

Appendix A

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

Product Name: CDG/BLUETOOTH KARAOKE PLAYER

Trade Mark: singing machine

Test Model: STVG785BT

Environmental Conditions

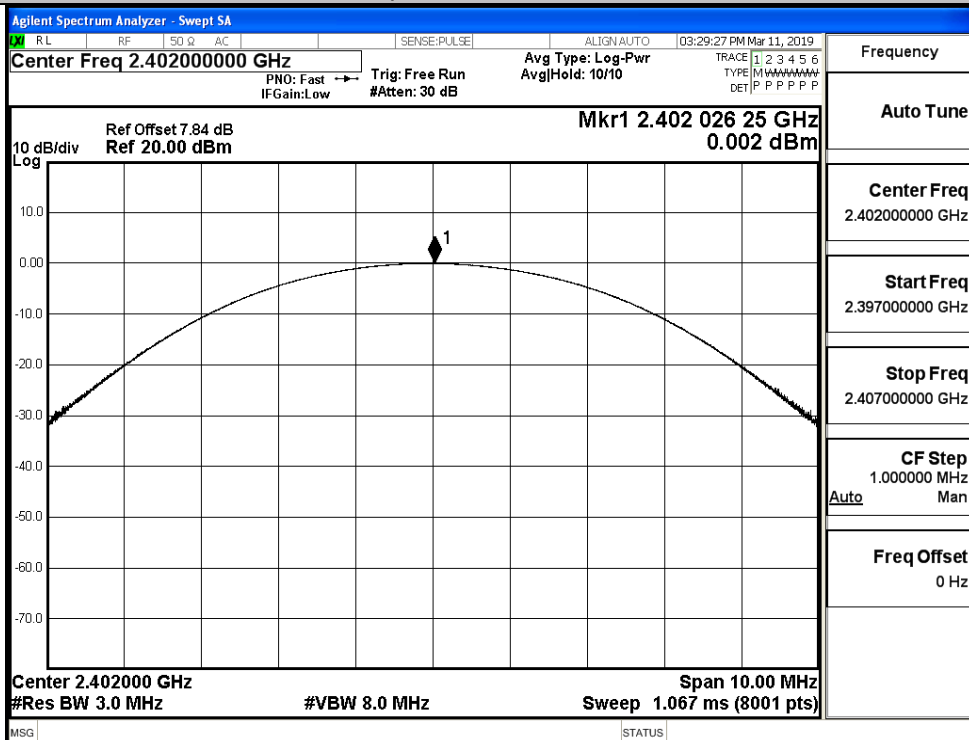
Temperature:	23.2 ° C
Relative Humidity:	53.4%
ATM Pressure:	100.0 kPa
Test Engineer:	LI HUAN
Supervised by:	Tom Liu

A.1 Maximum Conducted Peak Output Power

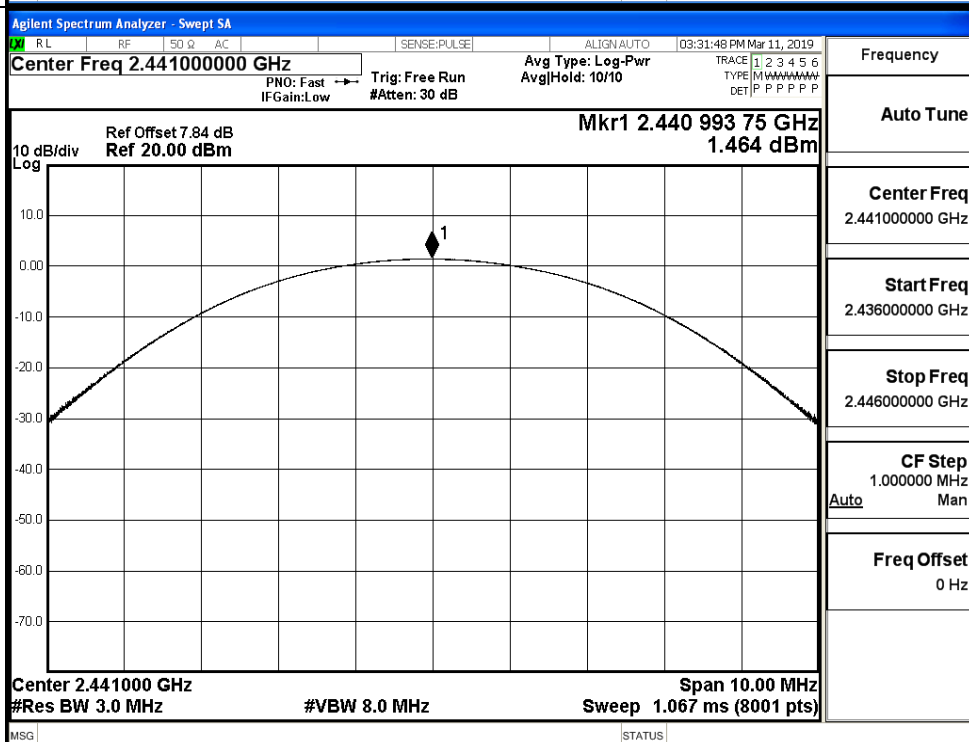
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.002	21	PASS
	MCH	1.464	21	PASS
	HCH	1.572	21	PASS
$\pi/4$ DQPSK	LCH	-0.507	21	PASS
	MCH	0.652	21	PASS
	HCH	0.542	21	PASS
8DPSK	LCH	-0.549	21	PASS
	MCH	0.566	21	PASS
	HCH	0.621	21	PASS

Test Graphs

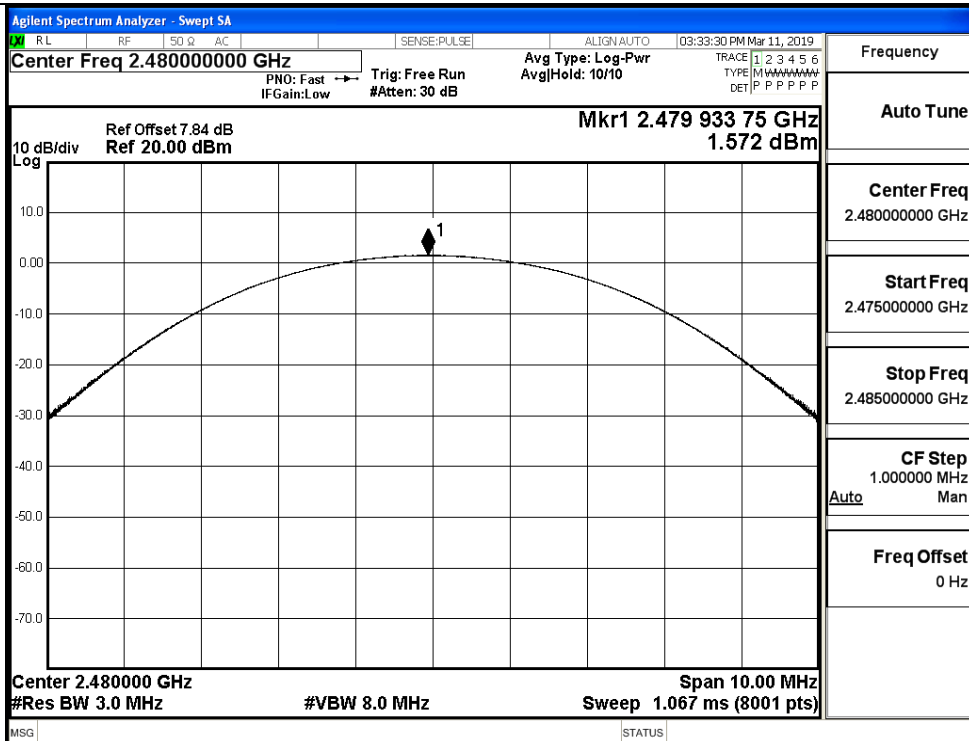
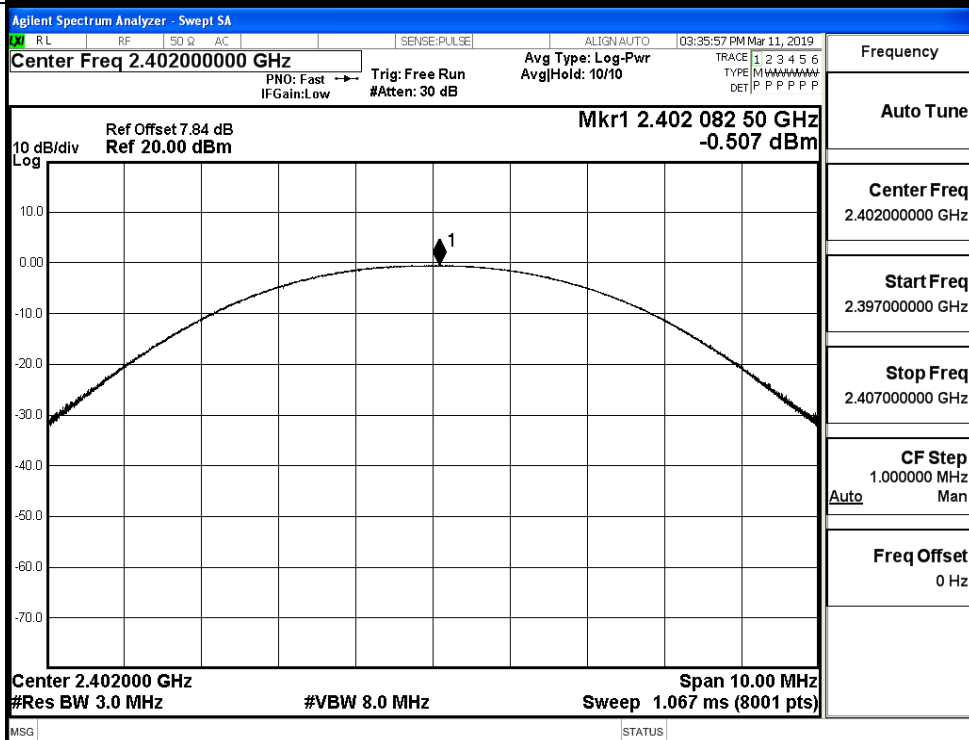
GFSK/LCH

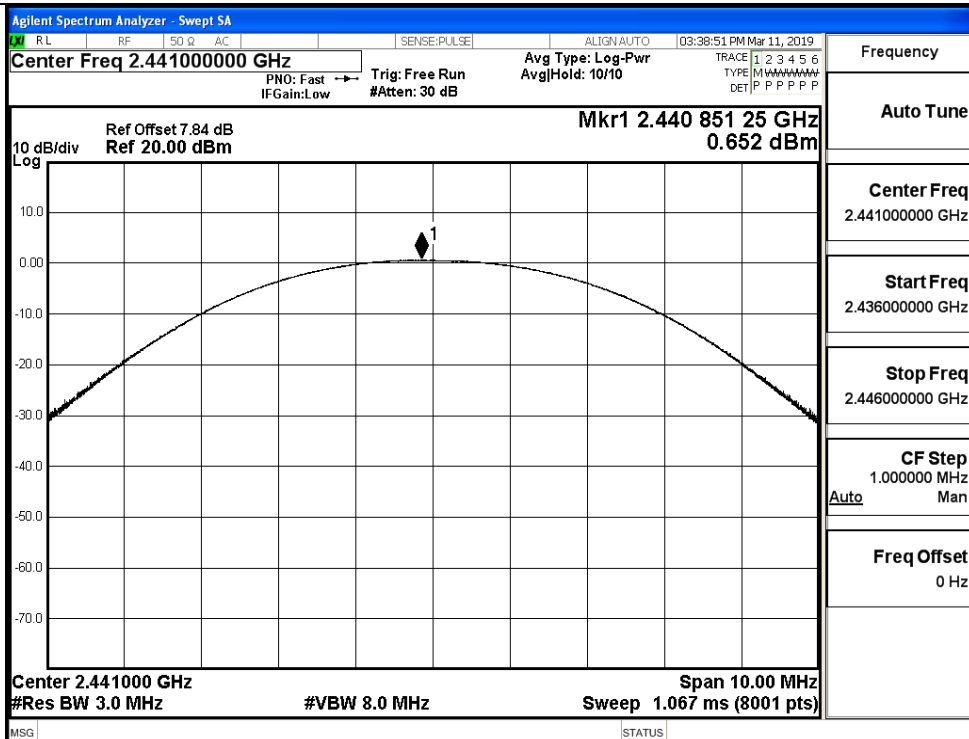
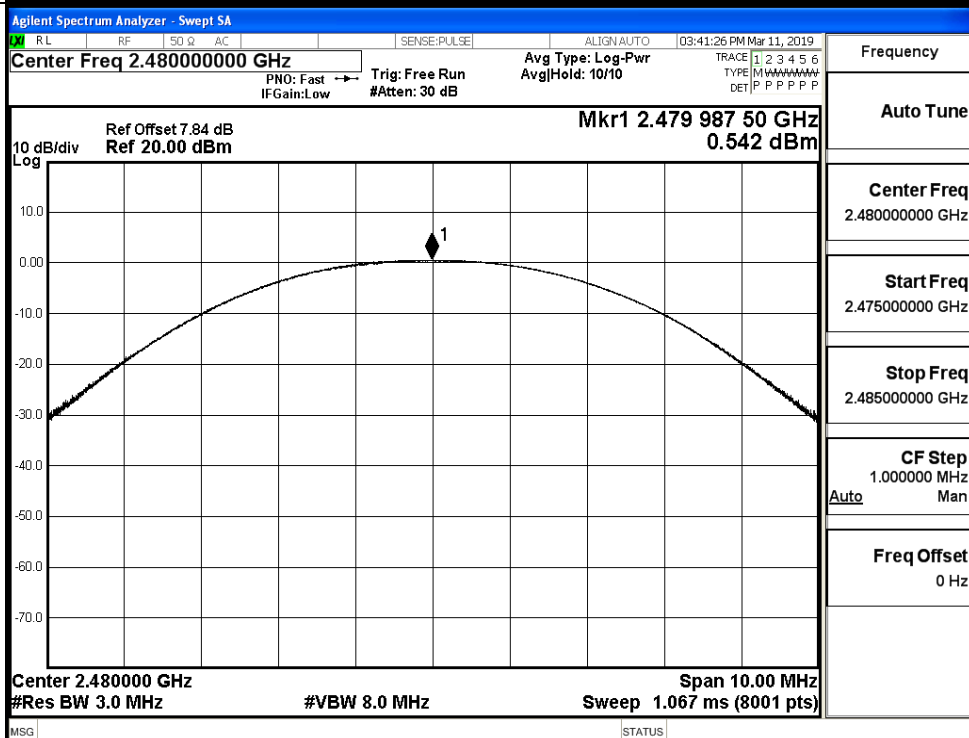


GFSK/MCH

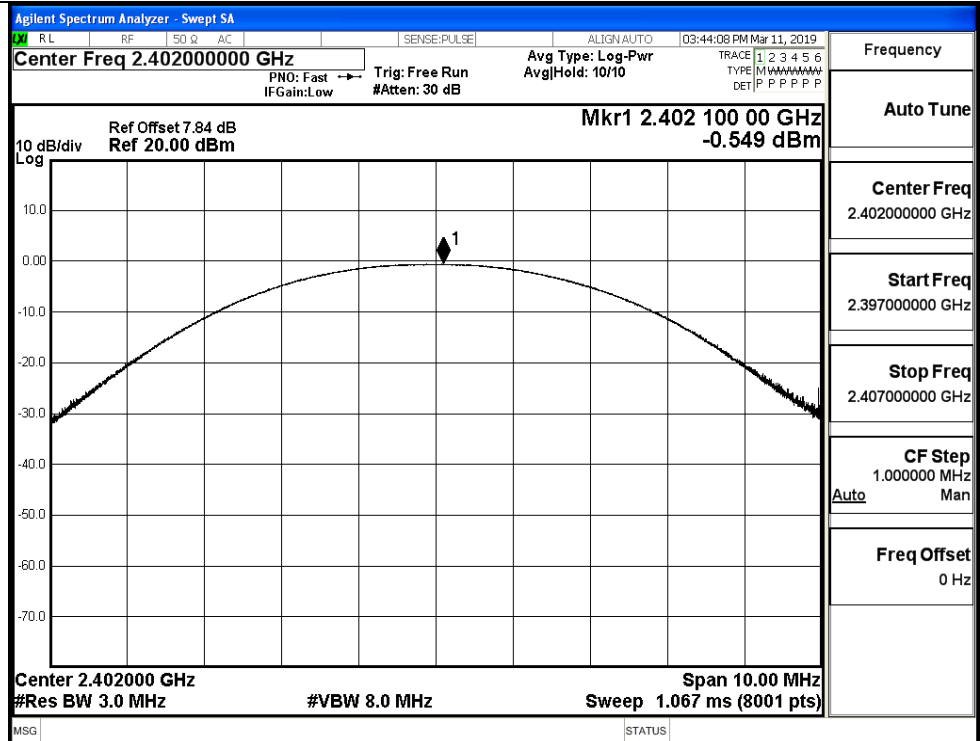


GFSK/HCH

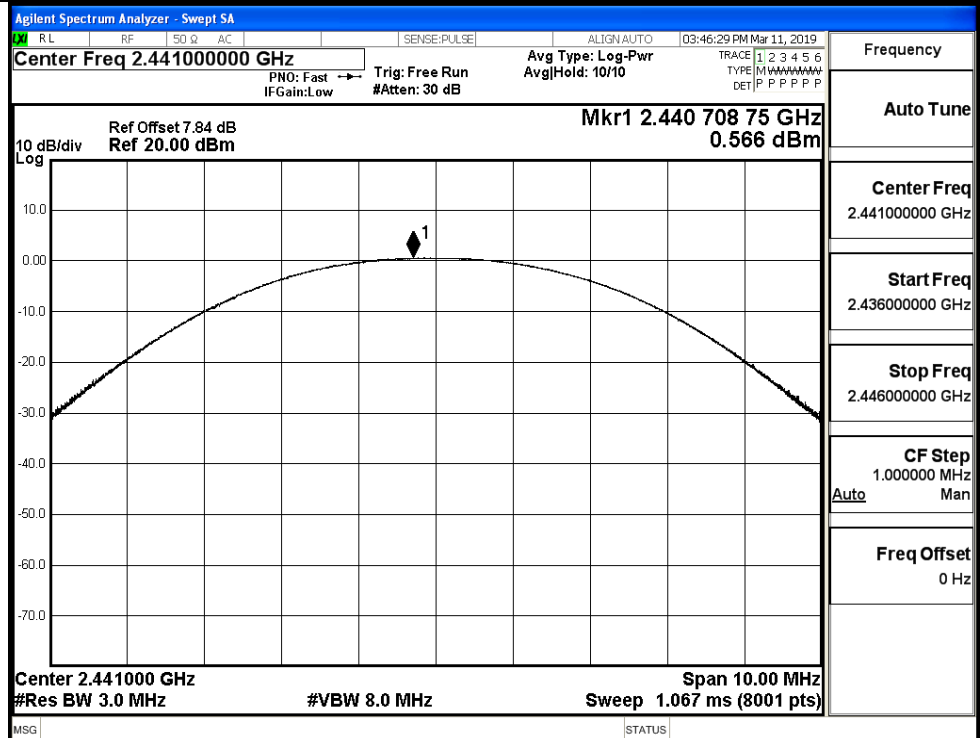
 π /4DQPSK/LCH

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

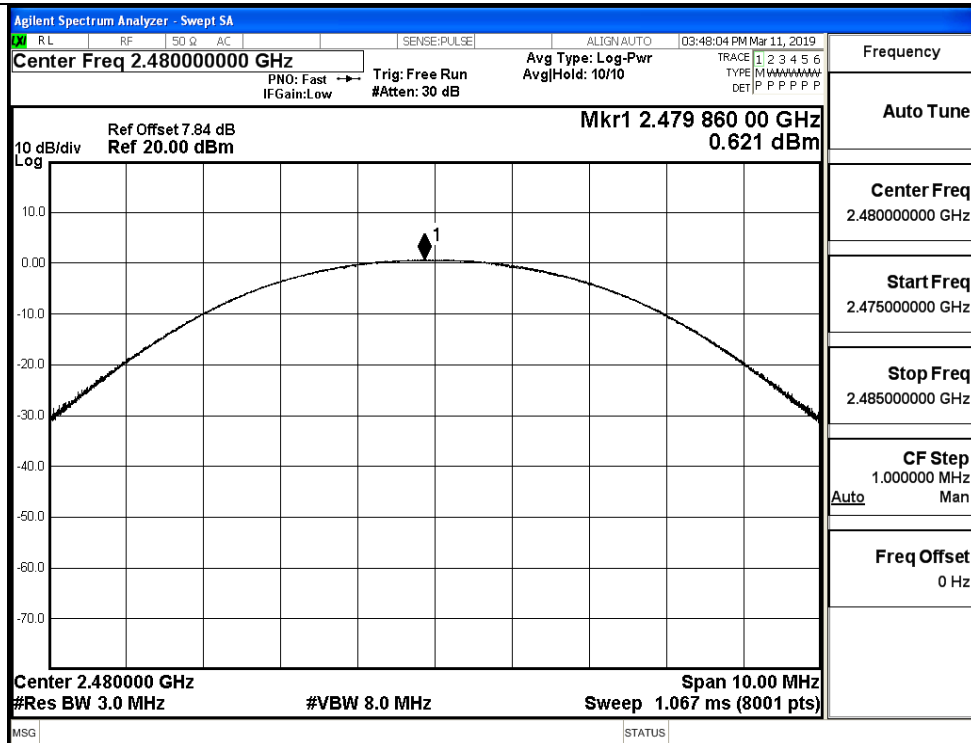
8DPSK/LCH



8DPSK/MCH



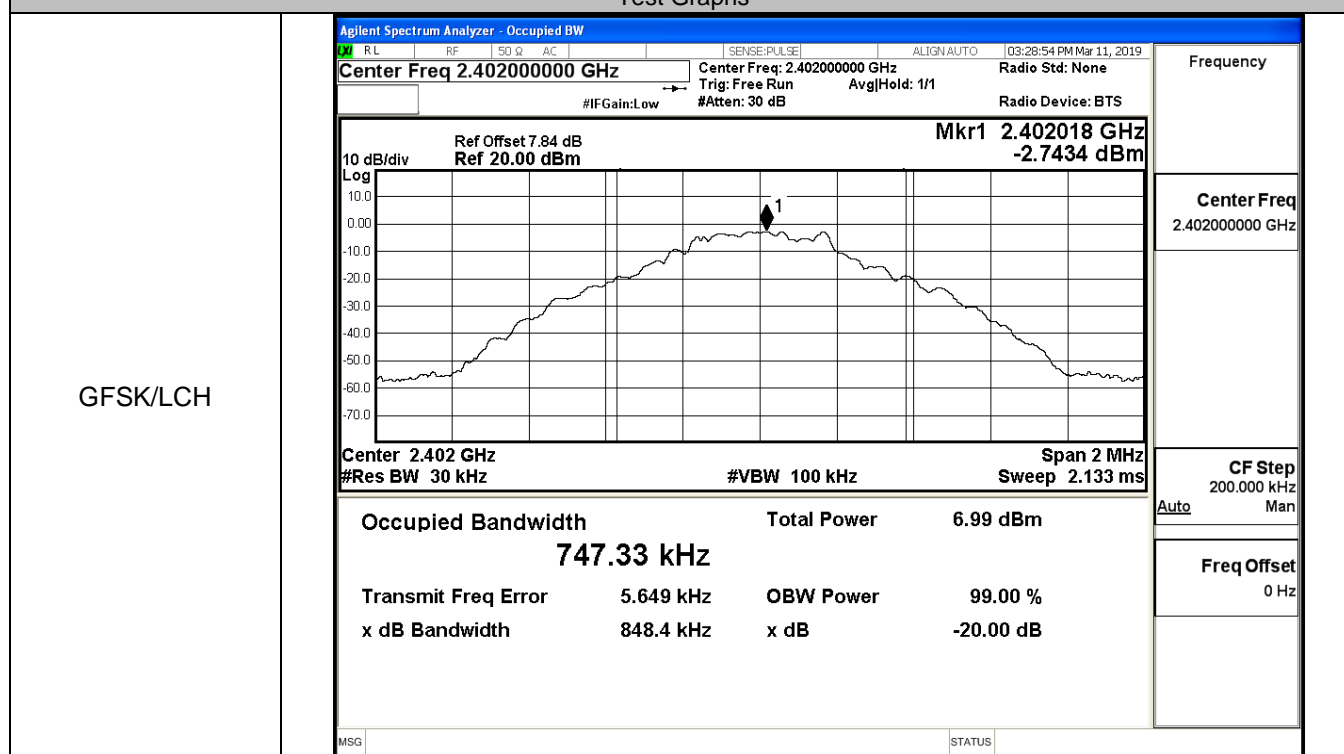
8DPSK/HCH



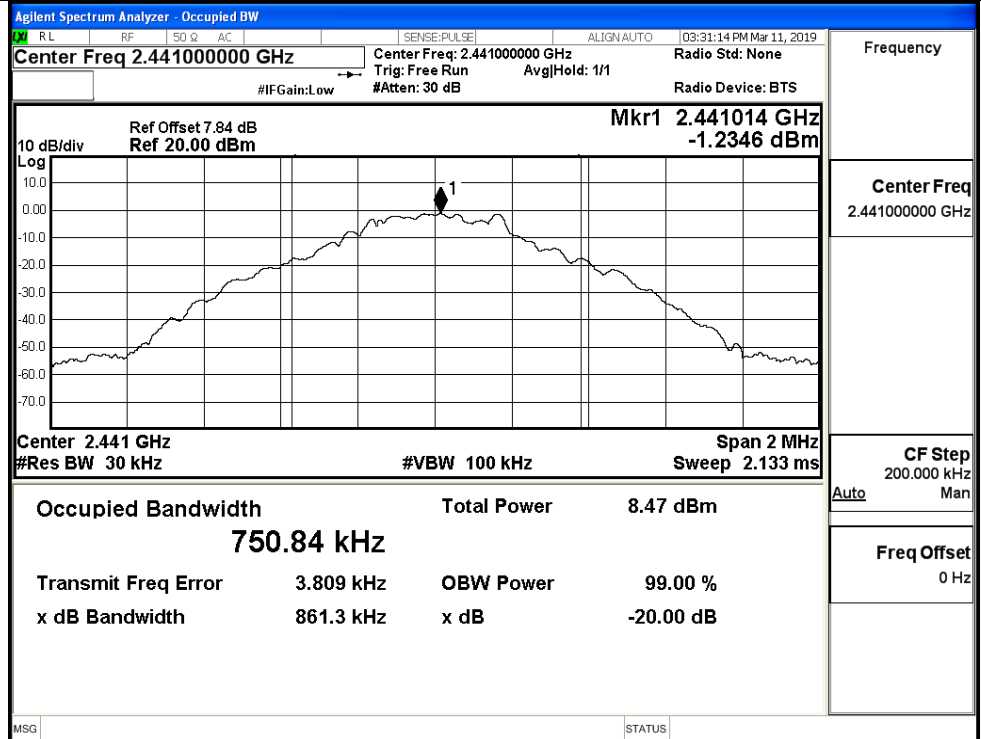
A.2 99% and 20dB Bandwidth

Mode	Channel.	99% Bandwidth [MHz]	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.74733	0.8484	Not Specified	PASS
	MCH	0.75084	0.8613	Not Specified	PASS
	HCH	0.75838	0.8511	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.1463	1.268	Not Specified	PASS
	MCH	1.1500	1.273	Not Specified	PASS
	HCH	1.1506	1.273	Not Specified	PASS
8DPSK	LCH	1.1515	1.268	Not Specified	PASS
	MCH	1.1528	1.268	Not Specified	PASS
	HCH	1.1563	1.269	Not Specified	PASS

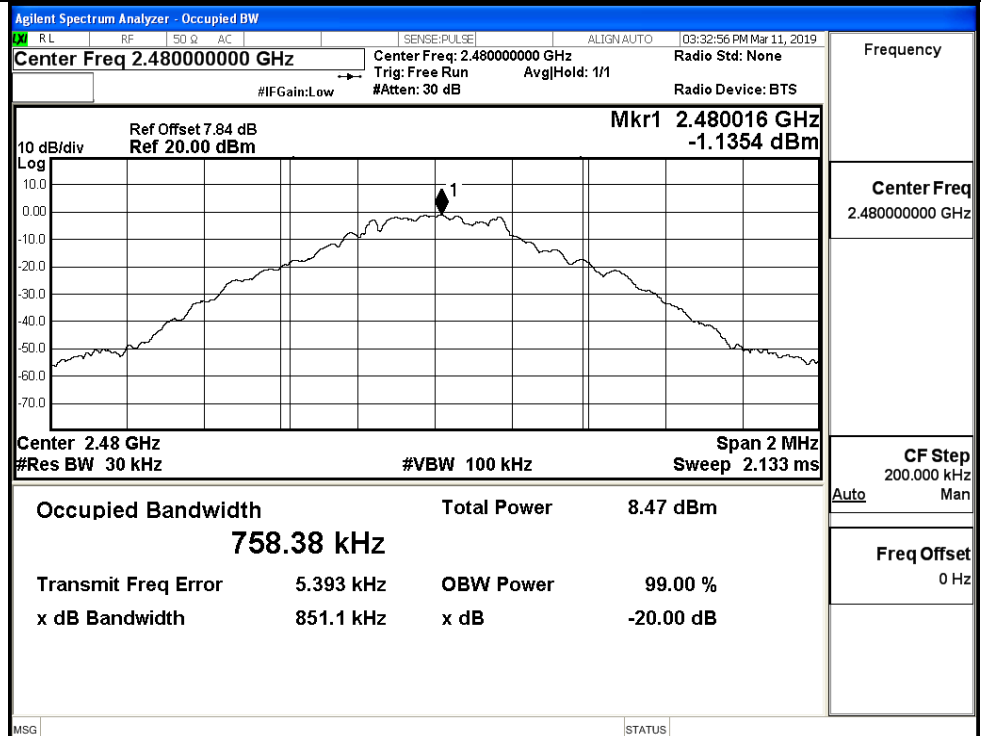
Test Graphs

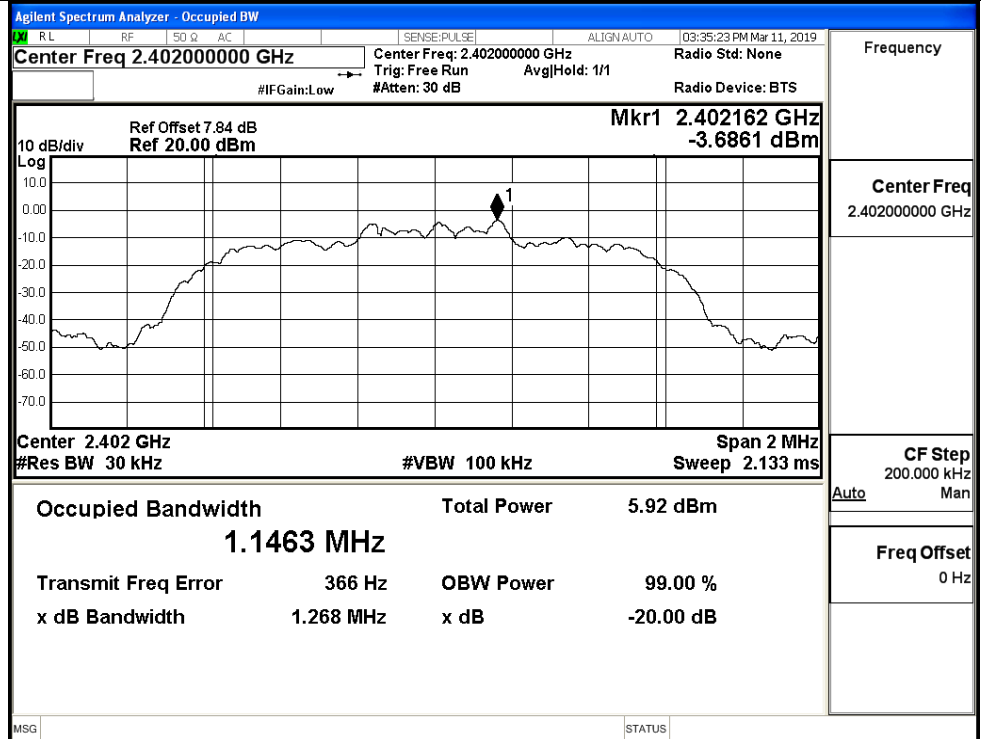
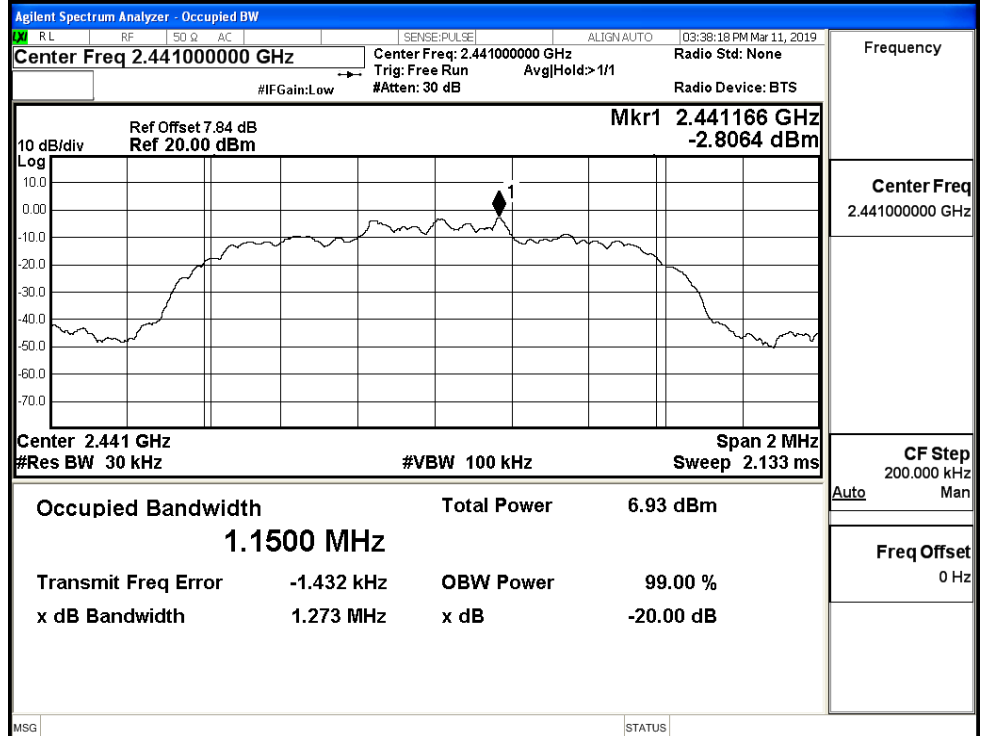


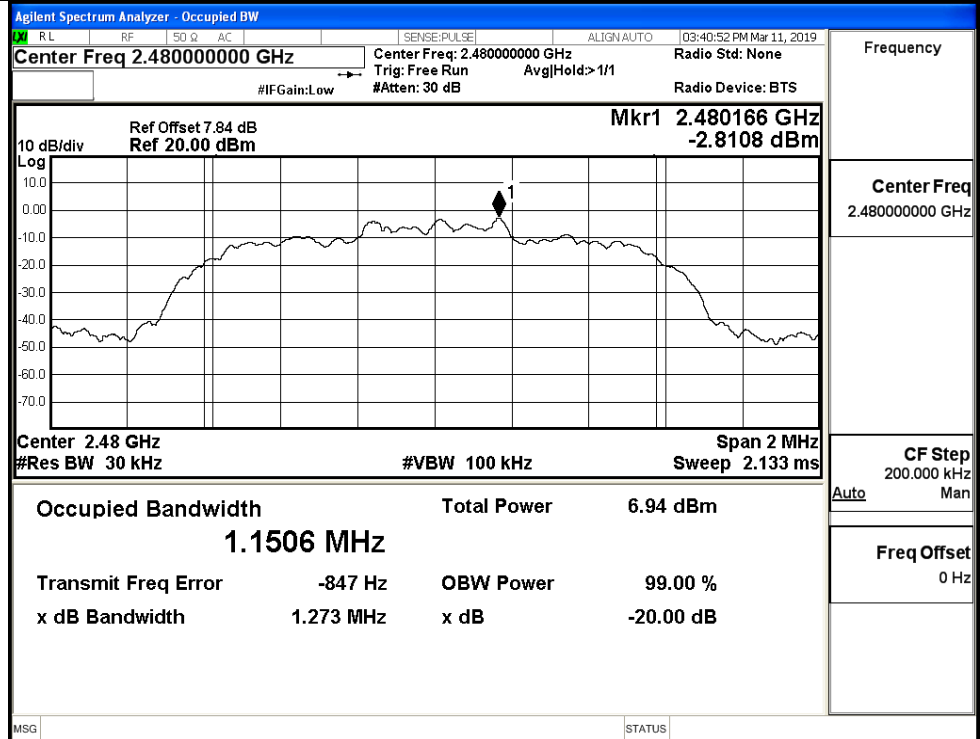
GFSK/MCH



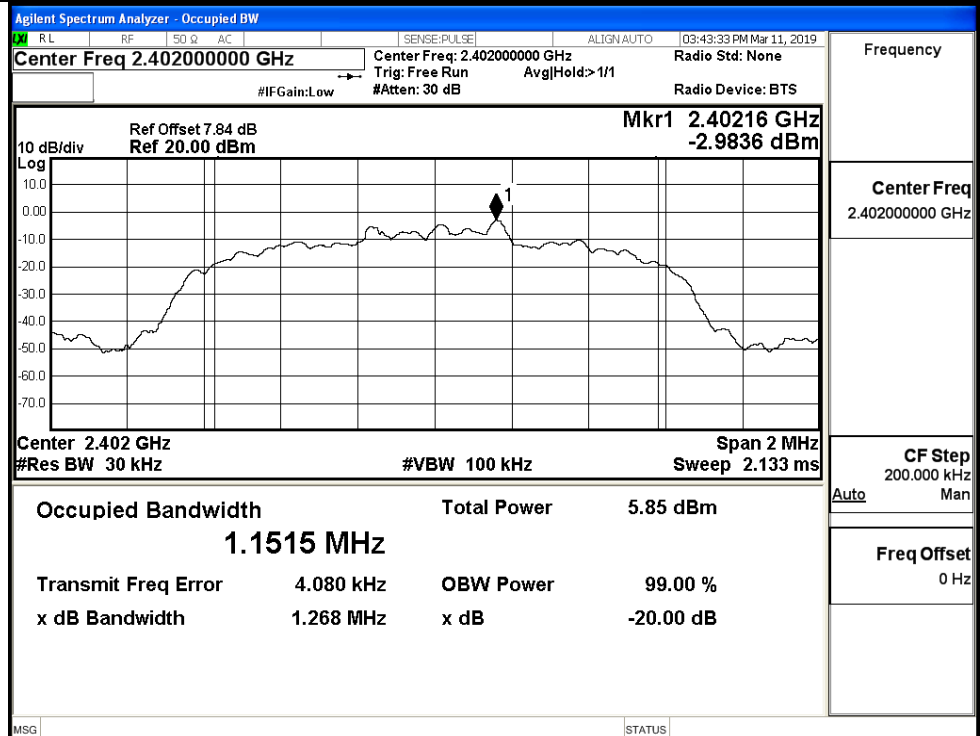
GFSK/HCH



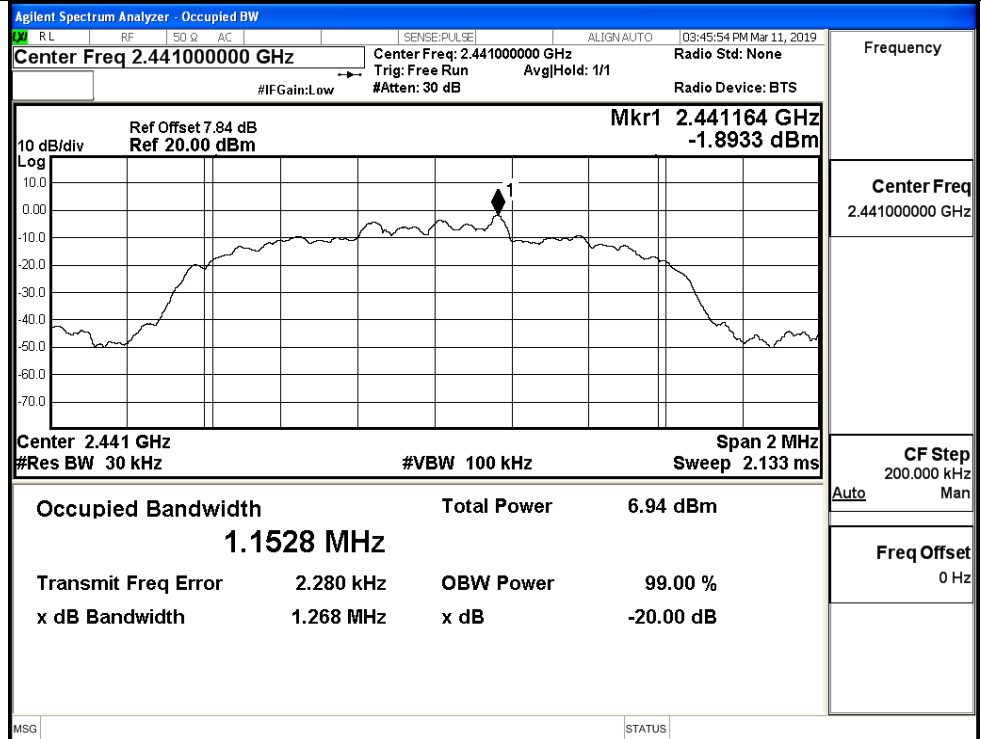
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

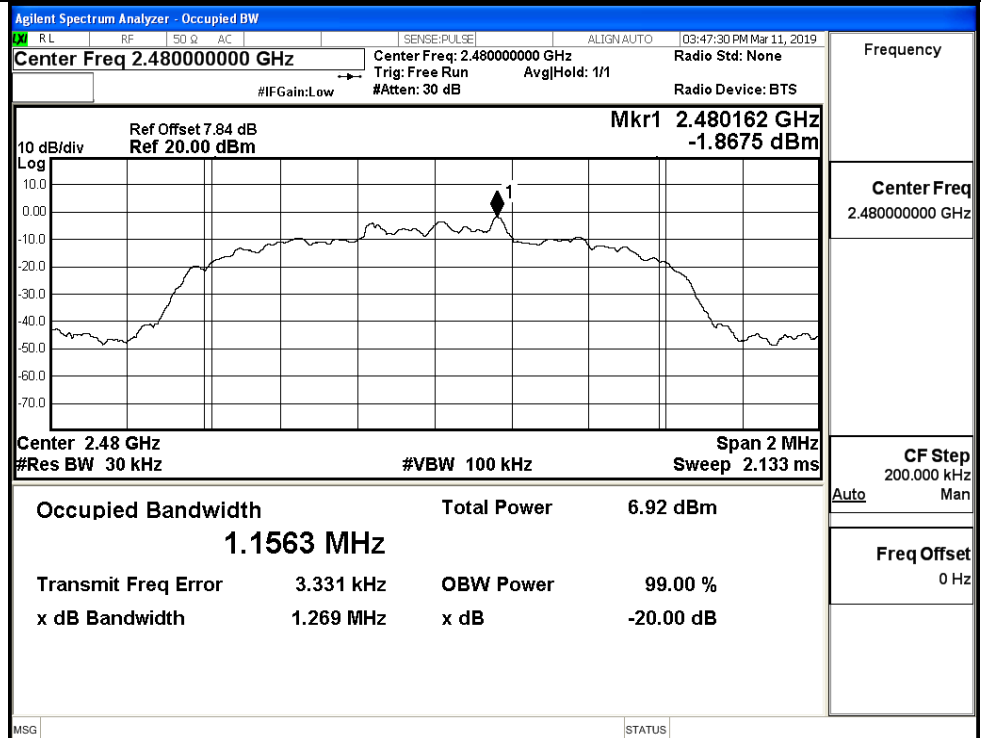
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

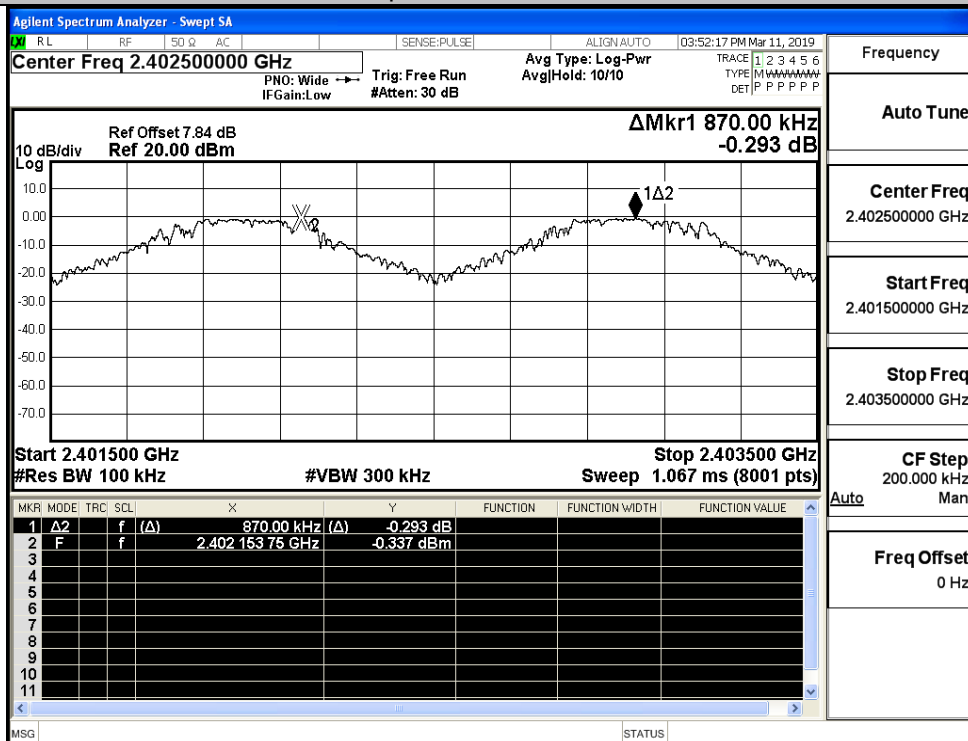


A.3 Carrier Frequency Separation

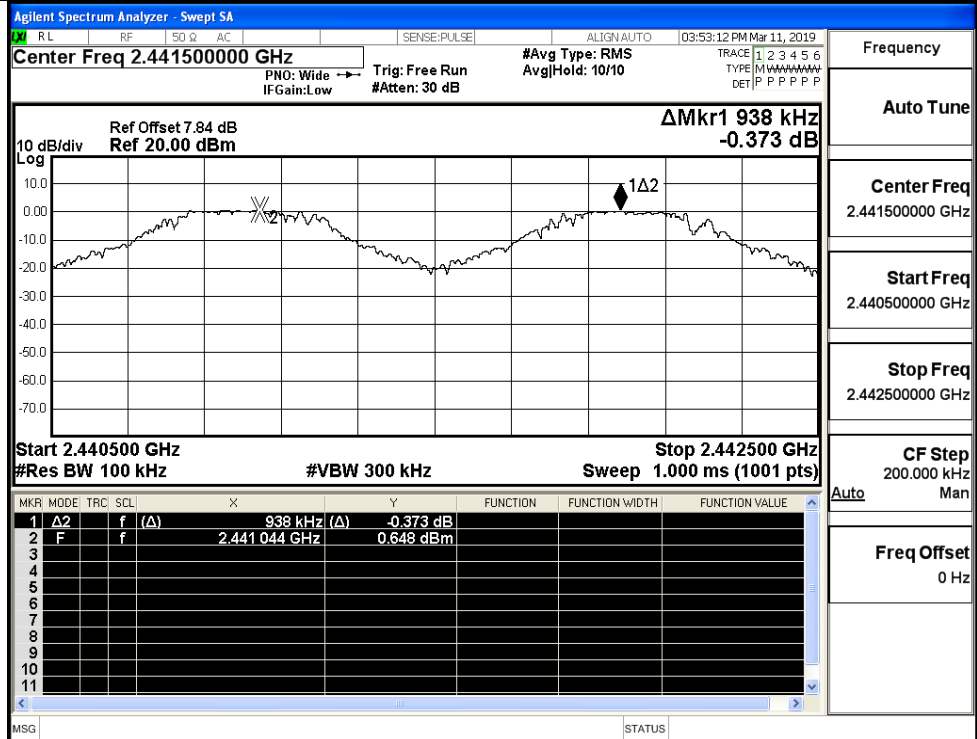
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.870	0.574	PASS
	MCH	0.938	0.574	PASS
	HCH	0.986	0.574	PASS
π /4DQPSK	LCH	1.042	0.849	PASS
	MCH	0.970	0.849	PASS
	HCH	1.132	0.849	PASS
8DPSK	LCH	1.028	0.846	PASS
	MCH	0.996	0.846	PASS
	HCH	1.114	0.846	PASS

Test Graphs

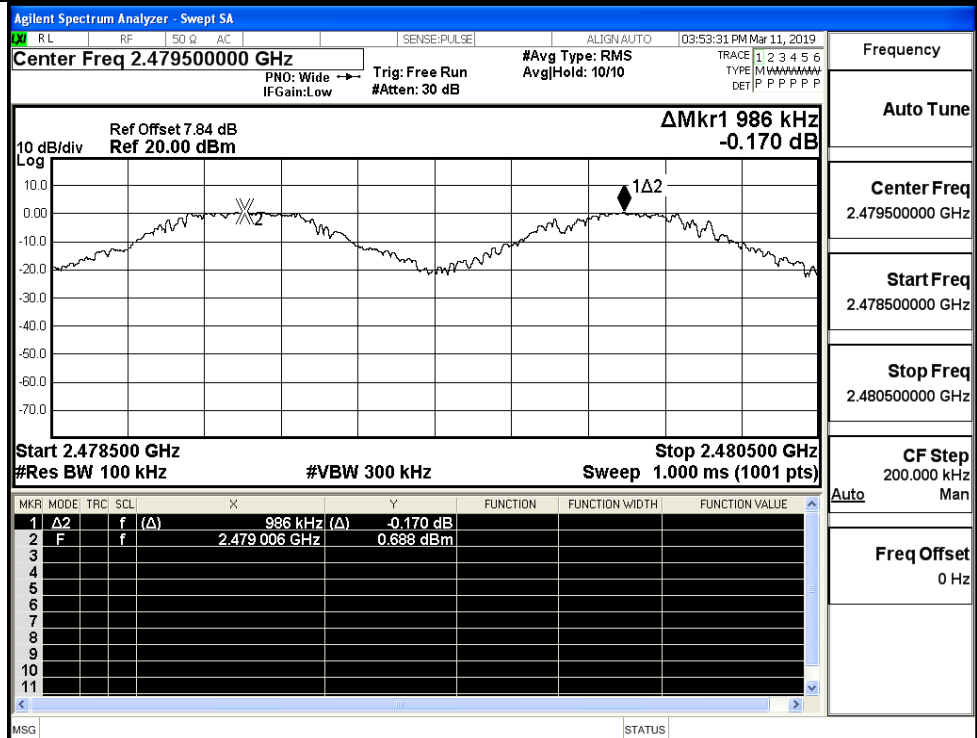
GFSK/LCH

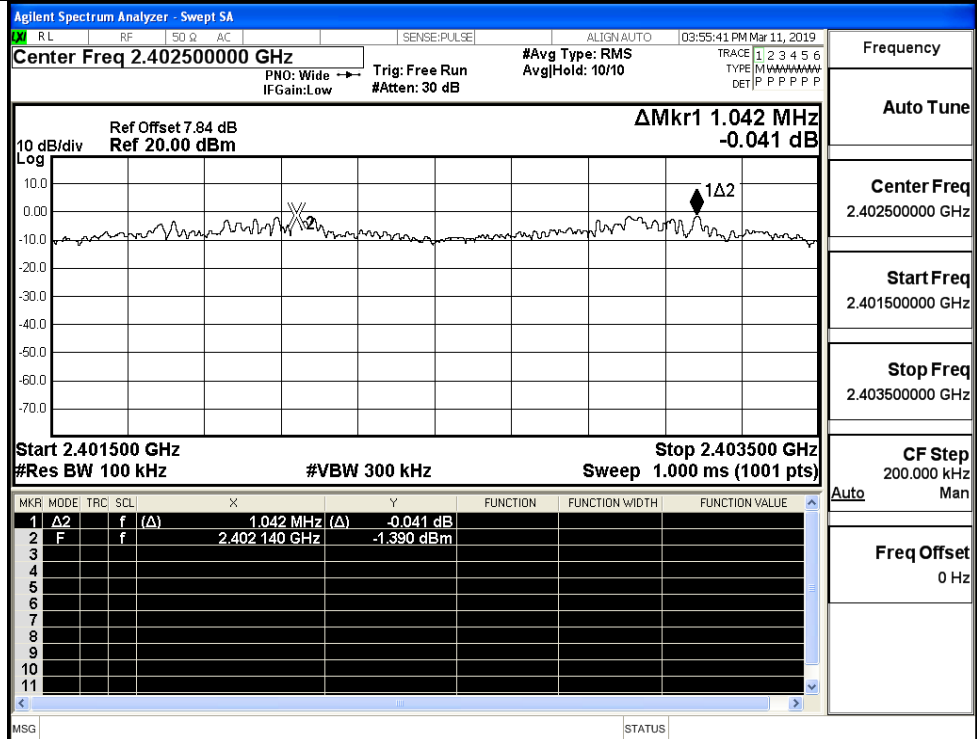
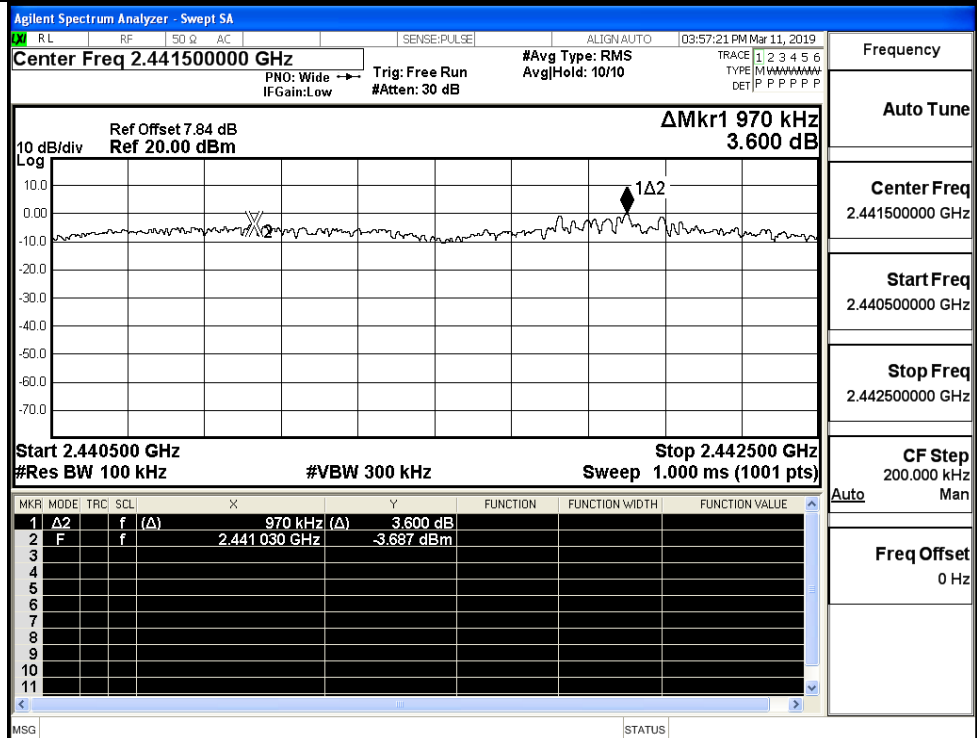


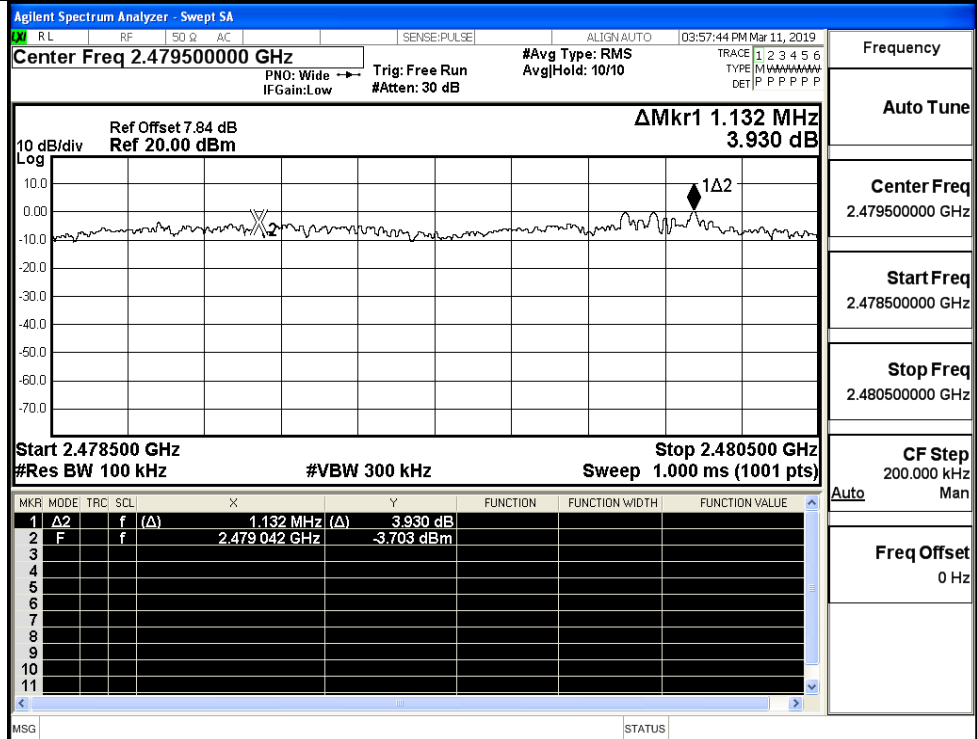
GFSK/MCH



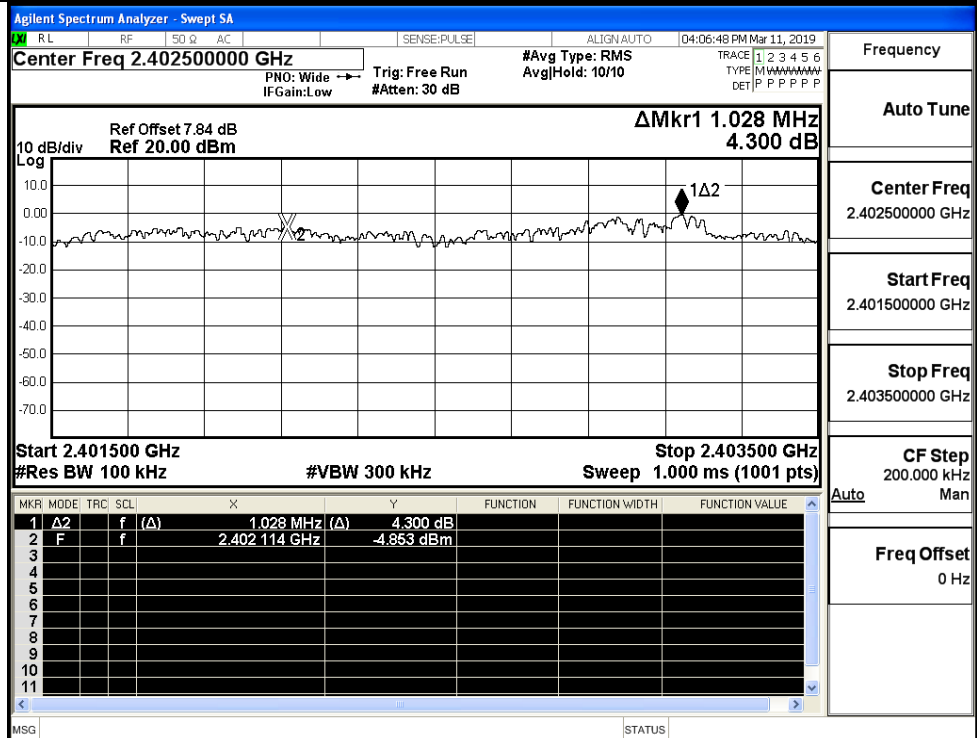
GFSK/HCH



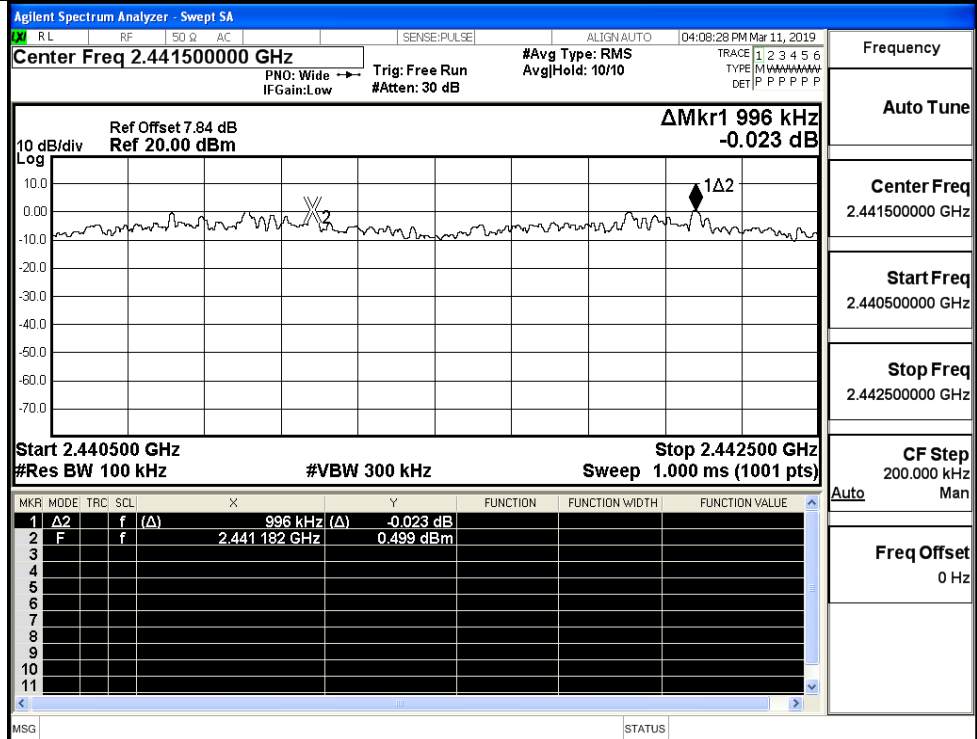
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

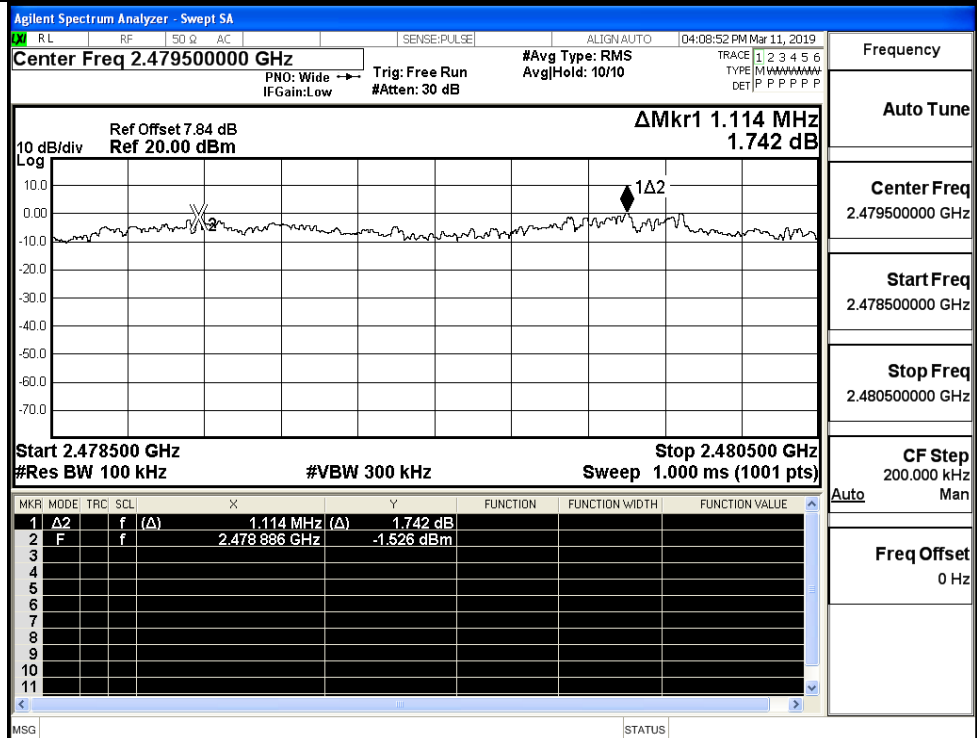
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

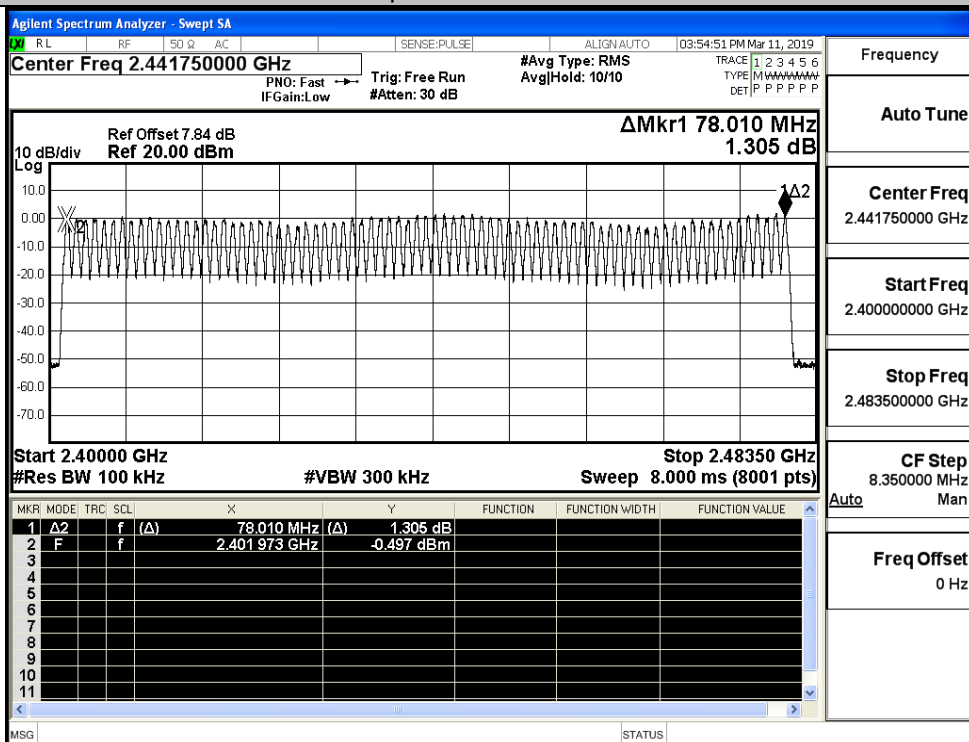
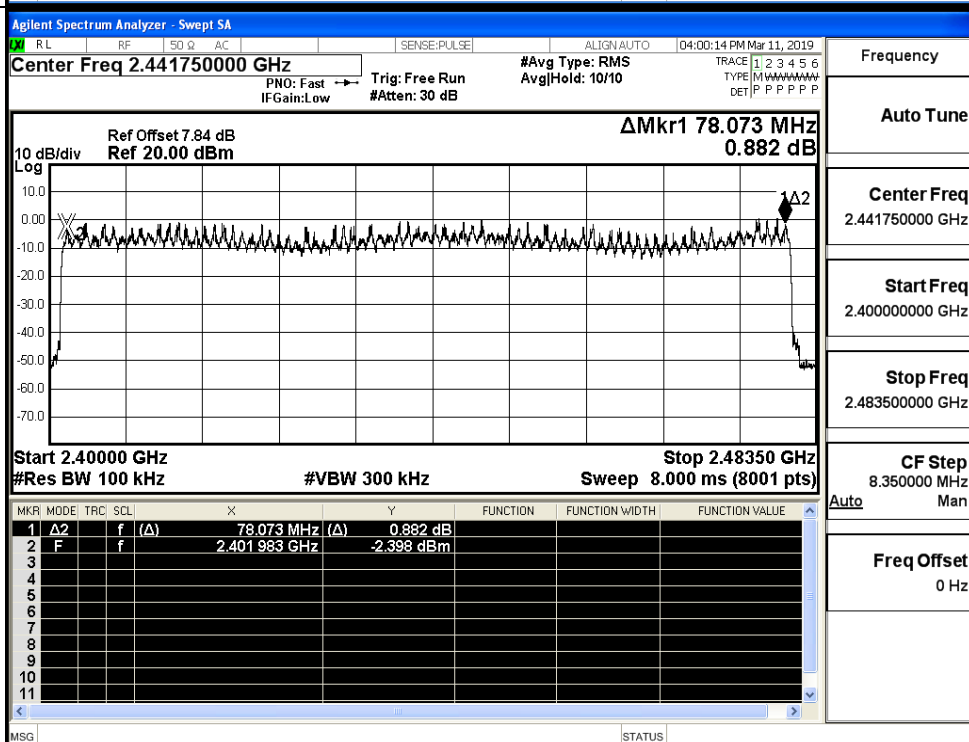


A.4 Hopping Channel Number

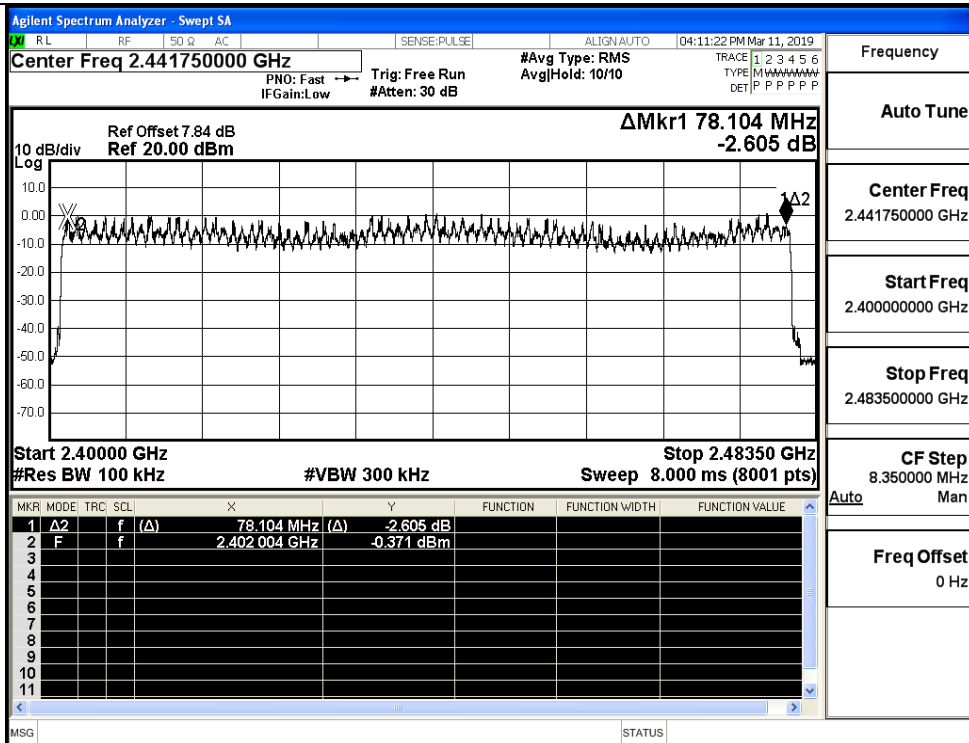
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	≥ 15	PASS
$\pi/4$ DQPSK	Hop	79	≥ 15	PASS
8DPSK	Hop	79	≥ 15	PASS

Test Graphs

GFSK/Hop

 $\pi/4$ DQPSK/Hop

8DPSK/Hop

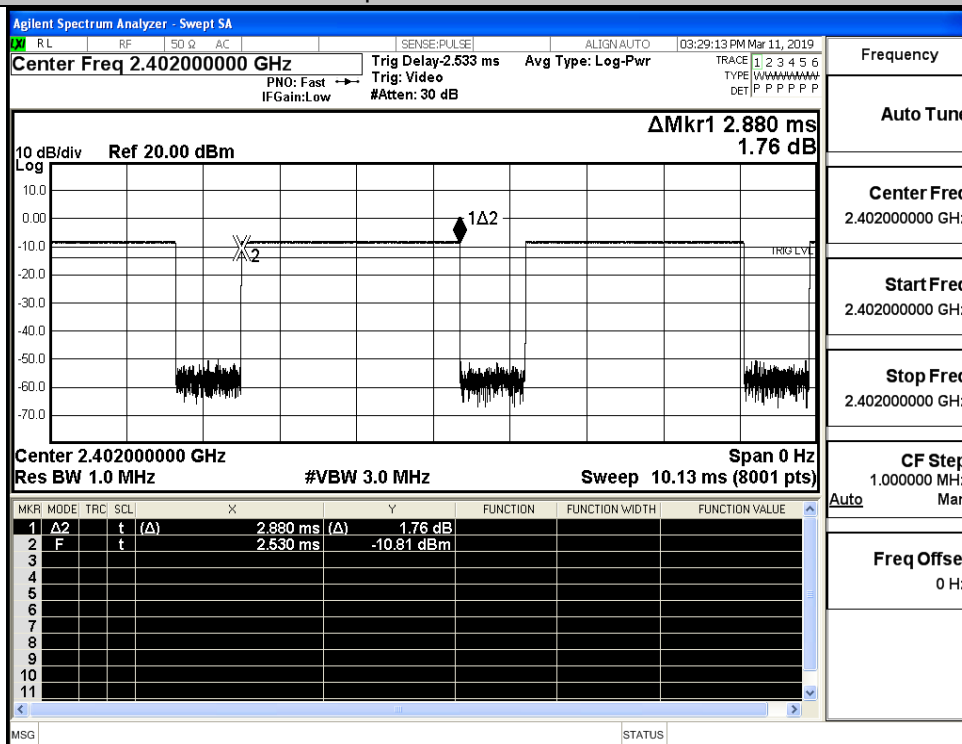


A.5 Dwell Time

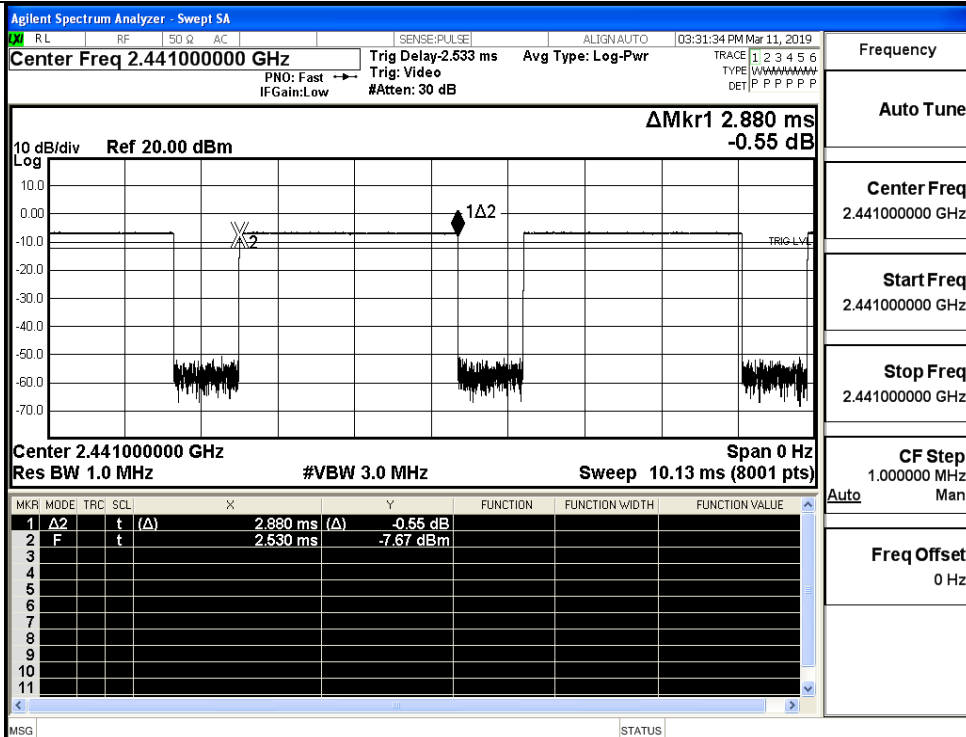
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88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

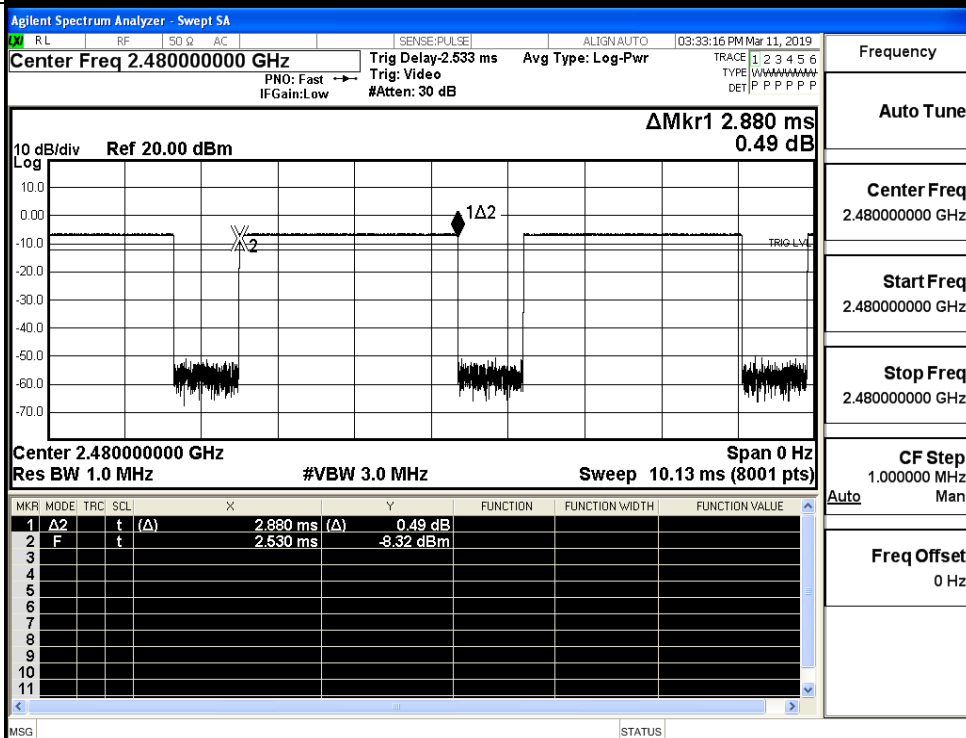
GFSK_DH5/LCH



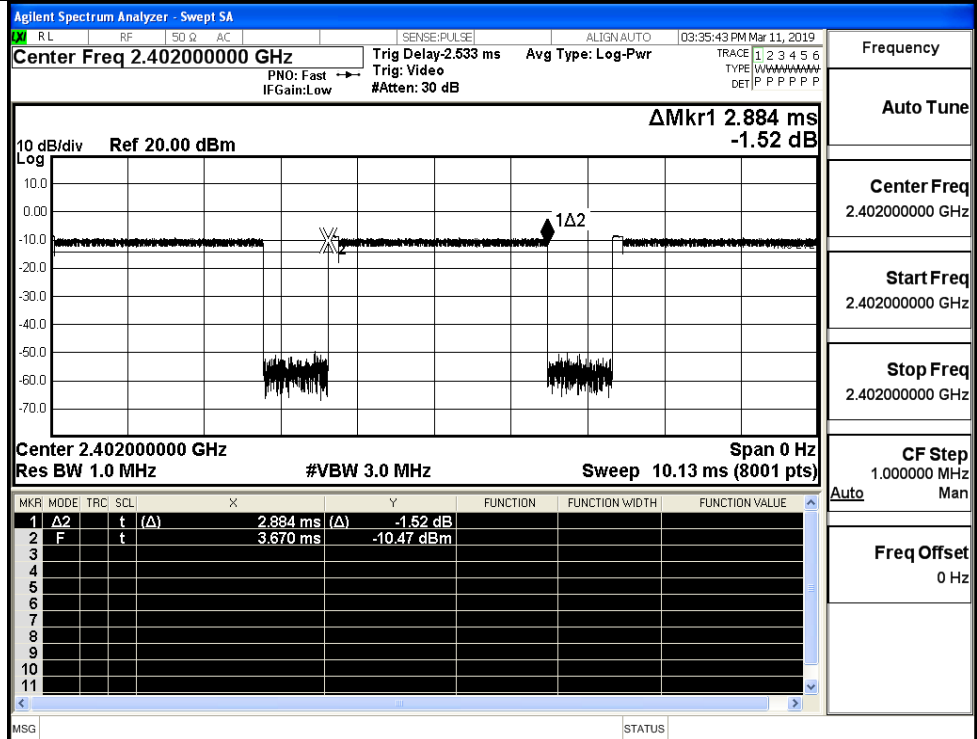
GFSK_DH5/MCH



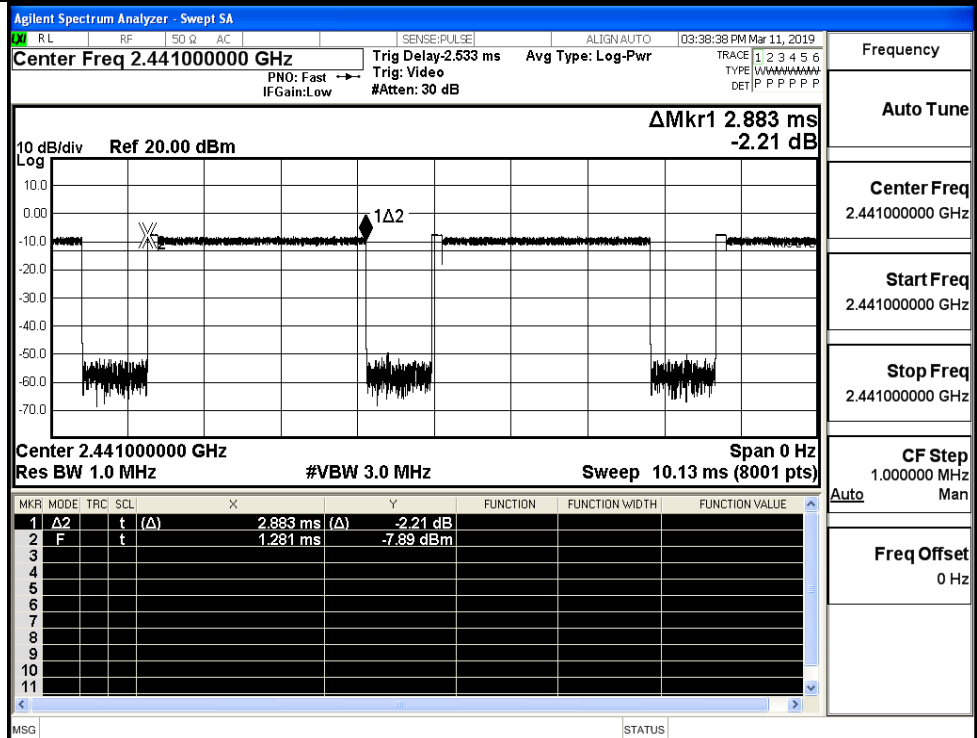
GFSK_DH5/HCH



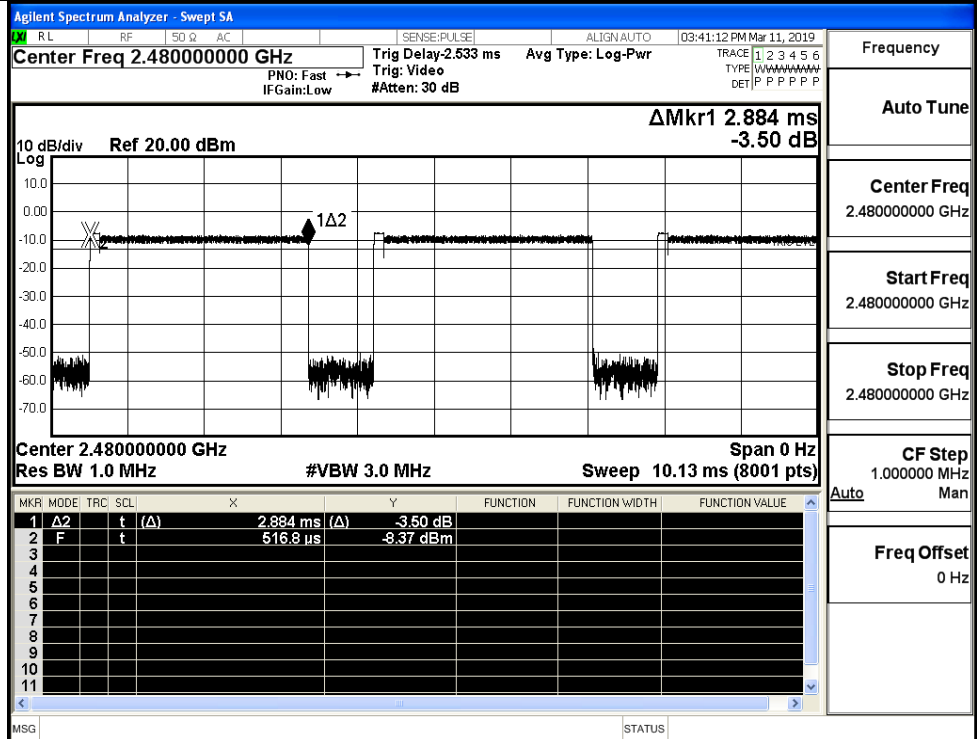
$\pi/4$ DQPSK
_2DH5/LCH



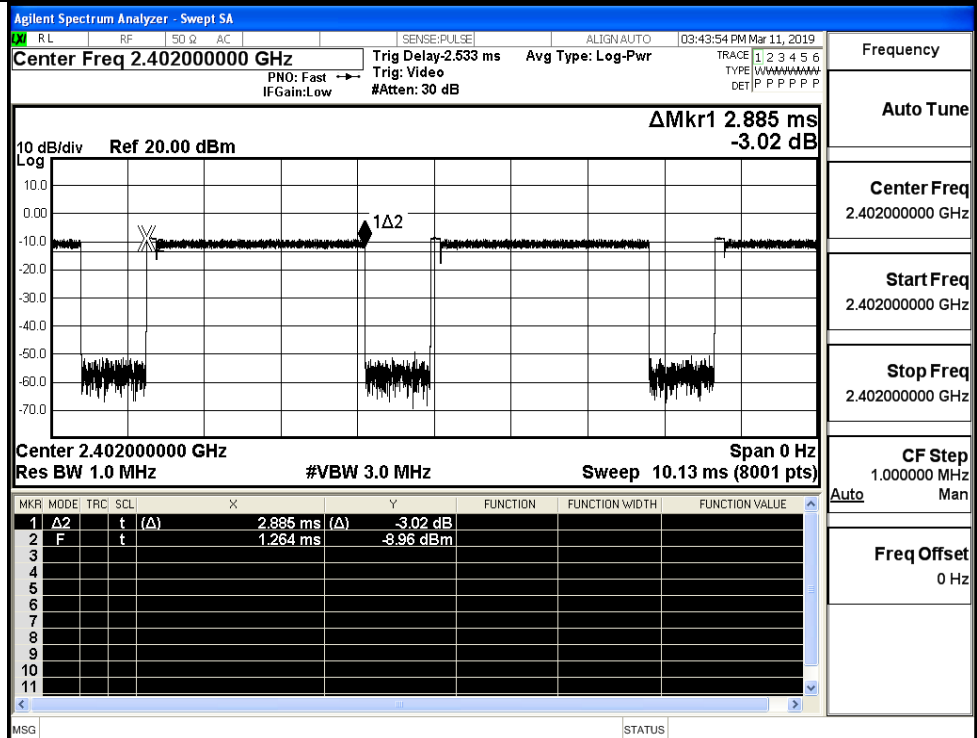
$\pi/4$ DQPSK
_2DH5/MCH



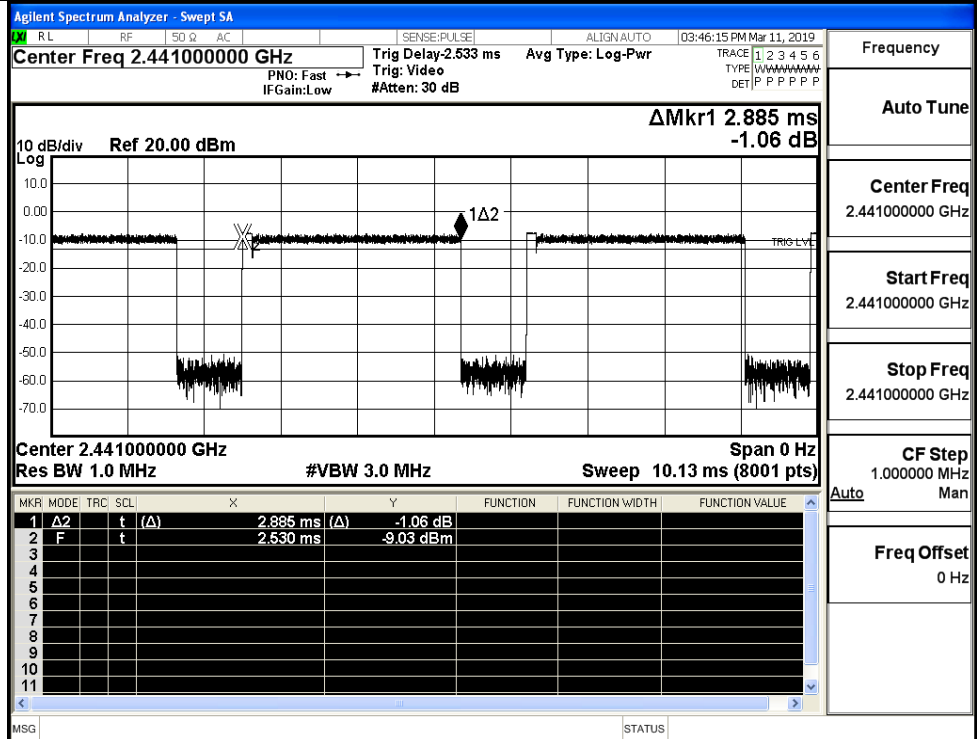
$\pi/4$ DQPSK
_2DH5/HCH



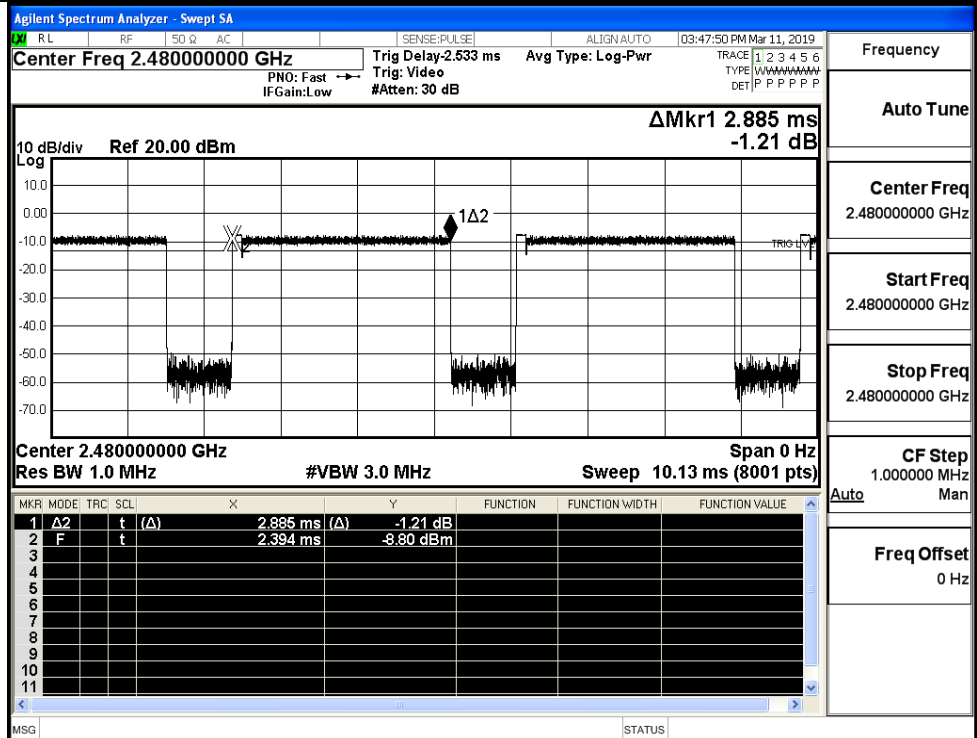
8DPSK _3DH5/LCH



8DPSK_3DH5/MCH



8DPSK_3DH5/HCH

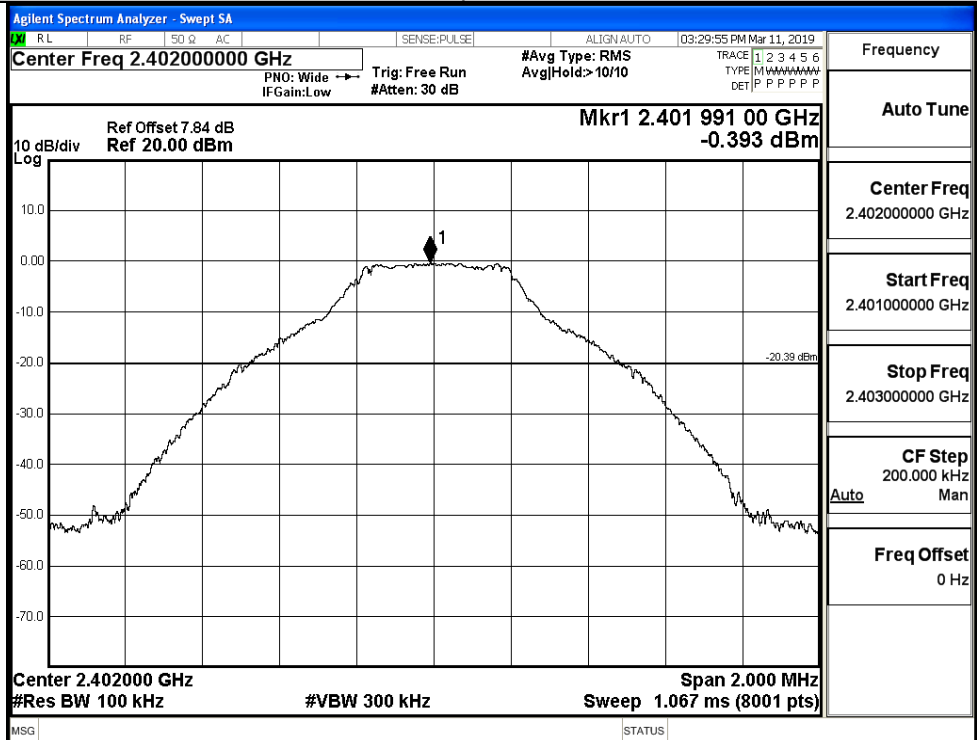


A.6 RF Conducted Spurious Emissions

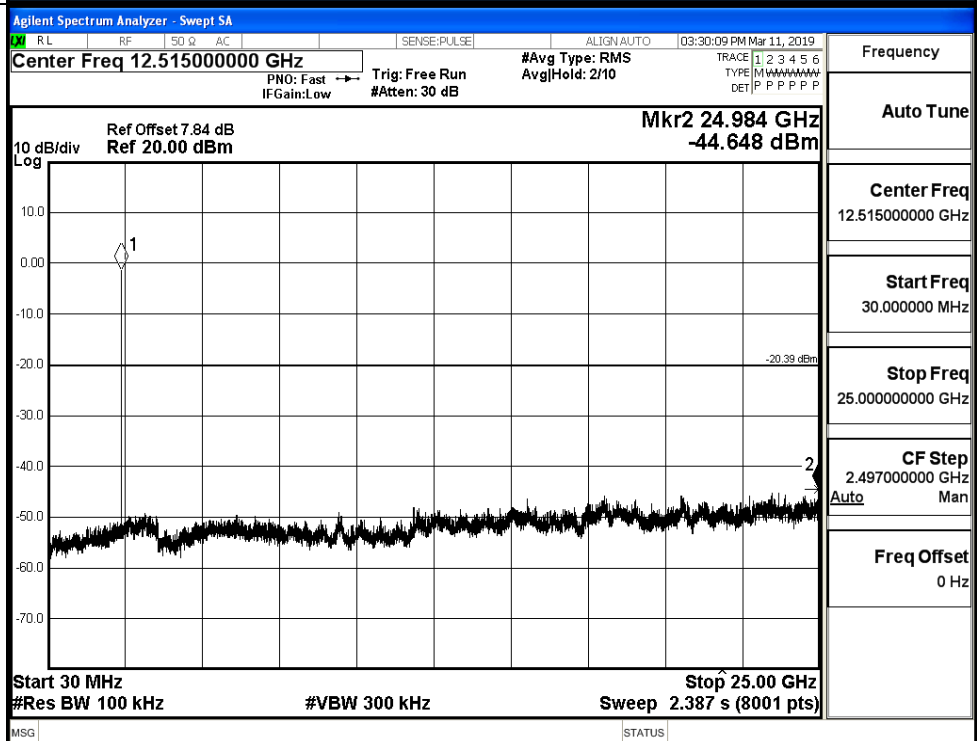
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.393	-44.648	-20.393	PASS
	MCH	0.864	-44.409	-19.136	PASS
	HCH	0.879	-44.546	-19.121	PASS
$\pi/4$ DQPSK	LCH	-0.494	-30.757	-20.494	PASS
	MCH	0.333	-45.374	-19.667	PASS
	HCH	0.181	-45.157	-19.819	PASS
8DPSK	LCH	-0.858	-44.803	-20.858	PASS
	MCH	0.169	-45.456	-19.831	PASS
	HCH	0.053	-45.443	-19.947	PASS

GFSK_LCH_Graphs

Pref

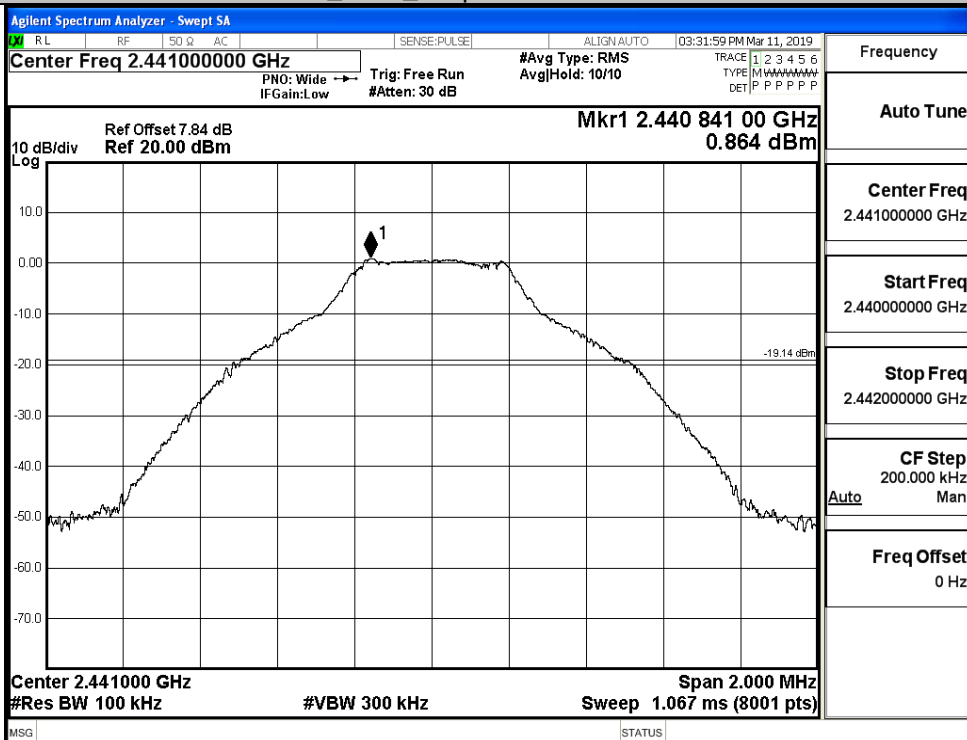


Puw

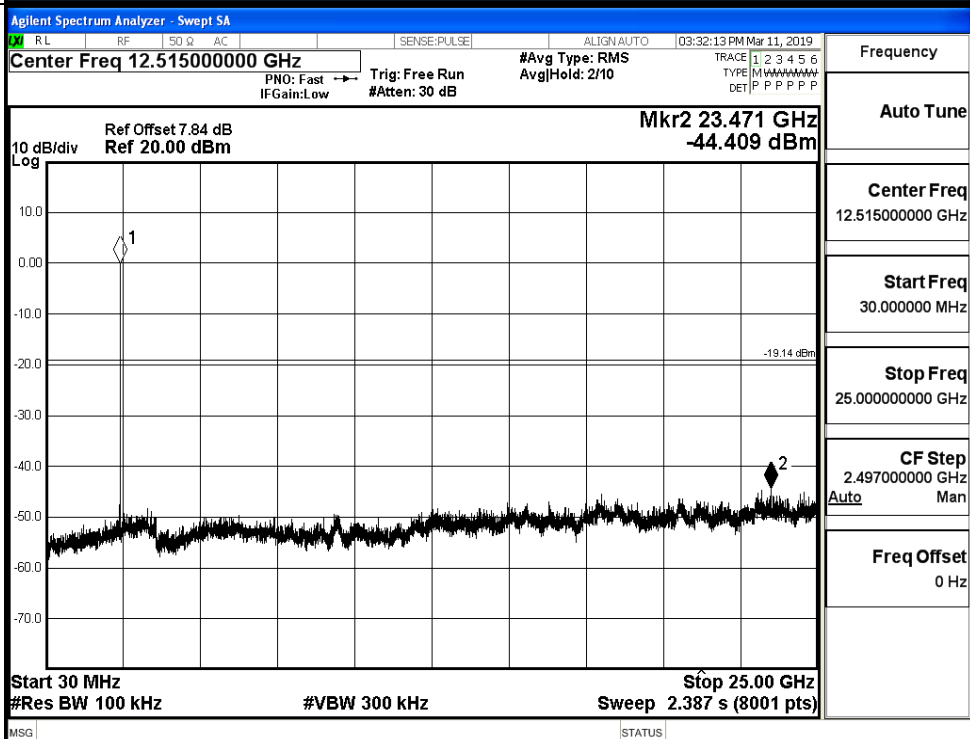


GFSK_MCH_Graphs

Pref

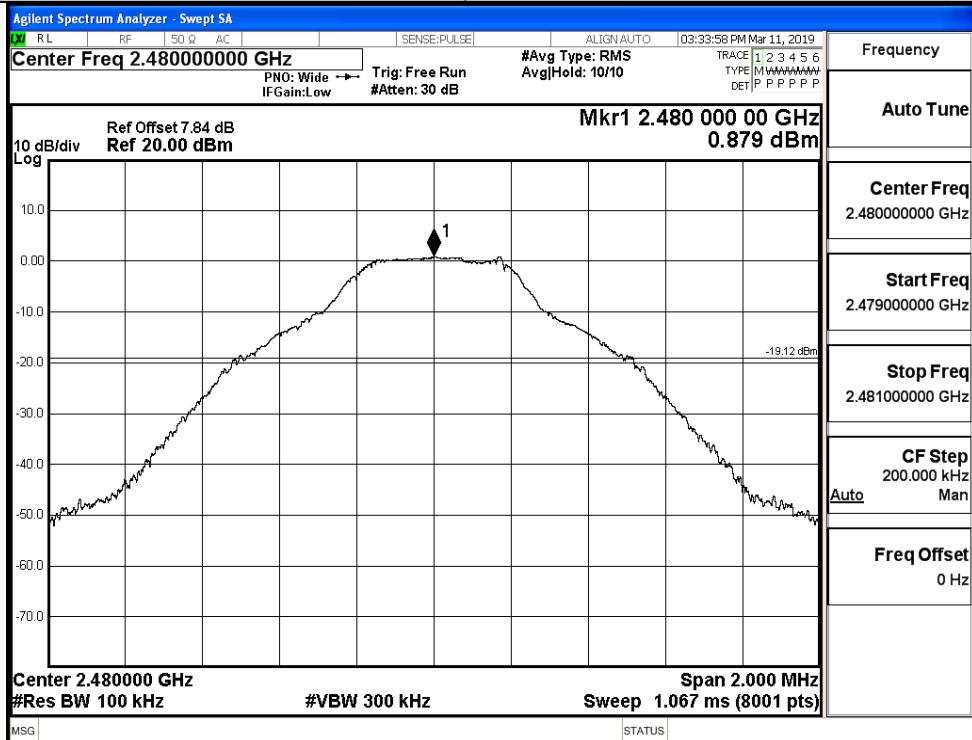


Puw

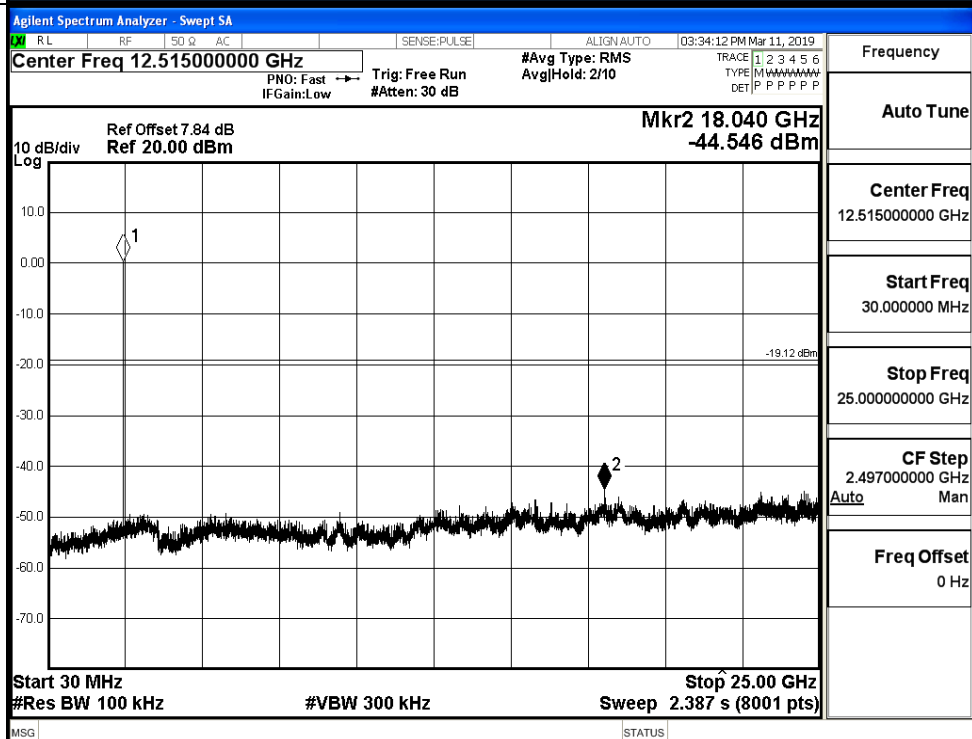


GFSK_HCH_Graphs

Pref

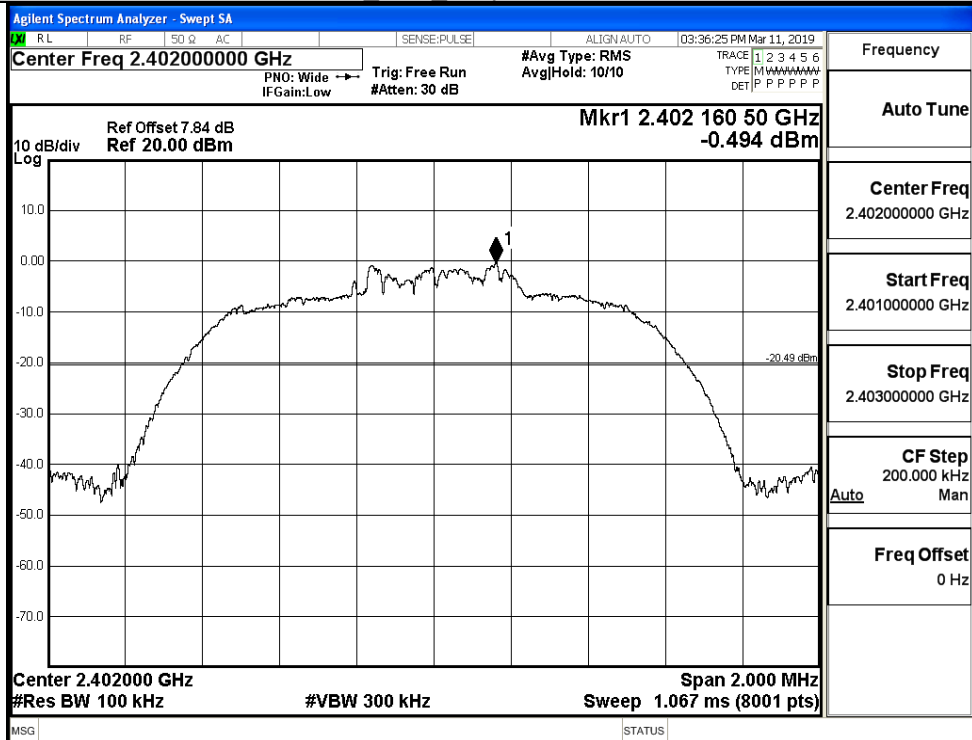


Puw

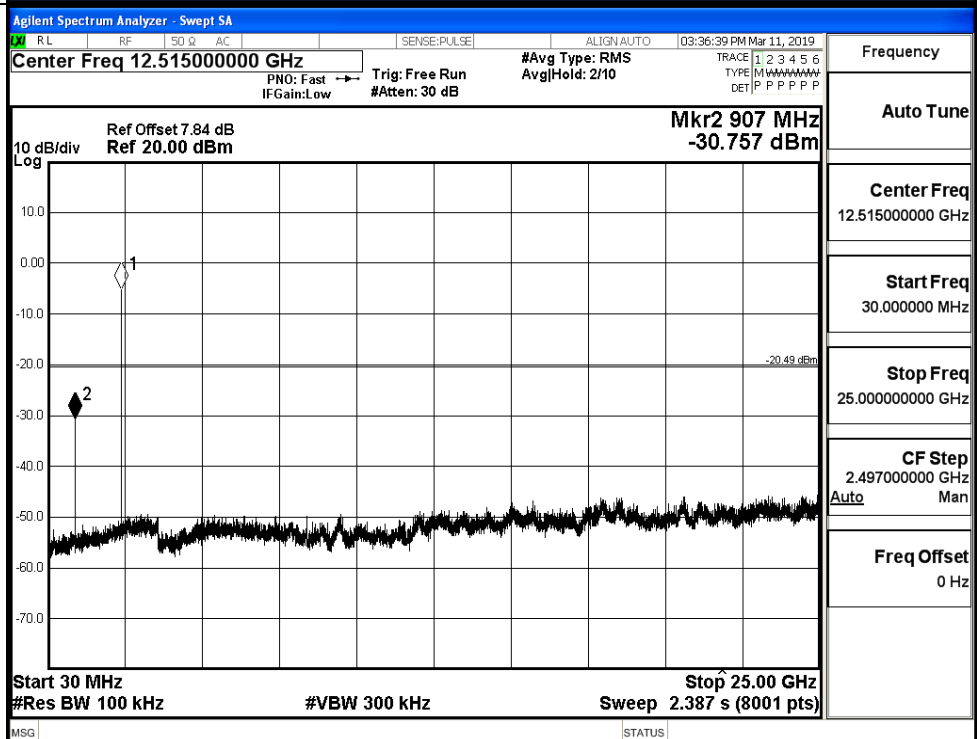


π /4DQPSK LCH_Graphs

Pref

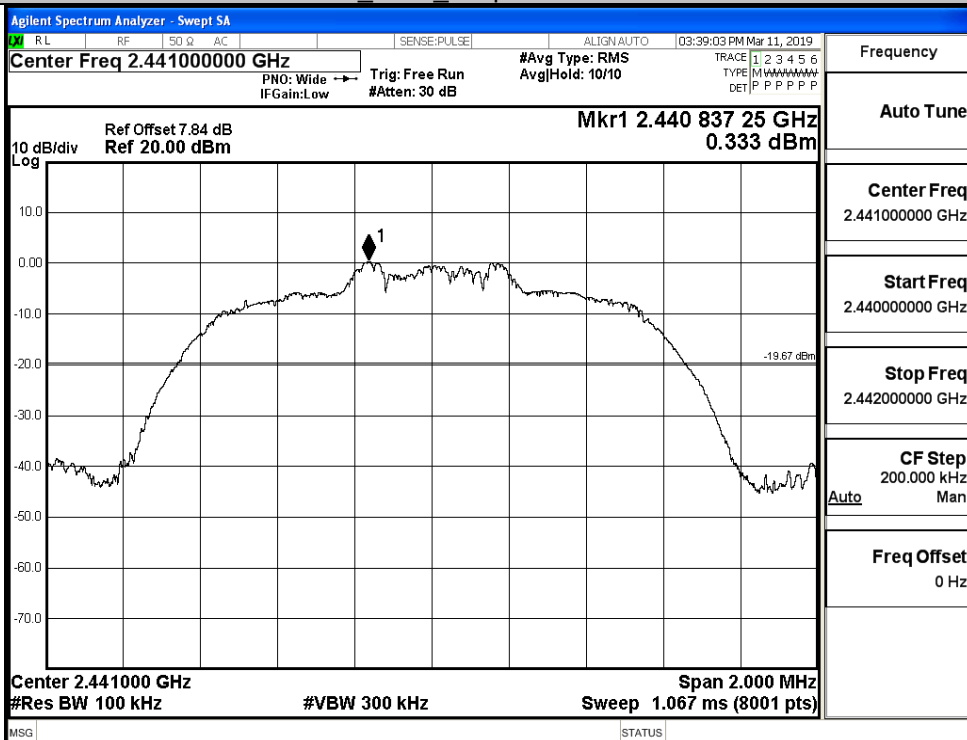


Puw

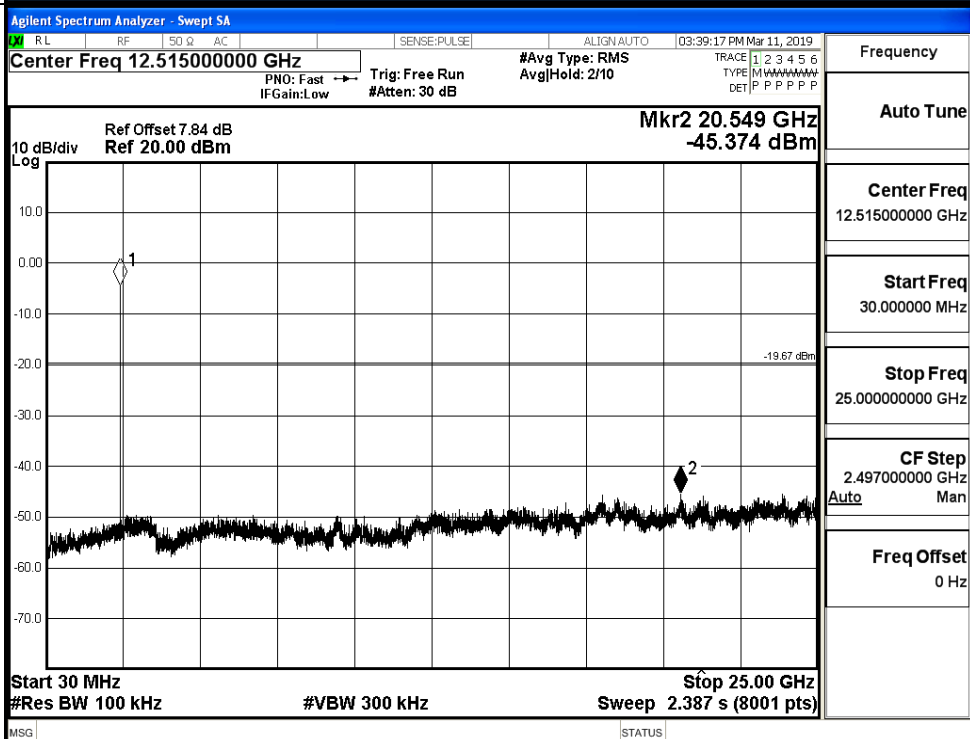


π /4DQPSK_MCH_Graphs

Pref

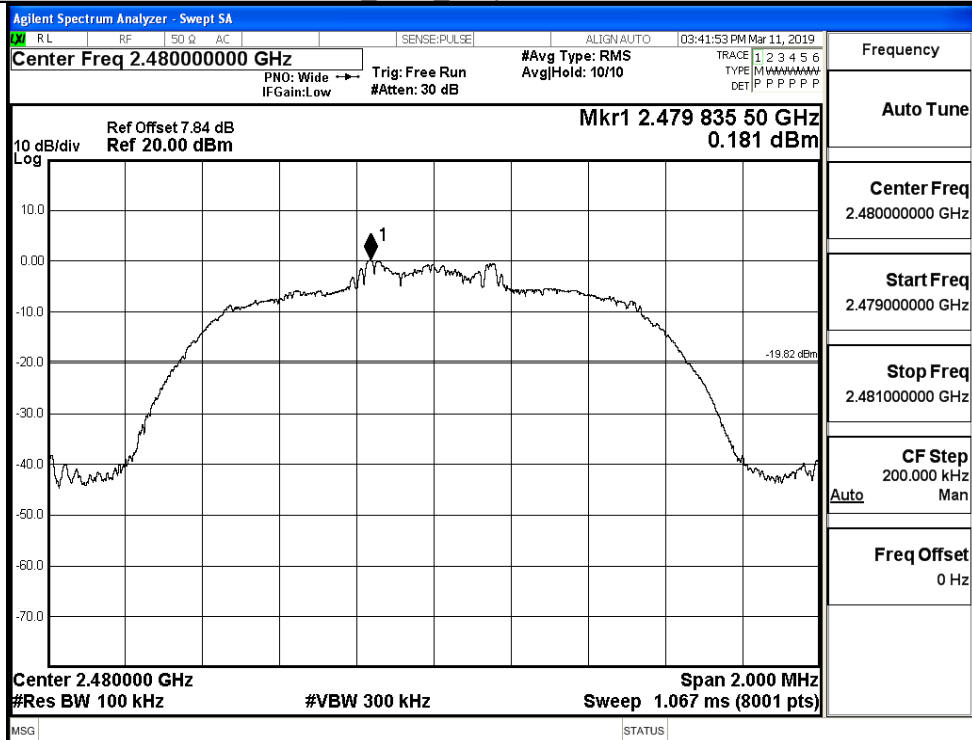


Puw

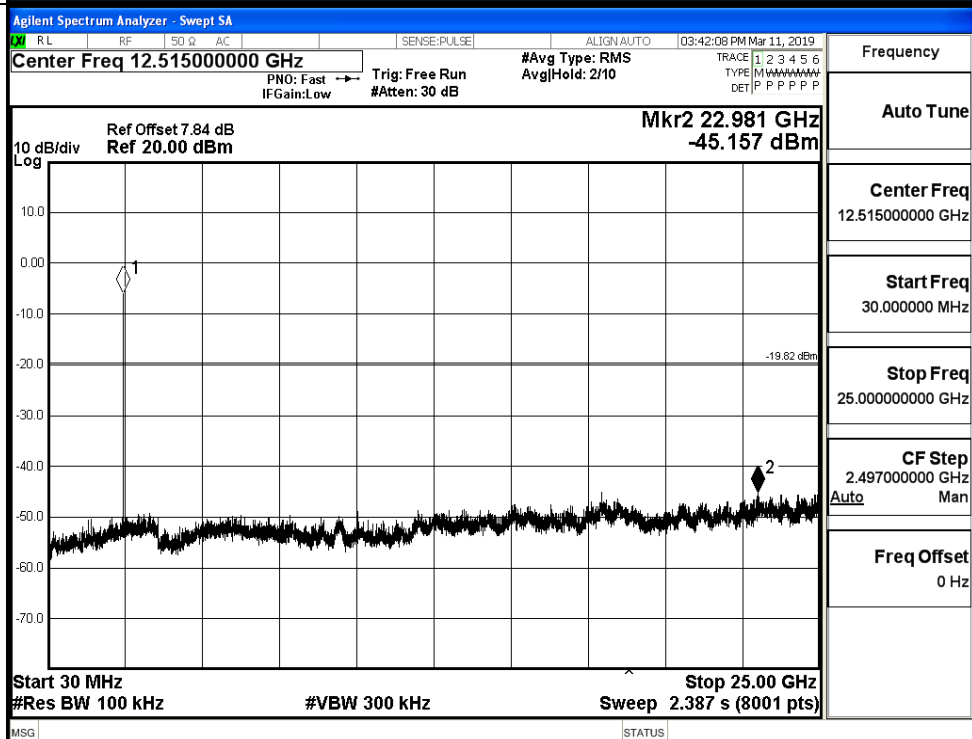


$\pi/4$ DQPSK_HCH_Graphs

Pref

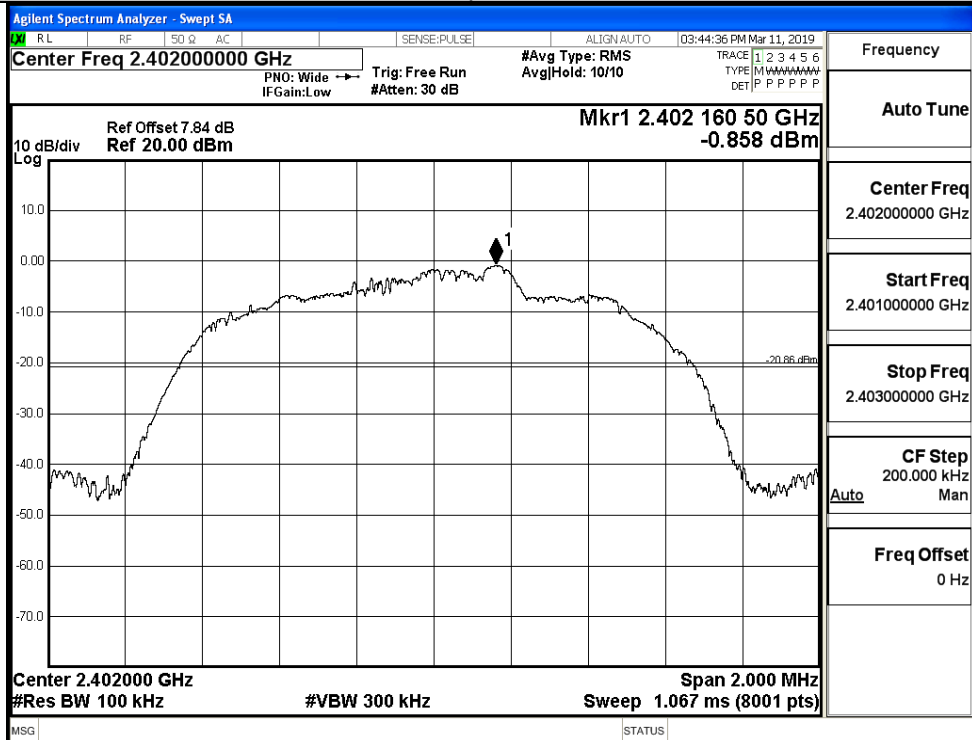


Puw

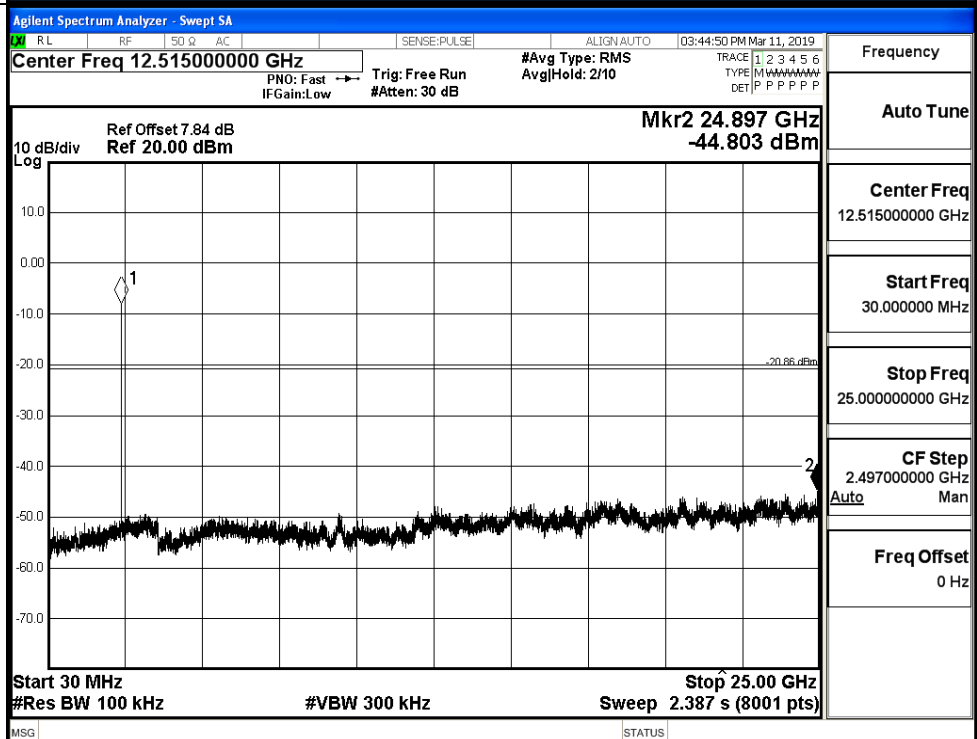


8DPSK_LCH_Graphs

Pref

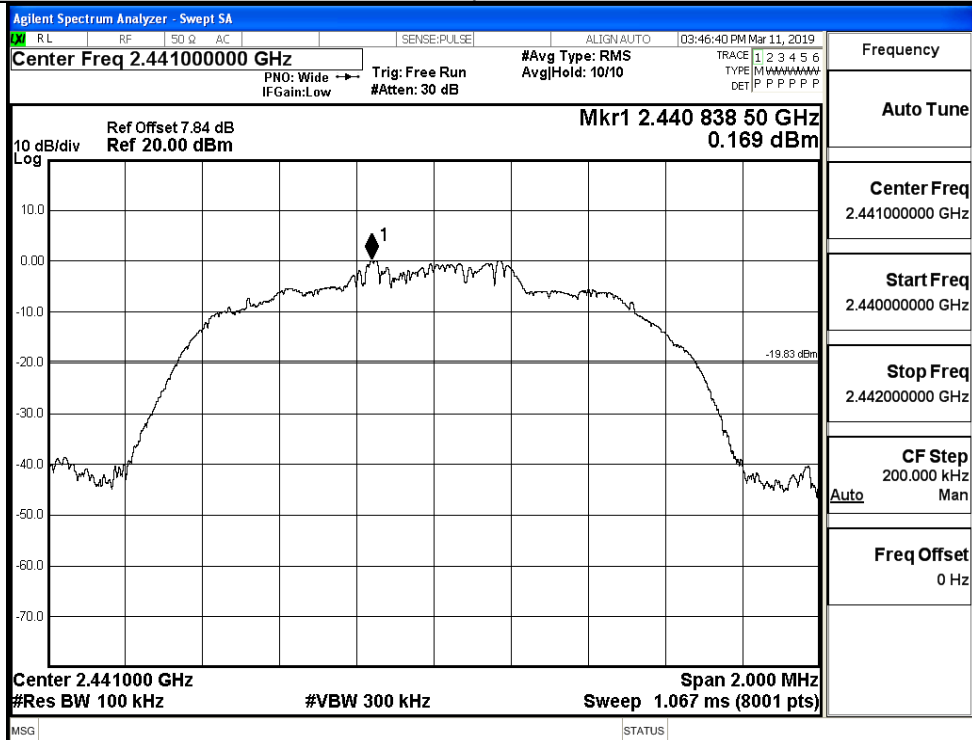


Puw

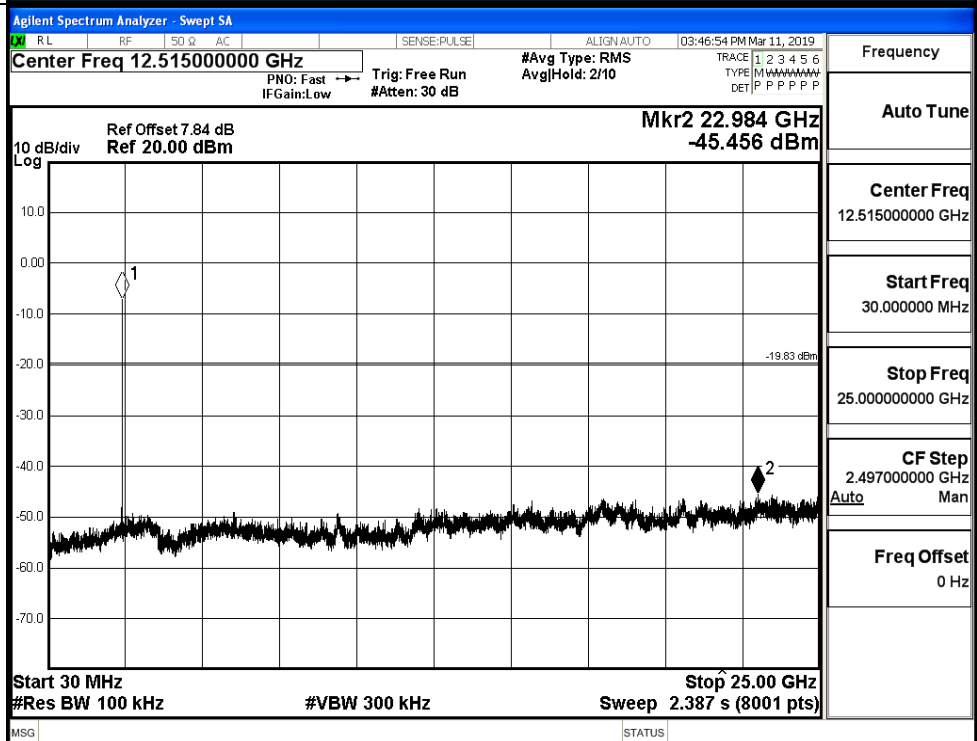


8DPSK_MCH_Graphs

Pref

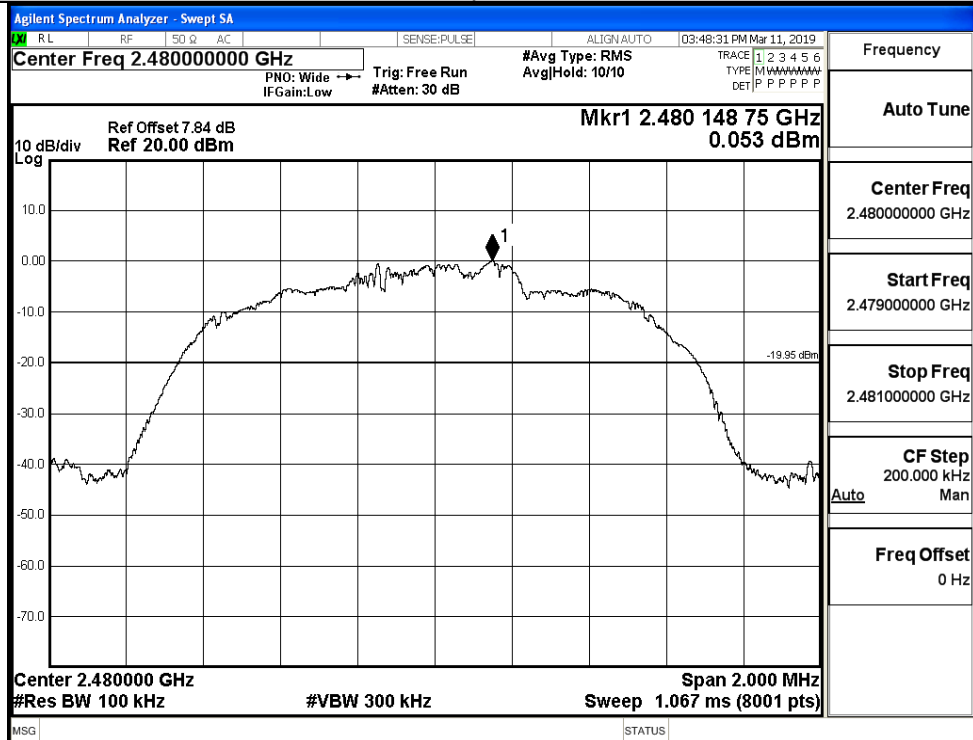


Puw

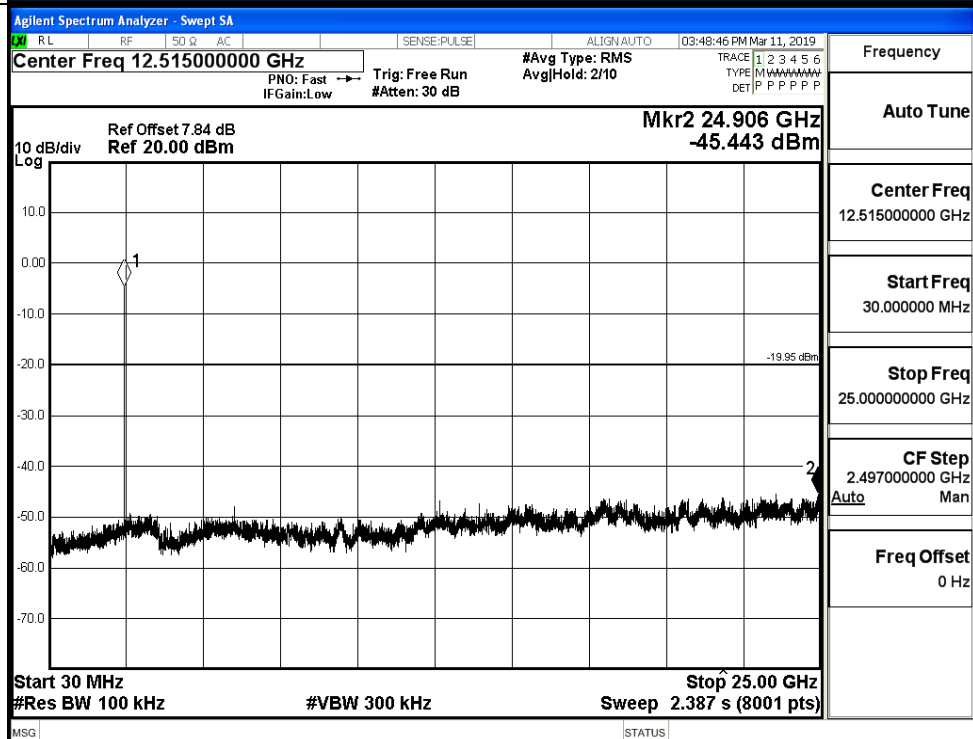


8DPSK_HCH_Graphs

Pref



Puw

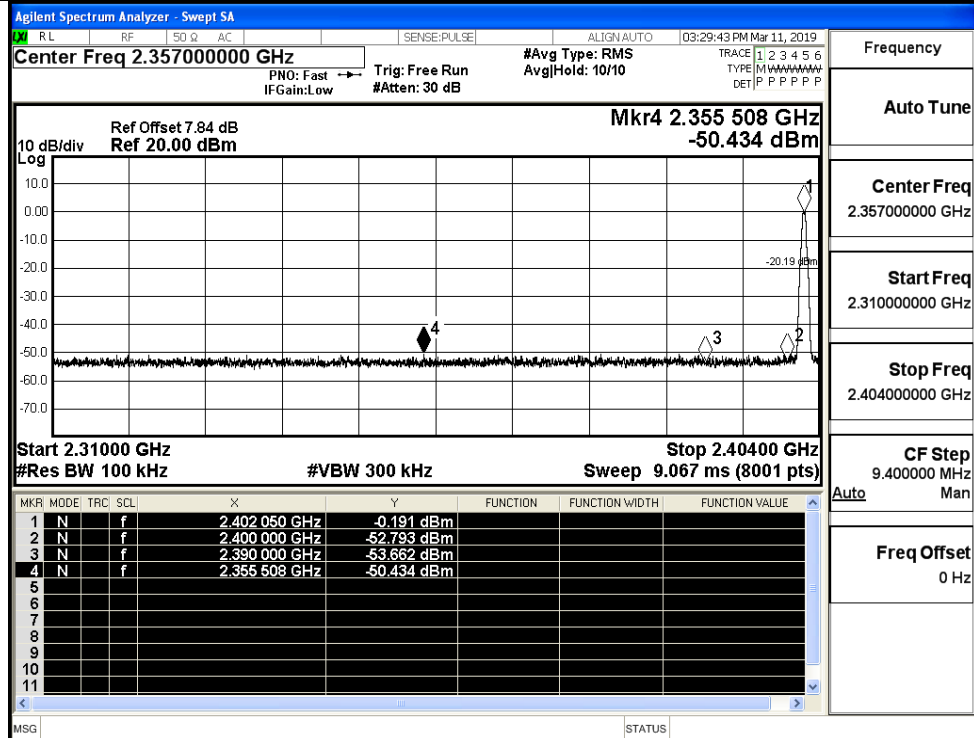


A.7 Band-edge for RF Conducted Emissions

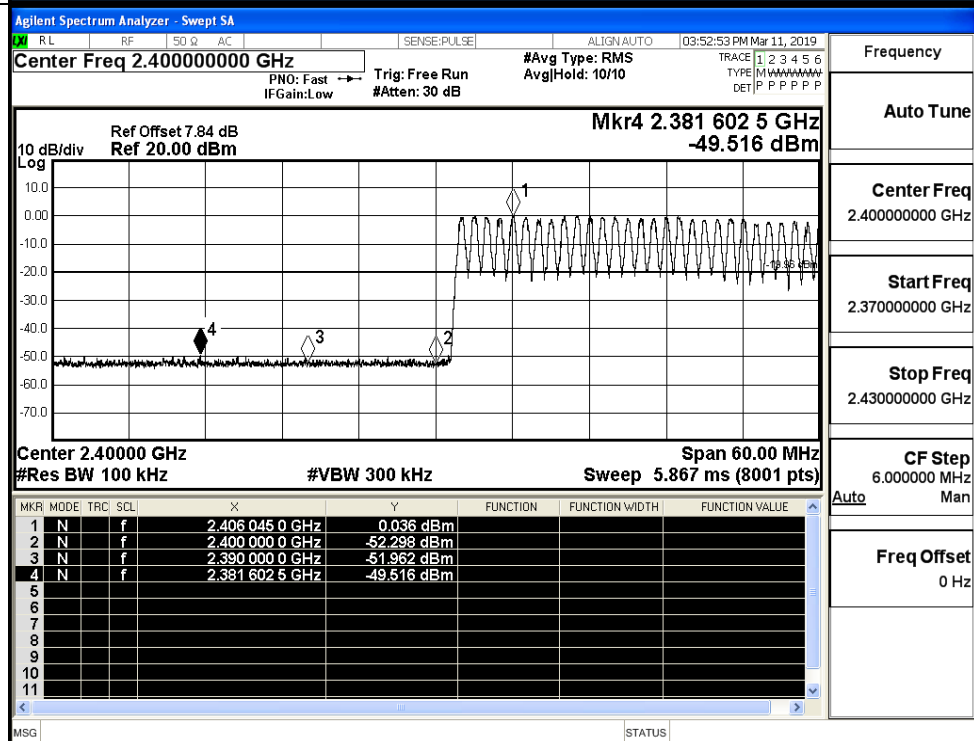
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-0.191	Off	-50.434	-20.19	PASS
			0.036	On	-49.516	-19.96	PASS
	HCH	2480	1.130	Off	-49.561	-18.87	PASS
			1.000	On	-49.933	-19	PASS
$\pi/4$ DQPSK	LCH	2402	-0.095	Off	-50.522	-20.1	PASS
			-0.514	On	-49.289	-20.51	PASS
	HCH	2480	1.892	Off	-49.844	-18.11	PASS
			0.542	On	-49.252	-19.46	PASS
8DPSK	LCH	2402	-2.057	Off	-49.930	-22.06	PASS
			-0.116	On	-49.733	-20.12	PASS
	HCH	2480	0.295	Off	-50.916	-19.71	PASS
			0.628	On	-48.982	-19.37	PASS

Test Graphs

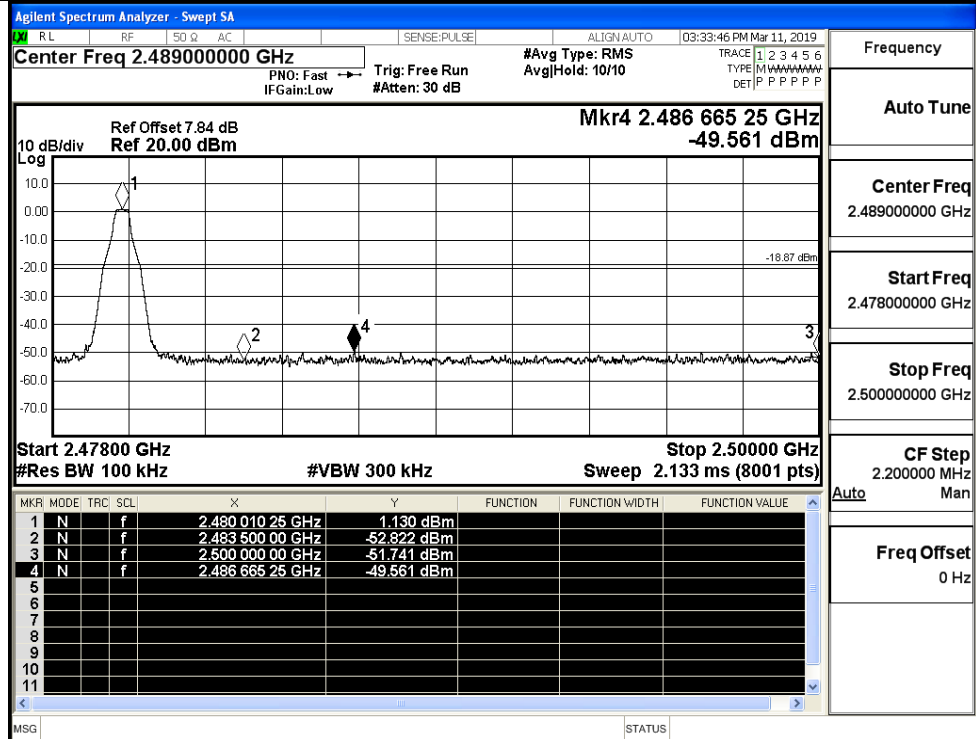
GFSK/LCH/No Hop



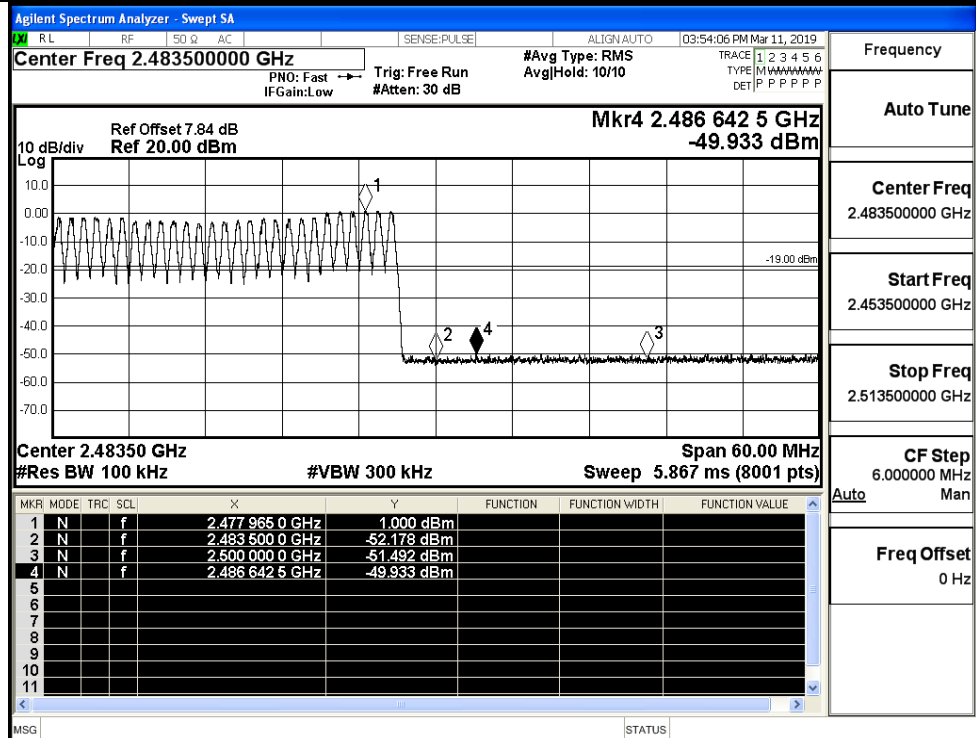
GFSK/LCH/Hop



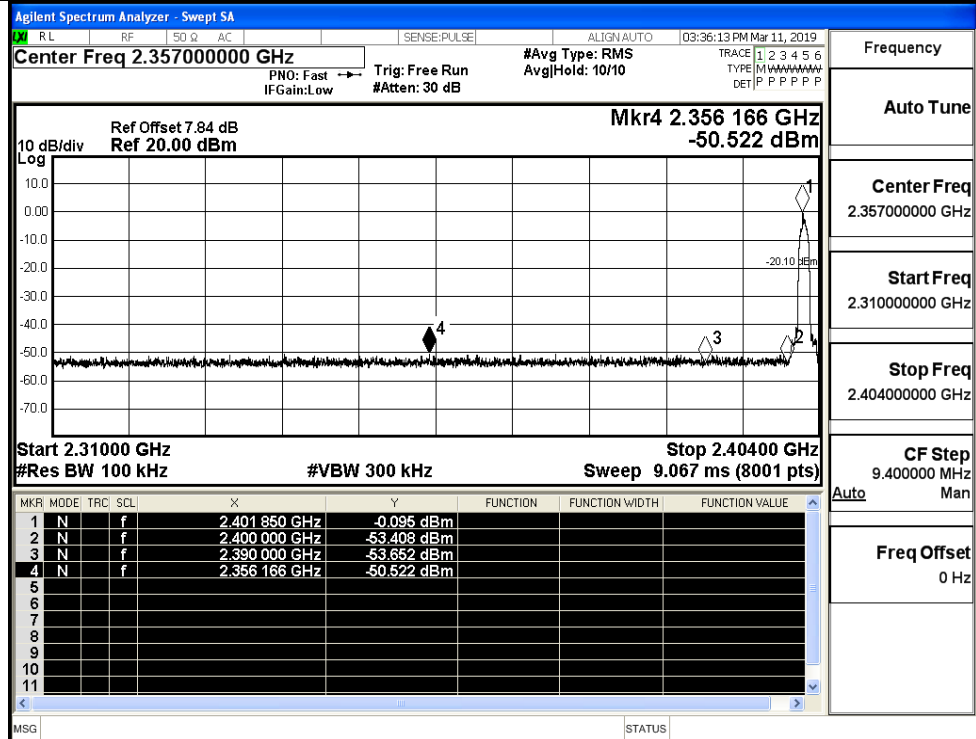
GFSK/HCH/No Hop



GFSK/HCH/Hop



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



Frequency

Auto Tune

Center Freq
2.357000000 GHz

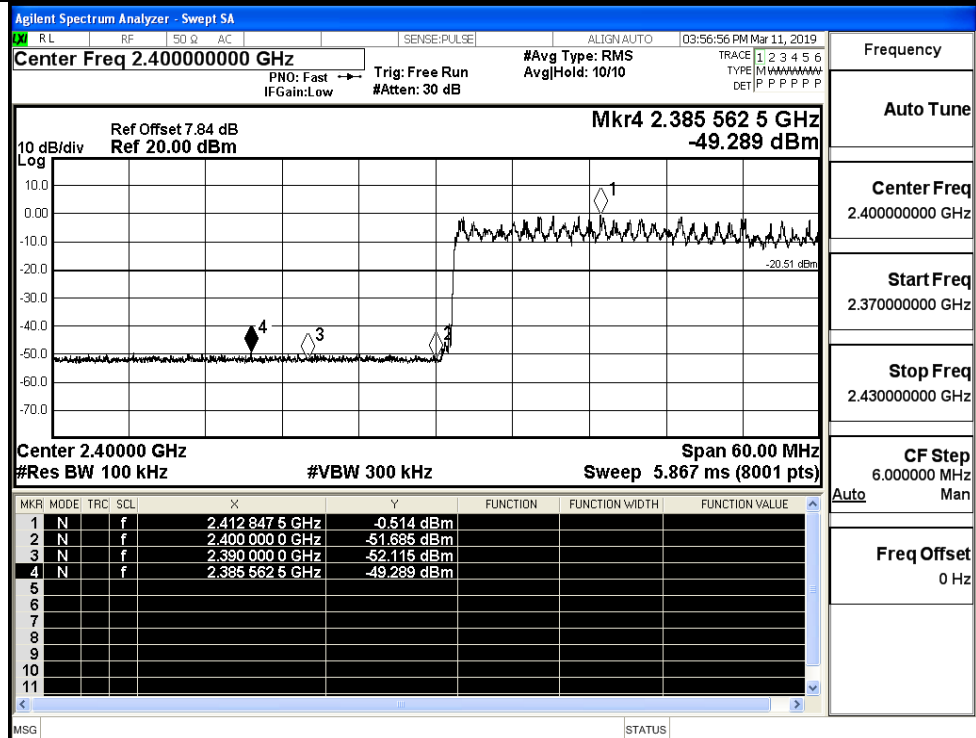
Start Freq
2.310000000 GHz

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

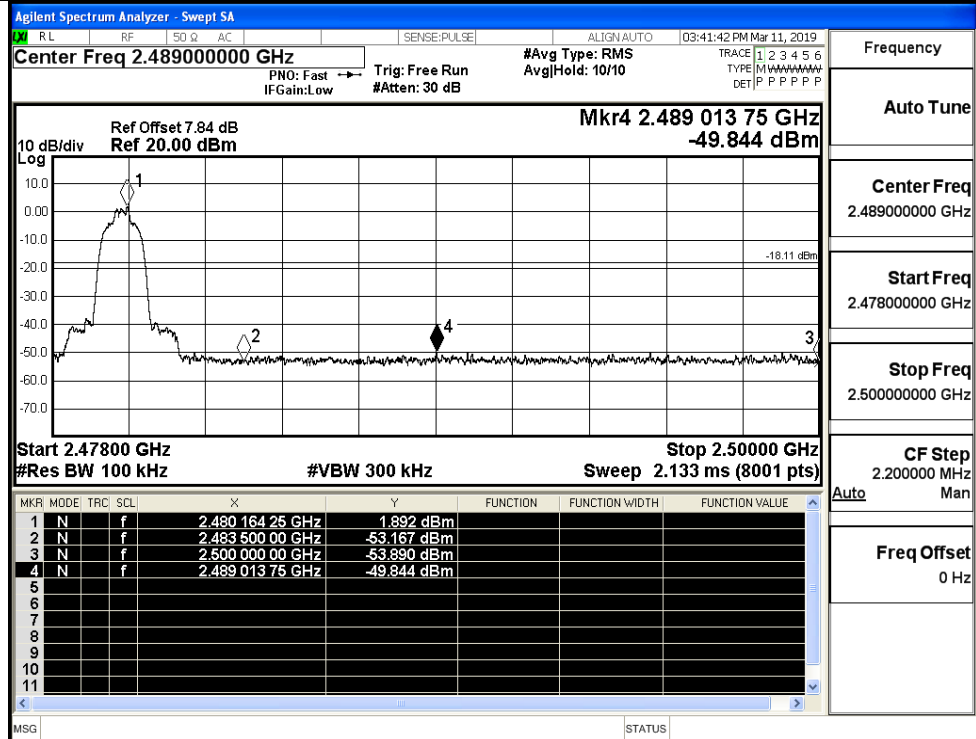
Start Freq
2.370000000 GHz

Stop Freq
2.430000000 GHz

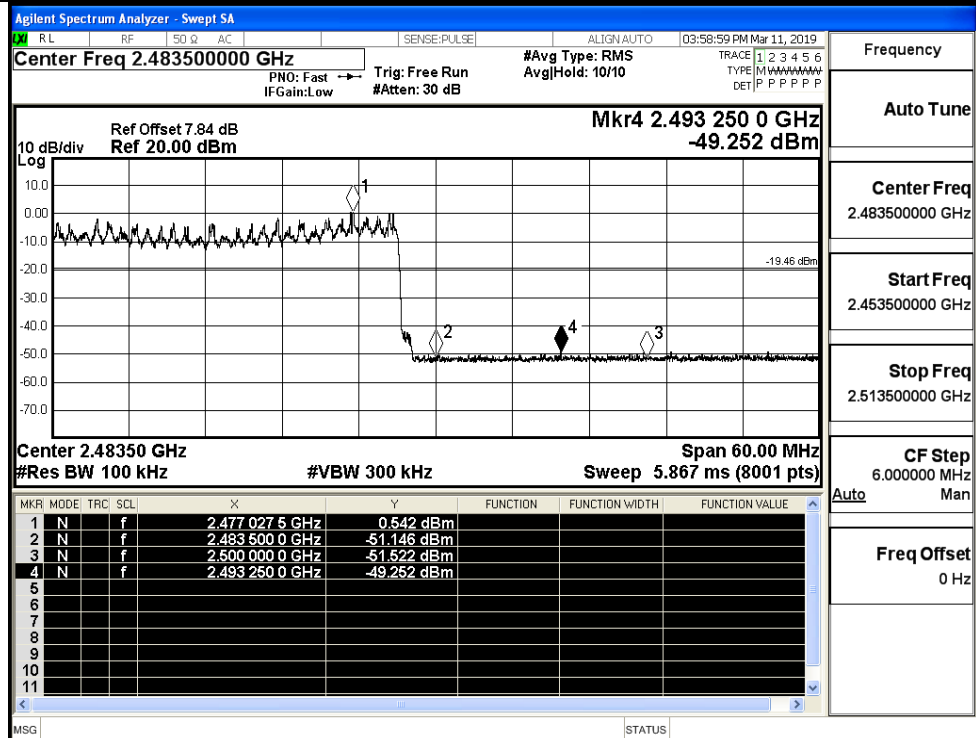
CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

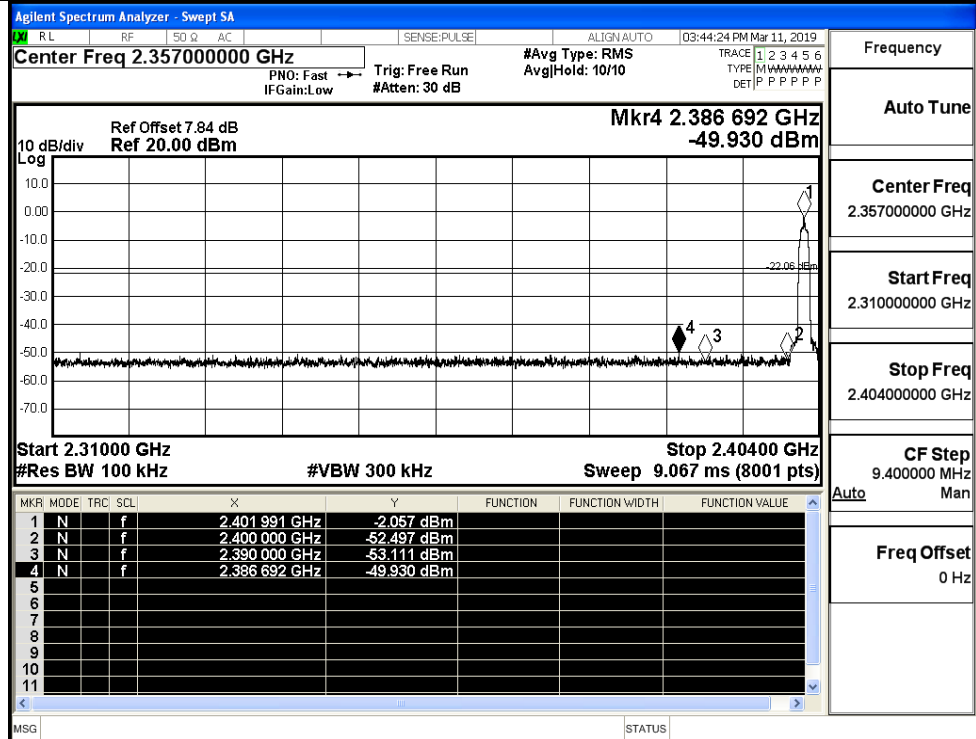
$\pi/4$ DQPSK/HCH/No
Hop



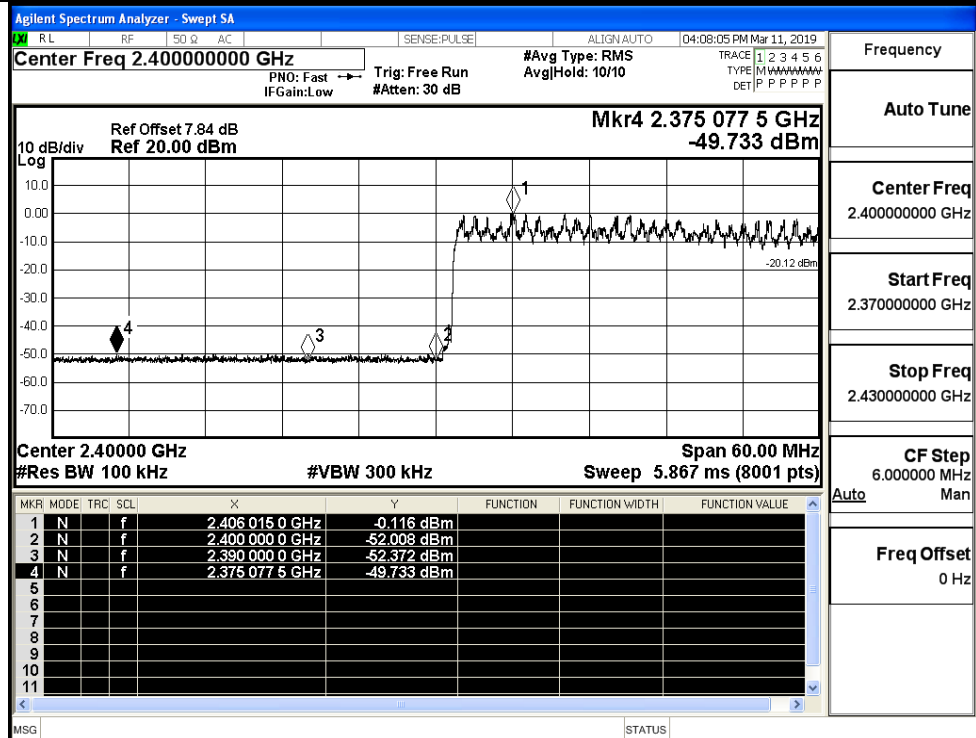
$\pi/4$ DQPSK/HCH/Hop



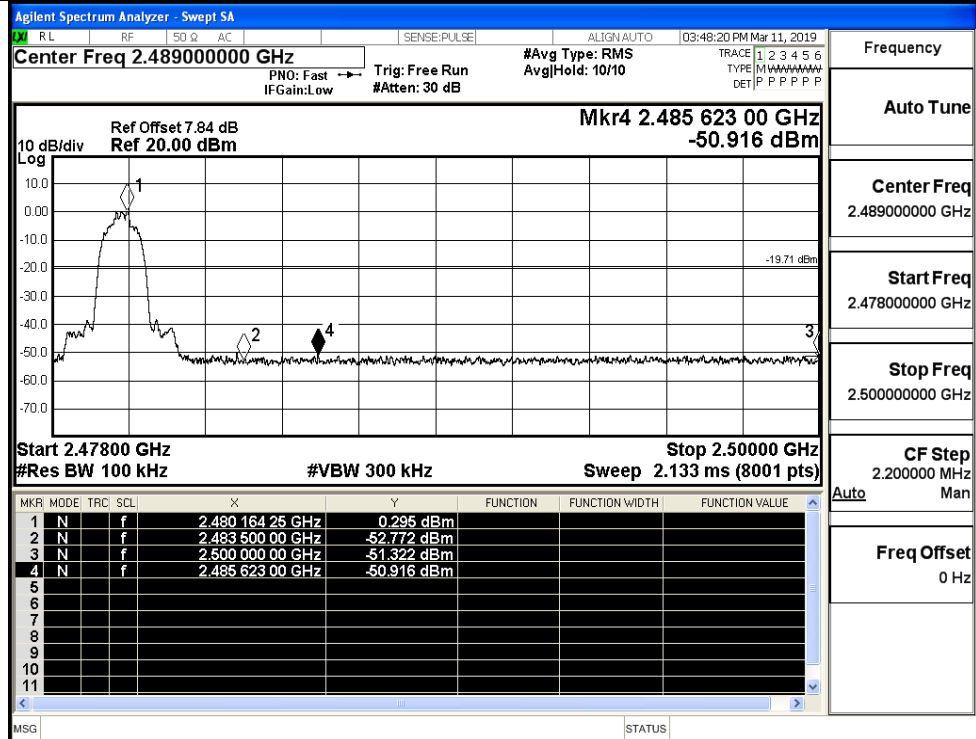
8DPSK/LCH/No Hop



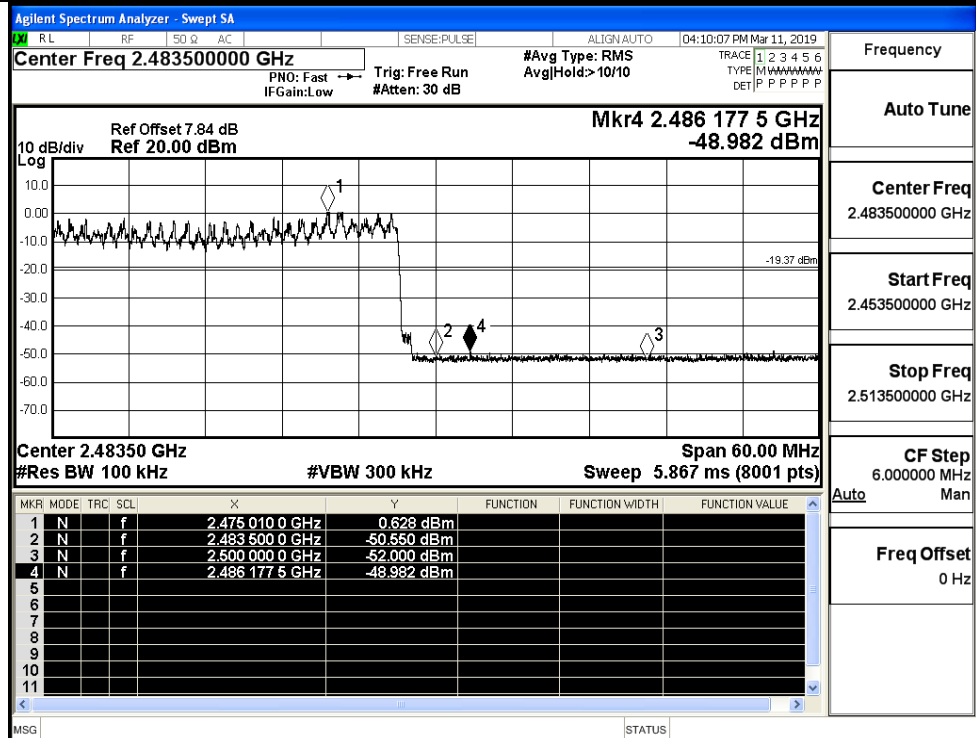
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



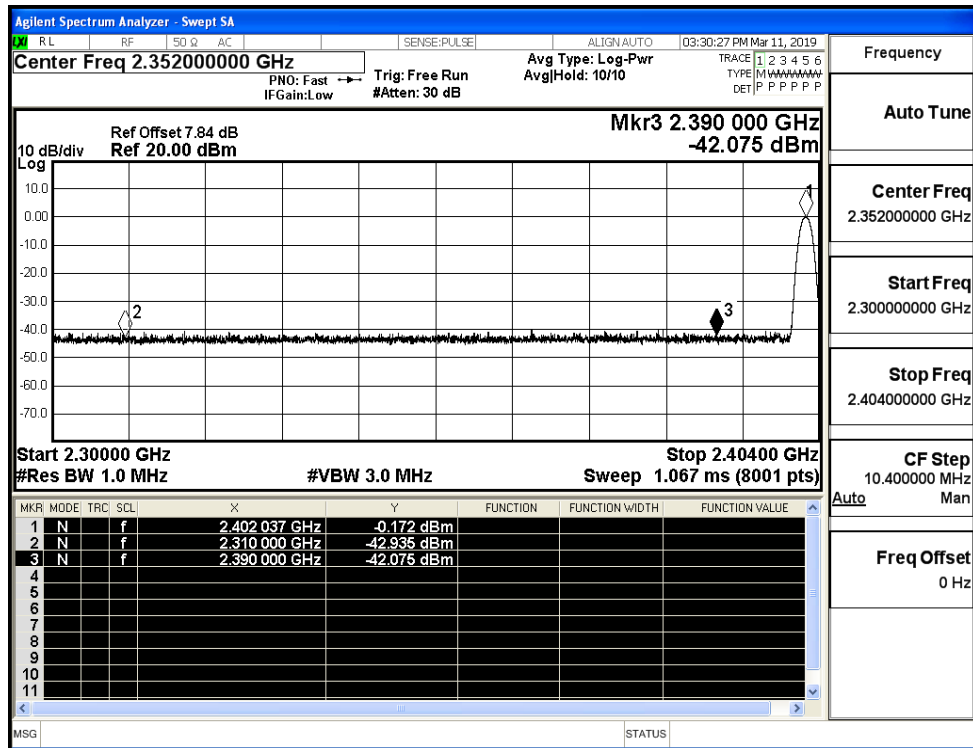
8DPSK/HCH/Hop



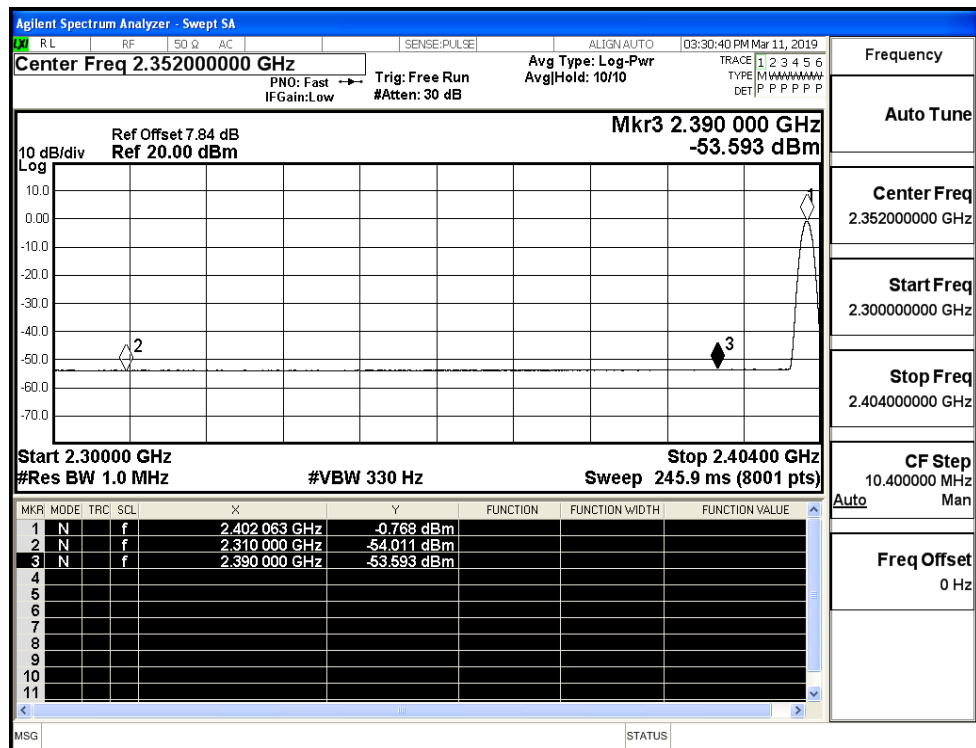
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-42.94	2.0	0	54.32	PEAK	74	PASS
	Off	2310.0	-54.01	2.0	0	43.25	AV	54	PASS
	Off	2390.0	-42.08	2.0	0	55.18	PEAK	74	PASS
	Off	2390.0	-53.59	2.0	0	43.66	AV	54	PASS
	Off	2483.5	-43.31	2.0	0	53.95	PEAK	74	PASS
	Off	2483.5	-53.26	2.0	0	44.00	AV	54	PASS
	Off	2500.0	-42.94	2.0	0	54.31	PEAK	74	PASS
	Off	2500.0	-53.20	2.0	0	44.06	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-41.93	2.0	0	55.32	PEAK	74	PASS
	Off	2310.0	-53.86	2.0	0	43.39	AV	54	PASS
	Off	2390.0	-44.52	2.0	0	52.74	PEAK	74	PASS
	Off	2390.0	-53.67	2.0	0	43.59	AV	54	PASS
	Off	2483.5	-42.76	2.0	0	54.50	PEAK	74	PASS
	Off	2483.5	-53.30	2.0	0	43.96	AV	54	PASS
	Off	2500.0	-42.62	2.0	0	54.63	PEAK	74	PASS
	Off	2500.0	-53.35	2.0	0	43.91	AV	54	PASS
8DPSK	Off	2310.0	-41.49	2.0	0	55.77	PEAK	74	PASS
	Off	2310.0	-53.84	2.0	0	43.42	AV	54	PASS
	Off	2390.0	-42.94	2.0	0	54.32	PEAK	74	PASS
	Off	2390.0	-53.64	2.0	0	43.61	AV	54	PASS
	Off	2483.5	-42.70	2.0	0	54.56	PEAK	74	PASS
	Off	2483.5	-53.31	2.0	0	43.95	AV	54	PASS
	Off	2500.0	-42.05	2.0	0	55.21	PEAK	74	PASS
	Off	2500.0	-53.28	2.0	0	43.97	AV	54	PASS

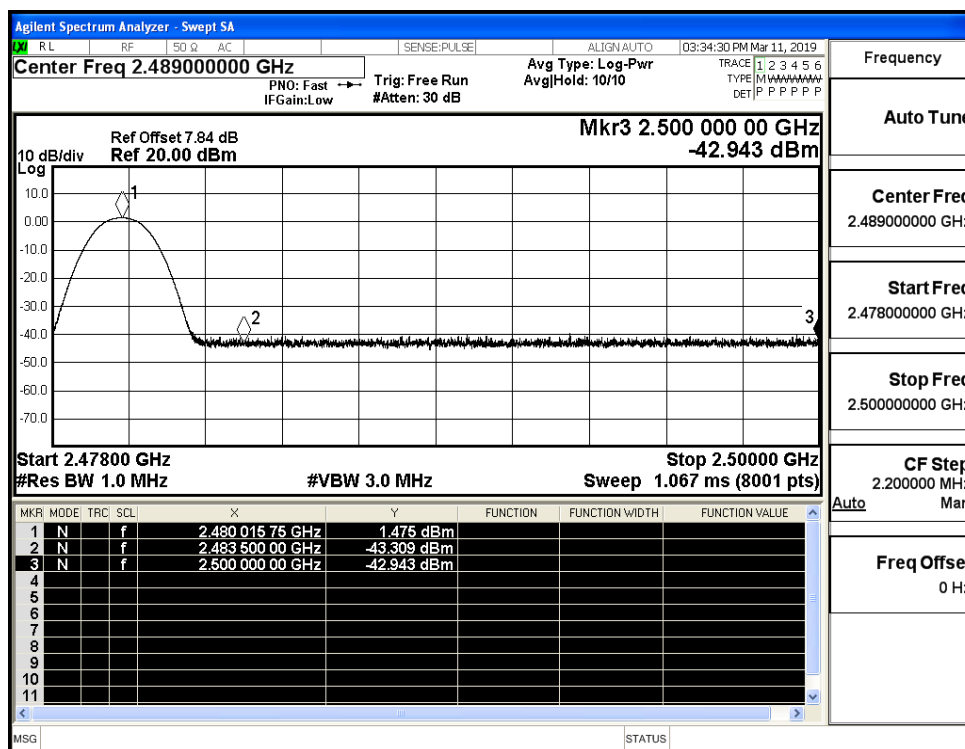
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



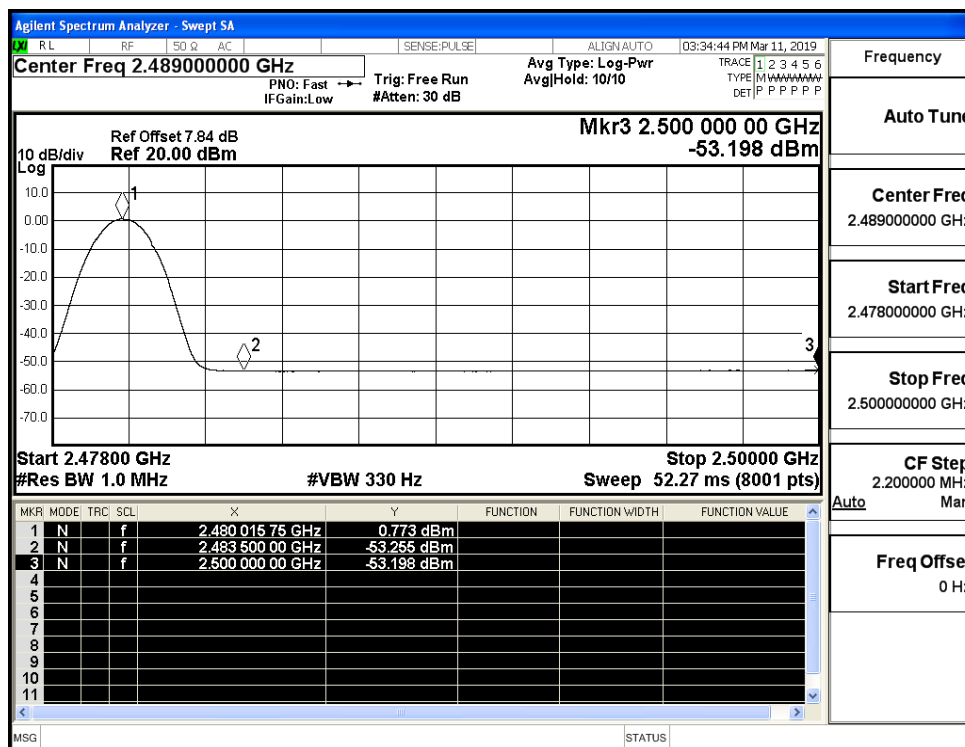
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

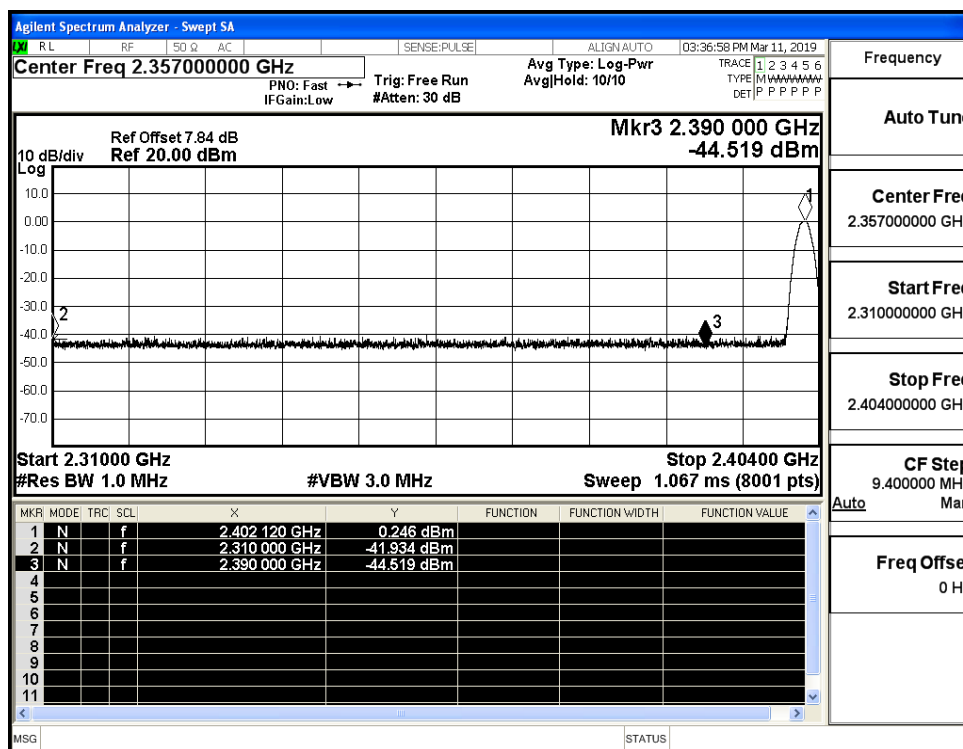
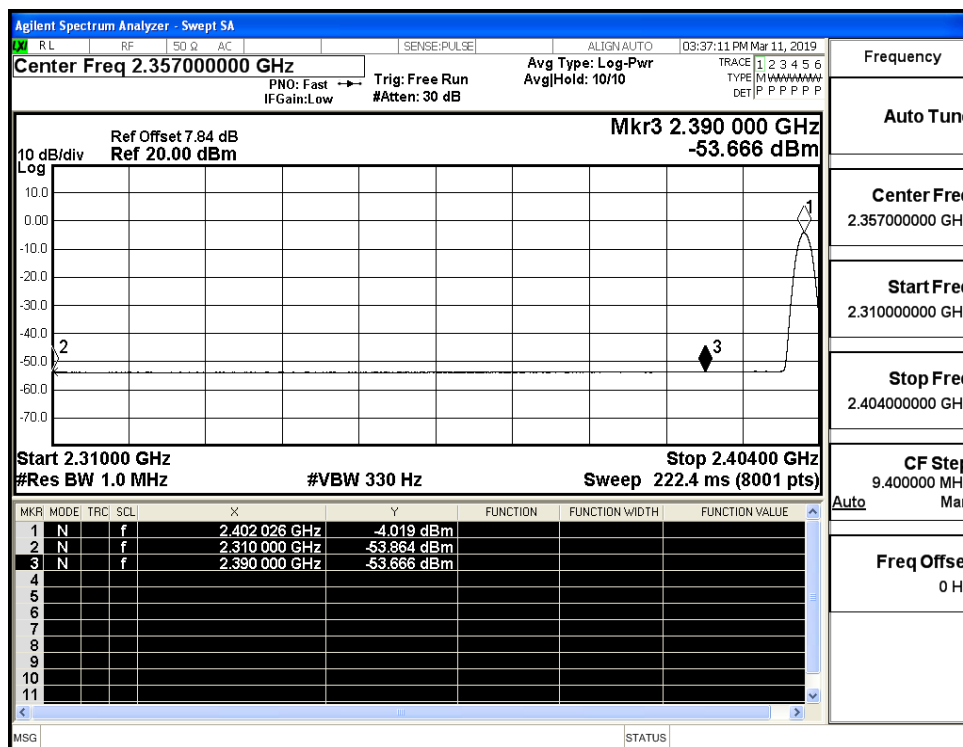


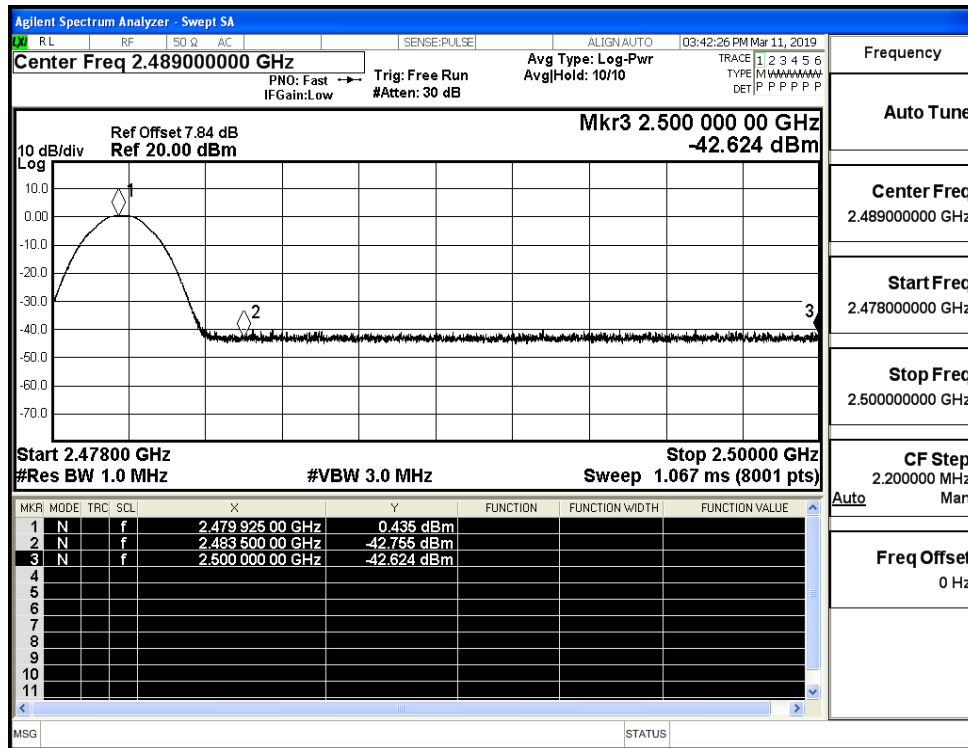
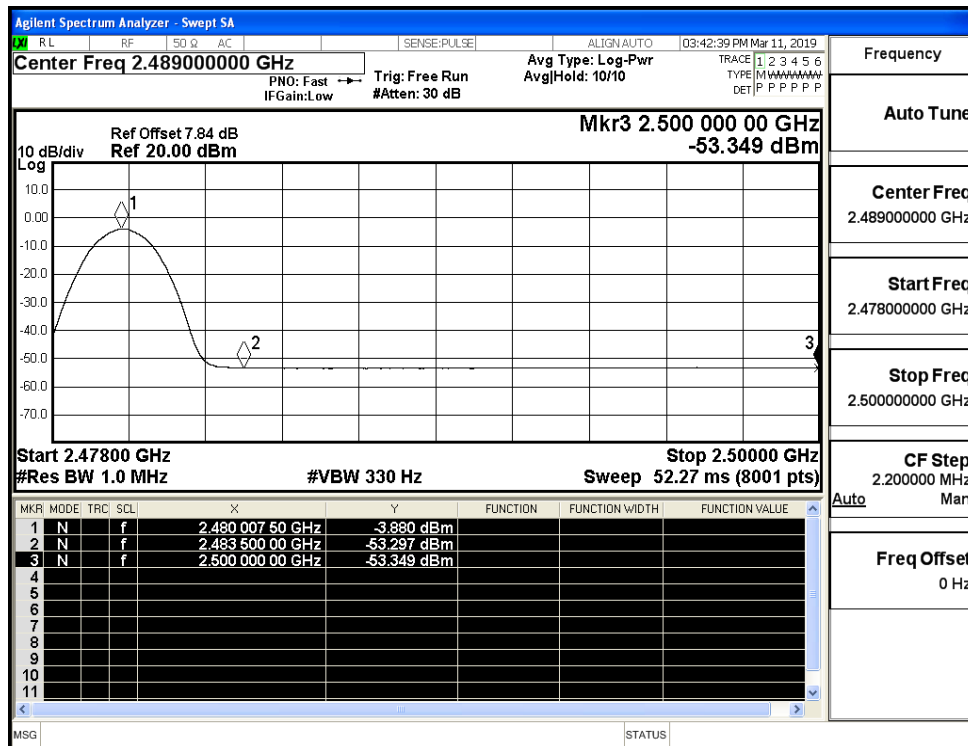
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



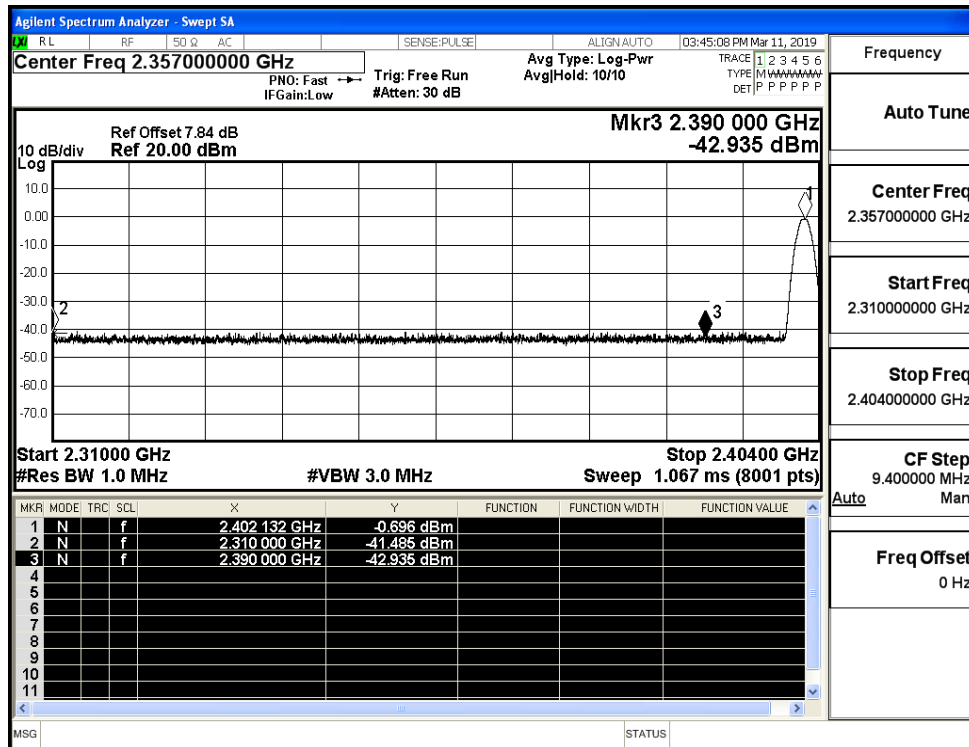
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



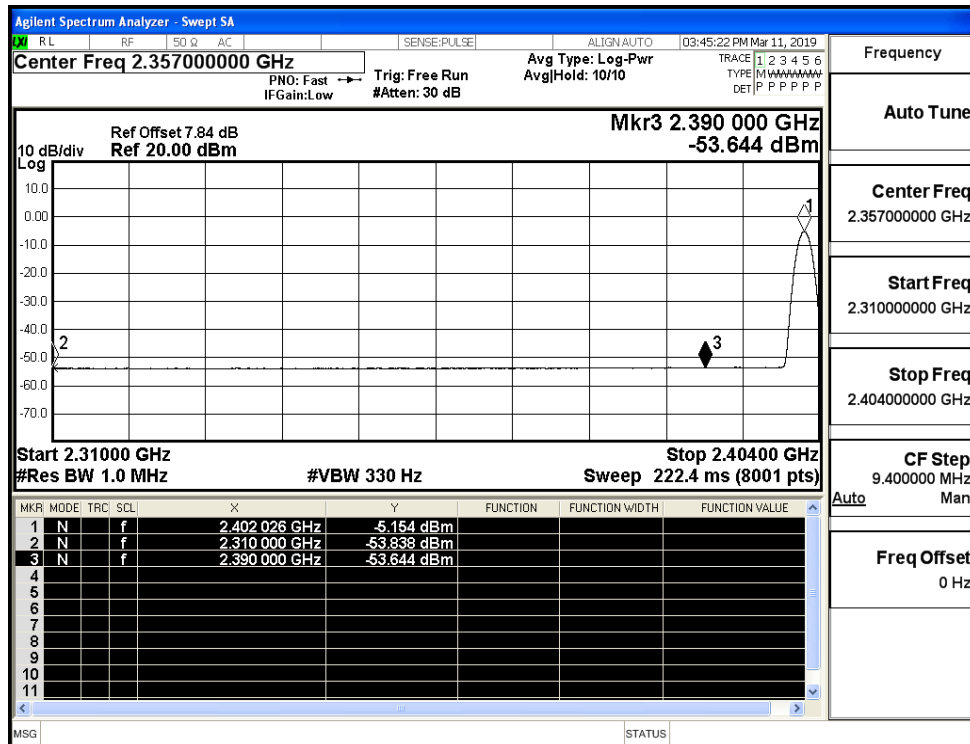
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

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)

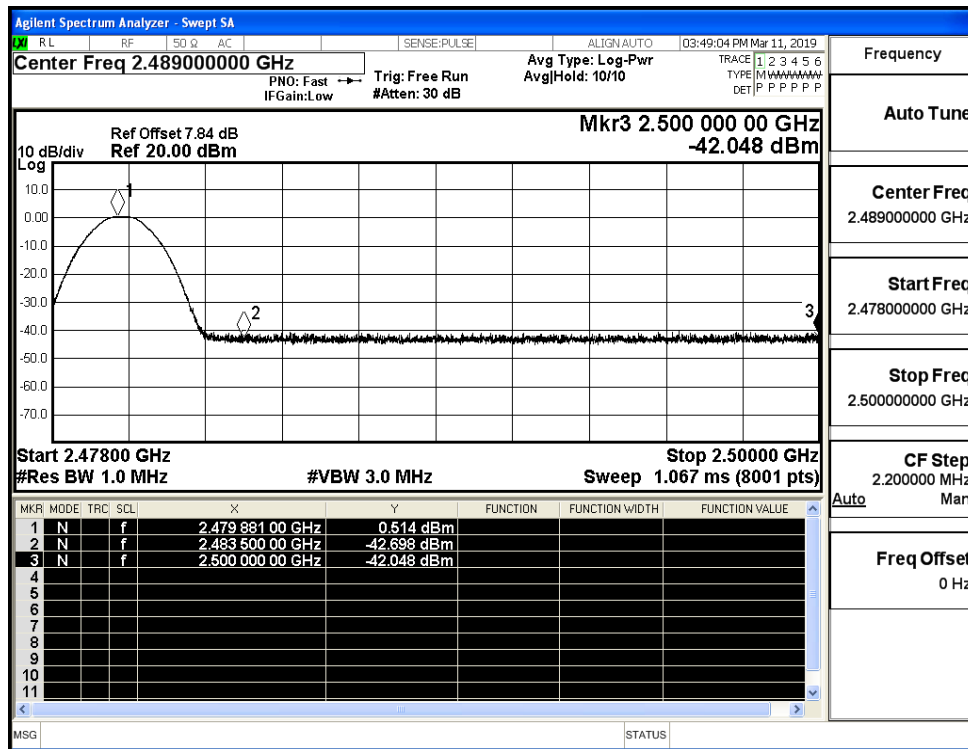
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

