

Appendix A

RF Test Data for BT V4.1(BDR/EDR) (Conducted Measurement)

Product Name: Wireless Speaker

Trade Mark: BLAUPUNKT

Test Model: BP1251

Environmental Conditions

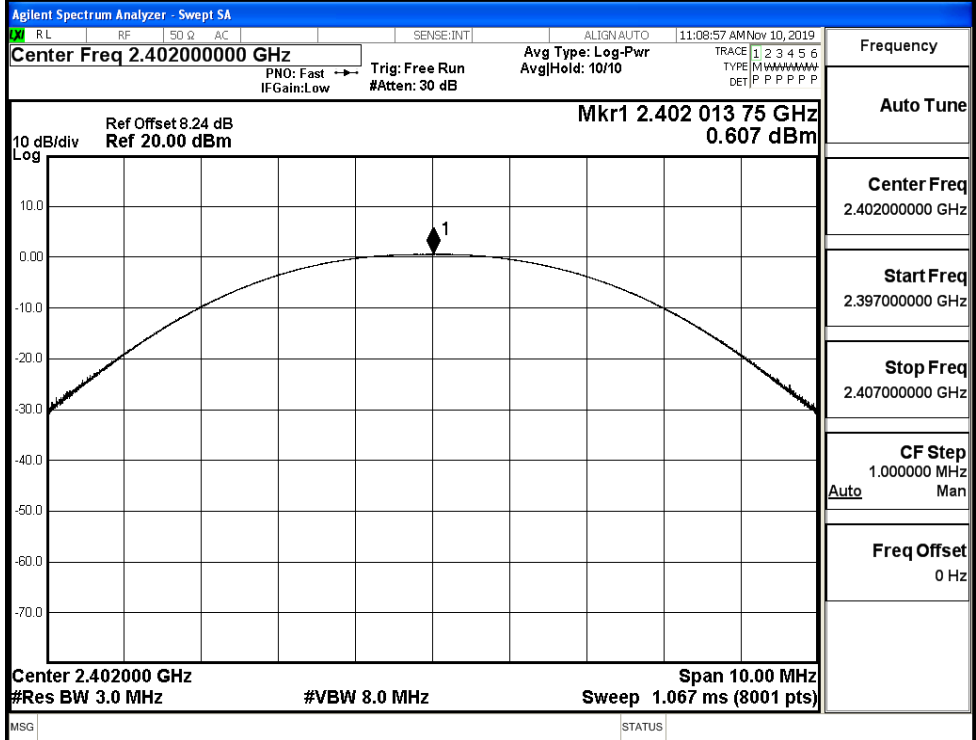
Temperature:	22.5 ° C
Relative Humidity:	53.4%
ATM Pressure:	100.0 kPa
Test Engineer:	QUXIN
Supervised by:	Tom.Liu

A.1 Maximum Conducted Peak Output Power

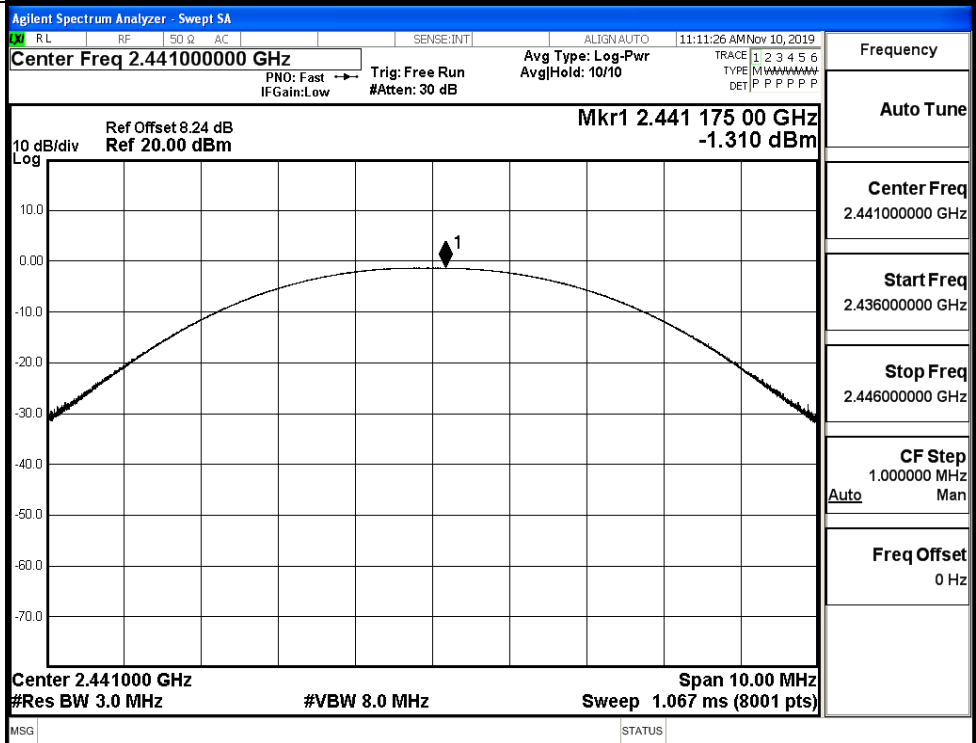
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.607	21	PASS
	MCH	-1.310	21	PASS
	HCH	-0.152	21	PASS
$\pi/4$ DQPSK	LCH	-0.179	21	PASS
	MCH	-1.985	21	PASS
	HCH	-0.950	21	PASS
8DPSK	LCH	0.049	21	PASS
	MCH	-1.712	21	PASS
	HCH	-0.615	21	PASS

Test Graphs

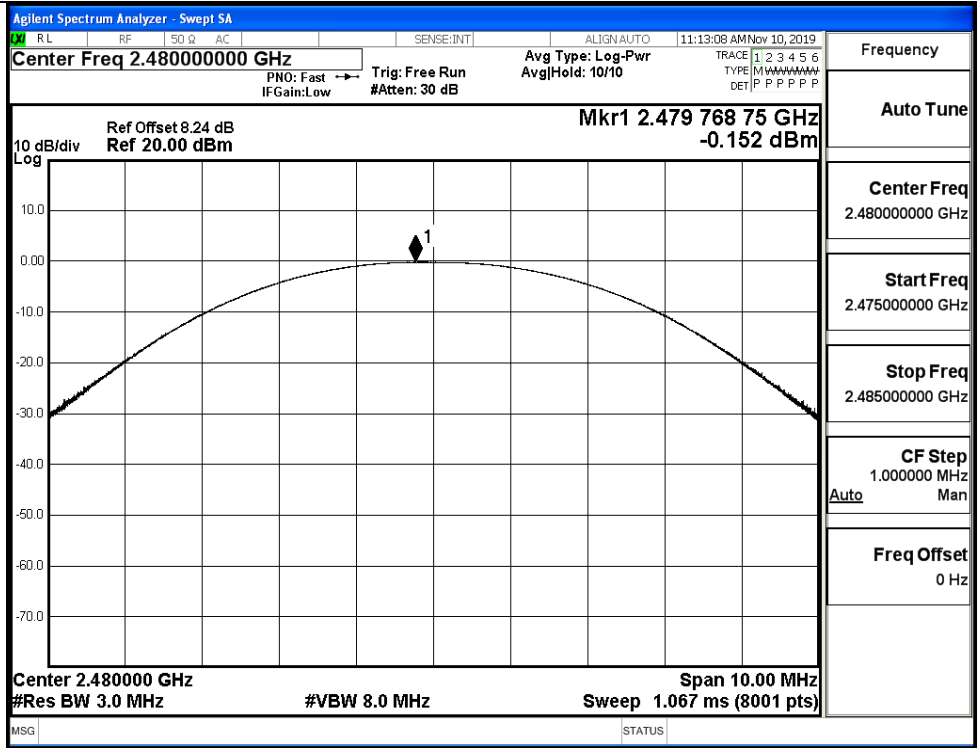
GFSK/LCH



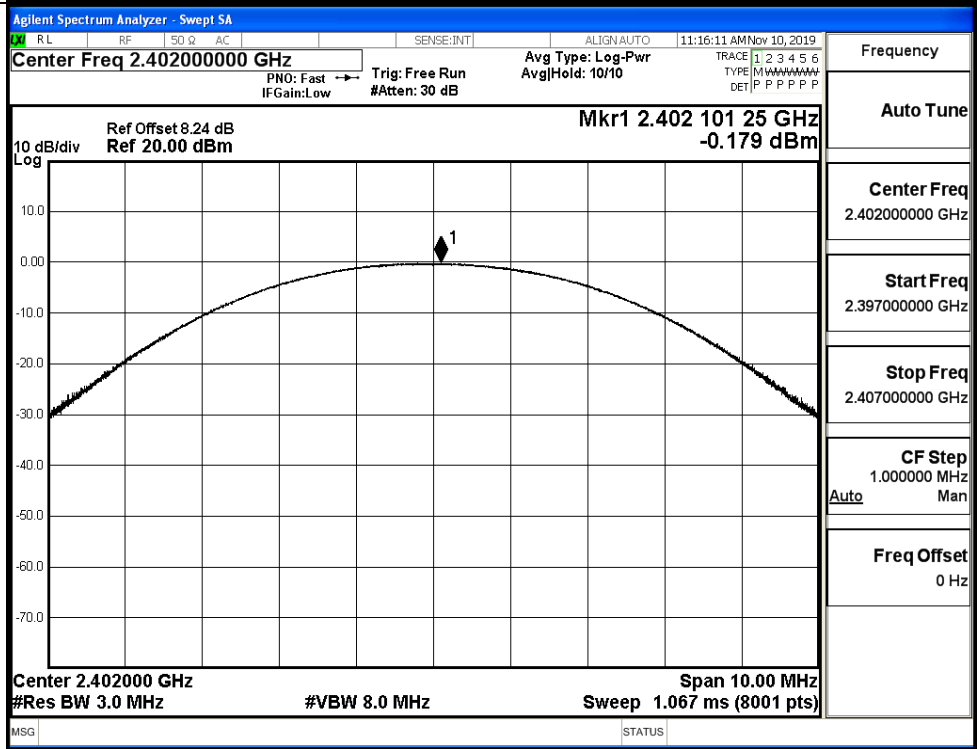
GFSK/MCH

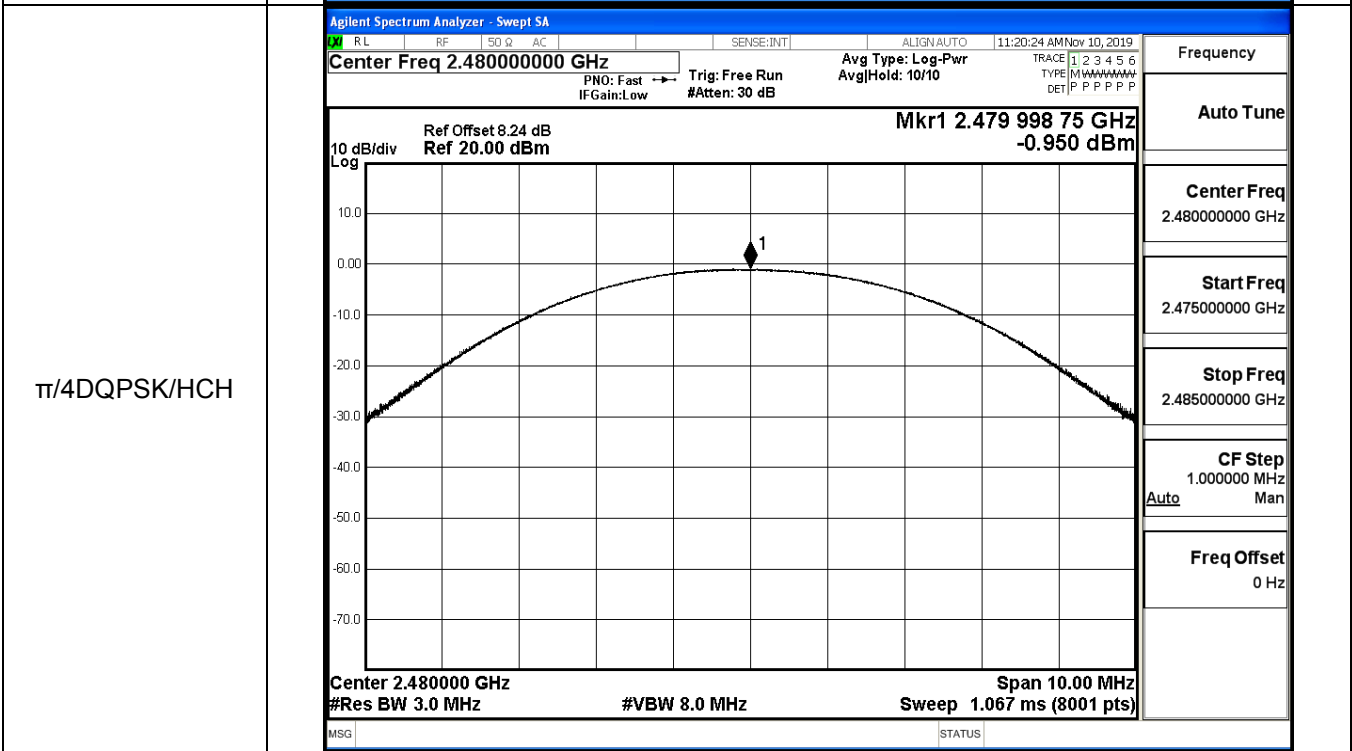
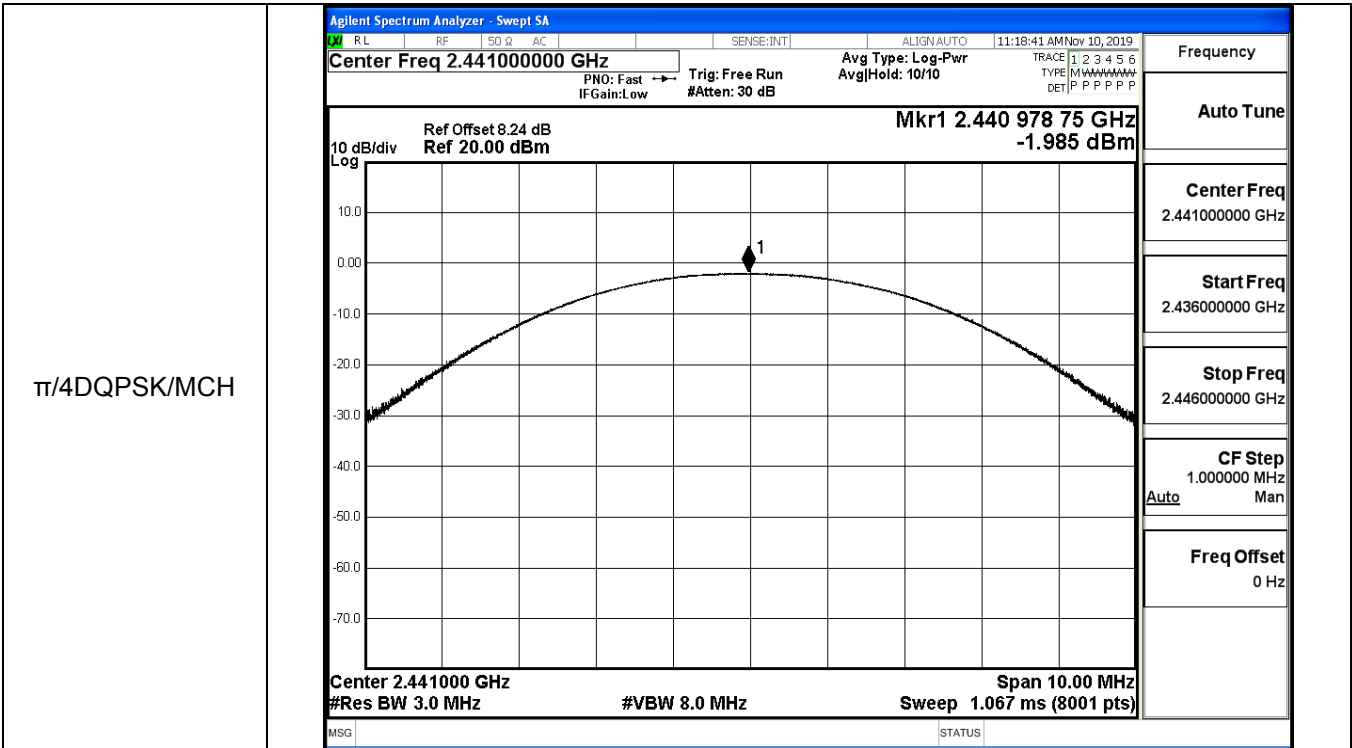


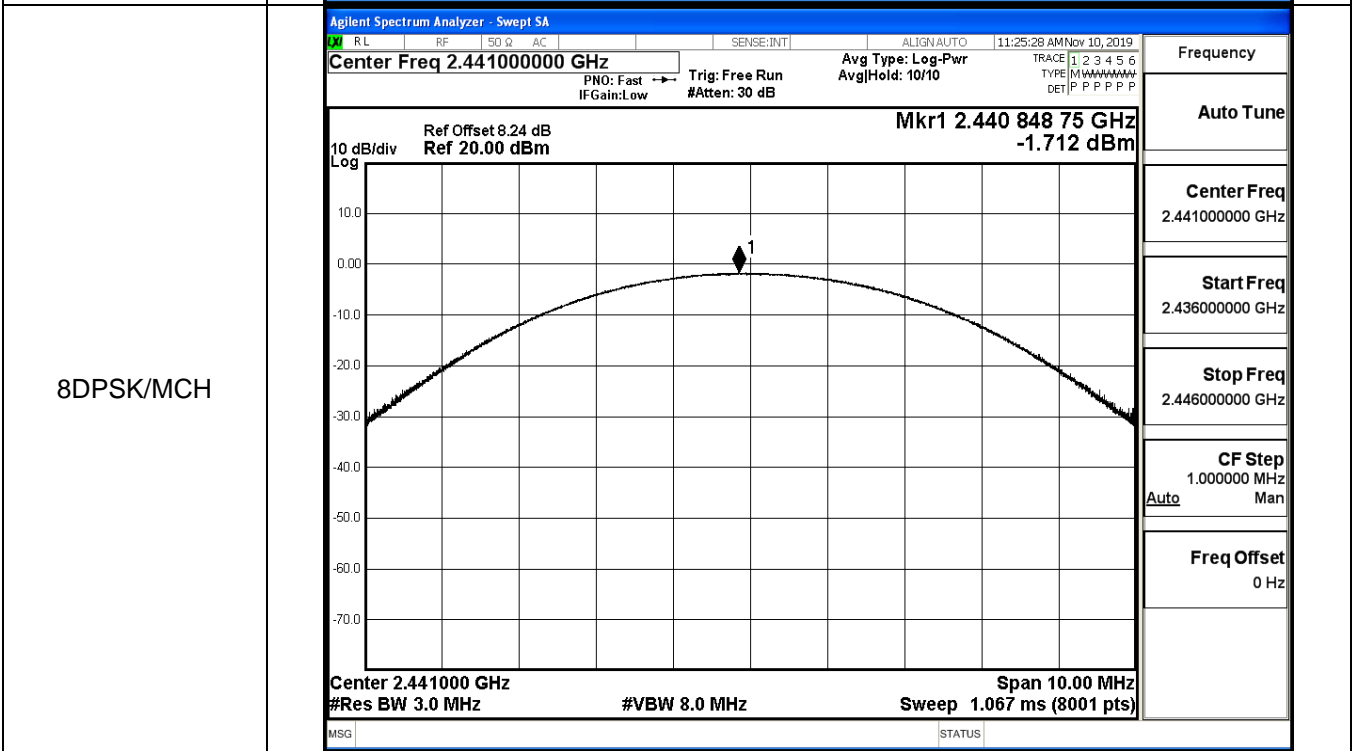
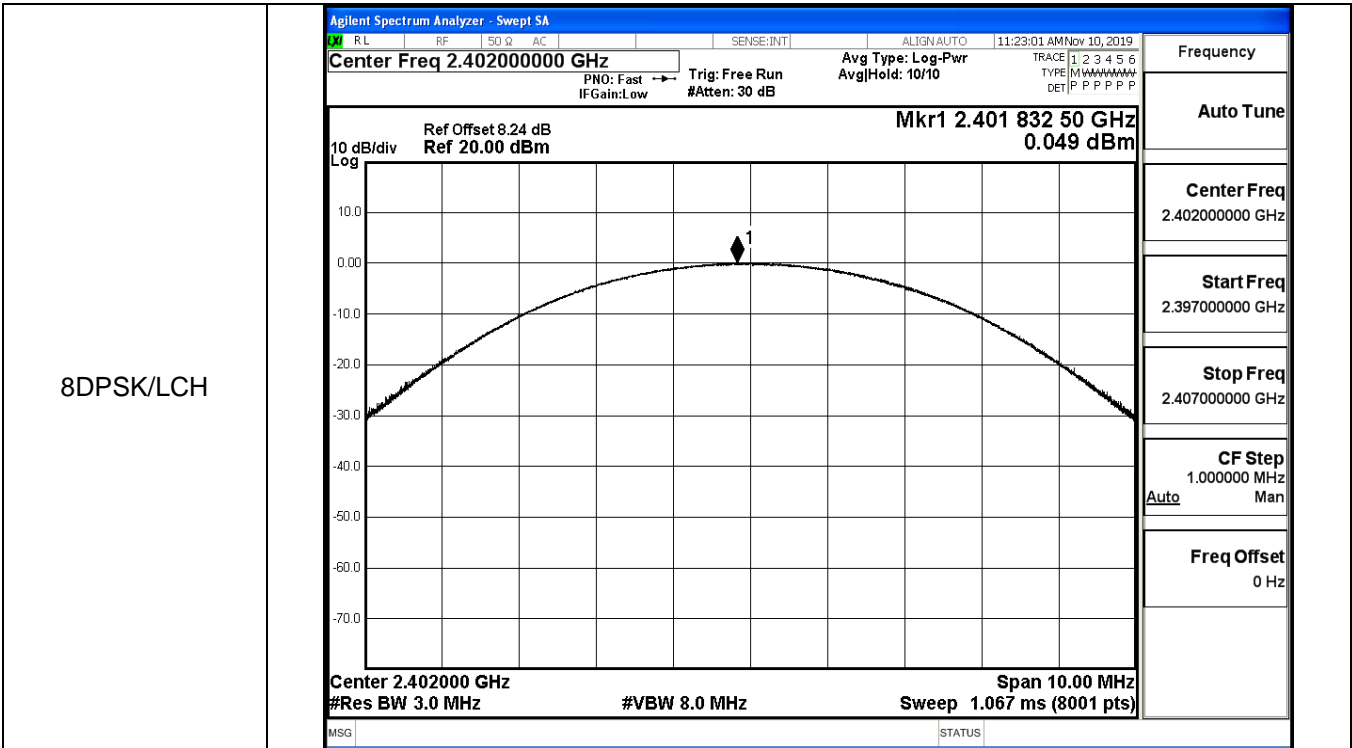
GFSK/HCH



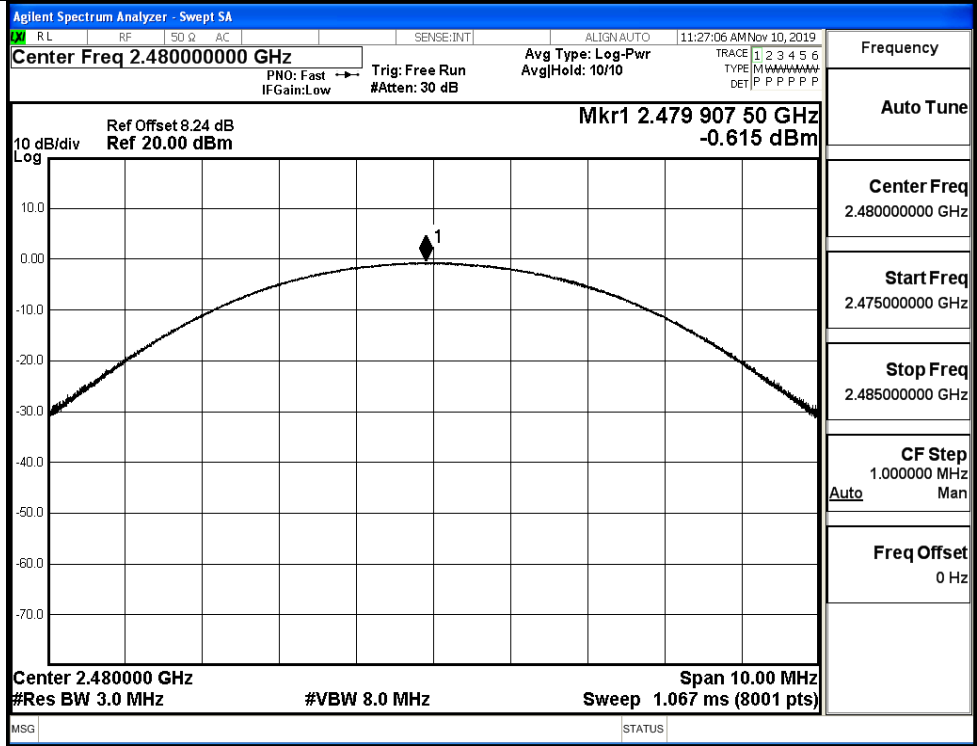
$\pi/4$ DQPSK/LCH





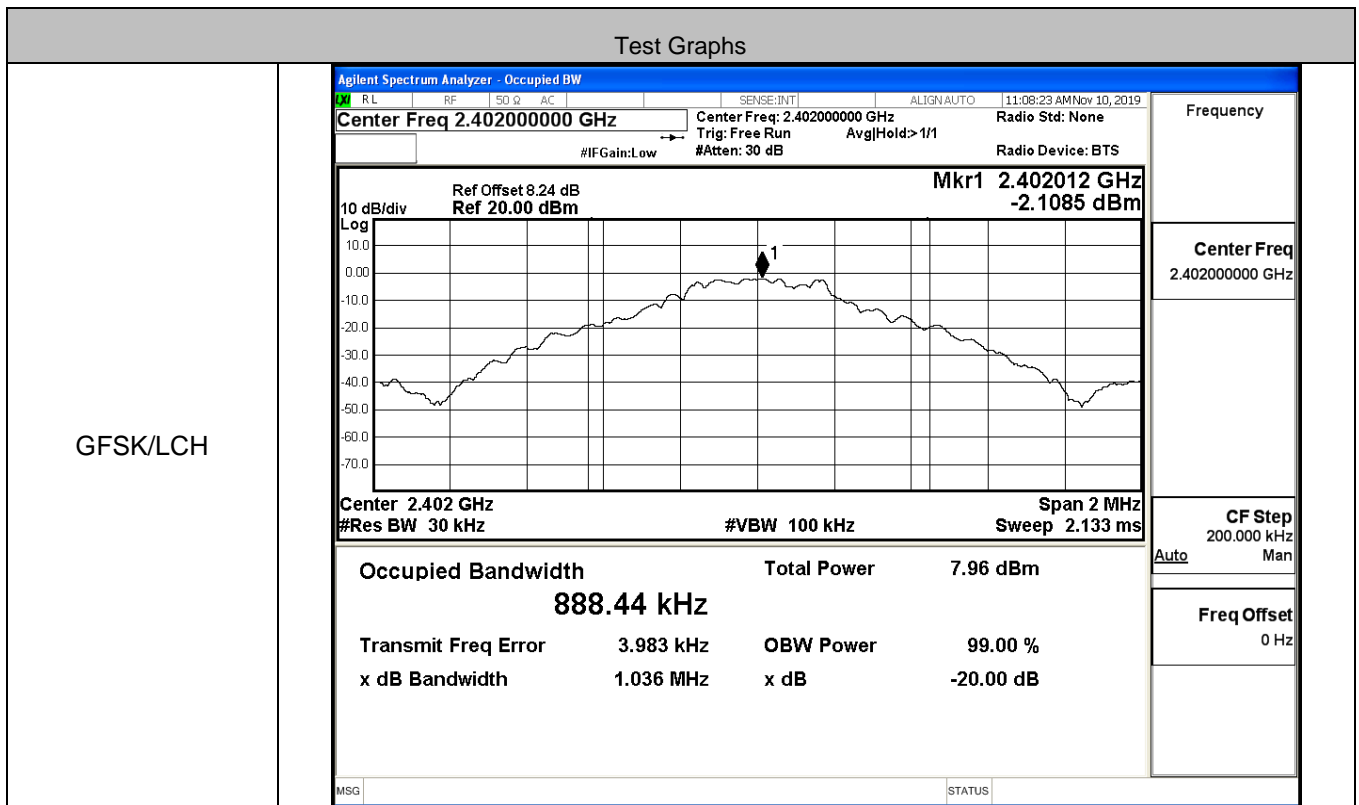


8DPSK/HCH

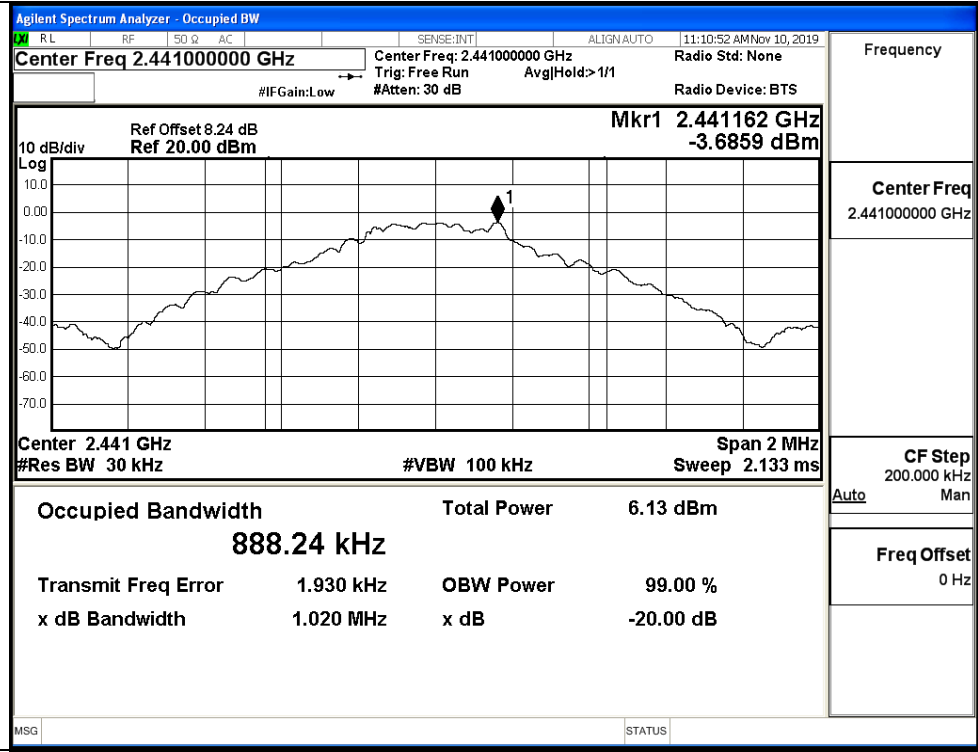


A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.036	Not Specified	PASS
	MCH	1.020	Not Specified	PASS
	HCH	1.033	Not Specified	PASS
π/4DQPSK	LCH	1.288	Not Specified	PASS
	MCH	1.295	Not Specified	PASS
	HCH	1.290	Not Specified	PASS
8DPSK	LCH	1.292	Not Specified	PASS
	MCH	1.302	Not Specified	PASS
	HCH	1.296	Not Specified	PASS

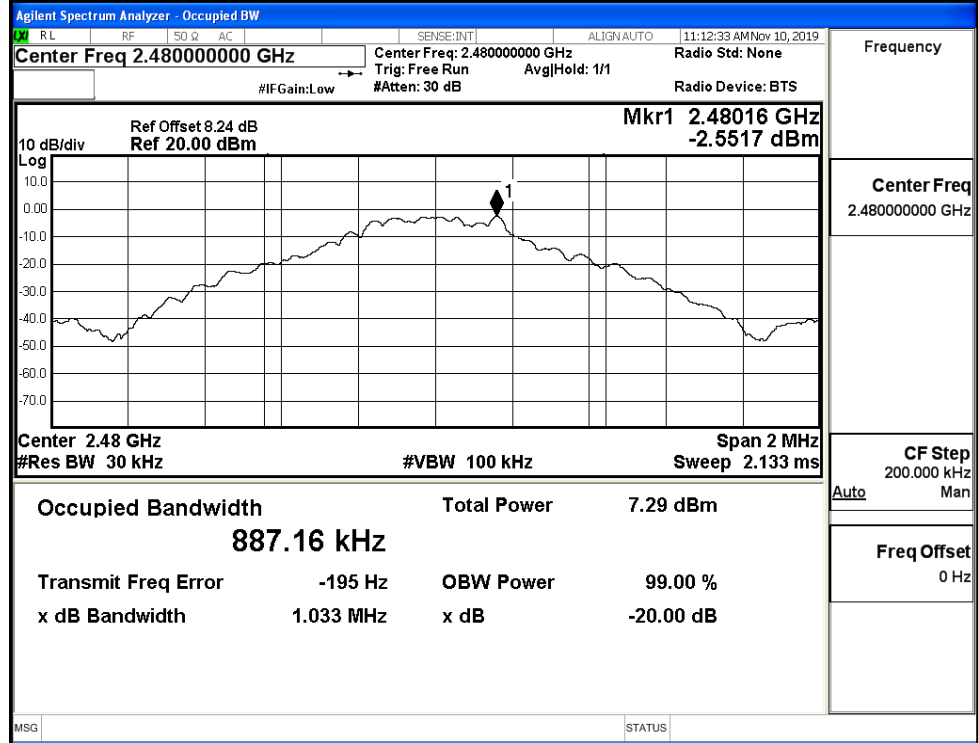


GFSK/MCH

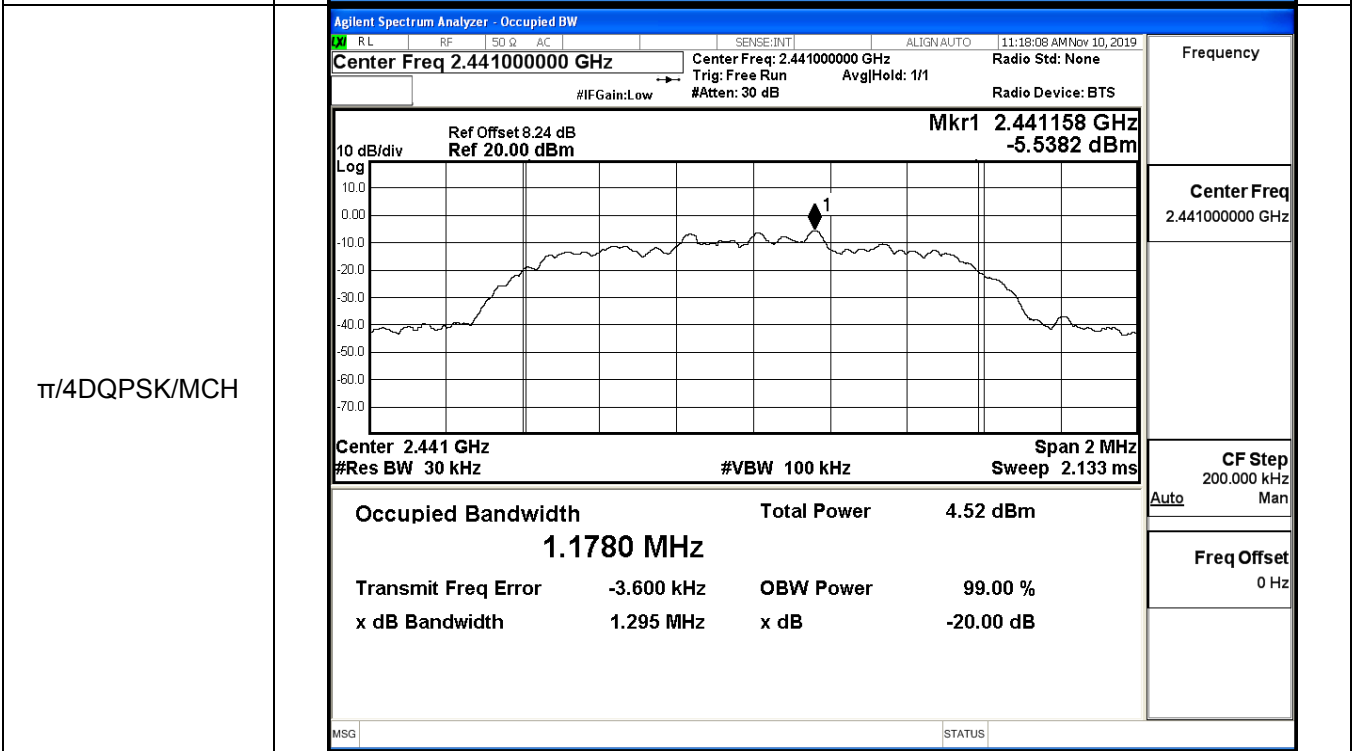
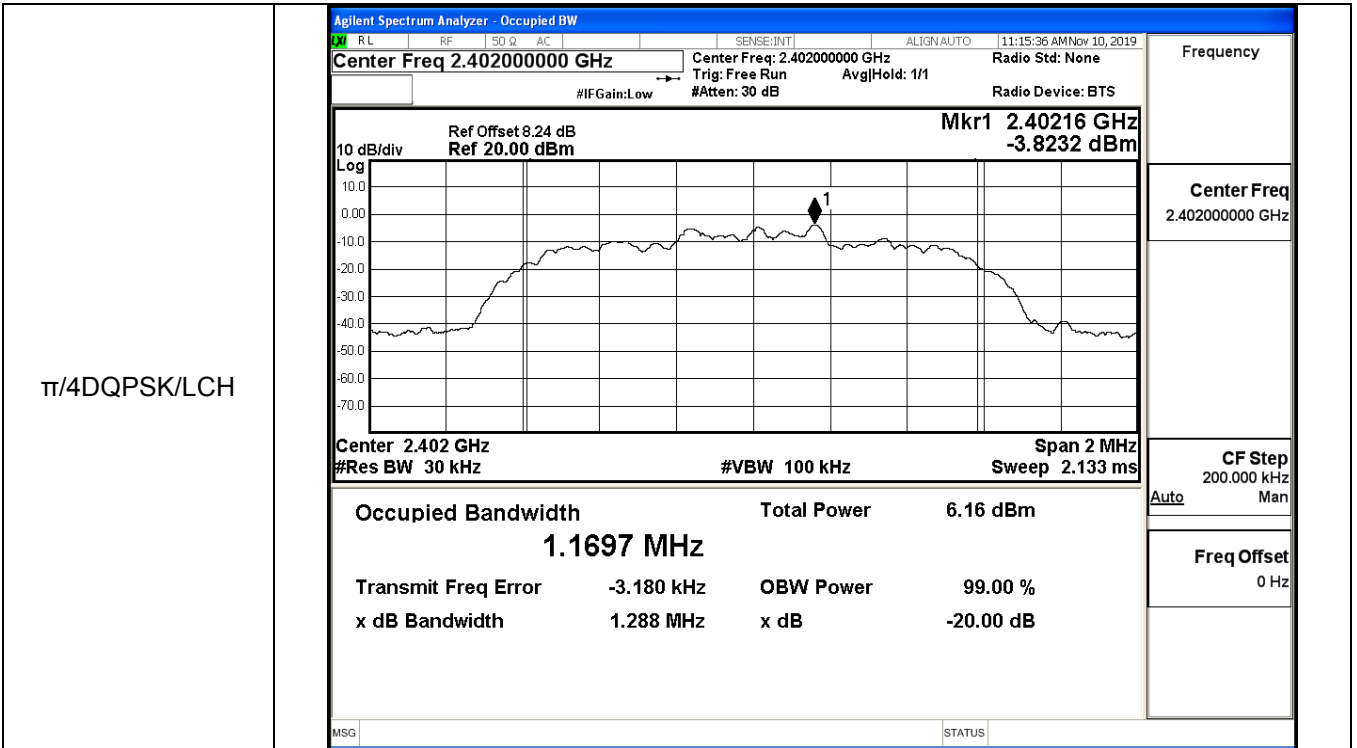


Frequency	2.441000000 GHz
Center Freq	2.441000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

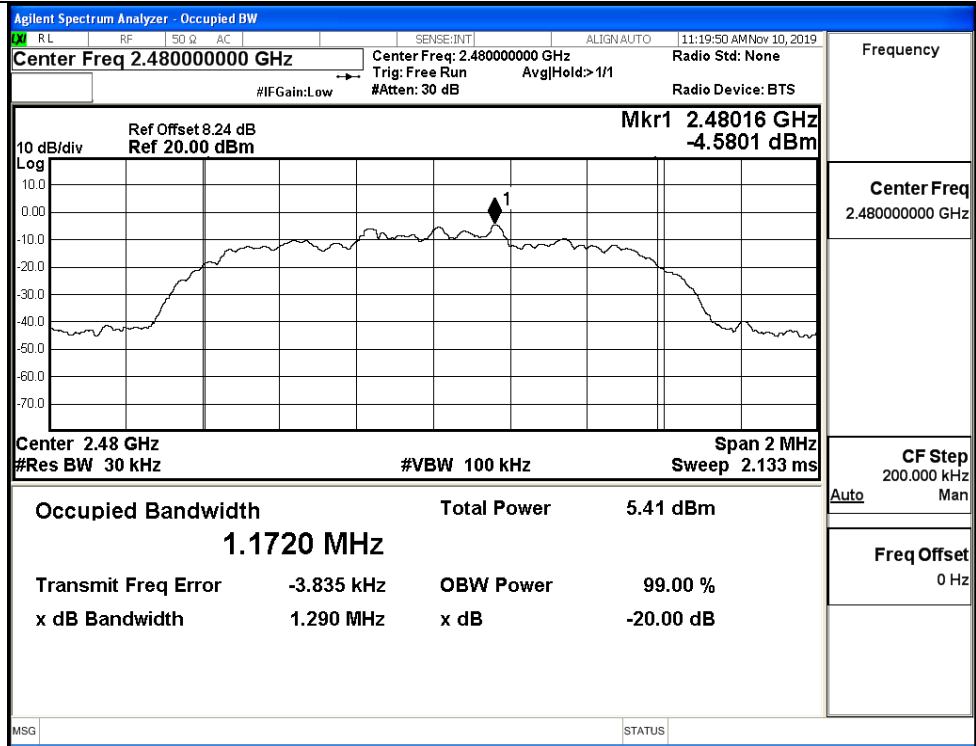
GFSK/HCH



Frequency	2.480000000 GHz
Center Freq	2.480000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

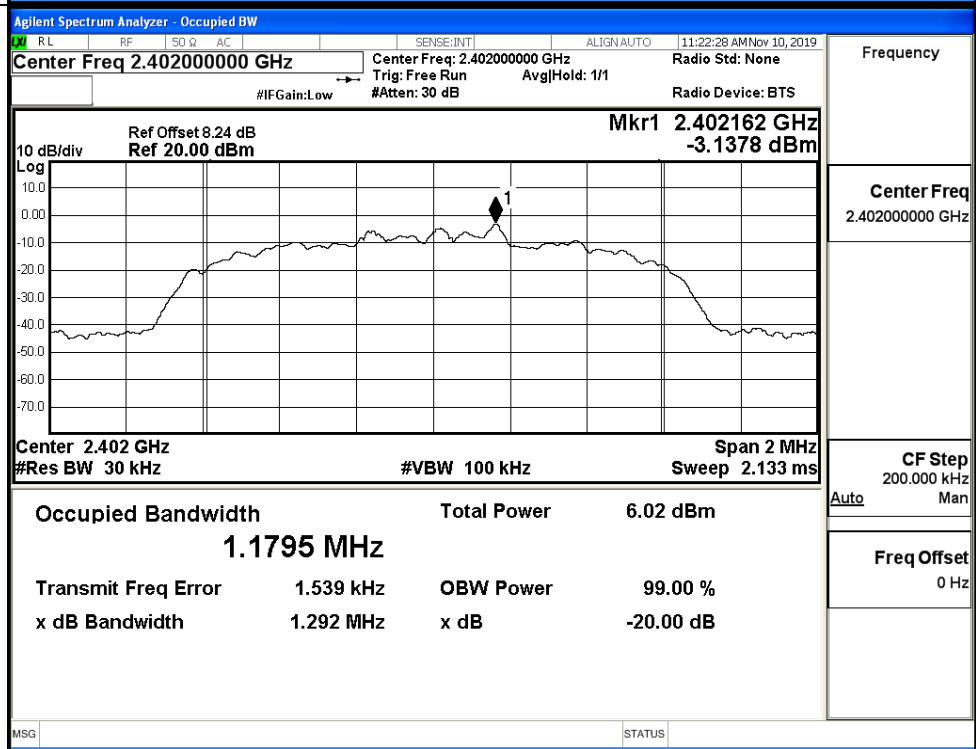


$\pi/4$ DQPSK/HCH



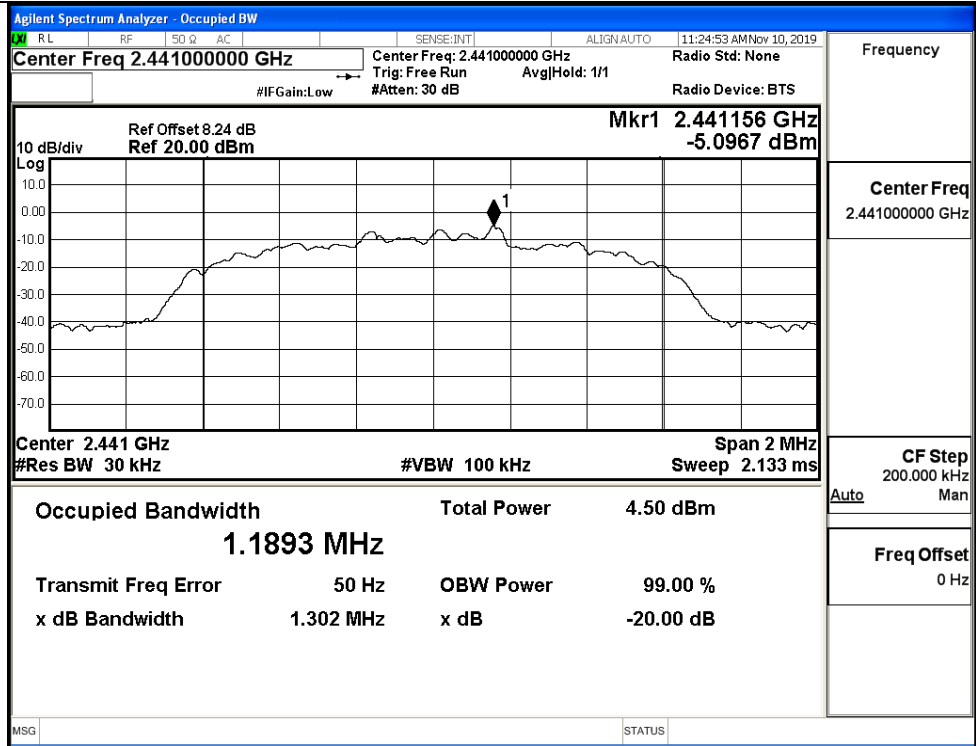
Frequency	2.48000000 GHz
Center Freq	2.48000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

8DPSK/LCH

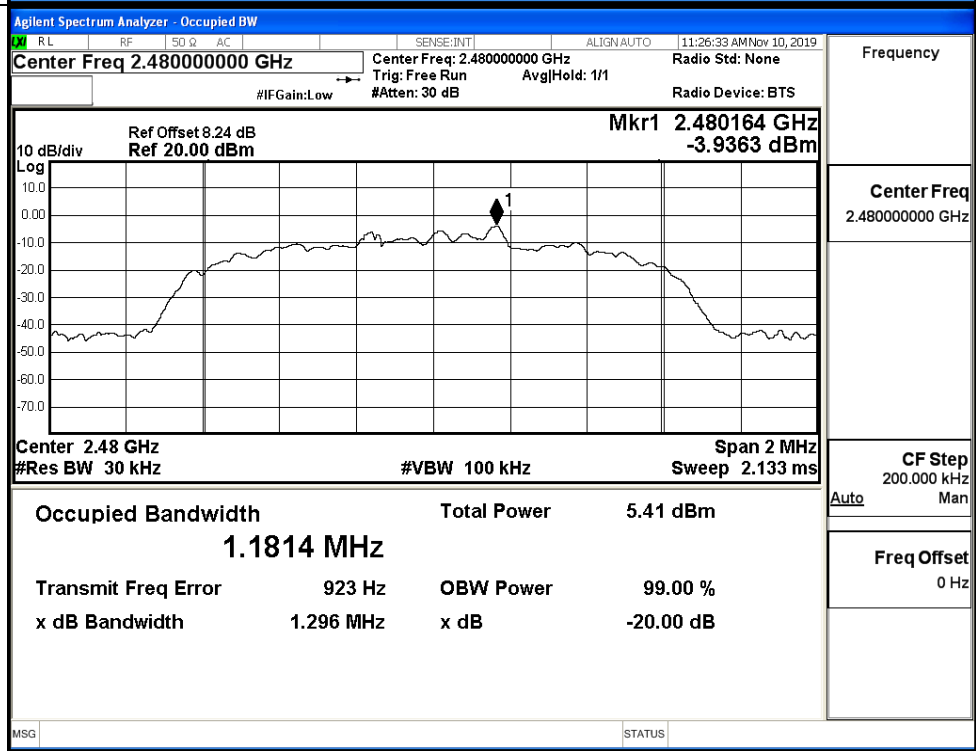


Frequency	2.40200000 GHz
Center Freq	2.40200000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

8DPSK/MCH

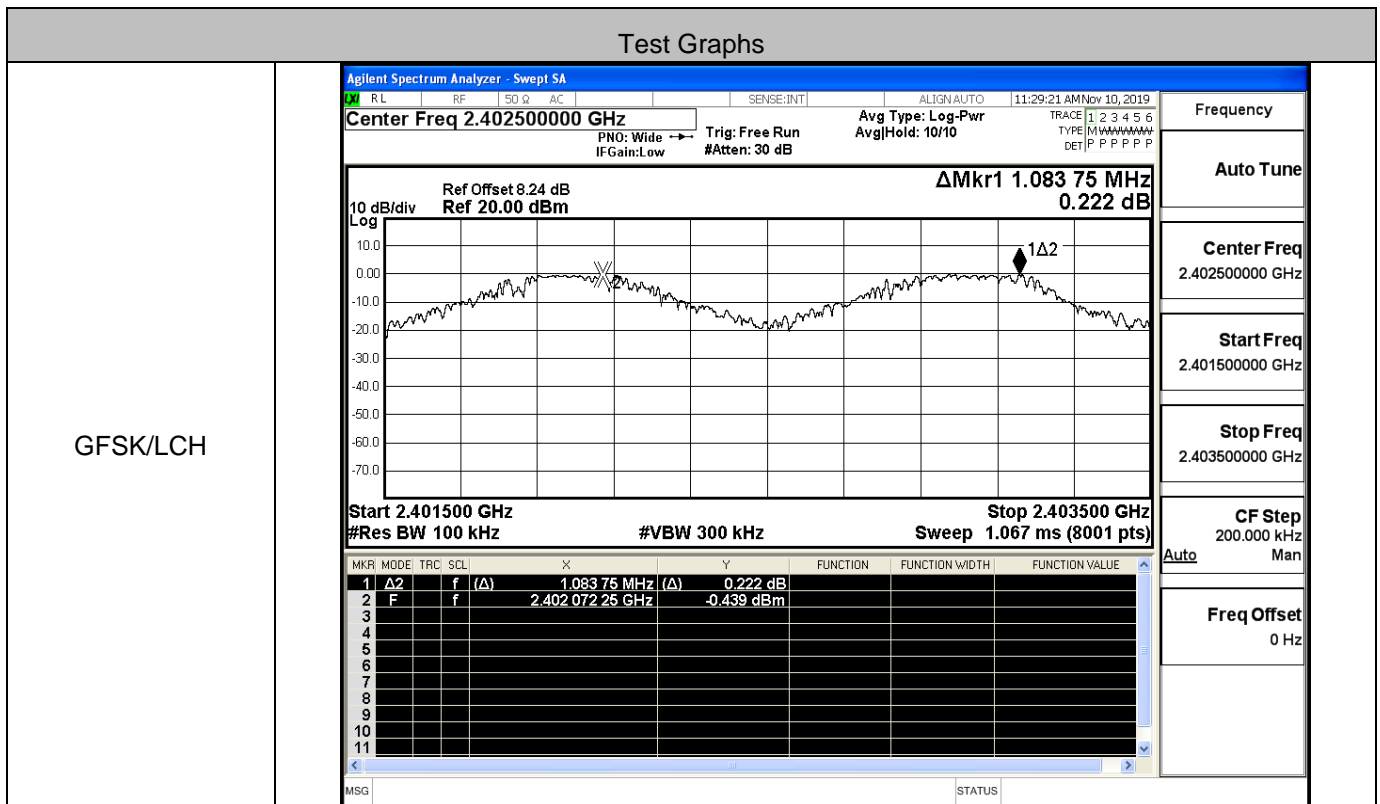


8DPSK/HCH

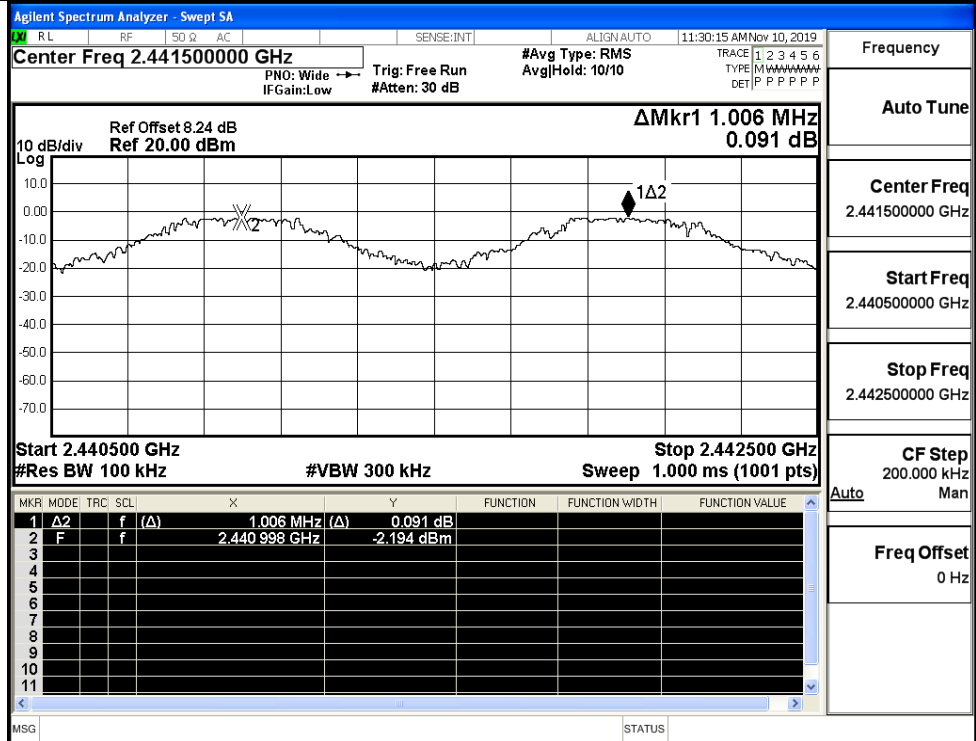


A.3 Carrier Frequency Separation

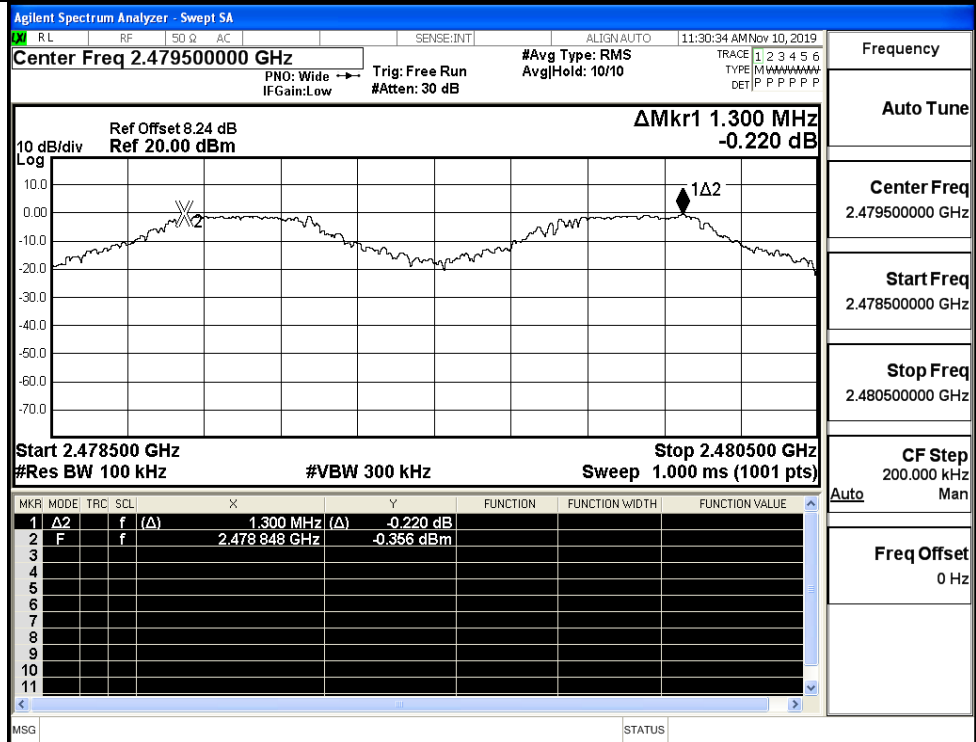
Mode	Channel	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.084	0.691	PASS
	MCH	1.006	0.691	PASS
	HCH	1.300	0.691	PASS
π/4DQPSK	LCH	1.214	0.863	PASS
	MCH	0.940	0.863	PASS
	HCH	1.150	0.863	PASS
8DPSK	LCH	1.054	0.868	PASS
	MCH	1.080	0.868	PASS
	HCH	1.254	0.868	PASS



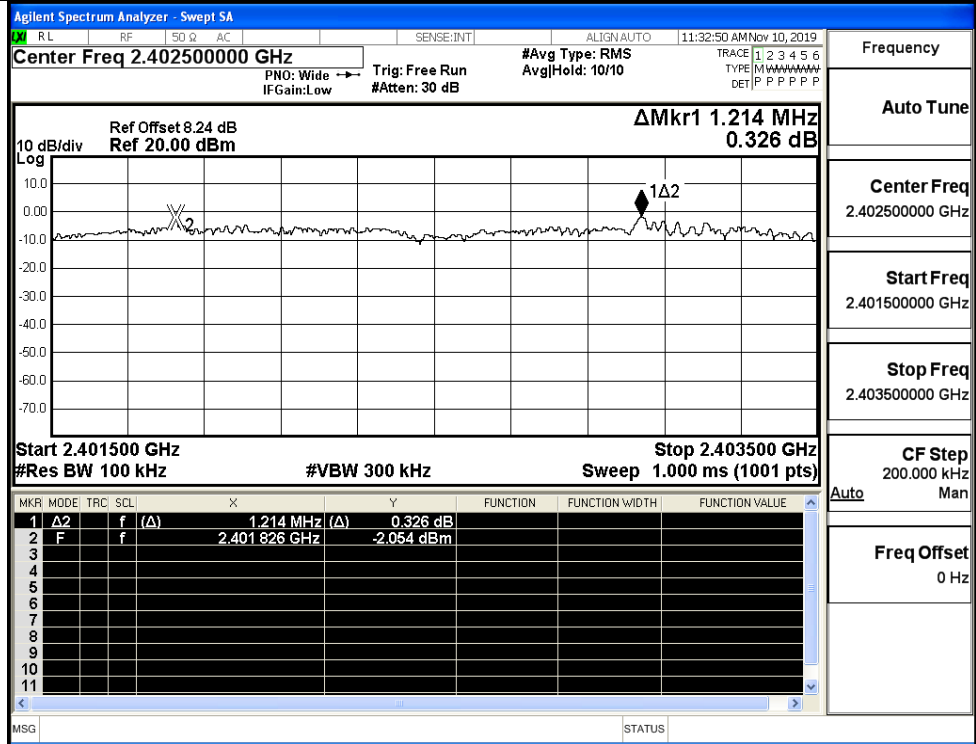
GFSK/MCH



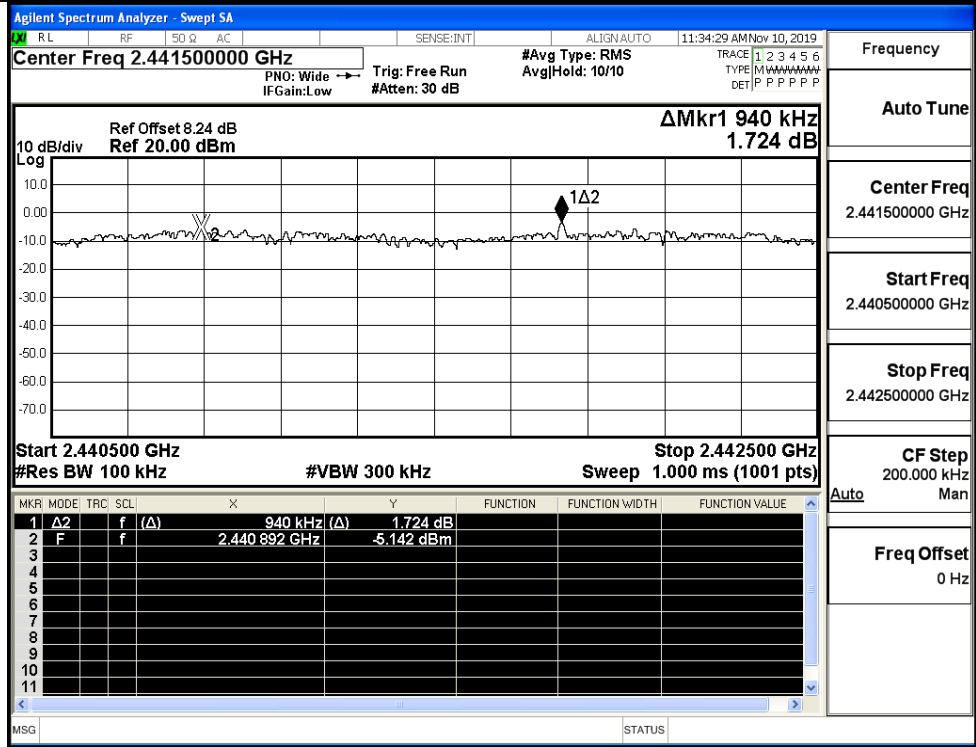
GFSK/HCH



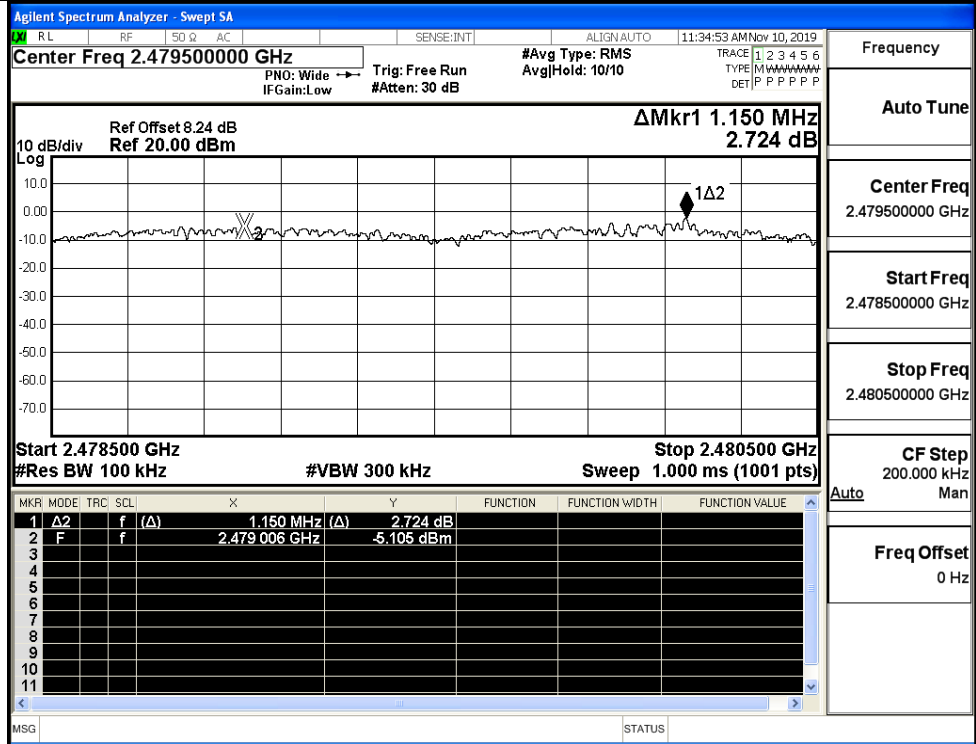
π/4DQPSK/LCH



π/4DQPSK/MCH



π/4DQPSK/HCH



Frequency

Auto Tune

Center Freq
2.479500000 GHz

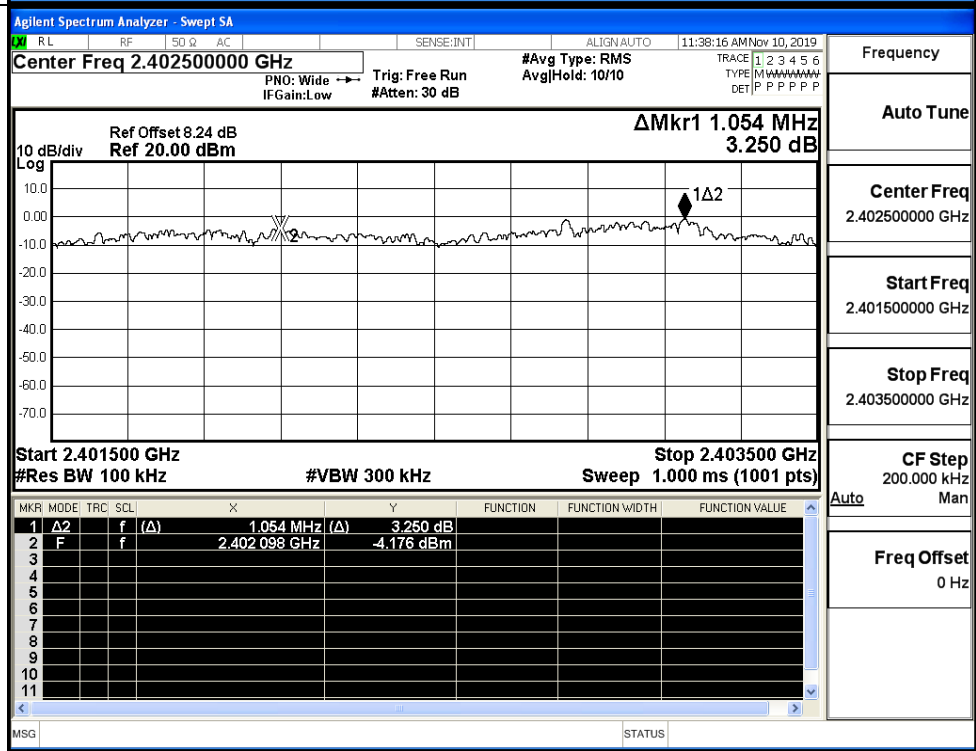
Start Freq
2.478500000 GHz

Stop Freq
2.480500000 GHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

8DPSK/LCH



Frequency

Auto Tune

Center Freq
2.402500000 GHz

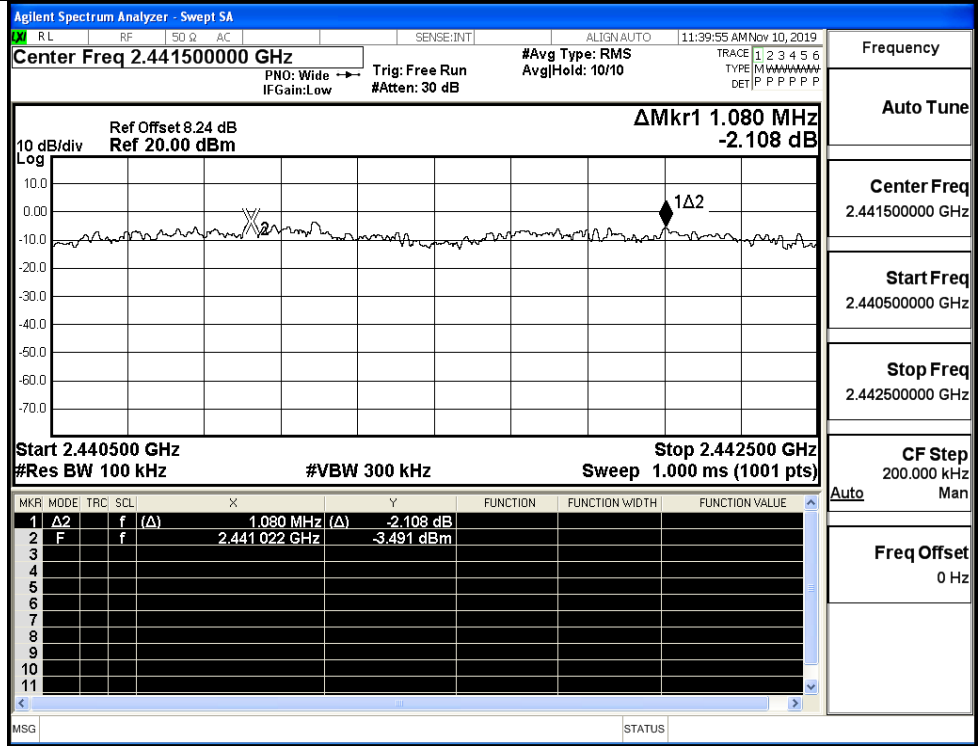
Start Freq
2.401500000 GHz

Stop Freq
2.403500000 GHz

CF Step
200.000 kHz
Auto Man

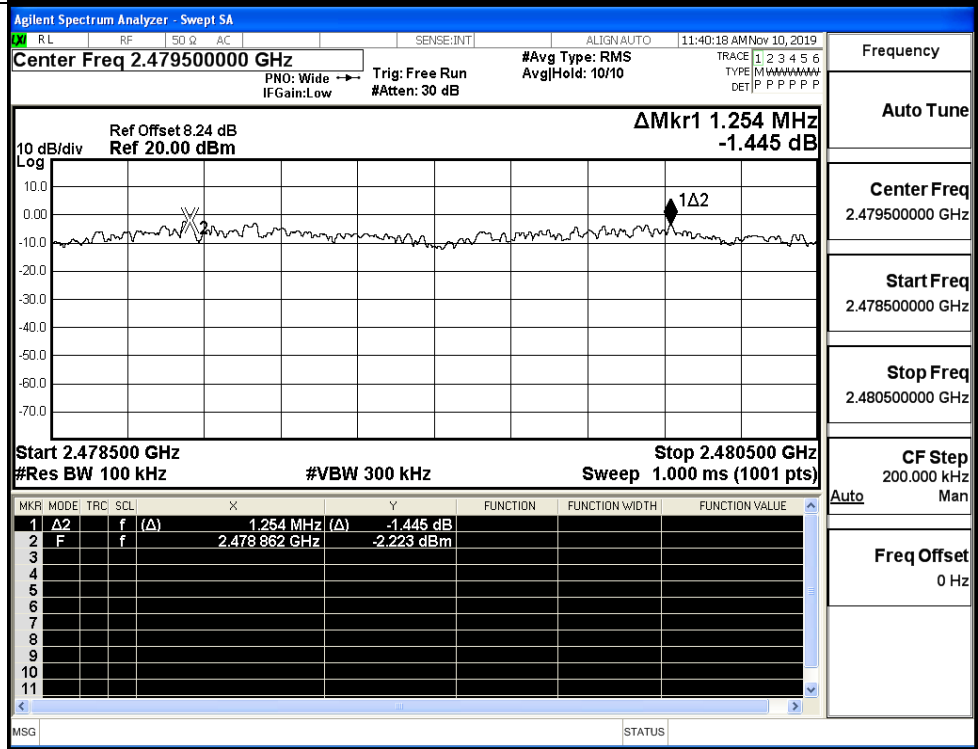
Freq Offset
0 Hz

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
Auto
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
Auto
Man
Freq Offset
0 Hz

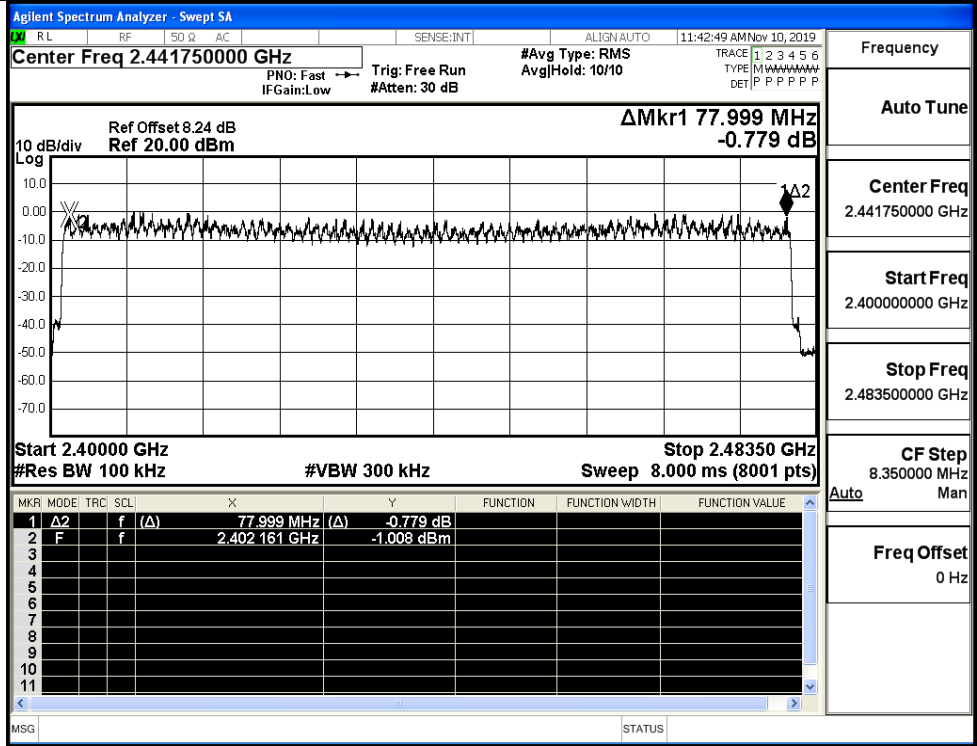
A.4 Hopping Channel Number

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

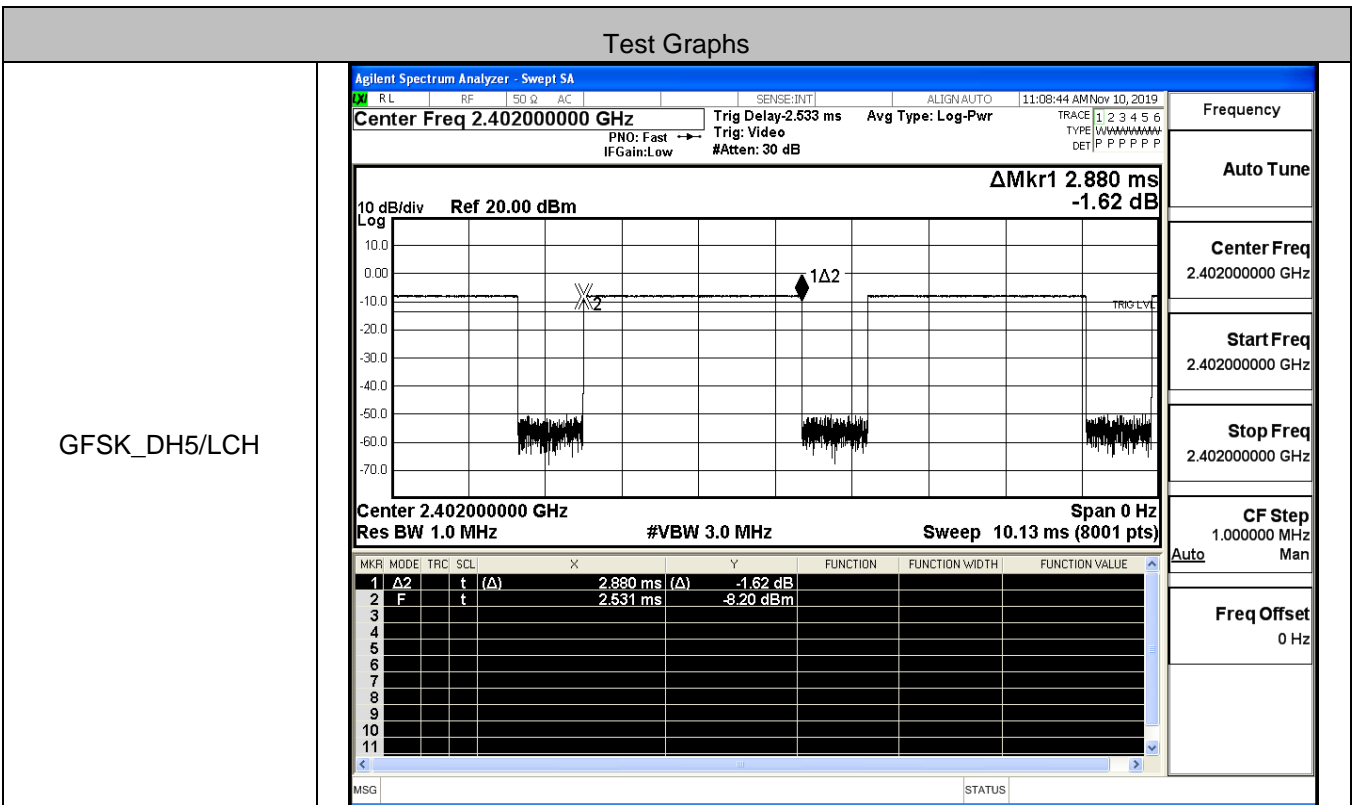
GFSK/Hop		<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.441750000 GHz</p> <p>Start Freq 2.400000000 GHz</p> <p>Stop Freq 2.483500000 GHz</p> <p>CF Step 8.350000 MHz Man</p> <p>Freq Offset 0 Hz</p>
$\pi/4$ DQPSK/Hop		<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.441750000 GHz</p> <p>Start Freq 2.400000000 GHz</p> <p>Stop Freq 2.483500000 GHz</p> <p>CF Step 8.350000 MHz Man</p> <p>Freq Offset 0 Hz</p>

8DPSK/Hop

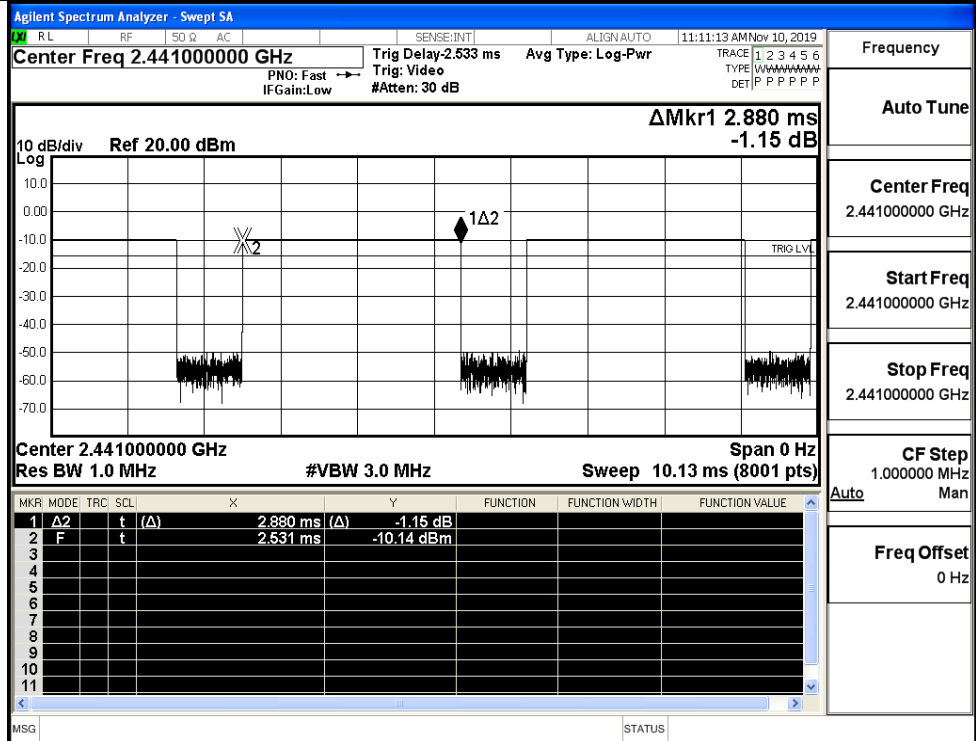


A.5 Dwell Time

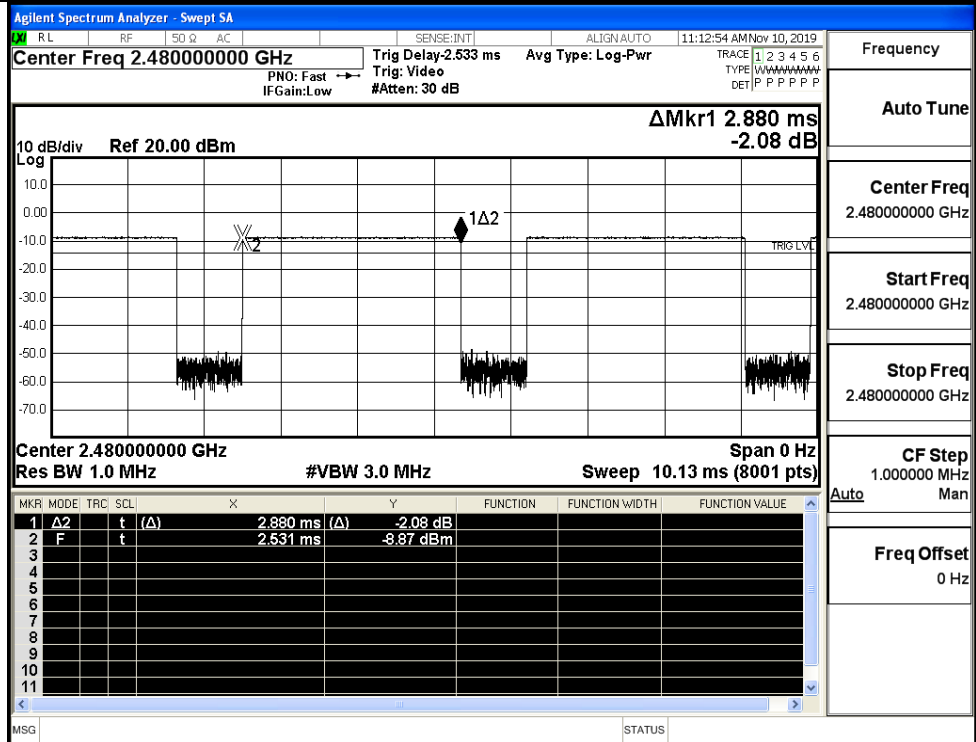
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
π/4DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7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



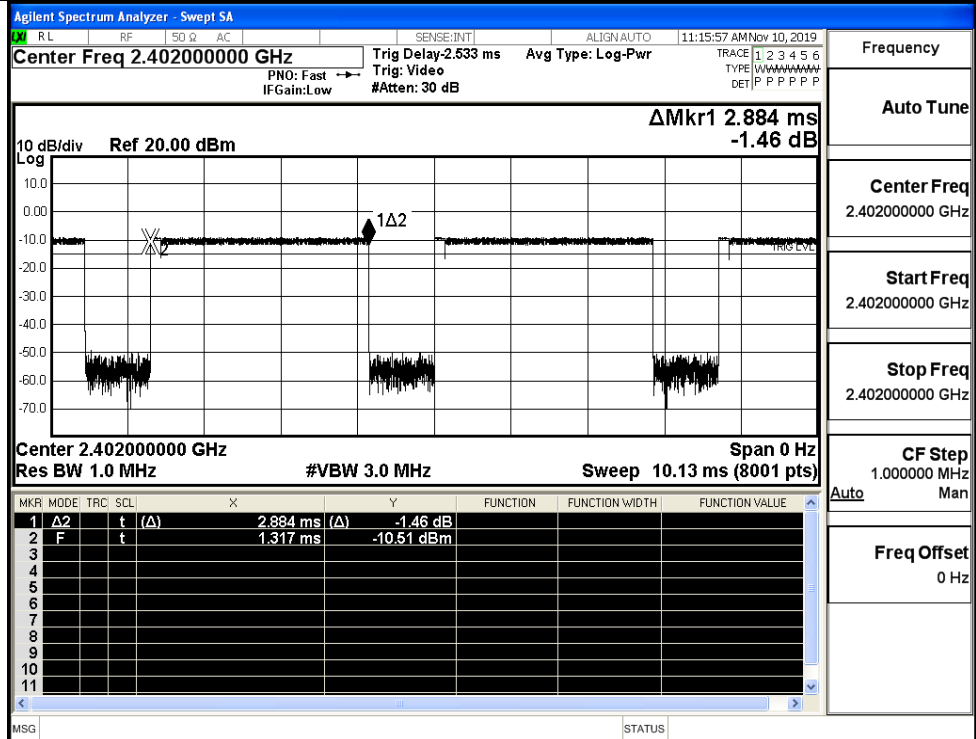
GFSK_DH5/MCH



GFSK_DH5/HCH

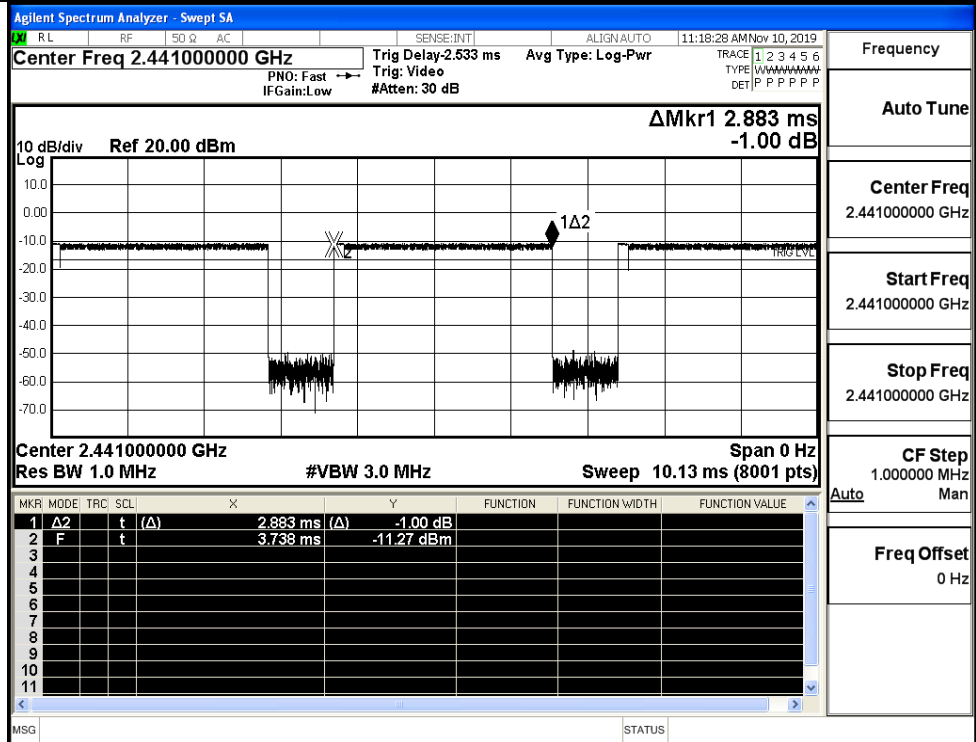


$\pi/4$ DQPSK
_2DH5/LCH



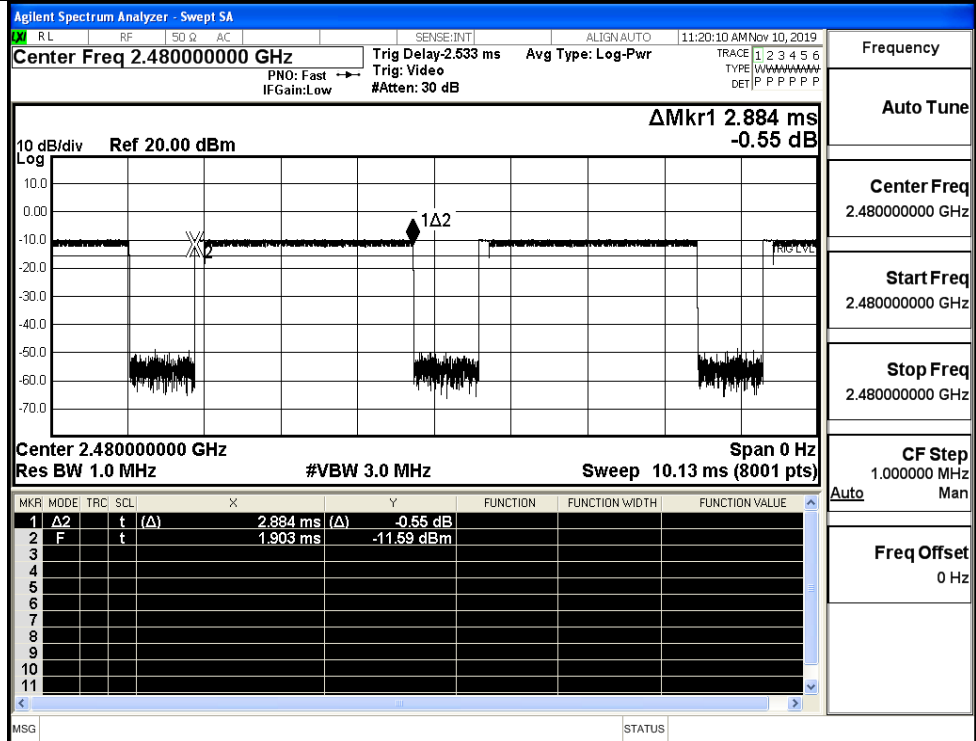
Frequency	2.40200000 GHz
Auto Tune	
Center Freq	2.40200000 GHz
Start Freq	2.40200000 GHz
Stop Freq	2.40200000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

$\pi/4$ DQPSK
_2DH5/MCH

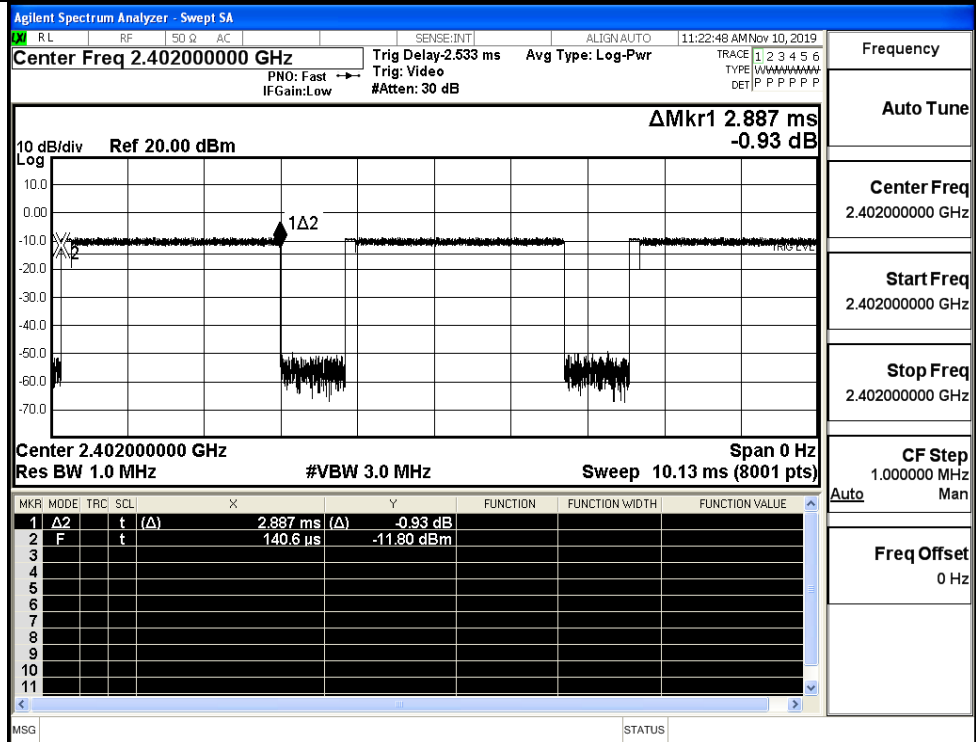


Frequency	2.44100000 GHz
Auto Tune	
Center Freq	2.44100000 GHz
Start Freq	2.44100000 GHz
Stop Freq	2.44100000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

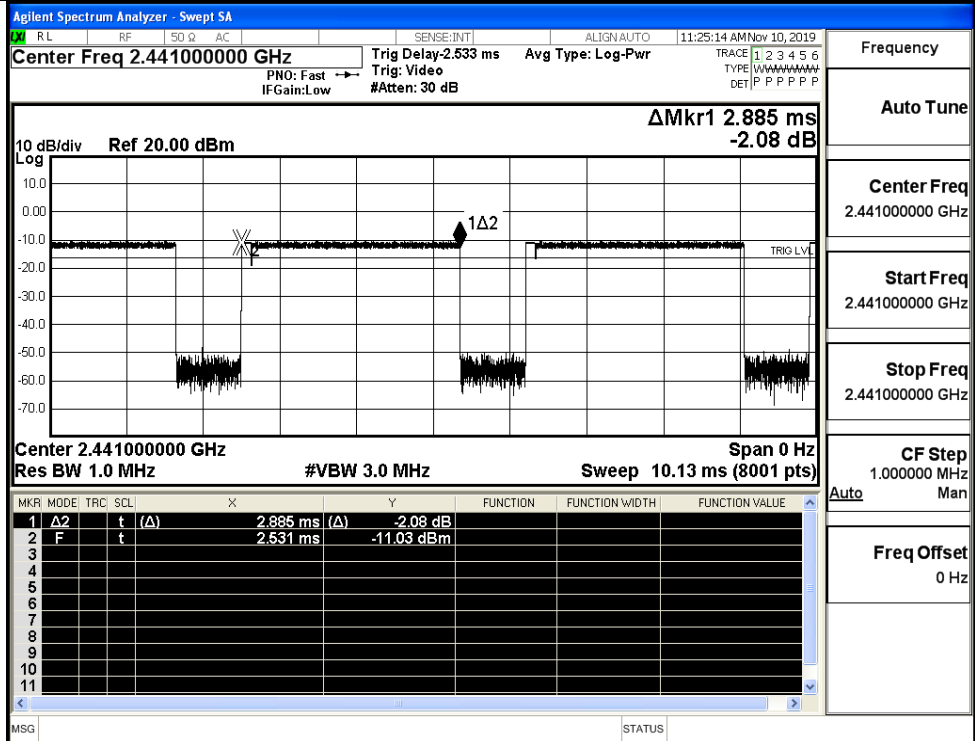
$\pi/4$ DQPSK
_2DH5/HCH



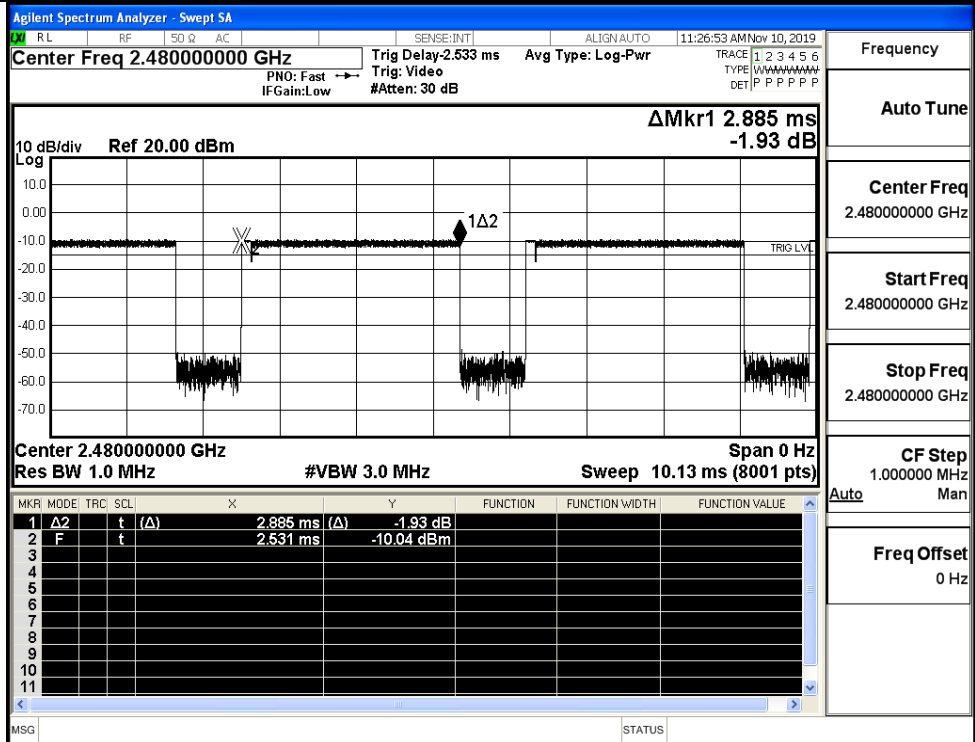
8DPSK_3DH5/LCH



8DPSK_3DH5/MCH

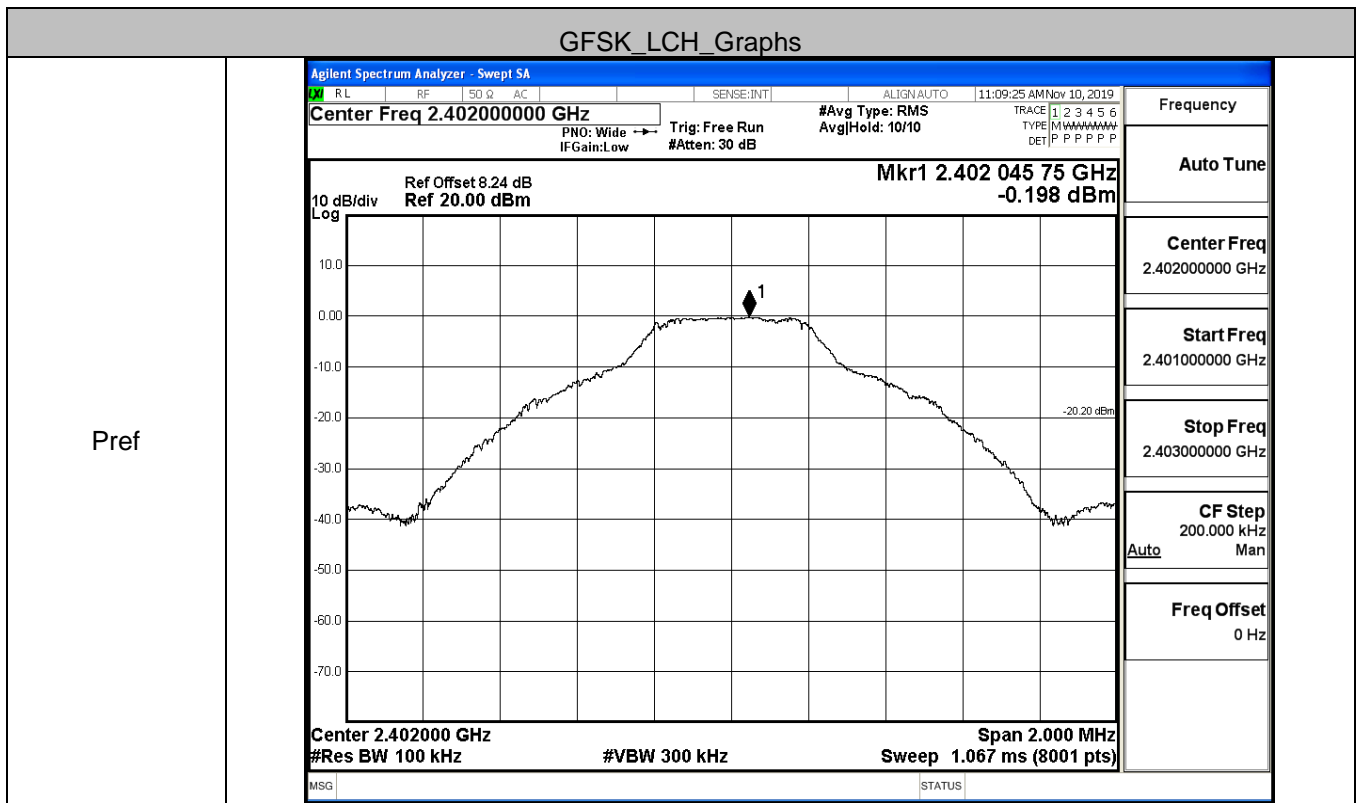


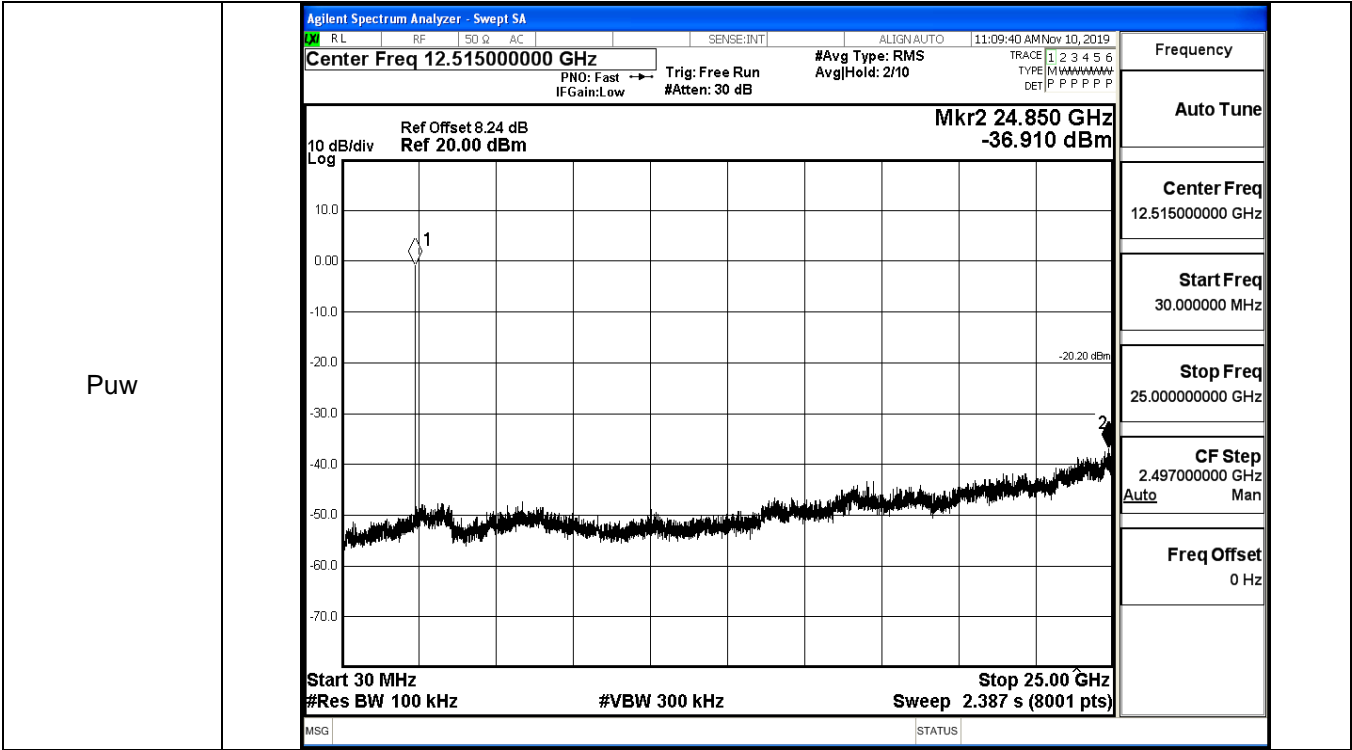
8DPSK_3DH5/HCH



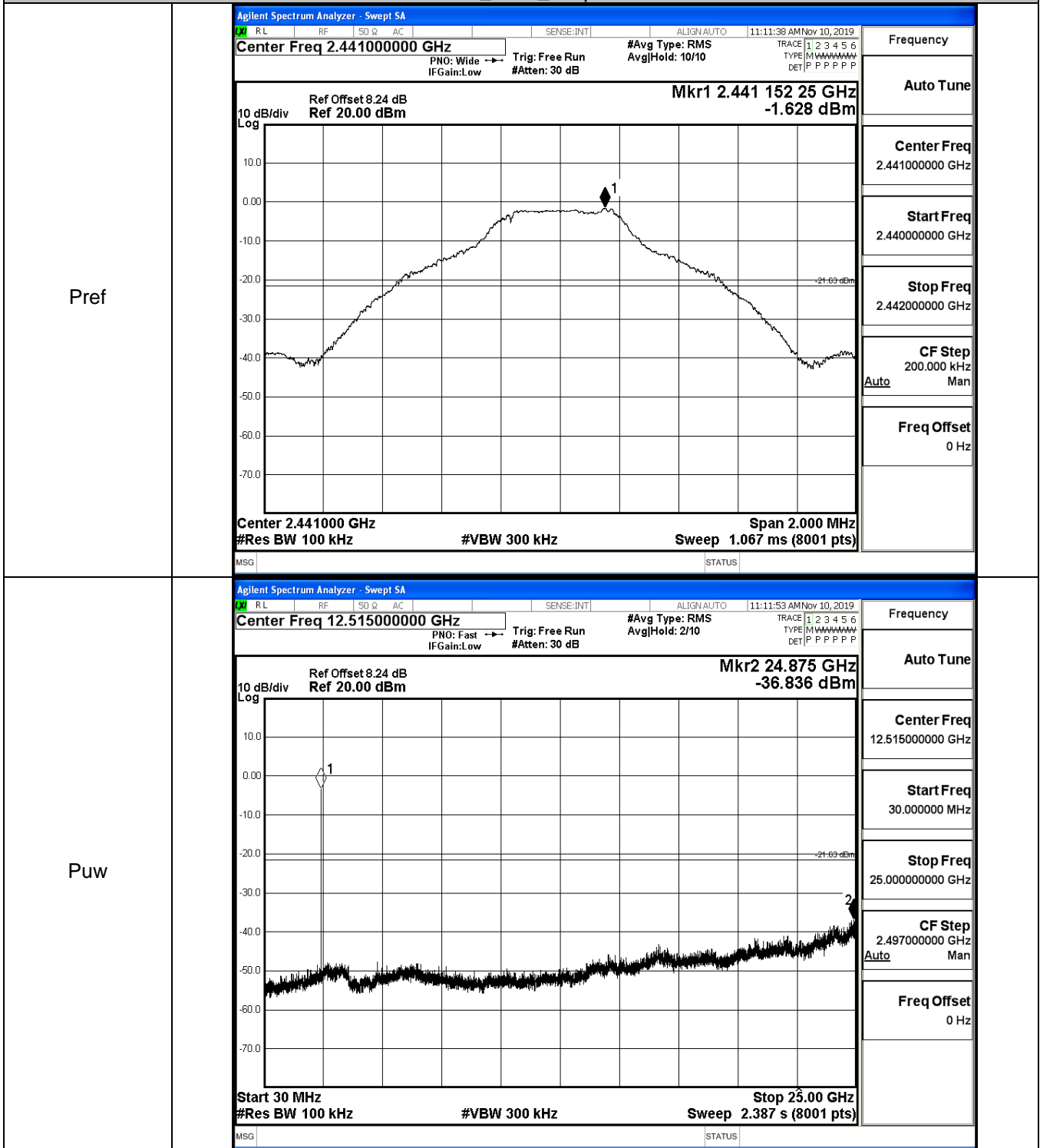
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.198	-36.910	-20.198	PASS
	MCH	-1.628	-36.836	-21.628	PASS
	HCH	-0.512	-37.492	-20.512	PASS
π /4DQPSK	LCH	-1.606	-37.691	-21.606	PASS
	MCH	-2.861	-36.997	-22.861	PASS
	HCH	-1.763	-36.843	-21.763	PASS
8DPSK	LCH	-1.269	-37.091	-21.269	PASS
	MCH	-2.755	-37.210	-22.755	PASS
	HCH	-1.831	-35.608	-21.831	PASS

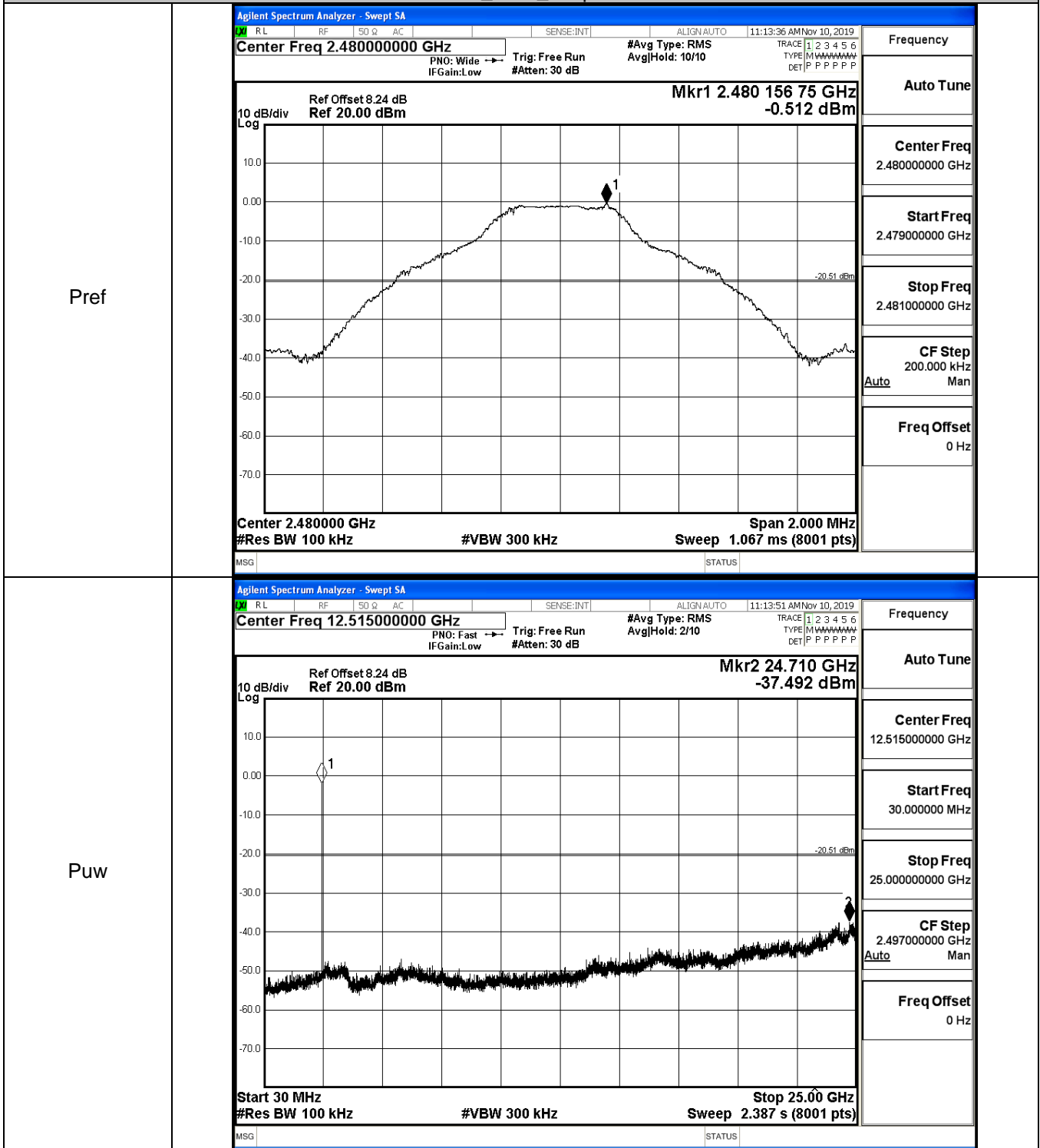




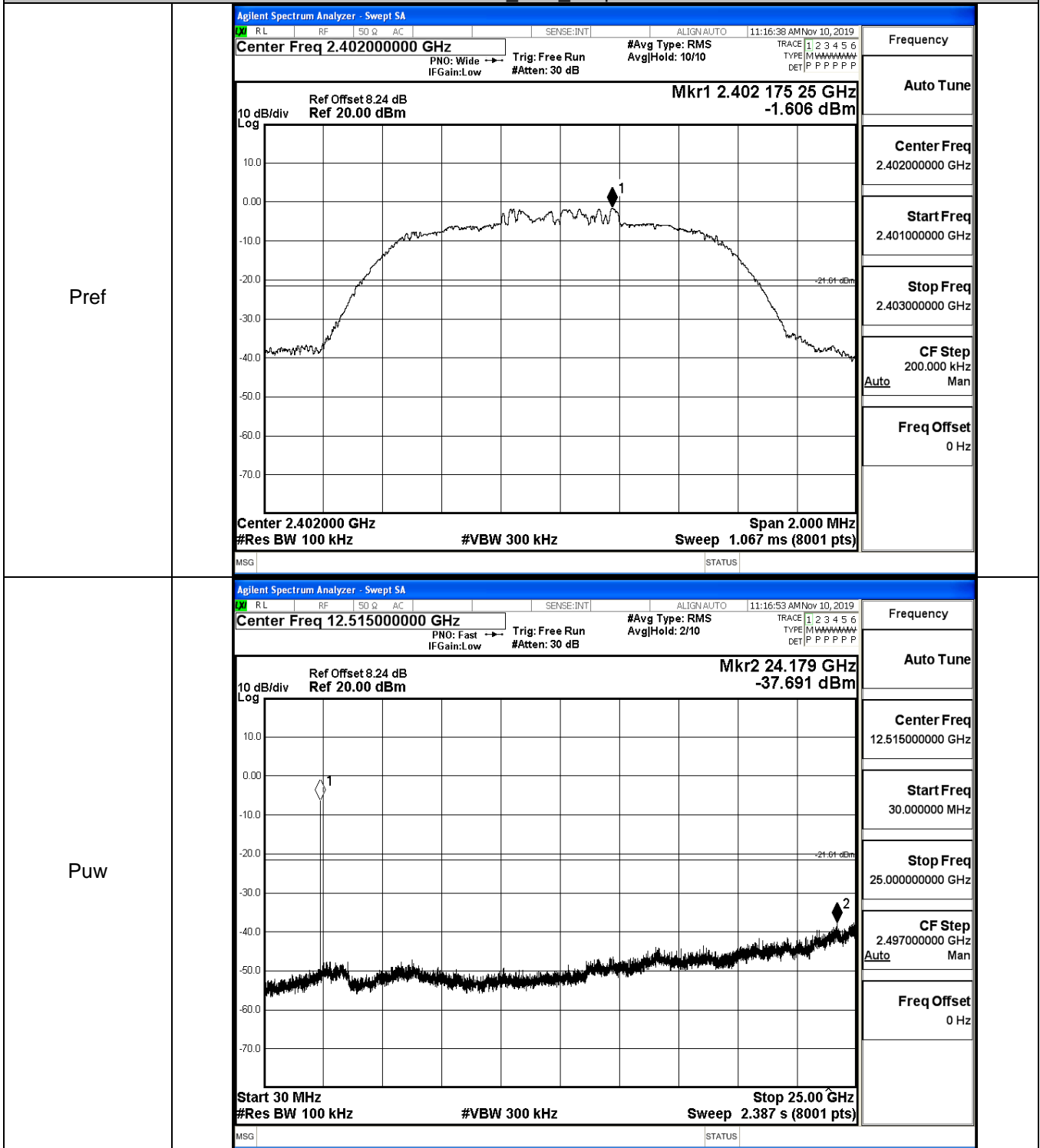
GFSK_MCH_Graphs



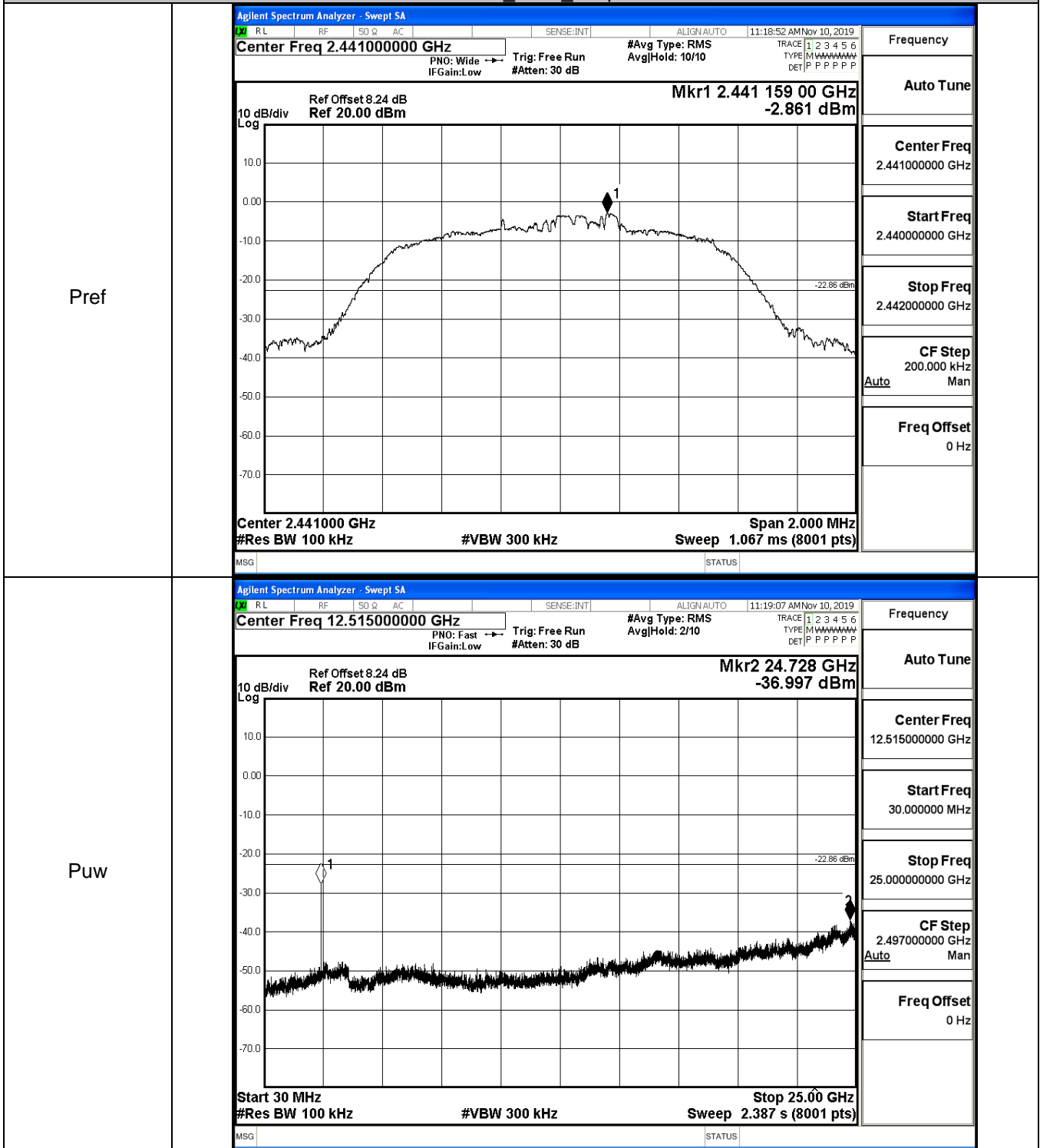
GFSK_HCH_Graphs



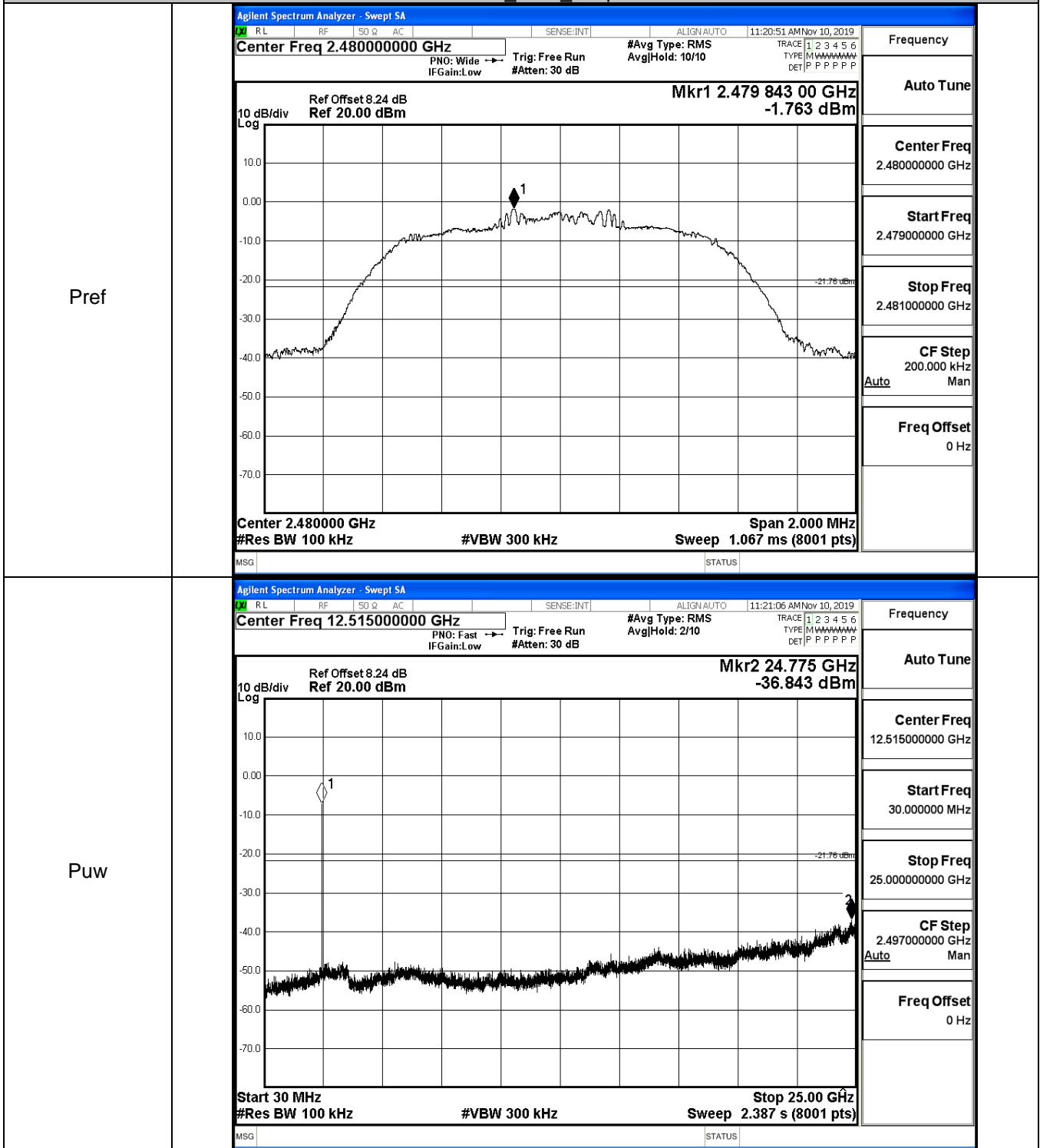
$\pi/4$ DQPSK_LCH_Graphs



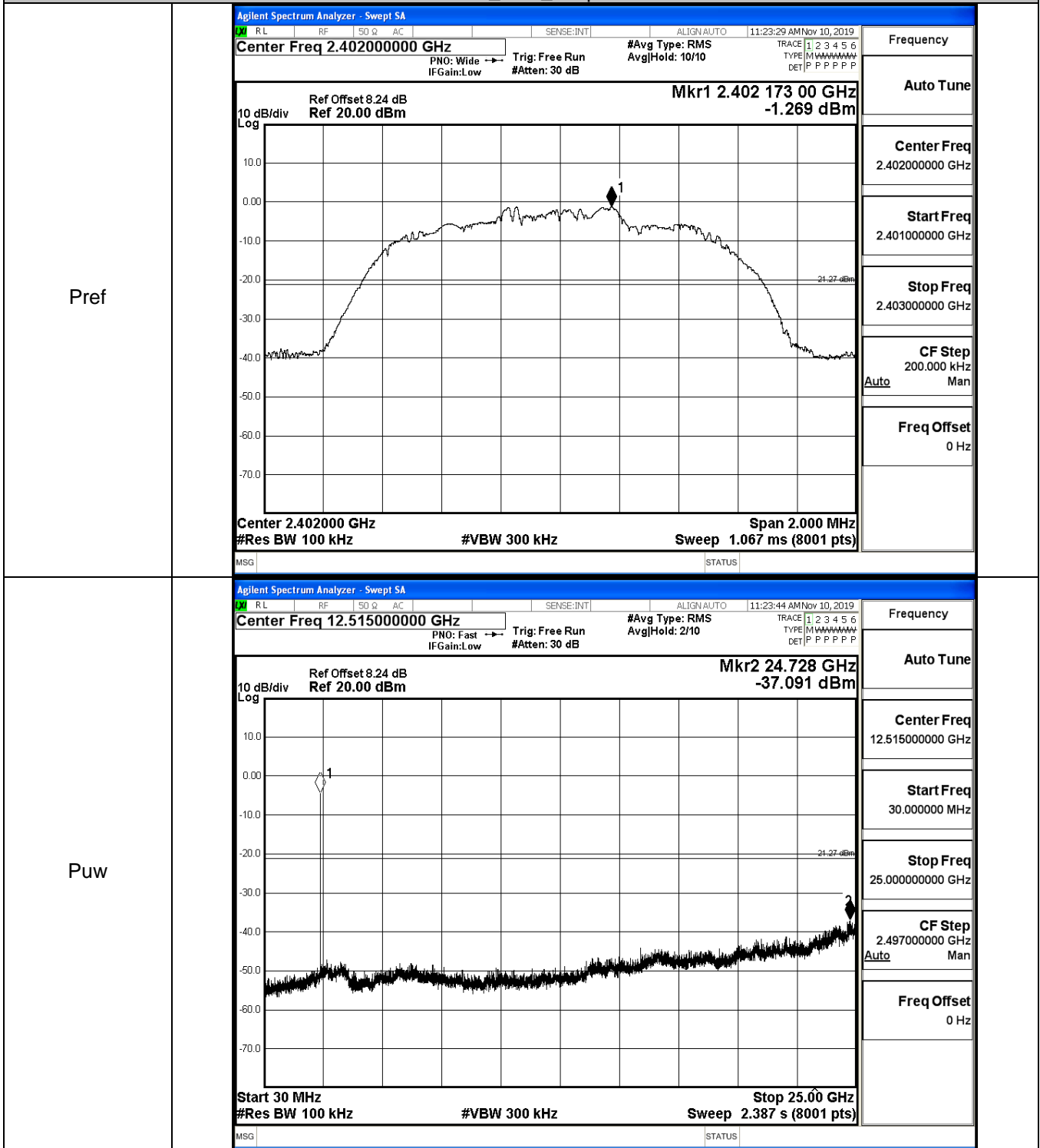
$\pi/4$ DQPSK_MCH_Graphs



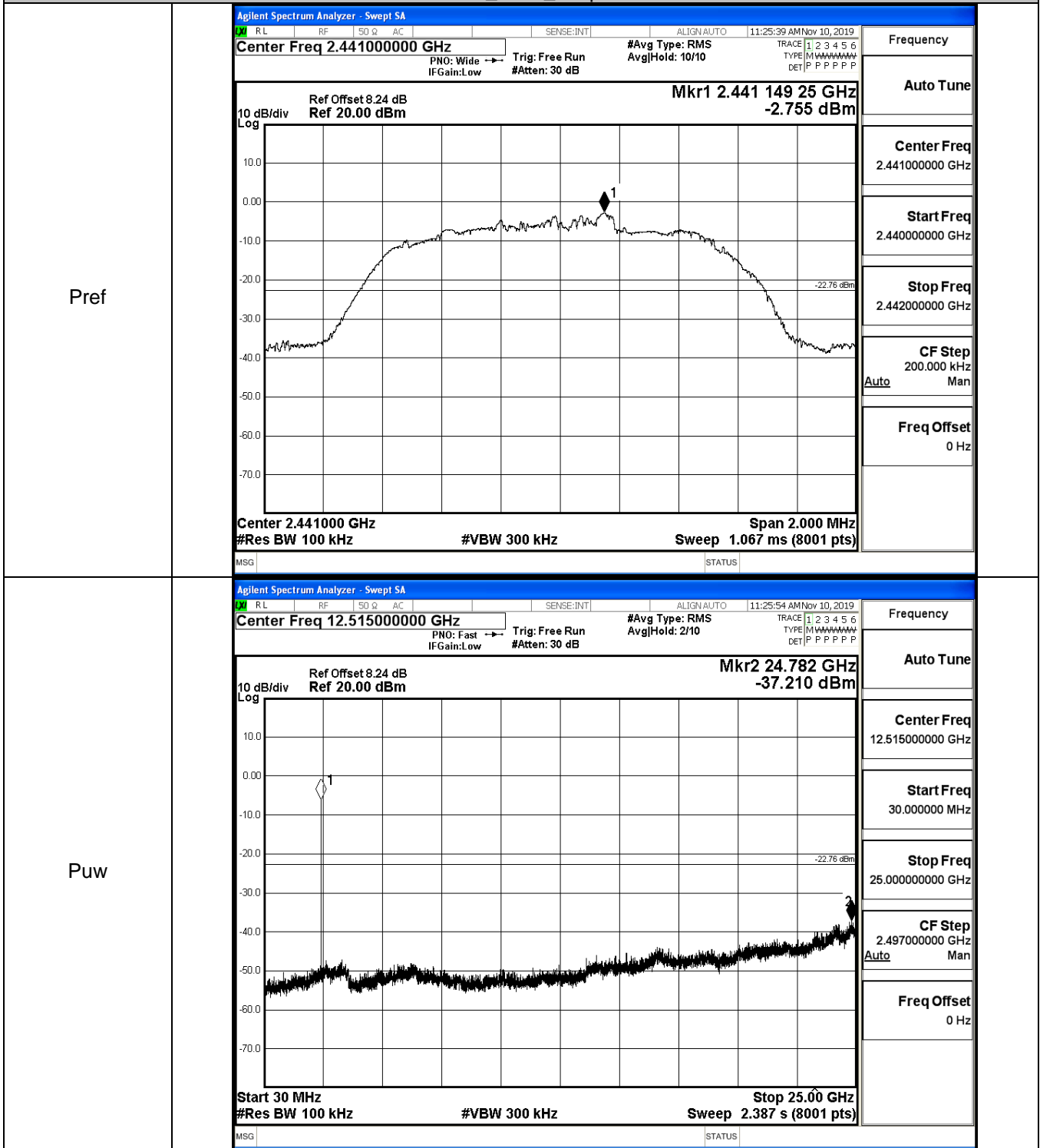
$\pi/4$ DQPSK_HCH_Graphs



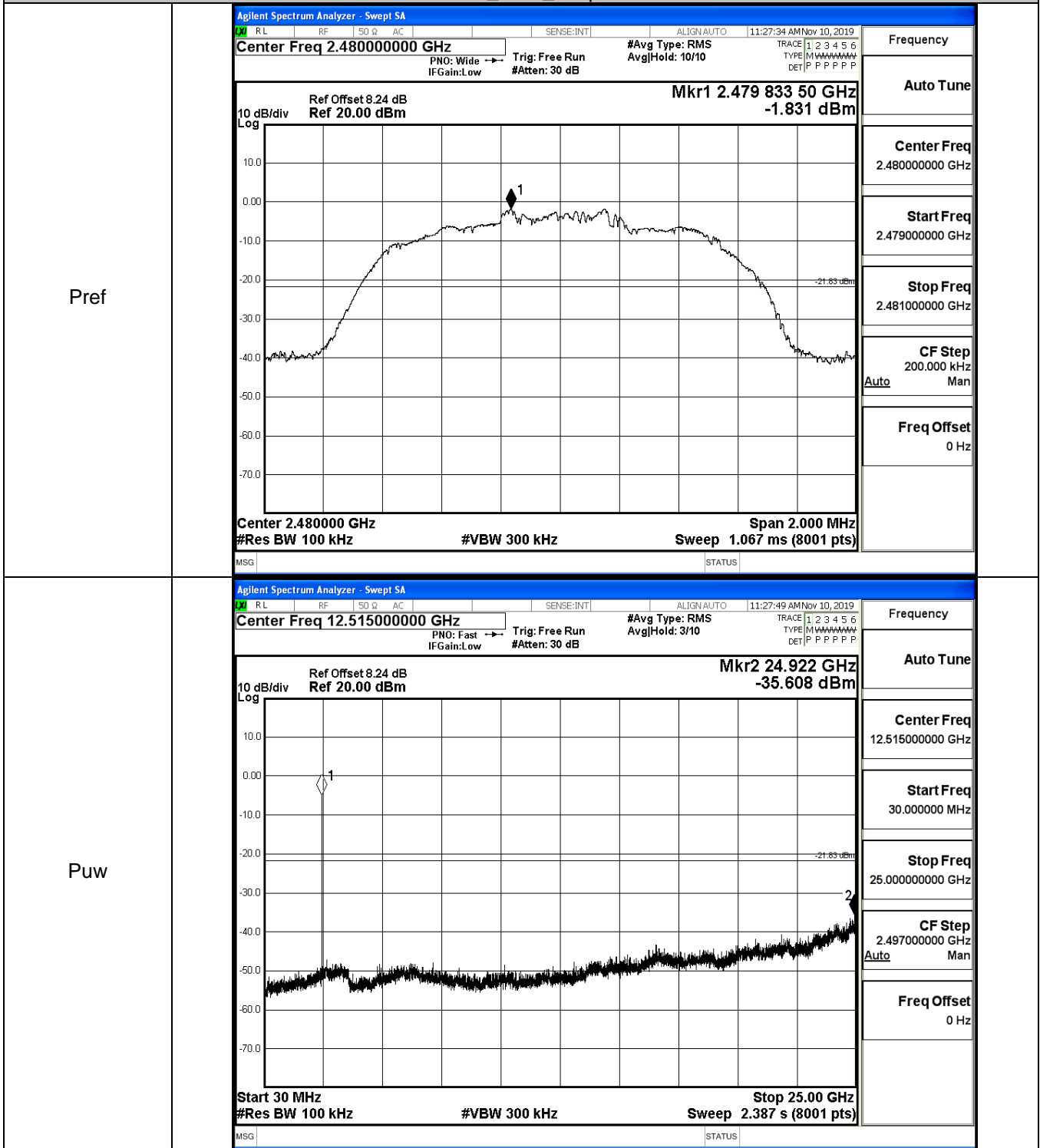
8DPSK_LCH_Graphs



8DPSK_MCH_Graphs



8DPSK_HCH_Graphs

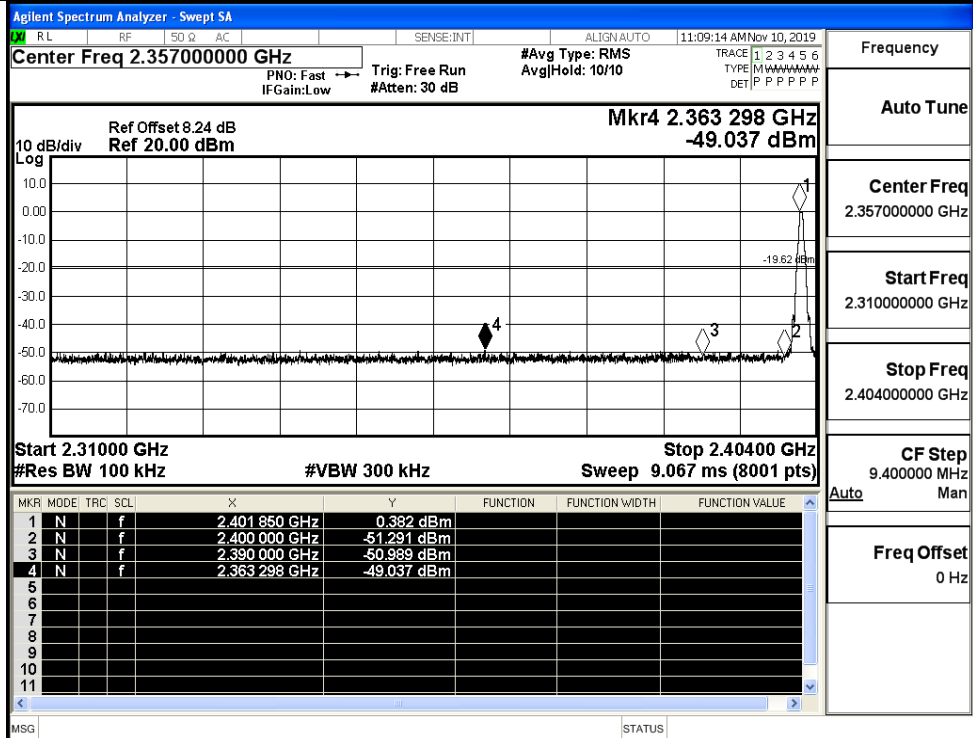


A.7 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	0.382	Off	-49.037	-19.62	PASS
			1.054	On	-48.943	-18.95	PASS
	HCH	2480	-0.530	Off	-48.186	-20.53	PASS
			0.916	On	-48.550	-19.08	PASS
$\pi/4$ DQPSK	LCH	2402	-1.383	Off	-49.040	-21.38	PASS
			-0.630	On	-48.416	-20.63	PASS
	HCH	2480	-1.781	Off	-48.111	-21.78	PASS
			-0.618	On	-47.243	-20.62	PASS
8DPSK	LCH	2402	-0.980	Off	-48.746	-20.98	PASS
			-0.186	On	-48.335	-20.19	PASS
	HCH	2480	-1.694	Off	-47.802	-21.69	PASS
			-0.736	On	-47.235	-20.74	PASS

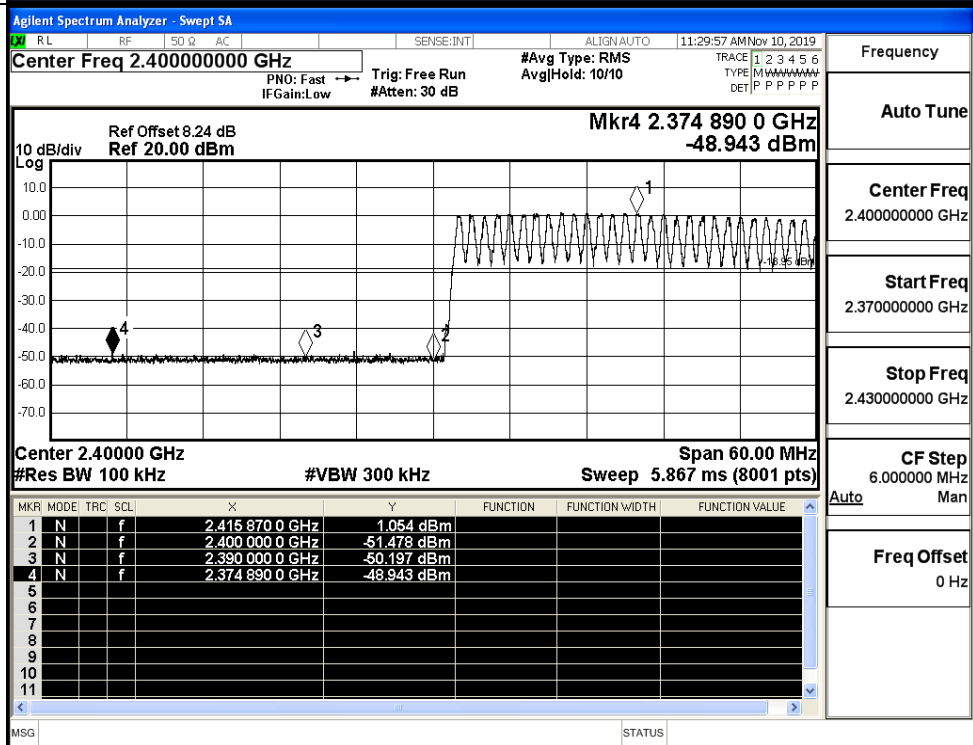
Test Graphs

GFSK/LCH/No Hop



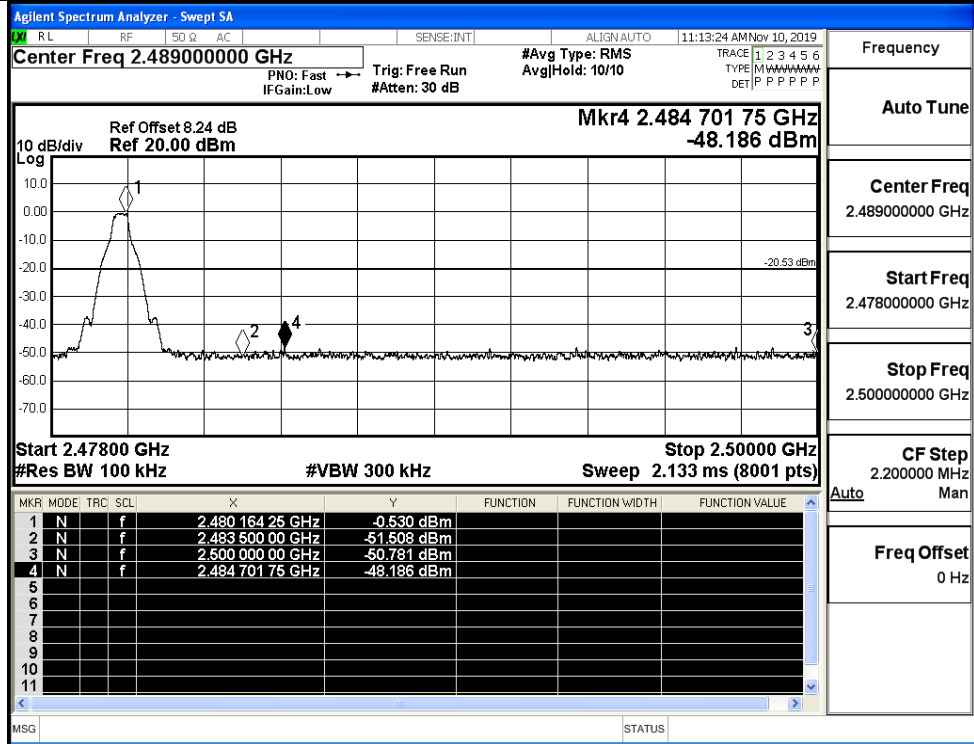
Frequency	2.357000000 GHz
Auto Tune	
Center Freq	2.357000000 GHz
Start Freq	2.310000000 GHz
Stop Freq	2.404000000 GHz
CF Step	9.400000 MHz
Auto	Man
Freq Offset	0 Hz

GFSK/LCH/Hop

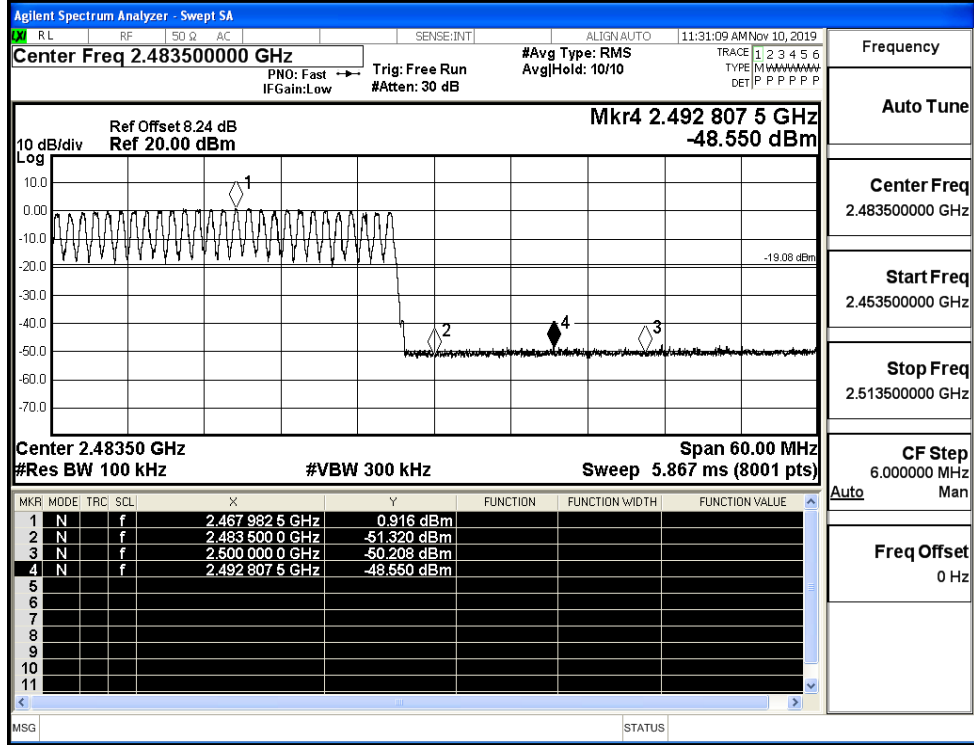


Frequency	2.400000000 GHz
Auto Tune	
Center Freq	2.400000000 GHz
Start Freq	2.370000000 GHz
Stop Freq	2.430000000 GHz
CF Step	6.000000 MHz
Auto	Man
Freq Offset	0 Hz

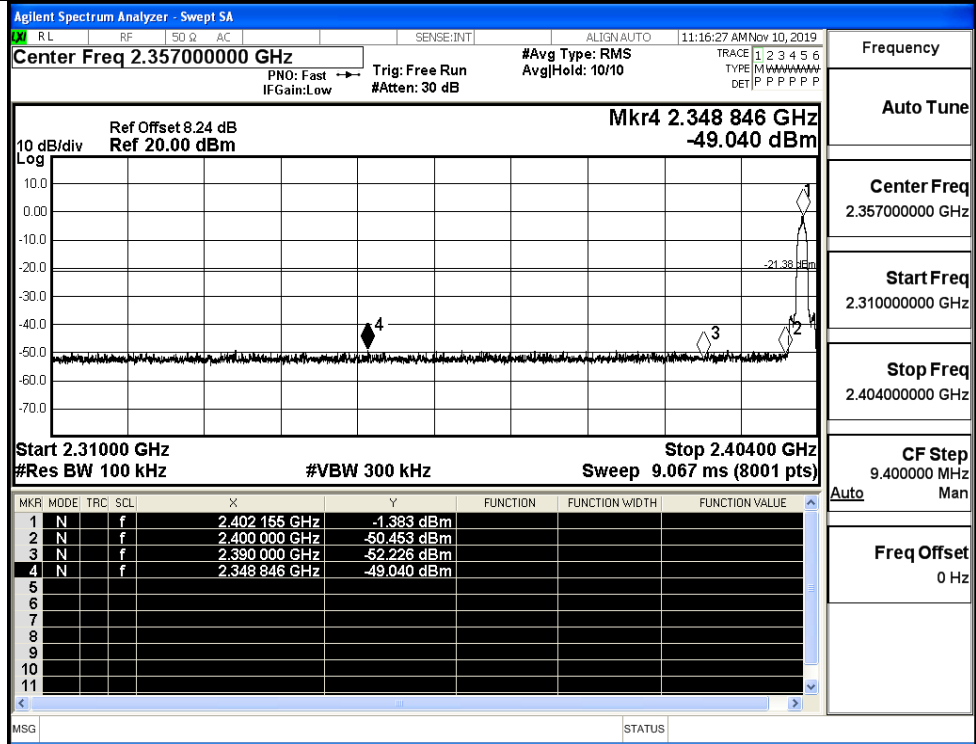
GFSK/HCH/No Hop



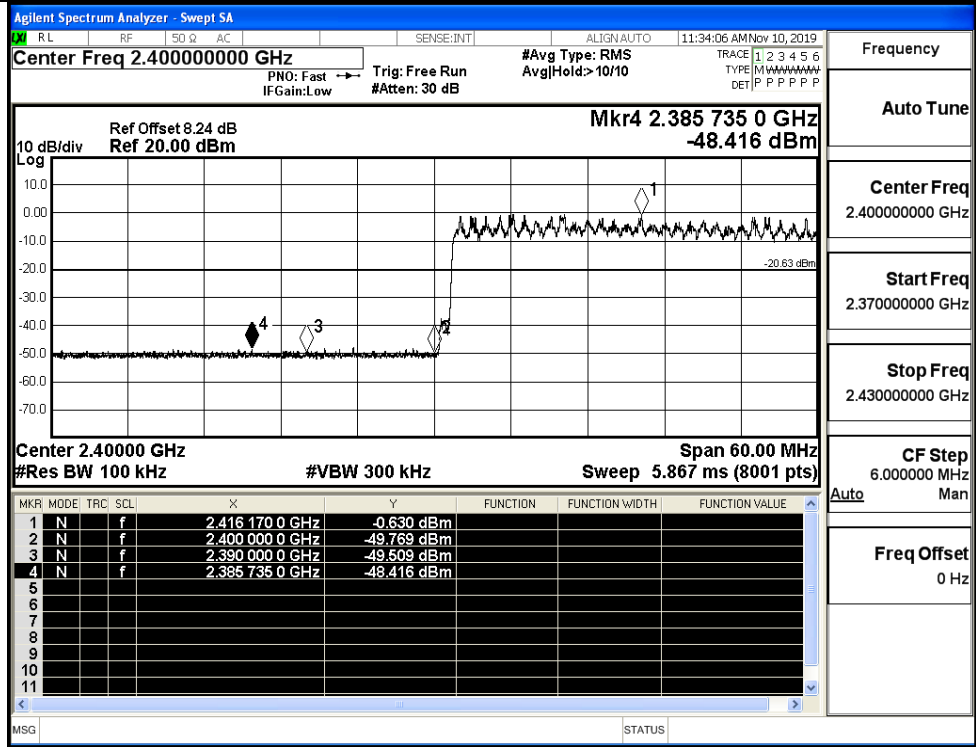
GFSK/HCH/Hop



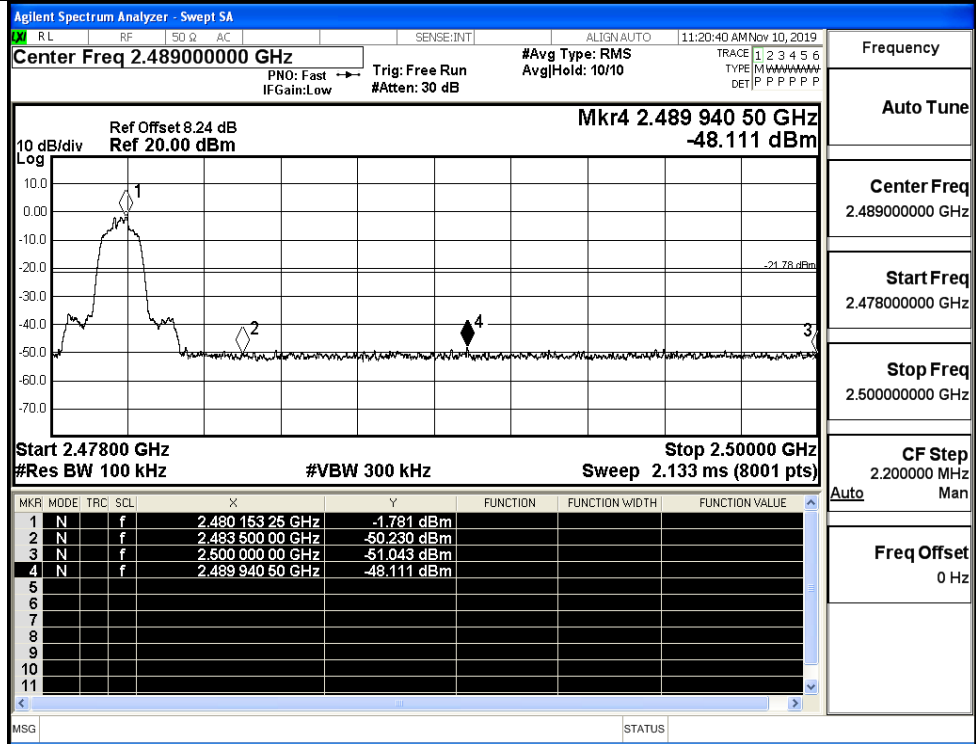
$\pi/4$ DQPSK/LCH/No
Hop



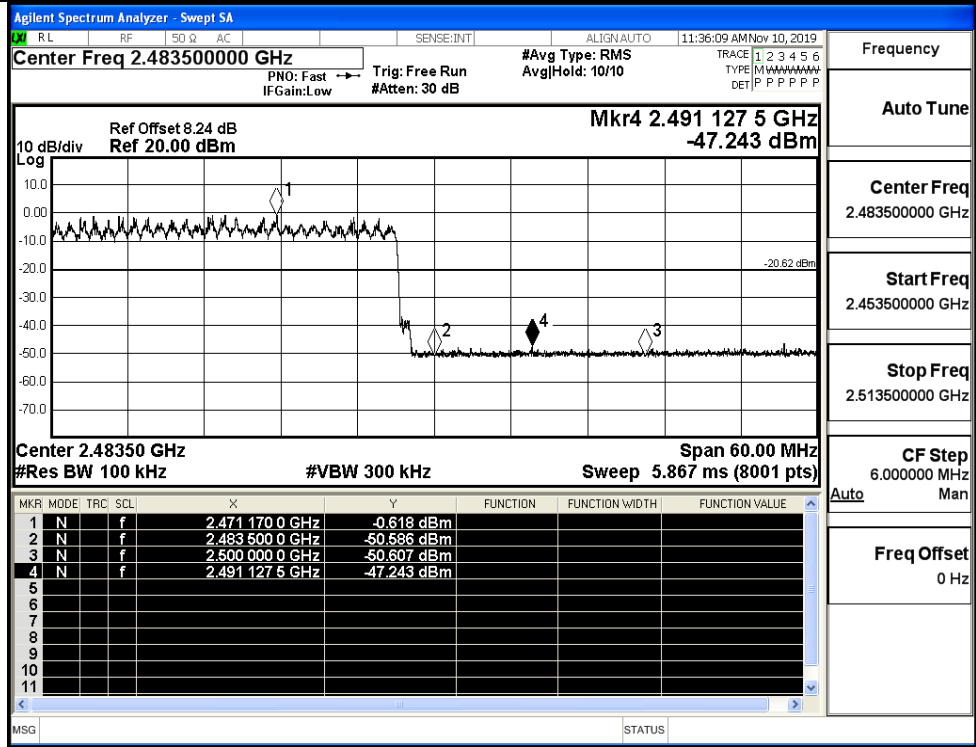
$\pi/4$ DQPSK/LCH/Hop



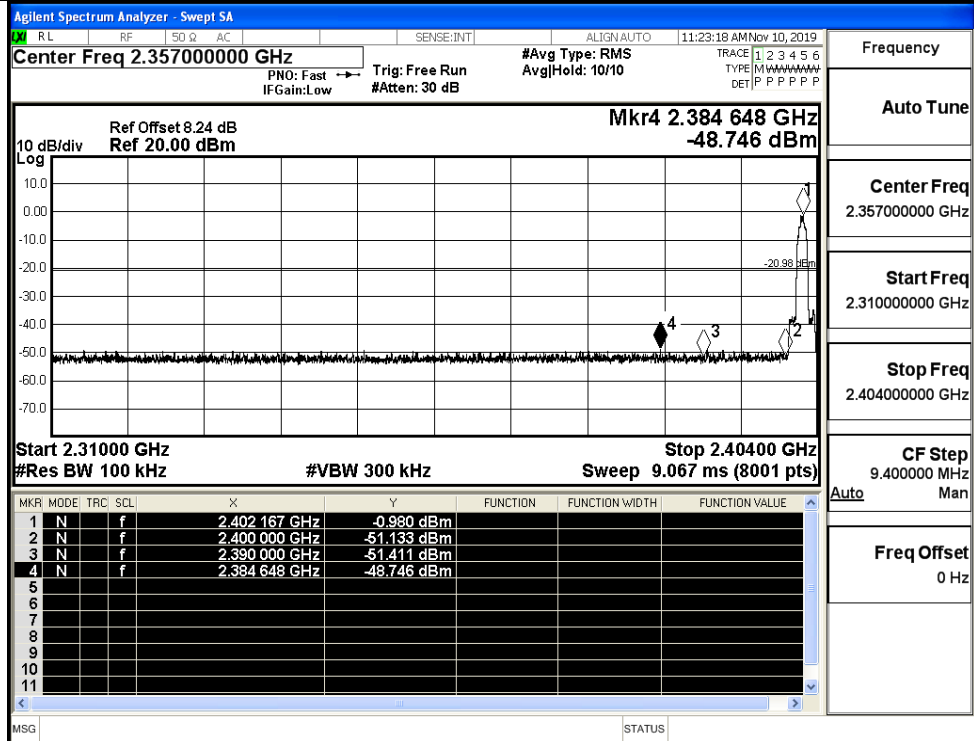
π /4DQPSK/HCH/No
Hop



π /4DQPSK/HCH/Hop

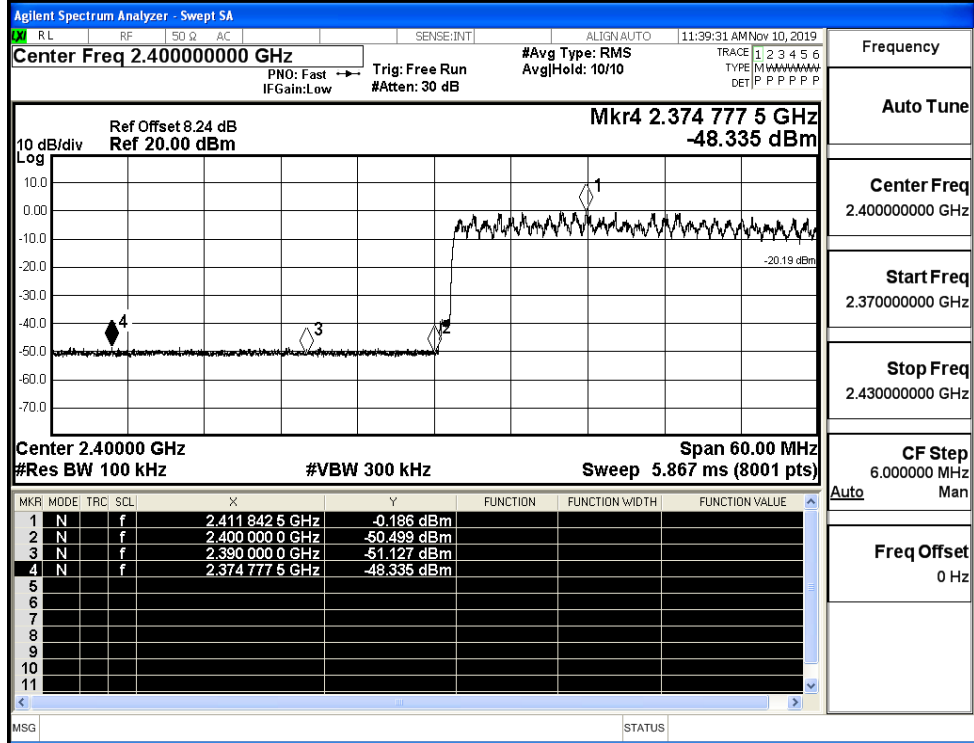


8DPSK/LCH/No Hop



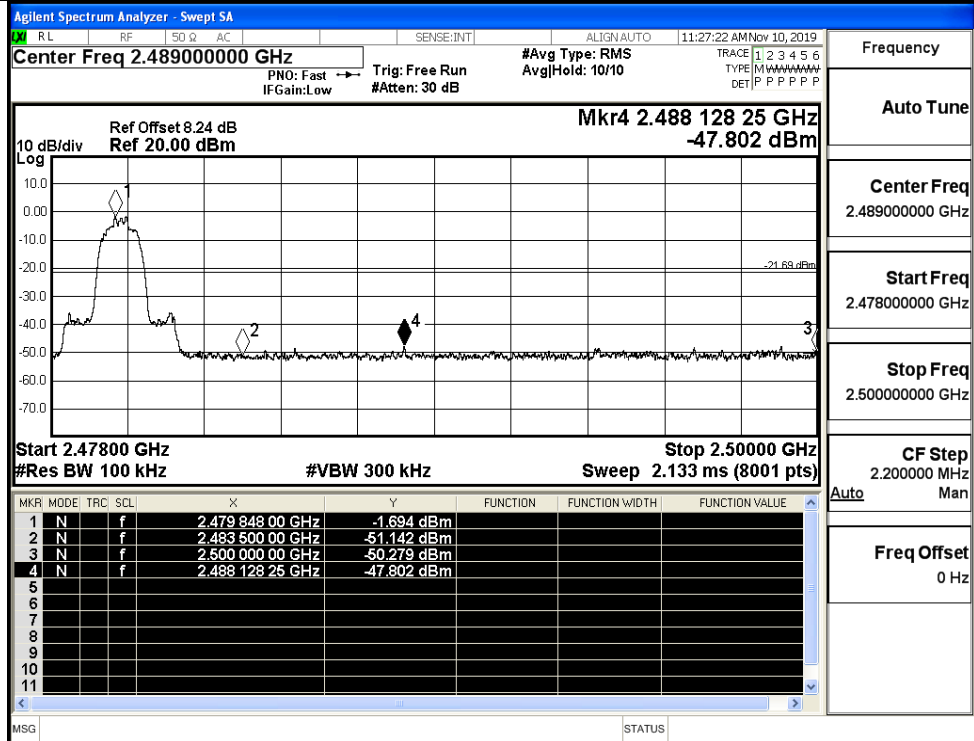
Frequency
Auto Tune
Center Freq
2.357000000 GHz
Start Freq
2.310000000 GHz
Stop Freq
2.404000000 GHz
CF Step
9.400000 MHz
Auto Man
Freq Offset
0 Hz

8DPSK/LCH/Hop



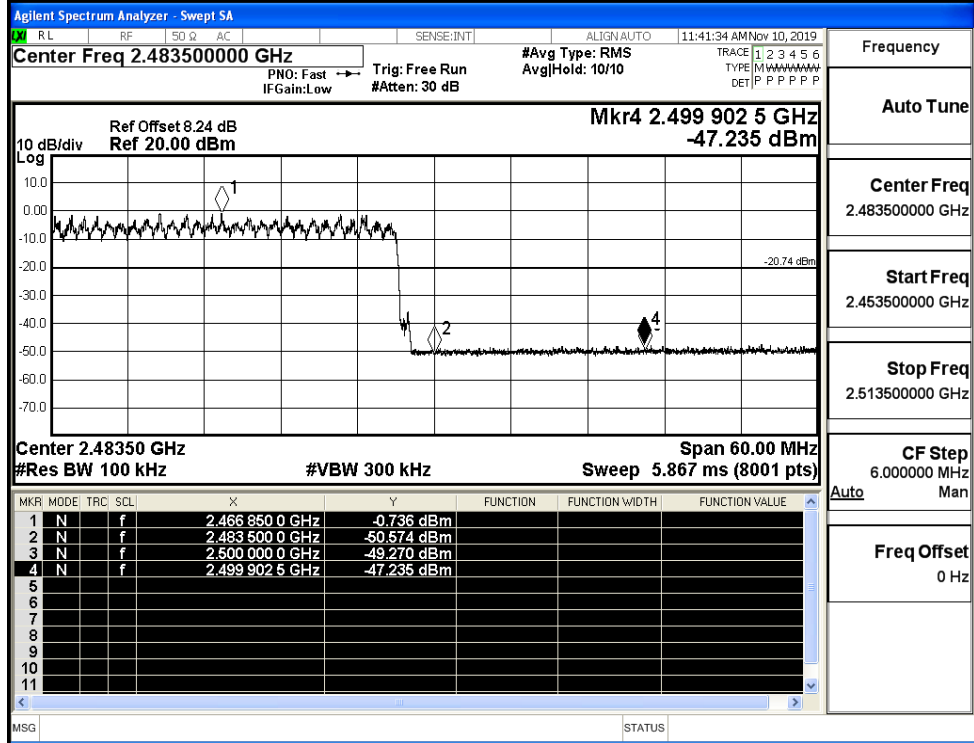
Frequency
Auto Tune
Center Freq
2.400000000 GHz
Start Freq
2.370000000 GHz
Stop Freq
2.430000000 GHz
CF Step
6.000000 MHz
Auto Man
Freq Offset
0 Hz

8DPSK/HCH/No Hop



Frequency	2.489000000 GHz
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

8DPSK/HCH/Hop

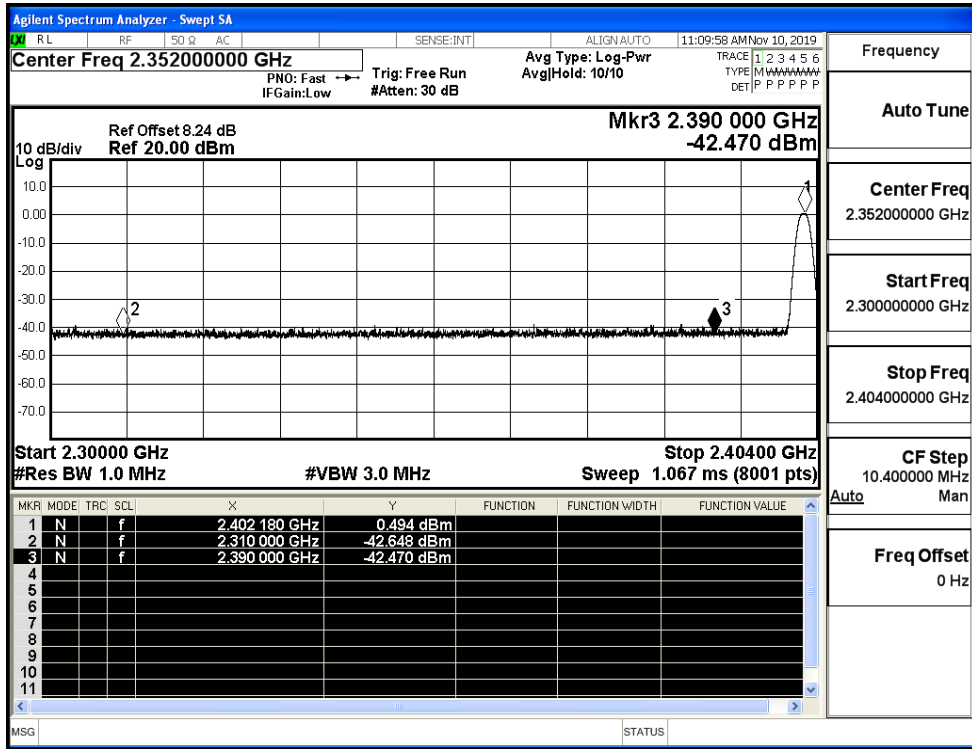


Frequency	2.483500000 GHz
Auto Tune	
Center Freq	2.483500000 GHz
Start Freq	2.463500000 GHz
Stop Freq	2.513500000 GHz
CF Step	6.000000 MHz
Freq Offset	0 Hz

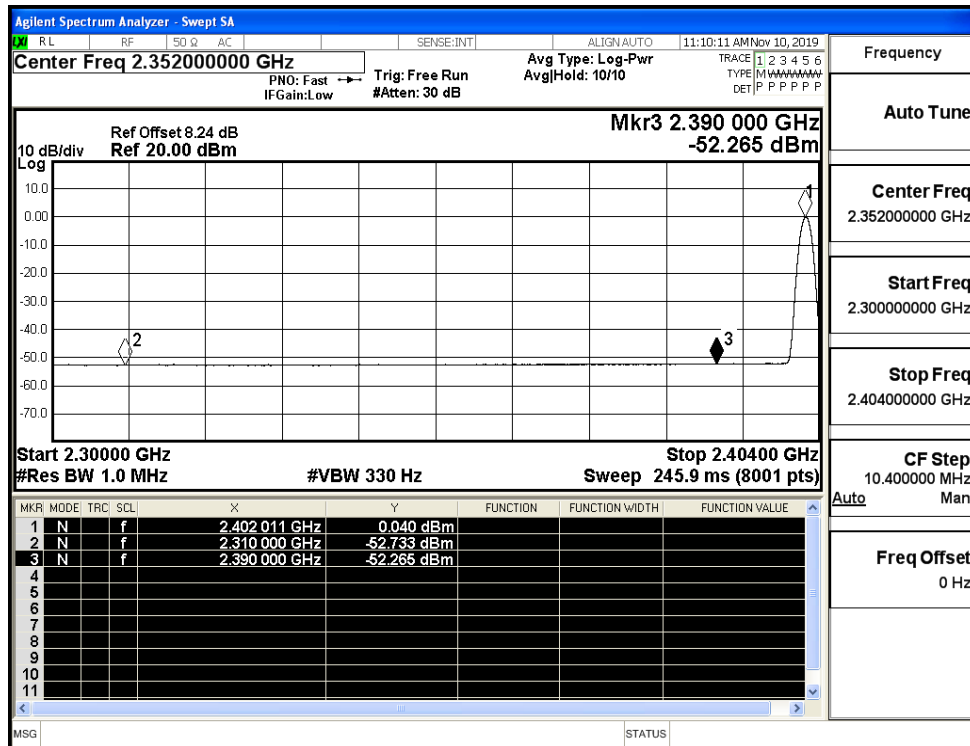
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-42.65	2.0	0	52.61	PEAK	74	PASS
	Off	2310.0	-52.73	2.0	0	42.52	AV	54	PASS
	Off	2390.0	-42.47	2.0	0	52.79	PEAK	74	PASS
	Off	2390.0	-52.27	2.0	0	42.99	AV	54	PASS
	Off	2483.5	-42.02	2.0	0	53.24	PEAK	74	PASS
	Off	2483.5	-51.86	2.0	0	43.40	AV	54	PASS
	Off	2500.0	-41.83	2.0	0	53.43	PEAK	74	PASS
	Off	2500.0	-51.56	2.0	0	43.69	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.06	2.0	0	52.19	PEAK	74	PASS
	Off	2310.0	-52.61	2.0	0	42.65	AV	54	PASS
	Off	2390.0	-41.97	2.0	0	53.29	PEAK	74	PASS
	Off	2390.0	-52.29	2.0	0	42.97	AV	54	PASS
	Off	2483.5	-41.39	2.0	0	53.87	PEAK	74	PASS
	Off	2483.5	-51.79	2.0	0	43.46	AV	54	PASS
	Off	2500.0	-42.59	2.0	0	52.66	PEAK	74	PASS
	Off	2500.0	-51.71	2.0	0	43.55	AV	54	PASS
8DPSK	Off	2310.0	-42.17	2.0	0	53.09	PEAK	74	PASS
	Off	2310.0	-52.67	2.0	0	42.59	AV	54	PASS
	Off	2390.0	-41.98	2.0	0	53.28	PEAK	74	PASS
	Off	2390.0	-52.24	2.0	0	43.02	AV	54	PASS
	Off	2483.5	-42.51	2.0	0	52.75	PEAK	74	PASS
	Off	2483.5	-51.70	2.0	0	43.55	AV	54	PASS
	Off	2500.0	-41.47	2.0	0	53.79	PEAK	74	PASS
	Off	2500.0	-51.68	2.0	0	43.58	AV	54	PASS

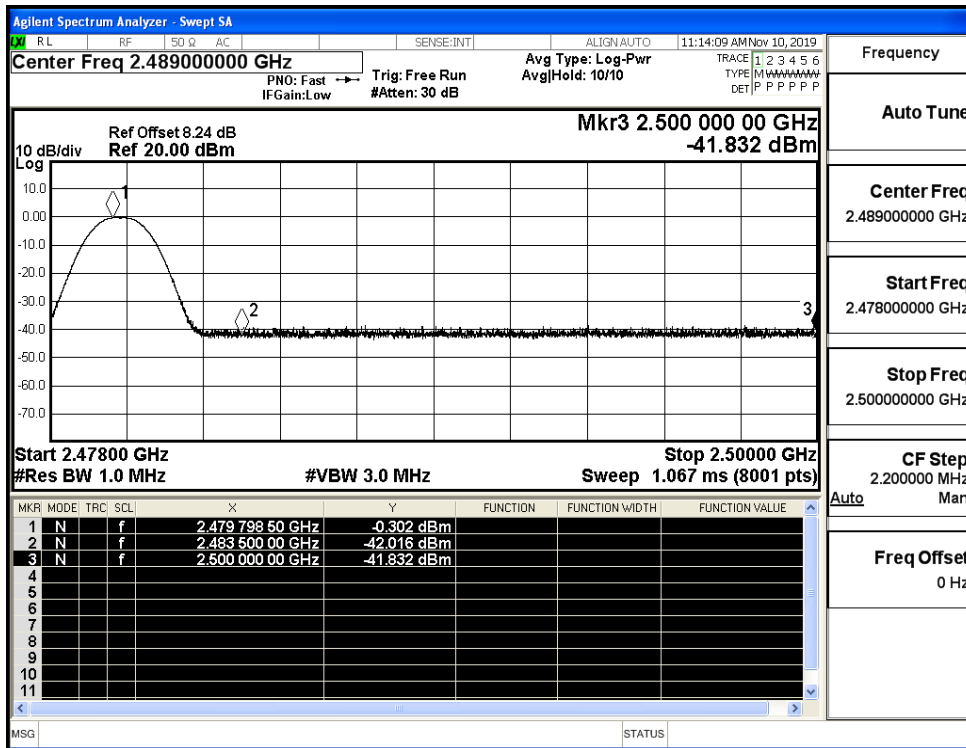
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



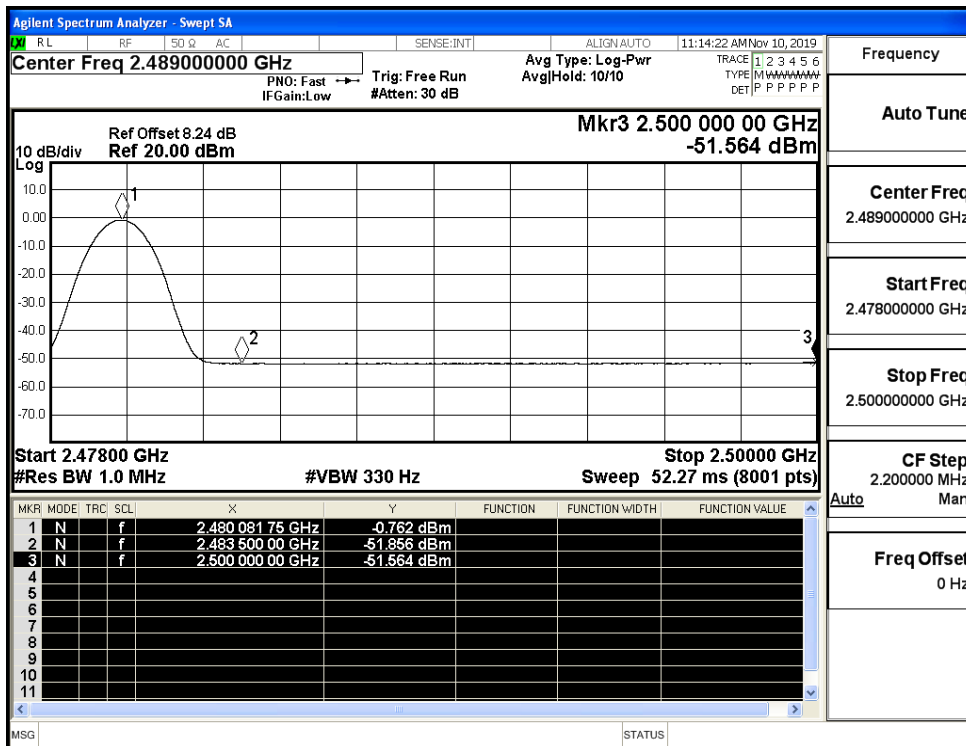
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



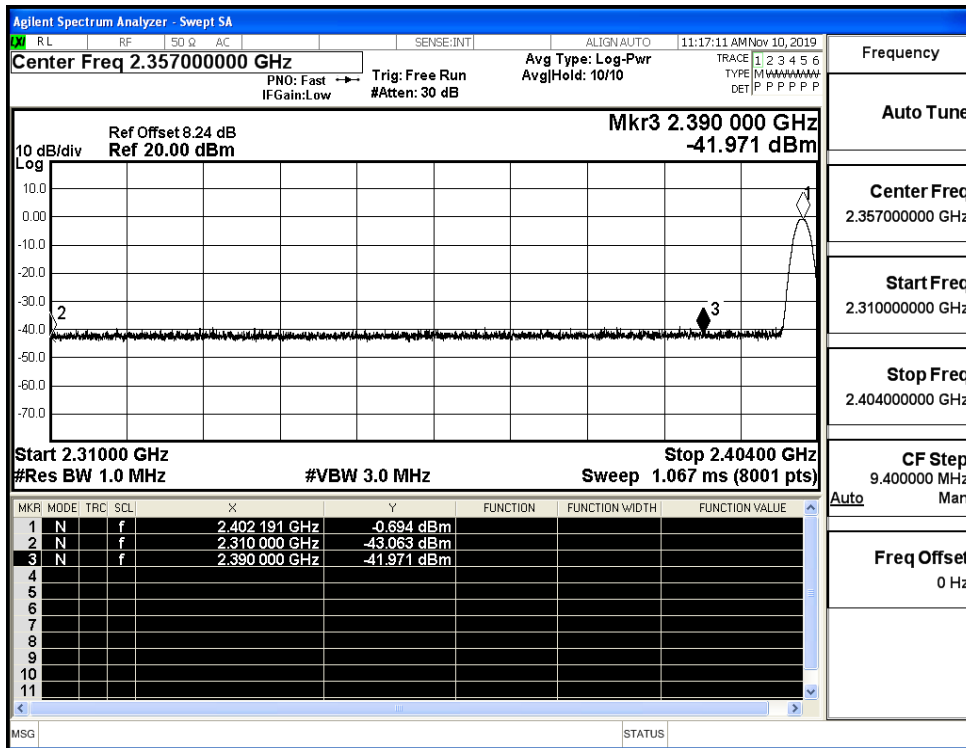
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



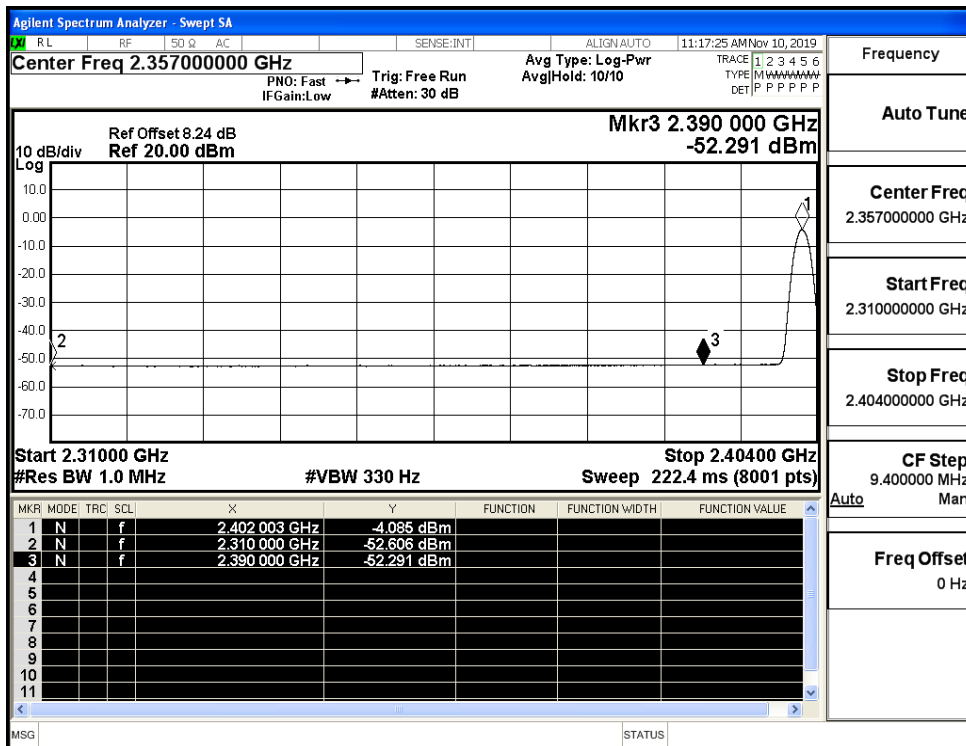
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



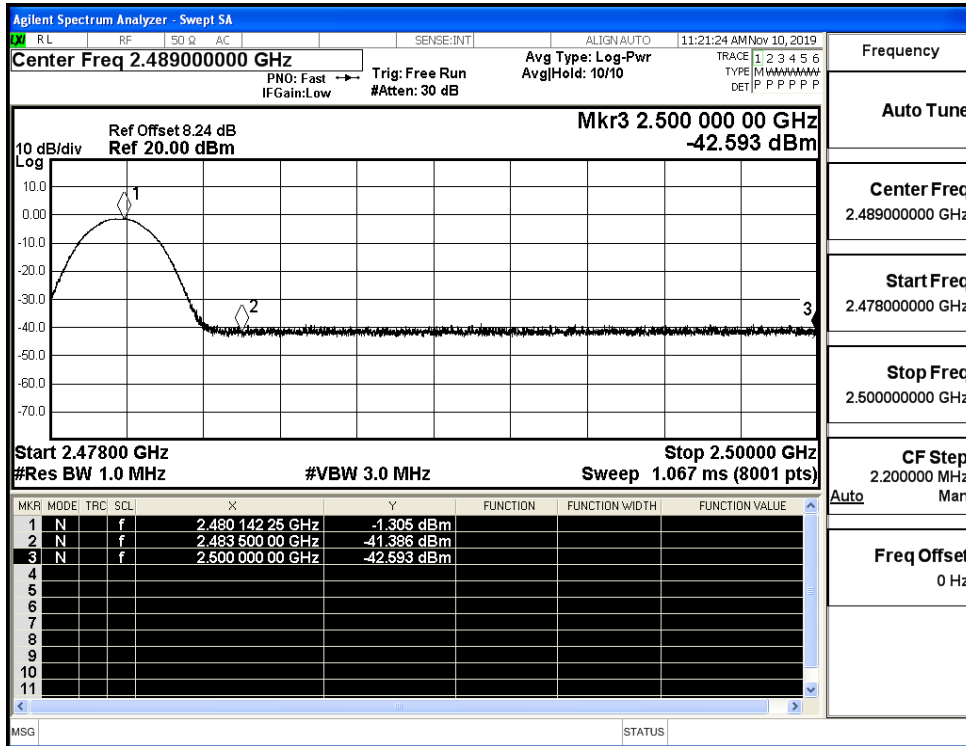
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)



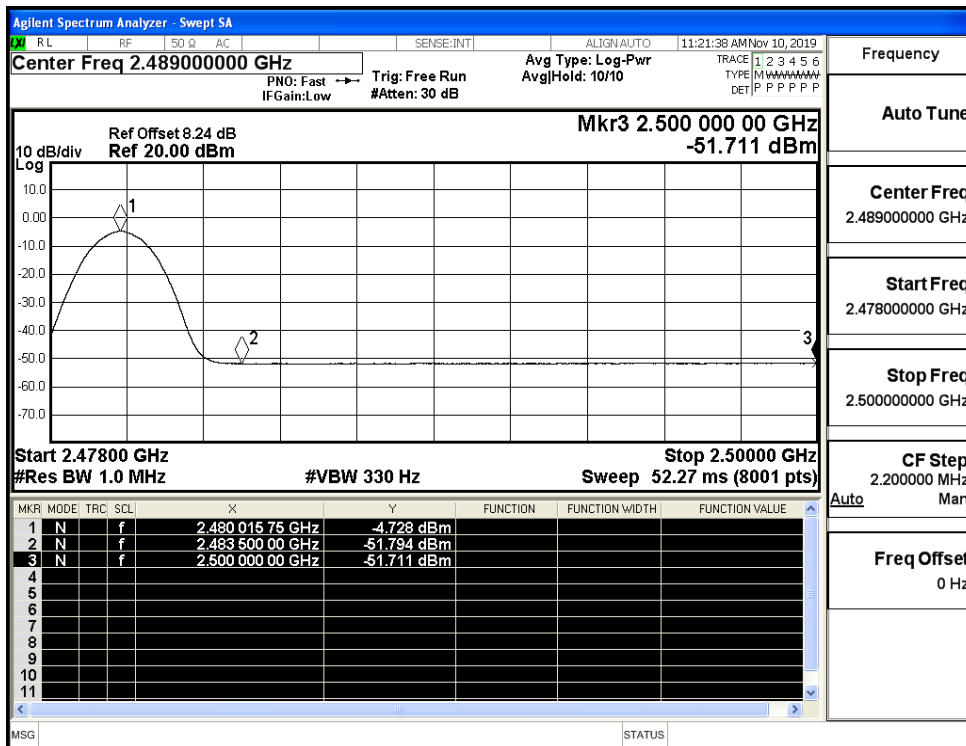
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)



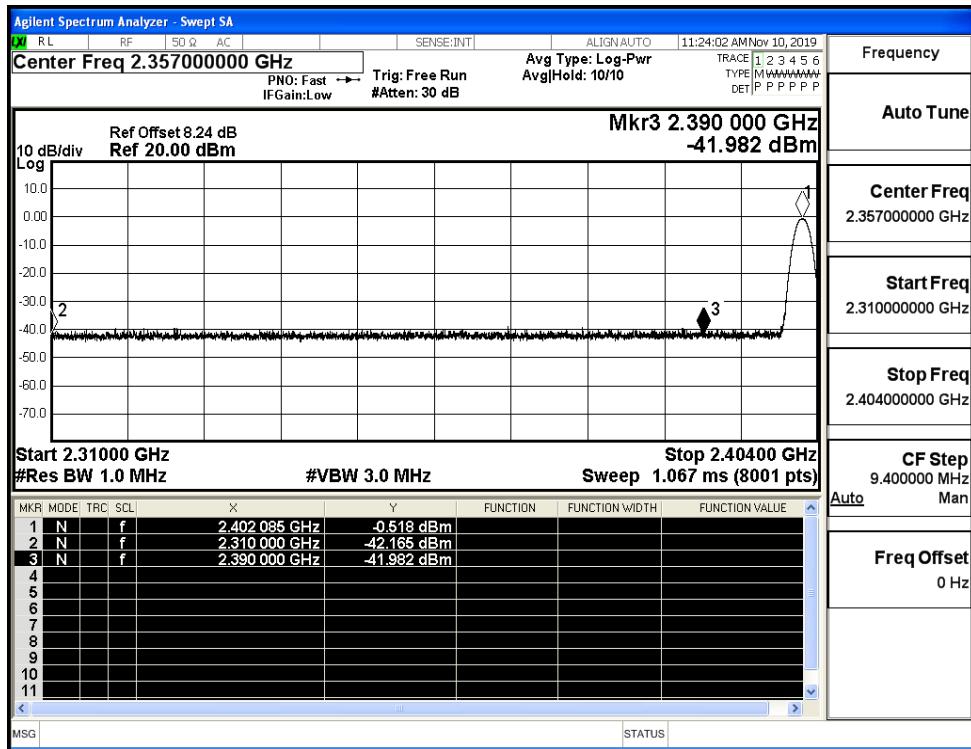
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (High Channel)



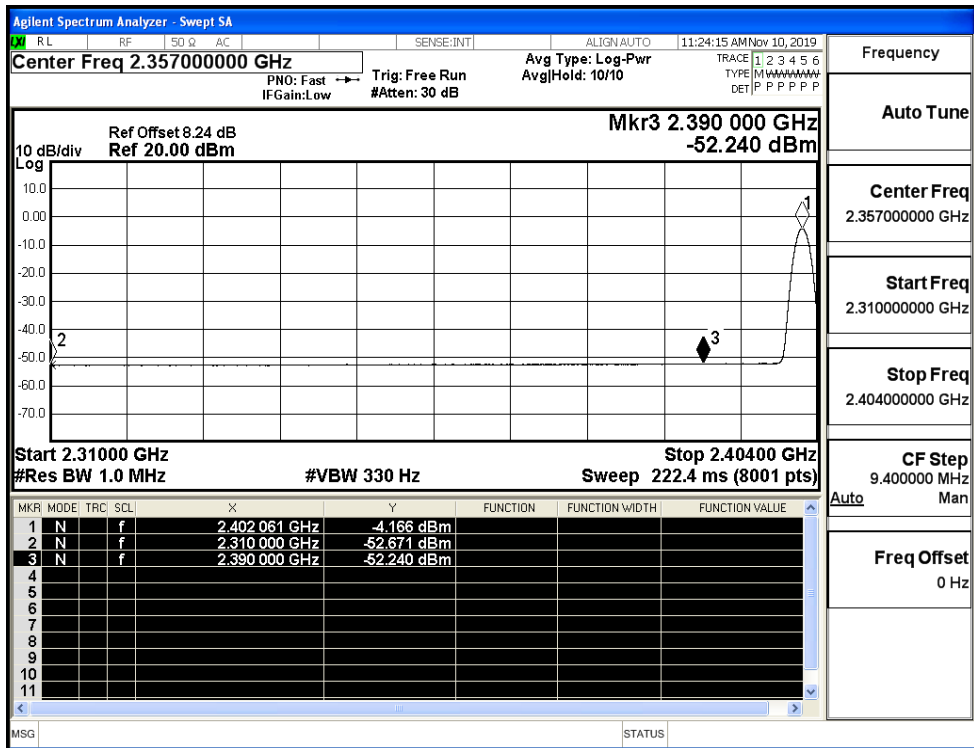
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (High Channel)



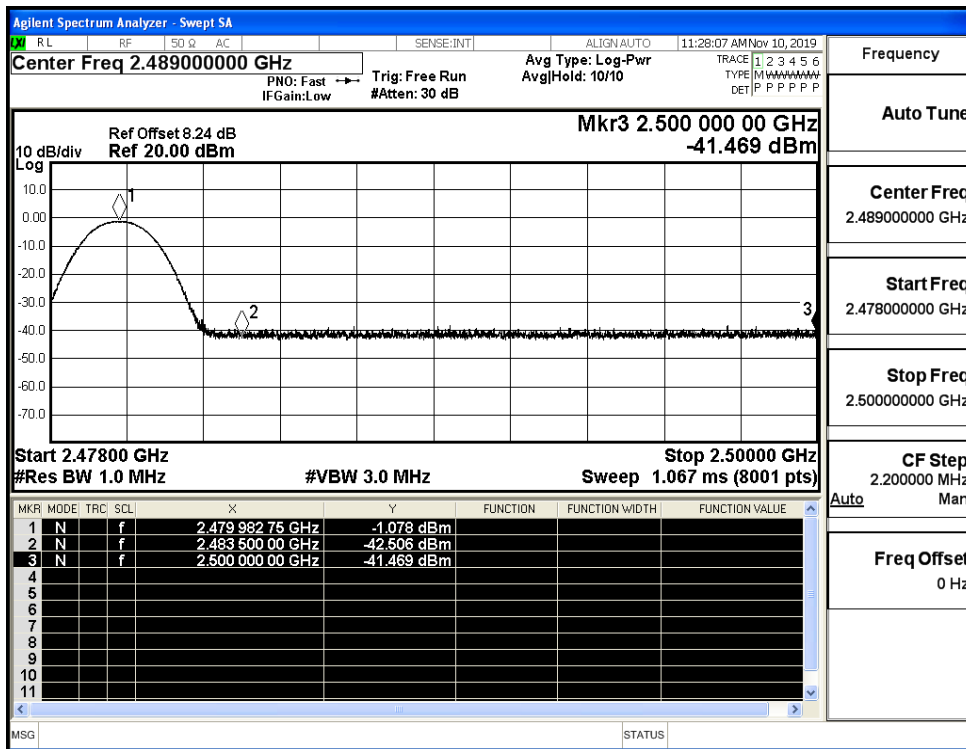
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

