

Appendix A

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

Product Name: Remote Control Car

Trade Mark: HELIWAY

Test Model: F6BC

Environmental Conditions

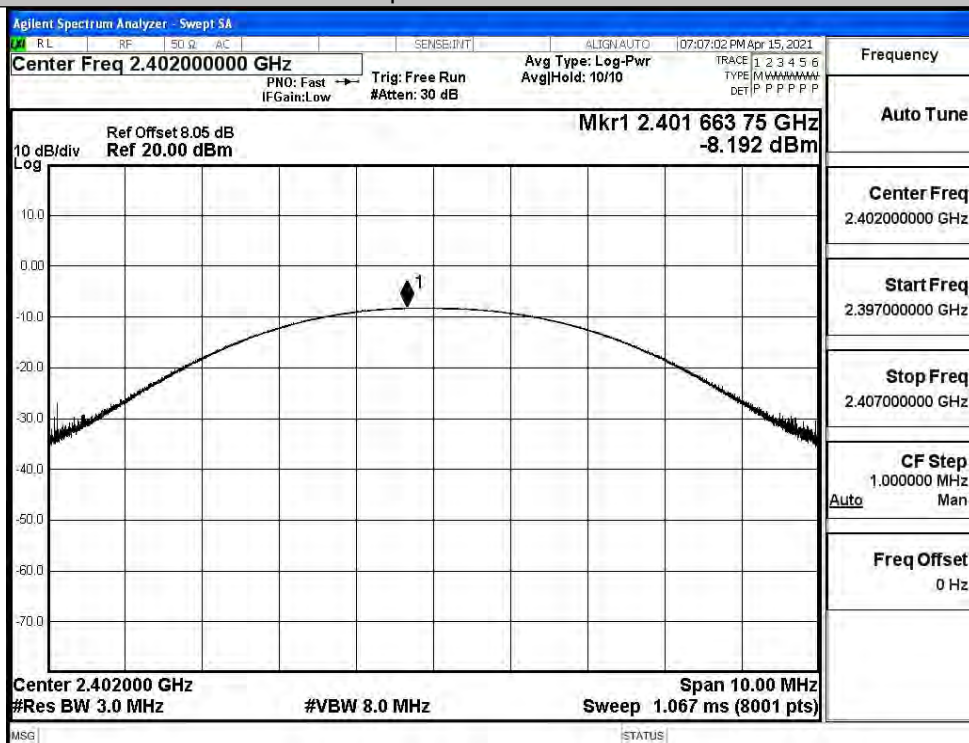
Temperature:	24.6° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Li
Supervised by:	Li Huan

A.1 Maximum Conducted Peak Output Power

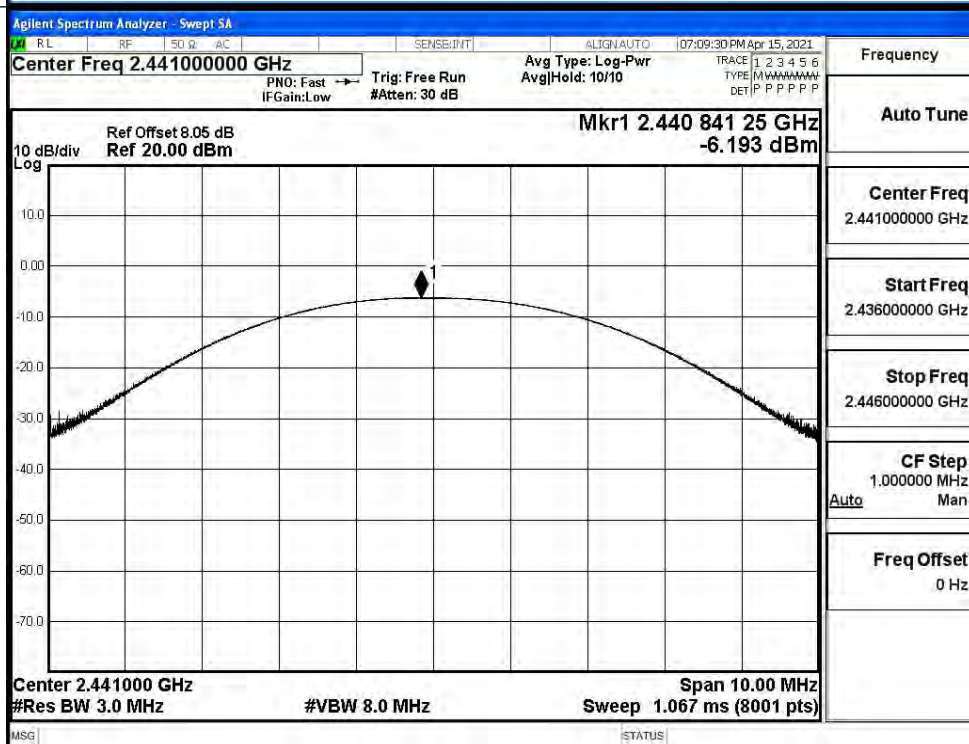
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-8.192	21	PASS
	MCH	-6.193	21	PASS
	HCH	-5.931	21	PASS
$\pi/4$ DQPSK	LCH	-7.404	21	PASS
	MCH	-5.645	21	PASS
	HCH	-5.600	21	PASS
8DPSK	LCH	-6.968	21	PASS
	MCH	-5.411	21	PASS
	HCH	-5.452	21	PASS

Test Graphs

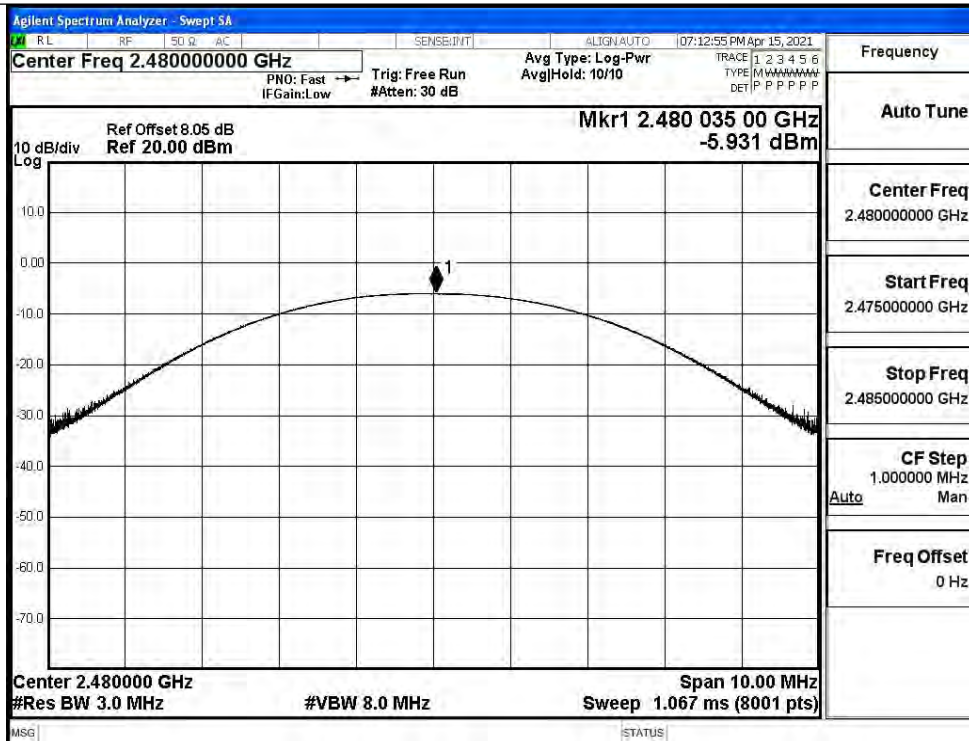
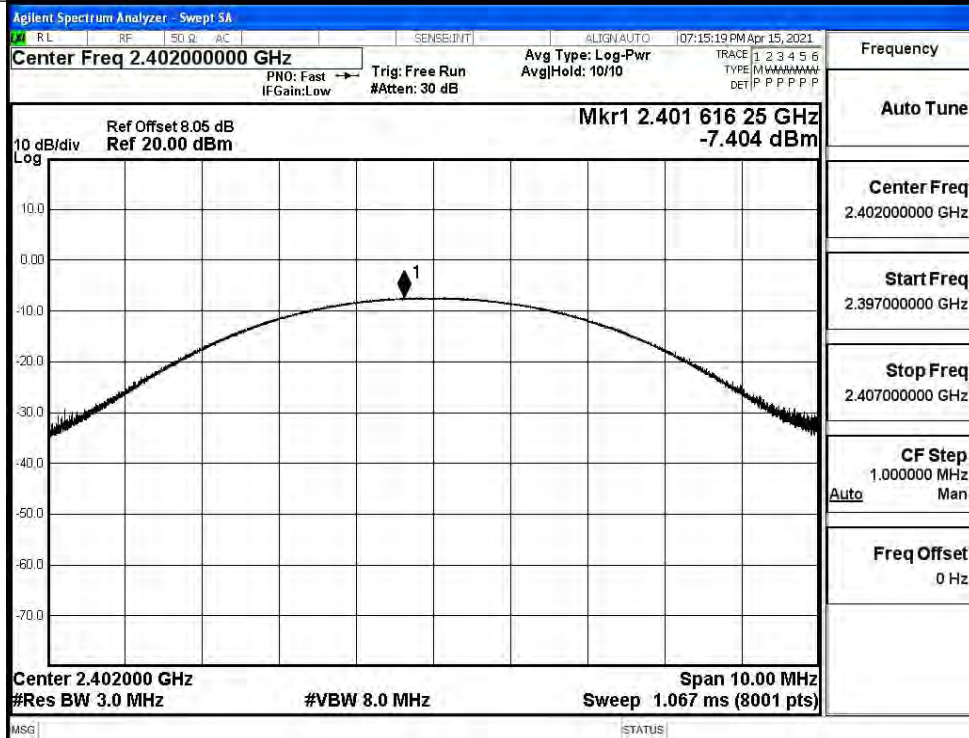
GFSK/LCH

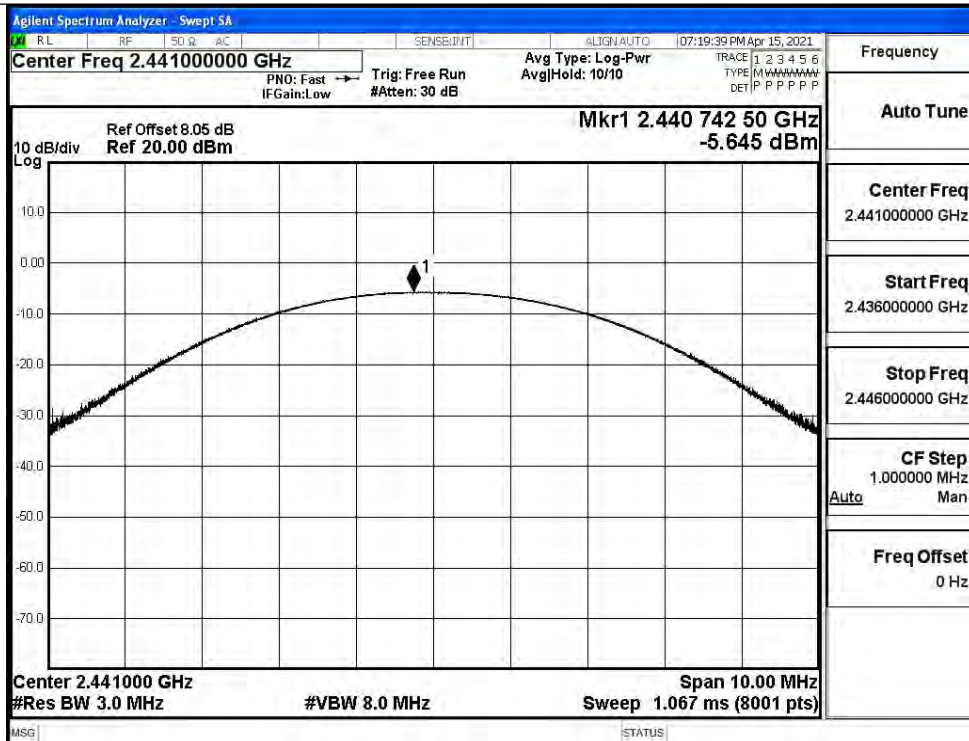
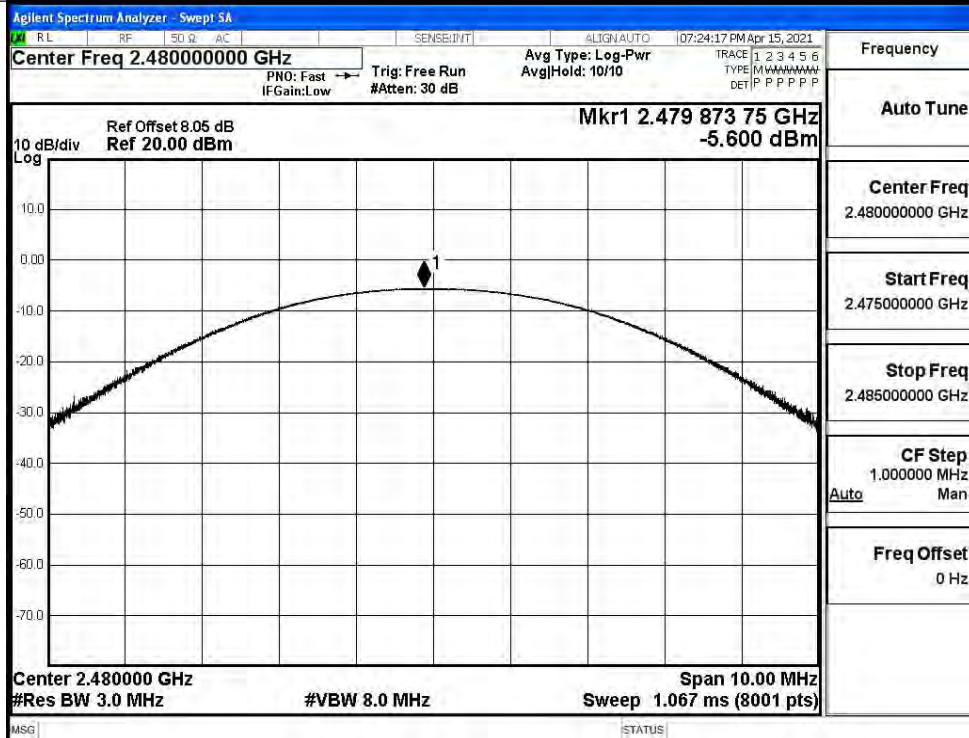


GFSK/MCH

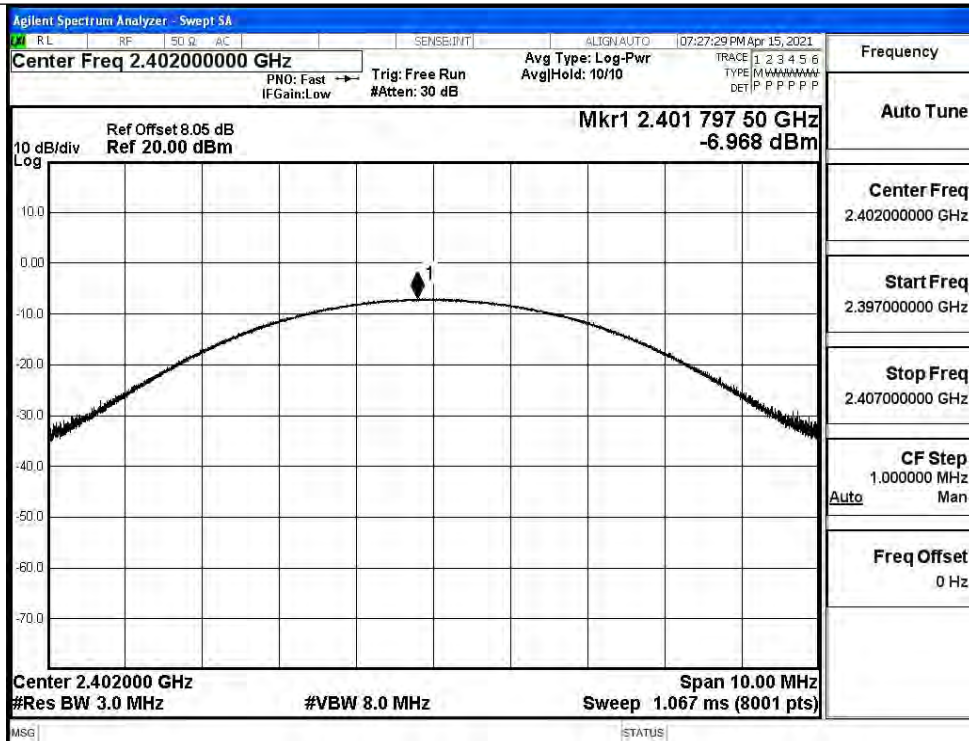


GFSK/HCH

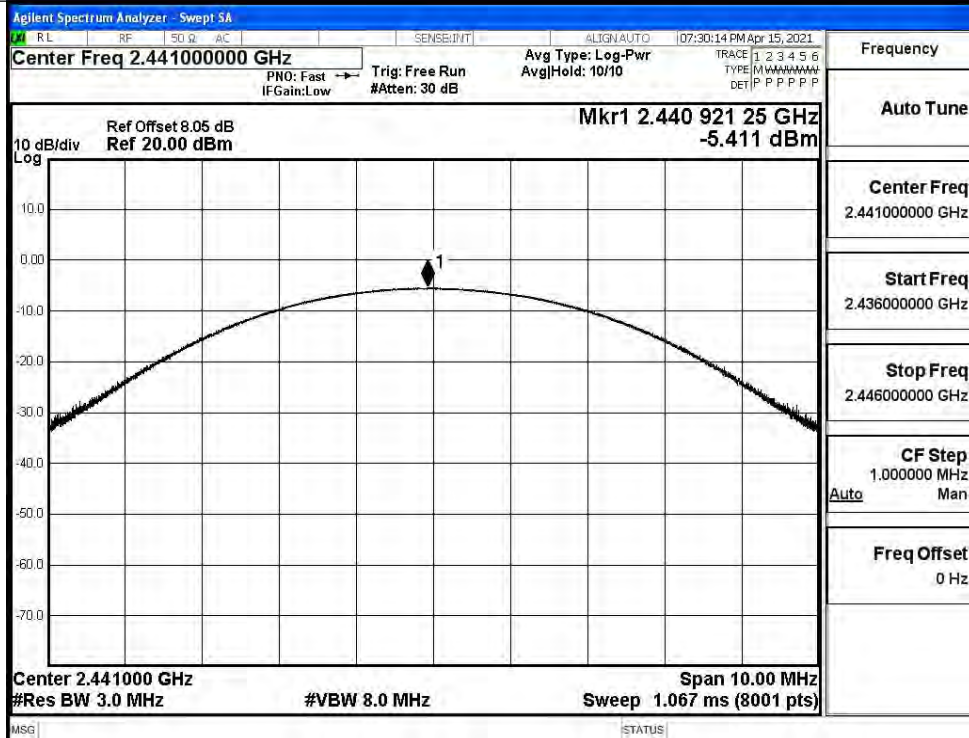
 π /4DQPSK/LCH

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

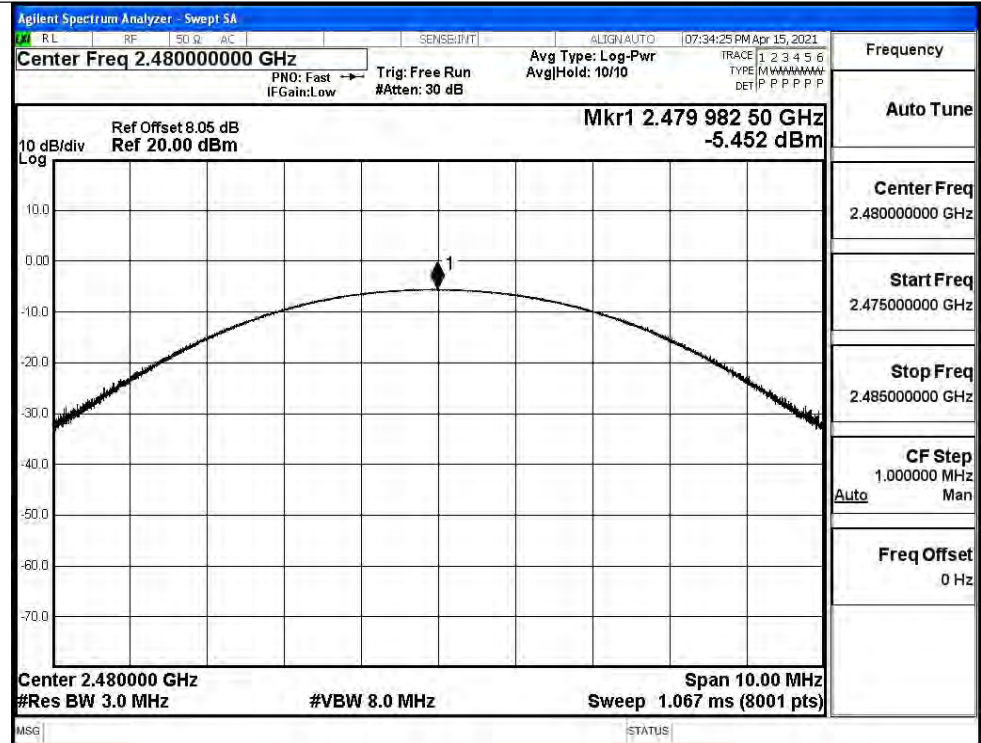
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

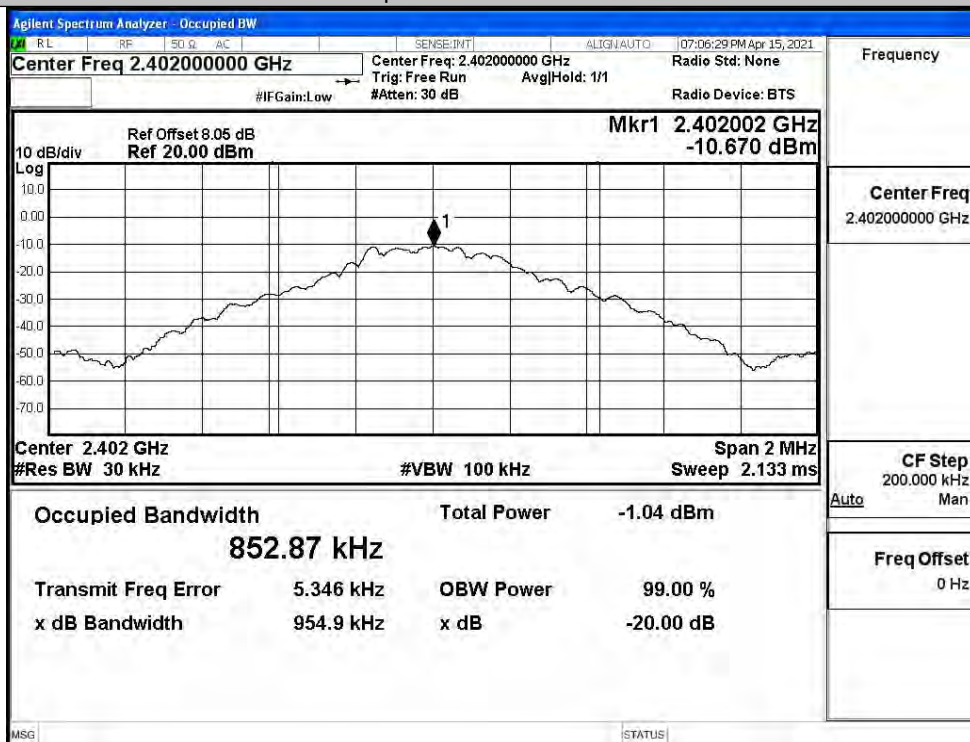


A.2 20dB Bandwidth

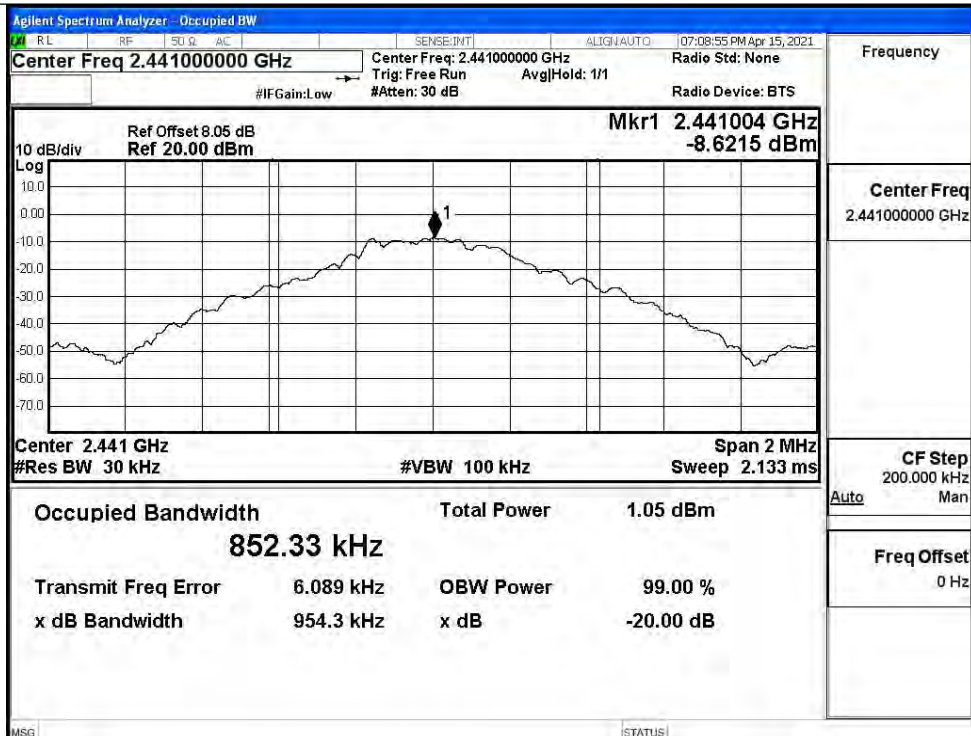
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9549	Not Specified	PASS
	MCH	0.9543	Not Specified	PASS
	HCH	0.9579	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.283	Not Specified	PASS
	MCH	1.317	Not Specified	PASS
	HCH	1.321	Not Specified	PASS
8DPSK	LCH	1.300	Not Specified	PASS
	MCH	1.305	Not Specified	PASS
	HCH	1.313	Not Specified	PASS

Test Graphs

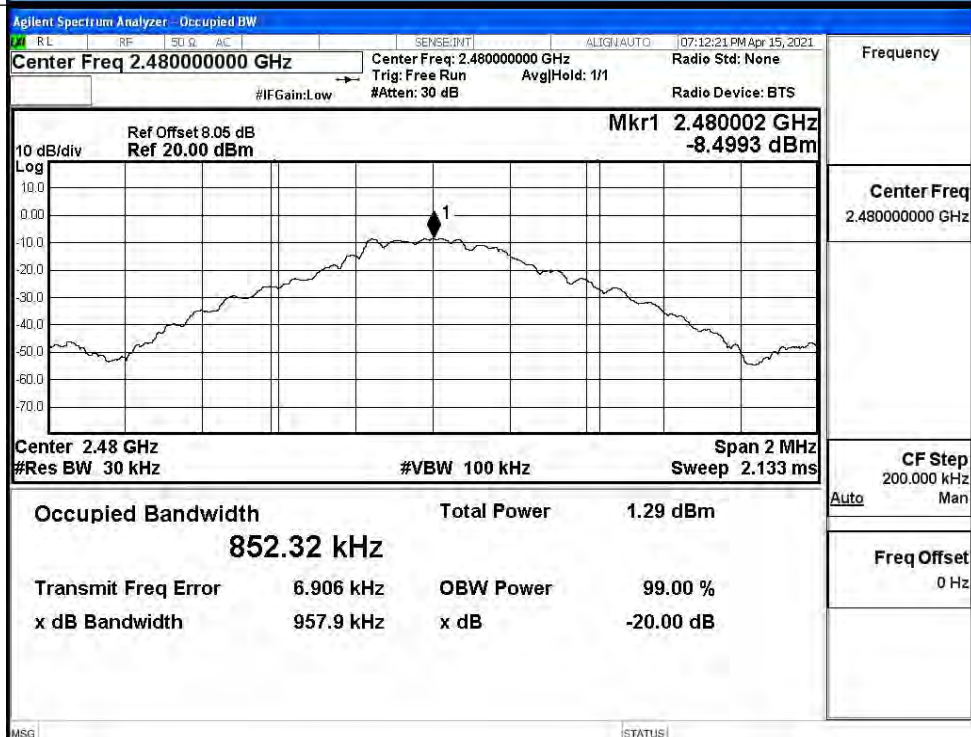
GFSK/LCH

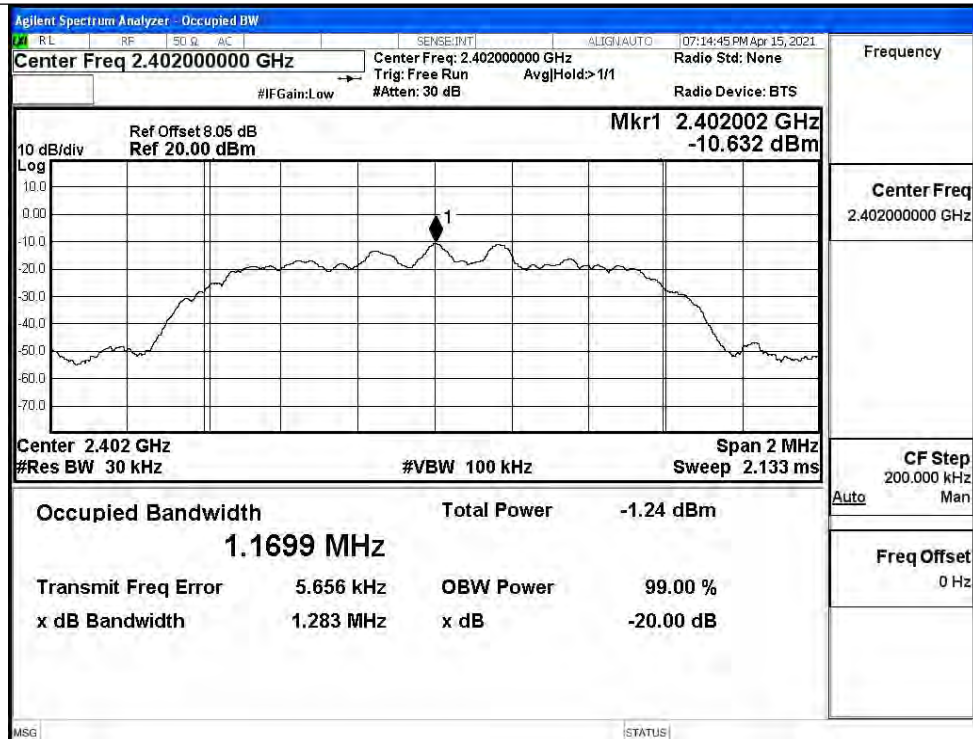
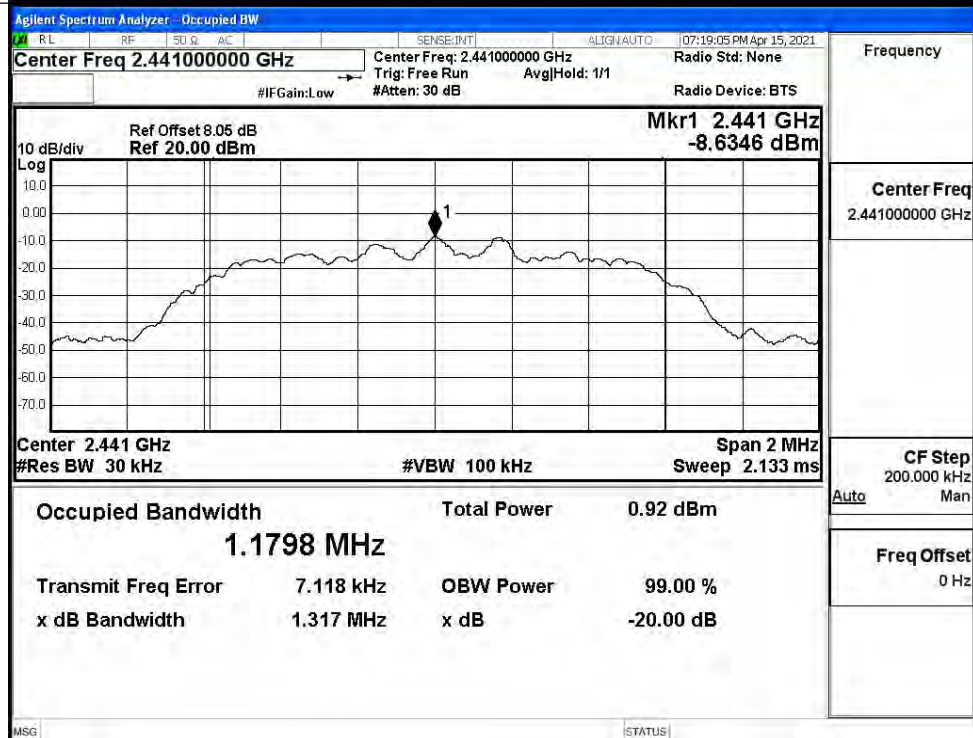


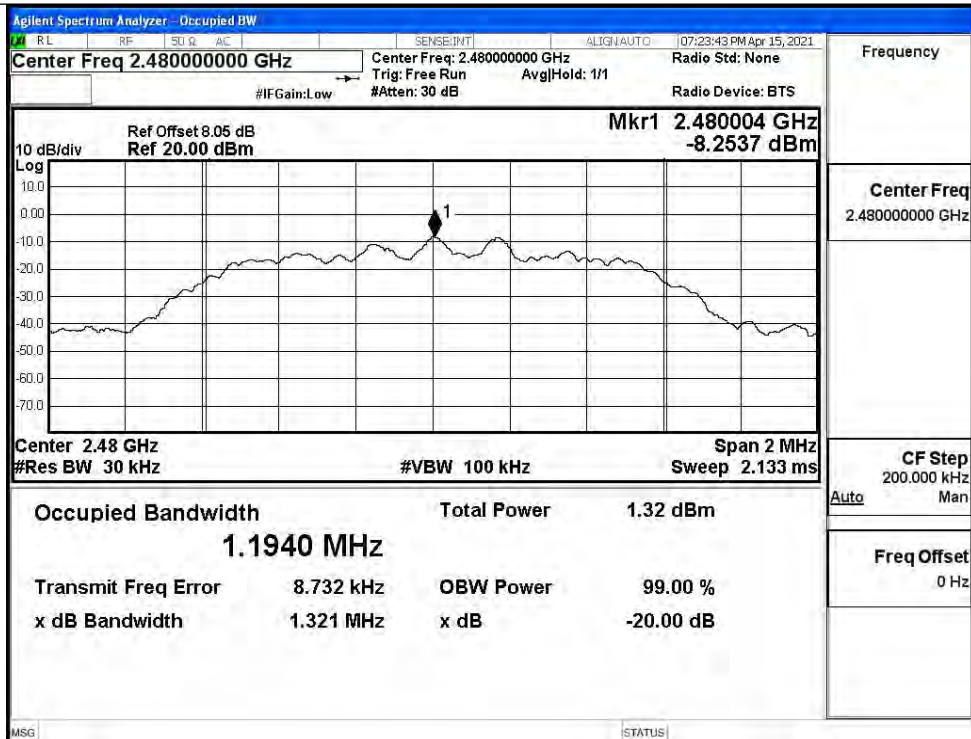
GFSK/MCH



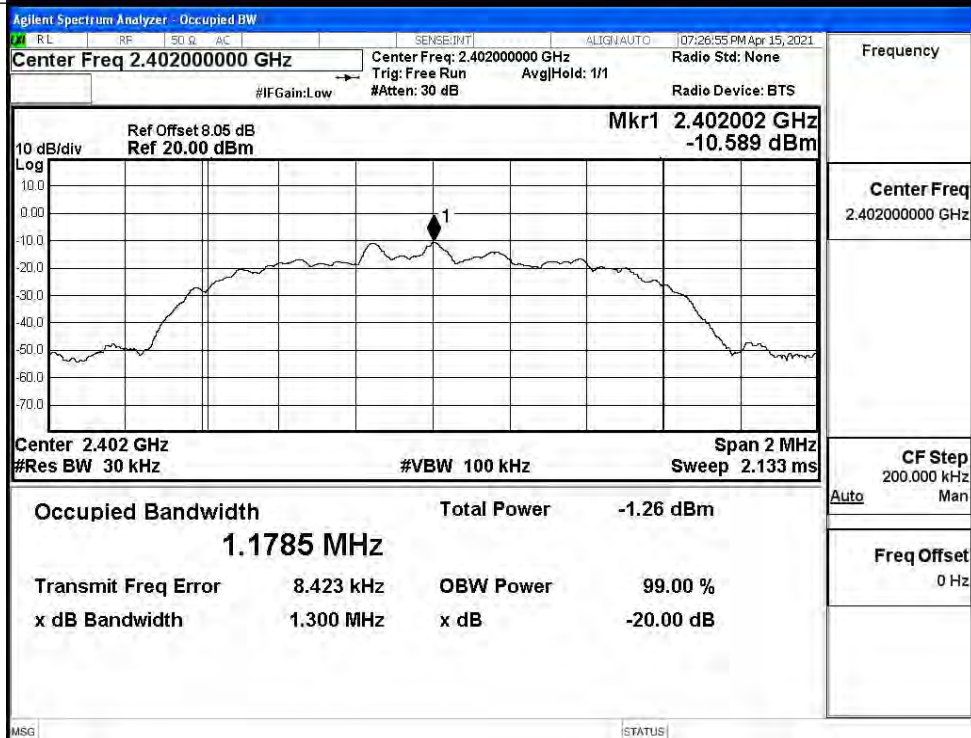
GFSK/HCH



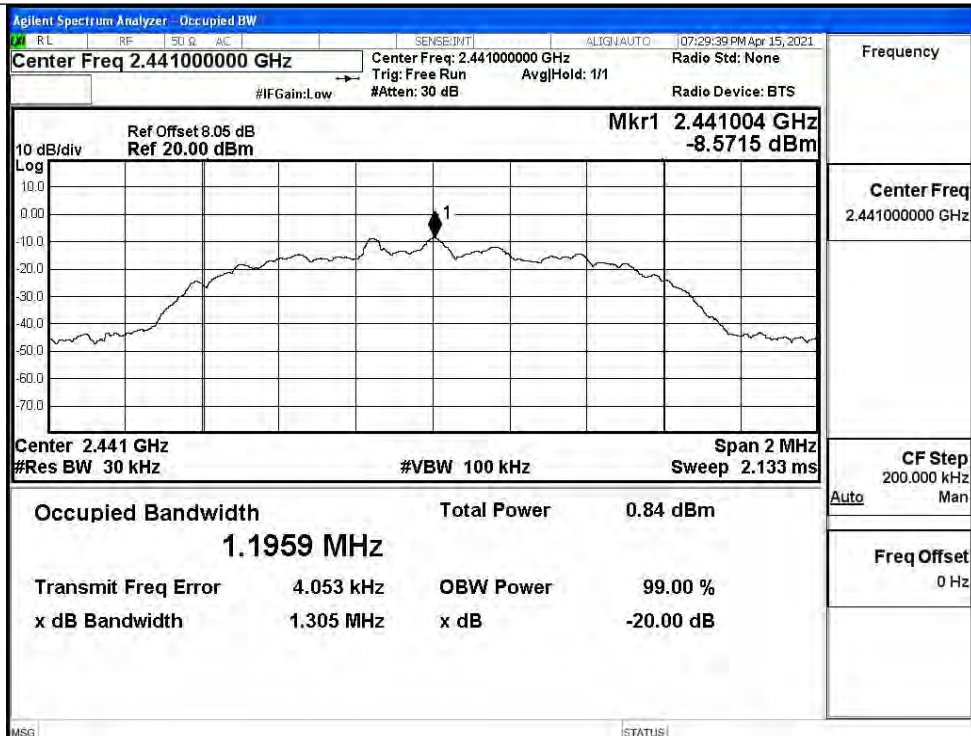
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

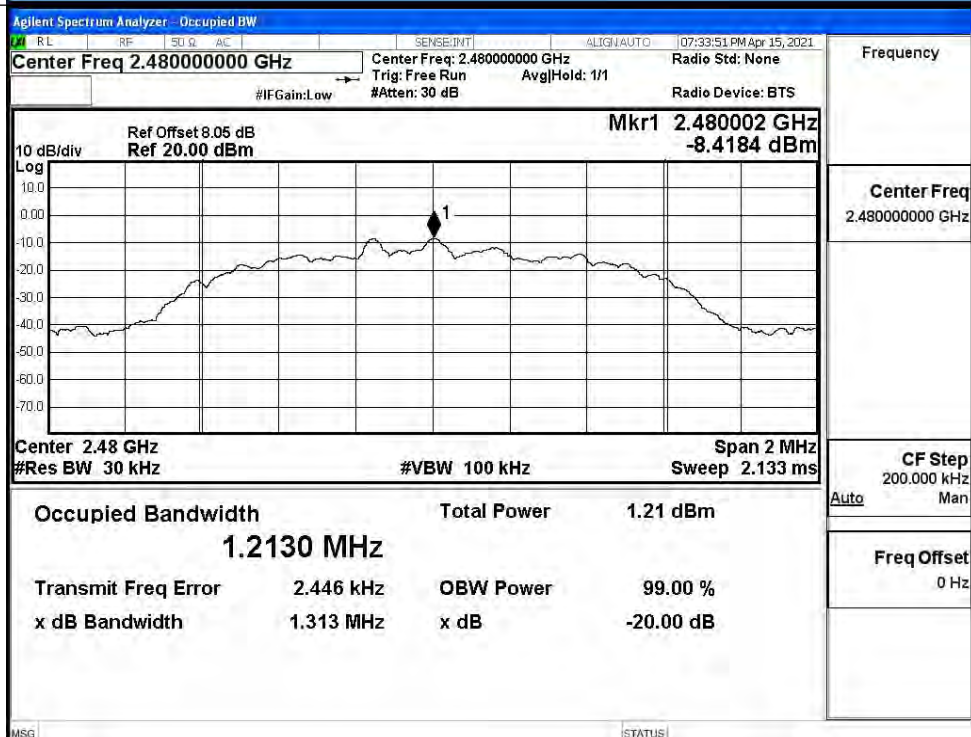
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

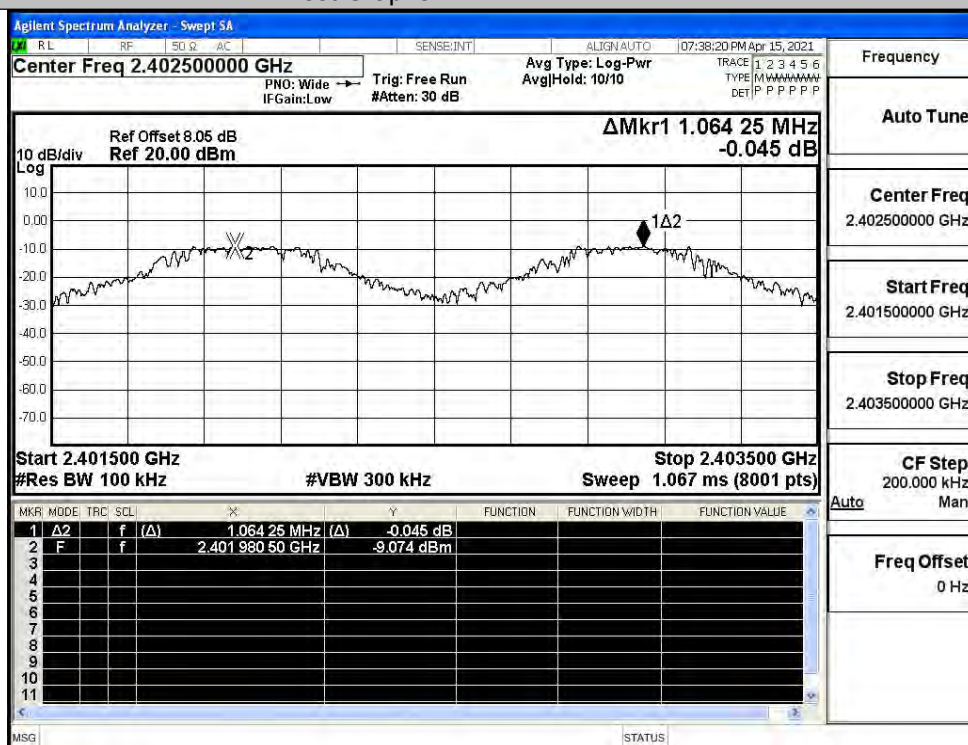


A.3 Carrier Frequency Separation

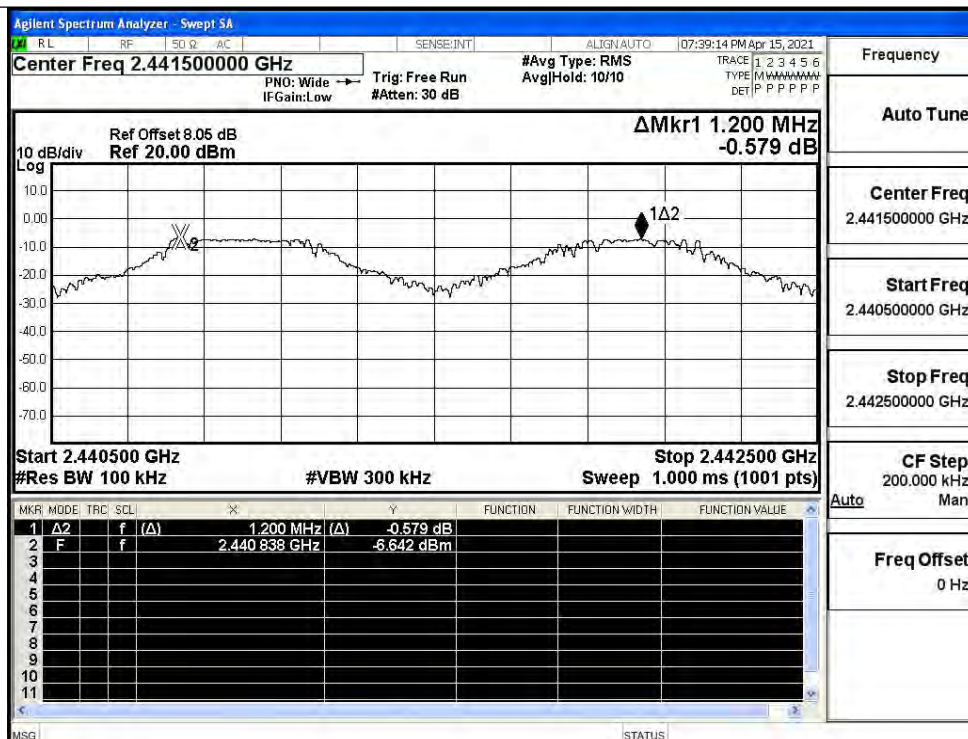
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.064	0.637	PASS
	MCH	1.200	0.636	PASS
	HCH	0.940	0.639	PASS
$\pi/4$ DQPSK	LCH	0.998	0.855	PASS
	MCH	1.002	0.878	PASS
	HCH	0.996	0.881	PASS
8DPSK	LCH	1.056	0.867	PASS
	MCH	1.012	0.870	PASS
	HCH	1.216	0.875	PASS

Test Graphs

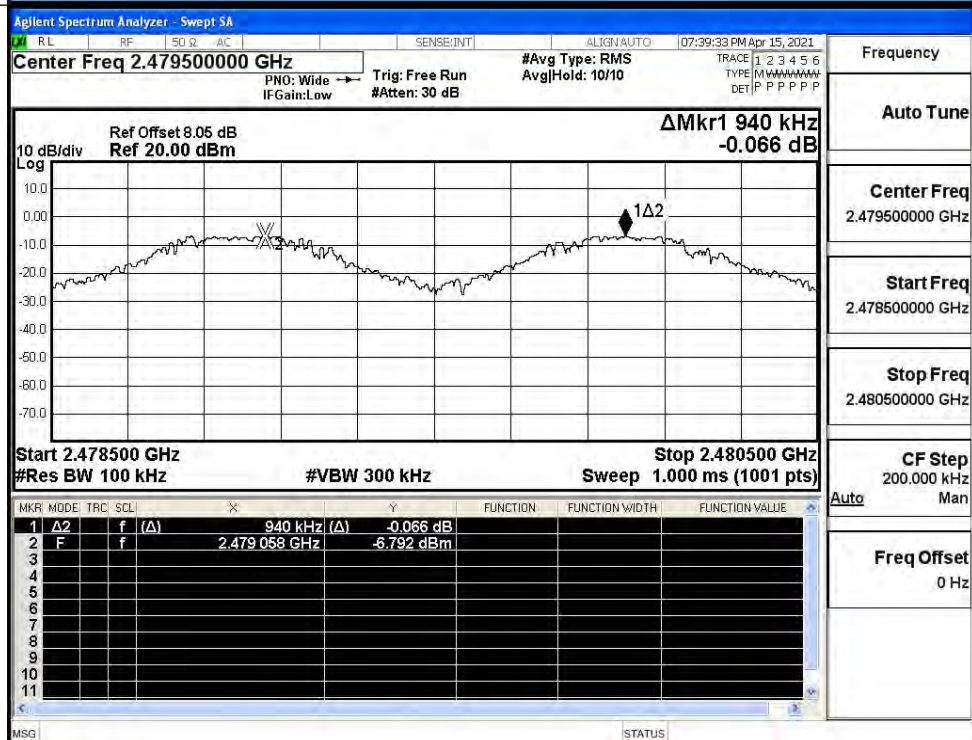
GFSK/LCH

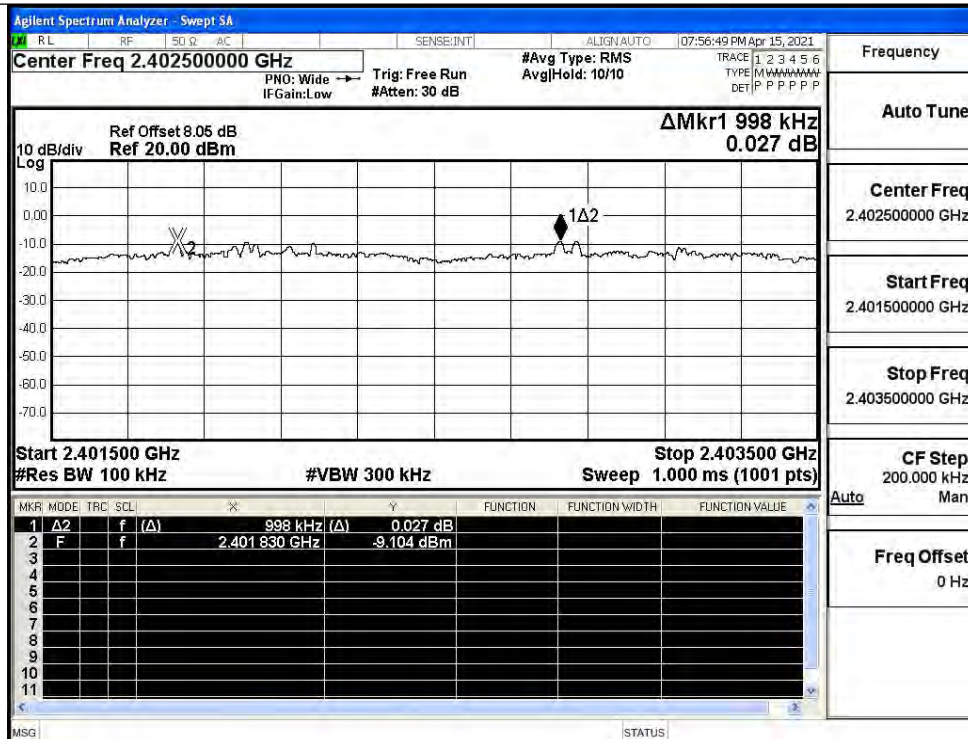
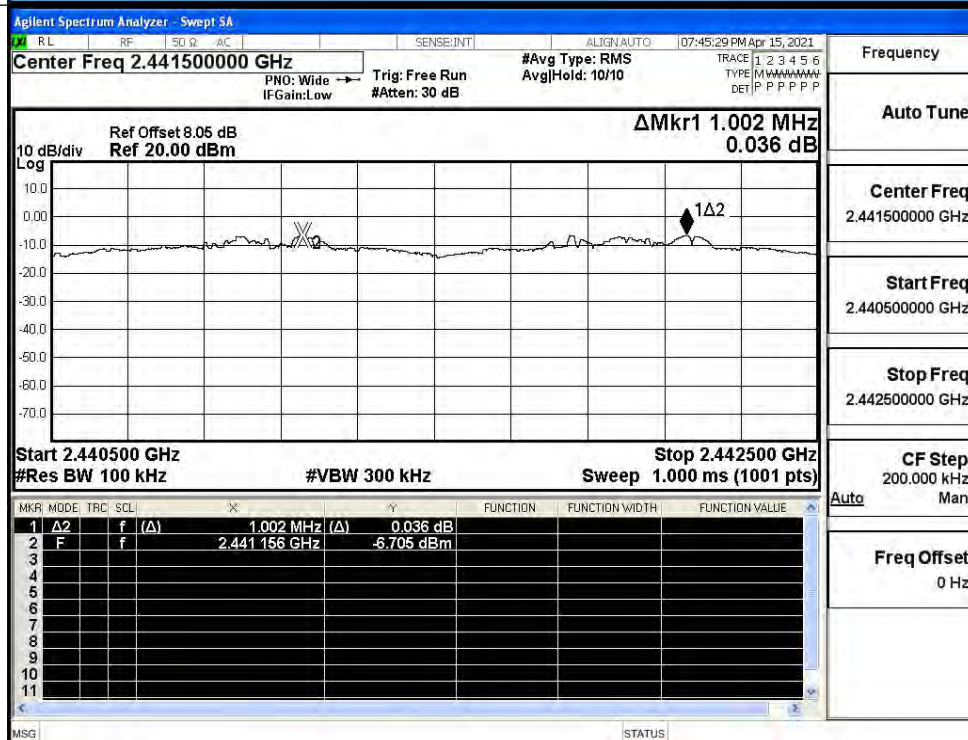


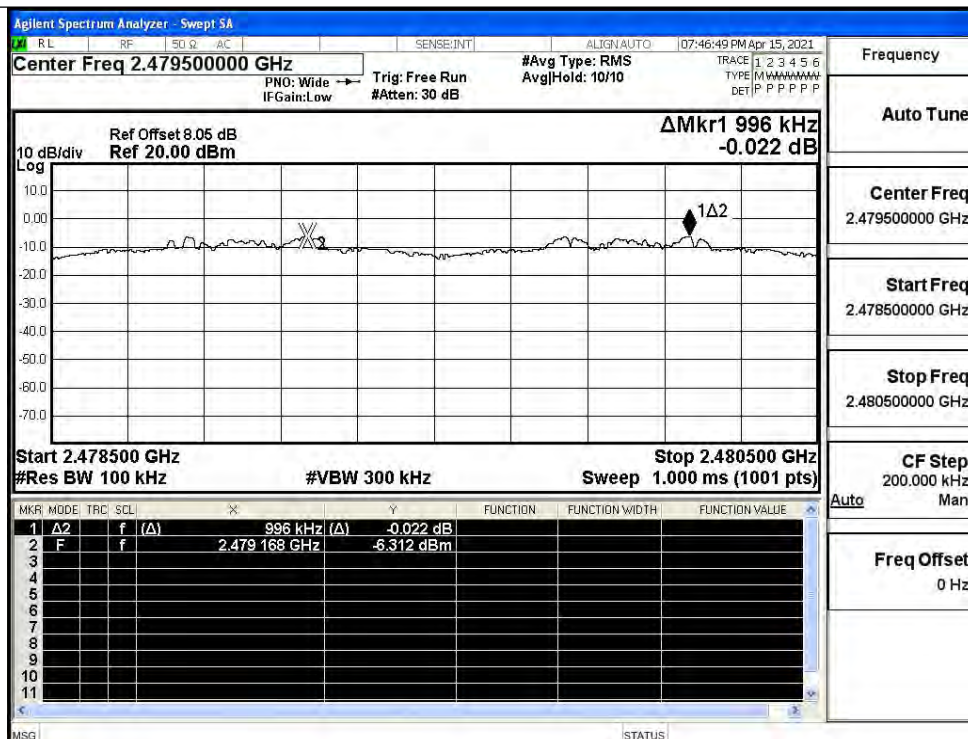
GFSK/MCH



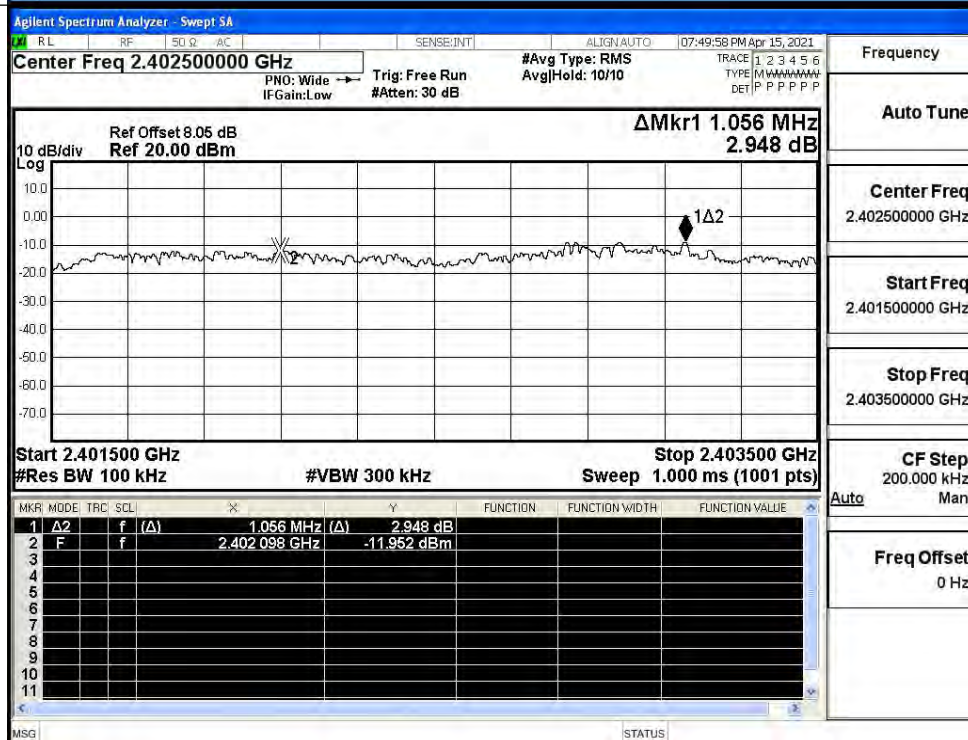
GFSK/HCH



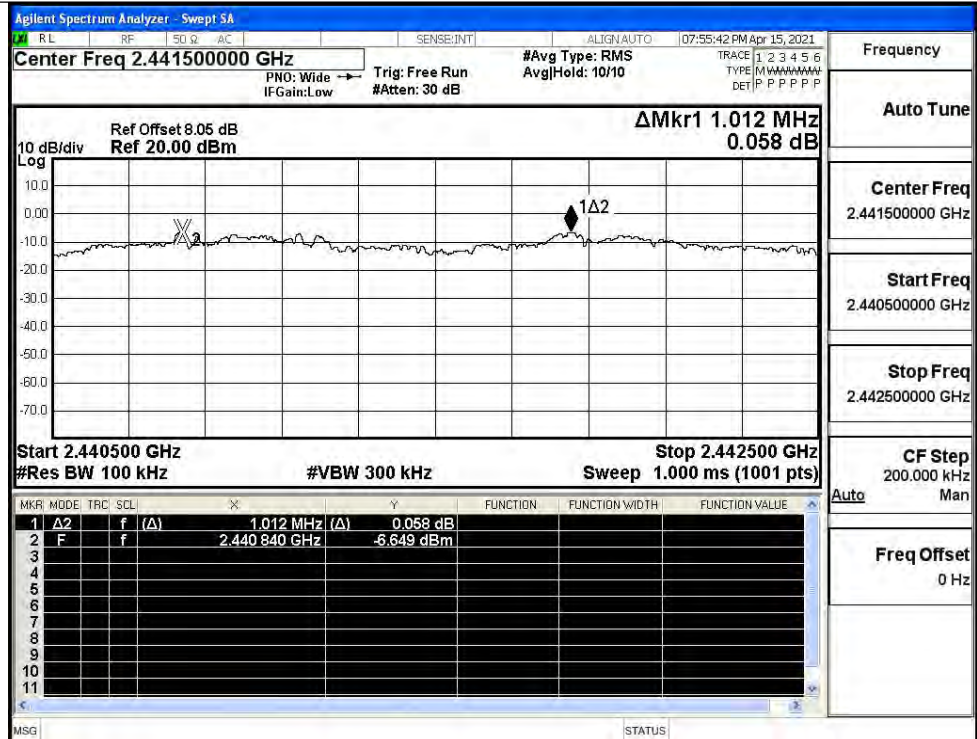
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

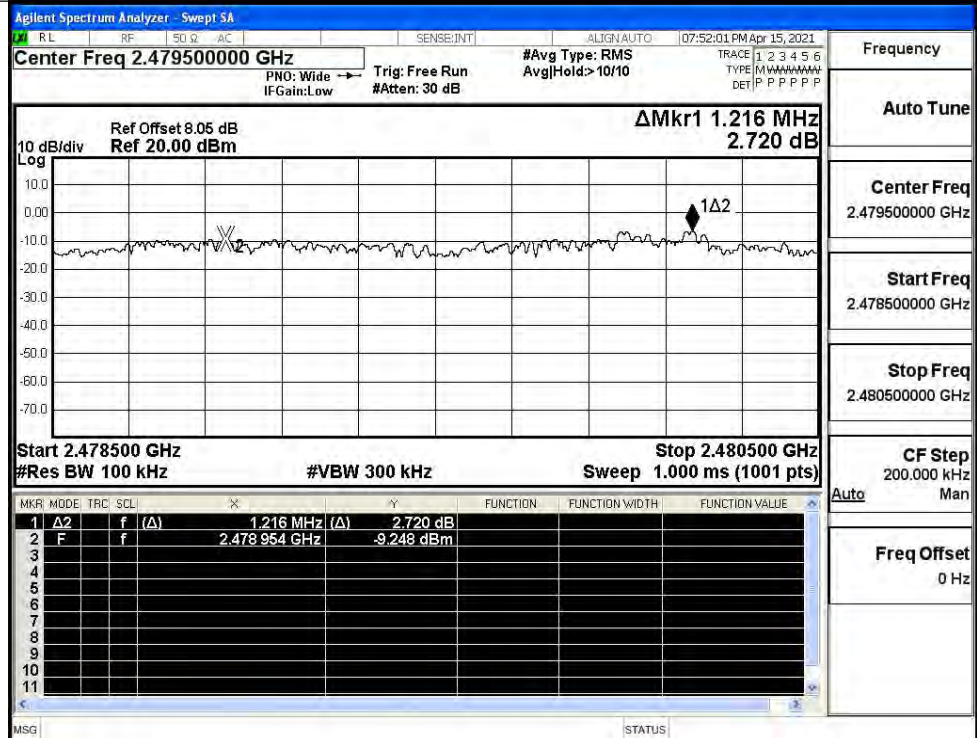
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

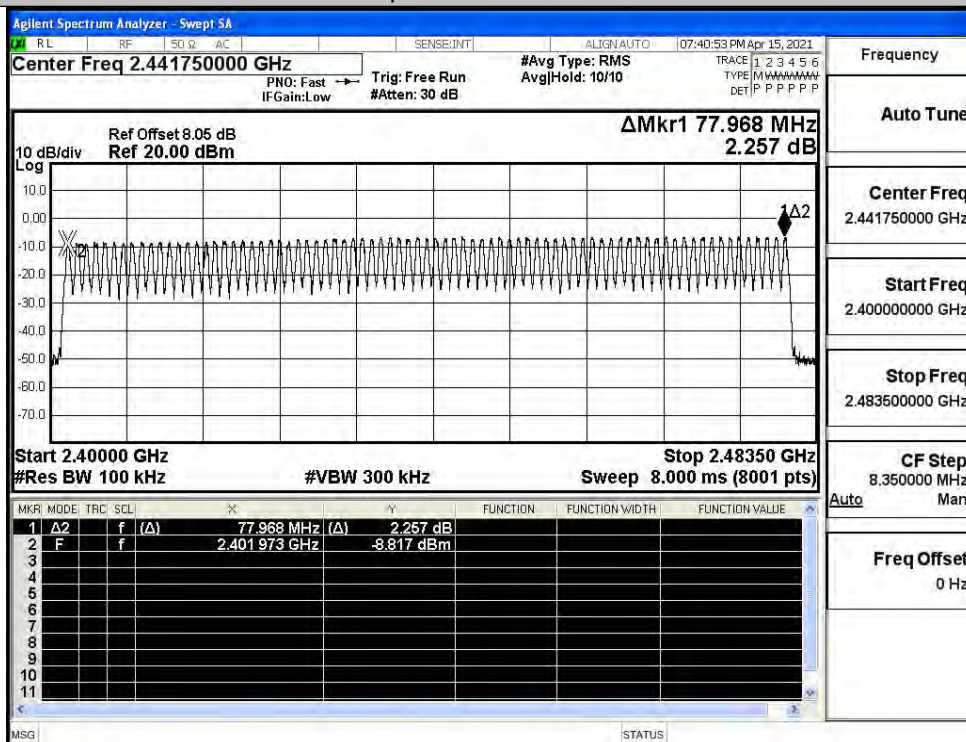
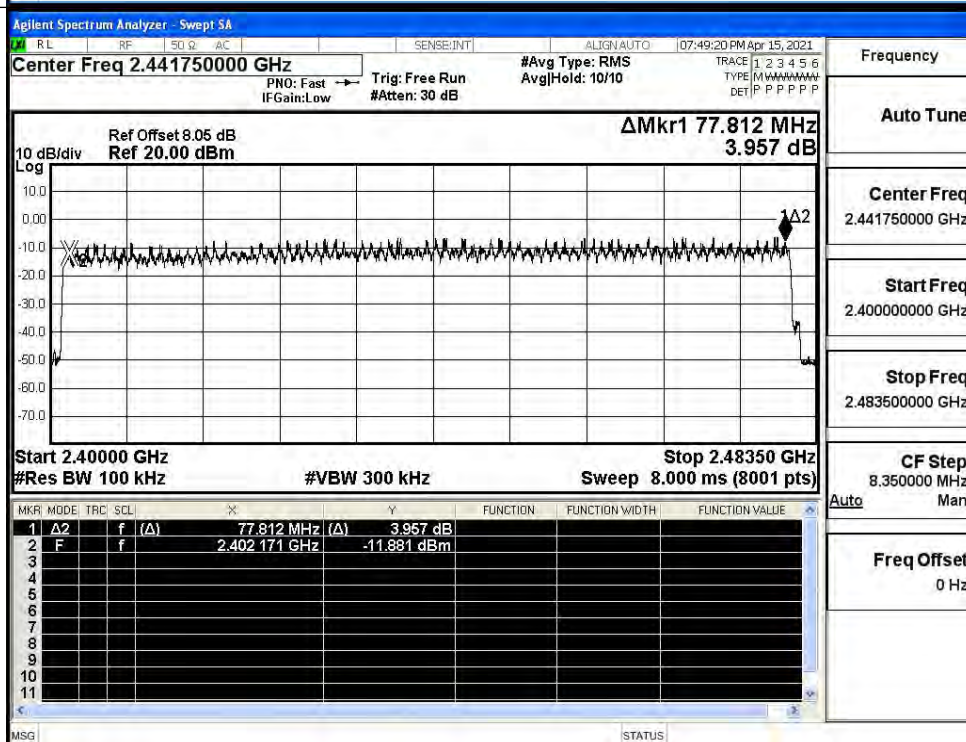


A.4 Hopping Channel Number

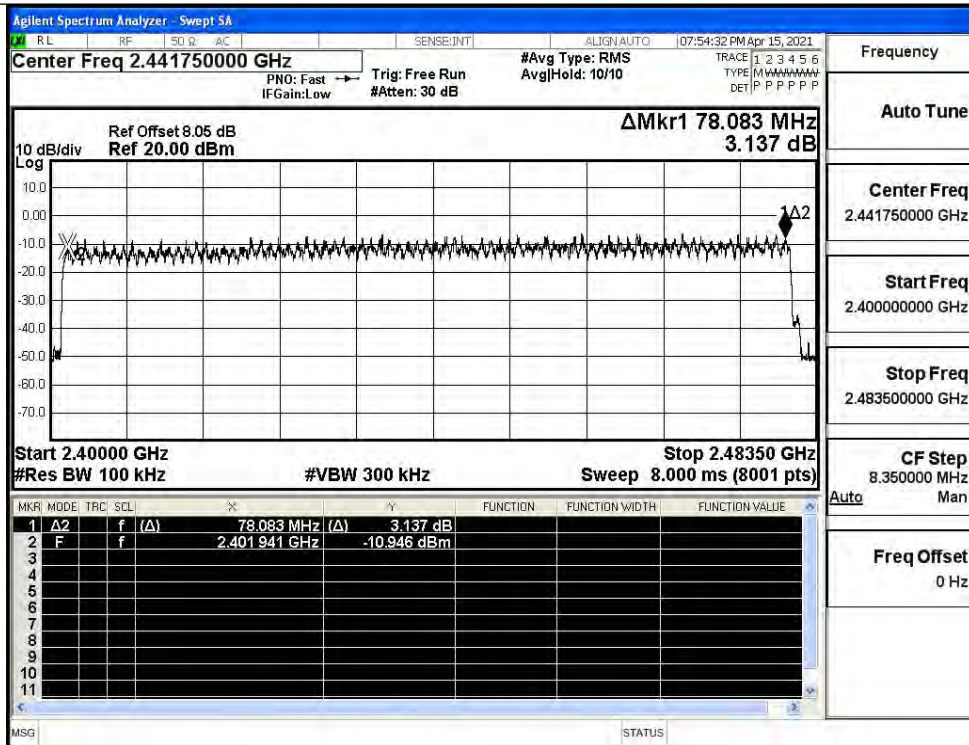
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	≥ 15	PASS
$\pi/4$ DQPSK	Hop	79	≥ 15	PASS
8DPSK	Hop	79	≥ 15	PASS

Test Graphs

GFSK/Hop

 $\pi/4$ DQPSK/Hop

8DPSK/Hop

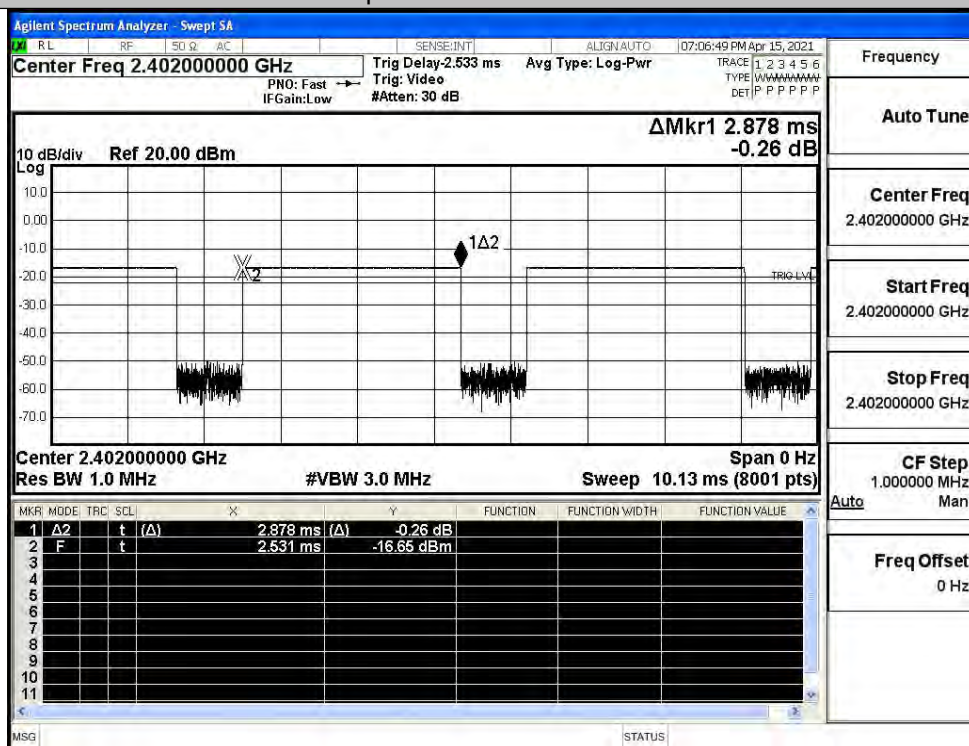


A.5 Dwell Time

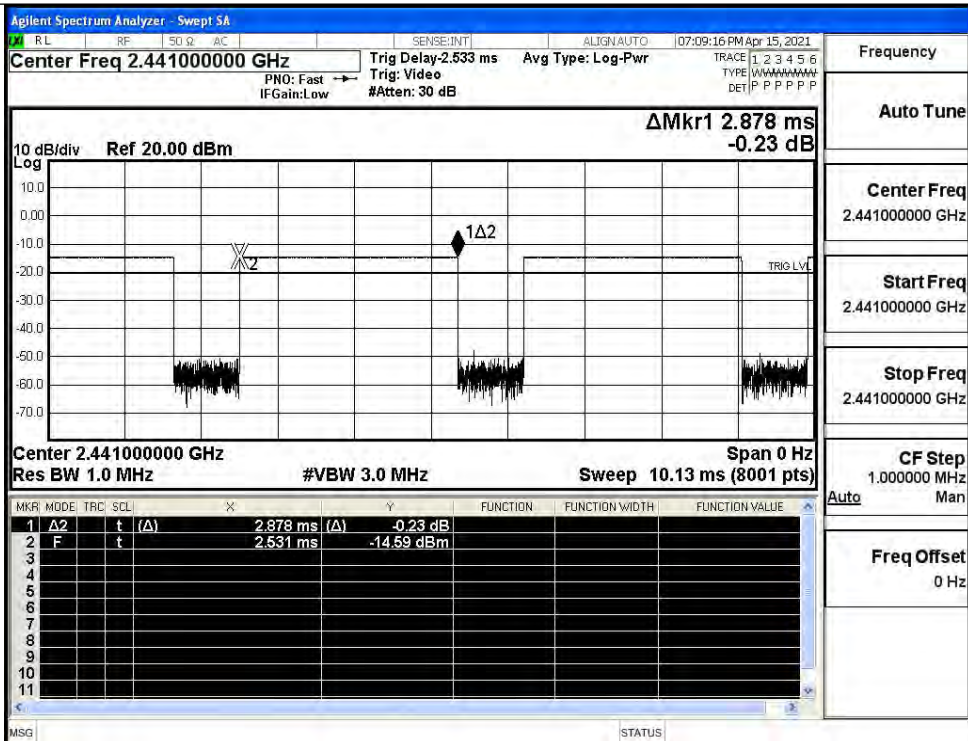
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7	0.307	0.4	PASS
8DPSK	3DH5	LCH	2.89	106.7	0.308	0.4	PASS
	3DH5	MCH	2.89	106.7	0.308	0.4	PASS
	3DH5	HCH	2.89	106.7	0.308	0.4	PASS

Test Graphs

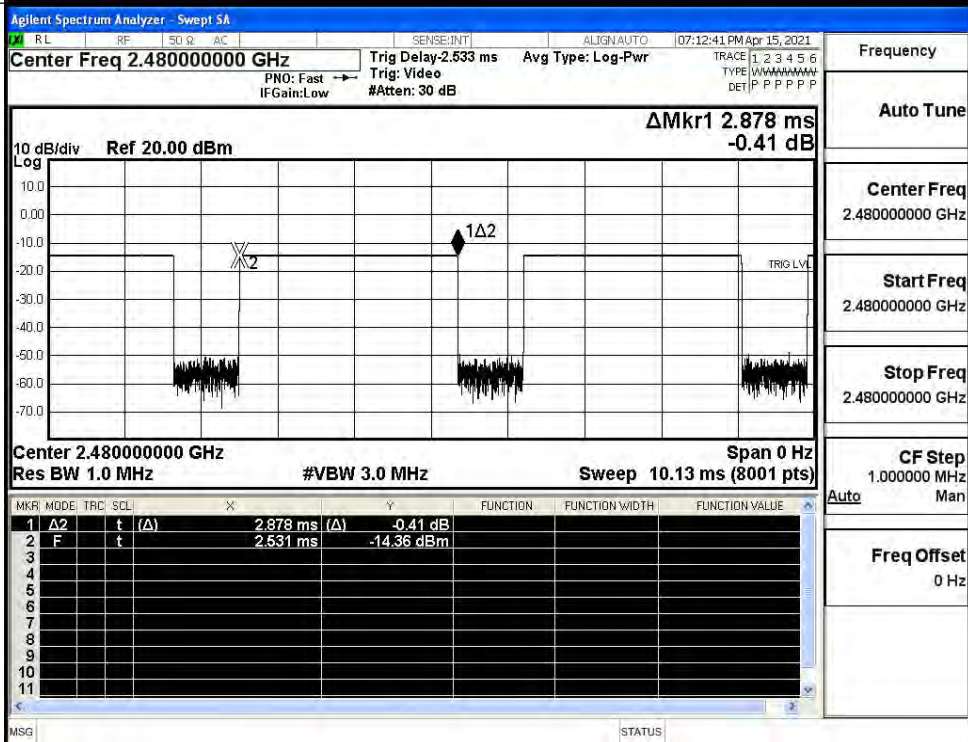
GFSK_DH5/LCH



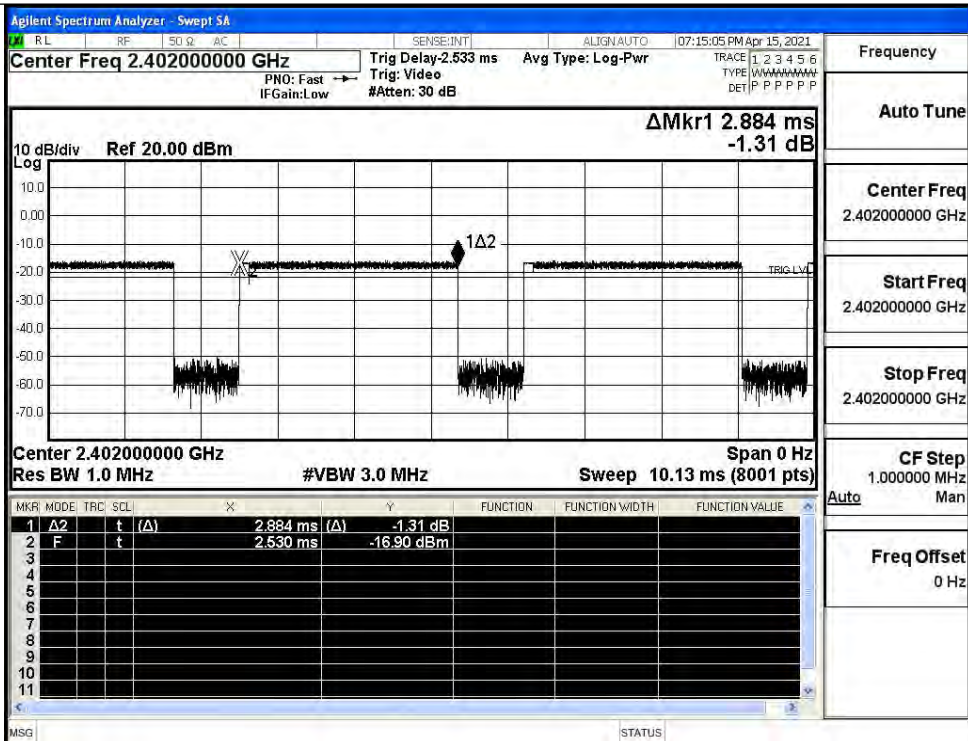
GFSK_DH5/MCH



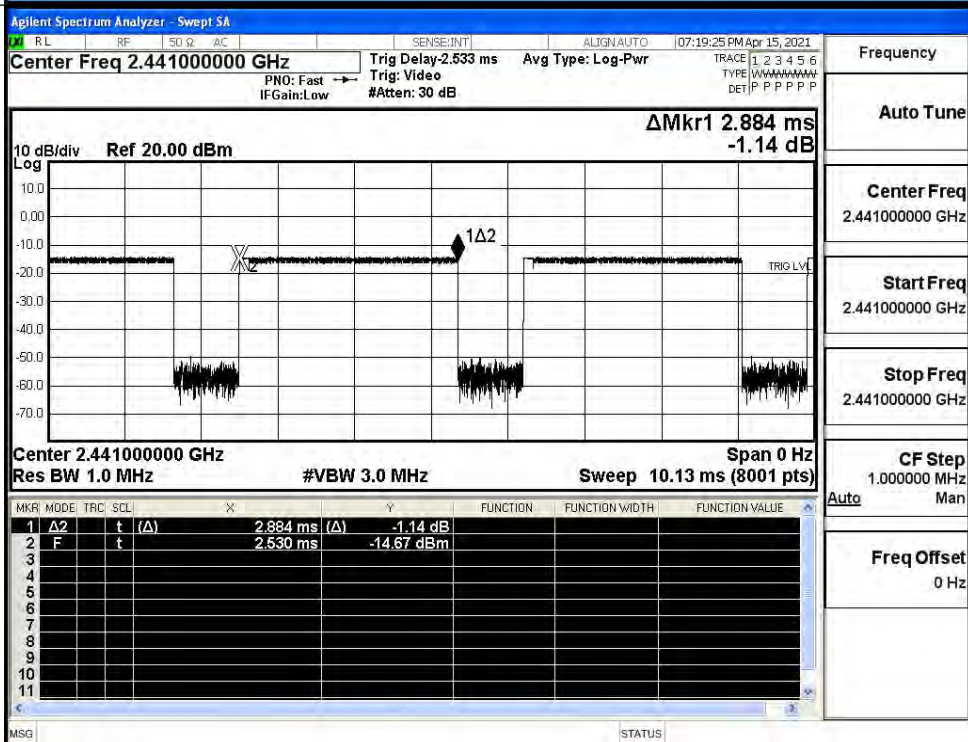
GFSK_DH5/HCH



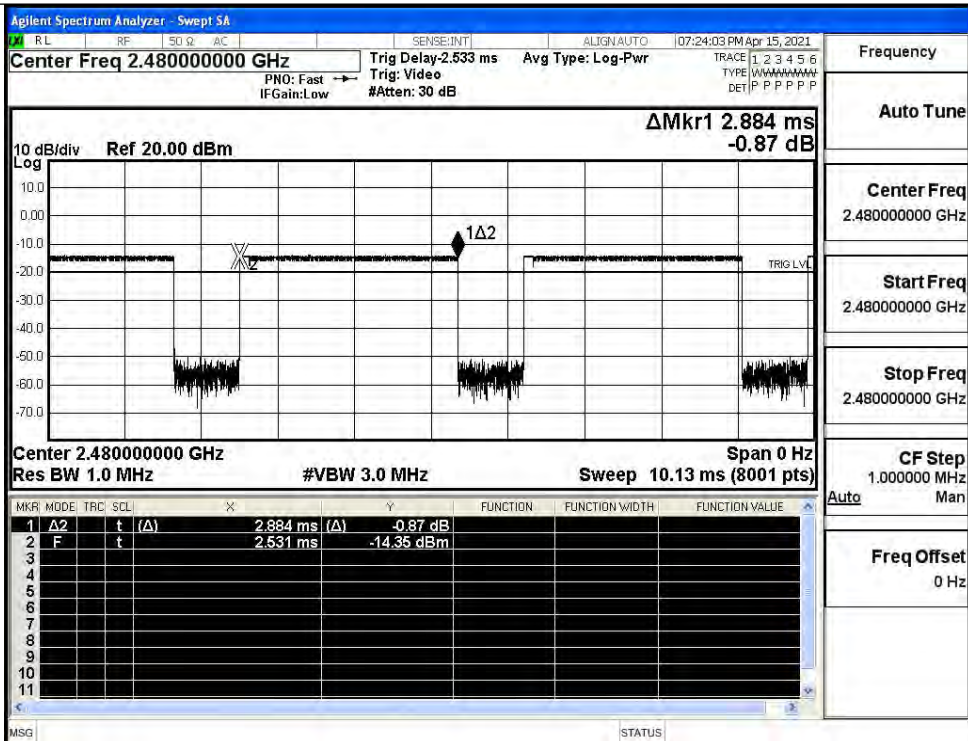
$\pi/4$ DQPSK
_2DH5/LCH



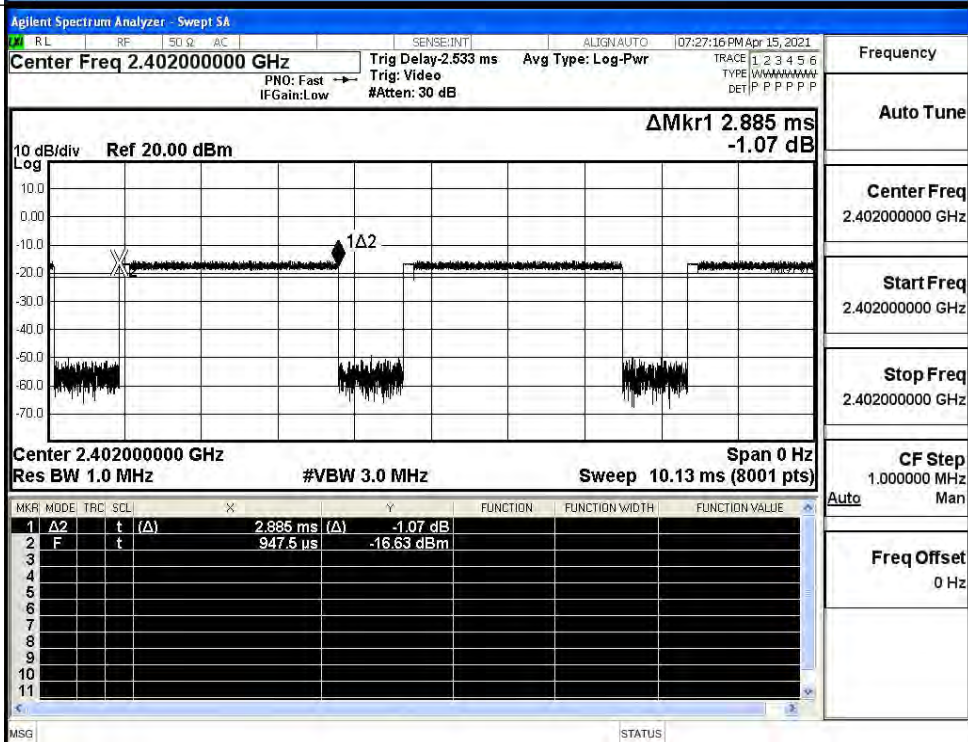
$\pi/4$ DQPSK
_2DH5/MCH



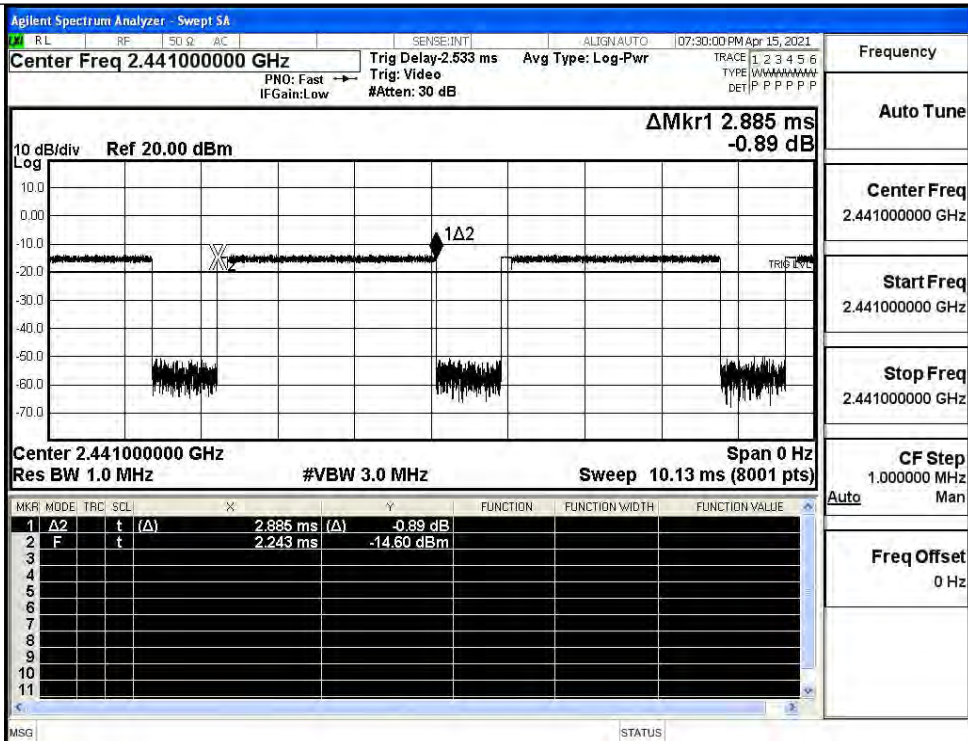
$\pi/4$ DQPSK
_2DH5/HCH



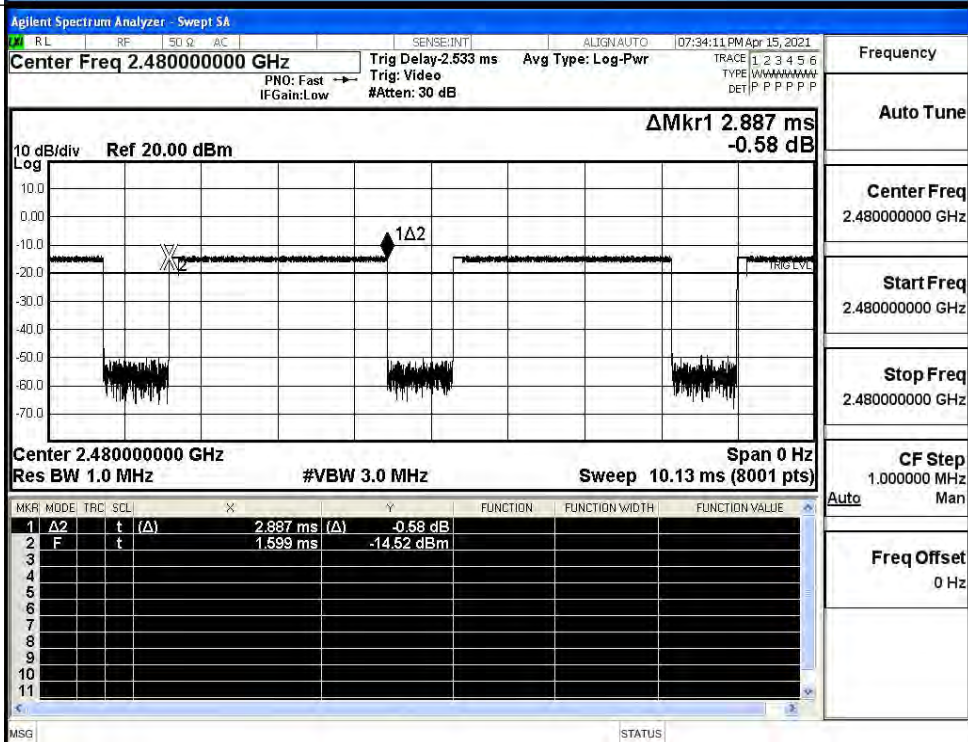
8DPSK _3DH5/LCH



8DPSK_3DH5/MCH



8DPSK_3DH5/HCH

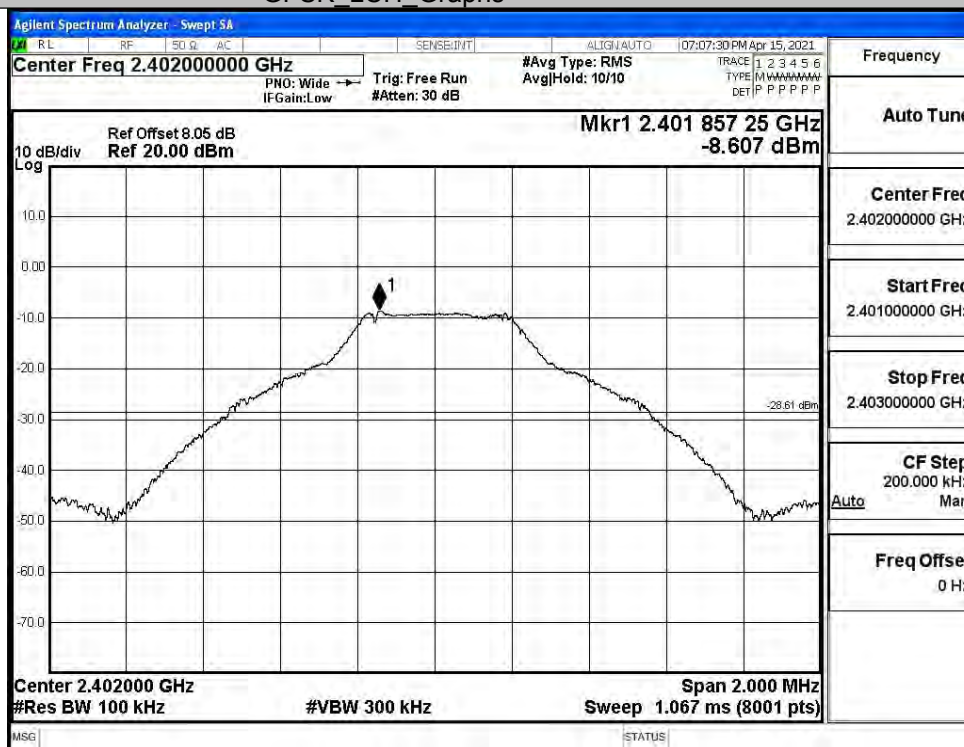


A.6 RF Conducted Spurious Emissions

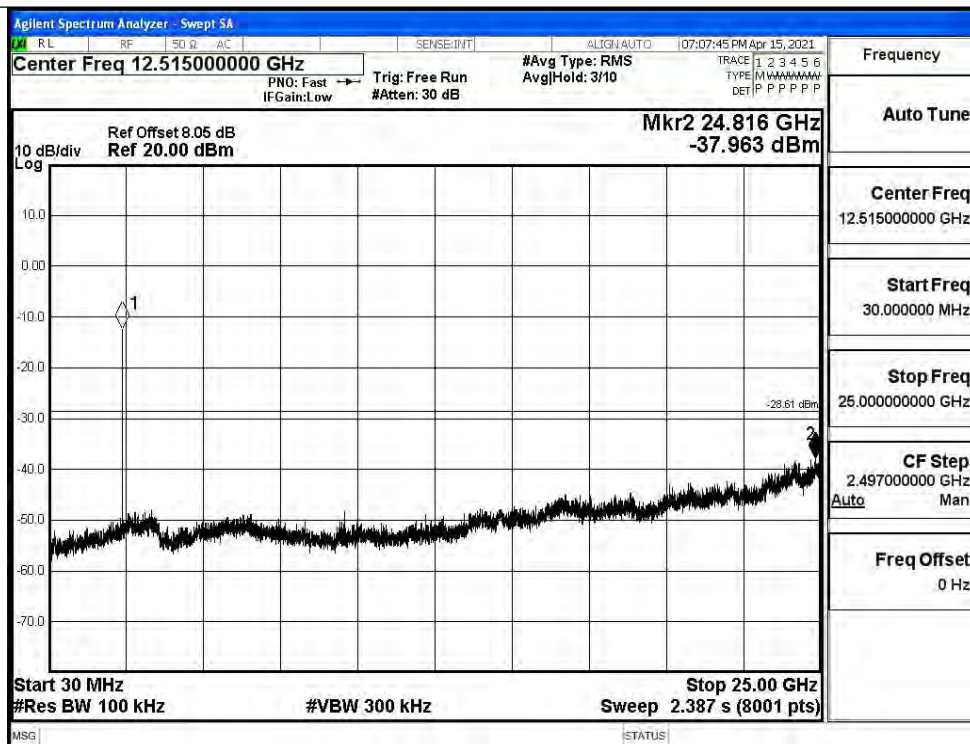
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-8.607	-37.963	-28.607	PASS
	MCH	-6.533	-37.307	-26.533	PASS
	HCH	-6.233	-38.378	-26.233	PASS
$\pi/4$ DQPSK	LCH	-8.598	-38.275	-28.598	PASS
	MCH	-6.518	-37.550	-26.518	PASS
	HCH	-6.221	-37.971	-26.221	PASS
8DPSK	LCH	-8.873	-37.516	-28.873	PASS
	MCH	-6.423	-37.337	-26.423	PASS
	HCH	-6.247	-37.503	-26.247	PASS

GFSK LCH Graphs

Pref

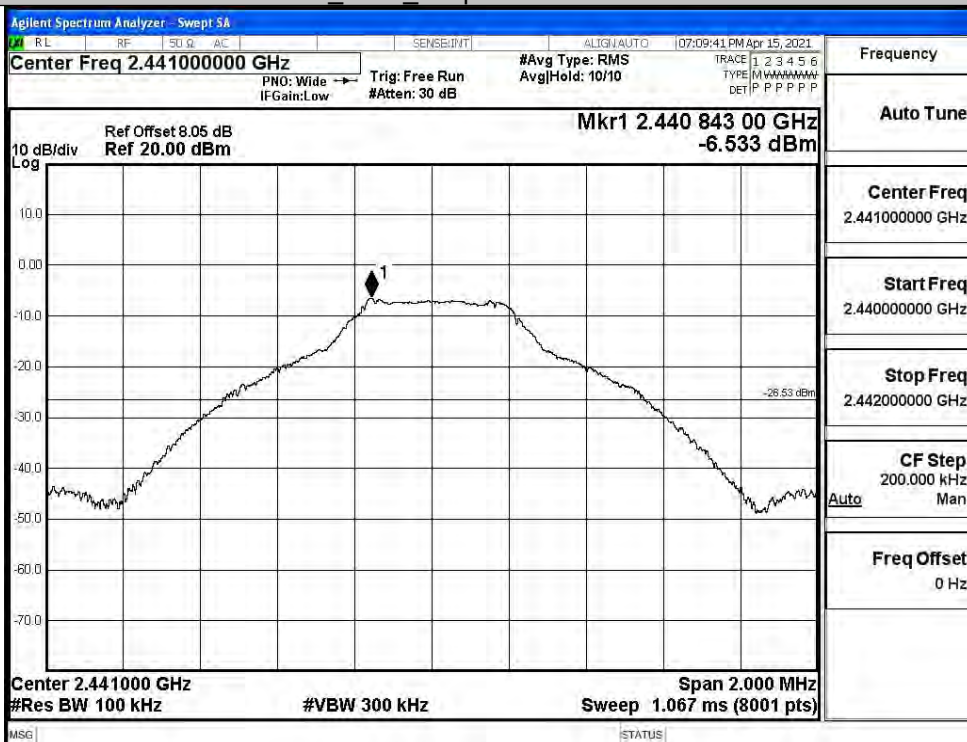


Puw

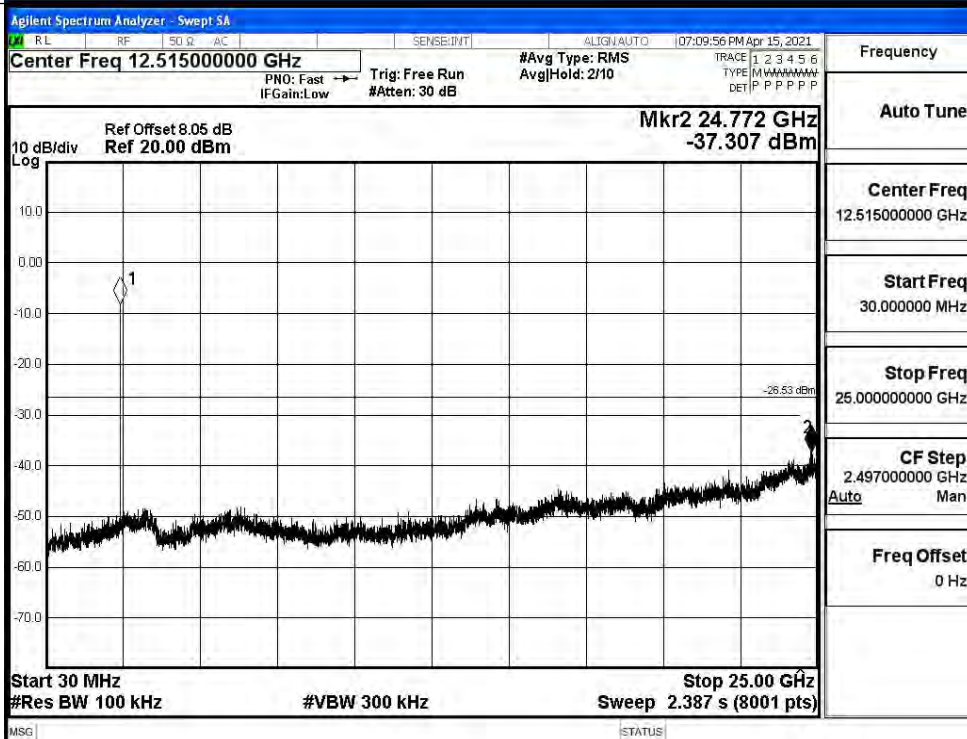


GFSK_MCH_Graphs

Pref

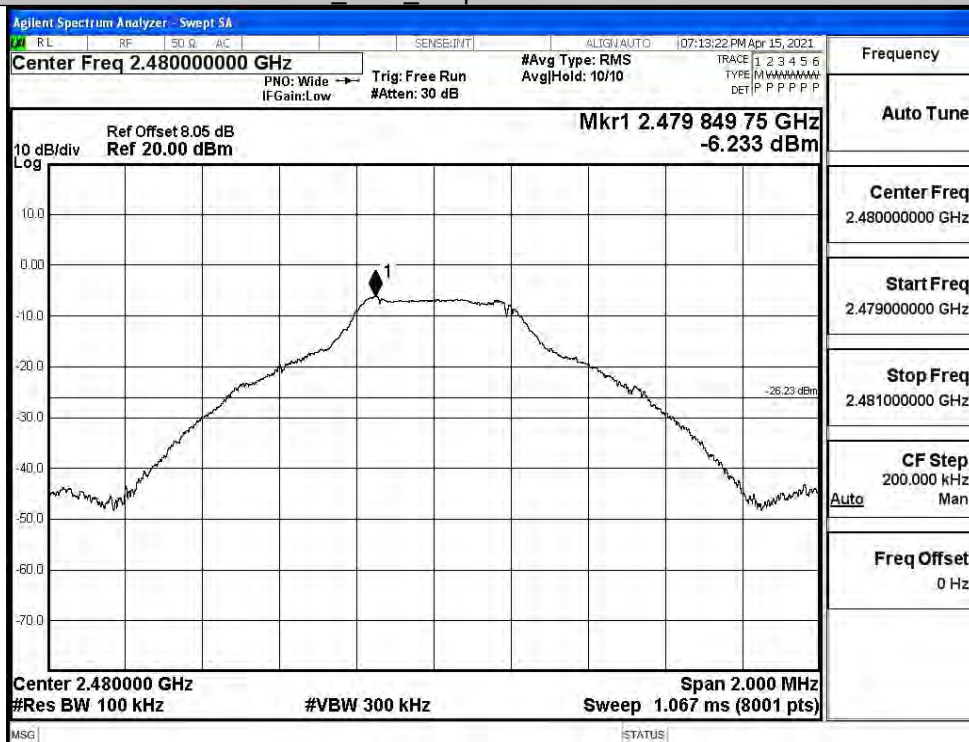


Puw



GFSK_HCH_Graphs

Pref

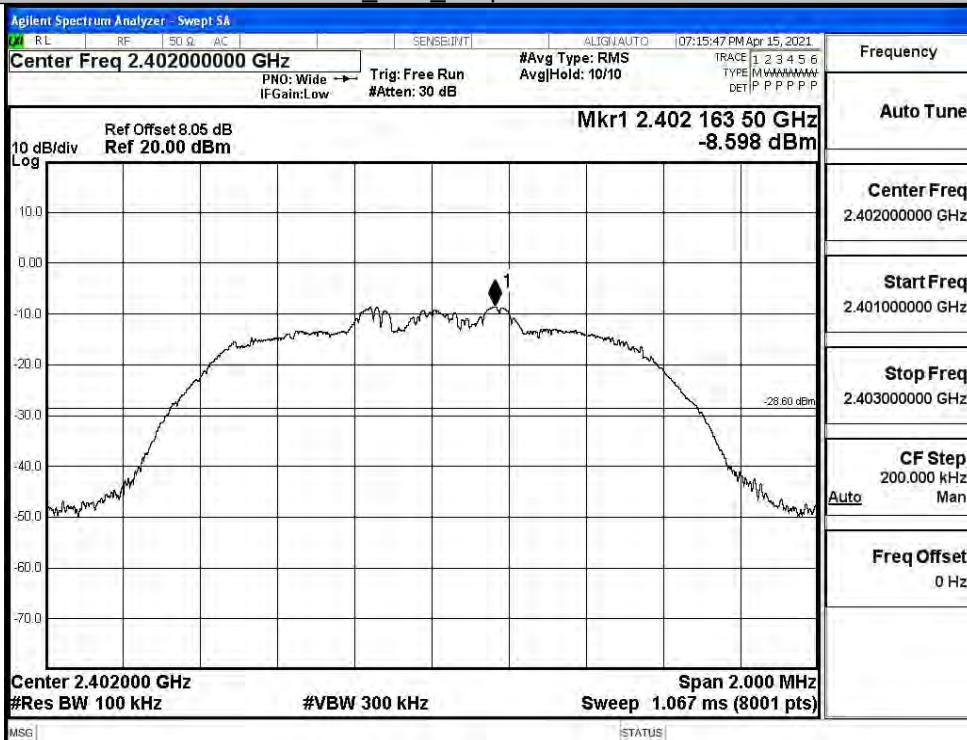


Puw



π /4DQPSK_LCH_Graphs

Pref

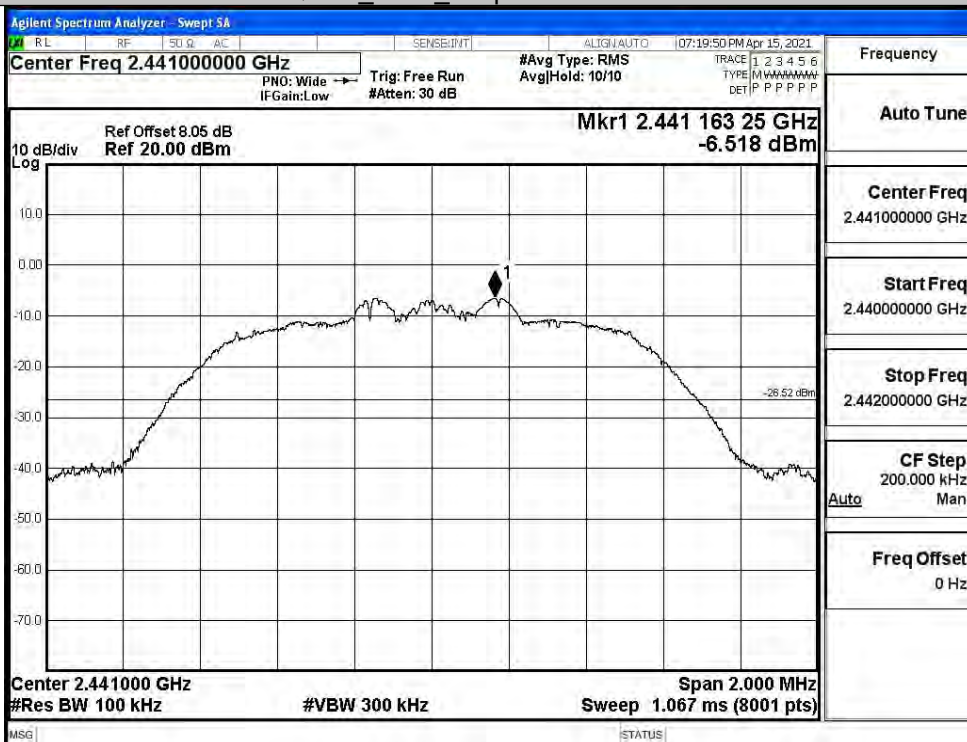


Puw

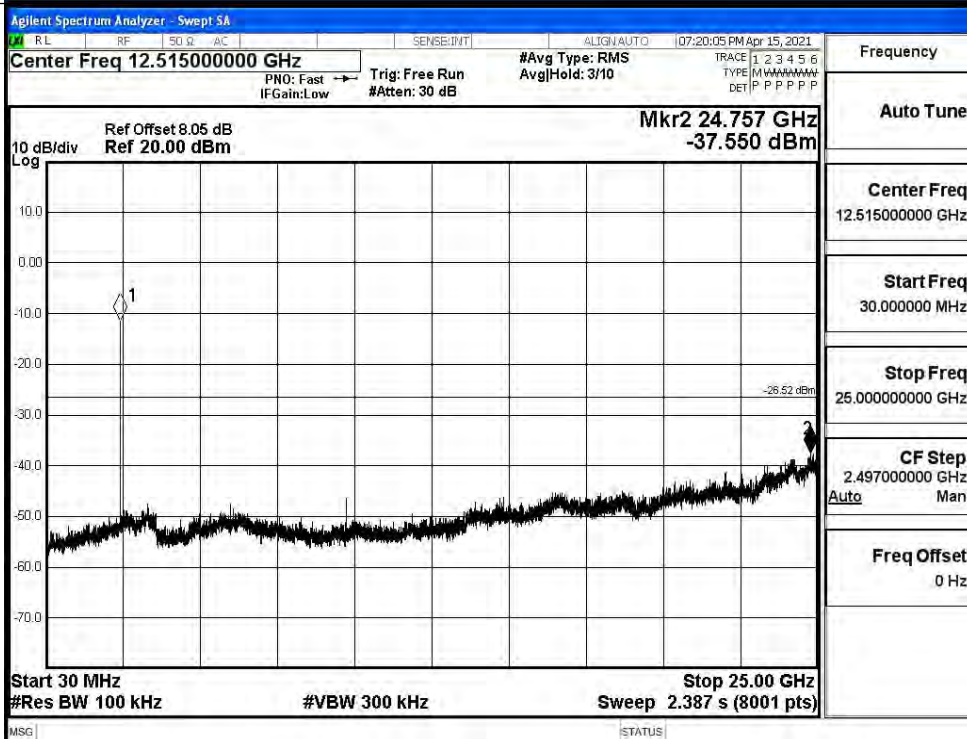


π /4DQPSK_MCH_Graphs

Pref

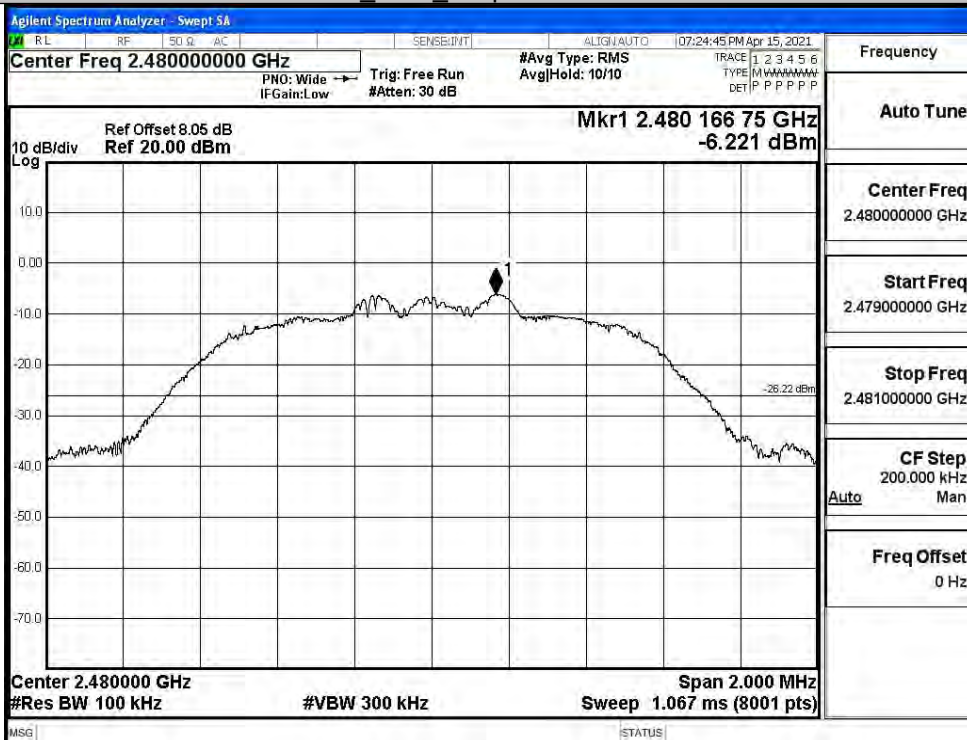


Puw

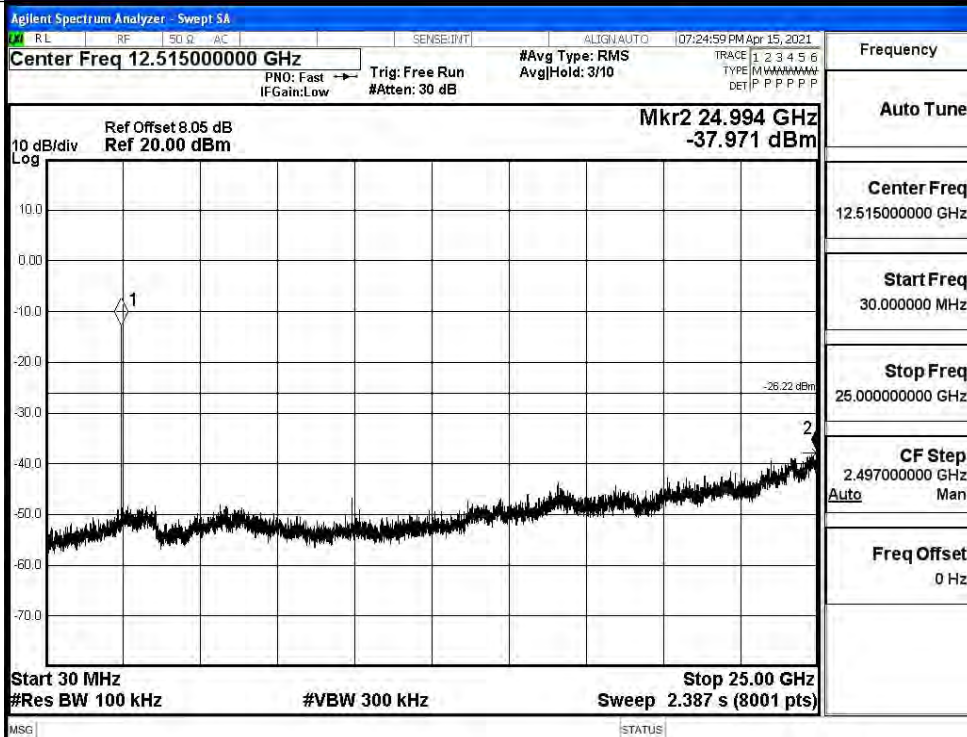


$\pi/4$ DQPSK_HCH_Graphs

Pref

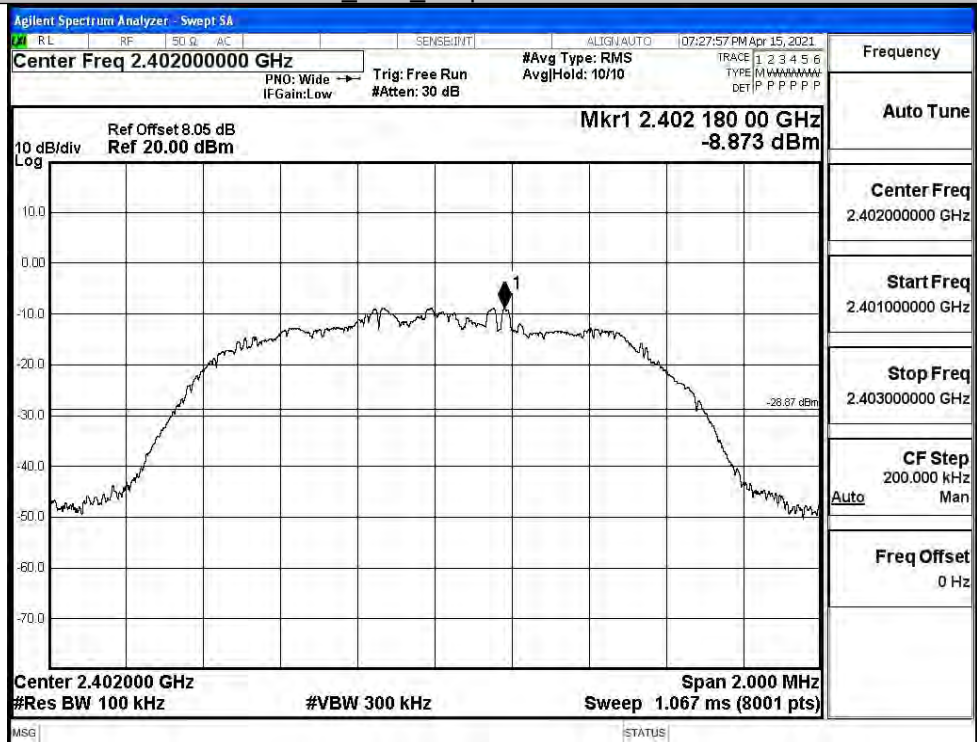


Puw



8DPSK_LCH_Graphs

Pref

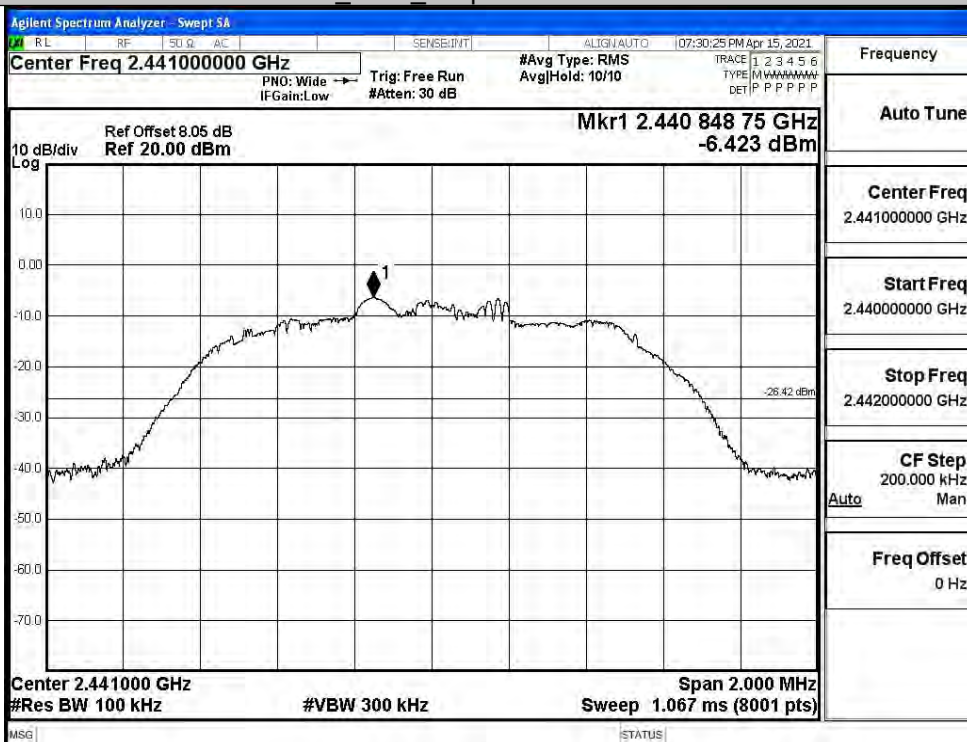


Puw

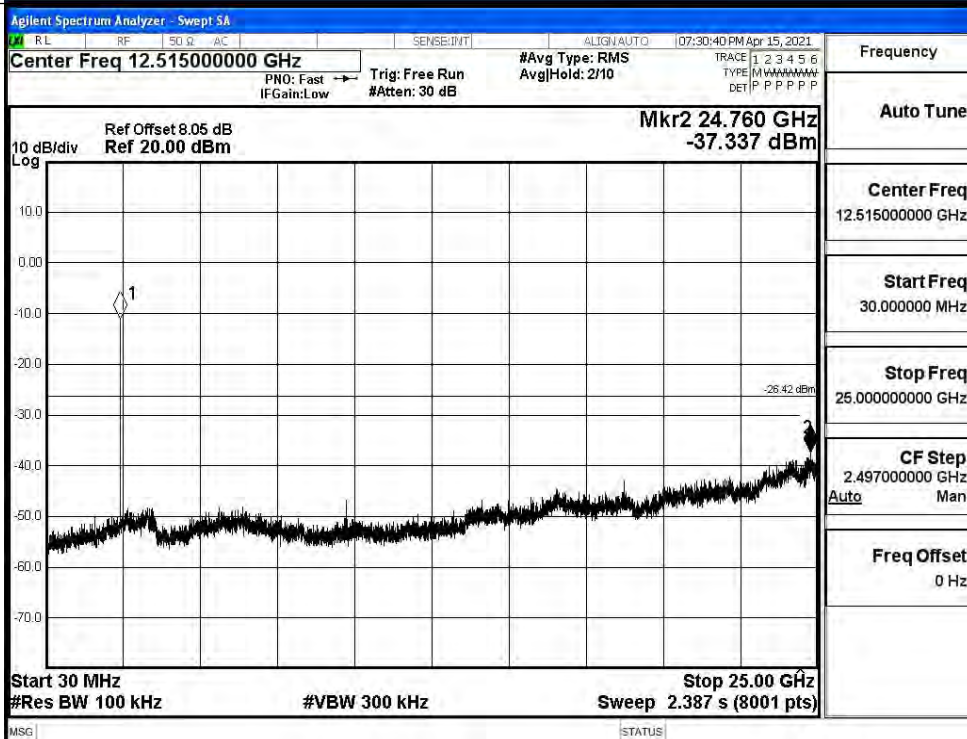


8DPSK_MCH_Graphs

Pref

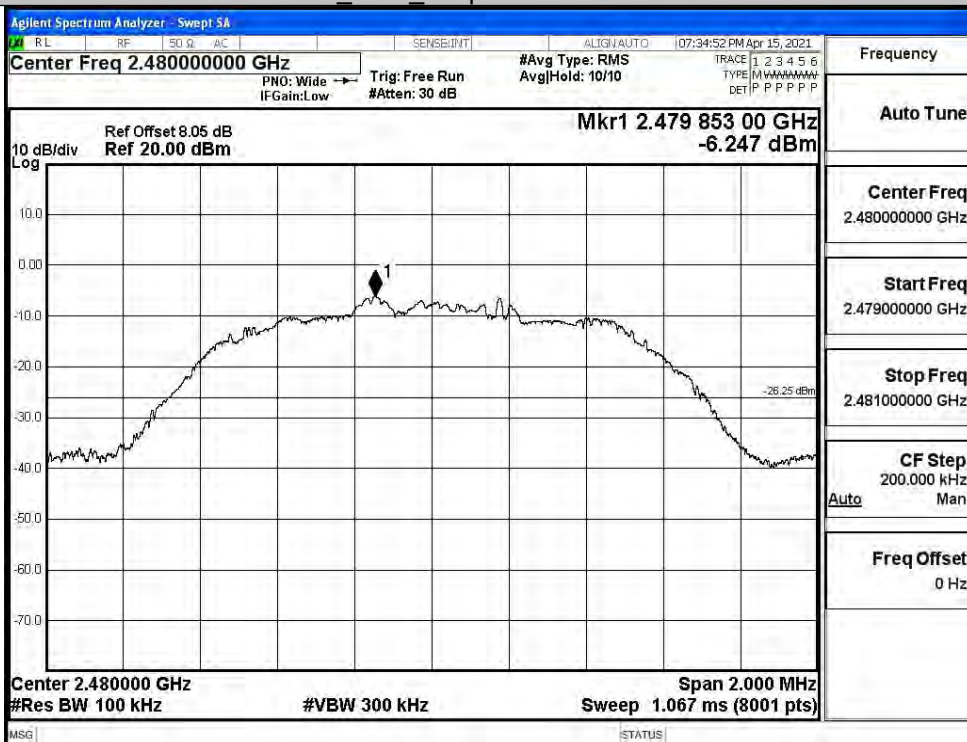


Puw

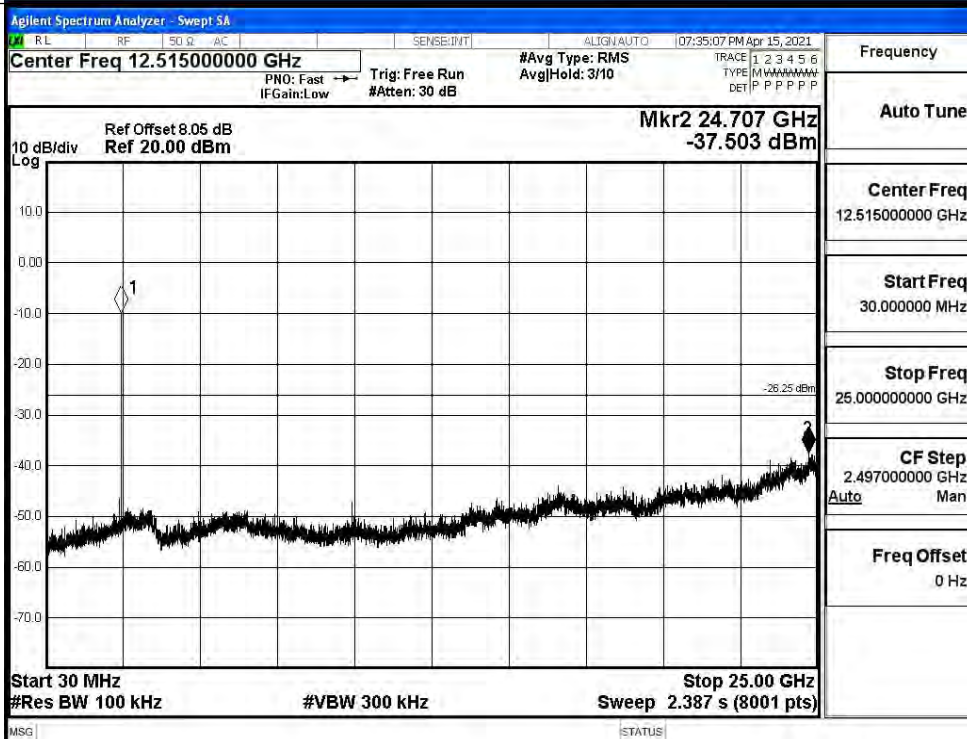


8DPSK_HCH_Graphs

Pref



Puw

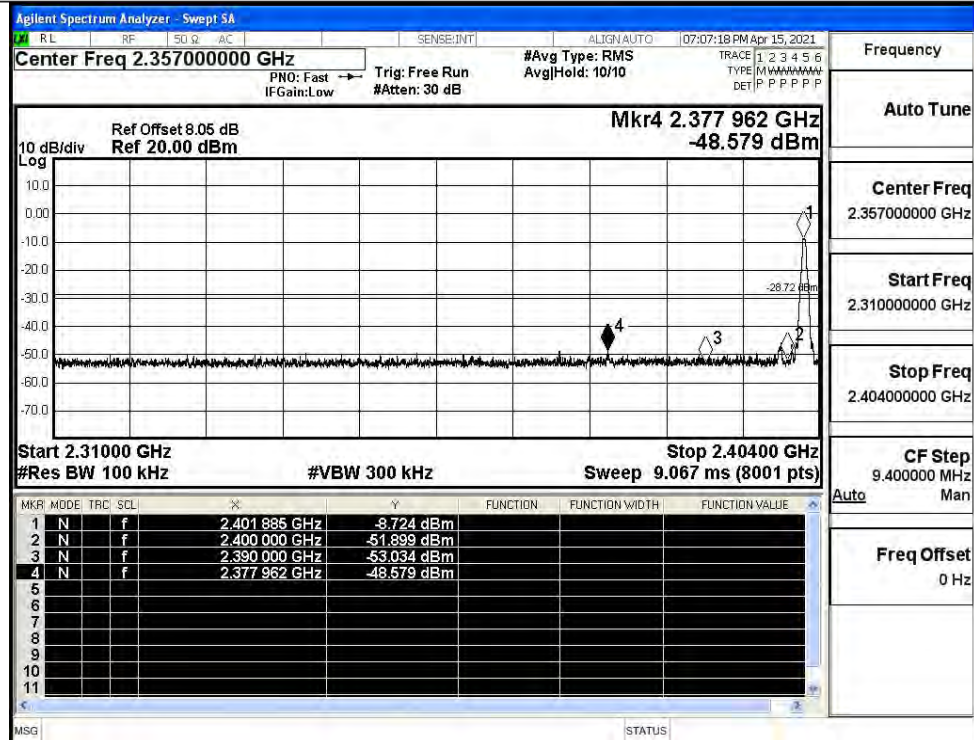


A.7 Band-edge for RF Conducted Emissions

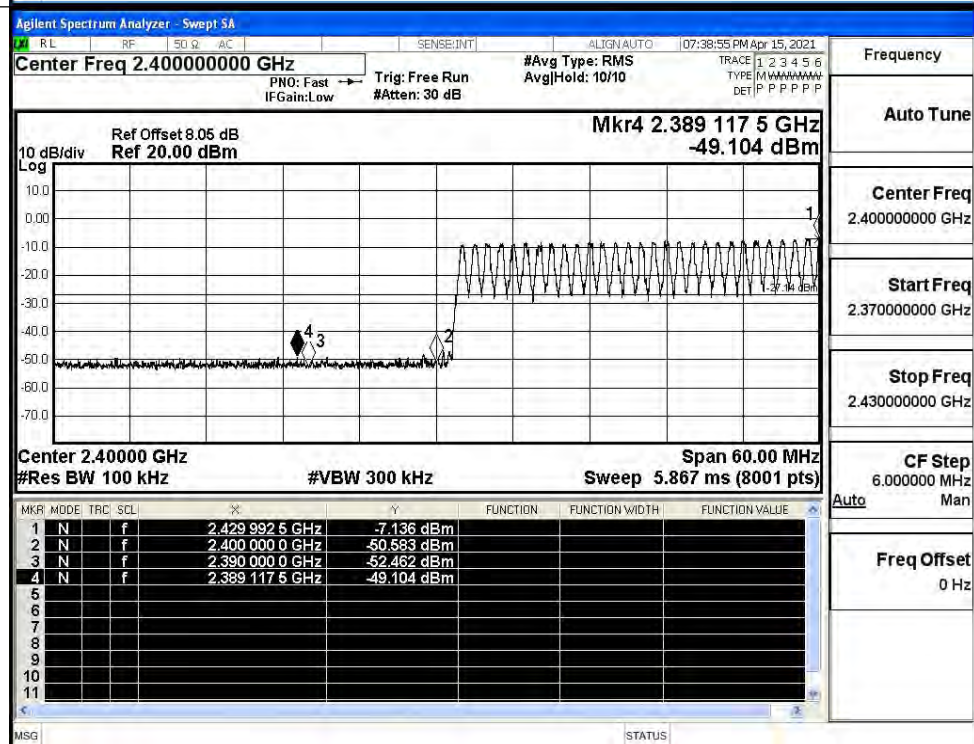
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-8.724	Off	-48.579	-28.72	PASS
			-7.136	On	-49.104	-27.14	PASS
	HCH	2480	-6.189	Off	-47.843	-26.19	PASS
			-6.275	On	-47.933	-26.28	PASS
$\pi/4$ DQPSK	LCH	2402	-8.662	Off	-49.229	-28.66	PASS
			-7.841	On	-48.614	-27.84	PASS
	HCH	2480	-6.183	Off	-49.208	-26.18	PASS
			-6.323	On	-48.071	-26.32	PASS
8DPSK	LCH	2402	-8.543	Off	-49.176	-28.54	PASS
			-7.169	On	-49.147	-27.17	PASS
	HCH	2480	-6.241	Off	-48.611	-26.24	PASS
			-6.391	On	-48.103	-26.39	PASS

Test Graphs

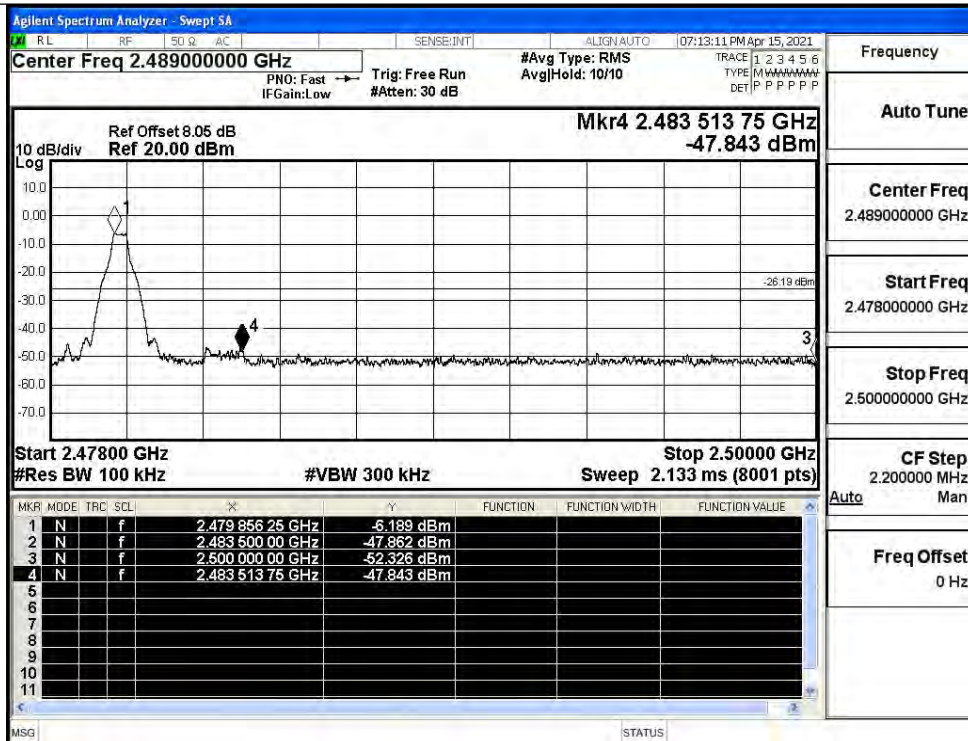
GFSK/LCH/No Hop



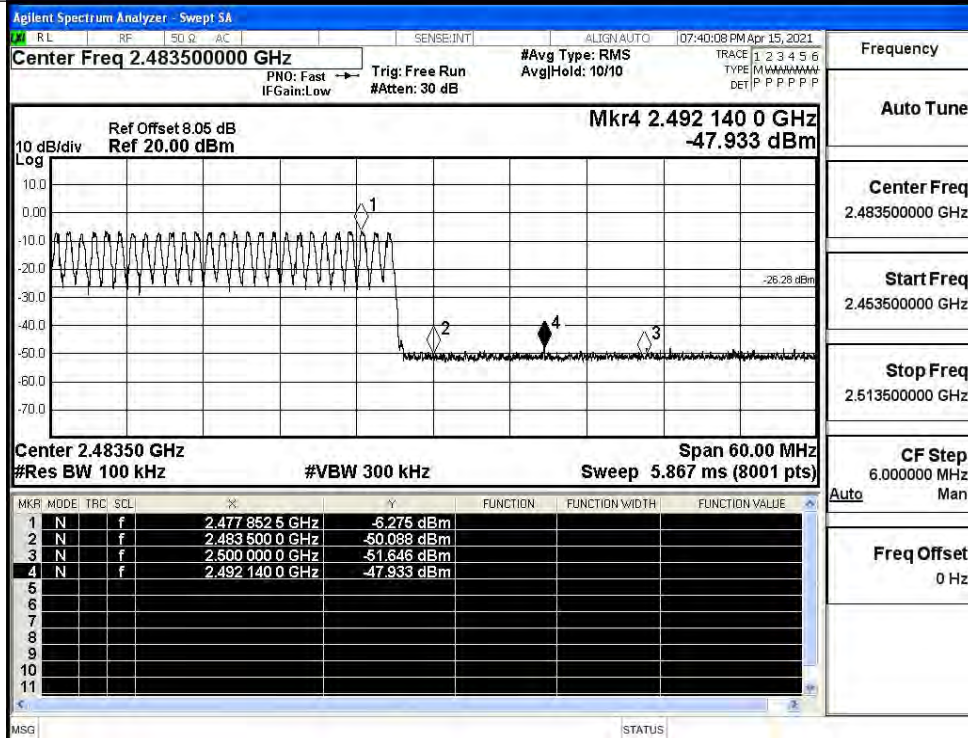
GFSK/LCH/Hop



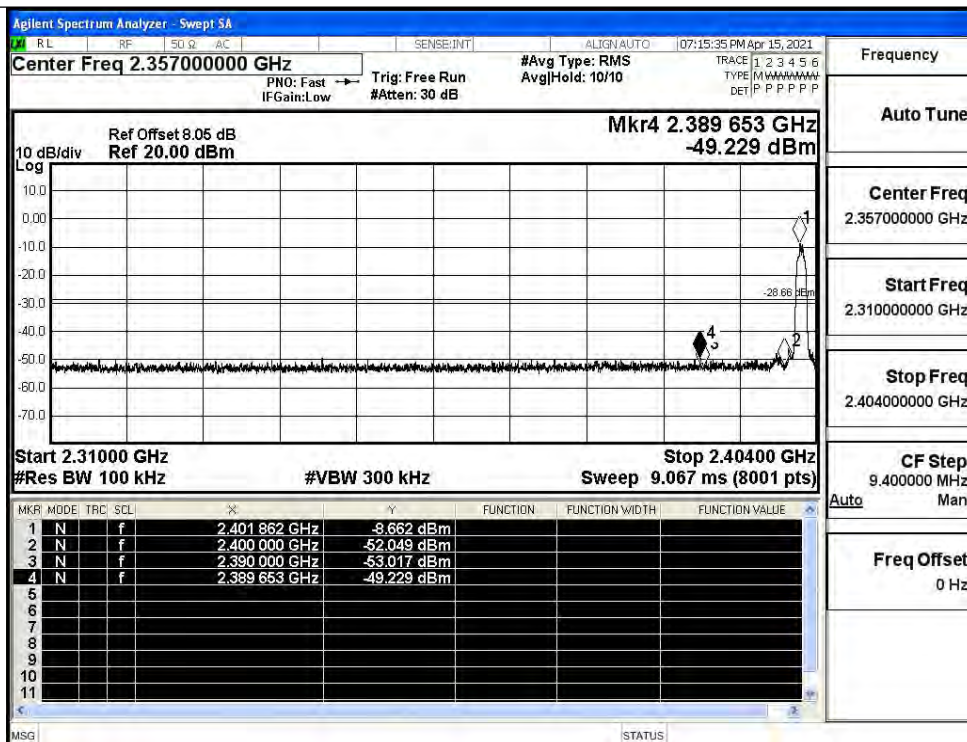
GFSK/HCH/No Hop



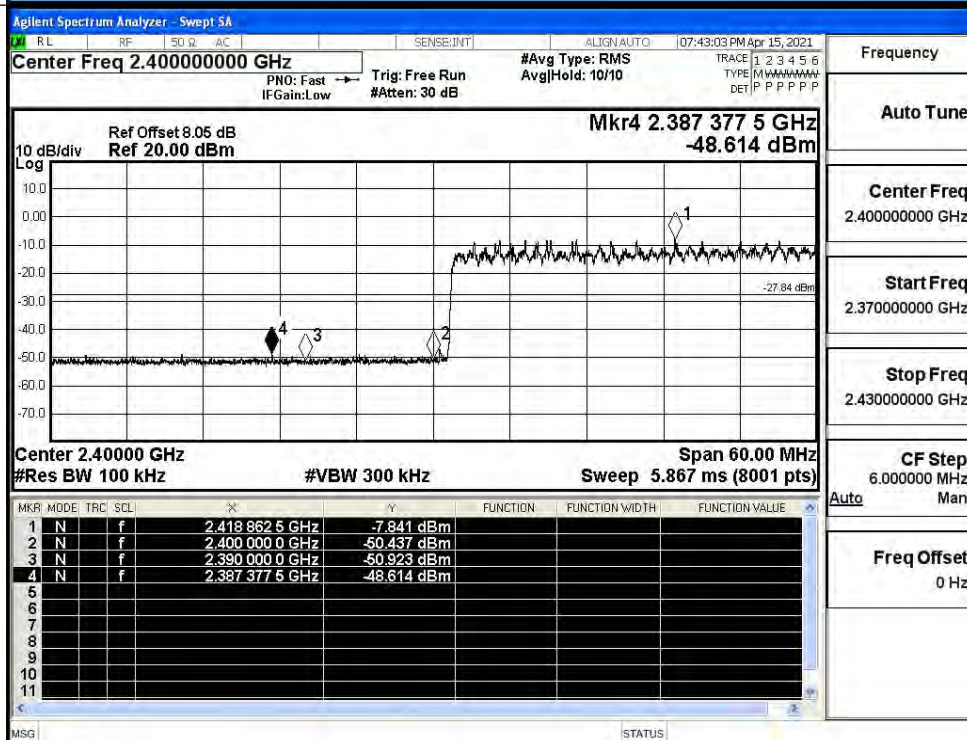
GFSK/HCH/Hop



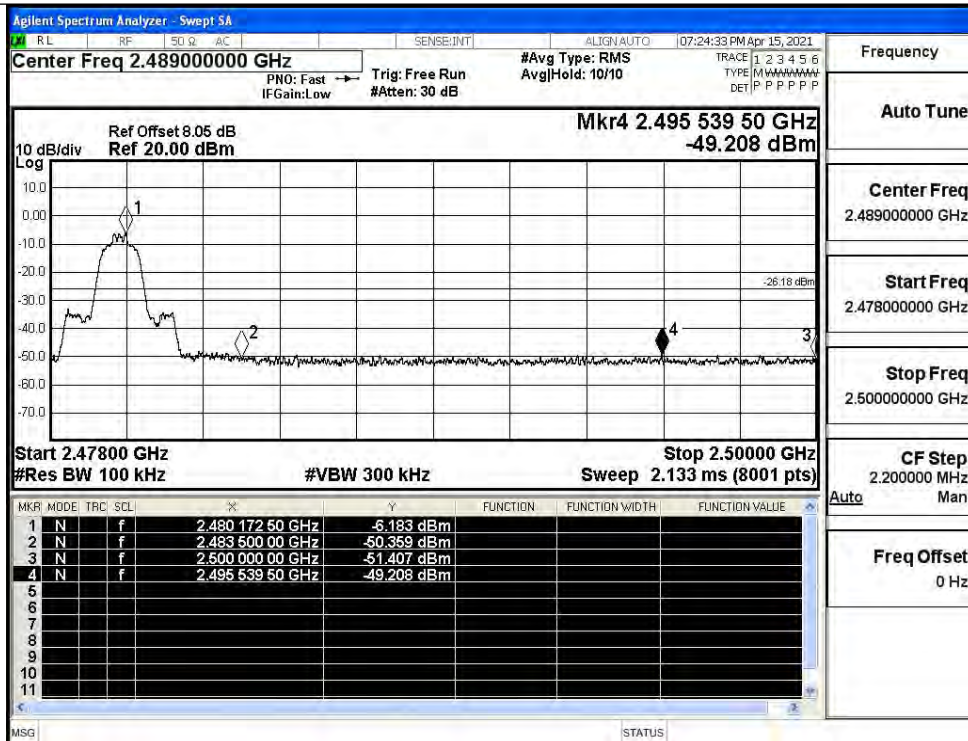
$\pi/4$ DQPSK/LCH/No
Hop



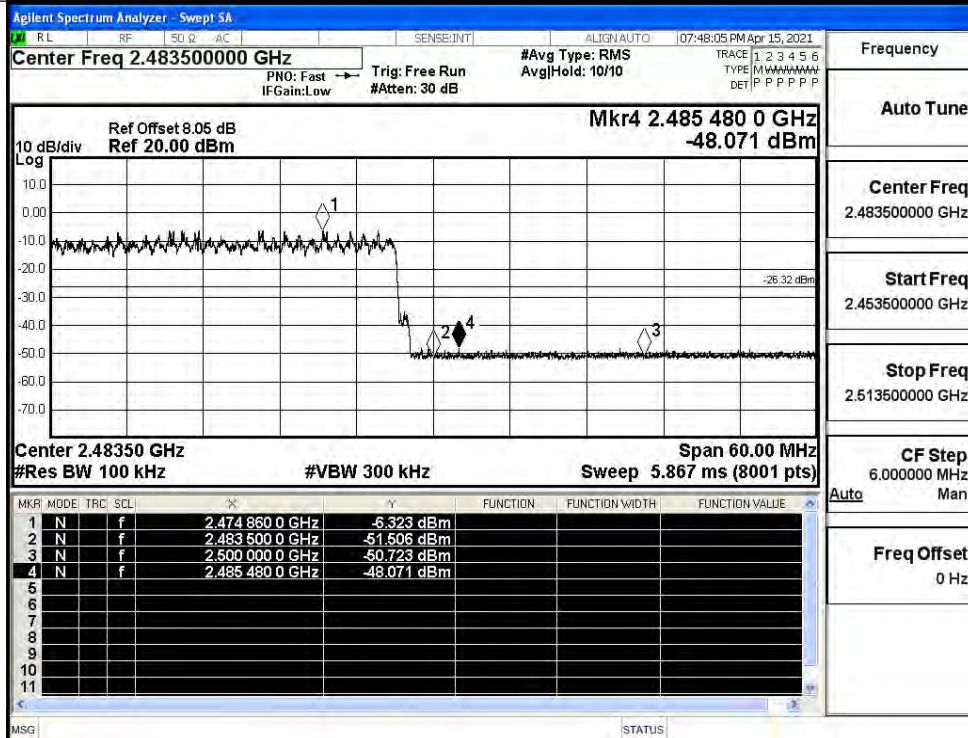
$\pi/4$ DQPSK/LCH/Hop



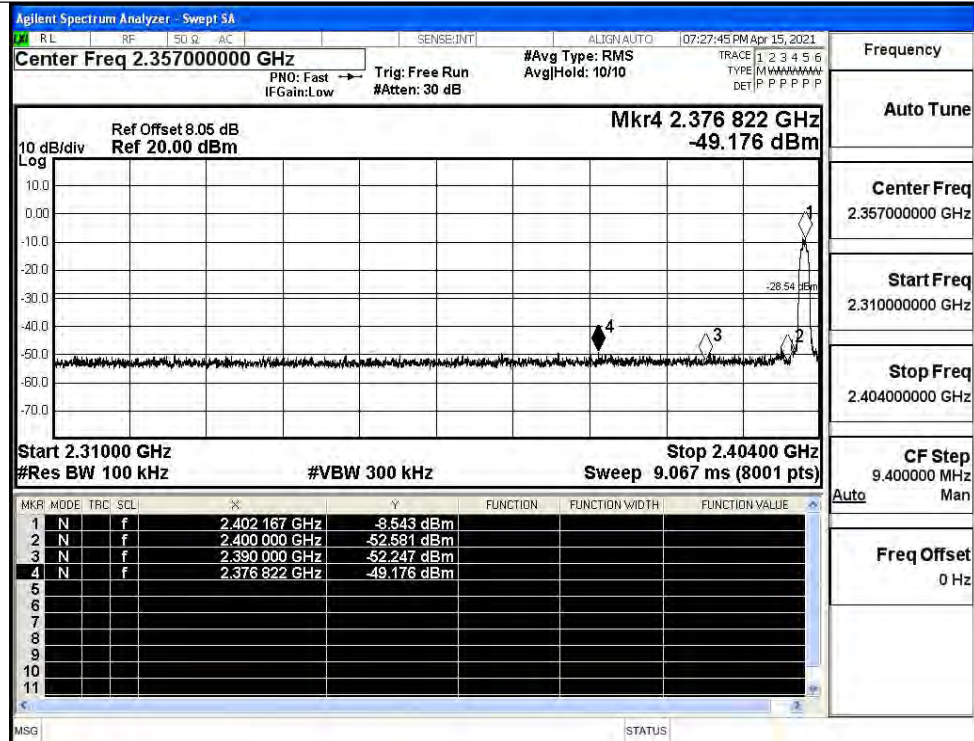
$\pi/4$ DQPSK/HCH/No
Hop



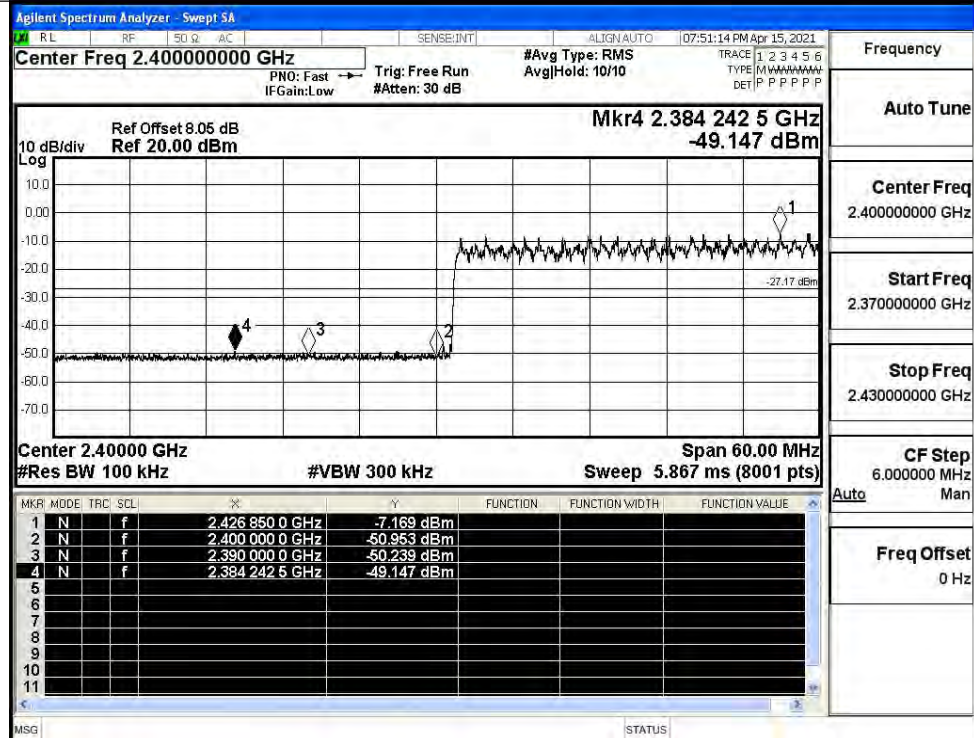
$\pi/4$ DQPSK/HCH/Hop



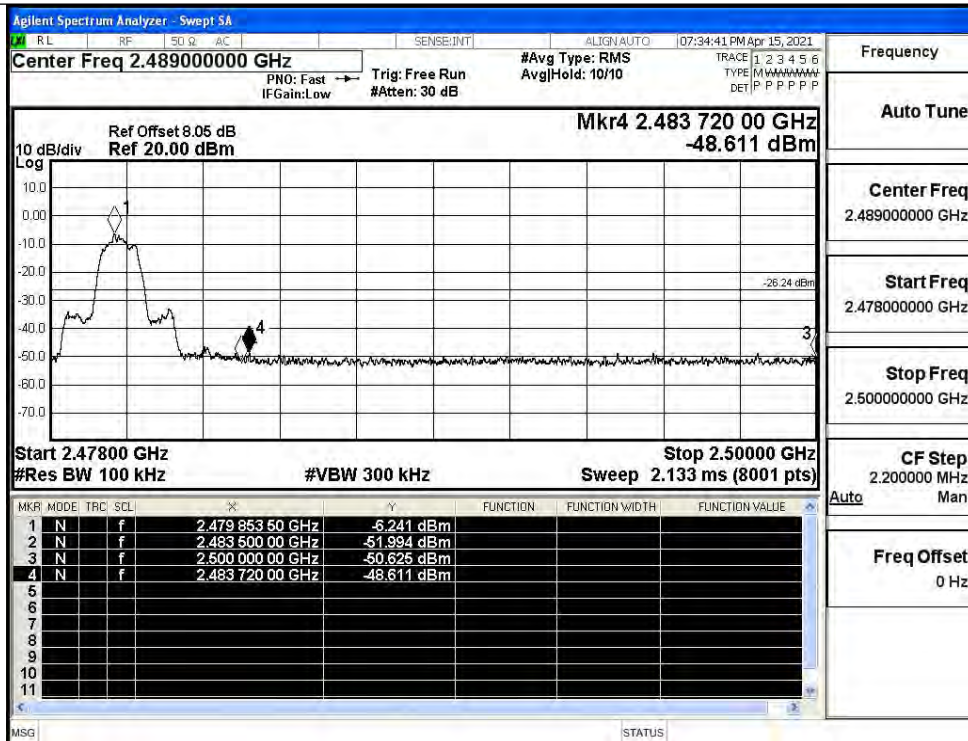
8DPSK/LCH/No Hop



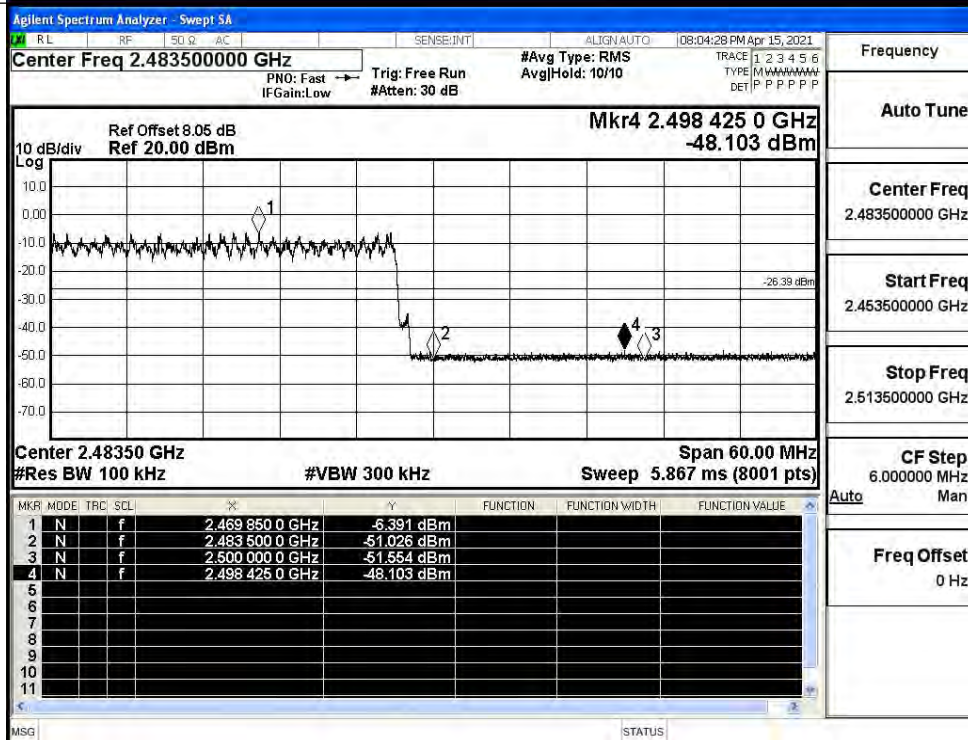
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



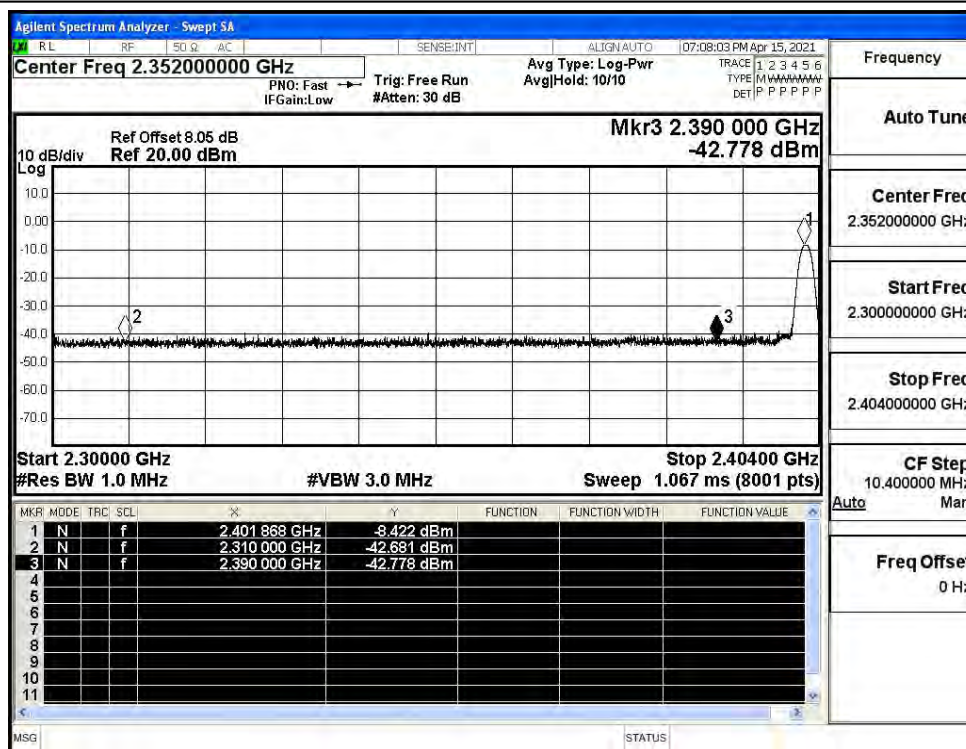
8DPSK/HCH/Hop



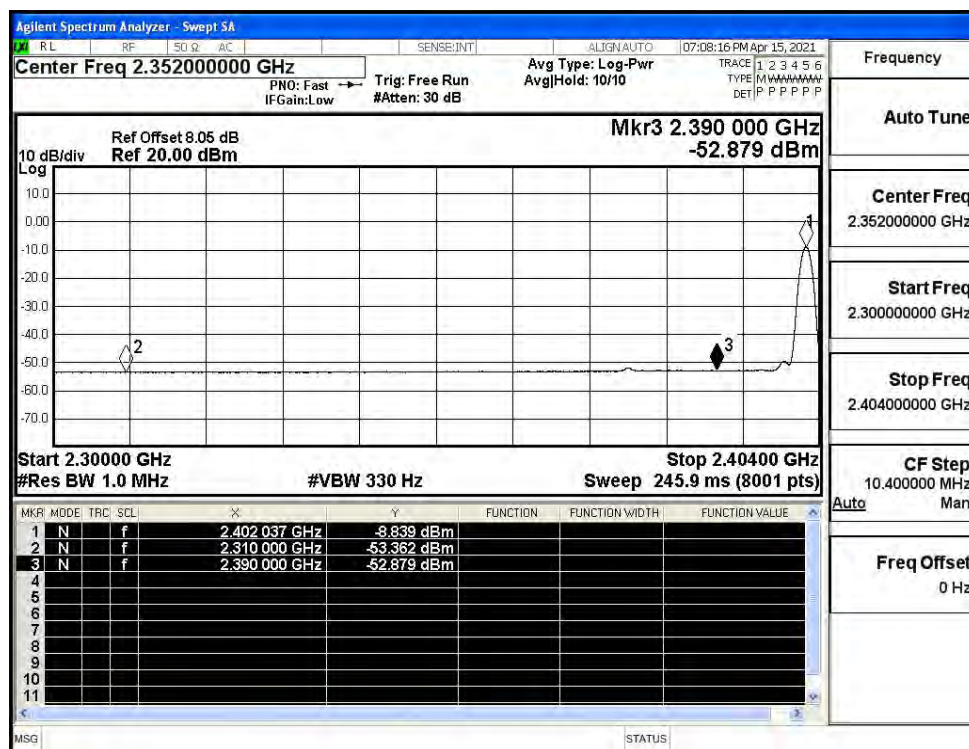
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-42.68	2.0	0	54.55	PEAK	74	PASS
	Off	2310.0	-53.36	2.0	0	43.87	AV	54	PASS
	Off	2390.0	-42.78	2.0	0	54.45	PEAK	74	PASS
	Off	2390.0	-52.88	2.0	0	44.35	AV	54	PASS
	Off	2483.5	-40.32	2.0	0	56.91	PEAK	74	PASS
	Off	2483.5	-50.28	2.0	0	46.95	AV	54	PASS
	Off	2500.0	-41.27	2.0	0	55.96	PEAK	74	PASS
	Off	2500.0	-52.11	2.0	0	45.12	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.53	2.0	0	53.70	PEAK	74	PASS
	Off	2310.0	-53.31	2.0	0	43.92	AV	54	PASS
	Off	2390.0	-43.20	2.0	0	54.03	PEAK	74	PASS
	Off	2390.0	-53.01	2.0	0	44.22	AV	54	PASS
	Off	2483.5	-41.28	2.0	0	55.95	PEAK	74	PASS
	Off	2483.5	-50.83	2.0	0	46.40	AV	54	PASS
	Off	2500.0	-42.59	2.0	0	54.64	PEAK	74	PASS
	Off	2500.0	-52.13	2.0	0	45.10	AV	54	PASS
8DPSK	Off	2310.0	-41.75	2.0	0	55.48	PEAK	74	PASS
	Off	2310.0	-53.43	2.0	0	43.80	AV	54	PASS
	Off	2390.0	-43.86	2.0	0	53.37	PEAK	74	PASS
	Off	2390.0	-52.96	2.0	0	44.27	AV	54	PASS
	Off	2483.5	-40.79	2.0	0	56.44	PEAK	74	PASS
	Off	2483.5	-50.91	2.0	0	46.32	AV	54	PASS
	Off	2500.0	-42.55	2.0	0	54.68	PEAK	74	PASS
	Off	2500.0	-51.87	2.0	0	45.36	AV	54	PASS

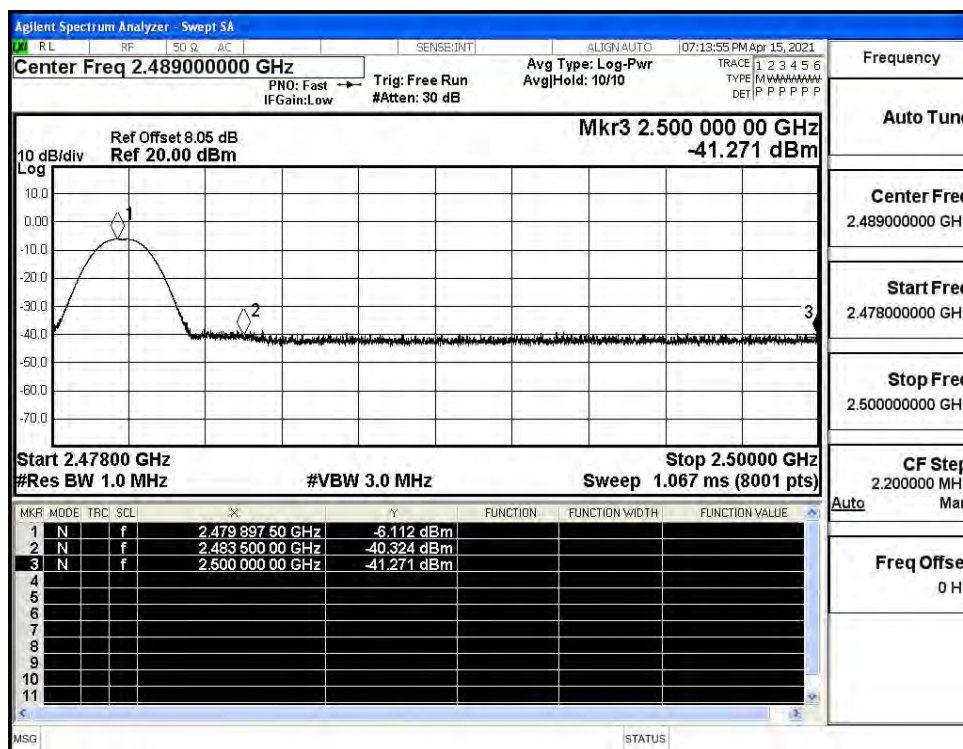
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



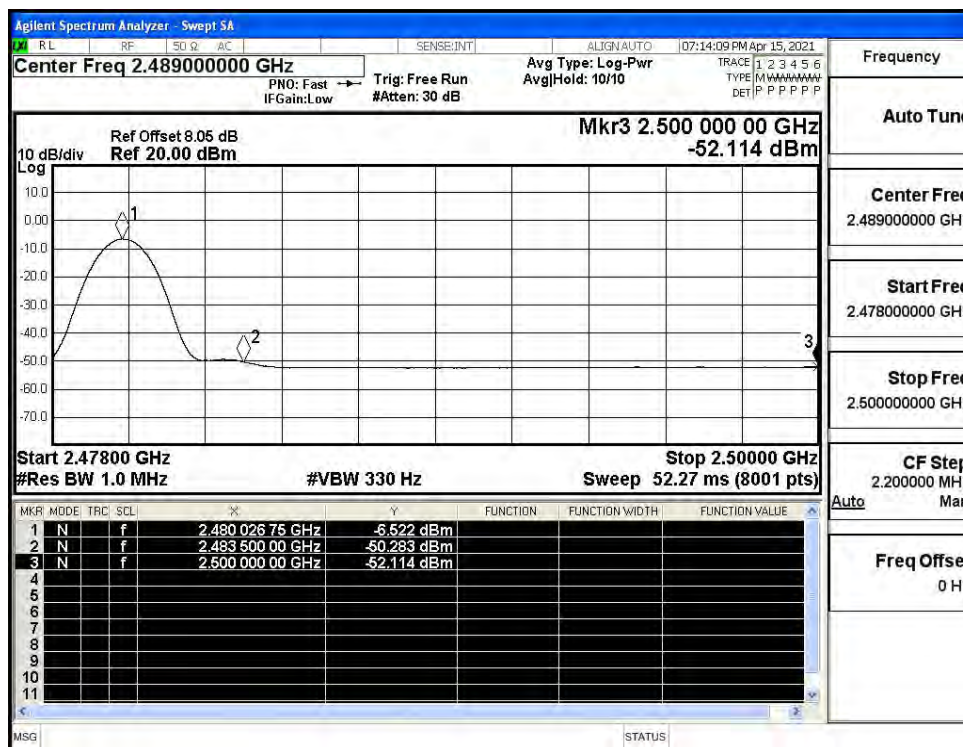
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)

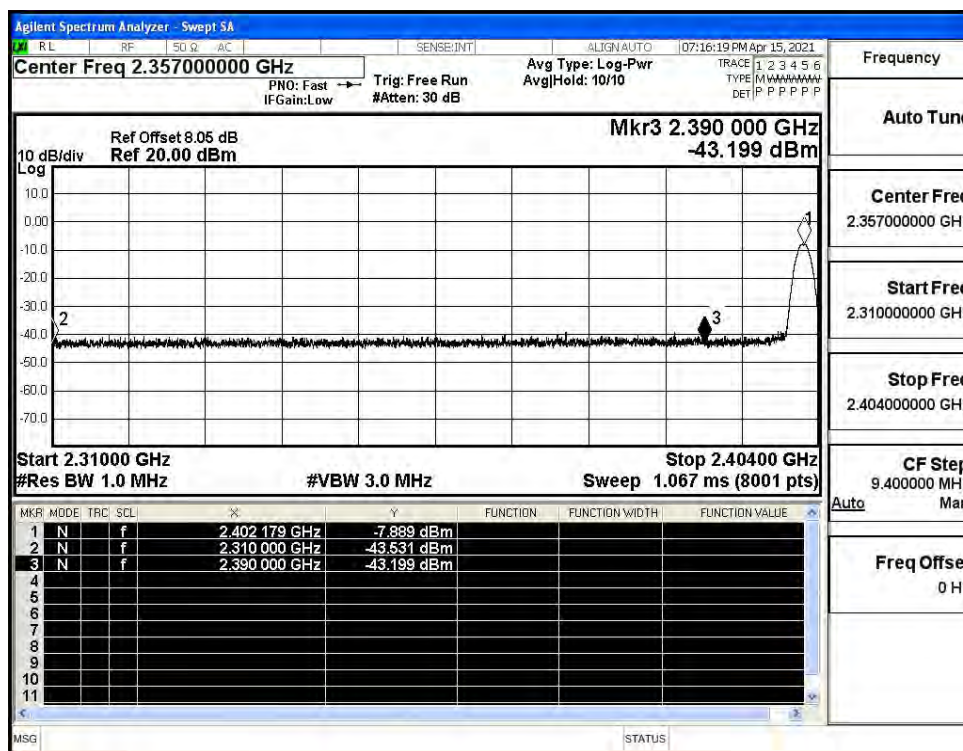
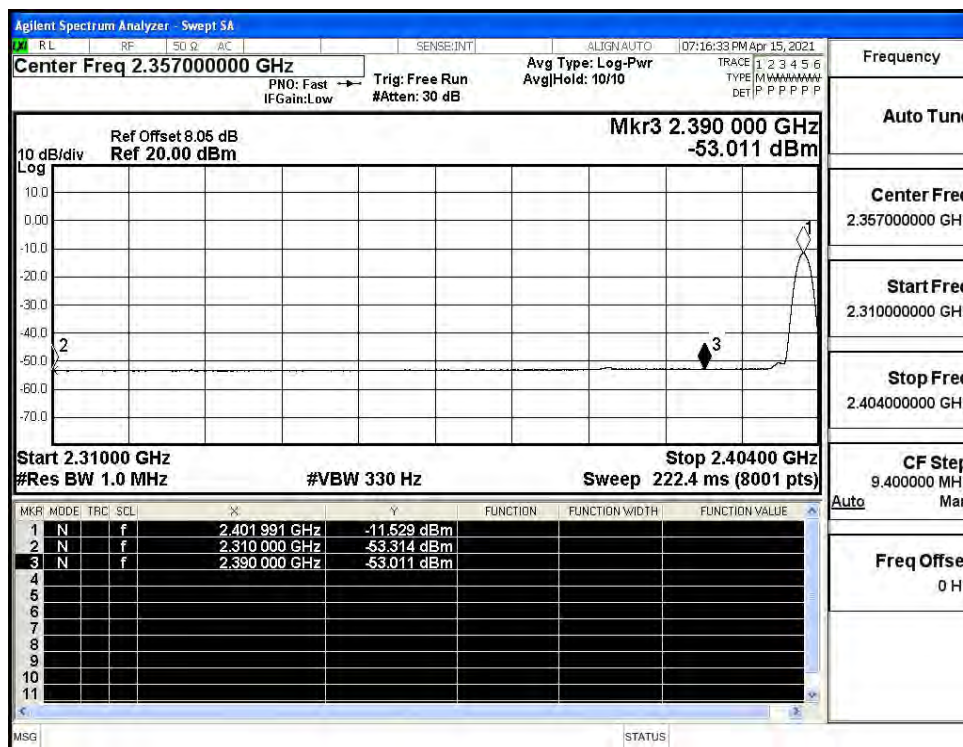


Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)

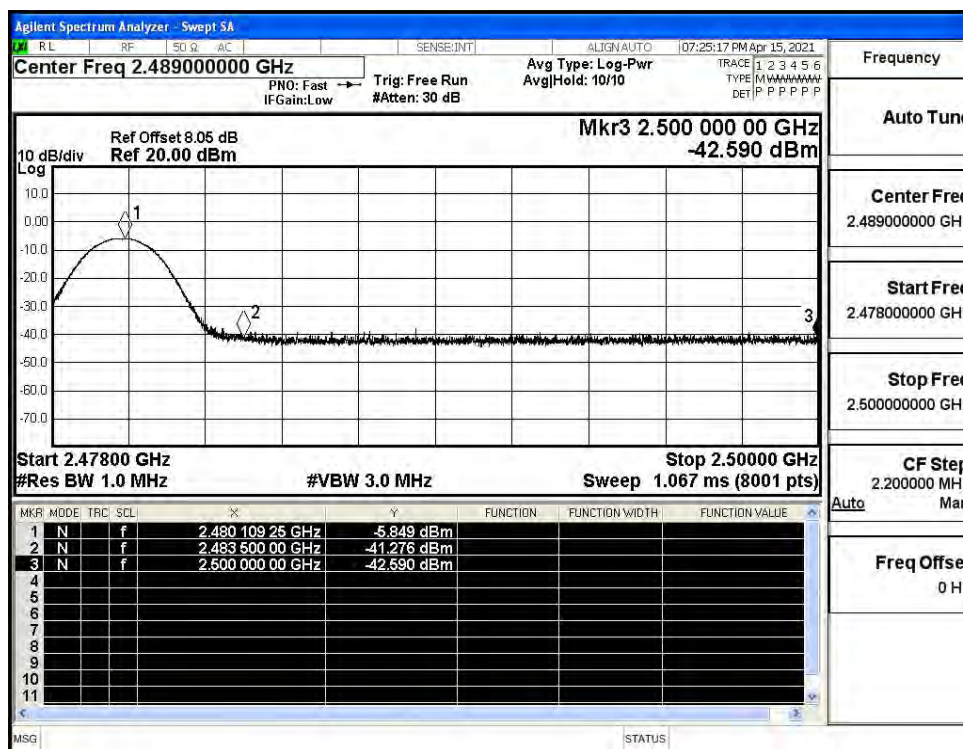


Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)

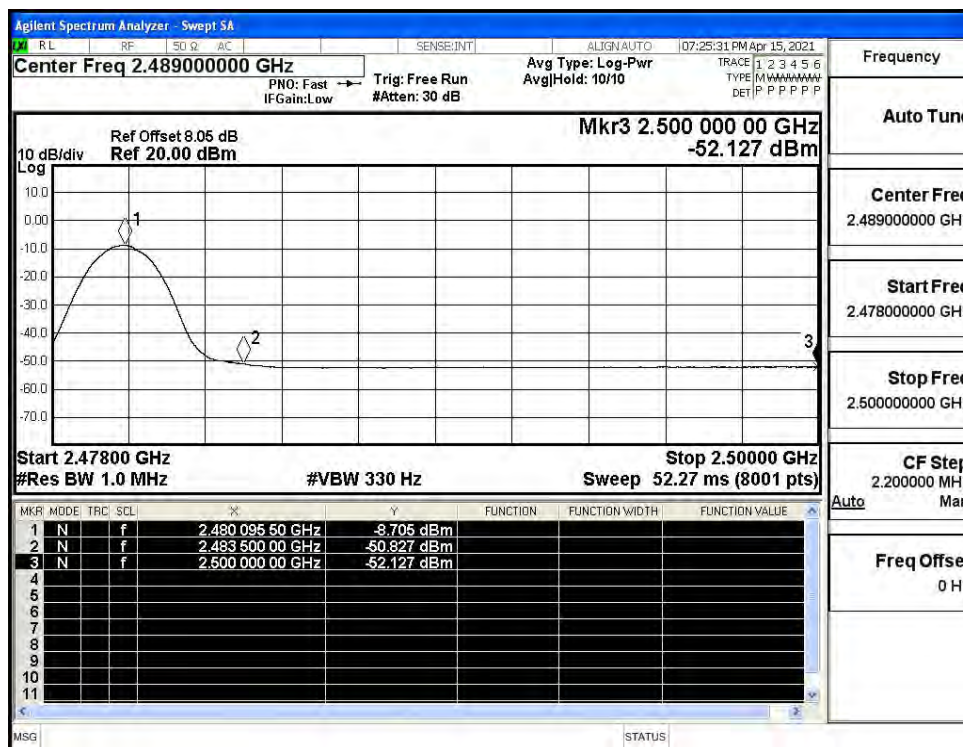


Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

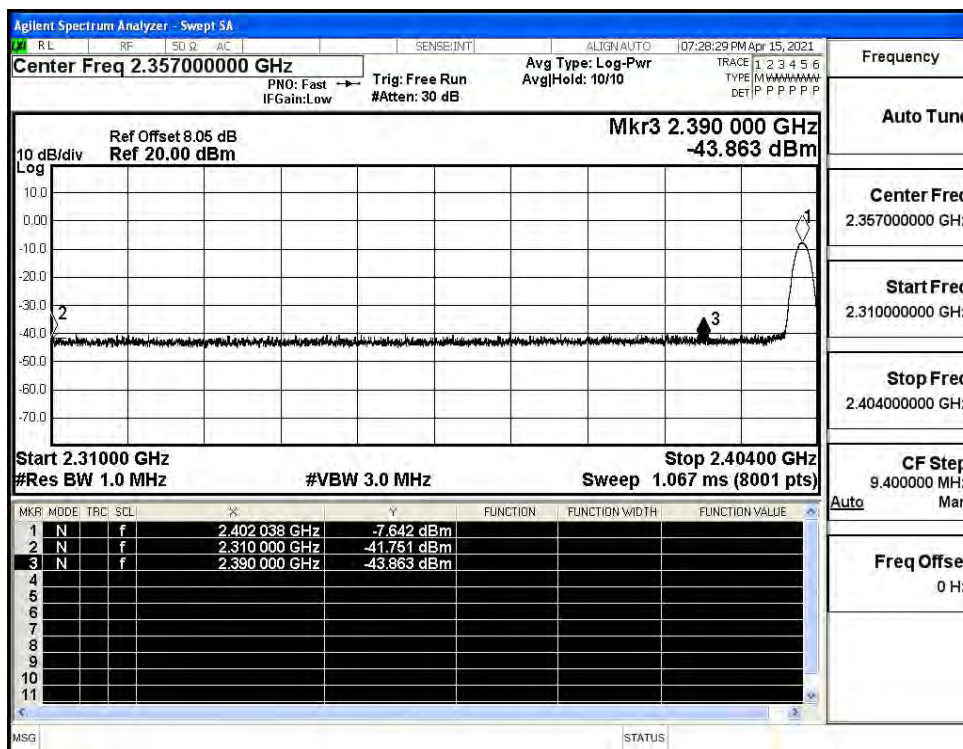
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



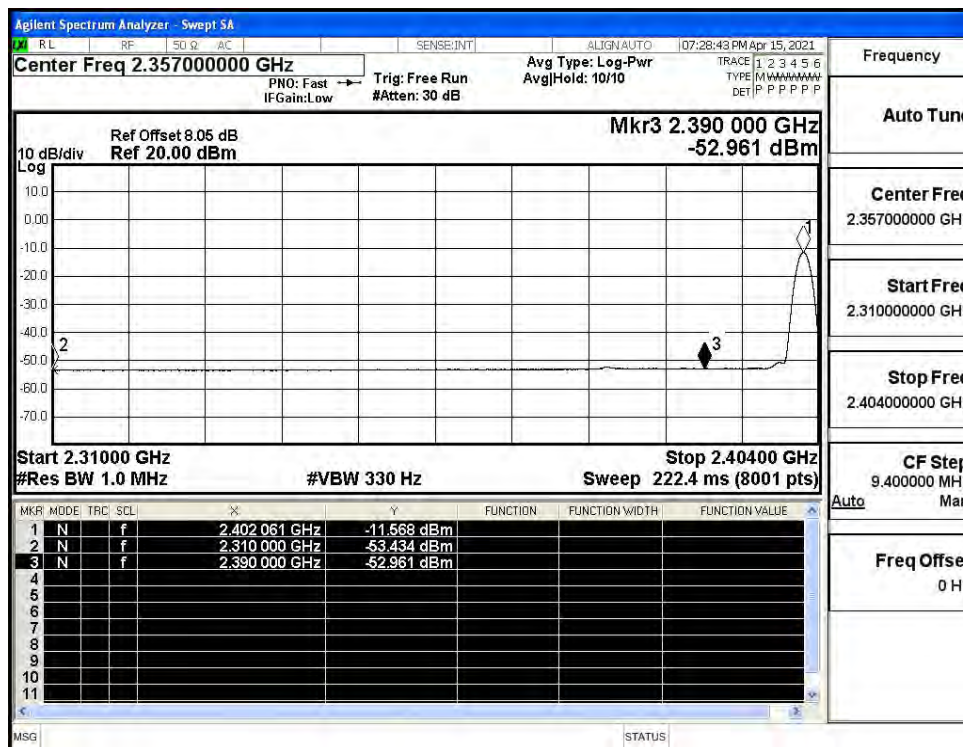
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



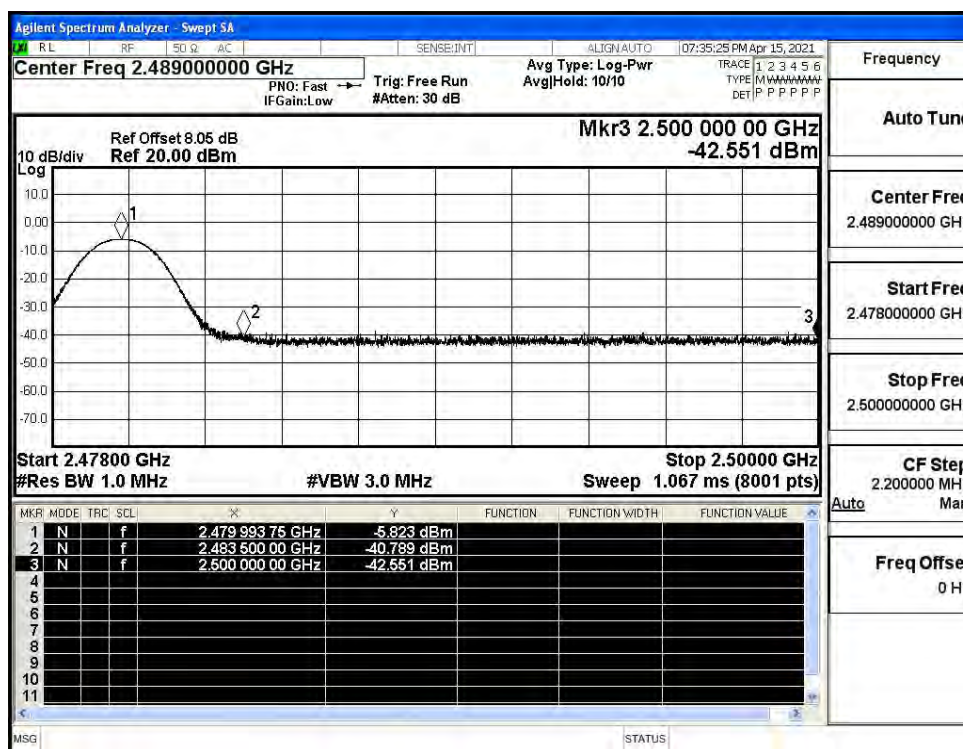
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

