

Appendix A

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

Product Name: 16inch Bluetooth Soundbar Speaker with Wireless Subwoofer and Dolby

Trade Mark: 

Test Model: SBB-A5520

Environmental Conditions

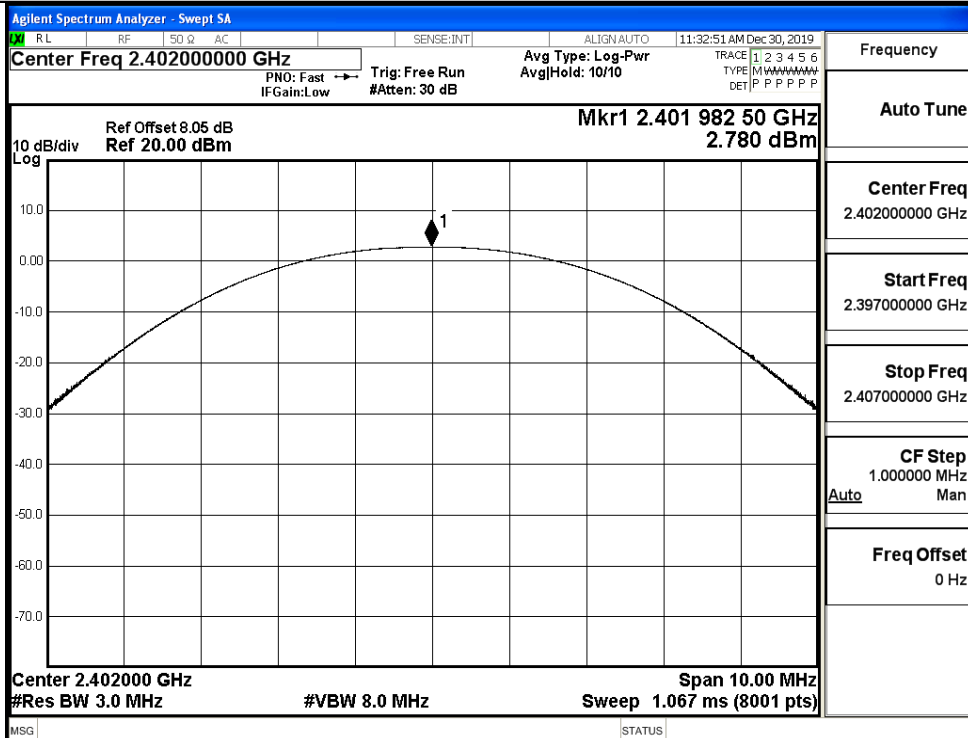
Temperature:	23.2 ° C
Relative Humidity:	54.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Qu Xin
Supervised by:	Tom.Liu

A.1 Maxmum Conducted Peak Output Power

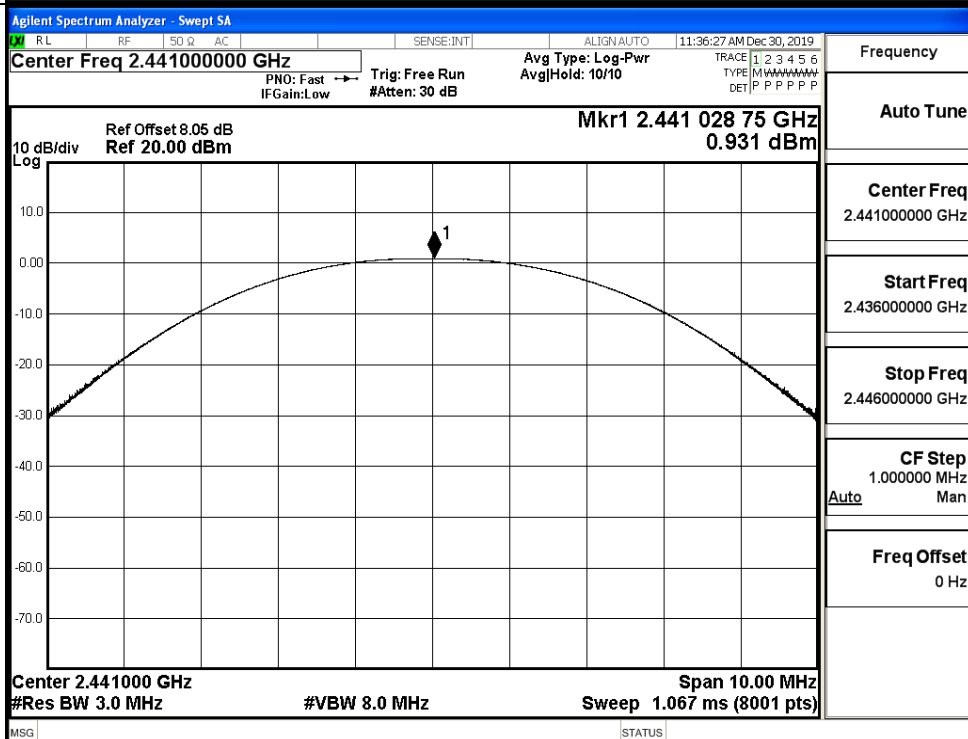
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2.780	21	PASS
	MCH	0.931	21	PASS
	HCH	2.147	21	PASS
$\pi/4$ DQPSK	LCH	2.019	21	PASS
	MCH	0.323	21	PASS
	HCH	1.375	21	PASS
8DPSK	LCH	2.237	21	PASS
	MCH	0.502	21	PASS
	HCH	1.569	21	PASS

Test Graphs

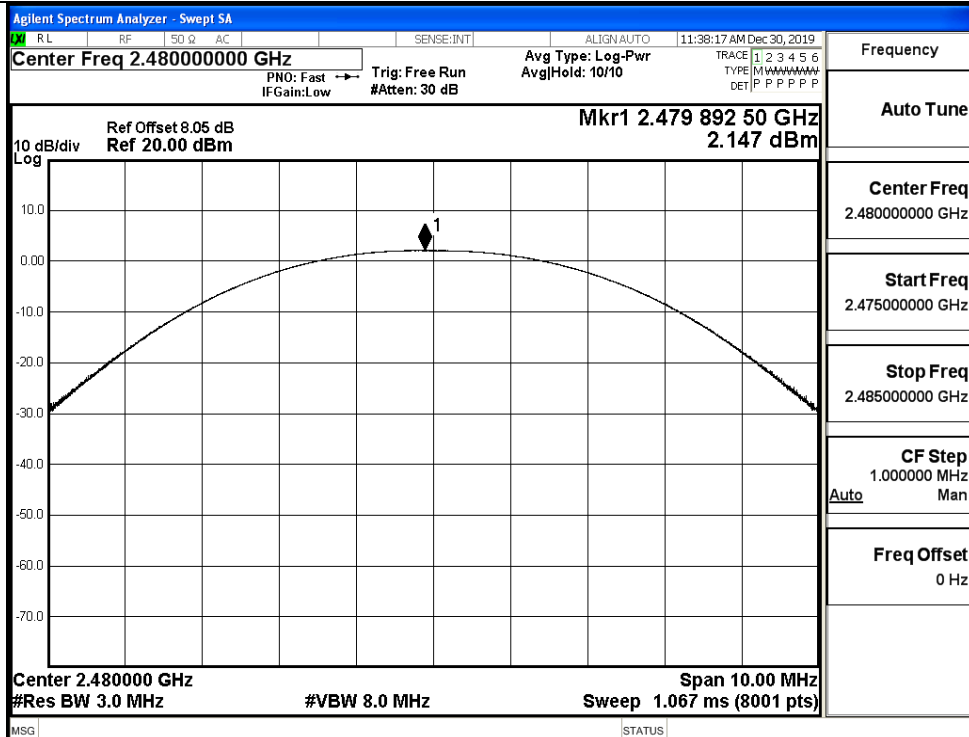
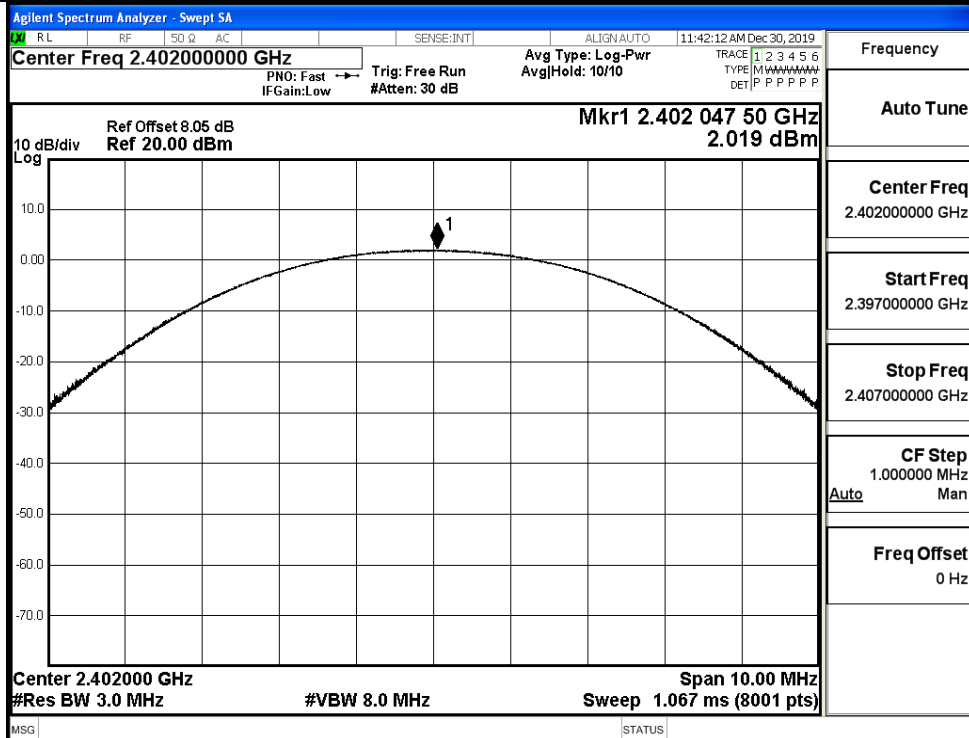
GFSK/LCH

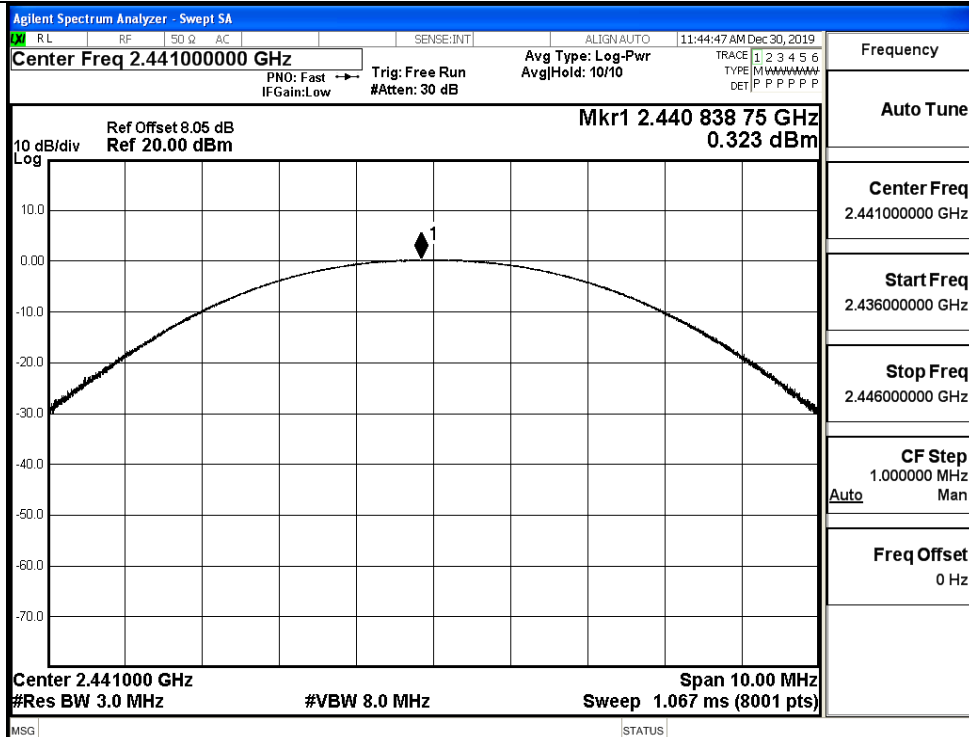
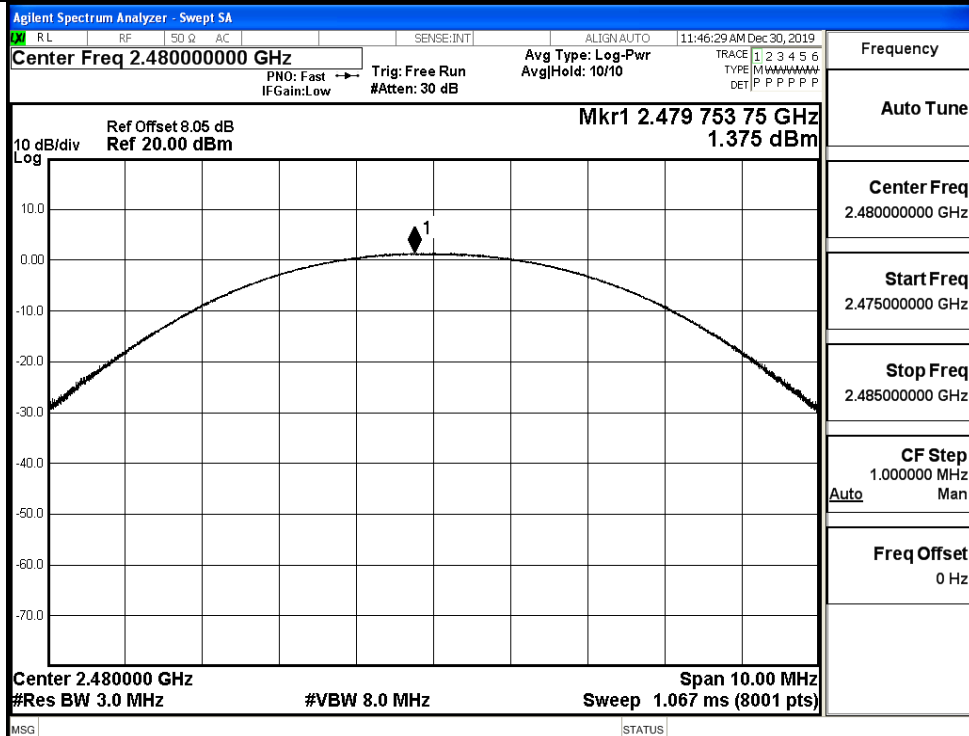


GFSK/MCH

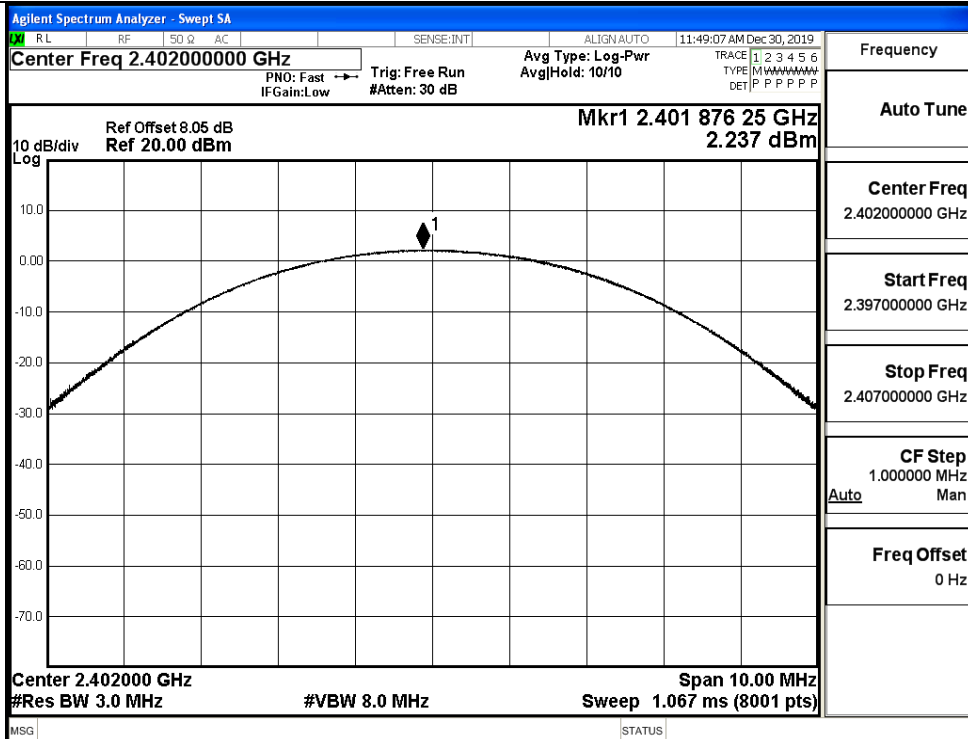


GFSK/HCH

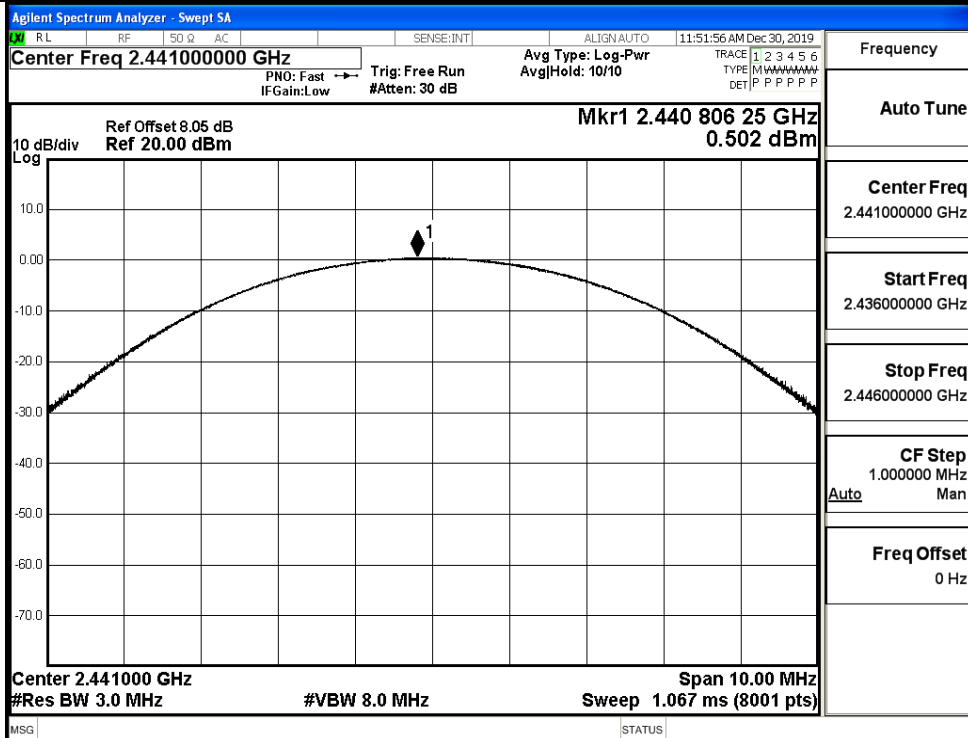
 $\pi/4$ DQPSK/LCH

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

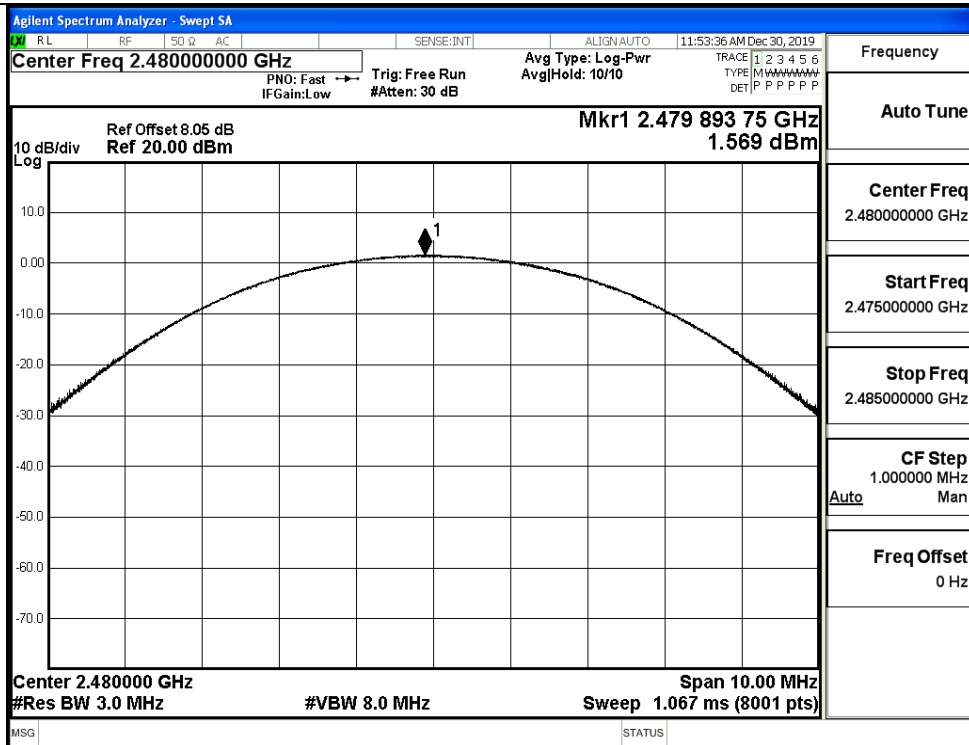
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

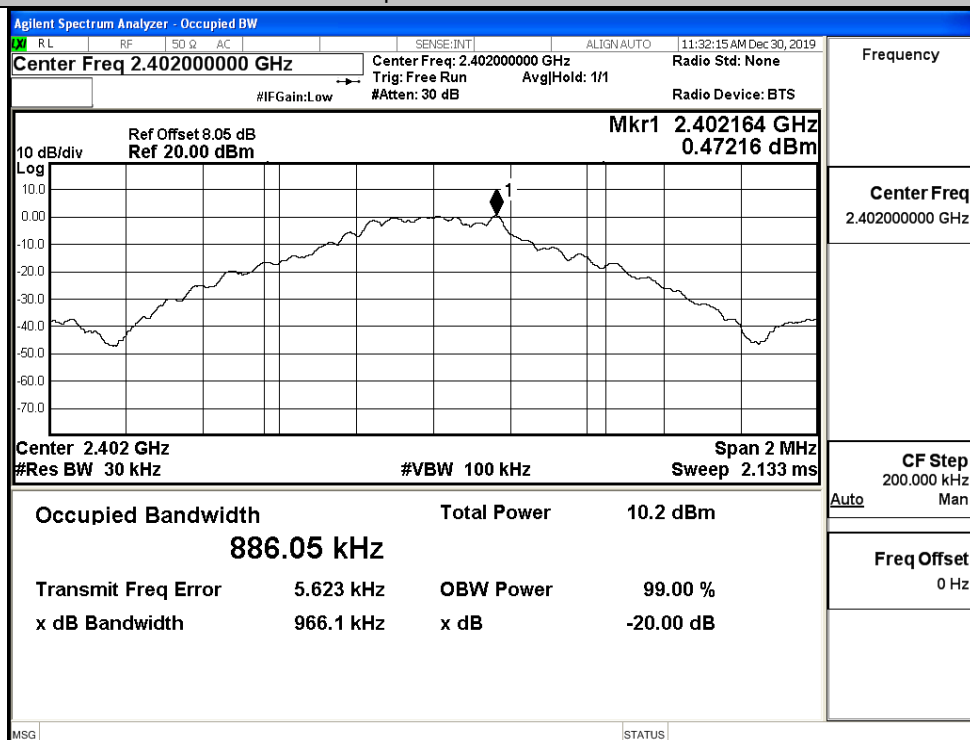


A.2 20dB Bandwidth

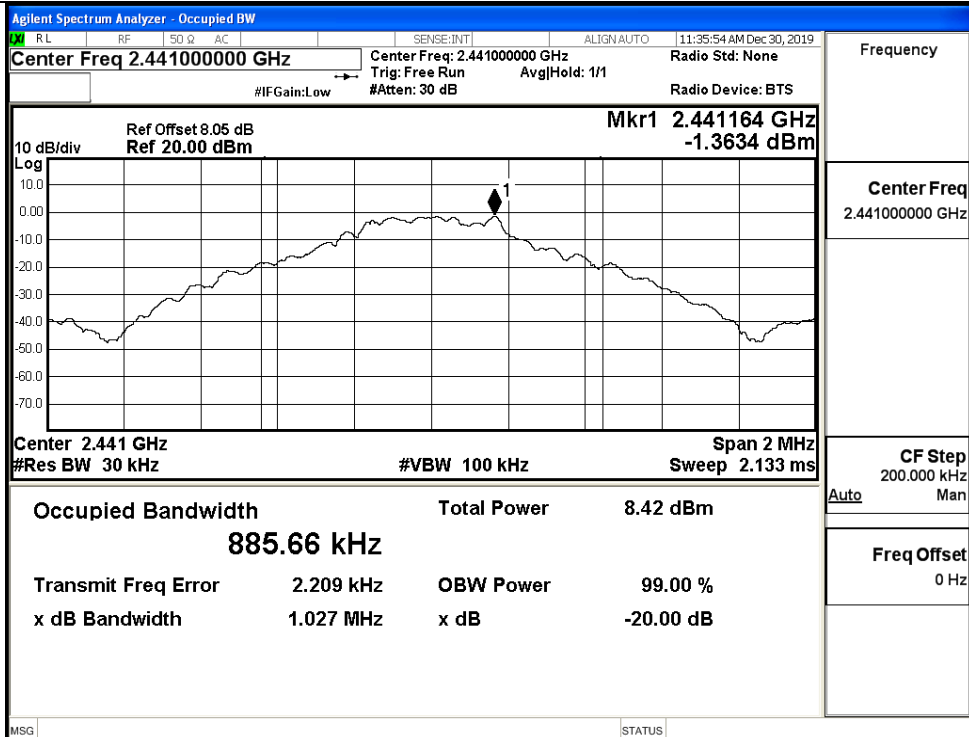
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9661	Not Specified	PASS
	MCH	1.027	Not Specified	PASS
	HCH	1.035	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.289	Not Specified	PASS
	MCH	1.294	Not Specified	PASS
	HCH	1.290	Not Specified	PASS
8DPSK	LCH	1.292	Not Specified	PASS
	MCH	1.296	Not Specified	PASS
	HCH	1.294	Not Specified	PASS

Test Graphs

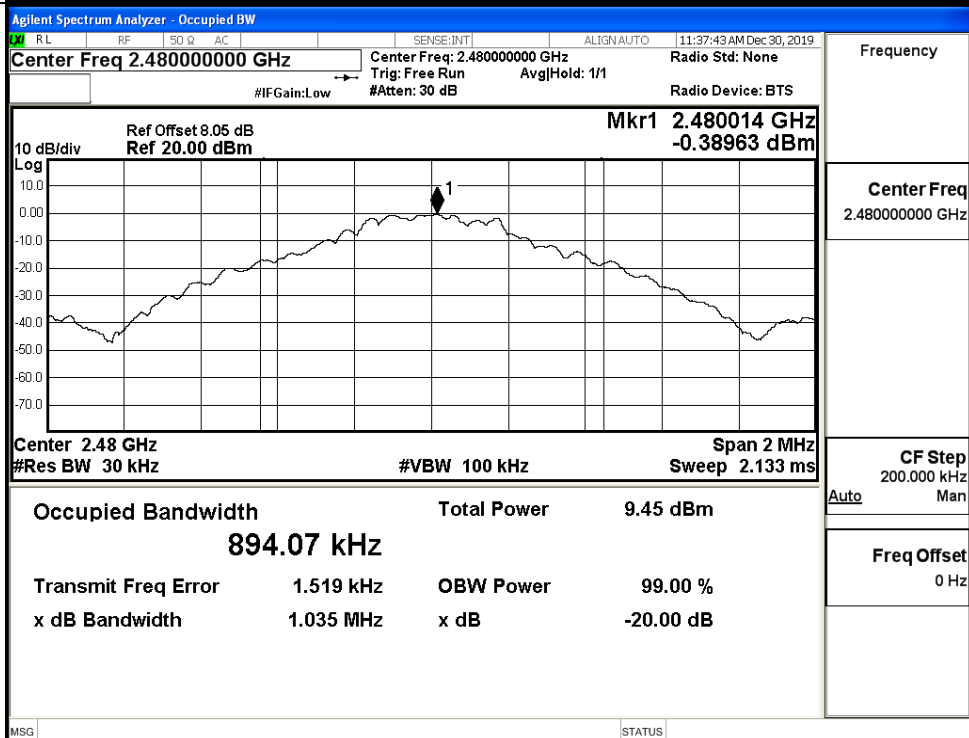
GFSK/LCH

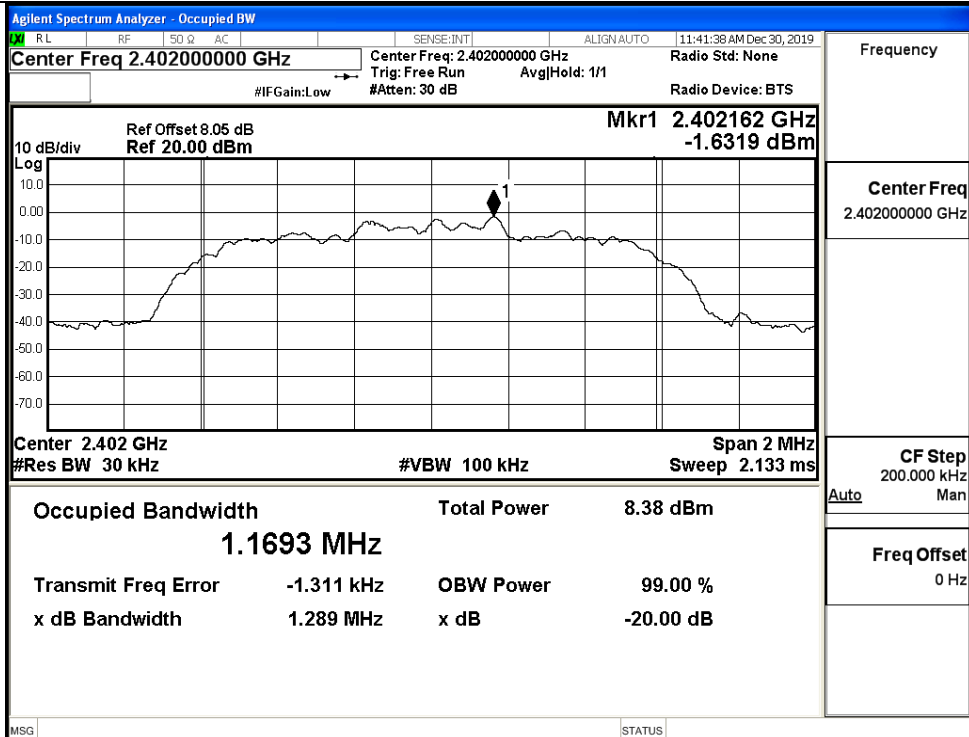
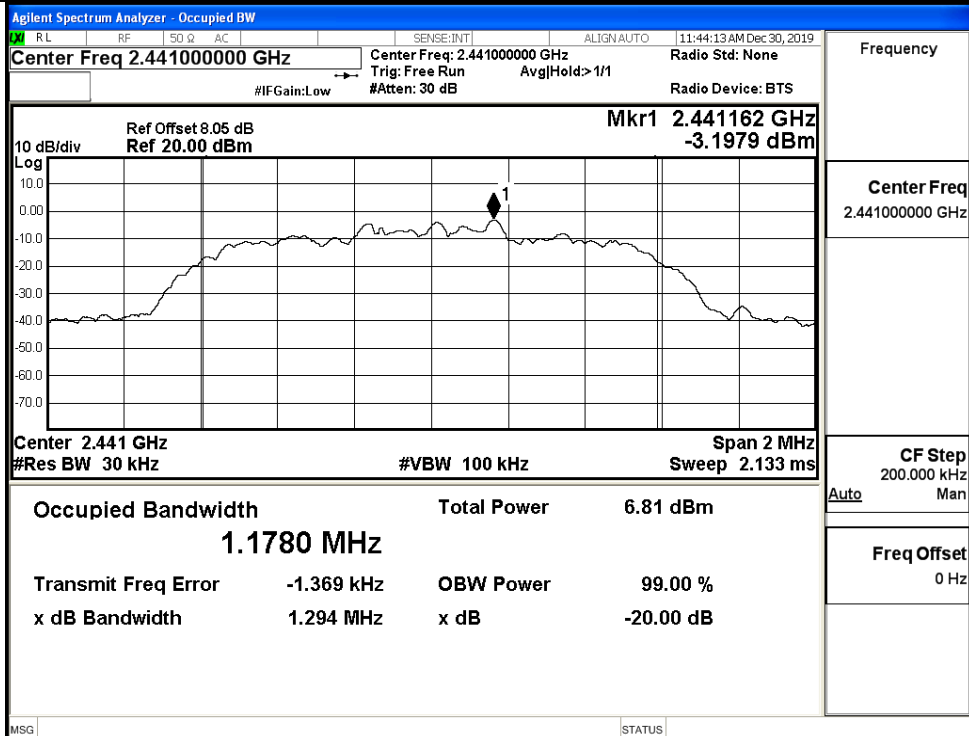


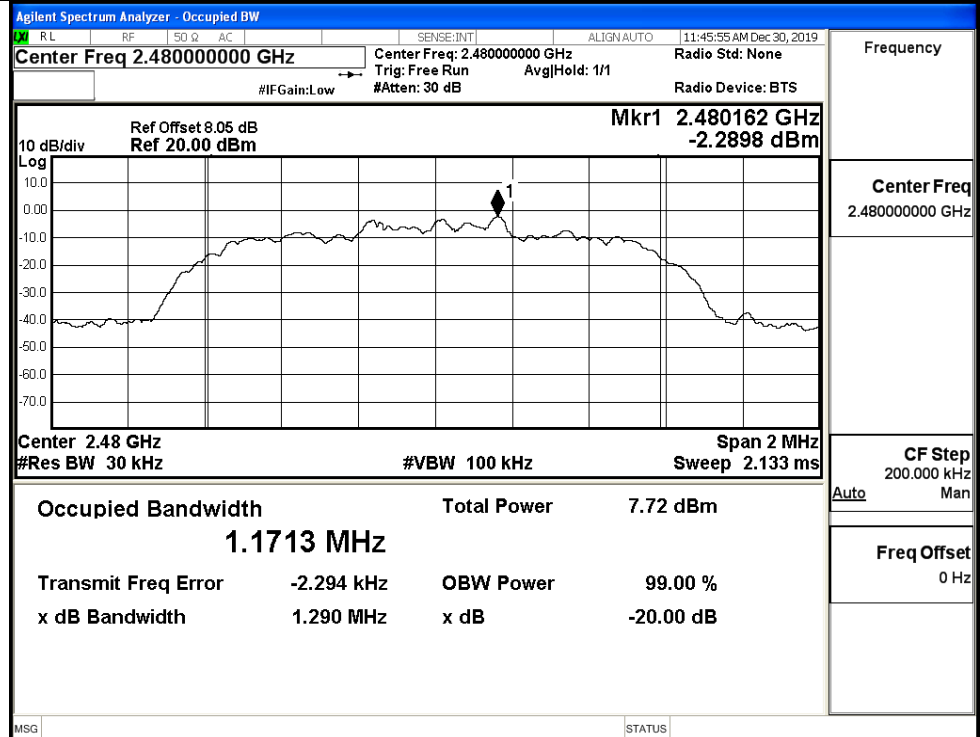
GFSK/MCH



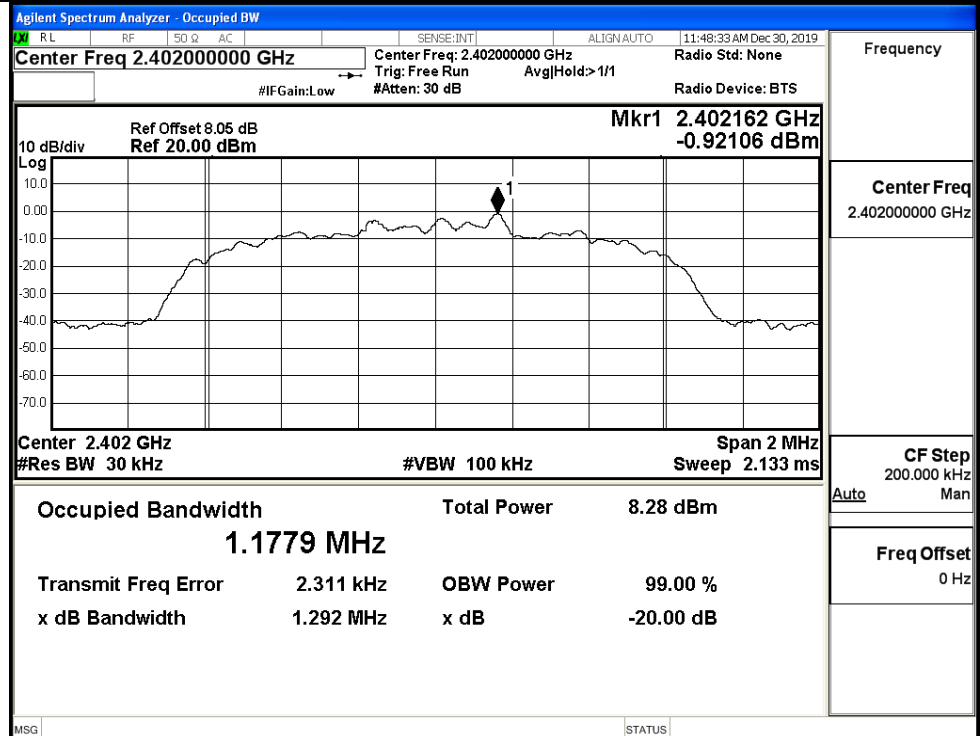
GFSK/HCH



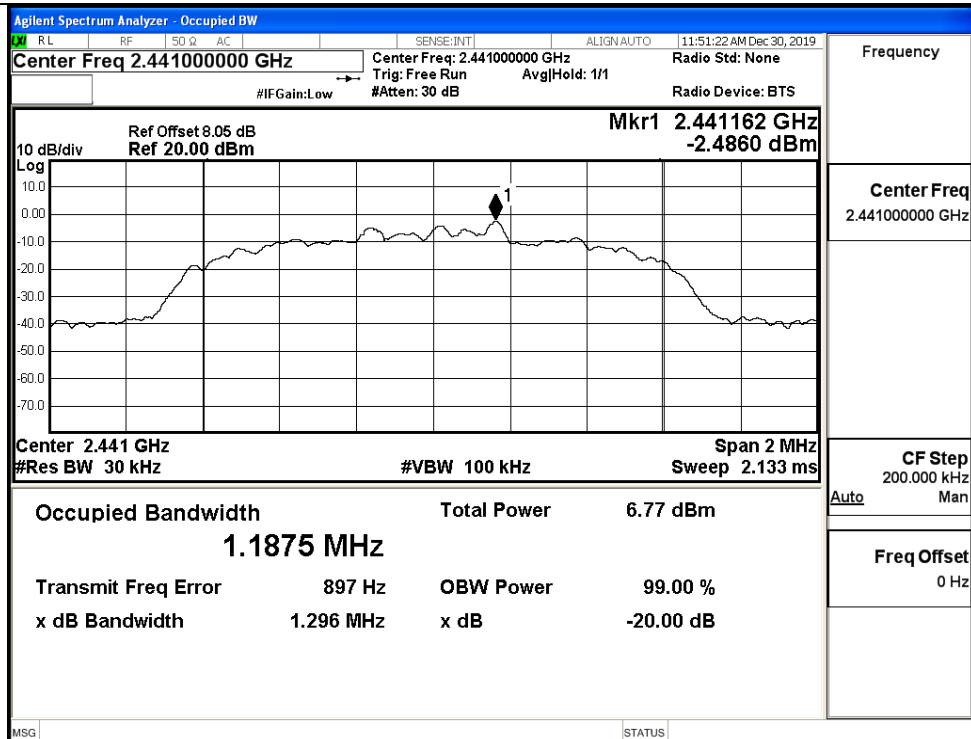
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

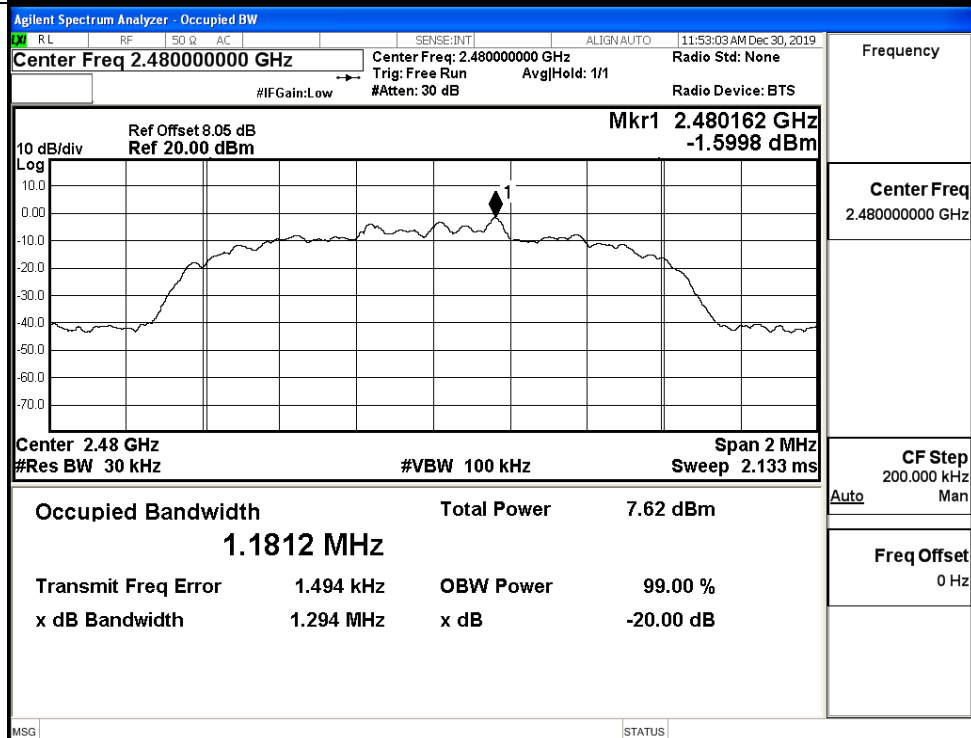
8DPSK/LCH



8DPSK/MCH



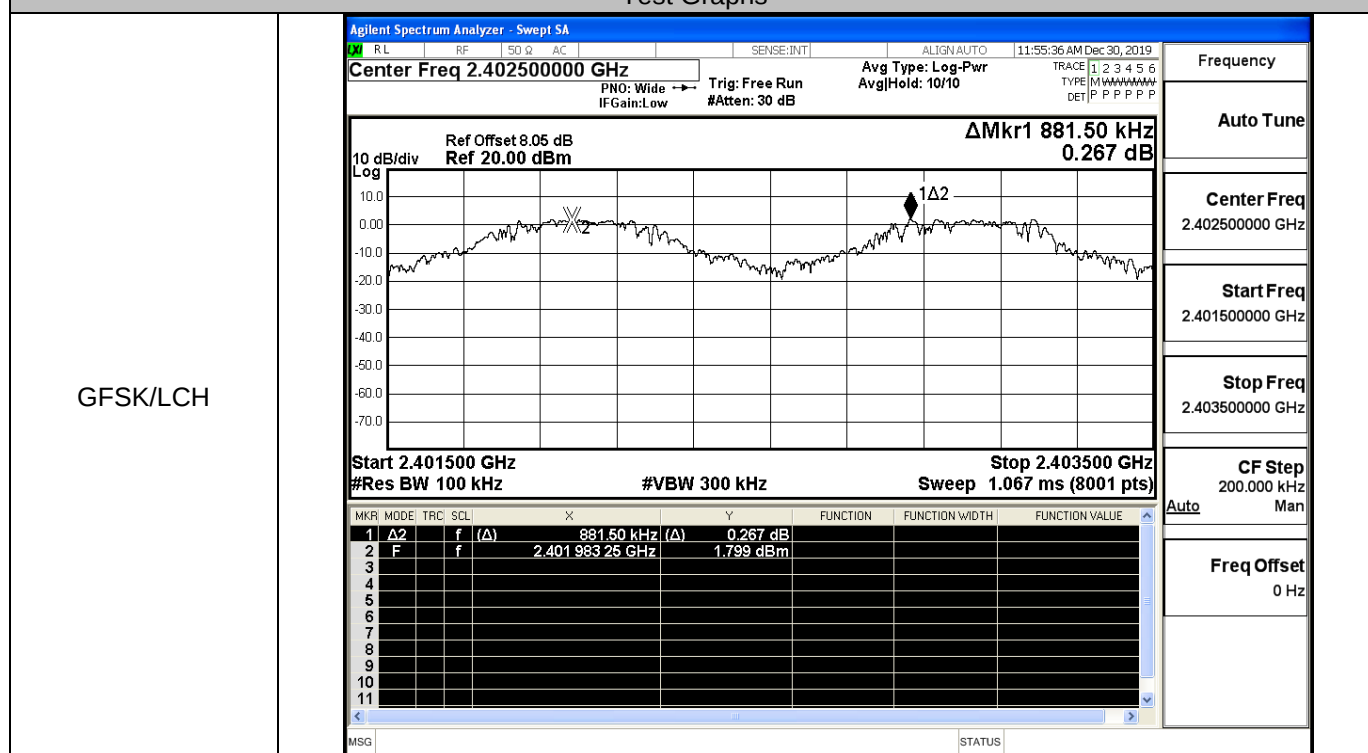
8DPSK/HCH



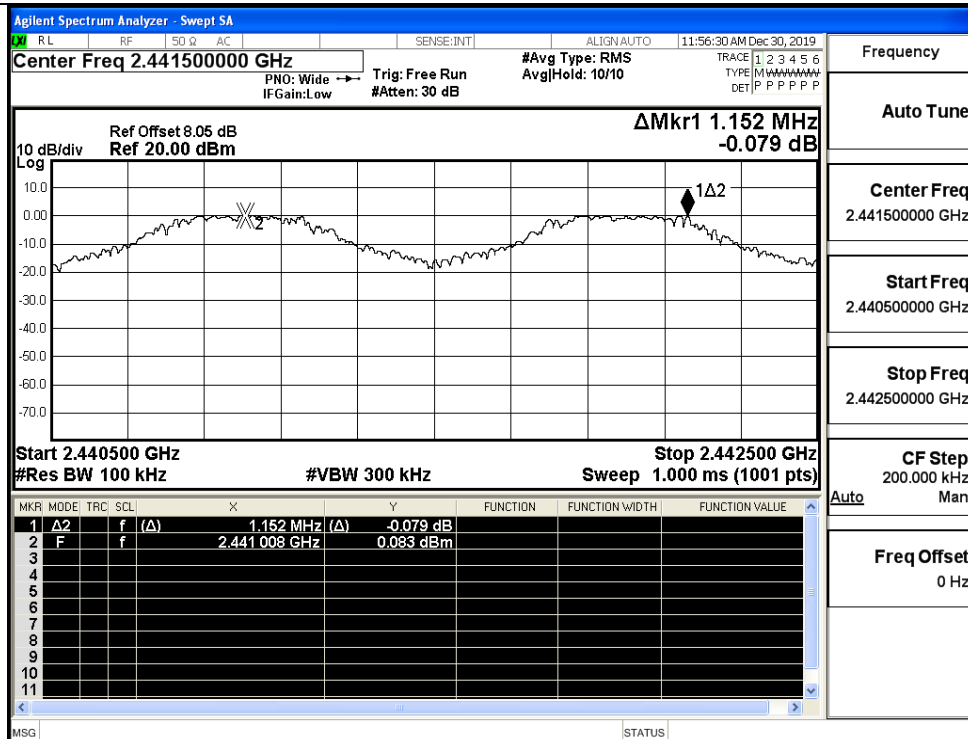
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.881	0.644	PASS
	MCH	1.152	0.685	PASS
	HCH	1.086	0.690	PASS
$\pi/4$ DQPSK	LCH	0.992	0.859	PASS
	MCH	1.004	0.863	PASS
	HCH	0.994	0.860	PASS
8DPSK	LCH	1.224	0.861	PASS
	MCH	1.296	0.864	PASS
	HCH	1.134	0.863	PASS

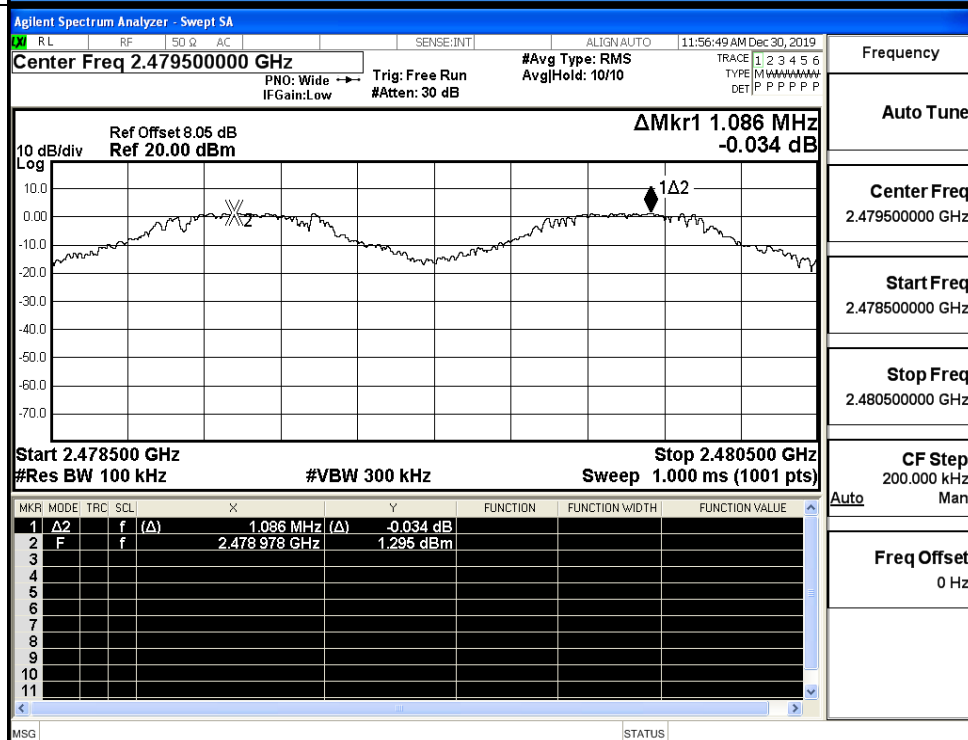
Test Graphs

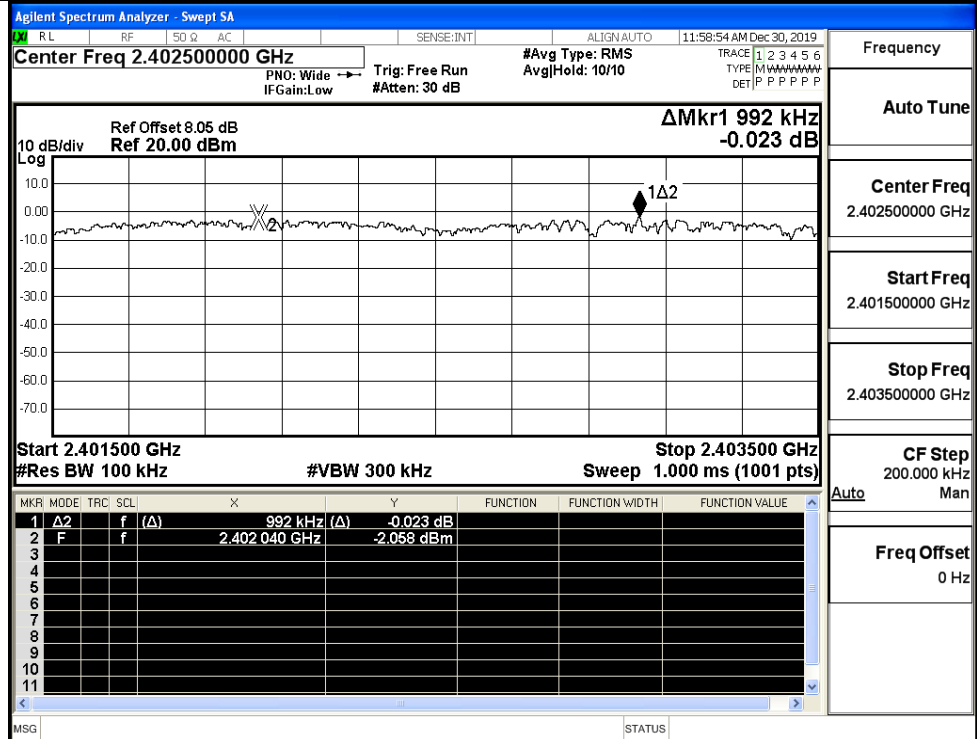
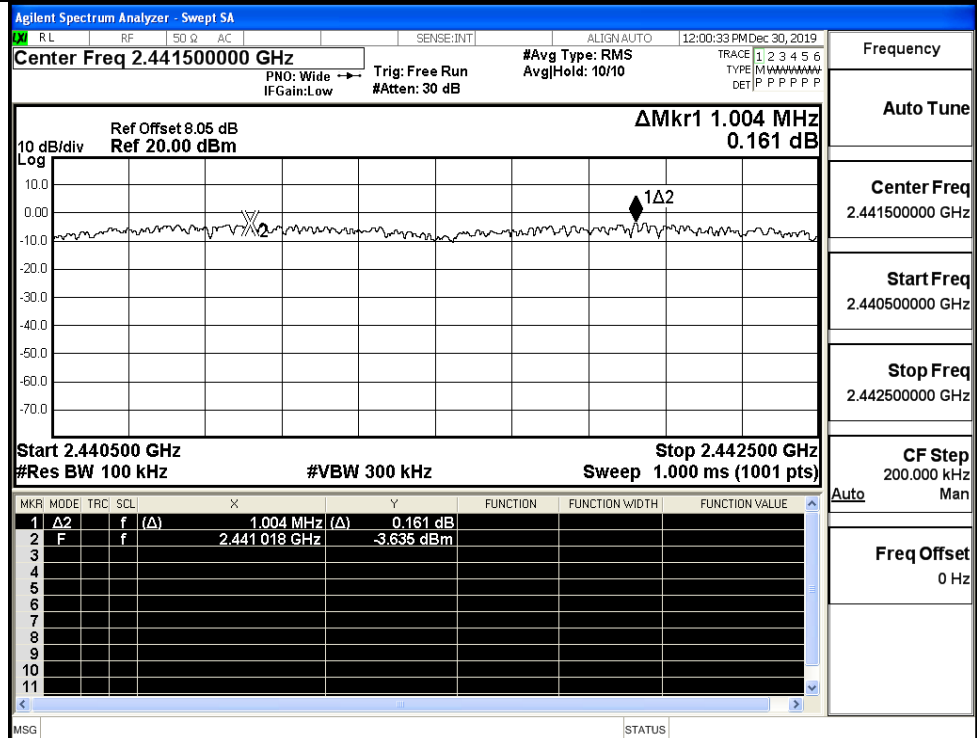


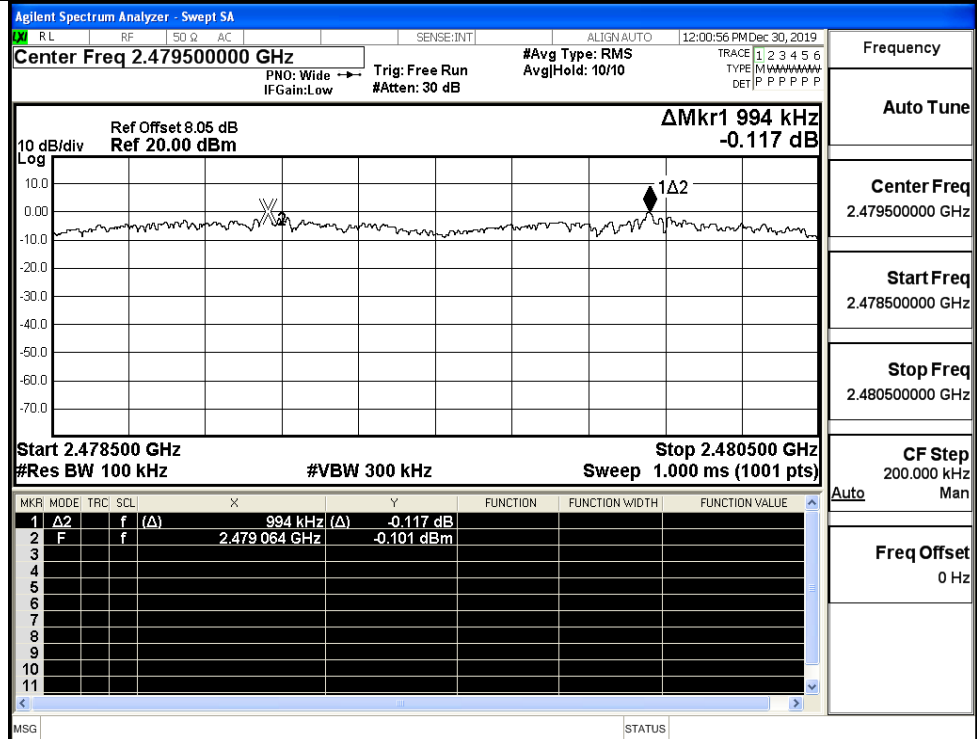
GFSK/MCH



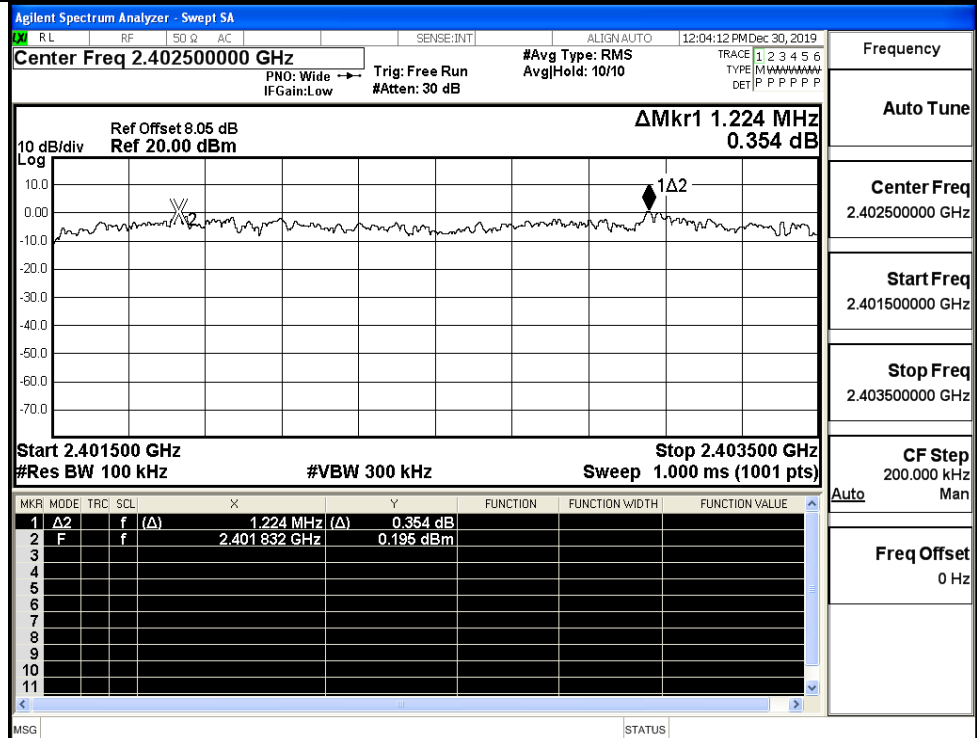
GFSK/HCH



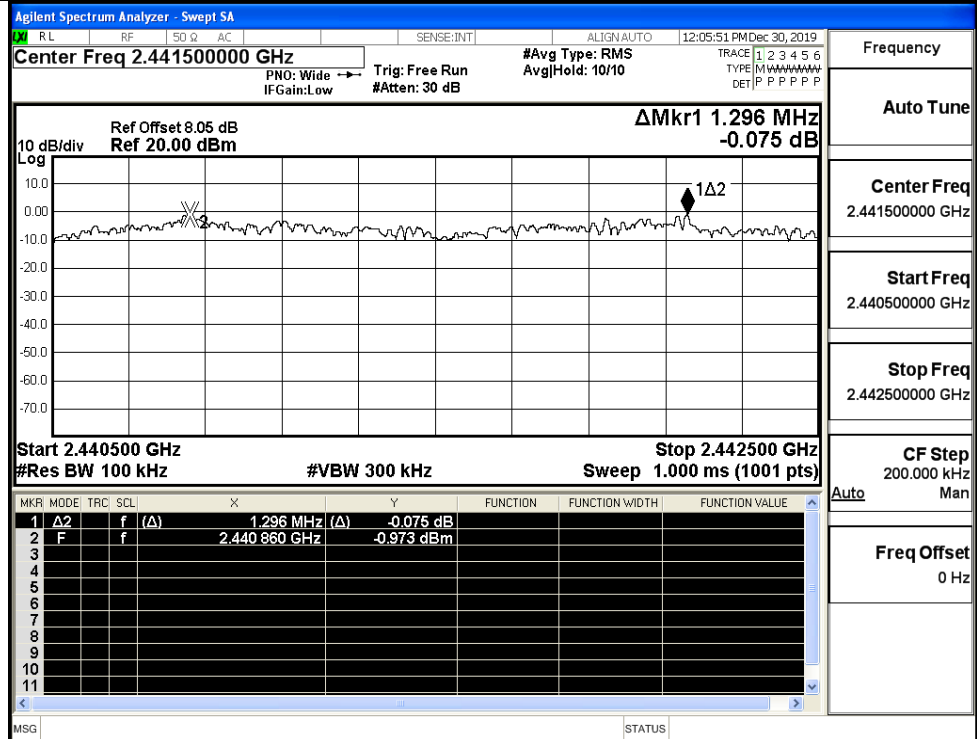
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

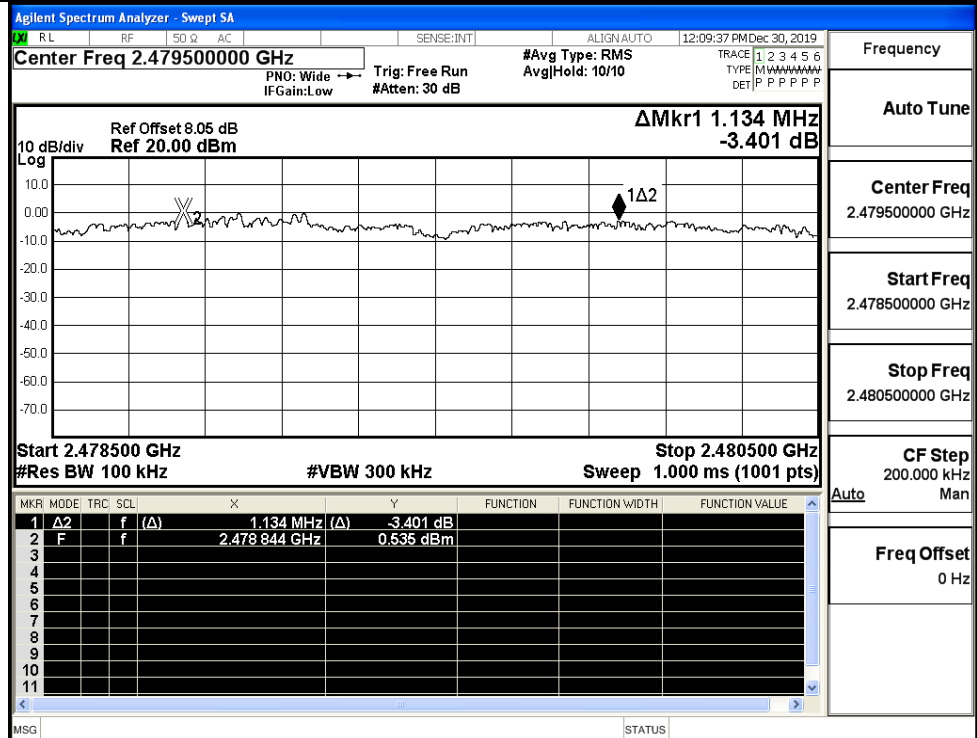
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

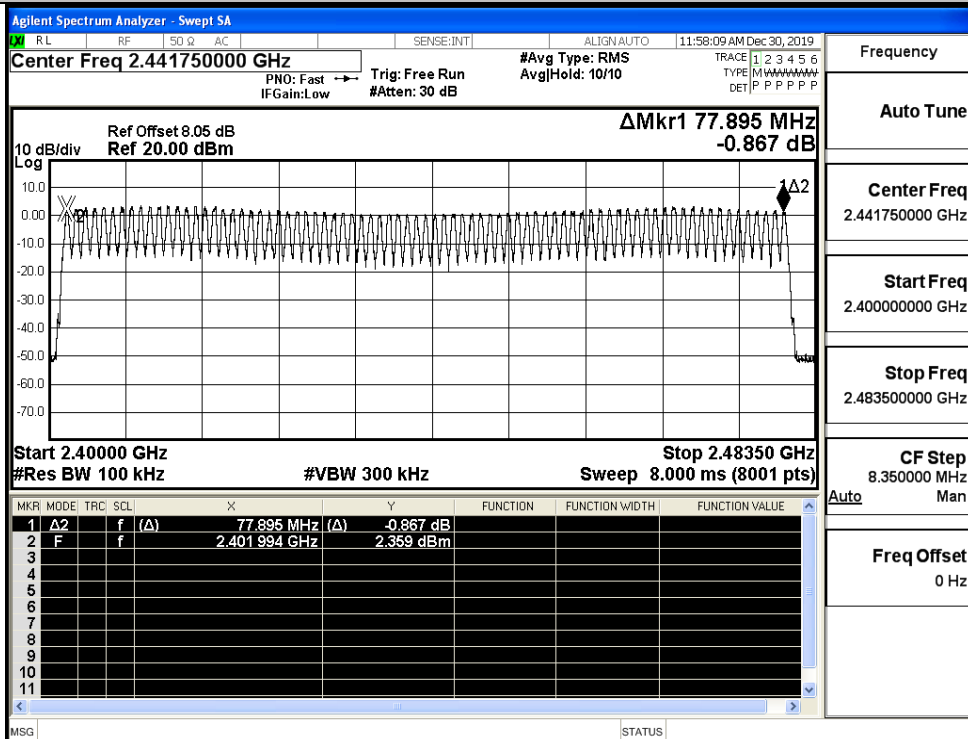
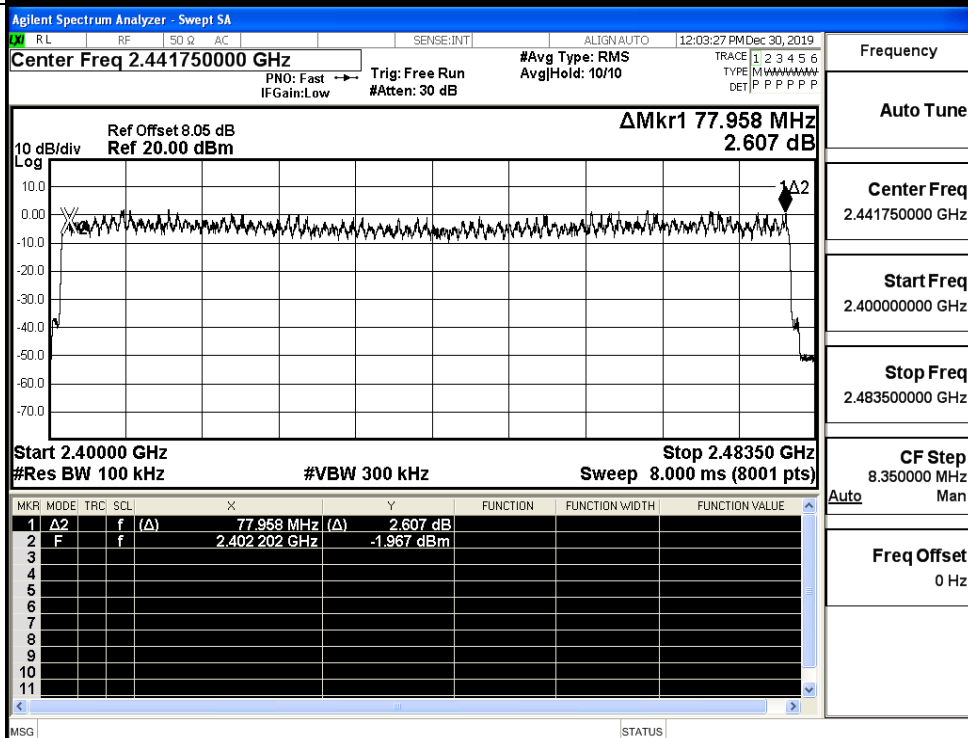


A.4 Hopping Channel Number

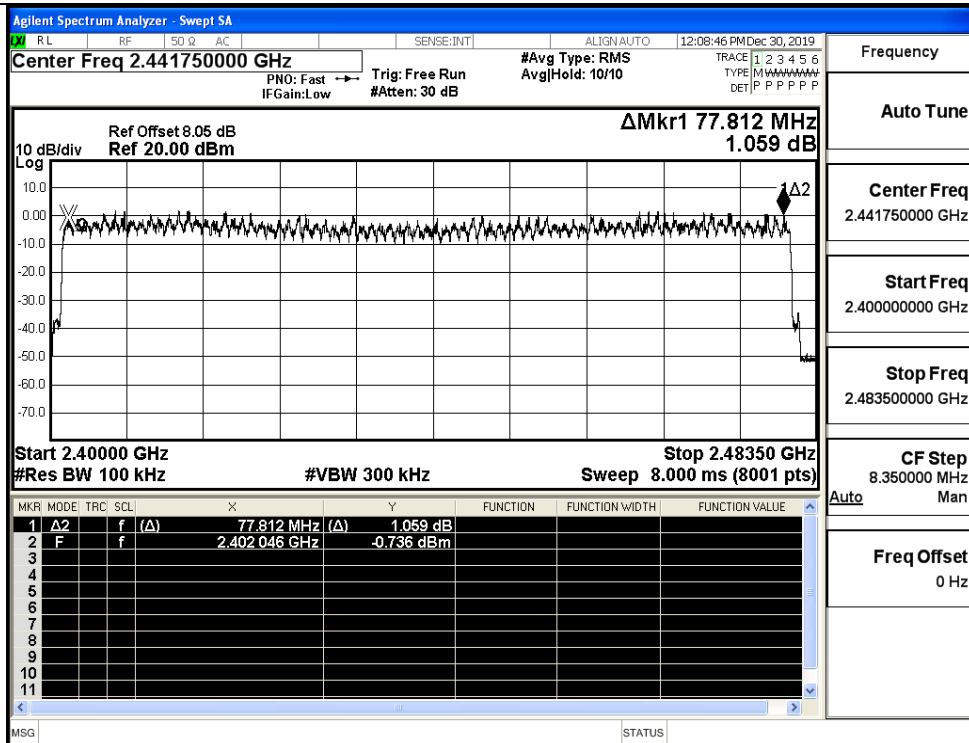
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	≥ 15	PASS
$\pi/4$ DQPSK	Hop	79	≥ 15	PASS
8DPSK	Hop	79	≥ 15	PASS

Test Graphs

GFSK/Hop

 $\pi/4$ DQPSK/Hop

8DPSK/Hop

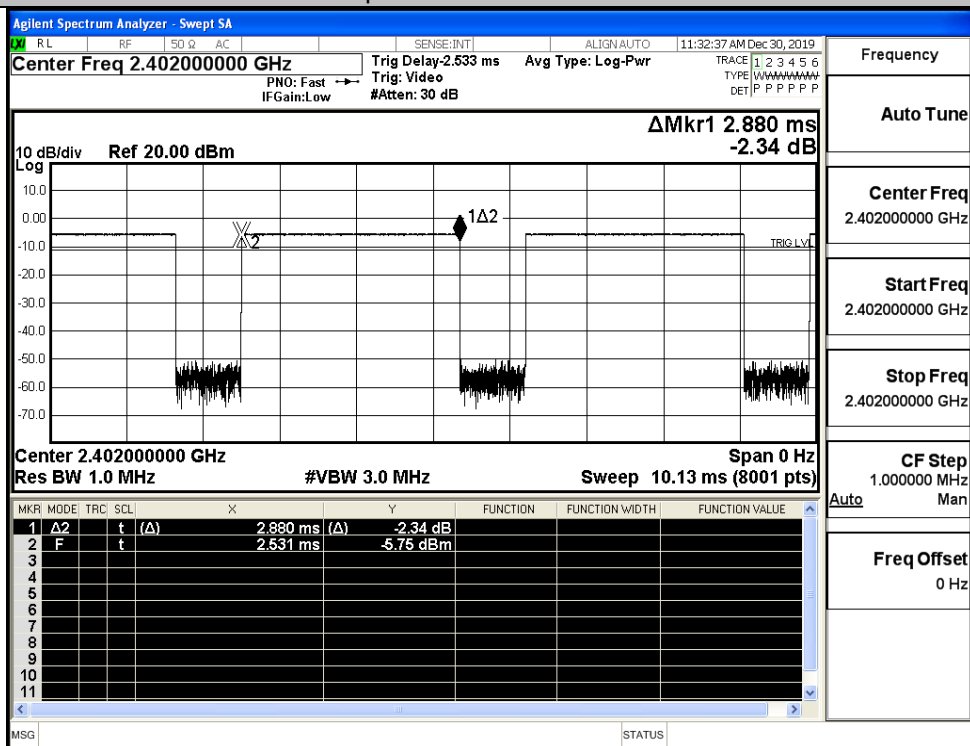


A.5 Dwell Time

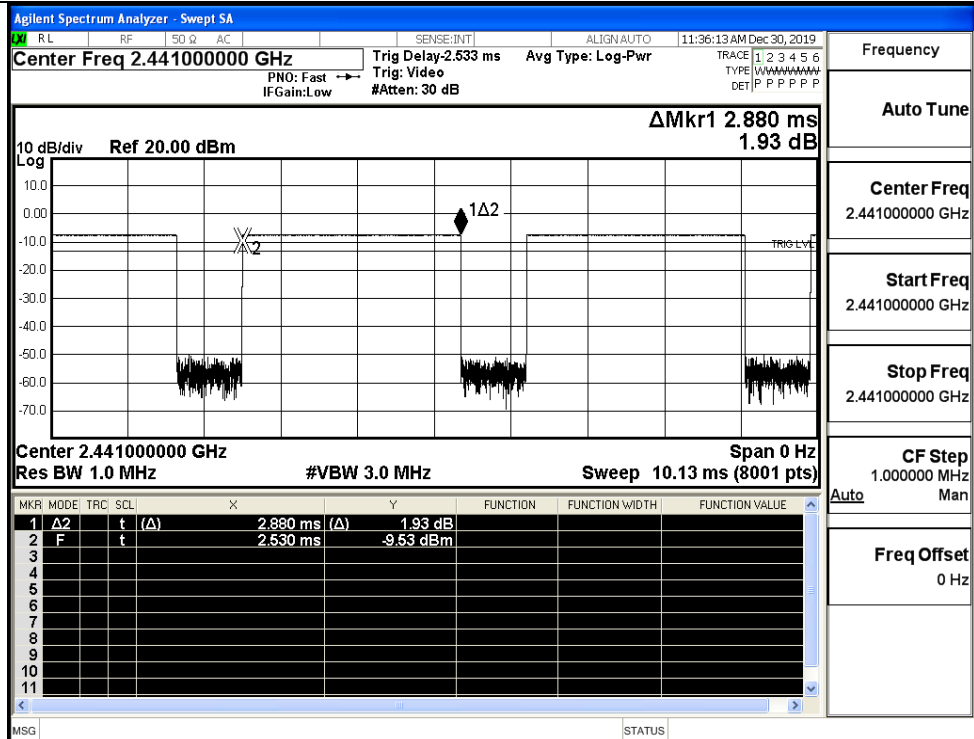
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7	0.307	0.4	PASS
8DPSK	3DH5	LCH	2.88	106.7	0.308	0.4	PASS
	3DH5	MCH	2.88	106.7	0.308	0.4	PASS
	3DH5	HCH	2.88	106.7	0.308	0.4	PASS

Test Graphs

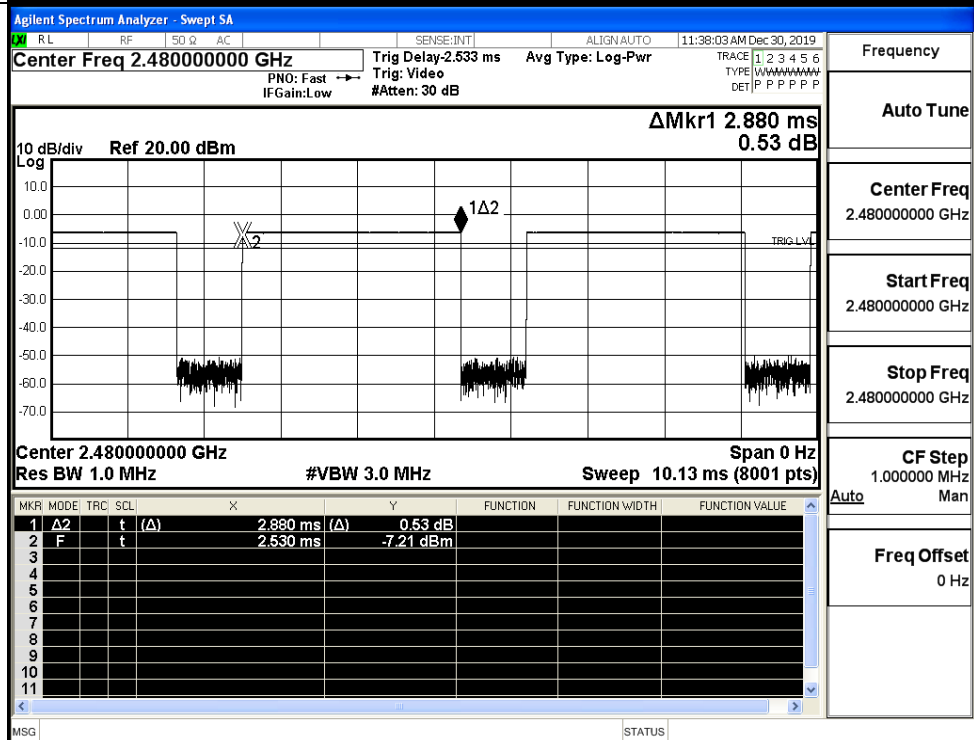
GFSK_DH5/LCH



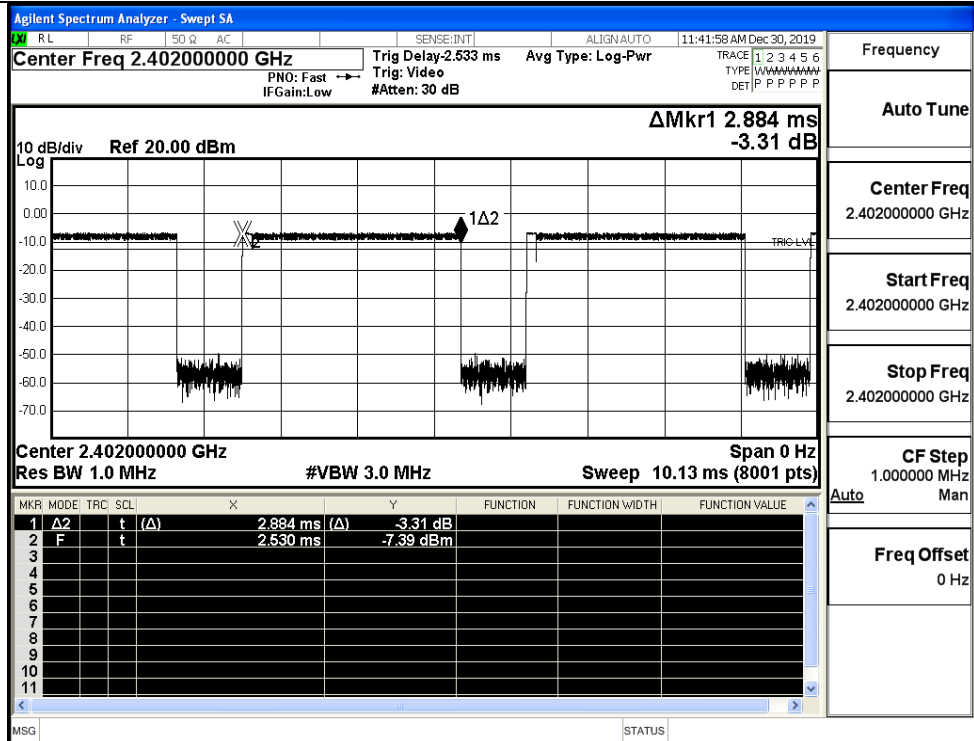
GFSK_DH5/MCH



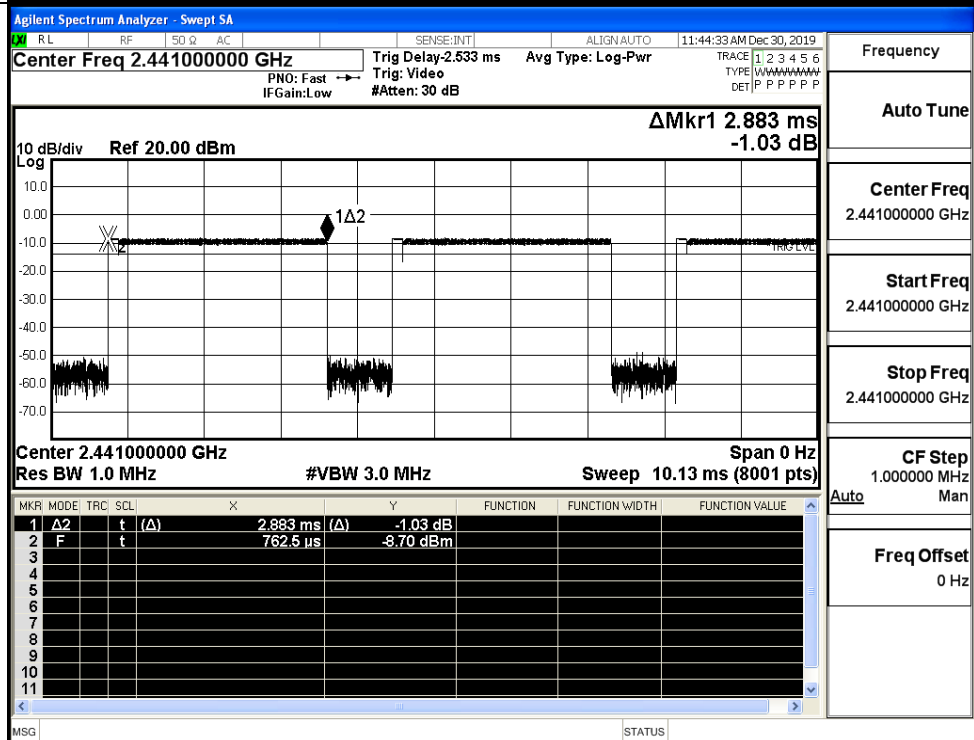
GFSK_DH5/HCH



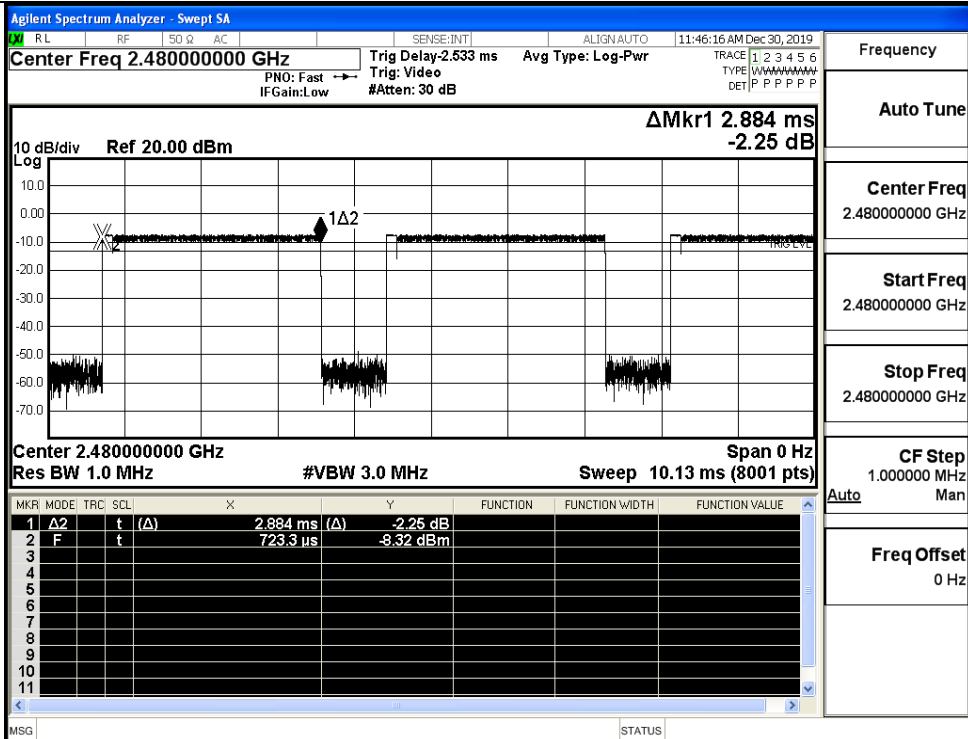
$\pi/4$ DQPSK
_2DH5/LCH



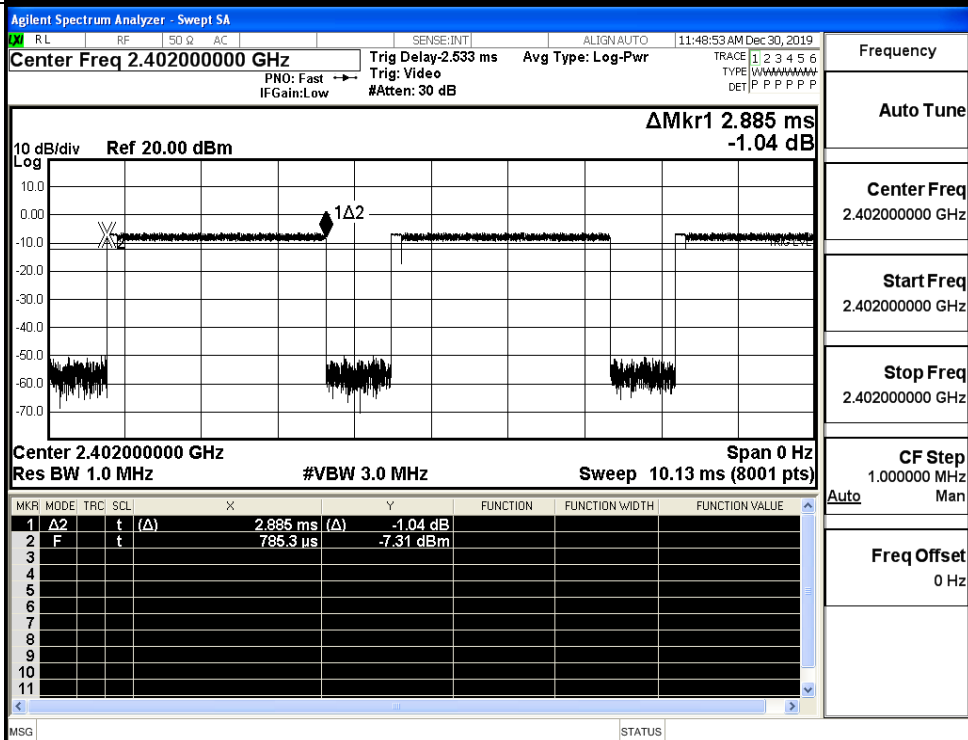
$\pi/4$ DQPSK
_2DH5/MCH



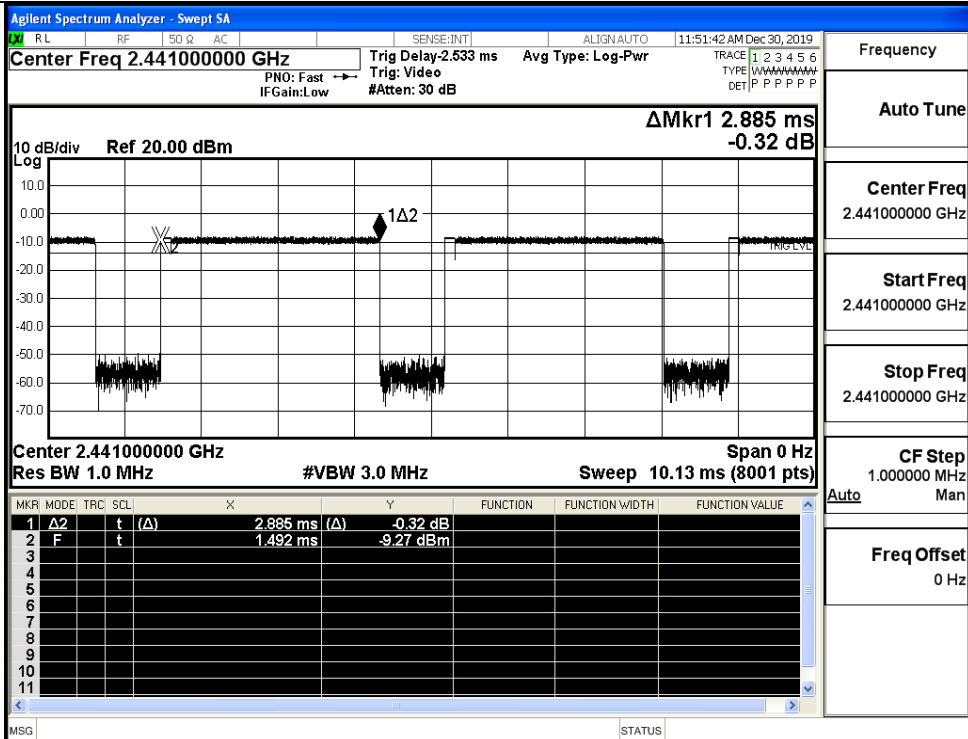
$\pi/4$ DQPSK
_2DH5/HCH



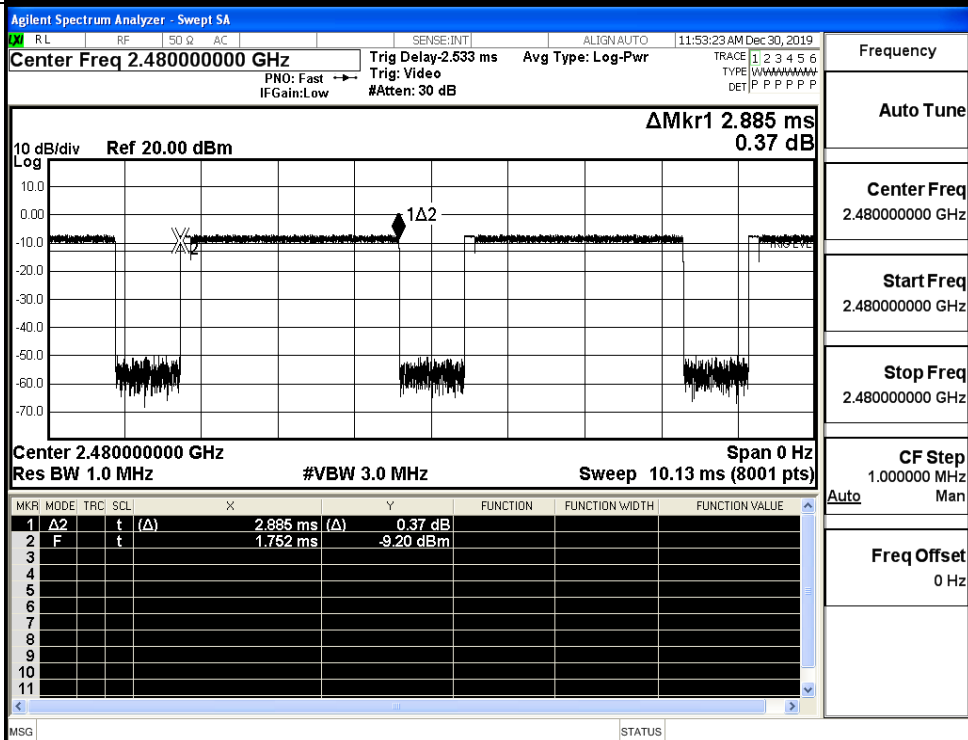
8DPSK _3DH5/LCH



8DPSK_3DH5/MCH



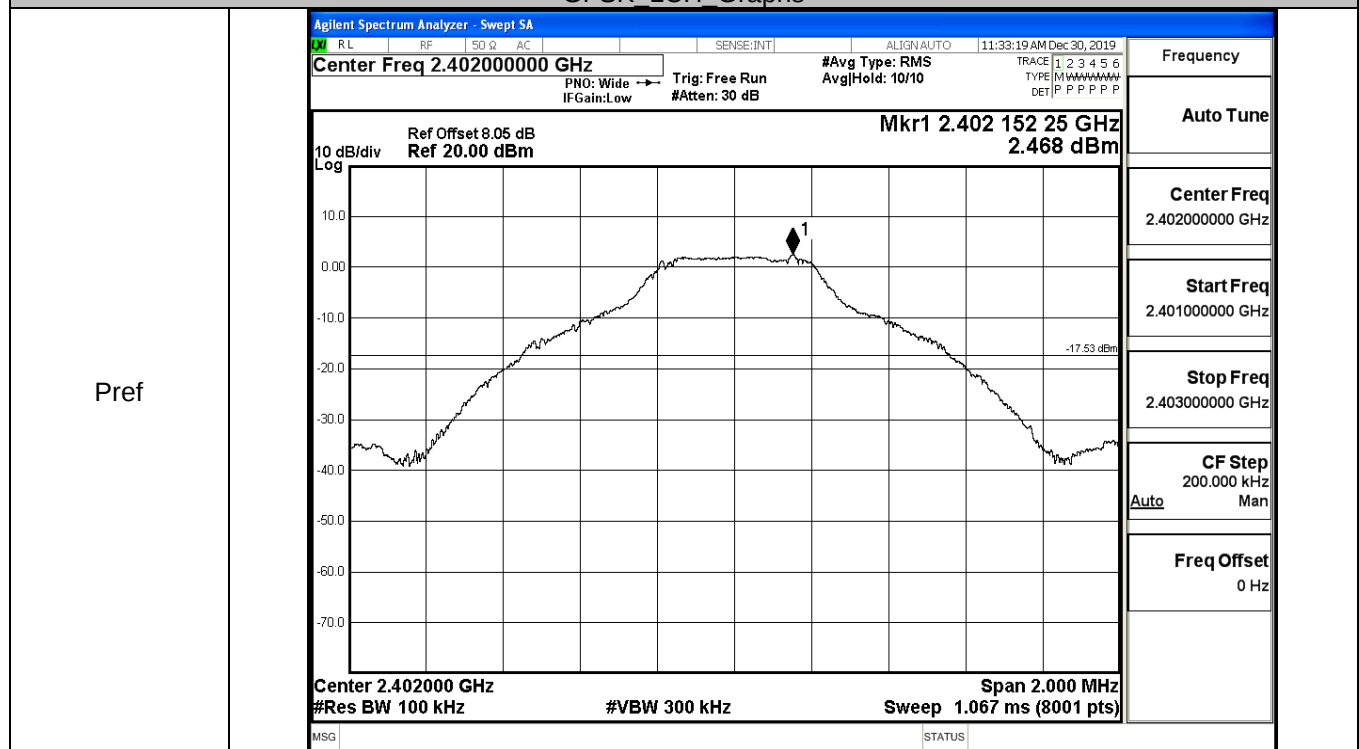
8DPSK_3DH5/HCH

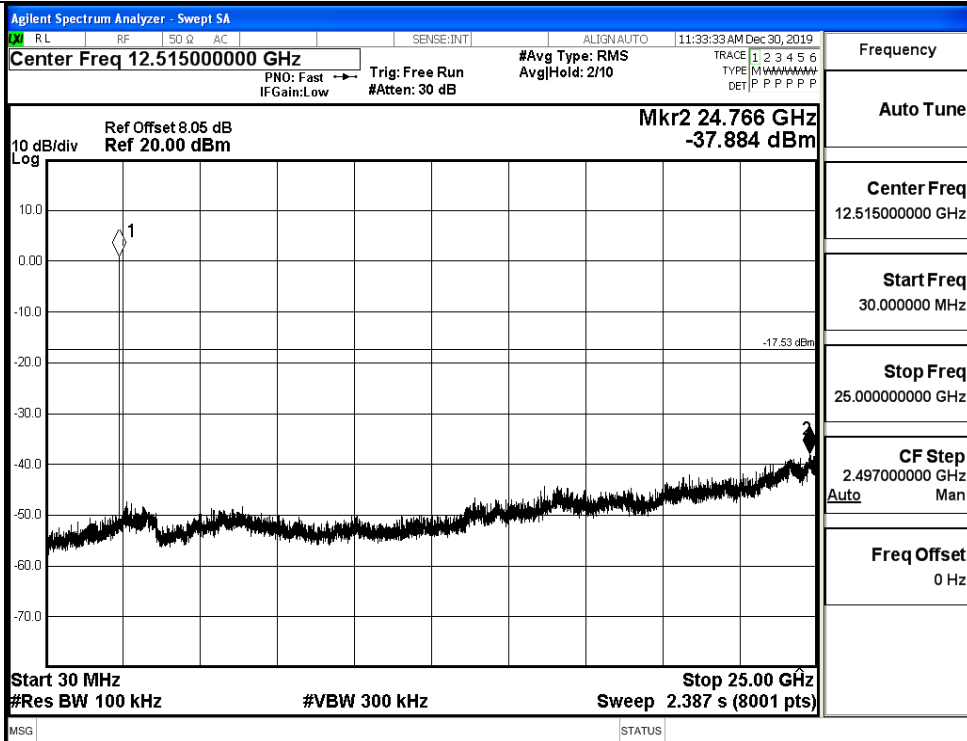


A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2.468	-37.884	-17.532	PASS
	MCH	0.715	-36.532	-19.285	PASS
	HCH	1.826	-36.444	-18.174	PASS
$\pi/4$ DQPSK	LCH	0.979	-36.500	-19.021	PASS
	MCH	-1.134	-37.200	-21.134	PASS
	HCH	0.19	-37.512	-19.810	PASS
8DPSK	LCH	0.477	-37.443	-19.523	PASS
	MCH	-0.432	-36.633	-20.432	PASS
	HCH	0.466	-37.567	-19.534	PASS

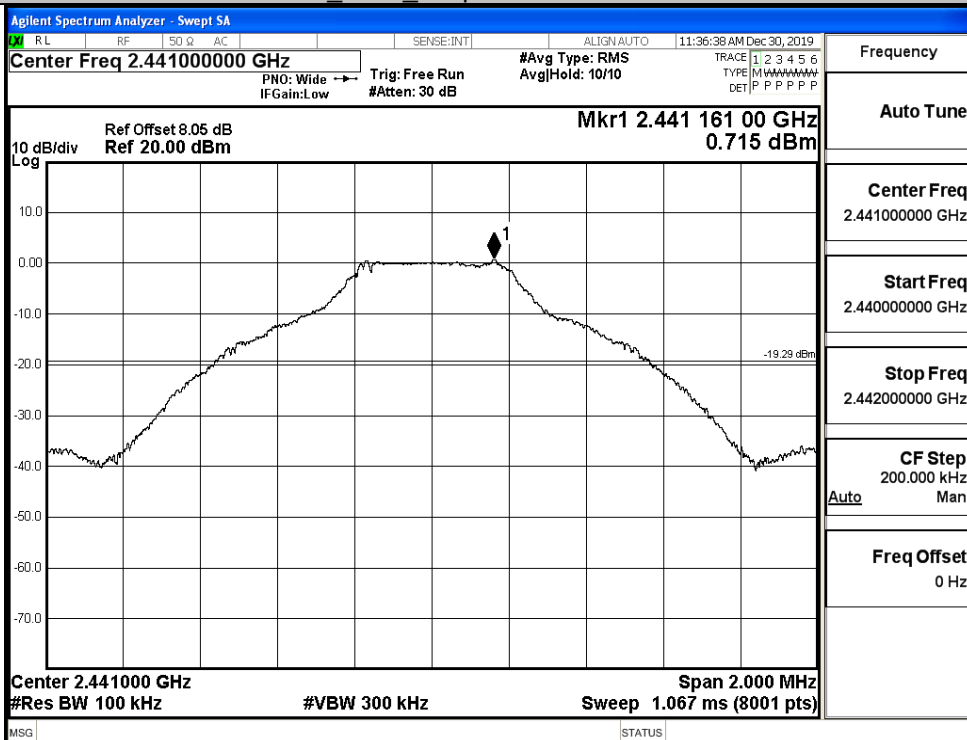
GFSK LCH Graphs



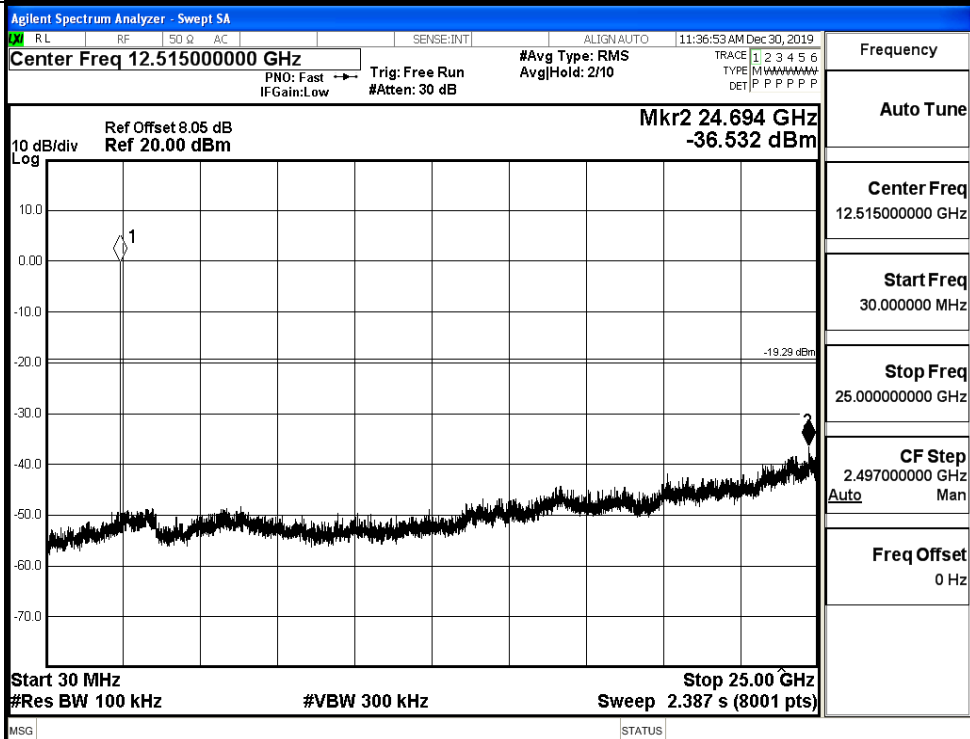
P_{uw}

GFSK_MCH_Graphs

Pref

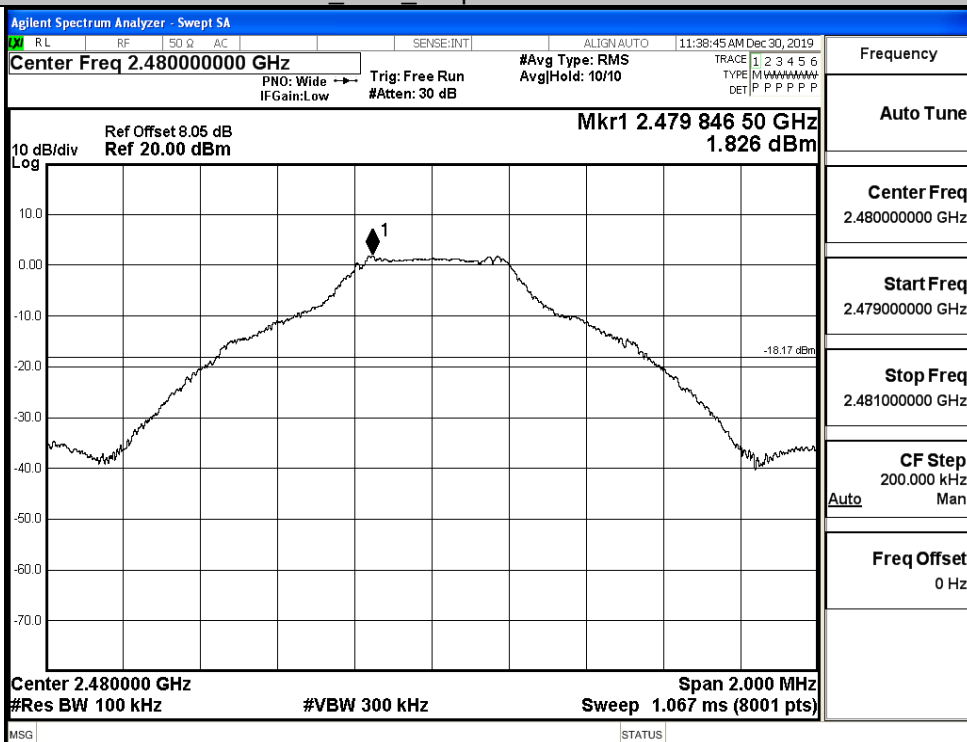


Puw

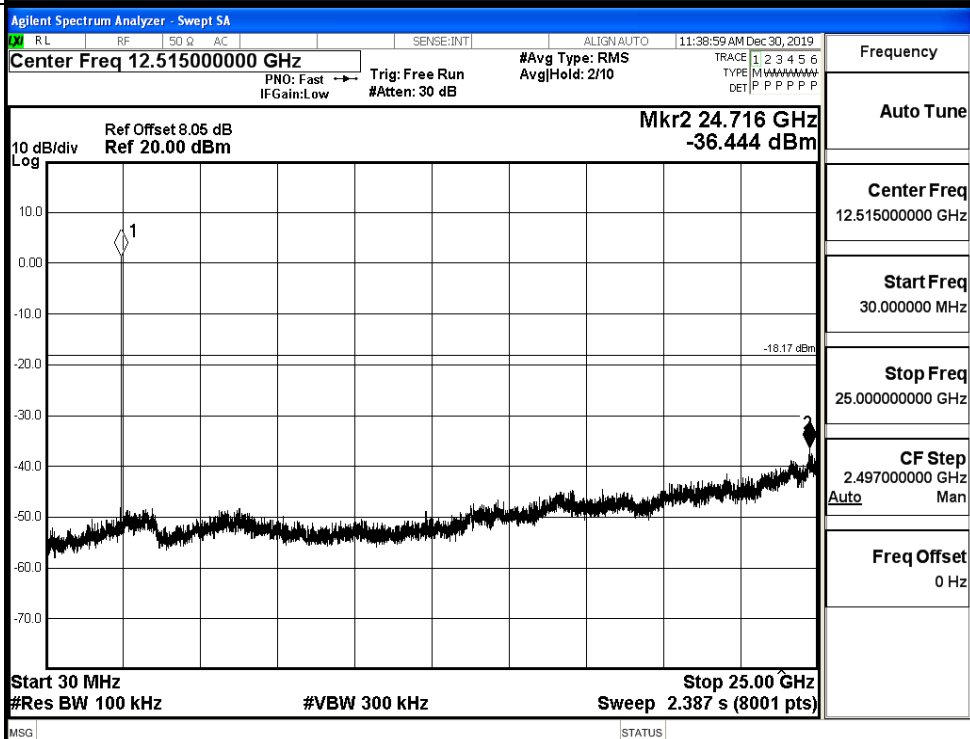


GFSK HCH Graphs

Pref

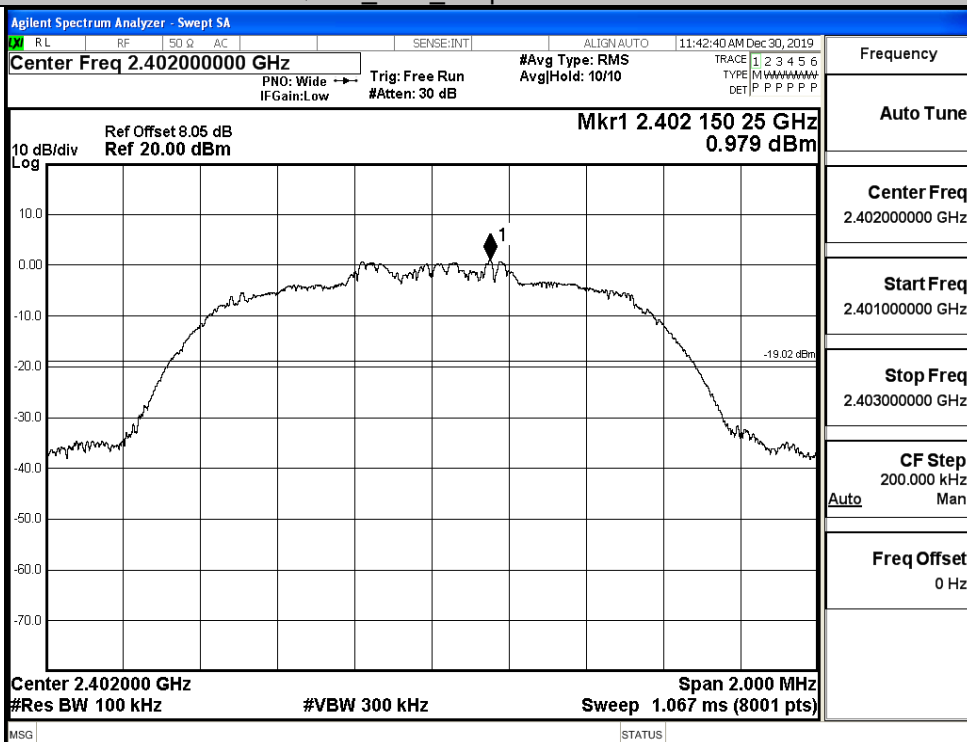


Puw

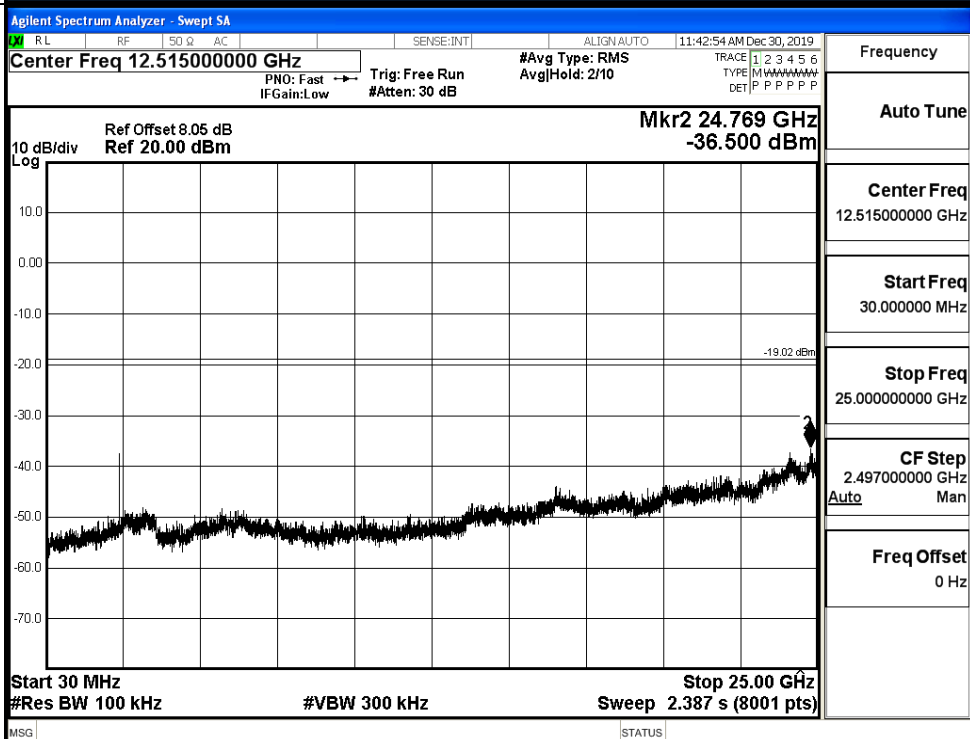


$\pi/4$ DQPSK_LCH_Graphs

Pref

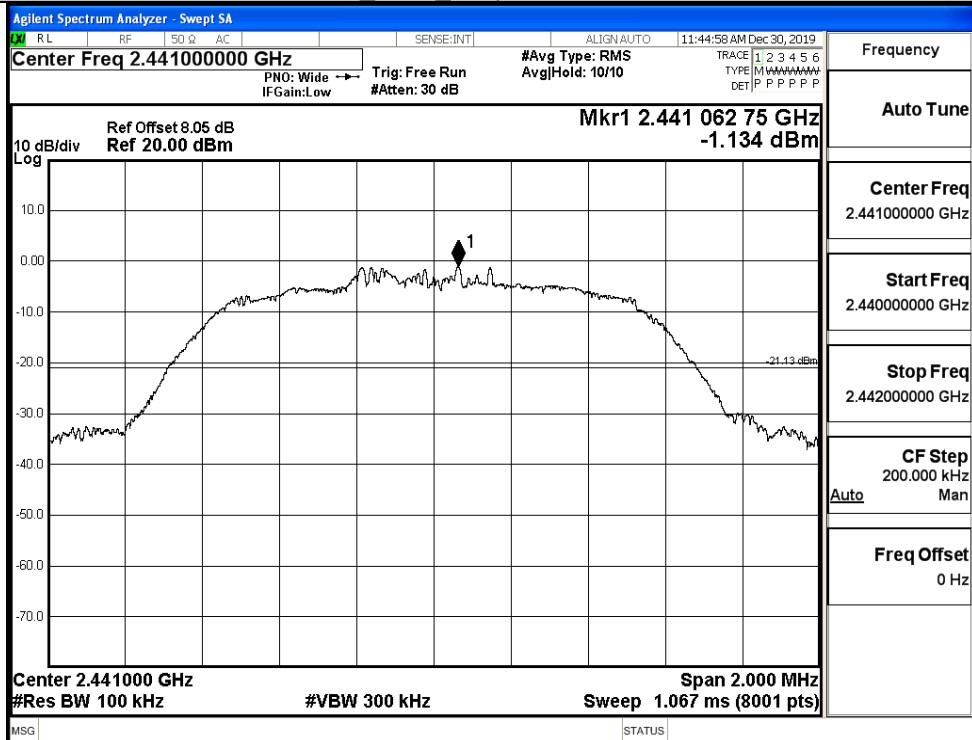


Puw

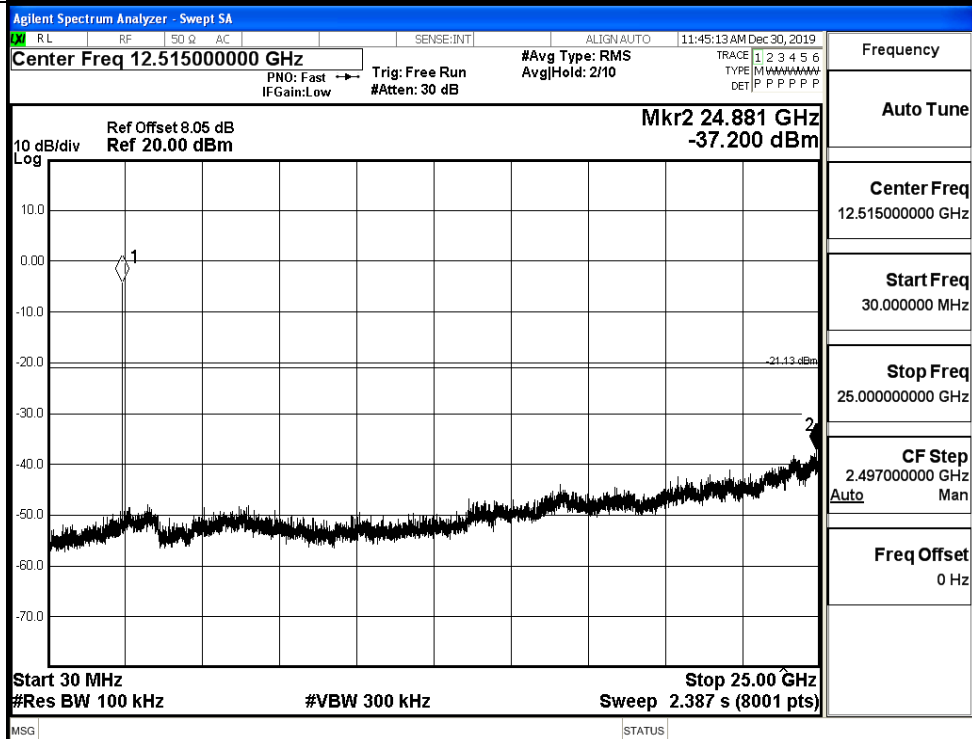


π /4DQPSK_MCH_Graphs

Pref

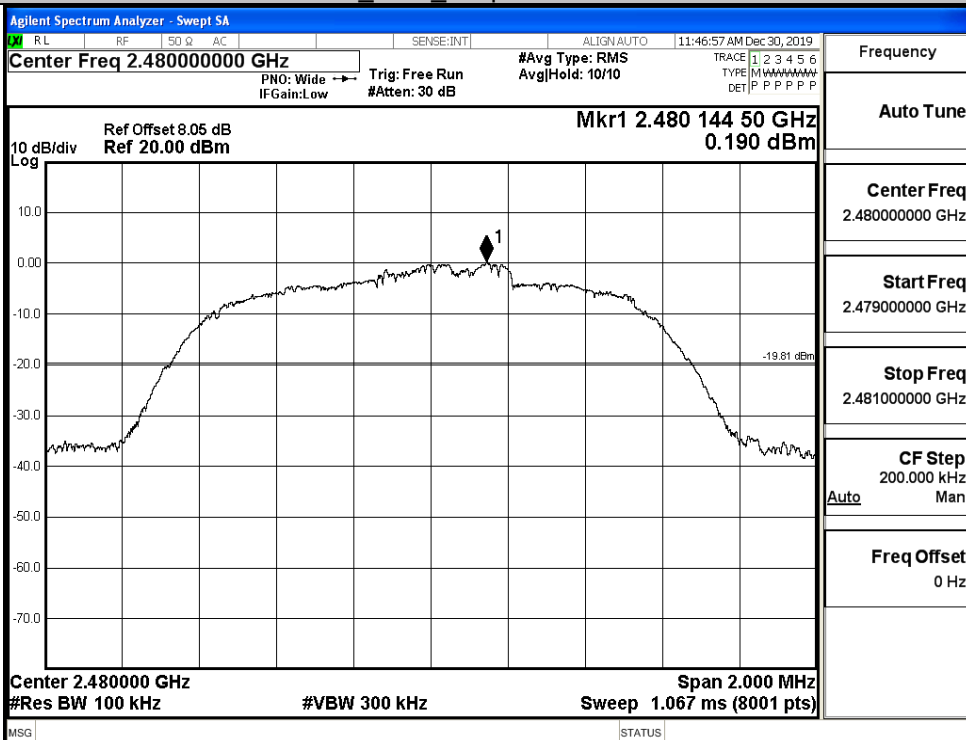


Puw

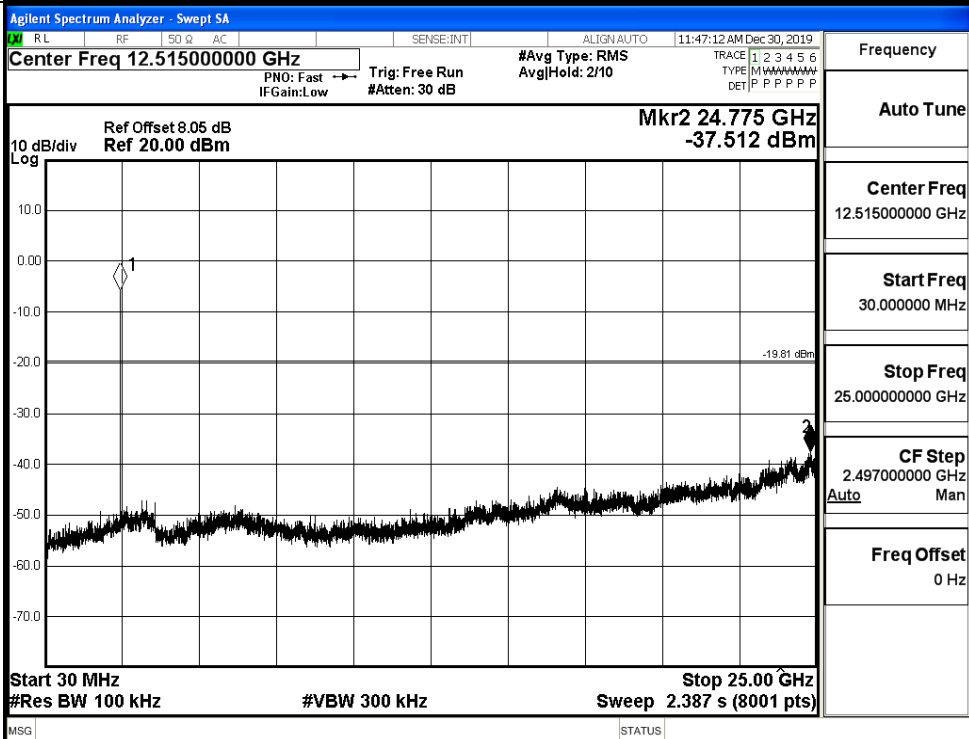


π /4DQPSK_HCH_Graphs

Pref

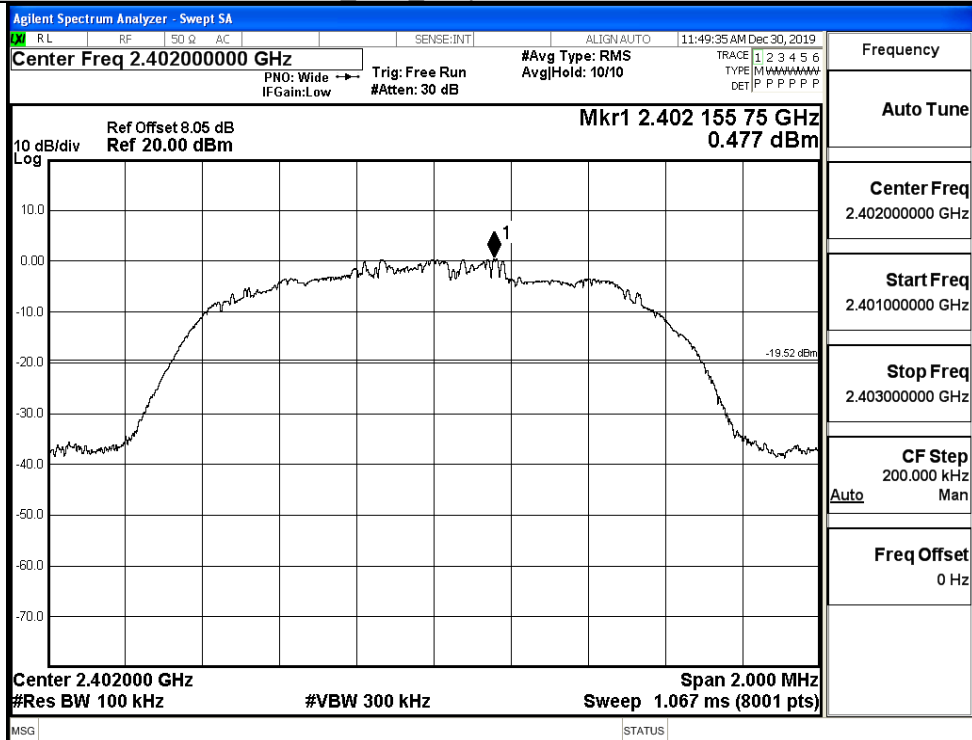


Puw

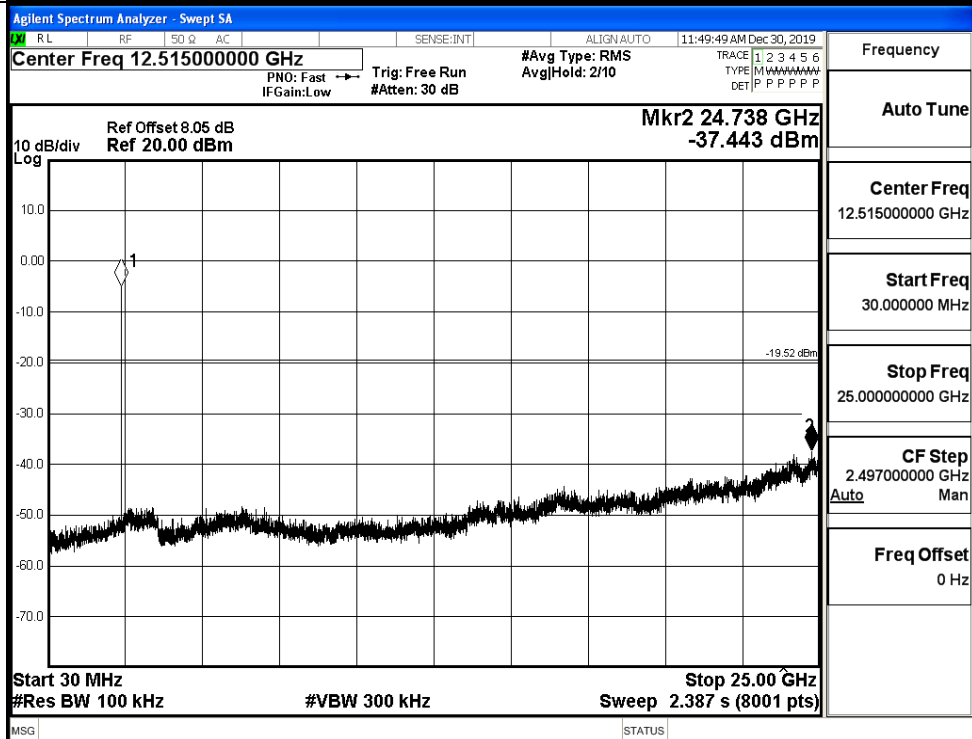


8DPSK_LCH_Graphs

Pref

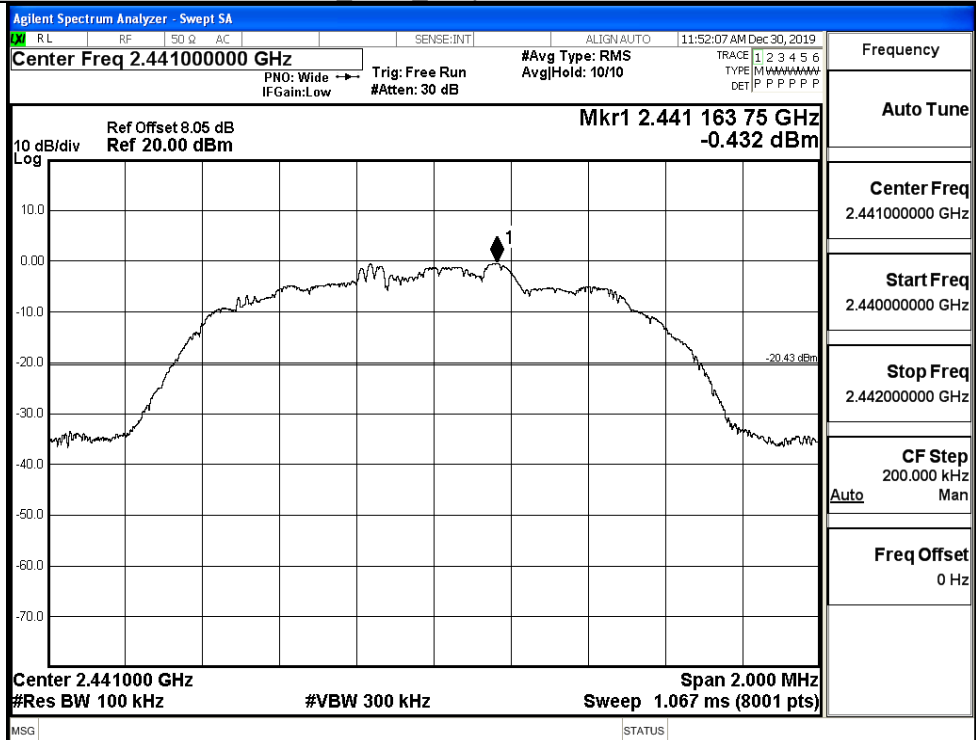


Puw

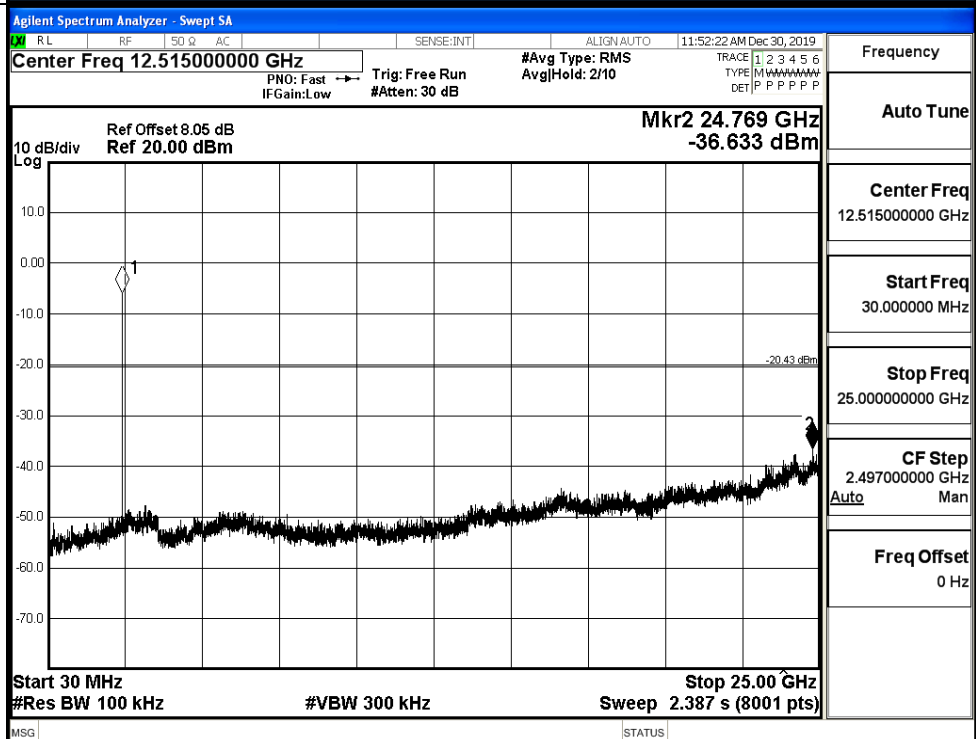


8DPSK_MCH_Graphs

Pref

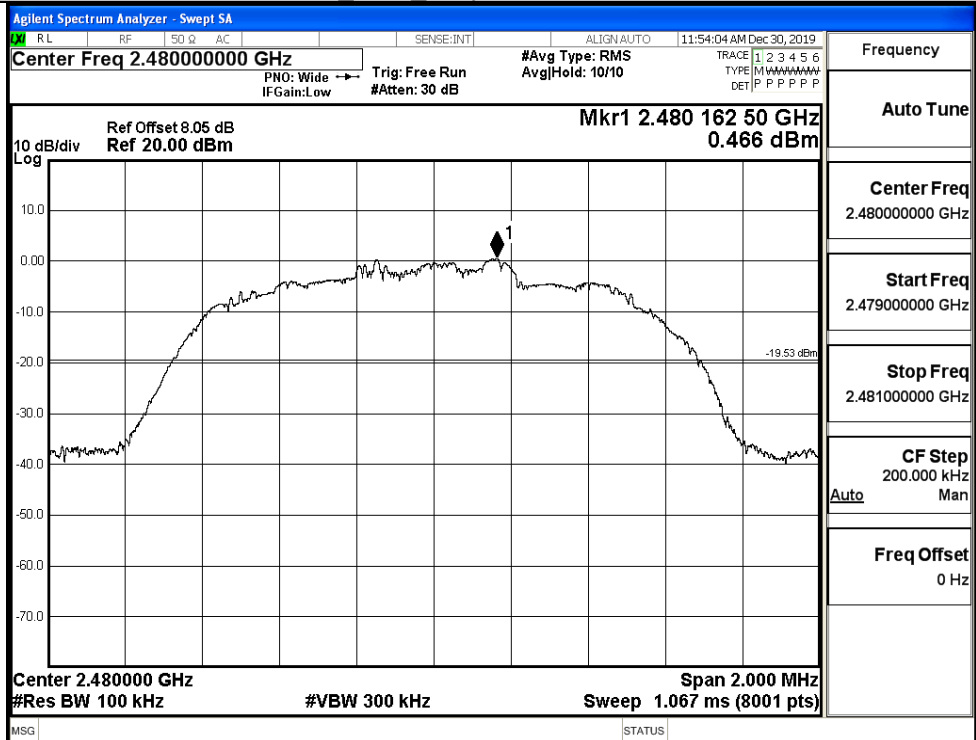


Puw



8DPSK_HCH_Graphs

Pref



Puw

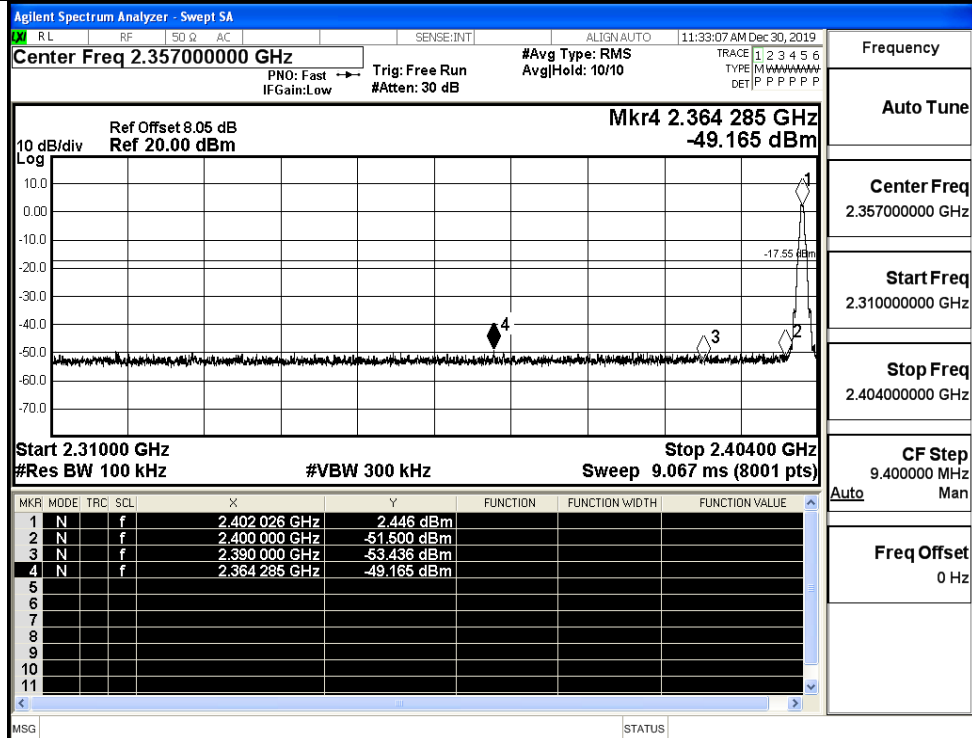


A.7 Band-edge for RF Conducted Emissions

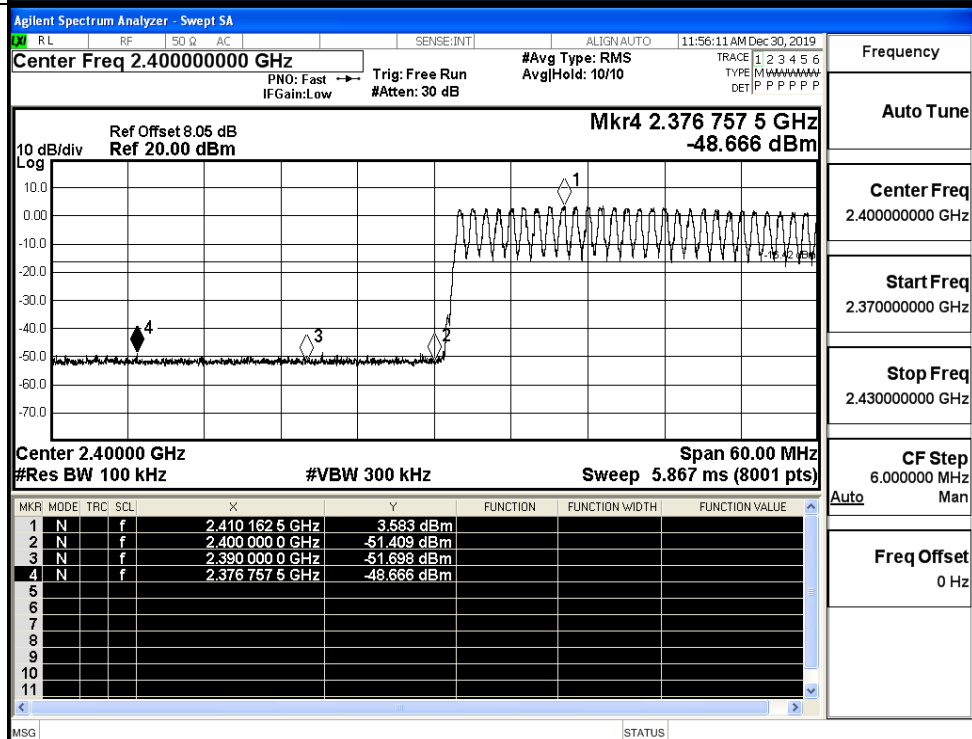
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	2.446	Off	-49.165	-17.55	PASS
			3.583	On	-48.666	-16.42	PASS
	HCH	2480	1.851	Off	-49.106	-18.15	PASS
			3.178	On	-48.868	-16.82	PASS
$\pi/4$ DQPSK	LCH	2402	0.715	Off	-49.577	-19.29	PASS
			2.105	On	-48.967	-17.9	PASS
	HCH	2480	0.622	Off	-48.688	-19.38	PASS
			1.702	On	-48.572	-18.3	PASS
8DPSK	LCH	2402	1.092	Off	-49.247	-18.91	PASS
			1.894	On	-49.327	-18.11	PASS
	HCH	2480	0.521	Off	-49.079	-19.48	PASS
			1.641	On	-48.442	-18.36	PASS

Test Graphs

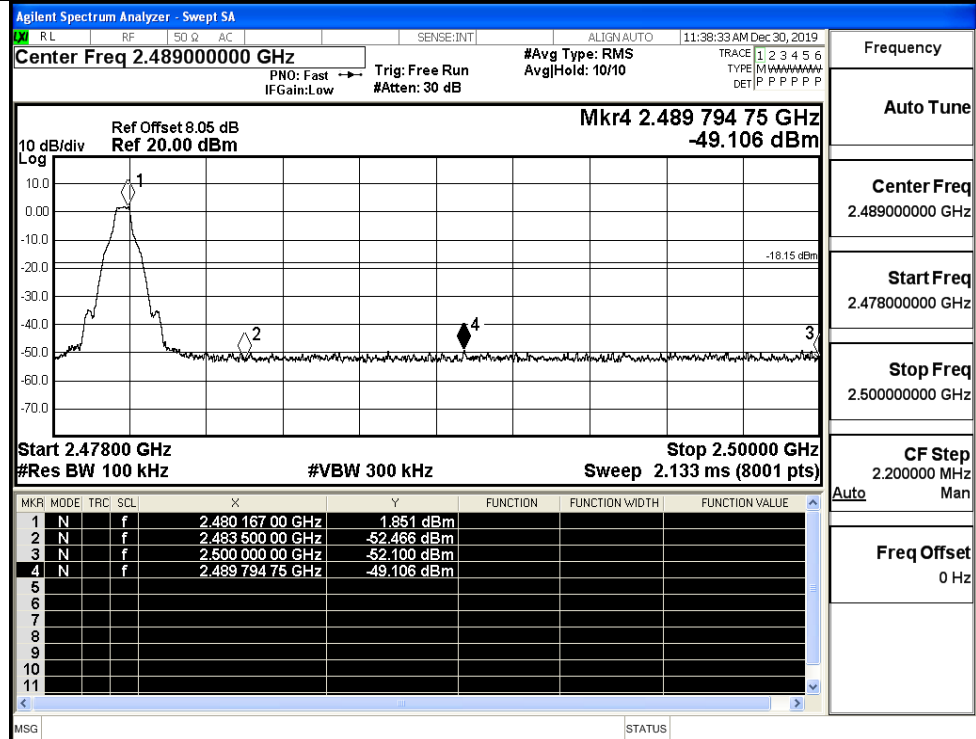
GFSK/LCH/No Hop



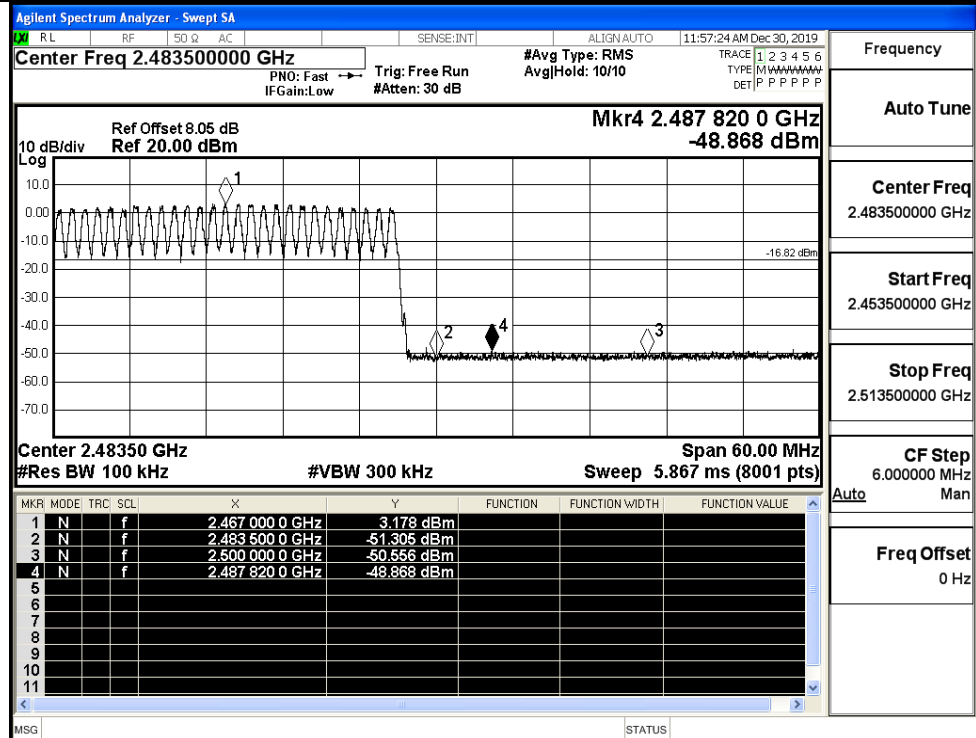
GFSK/LCH/Hop



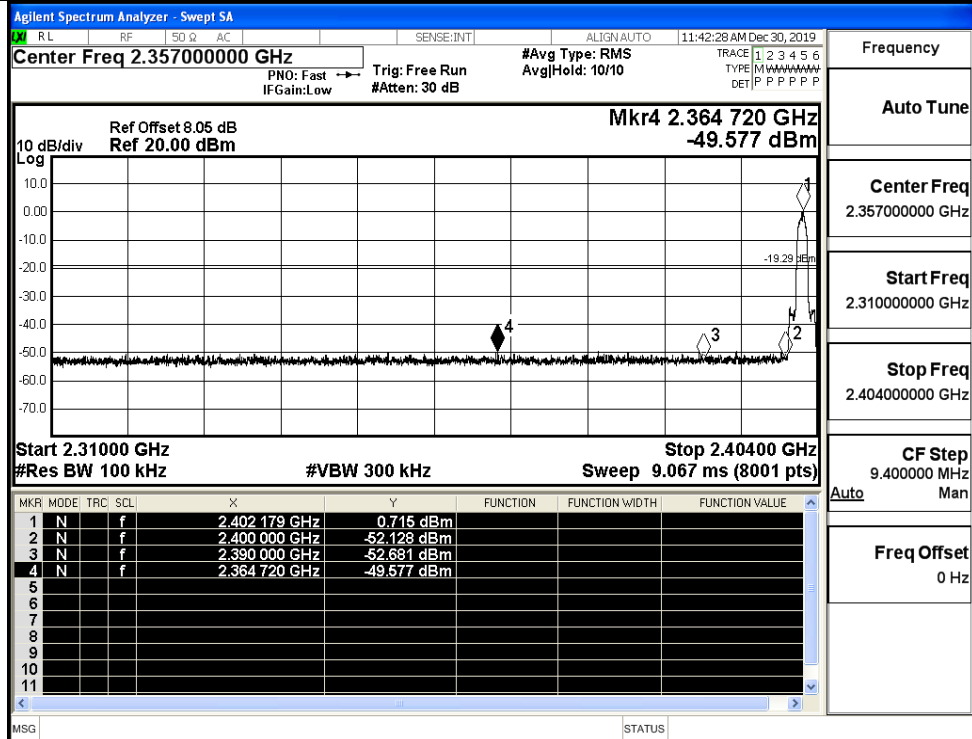
GFSK/HCH/No Hop



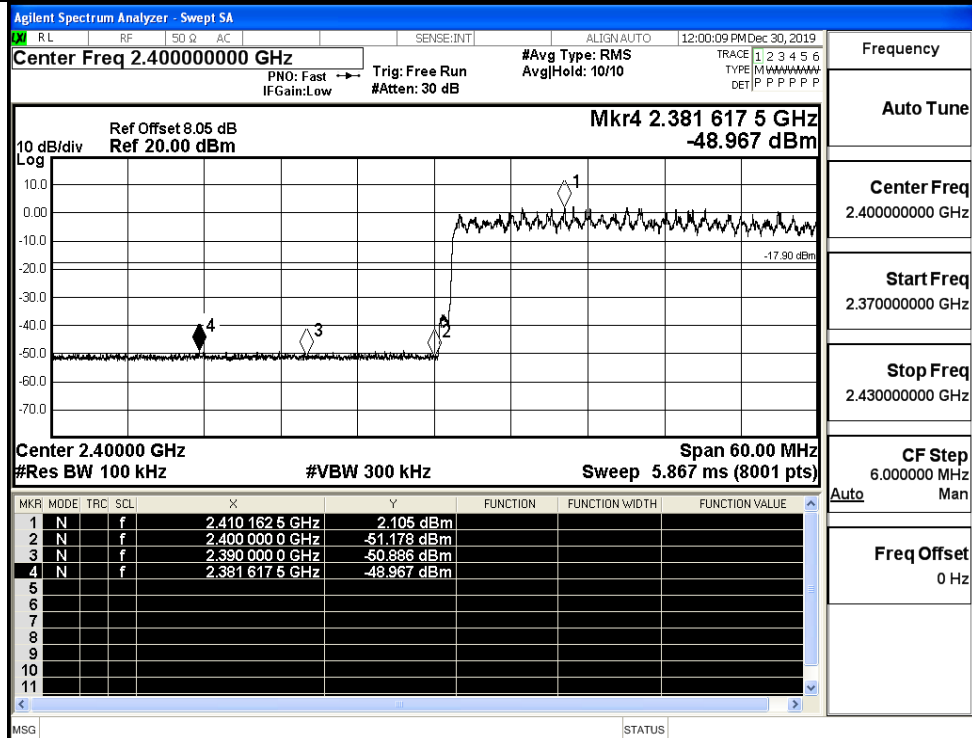
GFSK/HCH/Hop



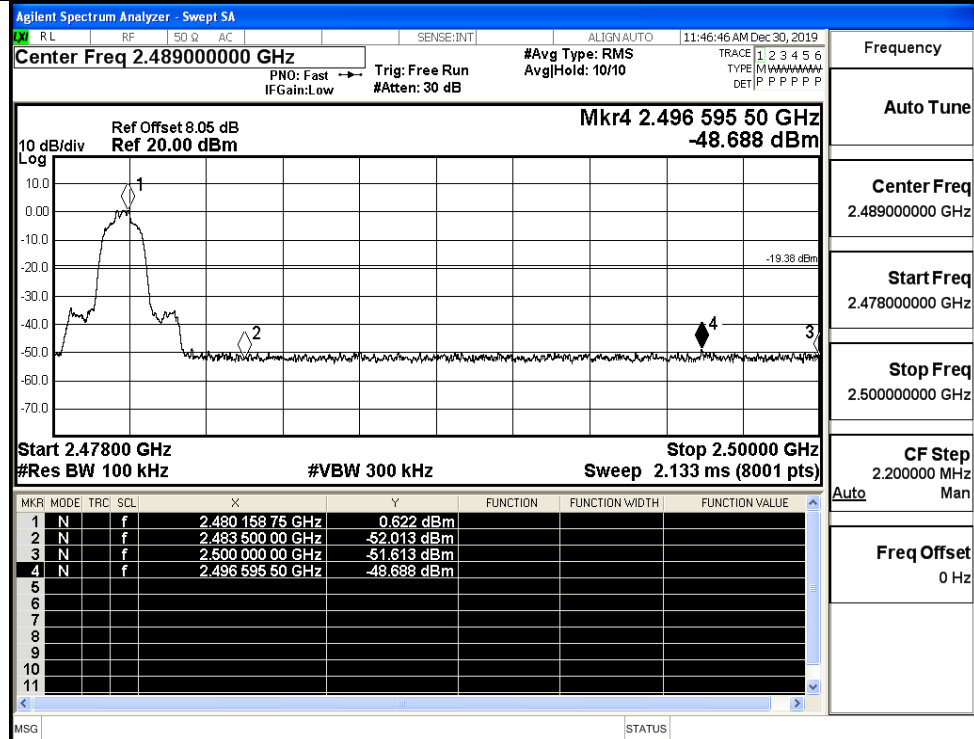
$\pi/4$ DQPSK/LCH/No
Hop



$\pi/4$ DQPSK/LCH/Hop



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



Frequency

Auto Tune

Center Freq
2.489000000 GHz

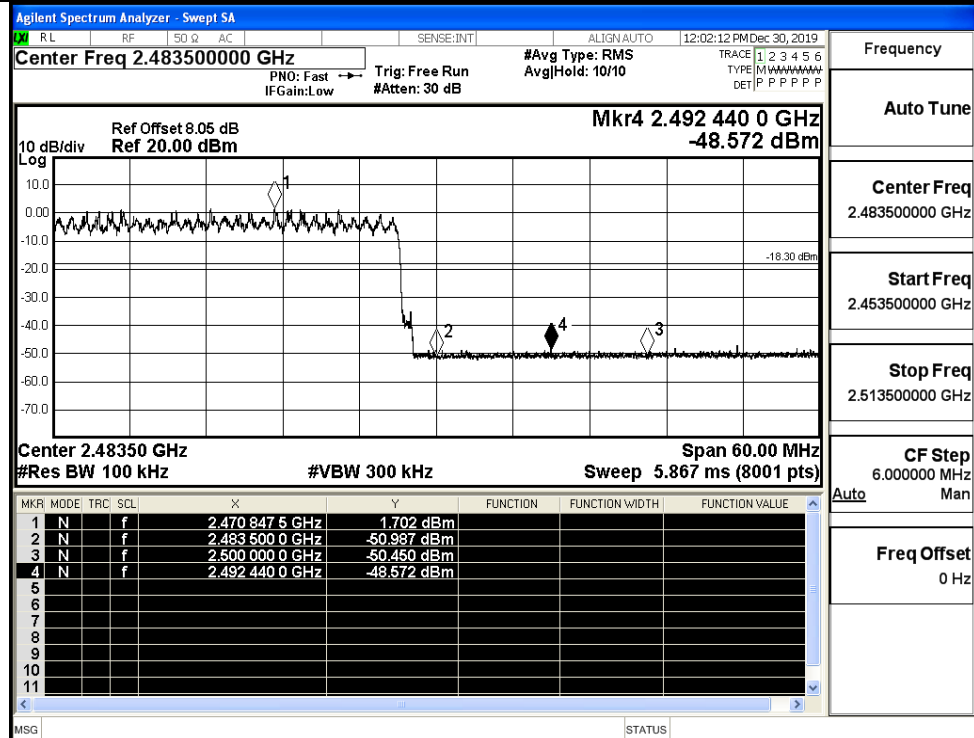
Start Freq
2.478000000 GHz

Stop Freq
2.500000000 GHz

CF Step
2.200000 MHz

Freq Offset
0 Hz

$\pi/4$ DQPSK/HCH/Hop



Frequency

Auto Tune

Center Freq
2.483500000 GHz

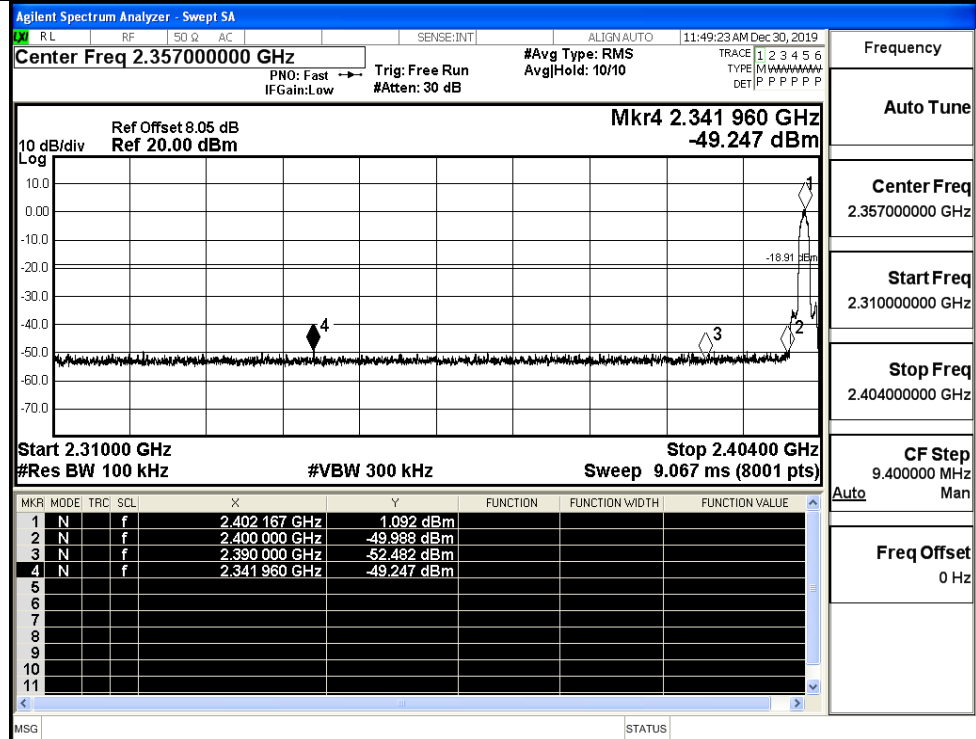
Start Freq
2.453500000 GHz

Stop Freq
2.513500000 GHz

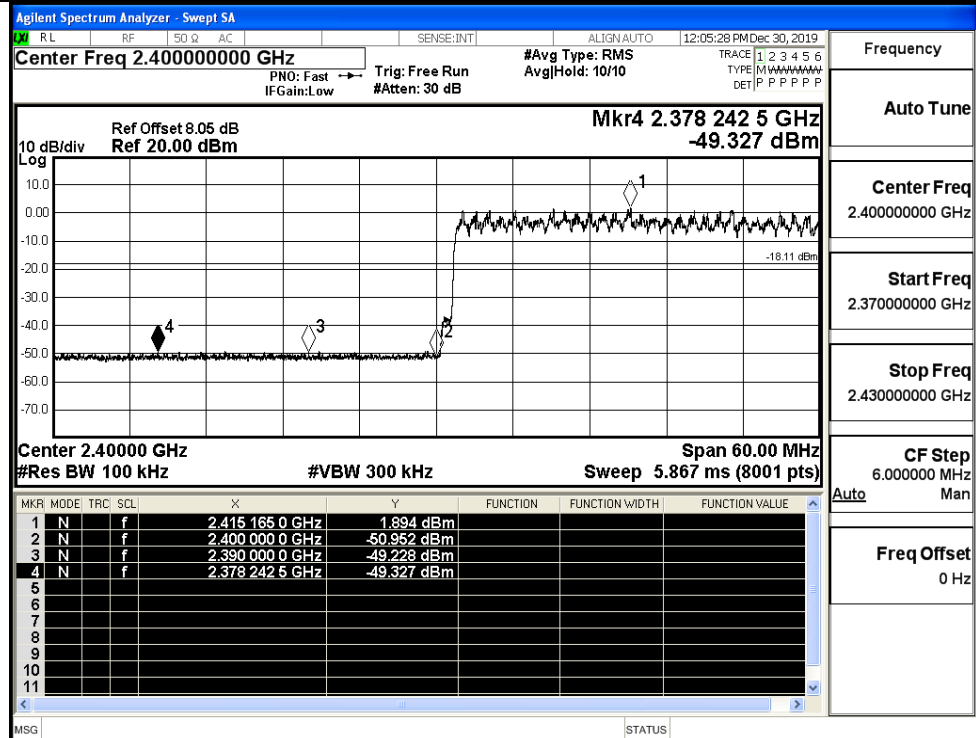
CF Step
6.000000 MHz

Freq Offset
0 Hz

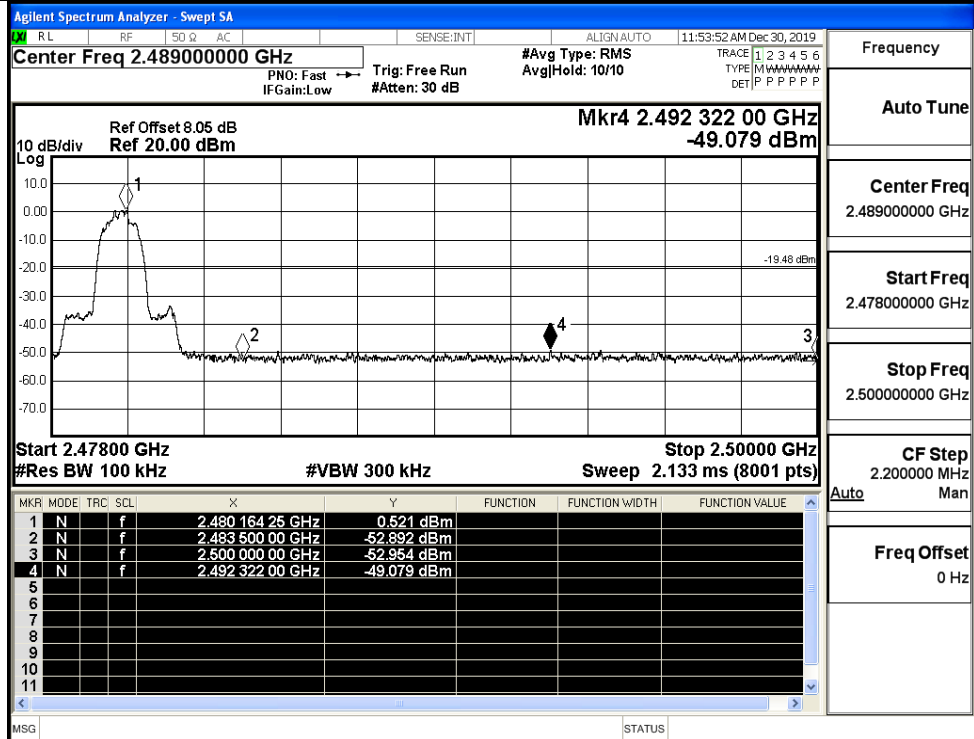
8DPSK/LCH/No Hop



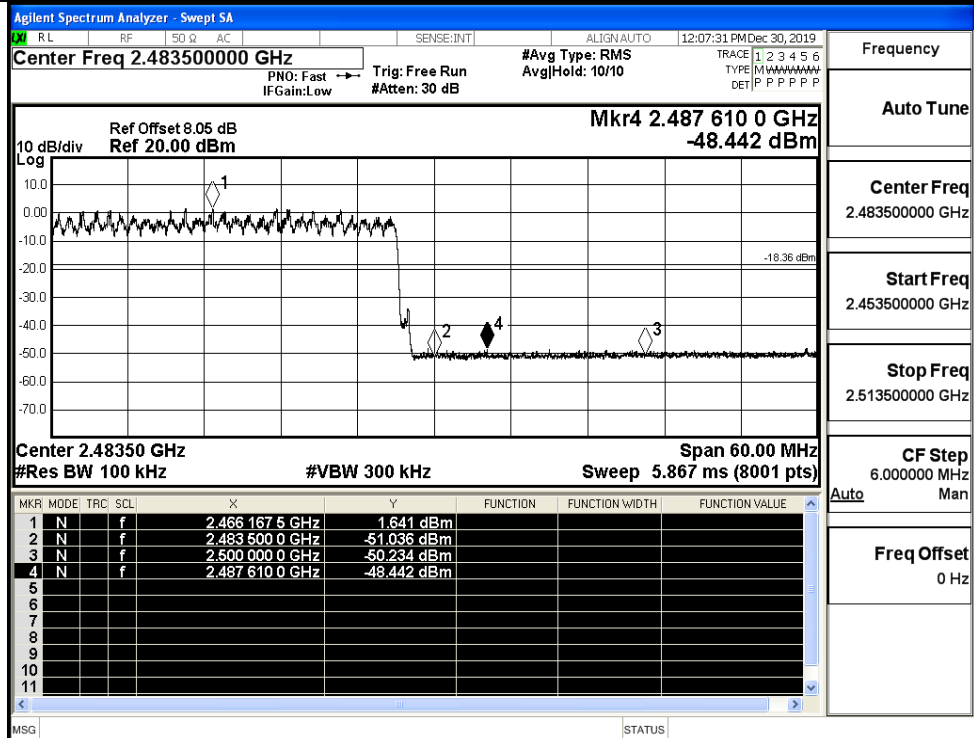
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



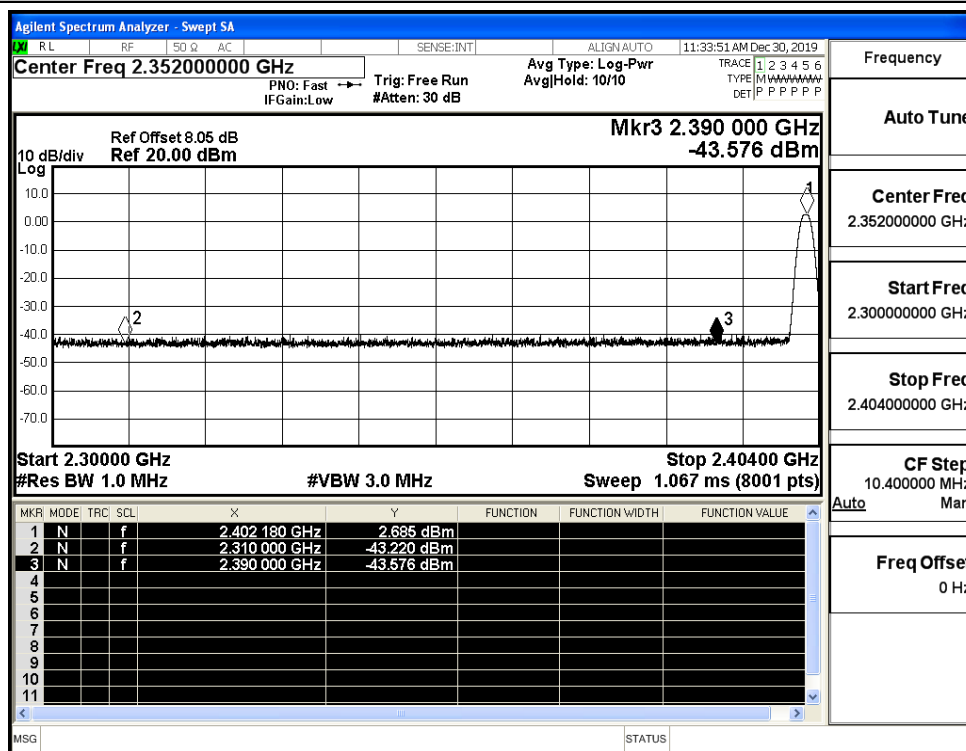
8DPSK/HCH/Hop



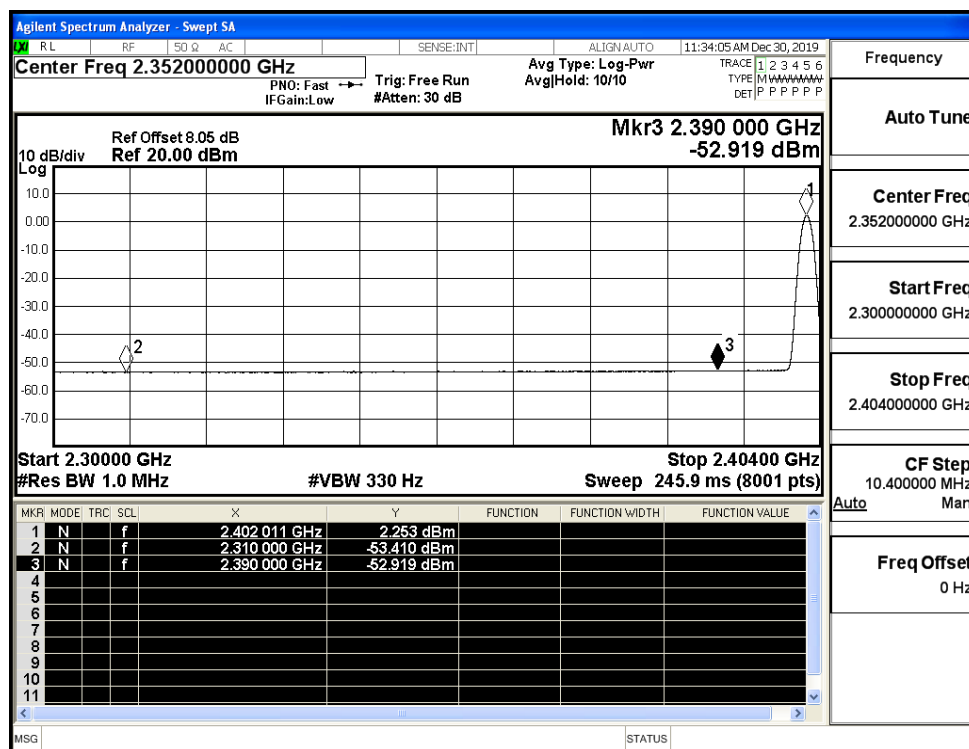
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.22	0	0	54.04	PEAK	74	PASS
	Off	2310.0	-53.41	0	0	43.85	AV	54	PASS
	Off	2390.0	-43.58	0	0	53.68	PEAK	74	PASS
	Off	2390.0	-52.92	0	0	44.34	AV	54	PASS
	Off	2483.5	-43.12	0	0	54.14	PEAK	74	PASS
	Off	2483.5	-52.39	0	0	44.87	AV	54	PASS
	Off	2500.0	-42.69	0	0	54.57	PEAK	74	PASS
	Off	2500.0	-52.35	0	0	44.91	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-42.14	0	0	55.11	PEAK	74	PASS
	Off	2310.0	-53.21	0	0	44.05	AV	54	PASS
	Off	2390.0	-42.41	0	0	54.85	PEAK	74	PASS
	Off	2390.0	-52.90	0	0	44.36	AV	54	PASS
	Off	2483.5	-43.09	0	0	54.17	PEAK	74	PASS
	Off	2483.5	-52.55	0	0	44.71	AV	54	PASS
	Off	2500.0	-41.55	0	0	55.71	PEAK	74	PASS
	Off	2500.0	-52.31	0	0	44.94	AV	54	PASS
8DPSK	Off	2310.0	-42.08	0	0	55.18	PEAK	74	PASS
	Off	2310.0	-53.33	0	0	43.93	AV	54	PASS
	Off	2390.0	-43.28	0	0	53.97	PEAK	74	PASS
	Off	2390.0	-52.99	0	0	44.27	AV	54	PASS
	Off	2483.5	-42.05	0	0	55.20	PEAK	74	PASS
	Off	2483.5	-52.46	0	0	44.80	AV	54	PASS
	Off	2500.0	-42.99	0	0	54.27	PEAK	74	PASS
	Off	2500.0	-52.30	0	0	44.96	AV	54	PASS

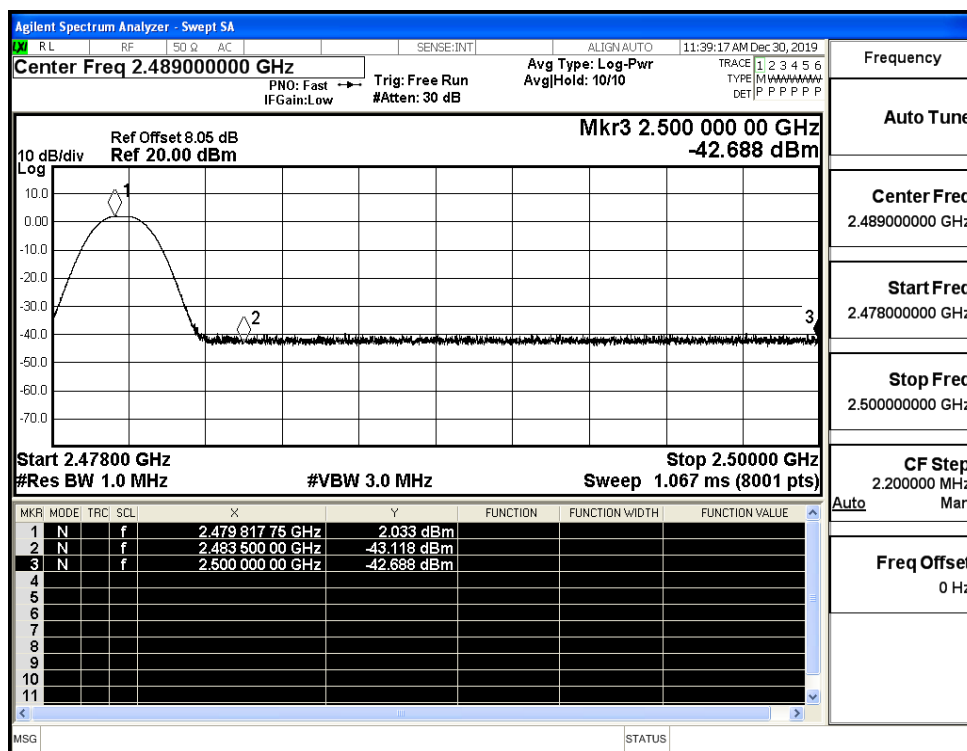
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



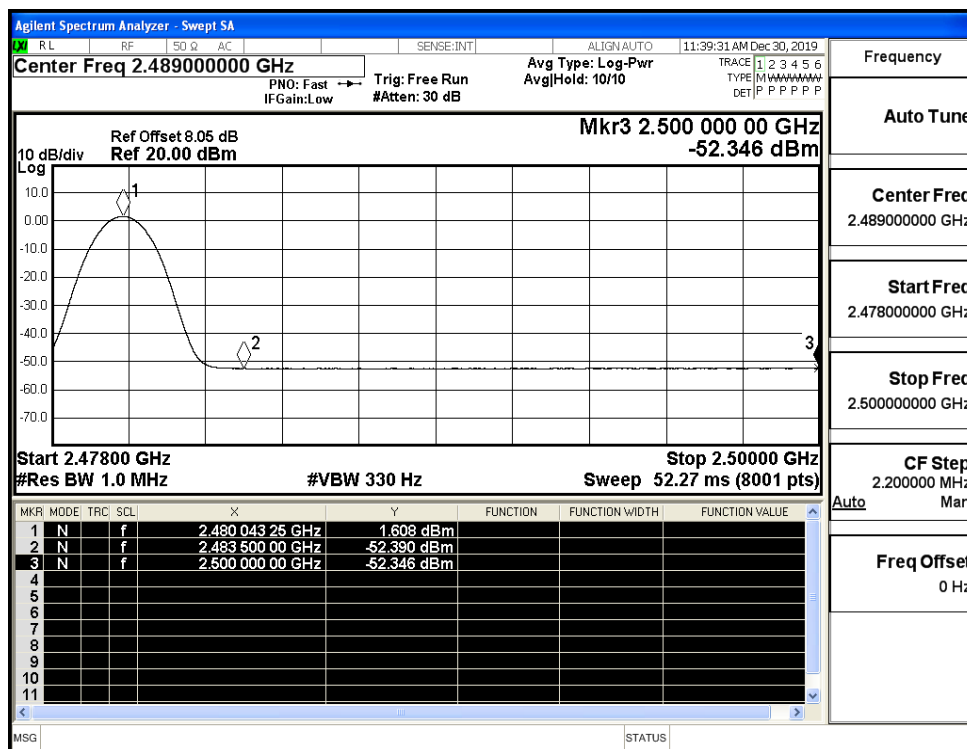
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

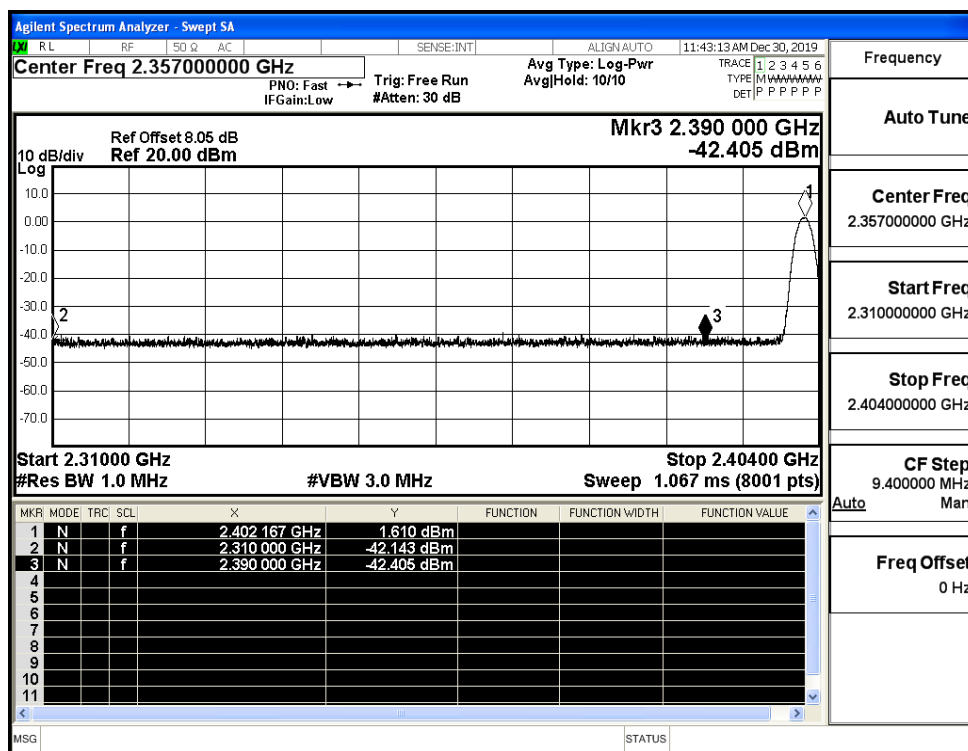
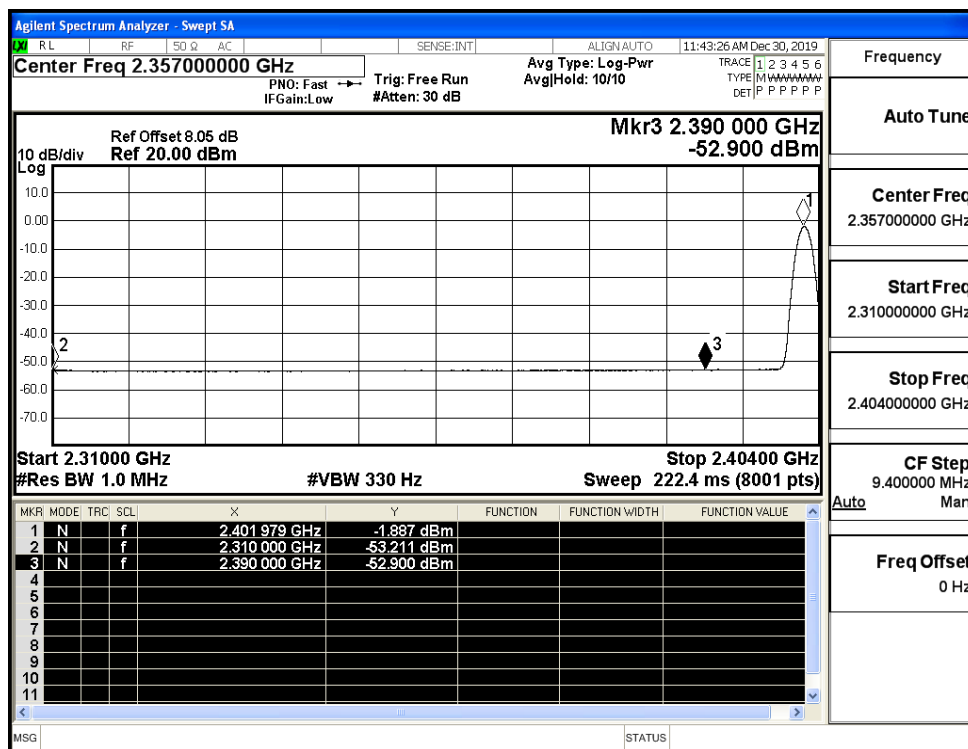


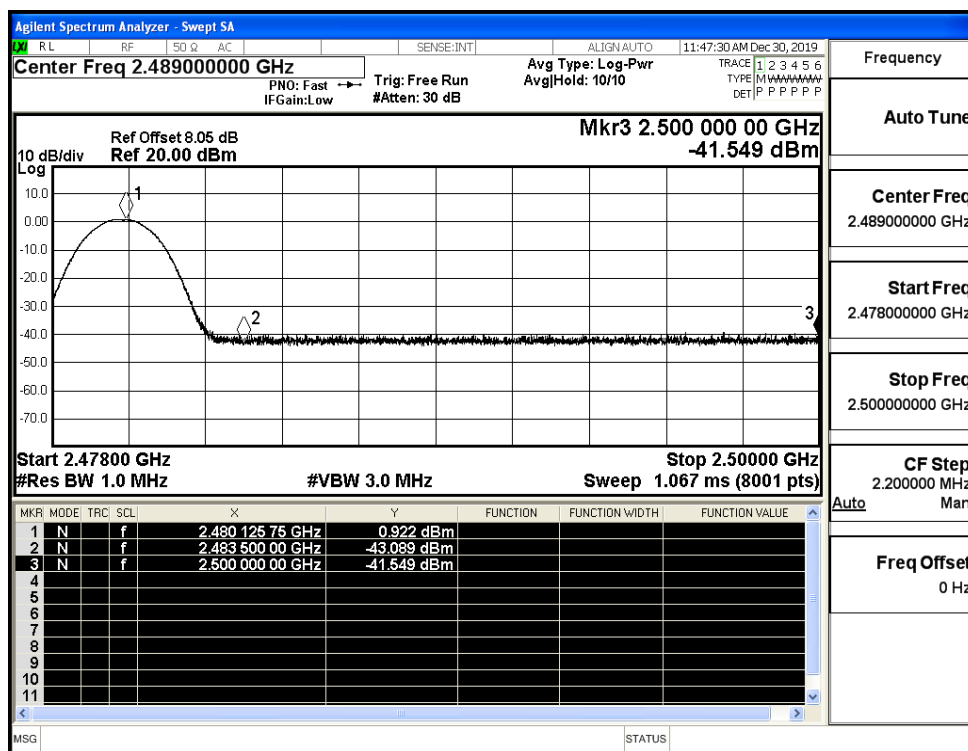
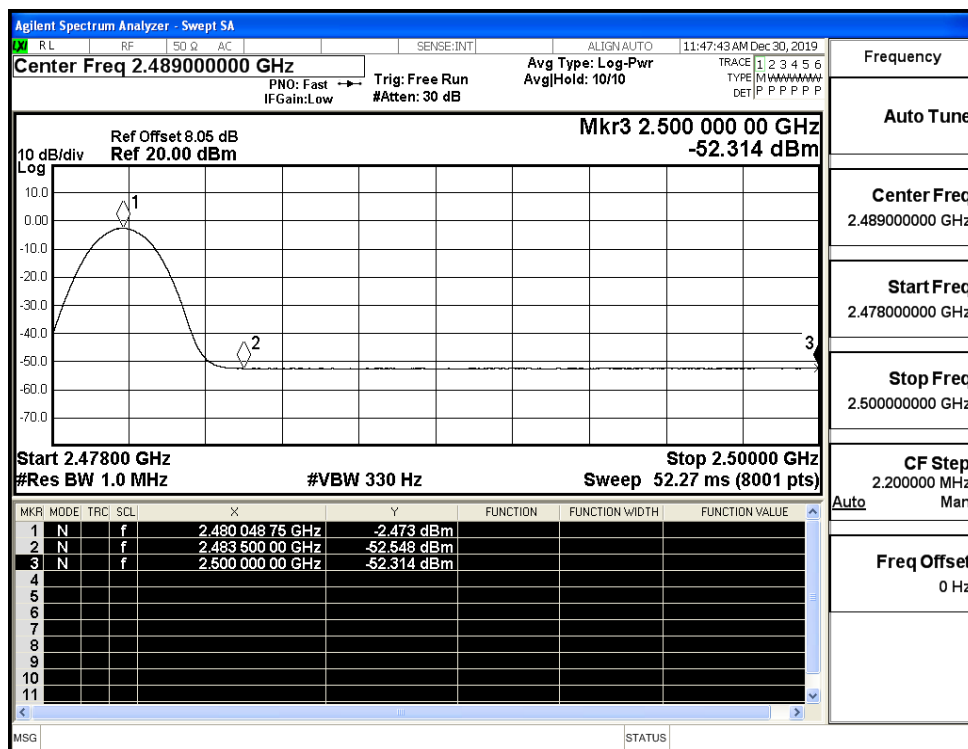
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



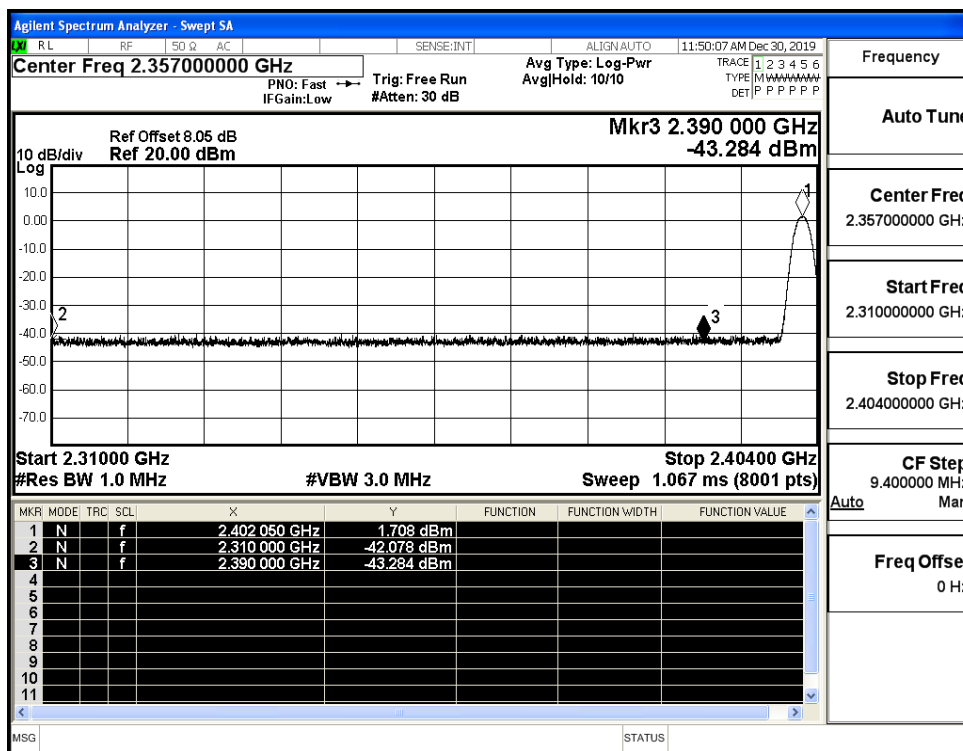
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



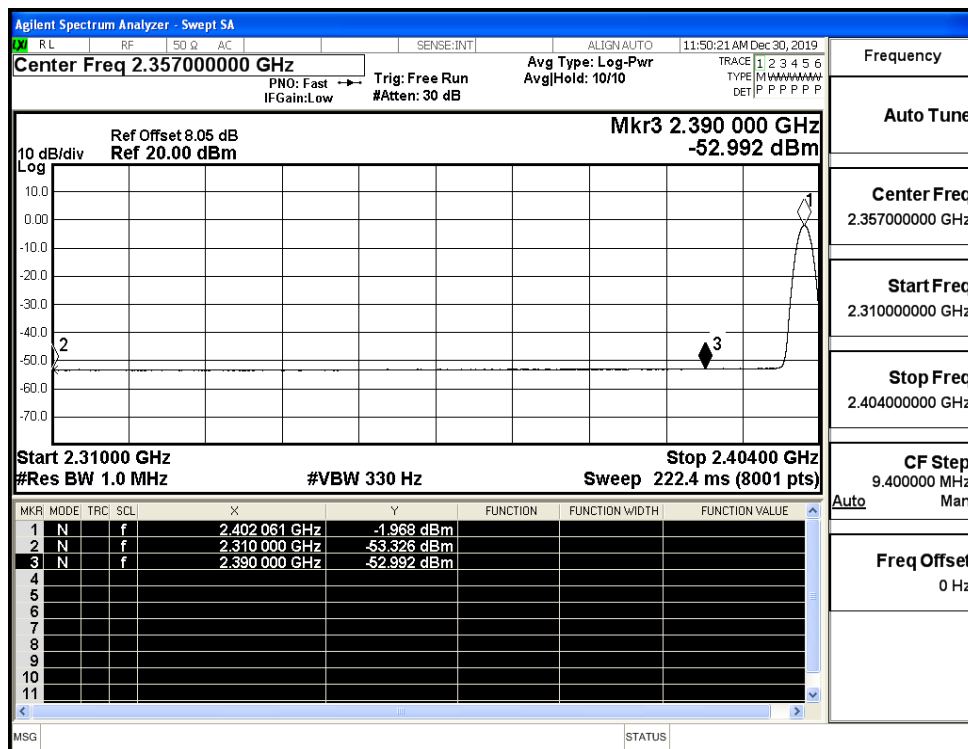
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

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)

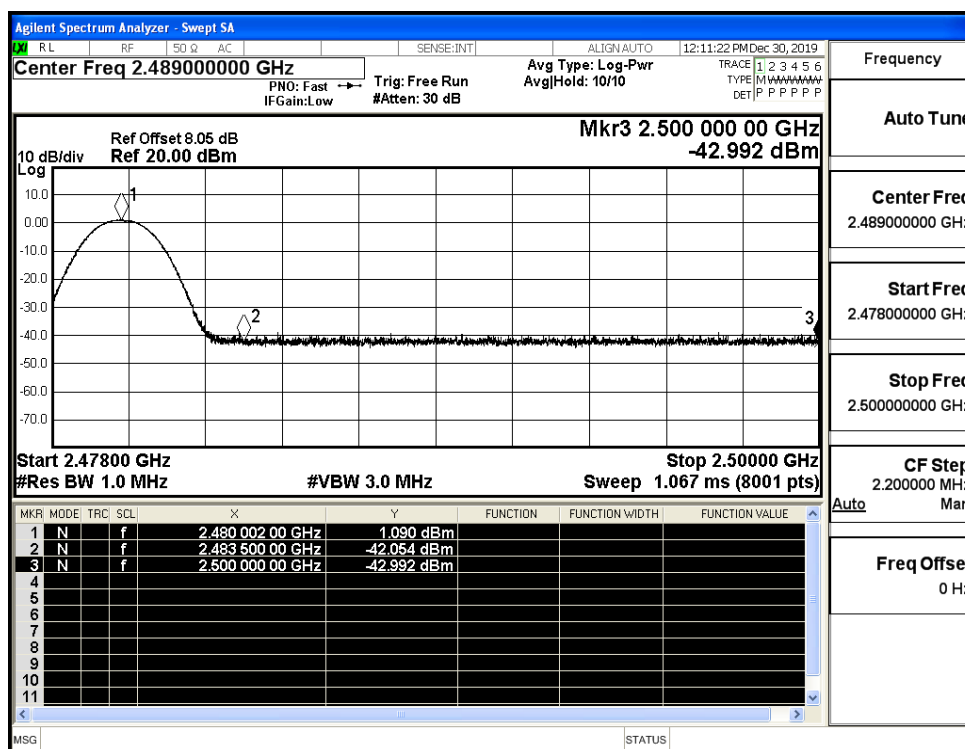
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

