

Appendix A

RF Test Data for BT V4.1(BDR/EDR) (Conducted Measurement)

Product Name: Bluetooth conference speaker

Trade Mark: N/A

Test Model: P10M

Environmental Conditions

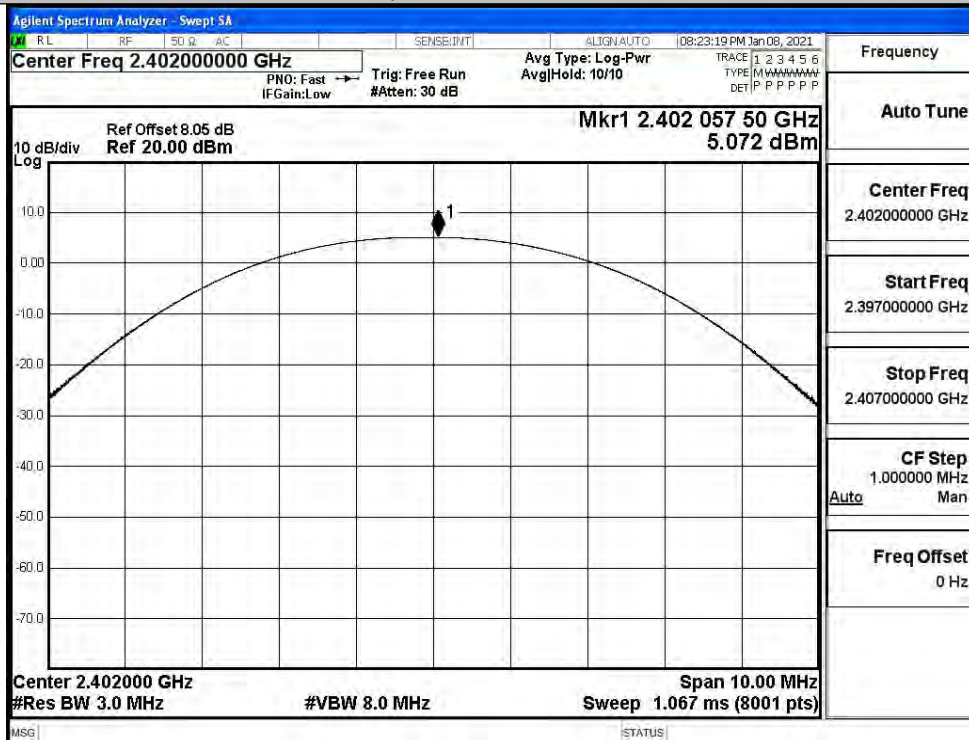
Temperature:	24.6° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Li
Supervised by:	Li Huan

A.1 Maximum Conducted Peak Output Power

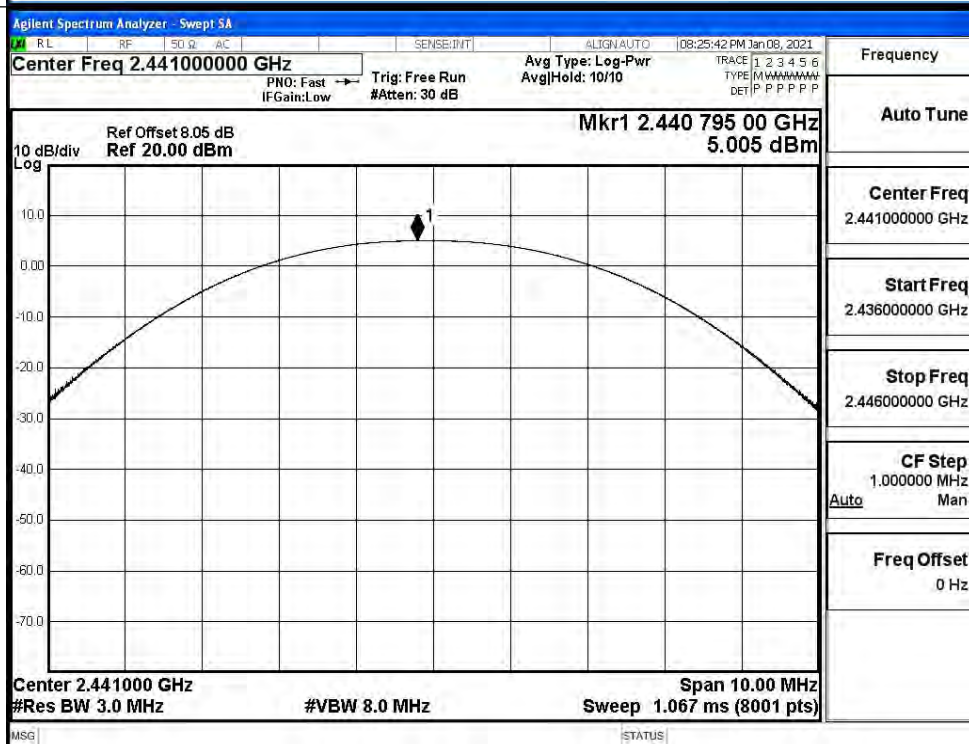
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	5.072	21	PASS
	MCH	5.005	21	PASS
	HCH	4.605	21	PASS
$\pi/4$ DQPSK	LCH	5.021	21	PASS
	MCH	4.958	21	PASS
	HCH	4.548	21	PASS
8DPSK	LCH	5.251	21	PASS
	MCH	5.150	21	PASS
	HCH	4.769	21	PASS

Test Graphs

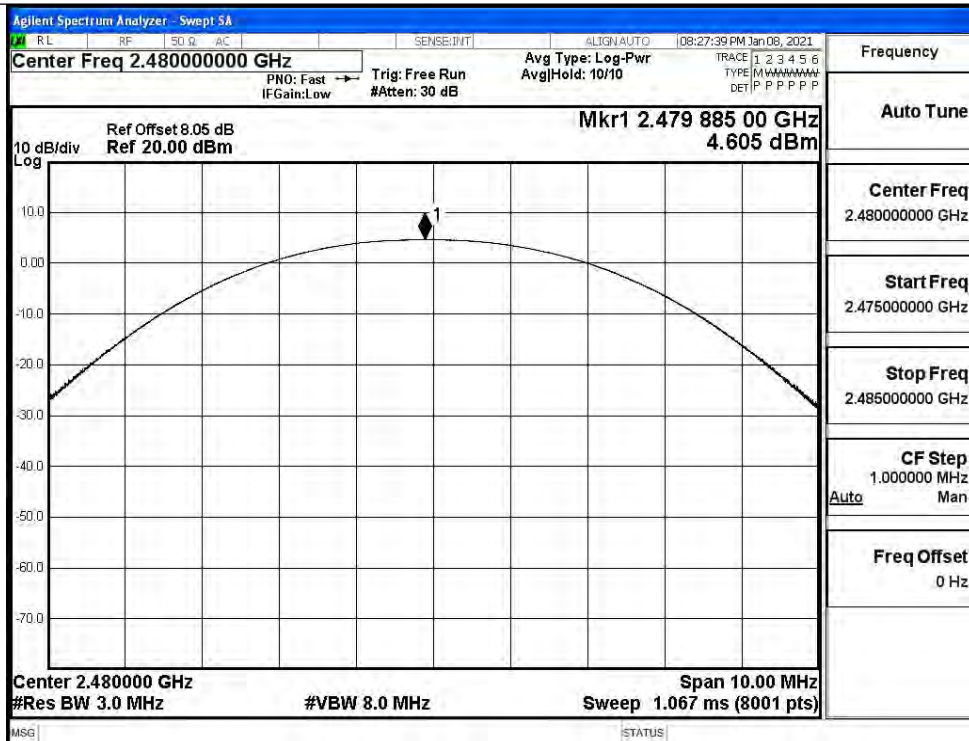
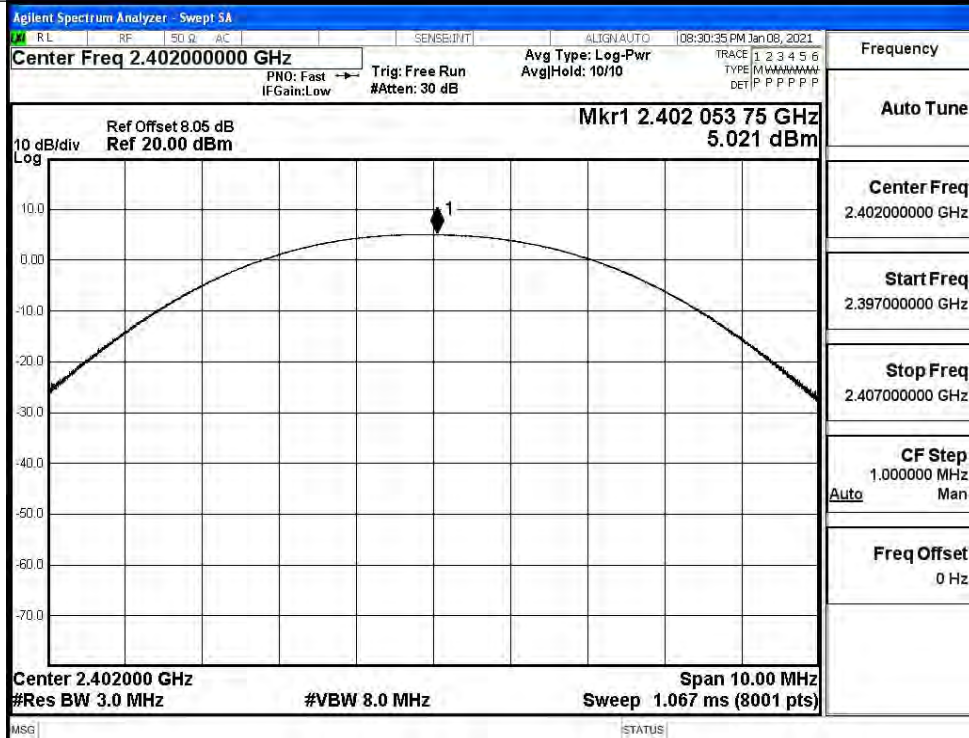
GFSK/LCH

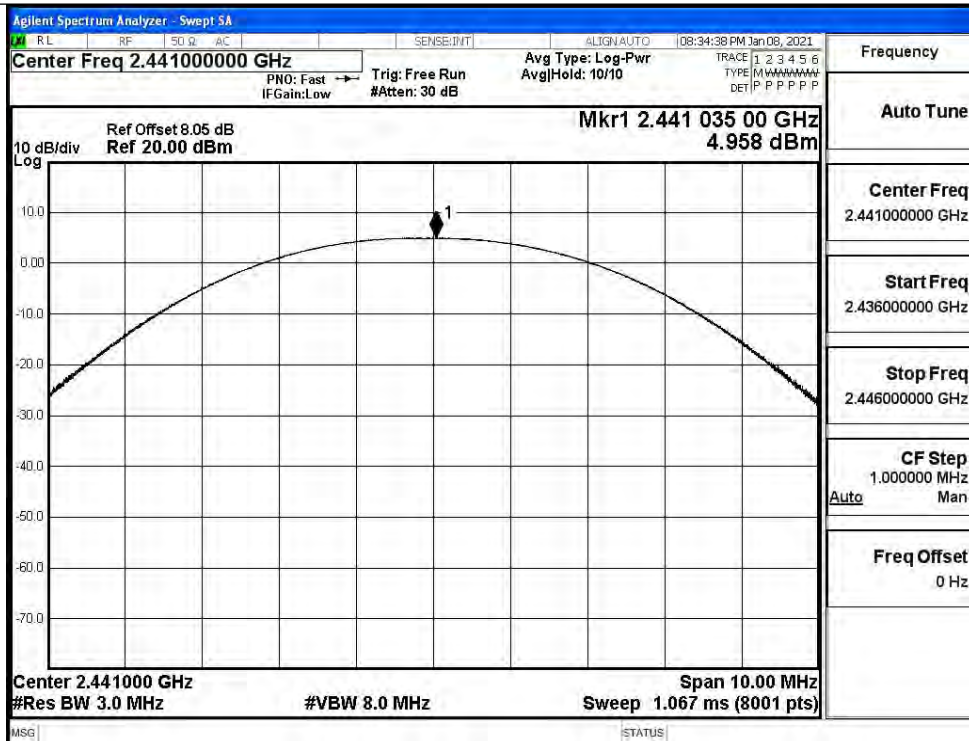
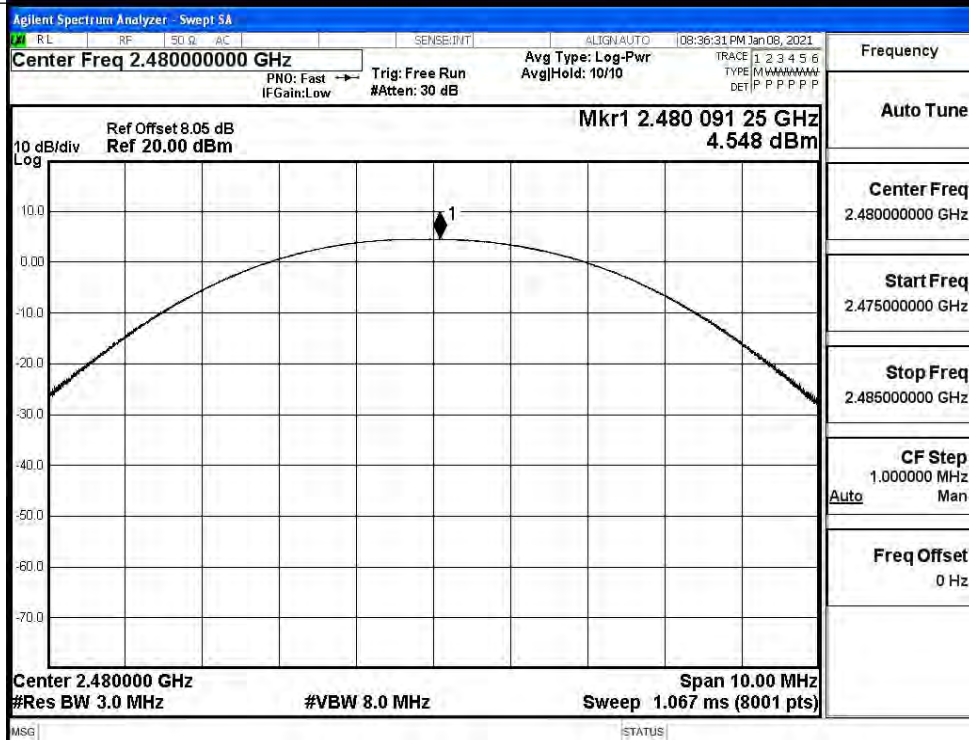


GFSK/MCH

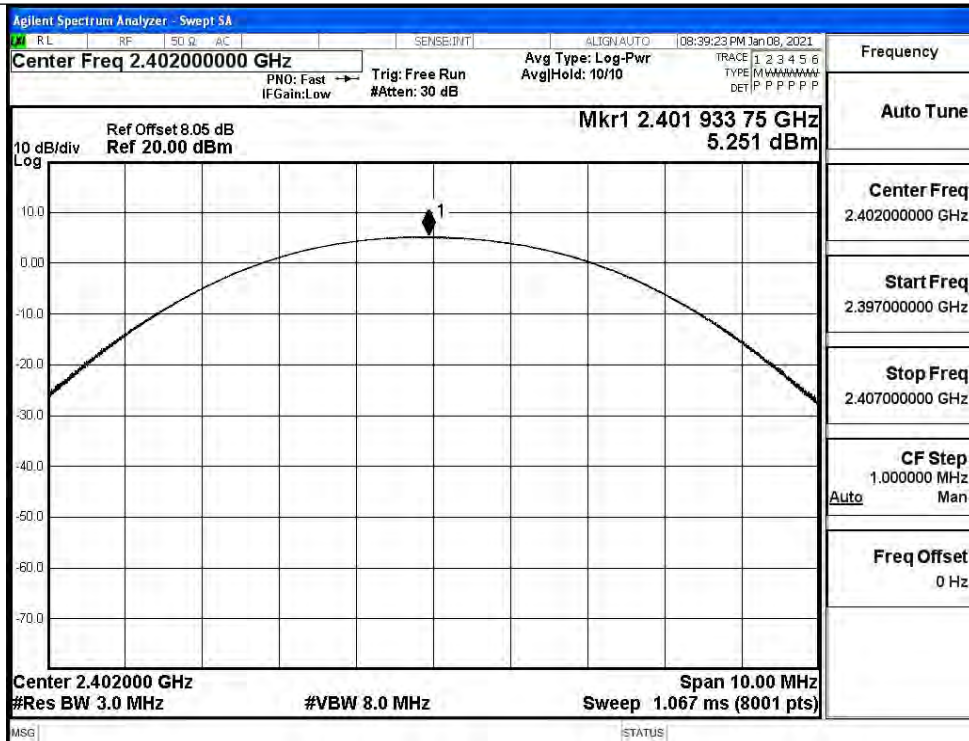


GFSK/HCH

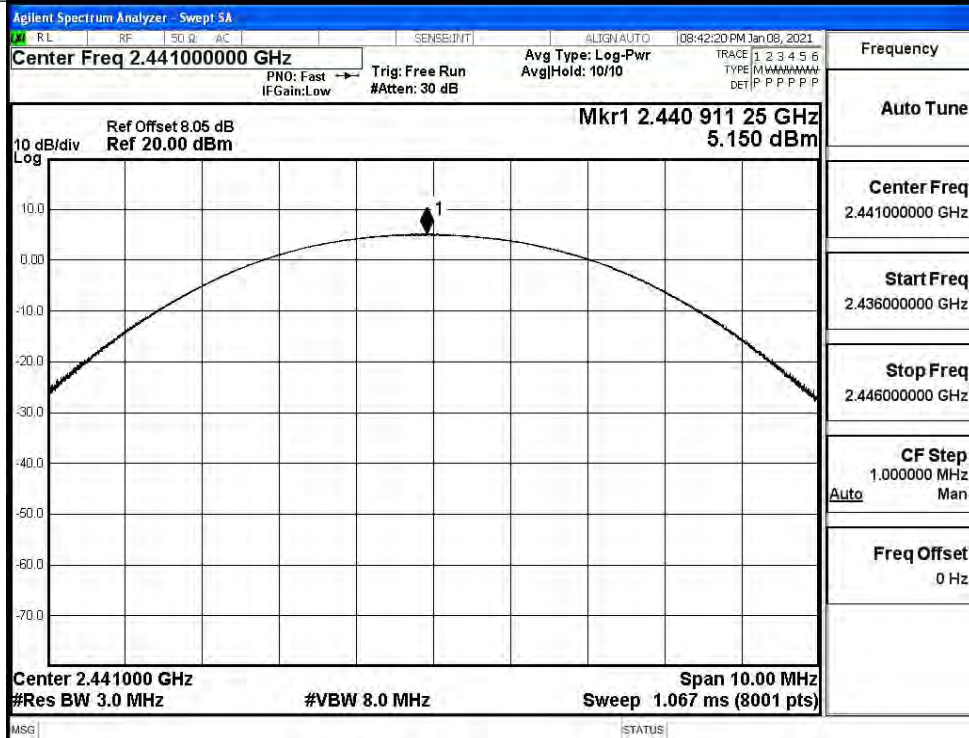
 π /4DQPSK/LCH

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

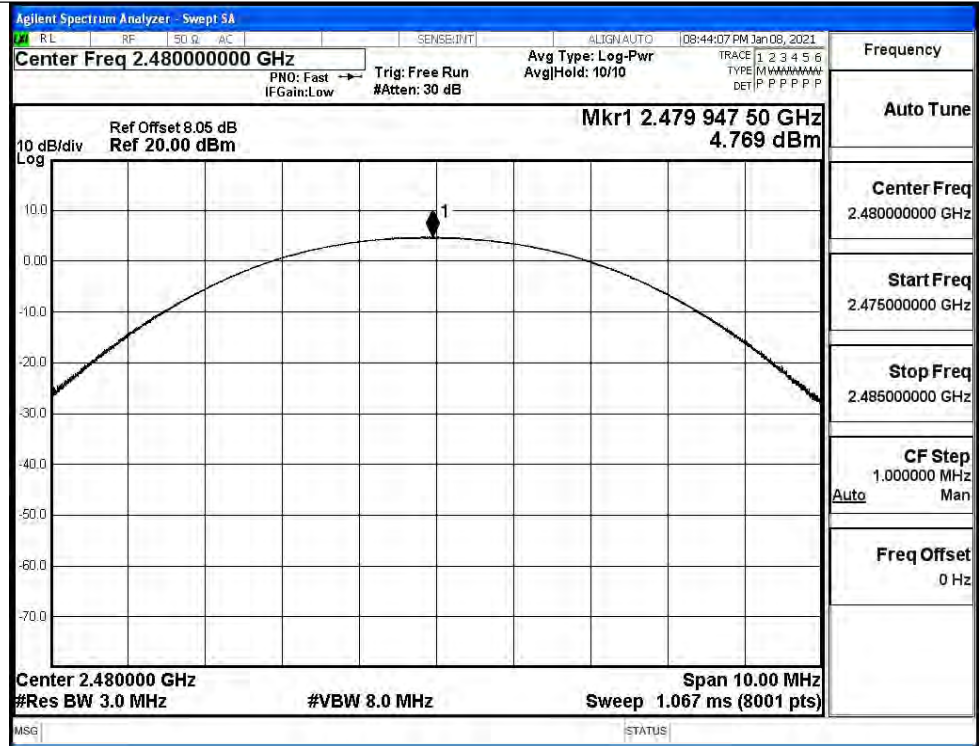
8DPSK/LCH



8DPSK/MCH



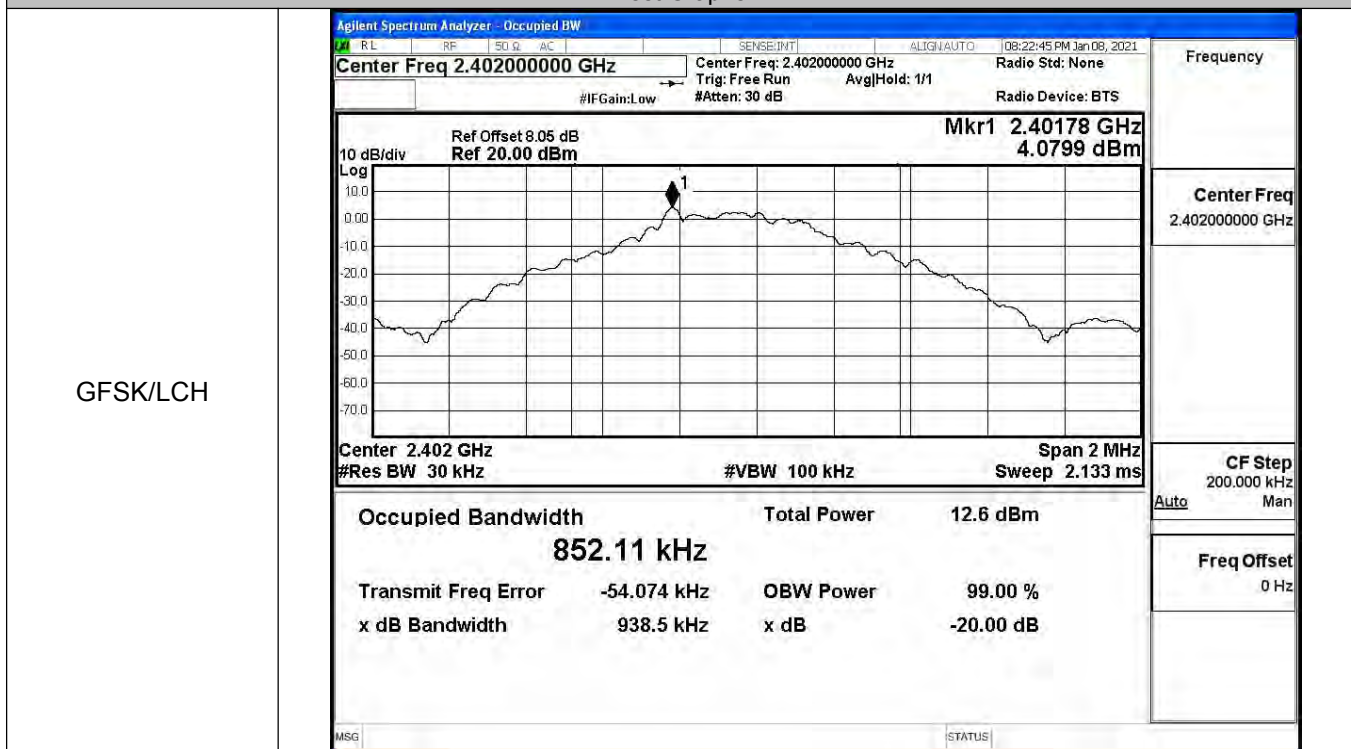
8DPSK/HCH



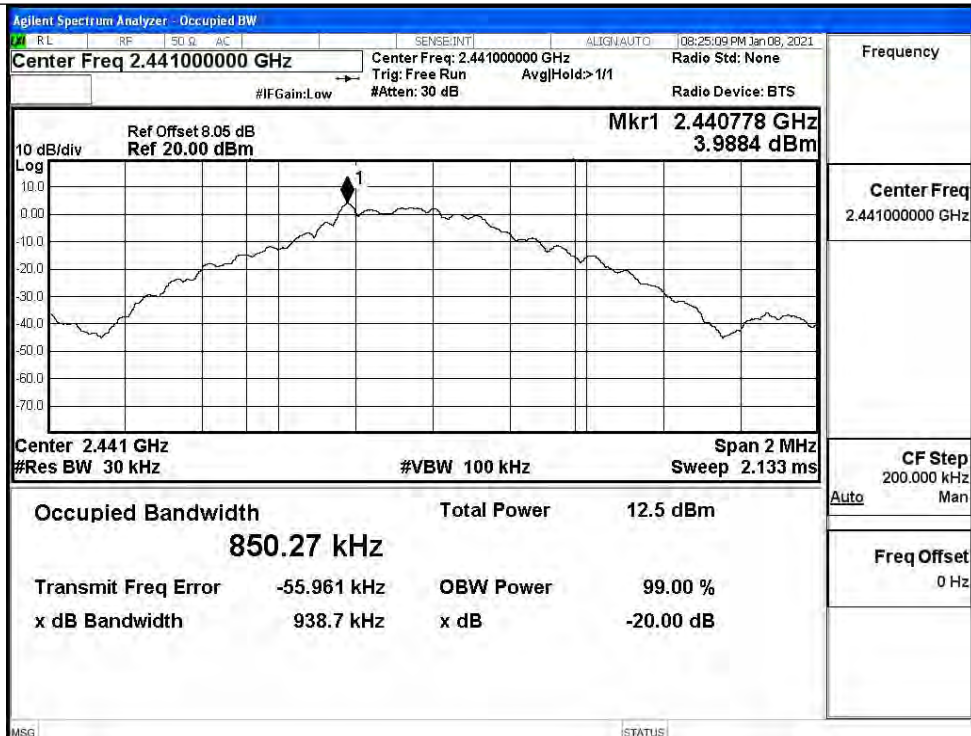
A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9385	Not Specified	PASS
	MCH	0.9387	Not Specified	PASS
	HCH	0.9405	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.273	Not Specified	PASS
	MCH	1.271	Not Specified	PASS
	HCH	1.271	Not Specified	PASS
8DPSK	LCH	1.252	Not Specified	PASS
	MCH	1.251	Not Specified	PASS
	HCH	1.250	Not Specified	PASS

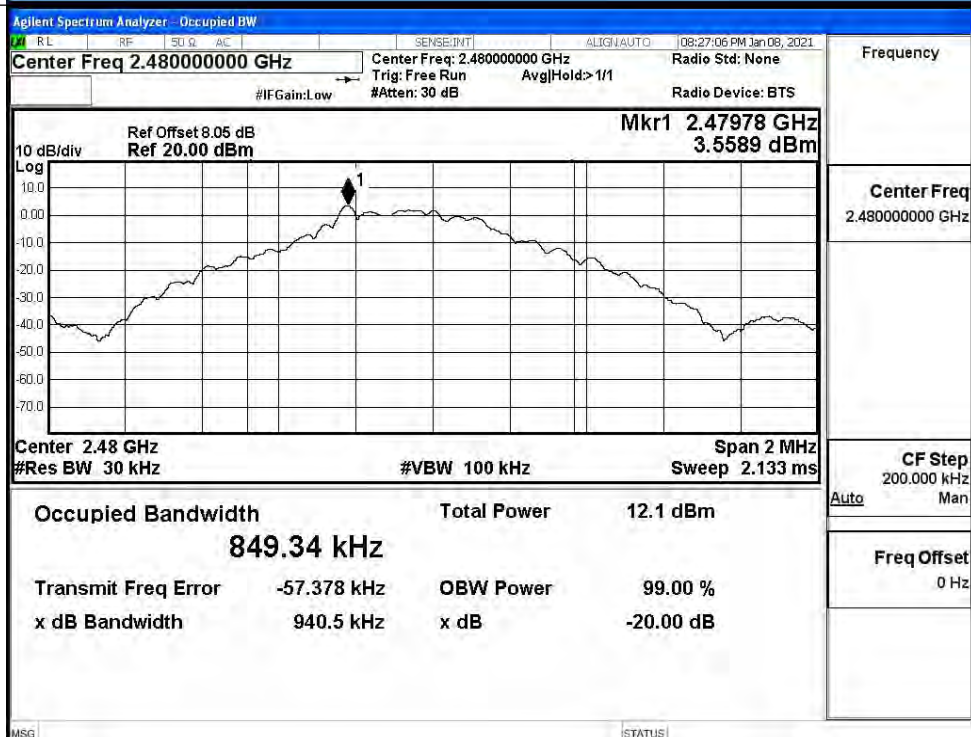
Test Graphs

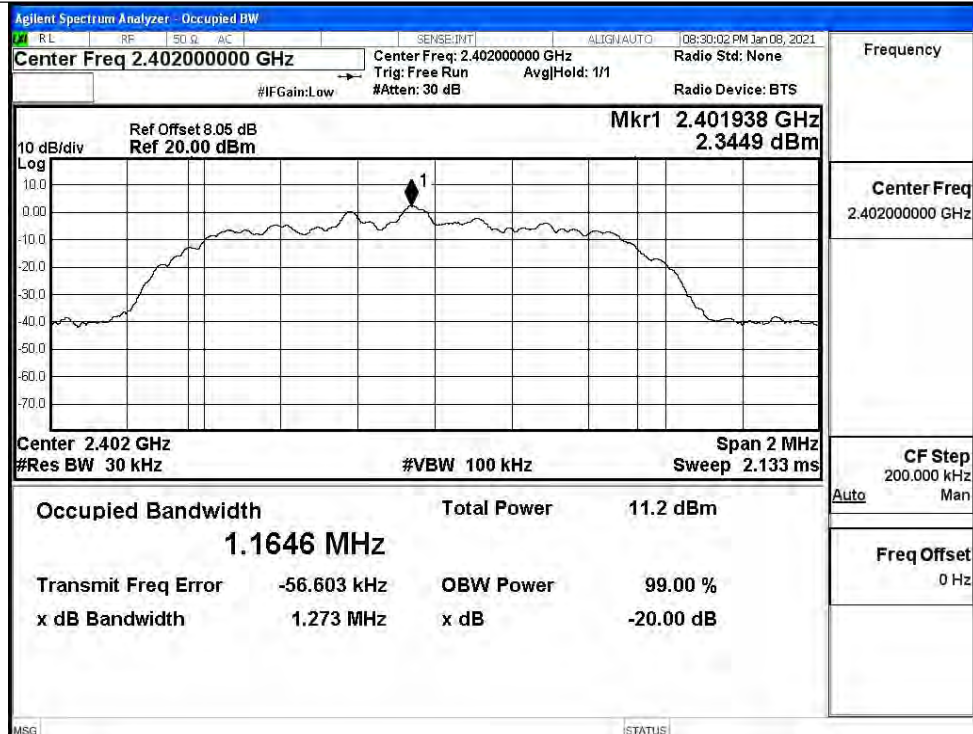
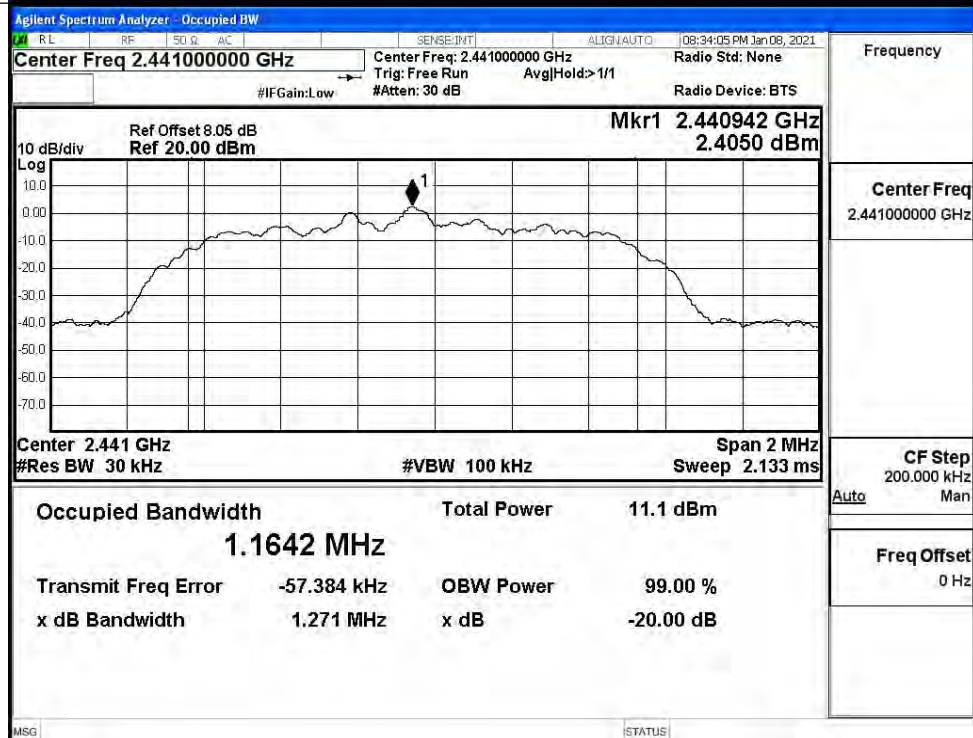


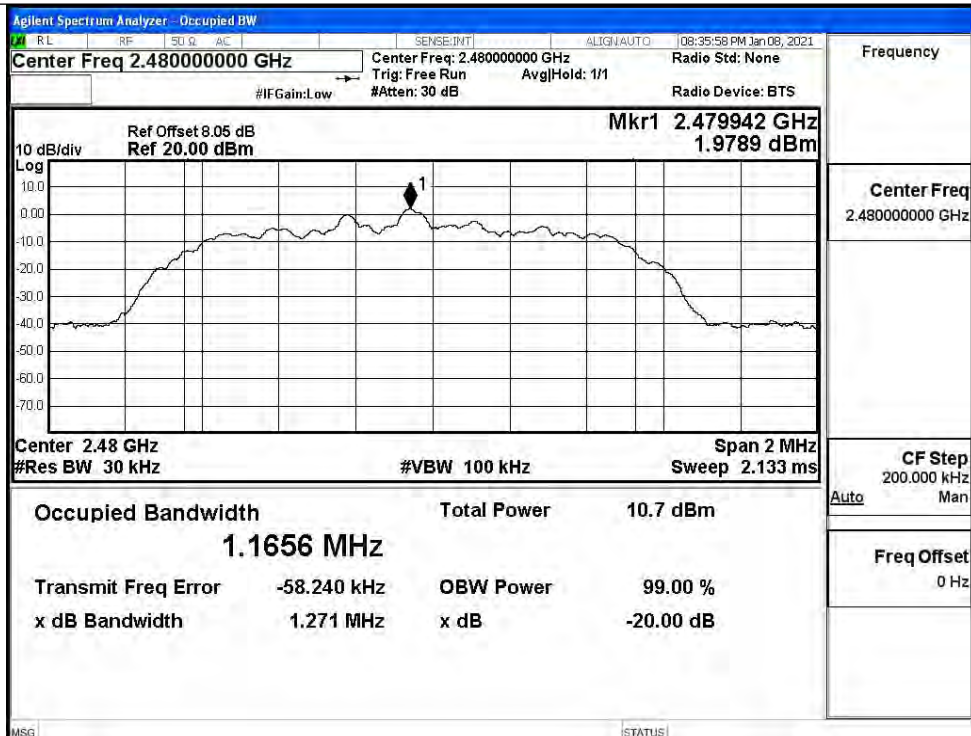
GFSK/MCH



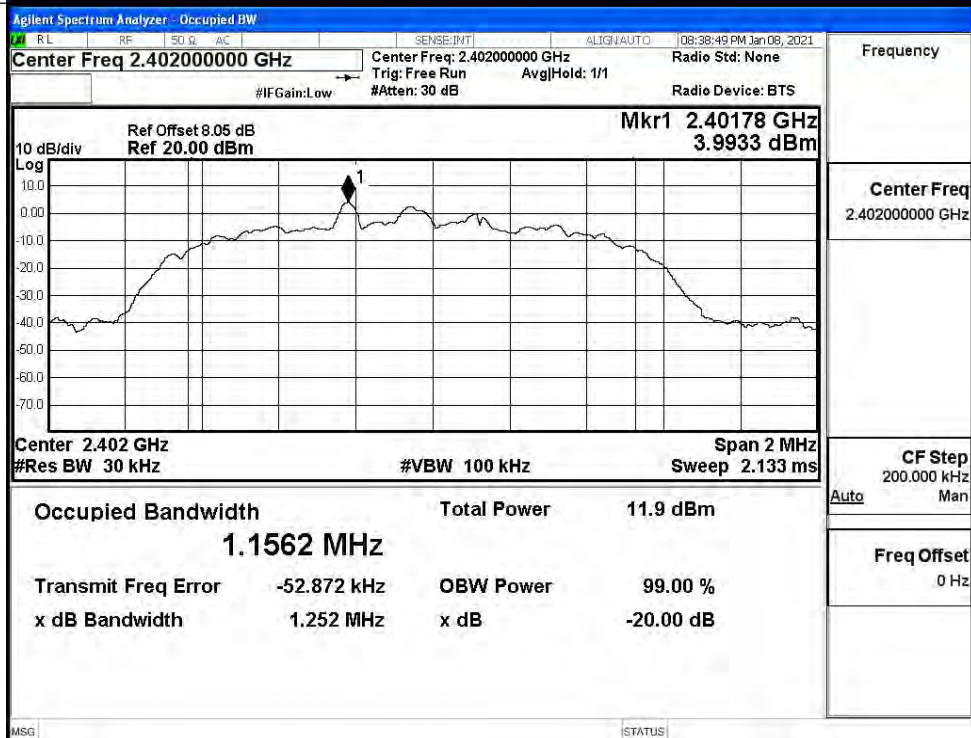
GFSK/HCH



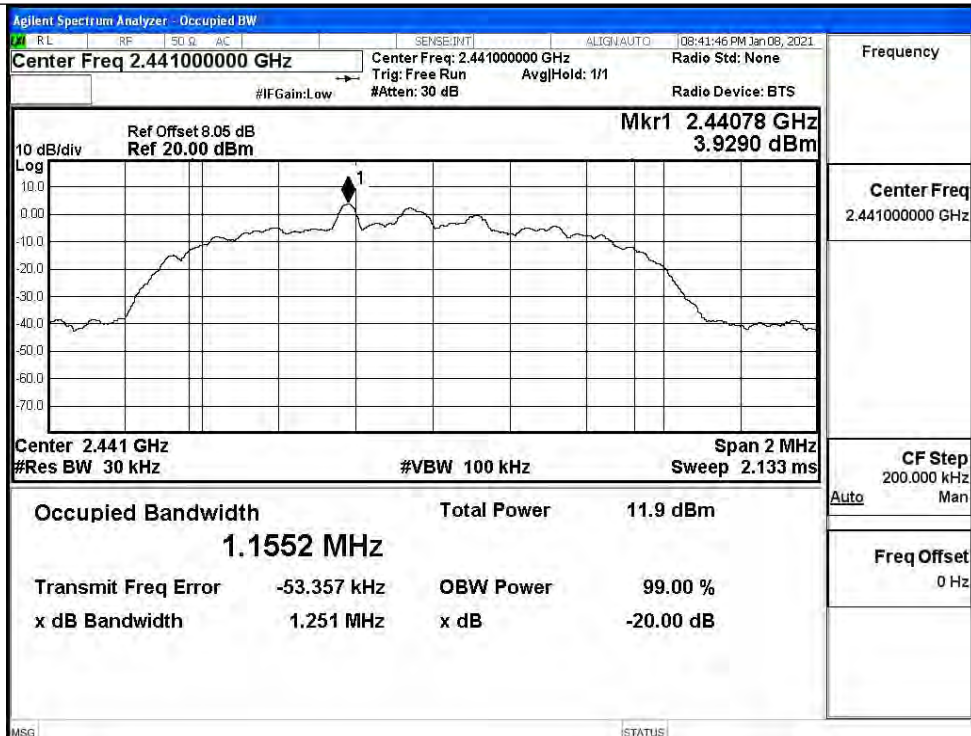
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

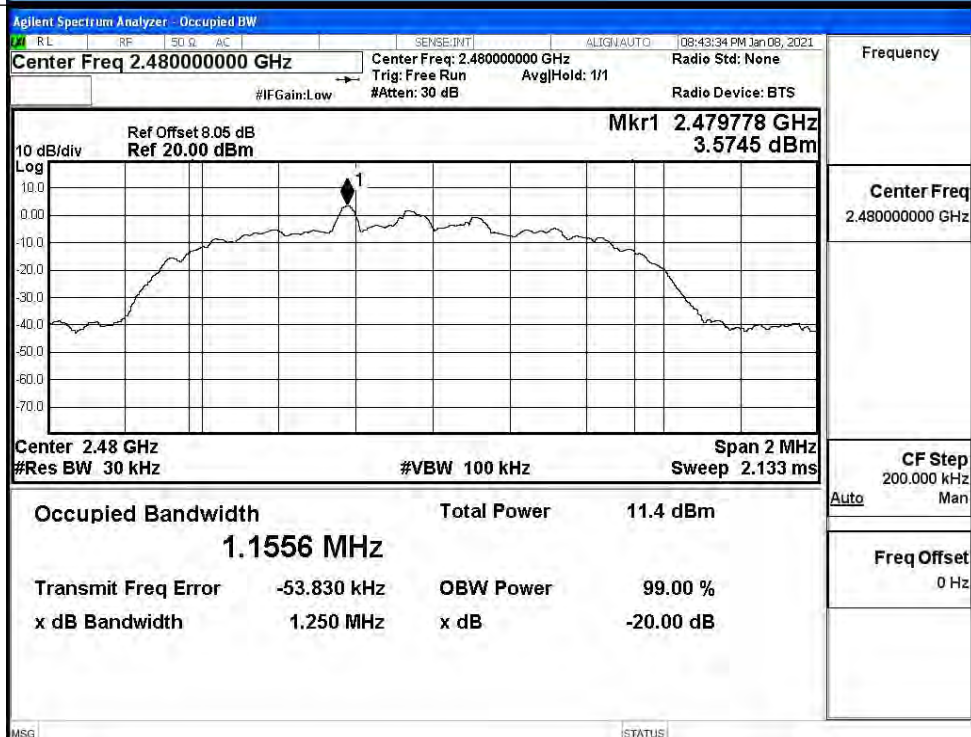
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

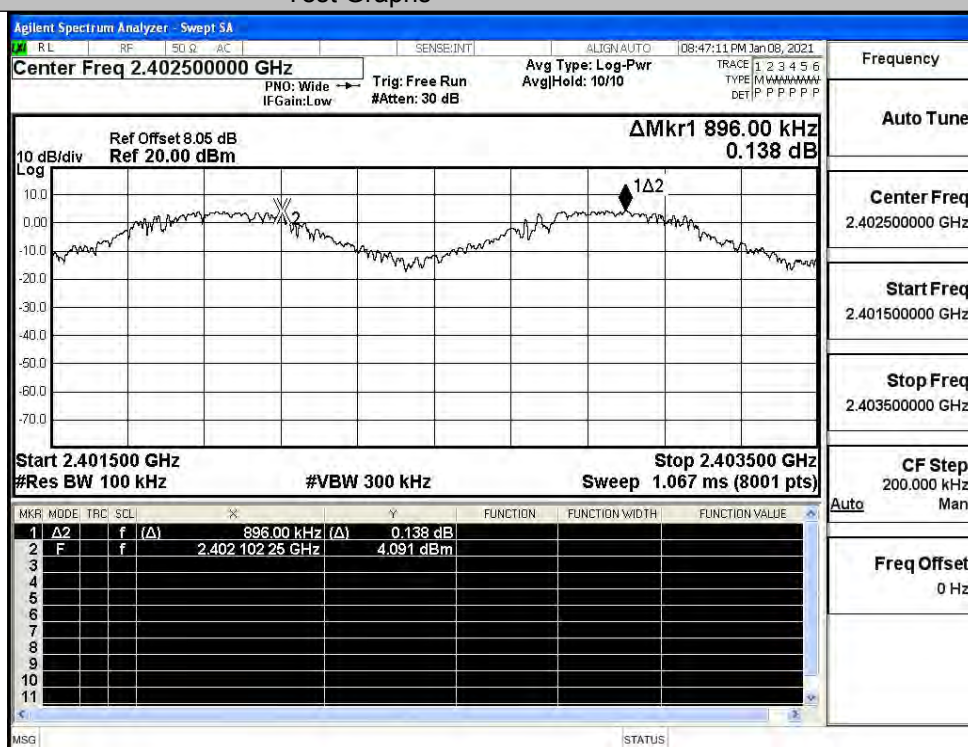


A.3 Carrier Frequency Separation

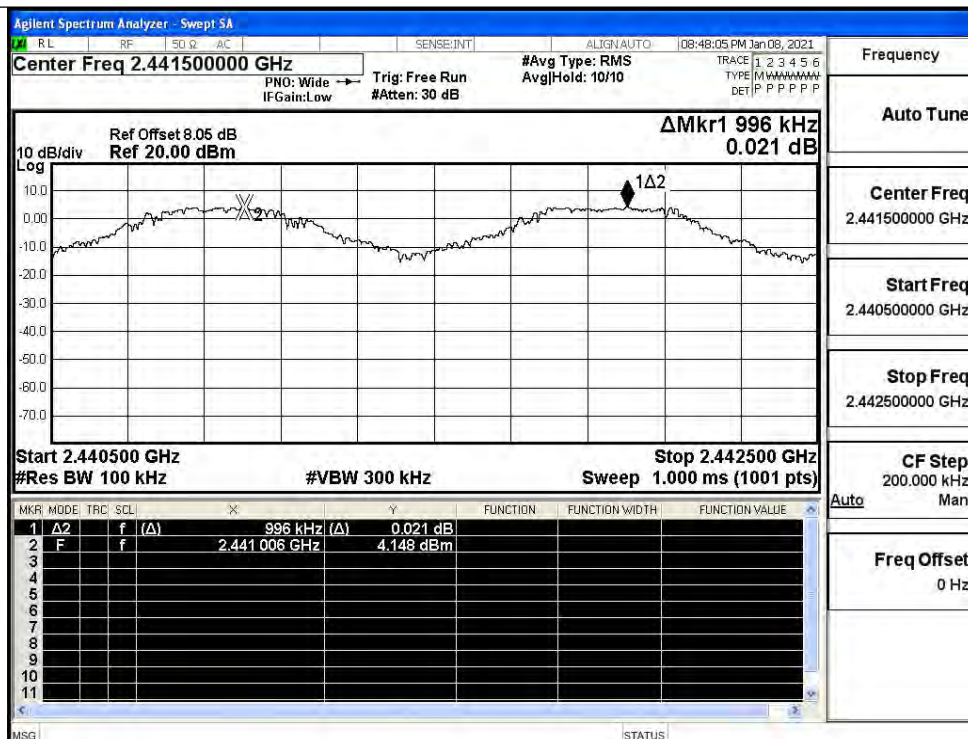
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.896	0.626	PASS
	MCH	0.996	0.626	PASS
	HCH	1.026	0.627	PASS
$\pi/4$ DQPSK	LCH	0.988	0.849	PASS
	MCH	1.222	0.847	PASS
	HCH	0.994	0.847	PASS
8DPSK	LCH	0.890	0.835	PASS
	MCH	1.232	0.834	PASS
	HCH	1.174	0.834	PASS

Test Graphs

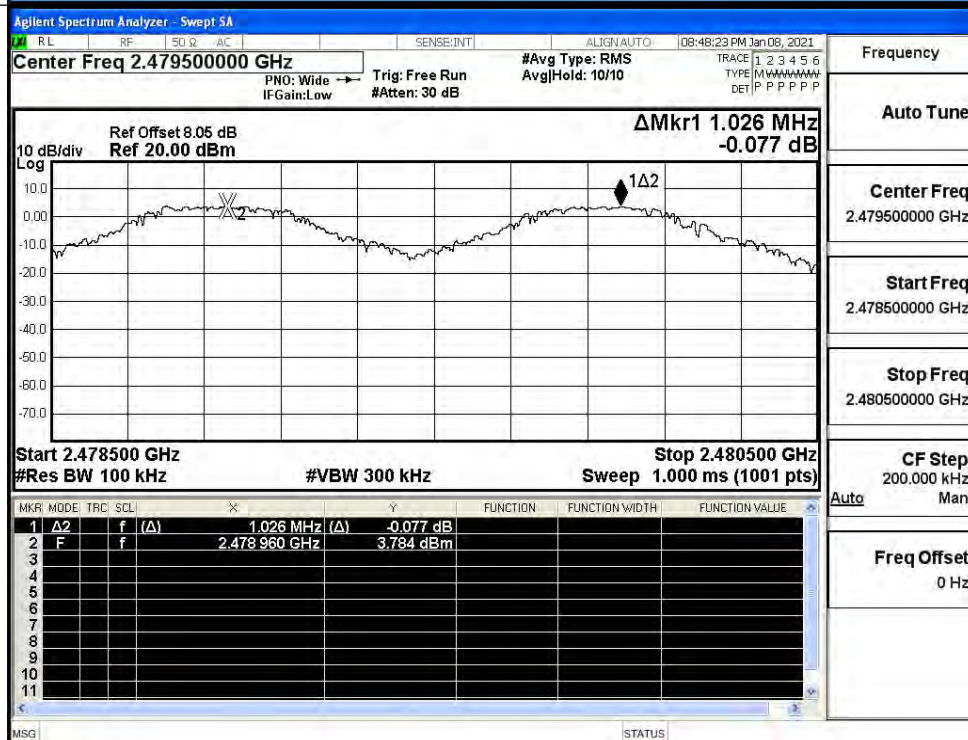
GFSK/LCH

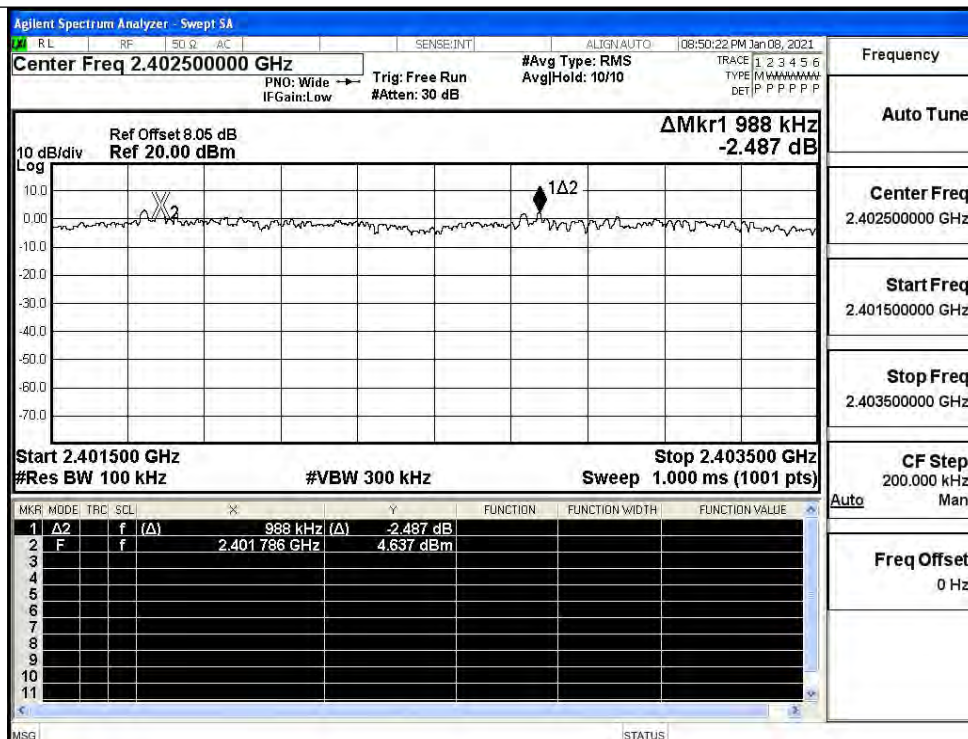
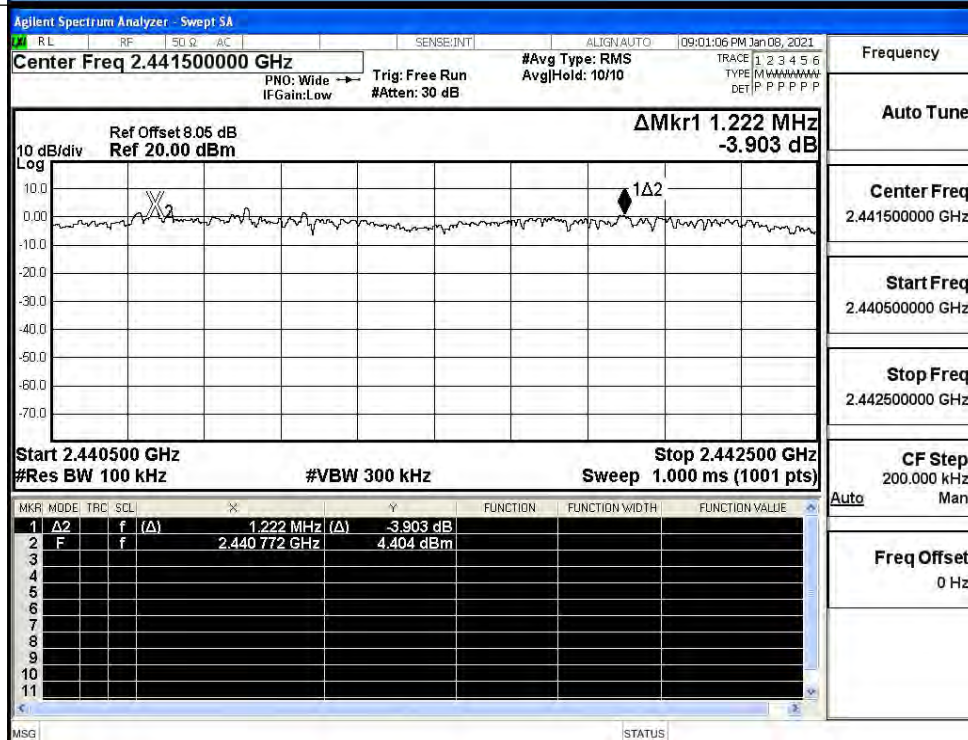


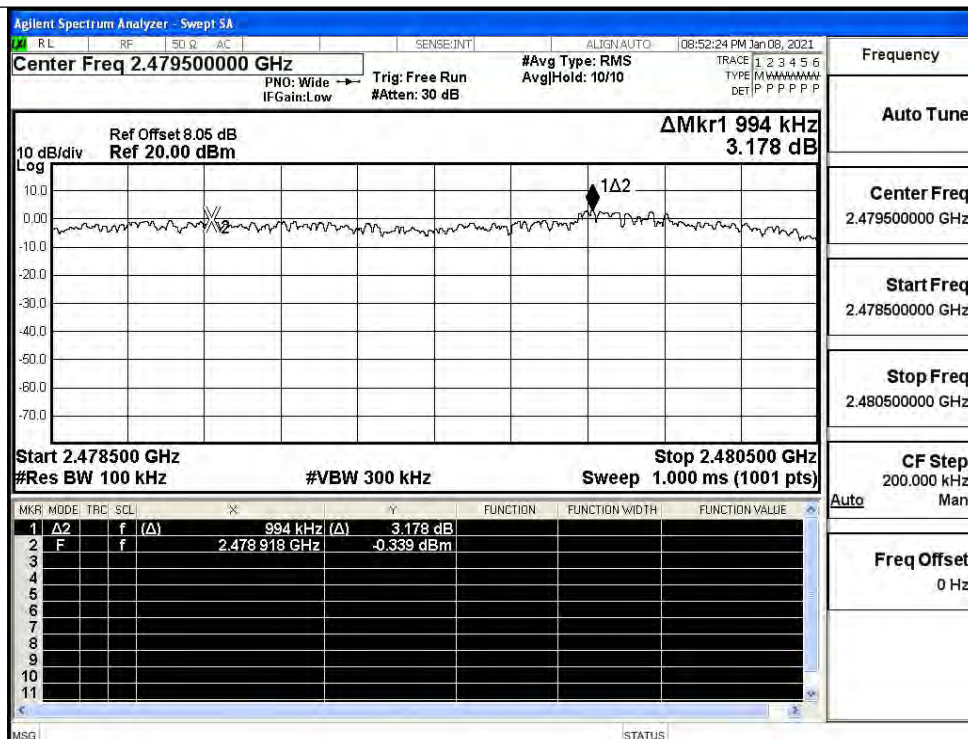
GFSK/MCH



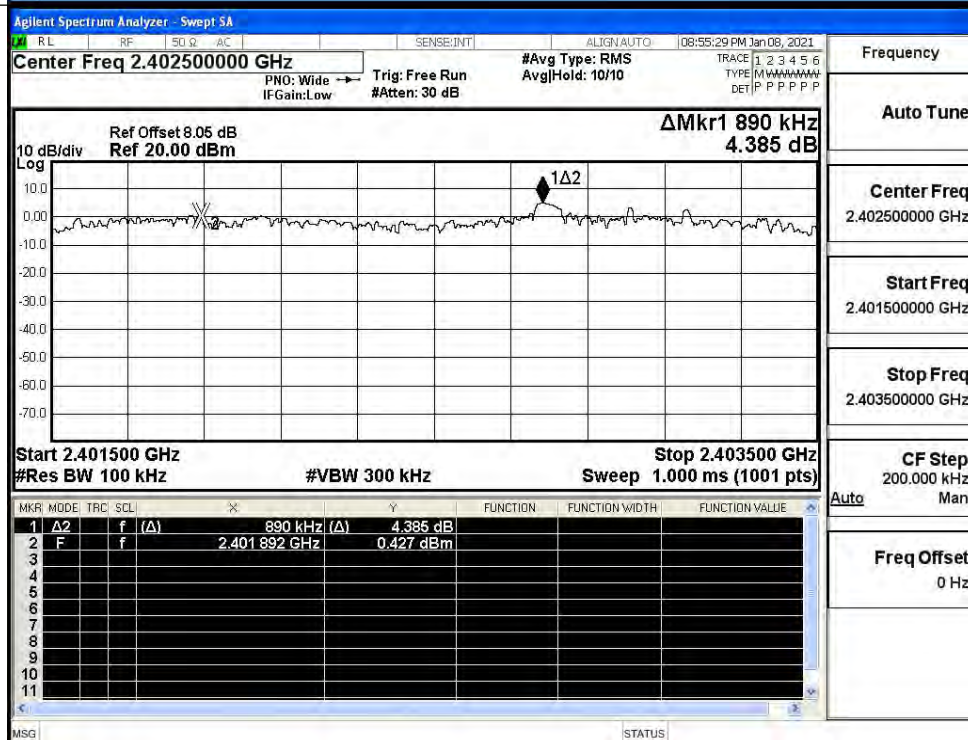
GFSK/HCH



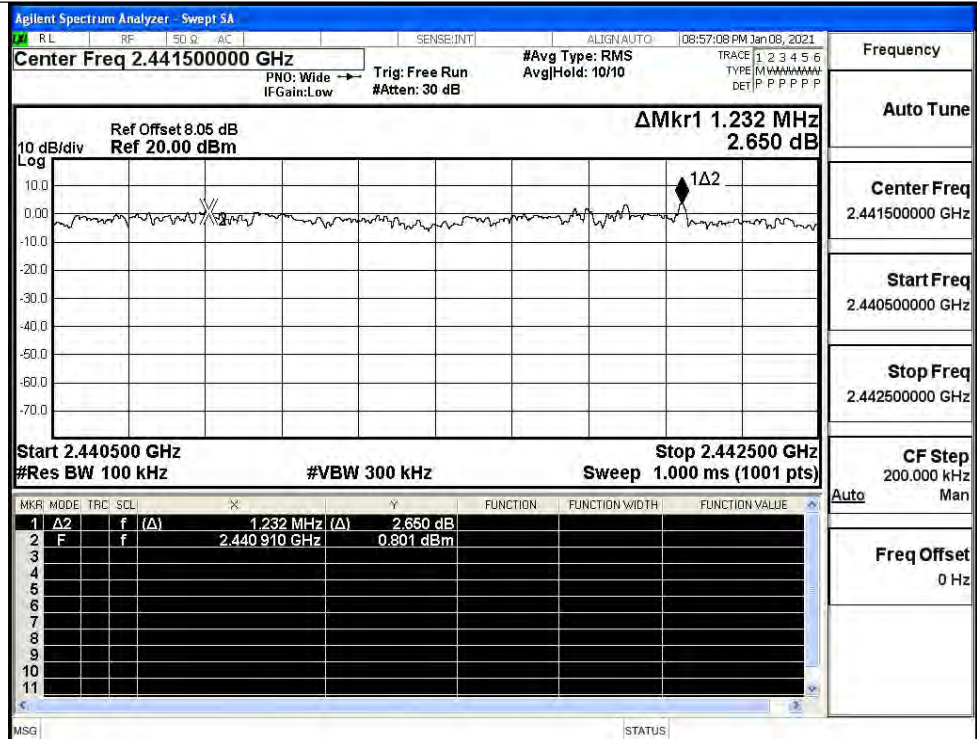
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

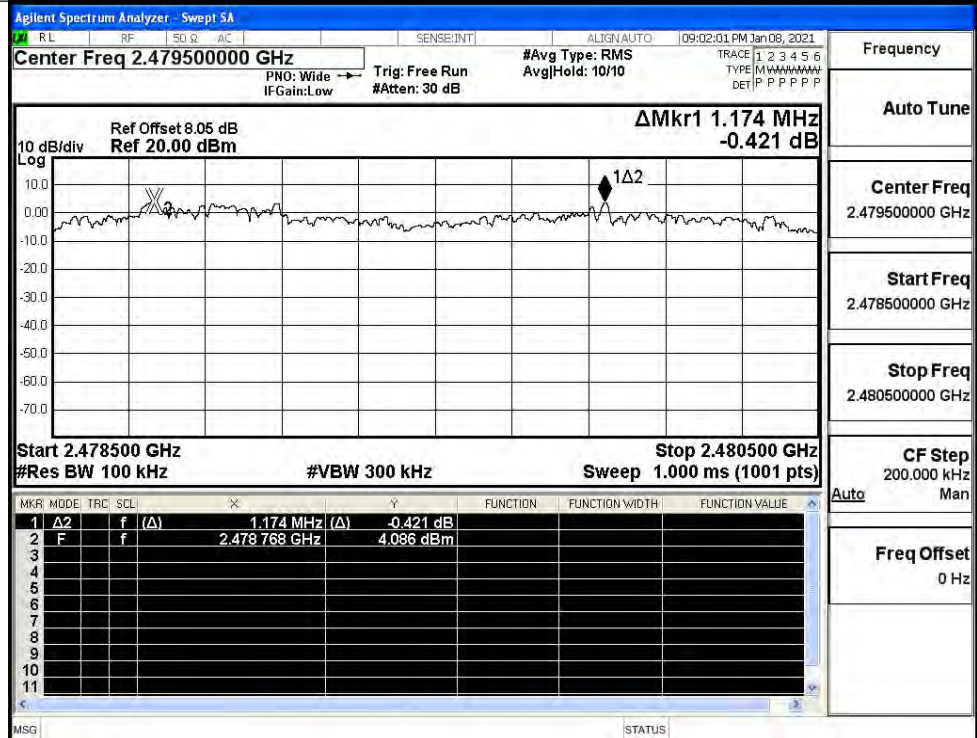
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

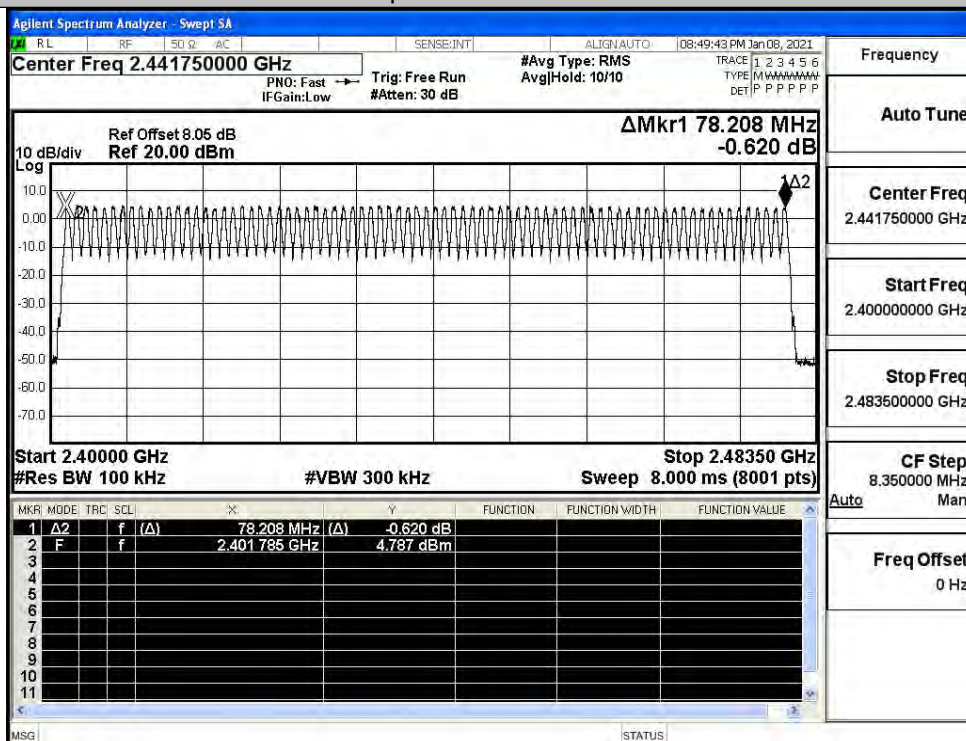
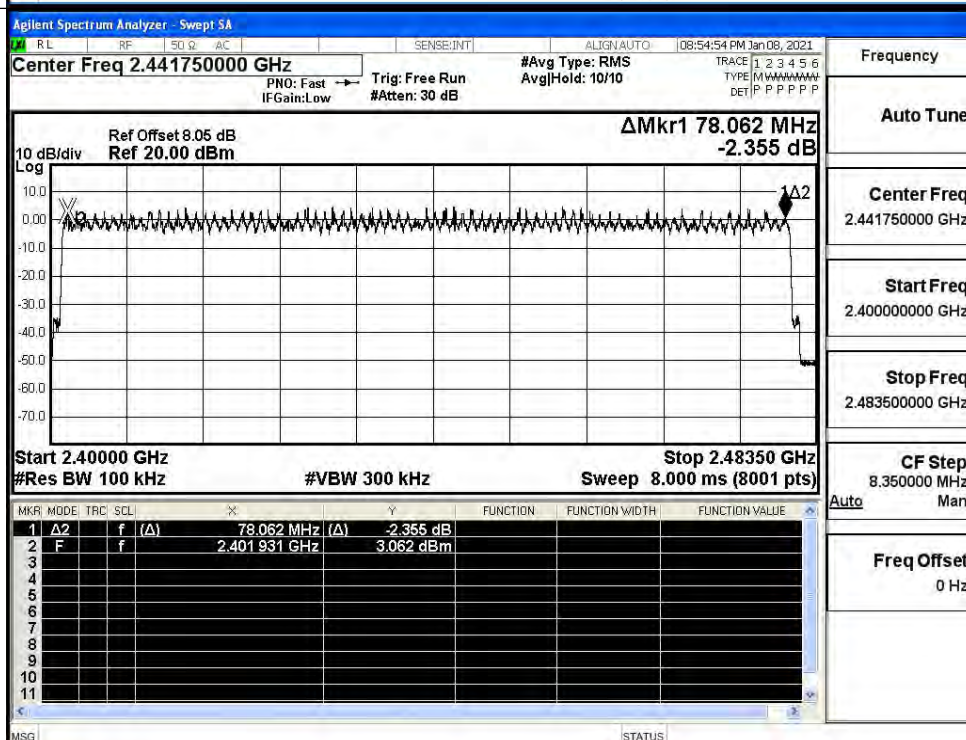


A.4 Hopping Channel Number

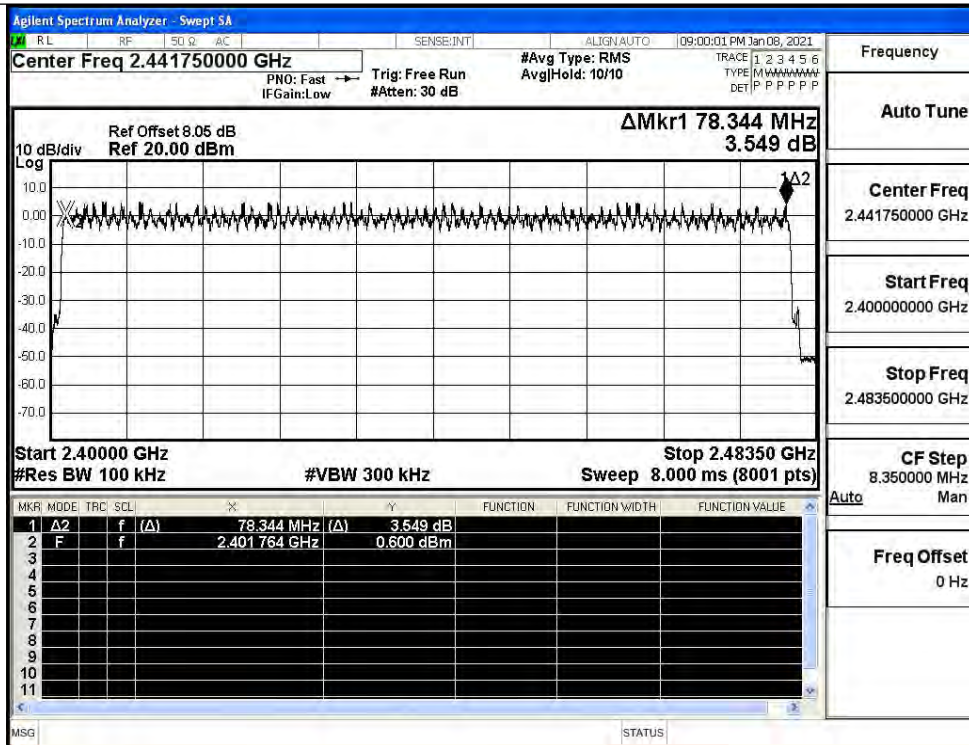
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	≥ 15	PASS
$\pi/4$ DQPSK	Hop	79	≥ 15	PASS
8DPSK	Hop	79	≥ 15	PASS

Test Graphs

GFSK/Hop

 $\pi/4$ DQPSK/Hop

8DPSK/Hop

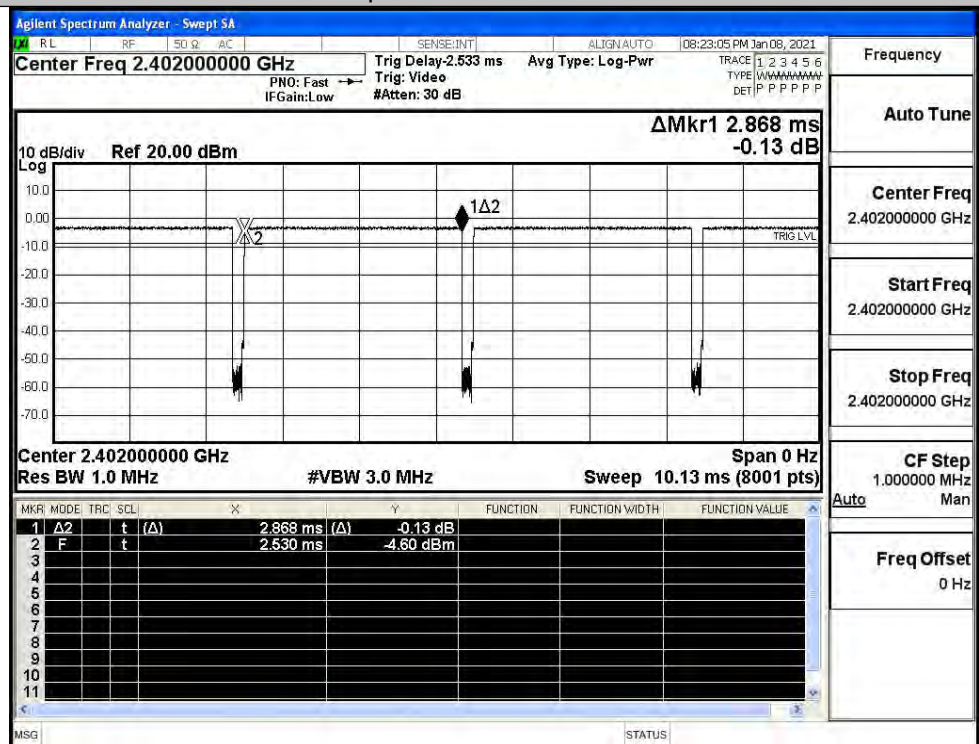


A.5 Dwell Time

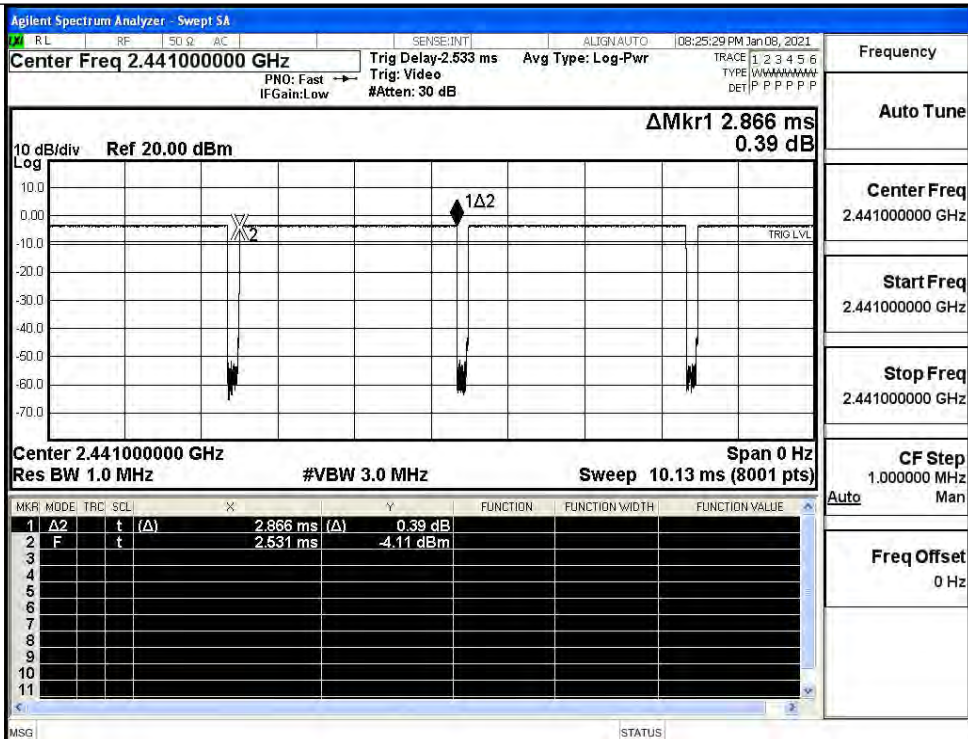
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.87	106.7	0.306	0.4	PASS
	DH5	MCH	2.87	106.7	0.306	0.4	PASS
	DH5	HCH	2.87	106.7	0.306	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.87	106.7	0.307	0.4	PASS
	2DH5	MCH	2.87	106.7	0.307	0.4	PASS
	2DH5	HCH	2.87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

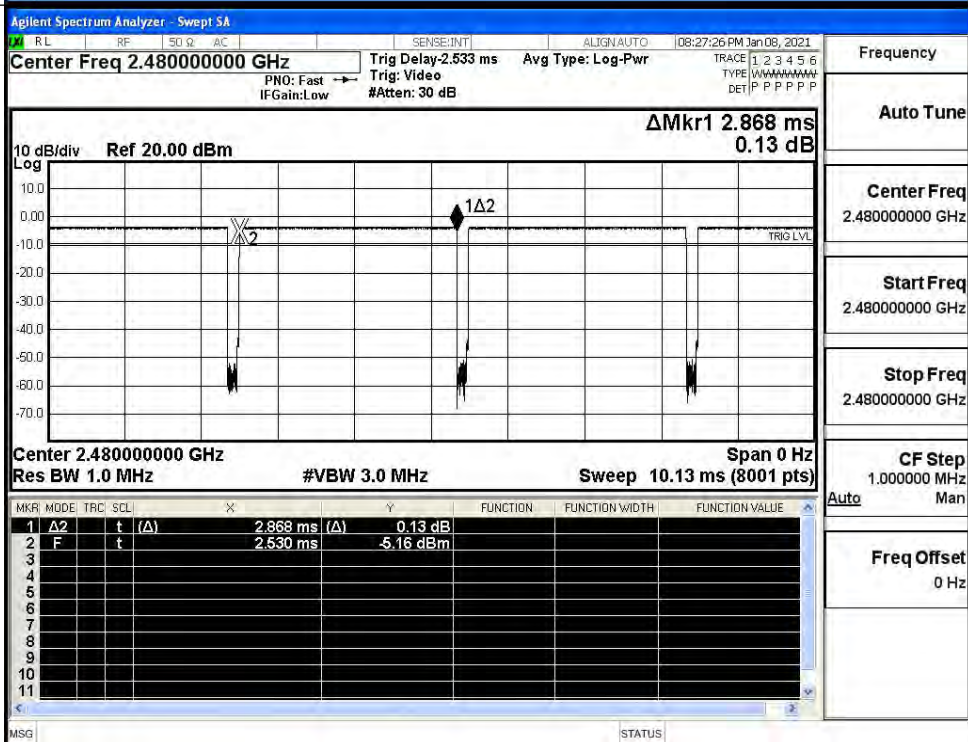
GFSK_DH5/LCH



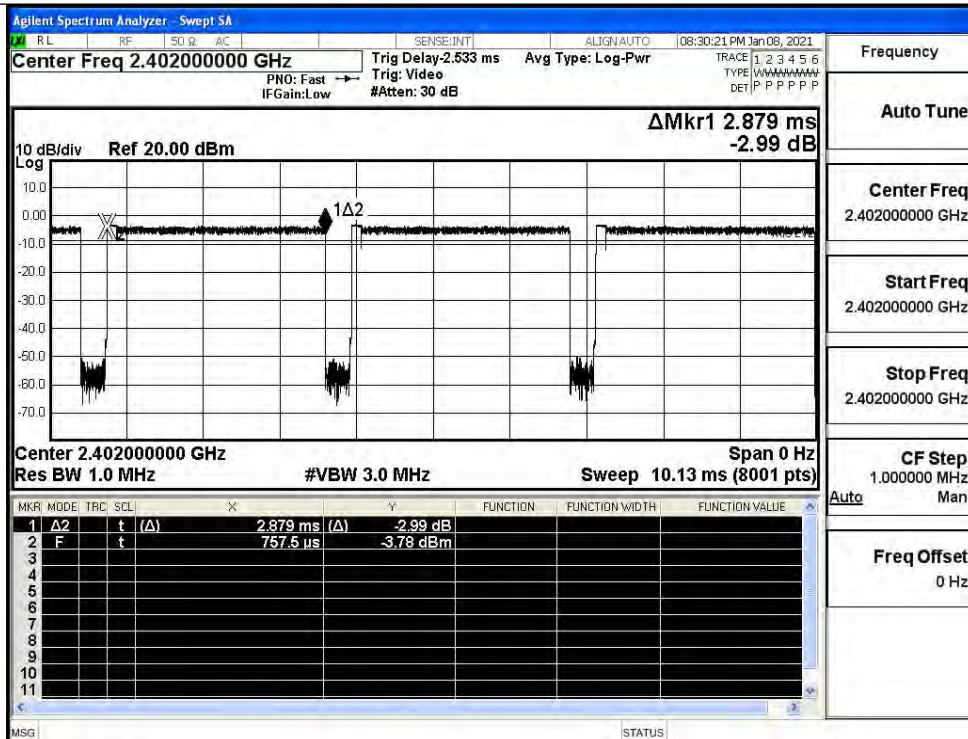
GFSK_DH5/MCH



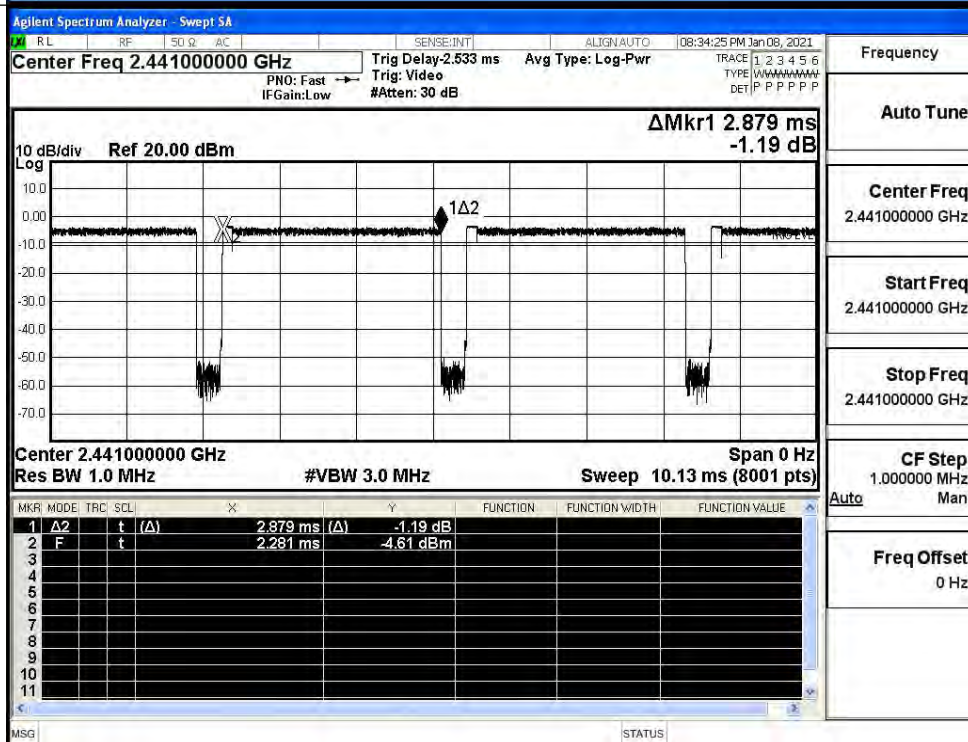
GFSK_DH5/HCH



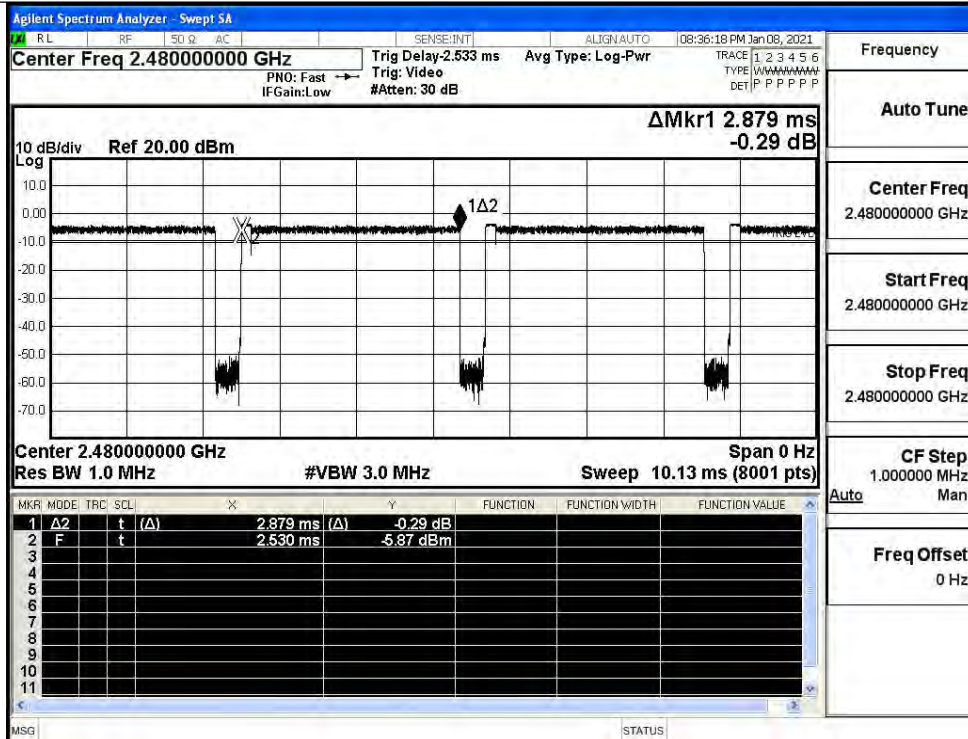
$\pi/4$ DQPSK
_2DH5/LCH



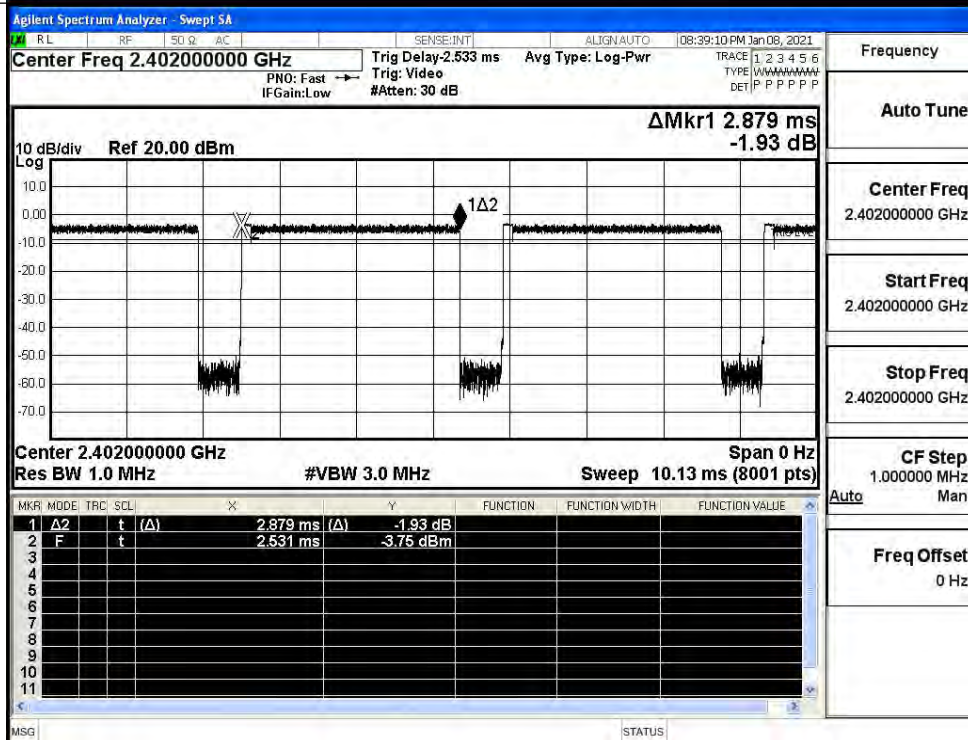
$\pi/4$ DQPSK
_2DH5/MCH



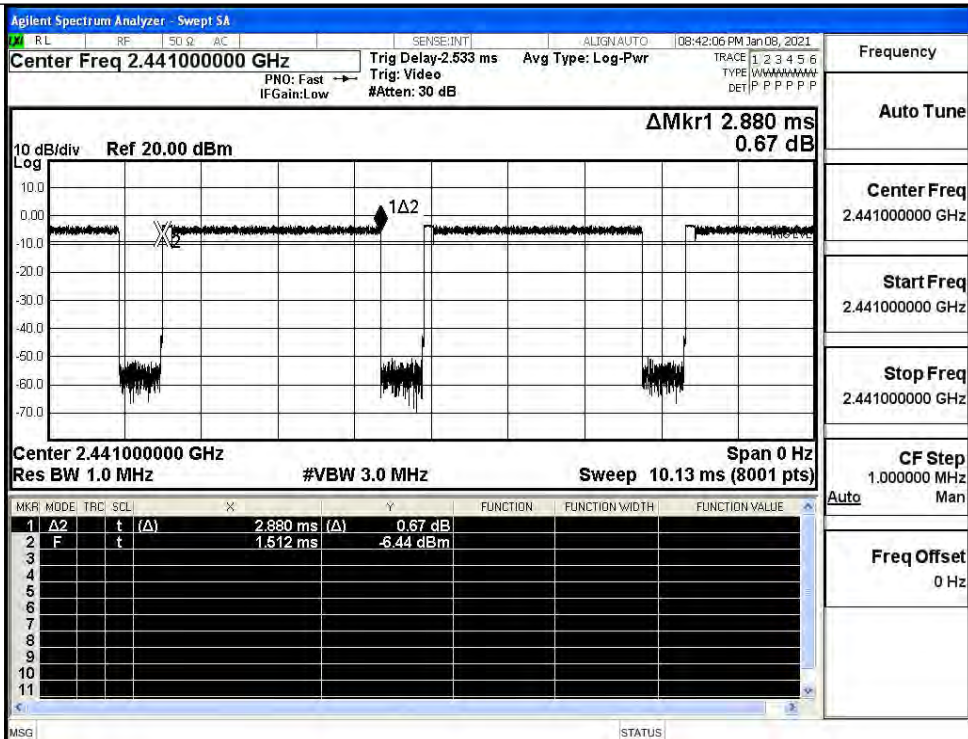
$\pi/4$ DQPSK
_2DH5/HCH



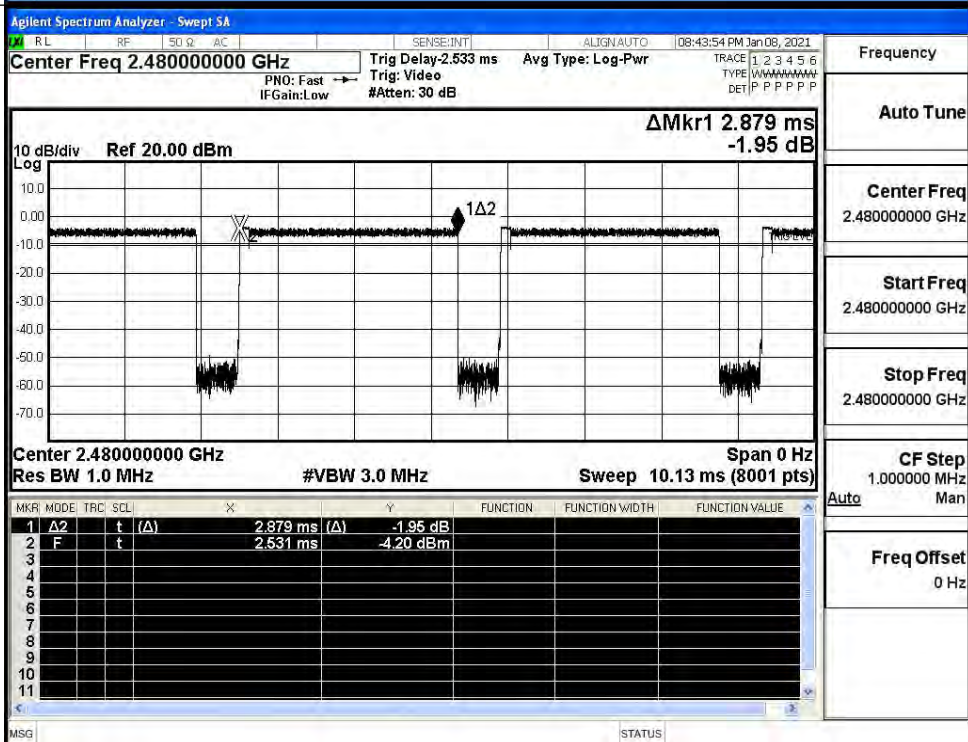
8DPSK _3DH5/LCH



8DPSK_3DH5/MCH

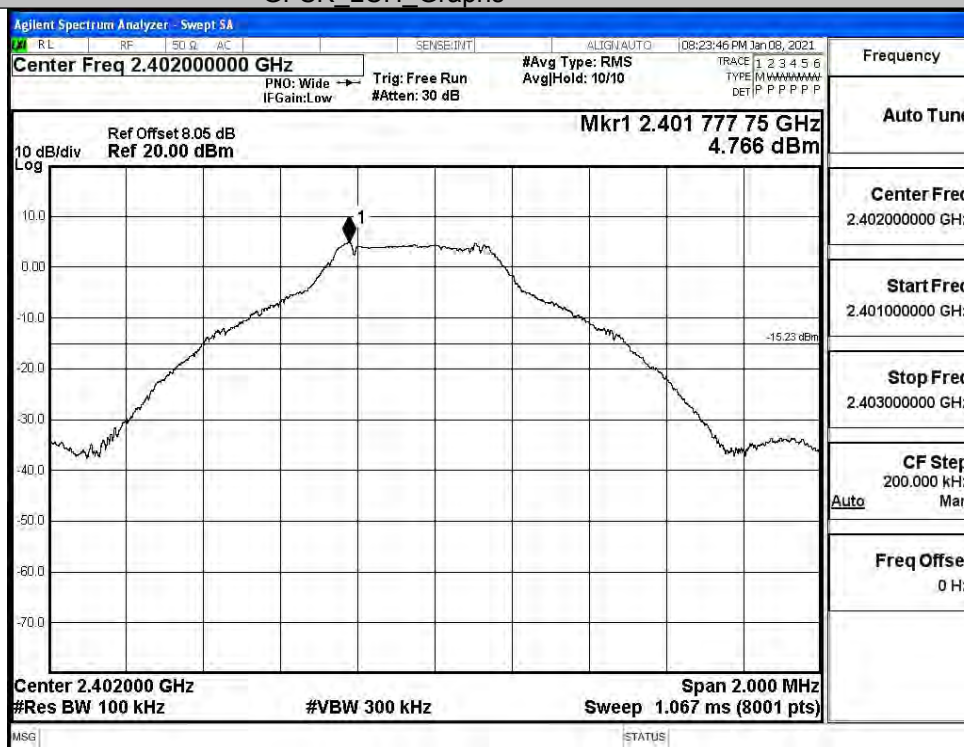


8DPSK_3DH5/HCH

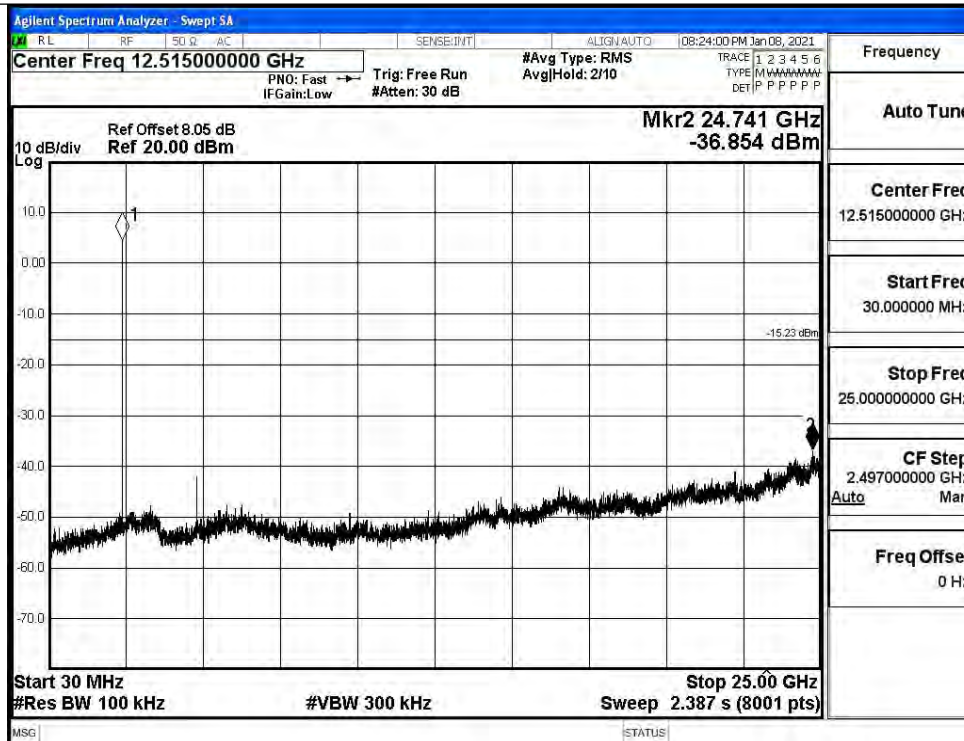


Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	4.766	-36.854	-15.234	PASS
	MCH	4.747	-37.482	-15.253	PASS
	HCH	4.328	-37.248	-15.672	PASS
$\pi/4$ DQPSK	LCH	4.598	-36.757	-15.402	PASS
	MCH	4.526	-36.930	-15.474	PASS
	HCH	4.116	-37.306	-15.884	PASS
8DPSK	LCH	4.71	-37.495	-15.290	PASS
	MCH	4.714	-37.417	-15.286	PASS
	HCH	4.319	-37.988	-15.681	PASS

Pref

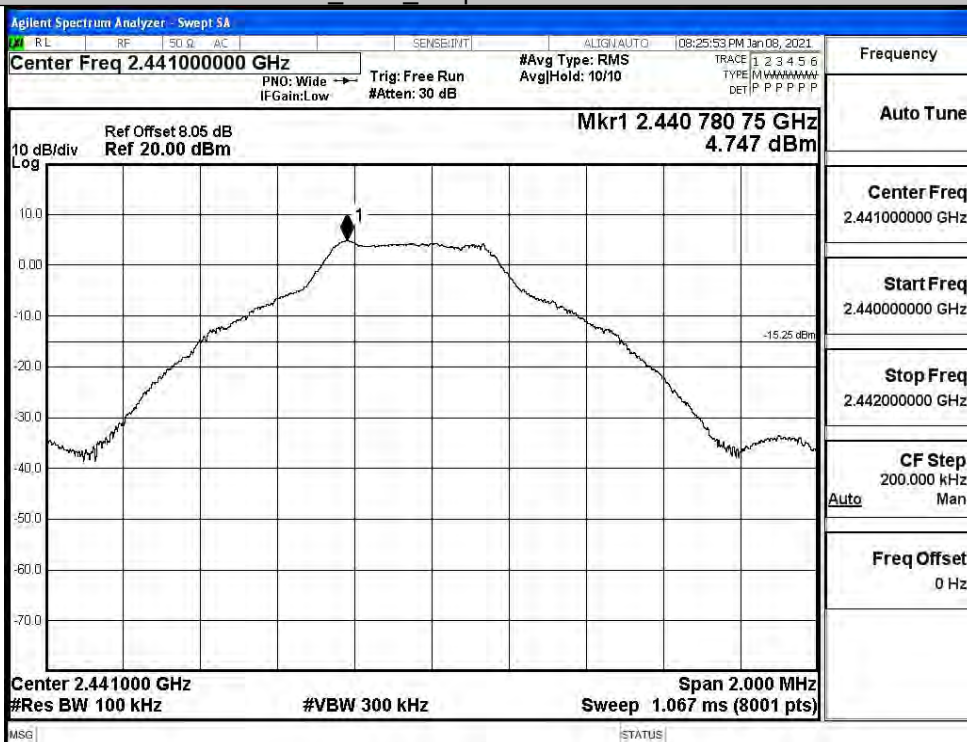


Puw

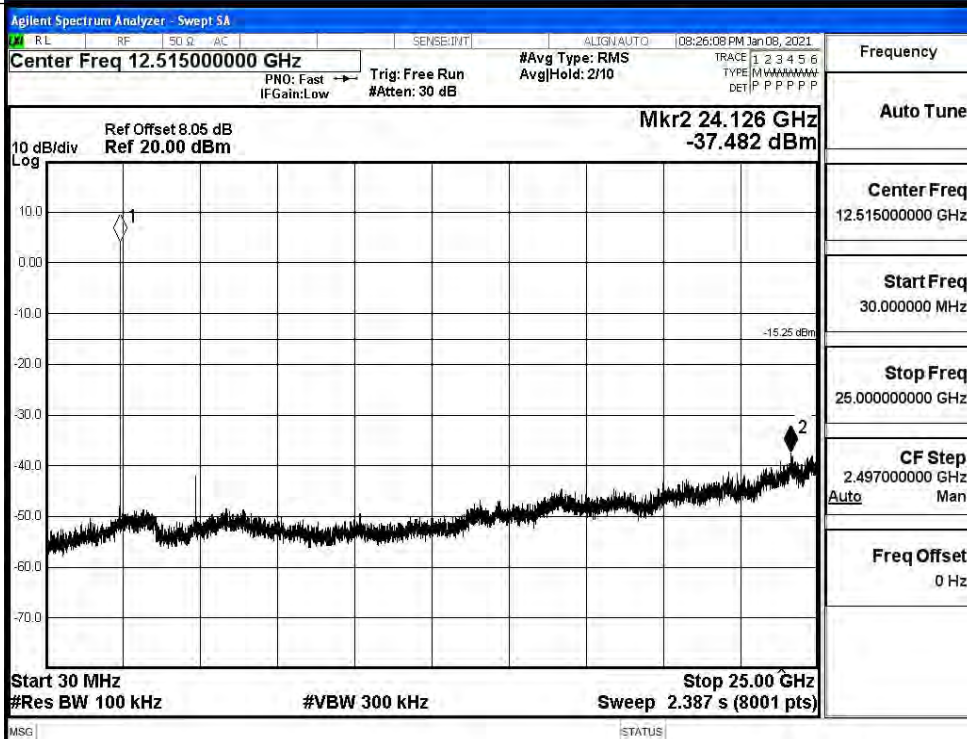


GFSK_MCH_Graphs

Pref

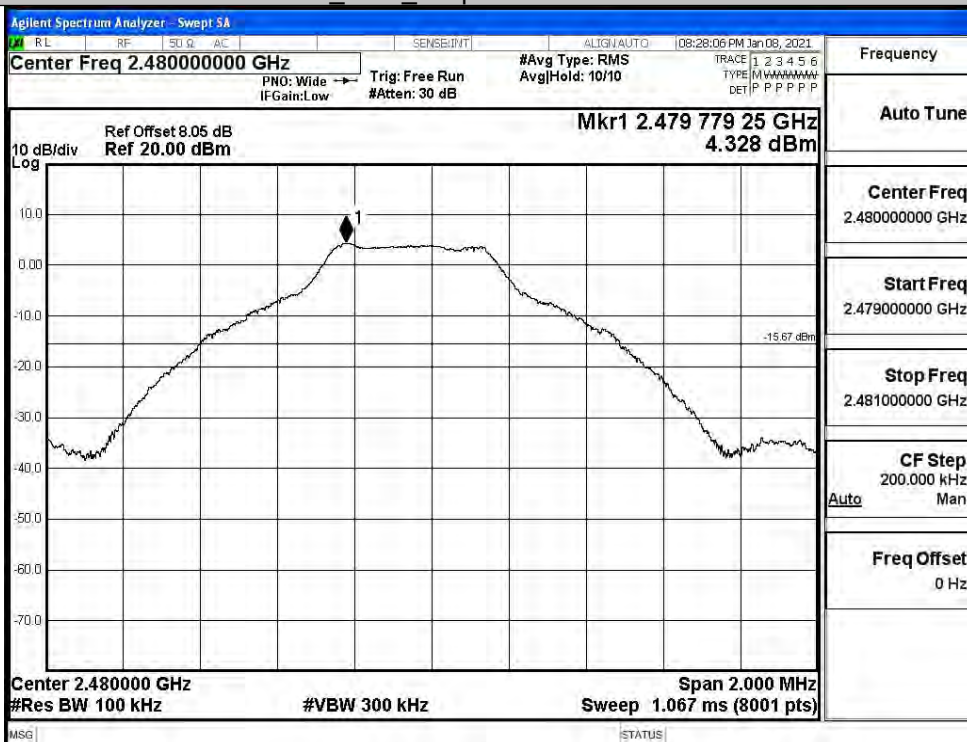


Puw

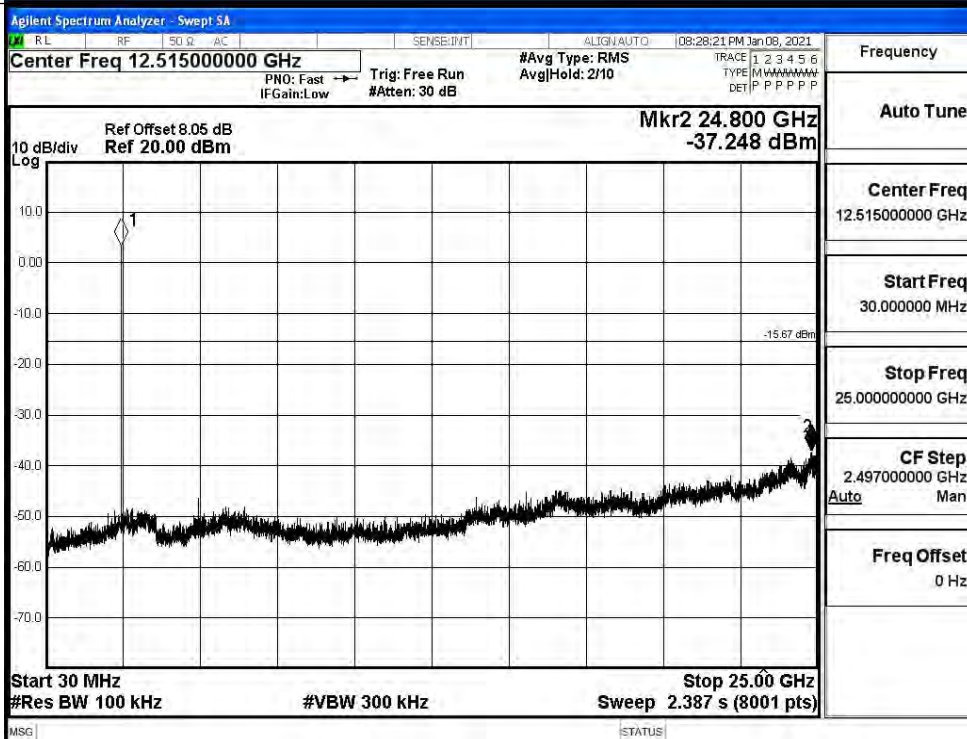


GFSK_HCH_Graphs

Pref

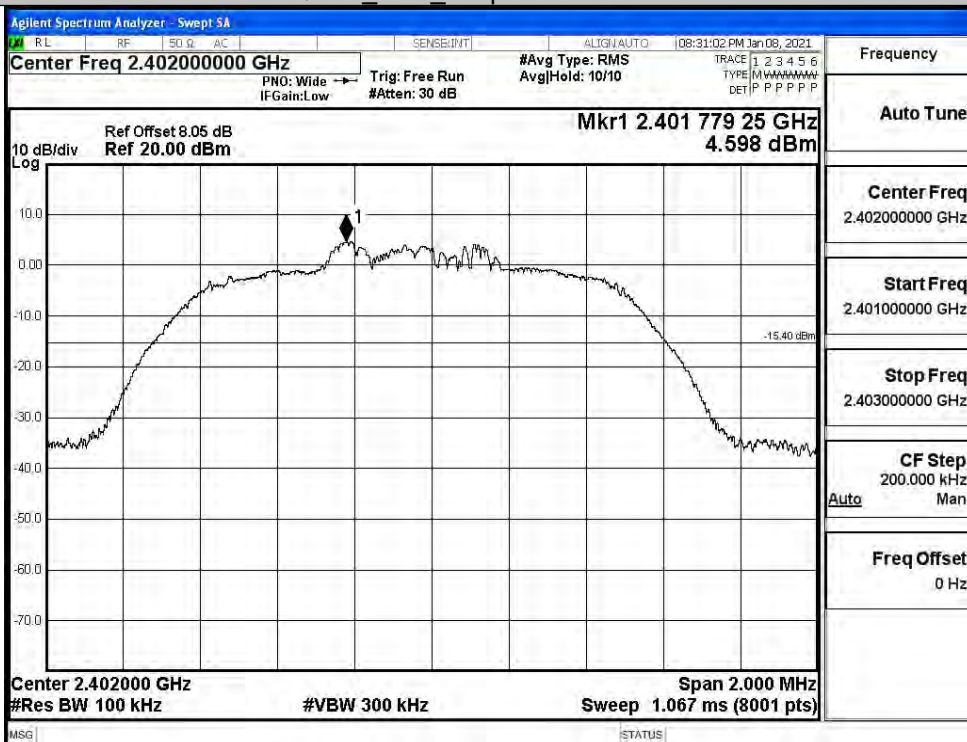


Puw

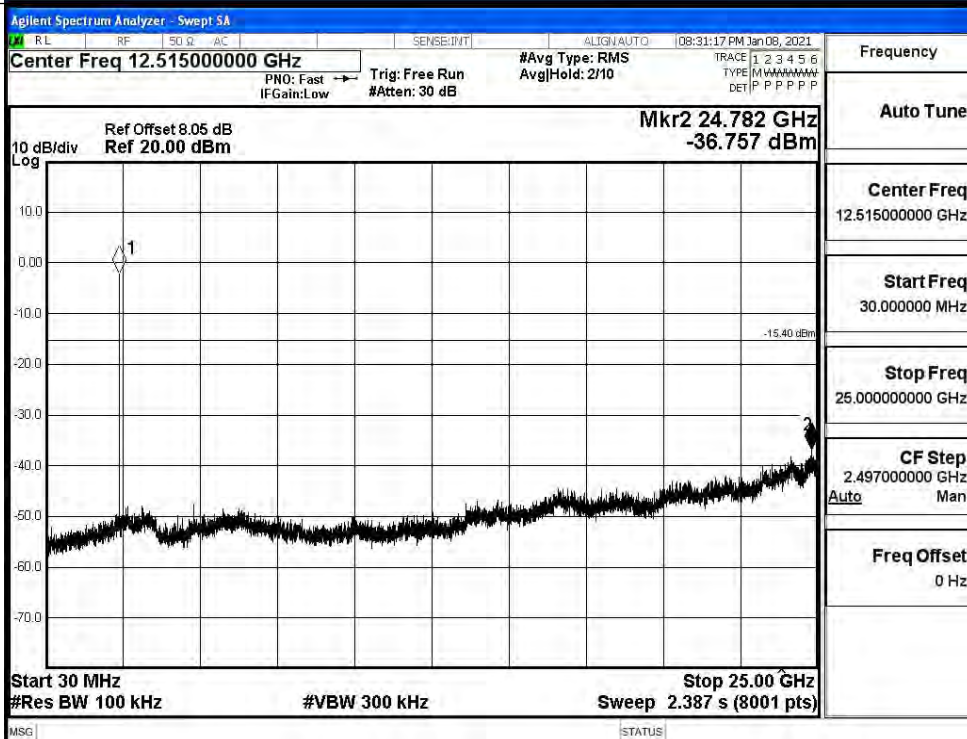


$\pi/4$ DQPSK_LCH_Graphs

Pref

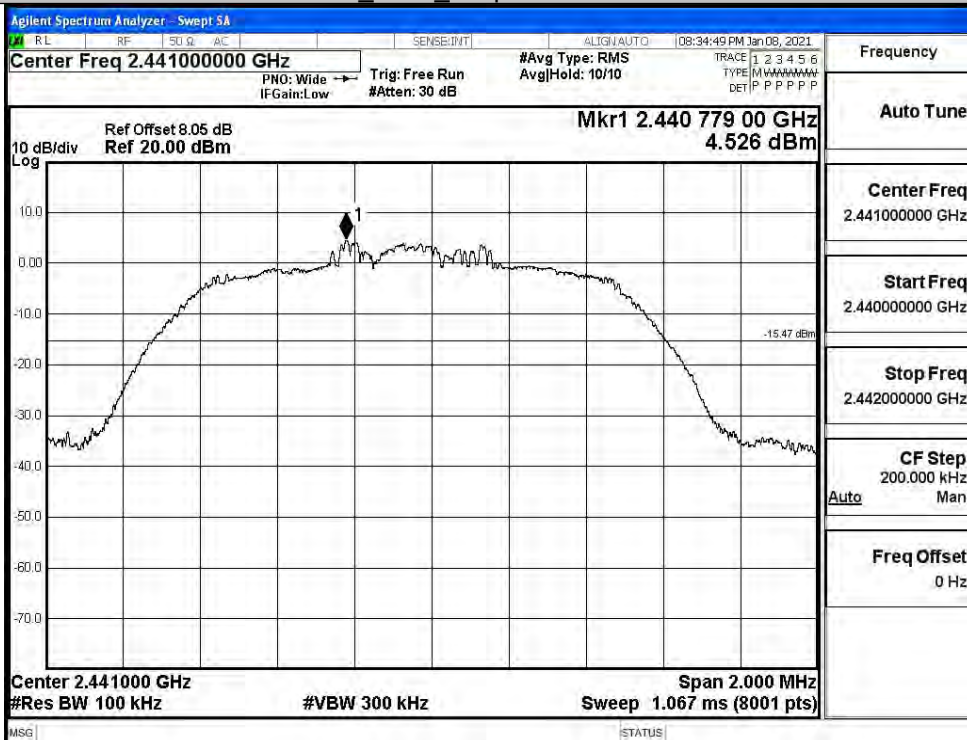


Puw

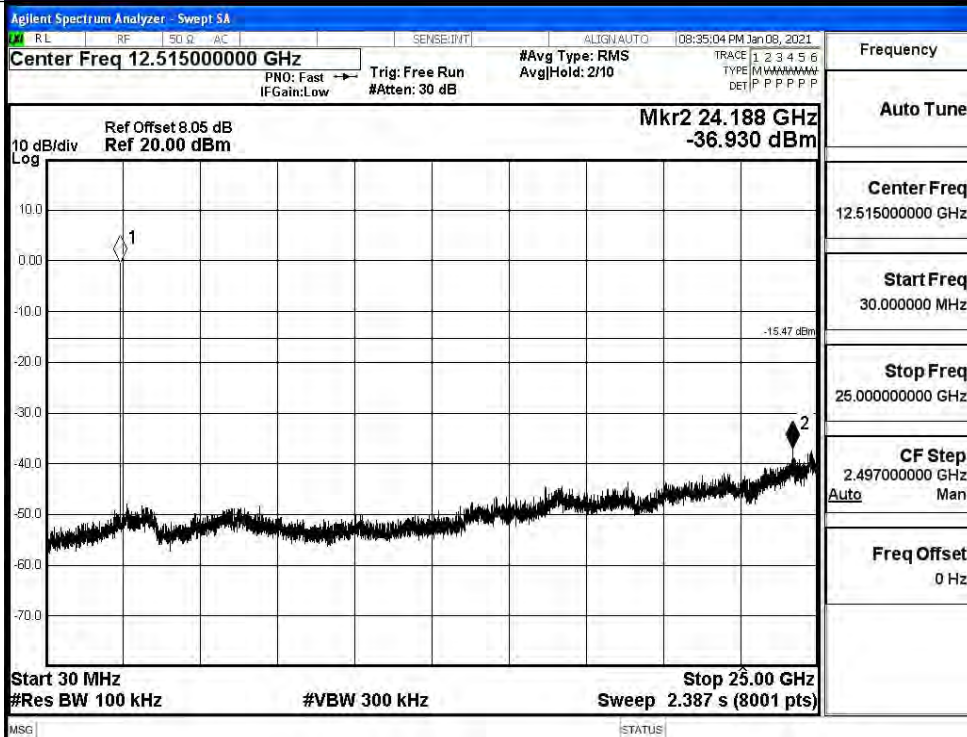


π /4DQPSK_MCH_Graphs

Pref

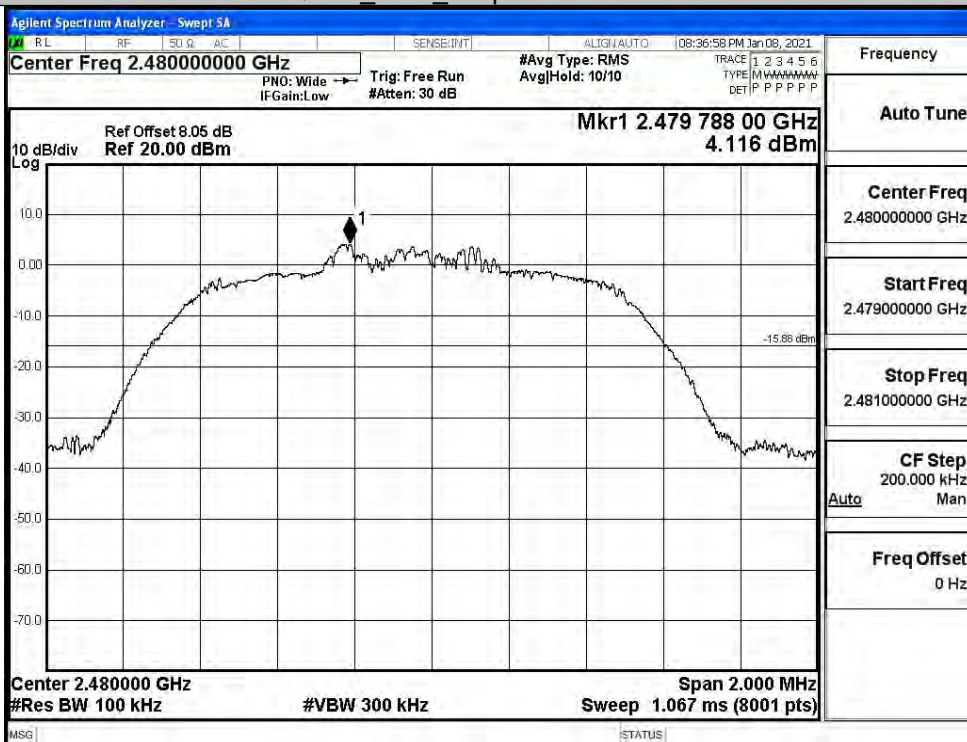


Puw

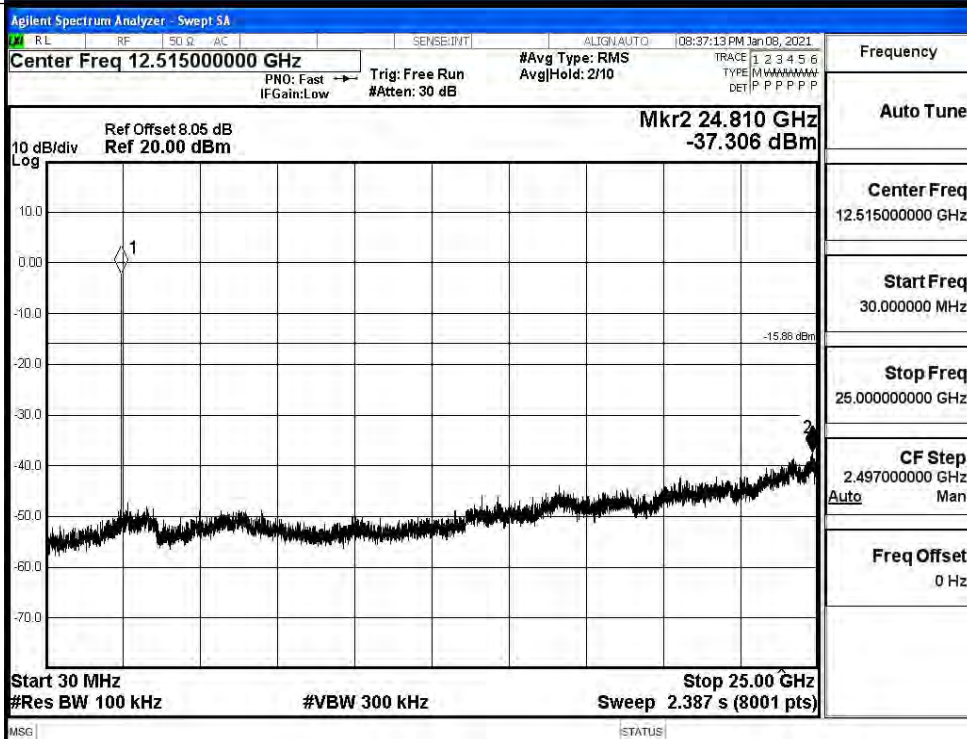


π /4DQPSK_HCH_Graphs

Pref

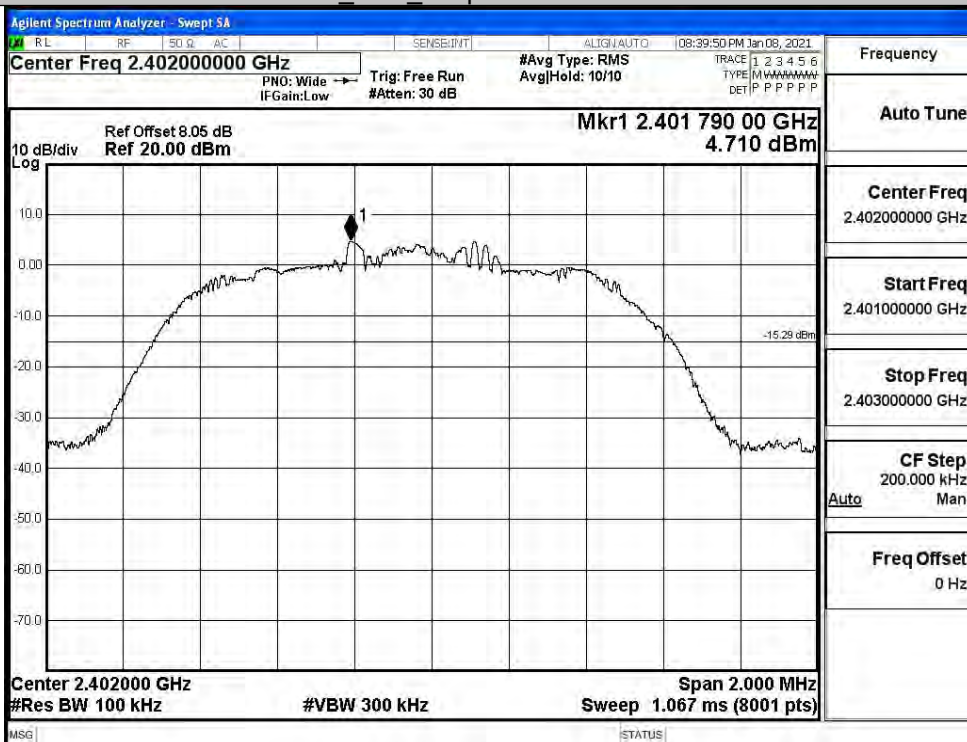


Puw

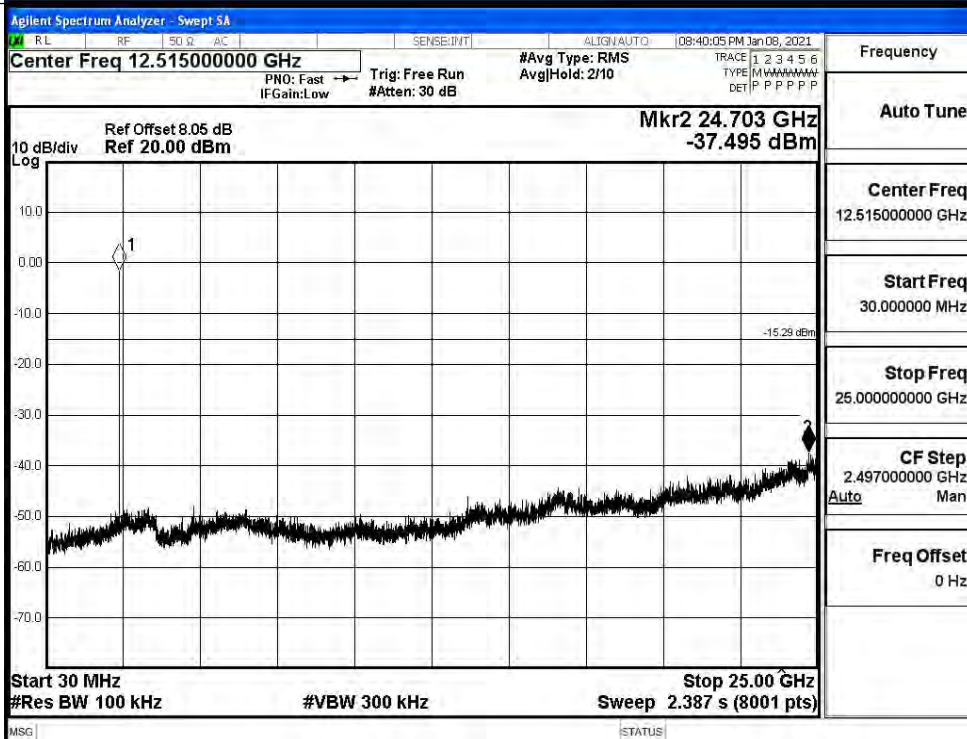


8DPSK_LCH_Graphs

Pref

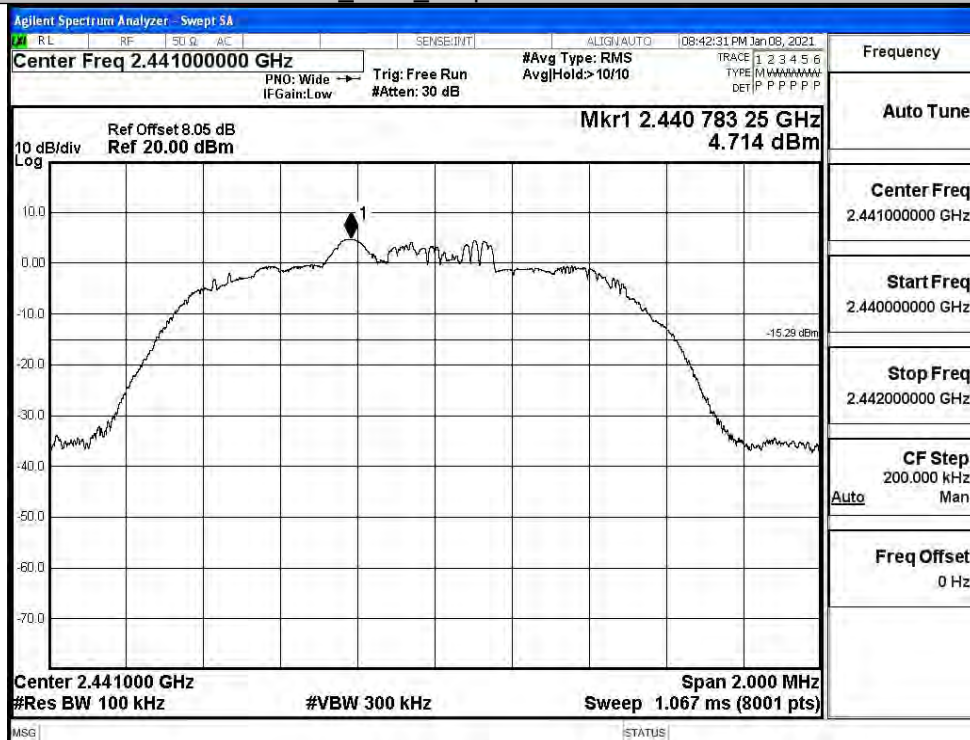


Puw

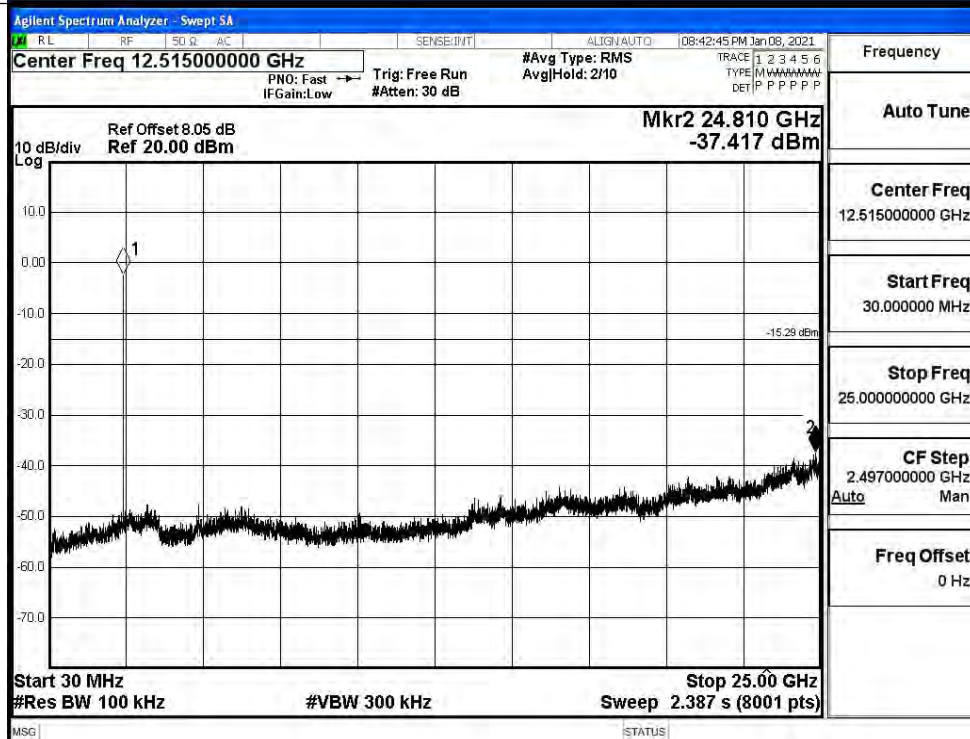


8DPSK_MCH_Graphs

Pref

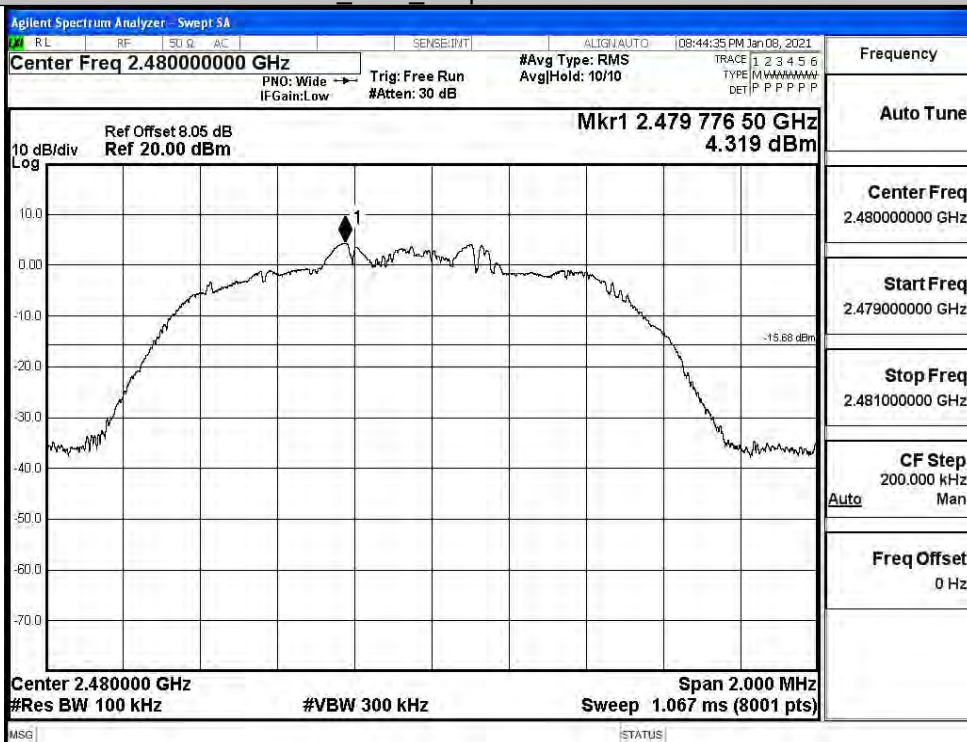


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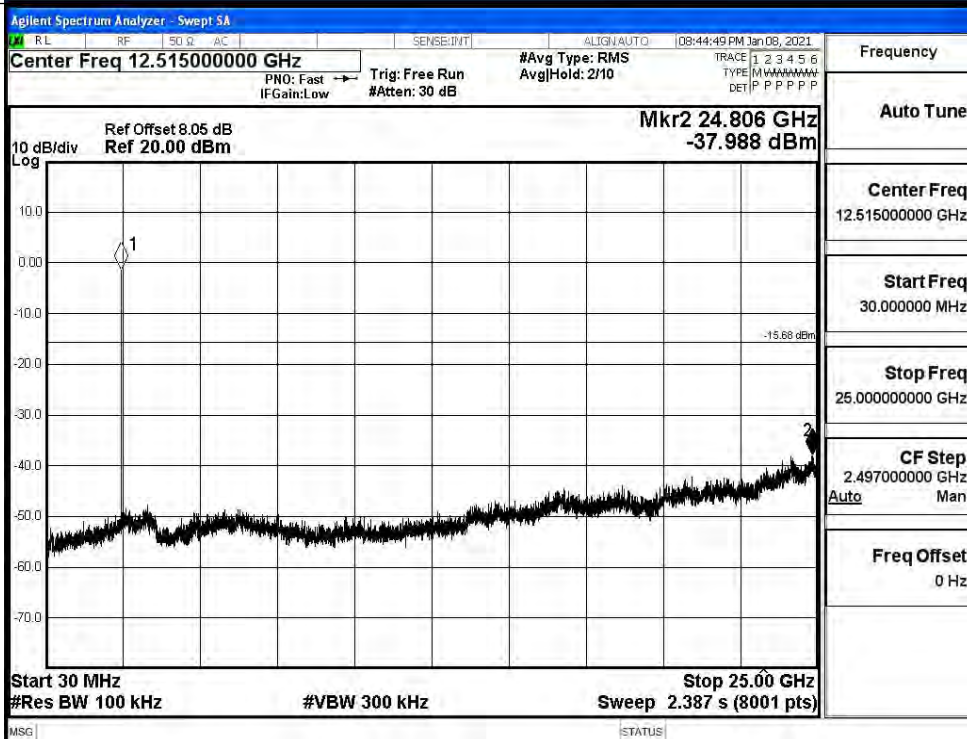


8DPSK_HCH_Graphs

Pref



Puw

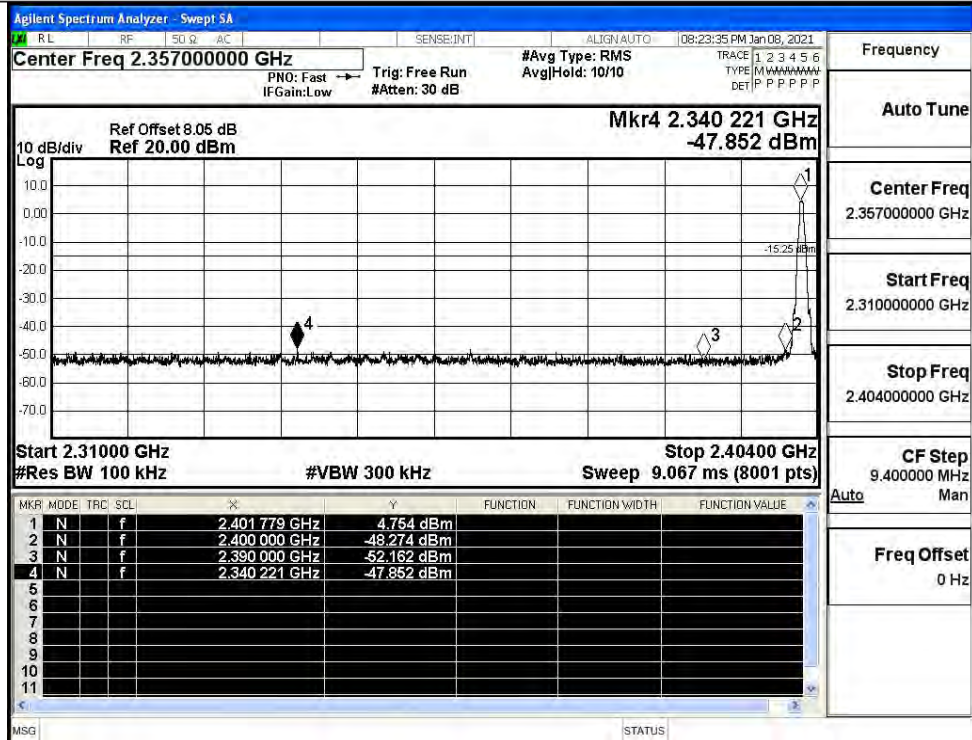


A.7 Band-edge for RF Conducted Emissions

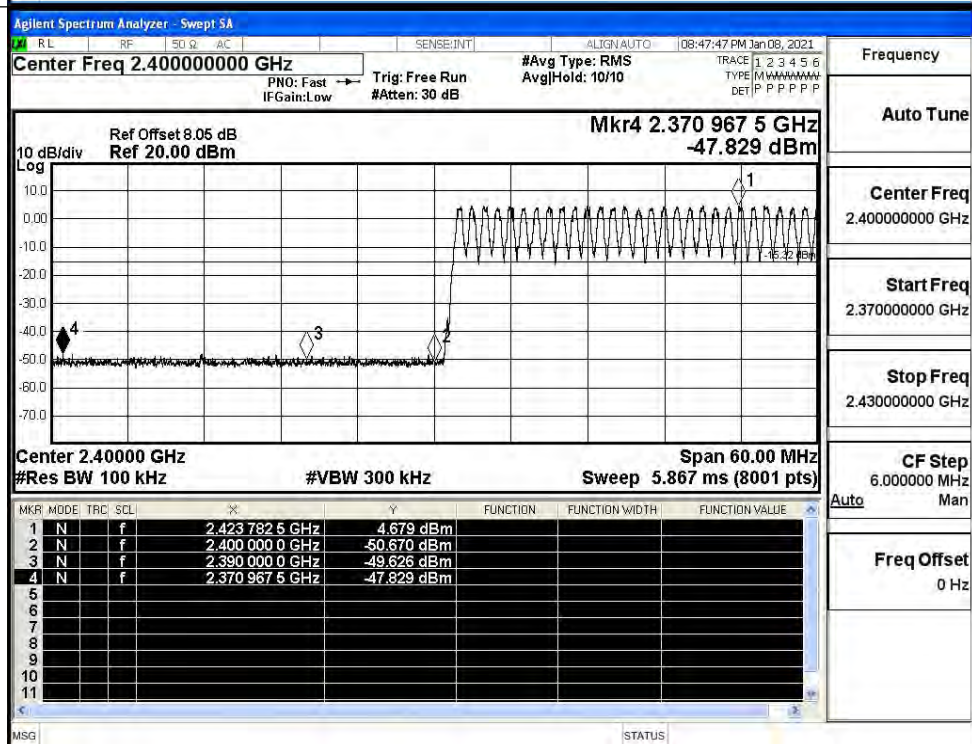
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	4.754	Off	-47.852	-15.25	PASS
			4.679	On	-47.829	-15.32	PASS
	HCH	2480	4.334	Off	-49.513	-15.67	PASS
			4.550	On	-48.428	-15.45	PASS
$\pi/4$ DQPSK	LCH	2402	4.355	Off	-49.276	-15.65	PASS
			4.707	On	-48.411	-15.29	PASS
	HCH	2480	4.212	Off	-49.664	-15.79	PASS
			4.156	On	-48.782	-15.84	PASS
8DPSK	LCH	2402	4.840	Off	-48.751	-15.16	PASS
			4.789	On	-48.702	-15.21	PASS
	HCH	2480	4.355	Off	-49.085	-15.65	PASS
			4.632	On	-47.930	-15.37	PASS

Test Graphs

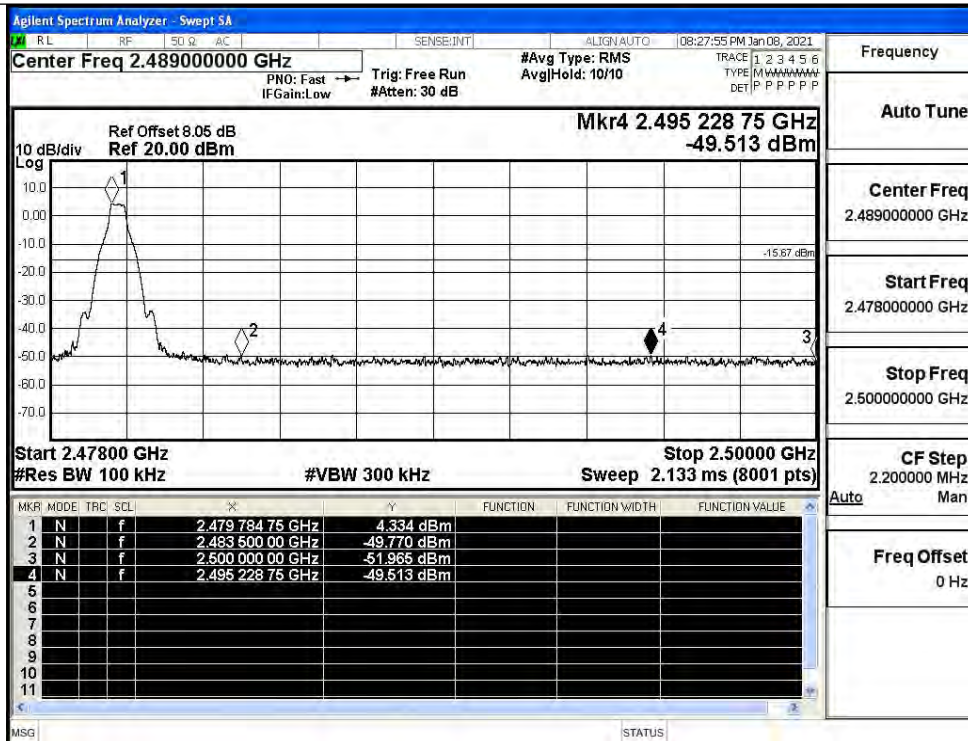
GFSK/LCH/No Hop



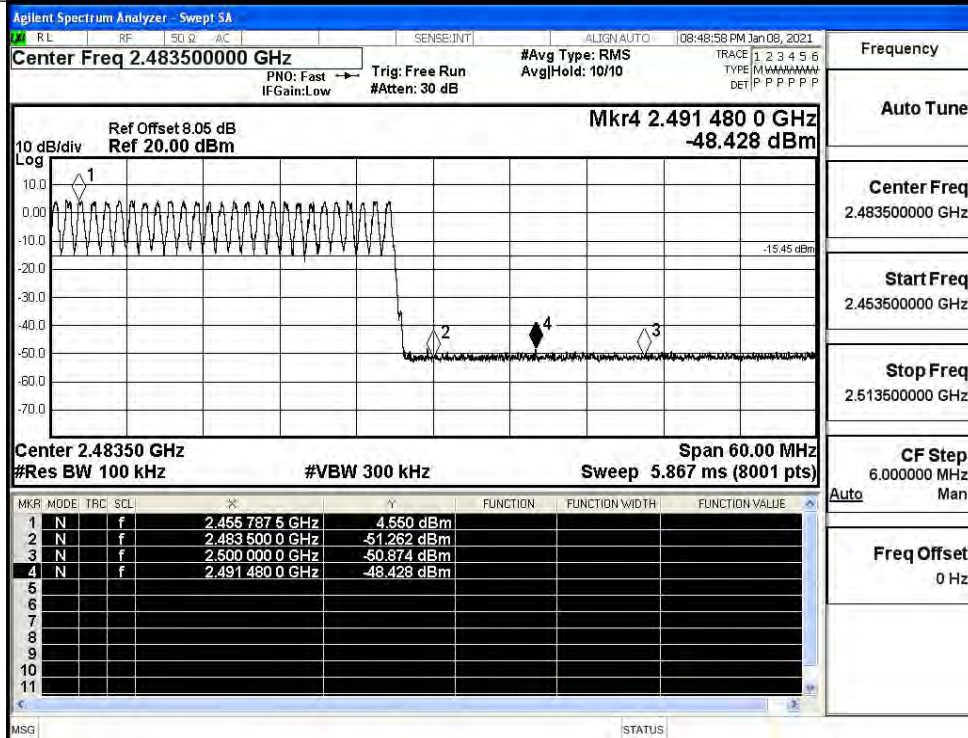
GFSK/LCH/Hop



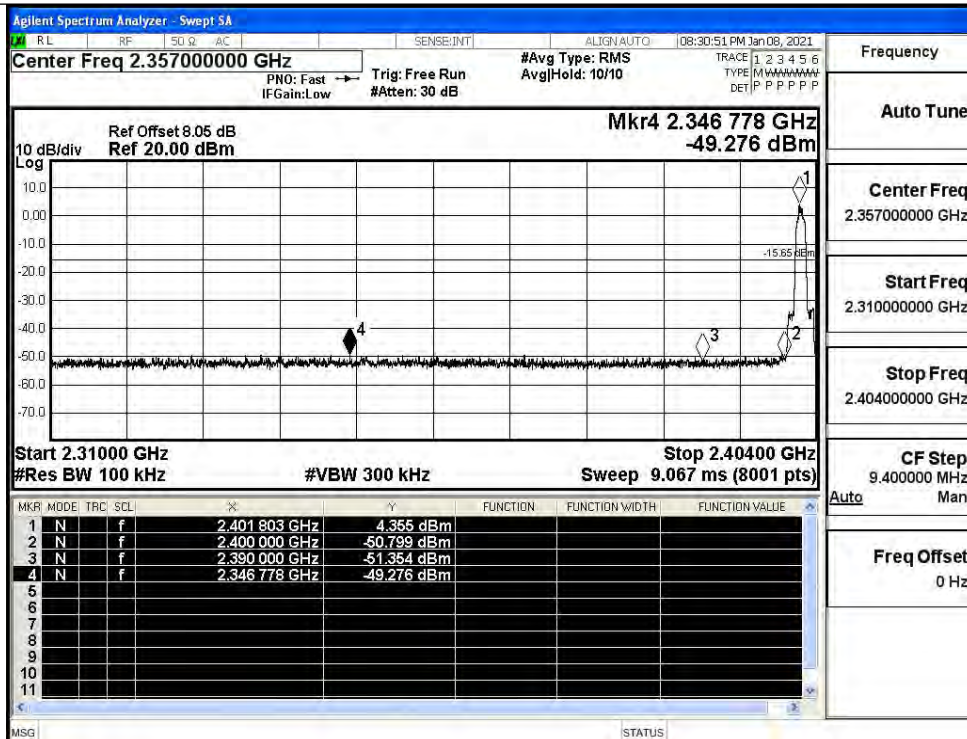
GFSK/HCH/No Hop



GFSK/HCH/Hop



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



Frequency

Auto Tune

Center Freq
2.357000000 GHz

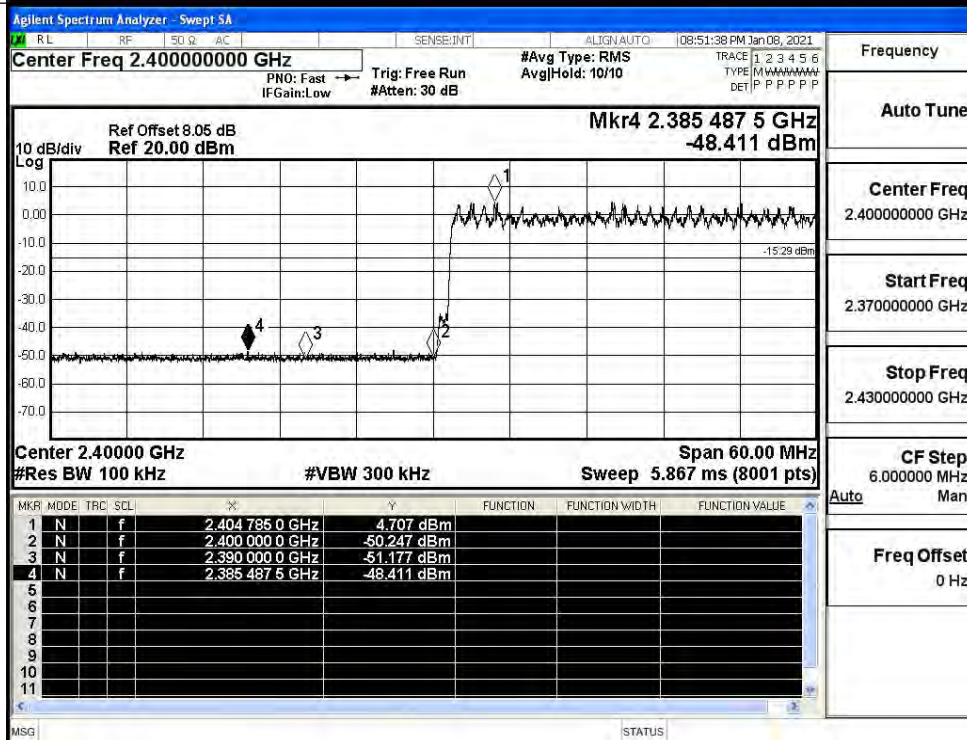
Start Freq
2.310000000 GHz

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

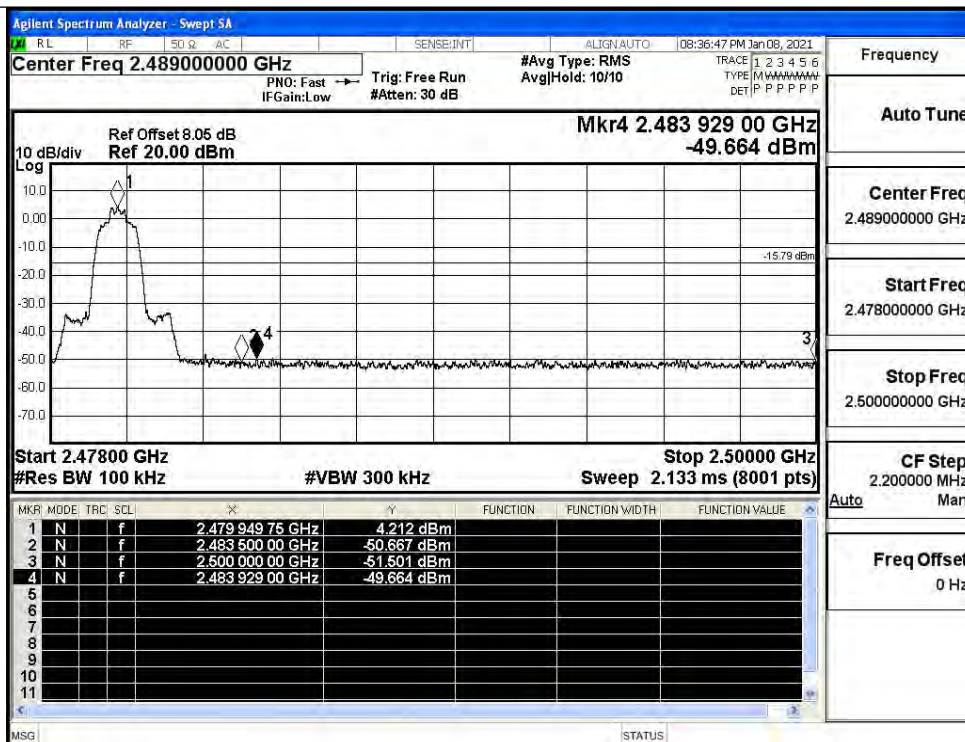
Start Freq
2.370000000 GHz

Stop Freq
2.430000000 GHz

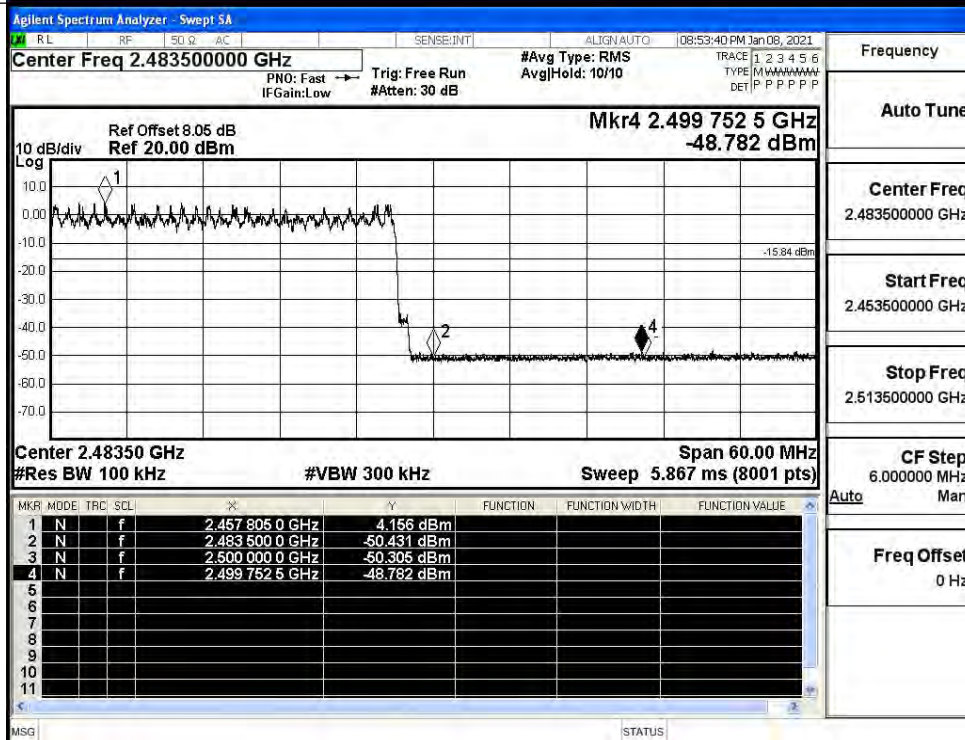
CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

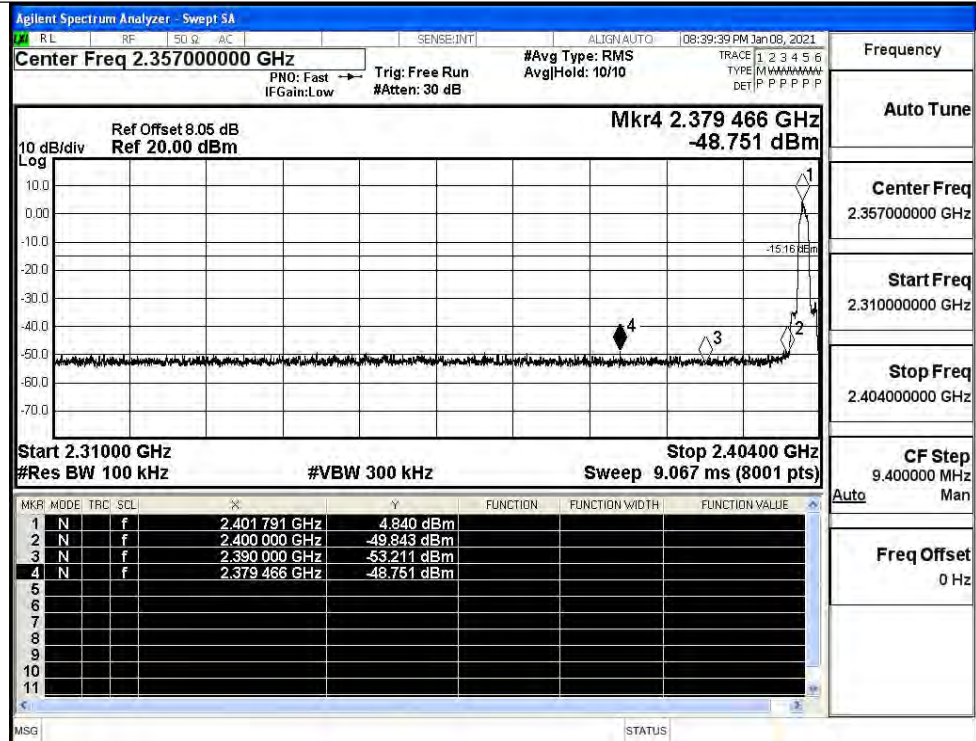
$\pi/4$ DQPSK/HCH/No
Hop



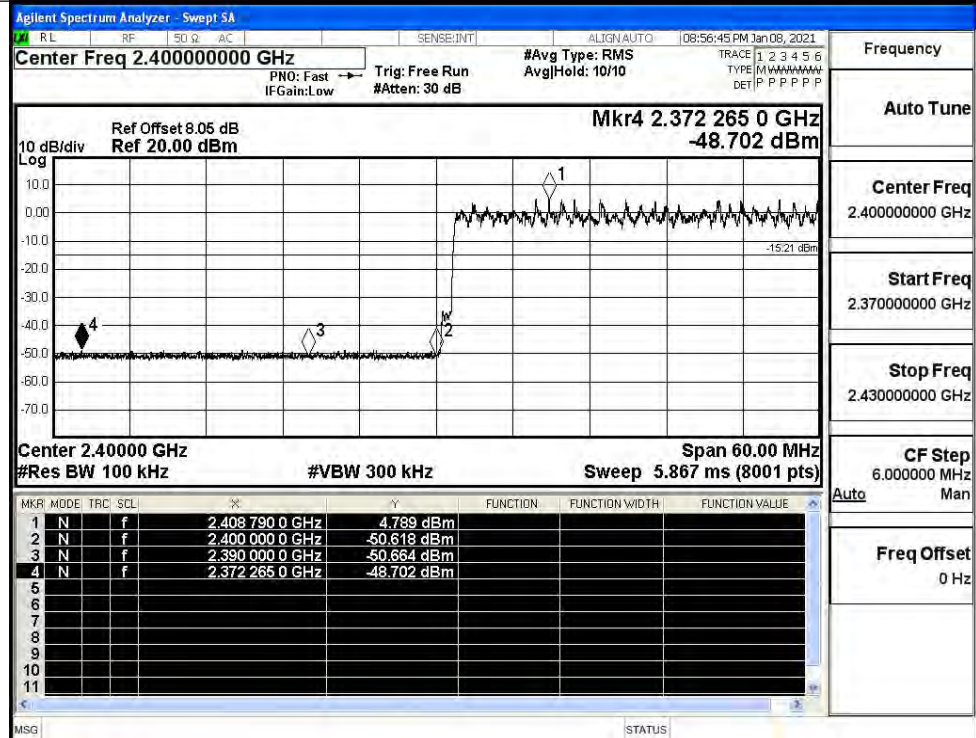
$\pi/4$ DQPSK/HCH/Hop



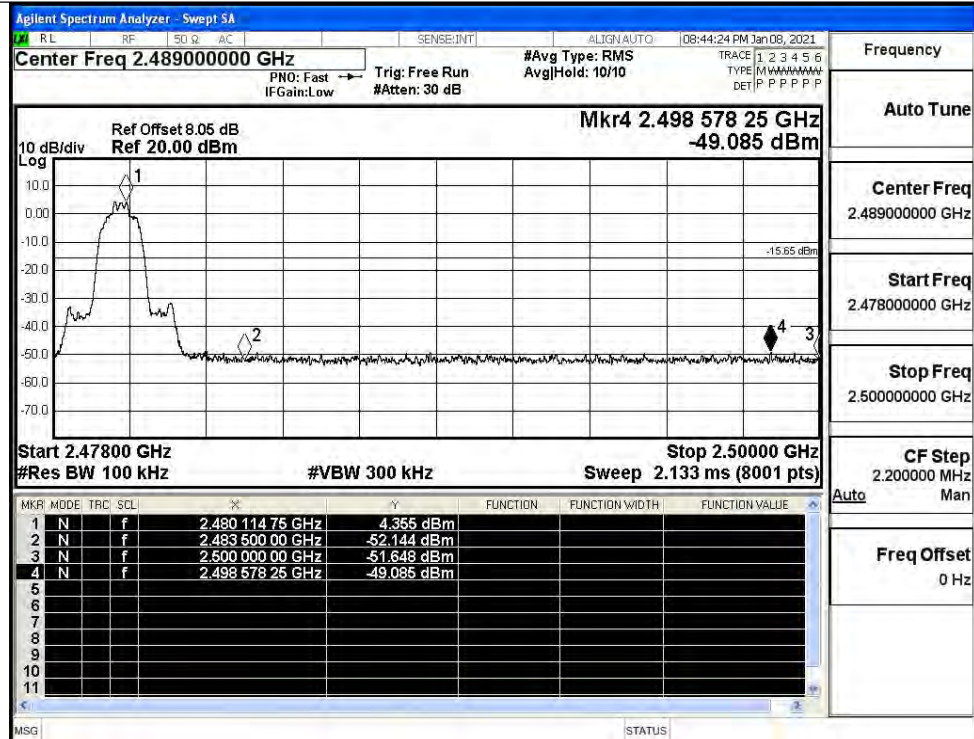
8DPSK/LCH/No Hop



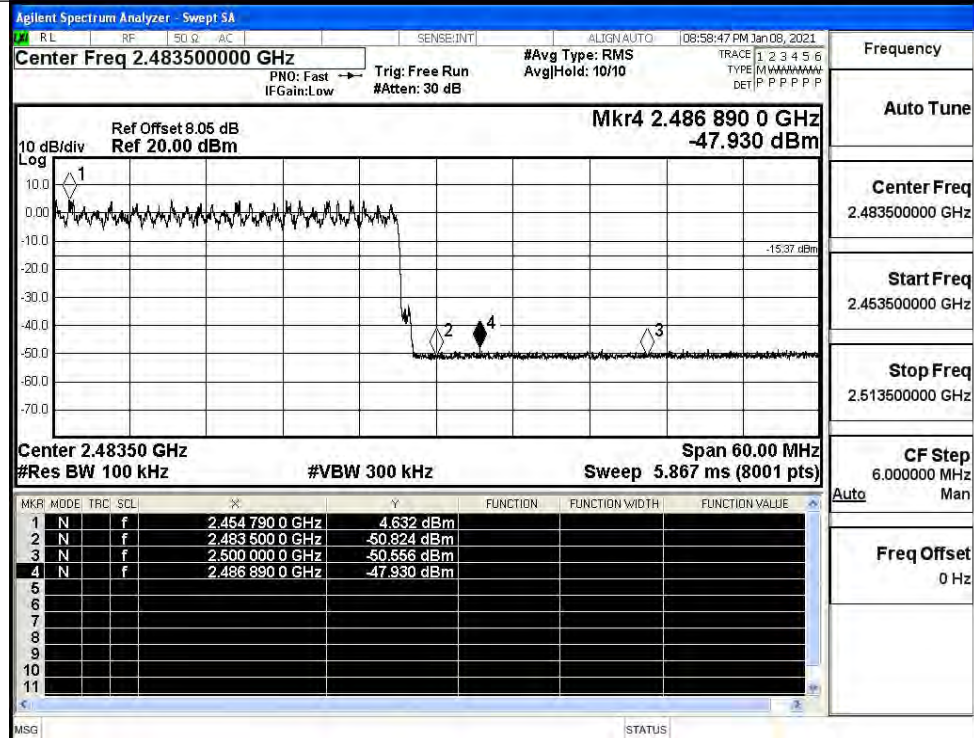
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



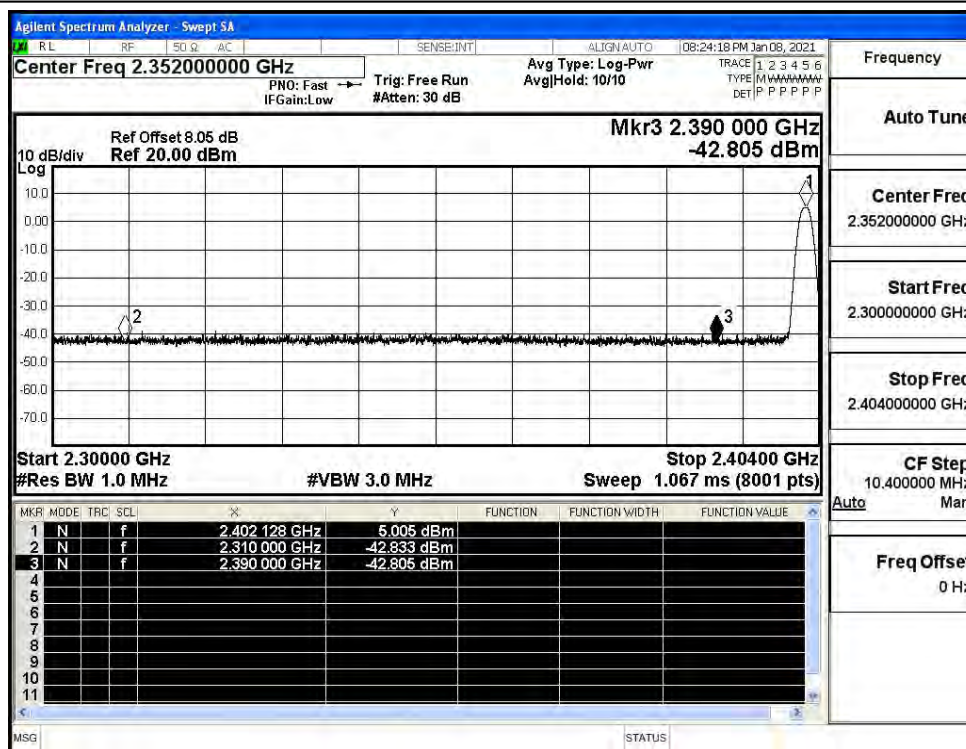
8DPSK/HCH/Hop



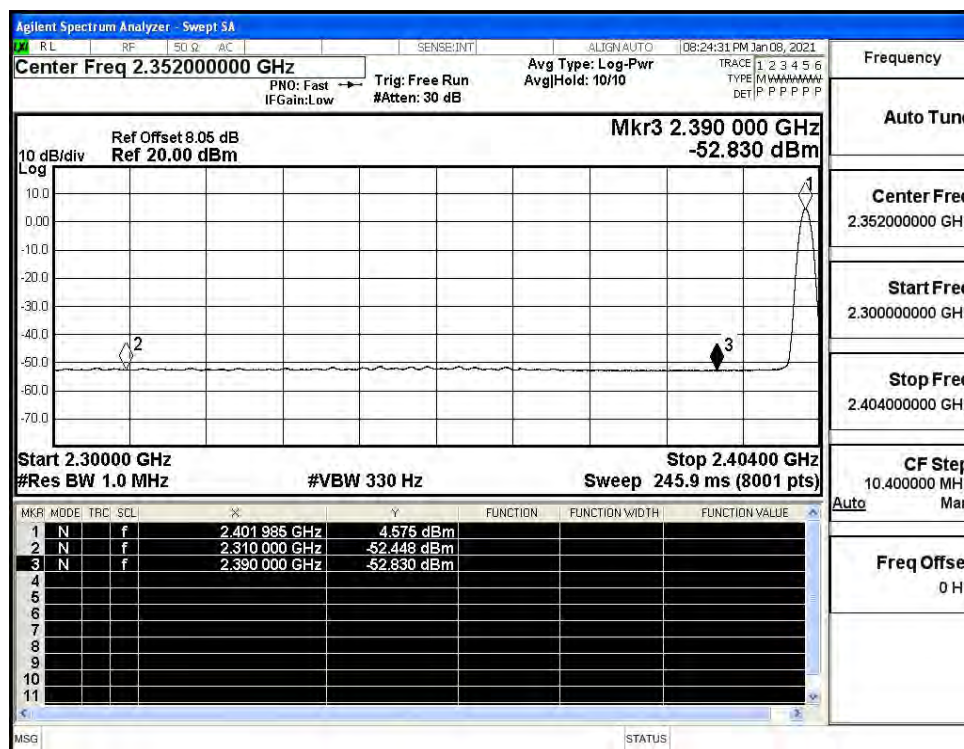
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-42.83	2.0	0	54.40	PEAK	74	PASS
	Off	2310.0	-52.45	2.0	0	44.78	AV	54	PASS
	Off	2390.0	-42.81	2.0	0	54.42	PEAK	74	PASS
	Off	2390.0	-52.83	2.0	0	44.40	AV	54	PASS
	Off	2483.5	-42.41	2.0	0	54.82	PEAK	74	PASS
	Off	2483.5	-52.11	2.0	0	45.12	AV	54	PASS
	Off	2500.0	-42.47	2.0	0	54.76	PEAK	74	PASS
	Off	2500.0	-52.32	2.0	0	44.91	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-42.94	2.0	0	54.29	PEAK	74	PASS
	Off	2310.0	-52.82	2.0	0	44.41	AV	54	PASS
	Off	2390.0	-43.89	2.0	0	53.34	PEAK	74	PASS
	Off	2390.0	-52.81	2.0	0	44.42	AV	54	PASS
	Off	2483.5	-42.99	2.0	0	54.24	PEAK	74	PASS
	Off	2483.5	-52.02	2.0	0	45.21	AV	54	PASS
	Off	2500.0	-42.29	2.0	0	54.94	PEAK	74	PASS
	Off	2500.0	-52.39	2.0	0	44.84	AV	54	PASS
8DPSK	Off	2310.0	-42.67	2.0	0	54.56	PEAK	74	PASS
	Off	2310.0	-52.87	2.0	0	44.36	AV	54	PASS
	Off	2390.0	-42.79	2.0	0	54.44	PEAK	74	PASS
	Off	2390.0	-52.83	2.0	0	44.40	AV	54	PASS
	Off	2483.5	-42.23	2.0	0	55.00	PEAK	74	PASS
	Off	2483.5	-51.96	2.0	0	45.27	AV	54	PASS
	Off	2500.0	-42.27	2.0	0	54.96	PEAK	74	PASS
	Off	2500.0	-52.39	2.0	0	44.84	AV	54	PASS

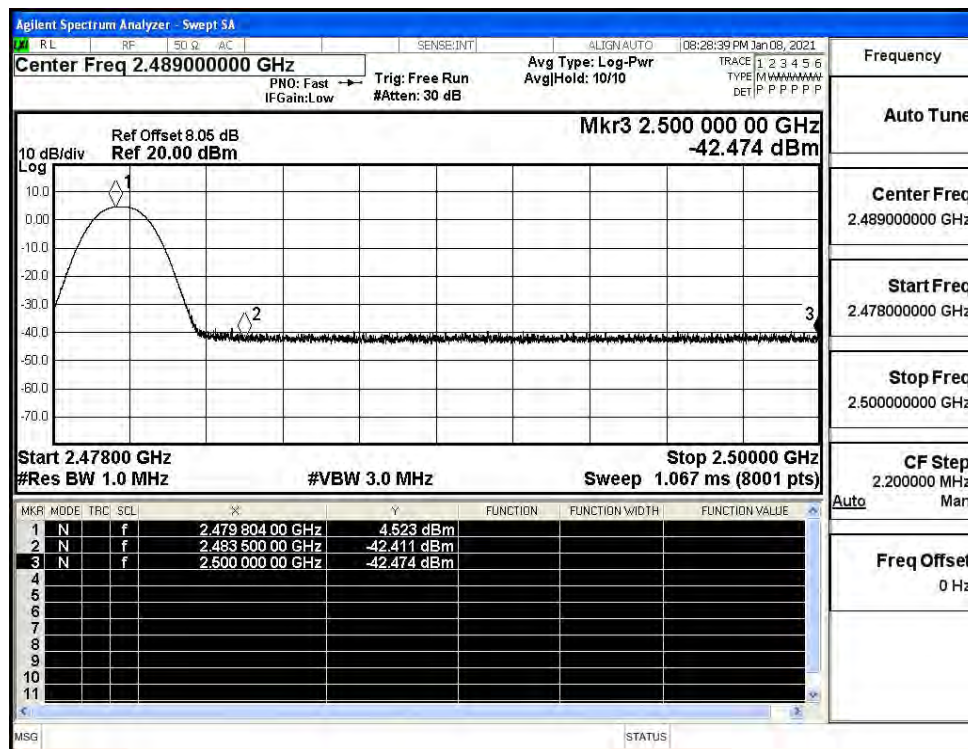
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



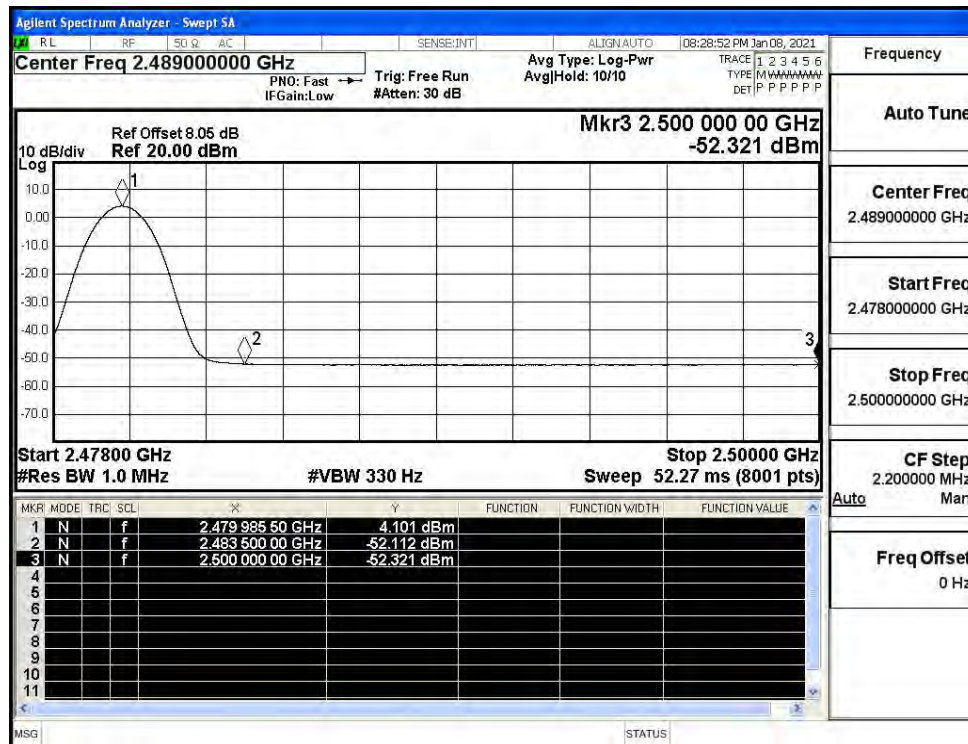
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

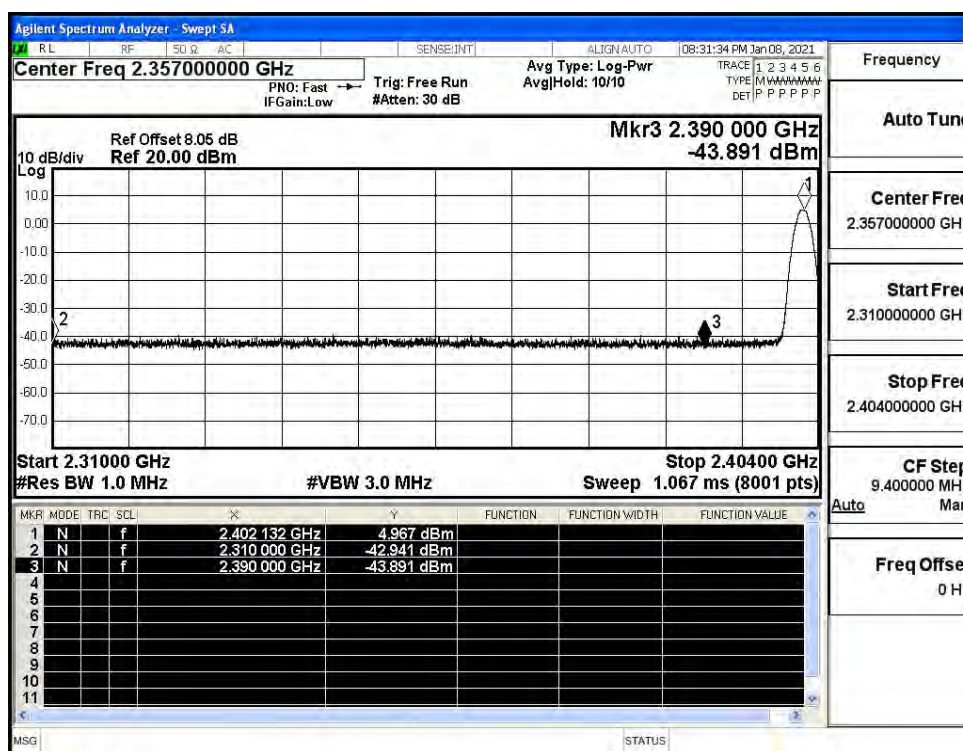
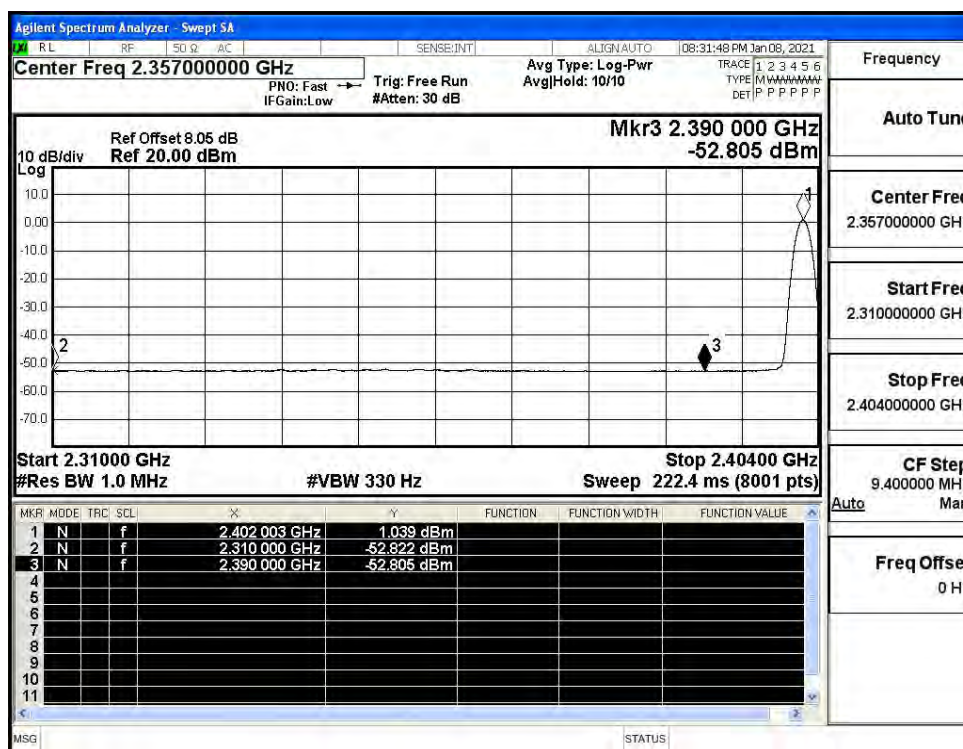


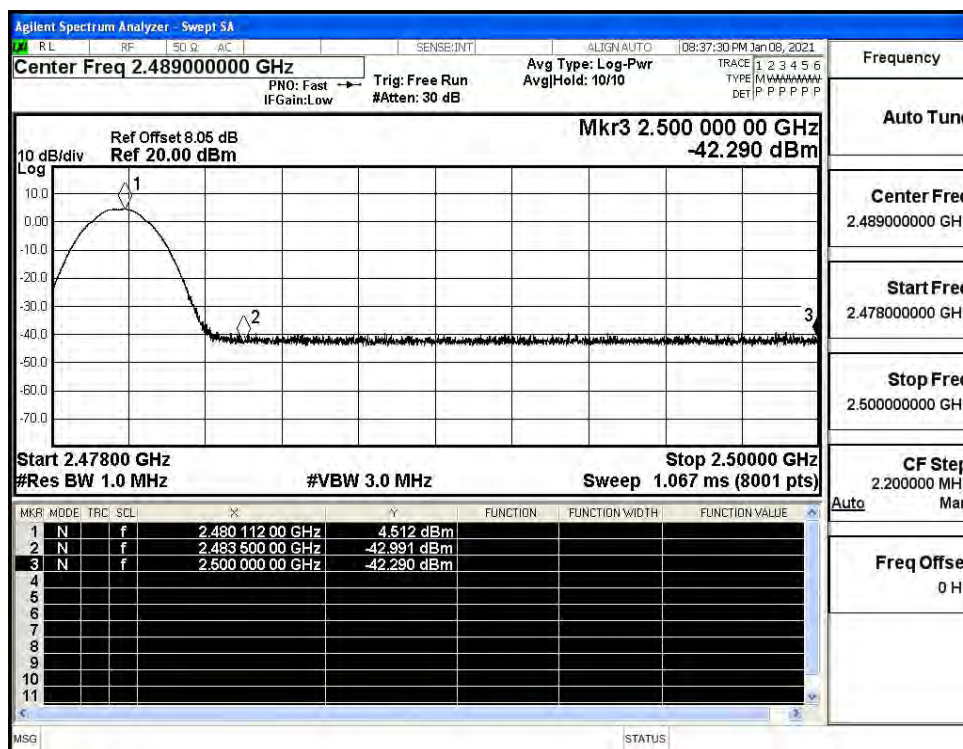
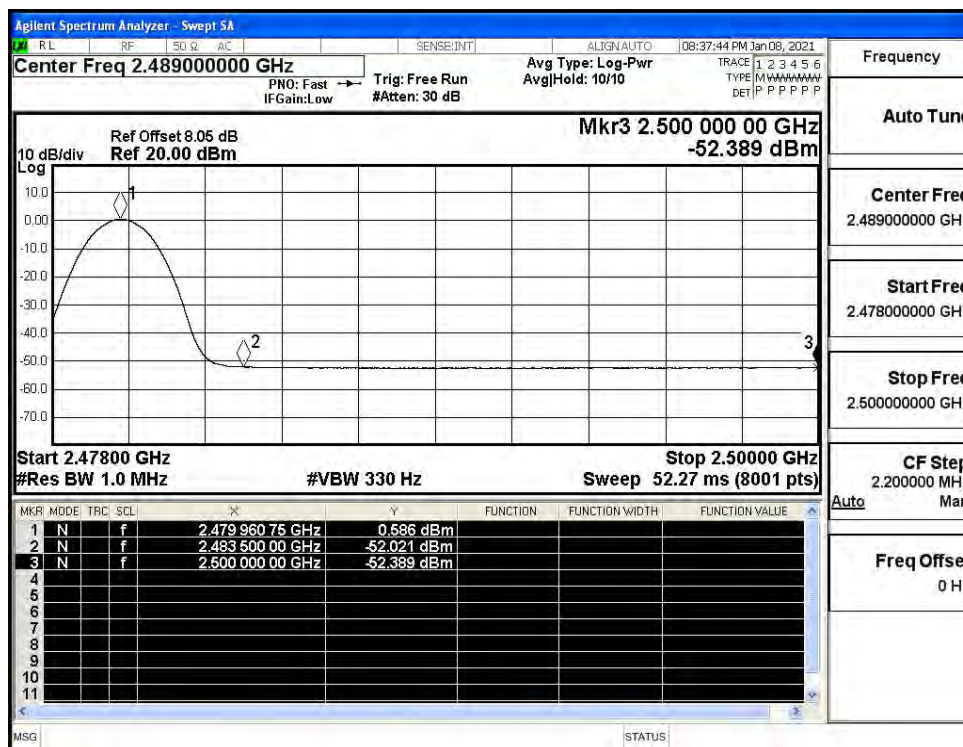
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



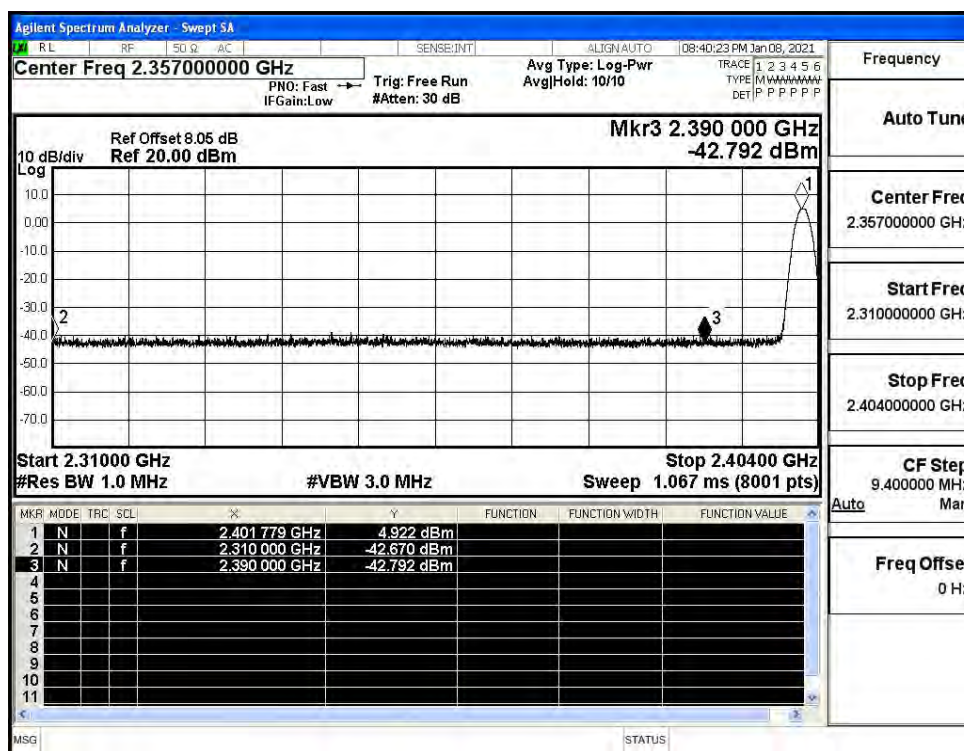
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



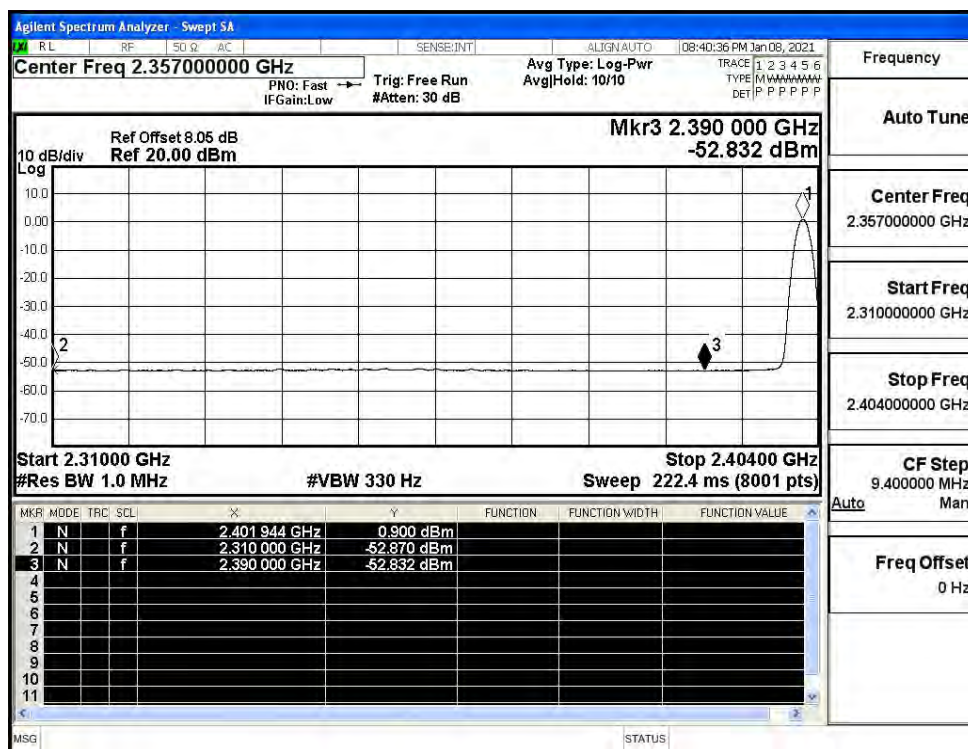
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

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)

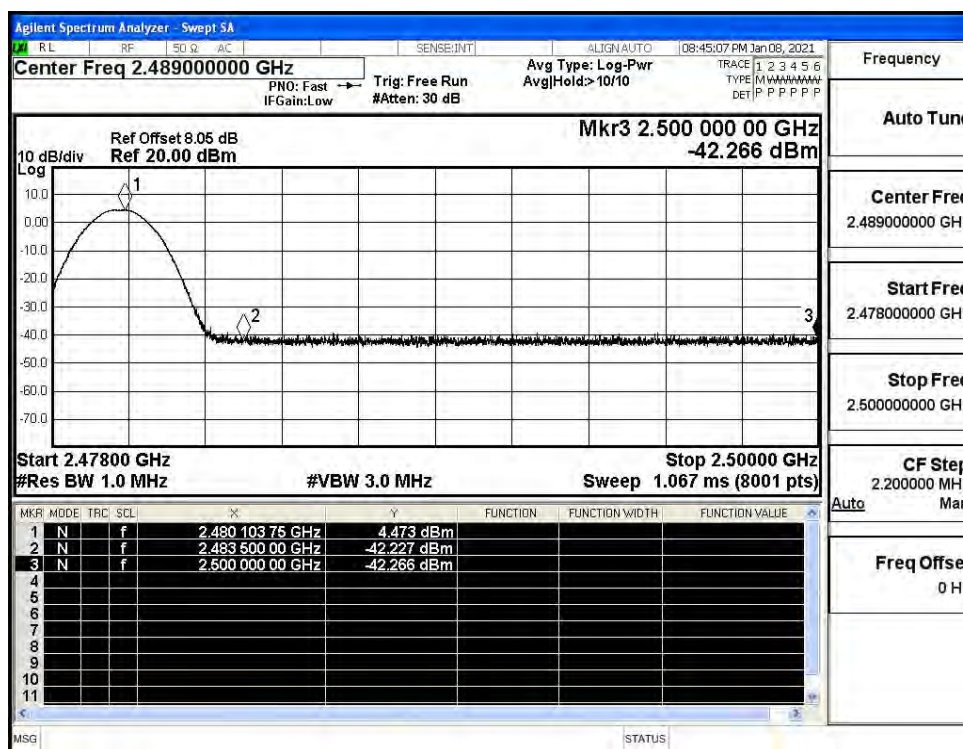
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

