



Appendix A

RF Test Data for BT V5.0(DSS) (Conducted Measurement)

Product Name: Everly Bluetooth® Speaker

Trade Mark: Gemline

Test Model: 101131-100B

Environmental Conditions

Temperature:	23.7°C
Relative Humidity:	51.9%
ATM Pressure:	100.0 kPa
Test Engineer:	Kay Hu
Supervised by:	Li Huan

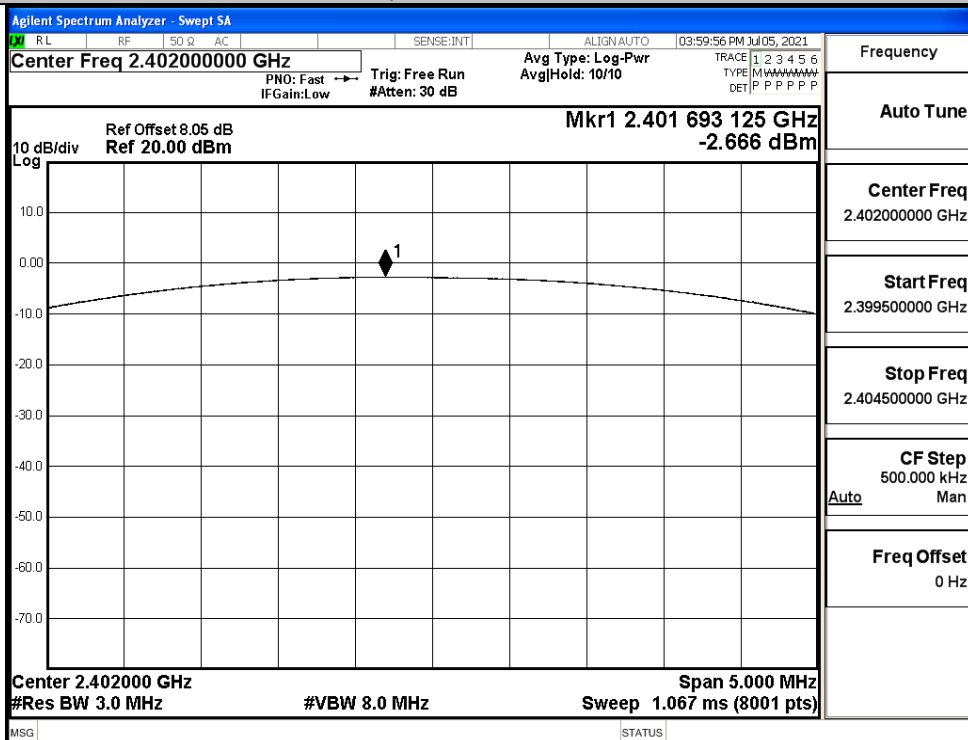
A.1 Maximum Conducted Peak Output Power

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-2.666	21	PASS
	MCH	-0.052	21	PASS
	HCH	1.925	21	PASS
$\pi/4$ DQPSK	LCH	-1.920	21	PASS
	MCH	0.869	21	PASS
	HCH	2.641	21	PASS
8DPSK	LCH	-1.933	21	PASS
	MCH	0.892	21	PASS
	HCH	2.655	21	PASS

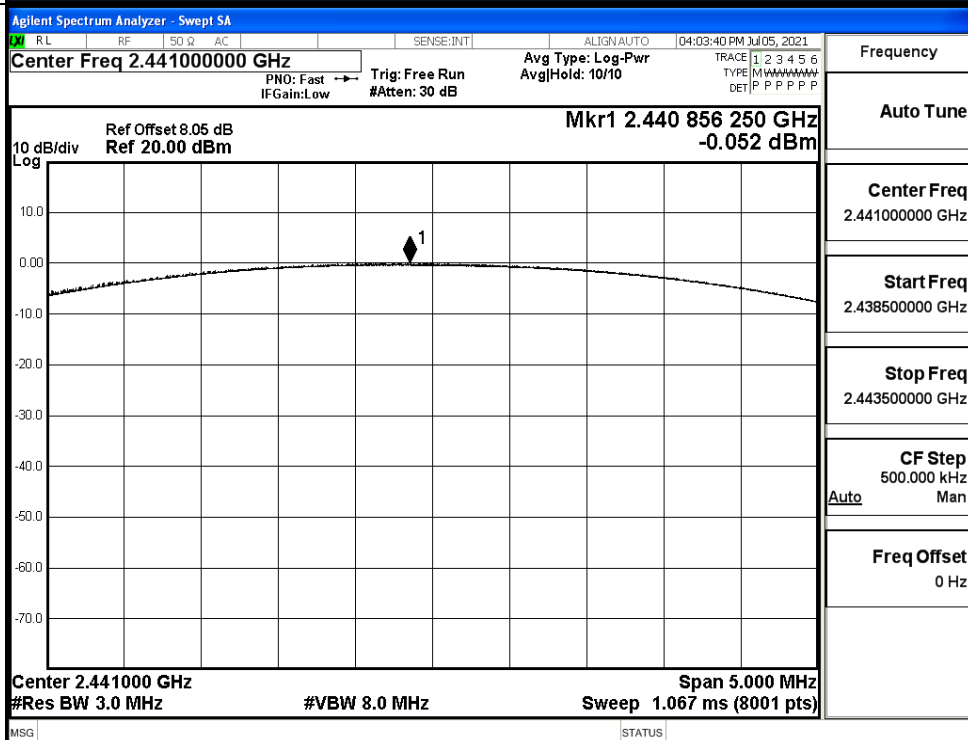


Test Graphs

GFSK/LCH

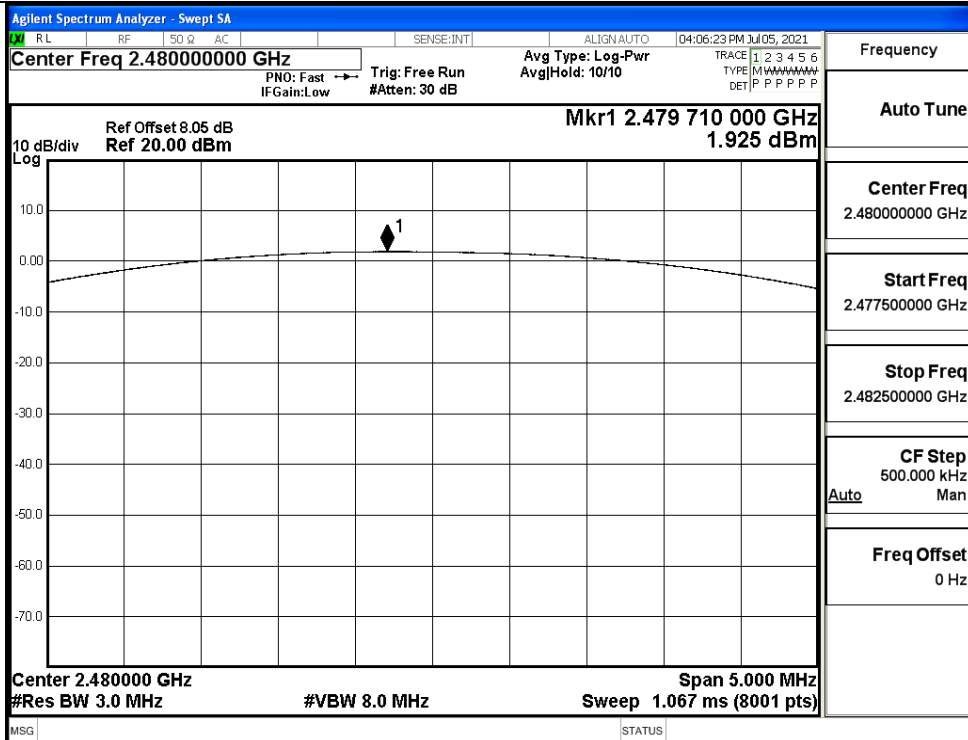
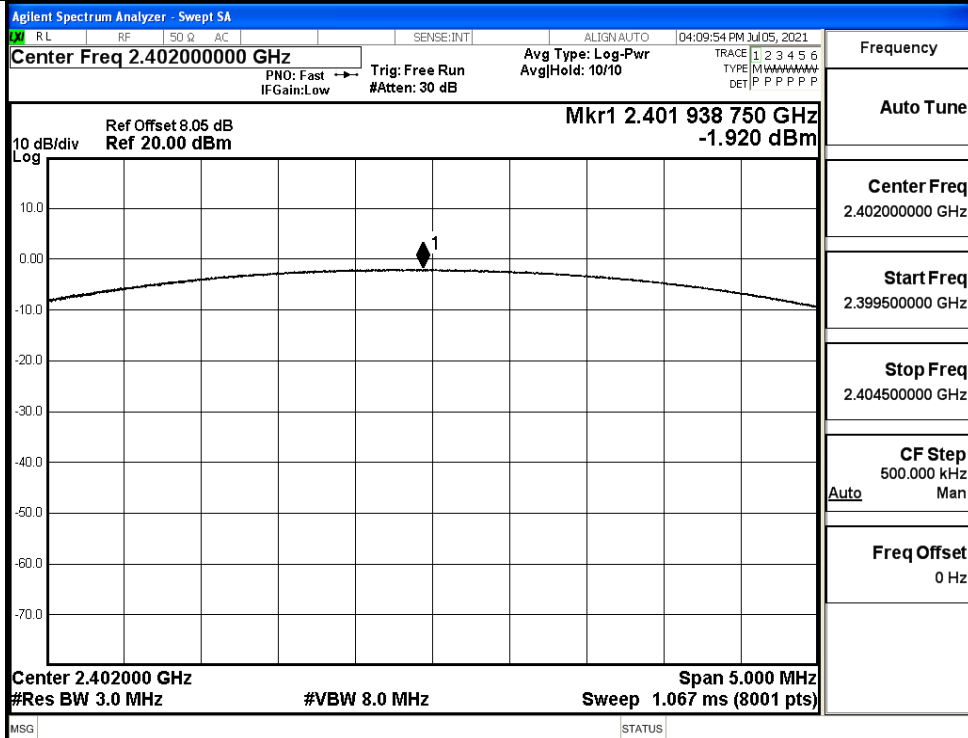


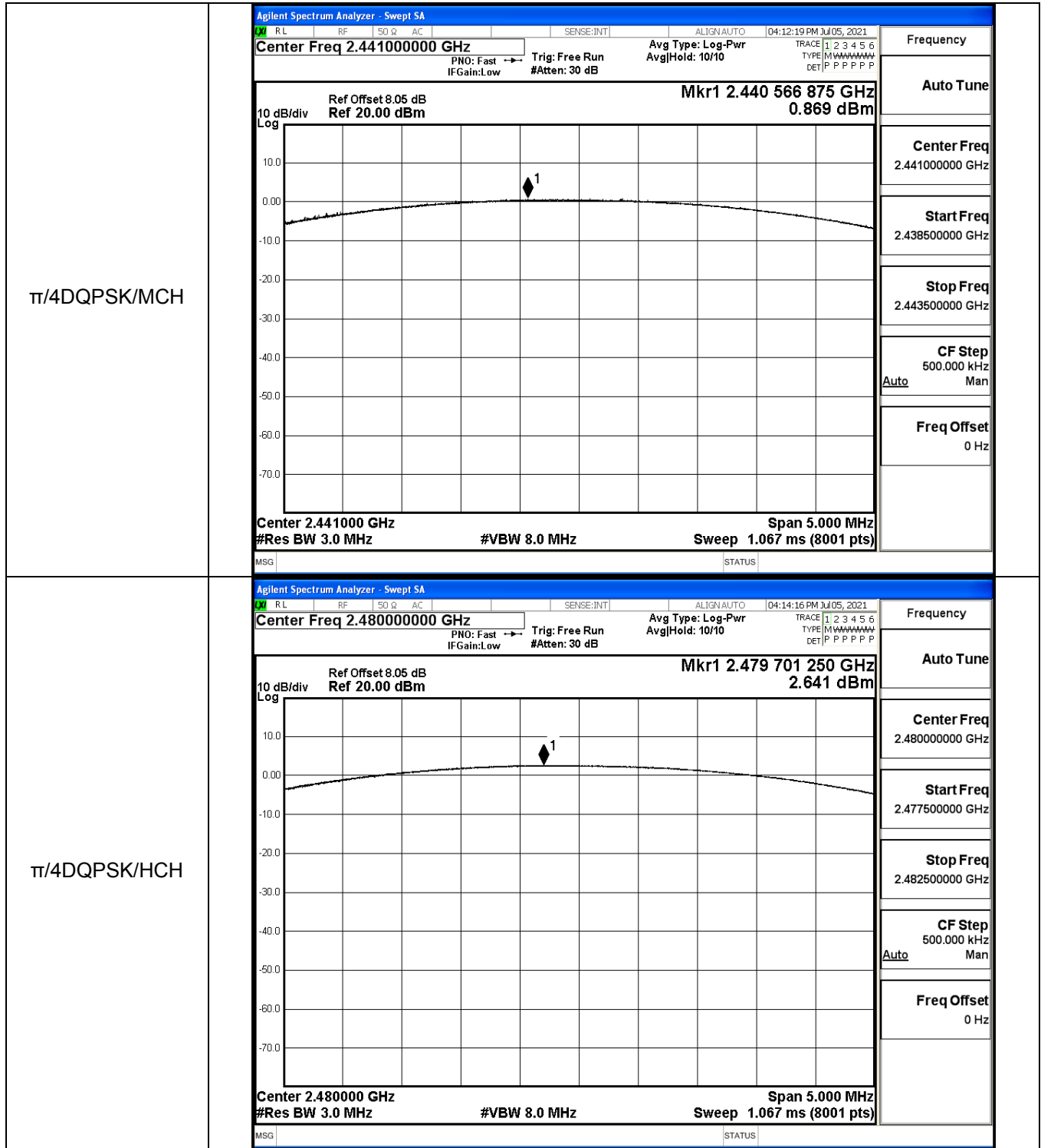
GFSK/MCH





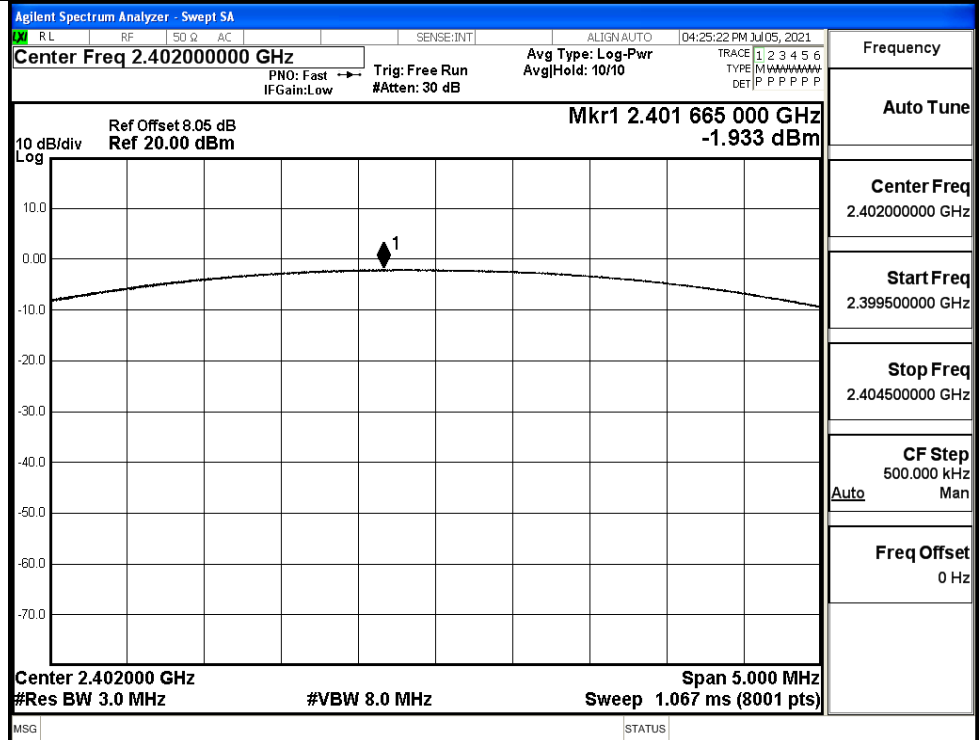
GFSK/HCH

 $\pi/4$ DQPSK/LCH

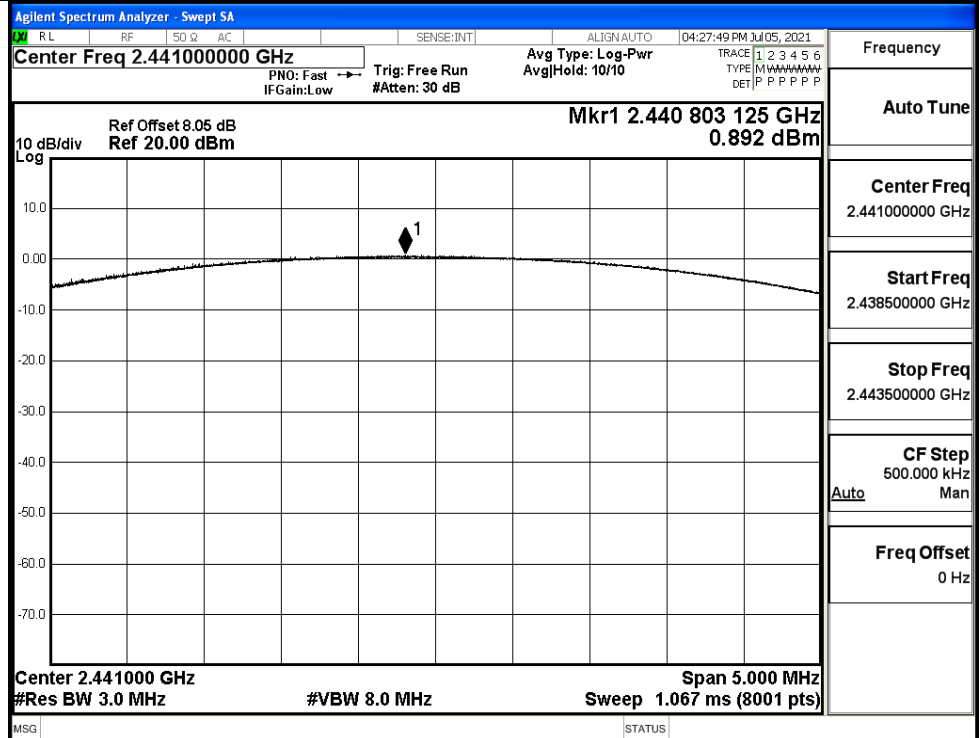




8DPSK/LCH

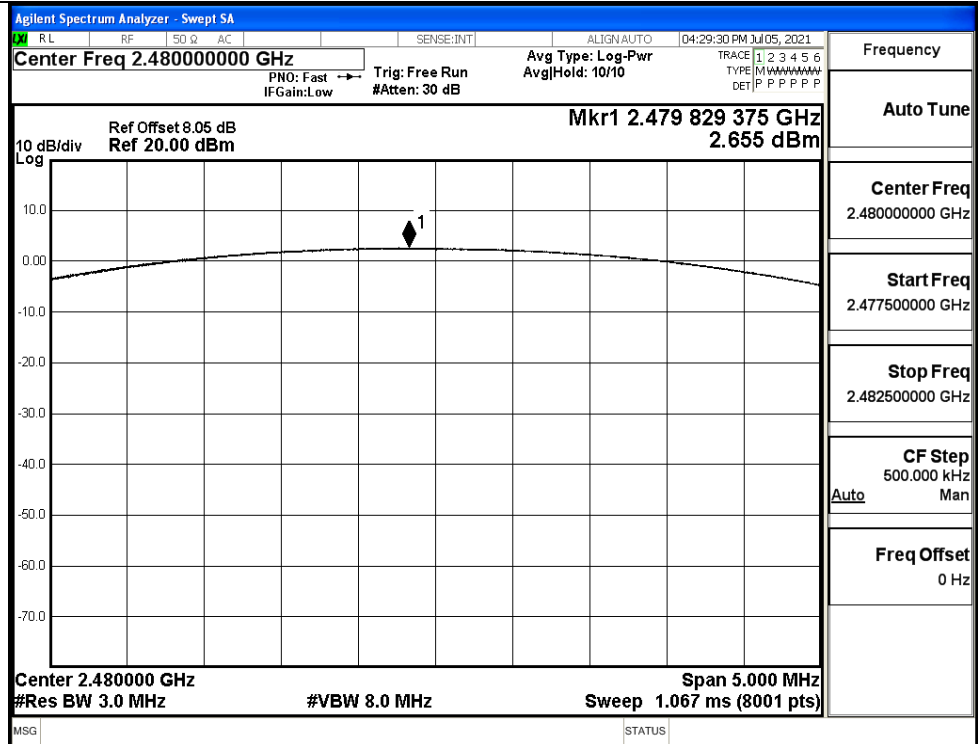


8DPSK/MCH





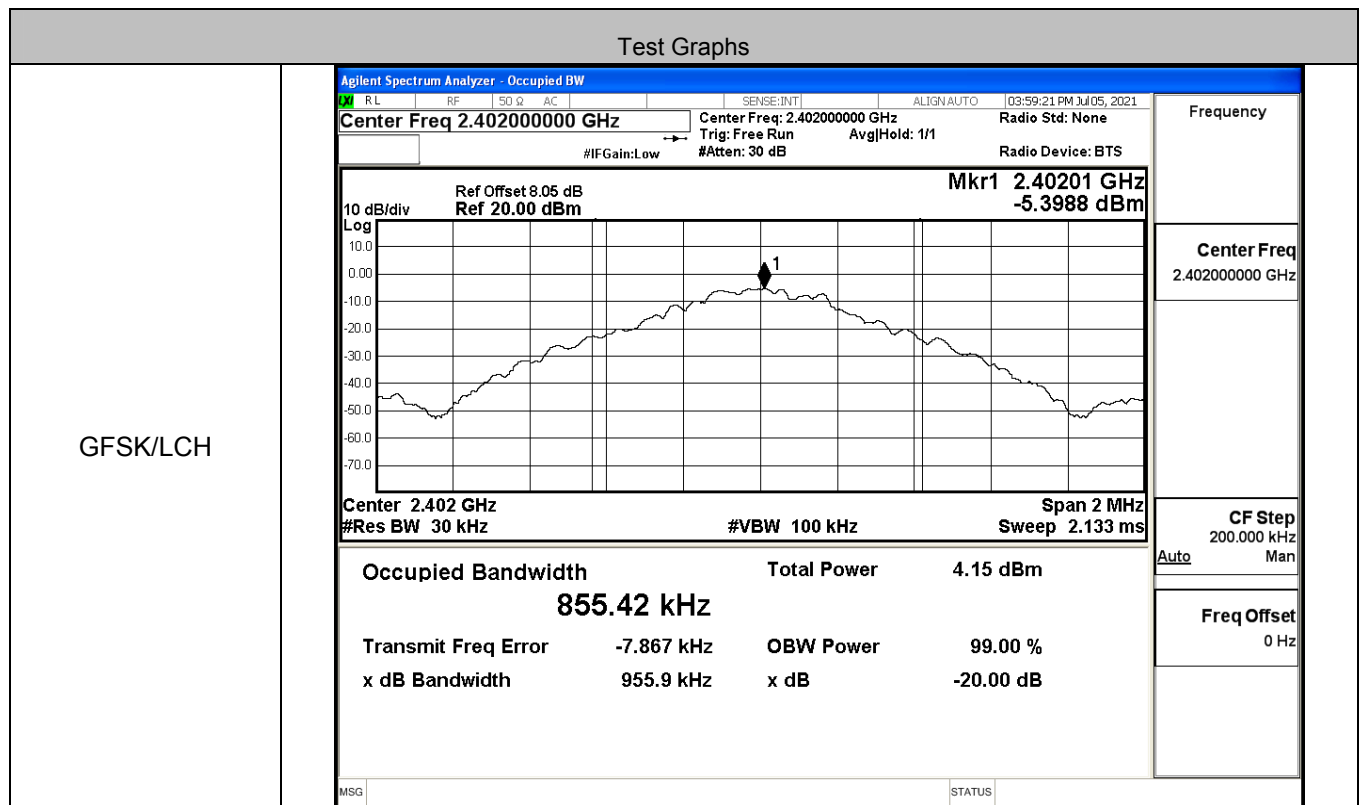
8DPSK/HCH





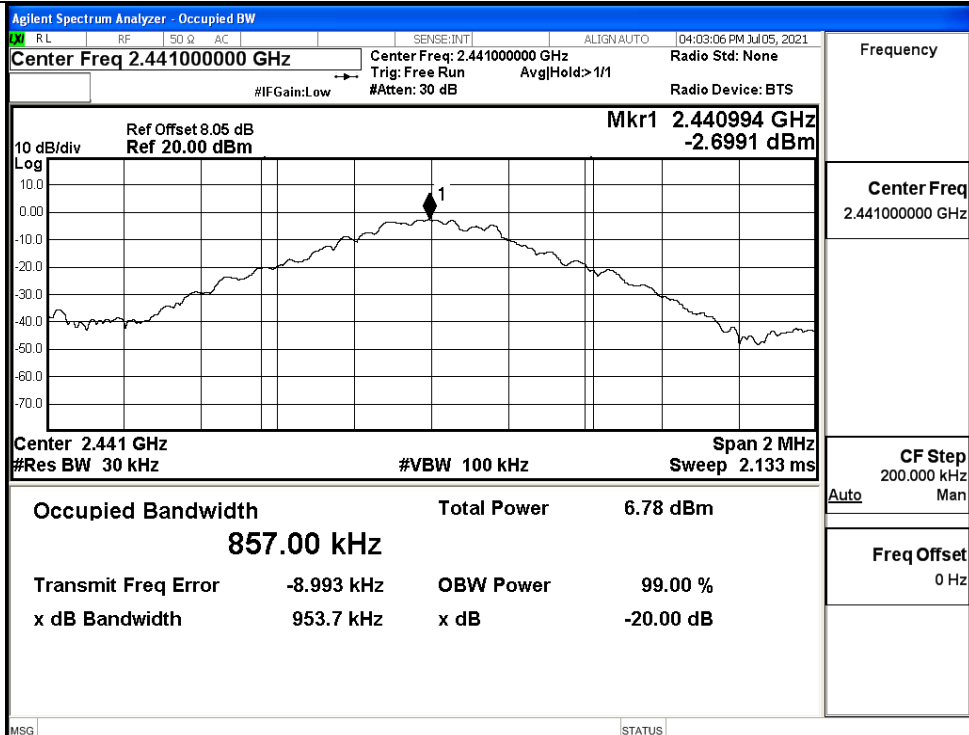
A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9559	Not Specified	PASS
	MCH	0.9537	Not Specified	PASS
	HCH	0.9533	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.314	Not Specified	PASS
	MCH	1.312	Not Specified	PASS
	HCH	1.315	Not Specified	PASS
8DPSK	LCH	1.311	Not Specified	PASS
	MCH	1.310	Not Specified	PASS
	HCH	1.312	Not Specified	PASS

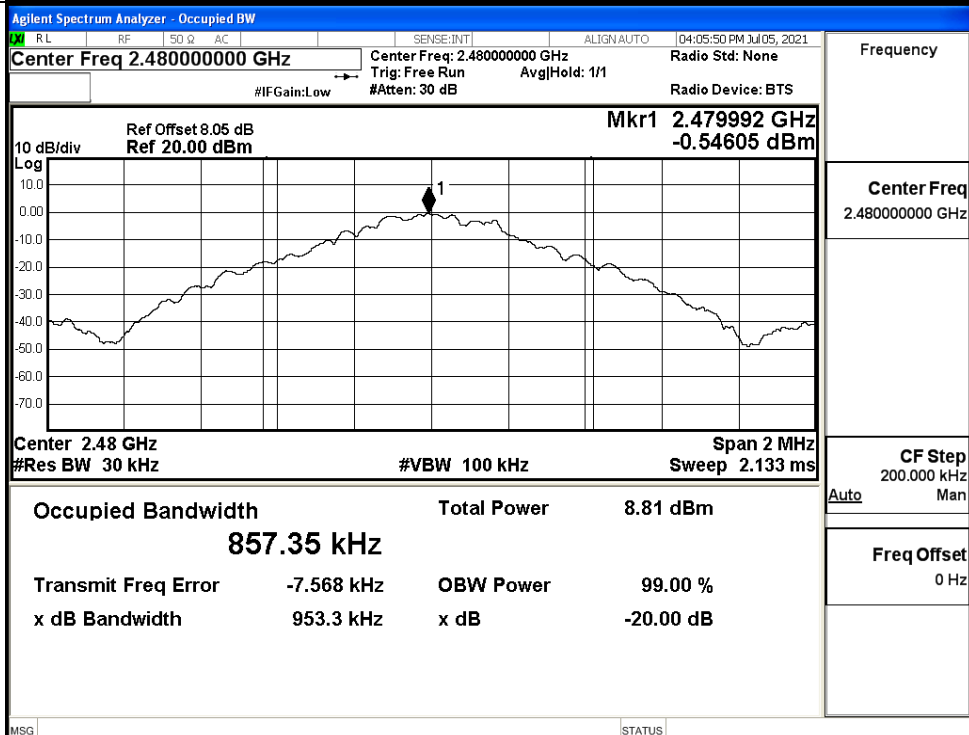


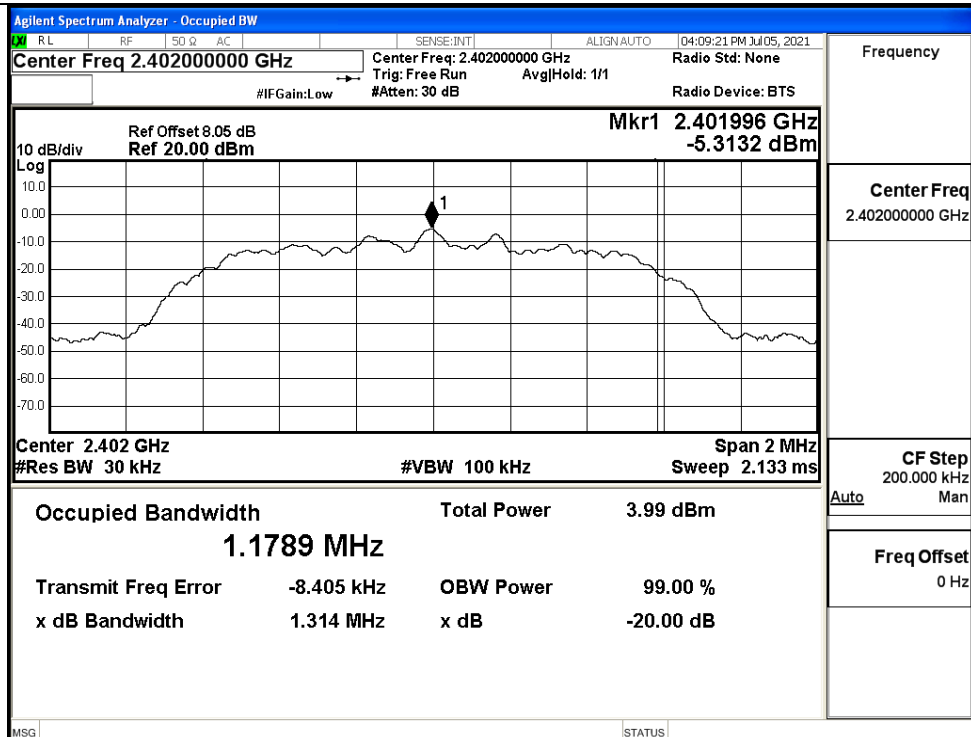
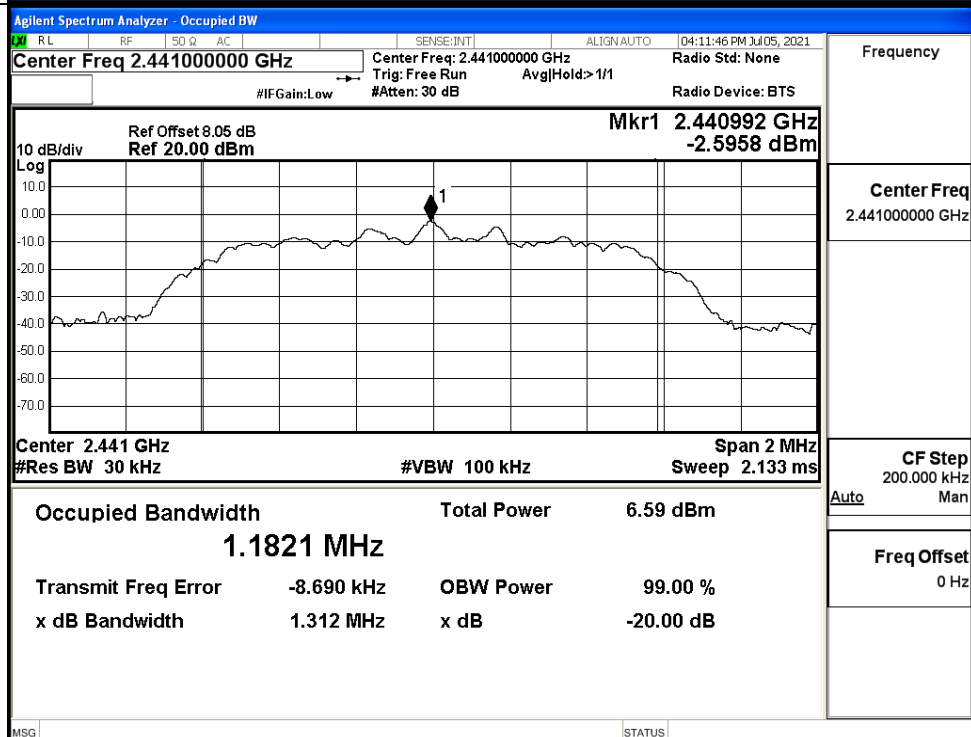


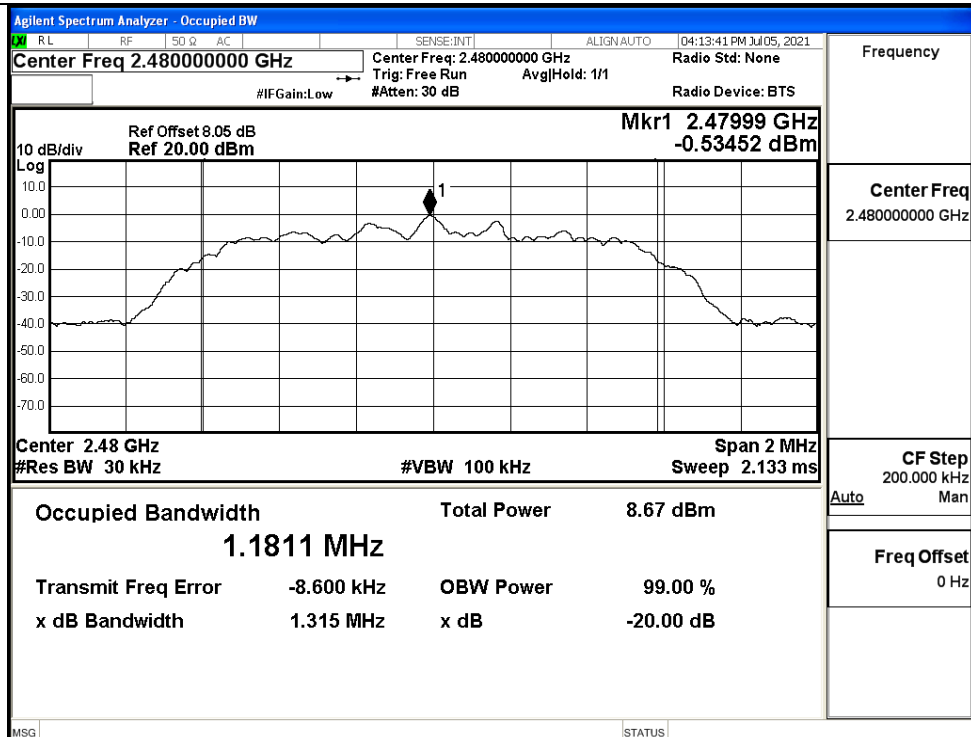
GFSK/MCH



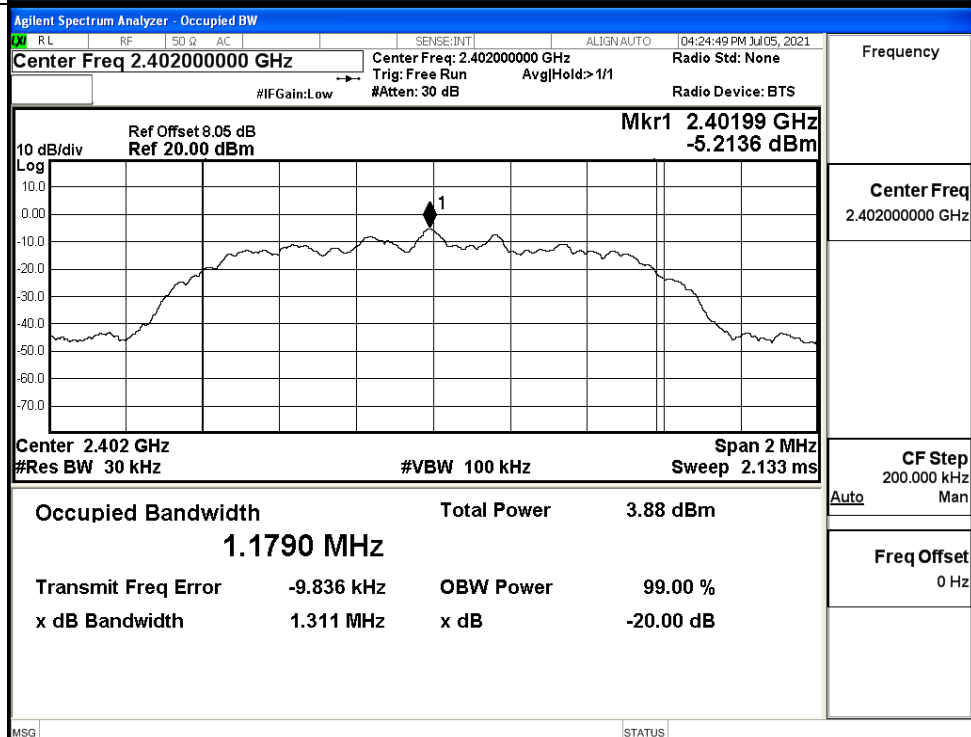
GFSK/HCH



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

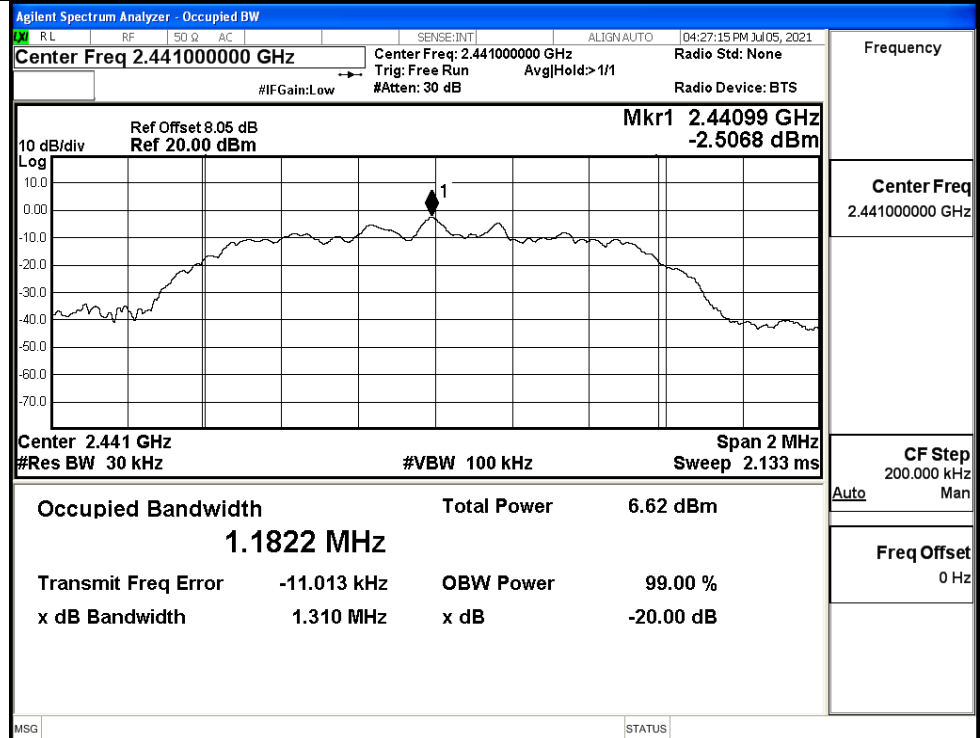
 $\pi/4$ DQPSK/HCH

8DPSK/LCH

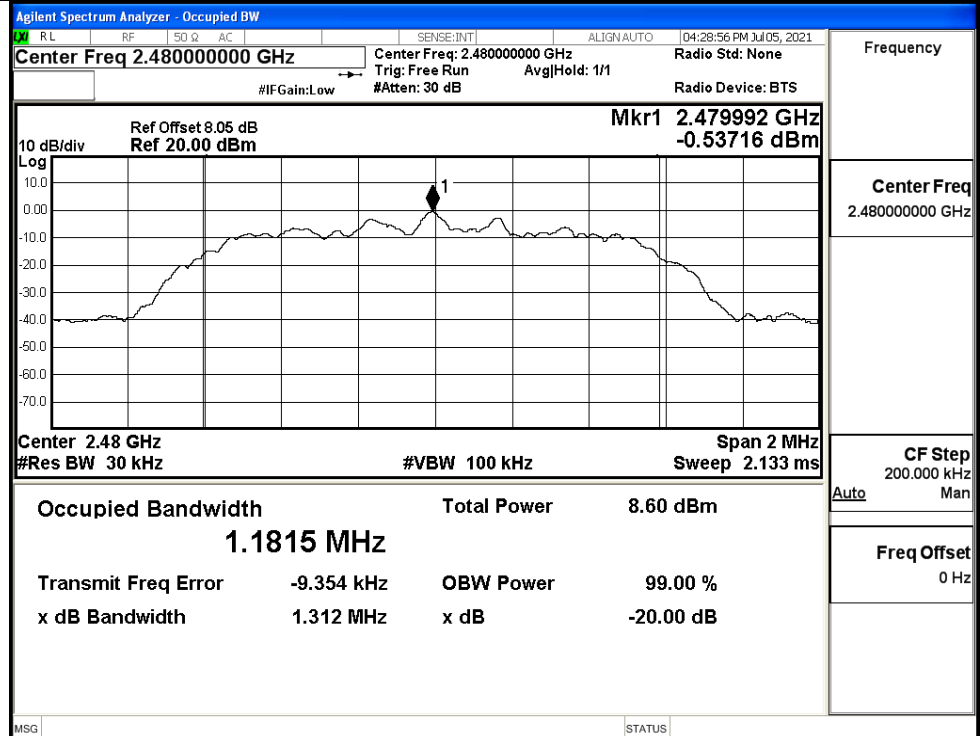




8DPSK/MCH



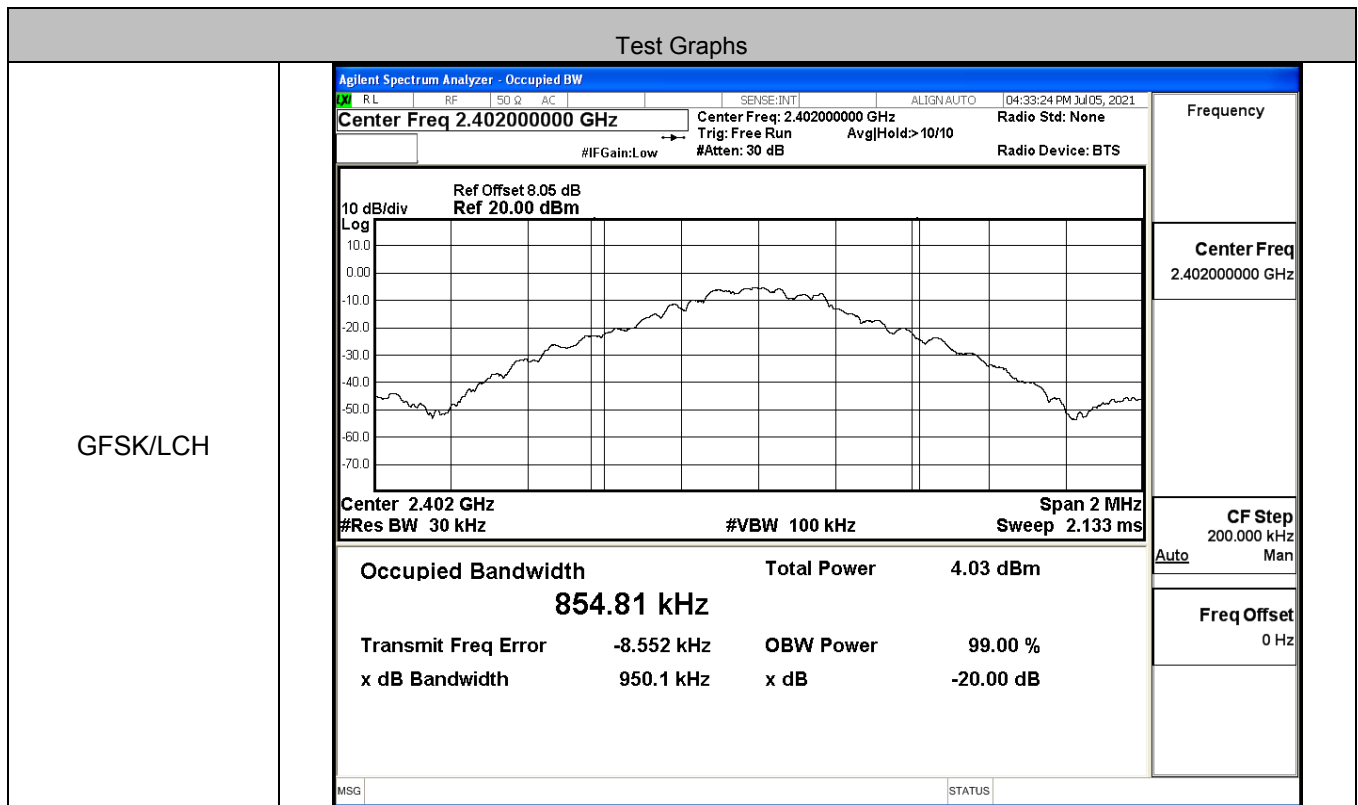
8DPSK/HCH





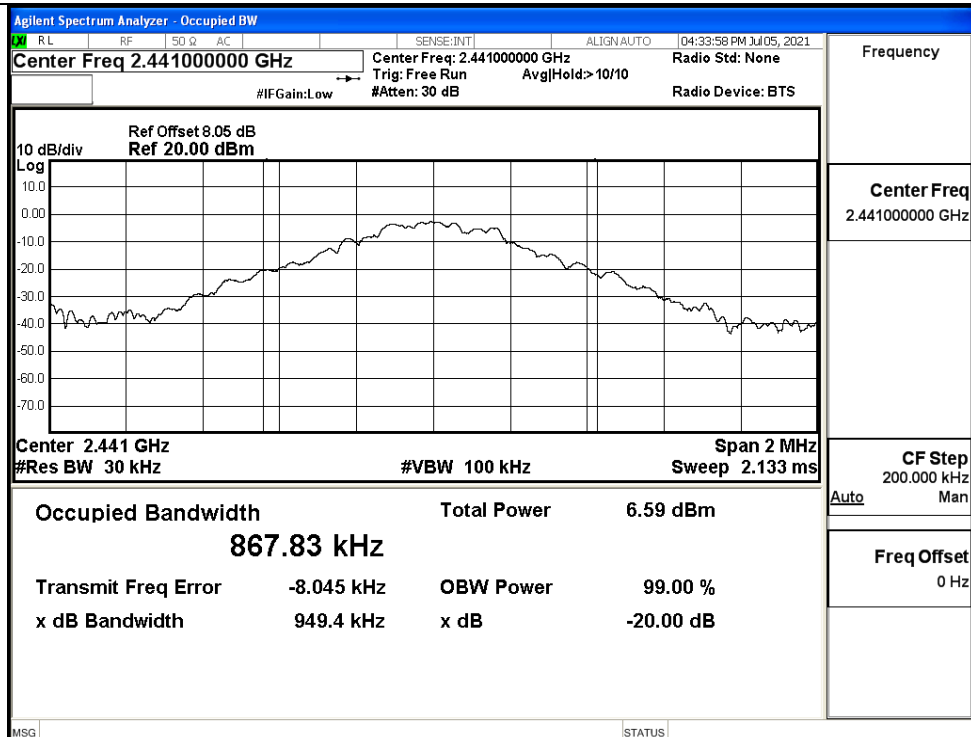
A.2 Occupied Bandwidth

Mode	Channel.	Occupied Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.85481	Not Specified	PASS
	MCH	0.86783	Not Specified	PASS
	HCH	0.85354	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.1780	Not Specified	PASS
	MCH	1.1814	Not Specified	PASS
	HCH	1.1813	Not Specified	PASS
8DPSK	LCH	1.1796	Not Specified	PASS
	MCH	1.1823	Not Specified	PASS
	HCH	1.1790	Not Specified	PASS

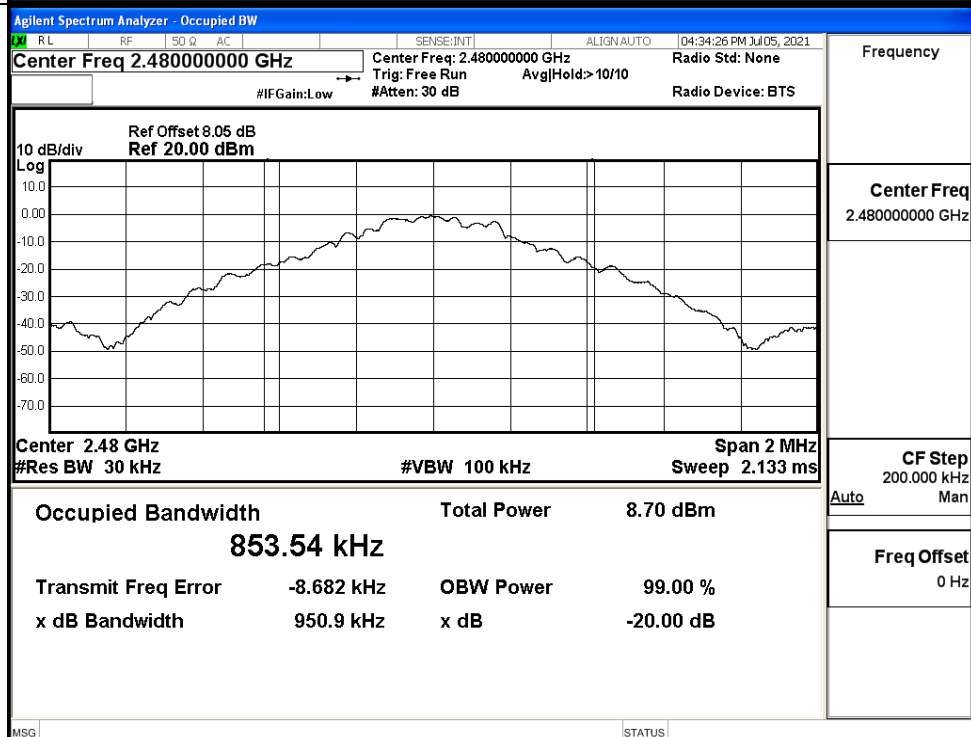


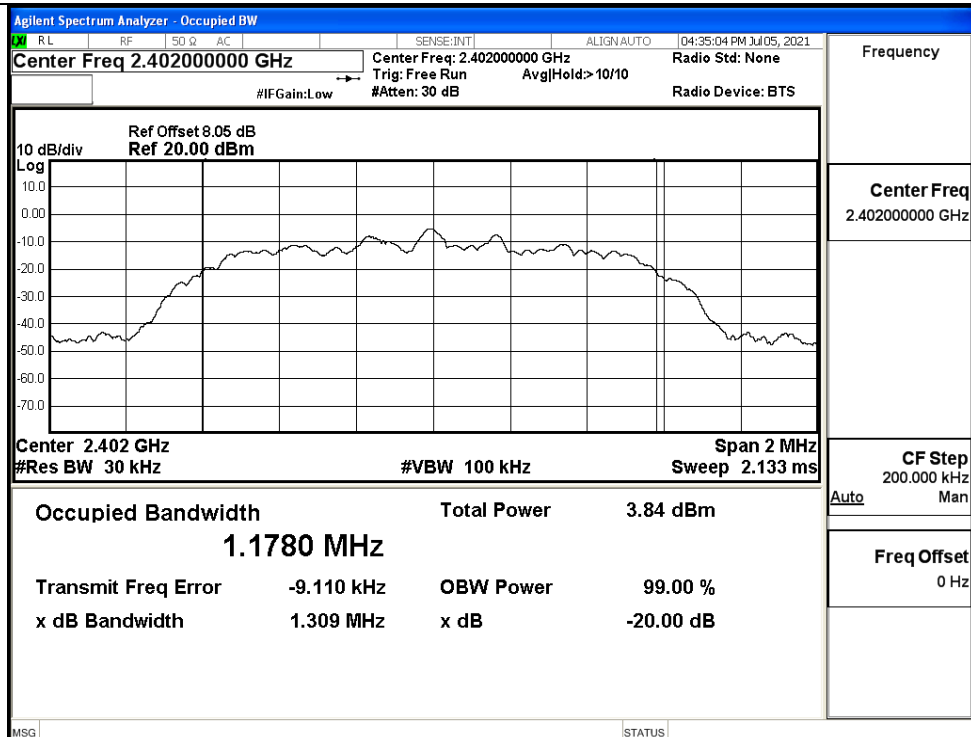
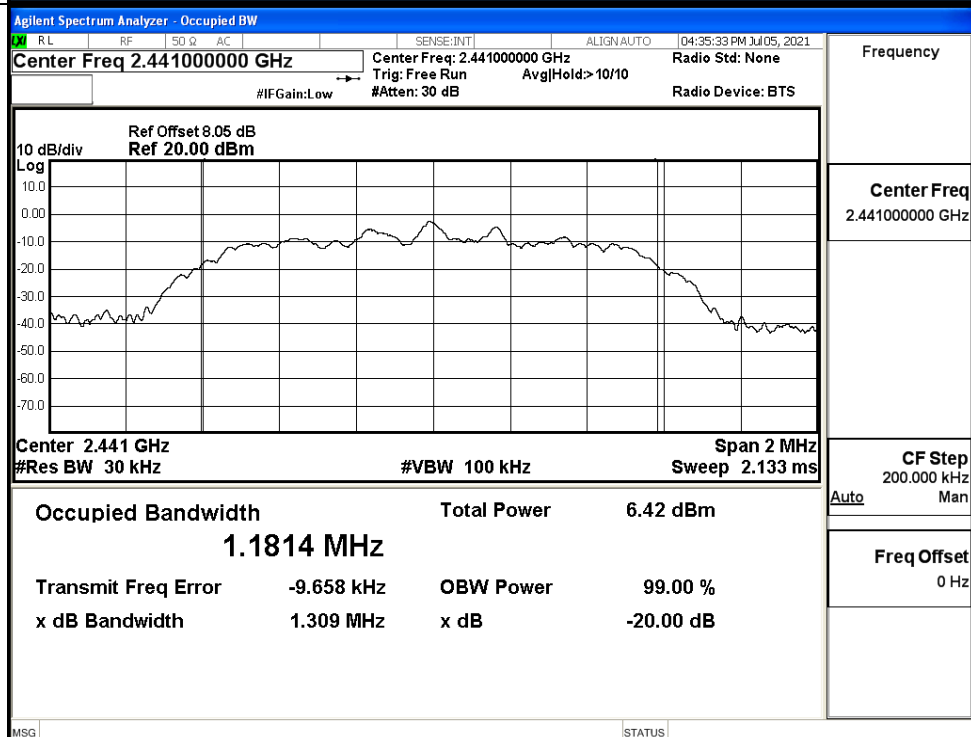


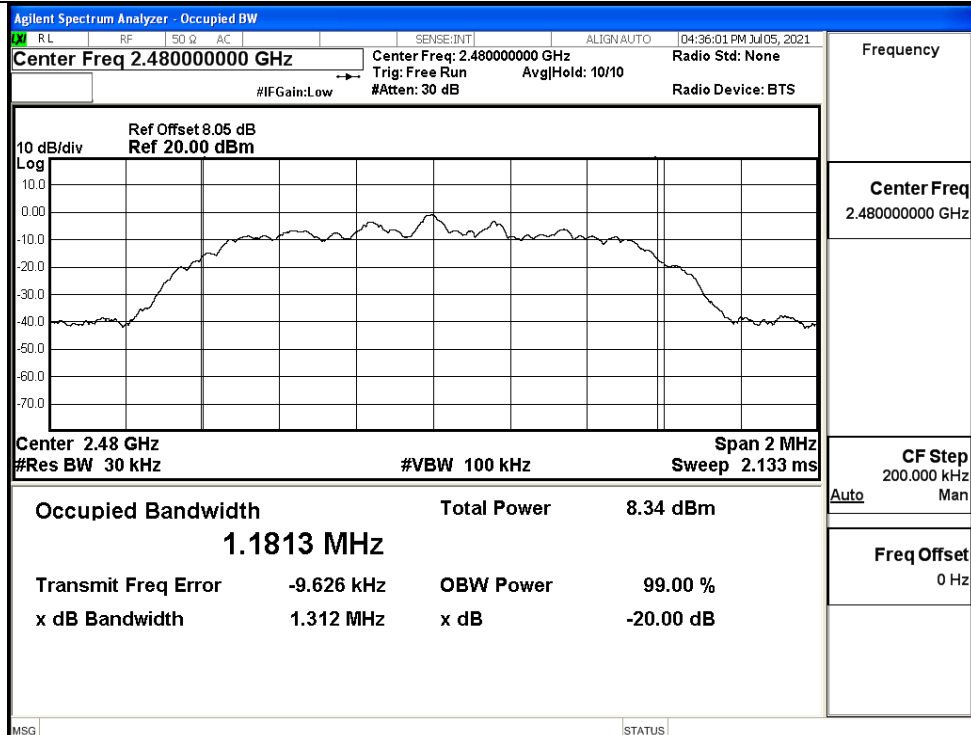
GFSK/MCH



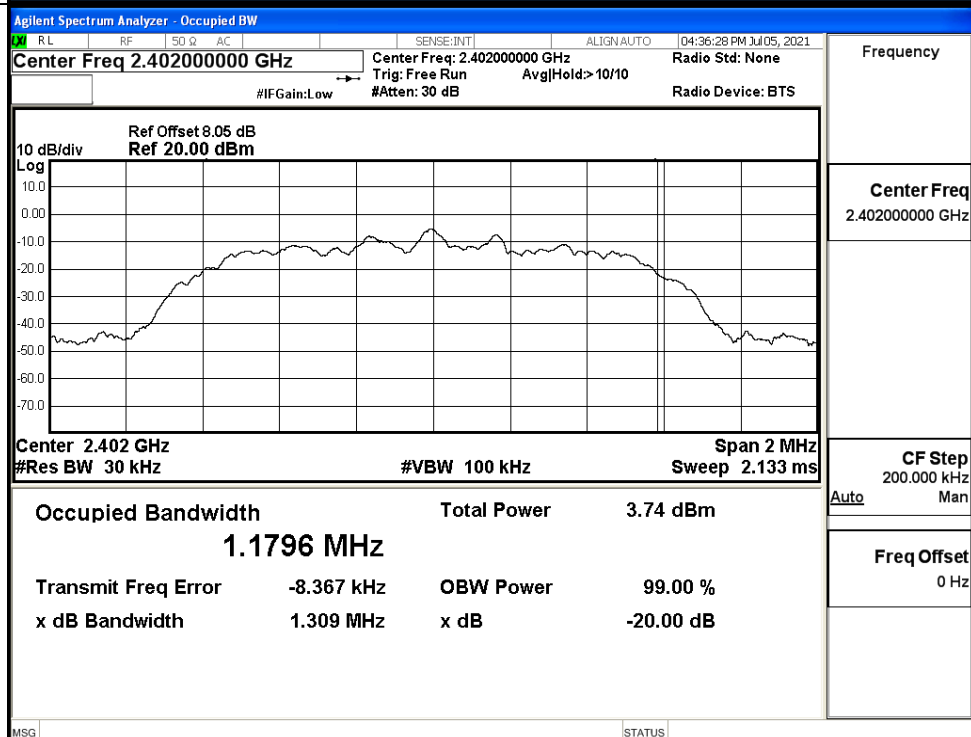
GFSK/HCH



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

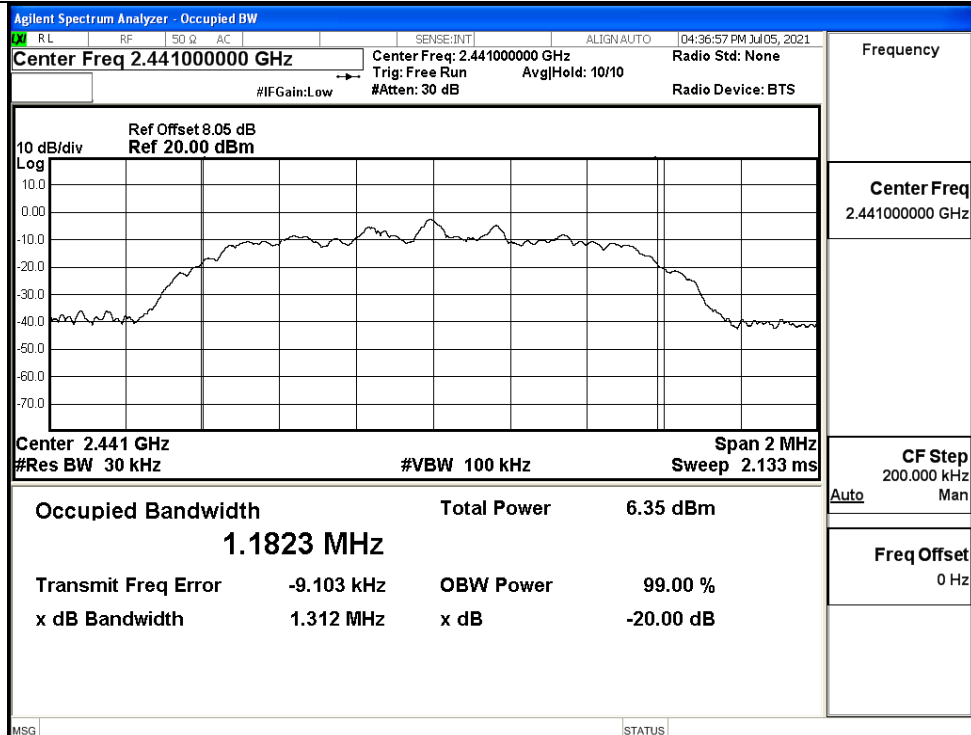
 $\pi/4$ DQPSK/HCH

8DPSK/LCH

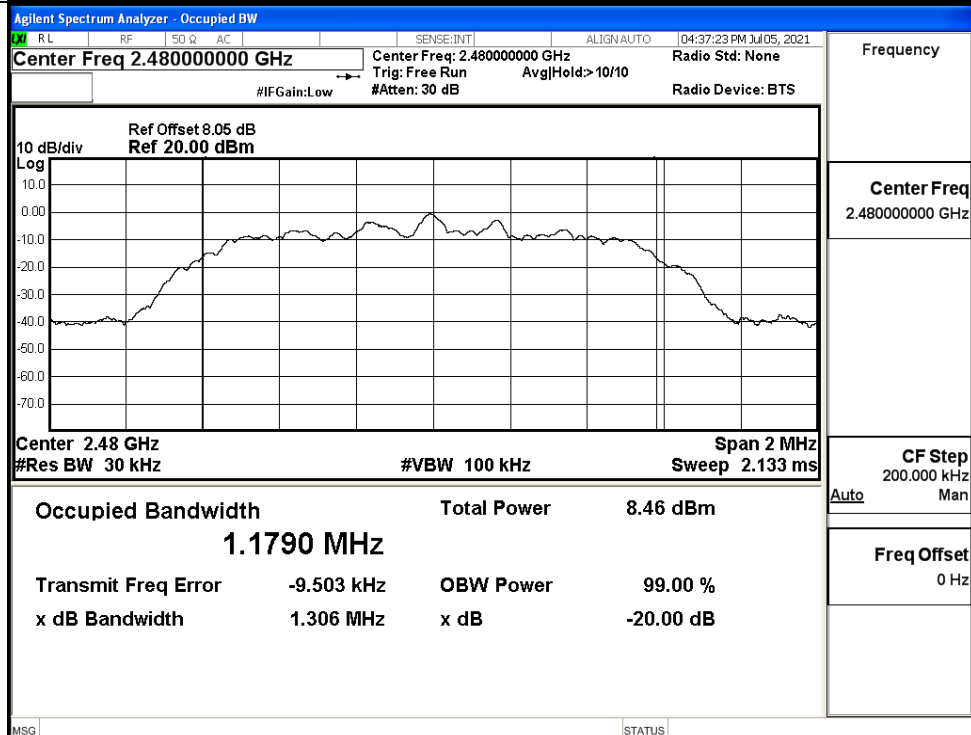




8DPSK/MCH



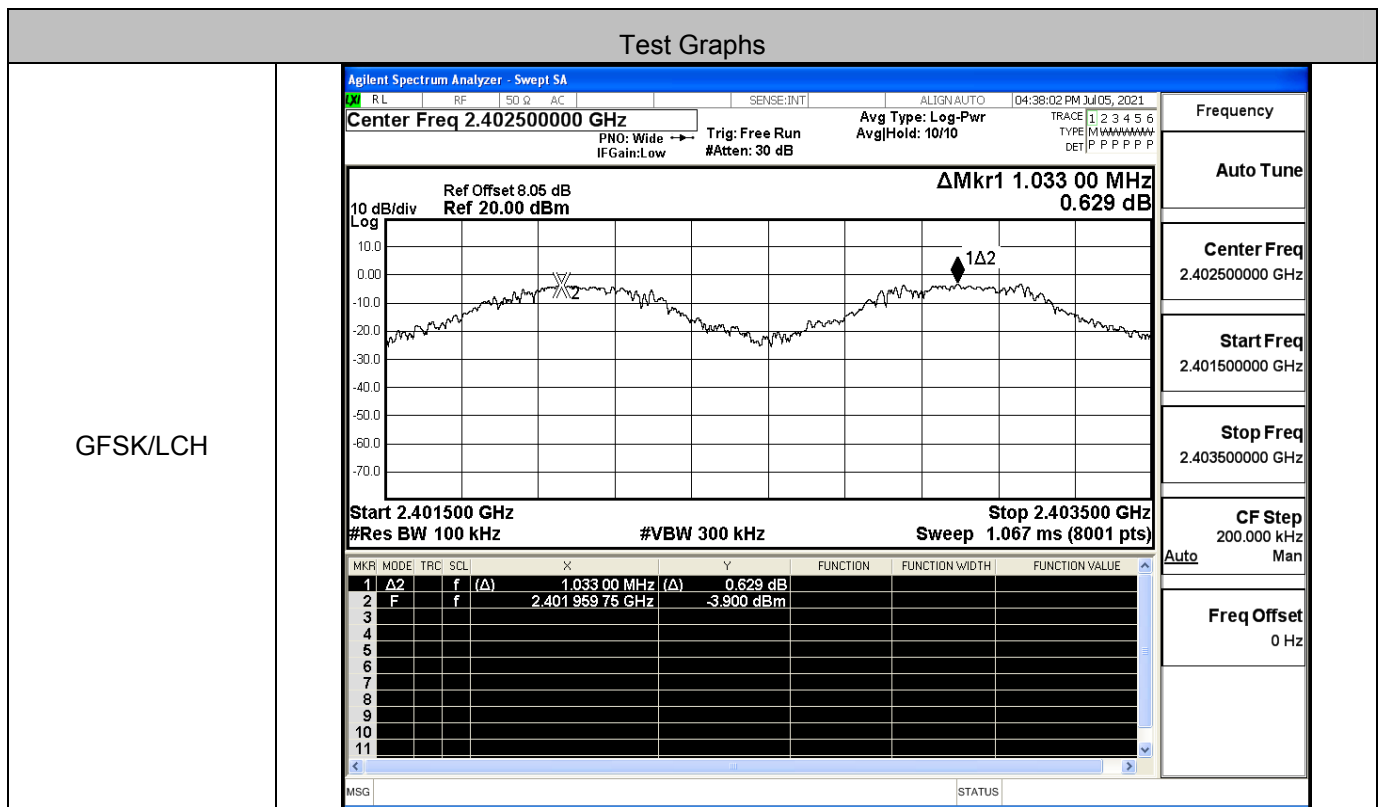
8DPSK/HCH





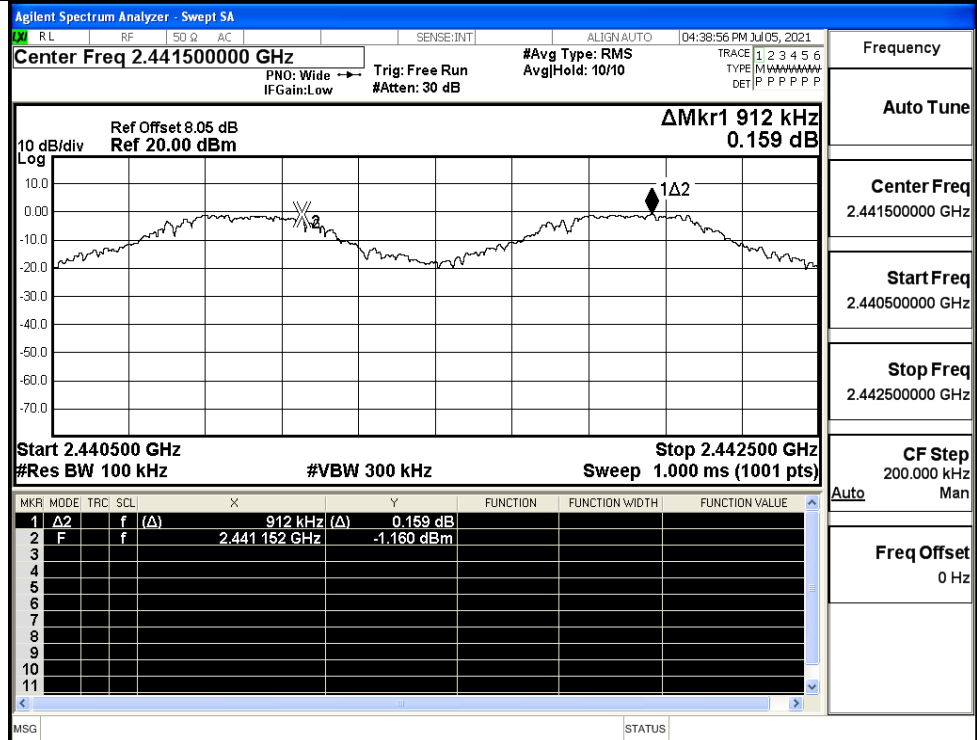
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.033	0.637	PASS
	MCH	0.912	0.637	PASS
	HCH	1.000	0.637	PASS
π /4DQPSK	LCH	1.196	0.877	PASS
	MCH	1.064	0.877	PASS
	HCH	0.992	0.877	PASS
8DPSK	LCH	1.154	0.875	PASS
	MCH	1.252	0.875	PASS
	HCH	1.016	0.875	PASS

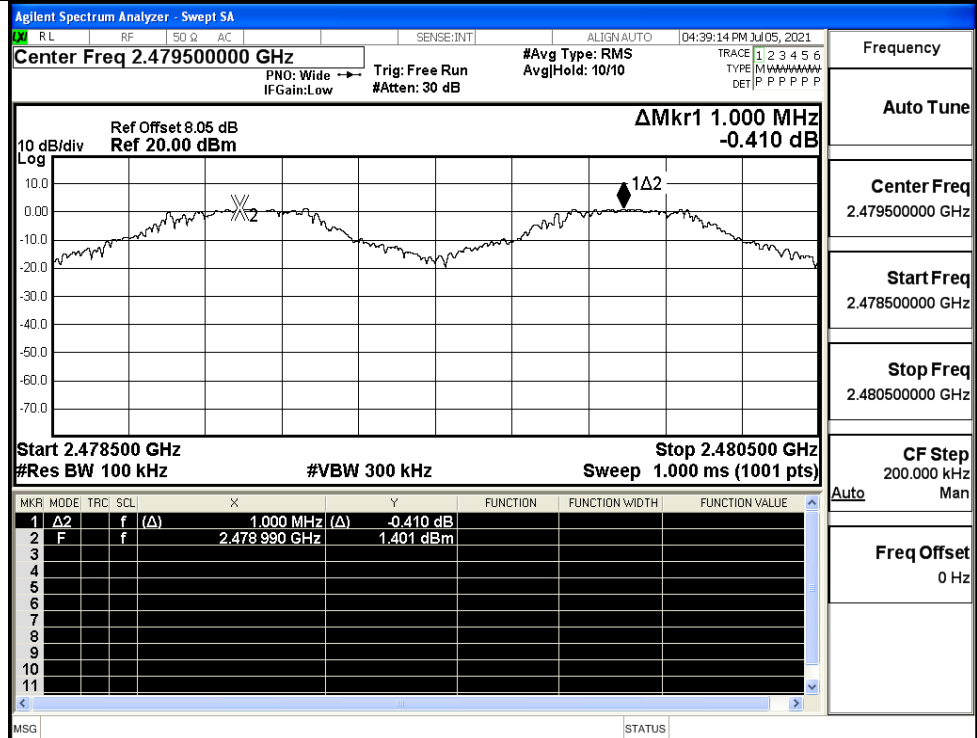


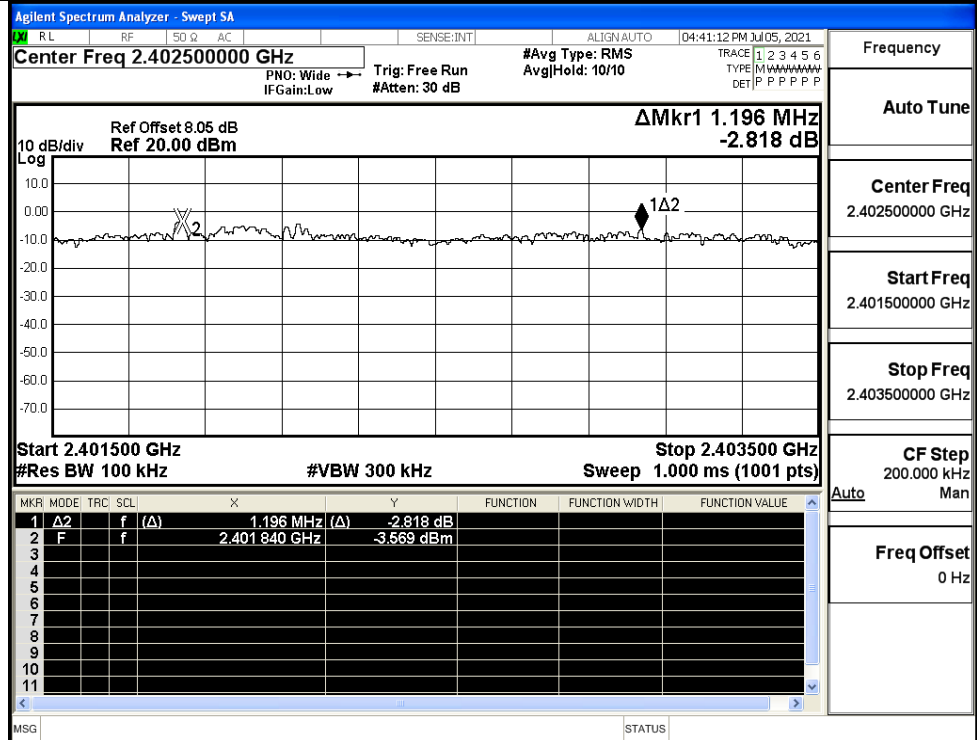
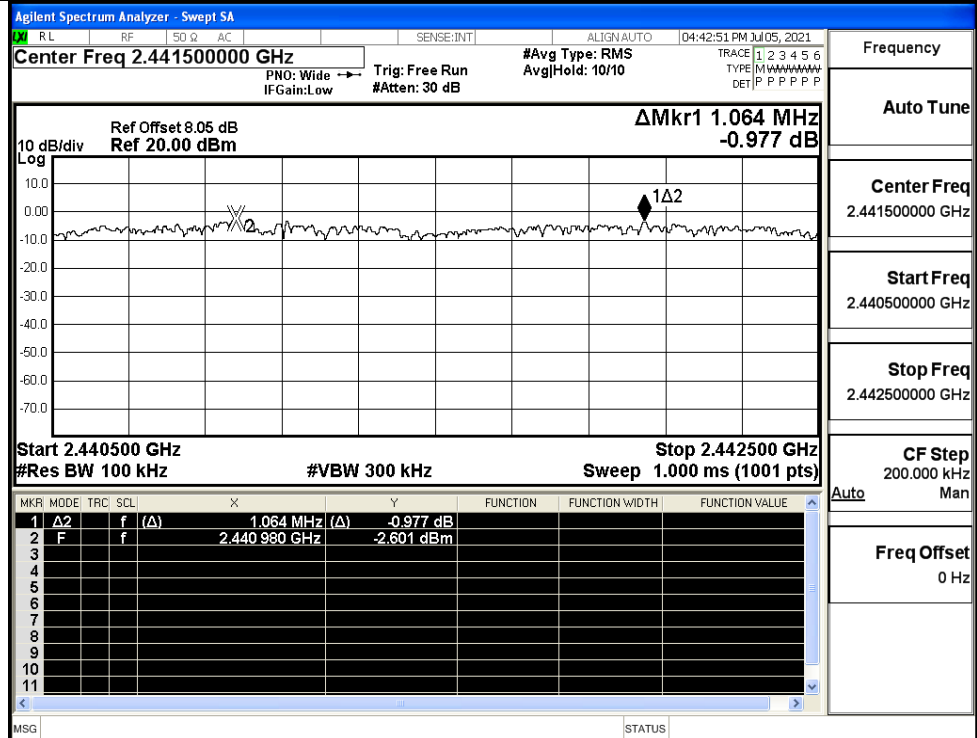


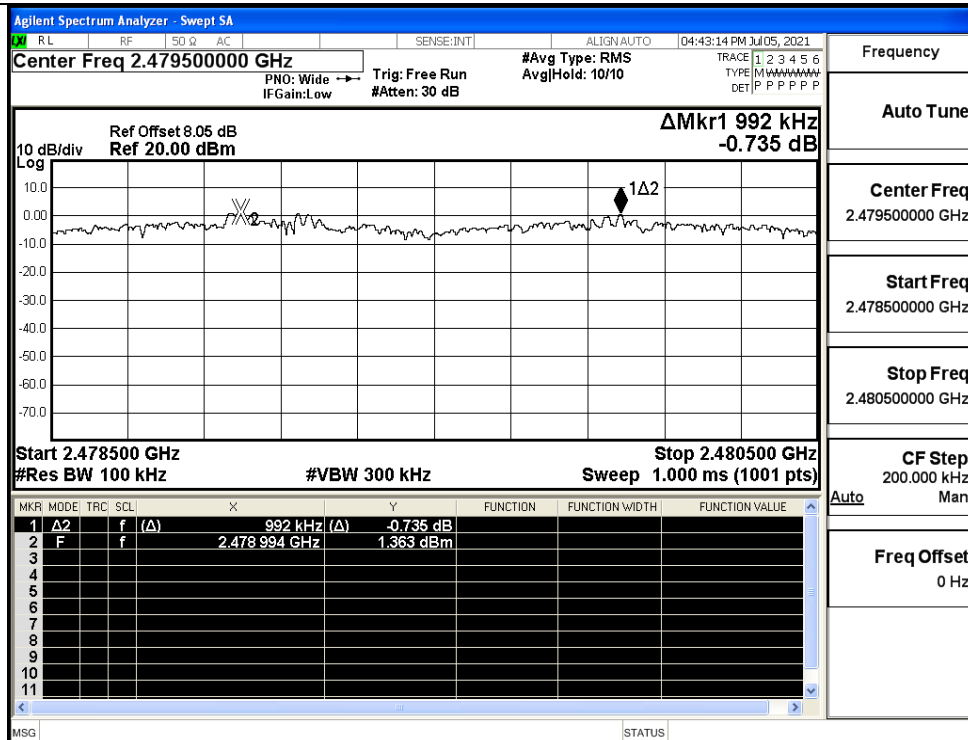
GFSK/MCH



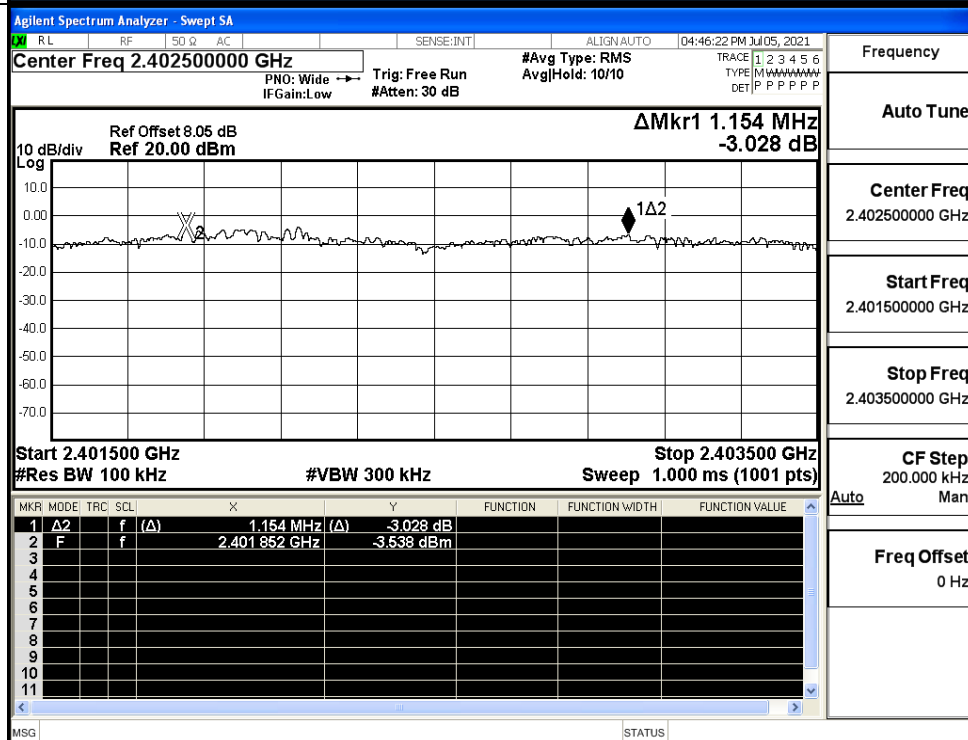
GFSK/HCH



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

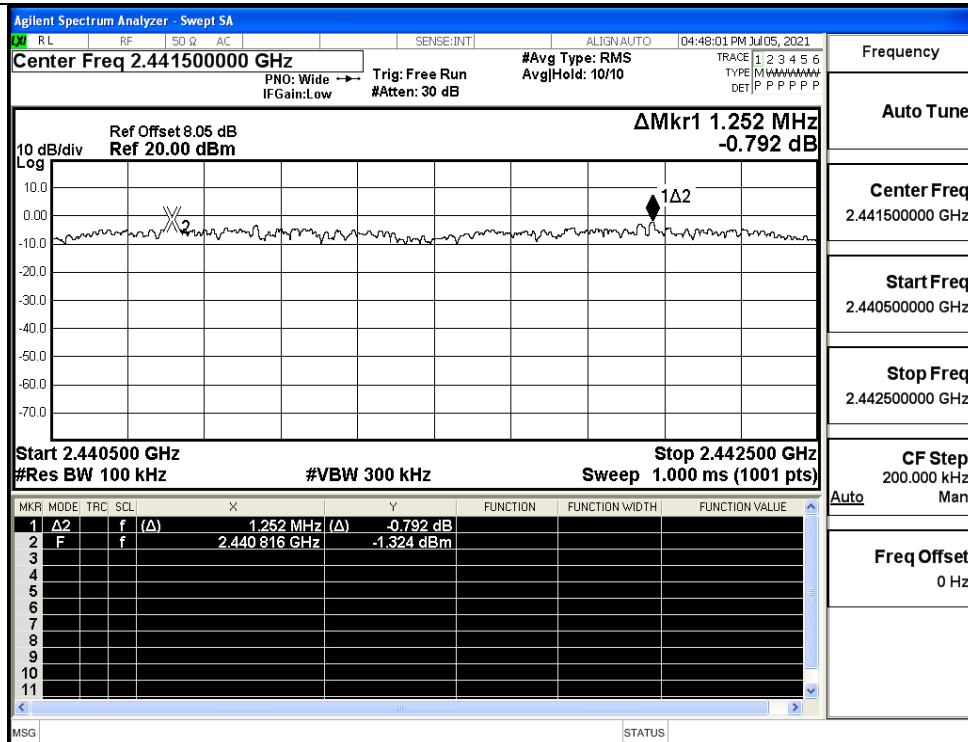
 π /4DQPSK/HCH

8DPSK/LCH

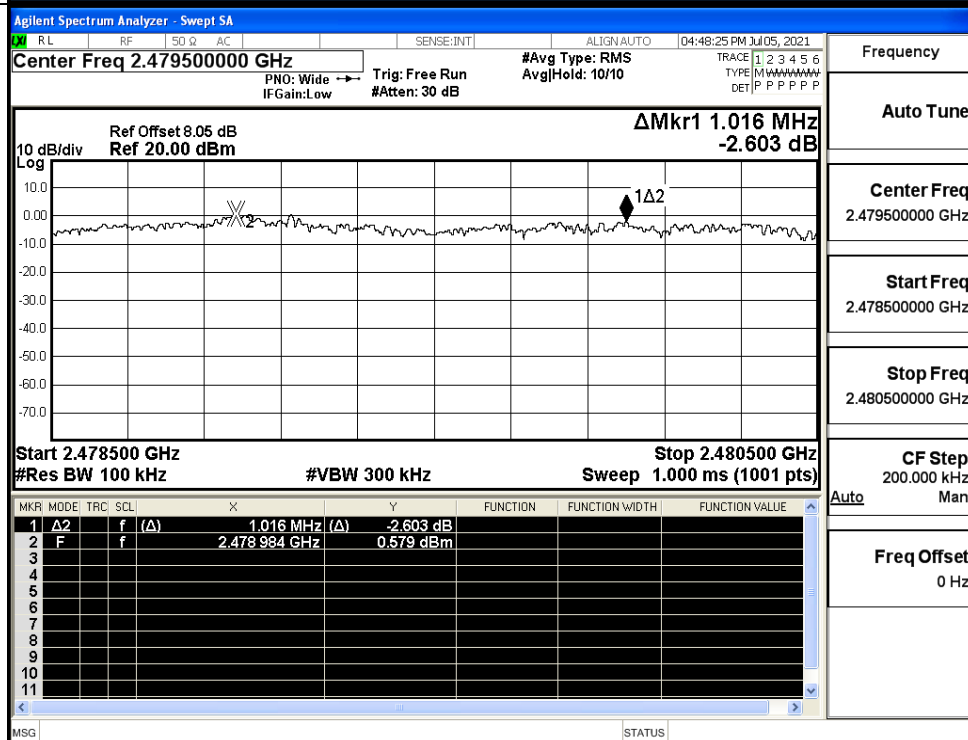




8DPSK/MCH



8DPSK/HCH



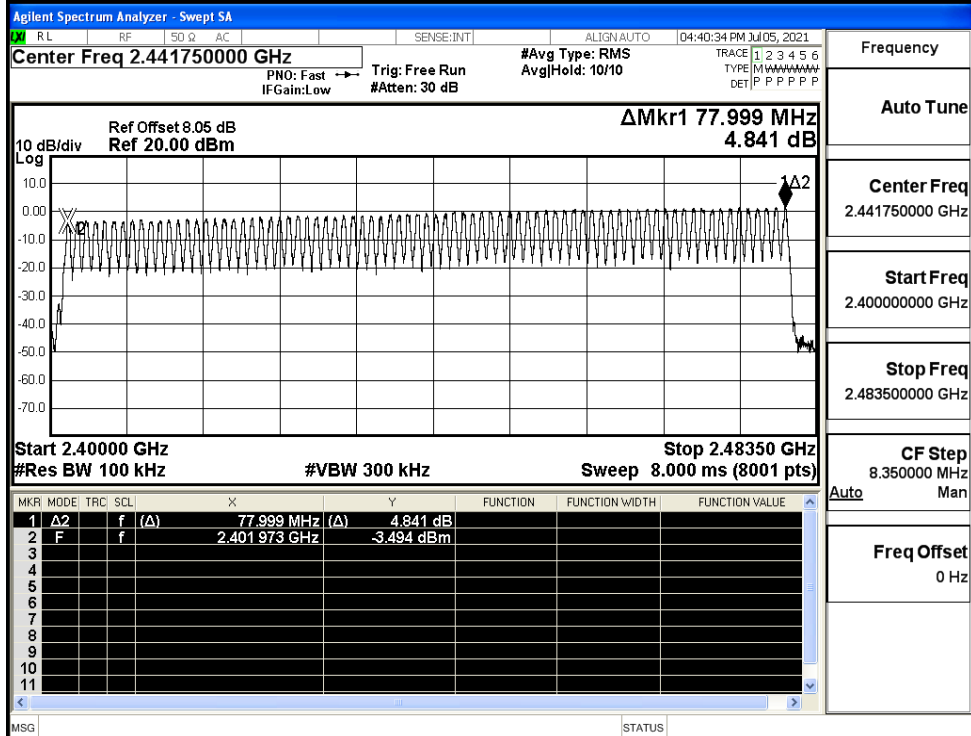
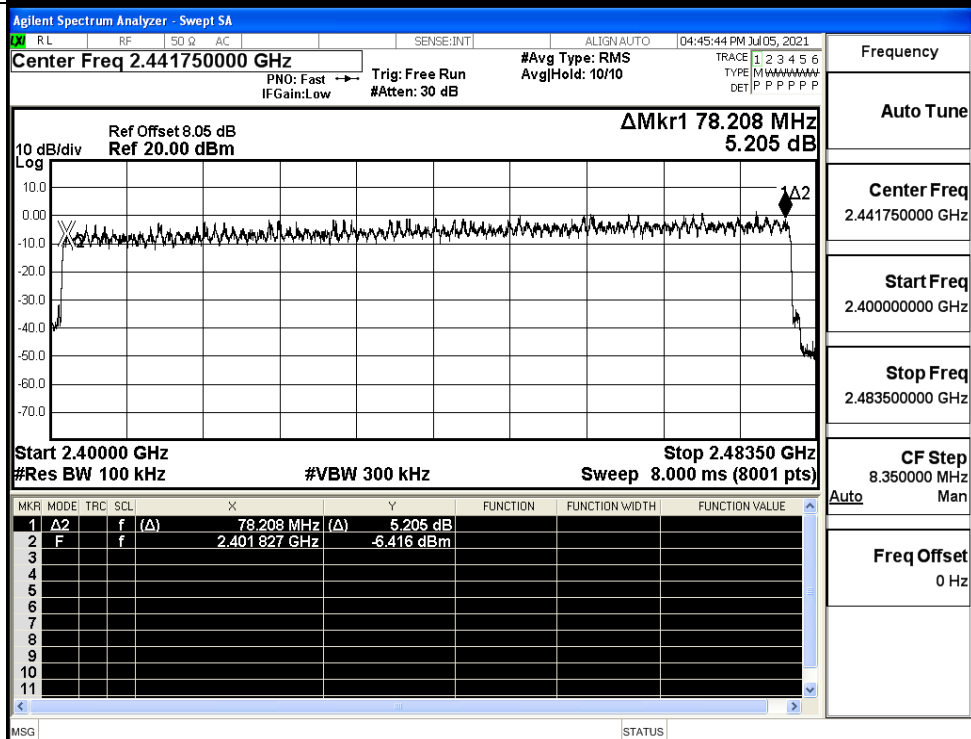


A.4 Hopping Channel Number

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

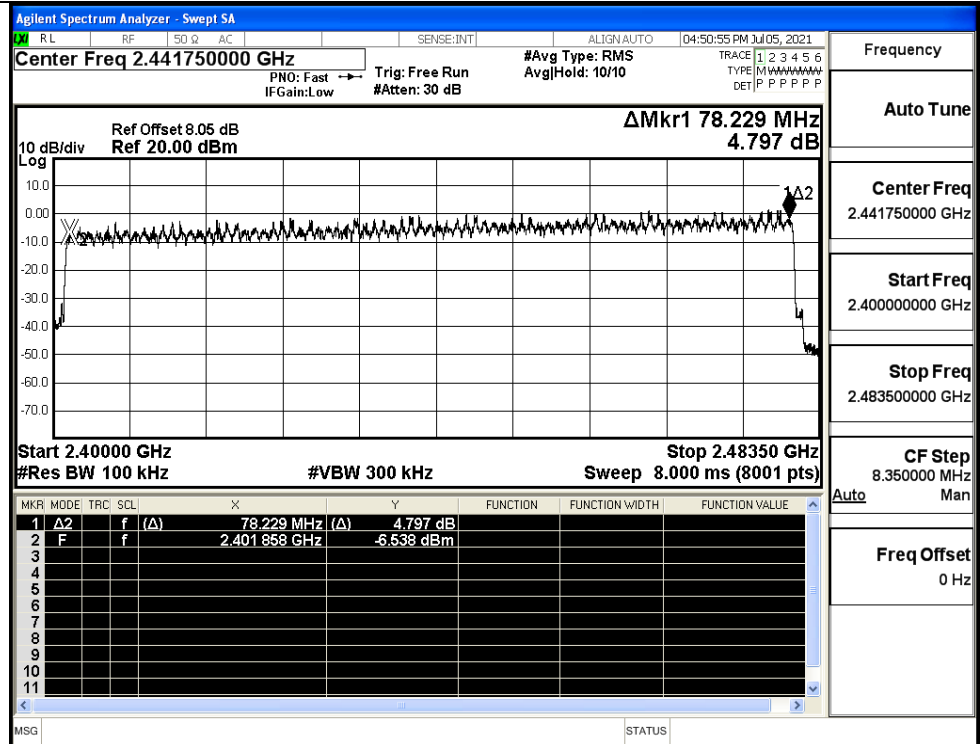
Test Graphs

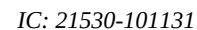
GFSK/Hop

 $\pi/4$ DQPSK/Hop

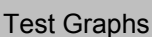


8DPSK/Hop





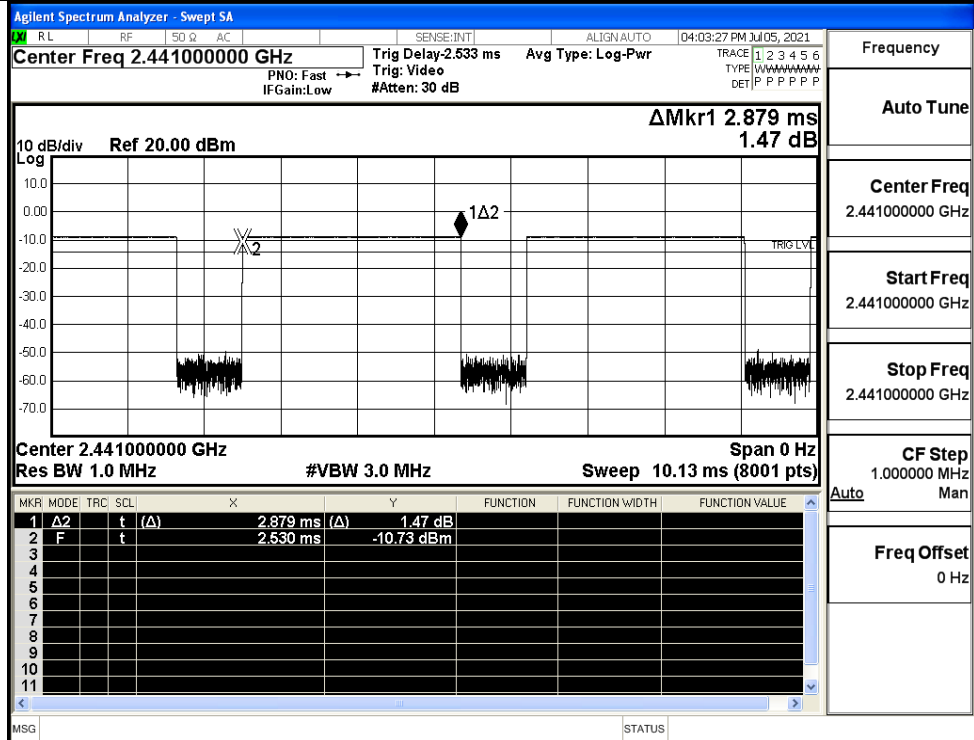
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
π/4DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.308	0.4	PASS
	2DH5	HCH	2.88	106.7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



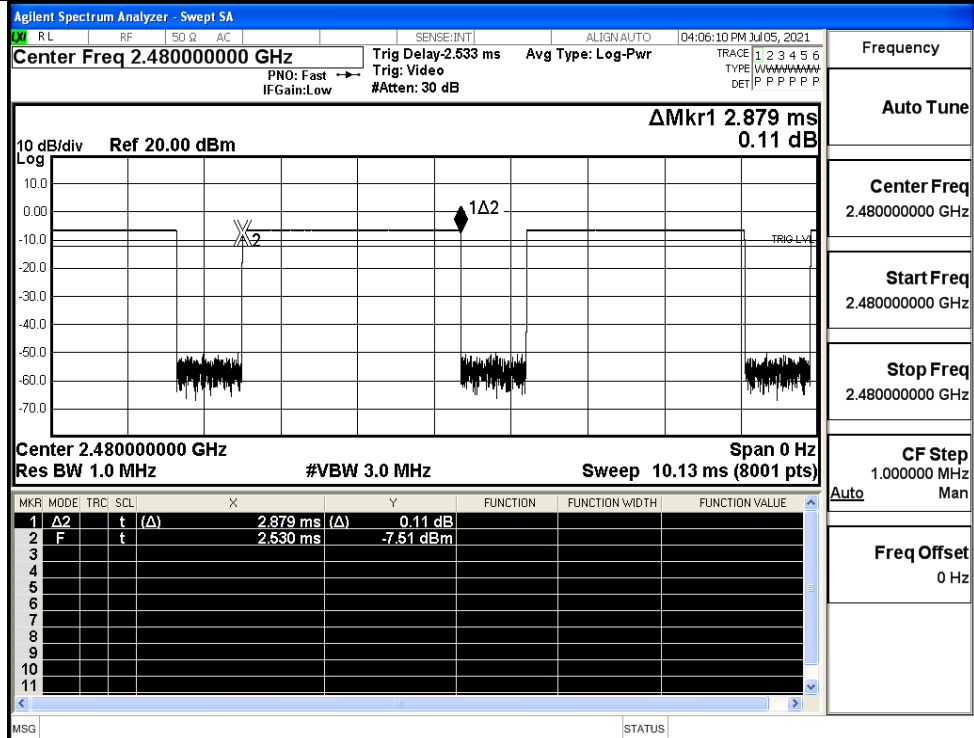
GFSK_DH5/LCH



GFSK_DH5/MCH

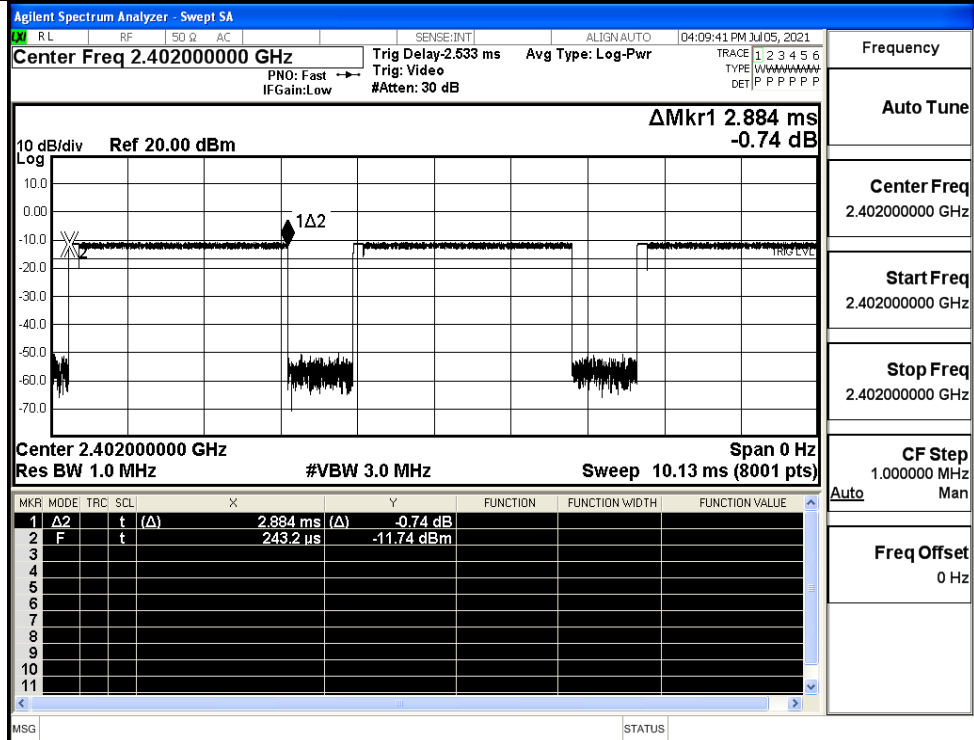


GFSK_DH5/HCH

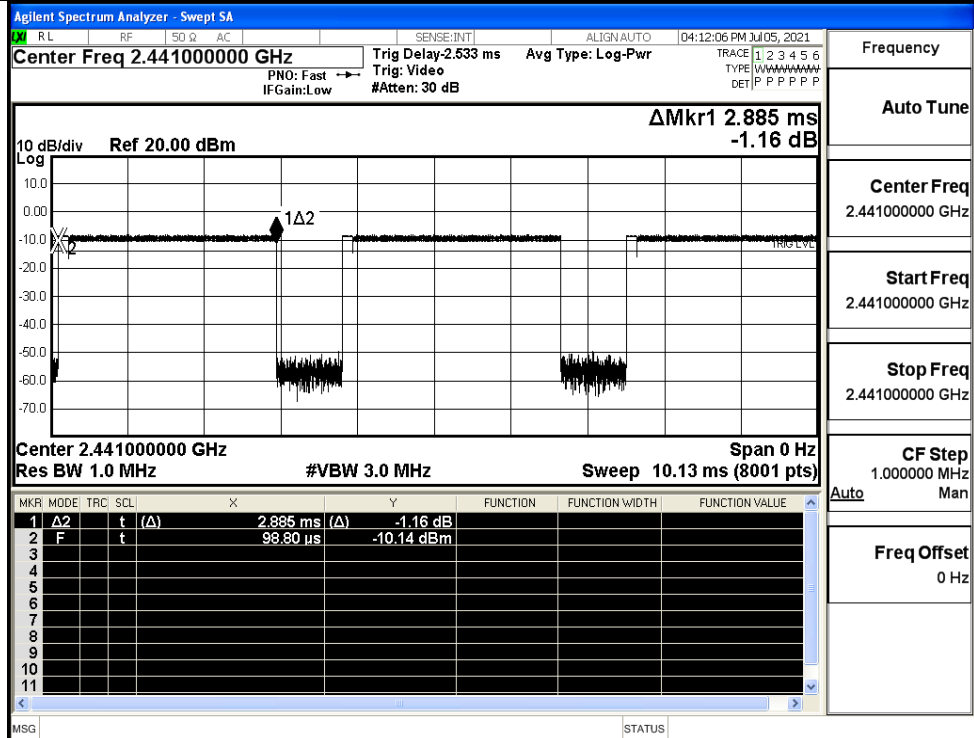




$\pi/4$ DQPSK
_2DH5/LCH

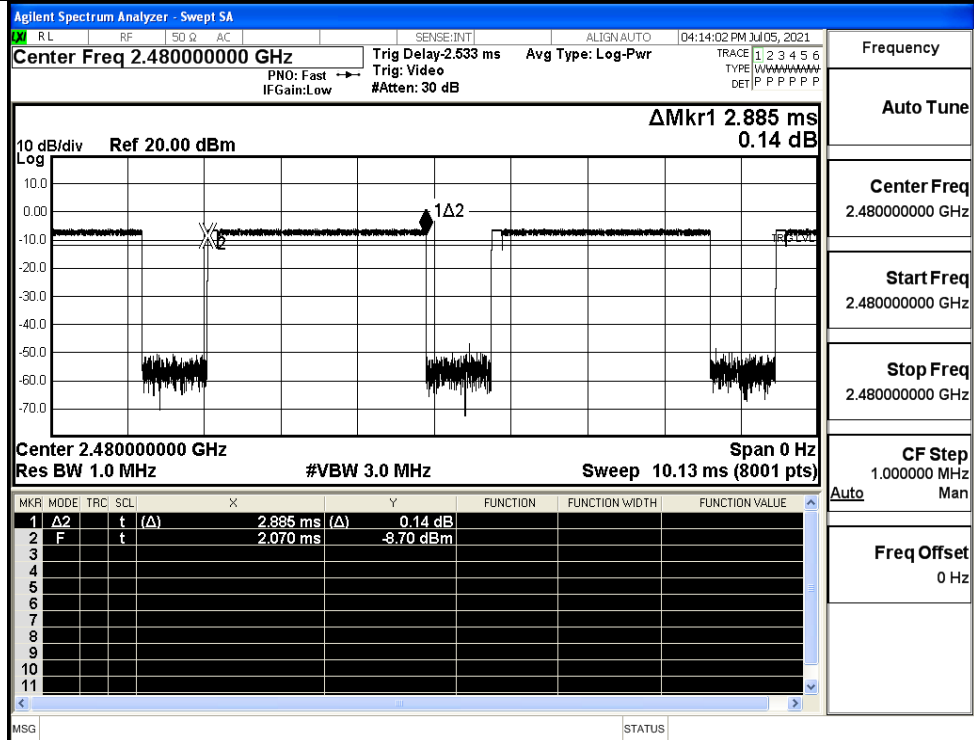


$\pi/4$ DQPSK
_2DH5/MCH

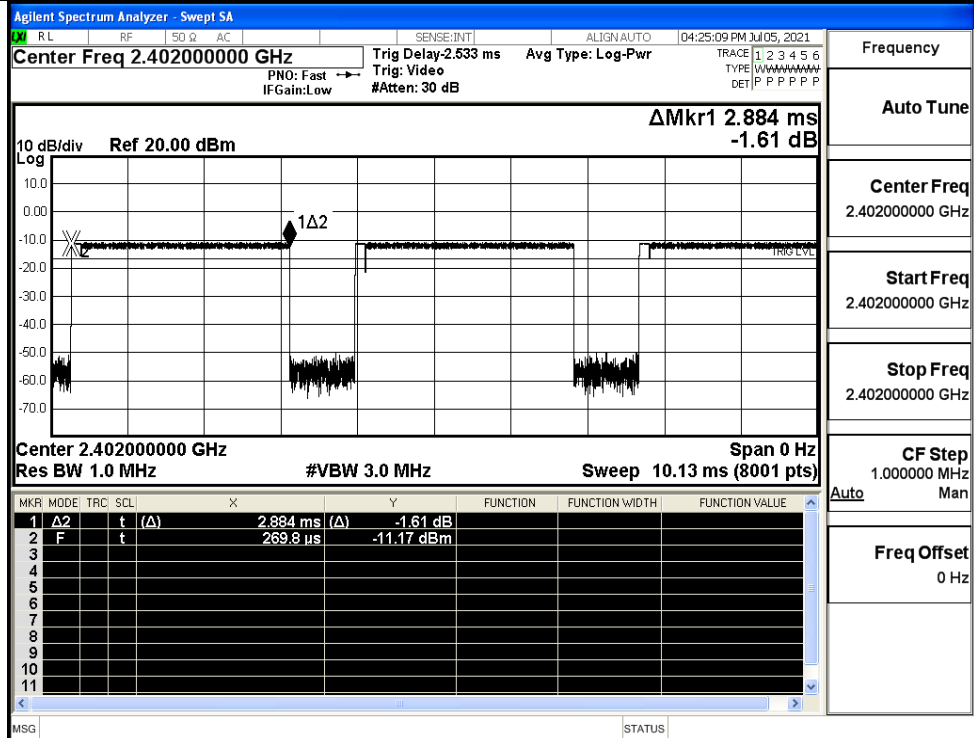




$\pi/4$ DQPSK
_2DH5/HCH

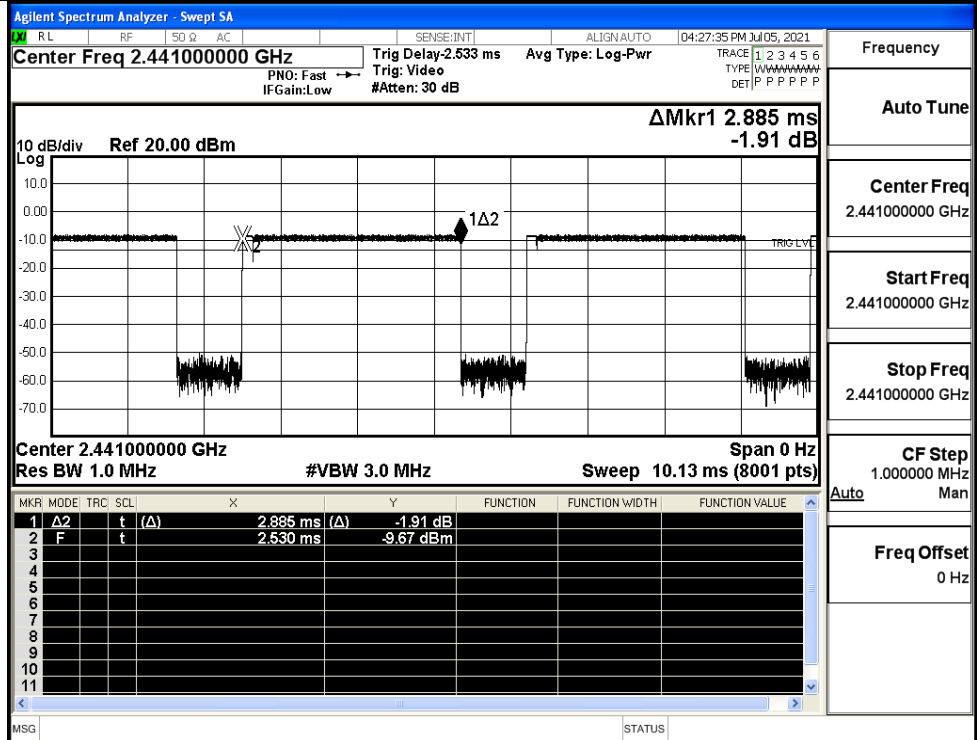


8DPSK _3DH5/LCH

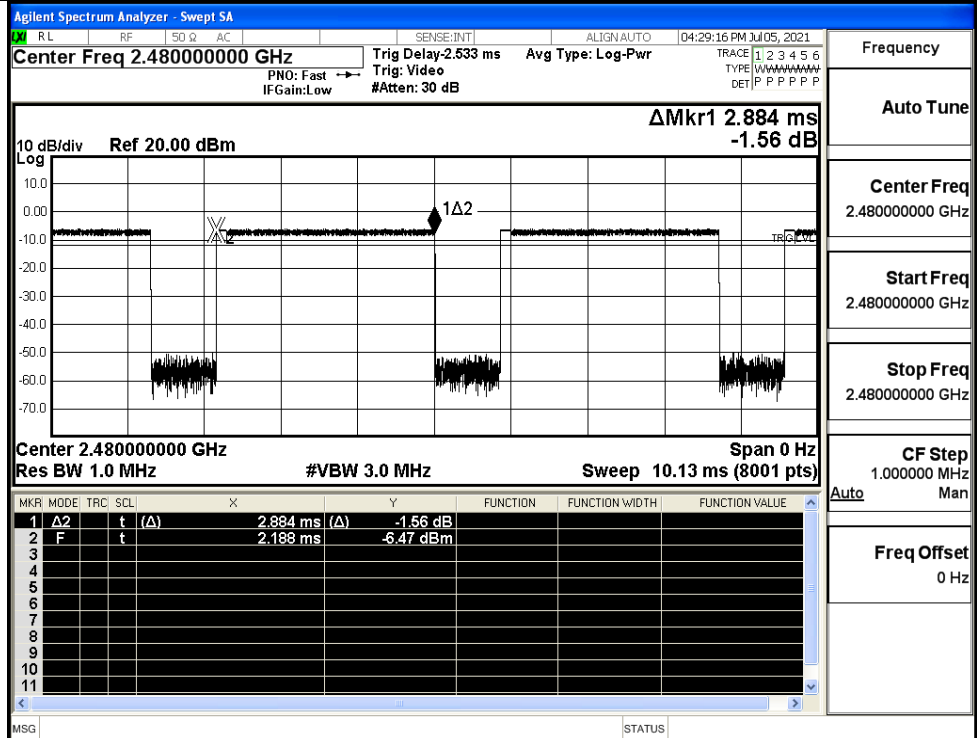




8DPSK_3DH5/MCH



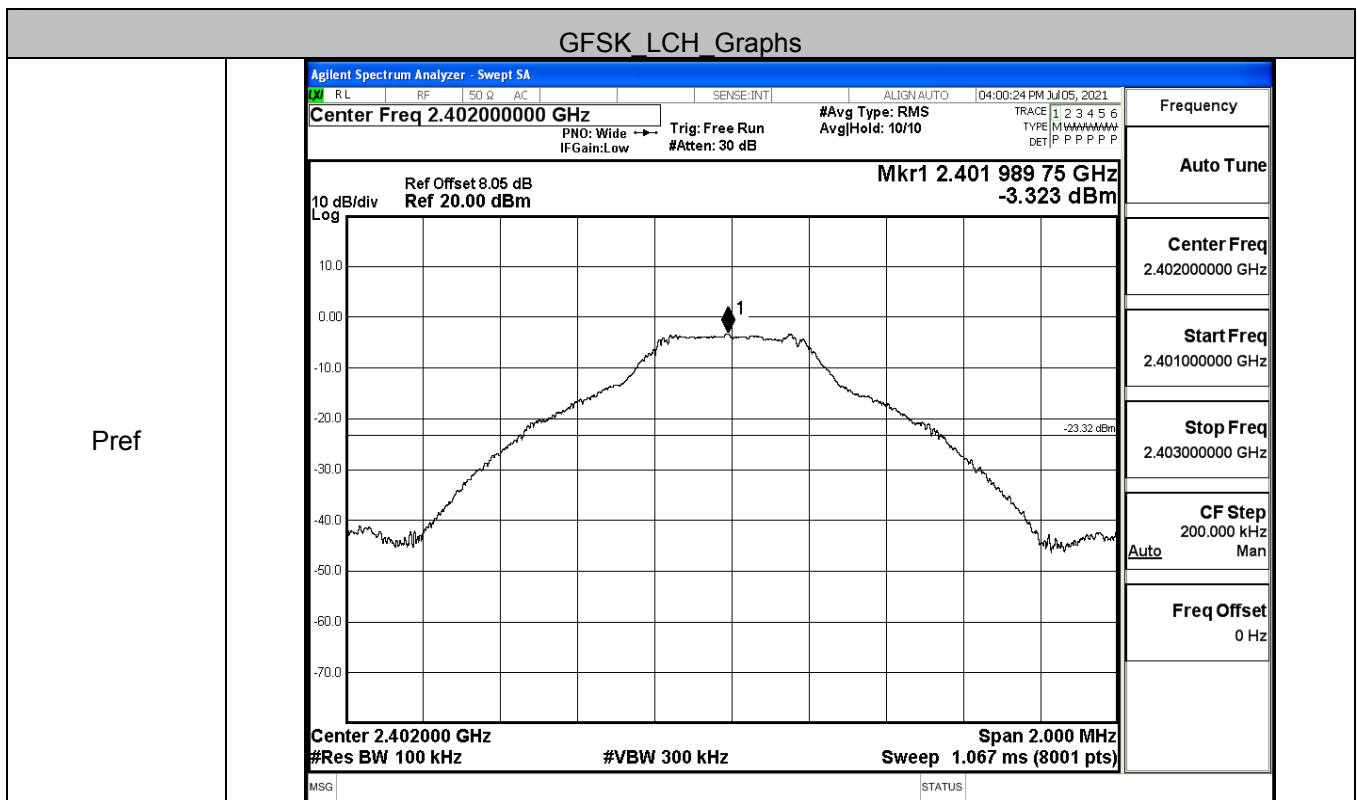
8DPSK_3DH5/HCH

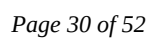
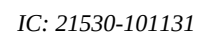




A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-3.323	-37.941	-23.323	PASS
	MCH	-1.22	-37.505	-21.220	PASS
	HCH	1.09	-37.289	-18.910	PASS
$\pi/4$ DQPSK	LCH	-3.567	-37.711	-23.567	PASS
	MCH	-0.621	-38.214	-20.621	PASS
	HCH	1.457	-38.045	-18.543	PASS
8DPSK	LCH	-3.369	-38.145	-23.369	PASS
	MCH	-0.408	-37.874	-20.408	PASS
	HCH	1.33	-37.304	-18.670	PASS

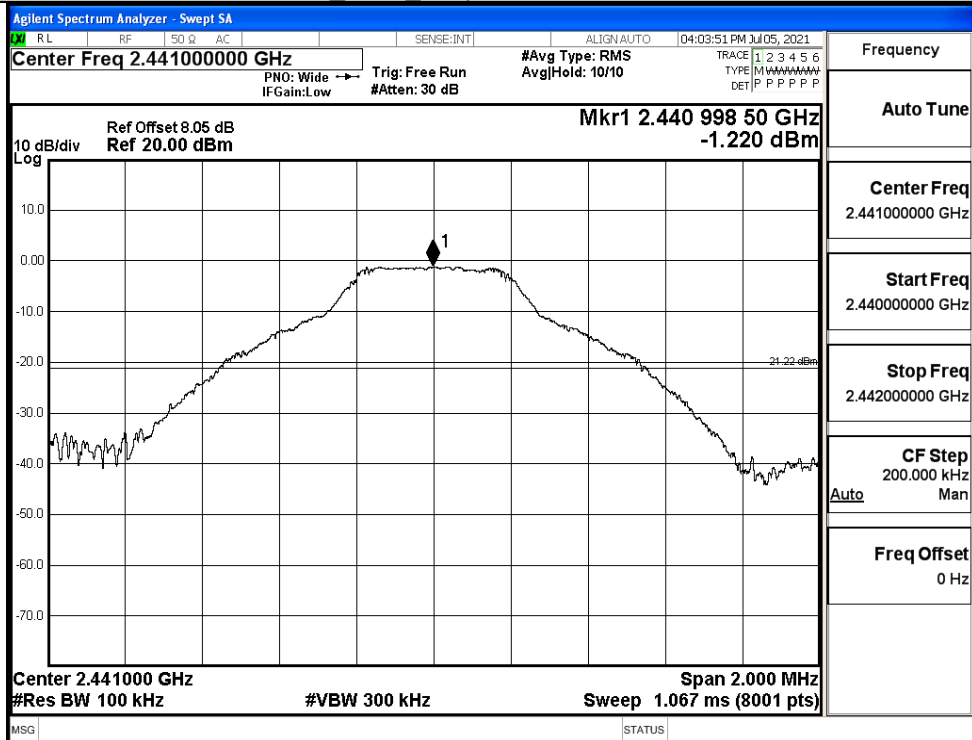




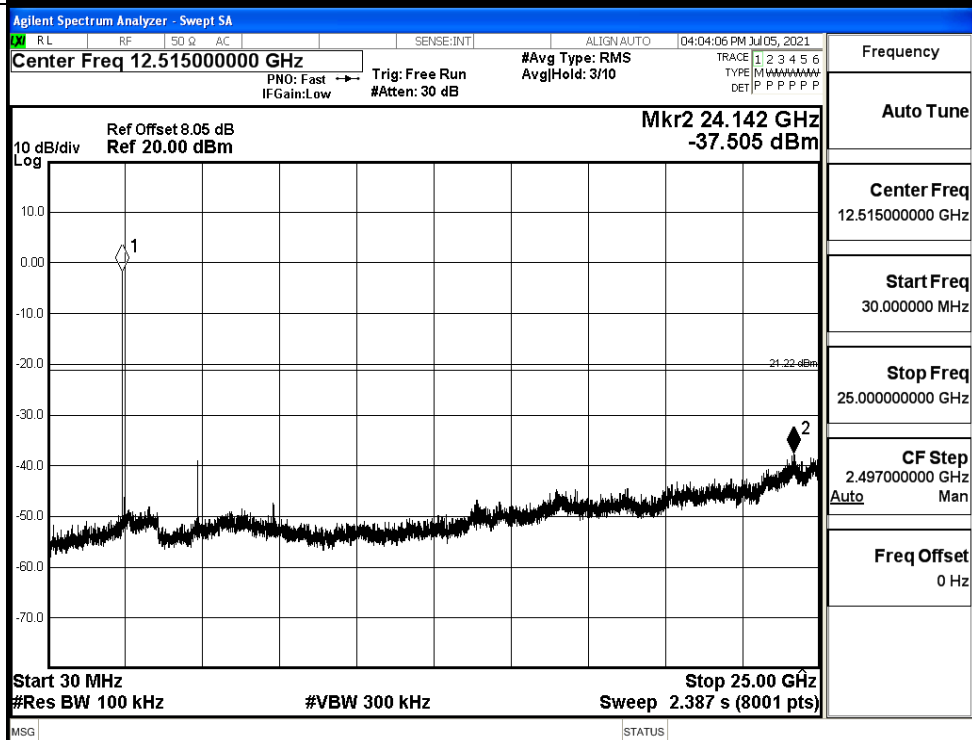


GFSK_MCH_Graphs

Pref



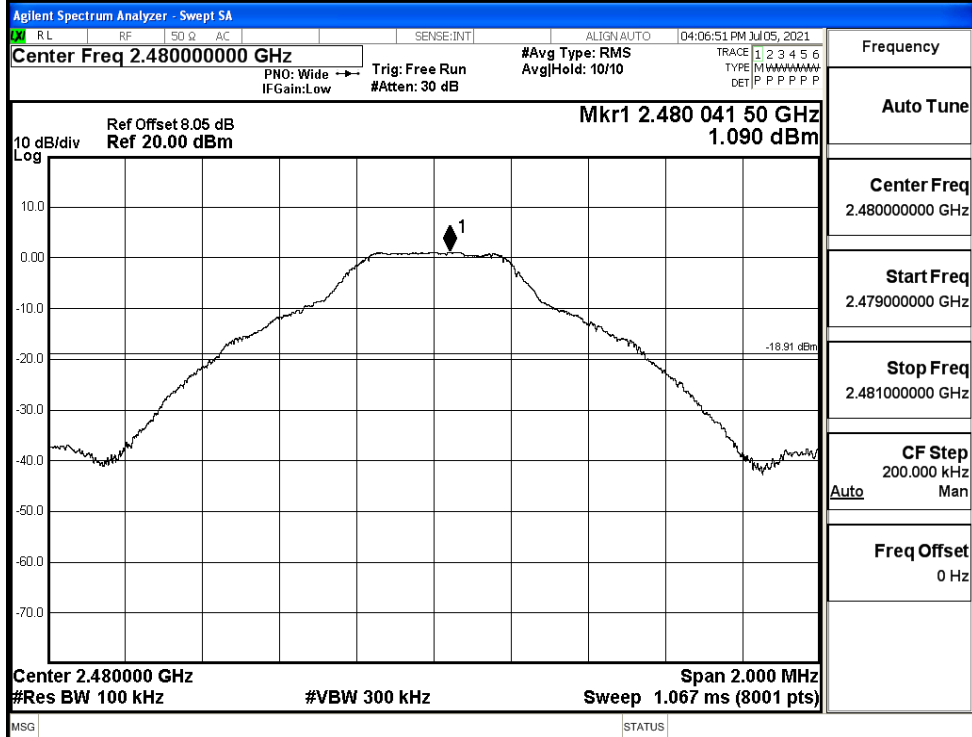
Puw



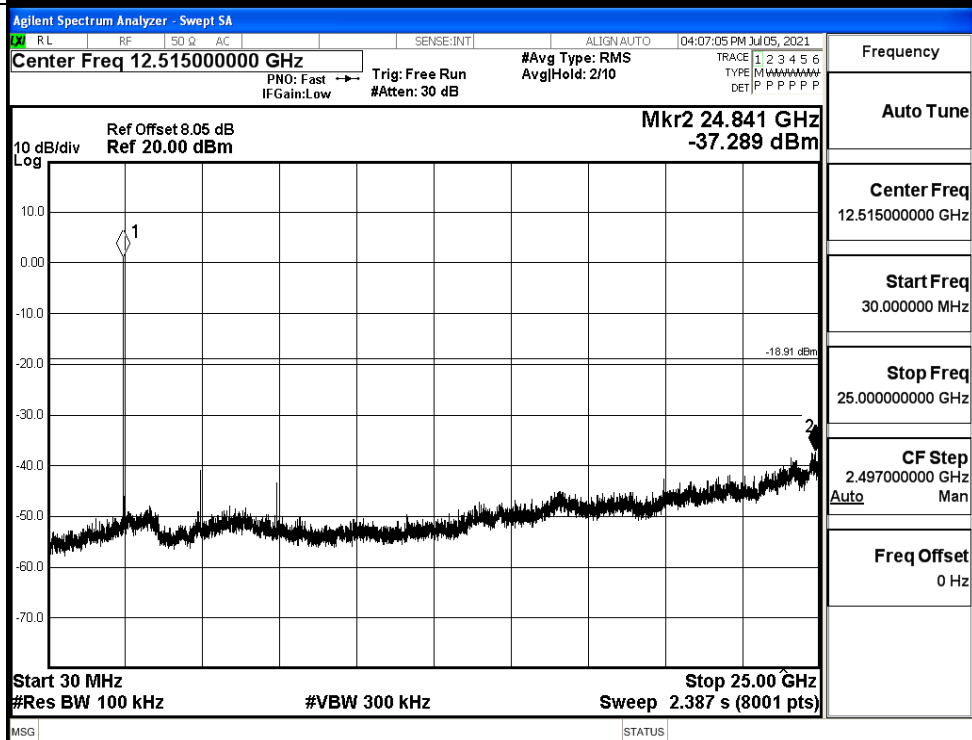


GFSK_HCH_Graphs

Pref

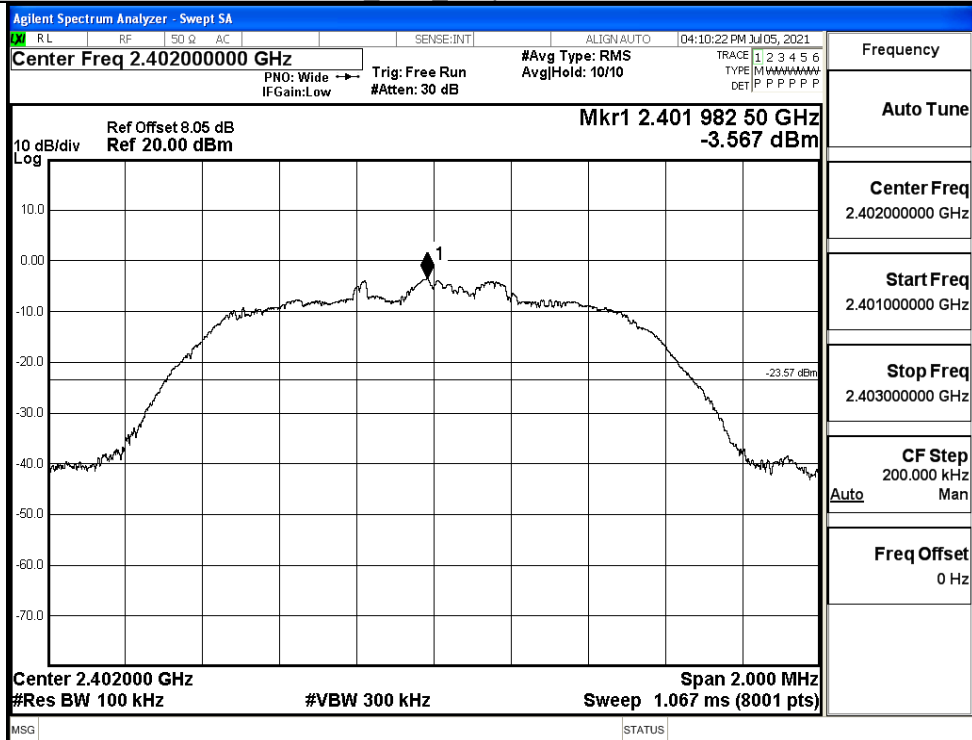


Puw

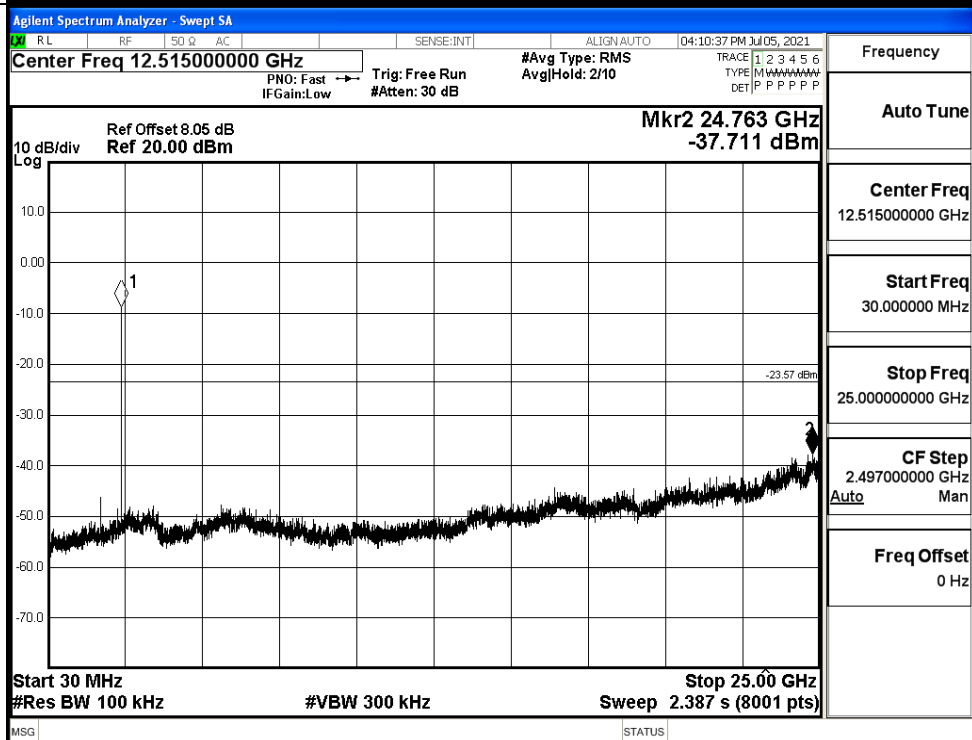


 $\pi/4$ DQPSK_LCH_Graphs

Pref

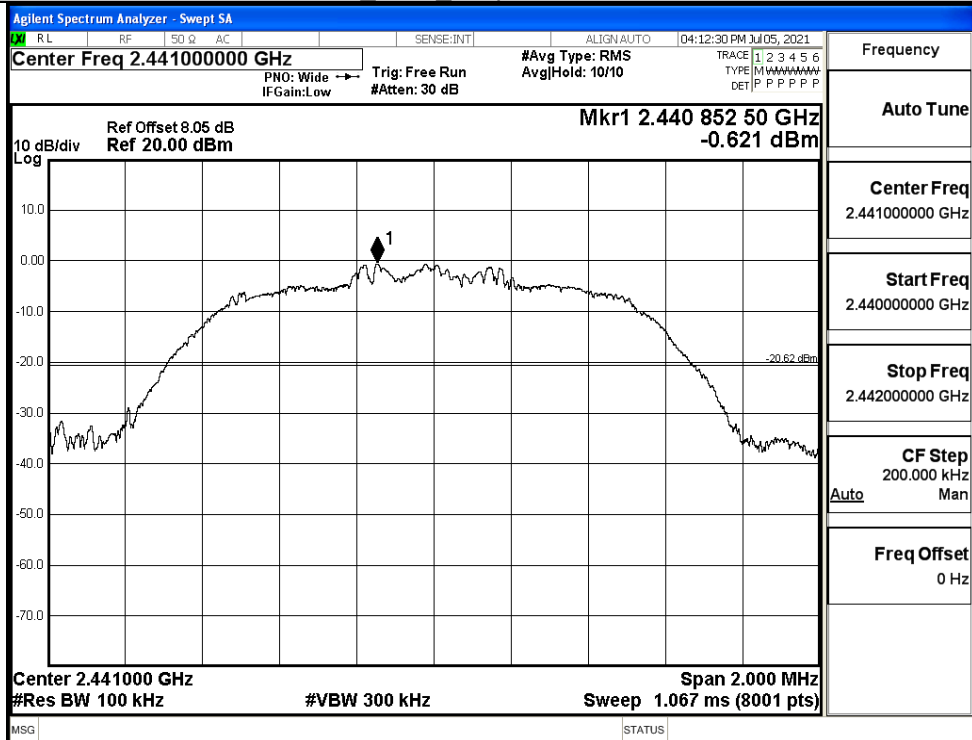


Puw

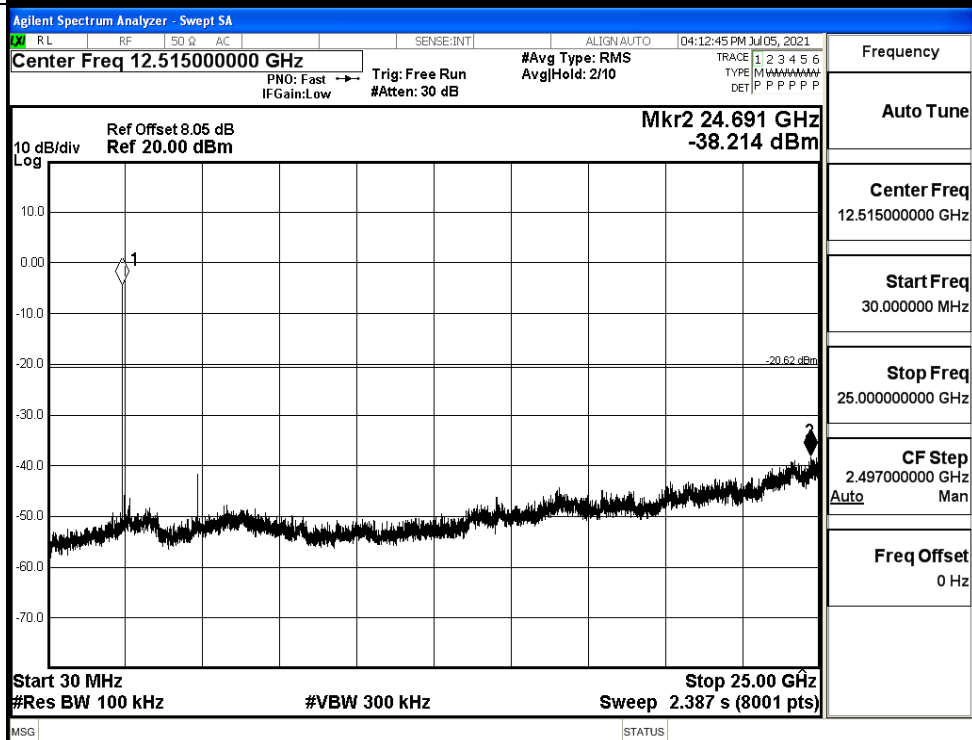


 π /4DQPSK_MCH_Graphs

Pref

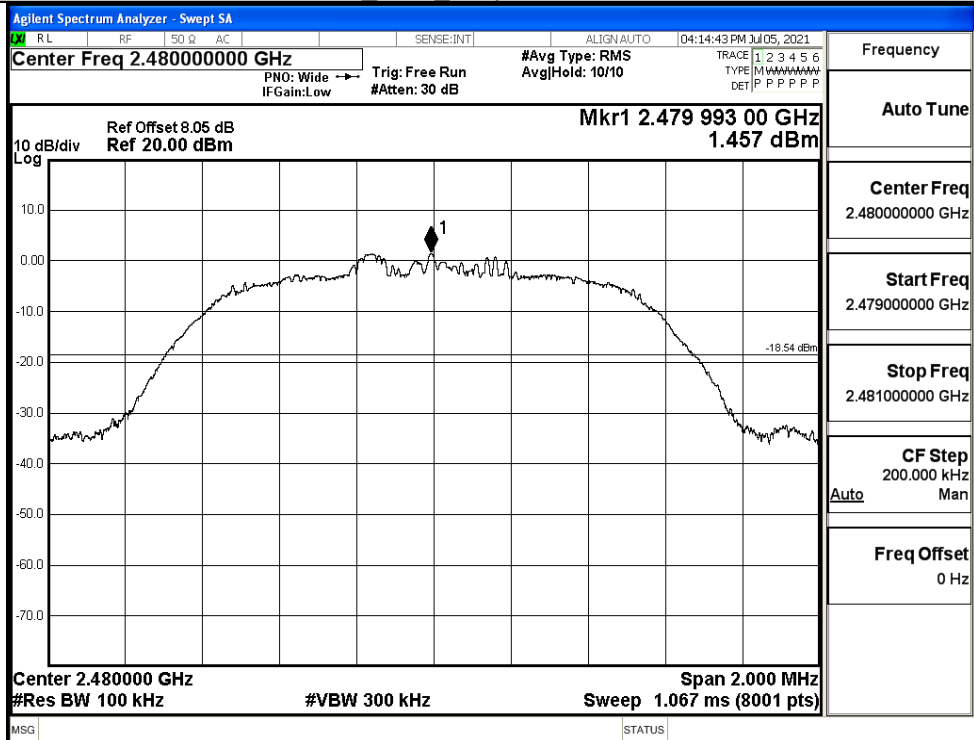


Puw

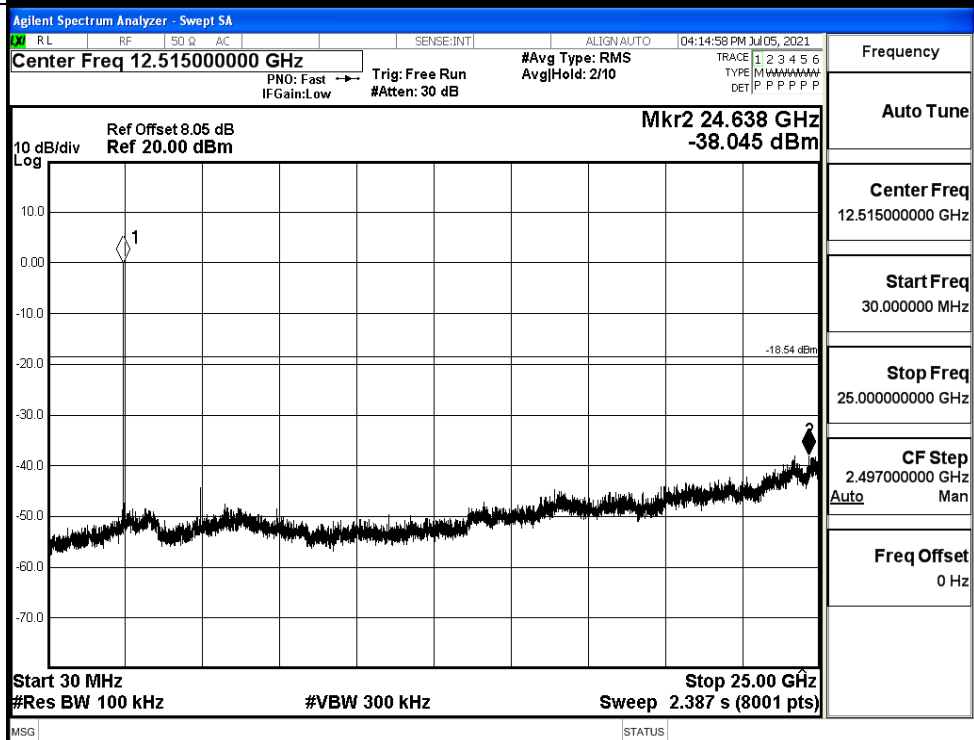


 π /4DQPSK_HCH_Graphs

Pref



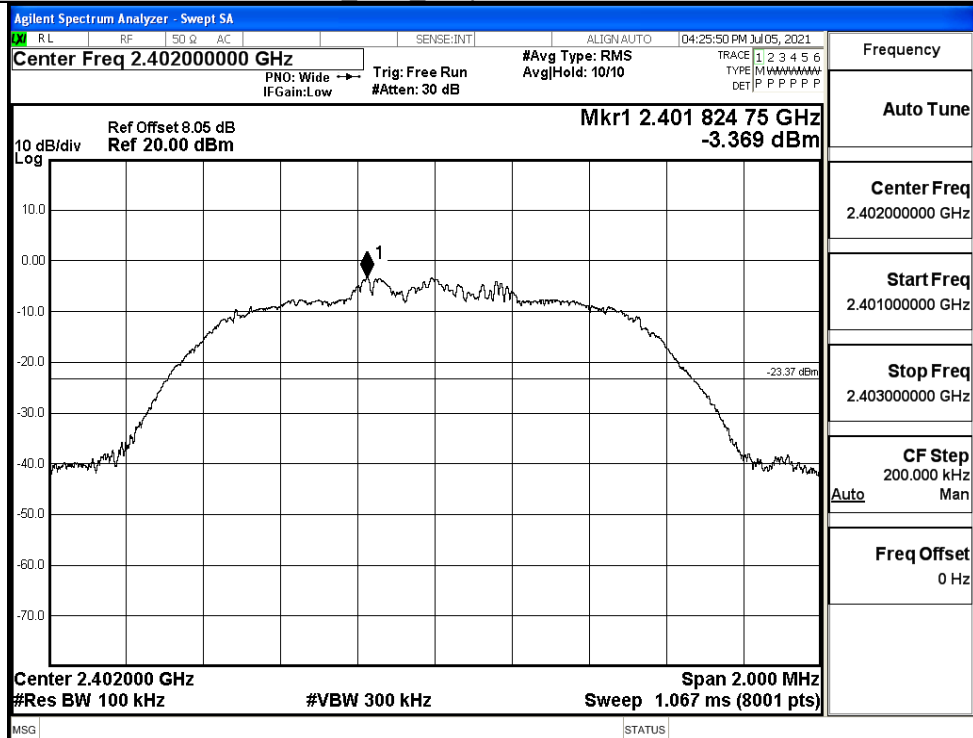
Puw



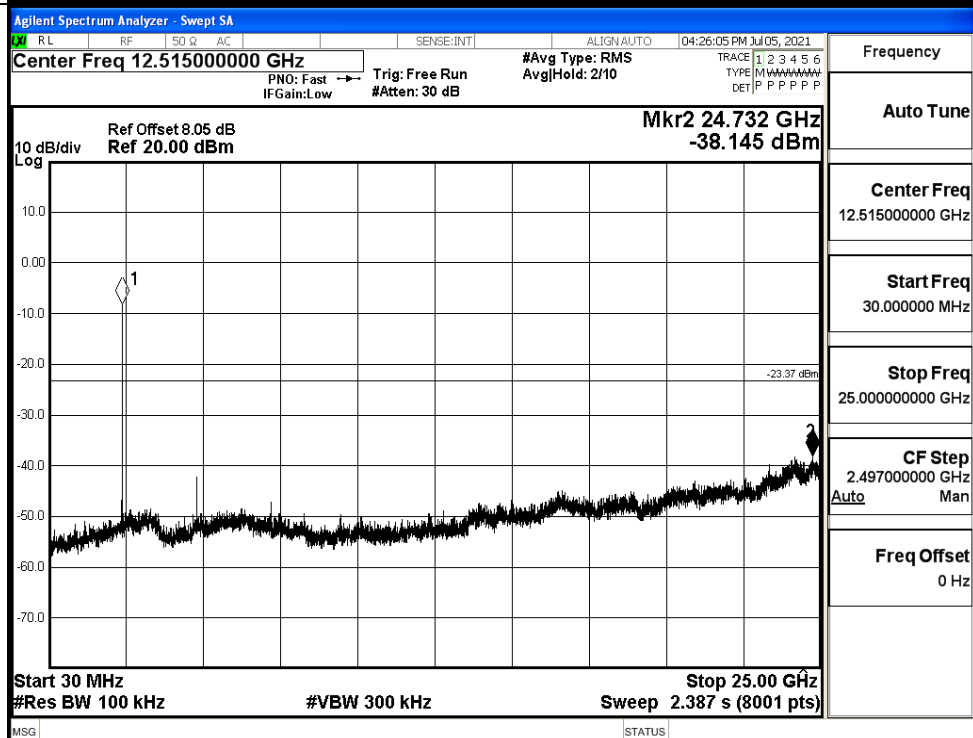


8DPSK_LCH_Graphs

Pref



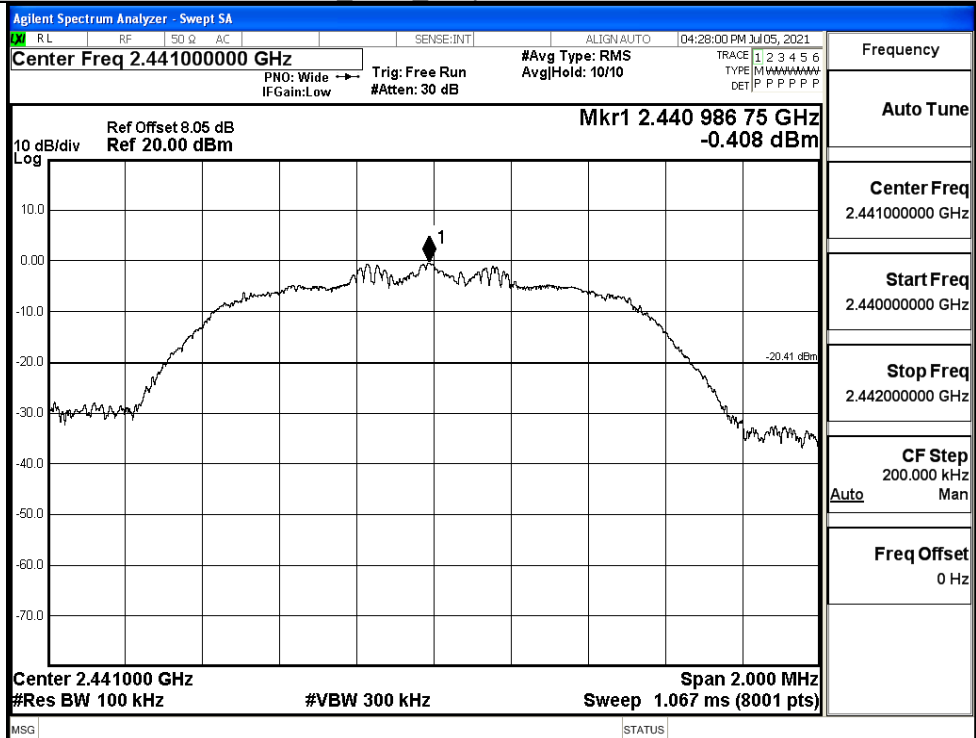
Puw



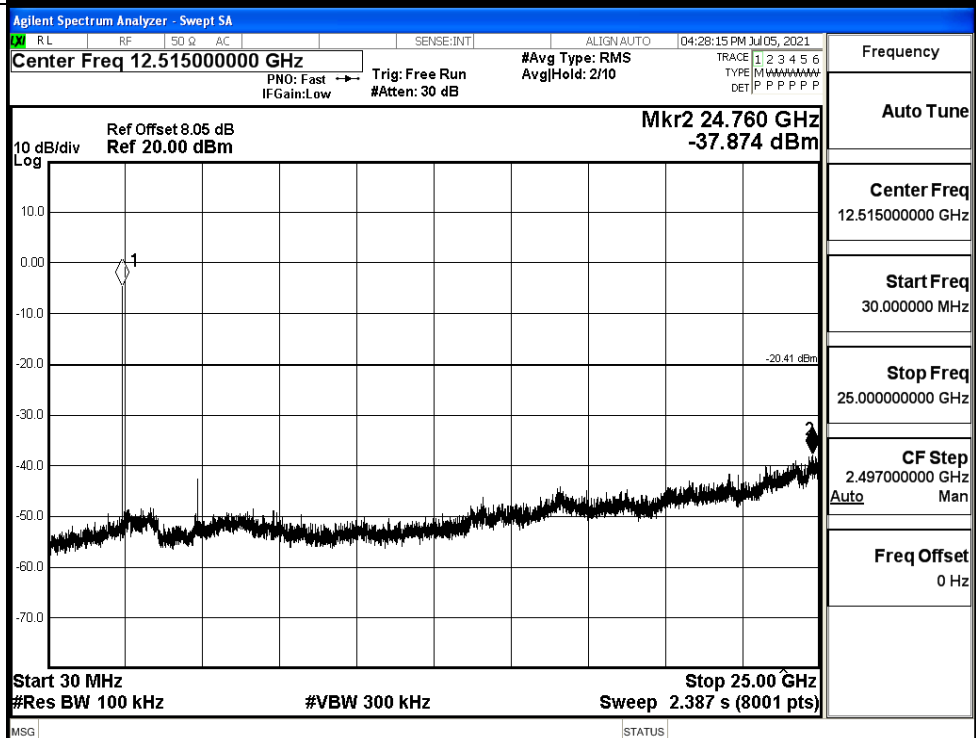


8DPSK_MCH_Graphs

Pref



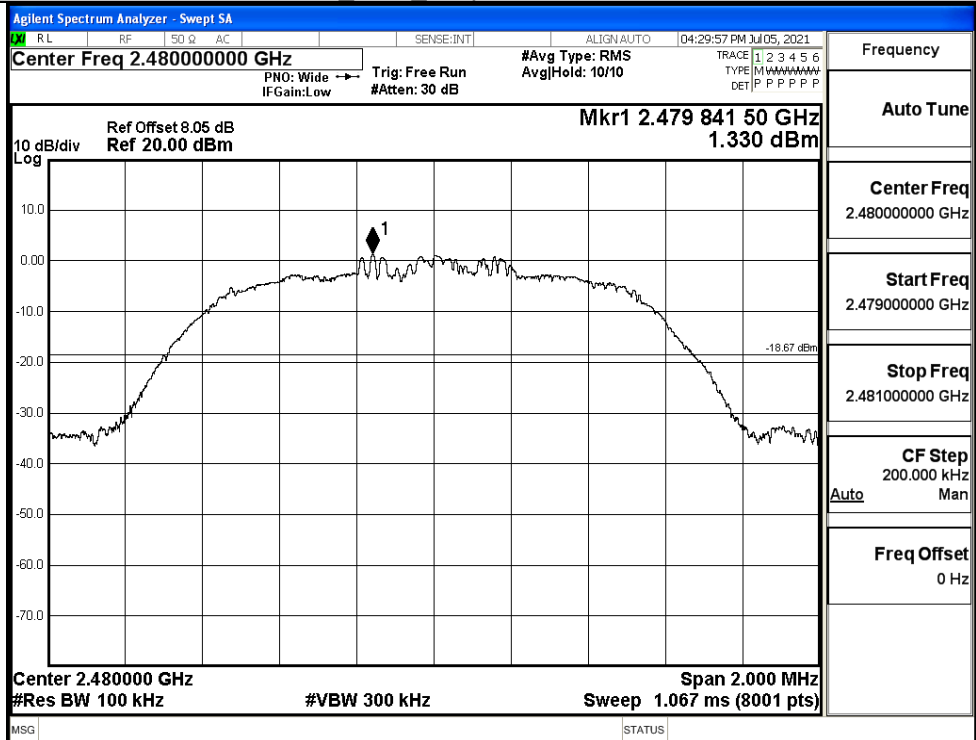
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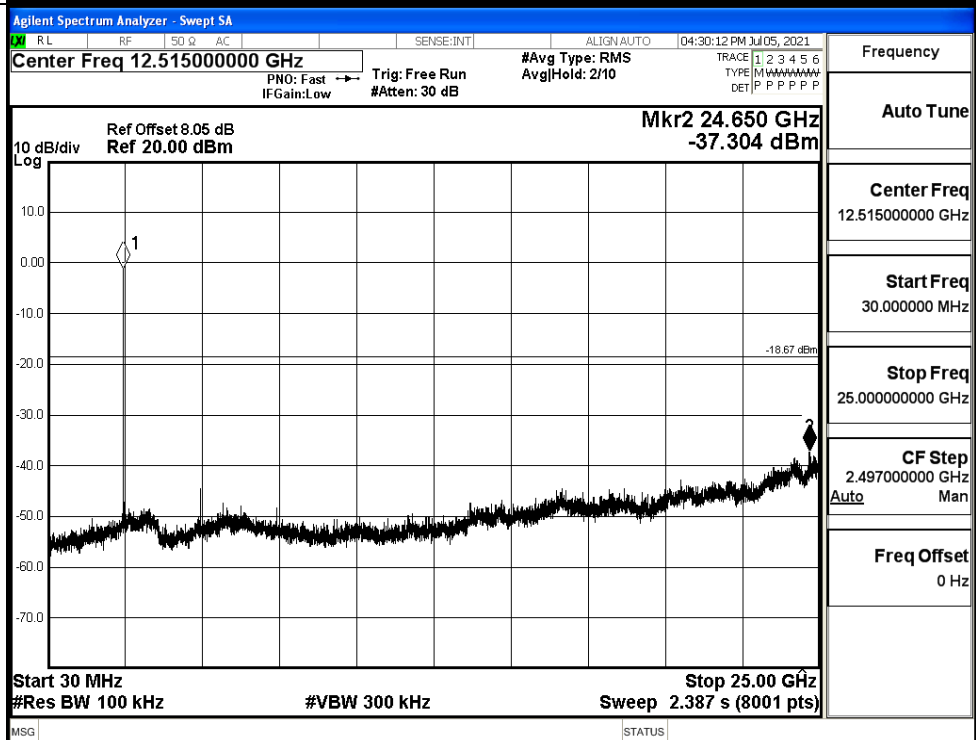


8DPSK_HCH_Graphs

Pref



Puw





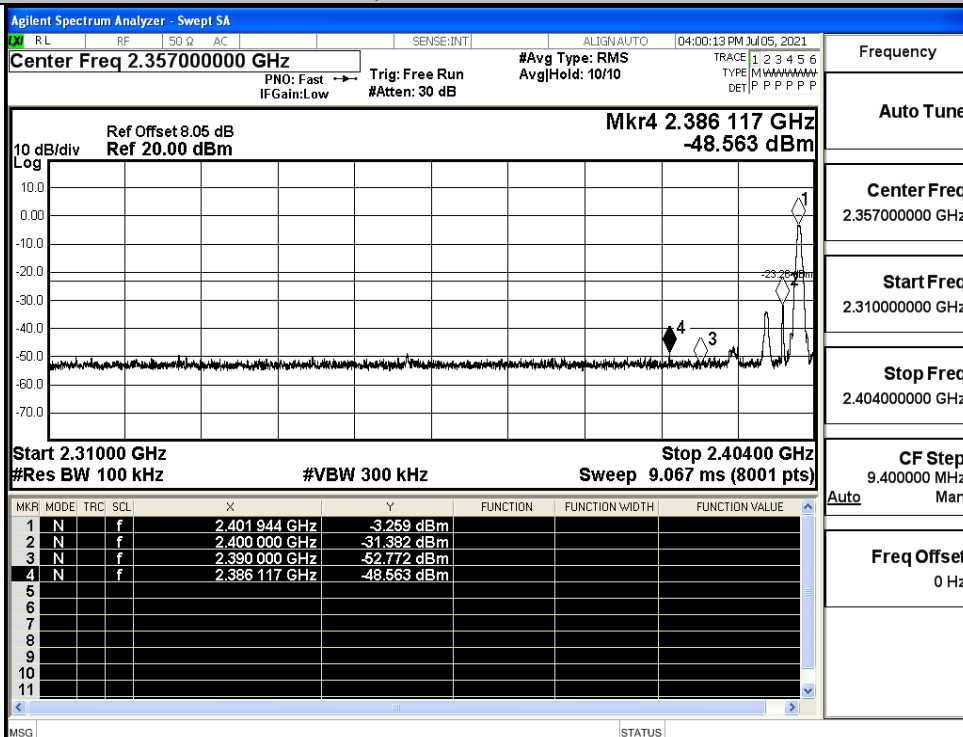
A.7 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-3.259	Off	-48.563	-23.26	PASS
			-1.655	On	-49.305	-21.66	PASS
	HCH	2480	1.466	Off	-43.312	-18.53	PASS
			1.328	On	-44.626	-18.67	PASS
$\pi/4$ DQPSK	LCH	2402	-3.117	Off	-49.638	-23.12	PASS
			-1.587	On	-48.680	-21.59	PASS
	HCH	2480	1.328	Off	-44.403	-18.67	PASS
			1.306	On	-45.551	-18.69	PASS
8DPSK	LCH	2402	-3.360	Off	-49.235	-23.36	PASS
			-1.533	On	-49.133	-21.53	PASS
	HCH	2480	1.748	Off	-44.988	-18.25	PASS
			1.373	On	-45.756	-18.63	PASS

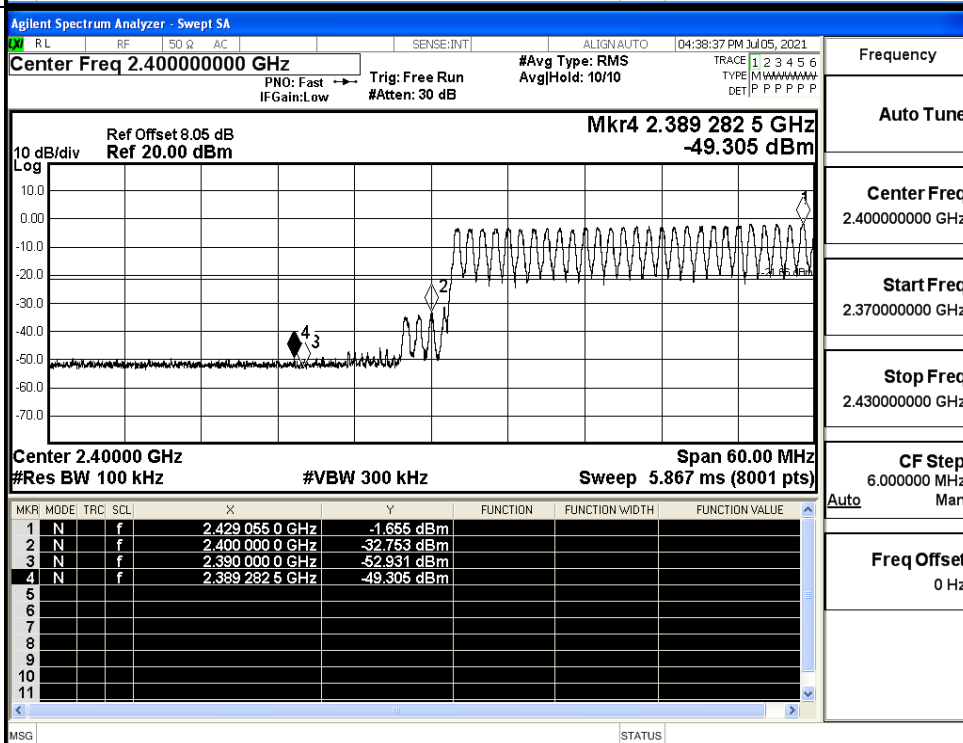


Test Graphs

GFSK/LCH/No Hop

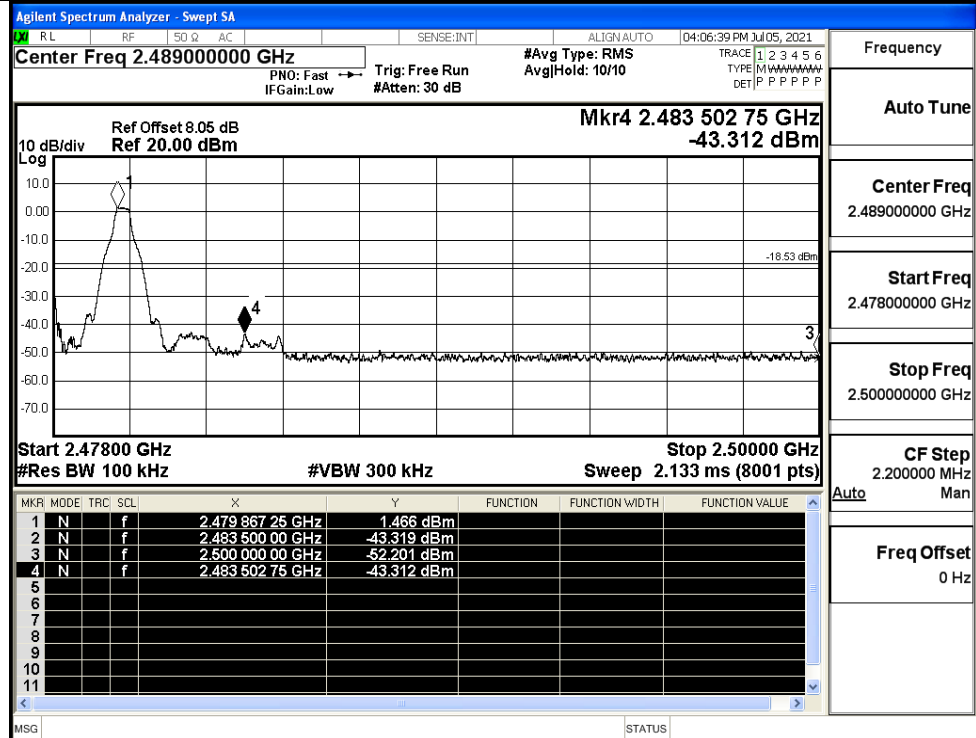


GFSK/LCH/Hop

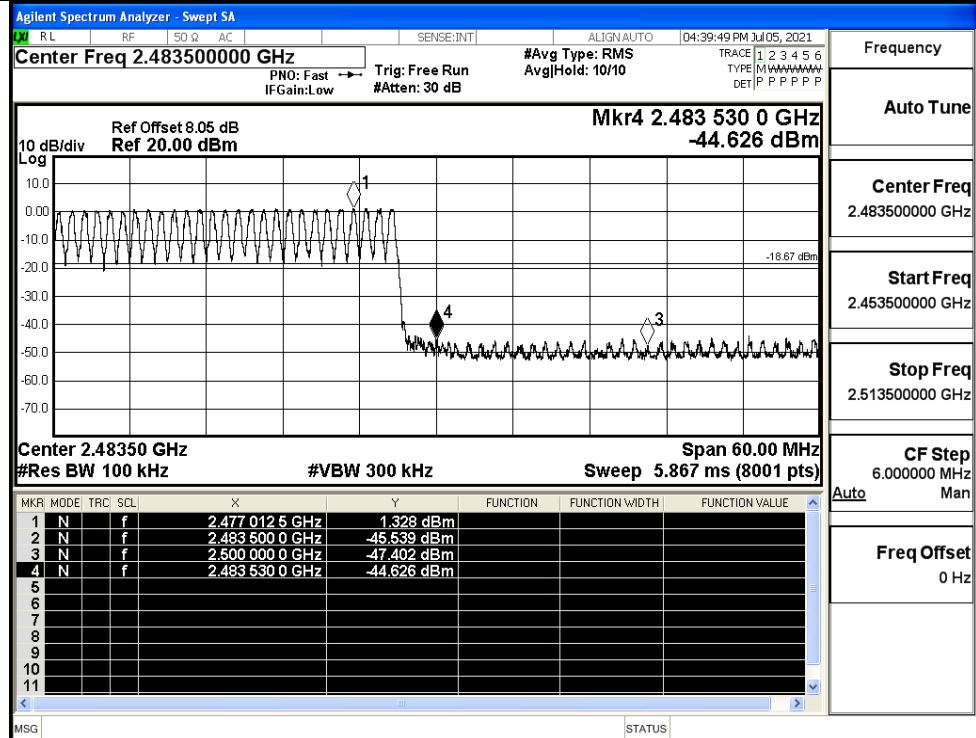




GFSK/HCH/No Hop

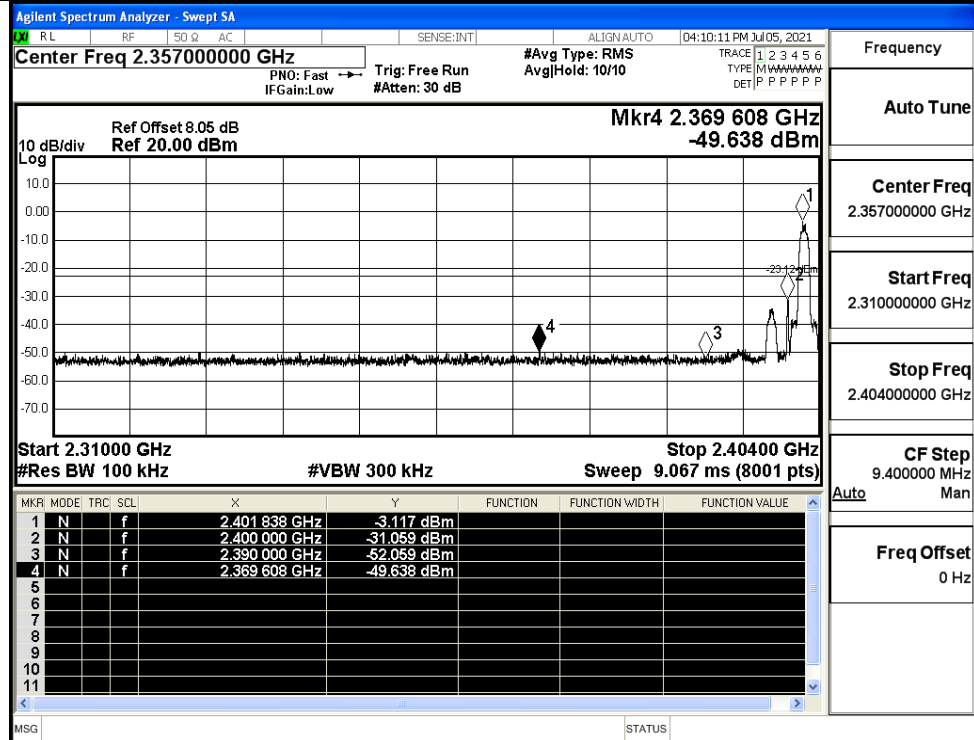


GFSK/HCH/Hop





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



Frequency

Auto Tune

Center Freq
2.357000000 GHz

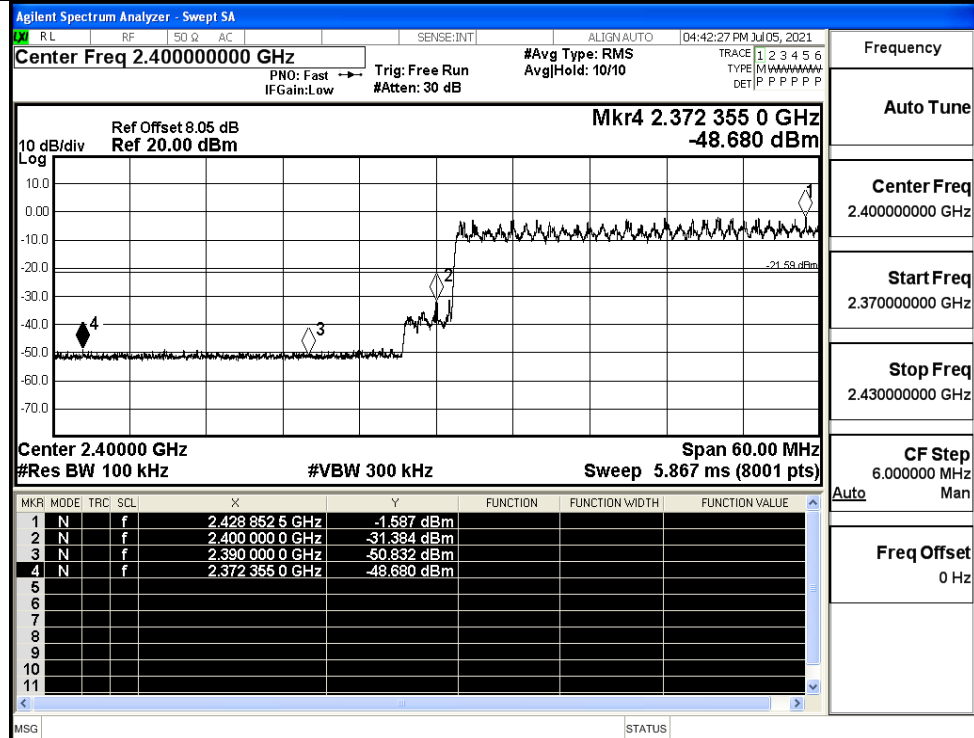
Start Freq
2.310000000 GHz

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

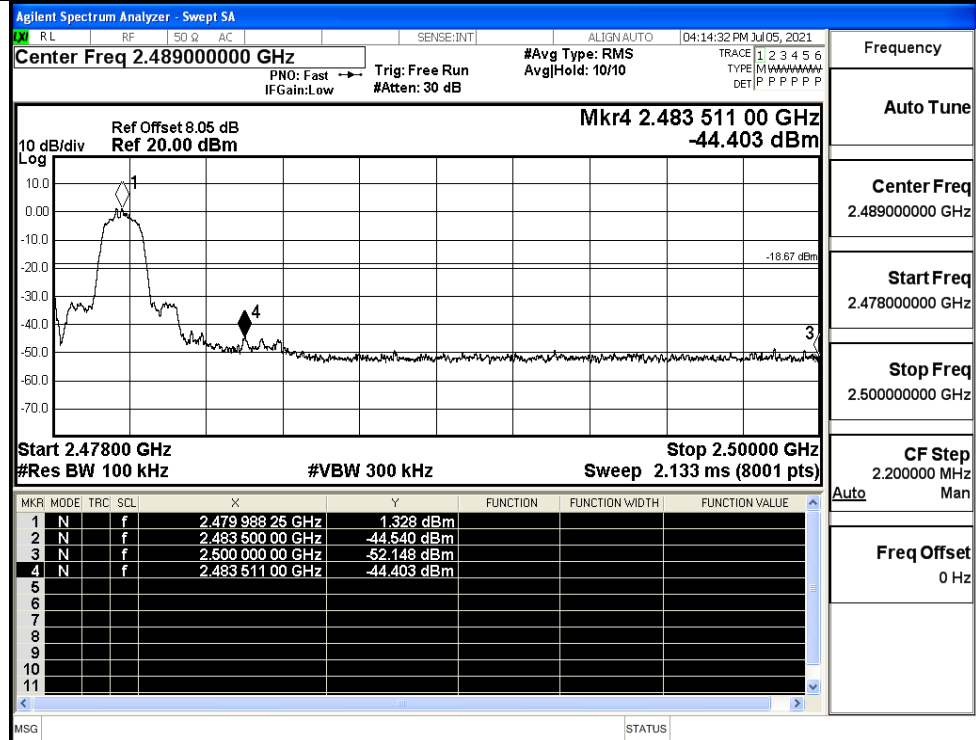
Stop Freq
2.430000000 GHz

CF Step
6.000000 MHz
Auto Man

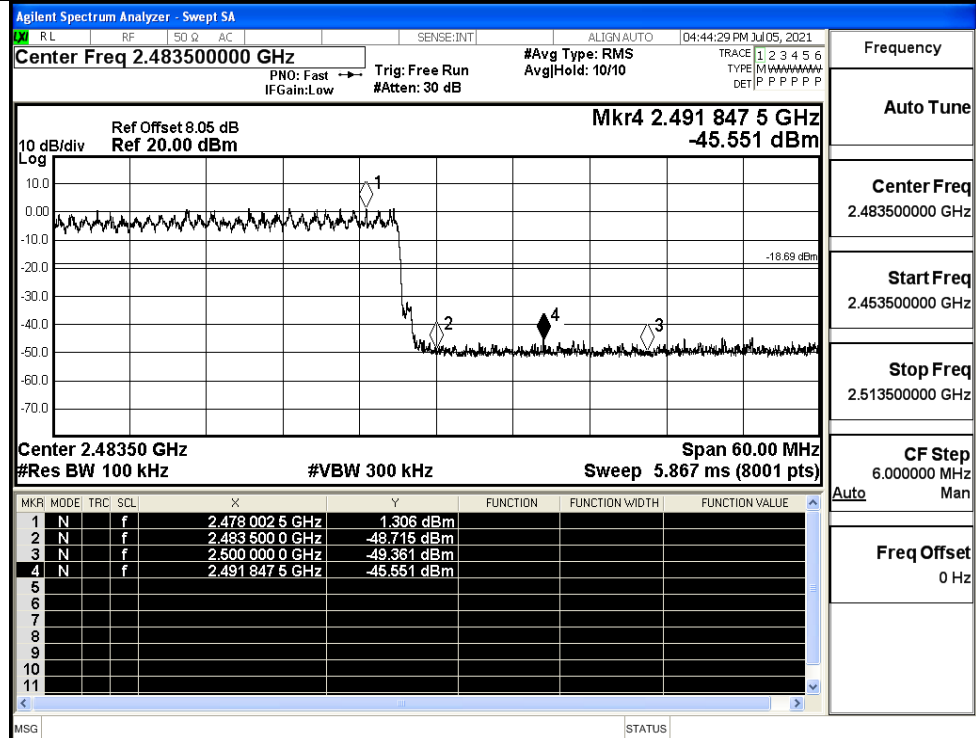
Freq Offset
0 Hz



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

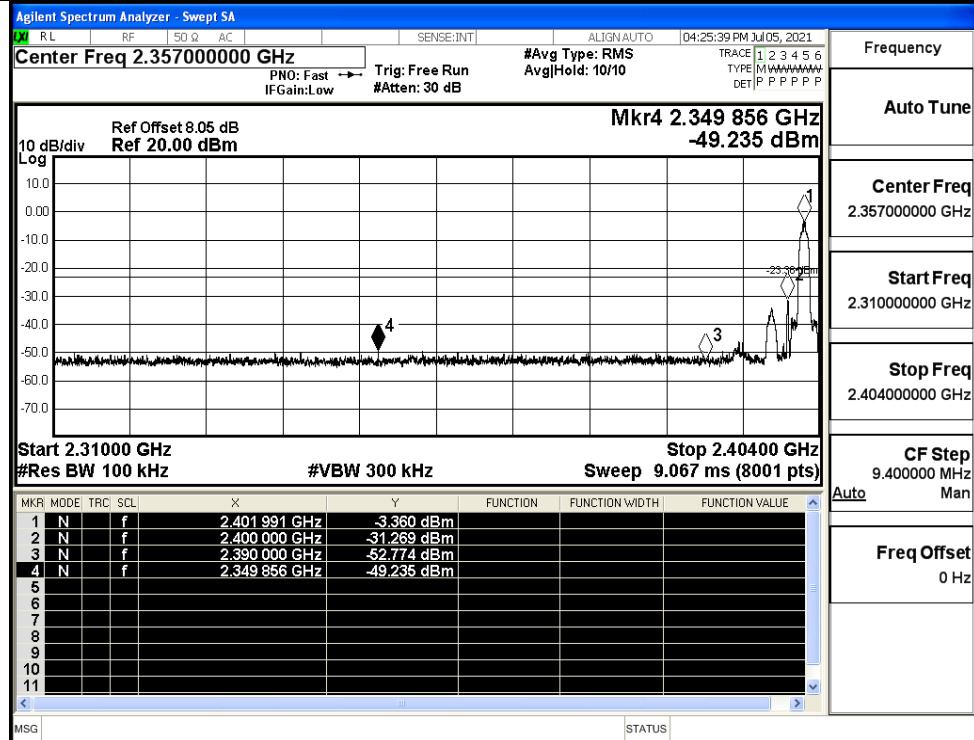


$\pi/4$ DQPSK/HCH/Hop





8DPSK/LCH/No Hop

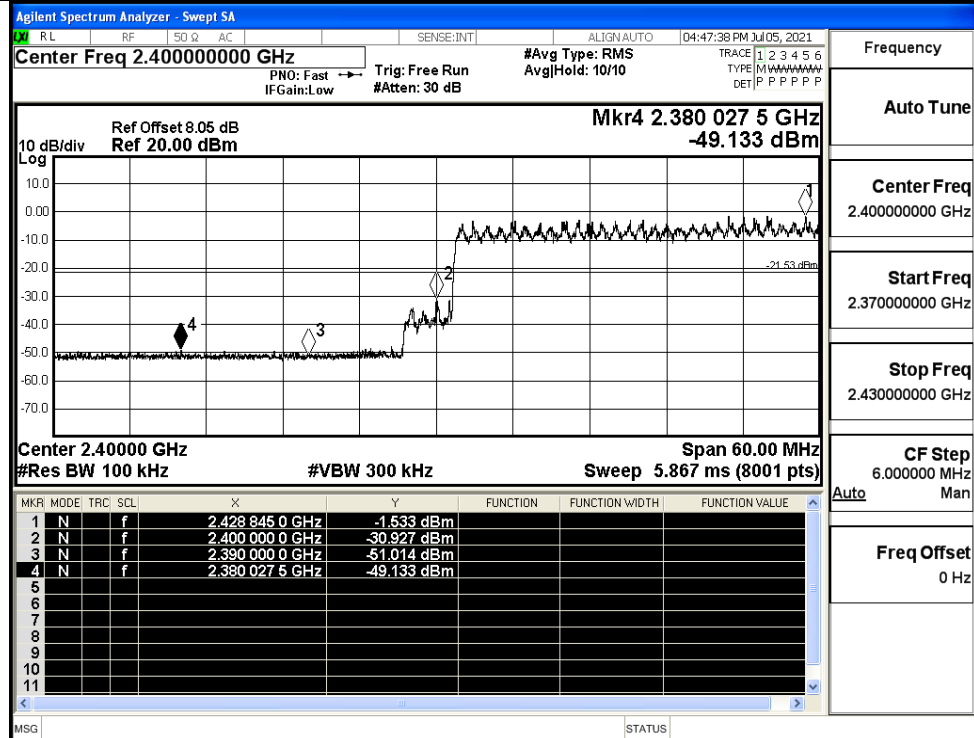


Frequency

Auto Tune

Center Freq
2.357000000 GHzStart Freq
2.310000000 GHzStop Freq
2.404000000 GHzCF Step
9.400000 MHz
Auto ManFreq Offset
0 Hz

8DPSK/LCH/Hop



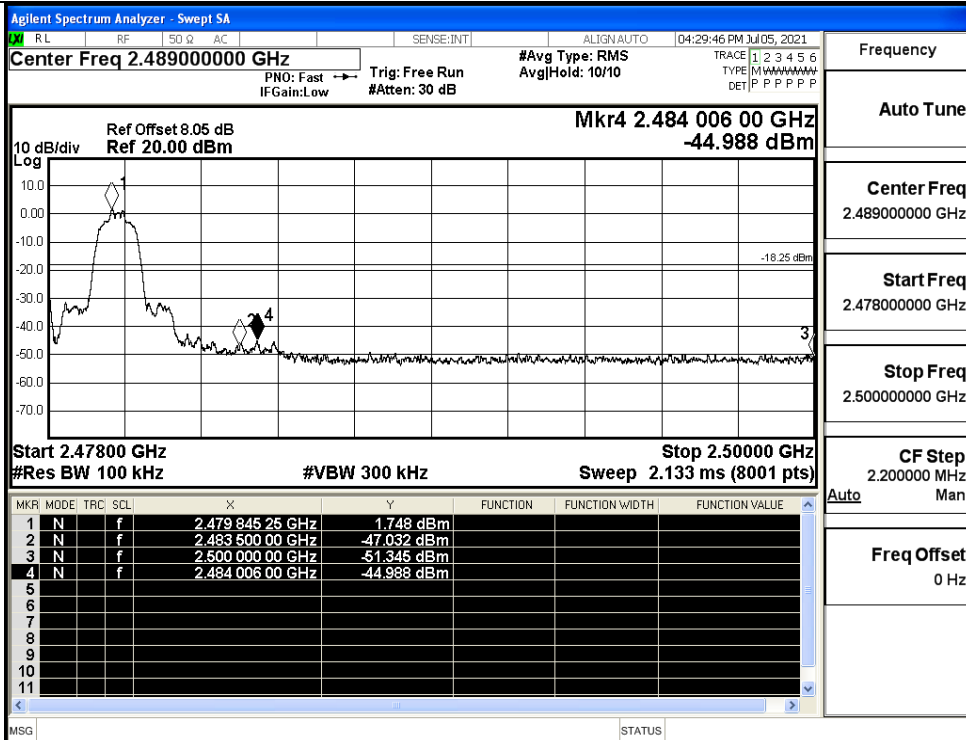
Frequency

Auto Tune

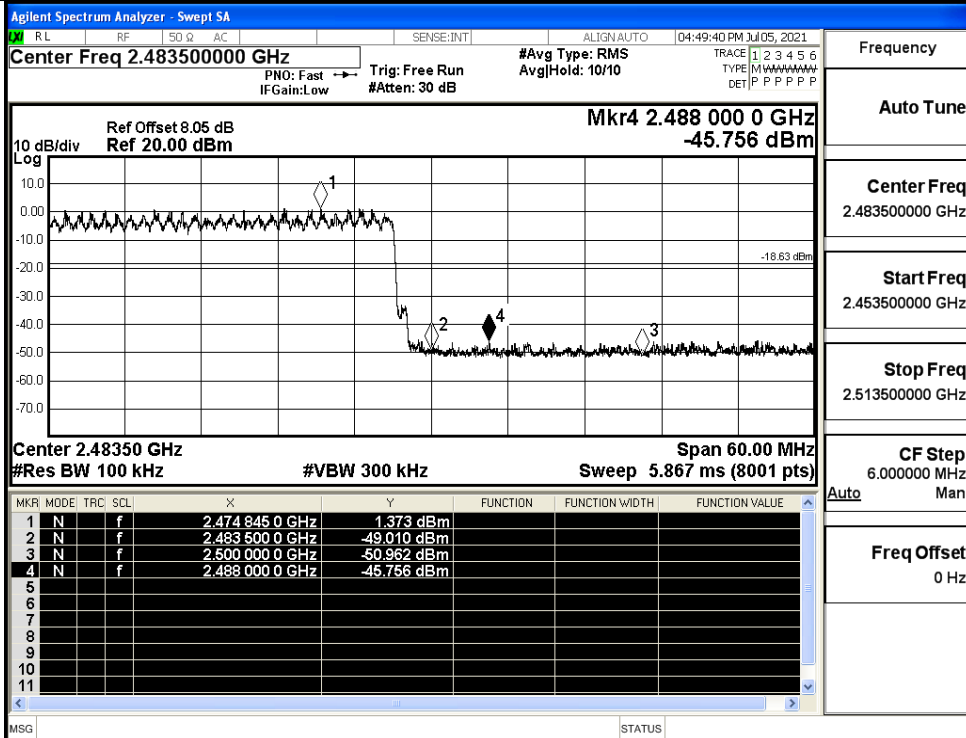
Center Freq
2.400000000 GHzStart Freq
2.370000000 GHzStop Freq
2.430000000 GHzCF Step
6.000000 MHz
Auto ManFreq Offset
0 Hz



8DPSK/HCH/No Hop



8DPSK/HCH/Hop



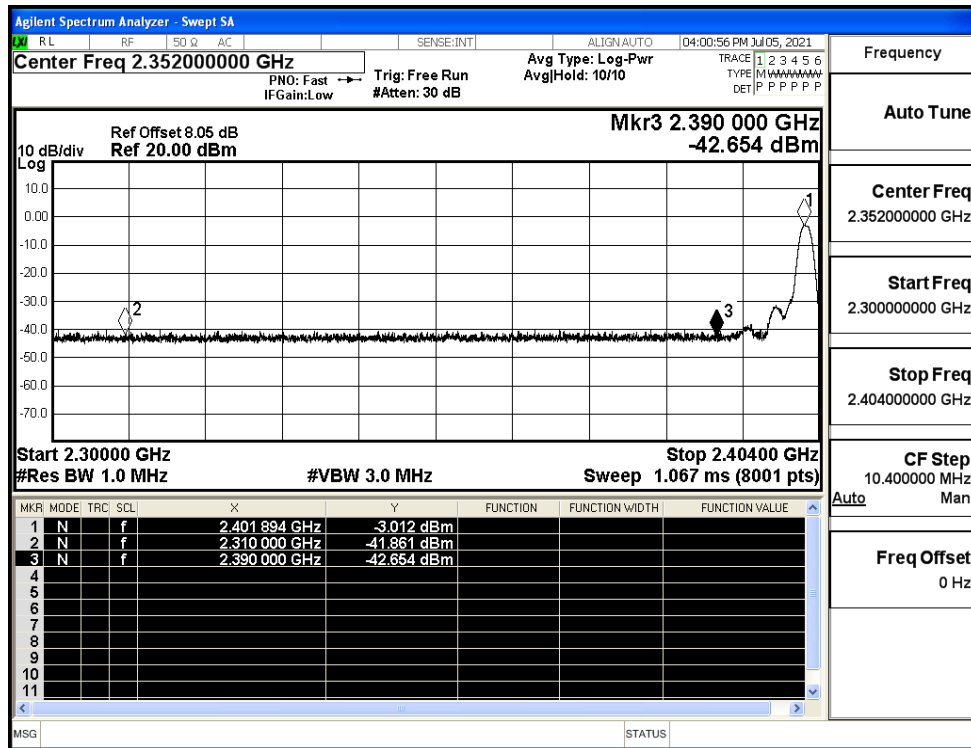


A.8 Restrict-band band-edge measurements

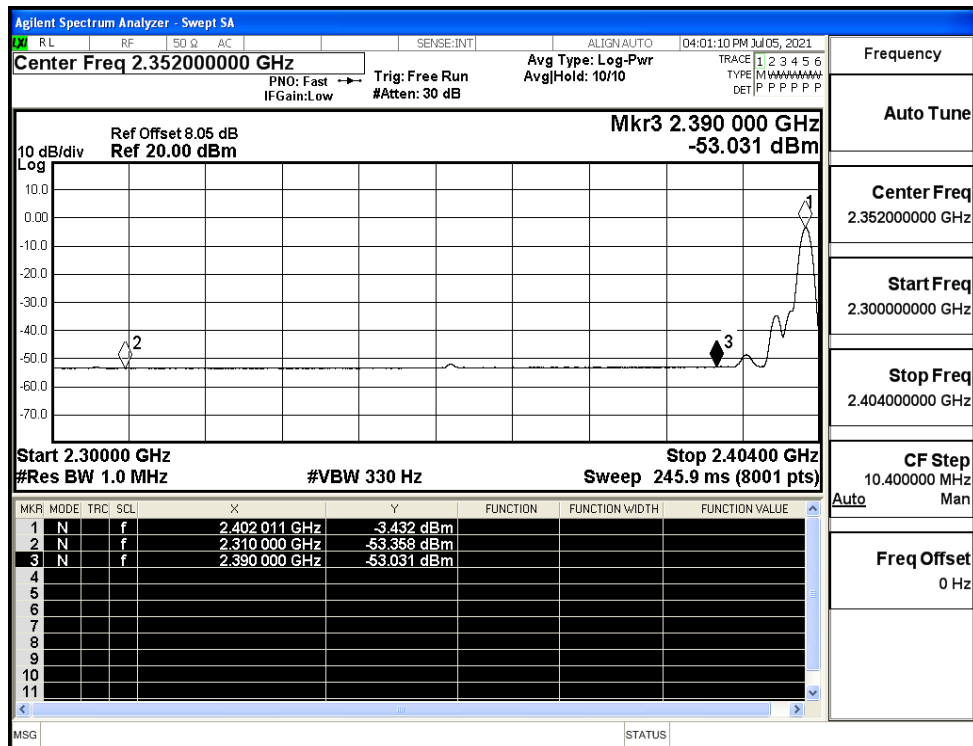
Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-41.86	2.0	0	55.37	PEAK	74	PASS
	Off	2310.0	-53.36	2.0	0	43.87	AV	54	PASS
	Off	2390.0	-42.65	2.0	0	54.58	PEAK	74	PASS
	Off	2390.0	-53.03	2.0	0	44.20	AV	54	PASS
	Off	2483.5	-37.63	2.0	0	59.60	PEAK	74	PASS
	Off	2483.5	-47.25	2.0	0	49.98	AV	54	PASS
	Off	2500.0	-42.98	2.0	0	54.25	PEAK	74	PASS
	Off	2500.0	-52.33	2.0	0	44.90	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-42.10	2.0	0	55.13	PEAK	74	PASS
	Off	2310.0	-53.37	2.0	0	43.86	AV	54	PASS
	Off	2390.0	-43.08	2.0	0	54.15	PEAK	74	PASS
	Off	2390.0	-52.96	2.0	0	44.27	AV	54	PASS
	Off	2483.5	-40.53	2.0	0	56.70	PEAK	74	PASS
	Off	2483.5	-48.72	2.0	0	48.51	AV	54	PASS
	Off	2500.0	-42.83	2.0	0	54.40	PEAK	74	PASS
	Off	2500.0	-52.35	2.0	0	44.88	AV	54	PASS
8DPSK	Off	2310.0	-42.97	2.0	0	54.26	PEAK	74	PASS
	Off	2310.0	-53.39	2.0	0	43.84	AV	54	PASS
	Off	2390.0	-42.19	2.0	0	55.04	PEAK	74	PASS
	Off	2390.0	-53.09	2.0	0	44.14	AV	54	PASS
	Off	2483.5	-38.35	2.0	0	58.88	PEAK	74	PASS
	Off	2483.5	-48.74	2.0	0	48.49	AV	54	PASS
	Off	2500.0	-41.39	2.0	0	55.84	PEAK	74	PASS
	Off	2500.0	-52.32	2.0	0	44.91	AV	54	PASS



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

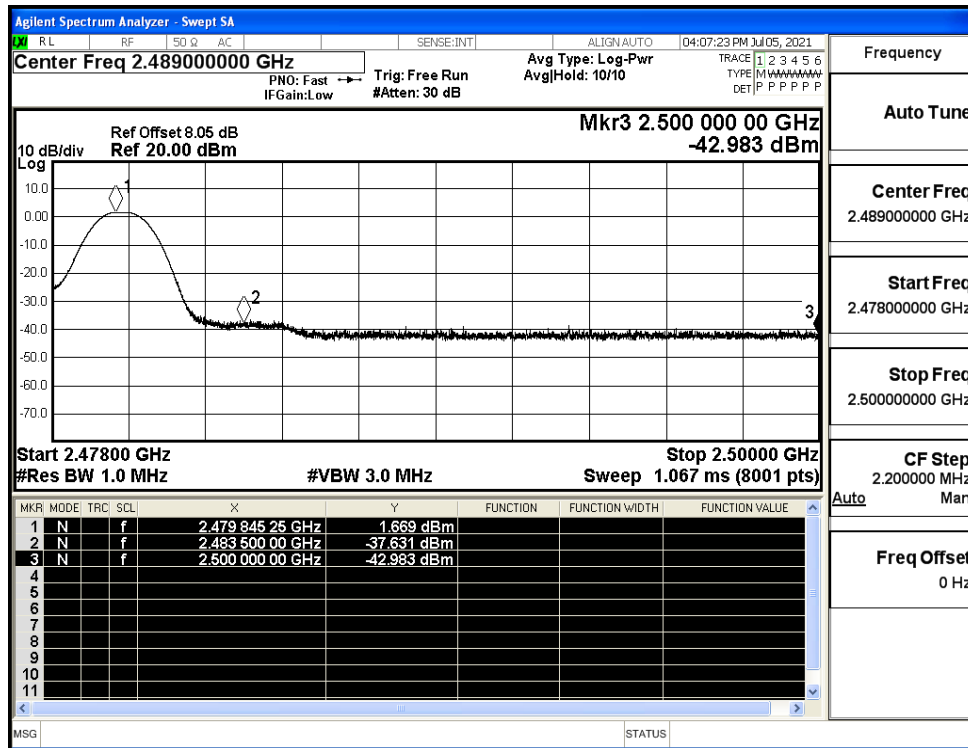


Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

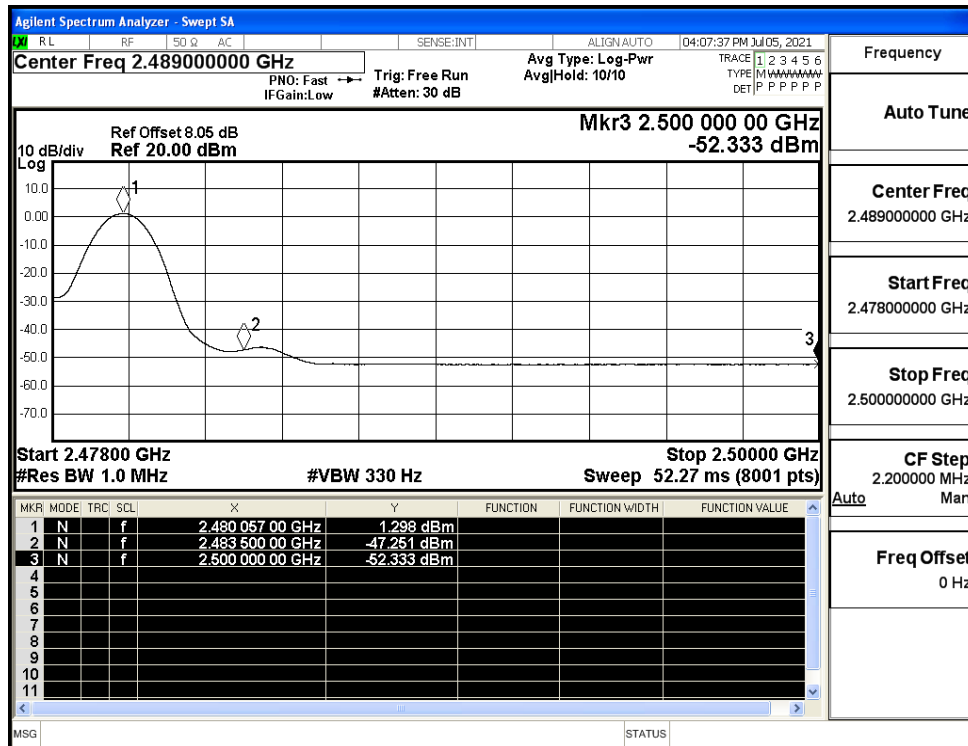


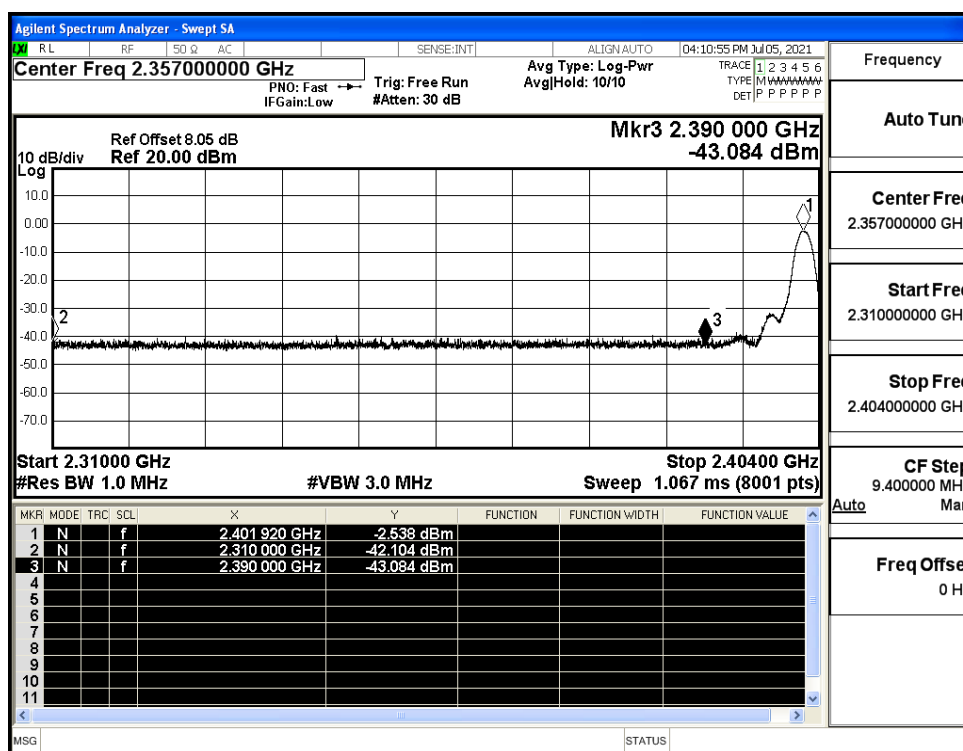
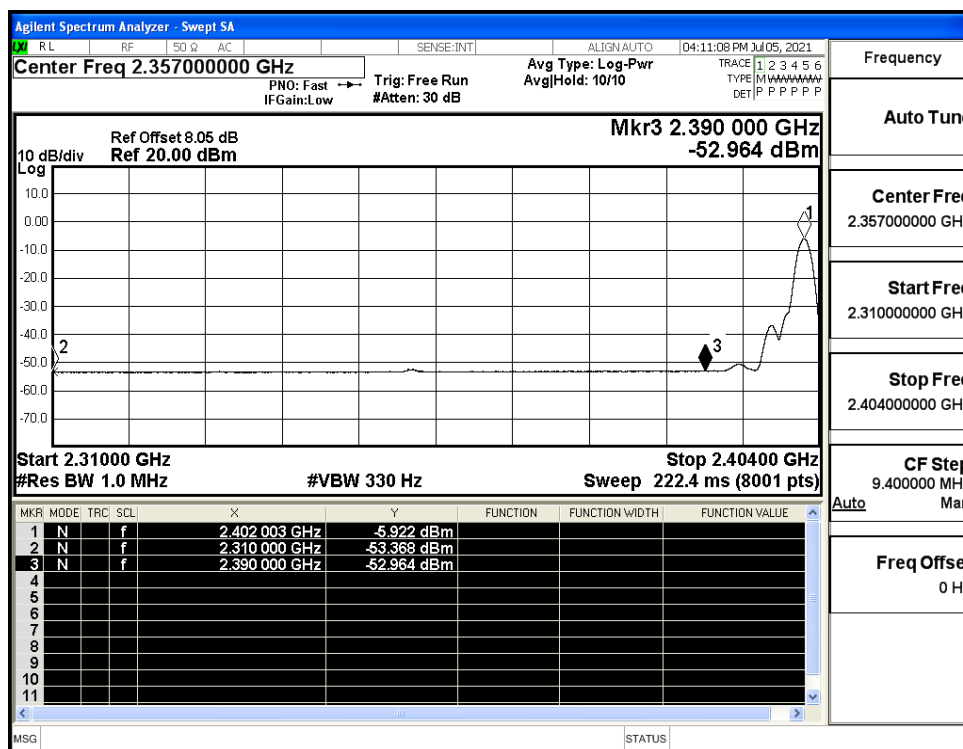


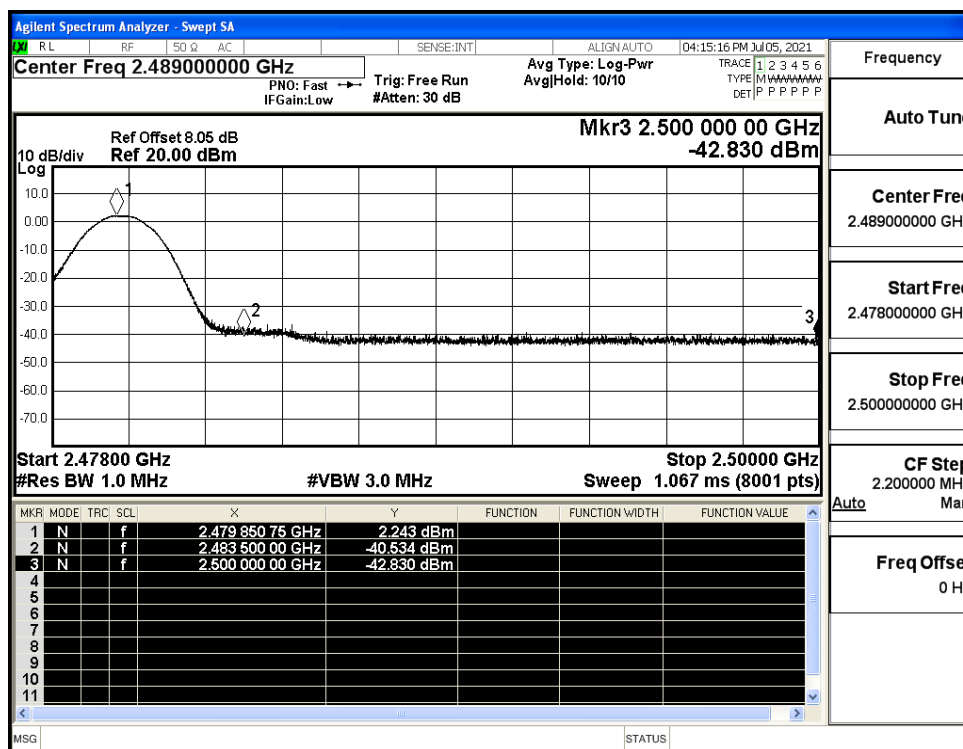
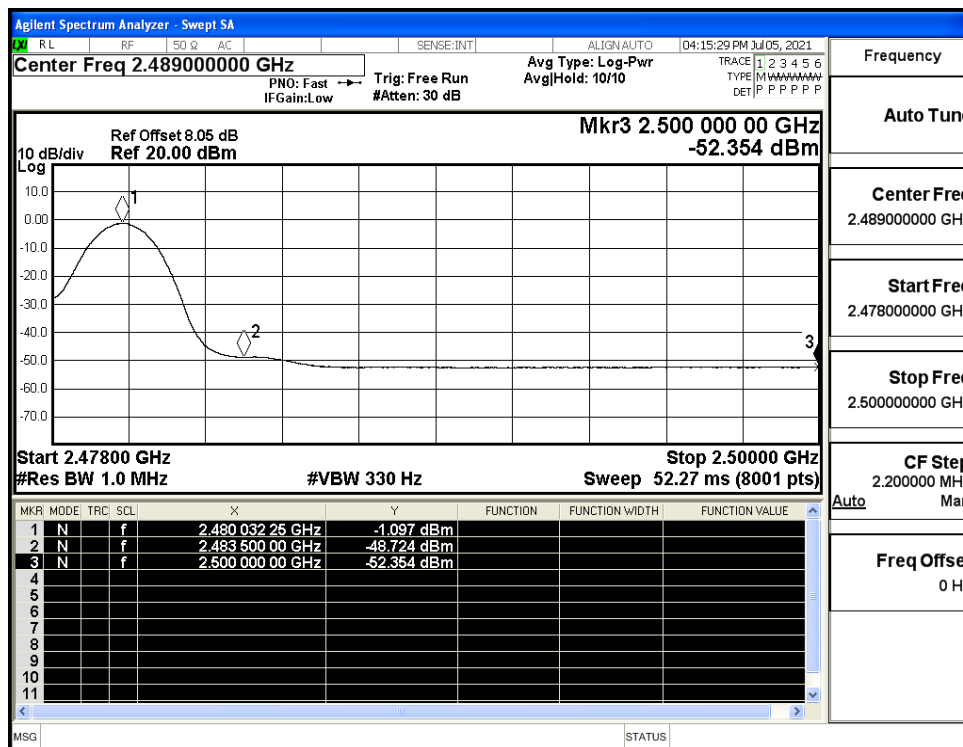
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



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

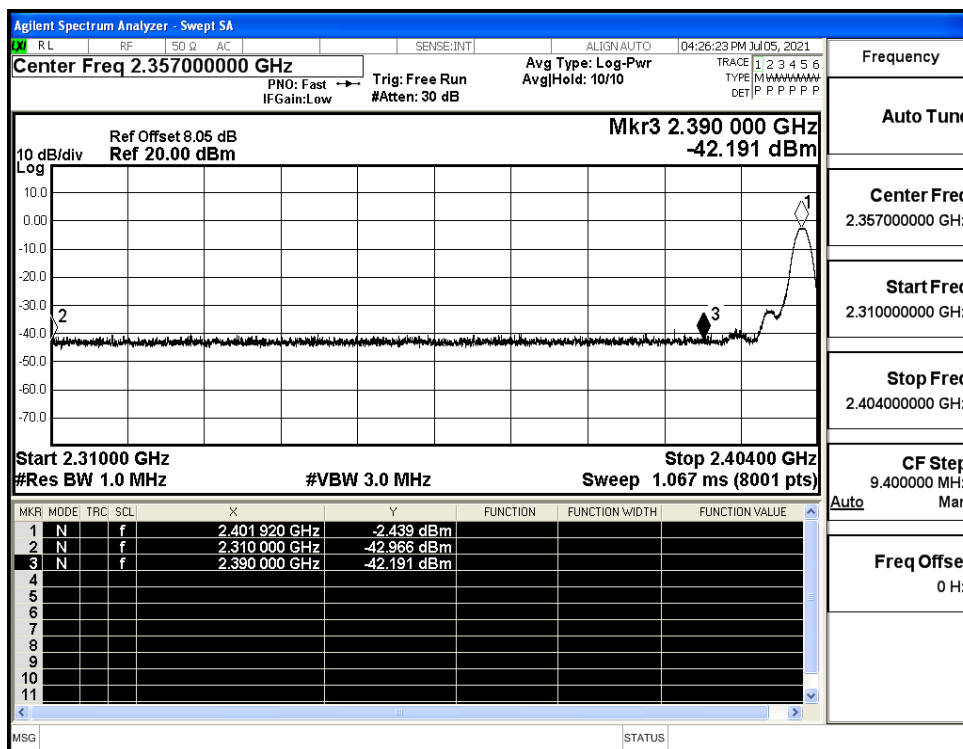


Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

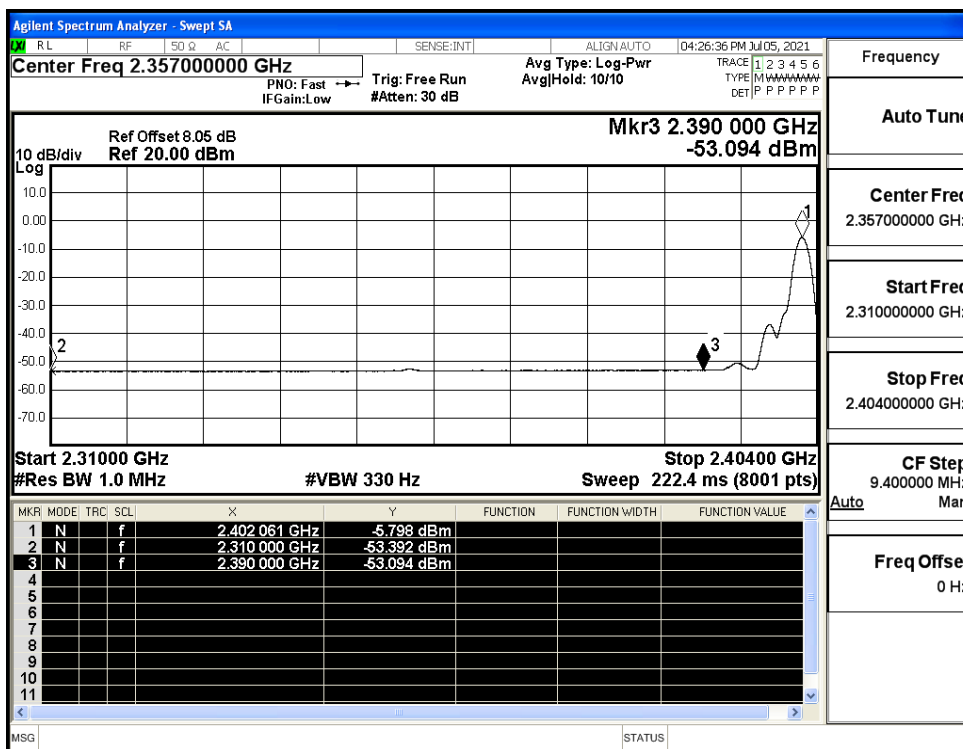
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (High Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (High Channel)



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

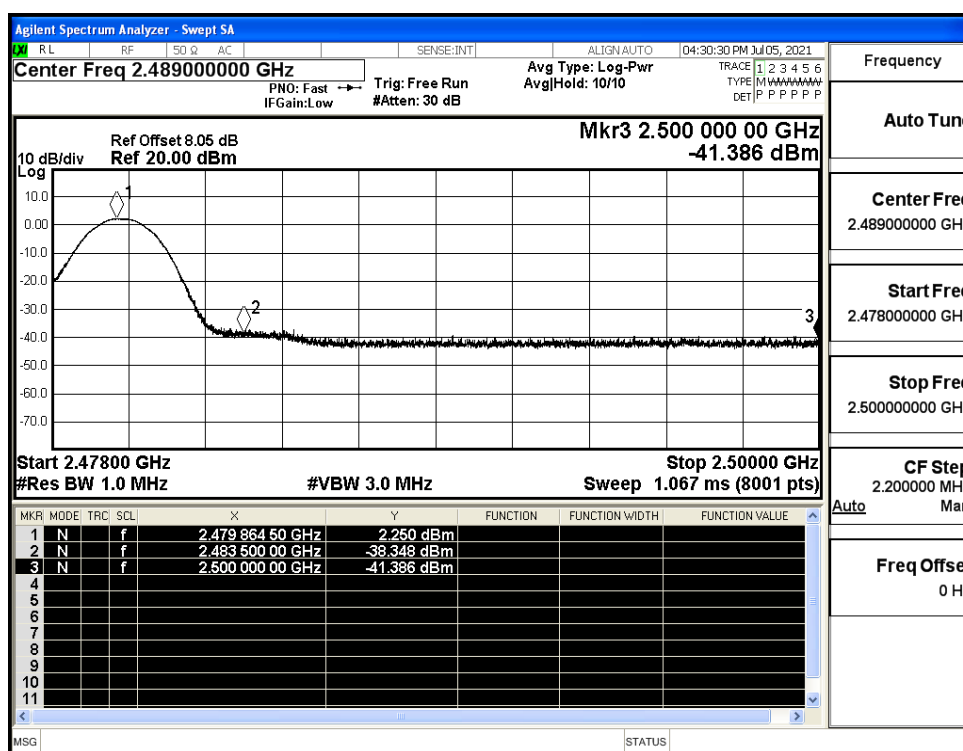


Restrict-band band-edge measurements_Hopping Off_8DPSK_Average (Low Channel)





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



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

