

Appendix A

RF Test Data for BT V4.2(BDR/EDR) (Conducted Measurement)

Product Name: Karaoke soundbar

Trade Mark: 
Test Model: KX100

Environmental Conditions

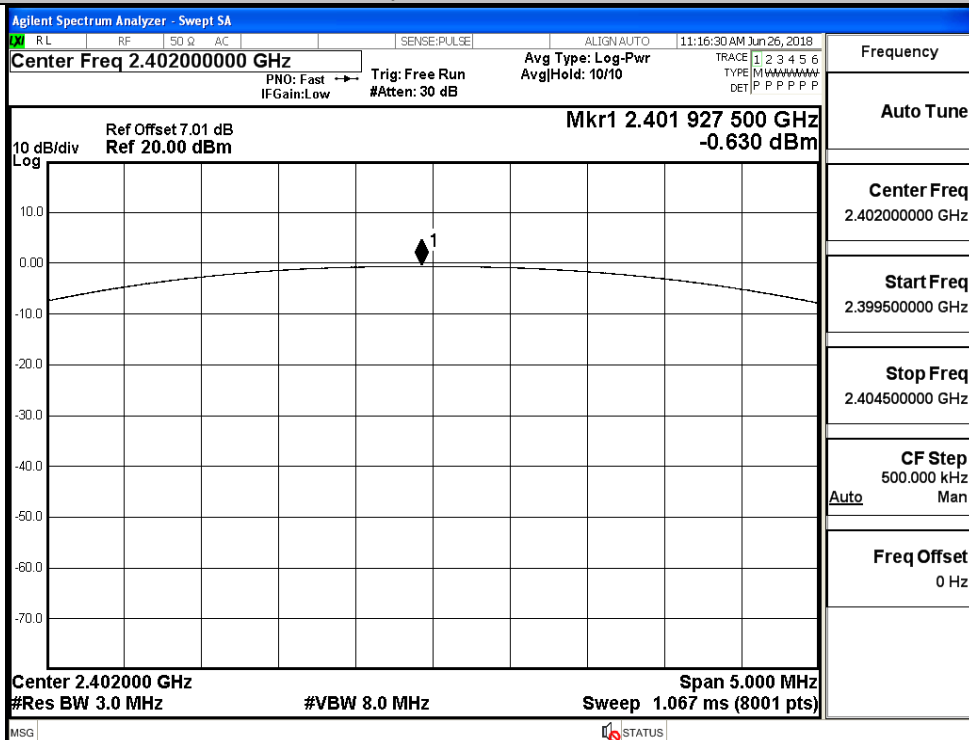
Temperature:	23.8 ° C
Relative Humidity:	53.7%
ATM Pressure:	100.0 kPa
Test Engineer:	Tom Liu
Supervised by:	Jayden Zhuo

A.1 Maximum Conducted Peak Output Power

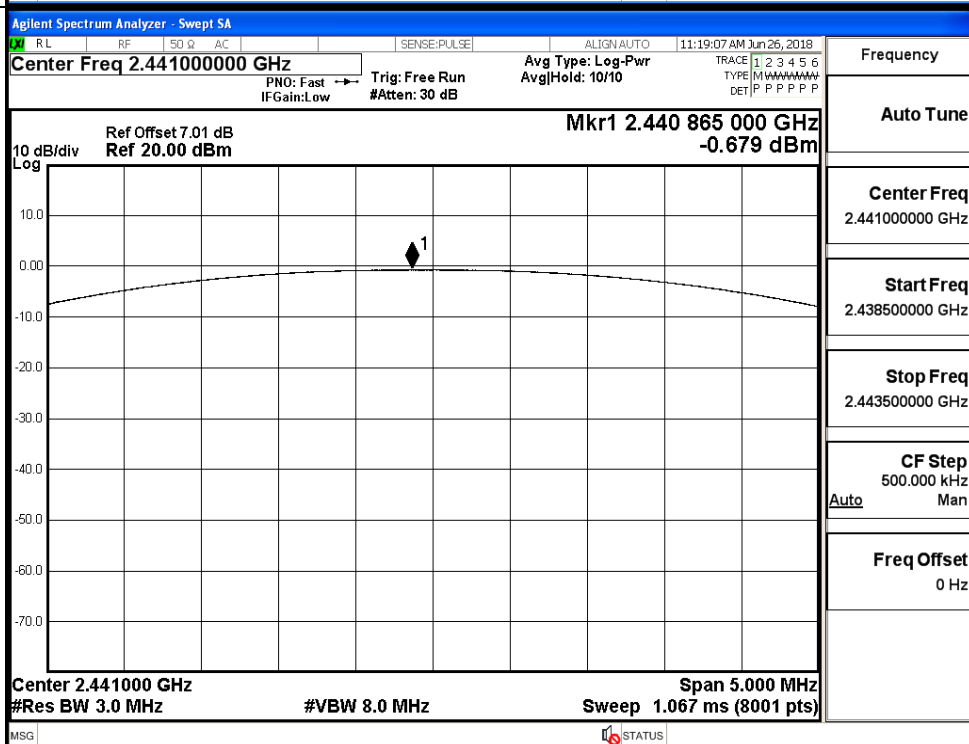
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.630	21	PASS
	MCH	-0.679	21	PASS
	HCH	-0.361	21	PASS
$\pi/4$ DQPSK	LCH	-0.777	21	PASS
	MCH	-1.241	21	PASS
	HCH	-0.941	21	PASS
8DPSK	LCH	-1.002	21	PASS
	MCH	-1.028	21	PASS
	HCH	-0.706	21	PASS

Test Graphs

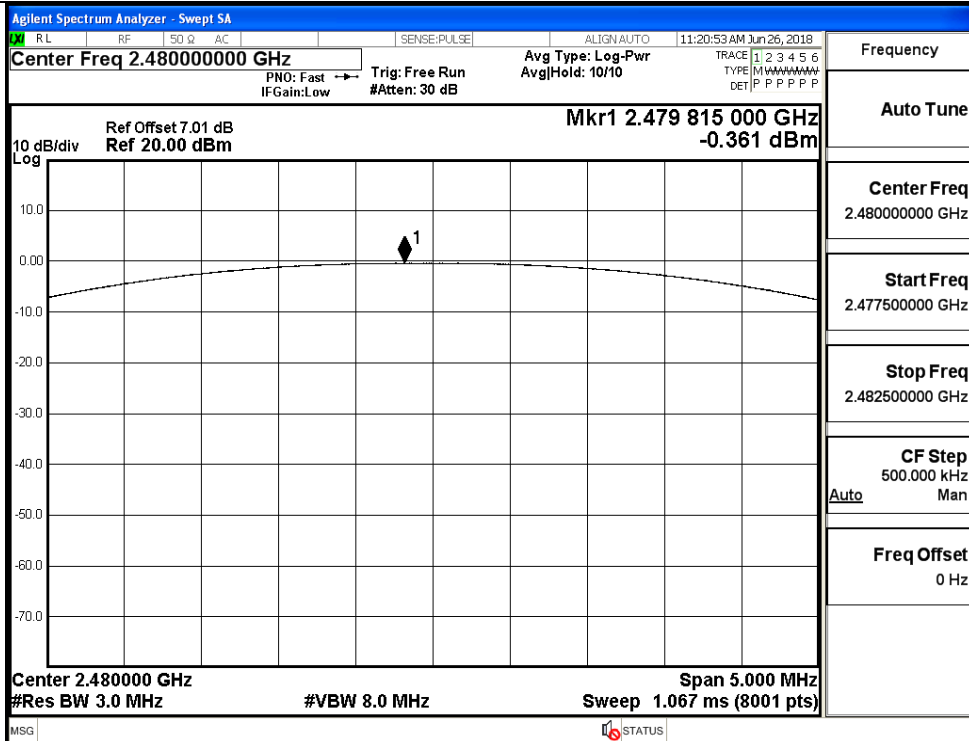
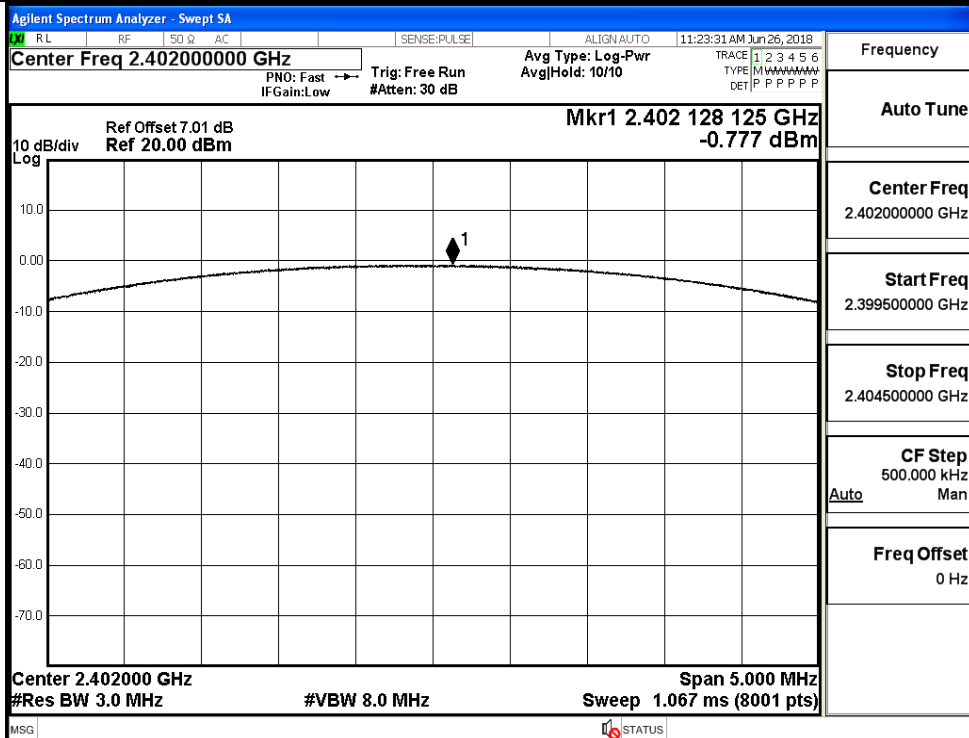
GFSK/LCH

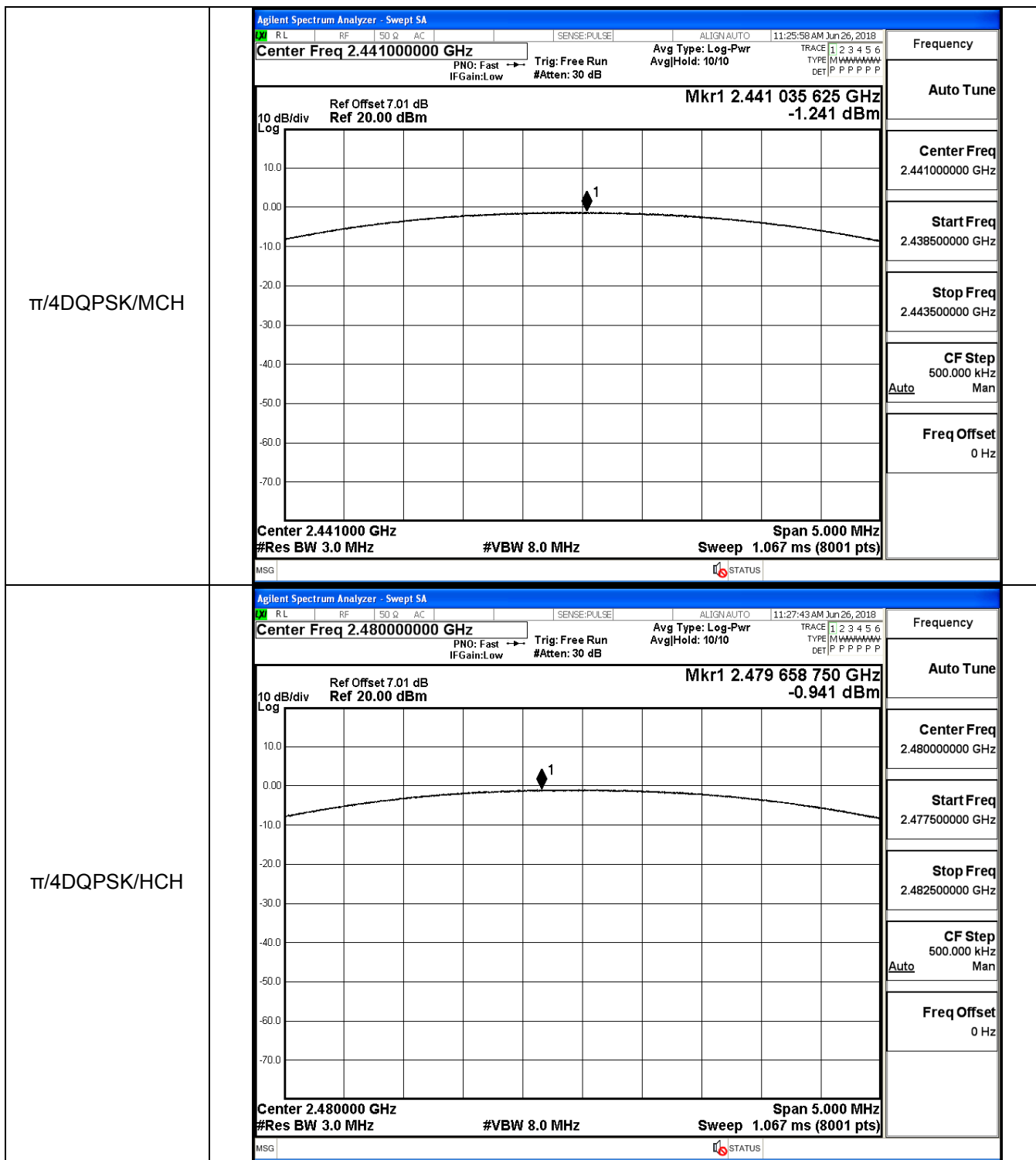


GFSK/MCH

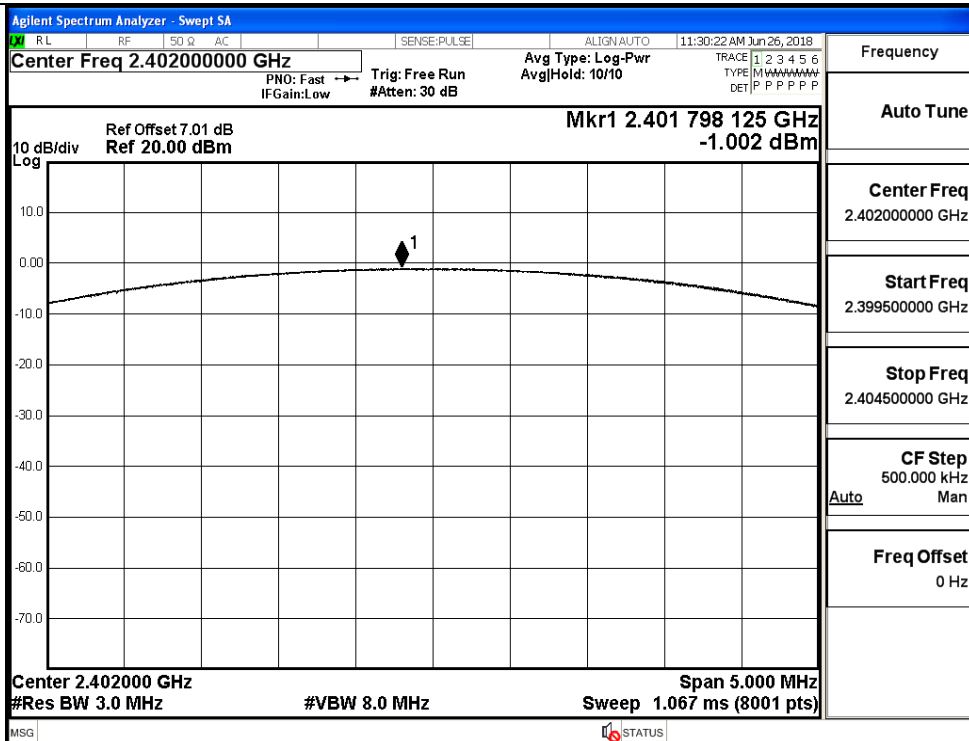


GFSK/HCH

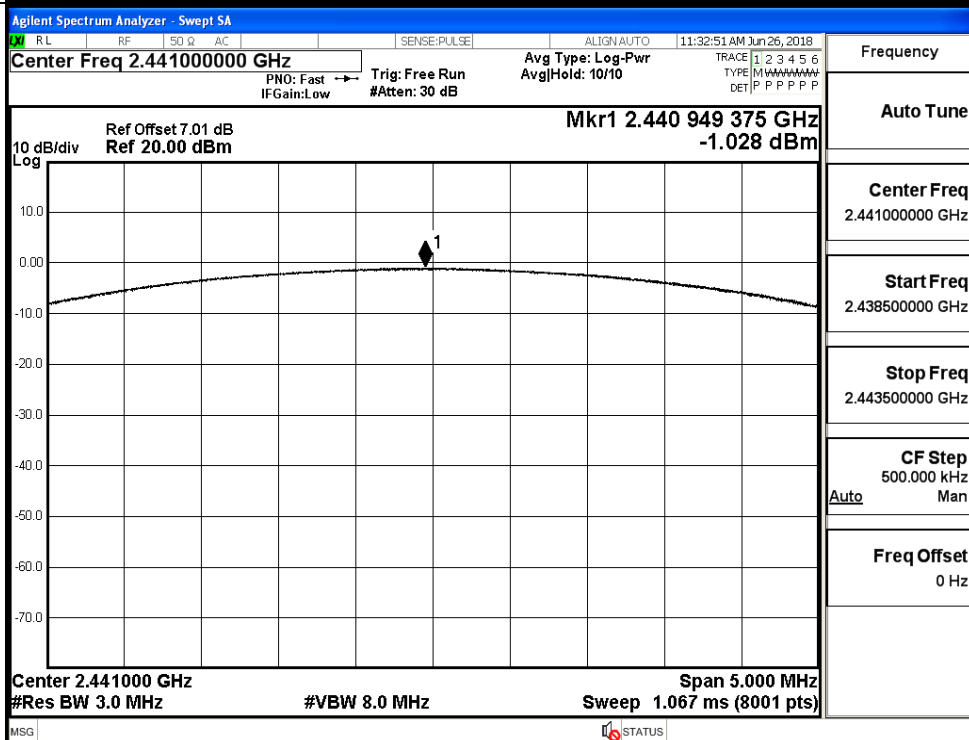
 $\pi/4$ DQPSK/LCH



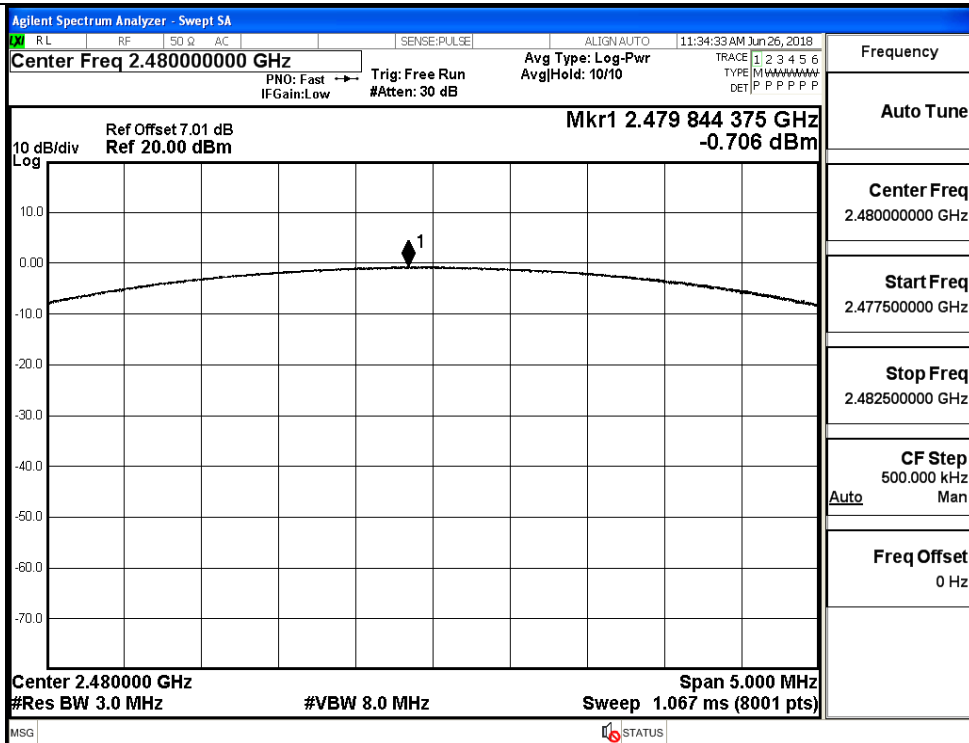
8DPSK/LCH



8DPSK/MCH



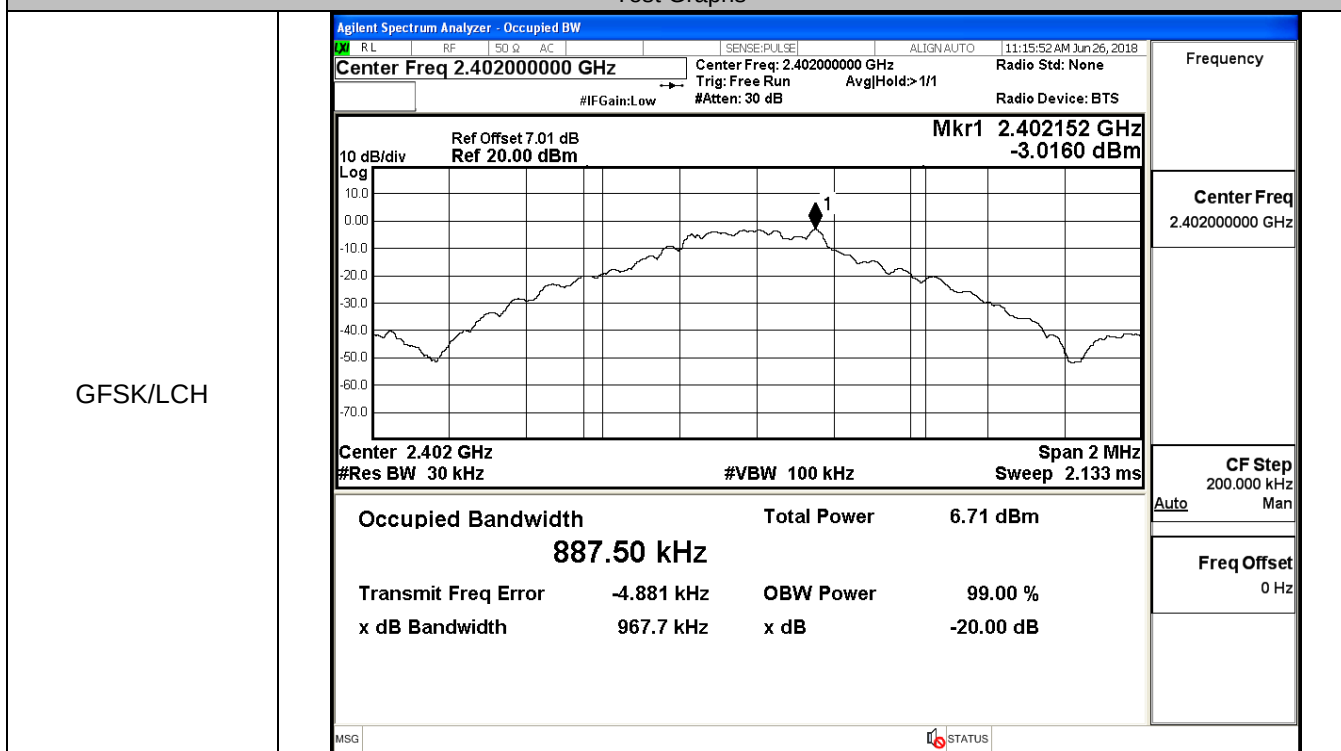
8DPSK/HCH



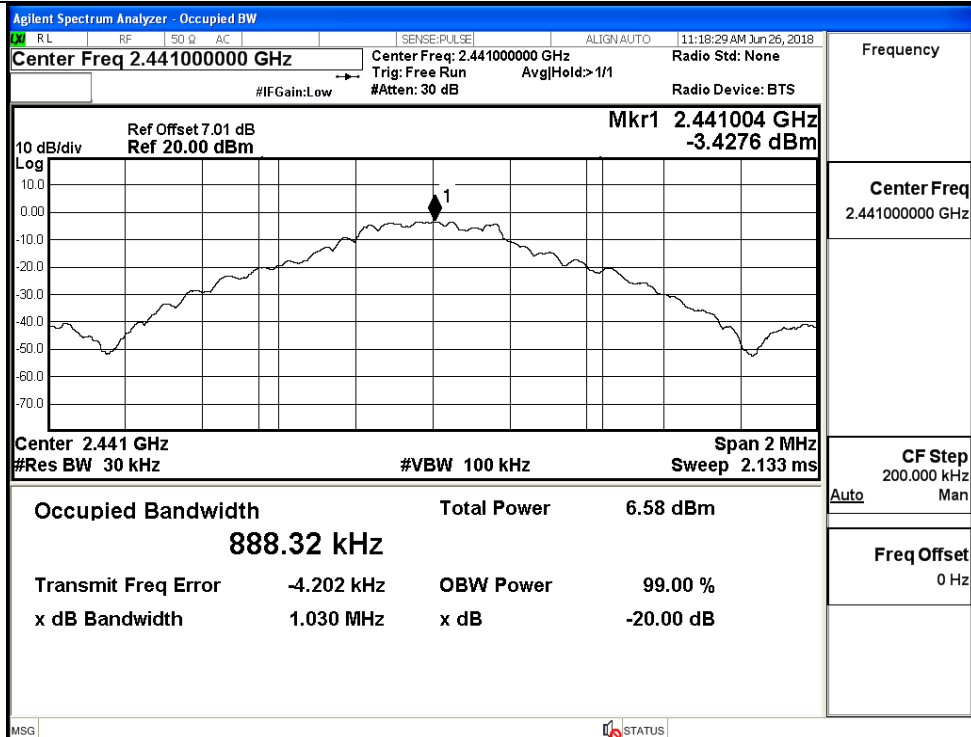
A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9677	Not Specified	PASS
	MCH	1.030	Not Specified	PASS
	HCH	1.026	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.290	Not Specified	PASS
	MCH	1.290	Not Specified	PASS
	HCH	1.286	Not Specified	PASS
8DPSK	LCH	1.290	Not Specified	PASS
	MCH	1.288	Not Specified	PASS
	HCH	1.288	Not Specified	PASS

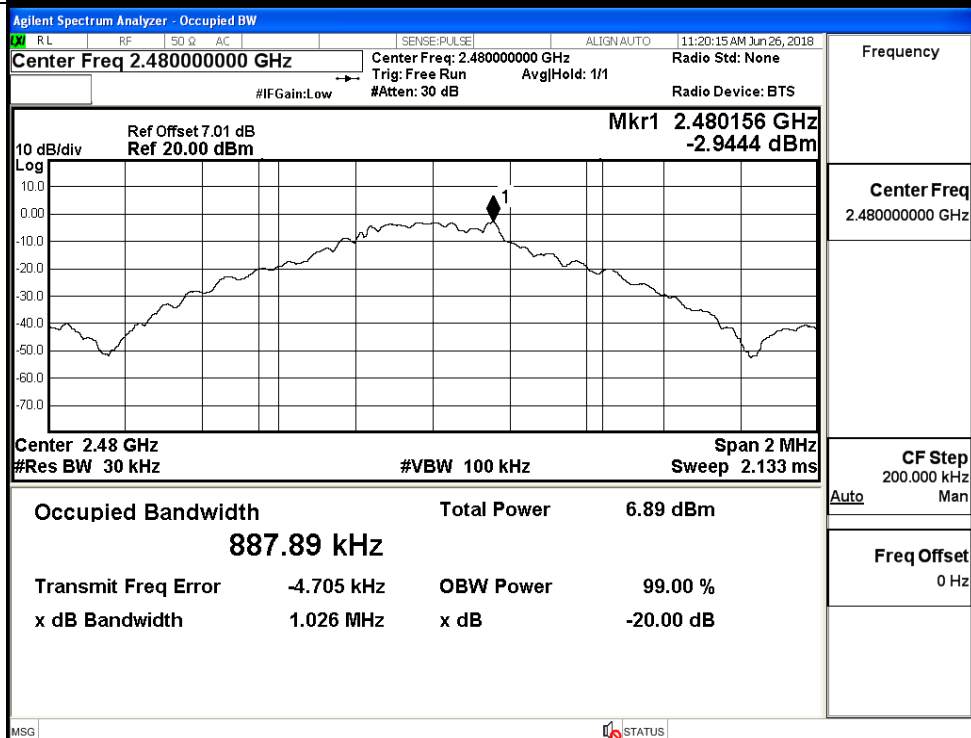
Test Graphs

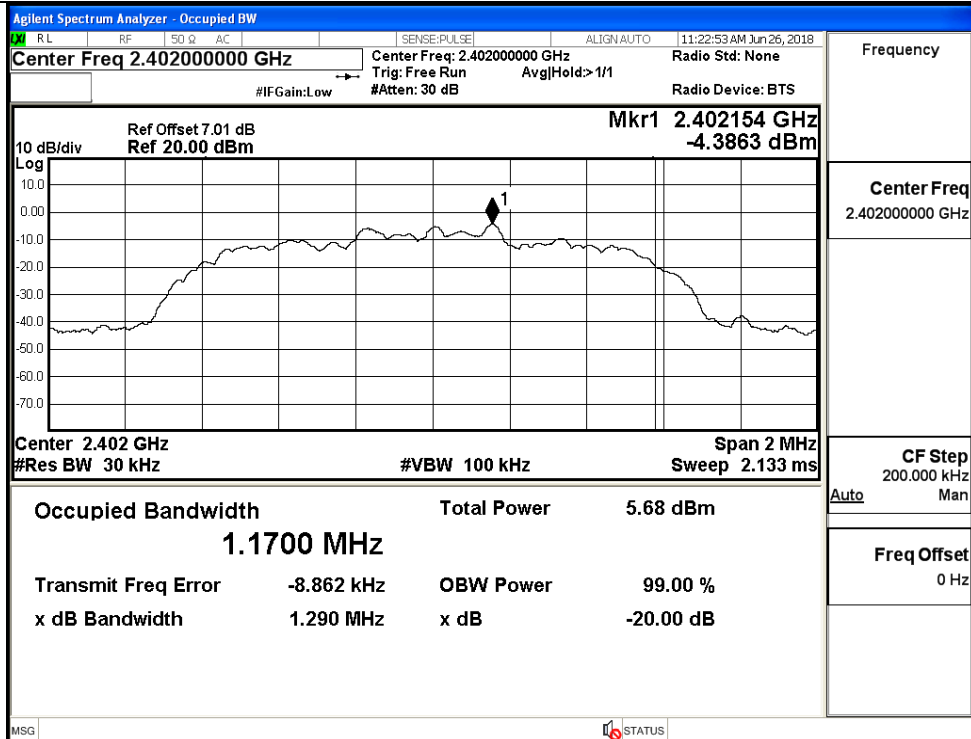
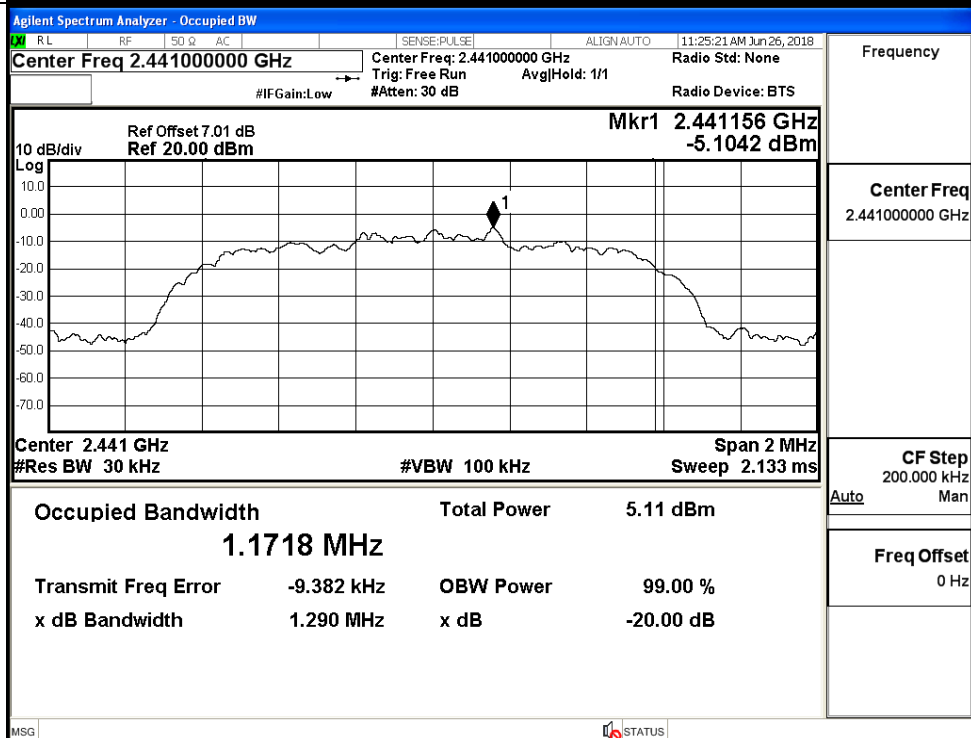


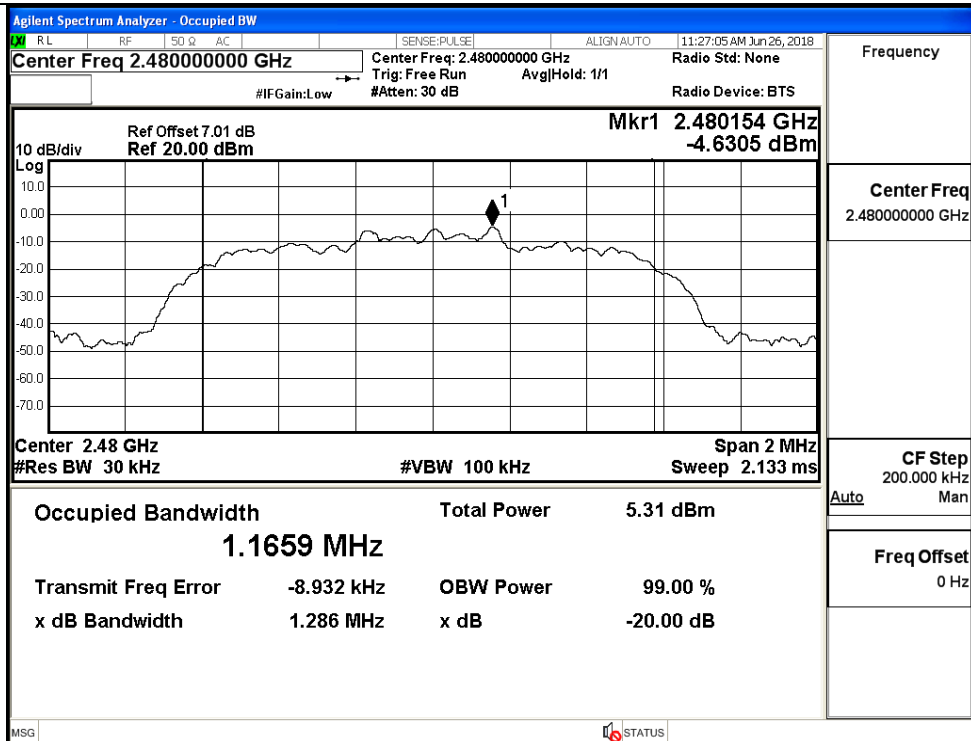
GFSK/MCH



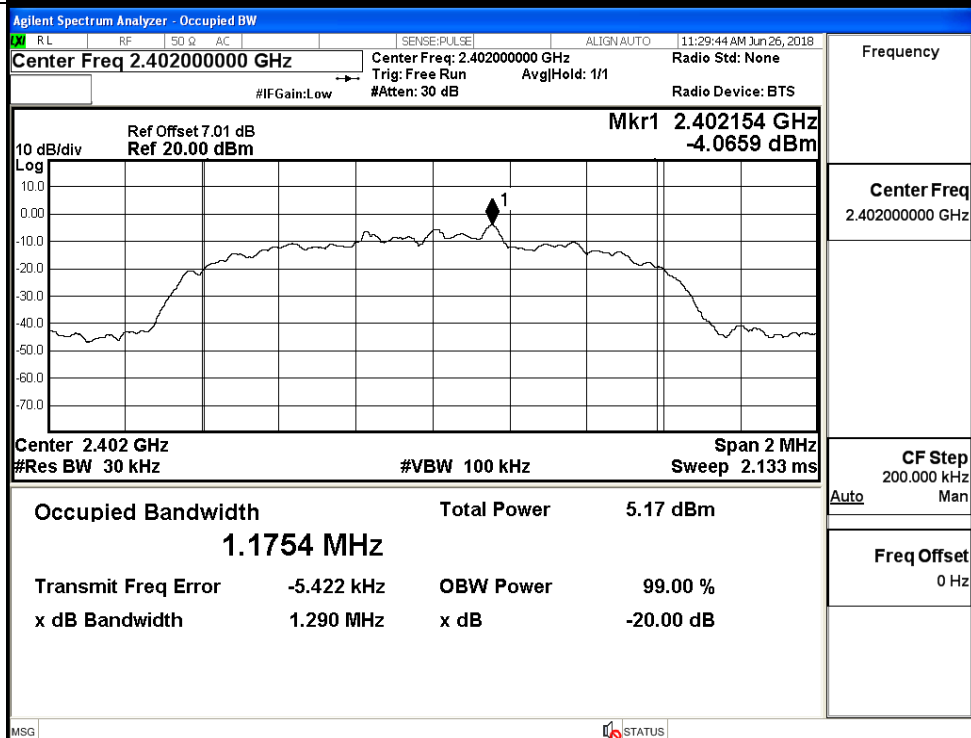
GFSK/HCH



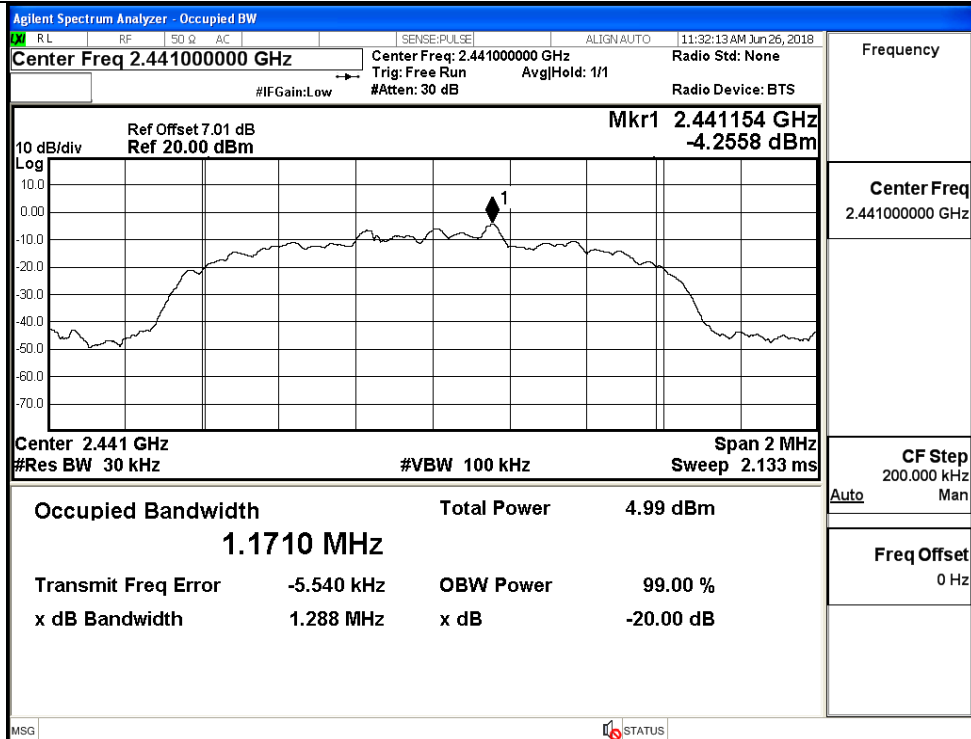
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

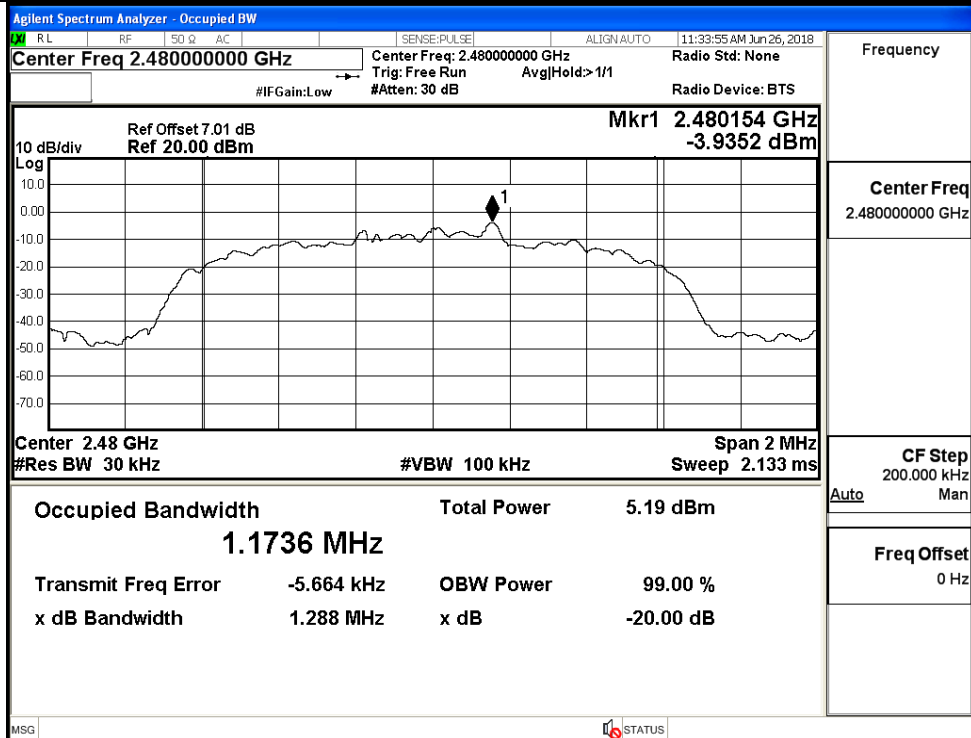
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

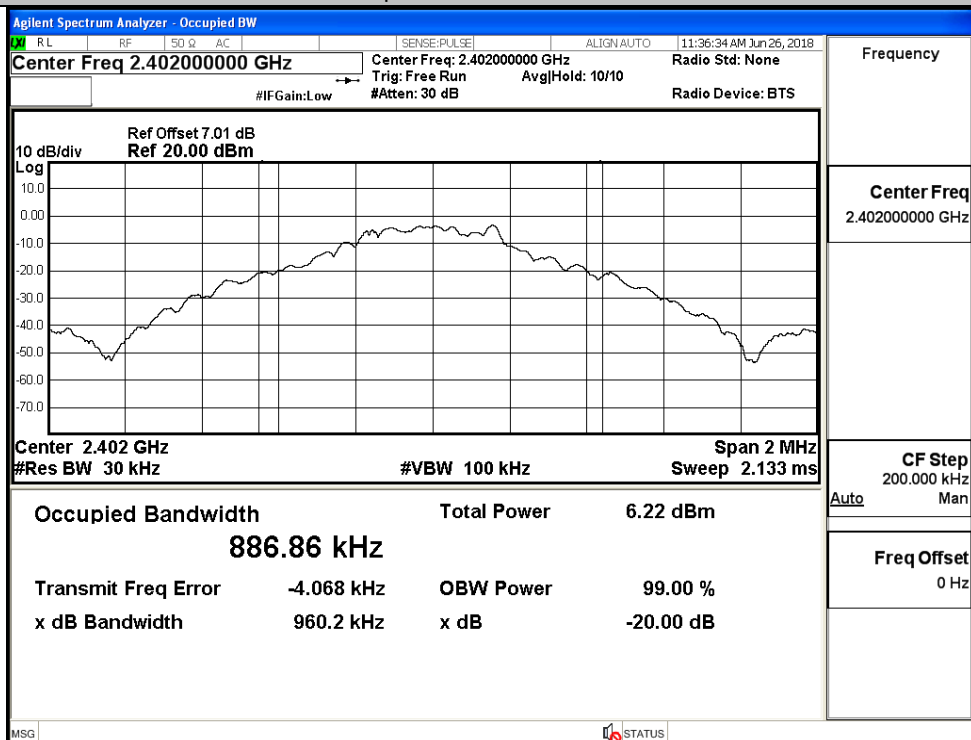


A.3 Occupied Bandwidth

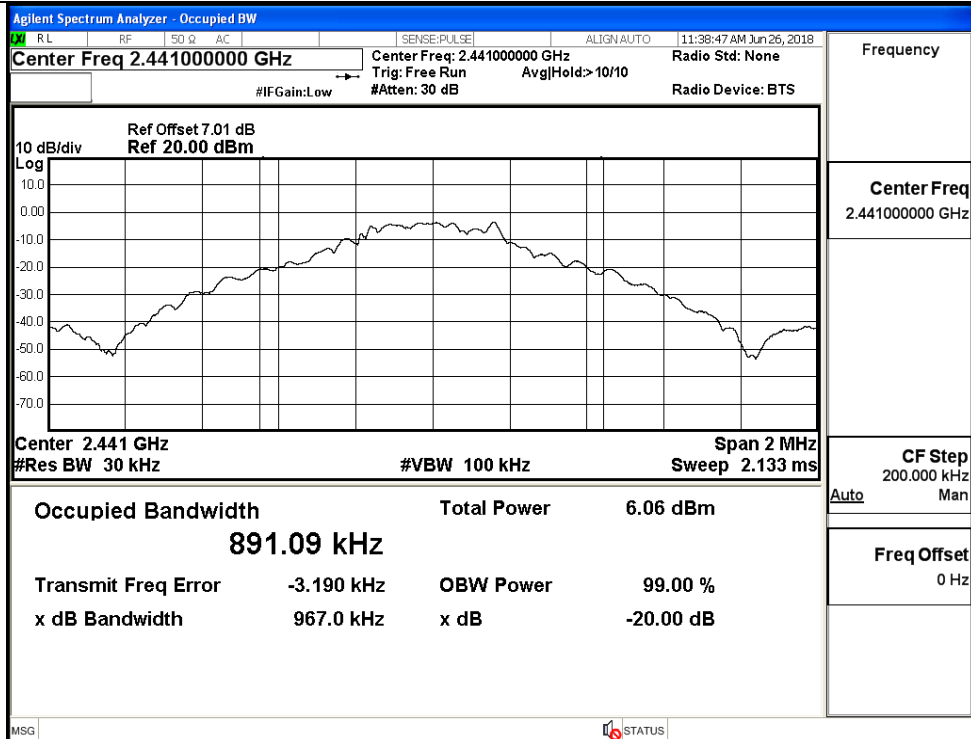
Mode	Channel.	Occupied Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.88686	Not Specified	PASS
	MCH	0.89109	Not Specified	PASS
	HCH	0.89064	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.1710	Not Specified	PASS
	MCH	1.1654	Not Specified	PASS
	HCH	1.1660	Not Specified	PASS
8DPSK	LCH	1.1761	Not Specified	PASS
	MCH	1.1724	Not Specified	PASS
	HCH	1.1727	Not Specified	PASS

Test Graphs

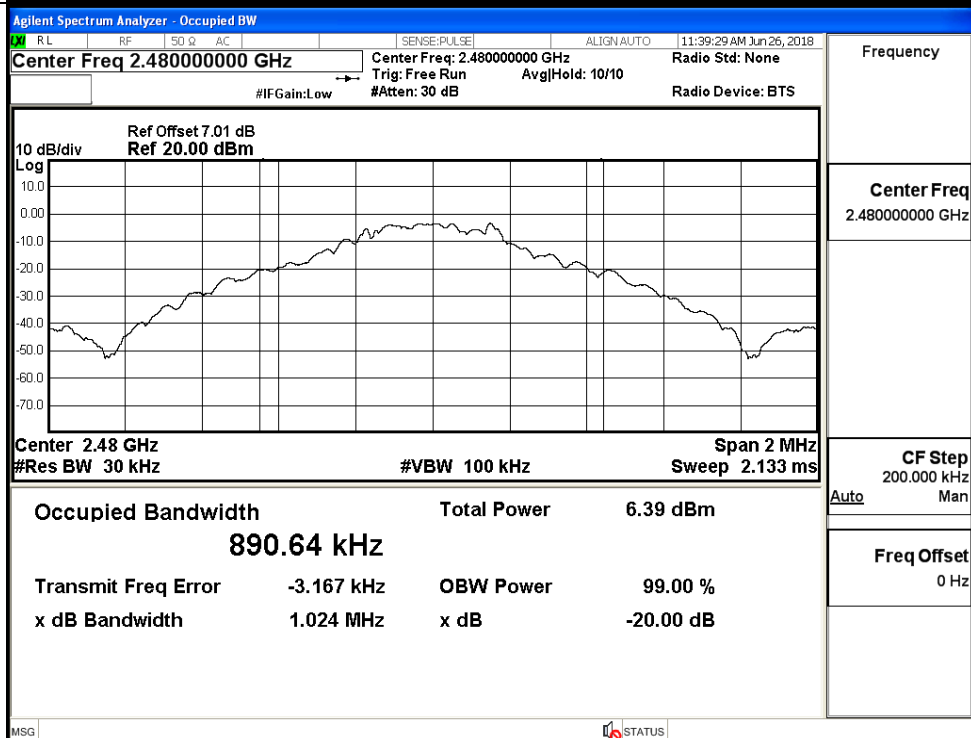
GFSK/LCH

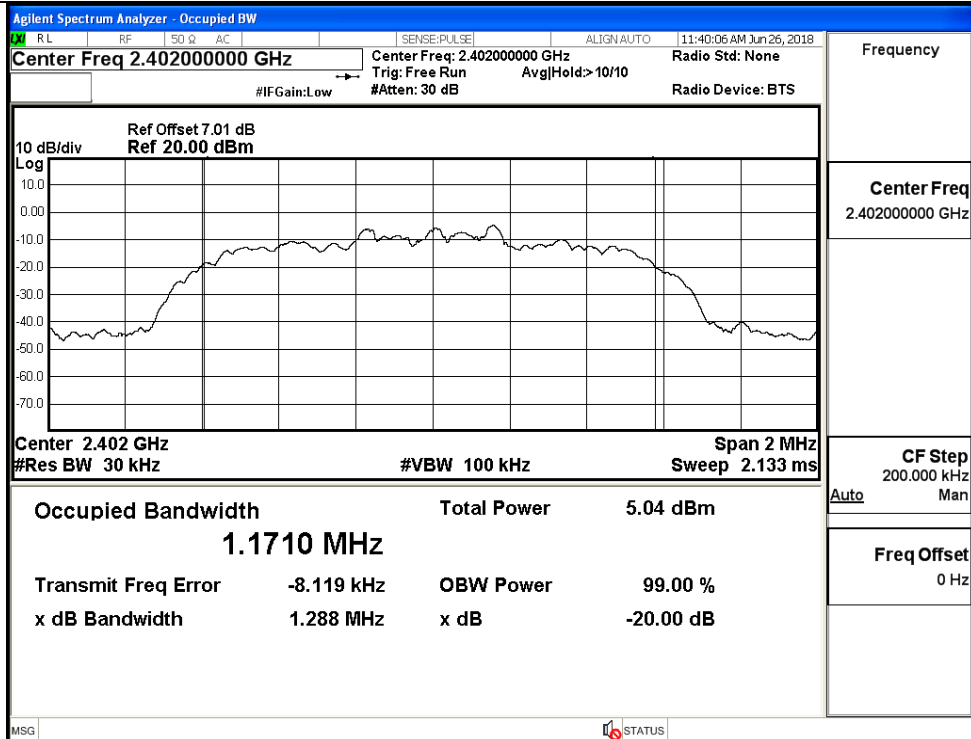


GFSK/MCH



GFSK/HCH

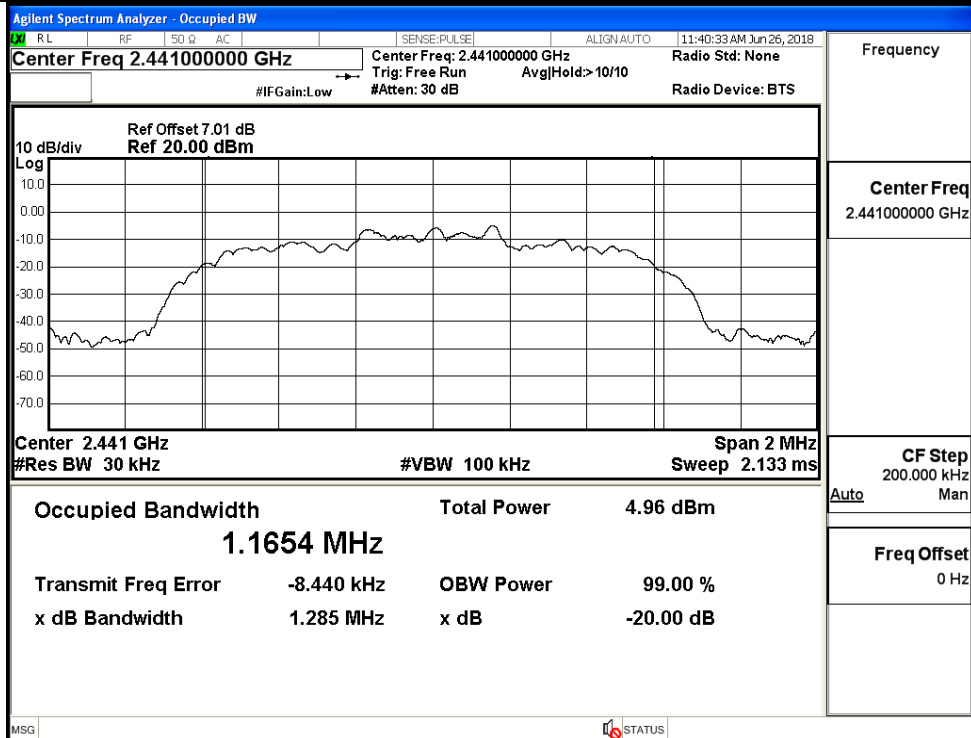


$\pi/4$ DQPSK/LCH

Frequency

Center Freq
2.40200000 GHzCF Step
200.000 kHz

Auto

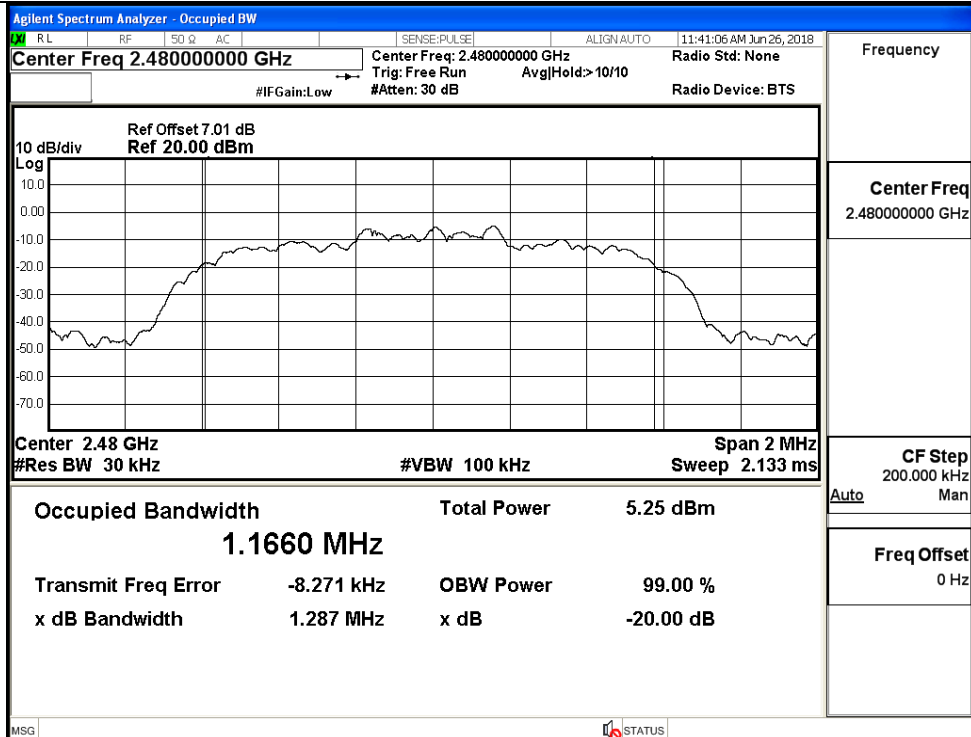
Freq Offset
0 Hz $\pi/4$ DQPSK/MCH

Frequency

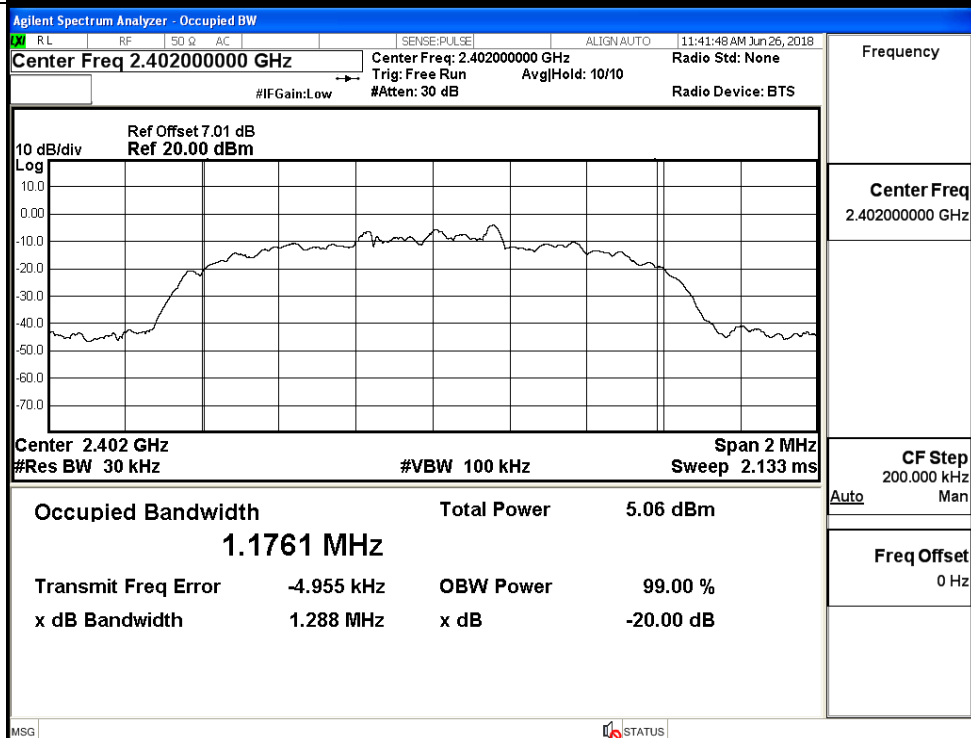
Center Freq
2.44100000 GHzCF Step
200.000 kHz

Auto

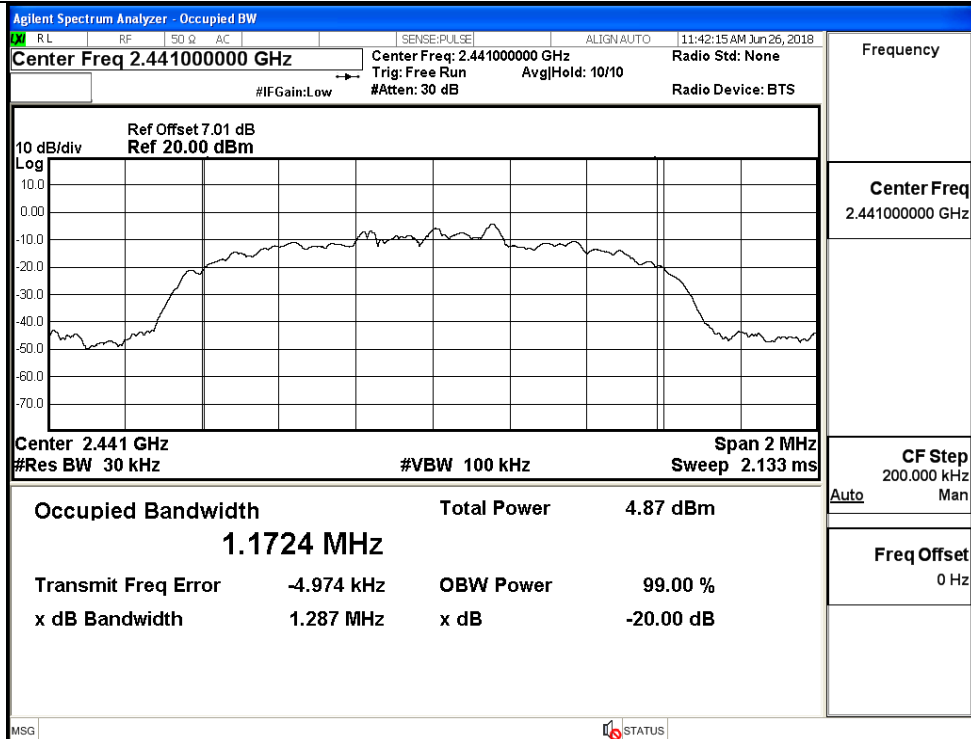
Freq Offset
0 Hz

$\pi/4$ DQPSK/HCH

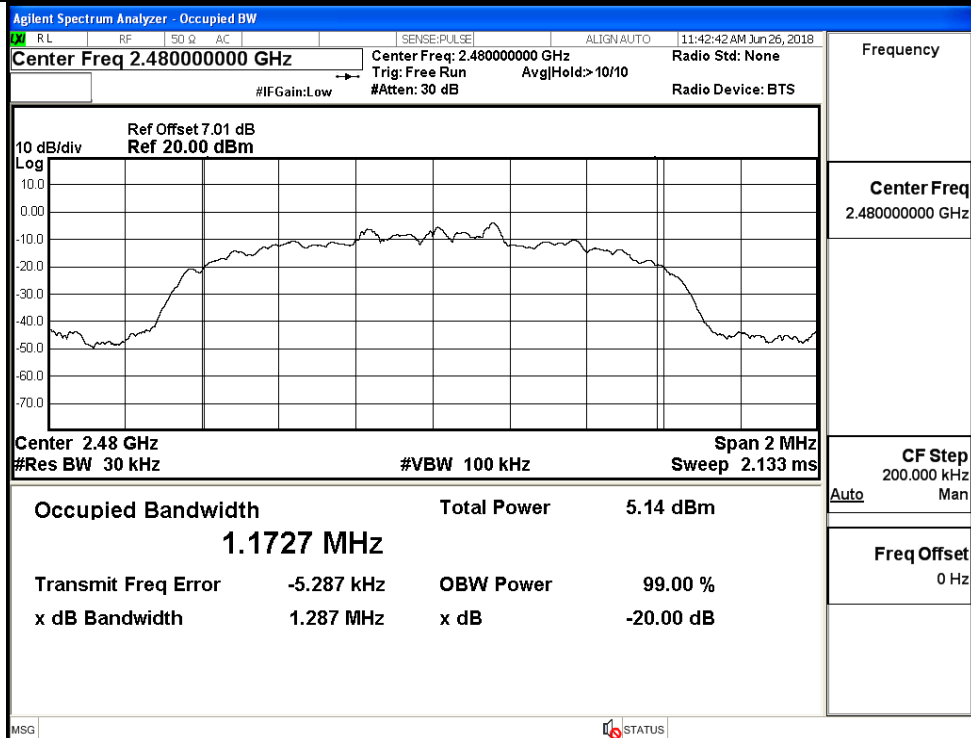
8DPSK/LCH



8DPSK/MCH



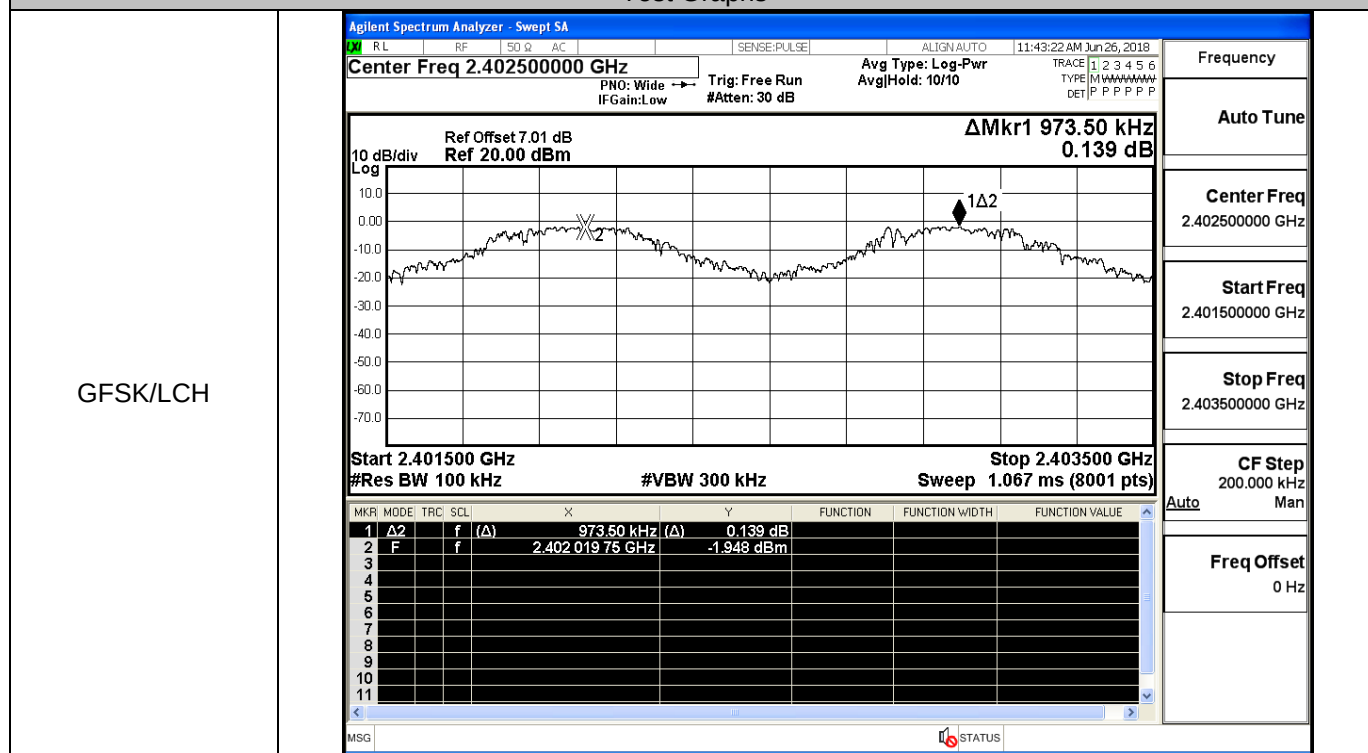
8DPSK/HCH



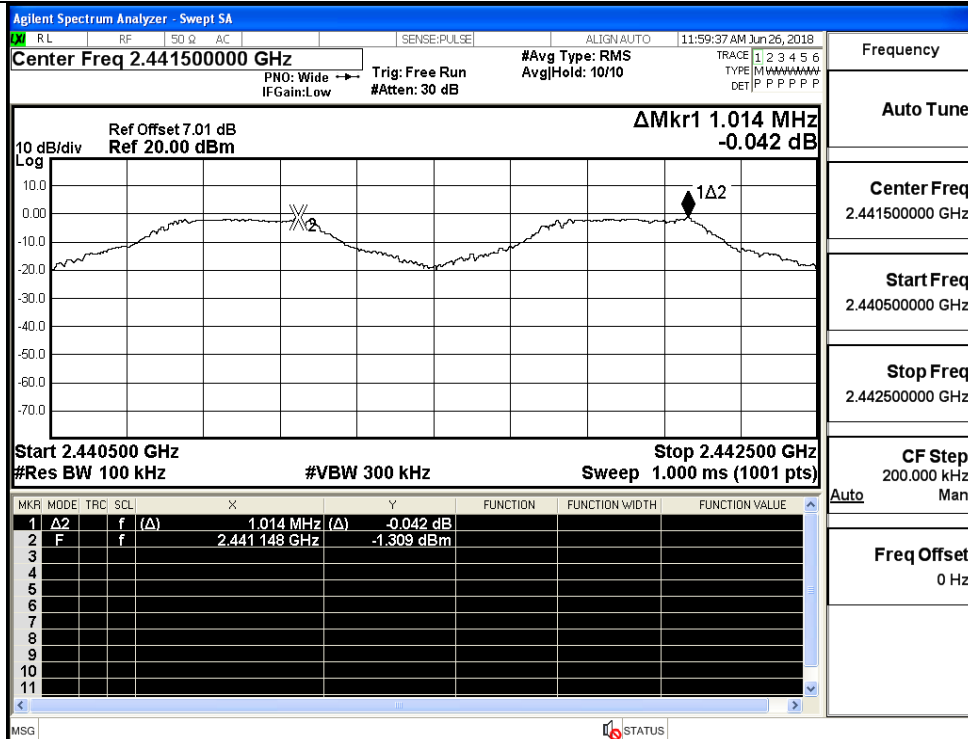
A.4 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.974	0.687	PASS
	MCH	1.014	0.687	PASS
	HCH	1.180	0.687	PASS
$\pi/4$ DQPSK	LCH	1.176	0.860	PASS
	MCH	0.940	0.860	PASS
	HCH	1.016	0.860	PASS
8DPSK	LCH	1.050	0.860	PASS
	MCH	1.032	0.860	PASS
	HCH	1.000	0.860	PASS

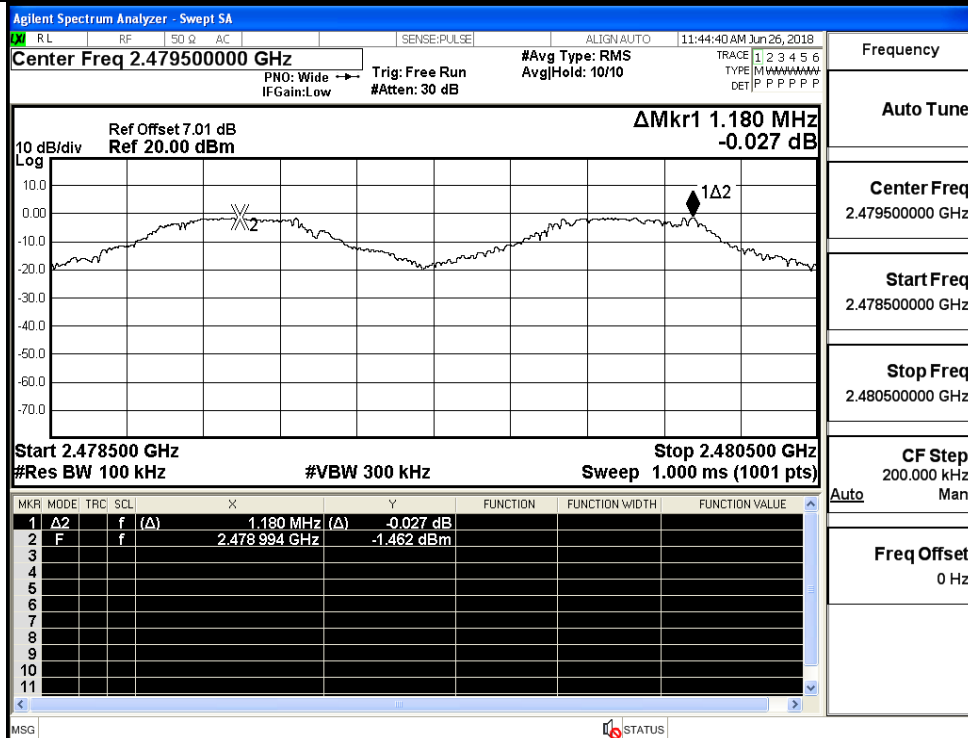
Test Graphs

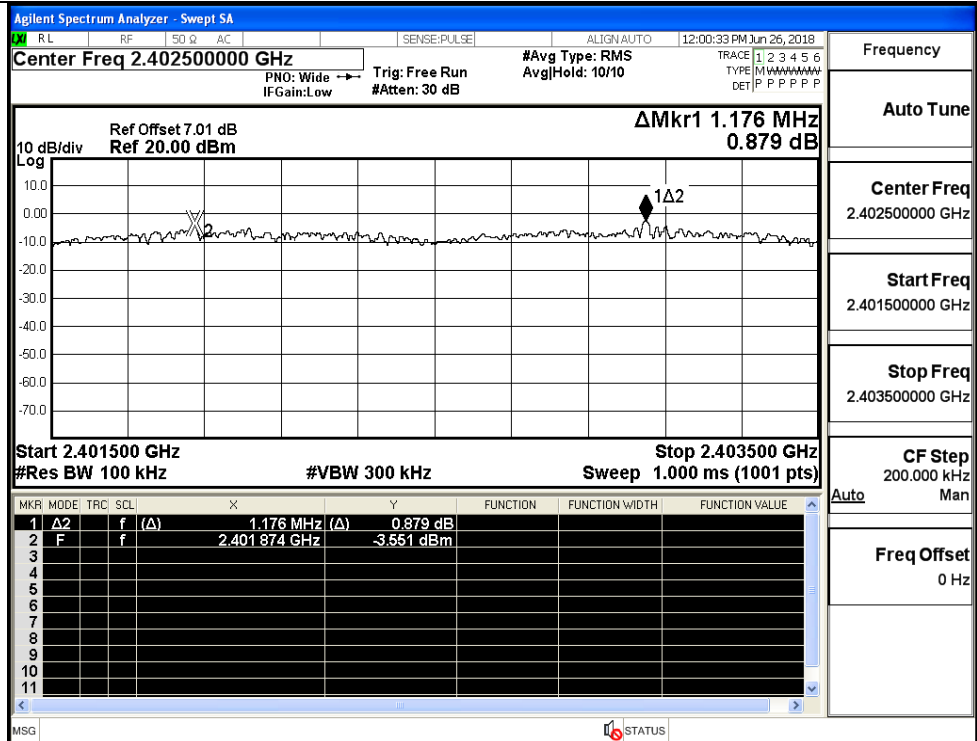
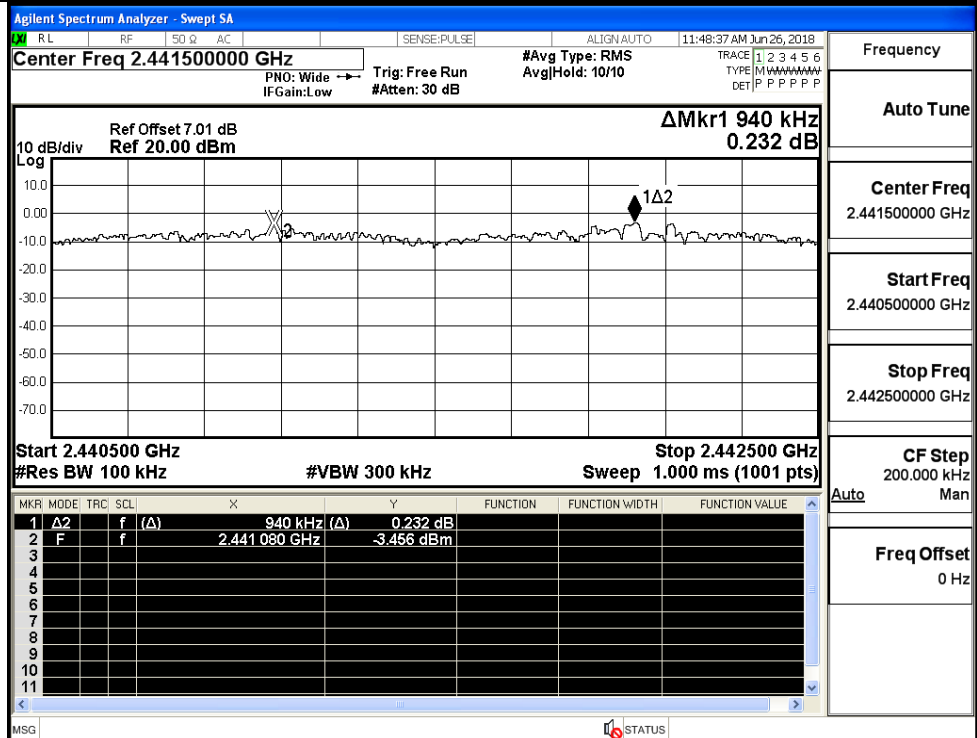


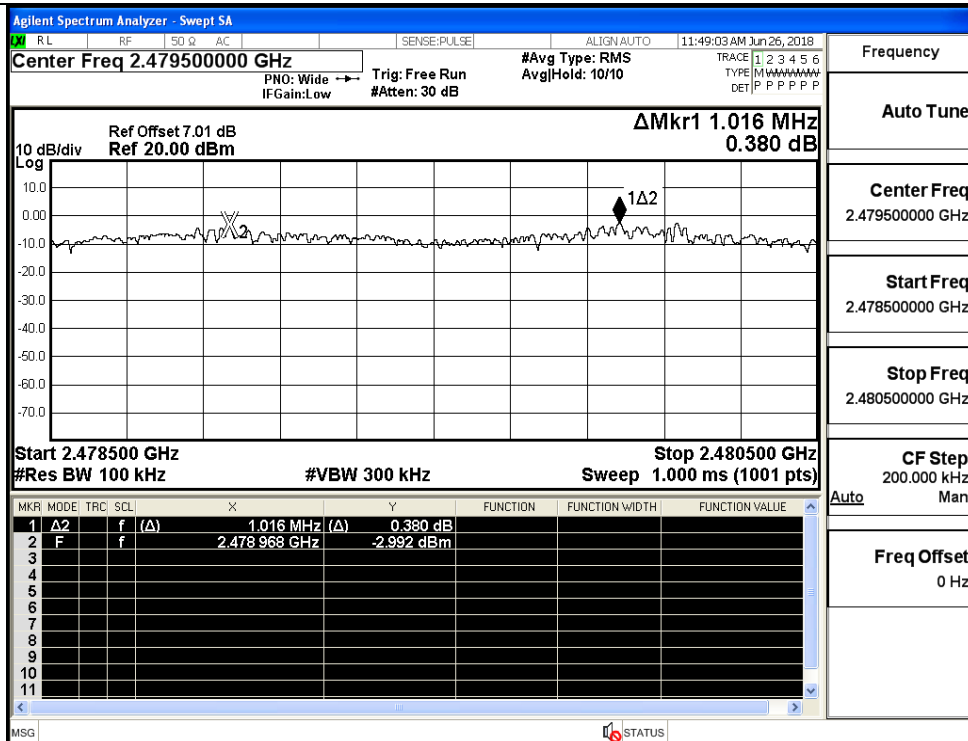
GFSK/MCH



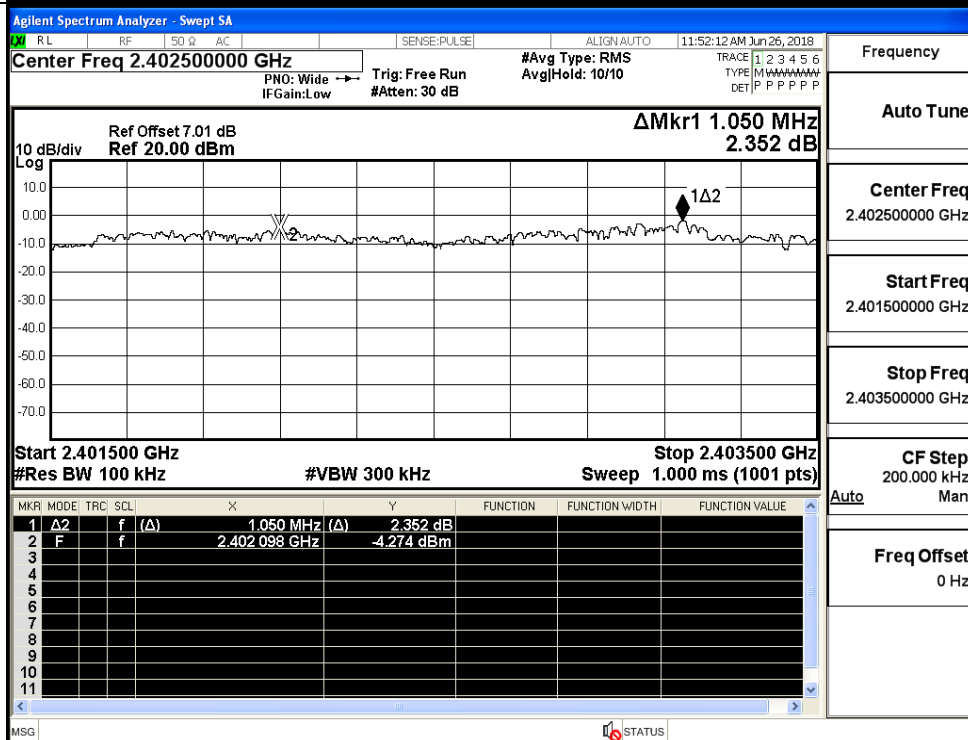
GFSK/HCH



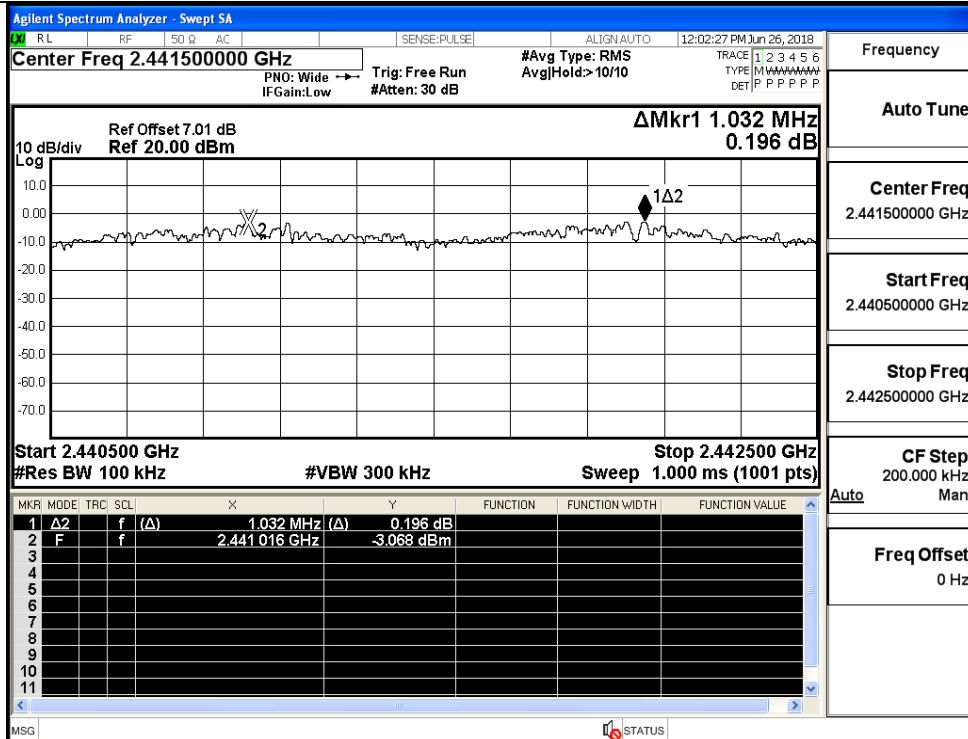
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

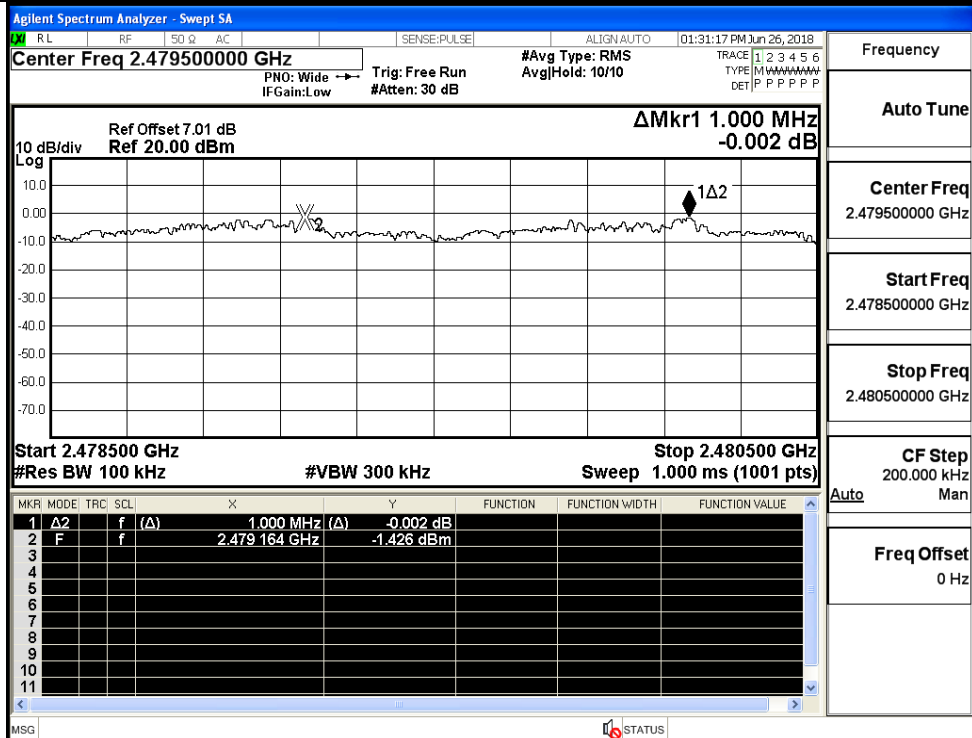
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

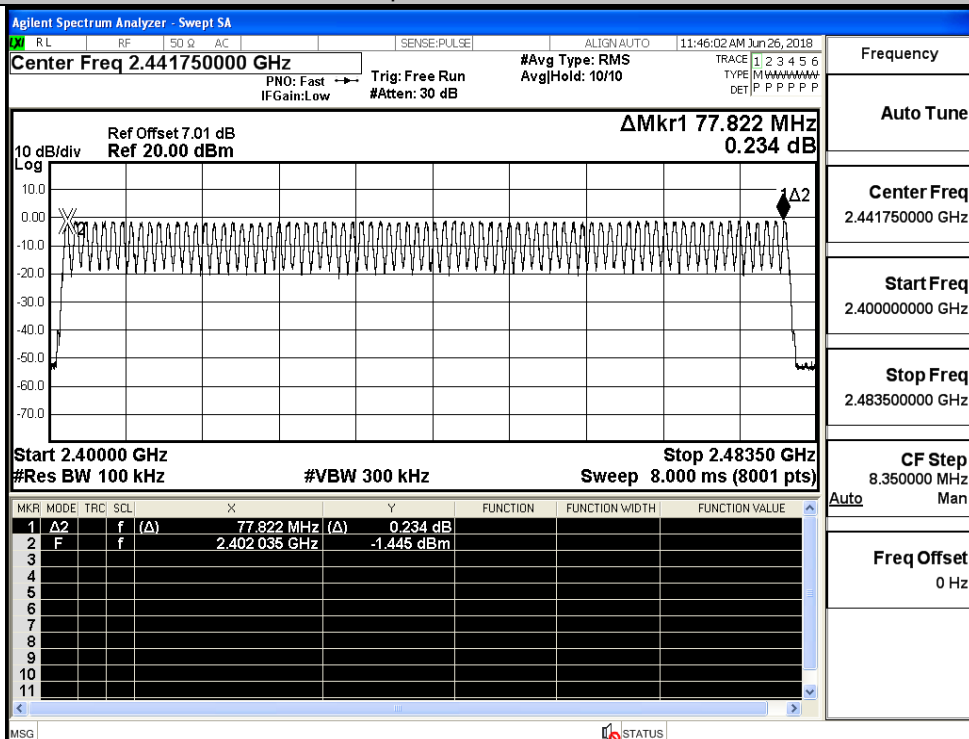
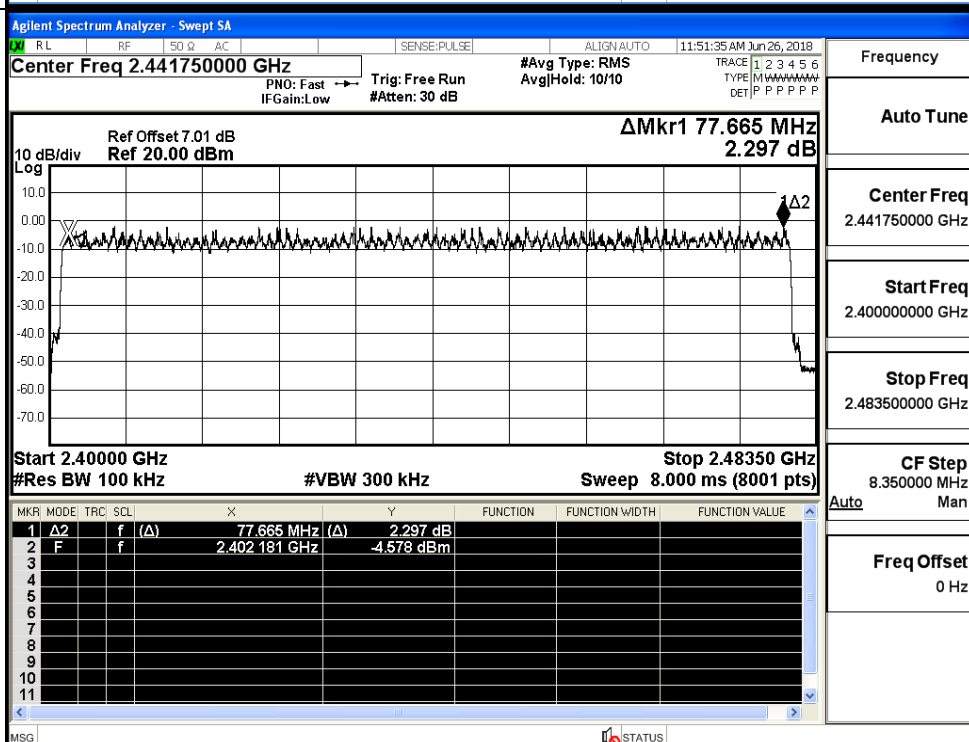


A.5 Hopping Channel Number

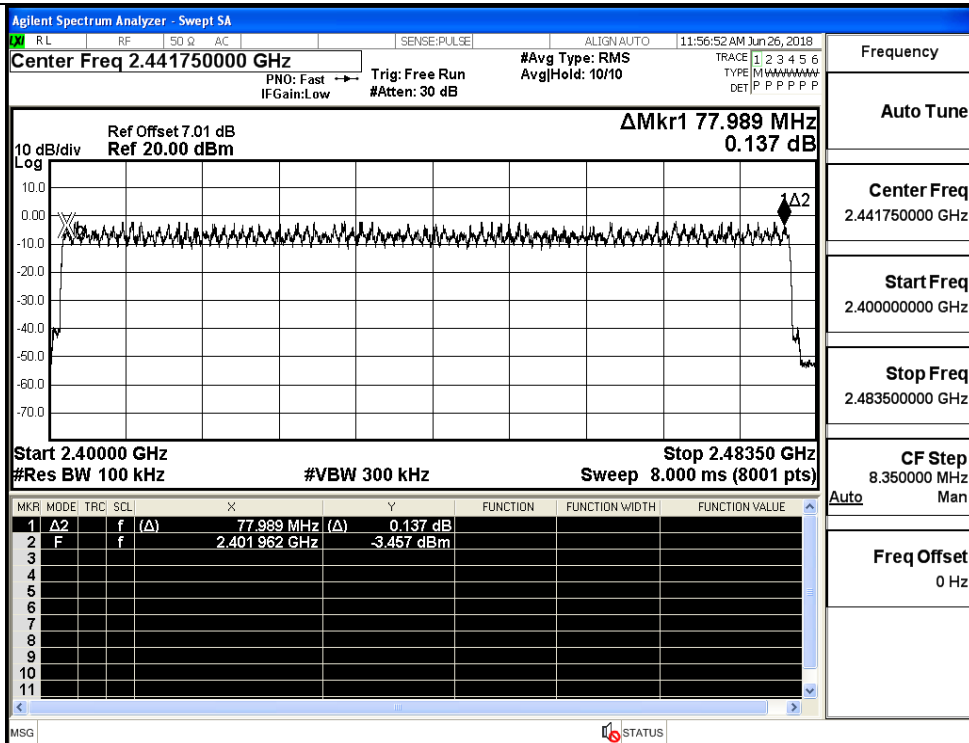
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

Test Graphs

GFSK/Hop

 $\pi/4$ DQPSK/Hop

8DPSK/Hop

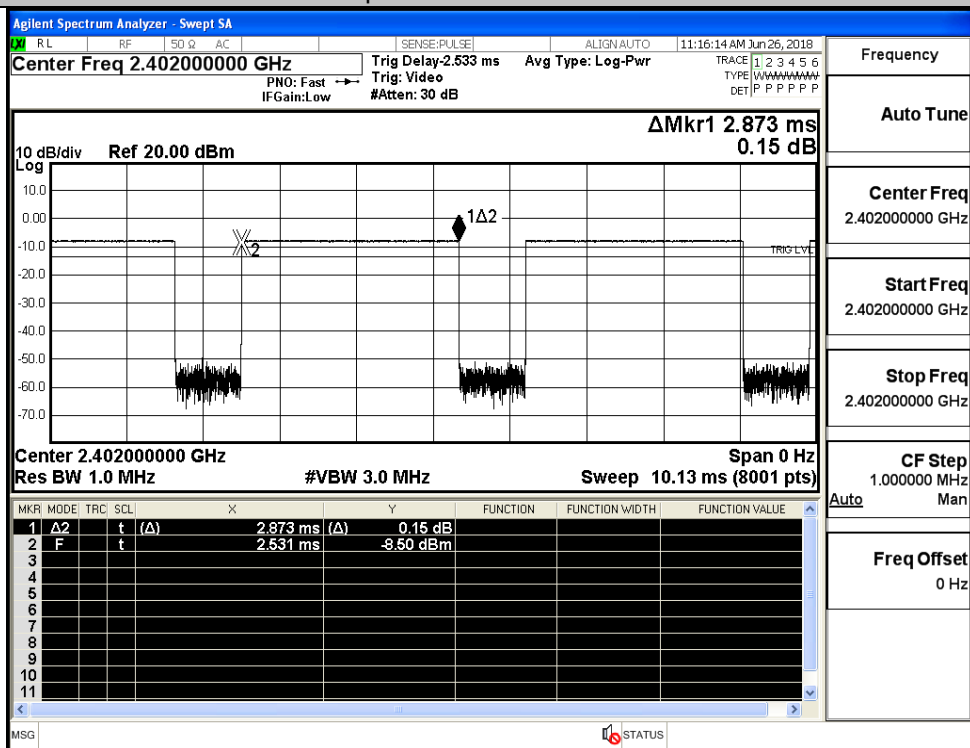


A.6 Dwell Time

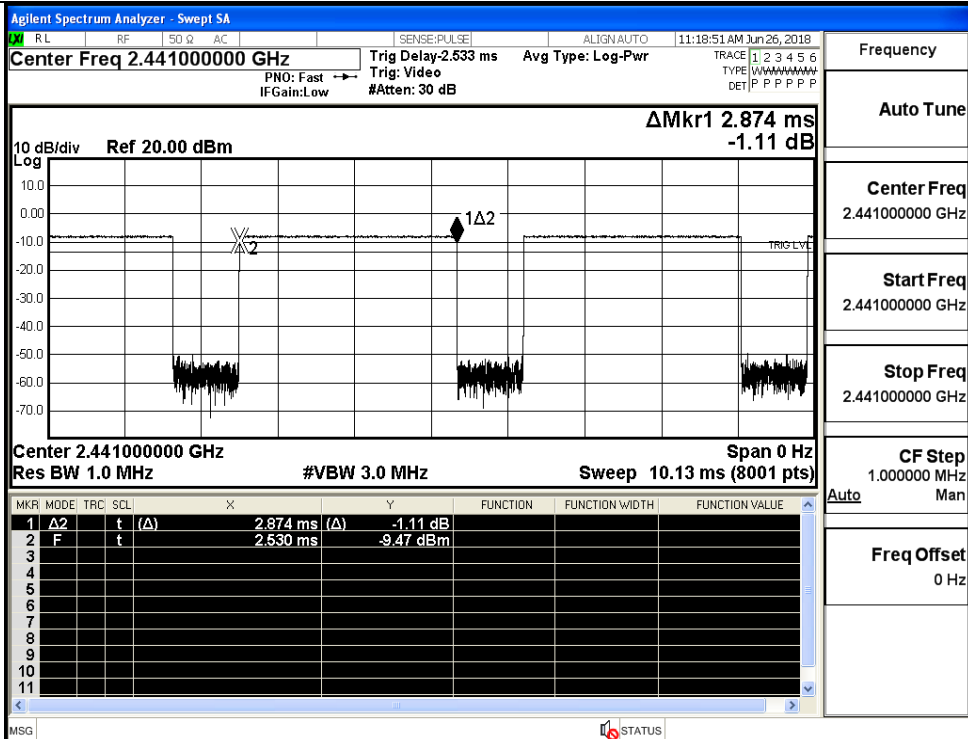
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.87	106.7	0.306	0.4	PASS
	DH5	MCH	2.87	106.7	0.306	0.4	PASS
	DH5	HCH	2.87	106.7	0.306	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.87	106.7	0.307	0.4	PASS
	2DH5	MCH	2.87	106.7	0.307	0.4	PASS
	2DH5	HCH	2.87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

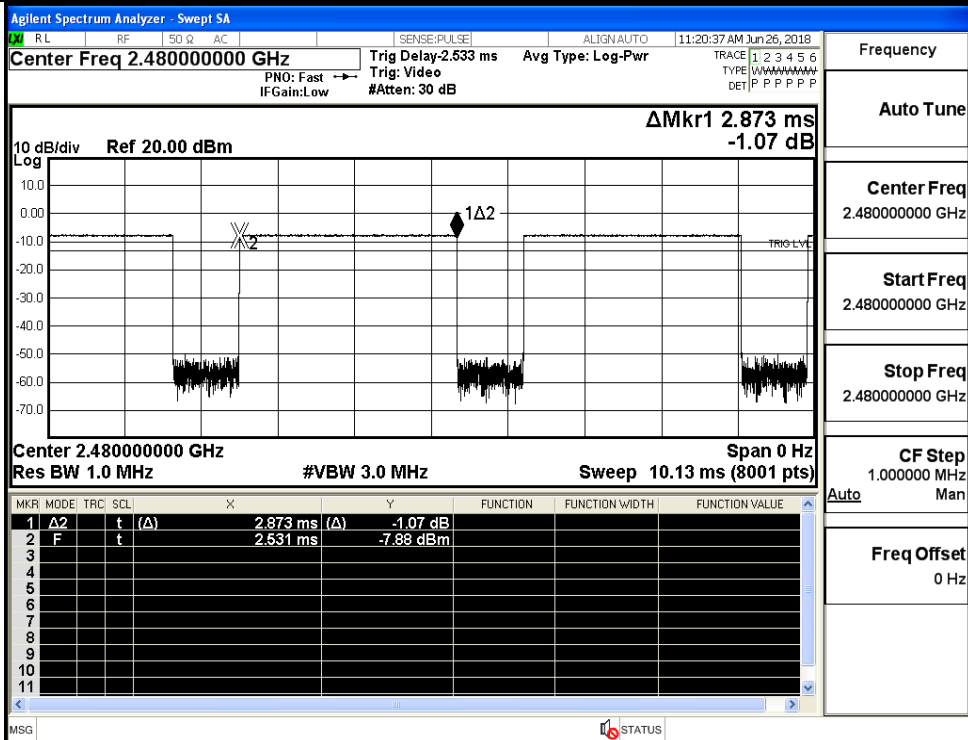
GFSK_DH5/LCH



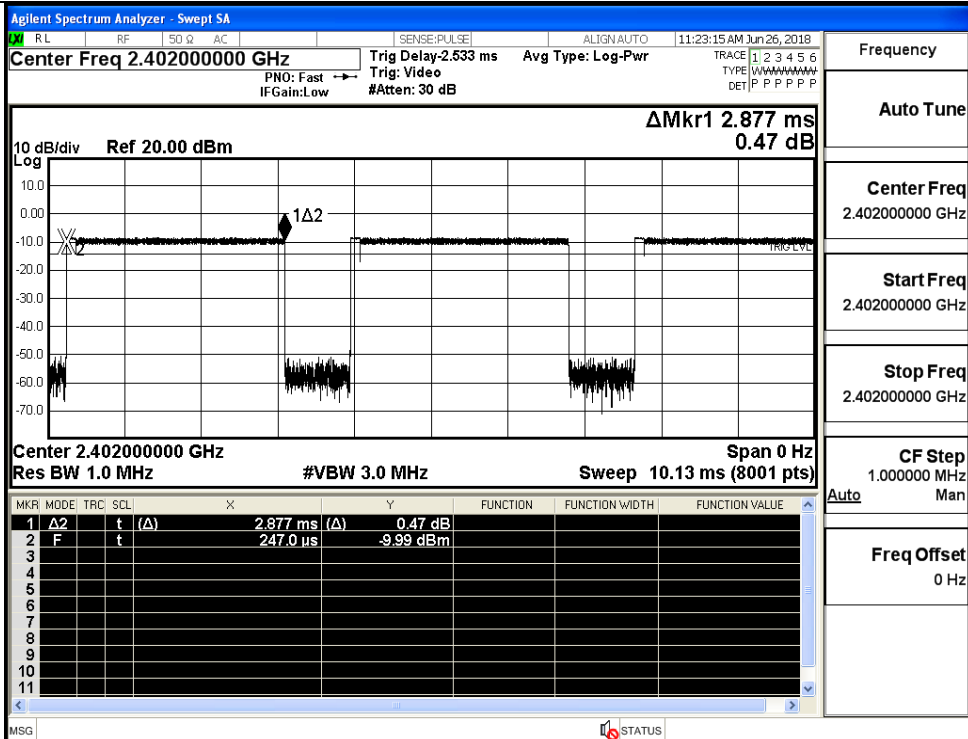
GFSK_DH5/MCH



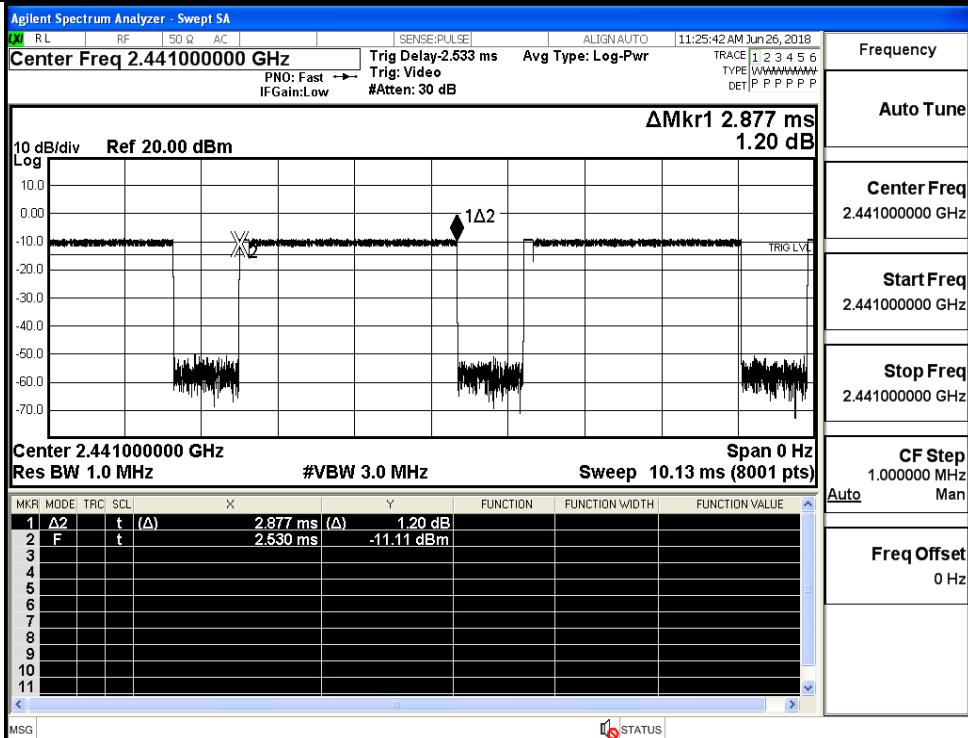
GFSK_DH5/HCH



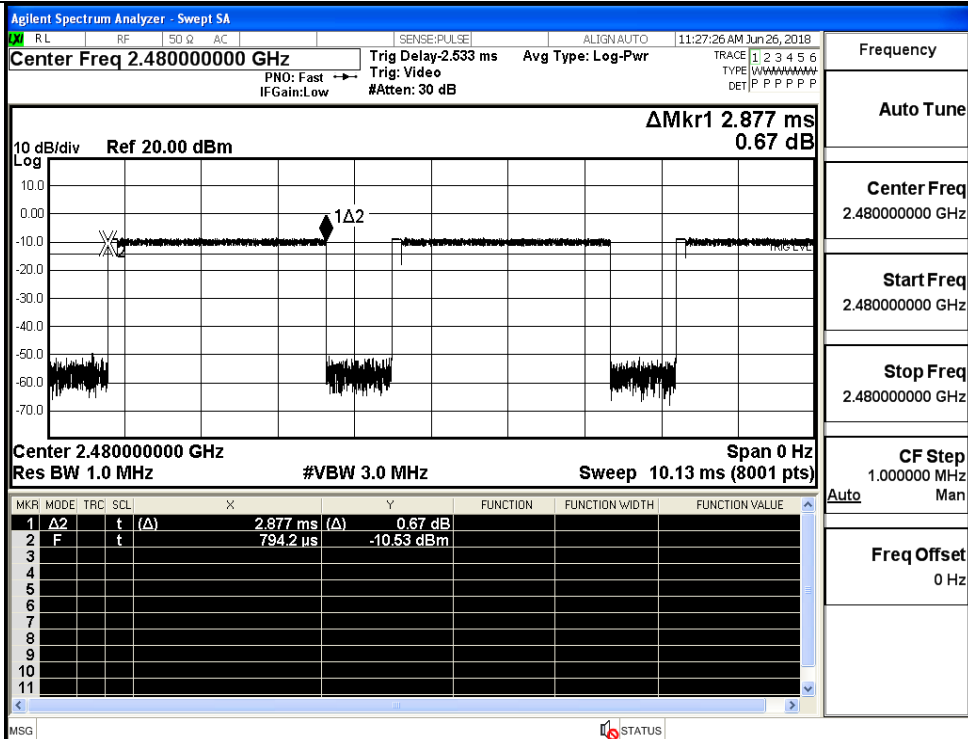
$\pi/4$ DQPSK
_2DH5/LCH



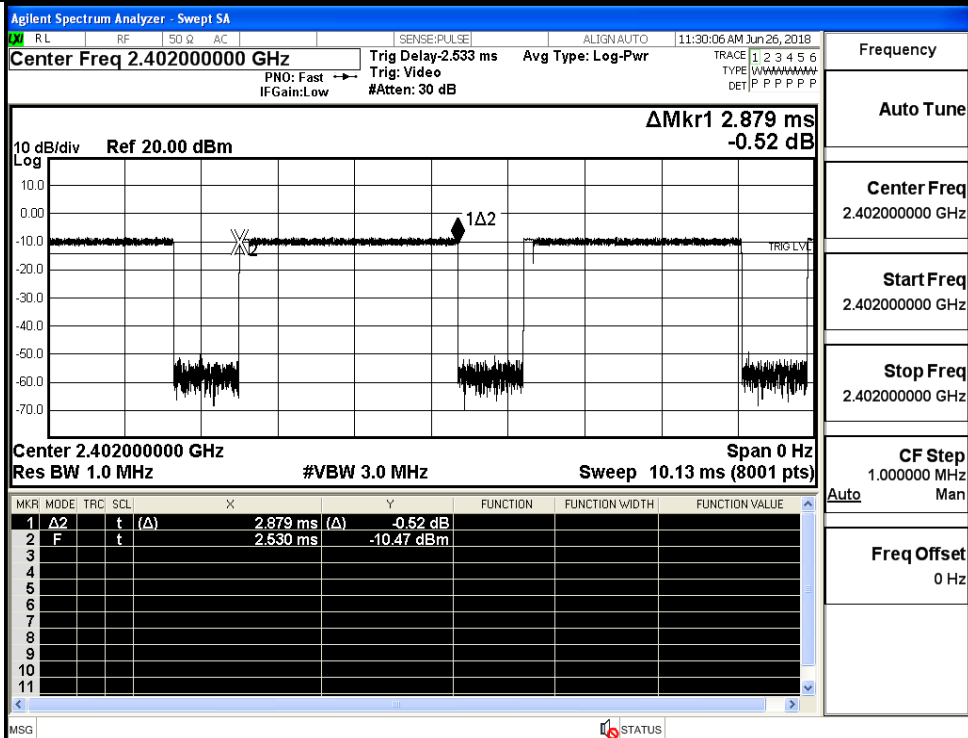
$\pi/4$ DQPSK
_2DH5/MCH



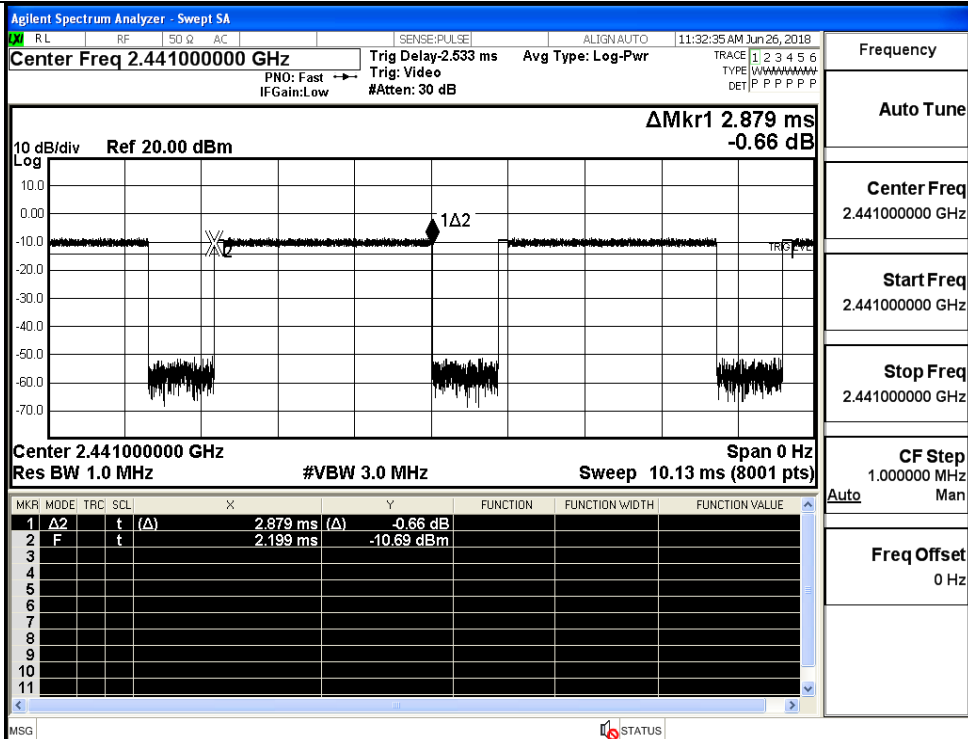
$\pi/4$ DQPSK
_2DH5/HCH



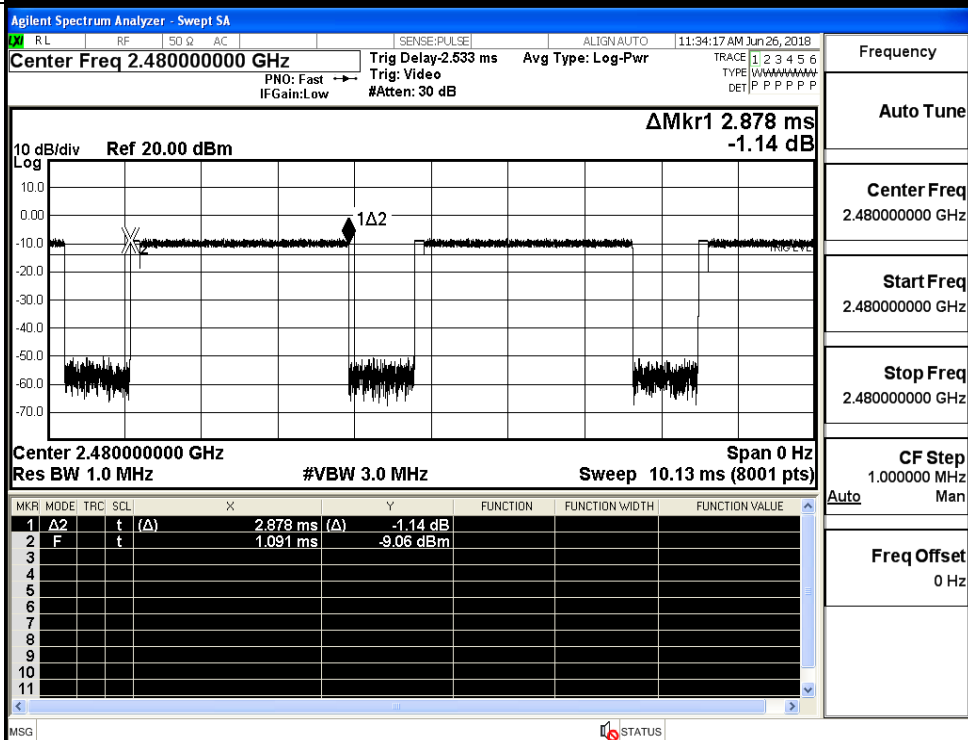
8DPSK _3DH5/LCH



8DPSK_3DH5/MCH



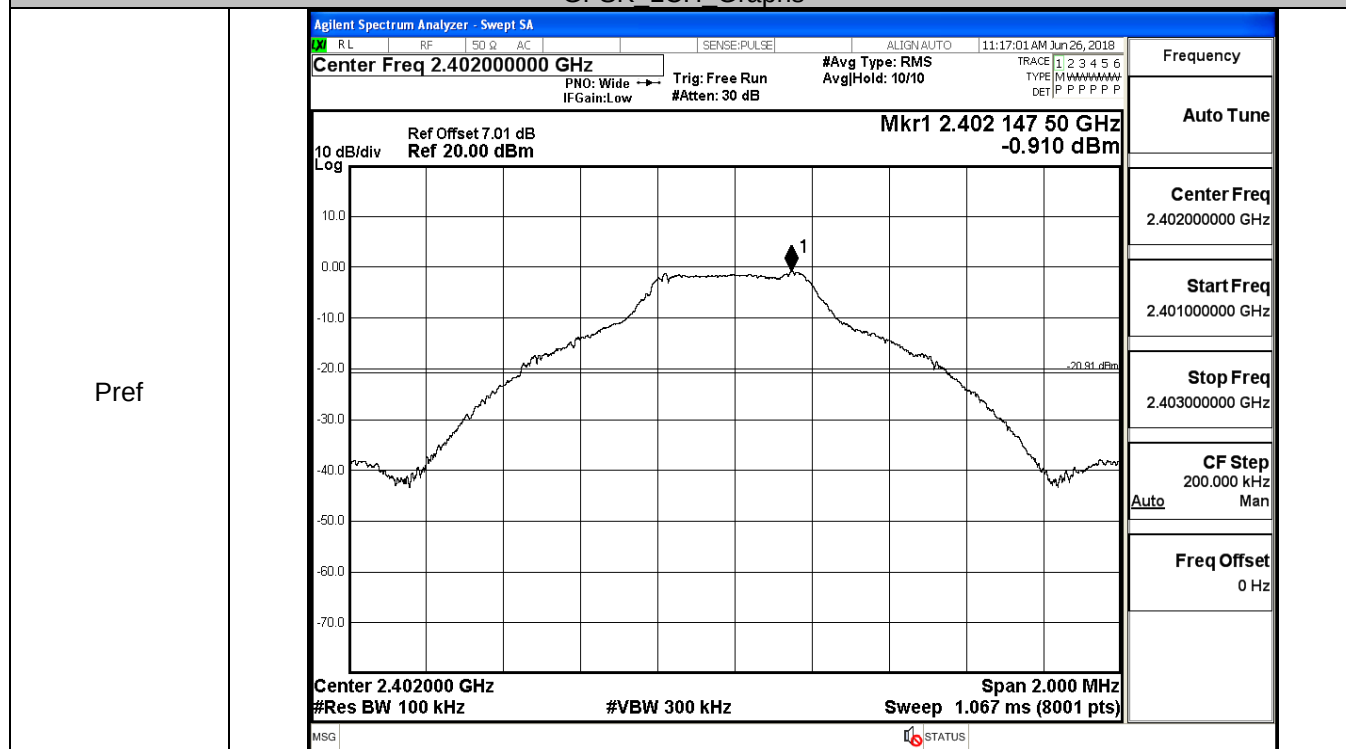
8DPSK_3DH5/HCH

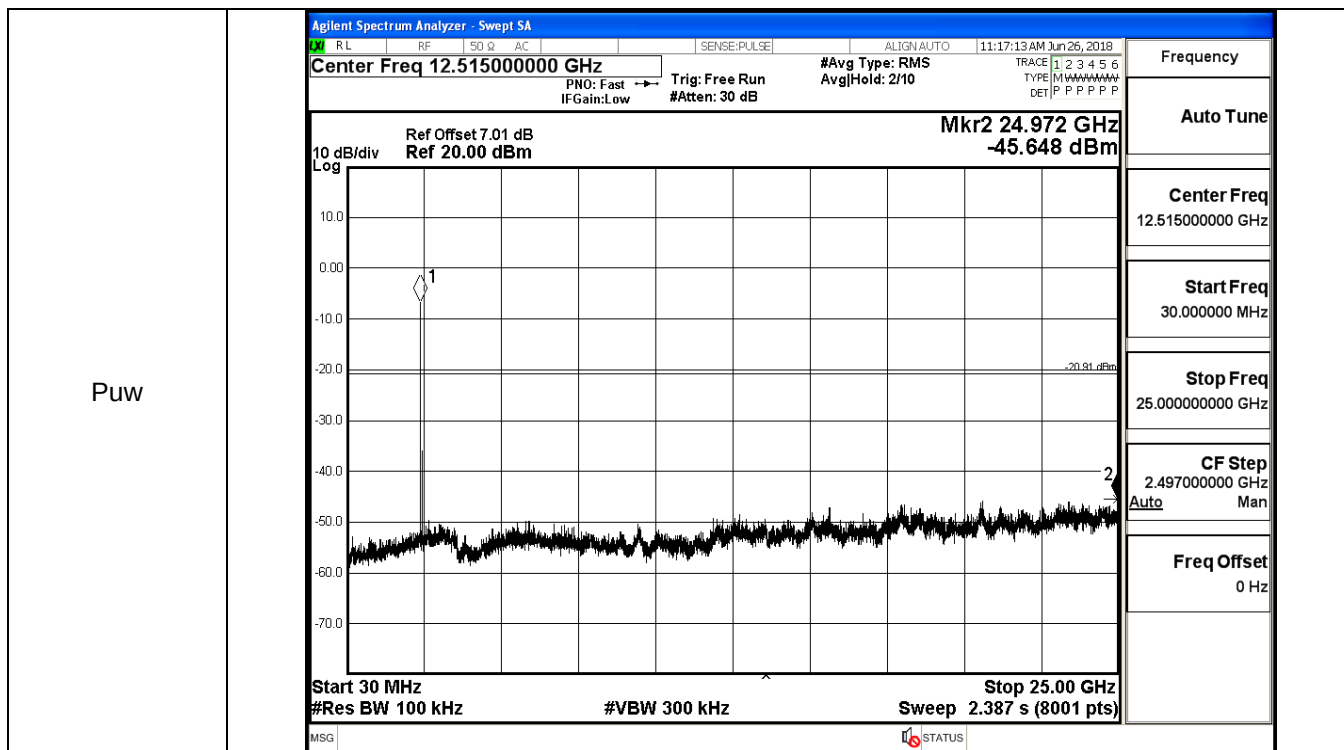


A.7 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.91	-45.648	-20.910	PASS
	MCH	-1.043	-44.953	-21.043	PASS
	HCH	-0.619	-45.687	-20.619	PASS
$\pi/4$ DQPSK	LCH	-2.186	-45.384	-22.186	PASS
	MCH	-2.254	-46.086	-22.254	PASS
	HCH	-2.067	-45.432	-22.067	PASS
8DPSK	LCH	-2.017	-45.802	-22.017	PASS
	MCH	-2.321	-45.060	-22.321	PASS
	HCH	-1.993	-45.418	-21.993	PASS

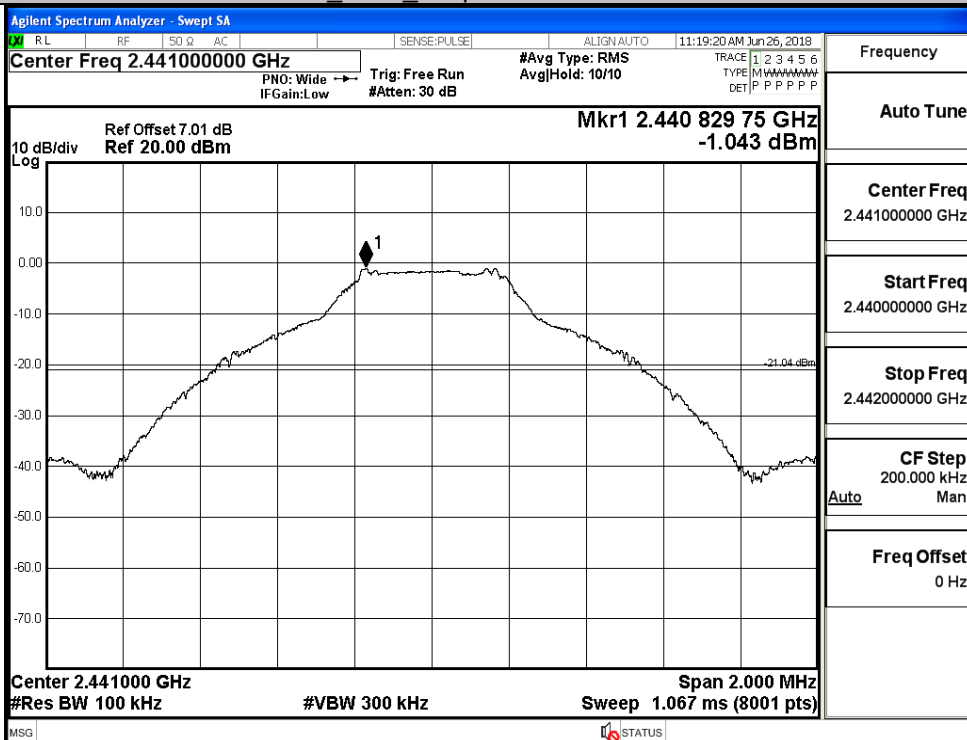
GFSK LCH Graphs



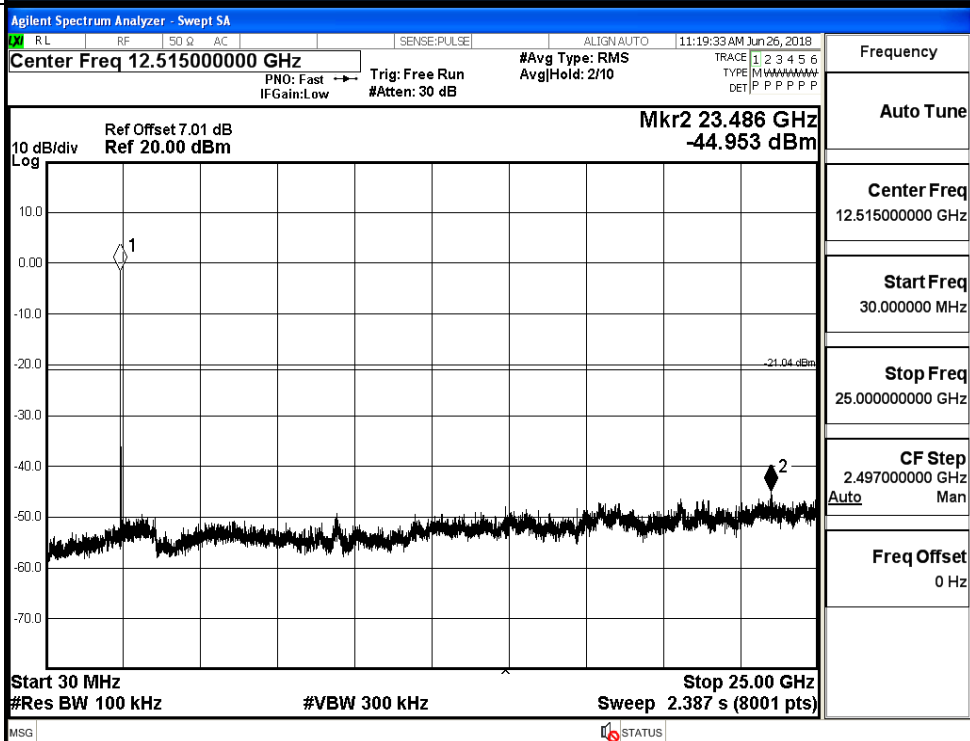


GFSK_MCH_Graphs

Pref

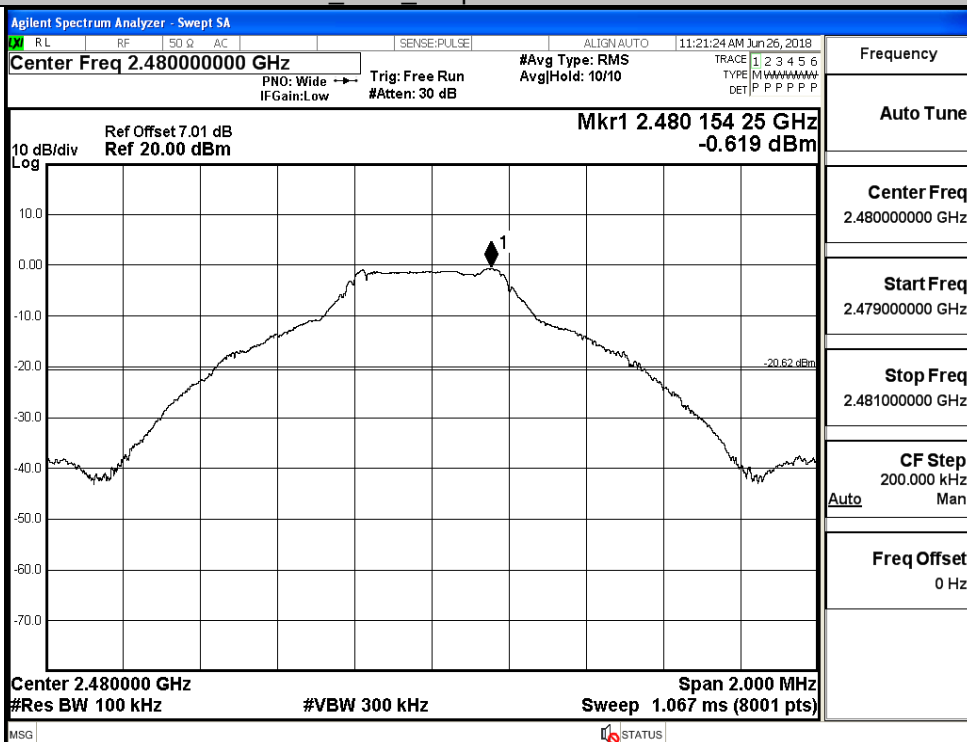


Puw

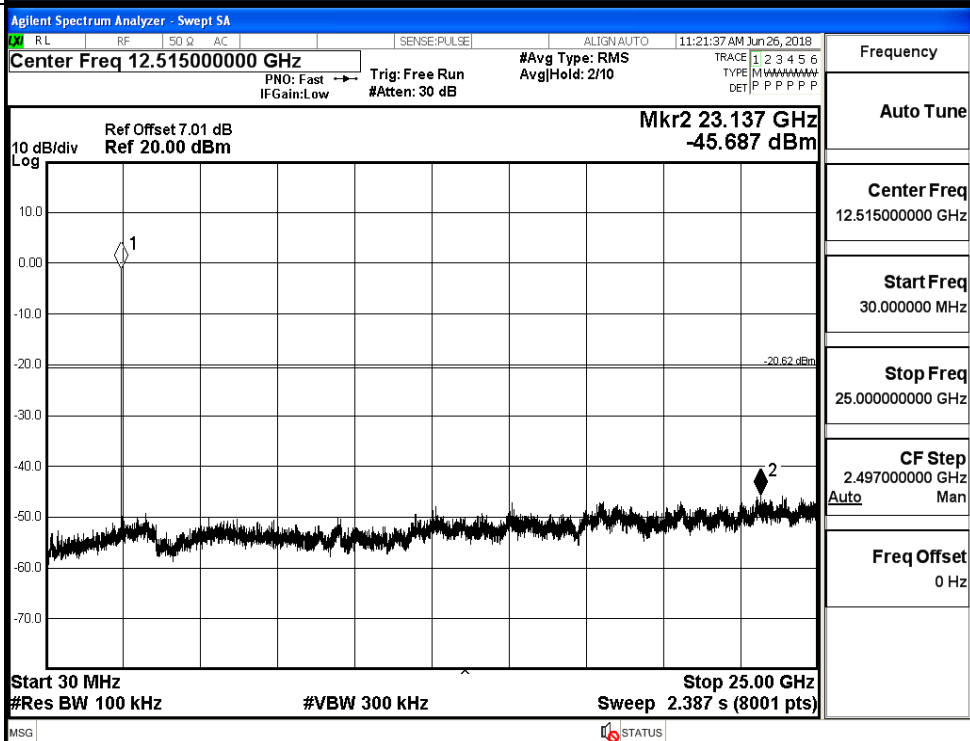


GFSK HCH_Graphs

Pref

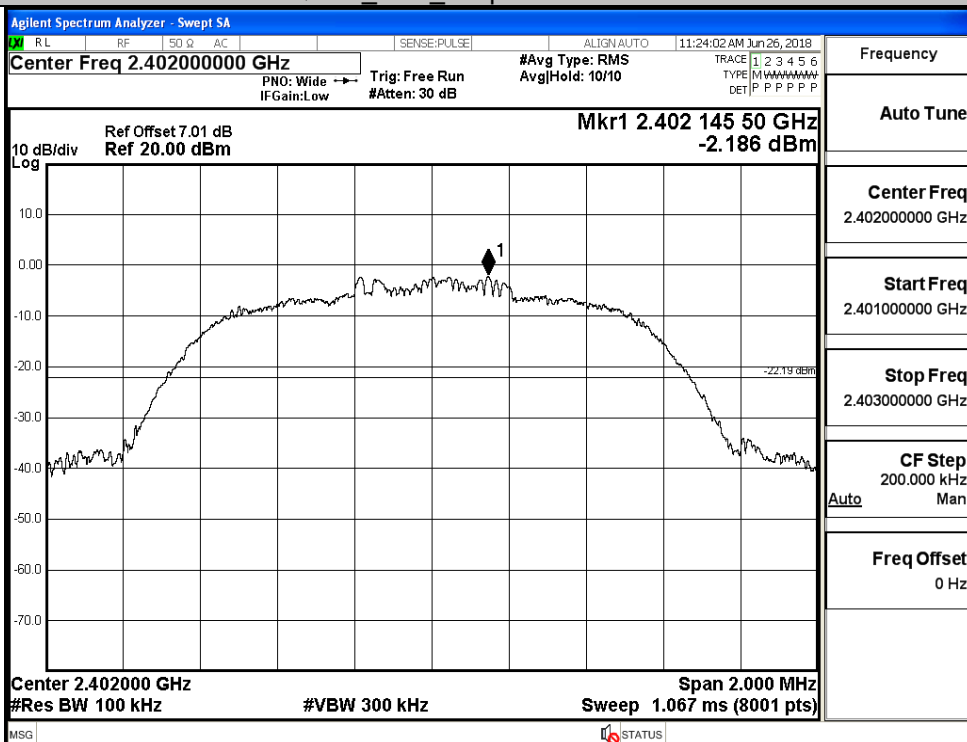


Puw

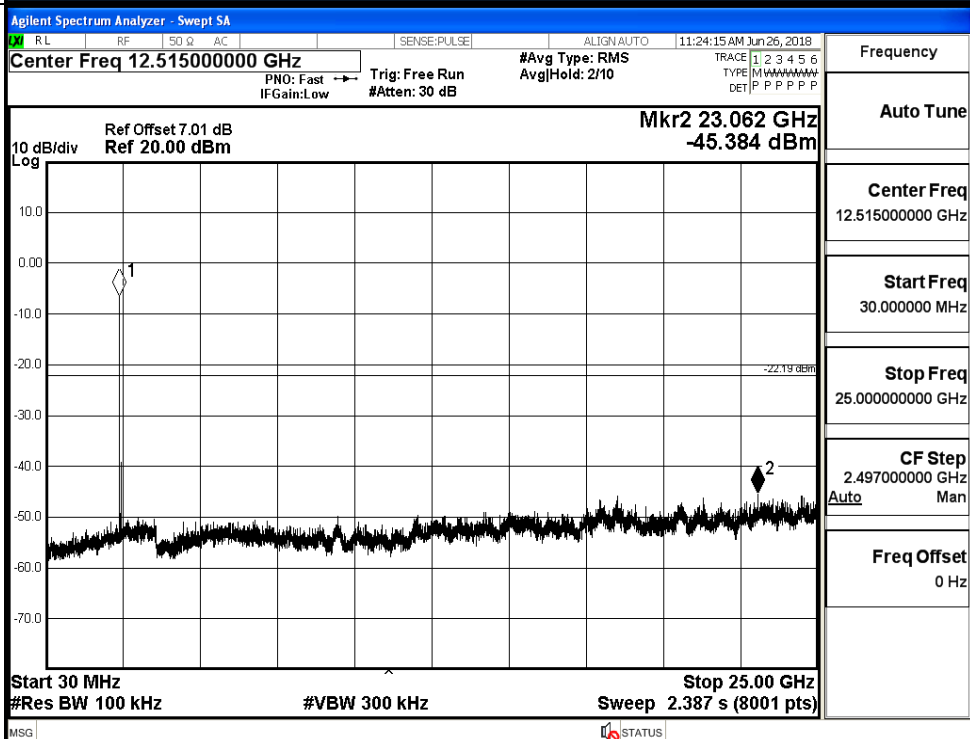


$\pi/4$ DQPSK_LCH_Graphs

Pref

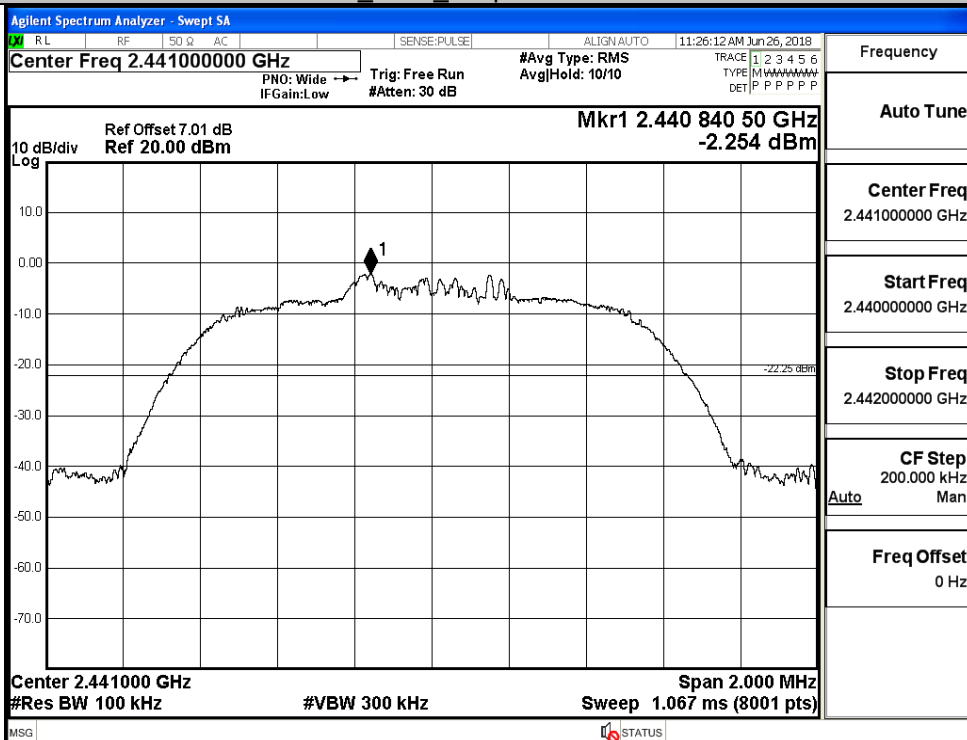


Puw

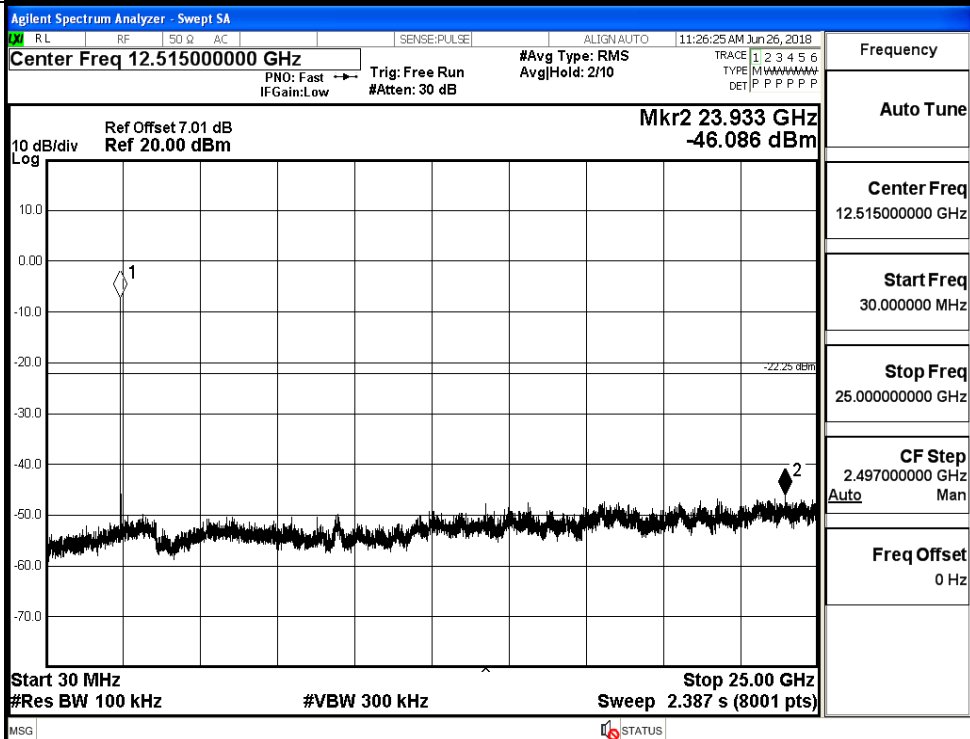


$\pi/4$ DQPSK_MCH_Graphs

Pref

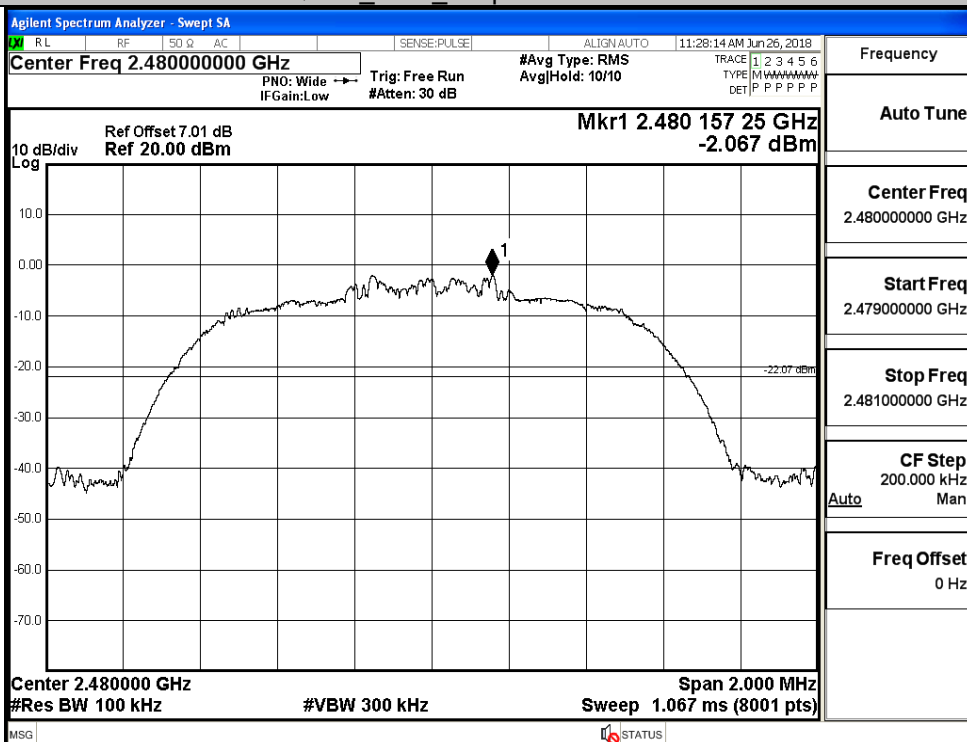


Puw

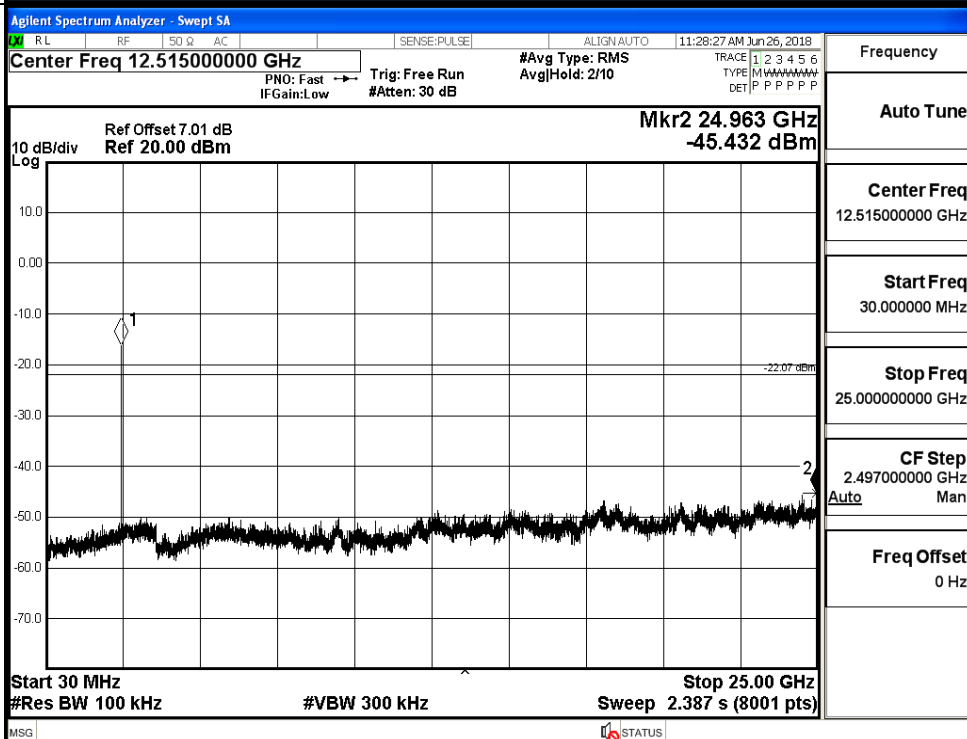


$\pi/4$ DQPSK_HCH_Graphs

Pref

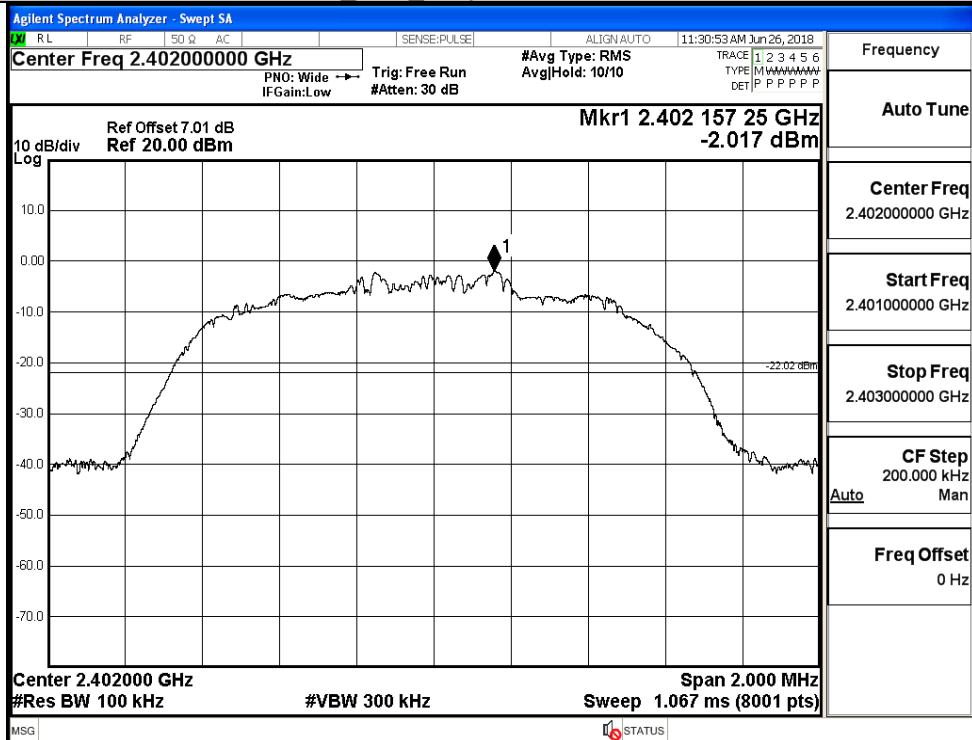


Puw

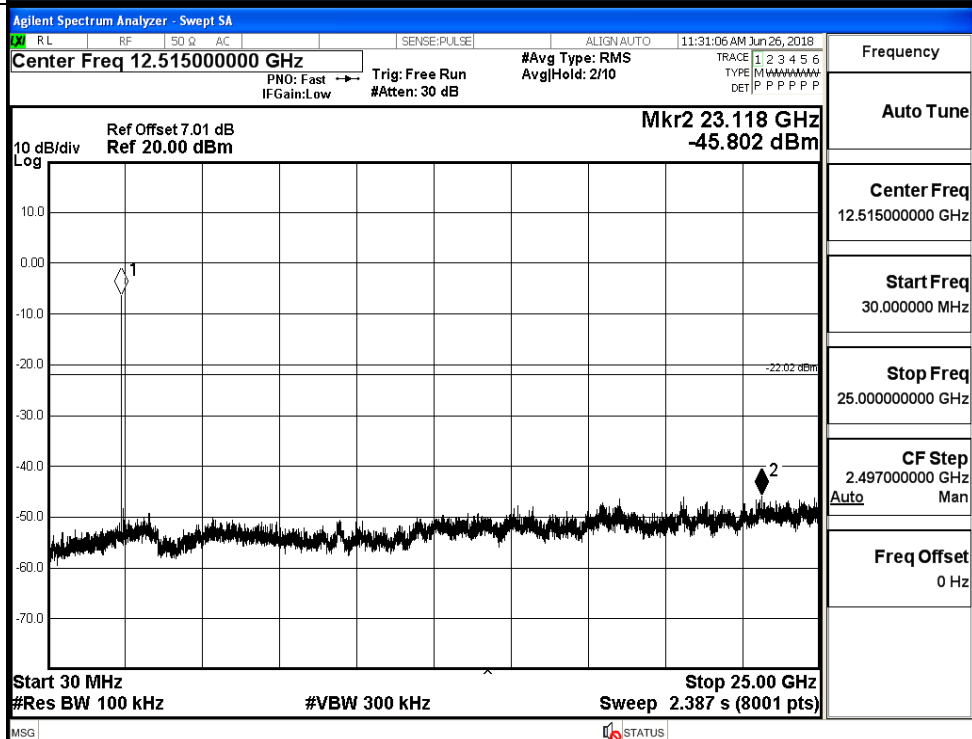


8DPSK_LCH_Graphs

Pref

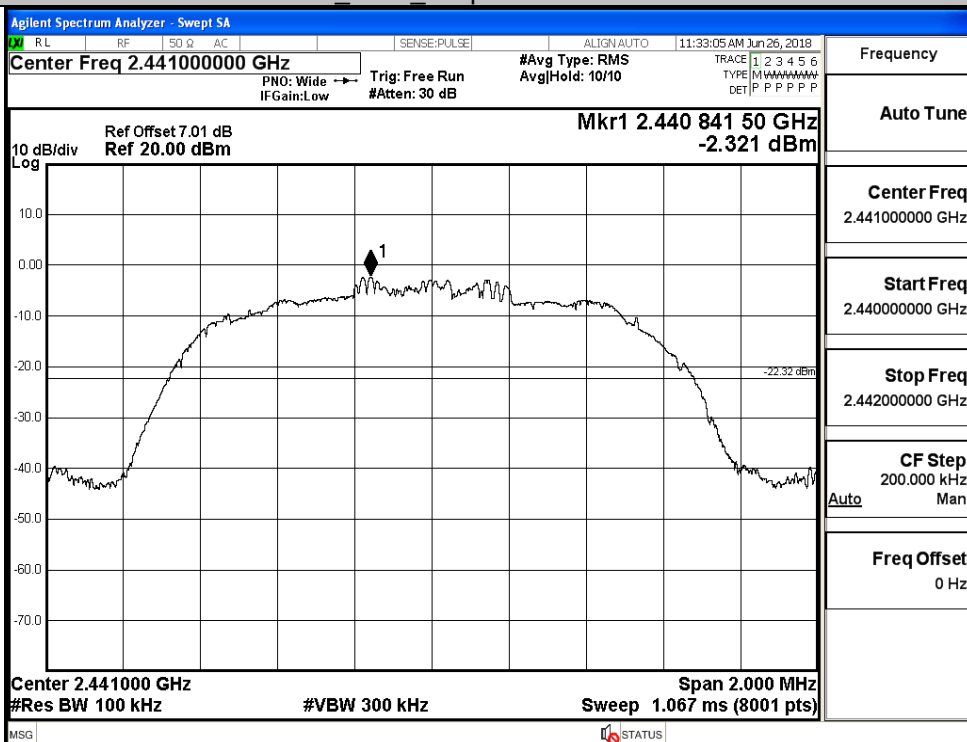


Puw

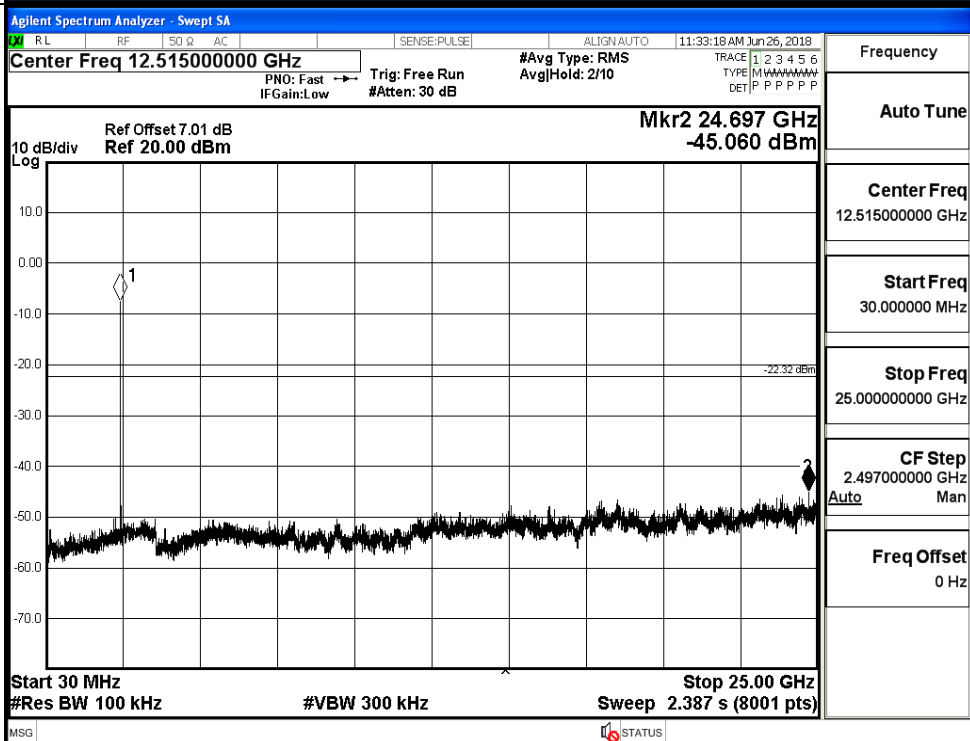


8DPSK_MCH_Graphs

Pref

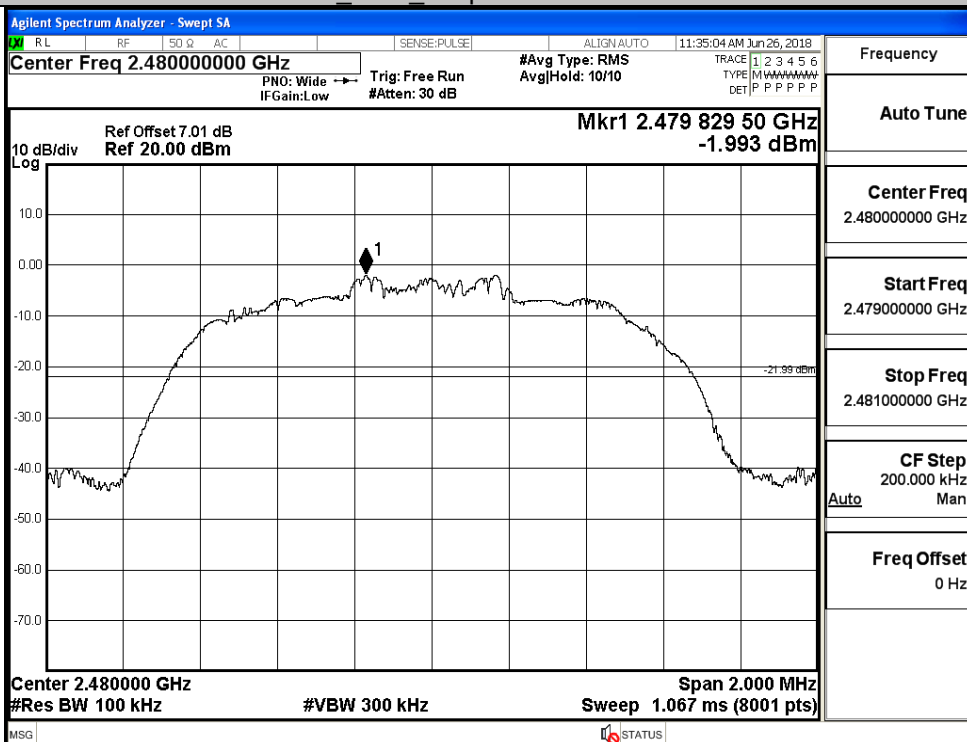


Puw

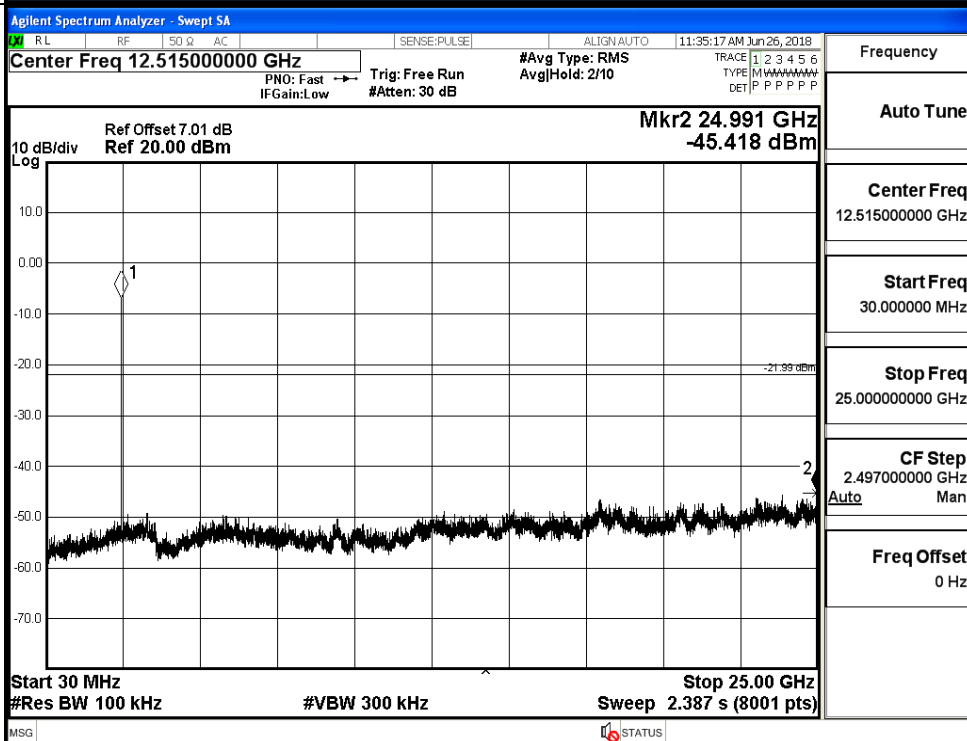


8DPSK_HCH_Graphs

Pref



Puw

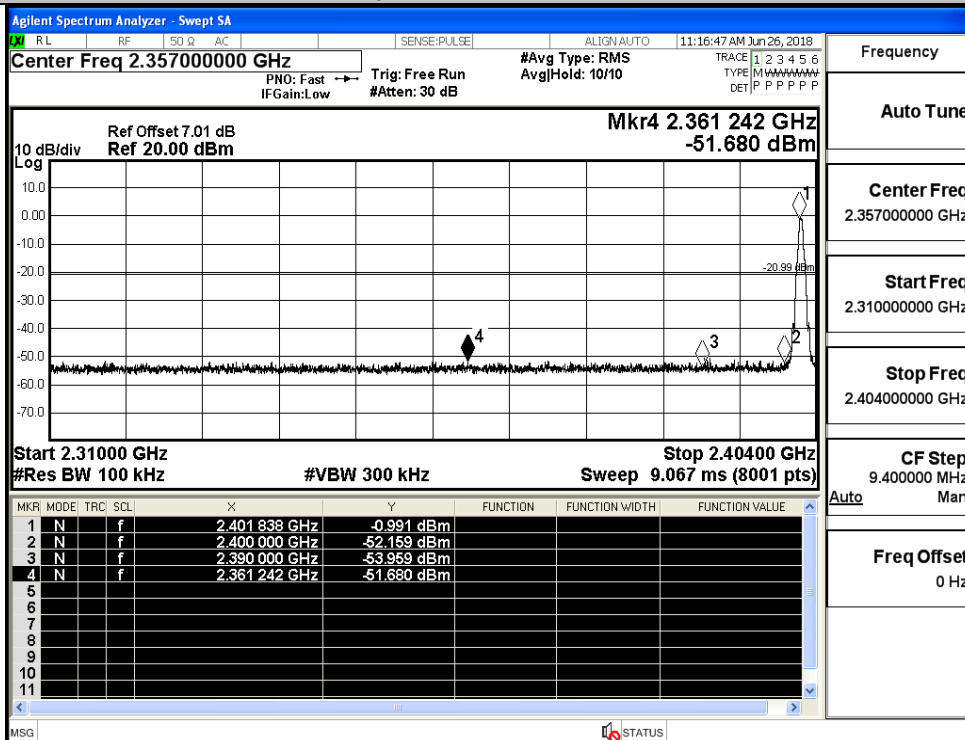


A.8 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-0.991	Off	-51.680	-20.99	PASS
			-1.387	On	-50.897	-21.39	PASS
	HCH	2480	-0.596	Off	-50.468	-20.6	PASS
			-1.082	On	-50.857	-21.08	PASS
$\pi/4$ DQPSK	LCH	2402	-1.600	Off	-50.505	-21.6	PASS
			-2.171	On	-50.073	-22.17	PASS
	HCH	2480	-1.901	Off	-50.920	-21.9	PASS
			-1.918	On	-49.574	-21.92	PASS
8DPSK	LCH	2402	-2.440	Off	-50.399	-22.44	PASS
			-1.890	On	-50.800	-21.89	PASS
	HCH	2480	-1.779	Off	-50.791	-21.78	PASS
			-1.770	On	-50.114	-21.77	PASS

Test Graphs

GFSK/LCH/No Hop



Frequency

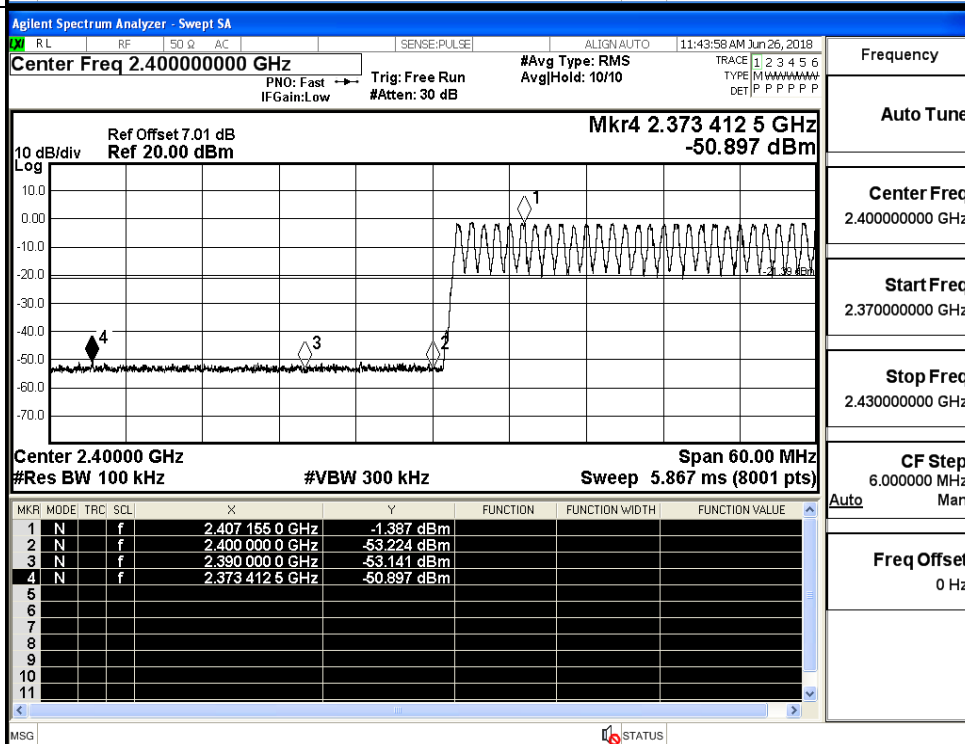
Auto Tune

Center Freq
2.357000000 GHzStart Freq
2.310000000 GHzStop Freq
2.404000000 GHzCF Step
9.400000 MHz

Auto

Freq Offset
0 Hz

GFSK/LCH/Hop



Frequency

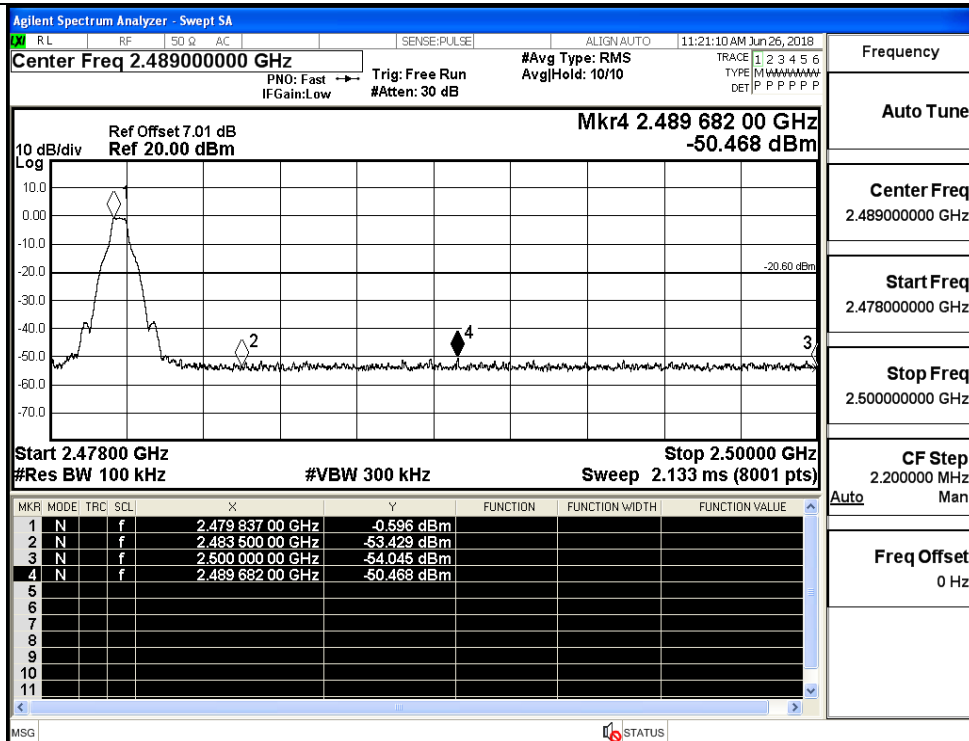
Auto Tune

Center Freq
2.400000000 GHzStart Freq
2.370000000 GHzStop Freq
2.430000000 GHz

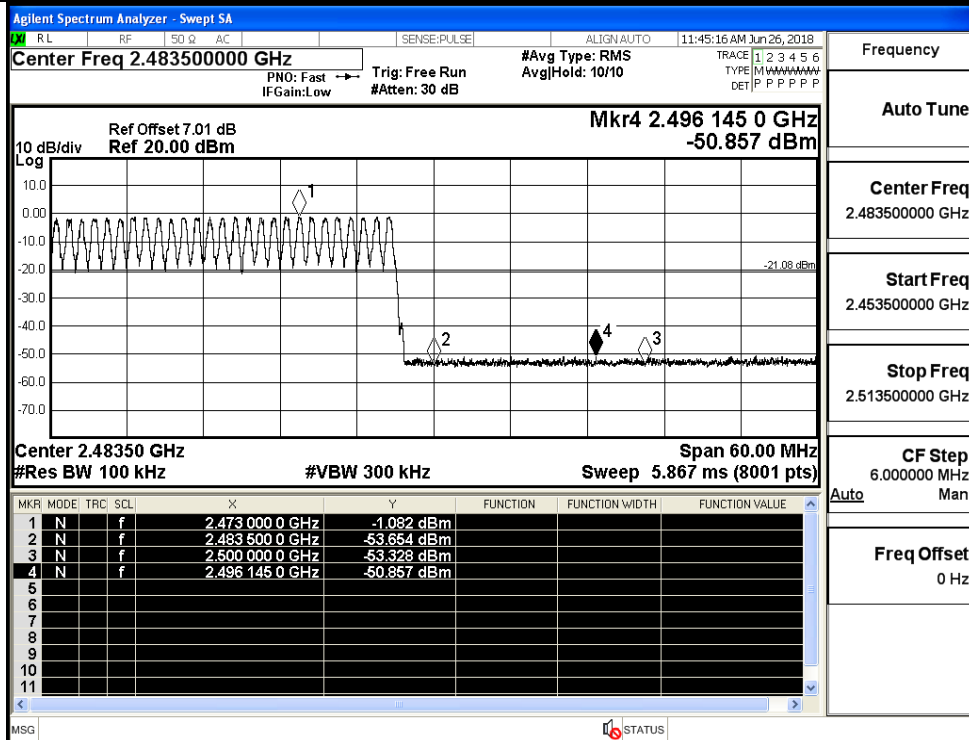
Auto

Freq Offset
0 Hz

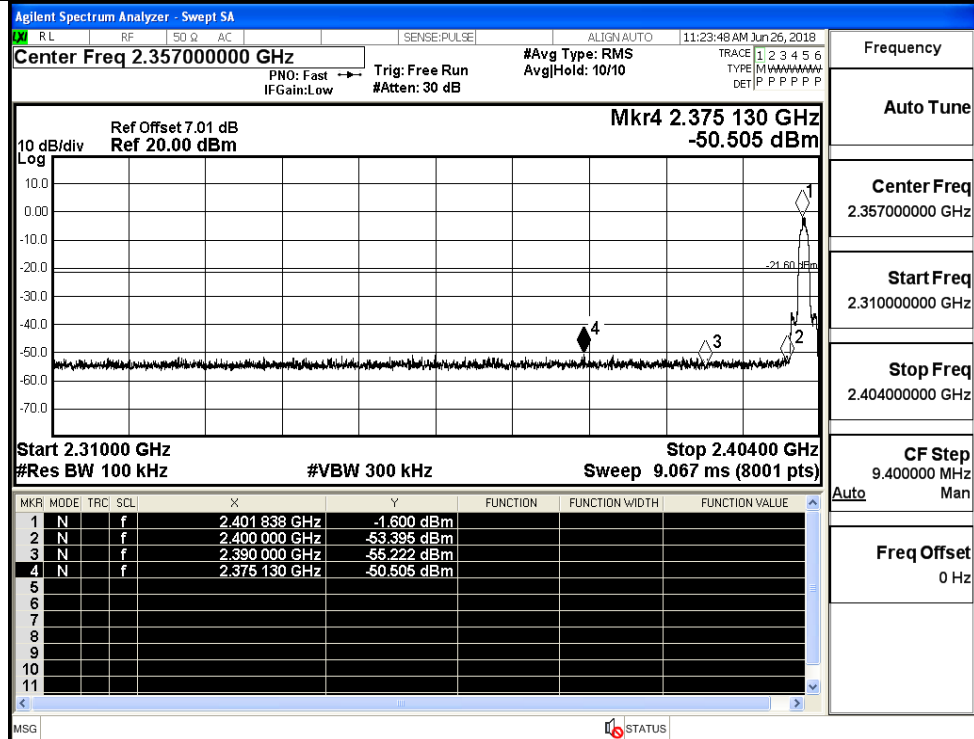
GFSK/HCH/No Hop



GFSK/HCH/Hop



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



Frequency

Auto Tune

Center Freq
2.357000000 GHz

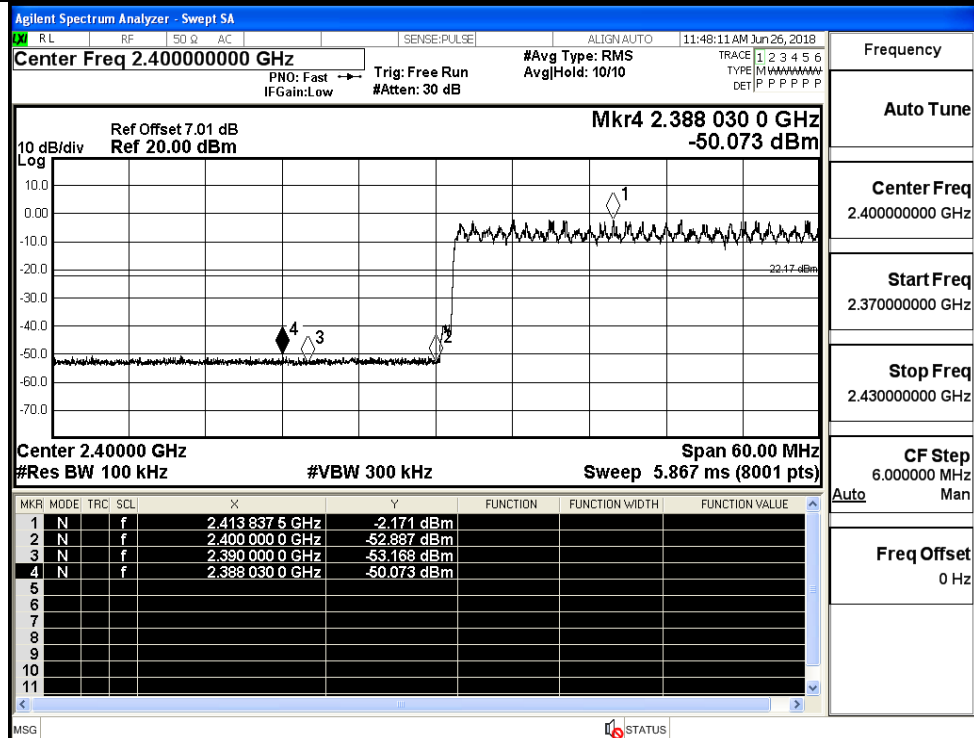
Start Freq
2.310000000 GHz

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

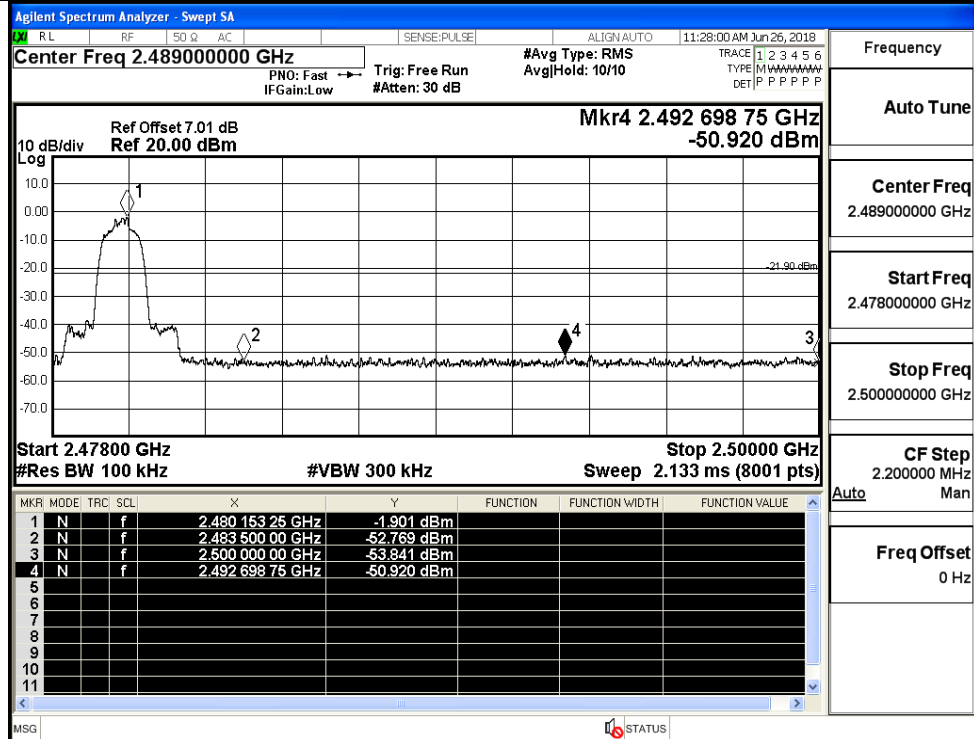
Start Freq
2.370000000 GHz

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 GHz

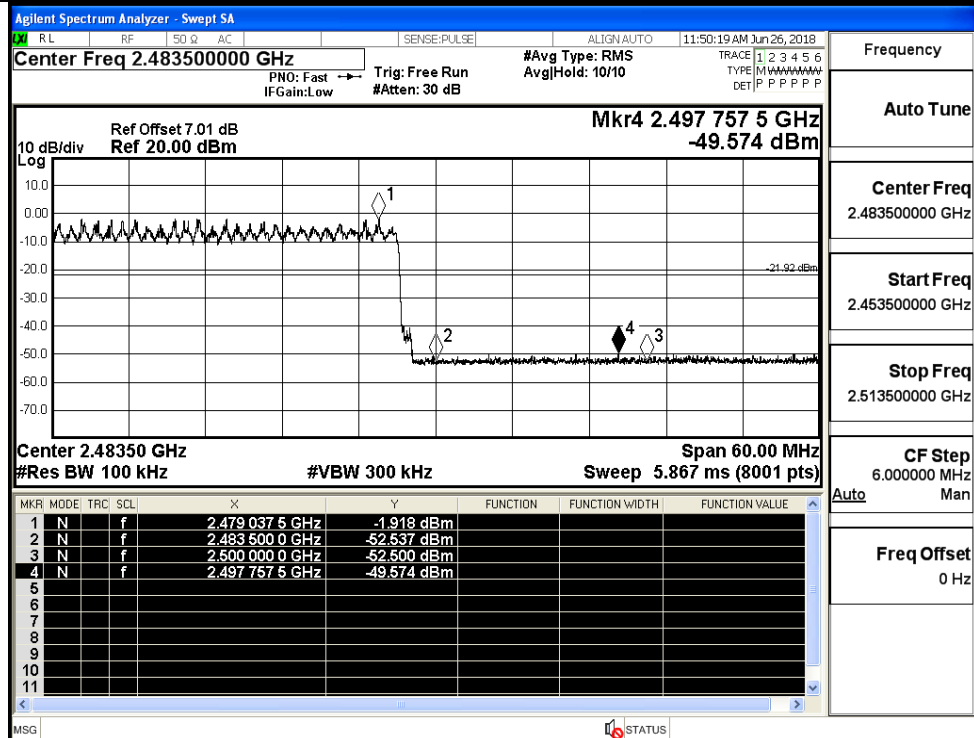
Start Freq
2.478000000 GHz

Stop Freq
2.500000000 GHz

CF Step
2.200000 MHz
Auto Man

Freq Offset
0 Hz

$\pi/4$ DQPSK/HCH/Hop



Frequency

Auto Tune

Center Freq
2.483500000 GHz

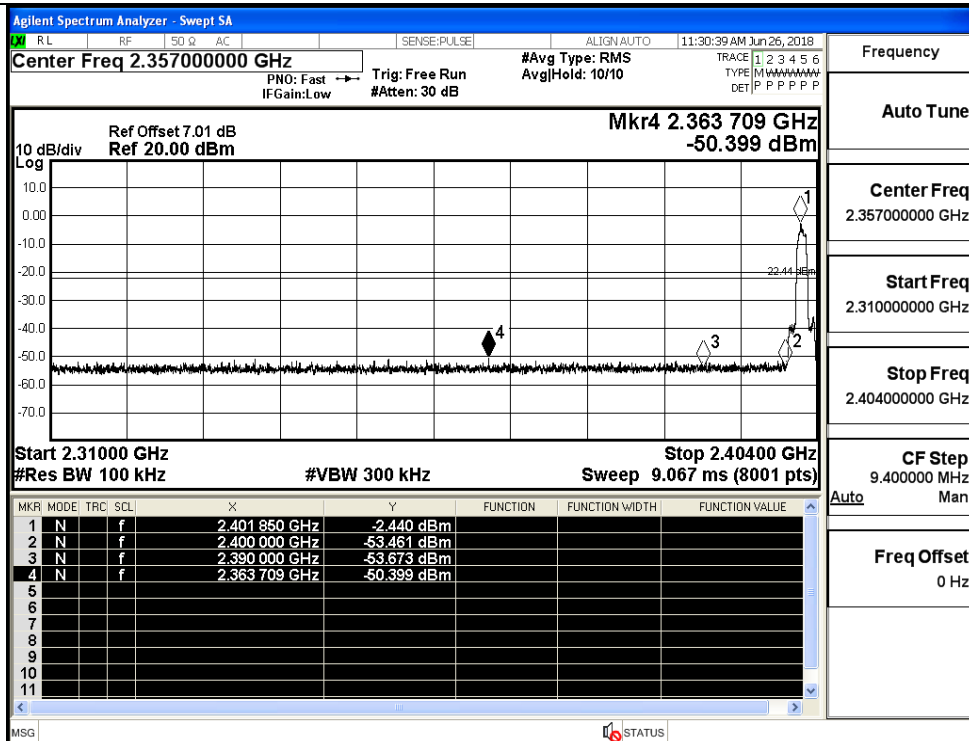
Start Freq
2.453500000 GHz

Stop Freq
2.513500000 GHz

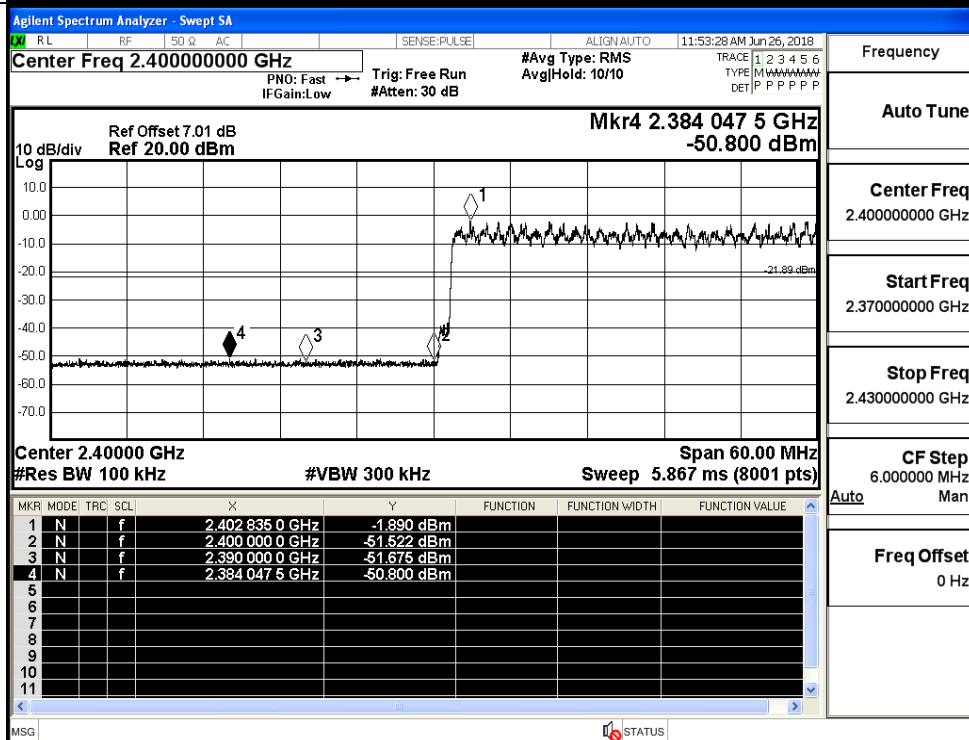
CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

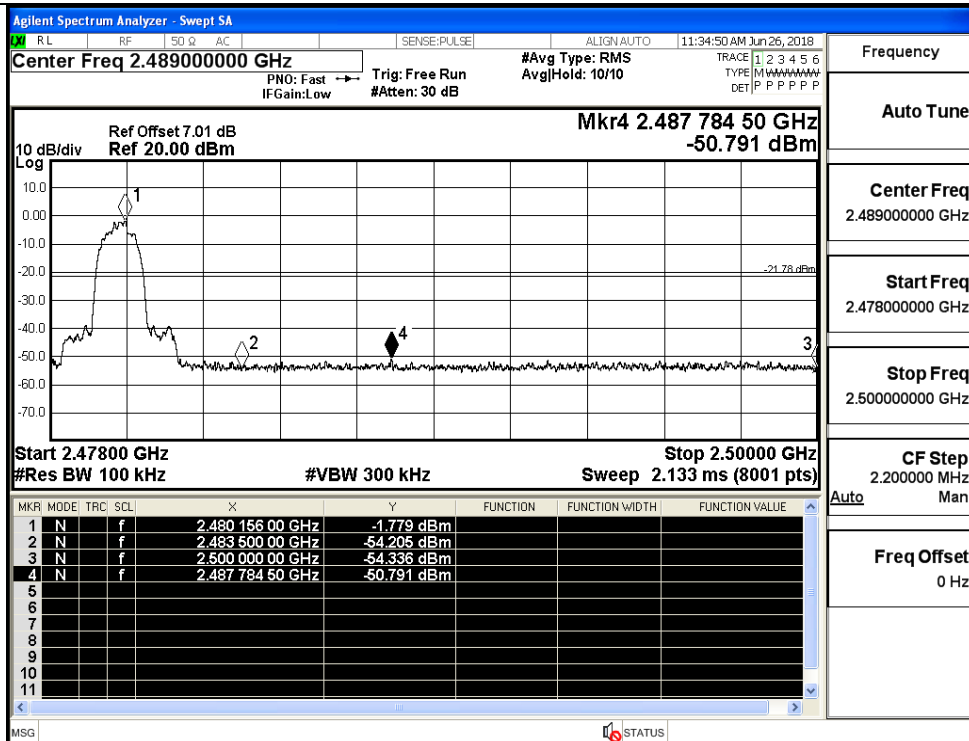
8DPSK/LCH/No Hop



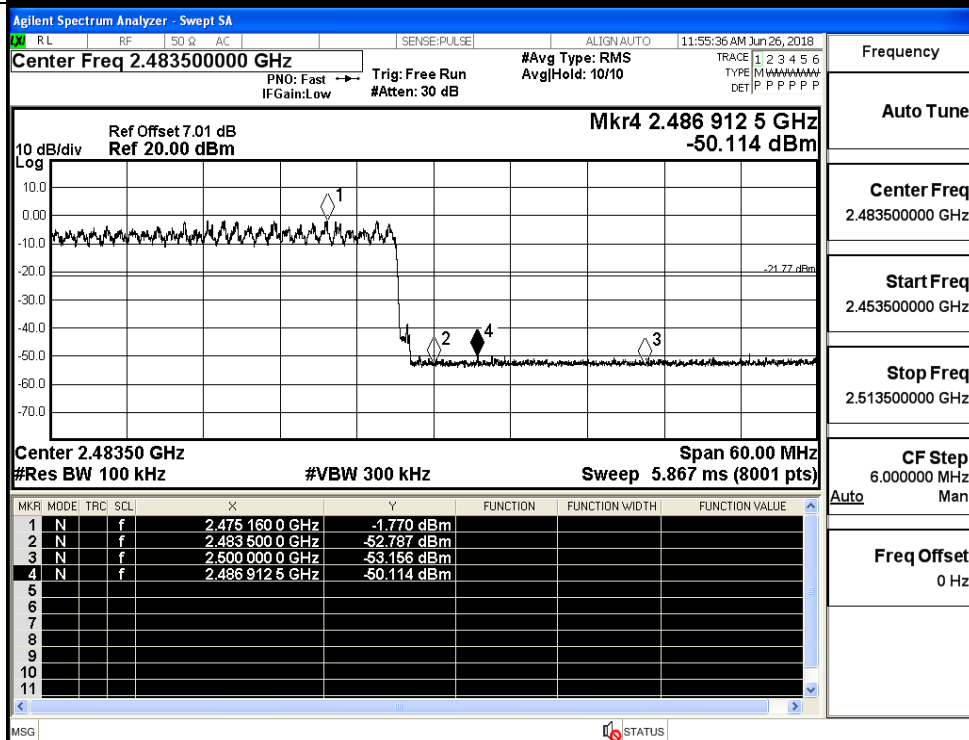
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



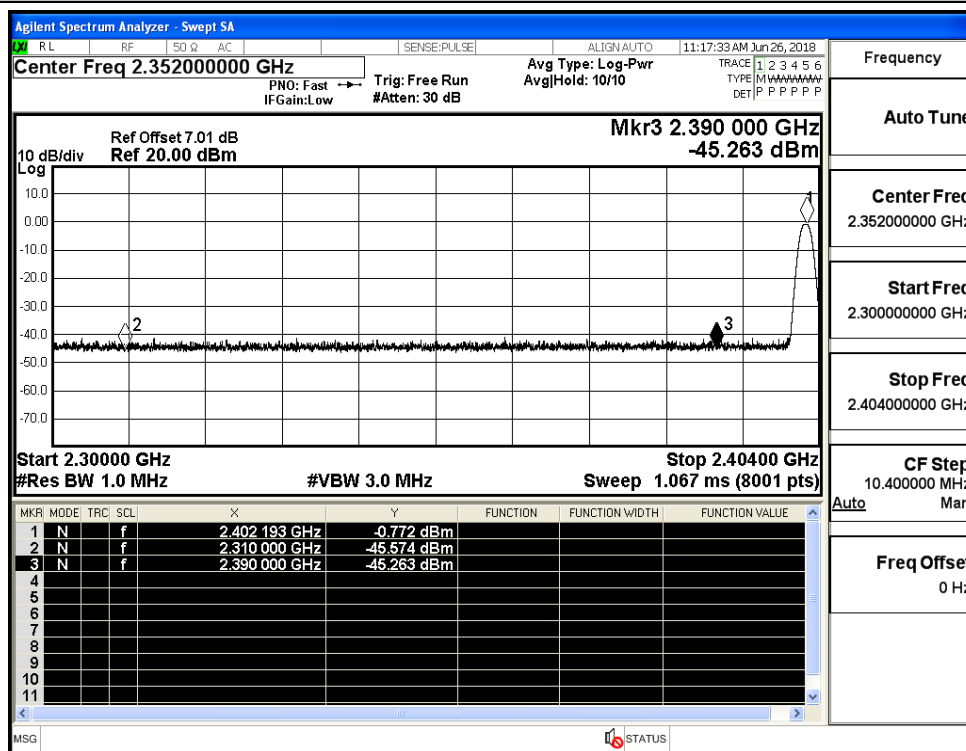
8DPSK/HCH/Hop



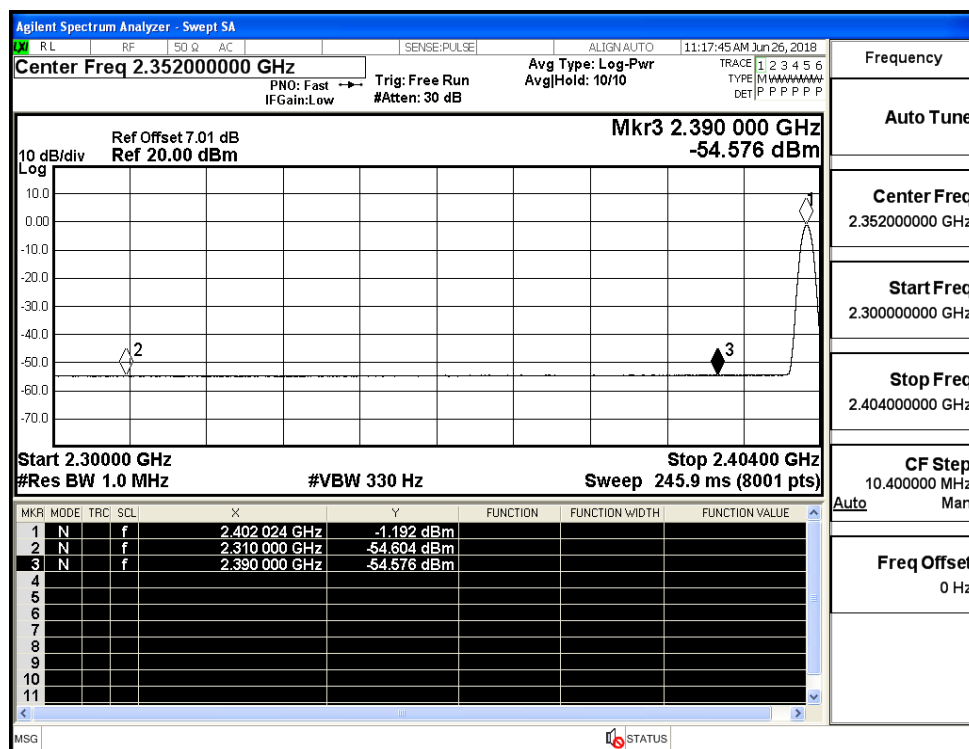
A.9 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-45.57	2.0	0	51.69	PEAK	74	PASS
	Off	2310.0	-54.60	2.0	0	42.66	AV	54	PASS
	Off	2390.0	-45.26	2.0	0	52.00	PEAK	74	PASS
	Off	2390.0	-54.58	2.0	0	42.68	AV	54	PASS
	Off	2483.5	-44.80	2.0	0	52.46	PEAK	74	PASS
	Off	2483.5	-54.28	2.0	0	42.98	AV	54	PASS
	Off	2500.0	-42.92	2.0	0	54.34	PEAK	74	PASS
	Off	2500.0	-54.10	2.0	0	43.16	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-44.62	2.0	0	52.64	PEAK	74	PASS
	Off	2310.0	-54.79	2.0	0	42.47	AV	54	PASS
	Off	2390.0	-44.43	2.0	0	52.83	PEAK	74	PASS
	Off	2390.0	-54.43	2.0	0	42.83	AV	54	PASS
	Off	2483.5	-43.67	2.0	0	53.59	PEAK	74	PASS
	Off	2483.5	-54.28	2.0	0	42.98	AV	54	PASS
	Off	2500.0	-45.27	2.0	0	51.99	PEAK	74	PASS
	Off	2500.0	-54.16	2.0	0	43.10	AV	54	PASS
8DPSK	Off	2310.0	-44.27	2.0	0	52.99	PEAK	74	PASS
	Off	2310.0	-54.75	2.0	0	42.51	AV	54	PASS
	Off	2390.0	-45.31	2.0	0	51.95	PEAK	74	PASS
	Off	2390.0	-54.41	2.0	0	42.85	AV	54	PASS
	Off	2483.5	-44.04	2.0	0	53.22	PEAK	74	PASS
	Off	2483.5	-54.12	2.0	0	43.14	AV	54	PASS
	Off	2500.0	-43.97	2.0	0	53.29	PEAK	74	PASS
	Off	2500.0	-54.13	2.0	0	43.13	AV	54	PASS

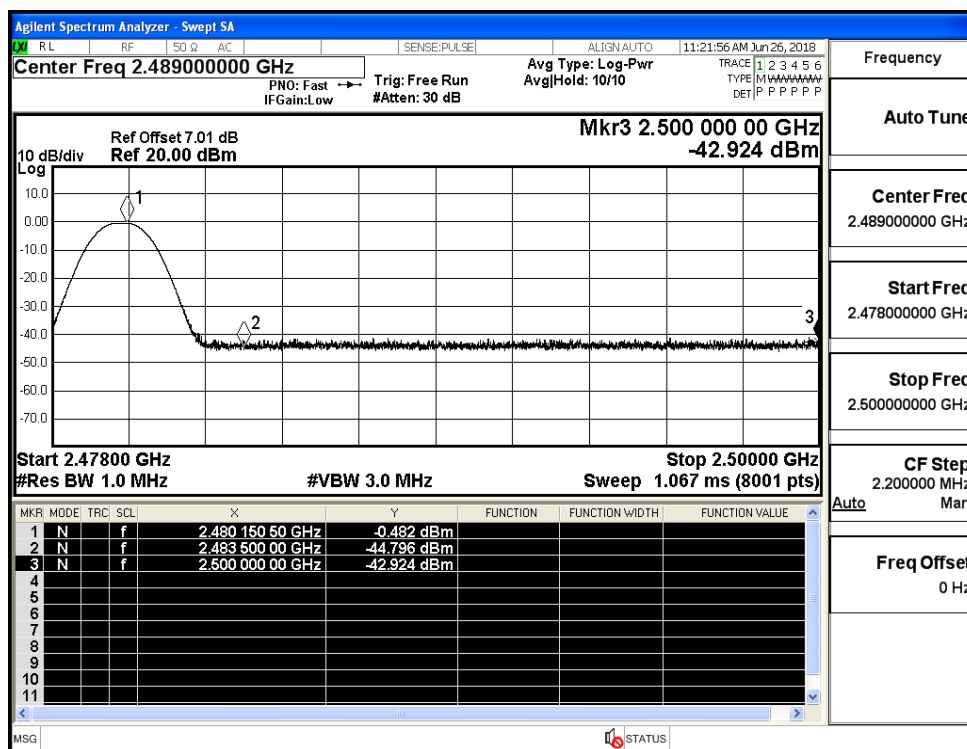
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



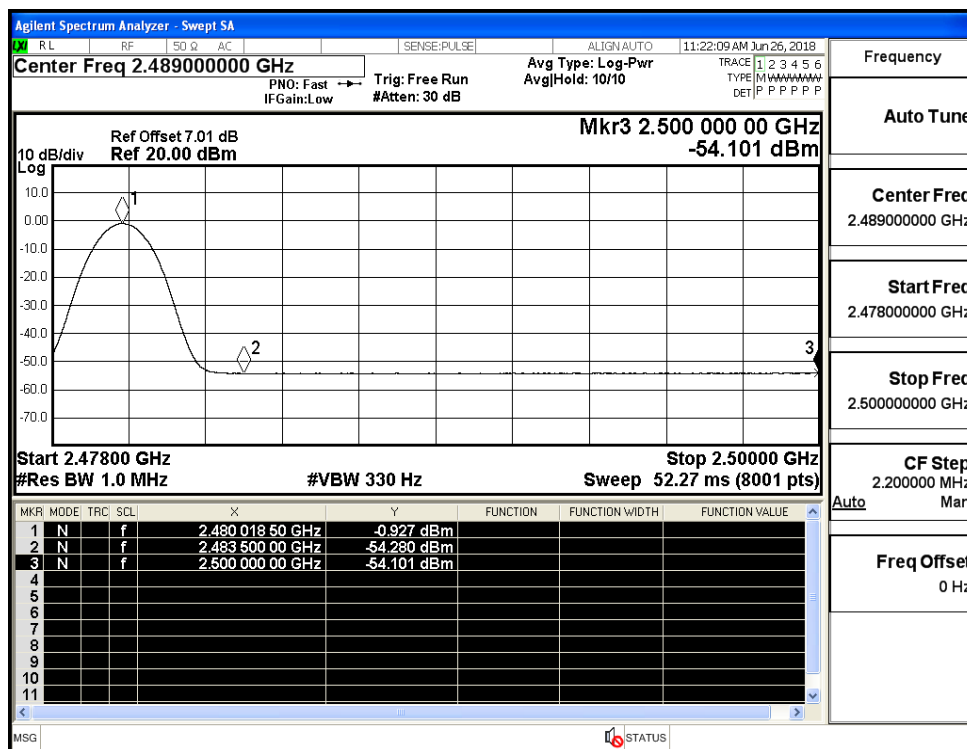
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

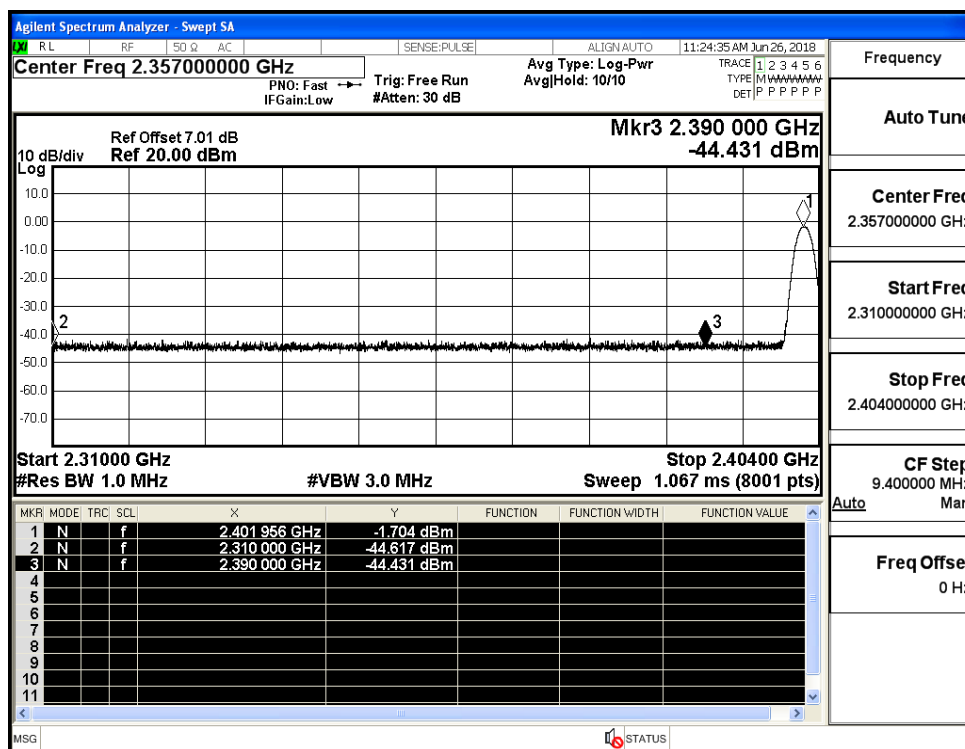
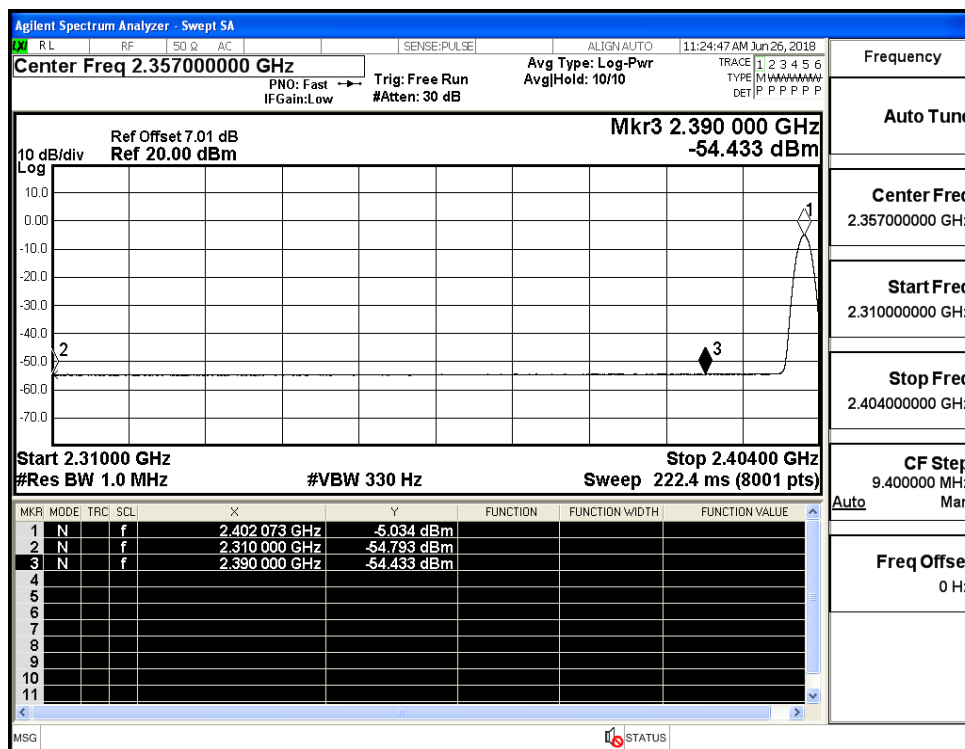


Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)

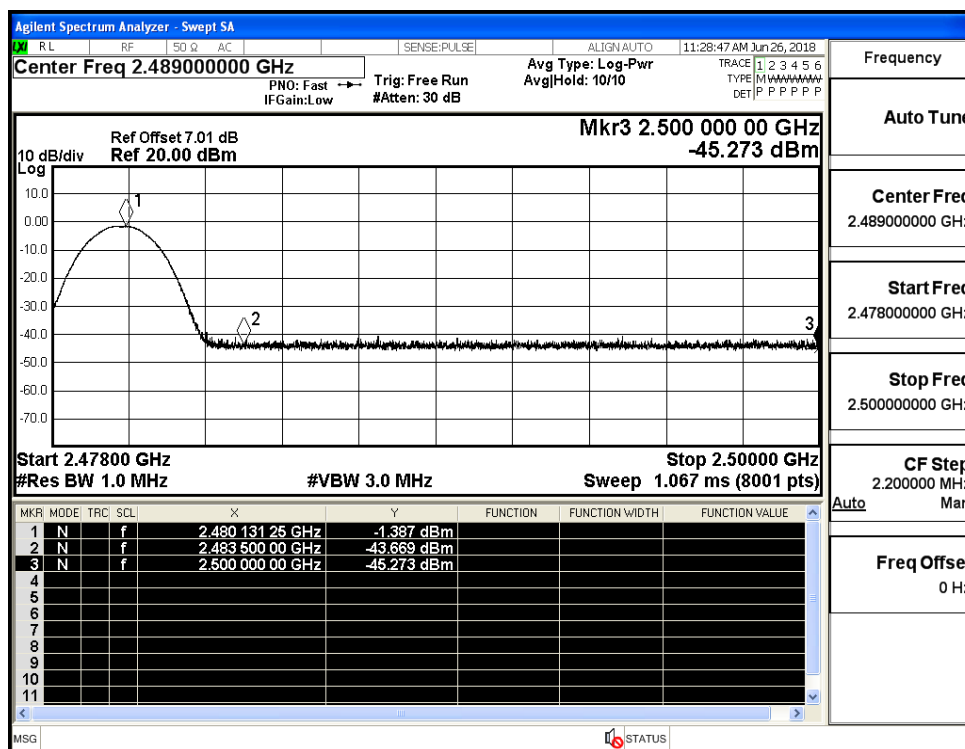


Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)

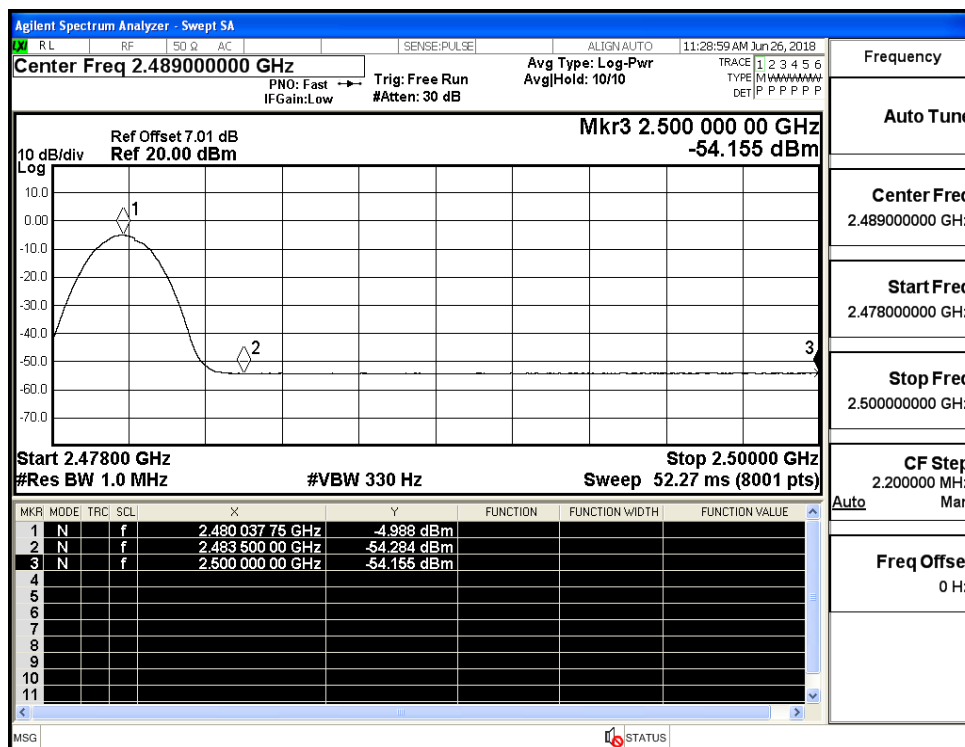


Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

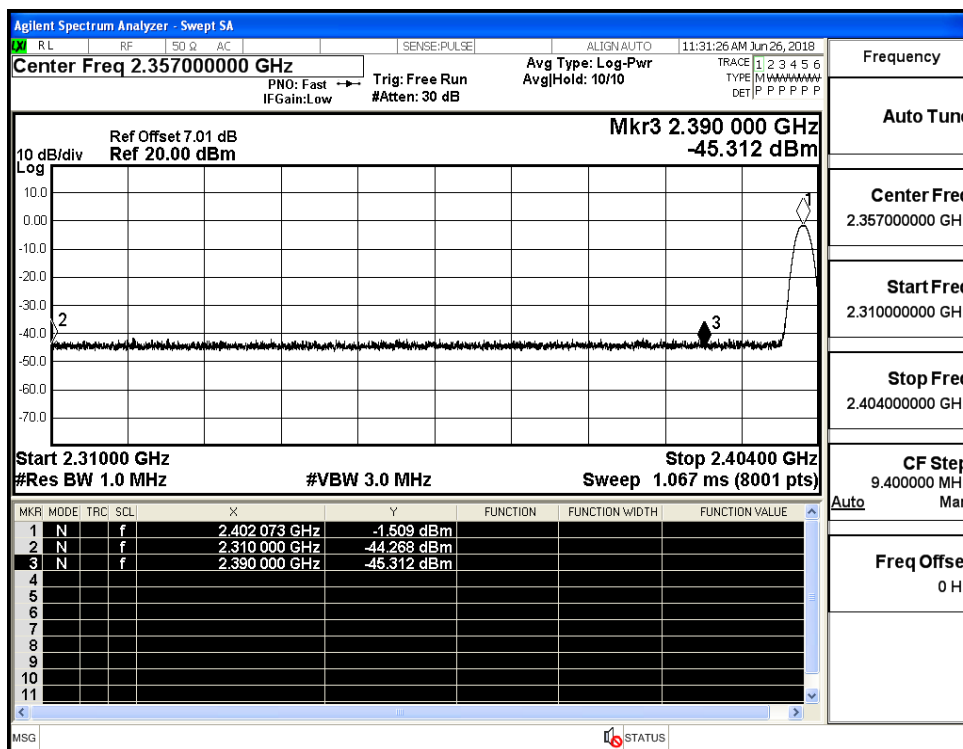
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



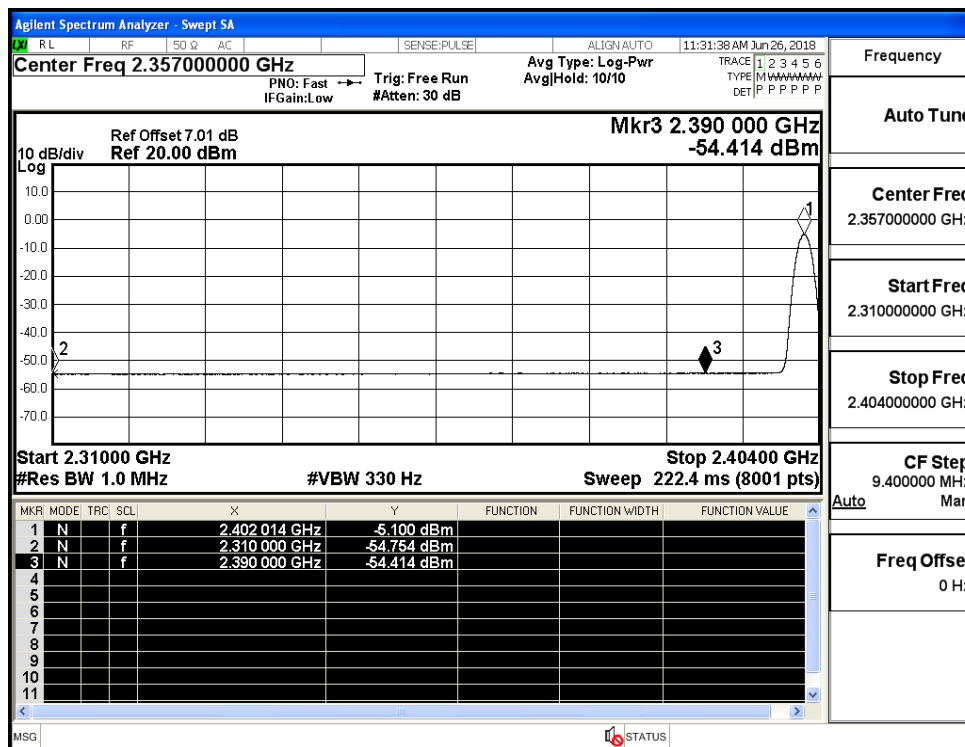
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



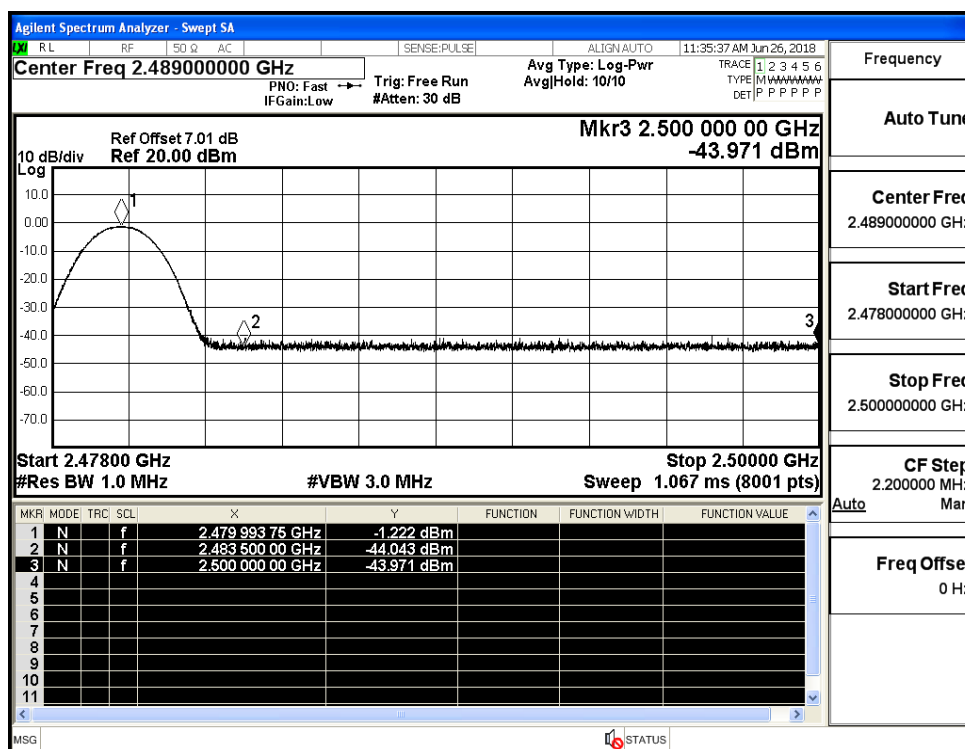
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

