

Appendix A

RF Test Data for BT V4.0(BDR/EDR) (Conducted Measurement)

Product Name: Gatecrasher 3 Powerbar

Trade Mark: N/A

Test Model: Gatecrasher 3

Environmental Conditions

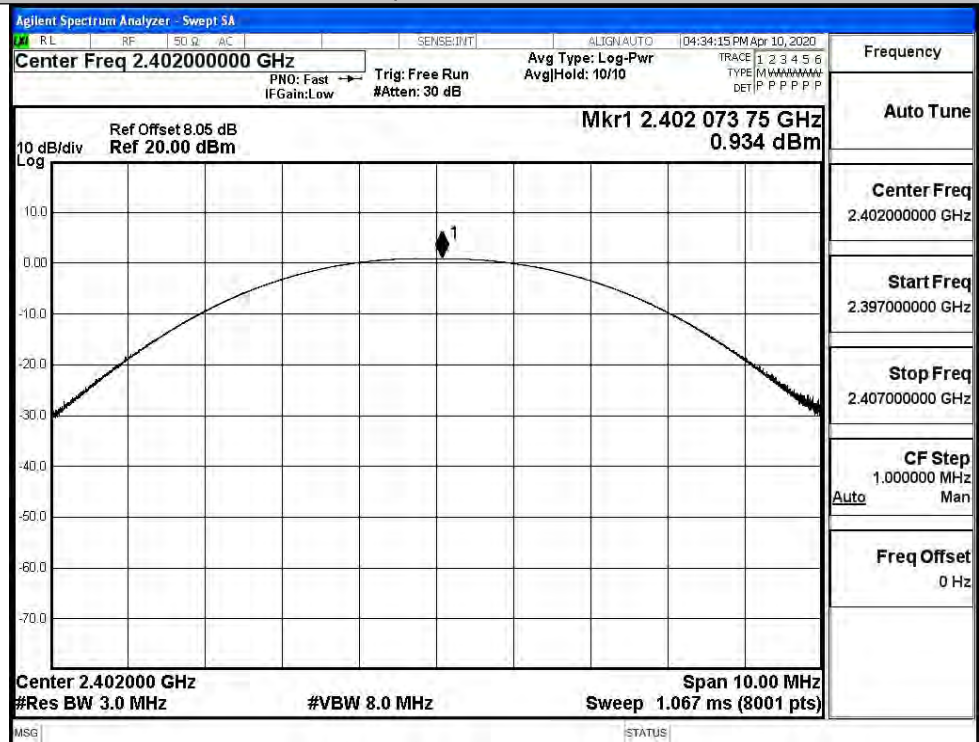
Temperature:	24.2 ° C
Relative Humidity:	53.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Qu Xin
Supervised by:	Li Huan

A.1 Maximum Conducted Peak Output Power

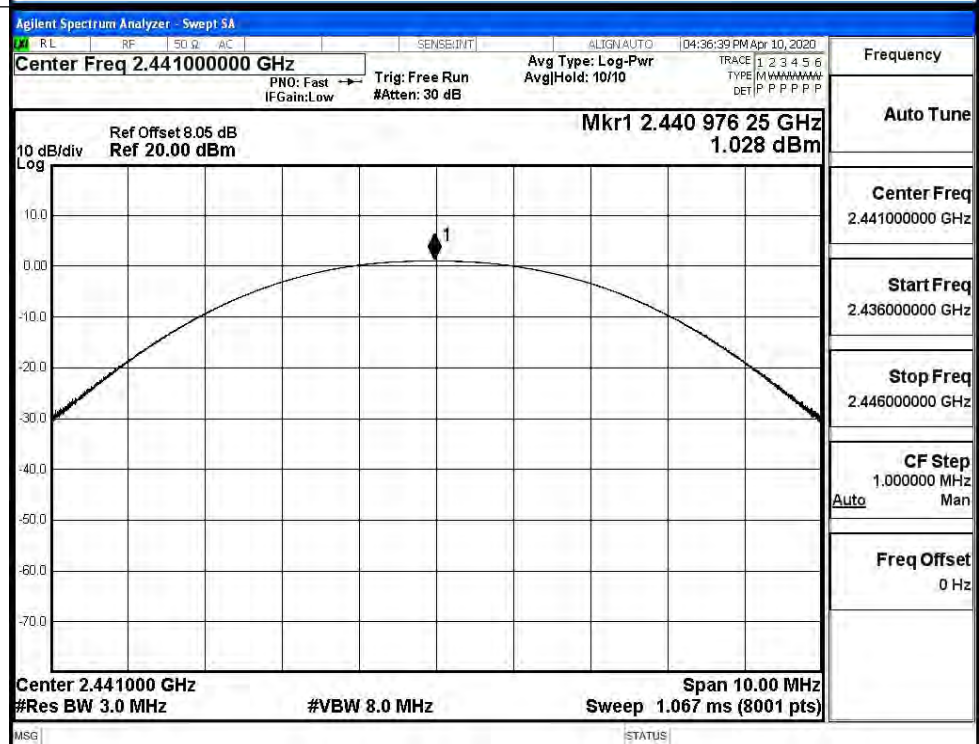
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.934	21	PASS
	MCH	1.028	21	PASS
	HCH	1.107	21	PASS
$\pi/4$ DQPSK	LCH	0.832	21	PASS
	MCH	0.897	21	PASS
	HCH	0.941	21	PASS
8DPSK	LCH	0.827	21	PASS
	MCH	0.876	21	PASS
	HCH	0.911	21	PASS

Test Graphs

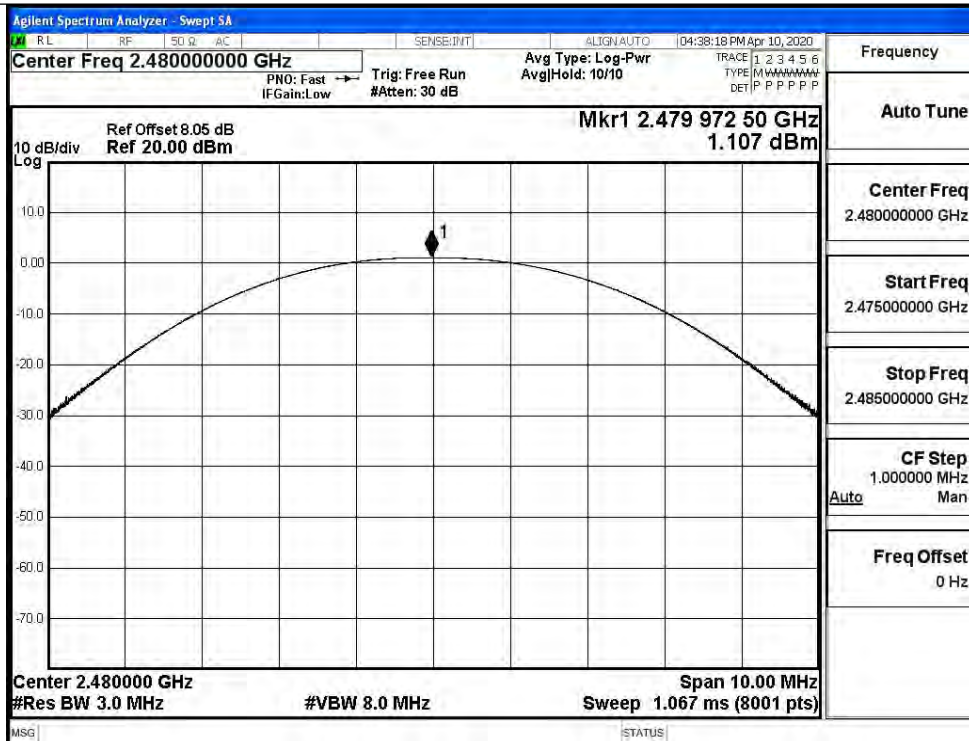
GFSK/LCH



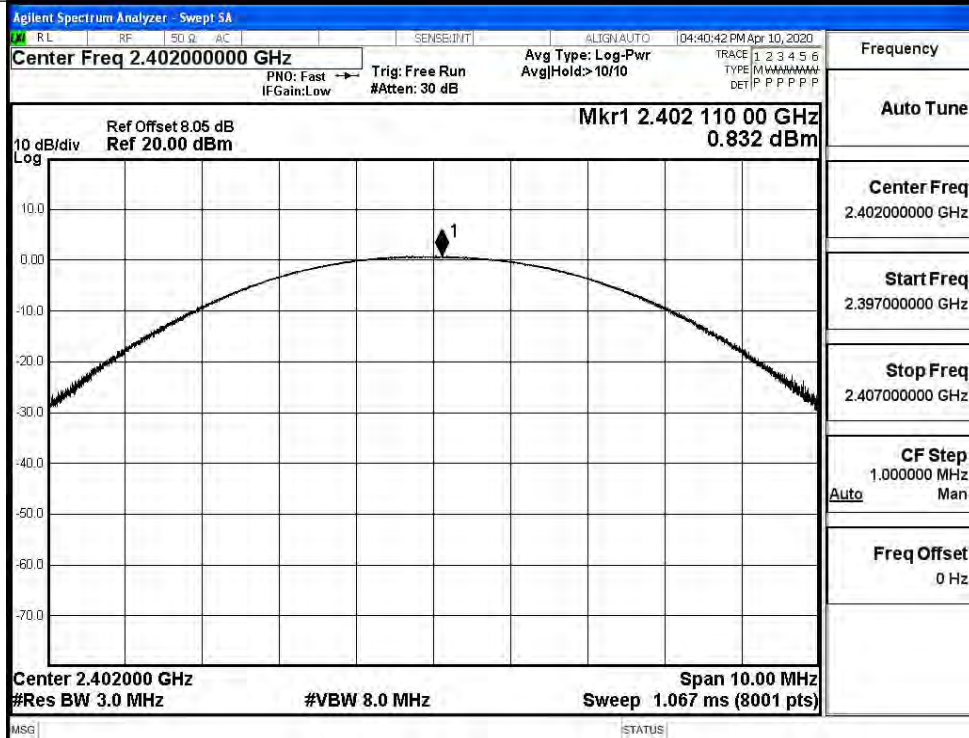
GFSK/MCH

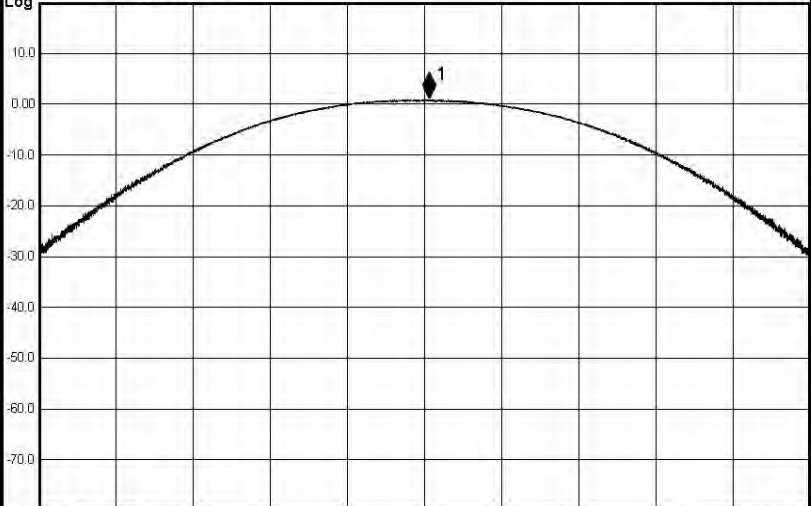
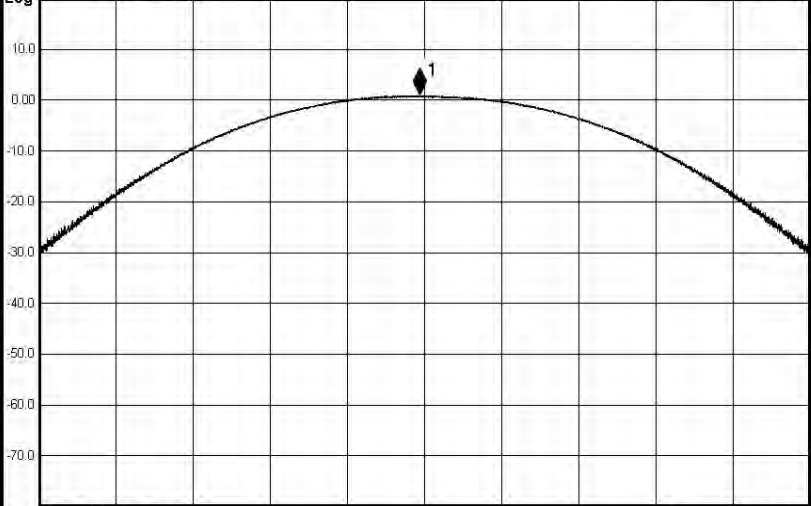


GFSK/HCH

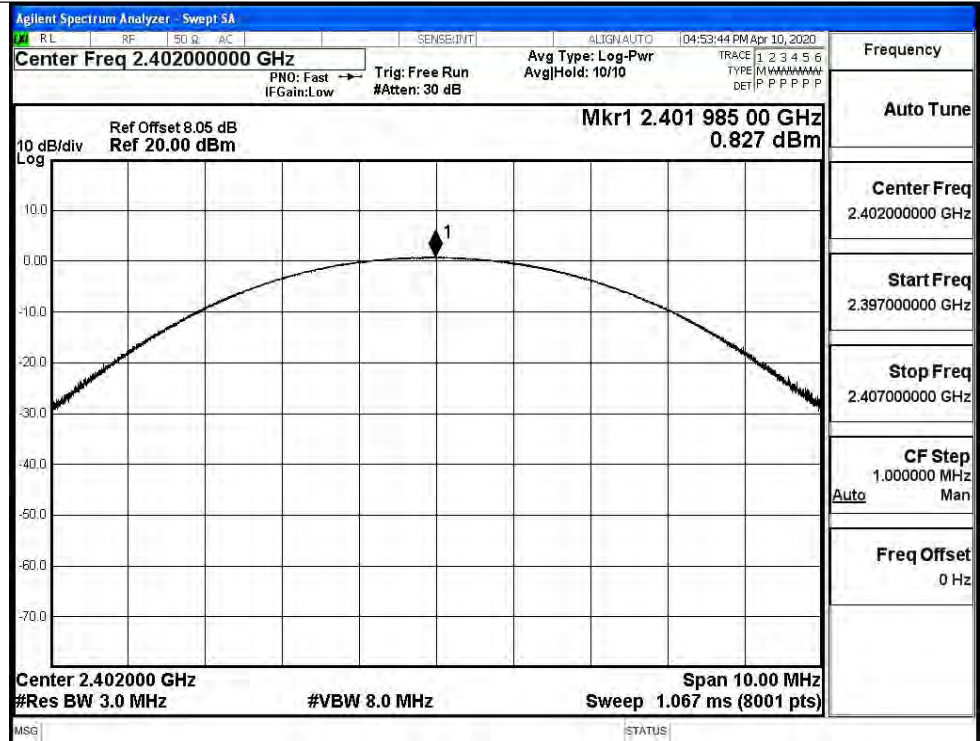


$\pi/4$ DQPSK/LCH

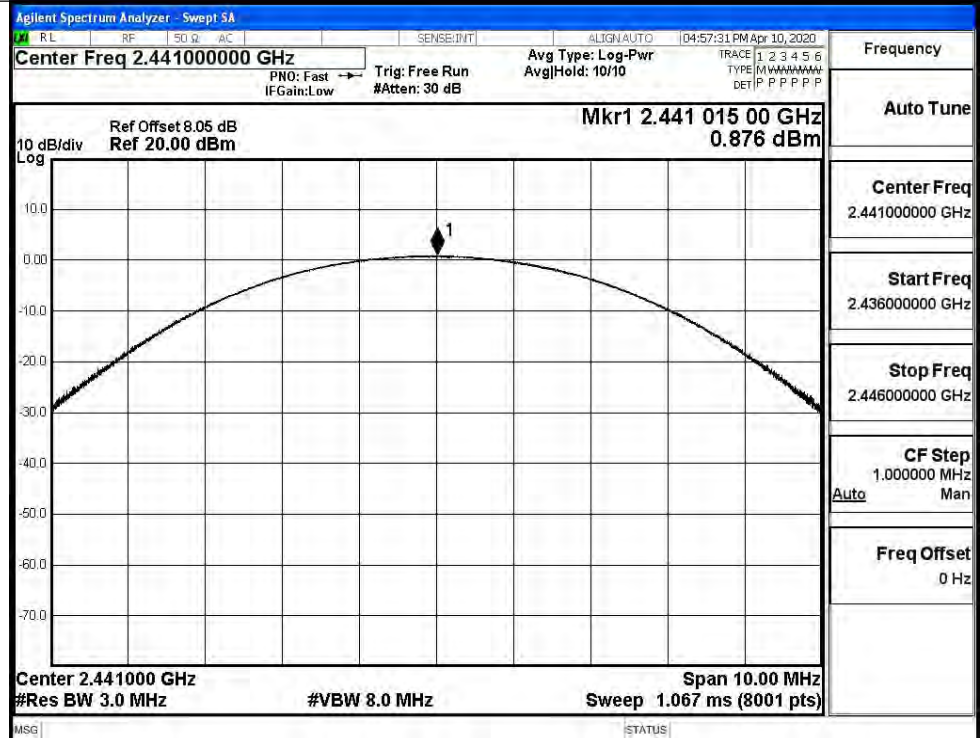


$\pi/4$DQPSK/MCH	Agilent Spectrum Analyzer - Swept SA Center Freq 2.441000000 GHz Ref Offset 8.05 dB Ref 20.00 dBm Mkr1 2.441 060 00 GHz 0.897 dBm  Center 2.441000 GHz #Res BW 3.0 MHz #VBW 8.0 MHz Sweep 1.067 ms (8001 pts) Frequency Auto Tune Center Freq 2.441000000 GHz Start Freq 2.436000000 GHz Stop Freq 2.446000000 GHz CF Step 1.000000 MHz Auto Freq Offset 0 Hz
$\pi/4$DQPSK/HCH	Agilent Spectrum Analyzer - Swept SA Center Freq 2.480000000 GHz Ref Offset 8.05 dB Ref 20.00 dBm Mkr1 2.479 940 00 GHz 0.941 dBm  Center 2.480000 GHz #Res BW 3.0 MHz #VBW 8.0 MHz Sweep 1.067 ms (8001 pts) Frequency Auto Tune Center Freq 2.480000000 GHz Start Freq 2.475000000 GHz Stop Freq 2.485000000 GHz CF Step 1.000000 MHz Auto Freq Offset 0 Hz

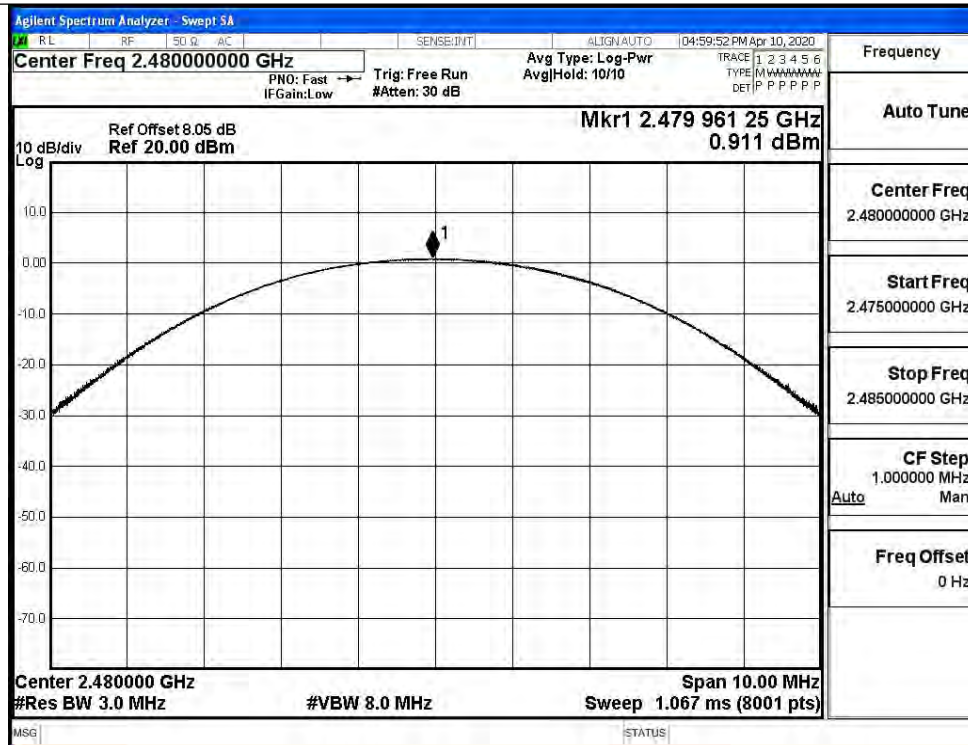
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

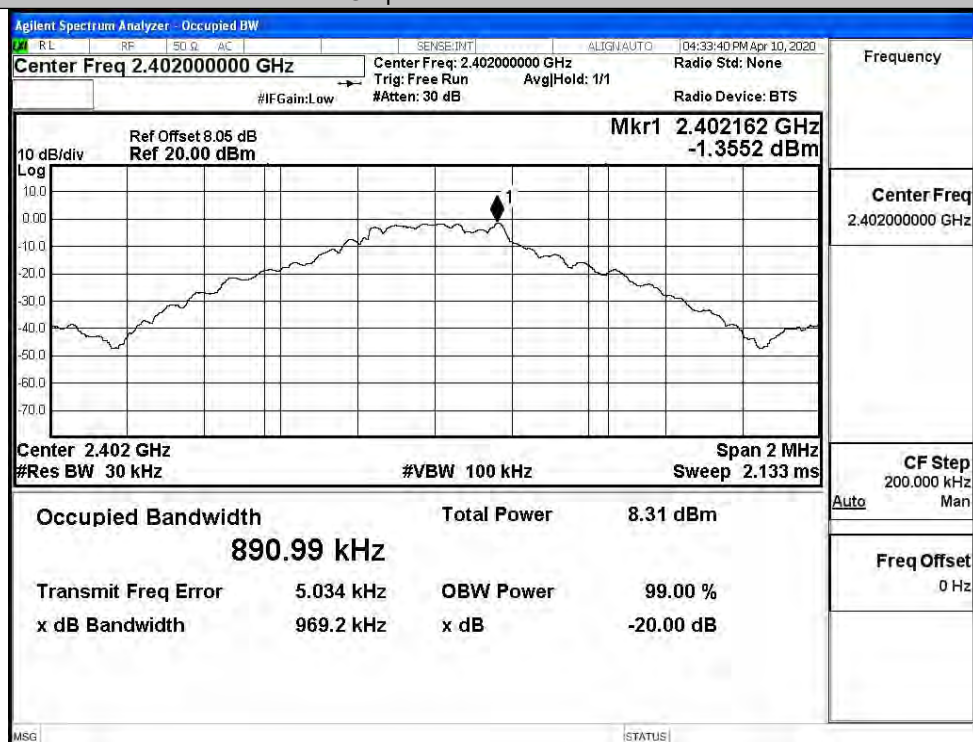


A.2 20dB Bandwidth

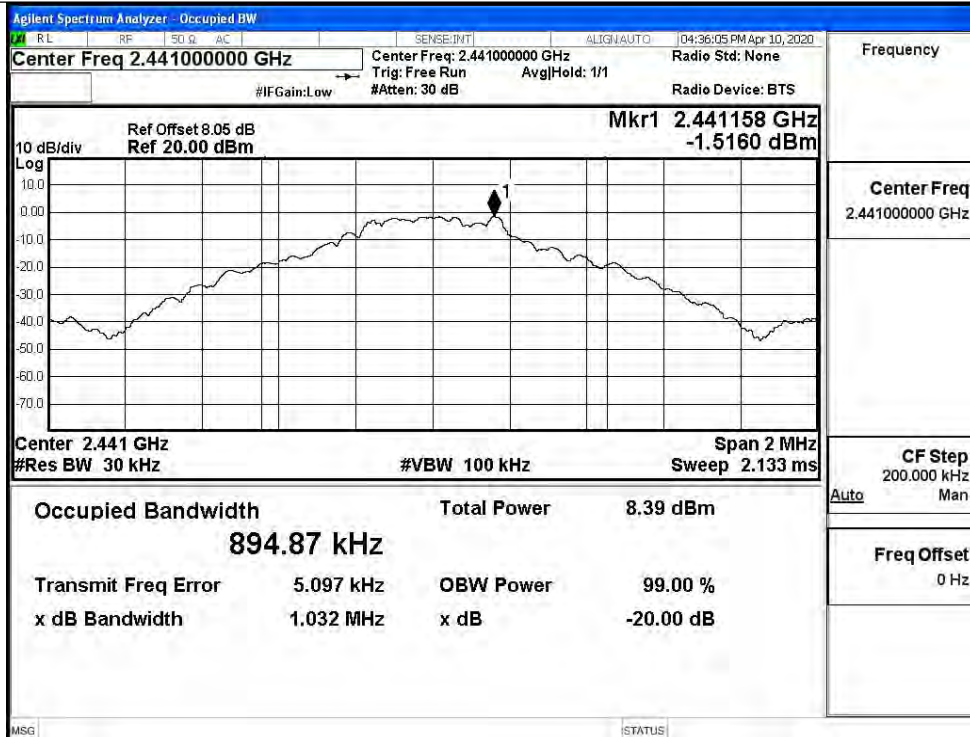
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9692	Not Specified	PASS
	MCH	1.032	Not Specified	PASS
	HCH	1.031	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.294	Not Specified	PASS
	MCH	1.312	Not Specified	PASS
	HCH	1.288	Not Specified	PASS
8DPSK	LCH	1.296	Not Specified	PASS
	MCH	1.297	Not Specified	PASS
	HCH	1.298	Not Specified	PASS

Test Graphs

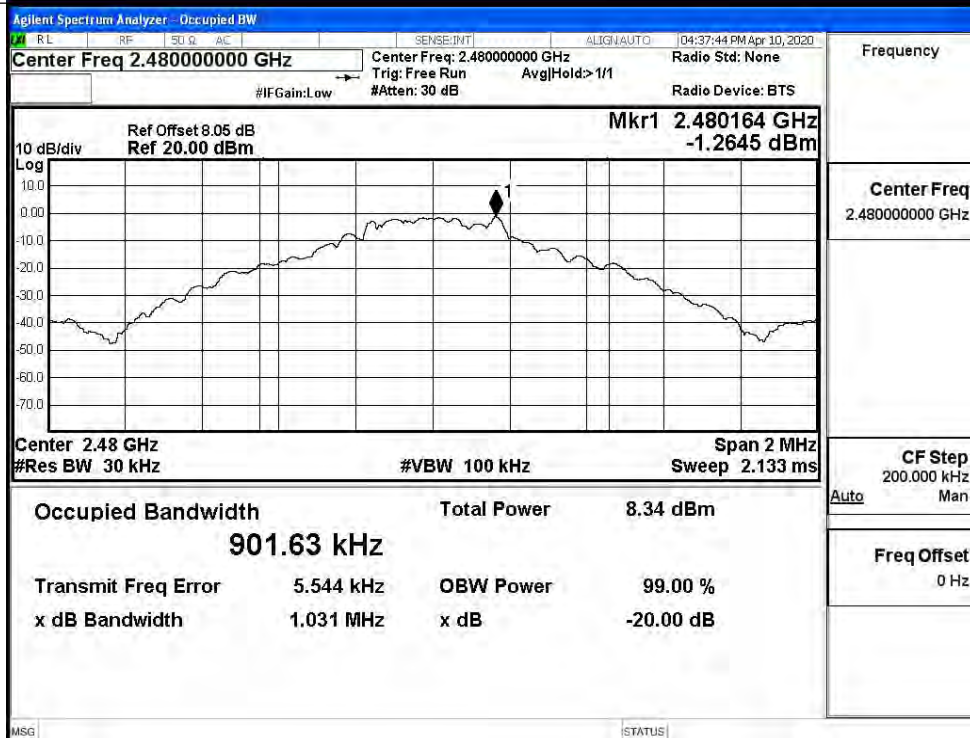
GFSK/LCH

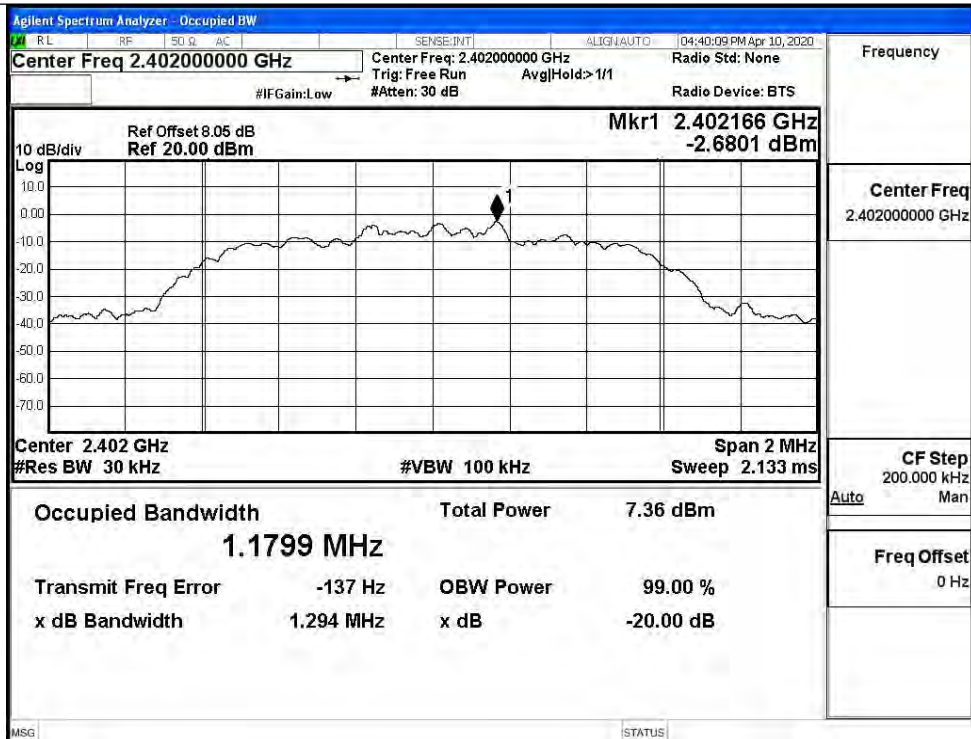
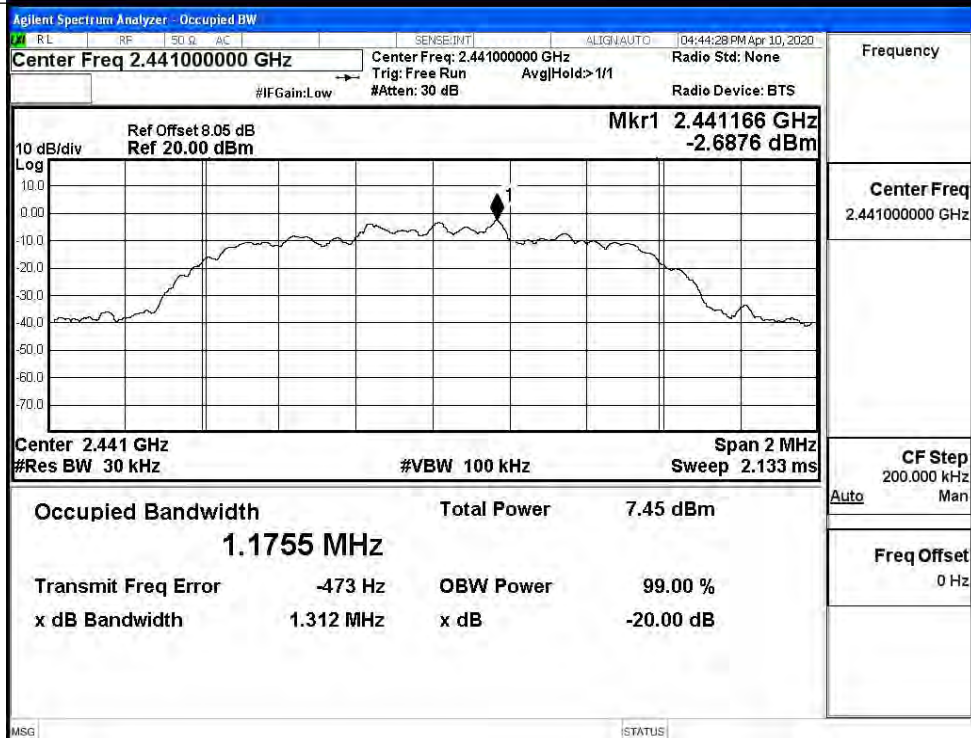


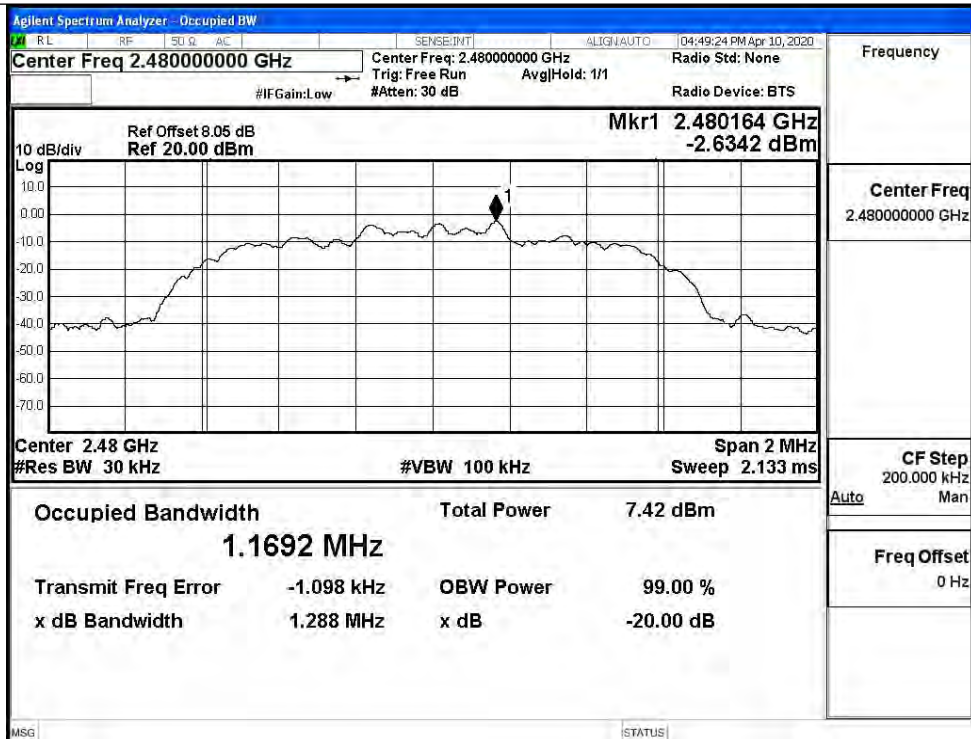
GFSK/MCH



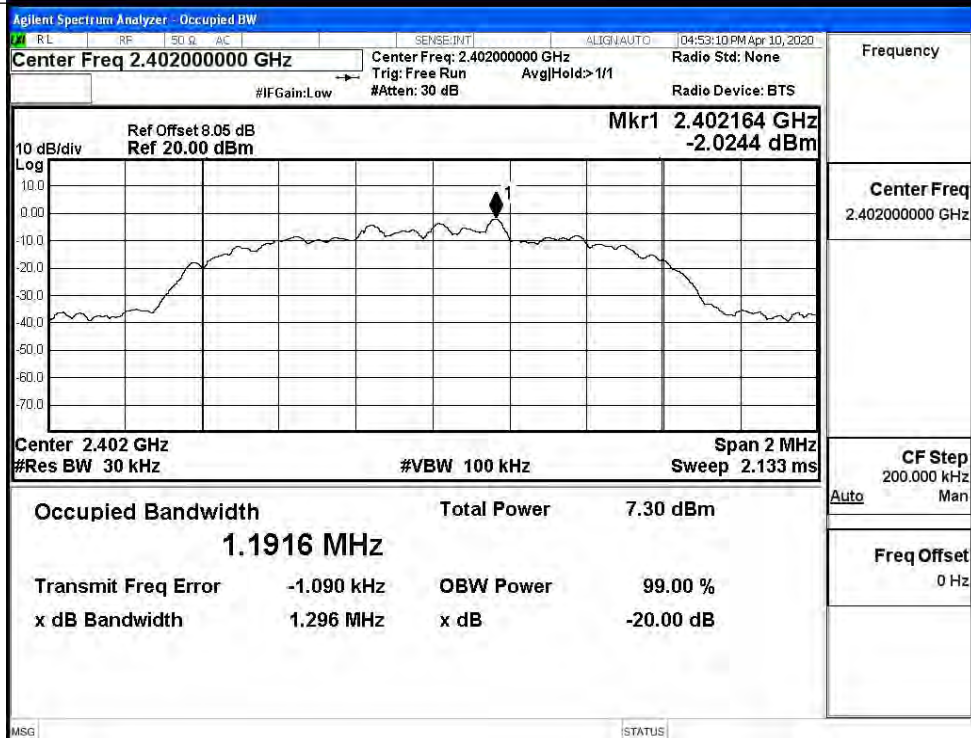
GFSK/HCH



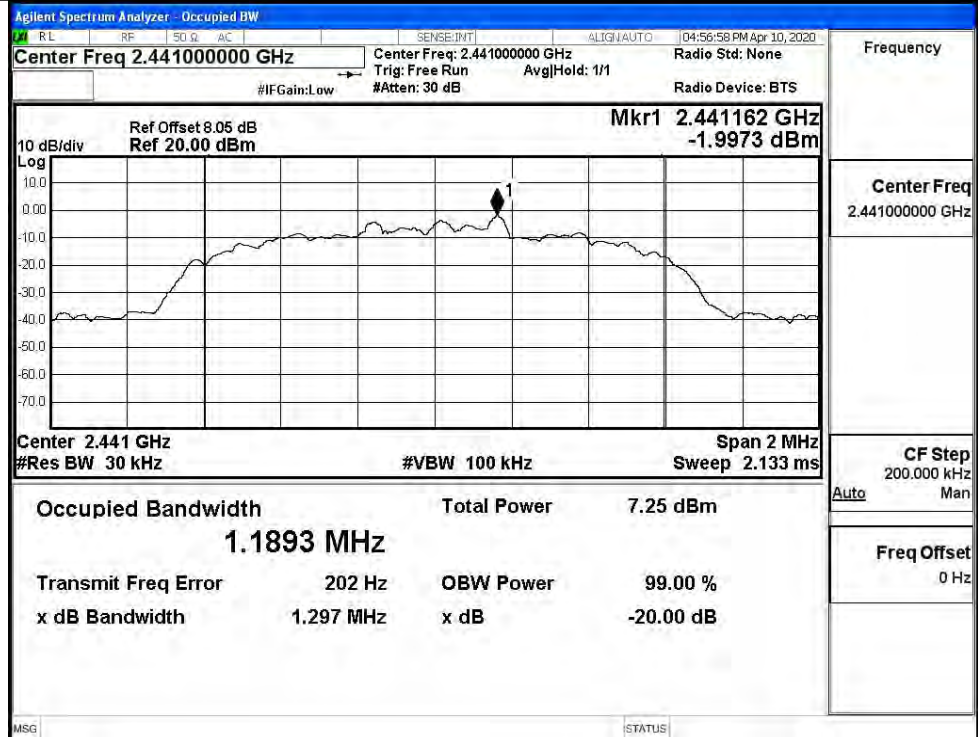
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

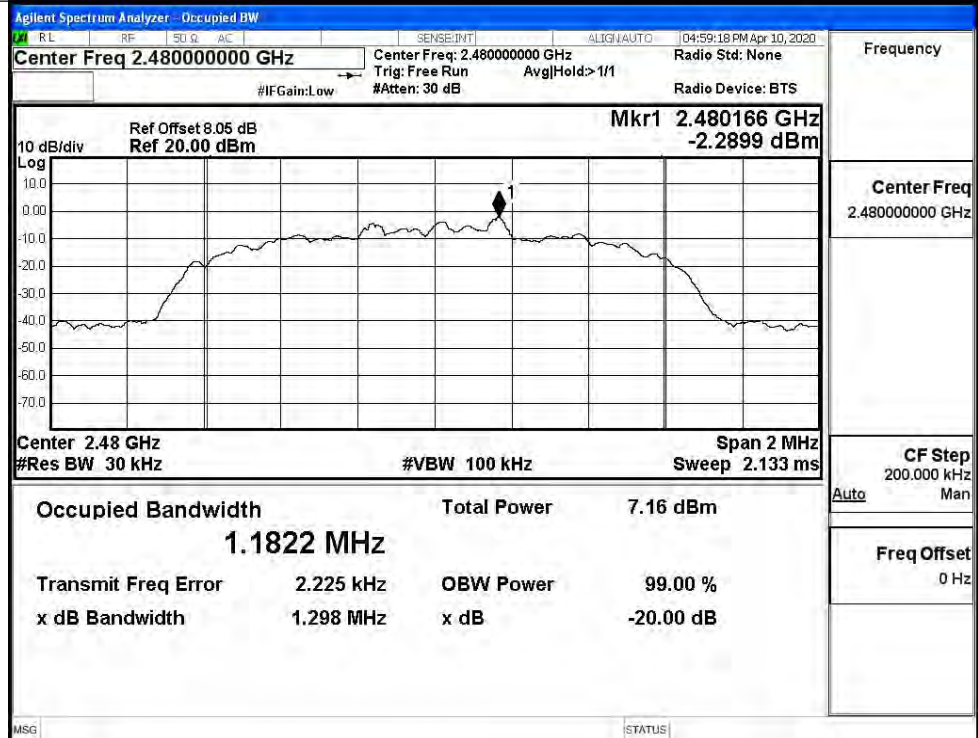
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

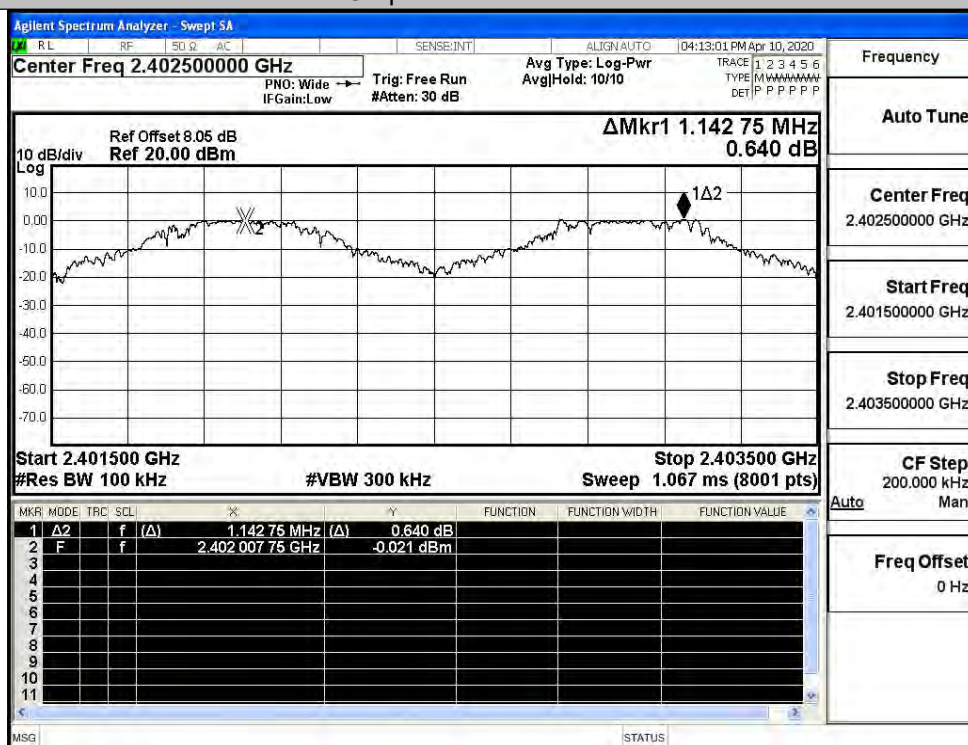


A.3 Carrier Frequency Separation

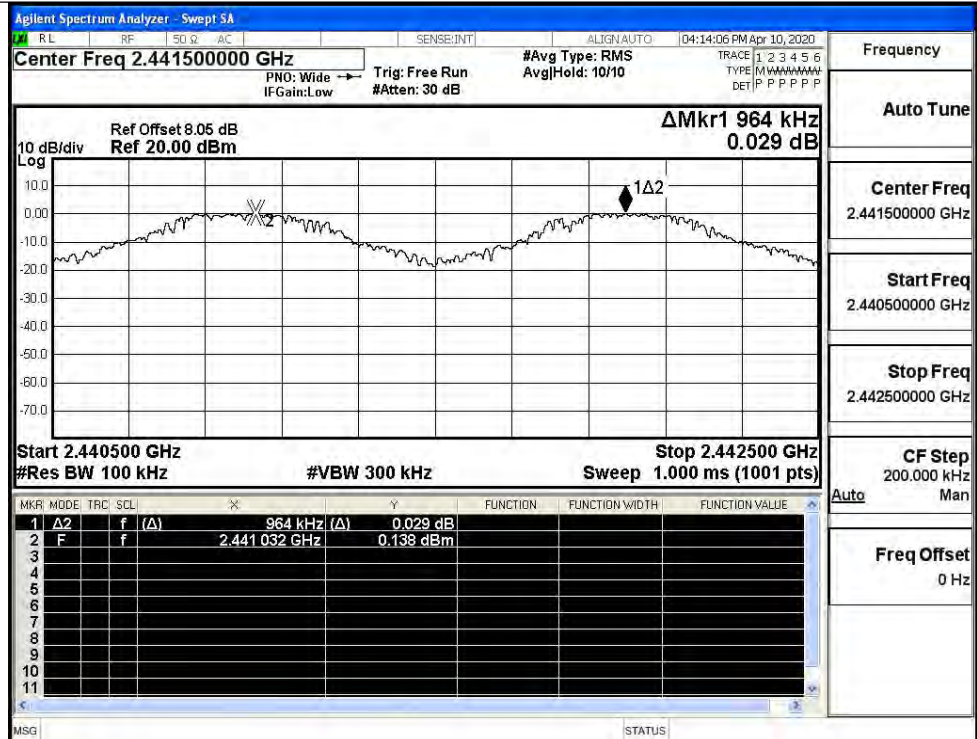
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.143	0.688	PASS
	MCH	0.964	0.688	PASS
	HCH	1.316	0.688	PASS
$\pi/4$ DQPSK	LCH	0.956	0.874	PASS
	MCH	1.022	0.874	PASS
	HCH	1.218	0.874	PASS
8DPSK	LCH	1.196	0.865	PASS
	MCH	1.006	0.865	PASS
	HCH	1.134	0.865	PASS

Test Graphs

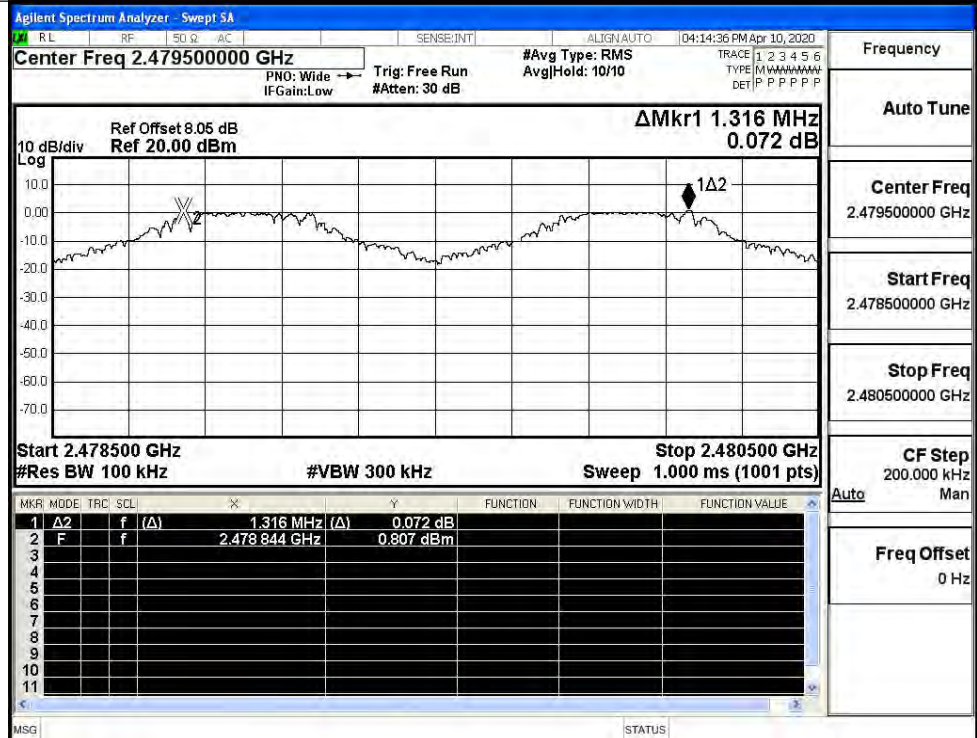
GFSK/LCH



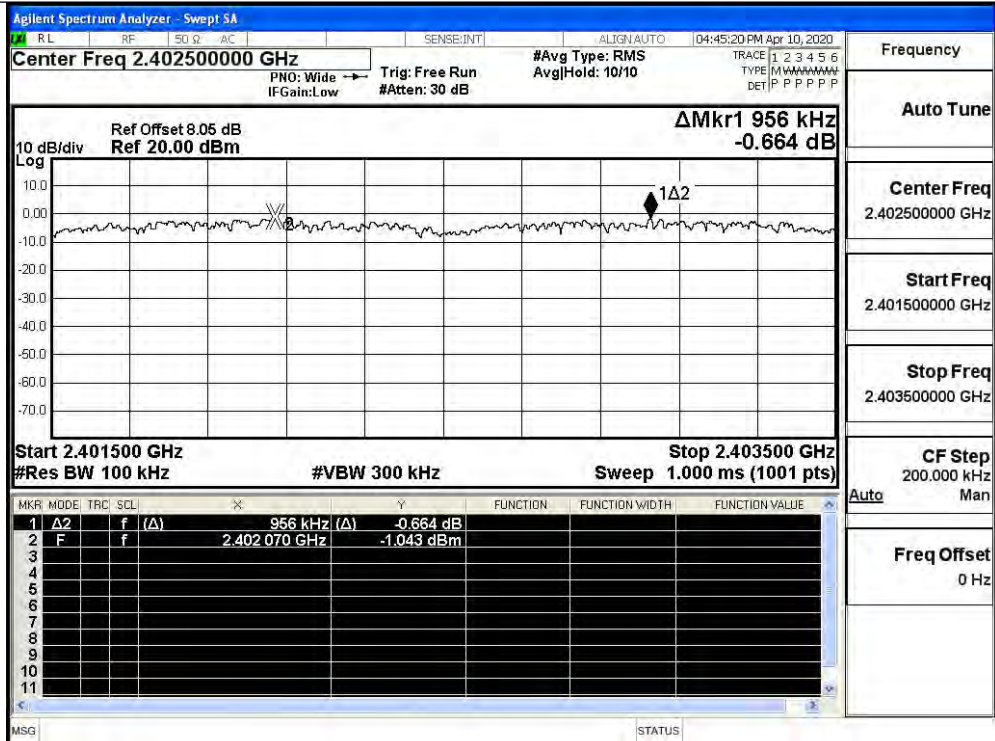
GFSK/MCH



GFSK/HCH



$\pi/4$ DQPSK/LCH



Frequency

Auto Tune

Center Freq
2.402500000 GHz

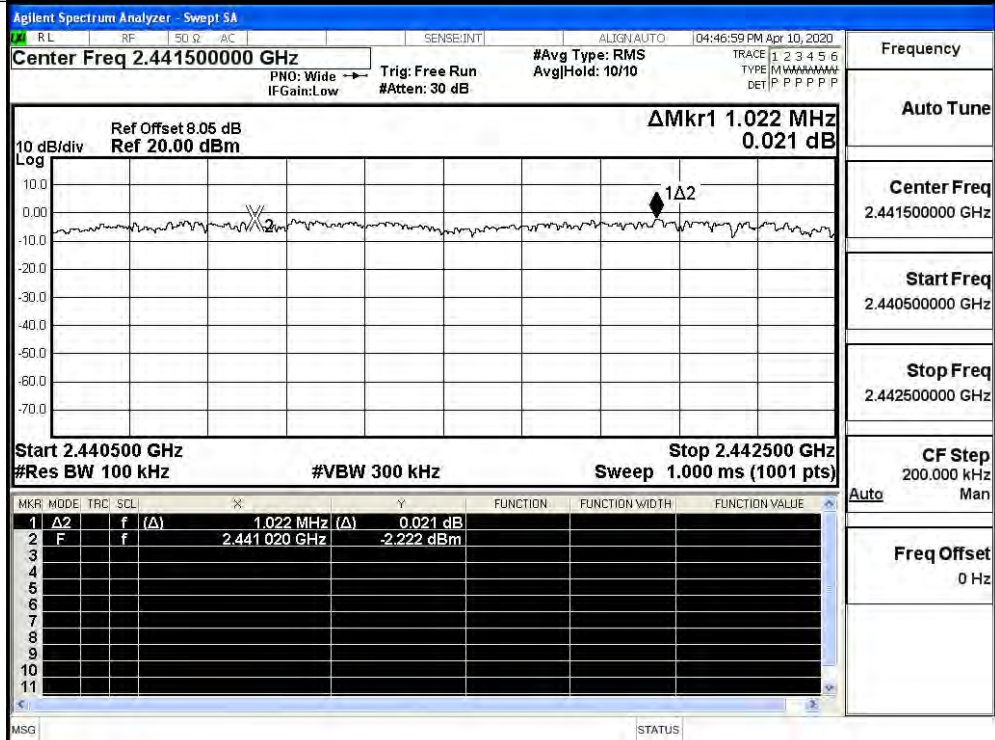
Start Freq
2.401500000 GHz

Stop Freq
2.403500000 GHz

CF Step
200.000 kHz
Man

Freq Offset
0 Hz

$\pi/4$ DQPSK/MCH



Frequency

Auto Tune

Center Freq
2.441500000 GHz

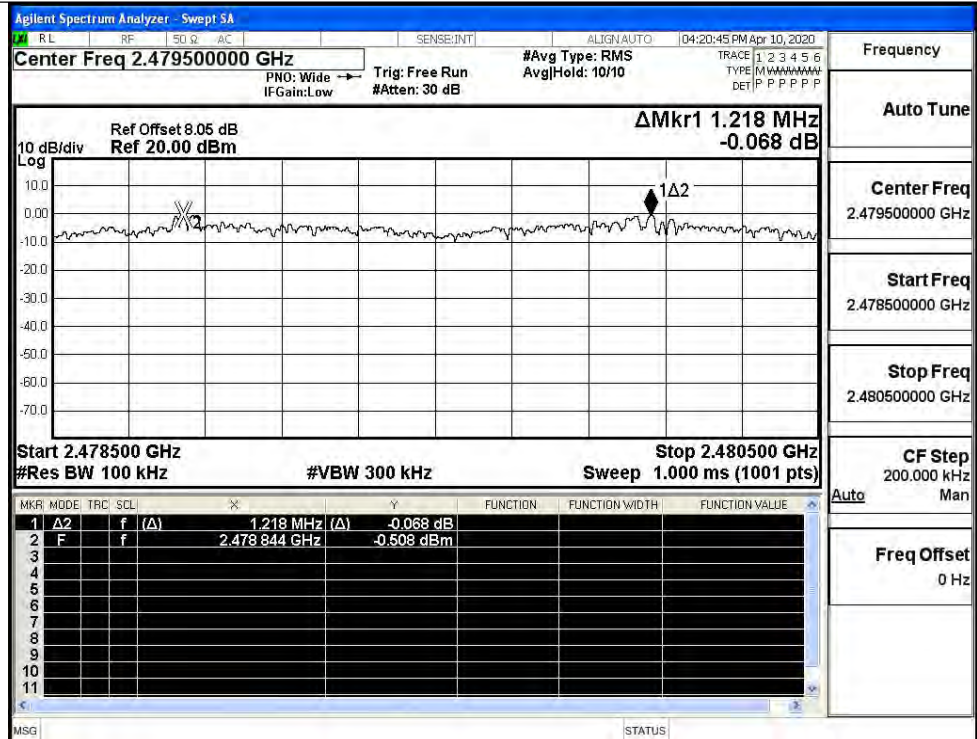
Start Freq
2.440500000 GHz

Stop Freq
2.442500000 GHz

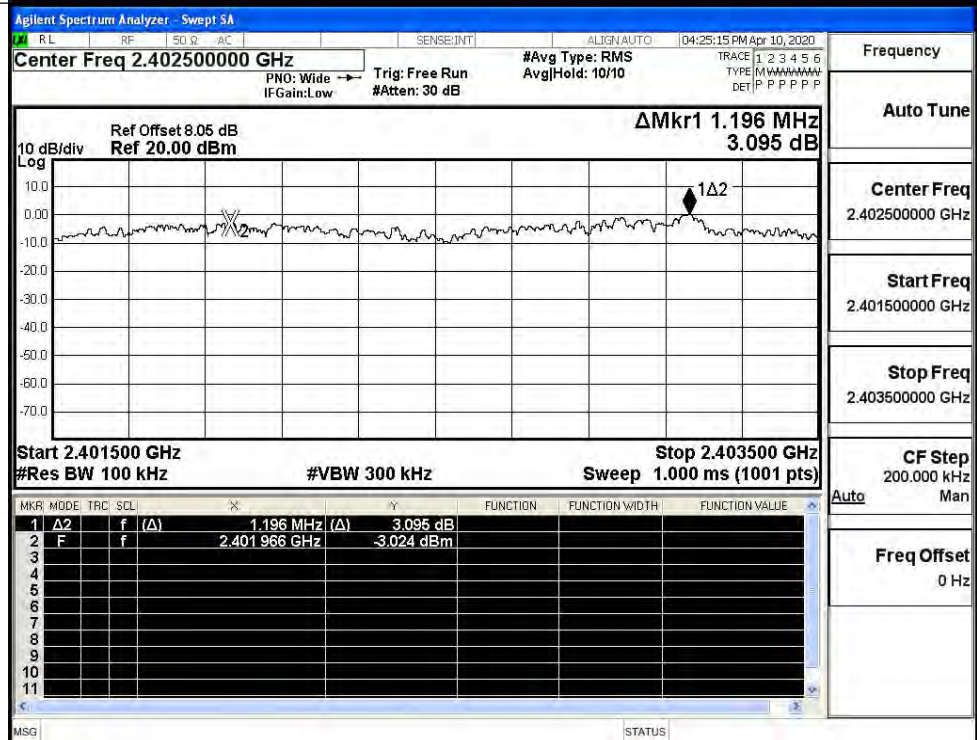
CF Step
200.000 kHz
Man

Freq Offset
0 Hz

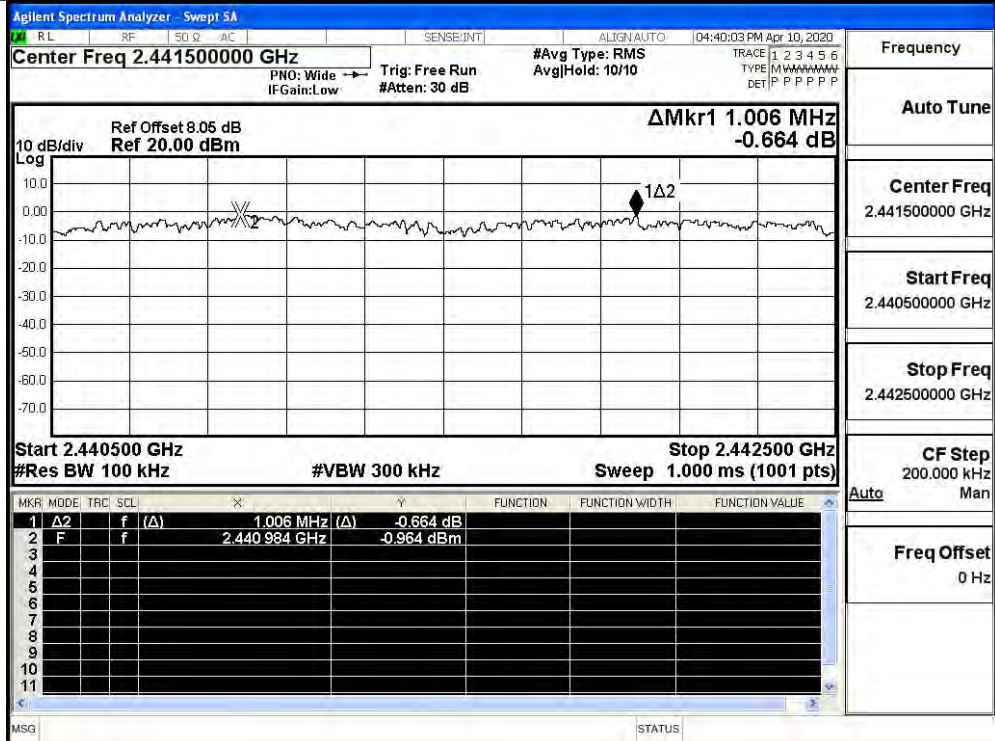
$\pi/4$ DQPSK/HCH



8DPSK/LCH



8DPSK/MCH



Frequency

Auto Tune

Center Freq
2.441500000 GHz

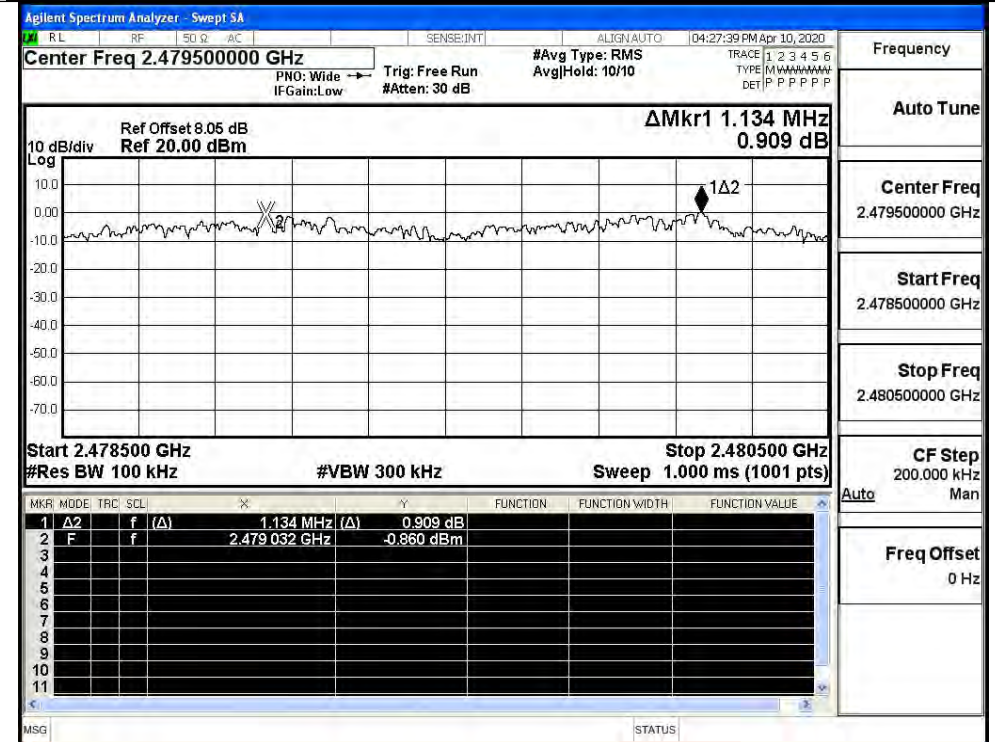
Start Freq
2.440500000 GHz

Stop Freq
2.442500000 GHz

CF Step
200.000 kHz
Man

Freq Offset
0 Hz

8DPSK/HCH



Frequency

Auto Tune

Center Freq
2.479500000 GHz

Start Freq
2.478500000 GHz

Stop Freq
2.480500000 GHz

CF Step
200.000 kHz
Man

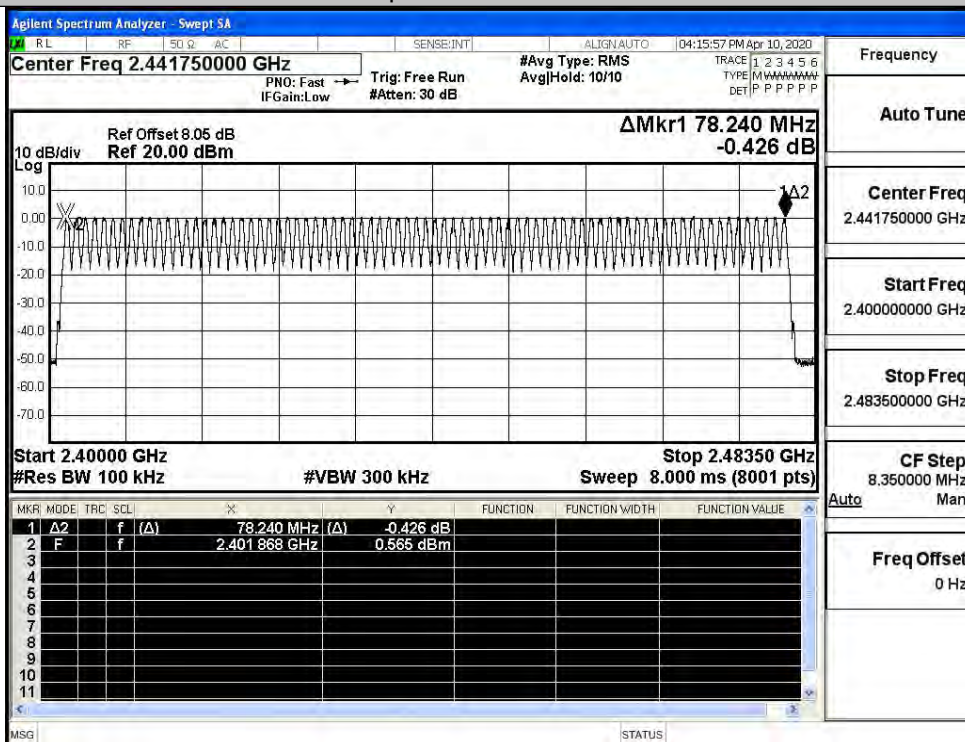
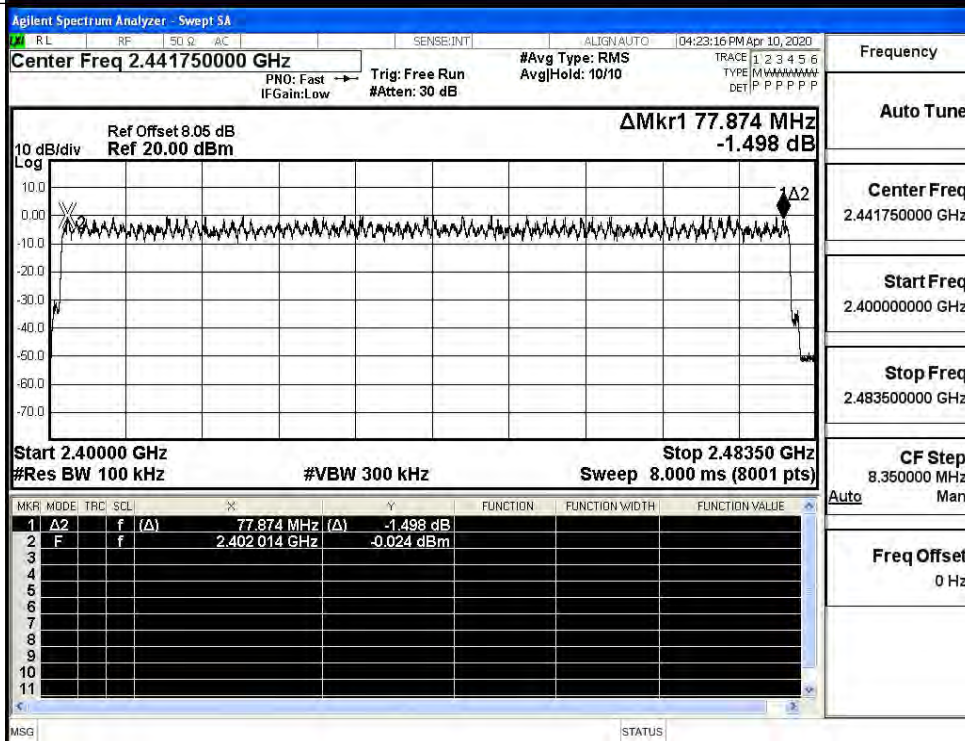
Freq Offset
0 Hz

A.4 Hopping Channel Number

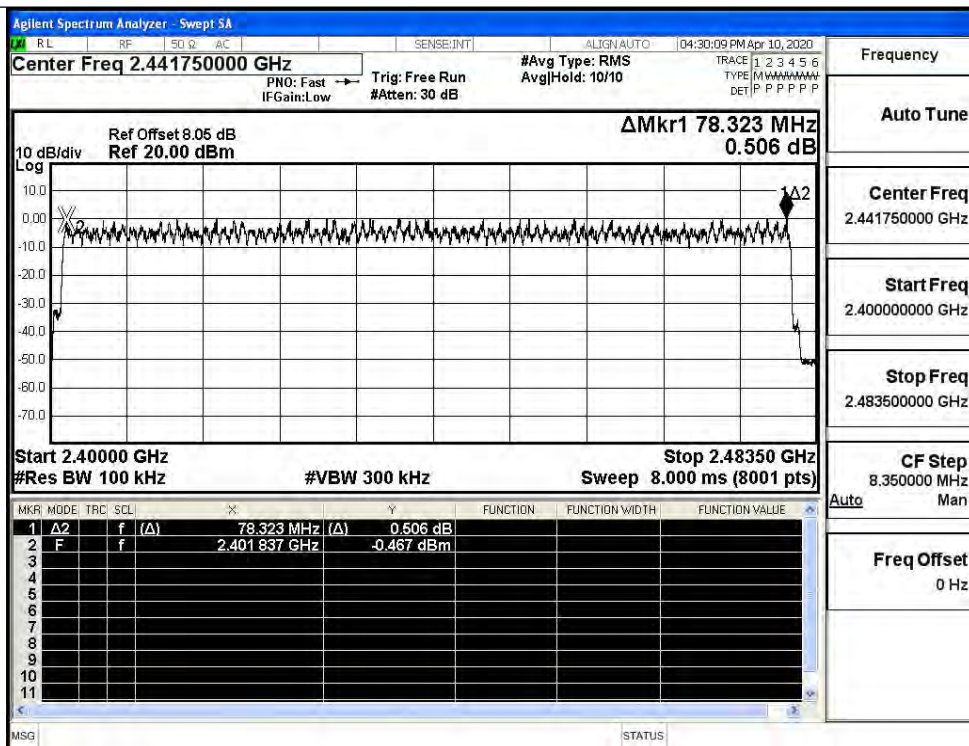
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	≥ 15	PASS
$\pi/4$ DQPSK	Hop	79	≥ 15	PASS
8DPSK	Hop	79	≥ 15	PASS

Test Graphs

GFSK/Hop

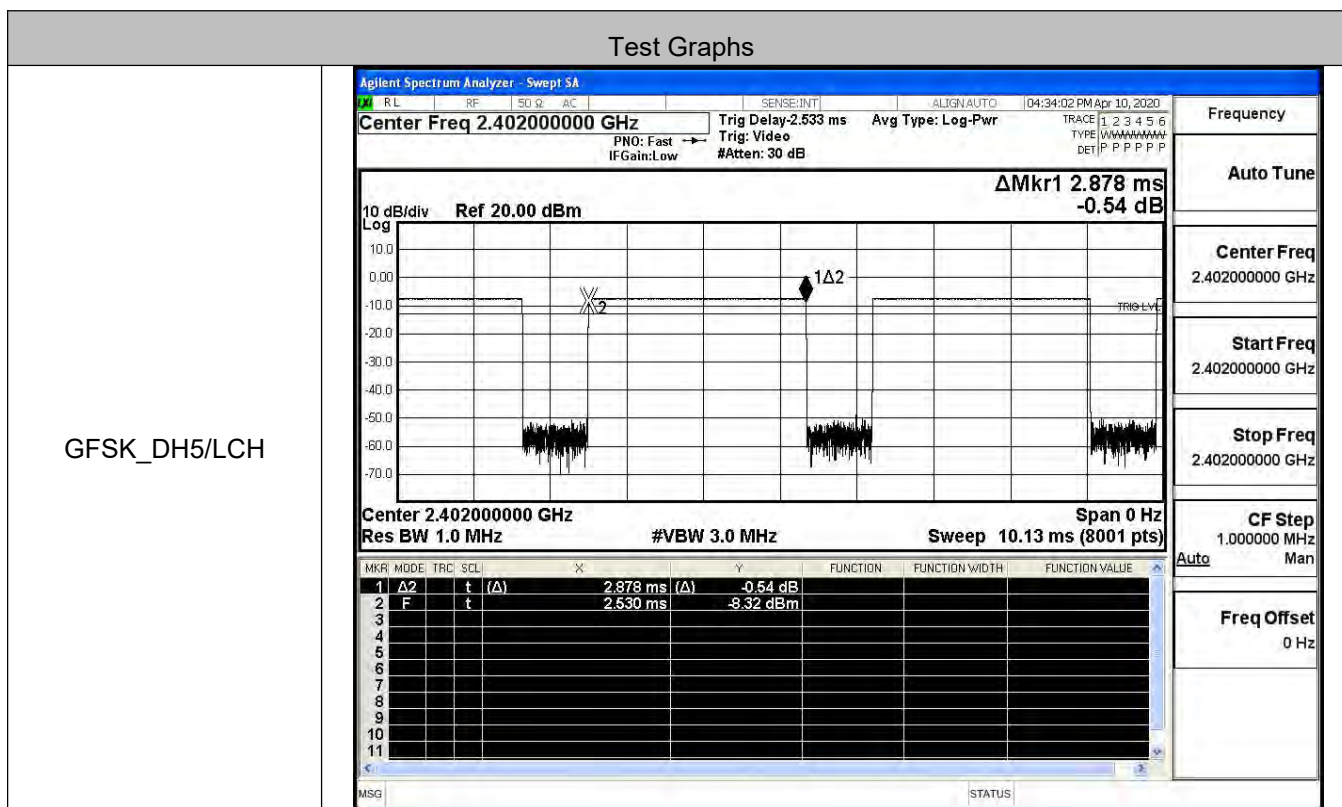
 $\pi/4$ DQPSK/Hop

8DPSK/Hop

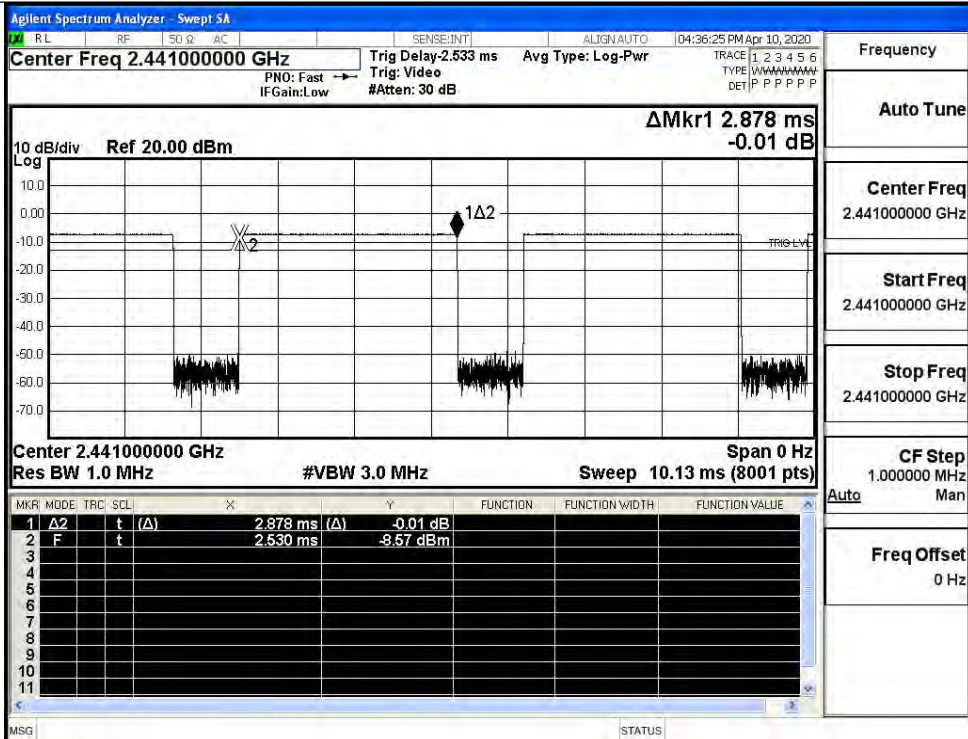


A.5 Dwell Time

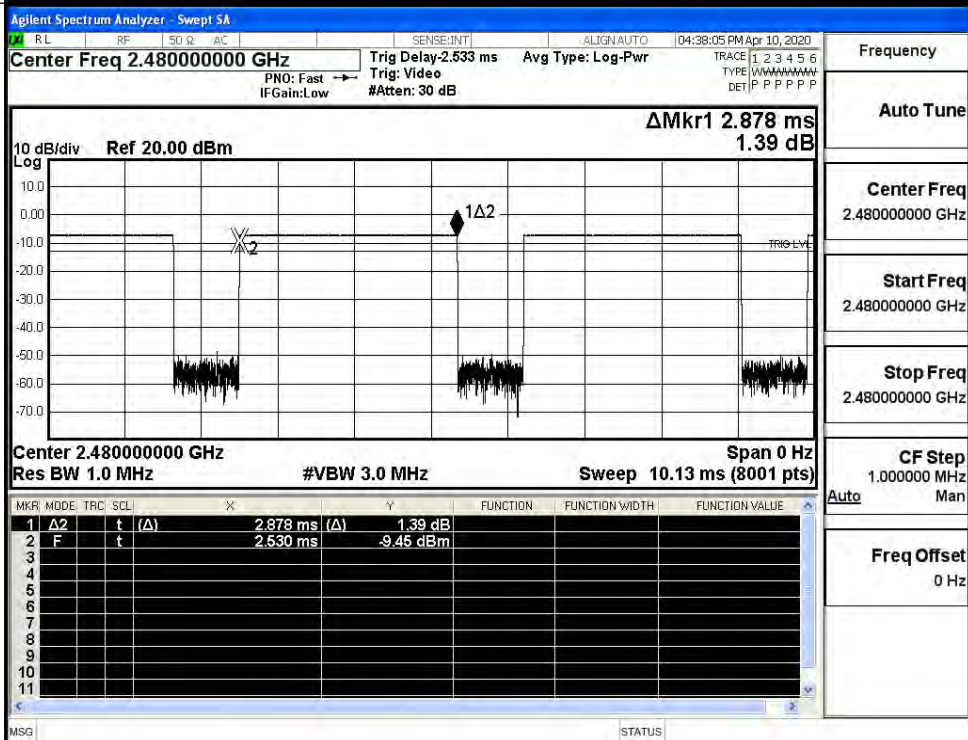
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.162	0.4	PASS
	2DH5	MCH	2.88	106.7	0.162	0.4	PASS
	2DH5	HCH	2.88	106.7	0.162	0.4	PASS
8DPSK	3DH5	LCH	2.88	106.7	0.307	0.4	PASS
	3DH5	MCH	2.88	106.7	0.307	0.4	PASS
	3DH5	HCH	2.88	106.7	0.307	0.4	PASS



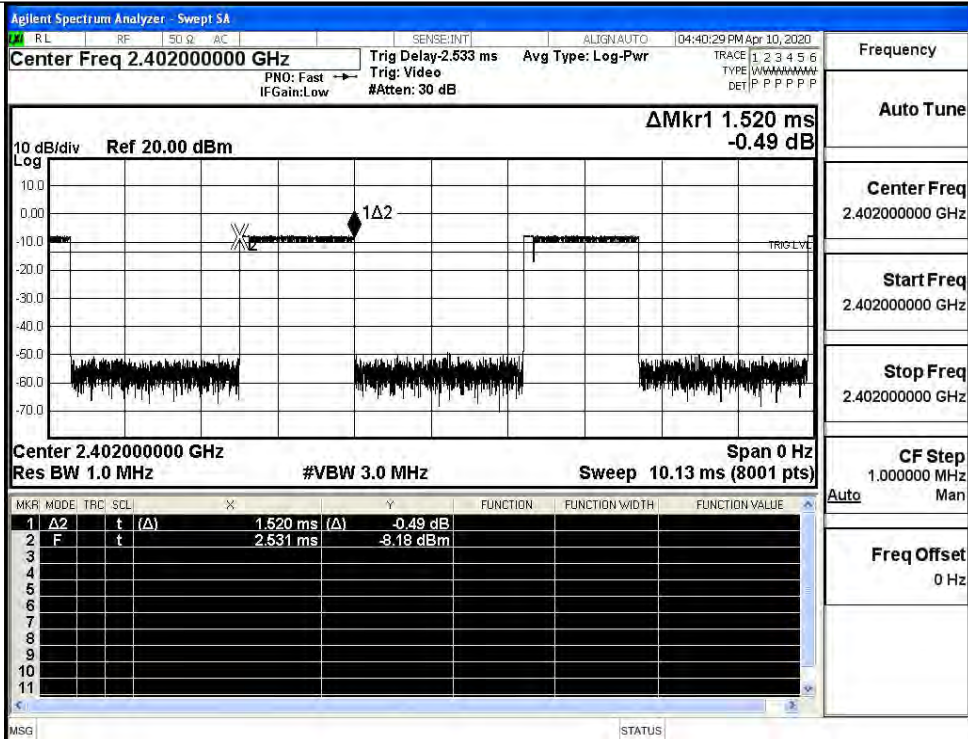
GFSK_DH5/MCH



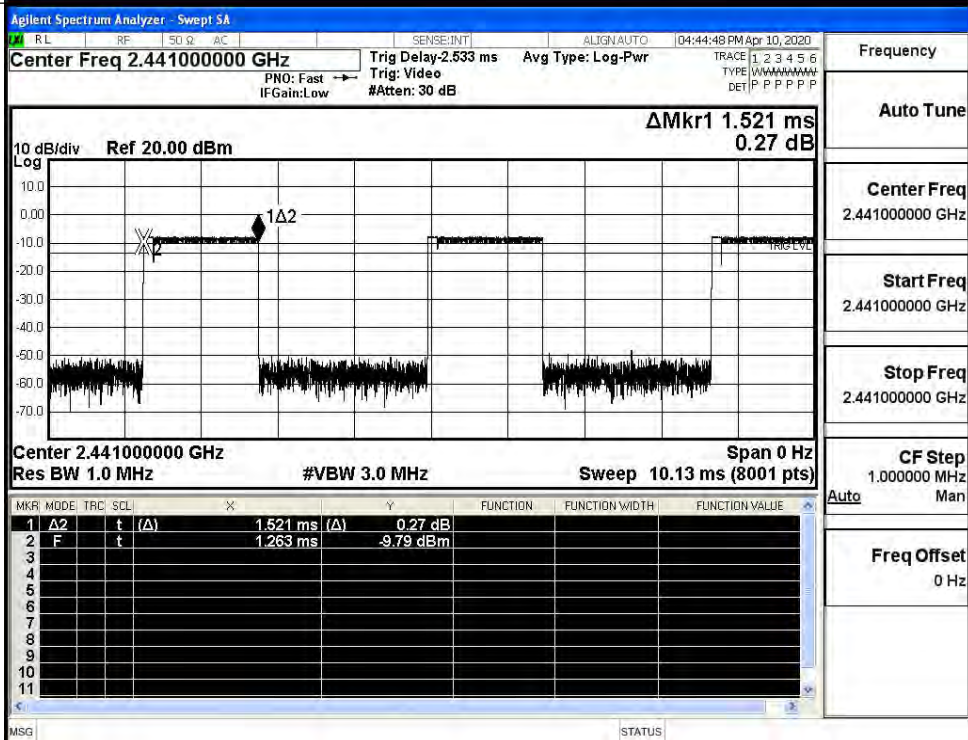
GFSK_DH5/HCH



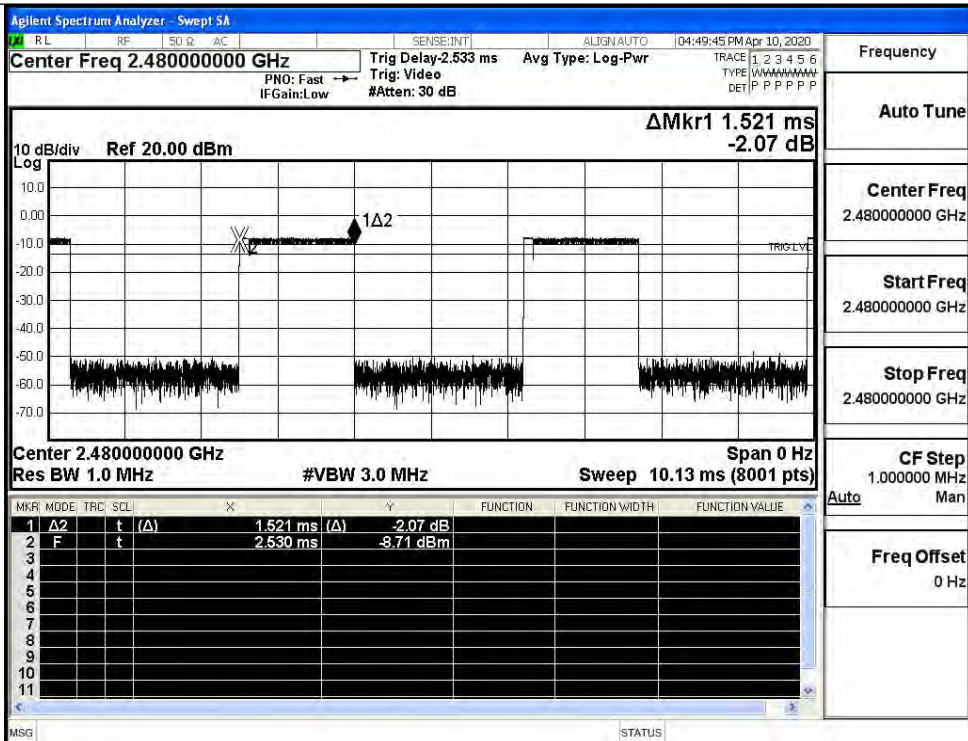
$\pi/4$ DQPSK
_2DH5/LCH



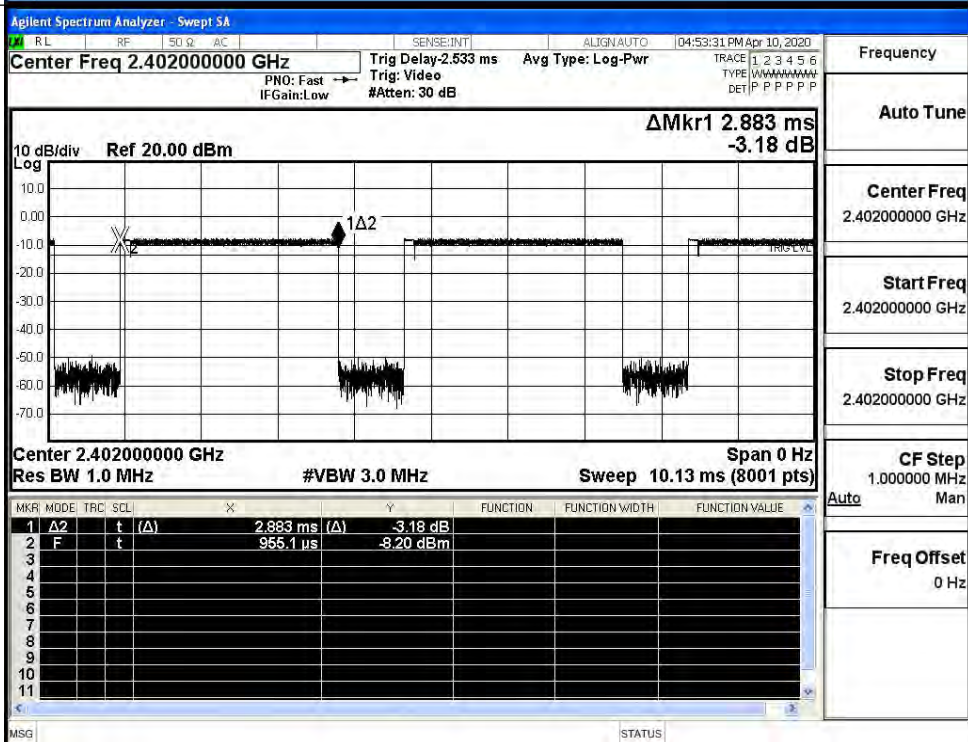
$\pi/4$ DQPSK
_2DH5/MCH



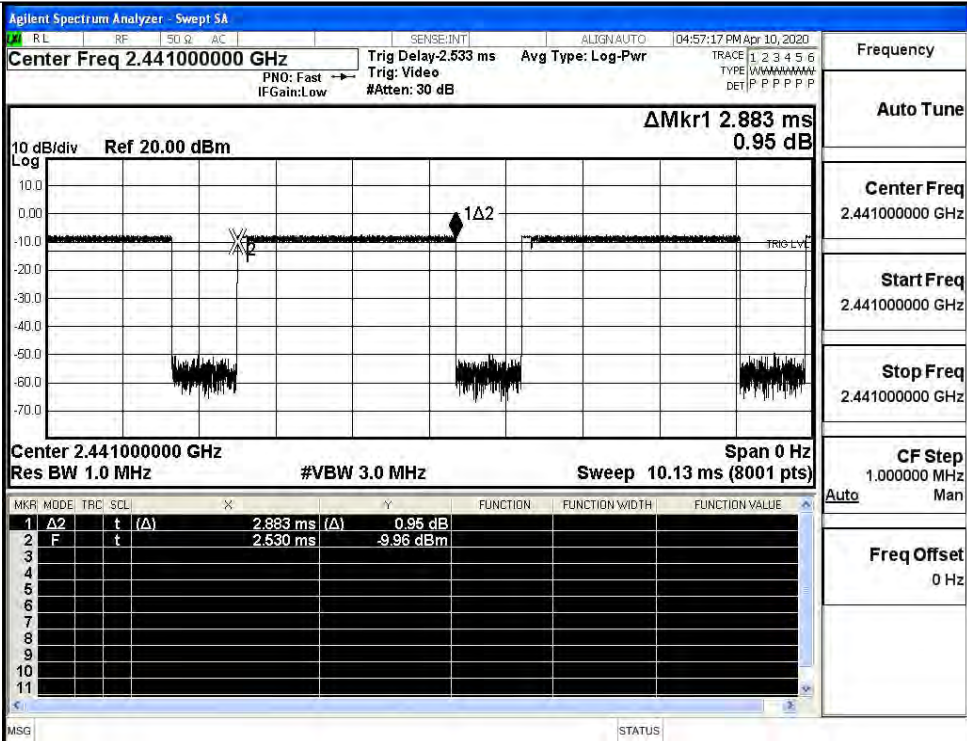
$\pi/4$ DQPSK
_2DH5/HCH



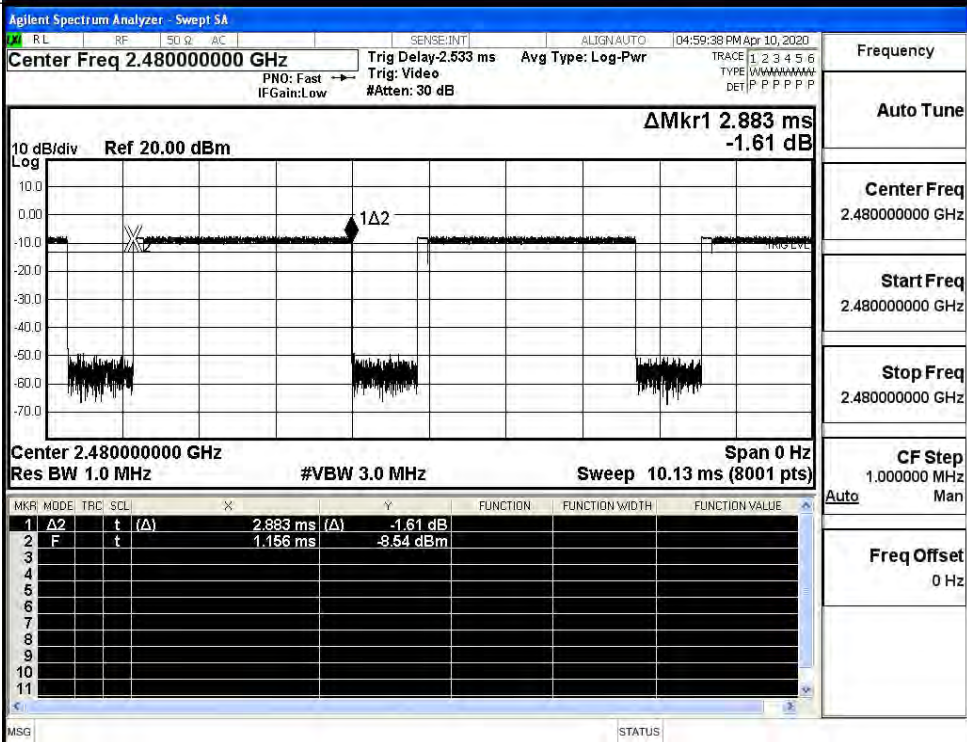
8DPSK _3DH5/LCH



8DPSK 3DH5/MCH



8DPSK_3DH5/HCH

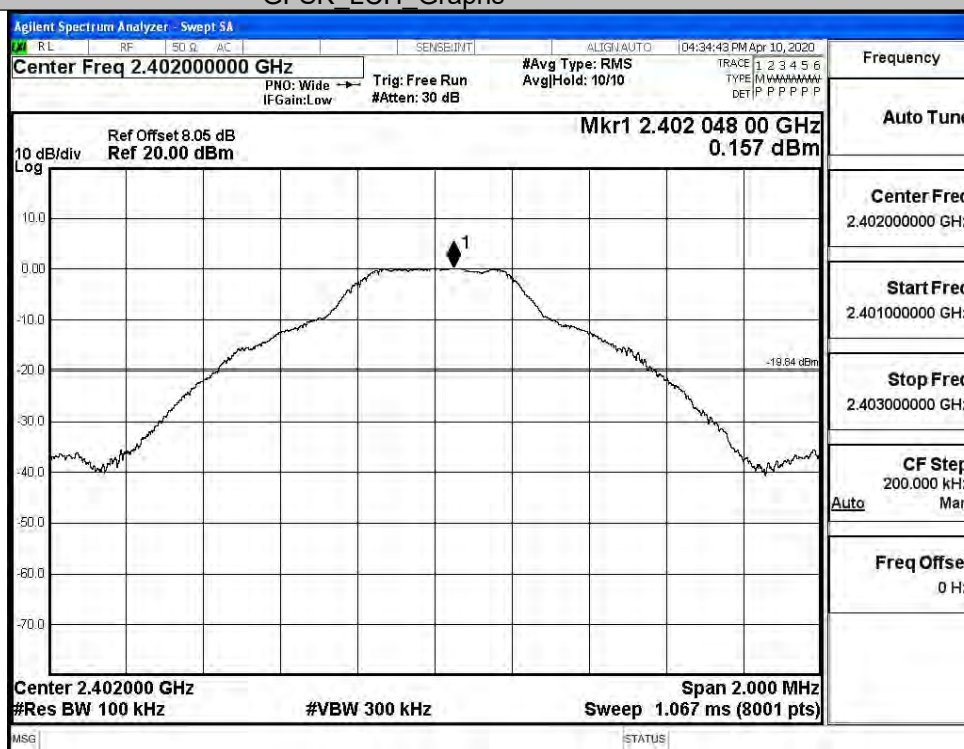


A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.157	-37.857	-19.843	PASS
	MCH	0.674	-36.599	-19.326	PASS
	HCH	0.782	-37.271	-19.218	PASS
$\pi/4$ DQPSK	LCH	-0.102	-36.836	-20.102	PASS
	MCH	-0.105	-36.937	-20.105	PASS
	HCH	-0.014	-37.941	-20.014	PASS
8DPSK	LCH	0.049	-37.859	-19.951	PASS
	MCH	0.042	-37.789	-19.958	PASS
	HCH	-0.028	-36.900	-20.028	PASS

GFSK LCH Graphs

Pref

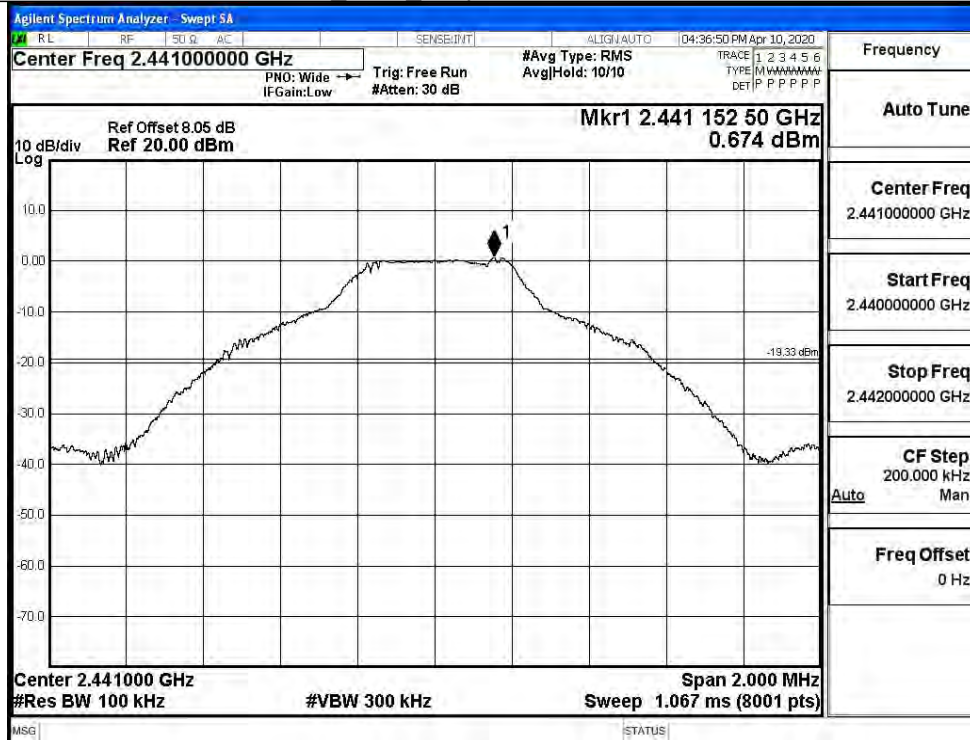


Puw

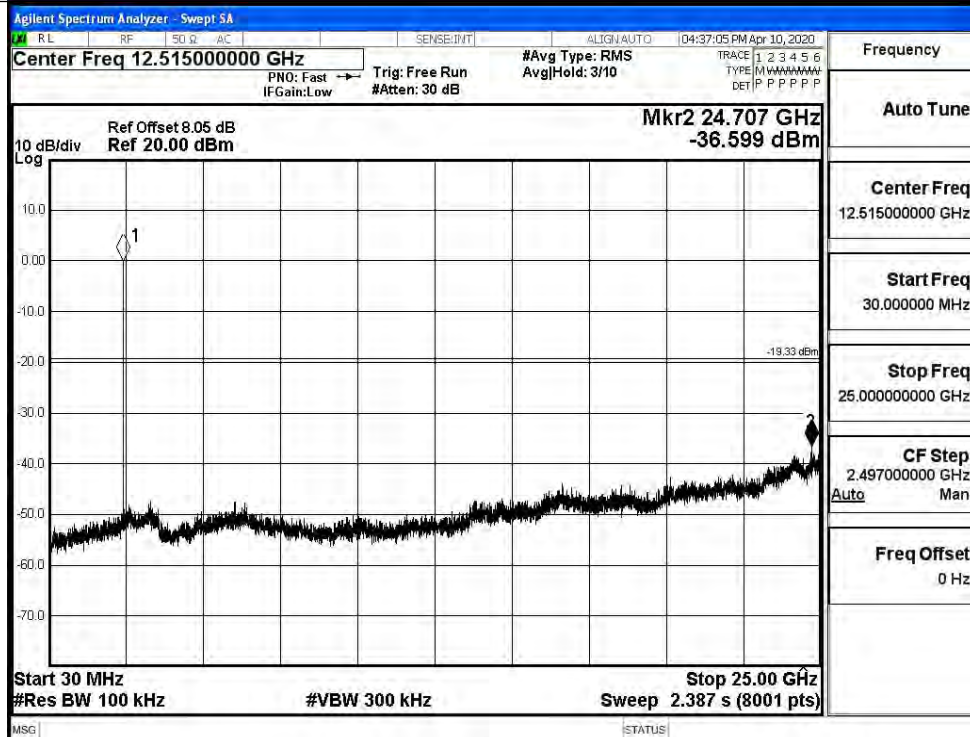


GFSK MCH_Graphs

Pref

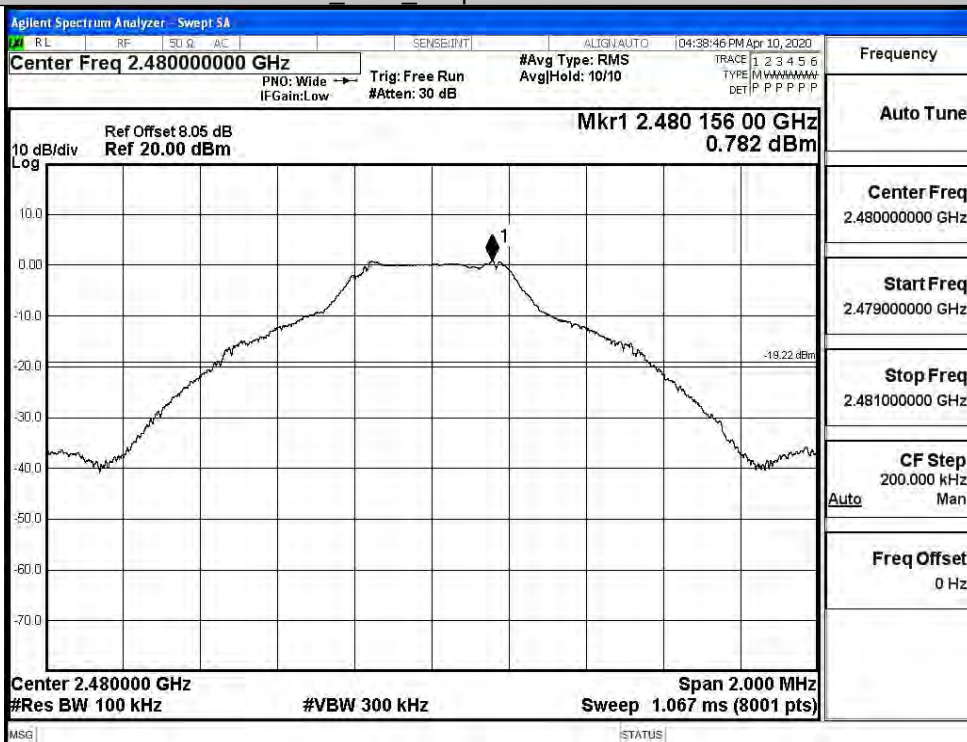


Puw



GFSK HCH_Graphs

Pref

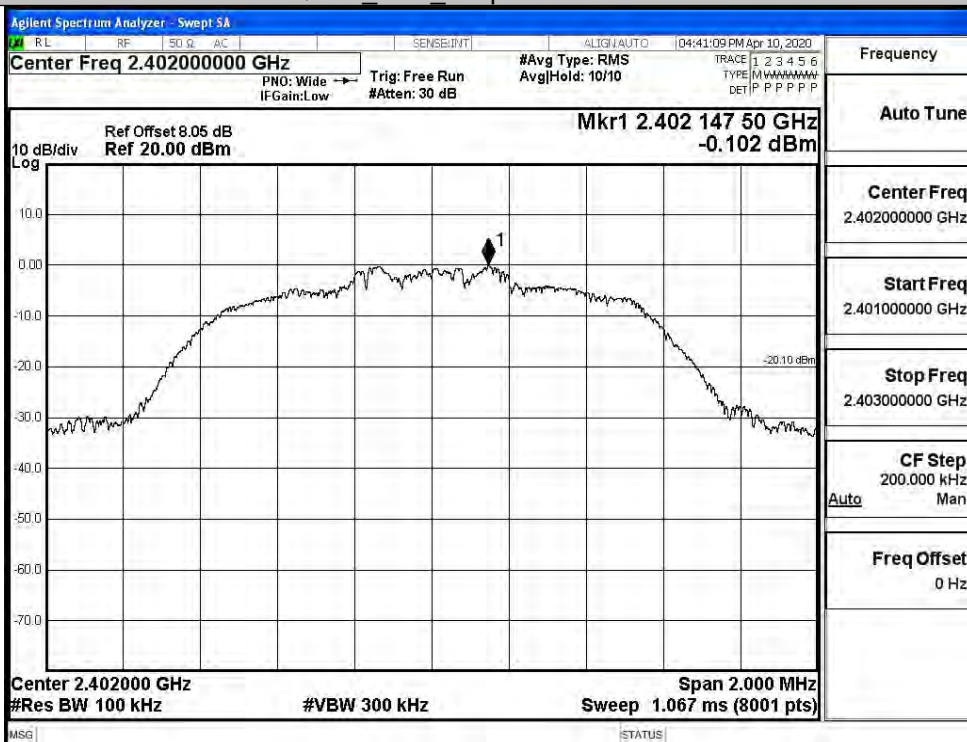


Puw



$\pi/4$ DQPSK LCH_Graphs

Pref

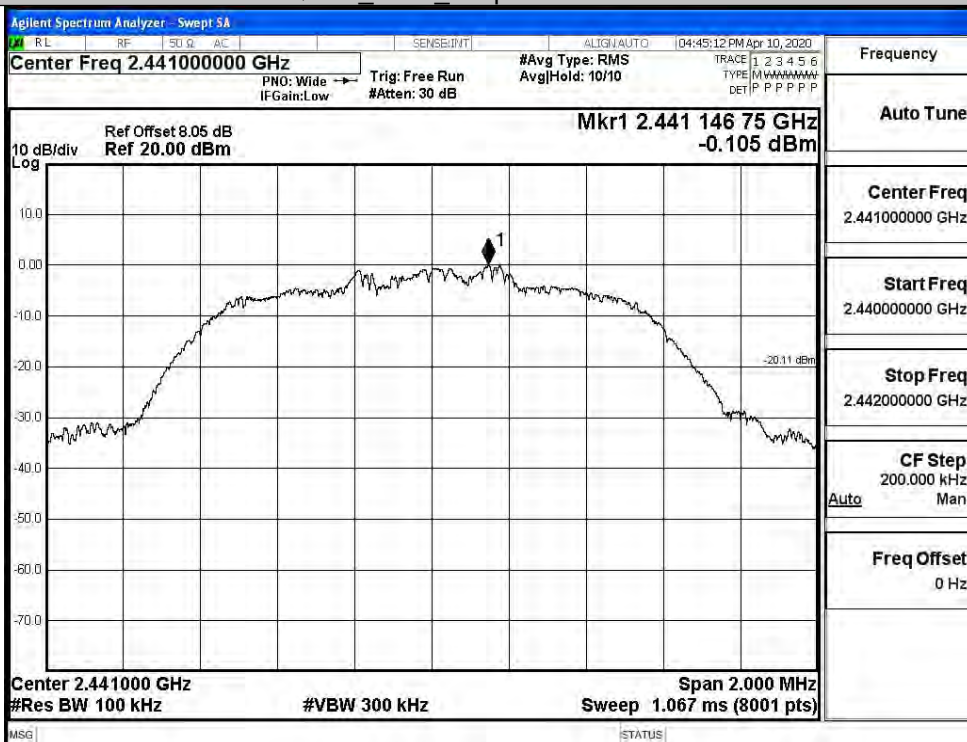


Puw

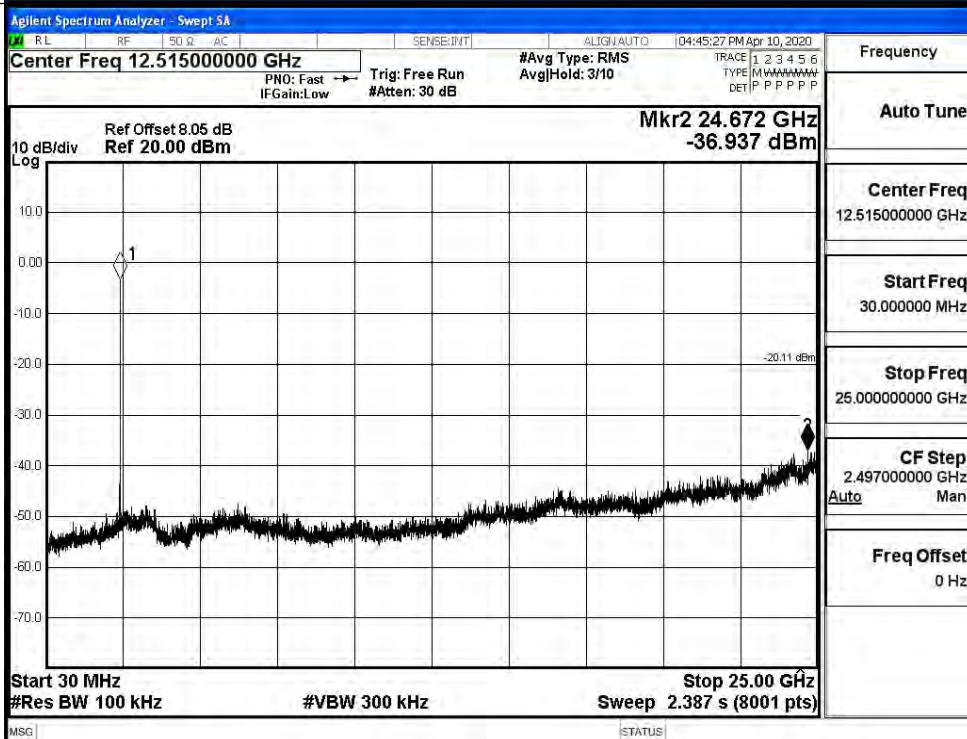


π /4DQPSK_MCH_Graphs

Pref

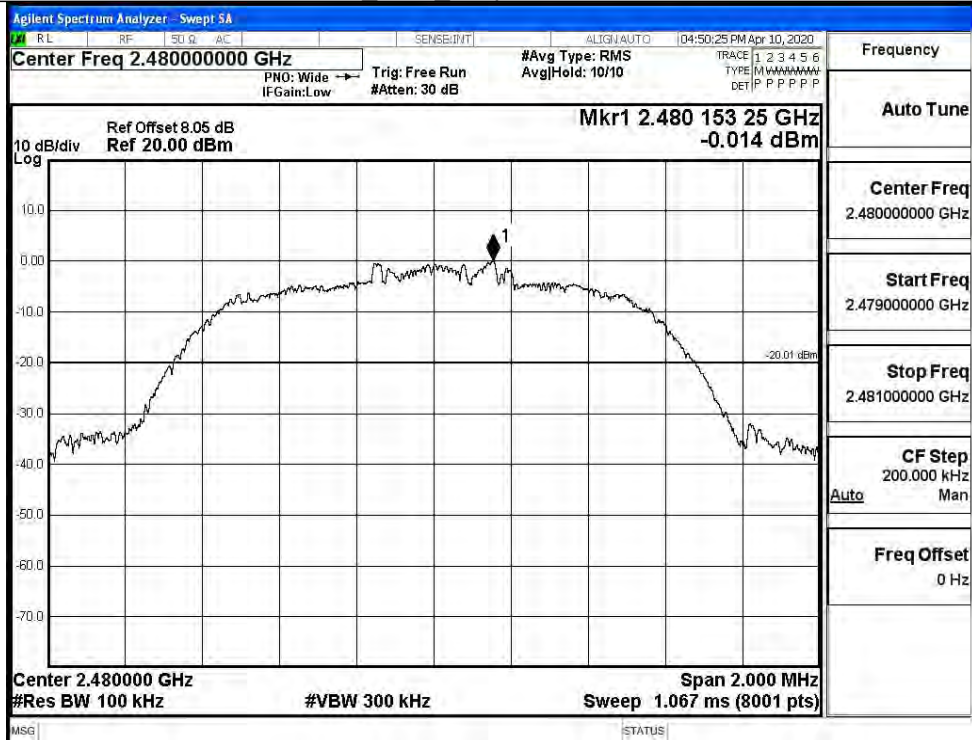


Puw



$\pi/4$ DQPSK HCH_Graphs

Pref

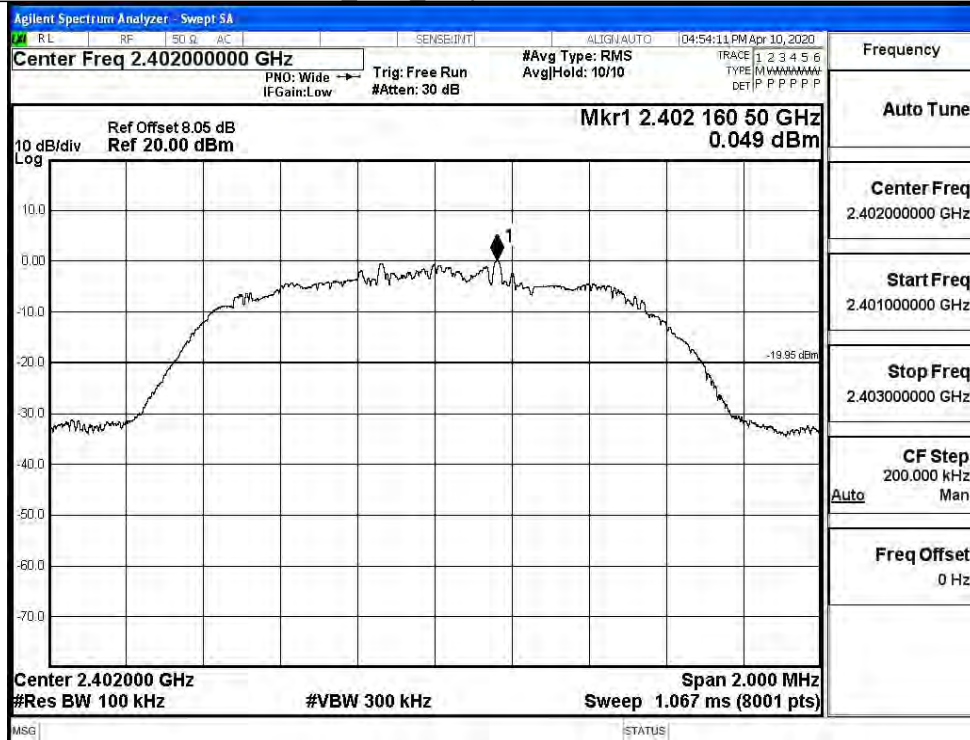


Puw

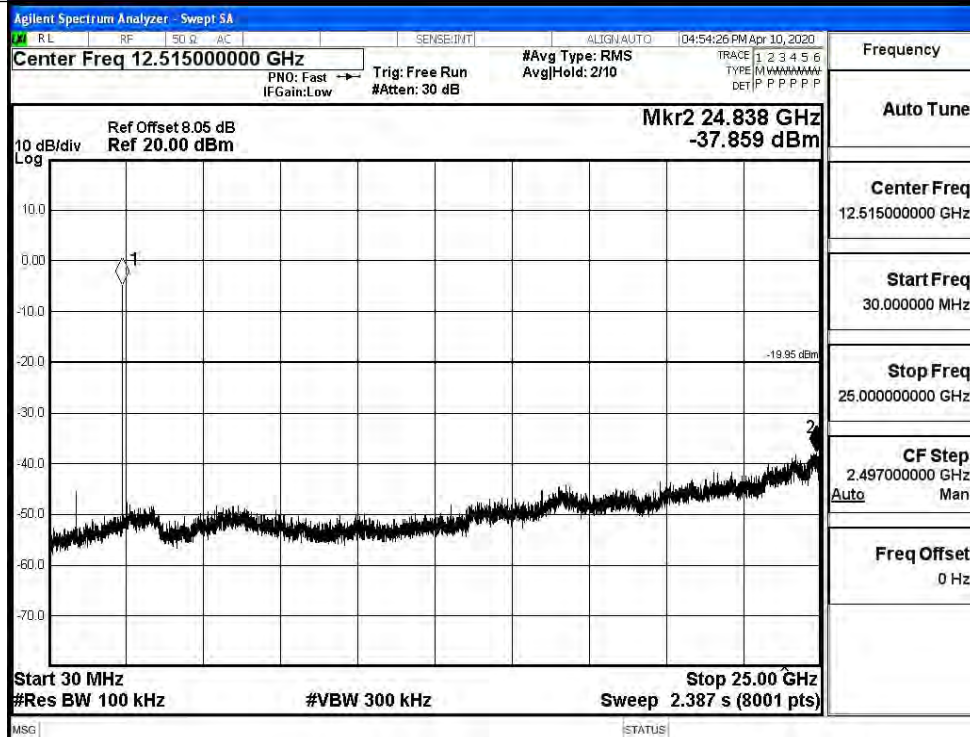


8DPSK_LCH_Graphs

Pref

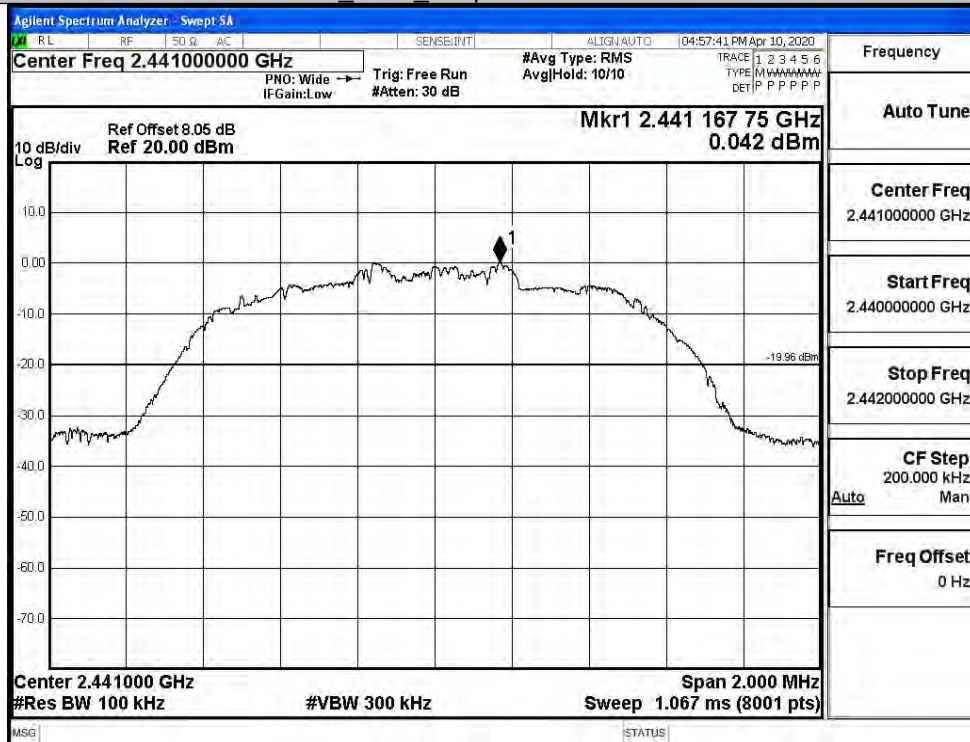


Puw

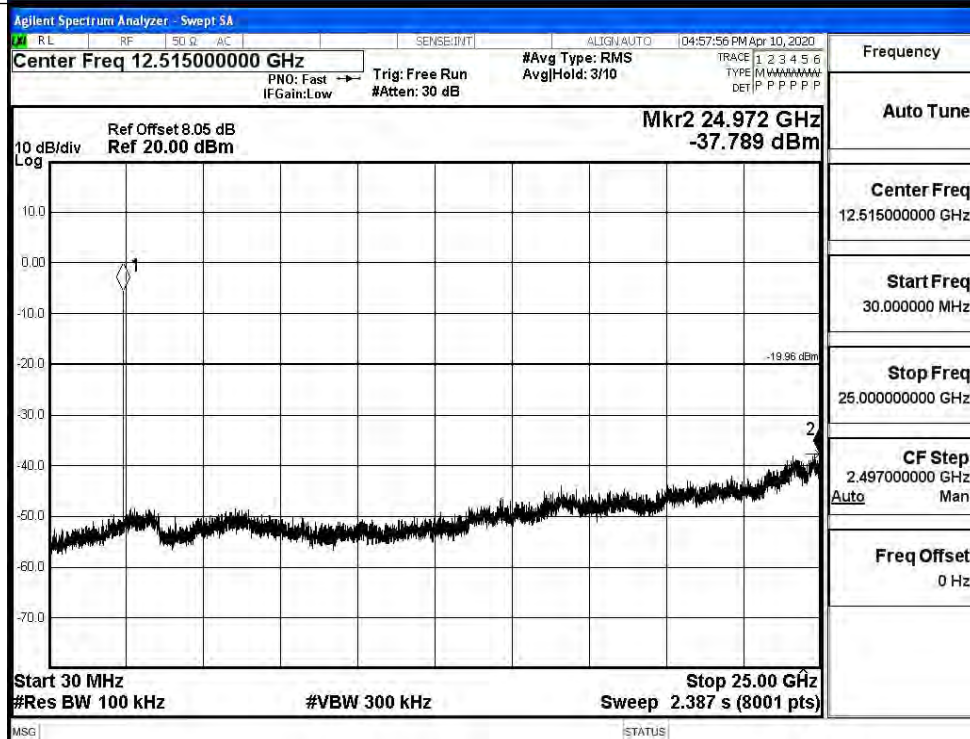


8DPSK_MCH_Graphs

Pref

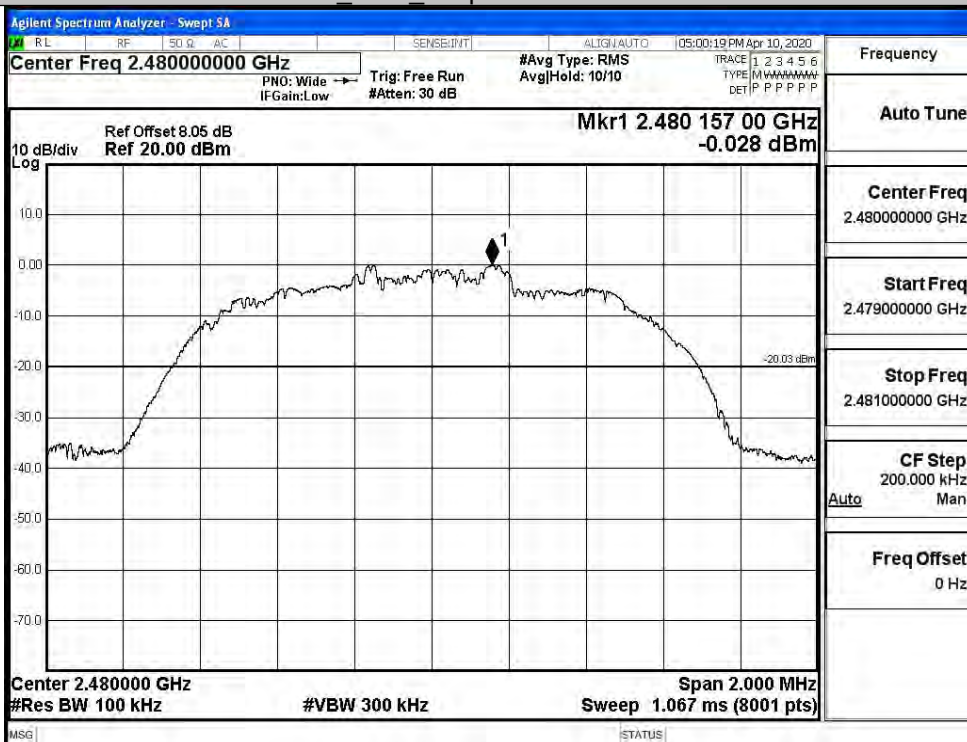


Puw

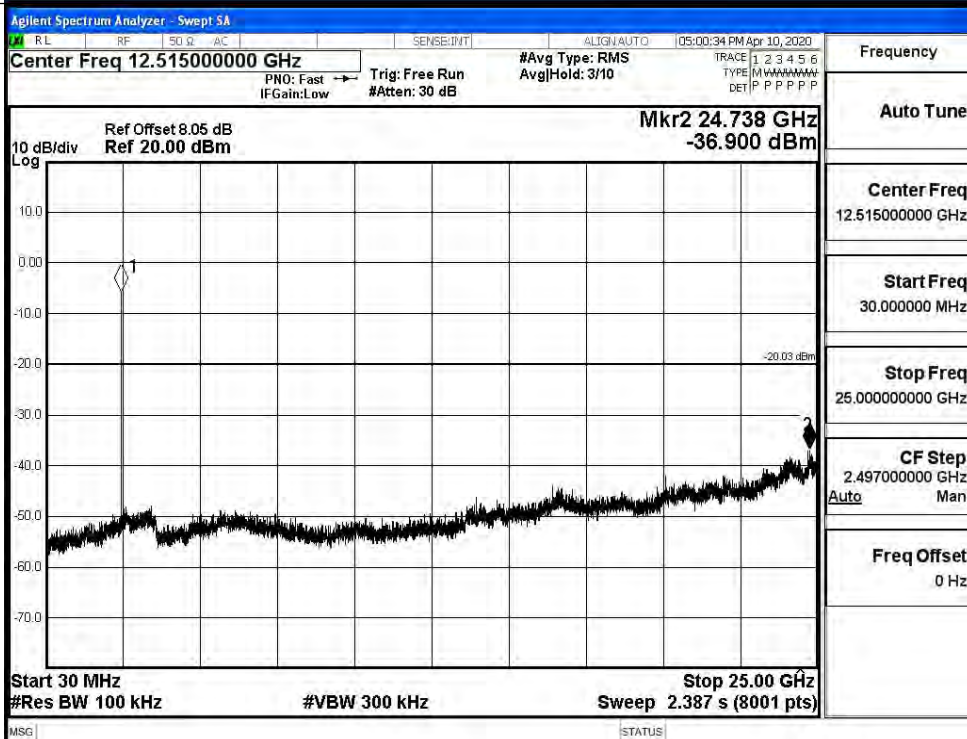


8DPSK_HCH_Graphs

Pref



Puw

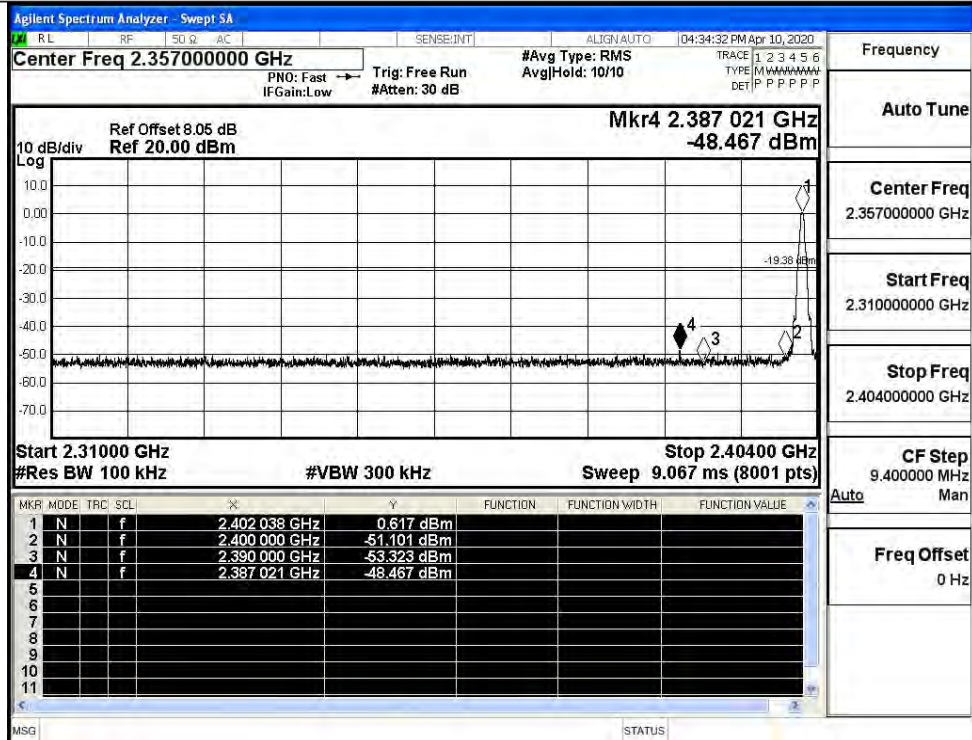


A.7 Band-edge for RF Conducted Emissions

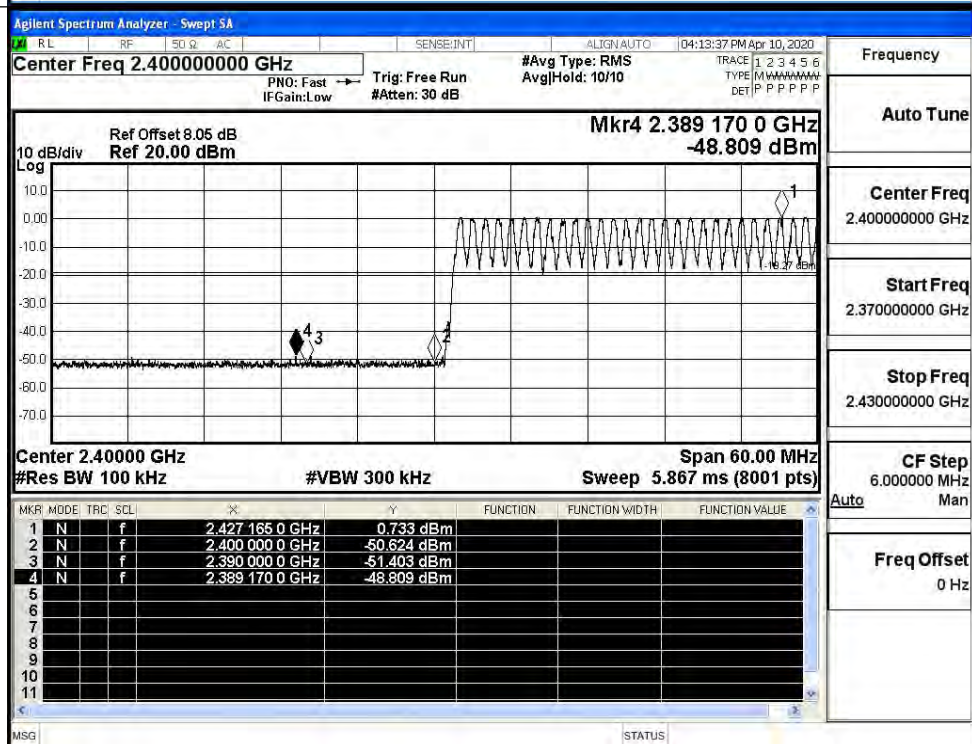
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	0.617	Off	-48.467	-19.38	PASS
			0.733	On	-48.809	-19.27	PASS
	HCH	2480	0.781	Off	-49.005	-19.22	PASS
			0.683	On	-48.680	-19.32	PASS
$\pi/4$ DQPSK	LCH	2402	-0.287	Off	-48.907	-20.29	PASS
			0.123	On	-49.063	-19.88	PASS
	HCH	2480	0.194	Off	-48.701	-19.81	PASS
			0.147	On	-48.254	-19.85	PASS
8DPSK	LCH	2402	0.088	Off	-49.636	-19.91	PASS
			-0.223	On	-48.765	-20.22	PASS
	HCH	2480	-0.181	Off	-49.029	-20.18	PASS
			0.022	On	-47.775	-19.98	PASS

Test Graphs

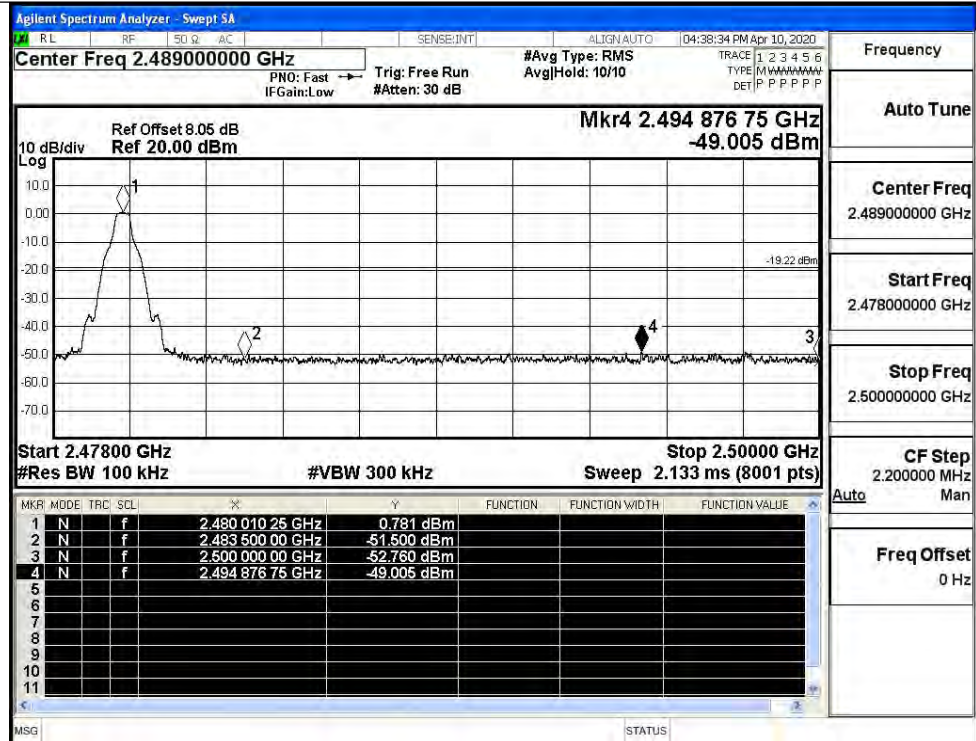
GFSK/LCH/No Hop



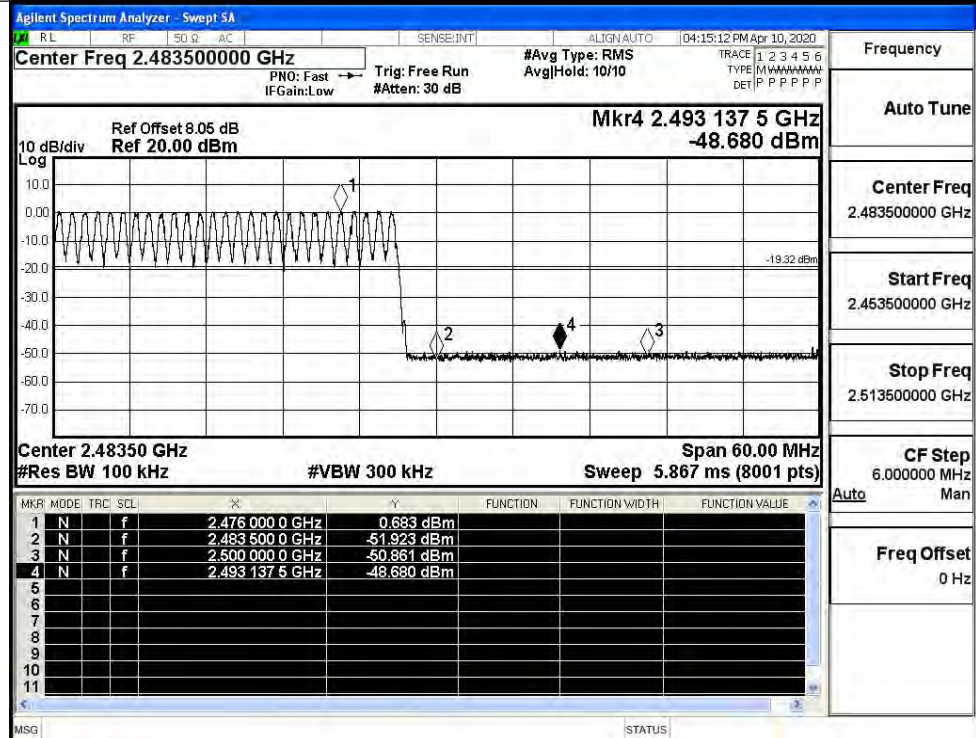
GFSK/LCH/Hop



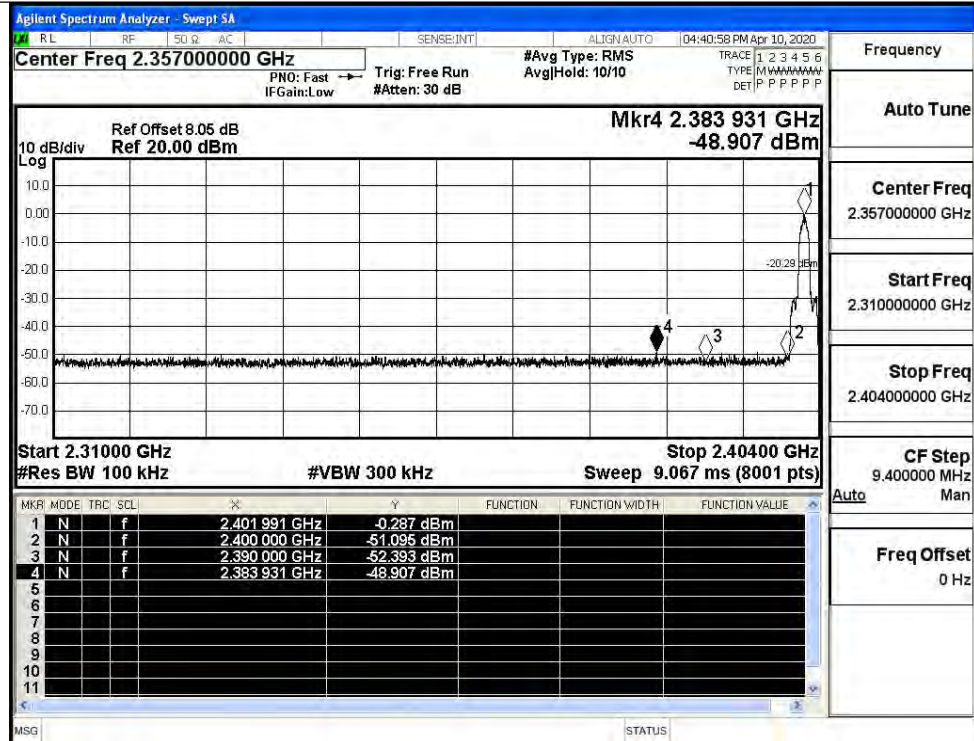
GFSK/HCH/No Hop



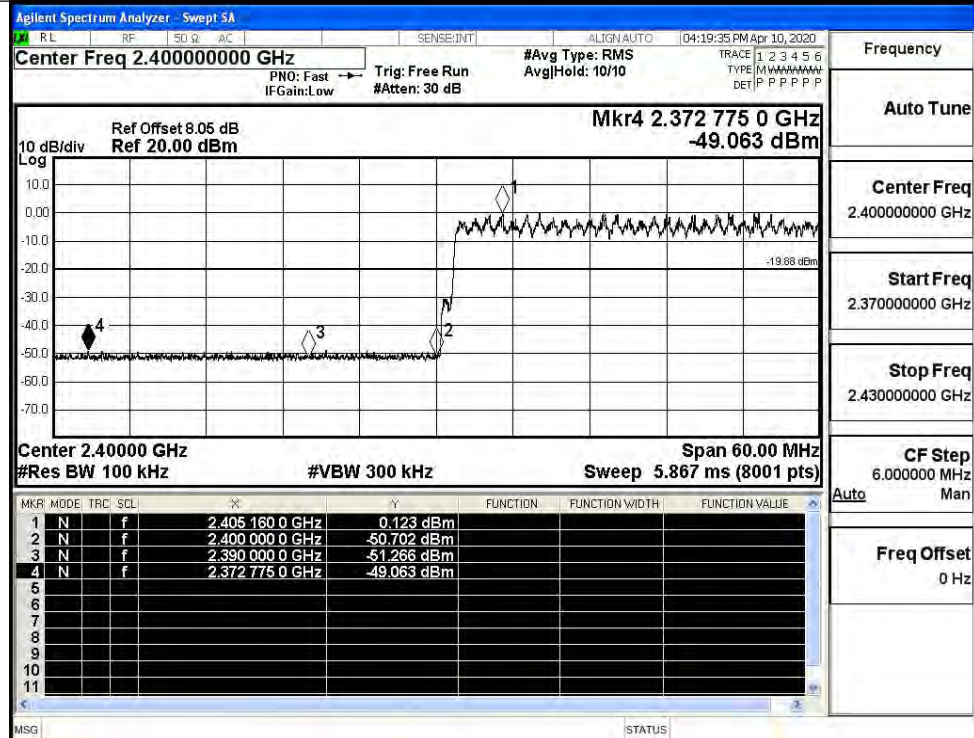
GFSK/HCH/Hop



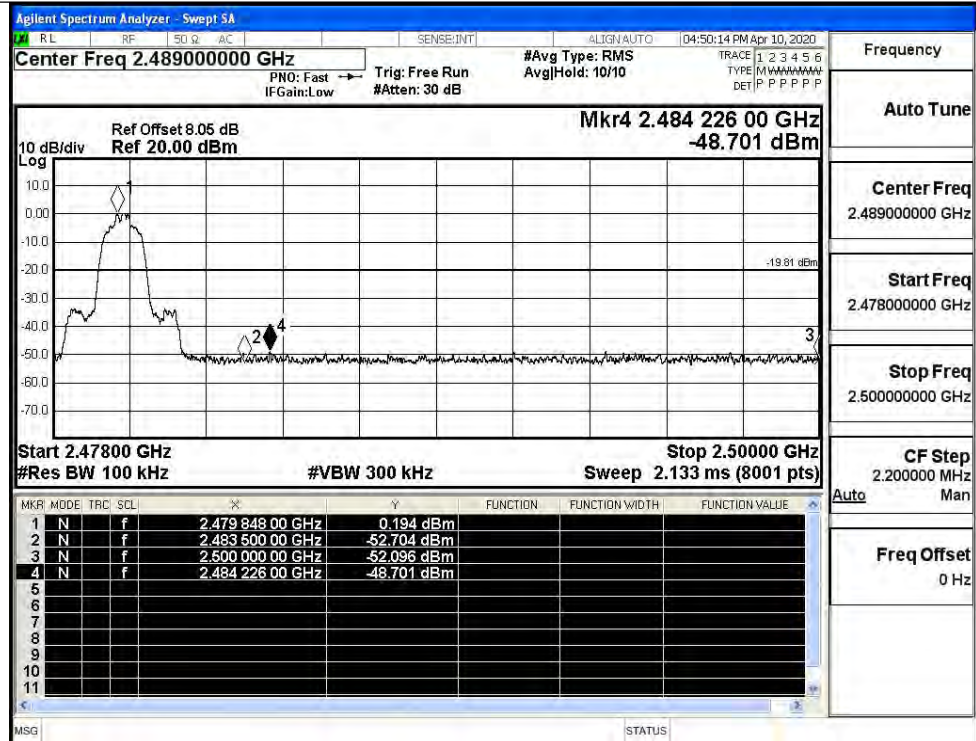
$\pi/4$ DQPSK/LCH/No
Hop



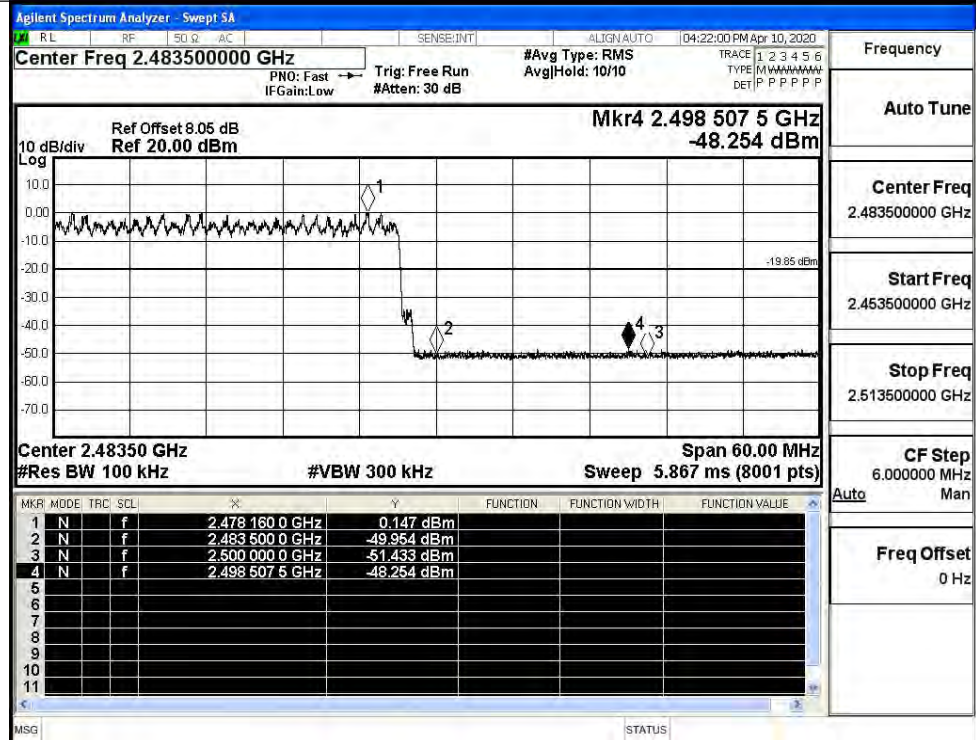
$\pi/4$ DQPSK/LCH/Hop



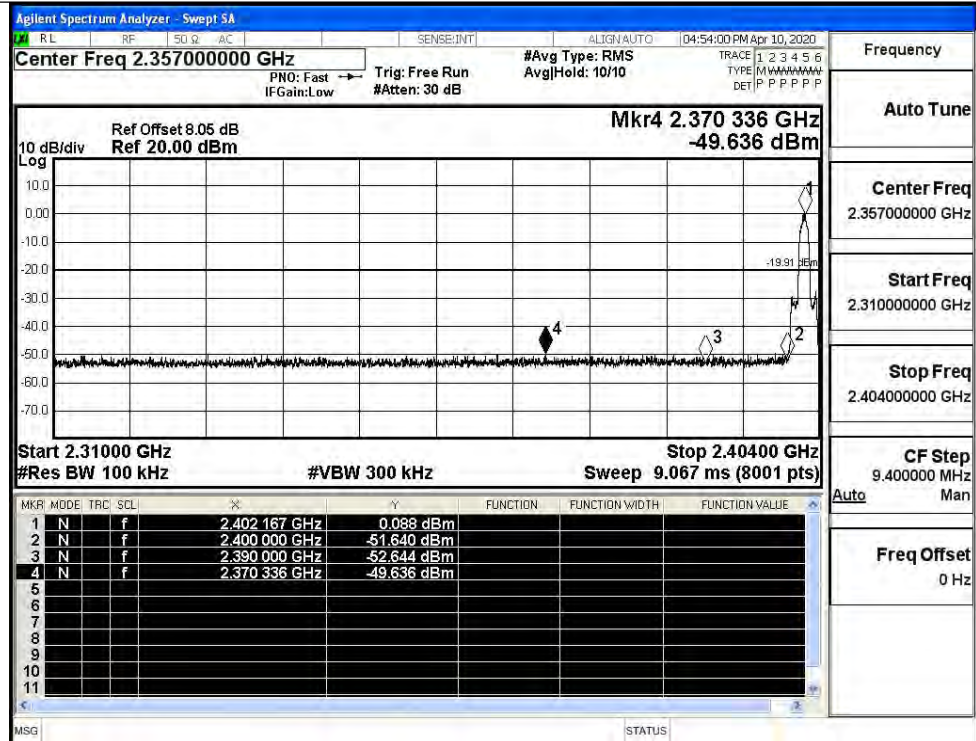
$\pi/4$ DQPSK/HCH/No
Hop



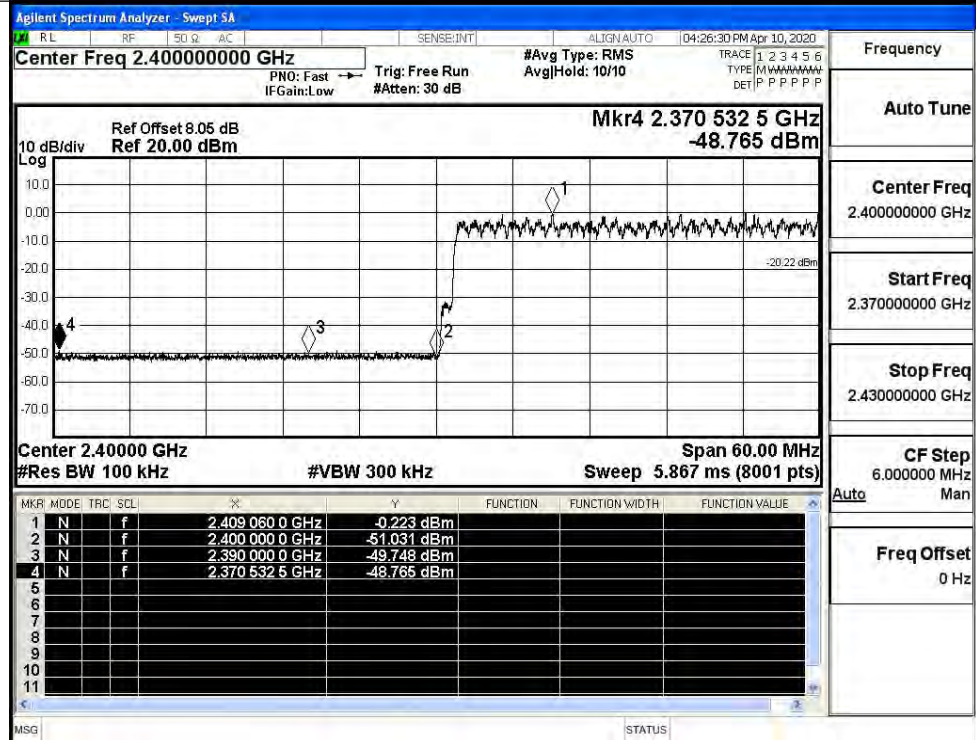
$\pi/4$ DQPSK/HCH/Hop



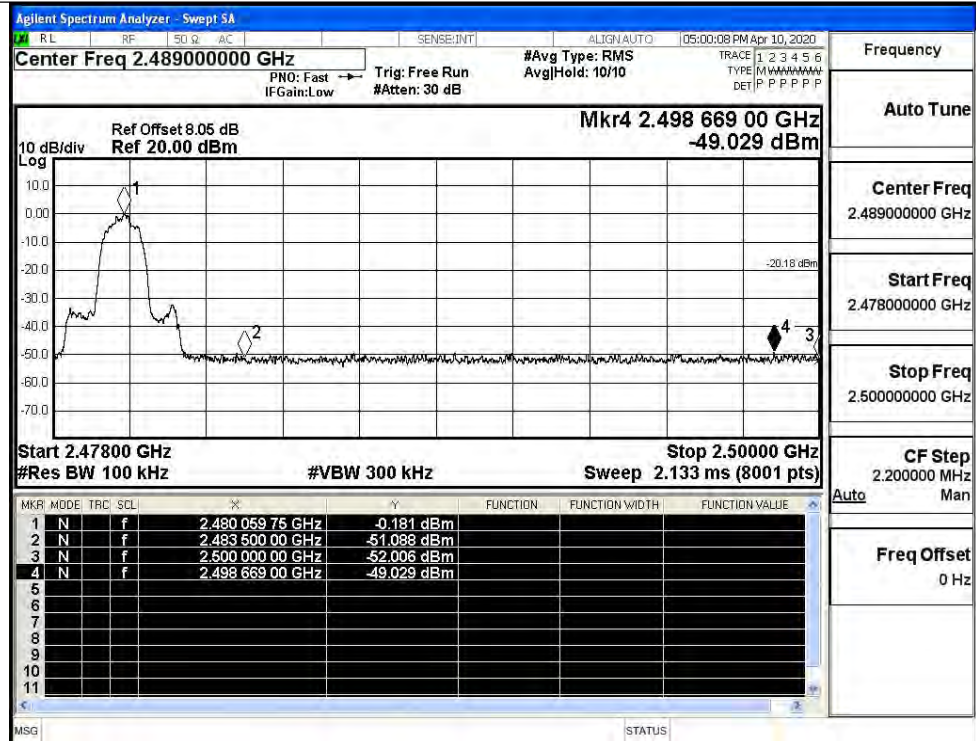
8DPSK/LCH/No Hop



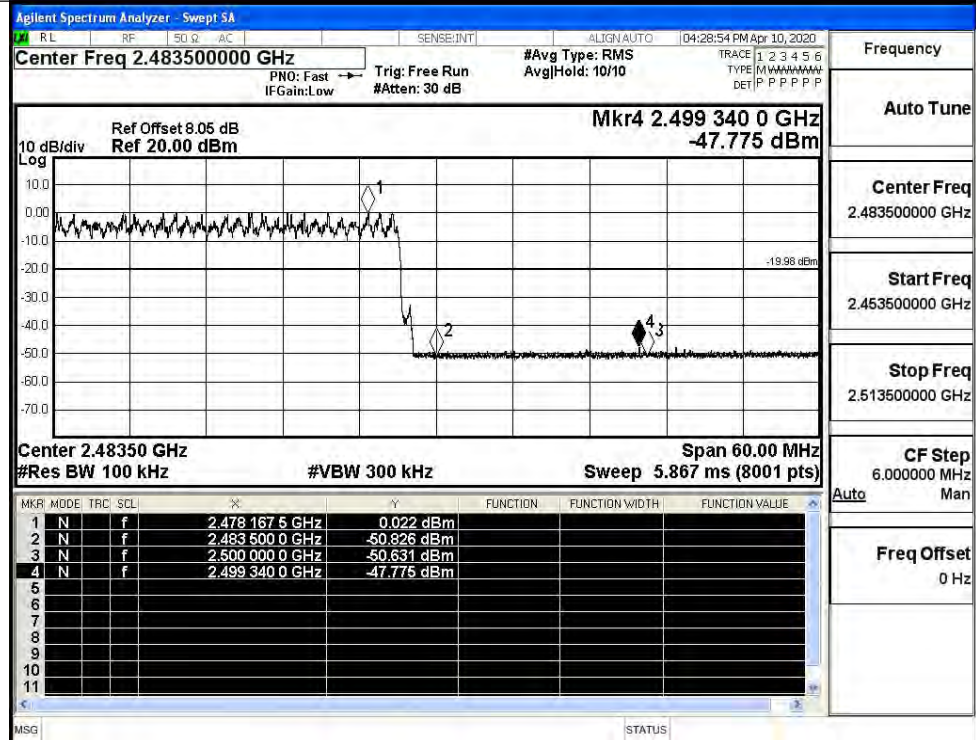
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



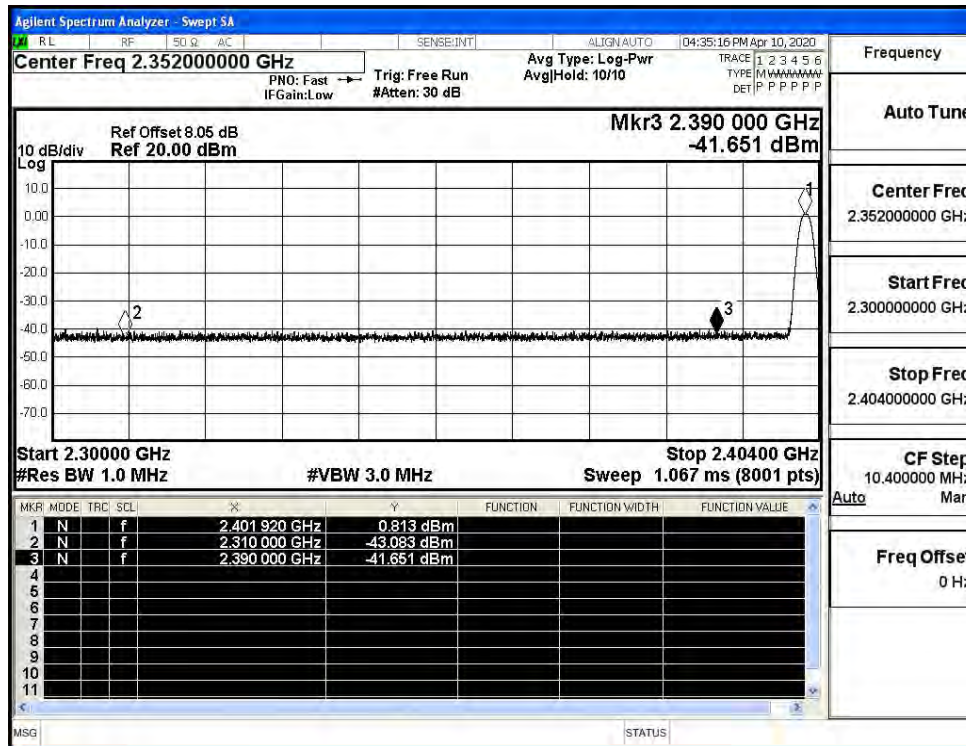
8DPSK/HCH/Hop



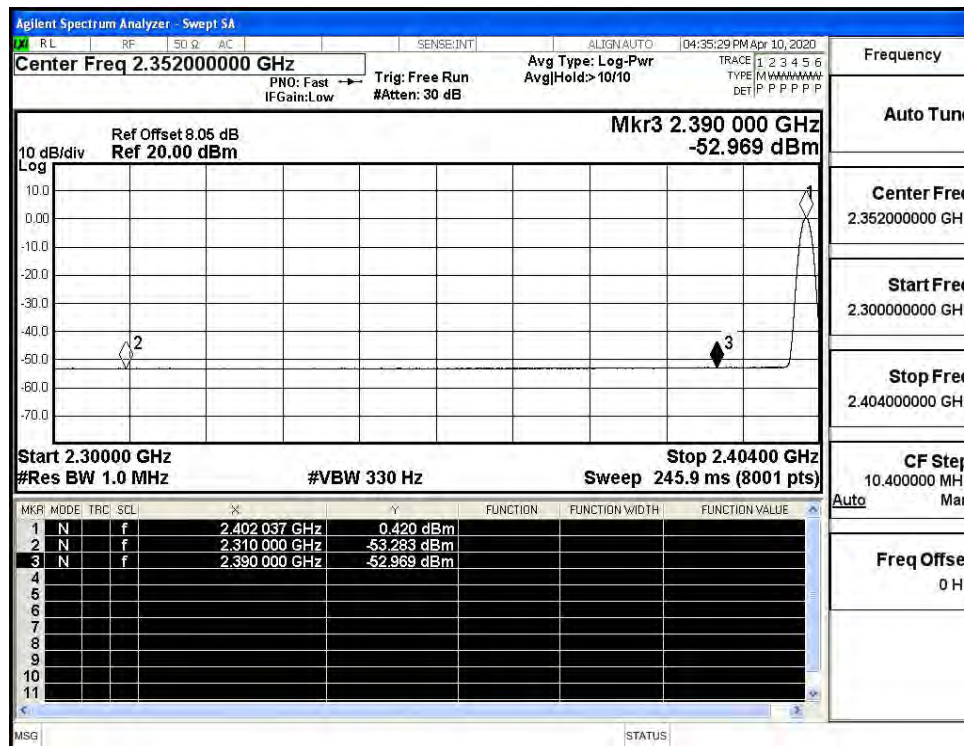
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.08	4	0	56.15	PEAK	74	PASS
	Off	2310.0	-53.28	4	0	45.95	AV	54	PASS
	Off	2390.0	-41.65	4	0	57.58	PEAK	74	PASS
	Off	2390.0	-52.97	4	0	46.26	AV	54	PASS
	Off	2483.5	-41.45	4	0	57.78	PEAK	74	PASS
	Off	2483.5	-52.36	4	0	46.87	AV	54	PASS
	Off	2500.0	-40.23	4	0	59.00	PEAK	74	PASS
	Off	2500.0	-52.27	4	0	46.96	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.14	4	0	56.09	PEAK	74	PASS
	Off	2310.0	-53.19	4	0	46.04	AV	54	PASS
	Off	2390.0	-42.4	4	0	56.83	PEAK	74	PASS
	Off	2390.0	-52.94	4	0	46.29	AV	54	PASS
	Off	2483.5	-40.4	4	0	58.83	PEAK	74	PASS
	Off	2483.5	-52.39	4	0	46.84	AV	54	PASS
	Off	2500.0	-41.67	4	0	57.56	PEAK	74	PASS
	Off	2500.0	-52.25	4	0	46.98	AV	54	PASS
8DPSK	Off	2310.0	-43.62	4	0	55.61	PEAK	74	PASS
	Off	2310.0	-53.17	4	0	46.06	AV	54	PASS
	Off	2390.0	-43.26	4	0	55.97	PEAK	74	PASS
	Off	2390.0	-52.85	4	0	46.38	AV	54	PASS
	Off	2483.5	-41.01	4	0	58.22	PEAK	74	PASS
	Off	2483.5	-52.27	4	0	46.96	AV	54	PASS
	Off	2500.0	-42.06	4	0	57.17	PEAK	74	PASS
	Off	2500.0	-52.26	4	0	46.97	AV	54	PASS

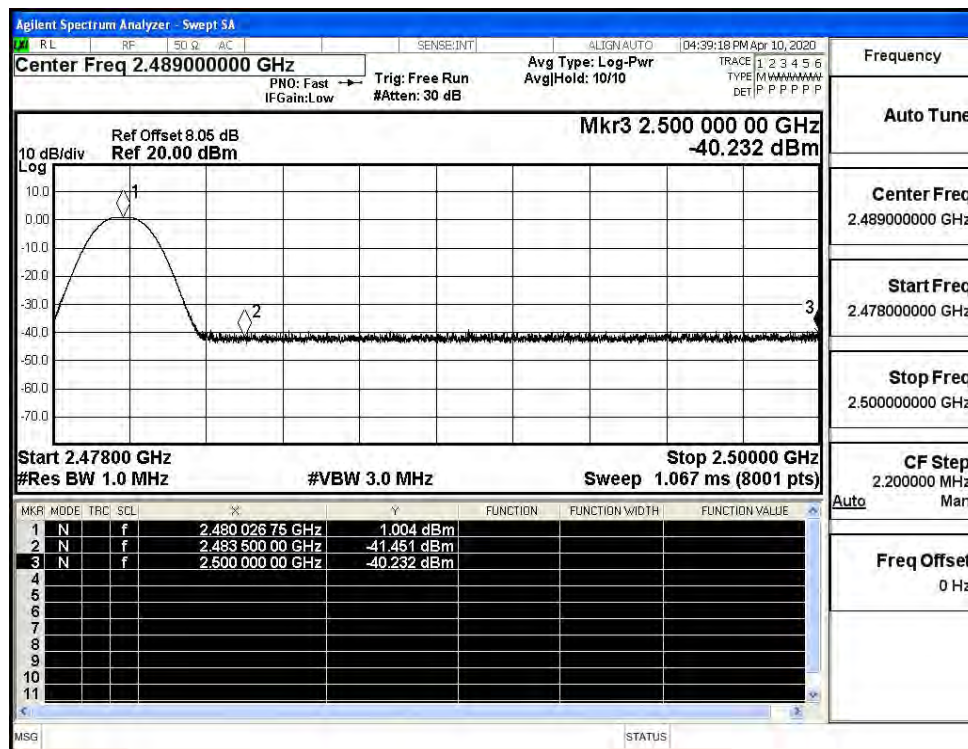
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



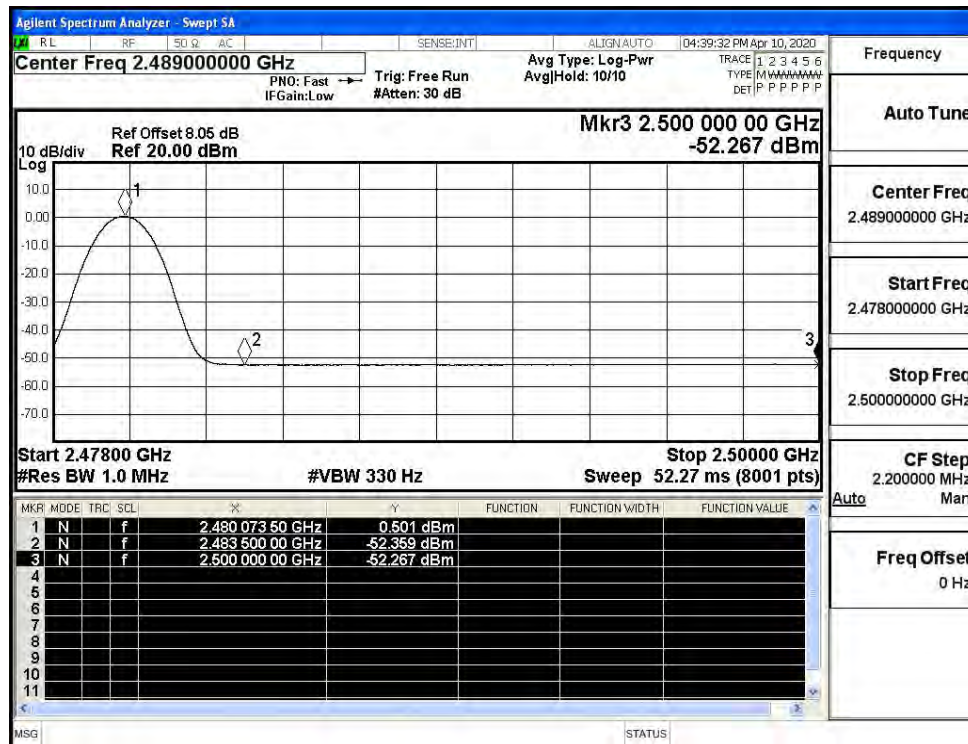
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



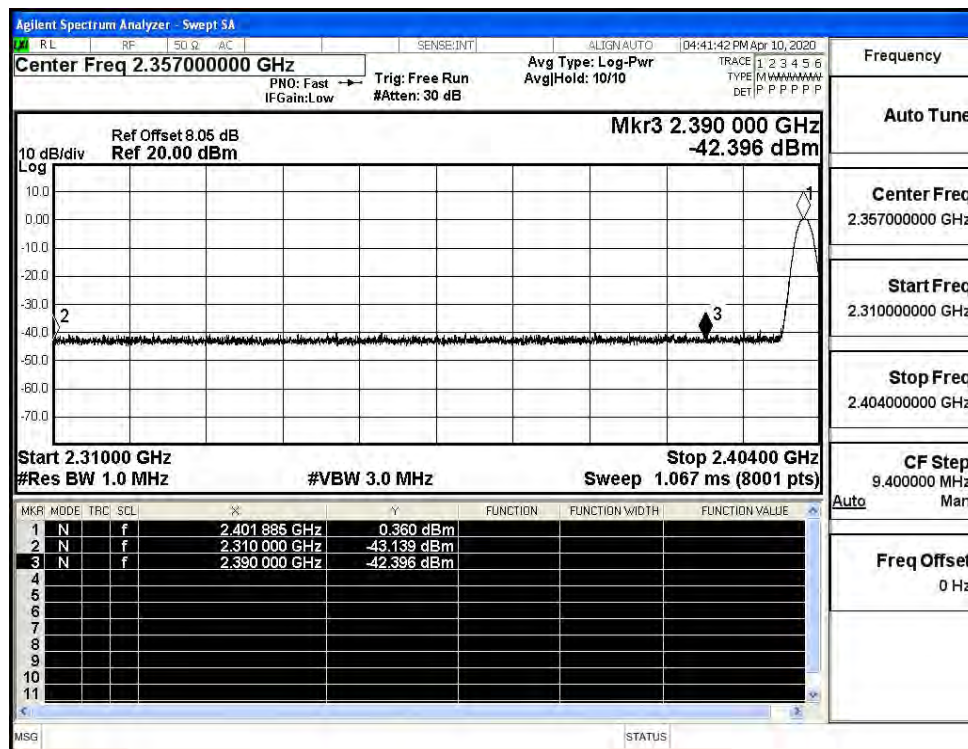
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



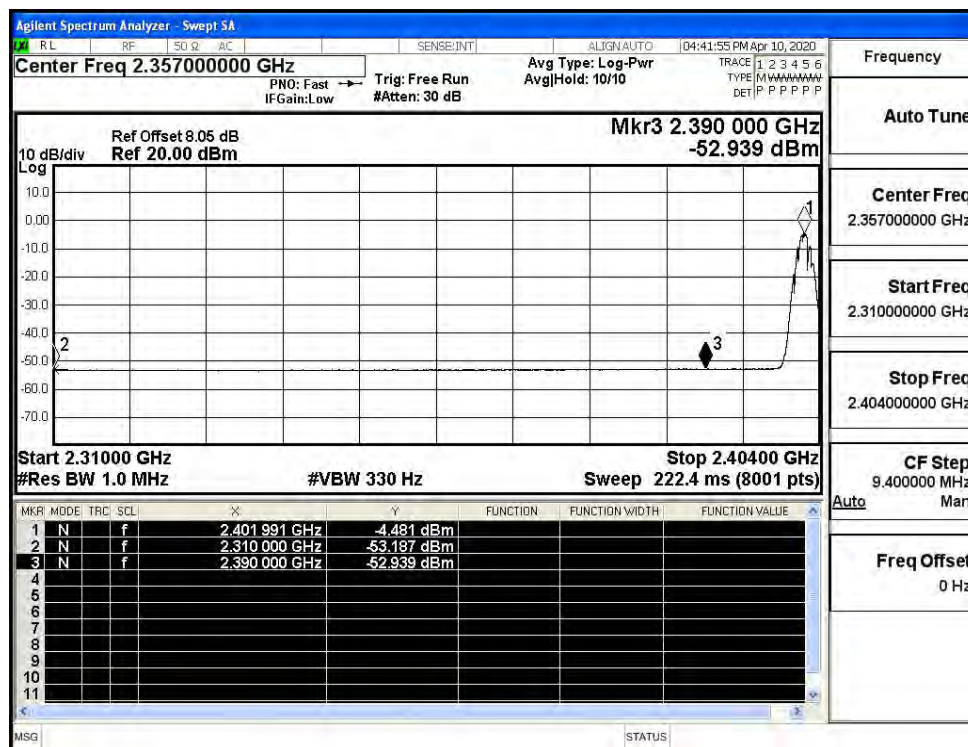
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



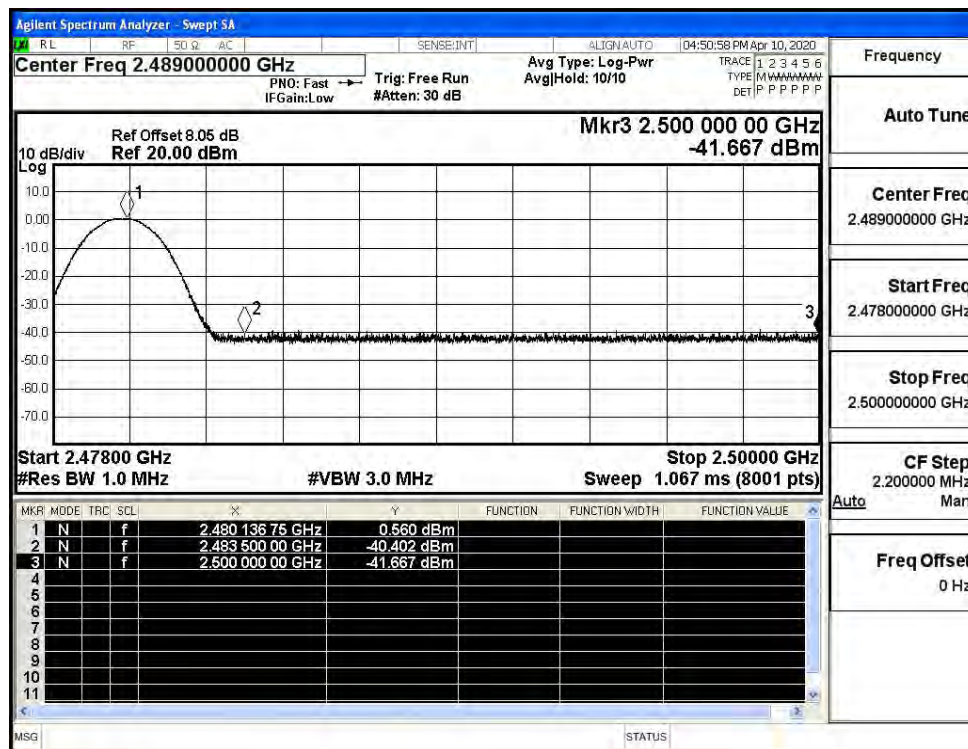
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)



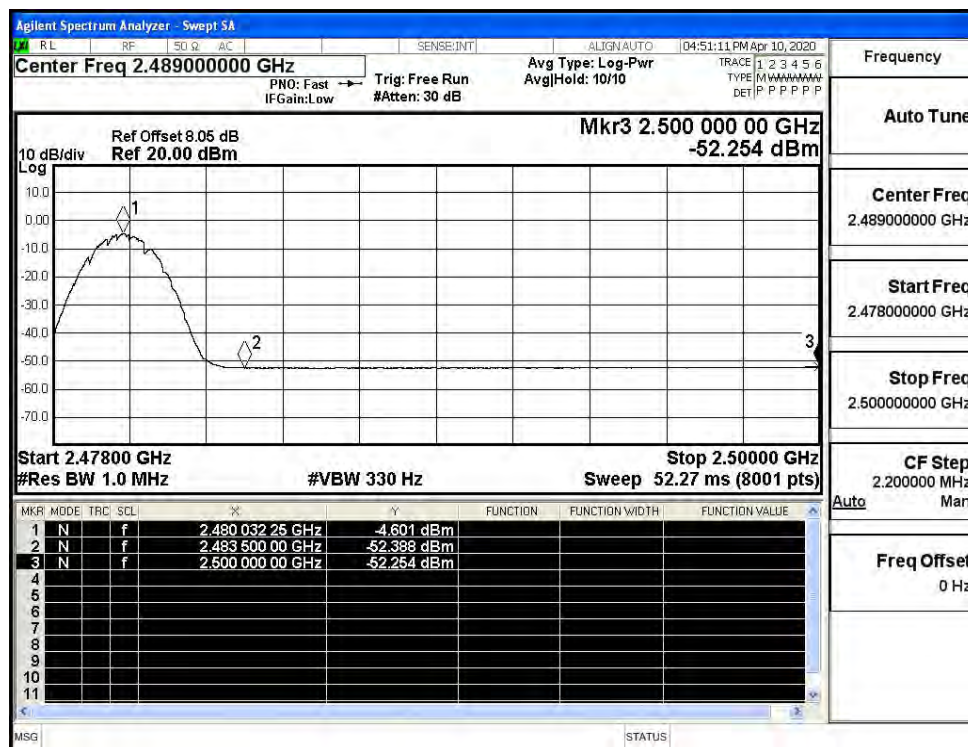
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)



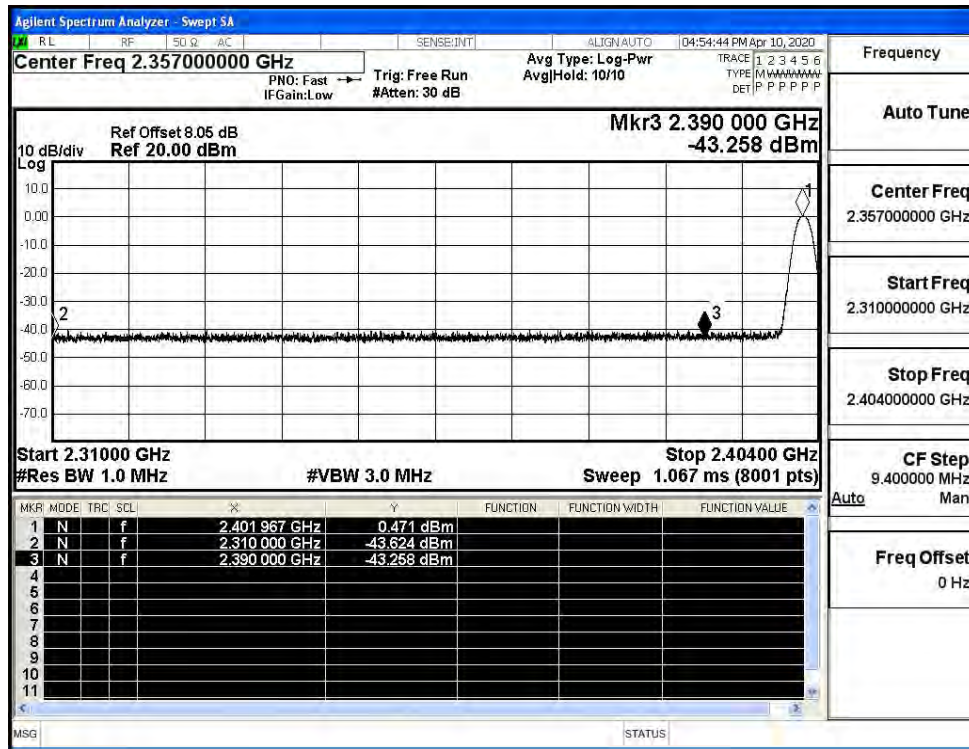
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (High Channel)



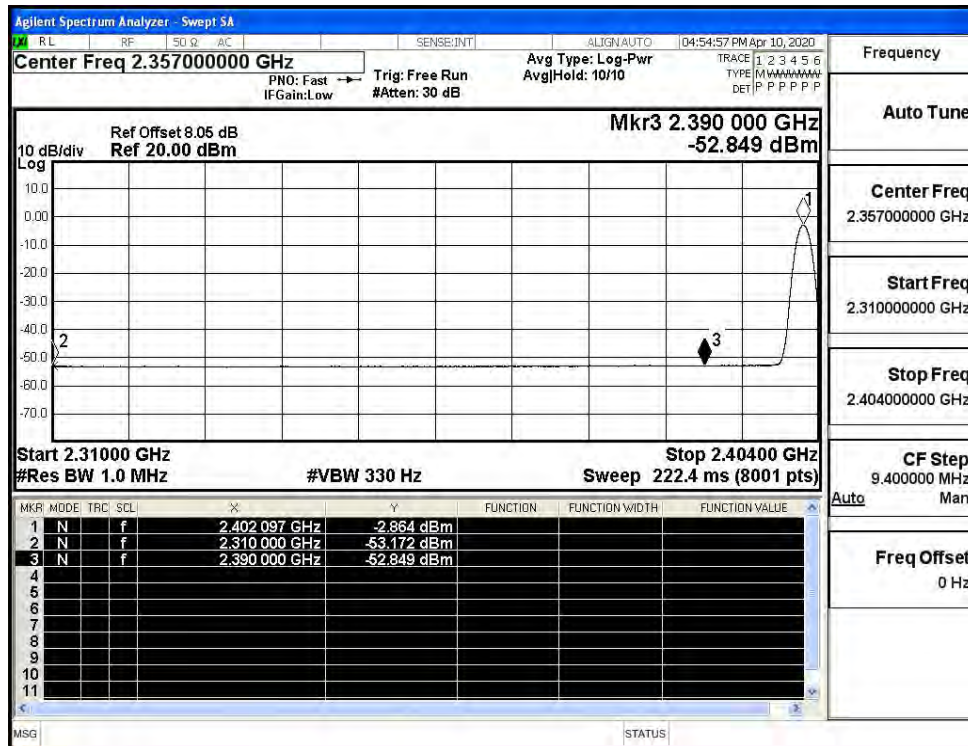
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (High Channel)



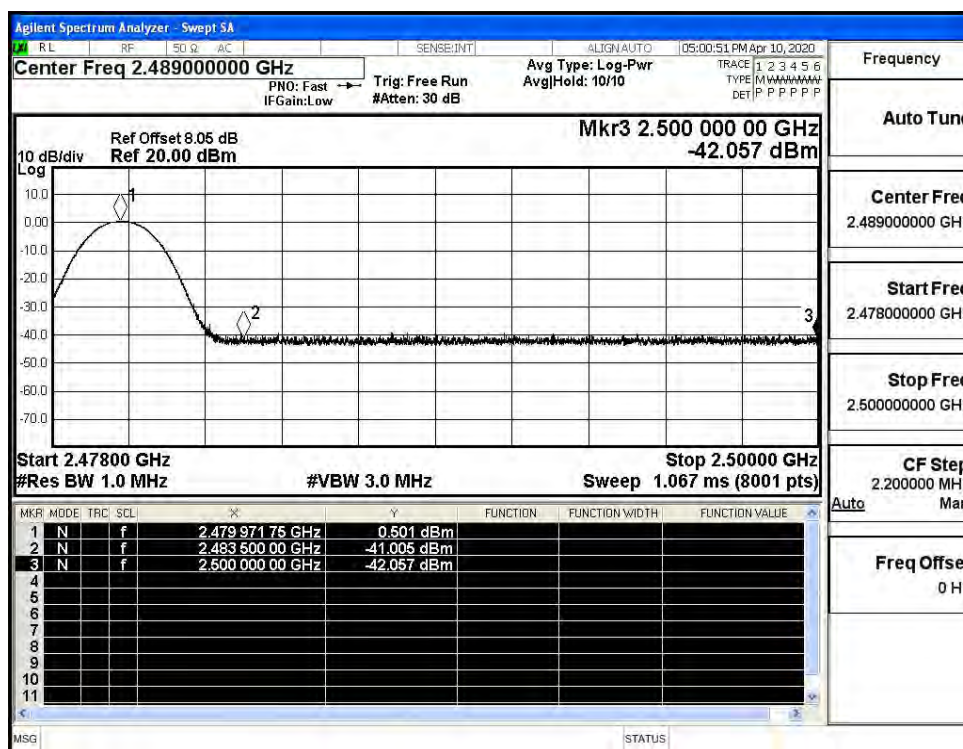
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

