

Appendix A
RF Test Data for BT V5.0(DSS) (Conducted Measurement)
Product Name: Bluetooth Cassette player converter
Trade Mark: Tonivent
Test Model: TON007B

Environmental Conditions

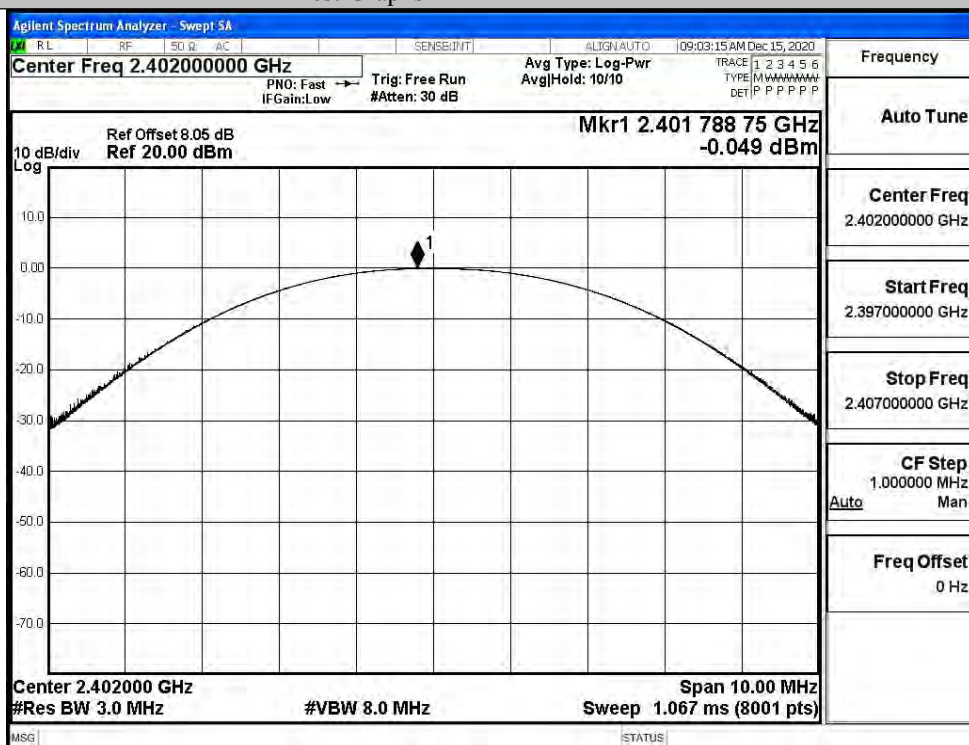
Temperature:	22.3 ° C
Relative Humidity:	53.0%
ATM Pressure:	100.0 kPa
Test Engineer:	Kay Hu
Supervised by:	Li Huan

A.1 Maxmum Conducted Peak Output Power

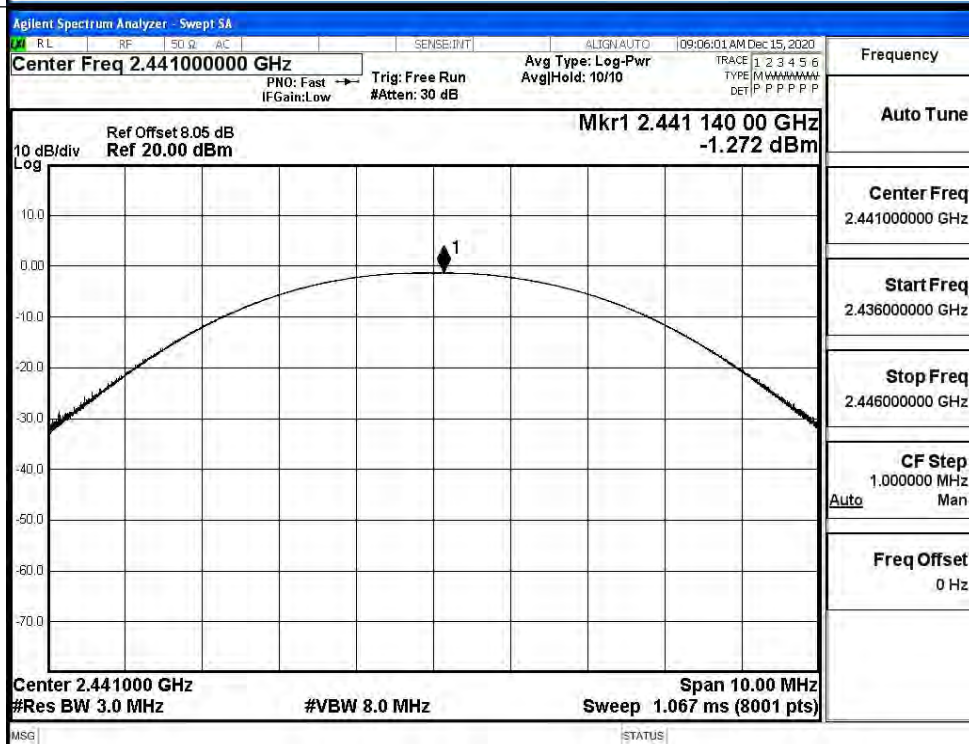
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.049	21	PASS
	MCH	-1.272	21	PASS
	HCH	-2.608	21	PASS
$\pi/4$ DQPSK	LCH	2.064	21	PASS
	MCH	0.868	21	PASS
	HCH	-0.366	21	PASS
8DPSK	LCH	2.691	21	PASS
	MCH	1.578	21	PASS
	HCH	0.282	21	PASS

Test Graphs

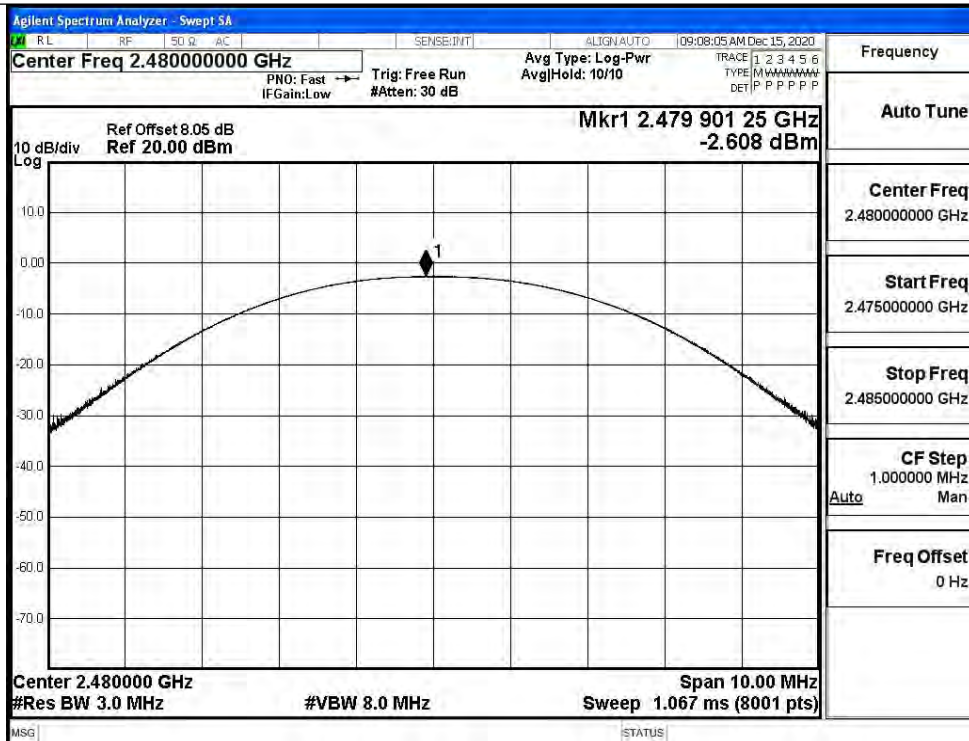
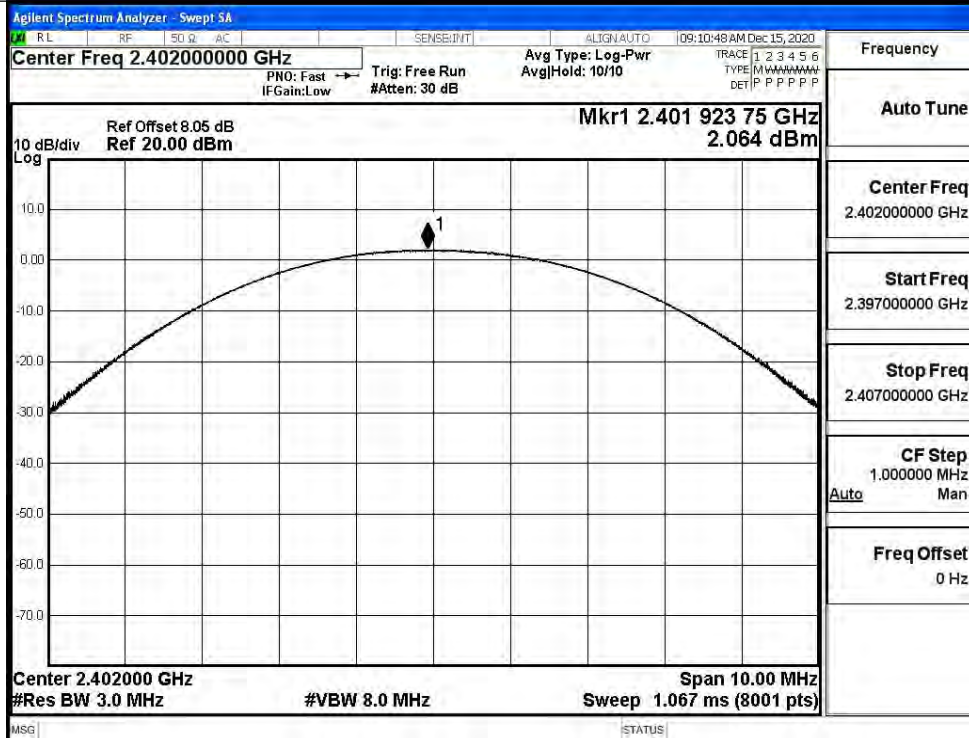
GFSK/LCH

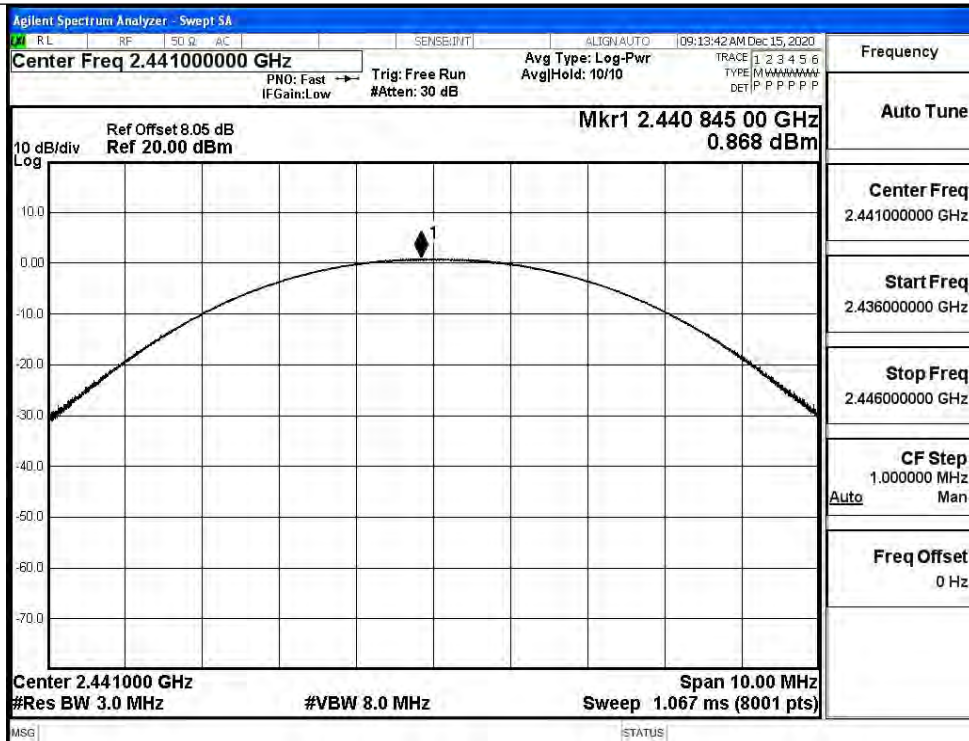
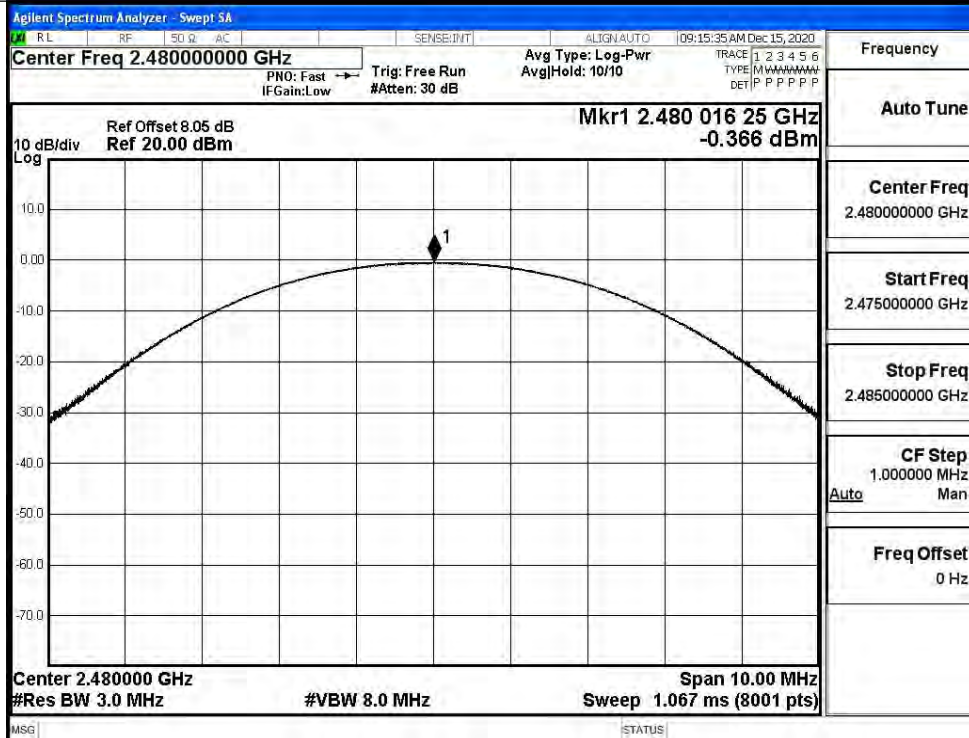


GFSK/MCH

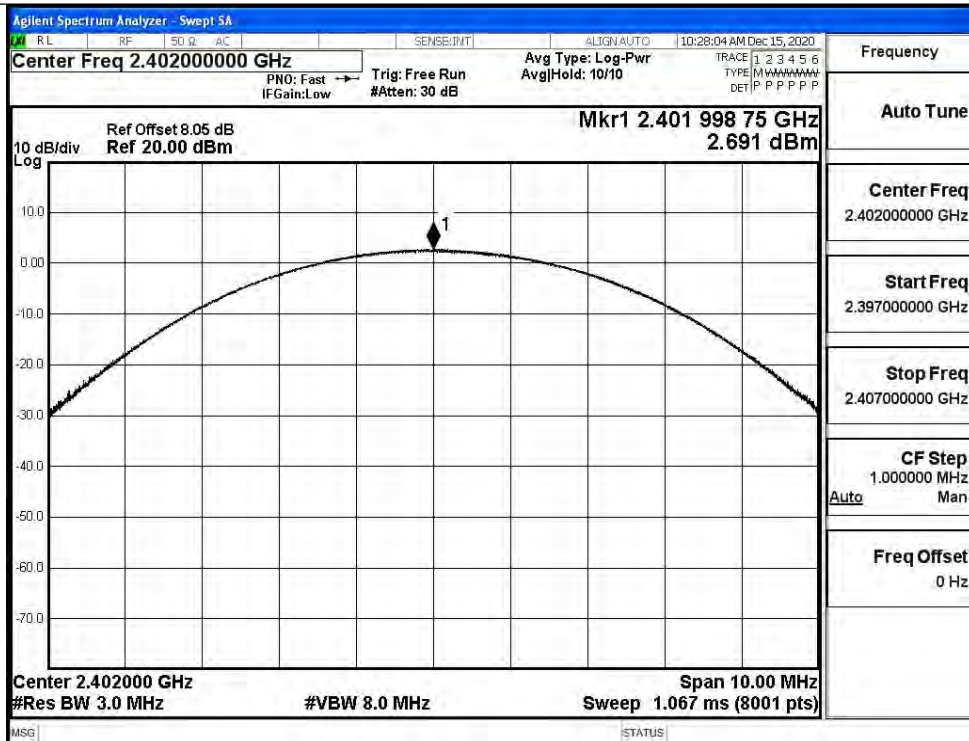


GFSK/HCH

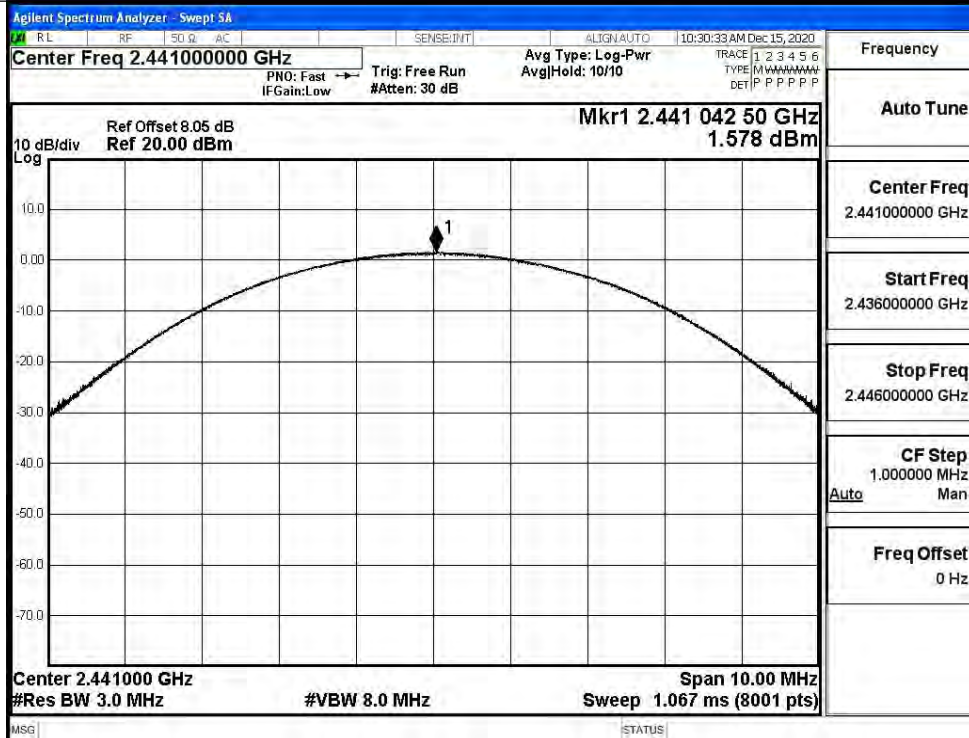
 $\pi/4$ DQPSK/LCH

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

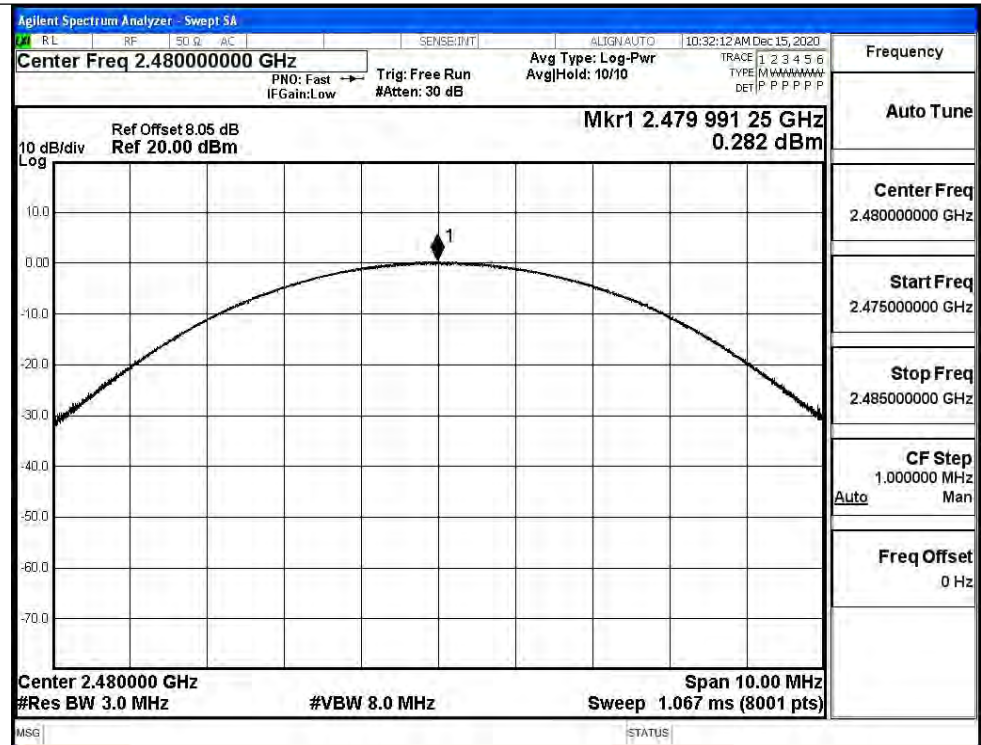
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

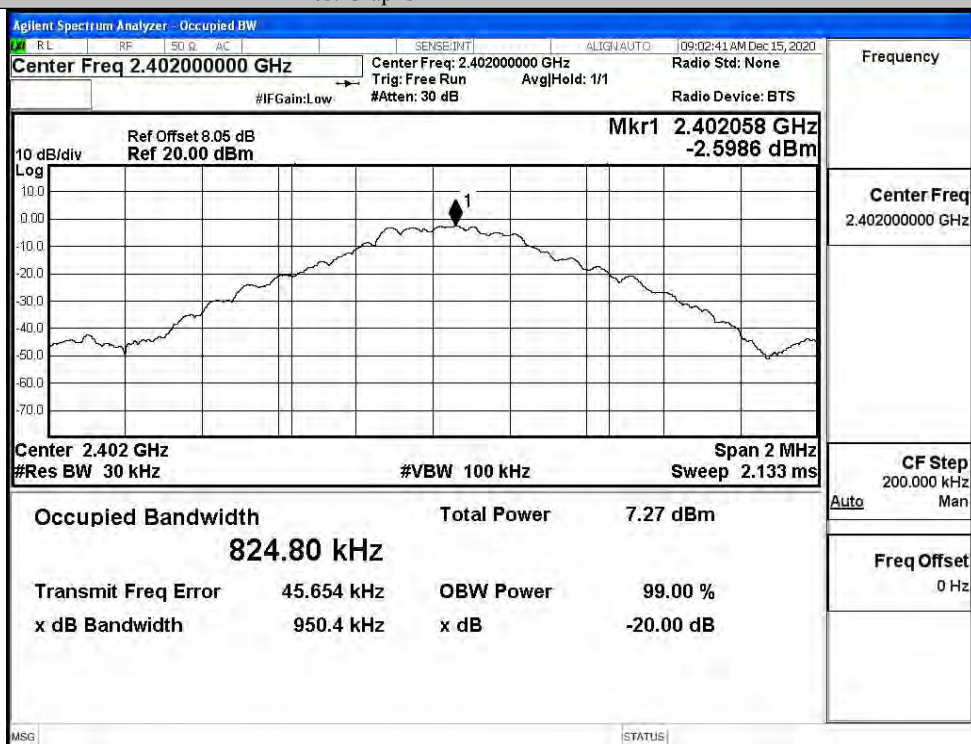


A.2 20dB Bandwidth

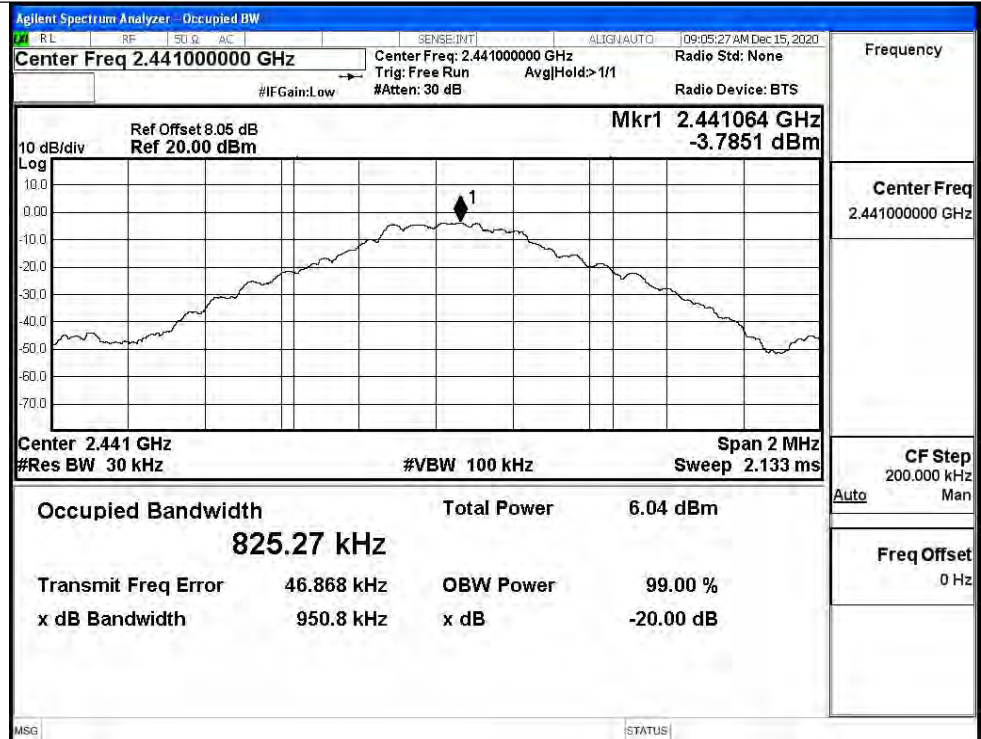
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9504	Not Specified	PASS
	MCH	0.9508	Not Specified	PASS
	HCH	0.9490	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.312	Not Specified	PASS
	MCH	1.313	Not Specified	PASS
	HCH	1.312	Not Specified	PASS
8DPSK	LCH	1.294	Not Specified	PASS
	MCH	1.296	Not Specified	PASS
	HCH	1.296	Not Specified	PASS

Test Graphs

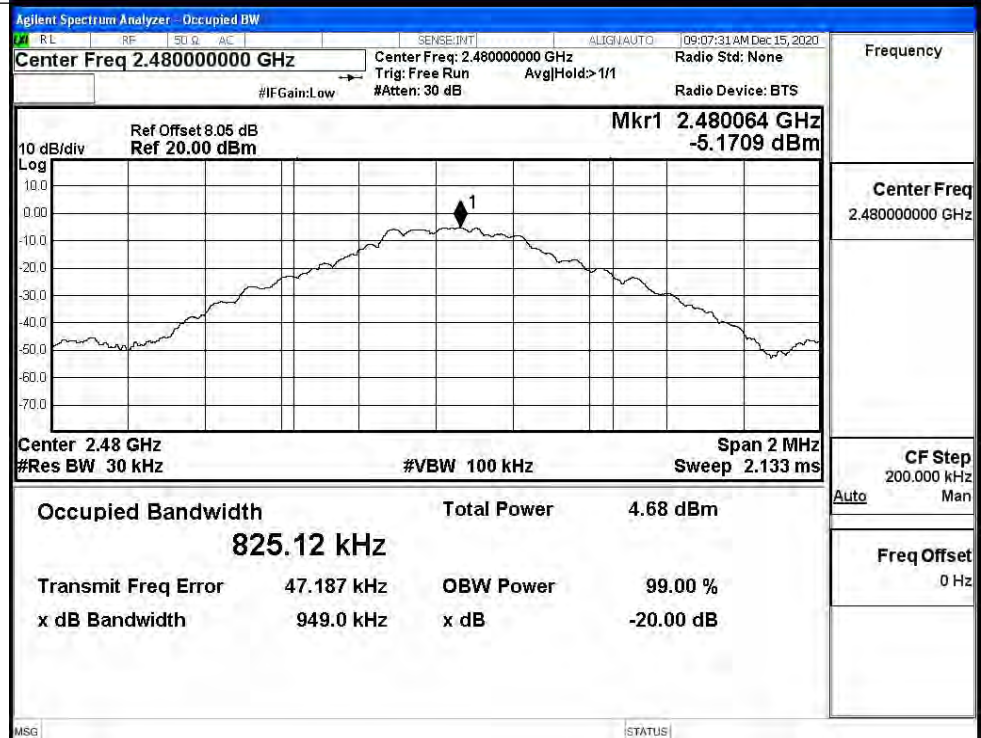
GFSK/LCH

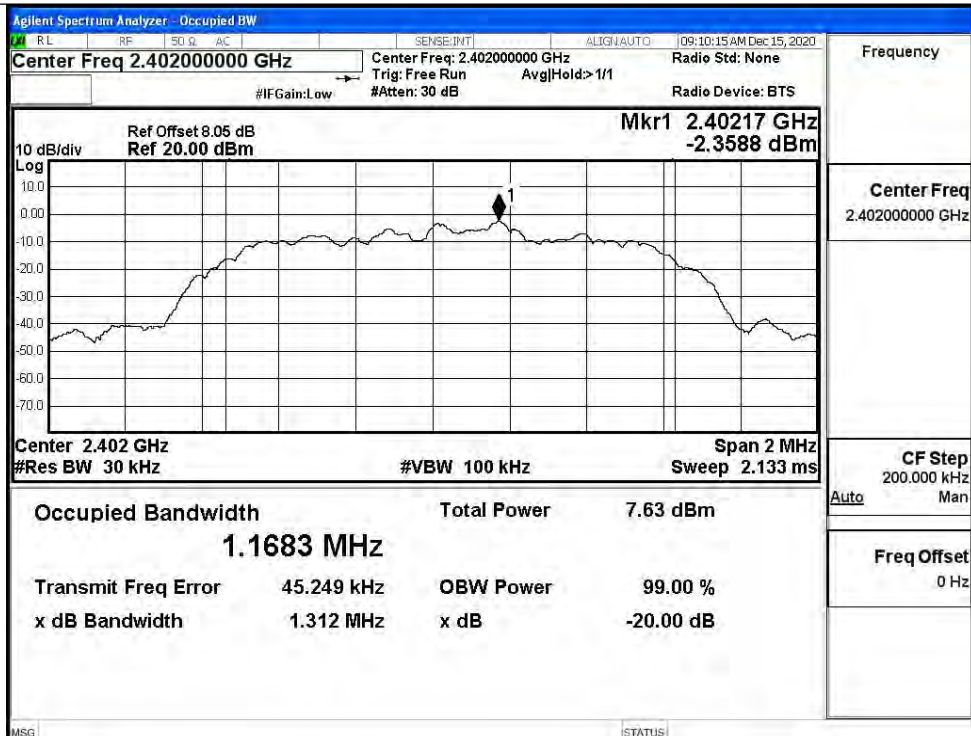
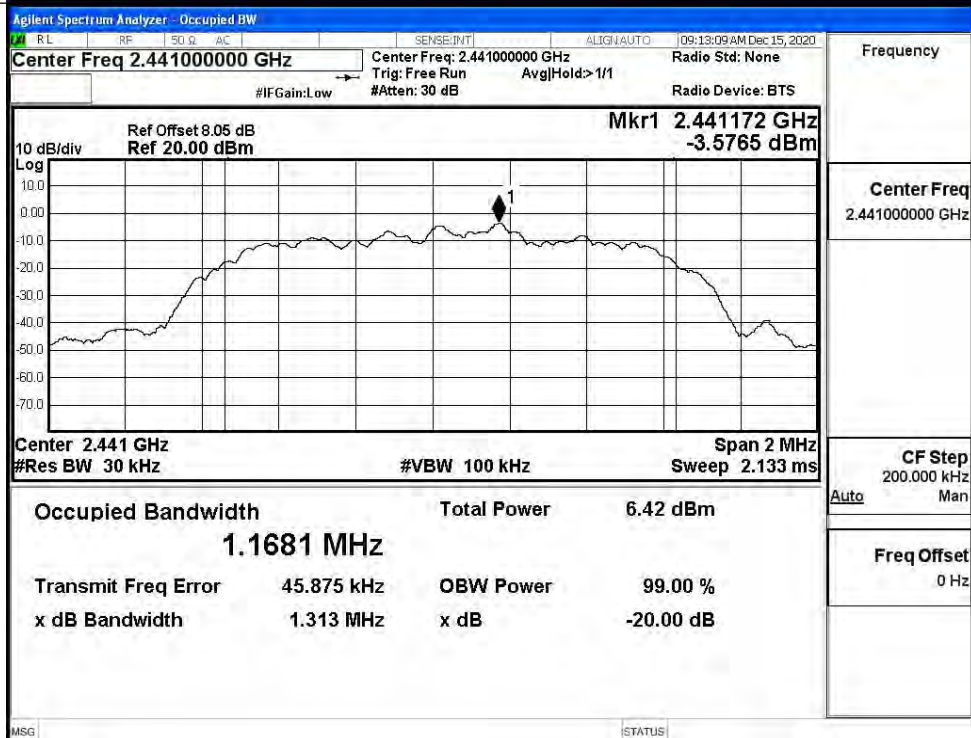


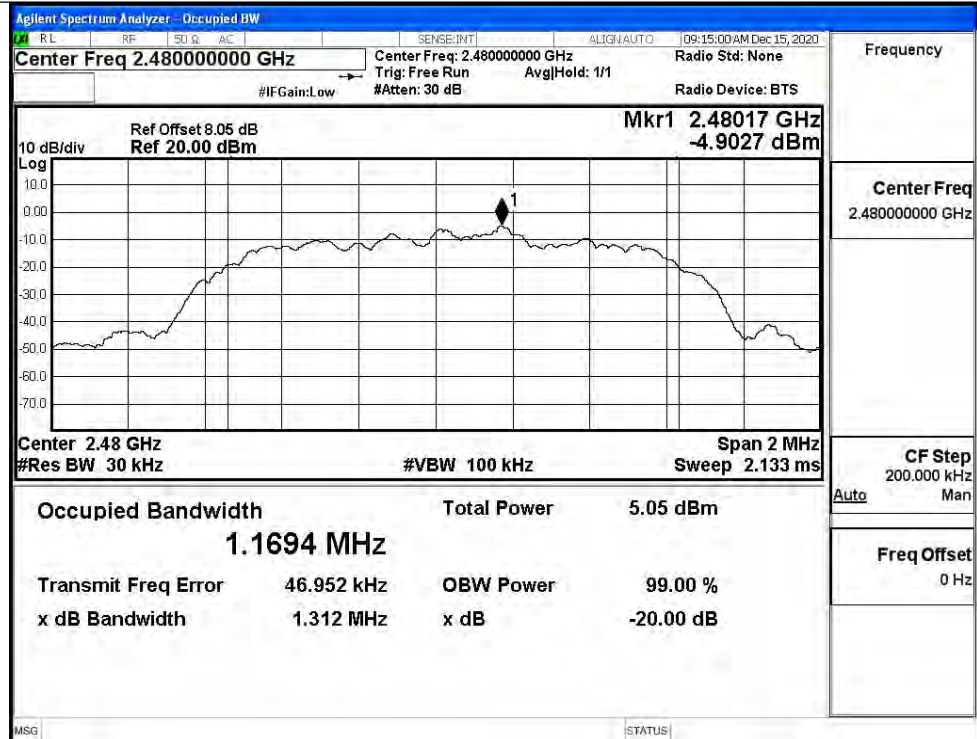
GFSK/MCH



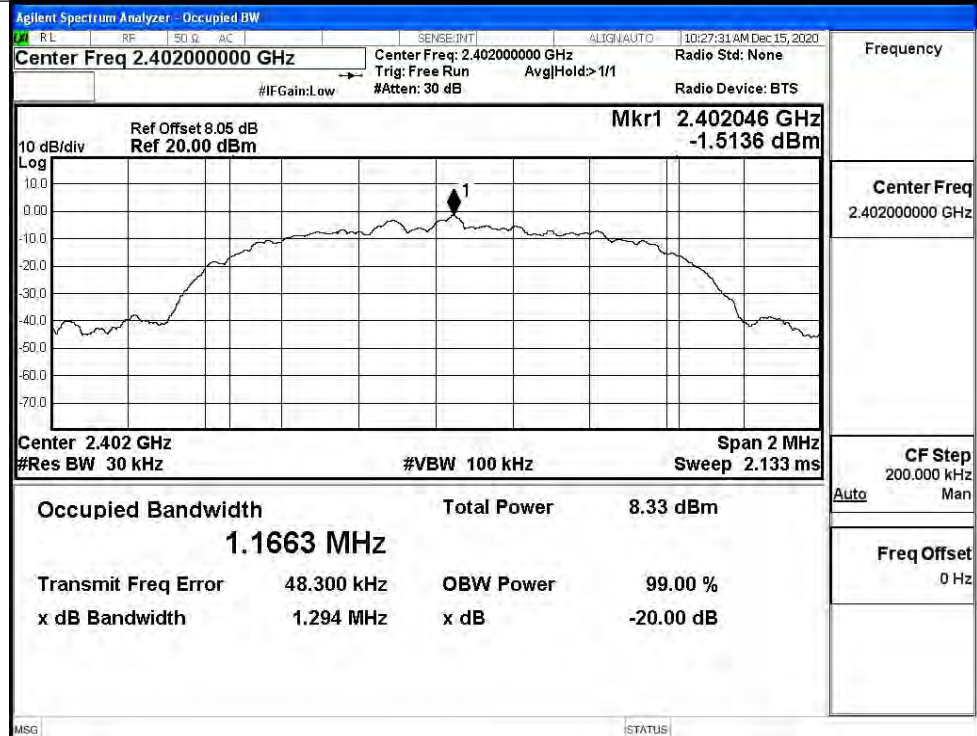
GFSK/HCH



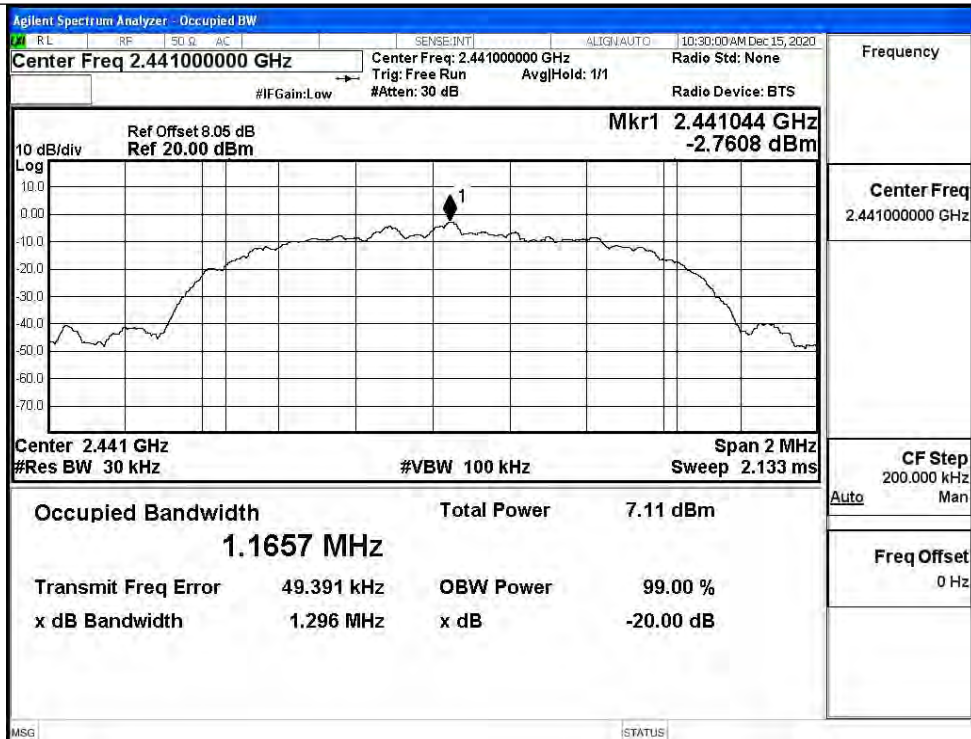
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

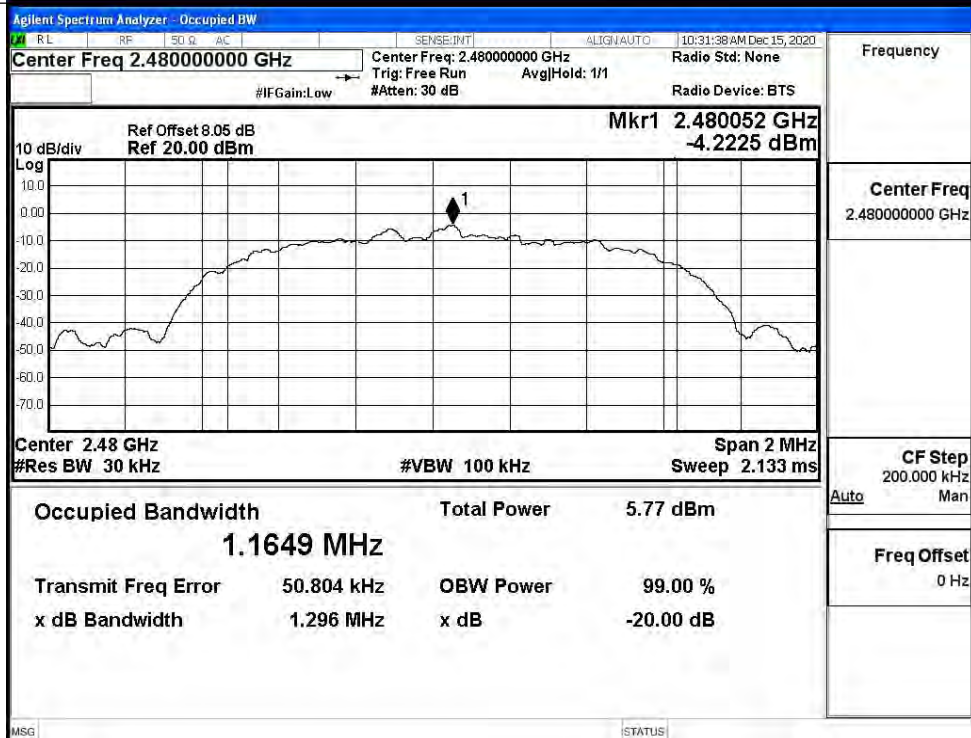
8DPSK/LCH



8DPSK/MCH



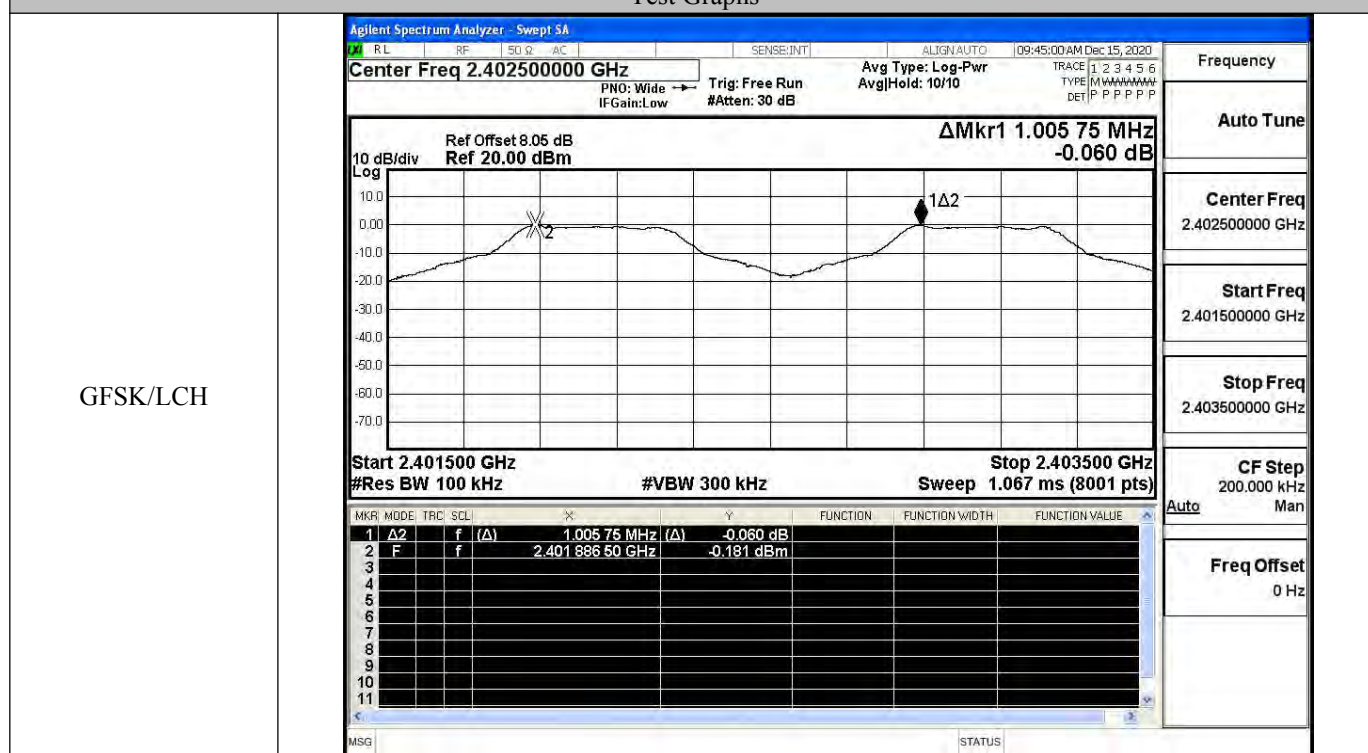
8DPSK/HCH



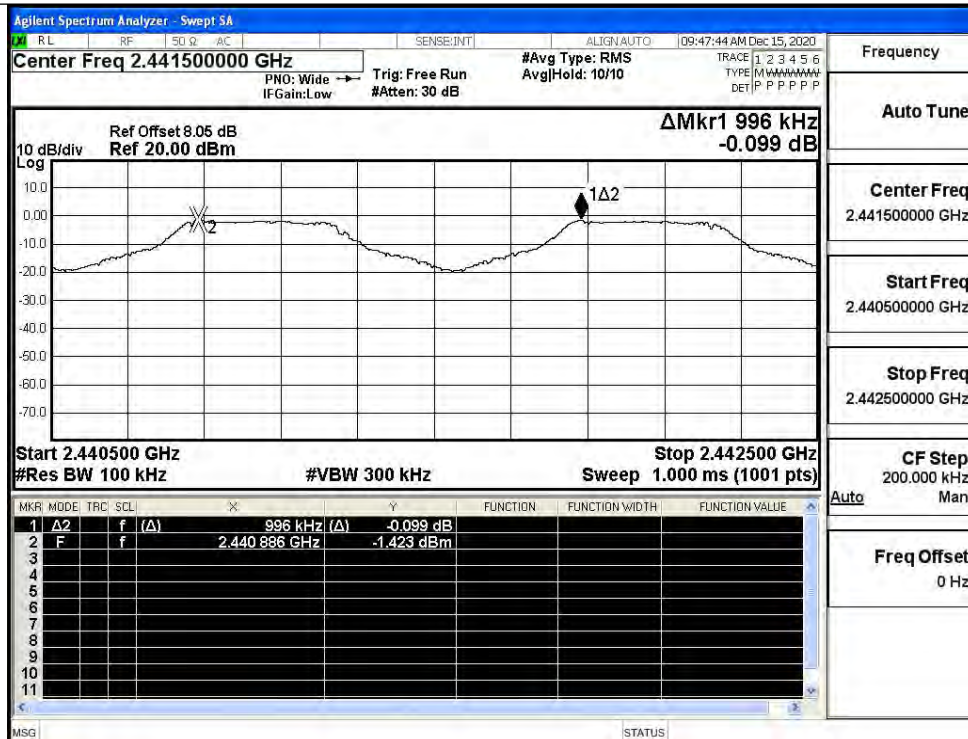
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.006	0.634	PASS
	MCH	0.996	0.634	PASS
	HCH	1.006	0.633	PASS
$\pi/4$ DQPSK	LCH	1.282	0.875	PASS
	MCH	1.000	0.875	PASS
	HCH	1.004	0.875	PASS
8DPSK	LCH	1.004	0.863	PASS
	MCH	0.998	0.864	PASS
	HCH	0.998	0.864	PASS

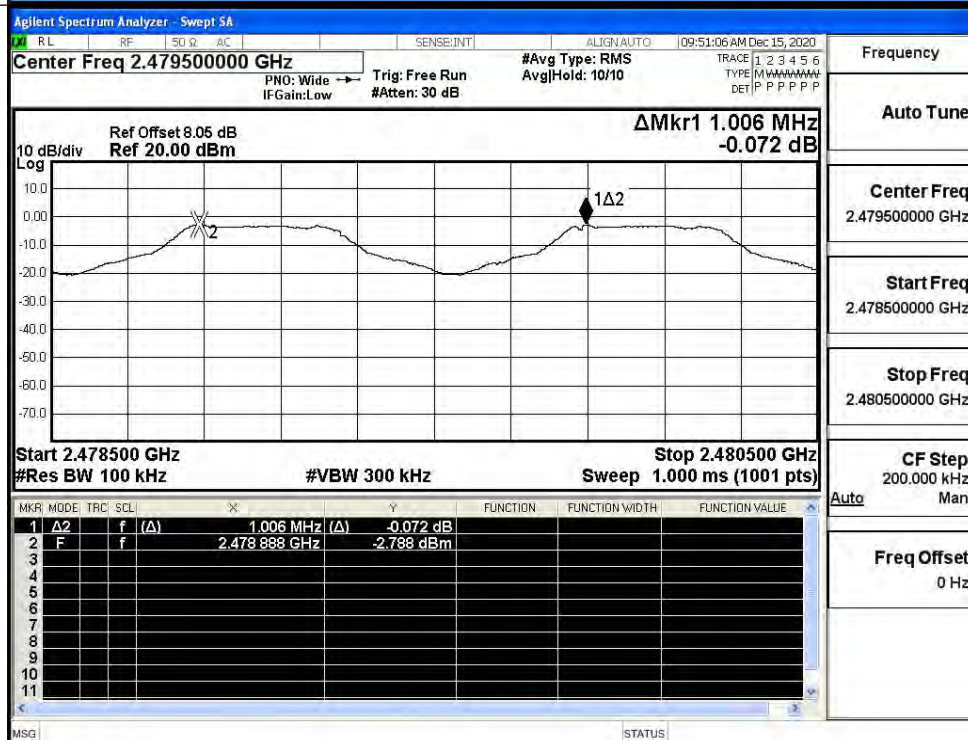
Test Graphs

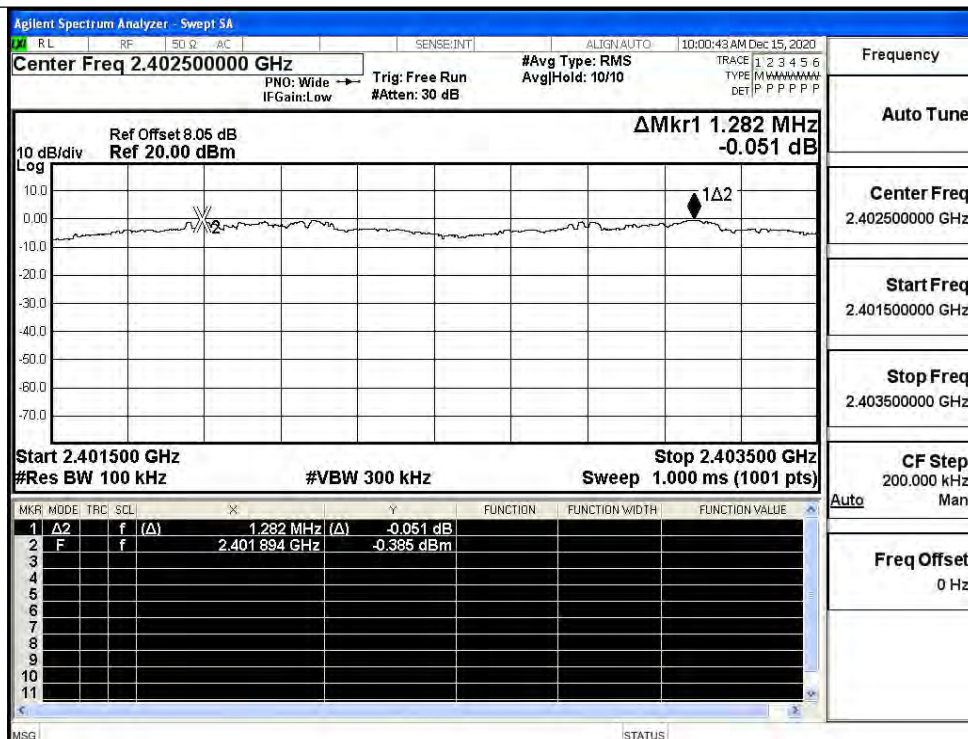
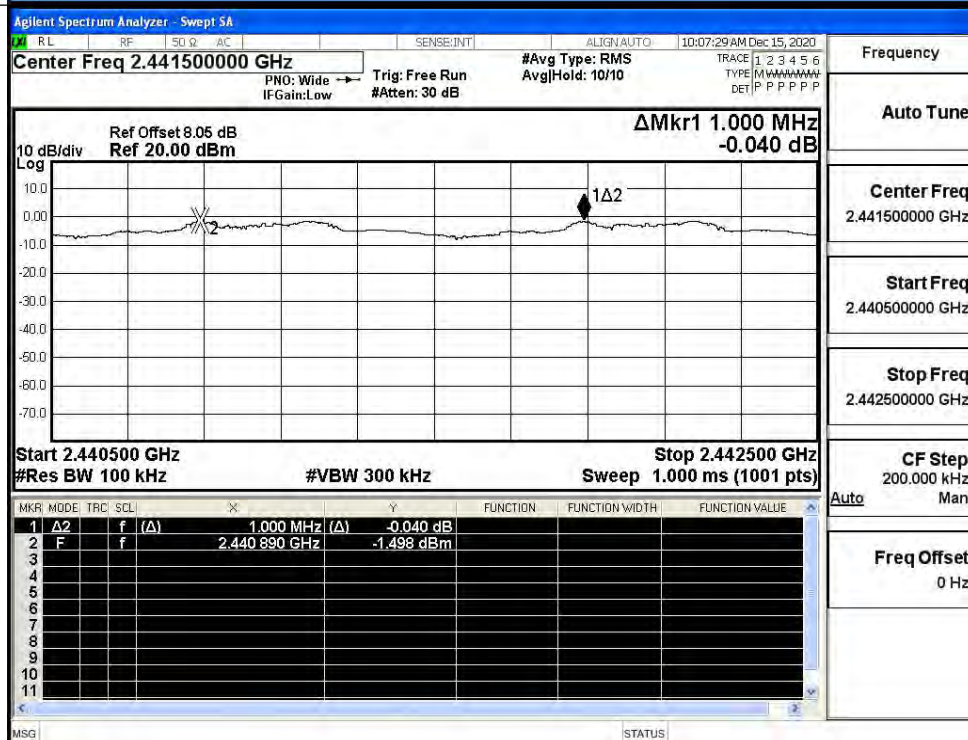


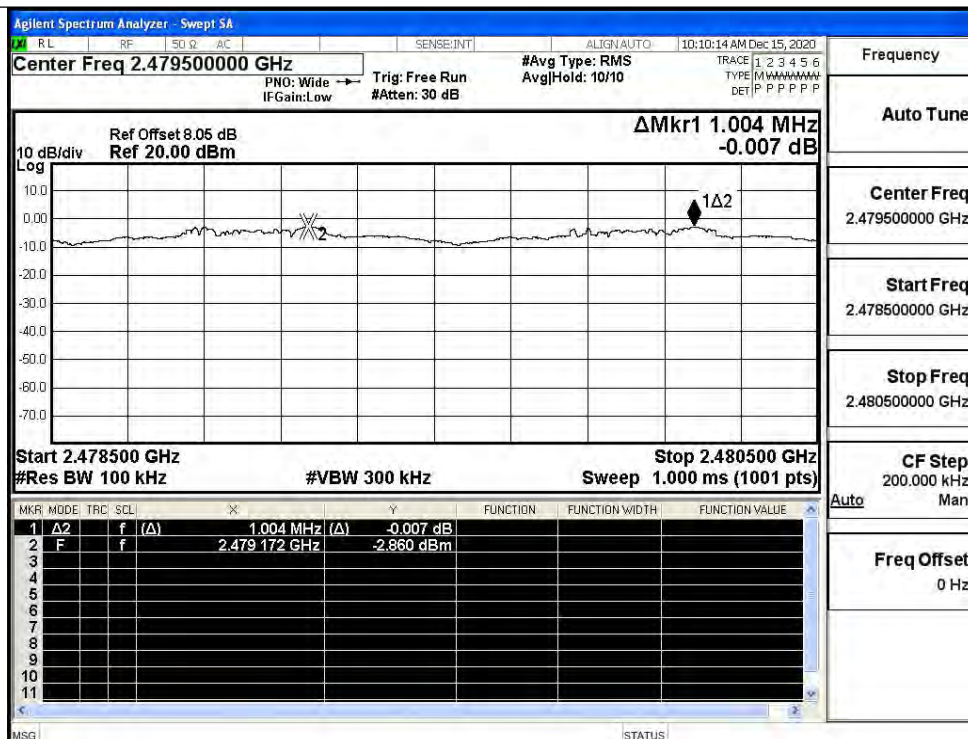
GFSK/MCH



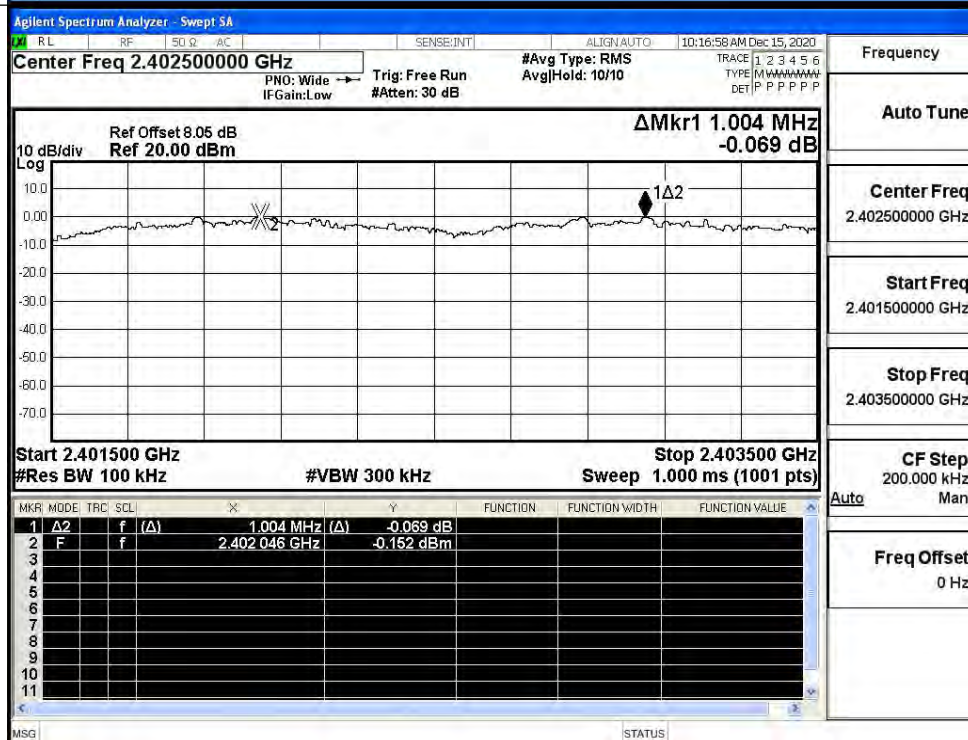
GFSK/HCH



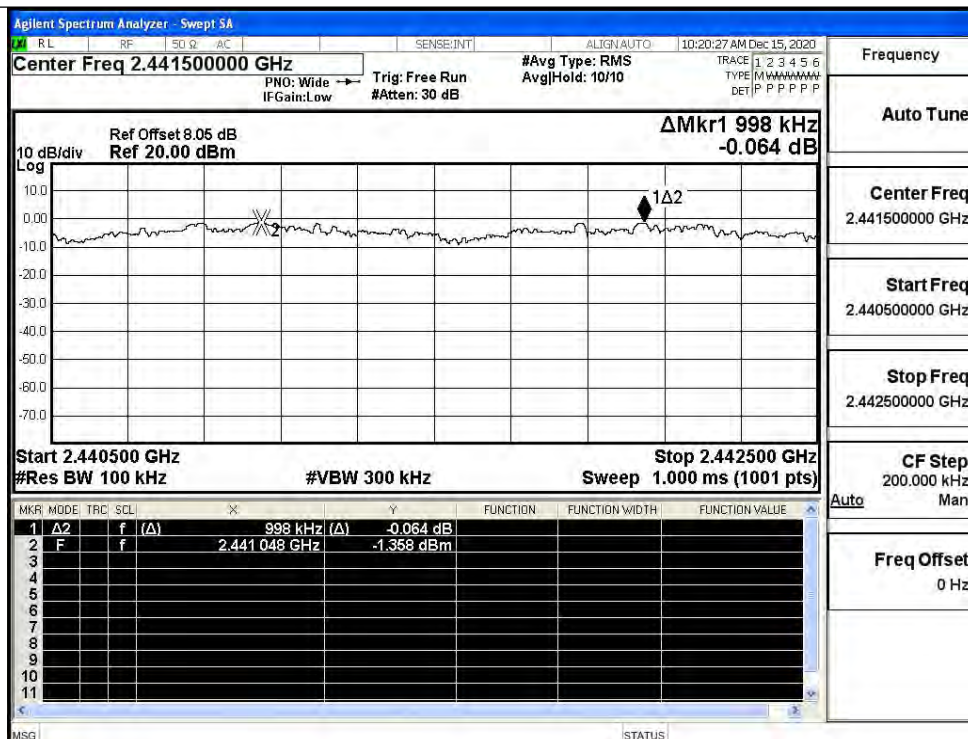
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

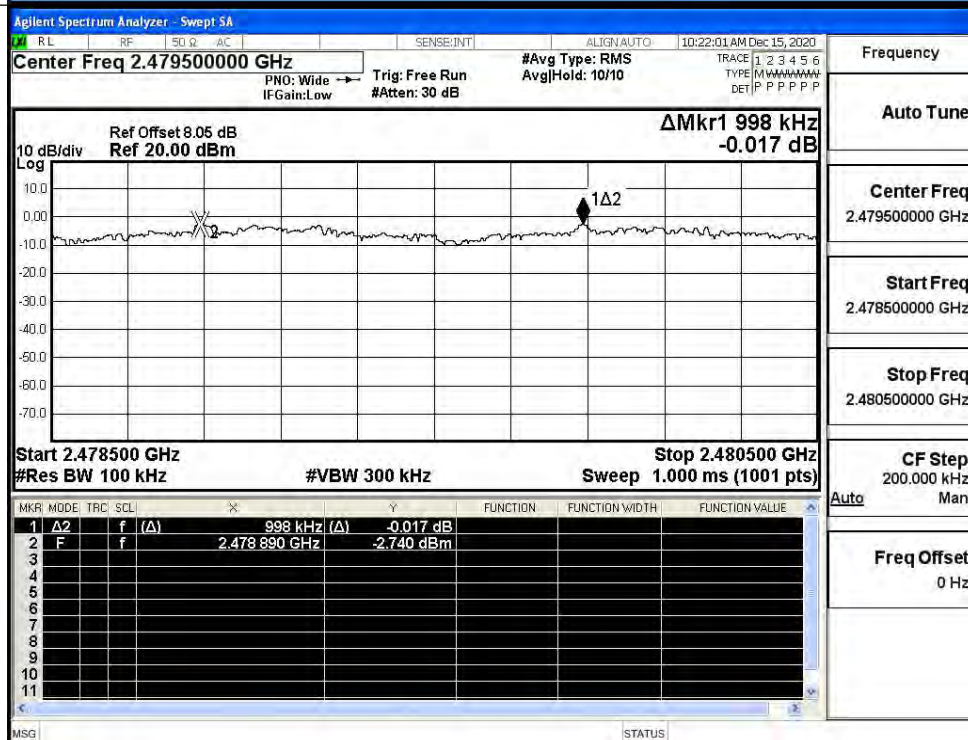
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

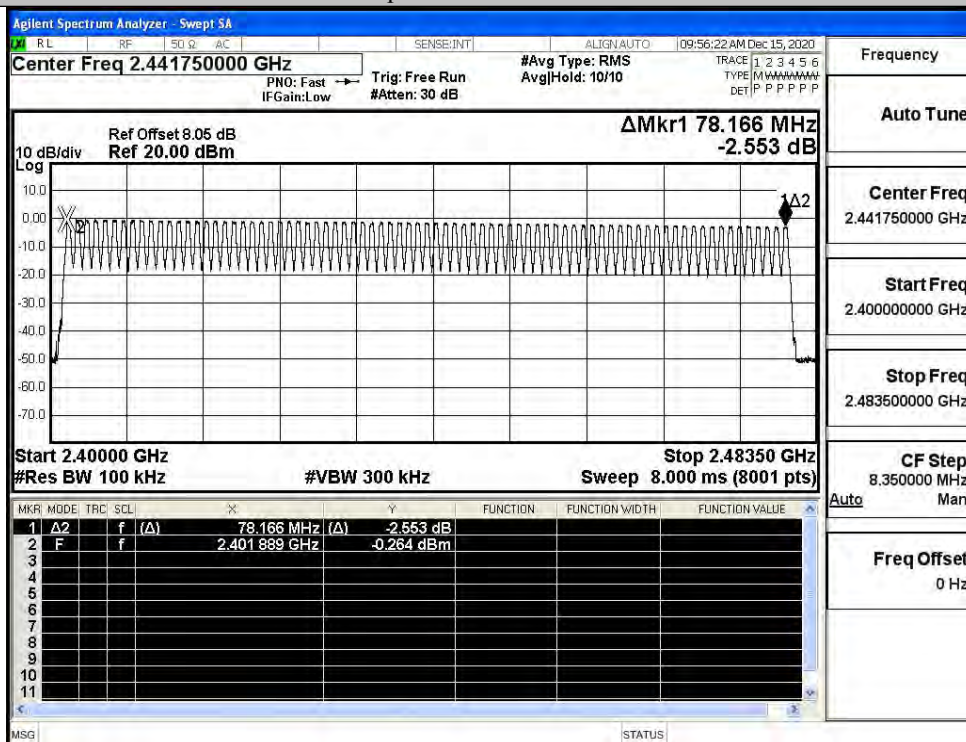
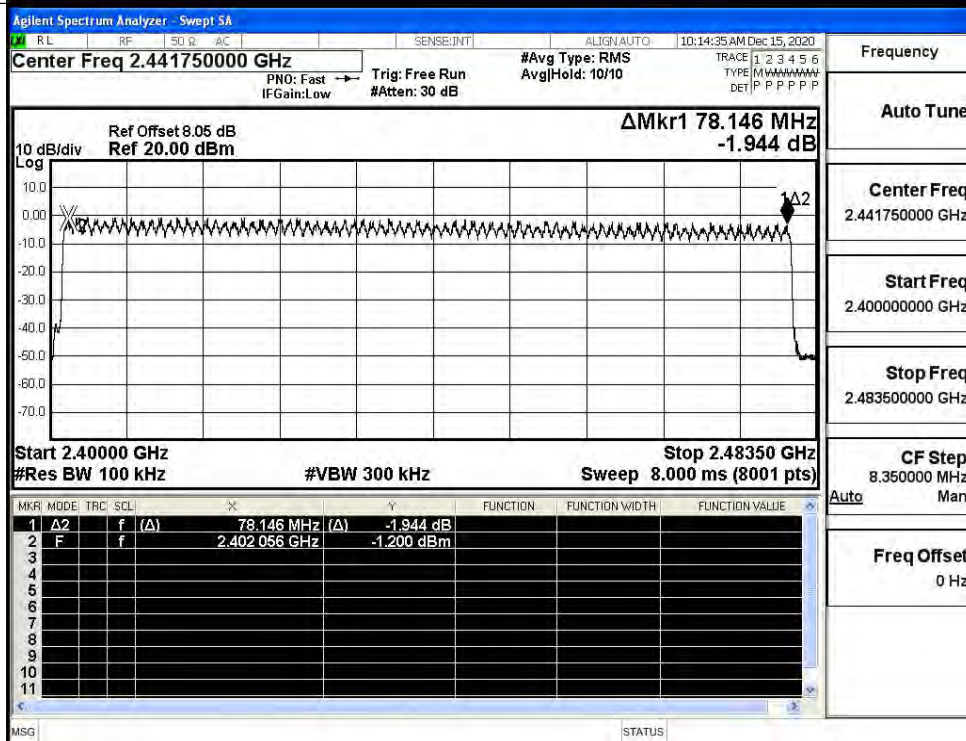


A.4 Hopping Channel Number

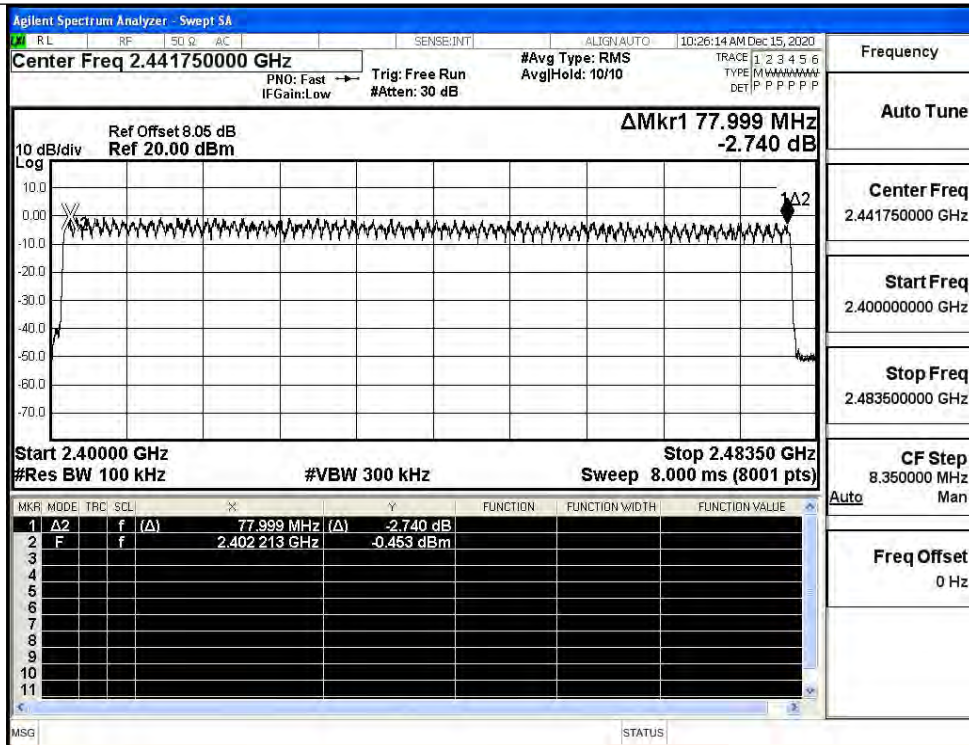
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	≥ 15	PASS
$\pi/4$ DQPSK	Hop	79	≥ 15	PASS
8DPSK	Hop	79	≥ 15	PASS

Test Graphs

GFSK/Hop

 $\pi/4$ DQPSK/Hop

8DPSK/Hop

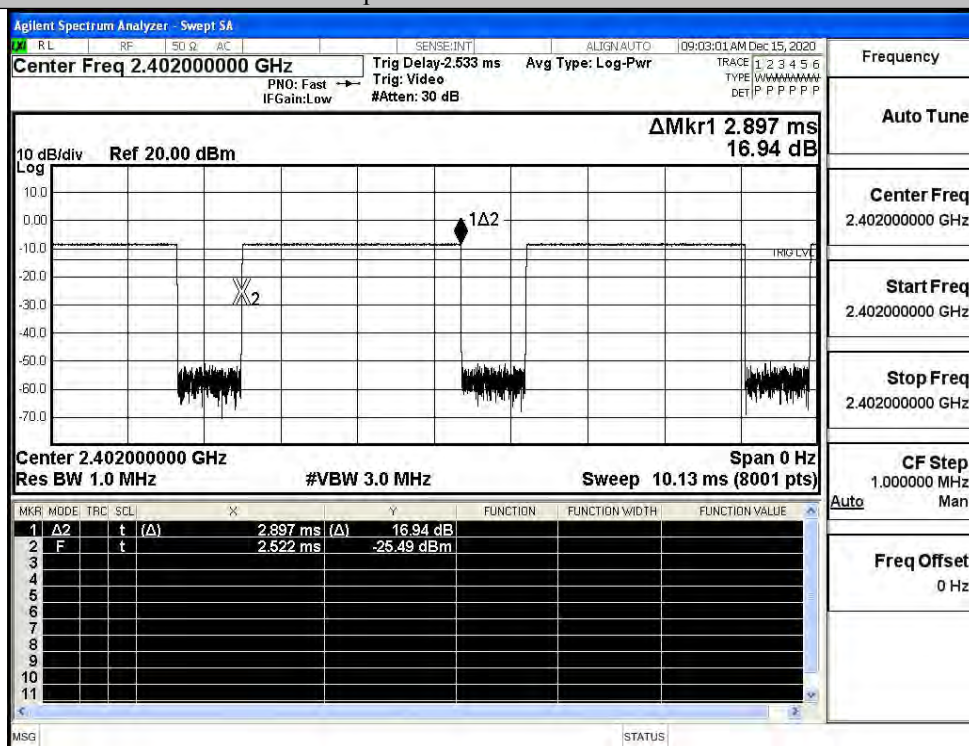


A.5 Dwell Time

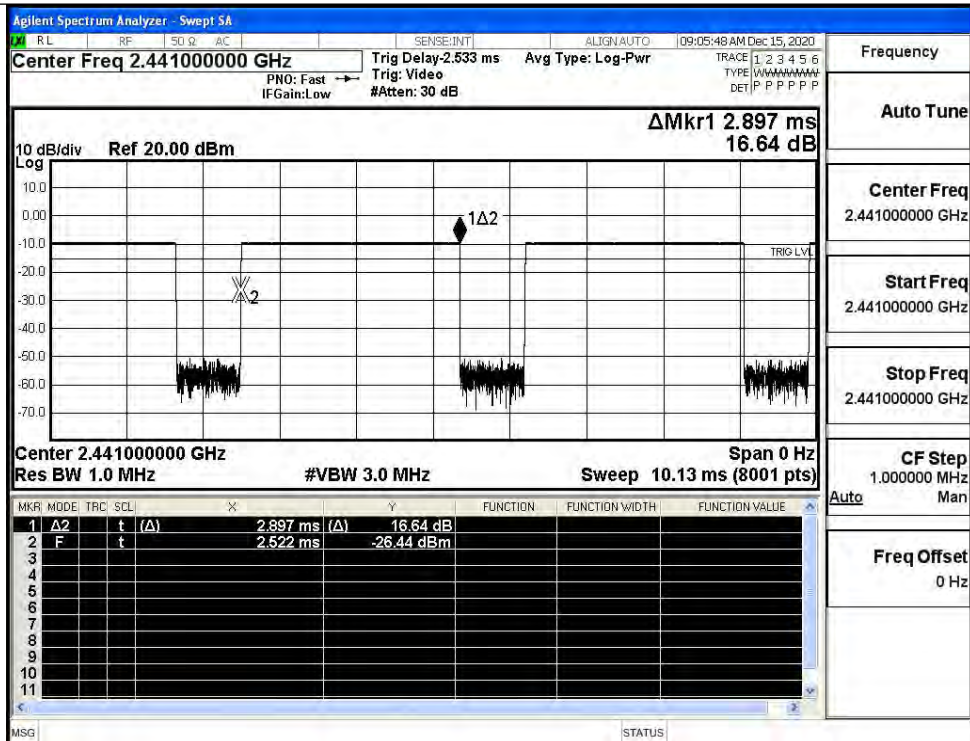
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.9	106.7	0.309	0.4	PASS
	DH5	MCH	2.9	106.7	0.309	0.4	PASS
	DH5	HCH	2.9	106.7	0.309	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.9	106.7	0.309	0.4	PASS
	2DH5	MCH	2.9	106.7	0.309	0.4	PASS
	2DH5	HCH	2.9	106.7	0.309	0.4	PASS
8DPSK	3DH5	LCH	2.9	106.7	0.309	0.4	PASS
	3DH5	MCH	2.9	106.7	0.309	0.4	PASS
	3DH5	HCH	2.9	106.7	0.309	0.4	PASS

Test Graphs

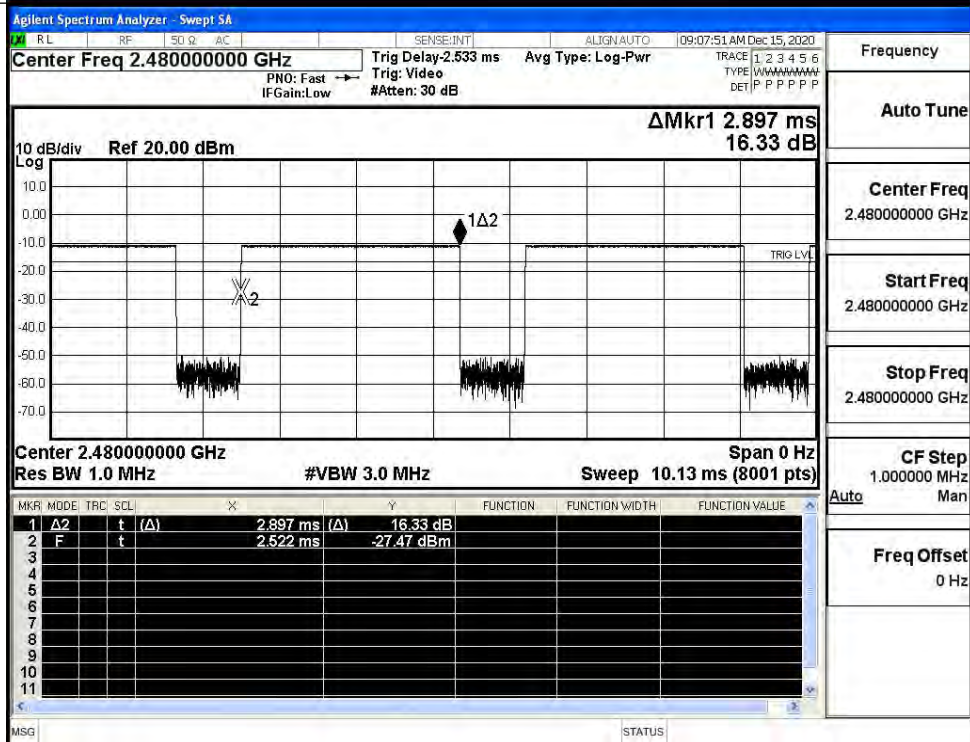
GFSK_DH5/LCH

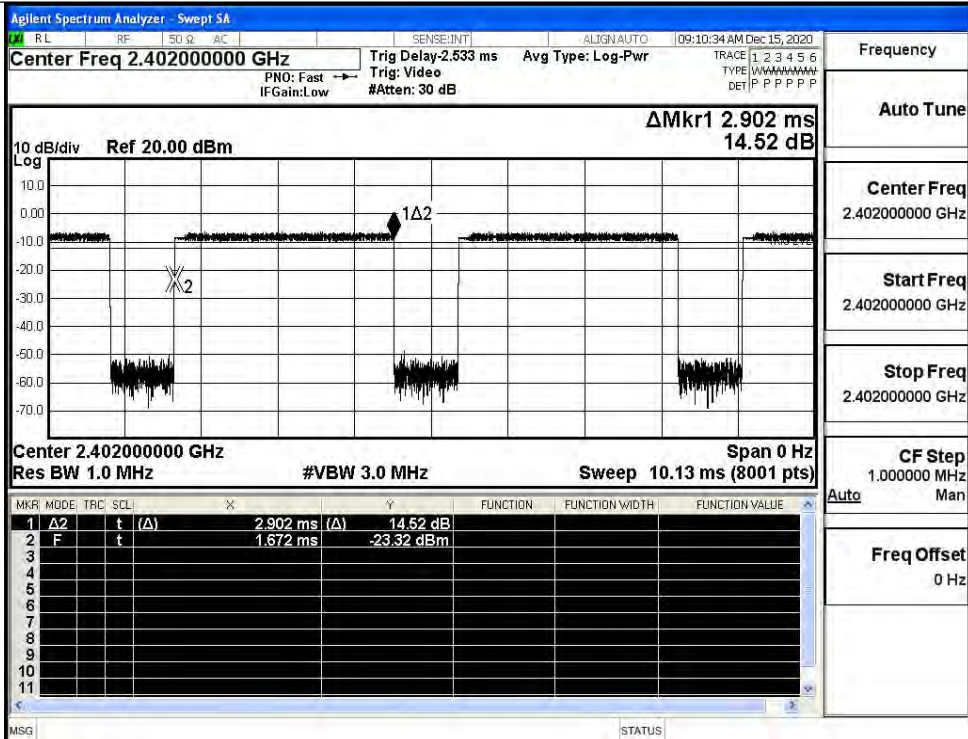
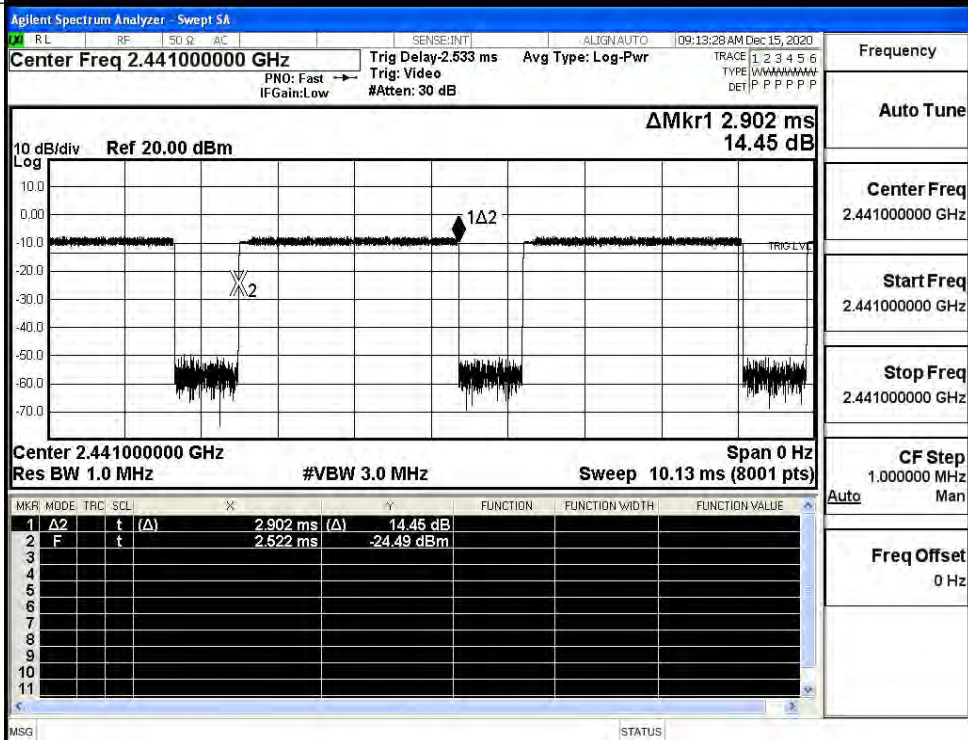


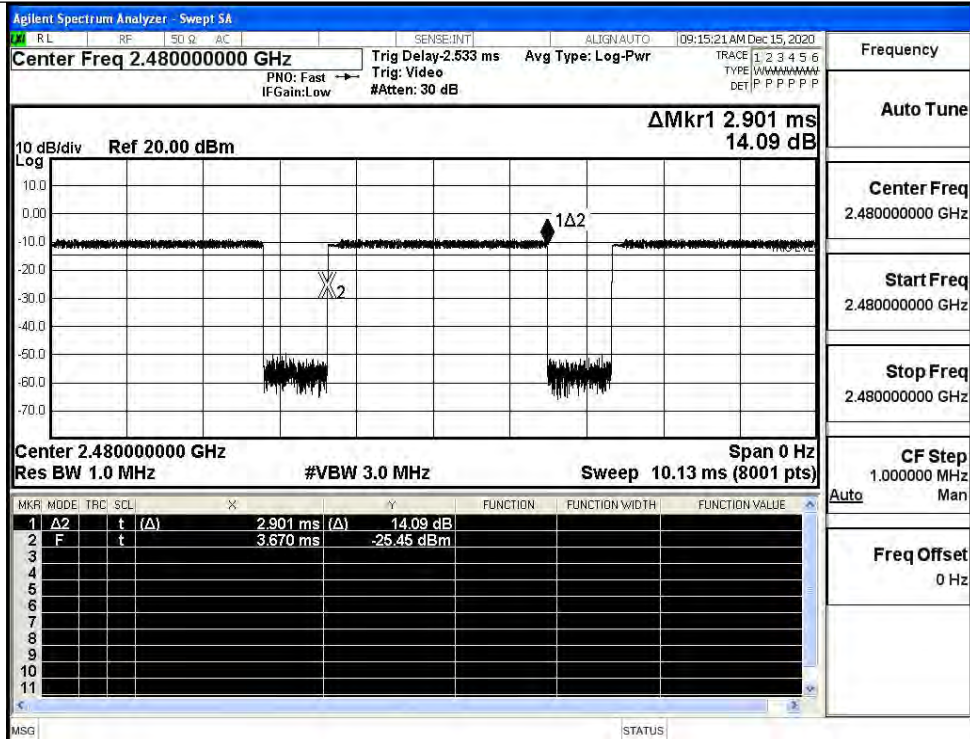
GFSK_DH5/MCH



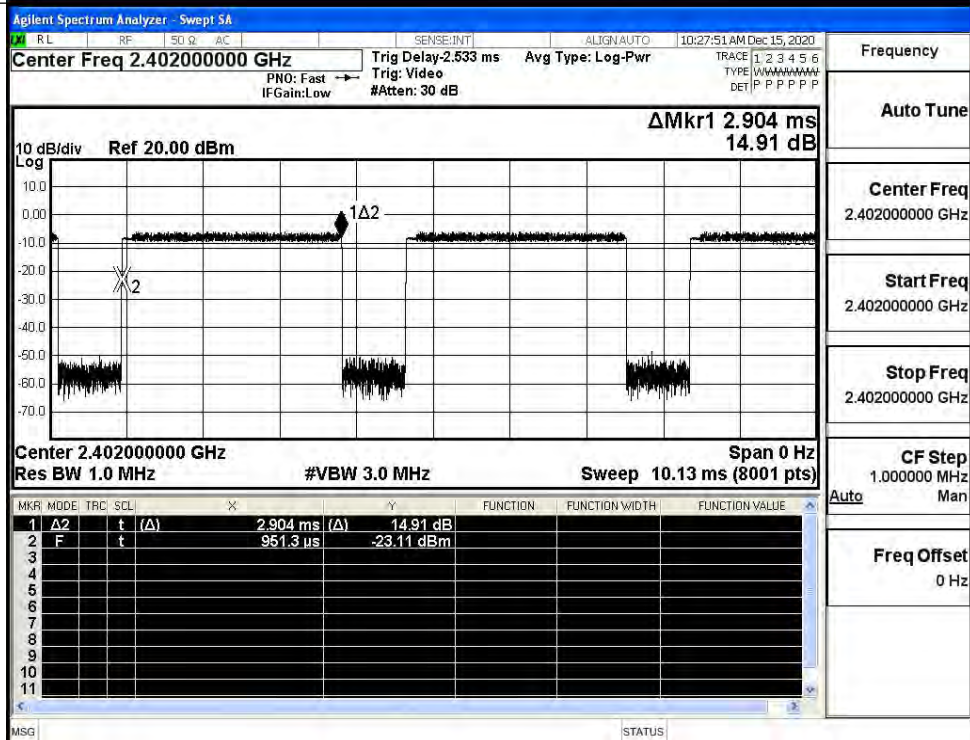
GFSK_DH5/HCH



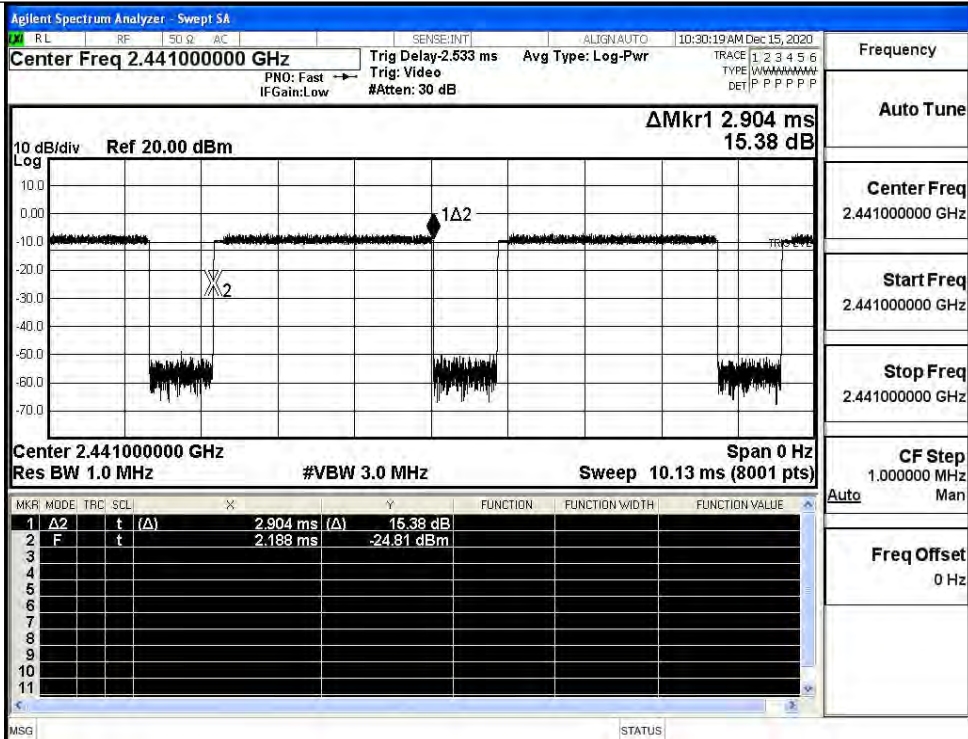
$\pi/4$ DQPSK_2DH5/LCH $\pi/4$ DQPSK_2DH5/MCH

$\pi/4$ DQPSK_2DH5/HCH

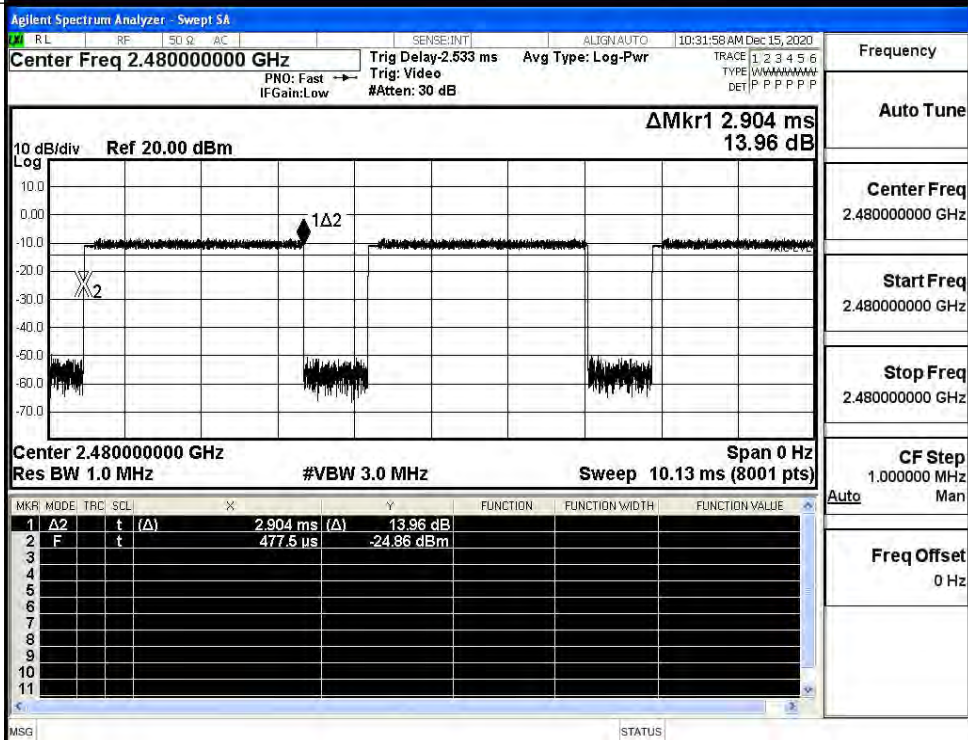
8DPSK_3DH5/LCH



8DPSK_3DH5/MCH



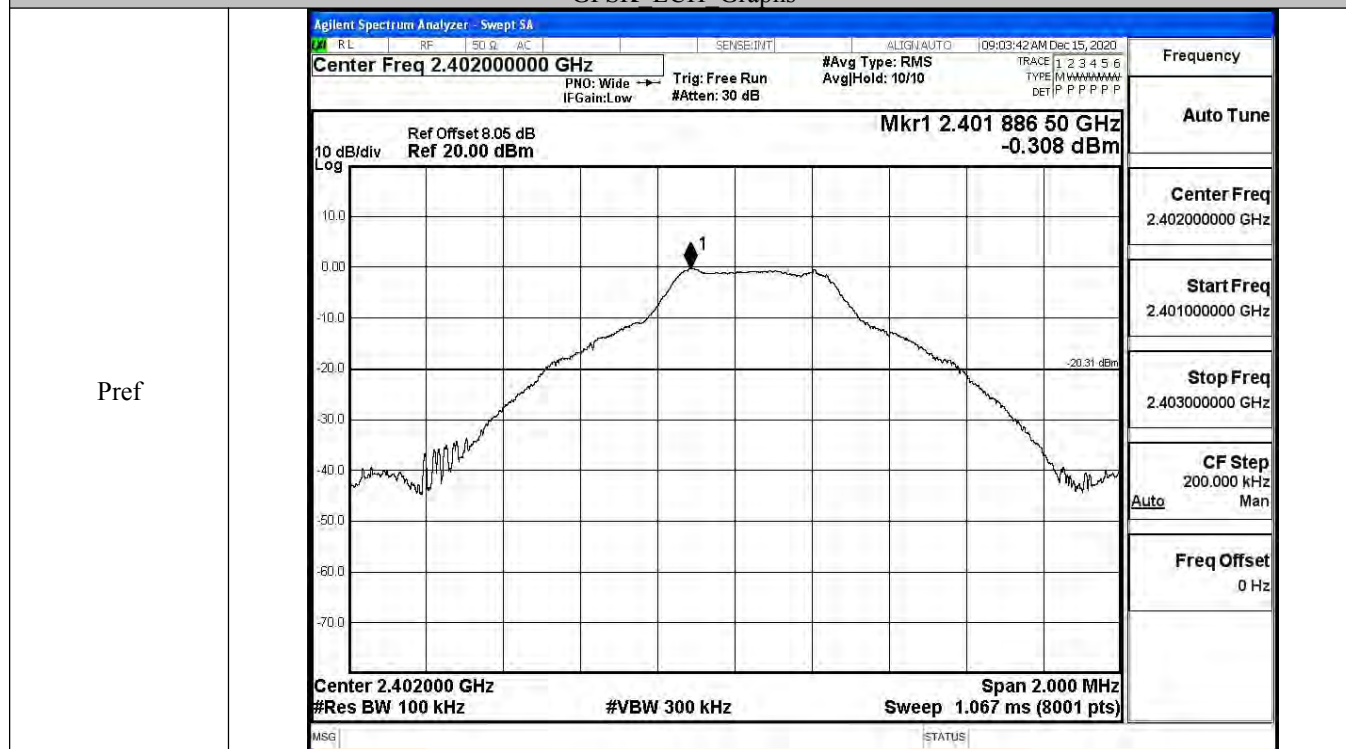
8DPSK_3DH5/HCH



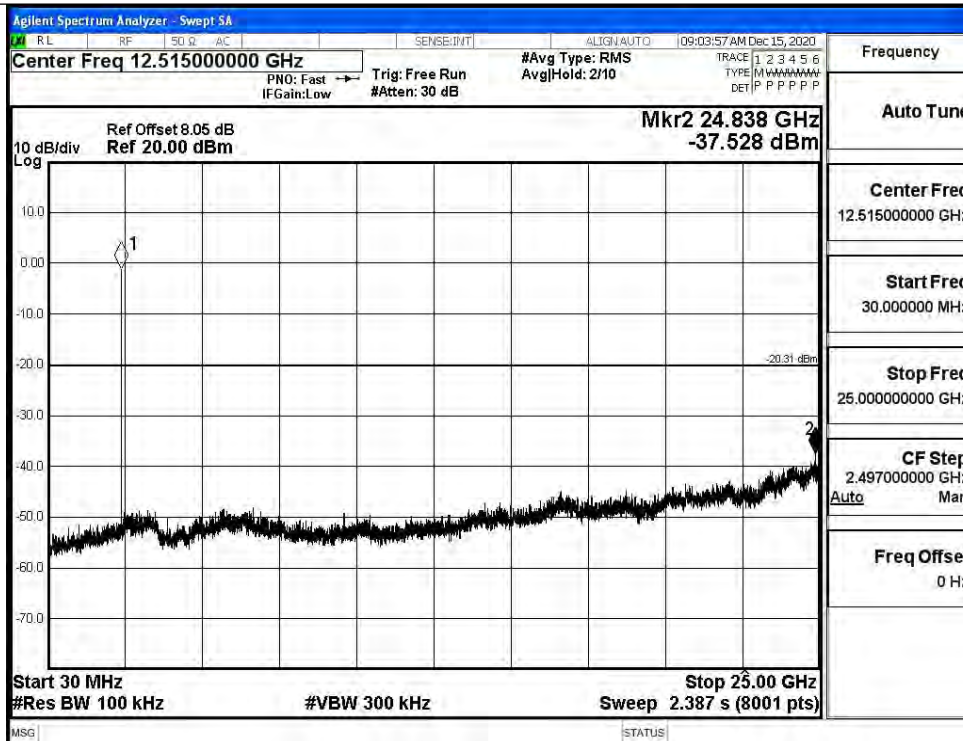
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.308	-37.528	-20.308	PASS
	MCH	-1.543	-38.169	-21.543	PASS
	HCH	-2.916	-37.665	-22.916	PASS
$\pi/4$ DQPSK	LCH	-0.533	-37.532	-20.533	PASS
	MCH	-1.813	-36.354	-21.813	PASS
	HCH	-3.207	-48.342	-23.207	PASS
8DPSK	LCH	-0.384	-36.238	-20.384	PASS
	MCH	-1.462	-37.299	-21.462	PASS
	HCH	-2.746	-37.549	-22.746	PASS

GFSK LCH Graphs

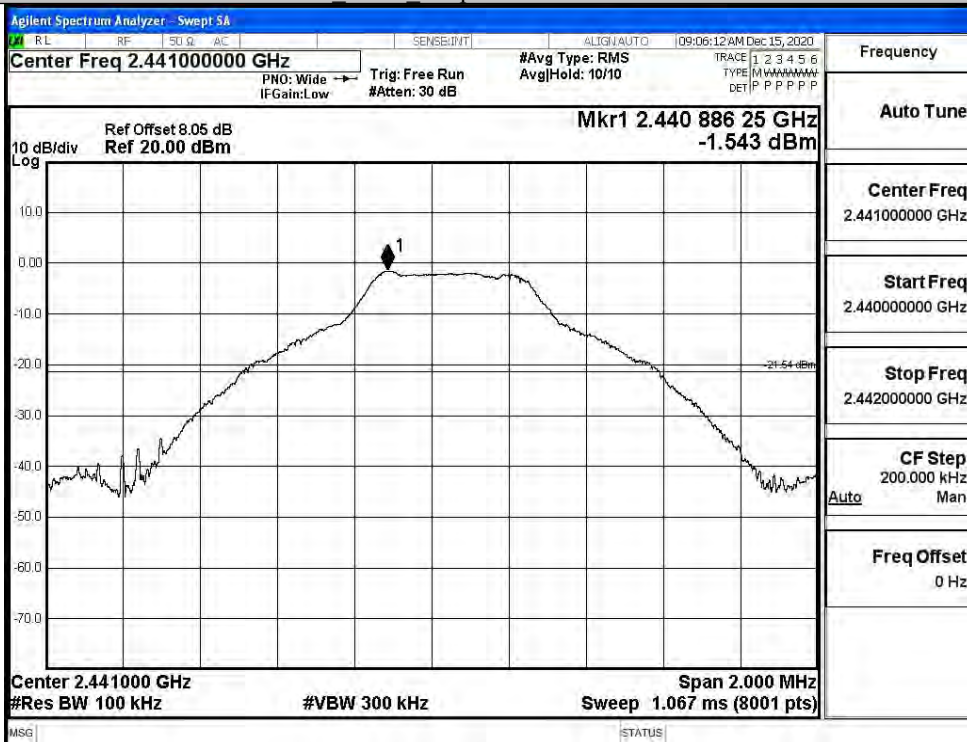


Puw

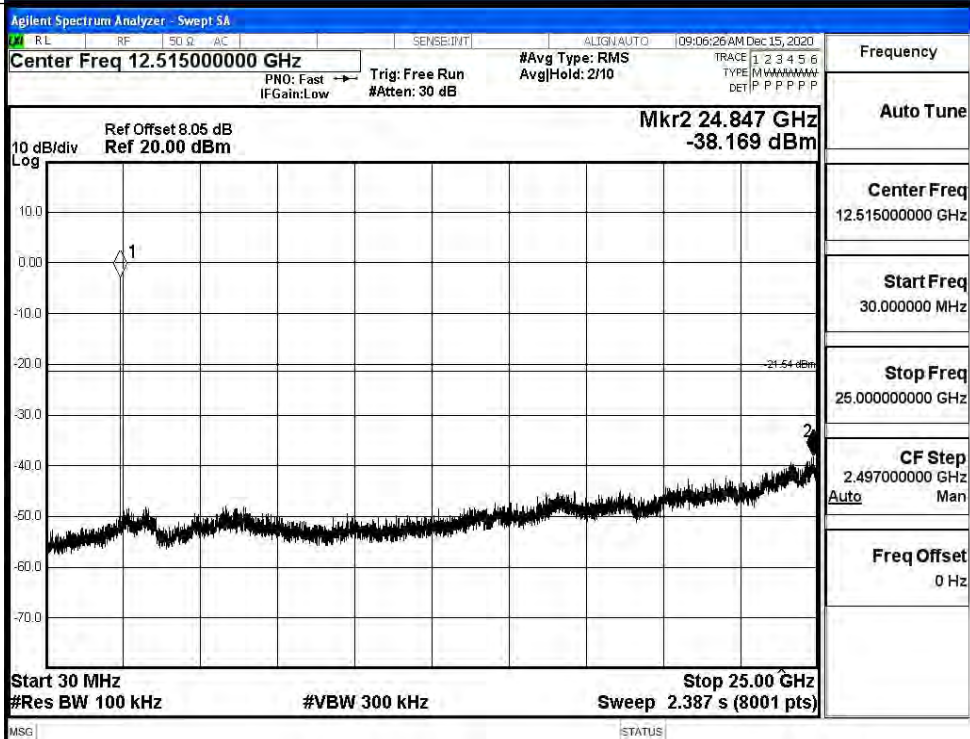


GFSK MCH Graphs

Pref

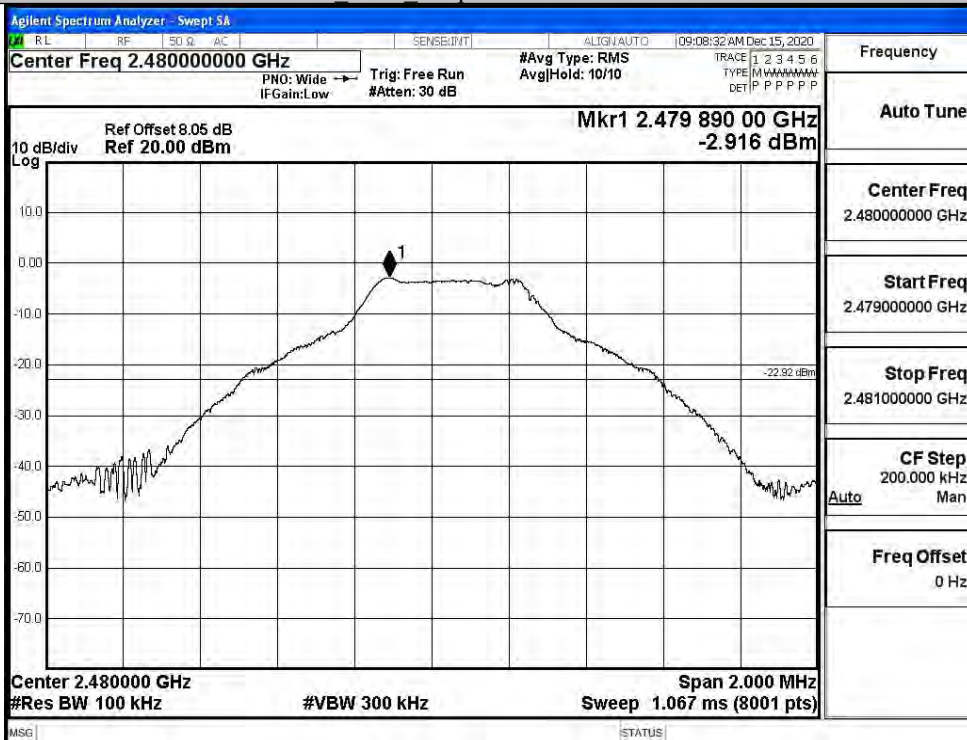


Puw



GFSK HCH Graphs

Pref

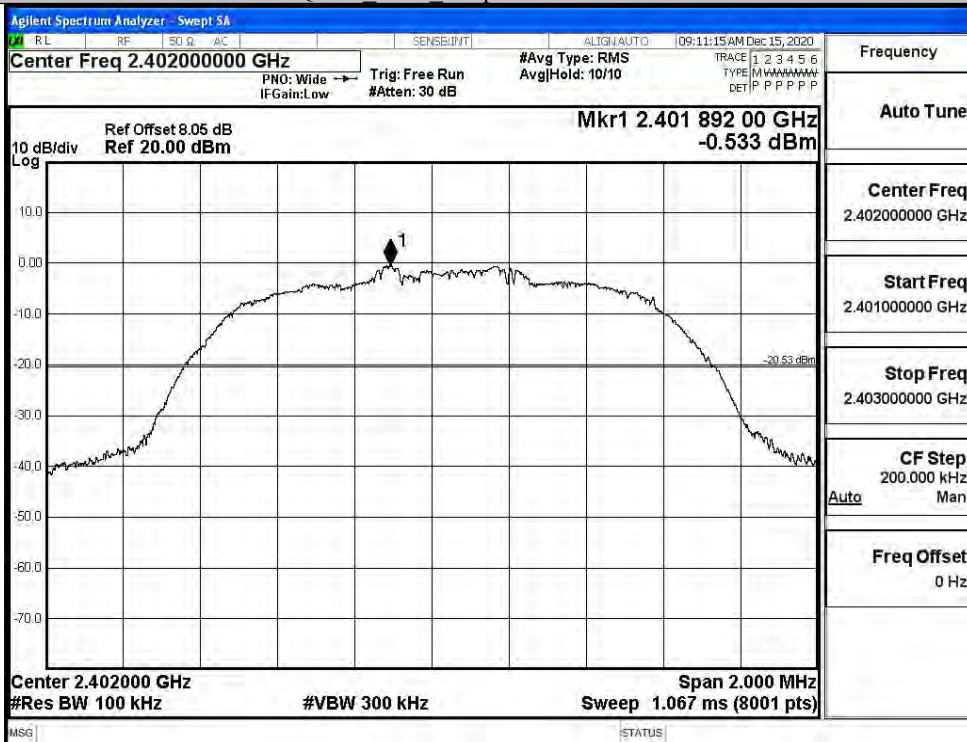


Puw



$\pi/4$ DQPSK LCH Graphs

Pref

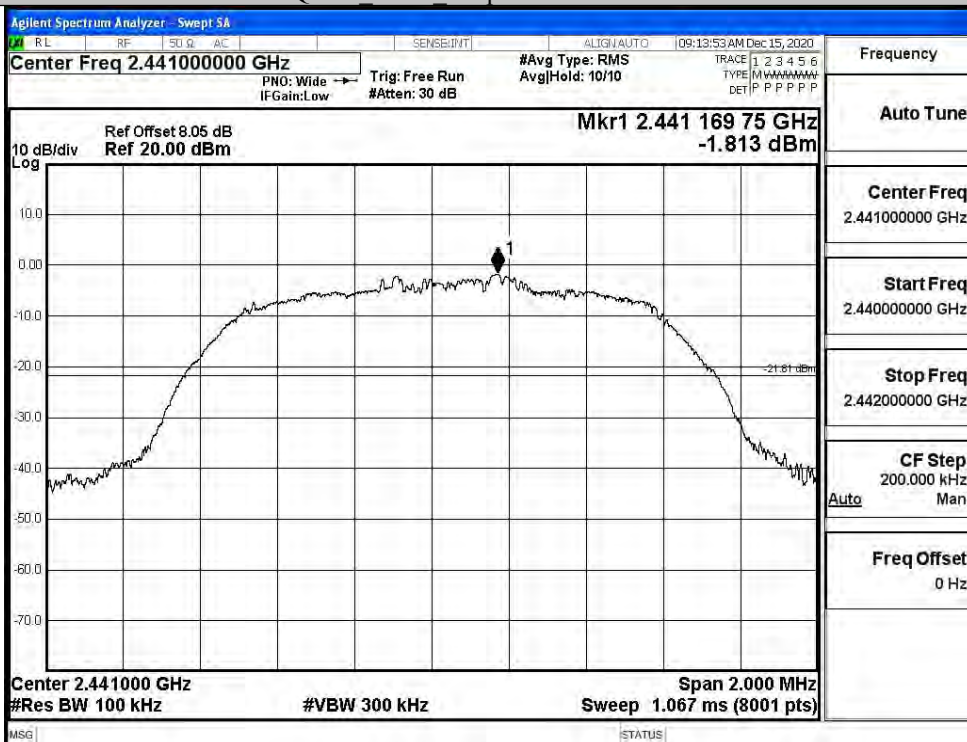


Puw

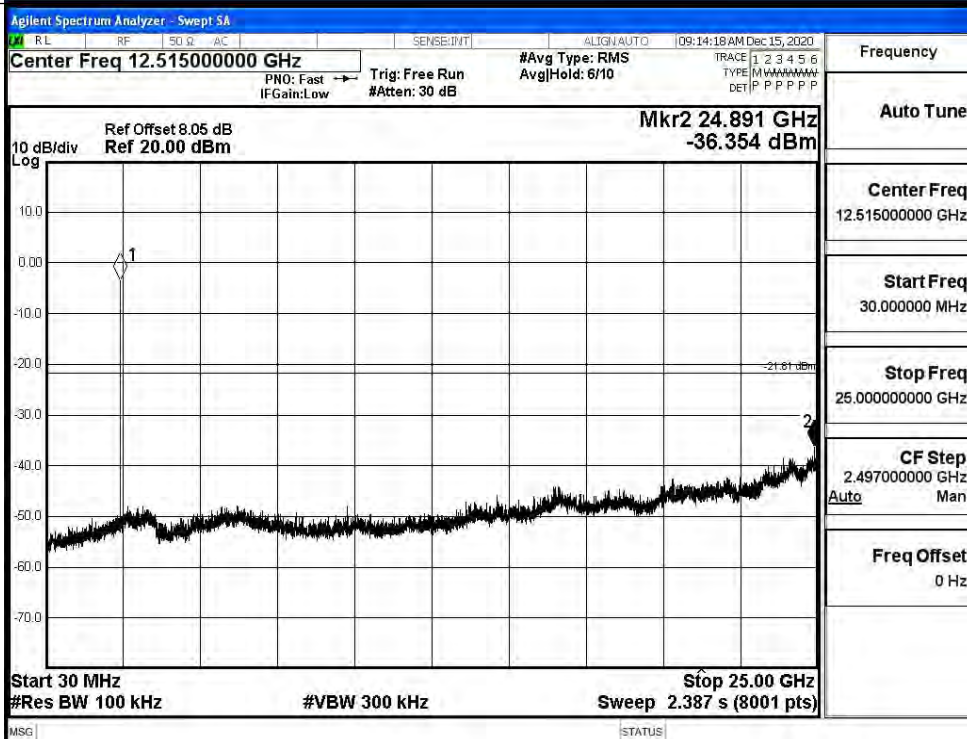


$\pi/4$ DQPSK MCH Graphs

Pref

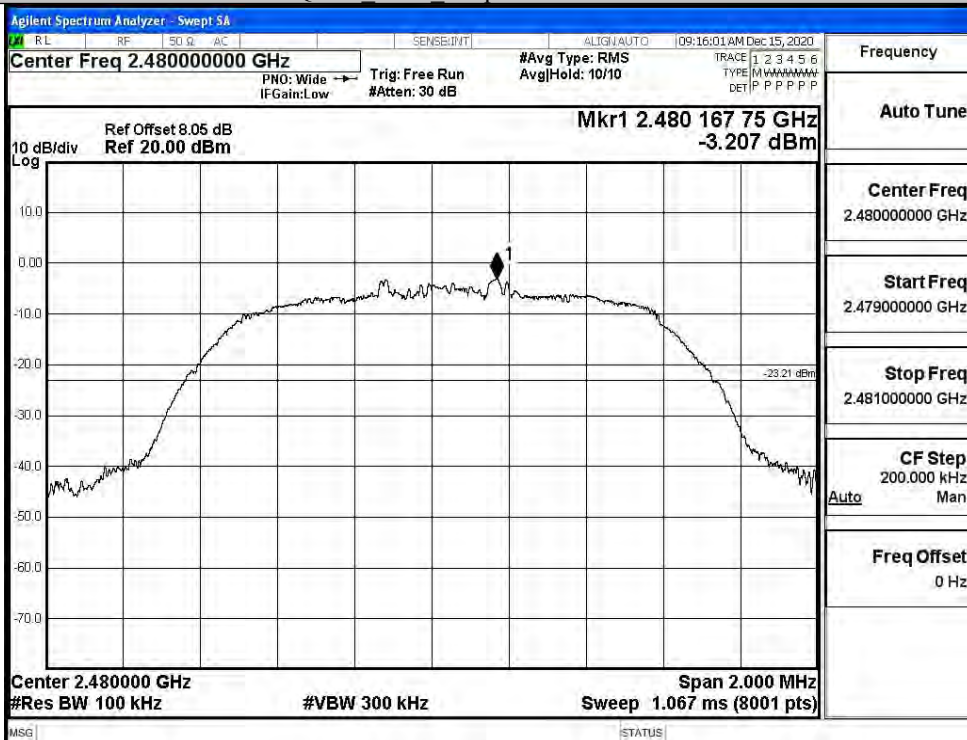


Puw

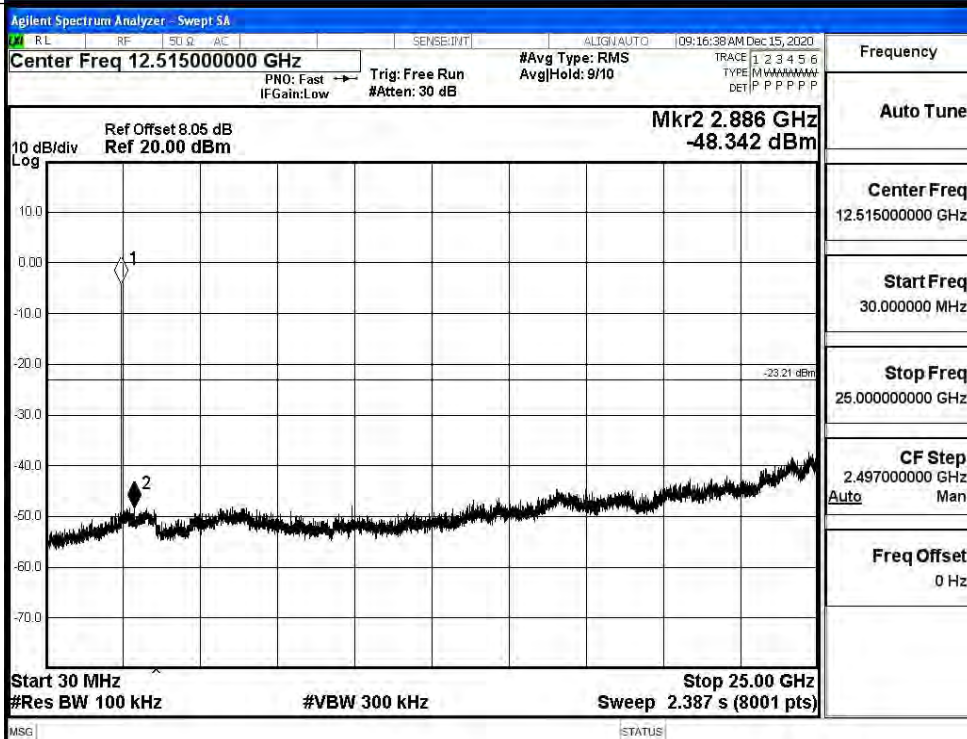


$\pi/4$ DQPSK HCH Graphs

Pref

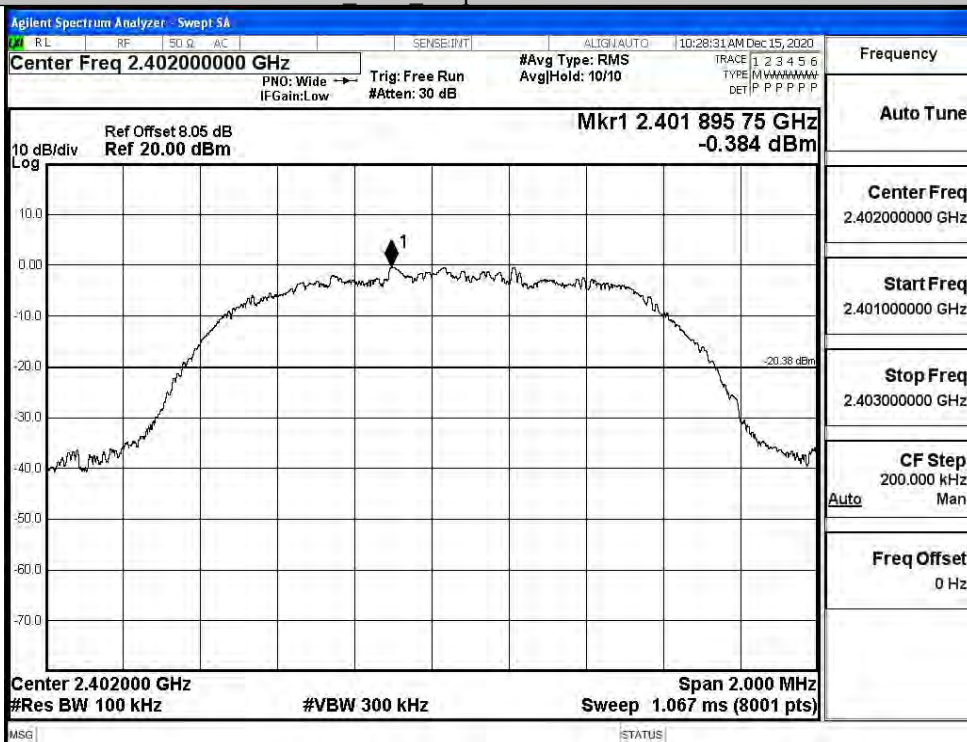


Puw



8DPSK LCH Graphs

Pref

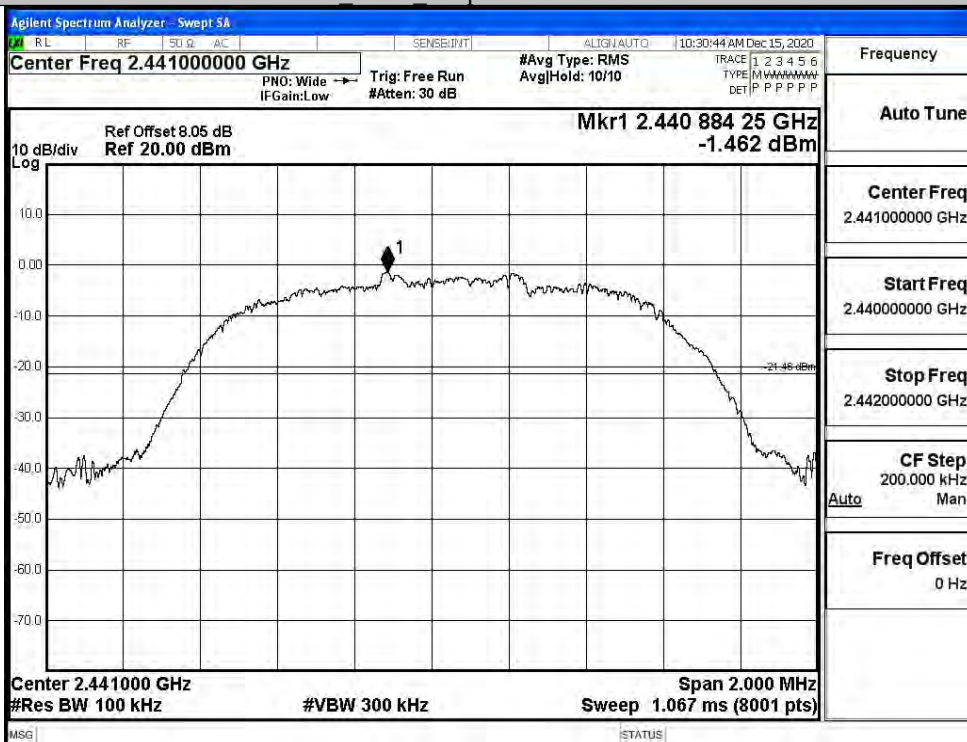


Puw

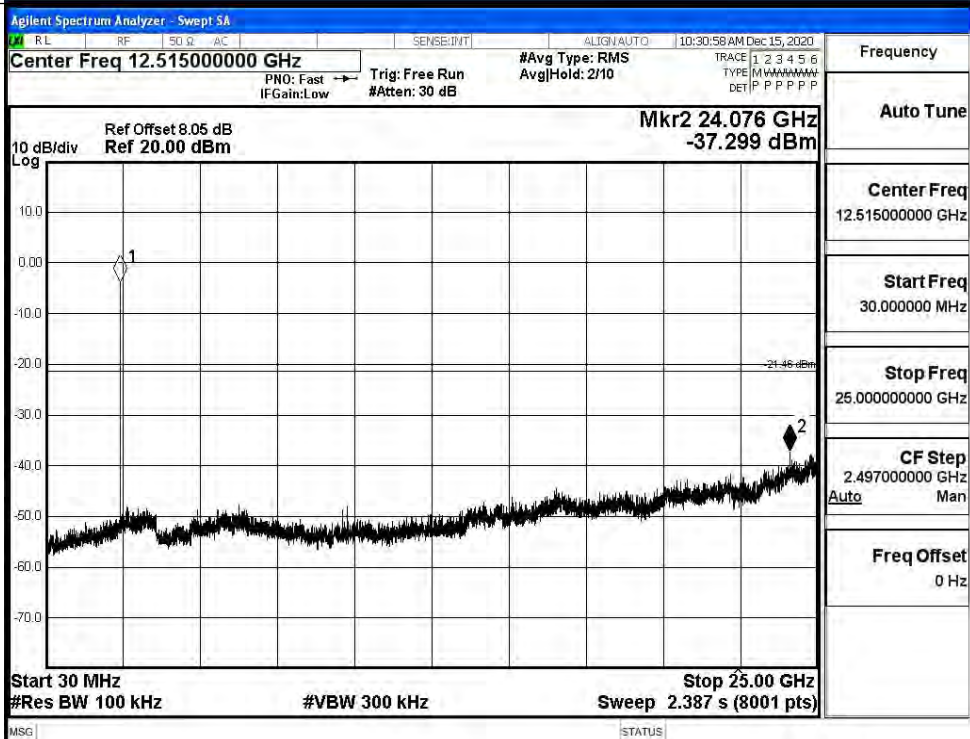


8DPSK MCH Graphs

Pref

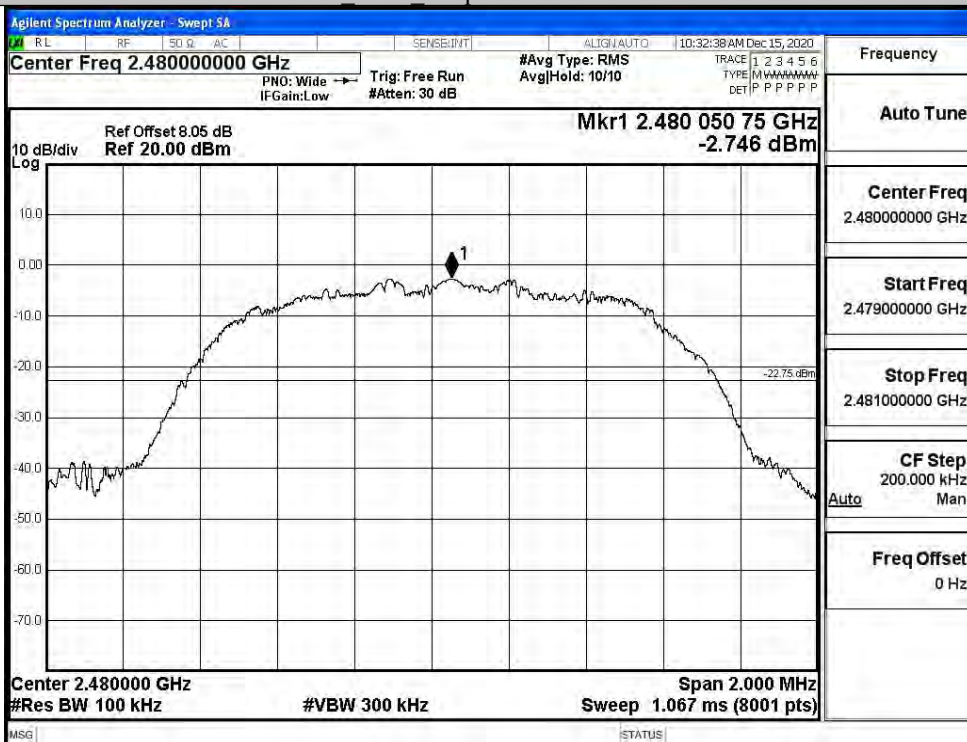


Puw

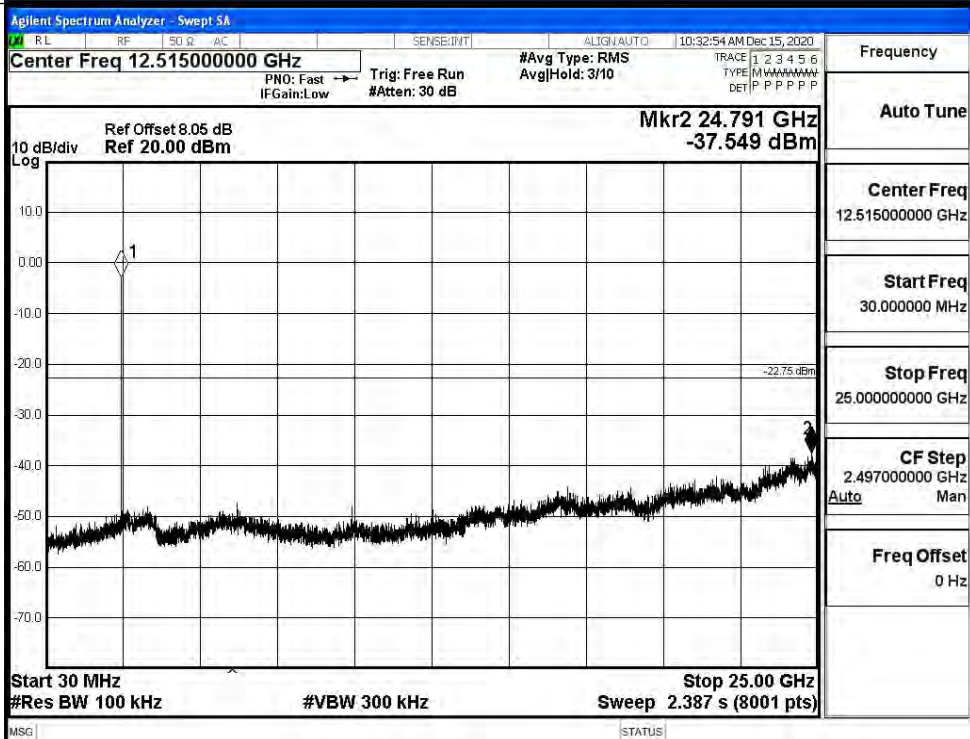


8DPSK HCH Graphs

Pref



Puw

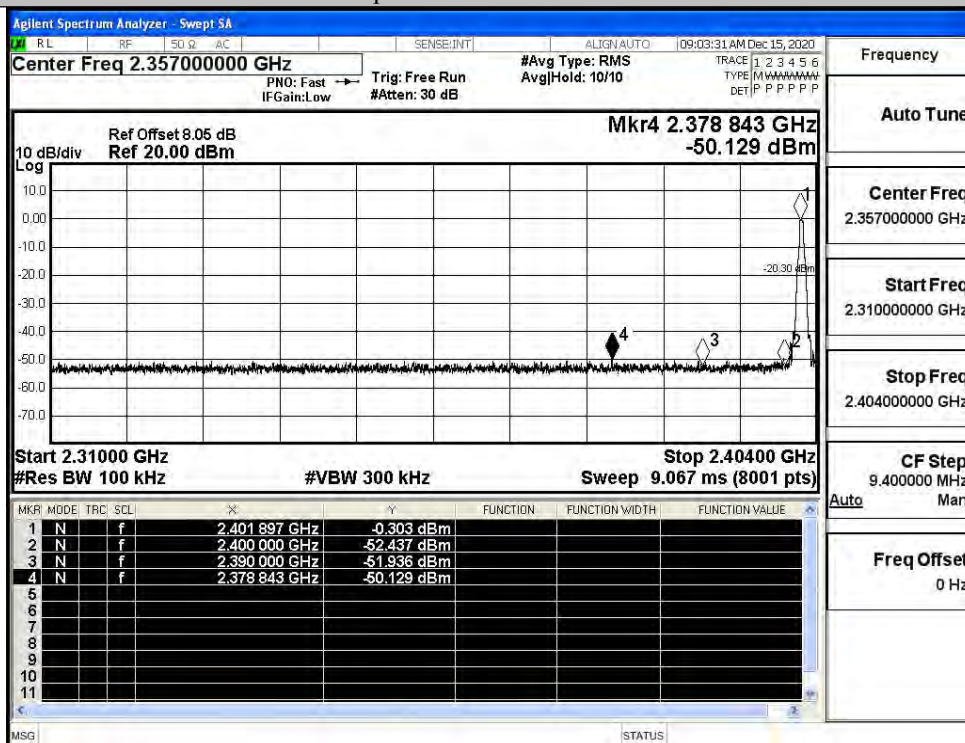


A.7 Band-edge for RF Conducted Emissions

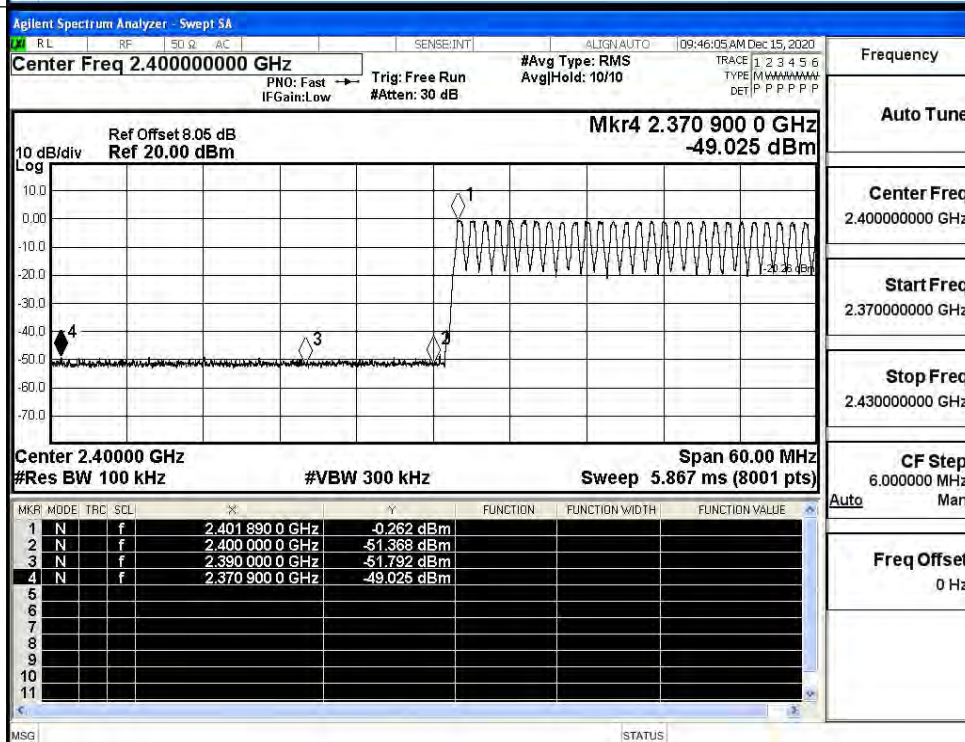
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-0.303	Off	-50.129	-20.3	PASS
			-0.262	On	-49.025	-20.26	PASS
	HCH	2480	-2.885	Off	-49.742	-22.89	PASS
			-2.218	On	-48.222	-22.22	PASS
$\pi/4$ DQPSK	LCH	2402	-0.389	Off	-49.835	-20.39	PASS
			-0.343	On	-48.866	-20.34	PASS
	HCH	2480	-2.977	Off	-48.812	-22.98	PASS
			-2.222	On	-48.658	-22.22	PASS
8DPSK	LCH	2402	-0.253	Off	-49.453	-20.25	PASS
			-0.177	On	-48.295	-20.18	PASS
	HCH	2480	-2.702	Off	-48.964	-22.7	PASS
			-2.033	On	-48.427	-22.03	PASS

Test Graphs

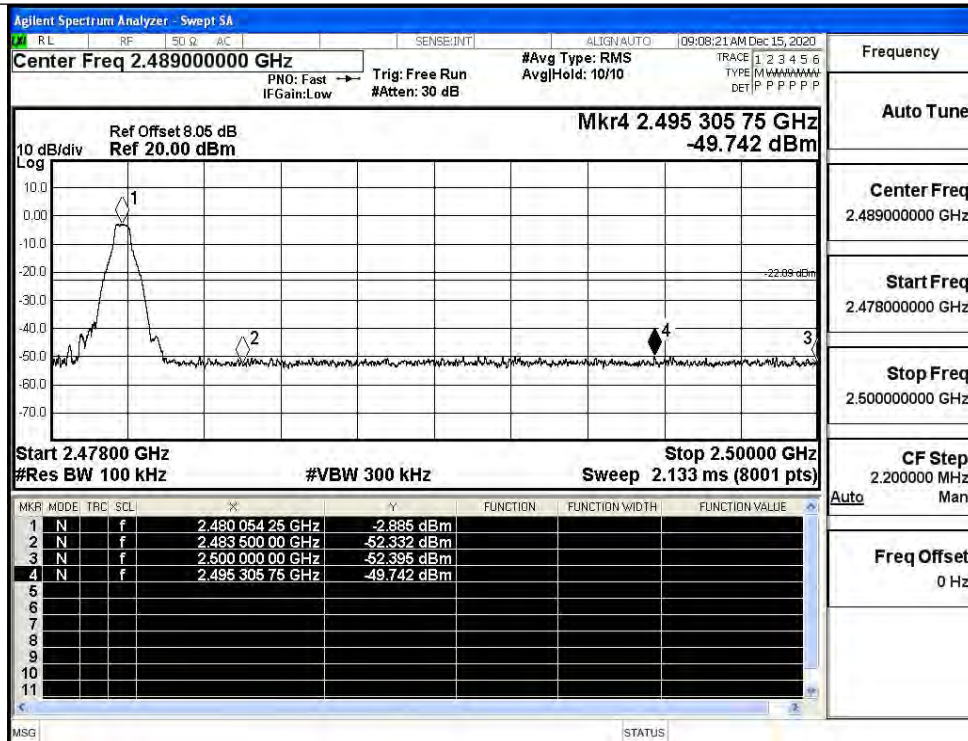
GFSK/LCH/No Hop



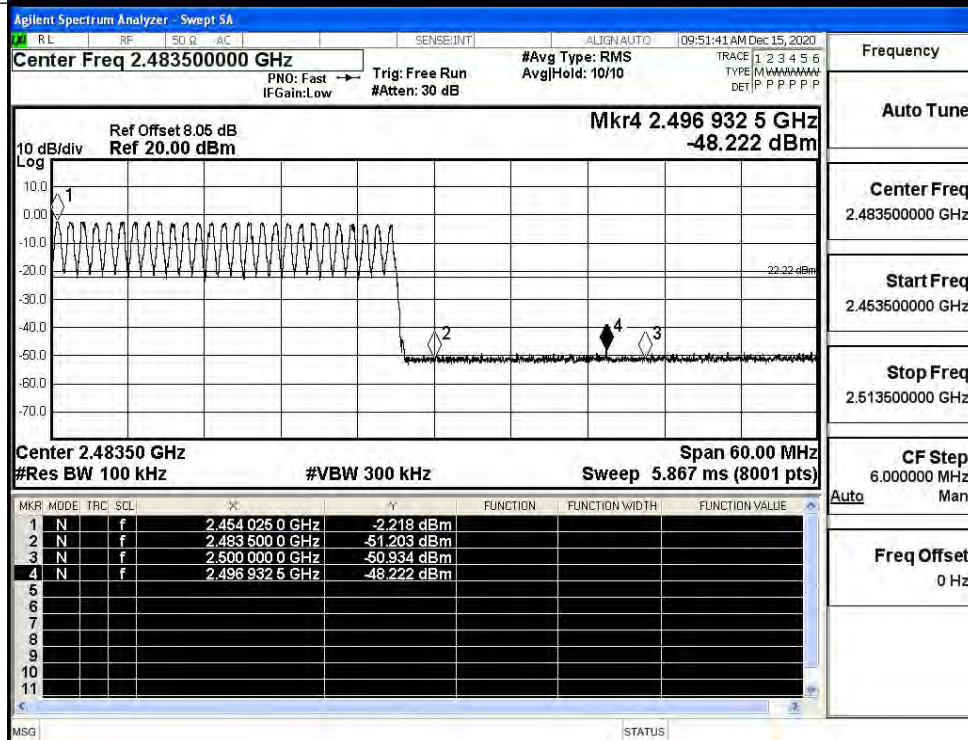
GFSK/LCH/Hop



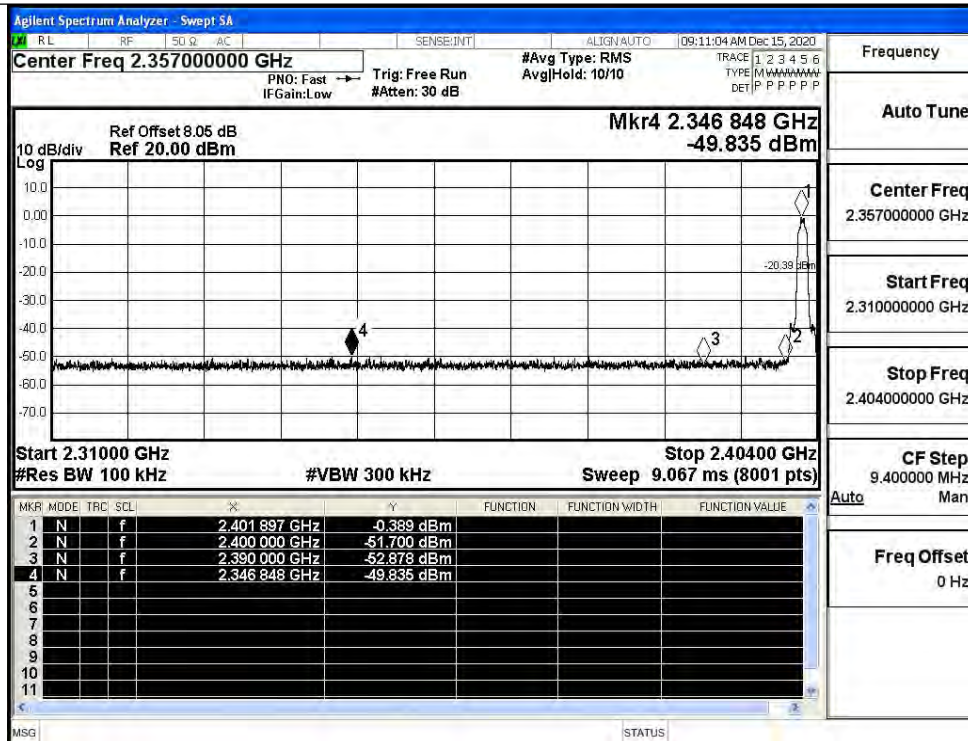
GFSK/HCH/No Hop



GFSK/HCH/Hop



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



Frequency

Auto Tune

Center Freq
2.357000000 GHz

Start Freq
2.310000000 GHz

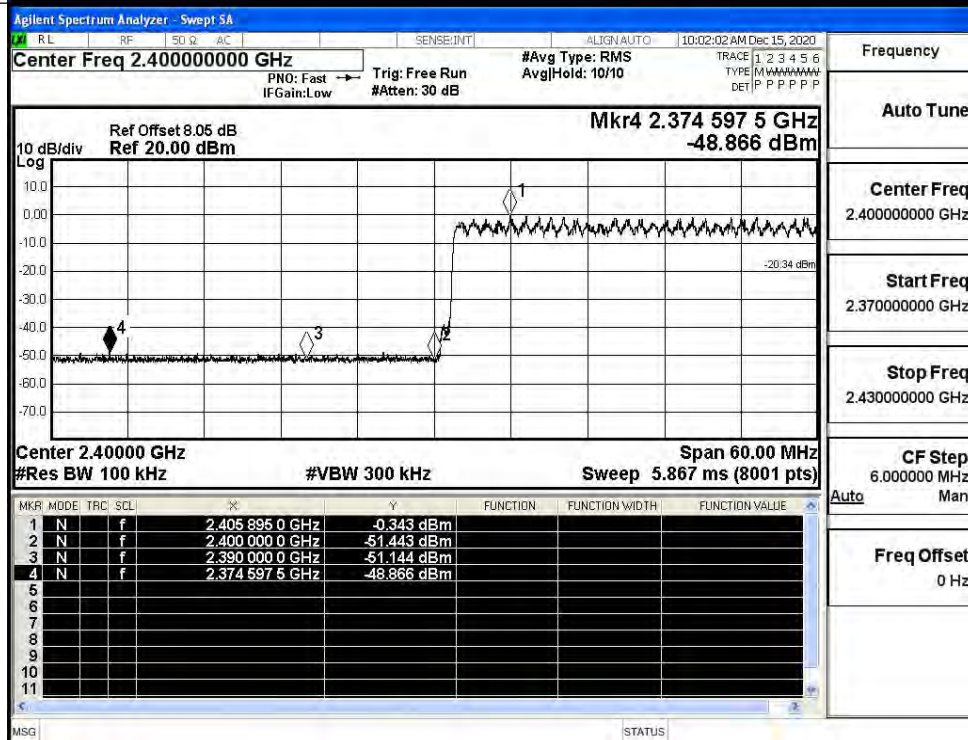
Stop Freq
2.404000000 GHz

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

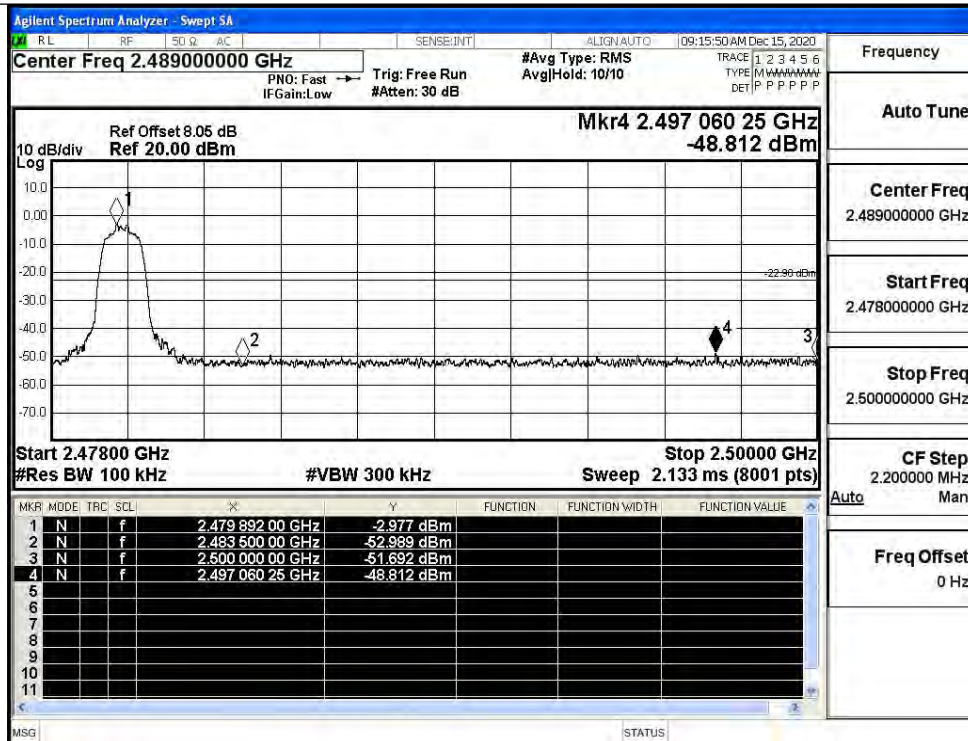
Stop Freq
2.430000000 GHz

CF Step
6.000000 MHz

Auto Man

Freq Offset
0 Hz

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



Frequency

Auto Tune

Center Freq
2.489000000 GHz

Start Freq
2.478000000 GHz

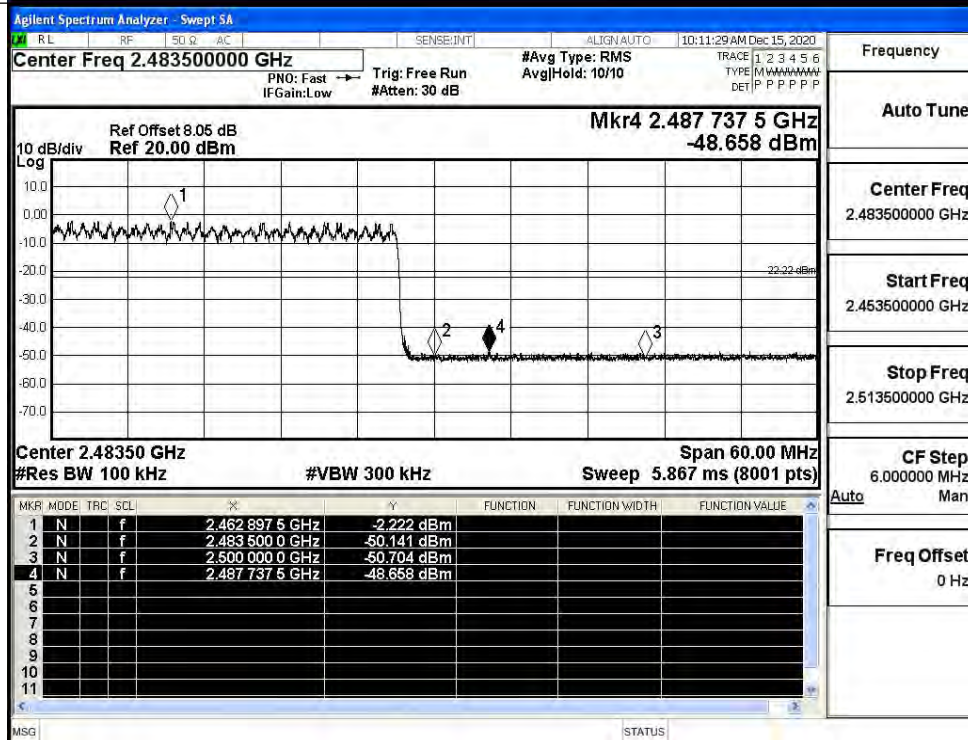
Stop Freq
2.500000000 GHz

CF Step
2.200000 MHz

Auto

Freq Offset
0 Hz

$\pi/4$ DQPSK/HCH/Hop



Frequency

Auto Tune

Center Freq
2.483500000 GHz

Start Freq
2.463500000 GHz

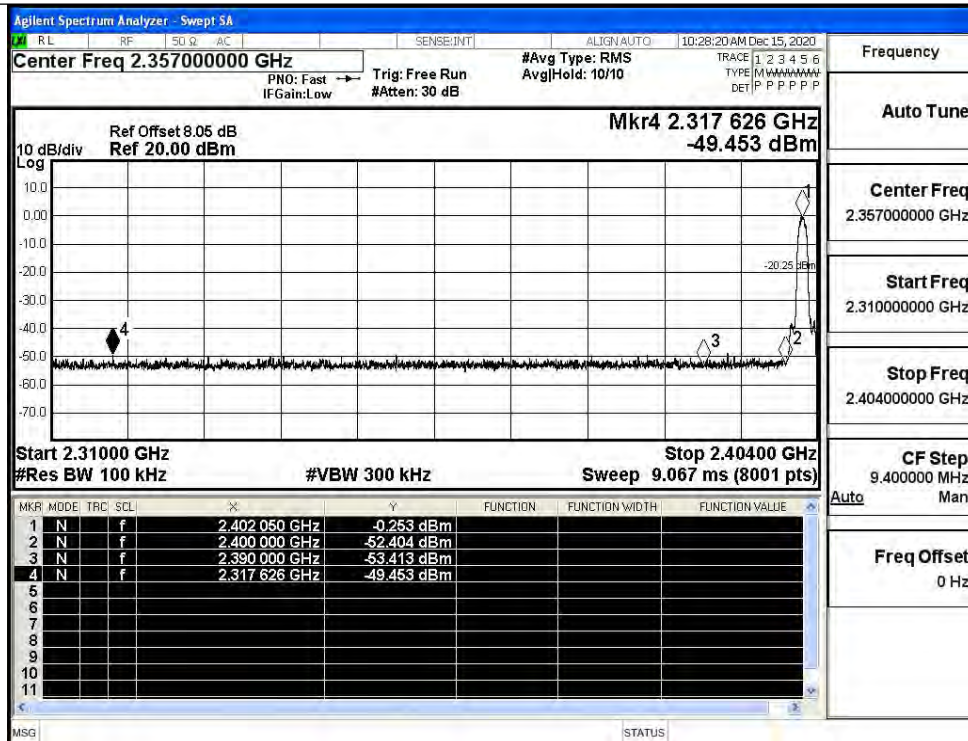
Stop Freq
2.513500000 GHz

CF Step
6.000000 MHz

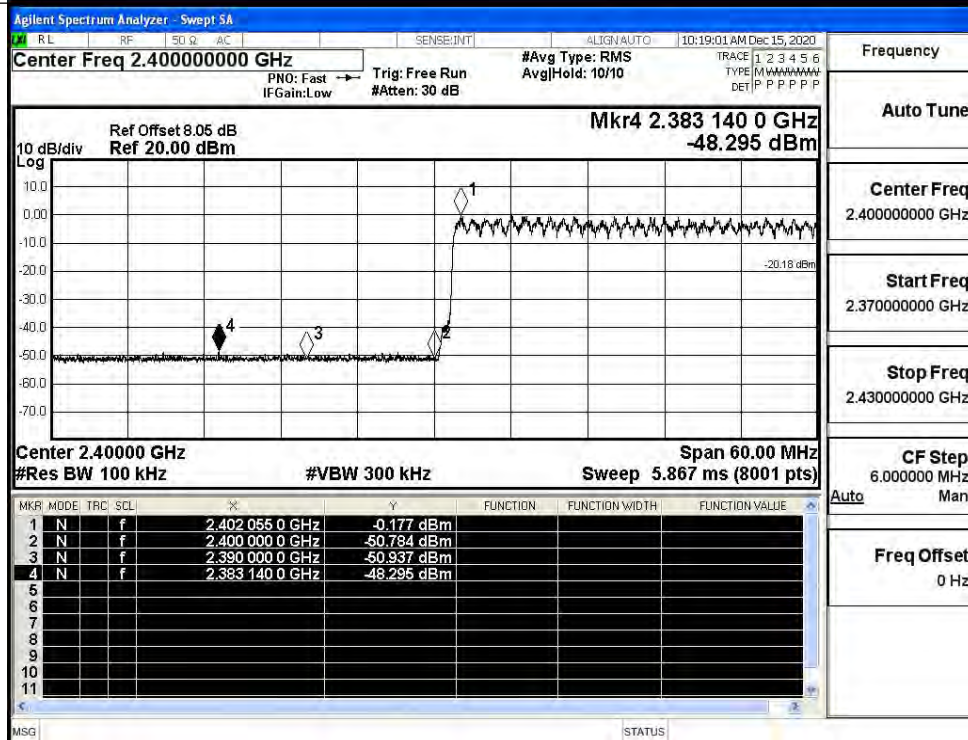
Auto

Freq Offset
0 Hz

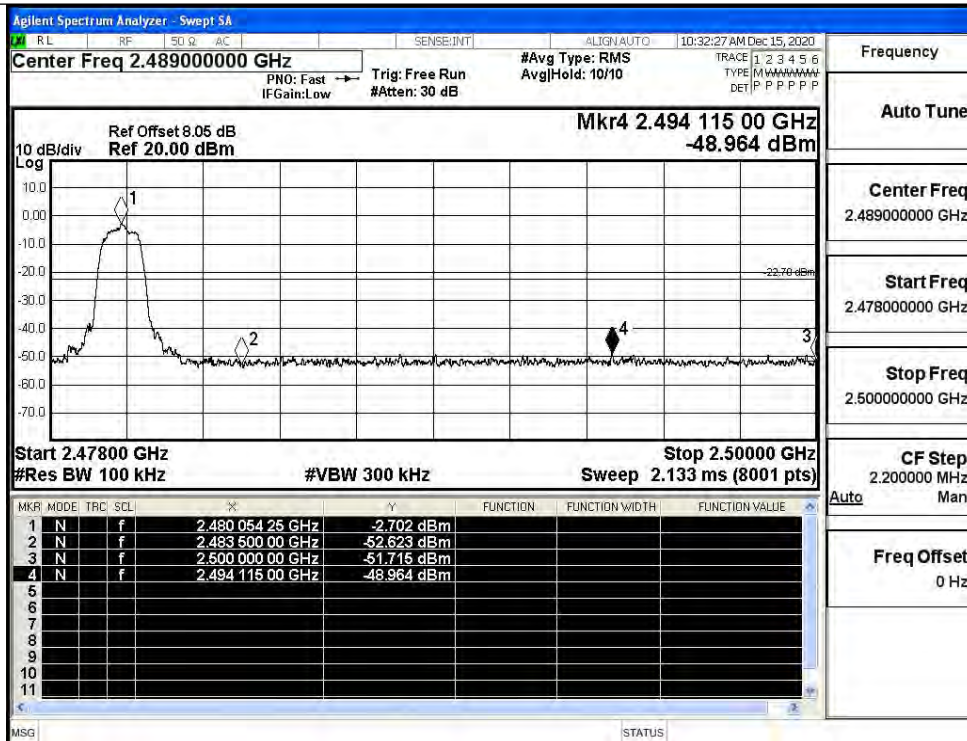
8DPSK/LCH/No Hop



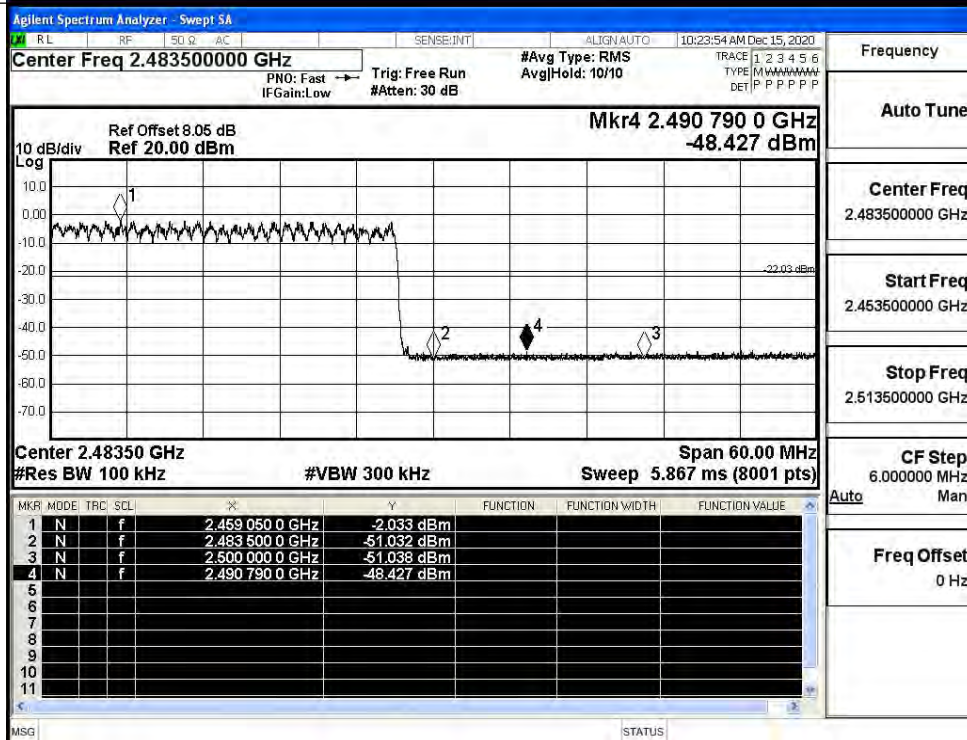
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



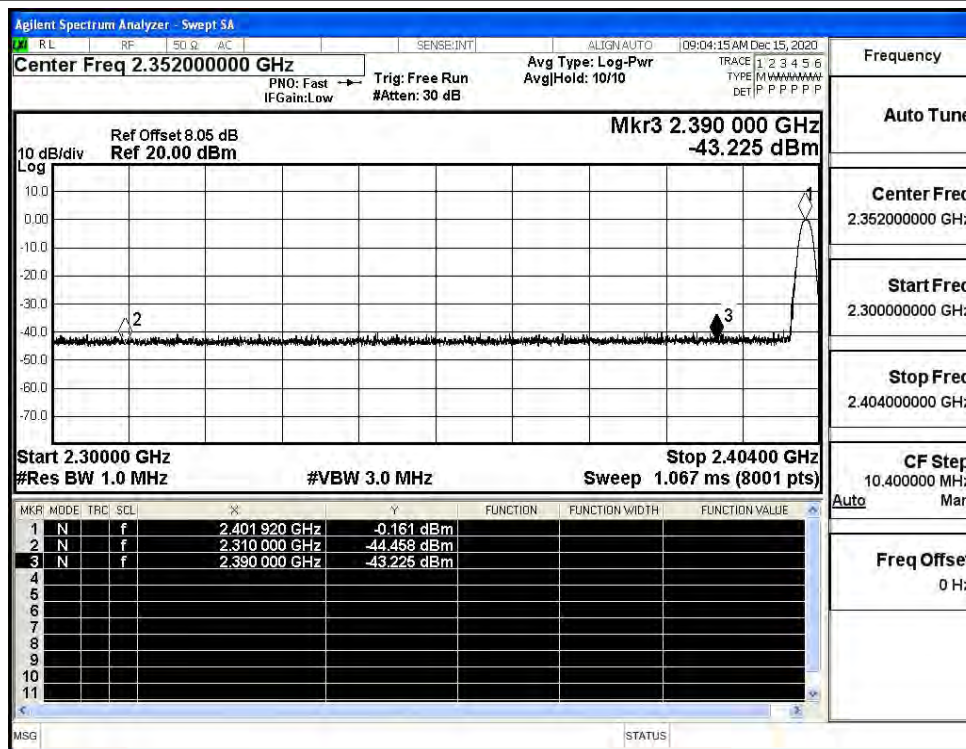
8DPSK/HCH/Hop



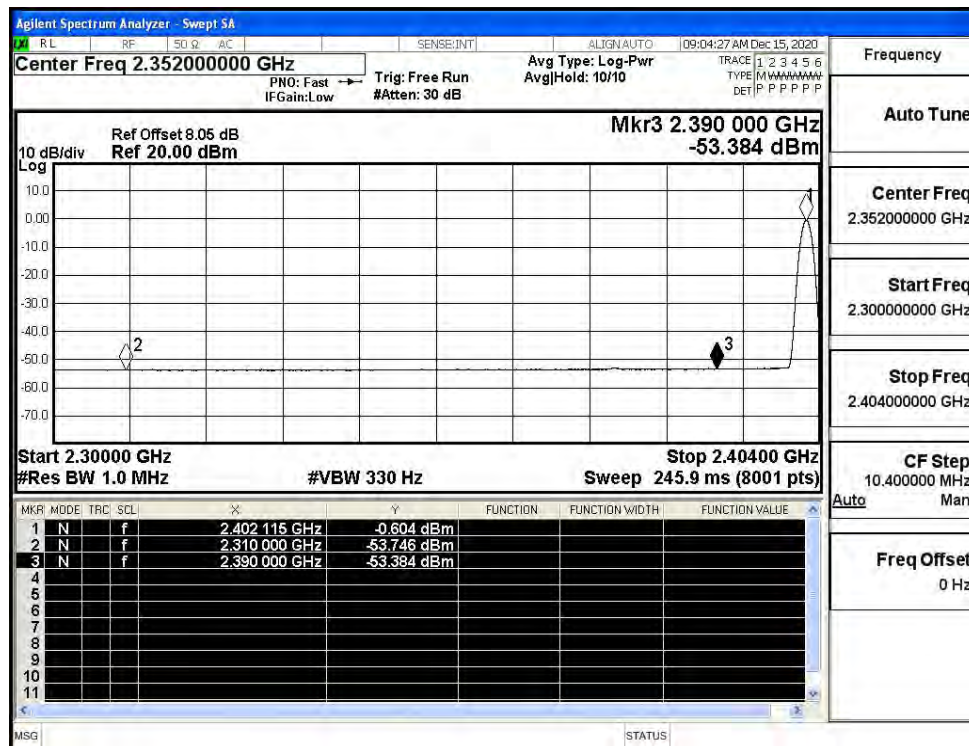
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-44.46	2.0	0	52.77	PEAK	74	PASS
	Off	2310.0	-53.75	2.0	0	43.48	AV	54	PASS
	Off	2390.0	-43.23	2.0	0	54.00	PEAK	74	PASS
	Off	2390.0	-53.38	2.0	0	43.85	AV	54	PASS
	Off	2483.5	-42.98	2.0	0	54.25	PEAK	74	PASS
	Off	2483.5	-52.77	2.0	0	44.46	AV	54	PASS
	Off	2500.0	-41.74	2.0	0	55.49	PEAK	74	PASS
	Off	2500.0	-52.63	2.0	0	44.60	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.48	2.0	0	53.75	PEAK	74	PASS
	Off	2310.0	-53.54	2.0	0	43.69	AV	54	PASS
	Off	2390.0	-41.58	2.0	0	55.65	PEAK	74	PASS
	Off	2390.0	-53.34	2.0	0	43.89	AV	54	PASS
	Off	2483.5	-42.28	2.0	0	54.95	PEAK	74	PASS
	Off	2483.5	-52.68	2.0	0	44.55	AV	54	PASS
	Off	2500.0	-41.94	2.0	0	55.29	PEAK	74	PASS
	Off	2500.0	-52.44	2.0	0	44.79	AV	54	PASS
8DPSK	Off	2310.0	-42.68	2.0	0	54.55	PEAK	74	PASS
	Off	2310.0	-53.41	2.0	0	43.82	AV	54	PASS
	Off	2390.0	-43.34	2.0	0	53.89	PEAK	74	PASS
	Off	2390.0	-53.14	2.0	0	44.09	AV	54	PASS
	Off	2483.5	-42.83	2.0	0	54.40	PEAK	74	PASS
	Off	2483.5	-52.58	2.0	0	44.65	AV	54	PASS
	Off	2500.0	-40.50	2.0	0	56.73	PEAK	74	PASS
	Off	2500.0	-52.42	2.0	0	44.81	AV	54	PASS

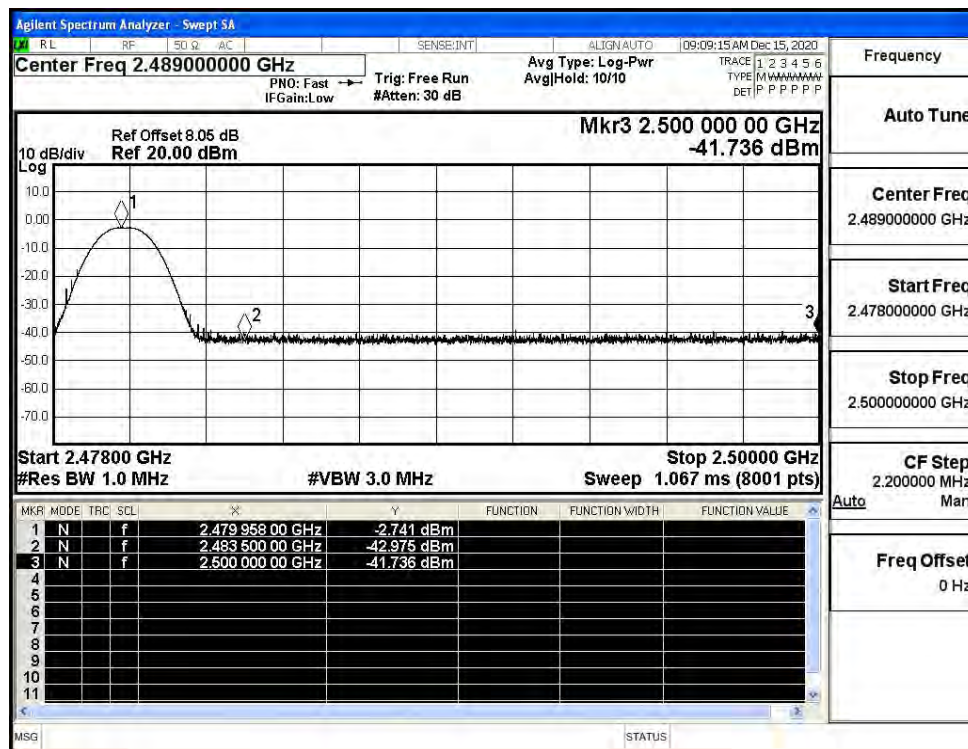
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



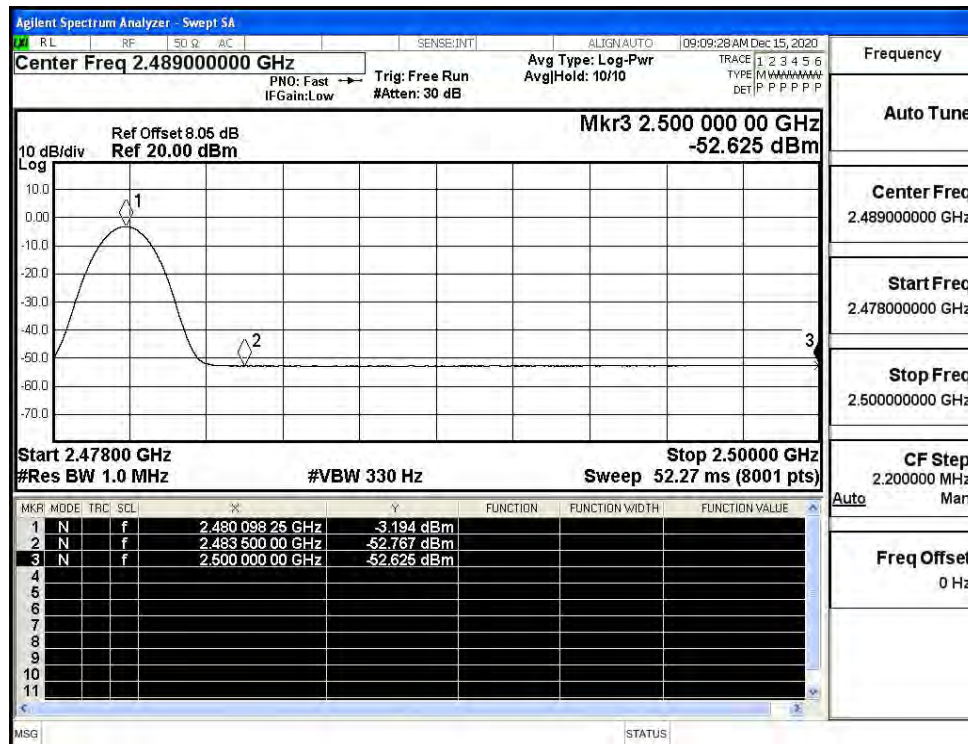
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

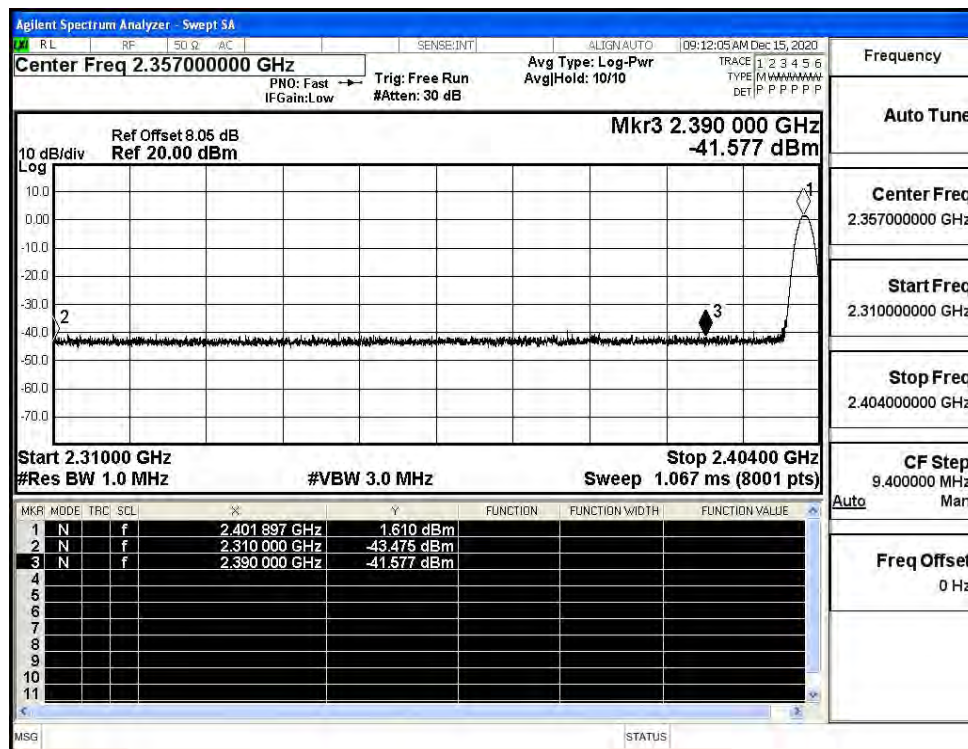
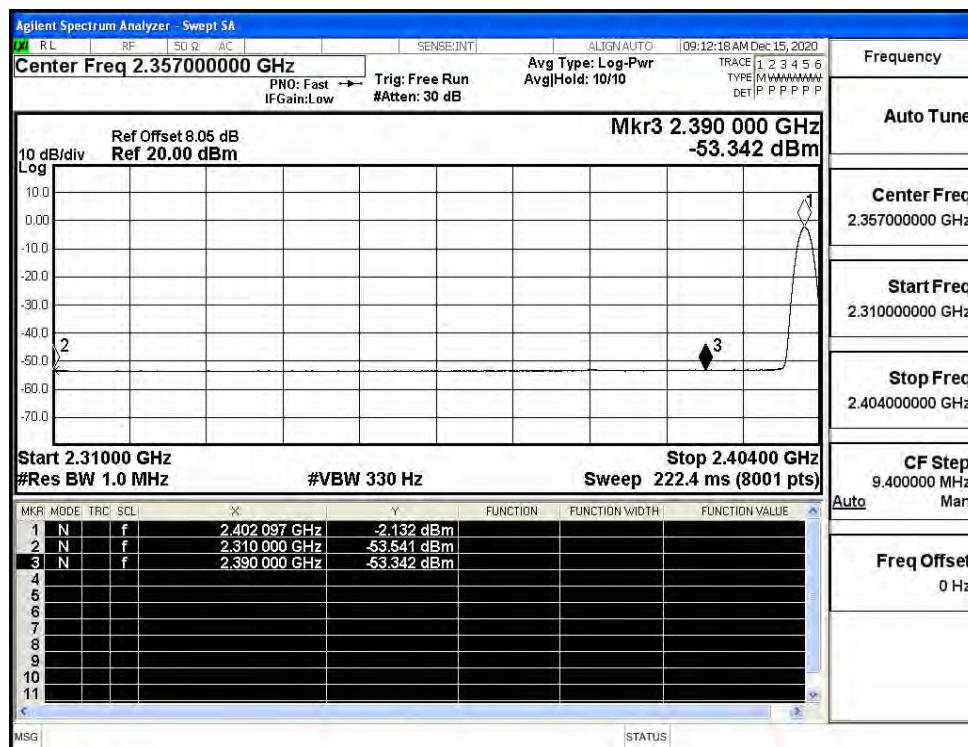


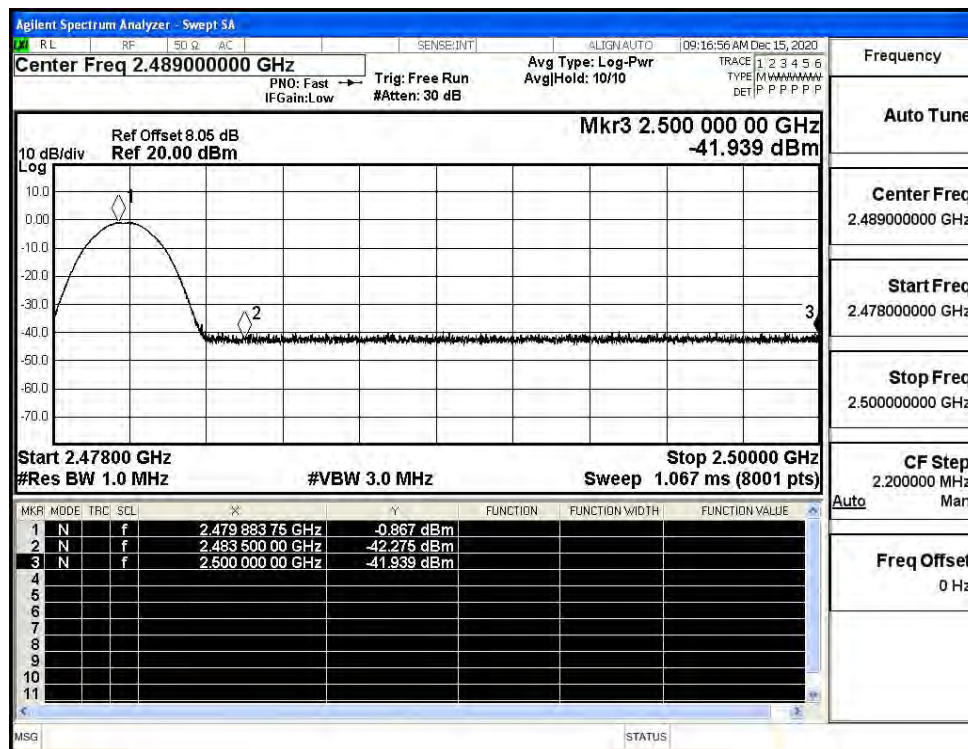
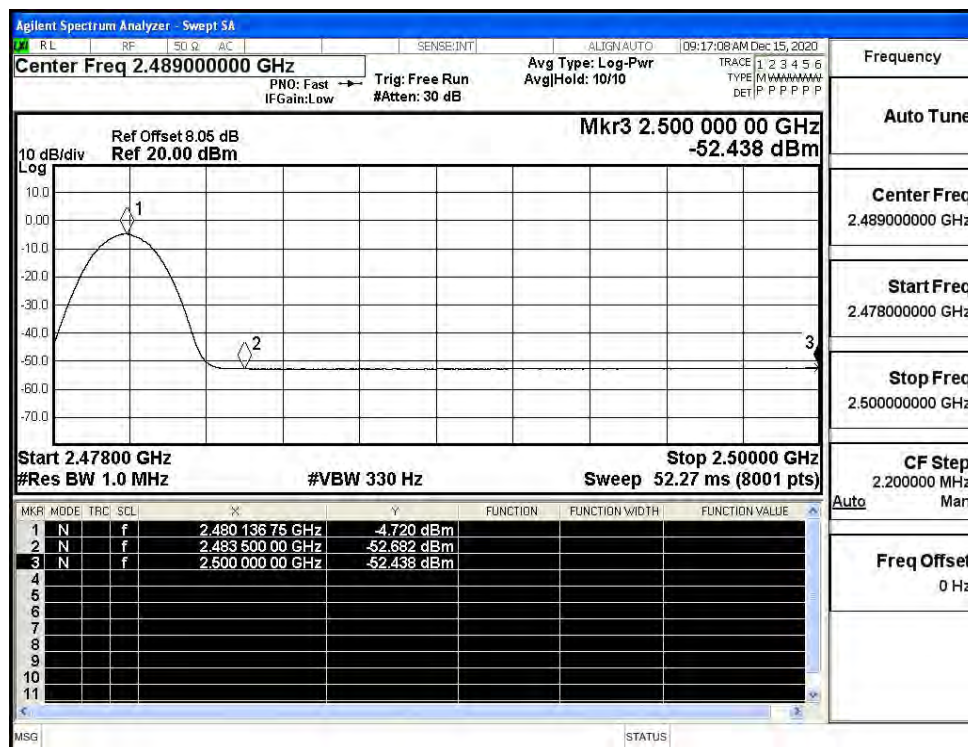
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



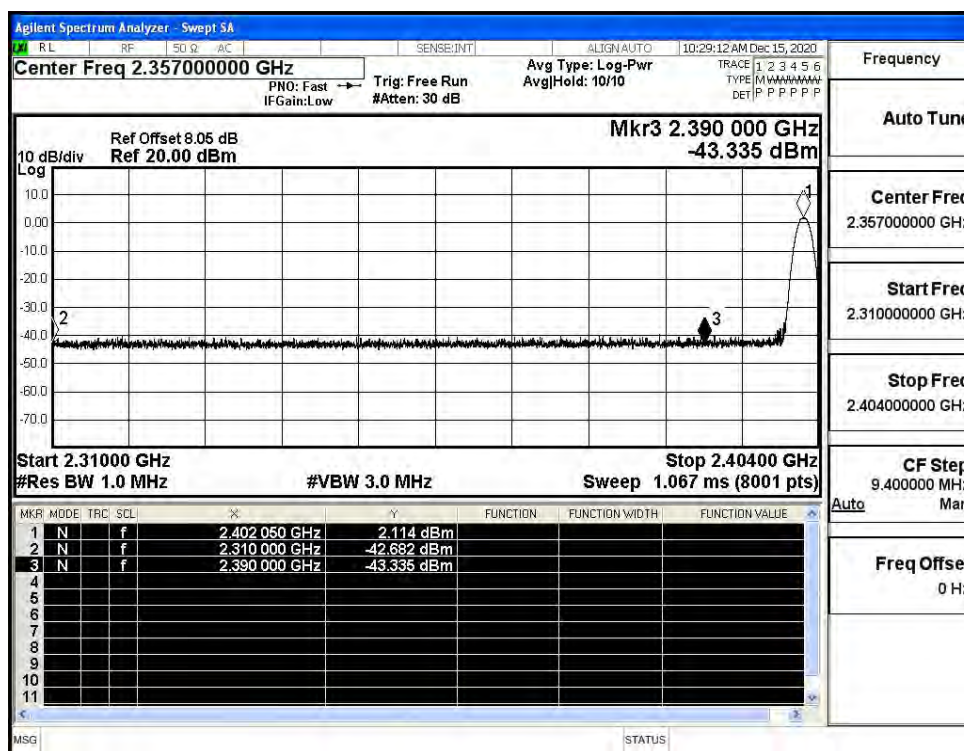
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



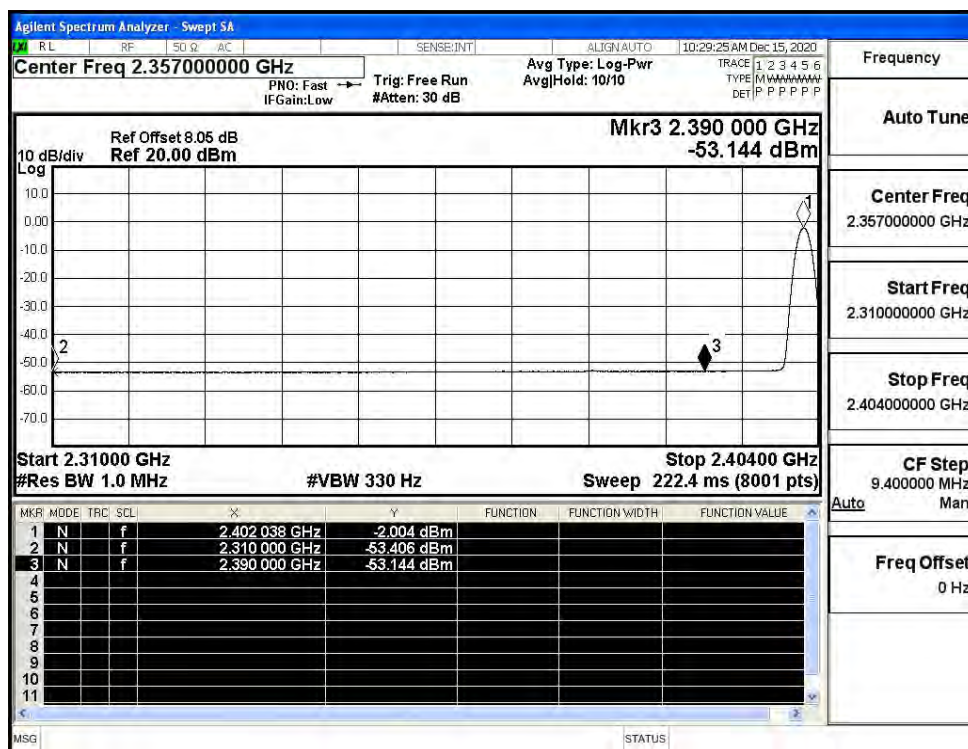
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

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)

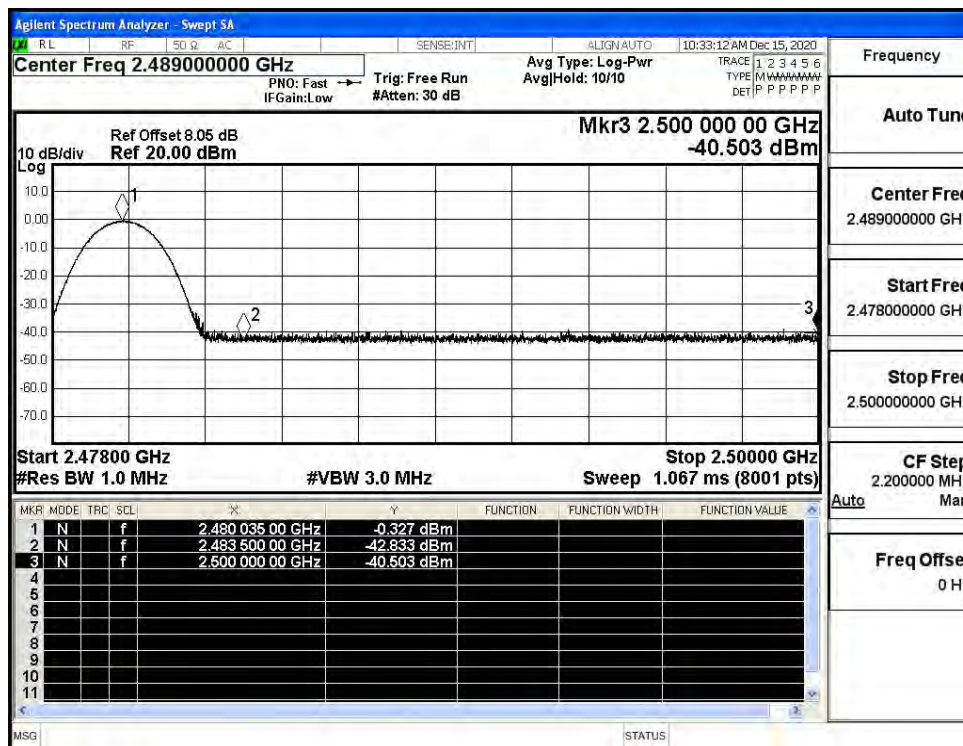
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

