

## Appendix A

### RF Test Data for BT 4.2(BDR/EDR) (Conducted Measurement)

Product Name: **Corona Bottle Speaker**

Trade Mark: **N/A**

Test Model: **73028-CO**

#### Environmental Conditions

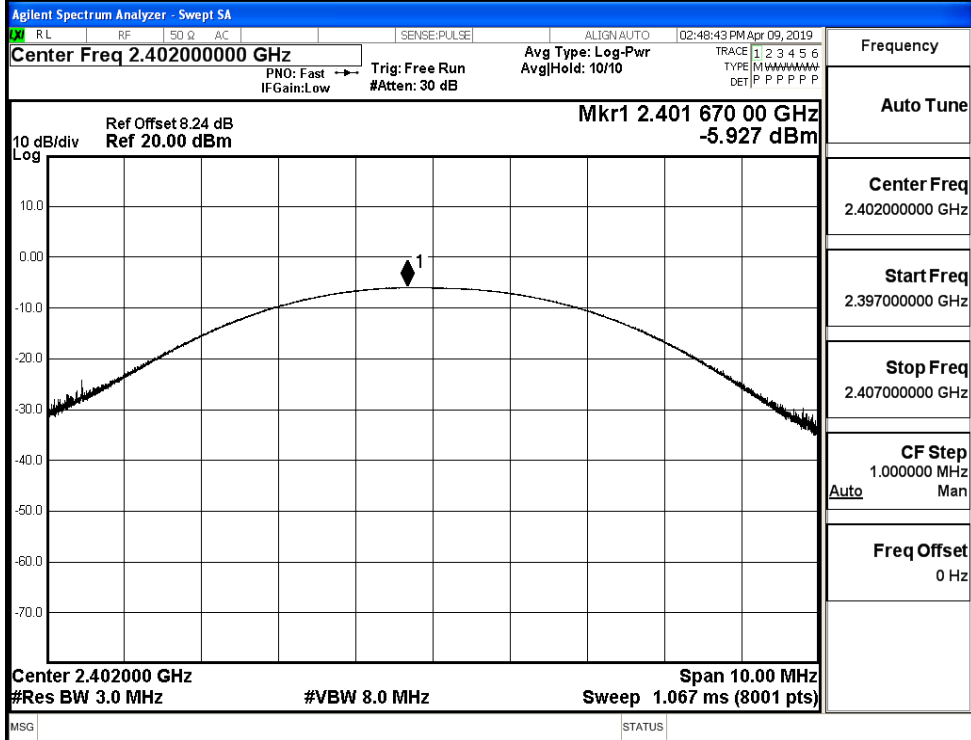
Temperature:	23.4 ° C
Relative Humidity:	53.3%
ATM Pressure:	100.0 kPa
Test Engineer:	SCENT HU
Supervised by:	Tom.Liu

#### A.1 Maximum Conducted Peak Output Power

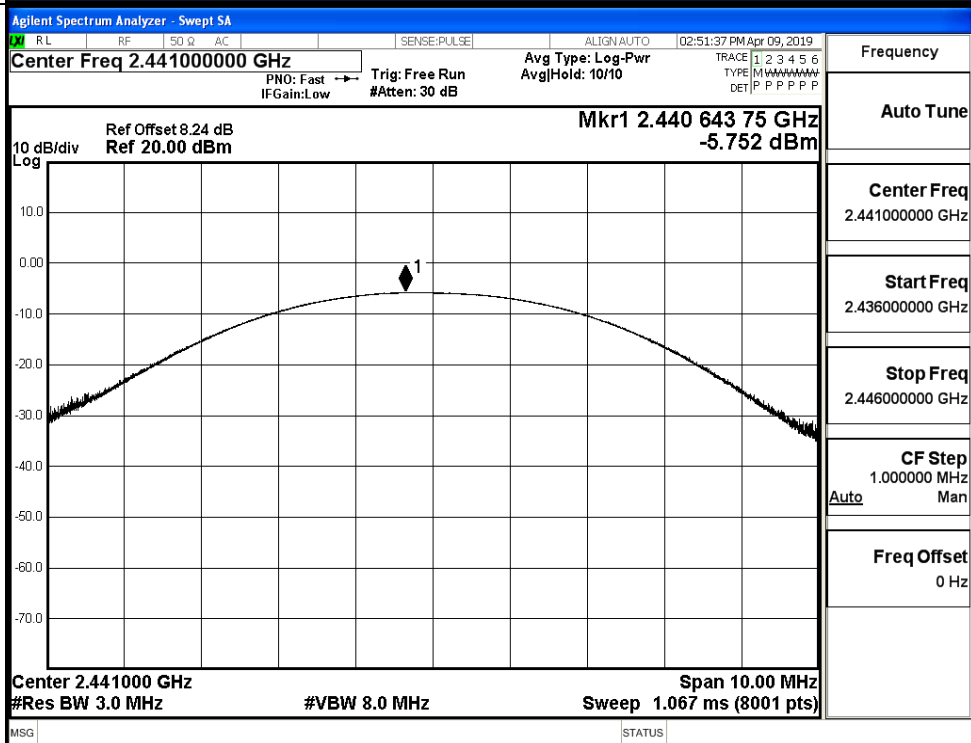
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-5.927	21	PASS
	MCH	-5.752	21	PASS
	HCH	-5.441	21	PASS
$\pi/4$ DQPSK	LCH	-5.276	21	PASS
	MCH	-5.169	21	PASS
	HCH	-4.838	21	PASS

Test Graphs

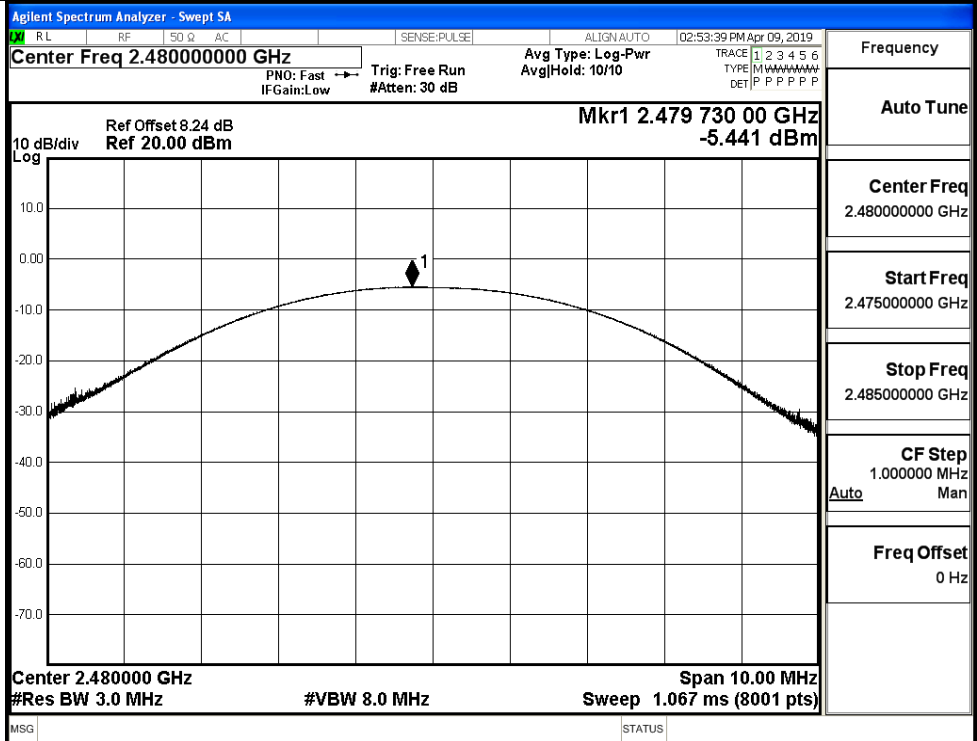
GFSK/LCH



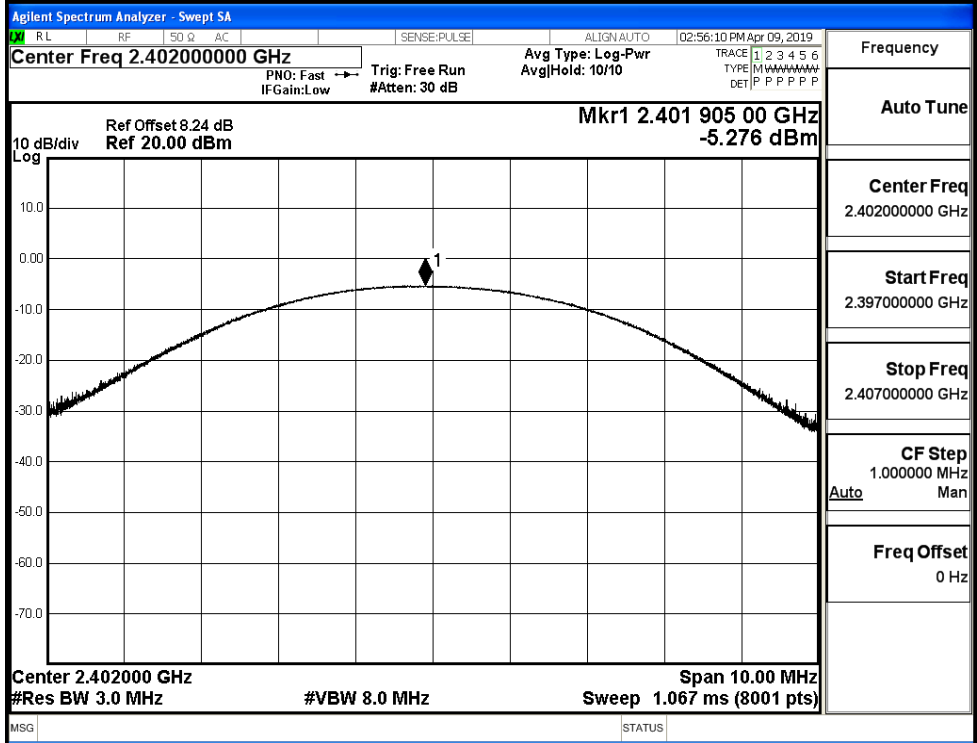
GFSK/MCH



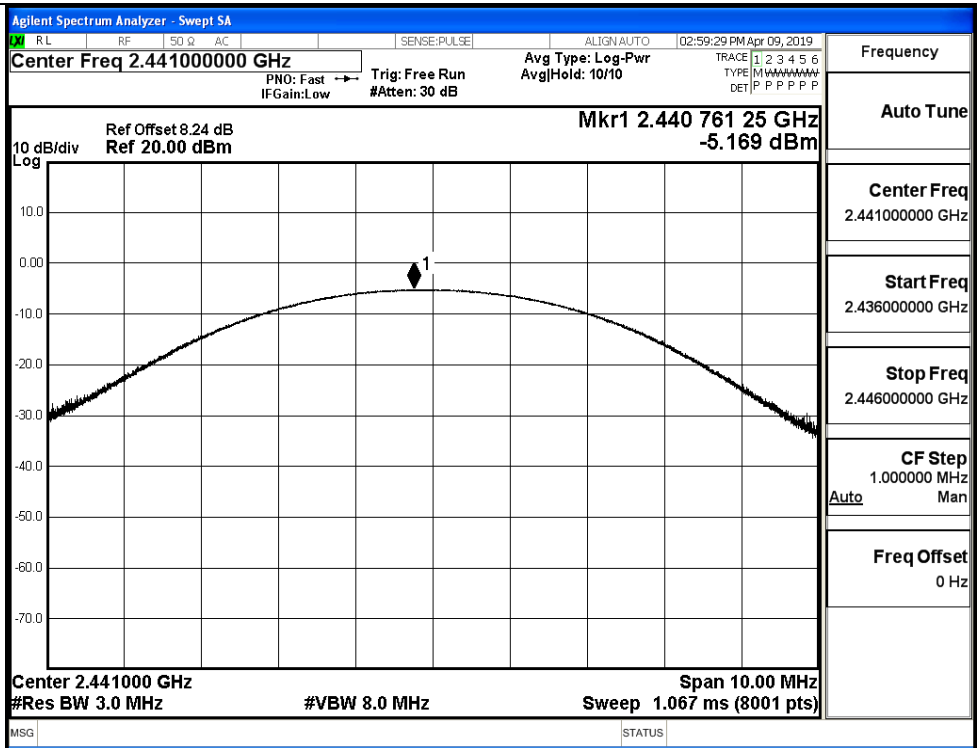
GFSK/HCH



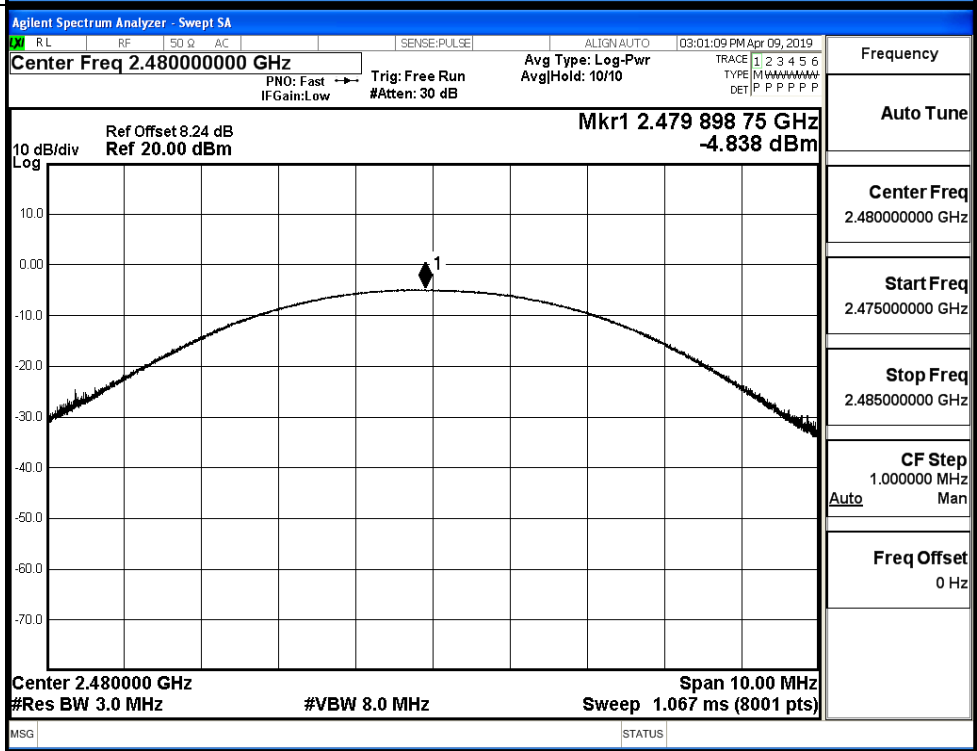
$\pi$ /4DQPSK/LCH



$\pi$ /4DQPSK/MCH

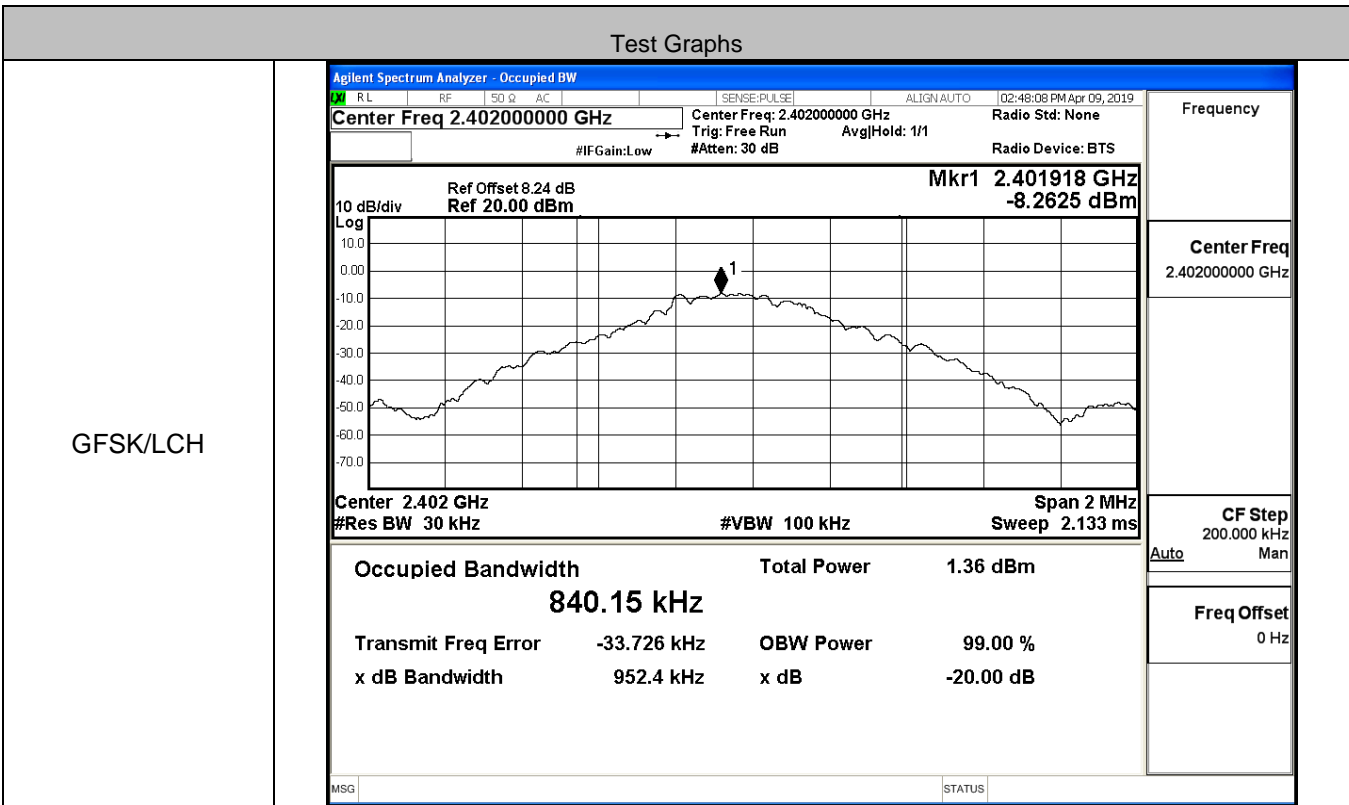


$\pi$ /4DQPSK/HCH

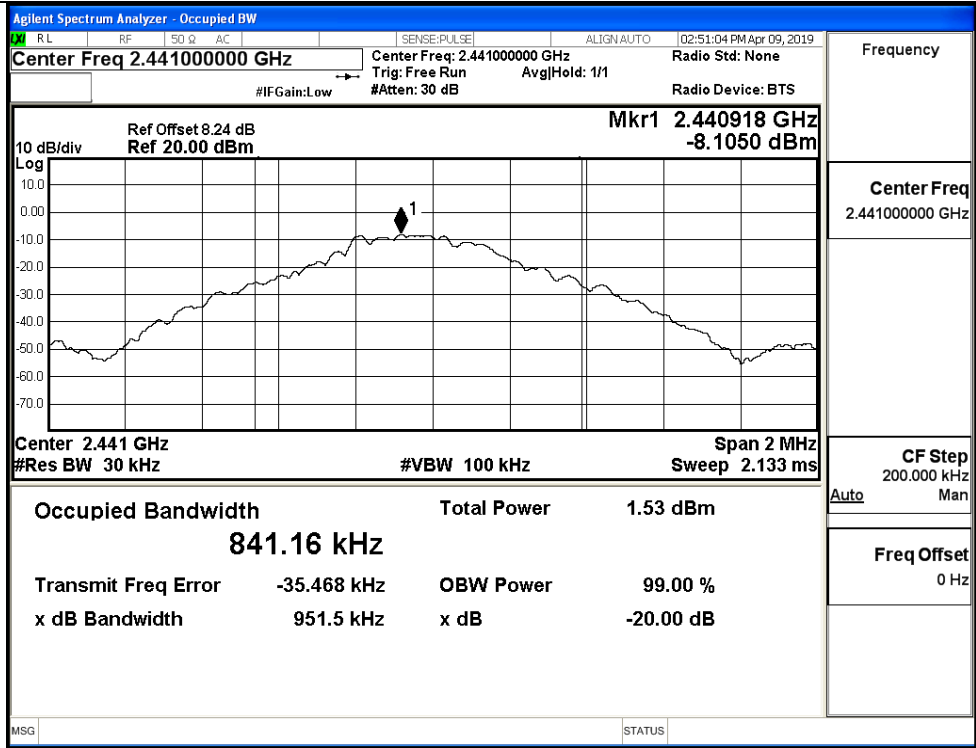


**A.2 20dB Bandwidth**

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9524	Not Specified	PASS
	MCH	0.9515	Not Specified	PASS
	HCH	0.9528	Not Specified	PASS
π/4DQPSK	LCH	1.317	Not Specified	PASS
	MCH	1.318	Not Specified	PASS
	HCH	1.317	Not Specified	PASS

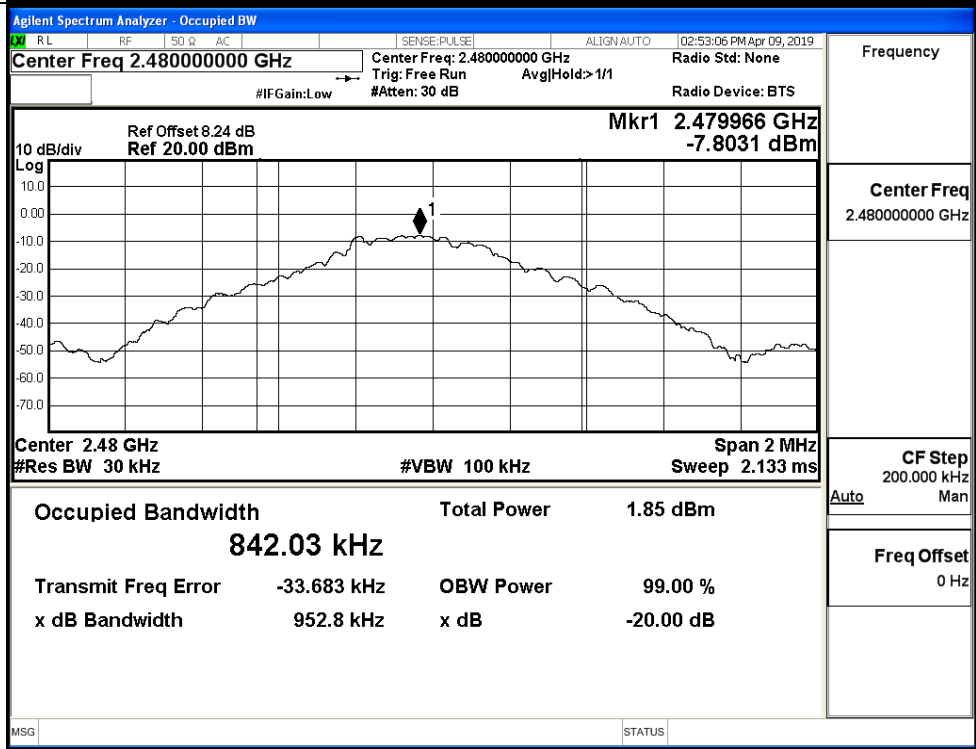


GFSK/MCH



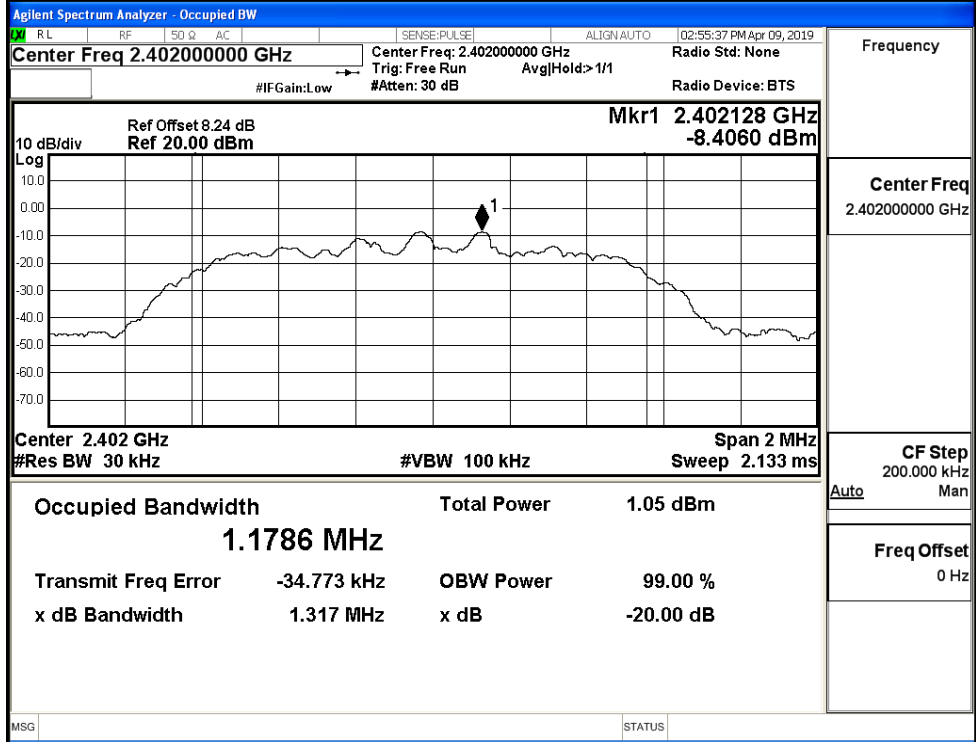
Frequency	2.441000000 GHz
Center Freq	2.441000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

GFSK/HCH

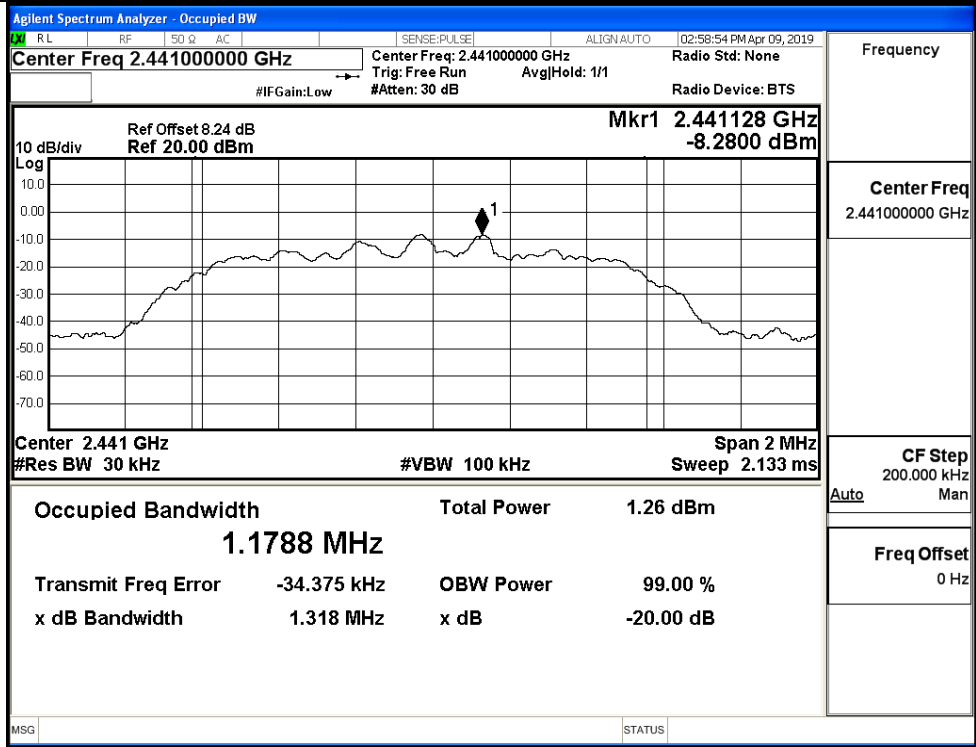


Frequency	2.480000000 GHz
Center Freq	2.480000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

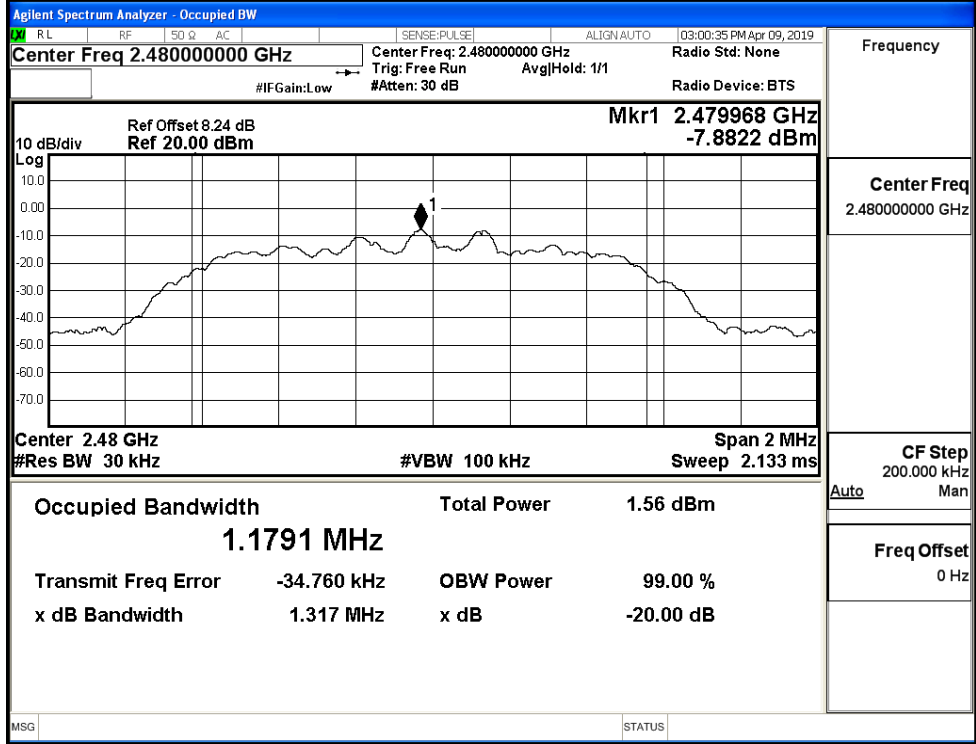
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



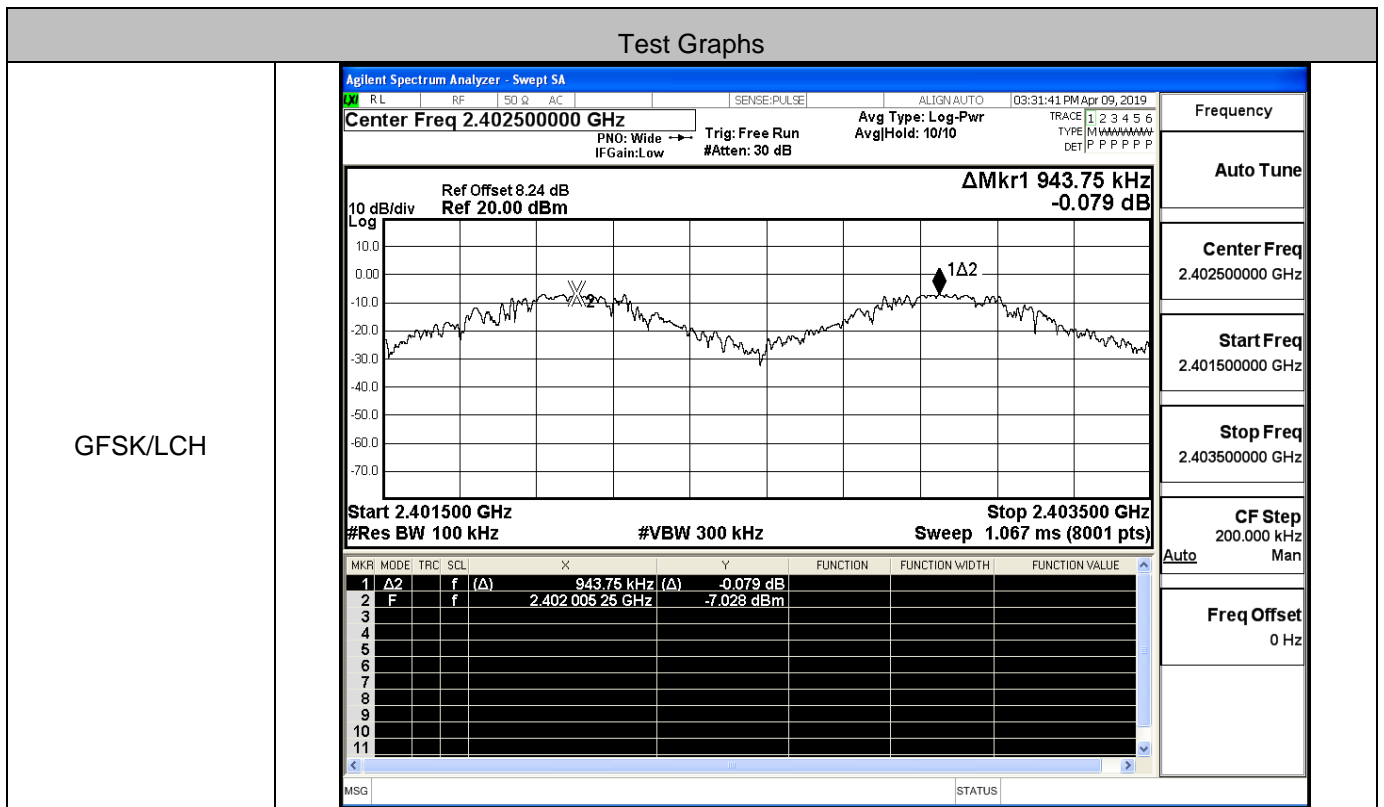
$\pi/4$ DQPSK/HCH



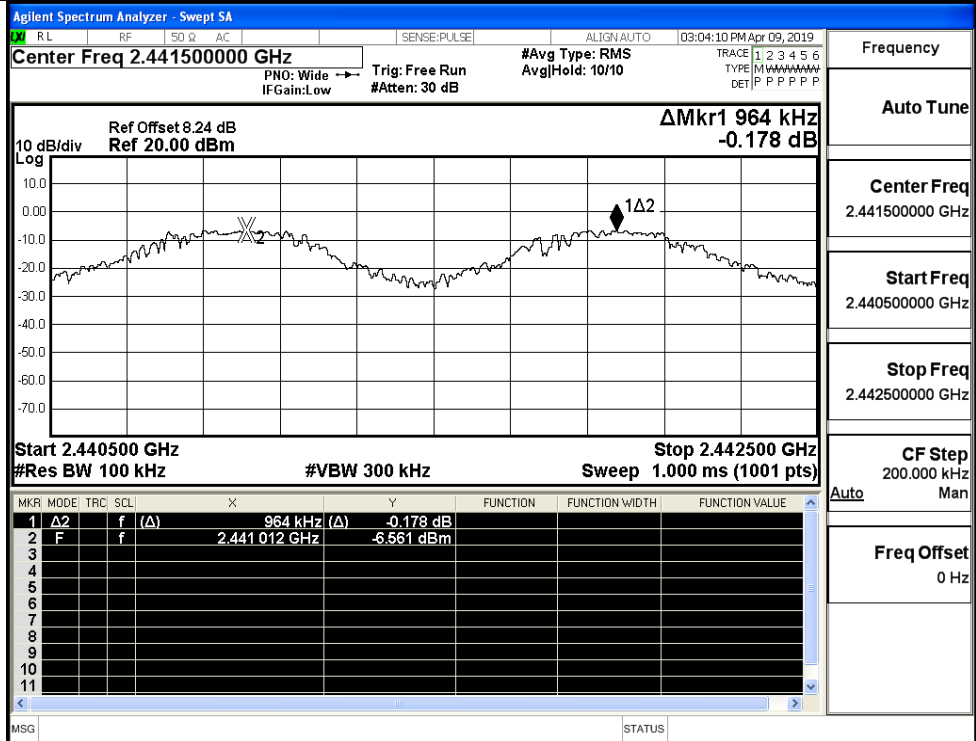


### A.3 Carrier Frequency Separation

Mode	Channel	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.944	0.635	PASS
	MCH	0.964	0.635	PASS
	HCH	1.076	0.635	PASS
π/4DQPSK	LCH	1.014	0.879	PASS
	MCH	1.024	0.879	PASS
	HCH	1.098	0.879	PASS



GFSK/MCH



Frequency

Auto Tune

Center Freq  
2.441500000 GHz

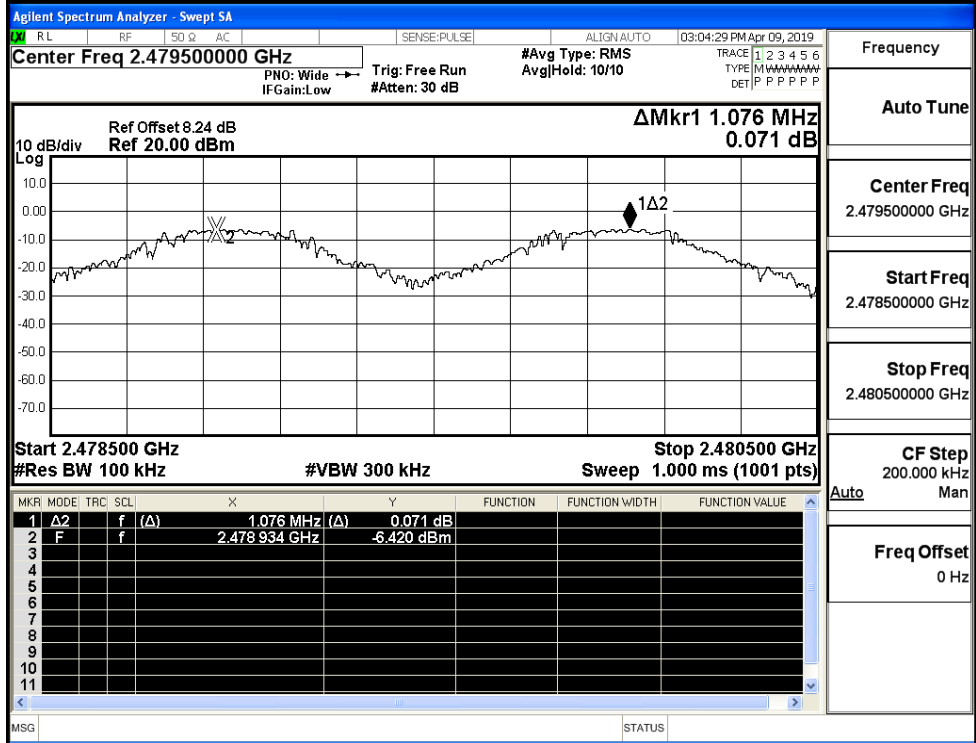
Start Freq  
2.440500000 GHz

Stop Freq  
2.442500000 GHz

CF Step  
200.000 kHz  
Auto Man

Freq Offset  
0 Hz

GFSK/HCH



Frequency

Auto Tune

Center Freq  
2.479500000 GHz

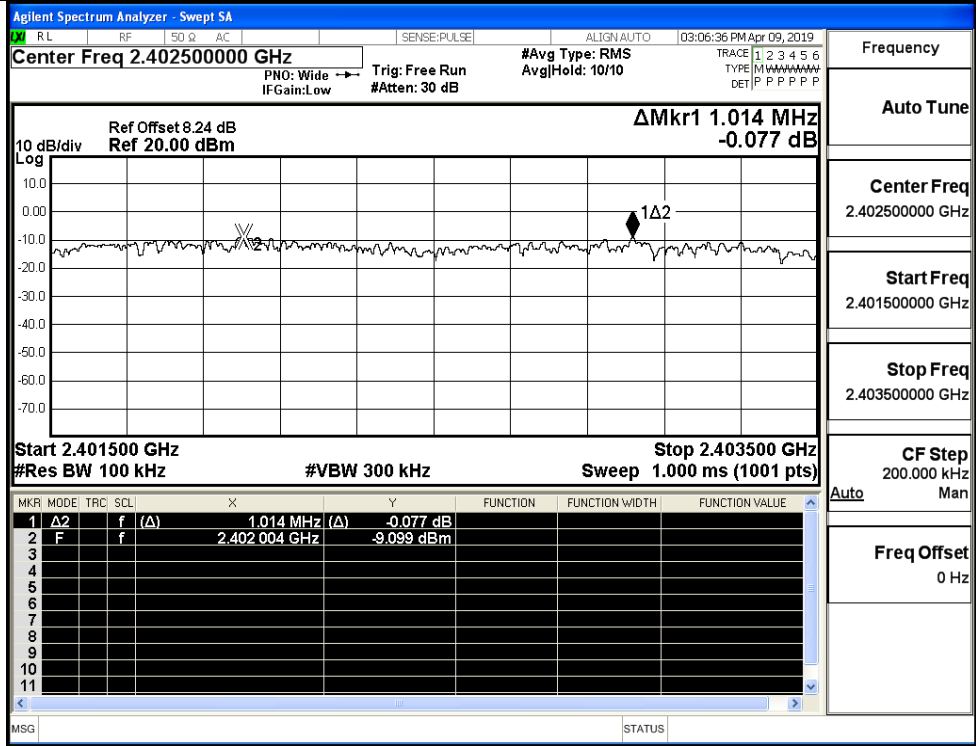
Start Freq  
2.478500000 GHz

Stop Freq  
2.480500000 GHz

CF Step  
200.000 kHz  
Auto Man

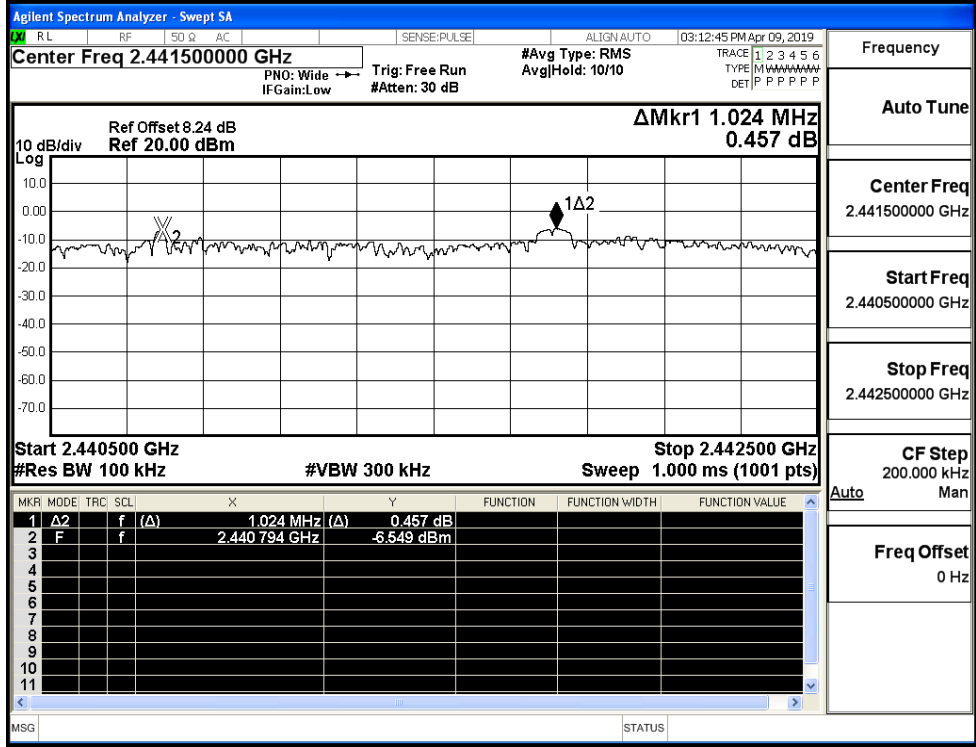
Freq Offset  
0 Hz

$\pi/4$ DQPSK/LCH



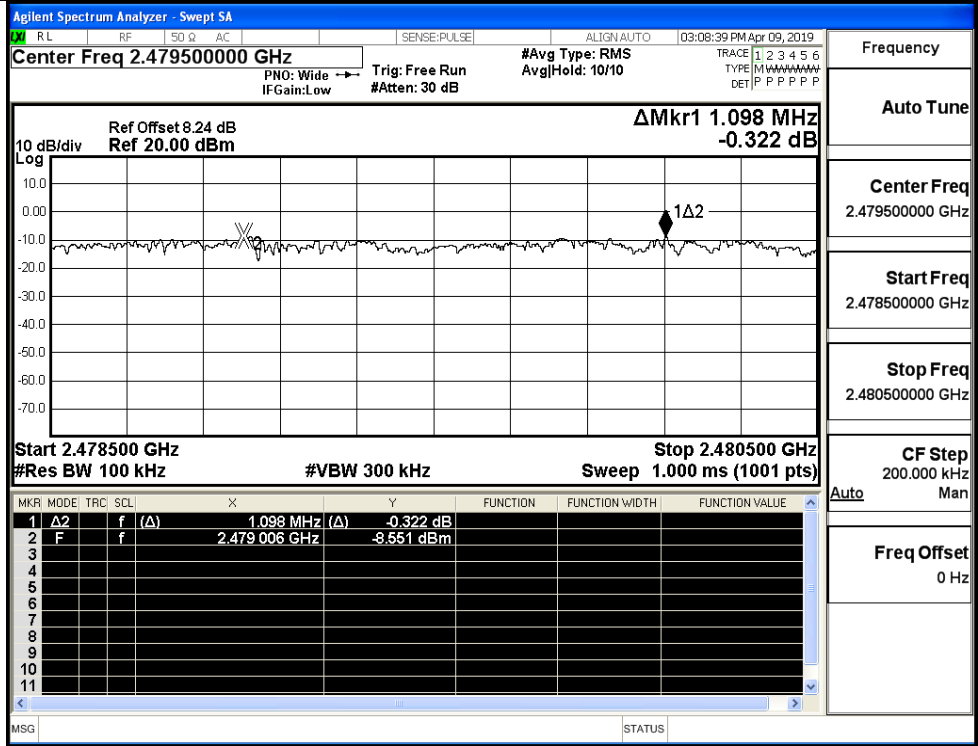
Frequency	Auto Tune
Center Freq	2.402500000 GHz
Start Freq	2.401500000 GHz
Stop Freq	2.403500000 GHz
CF Step	200.000 kHz
Freq Offset	0 Hz

$\pi/4$ DQPSK/MCH



Frequency	Auto Tune
Center Freq	2.441500000 GHz
Start Freq	2.440500000 GHz
Stop Freq	2.442500000 GHz
CF Step	200.000 kHz
Freq Offset	0 Hz

$\pi/4$ DQPSK/HCH



### A.4 Hopping Channel Number

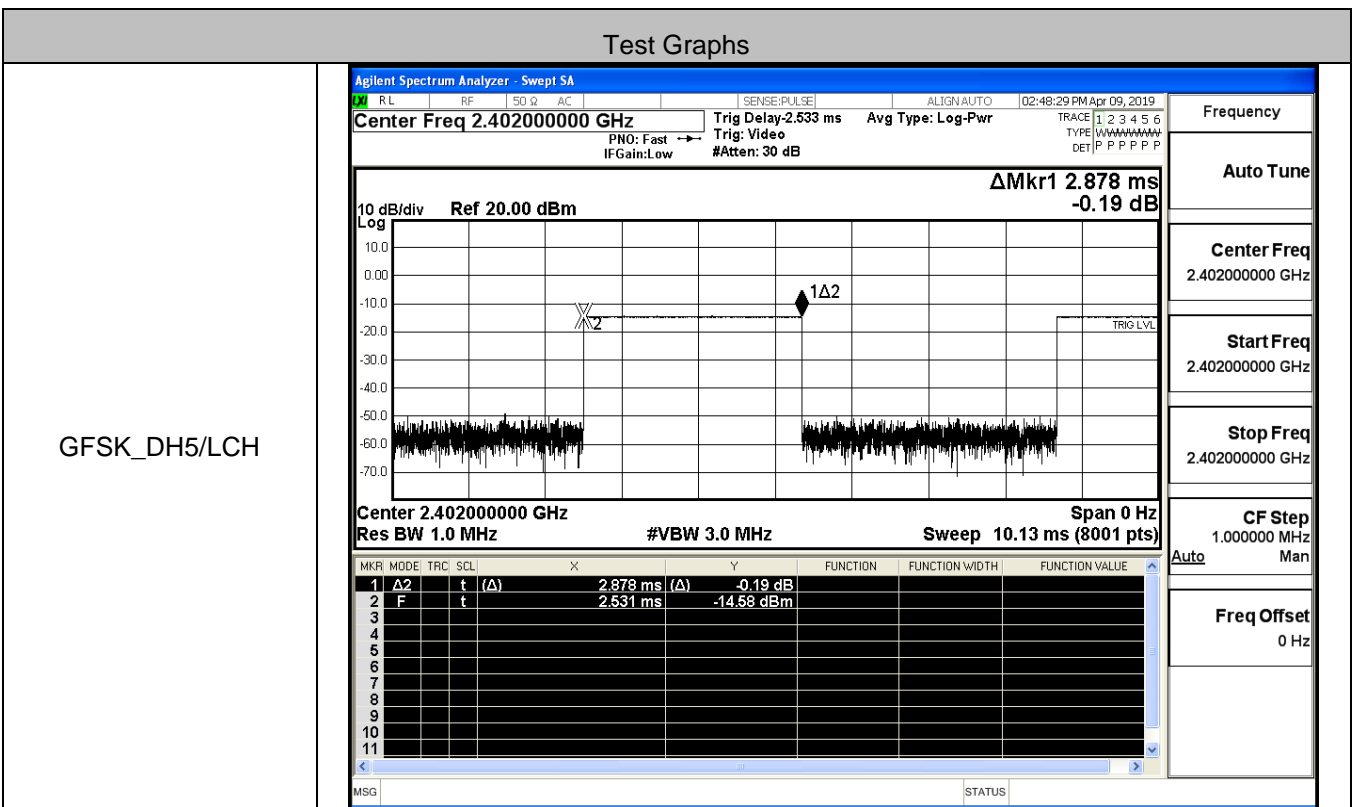
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

#### Test Graphs

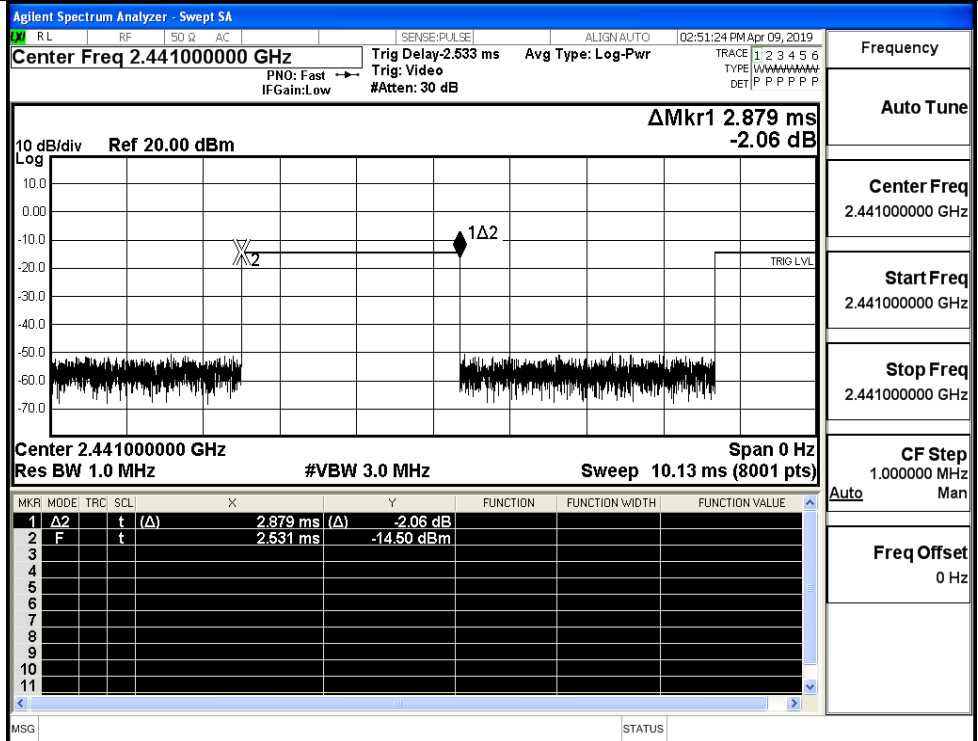
<p>GFSK/Hop</p>	<table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td><math>\Delta</math>2</td> <td>f</td> <td>(<math>\Delta</math>)</td> <td>78.010 MHz (<math>\Delta</math>)</td> <td>0.161 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td></td> <td>2.401 931 GHz</td> <td>-6.489 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	$\Delta$ 2	f	( $\Delta$ )	78.010 MHz ( $\Delta$ )	0.161 dB				2	F	f		2.401 931 GHz	-6.489 dBm				<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>
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
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<p><math>\pi/4</math>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><math>\Delta</math>2</td> <td>f</td> <td>(<math>\Delta</math>)</td> <td>78.240 MHz (<math>\Delta</math>)</td> <td>-1.847 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td></td> <td>2.402 025 GHz</td> <td>-8.770 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	$\Delta$ 2	f	( $\Delta$ )	78.240 MHz ( $\Delta$ )	-1.847 dB				2	F	f		2.402 025 GHz	-8.770 dBm				<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>
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
1	$\Delta$ 2	f	( $\Delta$ )	78.240 MHz ( $\Delta$ )	-1.847 dB																								
2	F	f		2.402 025 GHz	-8.770 dBm																								

**A.5 Dwell Time**

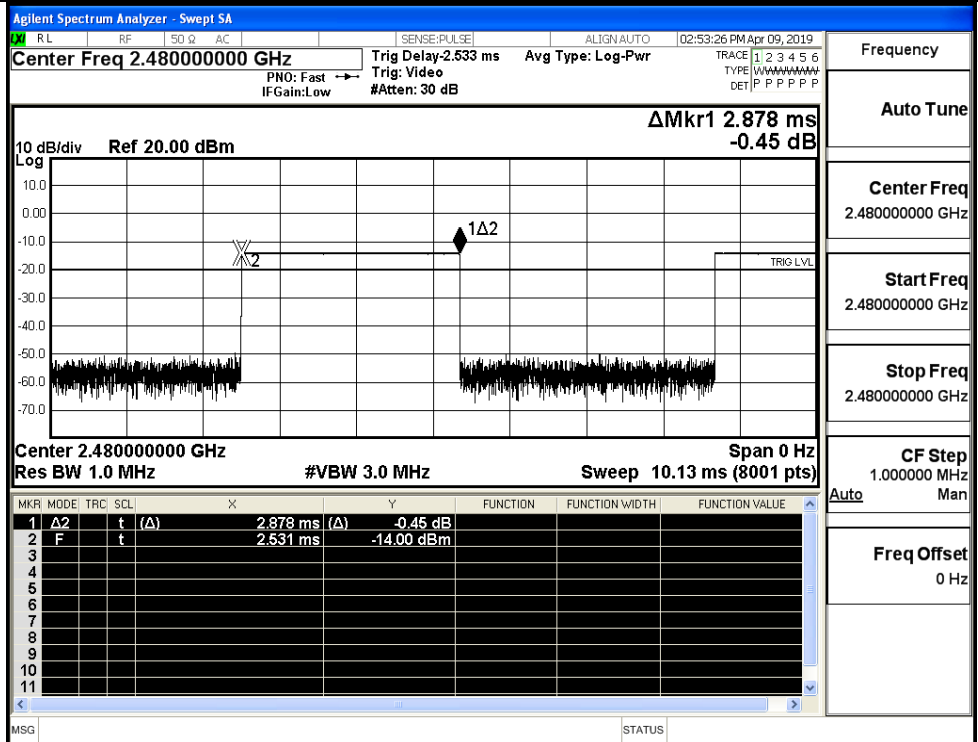
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
π/4DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.308	0.4	PASS
	2DH5	HCH	2.88	106.7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



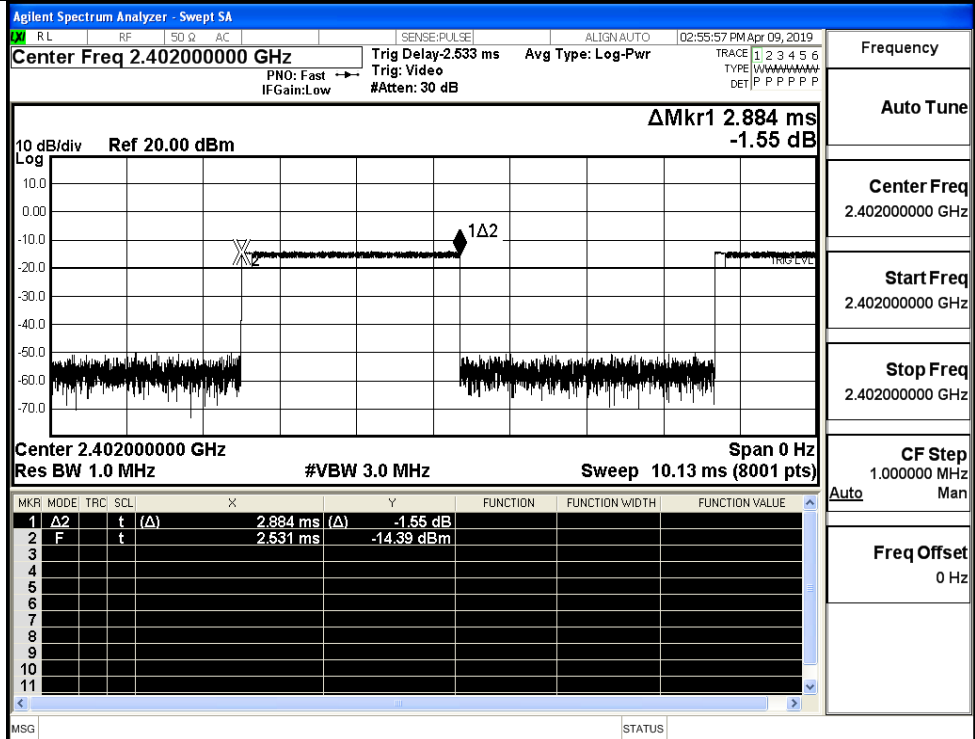
GFSK\_DH5/MCH



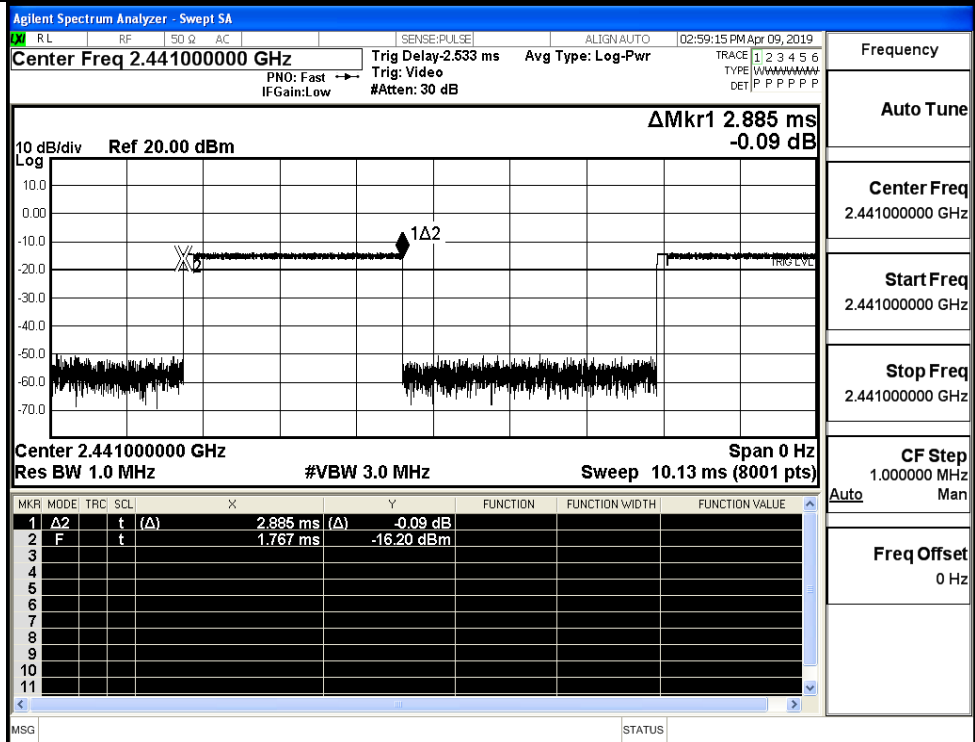
GFSK\_DH5/HCH



$\pi/4$ DQPSK  
\_2DH5/LCH

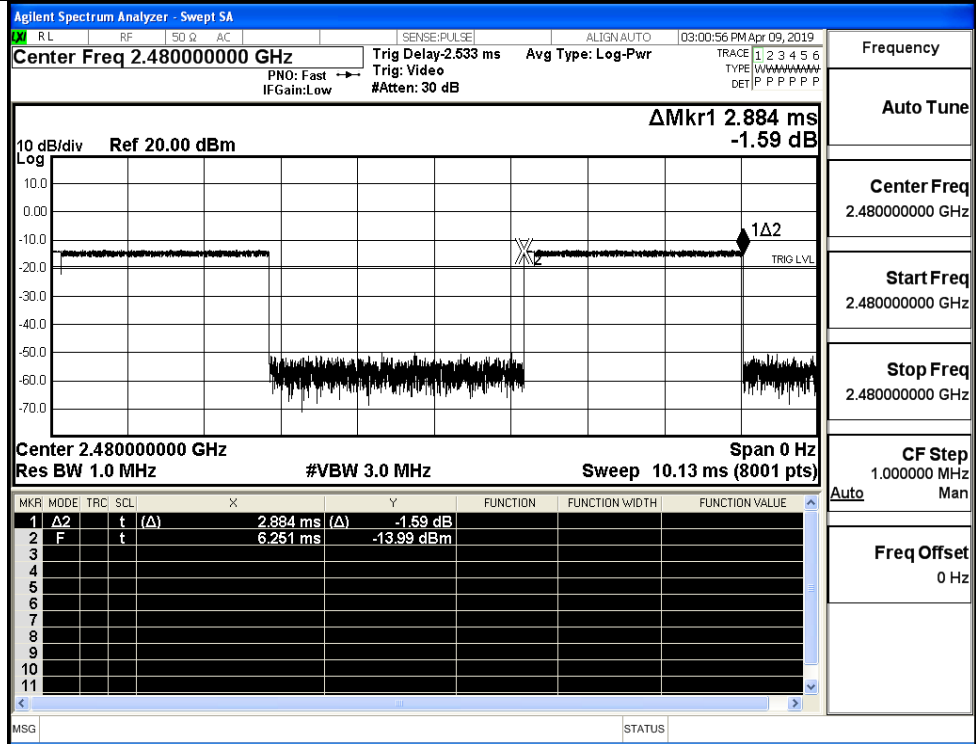


$\pi/4$ DQPSK  
\_2DH5/MCH



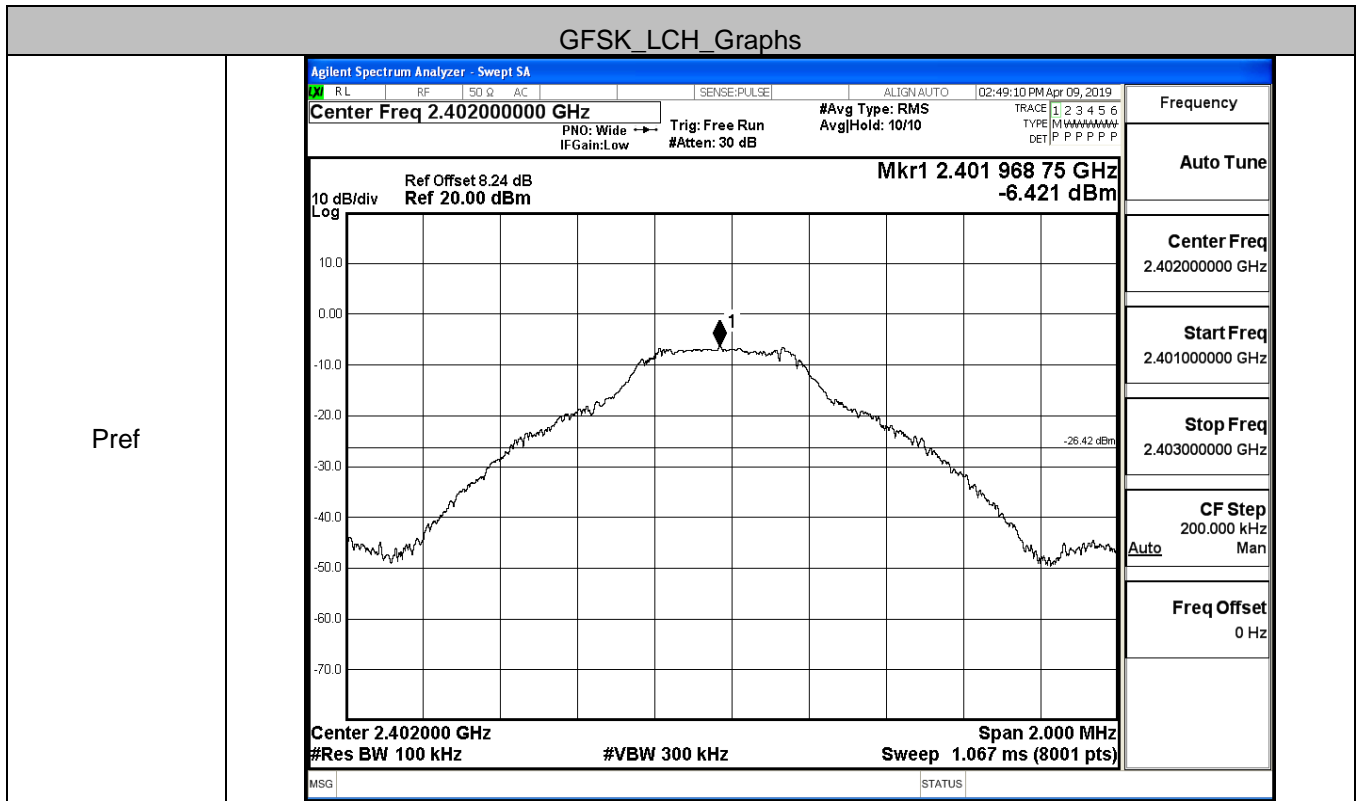


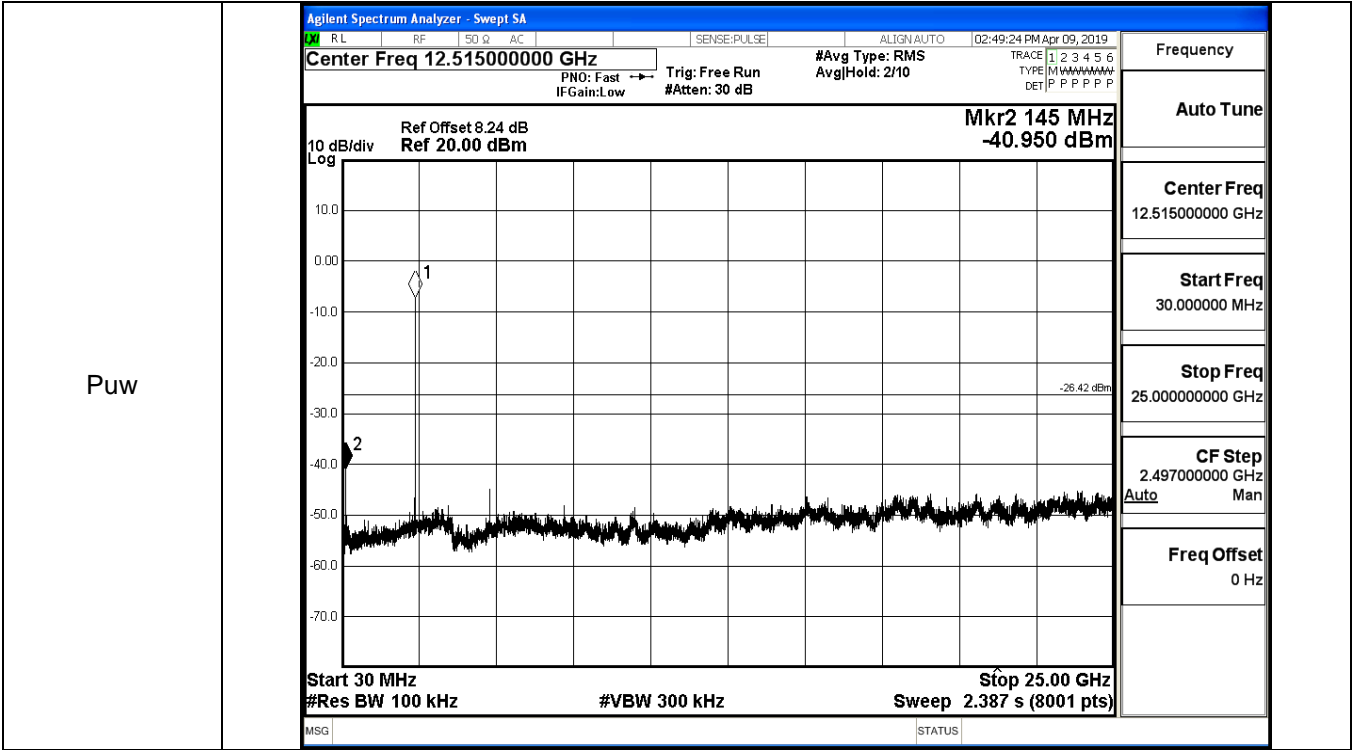
$\pi/4$ DQPSK  
\_2DH5/HCH



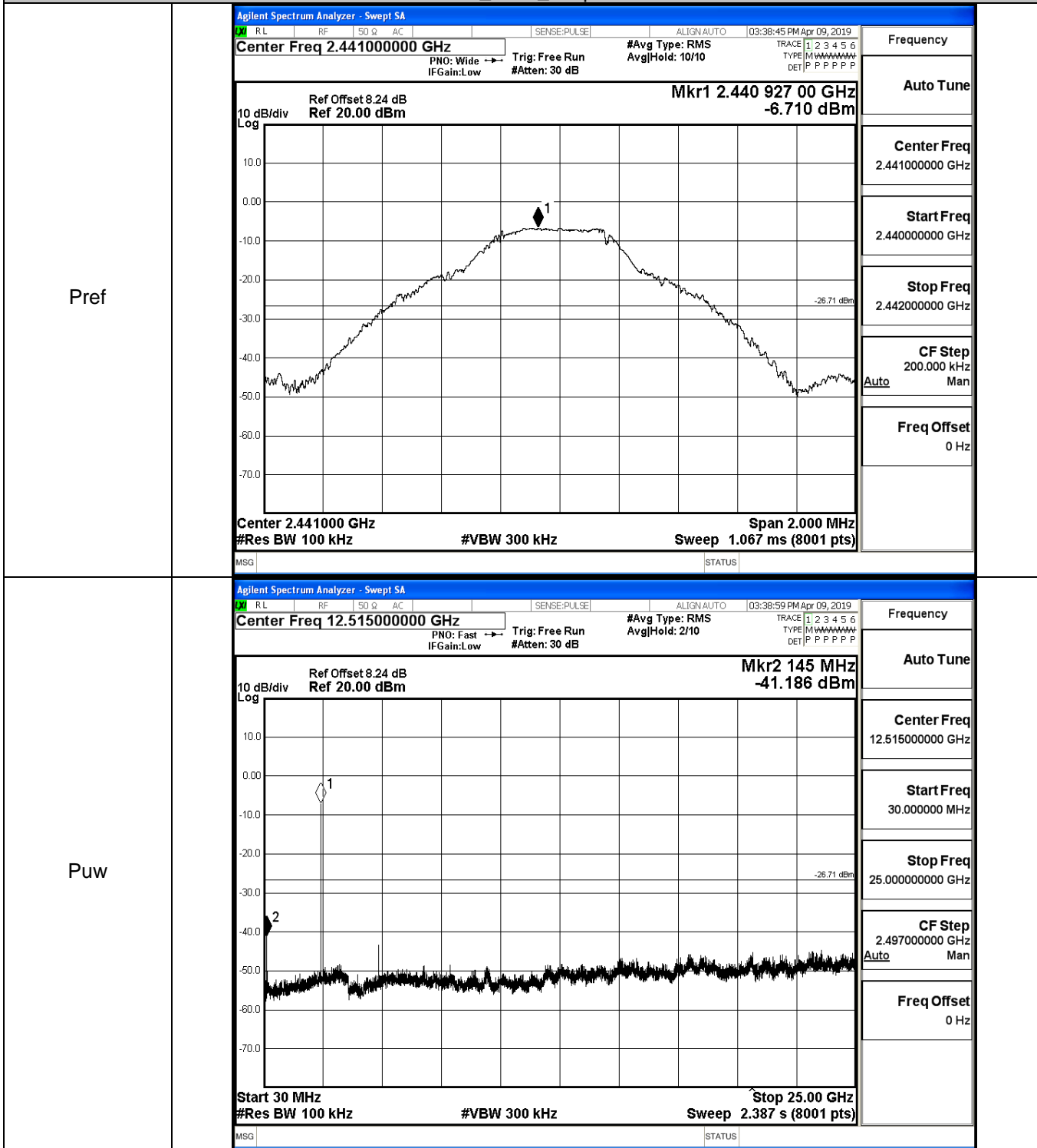
**A.6 RF Conducted Spurious Emissions**

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-6.421	-40.950	-26.421	PASS
	MCH	-6.71	-41.186	-26.710	PASS
	HCH	-5.702	-40.596	-25.702	PASS
π/4DQPSK	LCH	-6.798	-40.632	-26.798	PASS
	MCH	-7.706	-42.816	-27.706	PASS
	HCH	-5.842	-41.186	-25.842	PASS

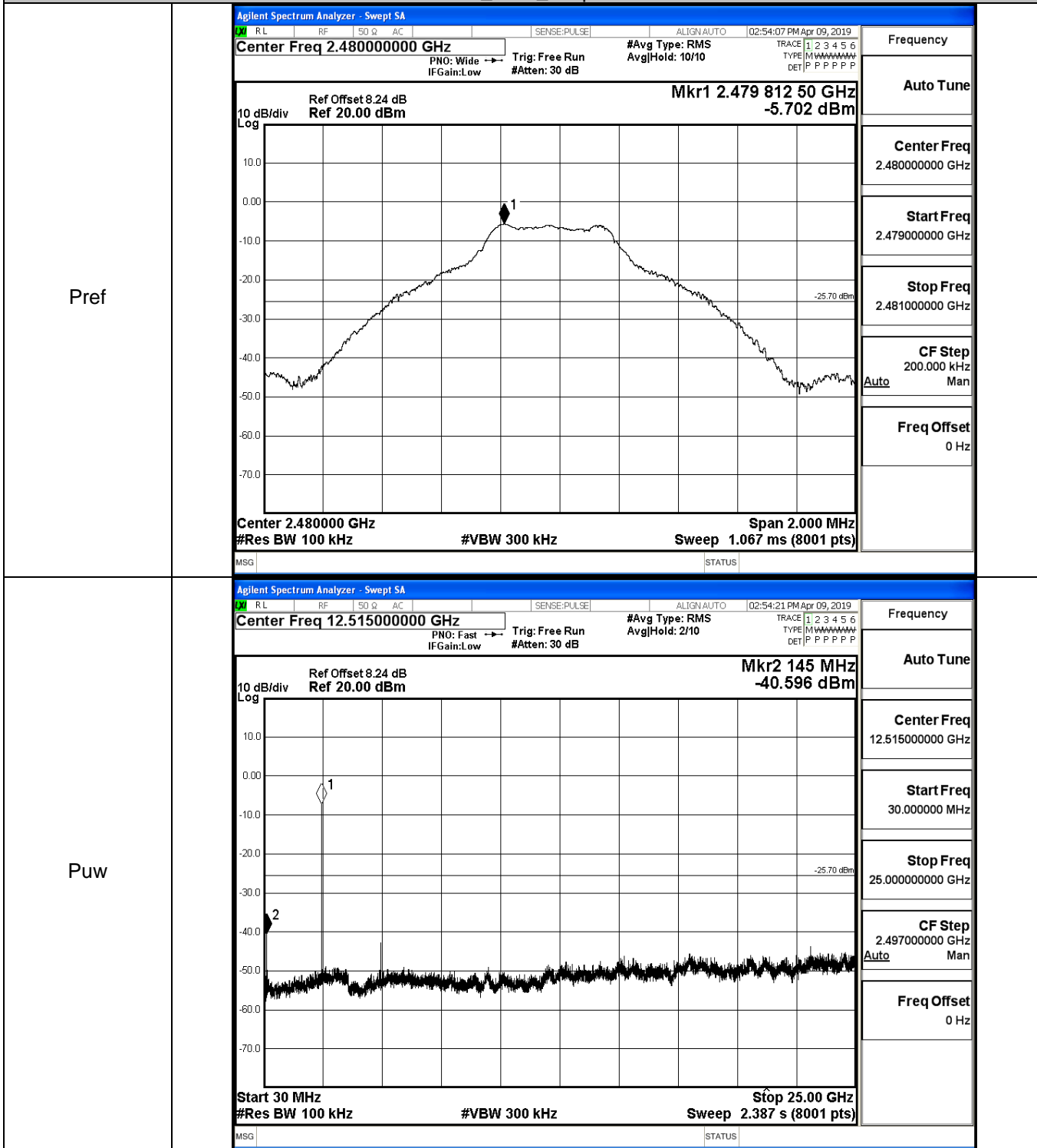




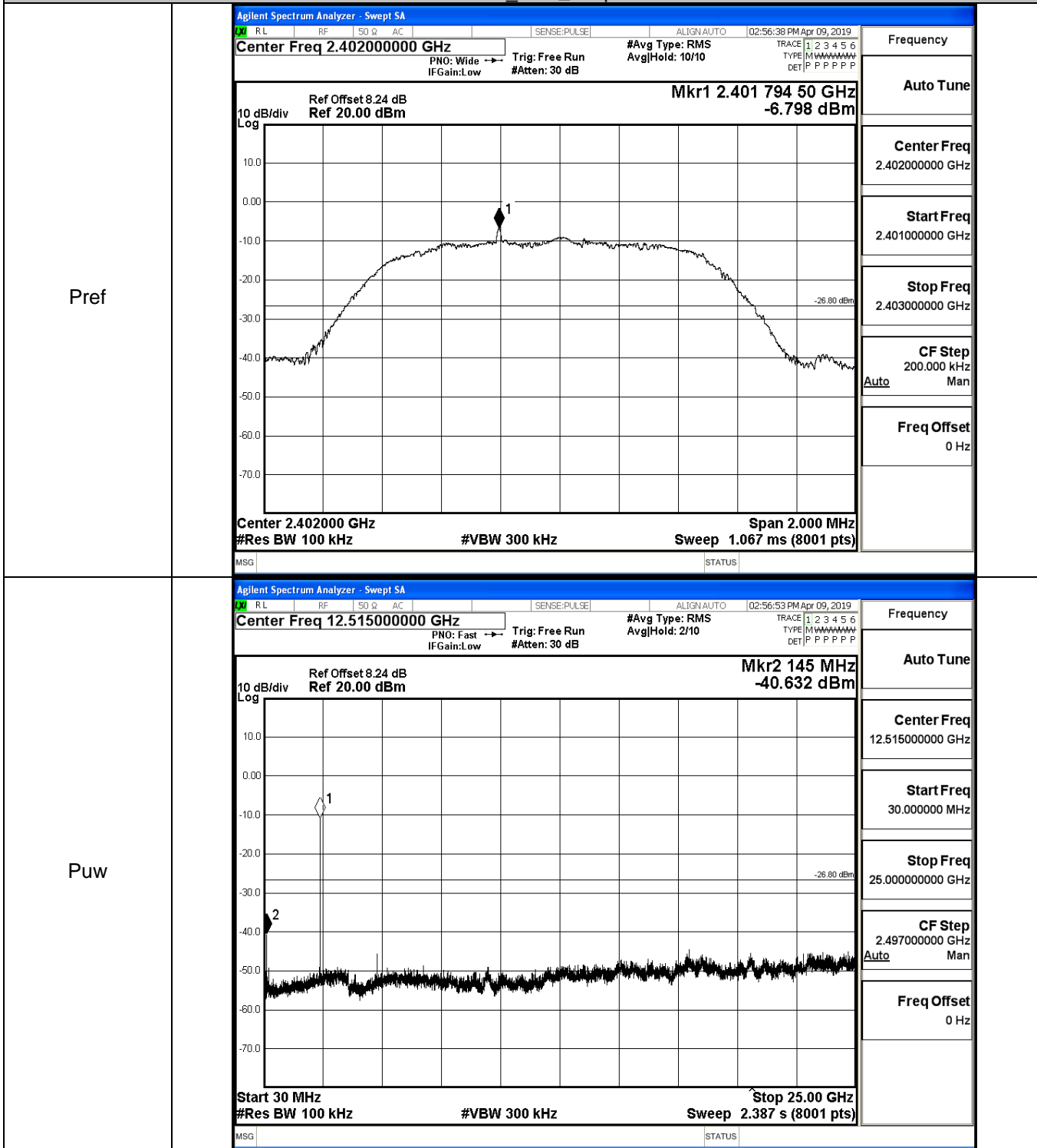
GFSK\_MCH\_Graphs



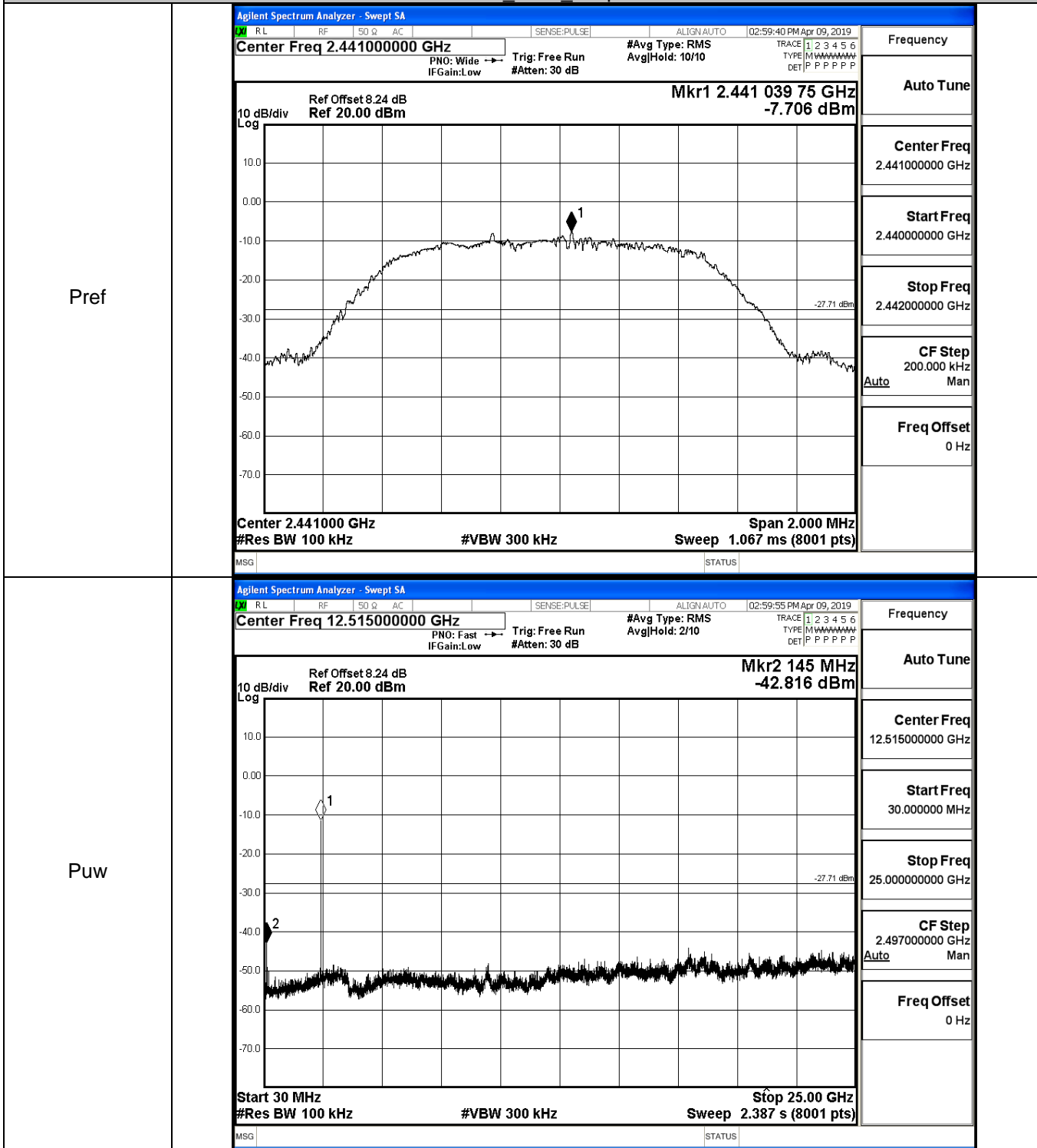
GFSK\_HCH\_Graphs



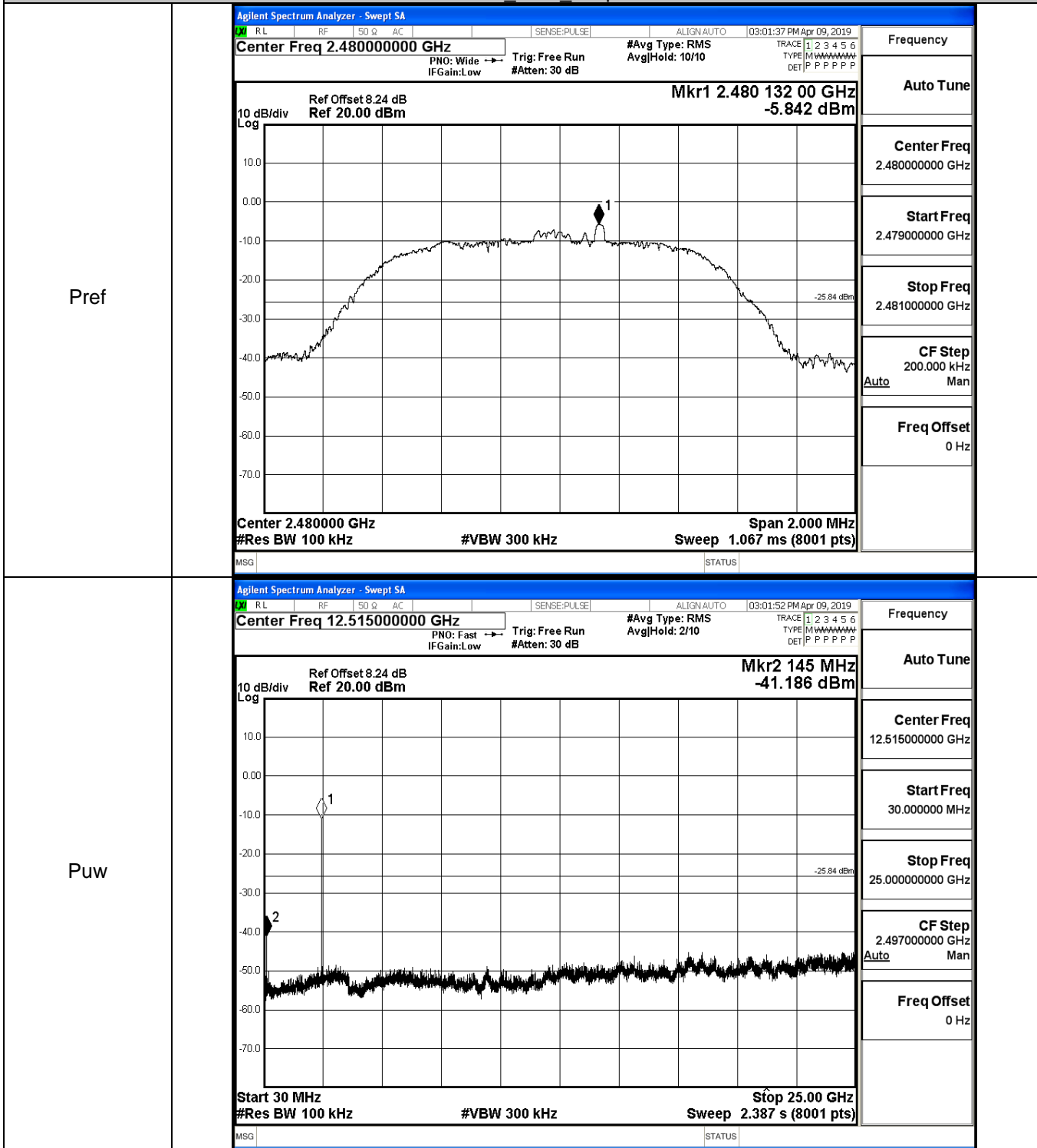
$\pi/4$ DQPSK\_LCH\_Graphs



$\pi/4$ DQPSK\_MCH\_Graphs



$\pi/4$ DQPSK\_HCH\_Graphs



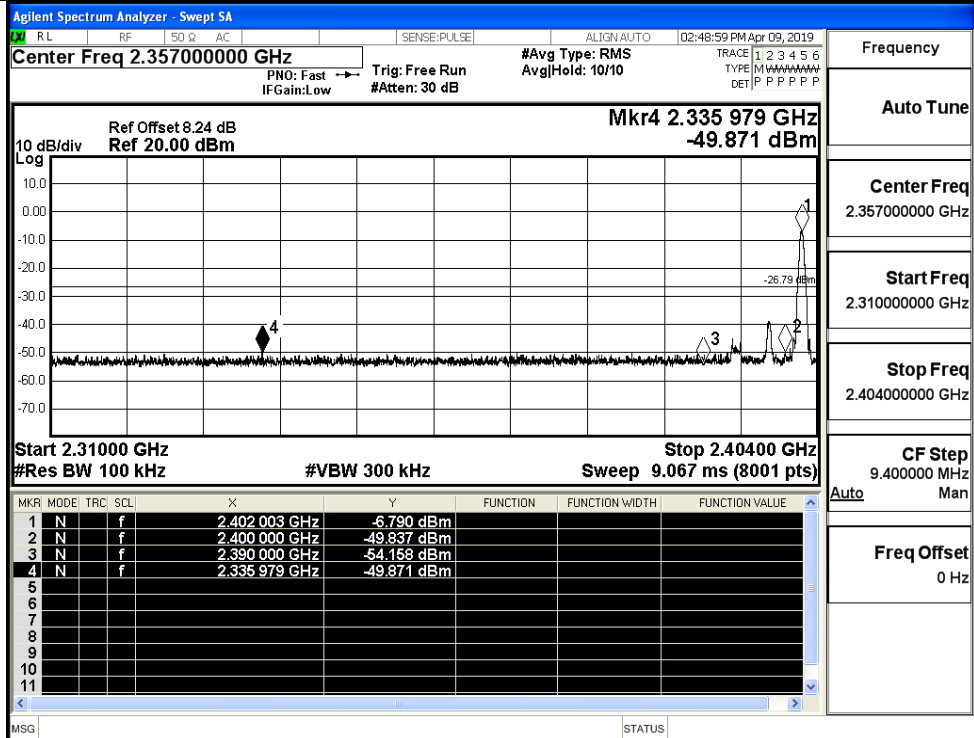


## A.7 Band-edge for RF Conducted Emissions

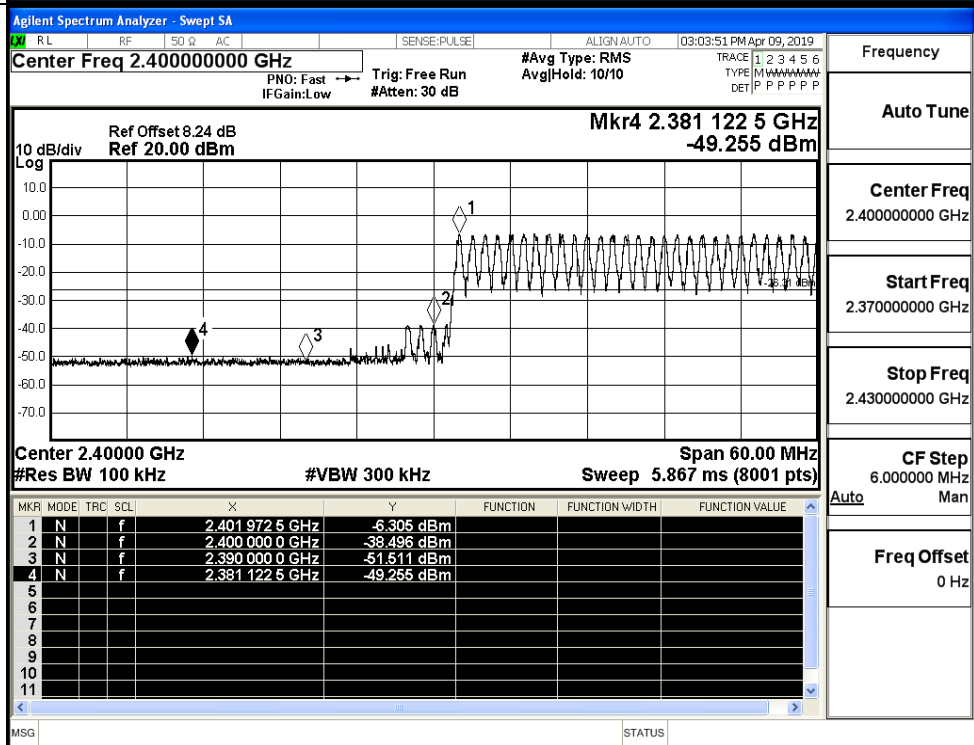
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-6.790	Off	-49.871	-26.79	PASS
			-6.305	On	-49.255	-26.31	PASS
	HCH	2480	-5.815	Off	-47.568	-25.82	PASS
			-5.958	On	-49.302	-25.96	PASS
$\pi/4$ DQPSK	LCH	2402	-5.988	Off	-48.924	-25.99	PASS
			-6.213	On	-48.819	-26.21	PASS
	HCH	2480	-8.305	Off	-49.744	-28.31	PASS
			-5.744	On	-48.274	-25.74	PASS

Test Graphs

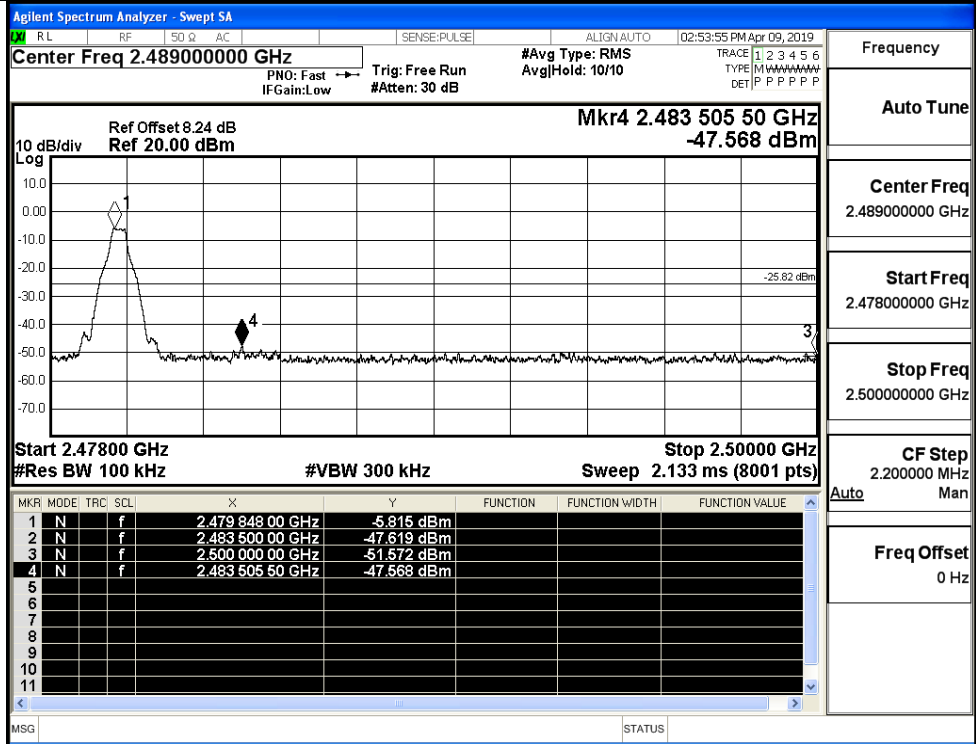
GFSK/LCH/No Hop



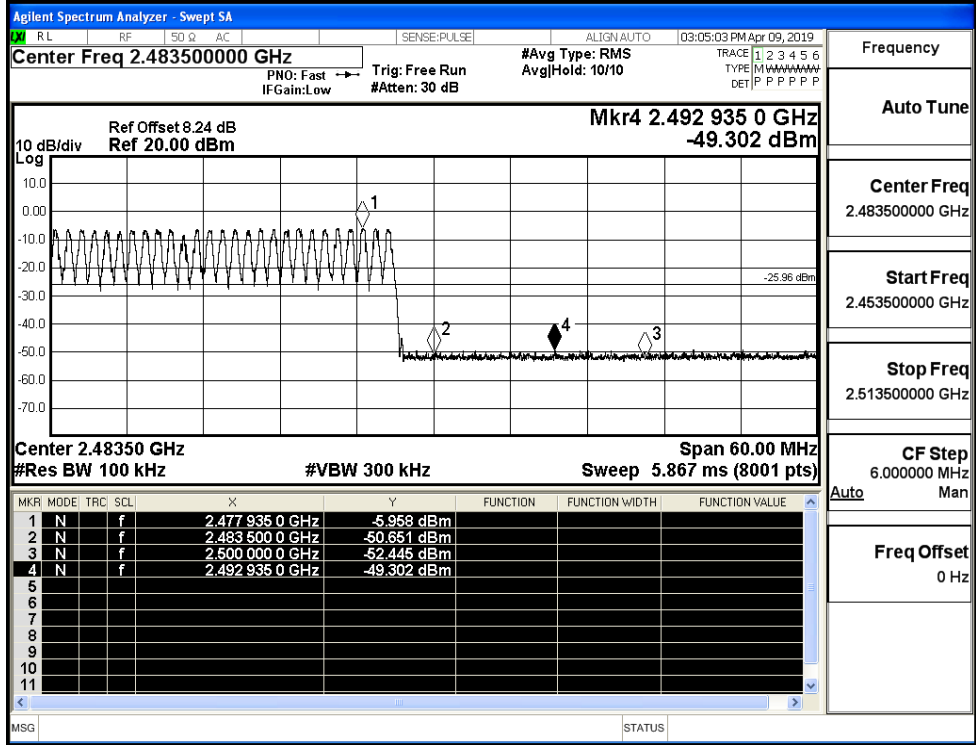
GFSK/LCH/Hop



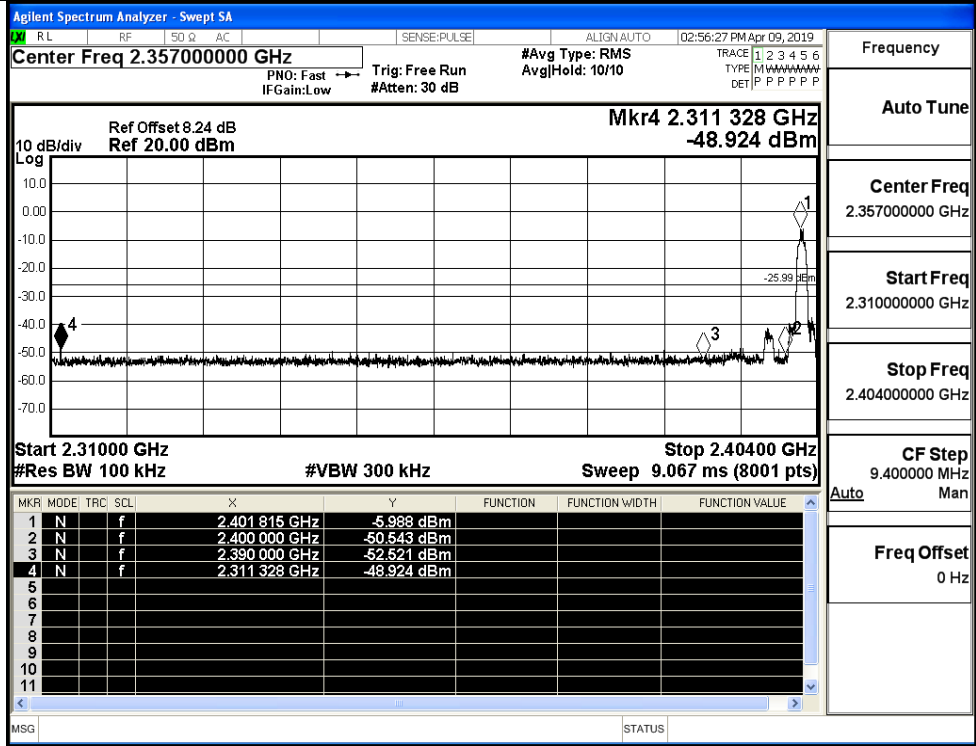
GFSK/HCH/No Hop



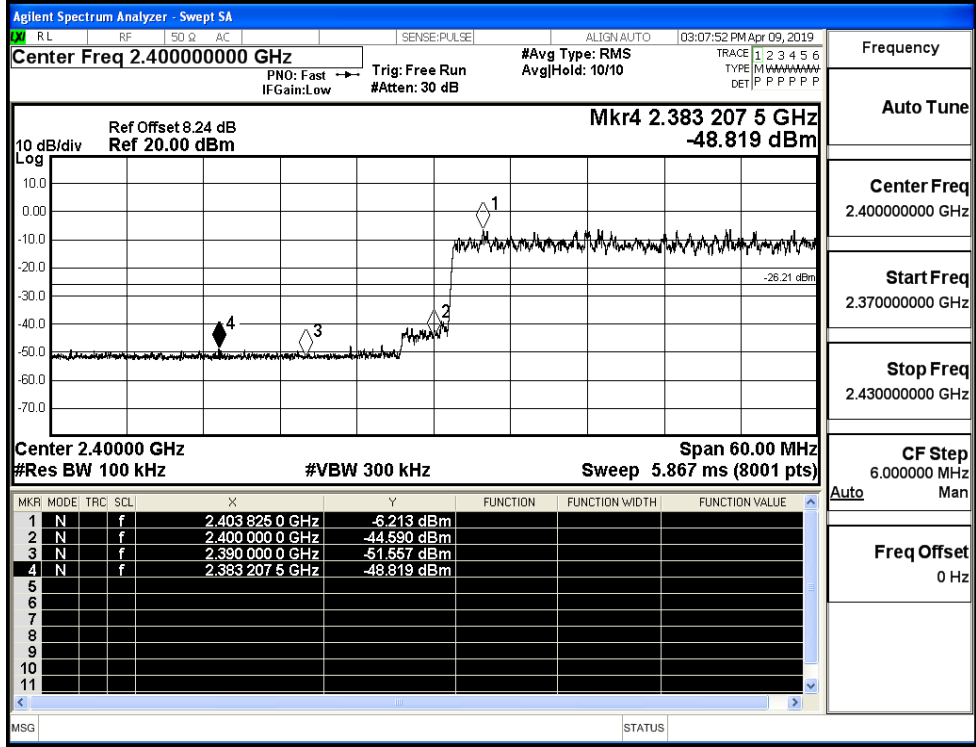
GFSK/HCH/Hop



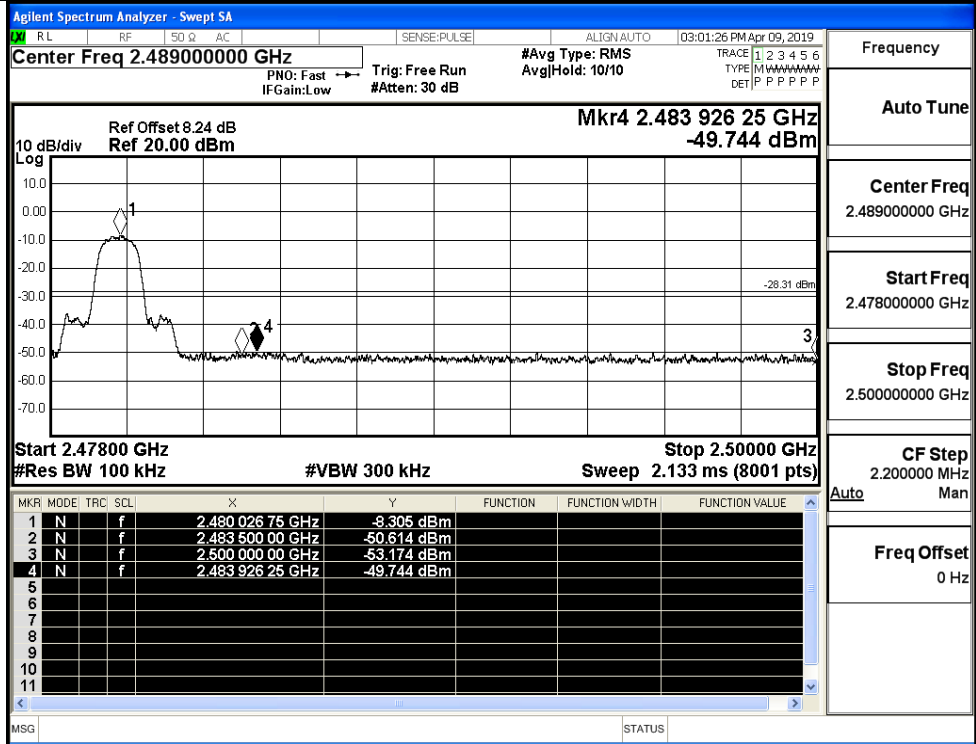
$\pi/4$ DQPSK/LCH/No Hop



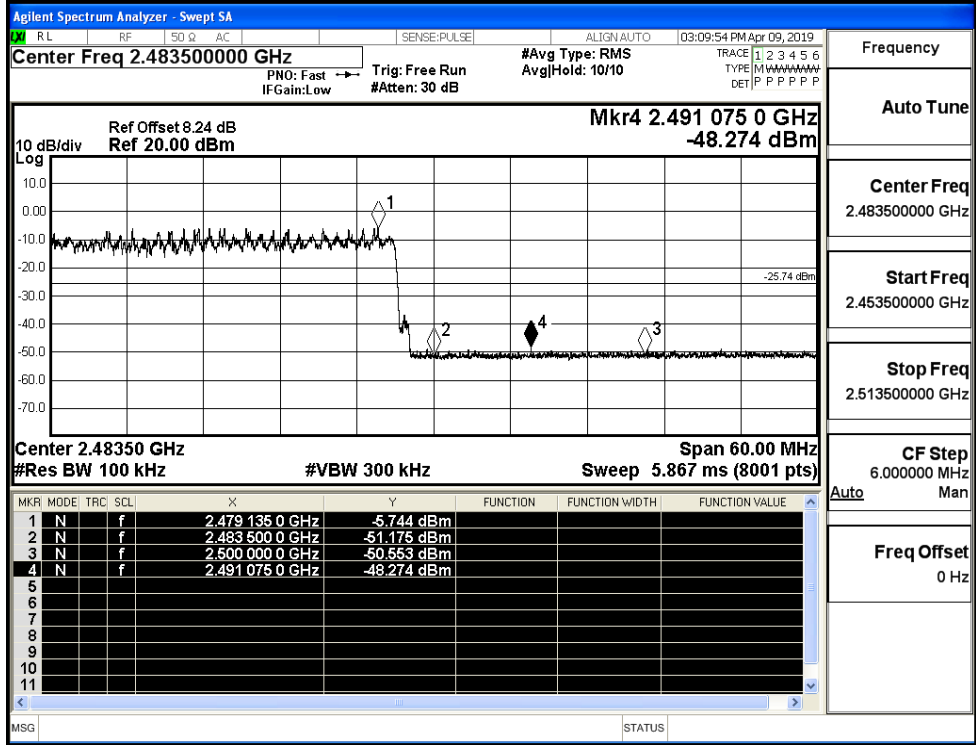
$\pi/4$ DQPSK/LCH/Hop



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



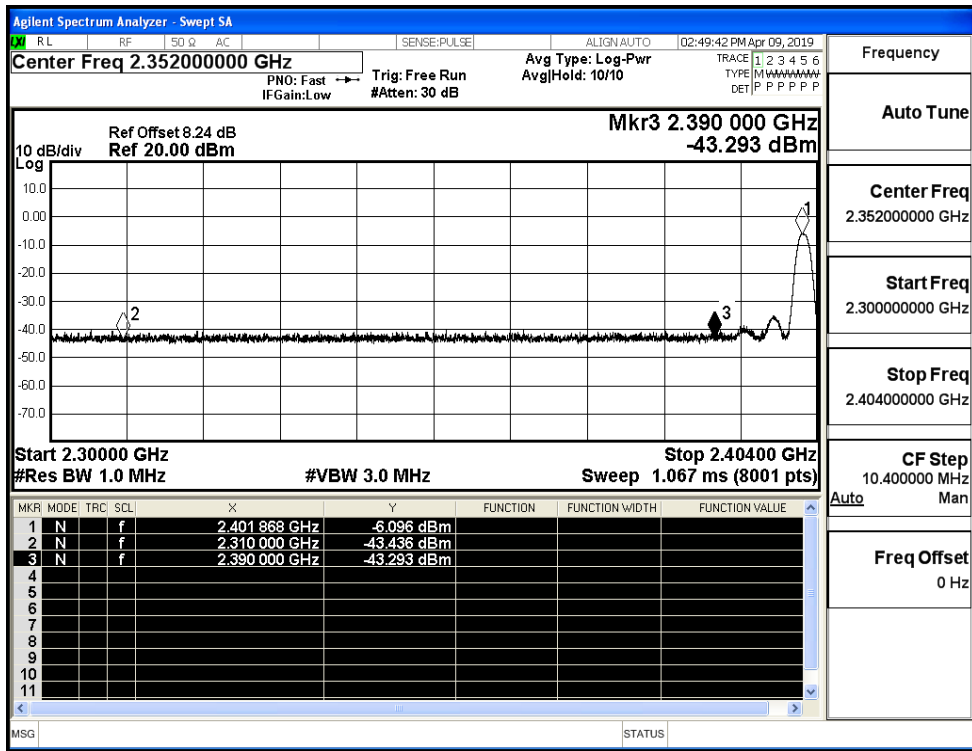
$\pi$ /4DQPSK/HCH/Hop



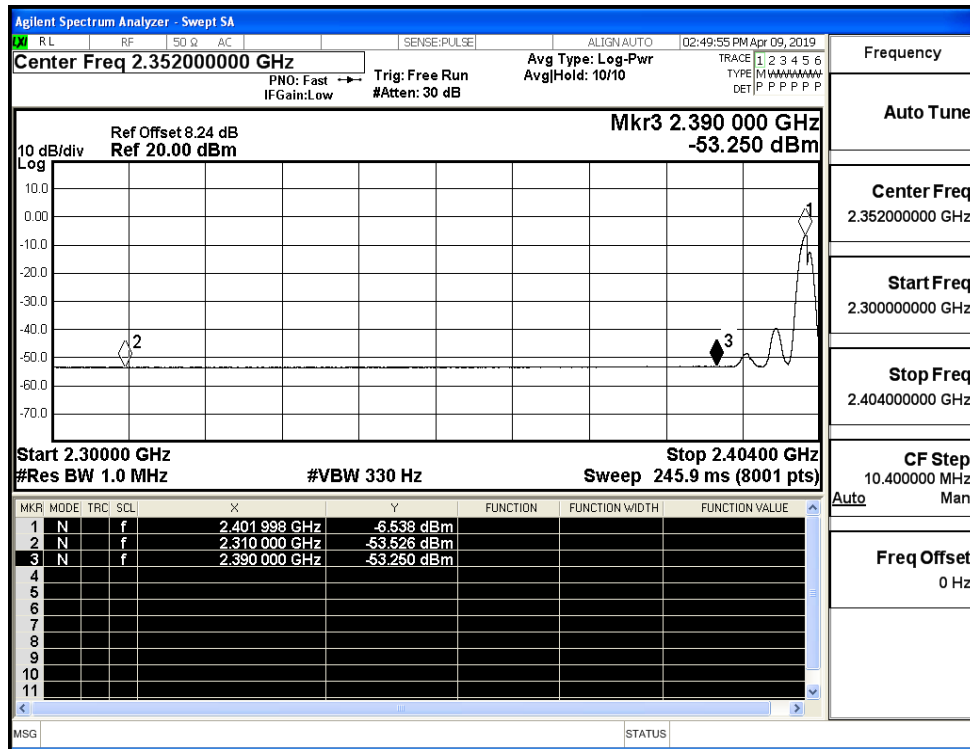
## A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.44	2.0	0	53.82	PEAK	74	PASS
	Off	2310.0	-53.53	2.0	0	43.73	AV	54	PASS
	Off	2390.0	-43.29	2.0	0	53.96	PEAK	74	PASS
	Off	2390.0	-53.25	2.0	0	44.01	AV	54	PASS
	Off	2483.5	-41.24	2.0	0	56.02	PEAK	74	PASS
	Off	2483.5	-51.65	2.0	0	45.61	AV	54	PASS
	Off	2500.0	-42.16	2.0	0	55.10	PEAK	74	PASS
	Off	2500.0	-52.88	2.0	0	44.38	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.49	2.0	0	53.77	PEAK	74	PASS
	Off	2310.0	-53.36	2.0	0	43.90	AV	54	PASS
	Off	2390.0	-42.36	2.0	0	54.90	PEAK	74	PASS
	Off	2390.0	-53.28	2.0	0	43.97	AV	54	PASS
	Off	2483.5	-42.02	2.0	0	55.24	PEAK	74	PASS
	Off	2483.5	-51.71	2.0	0	45.55	AV	54	PASS
	Off	2500.0	-43.47	2.0	0	53.79	PEAK	74	PASS
	Off	2500.0	-52.85	2.0	0	44.41	AV	54	PASS

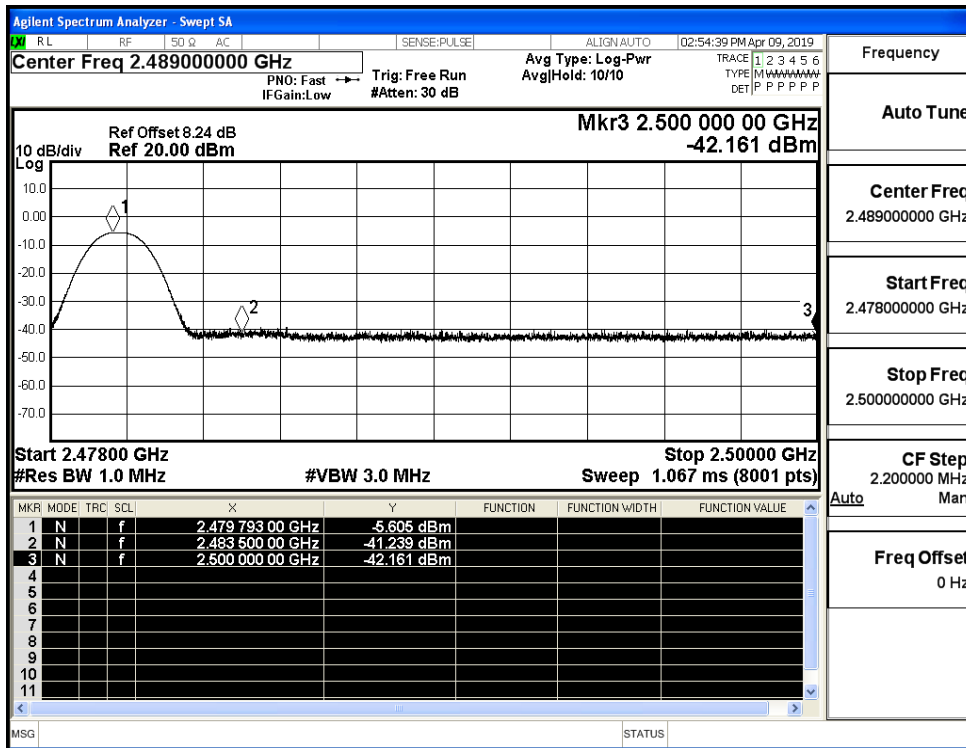
Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (Low Channel)



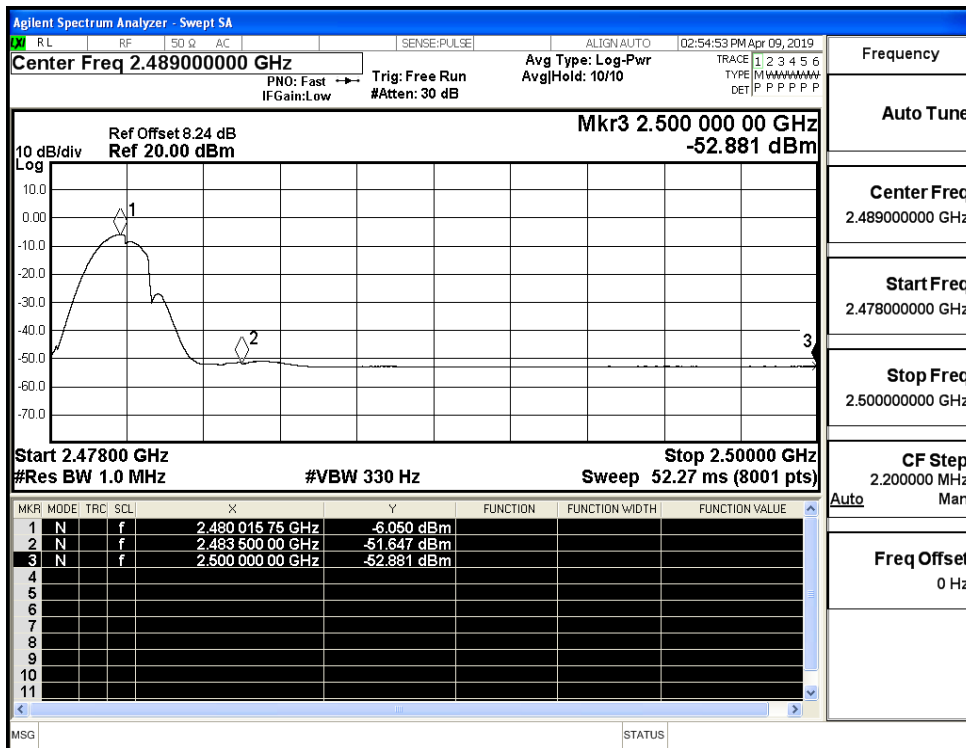
Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (Low Channel)



Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (High Channel)

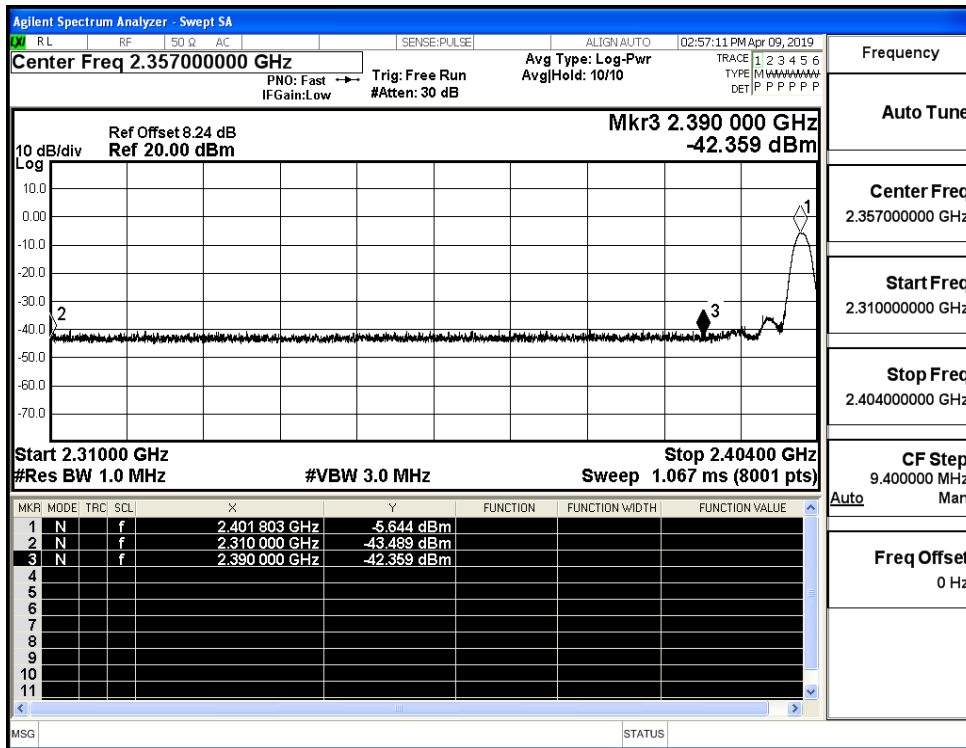


Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (High Channel)

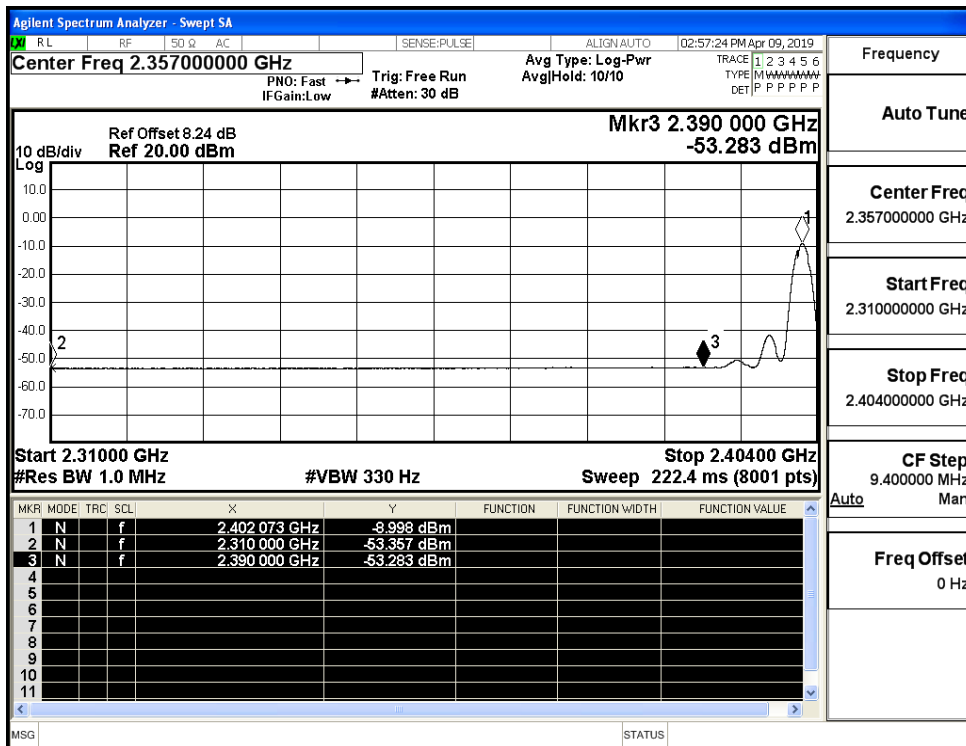




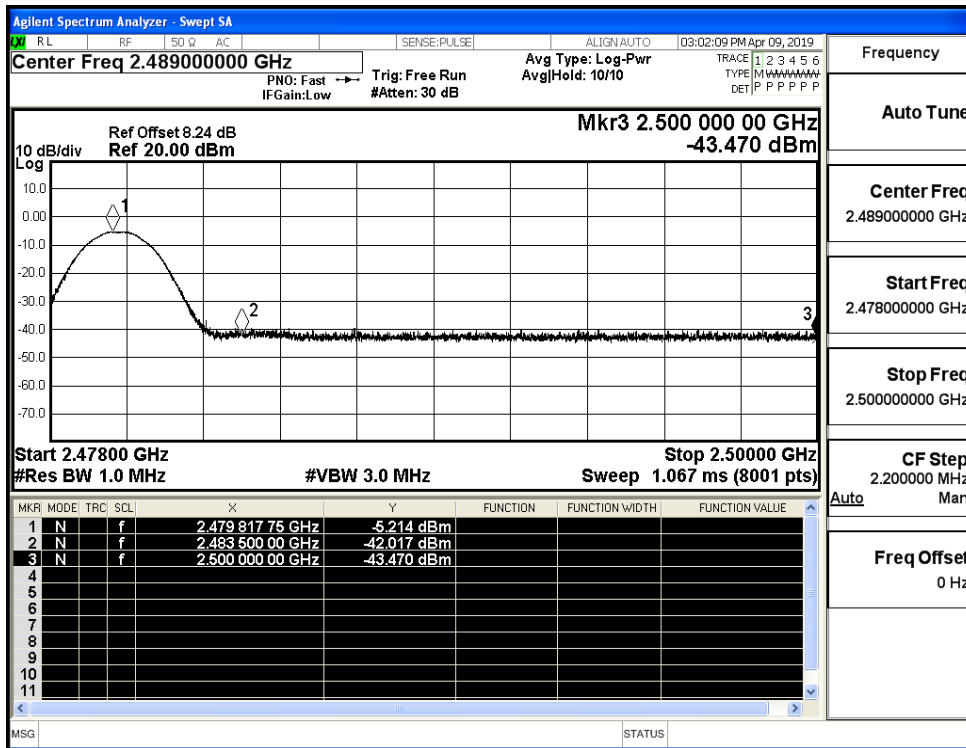
Restrict-band band-edge measurements\_Hopping Off  $\pi/4$ -DQPSK\_PEAK (Low Channel)



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)

