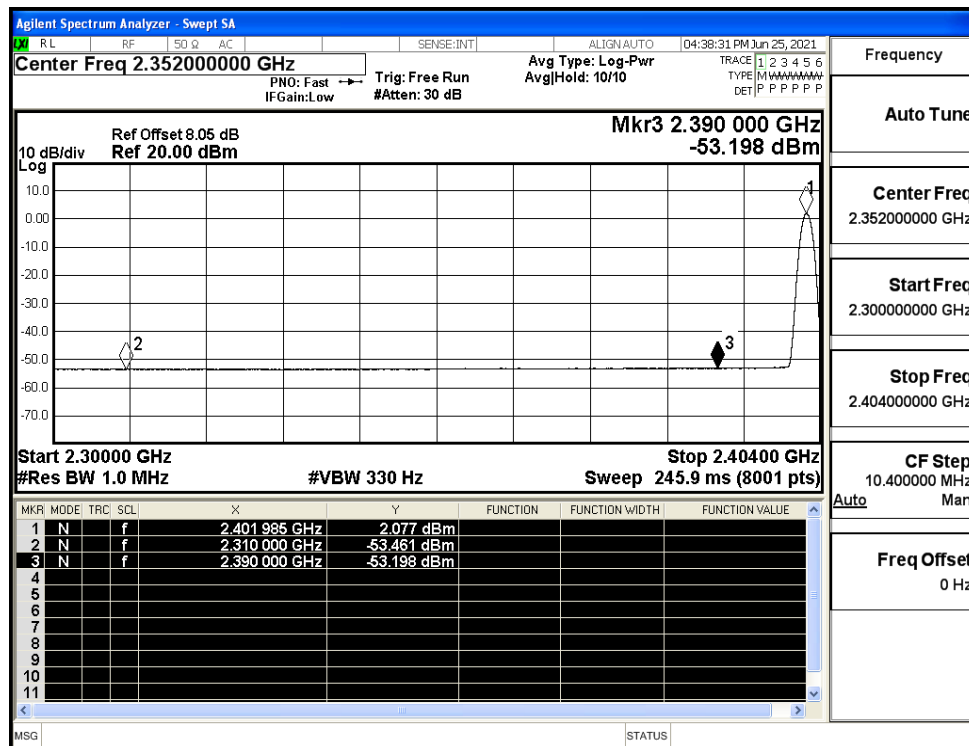
A.9 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-42.63	2.0	0	54.63	PEAK	74	PASS
	Off	2310.0	-53.46	2.0	0	43.80	AV	54	PASS
	Off	2390.0	-41.64	2.0	0	55.62	PEAK	74	PASS
	Off	2390.0	-53.20	2.0	0	44.06	AV	54	PASS
	Off	2483.5	-41.19	2.0	0	56.07	PEAK	74	PASS
	Off	2483.5	-52.41	2.0	0	44.85	AV	54	PASS
	Off	2500.0	-42.16	2.0	0	55.10	PEAK	74	PASS
	Off	2500.0	-52.40	2.0	0	44.86	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.25	2.0	0	54.01	PEAK	74	PASS
	Off	2310.0	-53.27	2.0	0	43.99	AV	54	PASS
	Off	2390.0	-40.78	2.0	0	56.48	PEAK	74	PASS
	Off	2390.0	-53.15	2.0	0	44.11	AV	54	PASS
	Off	2483.5	-41.39	2.0	0	55.87	PEAK	74	PASS
	Off	2483.5	-51.42	2.0	0	45.84	AV	54	PASS
	Off	2500.0	-41.80	2.0	0	55.46	PEAK	74	PASS
	Off	2500.0	-52.43	2.0	0	44.83	AV	54	PASS
8DPSK	Off	2310.0	-43.10	2.0	0	54.16	PEAK	74	PASS
	Off	2310.0	-53.49	2.0	0	43.77	AV	54	PASS
	Off	2390.0	-42.79	2.0	0	54.47	PEAK	74	PASS
	Off	2390.0	-53.13	2.0	0	44.13	AV	54	PASS
	Off	2483.5	-37.57	2.0	0	59.69	PEAK	74	PASS
	Off	2483.5	-51.48	2.0	0	45.78	AV	54	PASS
	Off	2500.0	-41.81	2.0	0	55.45	PEAK	74	PASS
	Off	2500.0	-52.47	2.0	0	44.79	AV	54	PASS

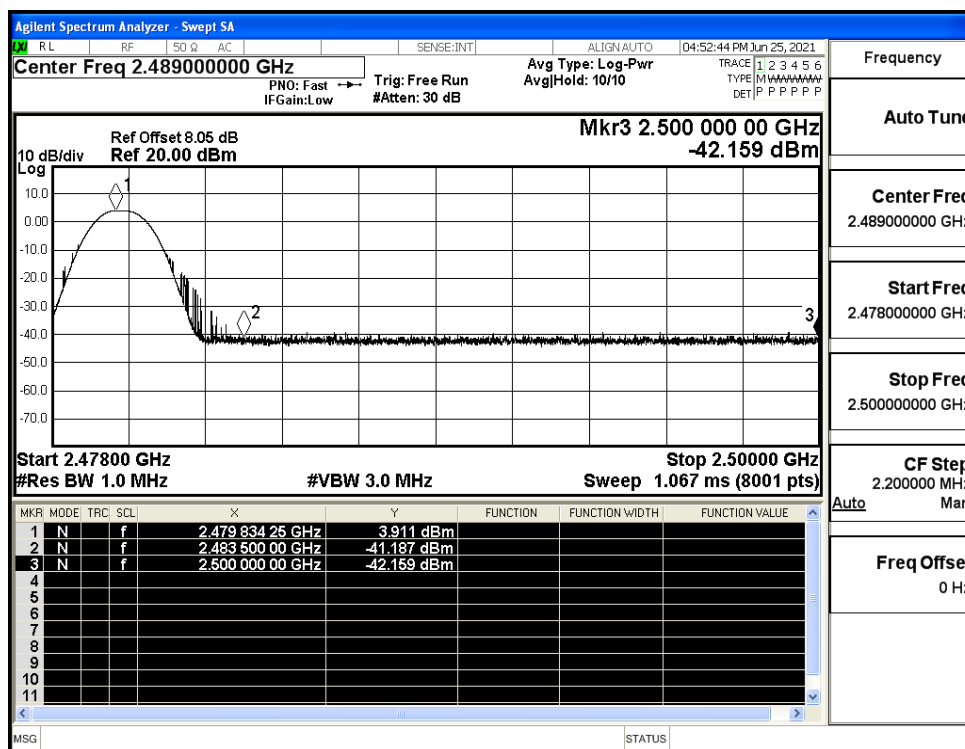
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



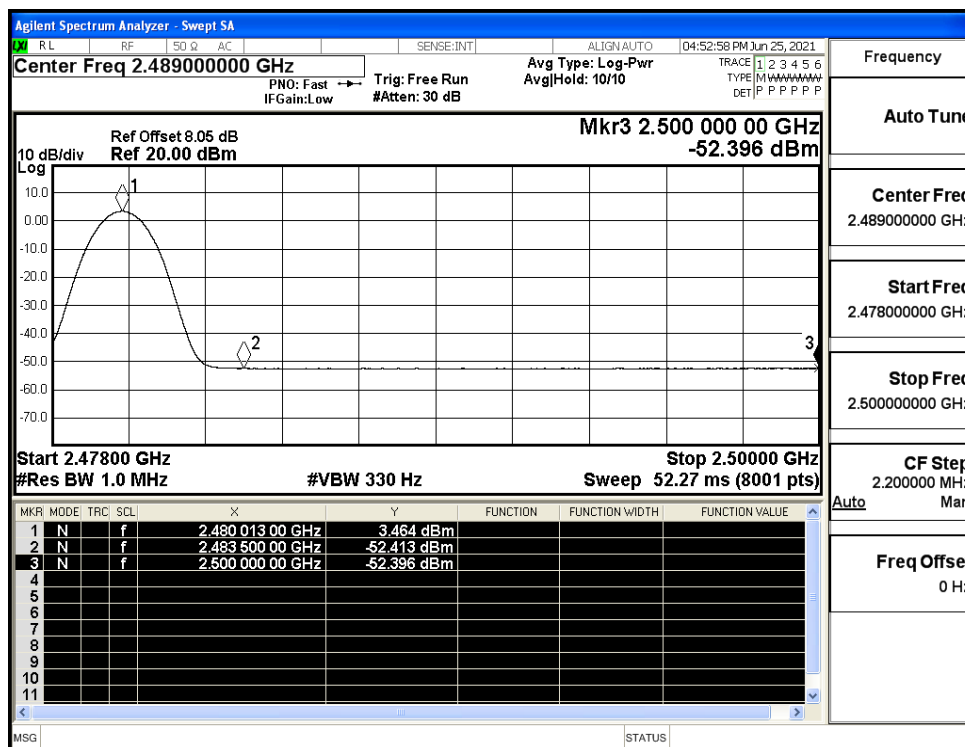
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

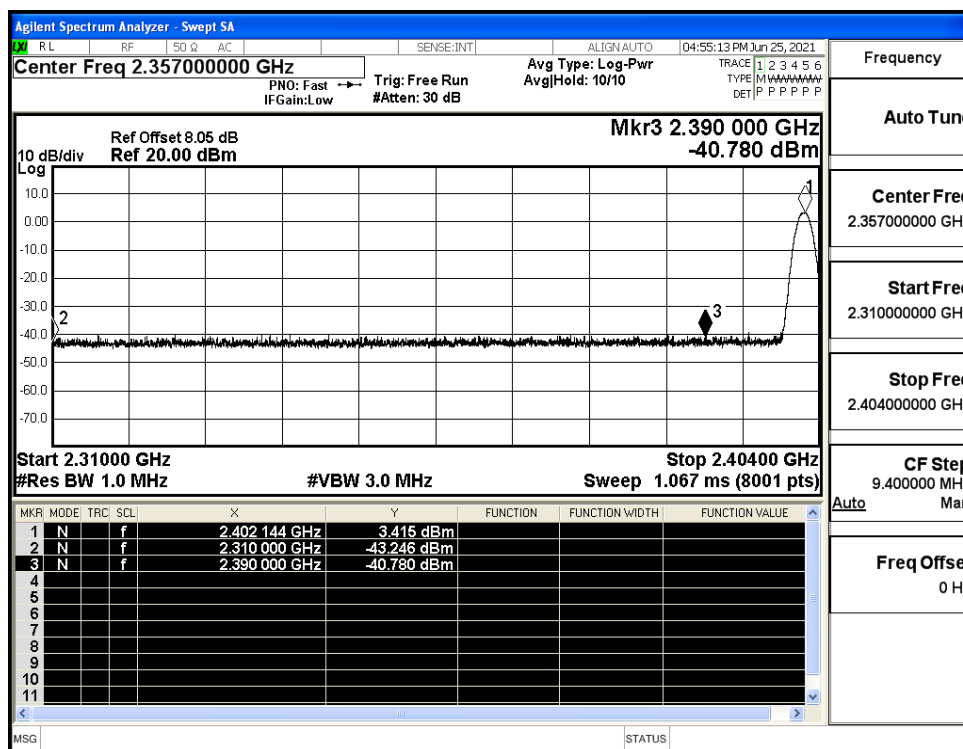
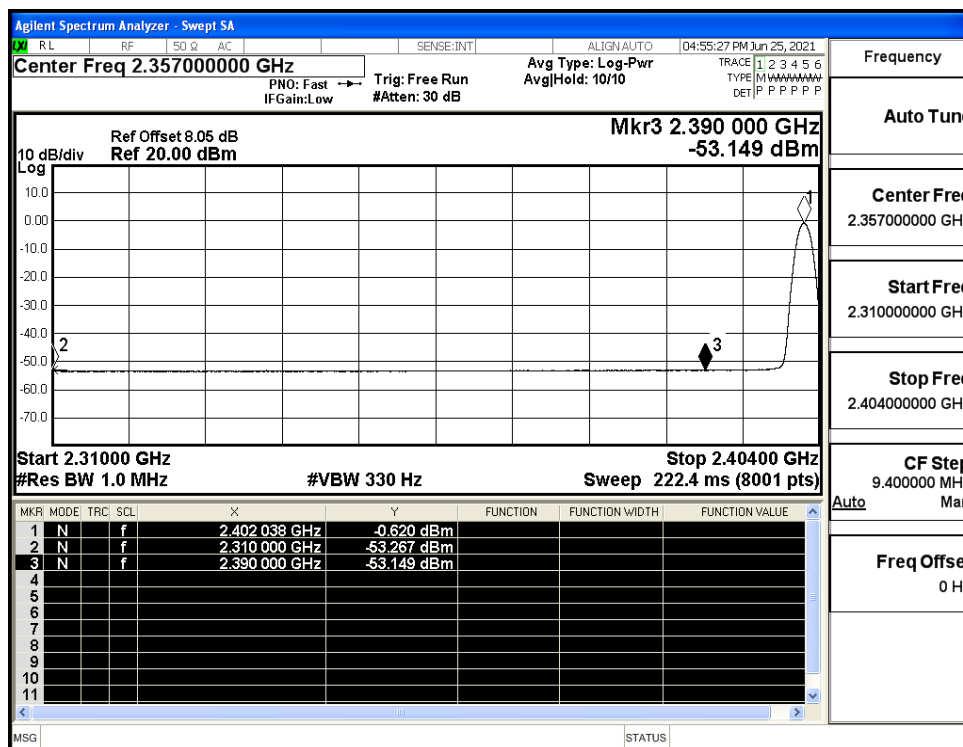


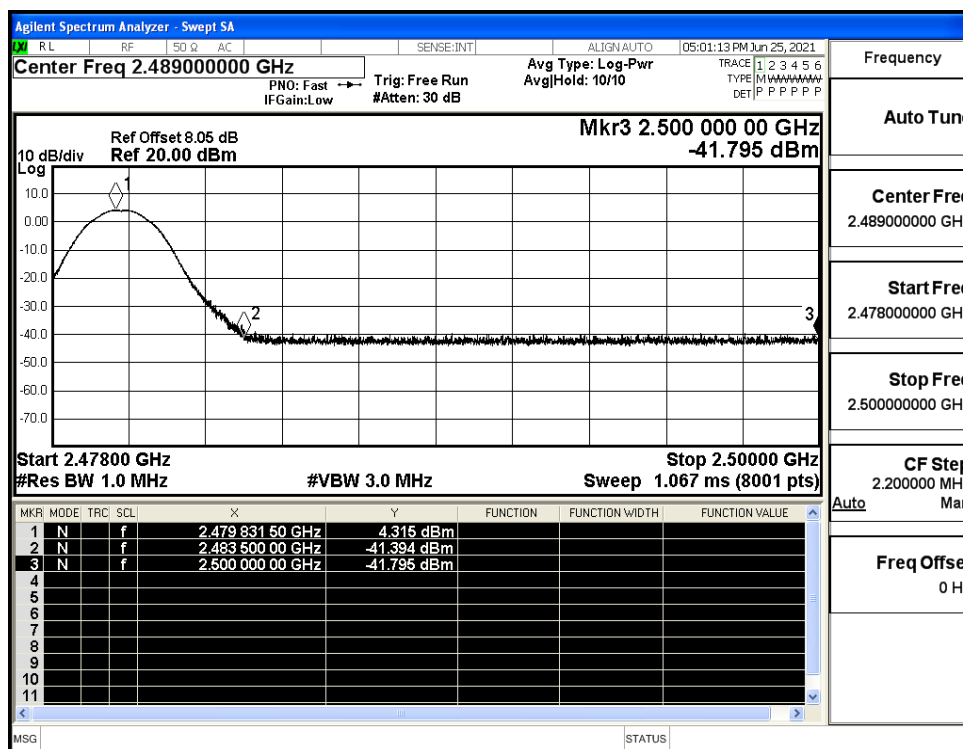
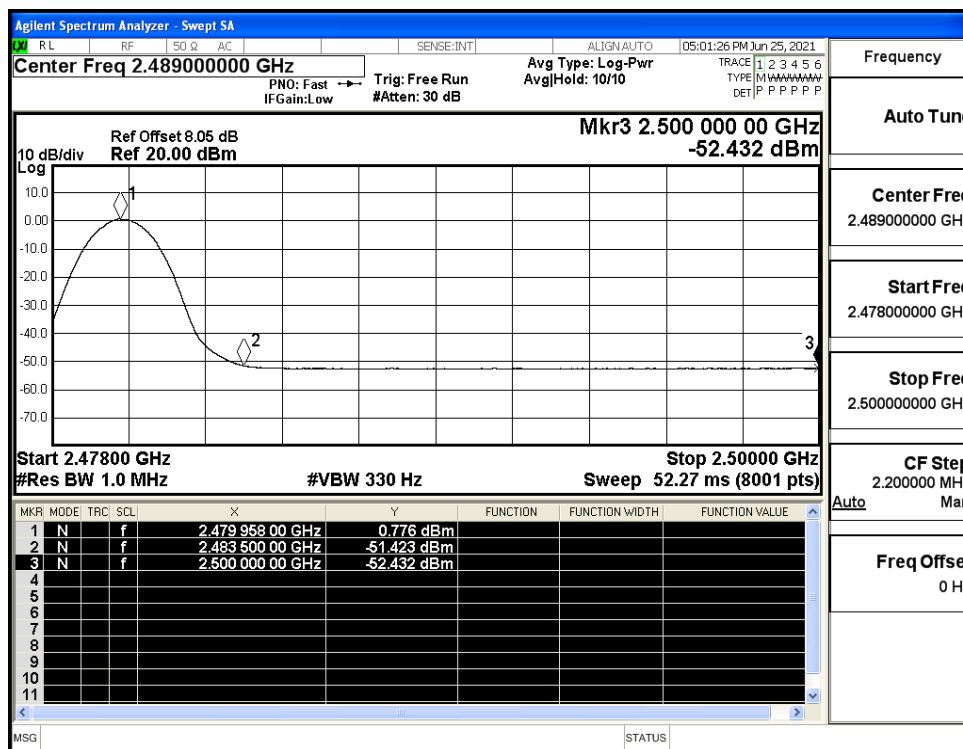
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



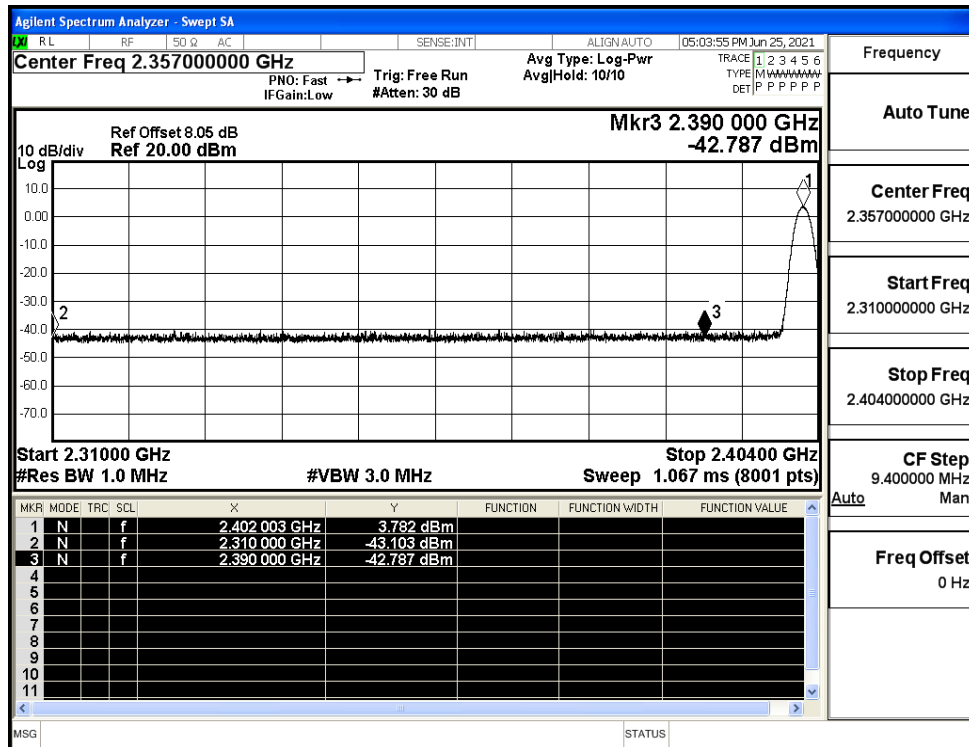
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



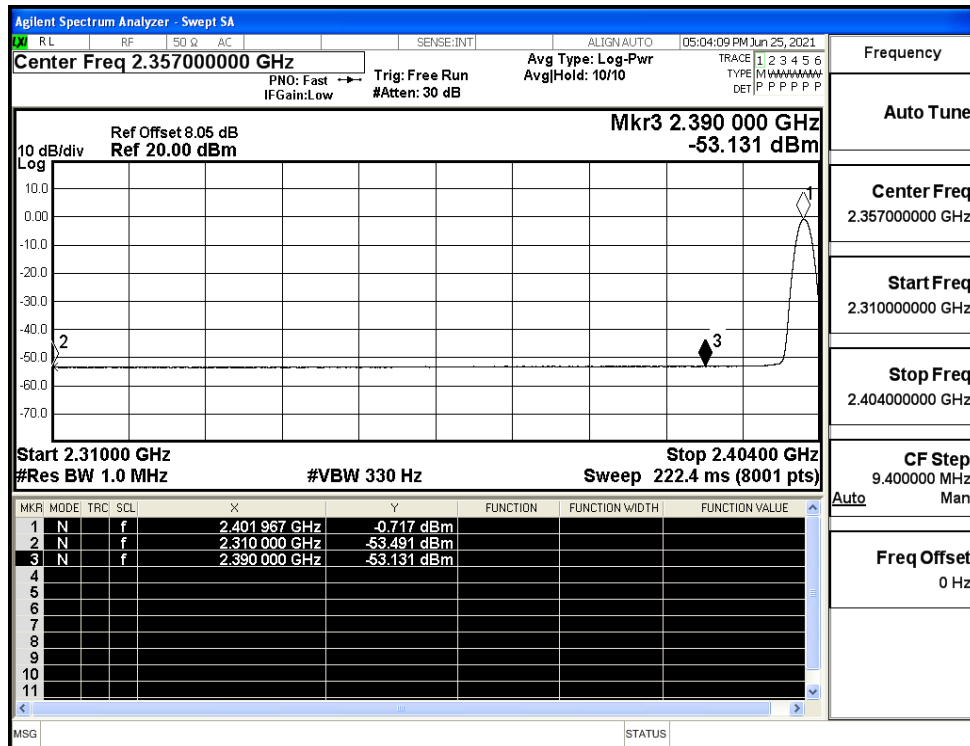
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

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)

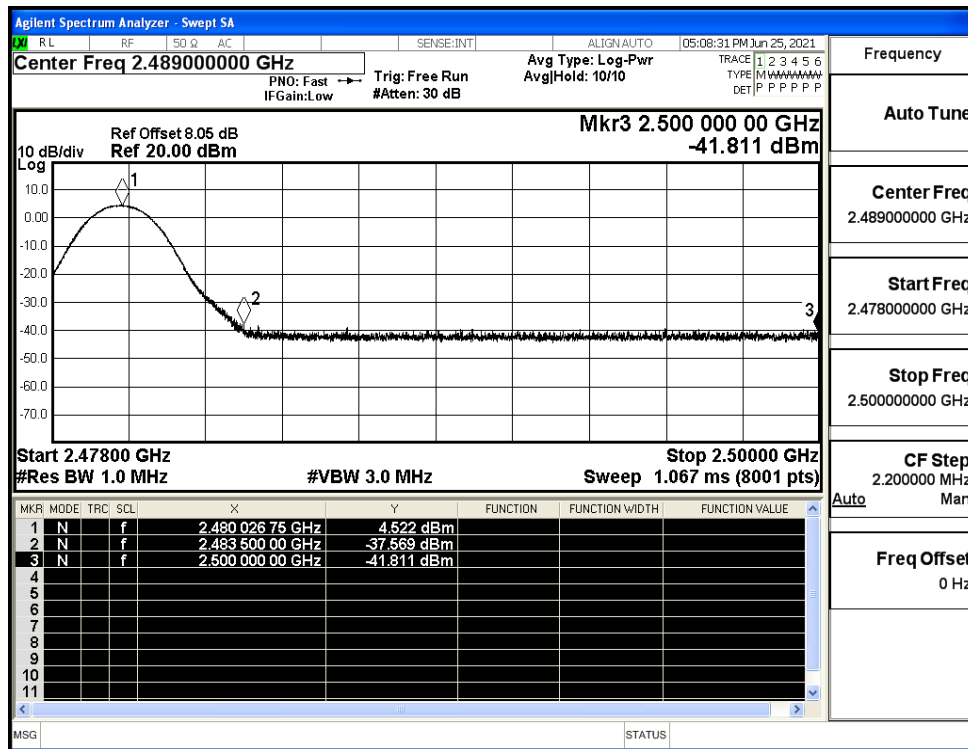
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



Restrict-band band-edge measurements_Hopping Off_8DPSK_Average (Low Channel)



Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (High Channel)



Restrict-band band-edge measurements_Hopping Off_8DPSK_Average (High Channel)

