

## Appendix A

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

**Product Name:** 4G Smartphone

**Trade Mark:** Kenxinda, Ken mobile, KXD, E&L, EL

**Test Model:** T50

#### Environmental Conditions

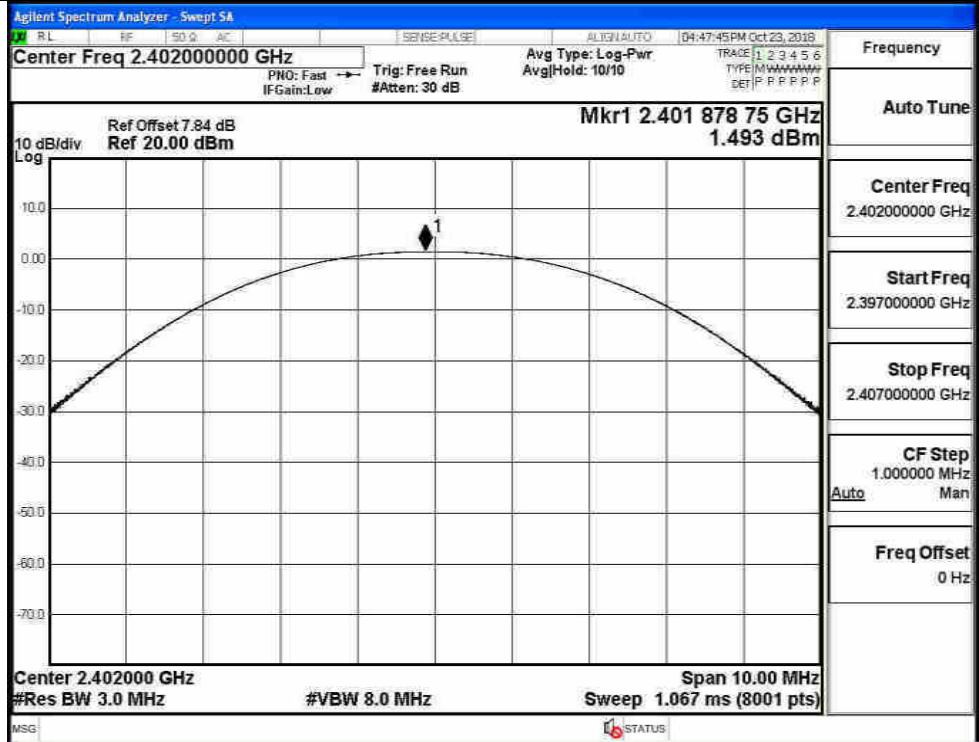
Temperature:	23.4° C
Relative Humidity:	53.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Tom.Liu
Supervised by:	Jayden.Zhuo

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

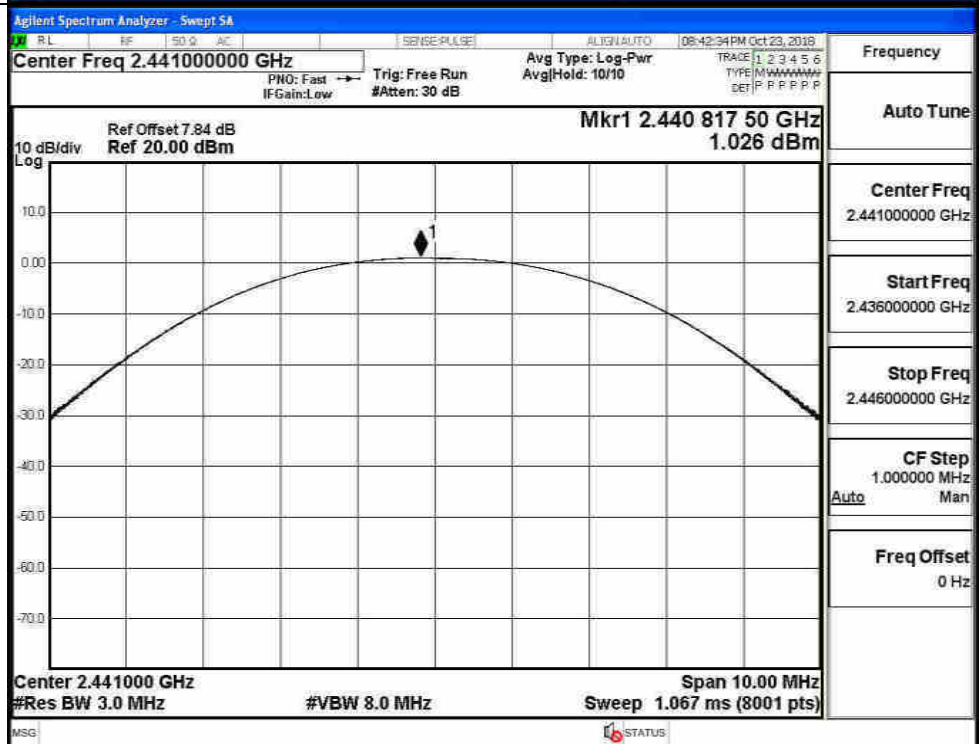
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	1.493	21	PASS
	MCH	1.026	21	PASS
	HCH	1.852	21	PASS
$\pi/4$ DQPSK	LCH	0.769	21	PASS
	MCH	0.523	21	PASS
	HCH	1.015	21	PASS
8DPSK	LCH	0.970	21	PASS
	MCH	0.643	21	PASS
	HCH	1.048	21	PASS

Test Graphs

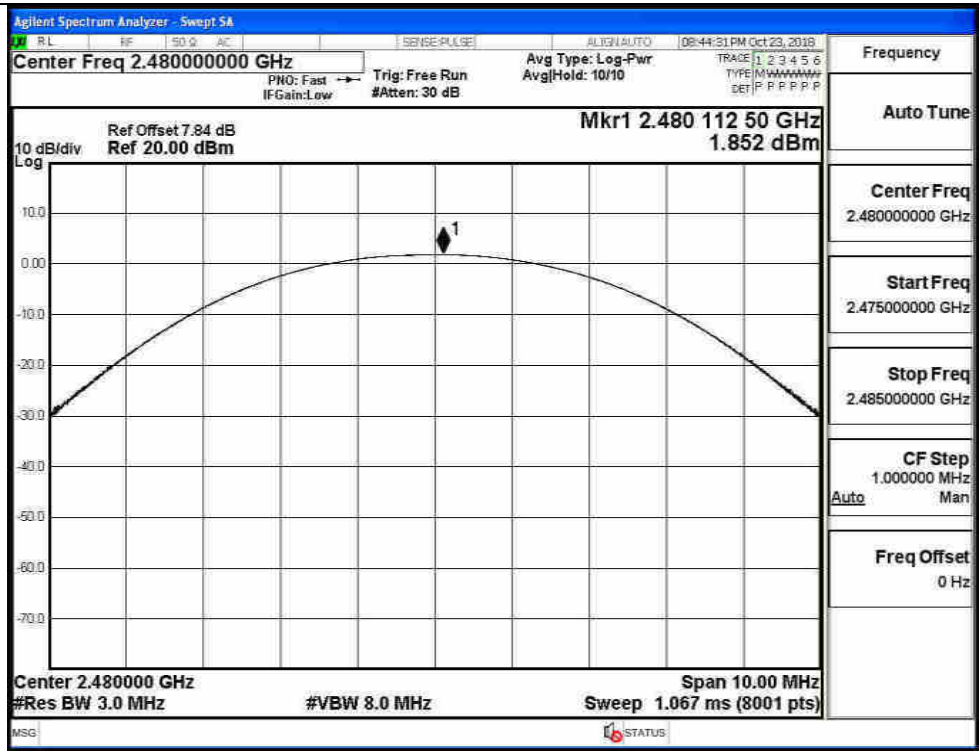
GFSK/LCH



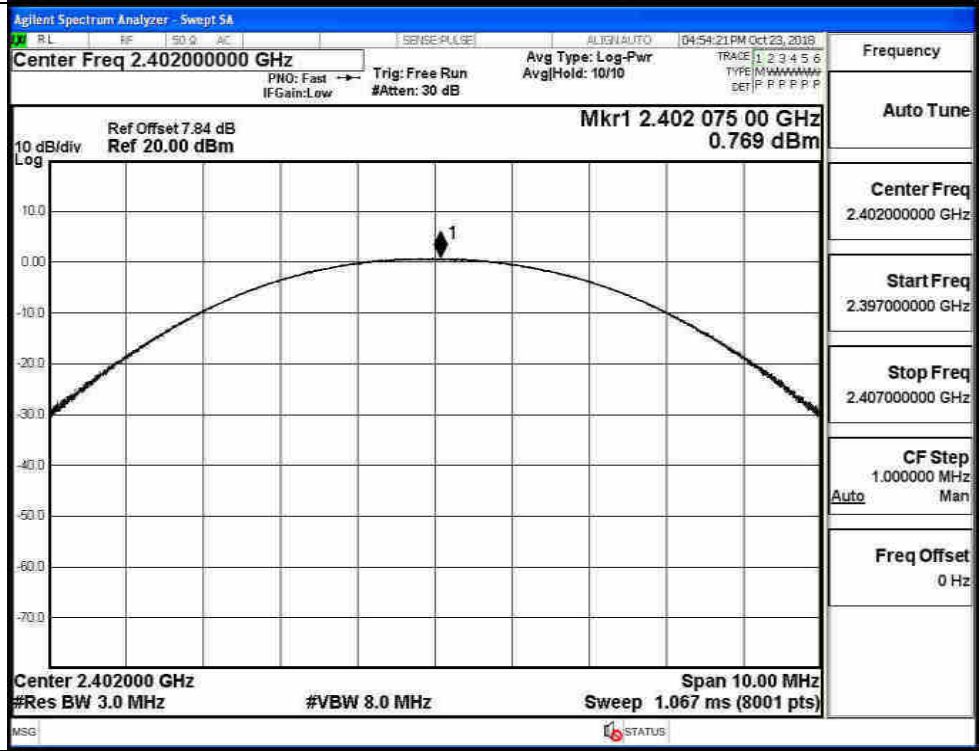
GFSK/MCH



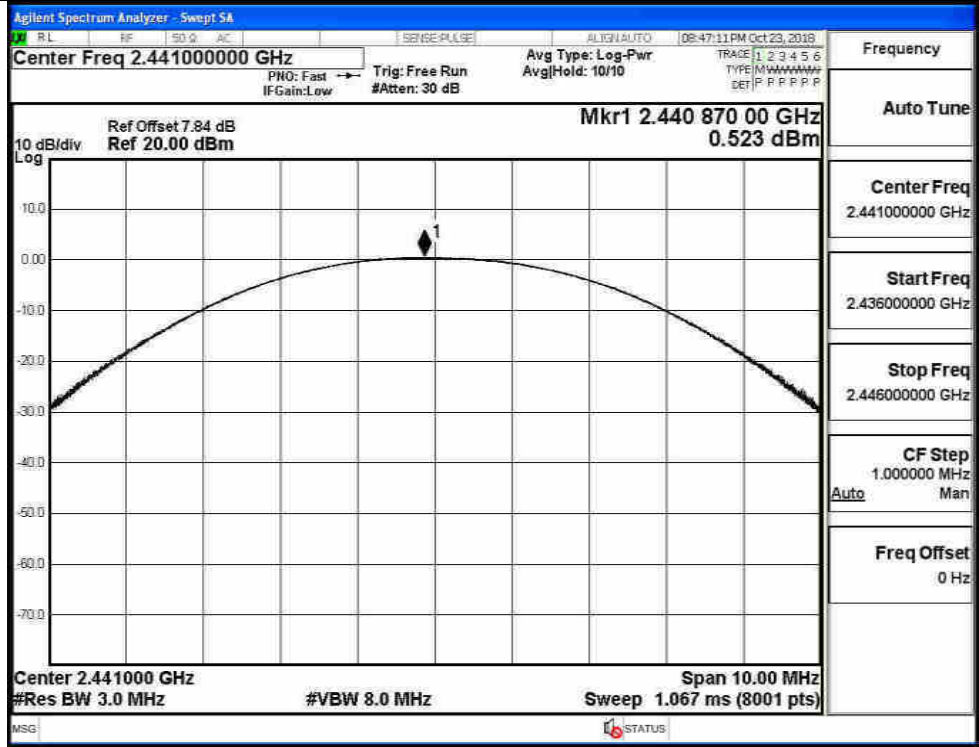
GFSK/HCH



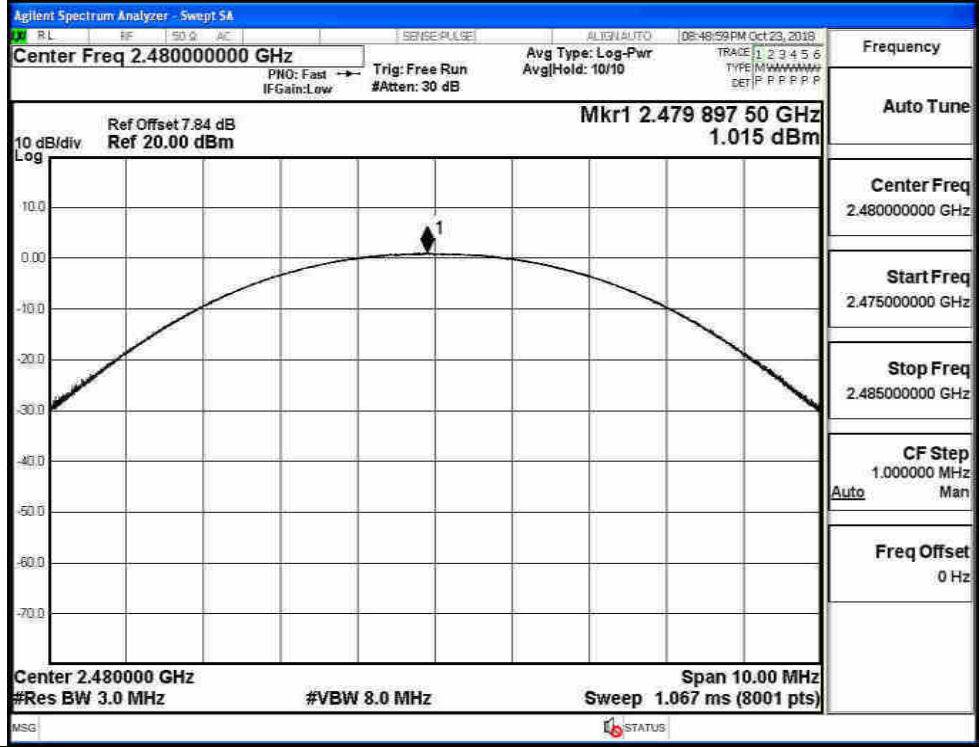
$\pi$ /4DQPSK/LCH



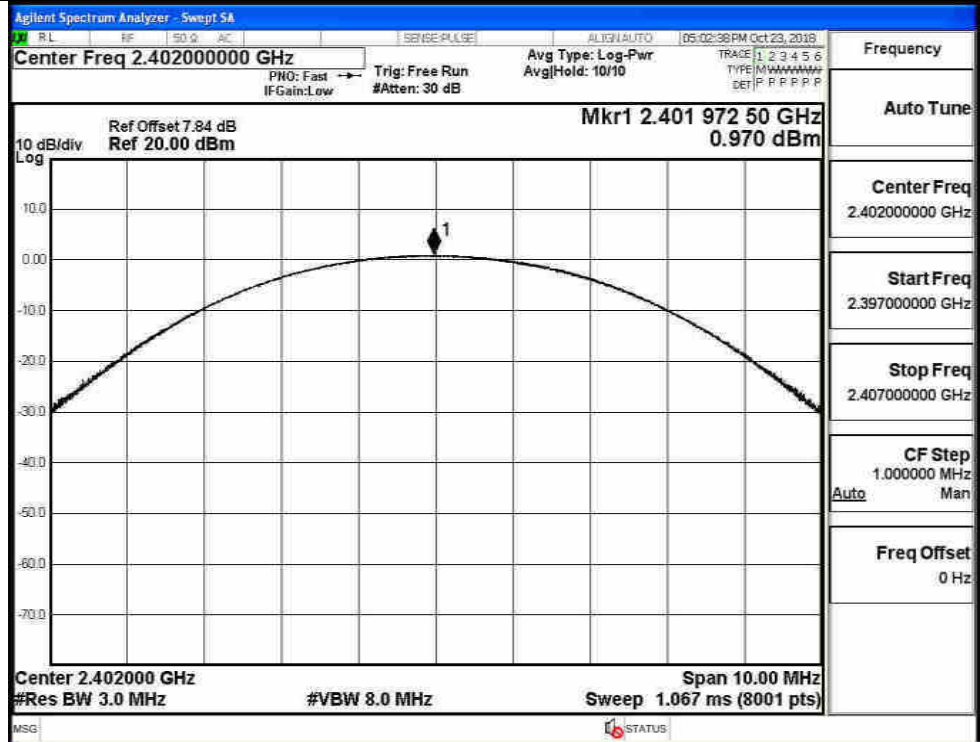
$\pi$ /4DQPSK/MCH



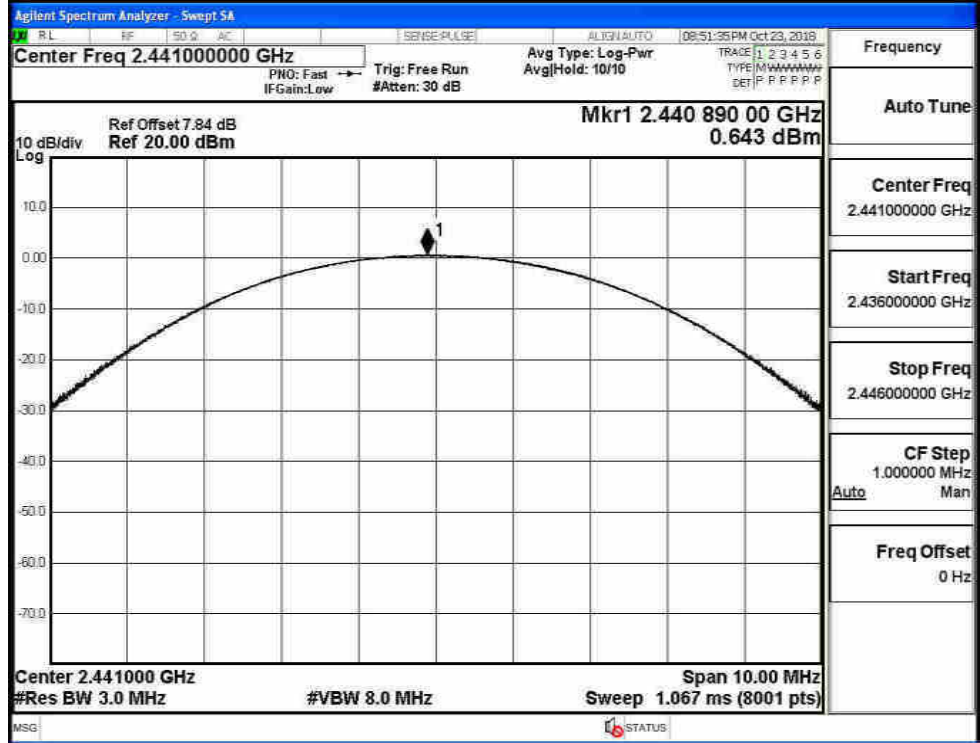
$\pi$ /4DQPSK/HCH



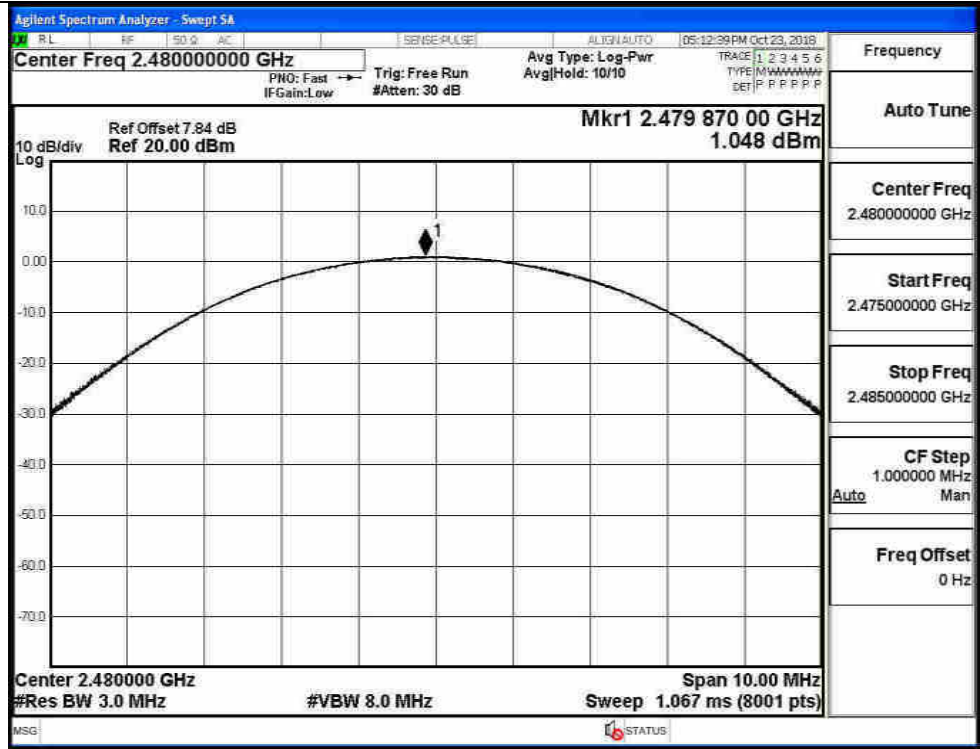
8DPSK/LCH



8DPSK/MCH

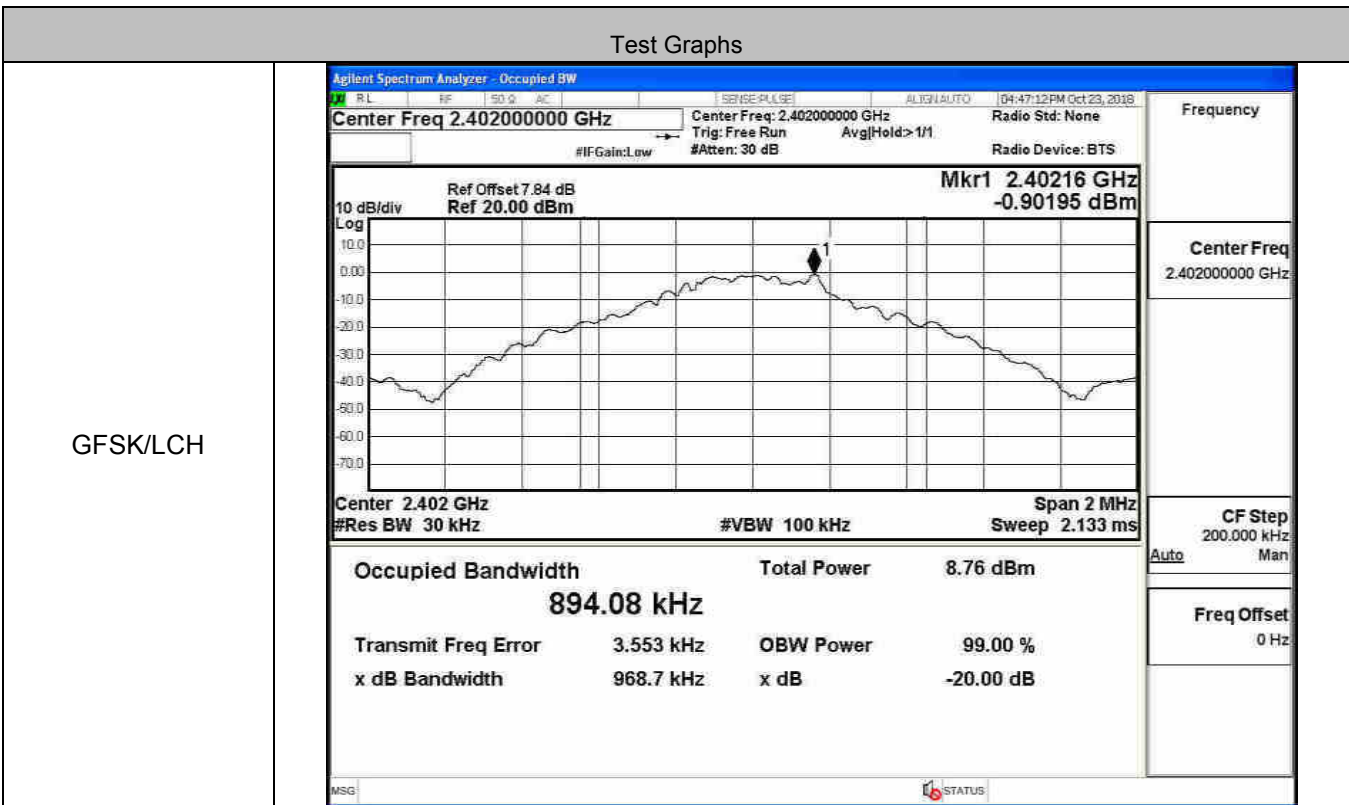


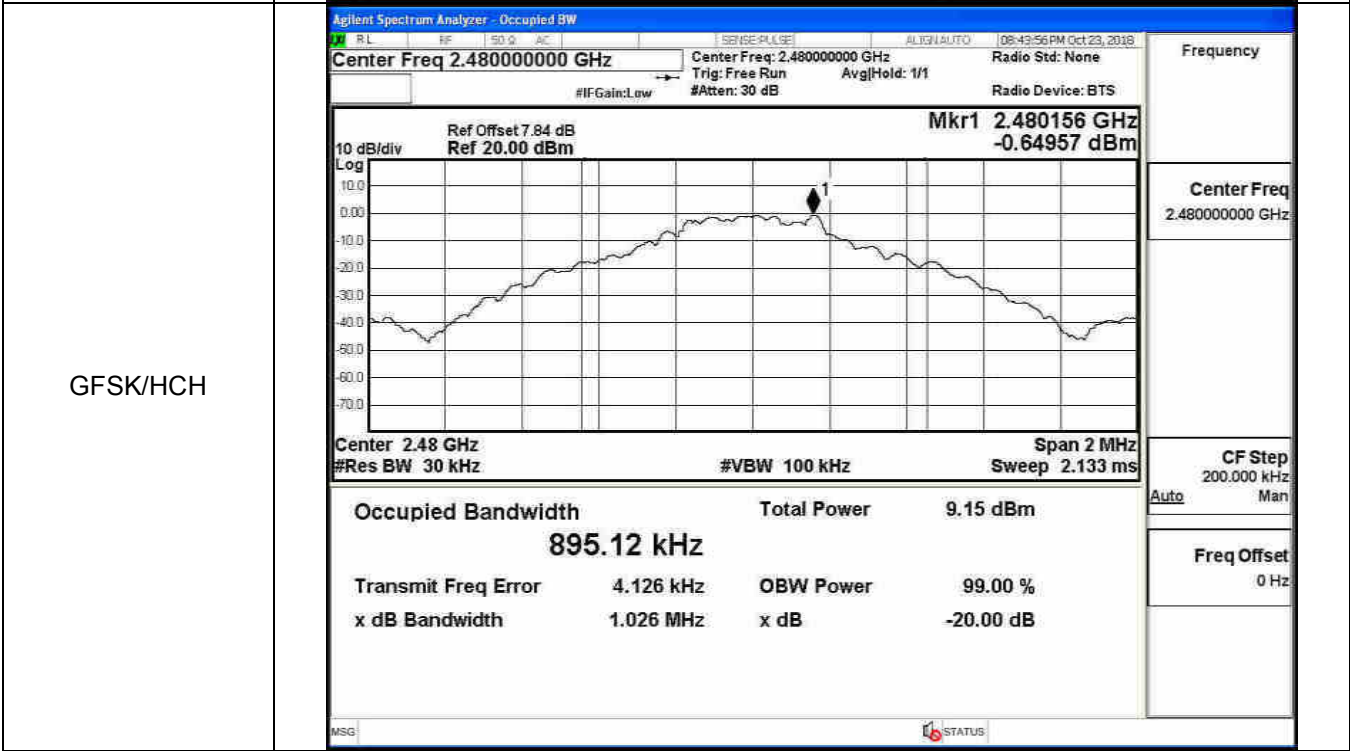
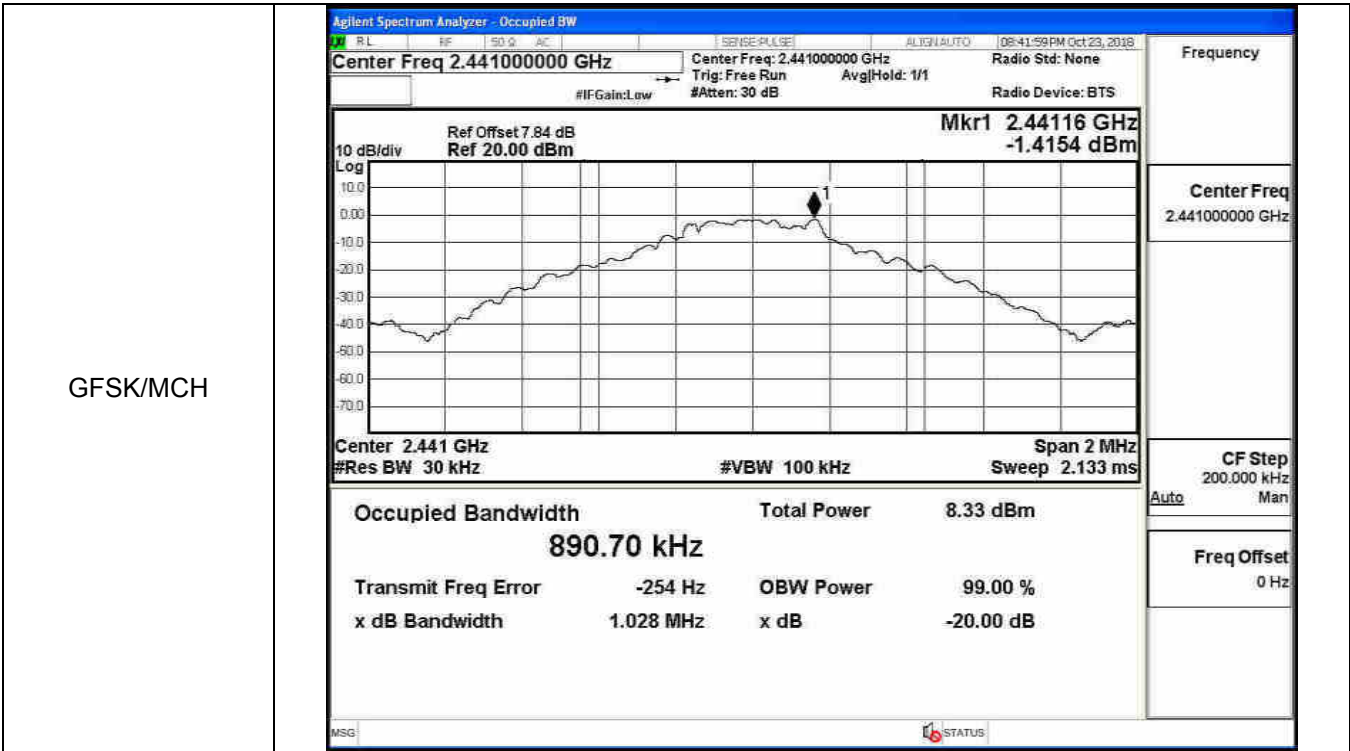
8DPSK/HCH



**A.2 20dB Bandwidth**

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9687	Not Specified	PASS
	MCH	1.028	Not Specified	PASS
	HCH	1.026	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.288	Not Specified	PASS
	MCH	1.309	Not Specified	PASS
	HCH	1.290	Not Specified	PASS
8DPSK	LCH	1.297	Not Specified	PASS
	MCH	1.299	Not Specified	PASS
	HCH	1.296	Not Specified	PASS







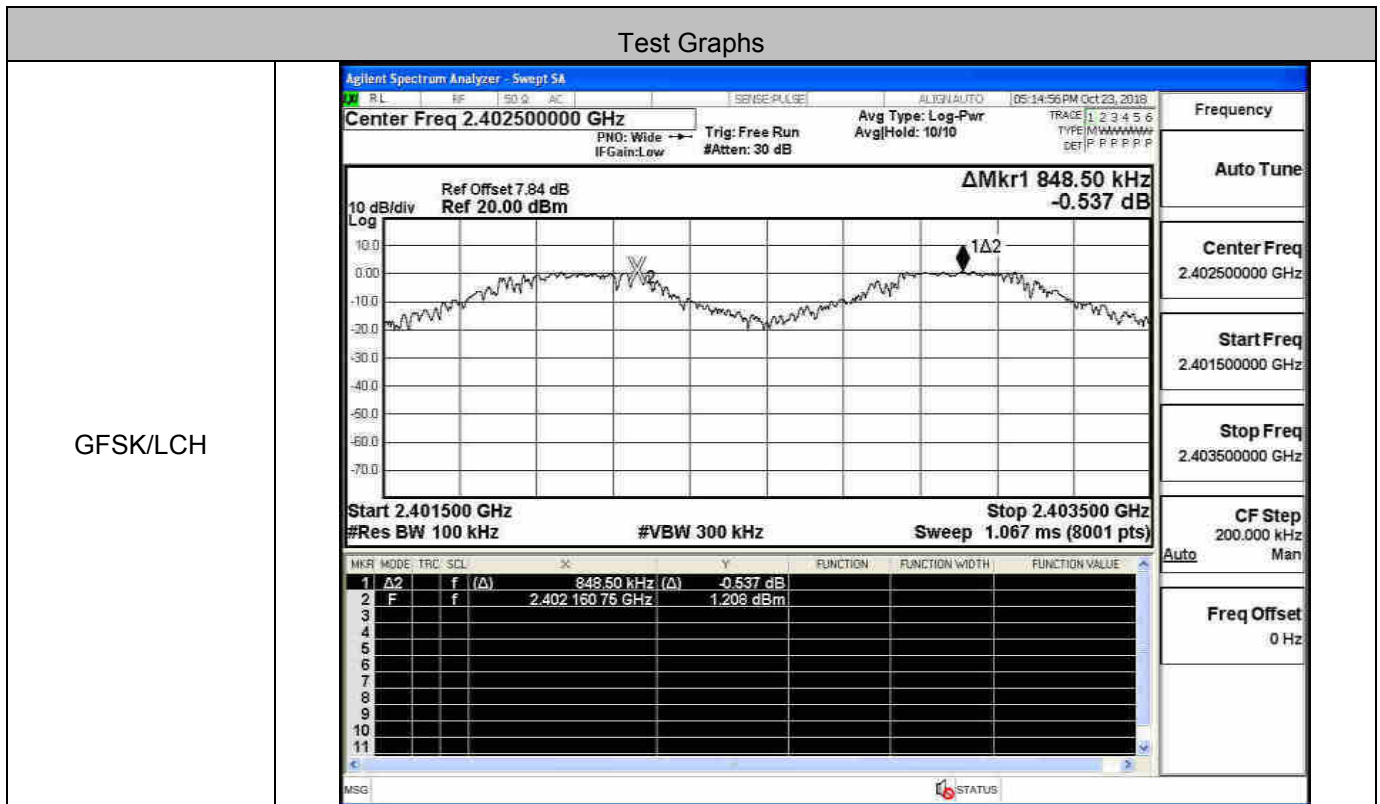
<p style="text-align: center;">π/4DQPSK/LCH</p>		<p>Frequency 2.40200000 GHz</p> <p>Center Freq 2.40200000 GHz</p> <p>CF Step 200.000 kHz</p> <p>Freq Offset 0 Hz</p>
		<p>Frequency 2.44100000 GHz</p> <p>Center Freq 2.44100000 GHz</p> <p>CF Step 200.000 kHz</p> <p>Freq Offset 0 Hz</p>

<p>π/4DQPSK/HCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.48000000 GHz</p> <p>Mkr1 2.48016 GHz -2.6258 dBm</p> <p>10 dB/div Ref Offset 7.84 dB Ref 20.00 dBm</p> <p>Center 2.48 GHz Span 2 MHz</p> <p>#Res BW 30 kHz #VBW 100 kHz Sweep 2.133 ms</p> <p>Occupied Bandwidth 1.1698 MHz Total Power 7.32 dBm</p> <p>Transmit Freq Error -3.084 kHz OBW Power 99.00 %</p> <p>x dB Bandwidth 1.290 MHz x dB -20.00 dB</p>	<p>Frequency</p> <p>Center Freq 2.48000000 GHz</p> <p>CF Step 200.000 kHz</p> <p>Freq Offset 0 Hz</p>
<p>8DPSK/LCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.40200000 GHz</p> <p>Mkr1 2.402156 GHz -2.4113 dBm</p> <p>10 dB/div Ref Offset 7.84 dB Ref 20.00 dBm</p> <p>Center 2.402 GHz Span 2 MHz</p> <p>#Res BW 30 kHz #VBW 100 kHz Sweep 2.133 ms</p> <p>Occupied Bandwidth 1.1821 MHz Total Power 6.99 dBm</p> <p>Transmit Freq Error 1.333 kHz OBW Power 99.00 %</p> <p>x dB Bandwidth 1.297 MHz x dB -20.00 dB</p>	<p>Frequency</p> <p>Center Freq 2.40200000 GHz</p> <p>CF Step 200.000 kHz</p> <p>Freq Offset 0 Hz</p>

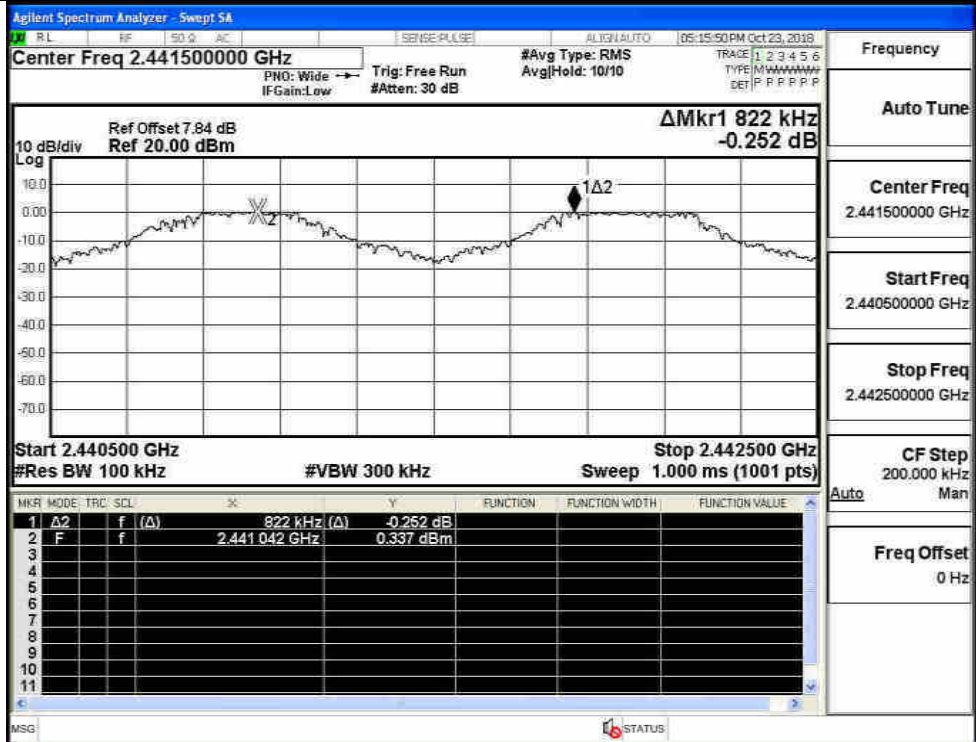
<p>8DPSK/MCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.44100000 GHz</p> <p>Mkr1 2.441162 GHz -2.3493 dBm</p> <p>10 dB/div Ref Offset 7.84 dB Ref 20.00 dBm</p> <p>Center 2.441 GHz Span 2 MHz</p> <p>#Res BW 30 kHz #VBW 100 kHz Sweep 2.133 ms</p> <p>Occupied Bandwidth 1.1925 MHz Total Power 6.94 dBm</p> <p>Transmit Freq Error -3.169 kHz OBW Power 99.00 %</p> <p>x dB Bandwidth 1.299 MHz x dB -20.00 dB</p>	<p>Frequency</p> <p>Center Freq</p> <p>2.441000000 GHz</p> <p>CF Step</p> <p>200.000 kHz</p> <p>Freq Offset</p> <p>0 Hz</p>
<p>8DPSK/HCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.480000000 GHz</p> <p>Mkr1 2.480158 GHz -2.1062 dBm</p> <p>10 dB/div Ref Offset 7.84 dB Ref 20.00 dBm</p> <p>Center 2.48 GHz Span 2 MHz</p> <p>#Res BW 30 kHz #VBW 100 kHz Sweep 2.133 ms</p> <p>Occupied Bandwidth 1.1798 MHz Total Power 7.17 dBm</p> <p>Transmit Freq Error 999 Hz OBW Power 99.00 %</p> <p>x dB Bandwidth 1.296 MHz x dB -20.00 dB</p>	<p>Frequency</p> <p>Center Freq</p> <p>2.480000000 GHz</p> <p>CF Step</p> <p>200.000 kHz</p> <p>Freq Offset</p> <p>0 Hz</p>

### A.3 Carrier Frequency Separation

Mode	Channel	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.849	0.680	PASS
	MCH	0.822	0.680	PASS
	HCH	0.980	0.680	PASS
π/4DQPSK	LCH	0.906	0.873	PASS
	MCH	1.040	0.873	PASS
	HCH	1.288	0.873	PASS
8DPSK	LCH	1.042	0.865	PASS
	MCH	1.016	0.865	PASS
	HCH	0.910	0.865	PASS

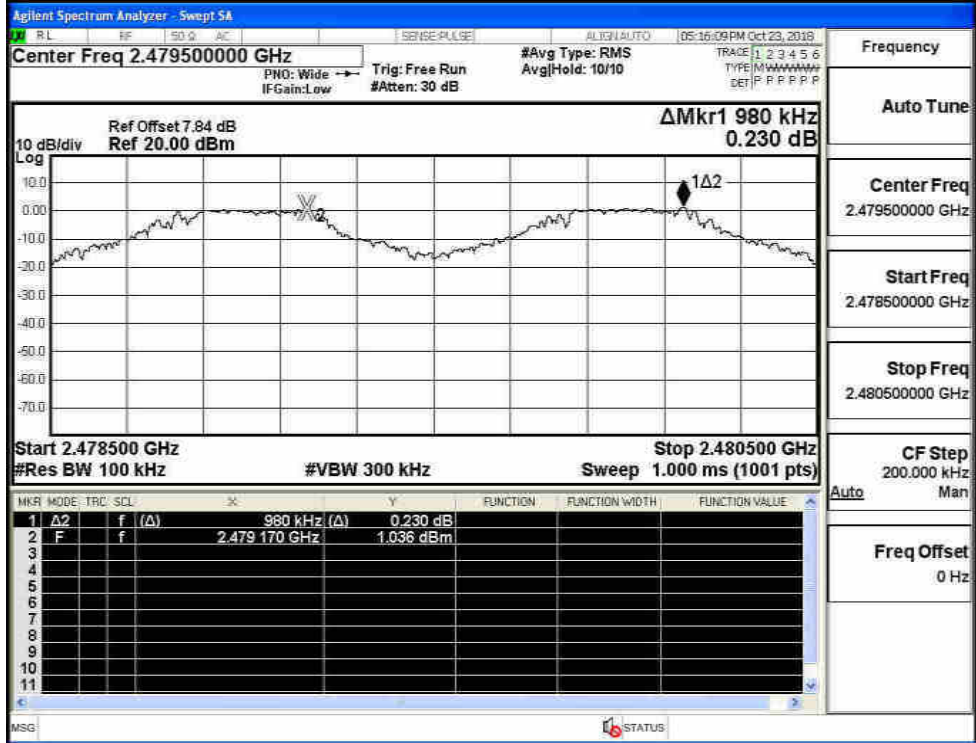


GFSK/MCH



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

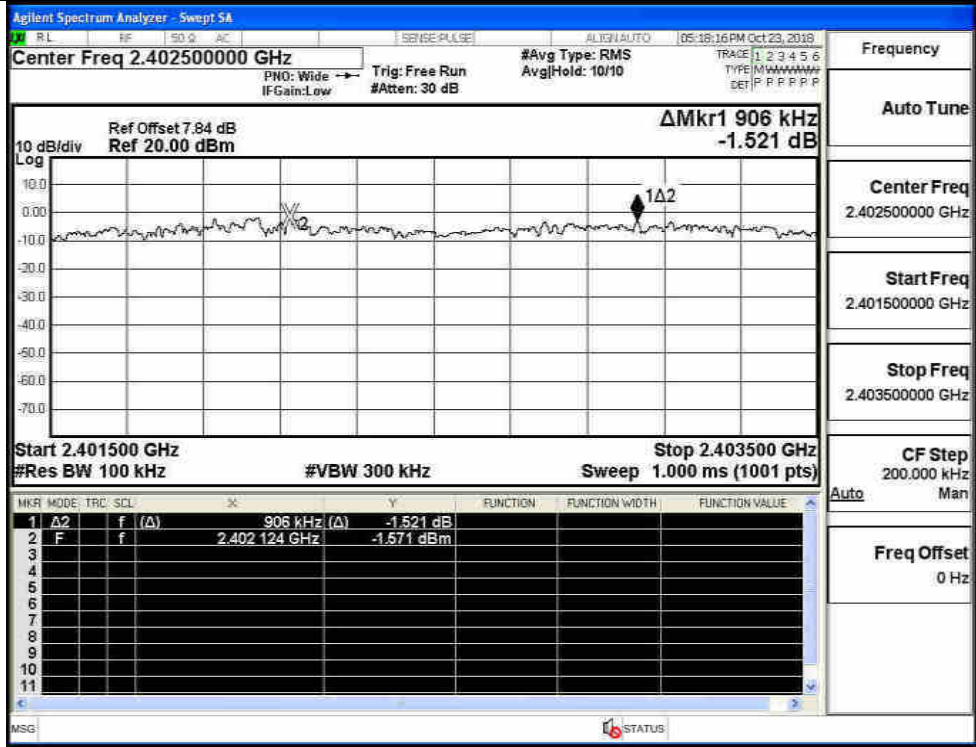
GFSK/HCH



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

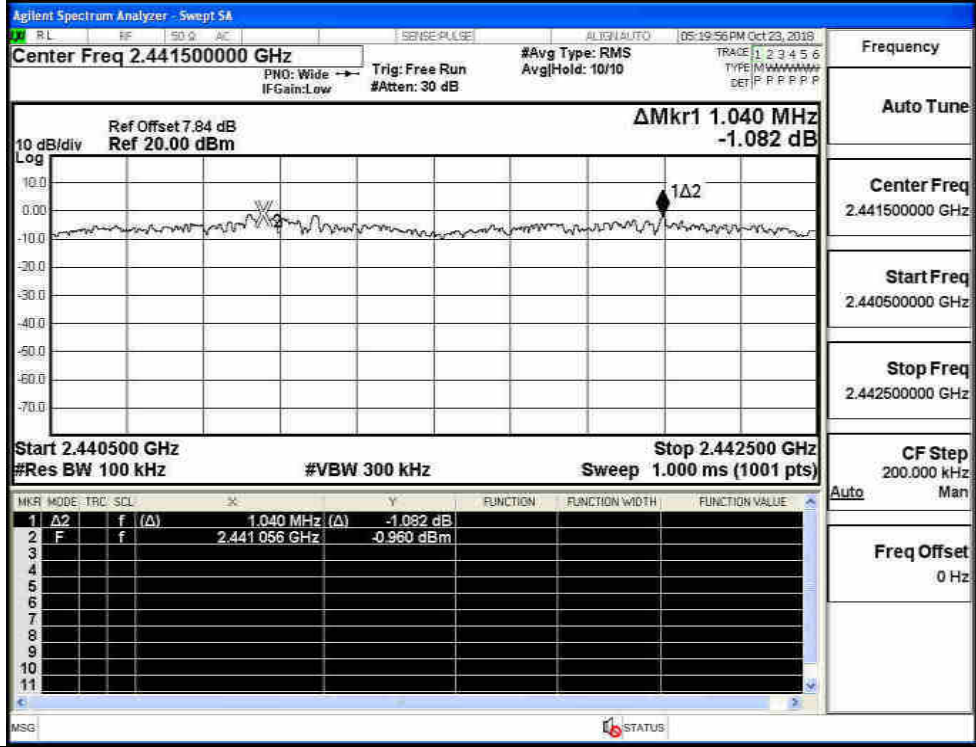
Start Freq  
2.401500000 GHz

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

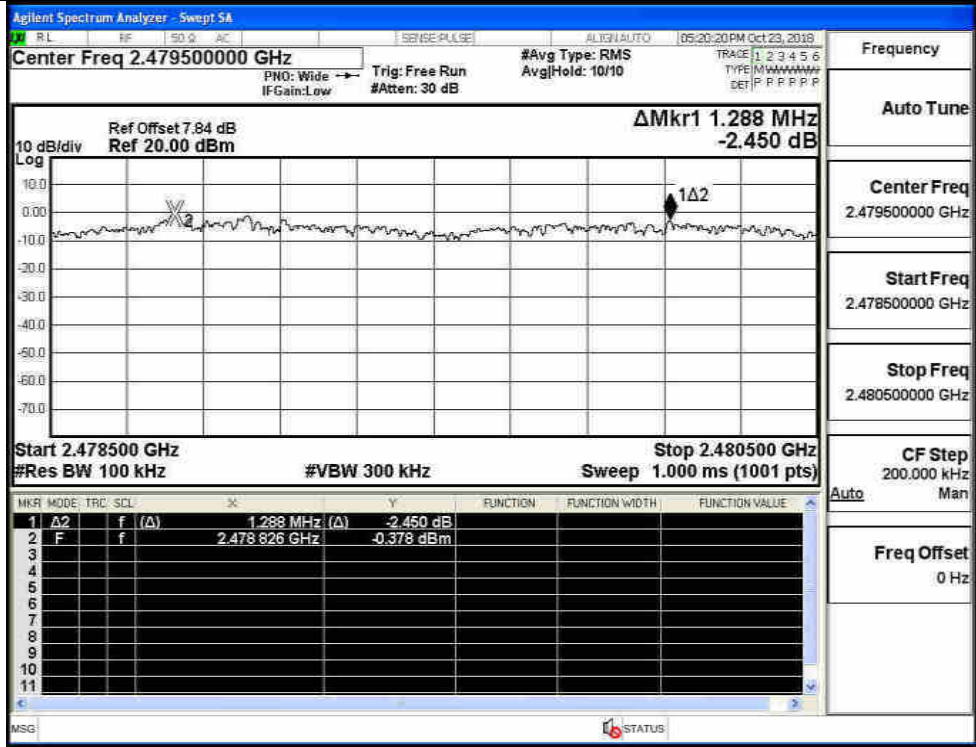
Start Freq  
2.440500000 GHz

Stop Freq  
2.442500000 GHz

CF Step  
200.000 kHz

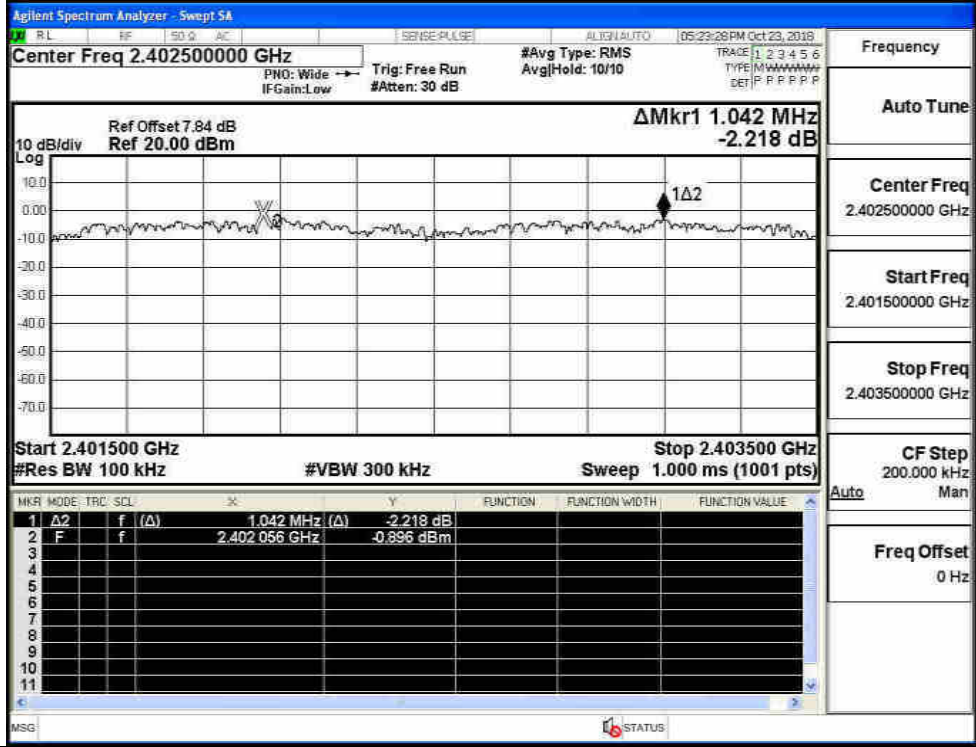
Freq Offset  
0 Hz

π/4DQPSK/HCH

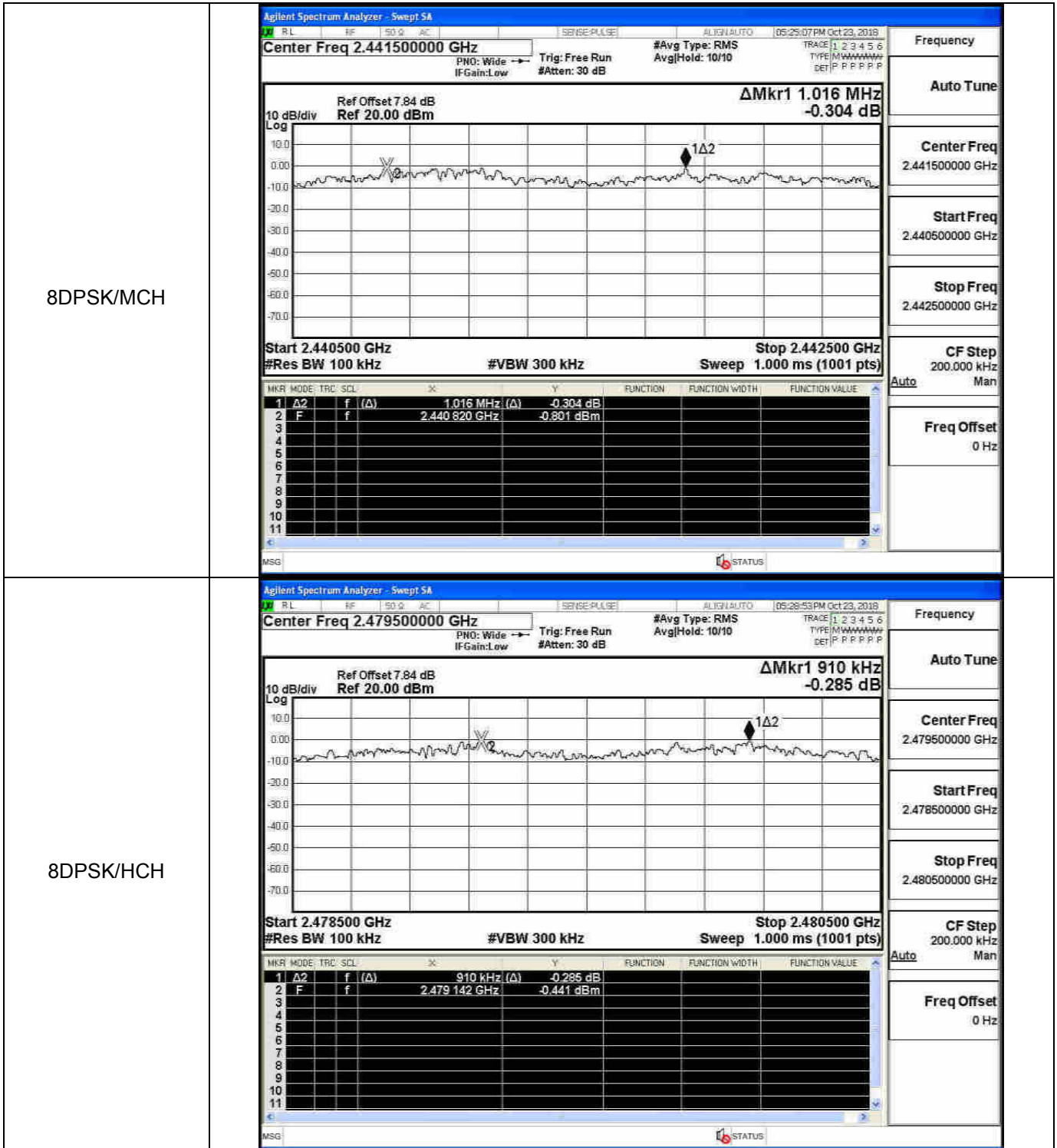


Frequency	2.479500000 GHz
Auto Tune	
Center Freq	2.479500000 GHz
Start Freq	2.478500000 GHz
Stop Freq	2.480500000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

8DPSK/LCH



Frequency	2.402500000 GHz
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



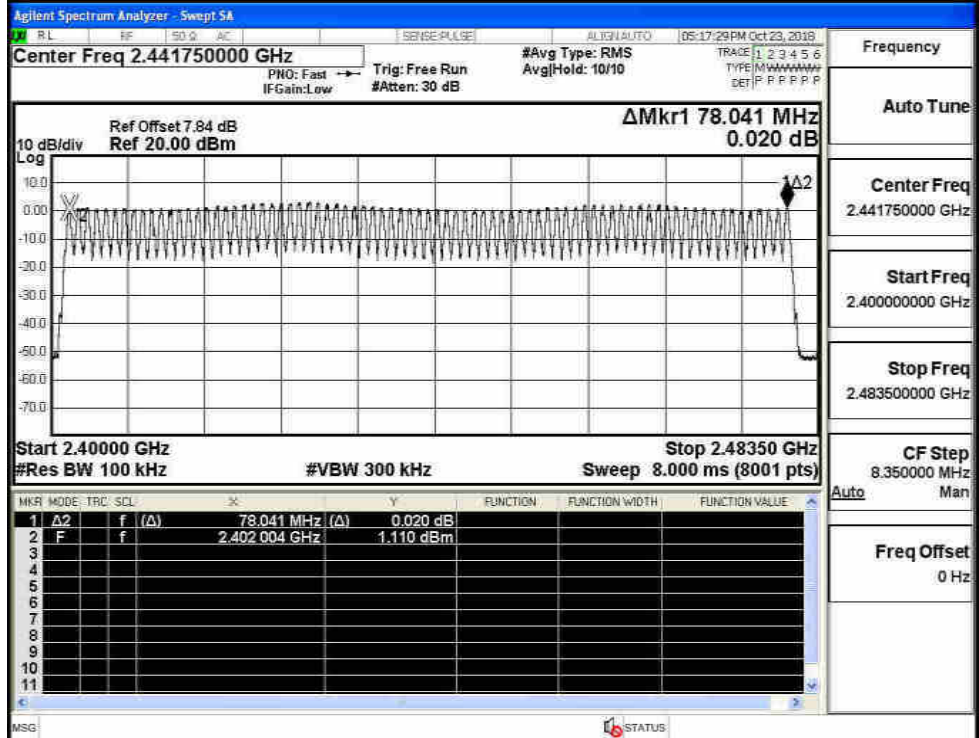
**A.4 Hopping Channel Number**

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

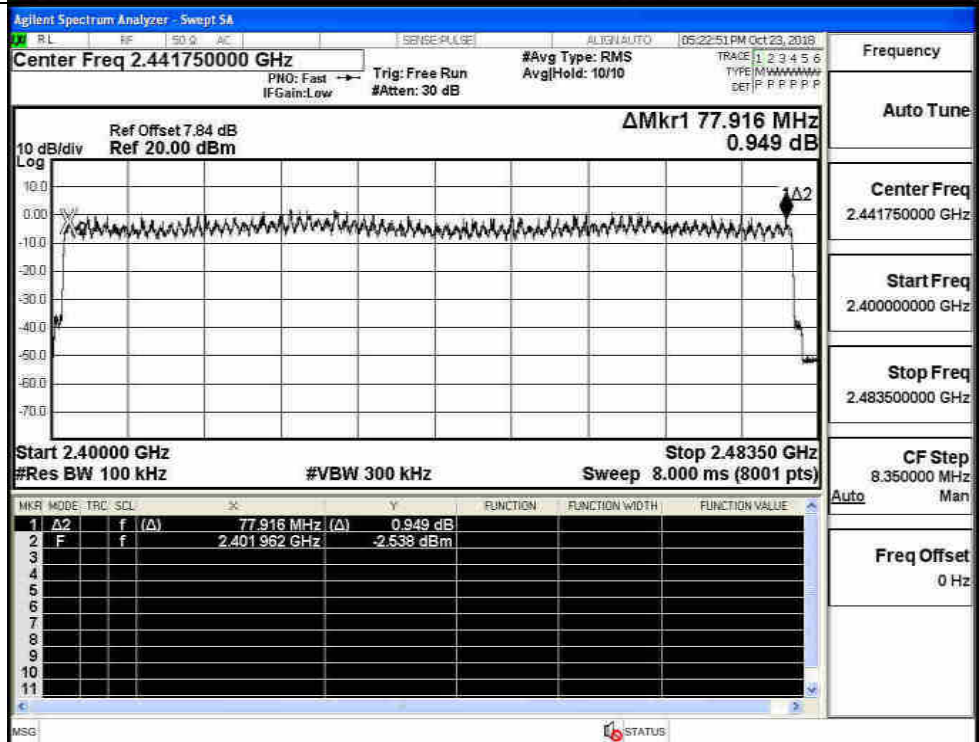


Test Graphs

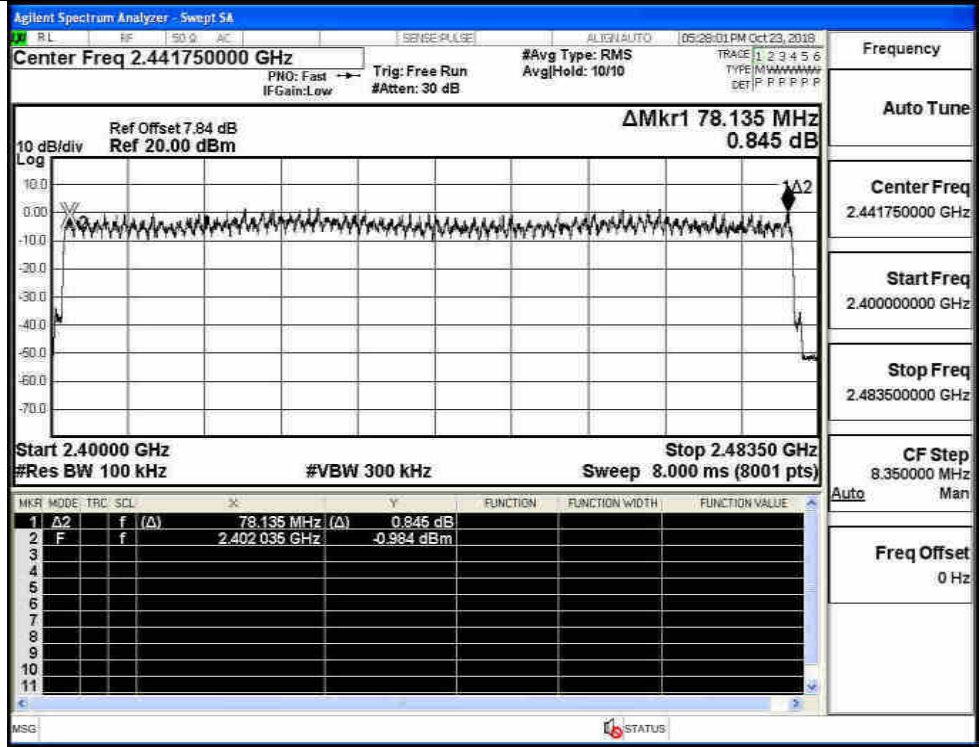
GFSK/Hop



$\pi/4$ DQPSK/Hop

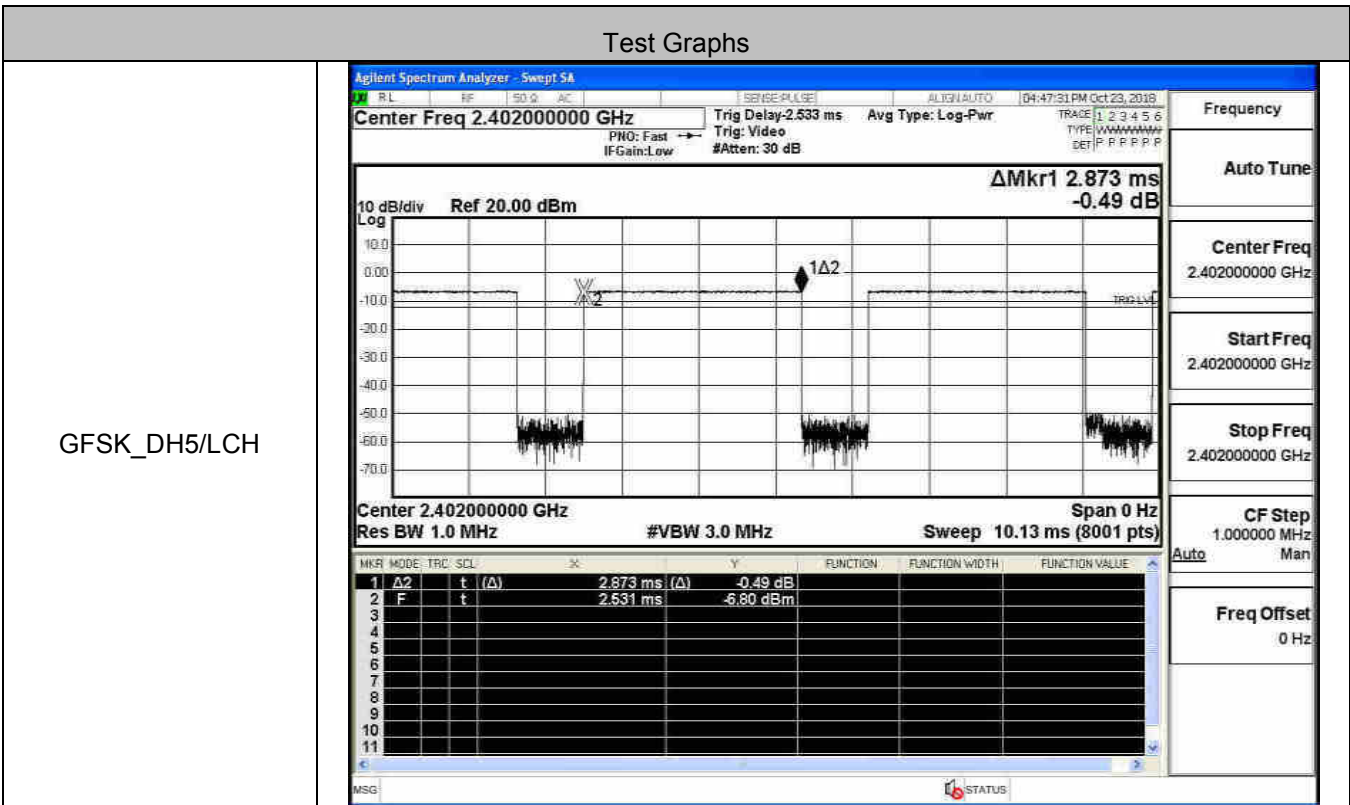


8DPSK/Hop

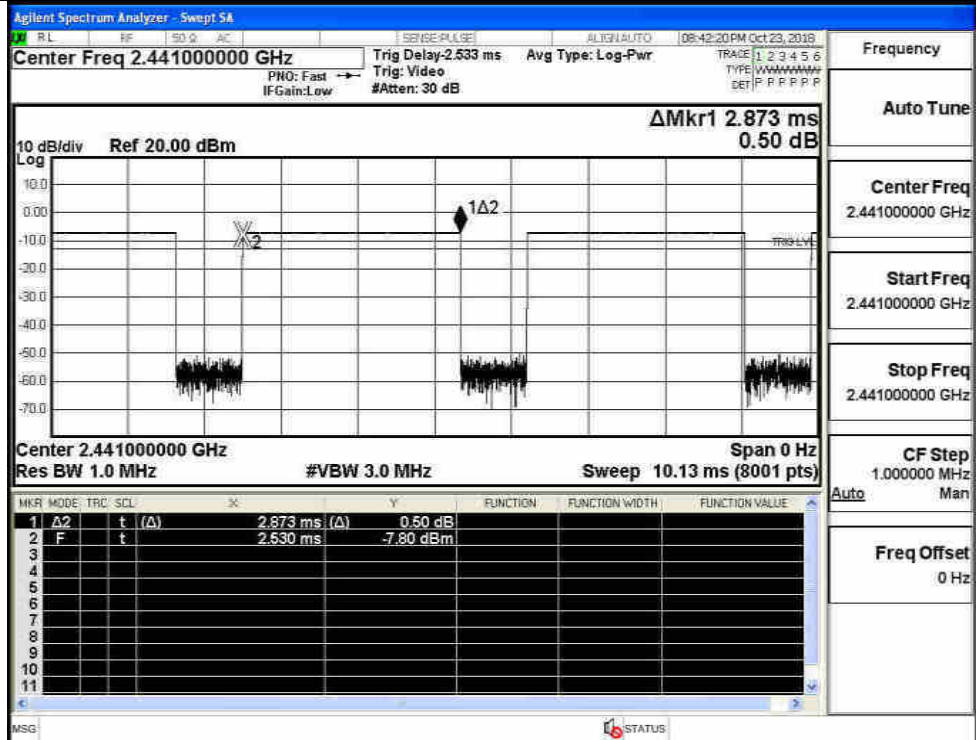


**A.5 Dwell Time**

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.87	106.7	0.306	0.4	PASS
	DH5	MCH	2.87	106.7	0.306	0.4	PASS
	DH5	HCH	2.87	106.7	0.306	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.87	106.7	0.307	0.4	PASS
	2DH5	MCH	2.87	106.7	0.307	0.4	PASS
	2DH5	HCH	2.87	106.7	0.307	0.4	PASS
8DPSK	3DH5	LCH	2.87	106.7	0.307	0.4	PASS
	3DH5	MCH	2.87	106.7	0.307	0.4	PASS
	3DH5	HCH	2.87	106.7	0.307	0.4	PASS

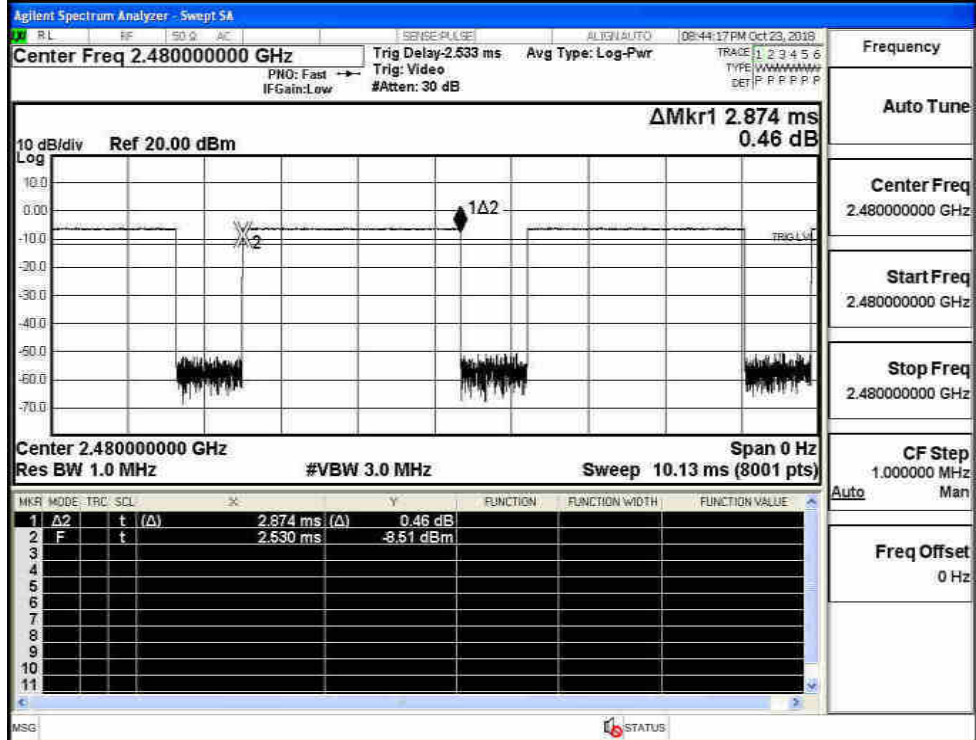


GFSK\_DH5/MCH



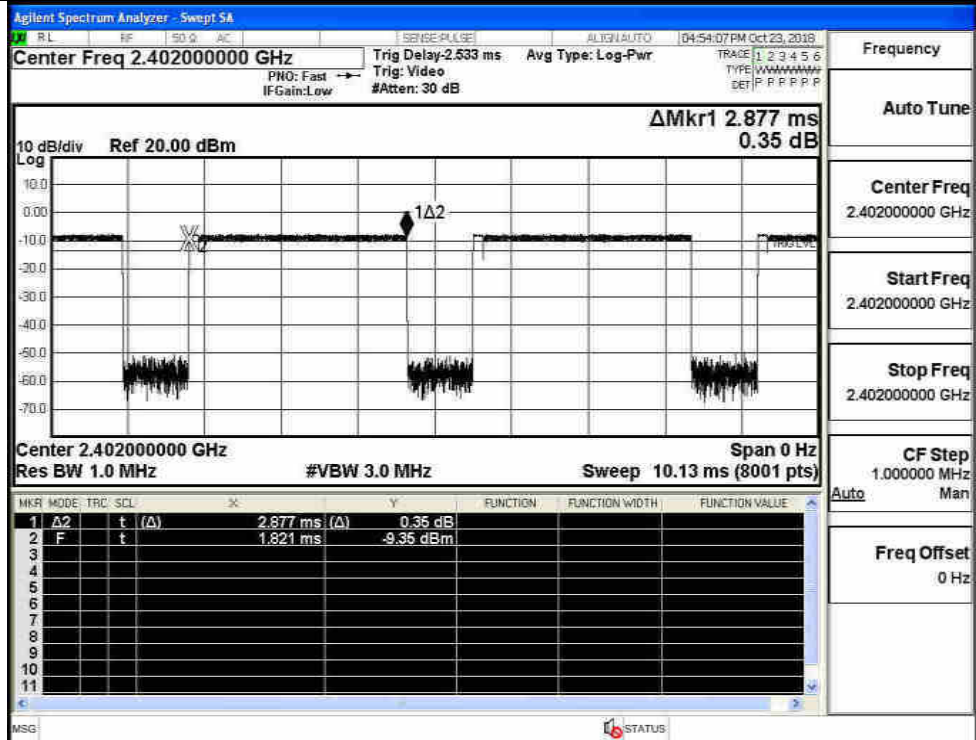
Frequency	
Auto Tune	
Center Freq	2.441000000 GHz
Start Freq	2.441000000 GHz
Stop Freq	2.441000000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

GFSK\_DH5/HCH

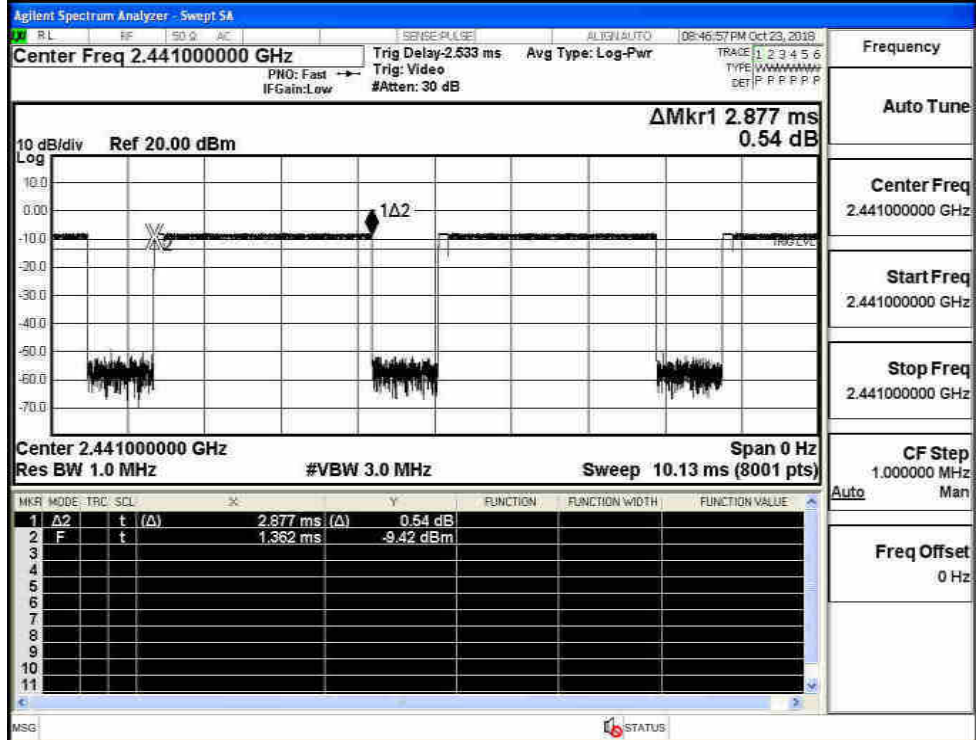


Frequency	
Auto Tune	
Center Freq	2.480000000 GHz
Start Freq	2.480000000 GHz
Stop Freq	2.480000000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

$\pi/4$ DQPSK  
\_2DH5/LCH

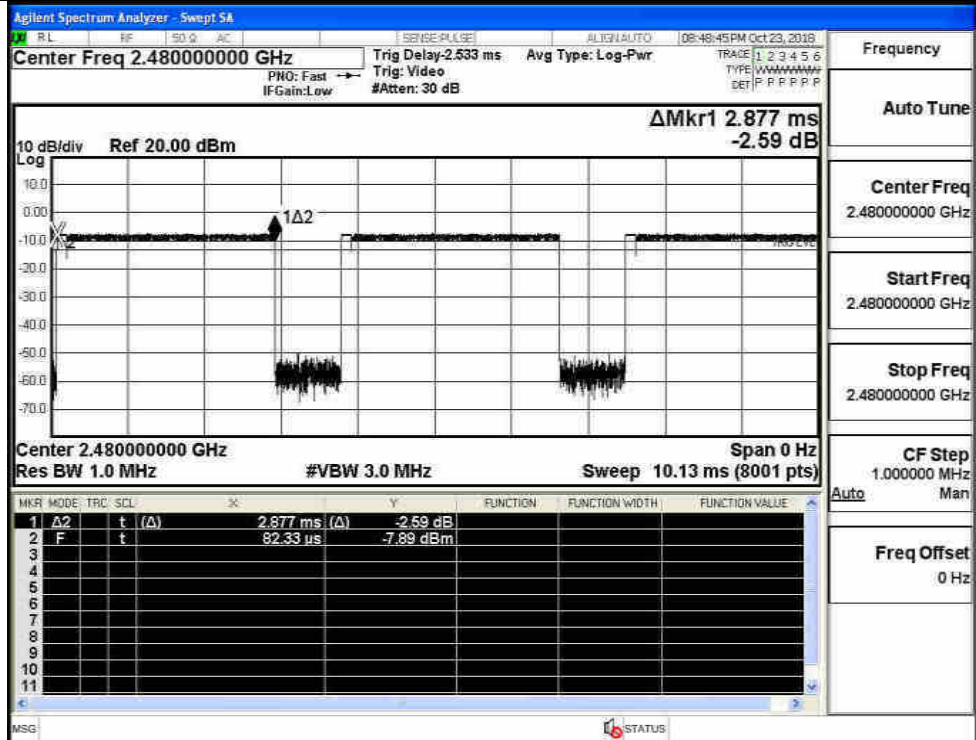


$\pi/4$ DQPSK  
\_2DH5/MCH



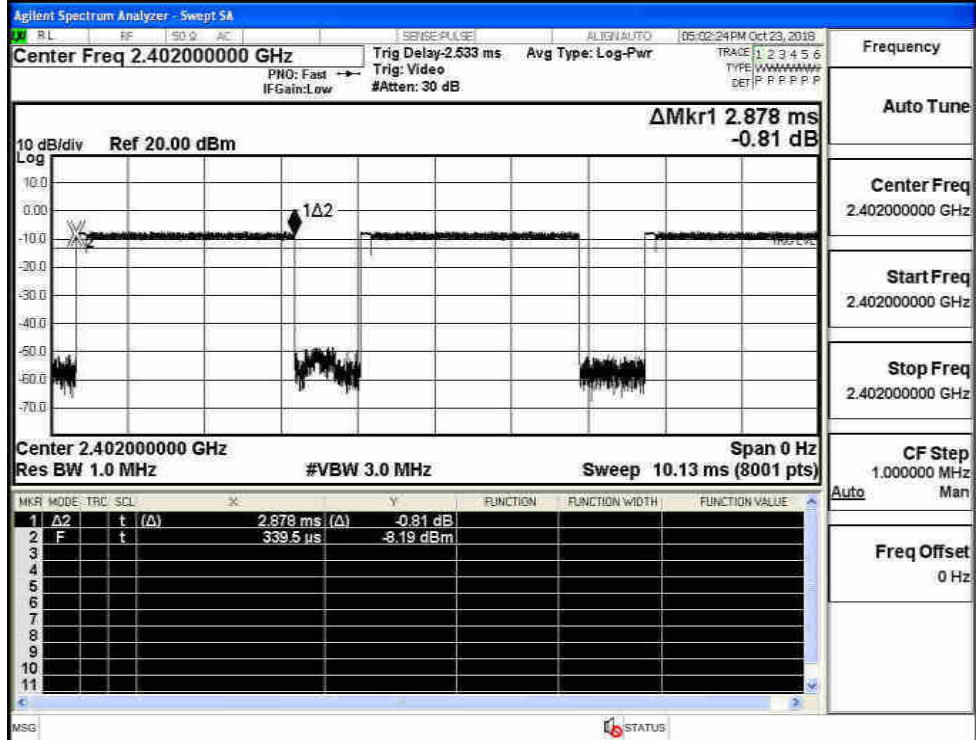


$\pi/4$ DQPSK  
\_2DH5/HCH



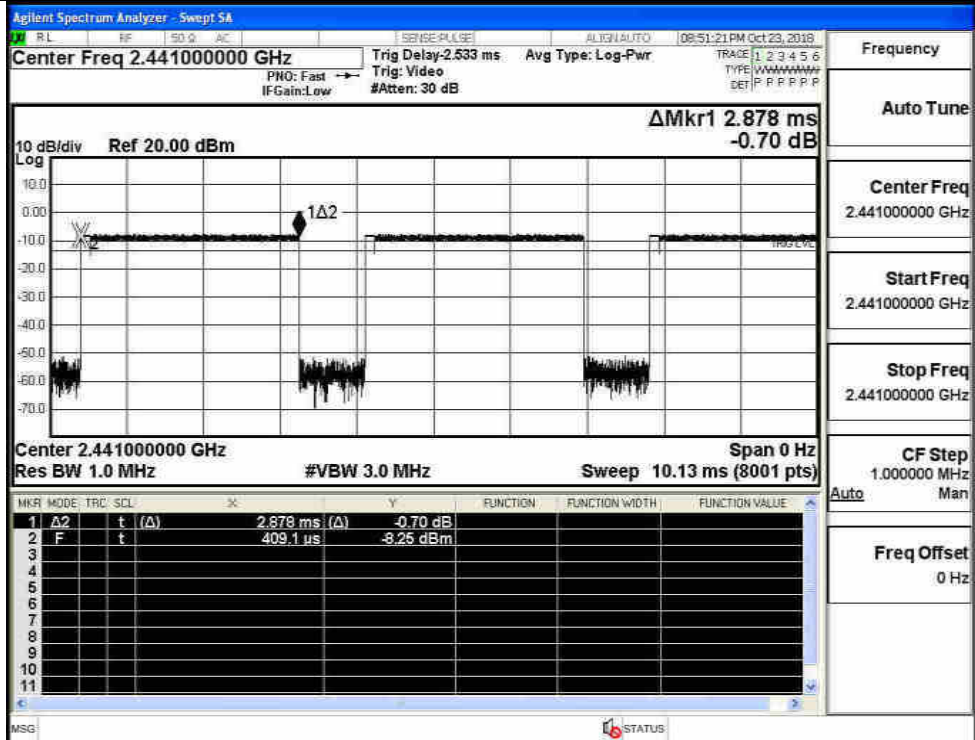
Frequency  
Auto Tune  
Center Freq  
2.480000000 GHz  
Start Freq  
2.480000000 GHz  
Stop Freq  
2.480000000 GHz  
CF Step  
1.000000 MHz  
Auto Man  
Freq Offset  
0 Hz

8DPSK\_3DH5/LCH

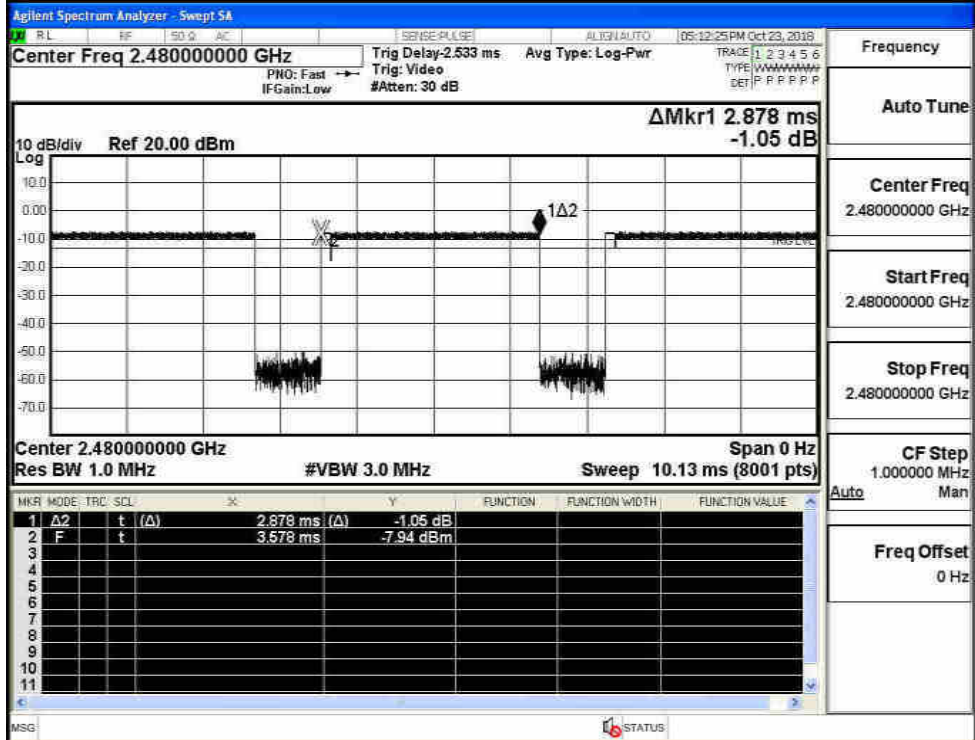


Frequency  
Auto Tune  
Center Freq  
2.402000000 GHz  
Start Freq  
2.402000000 GHz  
Stop Freq  
2.402000000 GHz  
CF Step  
1.000000 MHz  
Auto Man  
Freq Offset  
0 Hz

8DPSK\_3DH5/MCH



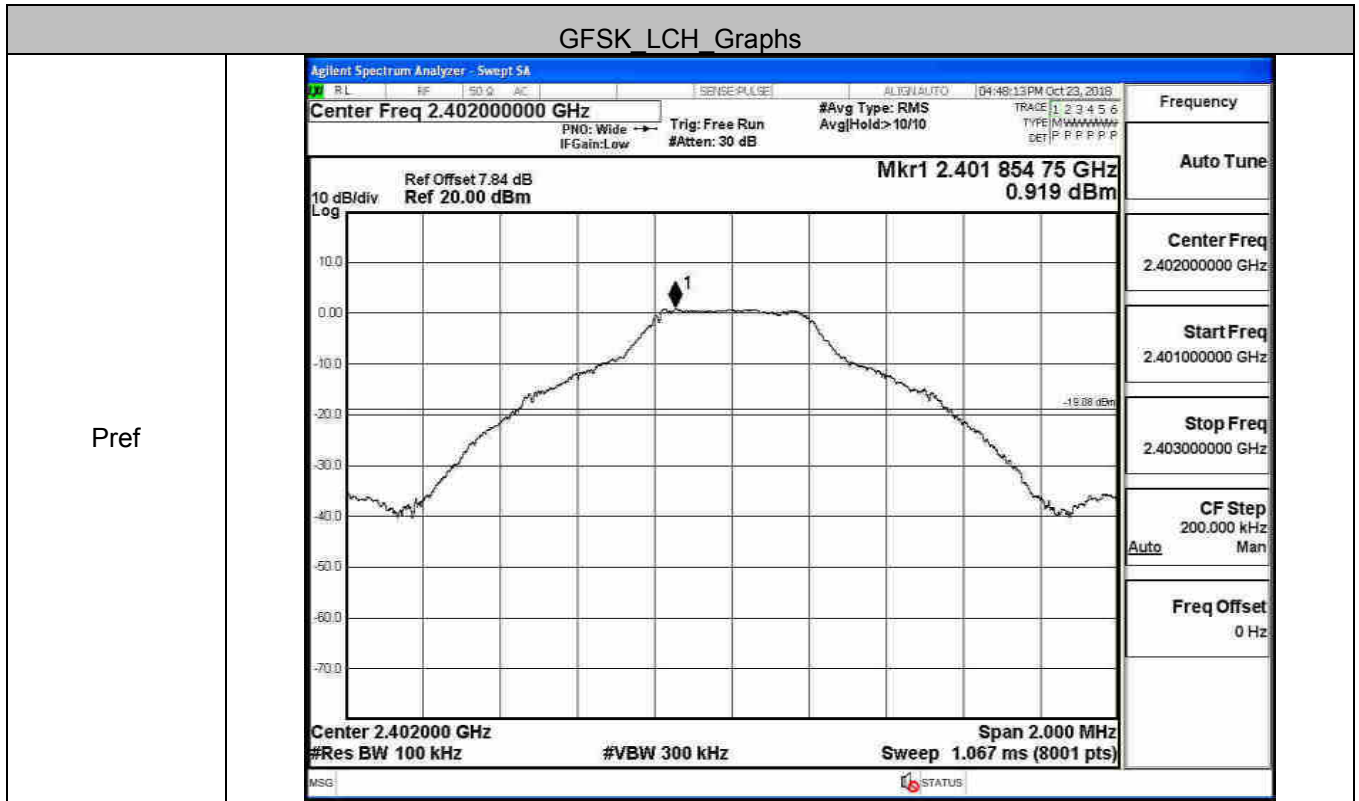
8DPSK\_3DH5/HCH



**A.6 RF Conducted Spurious Emissions**

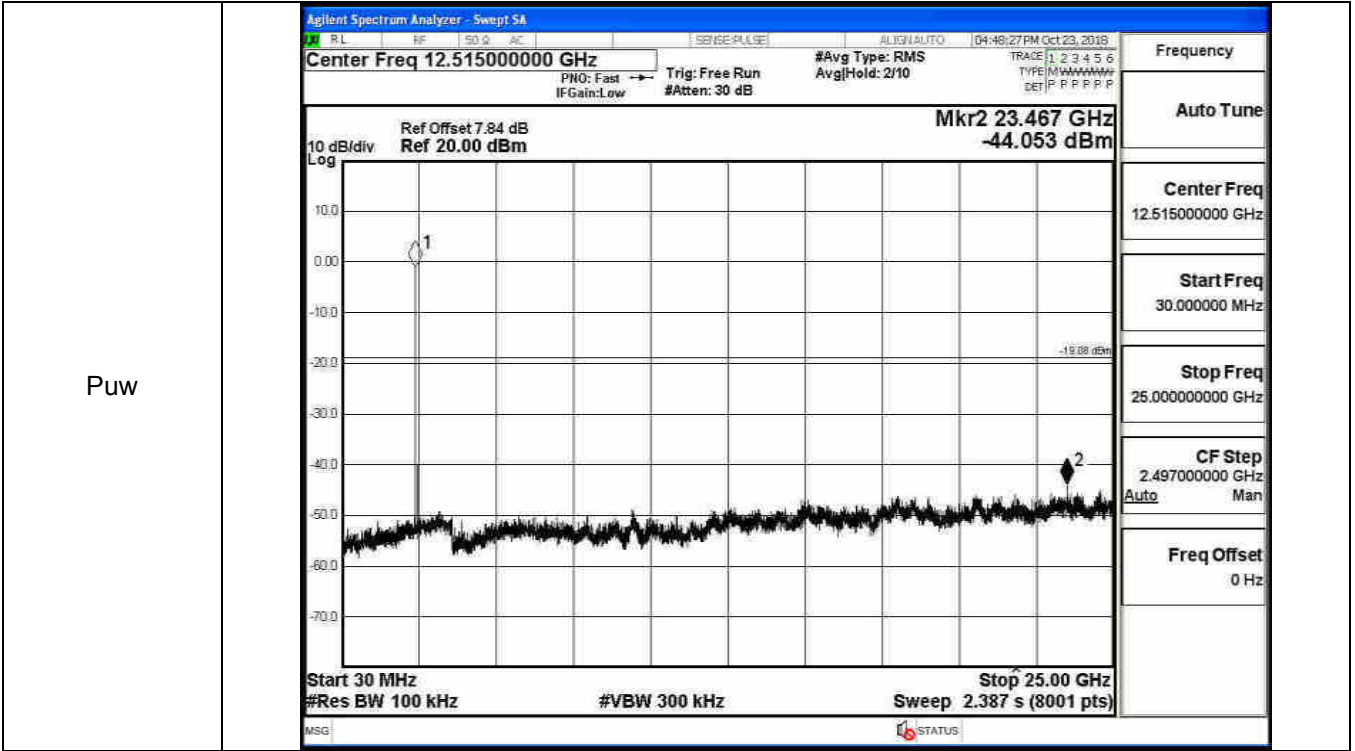
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.919	-44.053	-19.081	PASS
	MCH	0.801	-44.928	-19.199	PASS
	HCH	1.47	-44.567	-18.530	PASS
$\pi/4$ DQPSK	LCH	-0.243	-44.586	-20.243	PASS
	MCH	-0.181	-44.809	-20.181	PASS
	HCH	0	-44.448	-20.000	PASS
8DPSK	LCH	-0.126	-43.317	-20.126	PASS
	MCH	-0.305	-45.252	-20.305	PASS
	HCH	-0.092	-44.908	-20.092	PASS

GFSK LCH Graphs

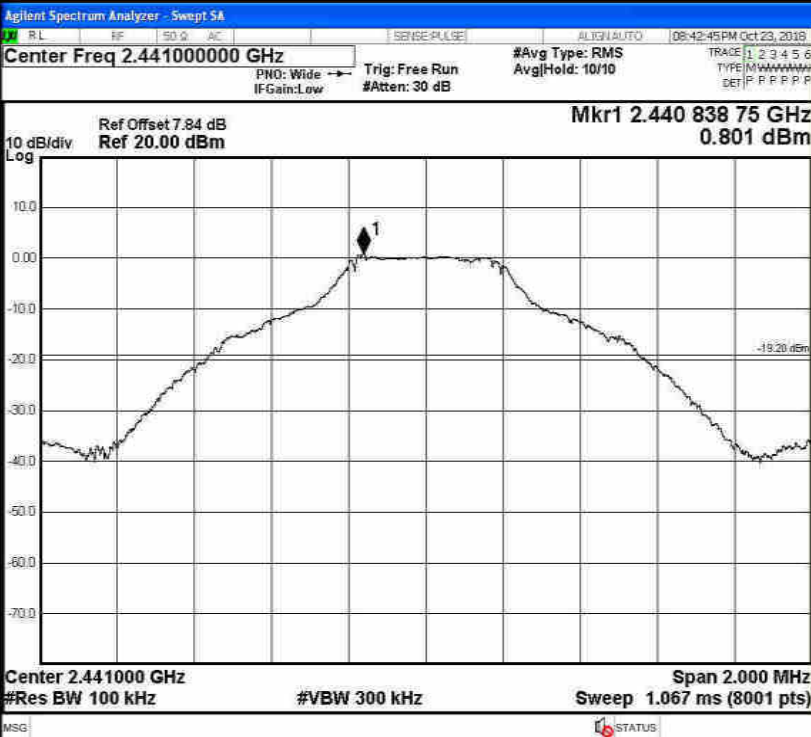
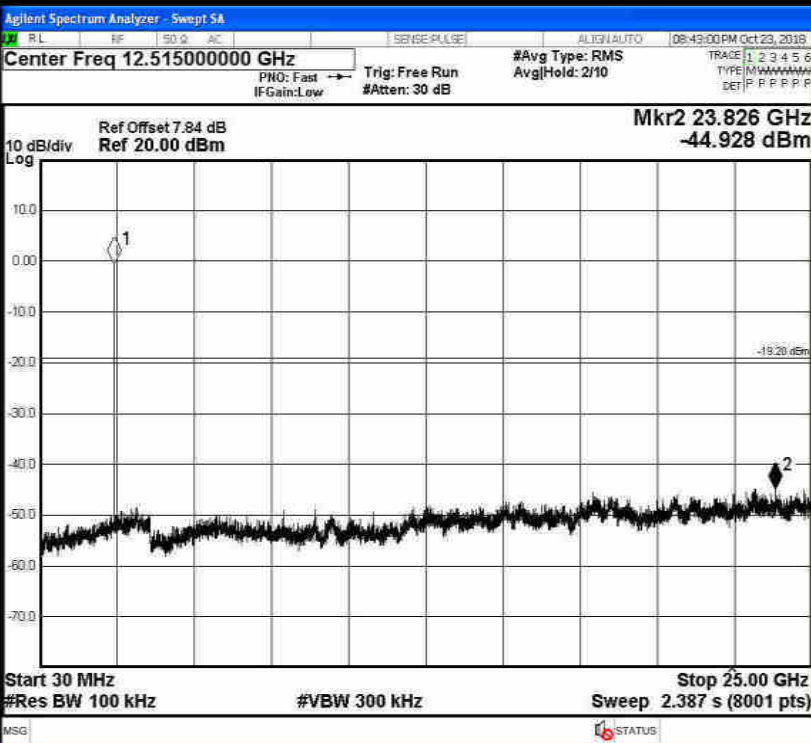


Pref

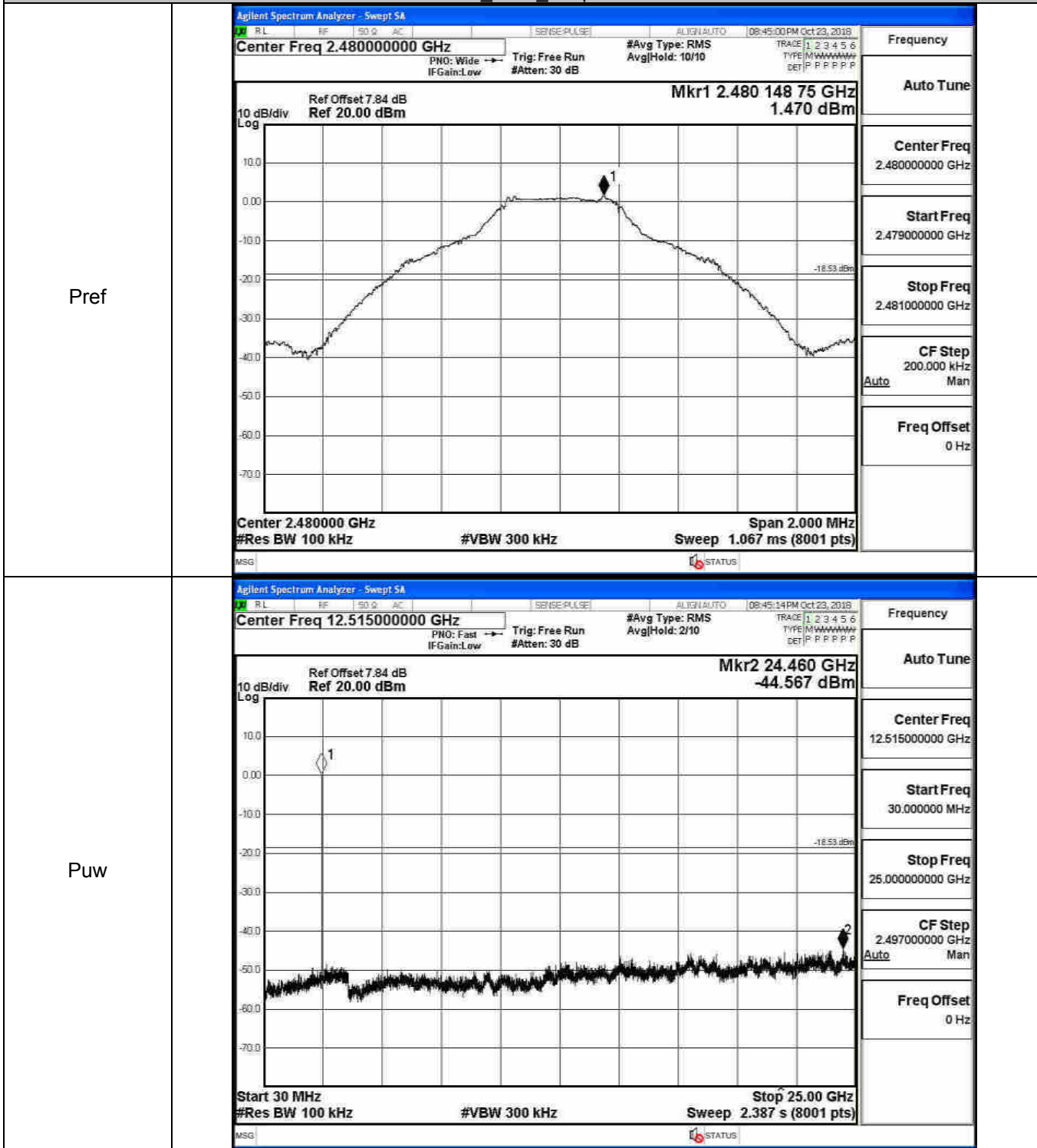




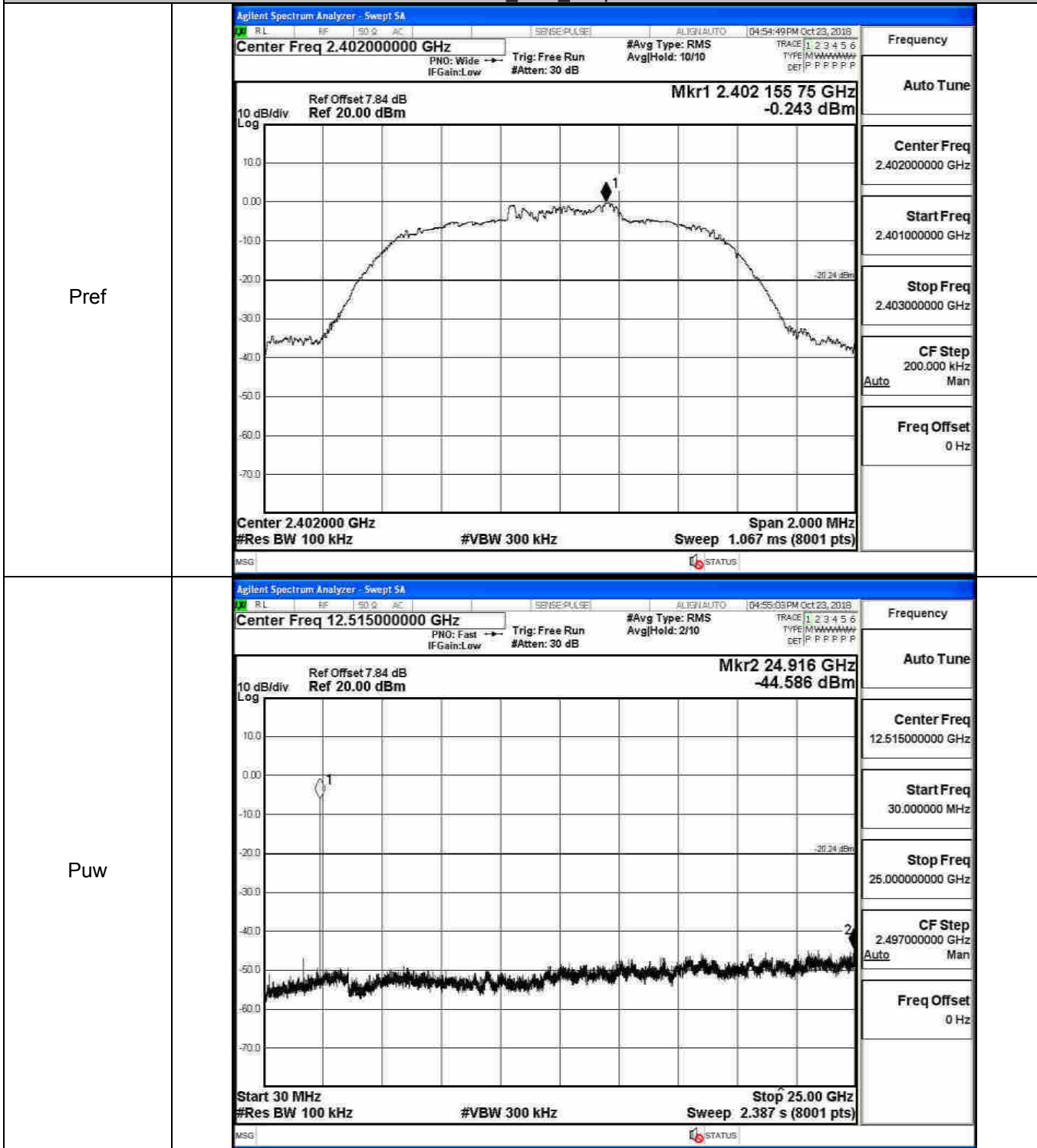
GFSK\_MCH\_Graphs

<p>Pref</p>		<table border="1"> <tr><td>Frequency</td></tr> <tr><td>Auto Tune</td></tr> <tr><td>Center Freq 2.441000000 GHz</td></tr> <tr><td>Start Freq 2.440000000 GHz</td></tr> <tr><td>Stop Freq 2.442000000 GHz</td></tr> <tr><td>CF Step 200.000 kHz Auto Man</td></tr> <tr><td>Freq Offset 0 Hz</td></tr> </table>	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
	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									
<p>Puw</p>		<table border="1"> <tr><td>Frequency</td></tr> <tr><td>Auto Tune</td></tr> <tr><td>Center Freq 12.515000000 GHz</td></tr> <tr><td>Start Freq 30.0000000 MHz</td></tr> <tr><td>Stop Freq 25.000000000 GHz</td></tr> <tr><td>CF Step 2.497000000 GHz Auto Man</td></tr> <tr><td>Freq Offset 0 Hz</td></tr> </table>	Frequency	Auto Tune	Center Freq 12.515000000 GHz	Start Freq 30.0000000 MHz	Stop Freq 25.000000000 GHz	CF Step 2.497000000 GHz Auto Man	Freq Offset 0 Hz
Frequency									
Auto Tune									
Center Freq 12.515000000 GHz									
Start Freq 30.0000000 MHz									
Stop Freq 25.000000000 GHz									
CF Step 2.497000000 GHz Auto Man									
Freq Offset 0 Hz									

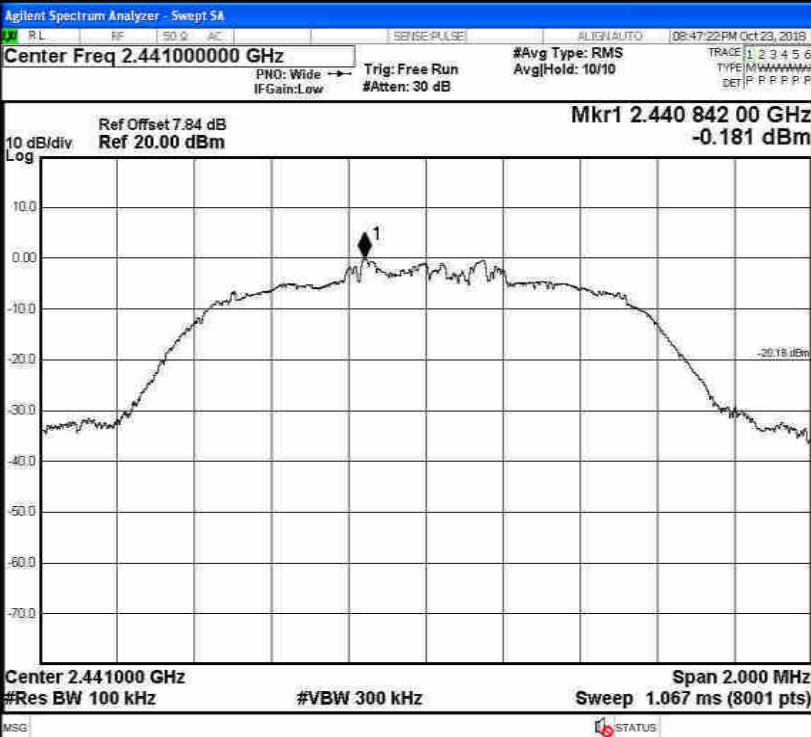
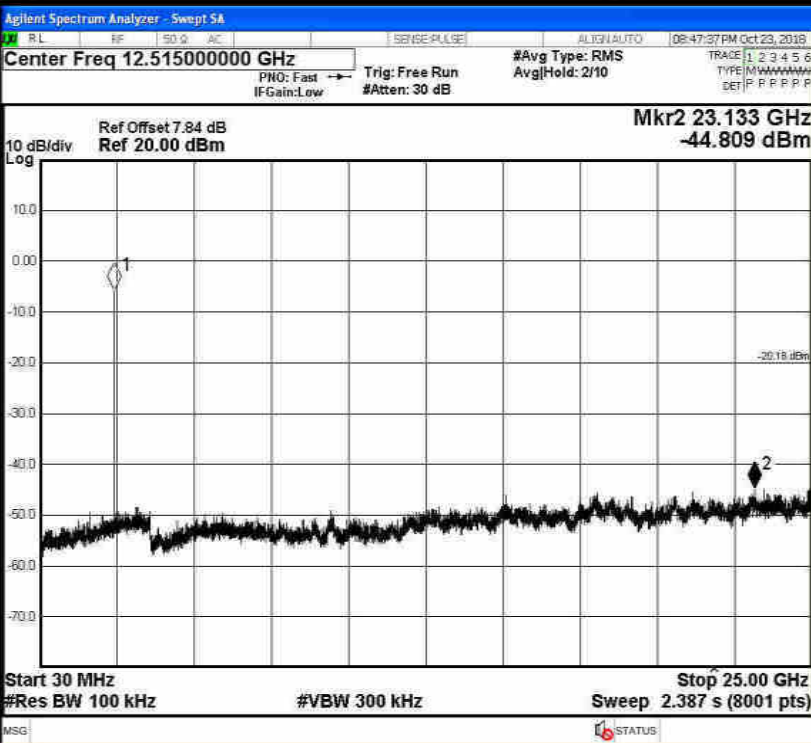
GFSK\_HCH\_Graphs



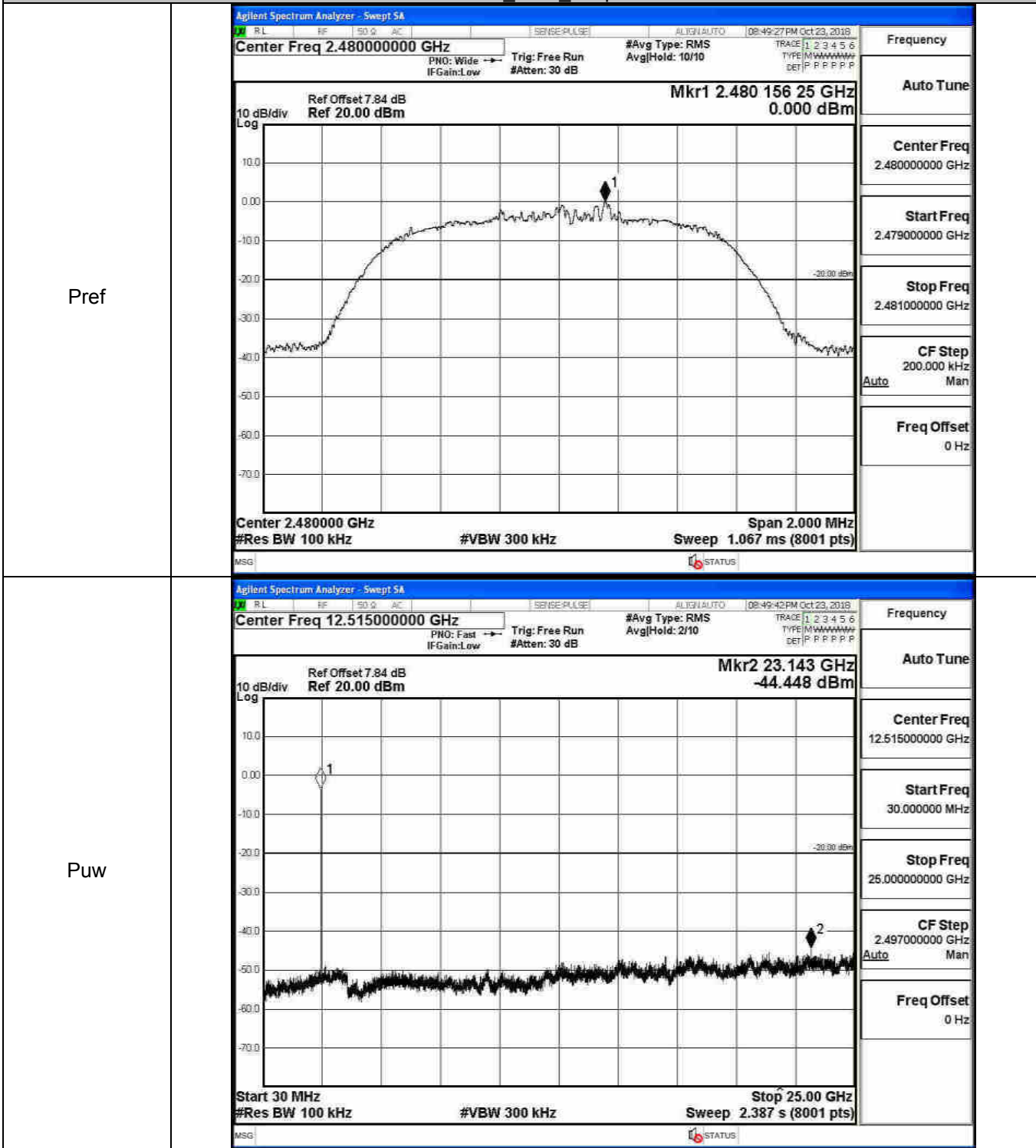
$\pi/4$ DQPSK\_LCH\_Graphs



$\pi$ /4DQPSK\_MCH\_Graphs

<p>Pref</p>		<p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.441000000 GHz</p> <p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.441000000 GHz</p> <p>Start Freq 2.440000000 GHz</p> <p>Stop Freq 2.442000000 GHz</p> <p>CF Step 200.000 kHz Auto Man</p> <p>Freq Offset 0 Hz</p>
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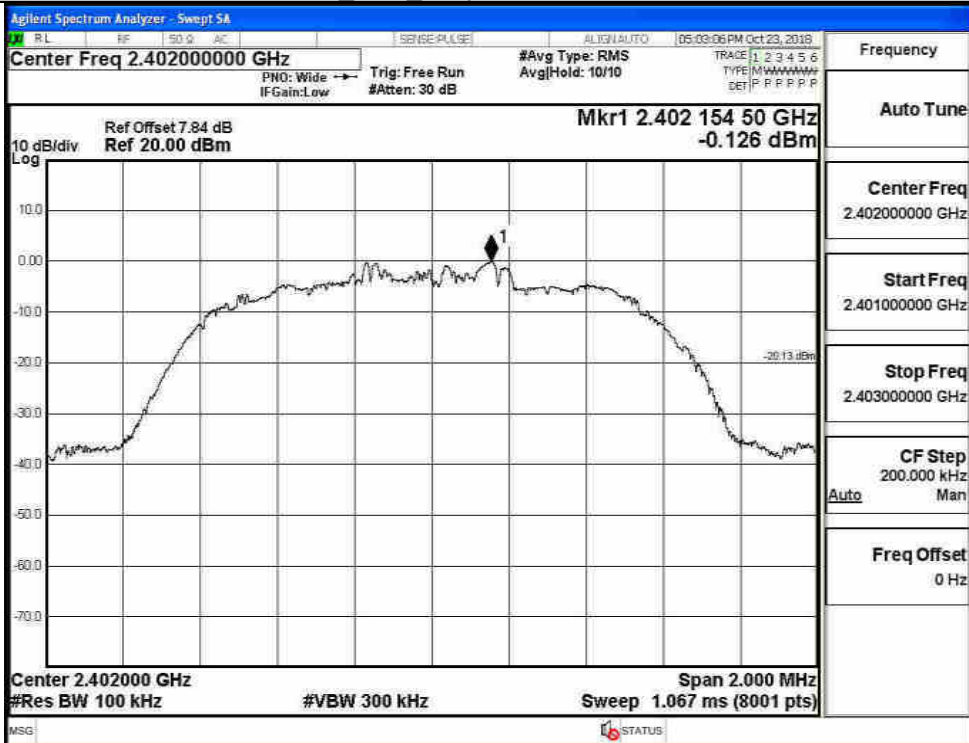
$\pi/4$ DQPSK\_HCH\_Graphs



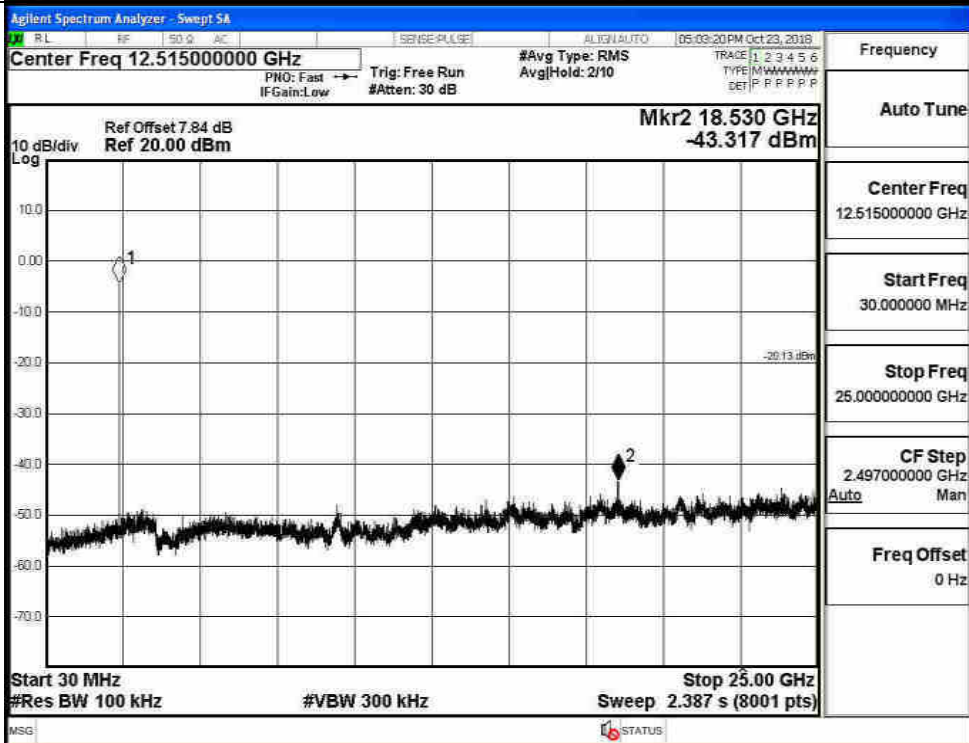


8DPSK\_LCH\_Graphs

Pref

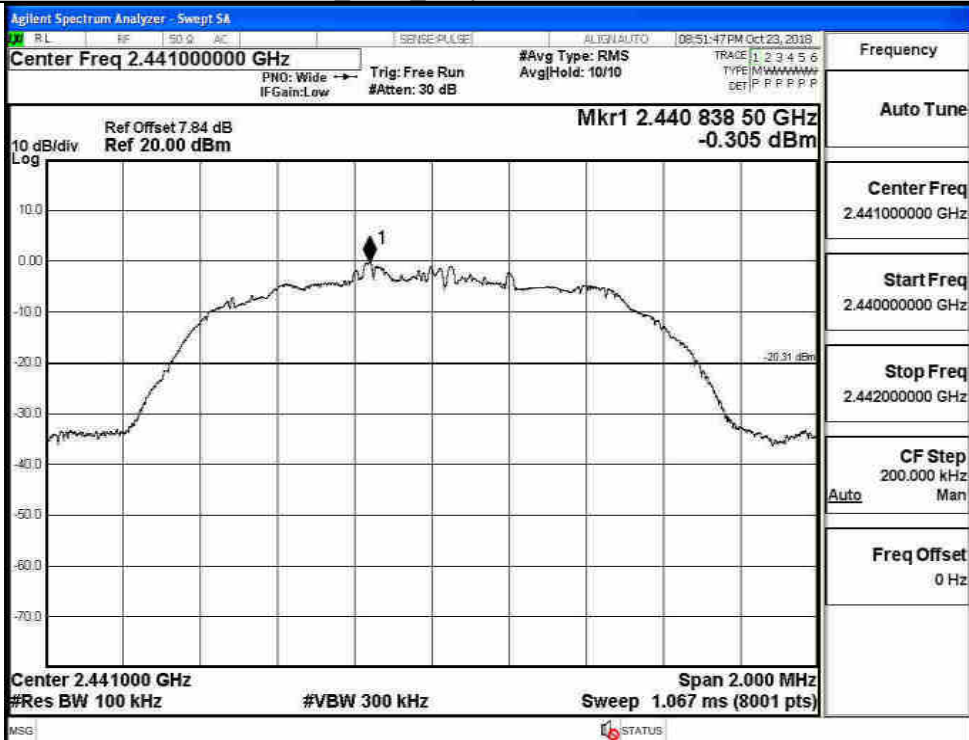


Puw

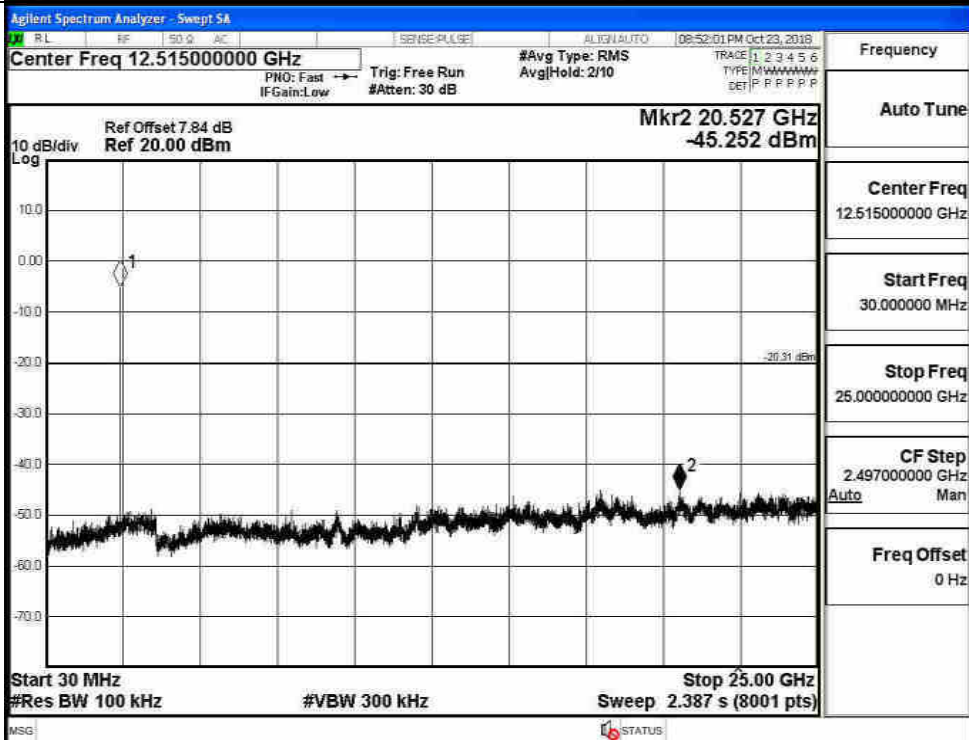


8DPSK\_MCH\_Graphs

Pref



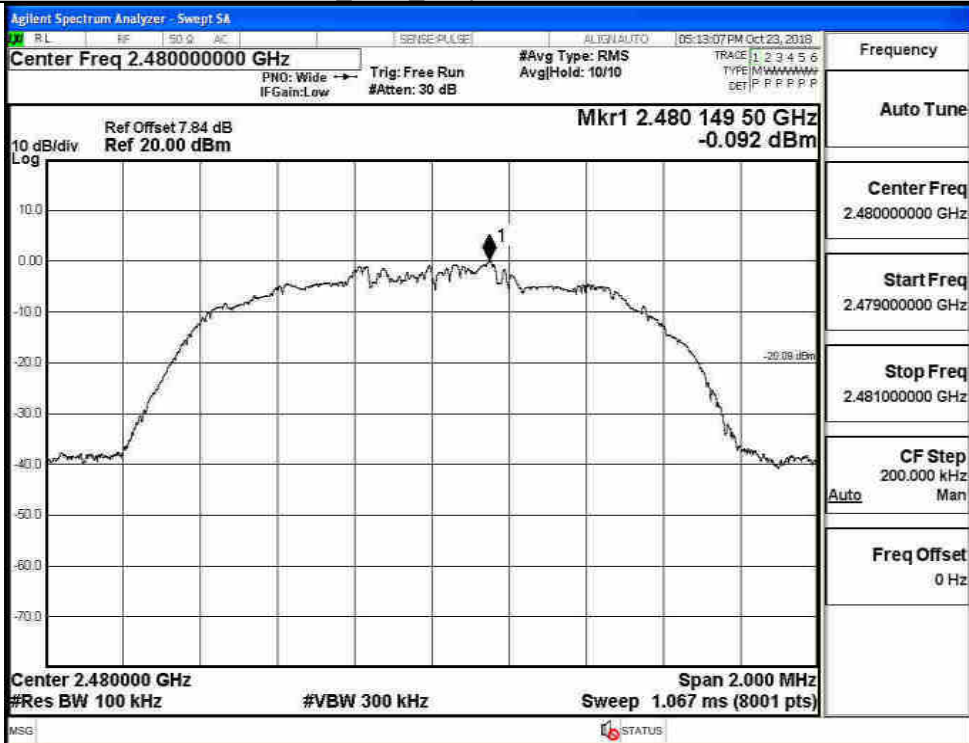
Puw



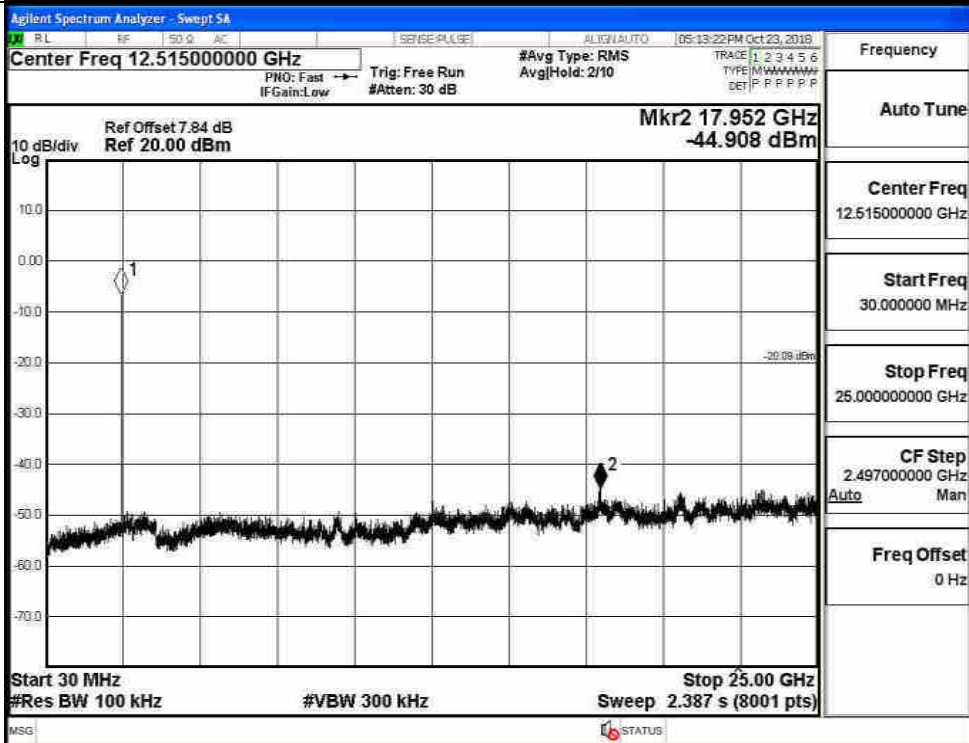


8DPSK\_HCH\_Graphs

Pref



Puw

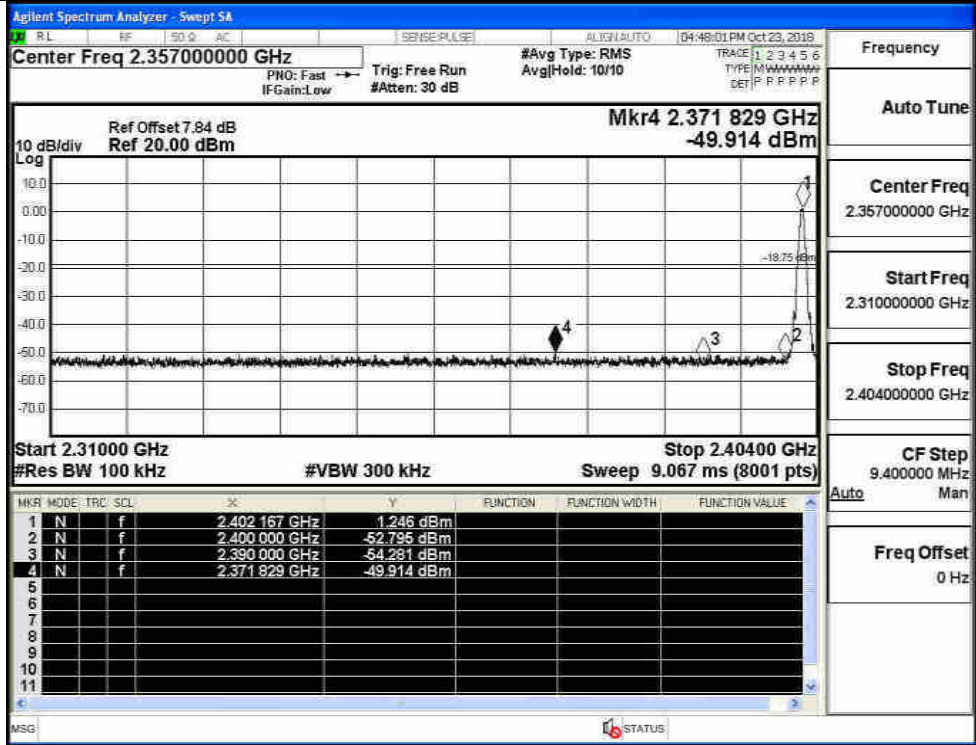


## A.7 Band-edge for RF Conducted Emissions

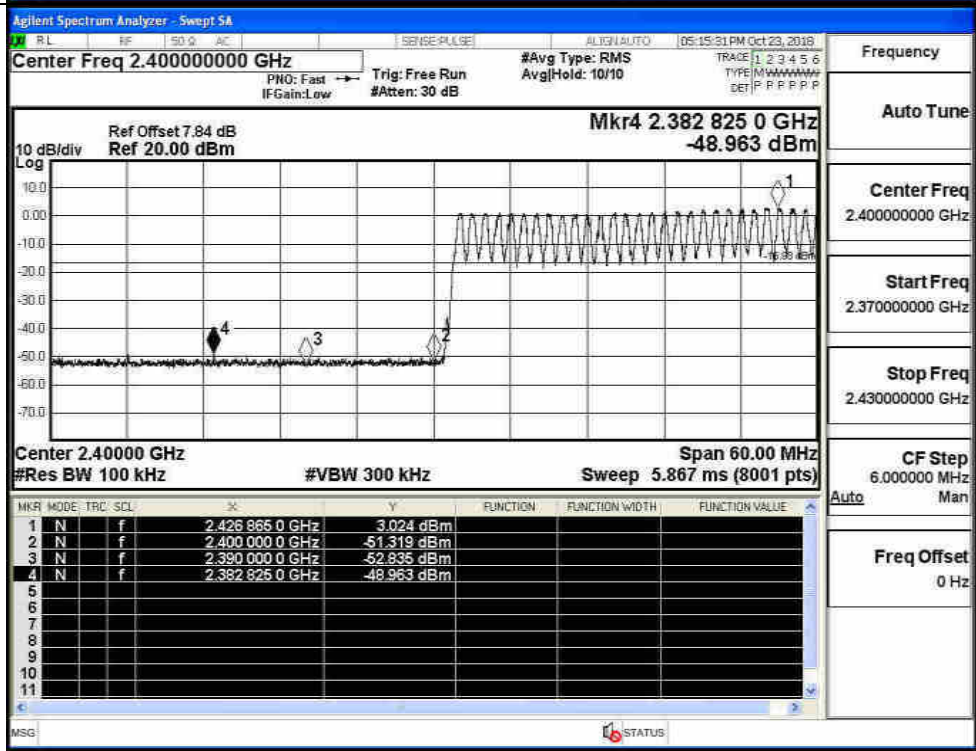
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	1.246	Off	-49.914	-18.75	PASS
			3.024	On	-48.963	-16.98	PASS
	HCH	2480	1.573	Off	-49.773	-18.43	PASS
			2.557	On	-49.463	-17.44	PASS
$\pi/4$ DQPSK	LCH	2402	-0.078	Off	-50.173	-20.08	PASS
			1.630	On	-49.686	-18.37	PASS
	HCH	2480	-0.108	Off	-50.226	-20.11	PASS
			1.071	On	-49.274	-18.93	PASS
8DPSK	LCH	2402	-0.095	Off	-50.442	-20.1	PASS
			1.508	On	-49.651	-18.49	PASS
	HCH	2480	0.076	Off	-50.024	-19.92	PASS
			1.180	On	-49.775	-18.82	PASS

Test Graphs

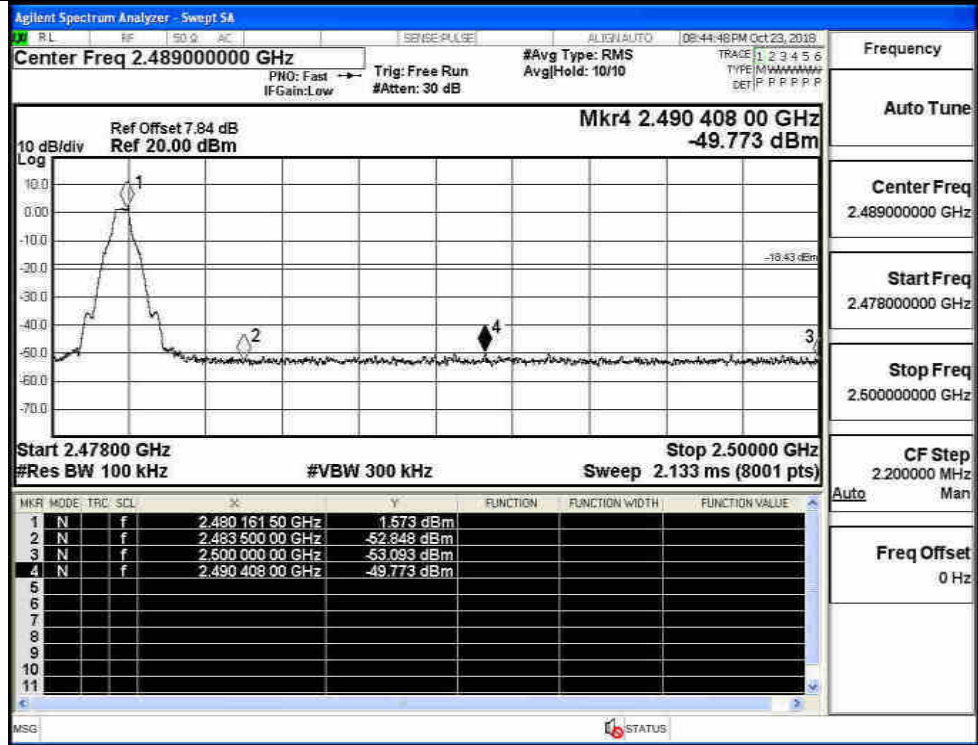
GFSK/LCH/No Hop



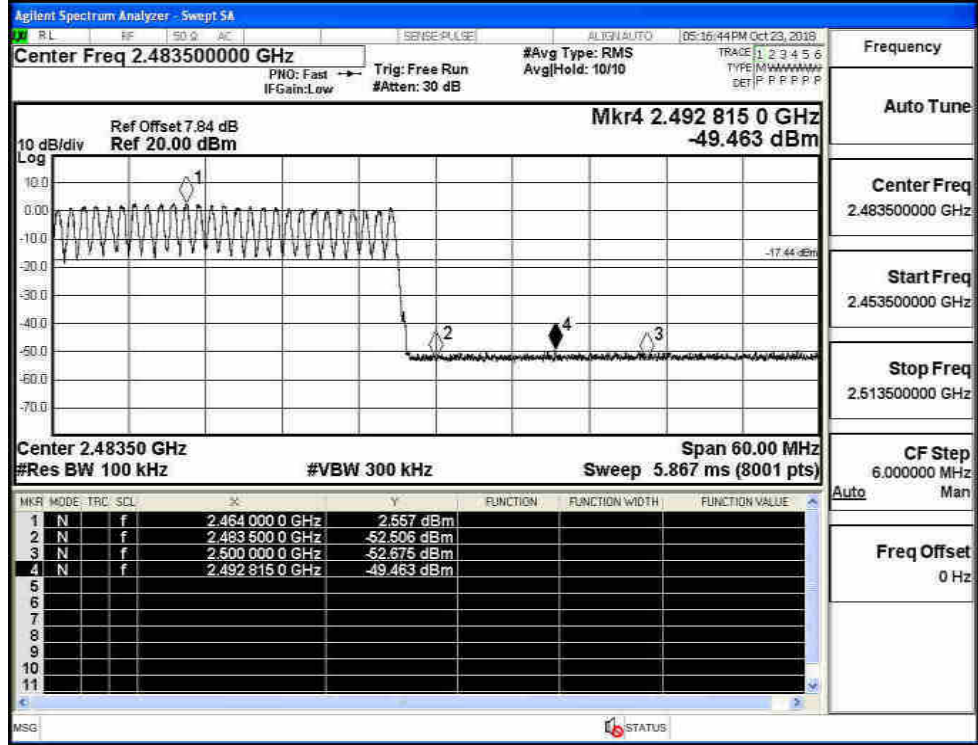
GFSK/LCH/Hop



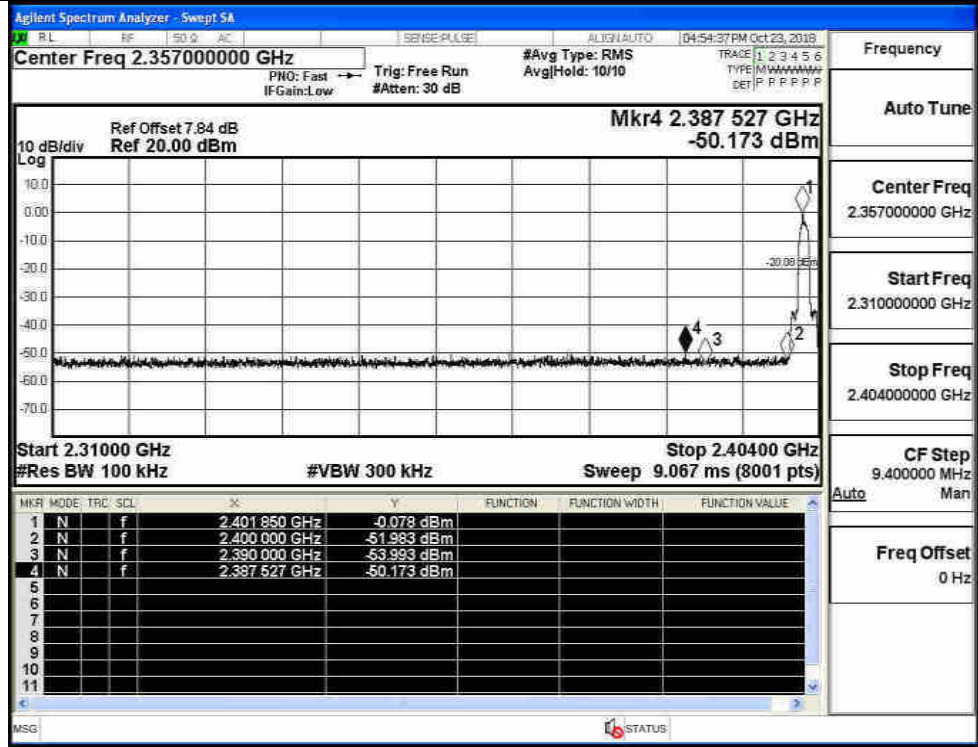
GFSK/HCH/No Hop



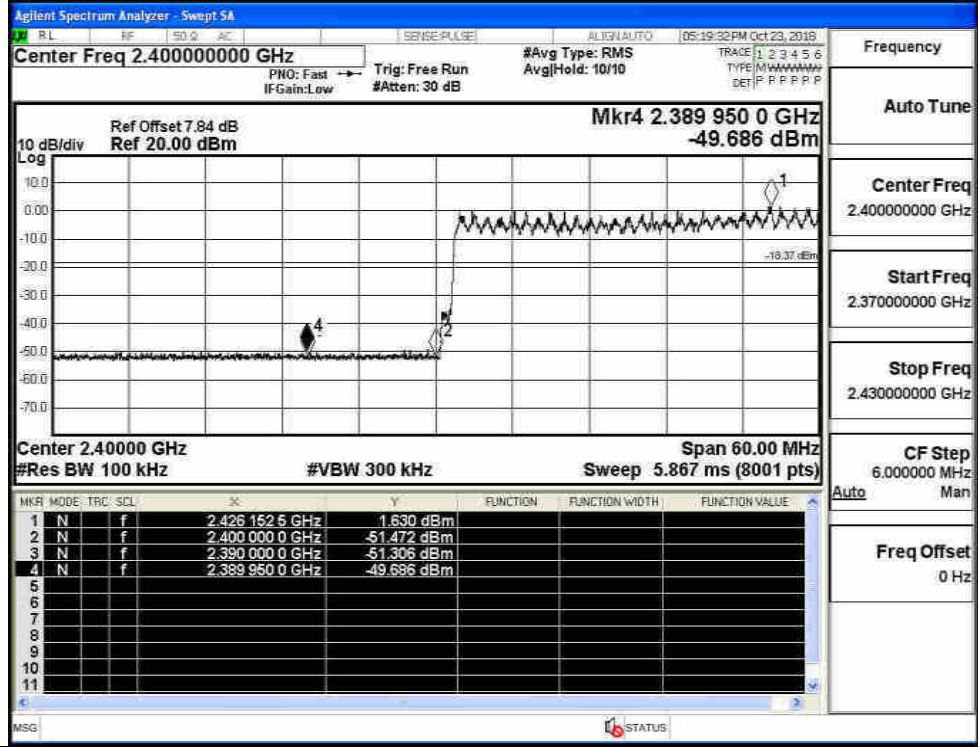
GFSK/HCH/Hop



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

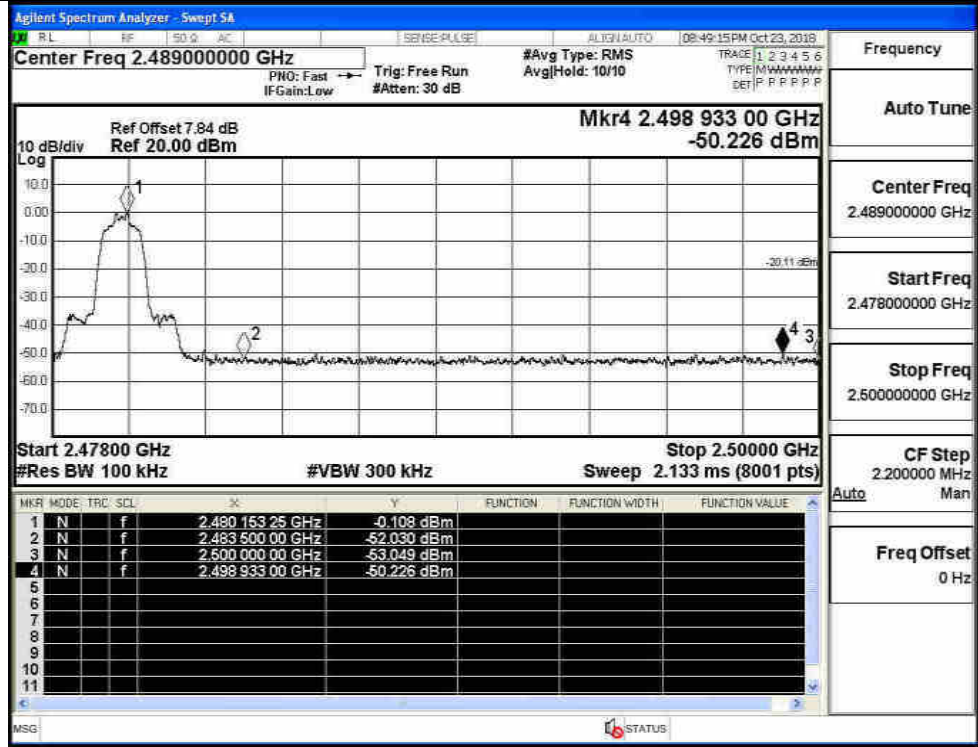


$\pi/4$ DQPSK/LCH/Hop

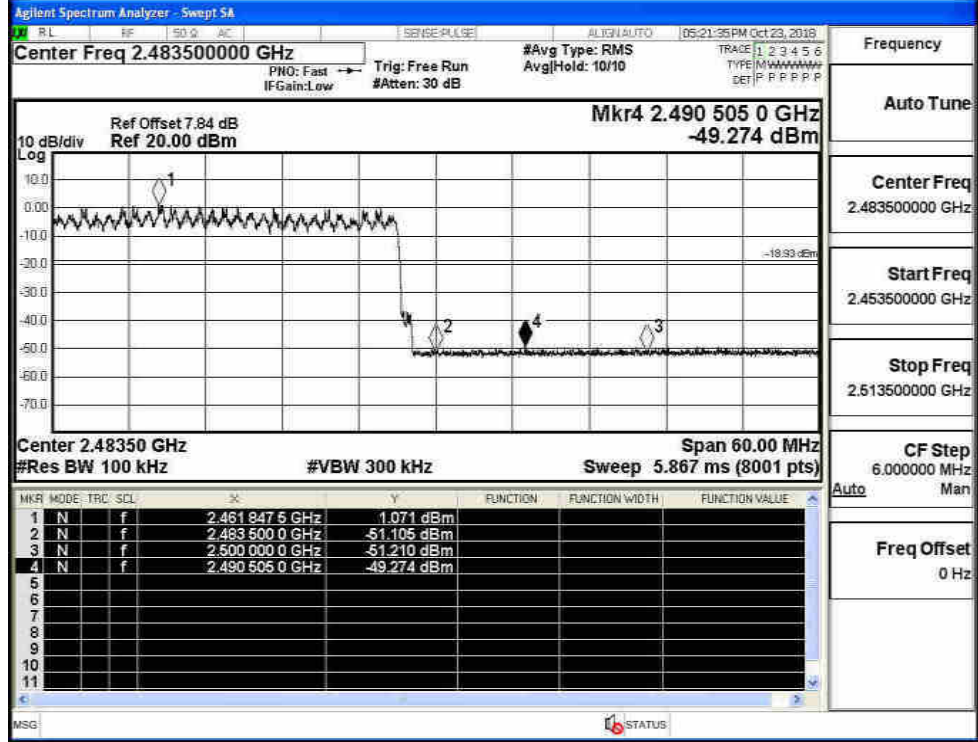




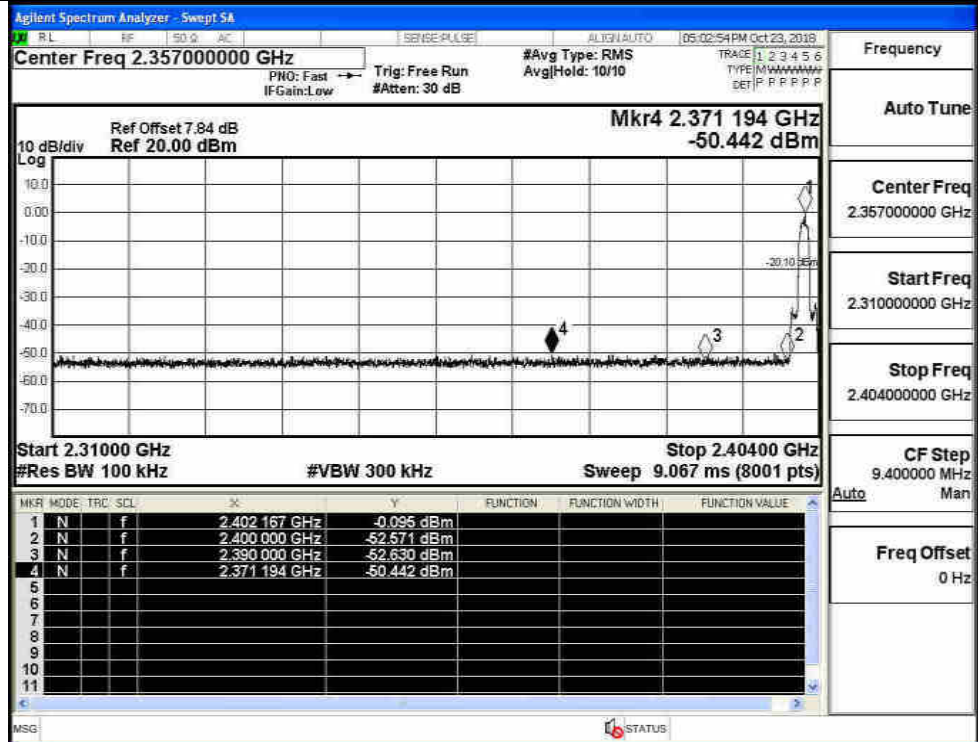
$\pi$ /4DQPSK/HCH/No  
Hop



$\pi$ /4DQPSK/HCH/Hop

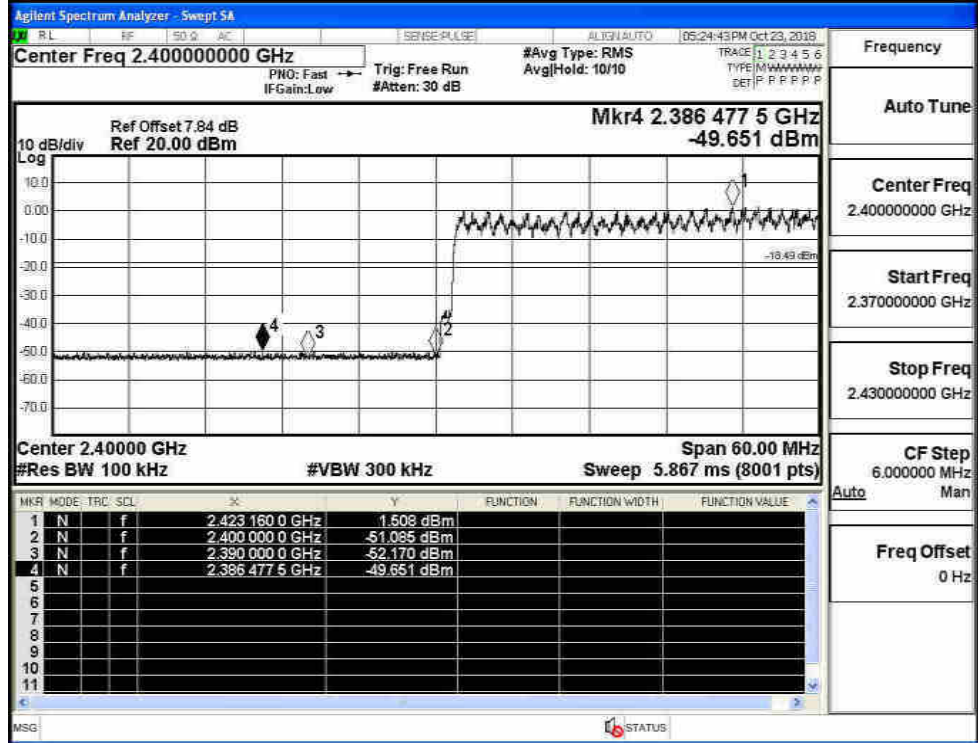


8DPSK/LCH/No Hop



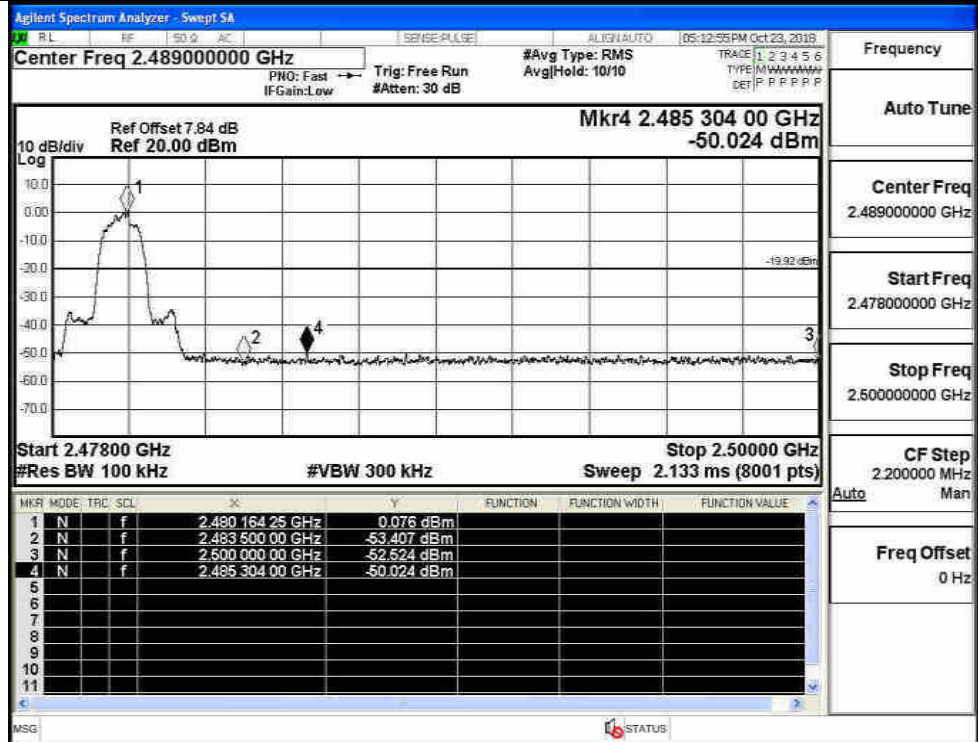
Frequency  
Auto Tune  
Center Freq  
2.357000000 GHz  
Start Freq  
2.310000000 GHz  
Stop Freq  
2.404000000 GHz  
CF Step  
9.400000 MHz  
Auto Man  
Freq Offset  
0 Hz

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

Auto Tune

Center Freq  
2.489000000 GHz

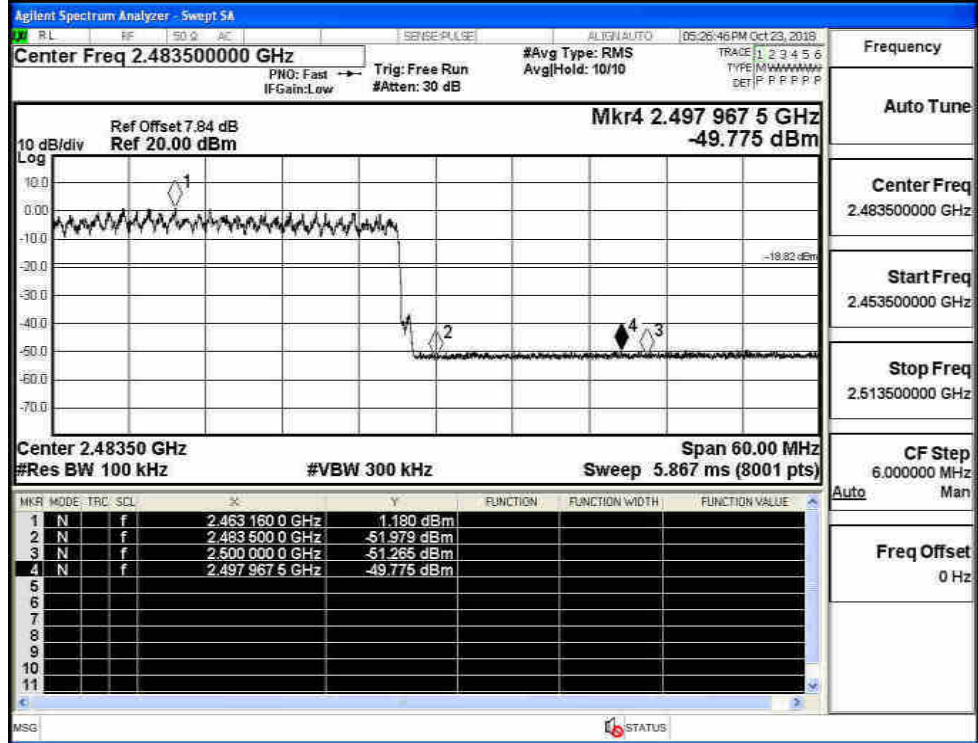
Start Freq  
2.478000000 GHz

Stop Freq  
2.500000000 GHz

CF Step  
2.200000 MHz

Freq Offset  
0 Hz

8DPSK/HCH/Hop



Frequency

Auto Tune

Center Freq  
2.483500000 GHz

Start Freq  
2.453500000 GHz

Stop Freq  
2.513500000 GHz

CF Step  
6.000000 MHz

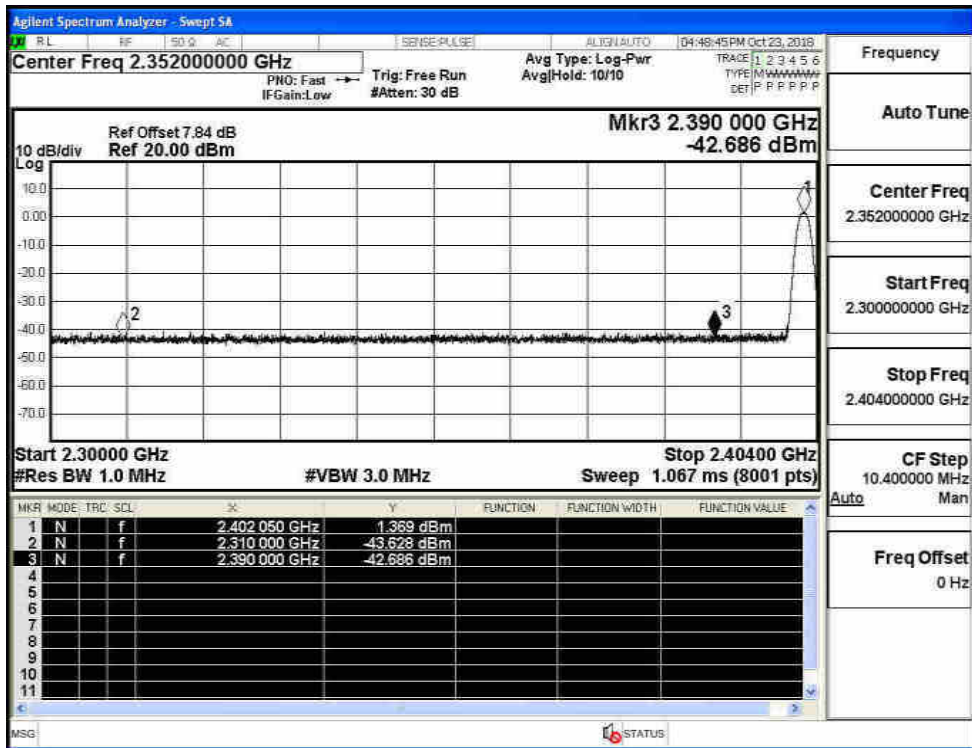
Freq Offset  
0 Hz



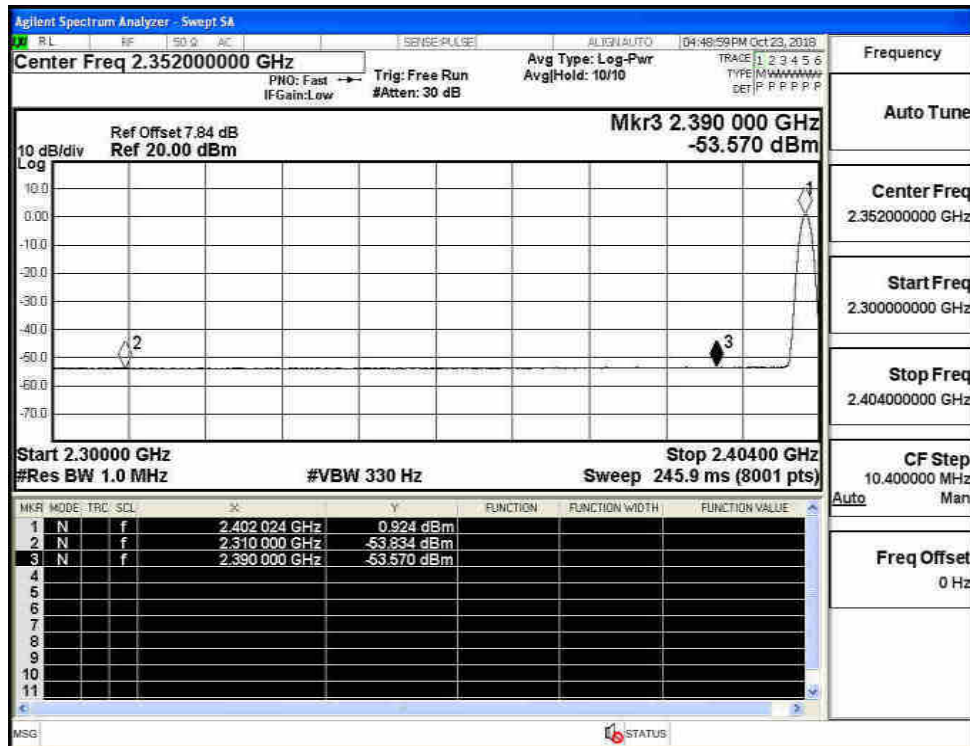
## A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.63	2.0	0	53.60	PEAK	74	PASS
	Off	2310.0	-53.83	2.0	0	43.40	AV	54	PASS
	Off	2390.0	-42.69	2.0	0	54.54	PEAK	74	PASS
	Off	2390.0	-53.57	2.0	0	43.66	AV	54	PASS
	Off	2483.5	-42.78	2.0	0	54.45	PEAK	74	PASS
	Off	2483.5	-53.36	2.0	0	43.87	AV	54	PASS
	Off	2500.0	-43.69	2.0	0	53.54	PEAK	74	PASS
	Off	2500.0	-53.31	2.0	0	43.92	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-44.89	2.0	0	52.34	PEAK	74	PASS
	Off	2310.0	-53.90	2.0	0	43.33	AV	54	PASS
	Off	2390.0	-42.54	2.0	0	54.69	PEAK	74	PASS
	Off	2390.0	-53.51	2.0	0	43.72	AV	54	PASS
	Off	2483.5	-42.31	2.0	0	54.92	PEAK	74	PASS
	Off	2483.5	-53.16	2.0	0	44.07	AV	54	PASS
	Off	2500.0	-43.63	2.0	0	53.60	PEAK	74	PASS
	Off	2500.0	-53.32	2.0	0	43.91	AV	54	PASS
8DPSK	Off	2310.0	-44.24	2.0	0	52.99	PEAK	74	PASS
	Off	2310.0	-53.79	2.0	0	43.44	AV	54	PASS
	Off	2390.0	-42.93	2.0	0	54.30	PEAK	74	PASS
	Off	2390.0	-53.67	2.0	0	43.56	AV	54	PASS
	Off	2483.5	-42.97	2.0	0	54.26	PEAK	74	PASS
	Off	2483.5	-53.22	2.0	0	44.01	AV	54	PASS
	Off	2500.0	-43.36	2.0	0	53.87	PEAK	74	PASS
	Off	2500.0	-53.25	2.0	0	43.98	AV	54	PASS

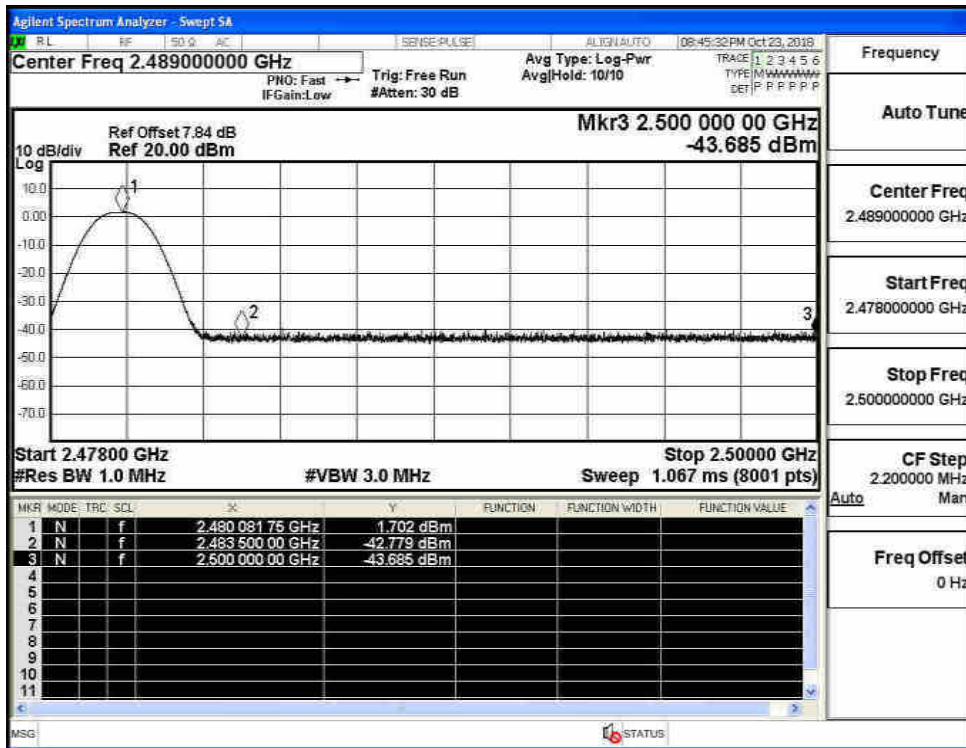
Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (Low Channel)



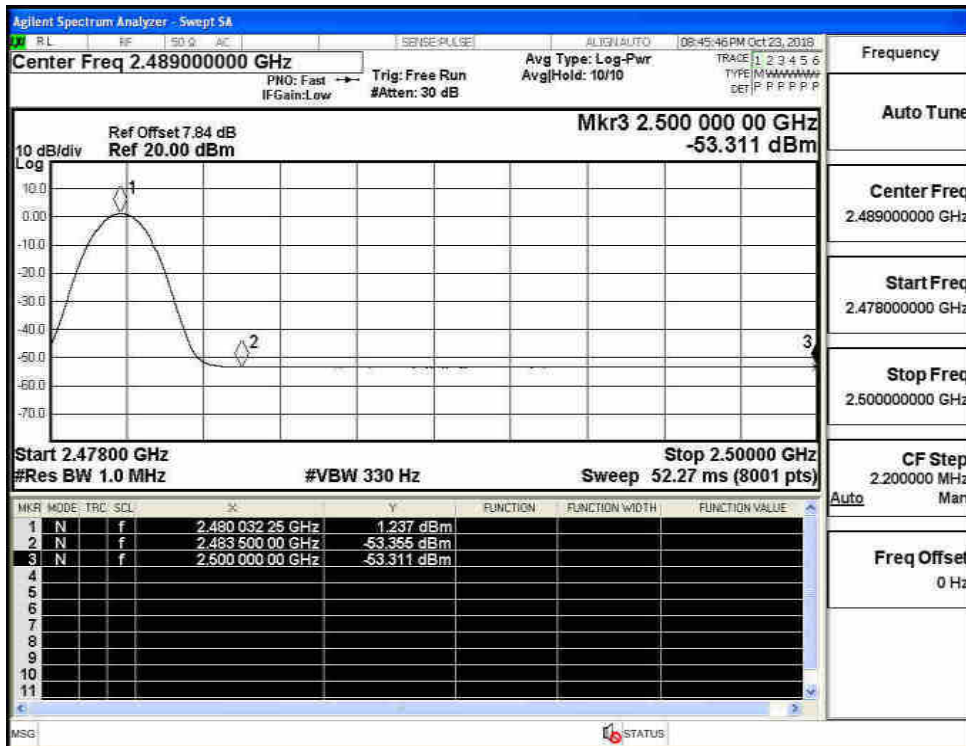
Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (Low Channel)



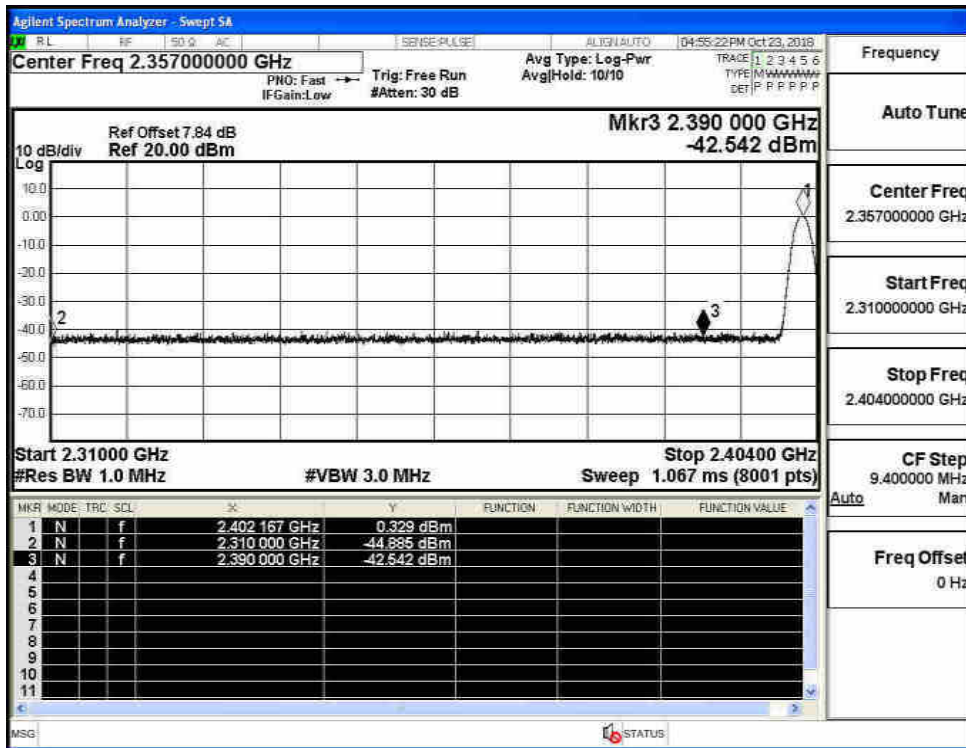
Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (High Channel)



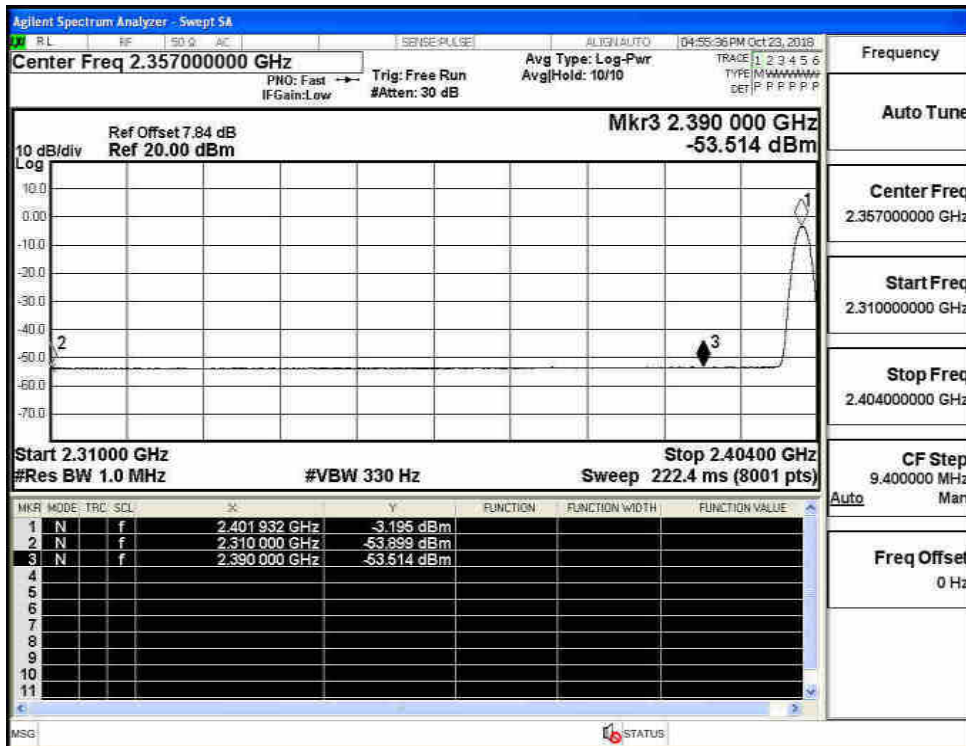
Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (High Channel)



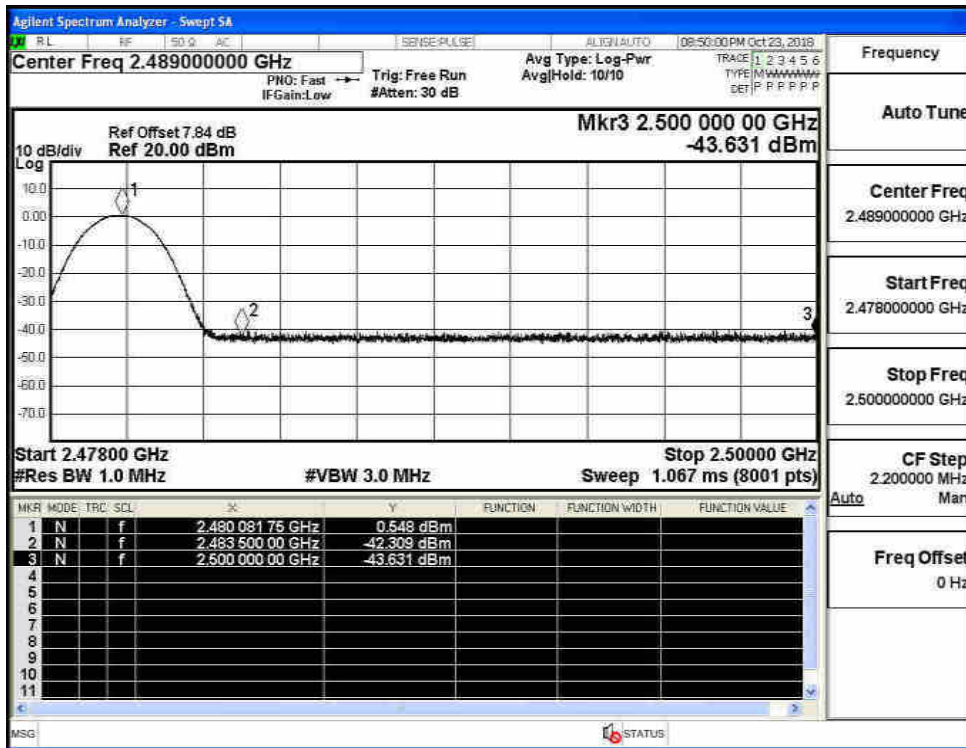
Restrict-band band-edge measurements\_Hopping Off  $\pi/4$ -DQPSK\_PEAK (Low Channel)



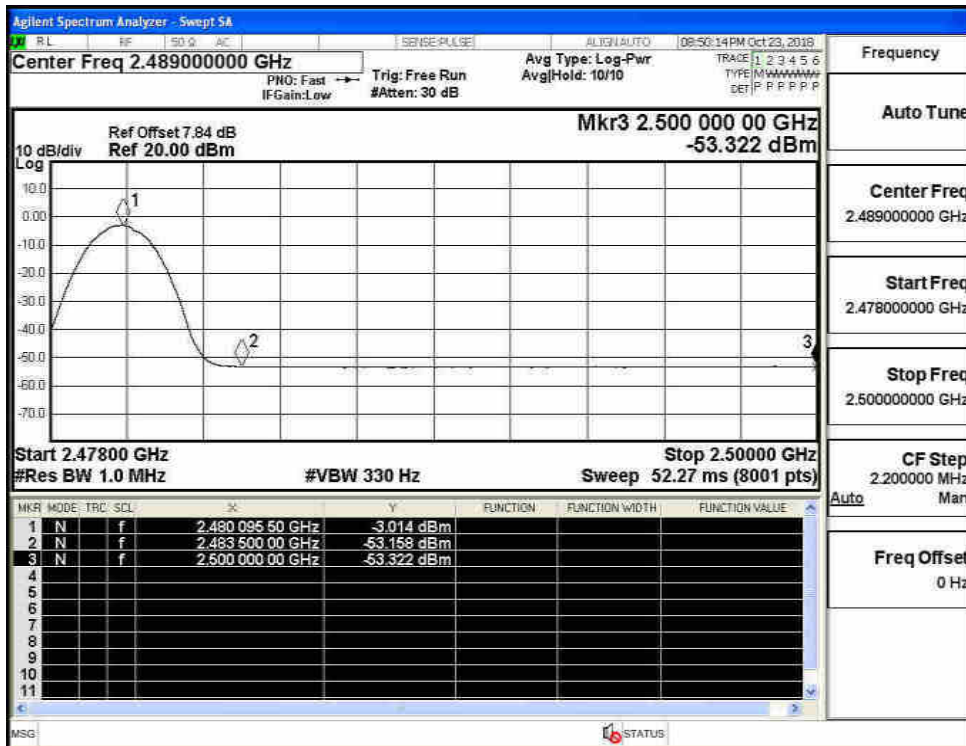
Restrict-band band-edge measurements\_Hopping Off  $\pi/4$ -DQPSK\_Average (Low Channel)



Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_PEAK (High Channel)

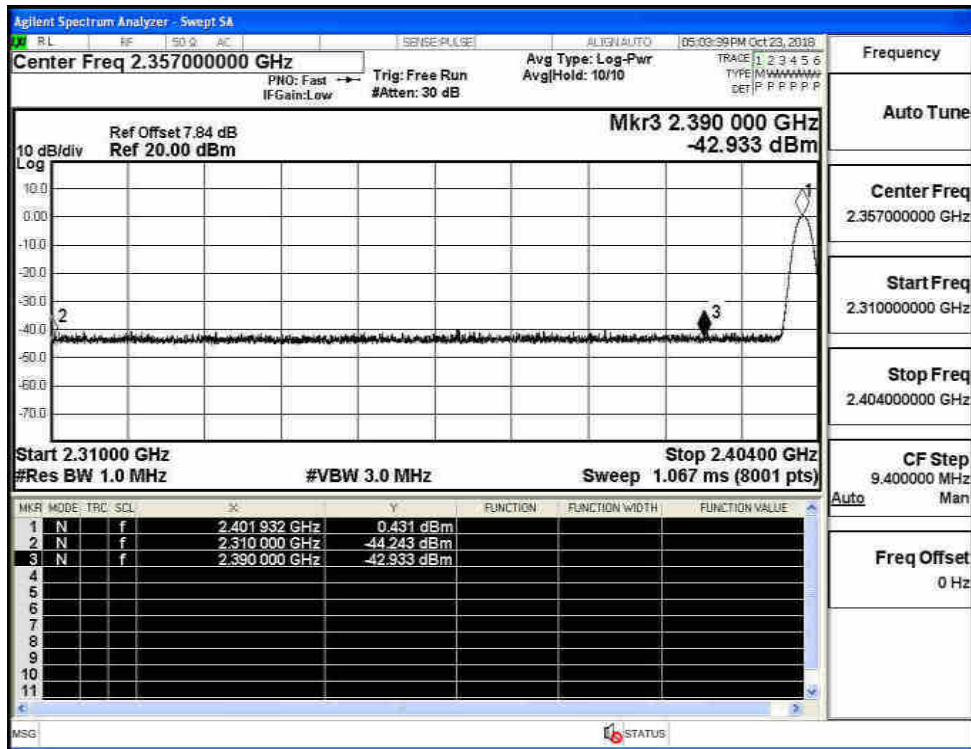


Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_Average (High Channel)

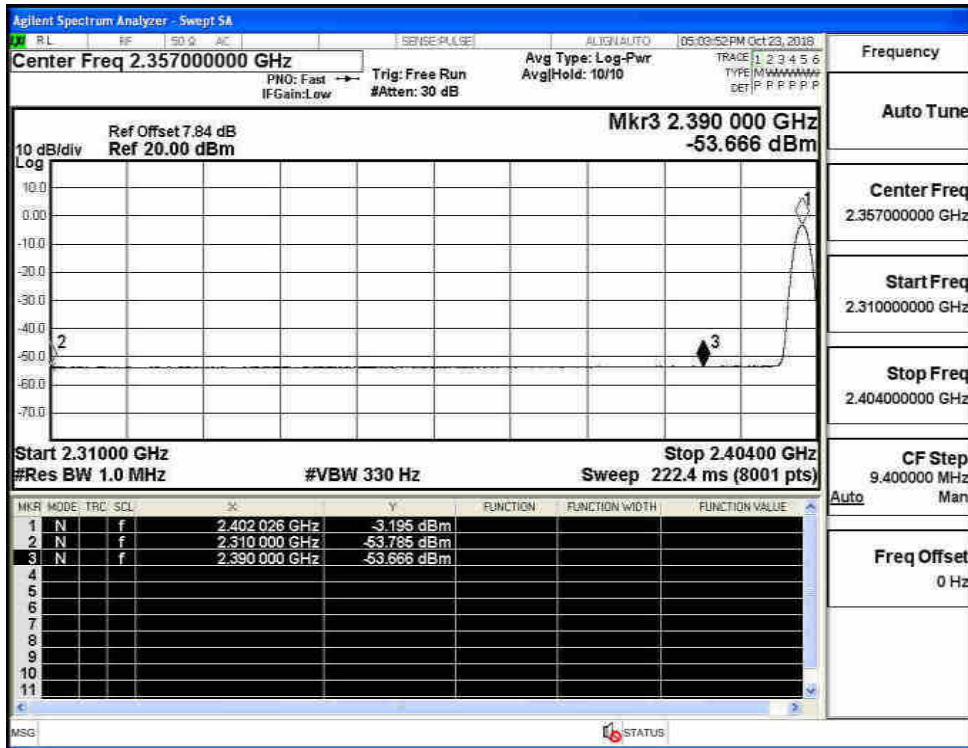




Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_PEAK (Low Channel)

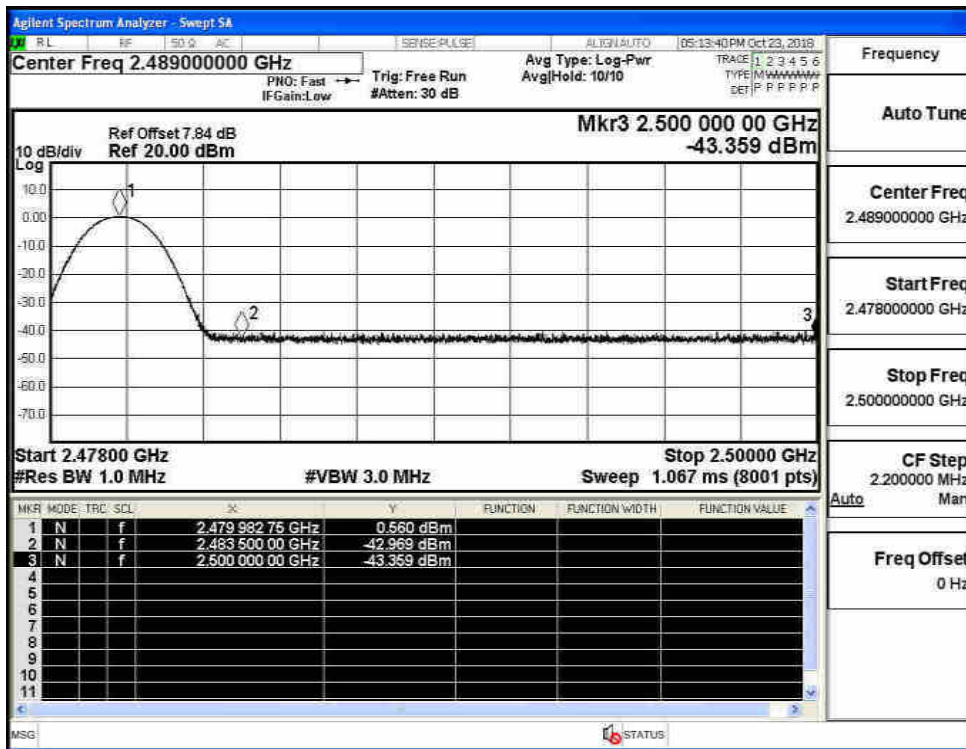


Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_Average (Low Channel)





Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_PEAK (High Channel)



Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_Average (High Channel)

