

Appendix A

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

Product Name: Bluetooth Sport Headset

Trade Mark: AWEI

Test Model: A850BL

Environmental Conditions

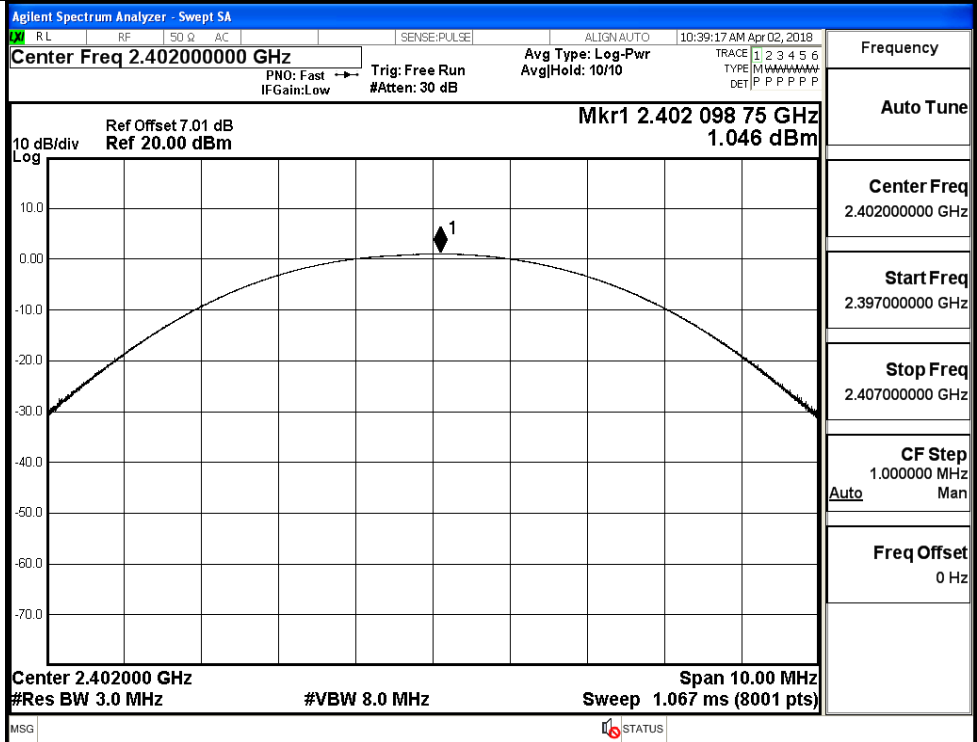
Temperature:	22.3 ° C
Relative Humidity:	52.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Jayden.Zhuo
Supervised by:	Dick.Su

A.1 Maxmum Conducted Peak Output Power

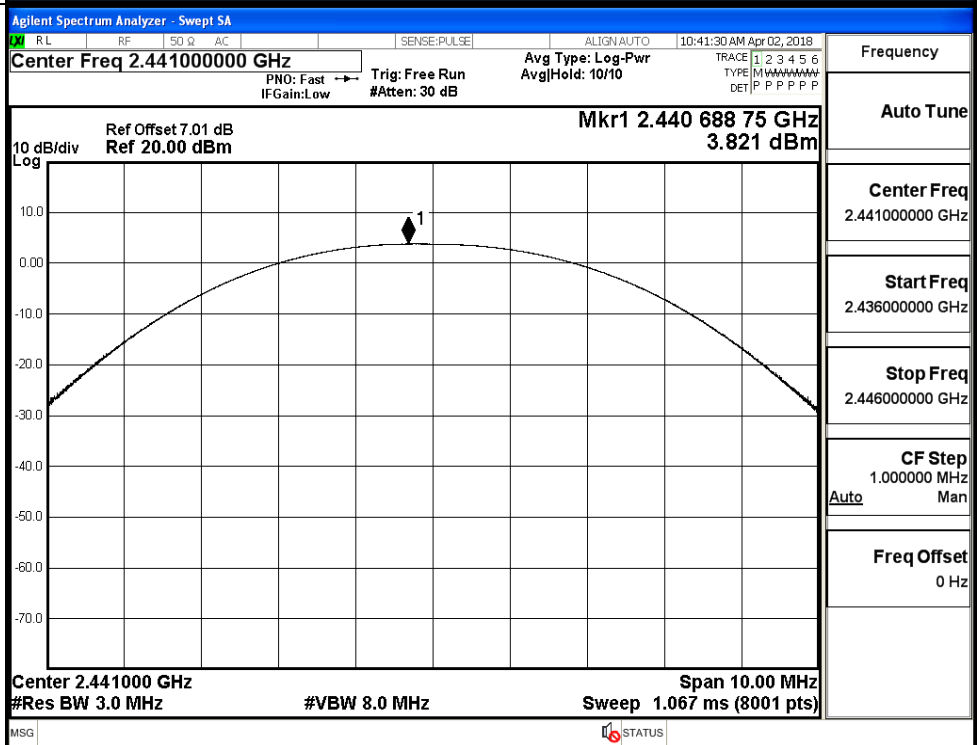
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	1.046	30	PASS
	MCH	3.821	30	PASS
	HCH	4.625	30	PASS
$\pi/4$ DQPSK	LCH	-1.232	21	PASS
	MCH	2.371	21	PASS
	HCH	3.399	21	PASS
8DPSK	LCH	-0.907	21	PASS
	MCH	2.710	21	PASS
	HCH	3.624	21	PASS

Test Graphs

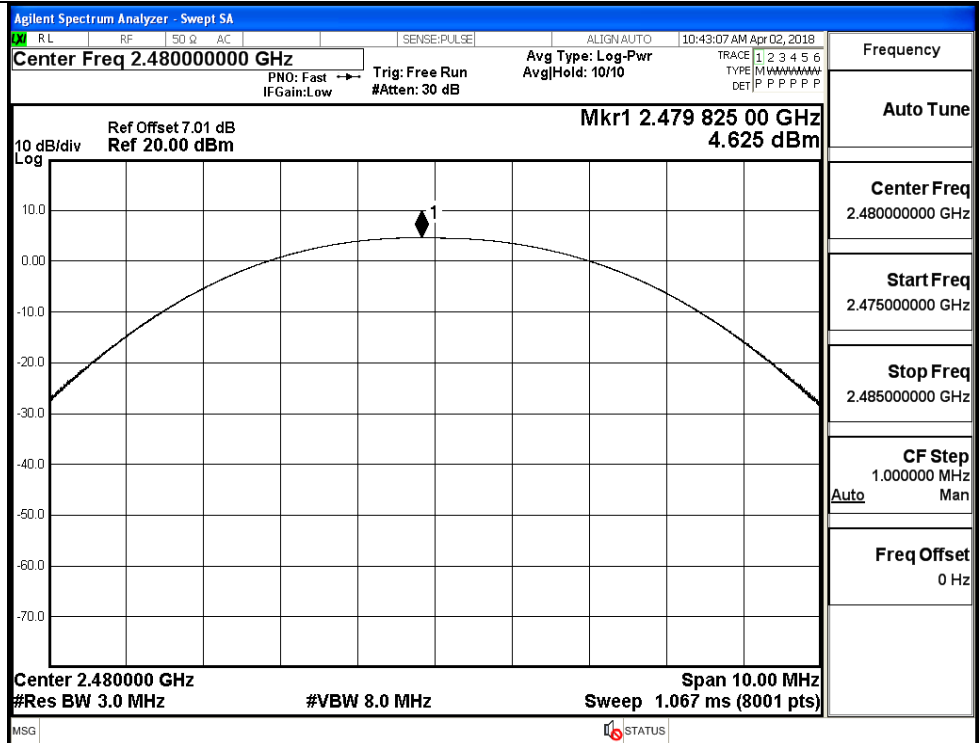
GFSK/LCH



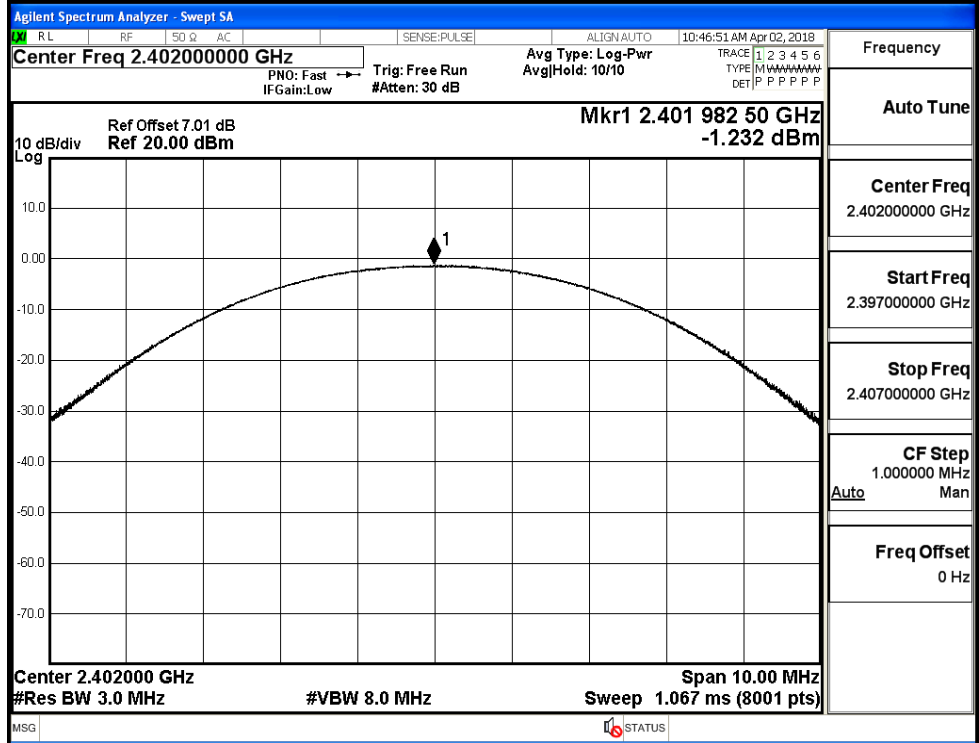
GFSK/MCH



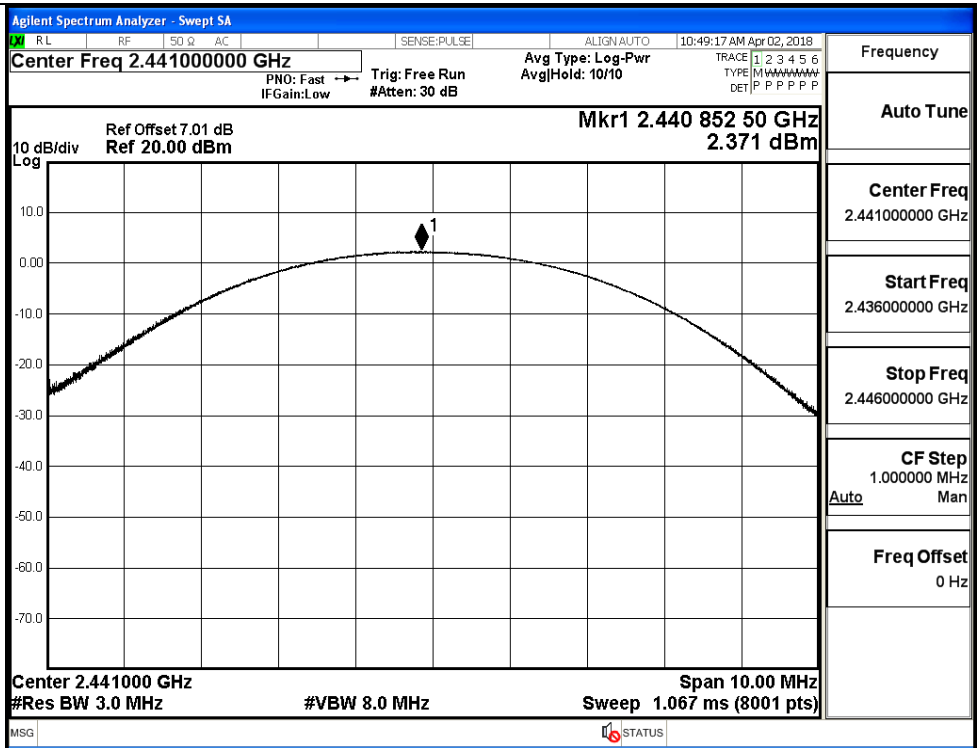
GFSK/HCH



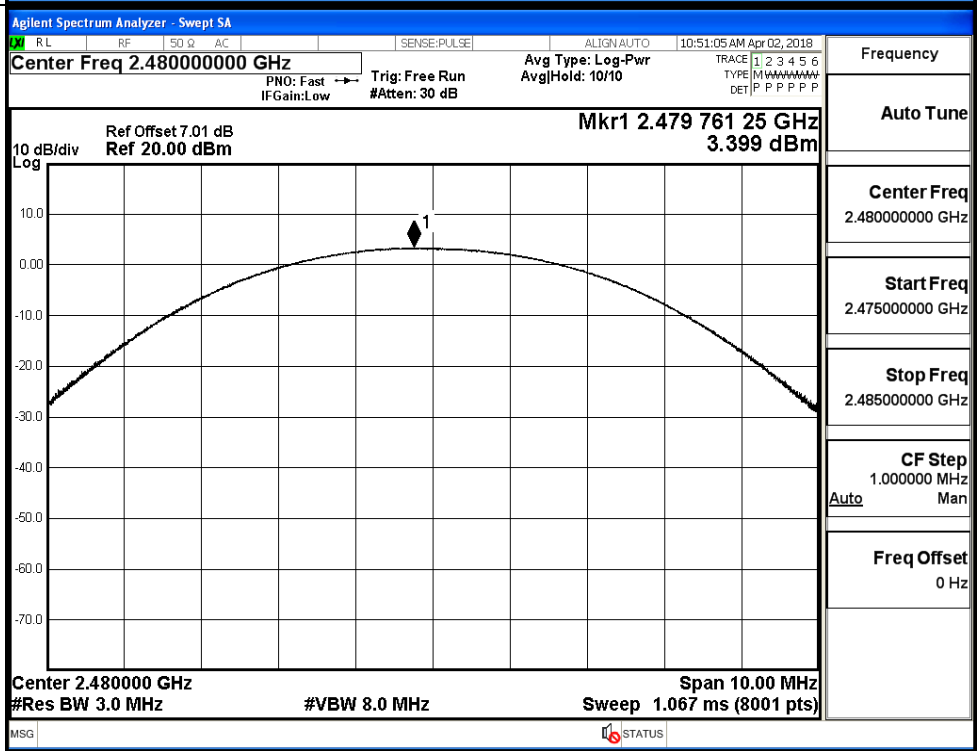
$\pi/4$ DQPSK/LCH



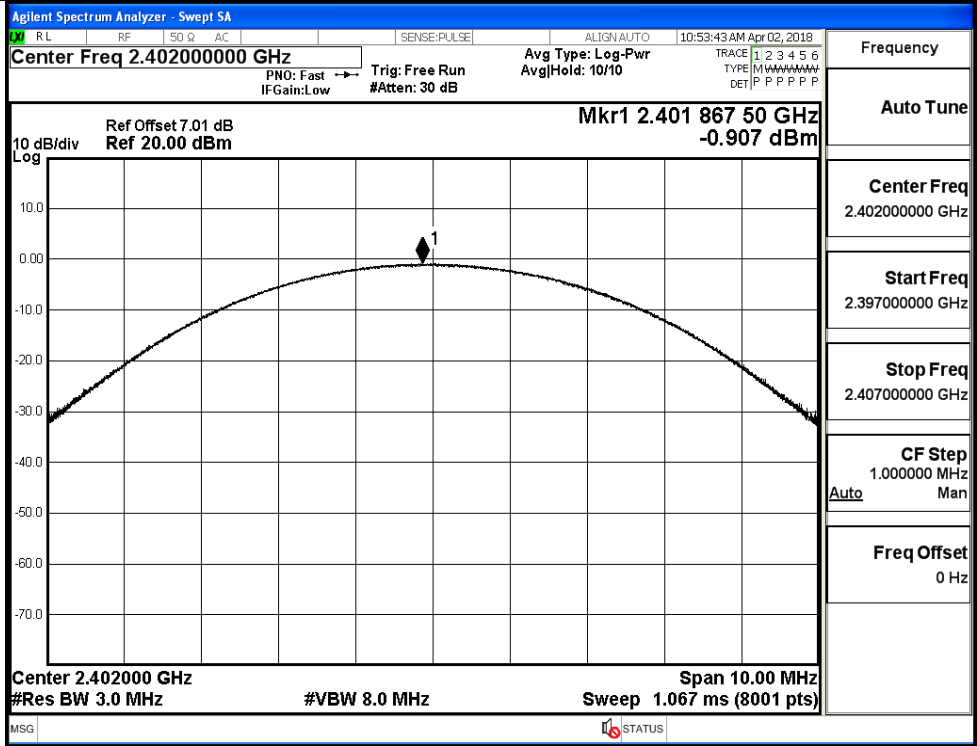
π /4DQPSK/MCH



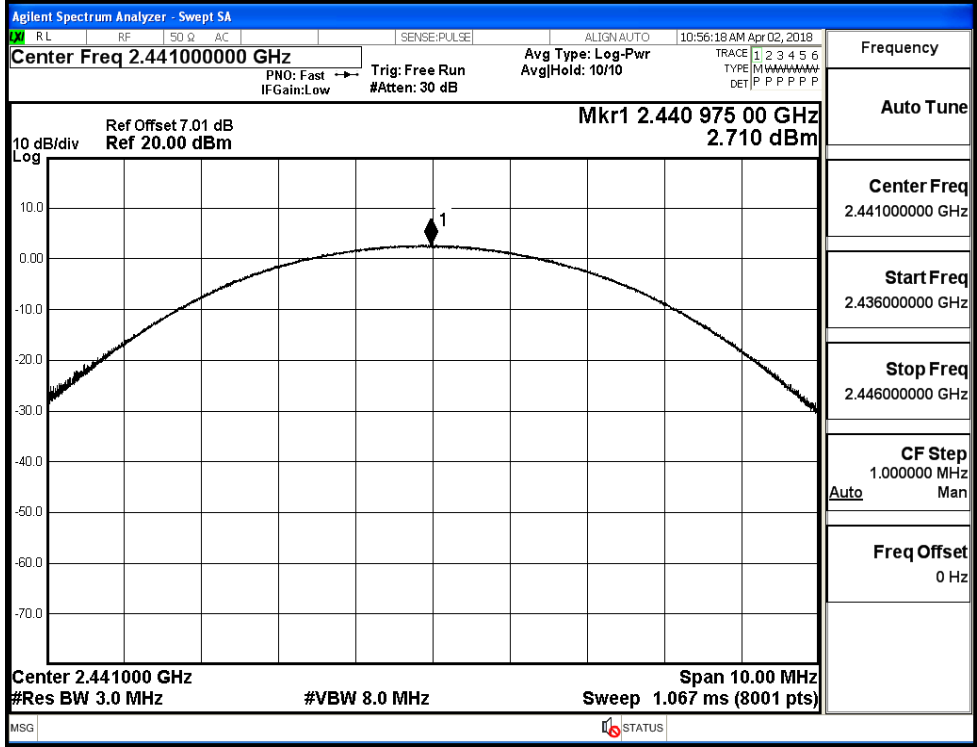
π /4DQPSK/HCH



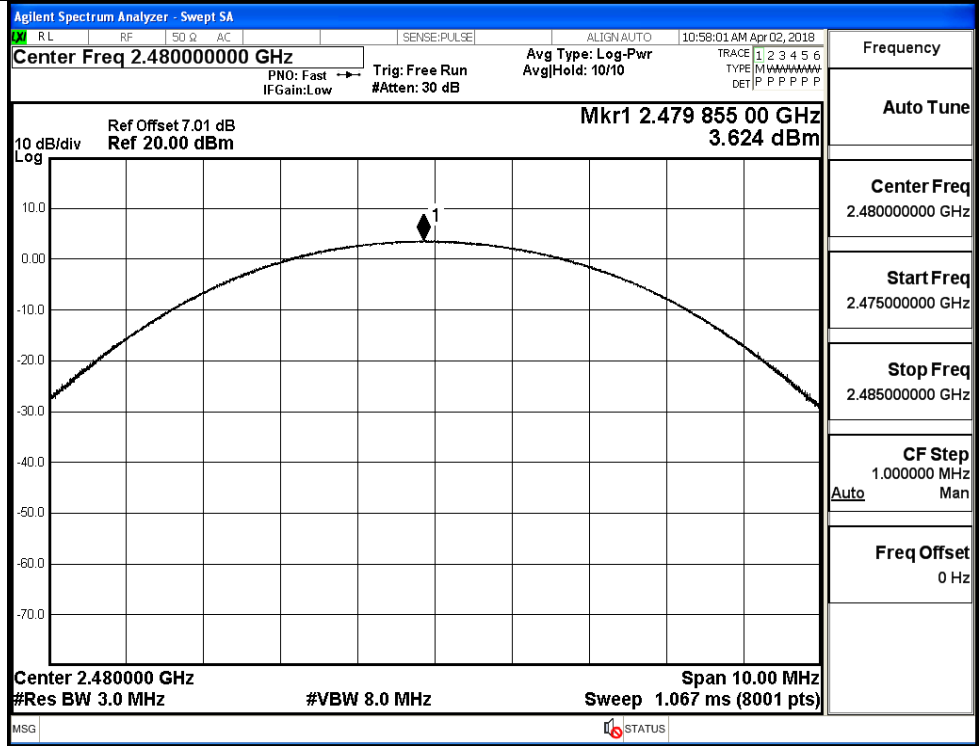
8DPSK/LCH



8DPSK/MCH

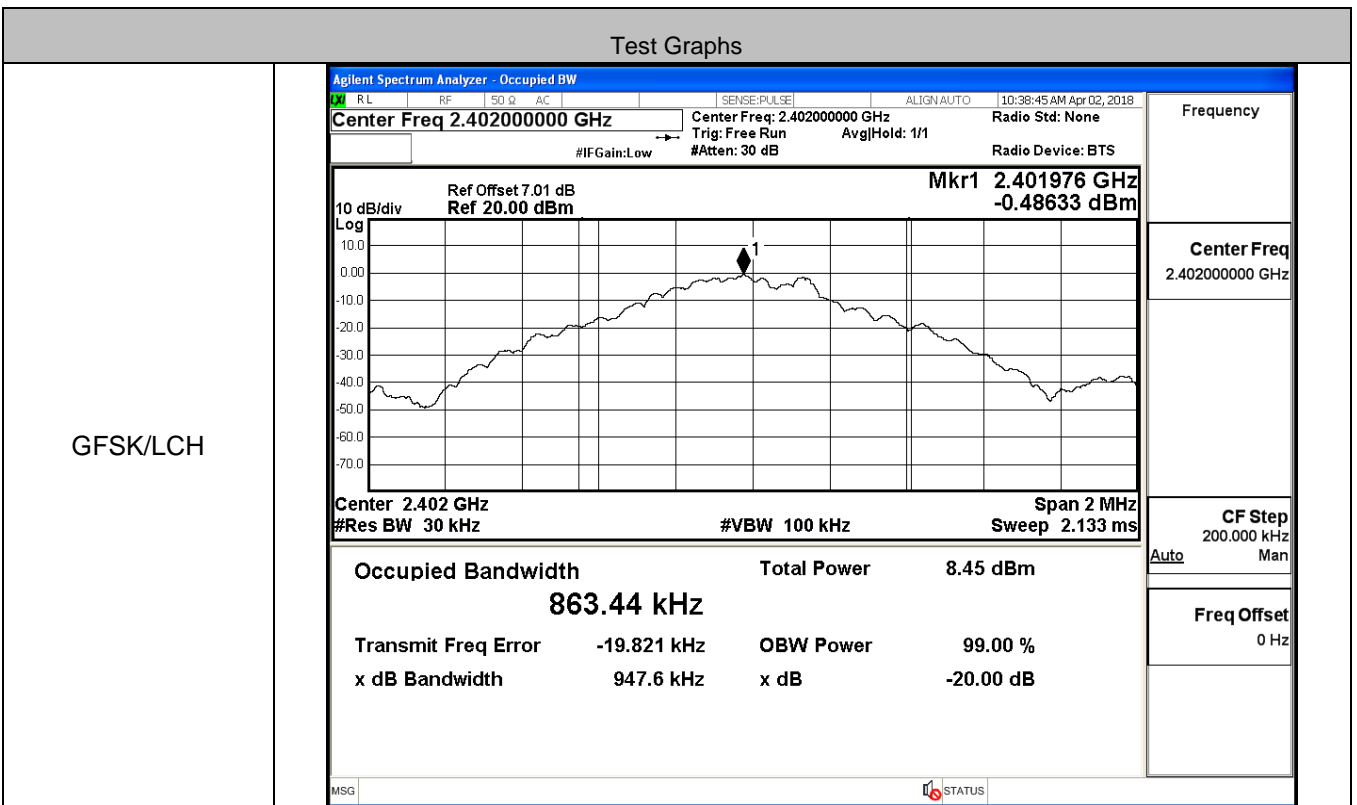


8DPSK/HCH

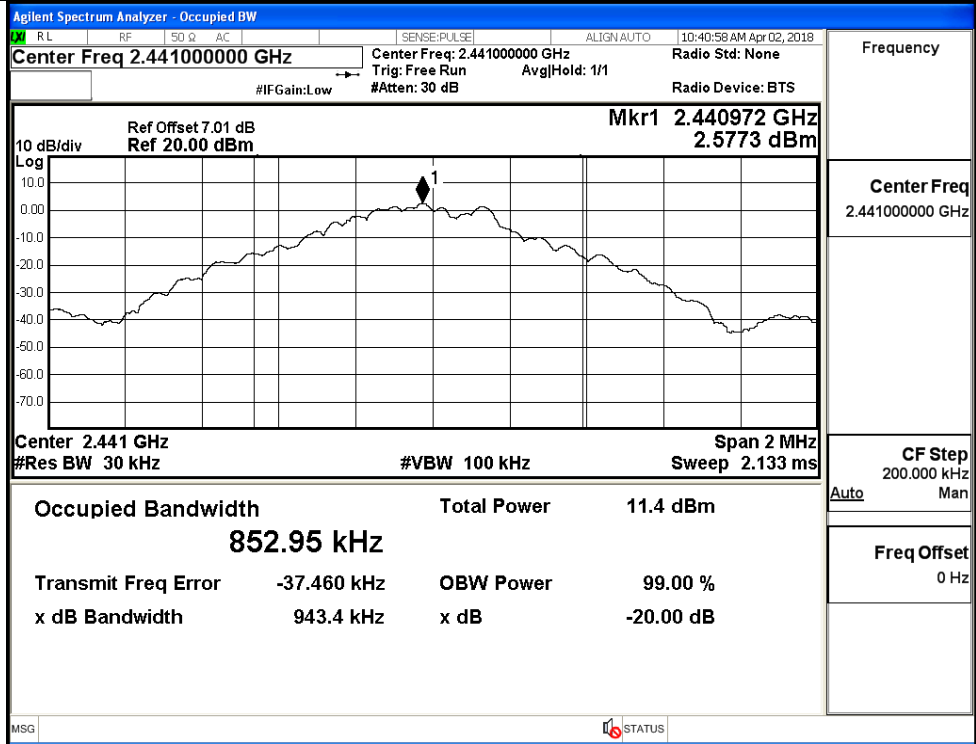


A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9476	Not Specified	PASS
	MCH	0.9434	Not Specified	PASS
	HCH	0.9435	Not Specified	PASS
π/4DQPSK	LCH	1.260	Not Specified	PASS
	MCH	1.229	Not Specified	PASS
	HCH	1.229	Not Specified	PASS
8DPSK	LCH	1.273	Not Specified	PASS
	MCH	1.260	Not Specified	PASS
	HCH	1.260	Not Specified	PASS

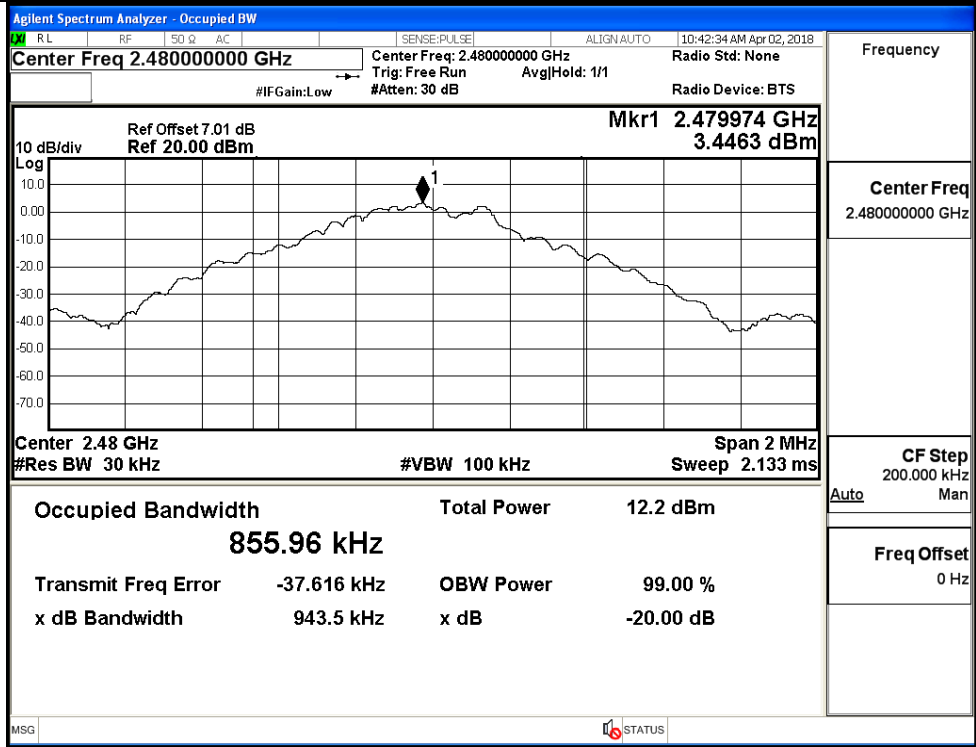


GFSK/MCH



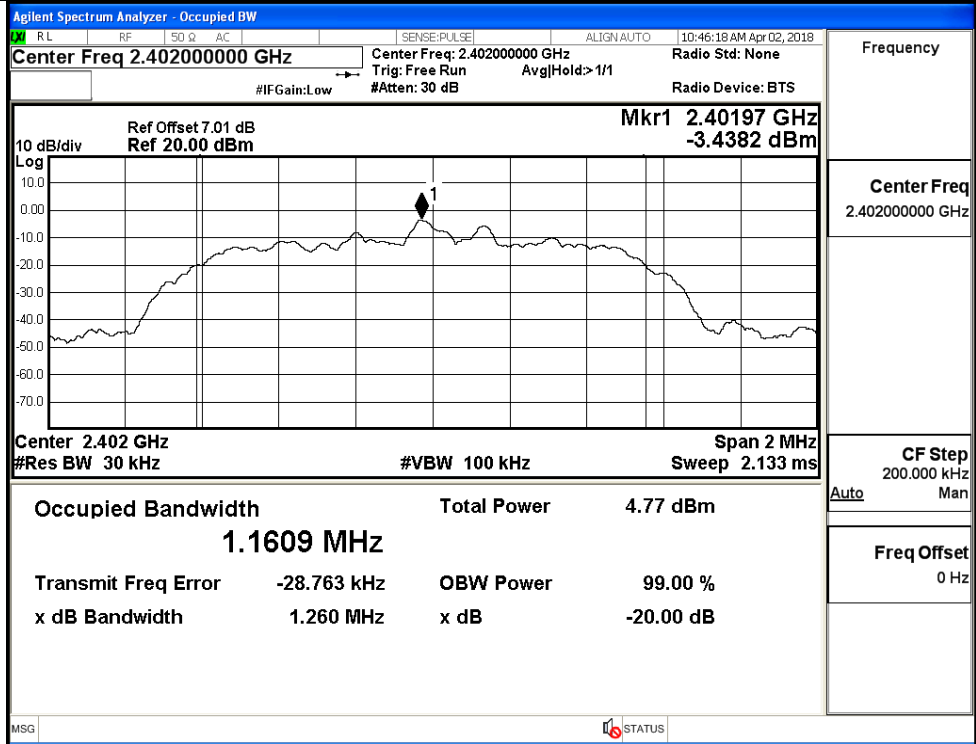
Frequency	2.441000000 GHz
Center Freq	2.441000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

GFSK/HCH

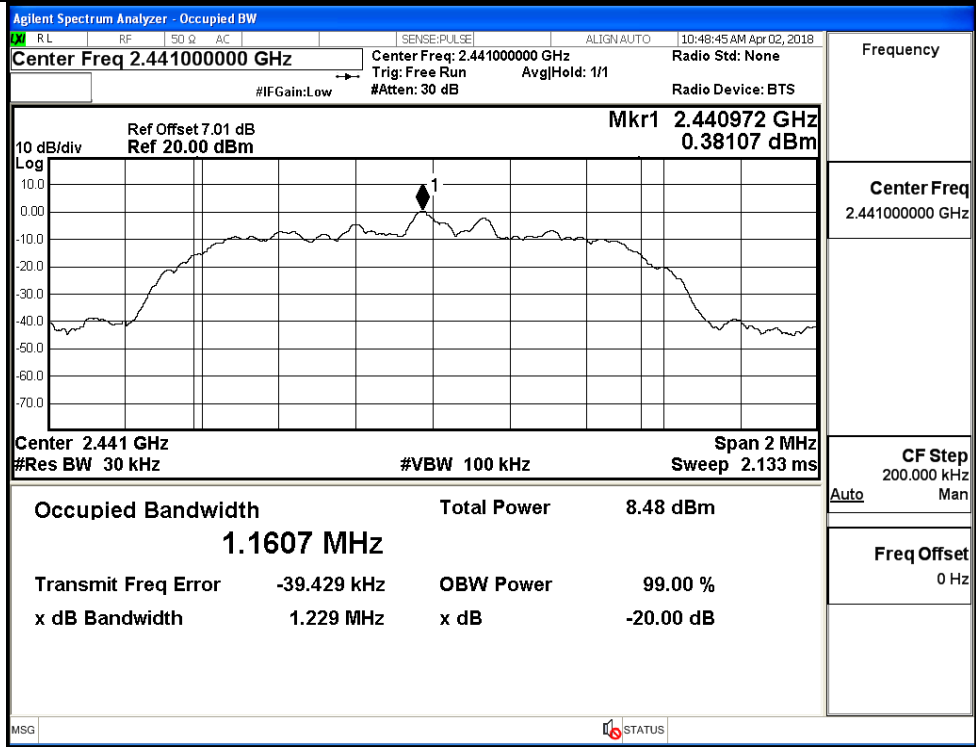


Frequency	2.480000000 GHz
Center Freq	2.480000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

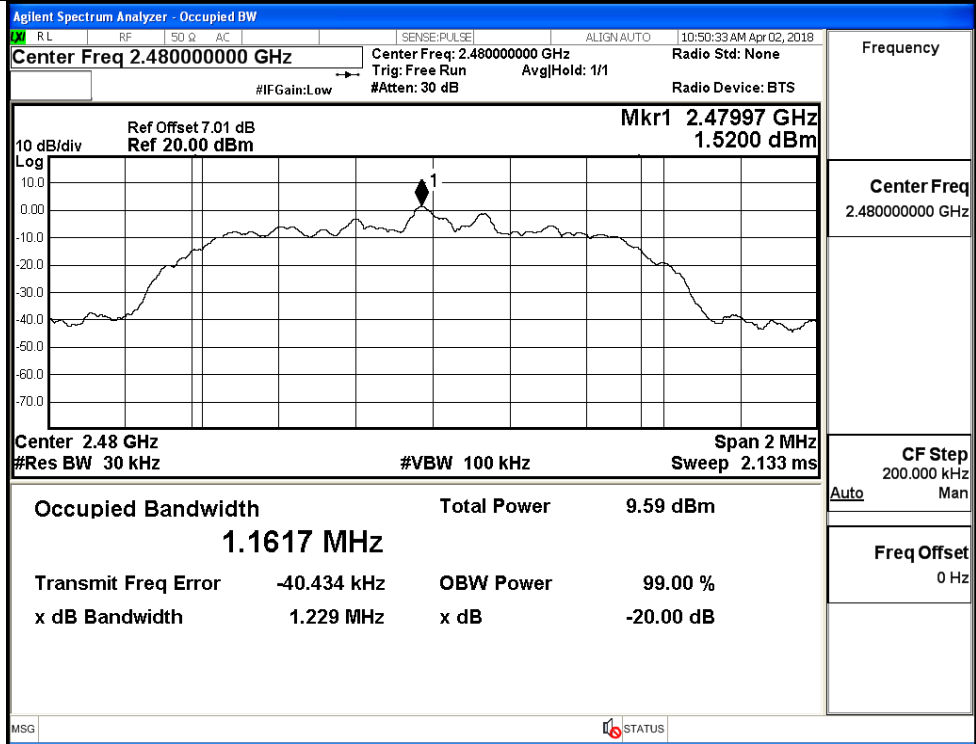
$\pi/4$ DQPSK/LCH



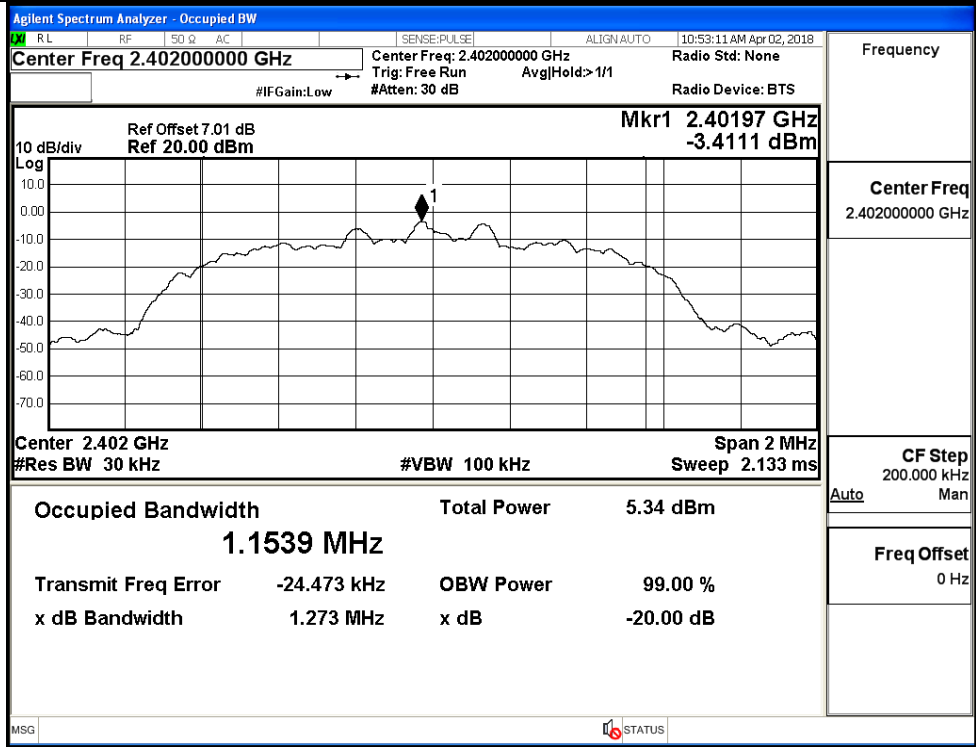
$\pi/4$ DQPSK/MCH



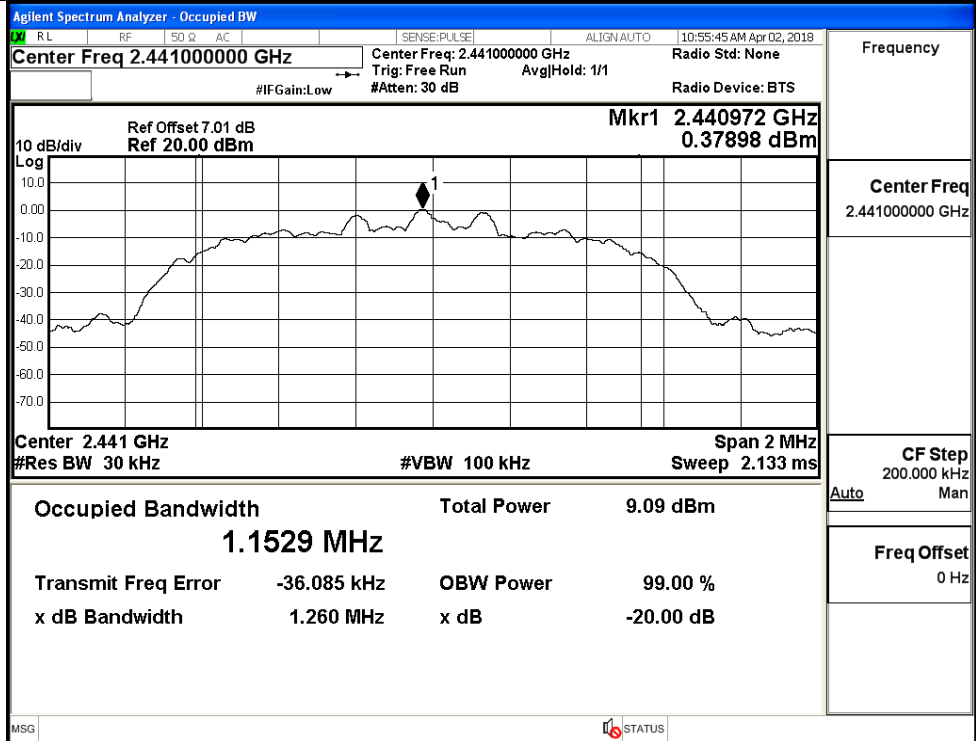
$\pi/4$ DQPSK/HCH



8DPSK/LCH

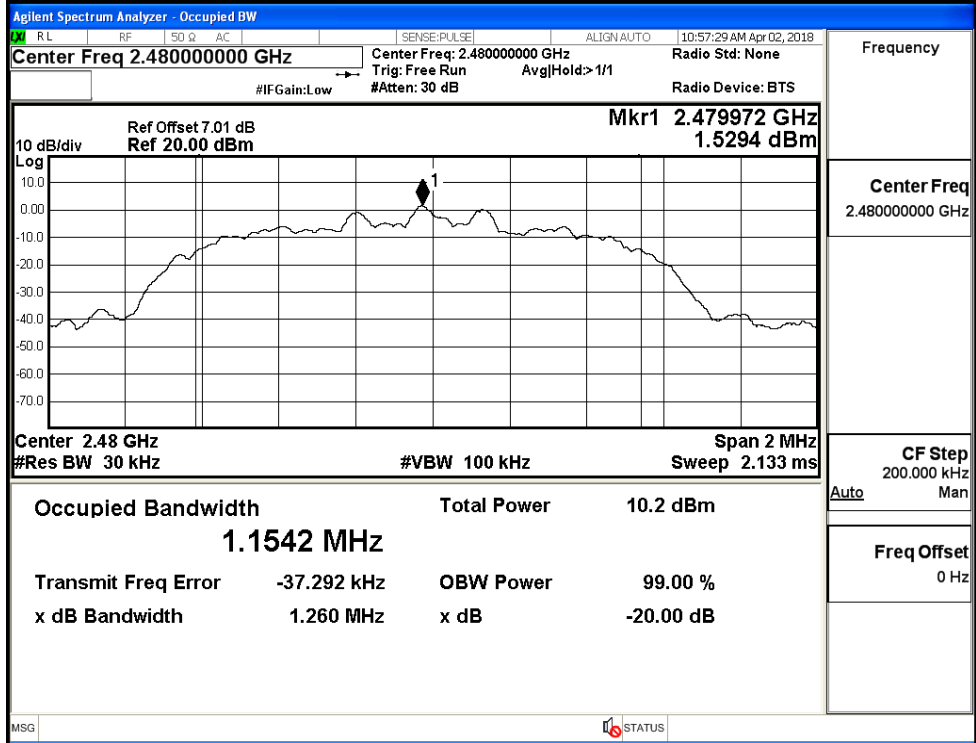


8DPSK/MCH



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

8DPSK/HCH

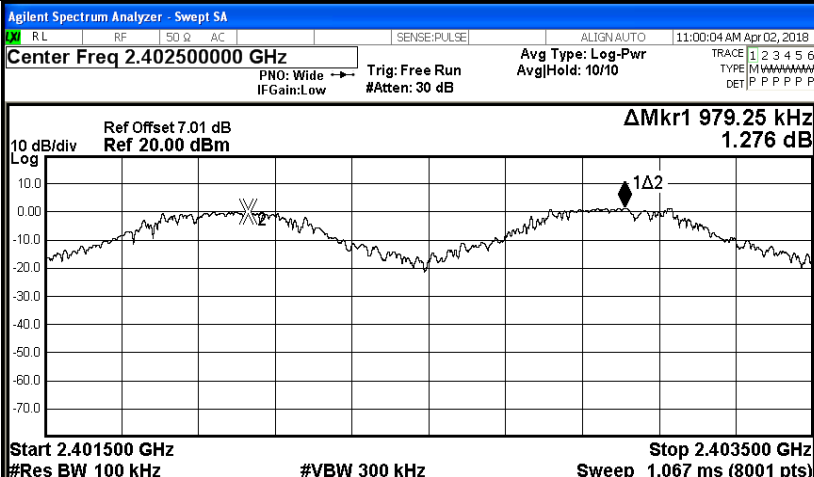


Frequency	2.480000000 GHz
Center Freq	2.480000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

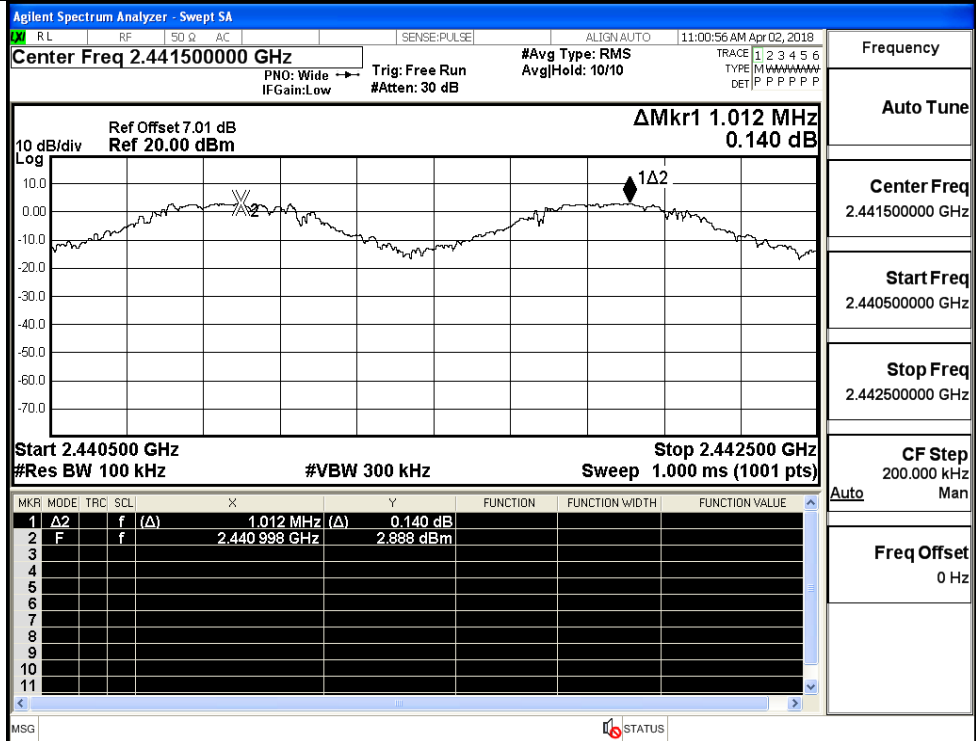
A.3 Carrier Frequency Separation

Mode	Channel	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.979	0.632	PASS
	MCH	1.012	0.629	PASS
	HCH	1.078	0.629	PASS
π/4DQPSK	LCH	1.120	0.84	PASS
	MCH	0.992	0.819	PASS
	HCH	1.120	0.819	PASS
8DPSK	LCH	0.860	0.848	PASS
	MCH	1.002	0.84	PASS
	HCH	1.144	0.84	PASS

Test Graphs

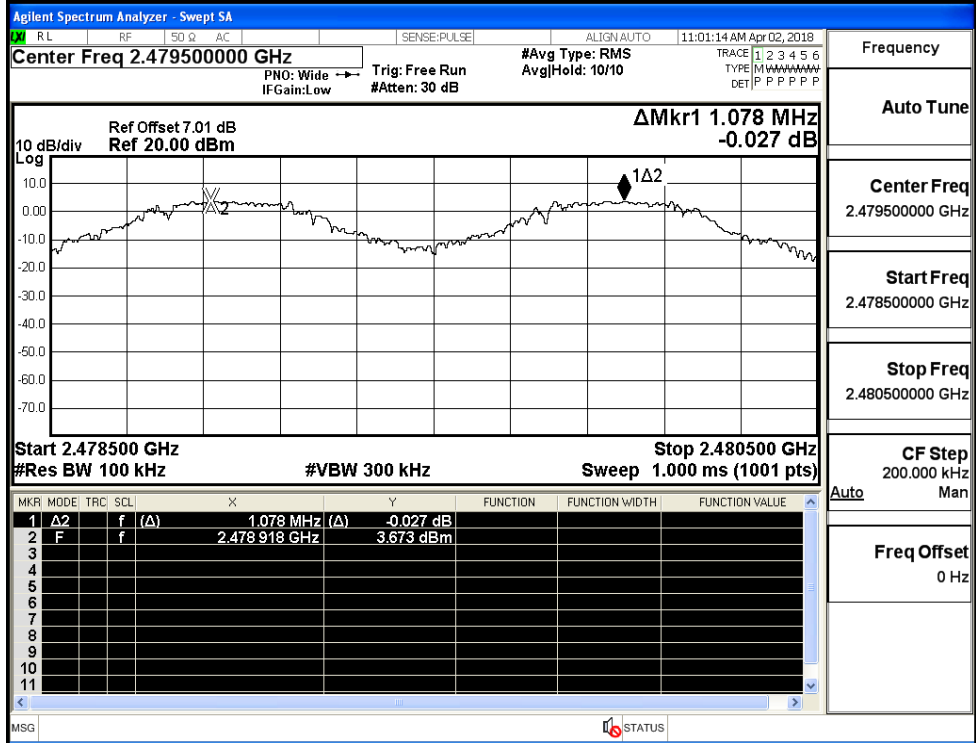
GFSK/LCH		Frequency Auto Tune Center Freq 2.402500000 GHz Start Freq 2.401500000 GHz Stop Freq 2.403500000 GHz CF Step 200.000 kHz Man Freq Offset 0 Hz																																																																																																											
	Agilent Spectrum Analyzer - Swept SA Center Freq 2.402500000 GHz PNO: Wide → Trig: Free Run Avg Type: Log-Pwr IFGain: Low #Atten: 30 dB AvgHold: 10/10																																																																																																												
	Ref Offset 7.01 dB ΔMkr1 979.25 kHz Ref 20.00 dBm 1.276 dB																																																																																																												
	Start 2.401500 GHz #Res BW 100 kHz Stop 2.403500 GHz Sweep 1.067 ms (8001 pts)																																																																																																												
	<table border="1" style="width: 100%; border-collapse: collapse; font-size: 0.8em;"> <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>979.25 kHz (Δ)</td> <td>1.276 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td></td> <td>2.402 030 25 GHz</td> <td>0.057 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>6</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>9</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>10</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>11</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	Δ2	f	(Δ)	979.25 kHz (Δ)	1.276 dB				2	F	f		2.402 030 25 GHz	0.057 dBm				3									4									5									6									7									8									9									10									11								
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GFSK/MCH



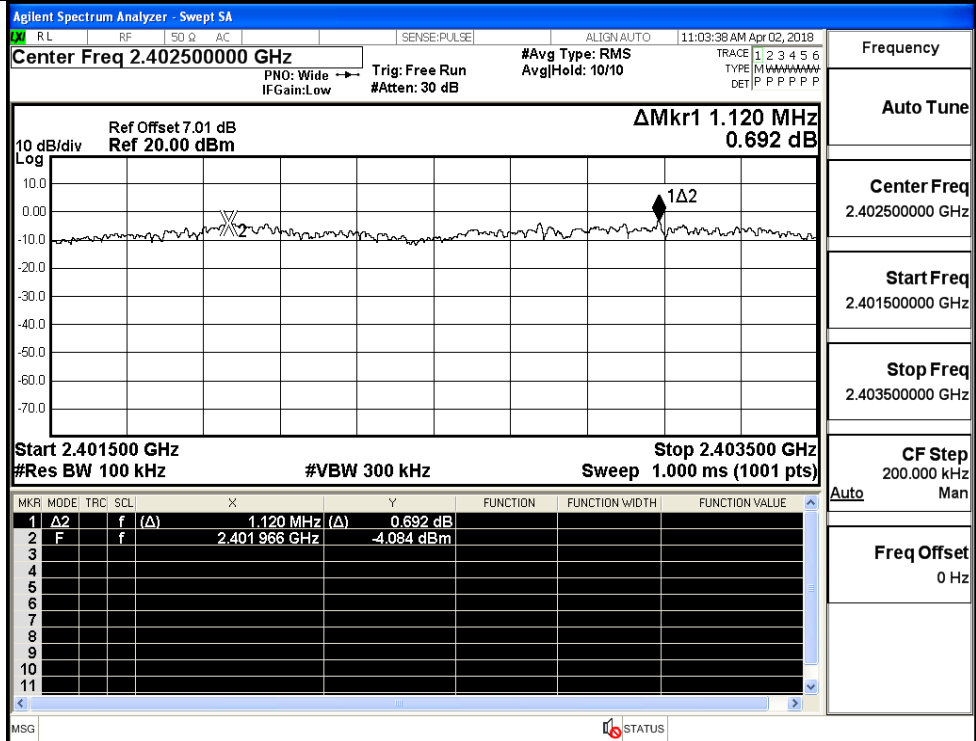
Frequency
Auto Tune
Center Freq
2.441500000 GHz
Start Freq
2.440500000 GHz
Stop Freq
2.442500000 GHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz

GFSK/HCH

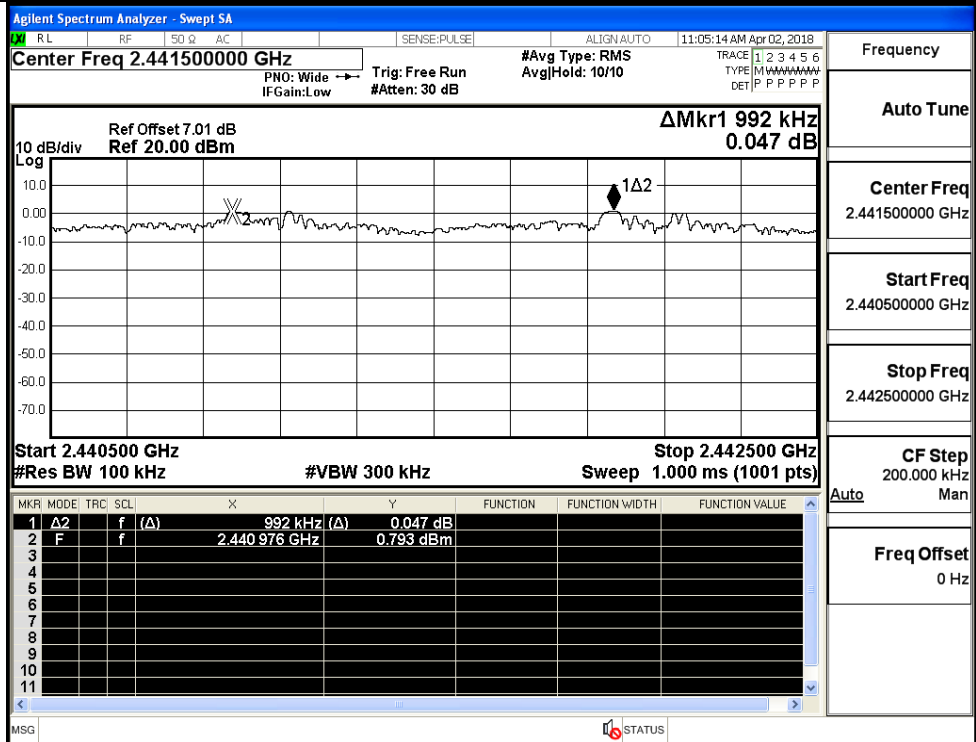


Frequency
Auto Tune
Center Freq
2.479500000 GHz
Start Freq
2.478500000 GHz
Stop Freq
2.480500000 GHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz

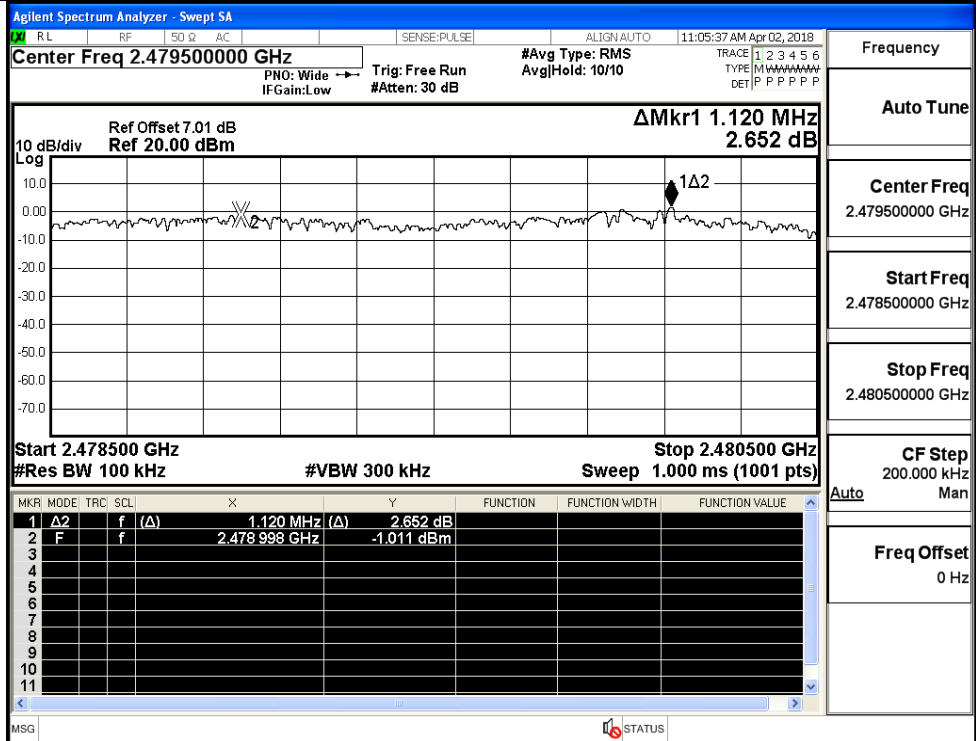
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



π/4DQPSK/HCH



Frequency

Auto Tune

Center Freq
2.479500000 GHz

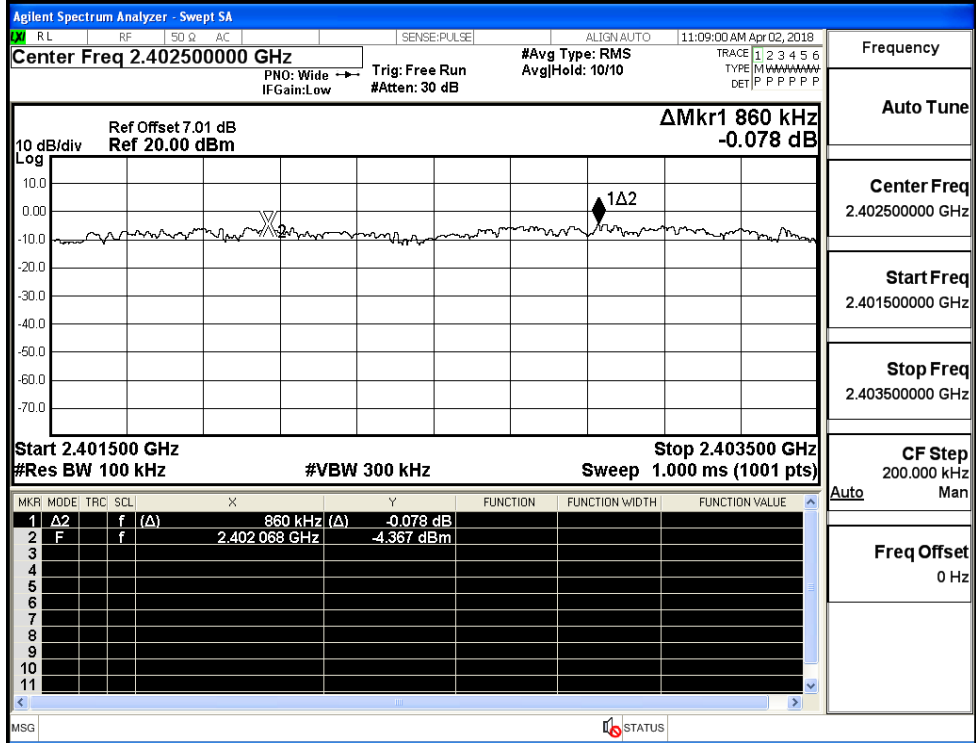
Start Freq
2.478500000 GHz

Stop Freq
2.480500000 GHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

8DPSK/LCH



Frequency

Auto Tune

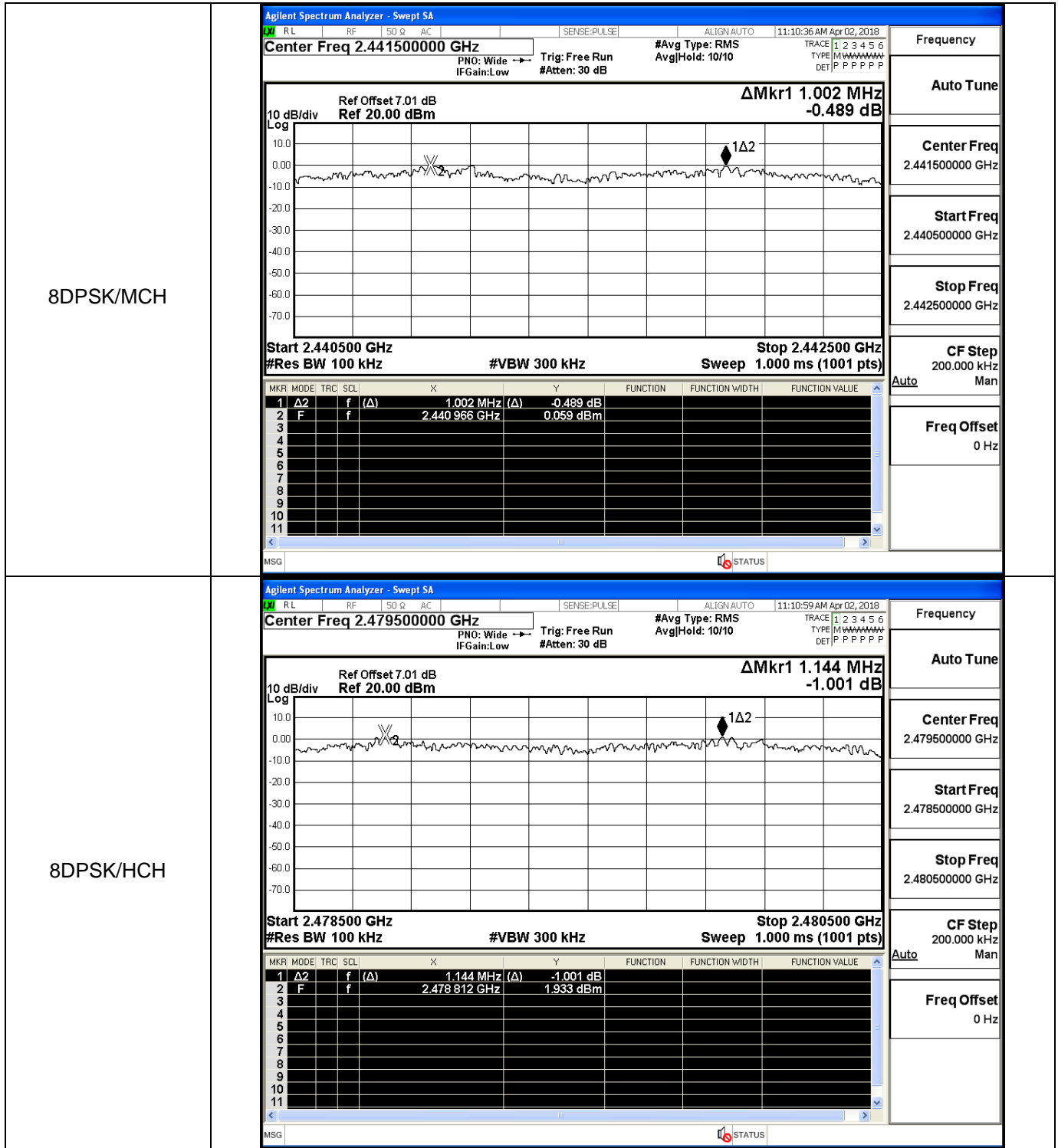
Center Freq
2.402500000 GHz

Start Freq
2.401500000 GHz

Stop Freq
2.403500000 GHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

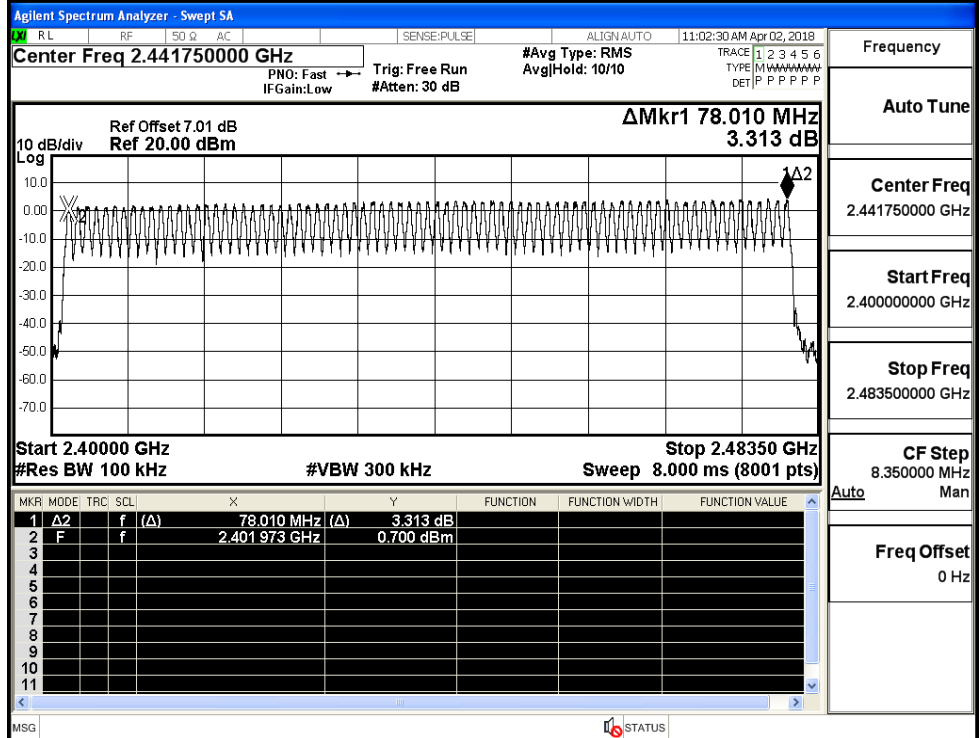


A.4 Hopping Channel Number

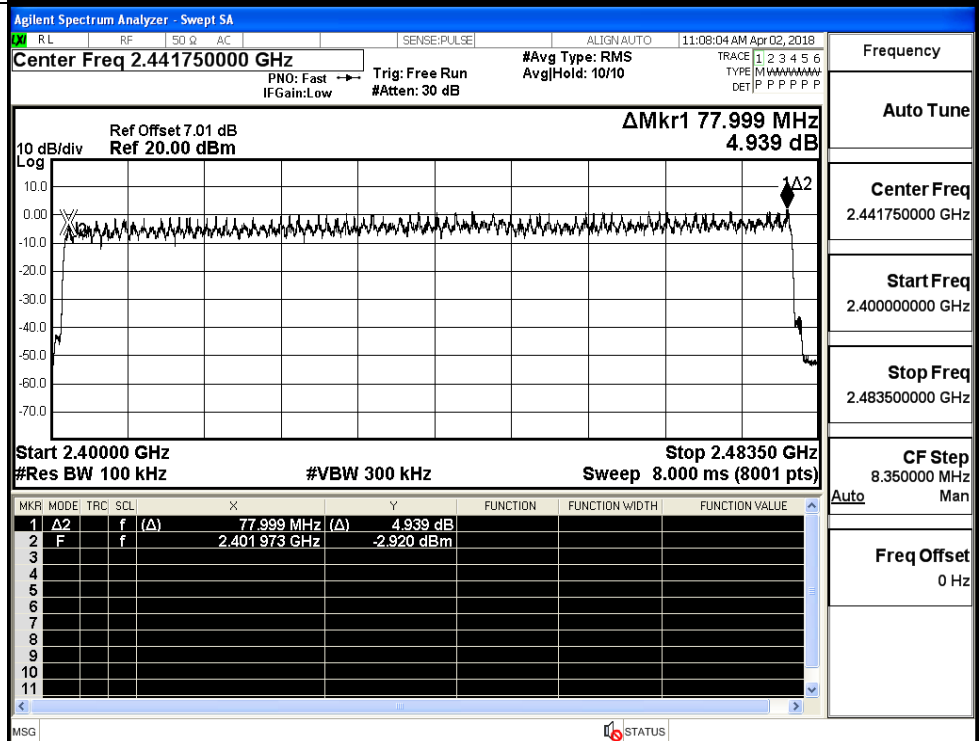
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
π/4DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

Test Graphs

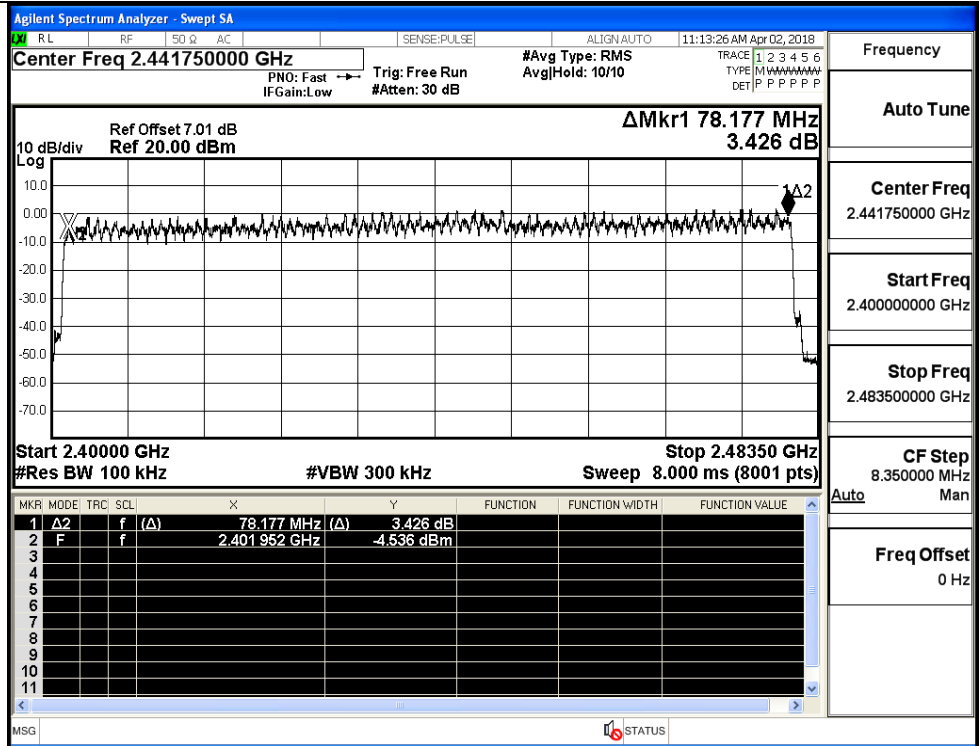
GFSK/Hop



π/4DQPSK/Hop

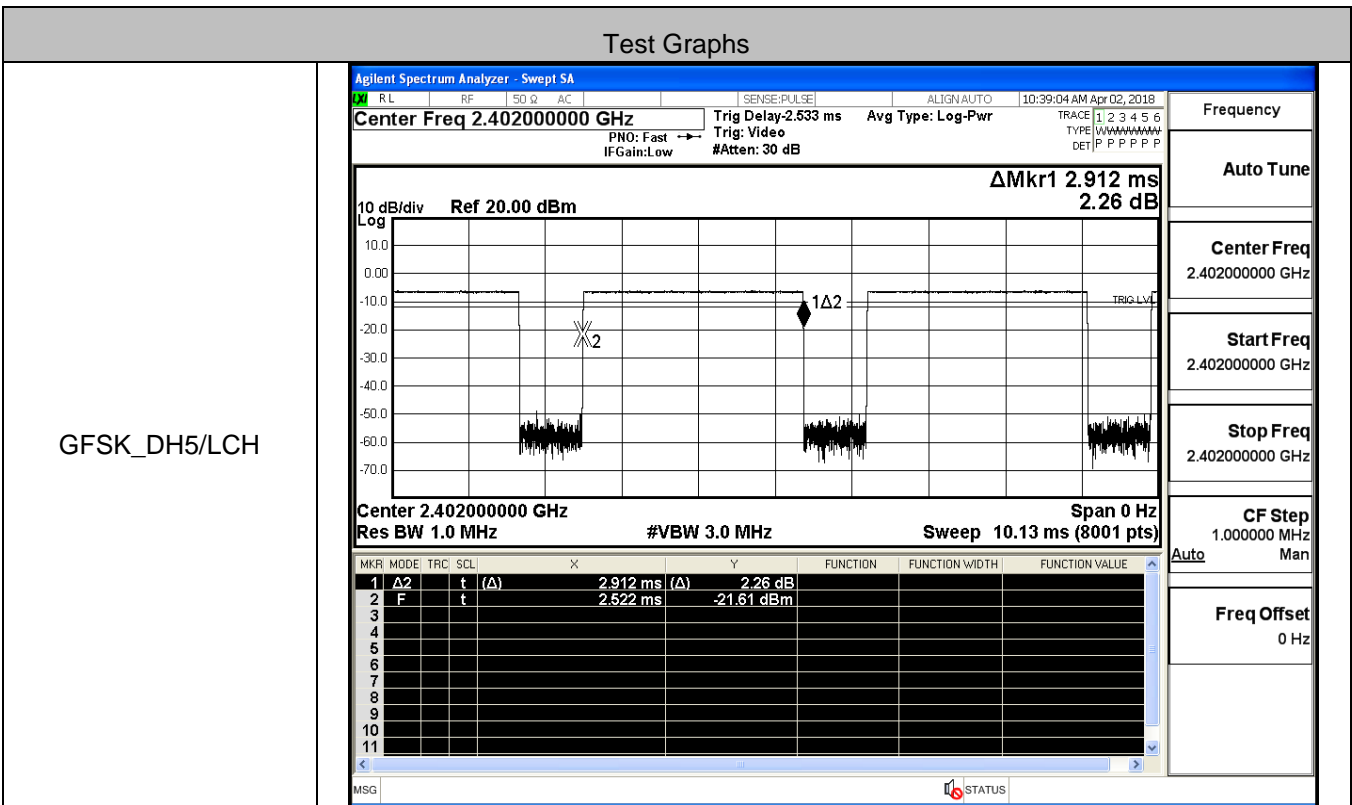


8DPSK/Hop

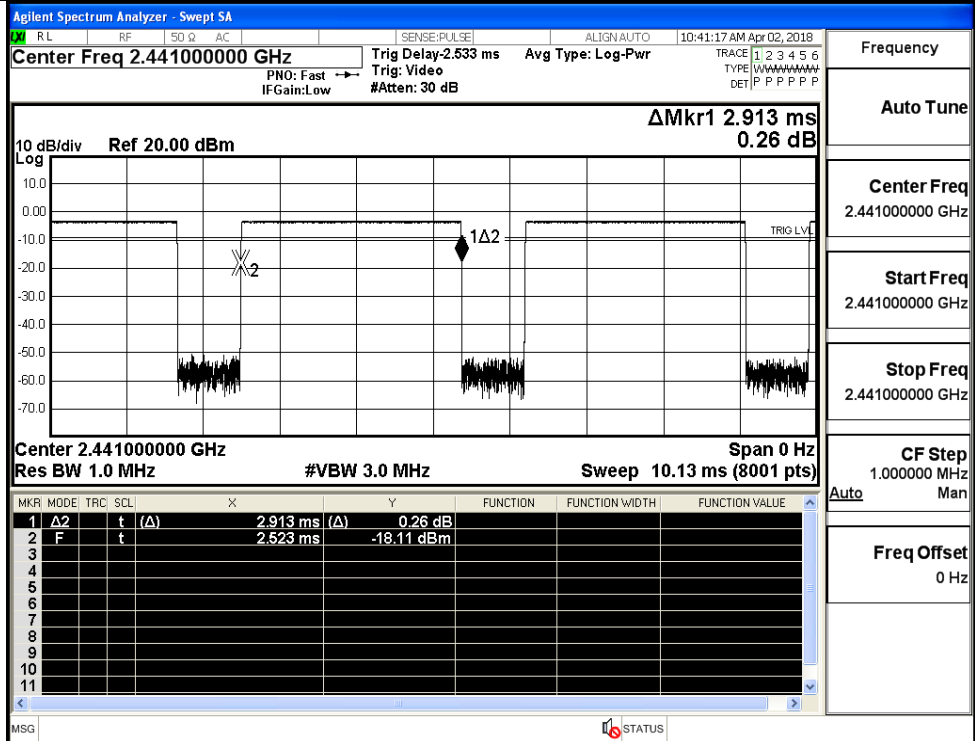


A.5 Dwell Time

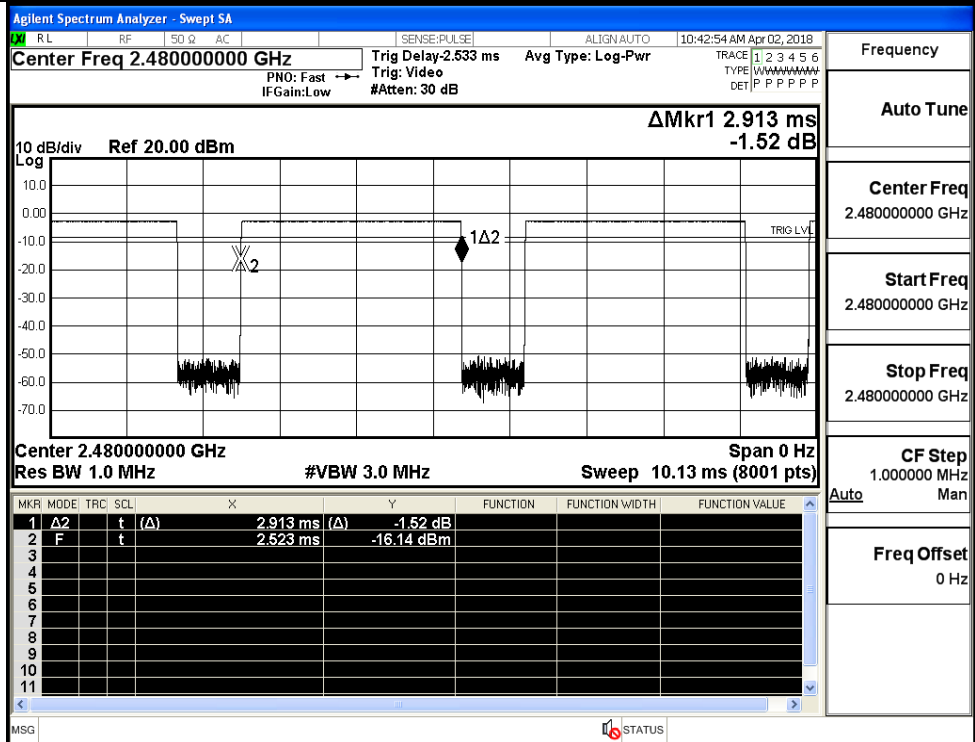
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.91	106.7	0.31	0.4	PASS
	DH5	MCH	2.91	106.7	0.31	0.4	PASS
	DH5	HCH	2.91	106.7	0.31	0.4	PASS
π/4DQPSK	2DH5	LCH	2.91	106.7	0.312	0.4	PASS
	2DH5	MCH	2.91	106.7	0.312	0.4	PASS
	2DH5	HCH	2.91	106.7	0.312	0.4	PASS
8DPSK	3DH5	LCH	2.91	106.7	0.312	0.4	PASS
	3DH5	MCH	2.91	106.7	0.312	0.4	PASS
	3DH5	HCH	2.91	106.7	0.312	0.4	PASS



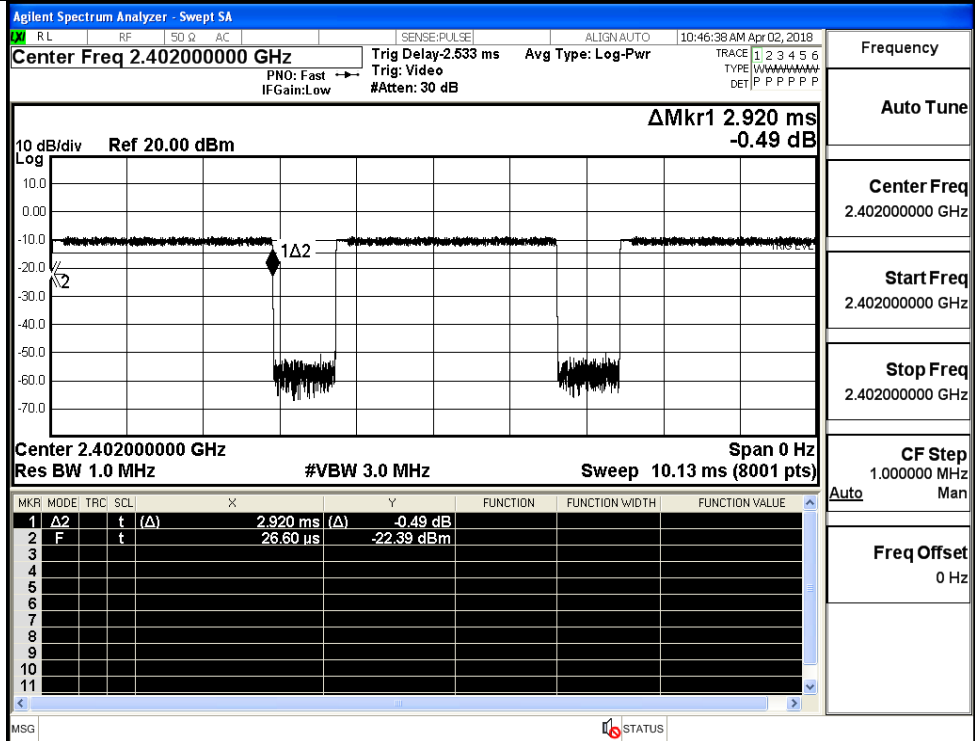
GFSK_DH5/MCH



GFSK_DH5/HCH

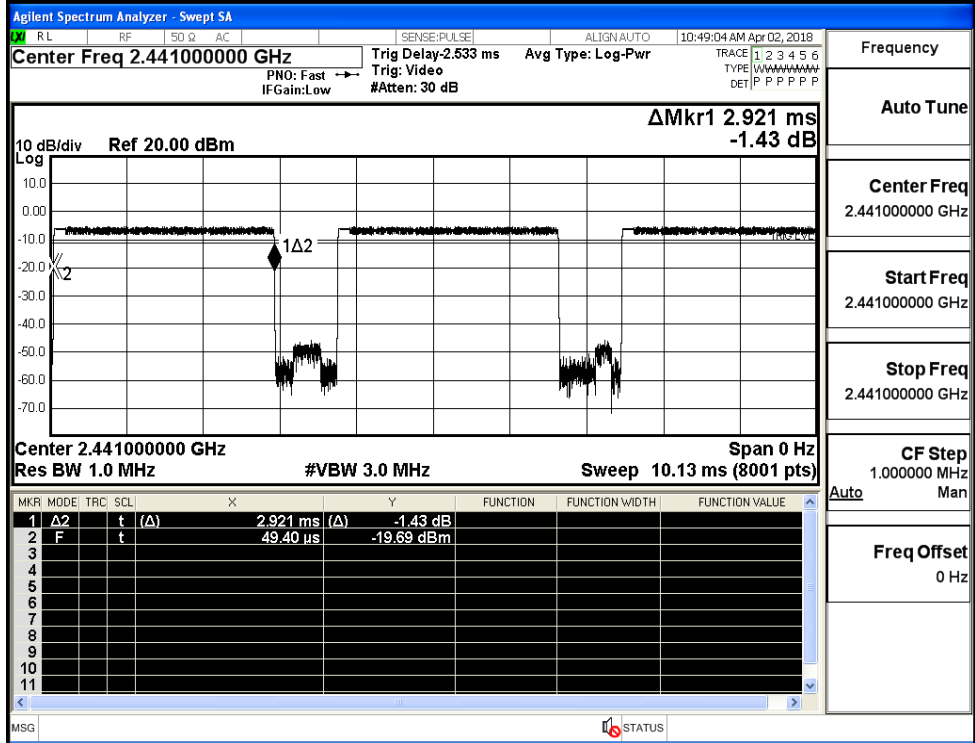


$\pi/4$ DQPSK
_2DH5/LCH



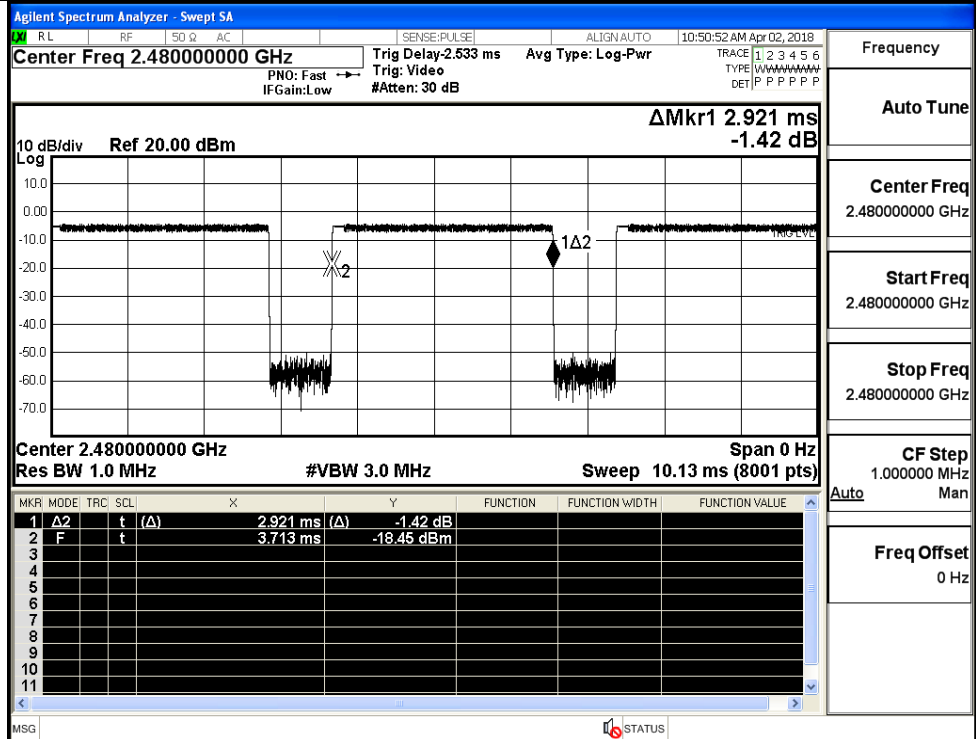
Frequency	2.40200000 GHz
Auto Tune	
Center Freq	2.40200000 GHz
Start Freq	2.40200000 GHz
Stop Freq	2.40200000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

$\pi/4$ DQPSK
_2DH5/MCH



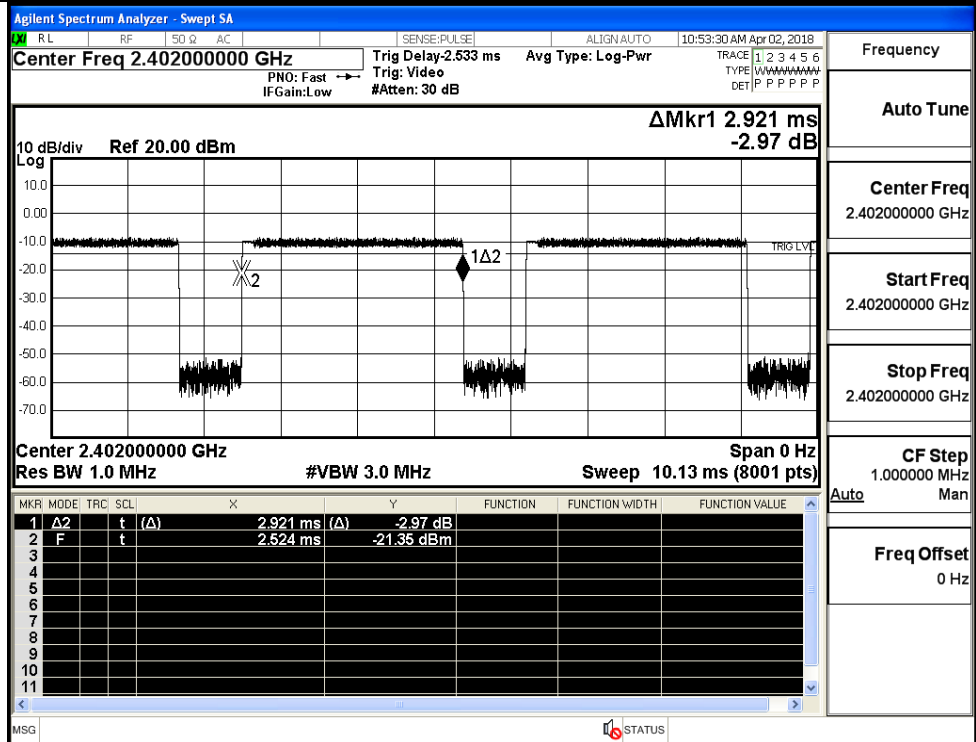
Frequency	2.44100000 GHz
Auto Tune	
Center Freq	2.44100000 GHz
Start Freq	2.44100000 GHz
Stop Freq	2.44100000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

$\pi/4$ DQPSK
_2DH5/HCH



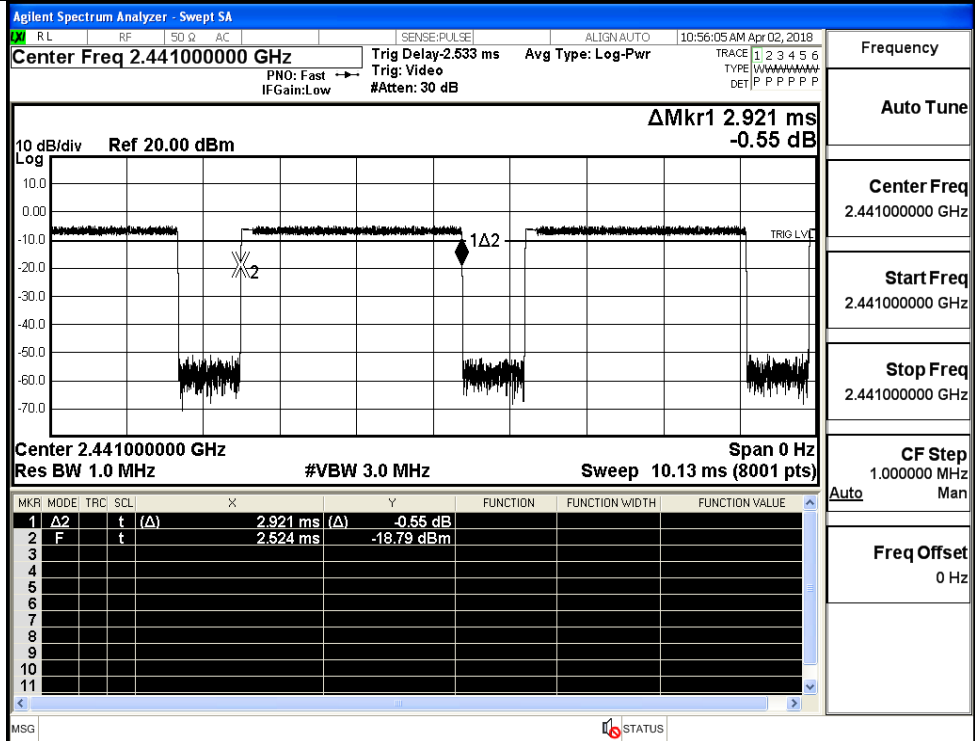
Frequency	2.480000000 GHz
Auto Tune	
Center Freq	2.480000000 GHz
Start Freq	2.480000000 GHz
Stop Freq	2.480000000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

8DPSK_3DH5/LCH

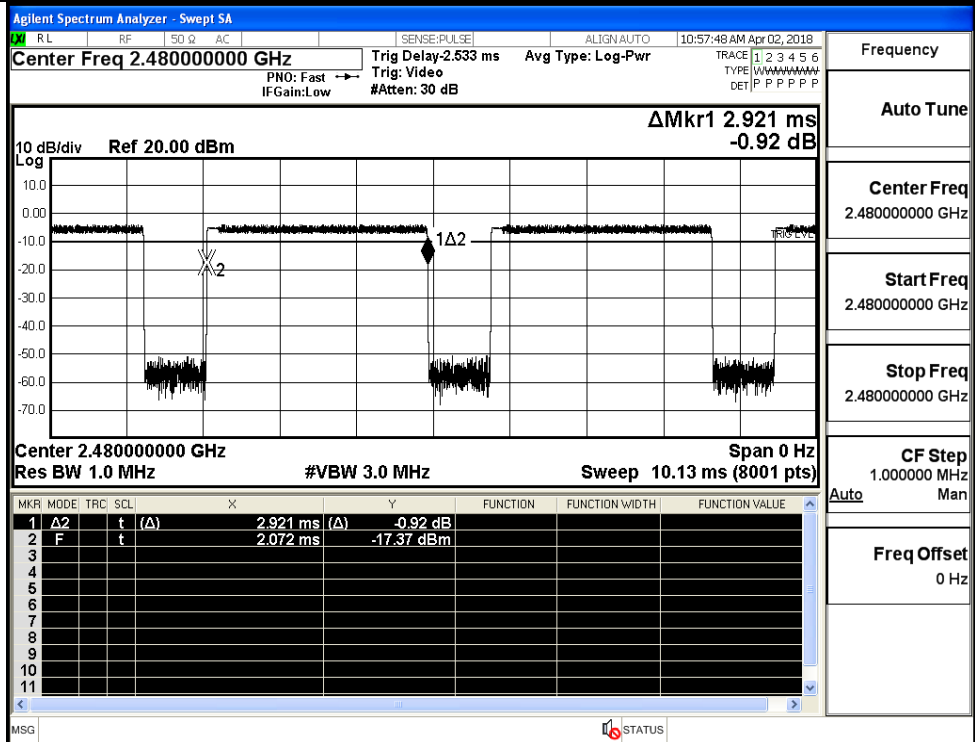


Frequency	2.402000000 GHz
Auto Tune	
Center Freq	2.402000000 GHz
Start Freq	2.402000000 GHz
Stop Freq	2.402000000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

8DPSK_3DH5/MCH



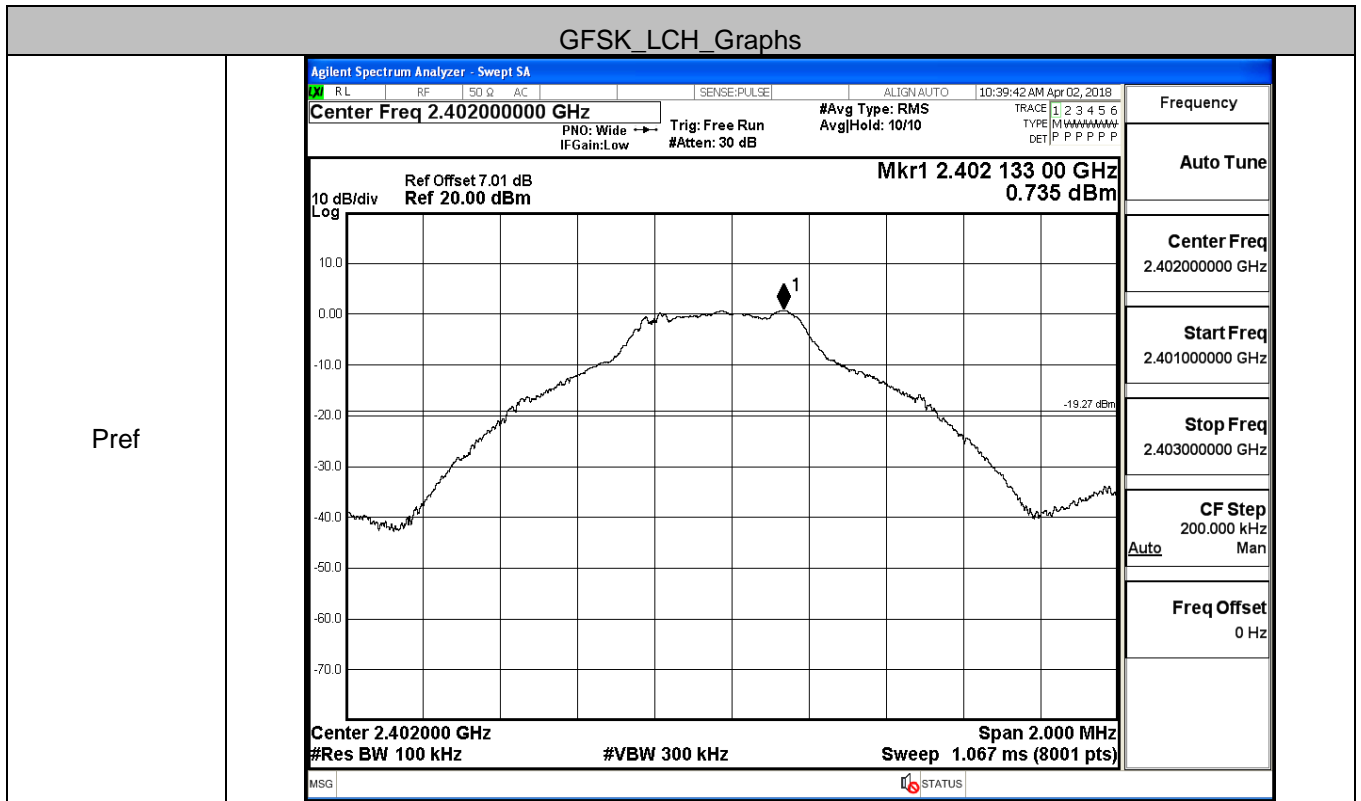
8DPSK_3DH5/HCH



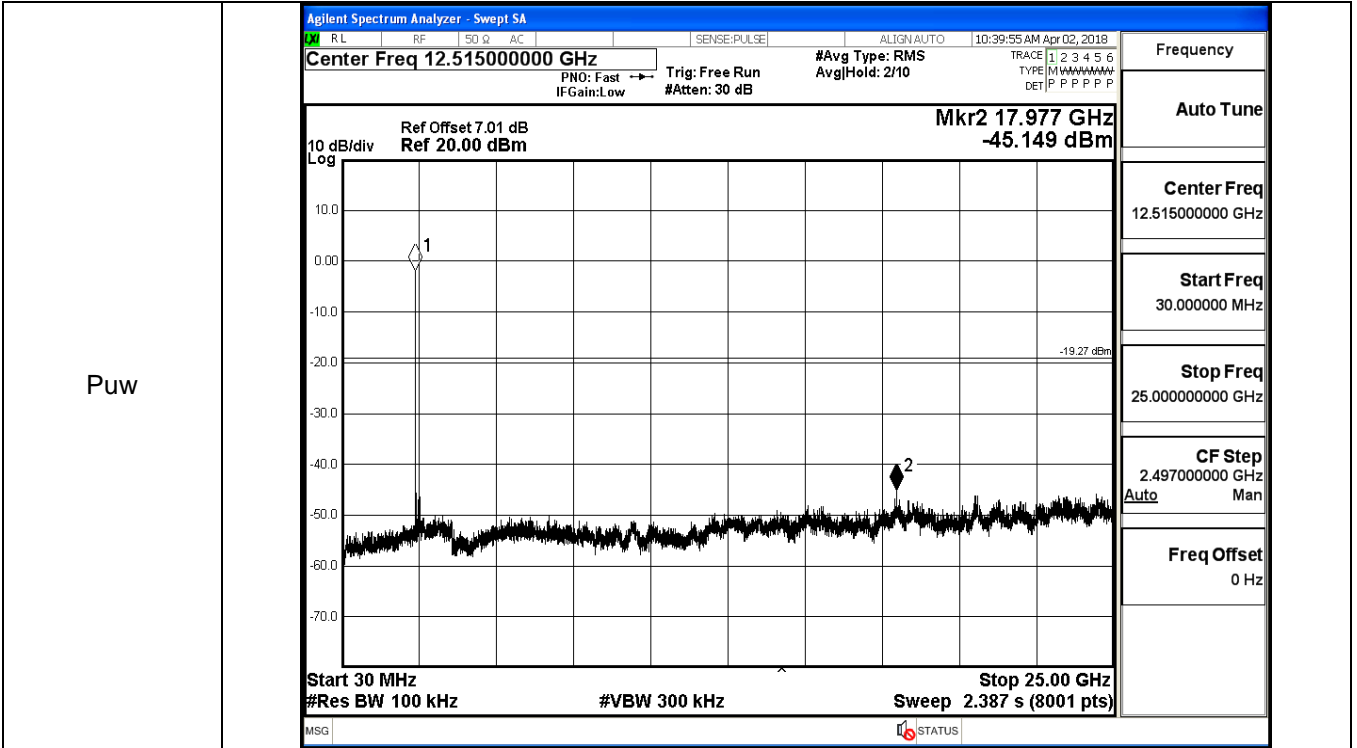
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.735	-45.149	-19.265	PASS
	MCH	3.388	-45.752	-16.612	PASS
	HCH	4.386	-45.600	-15.614	PASS
π /4DQPSK	LCH	-3.09	-45.875	-23.090	PASS
	MCH	0.524	-45.436	-19.476	PASS
	HCH	1.731	-45.207	-18.269	PASS
8DPSK	LCH	-2.721	-45.552	-22.721	PASS
	MCH	0.936	-45.276	-19.064	PASS
	HCH	2.106	-44.918	-17.894	PASS

GFSK_LCH_Graphs

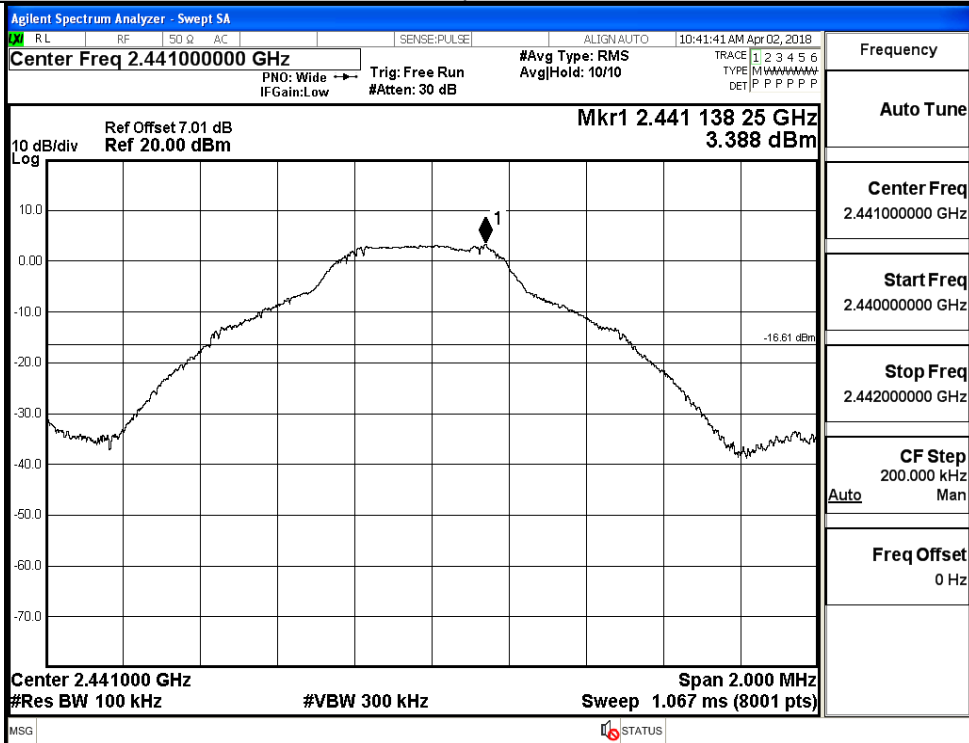


Pref

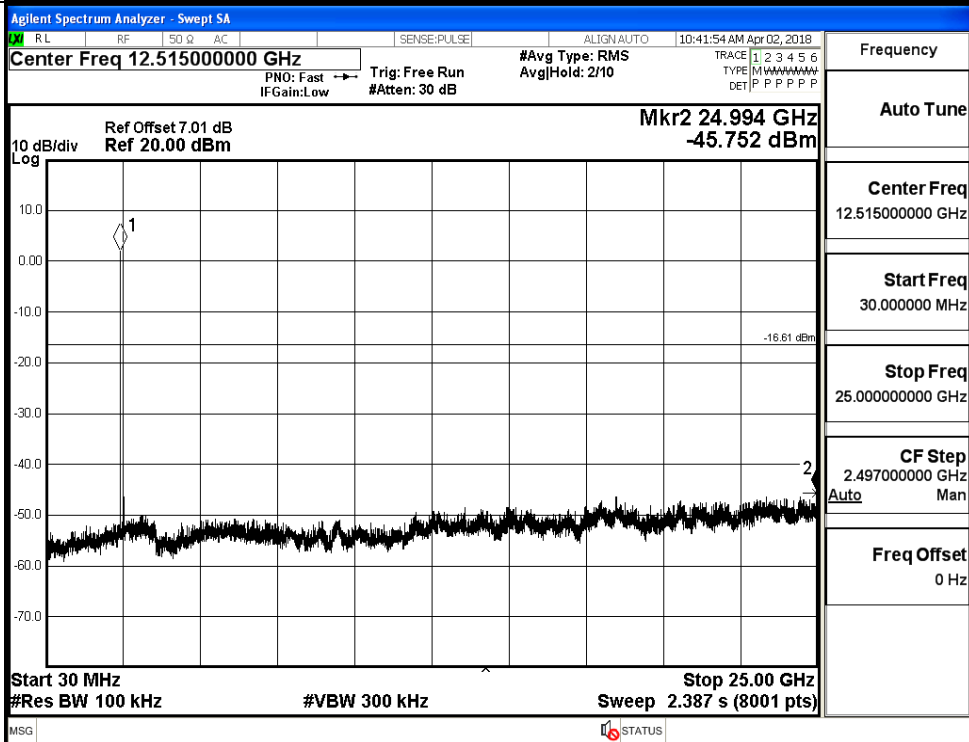


GFSK_MCH_Graphs

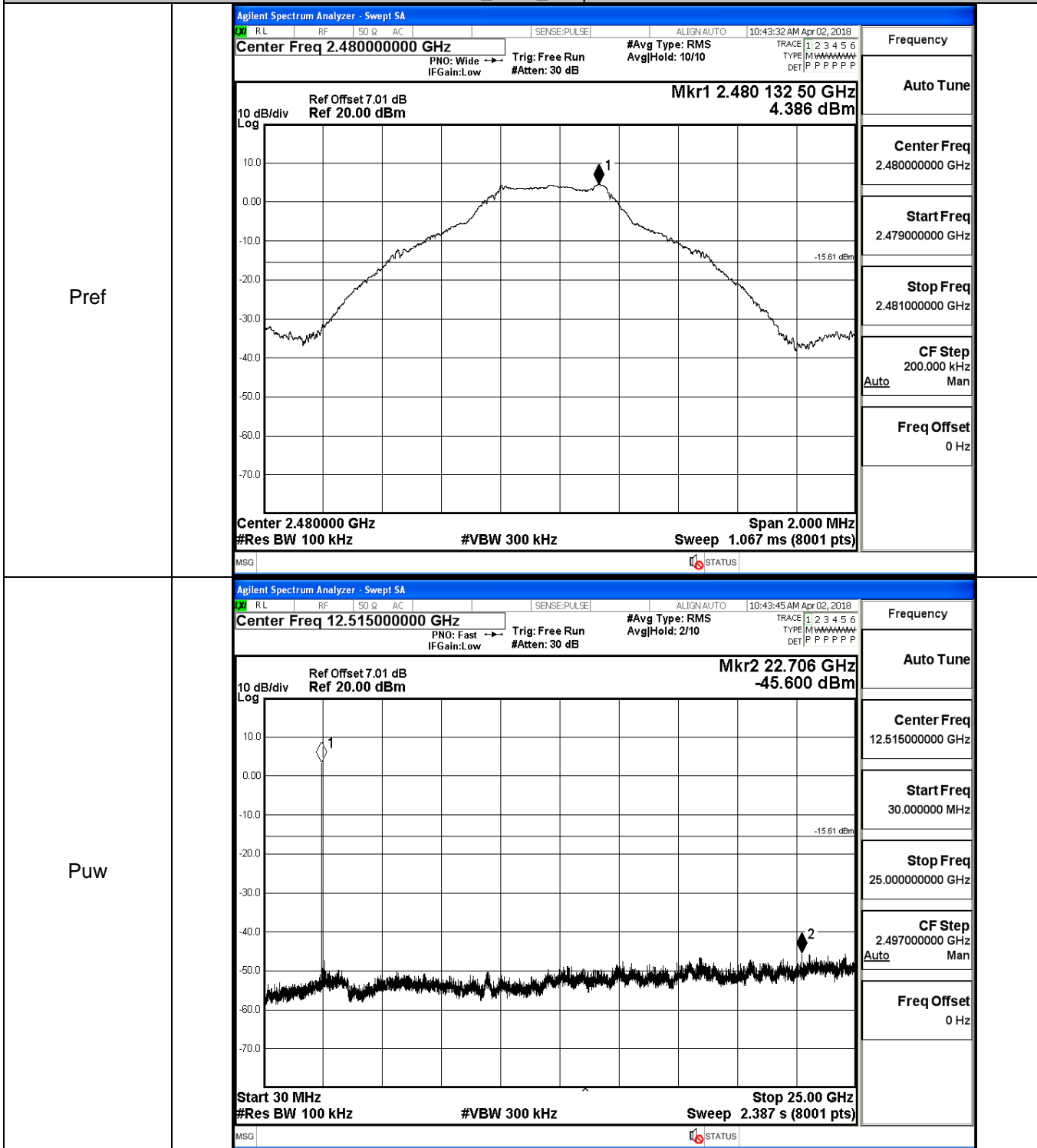
Pref



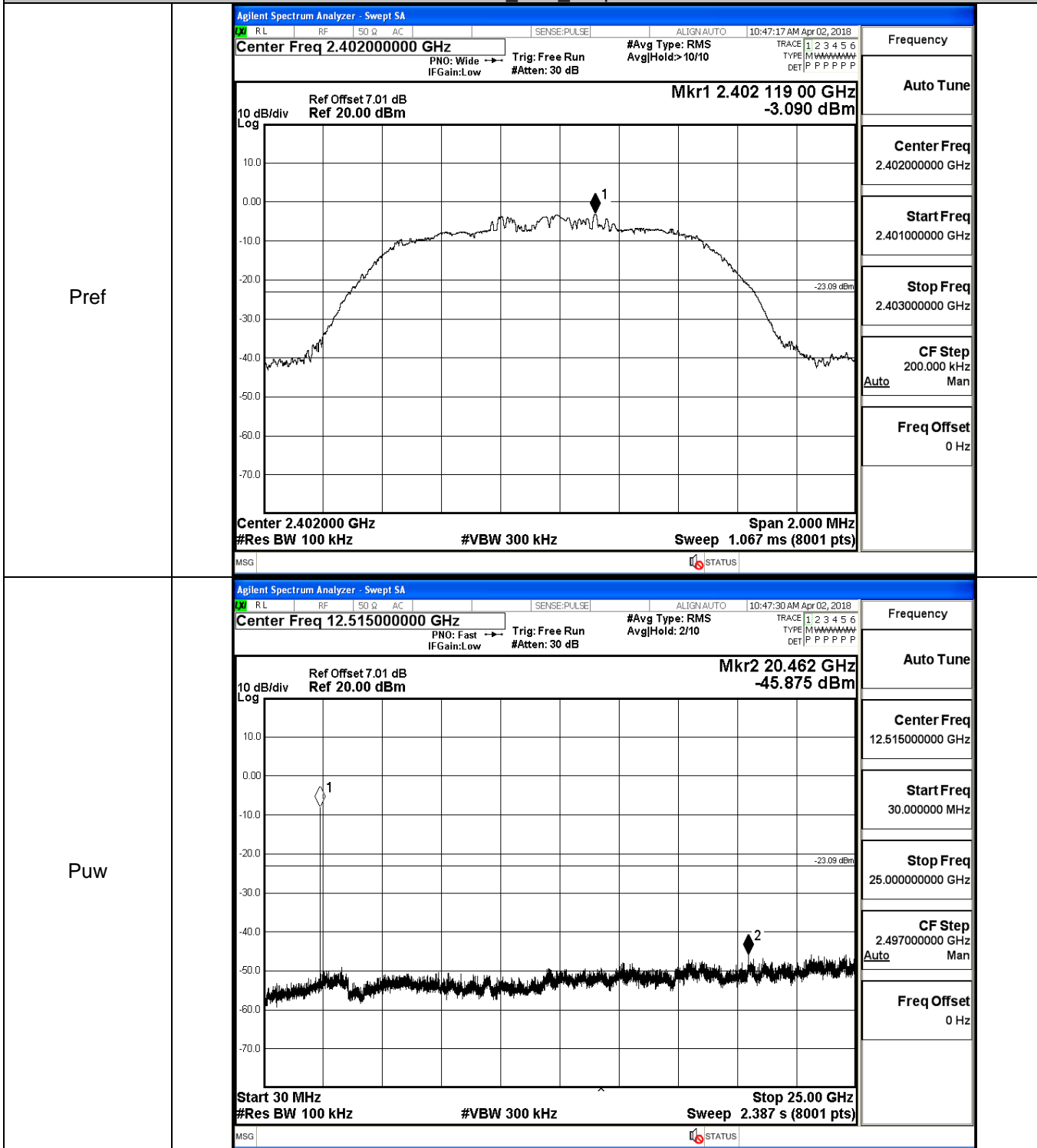
Puw



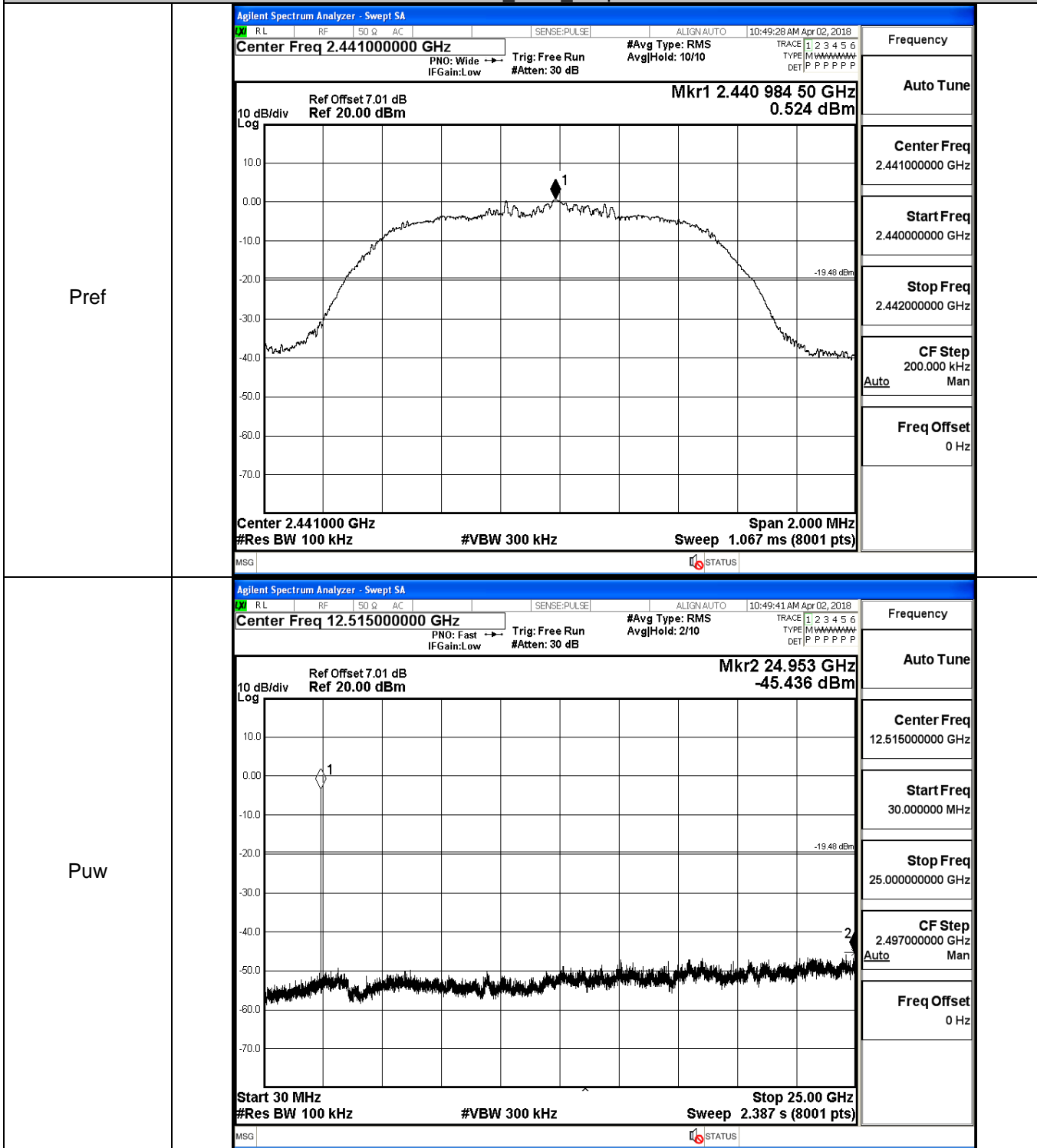
GFSK_HCH_Graphs



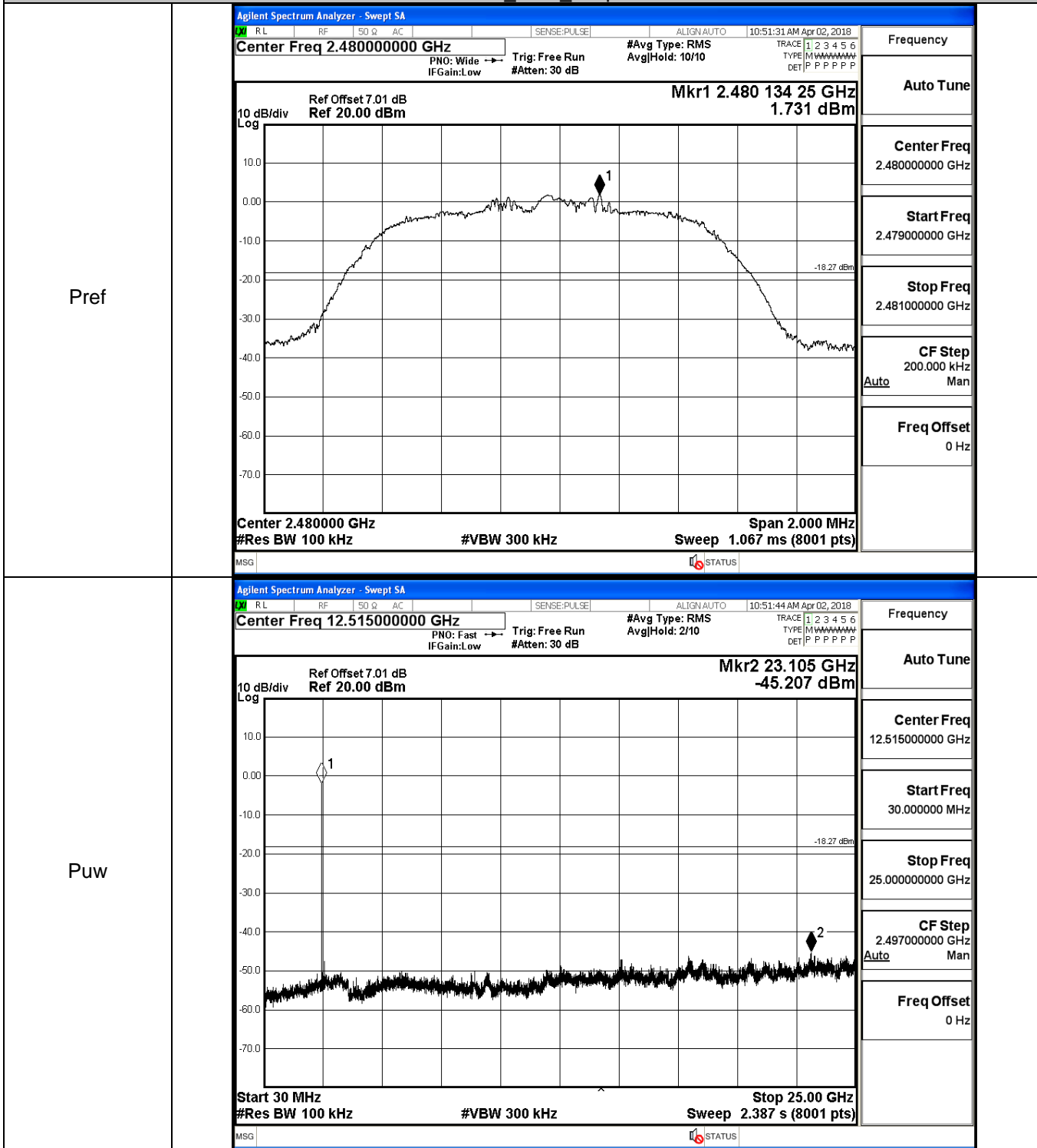
$\pi/4$ DQPSK_LCH_Graphs



$\pi/4$ DQPSK_MCH_Graphs

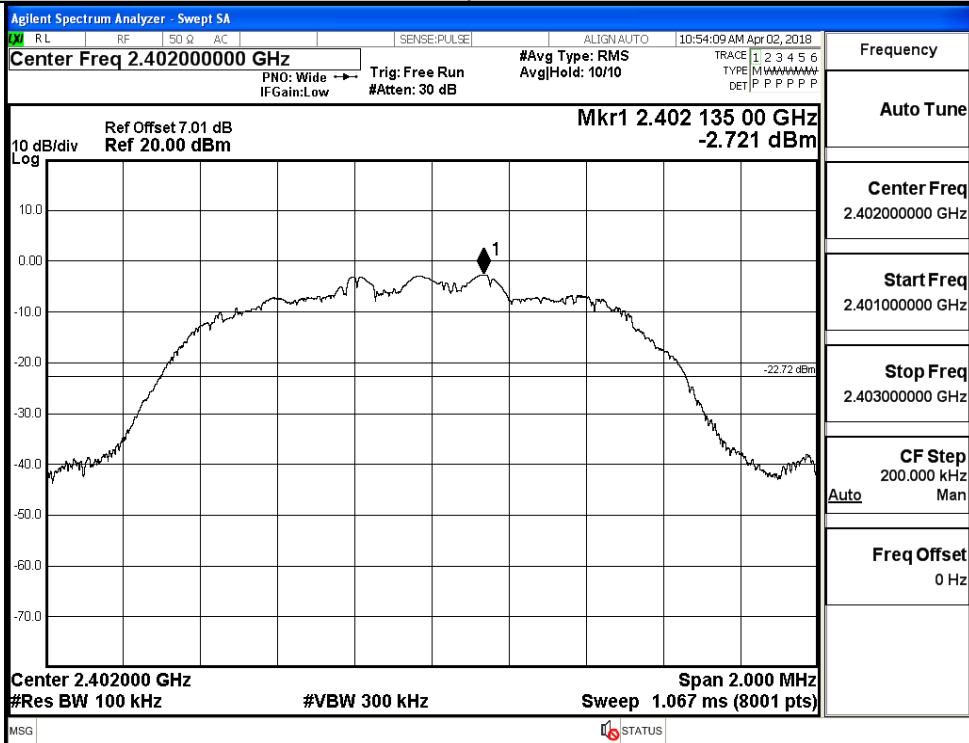


$\pi/4$ DQPSK_HCH_Graphs

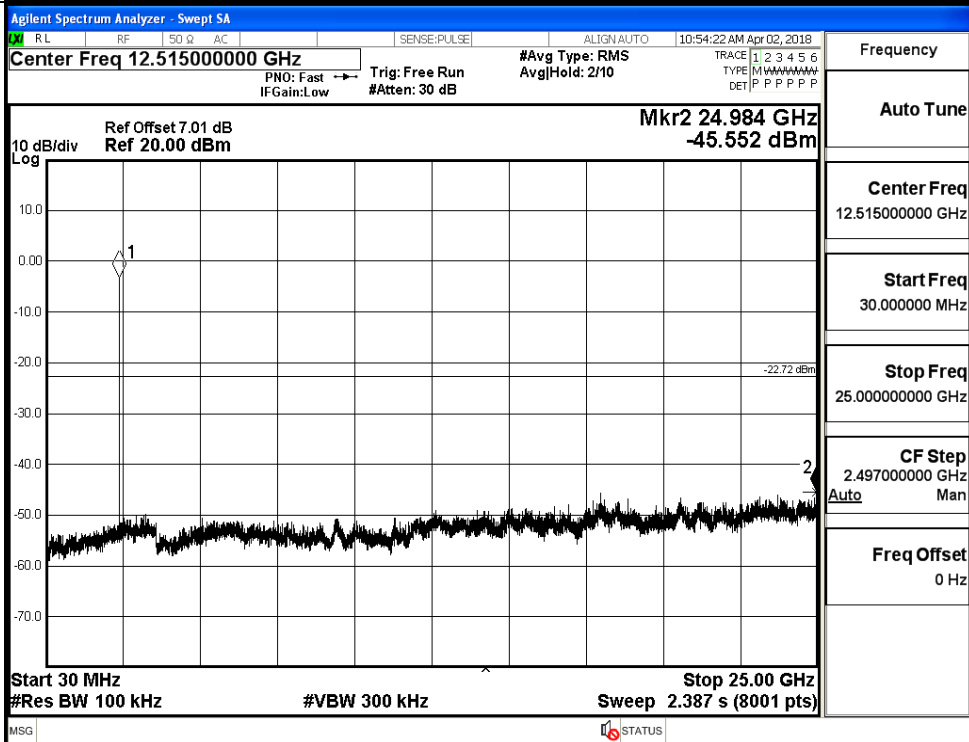


8DPSK_LCH_Graphs

Pref

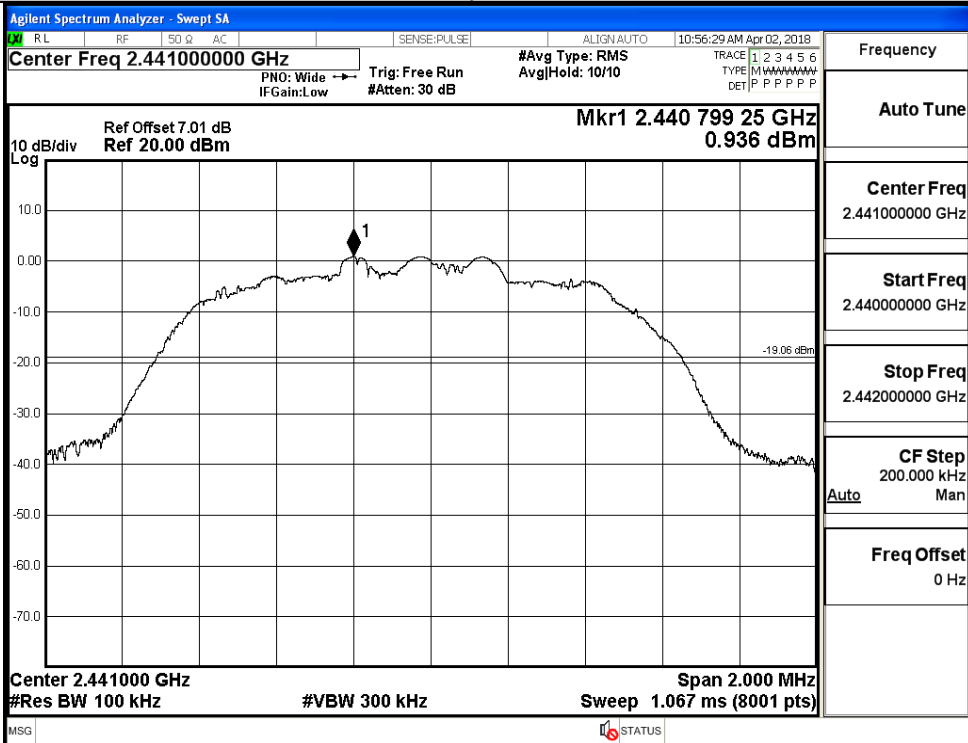


Puw

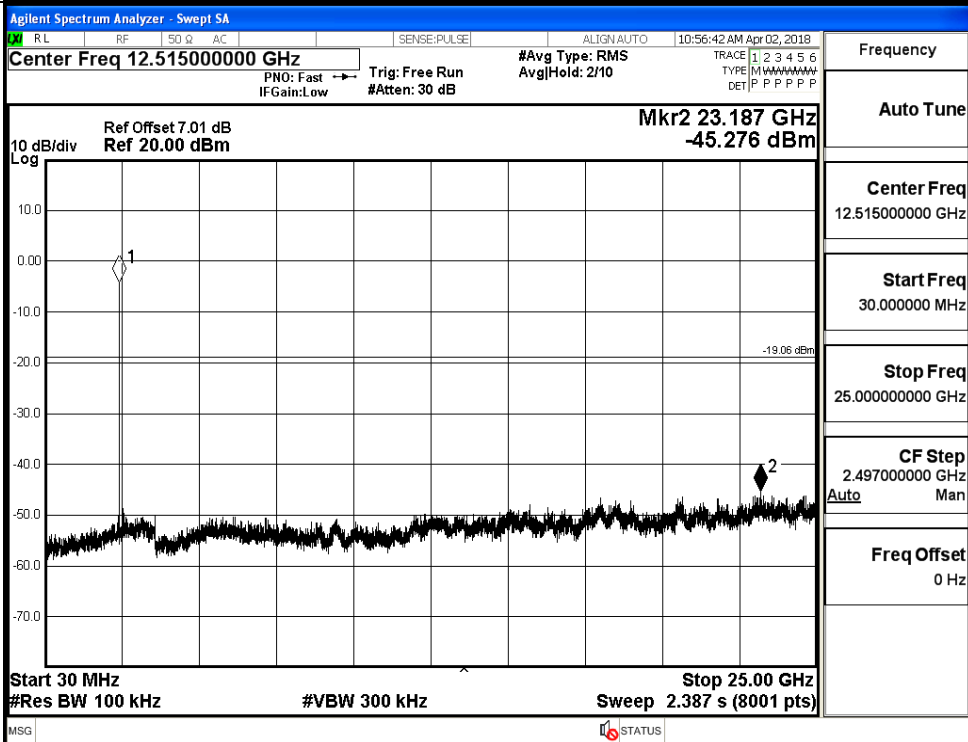


8DPSK_MCH_Graphs

Pref

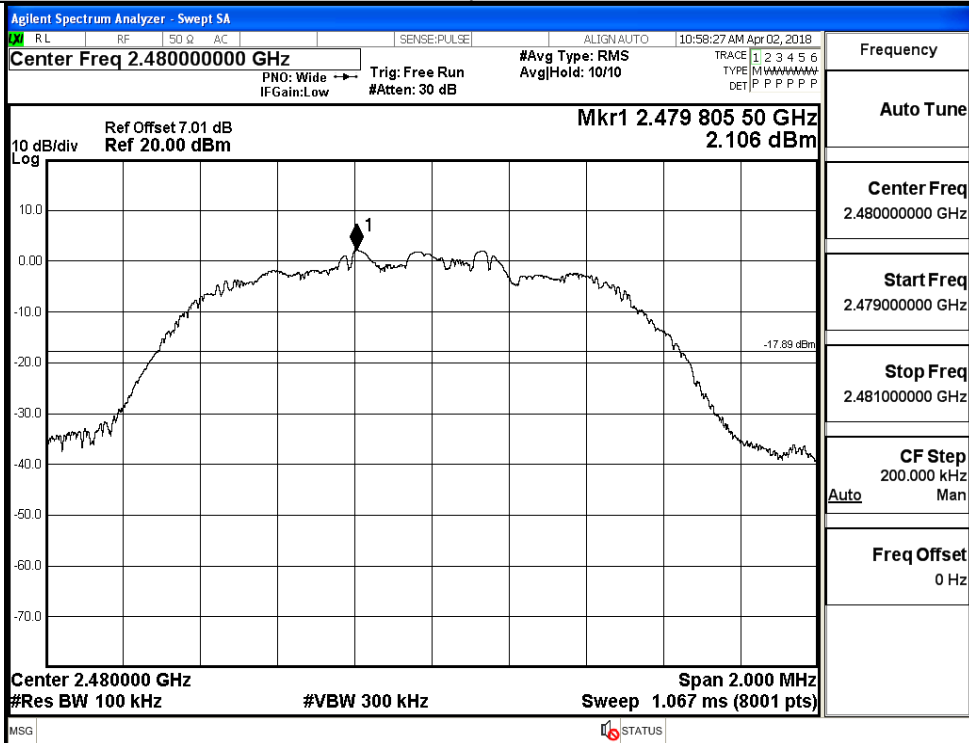


Puw

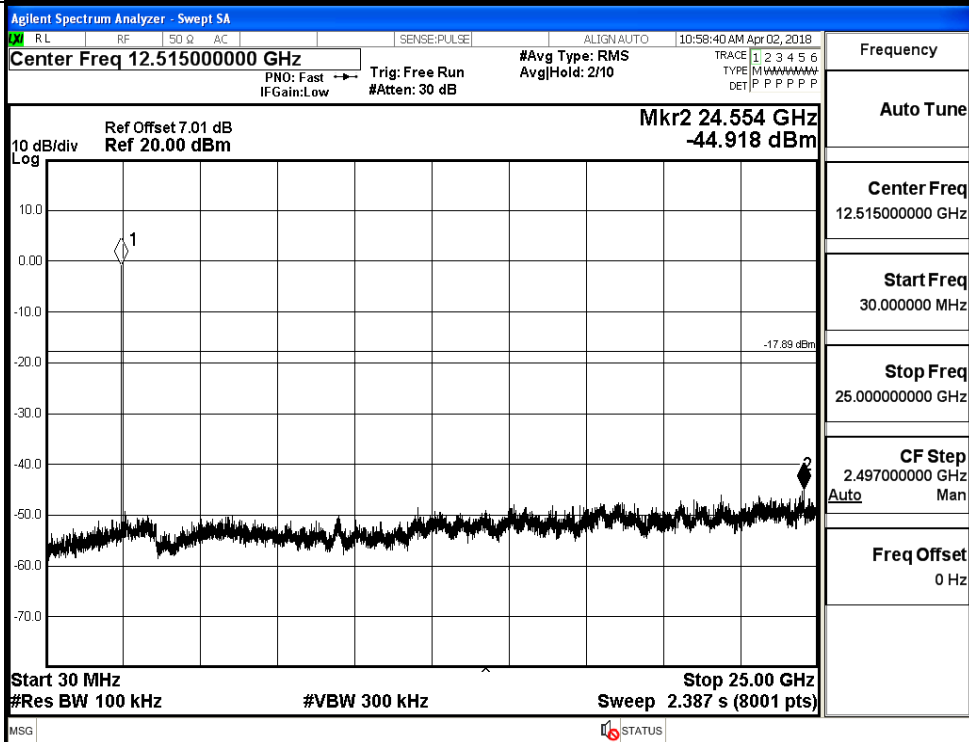


8DPSK_HCH_Graphs

Pref



Puw

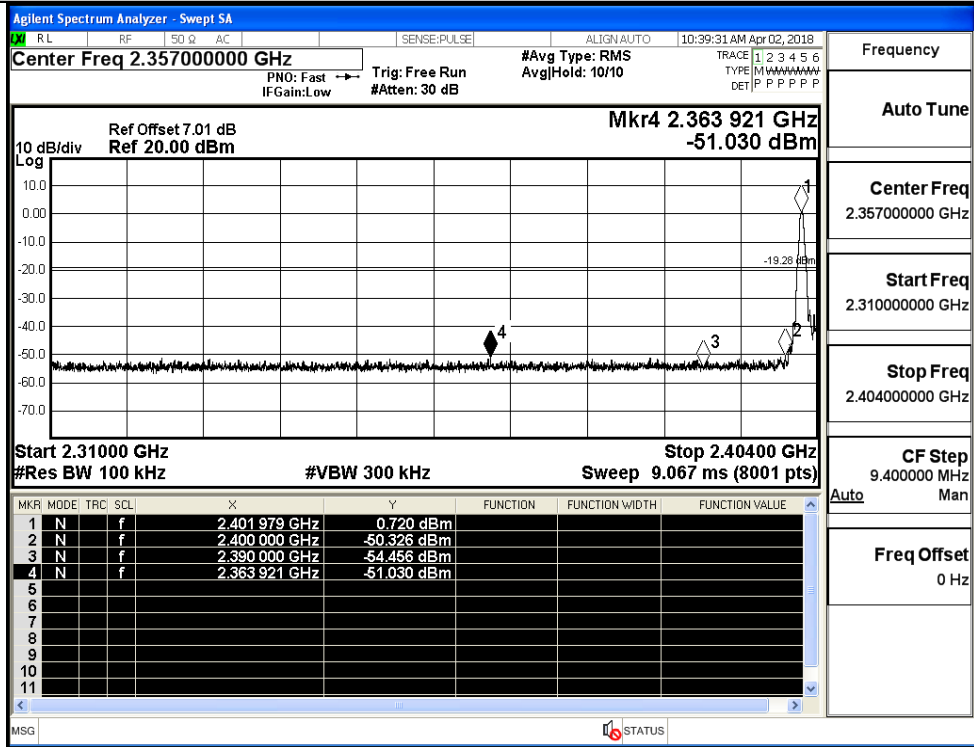


A.7 Band-edge for RF Conducted Emissions

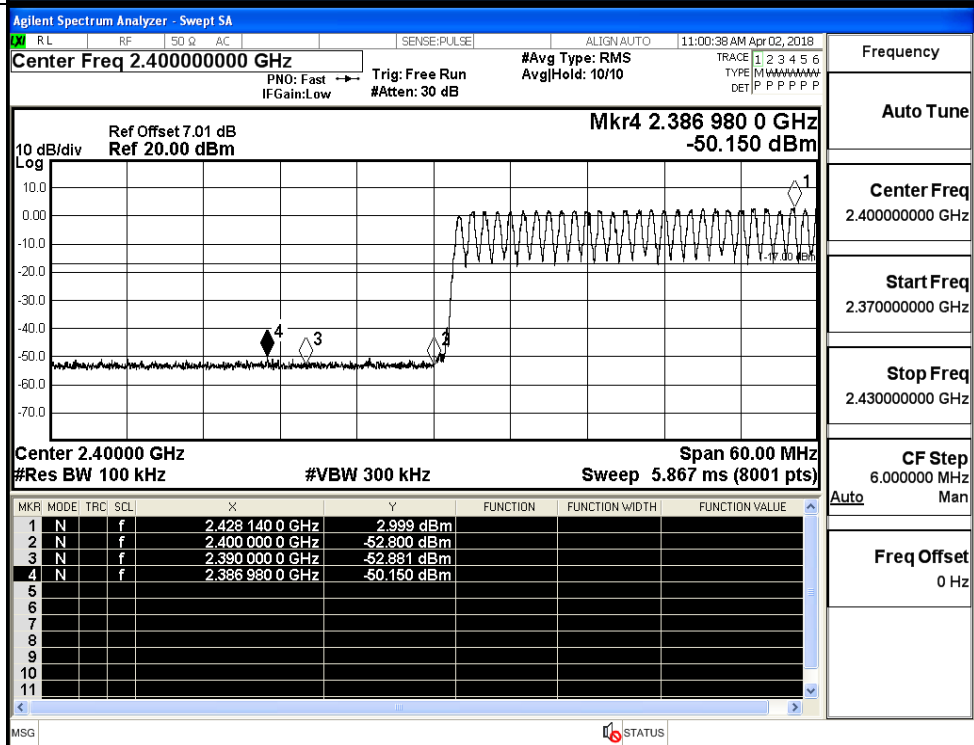
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	0.720	Off	-51.030	-19.28	PASS
			2.999	On	-50.150	-17	PASS
	HCH	2480	4.493	Off	-50.478	-15.51	PASS
			4.367	On	-48.748	-15.63	PASS
$\pi/4$ DQPSK	LCH	2402	-2.889	Off	-51.068	-22.89	PASS
			0.006	On	-50.182	-19.99	PASS
	HCH	2480	2.036	Off	-51.024	-17.96	PASS
			1.788	On	-49.806	-18.21	PASS
8DPSK	LCH	2402	-2.792	Off	-50.711	-22.79	PASS
			0.210	On	-51.000	-19.79	PASS
	HCH	2480	2.101	Off	-50.459	-17.9	PASS
			1.934	On	-49.522	-18.07	PASS

Test Graphs

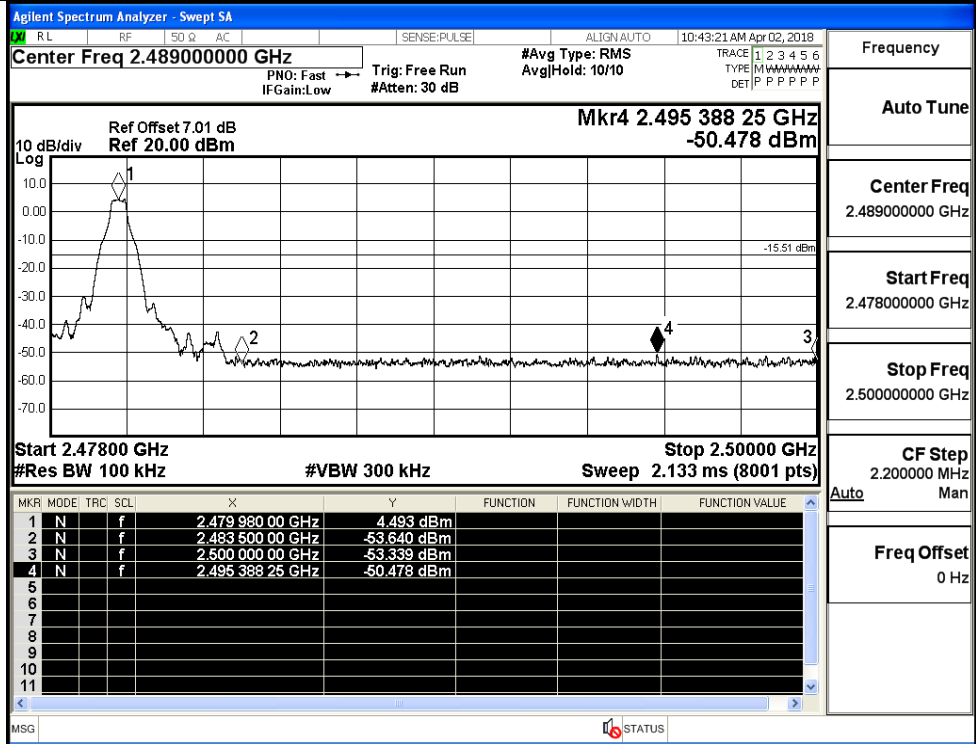
GFSK/LCH/No Hop



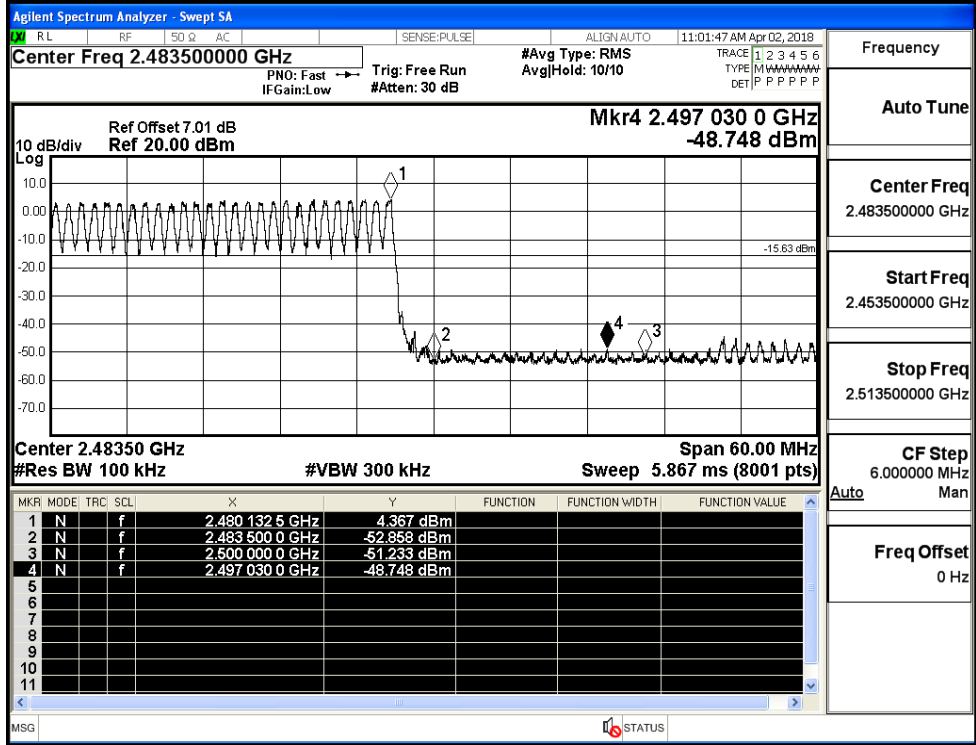
GFSK/LCH/Hop



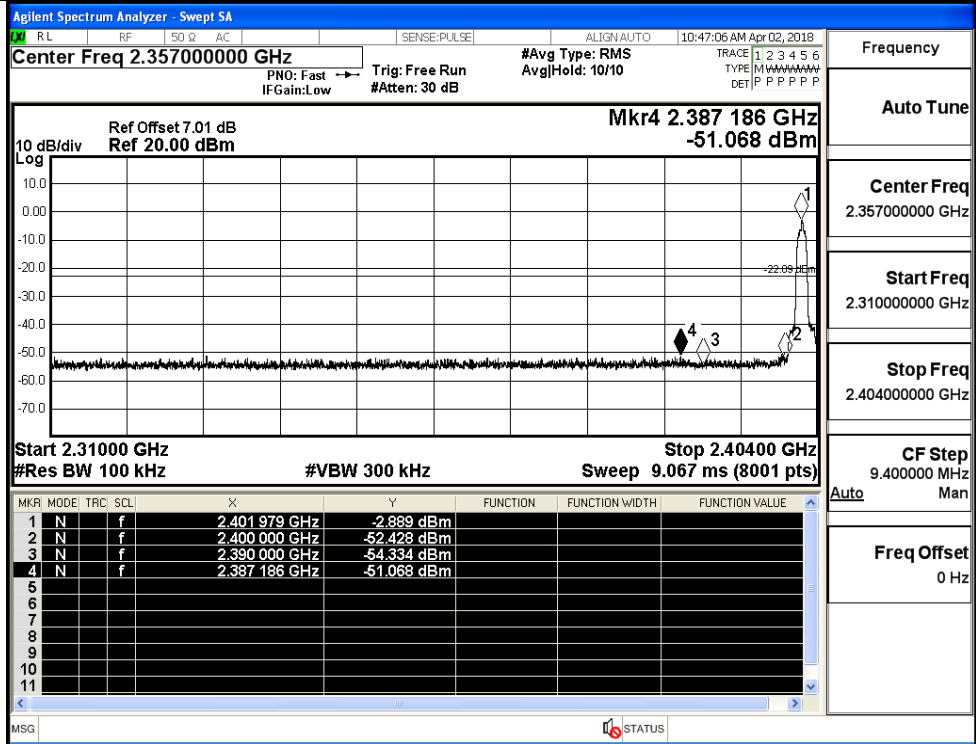
GFSK/HCH/No Hop



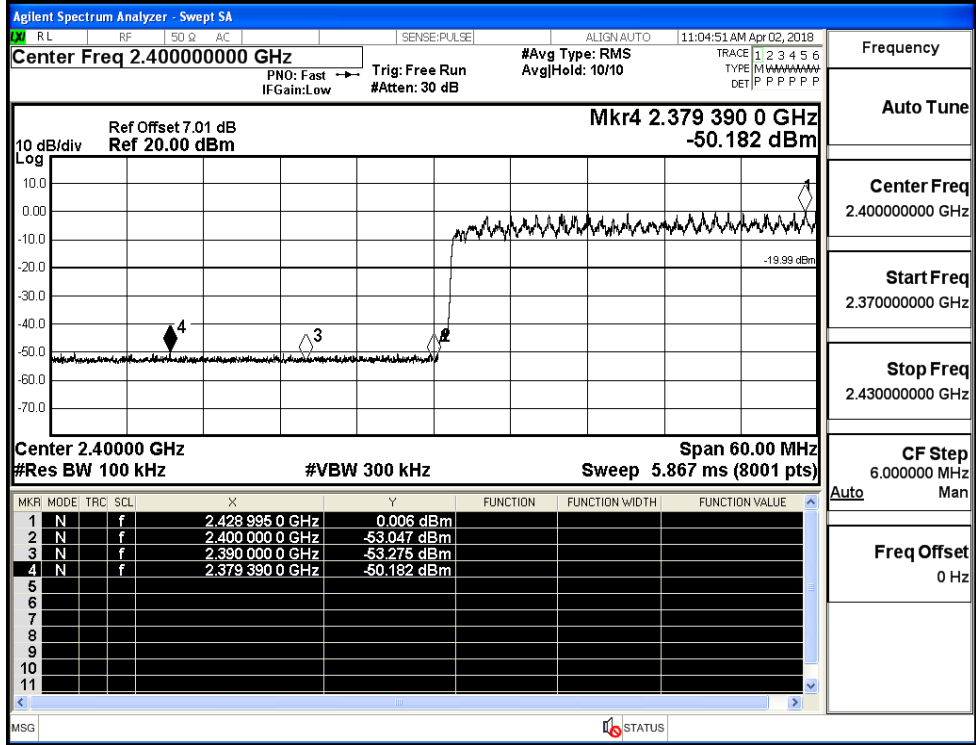
GFSK/HCH/Hop



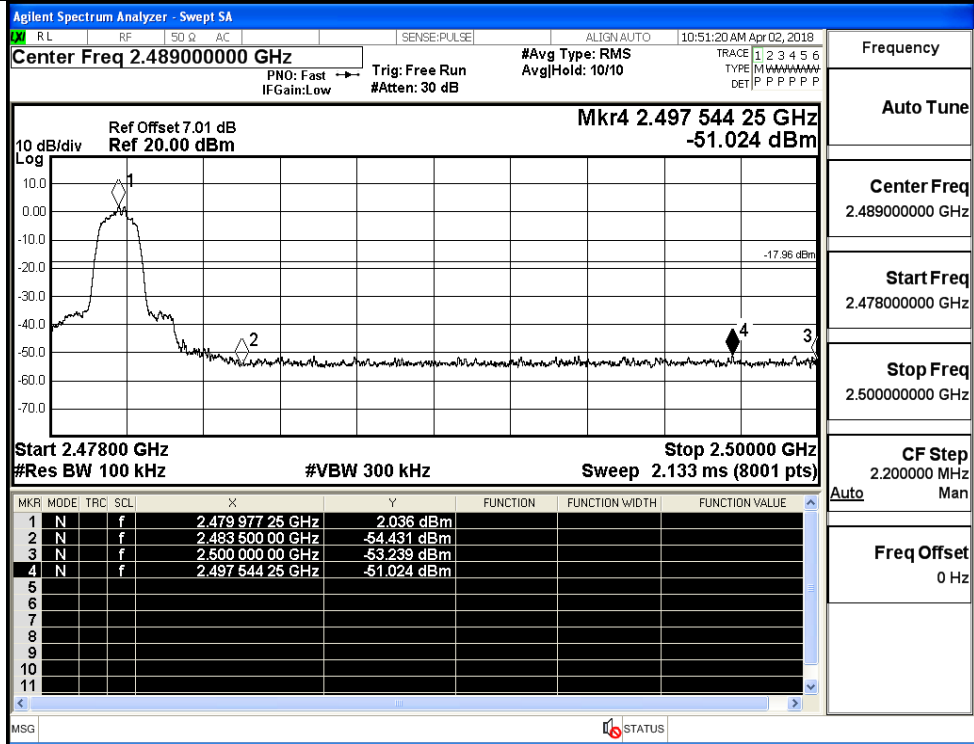
$\pi/4$ DQPSK/LCH/No
Hop



$\pi/4$ DQPSK/LCH/Hop

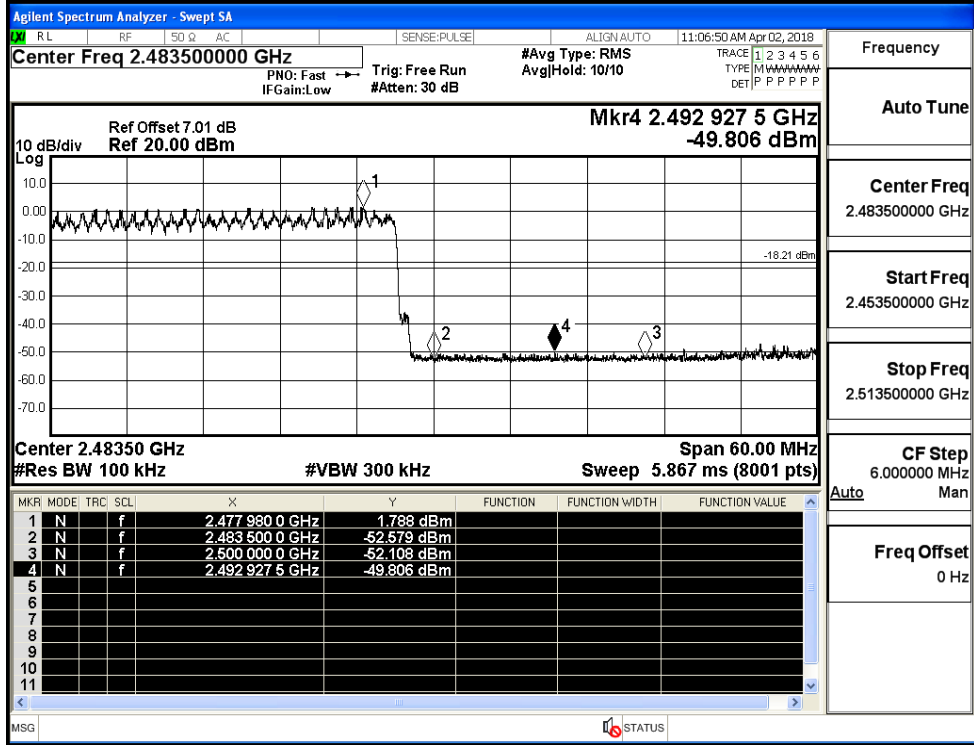


$\pi/4$ DQPSK/HCH/No
Hop



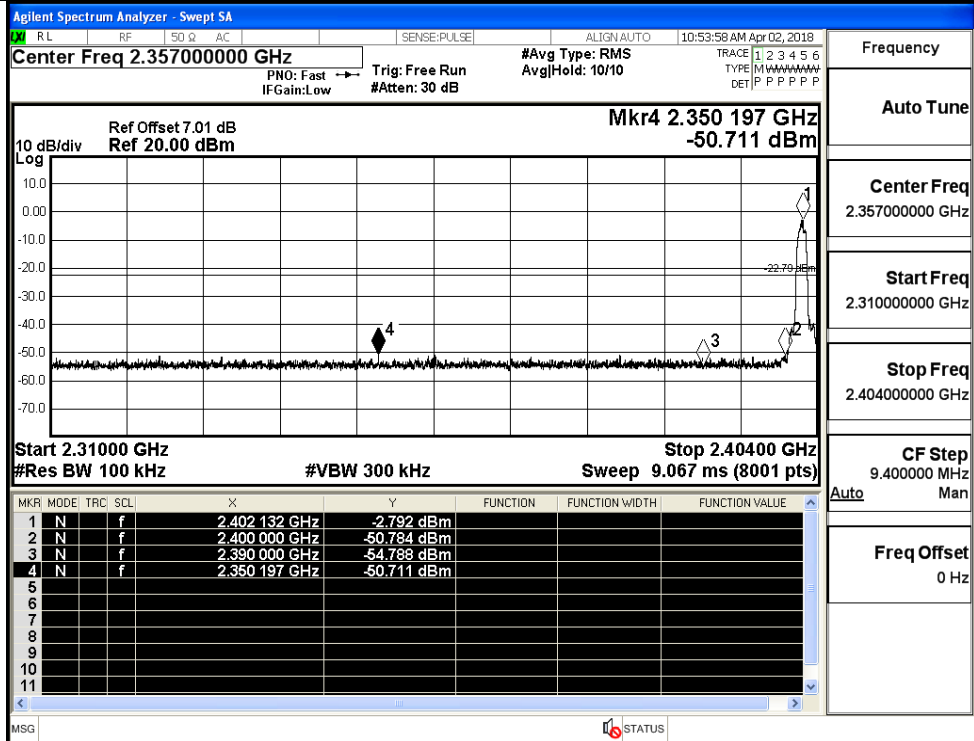
Frequency
Auto Tune
Center Freq 2.489000000 GHz
Start Freq 2.478000000 GHz
Stop Freq 2.500000000 GHz
CF Step 2.200000 MHz
Auto Man
Freq Offset 0 Hz

$\pi/4$ DQPSK/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
Auto Man
Freq Offset 0 Hz

8DPSK/LCH/No Hop



Frequency

Auto Tune

Center Freq
2.357000000 GHz

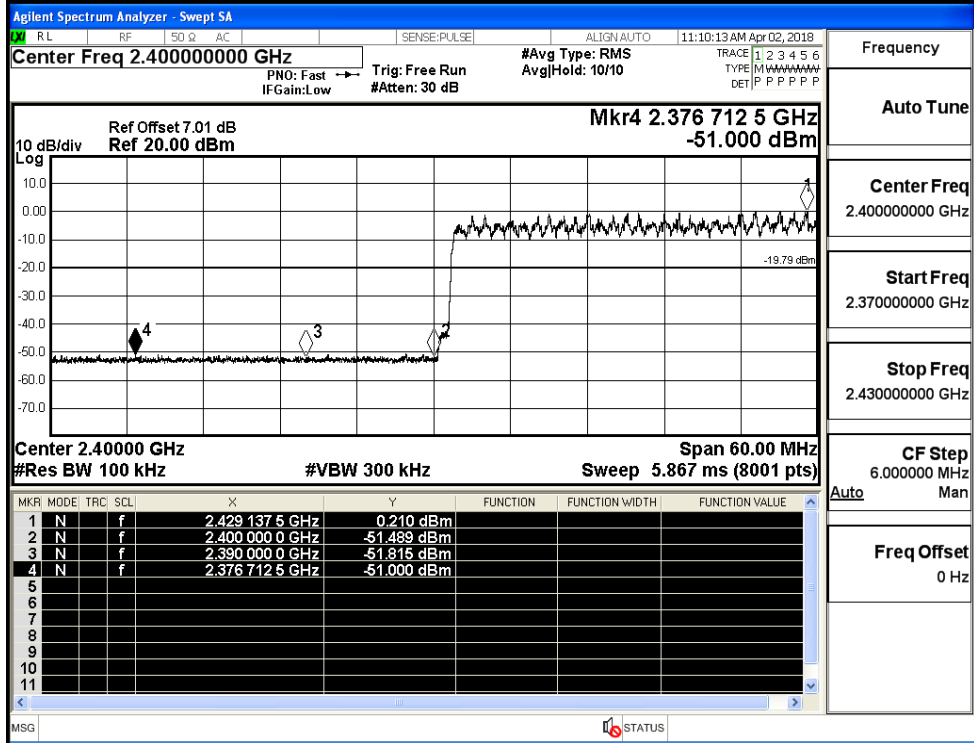
Start Freq
2.310000000 GHz

Stop Freq
2.404000000 GHz

CF Step
9.400000 MHz

Freq Offset
0 Hz

8DPSK/LCH/Hop



Frequency

Auto Tune

Center Freq
2.400000000 GHz

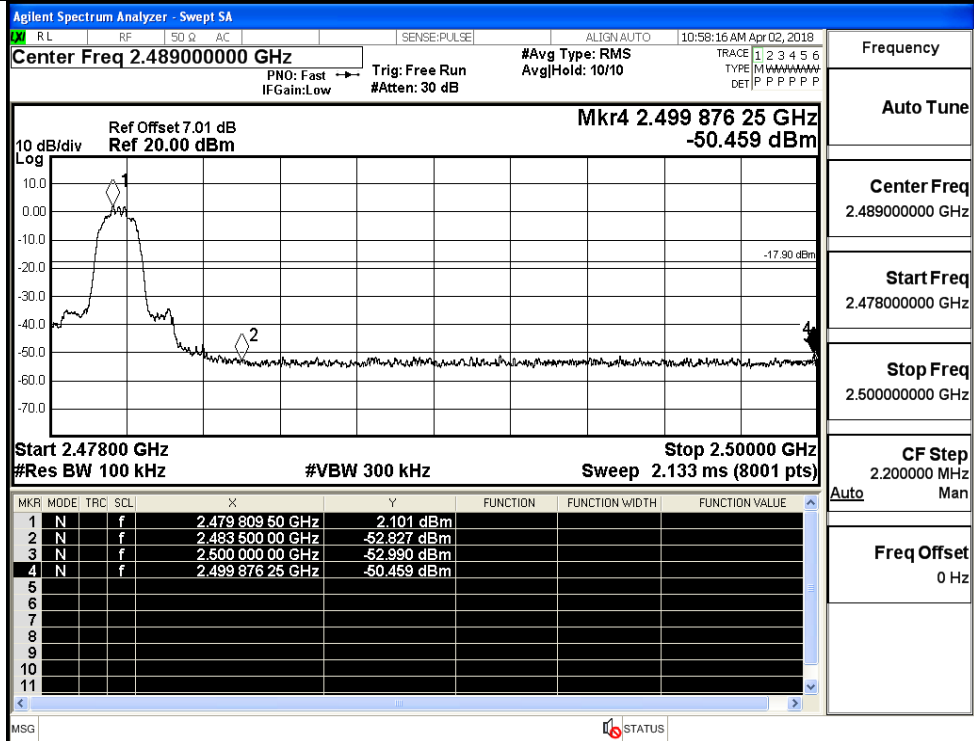
Start Freq
2.370000000 GHz

Stop Freq
2.430000000 GHz

CF Step
6.000000 MHz

Freq Offset
0 Hz

8DPSK/HCH/No Hop



Frequency

Auto Tune

Center Freq
2.489000000 GHz

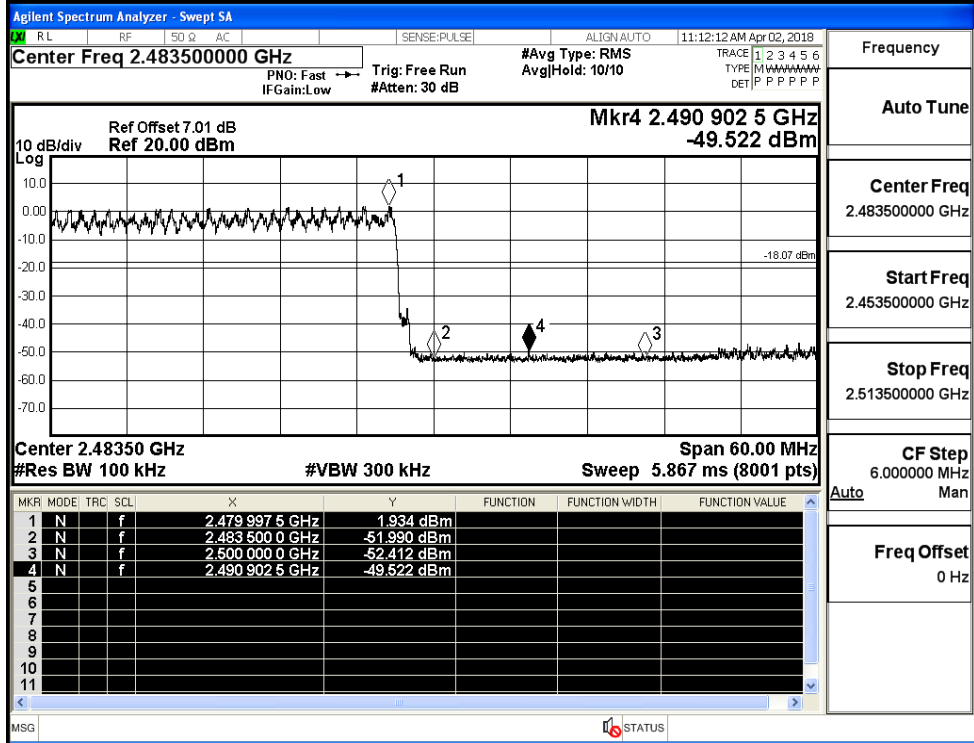
Start Freq
2.478000000 GHz

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

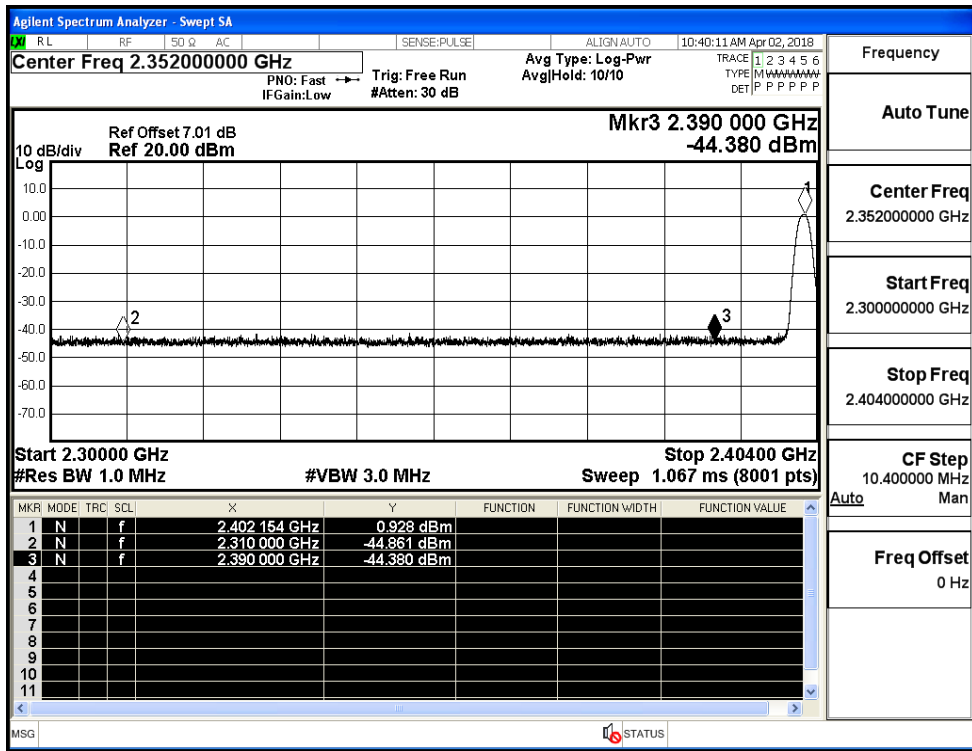
CF Step
6.000000 MHz

Freq Offset
0 Hz

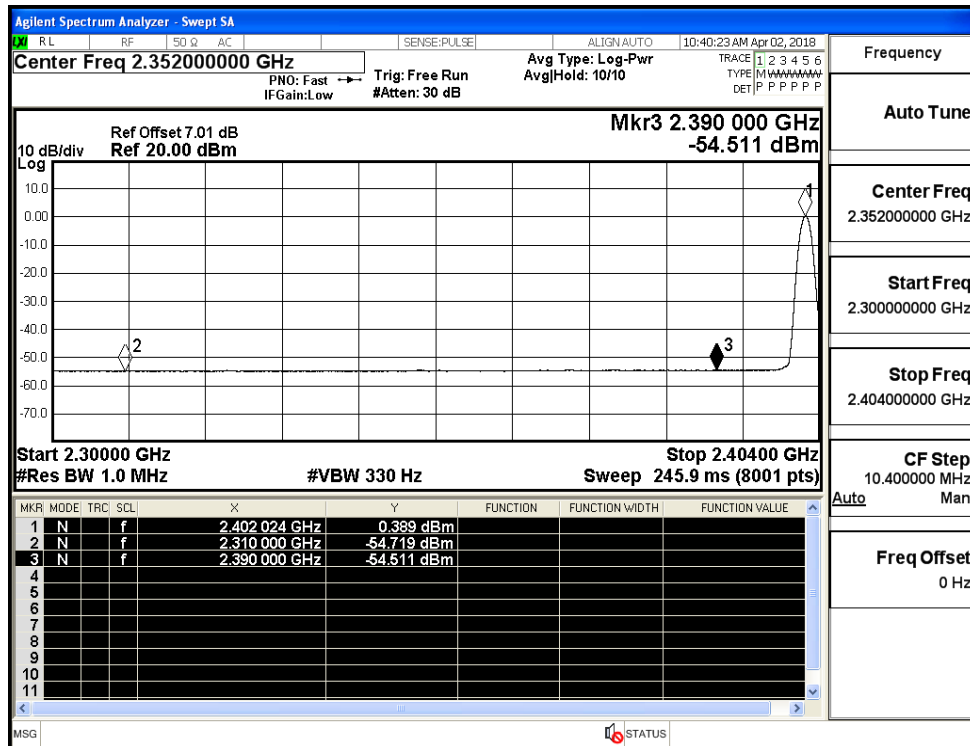
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-44.86	2.0	0	50.40	PEAK	74	PASS
	Off	2310.0	-54.72	2.0	0	40.54	AV	54	PASS
	Off	2390.0	-44.38	2.0	0	50.88	PEAK	74	PASS
	Off	2390.0	-54.51	2.0	0	40.75	AV	54	PASS
	Off	2483.5	-42.81	2.0	0	52.45	PEAK	74	PASS
	Off	2483.5	-52.09	2.0	0	43.17	AV	54	PASS
	Off	2500.0	-43.89	2.0	0	51.37	PEAK	74	PASS
	Off	2500.0	-54.10	2.0	0	41.16	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-44.41	2.0	0	50.85	PEAK	74	PASS
	Off	2310.0	-54.75	2.0	0	40.51	AV	54	PASS
	Off	2390.0	-44.36	2.0	0	50.90	PEAK	74	PASS
	Off	2390.0	-54.58	2.0	0	40.68	AV	54	PASS
	Off	2483.5	-45.02	2.0	0	50.24	PEAK	74	PASS
	Off	2483.5	-53.61	2.0	0	41.65	AV	54	PASS
	Off	2500.0	-44.42	2.0	0	50.83	PEAK	74	PASS
	Off	2500.0	-54.06	2.0	0	41.20	AV	54	PASS
8DPSK	Off	2310.0	-44.50	2.0	0	50.76	PEAK	74	PASS
	Off	2310.0	-54.81	2.0	0	40.45	AV	54	PASS
	Off	2390.0	-45.30	2.0	0	49.96	PEAK	74	PASS
	Off	2390.0	-54.46	2.0	0	40.80	AV	54	PASS
	Off	2483.5	-44.19	2.0	0	51.07	PEAK	74	PASS
	Off	2483.5	-53.52	2.0	0	41.74	AV	54	PASS
	Off	2500.0	-43.64	2.0	0	51.62	PEAK	74	PASS
	Off	2500.0	-54.13	2.0	0	41.13	AV	54	PASS

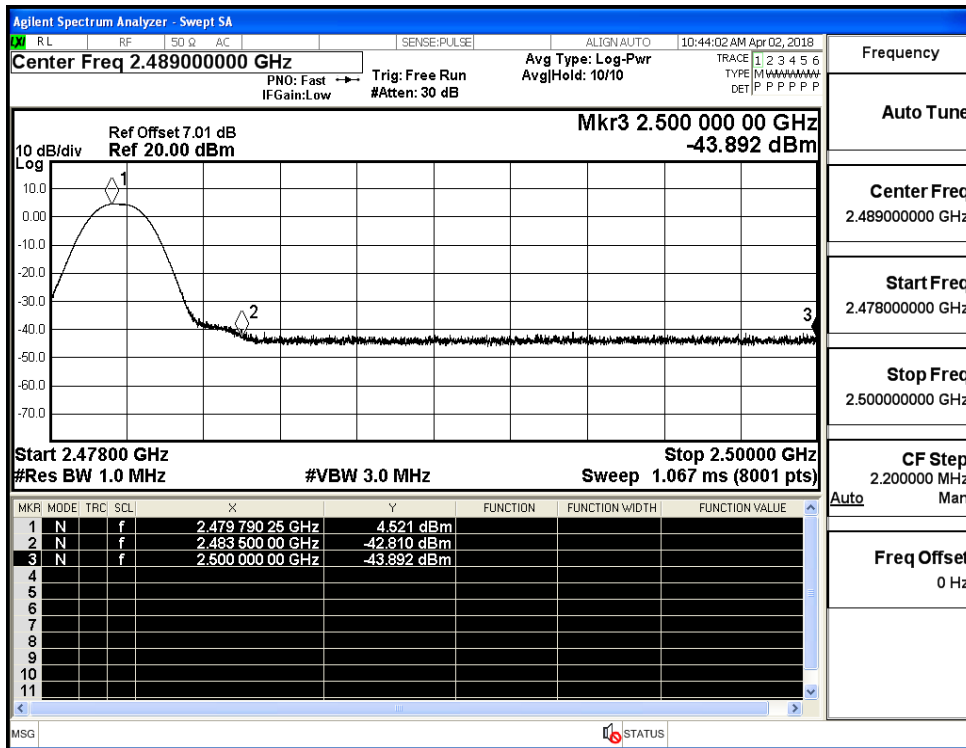
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



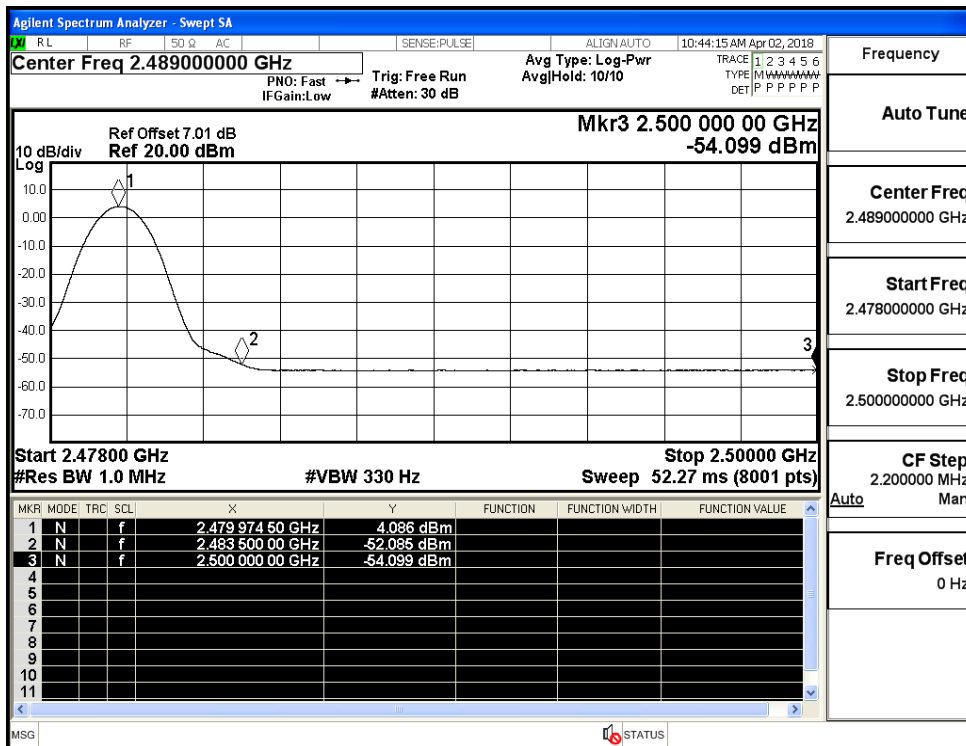
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



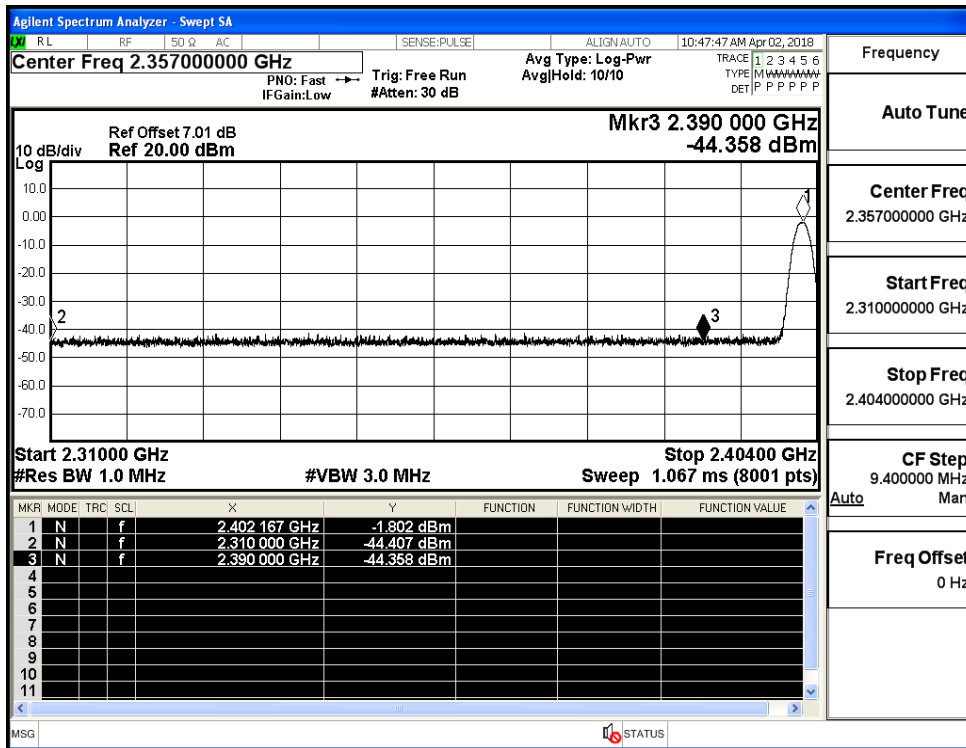
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



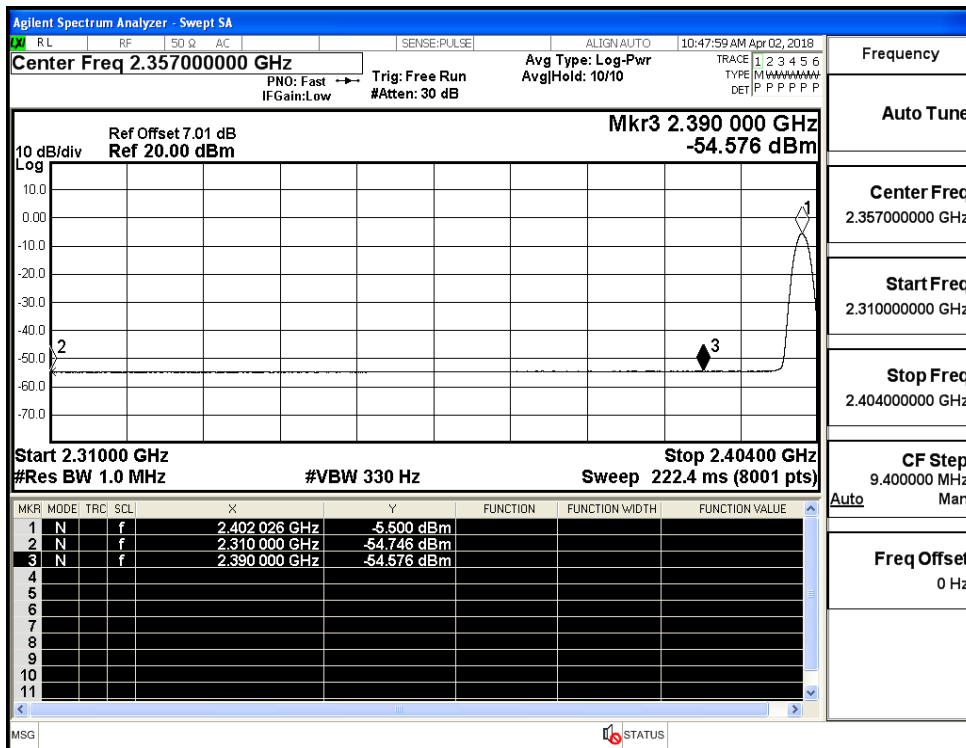
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



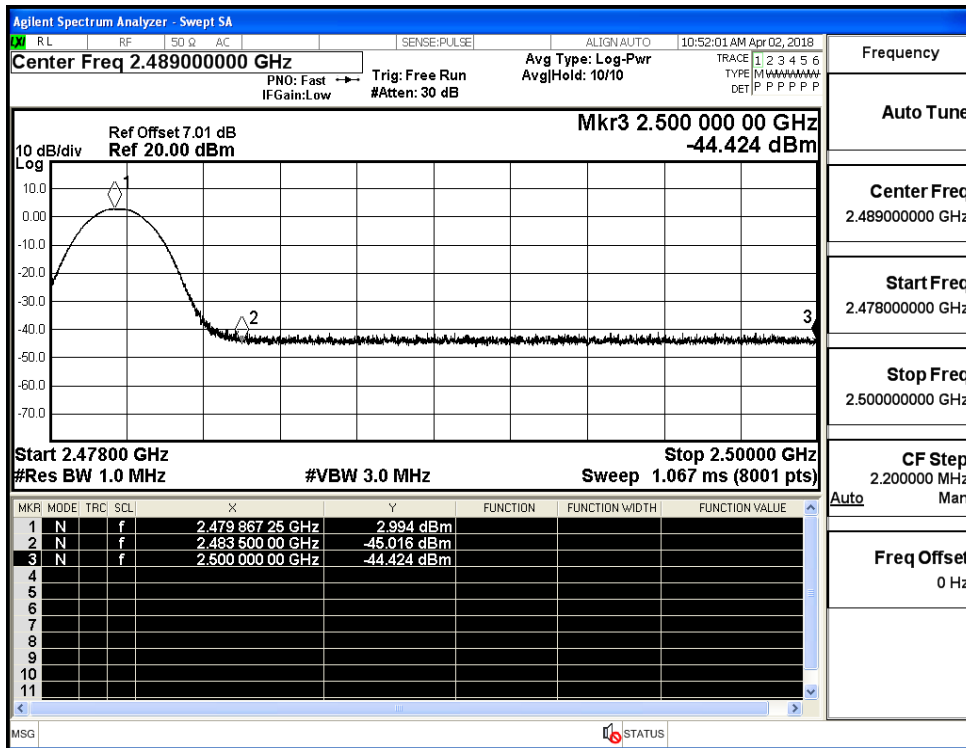
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)



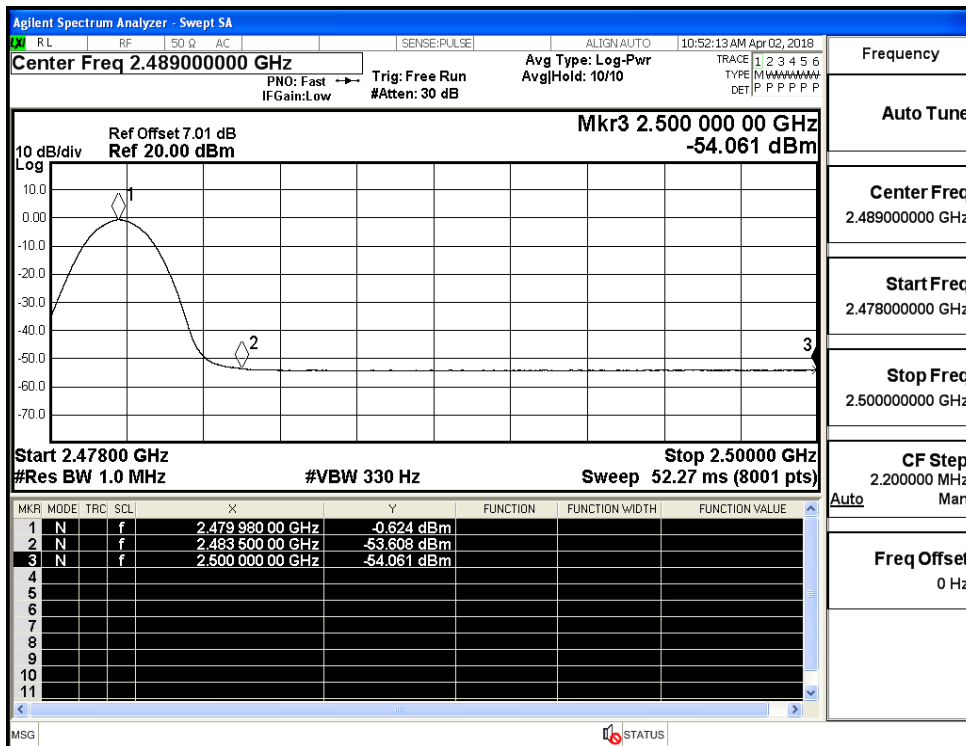
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)



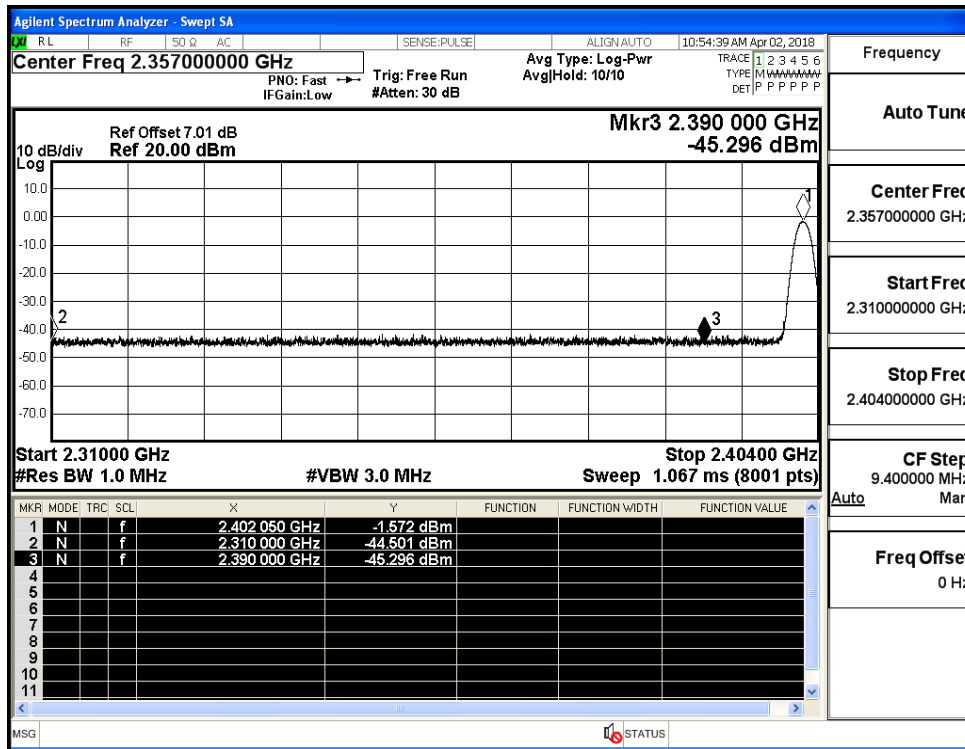
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



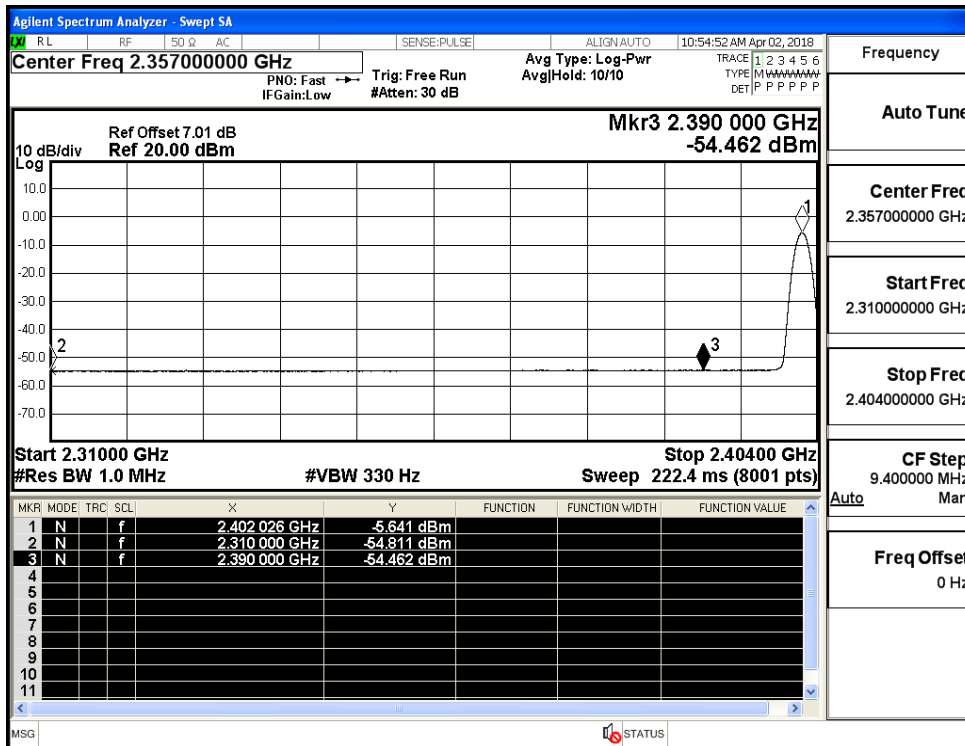
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



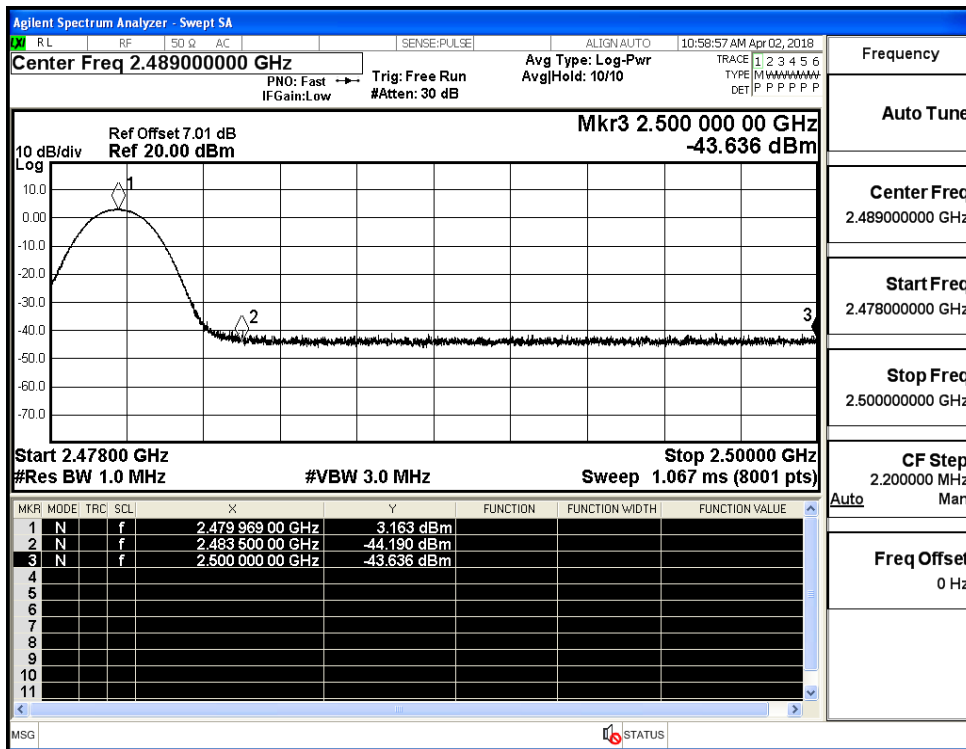
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

