

Appendix A

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

Product Name: GRAPHENE PHYSIOTHERAPY MUSIC EYE MASK

Trade Mark: N/A

Test Model: ST-2060

Environmental Conditions

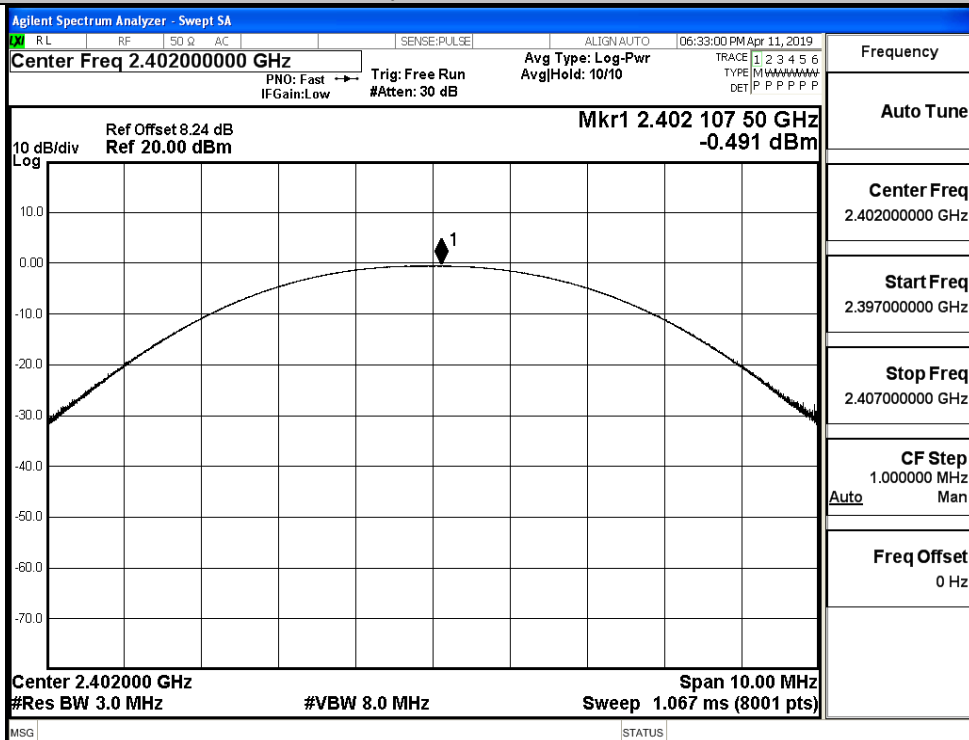
Temperature:	23.4 ° C
Relative Humidity:	53.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Jerry.Zeng
Supervised by:	Tom.Liu

A.1 Maximum Conducted Peak Output Power

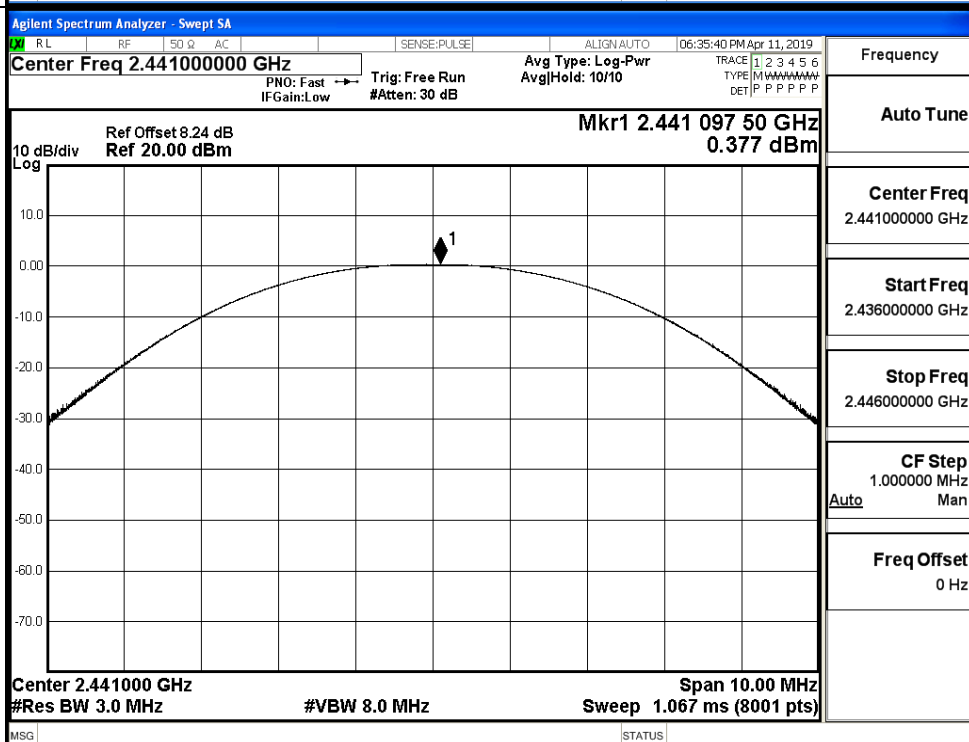
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.491	21	PASS
	MCH	0.377	21	PASS
	HCH	-0.518	21	PASS
$\pi/4$ DQPSK	LCH	-1.087	21	PASS
	MCH	-0.327	21	PASS
	HCH	-1.203	21	PASS
8DPSK	LCH	-0.967	21	PASS
	MCH	-0.145	21	PASS
	HCH	-1.124	21	PASS

Test Graphs

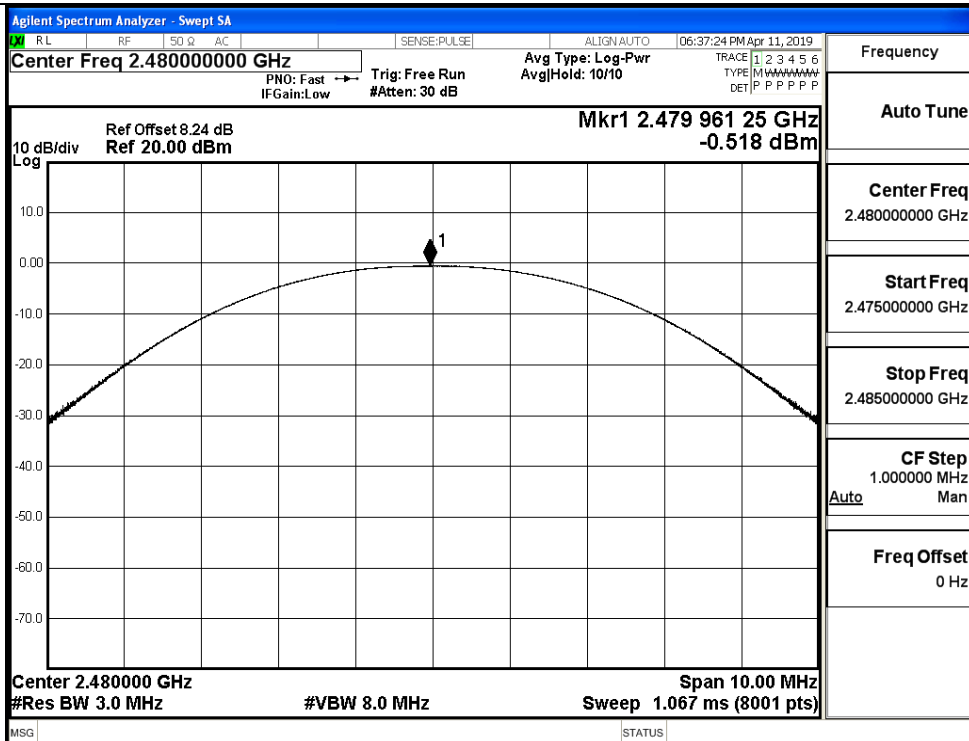
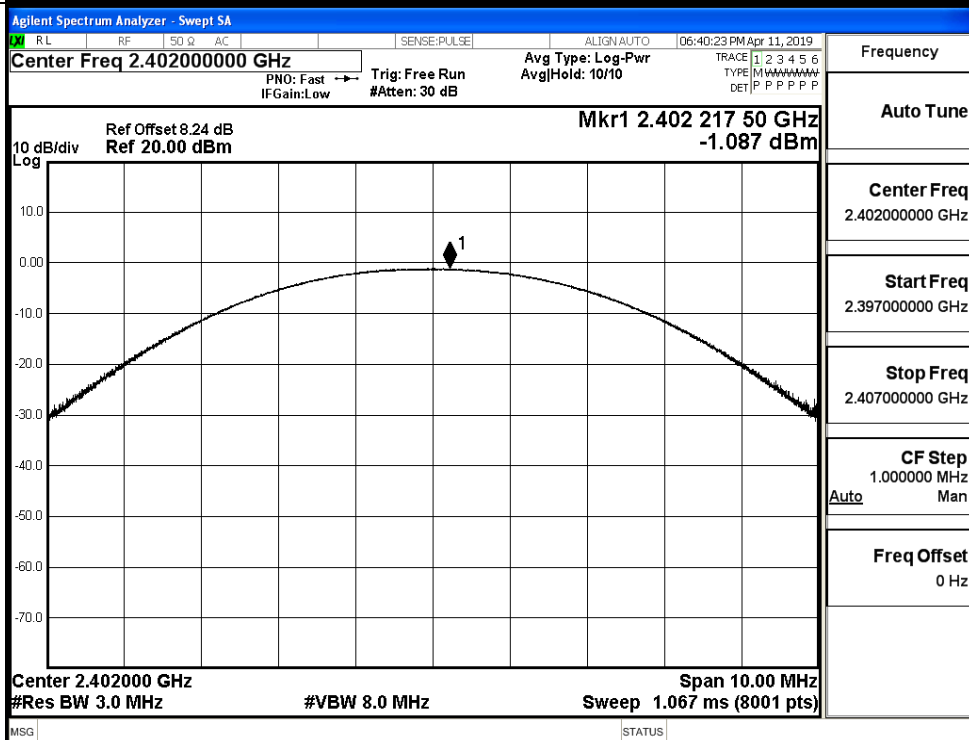
GFSK/LCH

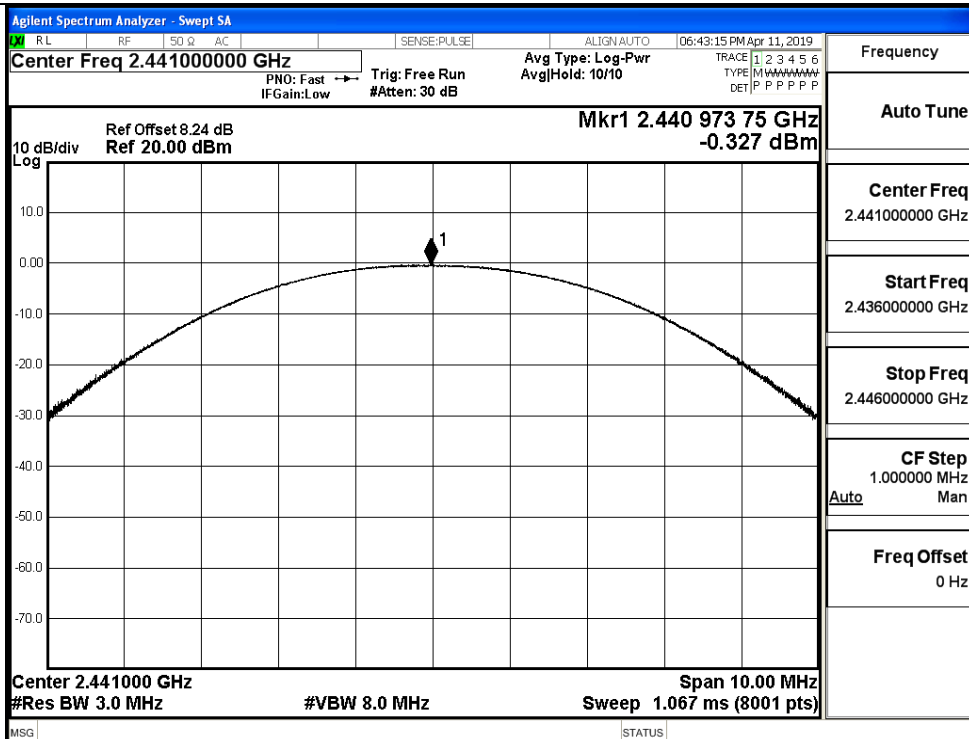
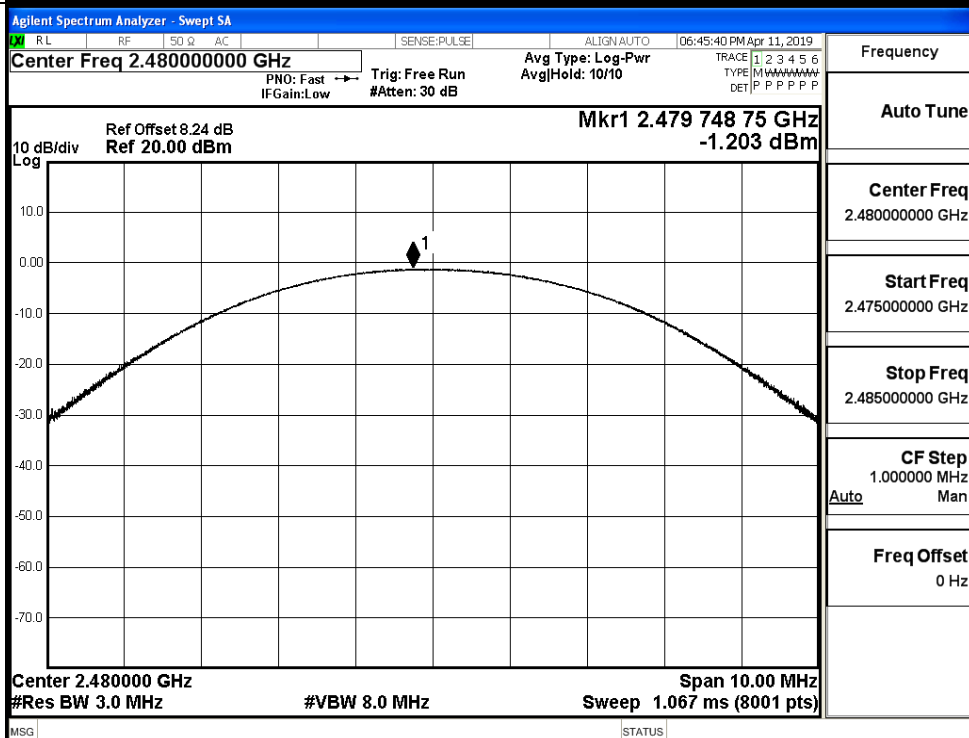


GFSK/MCH

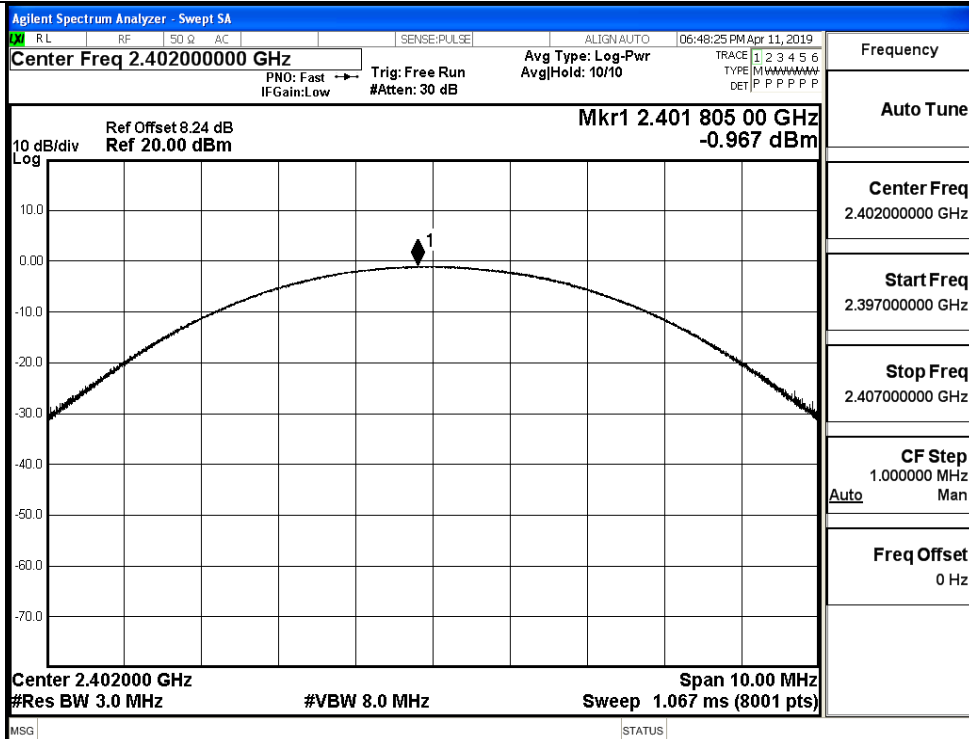


GFSK/HCH

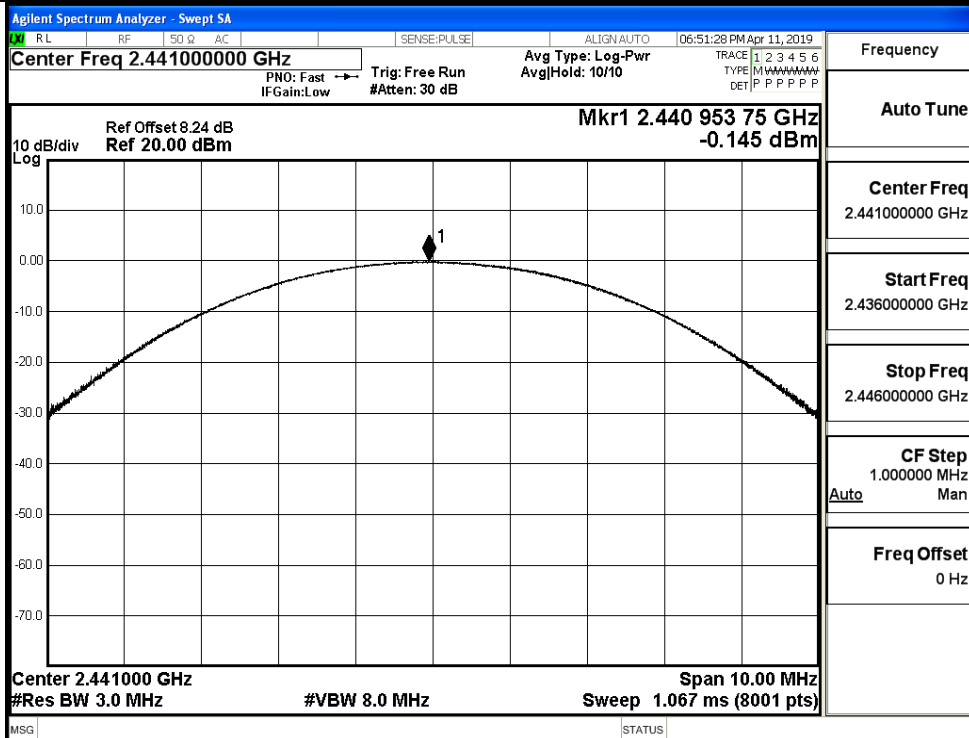
 π /4DQPSK/LCH

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

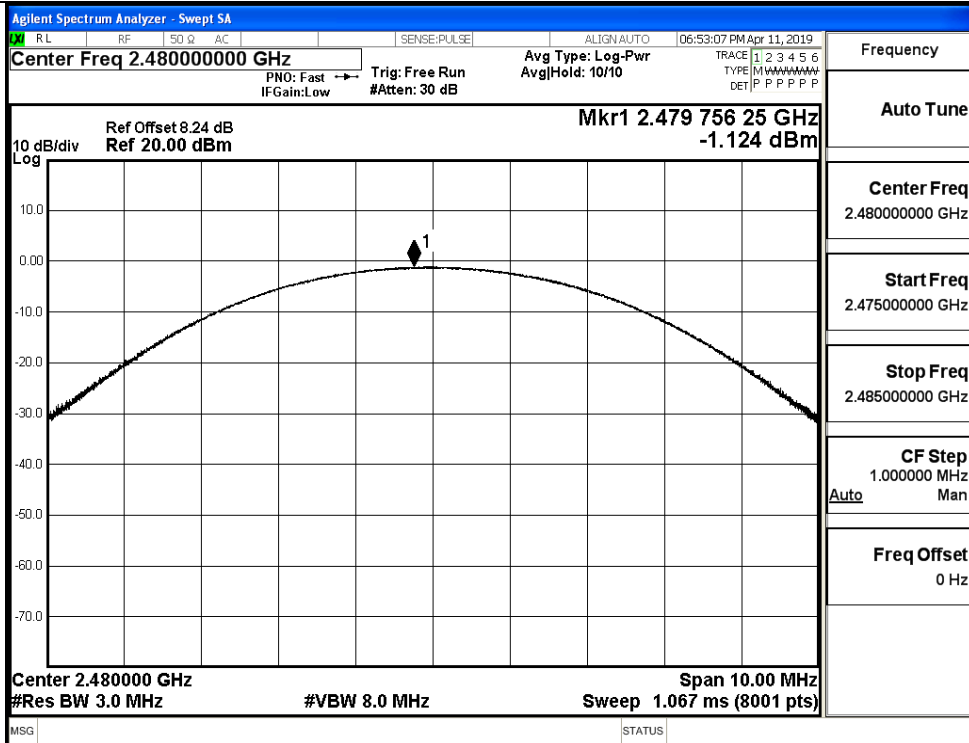
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

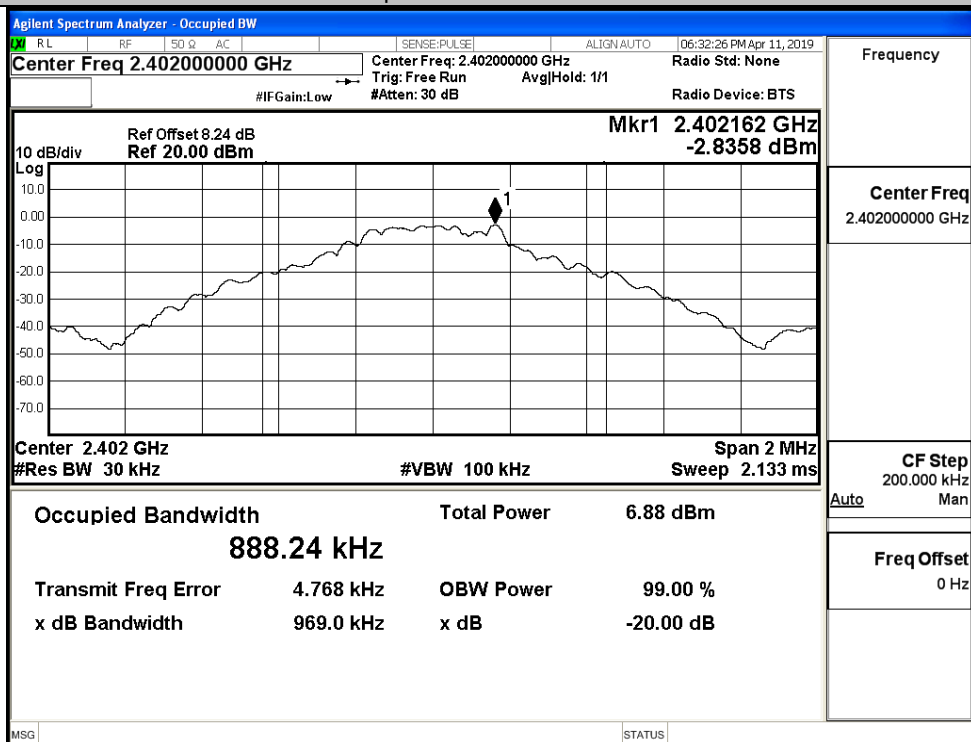


A.2 99% and 20dB Bandwidth

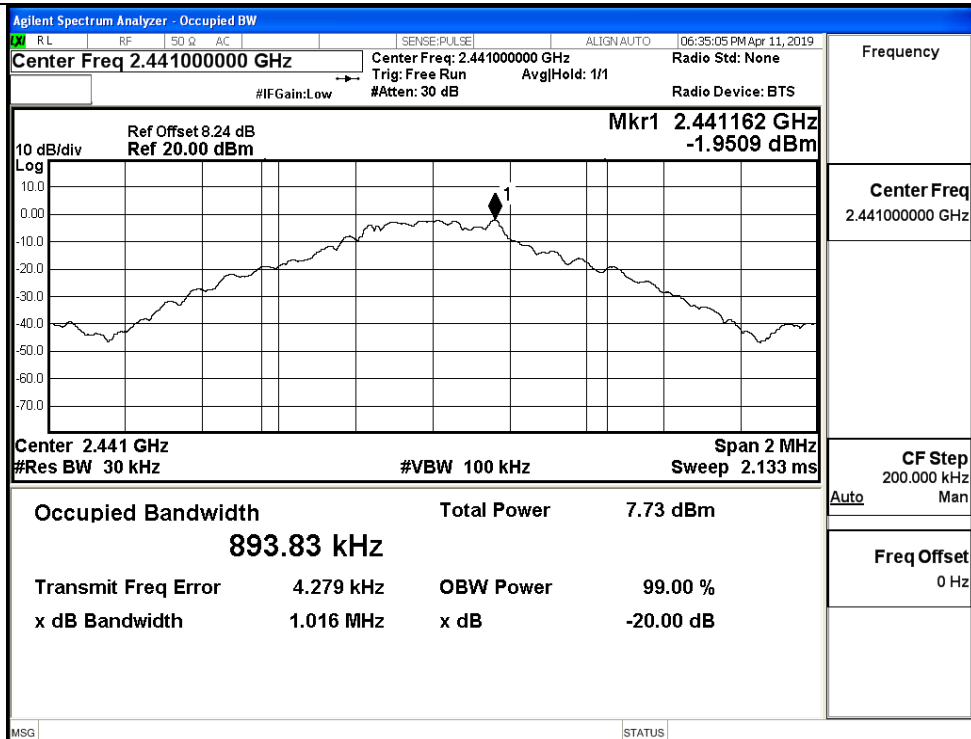
Mode	Channel.	99% Bandwidth [MHz]	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.88824	0.9690	Not Specified	PASS
	MCH	0.89383	1.016	Not Specified	PASS
	HCH	0.89544	1.025	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.1779	1.312	Not Specified	PASS
	MCH	1.1752	1.308	Not Specified	PASS
	HCH	1.1744	1.315	Not Specified	PASS
8DPSK	LCH	1.1880	1.295	Not Specified	PASS
	MCH	1.1898	1.297	Not Specified	PASS
	HCH	1.1876	1.311	Not Specified	PASS

Test Graphs

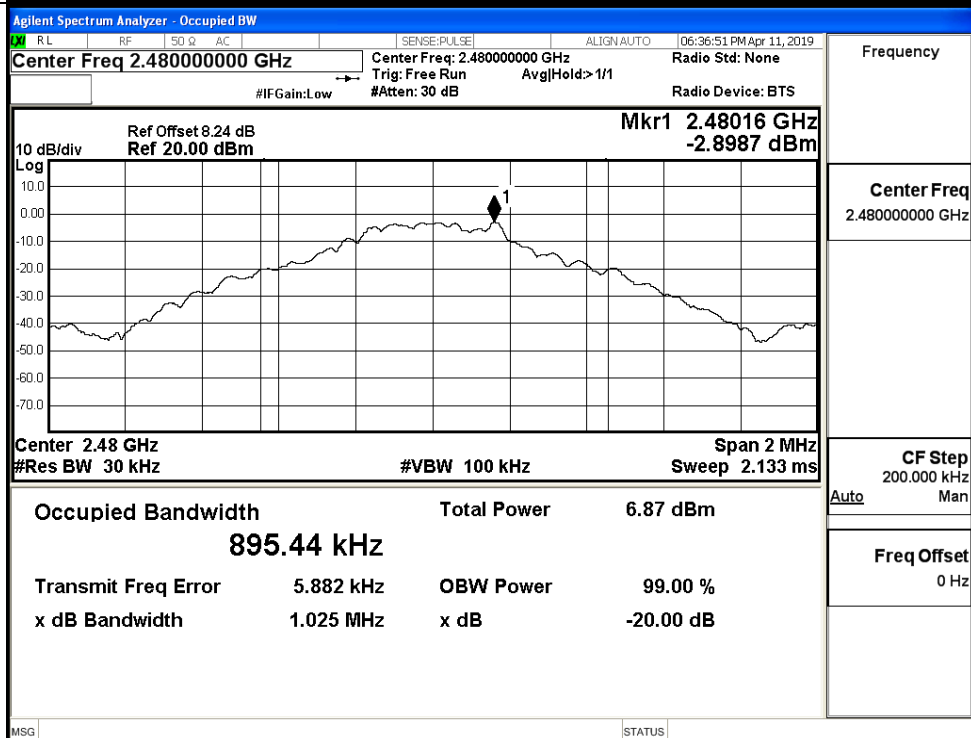
GFSK/LCH

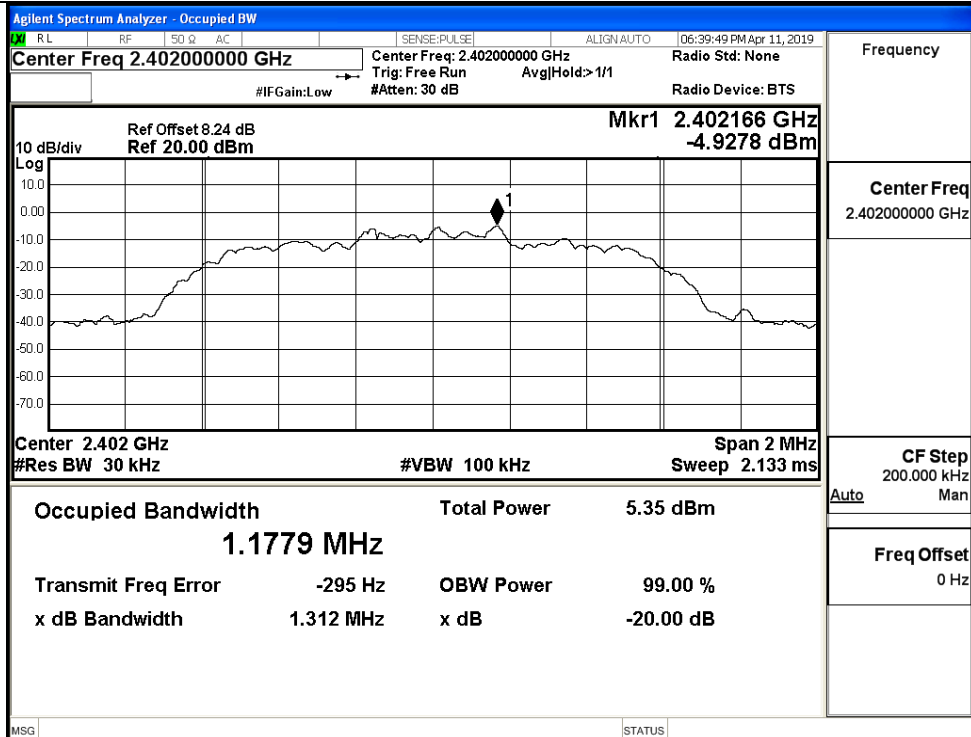
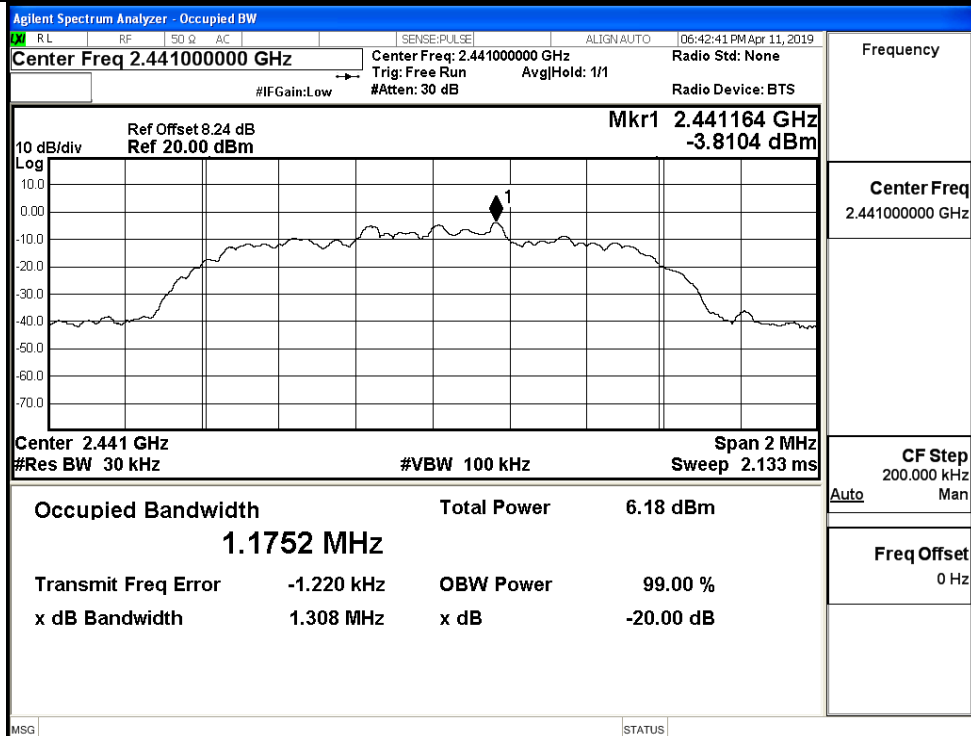


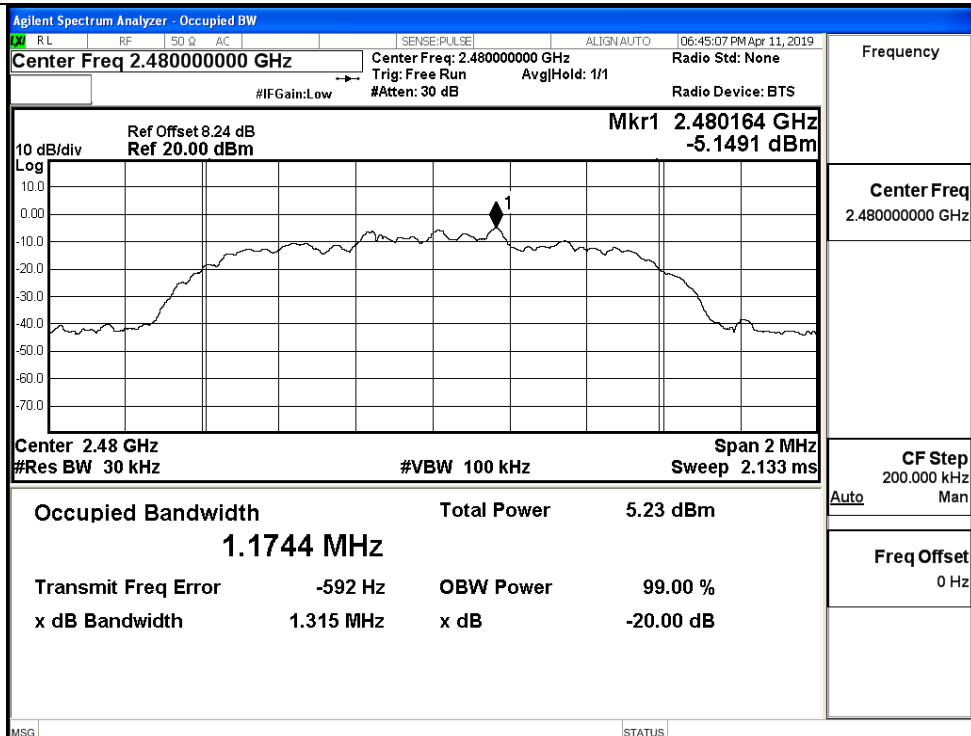
GFSK/MCH



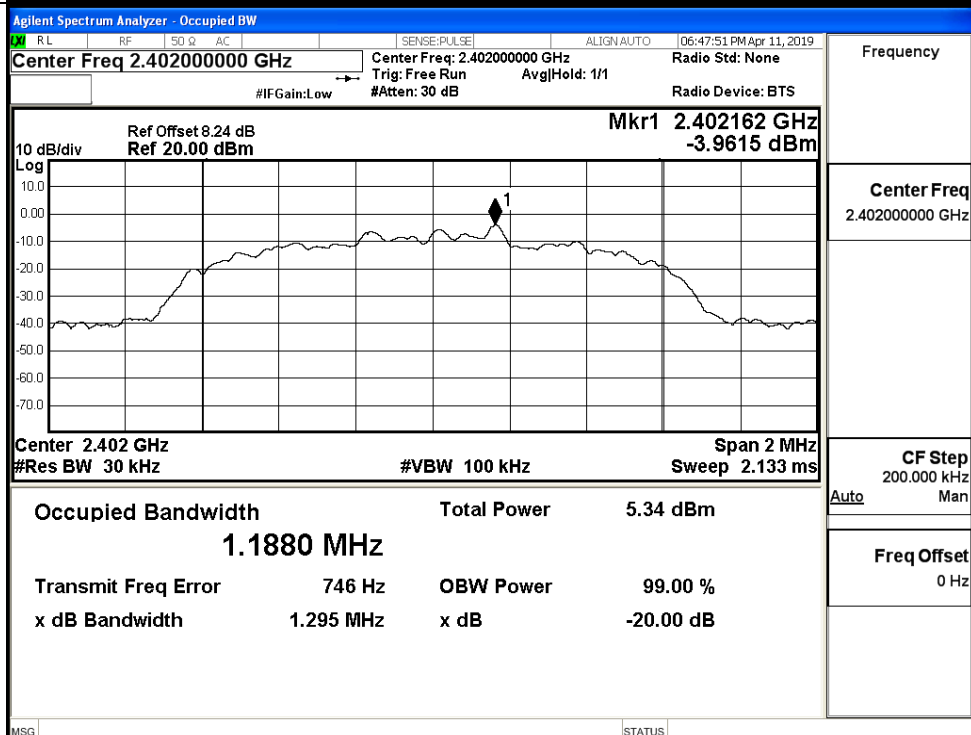
GFSK/HCH



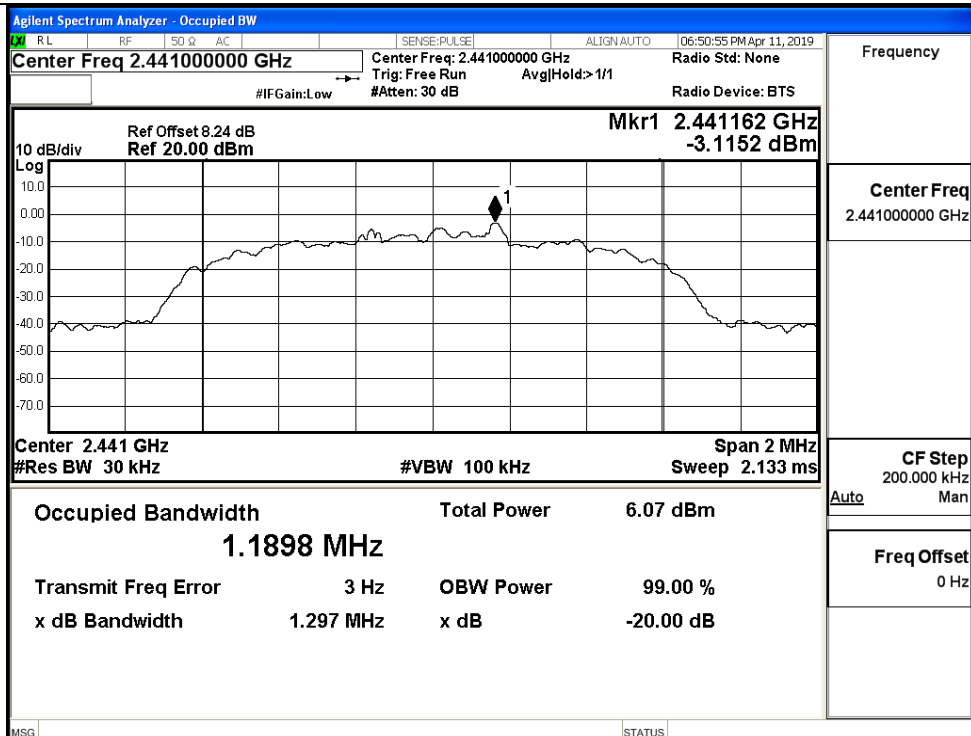
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

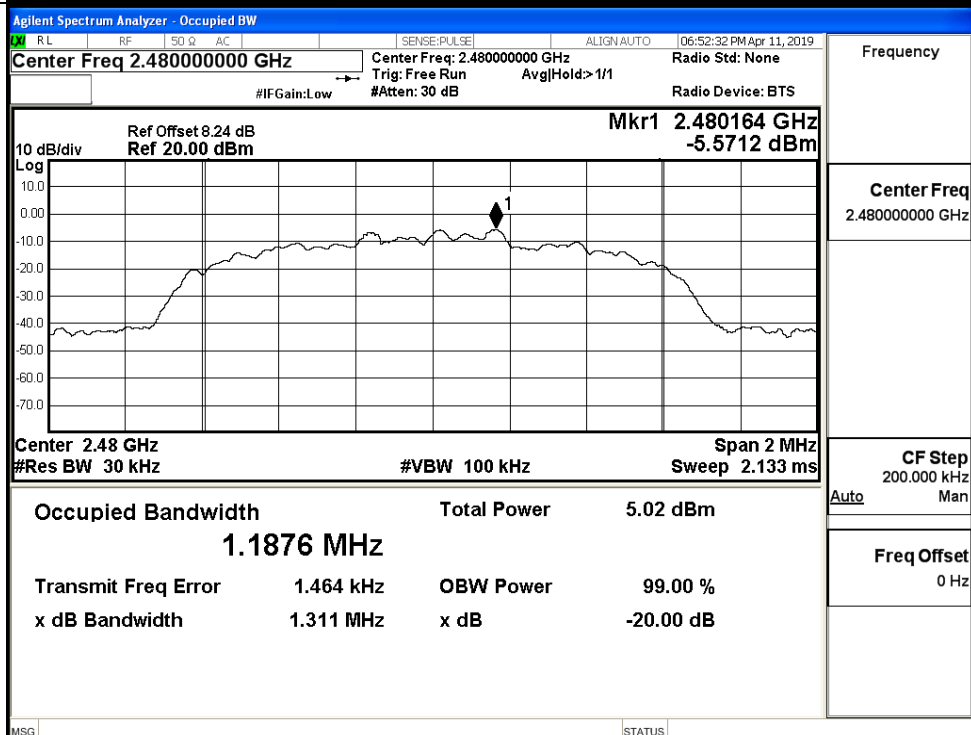
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

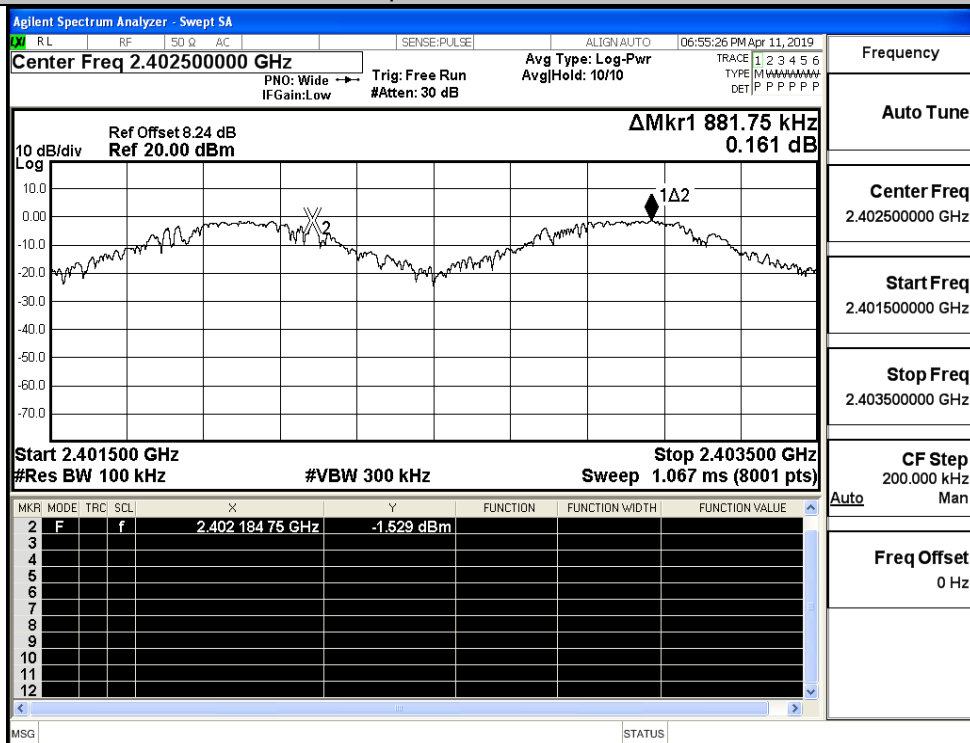


A.3 Carrier Frequency Separation

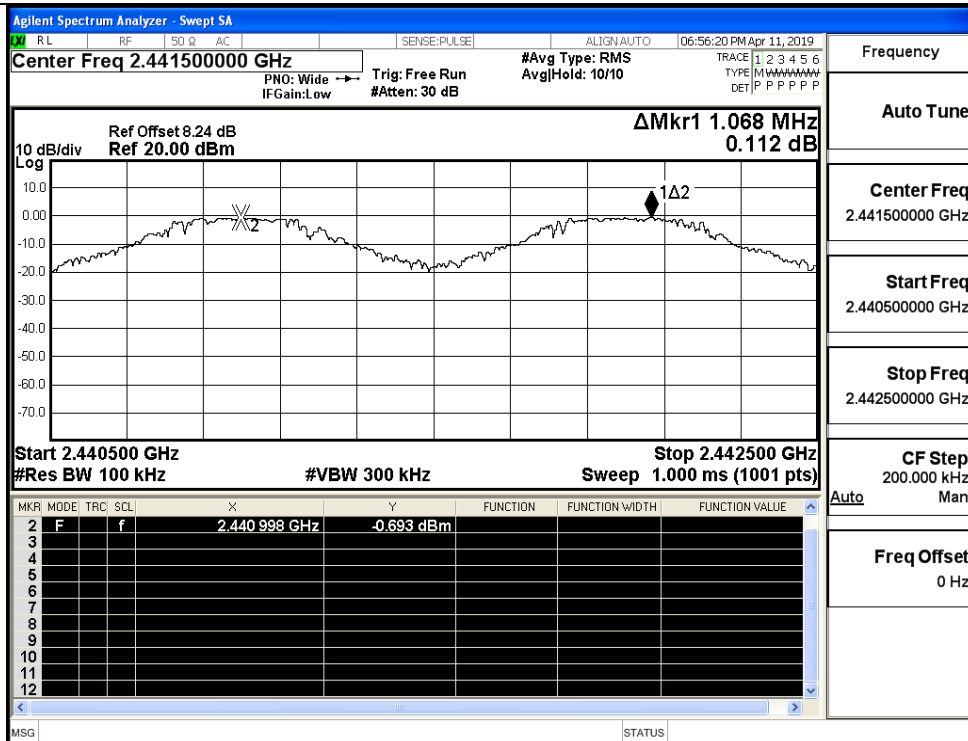
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.882	0.683	PASS
	MCH	1.068	0.683	PASS
	HCH	0.814	0.683	PASS
π /4DQPSK	LCH	1.092	0.877	PASS
	MCH	1.018	0.877	PASS
	HCH	0.978	0.877	PASS
8DPSK	LCH	1.300	0.874	PASS
	MCH	1.282	0.874	PASS
	HCH	1.332	0.874	PASS

Test Graphs

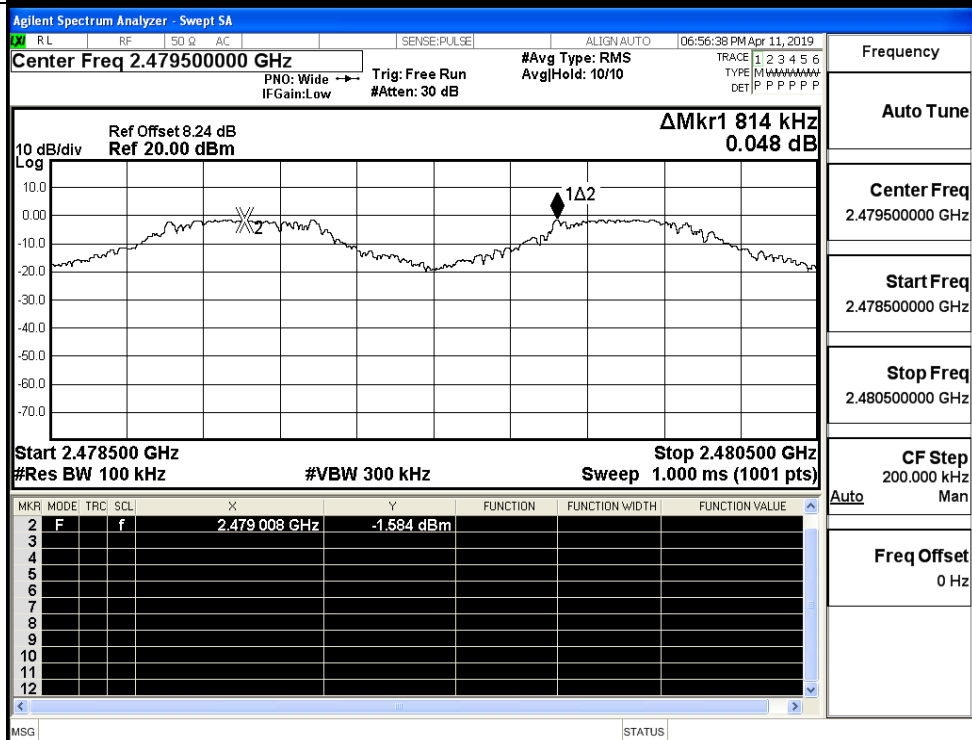
GFSK/LCH

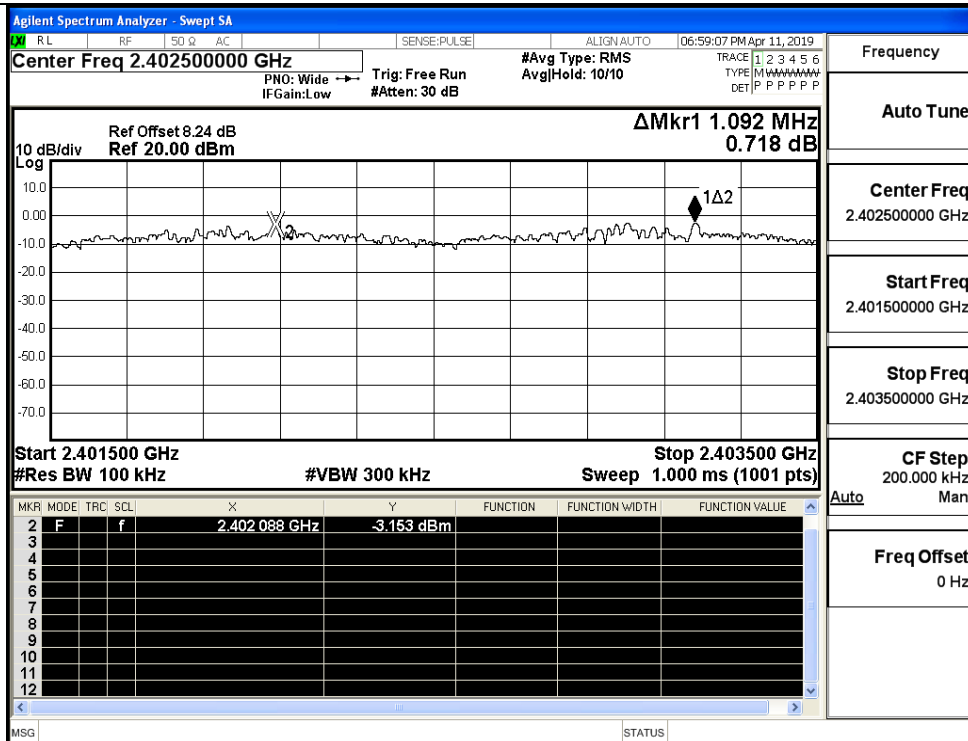
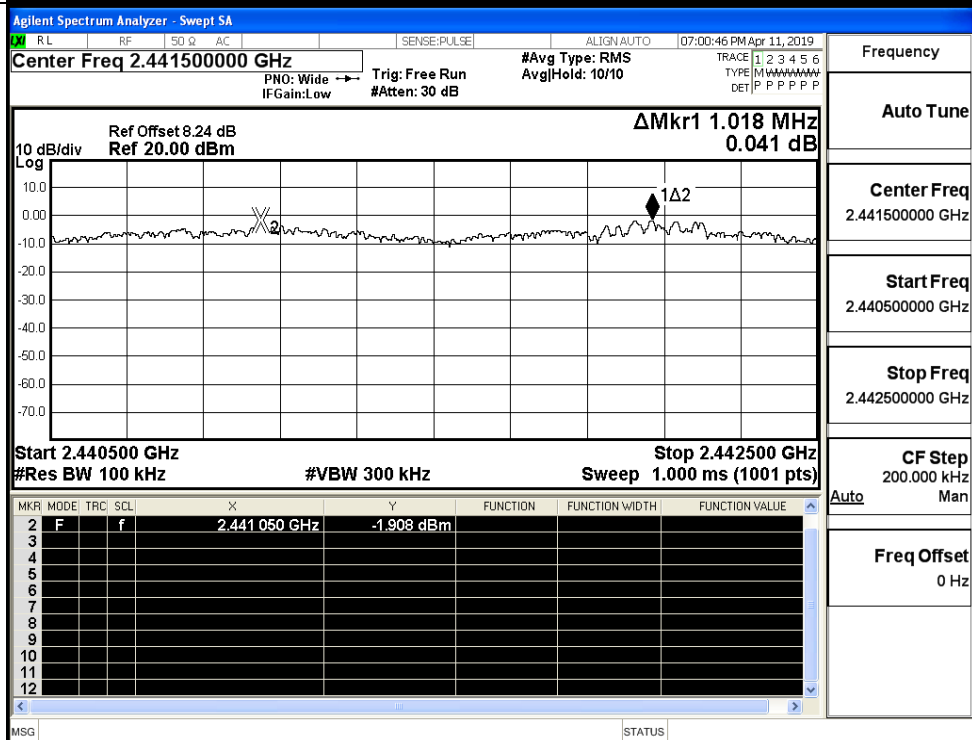


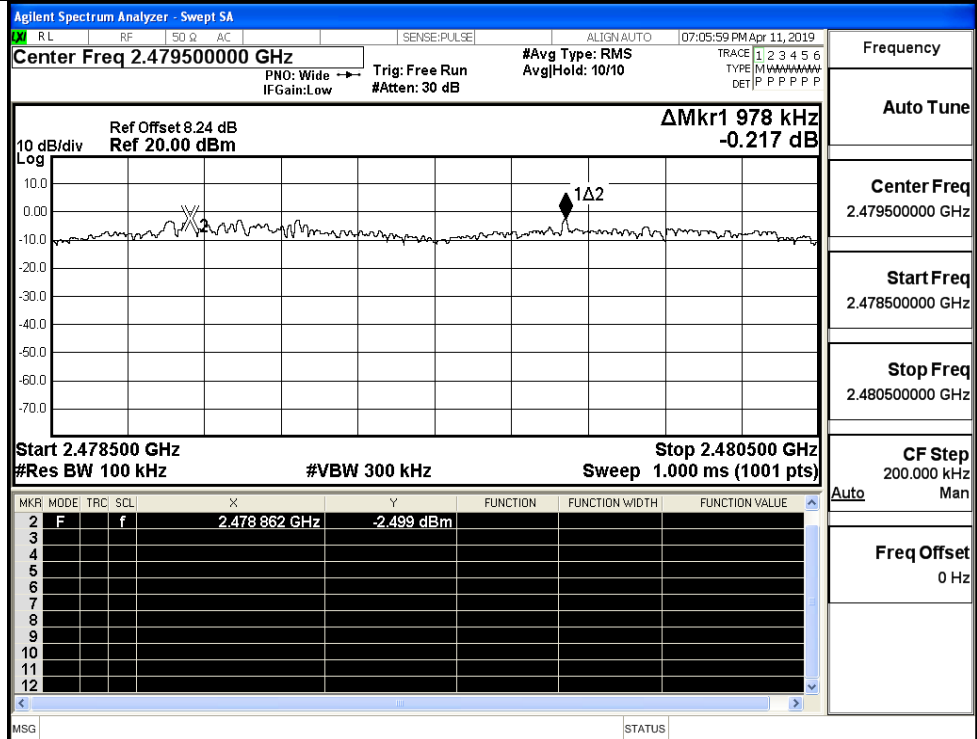
GFSK/MCH



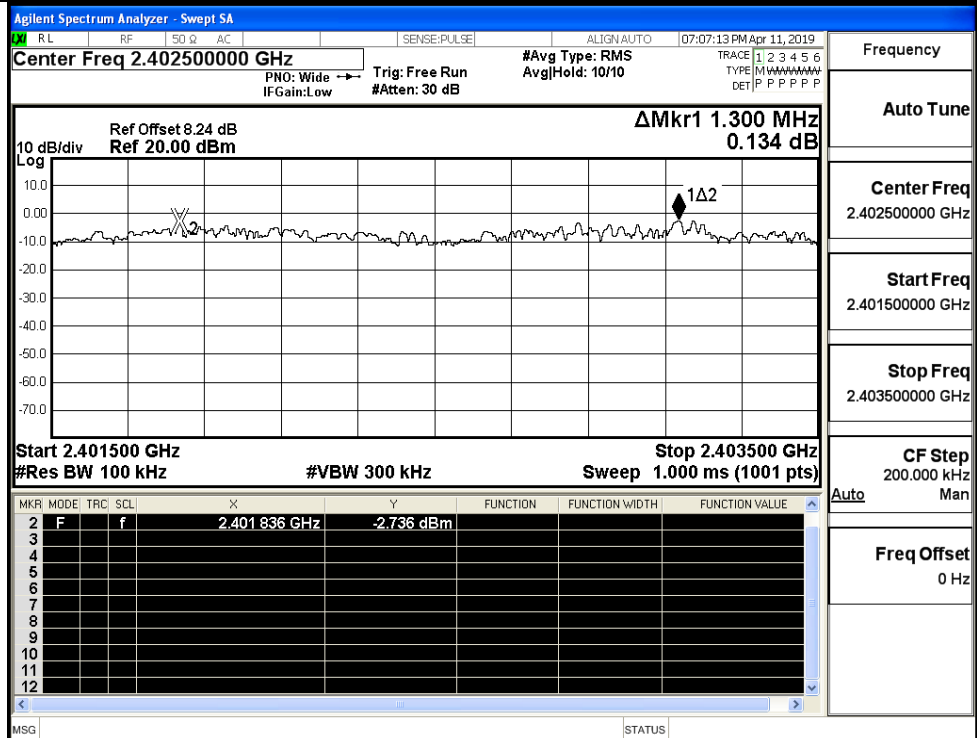
GFSK/HCH



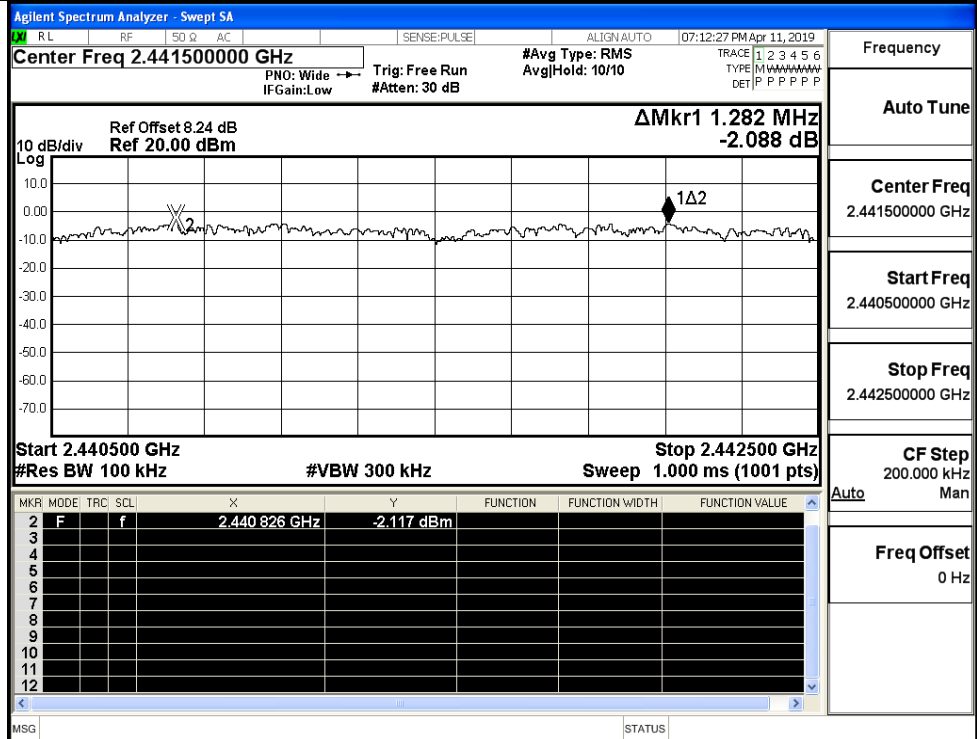
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

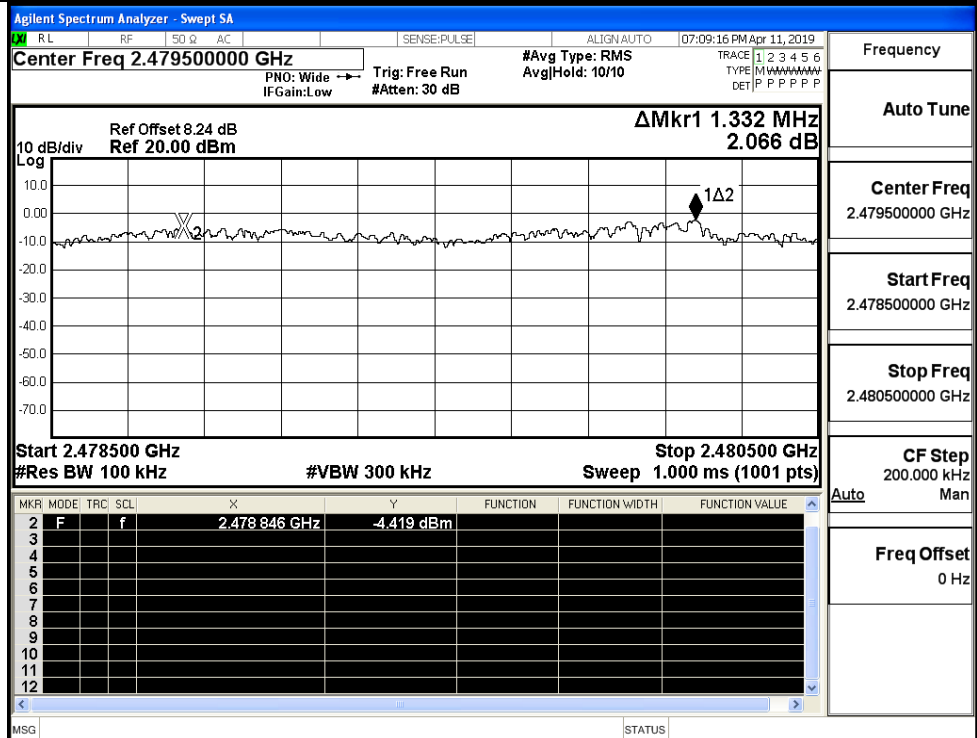
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

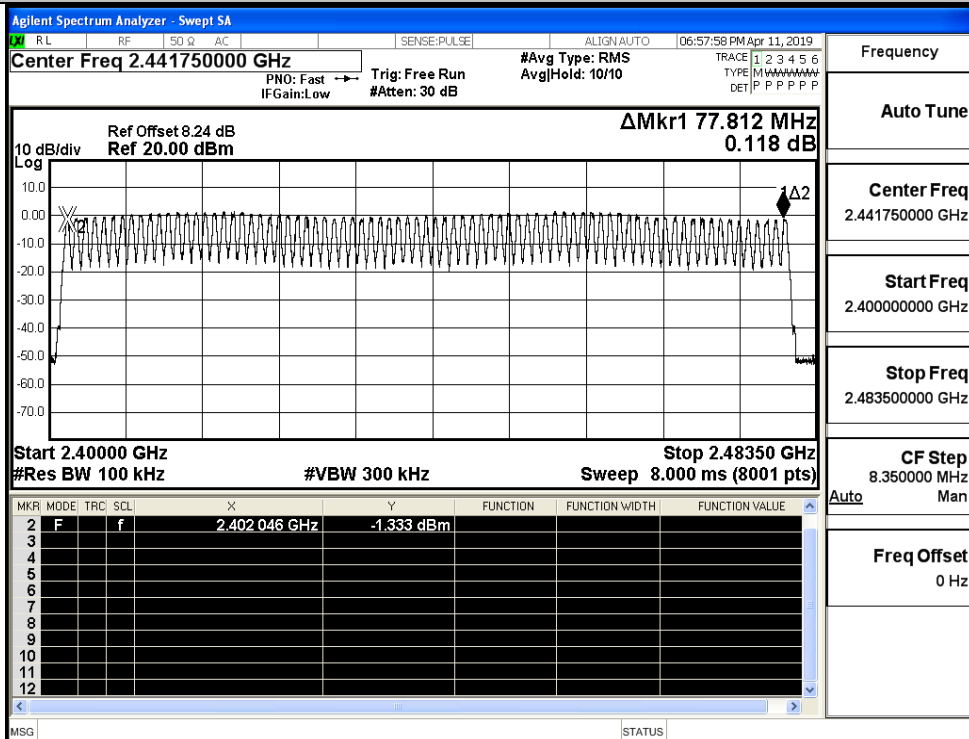
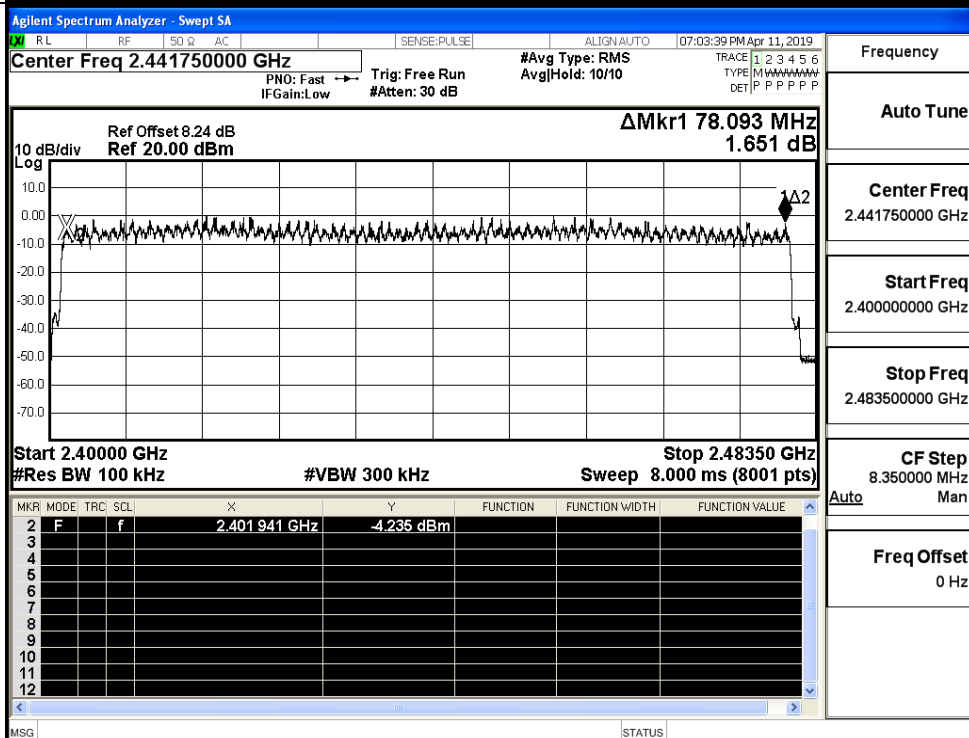


A.4 Hopping Channel Number

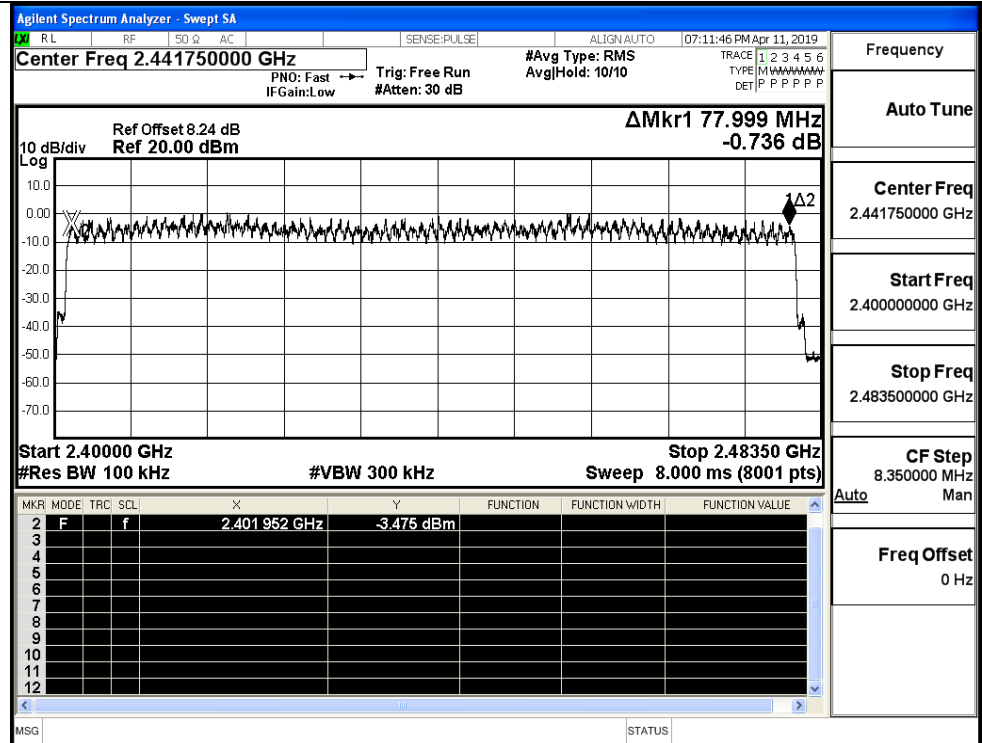
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	≥ 15	PASS
$\pi/4$ DQPSK	Hop	79	≥ 15	PASS
8DPSK	Hop	79	≥ 15	PASS

Test Graphs

GFSK/Hop

 $\pi/4$ DQPSK/Hop

8DPSK/Hop

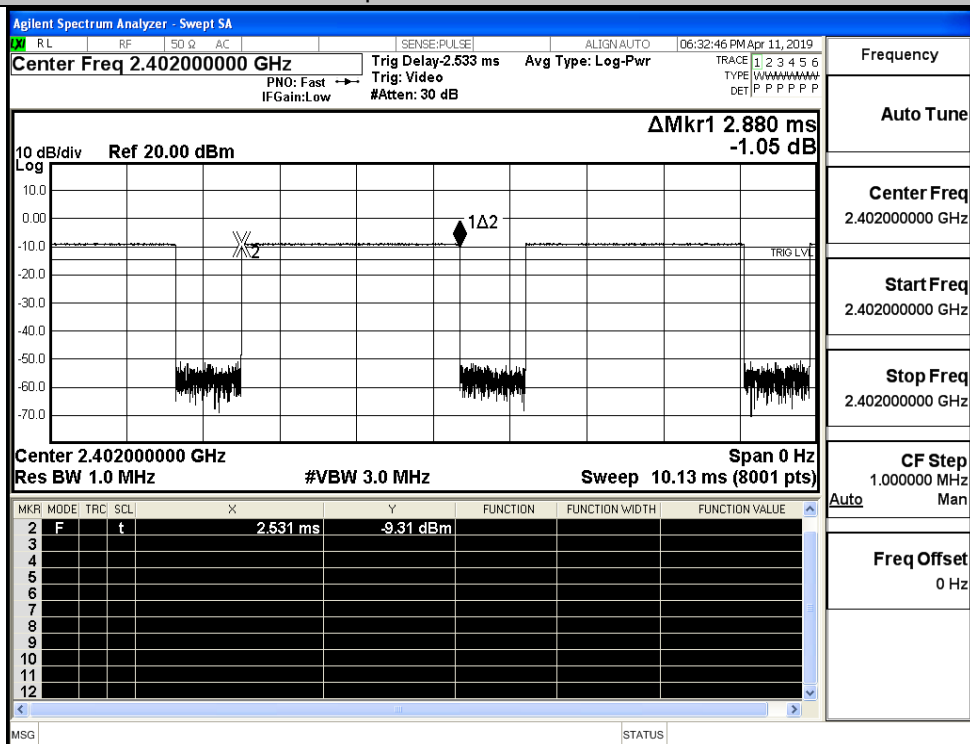


A.5 Dwell Time

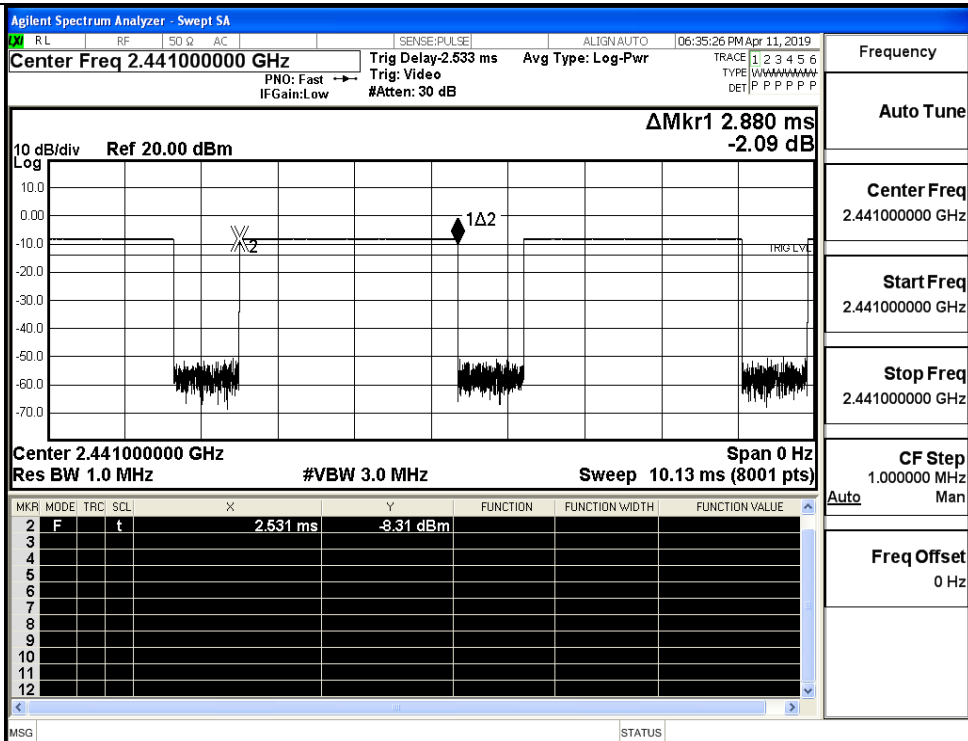
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88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

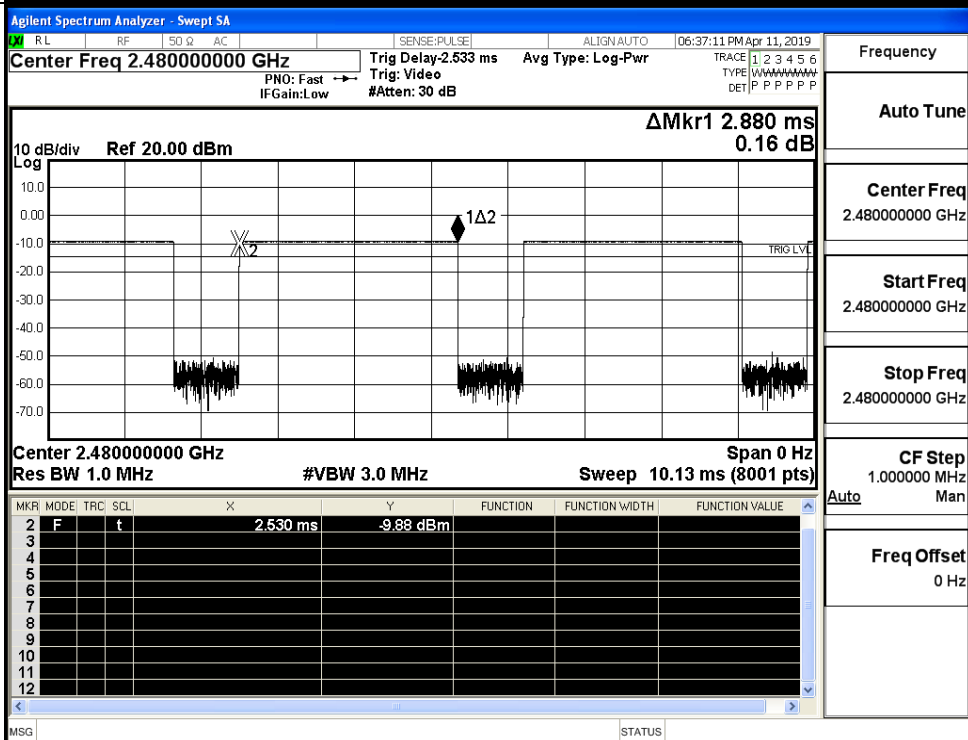
GFSK_DH5/LCH



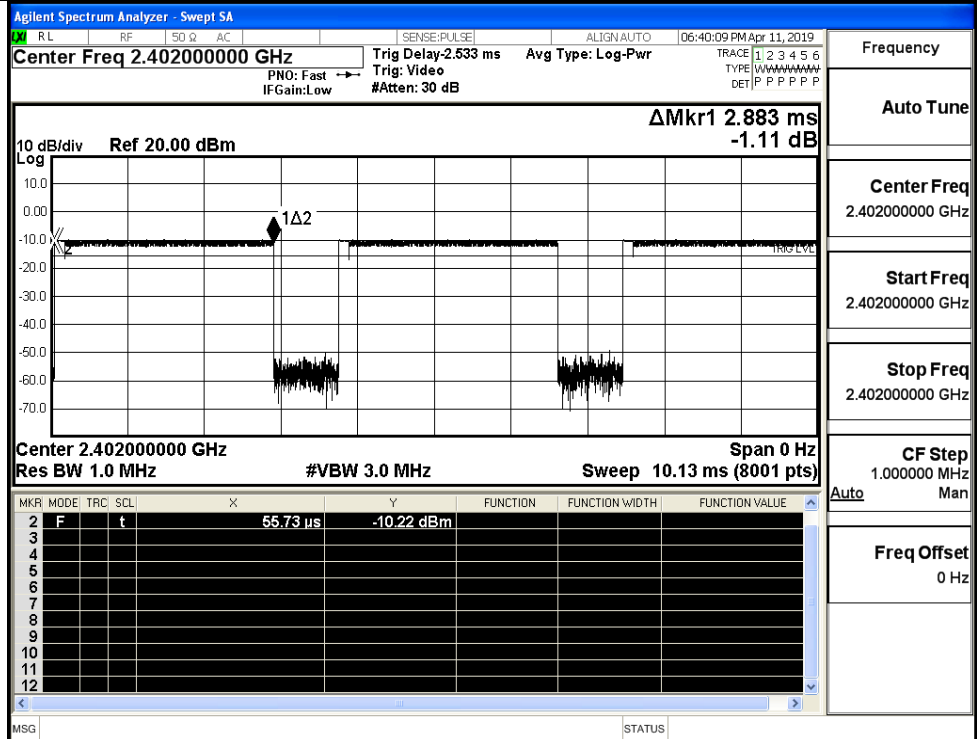
GFSK_DH5/MCH



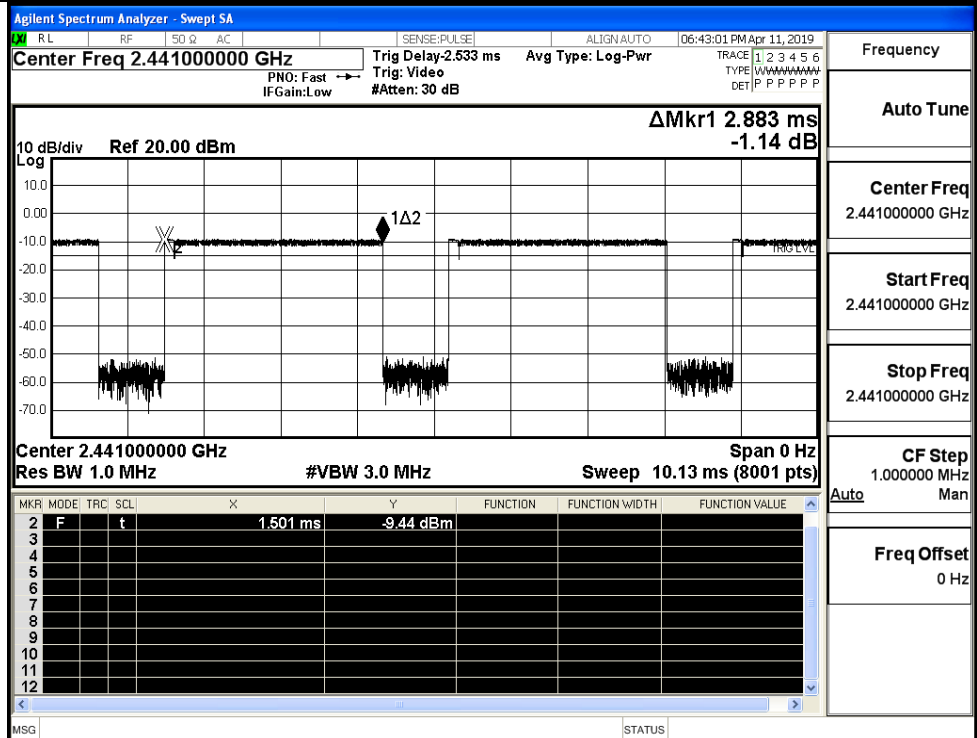
GFSK_DH5/HCH



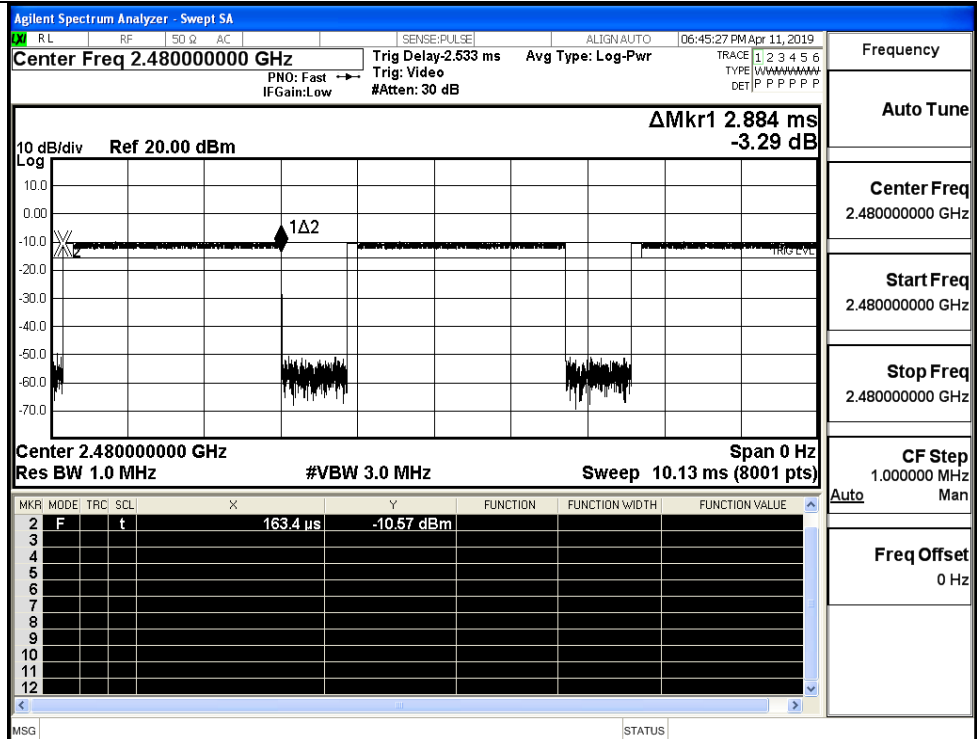
$\pi/4$ DQPSK
_2DH5/LCH



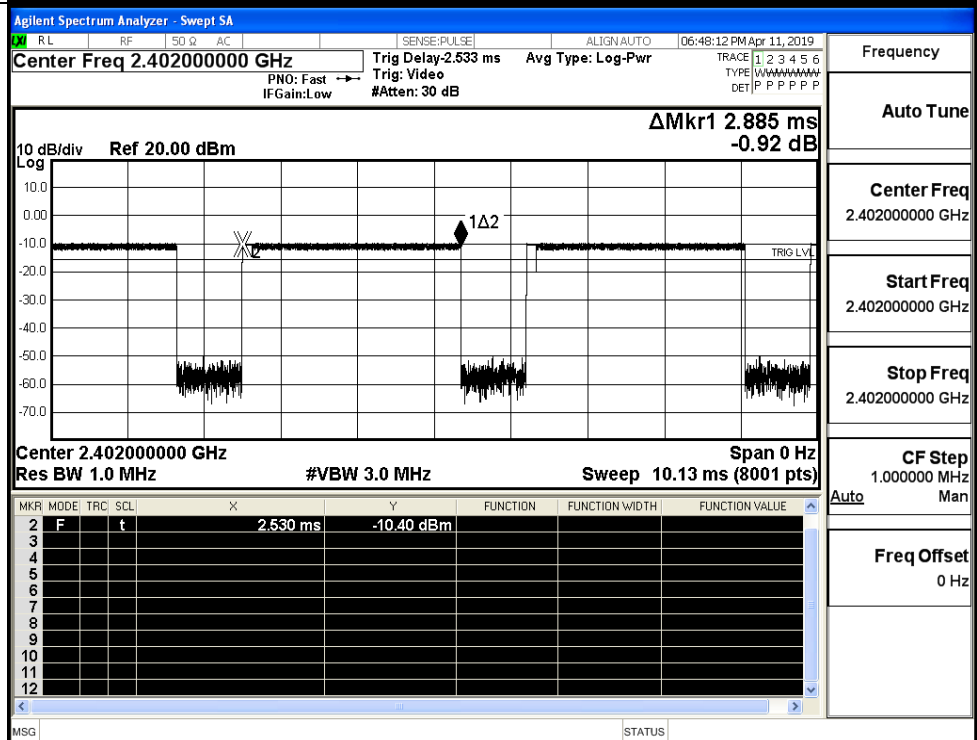
$\pi/4$ DQPSK
_2DH5/MCH



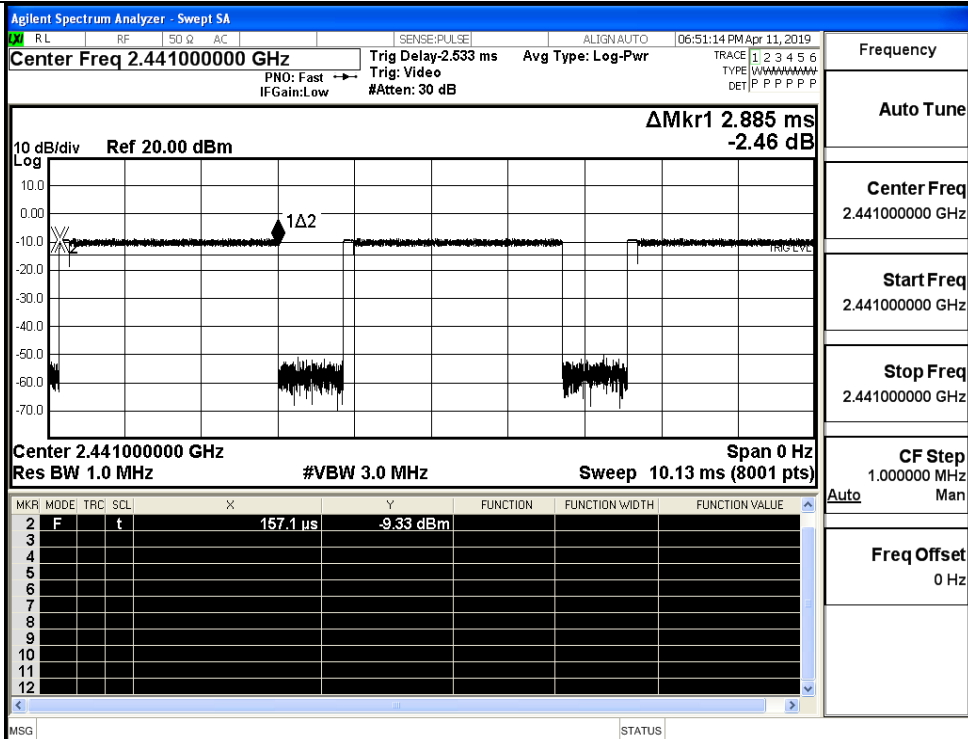
π/4DQPSK
_2DH5/HCH



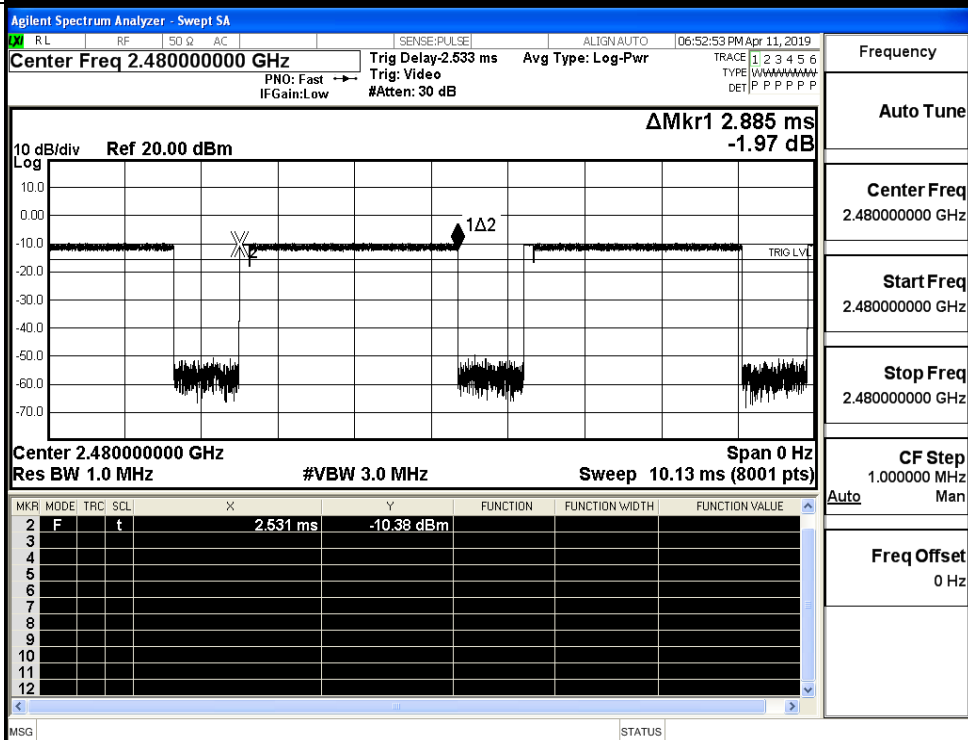
8DPSK_3DH5/LCH



8DPSK_3DH5/MCH



8DPSK_3DH5/HCH

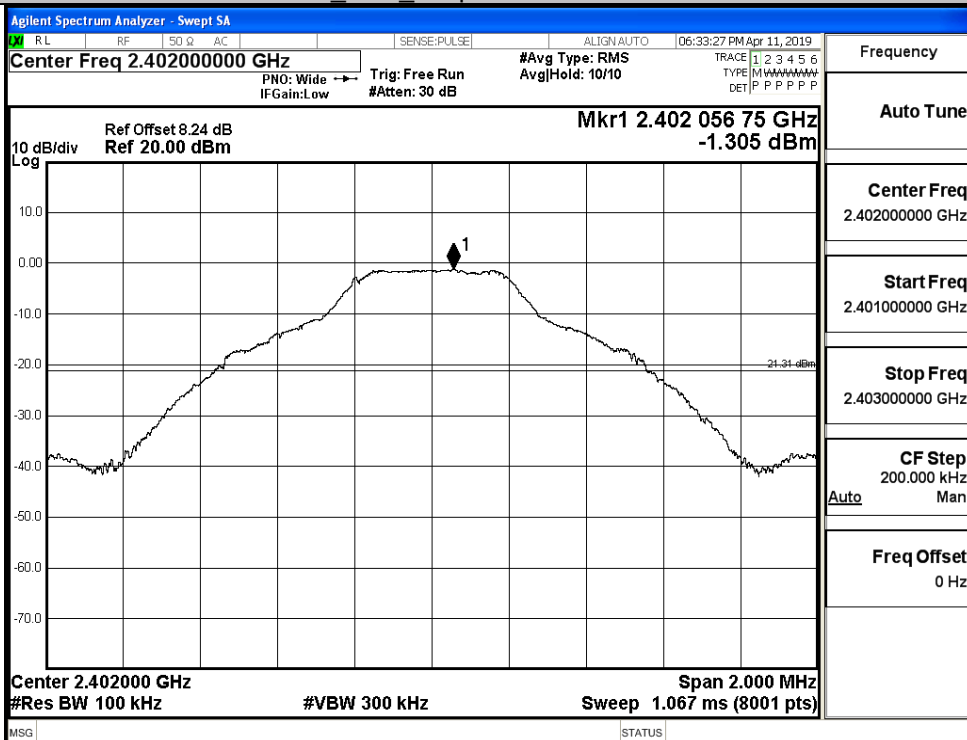


A.6 RF Conducted Spurious Emissions

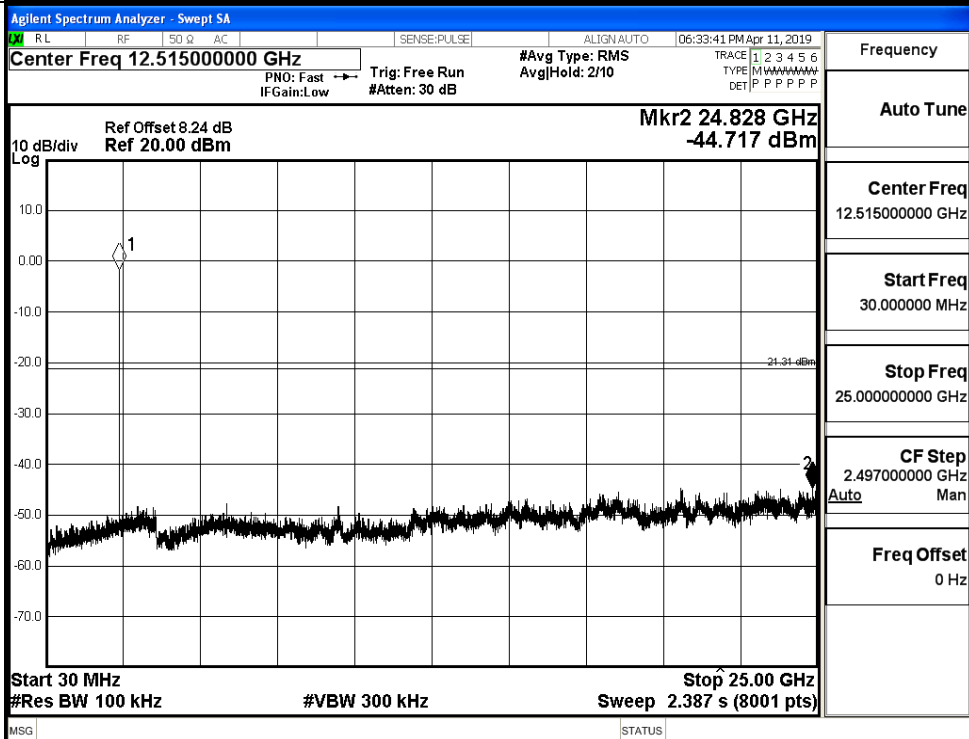
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-1.305	-44.717	-21.305	PASS
	MCH	0.048	-44.791	-19.952	PASS
	HCH	-0.819	-44.090	-20.819	PASS
$\pi/4$ DQPSK	LCH	-1.962	-44.255	-21.962	PASS
	MCH	-1.047	-44.663	-21.047	PASS
	HCH	-2.138	-44.727	-22.138	PASS
8DPSK	LCH	-1.97	-44.337	-21.970	PASS
	MCH	-1.132	-44.716	-21.132	PASS
	HCH	-2.104	-43.762	-22.104	PASS

GFSK_LCH_Graphs

Pref

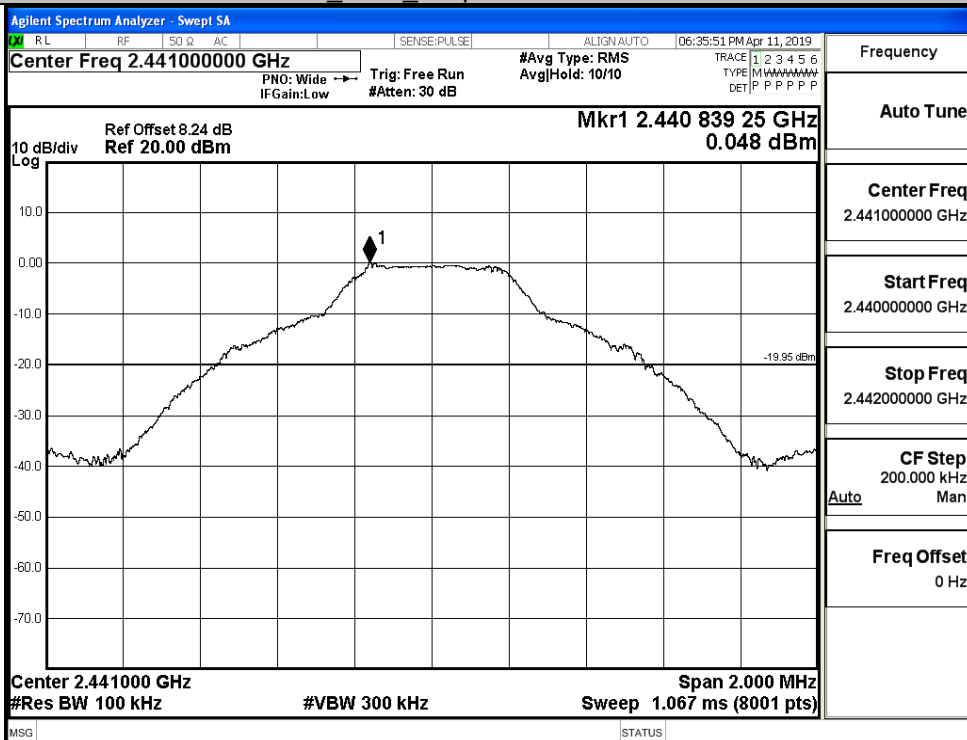


Puw

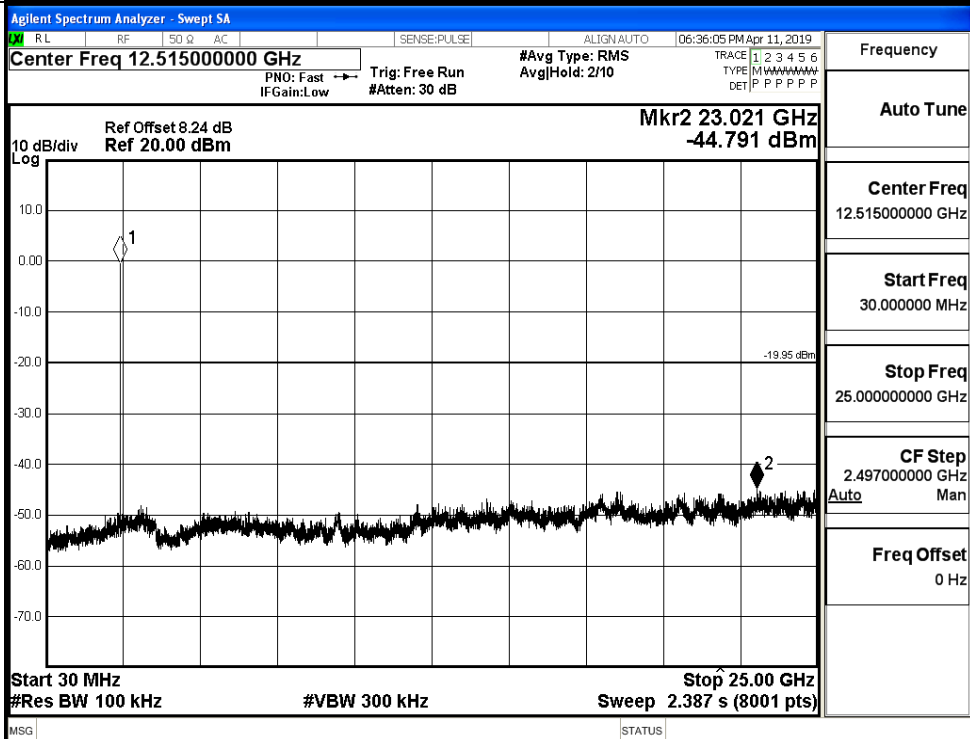


GFSK_MCH_Graphs

Pref

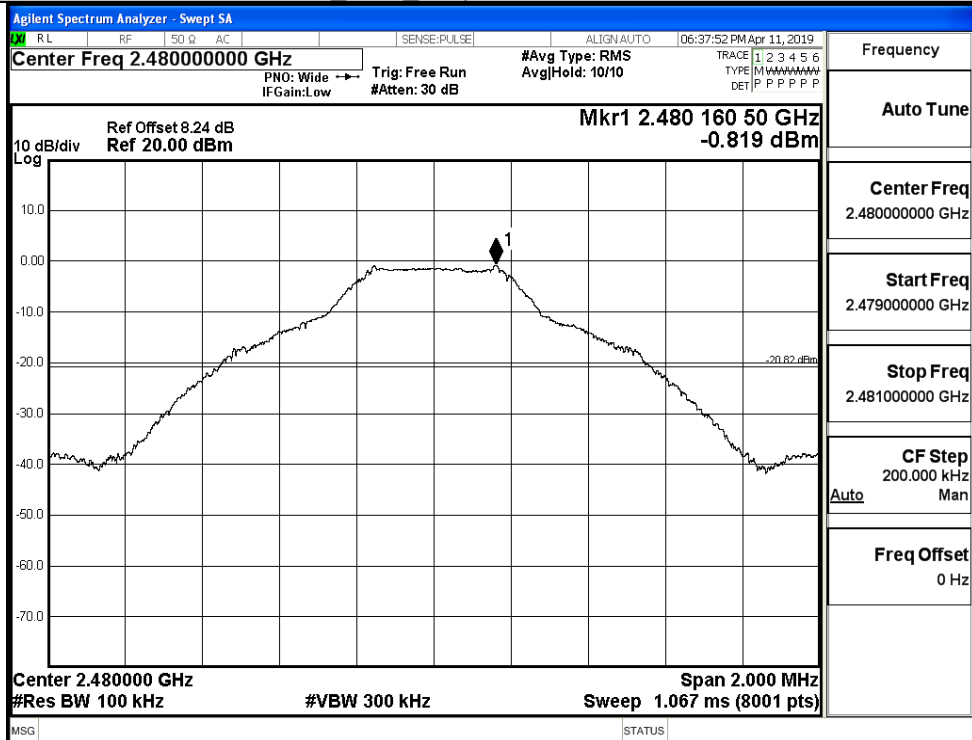


Puw

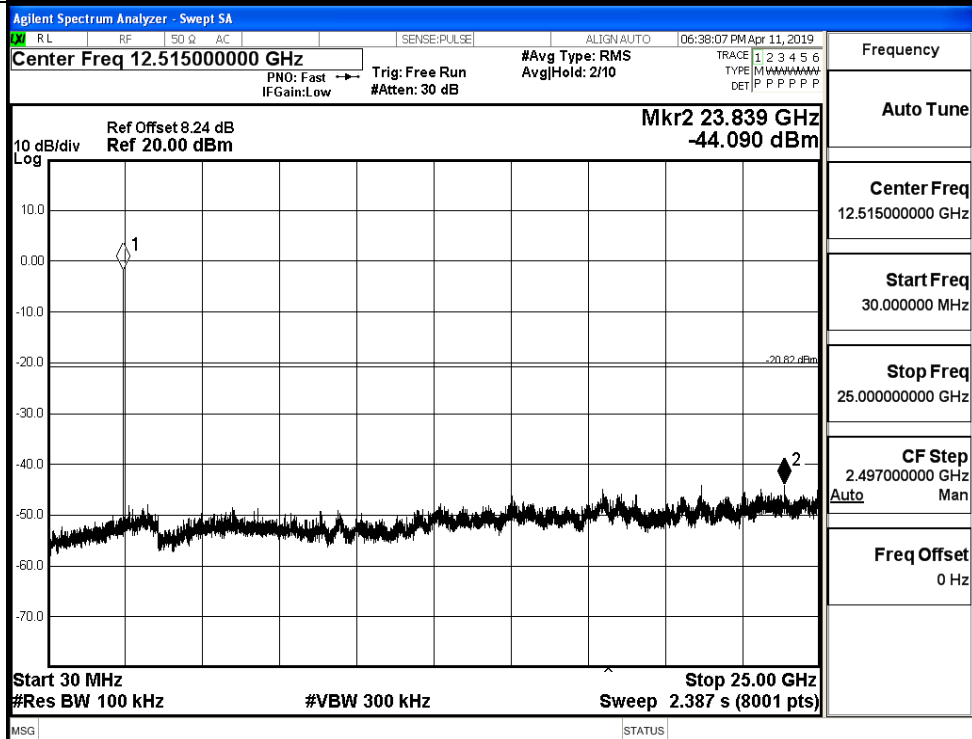


GFSK_HCH_Graphs

Pref

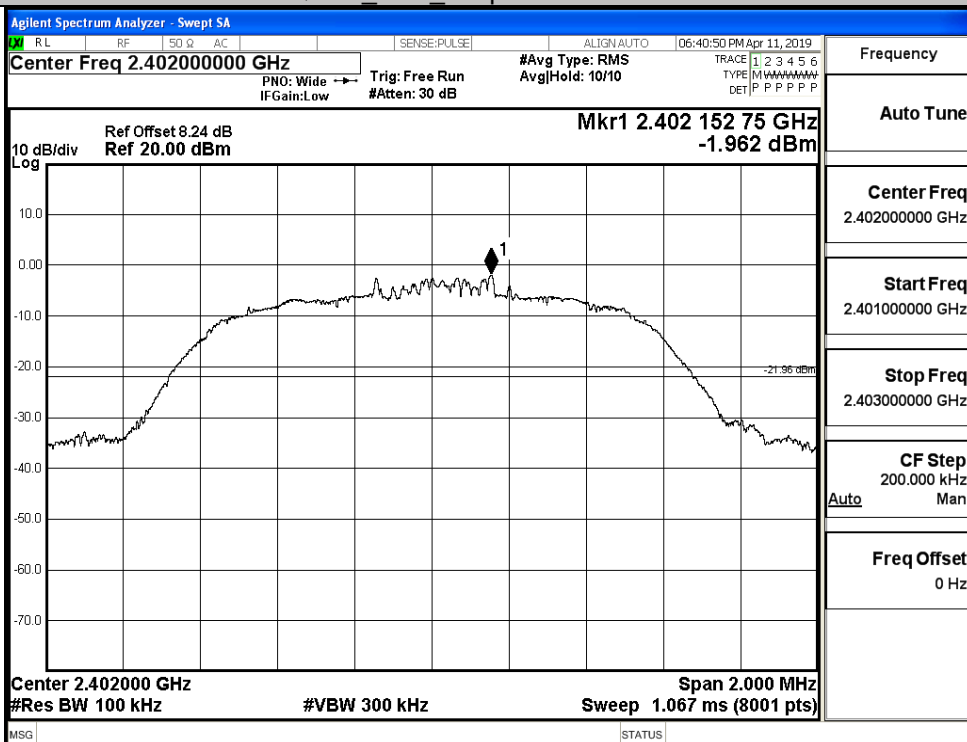


Puw

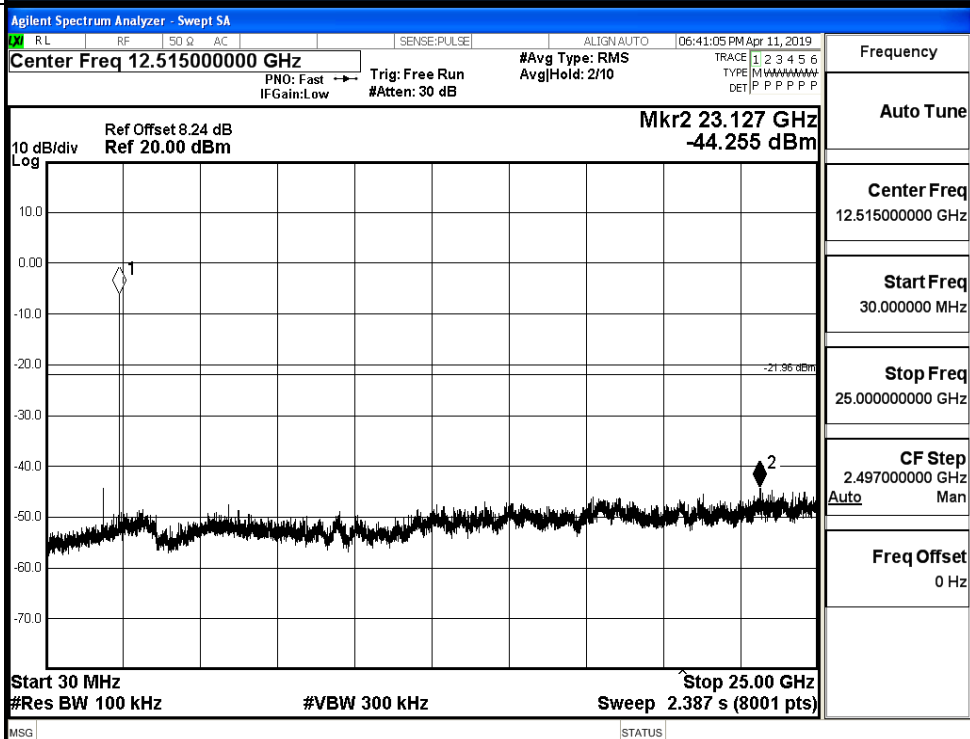


$\pi/4$ DQPSK LCH_Graphs

Pref

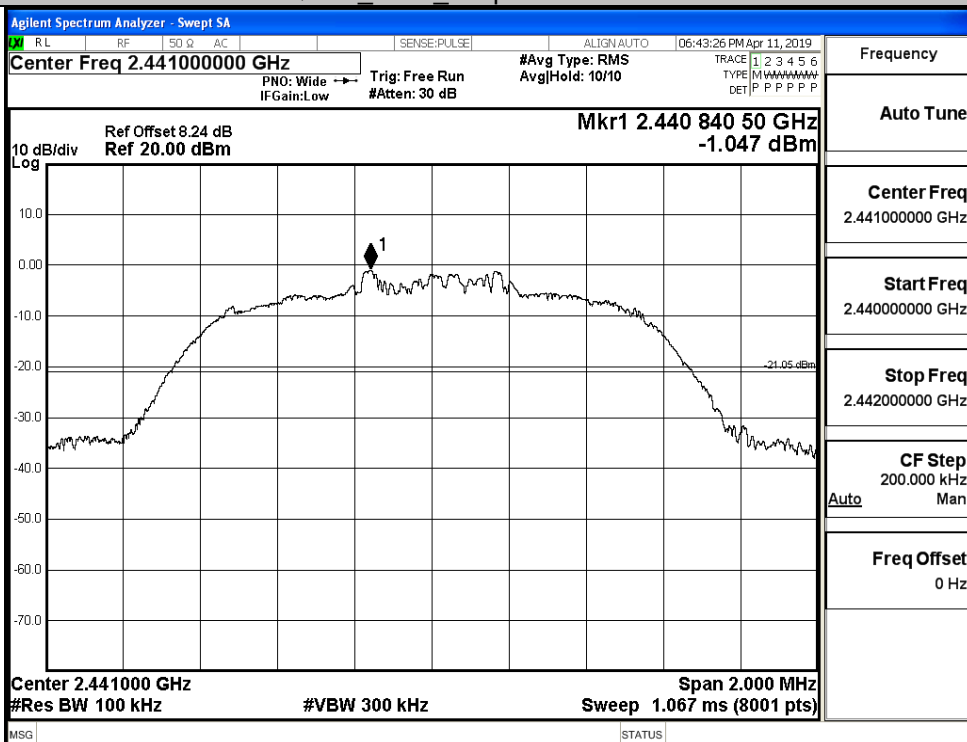


Puw

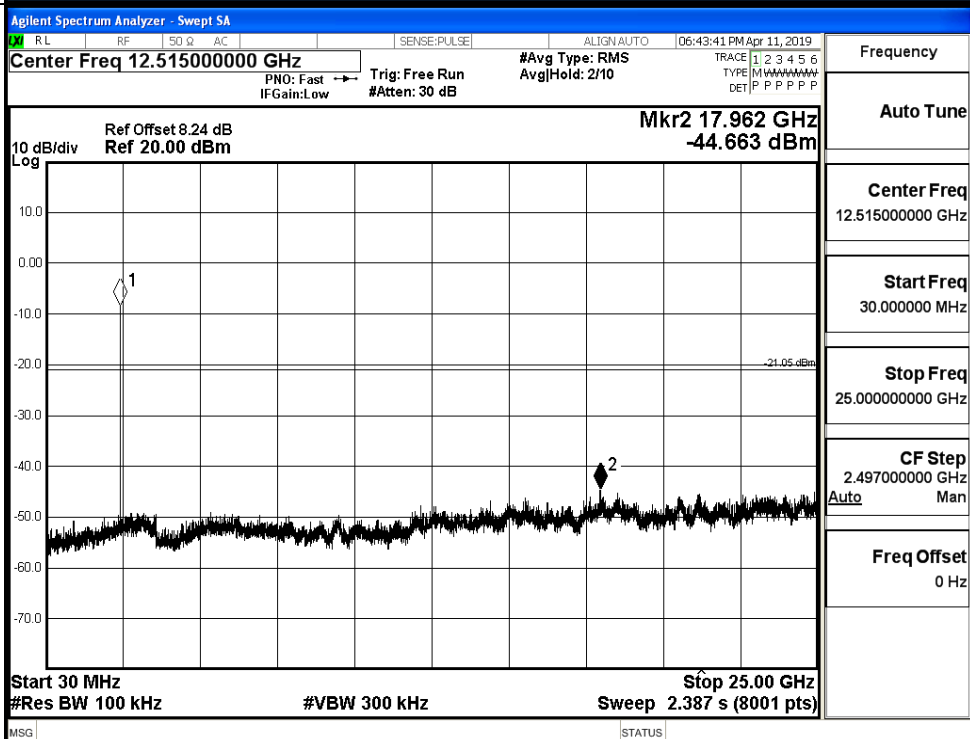


π /4DQPSK_MCH_Graphs

Pref

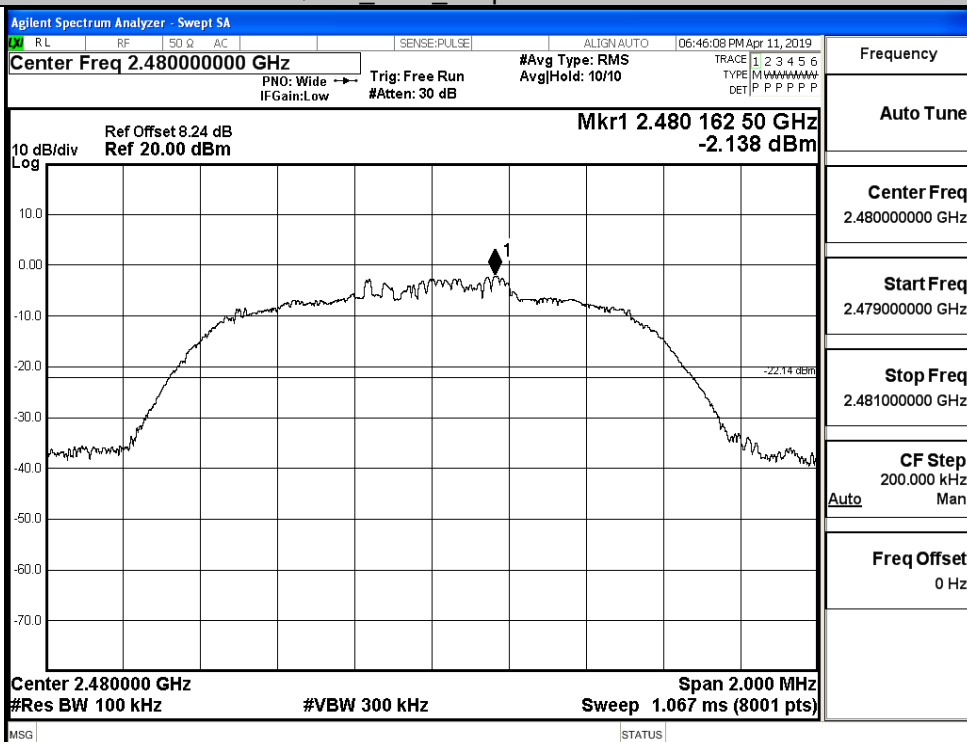


Puw

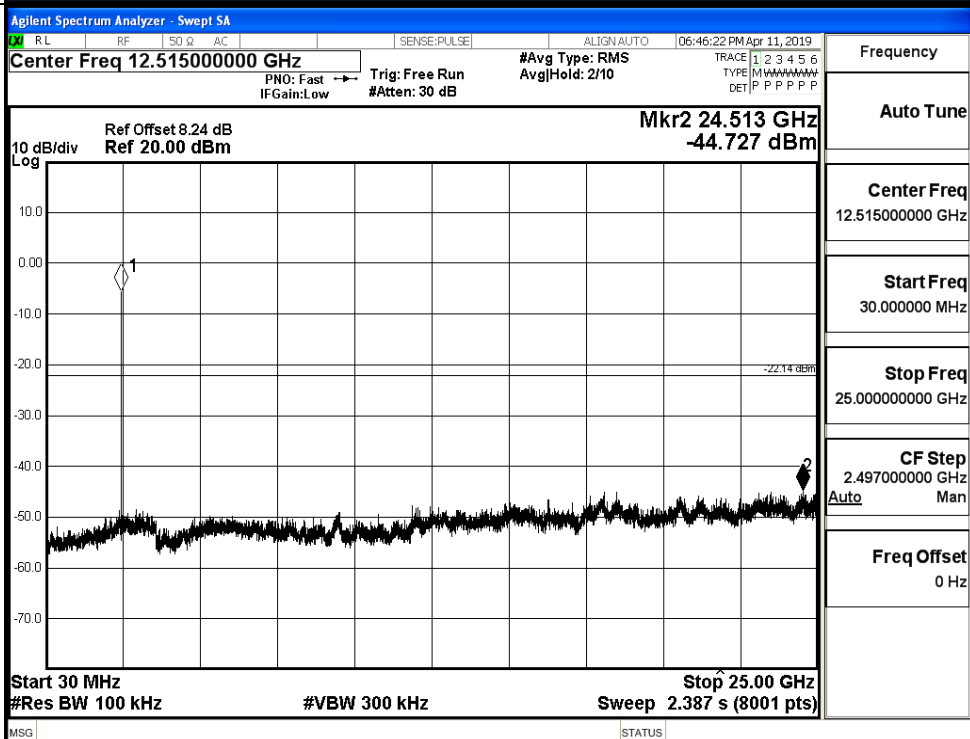


π /4DQPSK_HCH_Graphs

Pref

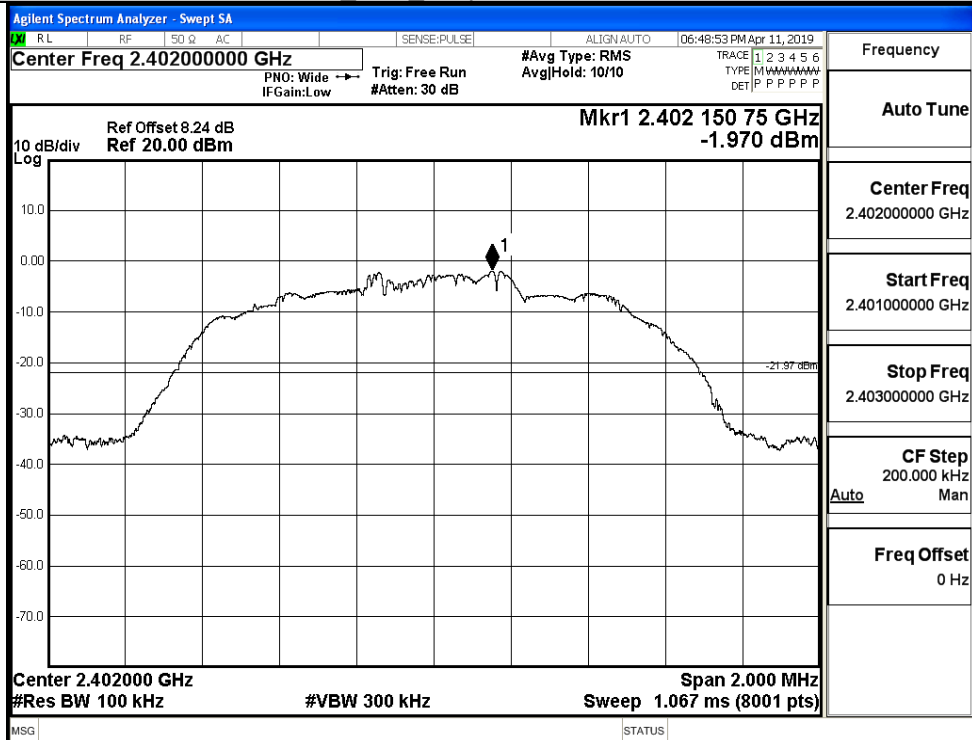


Puw

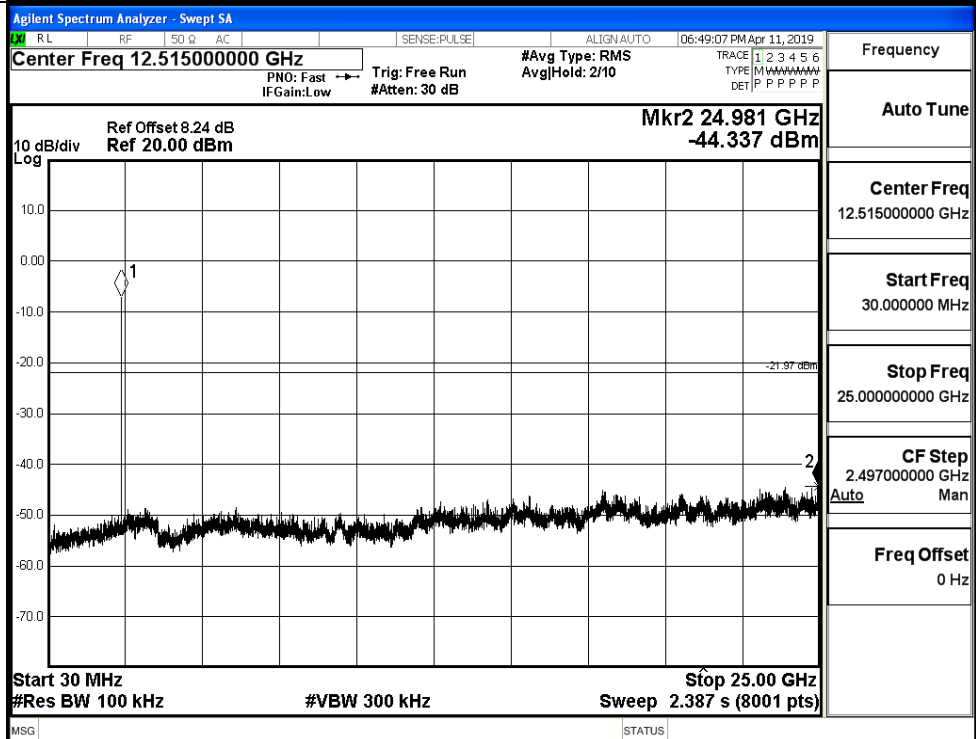


8DPSK_LCH_Graphs

Pref

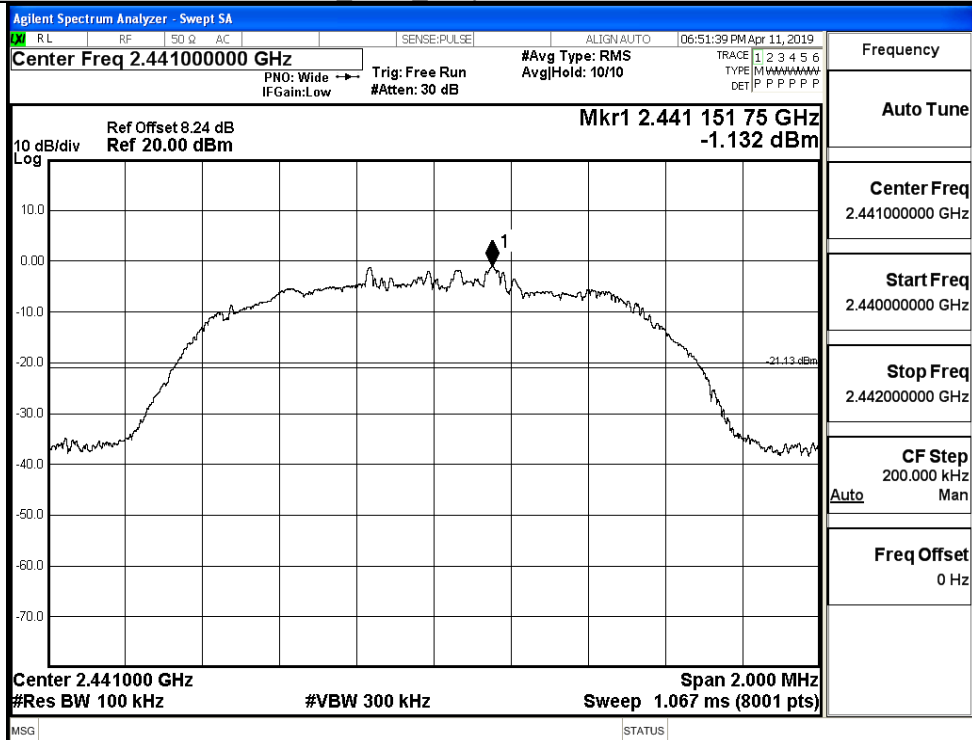


Puw

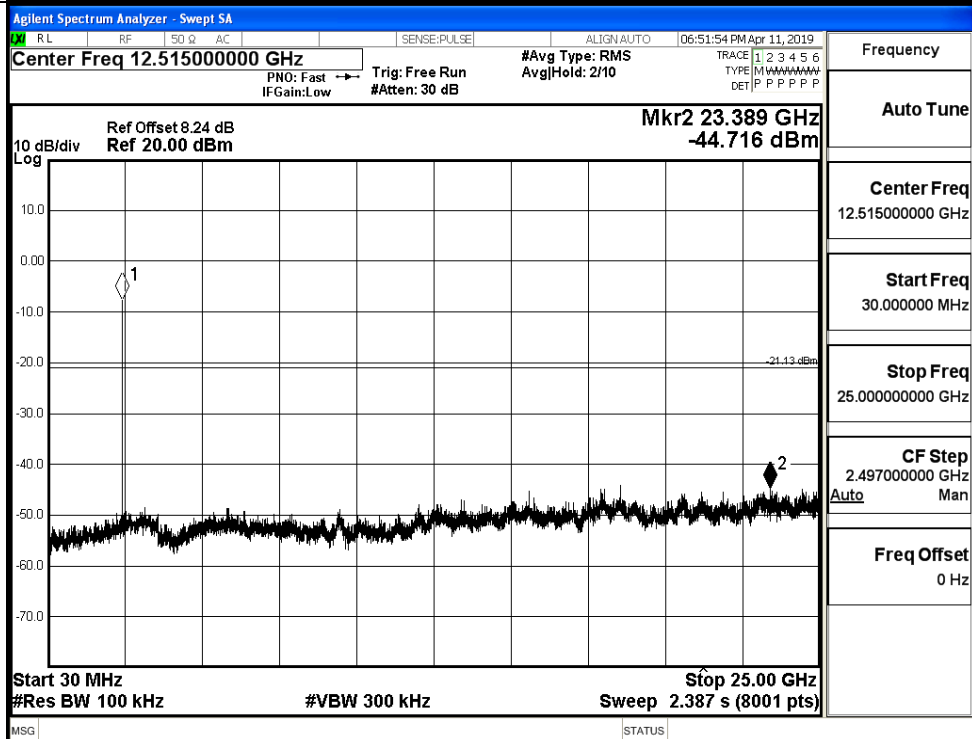


8DPSK_MCH_Graphs

Pref

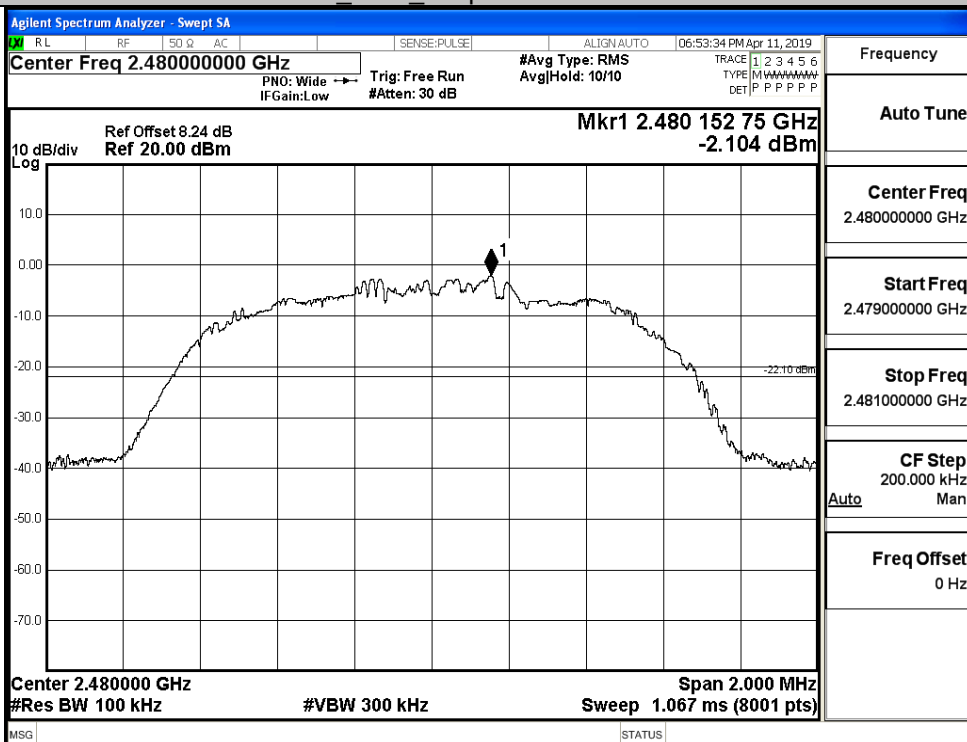


Puw

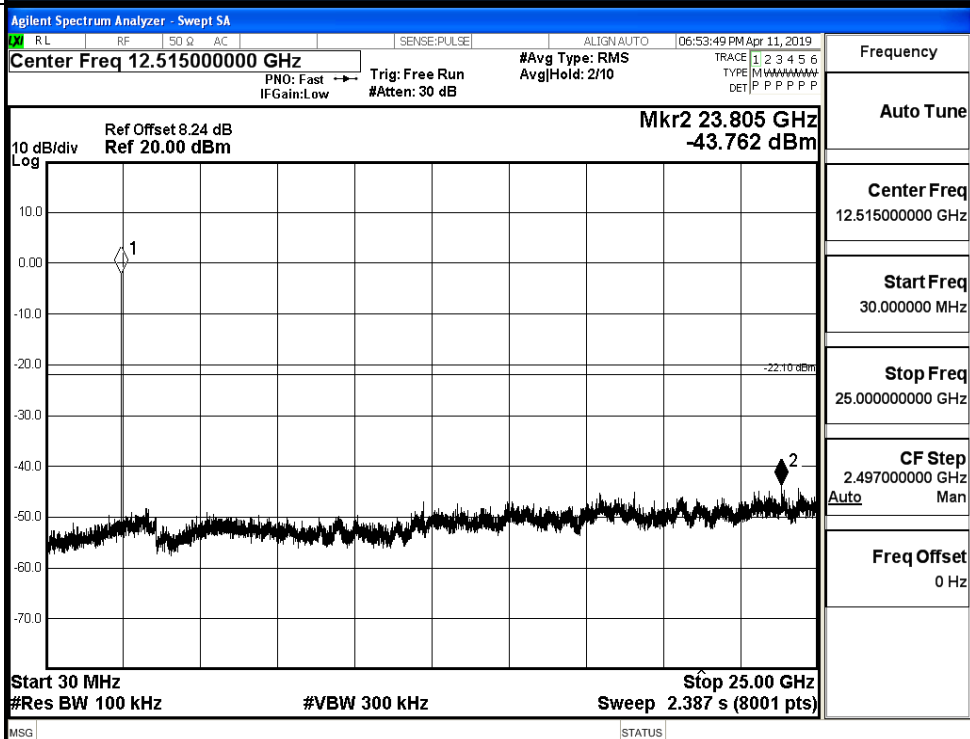


8DPSK_HCH_Graphs

Pref



Puw

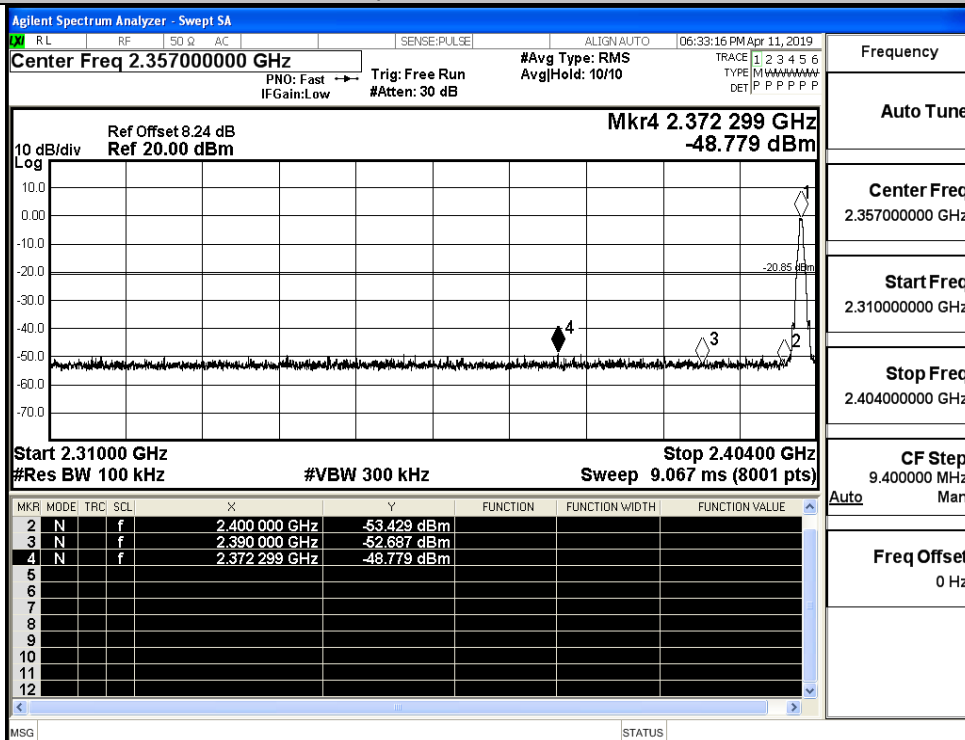


A.7 Band-edge for RF Conducted Emissions

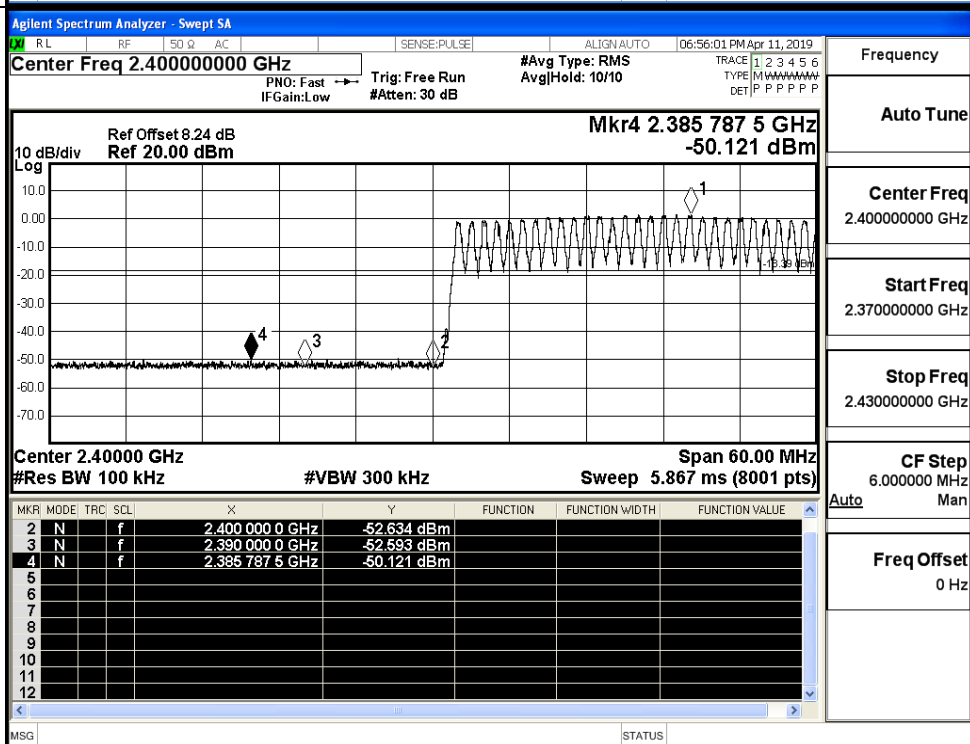
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-0.854	Off	-48.779	-20.85	PASS
			1.606	On	-50.121	-18.39	PASS
	HCH	2480	-0.794	Off	-49.299	-20.79	PASS
			1.288	On	-49.350	-18.71	PASS
$\pi/4$ DQPSK	LCH	2402	-1.891	Off	-50.005	-21.89	PASS
			0.023	On	-48.961	-19.98	PASS
	HCH	2480	-1.983	Off	-48.788	-21.98	PASS
			0.090	On	-49.133	-19.91	PASS
8DPSK	LCH	2402	-2.100	Off	-49.378	-22.1	PASS
			0.301	On	-48.132	-19.7	PASS
	HCH	2480	-2.085	Off	-49.486	-22.09	PASS
			0.285	On	-48.996	-19.72	PASS

Test Graphs

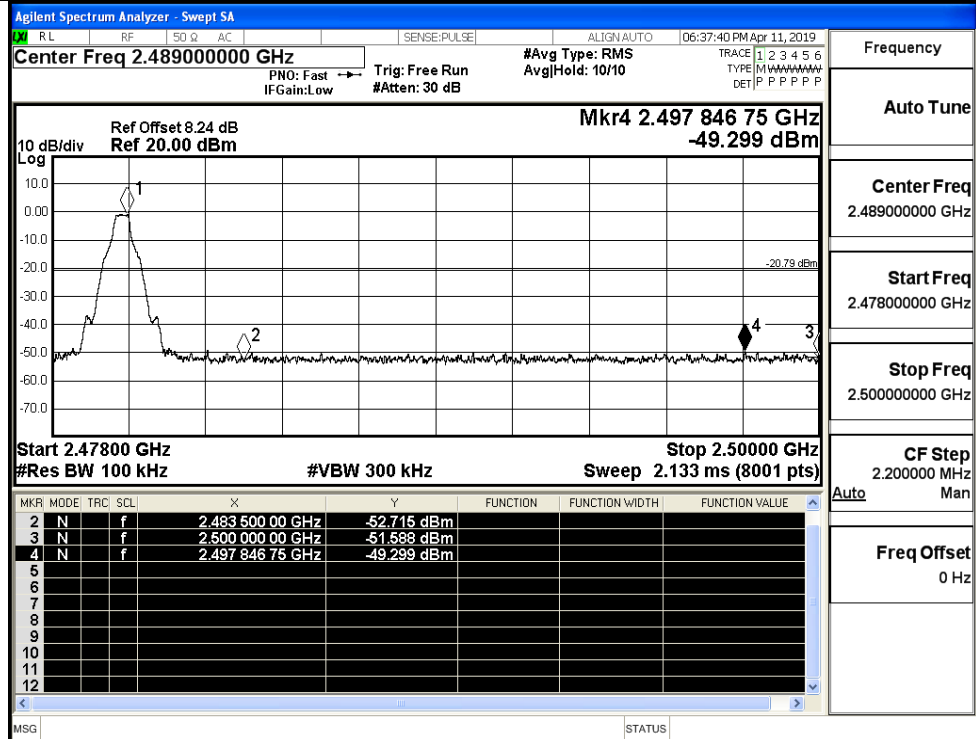
GFSK/LCH/No Hop



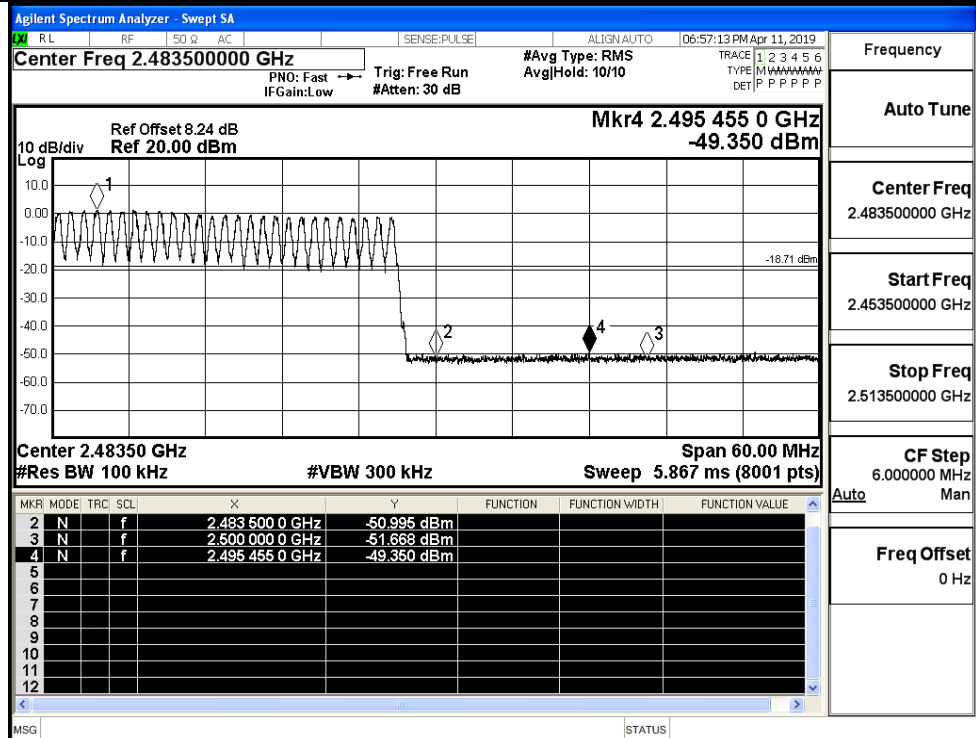
GFSK/LCH/Hop



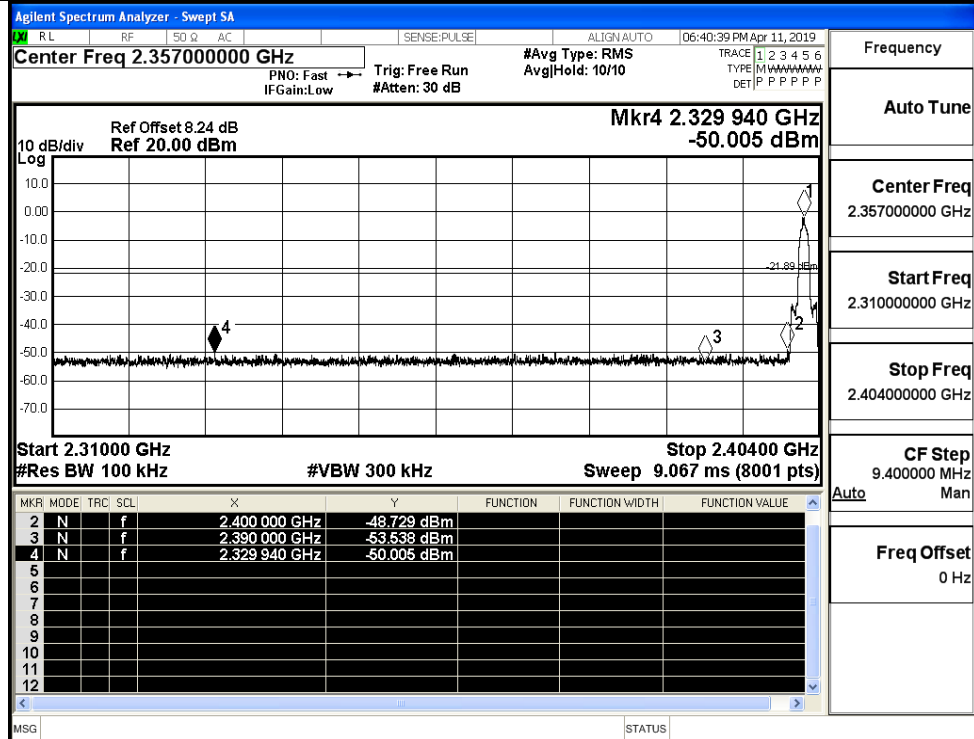
GFSK/HCH/No Hop



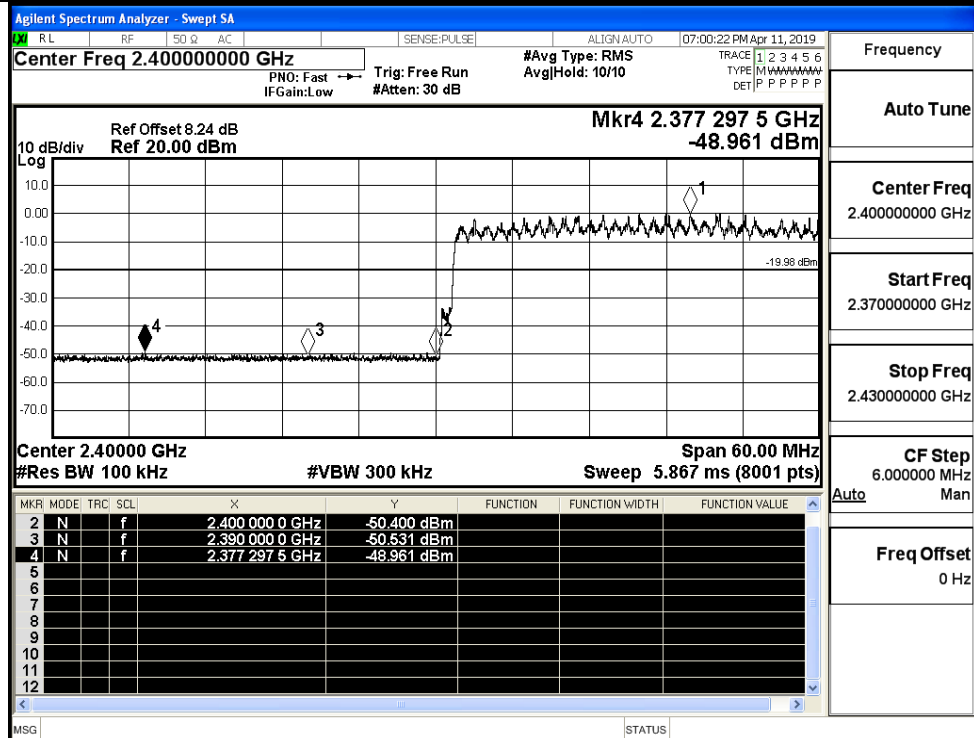
GFSK/HCH/Hop



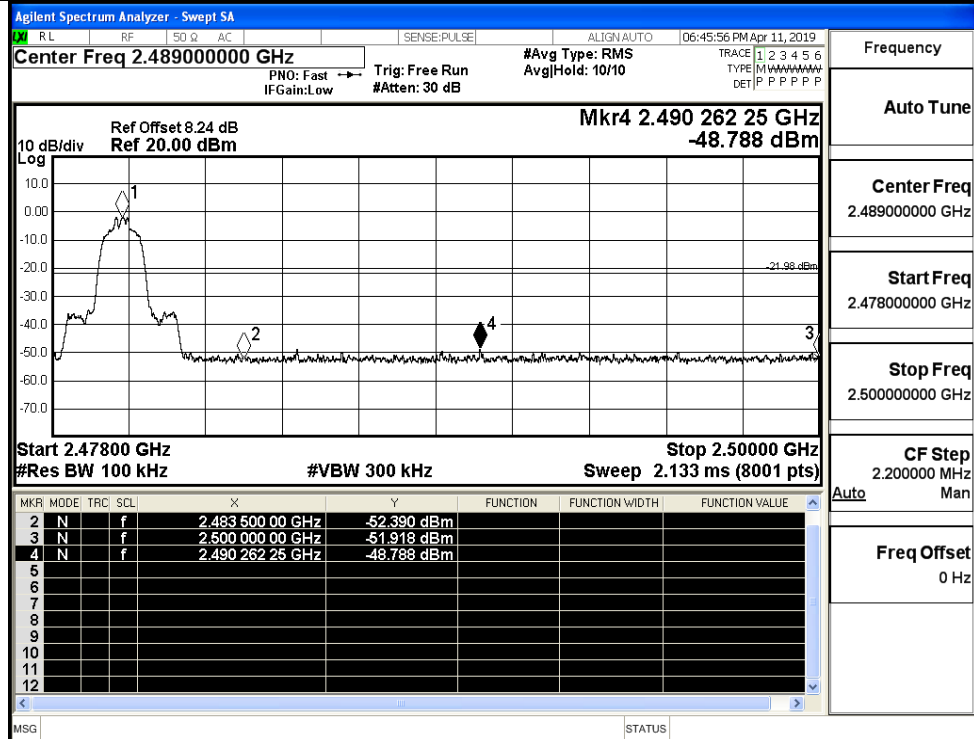
$\pi/4$ DQPSK/LCH/No
Hop



$\pi/4$ DQPSK/LCH/Hop



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

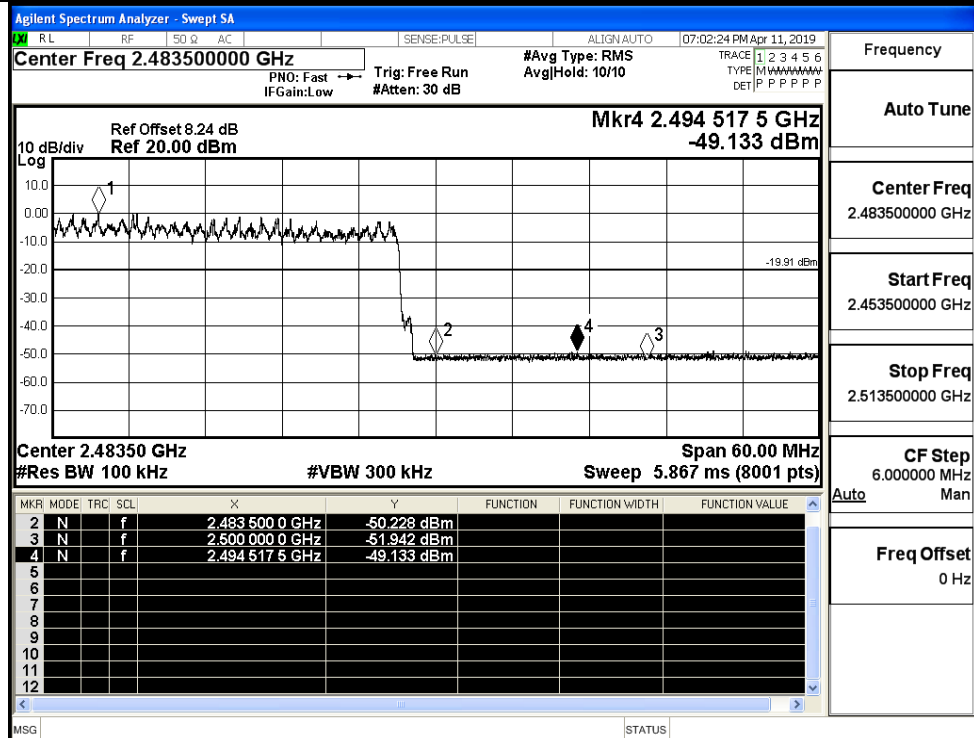


Frequency

Auto Tune

Center Freq
2.489000000 GHzStart Freq
2.478000000 GHzStop Freq
2.500000000 GHzCF Step
2.200000 MHz
Auto ManFreq Offset
0 Hz

$\pi/4$ DQPSK/HCH/Hop

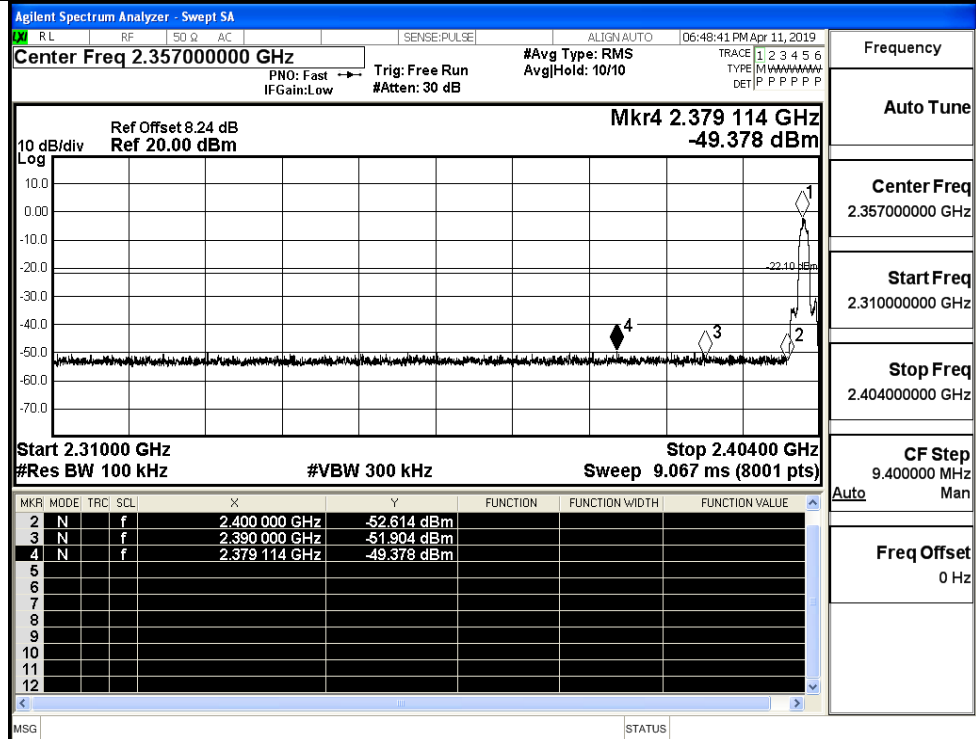


Frequency

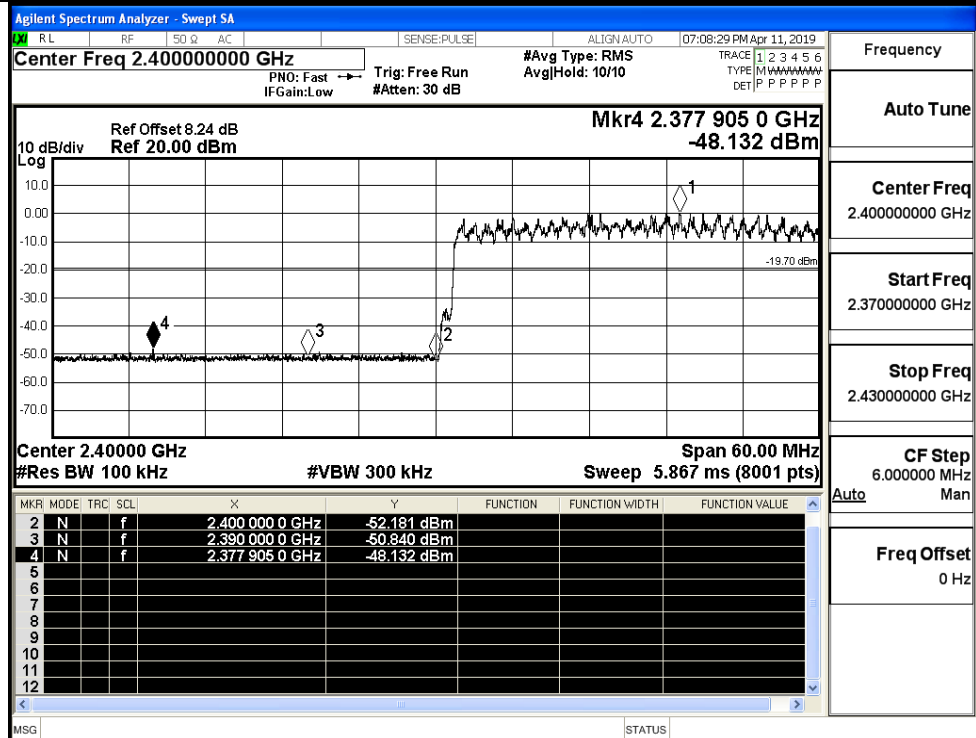
Auto Tune

Center Freq
2.483500000 GHzStart Freq
2.453500000 GHzStop Freq
2.513500000 GHzCF Step
6.000000 MHz
Auto ManFreq Offset
0 Hz

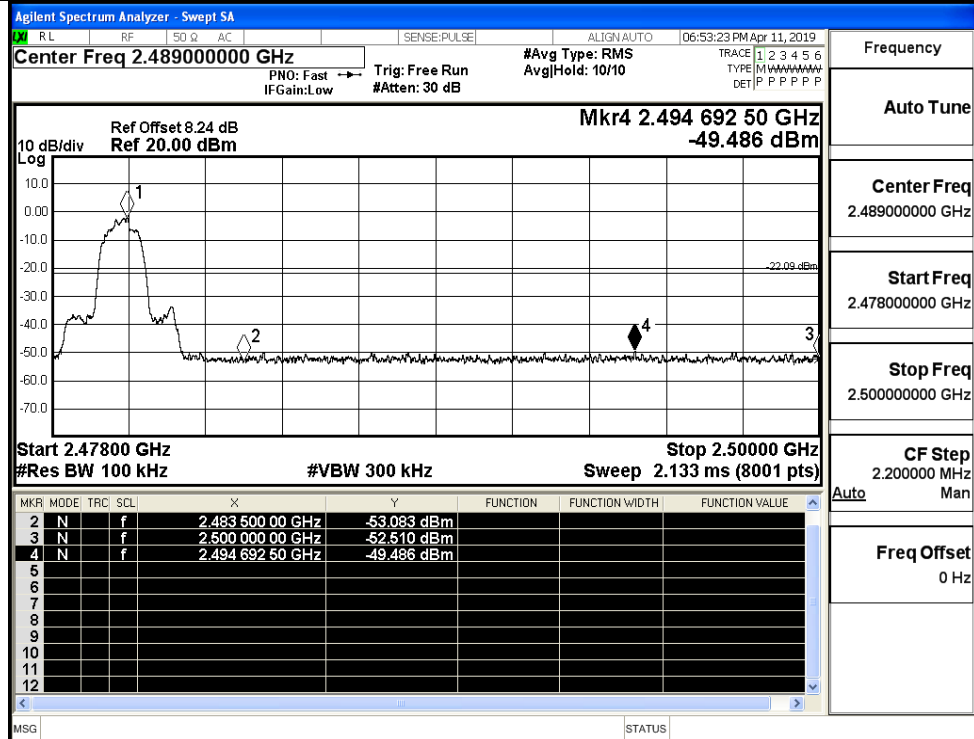
8DPSK/LCH/No Hop



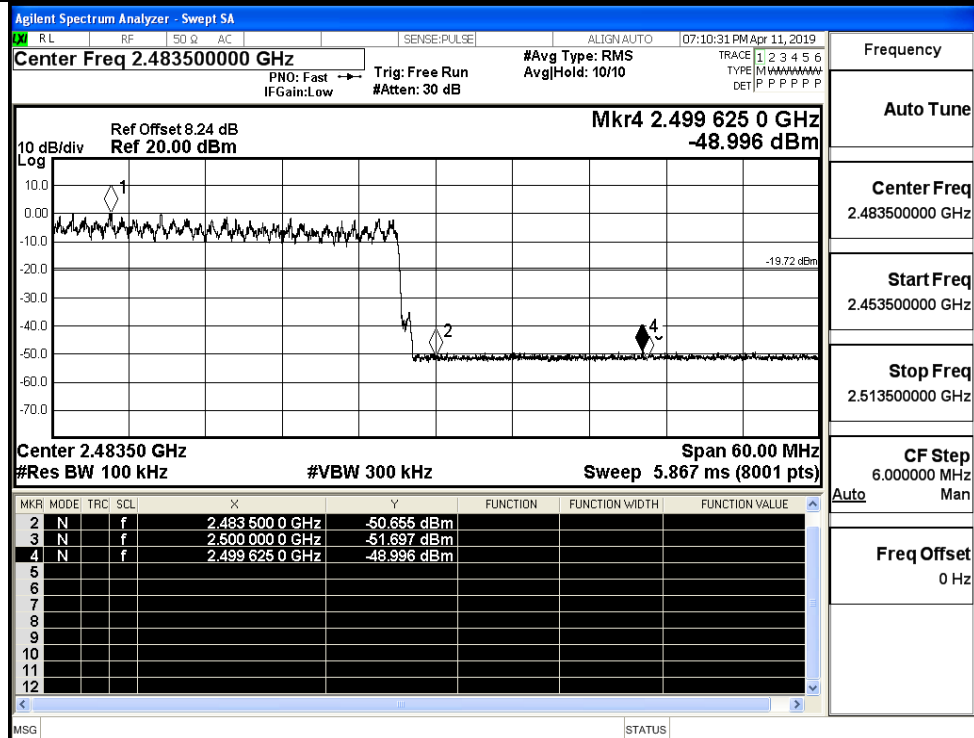
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



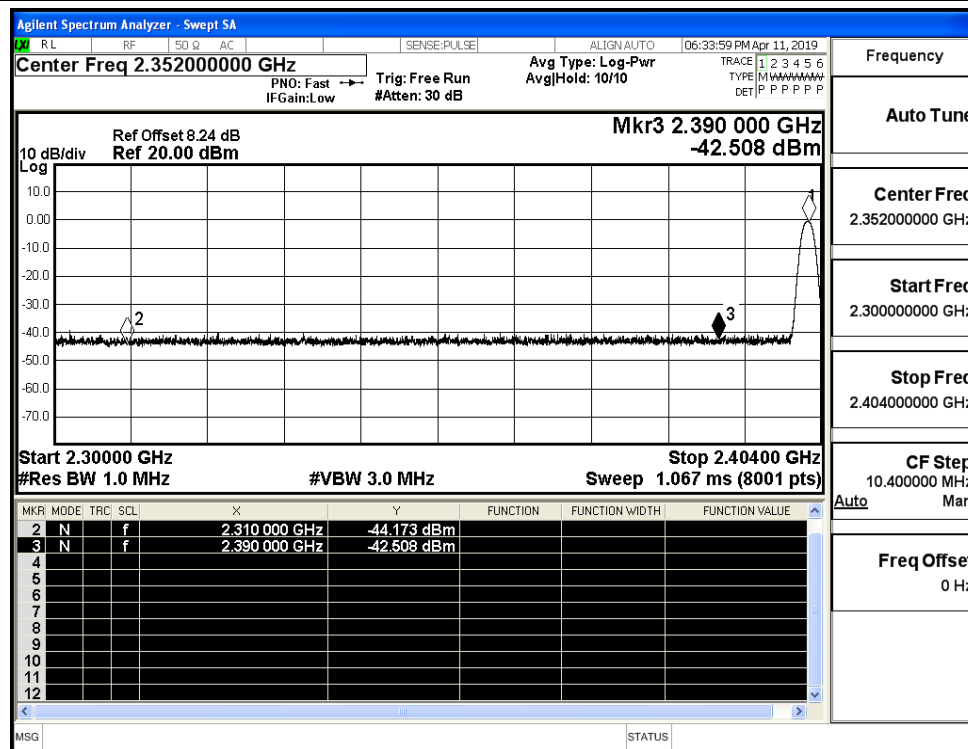
8DPSK/HCH/Hop



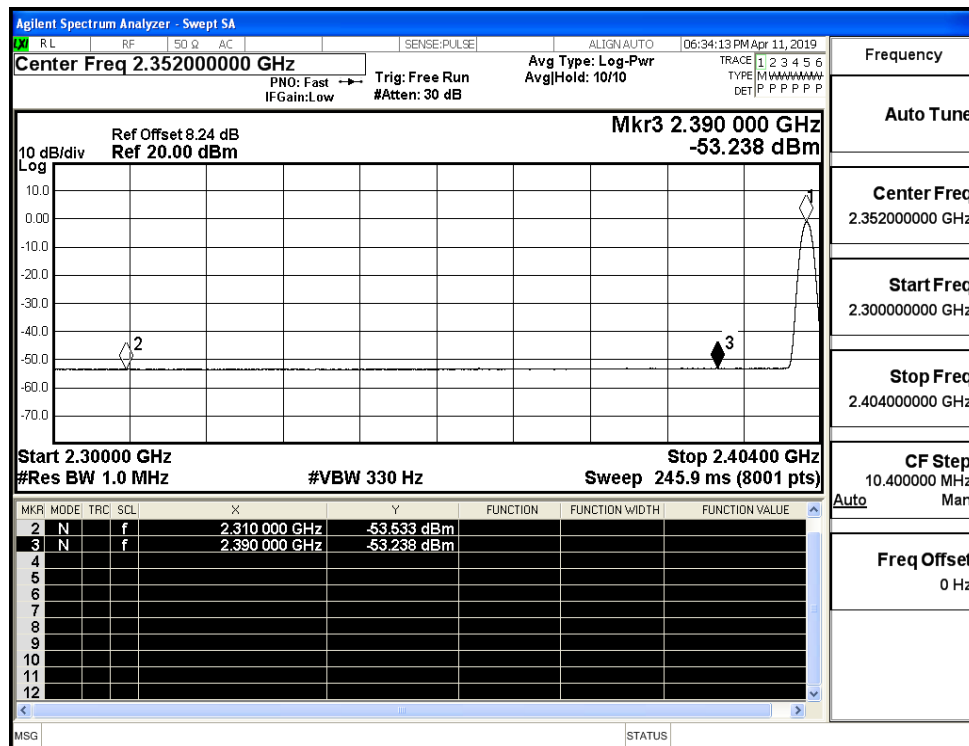
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-44.17	2.0	0	53.08	PEAK	74	PASS
	Off	2310.0	-53.53	2.0	0	43.72	AV	54	PASS
	Off	2390.0	-42.51	2.0	0	54.75	PEAK	74	PASS
	Off	2390.0	-53.24	2.0	0	44.02	AV	54	PASS
	Off	2483.5	-42.71	2.0	0	54.55	PEAK	74	PASS
	Off	2483.5	-52.89	2.0	0	44.37	AV	54	PASS
	Off	2500.0	-41.81	2.0	0	55.45	PEAK	74	PASS
	Off	2500.0	-52.80	2.0	0	44.46	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.88	2.0	0	53.38	PEAK	74	PASS
	Off	2310.0	-53.49	2.0	0	43.76	AV	54	PASS
	Off	2390.0	-40.98	2.0	0	56.28	PEAK	74	PASS
	Off	2390.0	-53.36	2.0	0	43.90	AV	54	PASS
	Off	2483.5	-43.14	2.0	0	54.12	PEAK	74	PASS
	Off	2483.5	-52.93	2.0	0	44.33	AV	54	PASS
	Off	2500.0	-42.56	2.0	0	54.70	PEAK	74	PASS
	Off	2500.0	-52.88	2.0	0	44.38	AV	54	PASS
8DPSK	Off	2310.0	-43.62	2.0	0	53.64	PEAK	74	PASS
	Off	2310.0	-53.51	2.0	0	43.75	AV	54	PASS
	Off	2390.0	-42.16	2.0	0	55.10	PEAK	74	PASS
	Off	2390.0	-53.12	2.0	0	44.13	AV	54	PASS
	Off	2483.5	-43.48	2.0	0	53.78	PEAK	74	PASS
	Off	2483.5	-52.87	2.0	0	44.39	AV	54	PASS
	Off	2500.0	-43.18	2.0	0	54.07	PEAK	74	PASS
	Off	2500.0	-52.90	2.0	0	44.36	AV	54	PASS

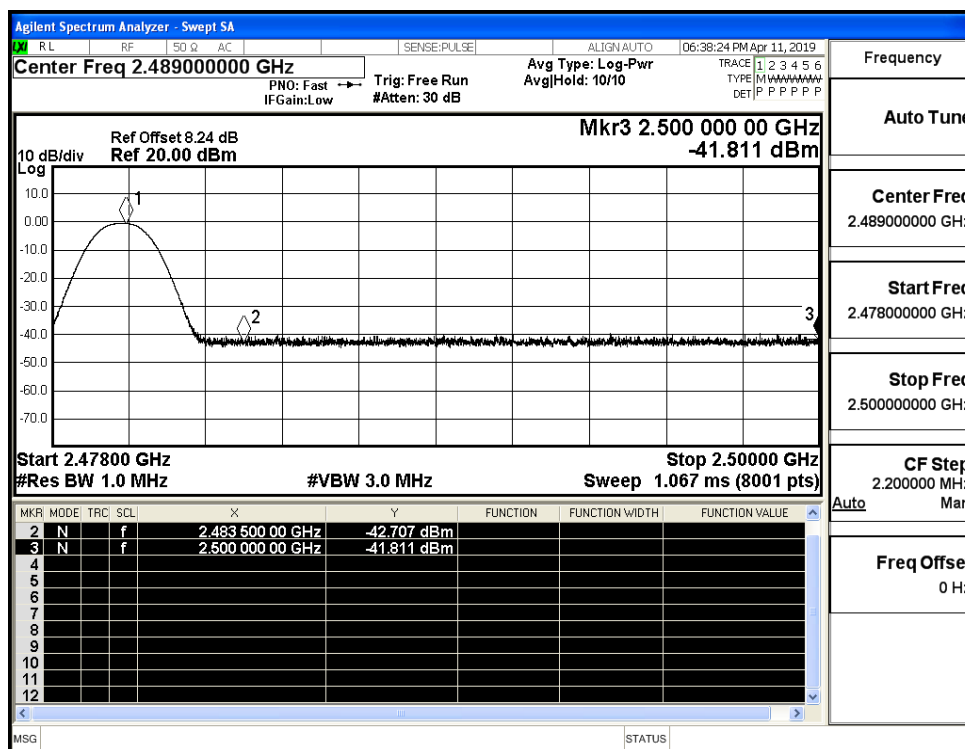
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



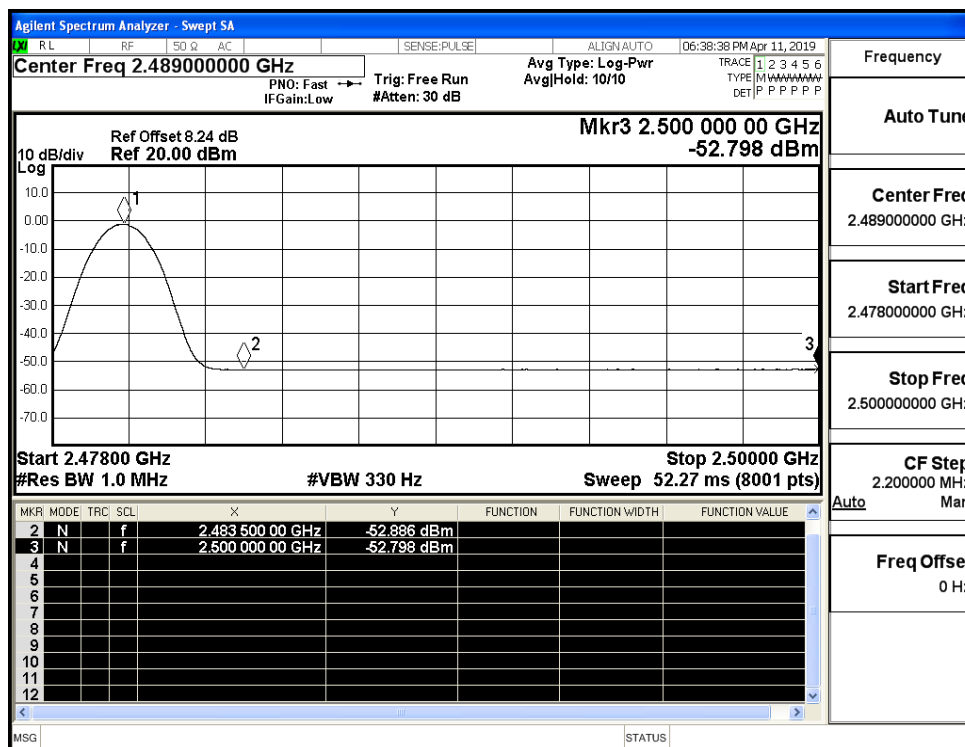
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

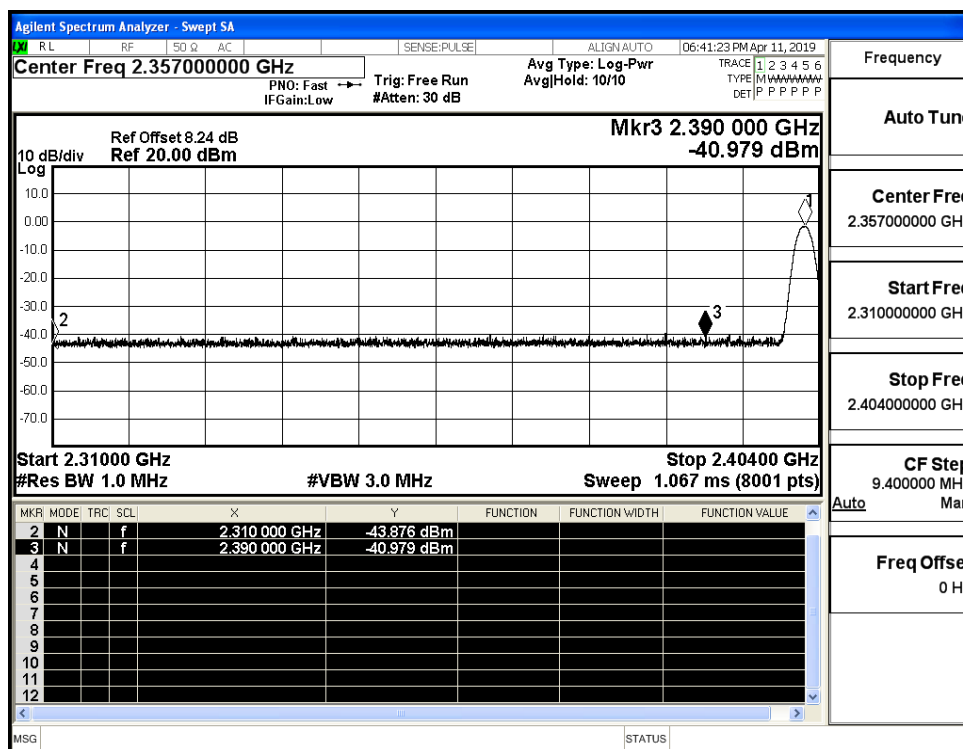
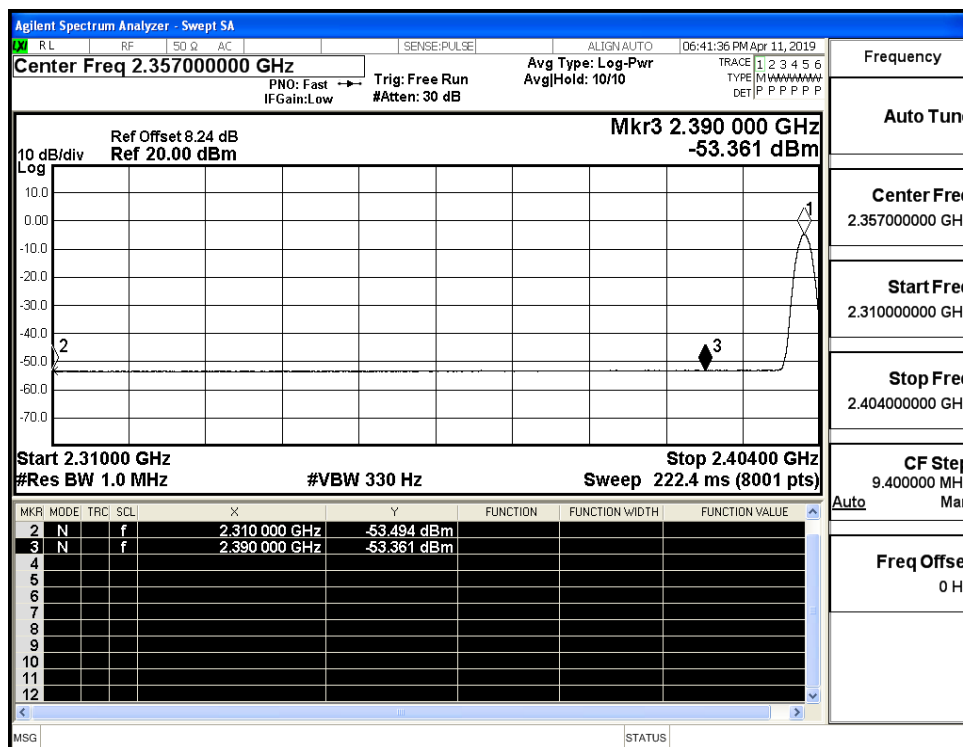


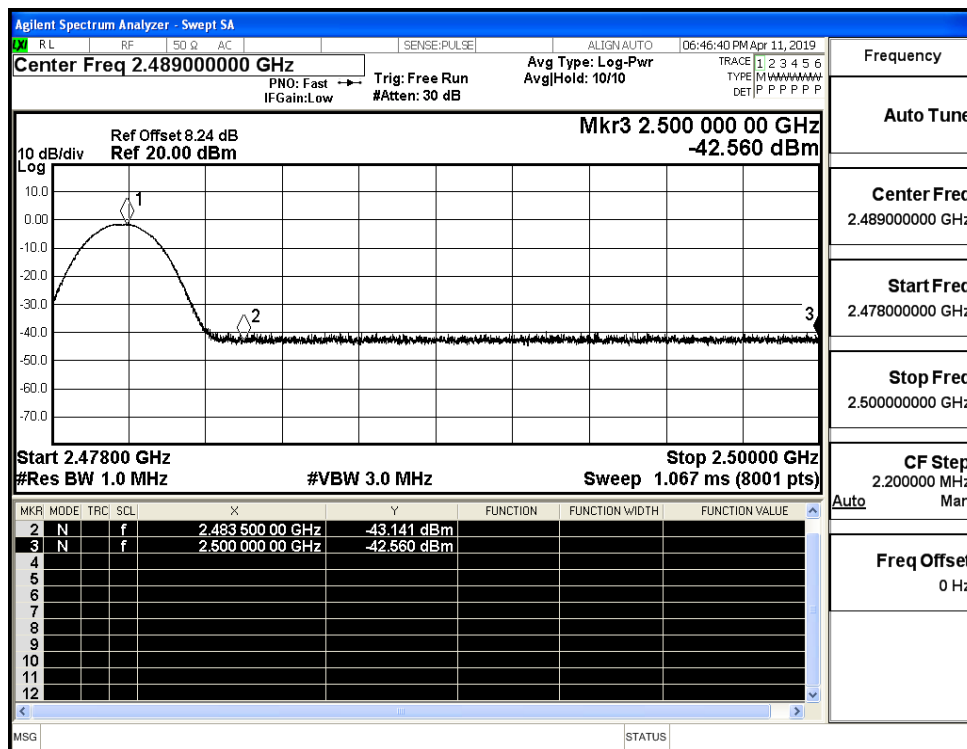
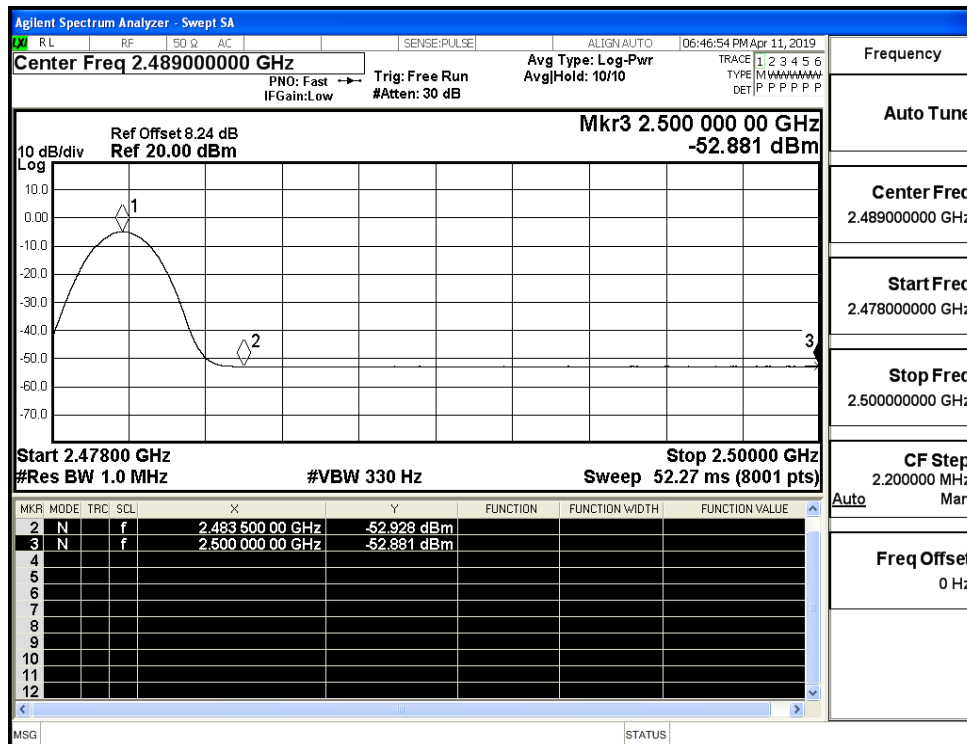
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



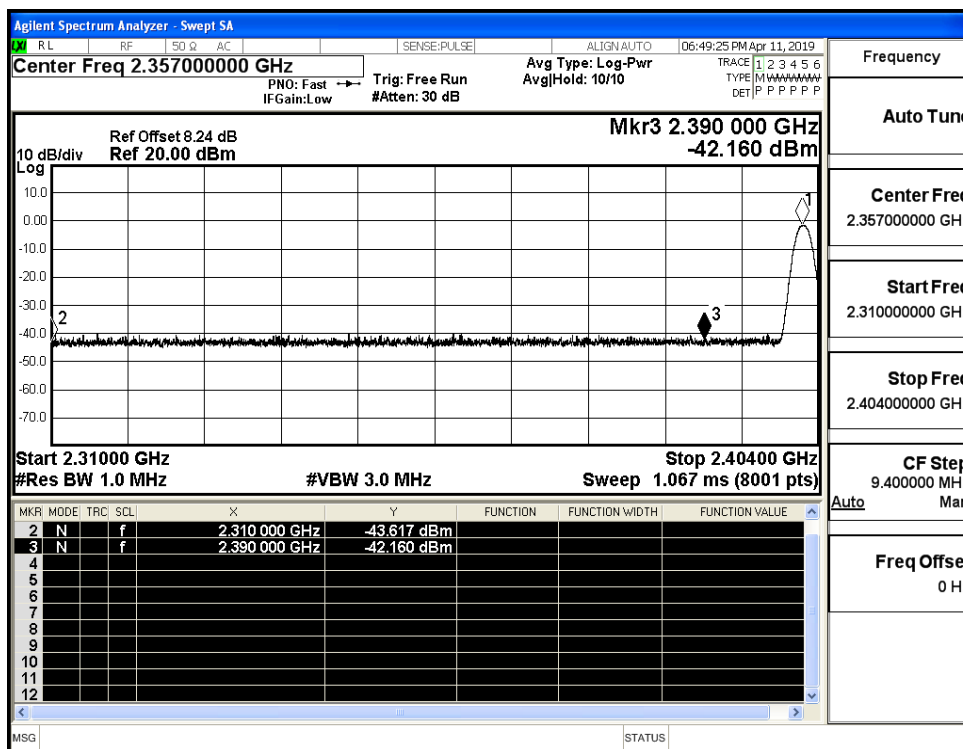
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



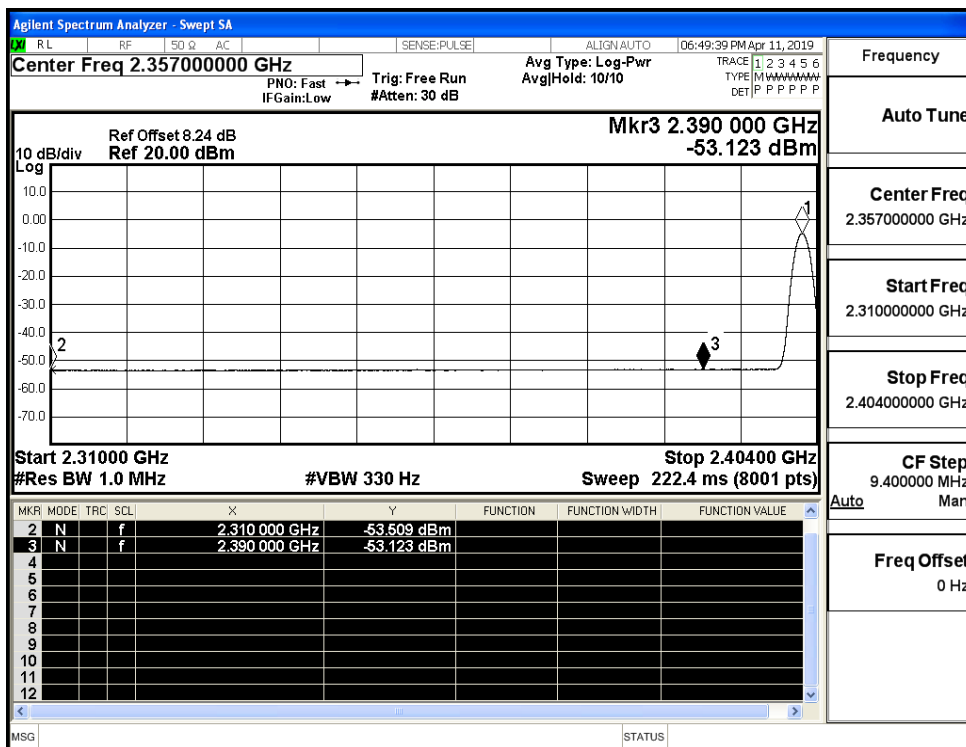
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

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

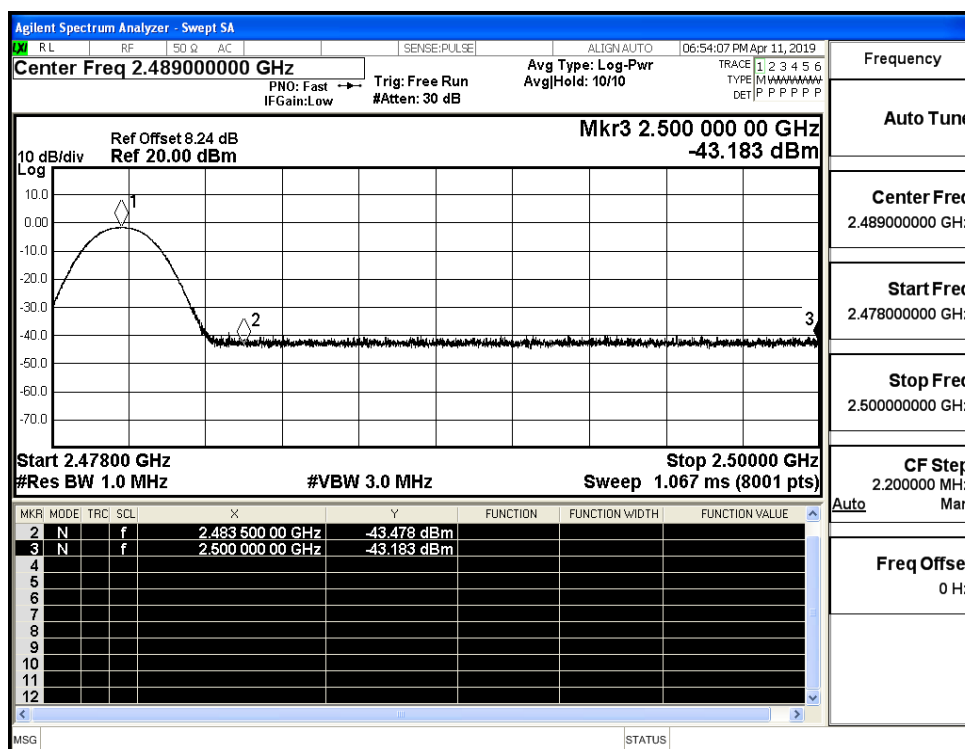
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

