

Appendix A

RF Test Data for BT V4.2(BDR/EDR) (Conducted Measurement)

Product Name: Aroma Diffuser

Trade Mark: N/A

Test Model: Dn-829

Environmental Conditions

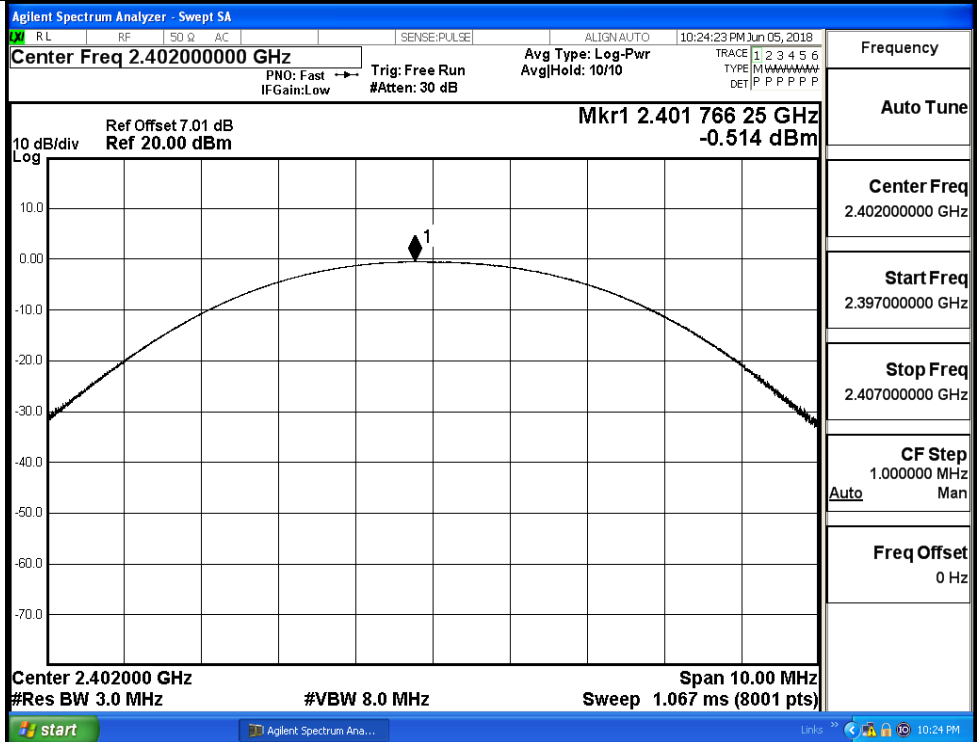
Temperature:	24.6 ° C
Relative Humidity:	54.4%
ATM Pressure:	100.0 kPa
Test Engineer:	WangChuang
Supervised by:	Jayden Zhuo

A.1 Maximum Conducted Peak Output Power

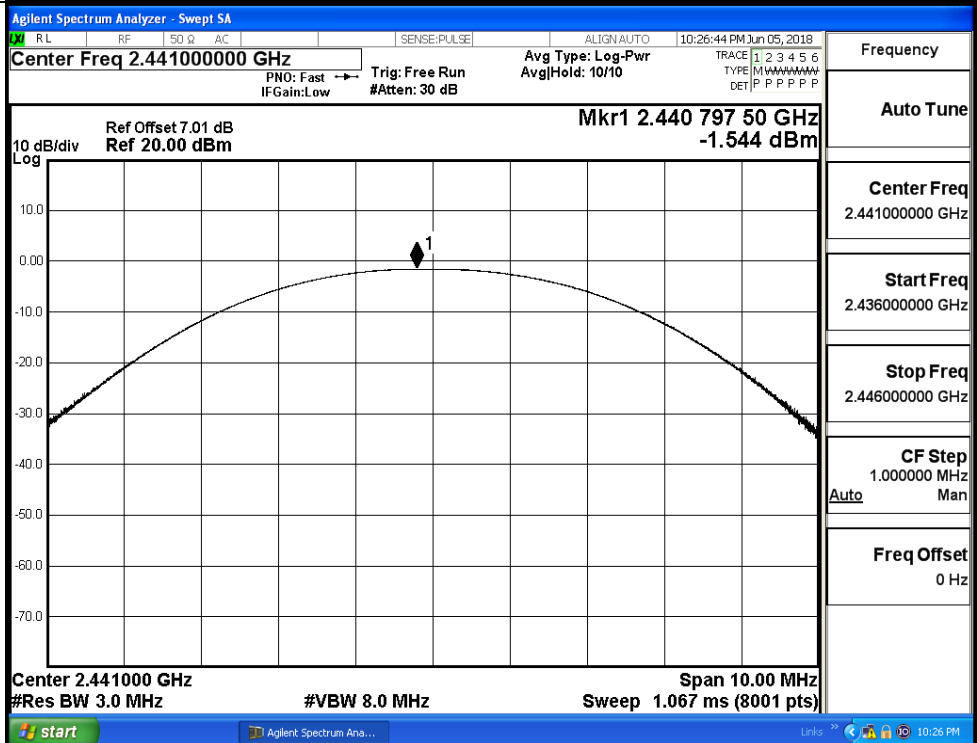
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.514	30	PASS
	MCH	-1.544	30	PASS
	HCH	-1.629	30	PASS
$\pi/4$ DQPSK	LCH	-1.651	21	PASS
	MCH	-2.341	21	PASS
	HCH	-2.513	21	PASS

Test Graphs

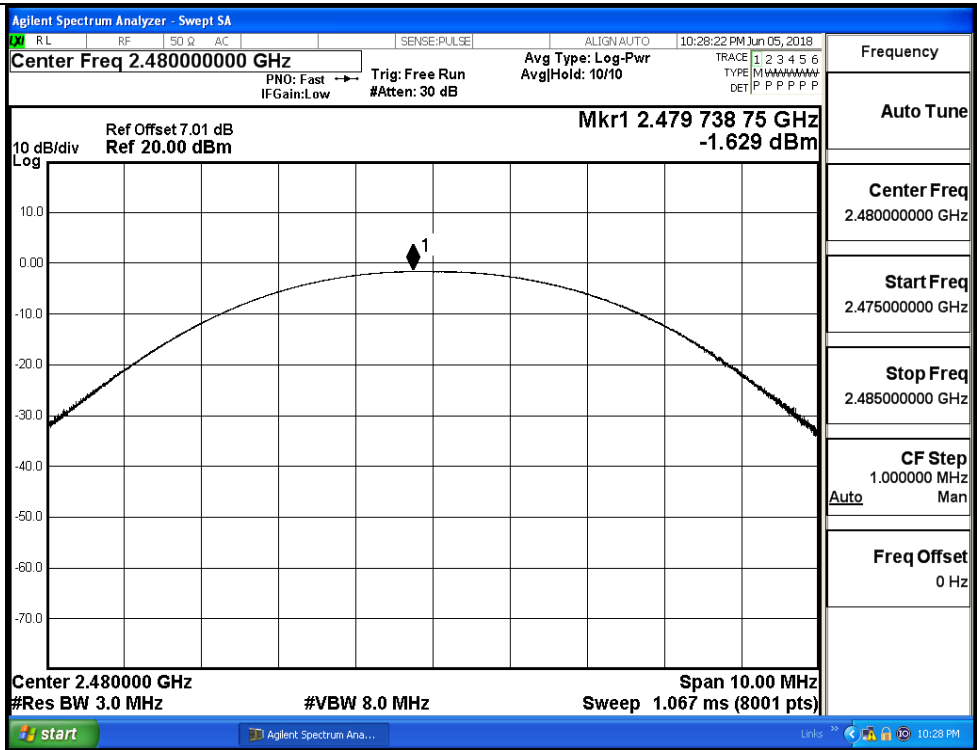
GFSK/LCH



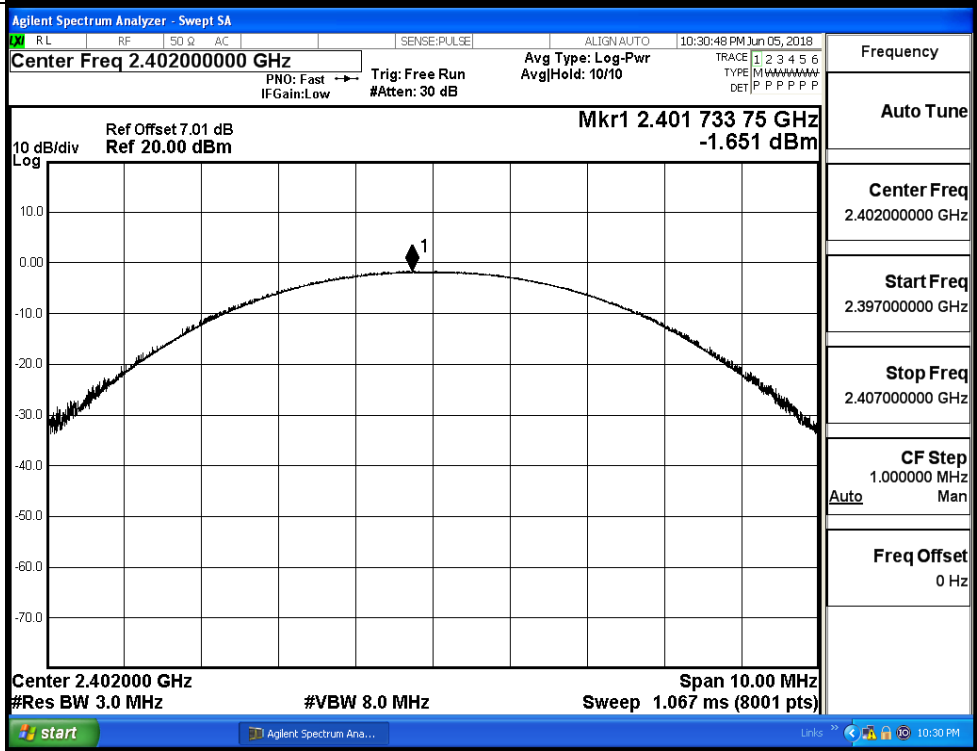
GFSK/MCH



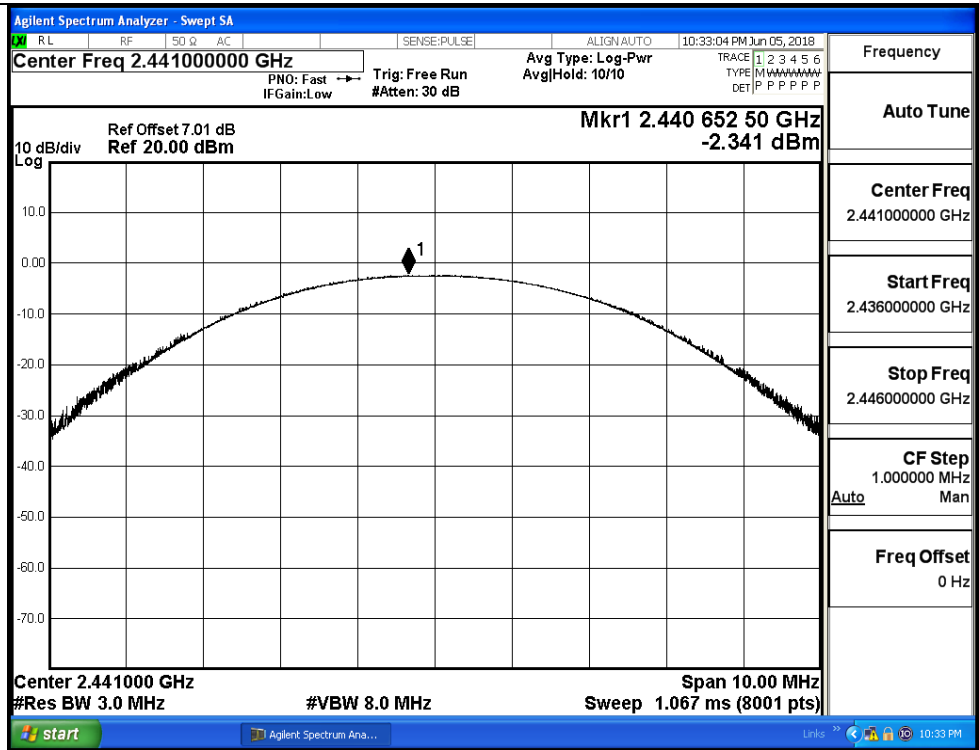
GFSK/HCH



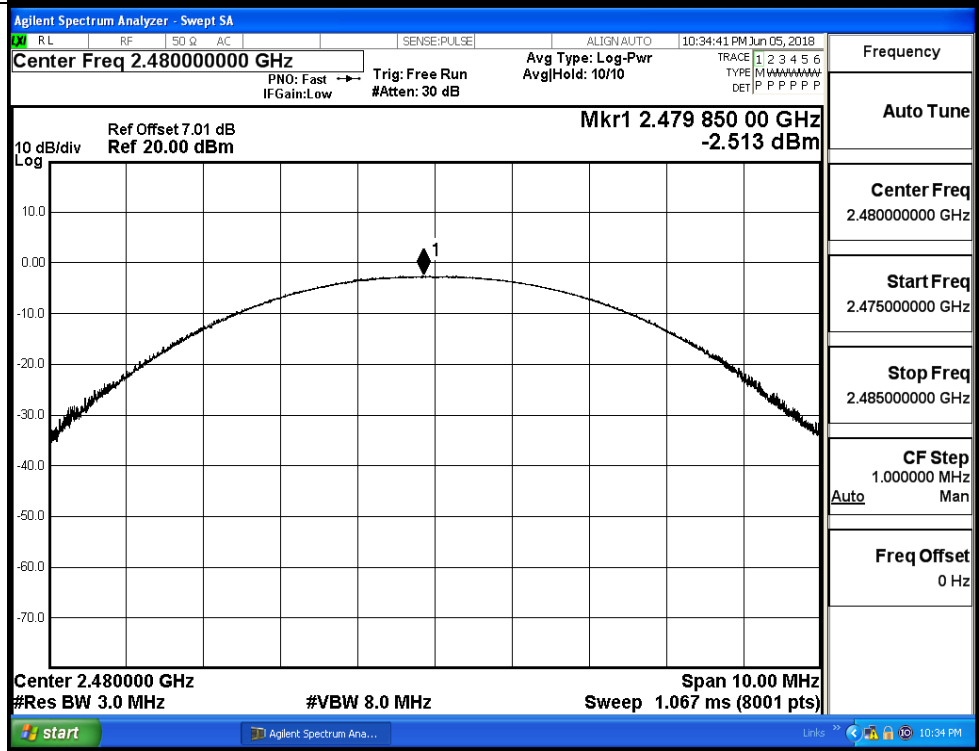
$\pi/4$ DQPSK/LCH



π /4DQPSK/MCH

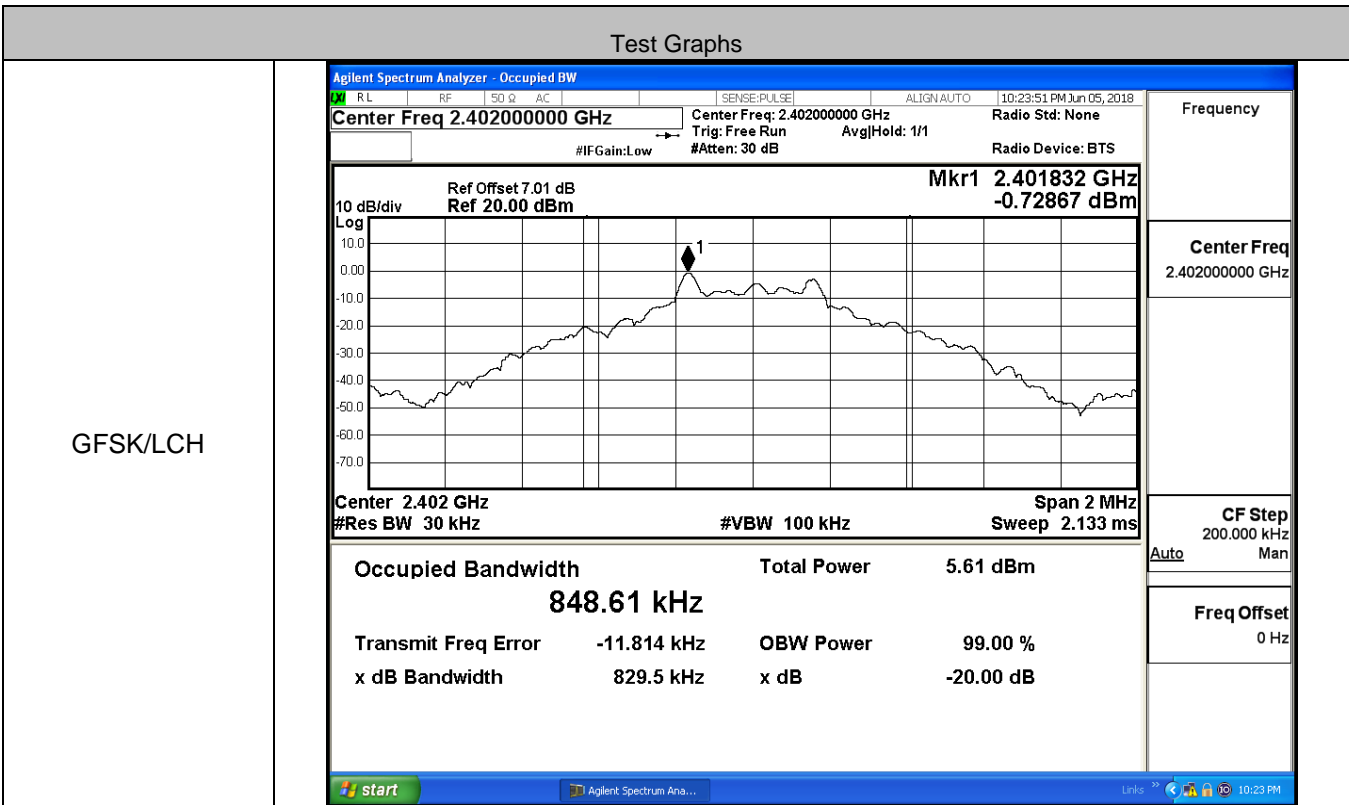


π /4DQPSK/HCH

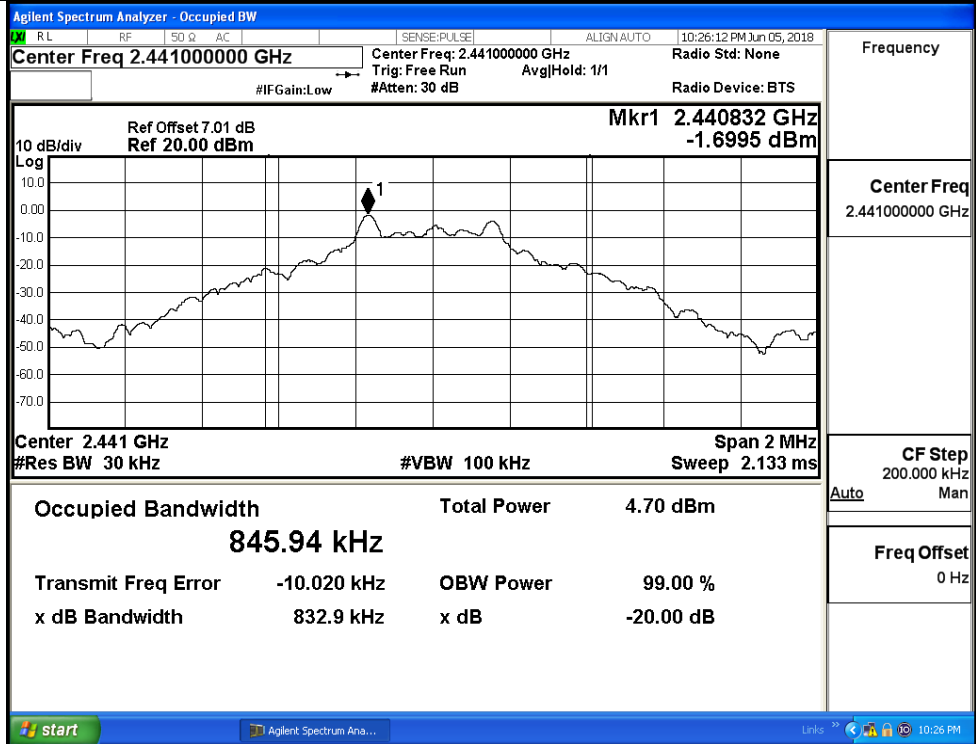


A.2 20dB Bandwidth

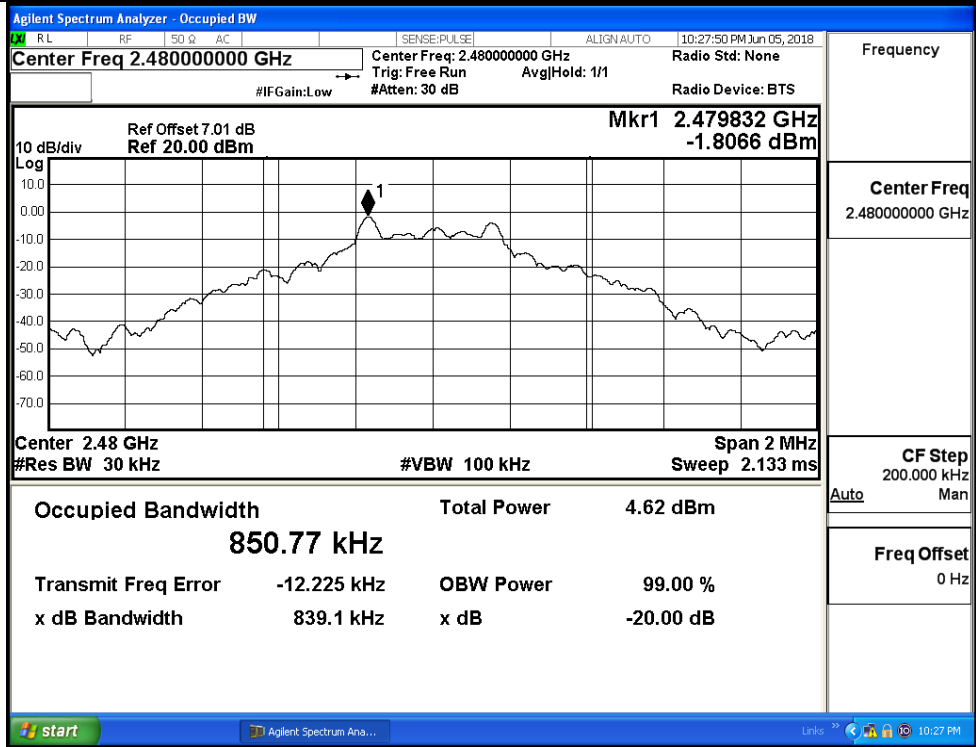
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.8295	Not Specified	PASS
	MCH	0.8329	Not Specified	PASS
	HCH	0.8391	Not Specified	PASS
π/4DQPSK	LCH	1.120	Not Specified	PASS
	MCH	1.113	Not Specified	PASS
	HCH	1.115	Not Specified	PASS



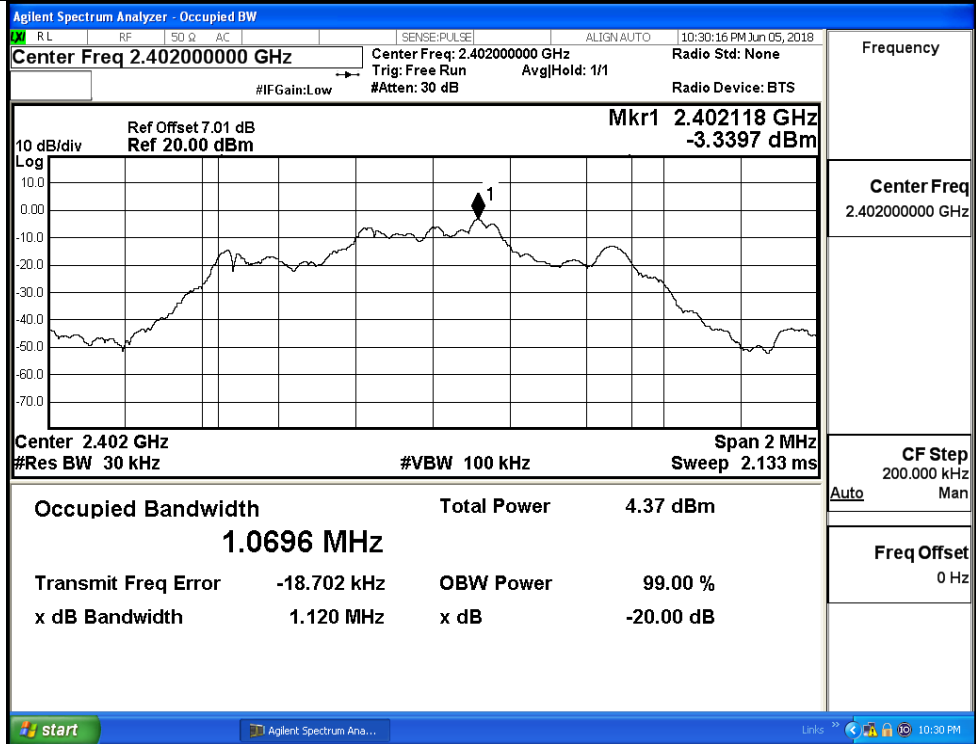
GFSK/MCH



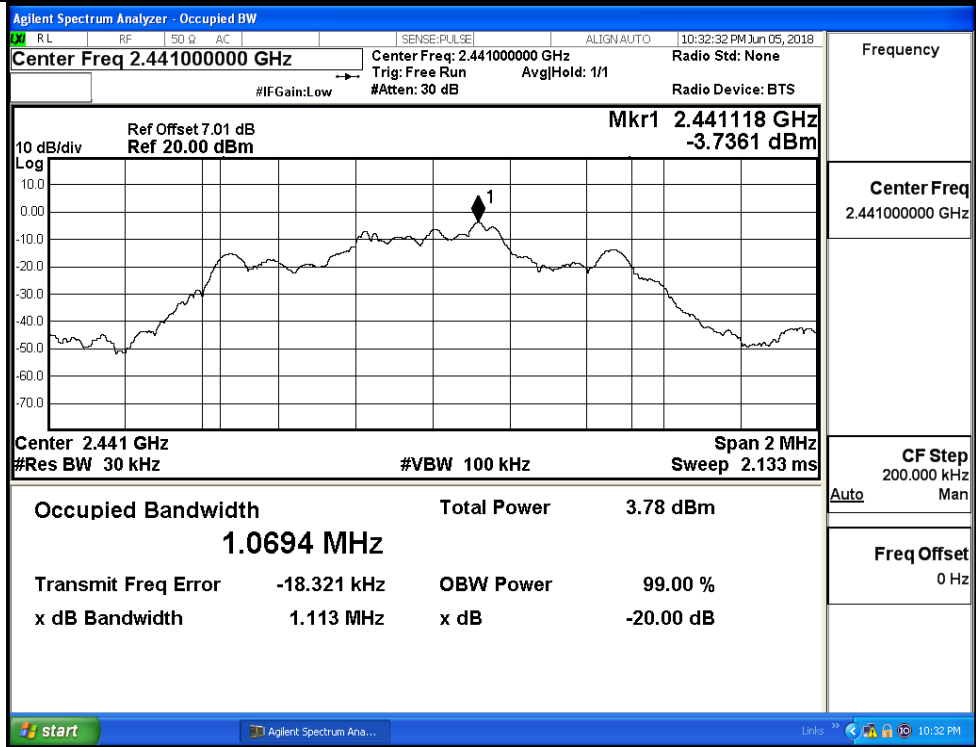
GFSK/HCH



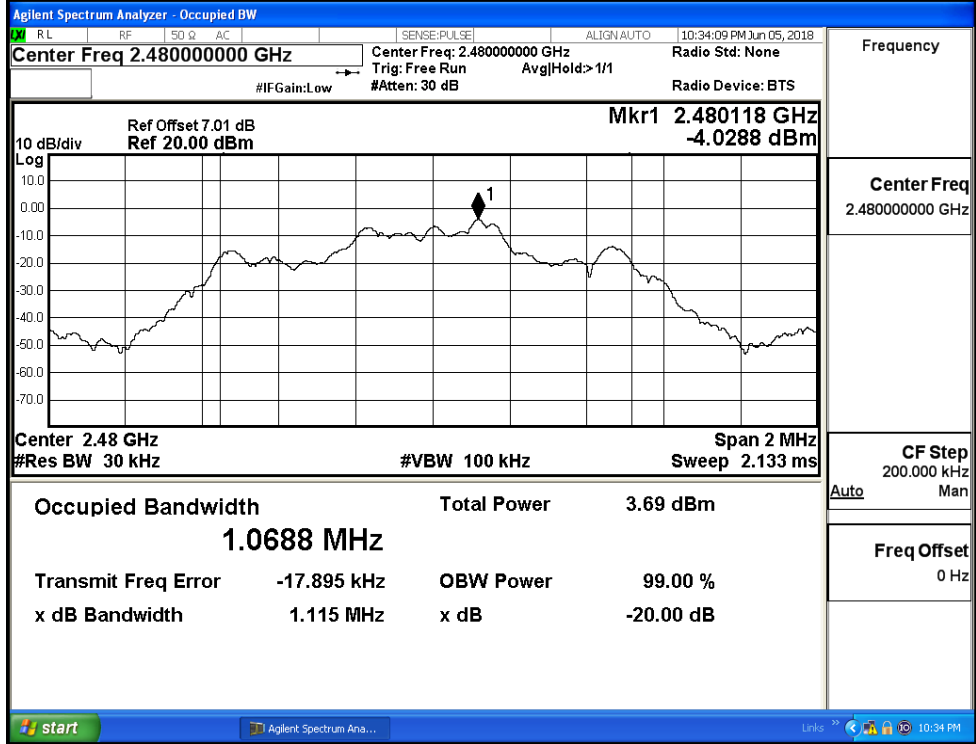
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



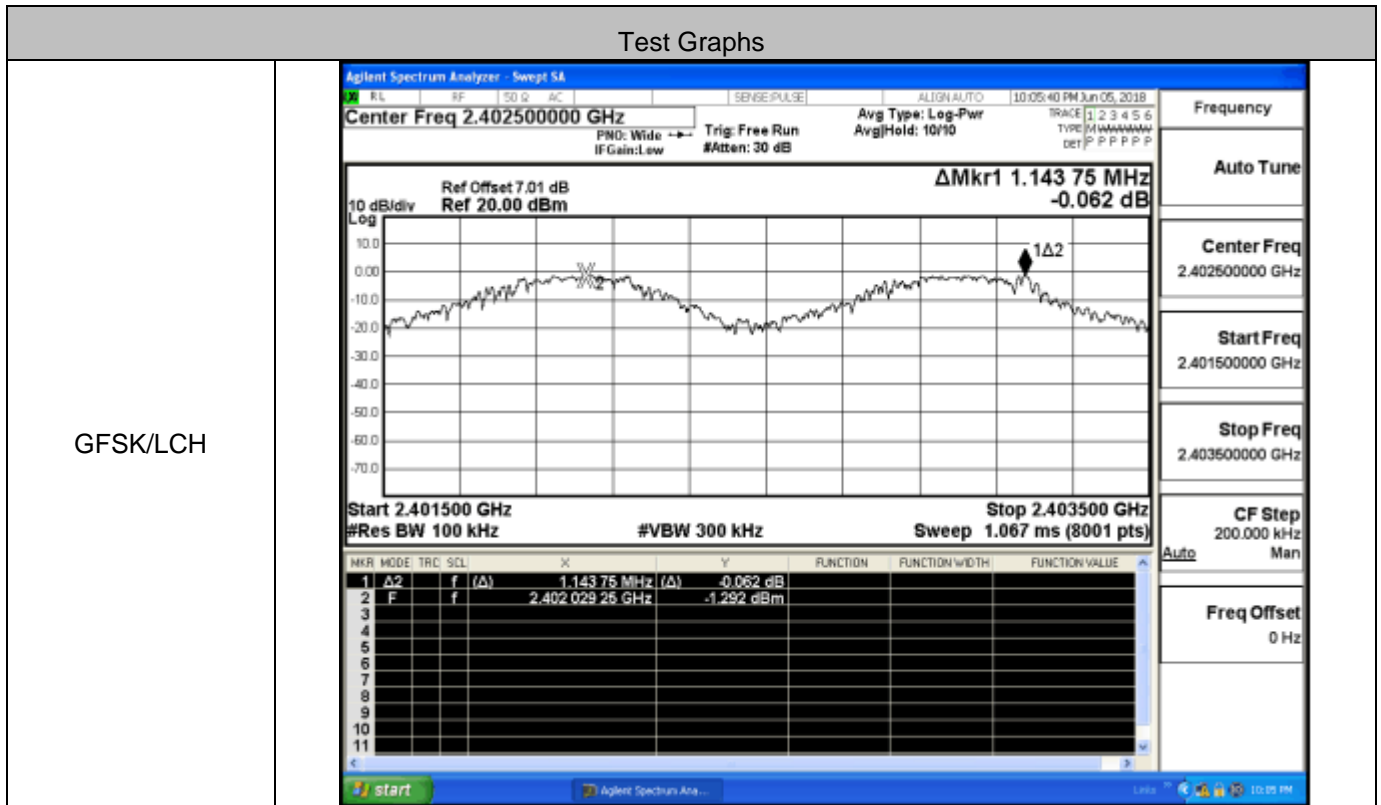
$\pi/4$ DQPSK/HCH



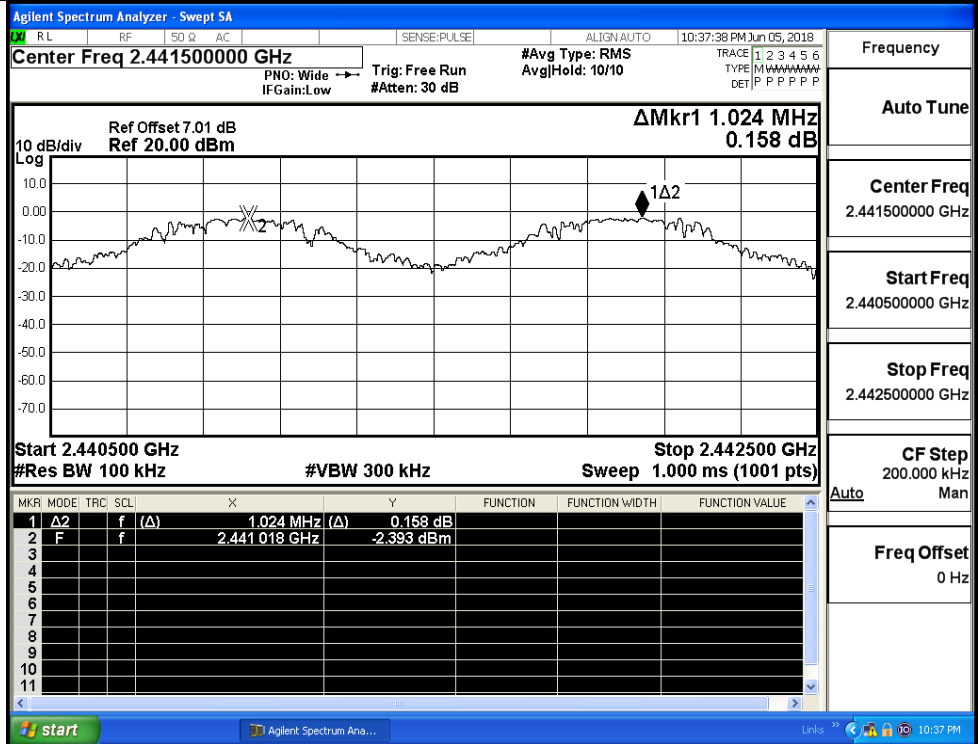
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.144	0.8295	PASS
	MCH	1.024	0.8329	PASS
	HCH	1.216	0.8391	PASS
π/4DQPSK	LCH	1.022	0.747	PASS
	MCH	1.182	0.742	PASS
	HCH	0.848	0.743	PASS

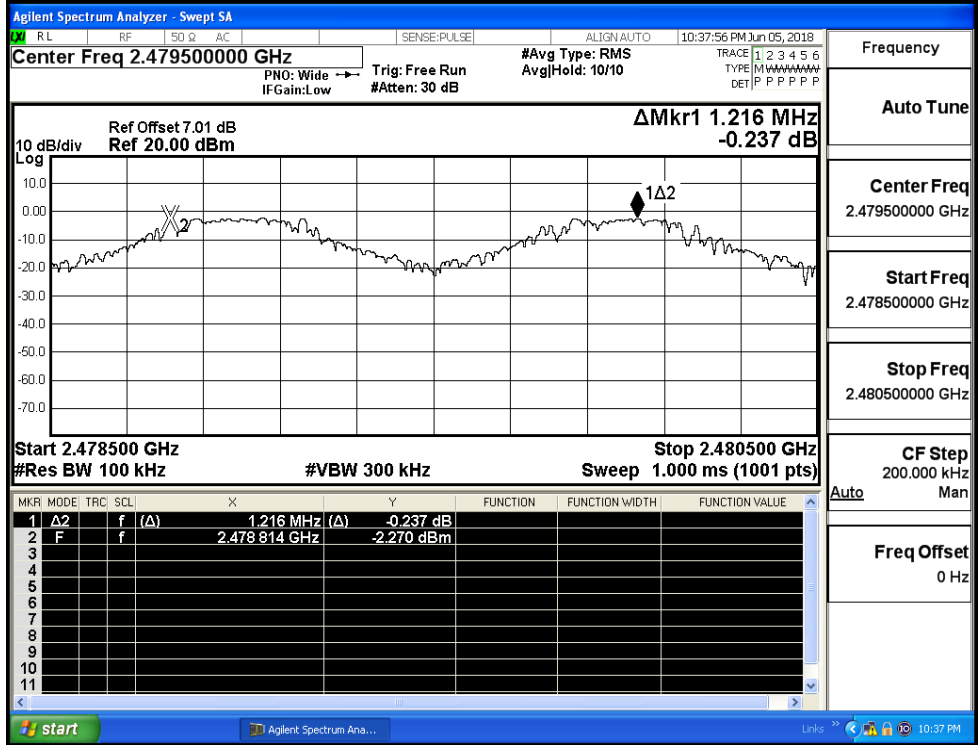
Test Graphs



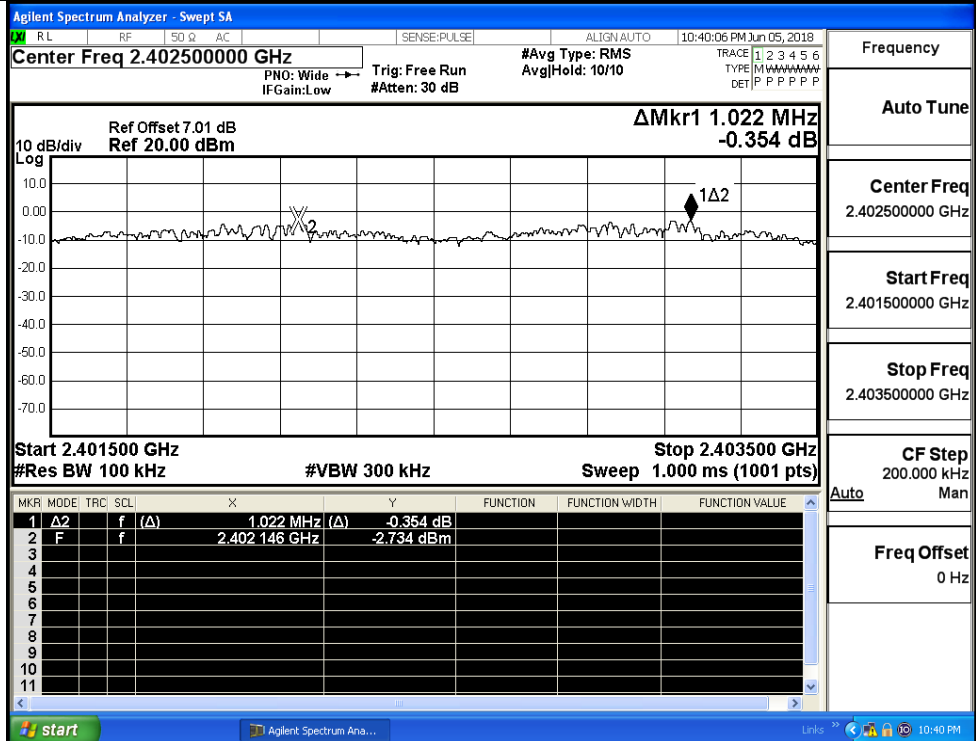
GFSK/MCH



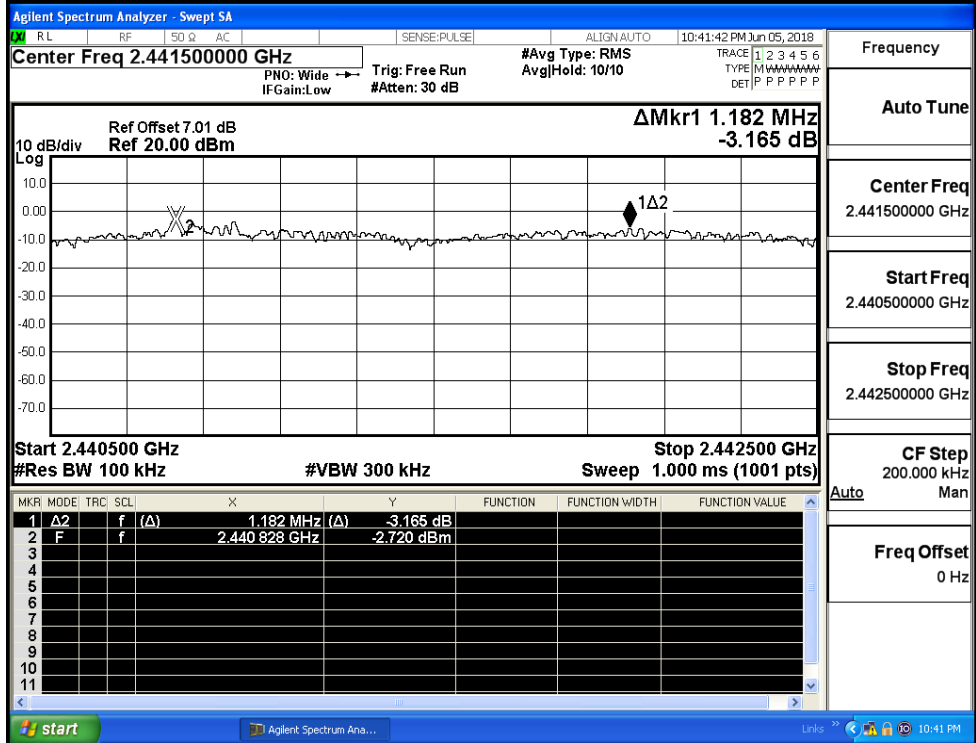
GFSK/HCH



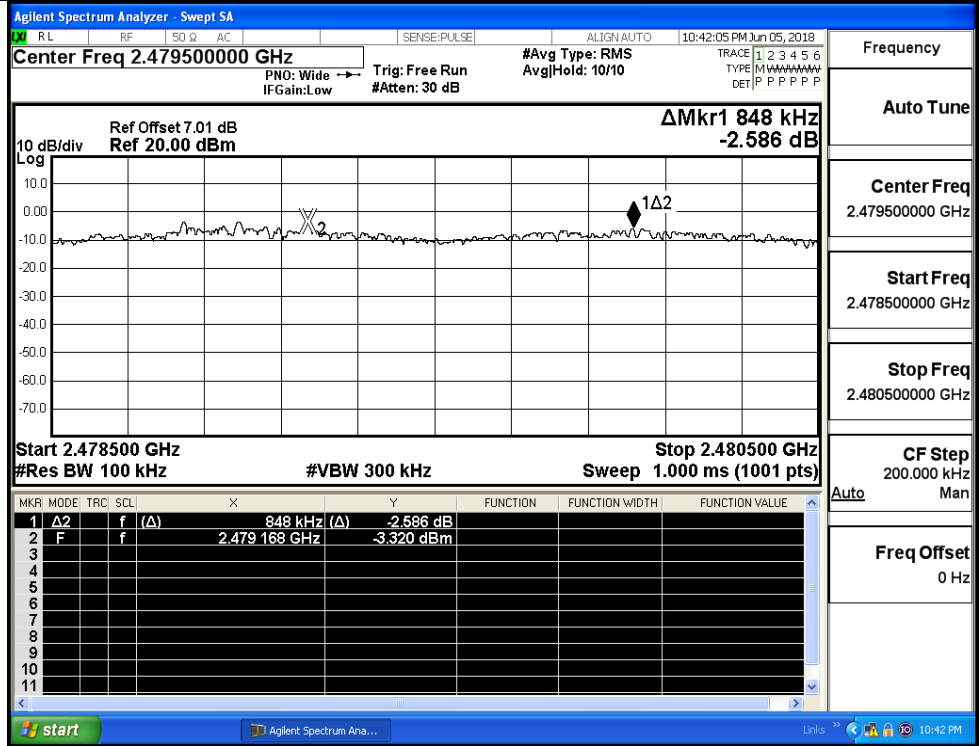
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



$\pi/4$ DQPSK/HCH



A.4 Hopping Channel Number

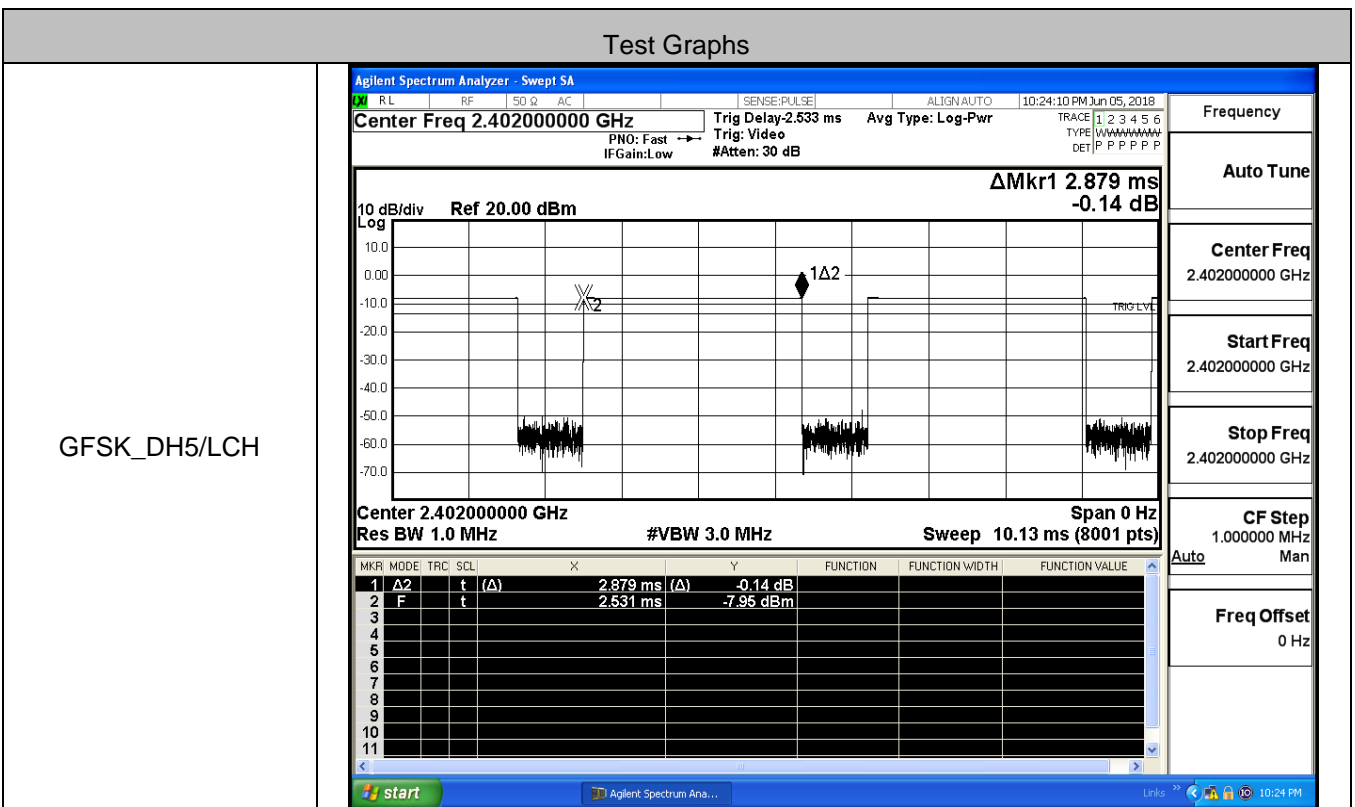
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS

Test Graphs

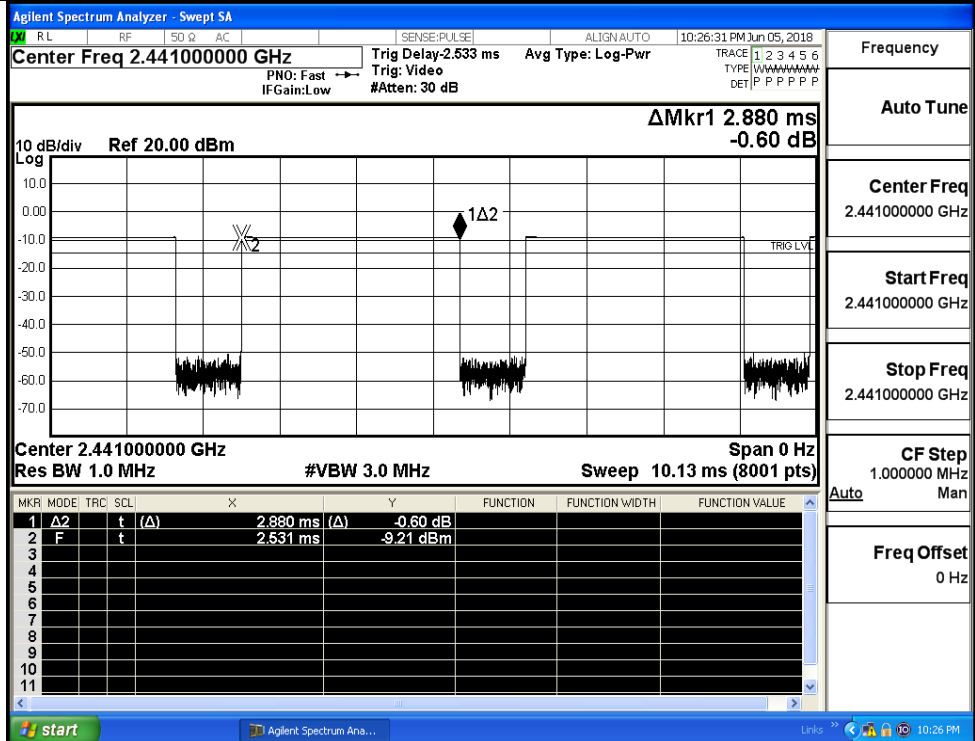
<p>GFSK/Hop</p>	<table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Δ2</td> <td>f</td> <td>(Δ)</td> <td>77.958 MHz (Δ)</td> <td>-0.998 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td></td> <td>2.402004 GHz</td> <td>-1.079 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	Δ 2	f	(Δ)	77.958 MHz (Δ)	-0.998 dB				2	F	f		2.402004 GHz	-1.079 dBm			
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																				
1	Δ 2	f	(Δ)	77.958 MHz (Δ)	-0.998 dB																							
2	F	f		2.402004 GHz	-1.079 dBm																							
<p>$\pi/4$DQPSK/Hop</p>	<table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Δ2</td> <td>f</td> <td>(Δ)</td> <td>77.686 MHz (Δ)</td> <td>0.407 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td></td> <td>2.402181 GHz</td> <td>-4.819 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	Δ 2	f	(Δ)	77.686 MHz (Δ)	0.407 dB				2	F	f		2.402181 GHz	-4.819 dBm			
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																				
1	Δ 2	f	(Δ)	77.686 MHz (Δ)	0.407 dB																							
2	F	f		2.402181 GHz	-4.819 dBm																							

A.5 Dwell Time

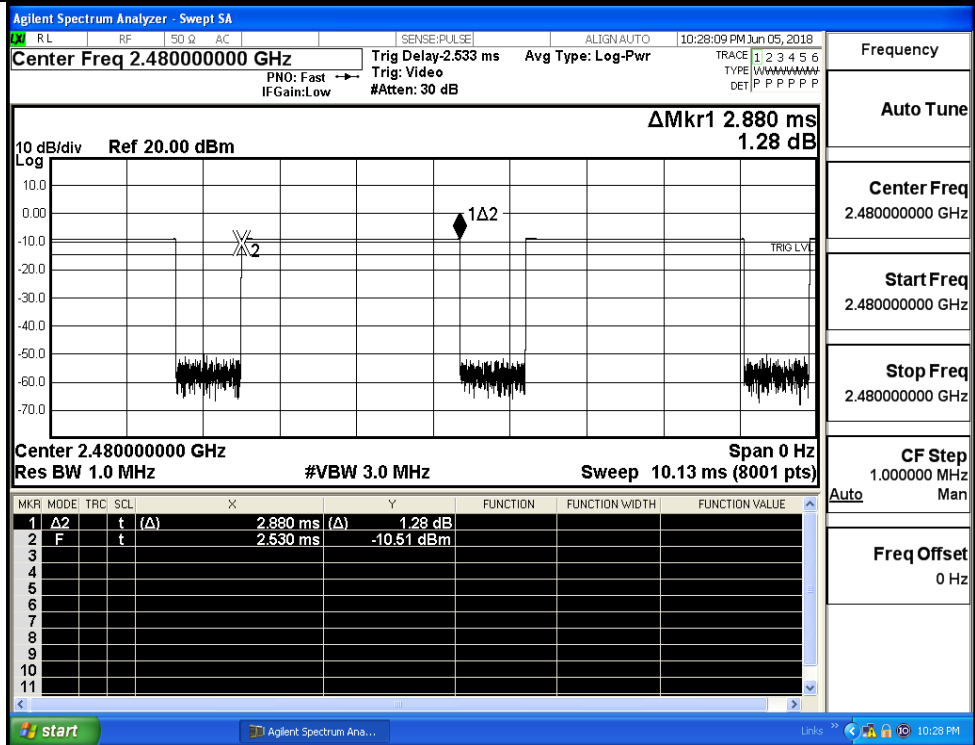
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
π/4DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7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



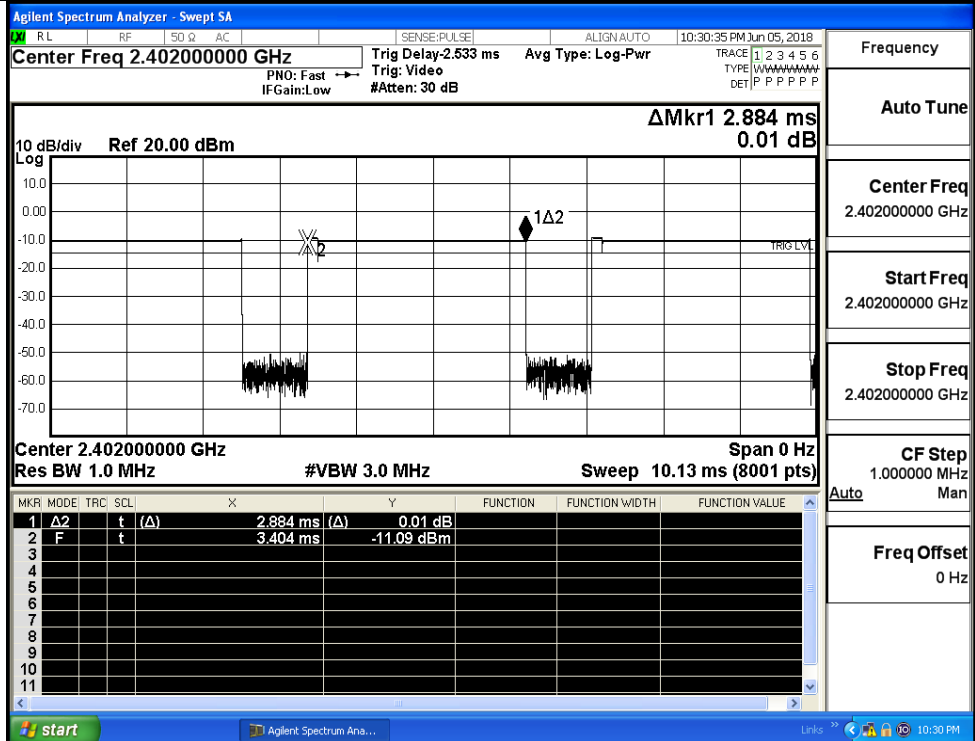
GFSK_DH5/MCH



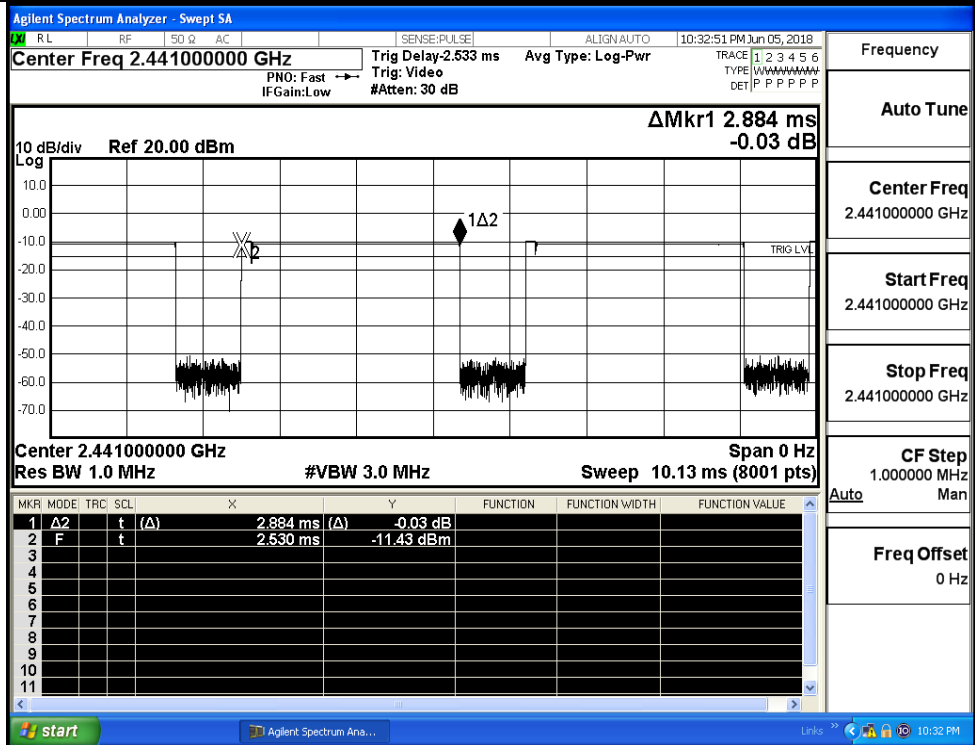
GFSK_DH5/HCH



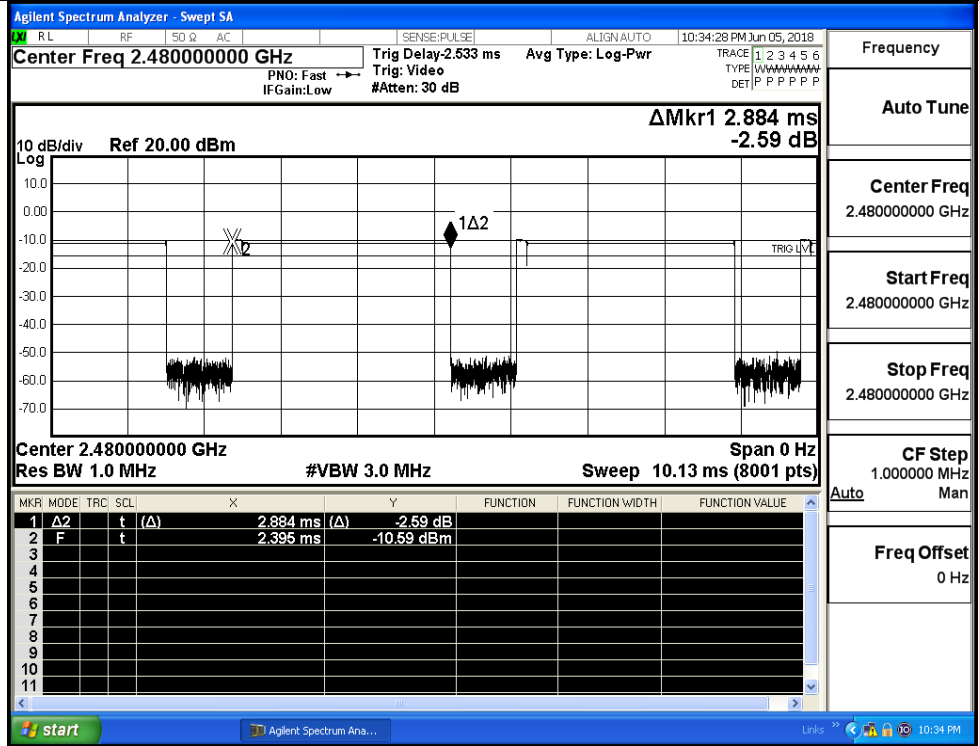
$\pi/4$ DQPSK
_2DH5/LCH



$\pi/4$ DQPSK
_2DH5/MCH

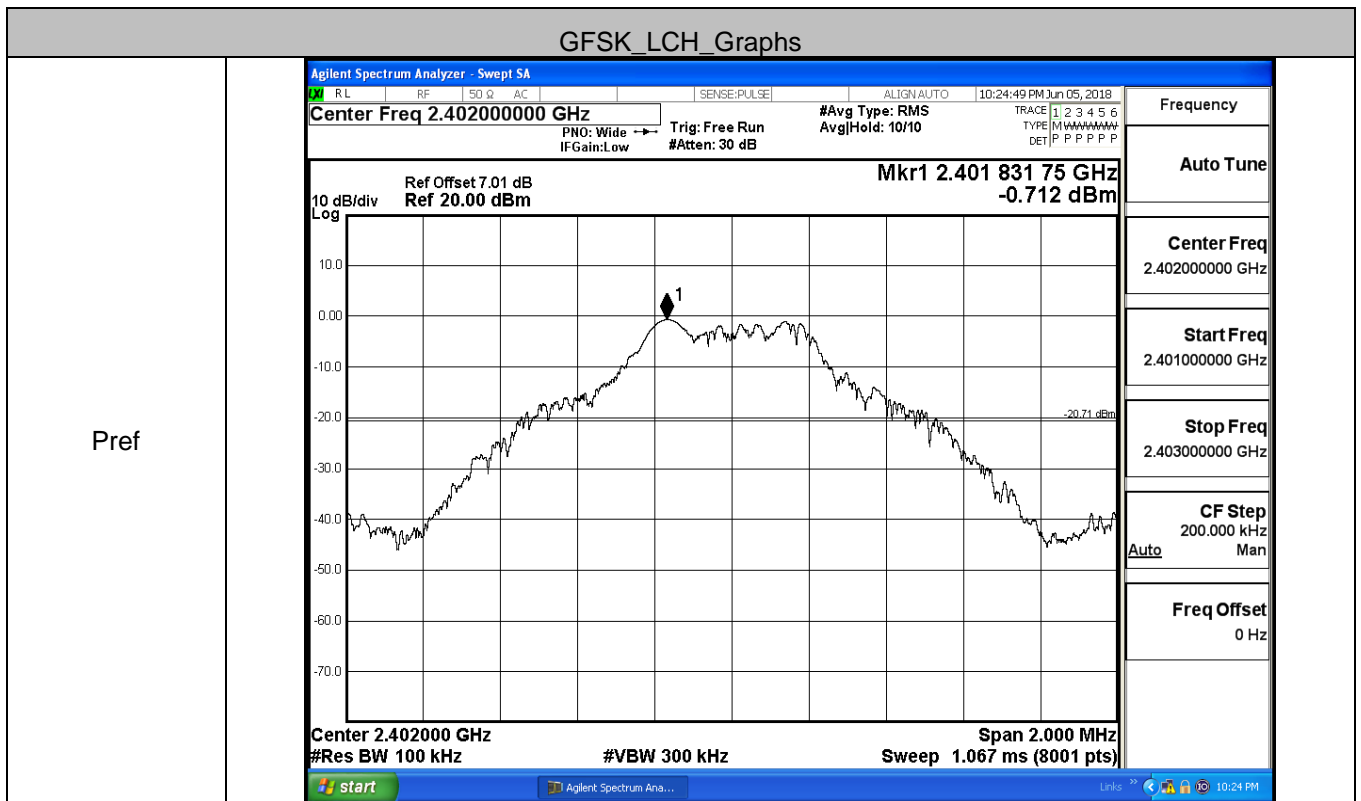


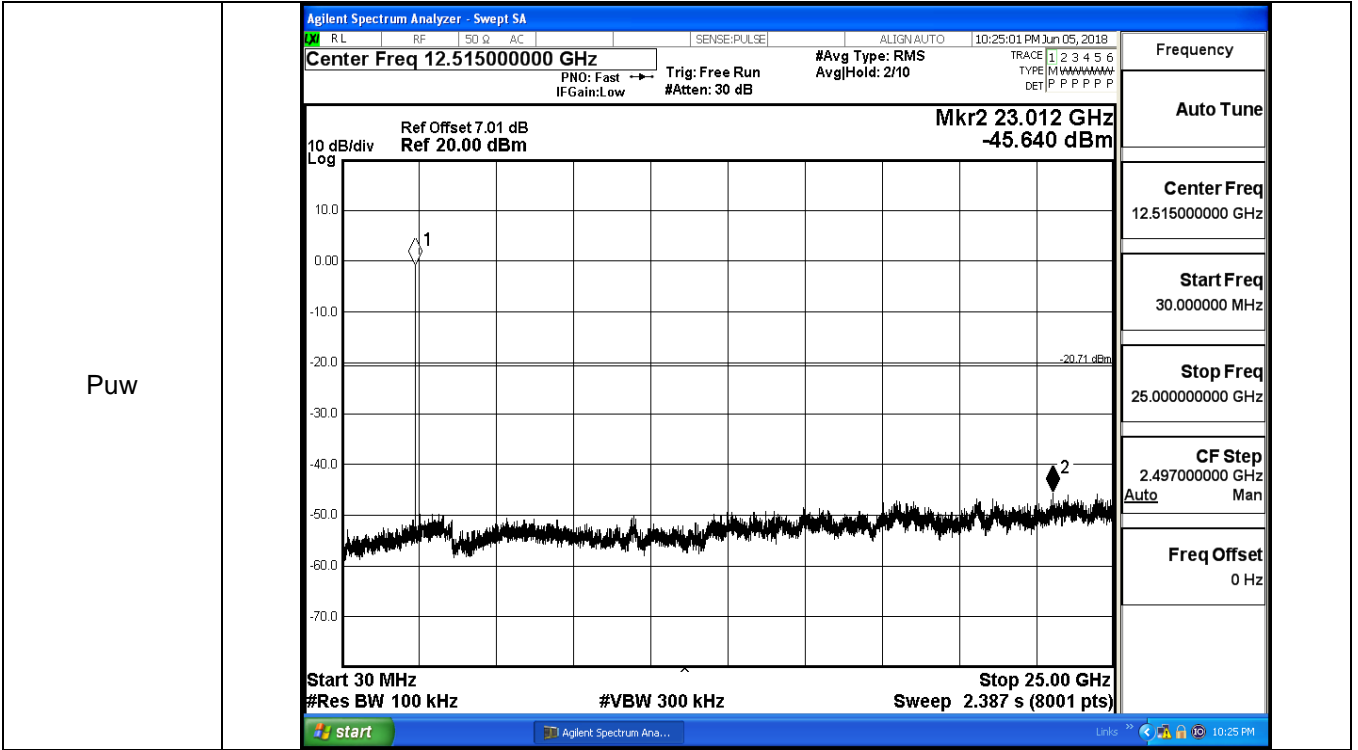
$\pi/4$ DQPSK
_2DH5/HCH



A.6 RF Conducted Spurious Emissions

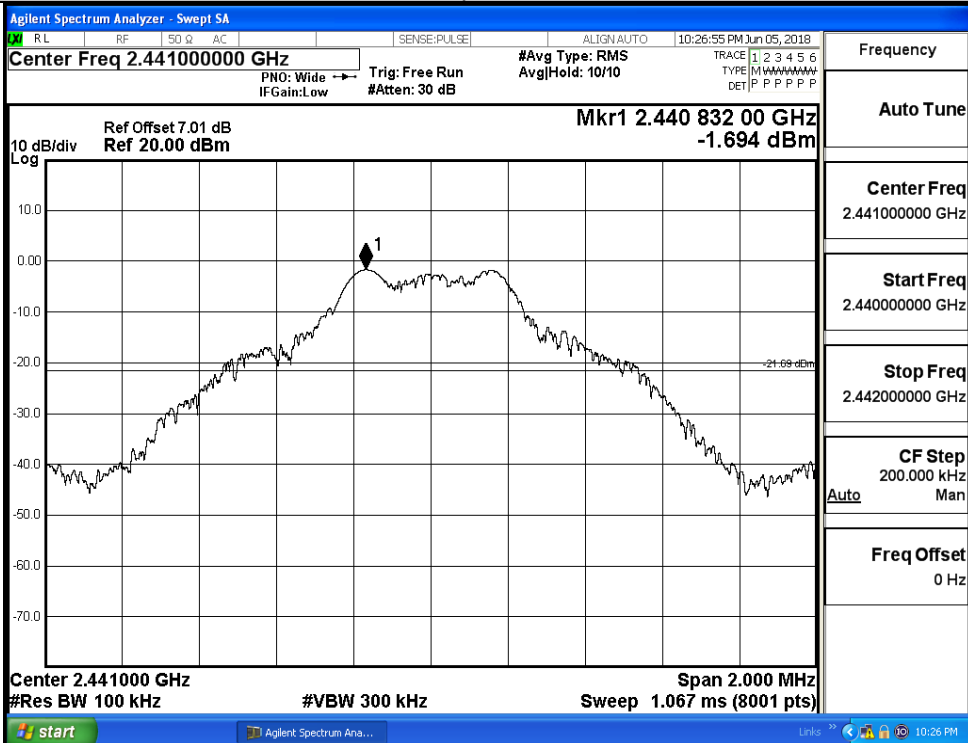
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.712	-45.640	-20.712	PASS
	MCH	-1.694	-46.135	-21.694	PASS
	HCH	-1.797	-45.726	-21.797	PASS
$\pi/4$ DQPSK	LCH	-2.123	-46.375	-22.123	PASS
	MCH	-2.864	-46.365	-22.864	PASS
	HCH	-2.981	-44.437	-22.981	PASS





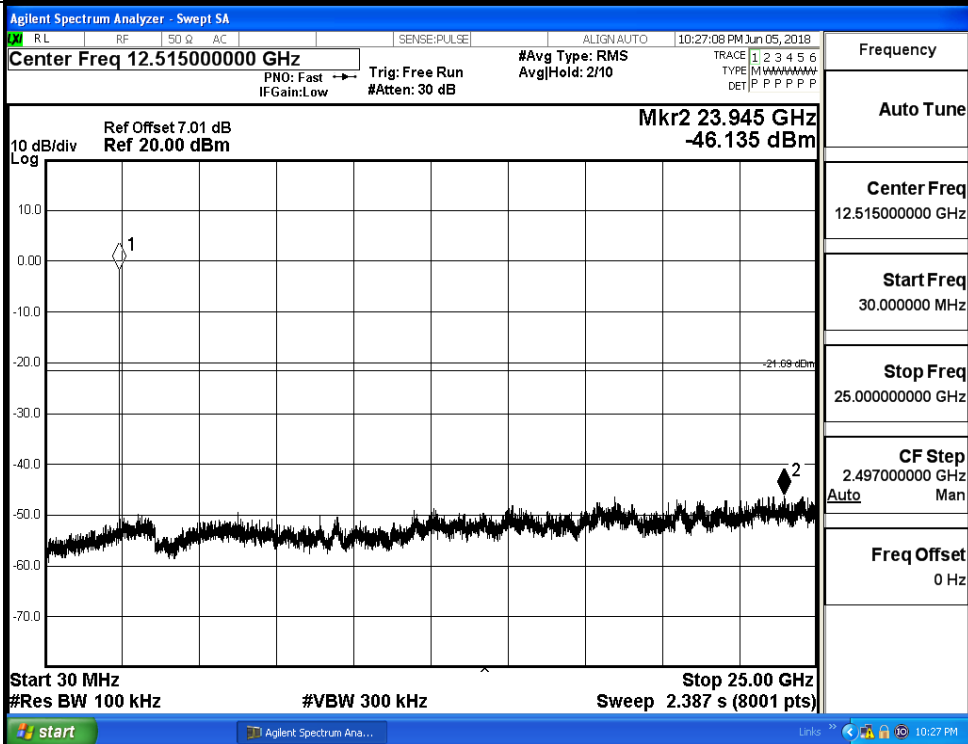
GFSK_MCH_Graphs

Pref



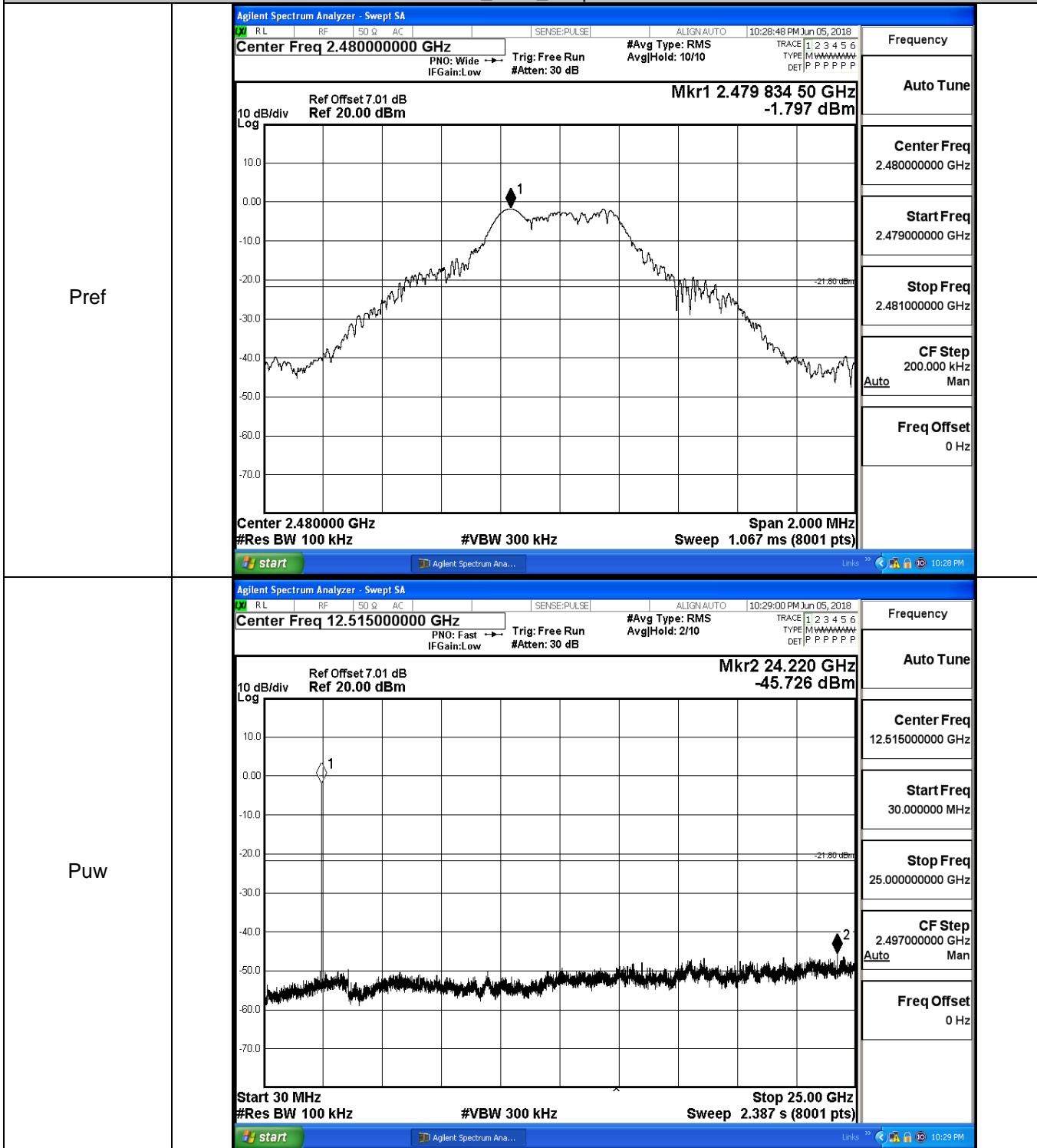
Frequency	
Auto Tune	
Center Freq	2.441000000 GHz
Start Freq	2.440000000 GHz
Stop Freq	2.442000000 GHz
CF Step	200.000 kHz Auto Man
Freq Offset	0 Hz

Puw

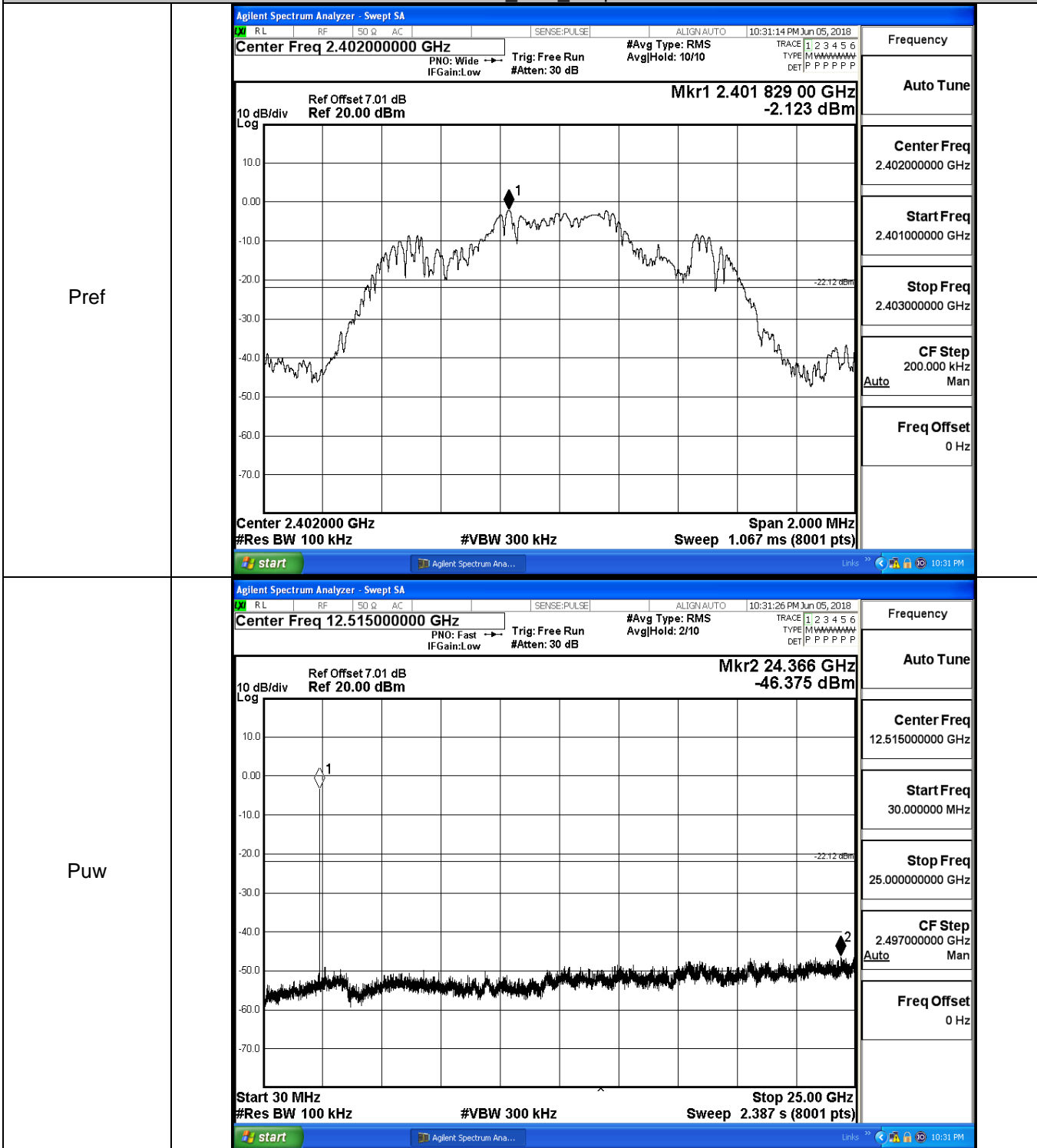


Frequency	
Auto Tune	
Center Freq	12.515000000 GHz
Start Freq	30.000000 MHz
Stop Freq	25.000000000 GHz
CF Step	2.497000000 GHz Auto Man
Freq Offset	0 Hz

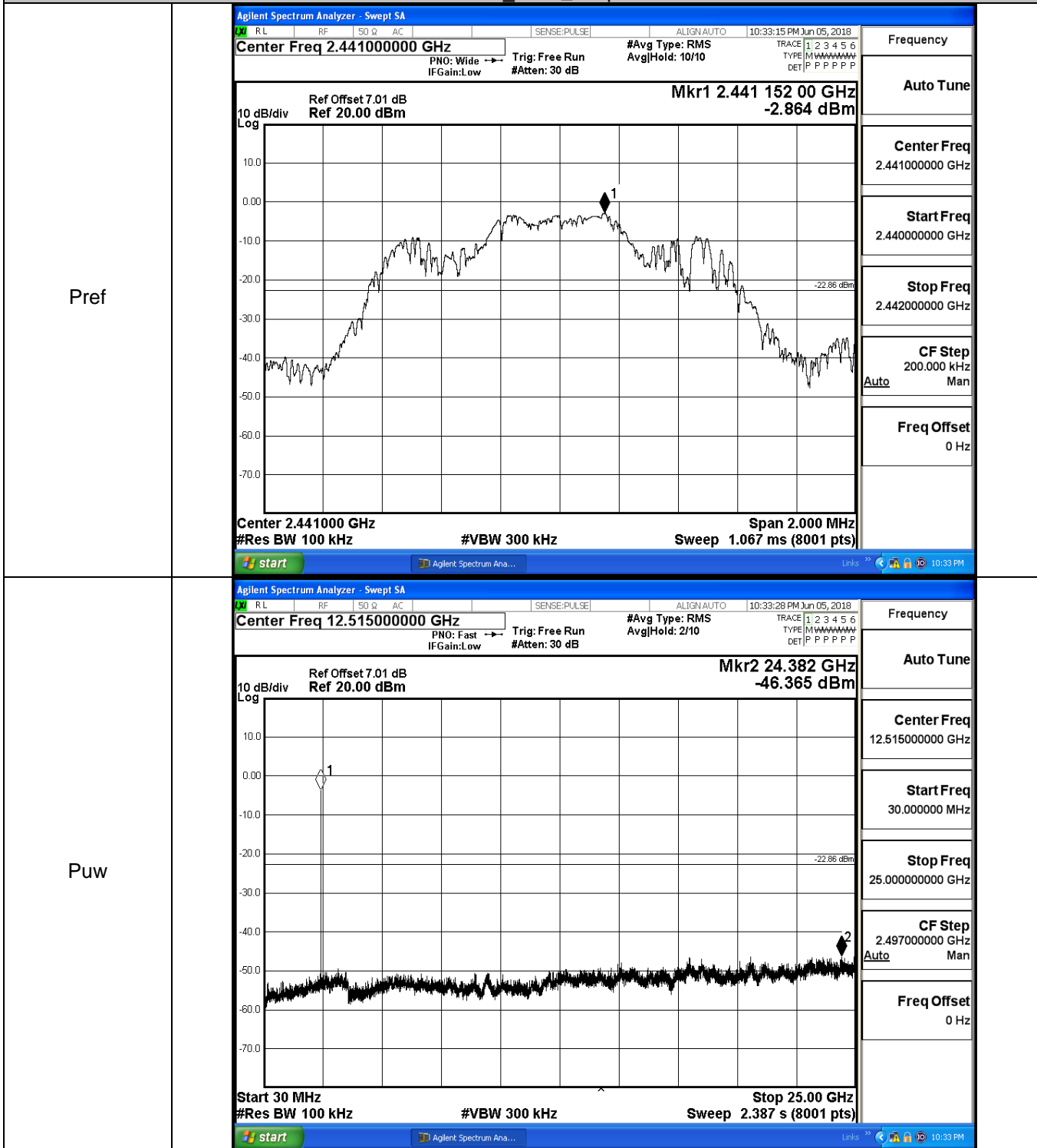
GFSK_HCH_Graphs



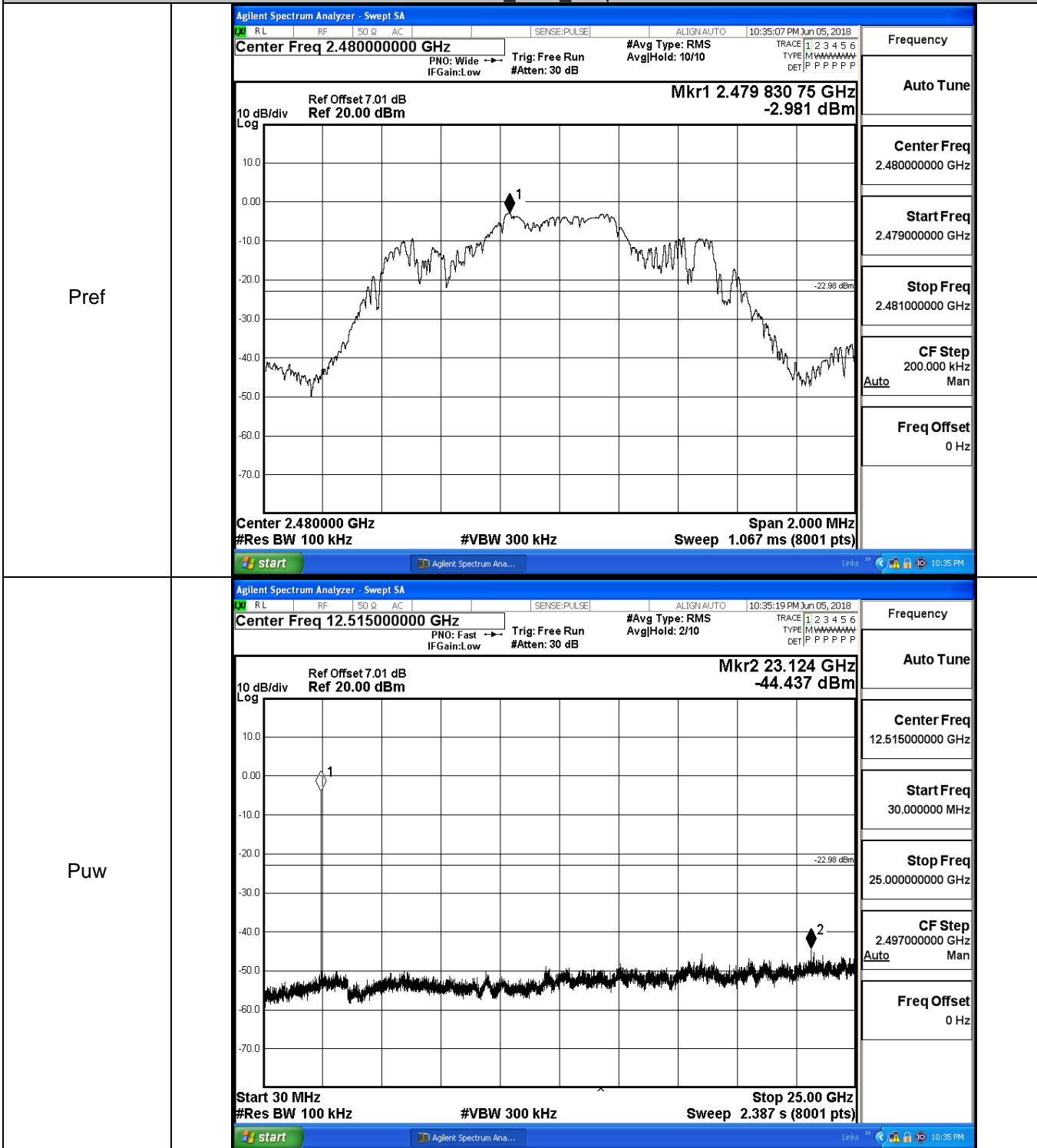
$\pi/4$ DQPSK_LCH_Graphs



$\pi/4$ DQPSK_MCH_Graphs



$\pi/4$ DQPSK_HCH_Graphs

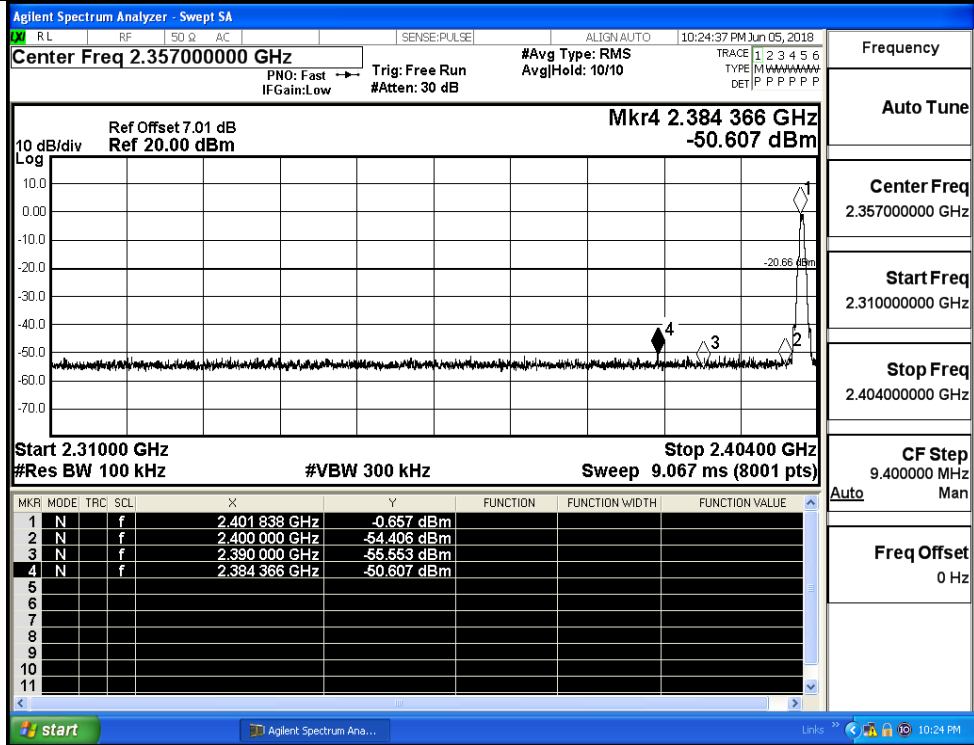


A.7 Band-edge for RF Conducted Emissions

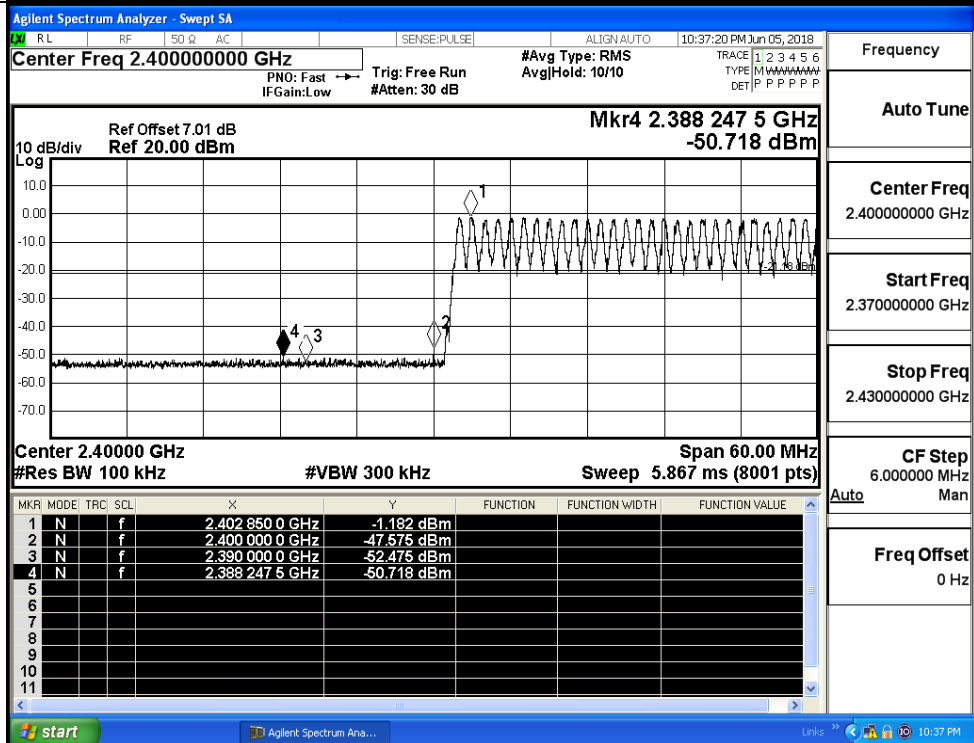
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-0.657	Off	-50.607	-20.66	PASS
			-1.182	On	-50.718	-21.18	PASS
	HCH	2480	-1.750	Off	-50.546	-21.75	PASS
			-1.780	On	-50.620	-21.78	PASS
$\pi/4$ DQPSK	LCH	2402	-2.179	Off	-50.305	-22.18	PASS
			-2.246	On	-50.560	-22.25	PASS
	HCH	2480	-3.210	Off	-51.251	-23.21	PASS
			-2.984	On	-49.644	-22.98	PASS

Test Graphs

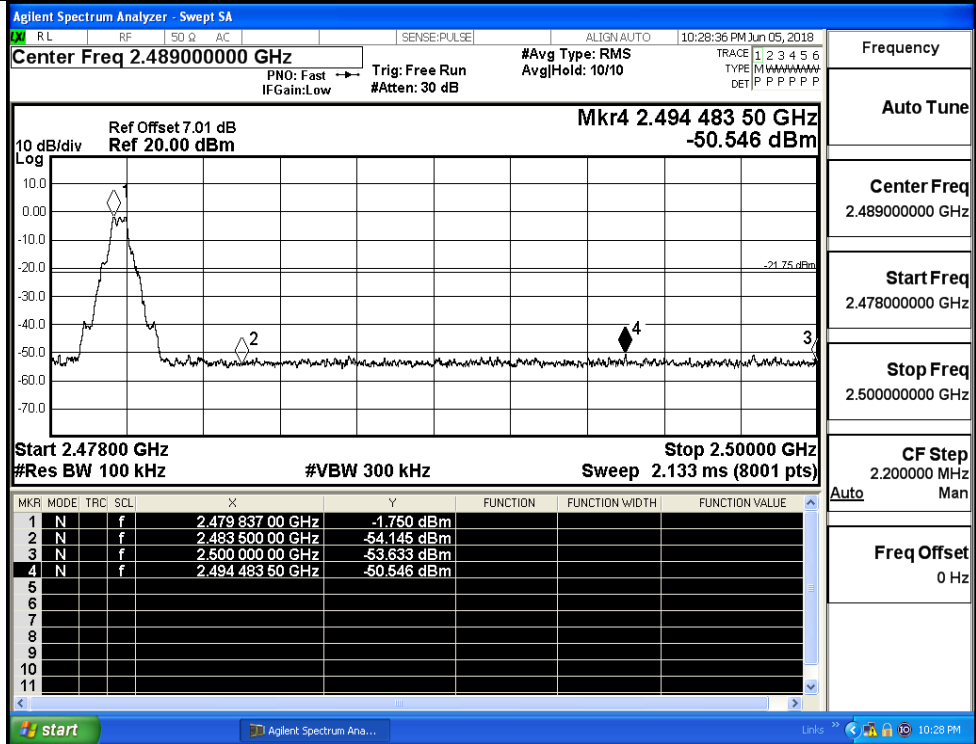
GFSK/LCH/No Hop



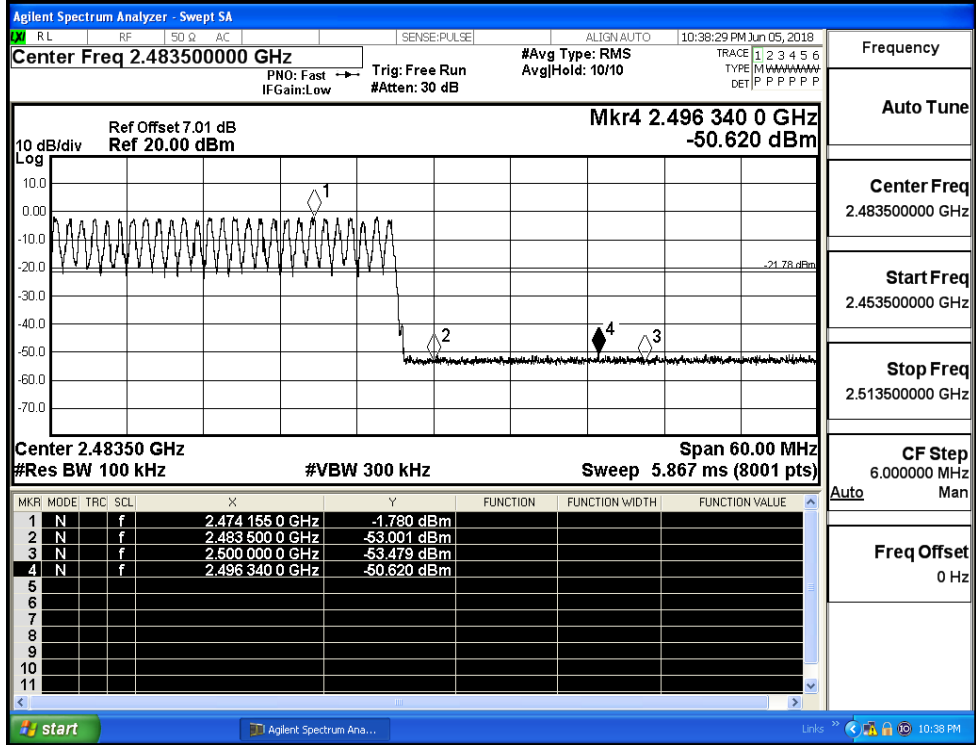
GFSK/LCH/Hop



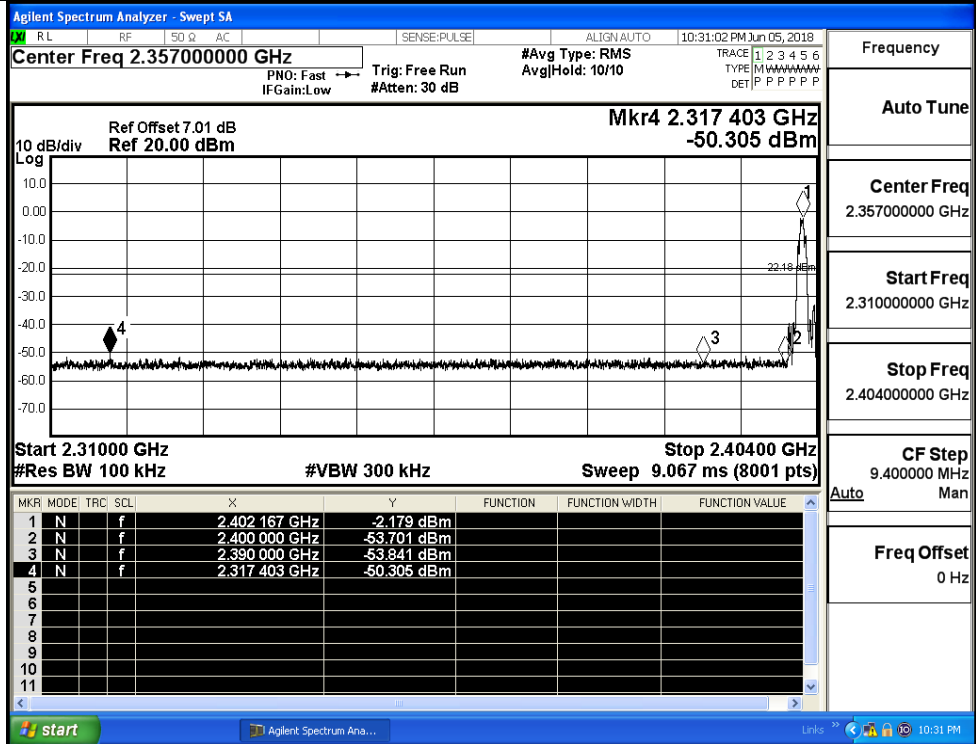
GFSK/HCH/No Hop



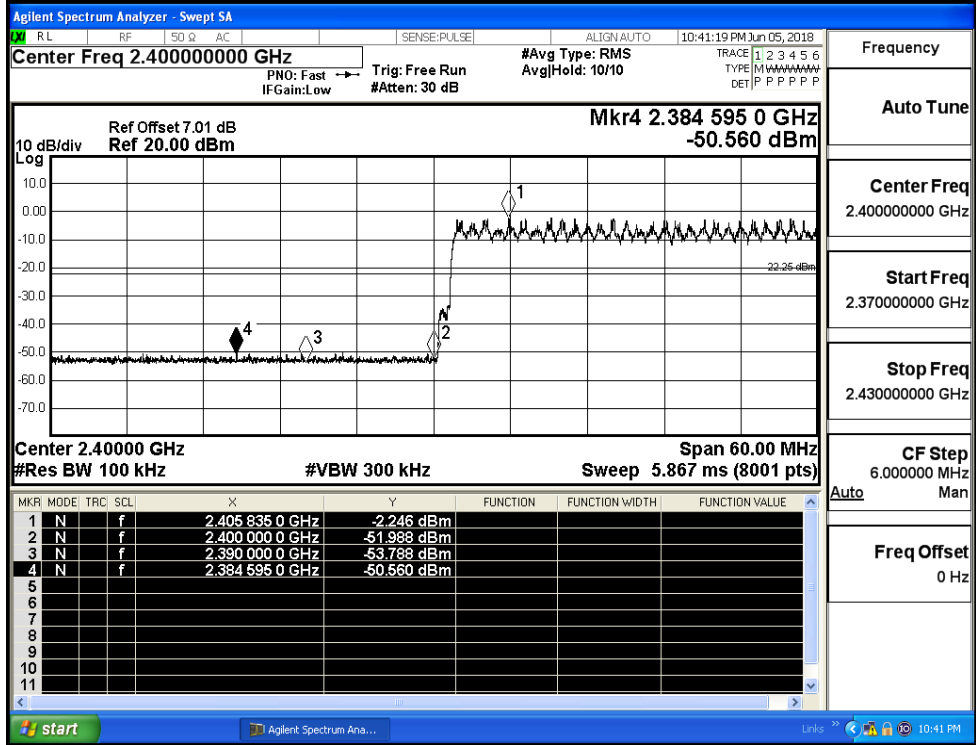
GFSK/HCH/Hop



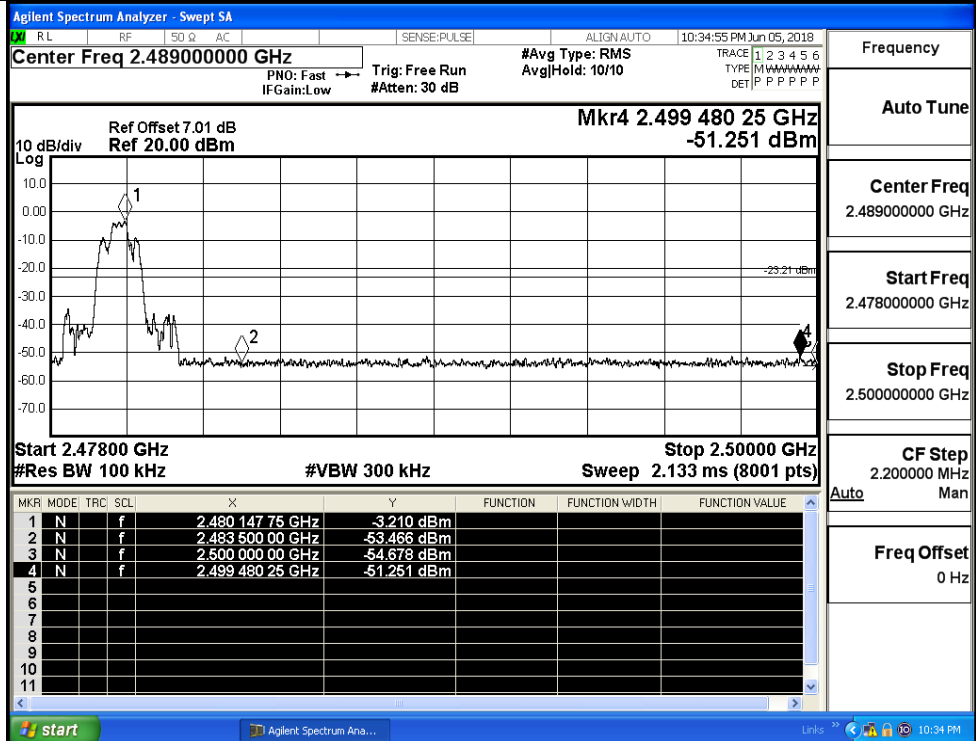
$\pi/4$ DQPSK/LCH/No Hop



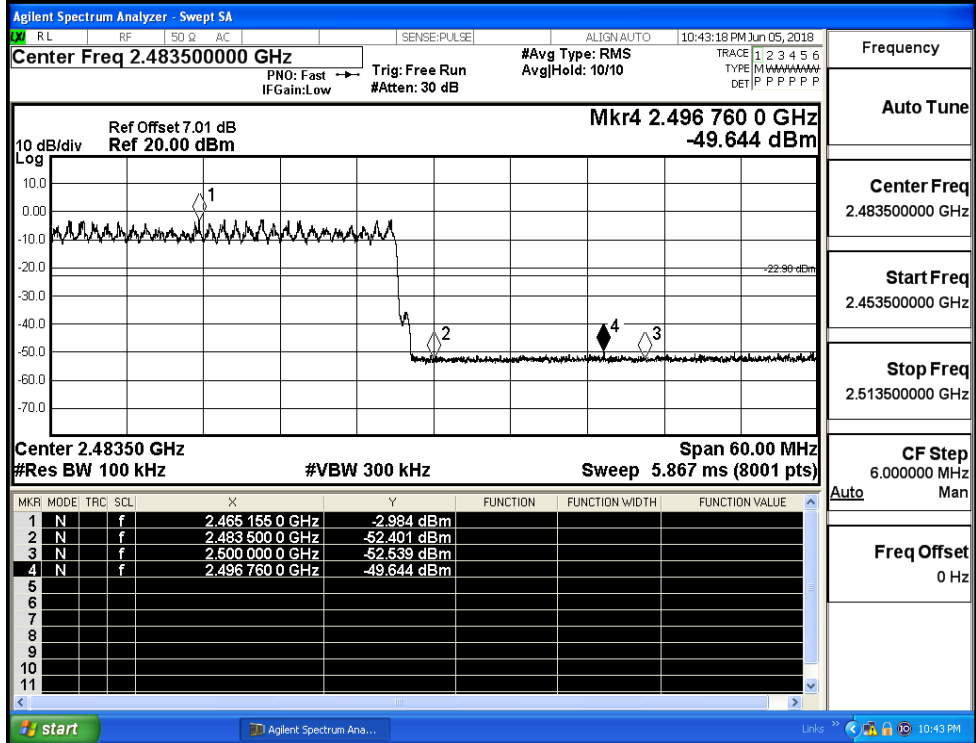
$\pi/4$ DQPSK/LCH/Hop



π /4DQPSK/HCH/No
Hop



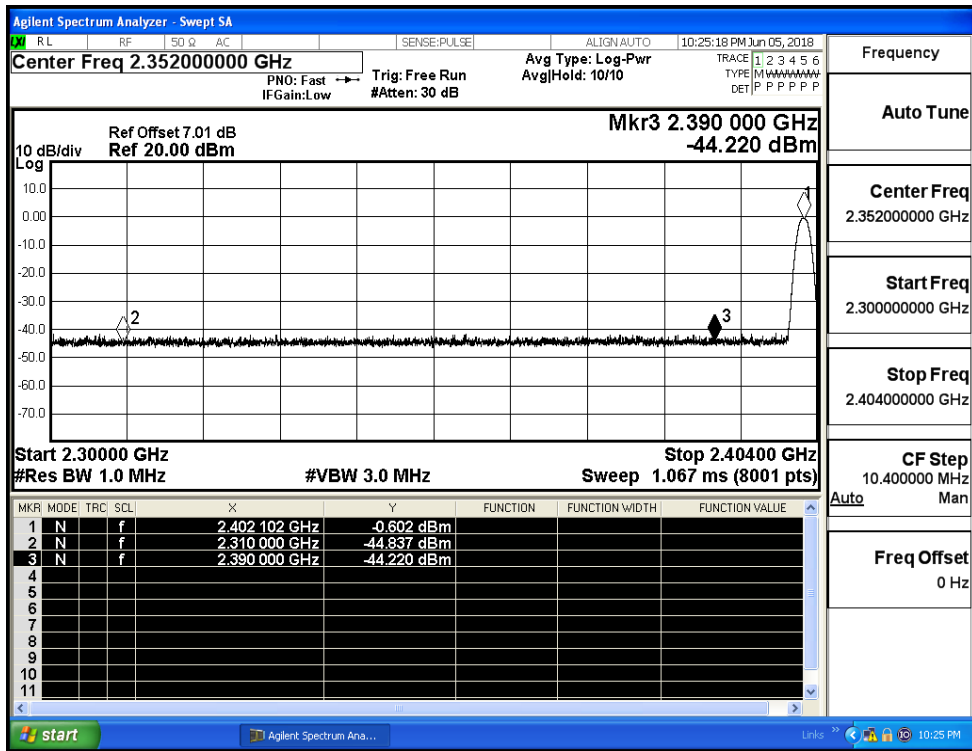
π /4DQPSK/HCH/Hop



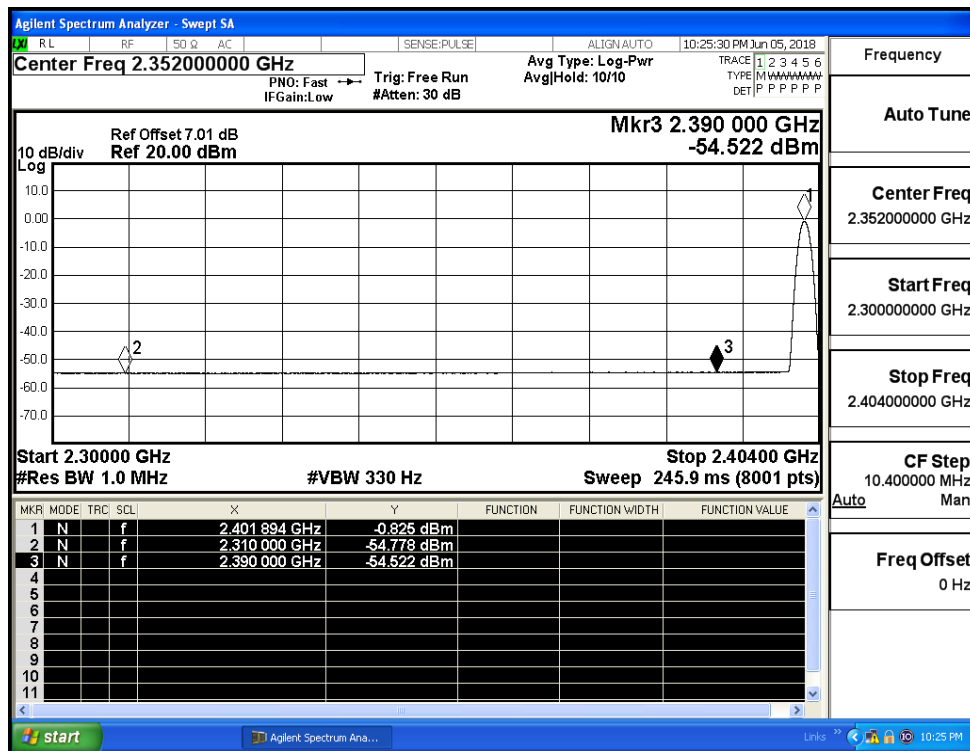
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-44.84	2.0	0	52.42	PEAK	74	PASS
	Off	2310.0	-54.78	2.0	0	42.48	AV	54	PASS
	Off	2390.0	-44.22	2.0	0	53.04	PEAK	74	PASS
	Off	2390.0	-54.52	2.0	0	42.74	AV	54	PASS
	Off	2483.5	-43.83	2.0	0	53.43	PEAK	74	PASS
	Off	2483.5	-54.23	2.0	0	43.02	AV	54	PASS
	Off	2500.0	-42.24	2.0	0	55.02	PEAK	74	PASS
	Off	2500.0	-54.13	2.0	0	43.13	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-44.12	2.0	0	53.13	PEAK	74	PASS
	Off	2310.0	-54.82	2.0	0	42.44	AV	54	PASS
	Off	2390.0	-44.36	2.0	0	52.90	PEAK	74	PASS
	Off	2390.0	-54.63	2.0	0	42.63	AV	54	PASS
	Off	2483.5	-44.51	2.0	0	52.75	PEAK	74	PASS
	Off	2483.5	-54.25	2.0	0	43.00	AV	54	PASS
	Off	2500.0	-45.03	2.0	0	52.23	PEAK	74	PASS
	Off	2500.0	-54.20	2.0	0	43.06	AV	54	PASS

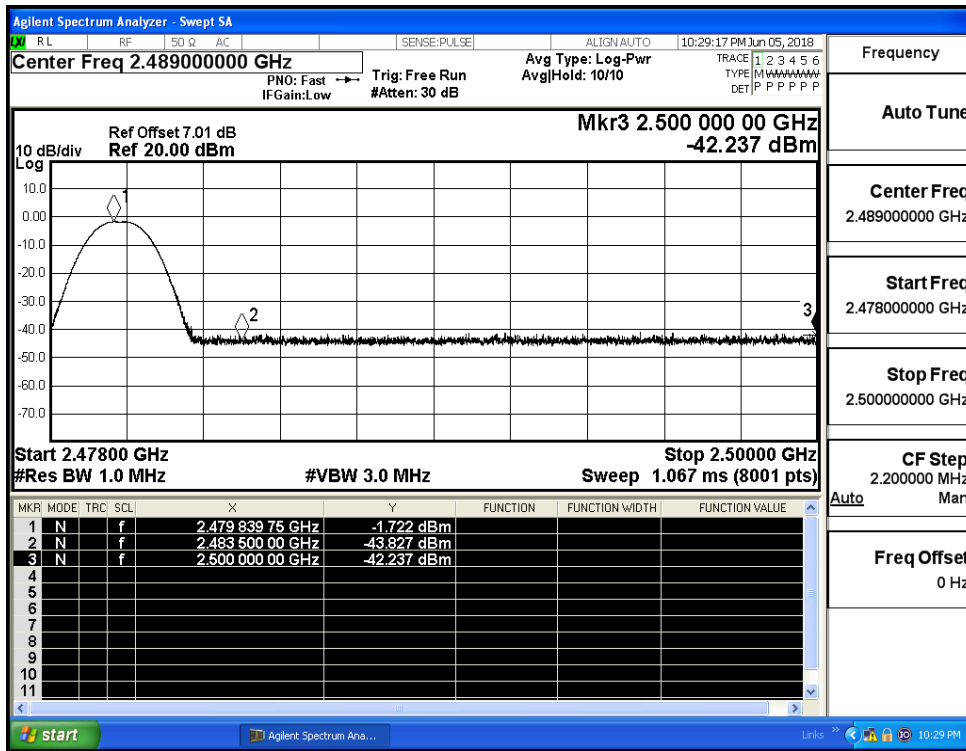
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



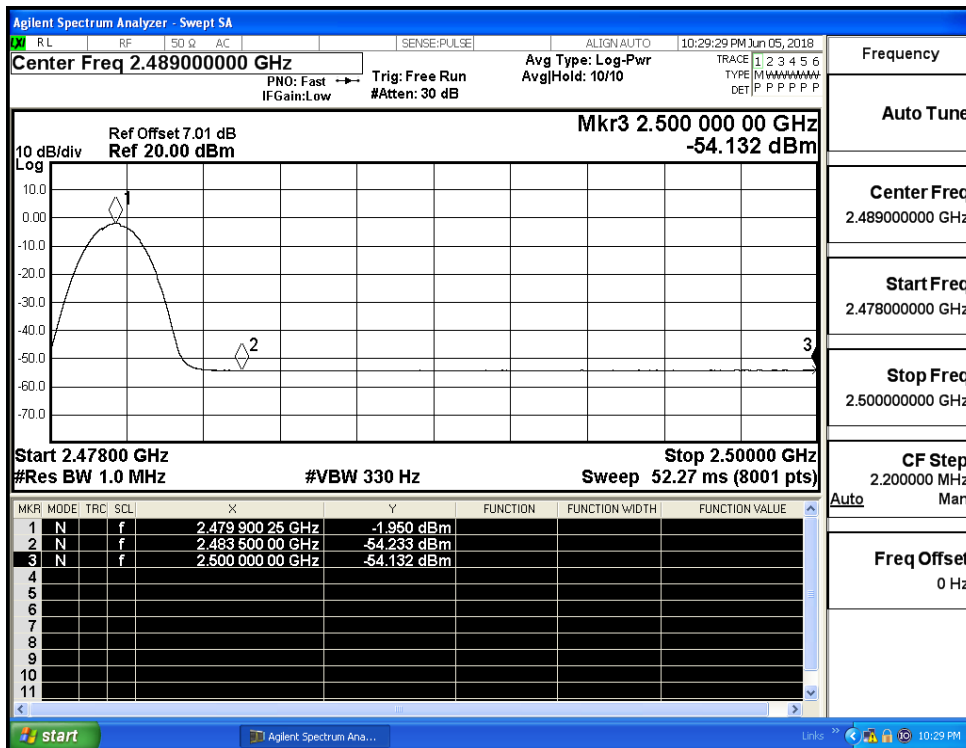
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



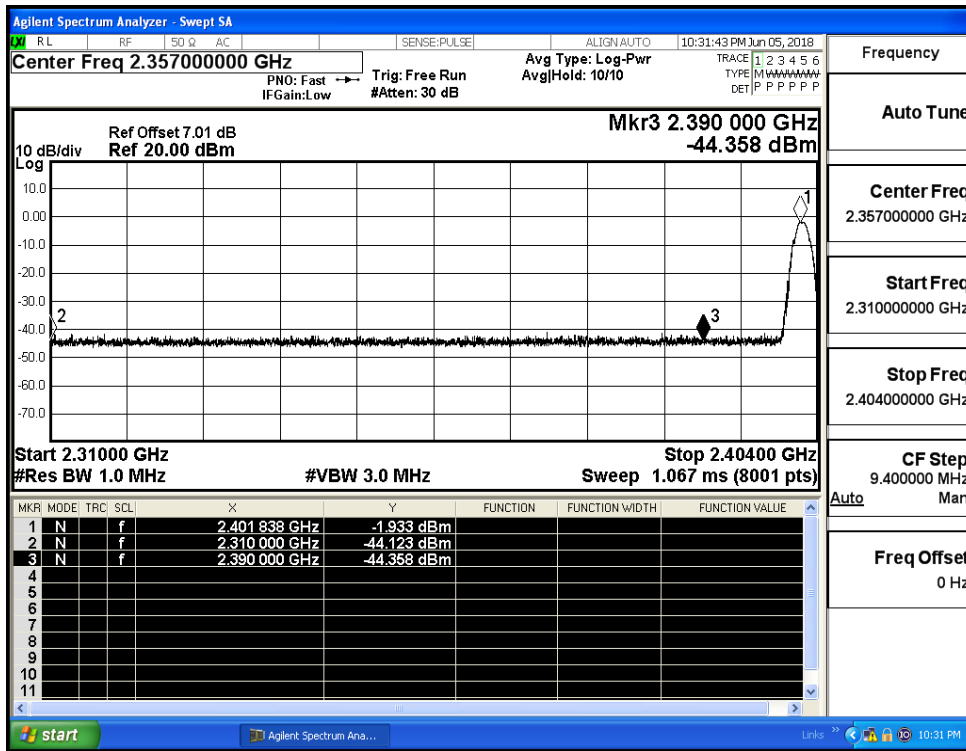
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



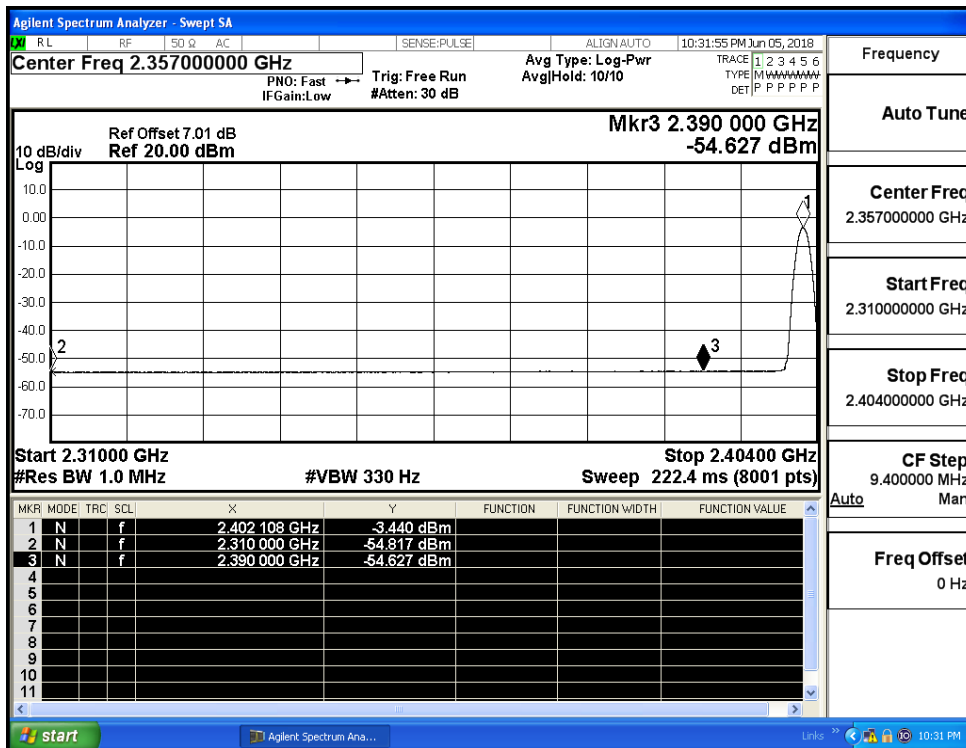
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



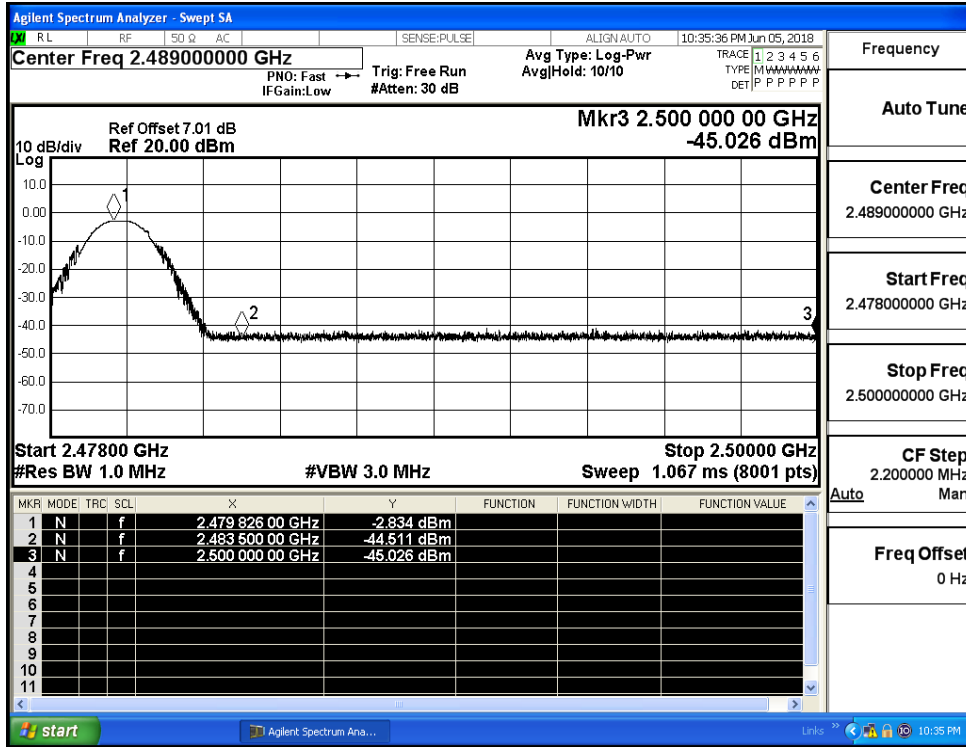
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)



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)

