

Appendix A

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

Product Name: Smartphone

Trade Mark: NSPRE

Test Model: NX-20PRO1

Environmental Conditions

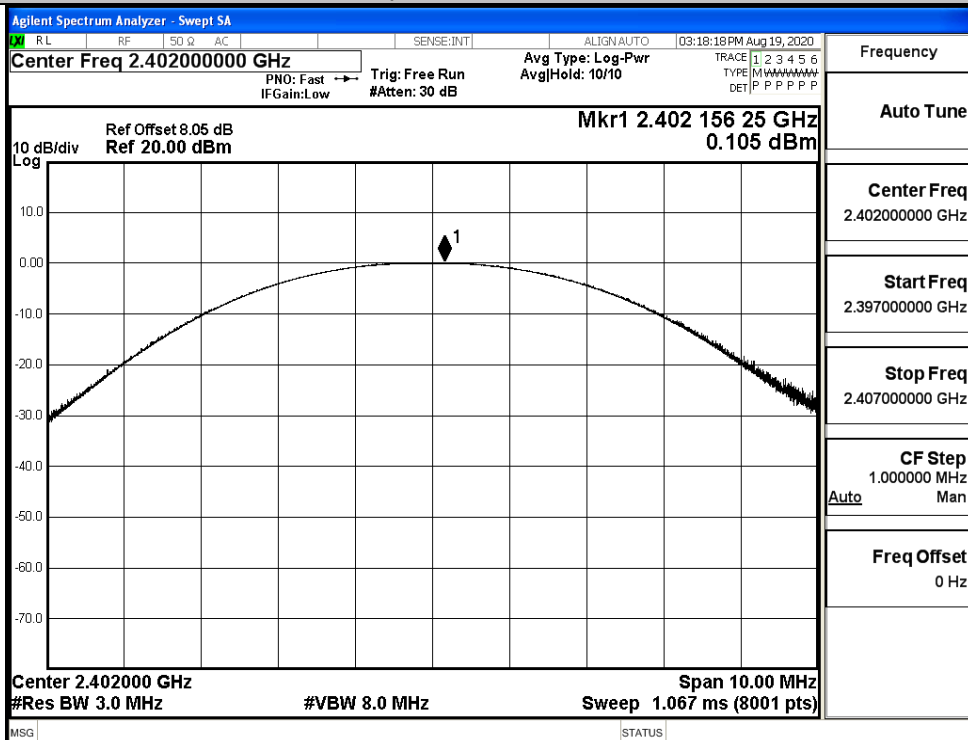
Temperature:	23.9° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond Lu
Supervised by:	Li Huan

A.1 Maxmum Conducted Peak Output Power

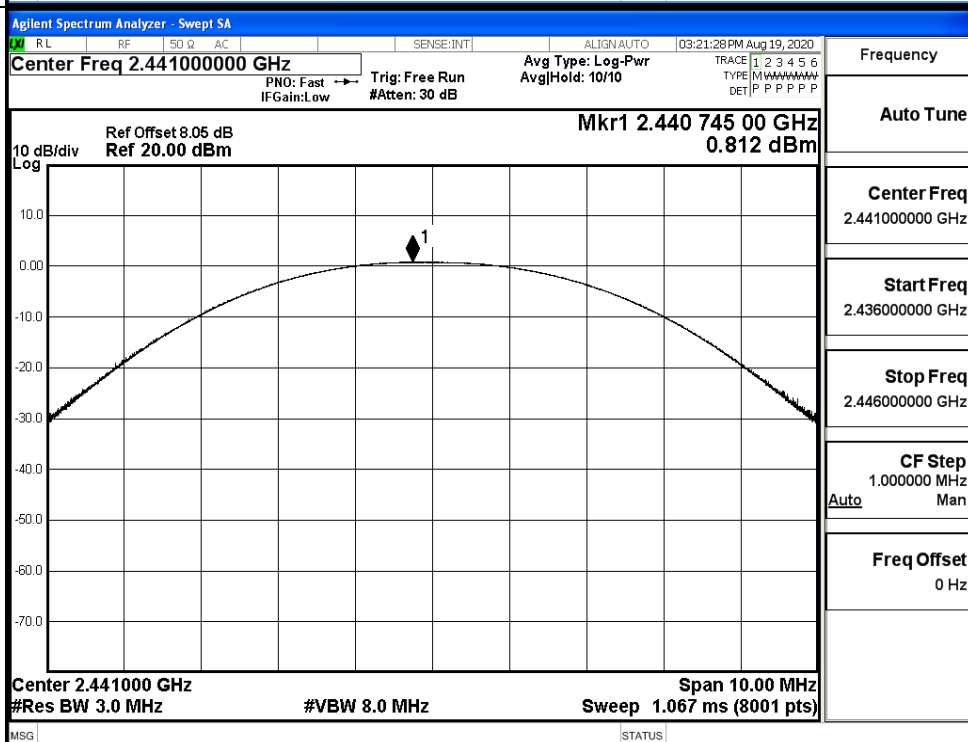
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.105	21	PASS
	MCH	0.812	21	PASS
	HCH	1.368	21	PASS
$\pi/4$ DQPSK	LCH	1.257	21	PASS
	MCH	1.544	21	PASS
	HCH	1.912	21	PASS
8DPSK	LCH	1.561	21	PASS
	MCH	1.814	21	PASS
	HCH	2.262	21	PASS

Test Graphs

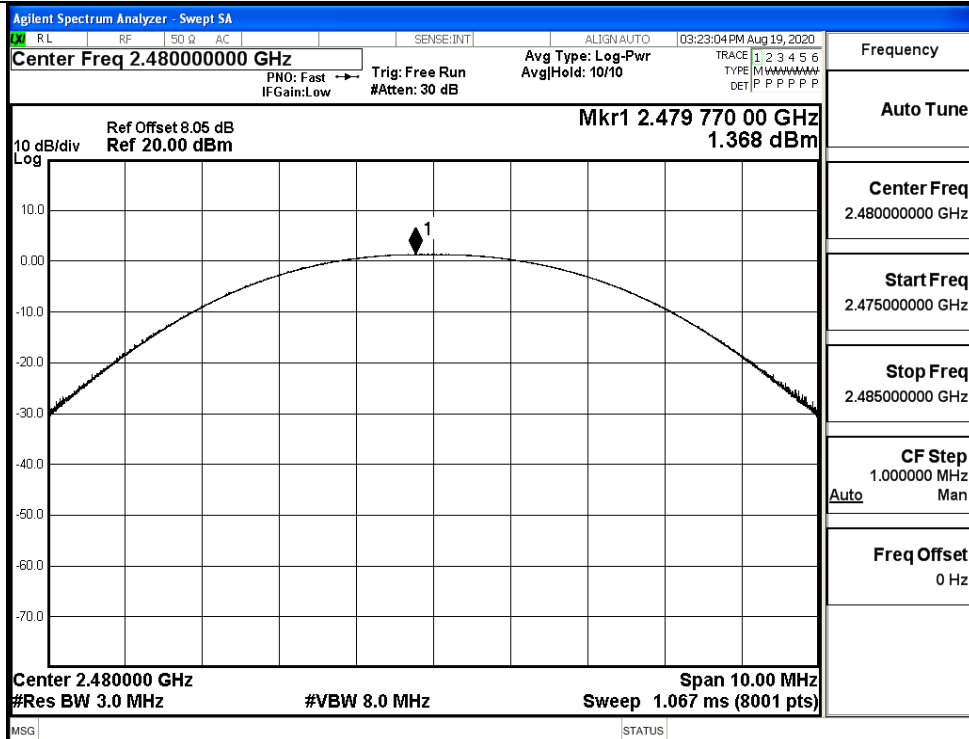
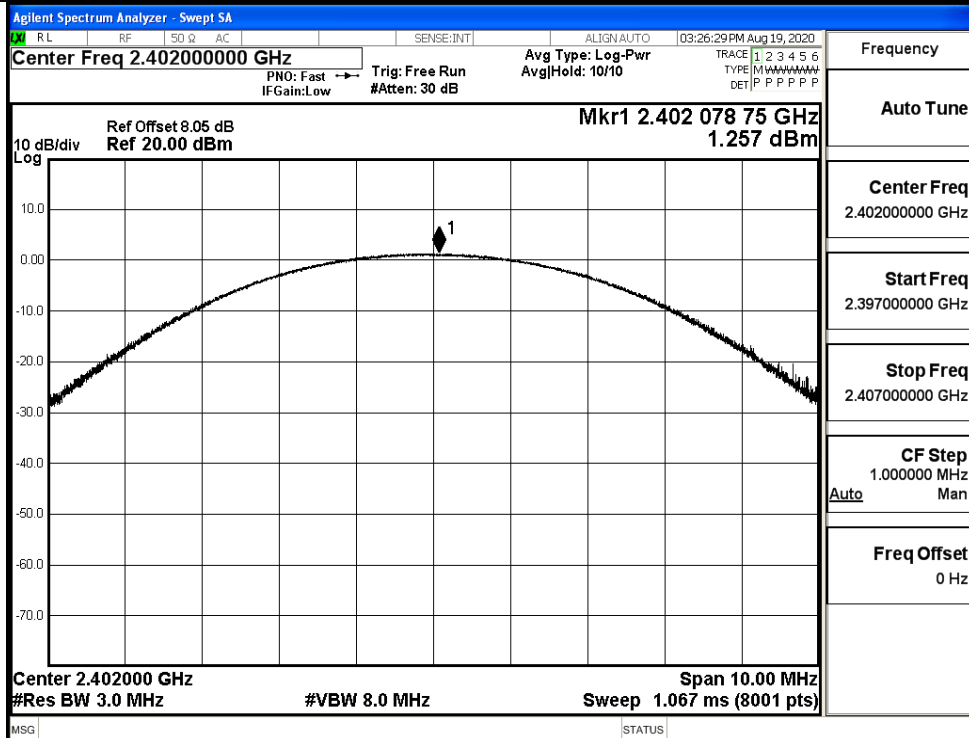
GFSK/LCH

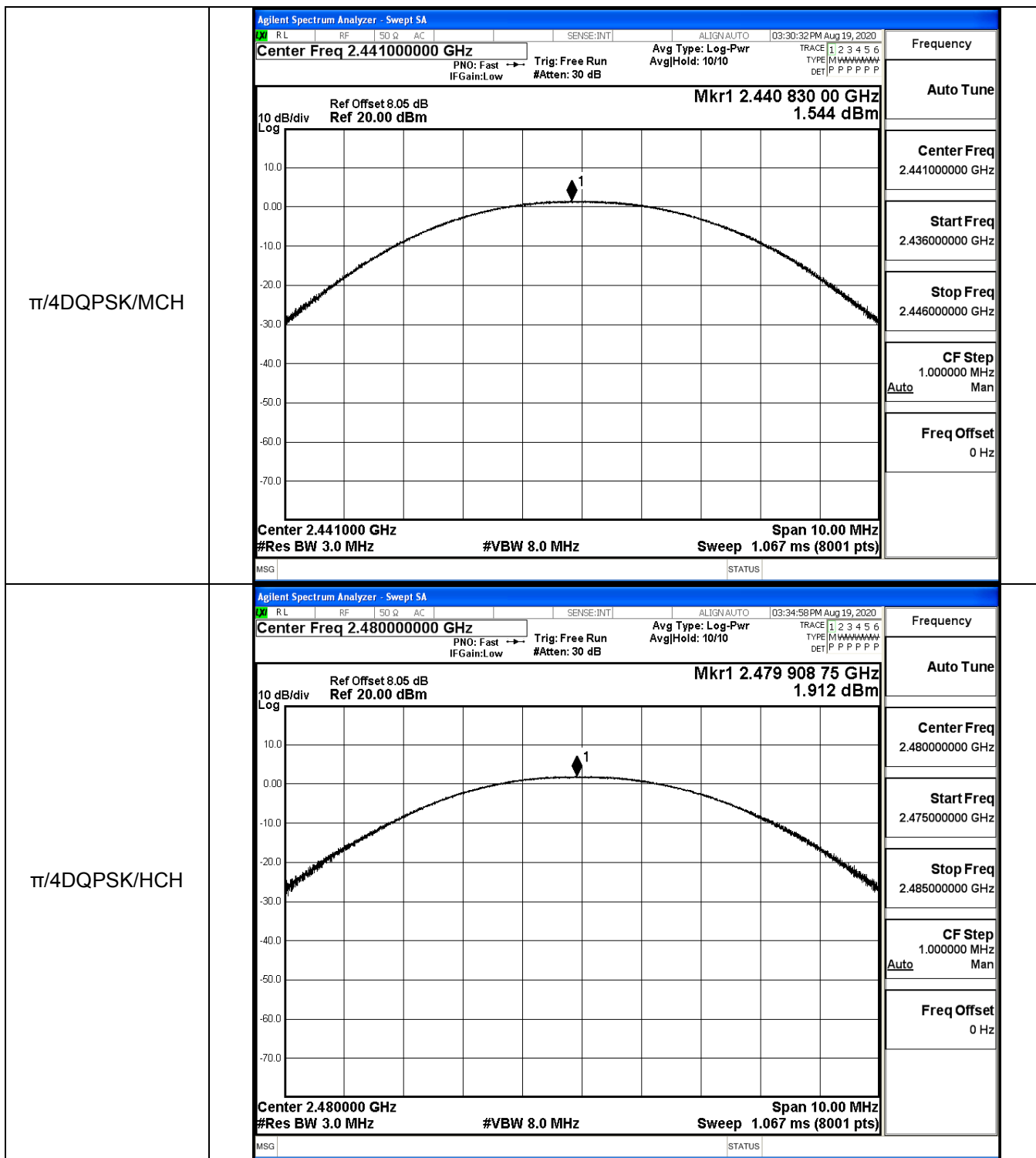


GFSK/MCH

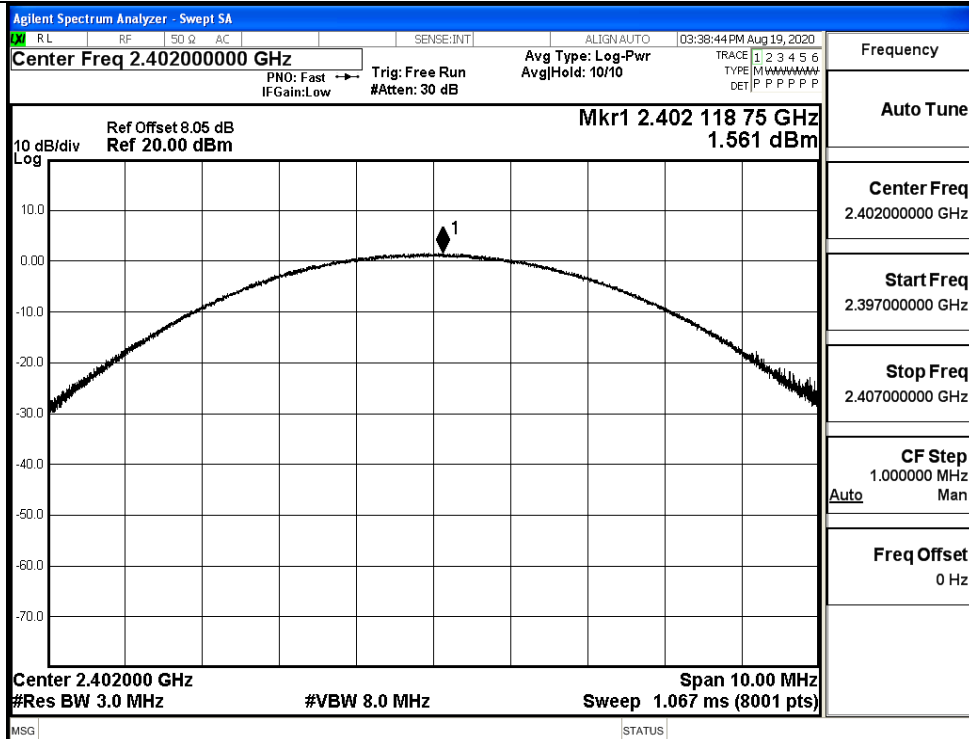


GFSK/HCH

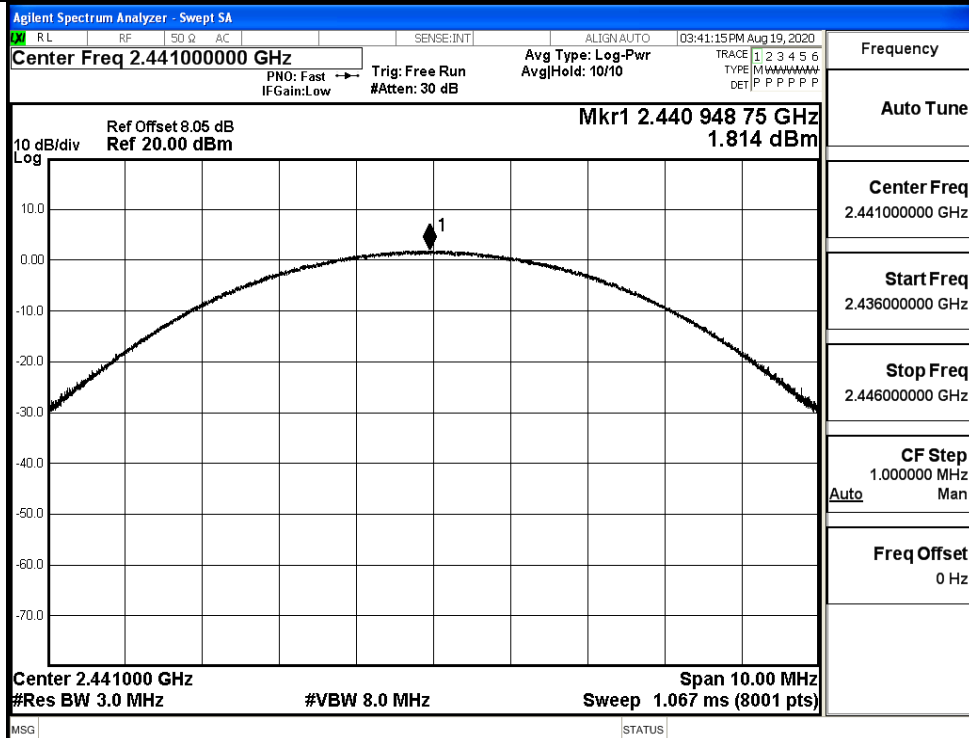
 $\pi/4$ DQPSK/LCH



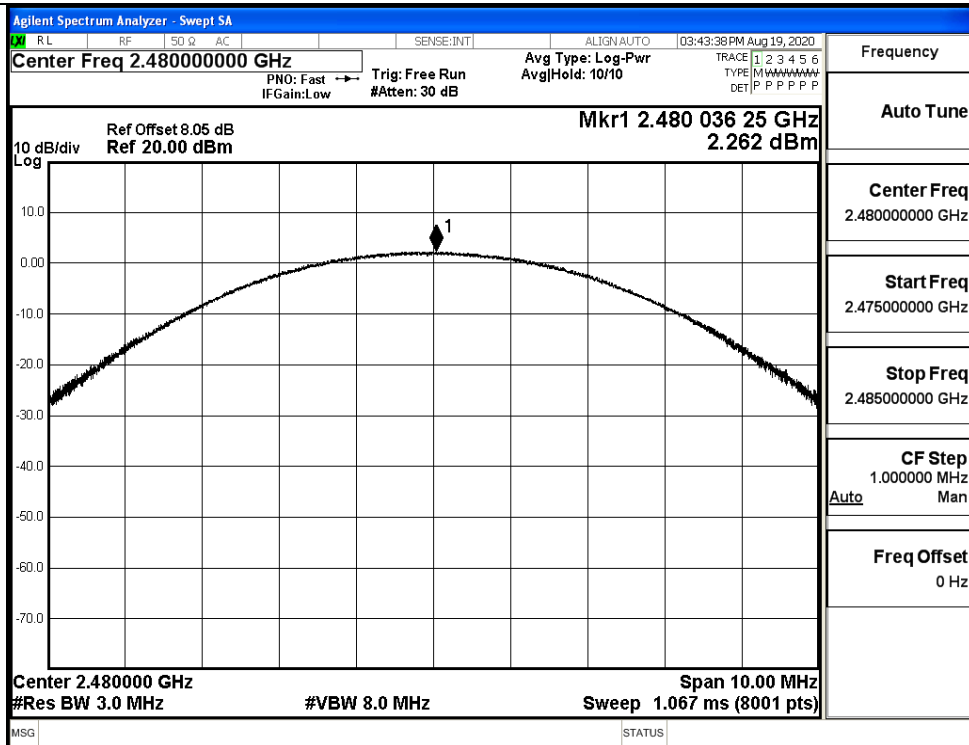
8DPSK/LCH



8DPSK/MCH



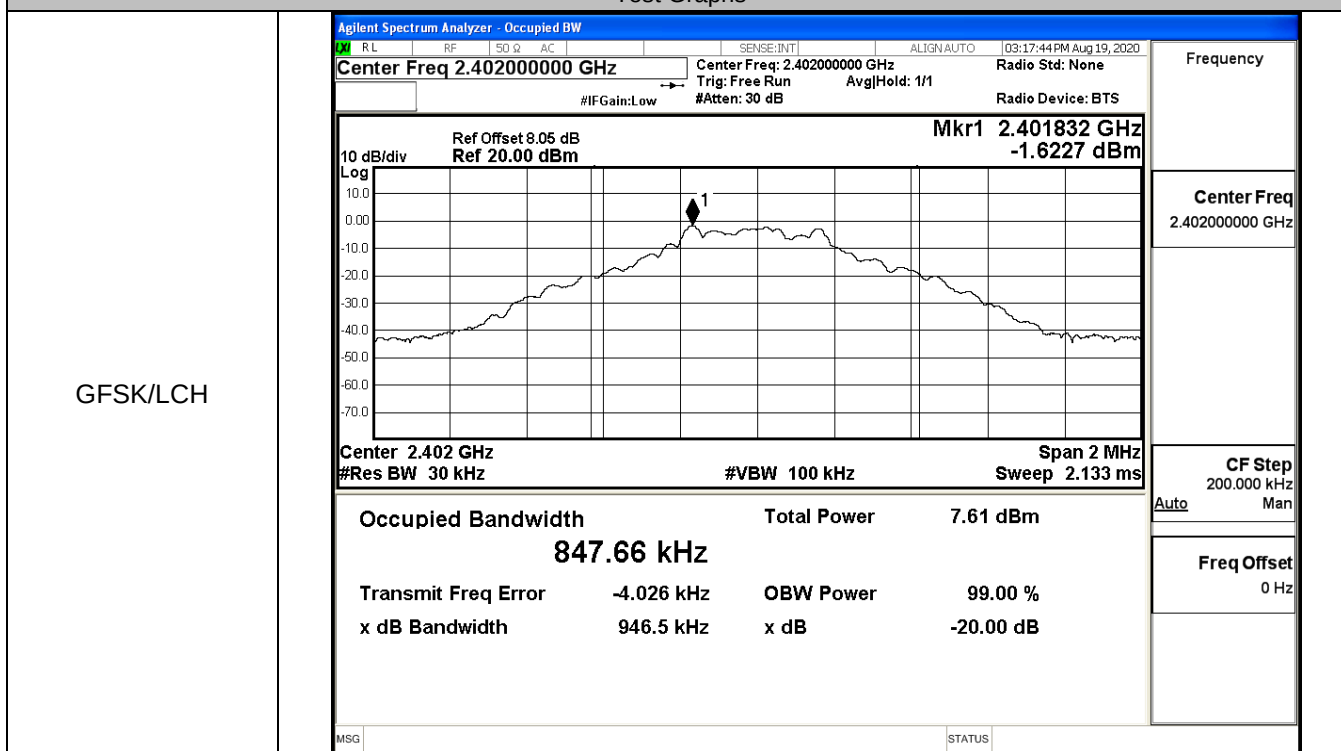
8DPSK/HCH



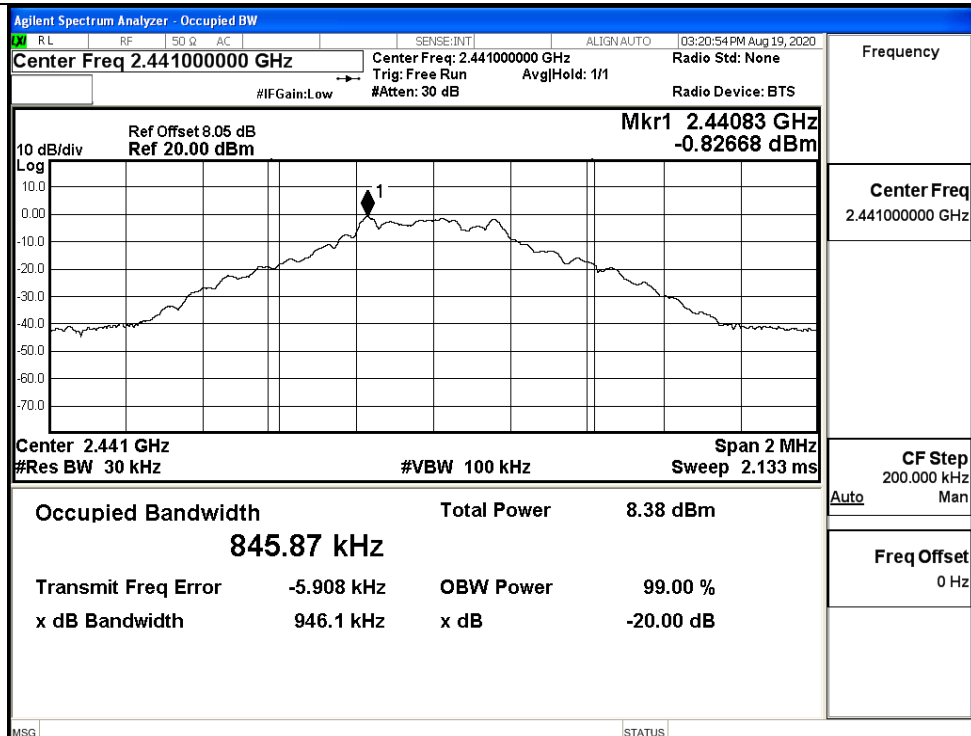
A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9465	Not Specified	PASS
	MCH	0.9461	Not Specified	PASS
	HCH	0.9457	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.288	Not Specified	PASS
	MCH	1.285	Not Specified	PASS
	HCH	1.289	Not Specified	PASS
8DPSK	LCH	1.291	Not Specified	PASS
	MCH	1.292	Not Specified	PASS
	HCH	1.295	Not Specified	PASS

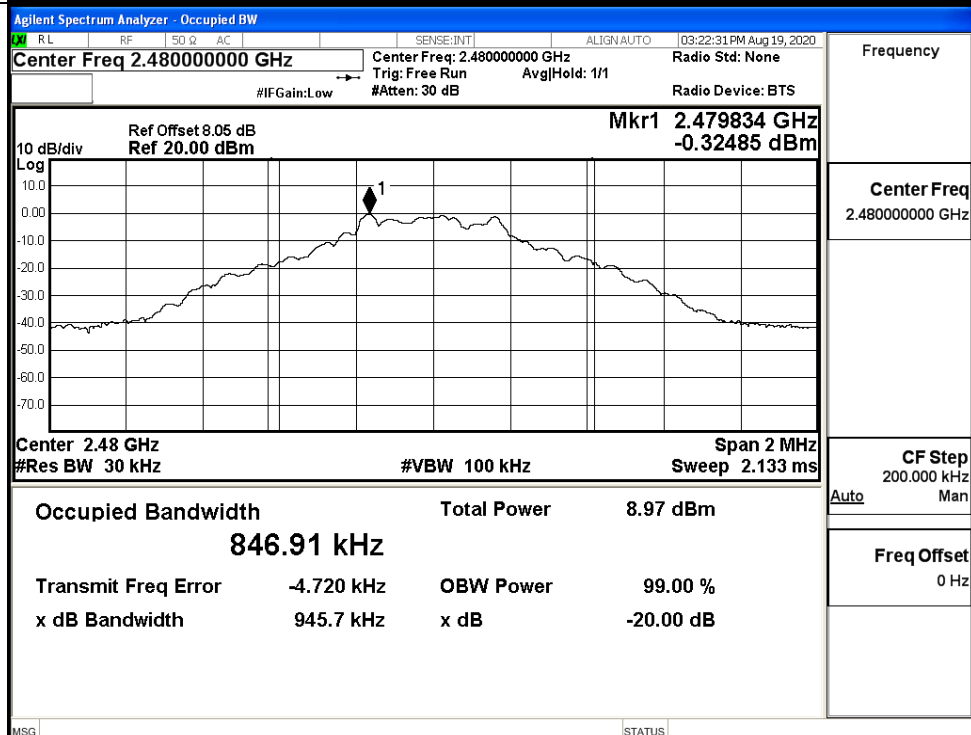
Test Graphs

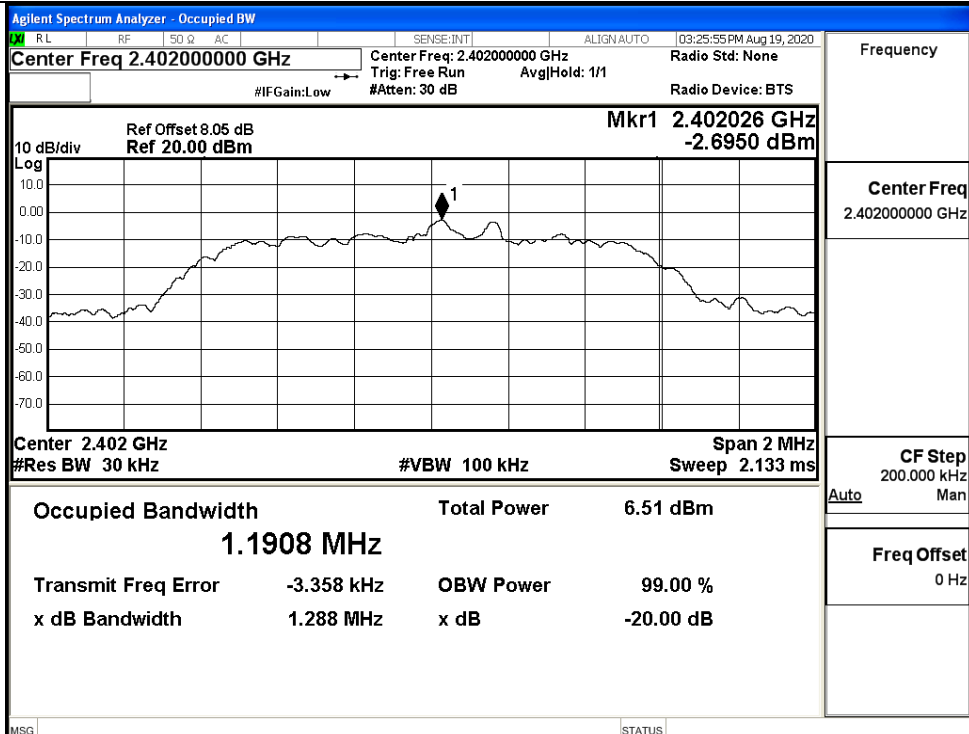
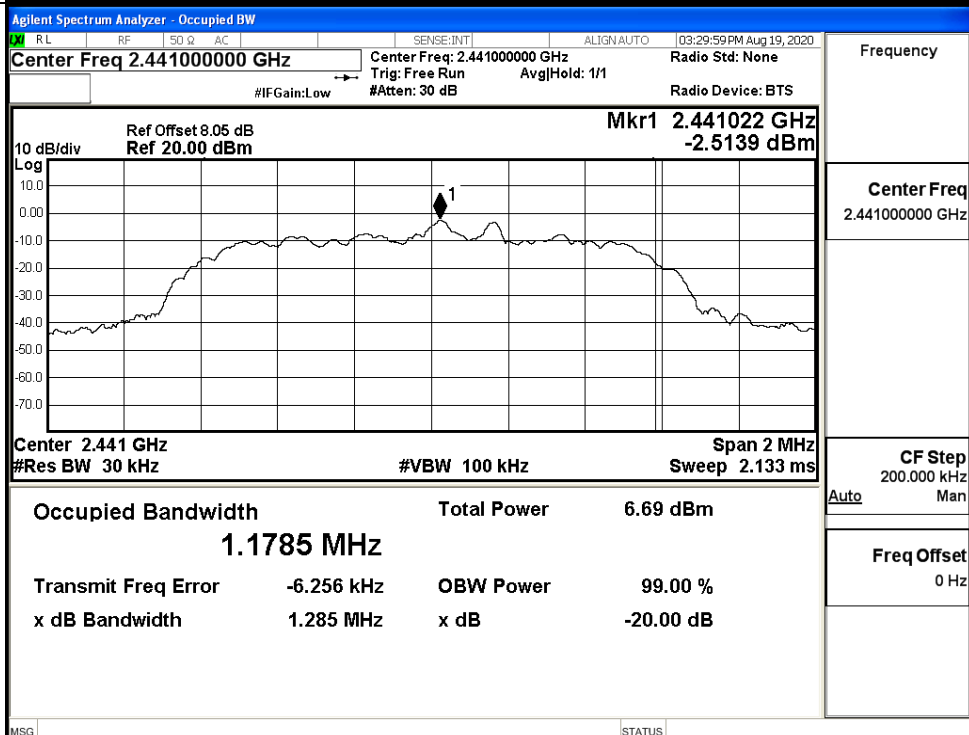


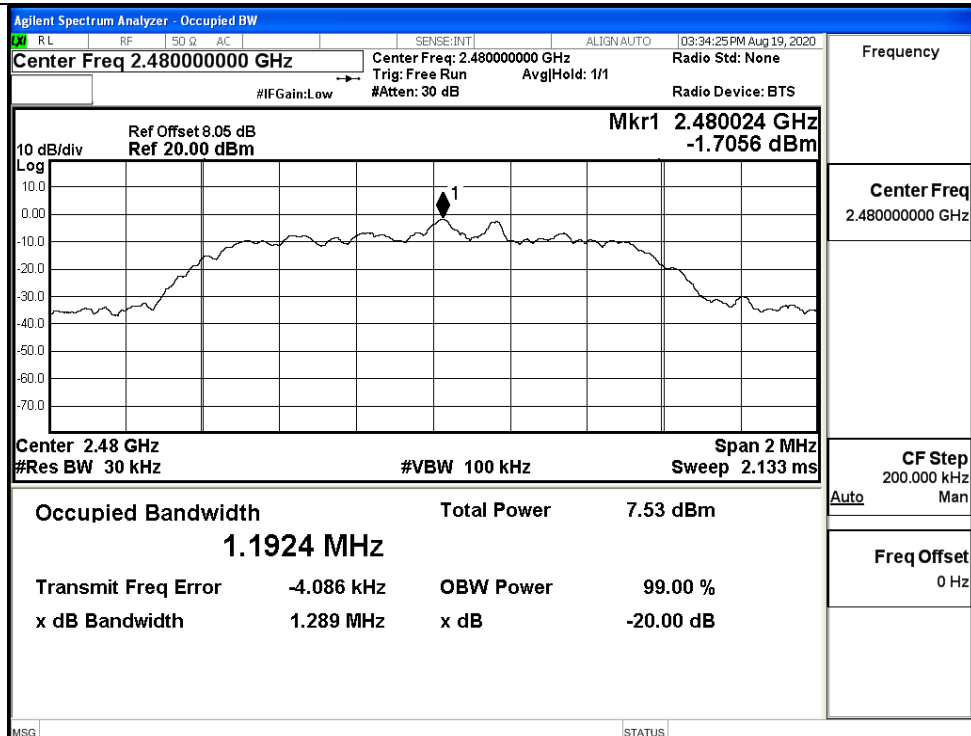
GFSK/MCH



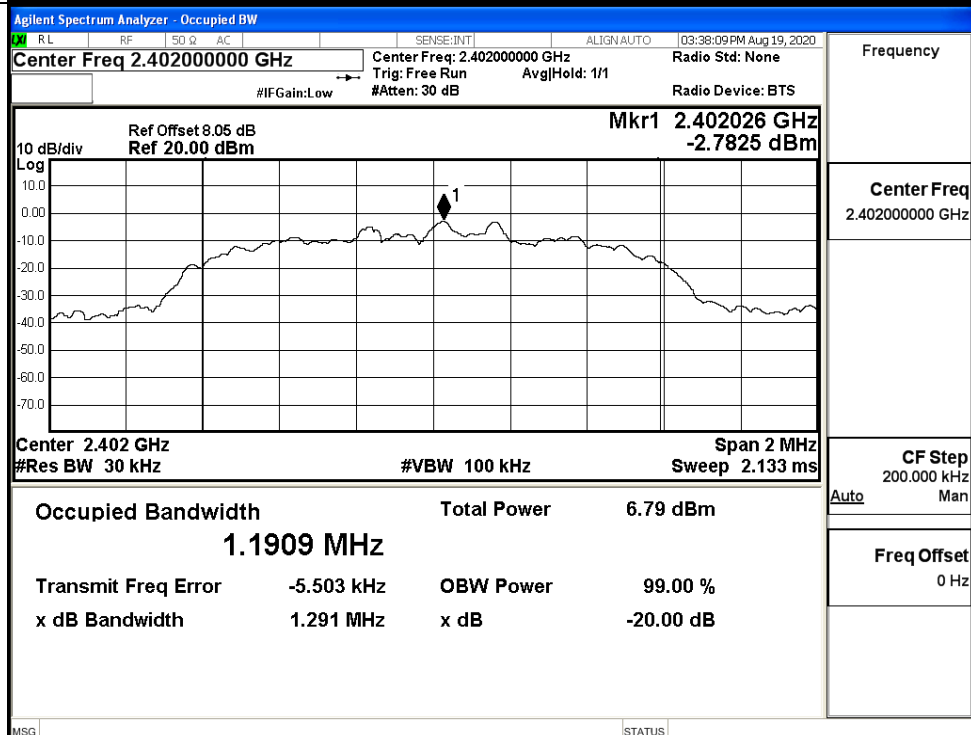
GFSK/HCH



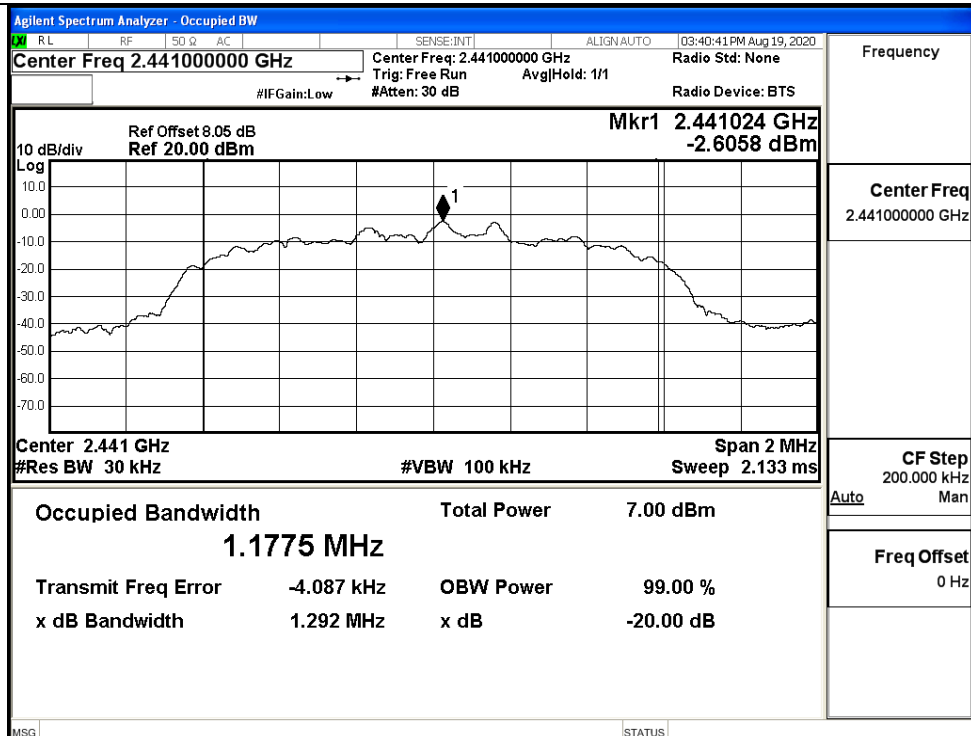
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

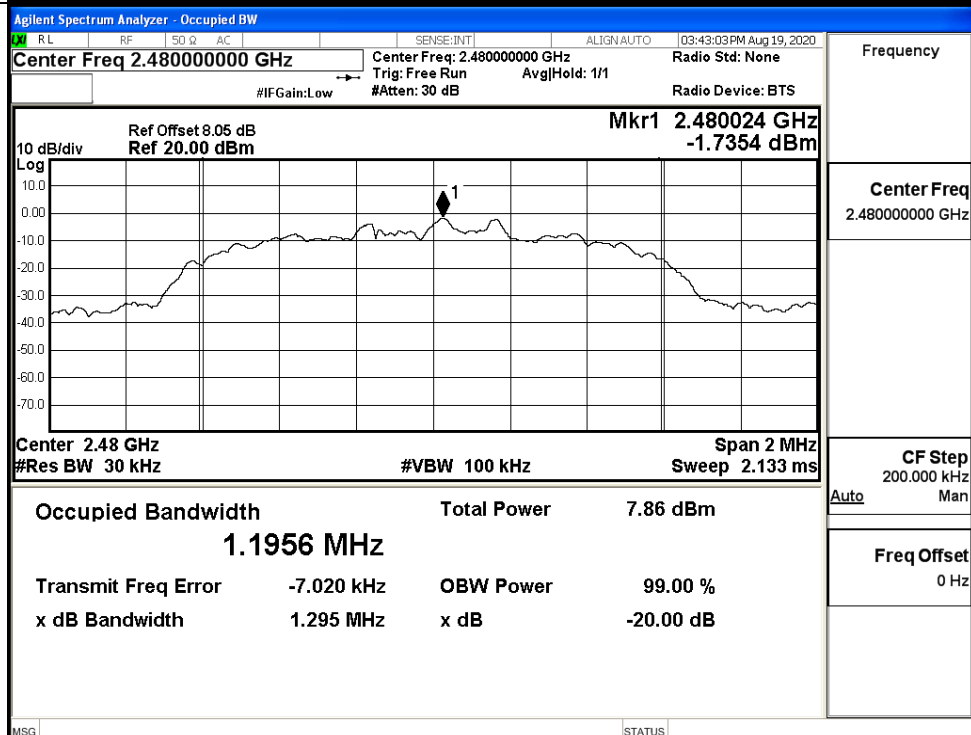
8DPSK/LCH



8DPSK/MCH



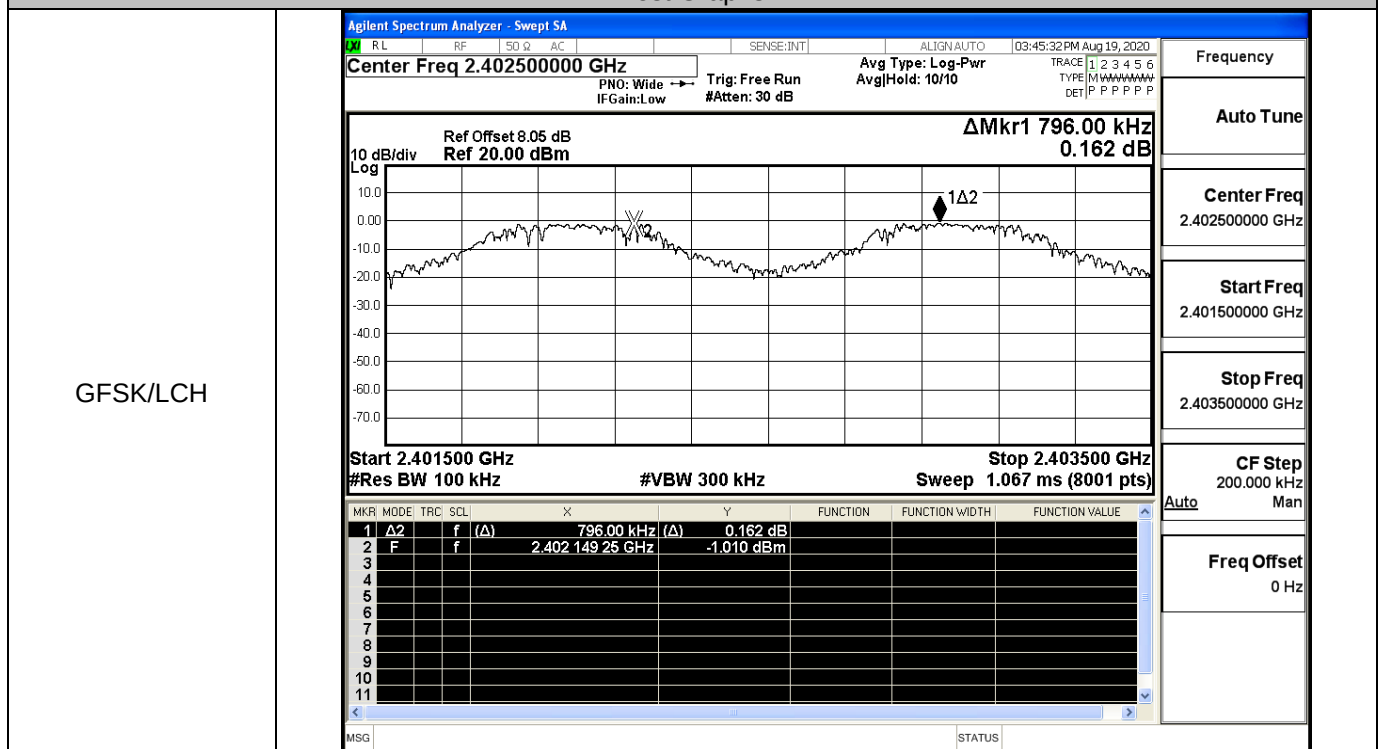
8DPSK/HCH



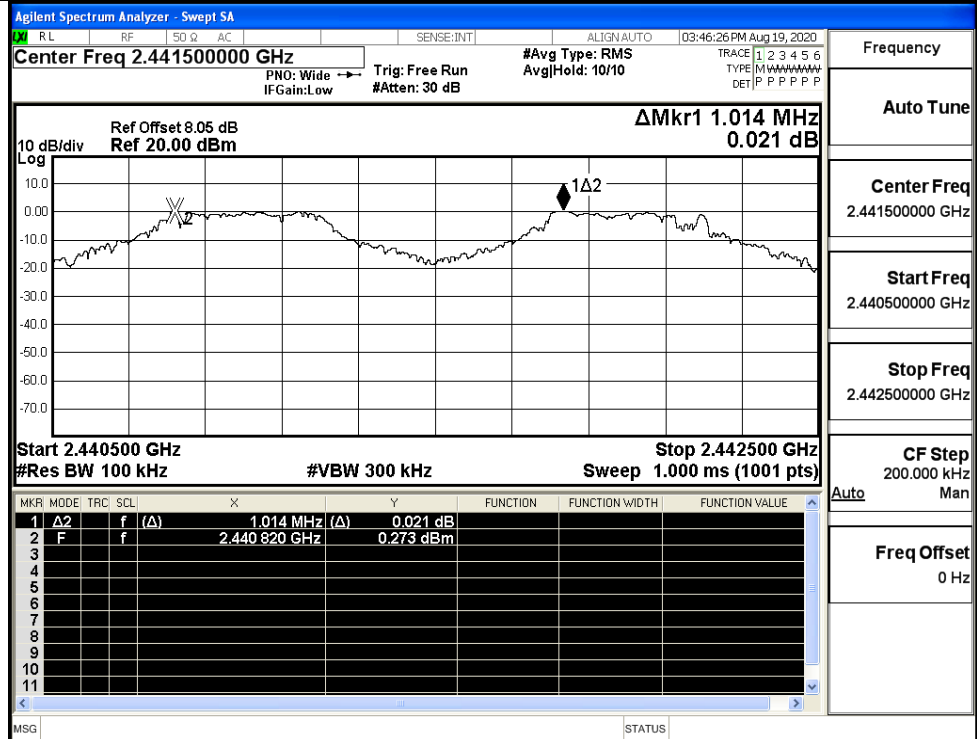
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.796	0.631	PASS
	MCH	1.014	0.631	PASS
	HCH	0.654	0.631	PASS
$\pi/4$ DQPSK	LCH	1.046	0.859	PASS
	MCH	1.334	0.859	PASS
	HCH	0.880	0.859	PASS
8DPSK	LCH	1.070	0.863	PASS
	MCH	1.128	0.863	PASS
	HCH	1.176	0.863	PASS

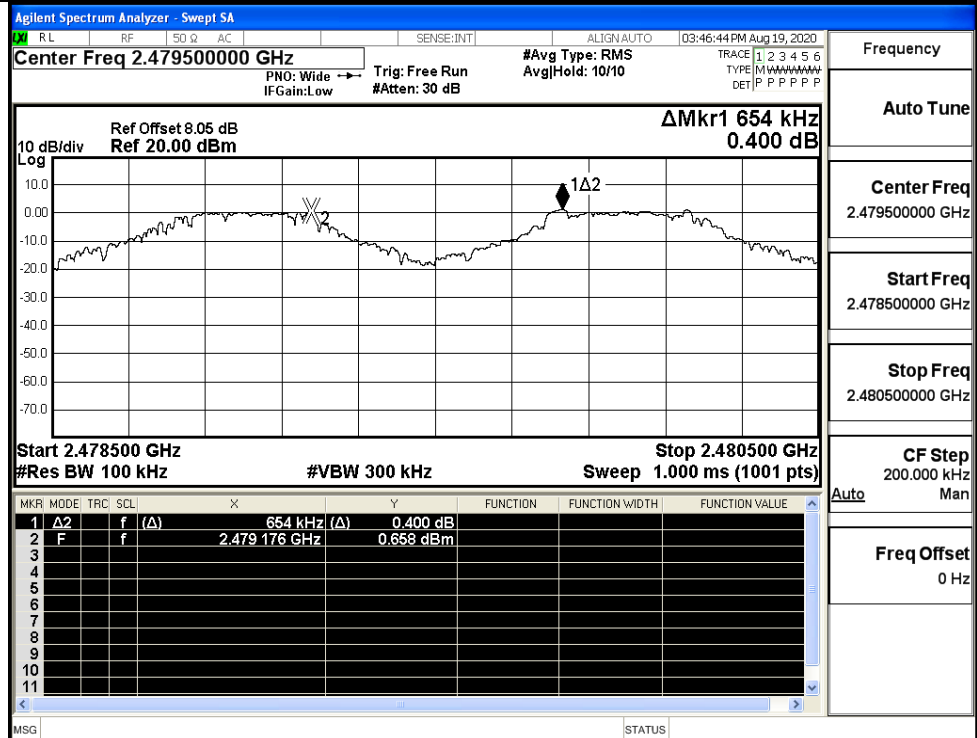
Test Graphs

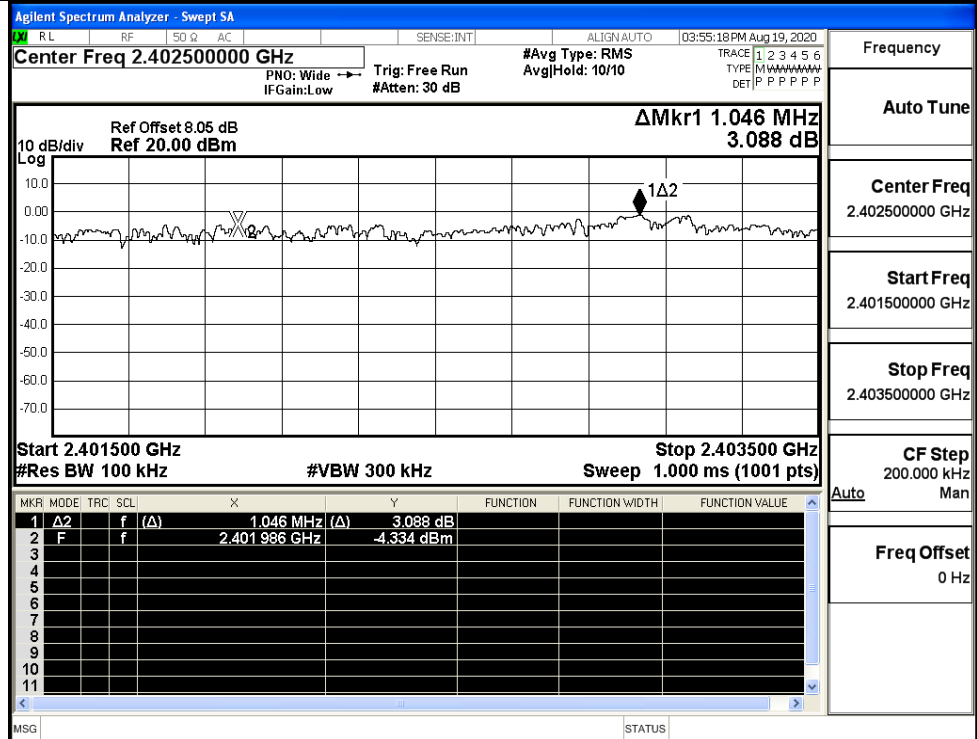
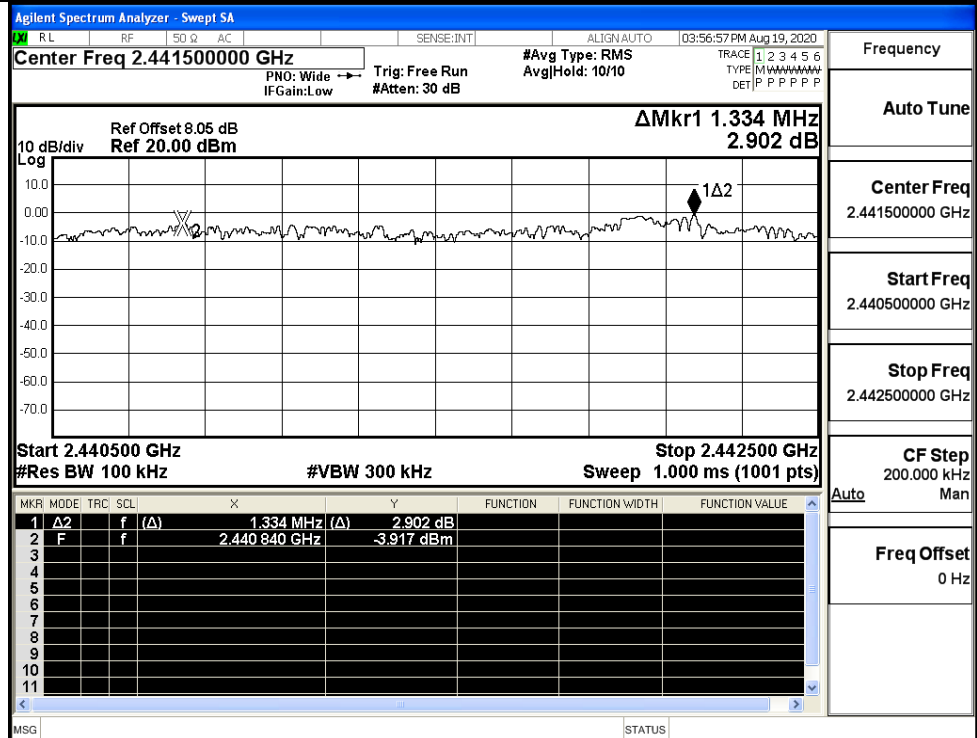


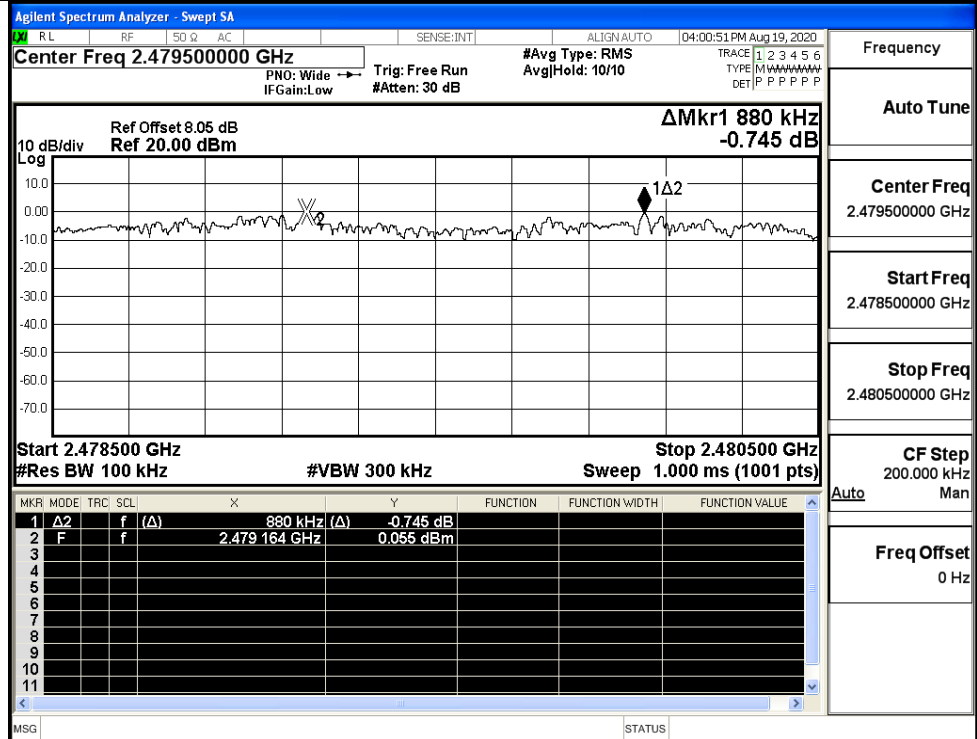
GFSK/MCH



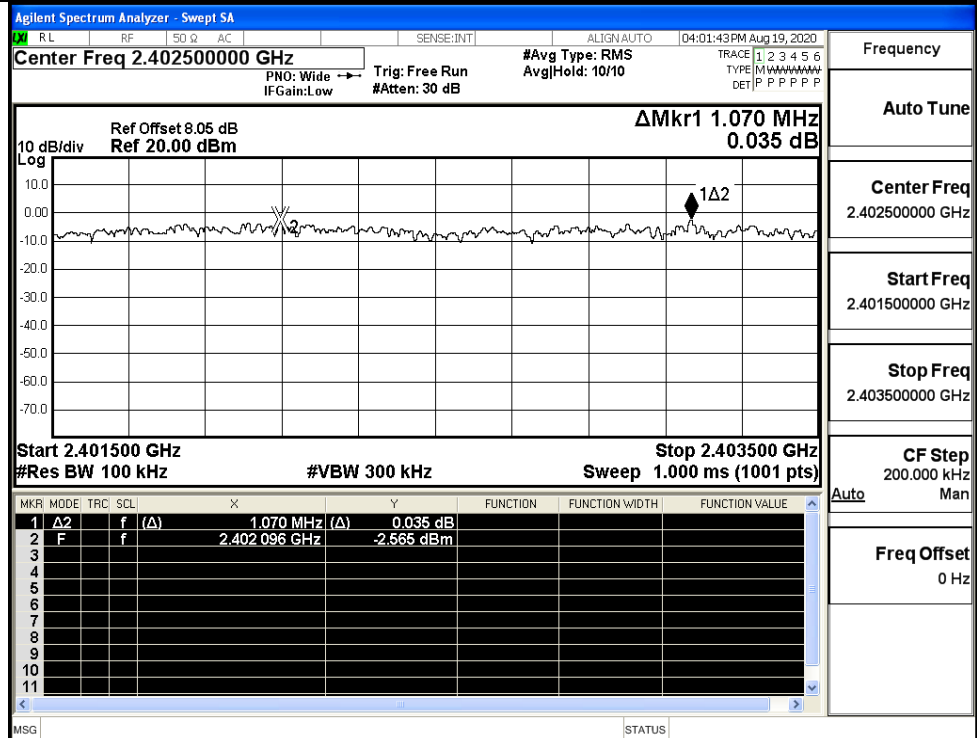
GFSK/HCH



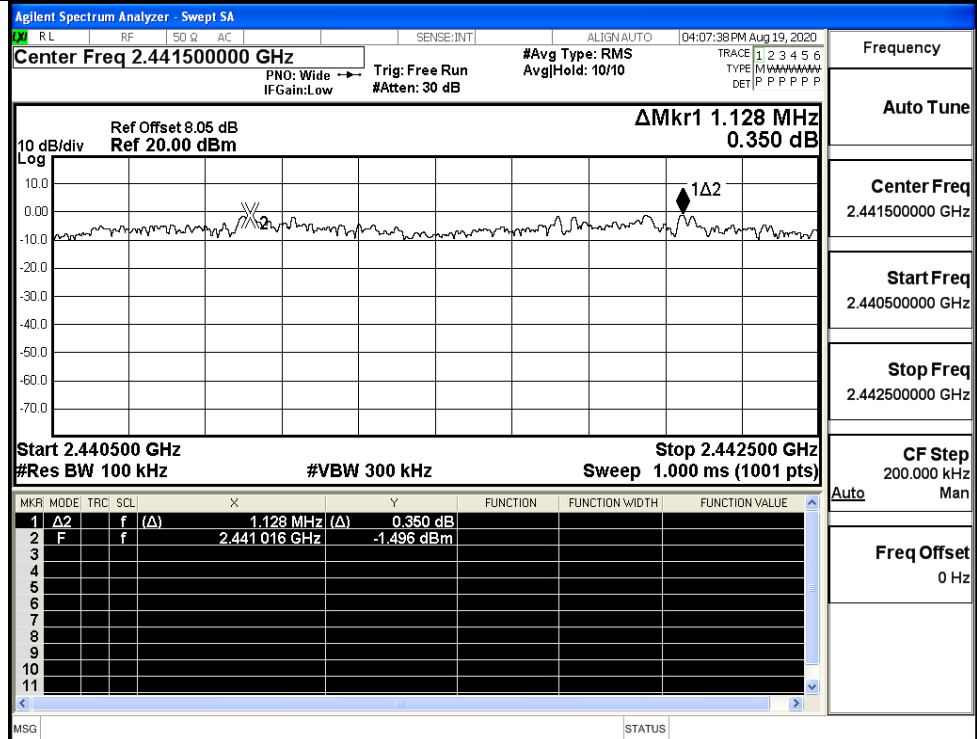
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

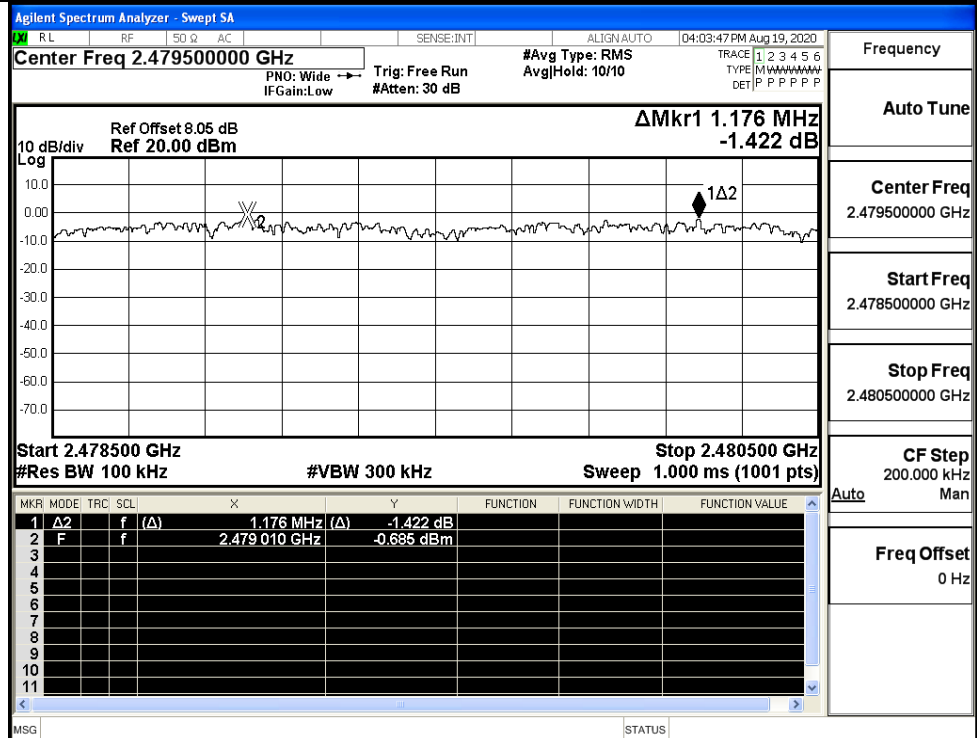
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

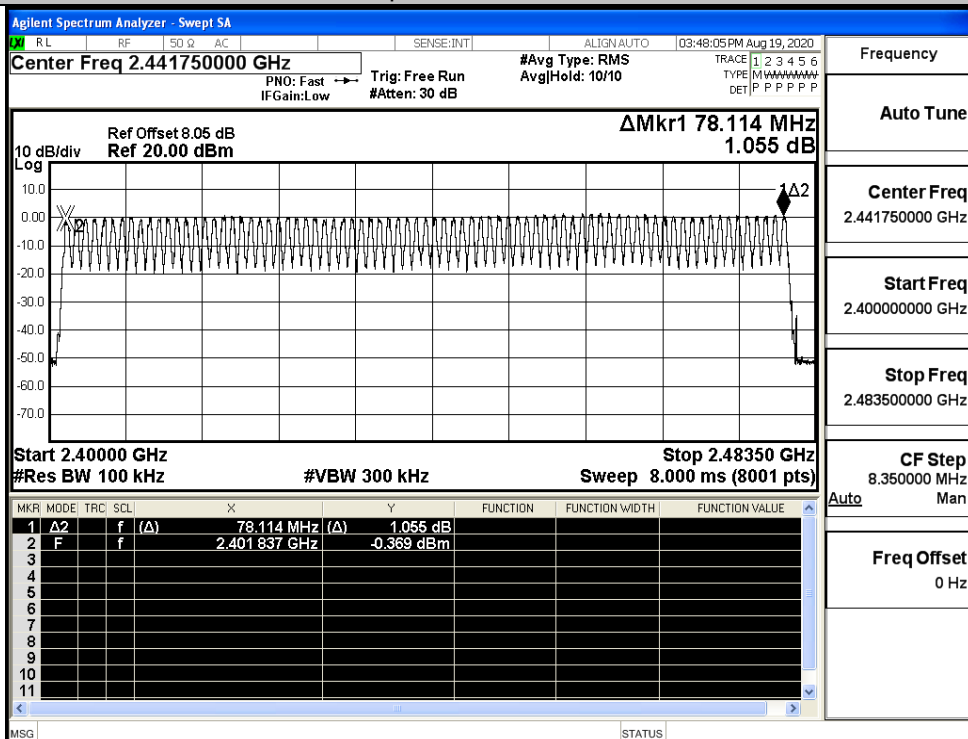


A.4 Hopping Channel Number

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

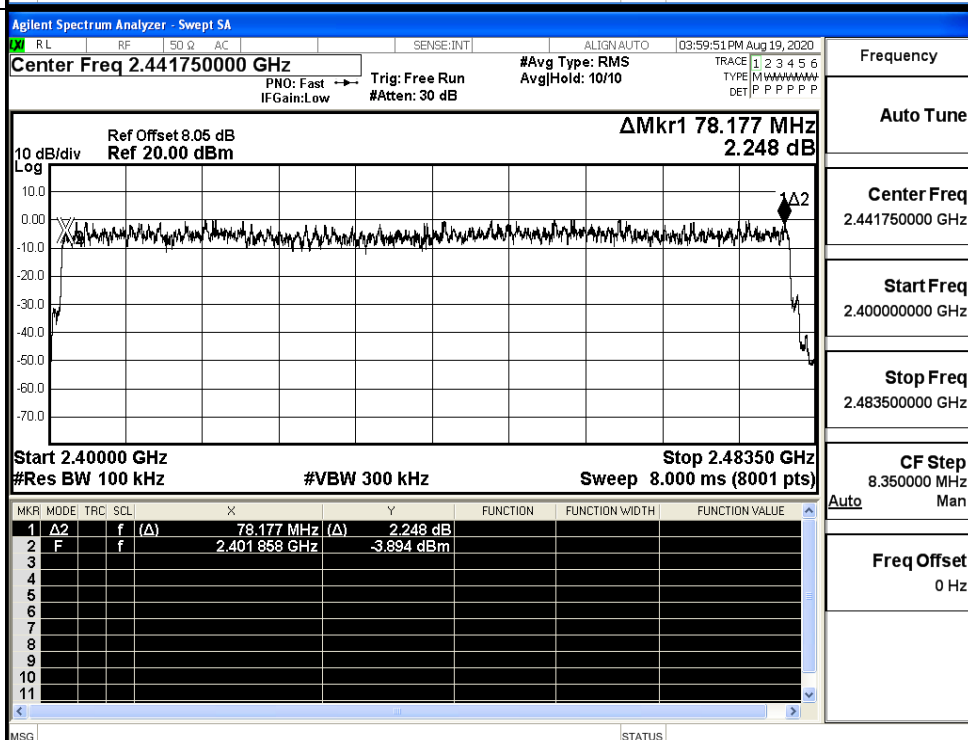
Test Graphs

GFSK/Hop



Frequency

Auto Tune

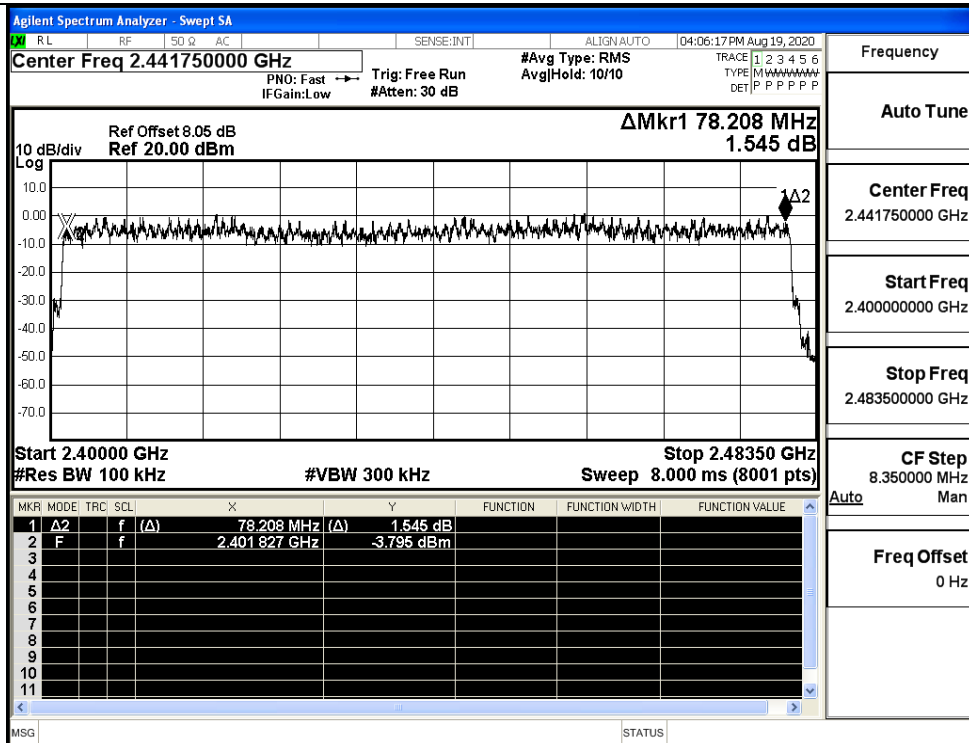
Center Freq
2.441750000 GHzStart Freq
2.400000000 GHzStop Freq
2.483500000 GHzCF Step
8.350000 MHz
Auto ManFreq Offset
0 Hz $\pi/4$ DQPSK/Hop

Frequency

Auto Tune

Center Freq
2.441750000 GHzStart Freq
2.400000000 GHzStop Freq
2.483500000 GHzCF Step
8.350000 MHz
Auto ManFreq Offset
0 Hz

8DPSK/Hop

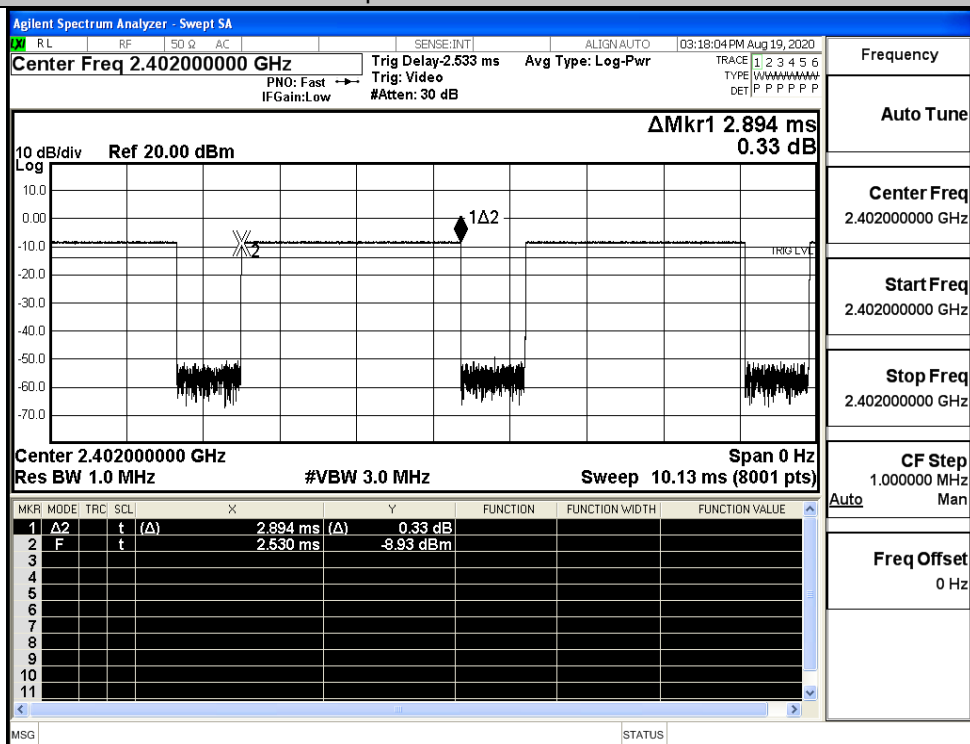


A.5 Dwell Time

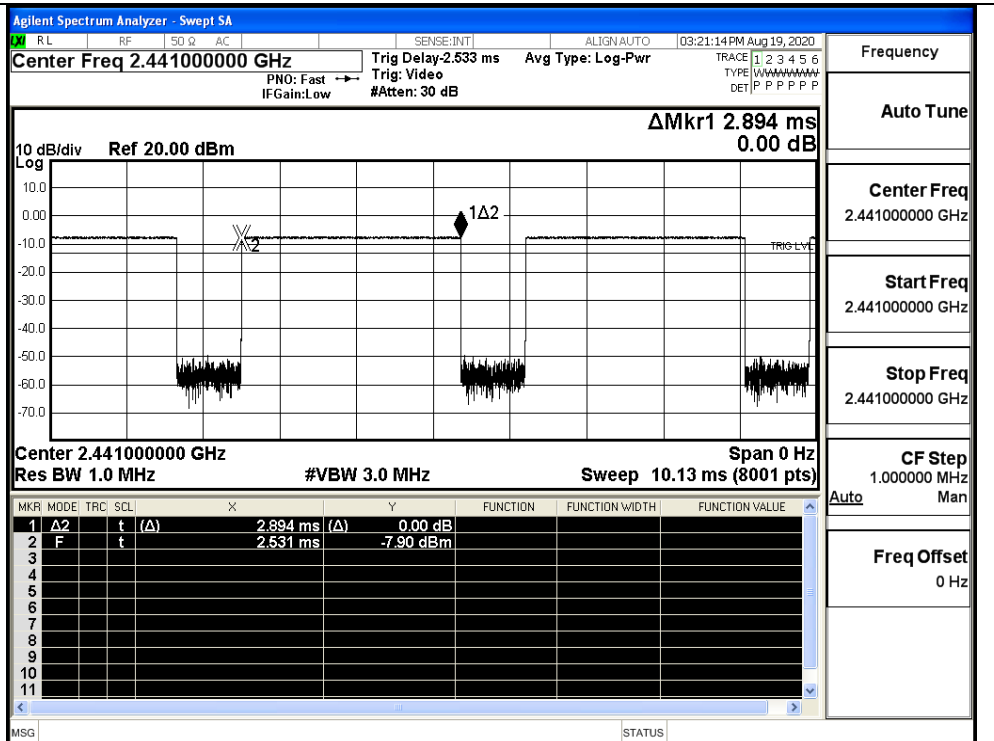
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.894	106.7	0.309	0.4	PASS
	DH5	MCH	2.894	106.7	0.309	0.4	PASS
	DH5	HCH	2.894	106.7	0.309	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.884	106.7	0.308	0.4	PASS
	2DH5	MCH	2.883	106.7	0.308	0.4	PASS
	2DH5	HCH	2.884	106.7	0.308	0.4	PASS
8DPSK	3DH5	LCH	2.885	106.7	0.308	0.4	PASS
	3DH5	MCH	2.887	106.7	0.308	0.4	PASS
	3DH5	HCH	2.885	106.7	0.308	0.4	PASS

Test Graphs

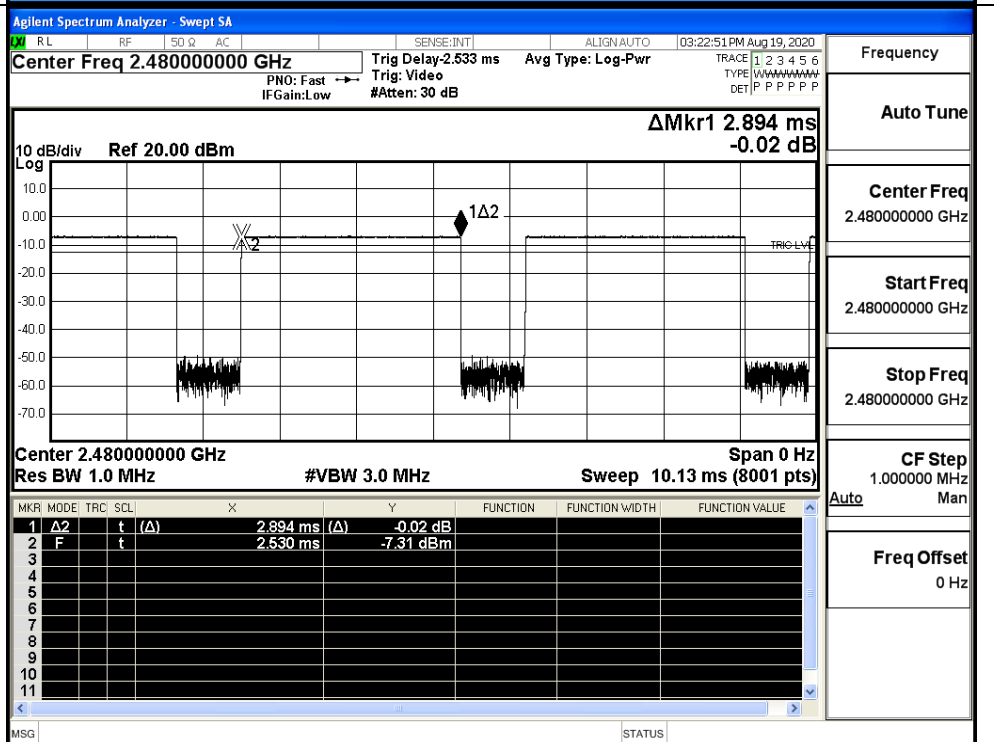
GFSK_DH5/LCH



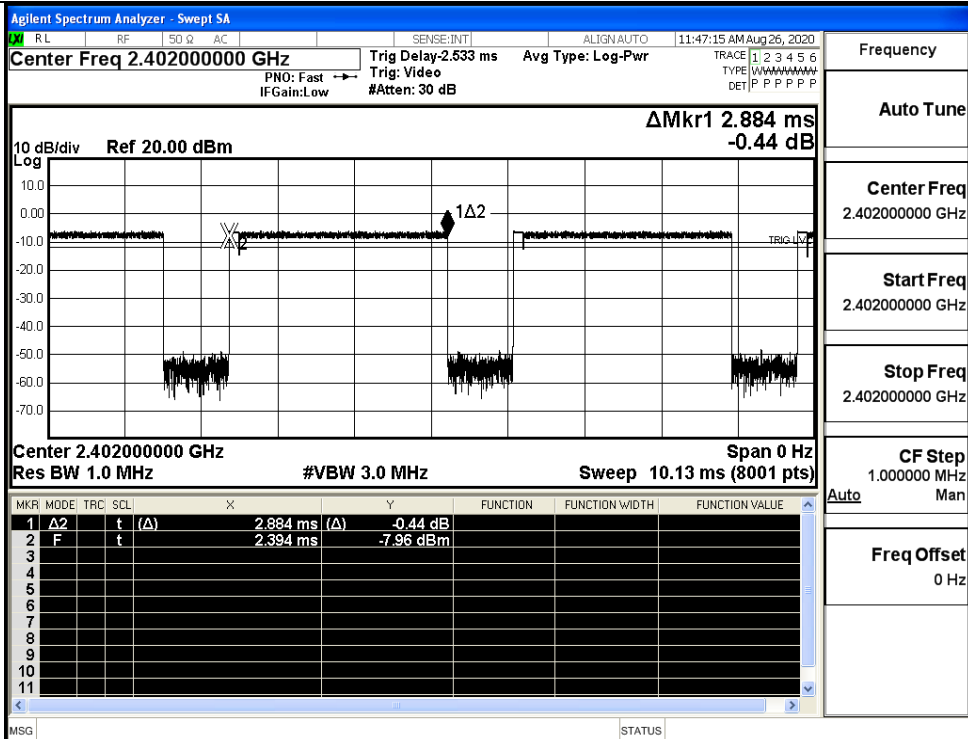
GFSK_DH5/MCH



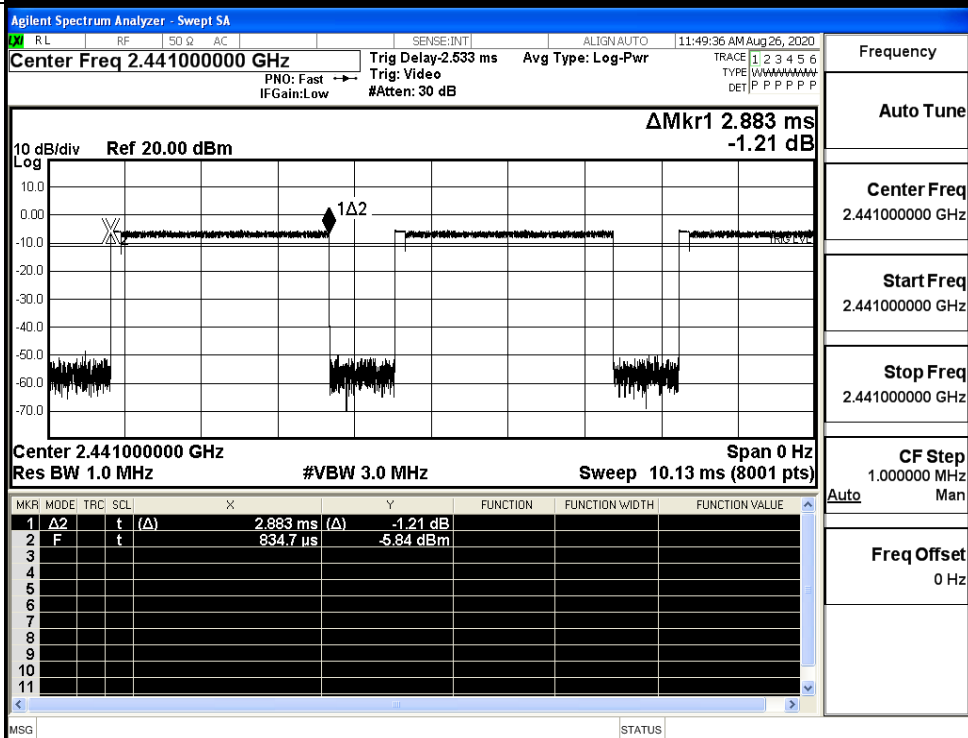
GFSK_DH5/HCH



$\pi/4$ DQPSK
_2DH5/LCH



$\pi/4$ DQPSK
_2DH5/MCH



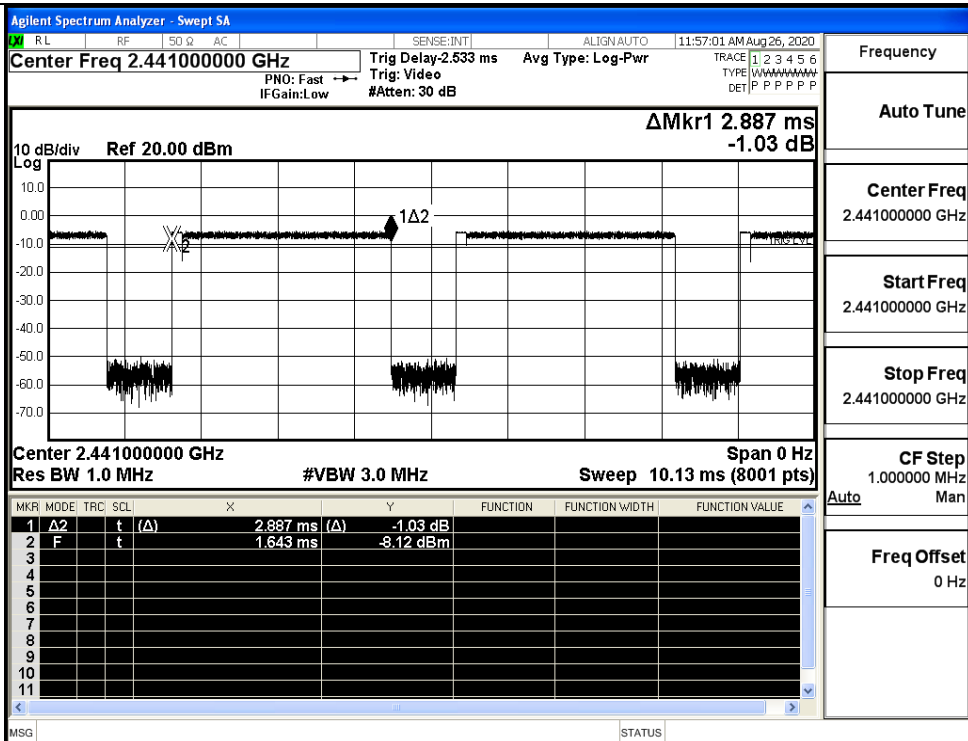
[illegible]

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

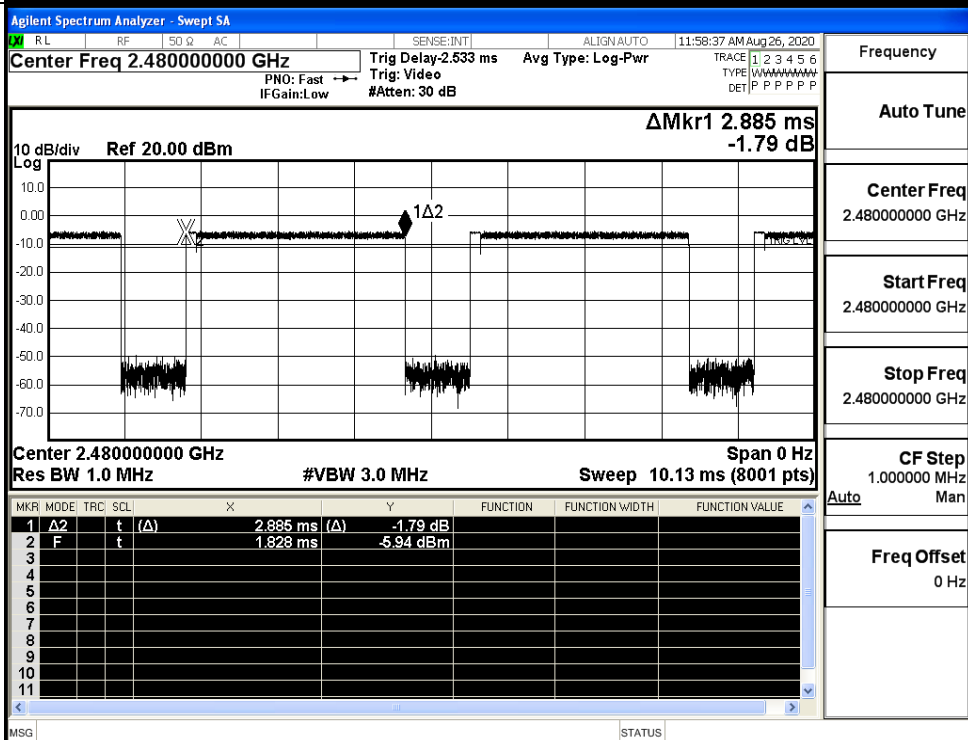
[illegible]

Frequency
Auto Tune
Center Freq 2.402000000 GHz
Start Freq 2.402000000 GHz
Stop Freq 2.402000000 GHz
CF Step 1.000000 MHz Auto
Freq Offset 0 Hz

8DPSK_3DH5/MCH



8DPSK_3DH5/HCH

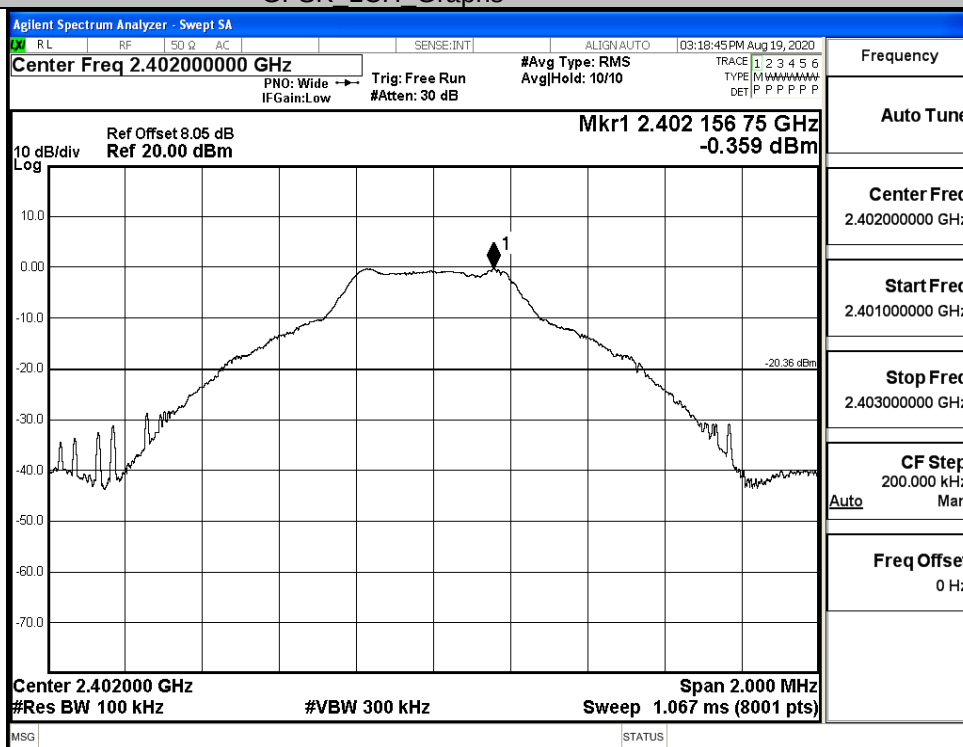


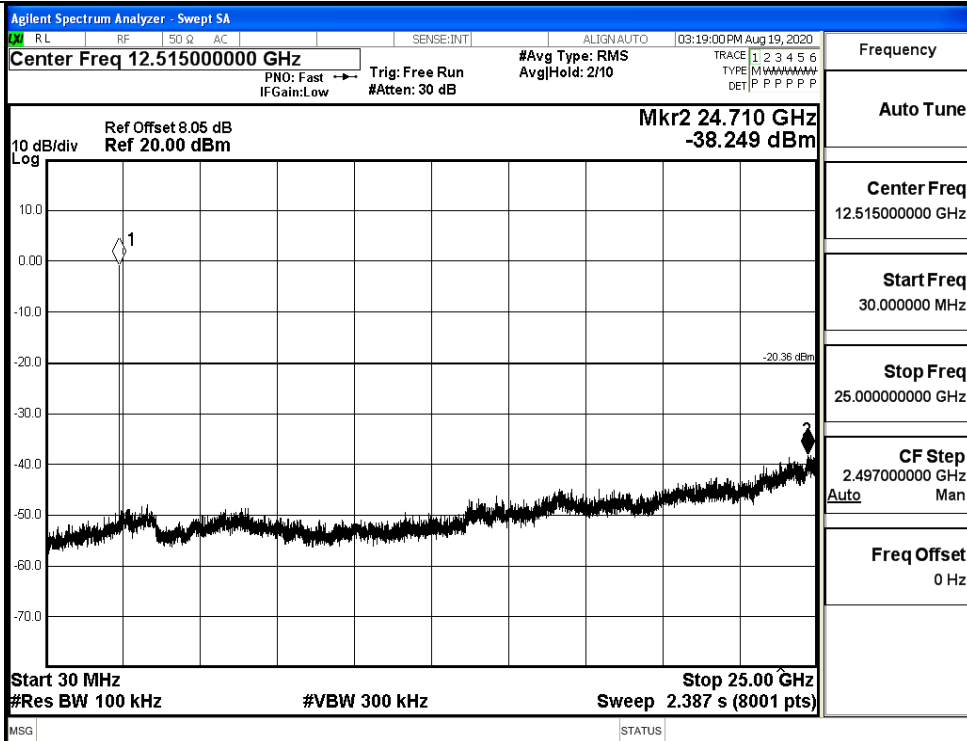
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.359	-38.249	-20.359	PASS
	MCH	0.48	-37.942	-19.520	PASS
	HCH	1.034	-37.690	-18.966	PASS
$\pi/4$ DQPSK	LCH	-0.903	-36.195	-20.903	PASS
	MCH	-0.894	-36.083	-20.894	PASS
	HCH	0.012	-37.031	-19.988	PASS
8DPSK	LCH	-0.983	-37.977	-20.983	PASS
	MCH	-0.708	-37.956	-20.708	PASS
	HCH	0.244	-38.306	-19.756	PASS

GFSK LCH Graphs

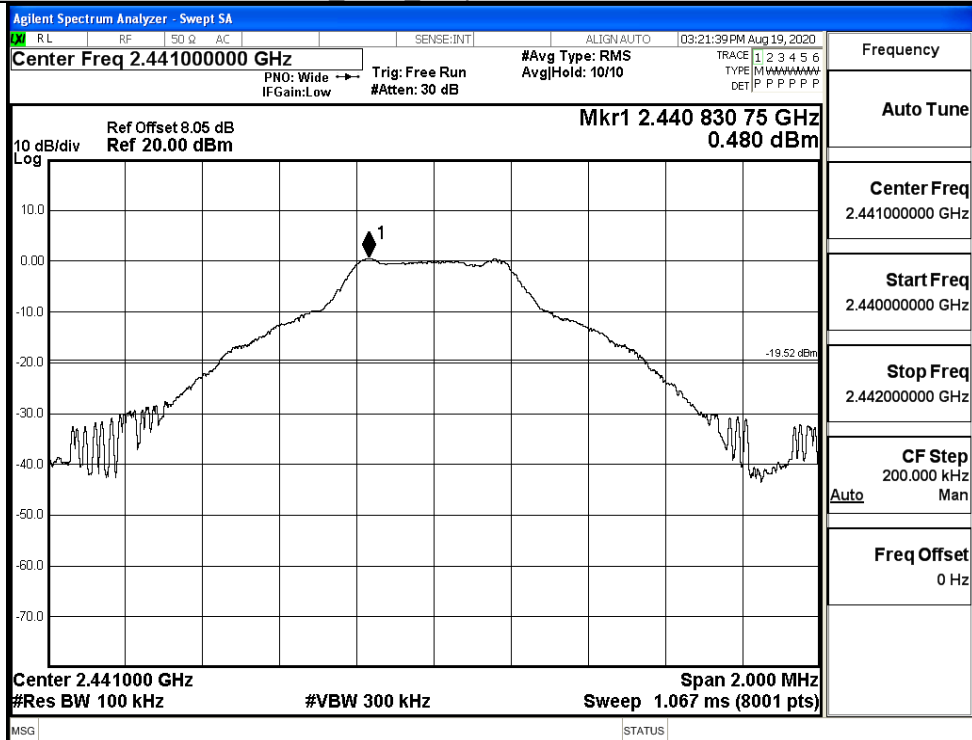
Pref



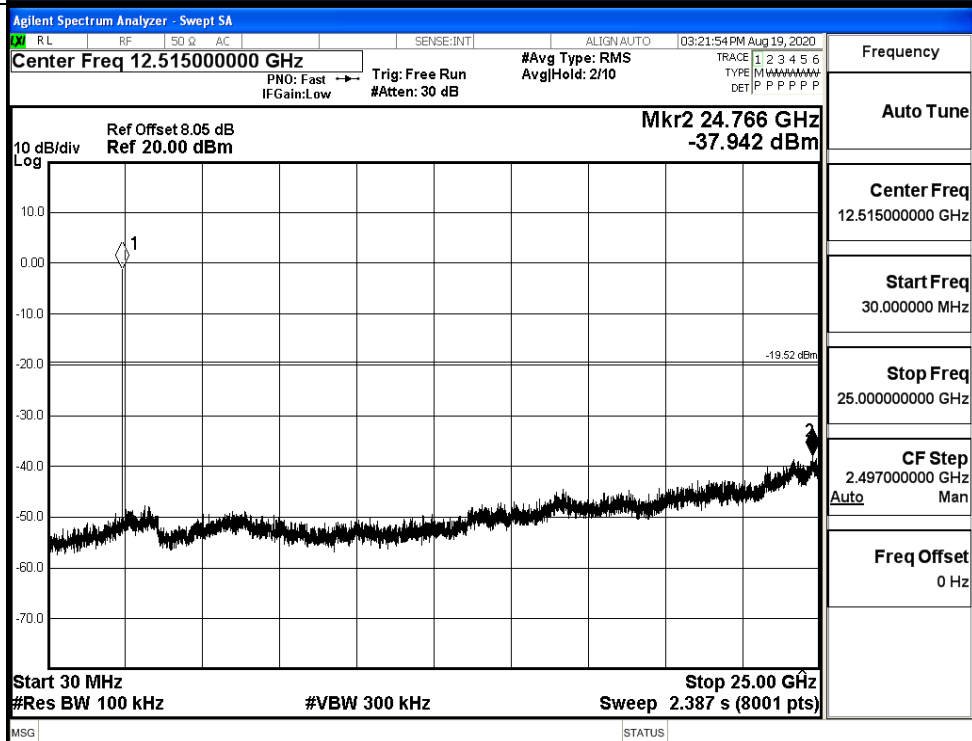
P_{uw}

GFSK_MCH_Graphs

Pref

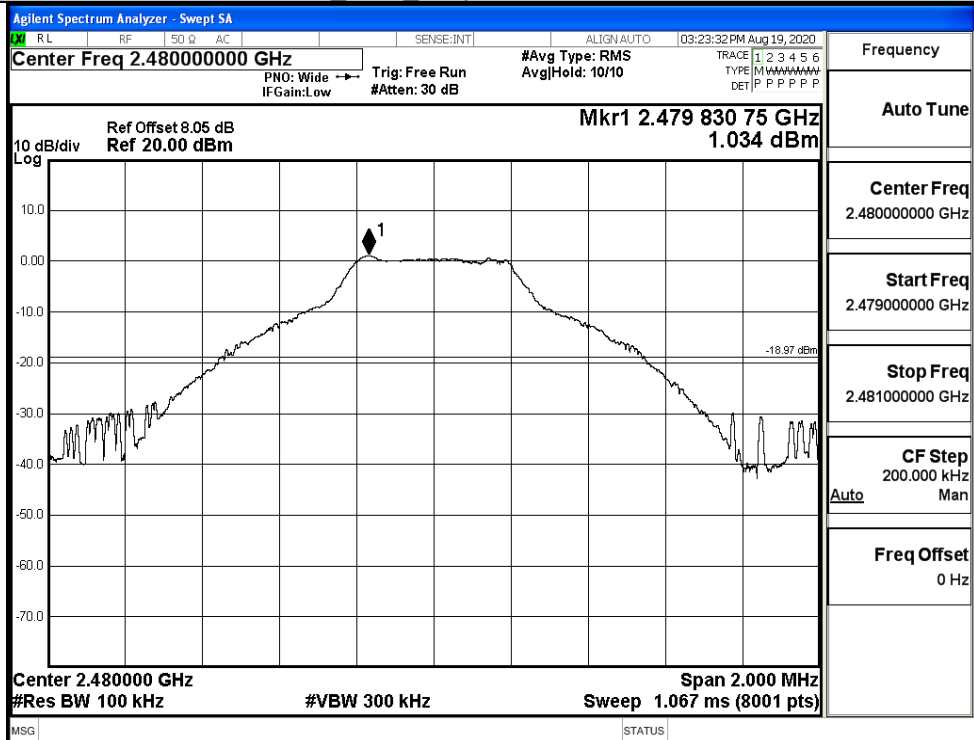


Puw

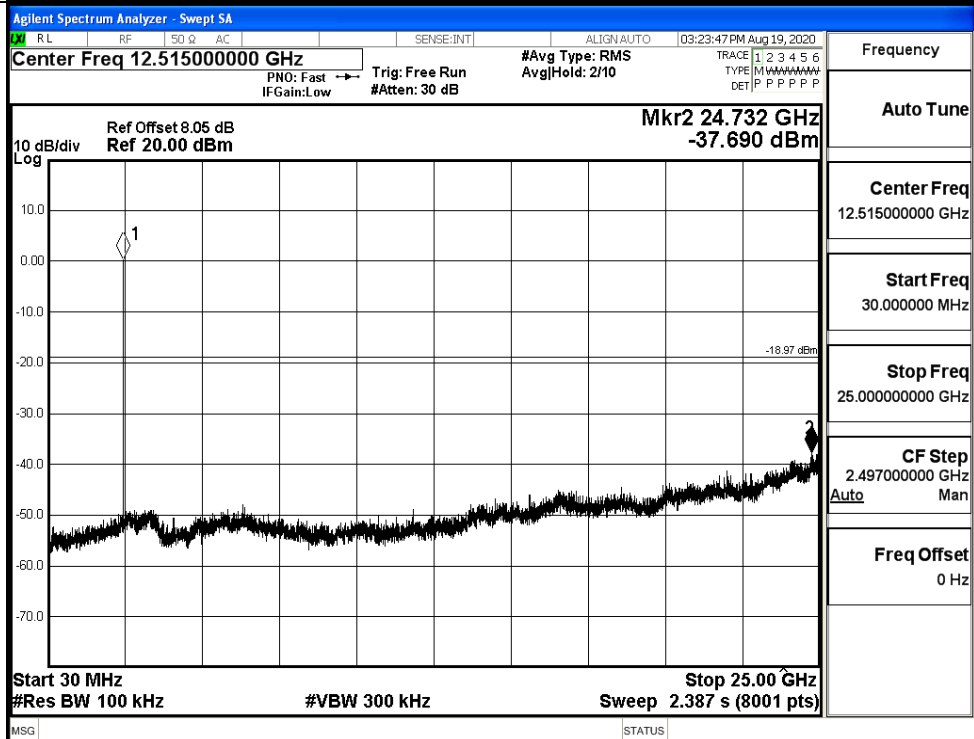


GFSK HCH_Graphs

Pref

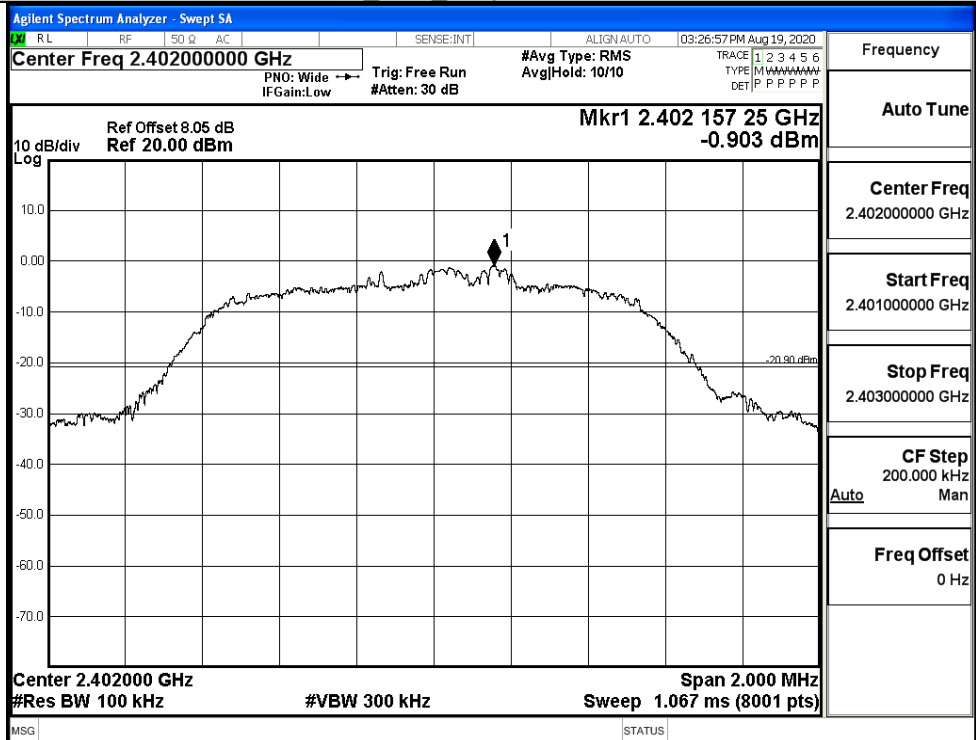


Puw

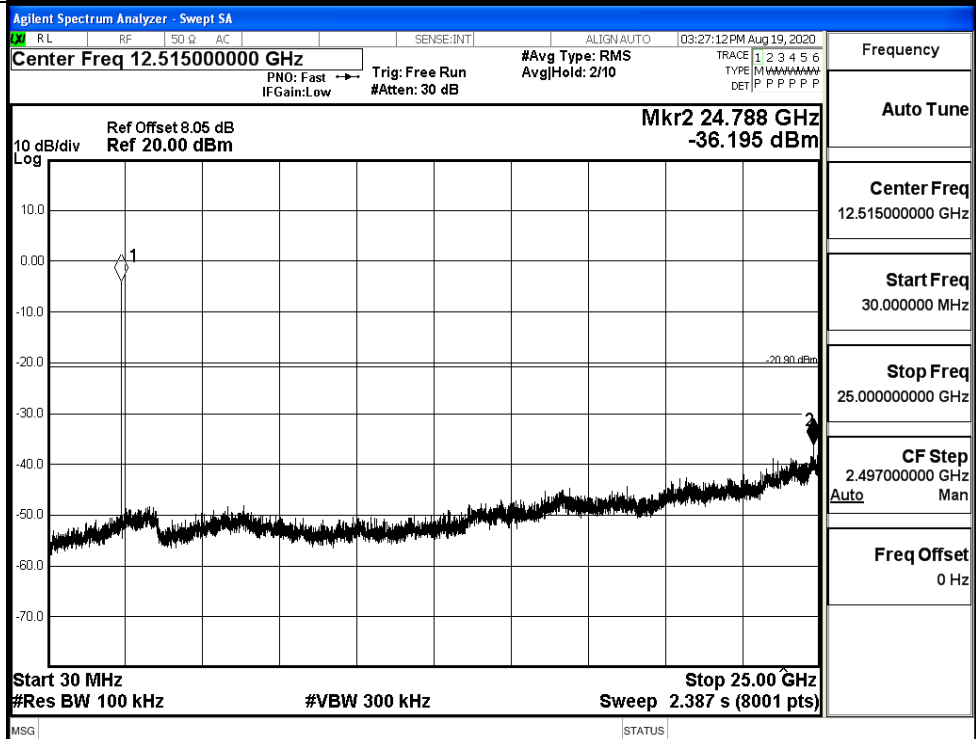


$\pi/4$ DQPSK_LCH_Graphs

Pref

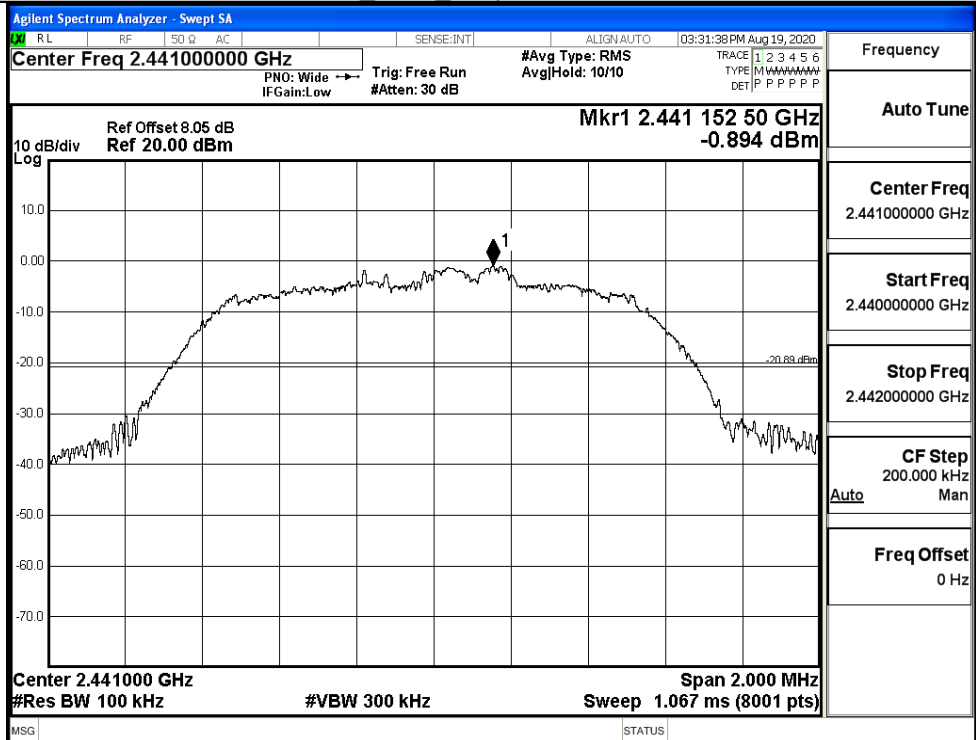


Puw



π /4DQPSK_MCH_Graphs

Pref

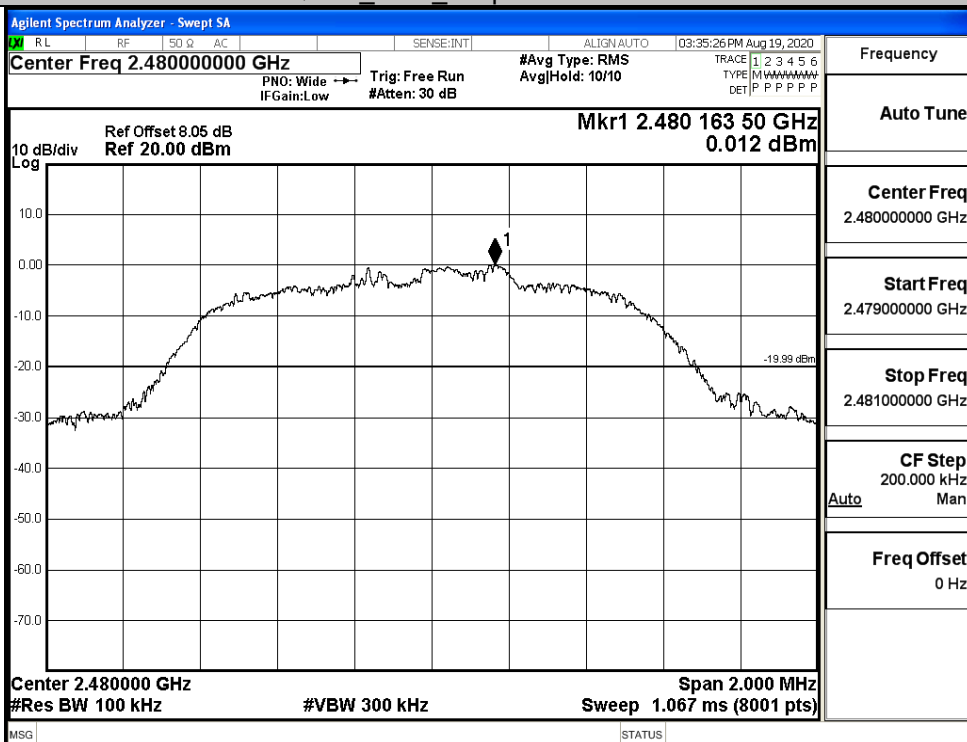


Puw

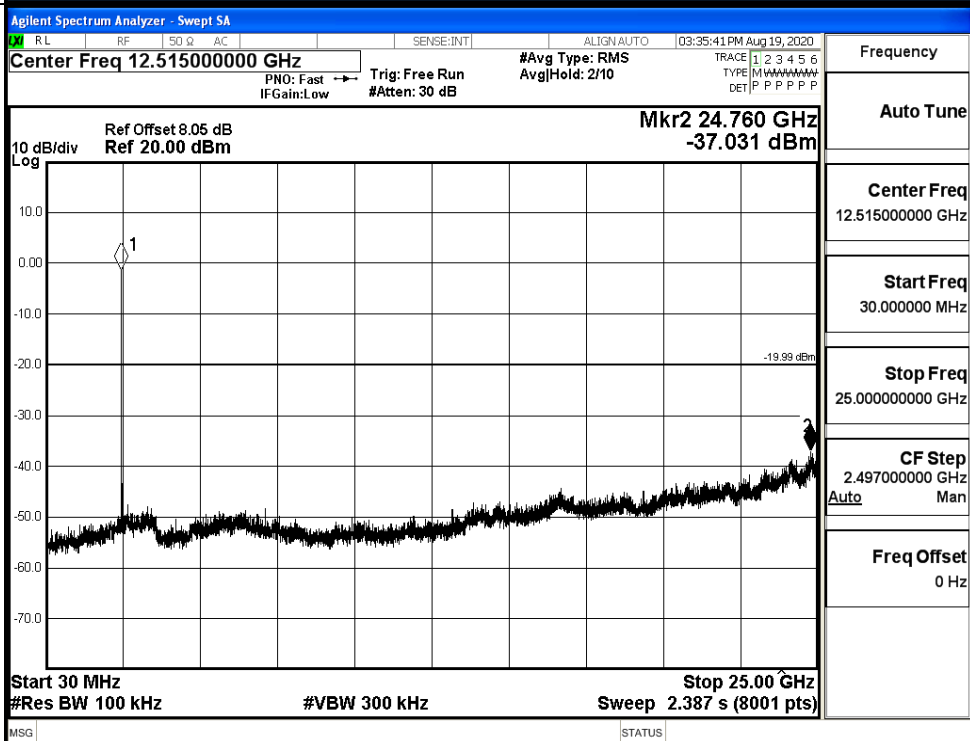


π /4DQPSK_HCH_Graphs

Pref

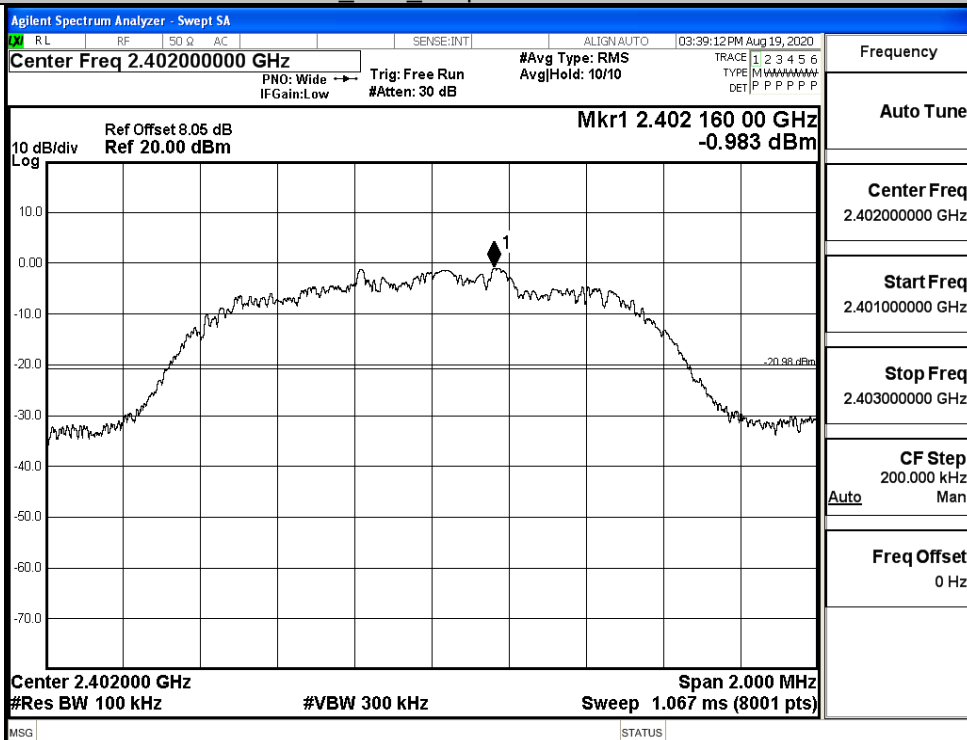


Puw

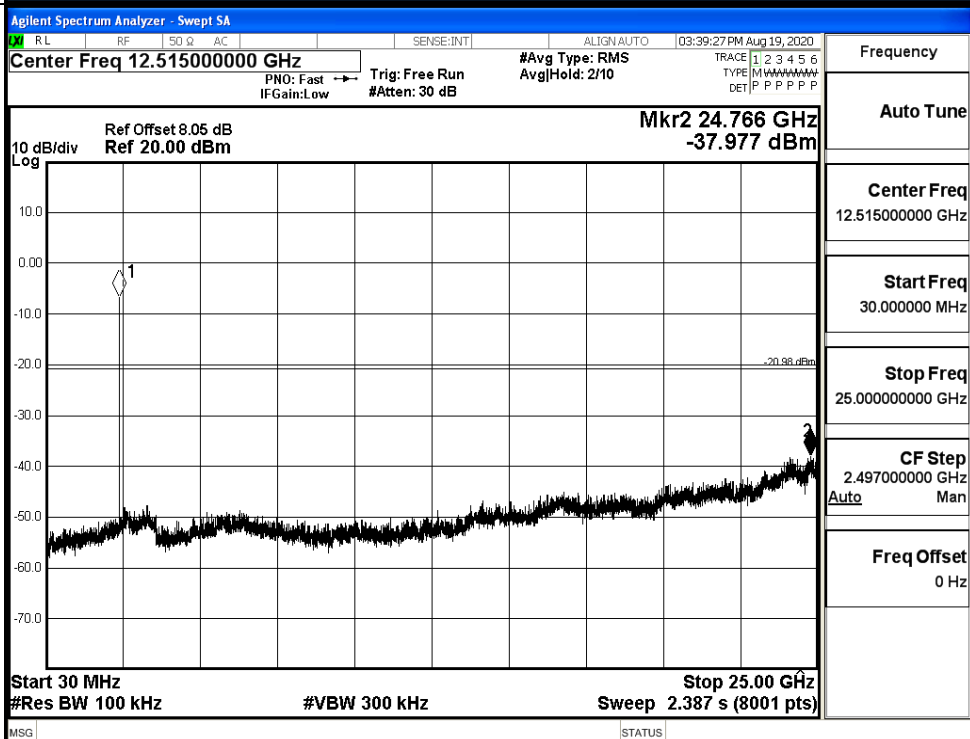


8DPSK_LCH_Graphs

Pref

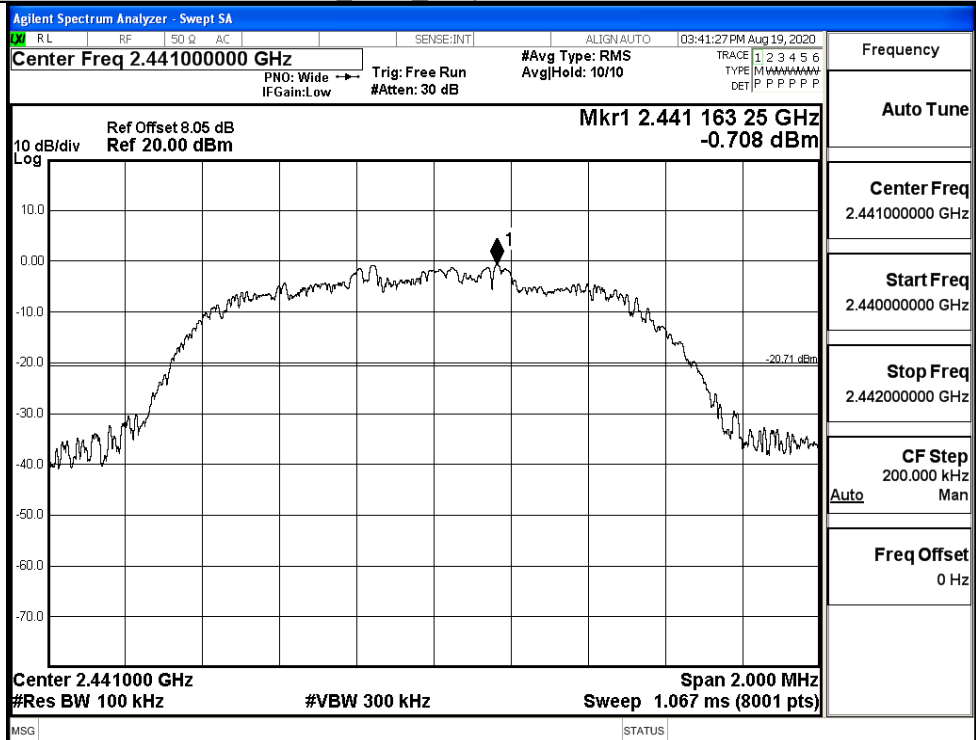


Puw

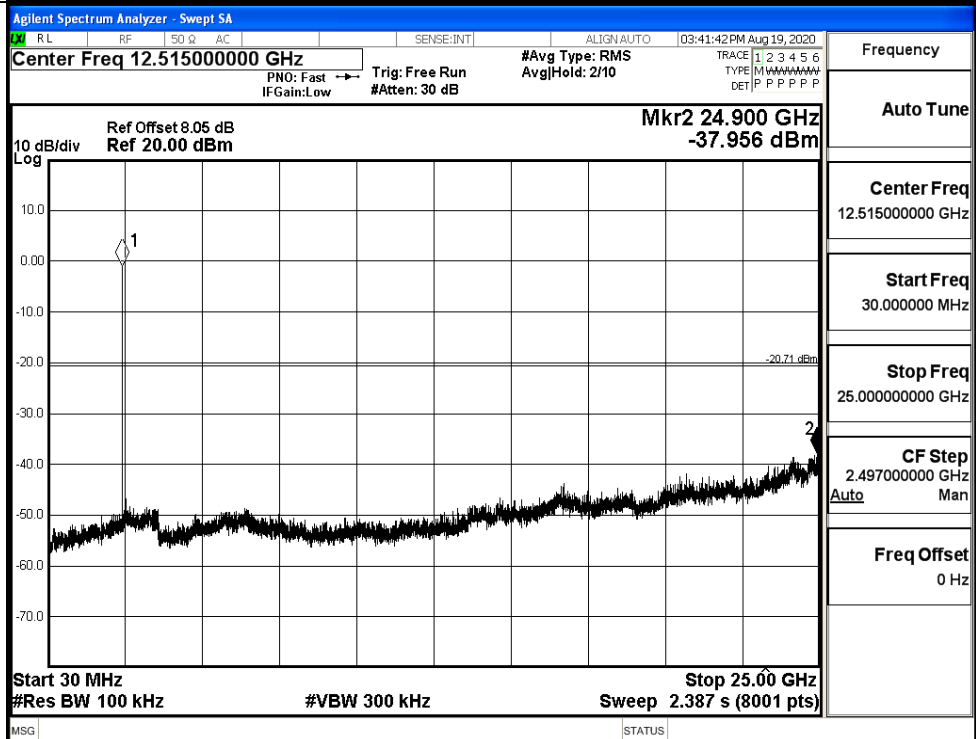


8DPSK_MCH_Graphs

Pref

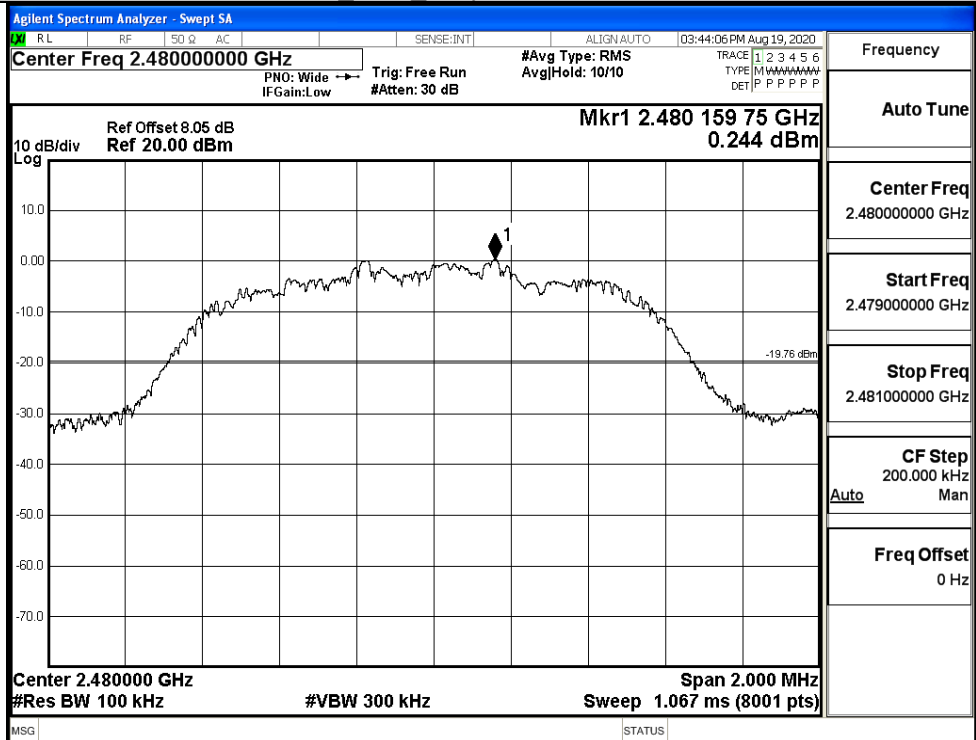


Puw

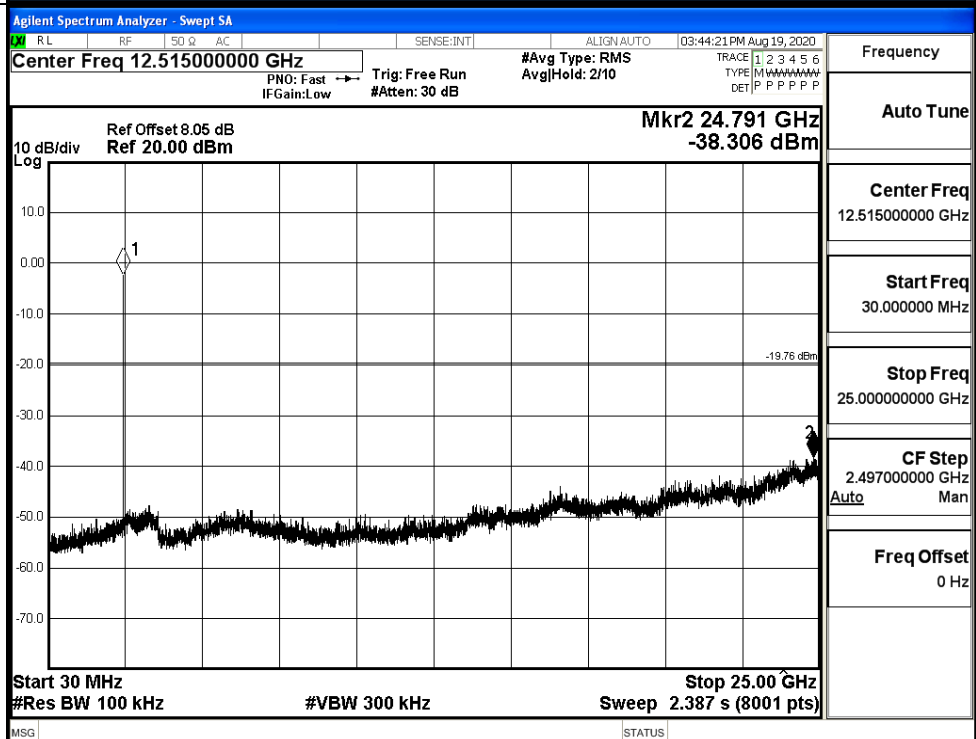


8DPSK_HCH_Graphs

Pref



Puw

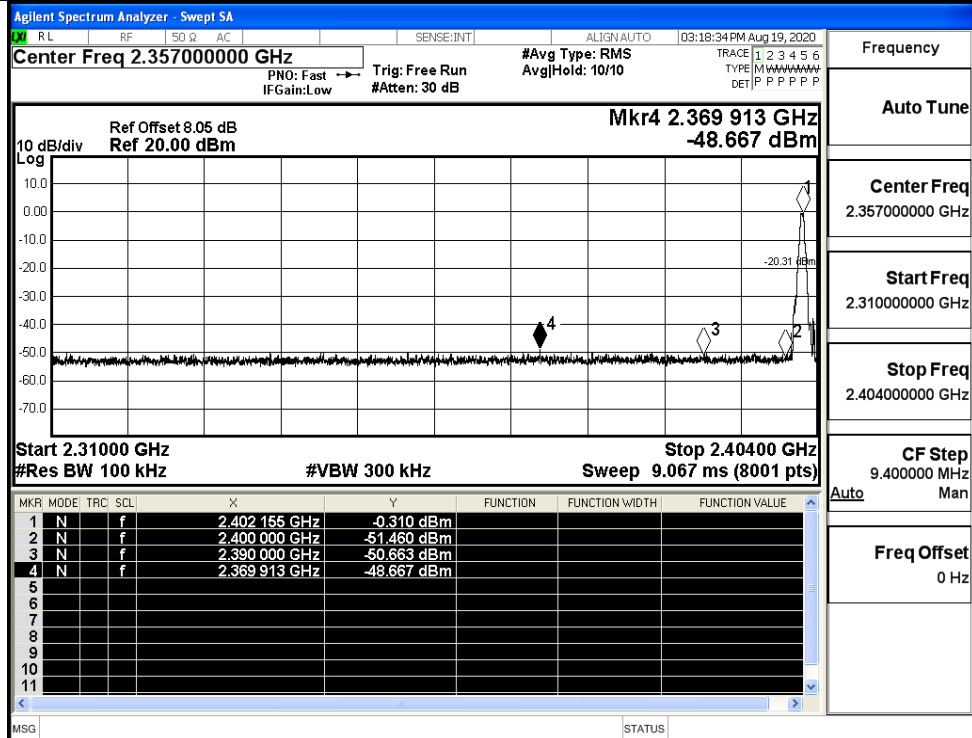


A.7 Band-edge for RF Conducted Emissions

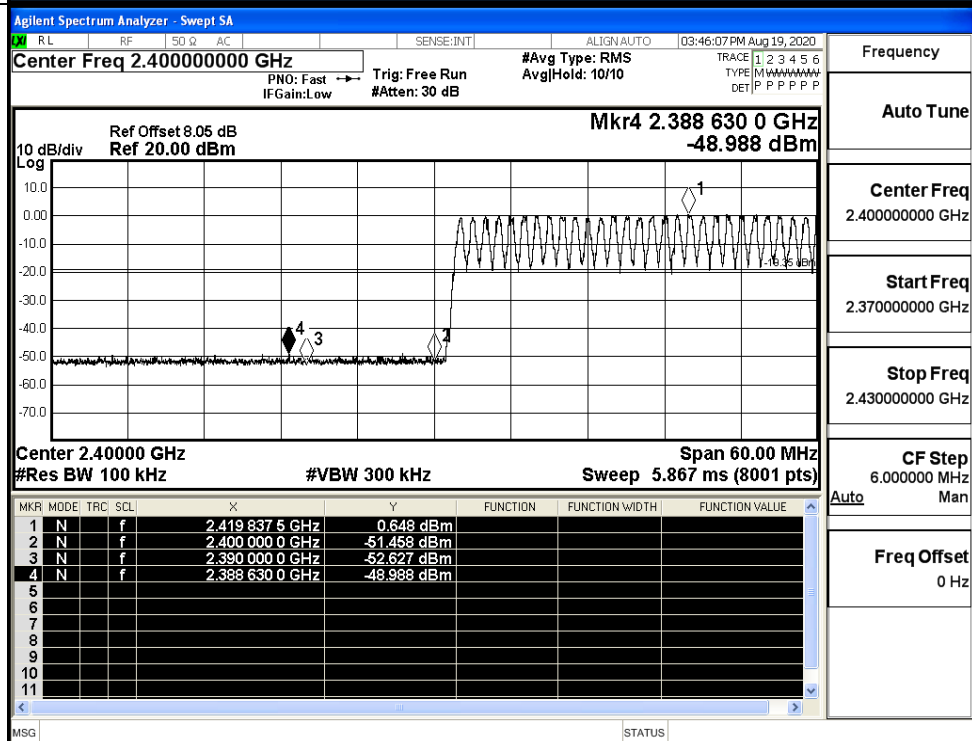
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-0.310	Off	-48.667	-20.31	PASS
			0.648	On	-48.988	-19.35	PASS
	HCH	2480	1.015	Off	-49.371	-18.99	PASS
			1.687	On	-48.373	-18.31	PASS
$\pi/4$ DQPSK	LCH	2402	-0.792	Off	-49.100	-20.79	PASS
			-0.114	On	-49.067	-20.11	PASS
	HCH	2480	-0.153	Off	-49.372	-20.15	PASS
			0.702	On	-48.554	-19.3	PASS
8DPSK	LCH	2402	-1.185	Off	-49.462	-21.19	PASS
			0.245	On	-48.696	-19.76	PASS
	HCH	2480	0.278	Off	-48.917	-19.72	PASS
			0.479	On	-48.820	-19.52	PASS

Test Graphs

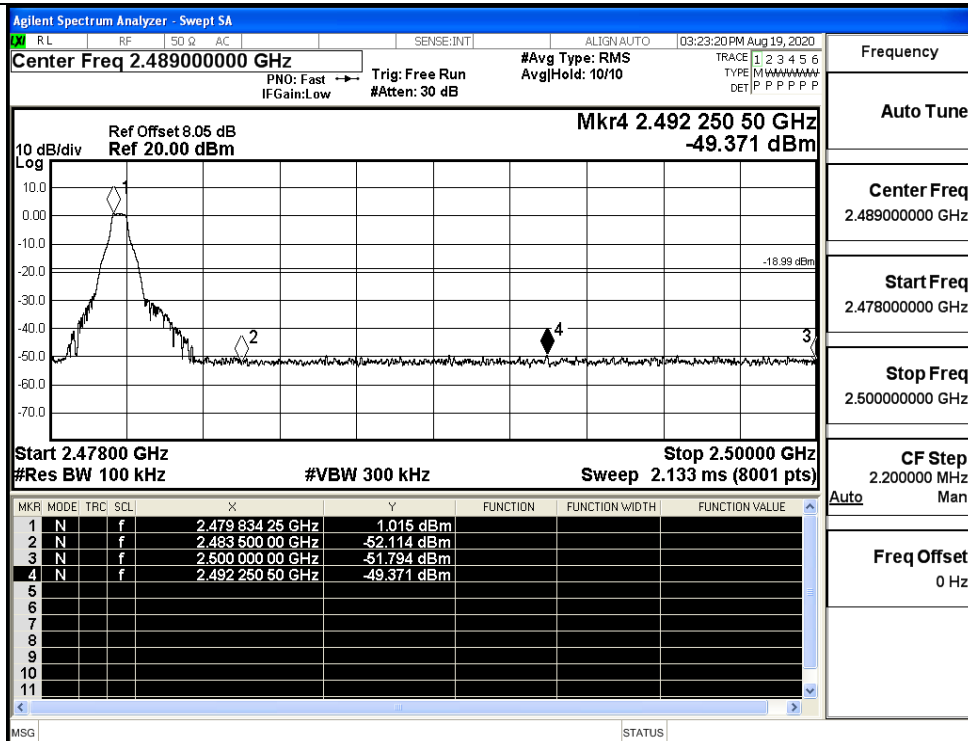
GFSK/LCH/No Hop



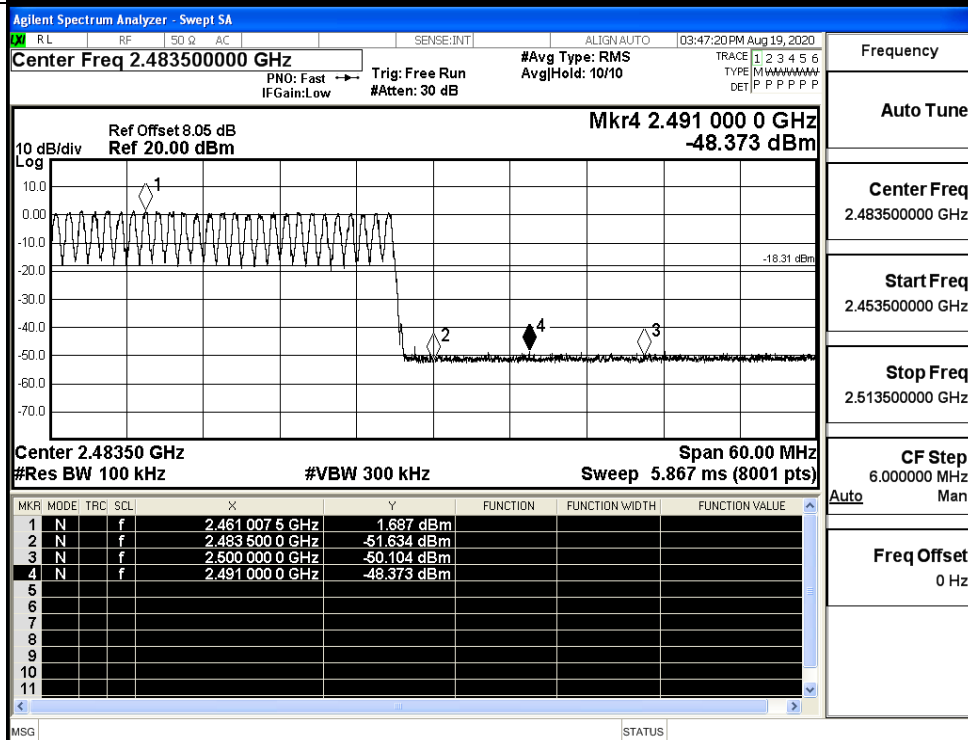
GFSK/LCH/Hop



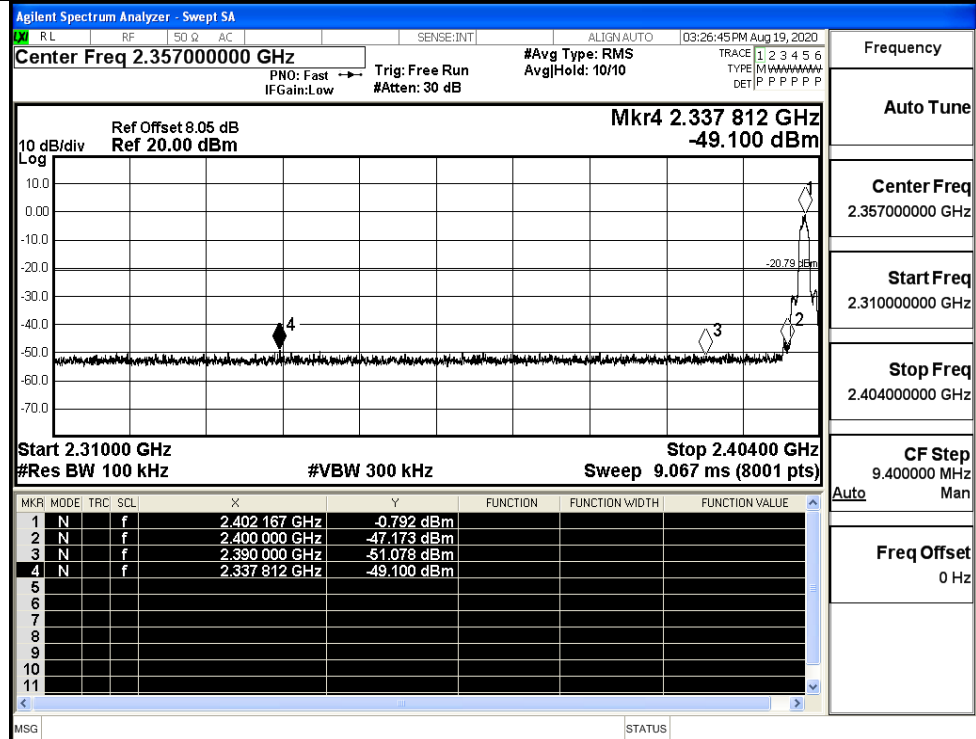
GFSK/HCH/No Hop



GFSK/HCH/Hop



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



Frequency

Auto Tune

Center Freq
2.357000000 GHz

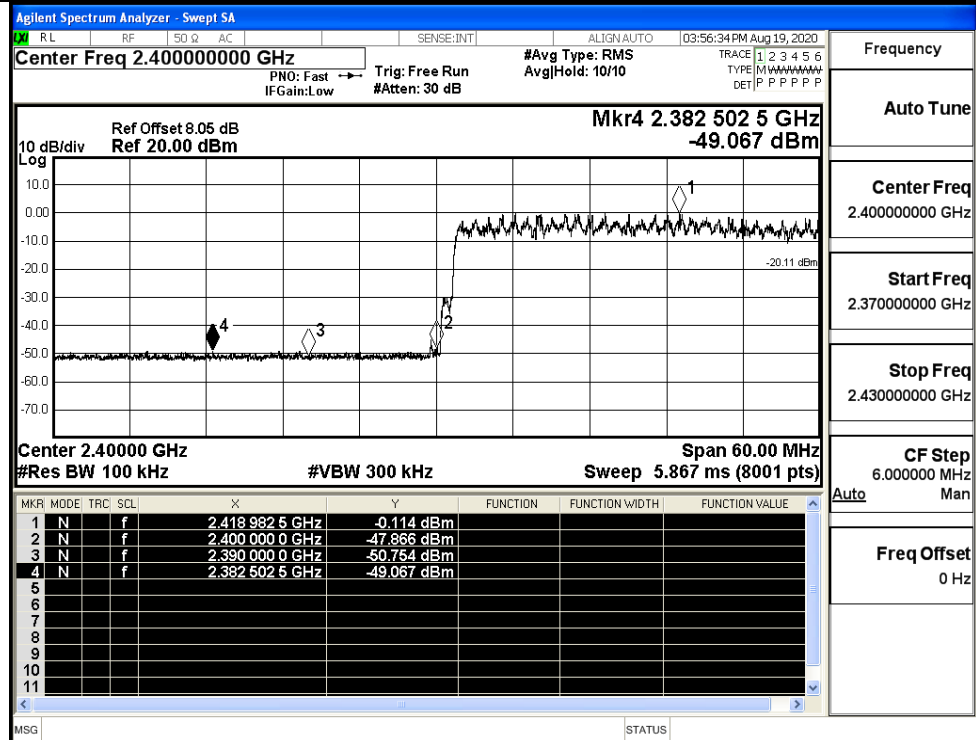
Start Freq
2.310000000 GHz

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

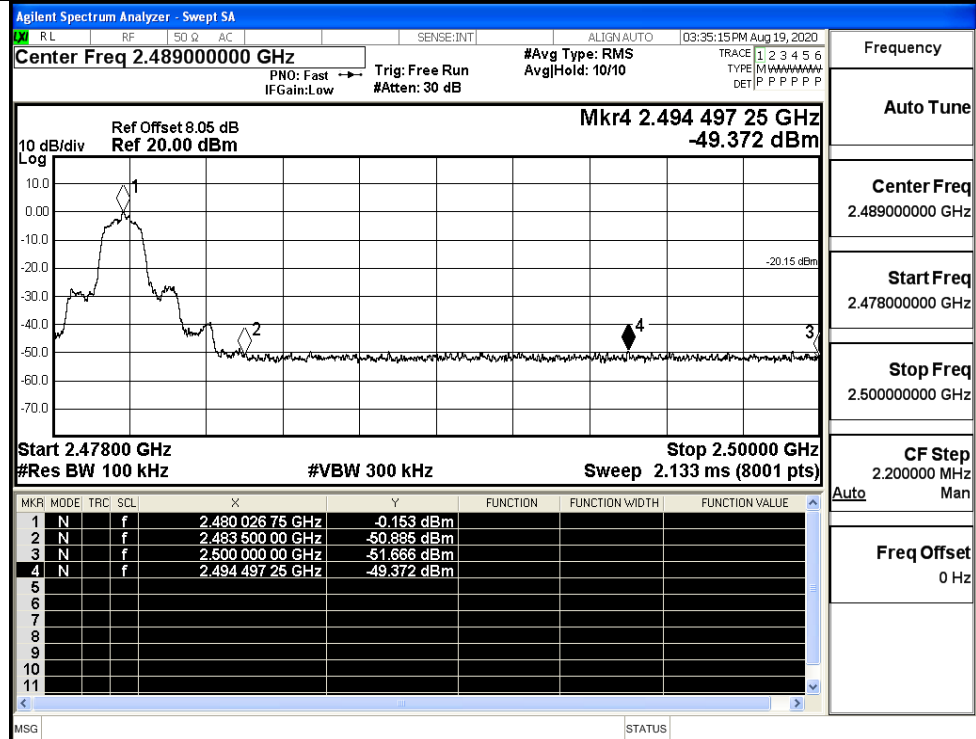
Start Freq
2.370000000 GHz

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

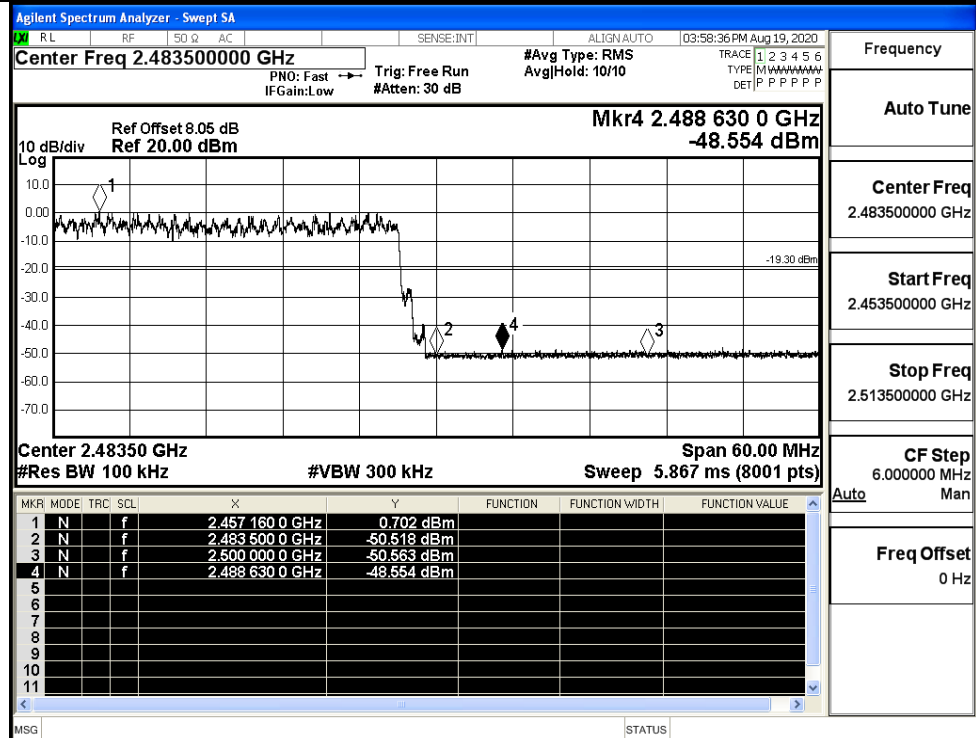
Start Freq
2.478000000 GHz

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

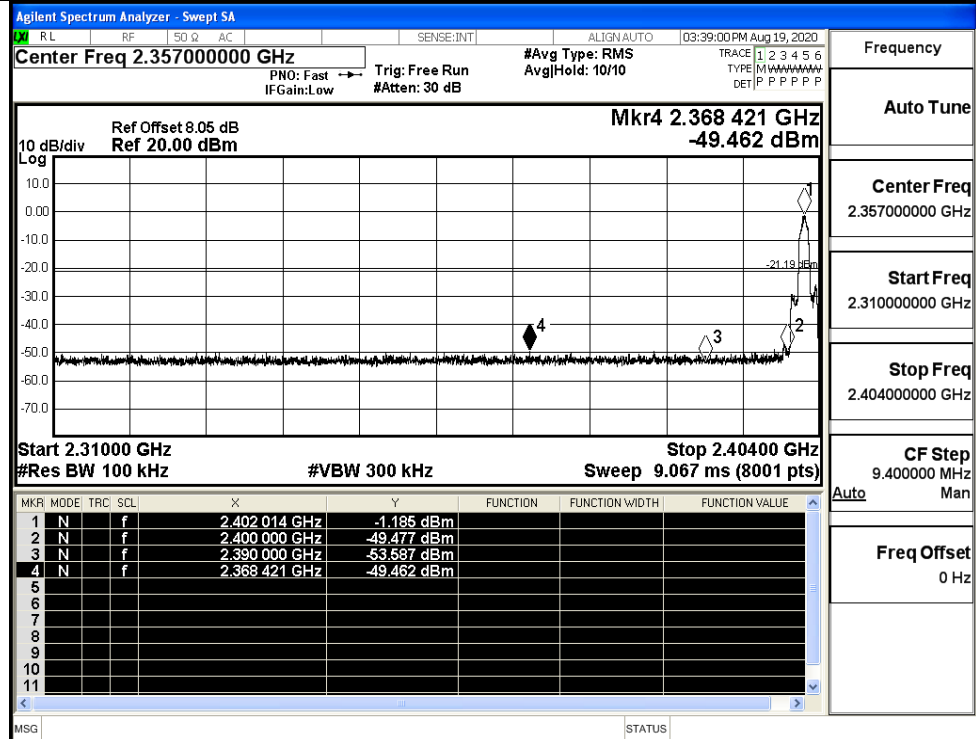
Start Freq
2.453500000 GHz

Stop Freq
2.513500000 GHz

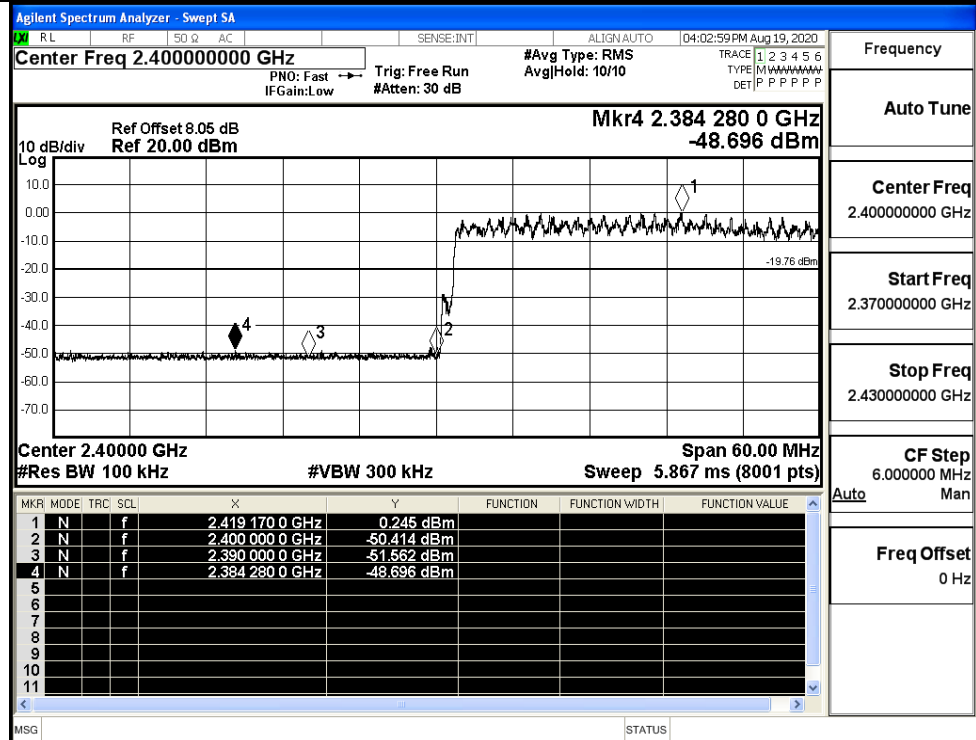
CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

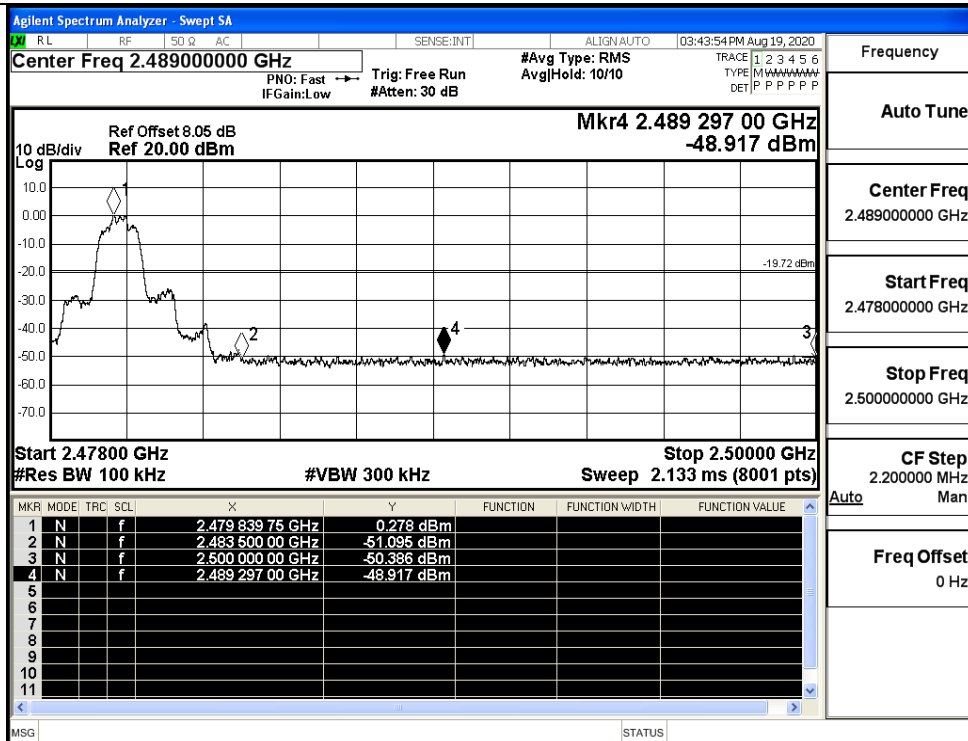
8DPSK/LCH/No Hop



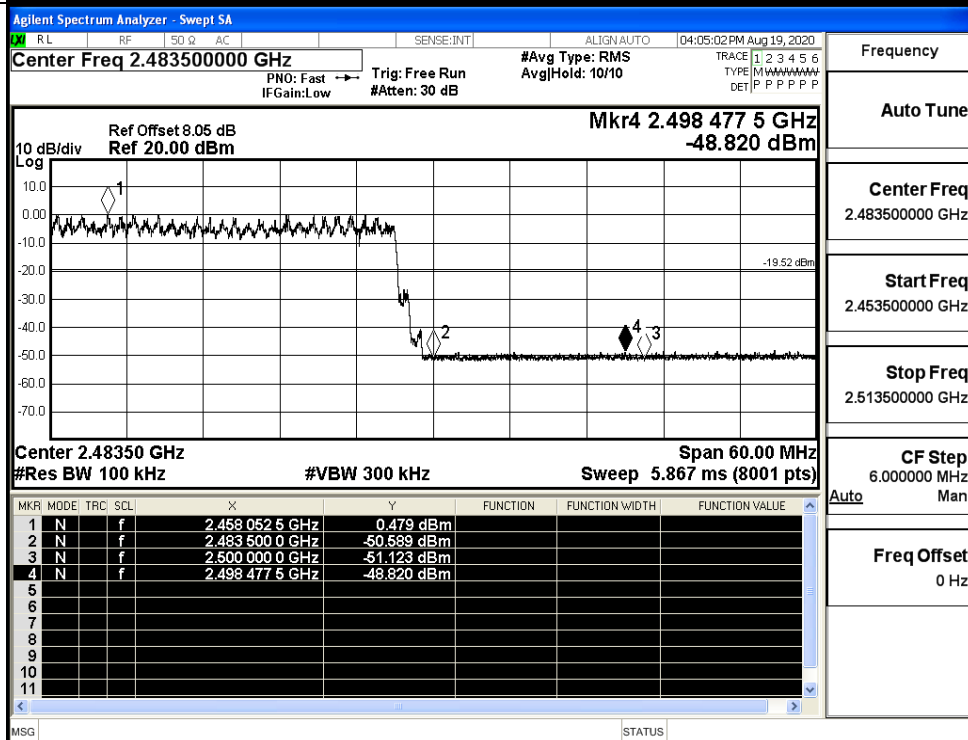
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



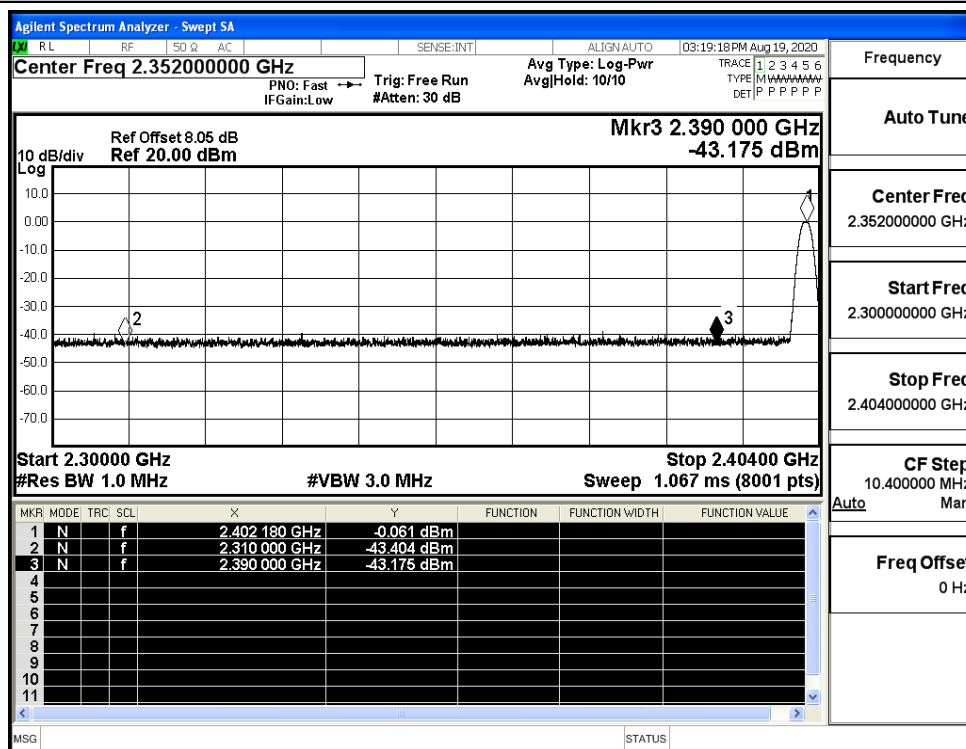
8DPSK/HCH/Hop



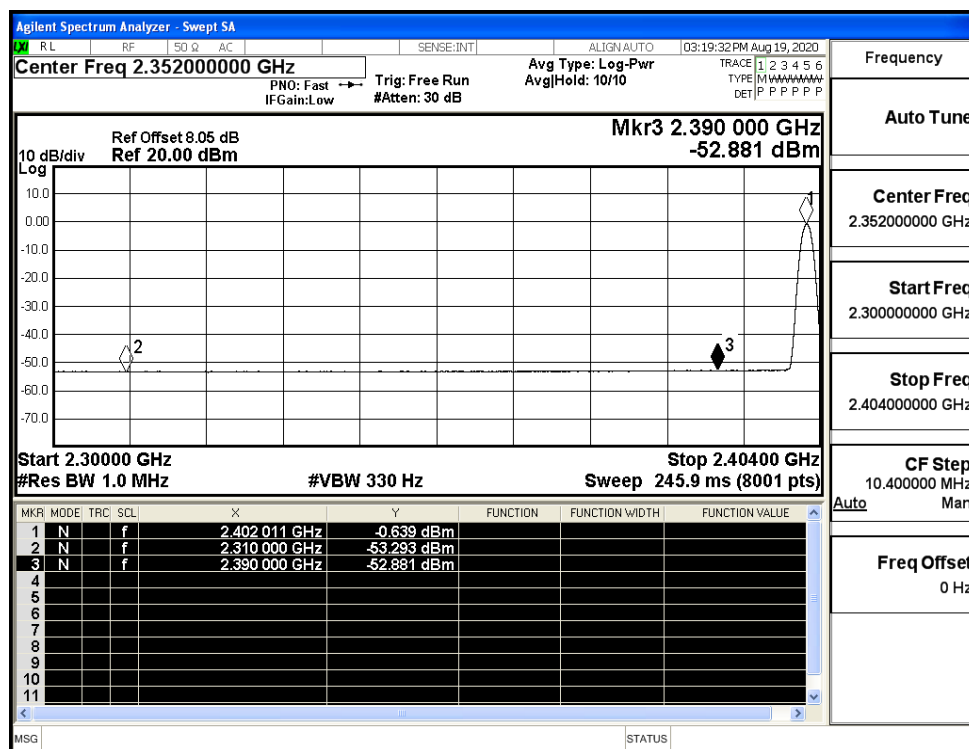
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.40	2.0	0	53.83	PEAK	74	PASS
	Off	2310.0	-53.29	2.0	0	43.94	AV	54	PASS
	Off	2390.0	-43.18	2.0	0	54.05	PEAK	74	PASS
	Off	2390.0	-52.88	2.0	0	44.35	AV	54	PASS
	Off	2483.5	-43.23	2.0	0	54.00	PEAK	74	PASS
	Off	2483.5	-52.38	2.0	0	44.85	AV	54	PASS
	Off	2500.0	-42.62	2.0	0	54.61	PEAK	74	PASS
	Off	2500.0	-52.27	2.0	0	44.96	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-42.31	2.0	0	54.92	PEAK	74	PASS
	Off	2310.0	-53.27	2.0	0	43.96	AV	54	PASS
	Off	2390.0	-42.00	2.0	0	55.23	PEAK	74	PASS
	Off	2390.0	-52.89	2.0	0	44.34	AV	54	PASS
	Off	2483.5	-39.10	2.0	0	58.13	PEAK	74	PASS
	Off	2483.5	-51.43	2.0	0	45.80	AV	54	PASS
	Off	2500.0	-42.33	2.0	0	54.90	PEAK	74	PASS
	Off	2500.0	-52.31	2.0	0	44.92	AV	54	PASS
8DPSK	Off	2310.0	-43.30	2.0	0	53.93	PEAK	74	PASS
	Off	2310.0	-53.21	2.0	0	44.02	AV	54	PASS
	Off	2390.0	-42.54	2.0	0	54.69	PEAK	74	PASS
	Off	2390.0	-52.91	2.0	0	44.32	AV	54	PASS
	Off	2483.5	-36.84	2.0	0	60.39	PEAK	74	PASS
	Off	2483.5	-51.61	2.0	0	45.62	AV	54	PASS
	Off	2500.0	-42.88	2.0	0	54.35	PEAK	74	PASS
	Off	2500.0	-52.23	2.0	0	45.00	AV	54	PASS

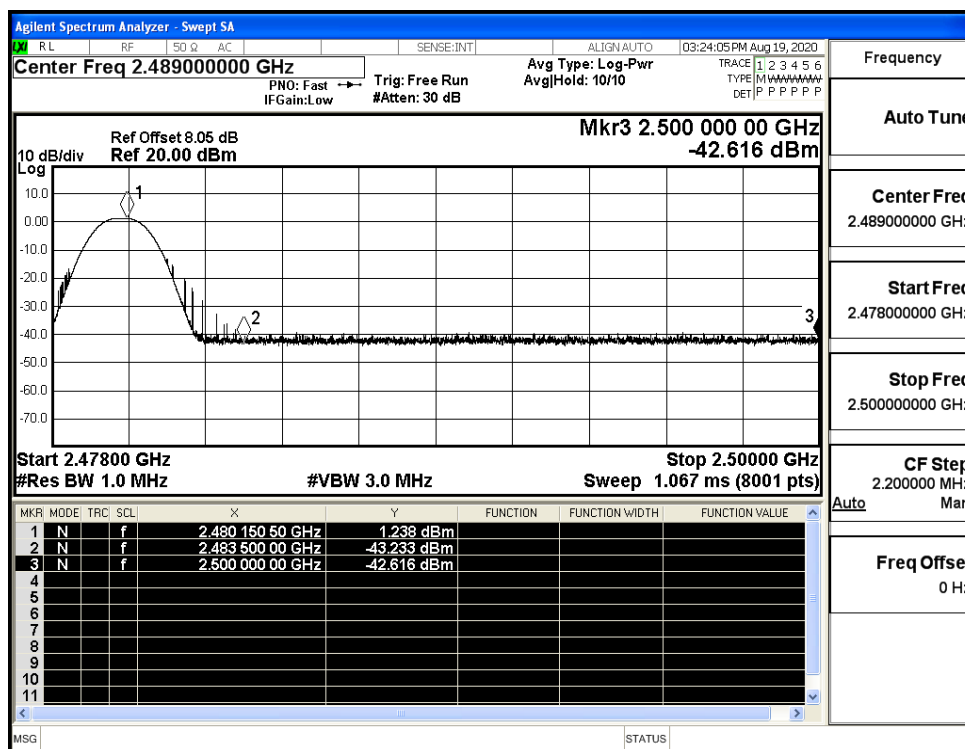
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



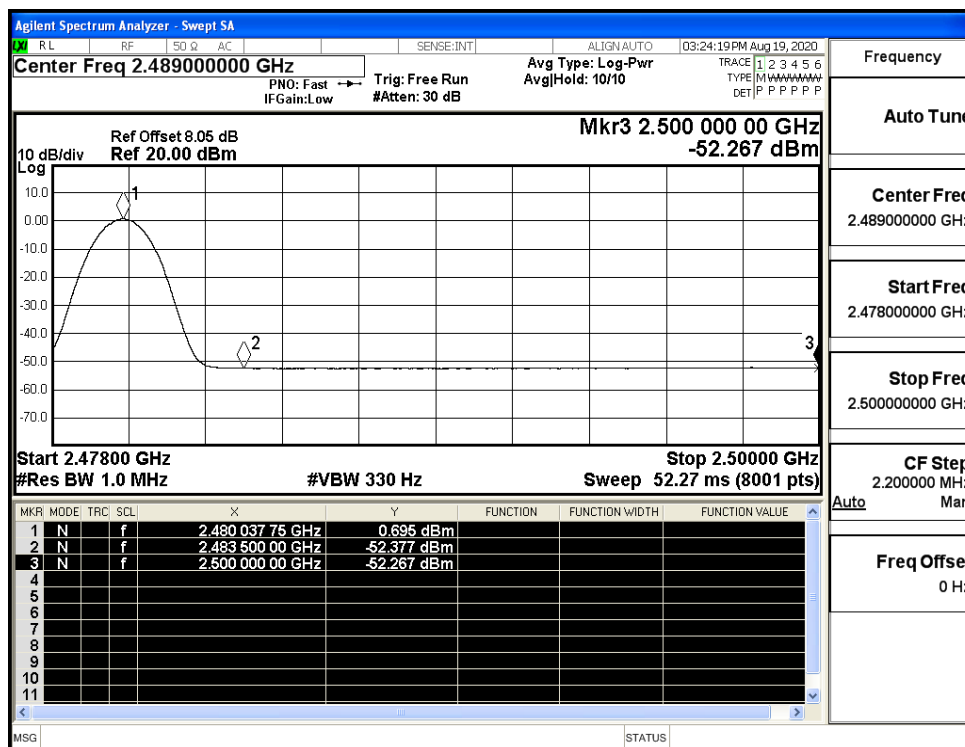
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

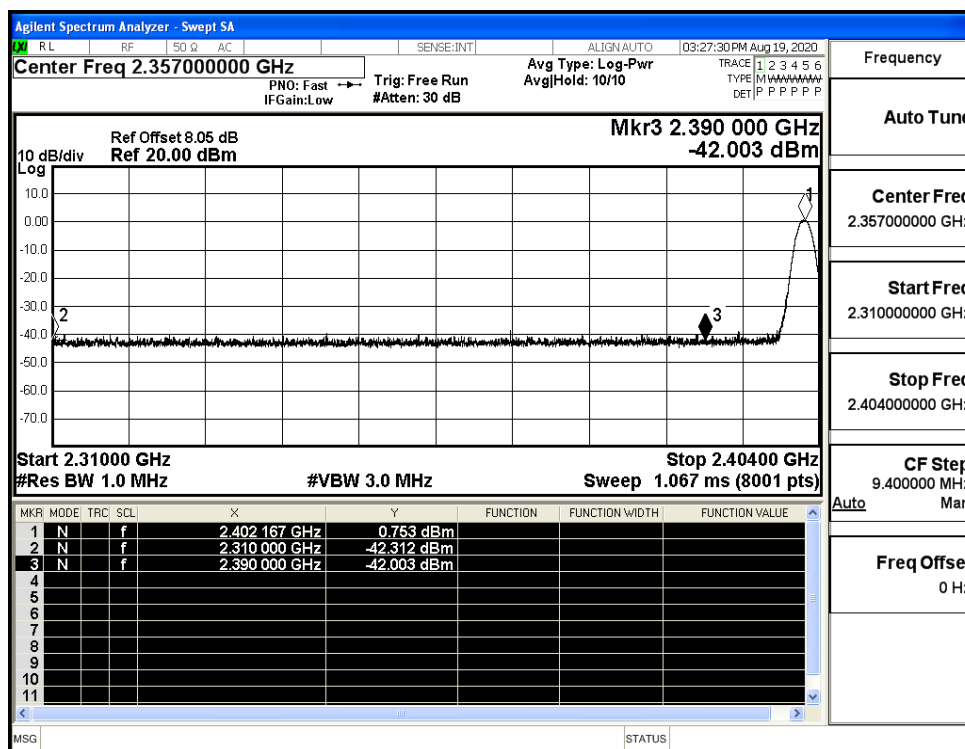
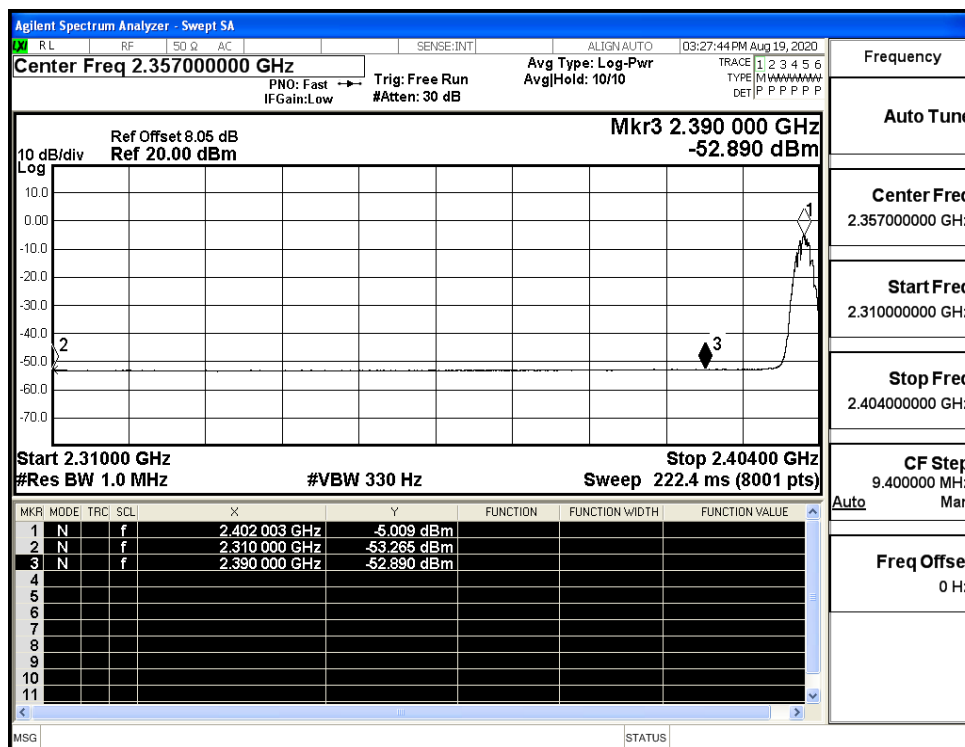


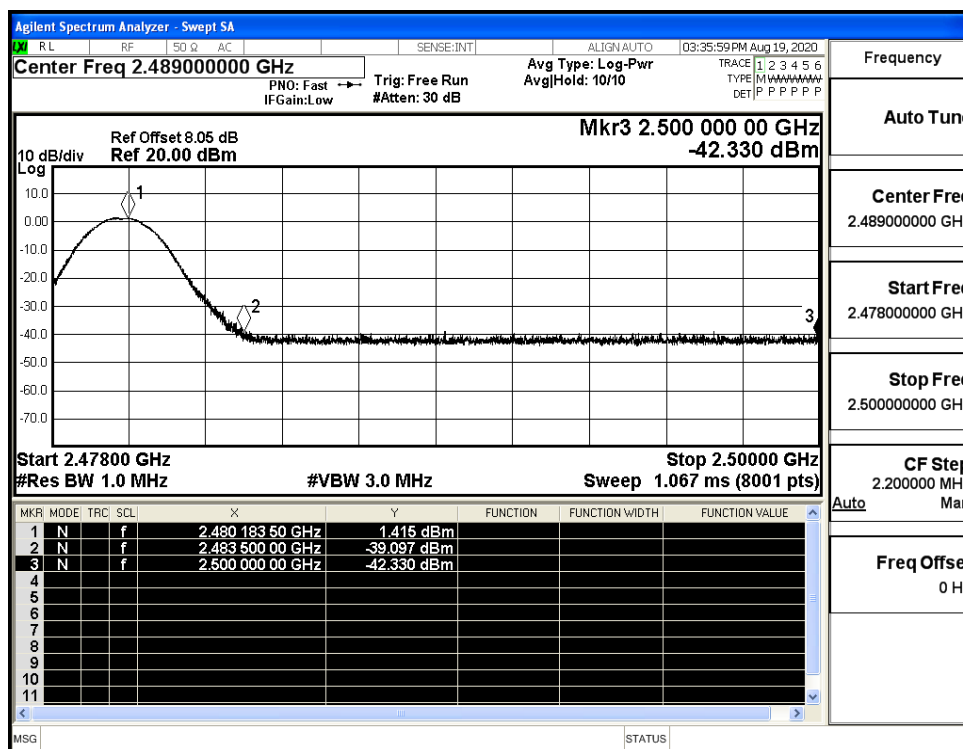
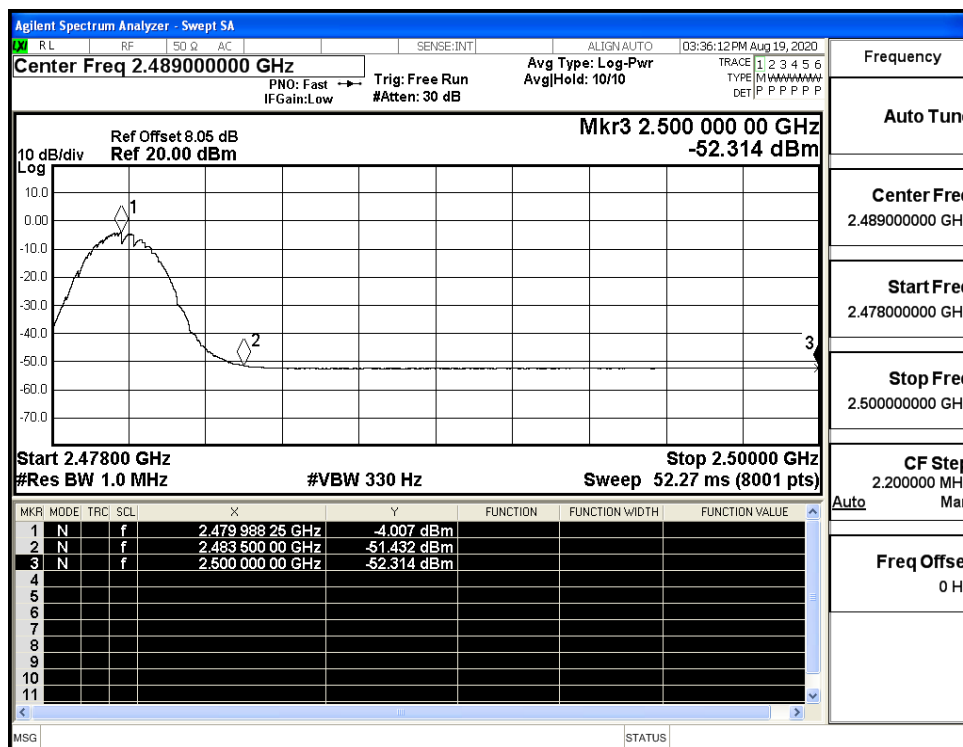
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



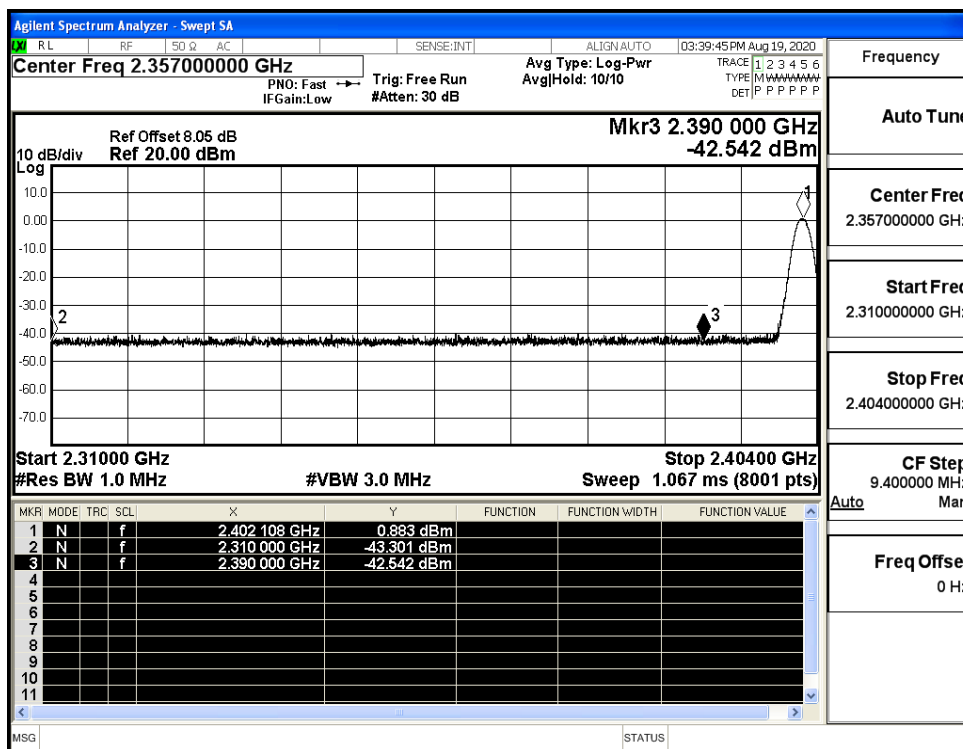
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



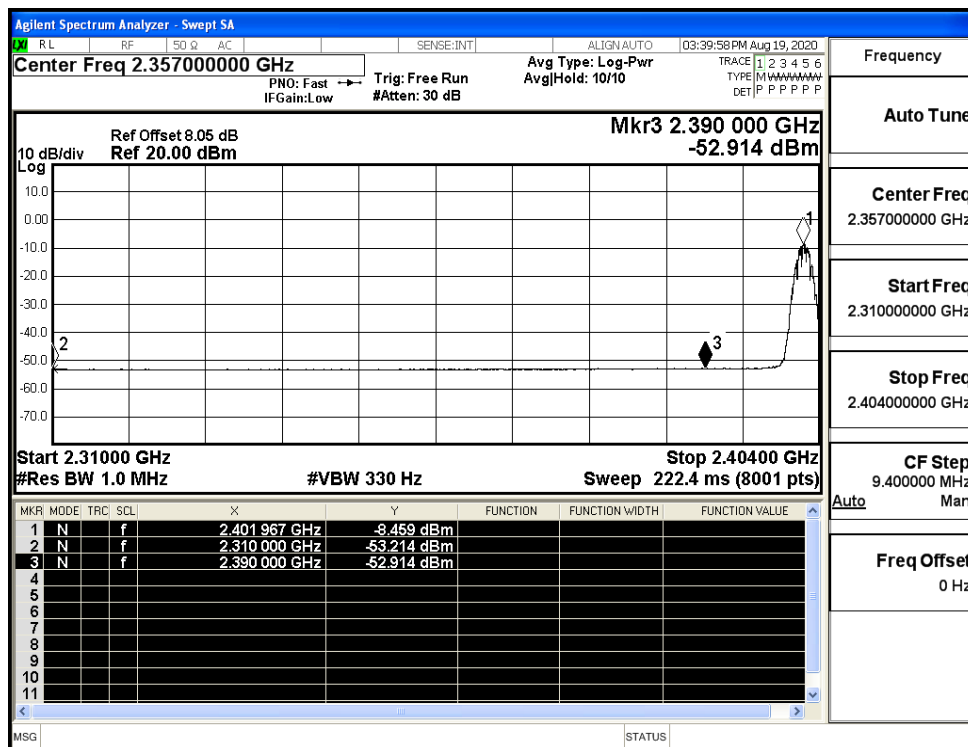
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

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)

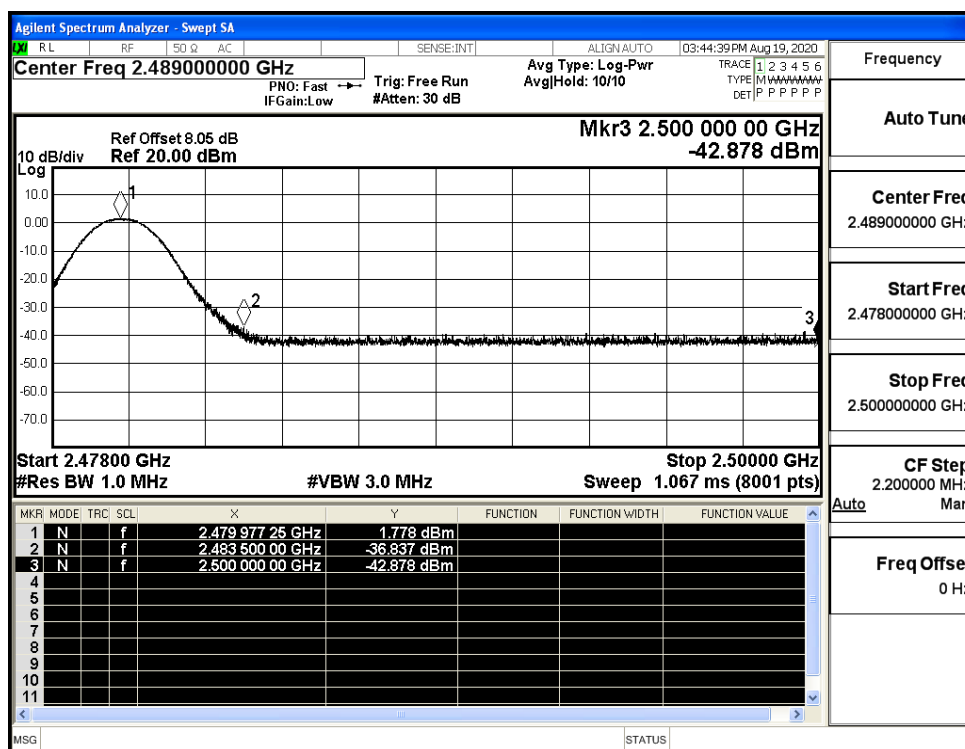
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

