

Appendix A

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

Product Name: Wireless headphone

Trade Mark: Polaroid

Test Model: PBTH201

Environmental Conditions

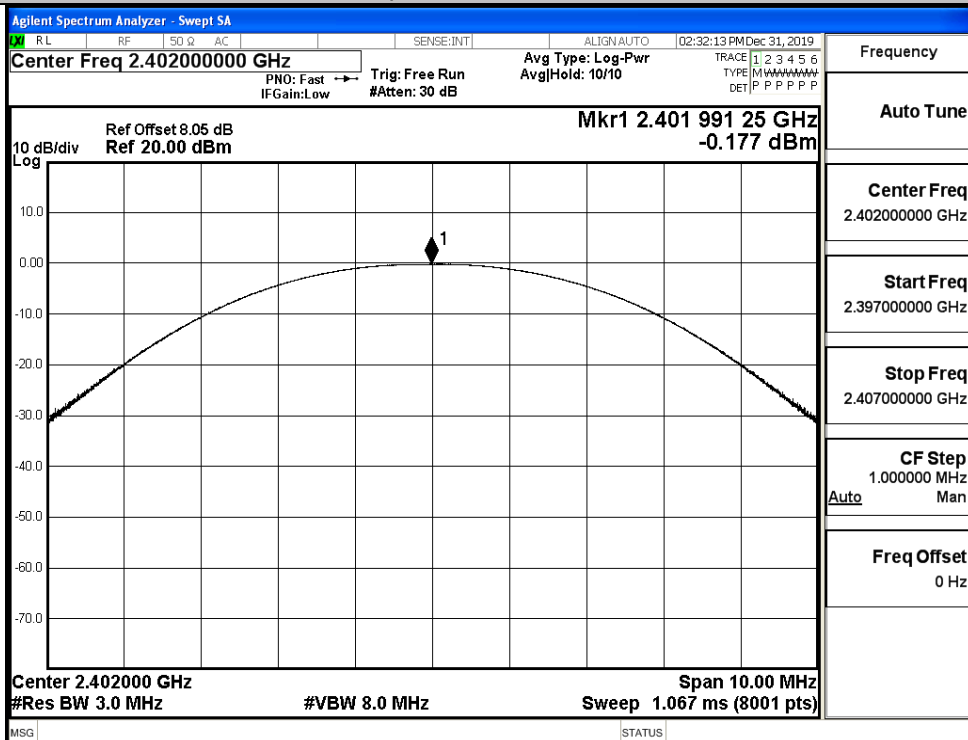
Temperature:	24.3 ° C
Relative Humidity:	53.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond Lu
Supervised by:	Wang Chuang

A.1 Maxmum Conducted Peak Output Power

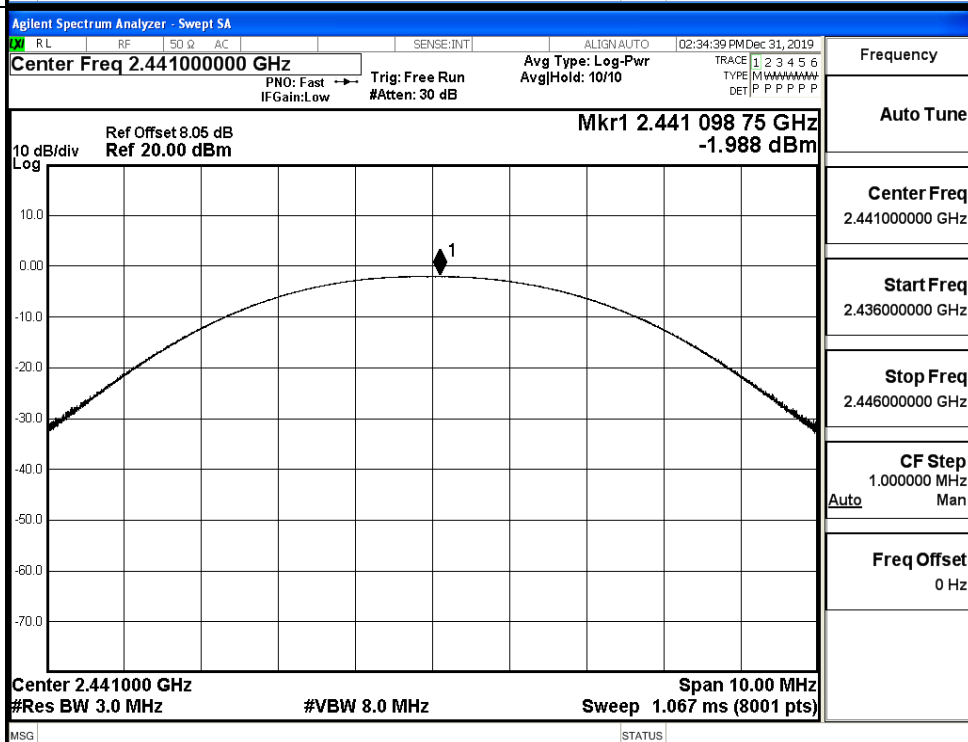
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.177	30	PASS
	MCH	-1.988	30	PASS
	HCH	-0.802	30	PASS
$\pi/4$ DQPSK	LCH	-0.972	21	PASS
	MCH	-2.638	21	PASS
	HCH	-1.588	21	PASS
8DPSK	LCH	-0.683	21	PASS
	MCH	-2.439	21	PASS
	HCH	-1.364	21	PASS

Test Graphs

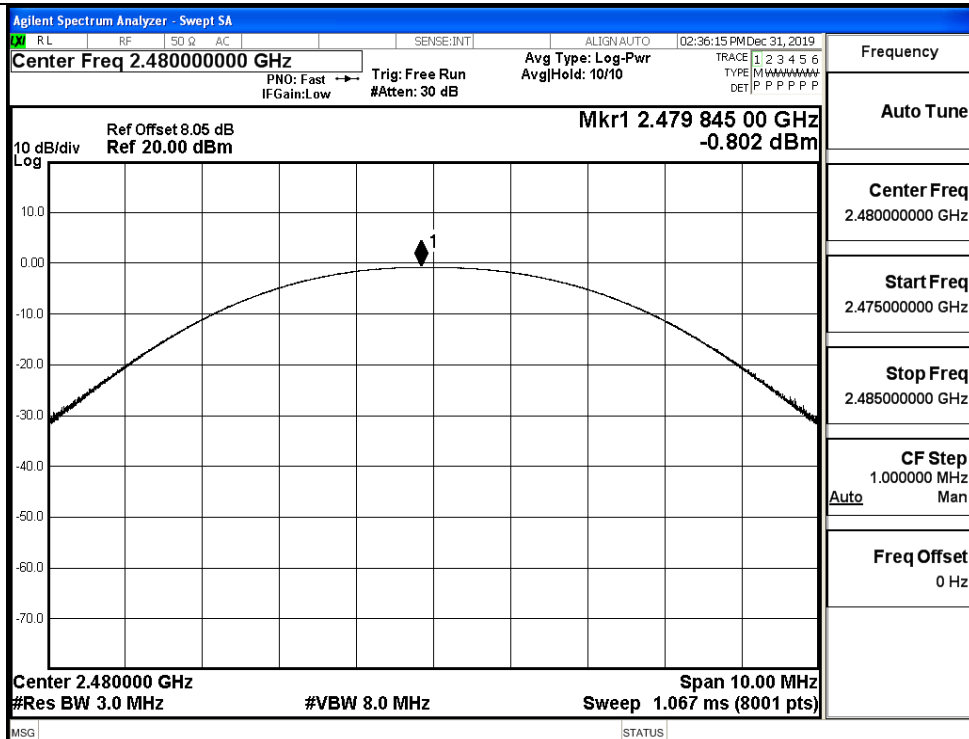
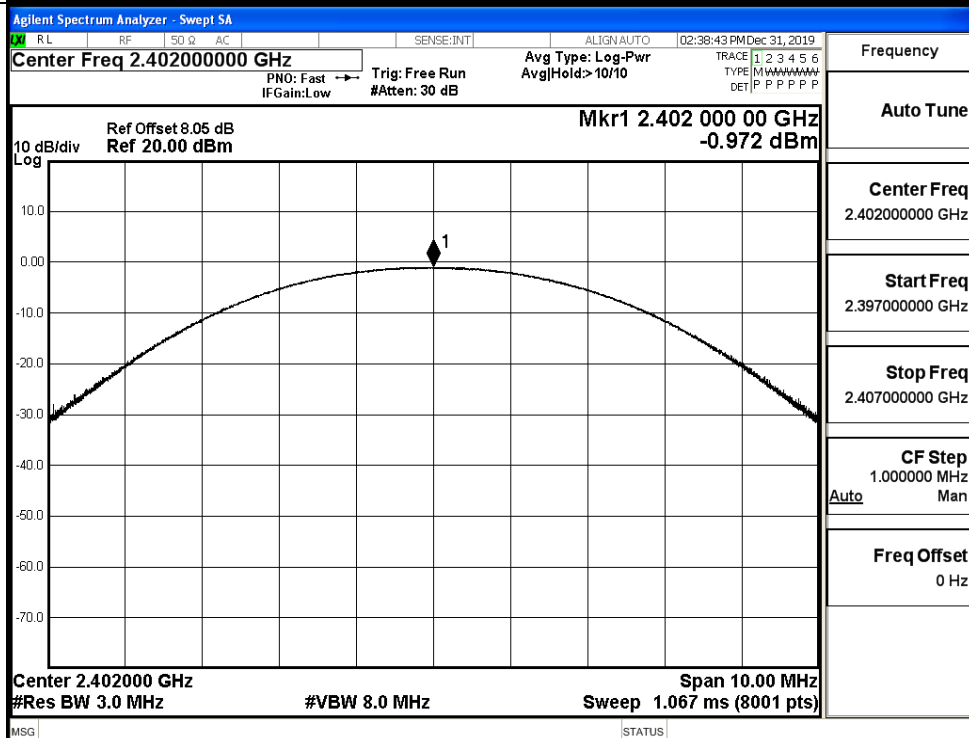
GFSK/LCH

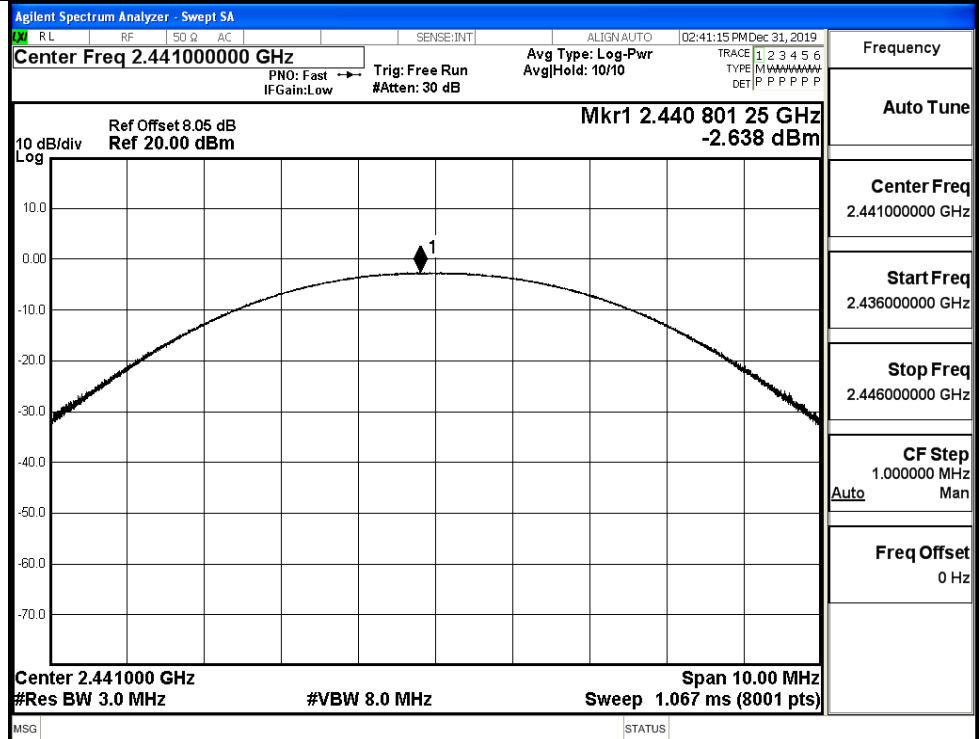
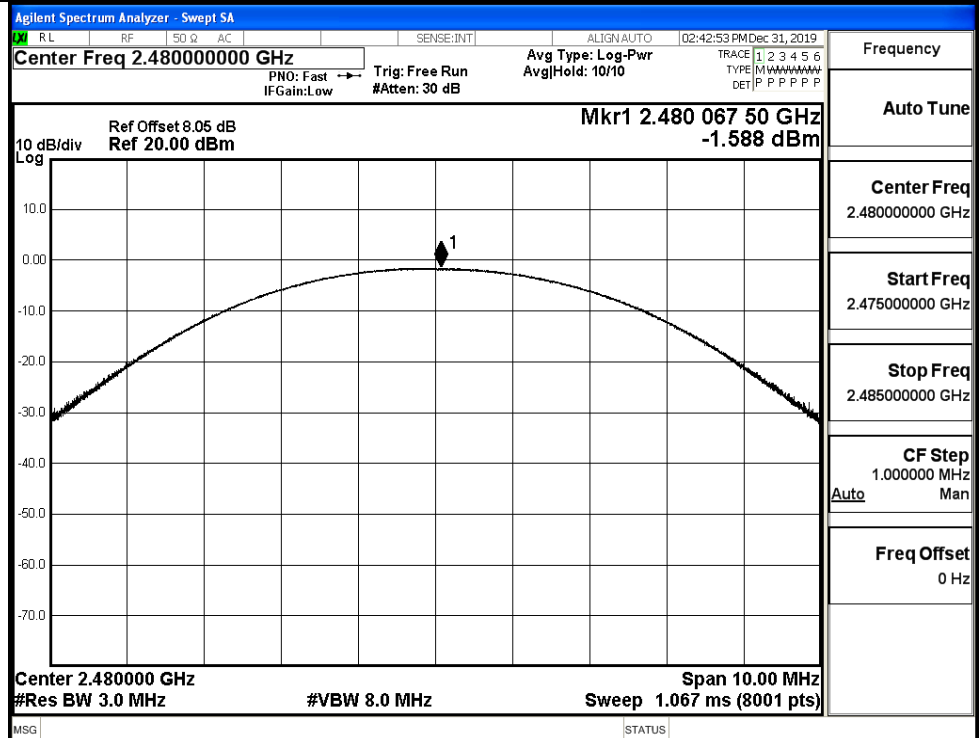


GFSK/MCH

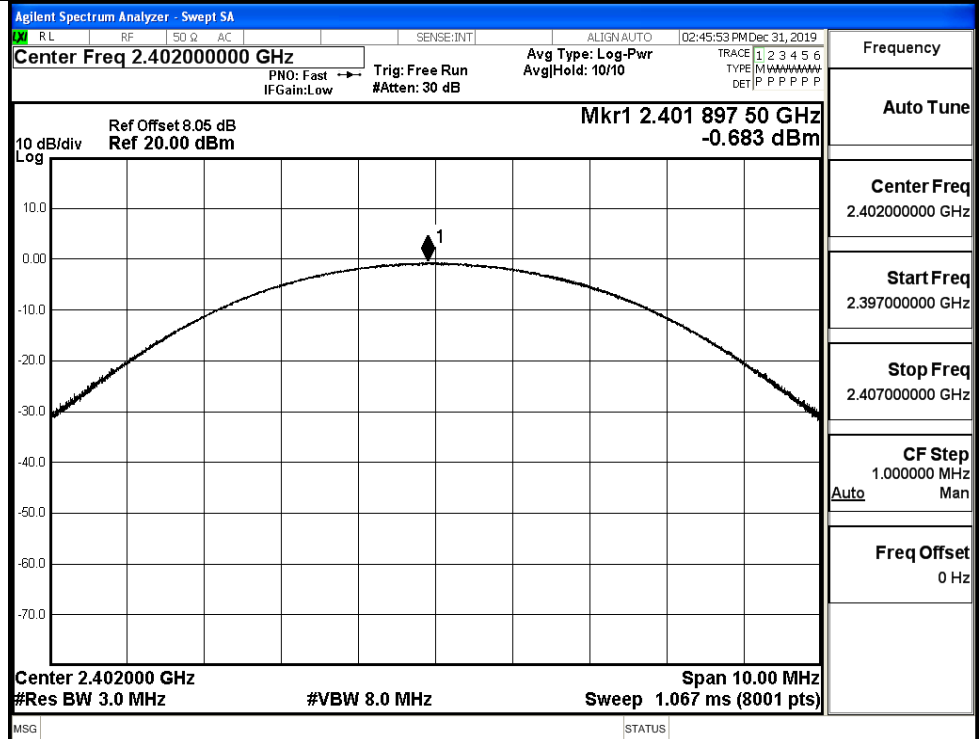


GFSK/HCH

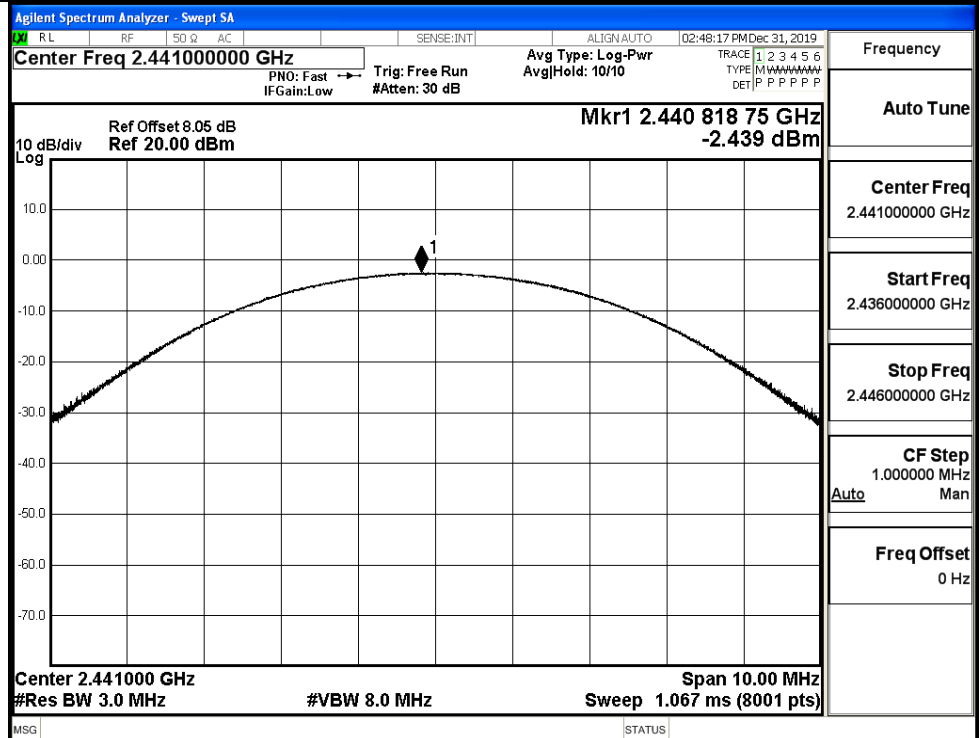
 $\pi/4$ DQPSK/LCH

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

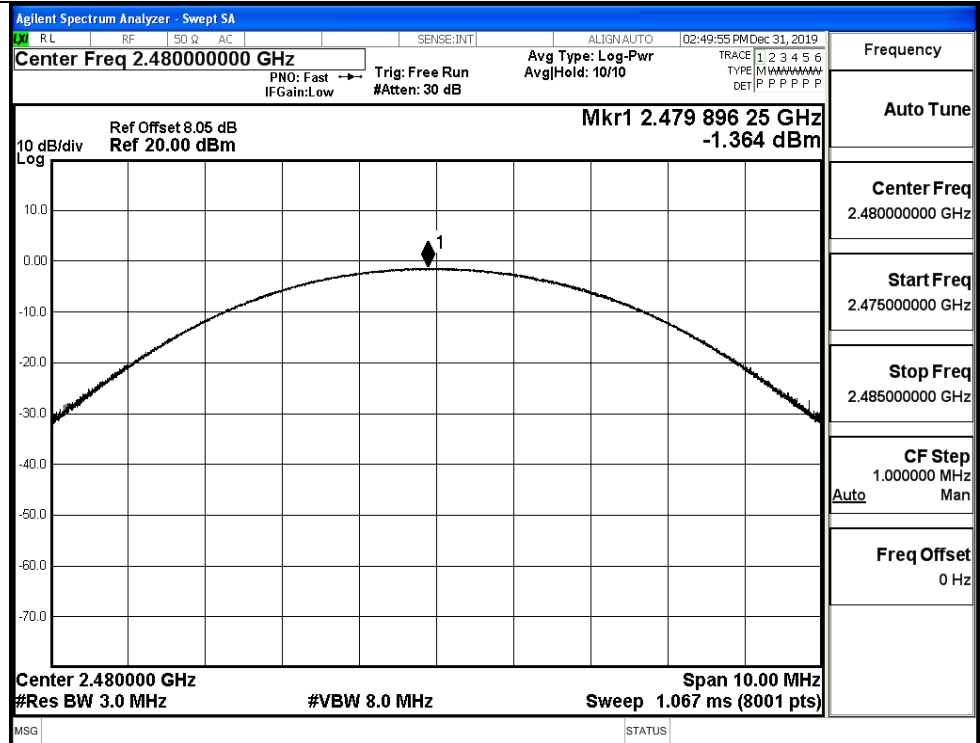
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

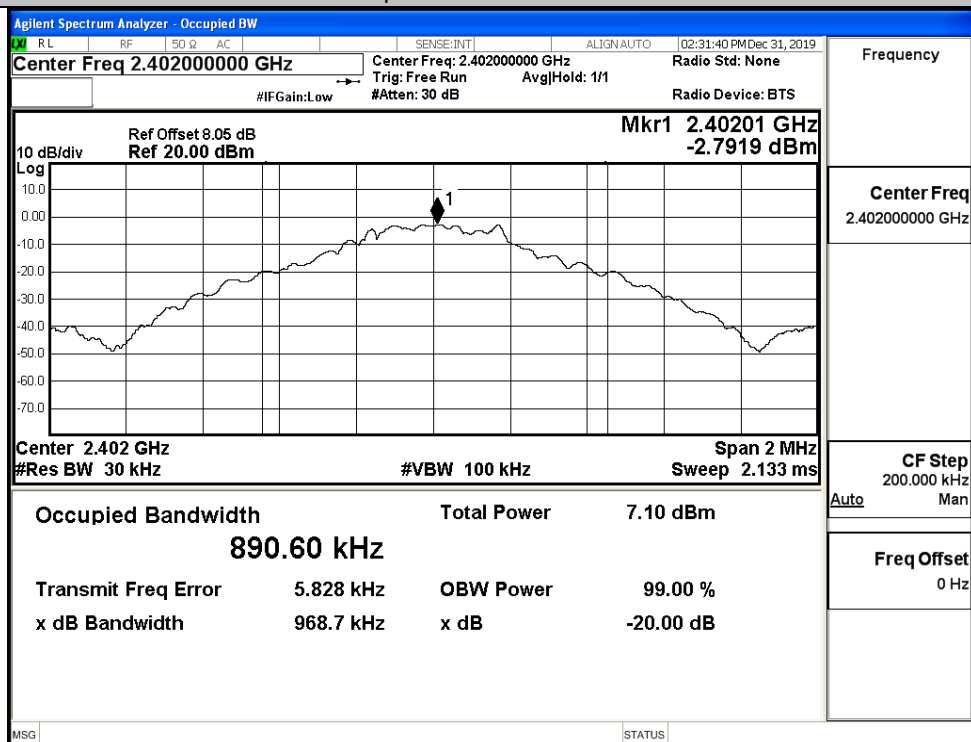


A.2 20dB Bandwidth

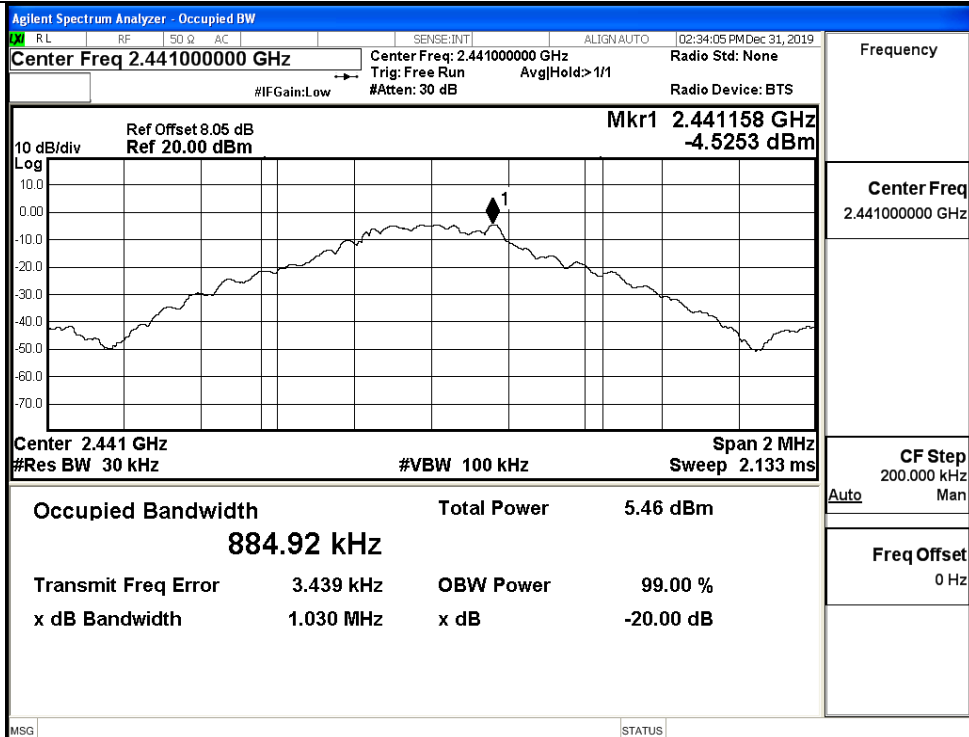
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9687	Not Specified	PASS
	MCH	1.030	Not Specified	PASS
	HCH	1.036	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.290	Not Specified	PASS
	MCH	1.309	Not Specified	PASS
	HCH	1.290	Not Specified	PASS
8DPSK	LCH	1.293	Not Specified	PASS
	MCH	1.298	Not Specified	PASS
	HCH	1.294	Not Specified	PASS

Test Graphs

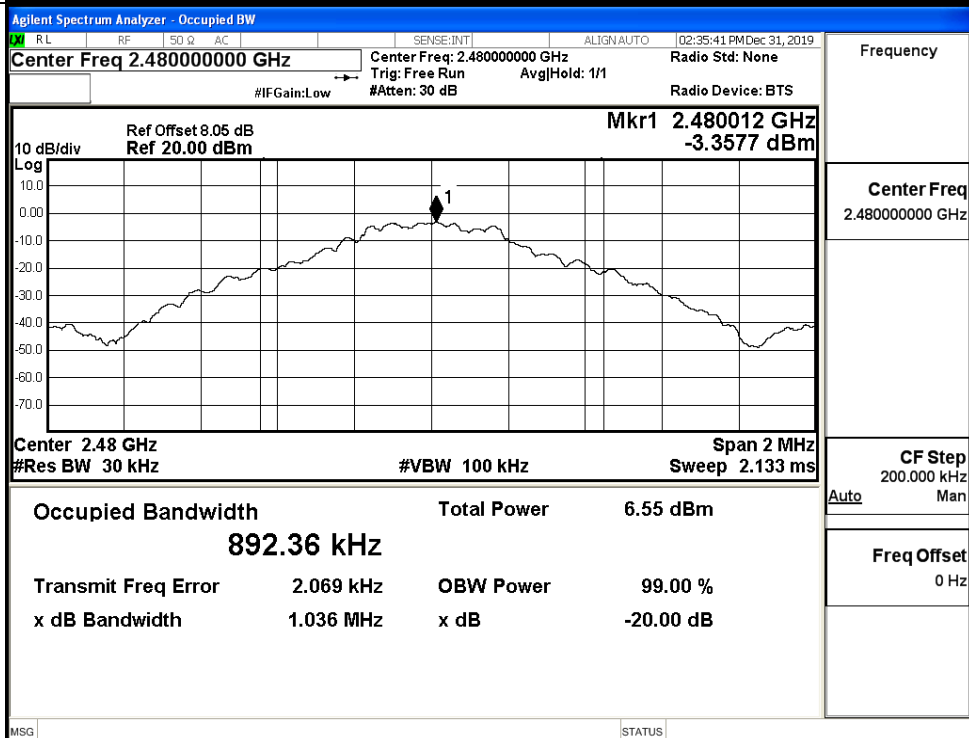
GFSK/LCH

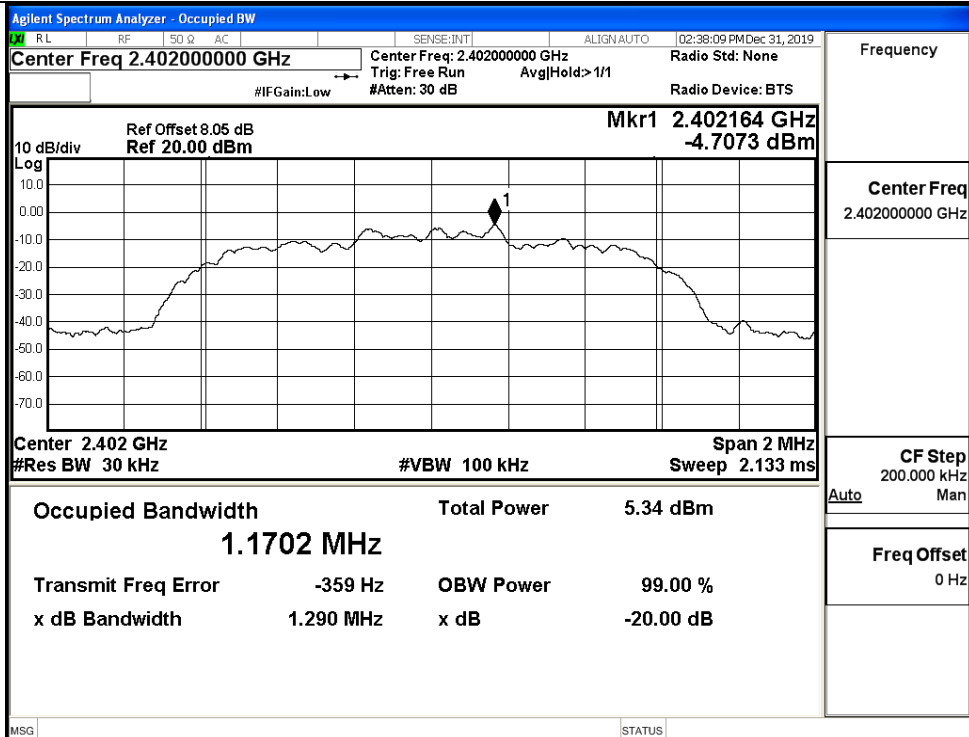


GFSK/MCH

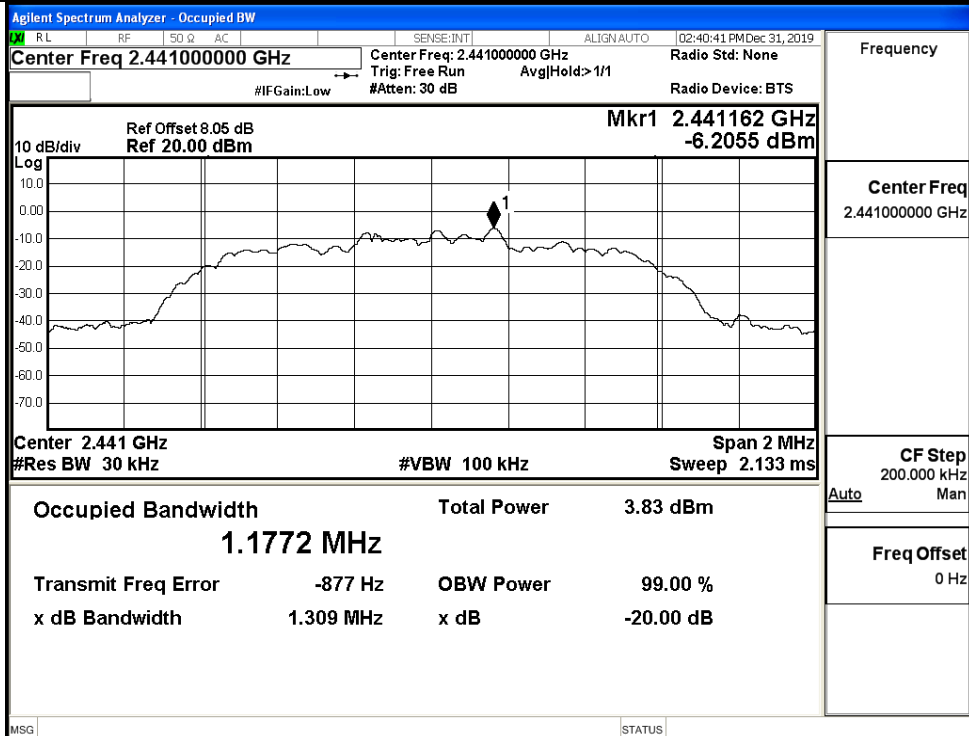


GFSK/HCH



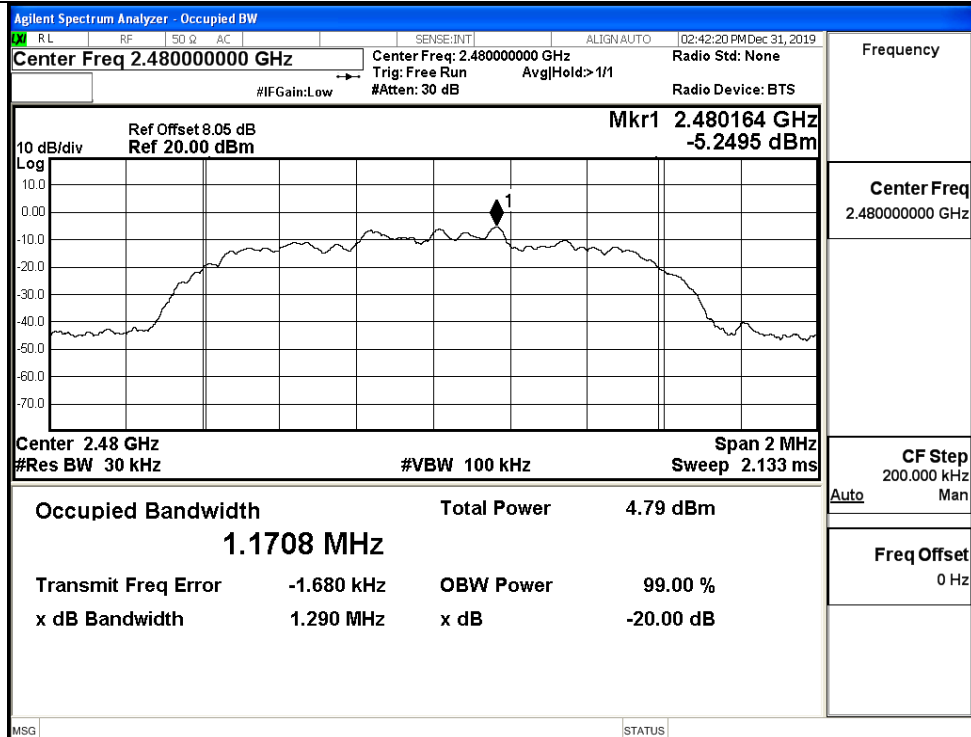
$\pi/4$ DQPSK/LCH

Frequency

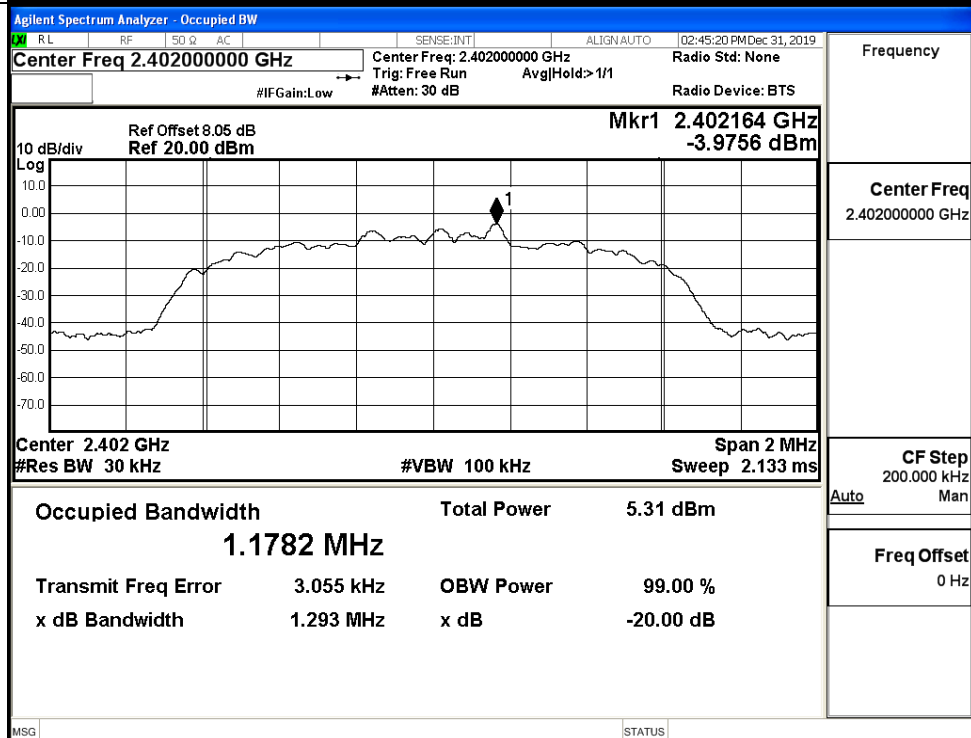
Center Freq
2.40200000 GHzCF Step
200.000 kHz
ManFreq Offset
0 Hz $\pi/4$ DQPSK/MCH

Frequency

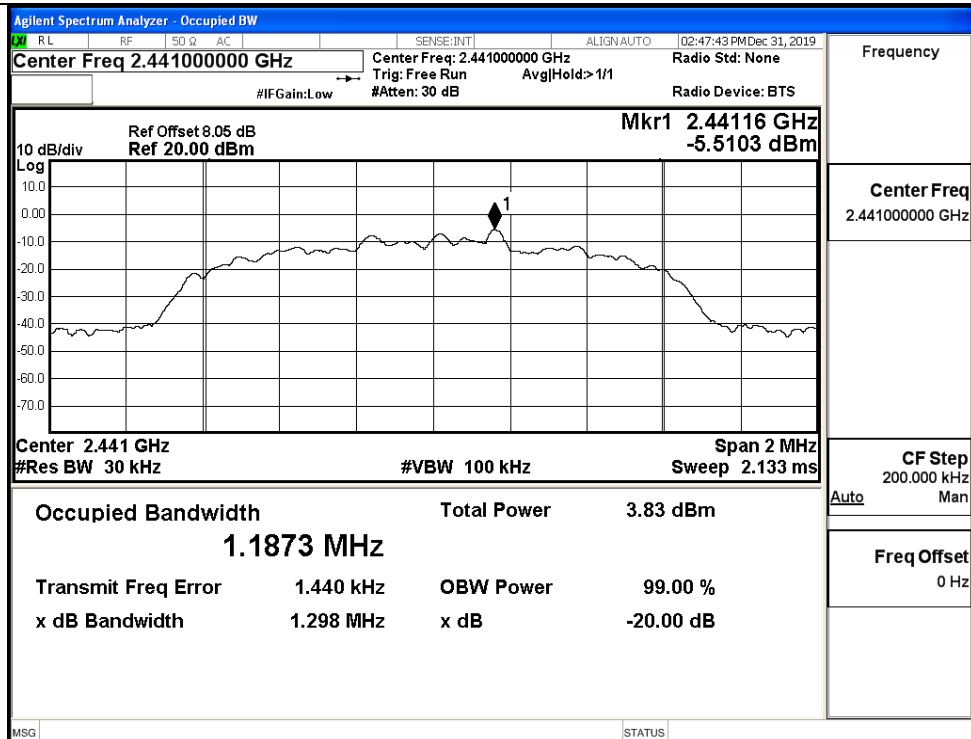
Center Freq
2.44100000 GHzCF Step
200.000 kHz
ManFreq Offset
0 Hz

$\pi/4$ DQPSK/HCH

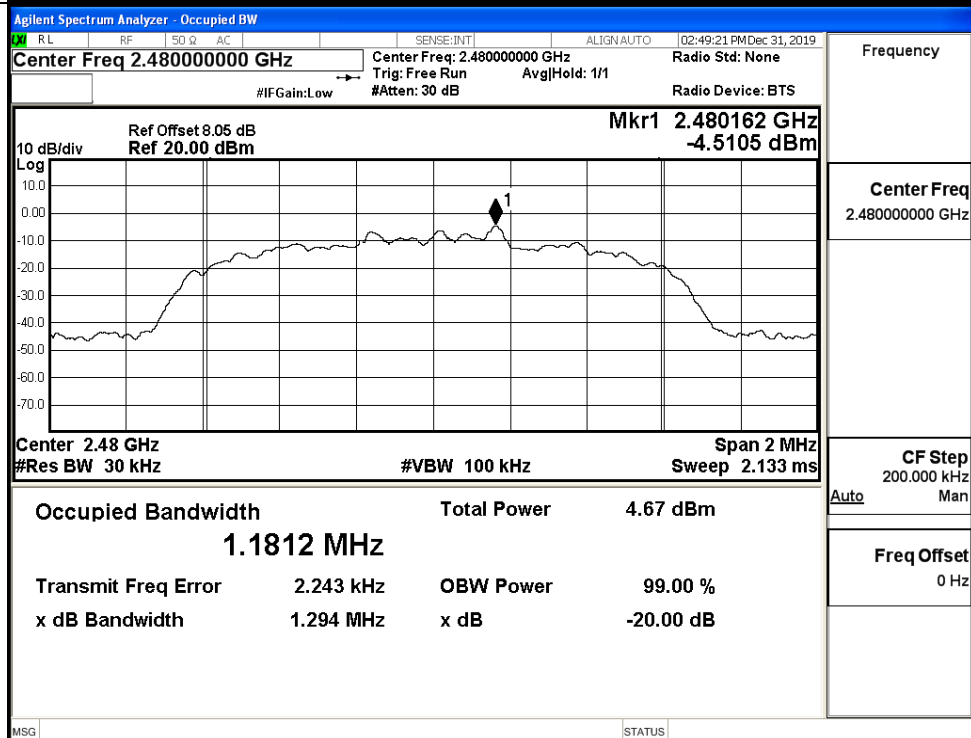
8DPSK/LCH



8DPSK/MCH



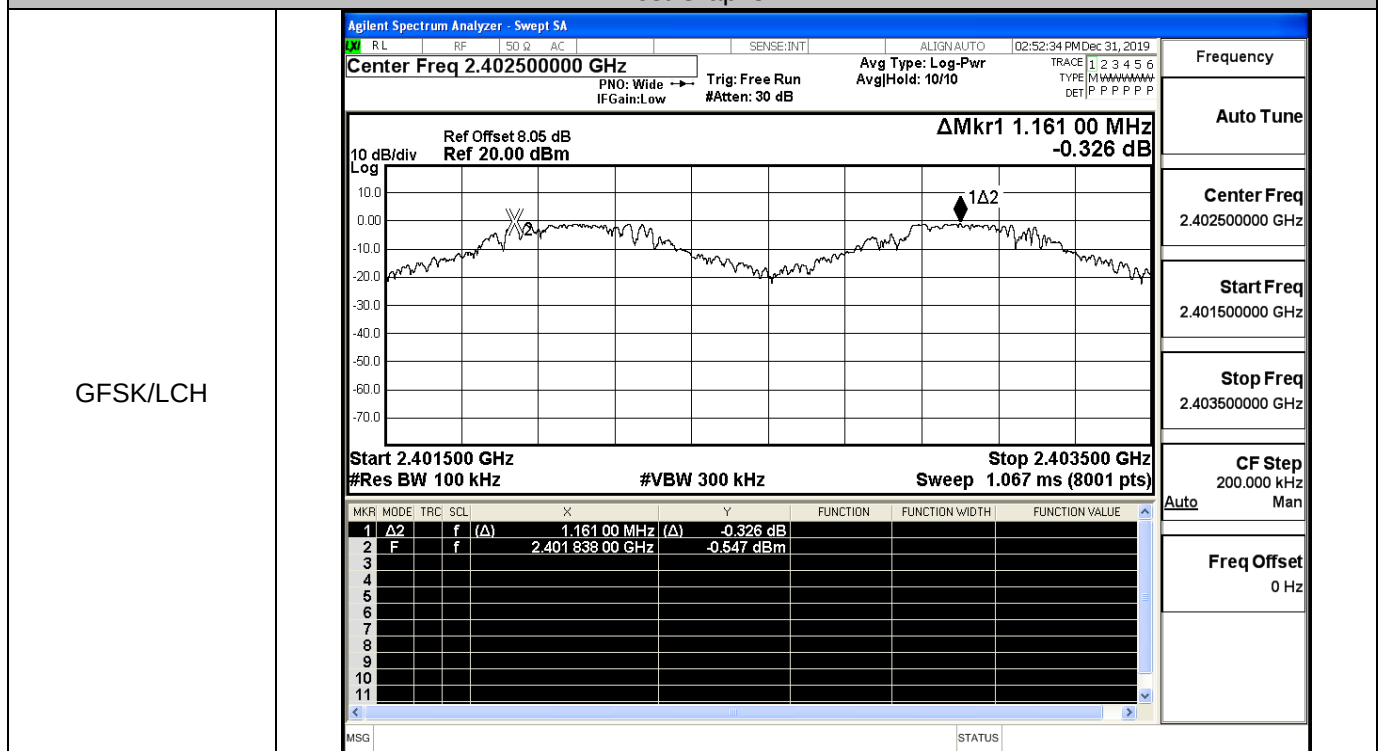
8DPSK/HCH



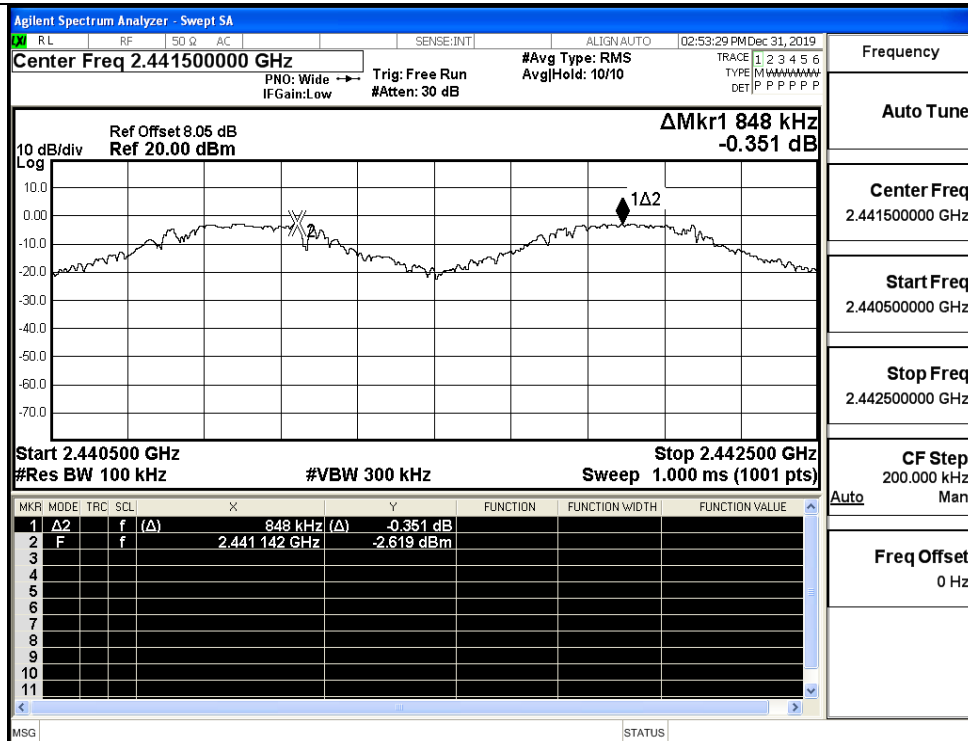
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.161	0.691	PASS
	MCH	0.848	0.691	PASS
	HCH	1.006	0.691	PASS
$\pi/4$ DQPSK	LCH	1.140	0.873	PASS
	MCH	1.162	0.873	PASS
	HCH	1.128	0.873	PASS
8DPSK	LCH	1.010	0.865	PASS
	MCH	1.122	0.865	PASS
	HCH	0.980	0.865	PASS

Test Graphs



GFSK/MCH

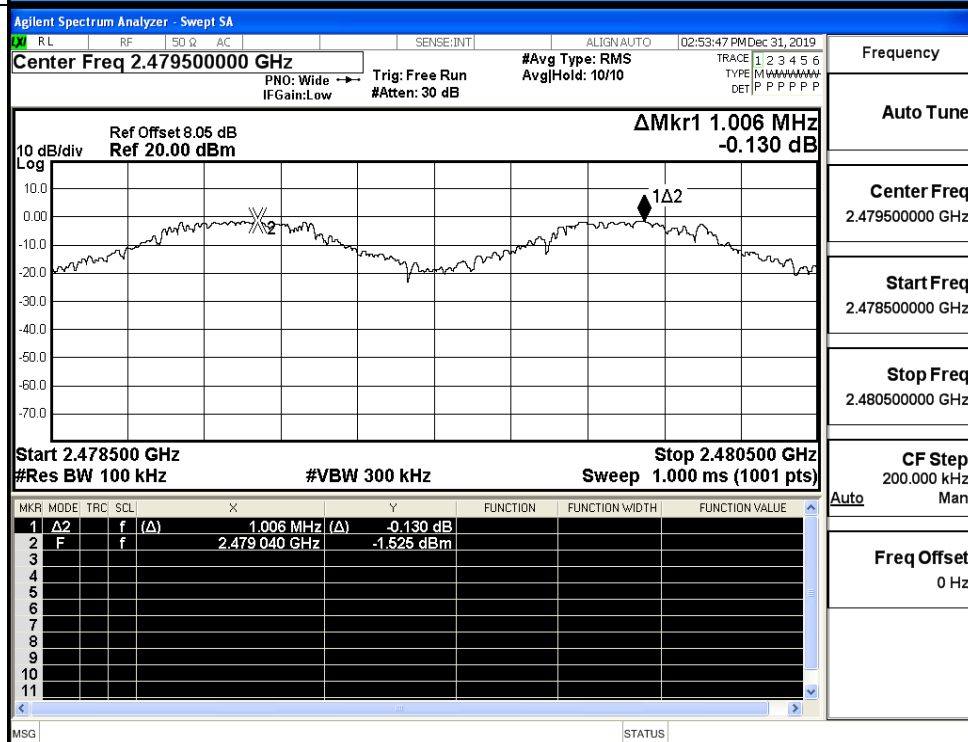


Frequency

Auto Tune

Center Freq
2.441500000 GHzStart Freq
2.440500000 GHzStop Freq
2.442500000 GHzCF Step
200.000 kHz
ManFreq Offset
0 Hz

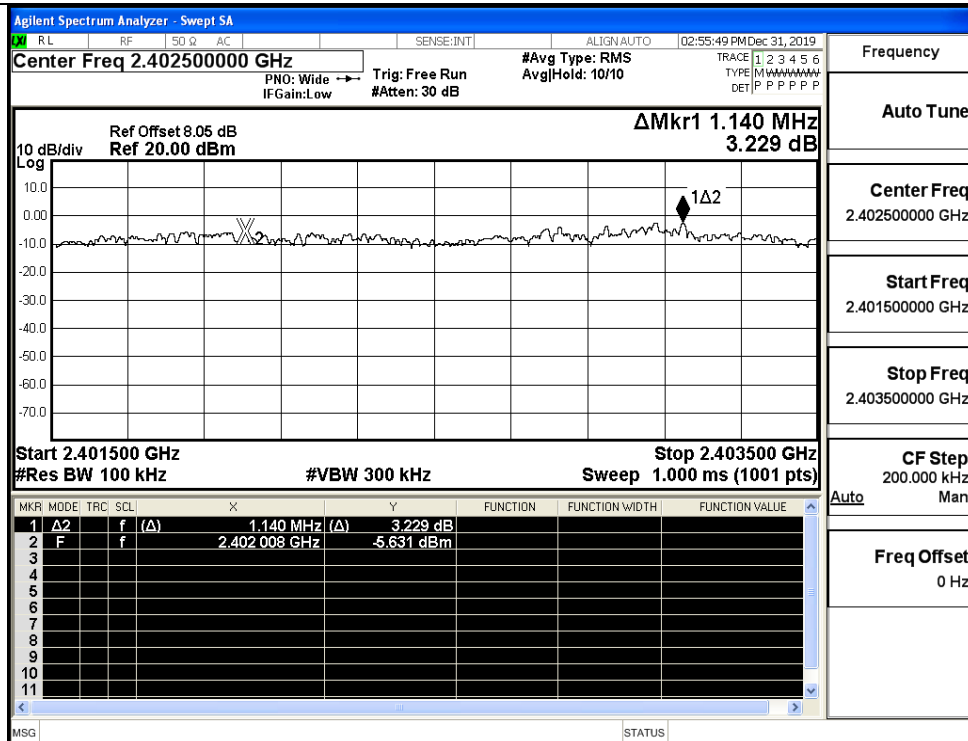
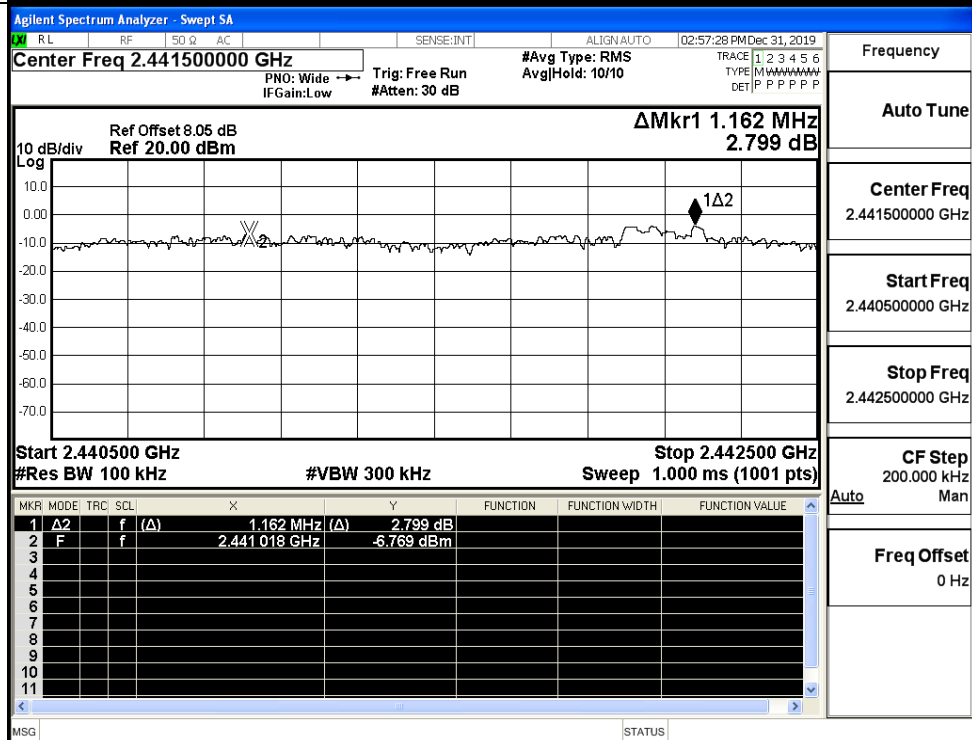
GFSK/HCH

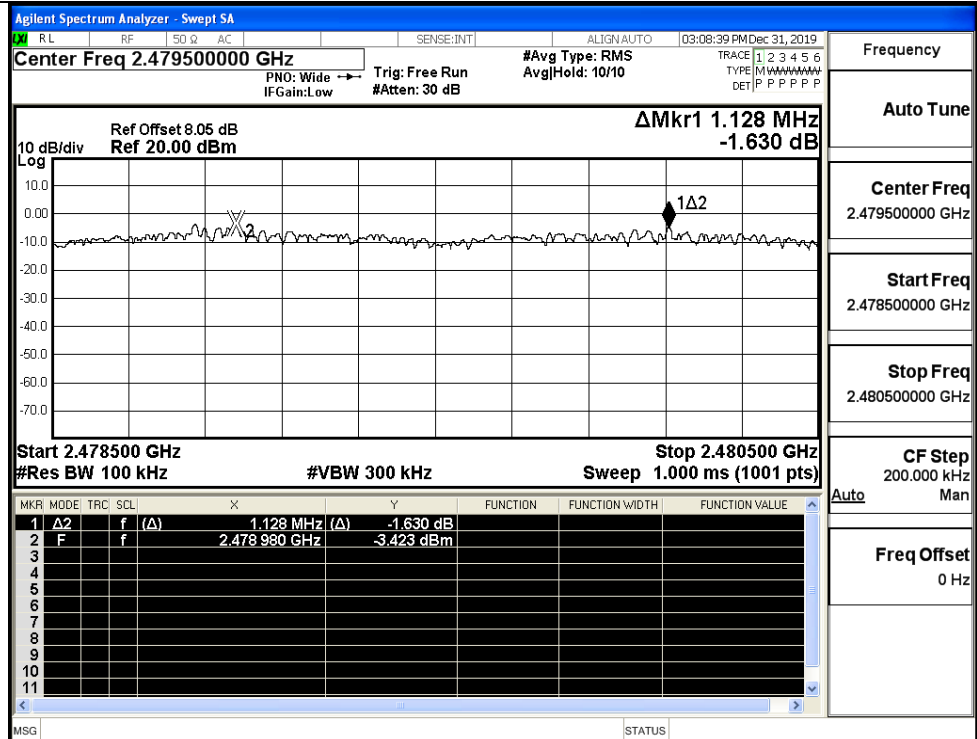


Frequency

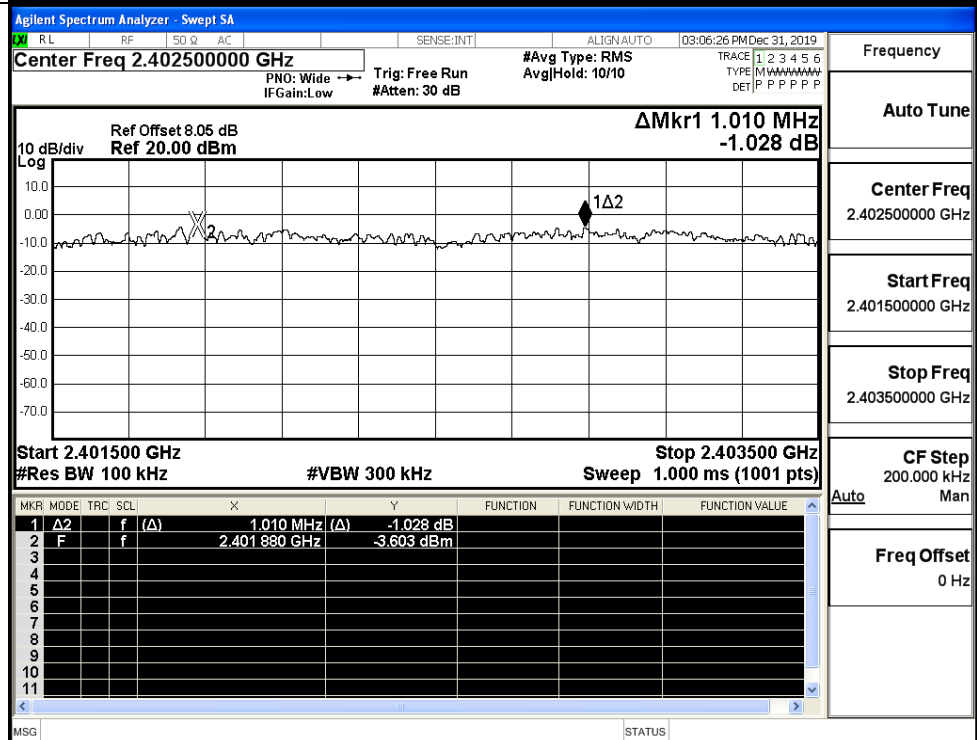
Auto Tune

Center Freq
2.479500000 GHzStart Freq
2.478500000 GHzStop Freq
2.480500000 GHzCF Step
200.000 kHz
ManFreq Offset
0 Hz

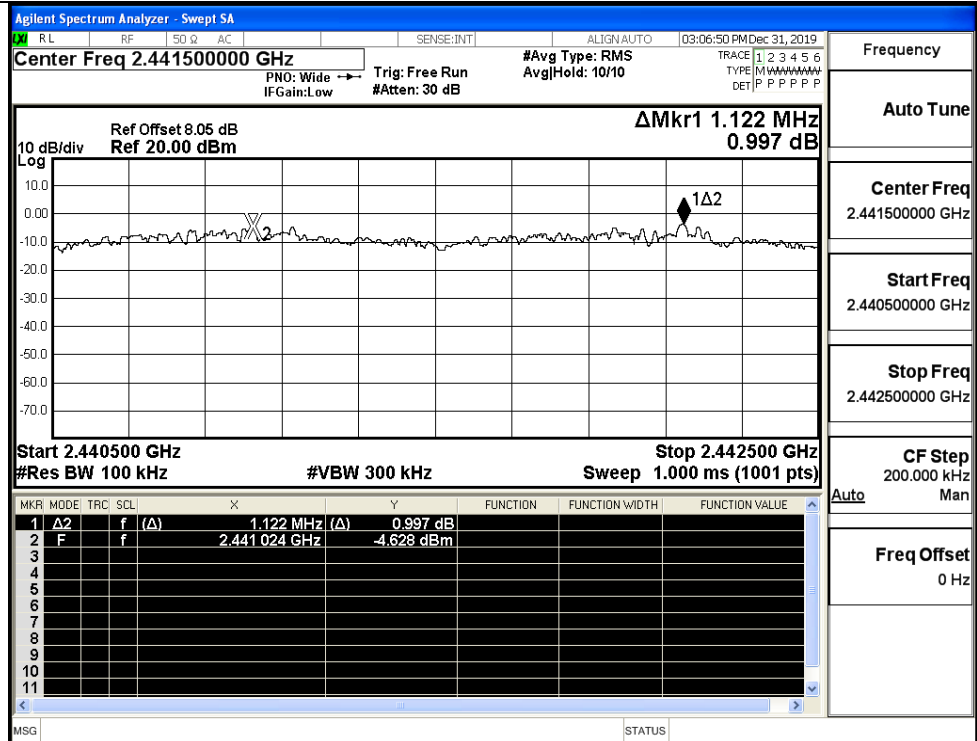
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

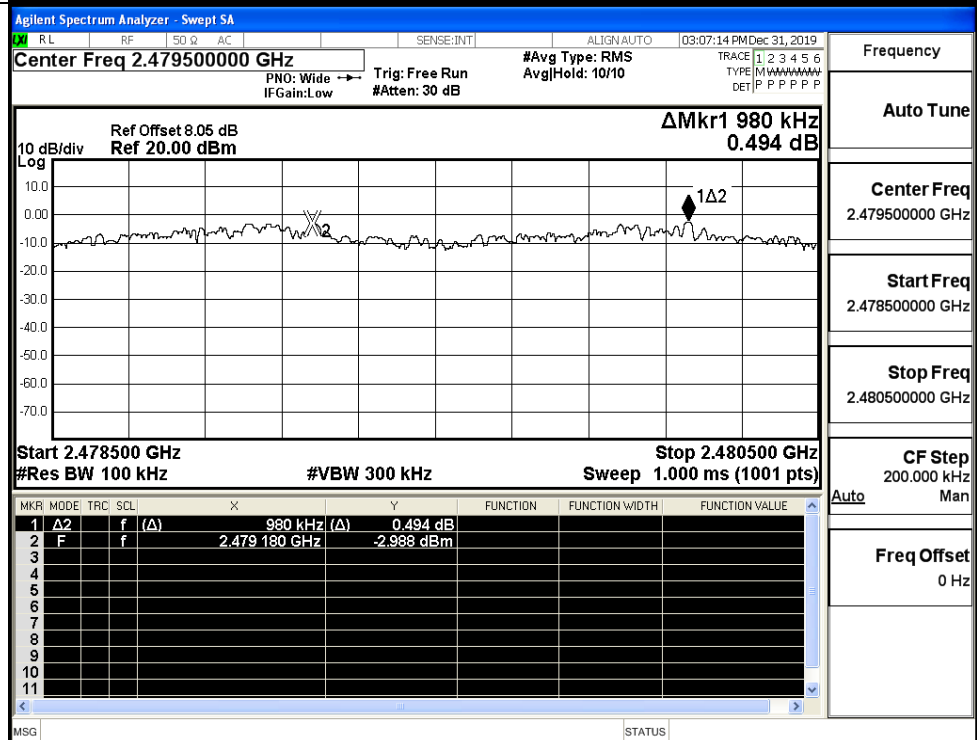
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

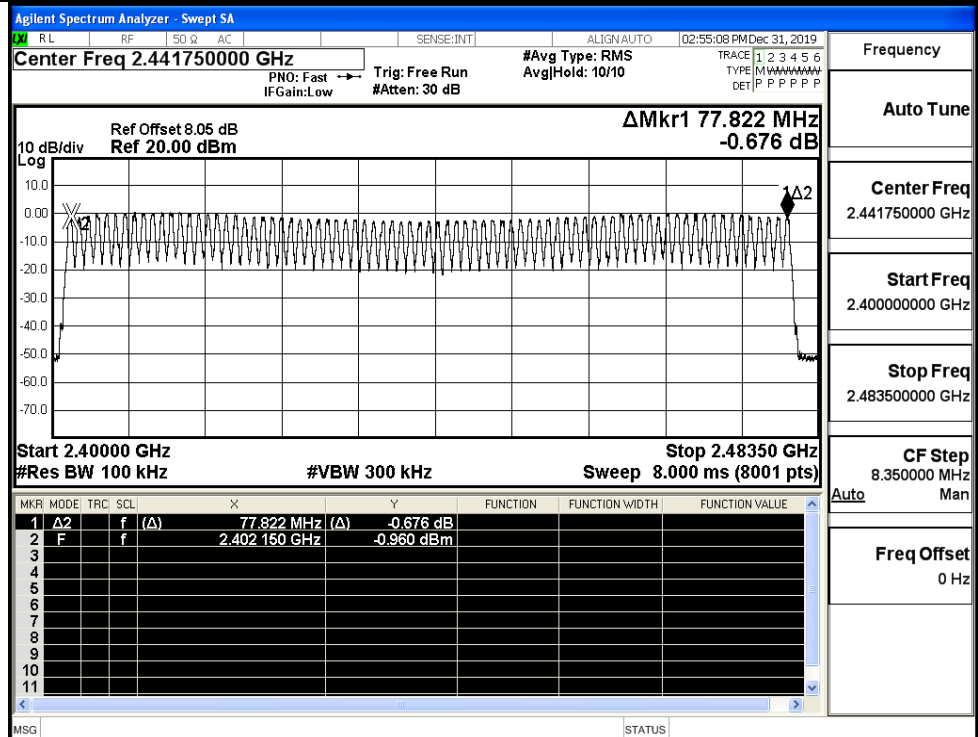
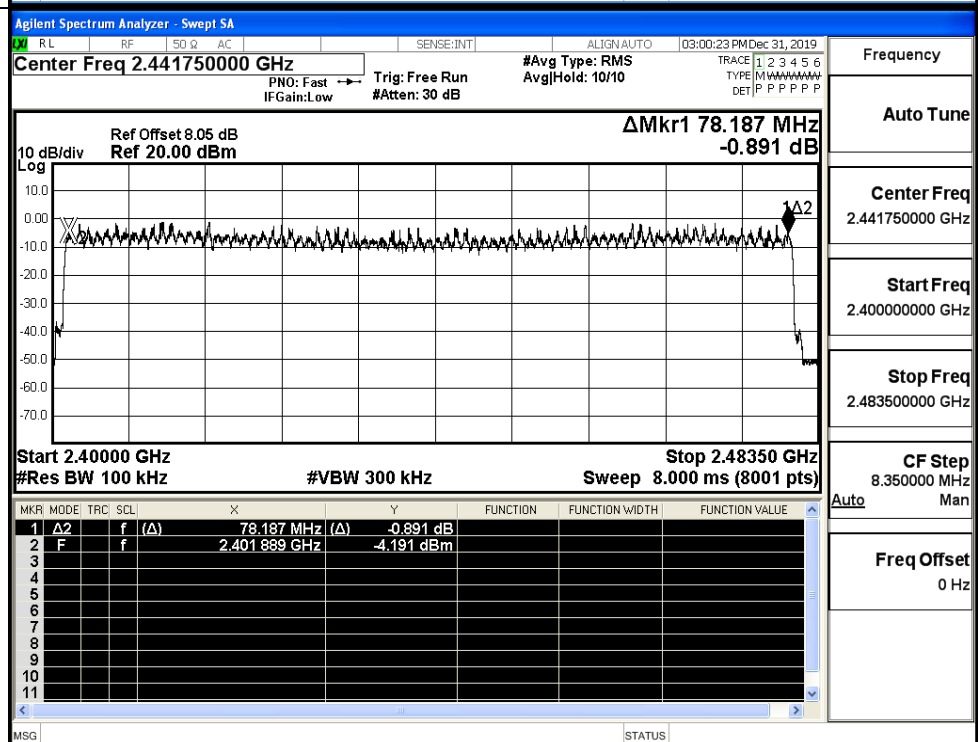


A.4 Hopping Channel Number

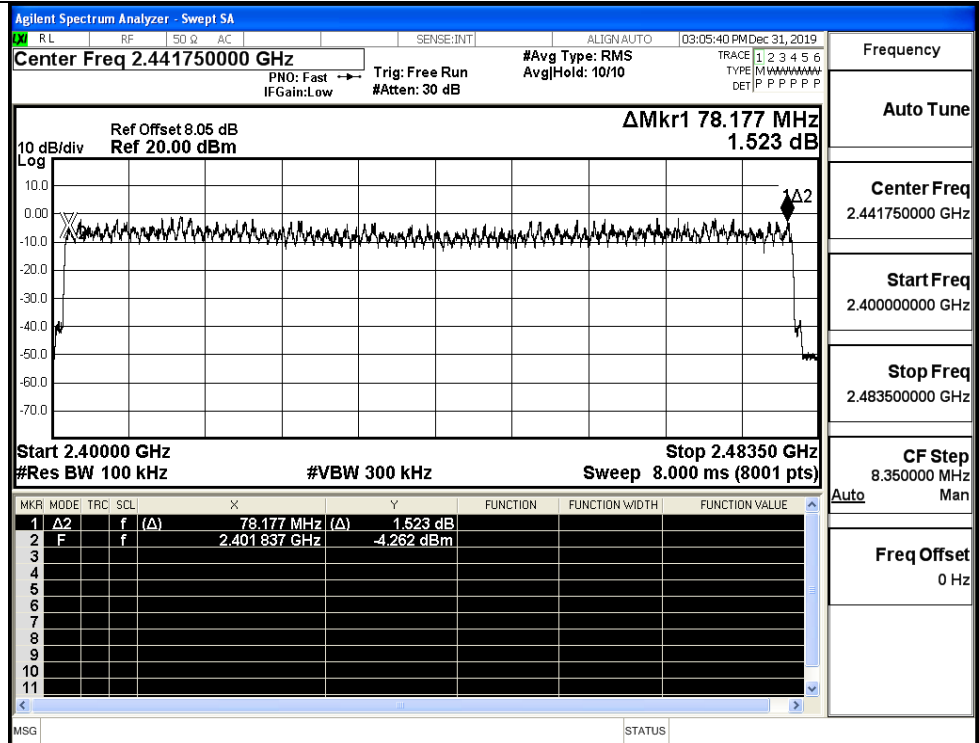
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

Test Graphs

GFSK/Hop

 $\pi/4$ DQPSK/Hop

8DPSK/Hop

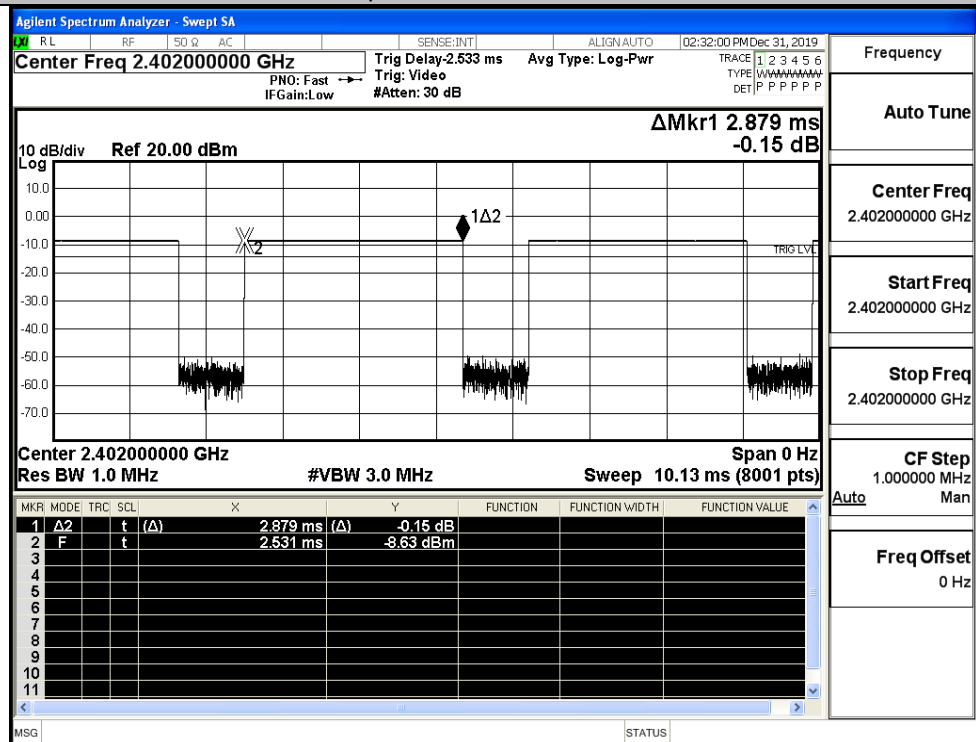


A.5 Dwell Time

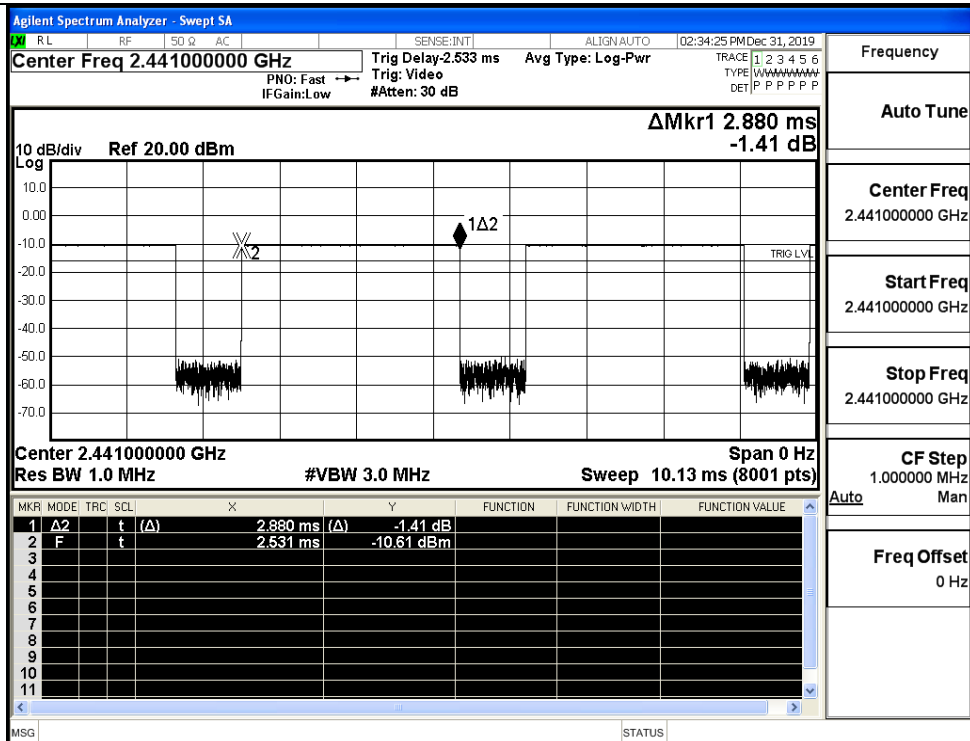
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88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

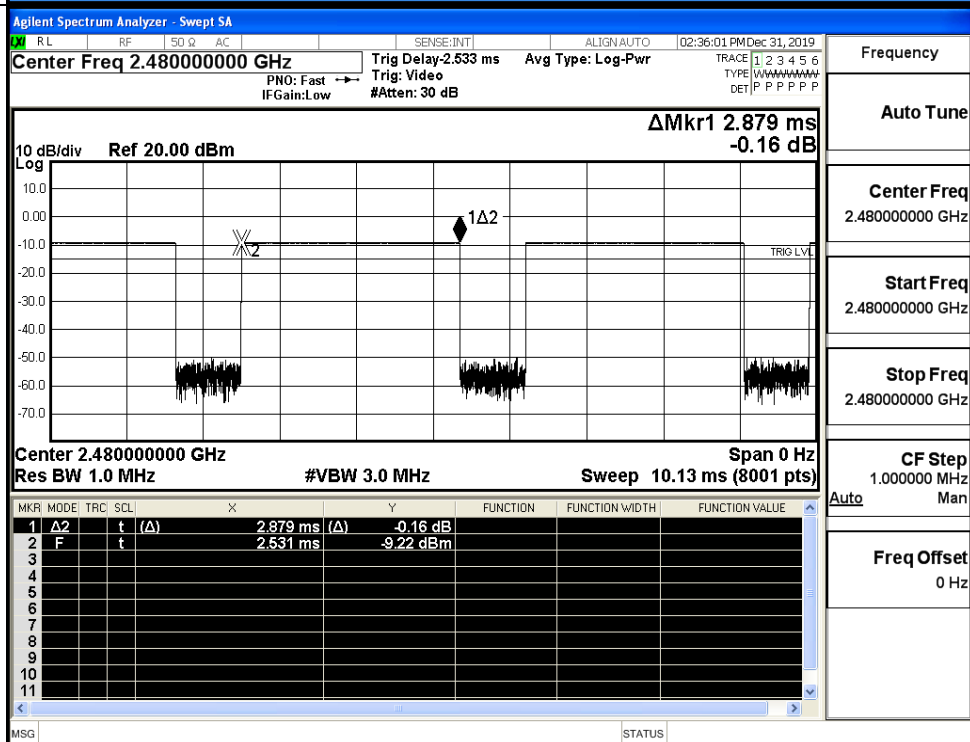
GFSK_DH5/LCH



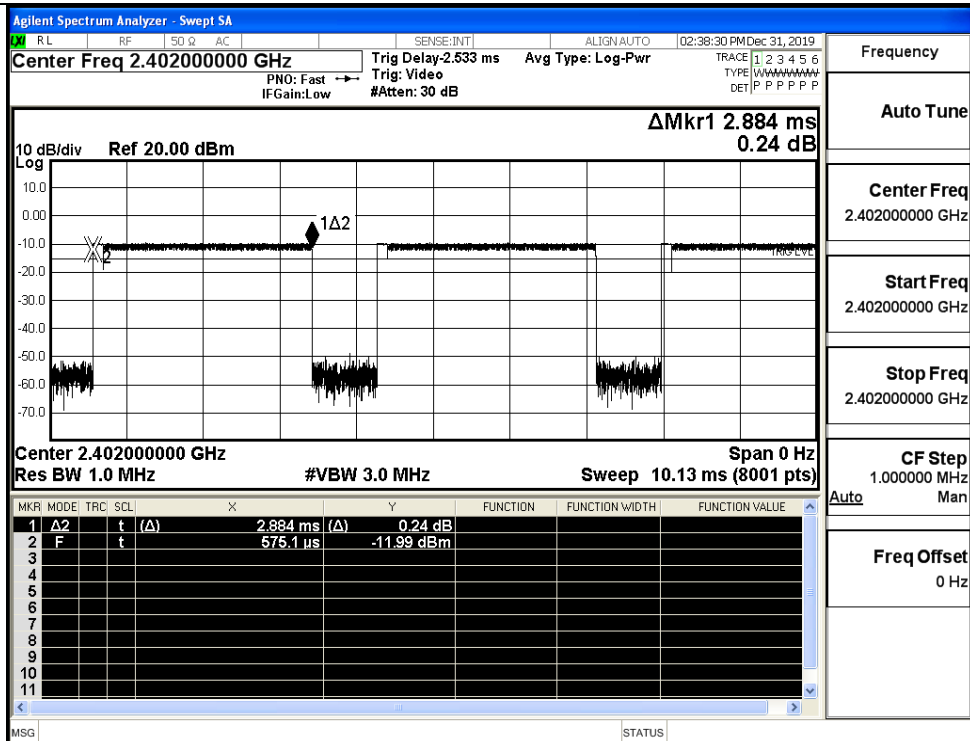
GFSK_DH5/MCH



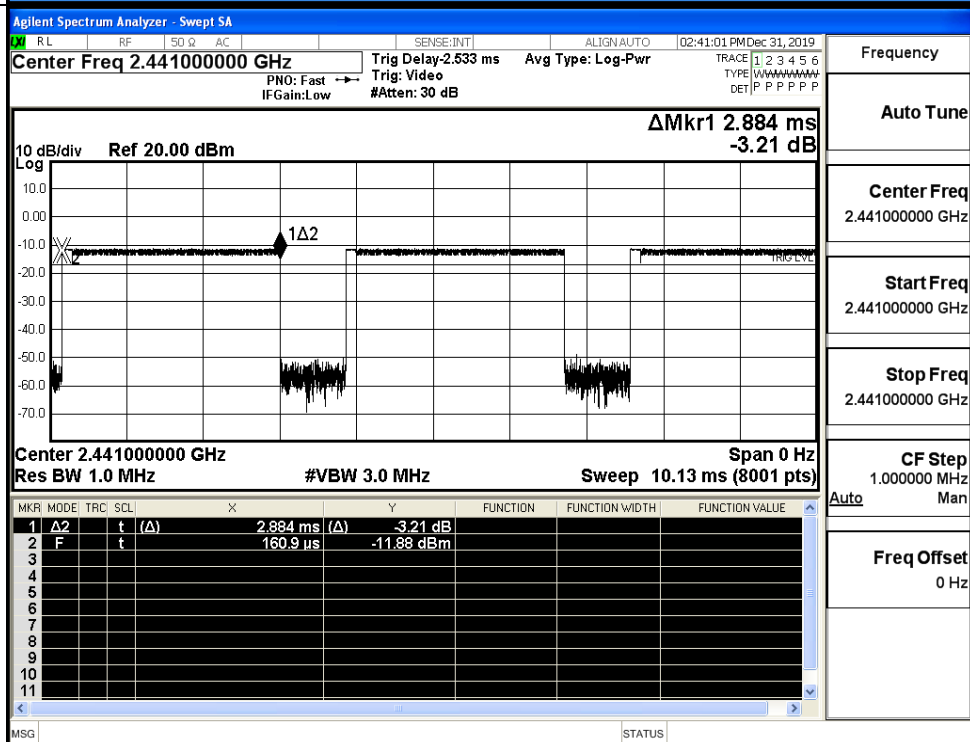
GFSK_DH5/HCH



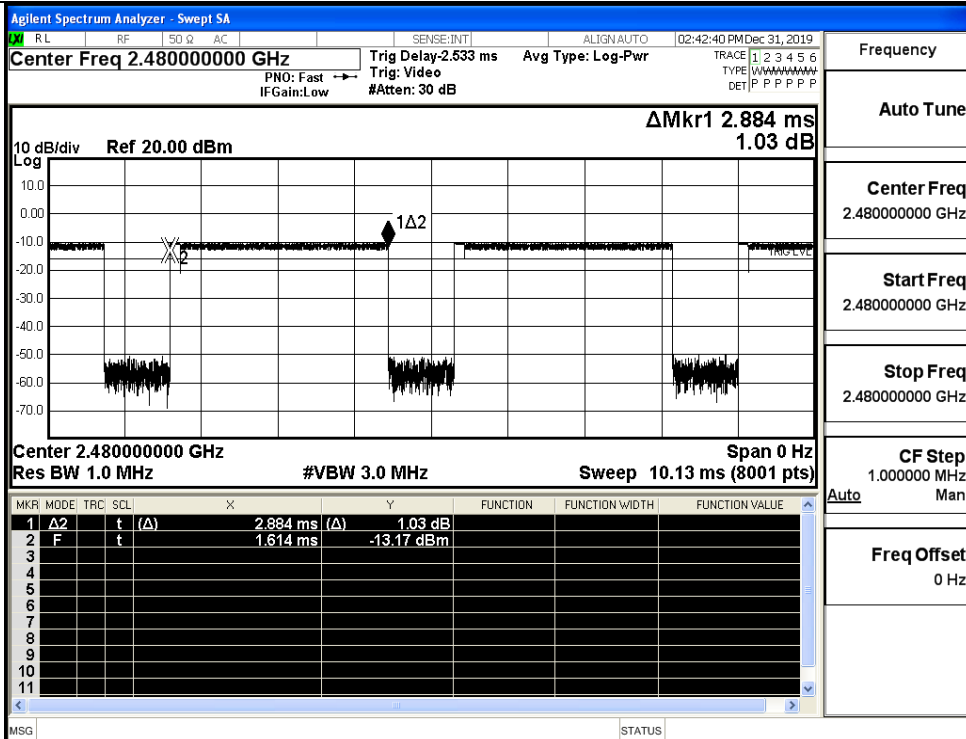
$\pi/4$ DQPSK
_2DH5/LCH



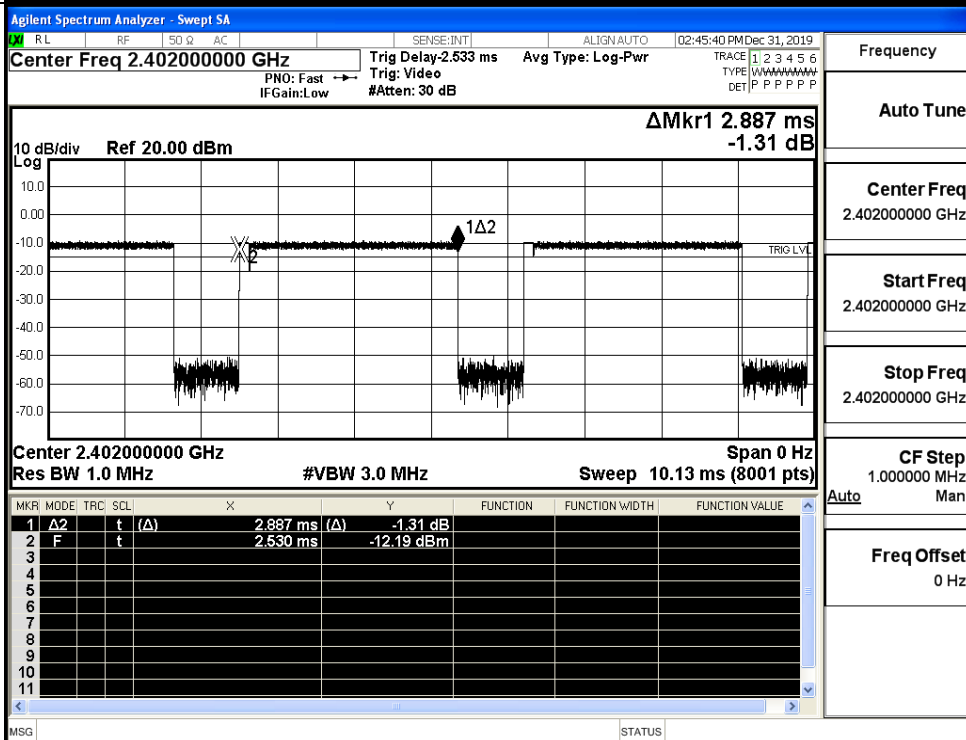
$\pi/4$ DQPSK
_2DH5/MCH



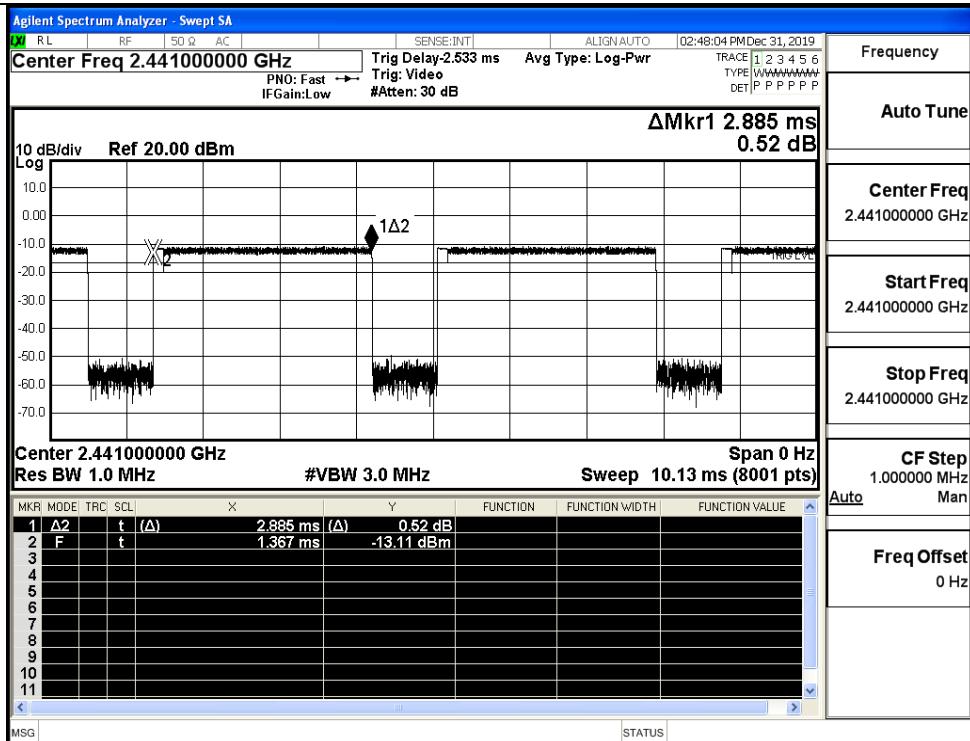
$\pi/4$ DQPSK
_2DH5/HCH



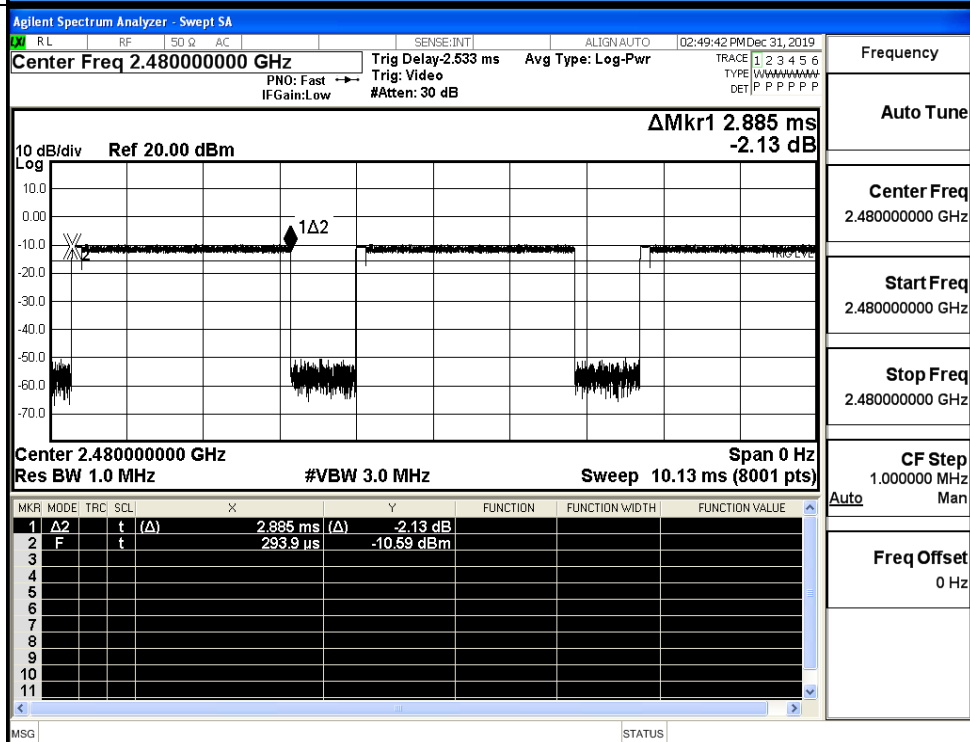
8DPSK _3DH5/LCH



8DPSK_3DH5/MCH



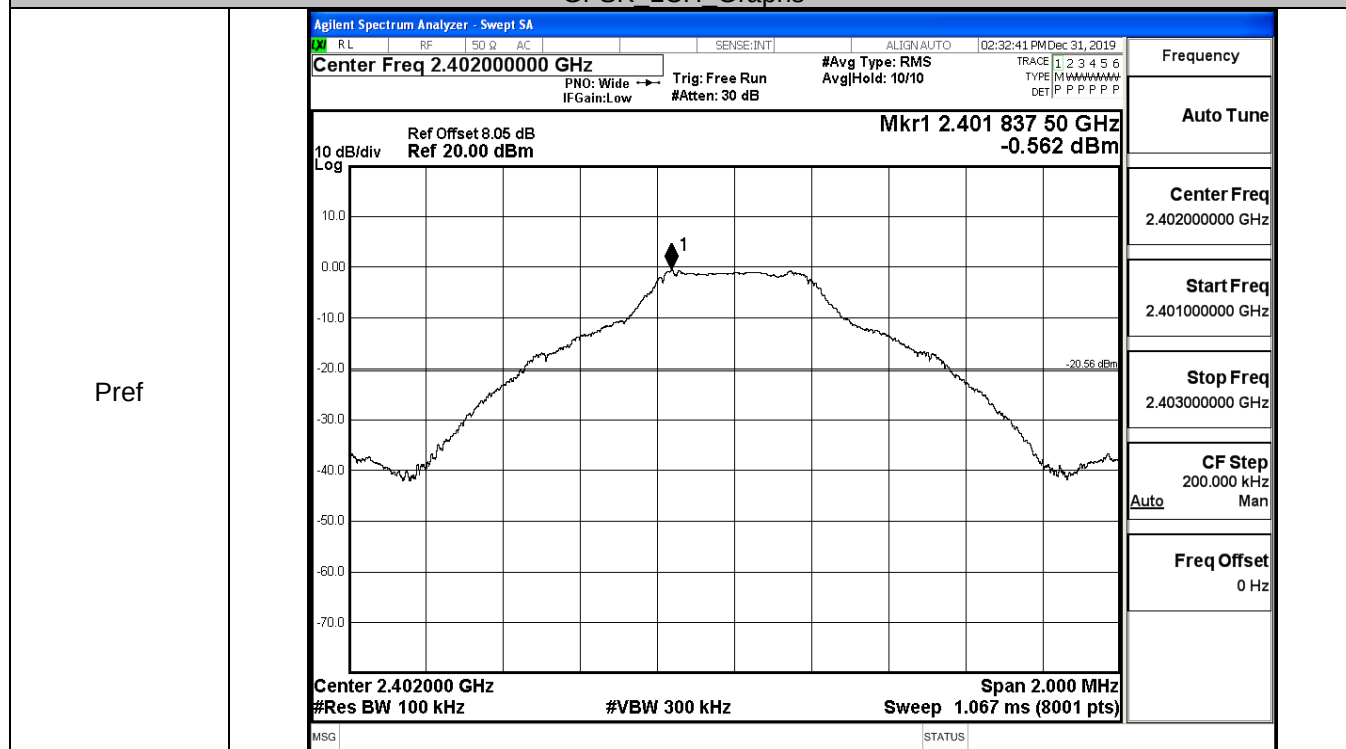
8DPSK_3DH5/HCH

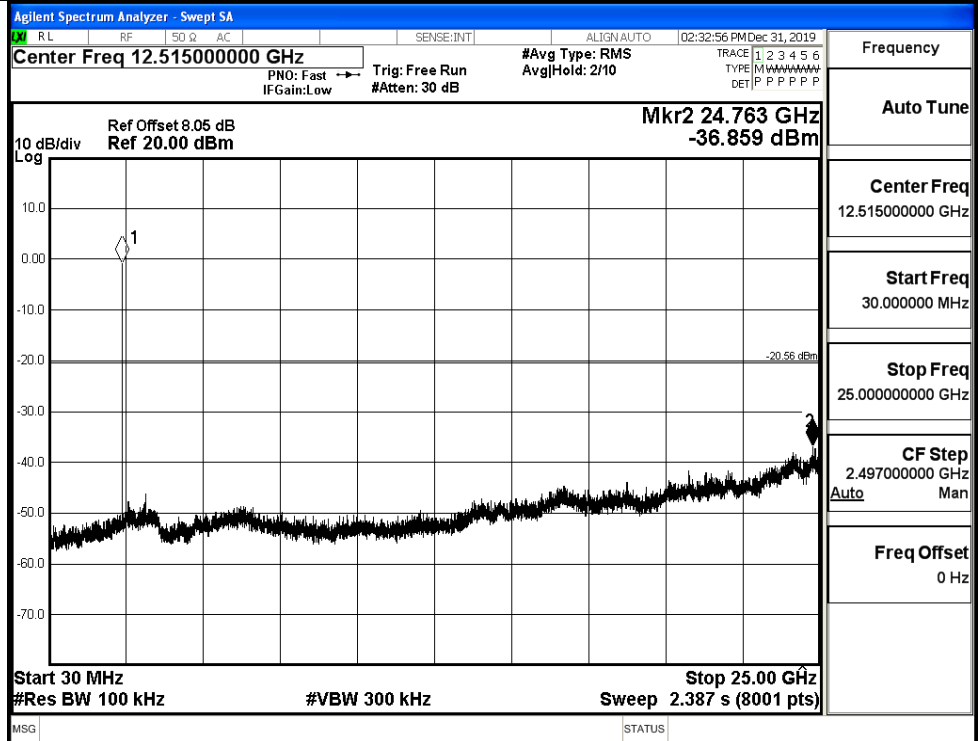


A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.562	-36.859	-20.562	PASS
	MCH	-2.263	-38.276	-22.263	PASS
	HCH	-1.189	-37.421	-21.189	PASS
$\pi/4$ DQPSK	LCH	-1.951	-37.507	-21.951	PASS
	MCH	-3.442	-37.748	-23.442	PASS
	HCH	-2.428	-38.230	-22.428	PASS
8DPSK	LCH	-2.304	-36.392	-22.304	PASS
	MCH	-3.455	-37.233	-23.455	PASS
	HCH	-2.517	-37.607	-22.517	PASS

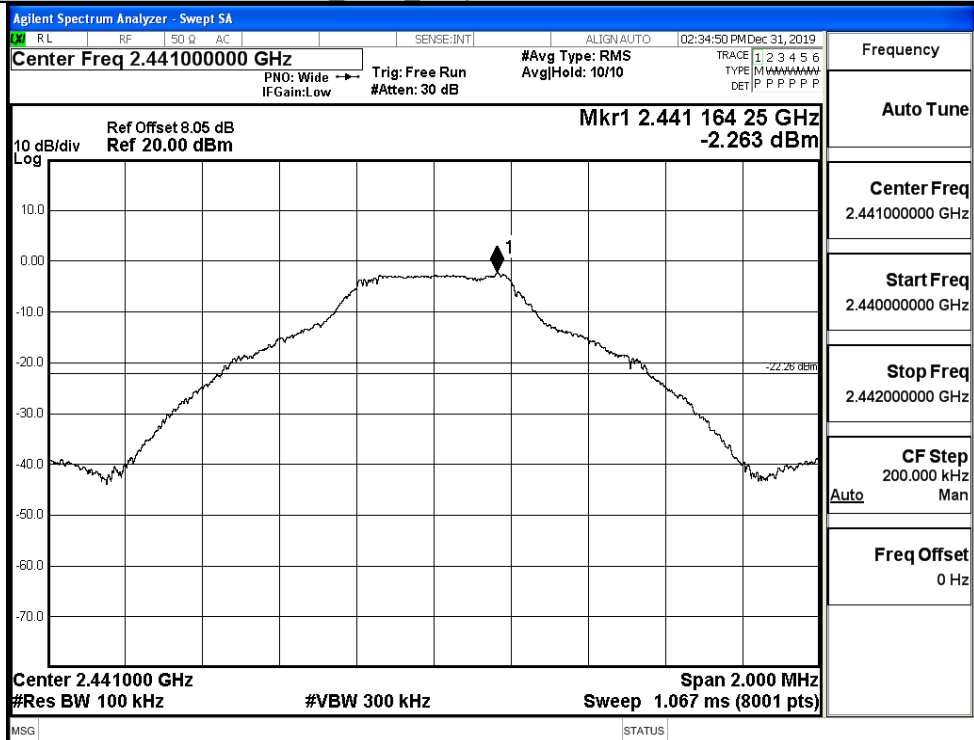
GFSK LCH Graphs



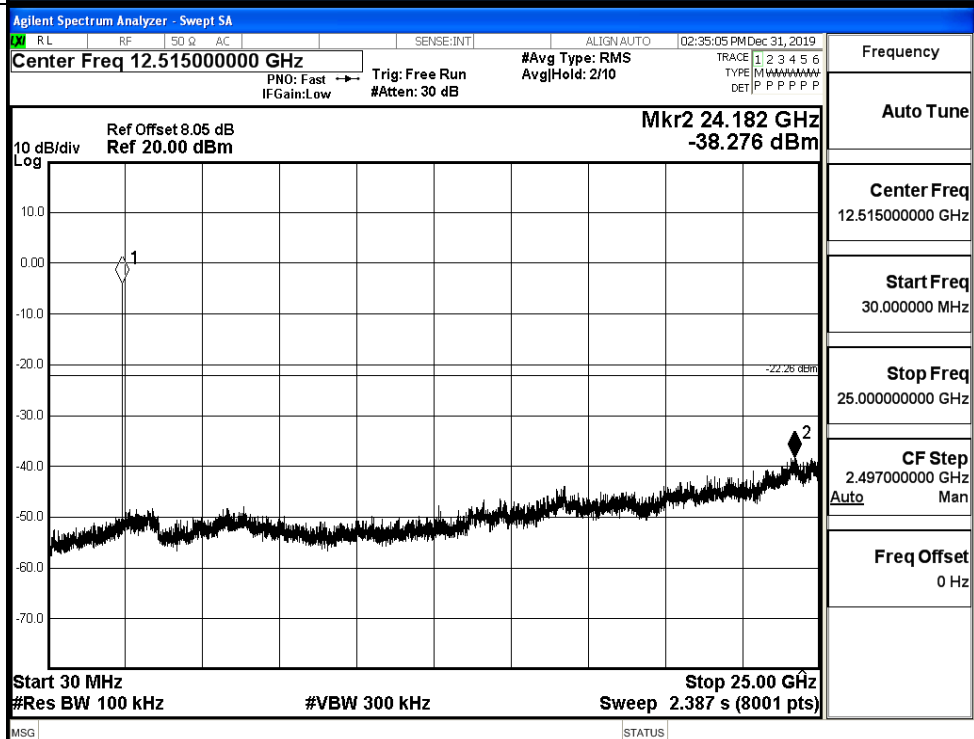
P_uw

GFSK_MCH_Graphs

Pref

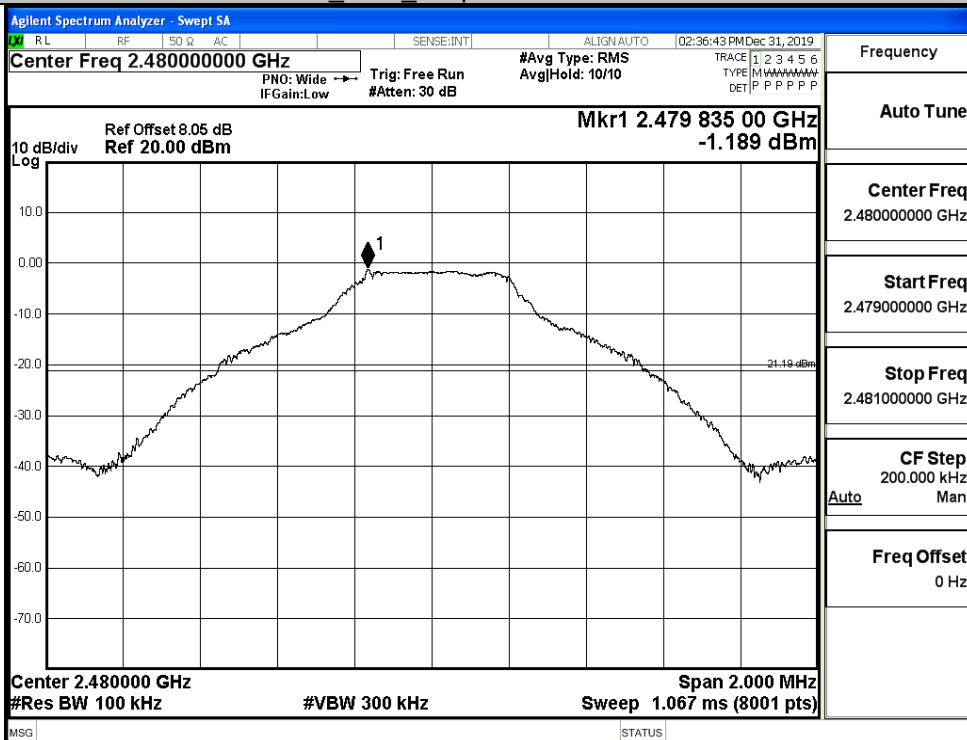


Puw

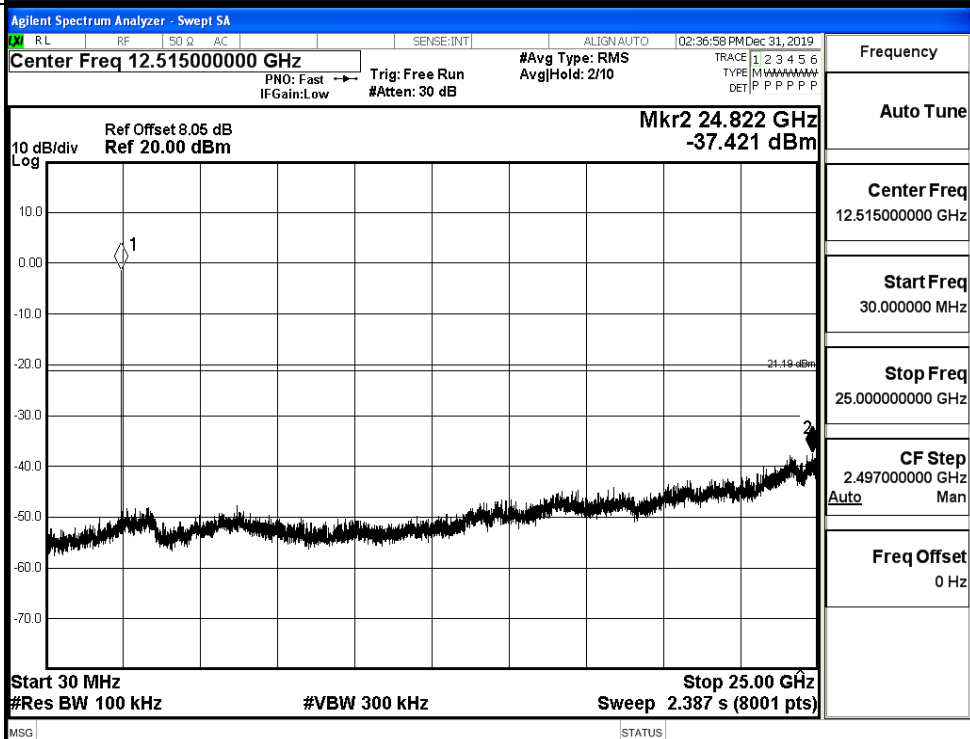


GFSK HCH_Graphs

Pref

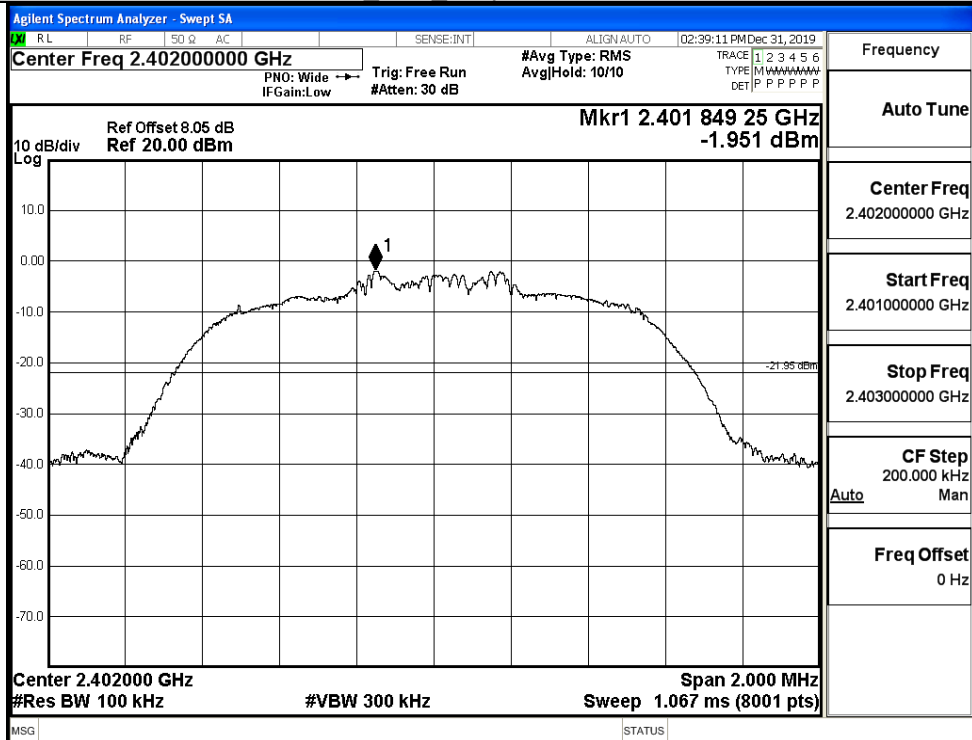


Puw

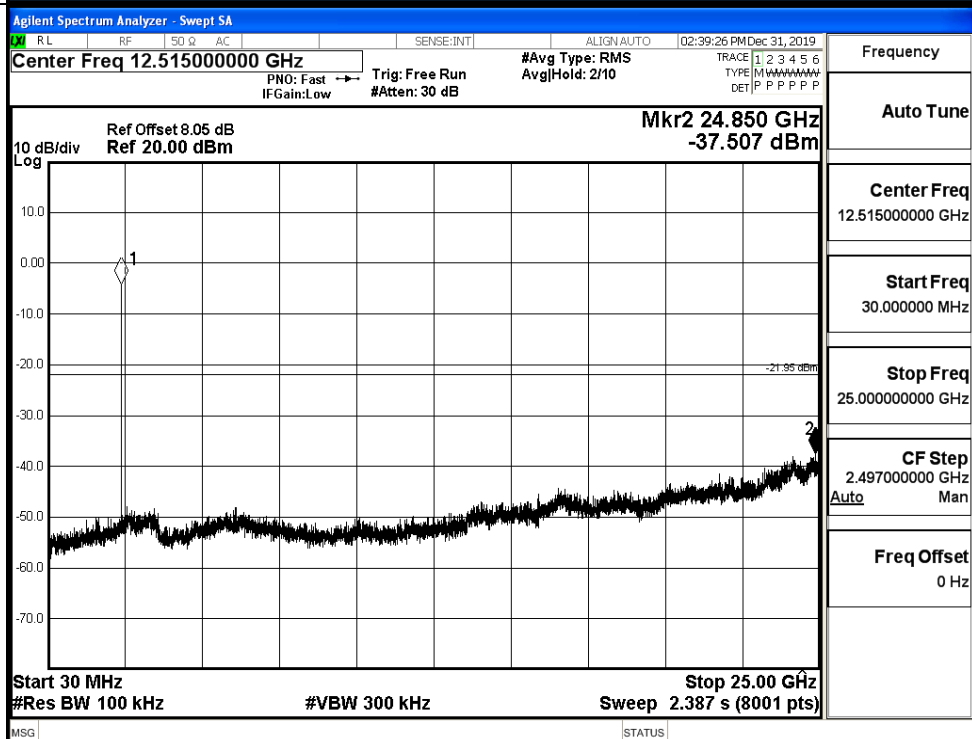


$\pi/4$ DQPSK_LCH_Graphs

Pref

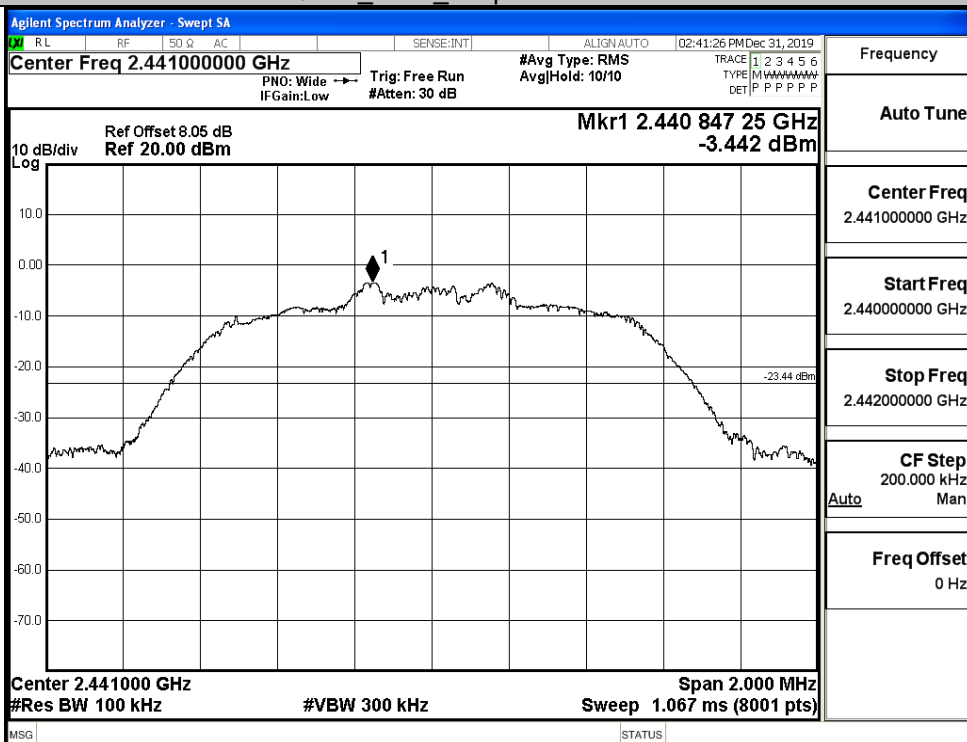


Puw

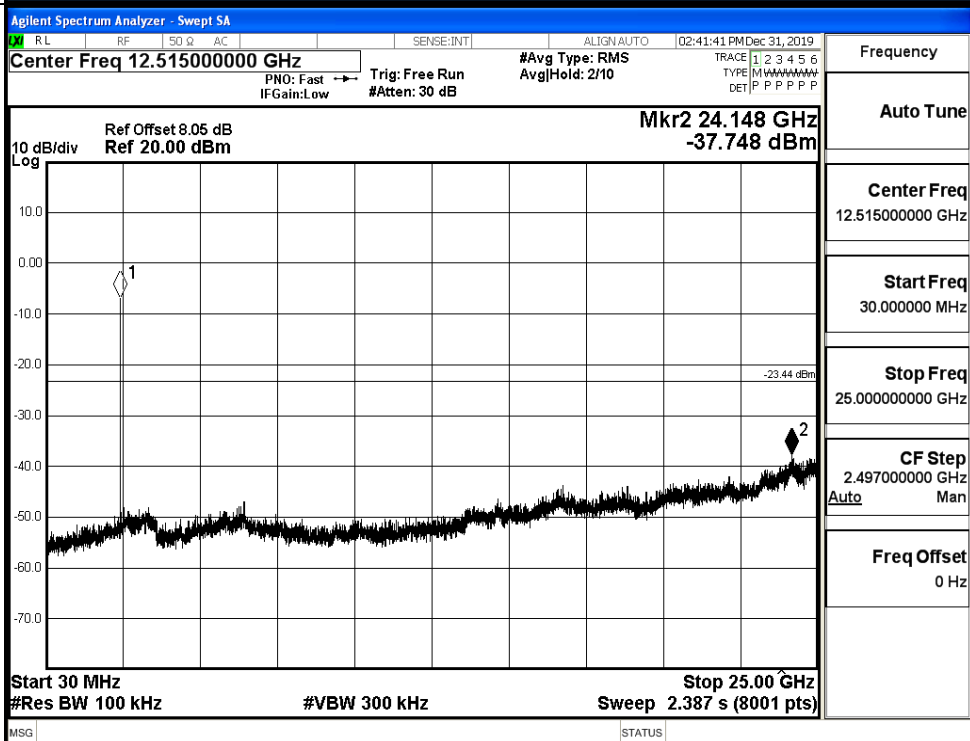


π /4DQPSK_MCH_Graphs

Pref

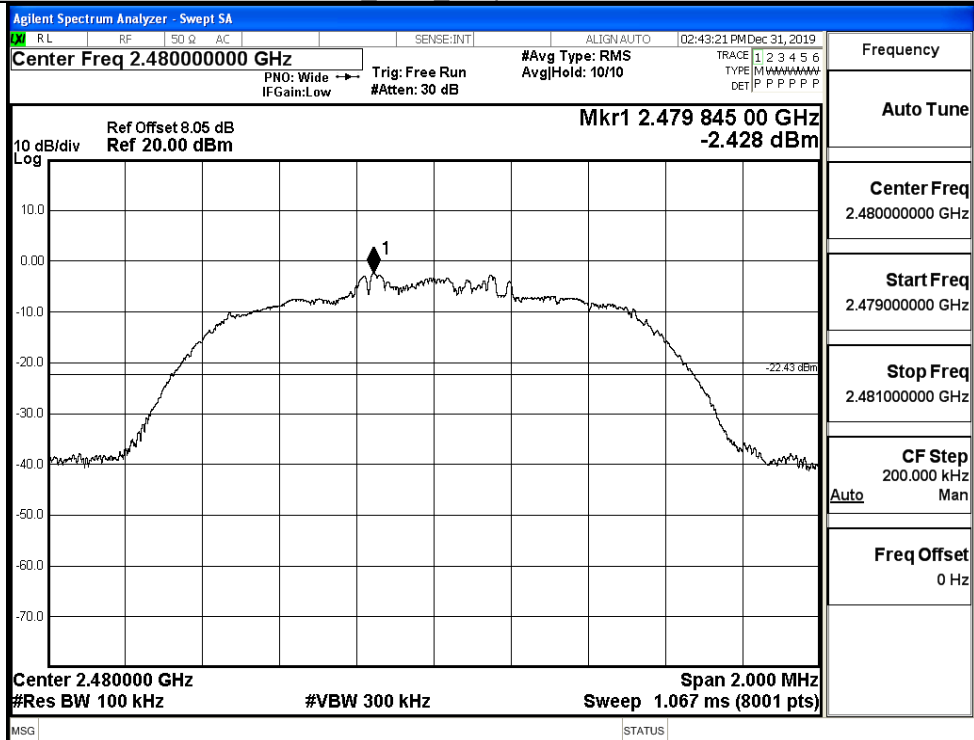


Puw

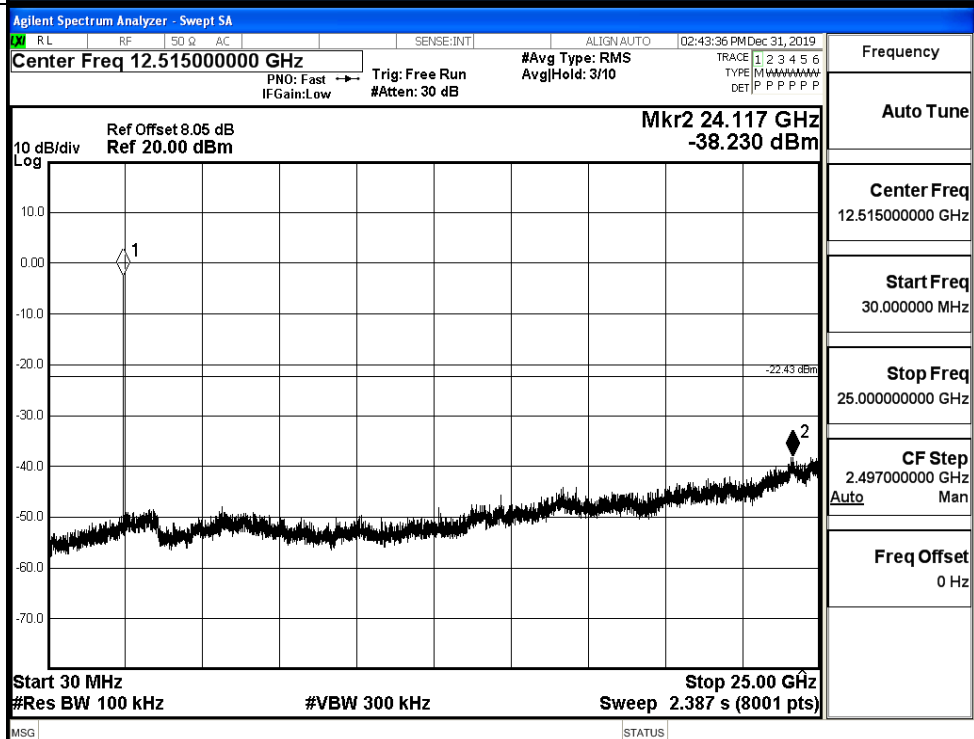


π /4DQPSK_HCH_Graphs

Pref

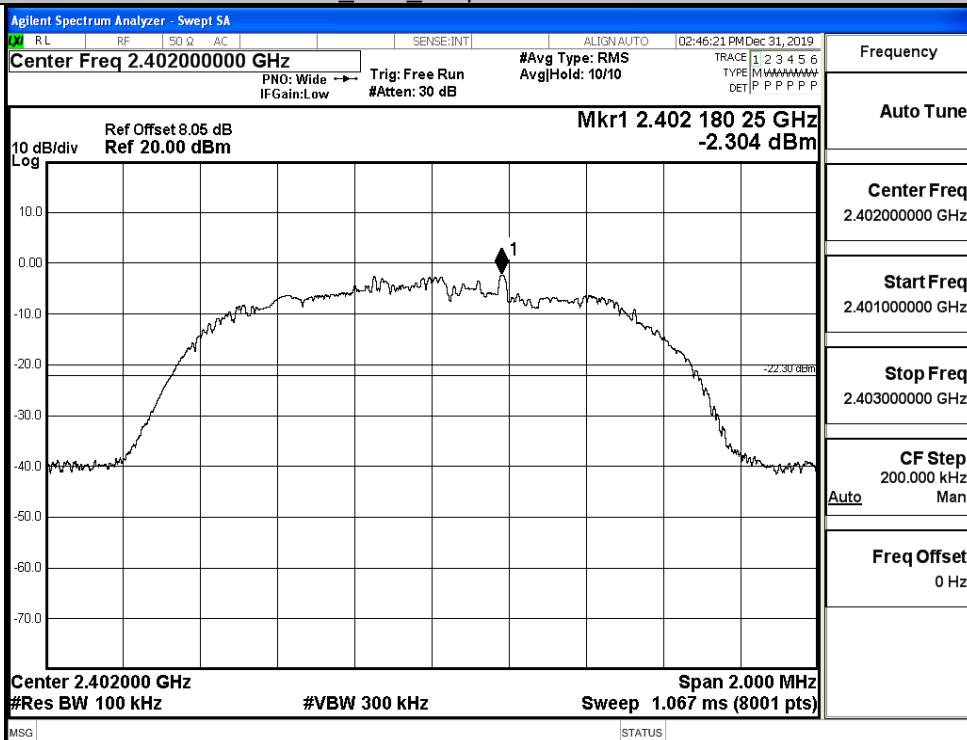


Puw

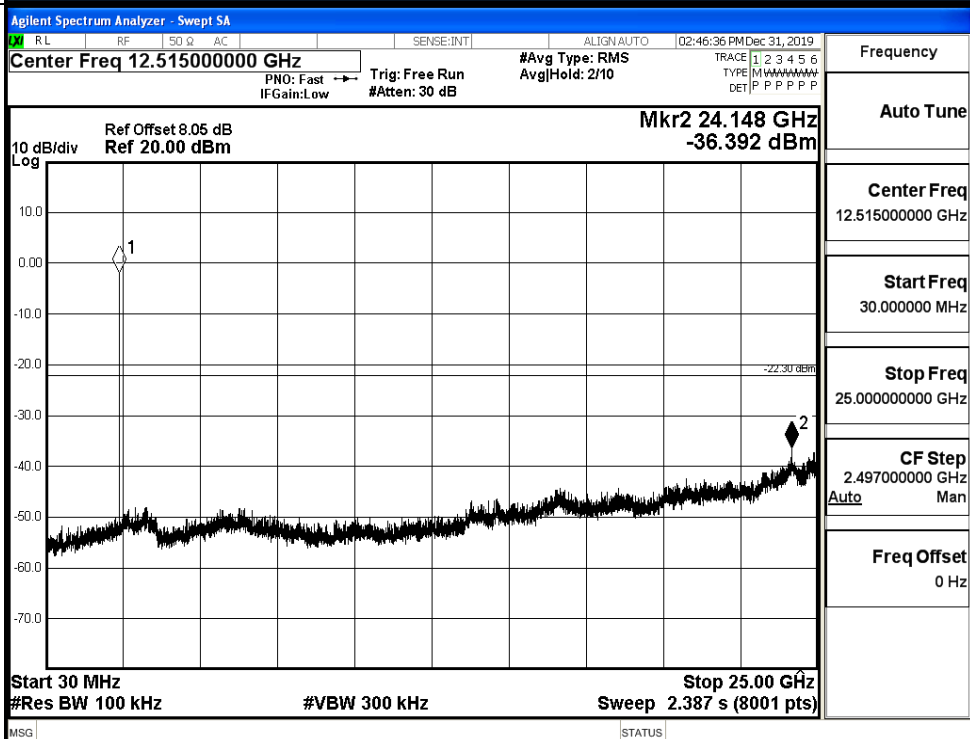


8DPSK_LCH_Graphs

Pref

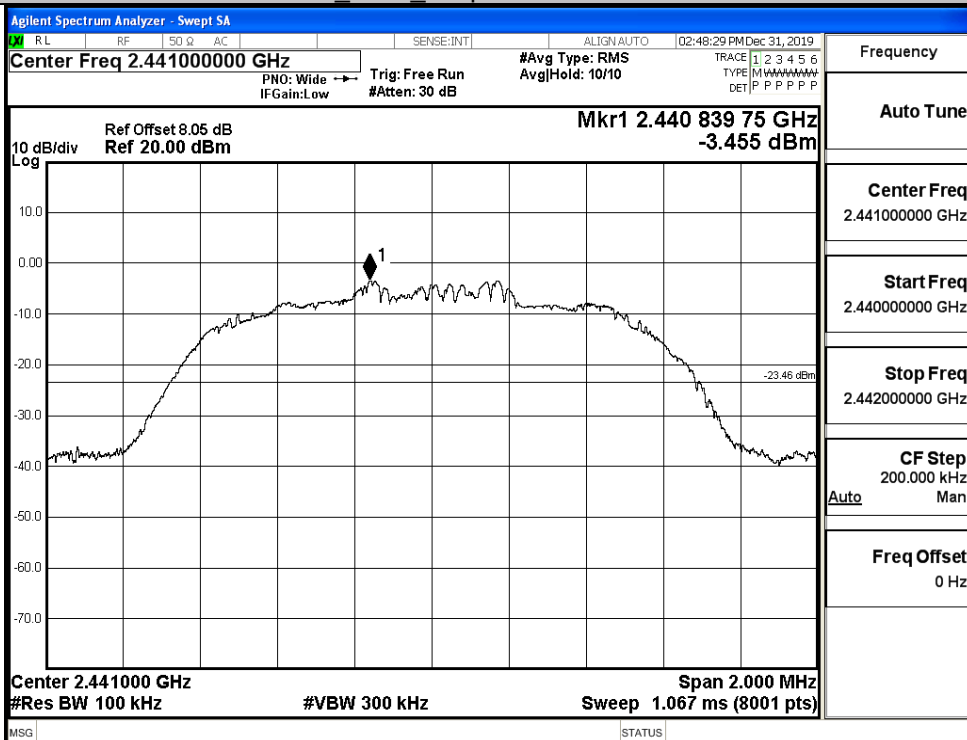


Puw

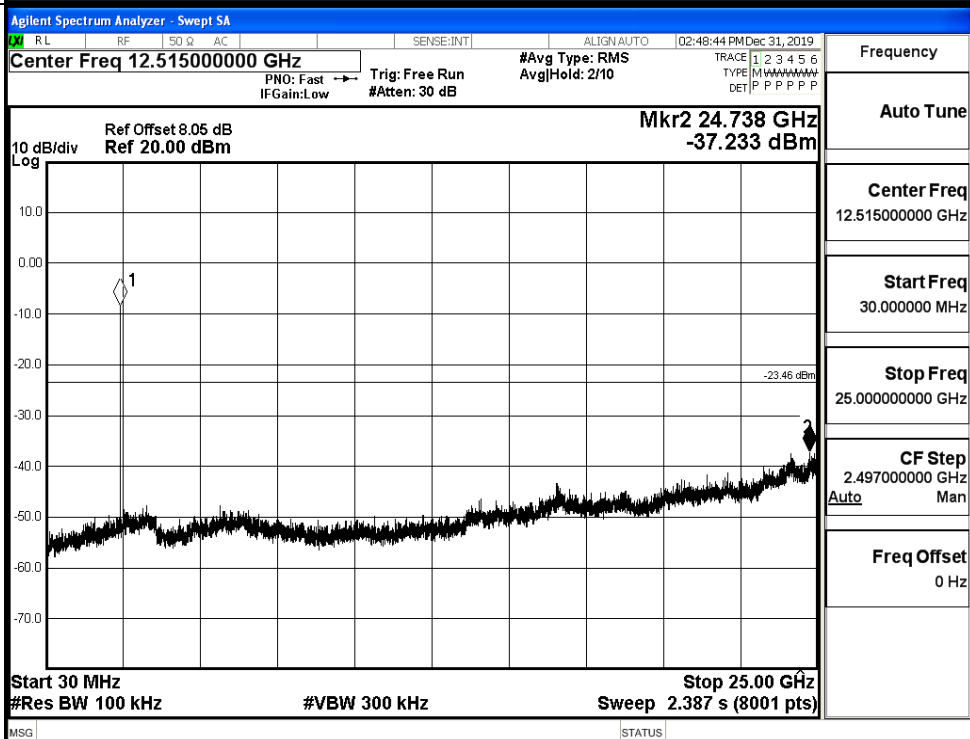


8DPSK_MCH_Graphs

Pref

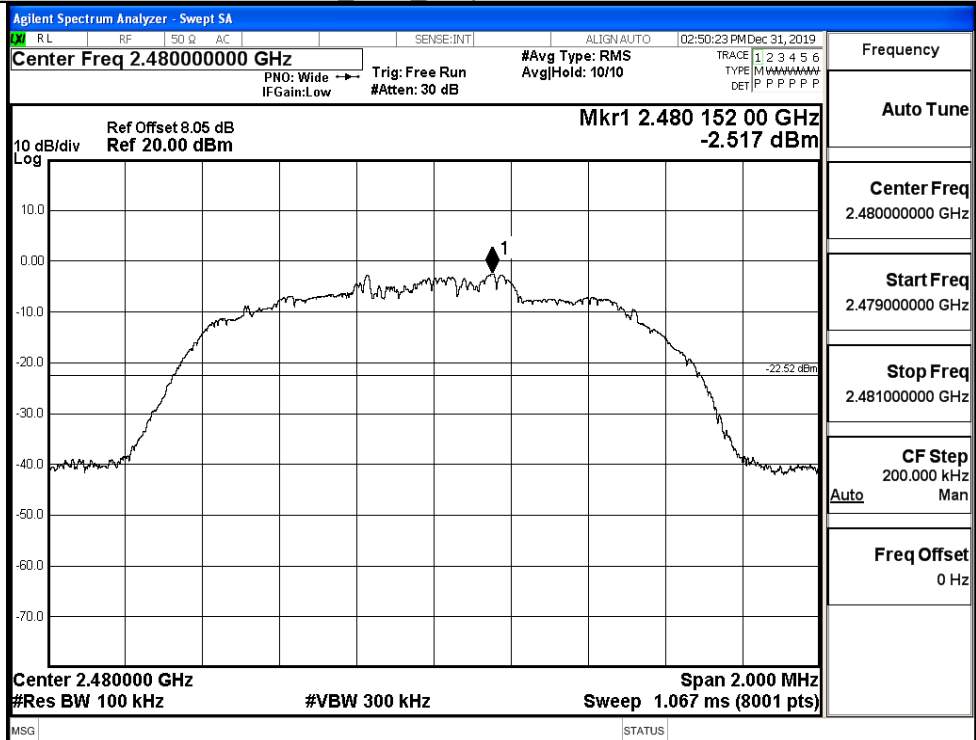


Puw

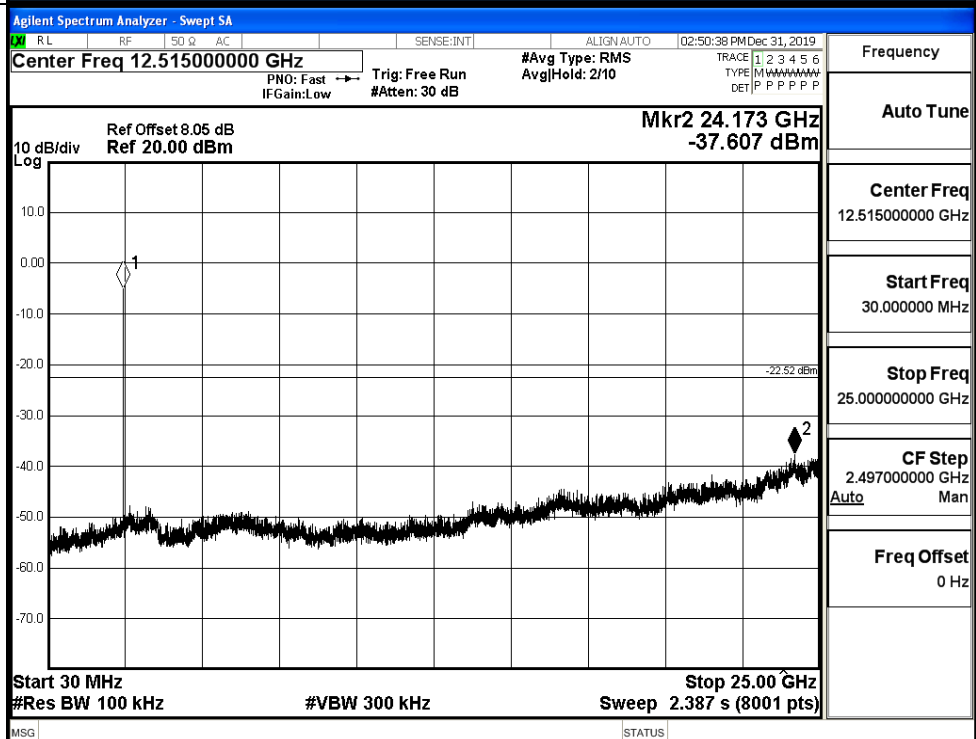


8DPSK_HCH_Graphs

Pref



Puw

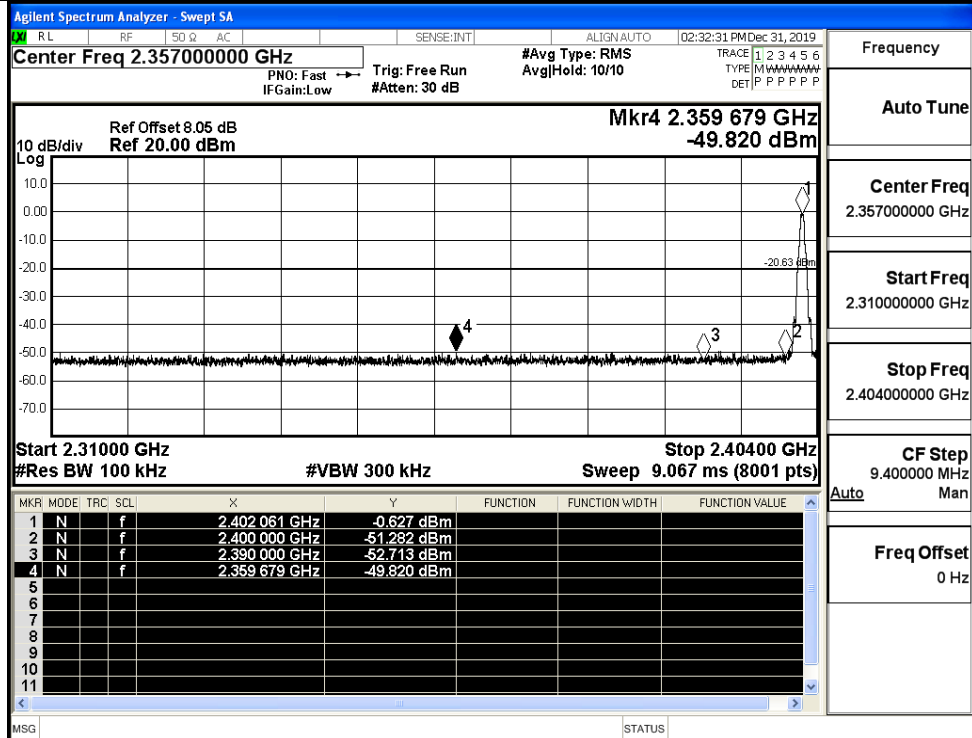


A.7 Band-edge for RF Conducted Emissions

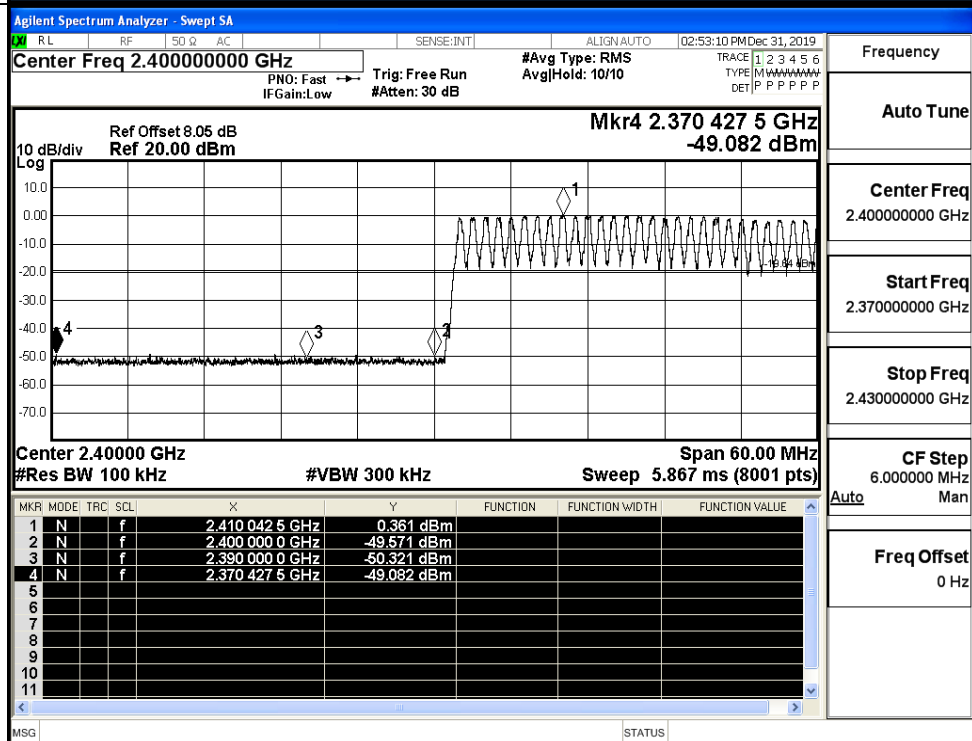
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-0.627	Off	-49.820	-20.63	PASS
			0.361	On	-49.082	-19.64	PASS
	HCH	2480	-1.152	Off	-48.752	-21.15	PASS
			0.143	On	-48.937	-19.86	PASS
$\pi/4$ DQPSK	LCH	2402	-1.866	Off	-49.916	-21.87	PASS
			-1.099	On	-49.525	-21.1	PASS
	HCH	2480	-2.319	Off	-48.843	-22.32	PASS
			-1.593	On	-48.979	-21.59	PASS
8DPSK	LCH	2402	-1.884	Off	-49.498	-21.88	PASS
			-1.163	On	-49.098	-21.16	PASS
	HCH	2480	-4.244	Off	-48.913	-24.24	PASS
			-1.417	On	-47.723	-21.42	PASS

Test Graphs

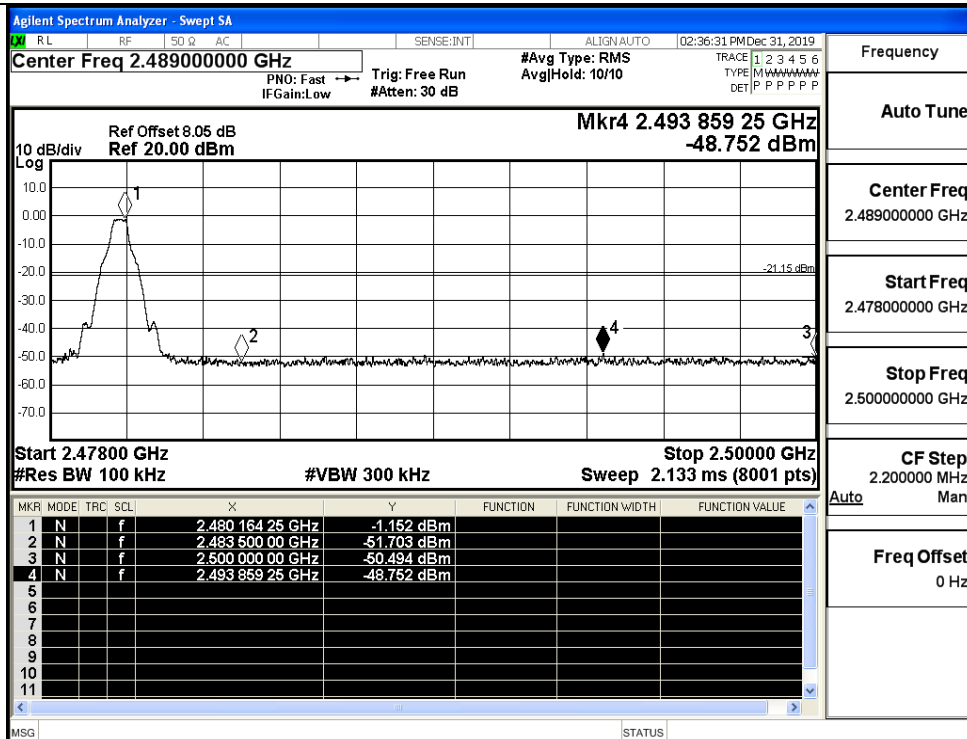
GFSK/LCH/No Hop



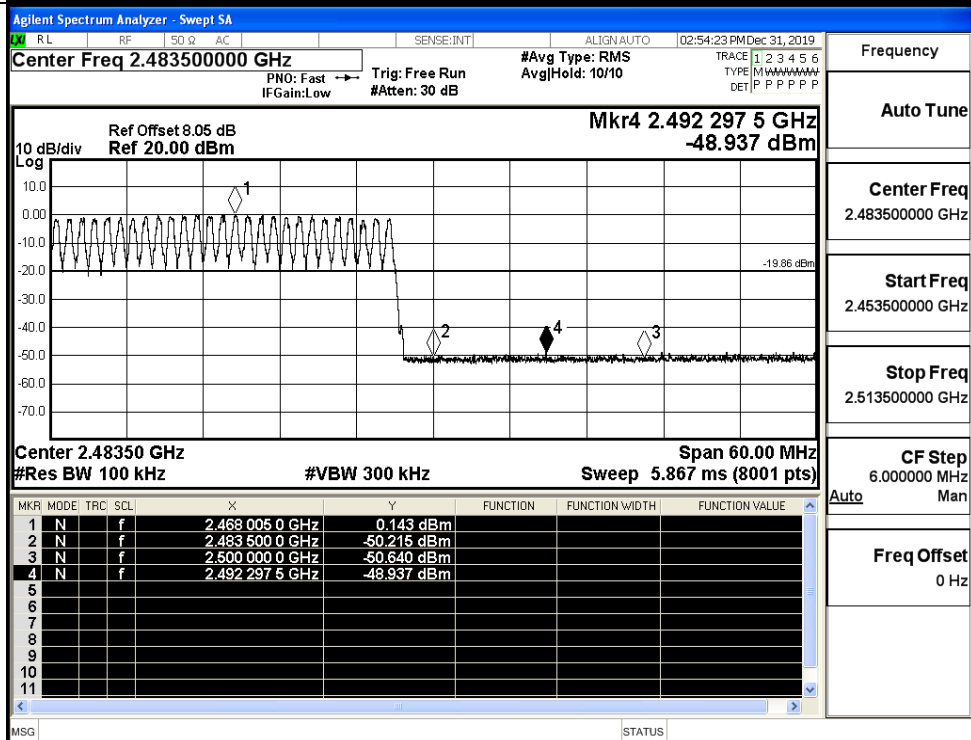
GFSK/LCH/Hop



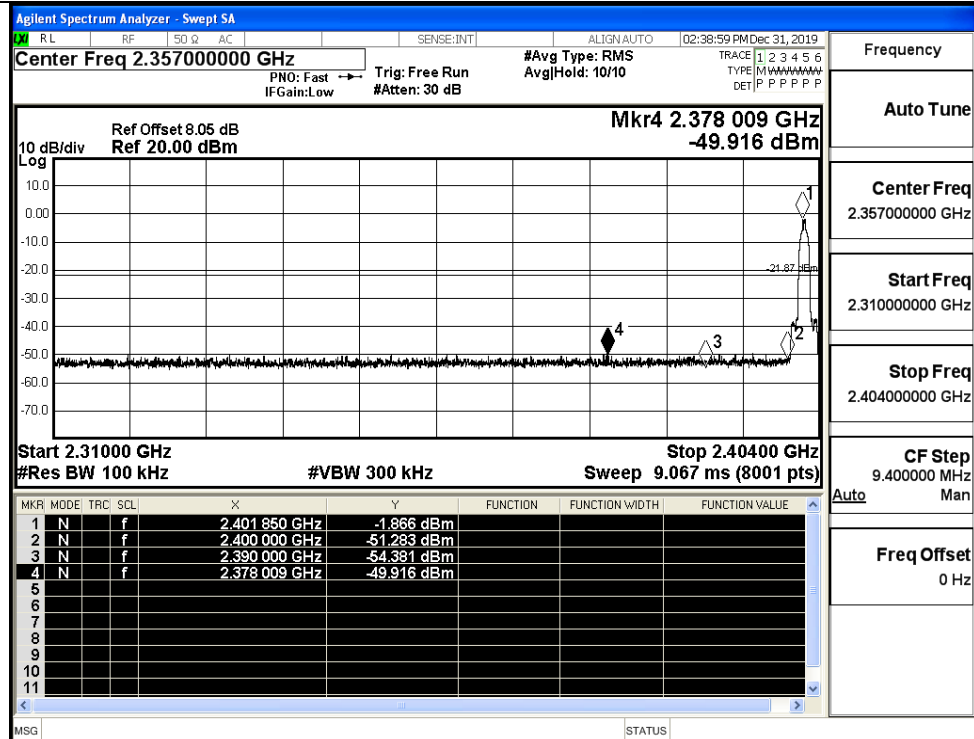
GFSK/HCH/No Hop



GFSK/HCH/Hop



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



Frequency

Auto Tune

Center Freq
2.357000000 GHz

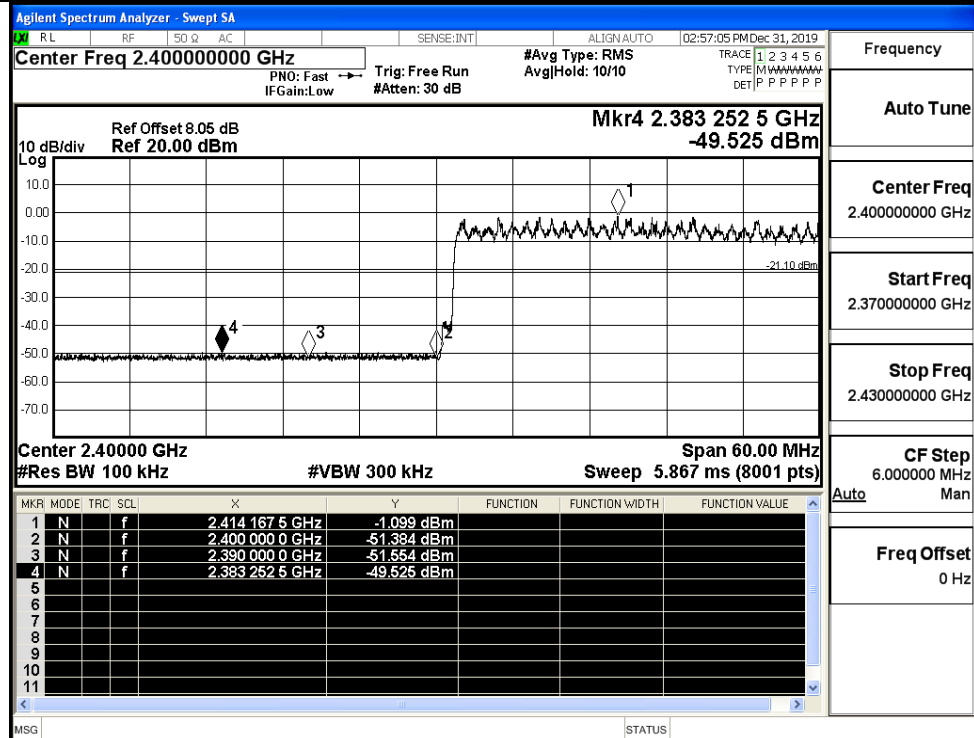
Start Freq
2.310000000 GHz

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

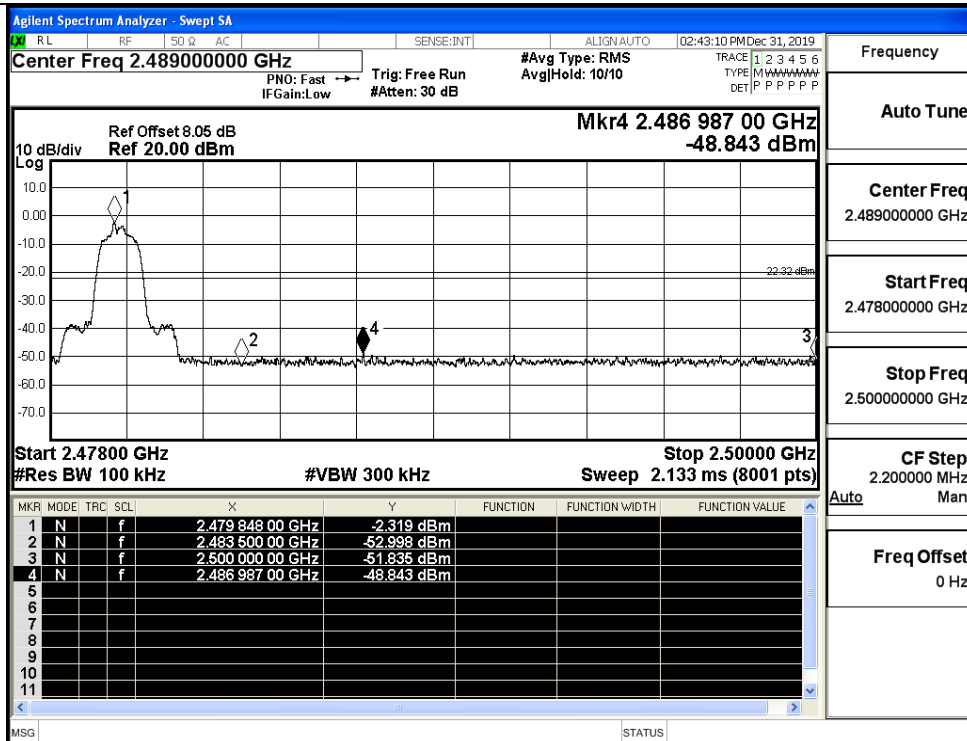
Start Freq
2.370000000 GHz

Stop Freq
2.430000000 GHz

CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

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

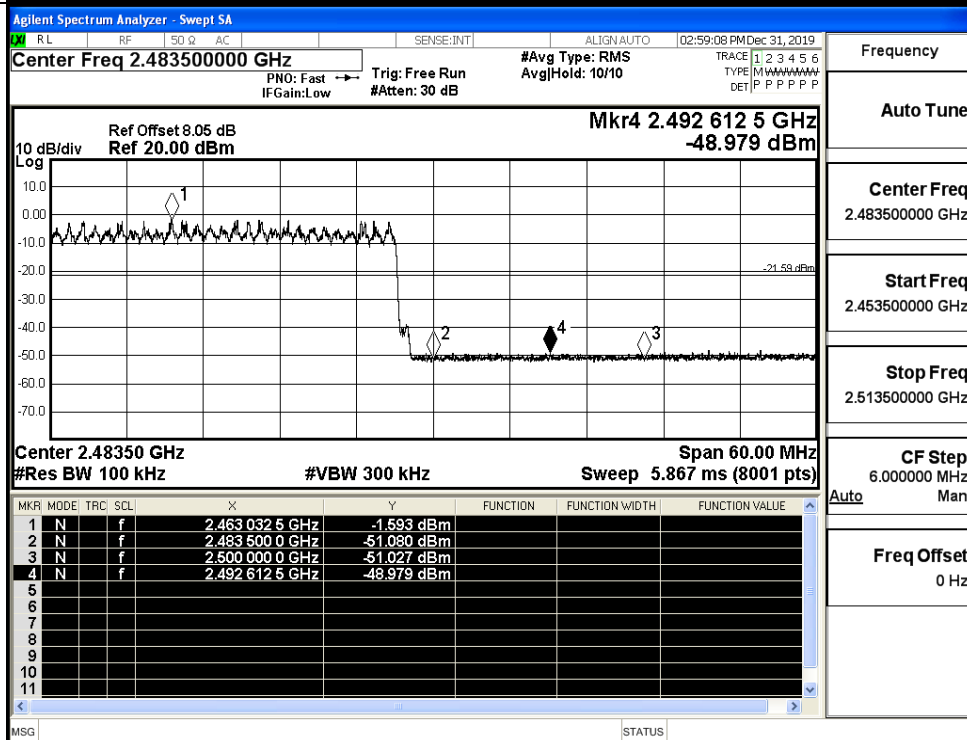


Frequency

Auto Tune

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

$\pi/4$ DQPSK/HCH/Hop

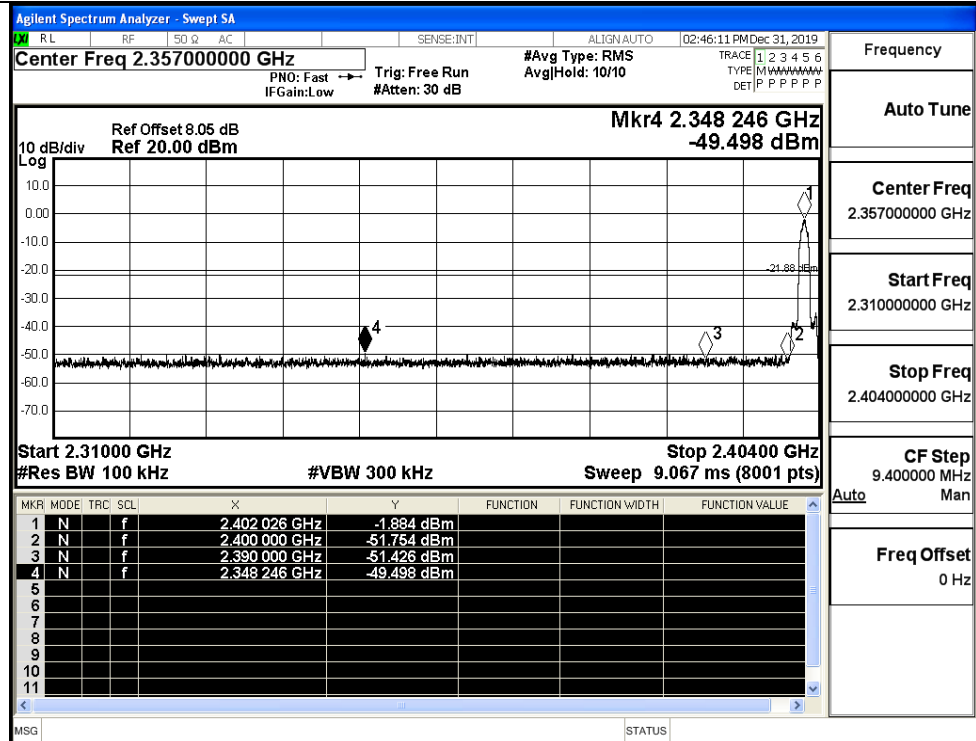


Frequency

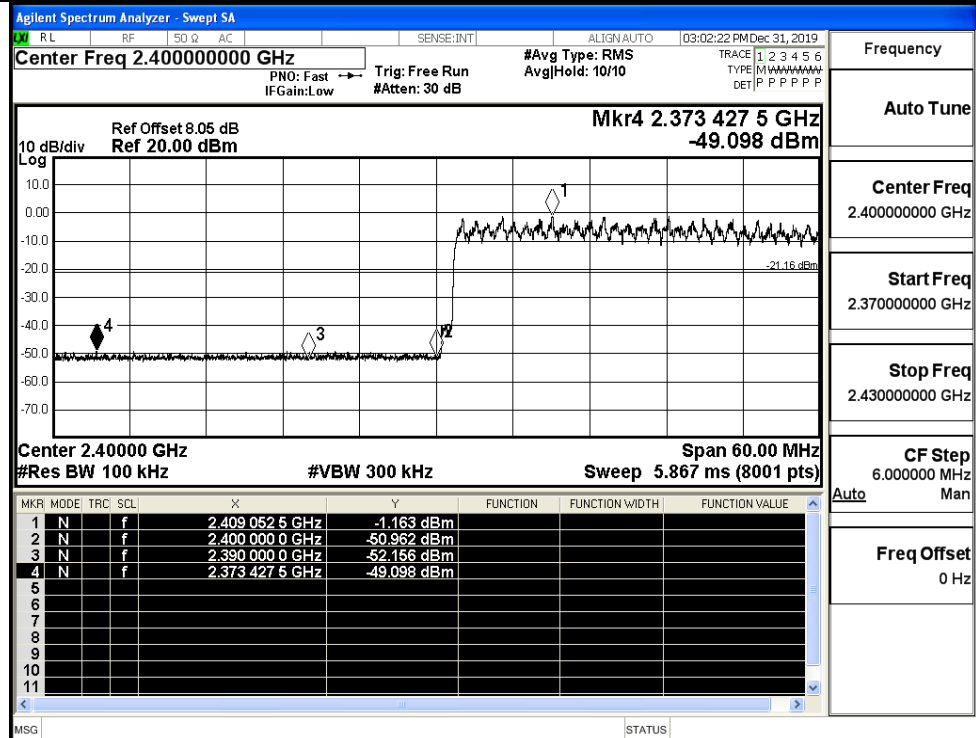
Auto Tune

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

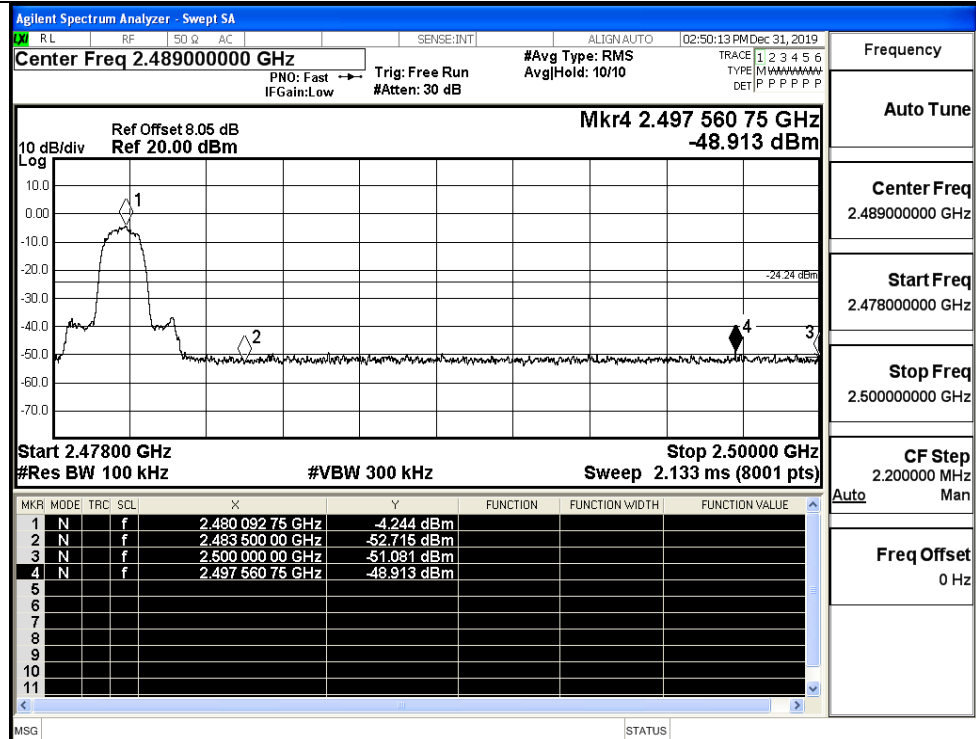
8DPSK/LCH/No Hop



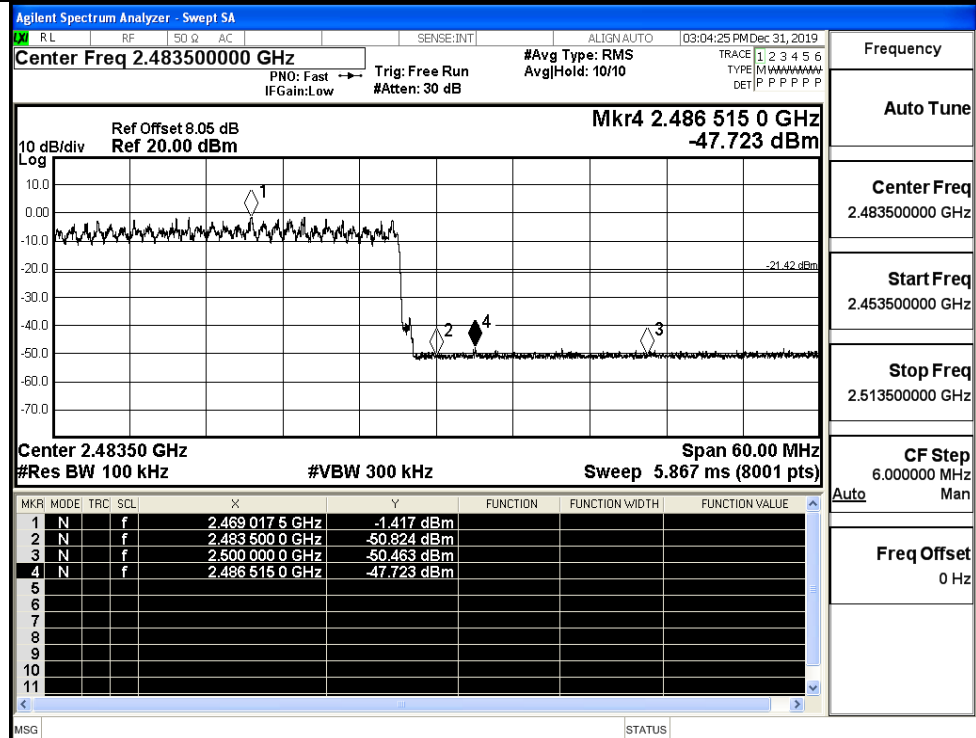
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



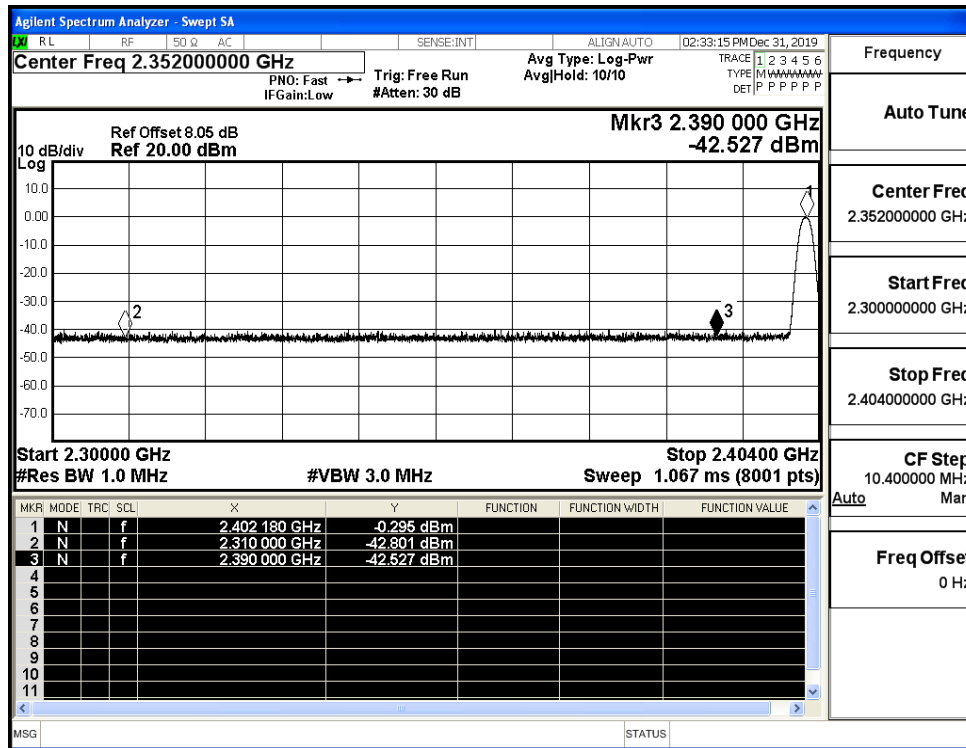
8DPSK/HCH/Hop



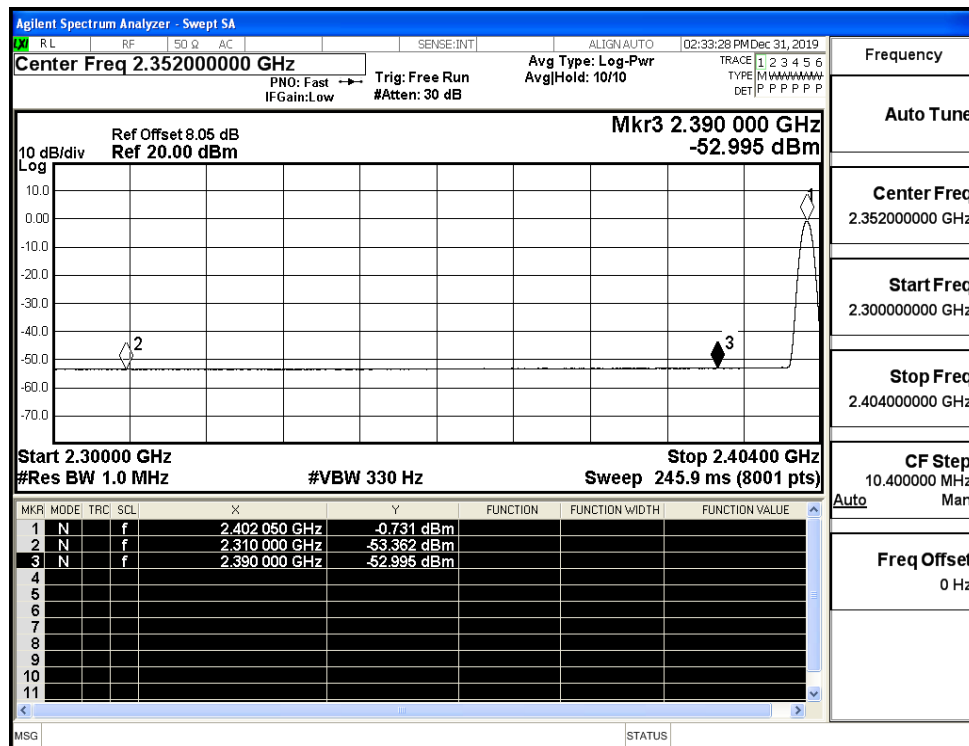
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-42.80	2.0	0	54.46	PEAK	74	PASS
	Off	2310.0	-53.36	2.0	0	43.90	AV	54	PASS
	Off	2390.0	-42.53	2.0	0	54.73	PEAK	74	PASS
	Off	2390.0	-53.00	2.0	0	44.26	AV	54	PASS
	Off	2483.5	-41.54	2.0	0	55.71	PEAK	74	PASS
	Off	2483.5	-52.55	2.0	0	44.71	AV	54	PASS
	Off	2500.0	-42.01	2.0	0	55.25	PEAK	74	PASS
	Off	2500.0	-52.47	2.0	0	44.79	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-42.98	2.0	0	54.28	PEAK	74	PASS
	Off	2310.0	-53.41	2.0	0	43.85	AV	54	PASS
	Off	2390.0	-43.57	2.0	0	53.69	PEAK	74	PASS
	Off	2390.0	-52.97	2.0	0	44.29	AV	54	PASS
	Off	2483.5	-42.86	2.0	0	54.40	PEAK	74	PASS
	Off	2483.5	-52.53	2.0	0	44.73	AV	54	PASS
	Off	2500.0	-41.78	2.0	0	55.48	PEAK	74	PASS
	Off	2500.0	-52.43	2.0	0	44.83	AV	54	PASS
8DPSK	Off	2310.0	-43.33	2.0	0	53.93	PEAK	74	PASS
	Off	2310.0	-53.41	2.0	0	43.85	AV	54	PASS
	Off	2390.0	-42.95	2.0	0	54.31	PEAK	74	PASS
	Off	2390.0	-52.93	2.0	0	44.32	AV	54	PASS
	Off	2483.5	-42.82	2.0	0	54.44	PEAK	74	PASS
	Off	2483.5	-52.51	2.0	0	44.75	AV	54	PASS
	Off	2500.0	-42.67	2.0	0	54.59	PEAK	74	PASS
	Off	2500.0	-52.31	2.0	0	44.95	AV	54	PASS

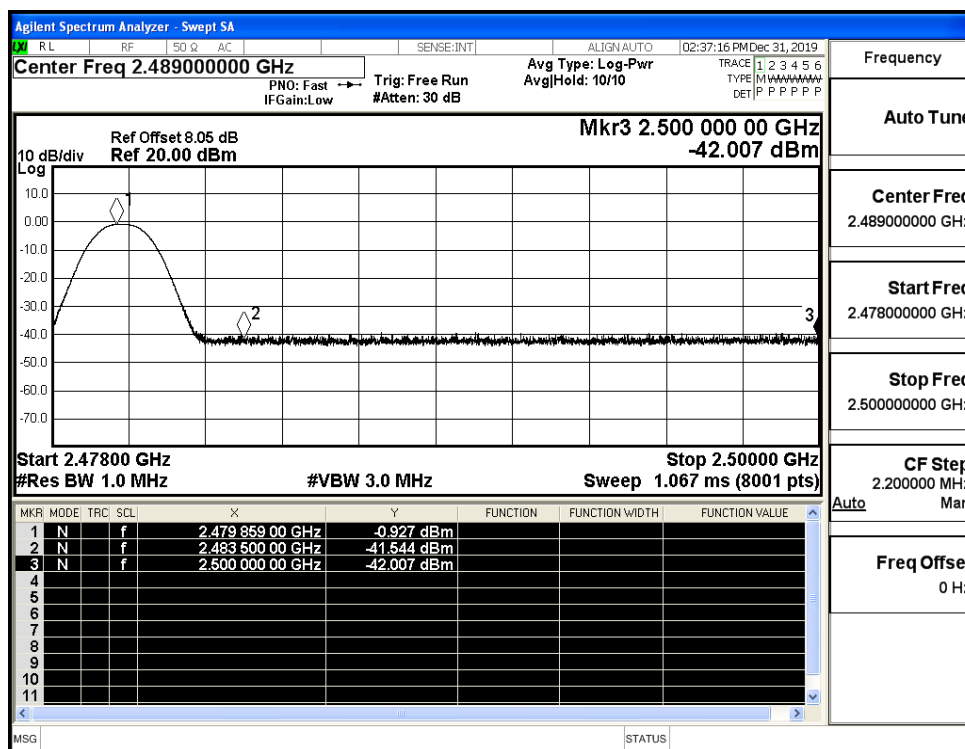
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



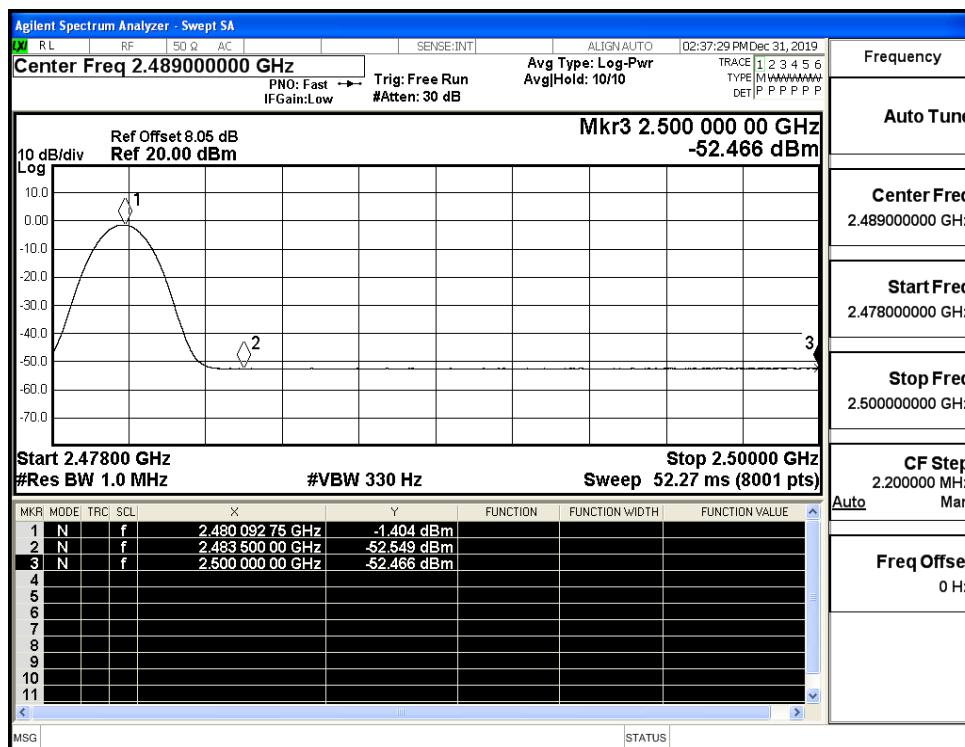
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

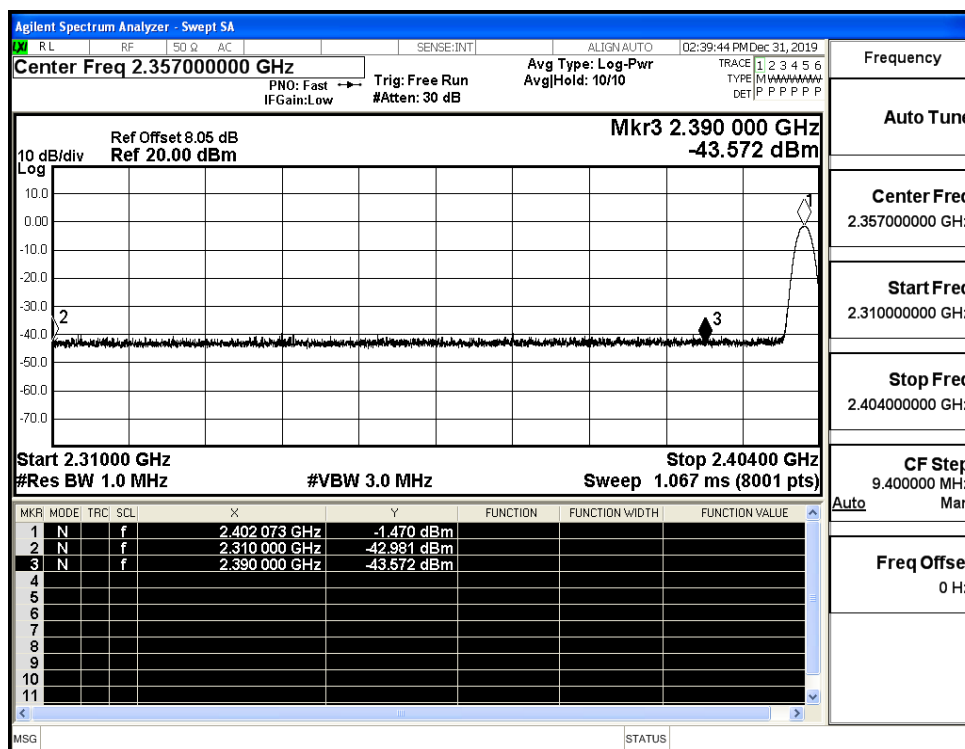
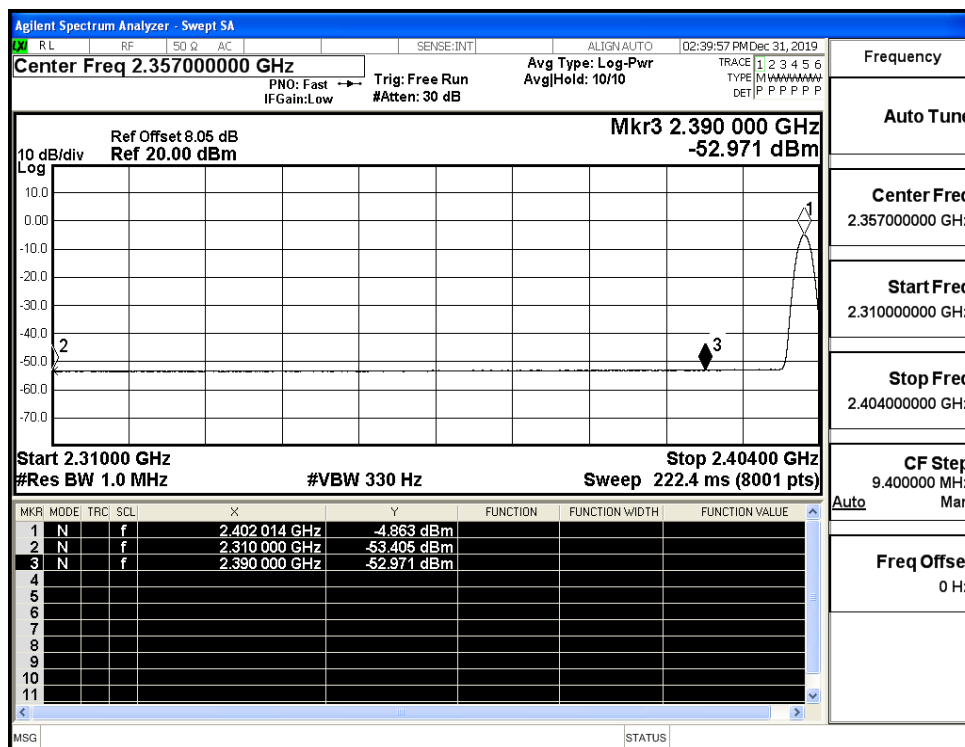


Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)

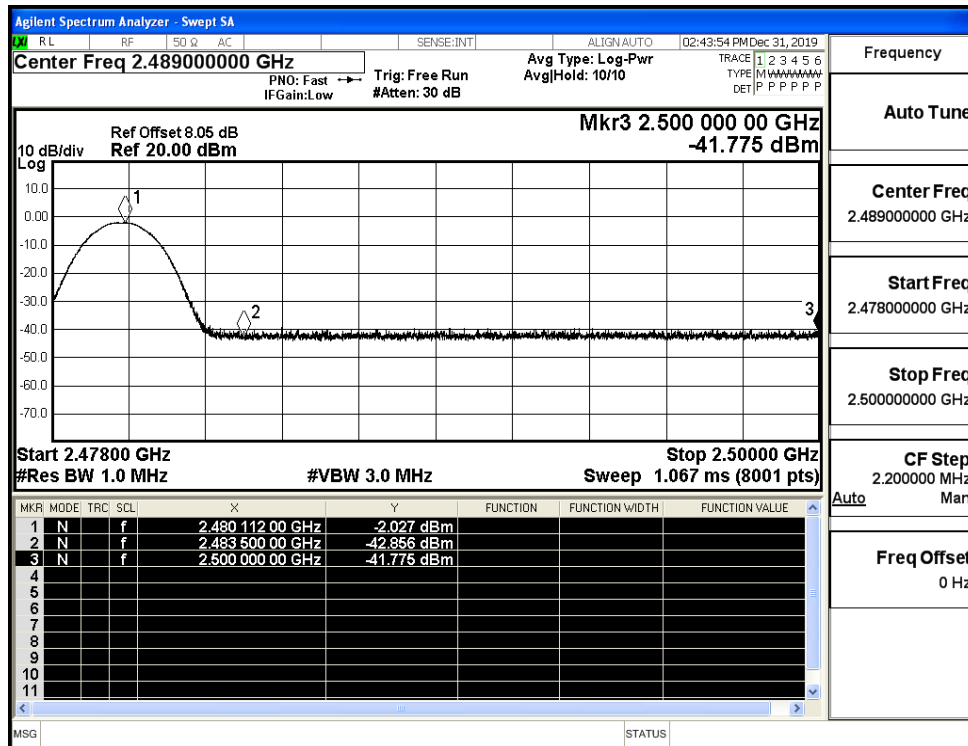


Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)

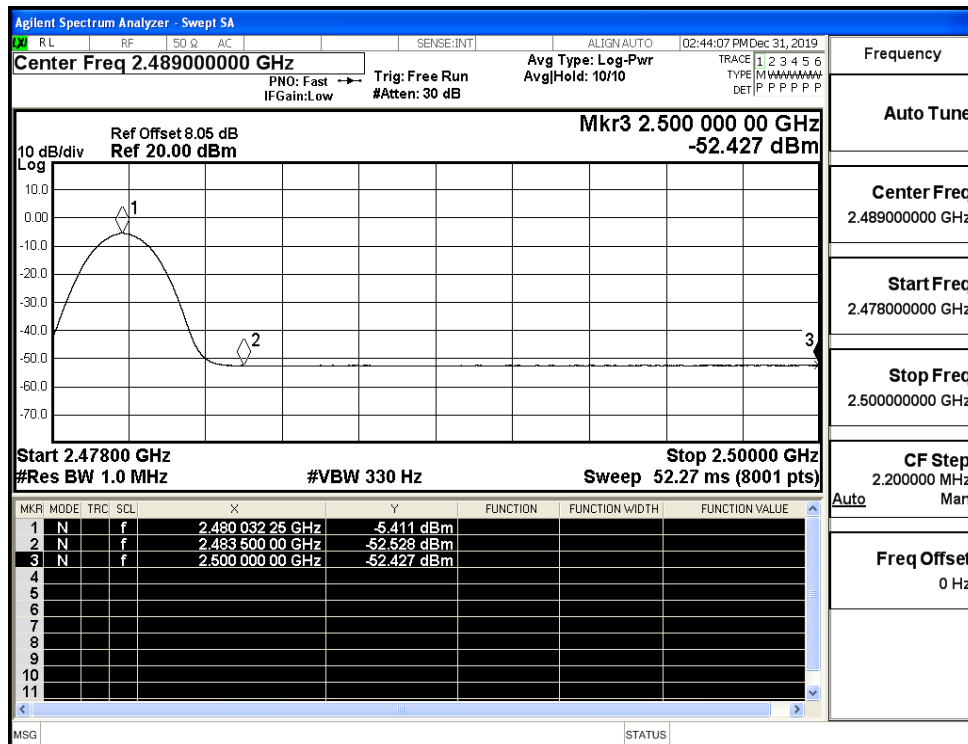


Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

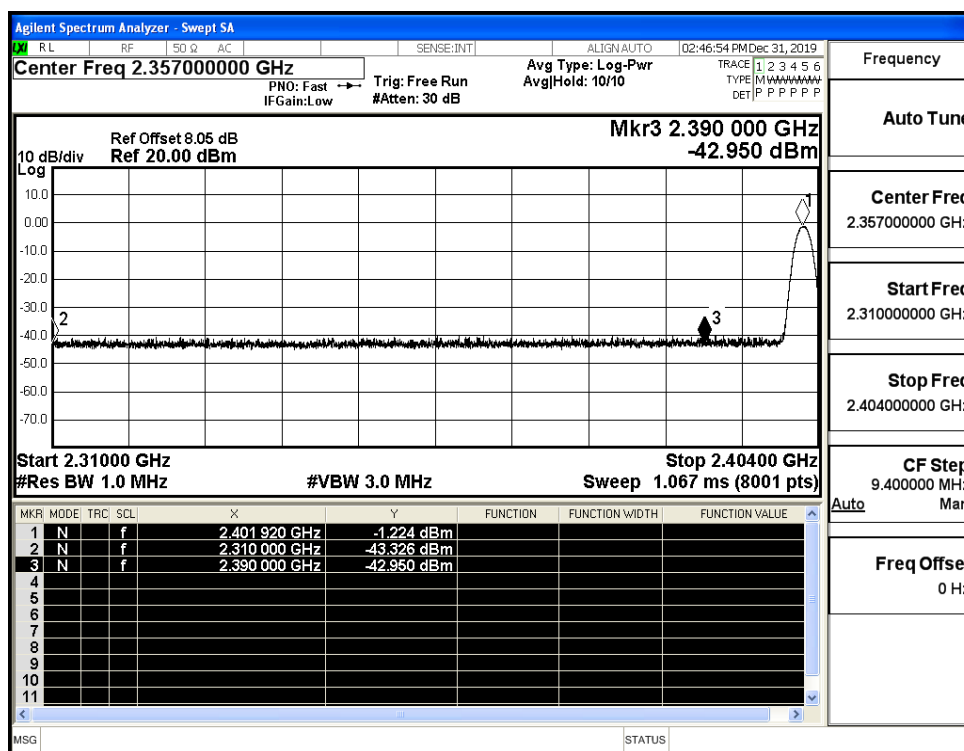
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



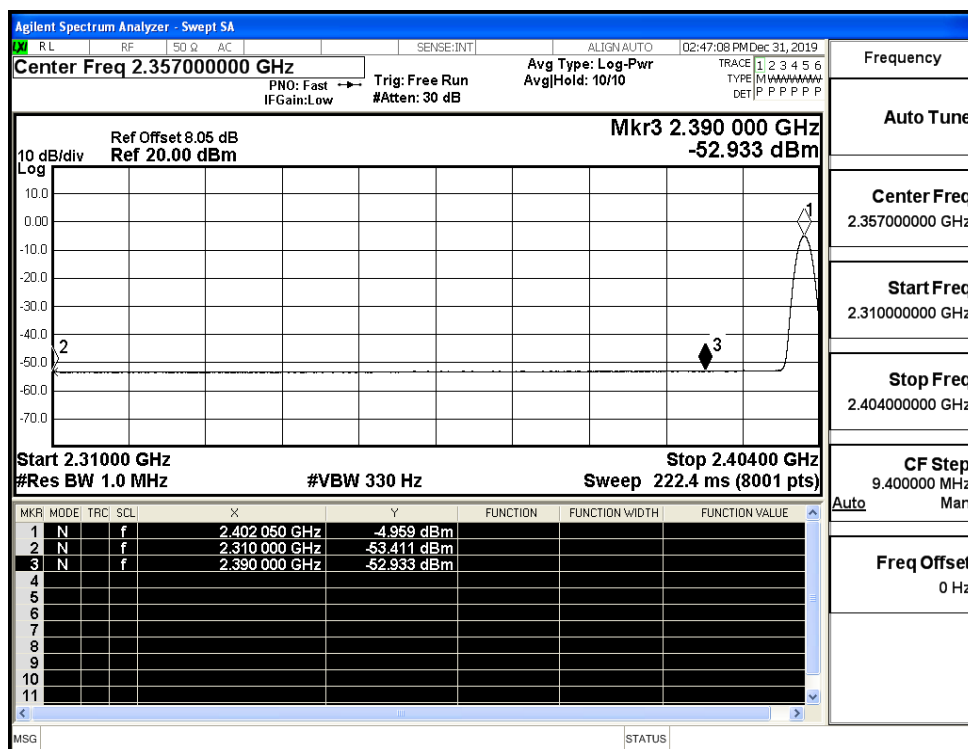
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



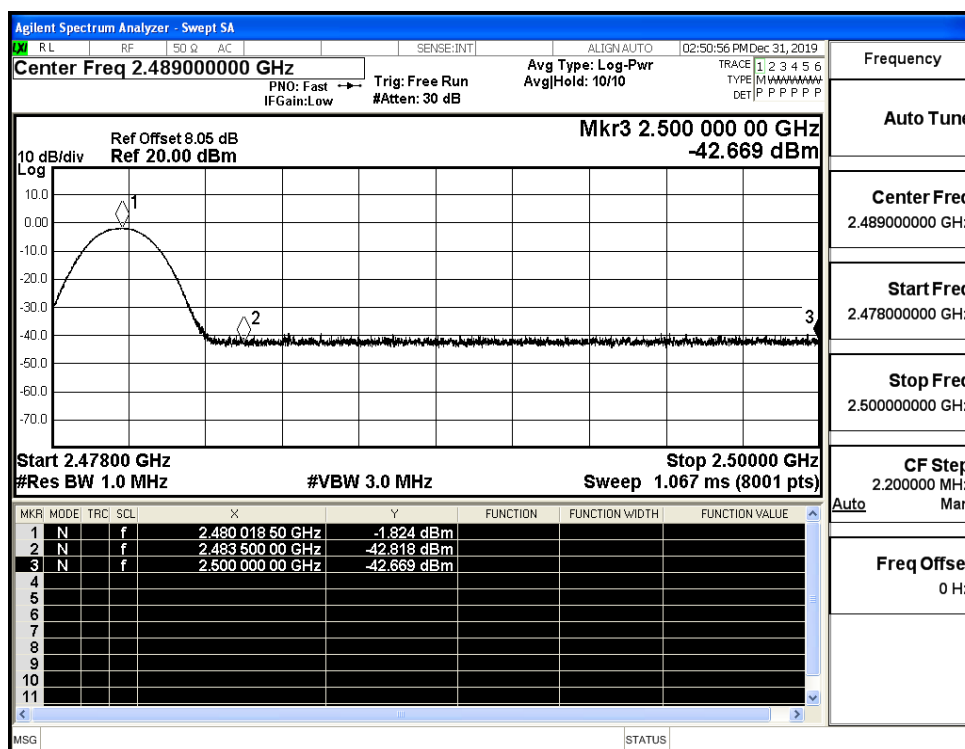
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

