

Appendix A

RF Test Data for BT V4.0(BDR/EDR) (Conducted Measurement)

Product Name: MOBILE PHONE

Trade Mark: CELLUTION

Test Model: PADUA

Environmental Conditions

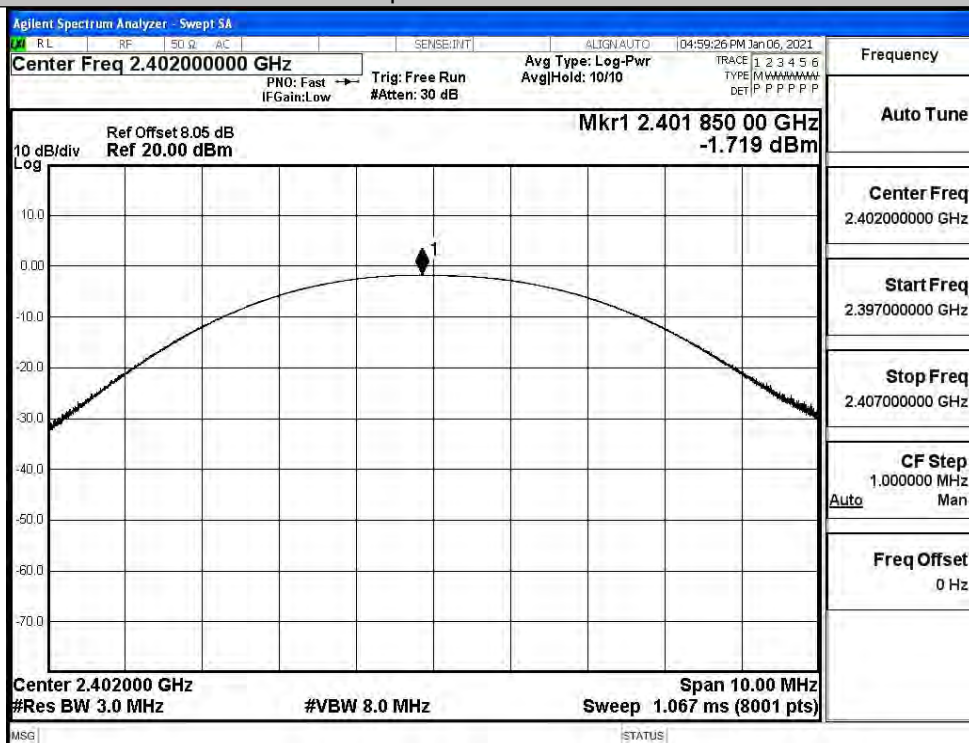
Temperature:	22.9° C
Relative Humidity:	53.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond Lu
Supervised by:	Li Huan

A.1 Maximum Conducted Peak Output Power

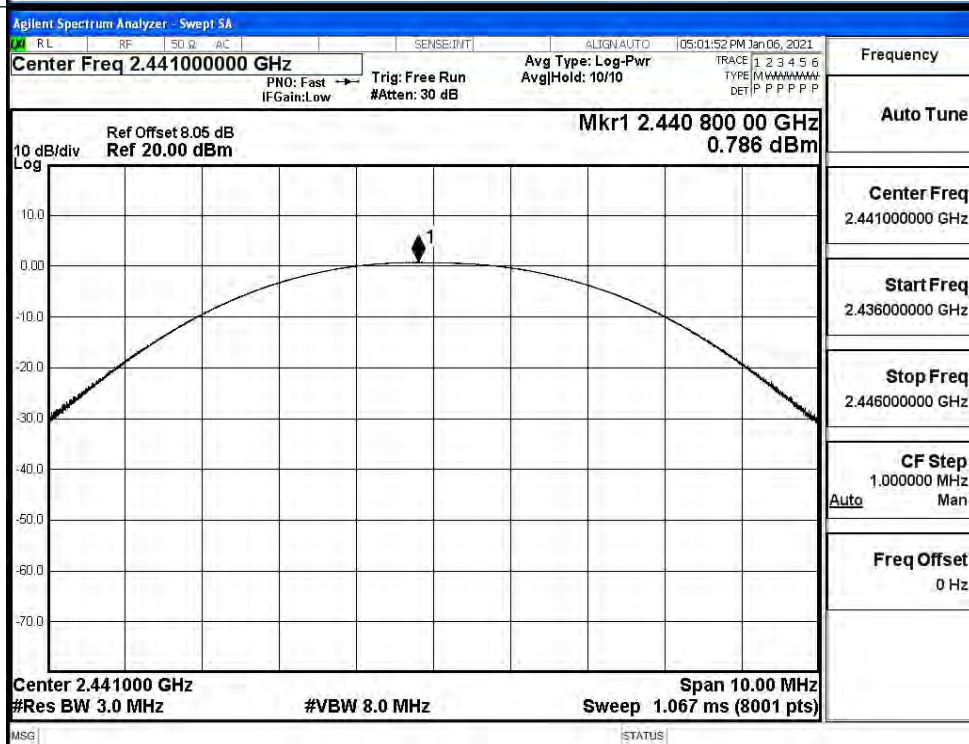
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-1.719	21	PASS
	MCH	0.786	21	PASS
	HCH	2.419	21	PASS
$\pi/4$ DQPSK	LCH	-2.411	21	PASS
	MCH	0.170	21	PASS
	HCH	1.668	21	PASS
8DPSK	LCH	-2.208	21	PASS
	MCH	0.535	21	PASS
	HCH	1.539	21	PASS

Test Graphs

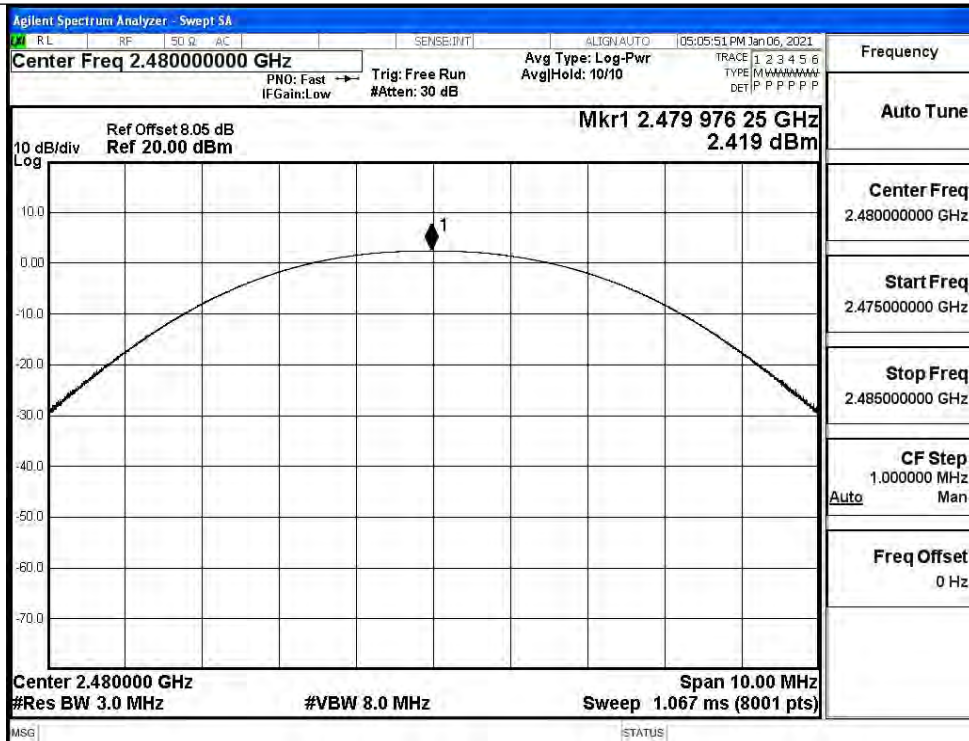
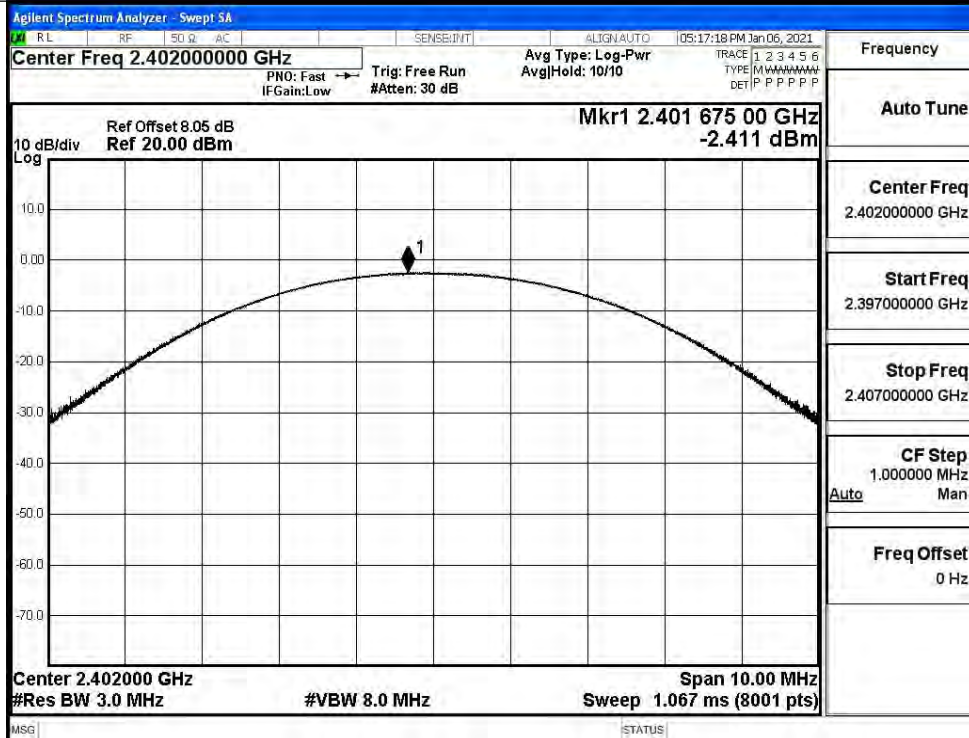
GFSK/LCH

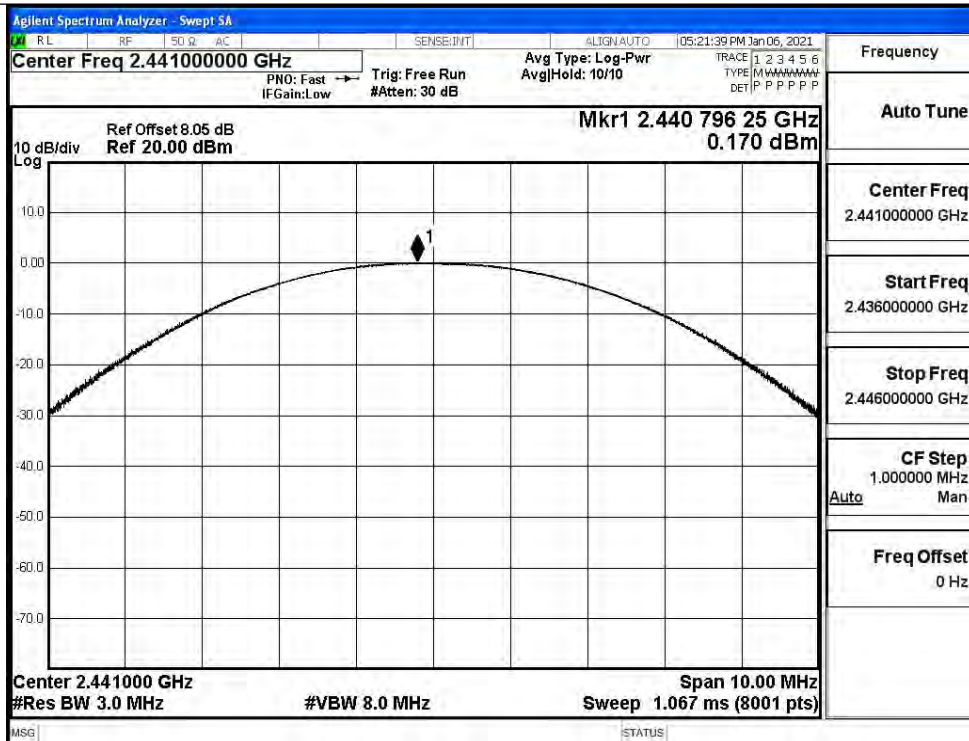
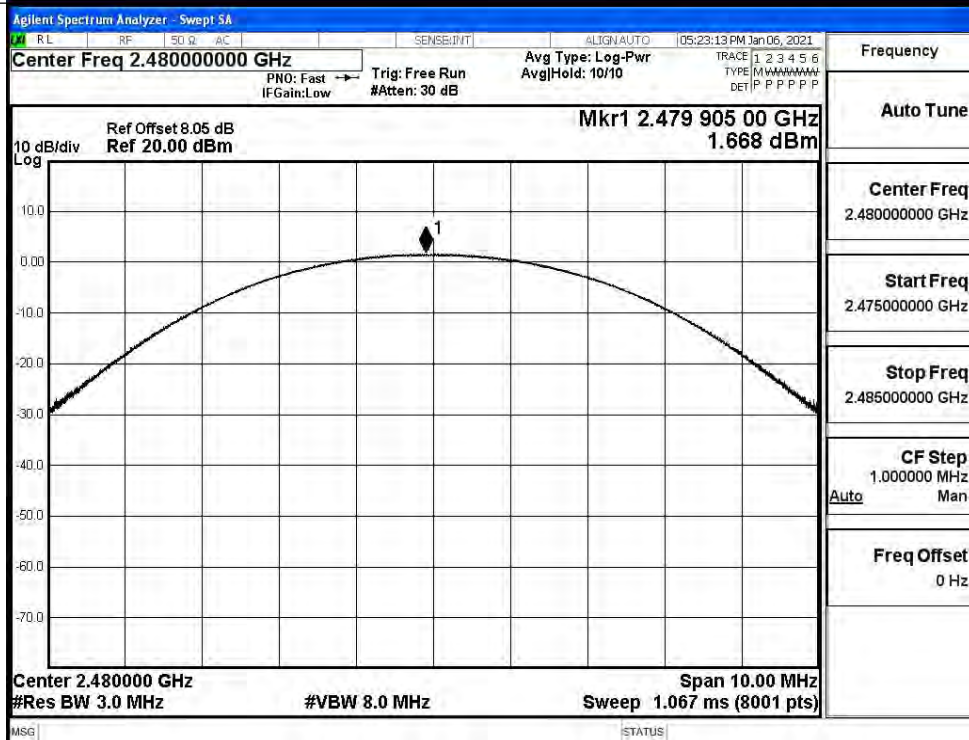


GFSK/MCH

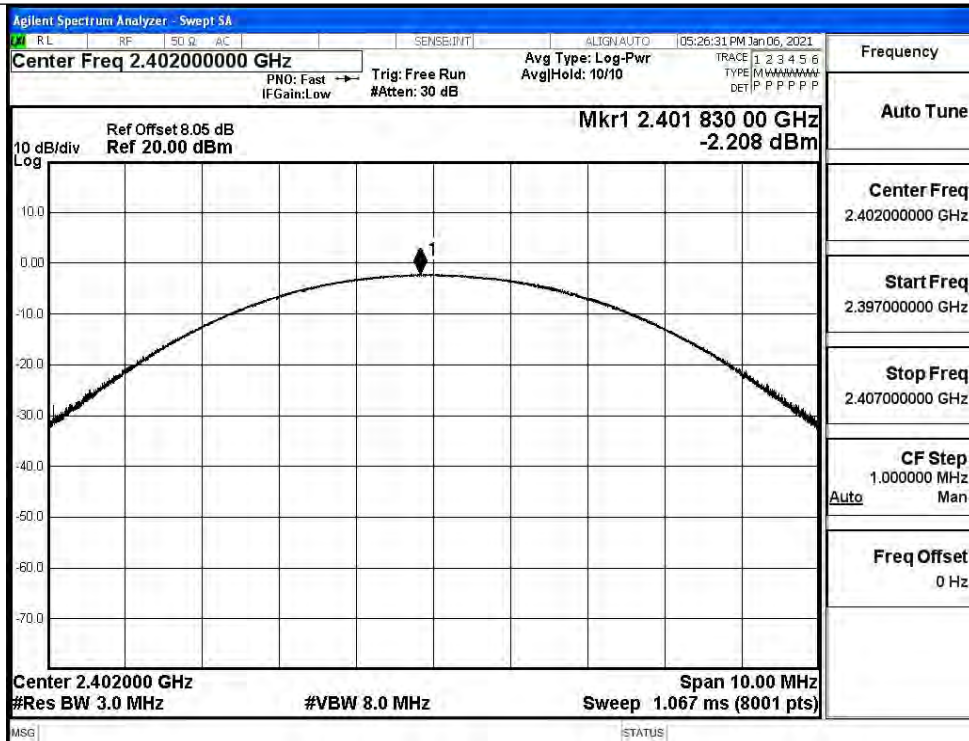


GFSK/HCH

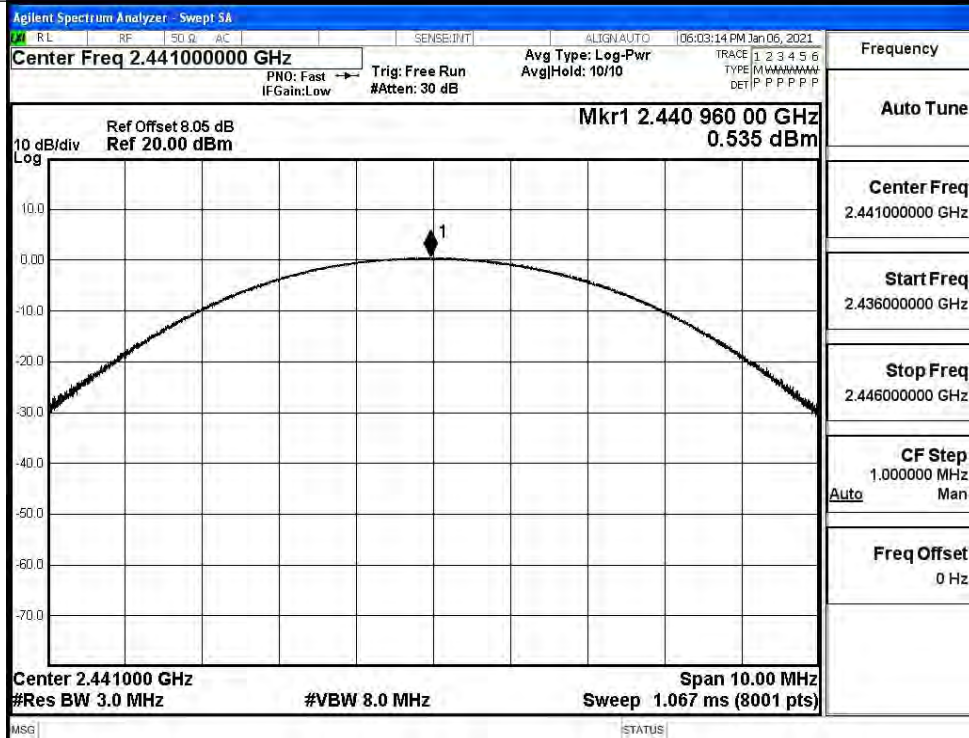
 π /4DQPSK/LCH

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

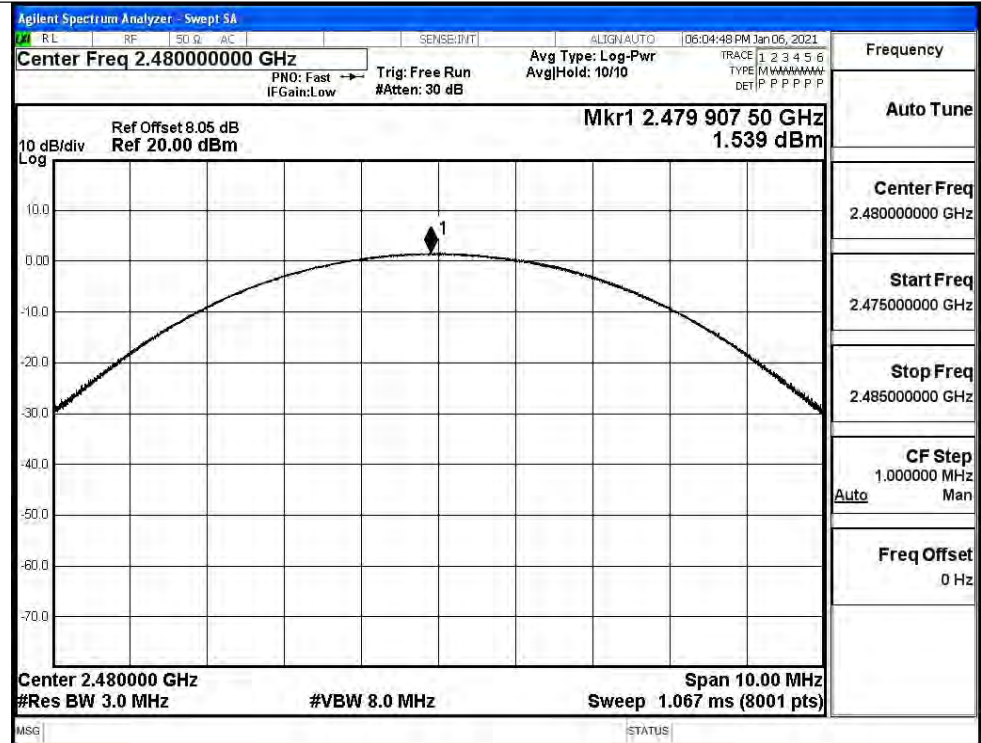
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

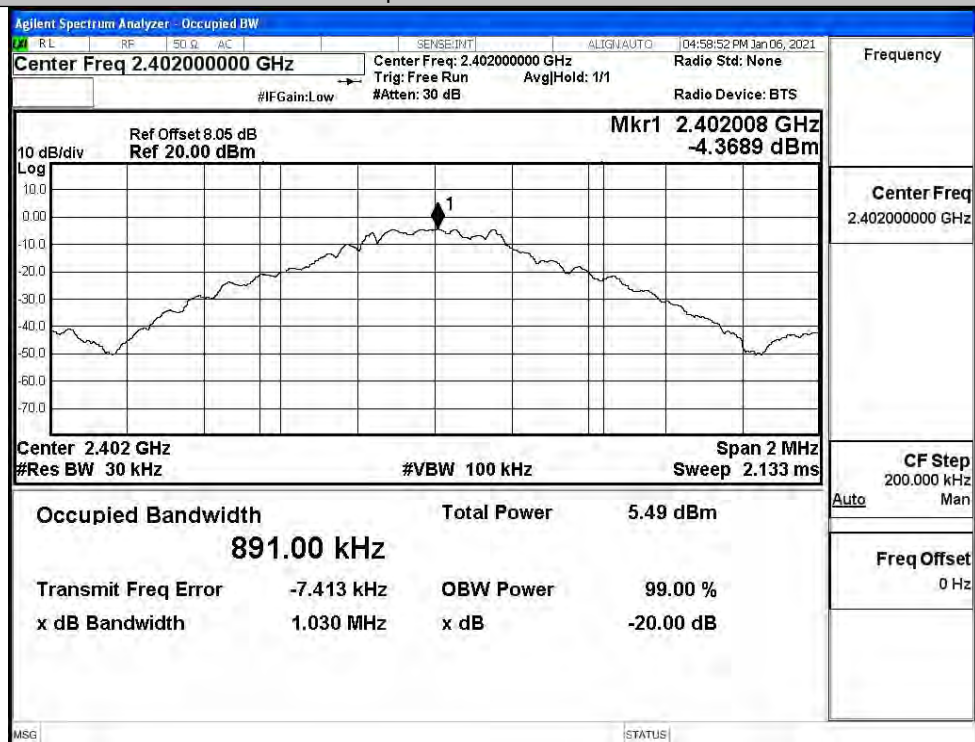


A.2 20dB Bandwidth

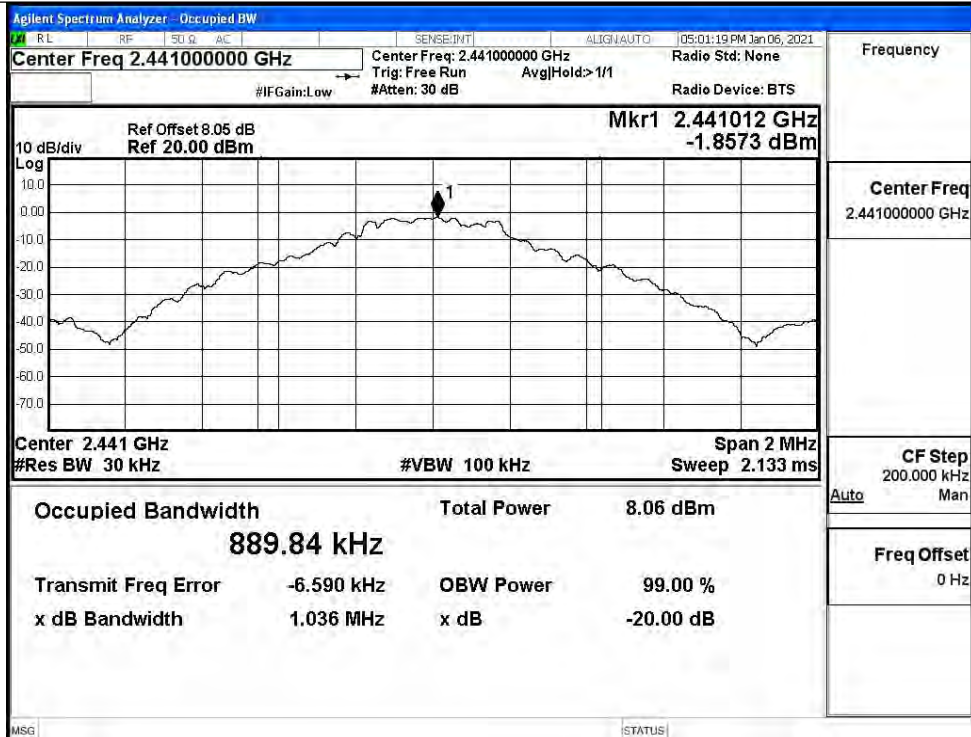
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.030	Not Specified	PASS
	MCH	1.036	Not Specified	PASS
	HCH	1.025	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.291	Not Specified	PASS
	MCH	1.295	Not Specified	PASS
	HCH	1.288	Not Specified	PASS
8DPSK	LCH	1.295	Not Specified	PASS
	MCH	1.299	Not Specified	PASS
	HCH	1.295	Not Specified	PASS

Test Graphs

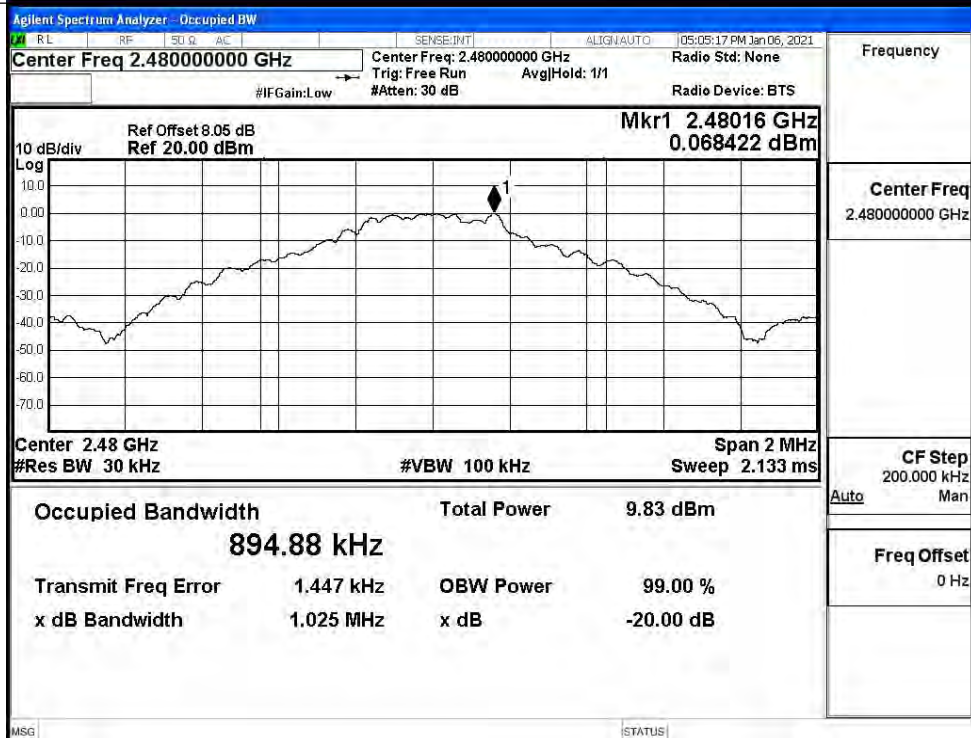
GFSK/LCH

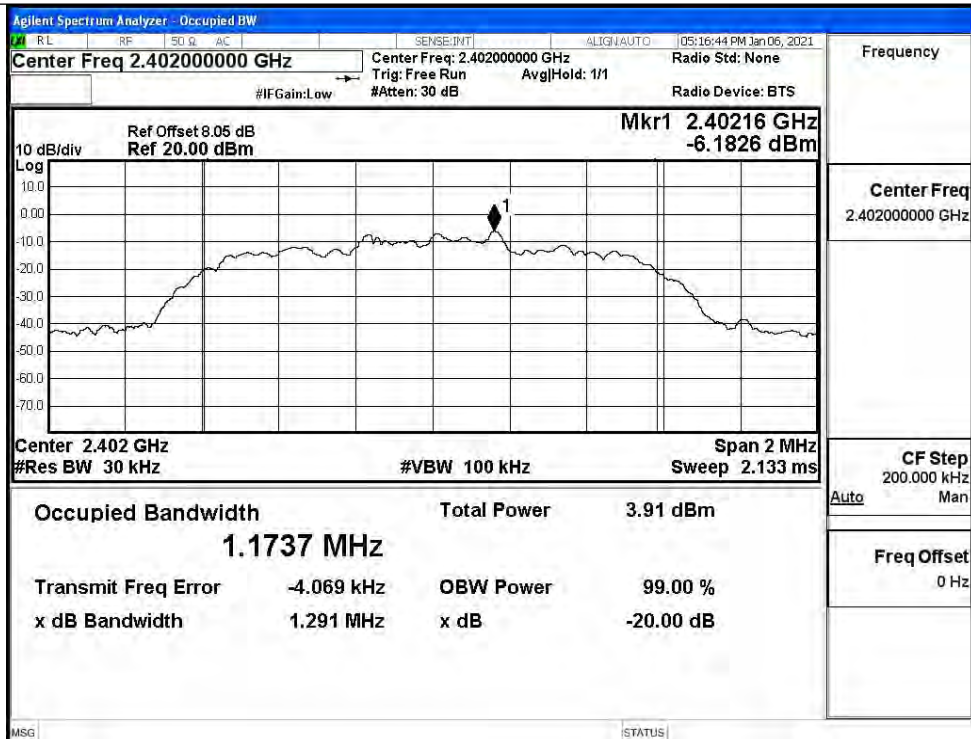
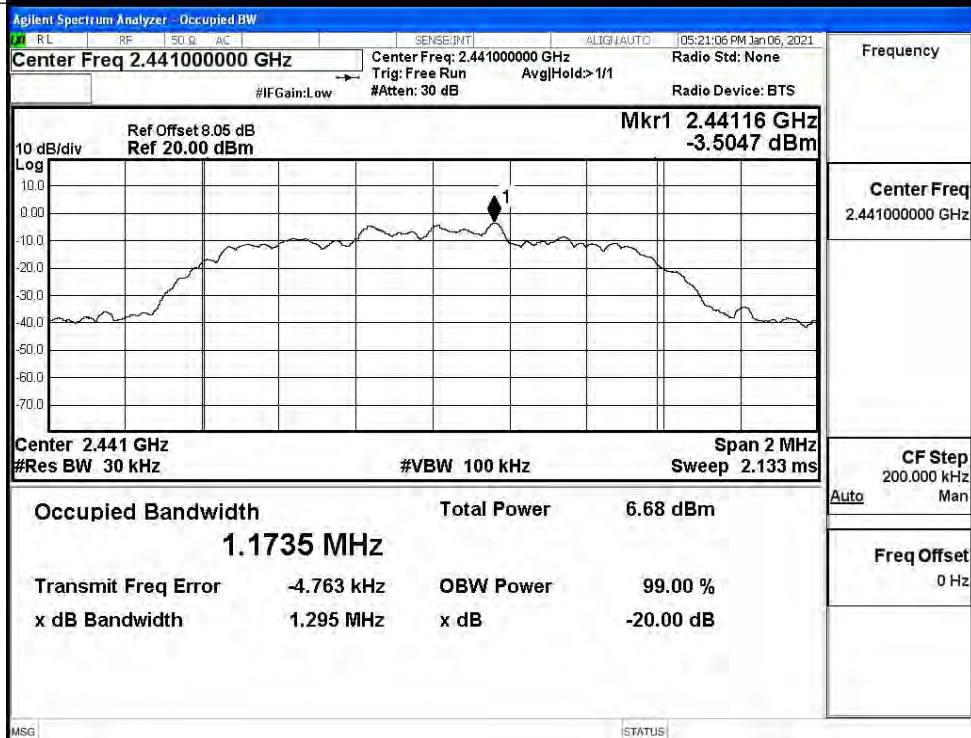


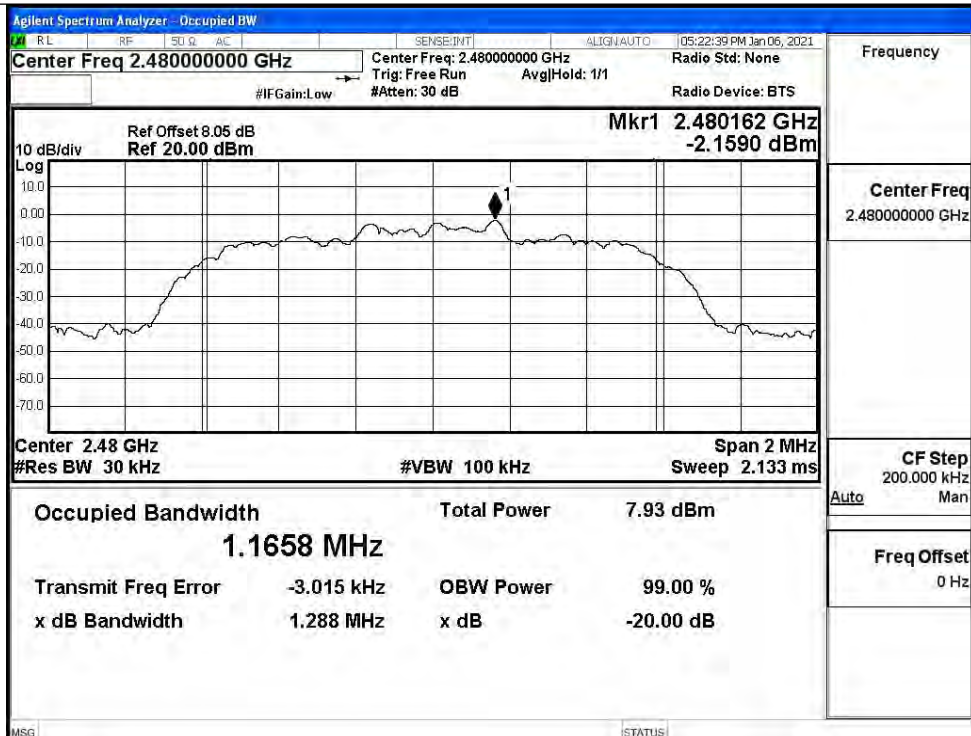
GFSK/MCH



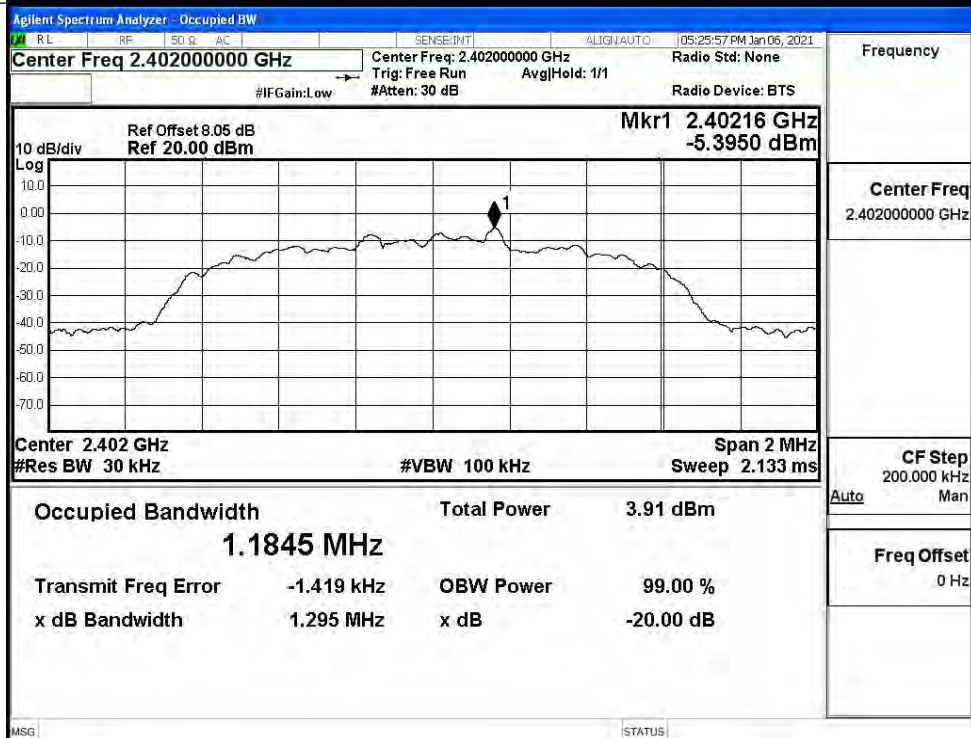
GFSK/HCH



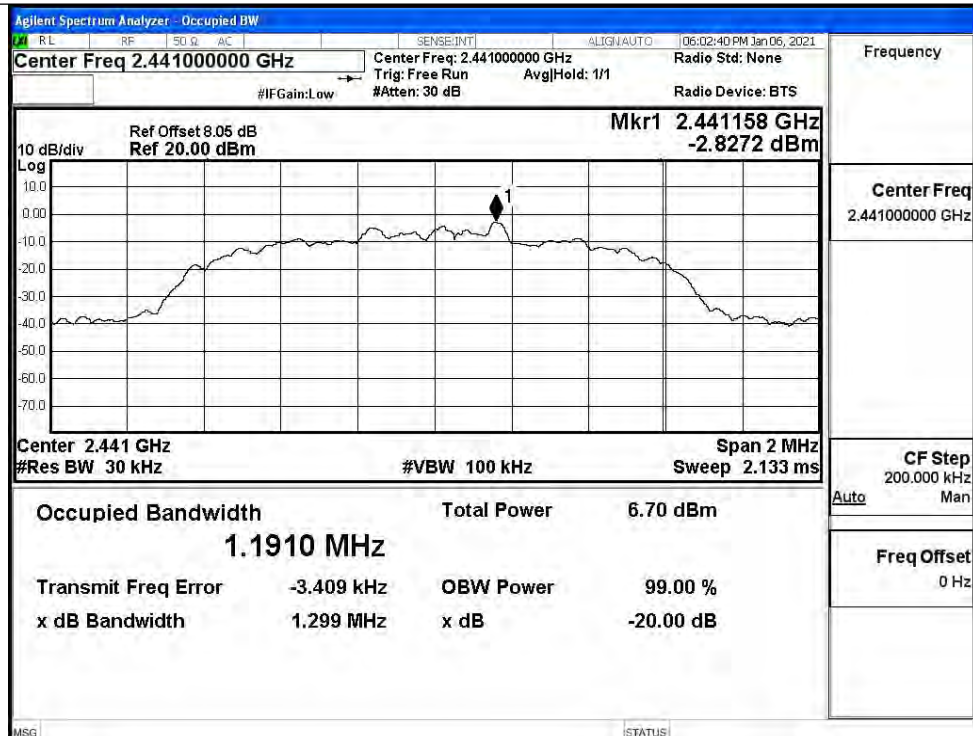
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

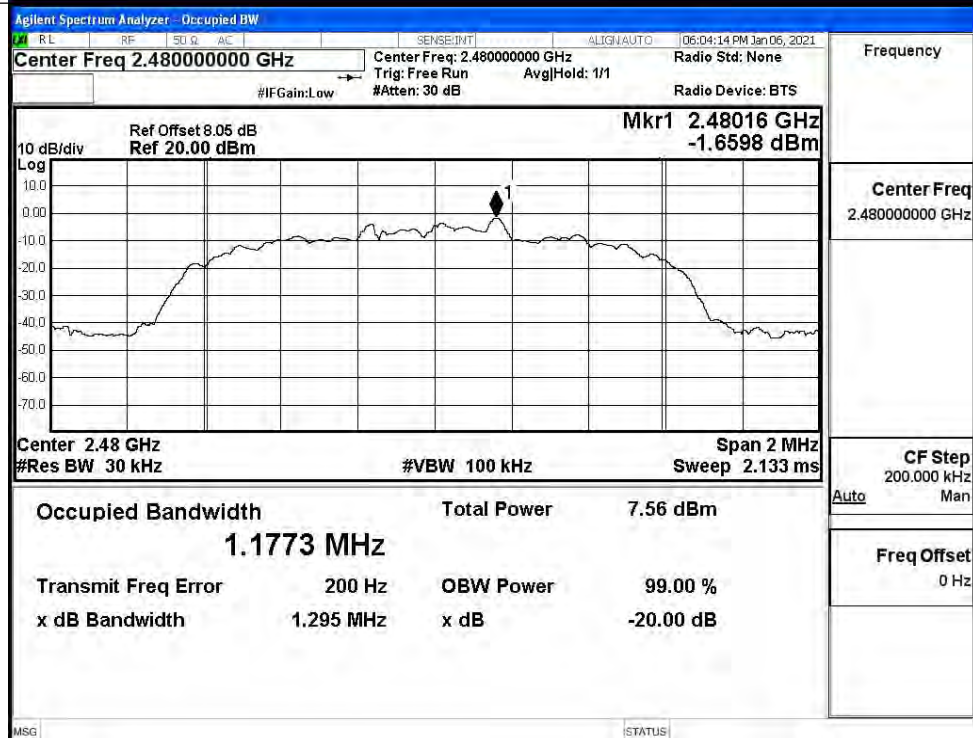
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

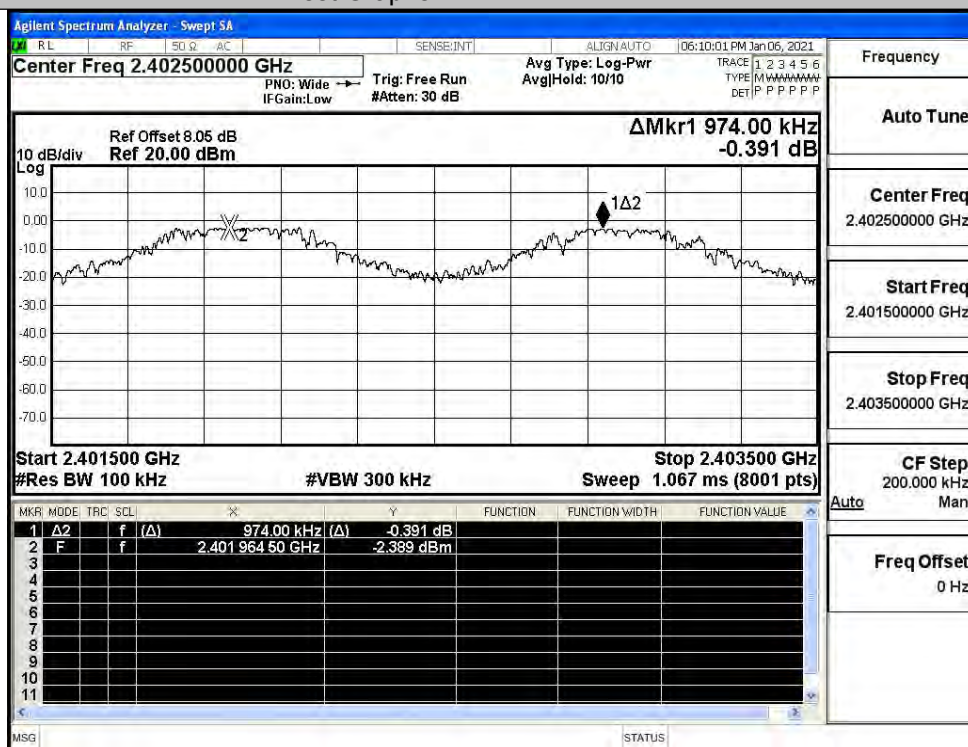


A.3 Carrier Frequency Separation

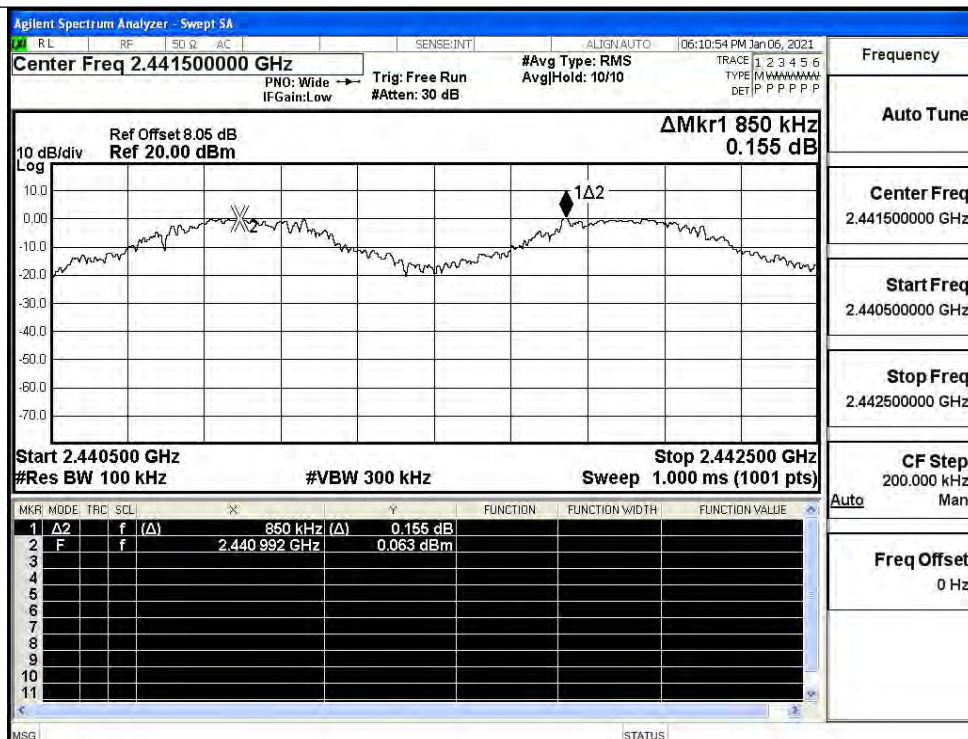
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.974	0.687	PASS
	MCH	0.850	0.691	PASS
	HCH	1.314	0.683	PASS
$\pi/4$ DQPSK	LCH	0.888	0.861	PASS
	MCH	1.046	0.863	PASS
	HCH	0.912	0.859	PASS
8DPSK	LCH	1.058	0.863	PASS
	MCH	1.200	0.866	PASS
	HCH	1.340	0.863	PASS

Test Graphs

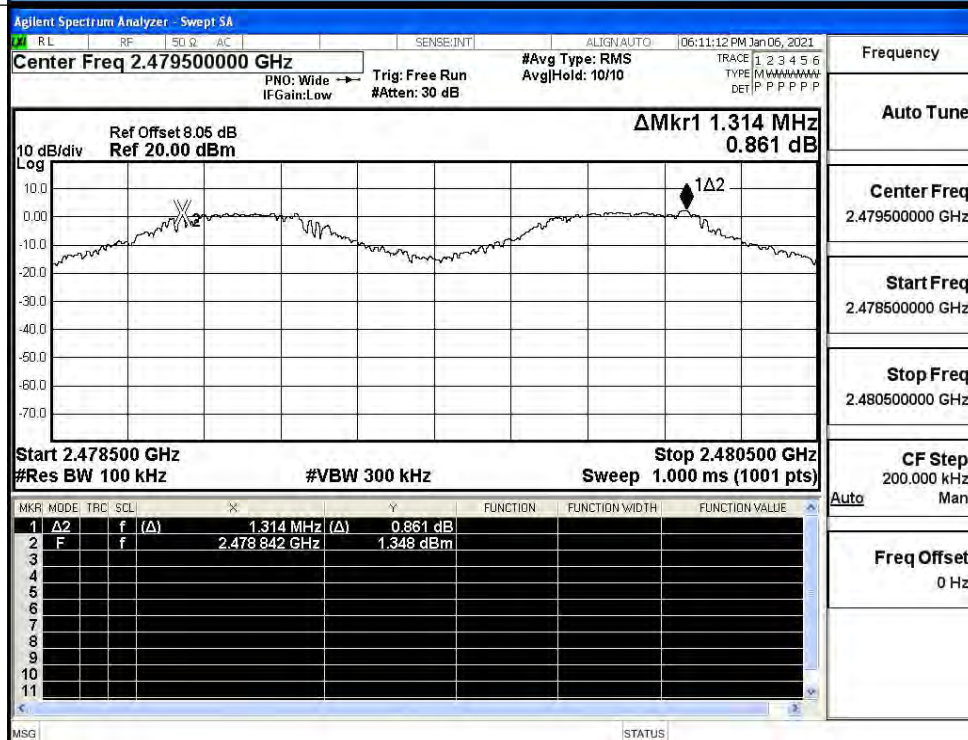
GFSK/LCH

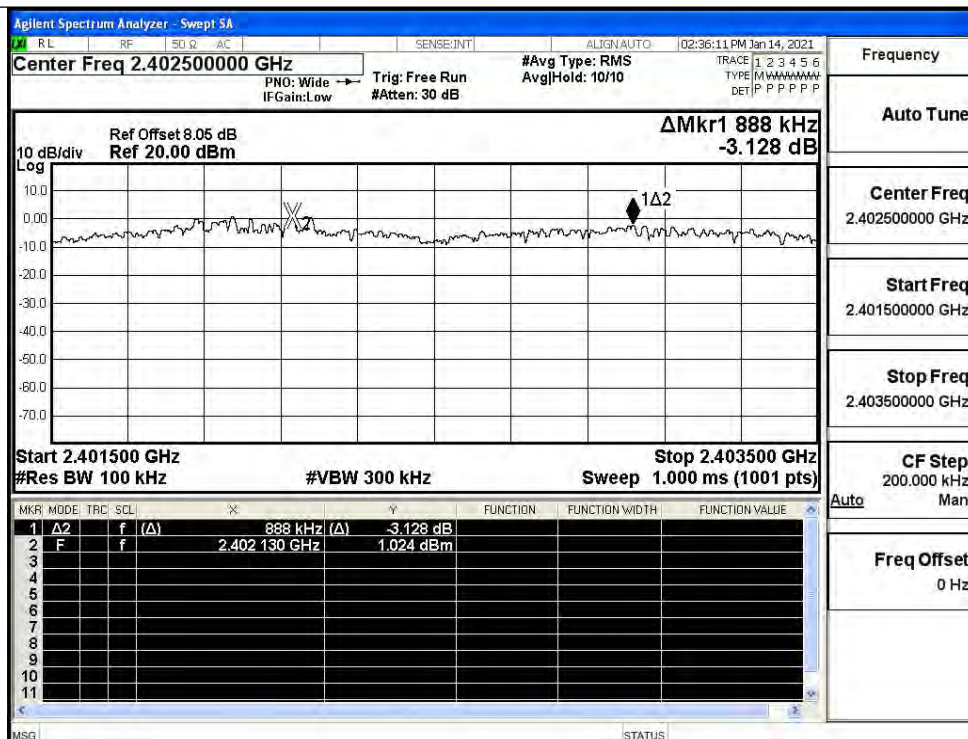
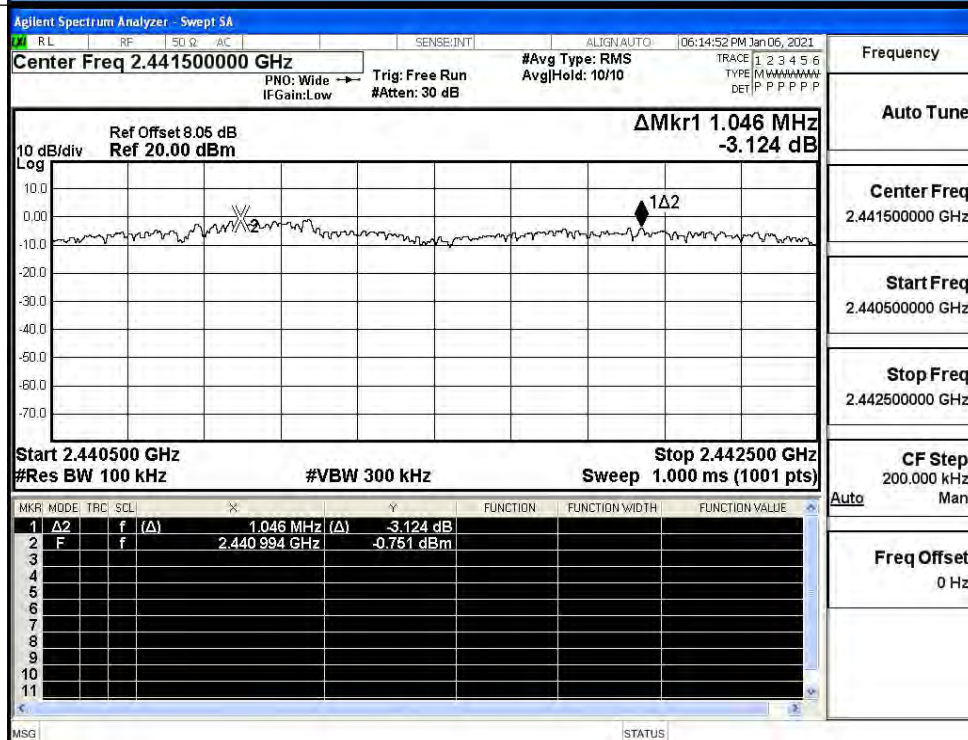


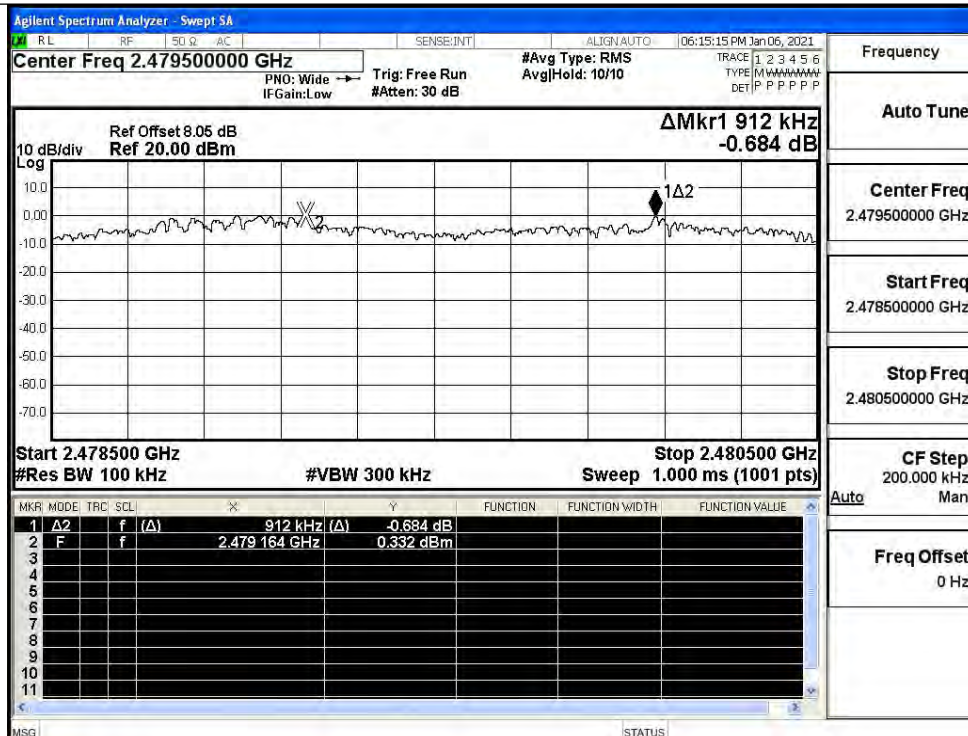
GFSK/MCH



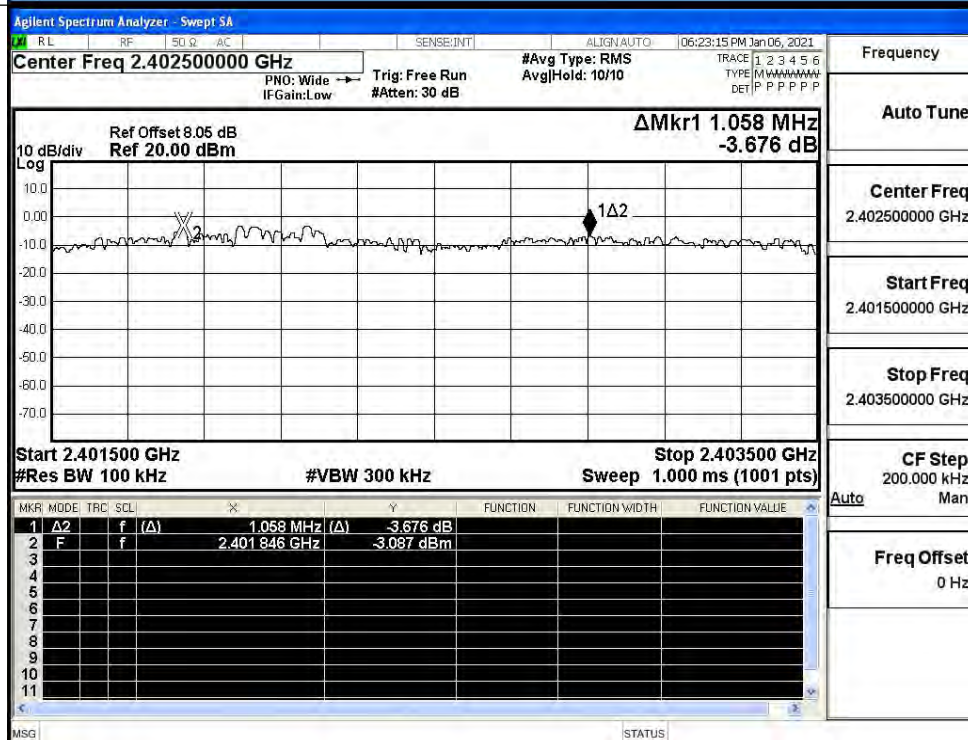
GFSK/HCH



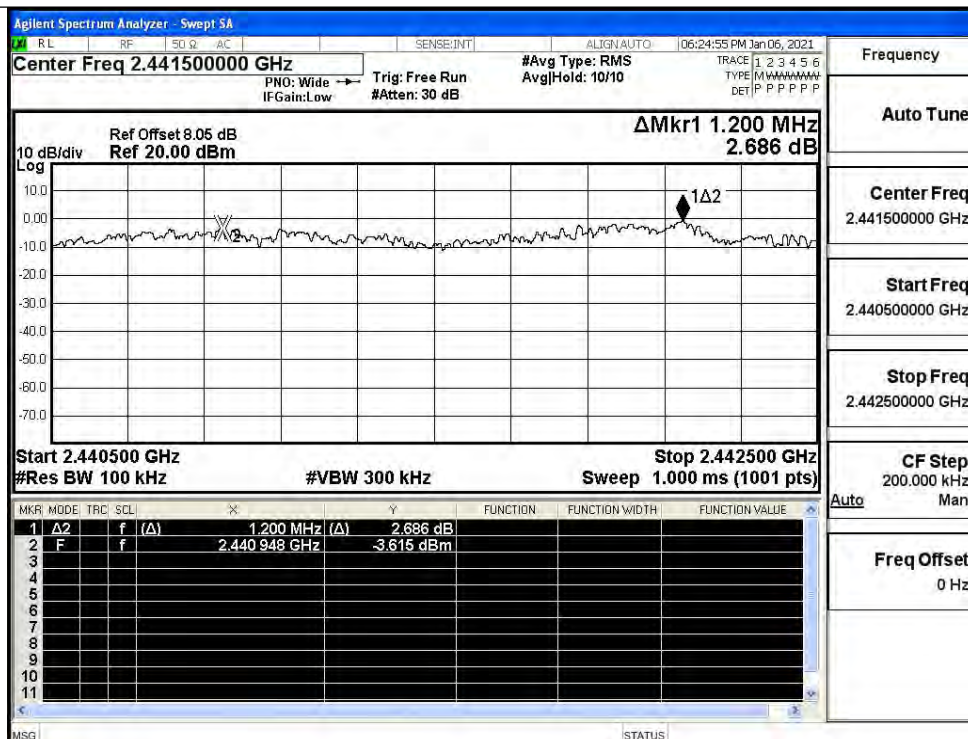
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

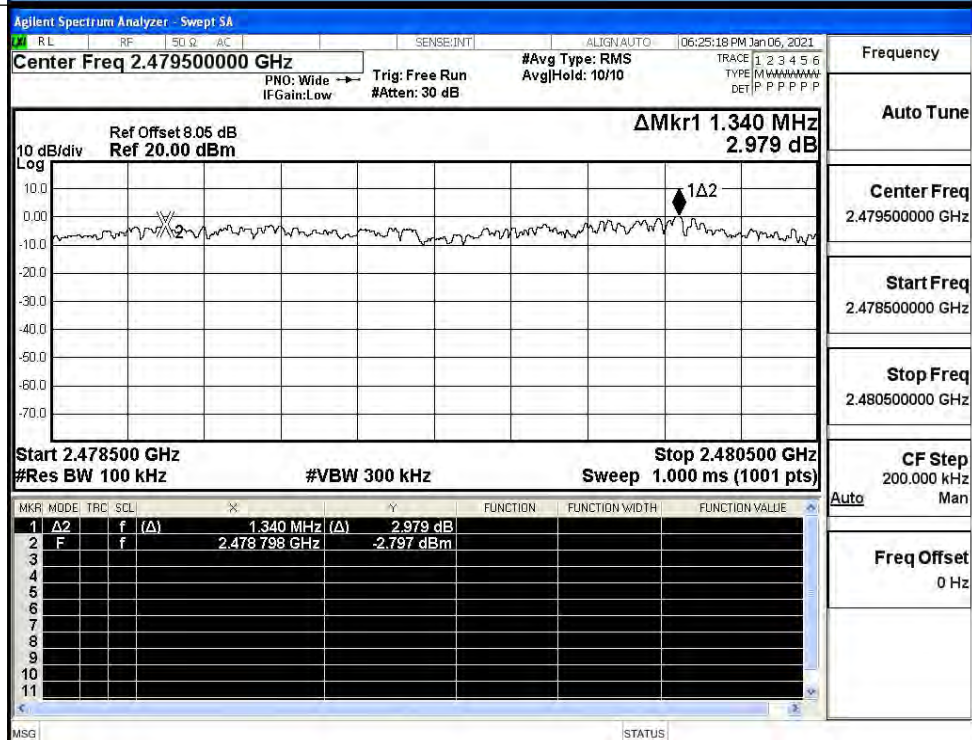
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

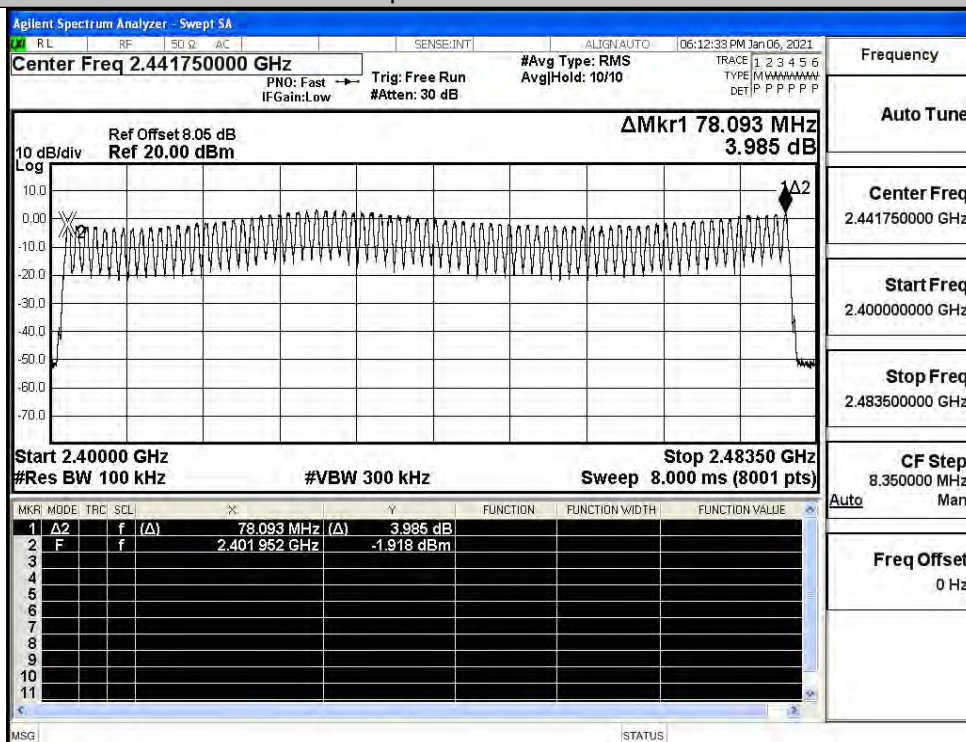
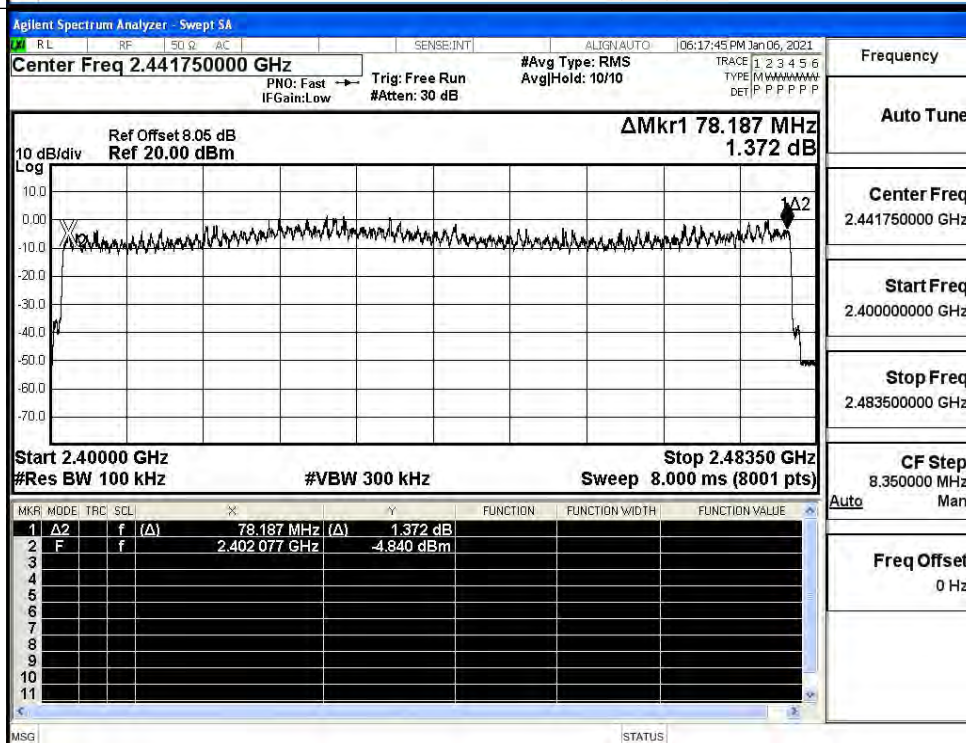


A.4 Hopping Channel Number

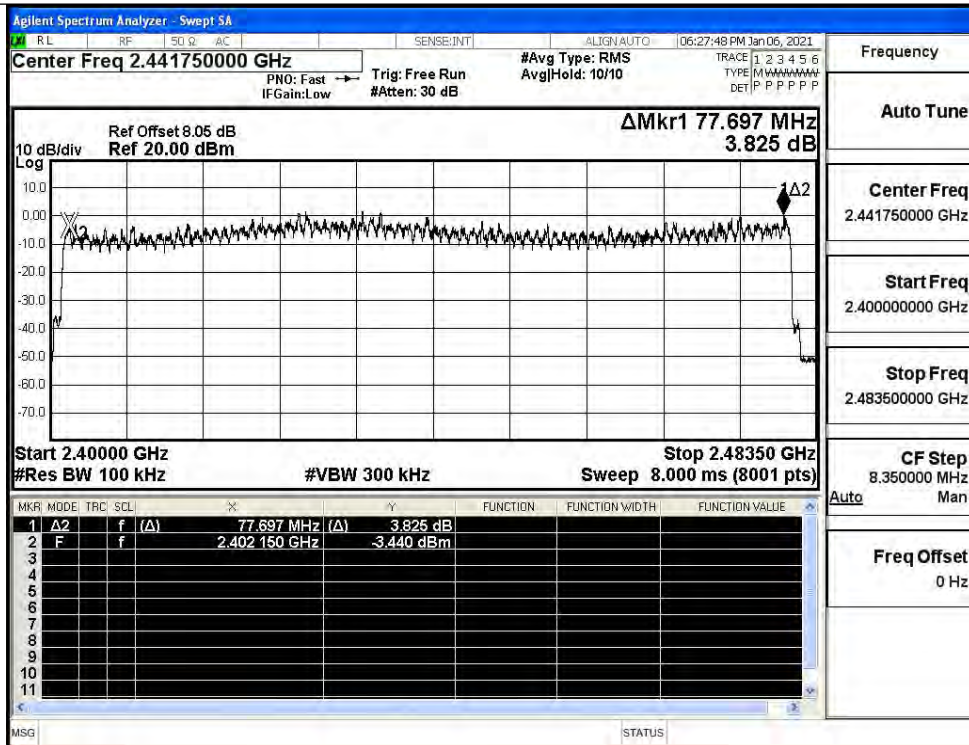
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

Test Graphs

GFSK/Hop

 $\pi/4$ DQPSK/Hop

8DPSK/Hop

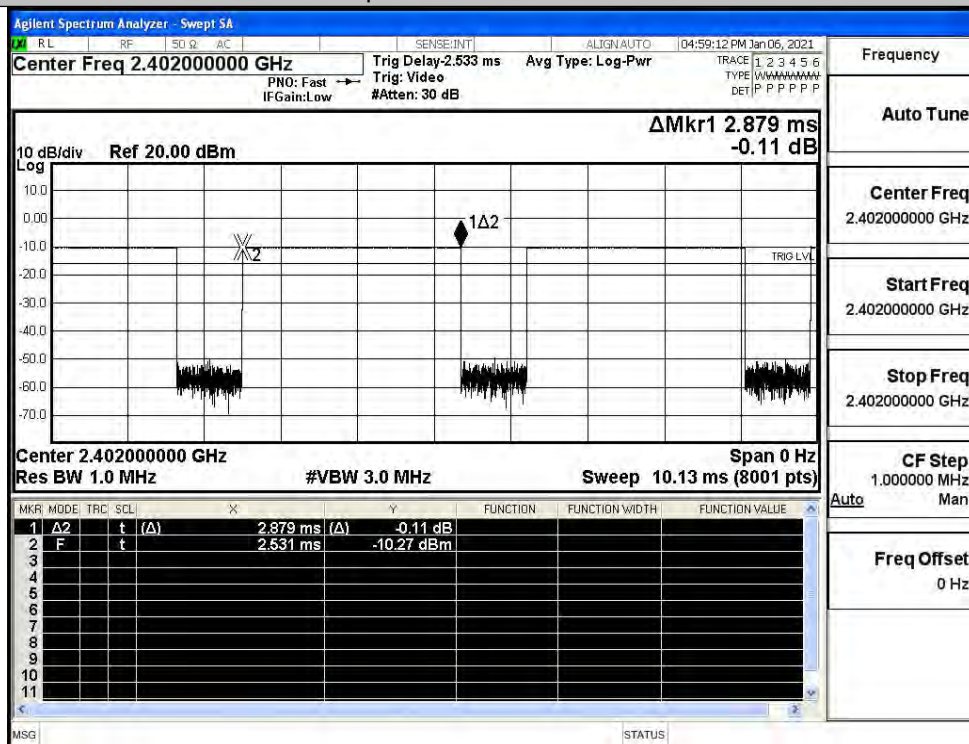


A.5 Dwell Time

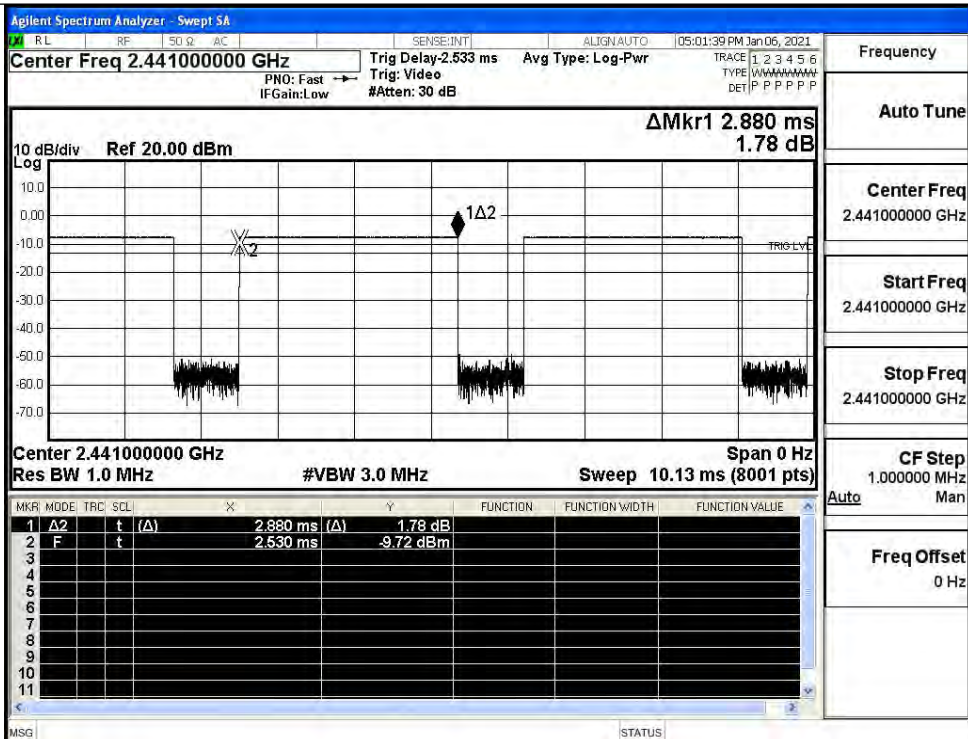
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7	0.307	0.4	PASS
8DPSK	3DH5	LCH	2.88	106.7	0.308	0.4	PASS
	3DH5	MCH	2.88	106.7	0.308	0.4	PASS
	3DH5	HCH	2.88	106.7	0.308	0.4	PASS

Test Graphs

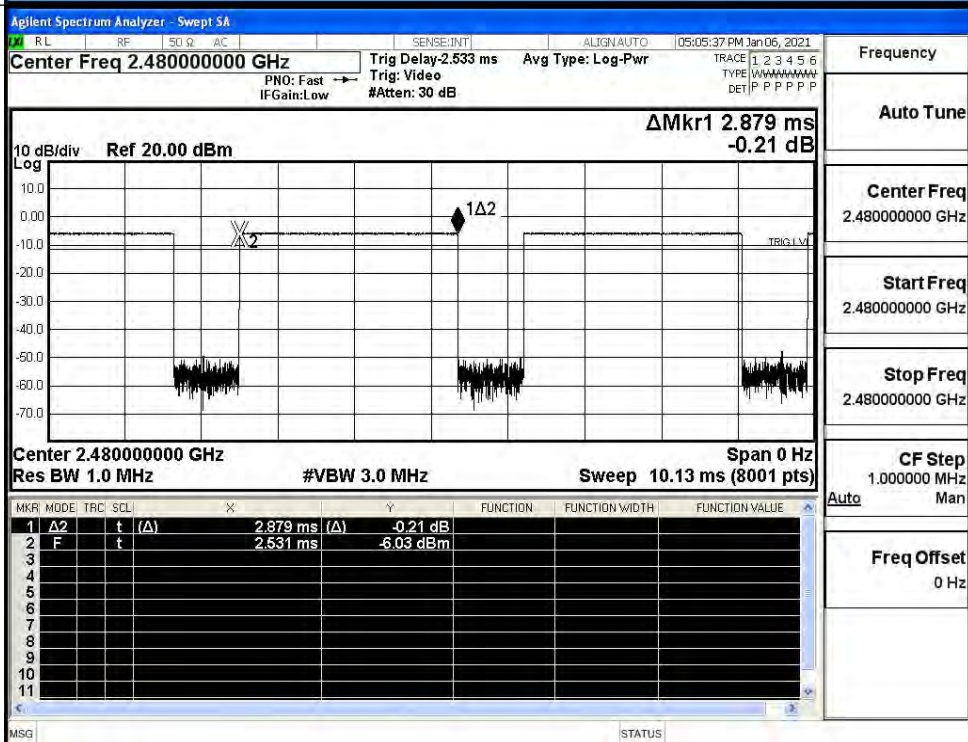
GFSK_DH5/LCH



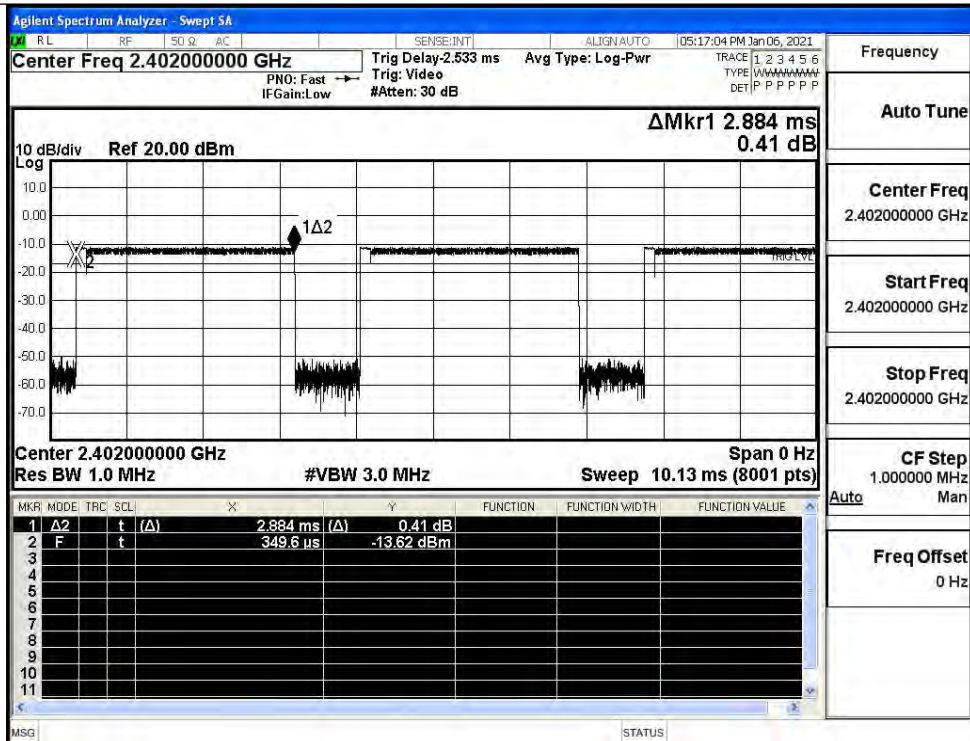
GFSK_DH5/MCH



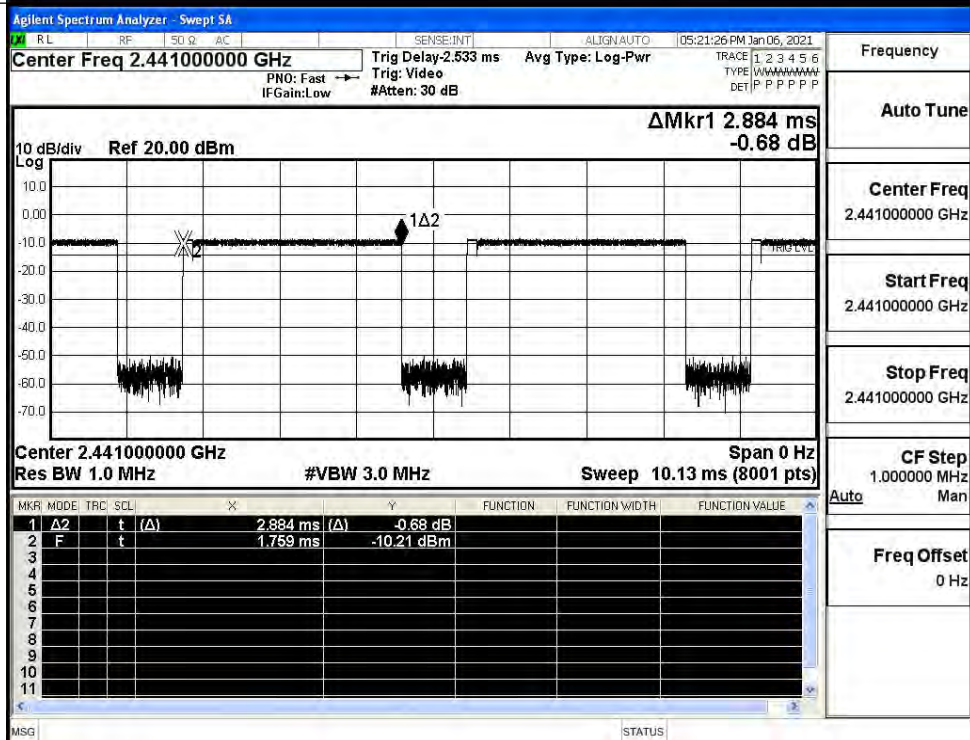
GFSK_DH5/HCH



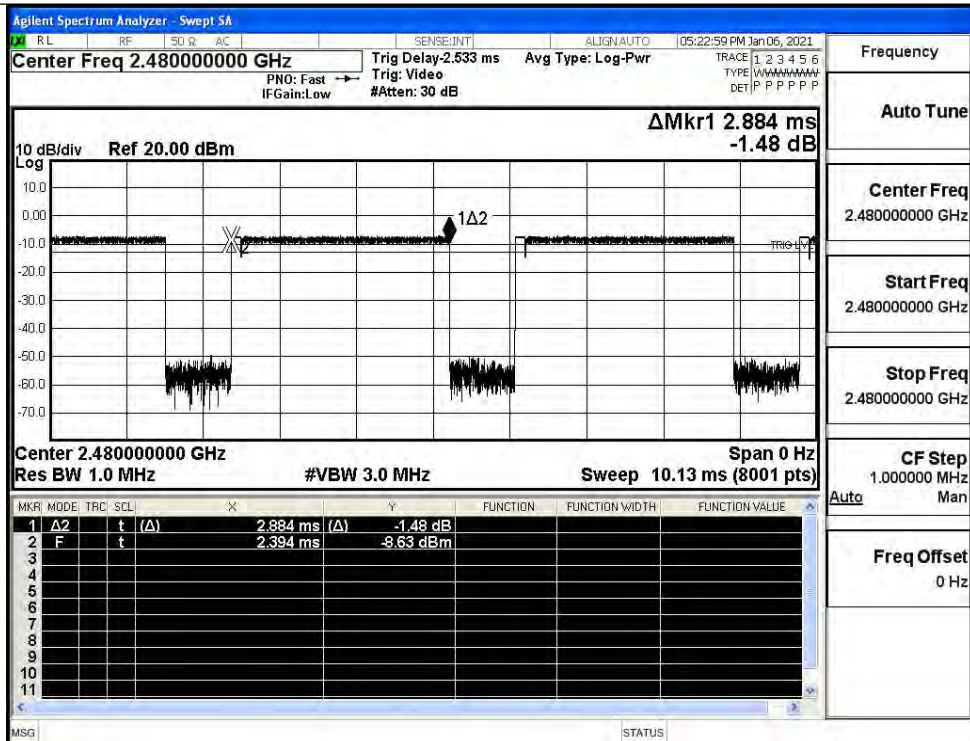
$\pi/4$ DQPSK
_2DH5/LCH



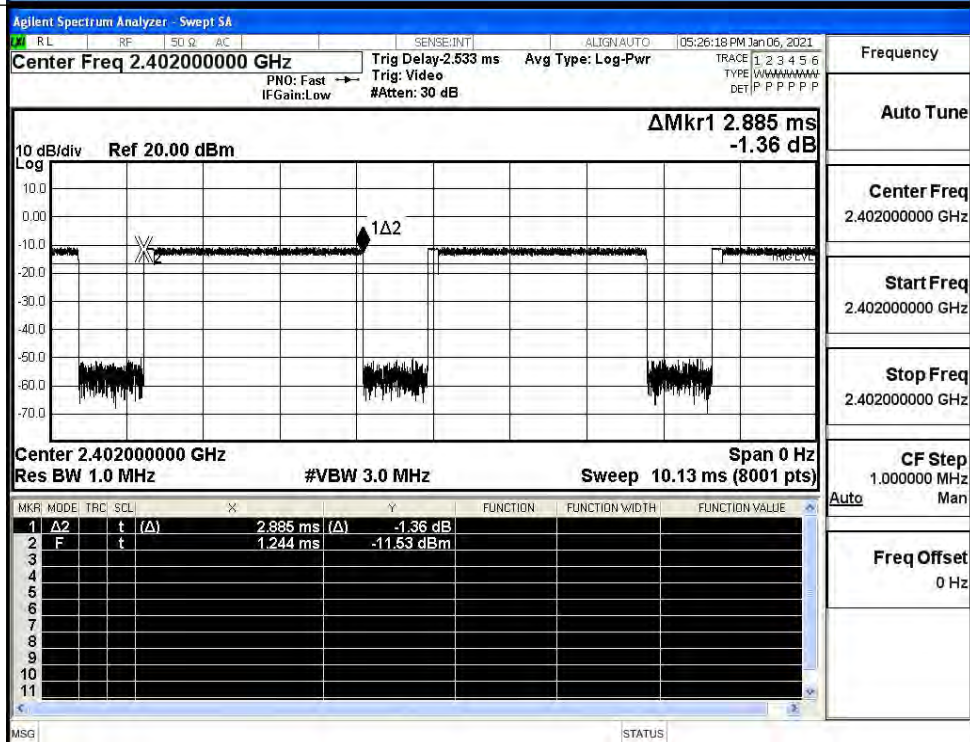
$\pi/4$ DQPSK
_2DH5/MCH



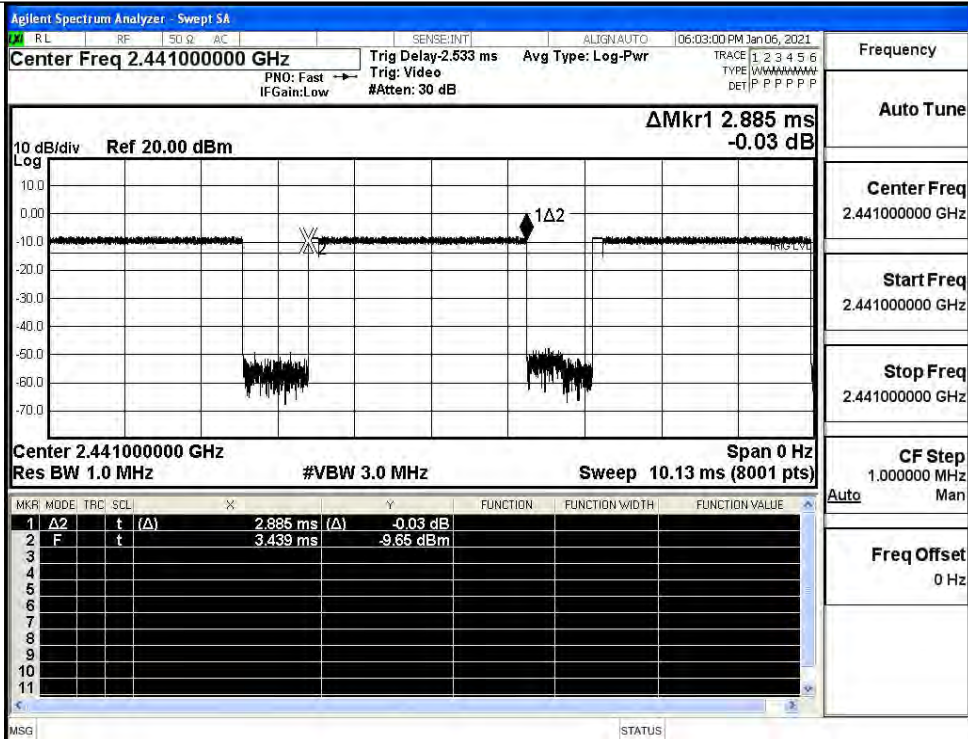
$\pi/4$ DQPSK
_2DH5/HCH



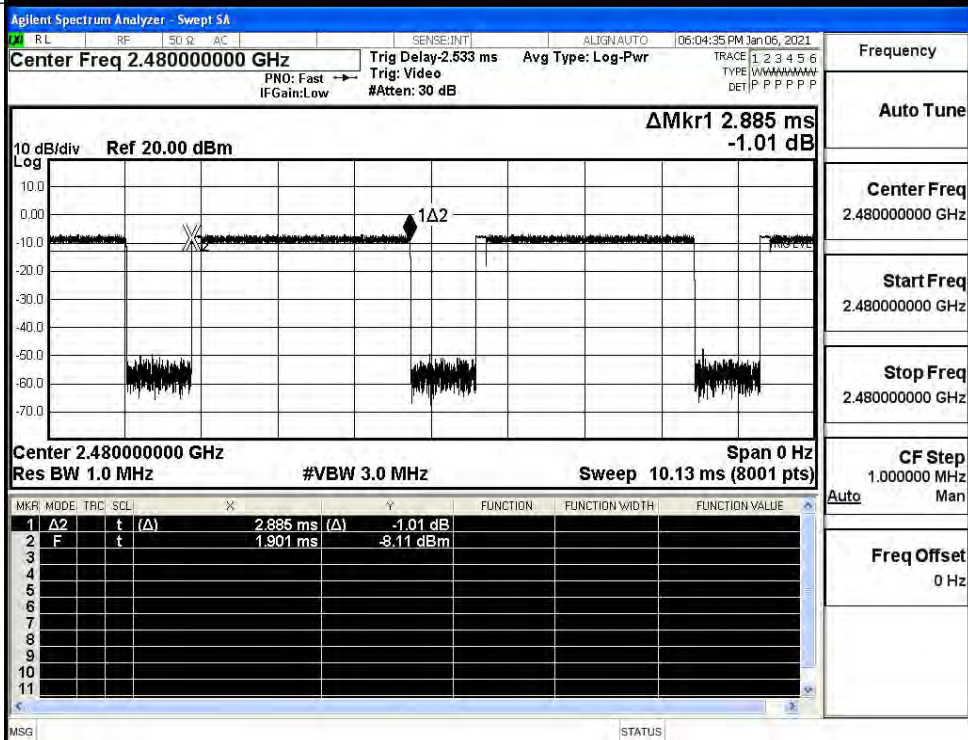
8DPSK _3DH5/LCH



8DPSK_3DH5/MCH



8DPSK_3DH5/HCH

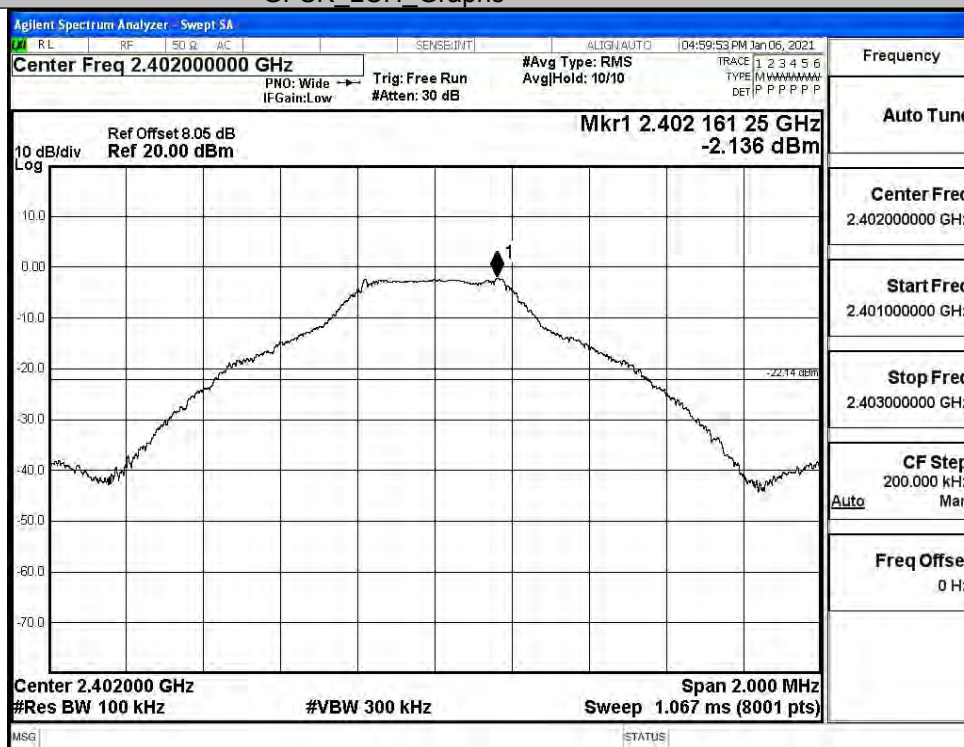


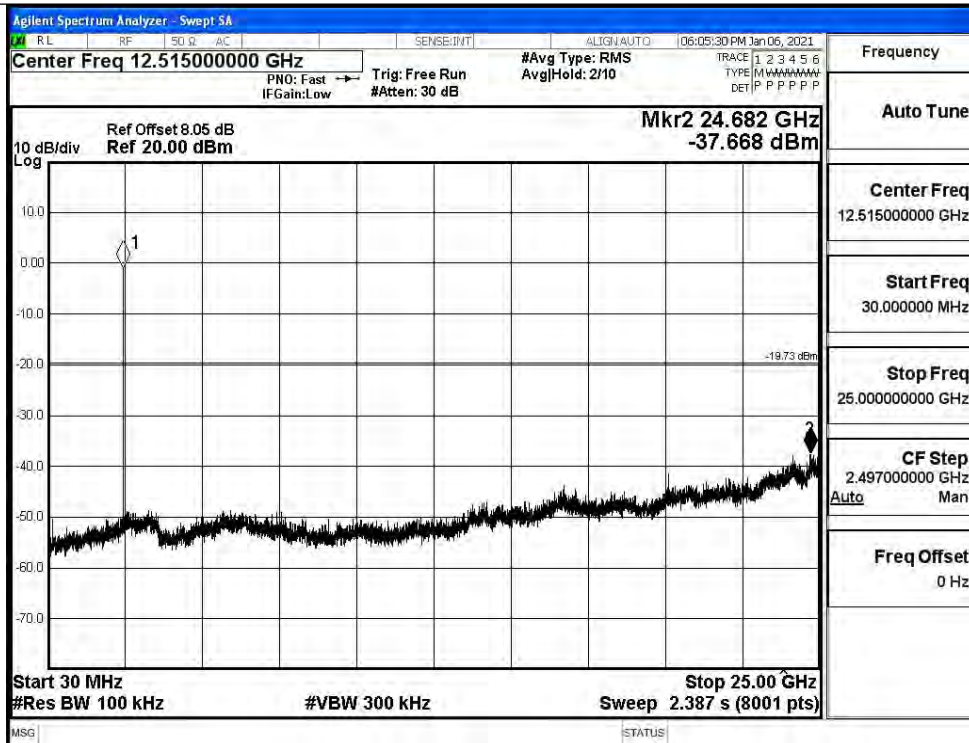
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-2.136	-37.425	-22.136	PASS
	MCH	0.45	-37.720	-19.550	PASS
	HCH	1.937	-37.045	-18.063	PASS
$\pi/4$ DQPSK	LCH	-3.448	-36.304	-23.448	PASS
	MCH	-0.916	-38.293	-20.916	PASS
	HCH	0.271	-38.201	-19.729	PASS
8DPSK	LCH	-3.509	-37.131	-23.509	PASS
	MCH	-0.441	-37.667	-20.441	PASS
	HCH	0.268	-37.668	-19.732	PASS

GFSK LCH Graphs

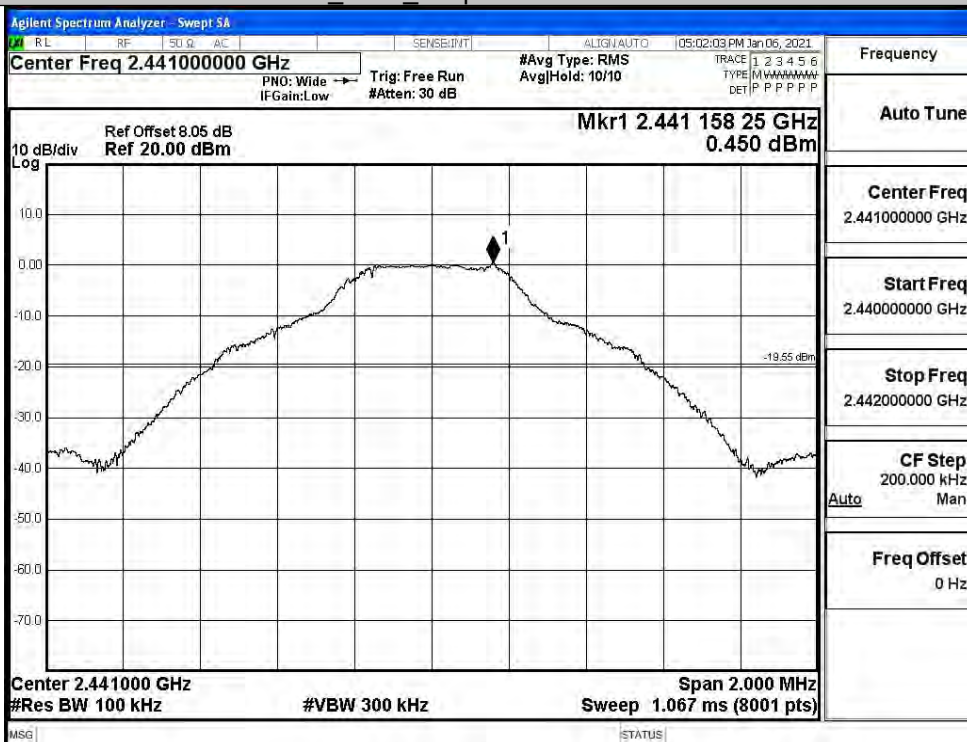
Pref



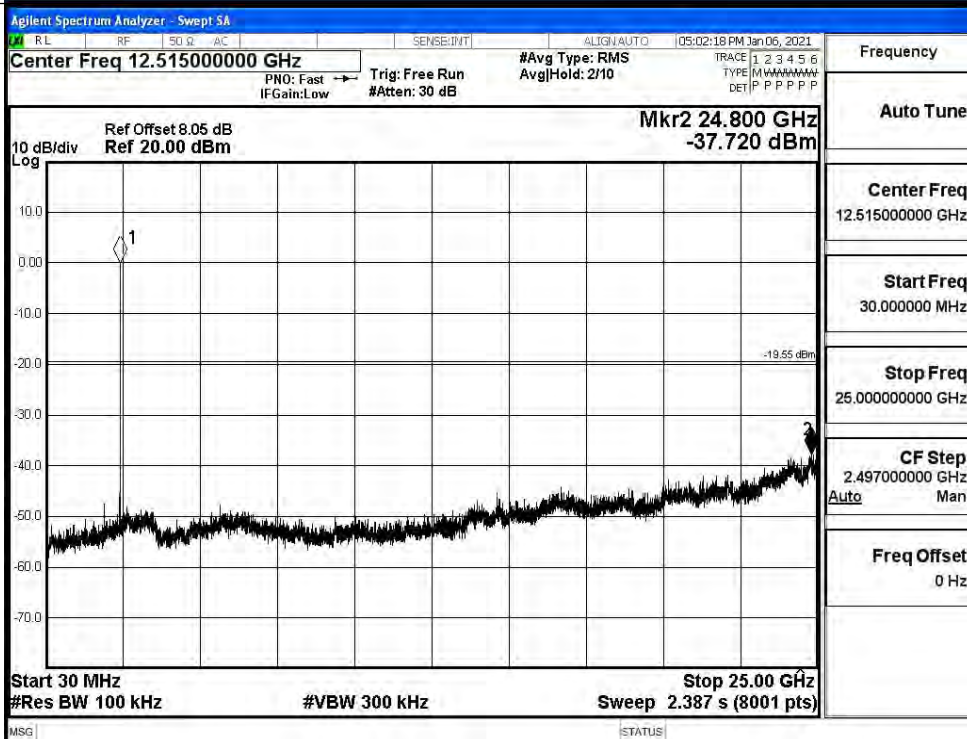
P_{uw}

GFSK_MCH_Graphs

Pref

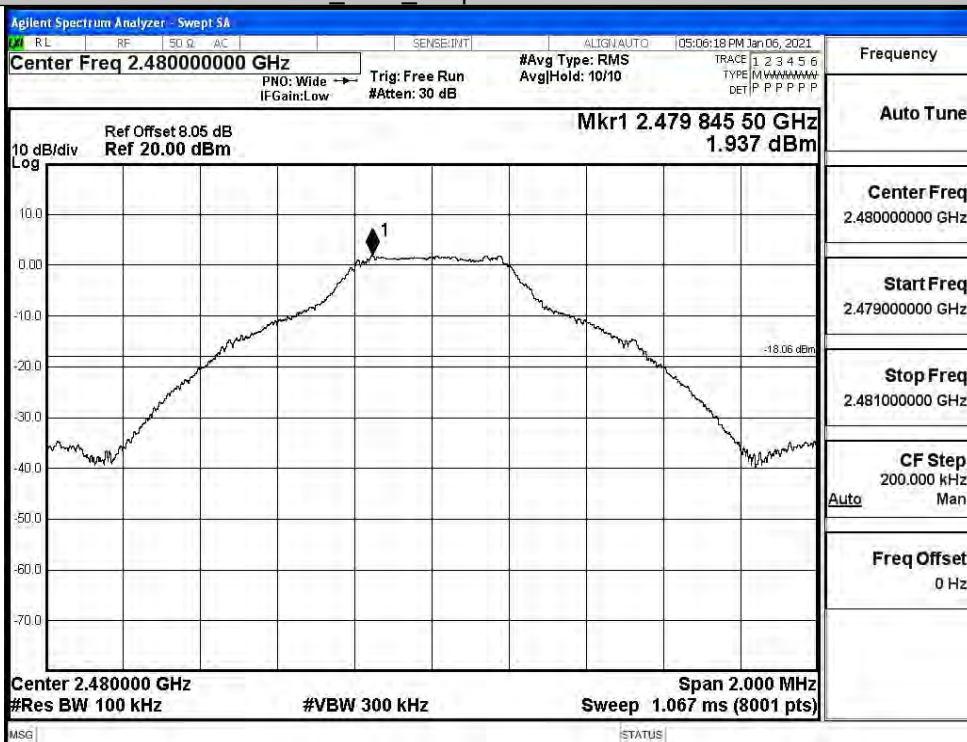


Puw

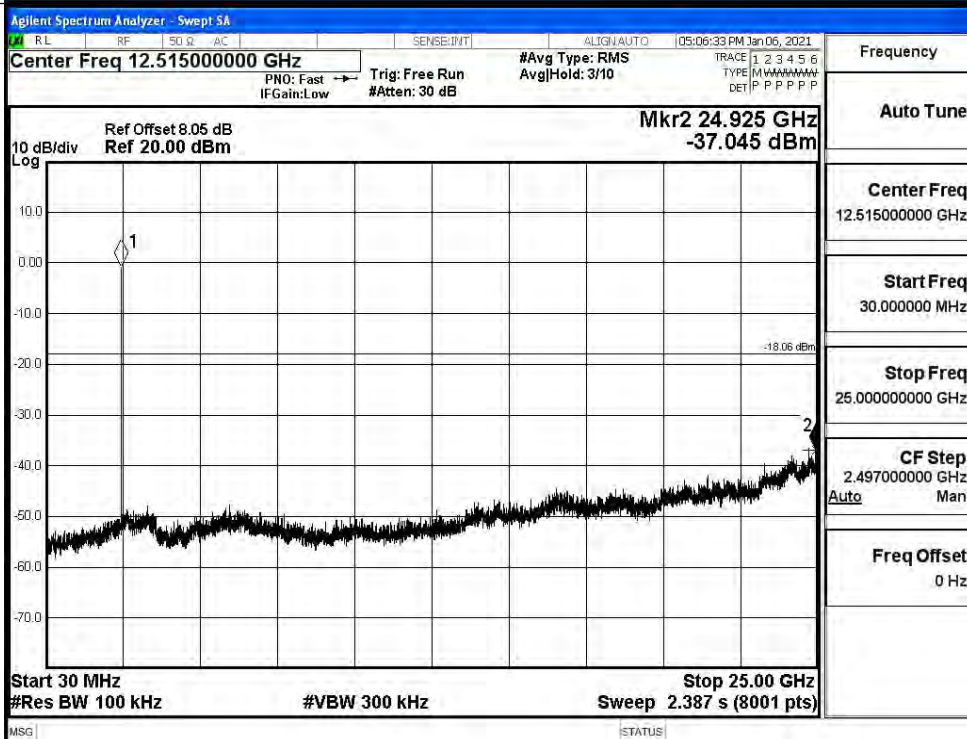


GFSK_HCH_Graphs

Pref

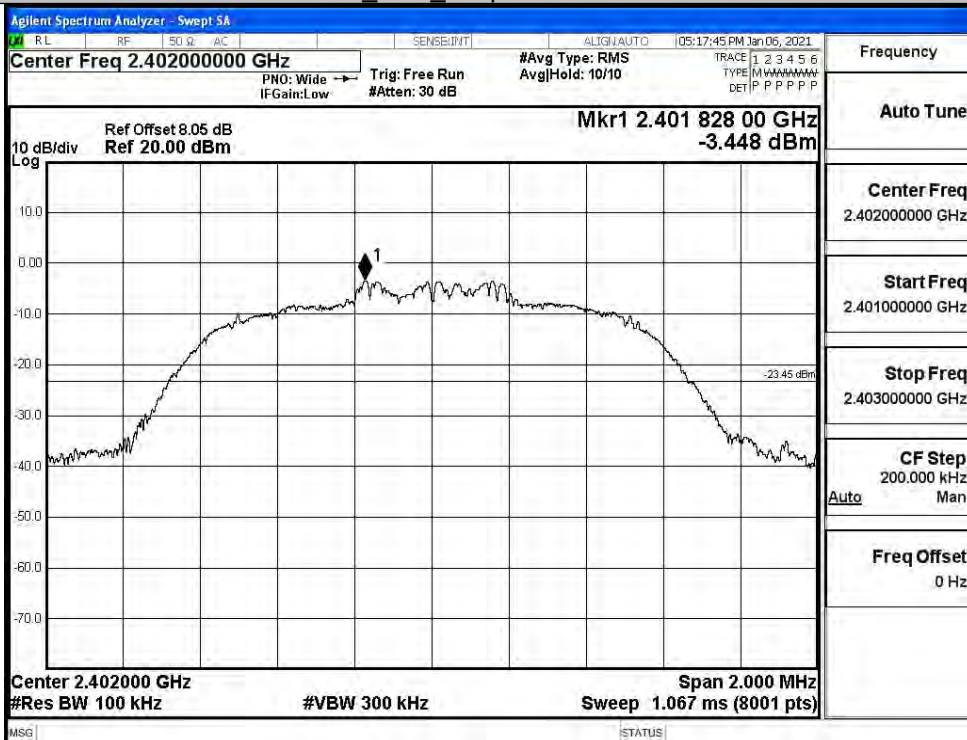


Puw

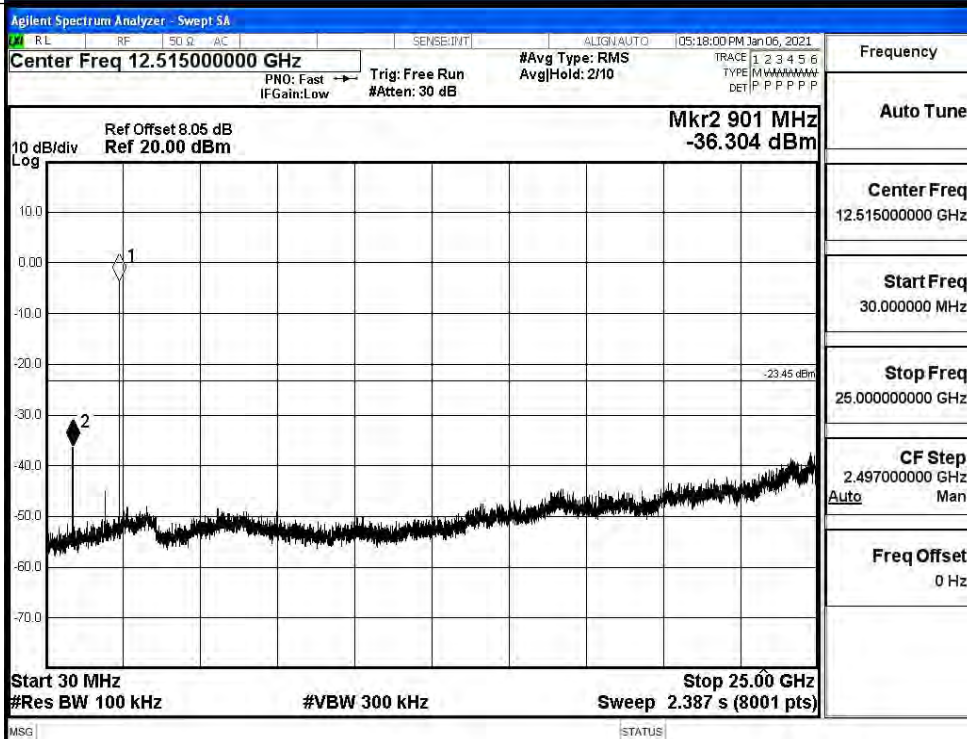


$\pi/4$ DQPSK_LCH_Graphs

Pref

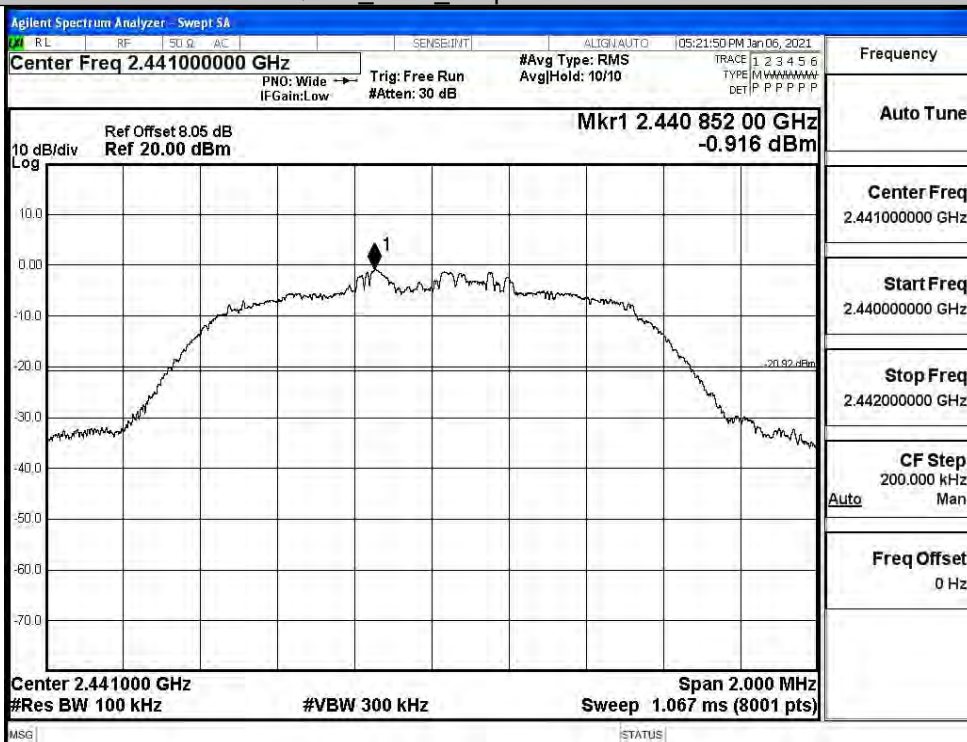


Puw



π /4DQPSK_MCH_Graphs

Pref

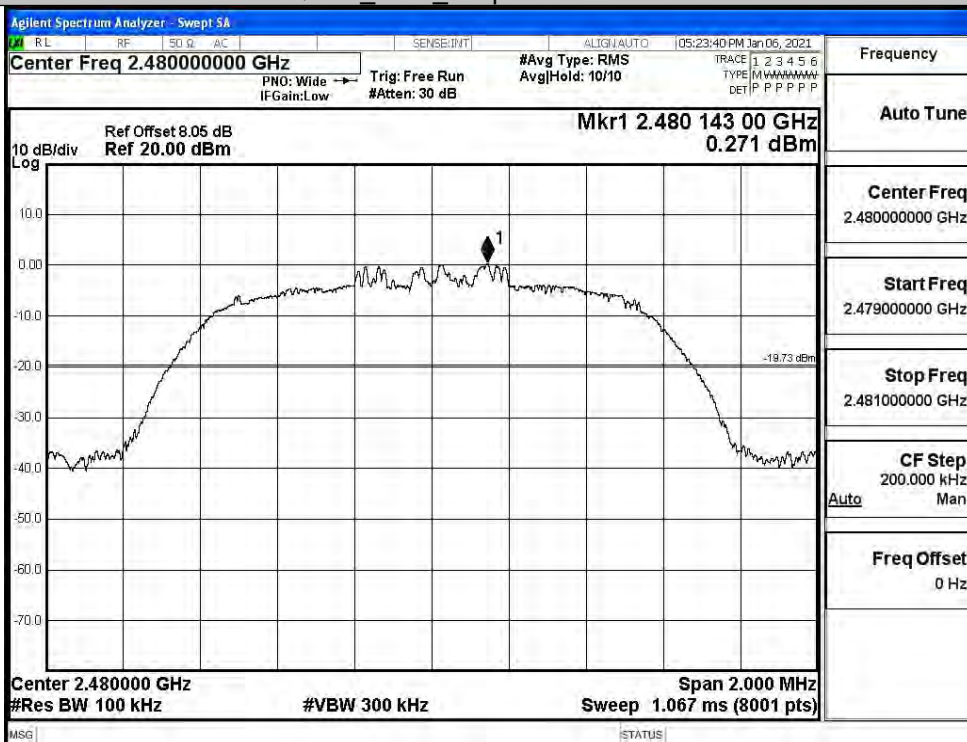


Puw

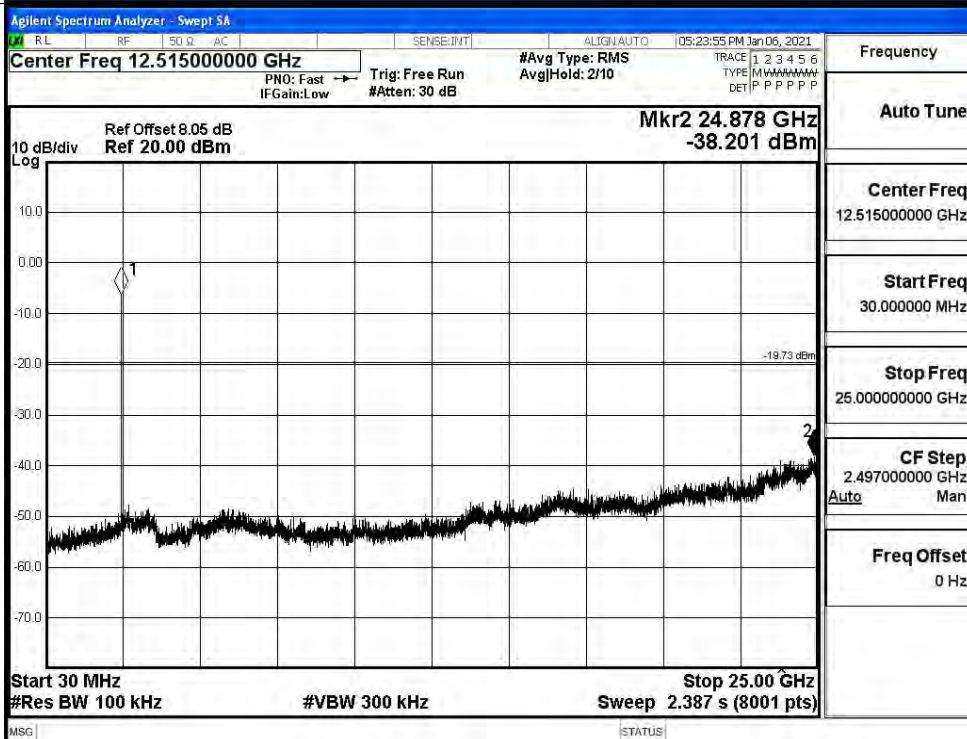


π /4DQPSK_HCH_Graphs

Pref

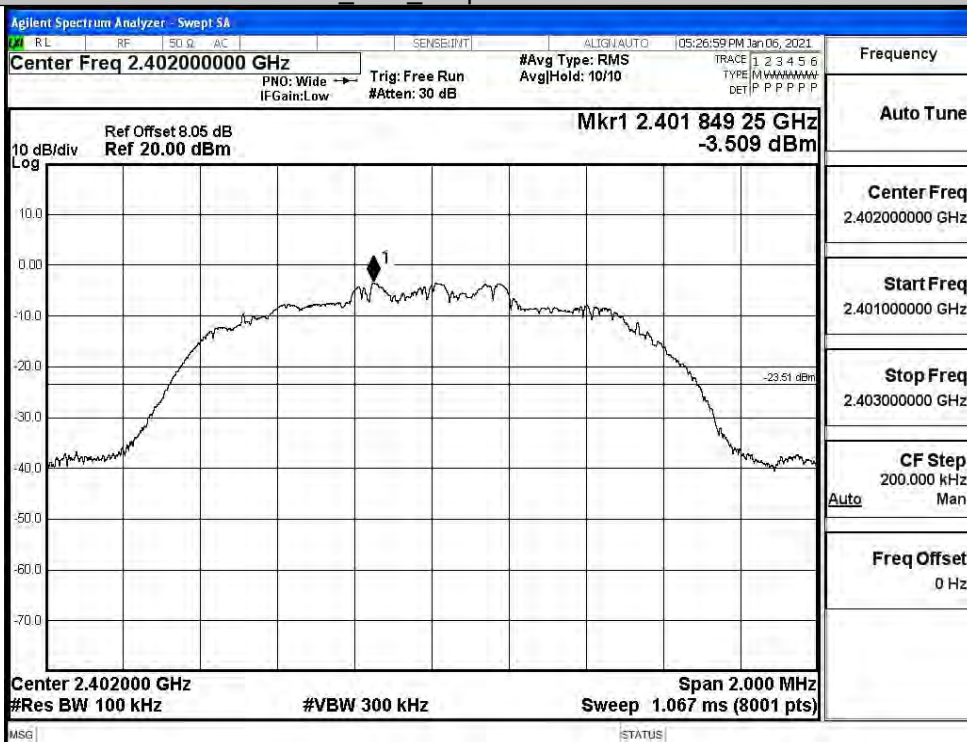


Puw

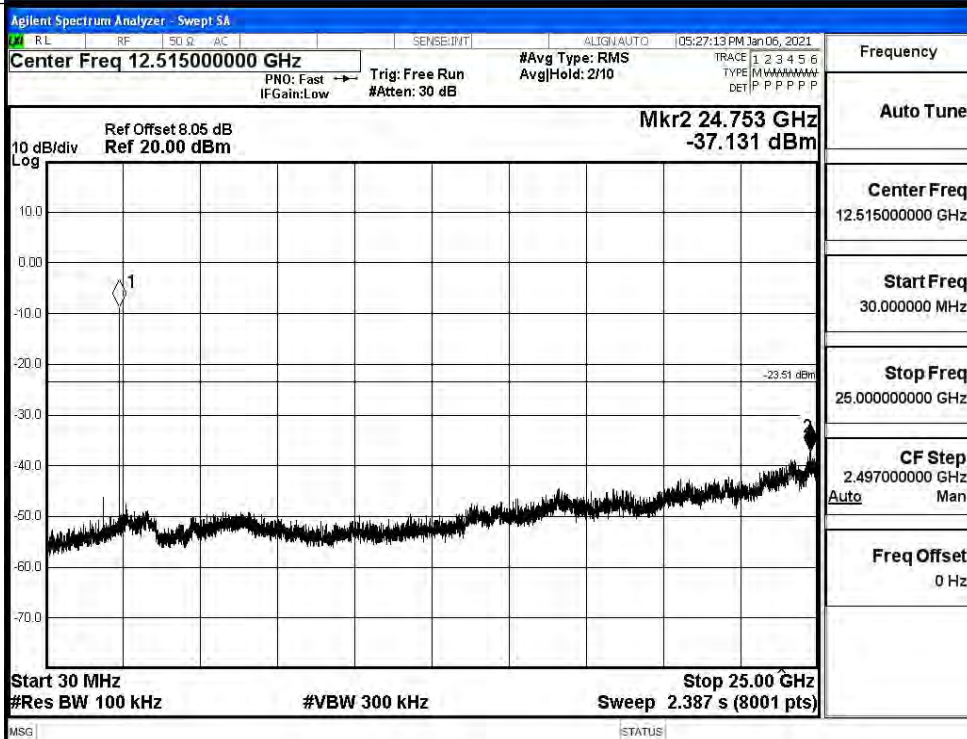


8DPSK_LCH_Graphs

Pref

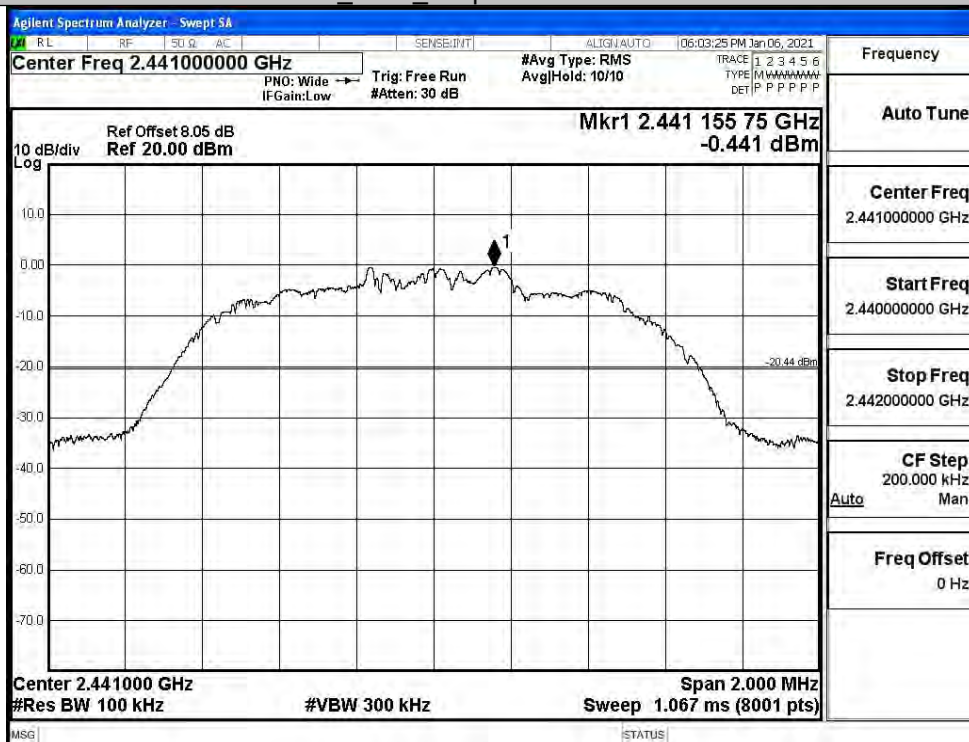


Puw

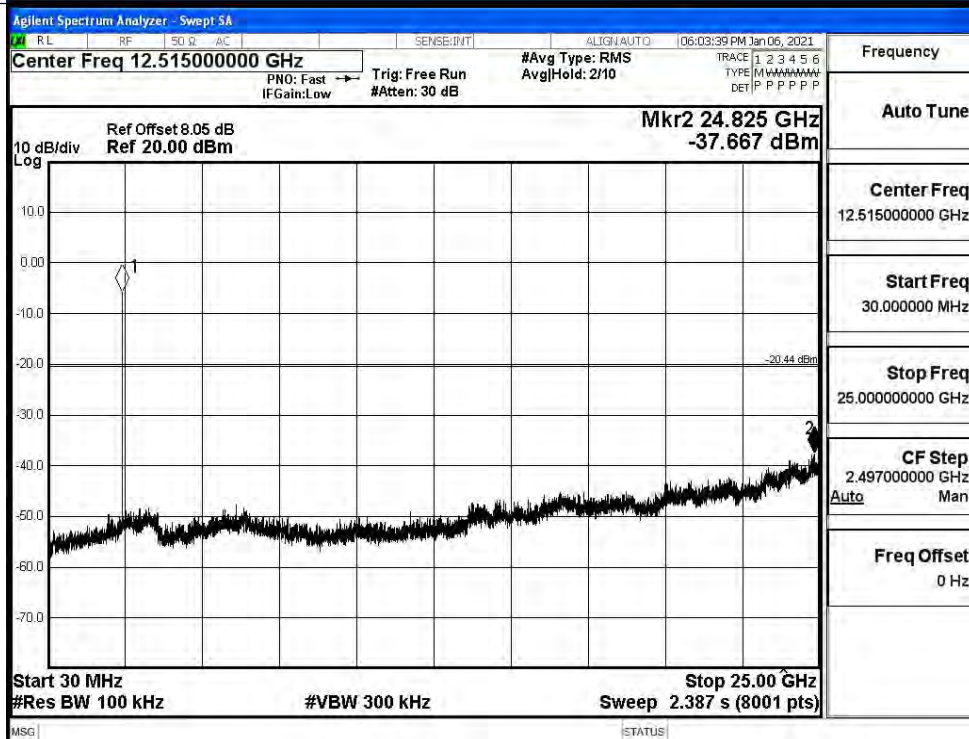


8DPSK_MCH_Graphs

Pref

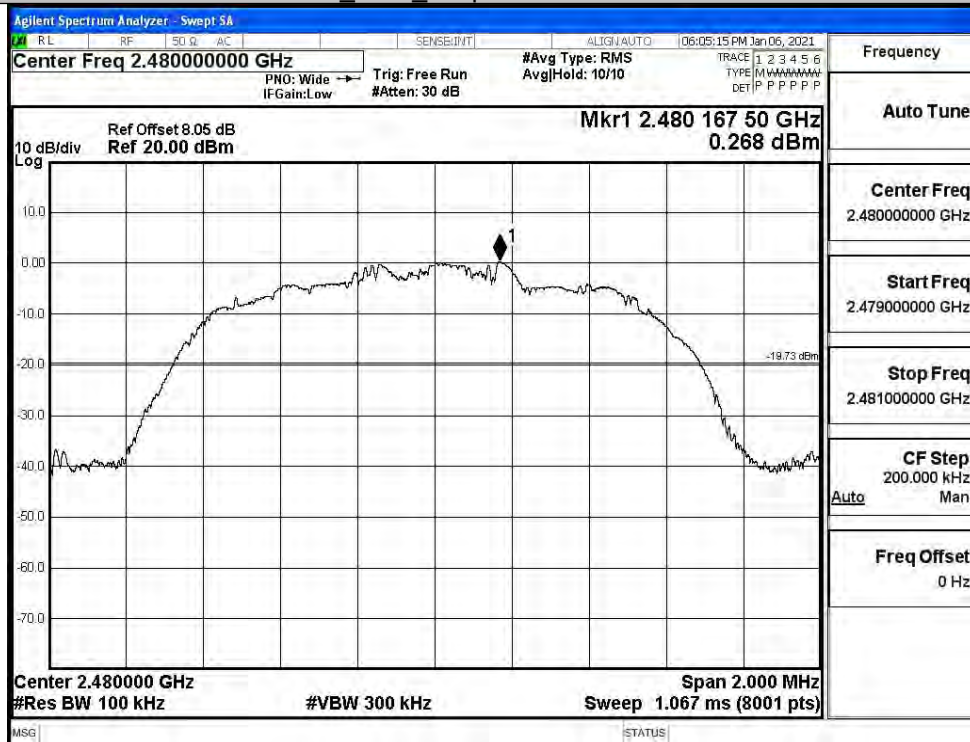


Puw

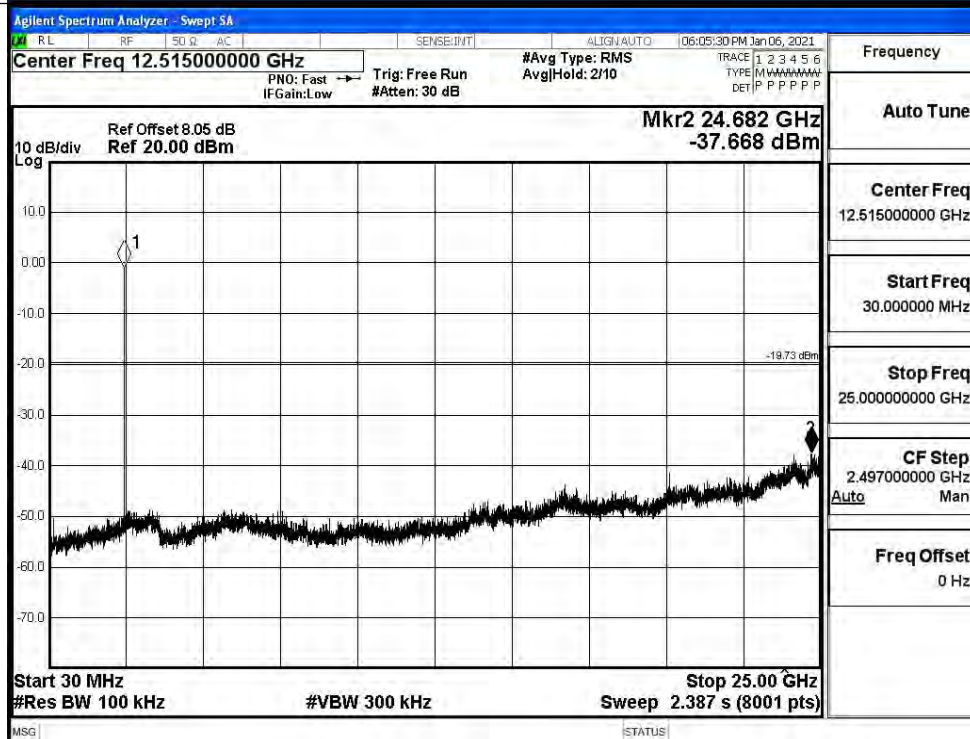


8DPSK_HCH_Graphs

Pref



Puw

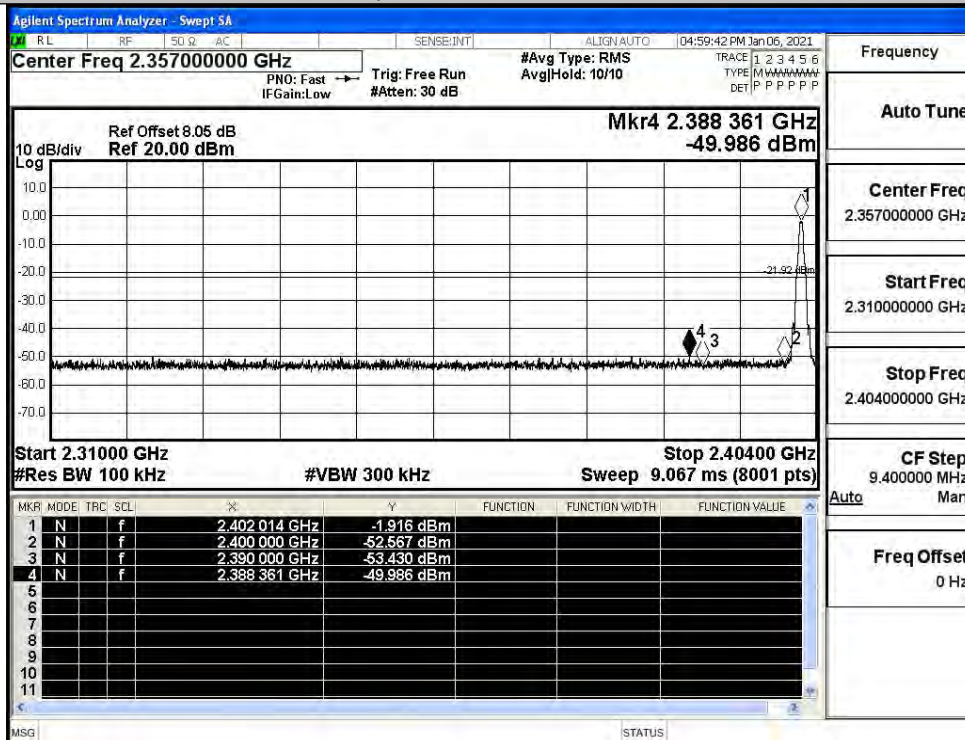


A.7 Band-edge for RF Conducted Emissions

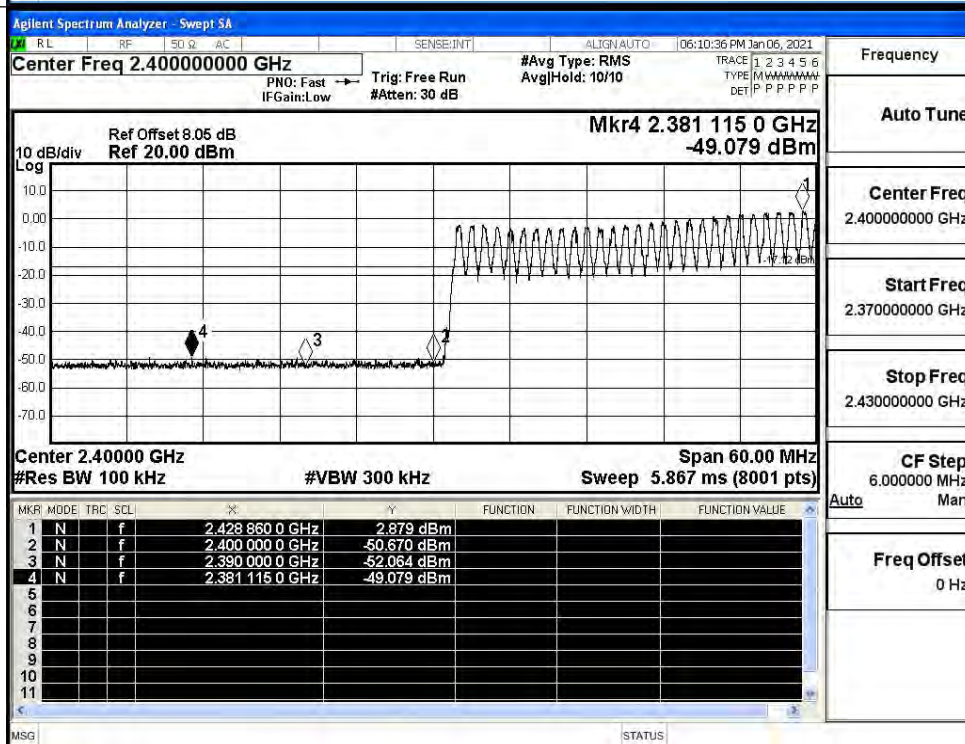
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-1.916	Off	-49.986	-21.92	PASS
			2.879	On	-49.079	-17.12	PASS
	HCH	2480	2.040	Off	-48.461	-17.96	PASS
			1.881	On	-48.145	-18.12	PASS
$\pi/4$ DQPSK	LCH	2402	-3.464	Off	-49.759	-23.46	PASS
			-0.289	On	-49.410	-20.29	PASS
	HCH	2480	0.703	Off	-49.142	-19.3	PASS
			0.530	On	-48.796	-19.47	PASS
8DPSK	LCH	2402	-5.102	Off	-49.197	-25.1	PASS
			1.648	On	-49.146	-18.35	PASS
	HCH	2480	0.230	Off	-48.836	-19.77	PASS
			0.604	On	-48.307	-19.4	PASS

Test Graphs

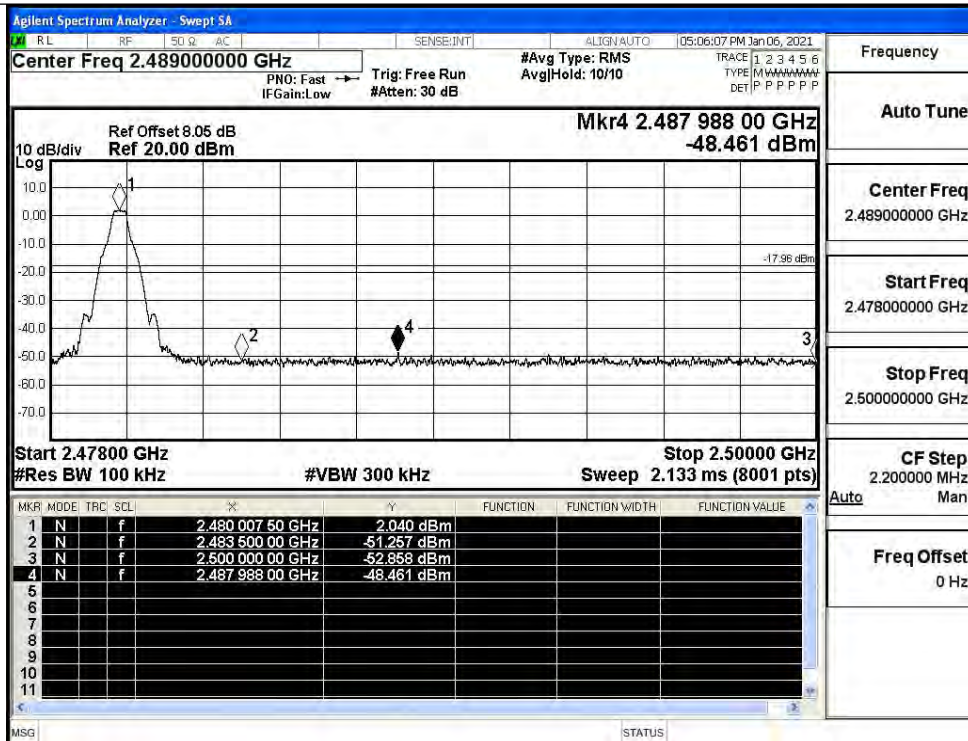
GFSK/LCH/No Hop



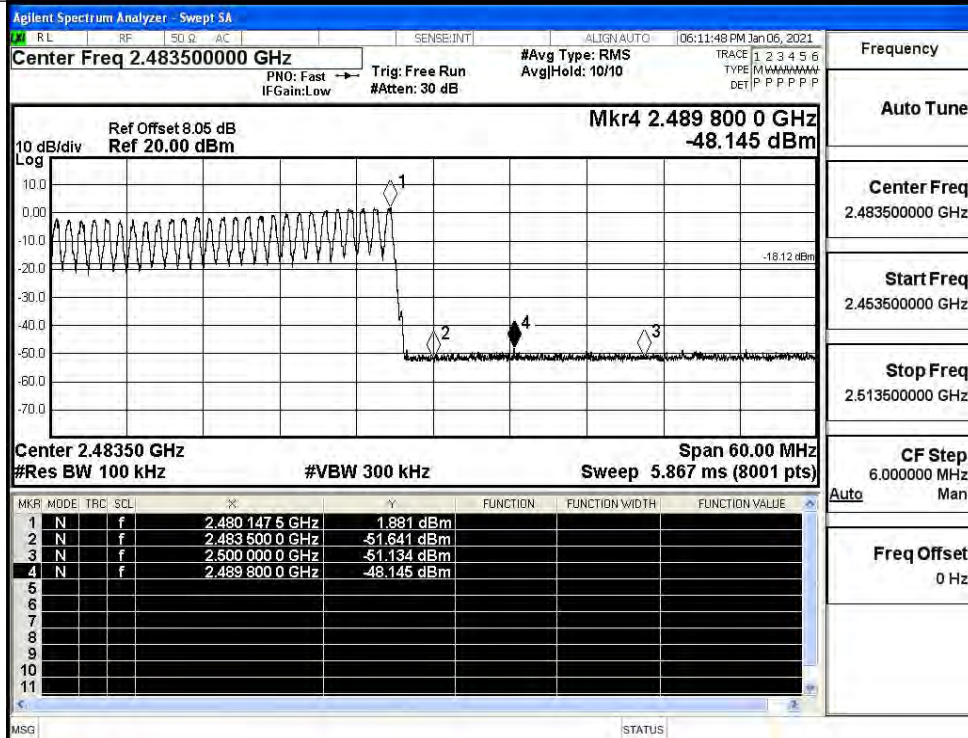
GFSK/LCH/Hop



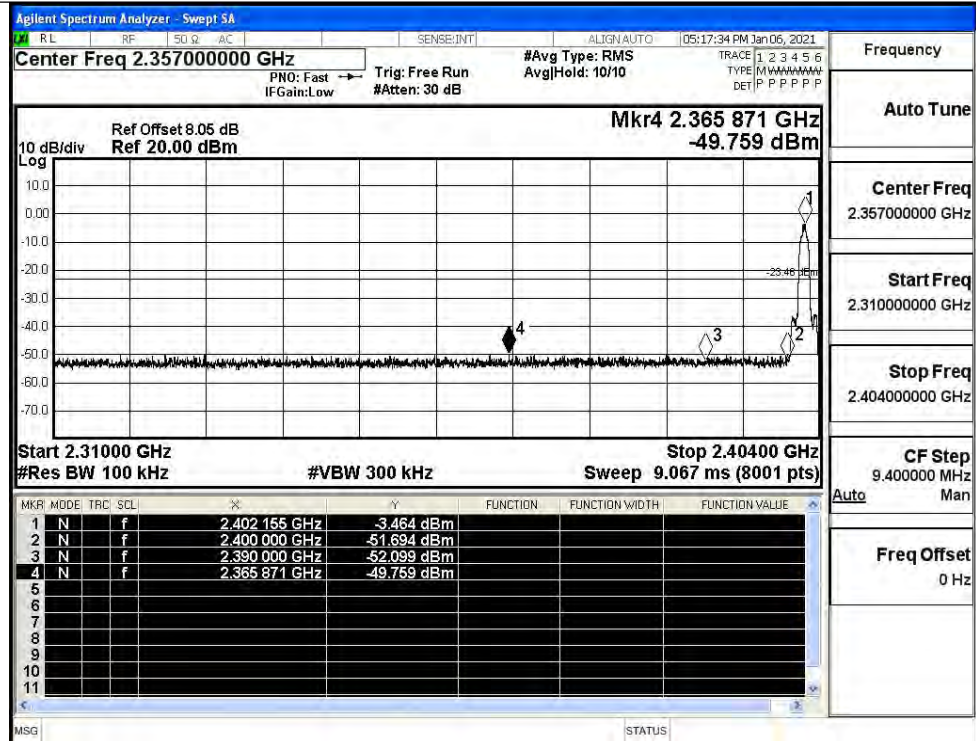
GFSK/HCH/No Hop



GFSK/HCH/Hop



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



Frequency

Auto Tune

Center Freq
2.357000000 GHz

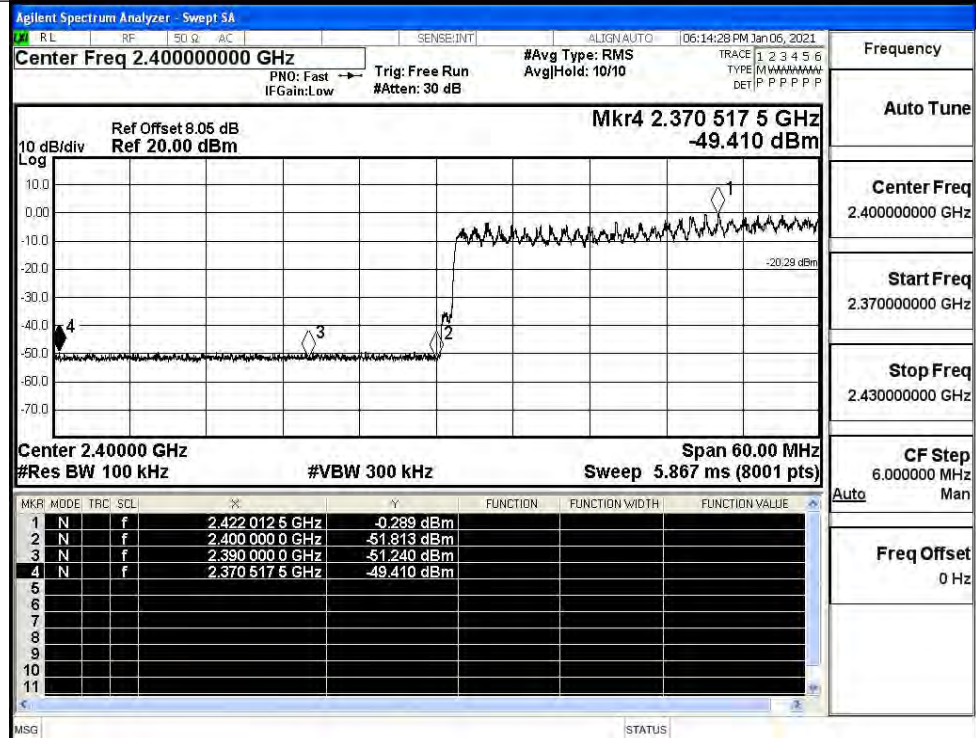
Start Freq
2.310000000 GHz

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

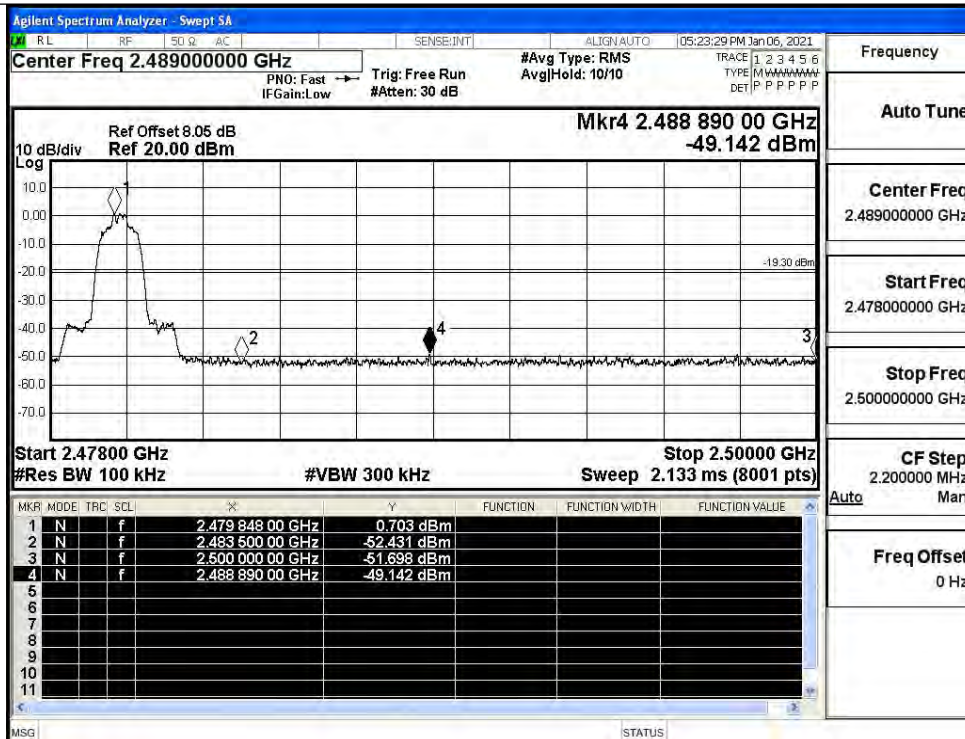
Start Freq
2.370000000 GHz

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

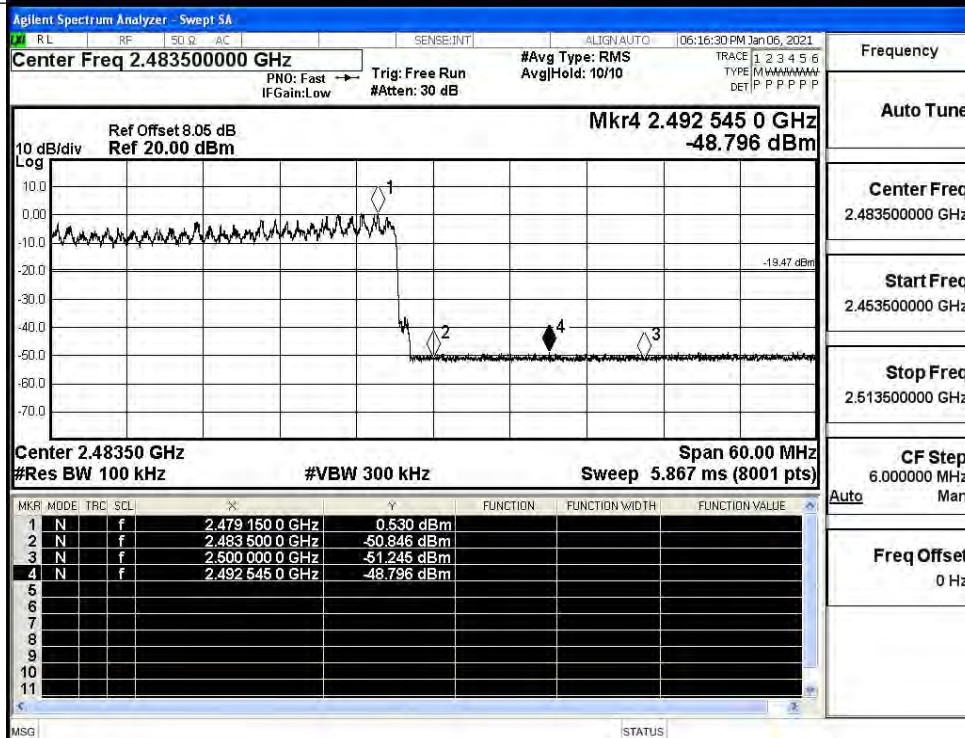
Center Freq
2.489000000 GHzStart Freq
2.478000000 GHzStop Freq
2.500000000 GHzCF Step
2.200000 MHz

Auto

Man

Freq Offset
0 Hz

$\pi/4$ DQPSK/HCH/Hop



Frequency

Auto Tune

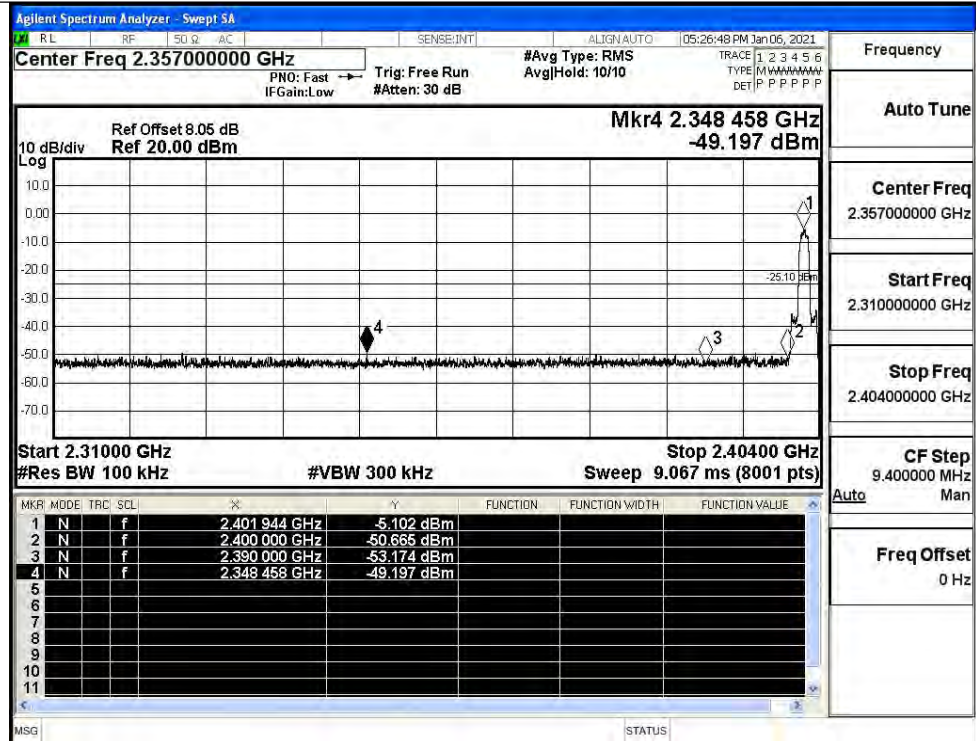
Center Freq
2.483500000 GHzStart Freq
2.463500000 GHzStop Freq
2.513500000 GHzCF Step
6.000000 MHz

Auto

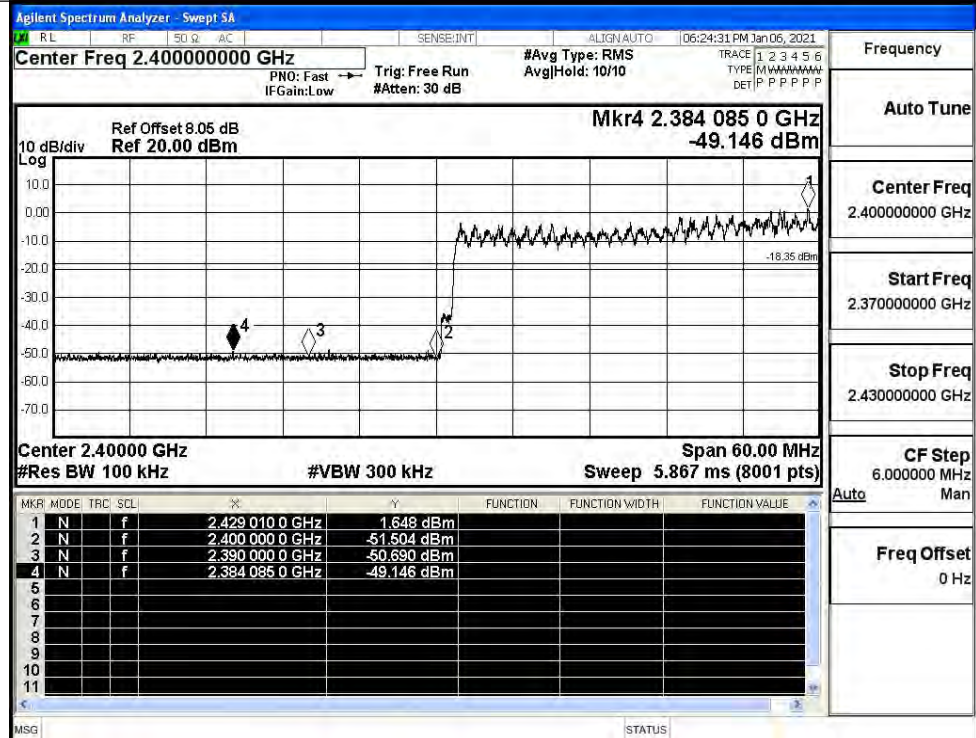
Man

Freq Offset
0 Hz

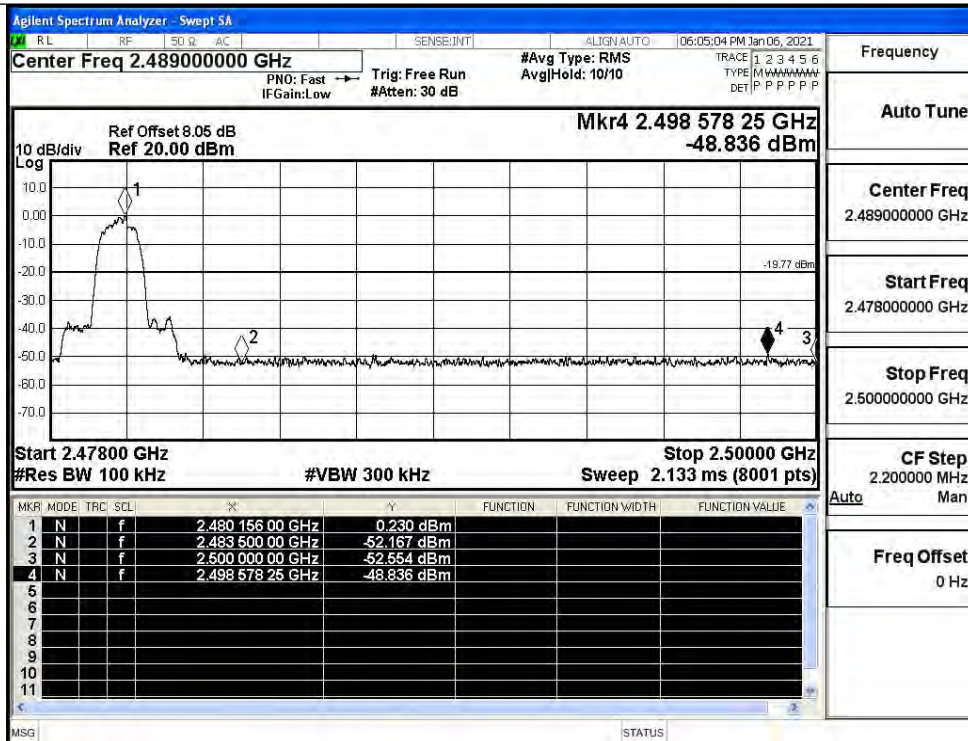
8DPSK/LCH/No Hop



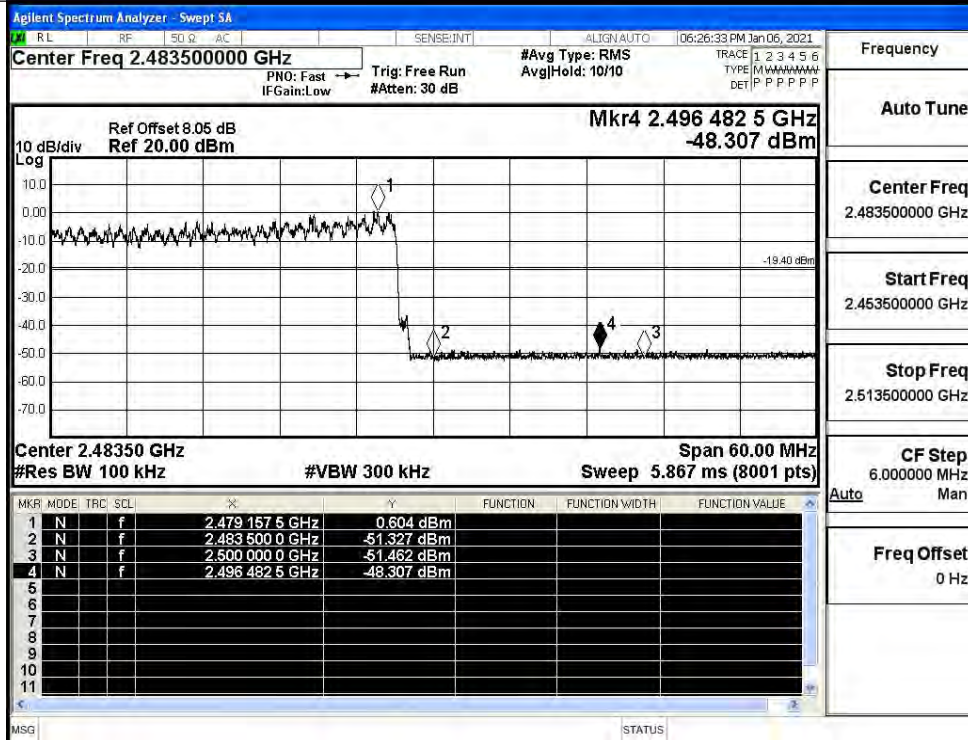
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



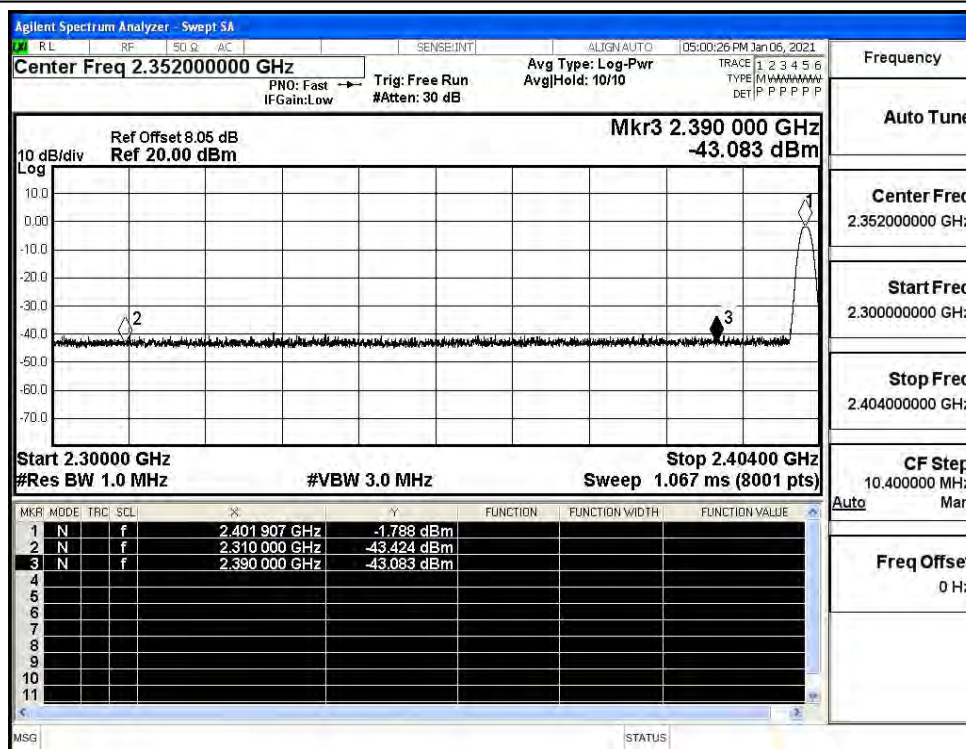
8DPSK/HCH/Hop



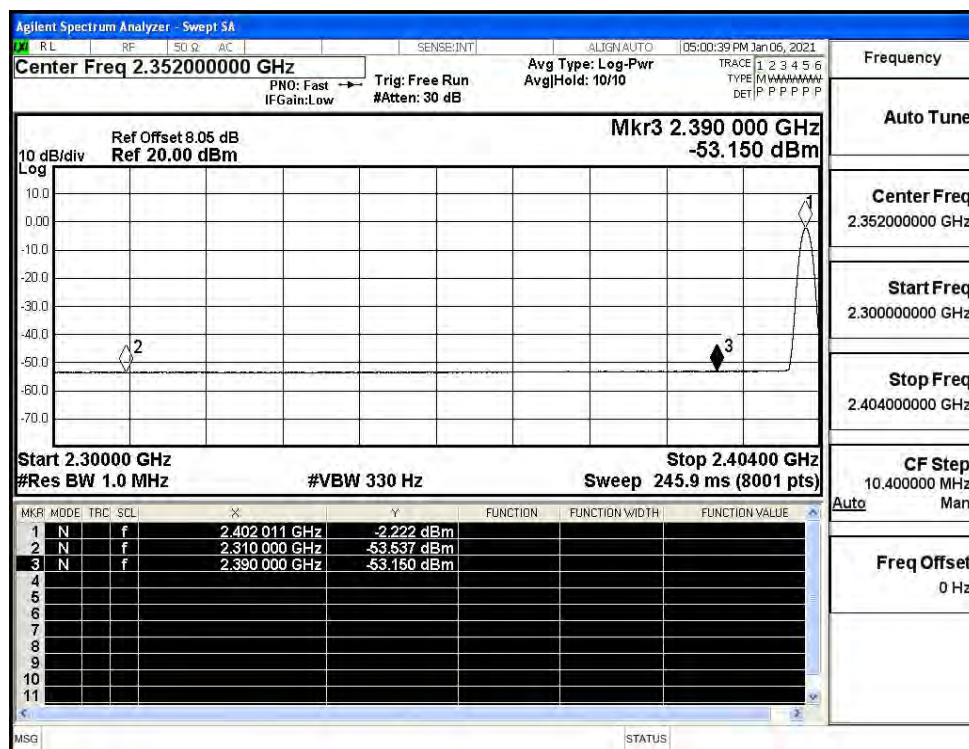
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.42	2.0	0	53.81	PEAK	74	PASS
	Off	2310.0	-53.54	2.0	0	43.69	AV	54	PASS
	Off	2390.0	-43.08	2.0	0	54.15	PEAK	74	PASS
	Off	2390.0	-53.15	2.0	0	44.08	AV	54	PASS
	Off	2483.5	-42.54	2.0	0	54.69	PEAK	74	PASS
	Off	2483.5	-52.57	2.0	0	44.66	AV	54	PASS
	Off	2500.0	-42.06	2.0	0	55.17	PEAK	74	PASS
	Off	2500.0	-52.41	2.0	0	44.82	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.30	2.0	0	53.93	PEAK	74	PASS
	Off	2310.0	-53.51	2.0	0	43.72	AV	54	PASS
	Off	2390.0	-41.74	2.0	0	55.49	PEAK	74	PASS
	Off	2390.0	-53.14	2.0	0	44.09	AV	54	PASS
	Off	2483.5	-42.75	2.0	0	54.48	PEAK	74	PASS
	Off	2483.5	-52.47	2.0	0	44.76	AV	54	PASS
	Off	2500.0	-42.69	2.0	0	54.54	PEAK	74	PASS
	Off	2500.0	-52.47	2.0	0	44.76	AV	54	PASS
8DPSK	Off	2310.0	-43.74	2.0	0	53.49	PEAK	74	PASS
	Off	2310.0	-53.35	2.0	0	43.88	AV	54	PASS
	Off	2390.0	-43.42	2.0	0	53.81	PEAK	74	PASS
	Off	2390.0	-53.14	2.0	0	44.09	AV	54	PASS
	Off	2483.5	-41.51	2.0	0	55.72	PEAK	74	PASS
	Off	2483.5	-52.44	2.0	0	44.79	AV	54	PASS
	Off	2500.0	-42.83	2.0	0	54.40	PEAK	74	PASS
	Off	2500.0	-52.44	2.0	0	44.79	AV	54	PASS

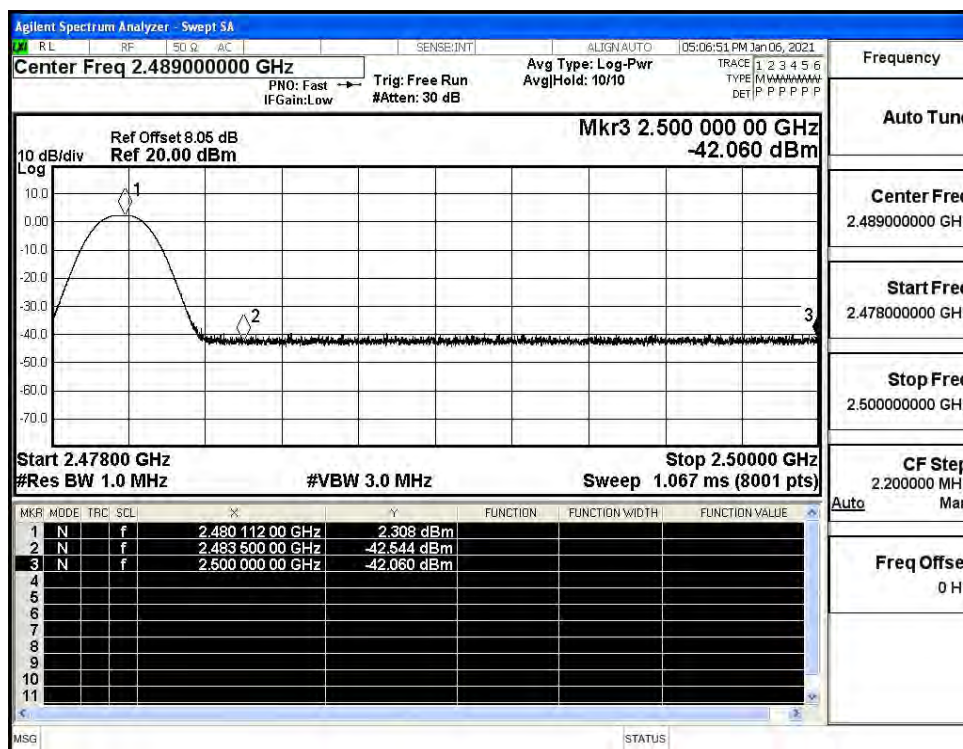
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



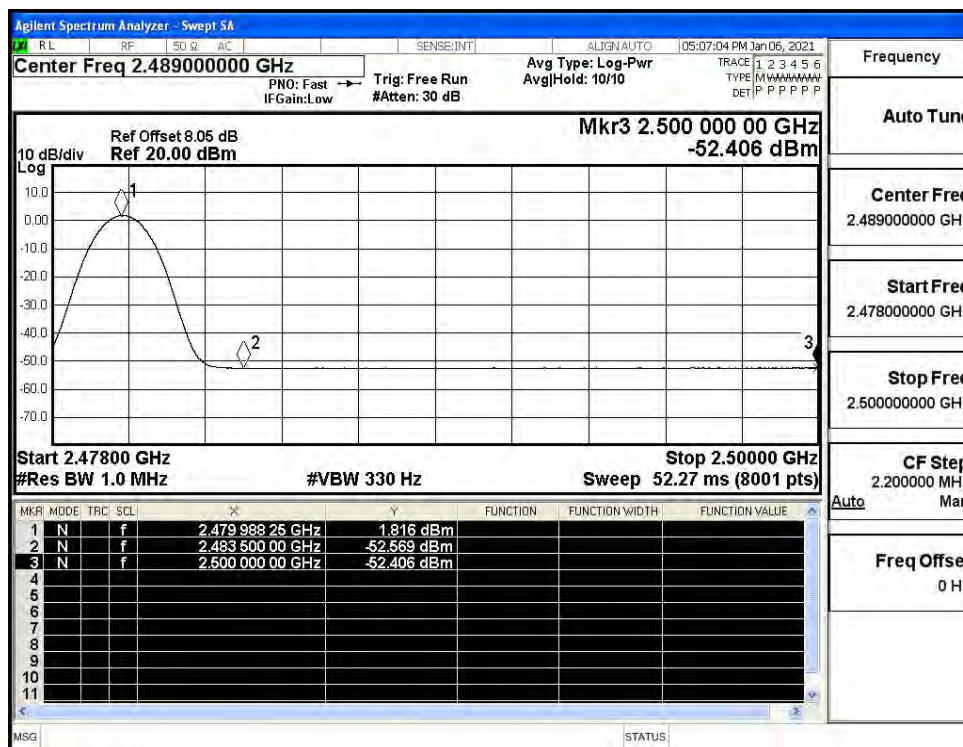
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

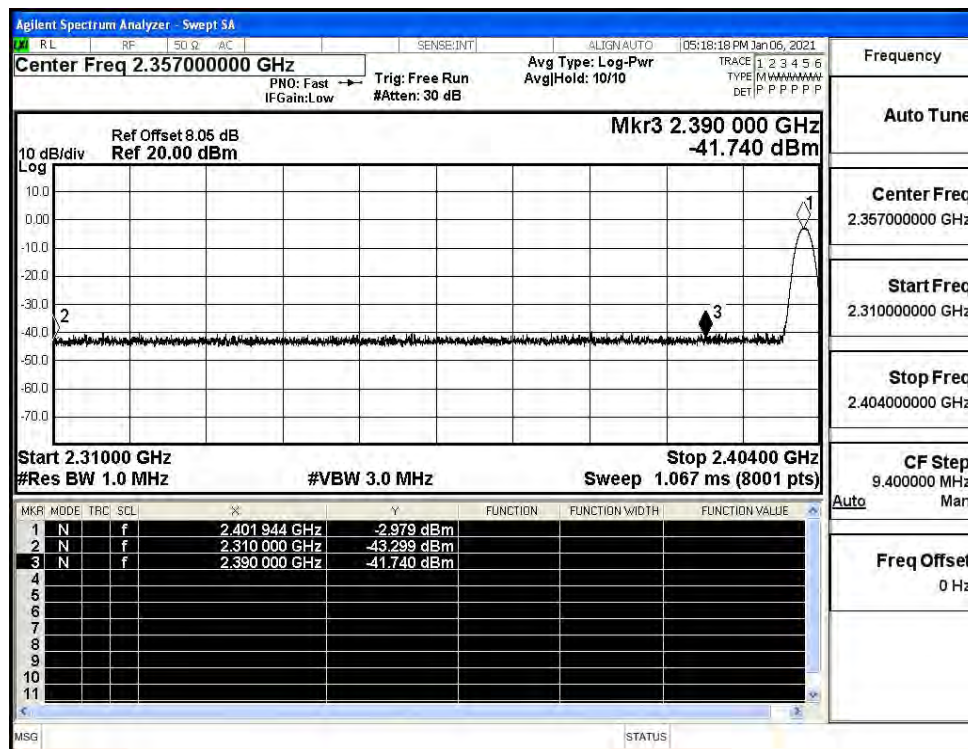
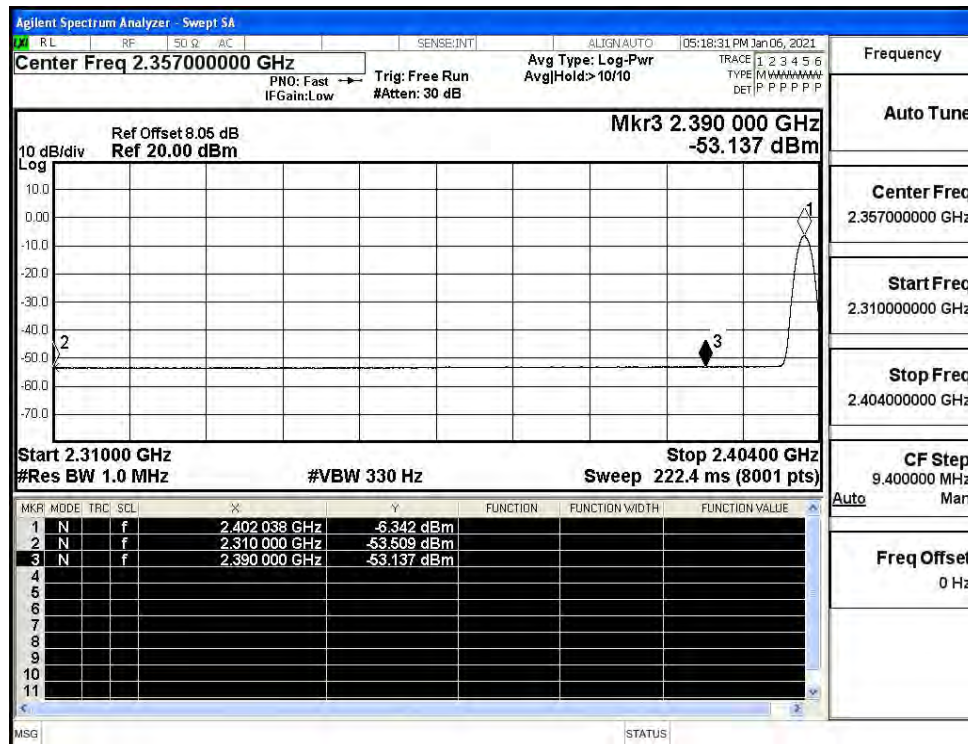


Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)

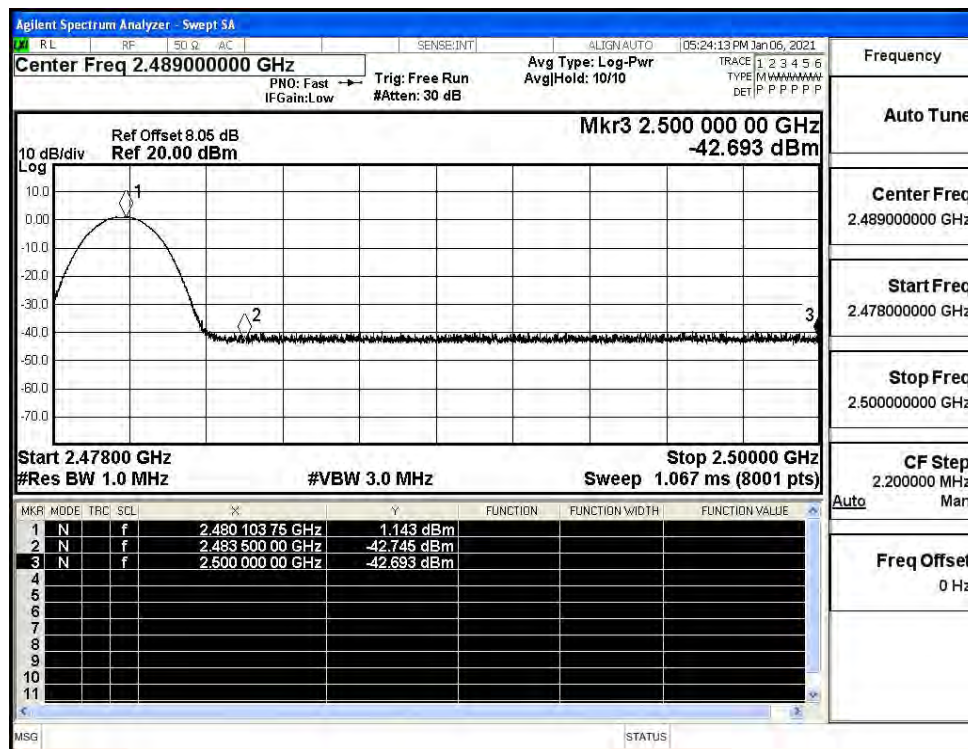


Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)

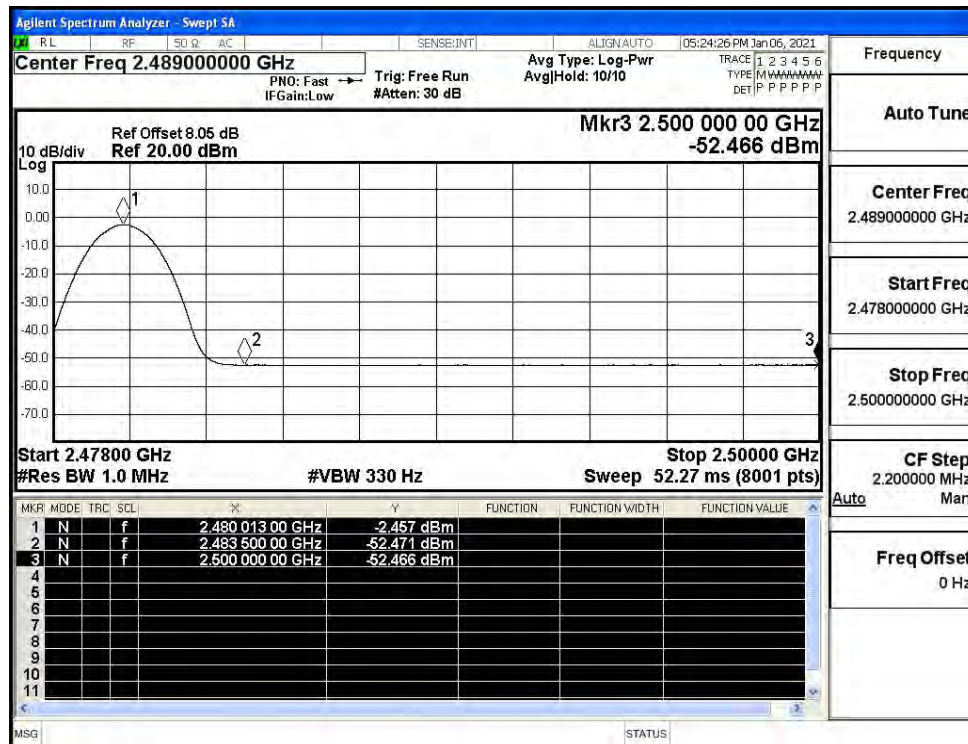


Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

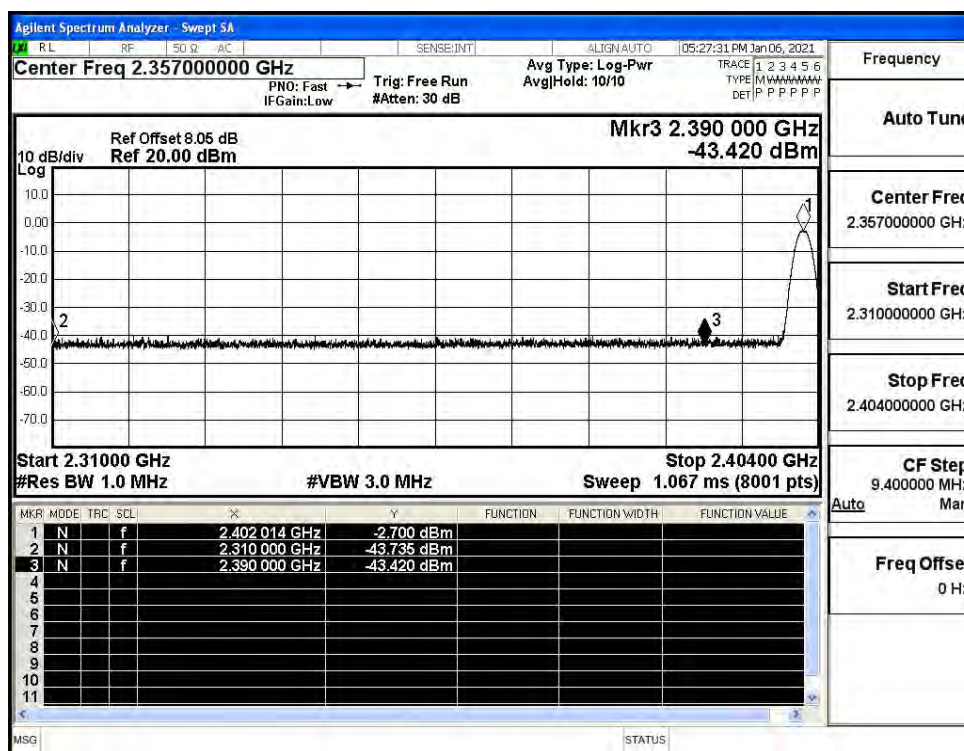
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



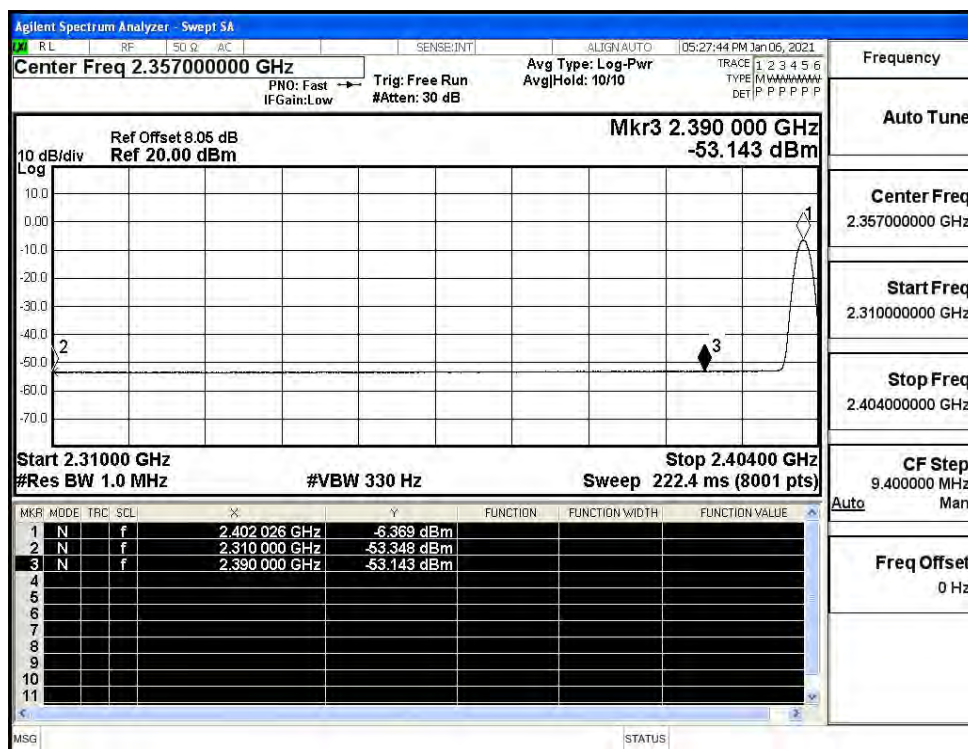
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



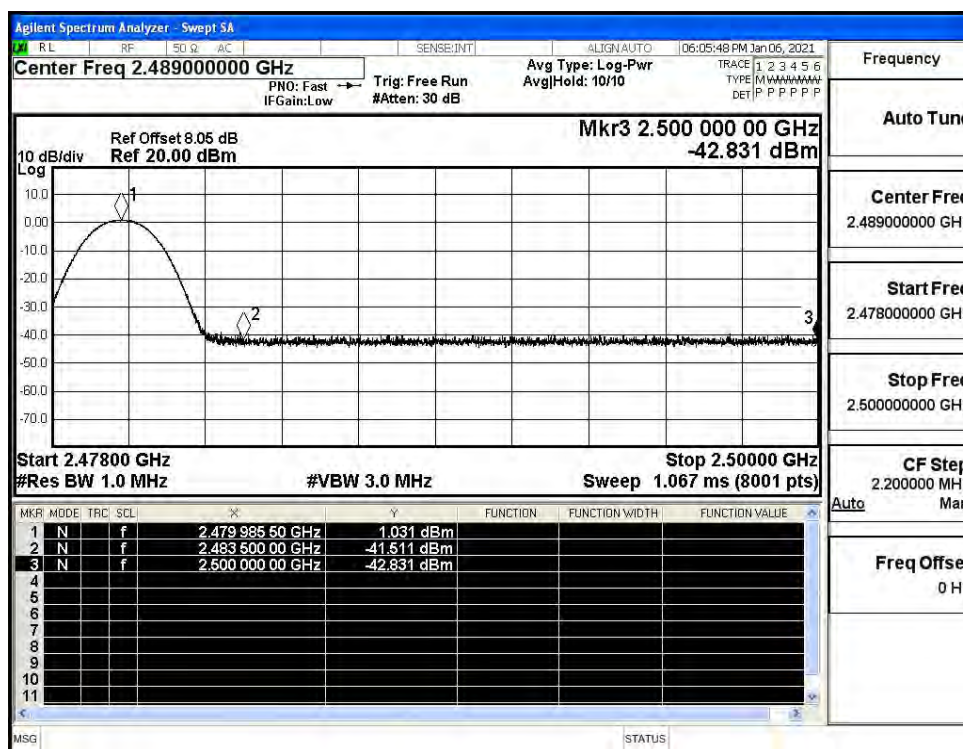
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

