



Appendix A

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

Product Name: Bluetooth Earphones

Trade Mark: AWEI, IPIPOO

Test Model: EB101

Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	50%
ATM Pressure:	100.0 kPa
Test Engineer:	Kay Hu
Supervised by:	Li Huan

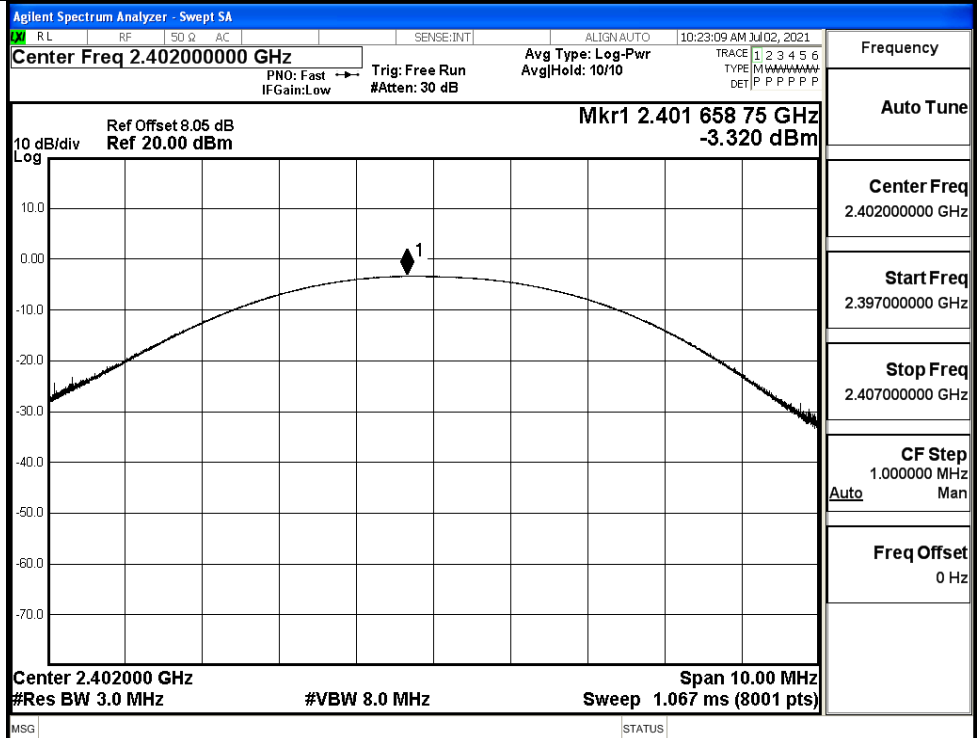
A.1 Maximum Conducted Peak Output Power

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-3.320	21	PASS
	MCH	-0.027	21	PASS
	HCH	1.849	21	PASS
$\pi/4$ DQPSK	LCH	-2.729	21	PASS
	MCH	0.410	21	PASS
	HCH	2.450	21	PASS
8DPSK	LCH	-2.718	21	PASS
	MCH	0.356	21	PASS
	HCH	2.474	21	PASS

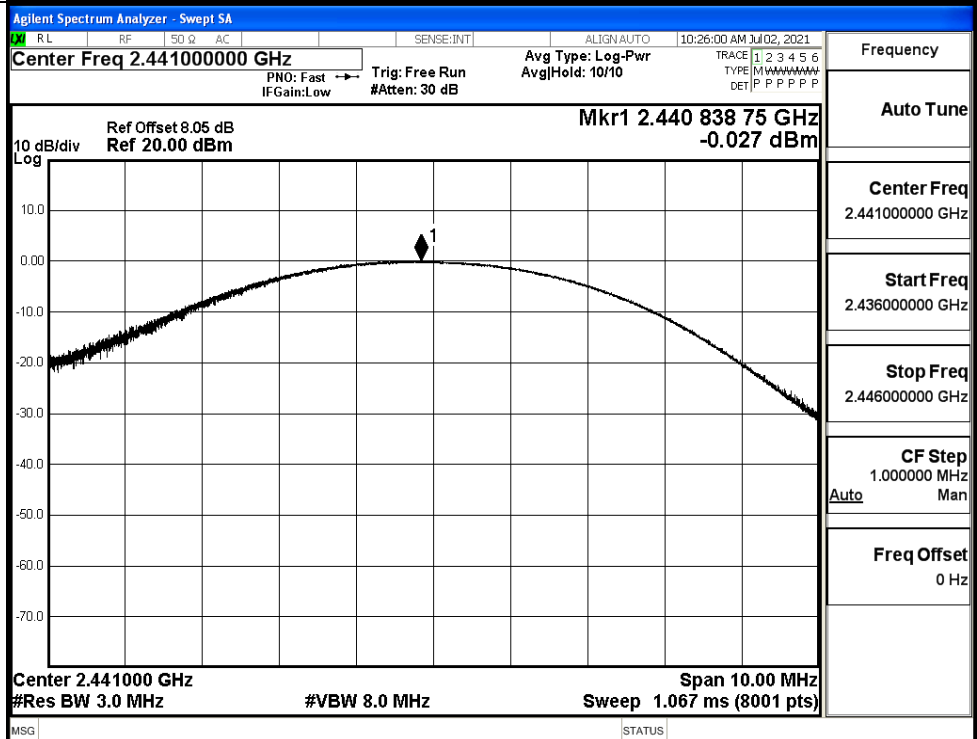


Test Graphs

GFSK/LCH

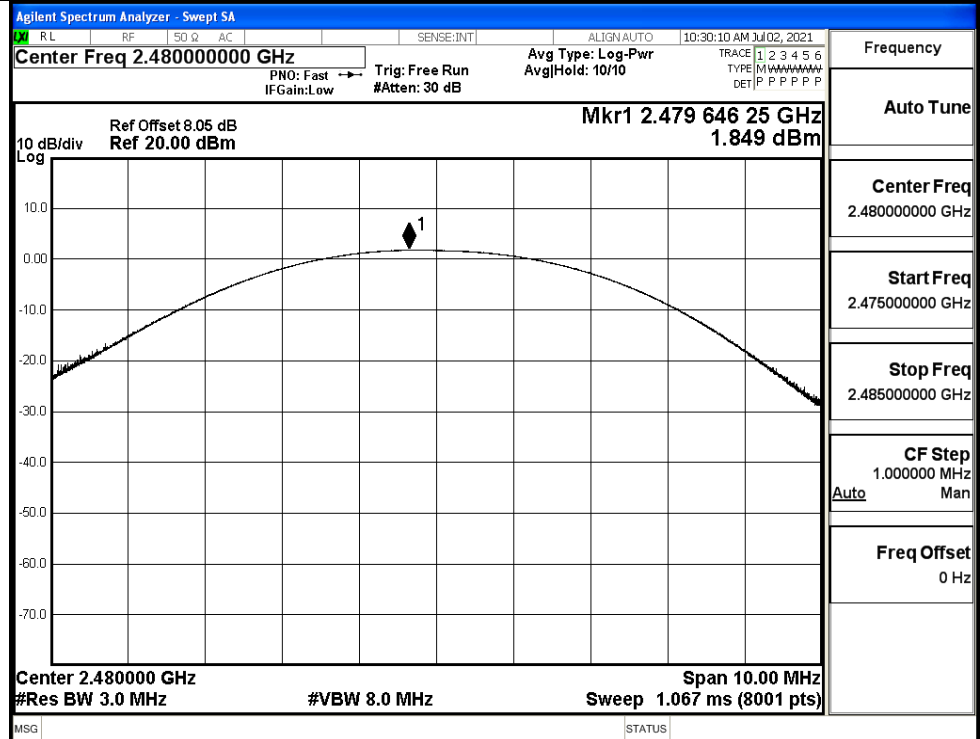
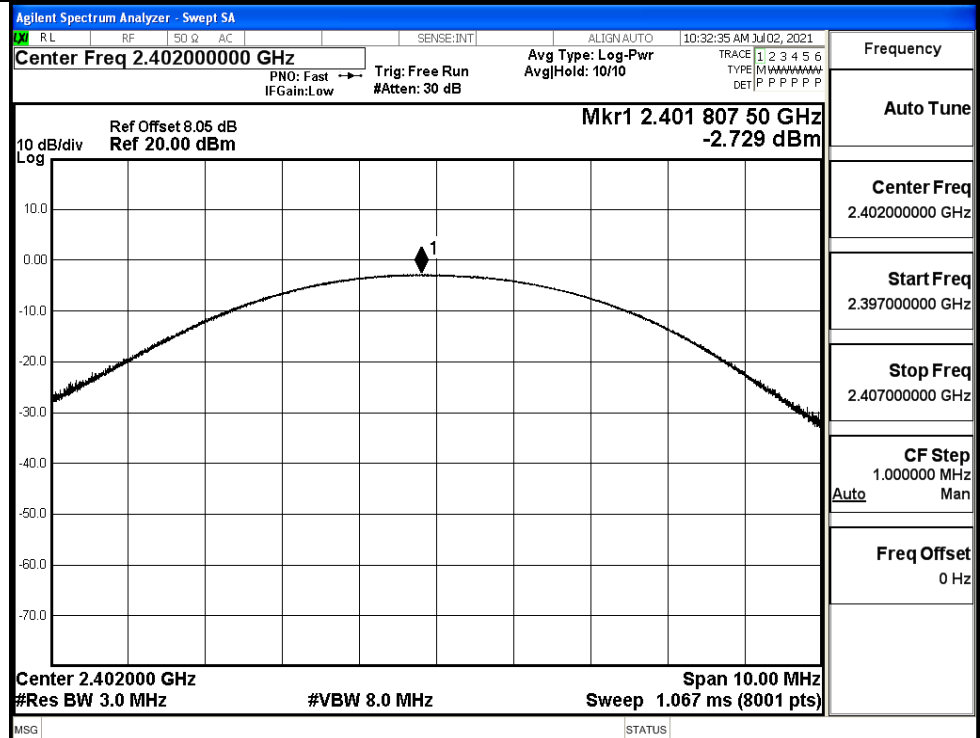


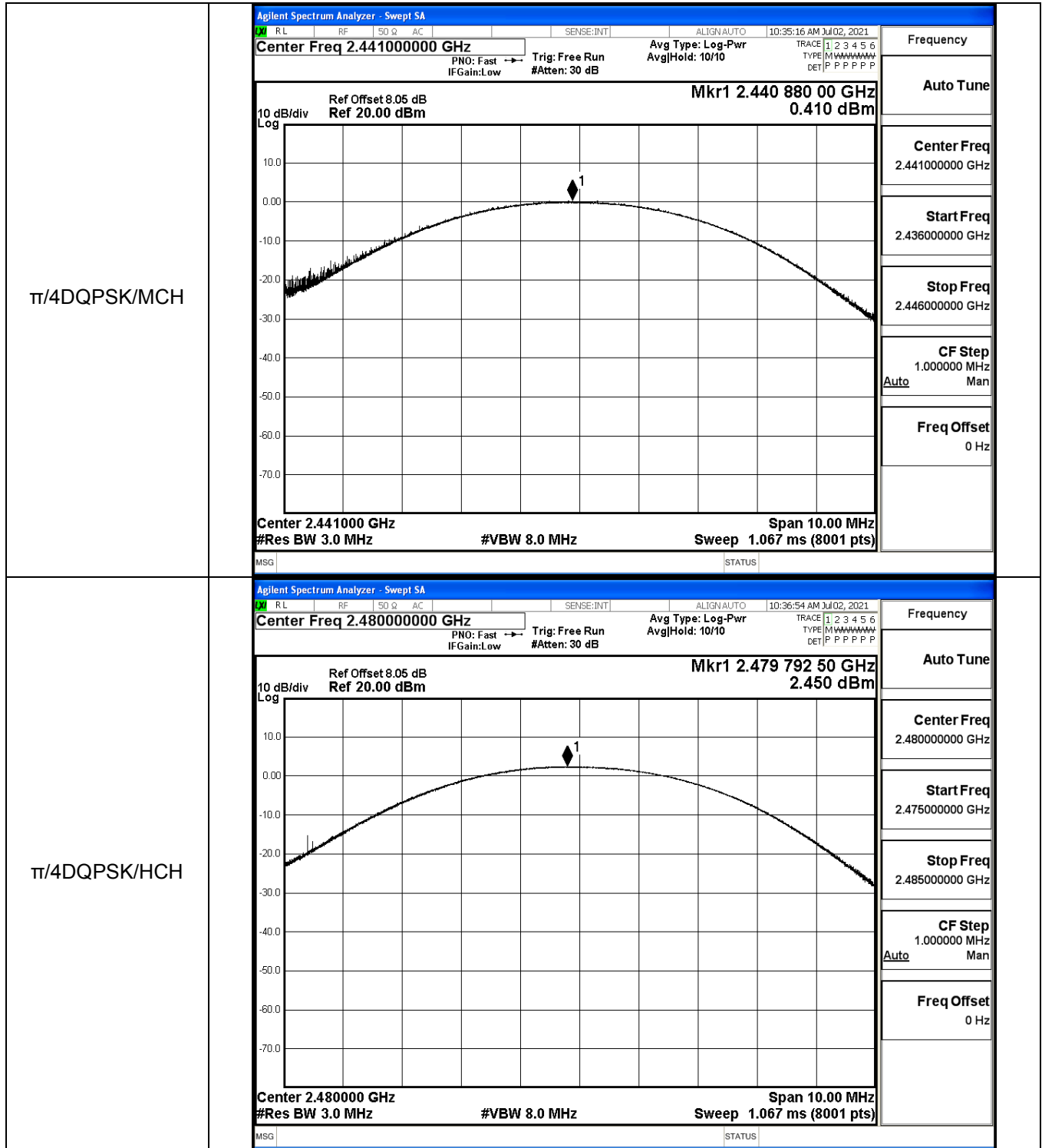
GFSK/MCH





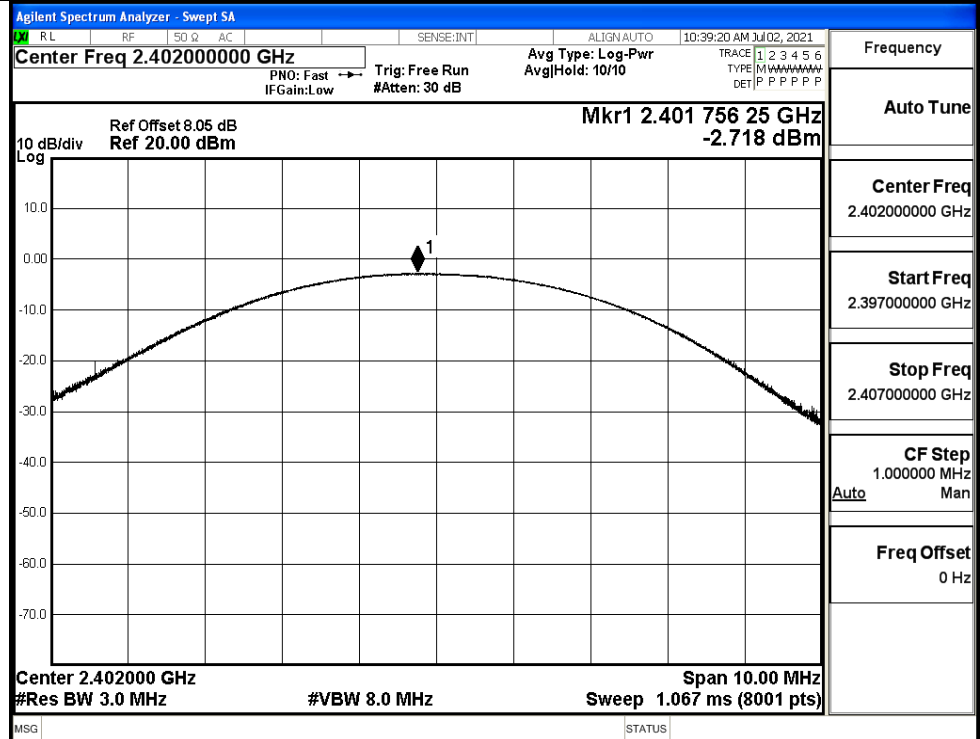
GFSK/HCH

 π /4DQPSK/LCH

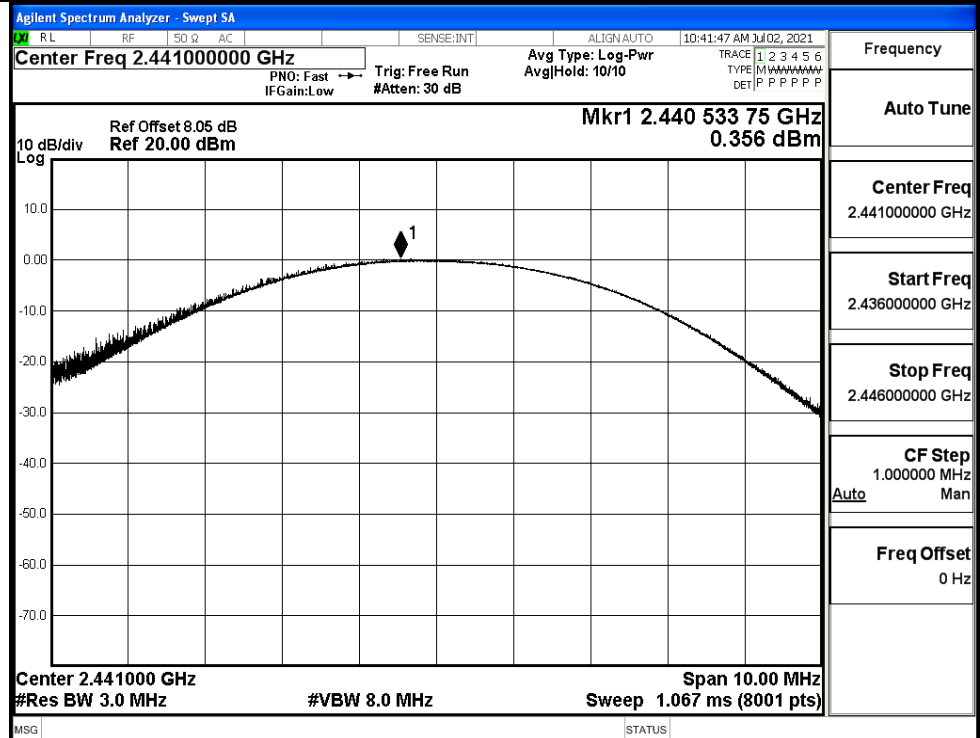




8DPSK/LCH

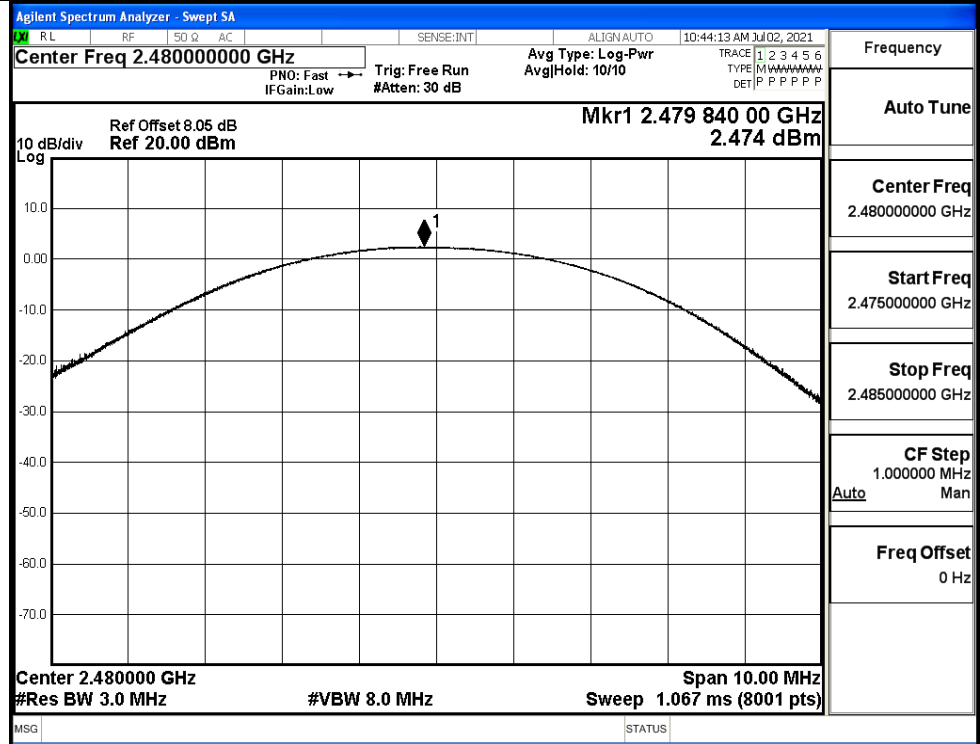


8DPSK/MCH





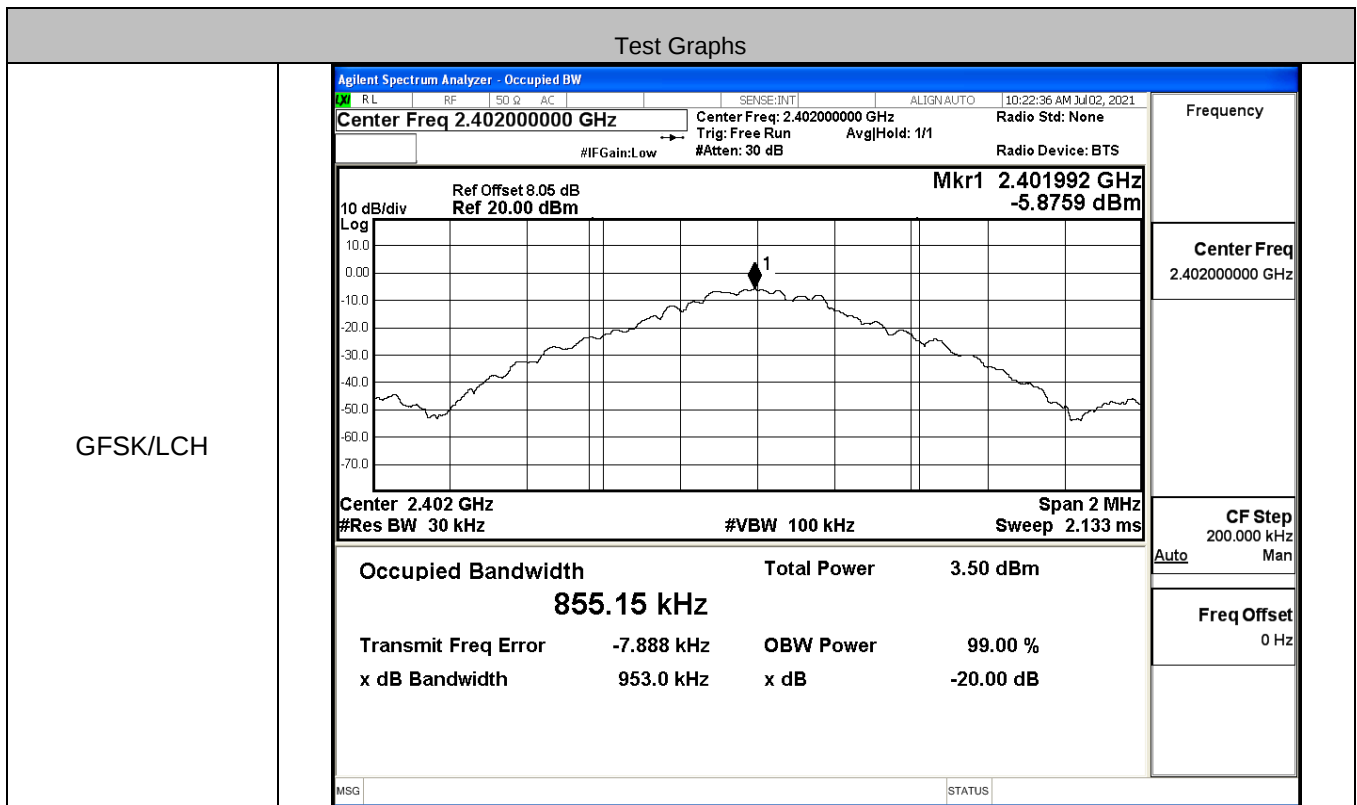
8DPSK/HCH





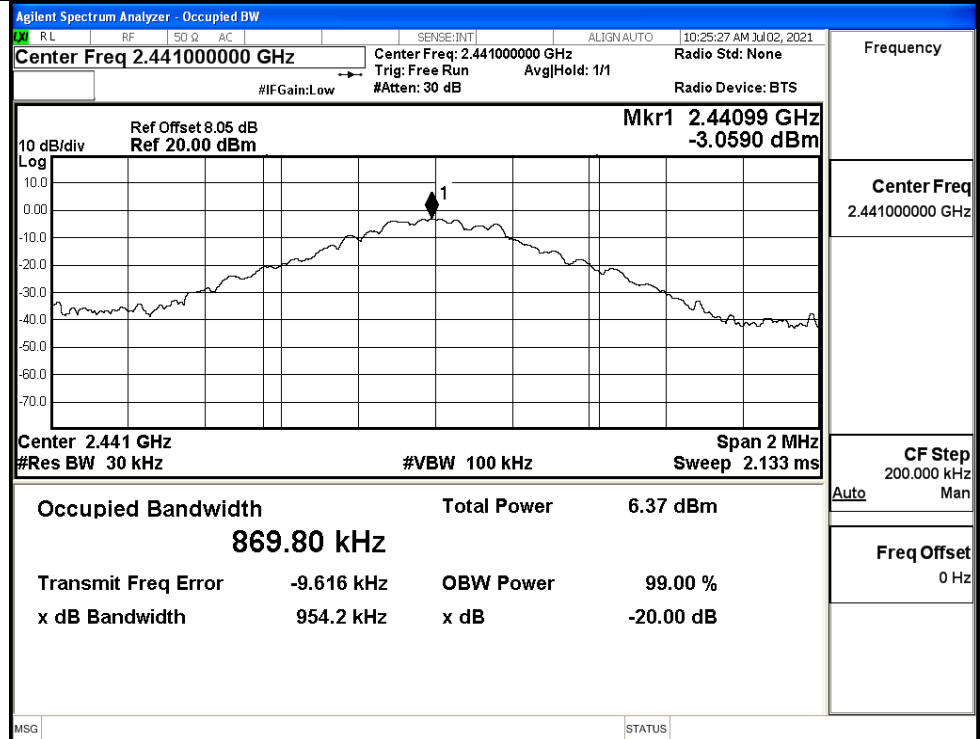
A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9530	Not Specified	PASS
	MCH	0.9542	Not Specified	PASS
	HCH	0.9570	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.311	Not Specified	PASS
	MCH	1.314	Not Specified	PASS
	HCH	1.313	Not Specified	PASS
8DPSK	LCH	1.310	Not Specified	PASS
	MCH	1.311	Not Specified	PASS
	HCH	1.312	Not Specified	PASS

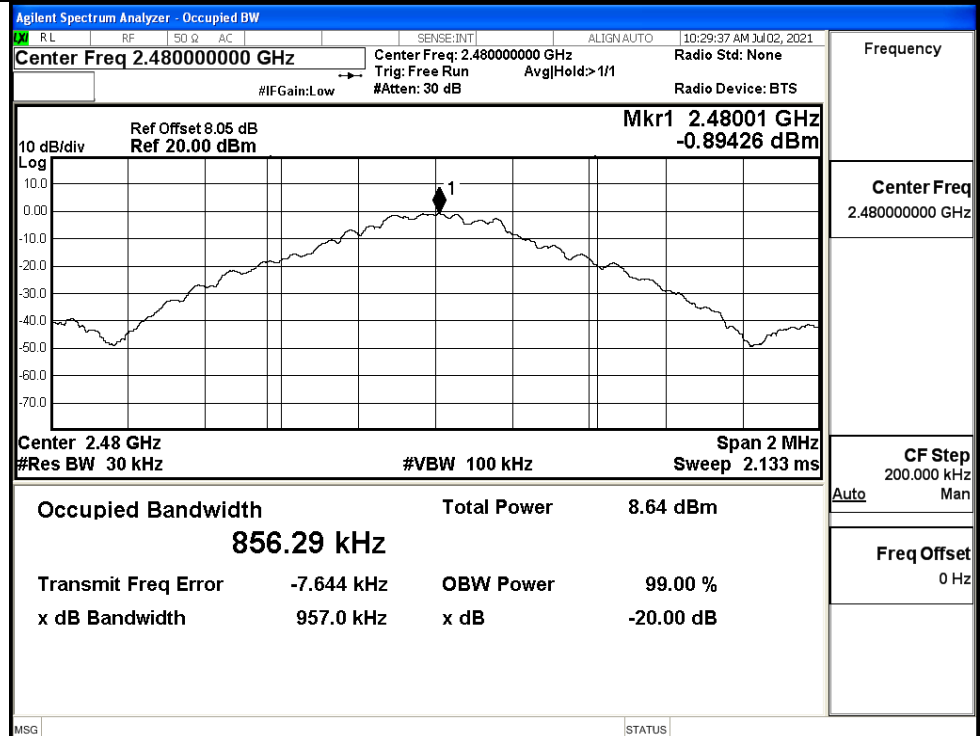


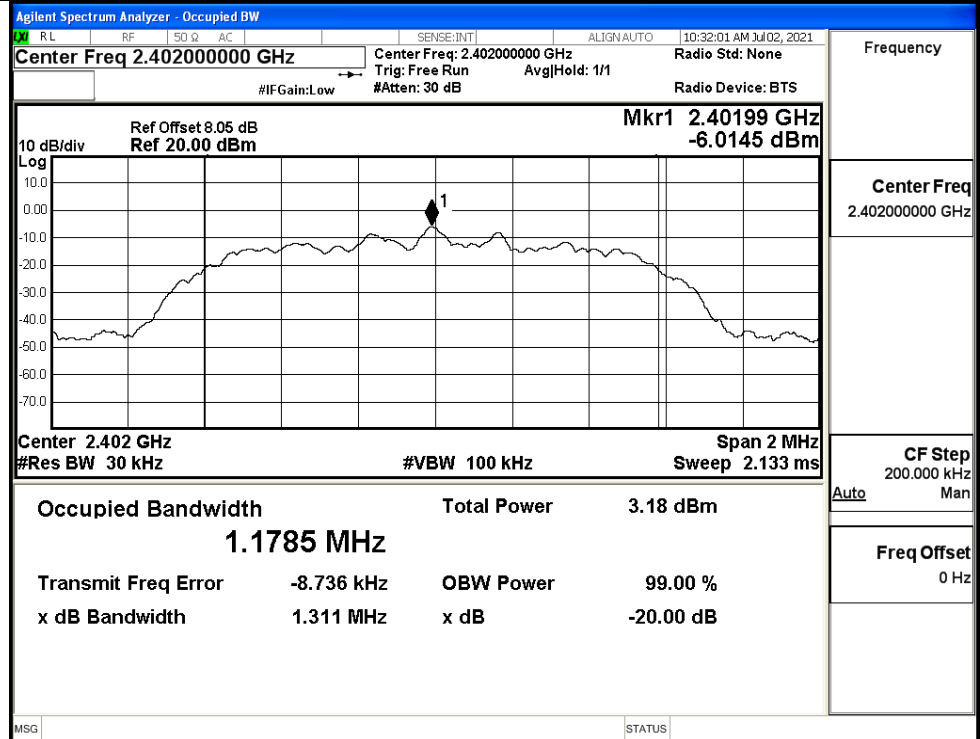
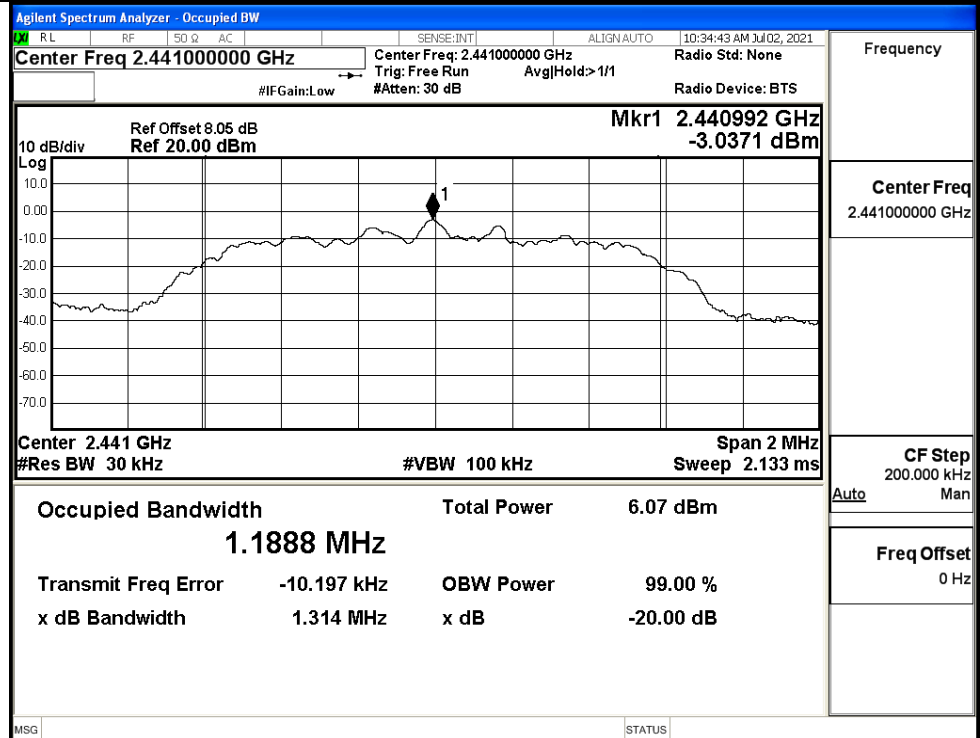


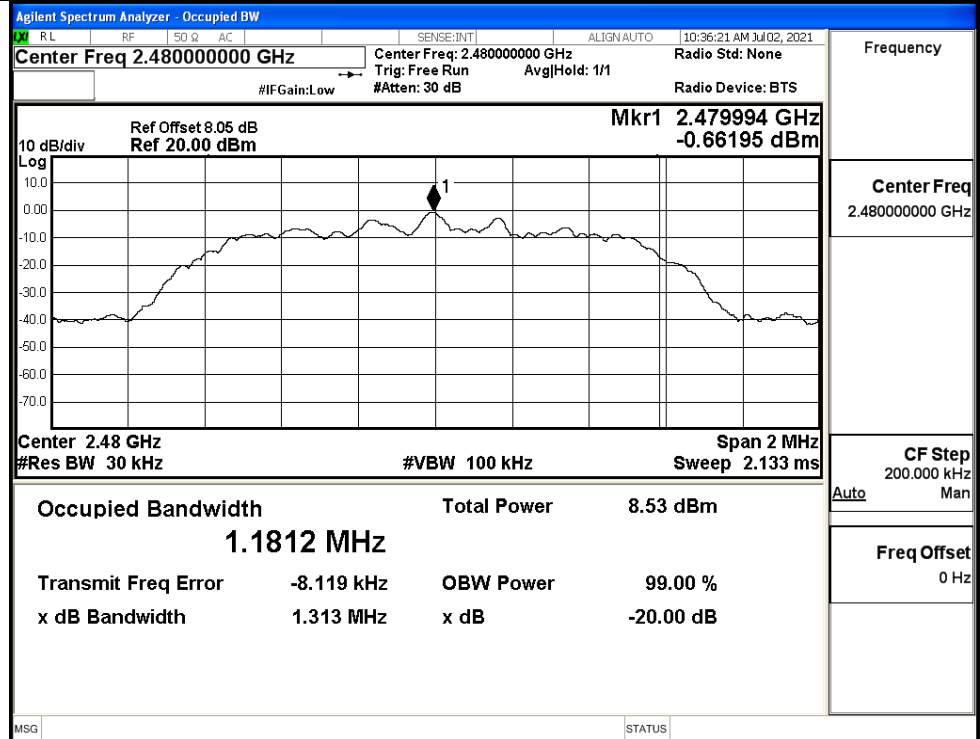
GFSK/MCH



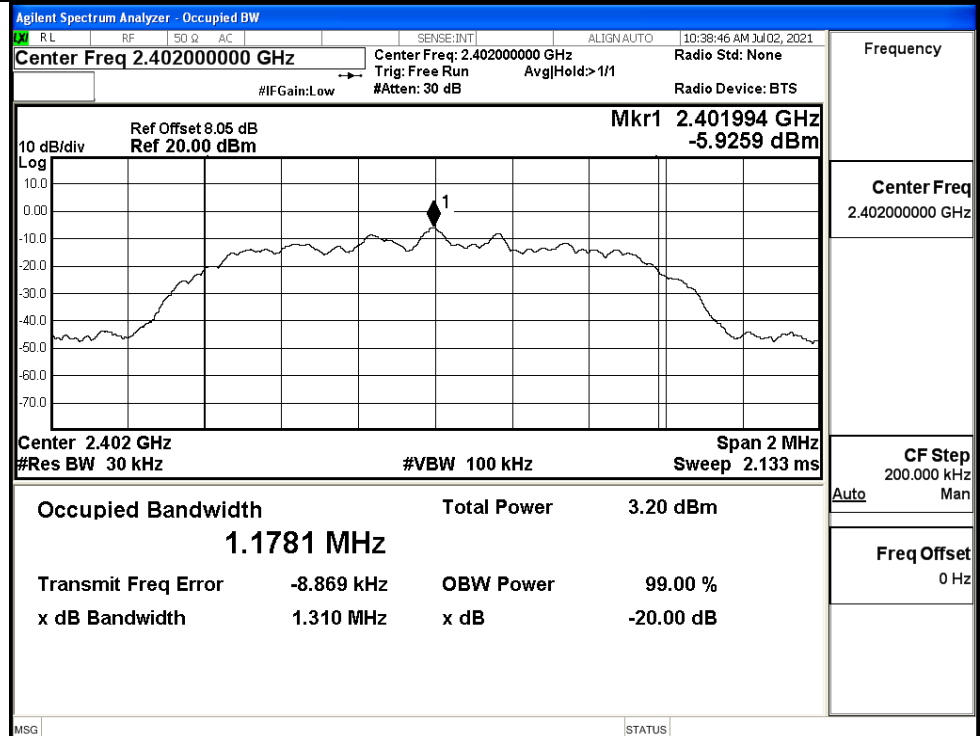
GFSK/HCH



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

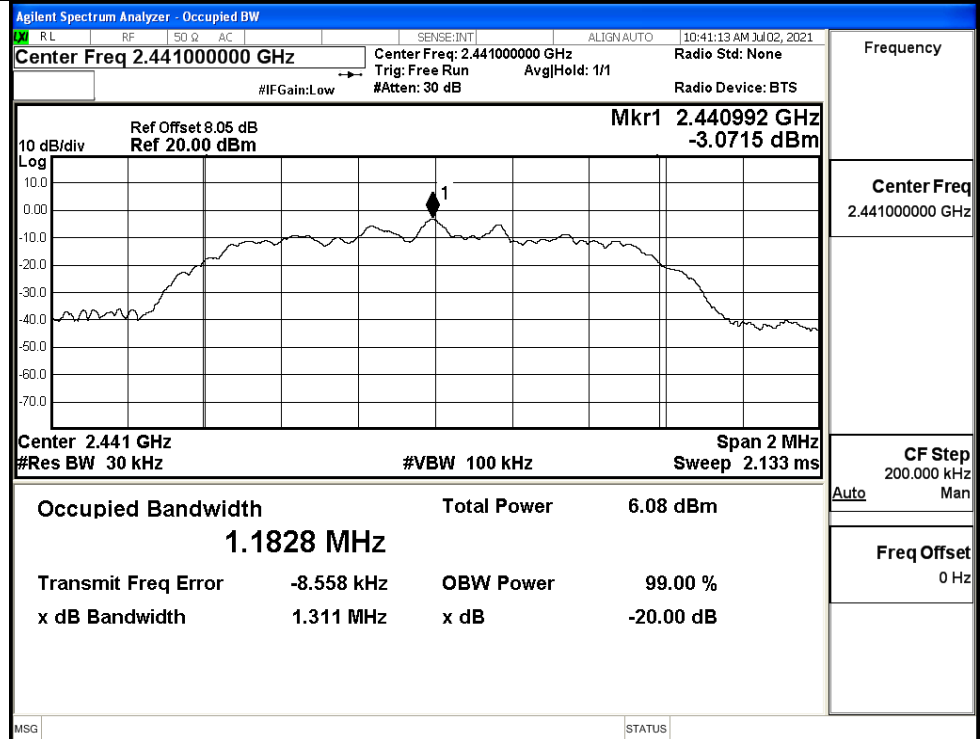
 $\pi/4$ DQPSK/HCH

8DPSK/LCH

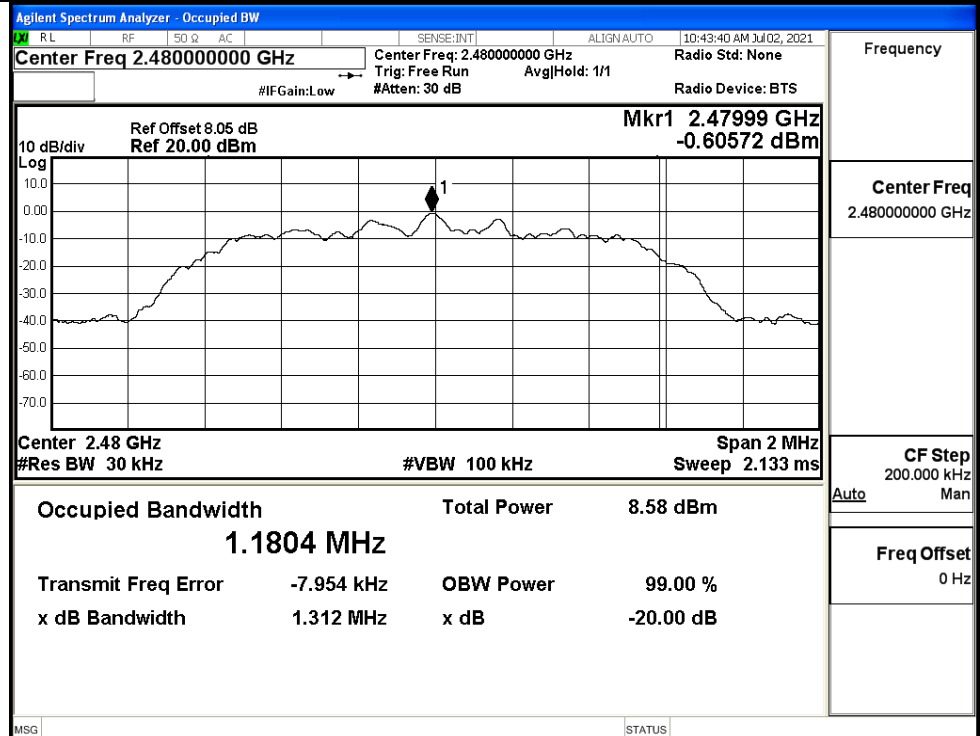


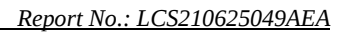


8DPSK/MCH



8DPSK/HCH



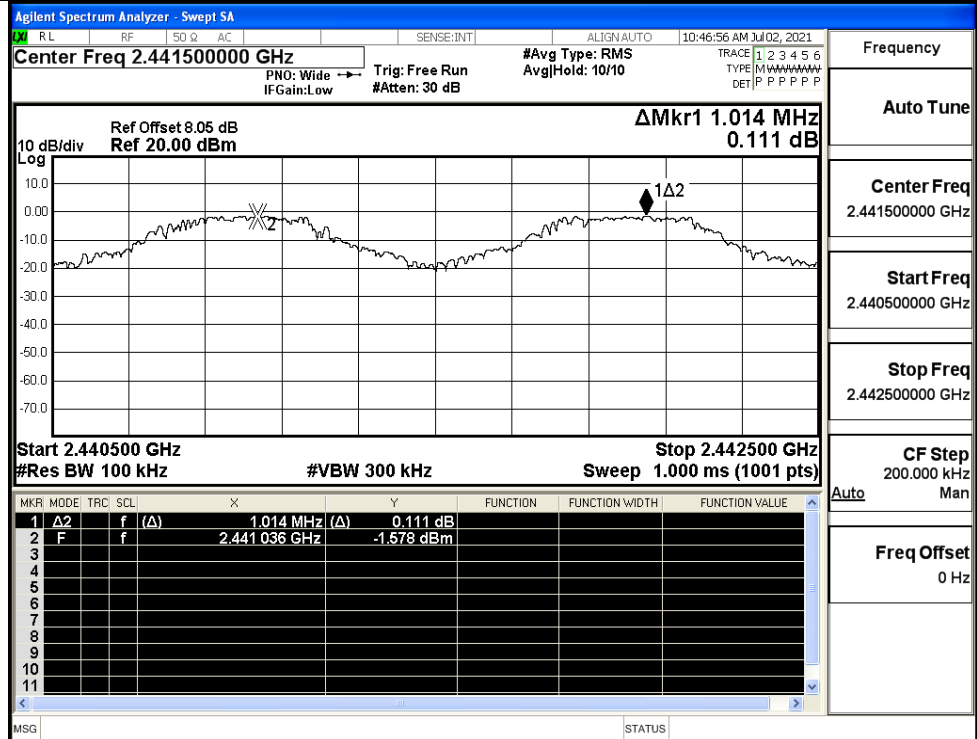


Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.120	0.638	PASS
	MCH	1.014	0.638	PASS
	HCH	1.190	0.638	PASS
$\pi/4$ DQPSK	LCH	0.976	0.876	PASS
	MCH	1.028	0.876	PASS
	HCH	1.008	0.876	PASS
8DPSK	LCH	1.036	0.875	PASS
	MCH	0.906	0.875	PASS
	HCH	1.166	0.875	PASS

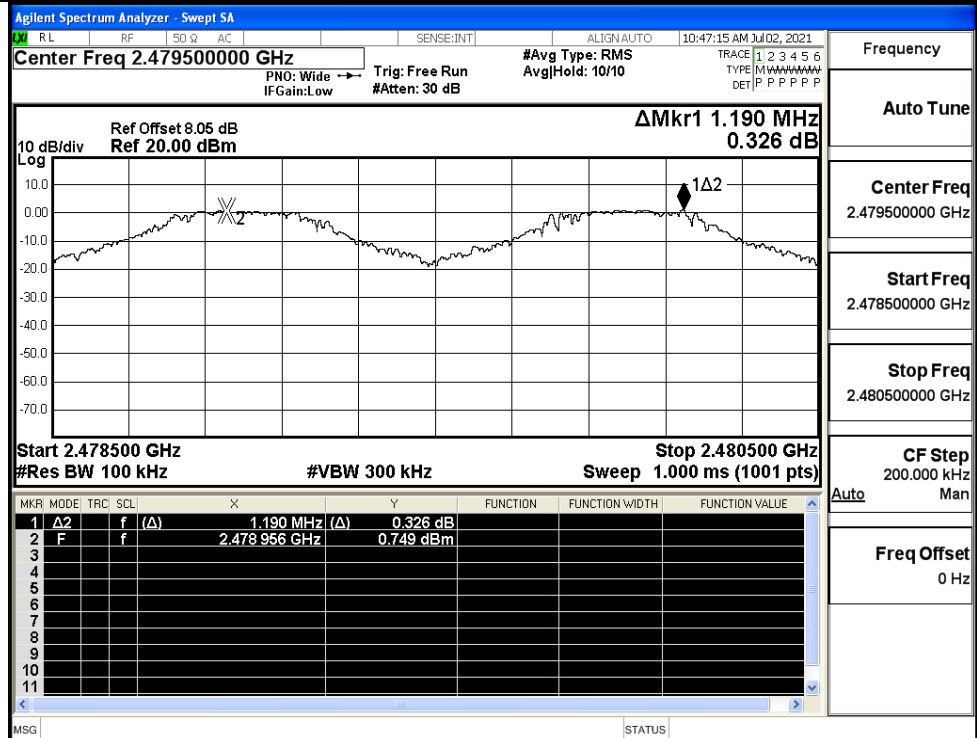


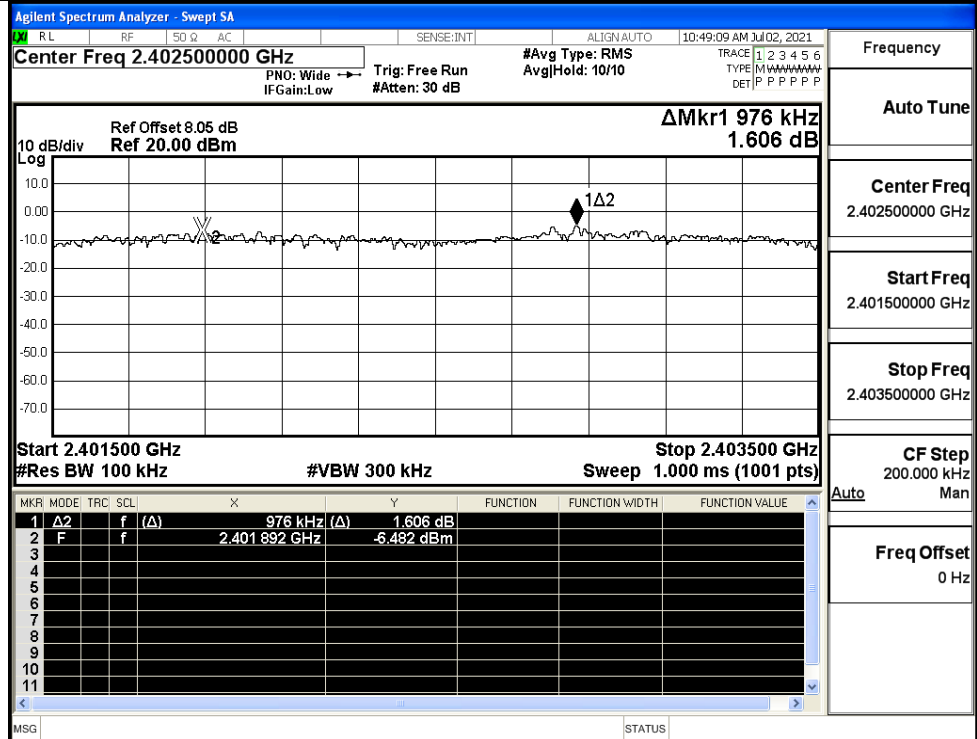
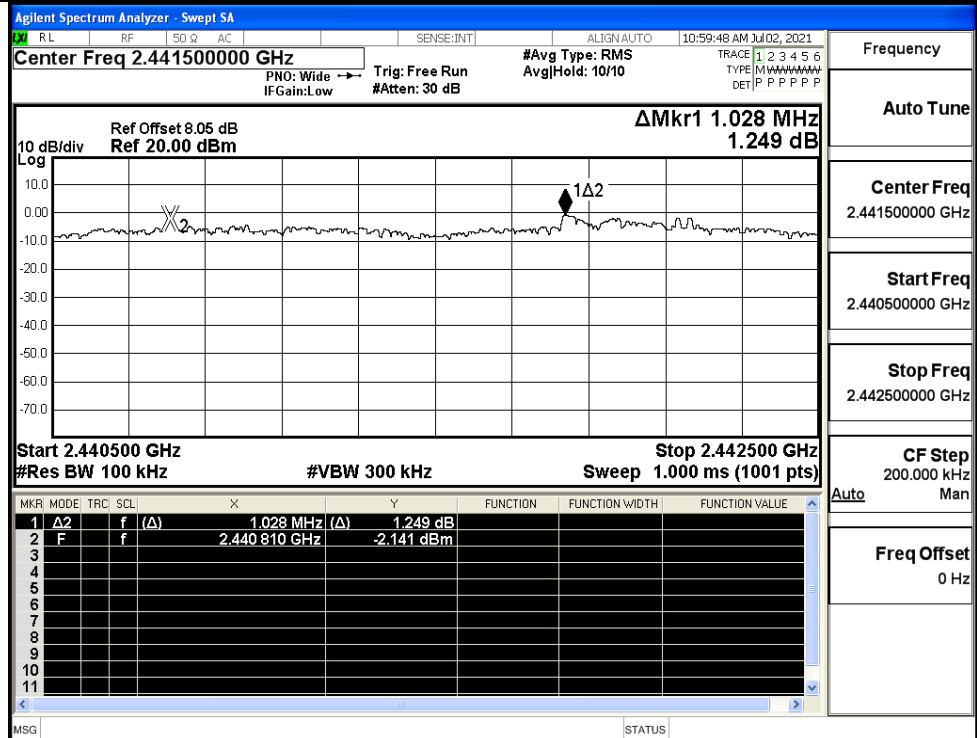


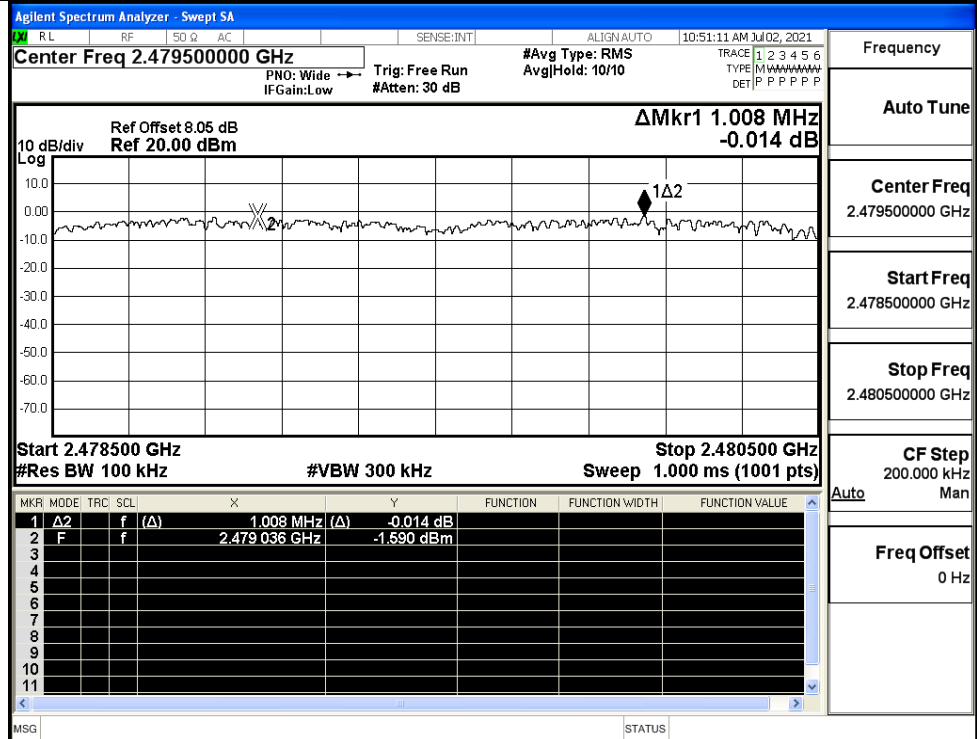
GFSK/MCH



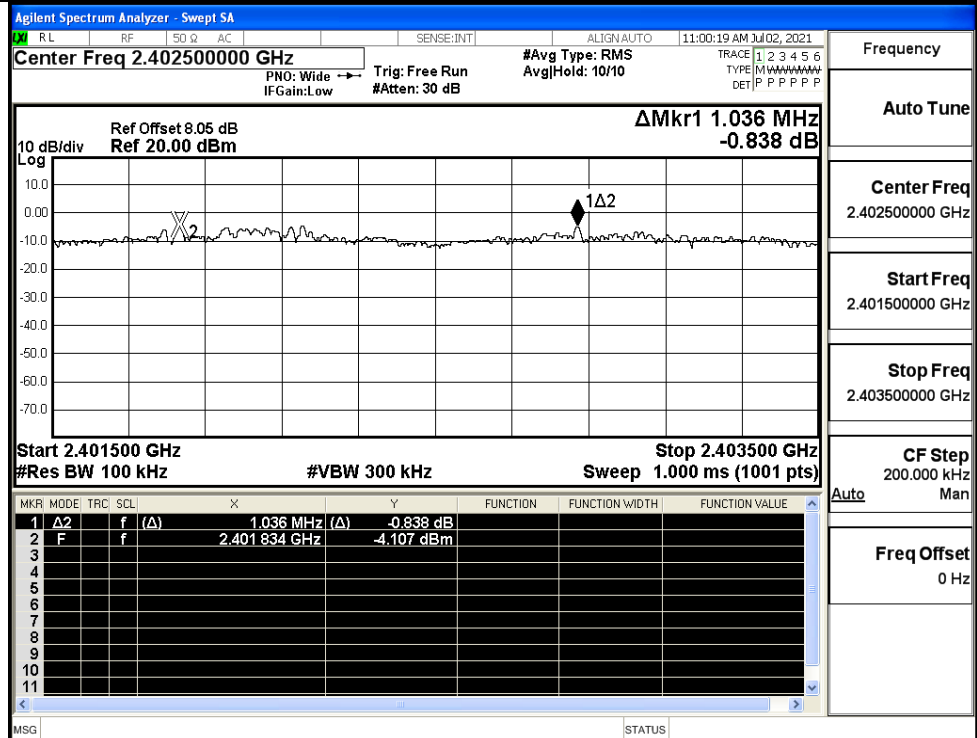
GFSK/HCH

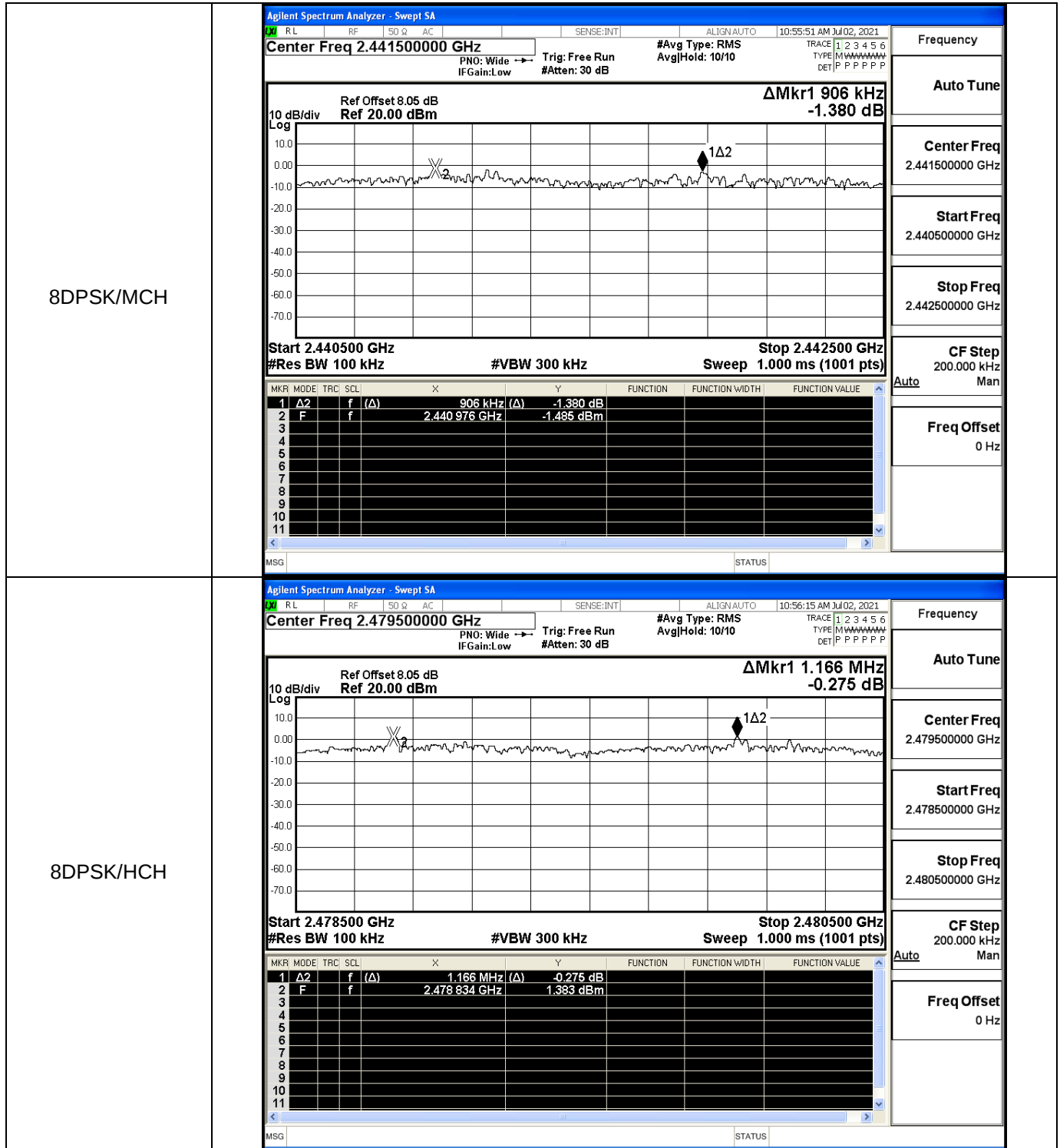


 $\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

 $\pi/4$ DQPSK/HCH

8DPSK/LCH





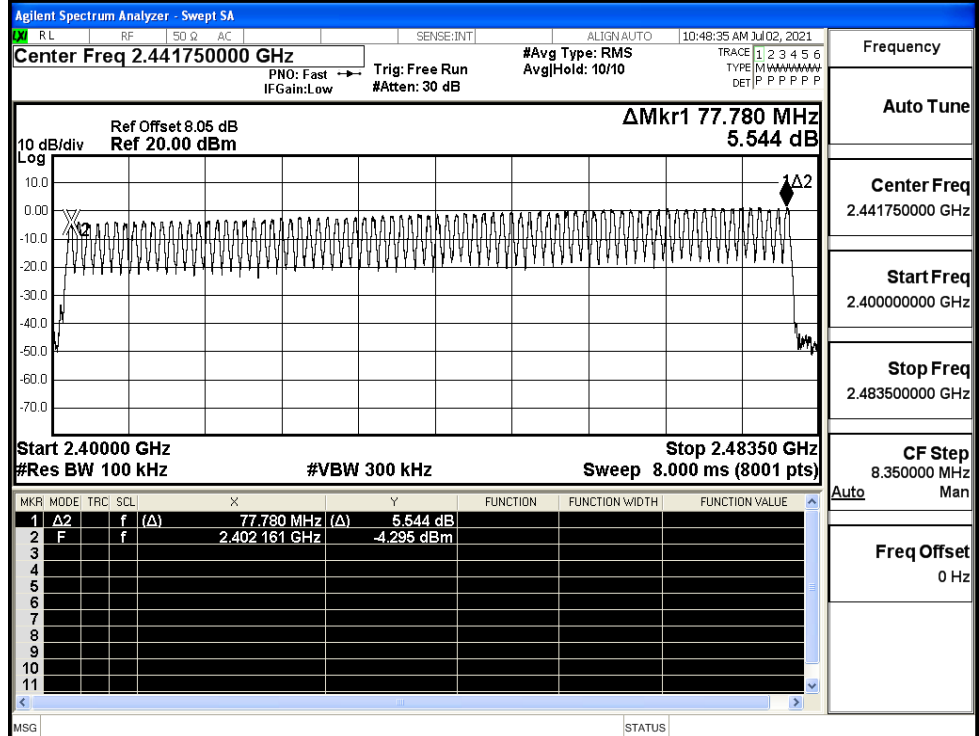
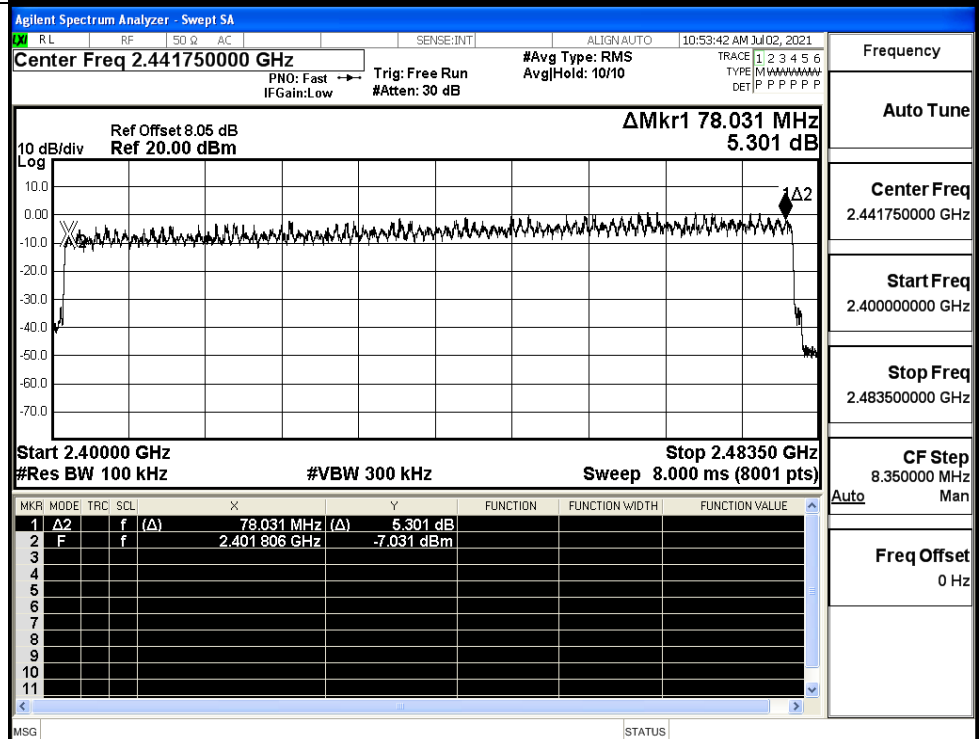
A.4 Hopping Channel Number

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



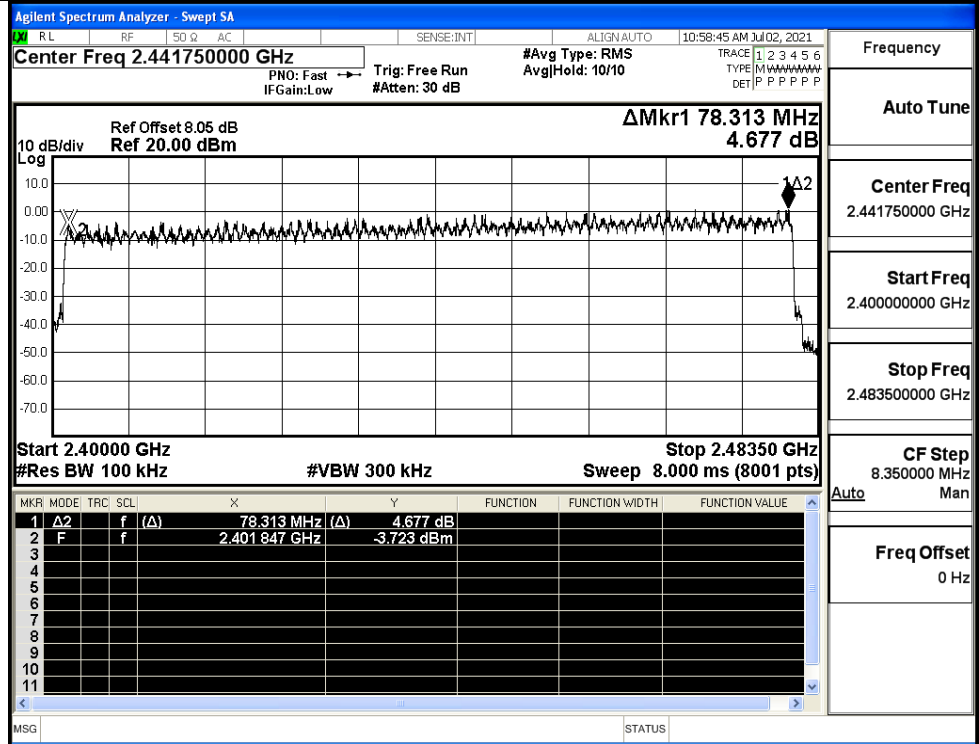
Test Graphs

GFSK/Hop

 $\pi/4$ DQPSK/Hop



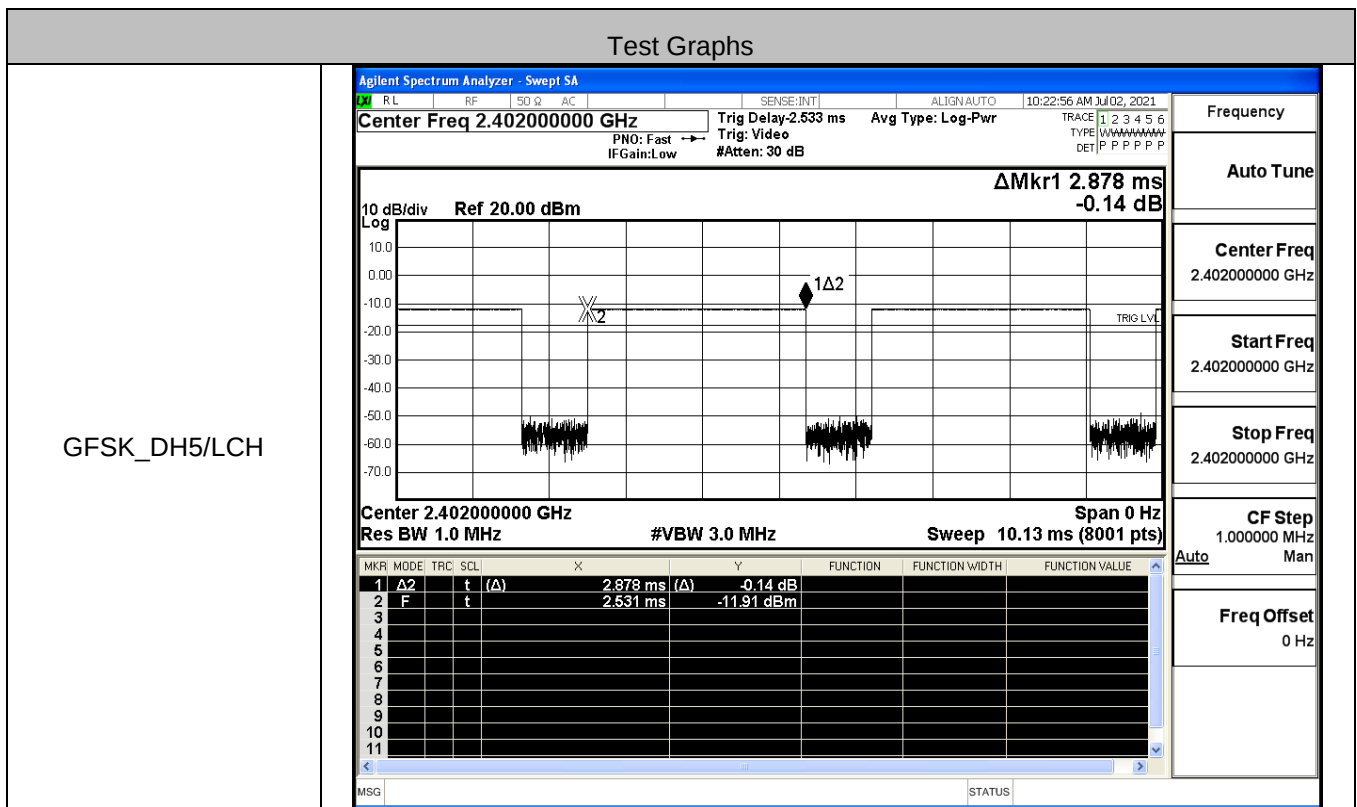
8DPSK/Hop





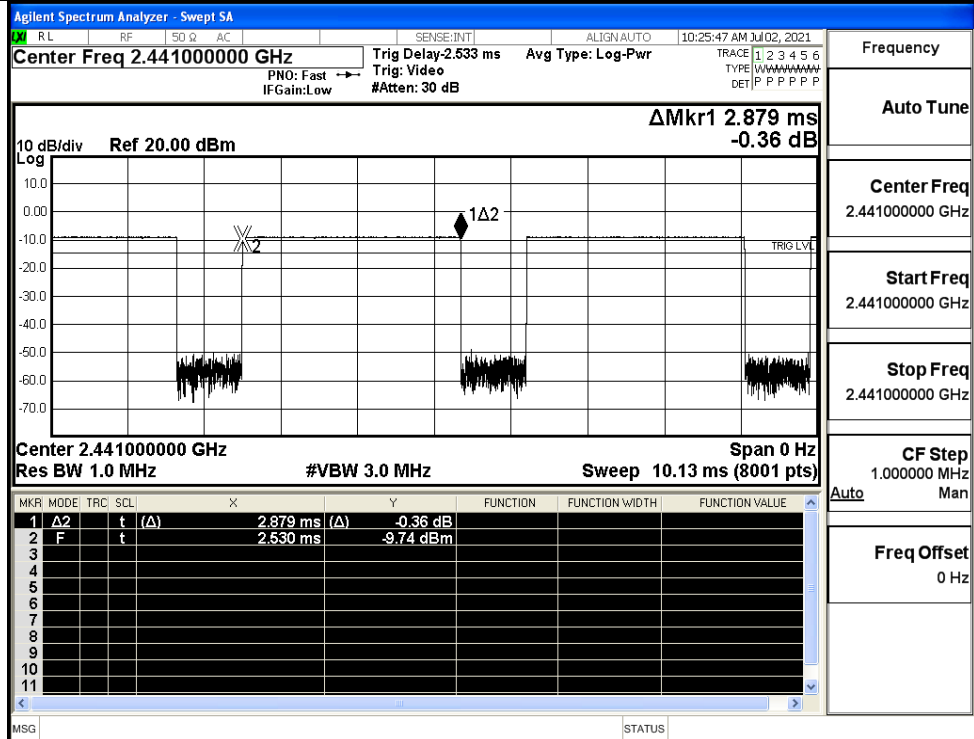
A.5 Dwell Time

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	0.308	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	0.307	0.4	PASS
	3DH5	MCH	2.88	106.7	0.307	0.4	PASS
	3DH5	HCH	2.88	106.7	0.308	0.4	PASS

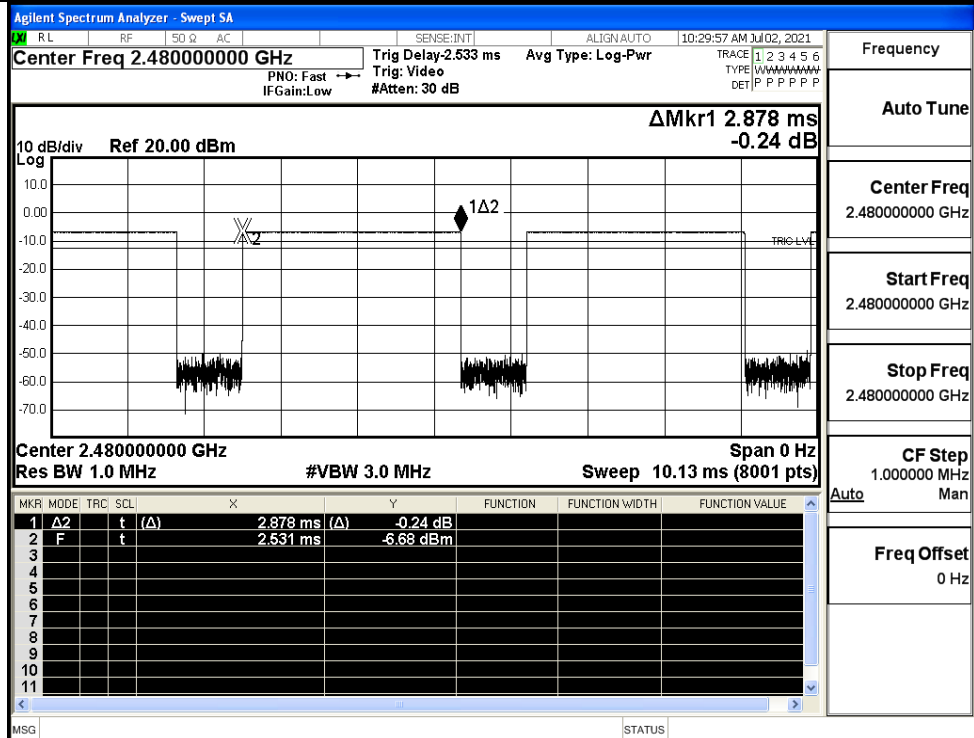




GFSK_DH5/MCH

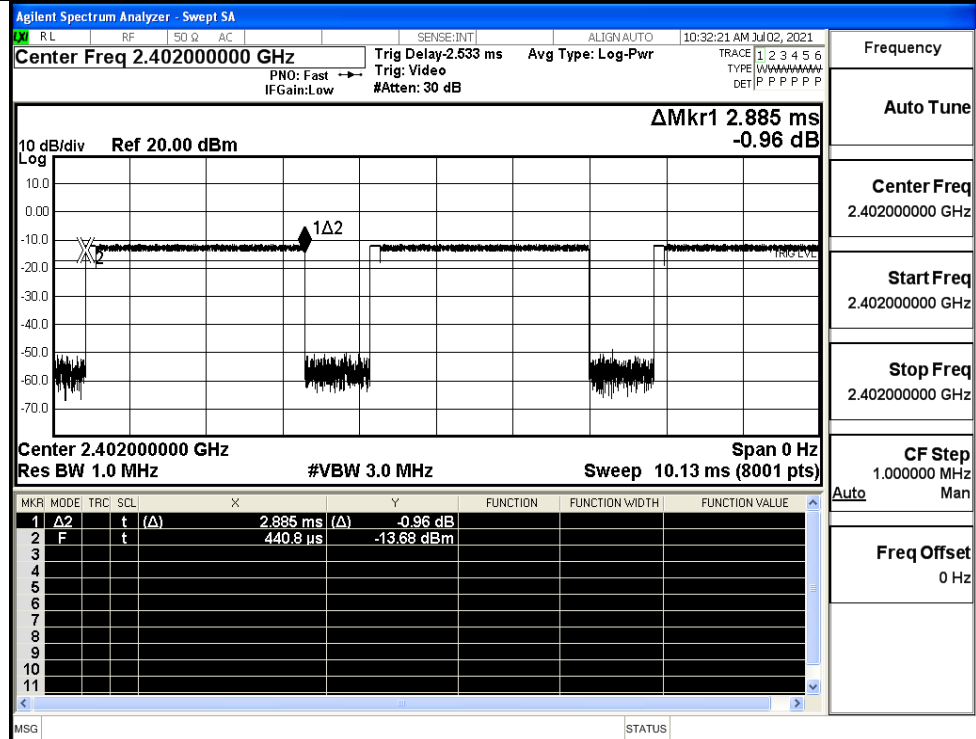


GFSK_DH5/HCH

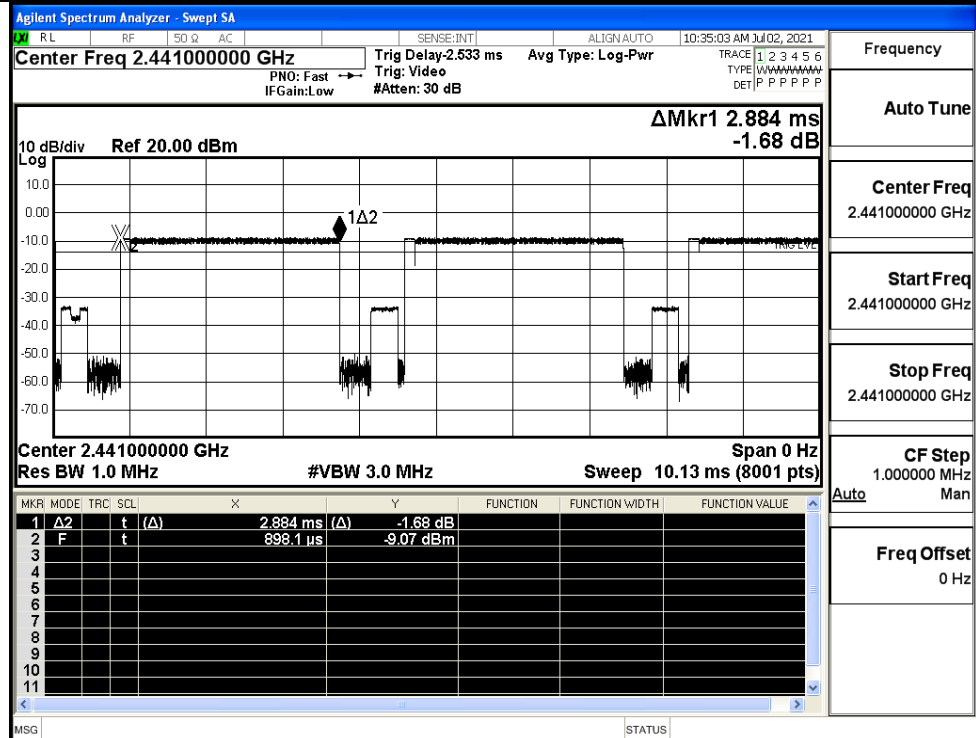




$\pi/4$ DQPSK
_2DH5/LCH

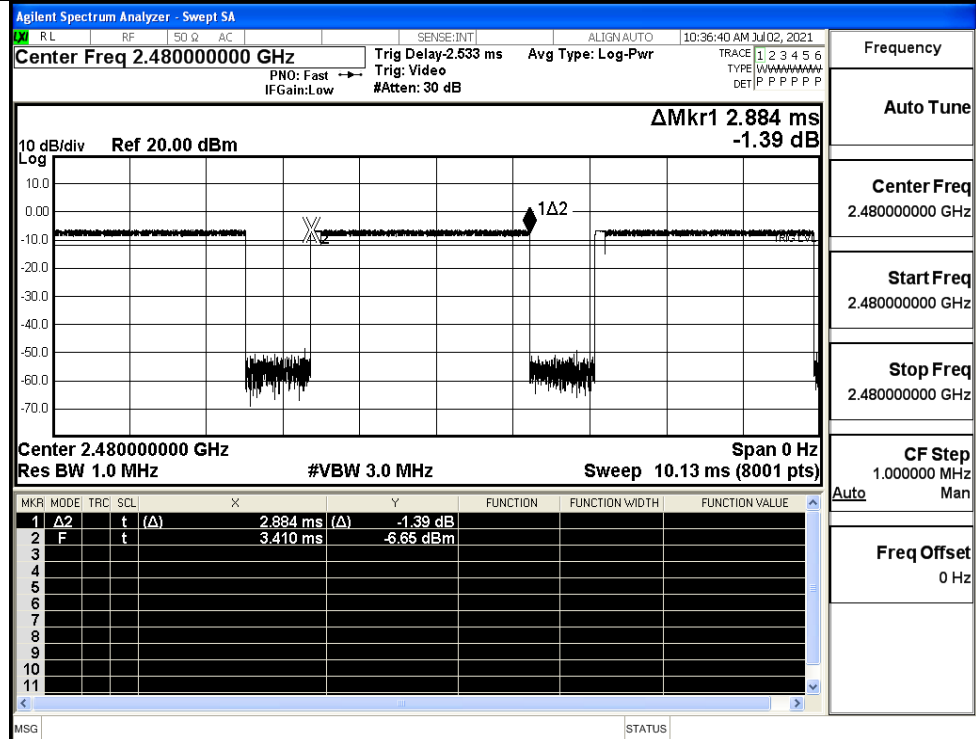


$\pi/4$ DQPSK
_2DH5/MCH

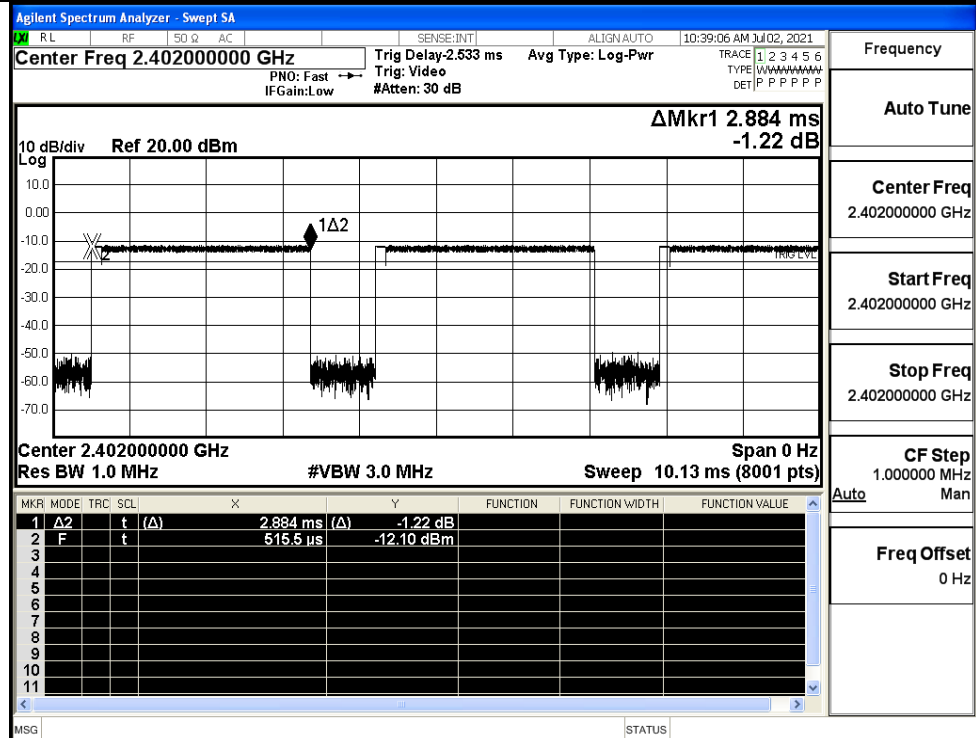




$\pi/4$ DQPSK
_2DH5/HCH

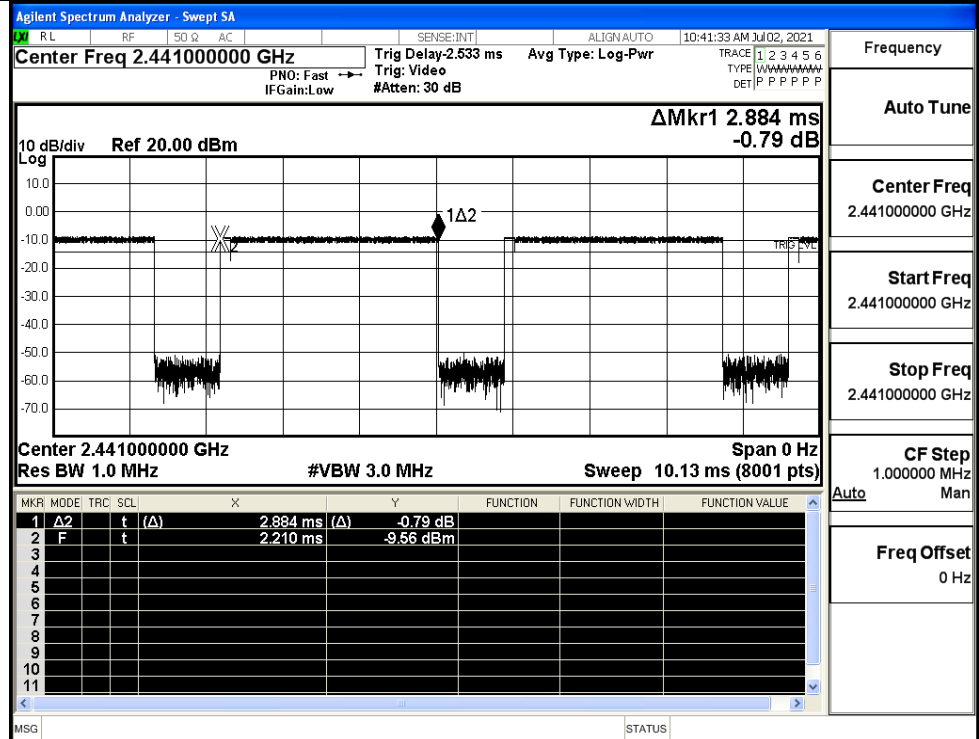


8DPSK _3DH5/LCH

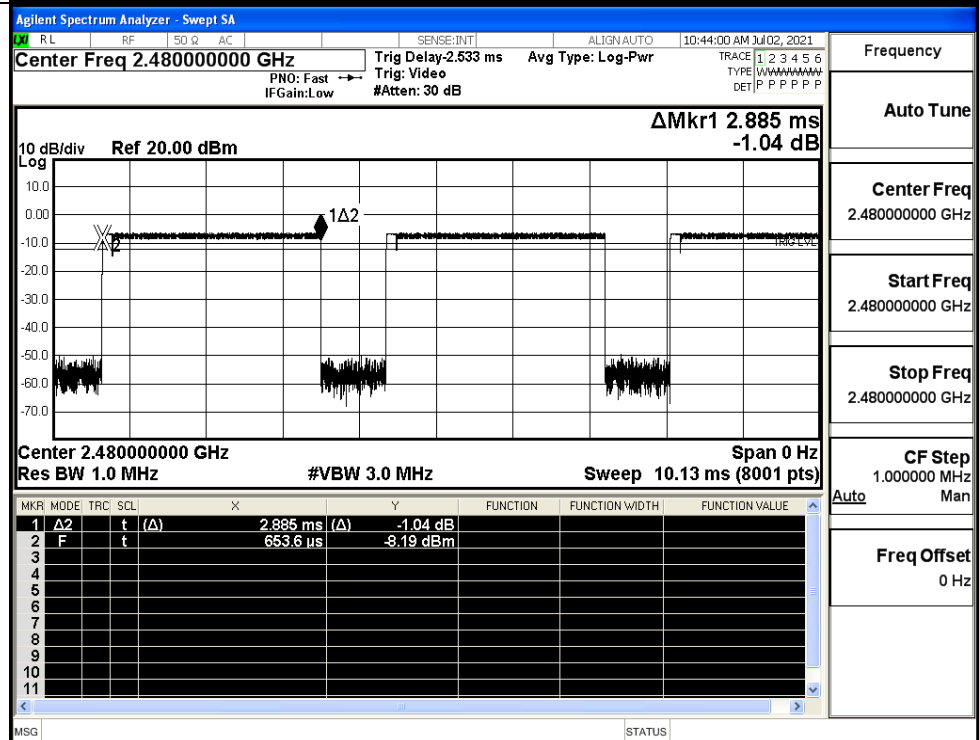




8DPSK_3DH5/MCH



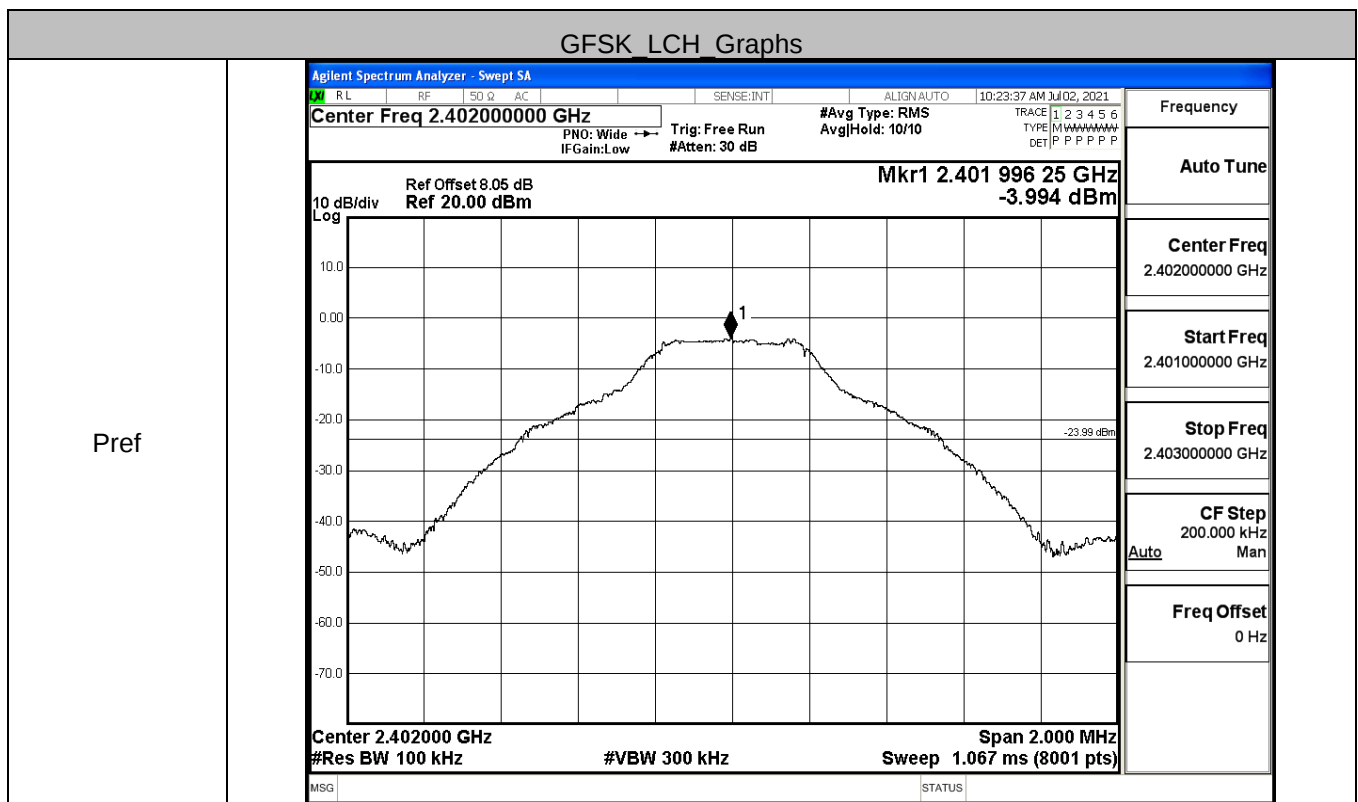
8DPSK_3DH5/HCH





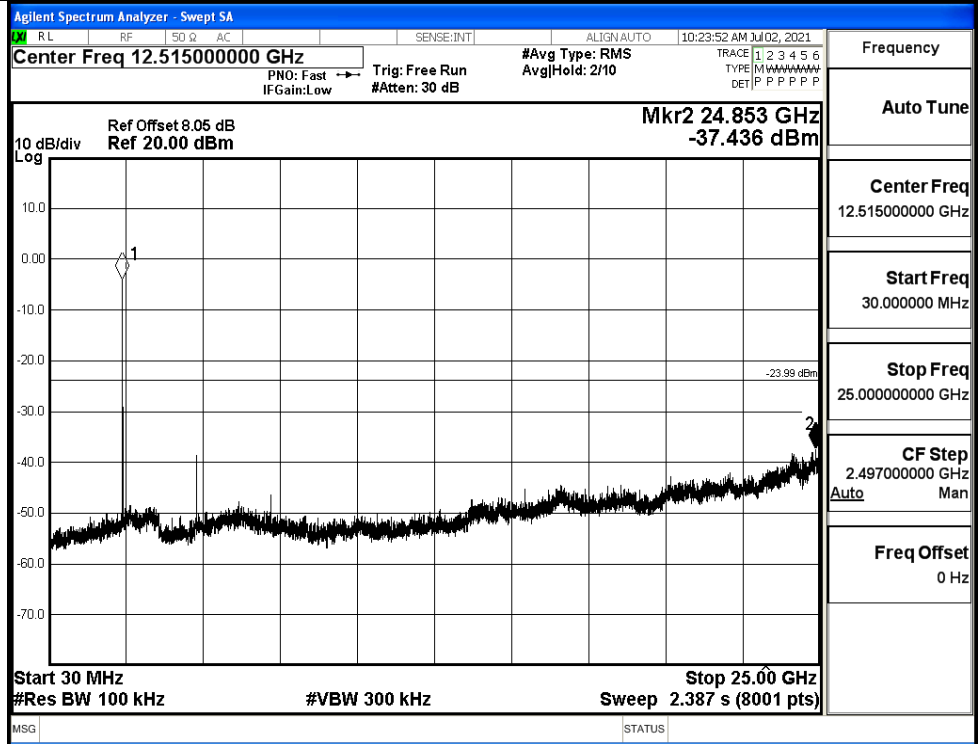
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-3.994	-37.436	-23.994	PASS
	MCH	-1.121	-37.215	-21.121	PASS
	HCH	0.915	-37.726	-19.085	PASS
$\pi/4$ DQPSK	LCH	-3.858	-37.089	-23.858	PASS
	MCH	-1.068	-37.535	-21.068	PASS
	HCH	1.268	-38.590	-18.732	PASS
8DPSK	LCH	-4.125	-38.016	-24.125	PASS
	MCH	-1.226	-37.492	-21.226	PASS
	HCH	1.312	-38.333	-18.688	PASS





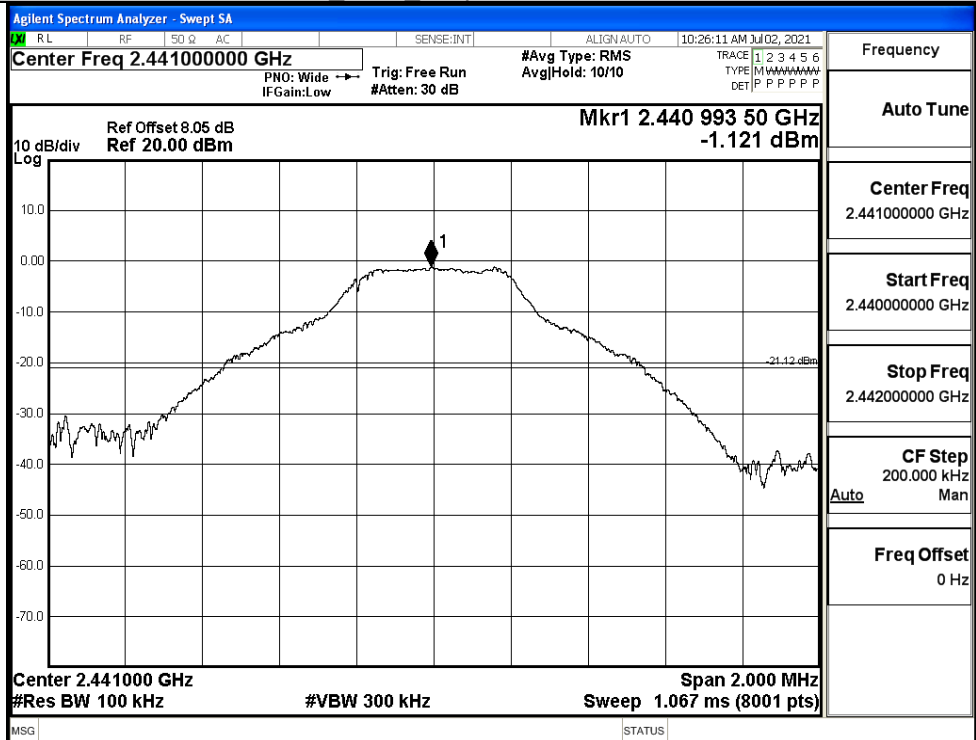
Puw



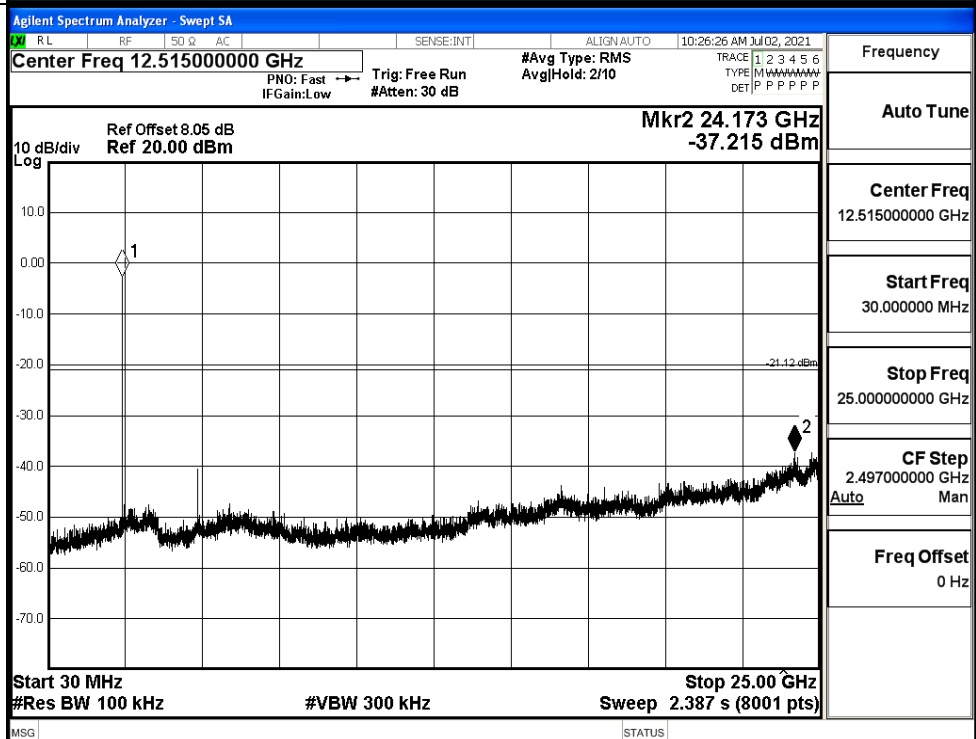


GFSK_MCH_Graphs

Pref



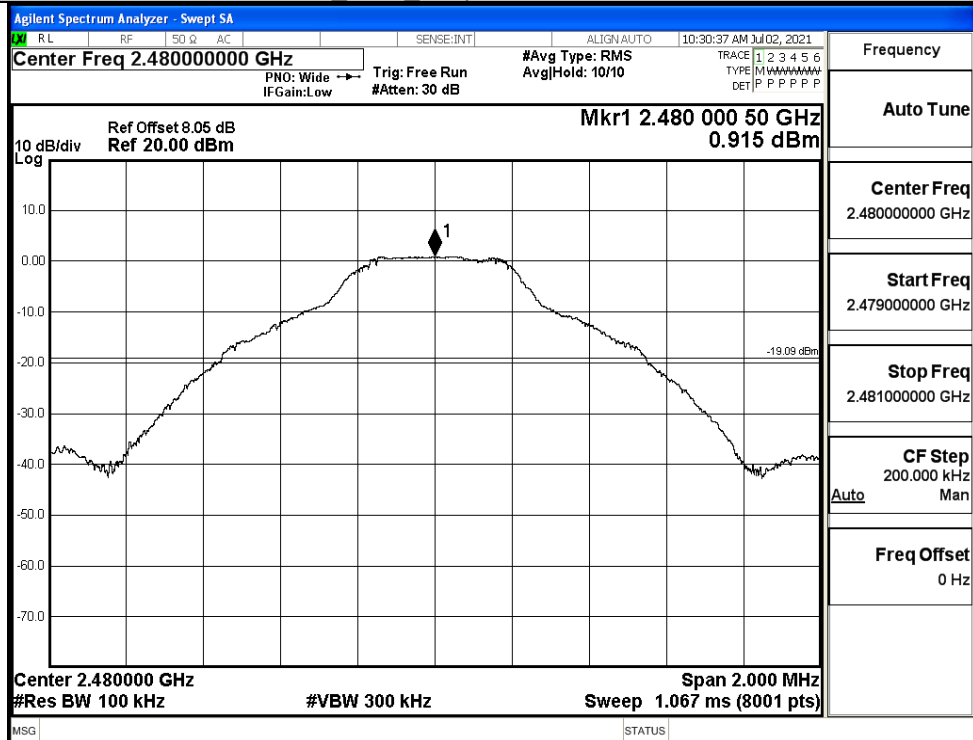
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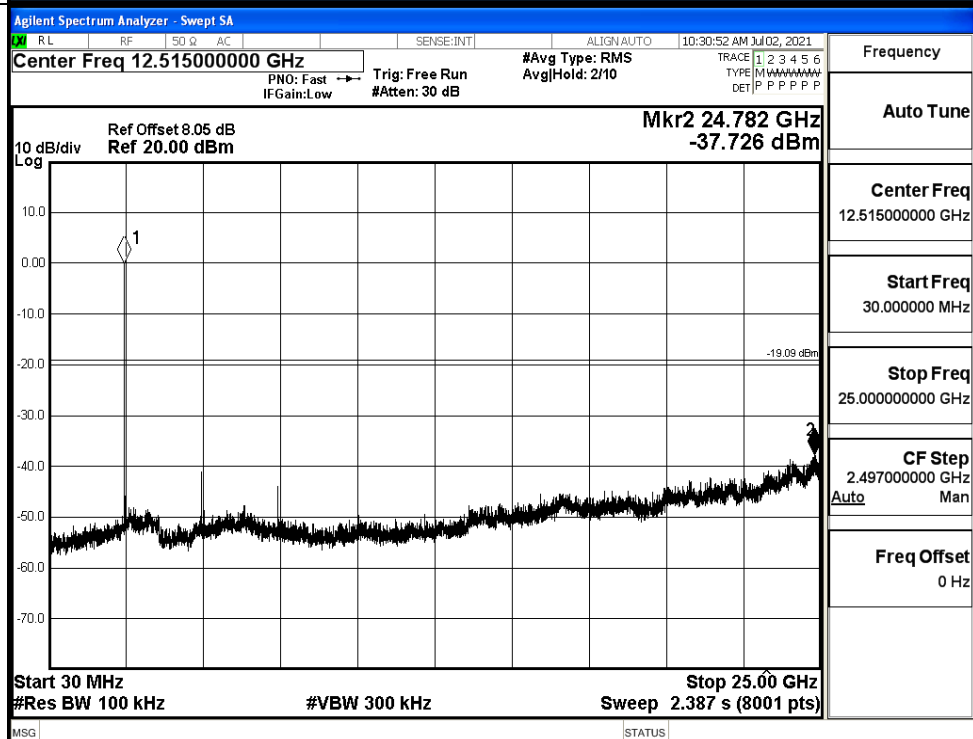


GFSK HCH Graphs

Pref

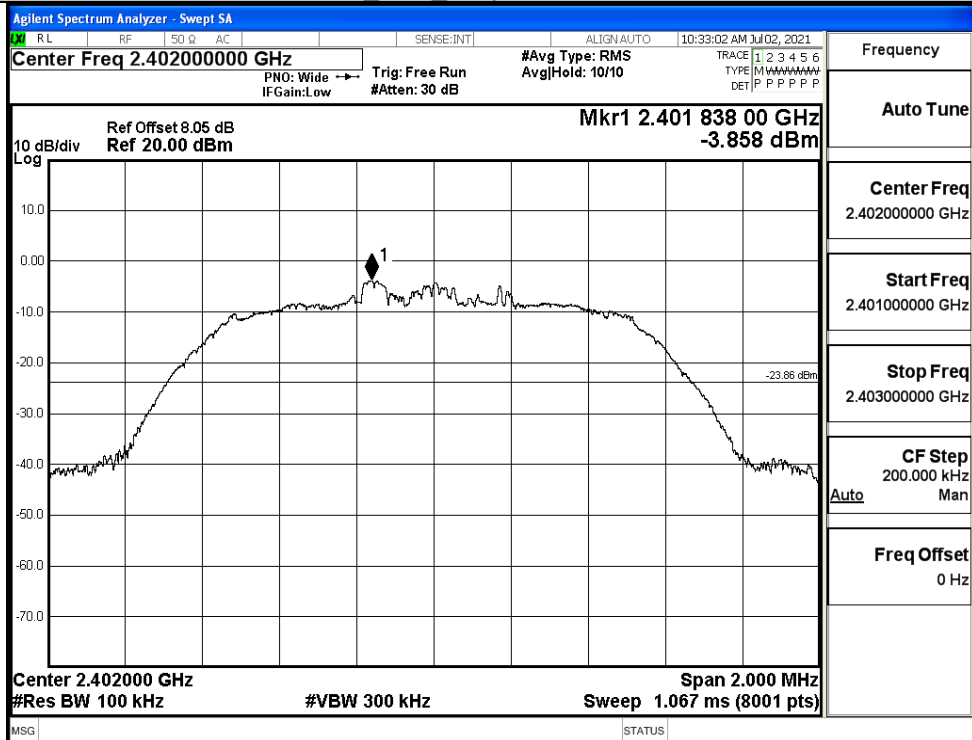


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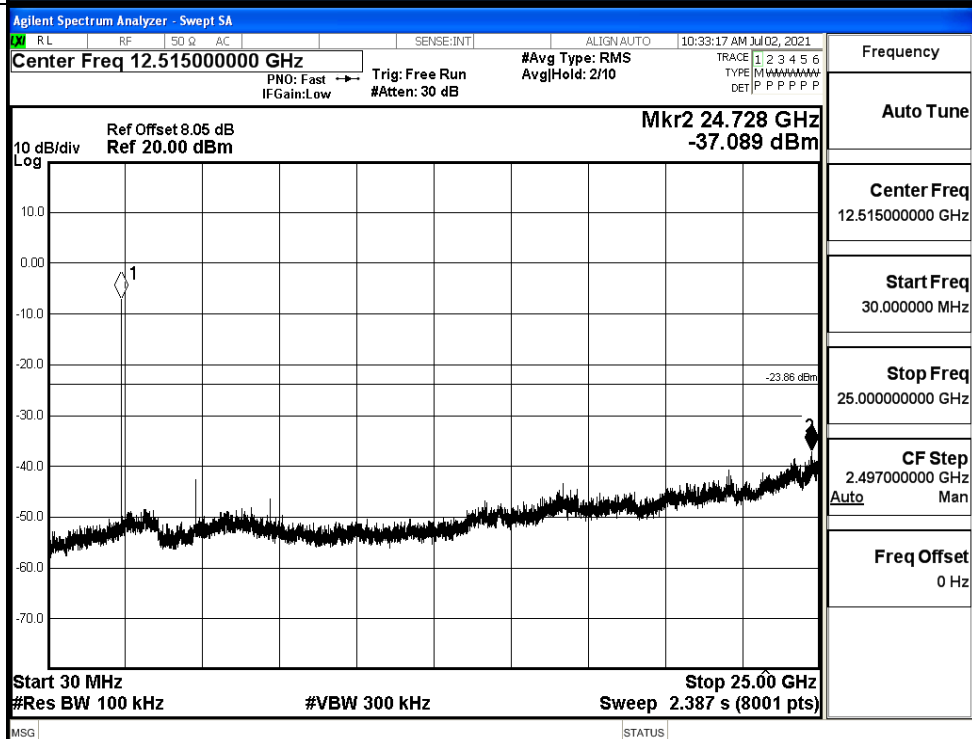


 $\pi/4$ DQPSK_LCH_Graphs

Pref

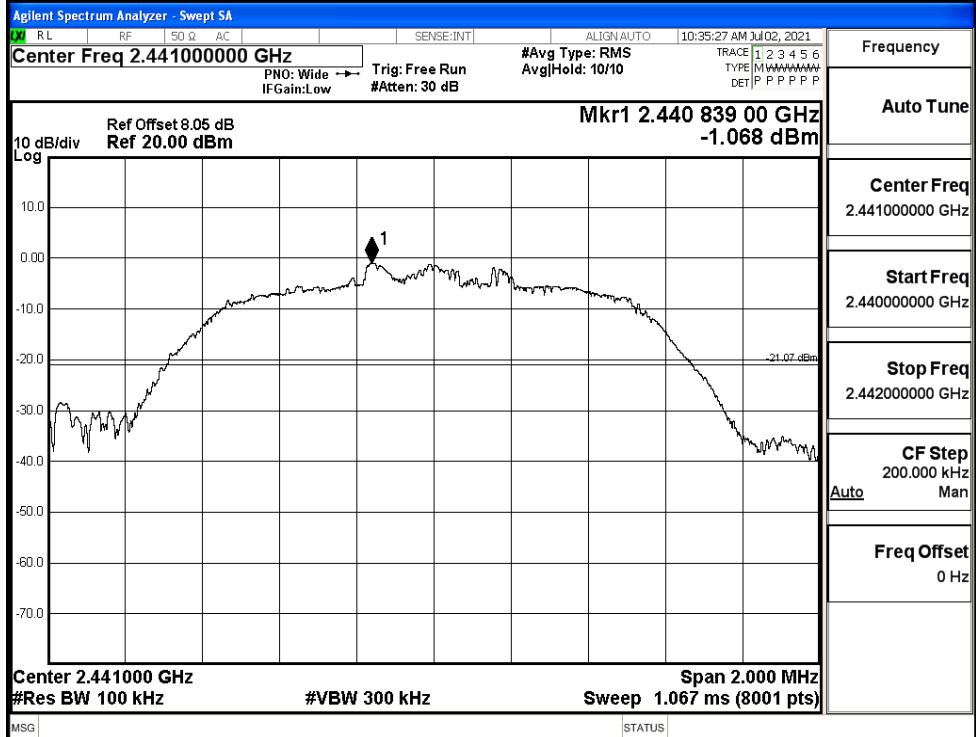


Puw



 π /4DQPSK_MCH_Graphs

Pref

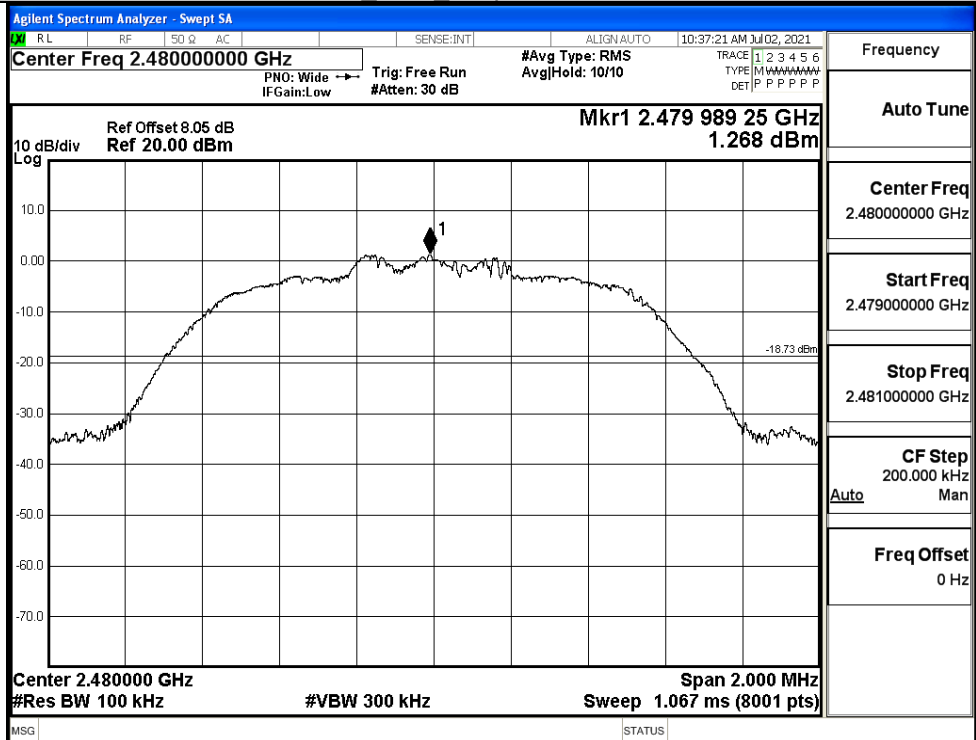


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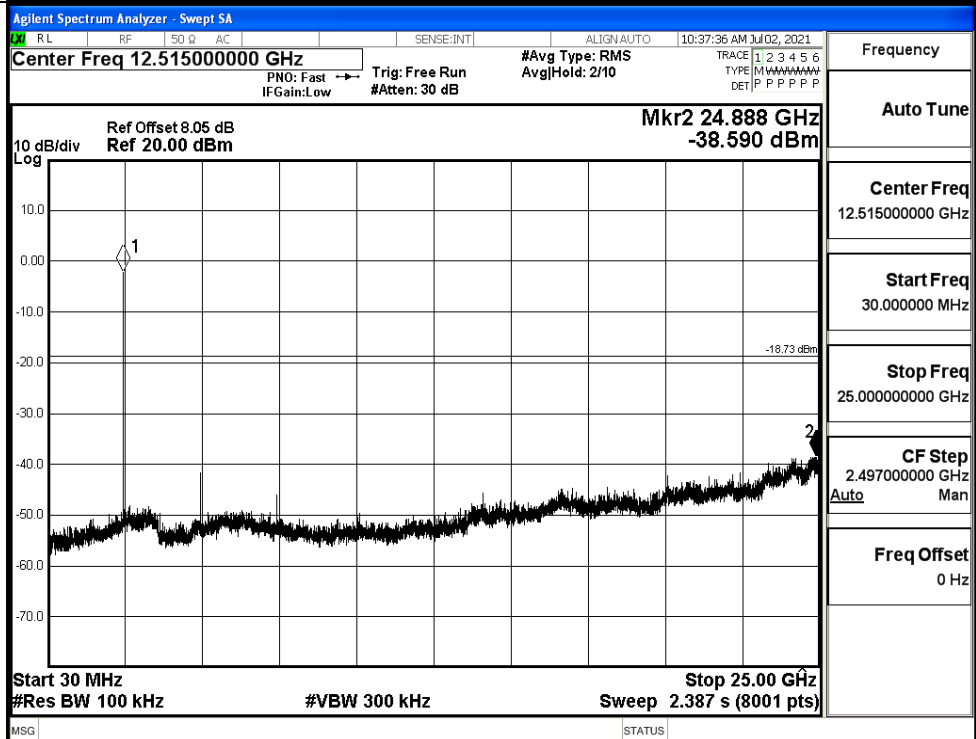


 $\pi/4$ DQPSK_HCH_Graphs

Pref



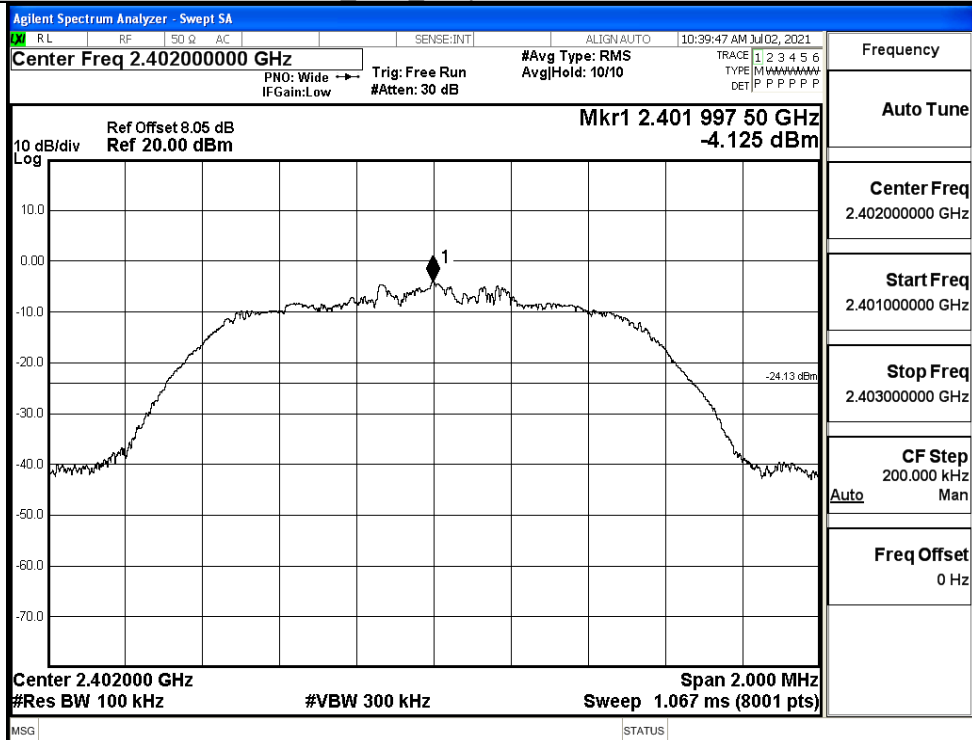
Puw



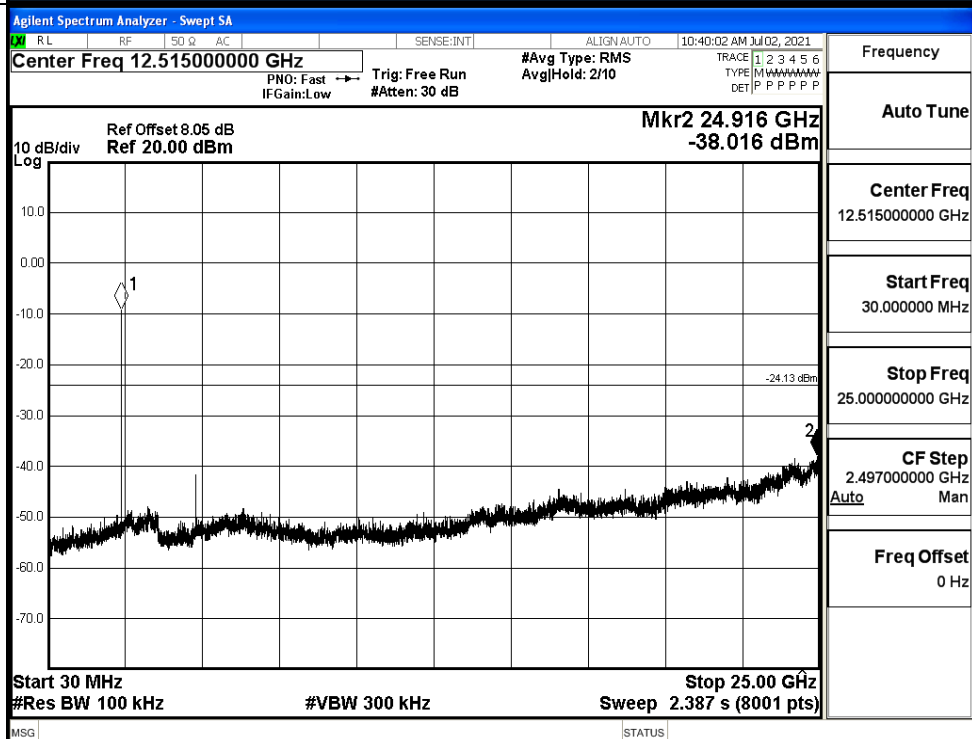


8DPSK_LCH_Graphs

Pref



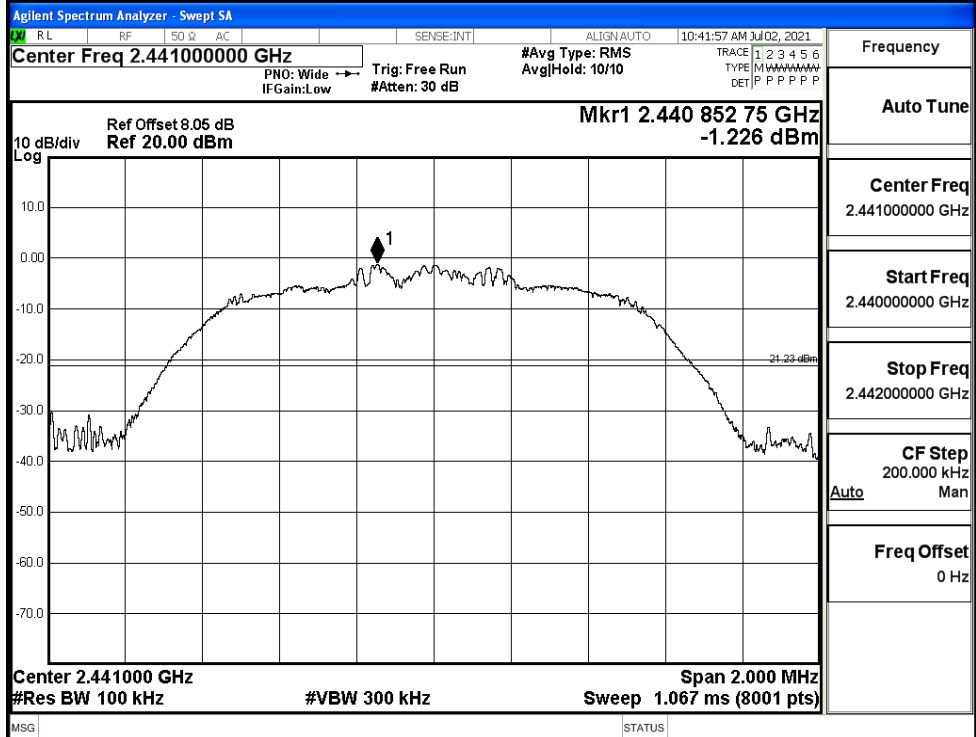
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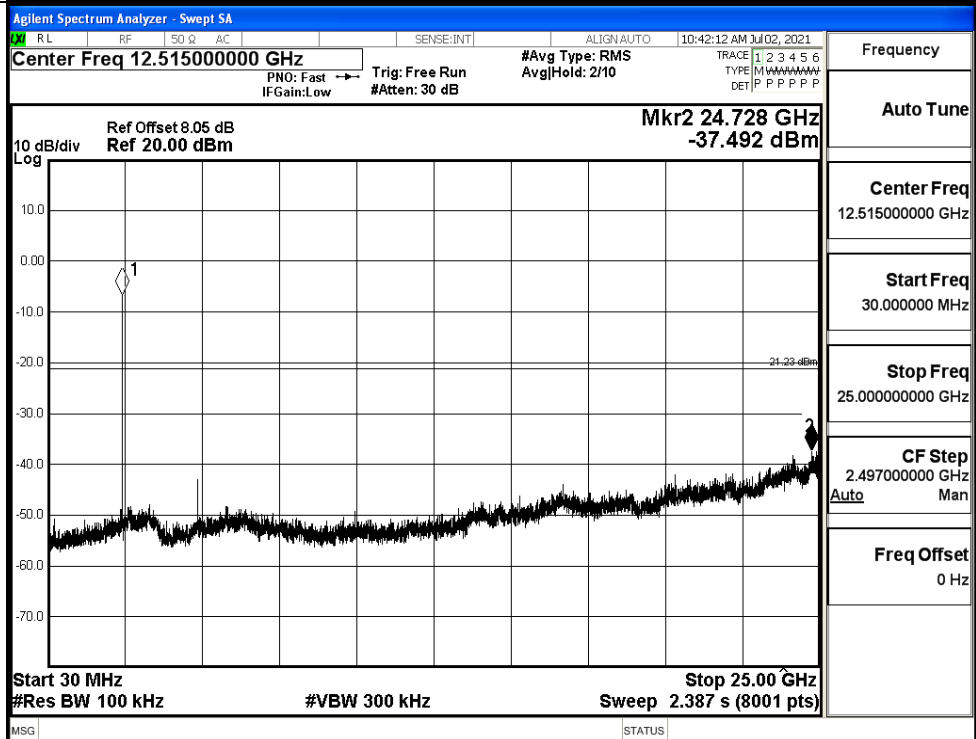


8DPSK_MCH_Graphs

Pref



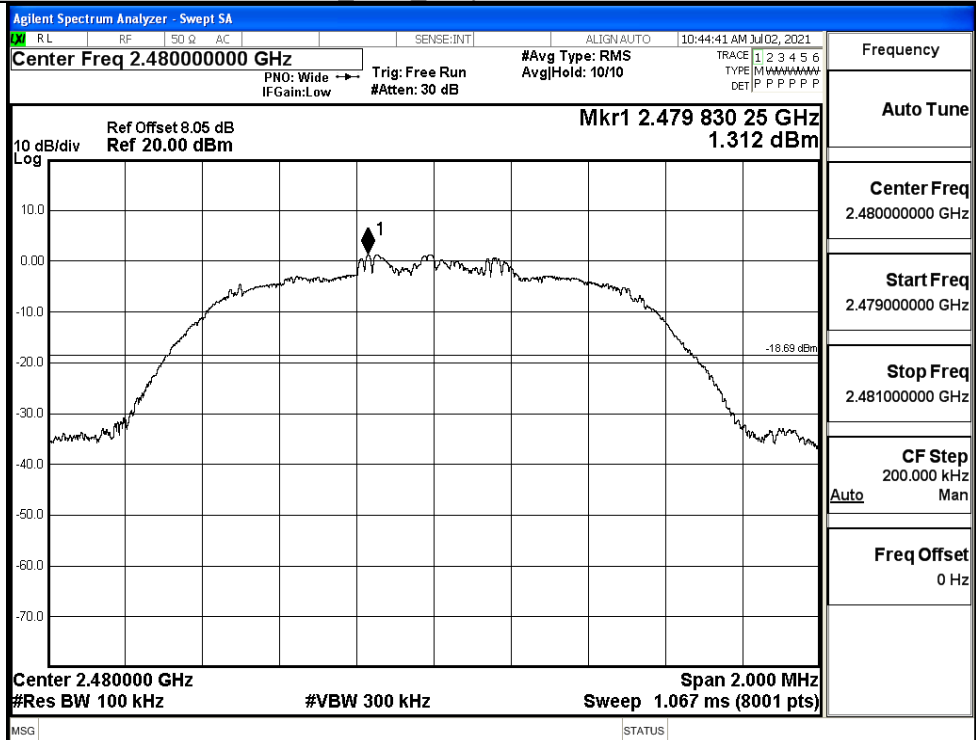
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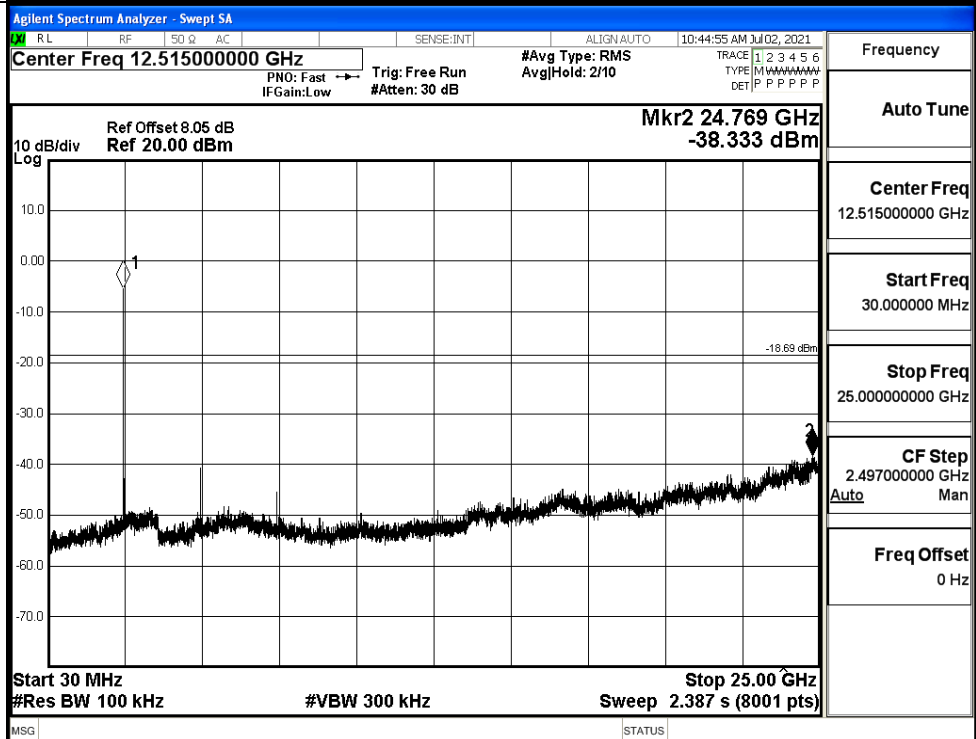


8DPSK_HCH_Graphs

Pref



Puw





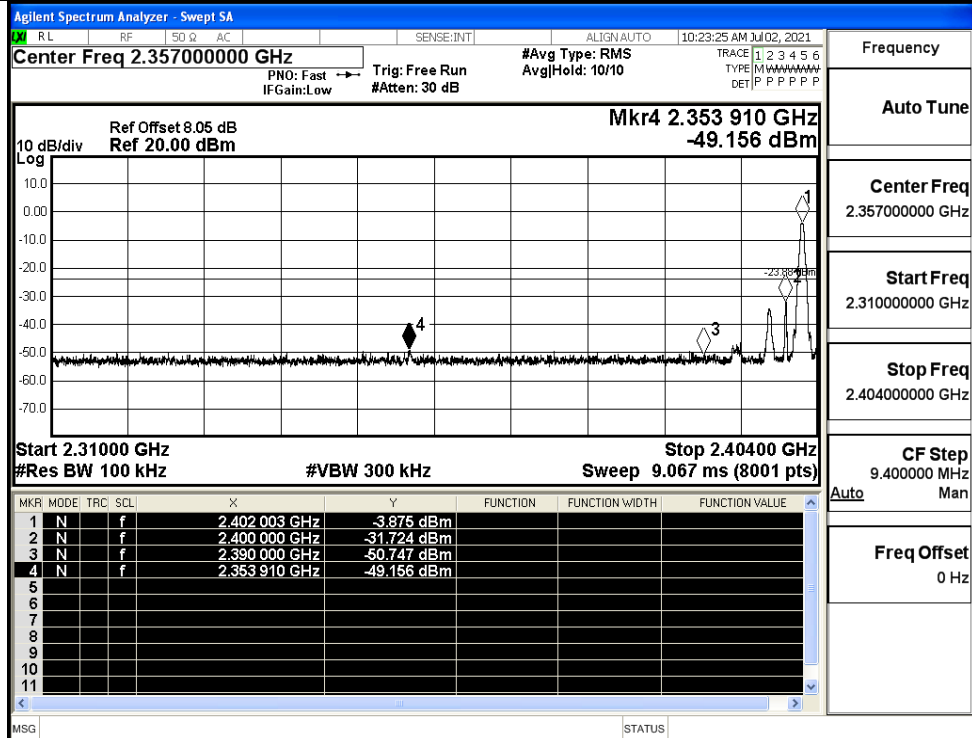
A.7 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-3.875	Off	-49.156	-23.88	PASS
			-2.267	On	-49.161	-22.27	PASS
	HCH	2480	1.360	Off	-43.848	-18.64	PASS
			1.238	On	-44.914	-18.76	PASS
$\pi/4$ DQPSK	LCH	2402	-4.218	Off	-49.547	-24.22	PASS
			-2.090	On	-48.488	-22.09	PASS
	HCH	2480	1.449	Off	-45.247	-18.55	PASS
			1.243	On	-44.435	-18.76	PASS
8DPSK	LCH	2402	-4.046	Off	-49.522	-24.05	PASS
			-2.781	On	-48.381	-22.78	PASS
	HCH	2480	1.492	Off	-44.233	-18.51	PASS
			1.345	On	-45.066	-18.66	PASS

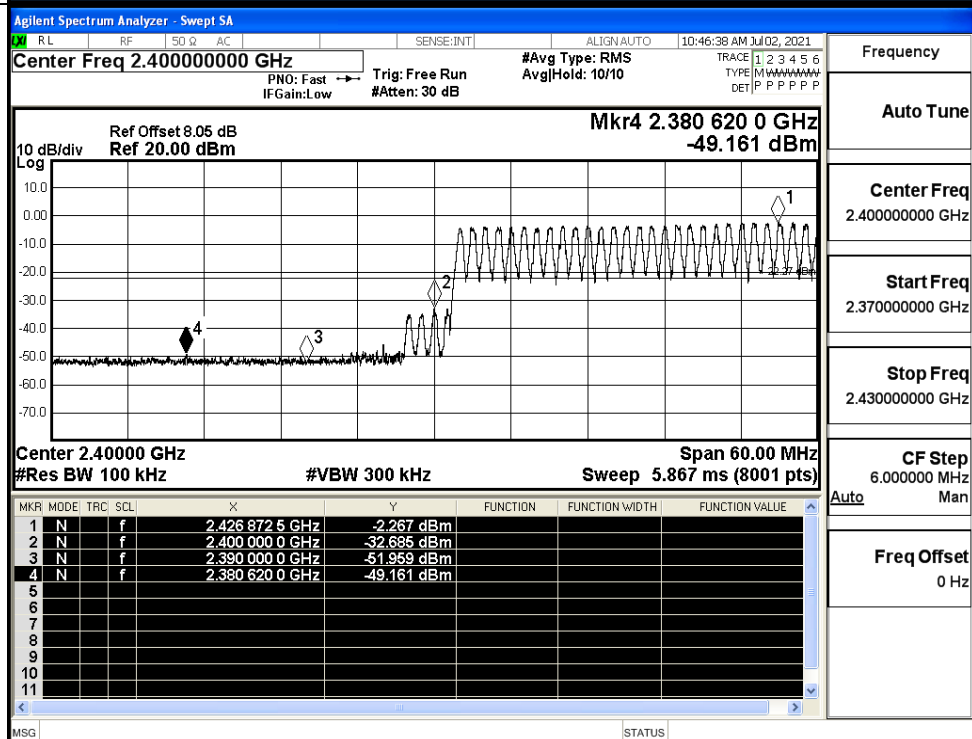


Test Graphs

GFSK/LCH/No Hop

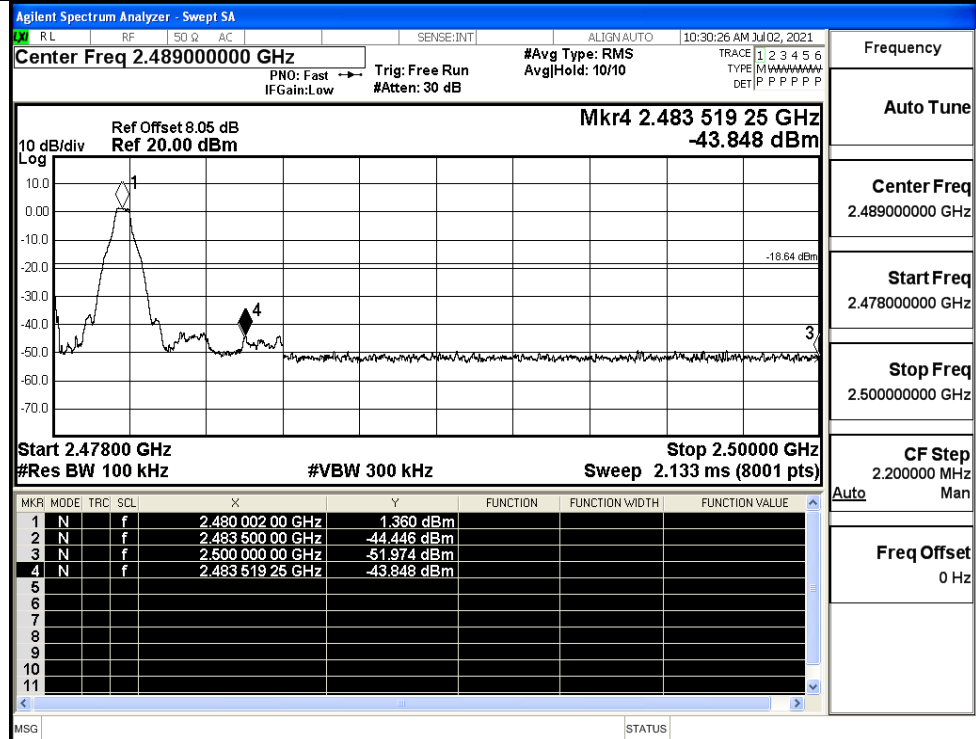


GFSK/LCH/Hop

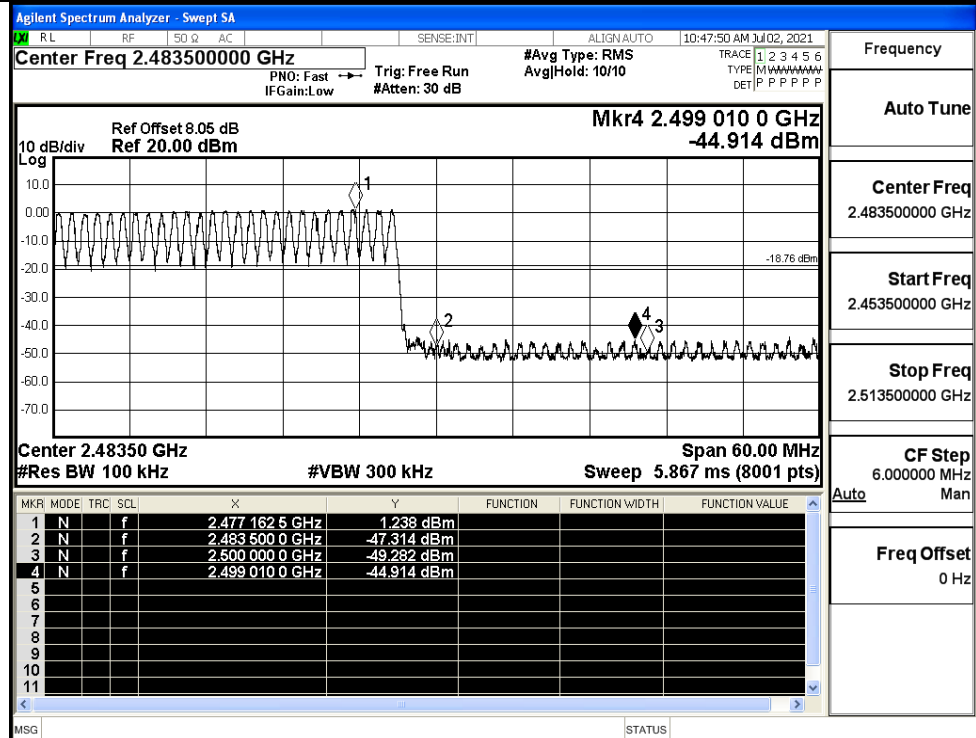




GFSK/HCH/No Hop

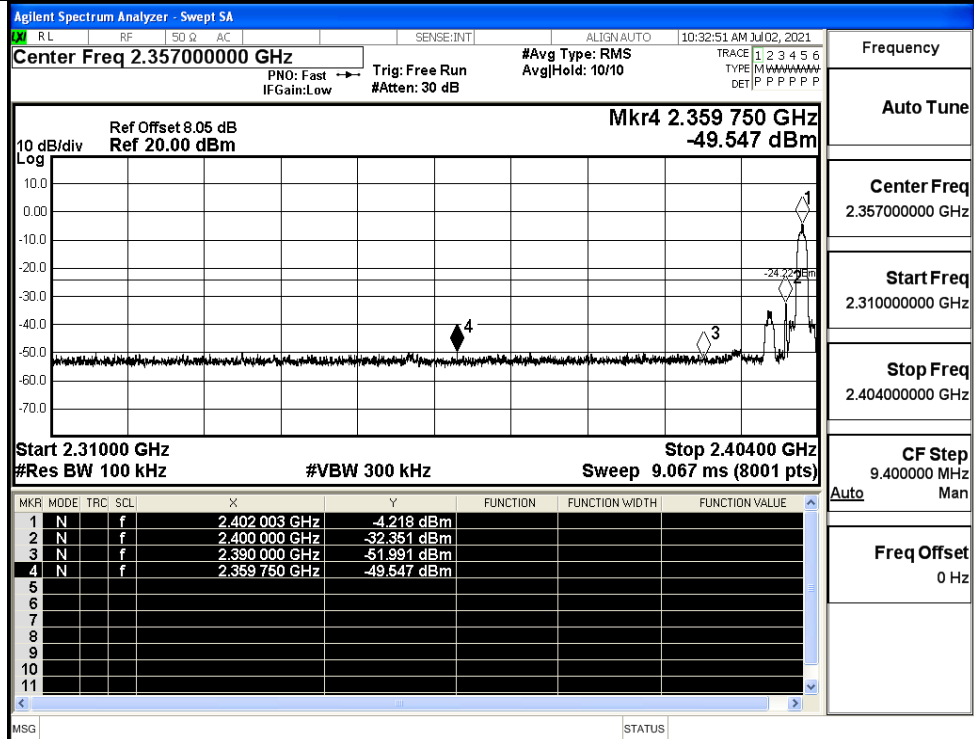


GFSK/HCH/Hop





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



Frequency

Auto Tune

Center Freq
2.357000000 GHz

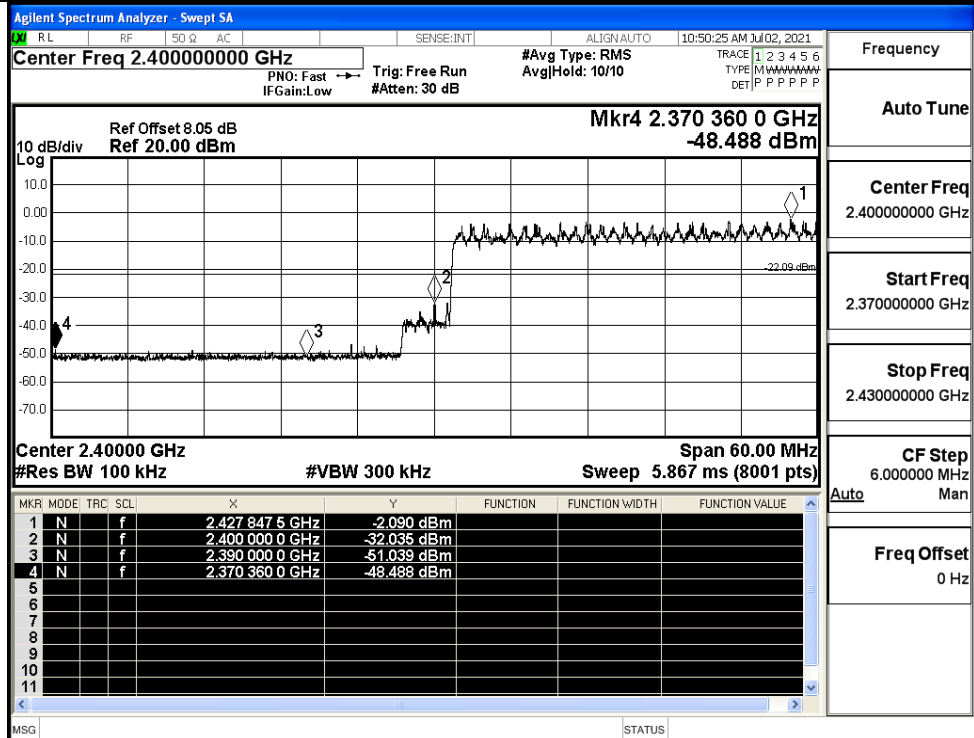
Start Freq
2.310000000 GHz

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

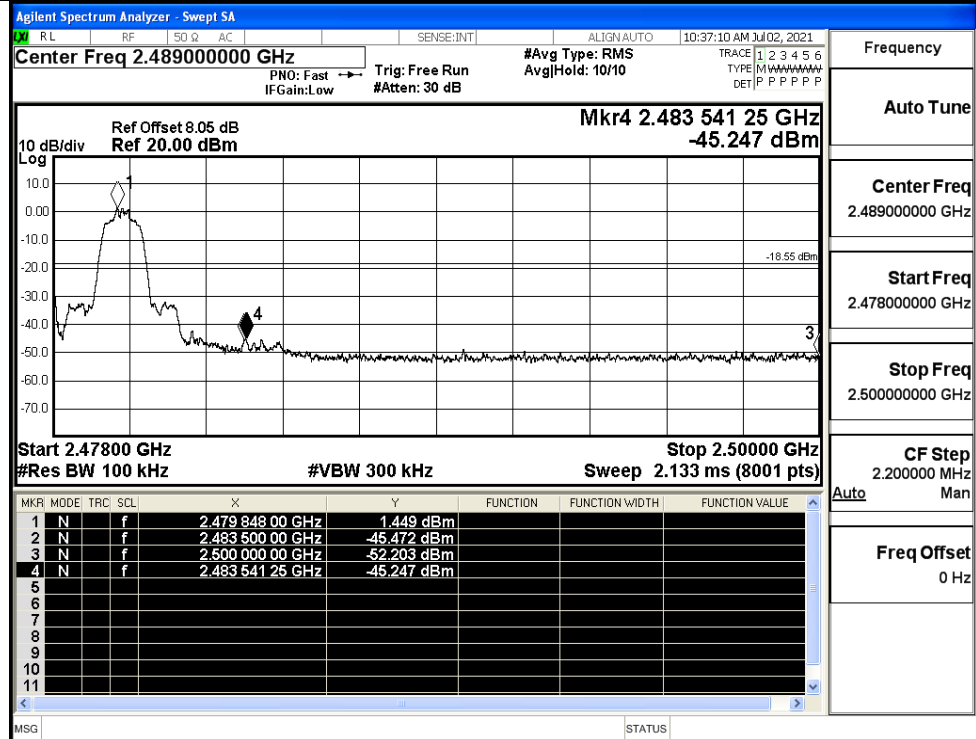
Stop Freq
2.430000000 GHz

CF Step
6.000000 MHz
Auto Man

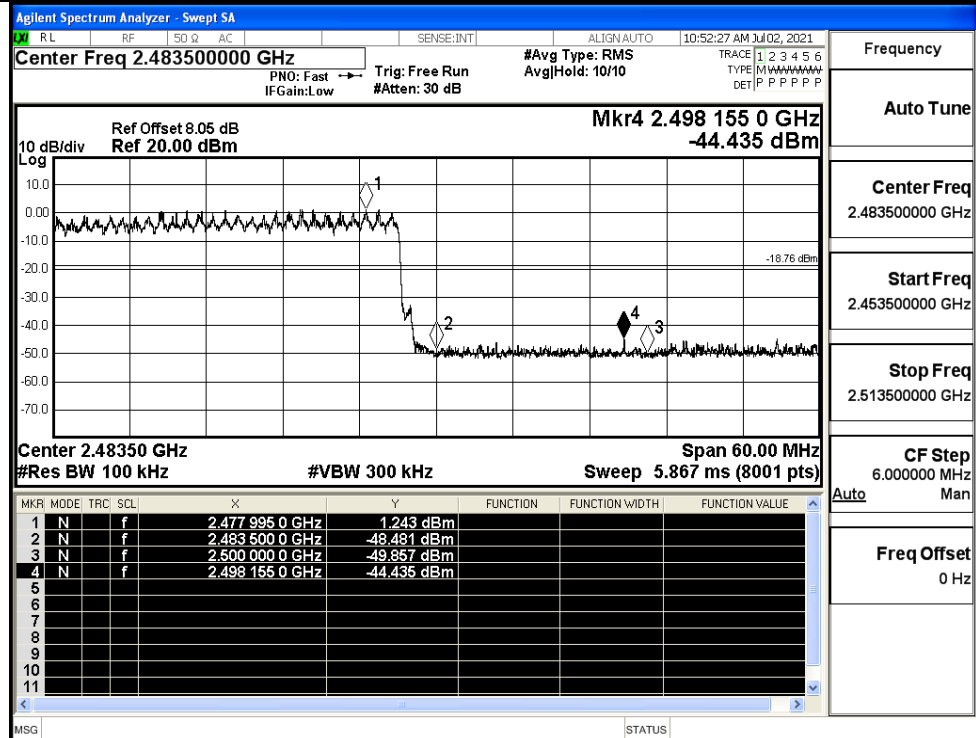
Freq Offset
0 Hz



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

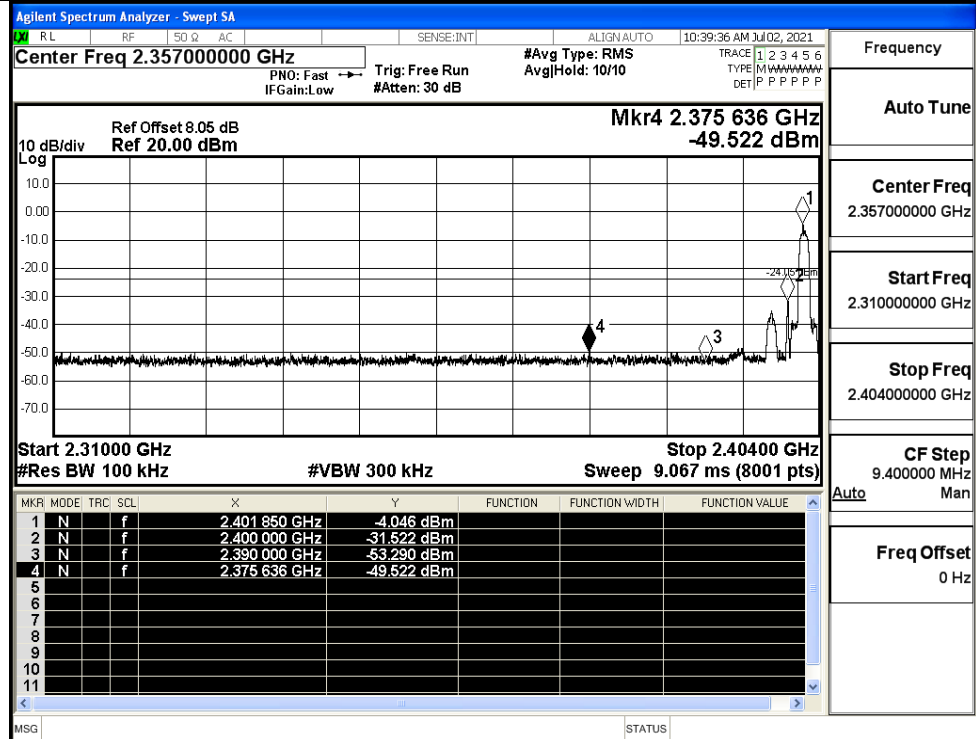


$\pi/4$ DQPSK/HCH/Hop

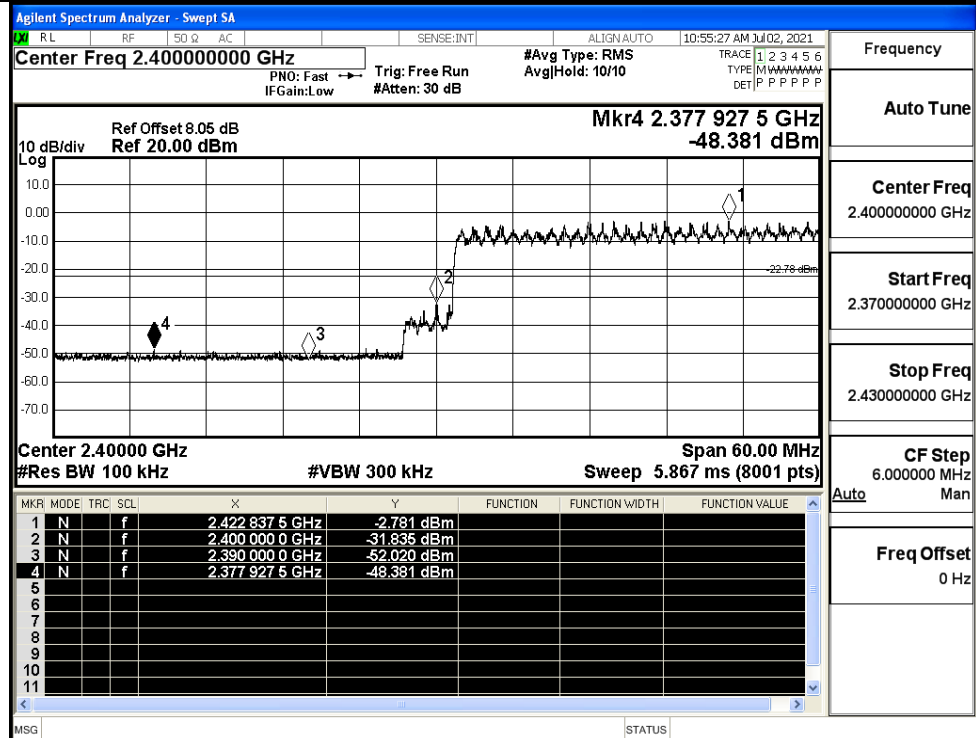




8DPSK/LCH/No Hop

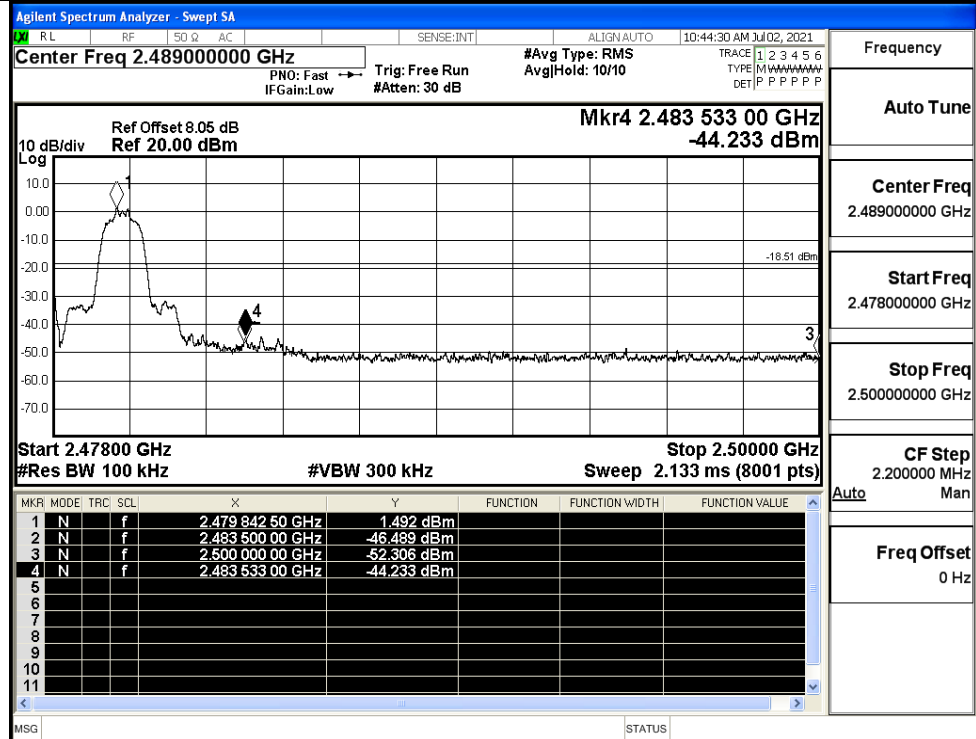


8DPSK/LCH/Hop

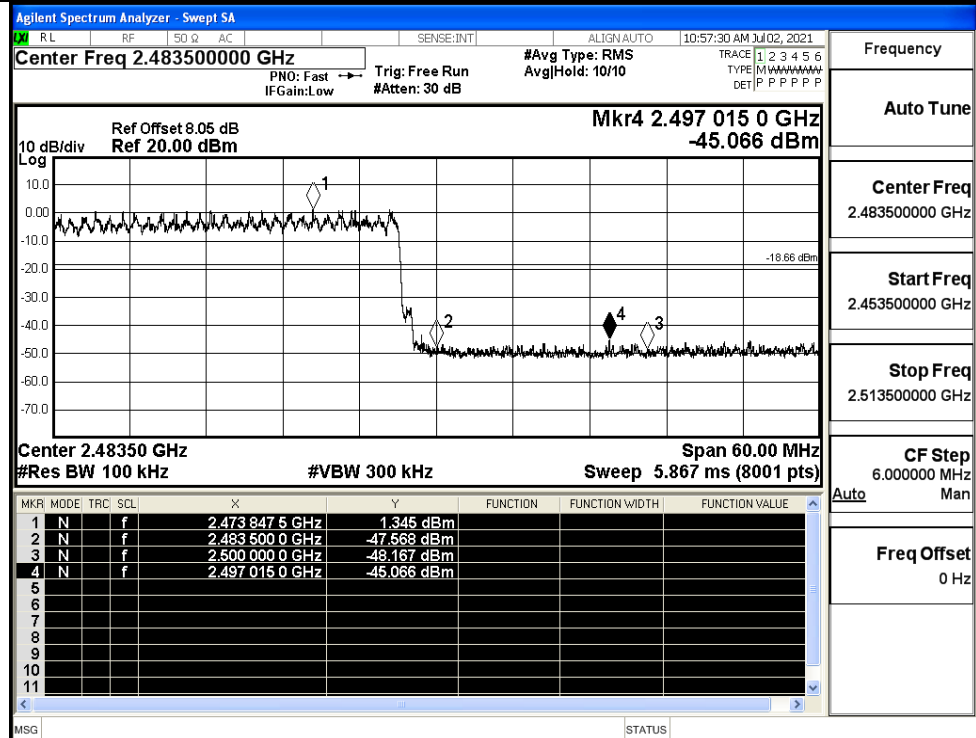




8DPSK/HCH/No Hop



8DPSK/HCH/Hop



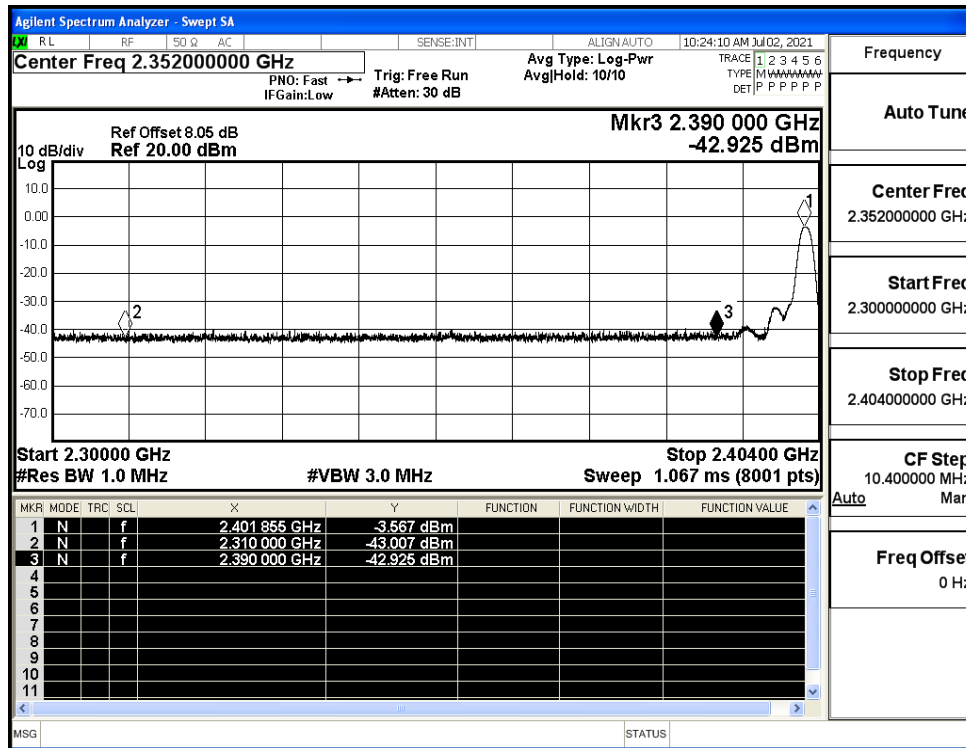


A.8 Restrict-band band-edge measurements

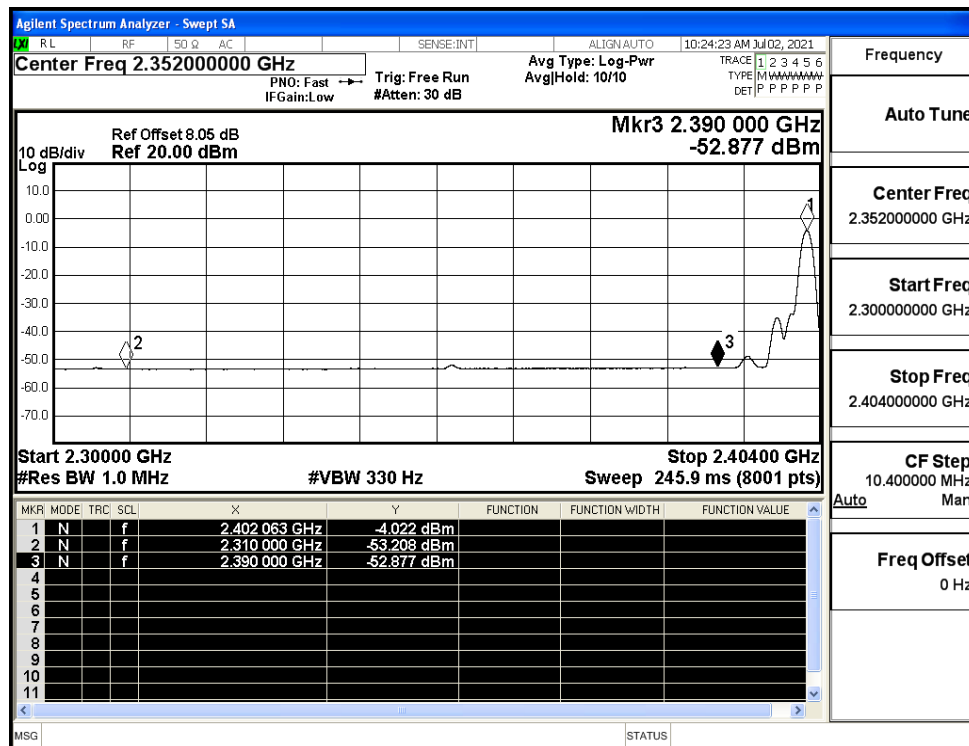
Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.01	2.0	0	54.22	PEAK	74	PASS
	Off	2310.0	-53.21	2.0	0	44.02	AV	54	PASS
	Off	2390.0	-42.93	2.0	0	54.30	PEAK	74	PASS
	Off	2390.0	-52.88	2.0	0	44.35	AV	54	PASS
	Off	2483.5	-39.08	2.0	0	58.15	PEAK	74	PASS
	Off	2483.5	-47.30	2.0	0	49.93	AV	54	PASS
	Off	2500.0	-41.94	2.0	0	55.29	PEAK	74	PASS
	Off	2500.0	-52.32	2.0	0	44.91	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-42.84	2.0	0	54.39	PEAK	74	PASS
	Off	2310.0	-53.32	2.0	0	43.91	AV	54	PASS
	Off	2390.0	-42.63	2.0	0	54.60	PEAK	74	PASS
	Off	2390.0	-52.94	2.0	0	44.29	AV	54	PASS
	Off	2483.5	-38.28	2.0	0	58.95	PEAK	74	PASS
	Off	2483.5	-48.88	2.0	0	48.35	AV	54	PASS
	Off	2500.0	-43.41	2.0	0	53.82	PEAK	74	PASS
	Off	2500.0	-52.30	2.0	0	44.93	AV	54	PASS
8DPSK	Off	2310.0	-42.81	2.0	0	54.42	PEAK	74	PASS
	Off	2310.0	-53.36	2.0	0	43.87	AV	54	PASS
	Off	2390.0	-42.77	2.0	0	54.46	PEAK	74	PASS
	Off	2390.0	-53.07	2.0	0	44.16	AV	54	PASS
	Off	2483.5	-39.56	2.0	0	57.67	PEAK	74	PASS
	Off	2483.5	-48.78	2.0	0	48.45	AV	54	PASS
	Off	2500.0	-42.34	2.0	0	54.89	PEAK	74	PASS
	Off	2500.0	-52.28	2.0	0	44.95	AV	54	PASS



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

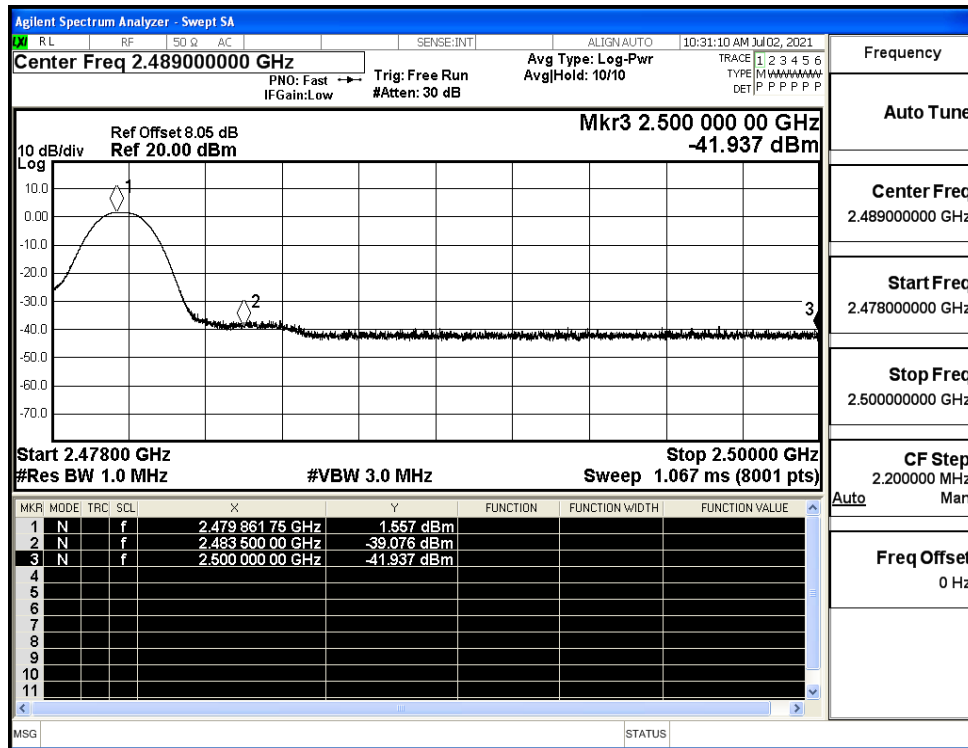


Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

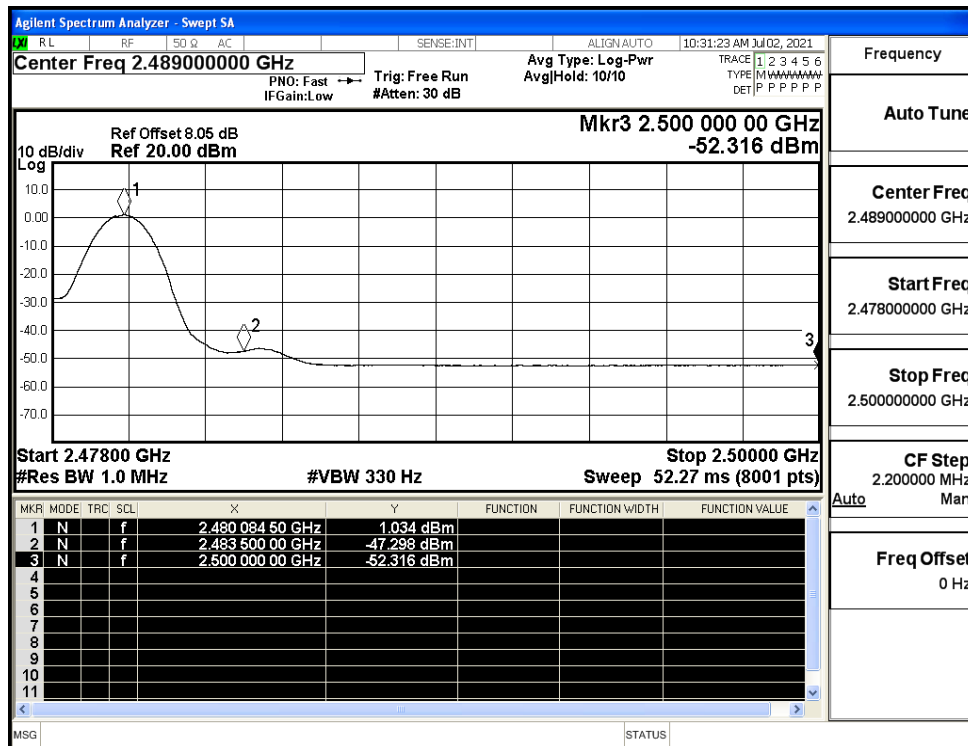


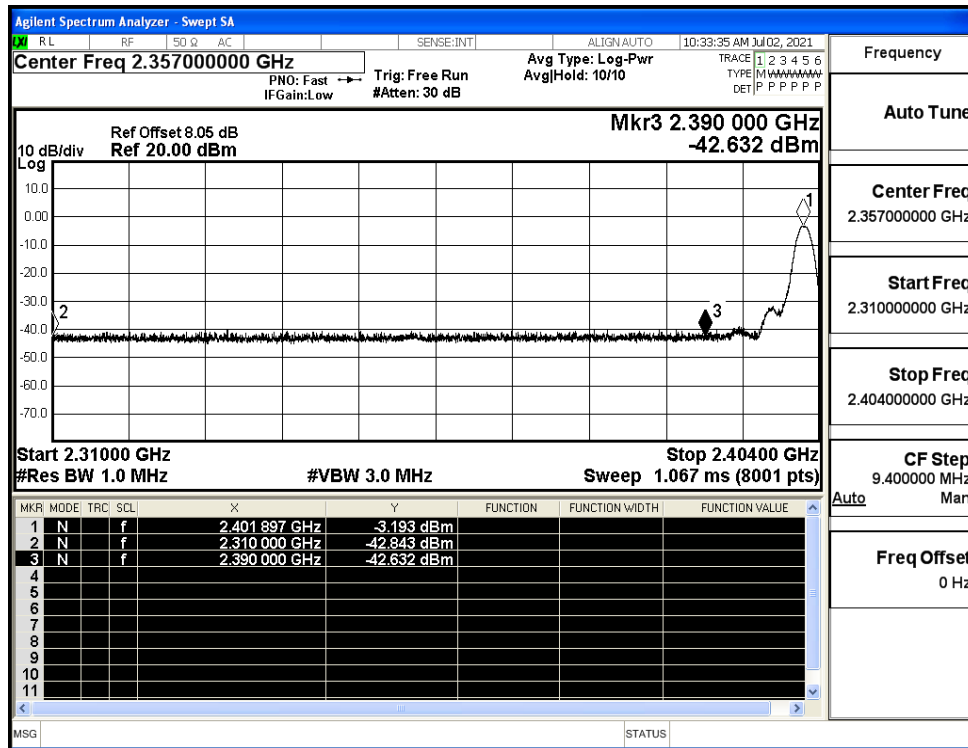
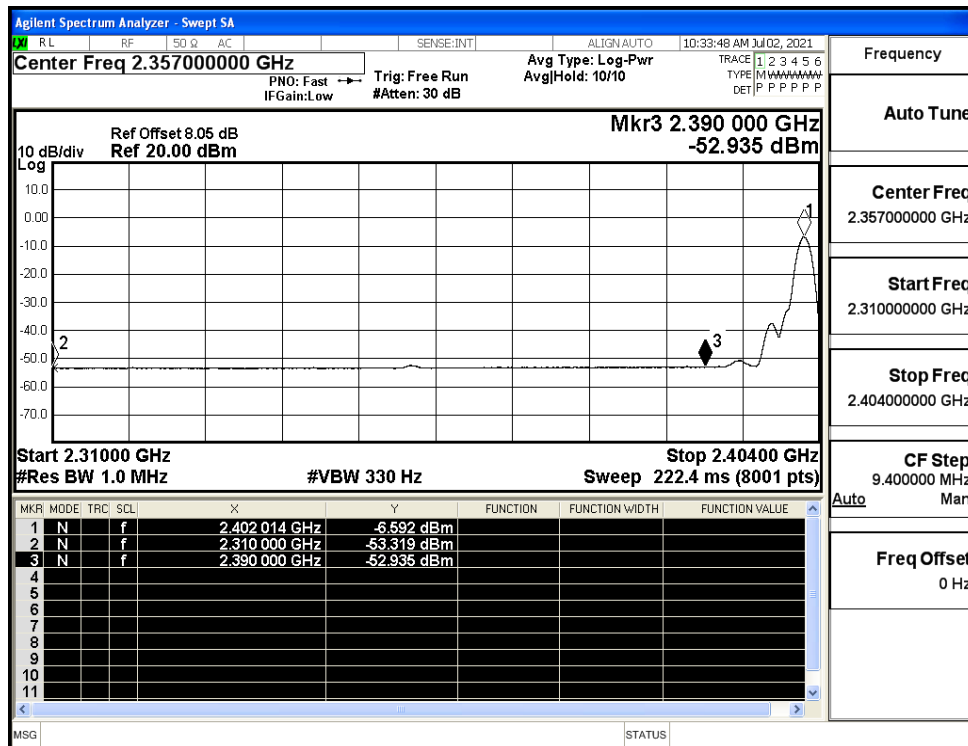


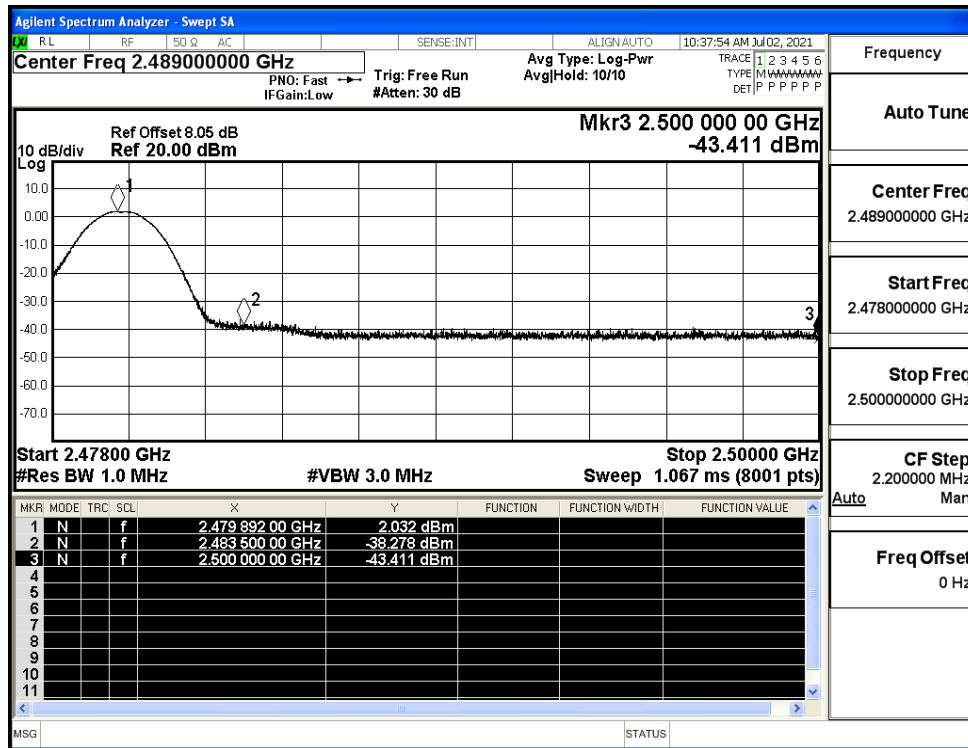
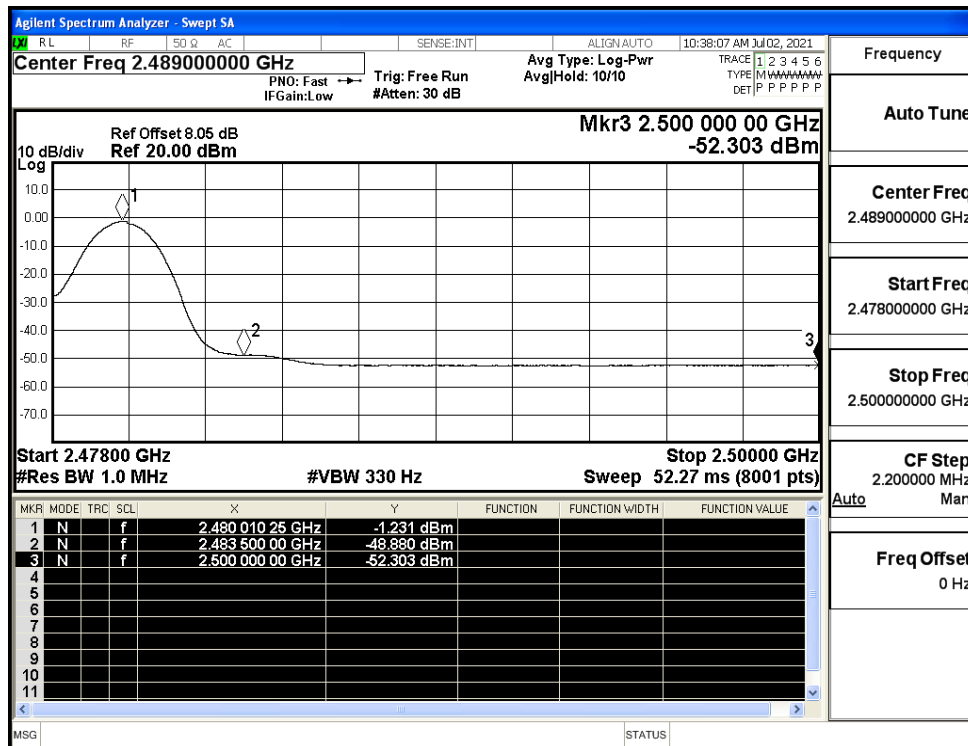
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



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

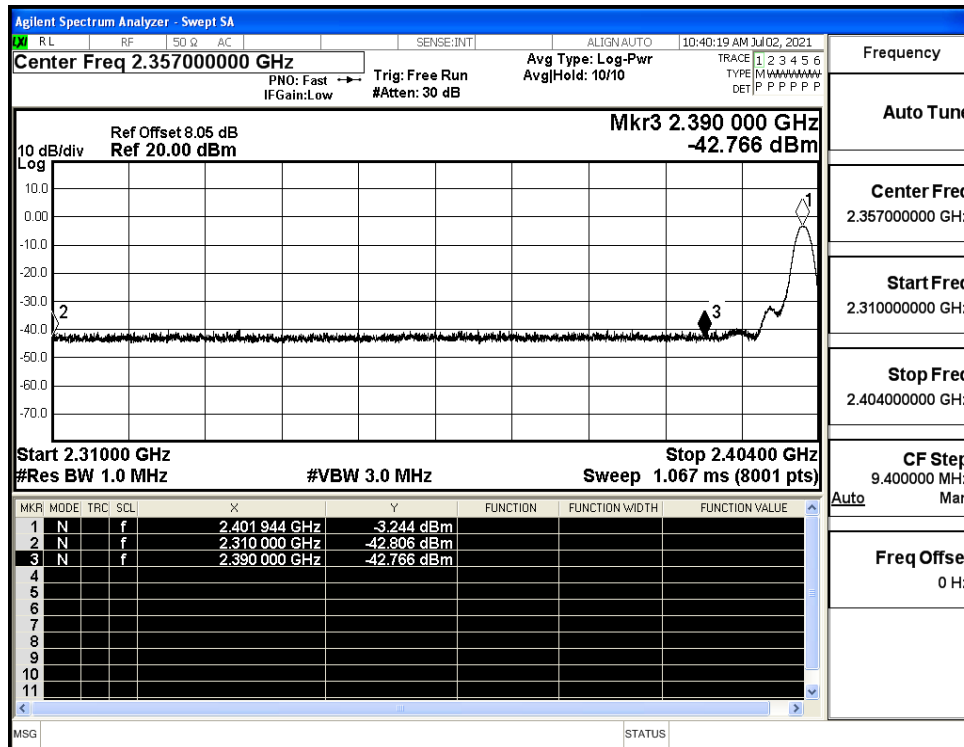


Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

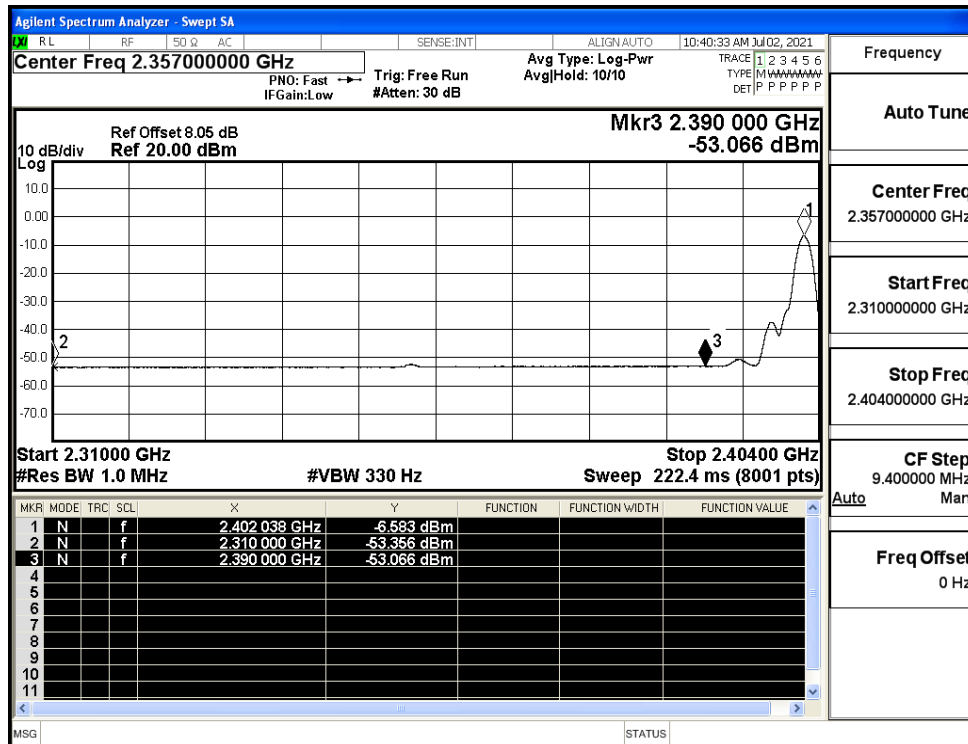
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (High Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (High Channel)



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

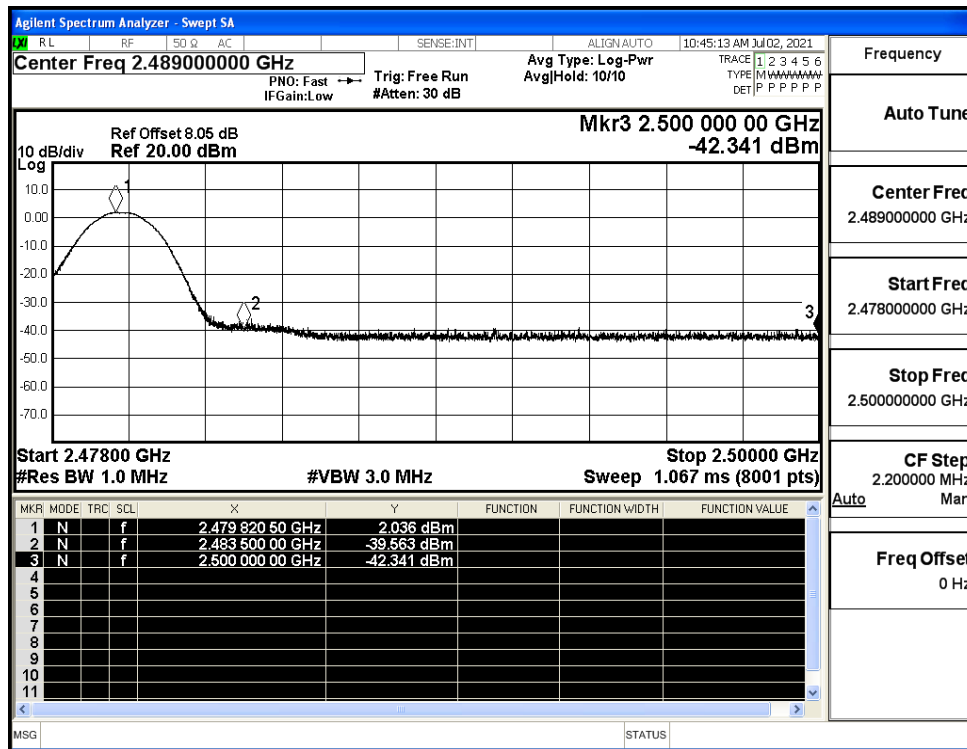


Restrict-band band-edge measurements_Hopping Off_8DPSK_Average (Low Channel)





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



Restrict-band band-edge measurements_Hopping Off_8DPSK_Average (High Channel)

