

Appendix A

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

Product Name: Smart Phone

Trade Mark: DOOGEE

Test Model: S96Pro

Environmental Conditions

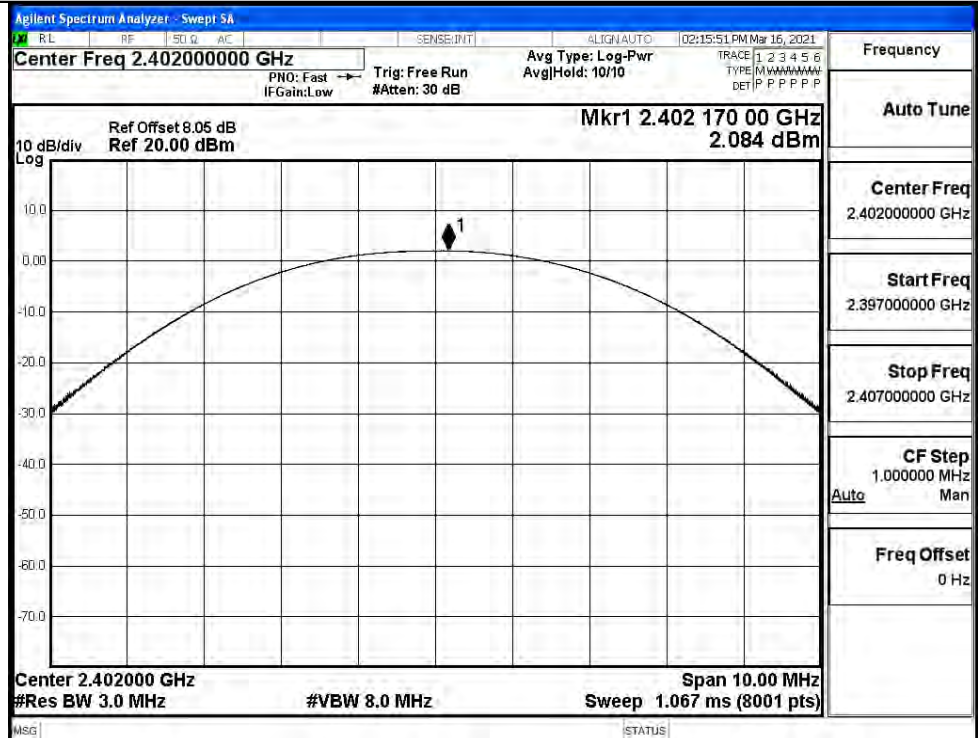
Temperature:	22.9° C
Relative Humidity:	53.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond Lu
Supervised by:	Li Huan

A.1 Maximum Conducted Peak Output Power

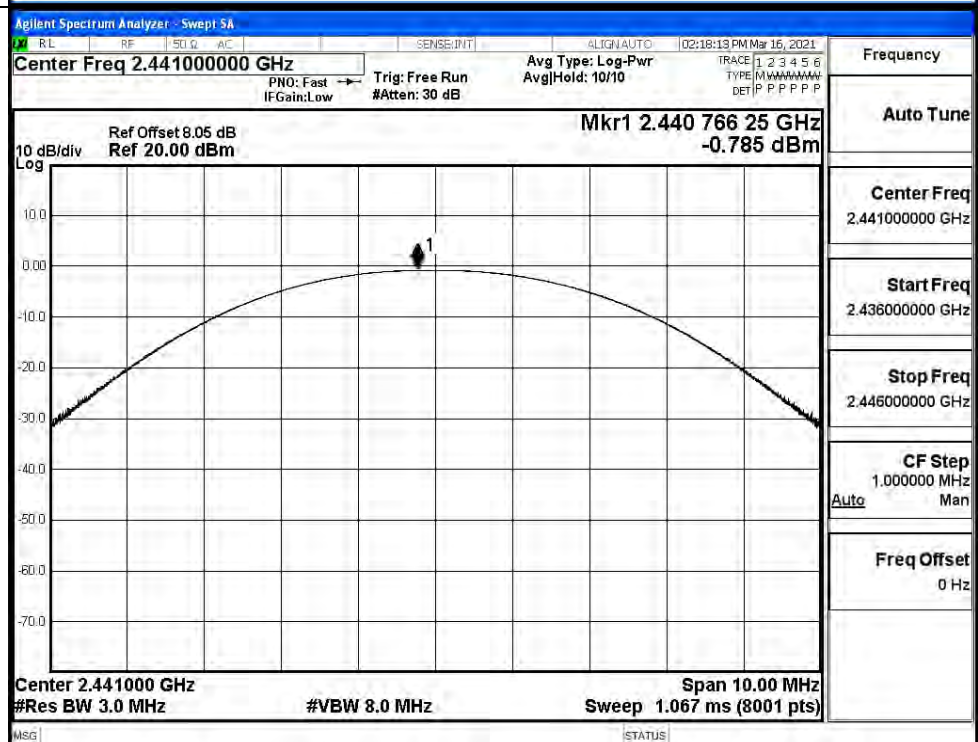
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2.084	21	PASS
	MCH	-0.785	21	PASS
	HCH	1.339	21	PASS
$\pi/4$ DQPSK	LCH	1.509	21	PASS
	MCH	-1.305	21	PASS
	HCH	0.801	21	PASS
8DPSK	LCH	1.595	21	PASS
	MCH	-1.157	21	PASS
	HCH	0.933	21	PASS

Test Graphs

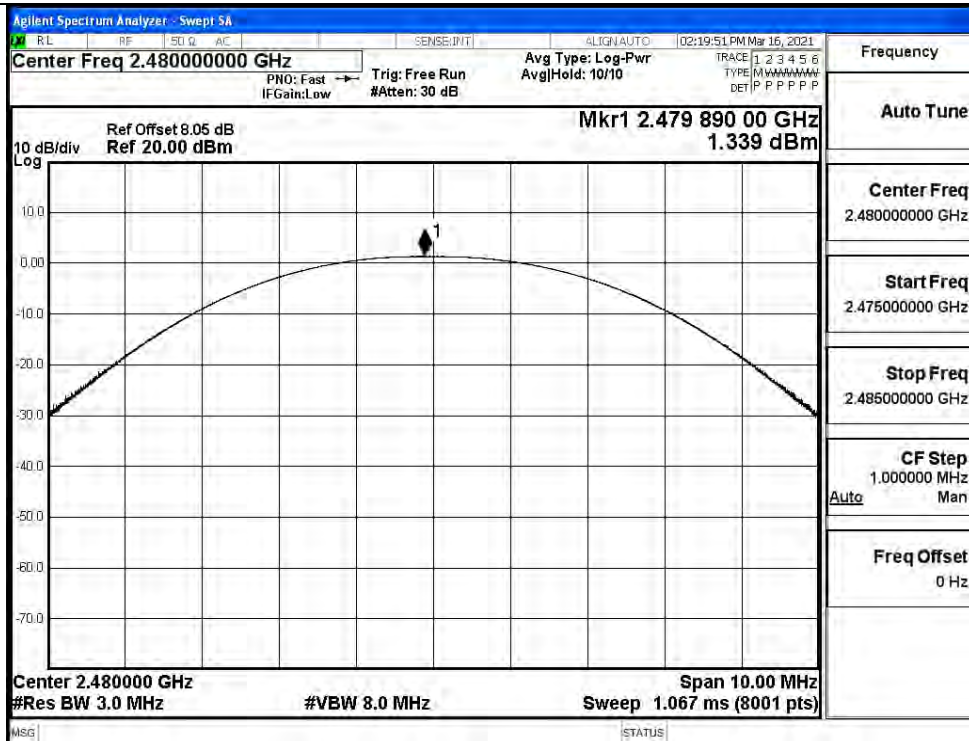
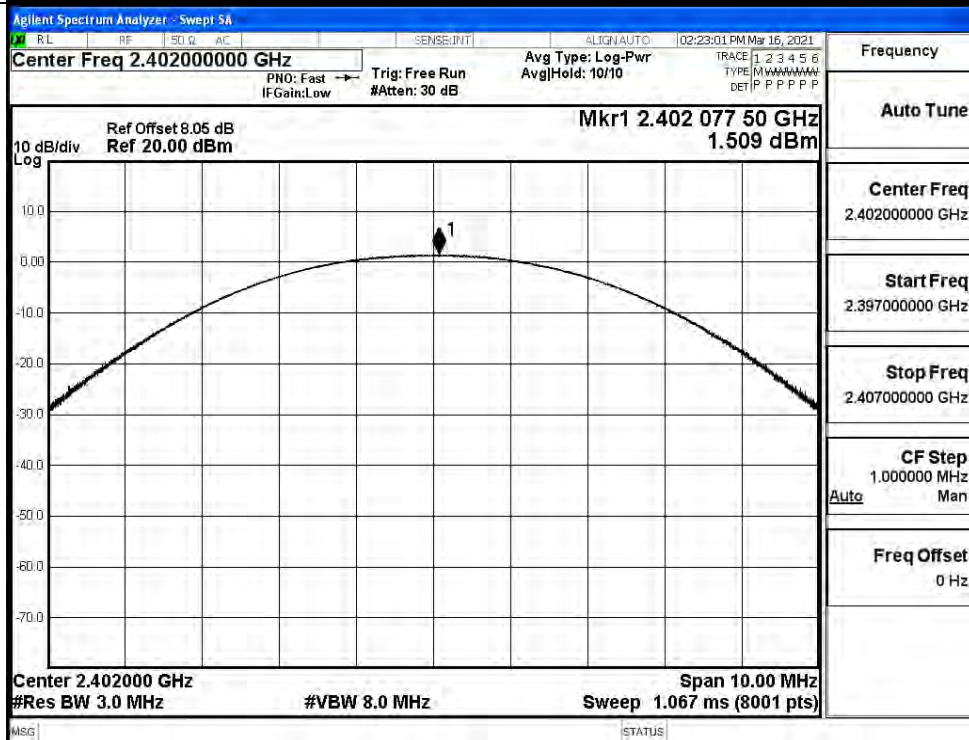
GFSK/LCH

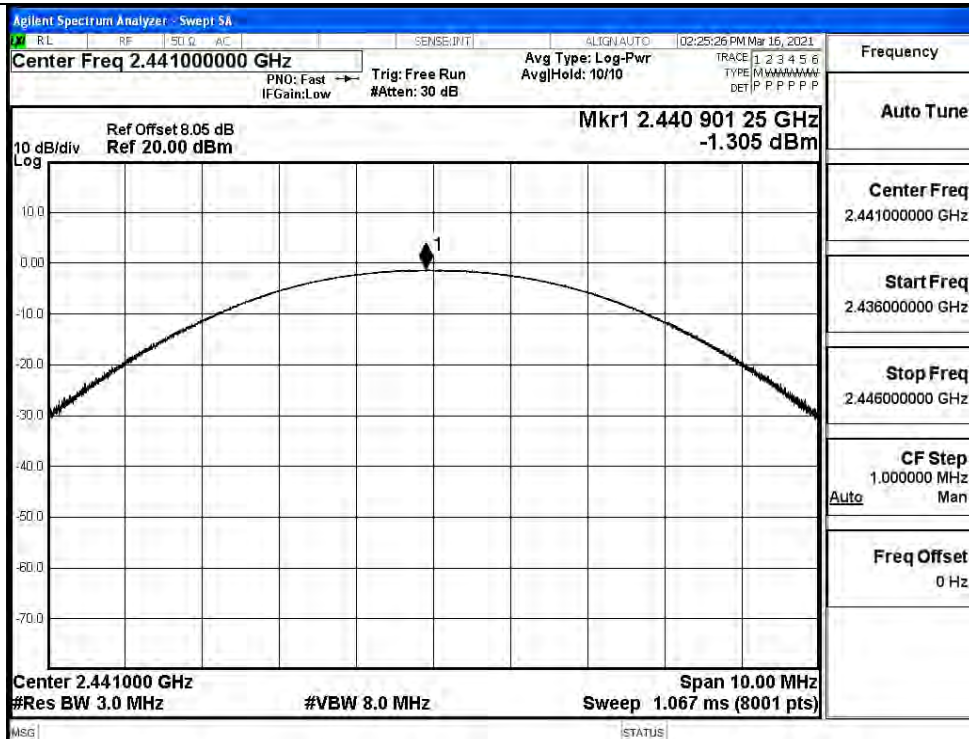
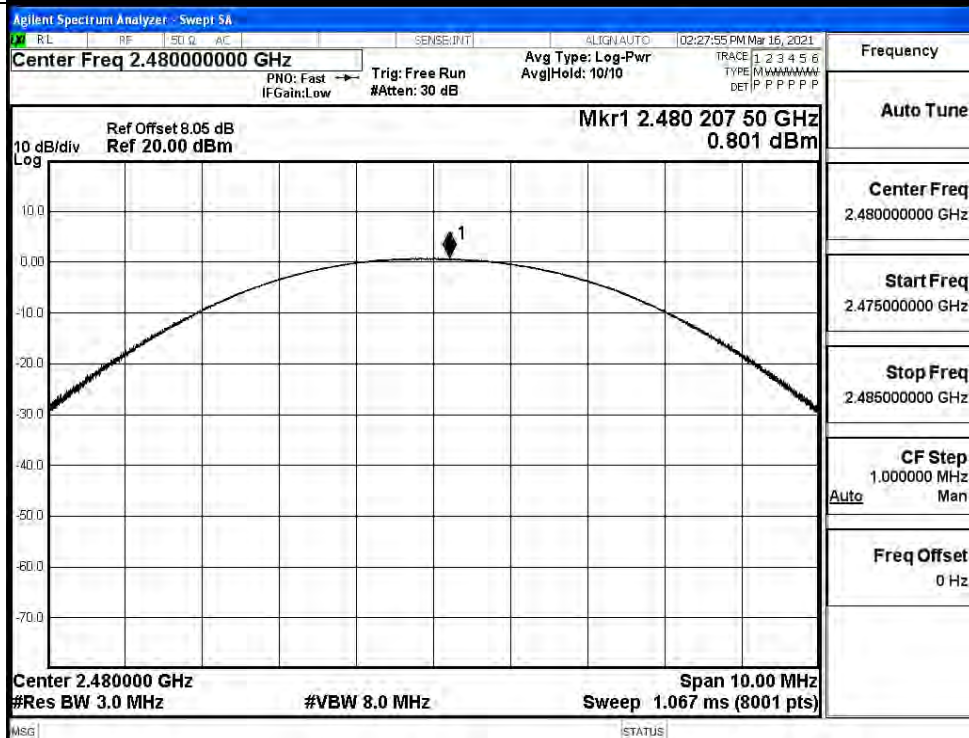


GFSK/MCH

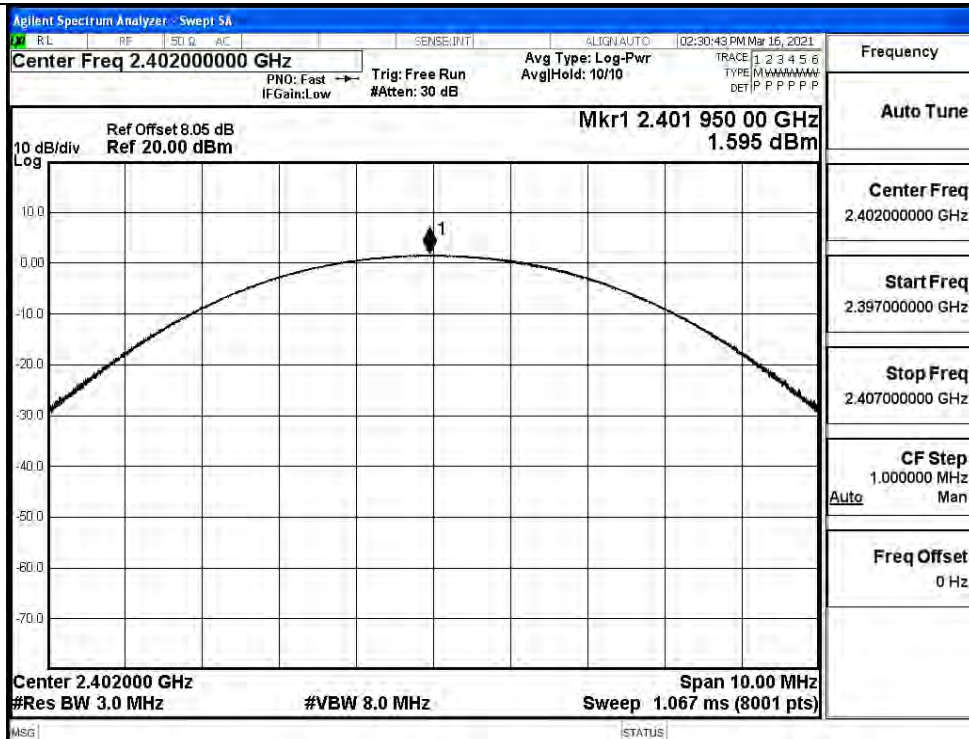


GFSK/HCH

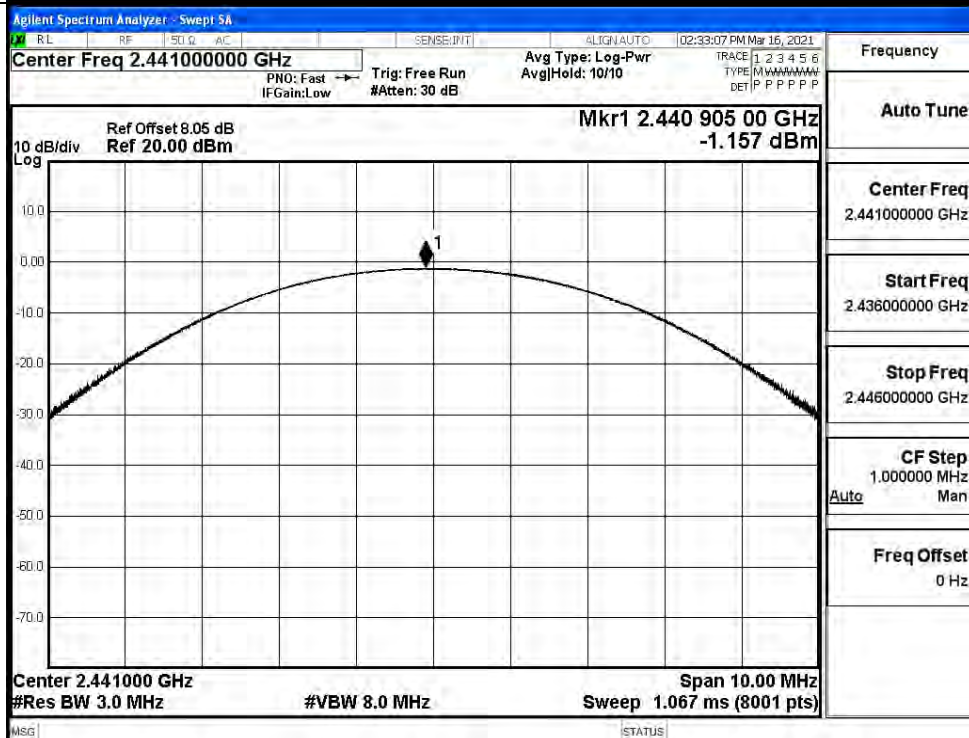
 $\pi/4$ DQPSK/LCH

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

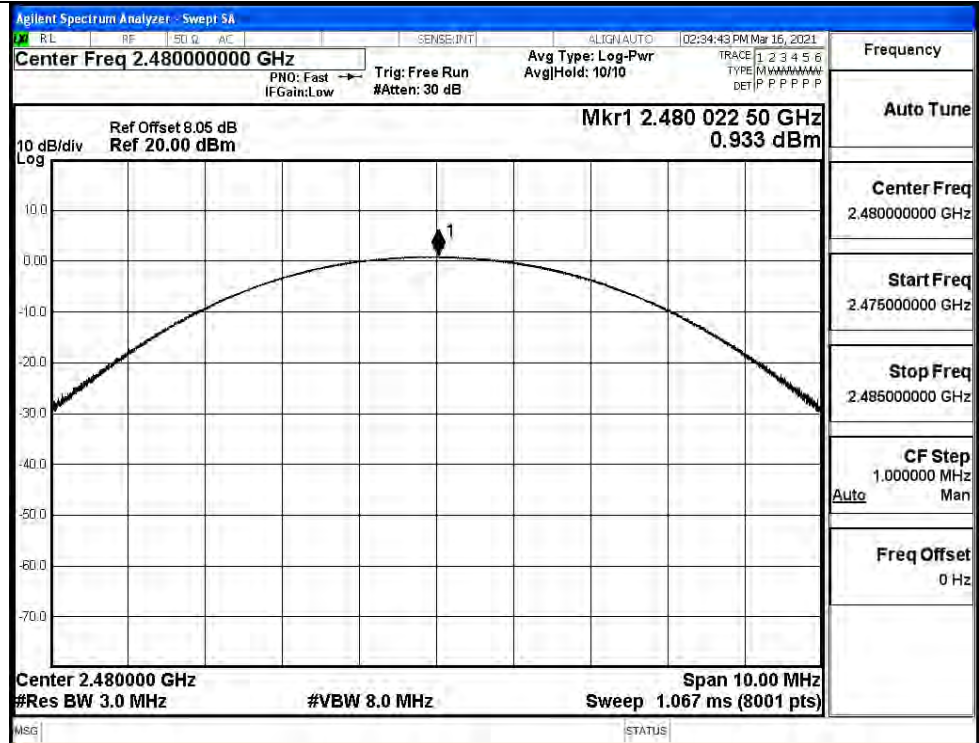
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

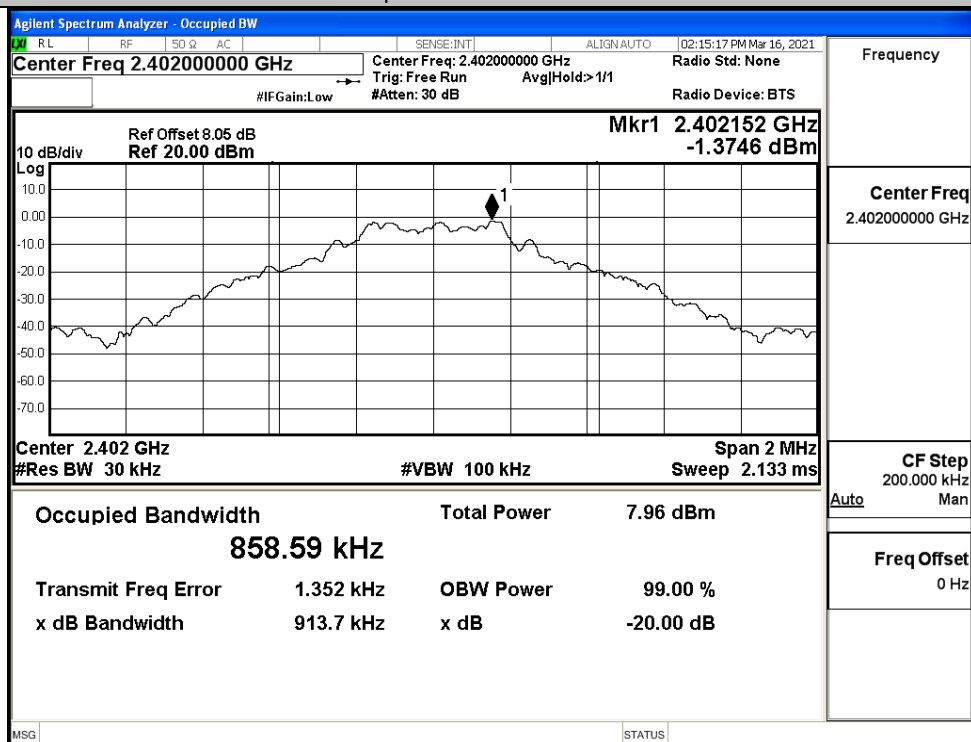


A.2 20dB Bandwidth

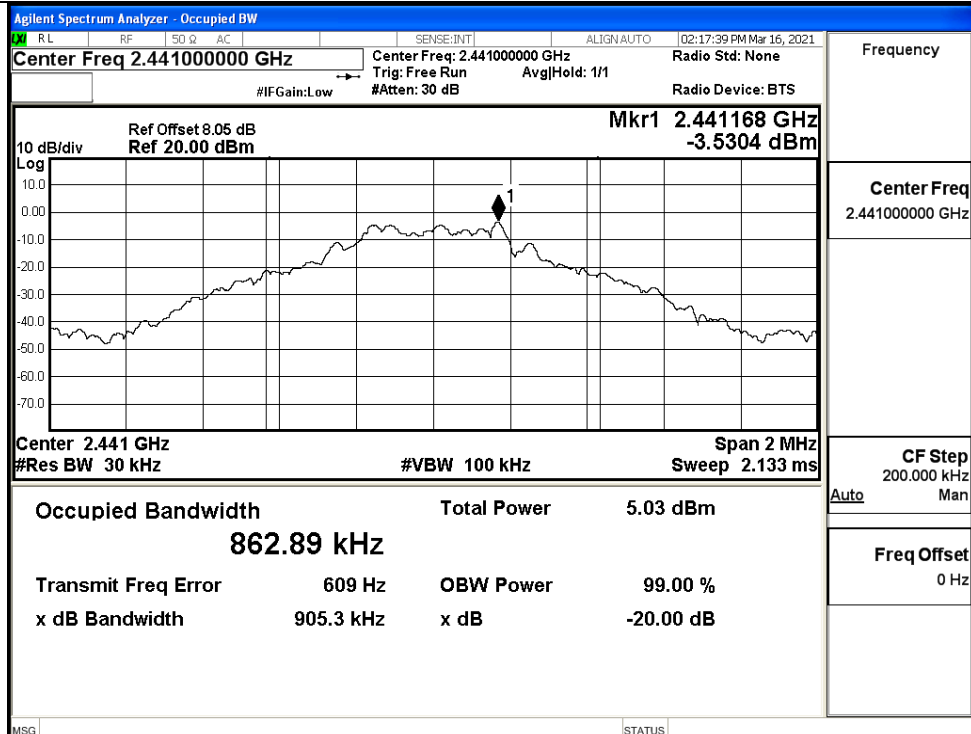
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9137	Not Specified	PASS
	MCH	0.9053	Not Specified	PASS
	HCH	1.034	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.293	Not Specified	PASS
	MCH	1.314	Not Specified	PASS
	HCH	1.314	Not Specified	PASS
8DPSK	LCH	1.297	Not Specified	PASS
	MCH	1.301	Not Specified	PASS
	HCH	1.298	Not Specified	PASS

Test Graphs

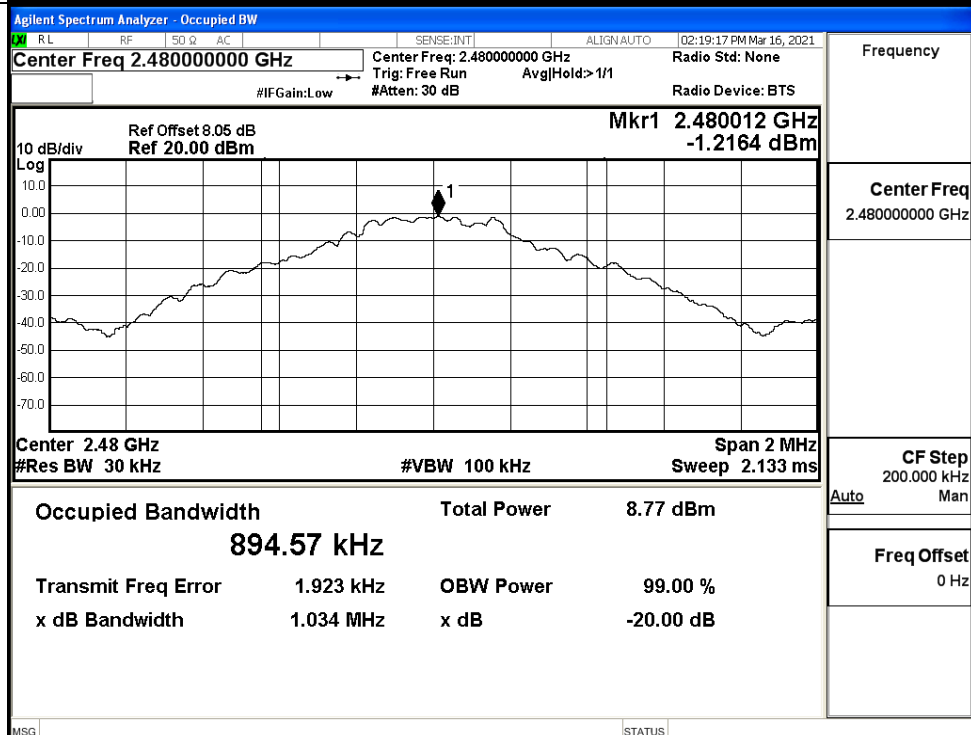
GFSK/LCH

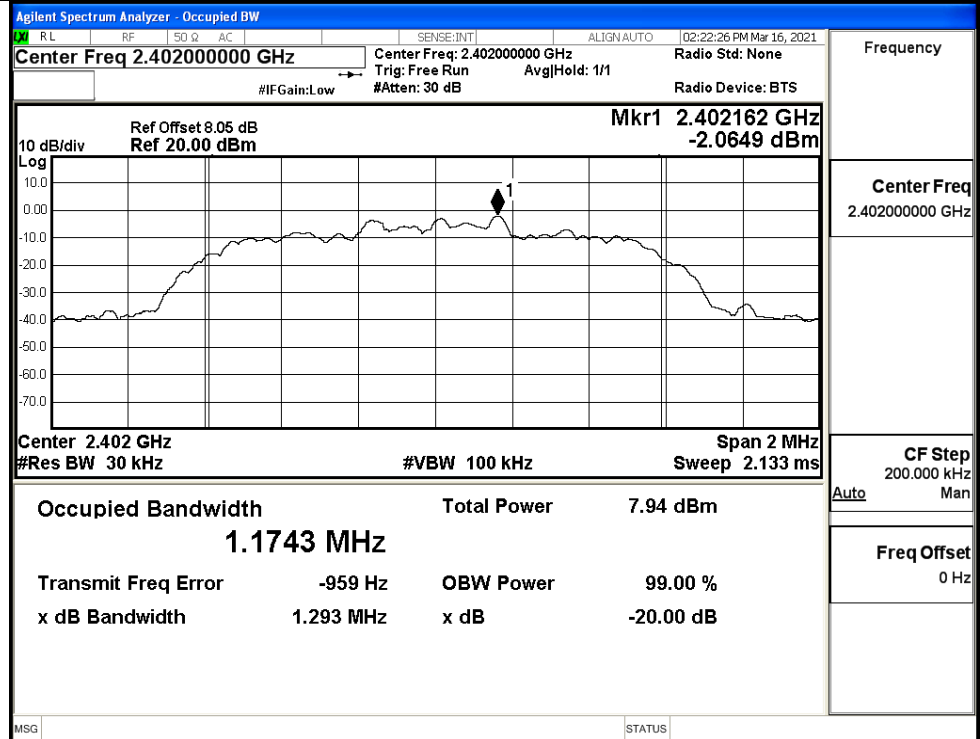
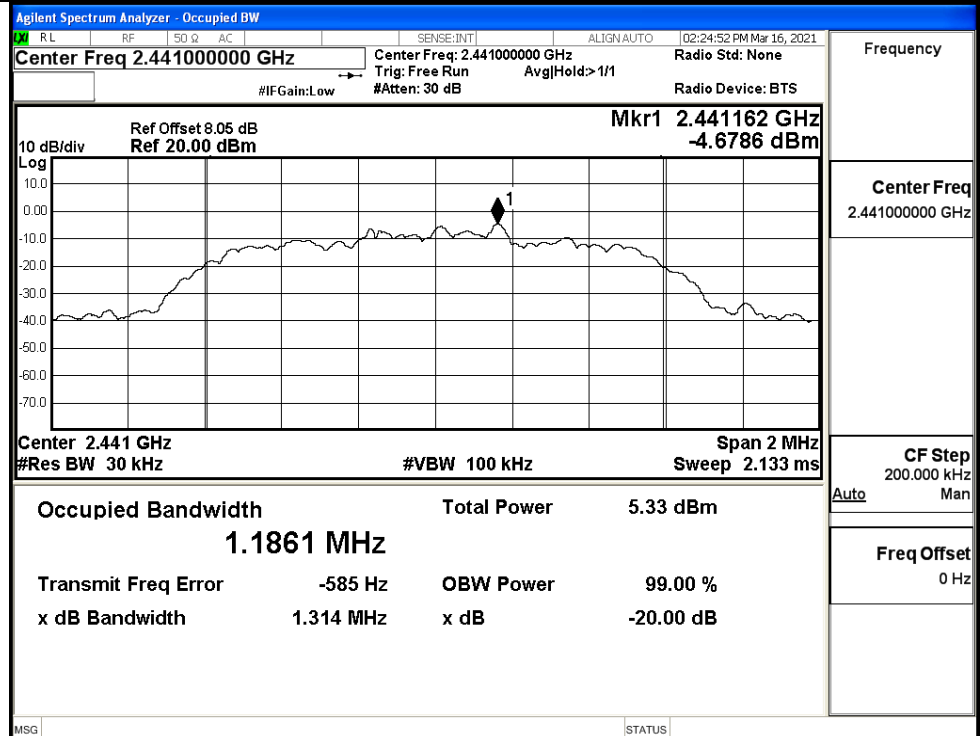


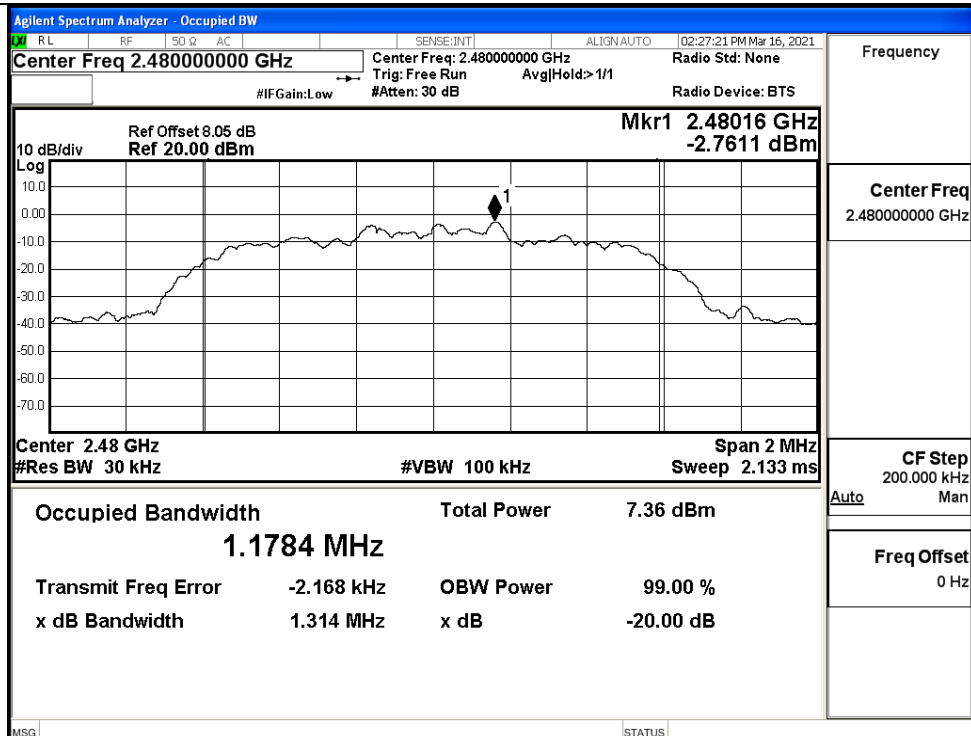
GFSK/MCH



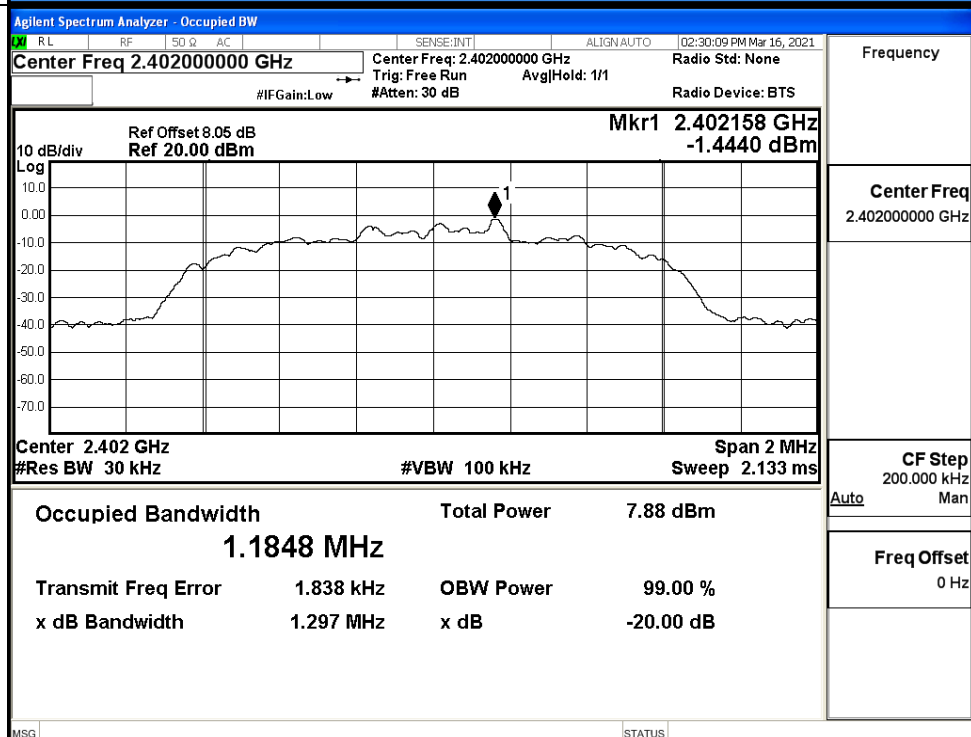
GFSK/HCH



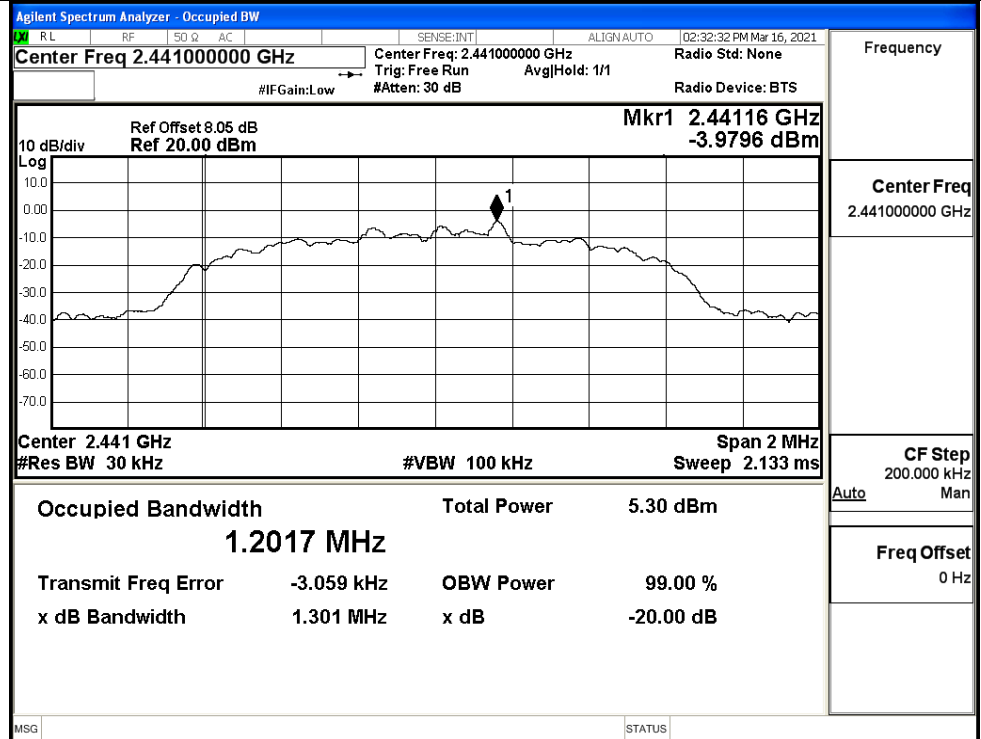
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

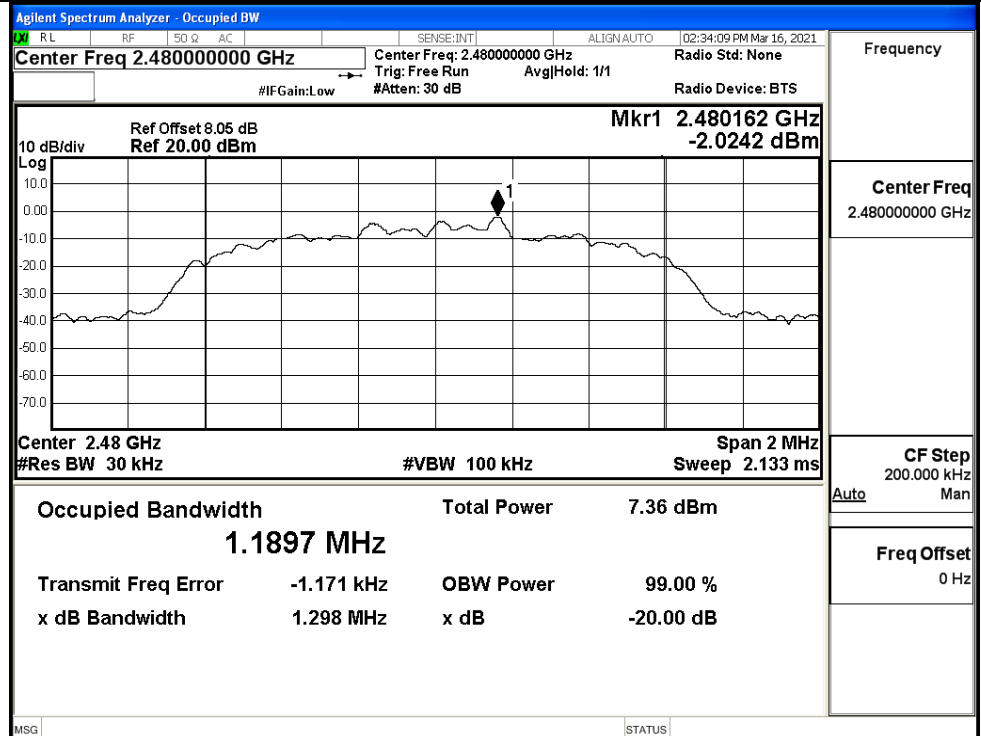
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

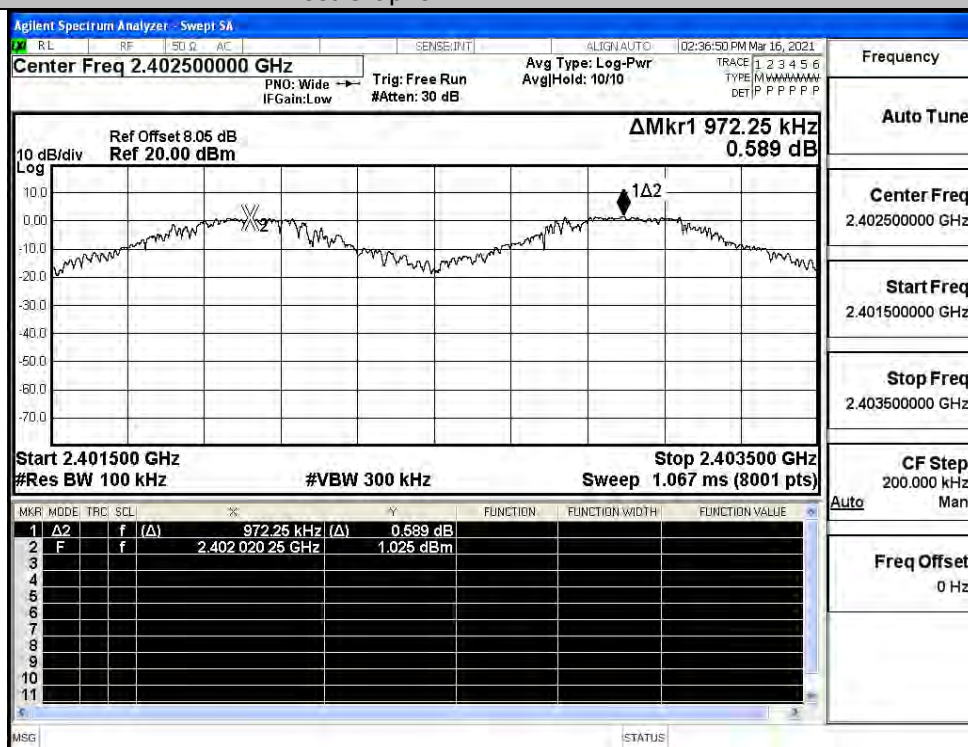


A.3 Carrier Frequency Separation

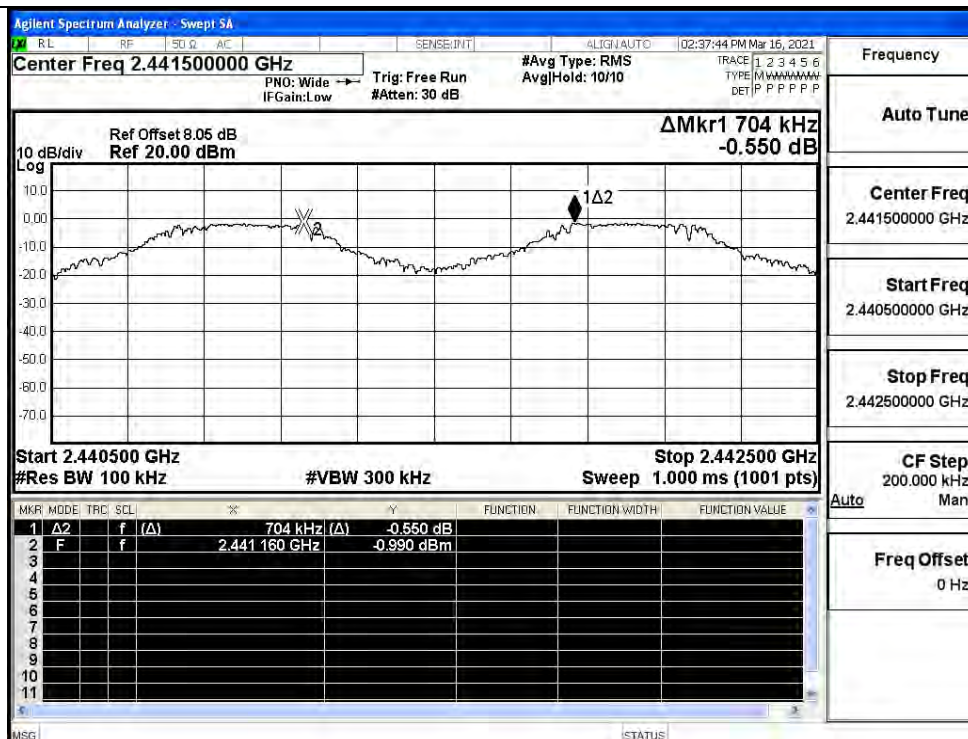
Mode	Channel	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.972	0.689	PASS
	MCH	0.704	0.689	PASS
	HCH	0.796	0.689	PASS
$\pi/4$ DQPSK	LCH	1.152	0.876	PASS
	MCH	1.016	0.876	PASS
	HCH	1.194	0.876	PASS
8DPSK	LCH	1.006	0.867	PASS
	MCH	0.932	0.867	PASS
	HCH	1.082	0.867	PASS

Test Graphs

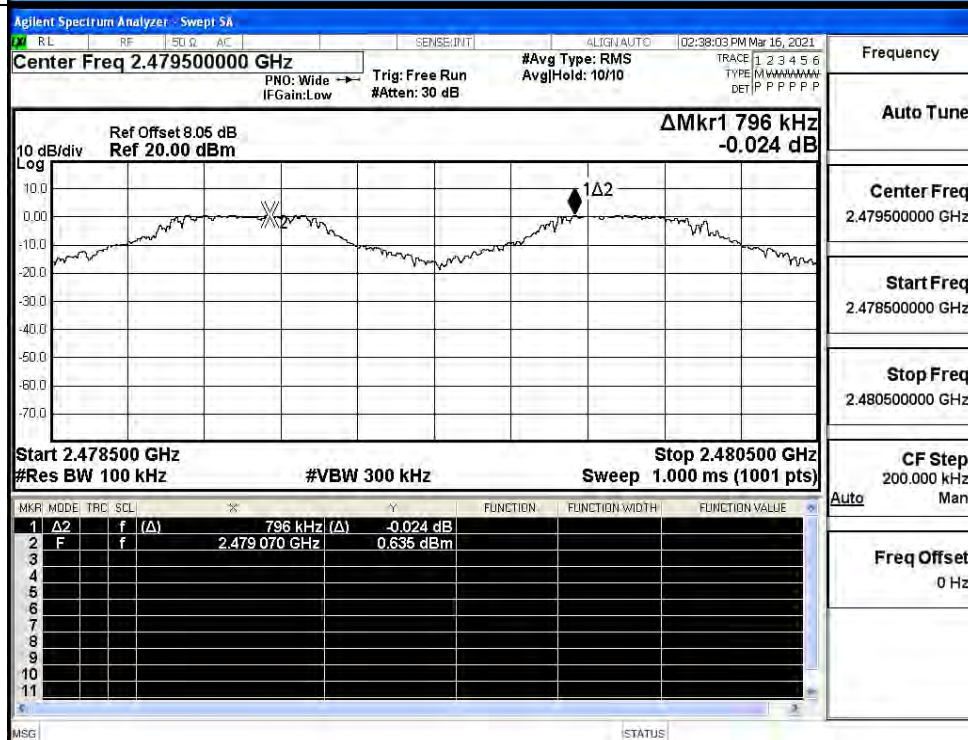
GFSK/LCH

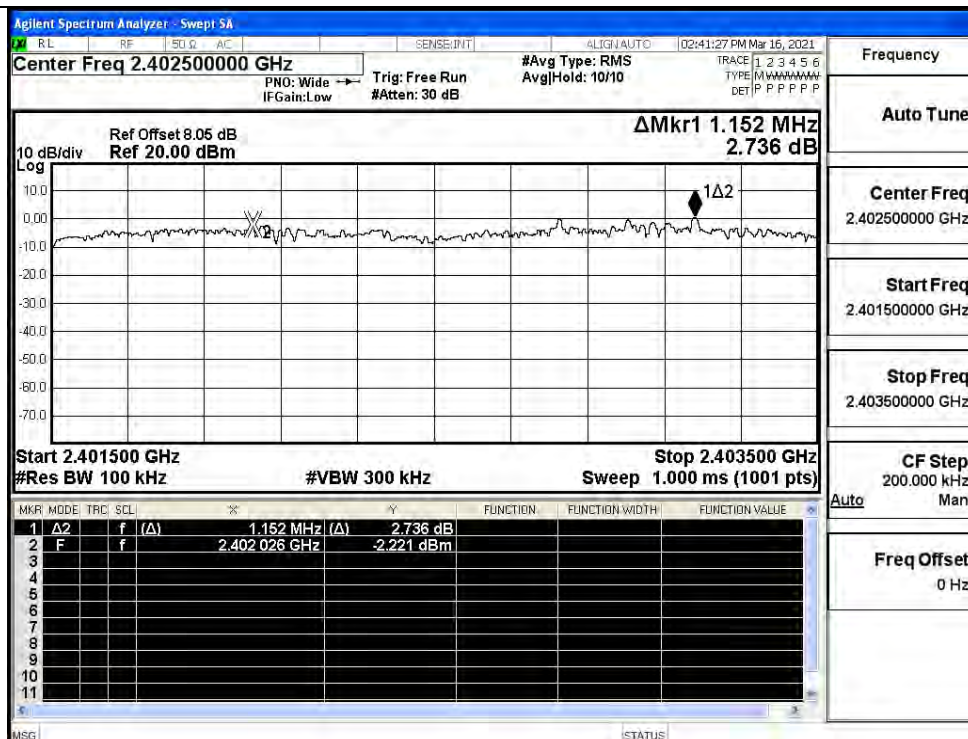
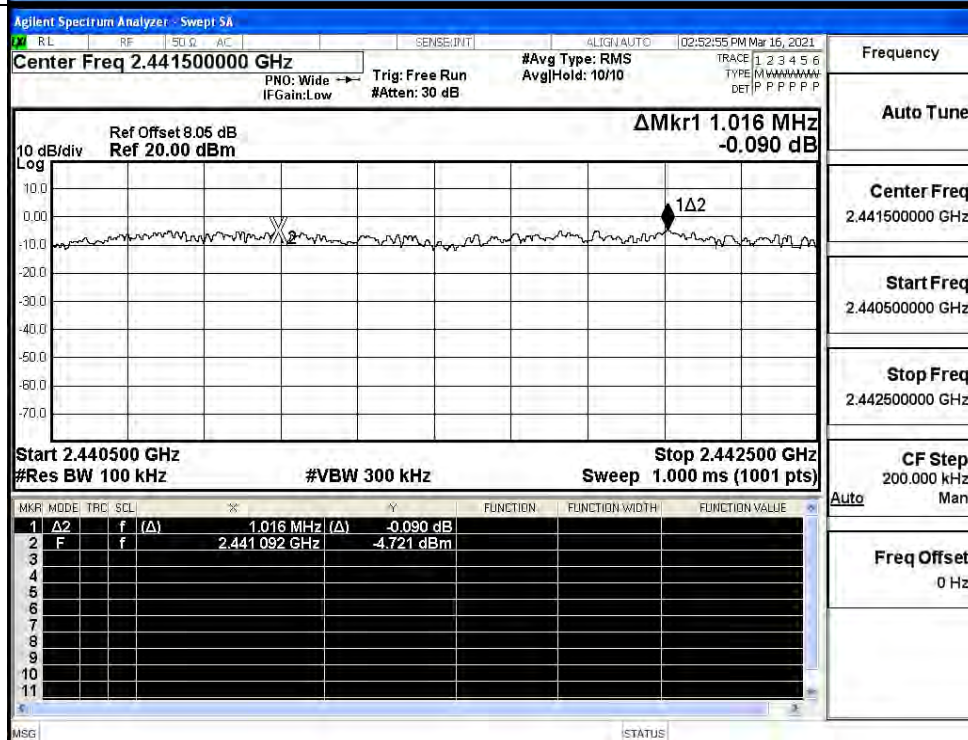


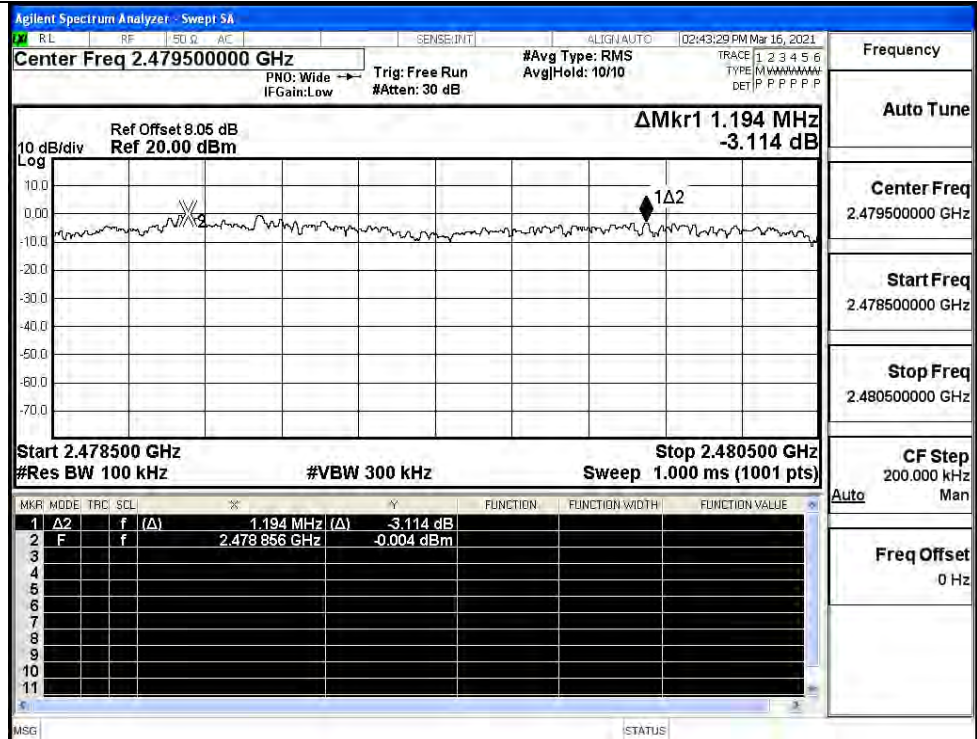
GFSK/MCH



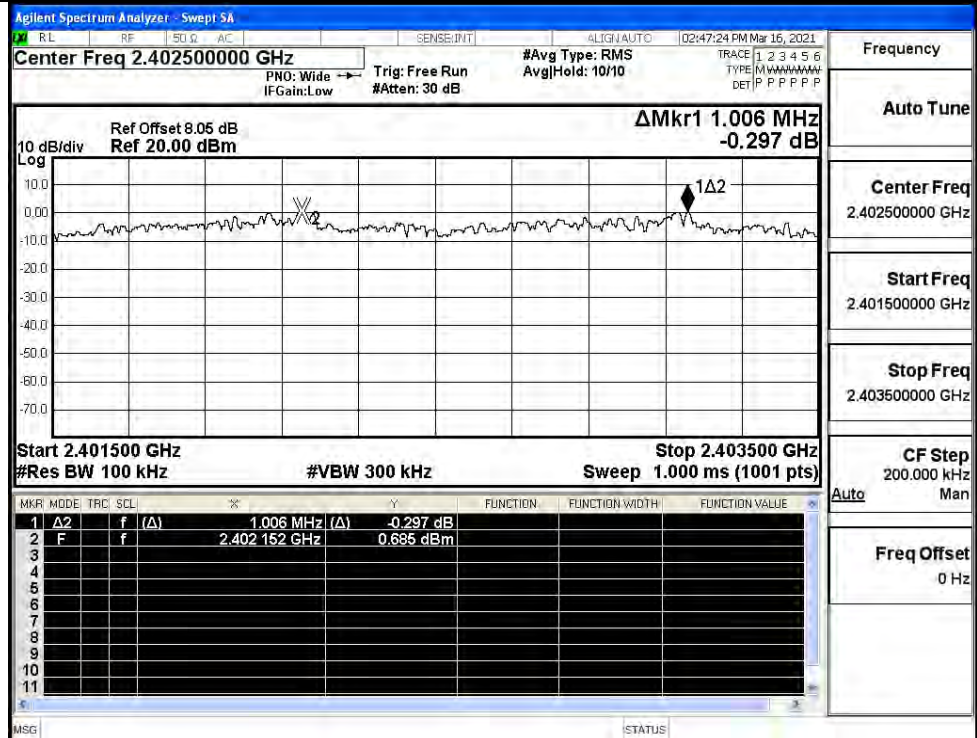
GFSK/HCH



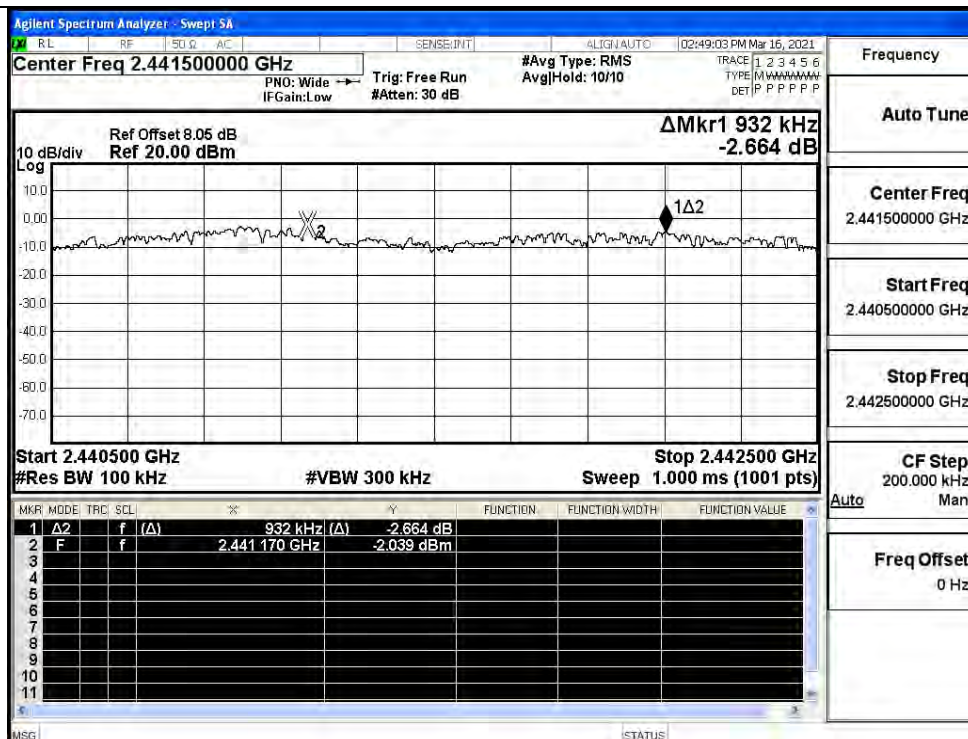
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

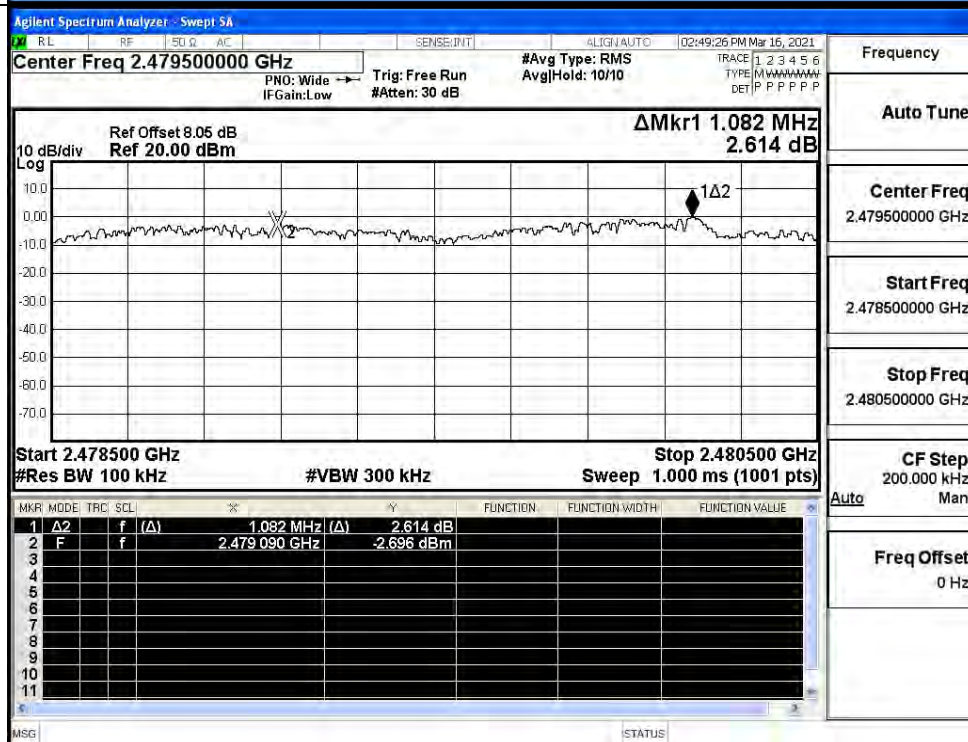
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

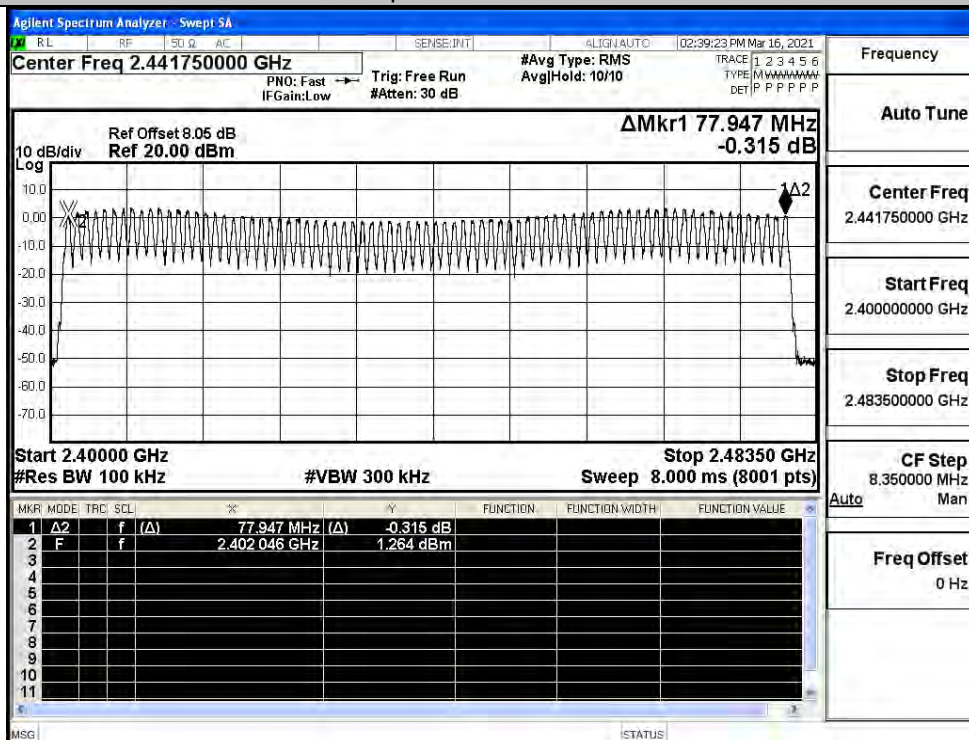
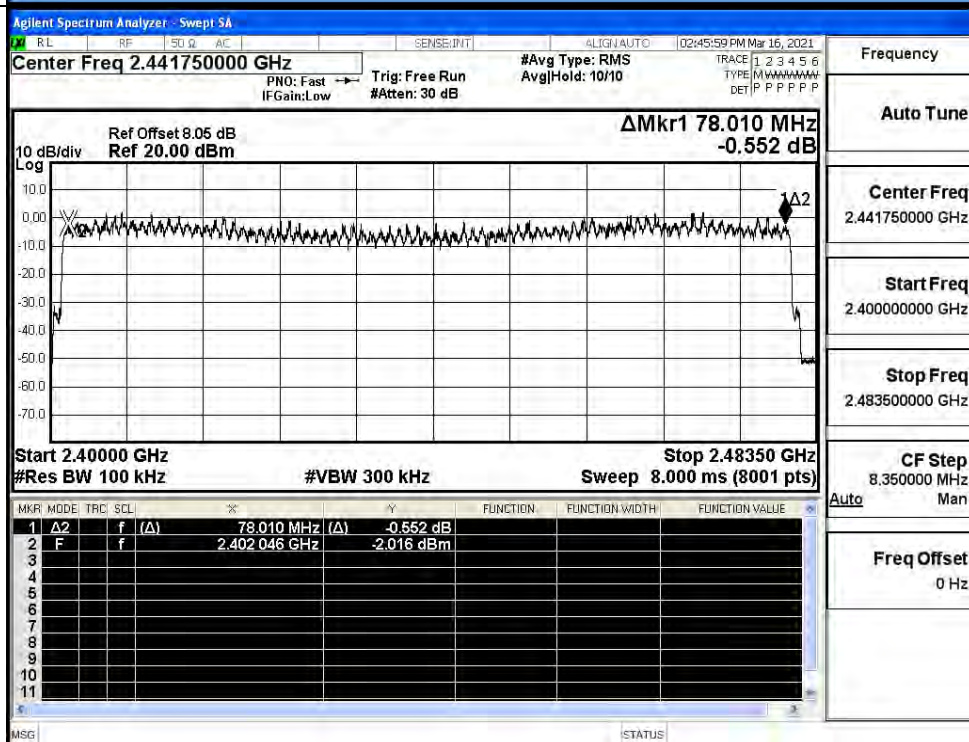


A.4 Hopping Channel Number

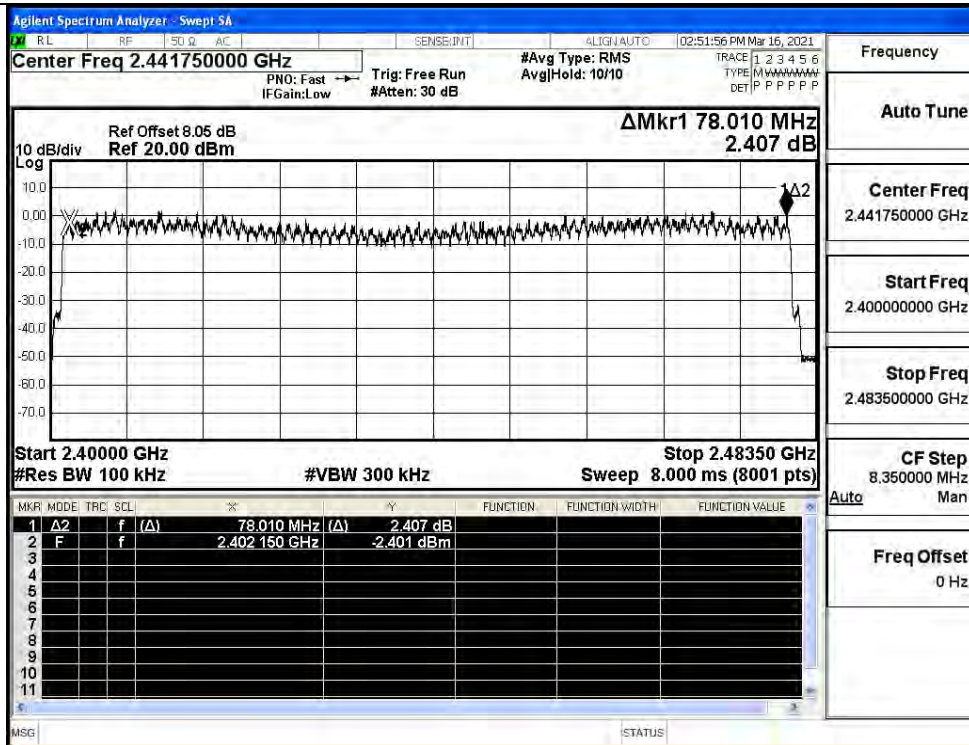
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

Test Graphs

GFSK/Hop

 $\pi/4$ DQPSK/Hop

8DPSK/Hop

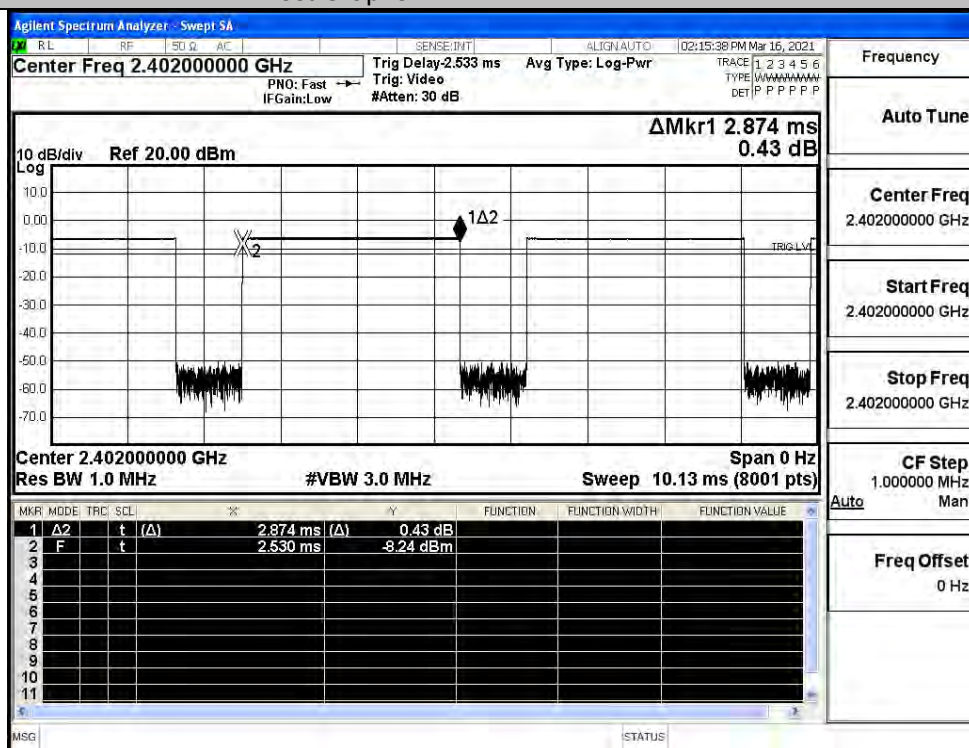


A.5 Dwell Time

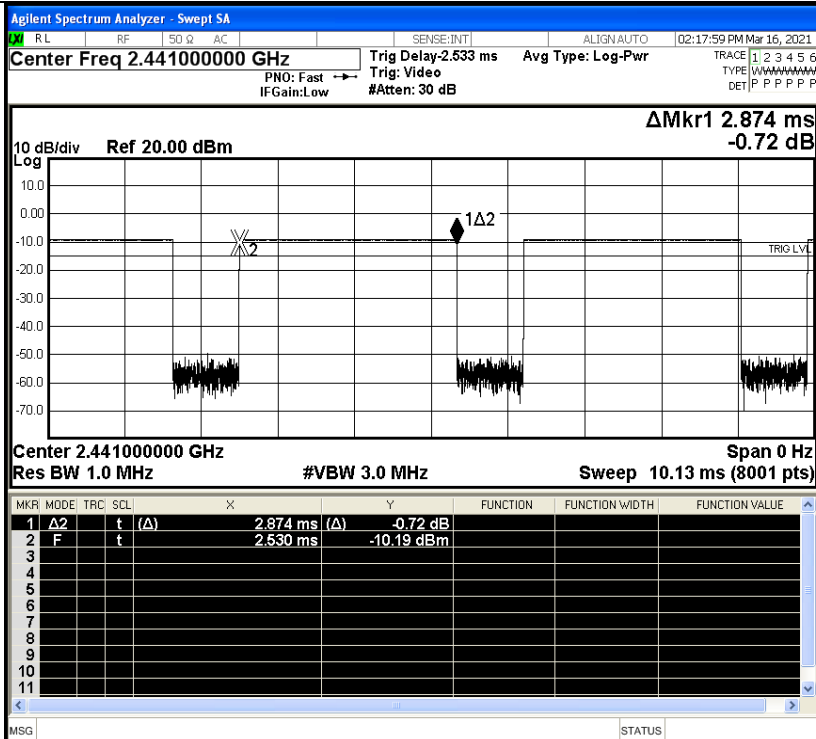
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.87	106.7	0.306	0.4	PASS
	DH5	MCH	2.87	106.7	0.306	0.4	PASS
	DH5	HCH	2.87	106.7	0.306	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.87	106.7	0.307	0.4	PASS
	2DH5	MCH	2.87	106.7	0.307	0.4	PASS
	2DH5	HCH	2.87	106.7	0.307	0.4	PASS
8DPSK	3DH5	LCH	2.87	106.7	0.307	0.4	PASS
	3DH5	MCH	2.87	106.7	0.307	0.4	PASS
	3DH5	HCH	2.87	106.7	0.307	0.4	PASS

Test Graphs

GFSK_DH5/LCH



GFSK_DH5/MCH

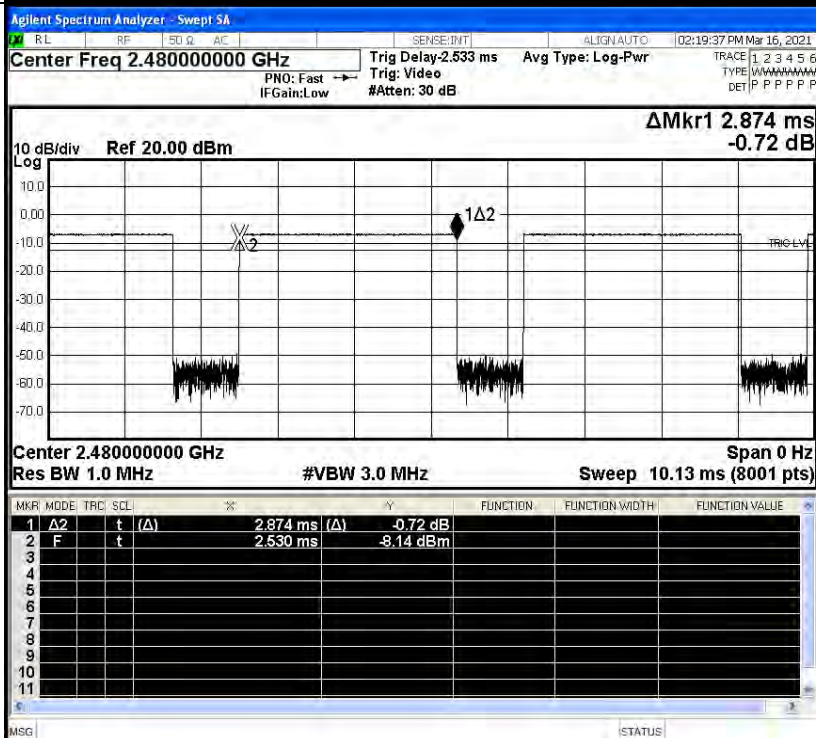


Frequency

Auto Tune

Center Freq
2.441000000 GHzStart Freq
2.441000000 GHzStop Freq
2.441000000 GHzCF Step
1.000000 MHz
Auto ManFreq Offset
0 Hz

GFSK_DH5/HCH

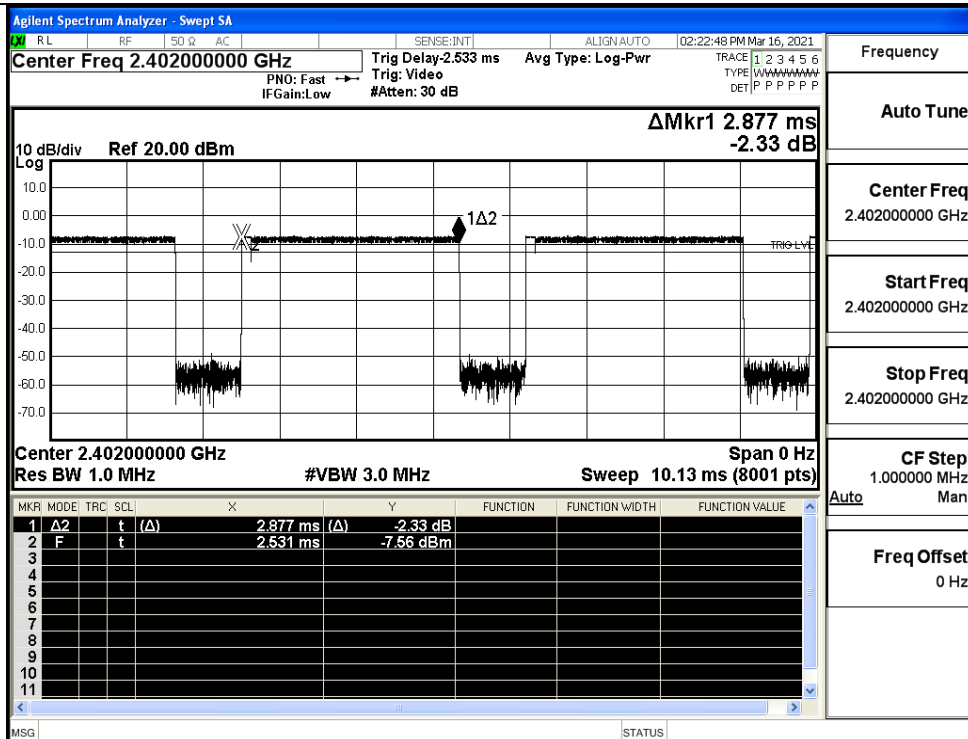


Frequency

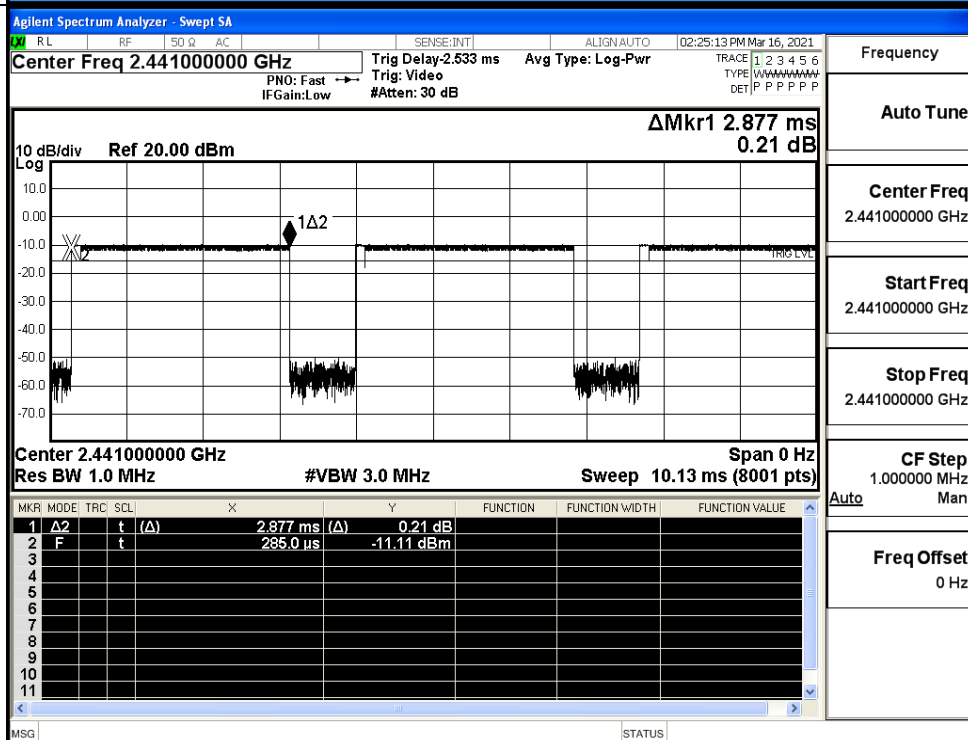
Auto Tune

Center Freq
2.480000000 GHzStart Freq
2.480000000 GHzStop Freq
2.480000000 GHzCF Step
1.000000 MHz
Auto ManFreq Offset
0 Hz

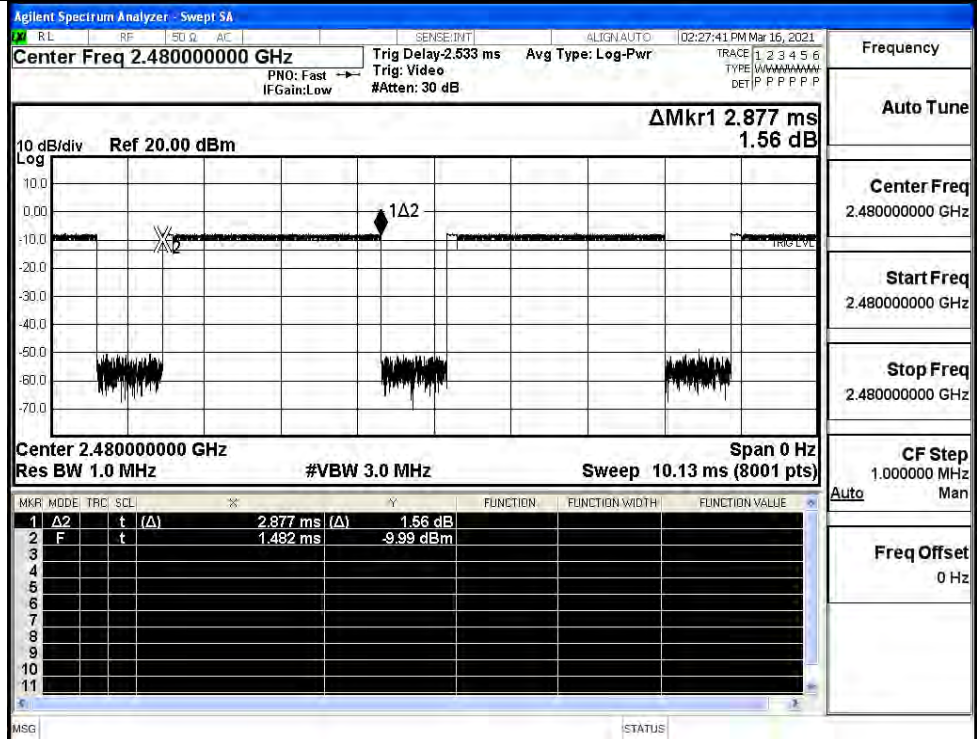
$\pi/4$ DQPSK
_2DH5/LCH



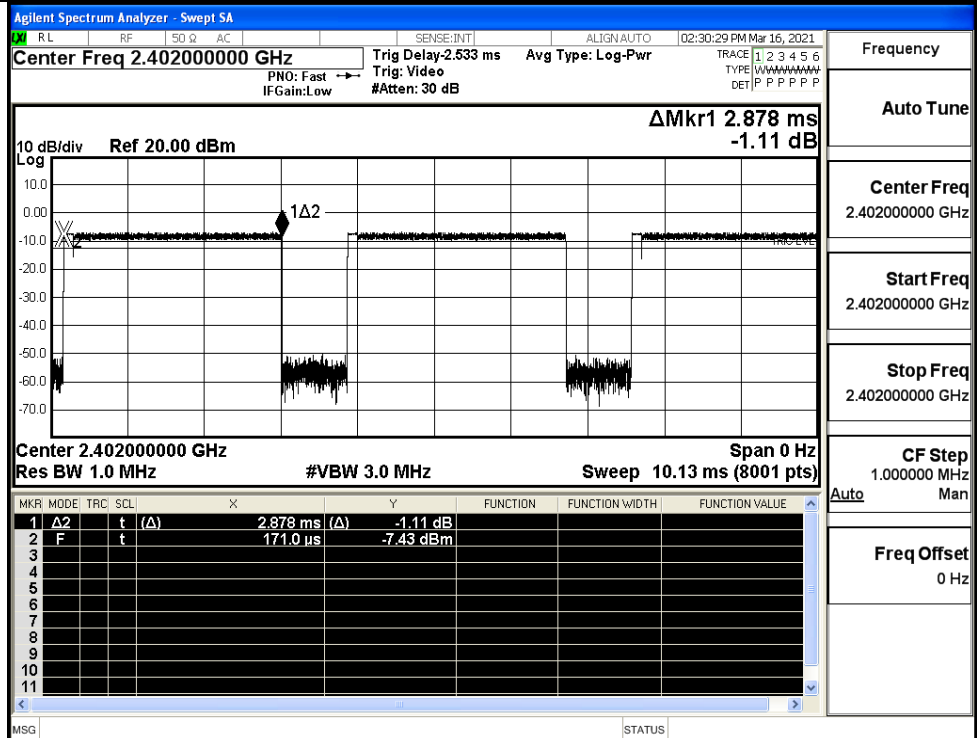
$\pi/4$ DQPSK
_2DH5/MCH



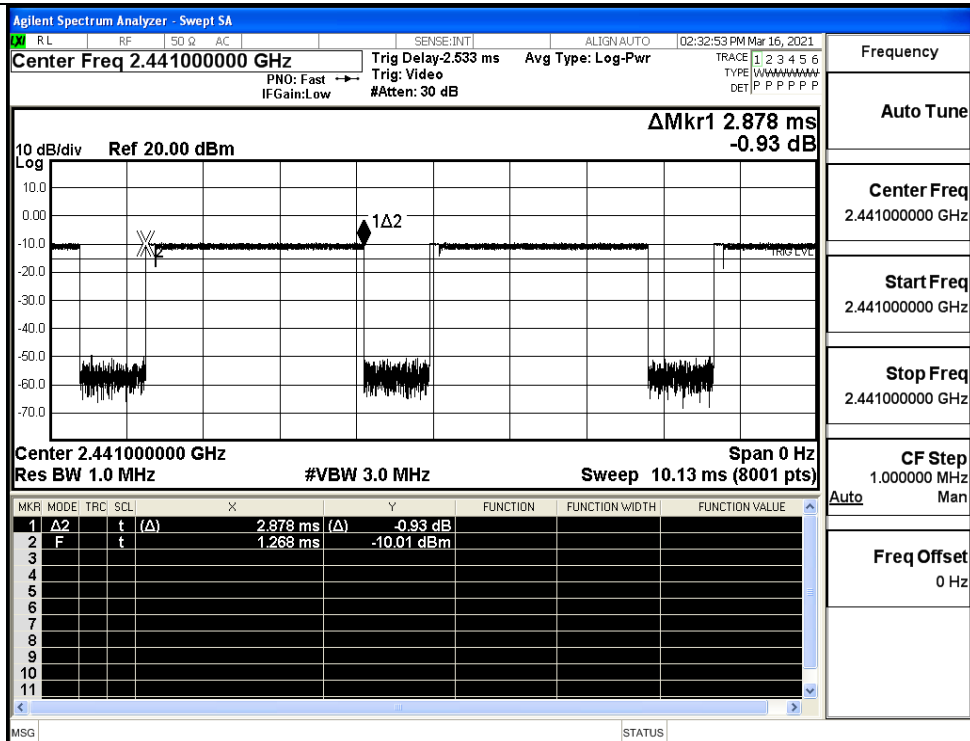
$\pi/4$ DQPSK
_2DH5/HCH



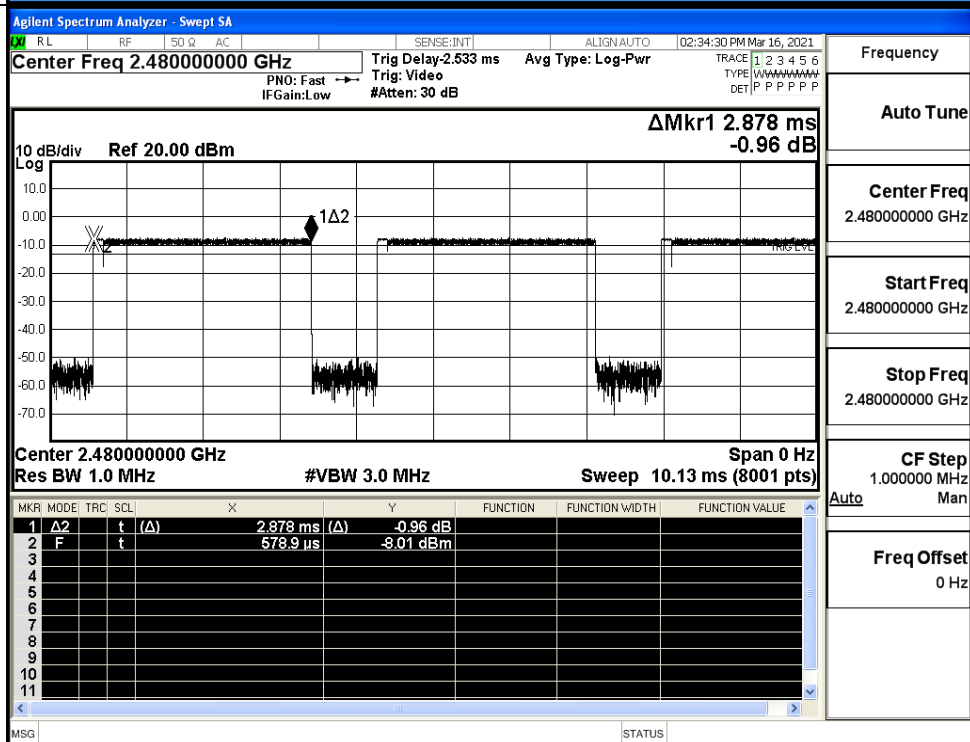
8DPSK _3DH5/LCH



8DPSK_3DH5/MCH



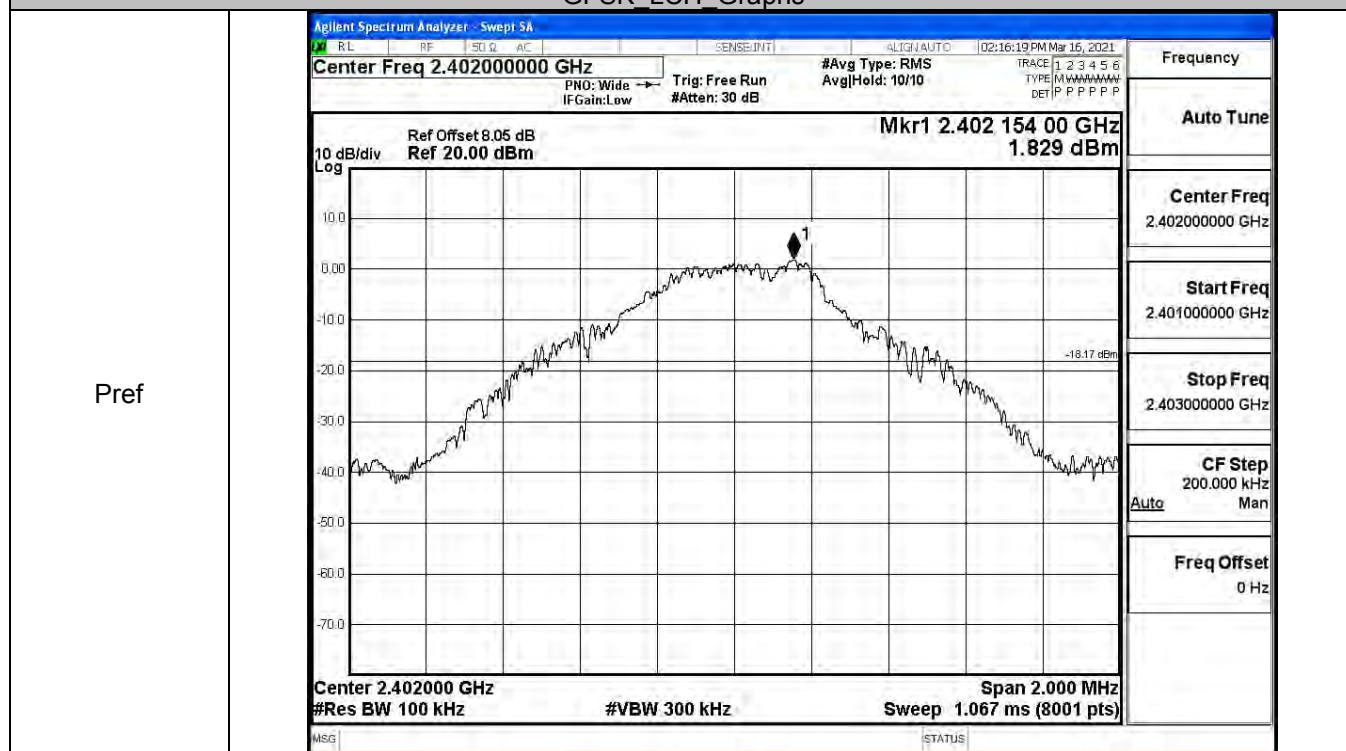
8DPSK_3DH5/HCH

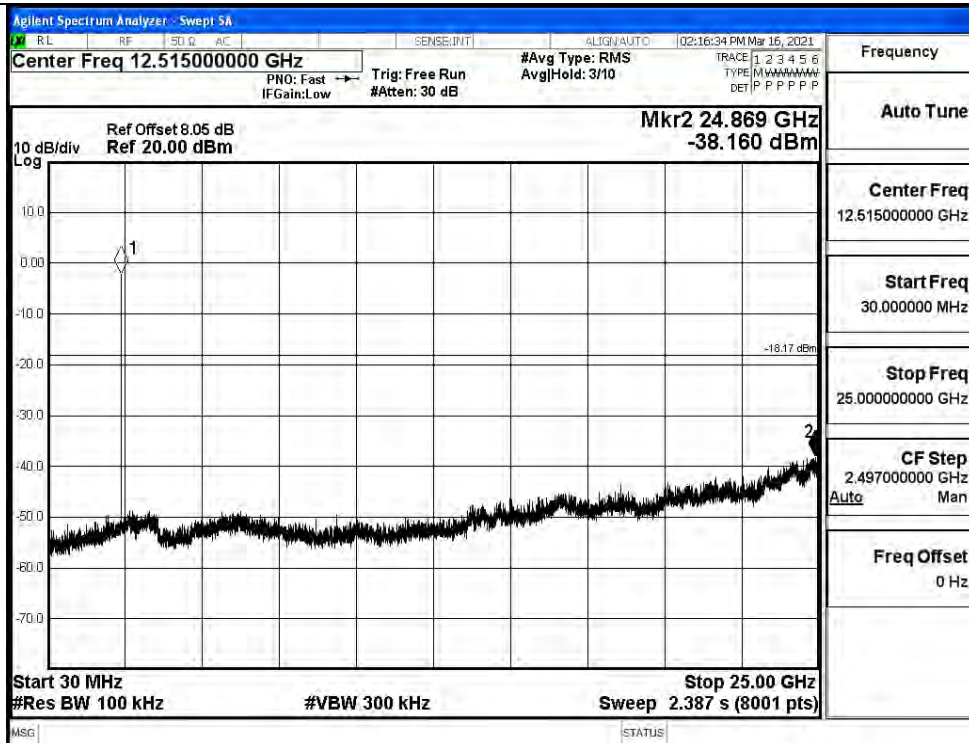


A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	1.829	-38.160	-18.171	PASS
	MCH	-1.026	-36.725	-21.026	PASS
	HCH	1.077	-37.008	-18.923	PASS
$\pi/4$ DQPSK	LCH	0.064	-37.873	-19.936	PASS
	MCH	-2.25	-38.232	-22.250	PASS
	HCH	-0.32	-37.676	-20.320	PASS
8DPSK	LCH	-0.066	-37.522	-20.066	PASS
	MCH	-2.291	-37.574	-22.291	PASS
	HCH	0.07	-38.157	-19.930	PASS

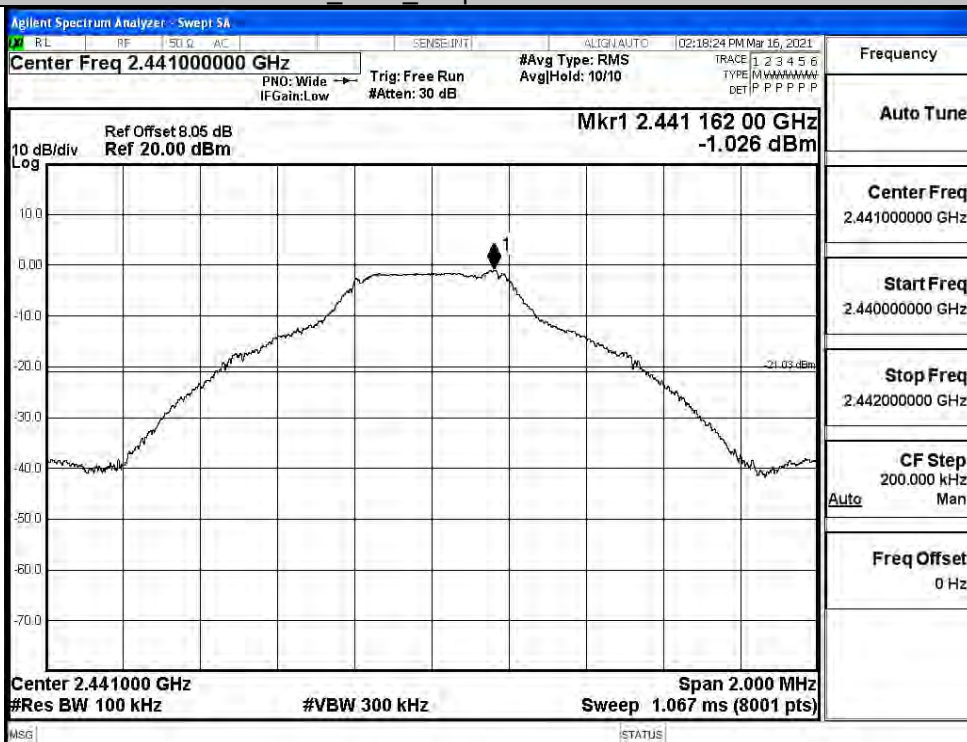
GFSK LCH Graphs



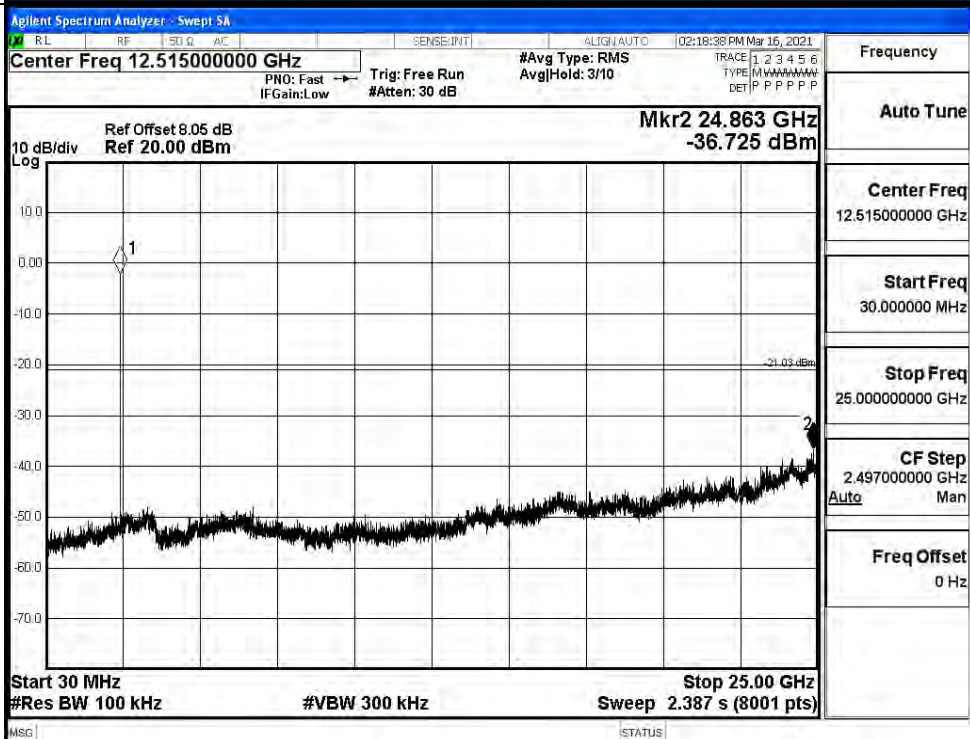
P_u

GFSK_MCH_Graphs

Pref

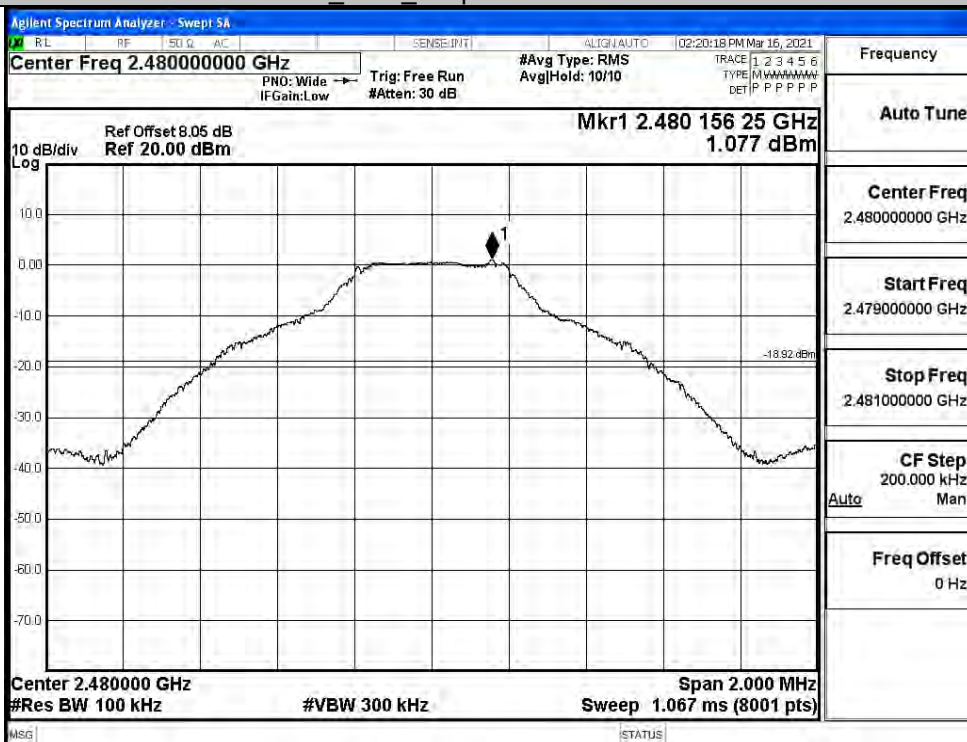


Puw

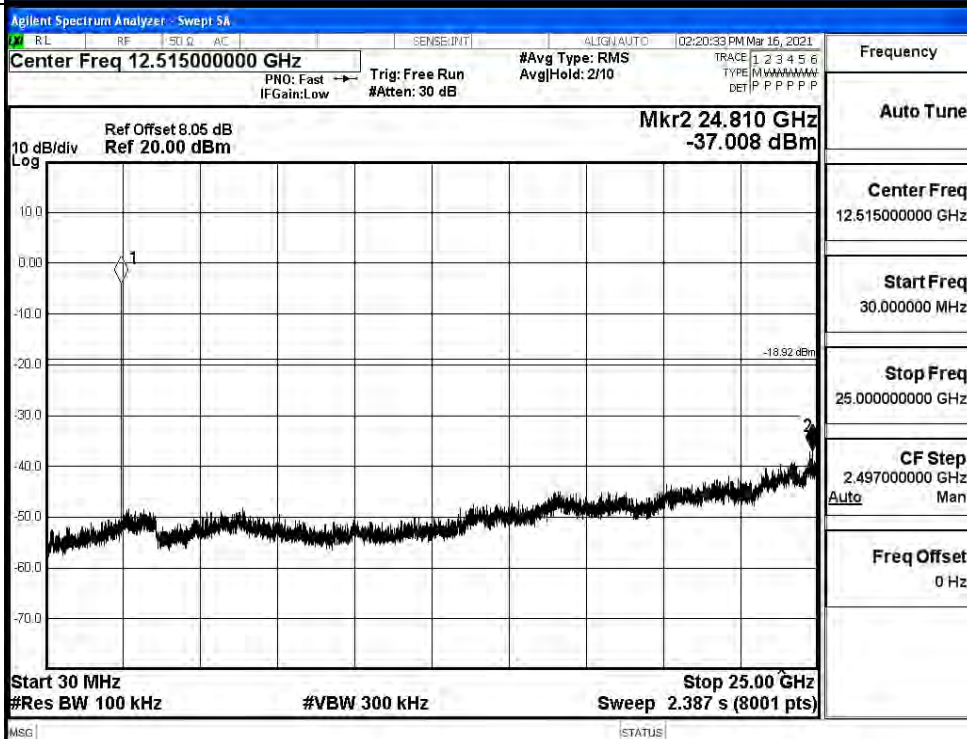


GFSK_HCH_Graphs

Pref

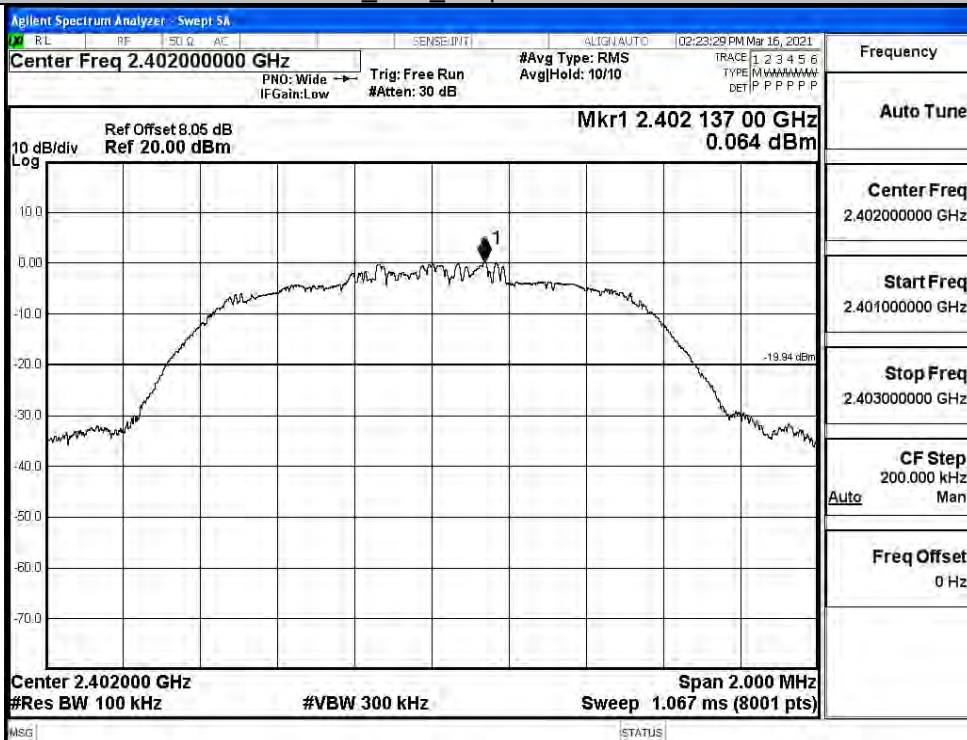


Puw

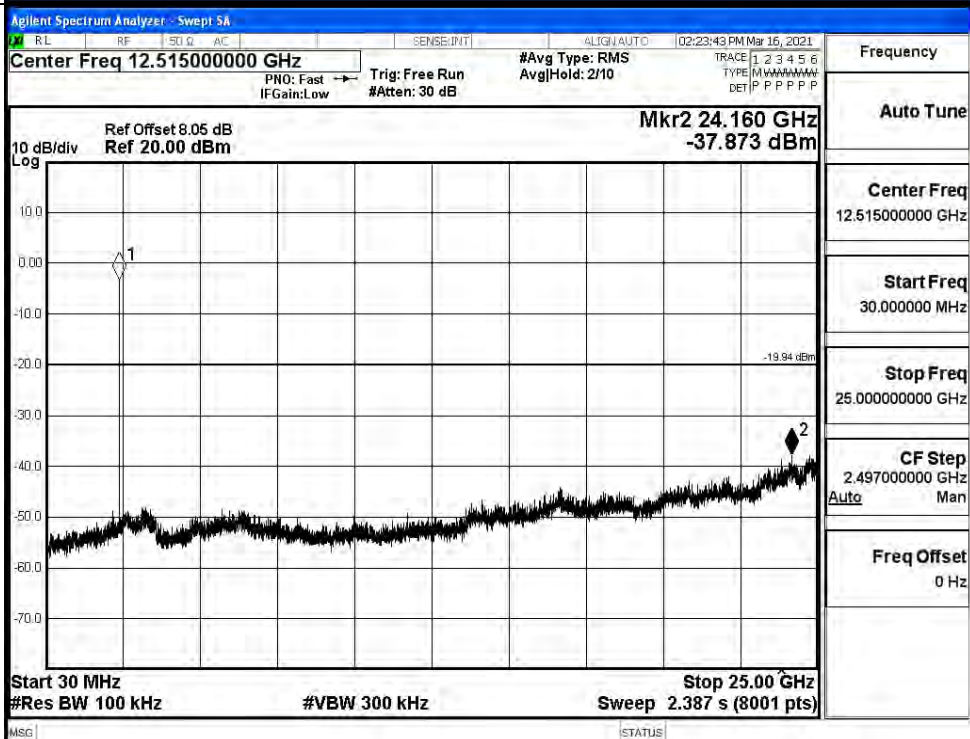


$\pi/4$ DQPSK_LCH_Graphs

Pref

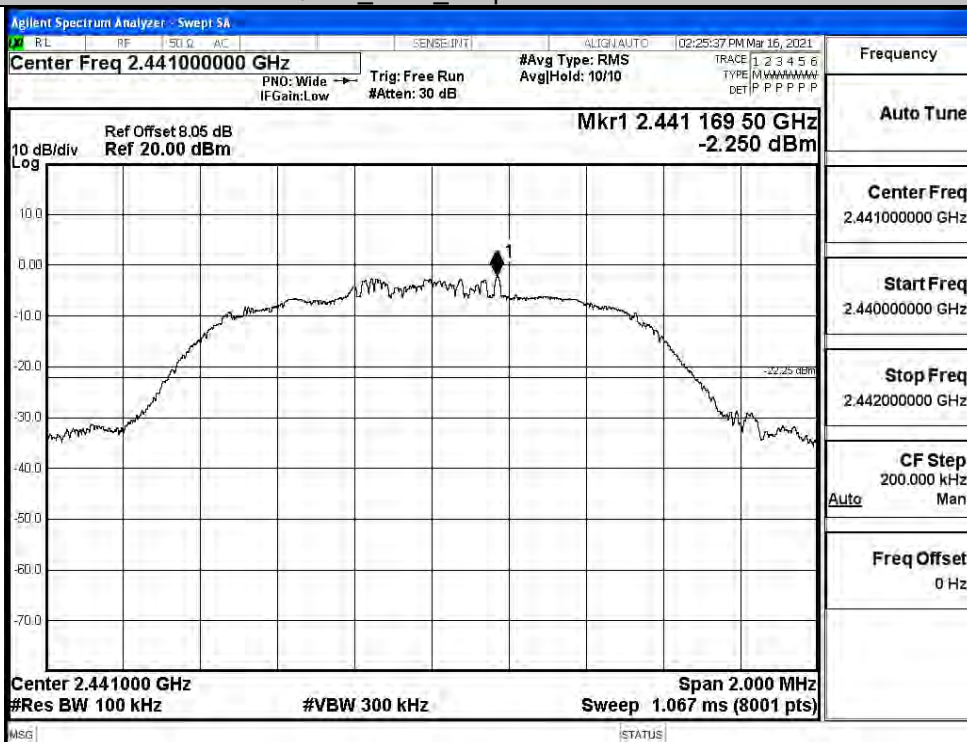


Puw

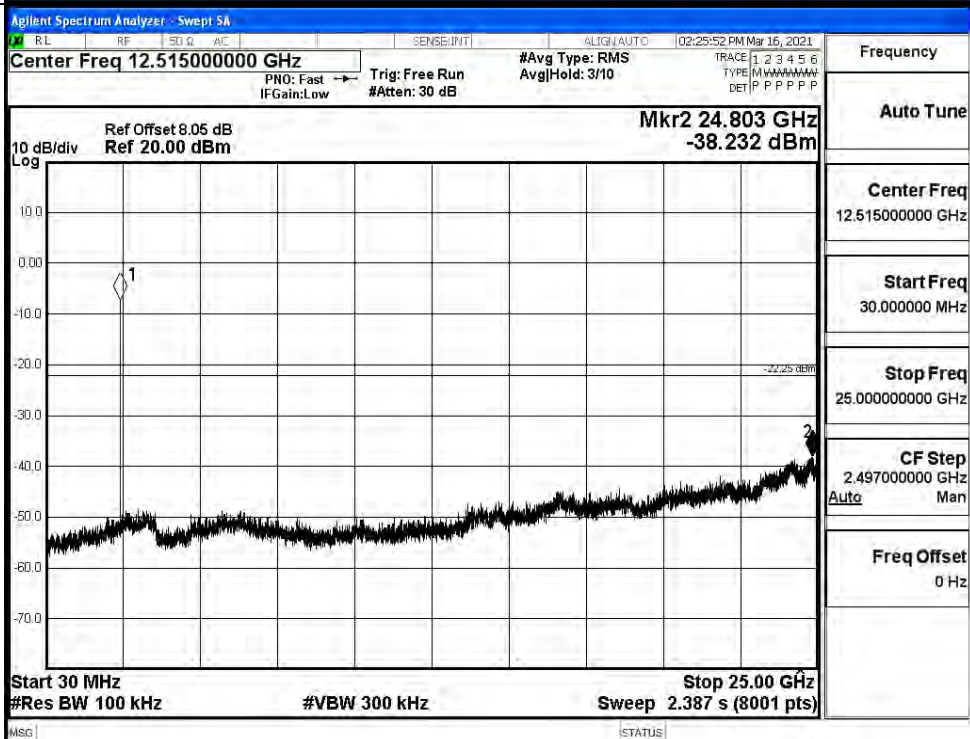


π /4DQPSK_MCH_Graphs

Pref

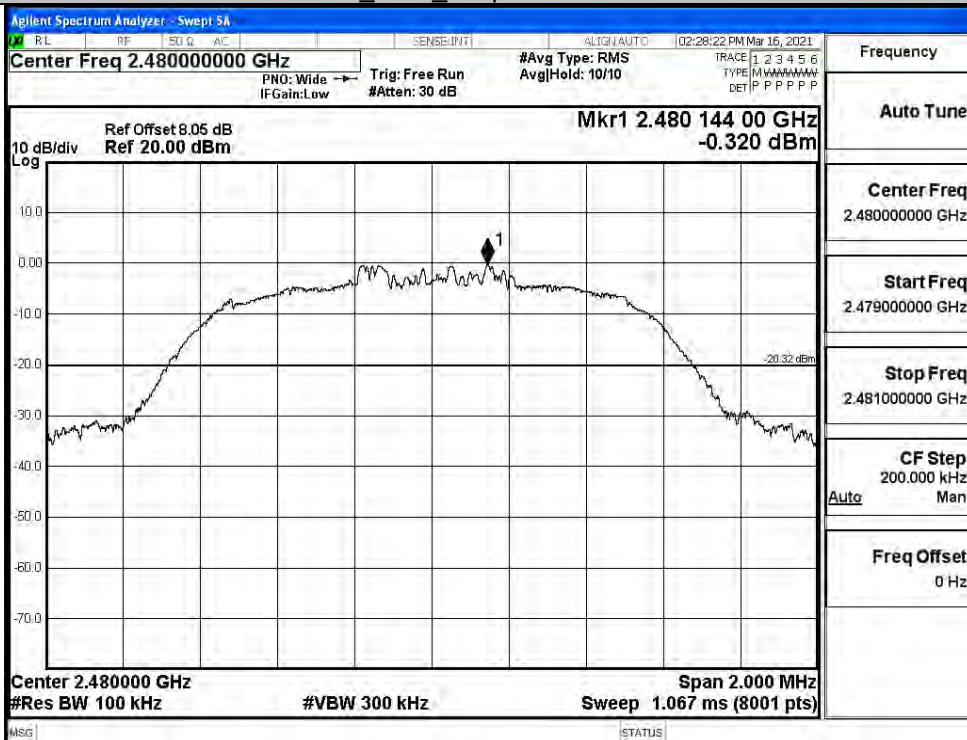


Puw

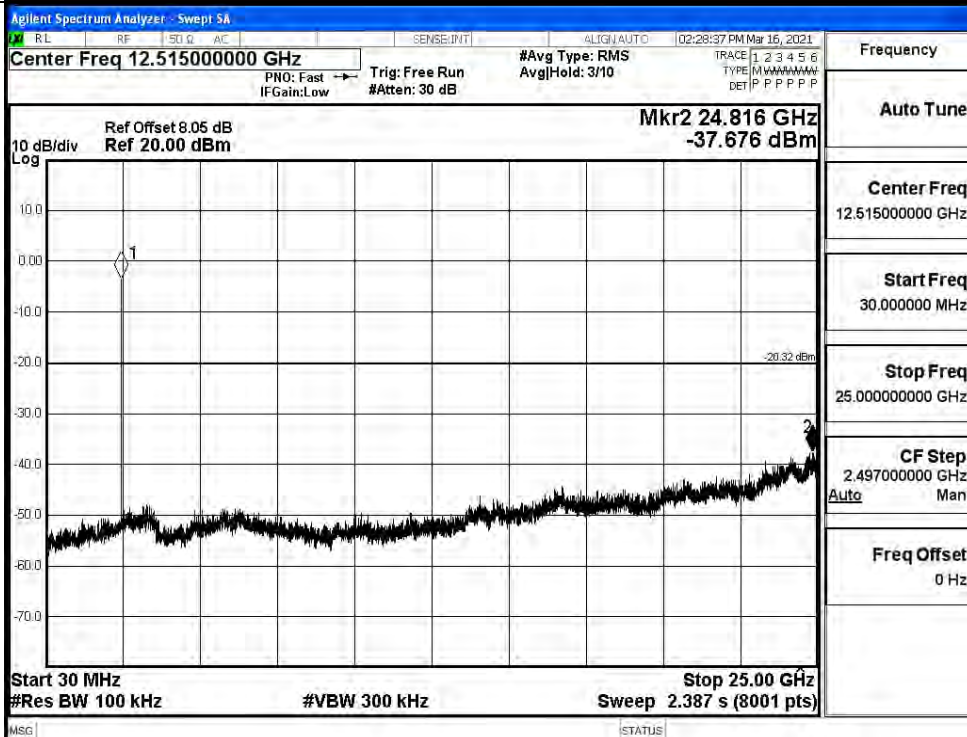


$\pi/4$ DQPSK_HCH_Graphs

Pref

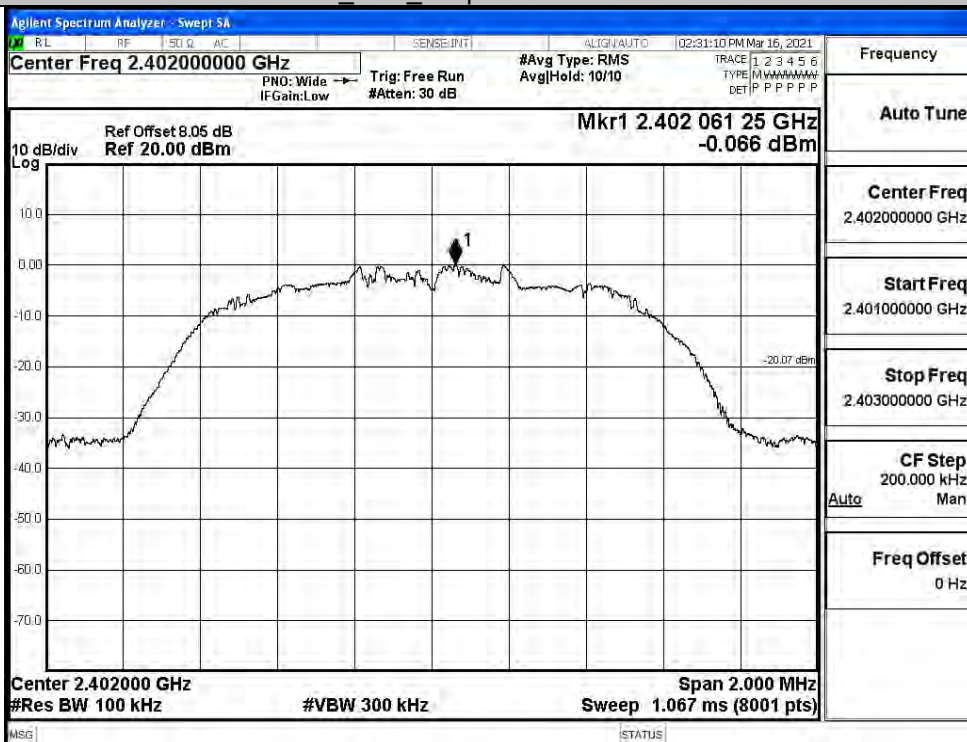


Puw

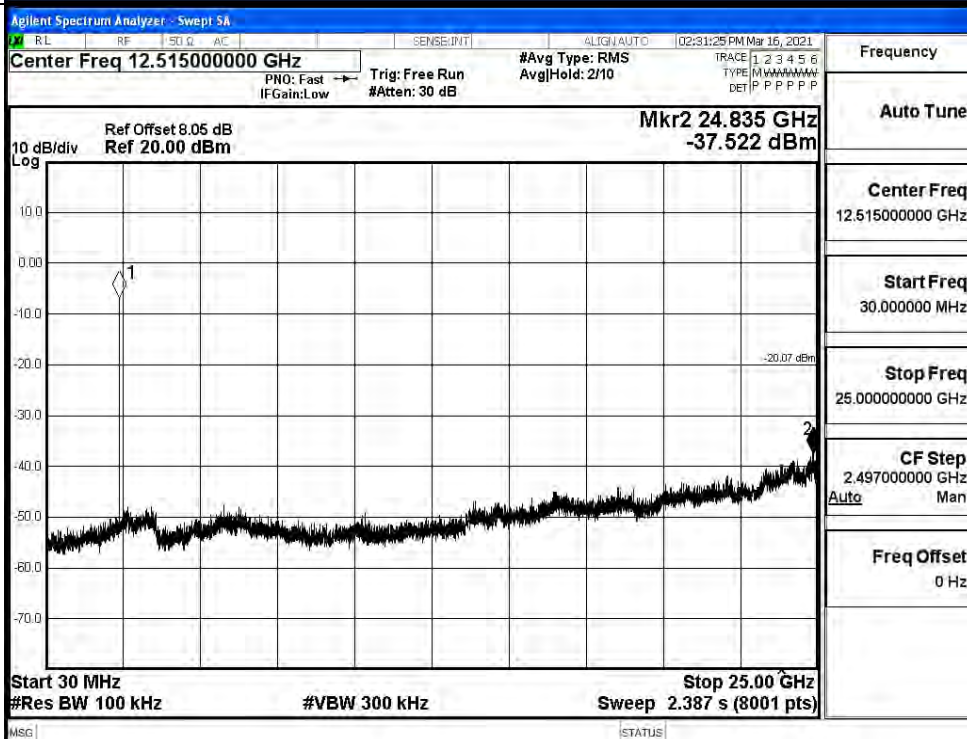


8DPSK_LCH_Graphs

Pref

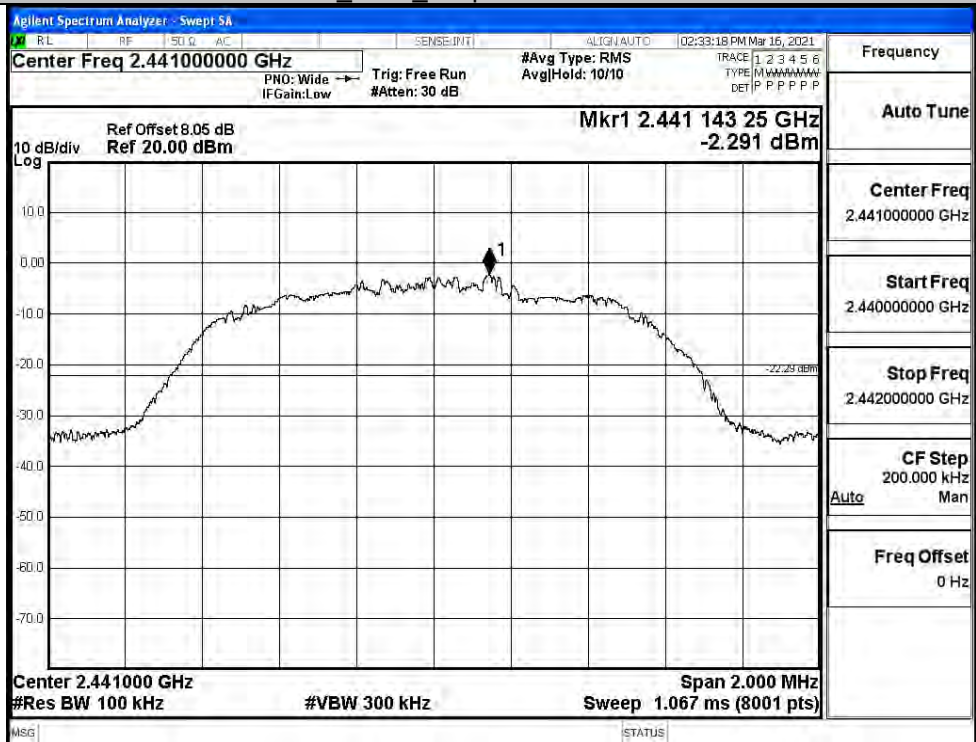


Puw



8DPSK_MCH_Graphs

Pref

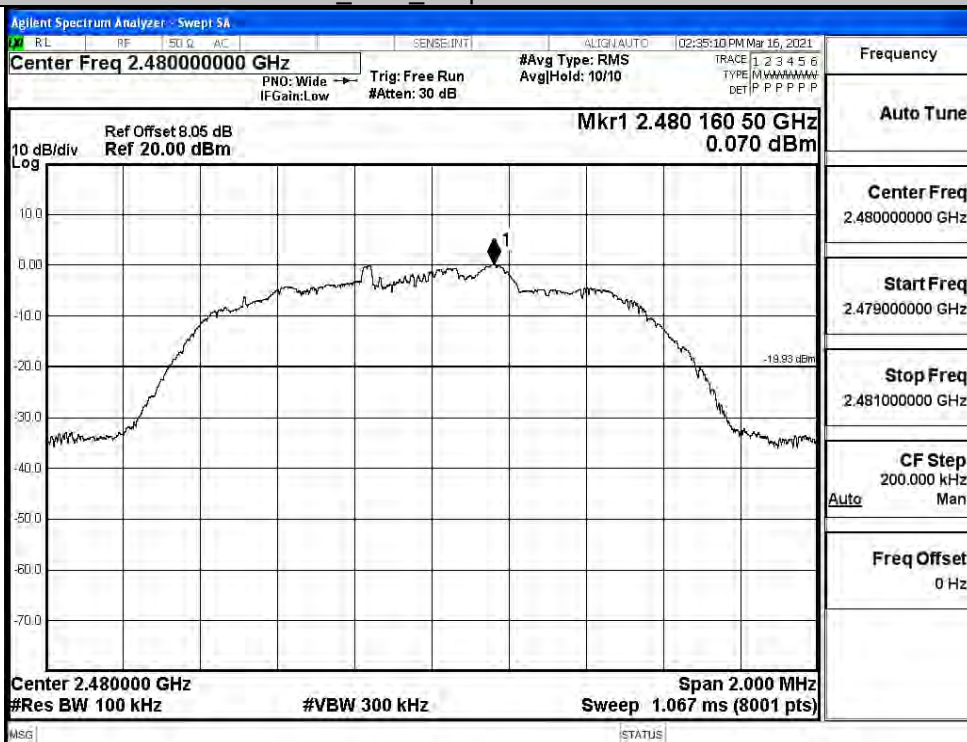


Puw

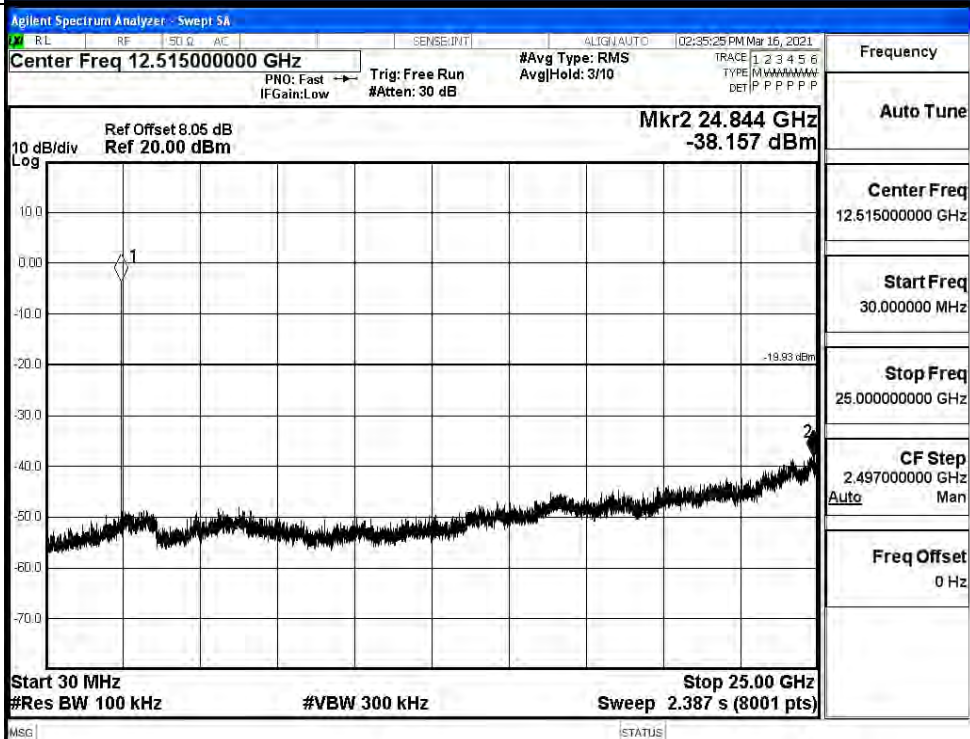


8DPSK_HCH_Graphs

Pref



Puw

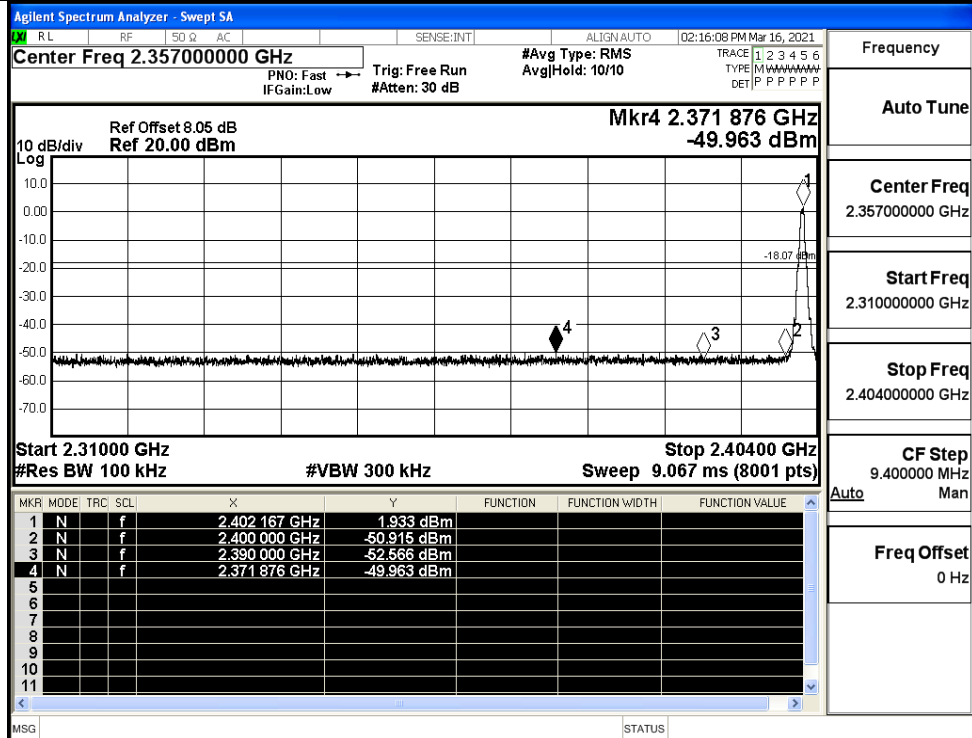


A.7 Band-edge for RF Conducted Emissions

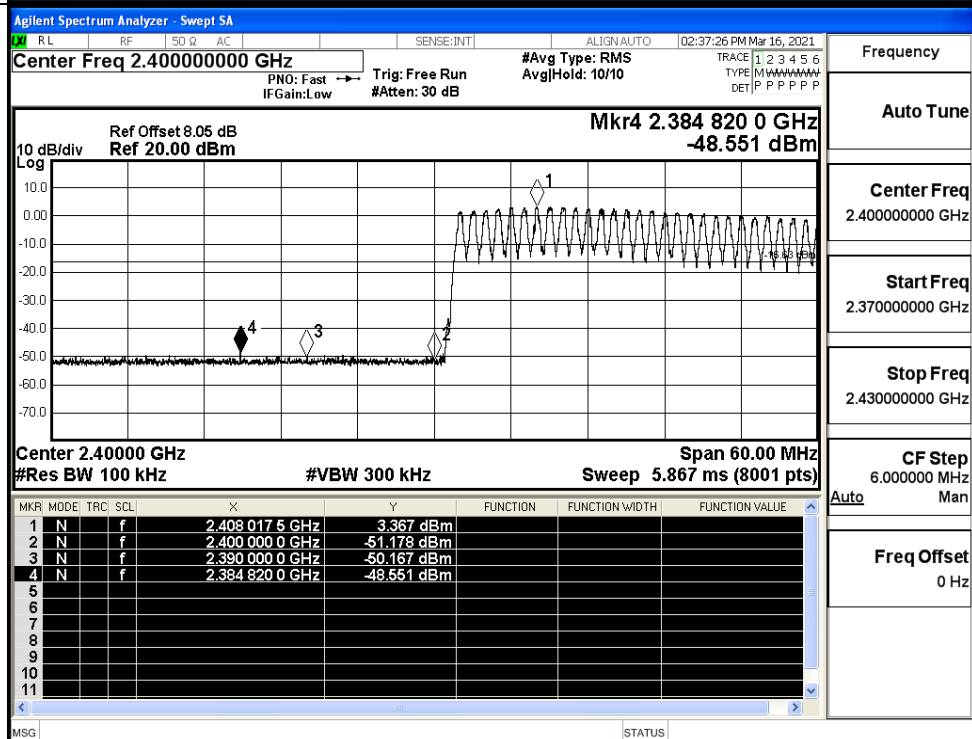
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	1.933	Off	-49.963	-18.07	PASS
			3.367	On	-48.551	-16.63	PASS
	HCH	2480	1.110	Off	-48.683	-18.89	PASS
			3.433	On	-49.062	-16.57	PASS
$\pi/4$ DQPSK	LCH	2402	0.748	Off	-49.242	-19.25	PASS
			2.038	On	-48.956	-17.96	PASS
	HCH	2480	-0.321	Off	-49.070	-20.32	PASS
			2.071	On	-49.124	-17.93	PASS
8DPSK	LCH	2402	-0.800	Off	-49.503	-20.8	PASS
			2.247	On	-49.283	-17.75	PASS
	HCH	2480	-0.076	Off	-48.961	-20.08	PASS
			2.089	On	-48.470	-17.91	PASS

Test Graphs

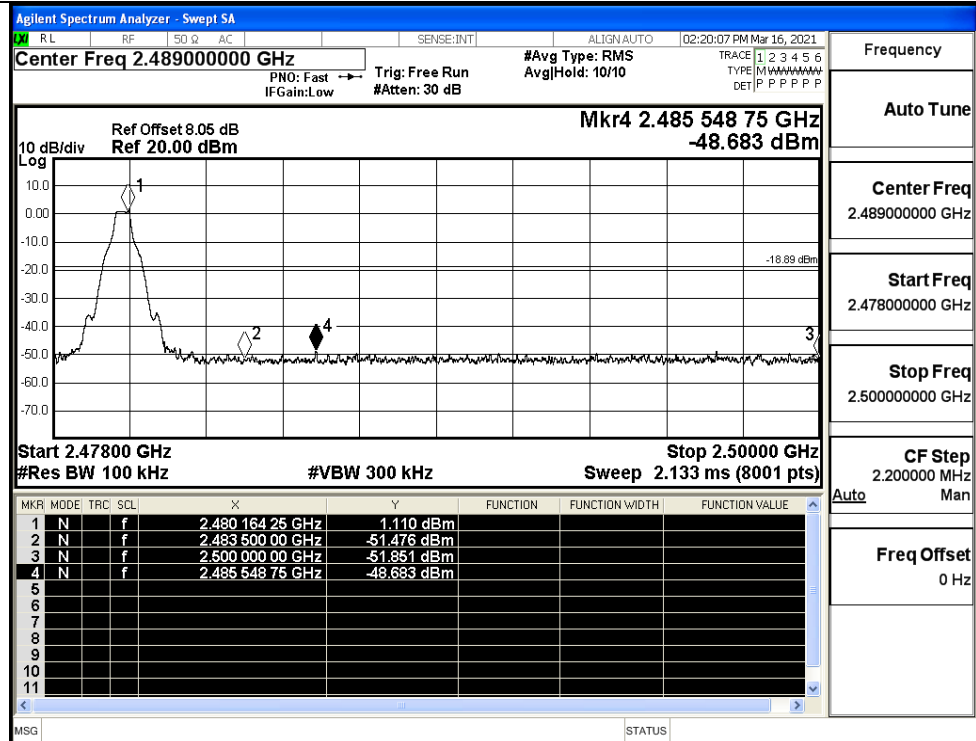
GFSK/LCH/No Hop



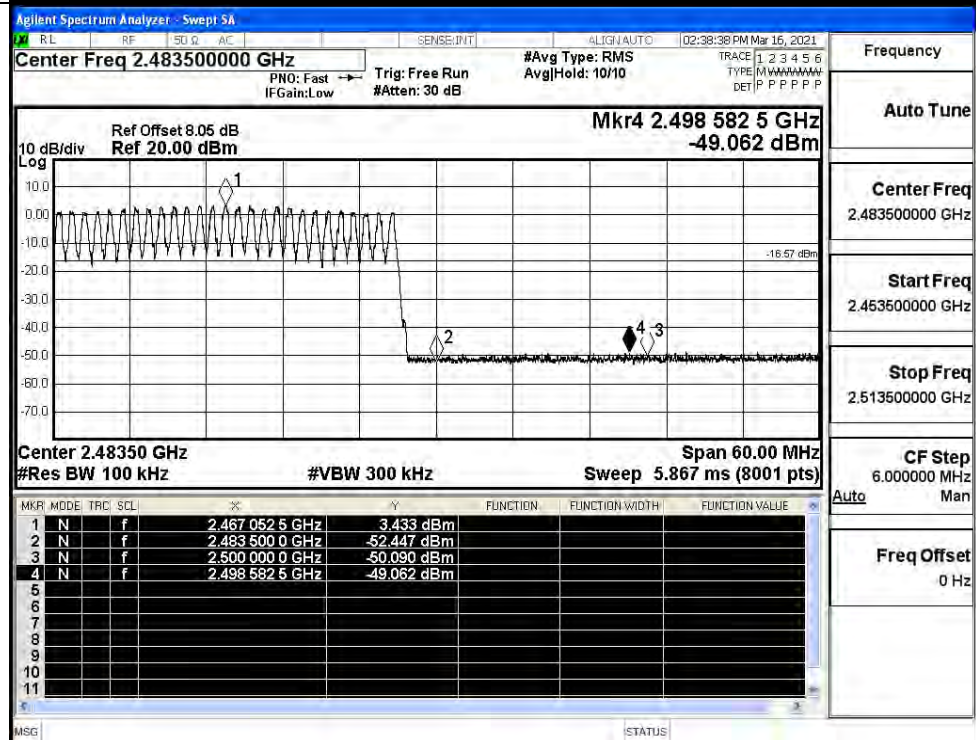
GFSK/LCH/Hop



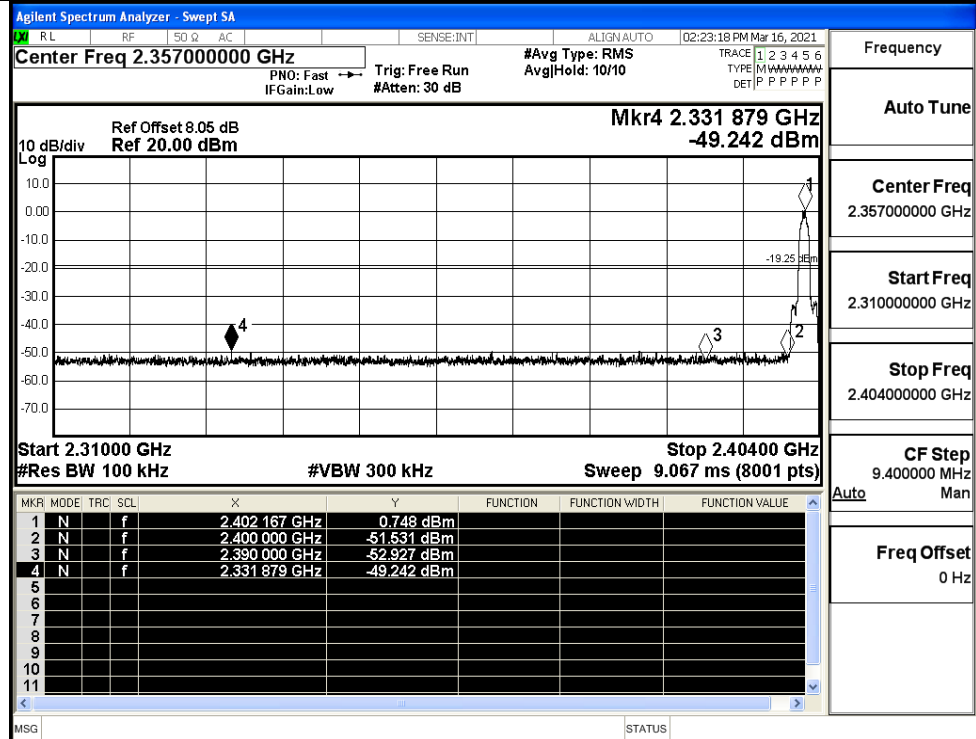
GFSK/HCH/No Hop



GFSK/HCH/Hop



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



Frequency

Auto Tune

Center Freq
2.357000000 GHz

Start Freq
2.310000000 GHz

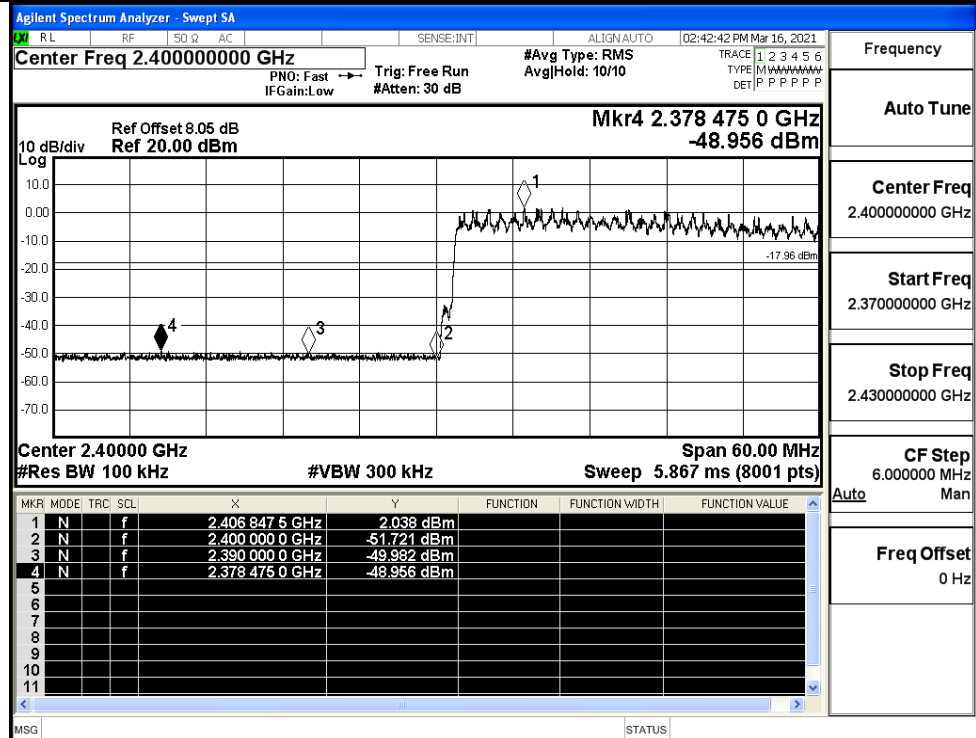
Stop Freq
2.404000000 GHz

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

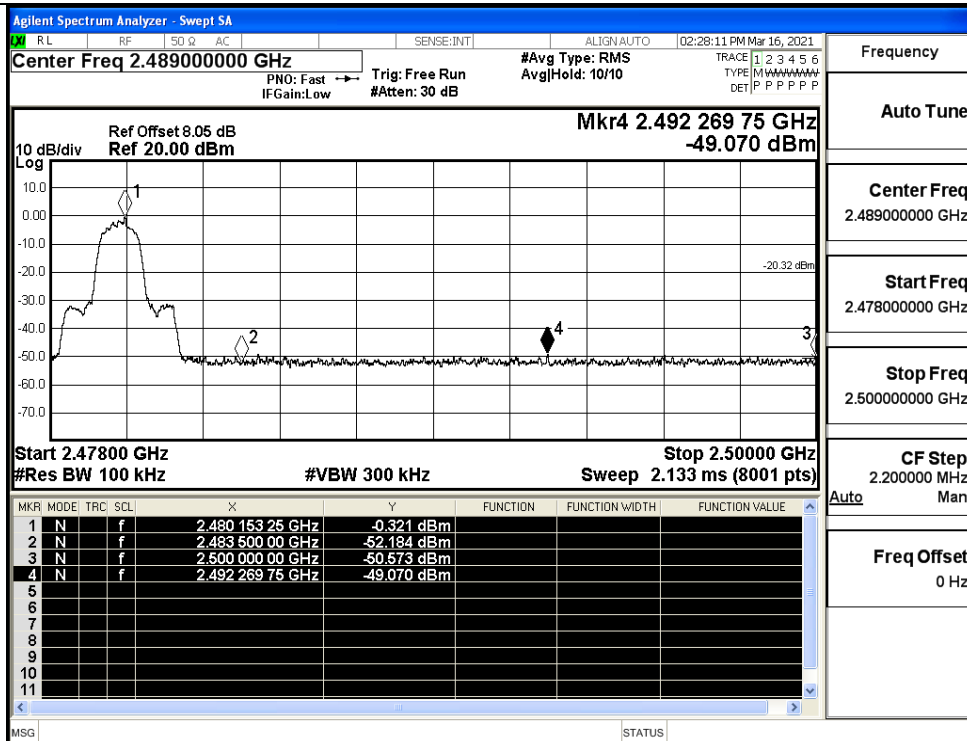
Stop Freq
2.430000000 GHz

CF Step
6.000000 MHz

Auto Man

Freq Offset
0 Hz

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

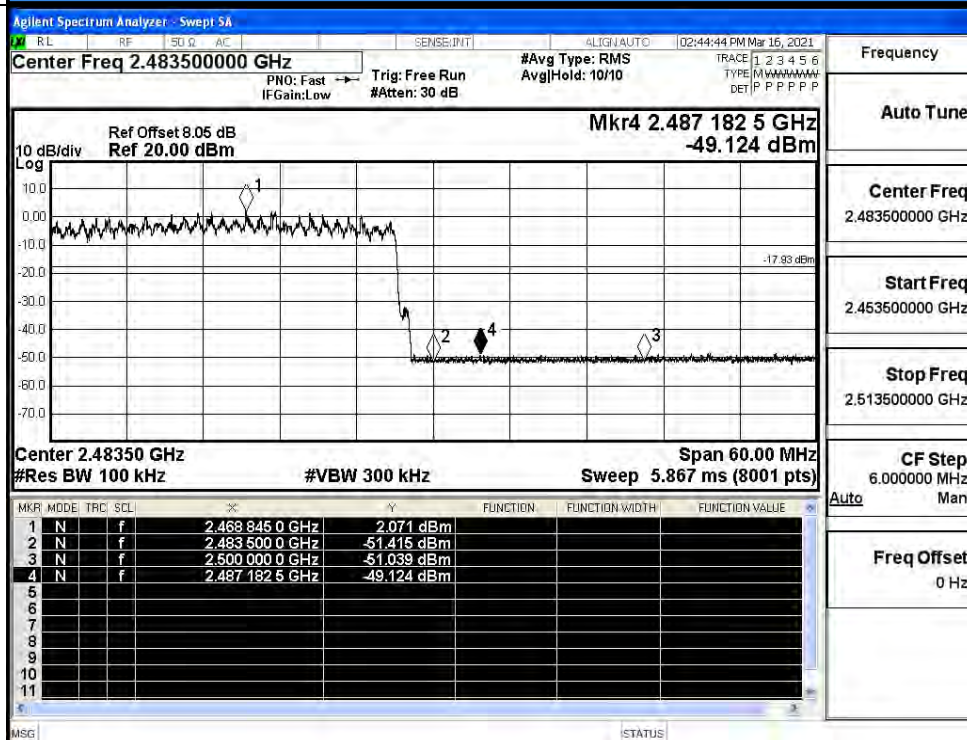


Frequency

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

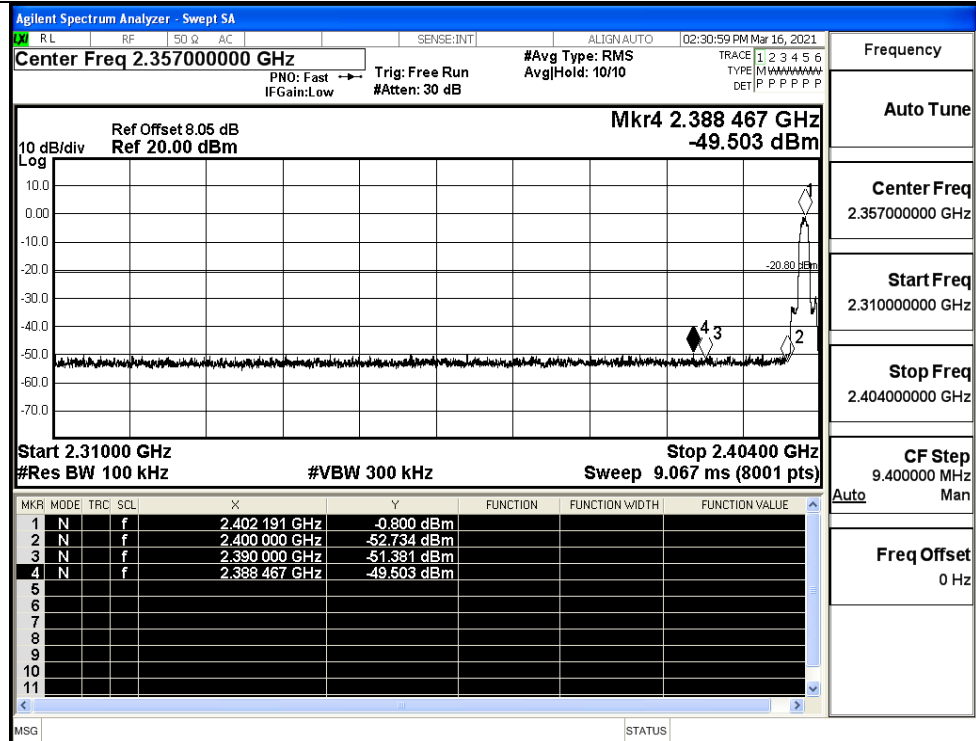


Frequency

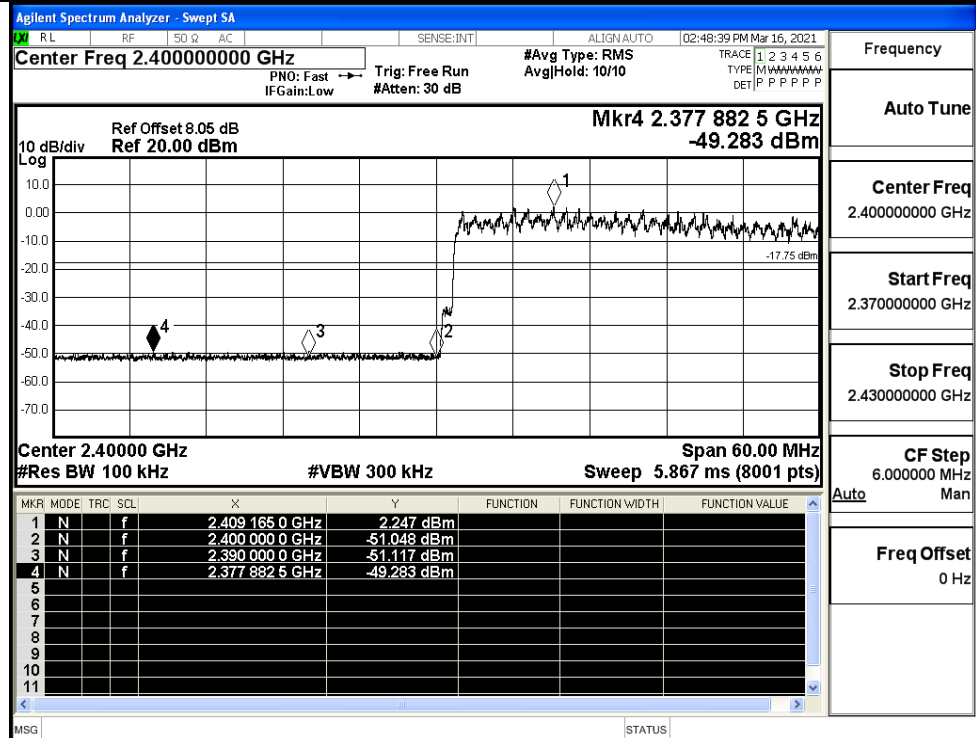
Auto Tune

Center Freq
2.483500000 GHzStart Freq
2.463500000 GHzStop Freq
2.513500000 GHzCF Step
6.000000 MHz
Auto ManFreq Offset
0 Hz

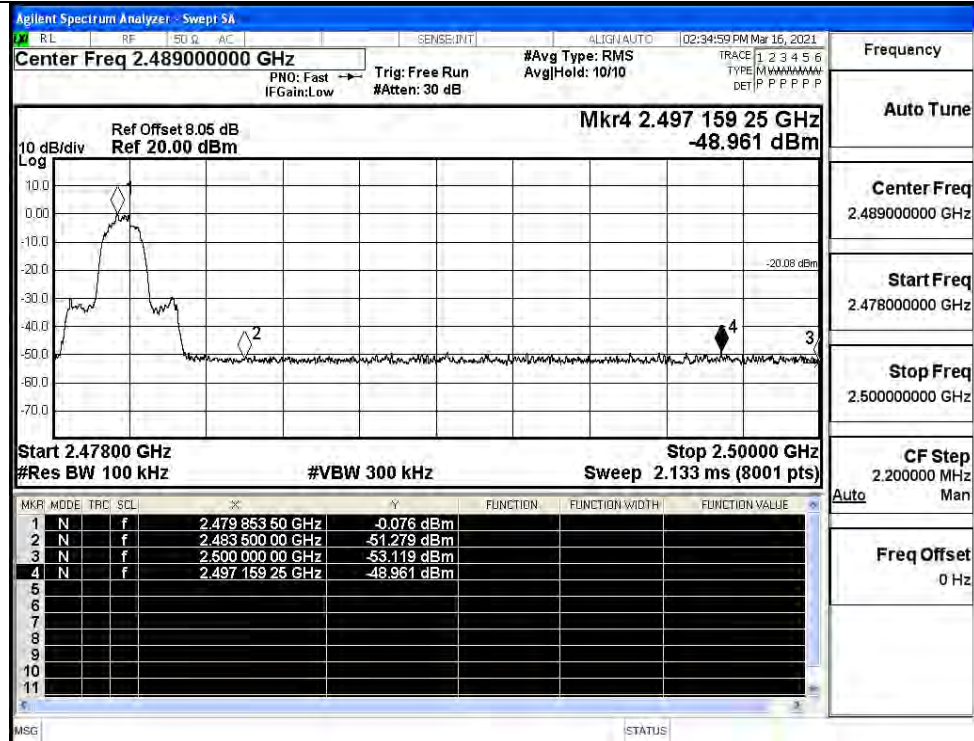
8DPSK/LCH/No Hop



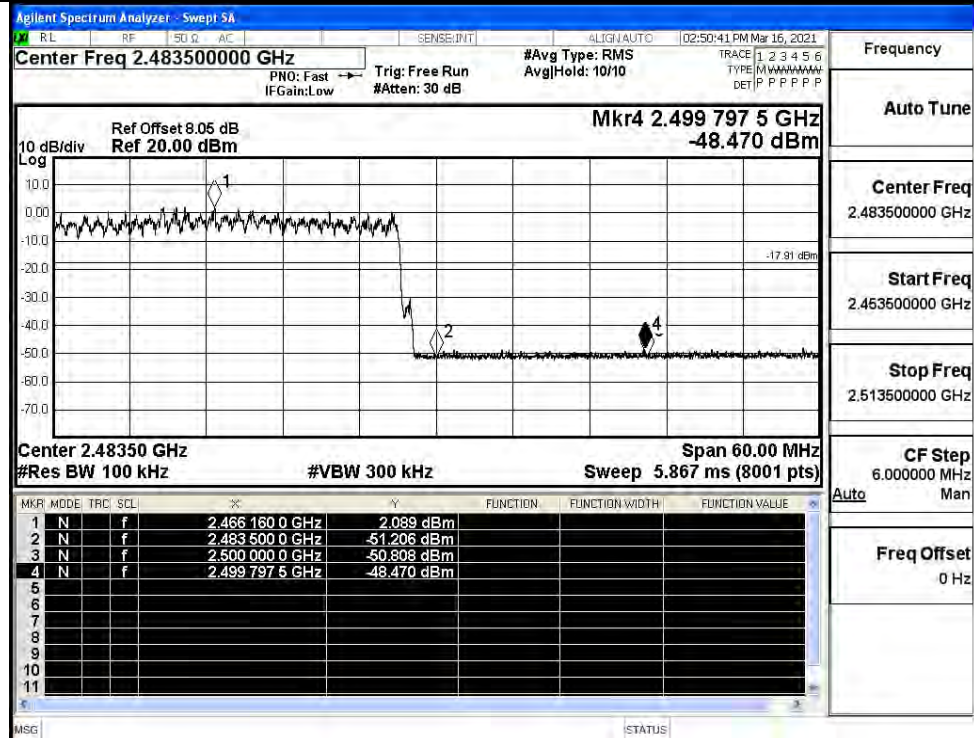
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



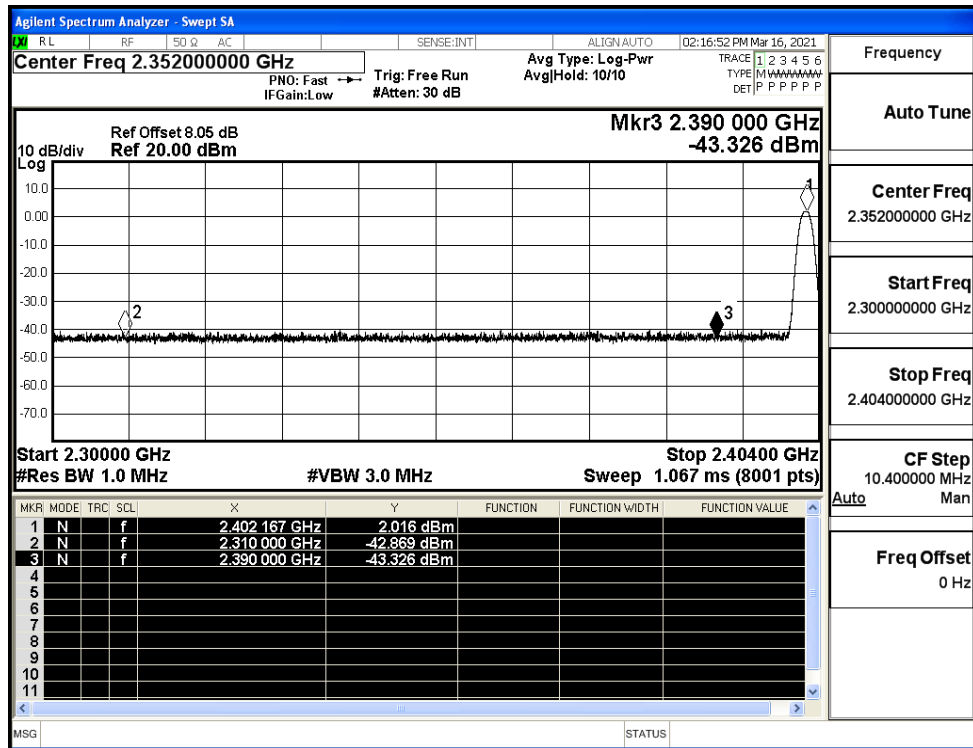
8DPSK/HCH/Hop



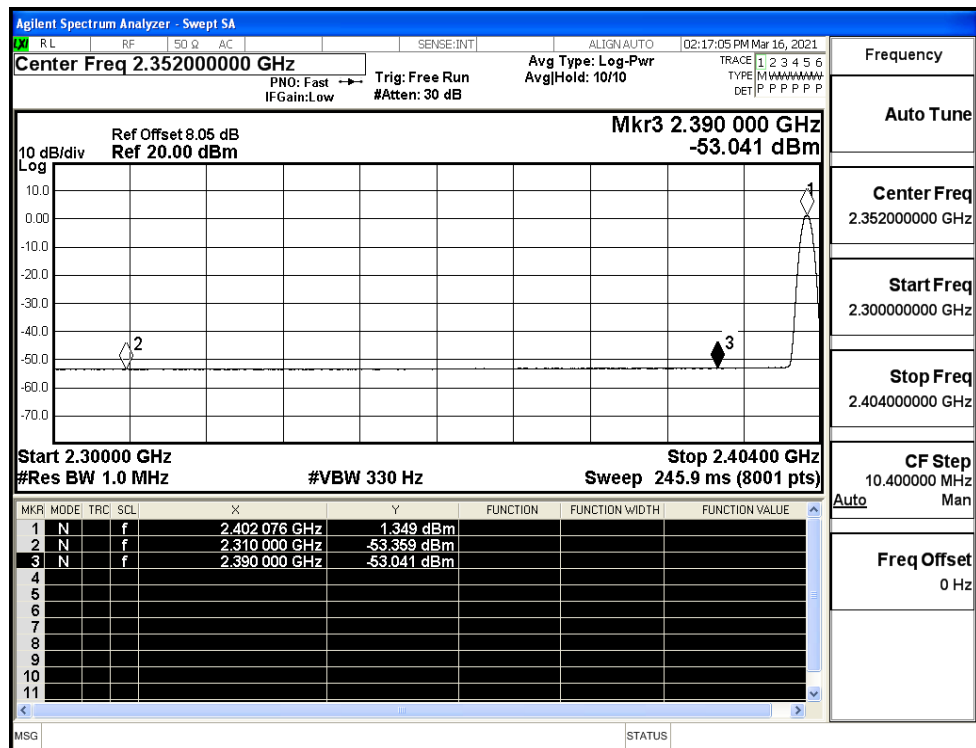
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-42.87	2.0	0	52.39	PEAK	74	PASS
	Off	2310.0	-53.36	2.0	0	41.90	AV	54	PASS
	Off	2390.0	-43.33	2.0	0	51.93	PEAK	74	PASS
	Off	2390.0	-53.04	2.0	0	42.22	AV	54	PASS
	Off	2483.5	-41.75	2.0	0	53.51	PEAK	74	PASS
	Off	2483.5	-52.59	2.0	0	42.67	AV	54	PASS
	Off	2500.0	-40.84	2.0	0	54.42	PEAK	74	PASS
	Off	2500.0	-52.33	2.0	0	42.93	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.07	2.0	0	52.18	PEAK	74	PASS
	Off	2310.0	-53.48	2.0	0	41.77	AV	54	PASS
	Off	2390.0	-42.73	2.0	0	52.53	PEAK	74	PASS
	Off	2390.0	-53.00	2.0	0	42.26	AV	54	PASS
	Off	2483.5	-42.72	2.0	0	52.54	PEAK	74	PASS
	Off	2483.5	-52.18	2.0	0	43.08	AV	54	PASS
	Off	2500.0	-43.07	2.0	0	52.19	PEAK	74	PASS
	Off	2500.0	-52.40	2.0	0	42.86	AV	54	PASS
8DPSK	Off	2310.0	-43.27	2.0	0	51.99	PEAK	74	PASS
	Off	2310.0	-53.42	2.0	0	41.84	AV	54	PASS
	Off	2390.0	-41.85	2.0	0	53.41	PEAK	74	PASS
	Off	2390.0	-53.08	2.0	0	42.17	AV	54	PASS
	Off	2483.5	-42.01	2.0	0	53.25	PEAK	74	PASS
	Off	2483.5	-52.33	2.0	0	42.93	AV	54	PASS
	Off	2500.0	-41.44	2.0	0	53.82	PEAK	74	PASS
	Off	2500.0	-52.38	2.0	0	42.88	AV	54	PASS

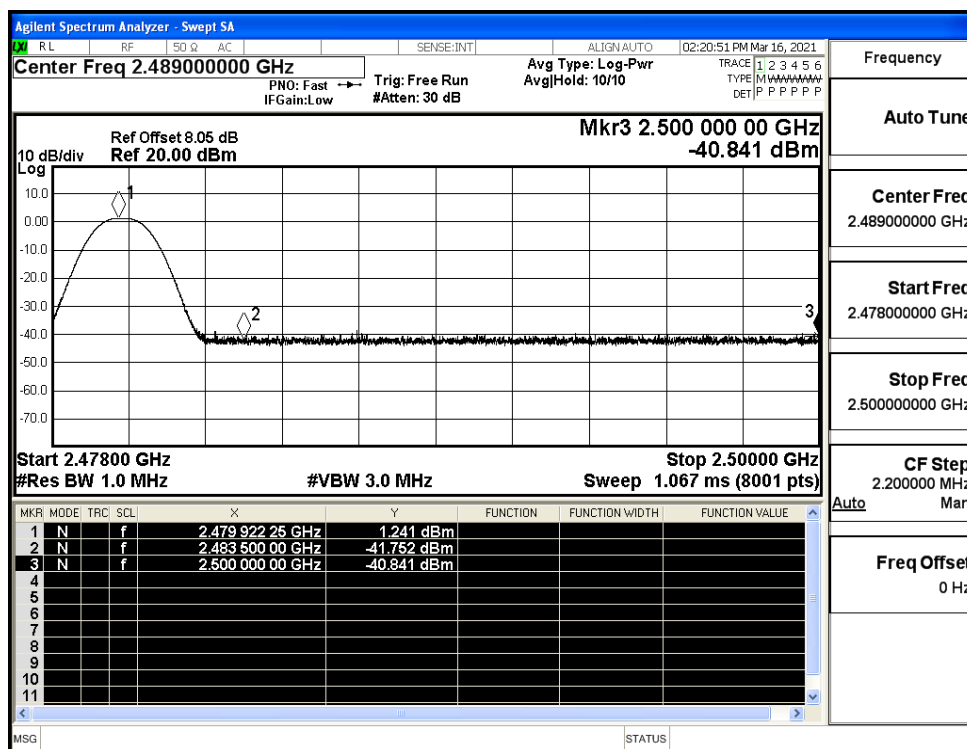
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



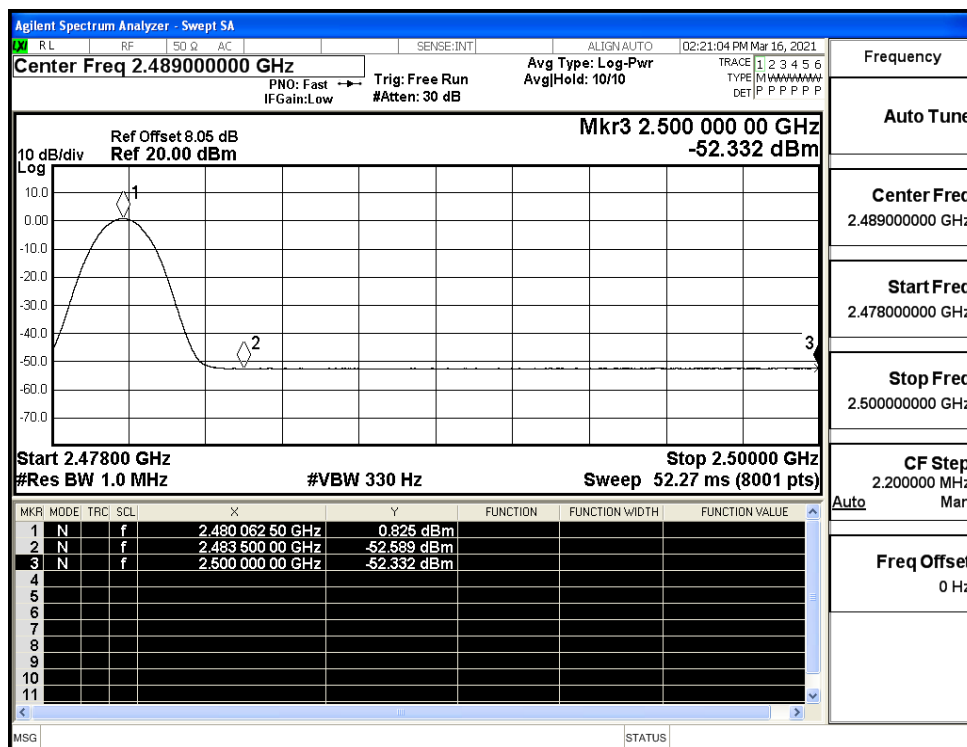
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

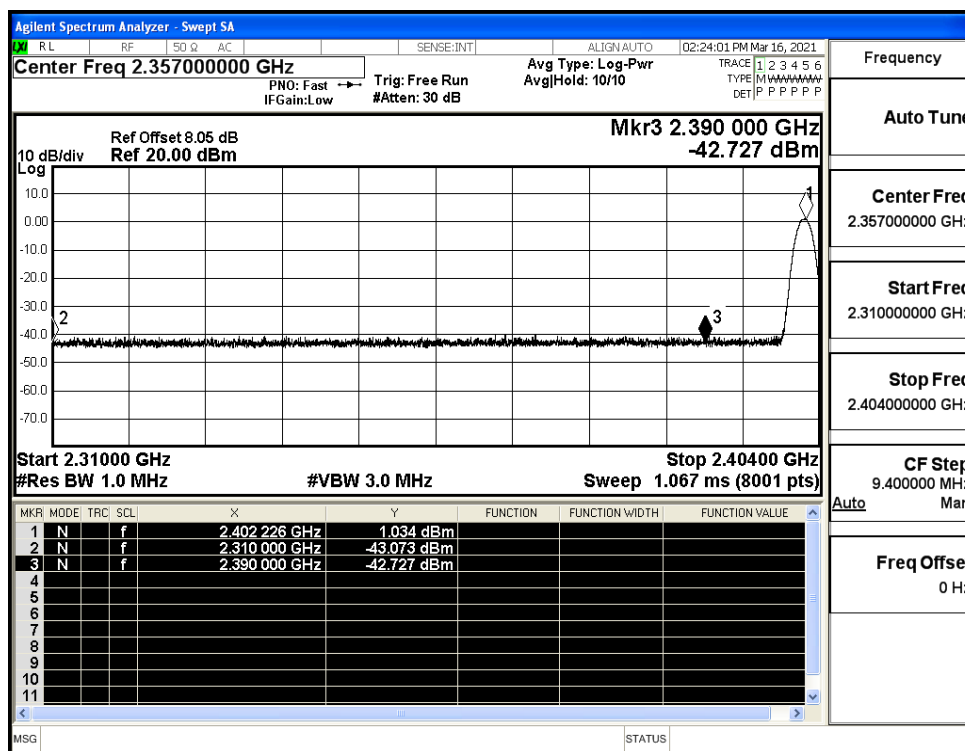
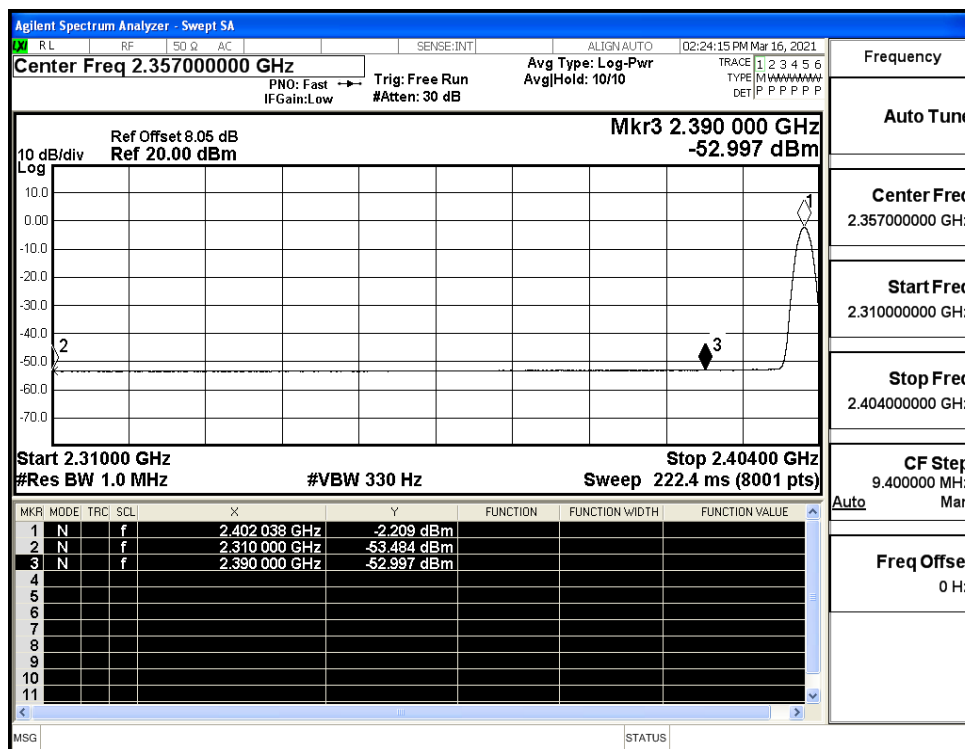


Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)

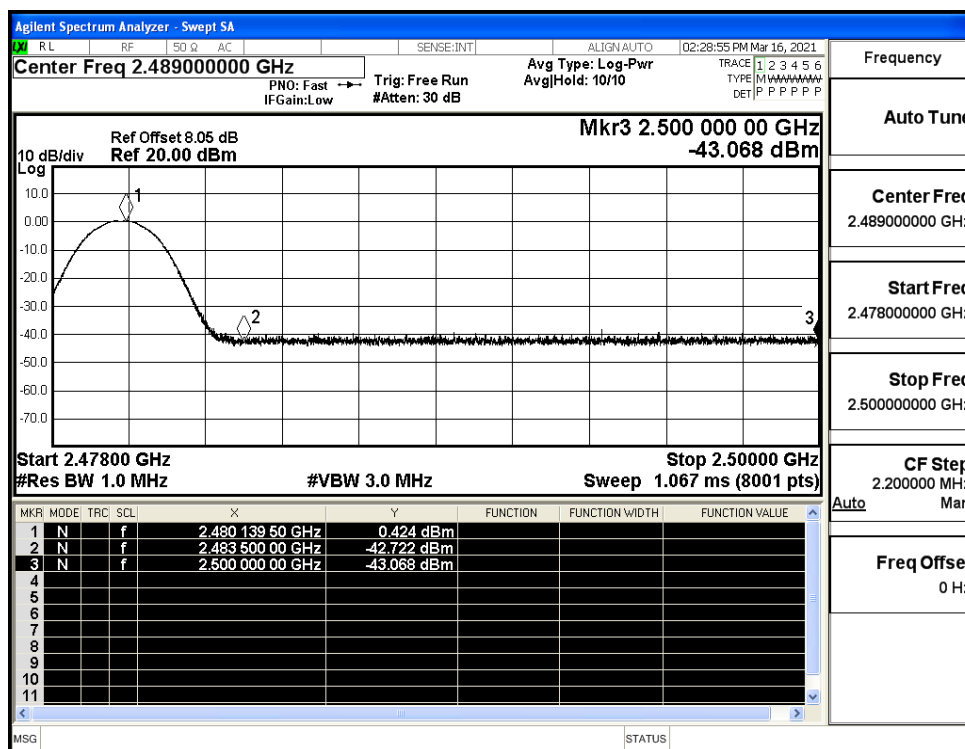


Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)

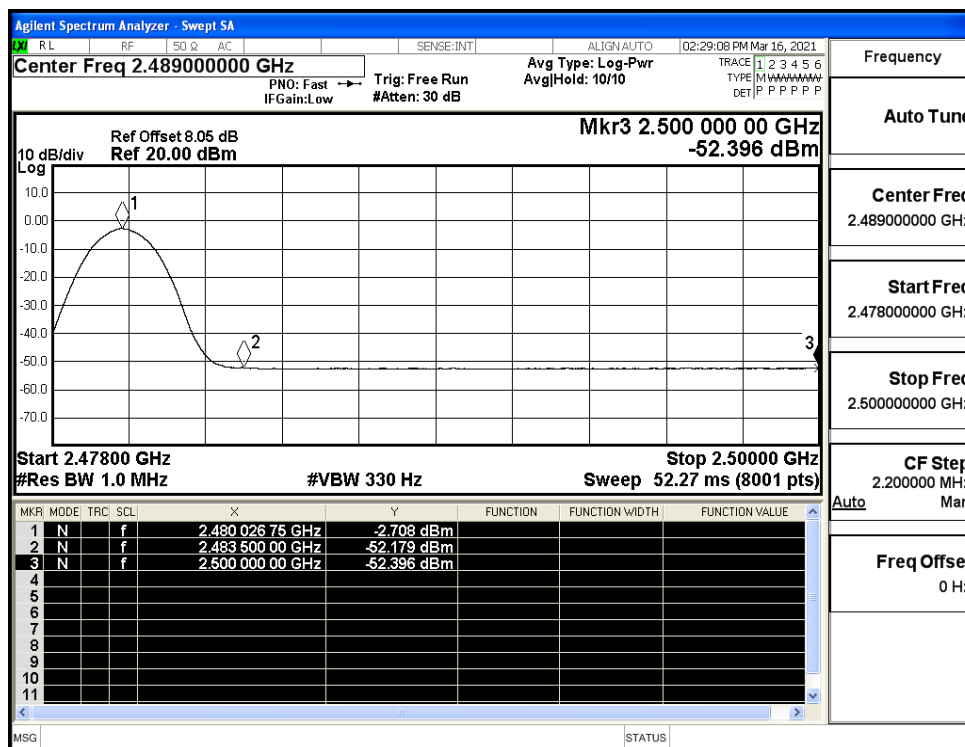


Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

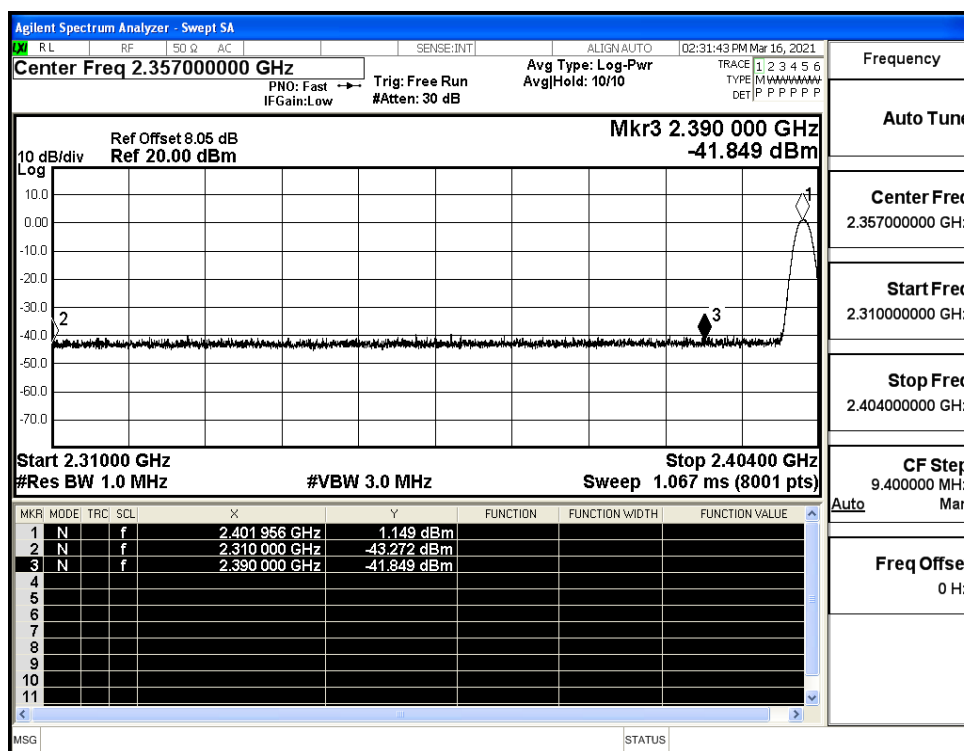
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



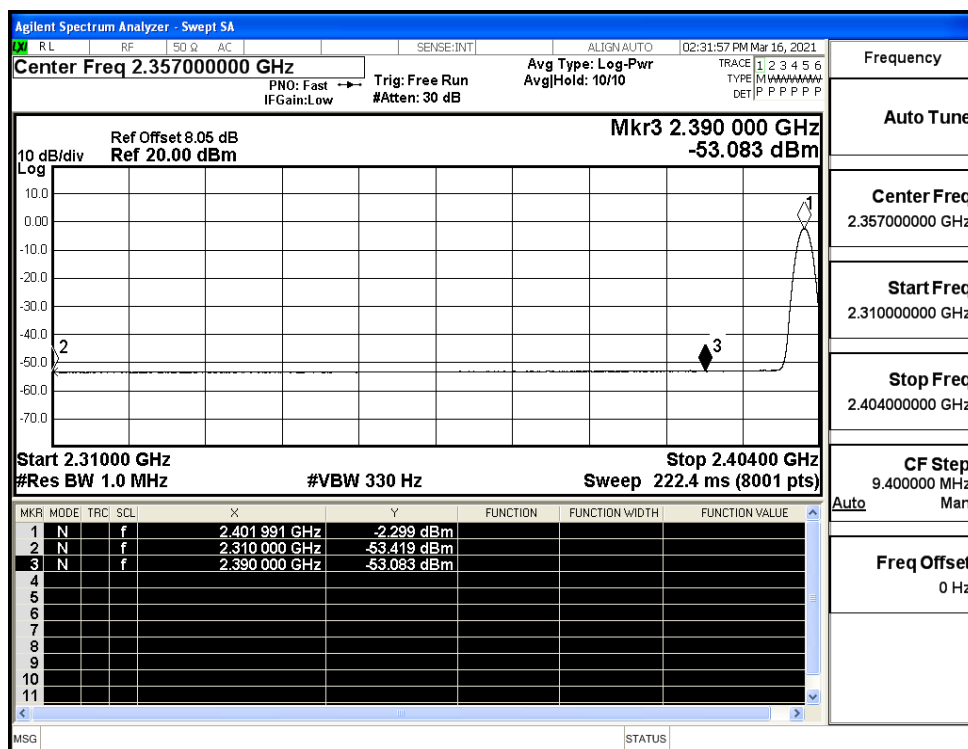
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



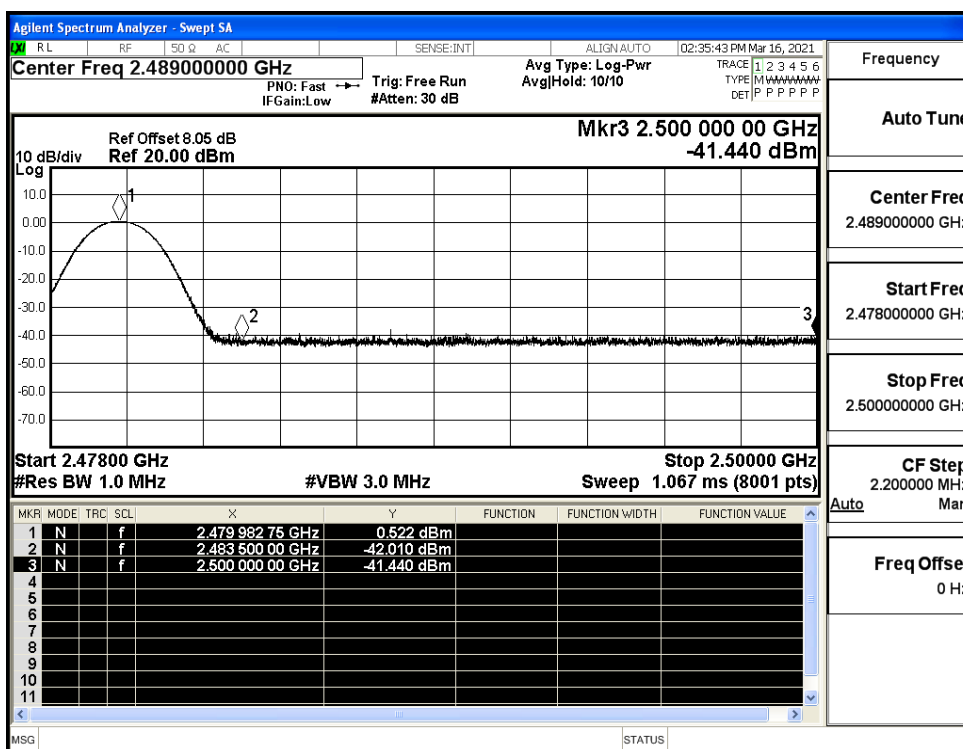
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

