

Appendix A

RF Test Data for BT V4.0 (BDR/EDR) (Conducted Measurement)

Product Name: Vinyl Record Player/Turntable

Trade Mark: BC MASTER

Test Model: TT202-I

Environmental Conditions

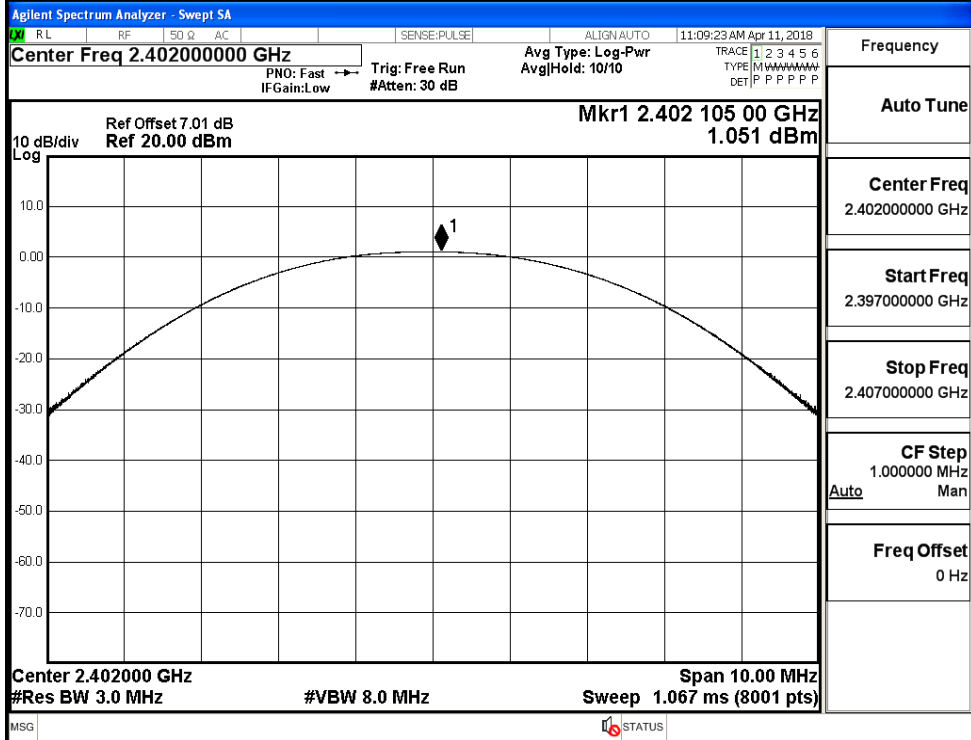
Temperature:	23.3 ° C
Relative Humidity:	53.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Mina.xu
Supervised by:	Jayden Zhuo

A.1 Maxmum Conducted Peak Output Power

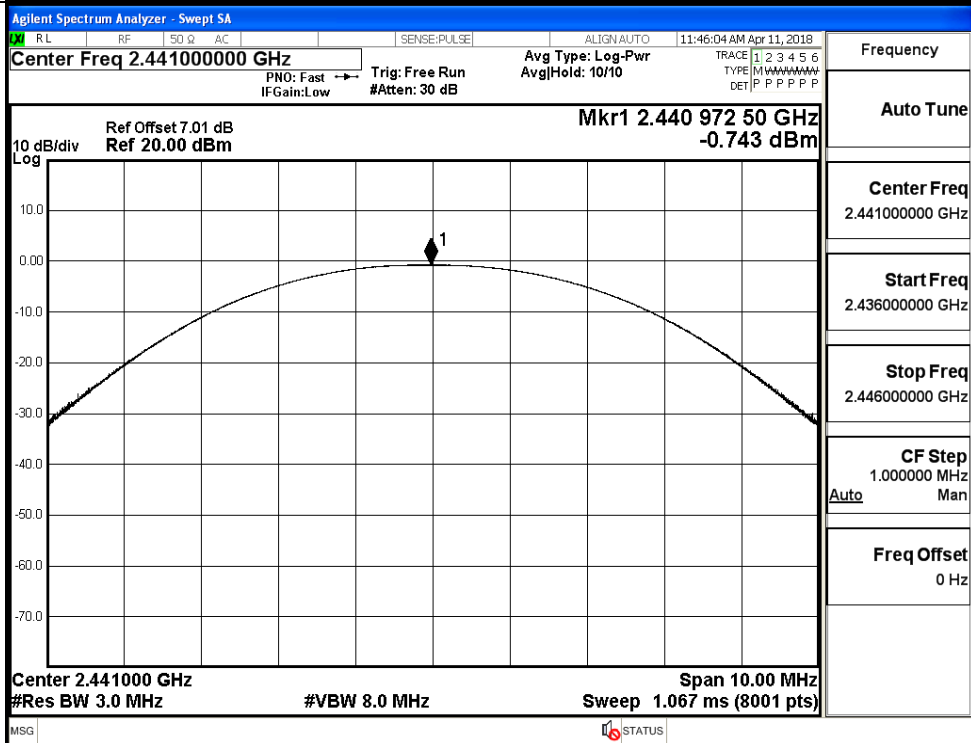
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	1.051	21	PASS
	MCH	-0.743	21	PASS
	HCH	-0.592	21	PASS
$\pi/4$ DQPSK	LCH	0.368	21	PASS
	MCH	-1.387	21	PASS
	HCH	-1.415	21	PASS
8DPSK	LCH	0.479	21	PASS
	MCH	-1.208	21	PASS
	HCH	-1.308	21	PASS

Test Graphs

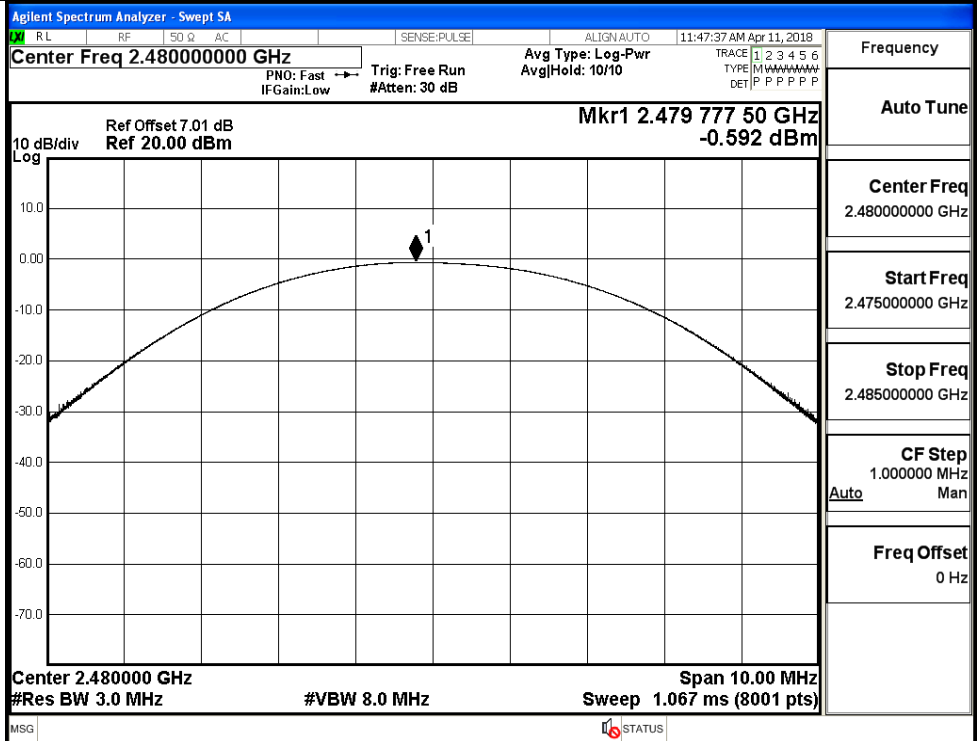
GFSK/LCH



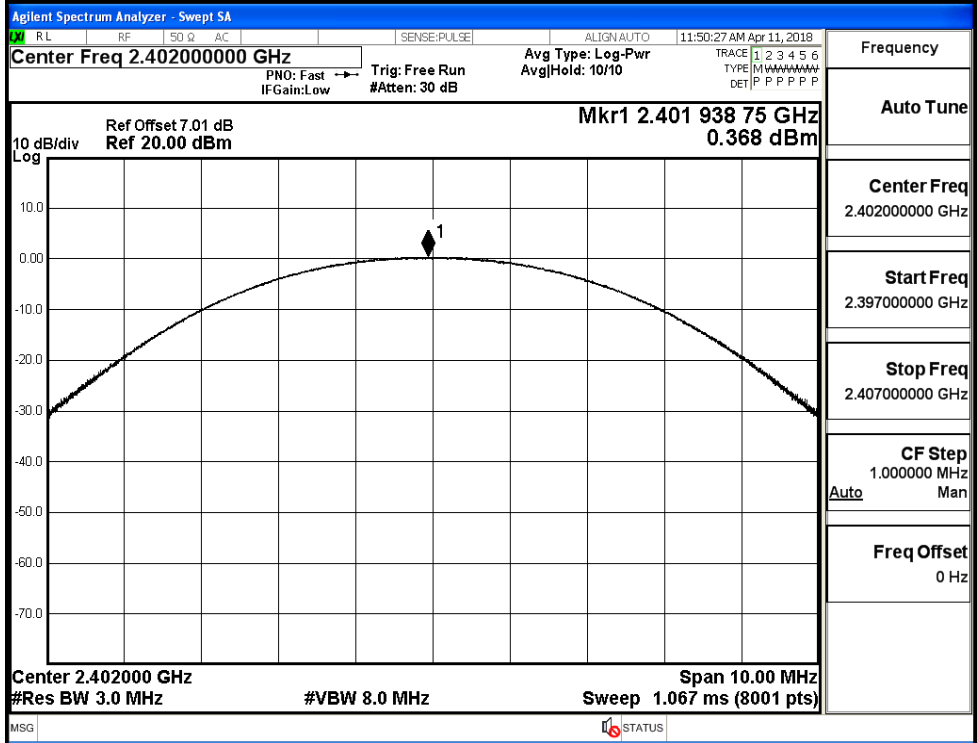
GFSK/MCH



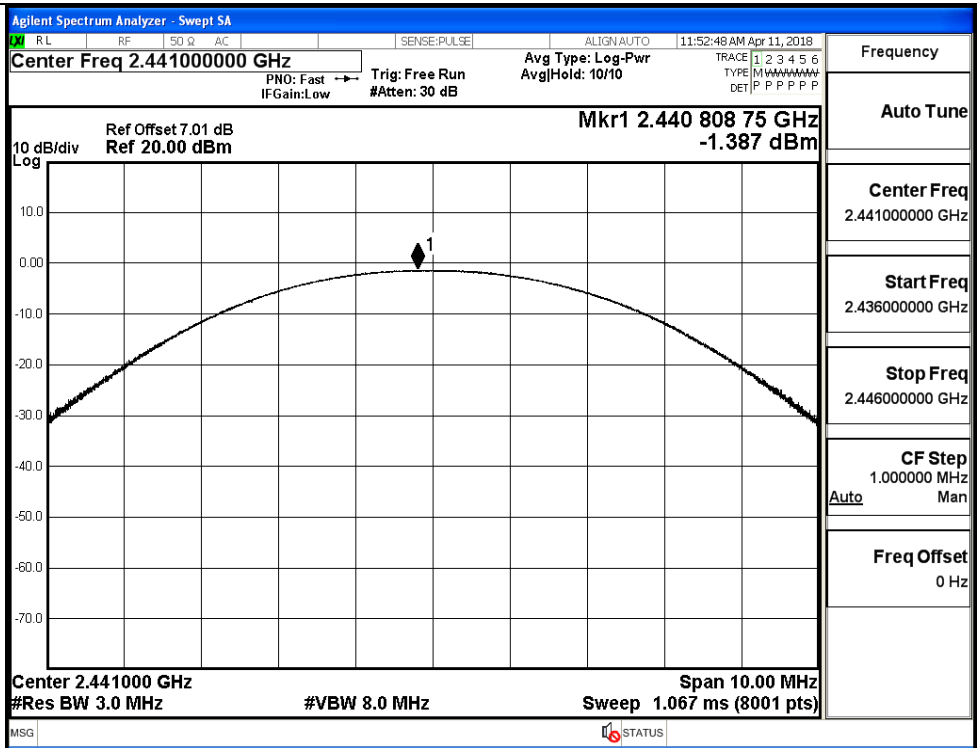
GFSK/HCH



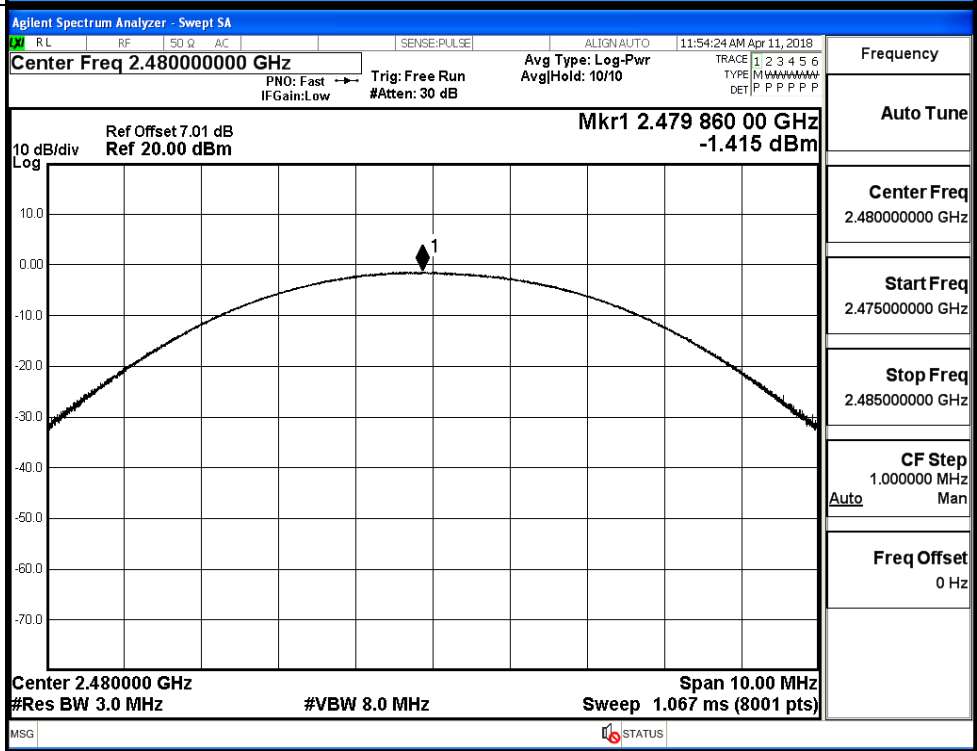
$\pi/4$ DQPSK/LCH



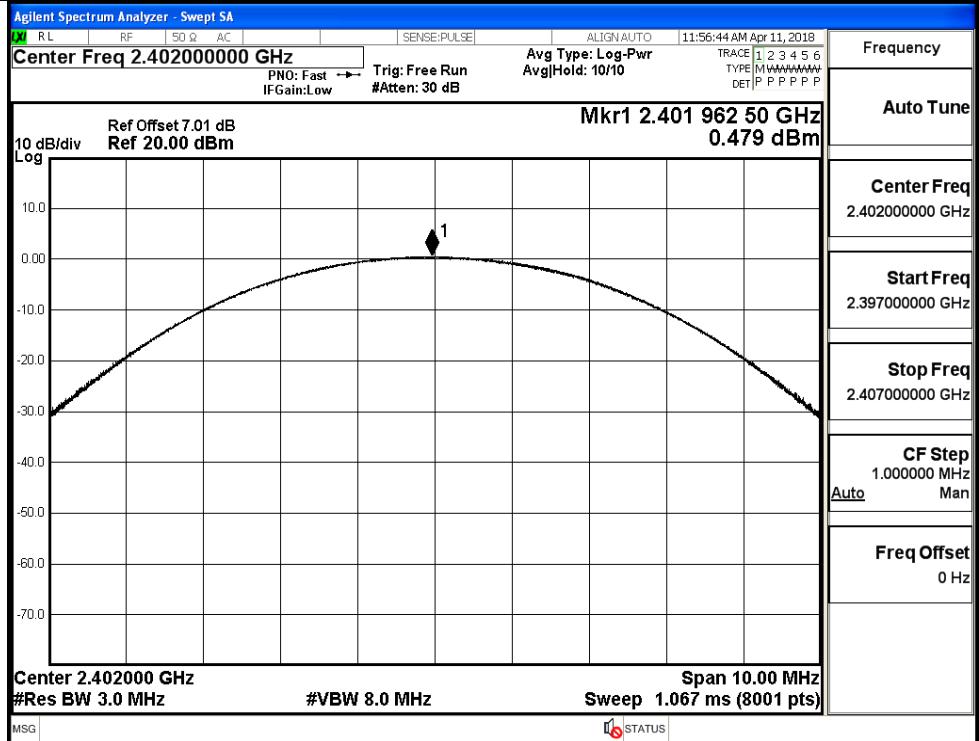
π /4DQPSK/MCH



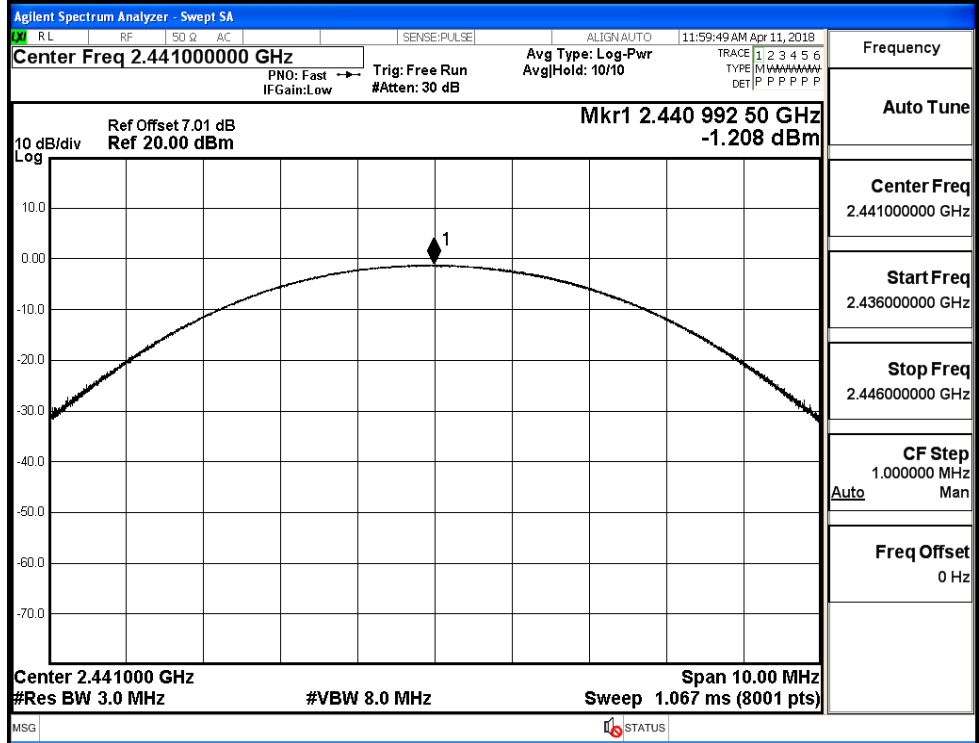
π /4DQPSK/HCH



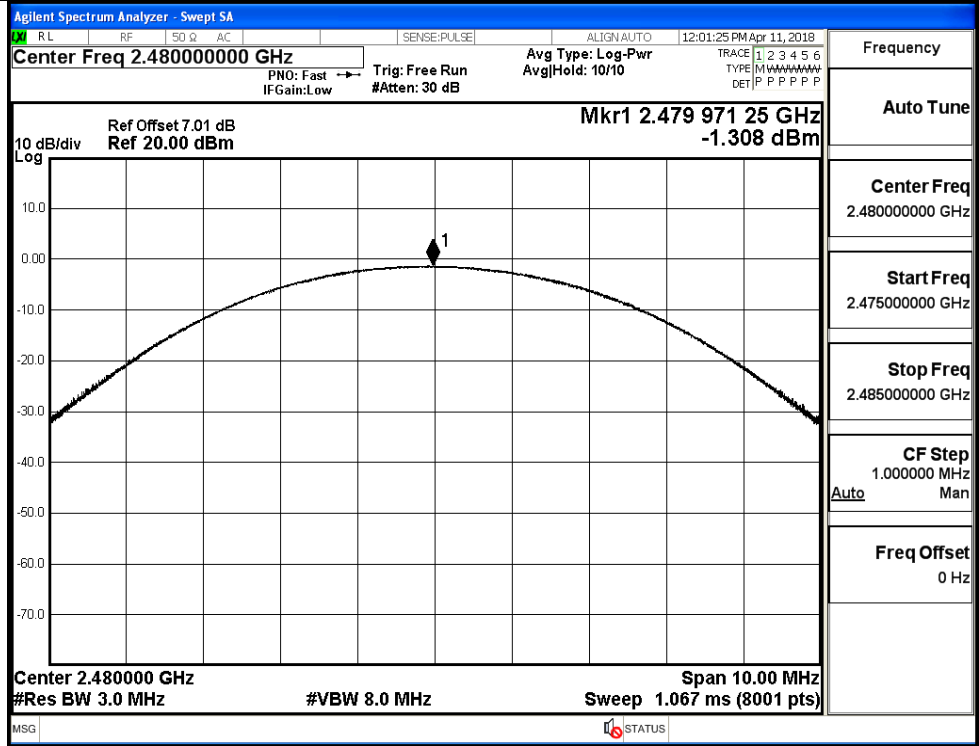
8DPSK/LCH



8DPSK/MCH

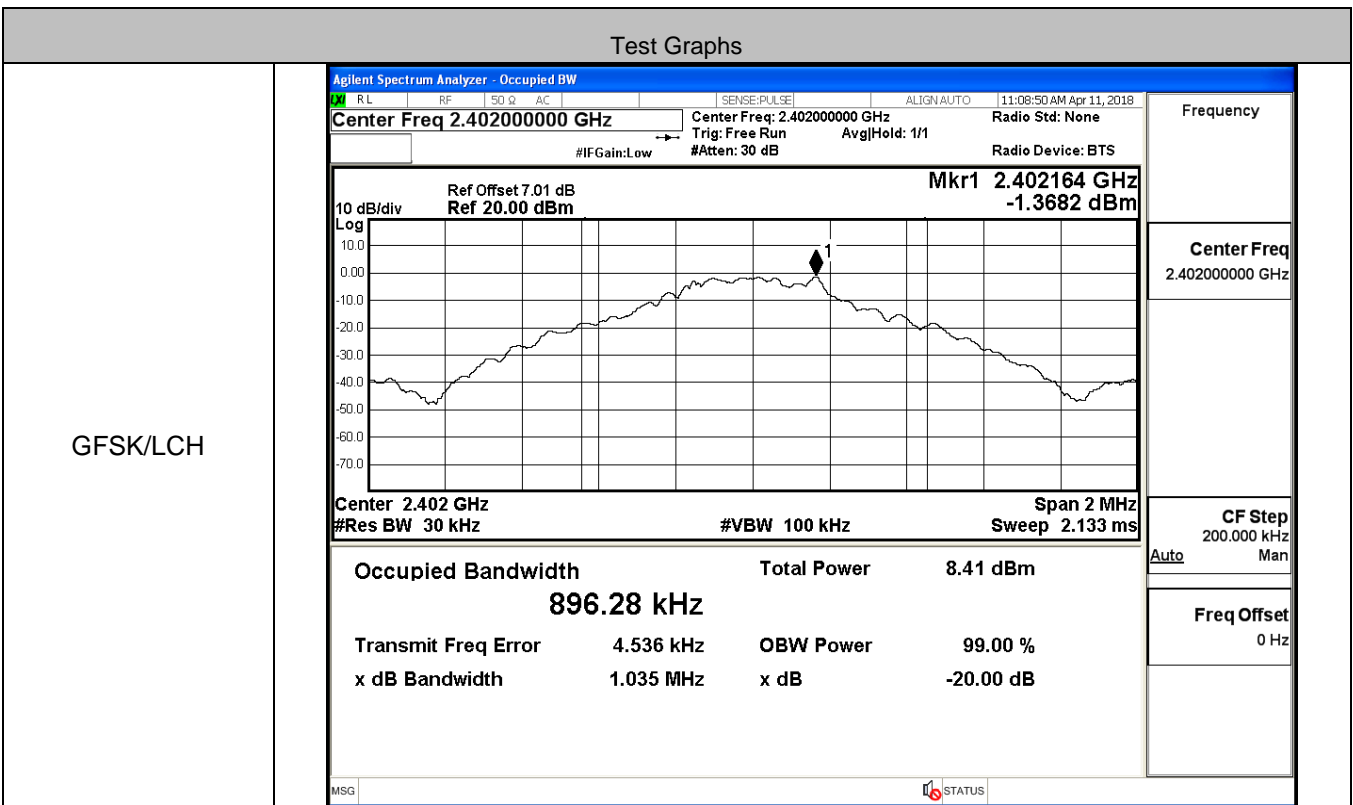


8DPSK/HCH

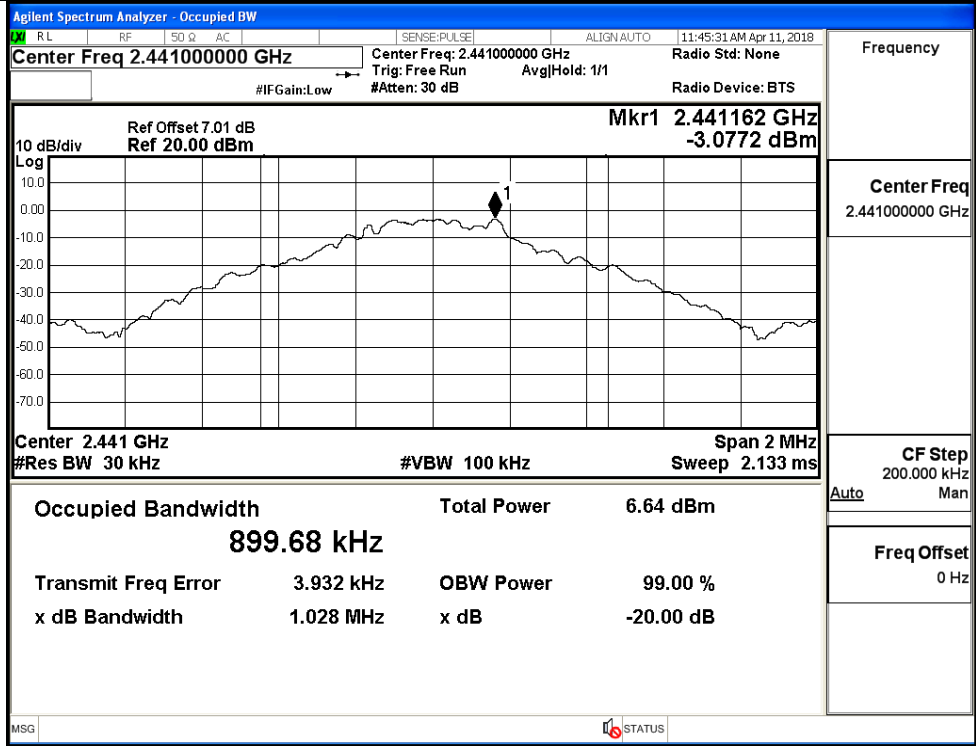


A.2 20dB Bandwidth

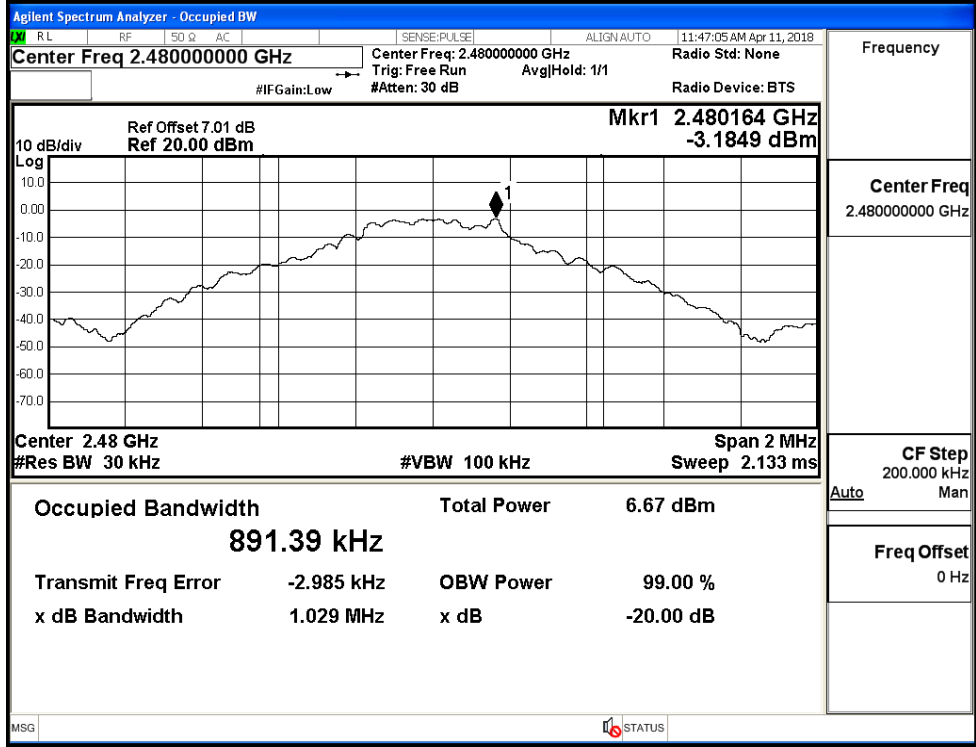
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.035	Not Specified	PASS
	MCH	1.028	Not Specified	PASS
	HCH	1.029	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.289	Not Specified	PASS
	MCH	1.314	Not Specified	PASS
	HCH	1.289	Not Specified	PASS
8DPSK	LCH	1.292	Not Specified	PASS
	MCH	1.300	Not Specified	PASS
	HCH	1.293	Not Specified	PASS



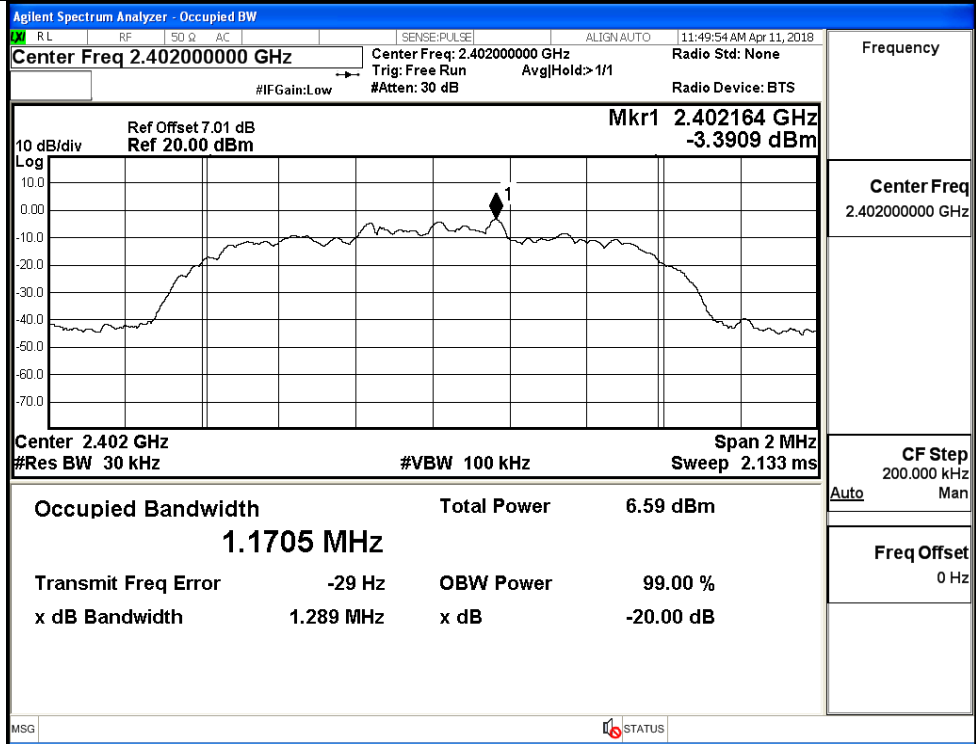
GFSK/MCH



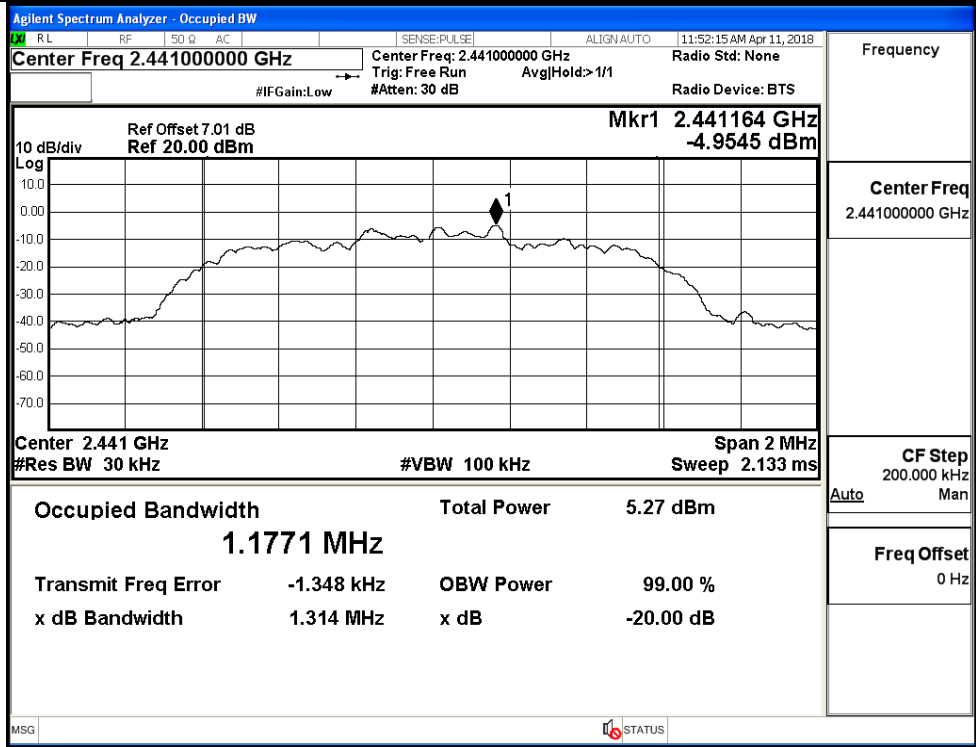
GFSK/HCH



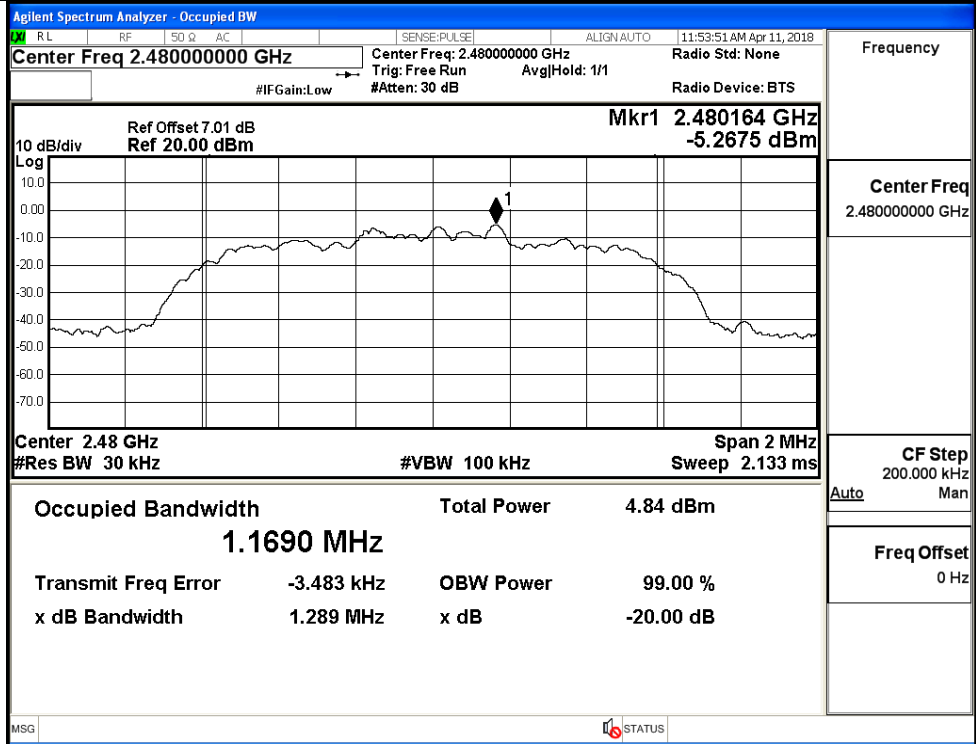
$\pi/4$ DQPSK/LCH



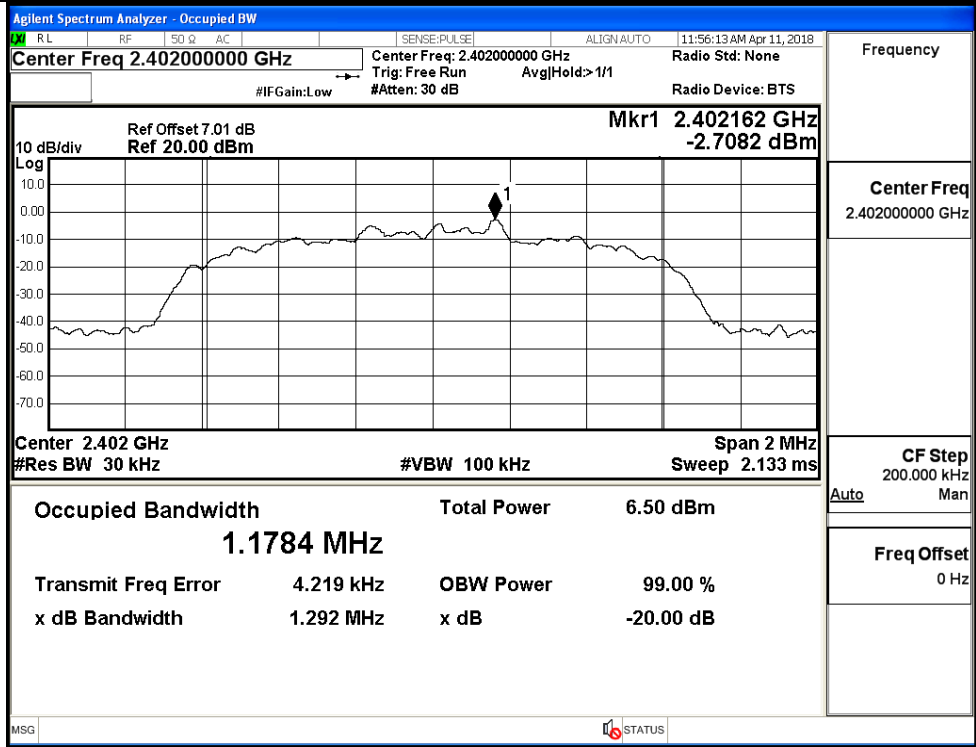
$\pi/4$ DQPSK/MCH



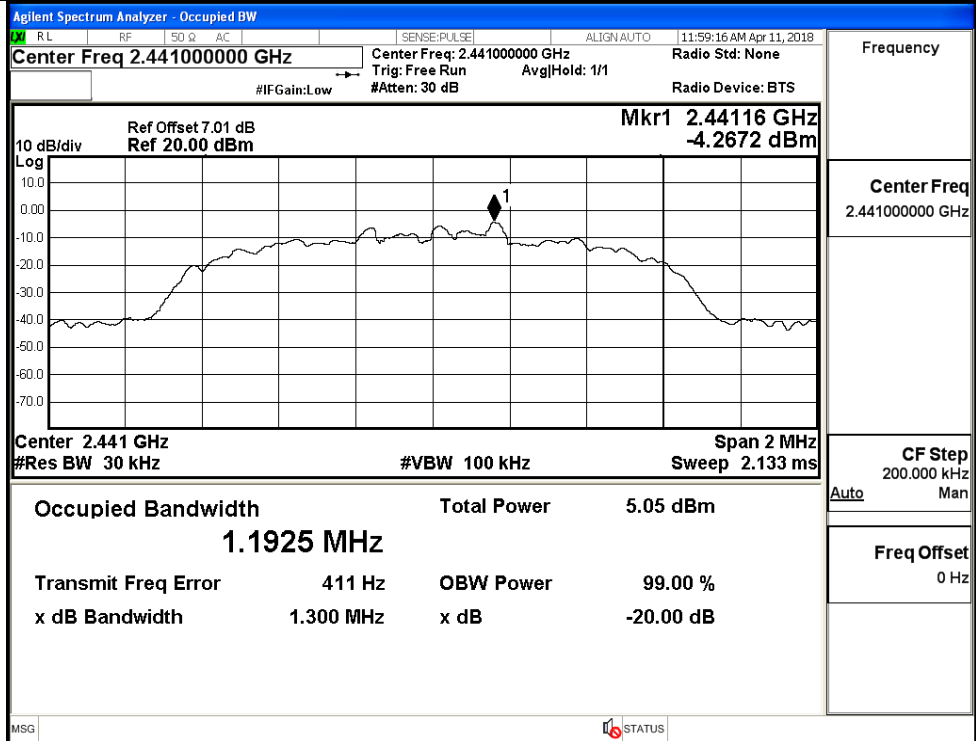
$\pi/4$ DQPSK/HCH



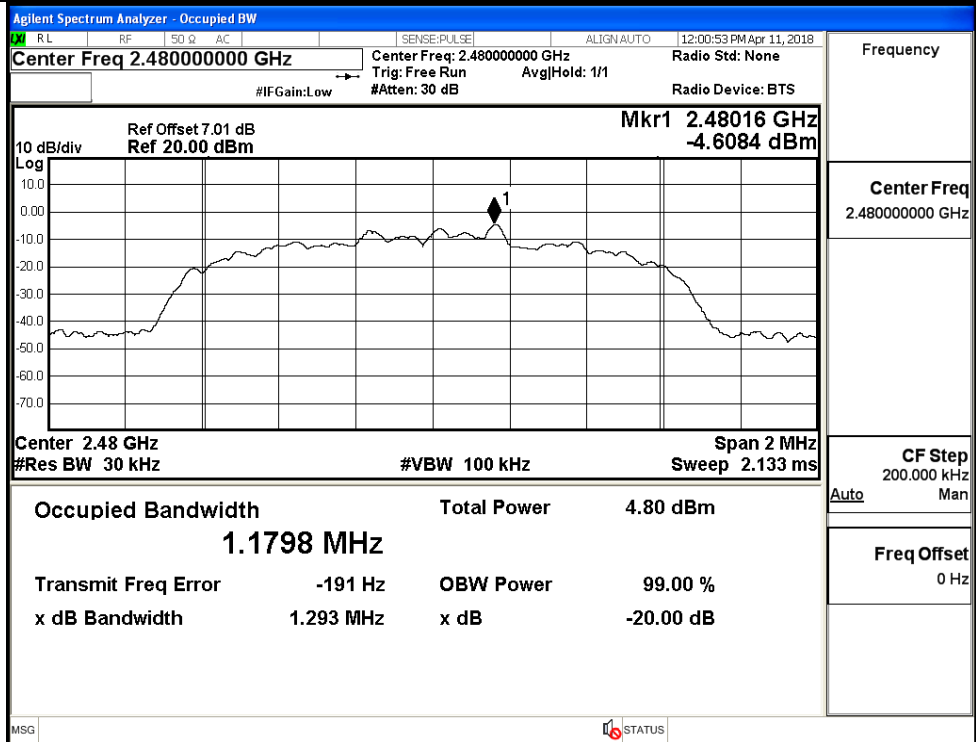
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH



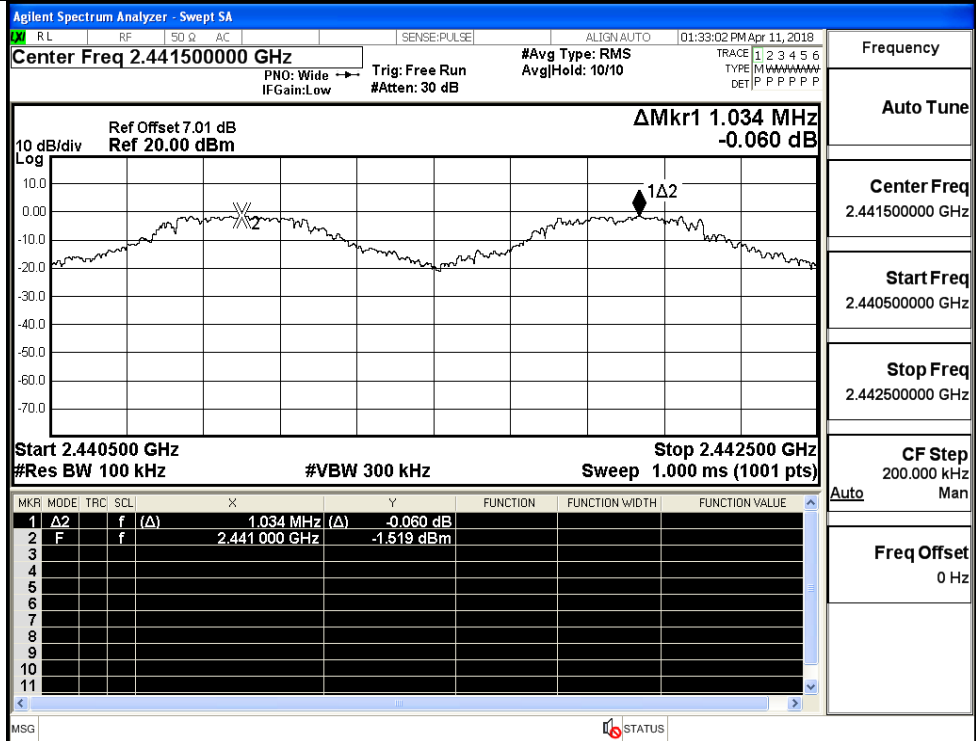
A.3 Carrier Frequency Separation

Mode	Channel	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.039	0.690	PASS
	MCH	1.034	0.690	PASS
	HCH	0.902	0.690	PASS
π/4DQPSK	LCH	1.014	0.876	PASS
	MCH	0.938	0.876	PASS
	HCH	1.340	0.876	PASS
8DPSK	LCH	1.278	0.867	PASS
	MCH	0.936	0.867	PASS
	HCH	0.982	0.867	PASS

Test Graphs

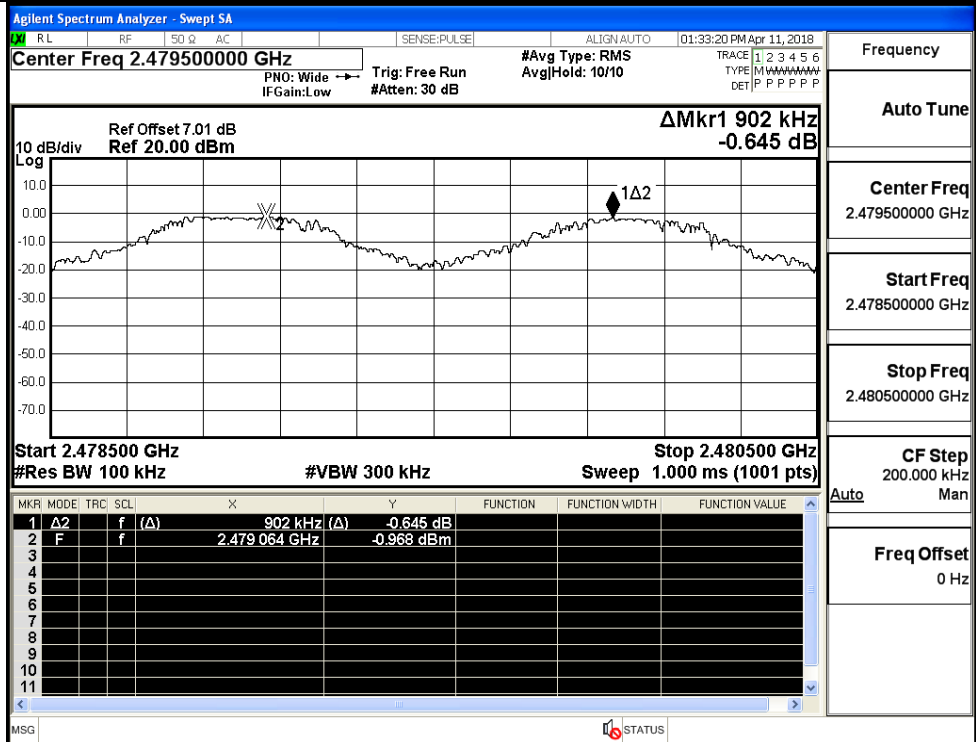
GFSK/LCH	Agilent Spectrum Analyzer - Swept SA	Center Freq 2.402500000 GHz PNO: Wide → Trig: Free Run Avg Type: Log-Pwr IFGain: Low #Atten: 30 dB AvgHold: 10/10	Frequency Auto Tune																																																																																								
	Ref Offset 7.01 dB Ref 20.00 dBm ΔMkr1 1.038 75 MHz 0.121 dB	10 dB/div Log	Center Freq 2.402500000 GHz																																																																																								
	Start 2.401500 GHz #Res BW 100 kHz	Stop 2.403500 GHz Sweep 1.067 ms (8001 pts)	Start Freq 2.401500000 GHz																																																																																								
	MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE	<table border="1" style="width: 100%; border-collapse: collapse; font-size: 8px;"> <tr> <td>1</td><td>Δ2</td><td>f (Δ)</td><td>1.038 75 MHz (Δ)</td><td>0.121 dB</td><td></td><td></td><td></td></tr> <tr> <td>2</td><td>F</td><td>f</td><td>2.401 961 75 GHz</td><td>0.158 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></tr> <tr><td>4</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></tr> <tr><td>6</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></tr> <tr><td>8</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></tr> <tr><td>10</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></tr> </table>	1	Δ2	f (Δ)	1.038 75 MHz (Δ)	0.121 dB				2	F	f	2.401 961 75 GHz	0.158 dBm				3								4								5								6								7								8								9								10								11								Stop Freq 2.403500000 GHz
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#VBW 300 kHz	CF Step 200.000 kHz Auto Man	Freq Offset 0 Hz																																																																																									
MSG	STATUS																																																																																										

GFSK/MCH



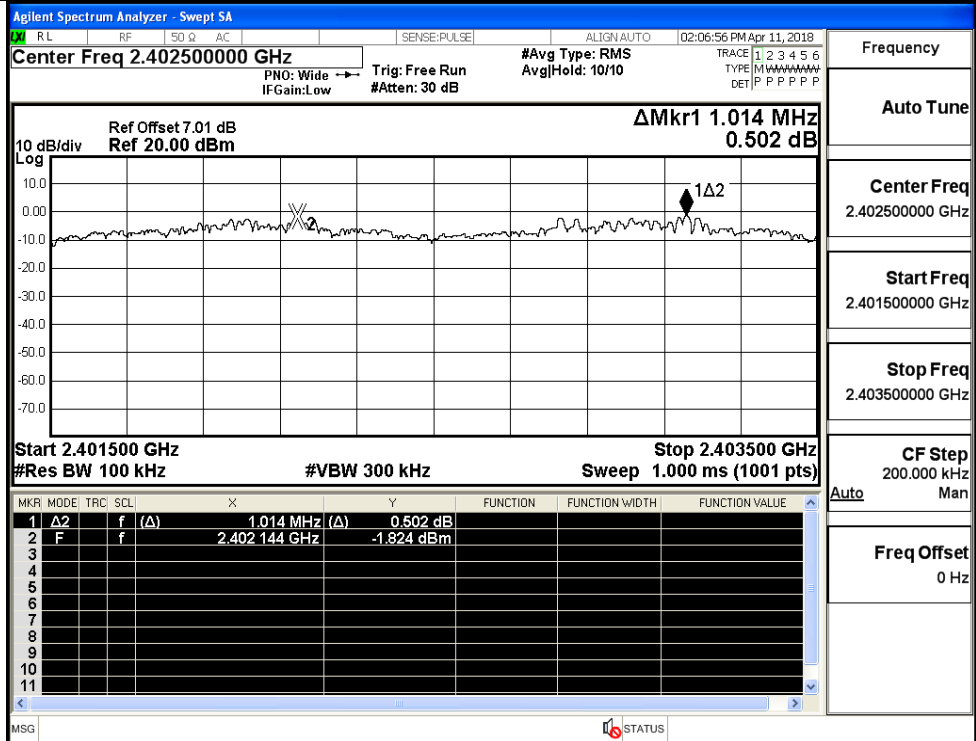
Frequency
Auto Tune
Center Freq
2.441500000 GHz
Start Freq
2.440500000 GHz
Stop Freq
2.442500000 GHz
CF Step
200.000 kHz
Auto Man
Freq Offset
0 Hz

GFSK/HCH

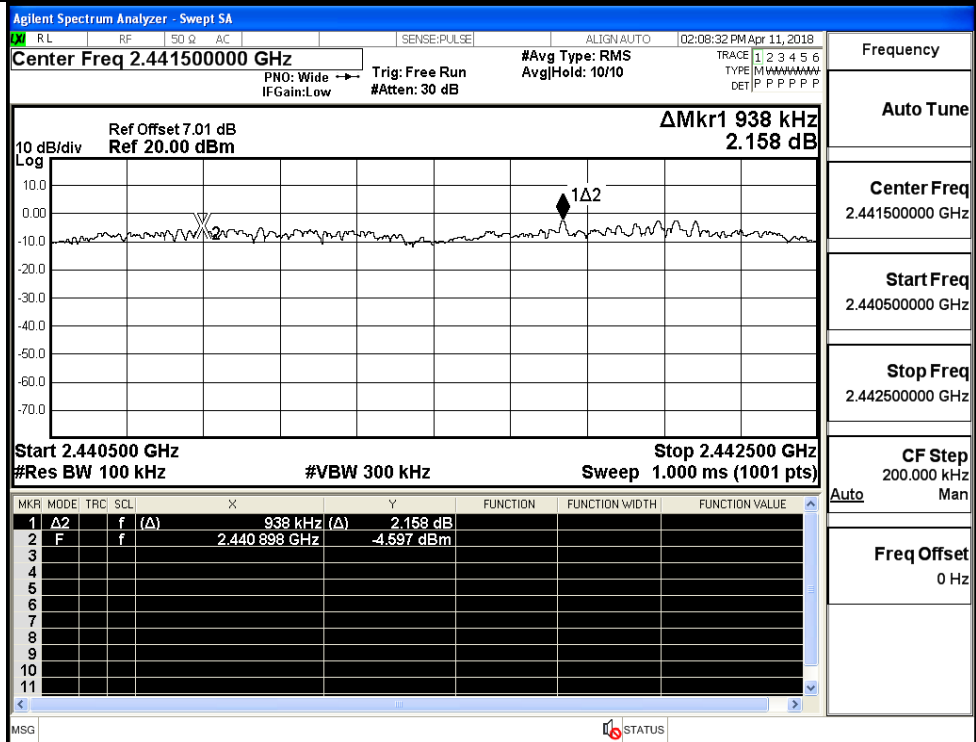


Frequency
Auto Tune
Center Freq
2.479500000 GHz
Start Freq
2.478500000 GHz
Stop Freq
2.480500000 GHz
CF Step
200.000 kHz
Auto Man
Freq Offset
0 Hz

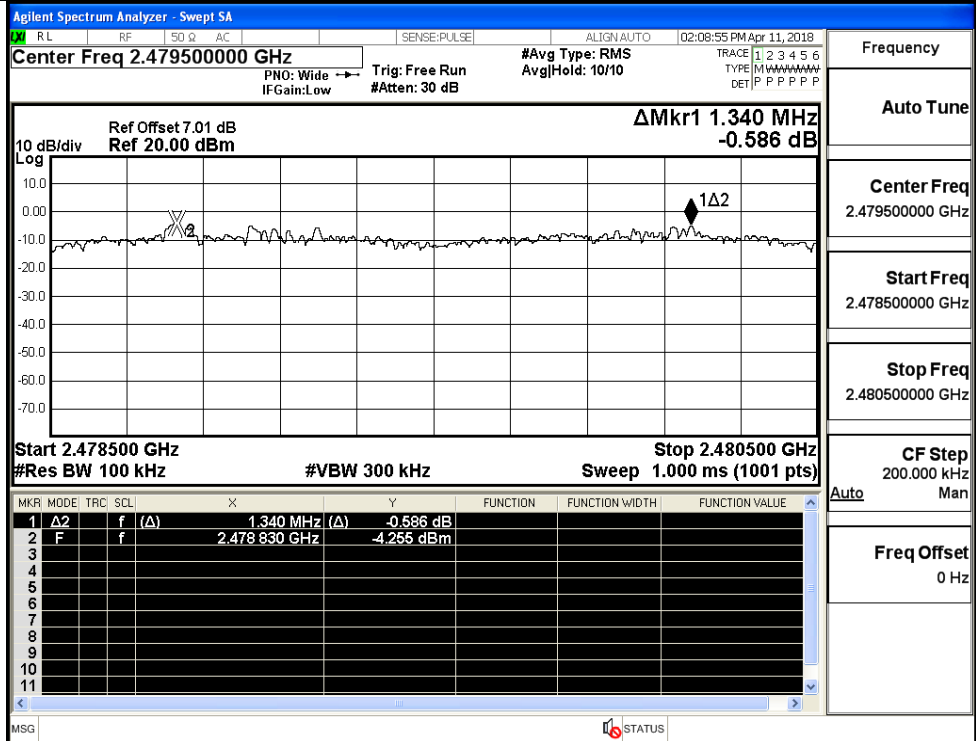
π/4DQPSK/LCH



π/4DQPSK/MCH

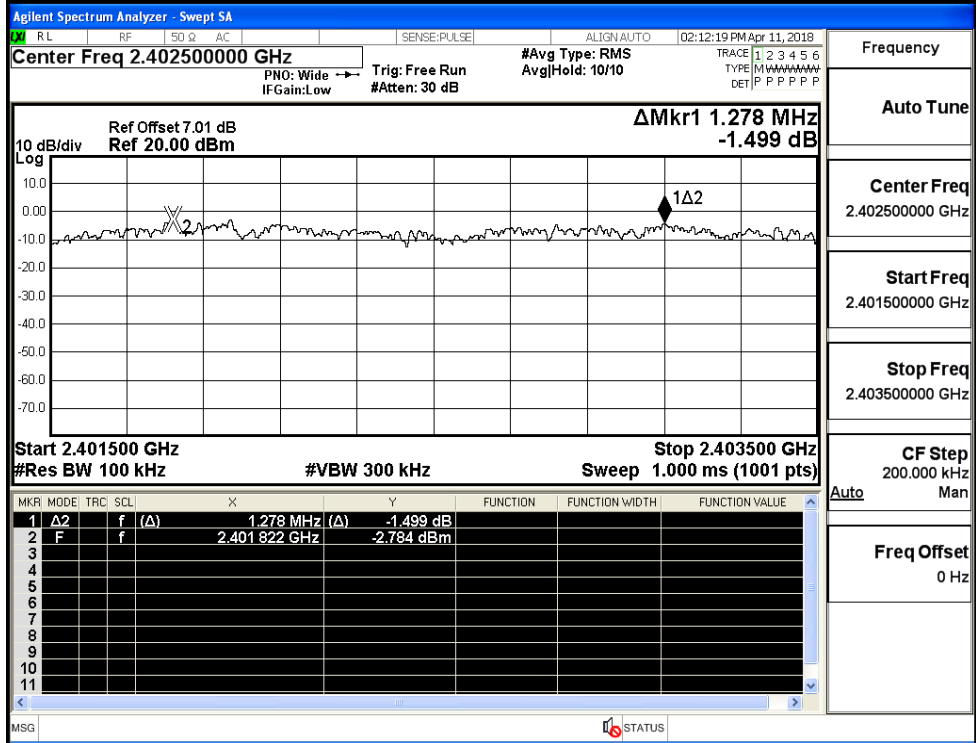


π/4DQPSK/HCH

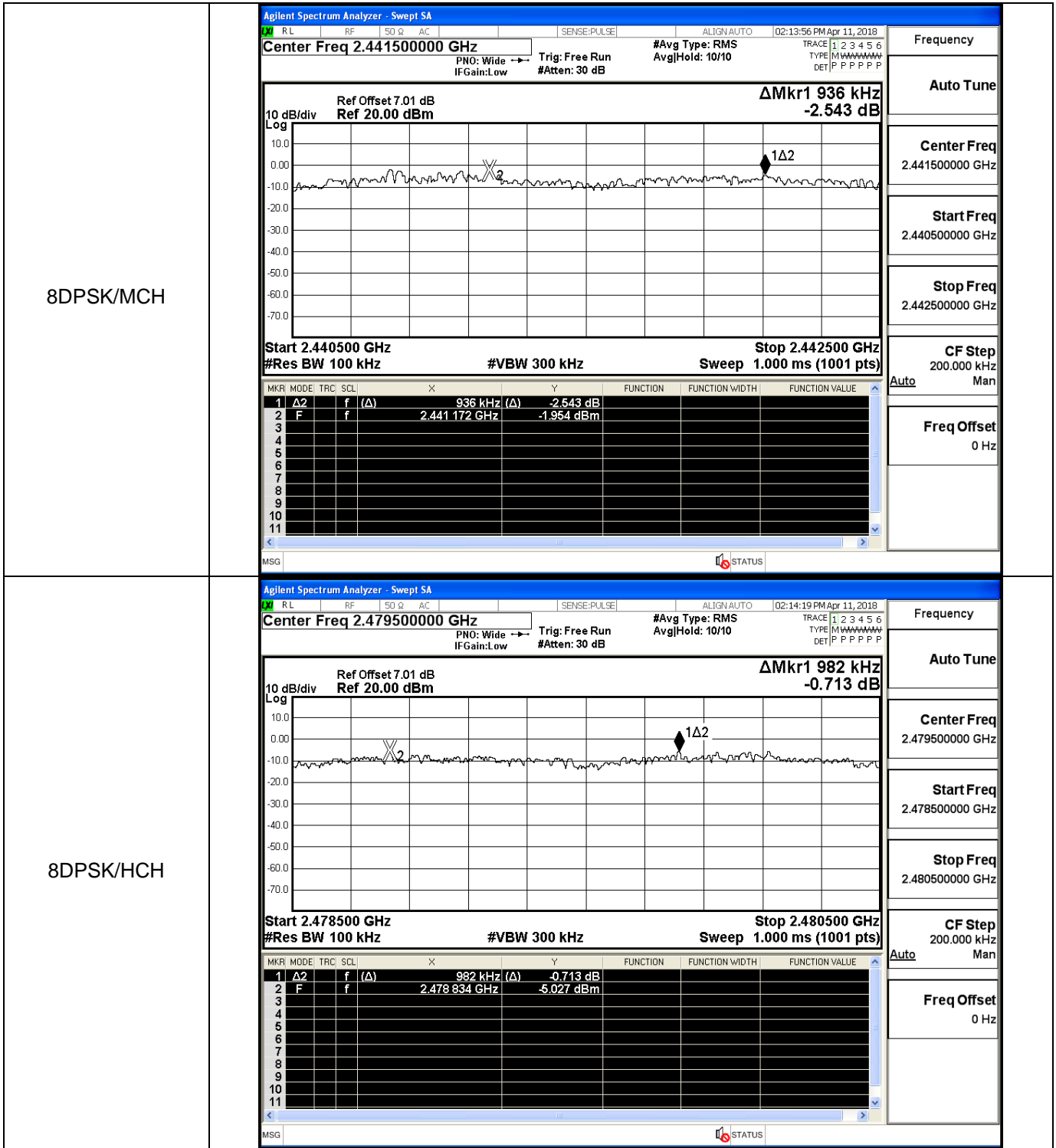


Frequency
Auto Tune
Center Freq
2.479500000 GHz
Start Freq
2.478500000 GHz
Stop Freq
2.480500000 GHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz

8DPSK/LCH



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

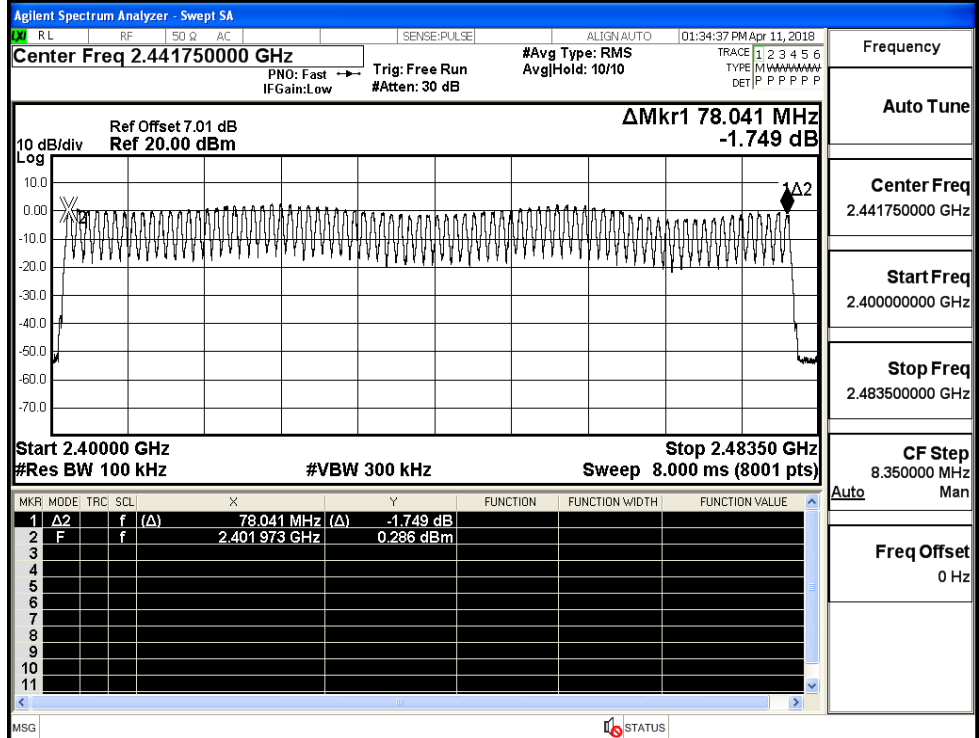


A.4 Hopping Channel Number

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



Frequency

Auto Tune

Center Freq
2.441750000 GHz

Start Freq
2.400000000 GHz

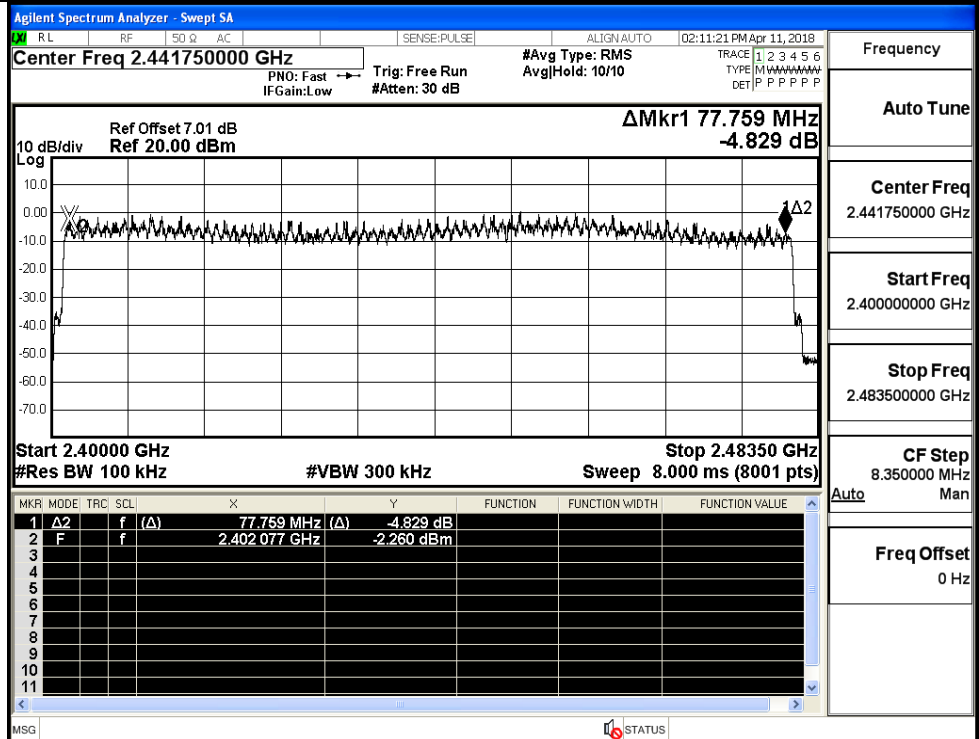
Stop Freq
2.483500000 GHz

CF Step
8.350000 MHz

Auto Man

Freq Offset
0 Hz

$\pi/4$ DQPSK/Hop



Frequency

Auto Tune

Center Freq
2.441750000 GHz

Start Freq
2.400000000 GHz

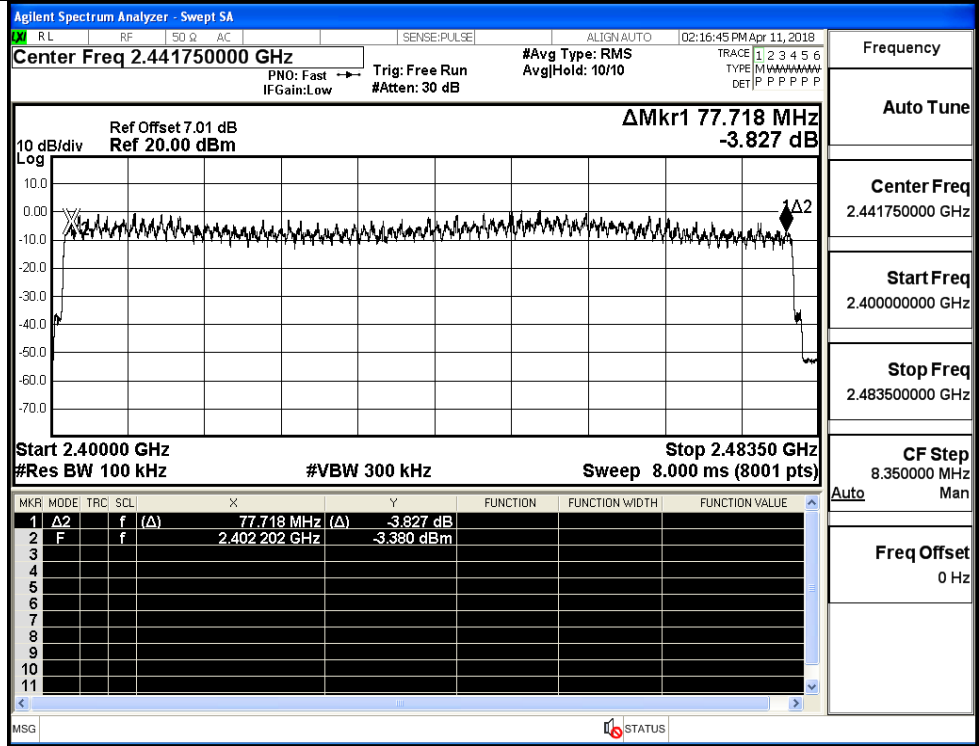
Stop Freq
2.483500000 GHz

CF Step
8.350000 MHz

Auto Man

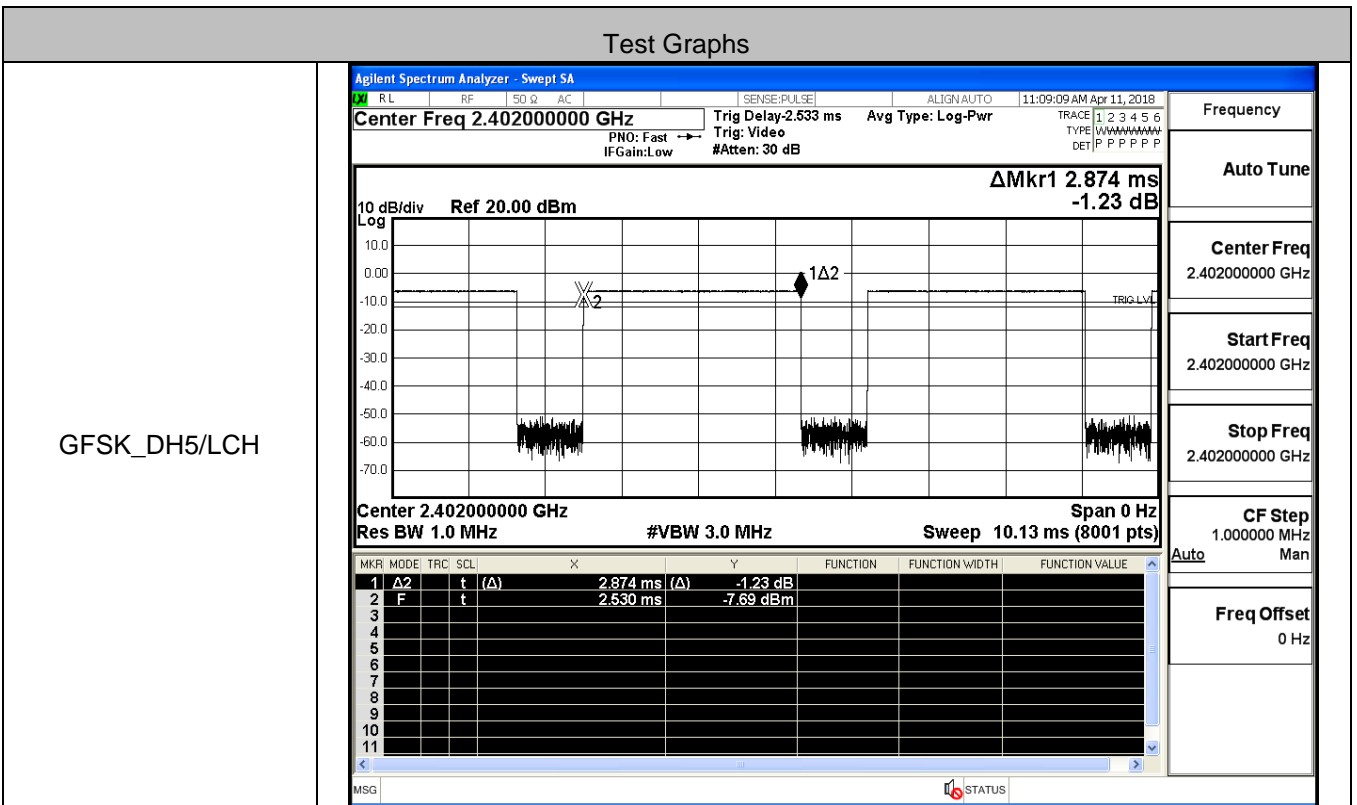
Freq Offset
0 Hz

8DPSK/Hop

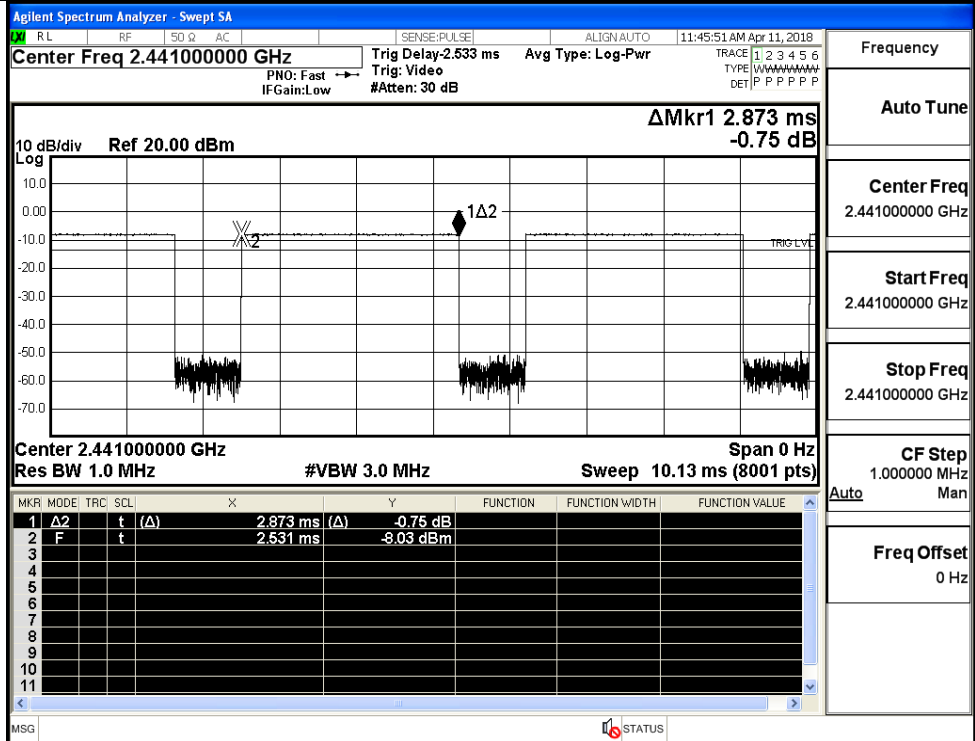


A.5 Dwell Time

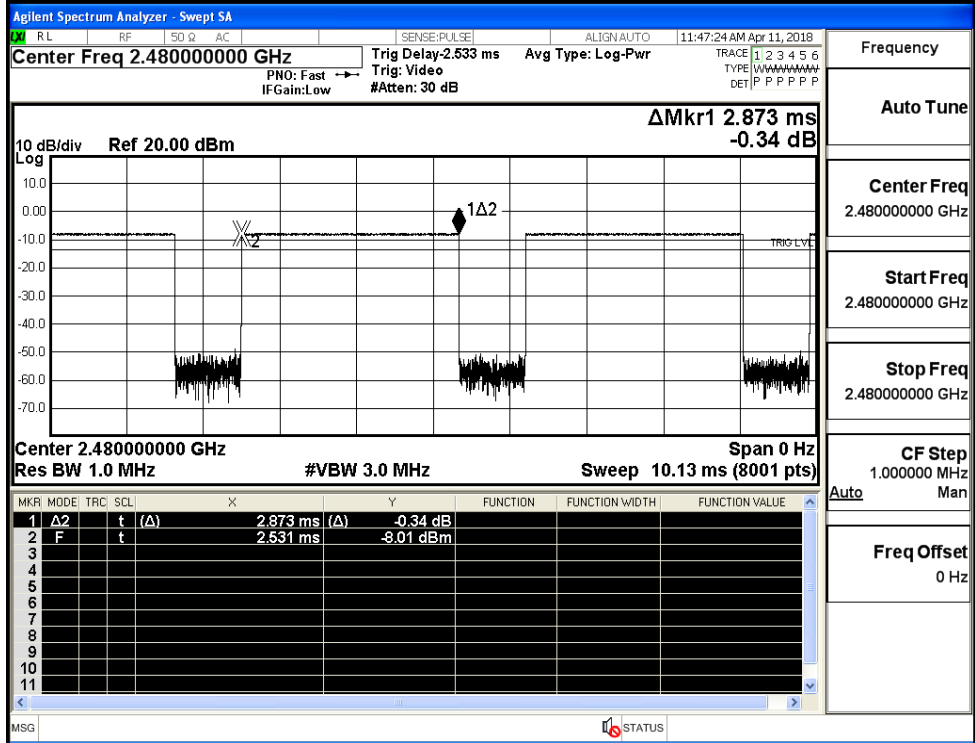
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.87	106.7	0.306	0.4	PASS
	DH5	MCH	2.87	106.7	0.306	0.4	PASS
	DH5	HCH	2.87	106.7	0.306	0.4	PASS
π/4DQPSK	2DH5	LCH	2.87	106.7	0.307	0.4	PASS
	2DH5	MCH	2.87	106.7	0.307	0.4	PASS
	2DH5	HCH	2.87	106.7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



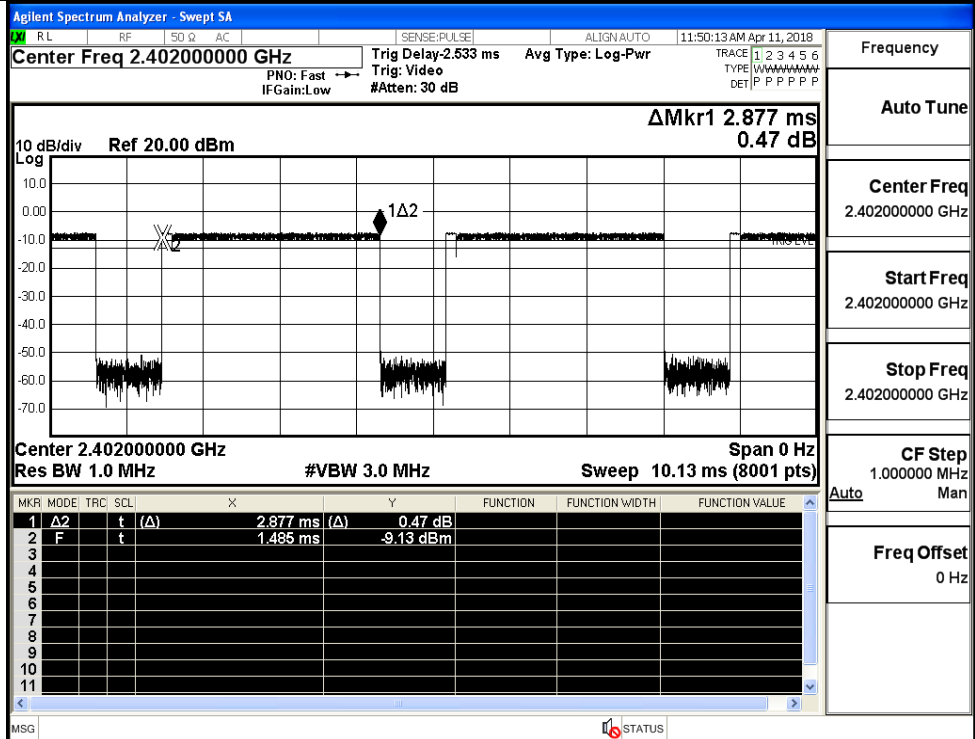
GFSK_DH5/MCH



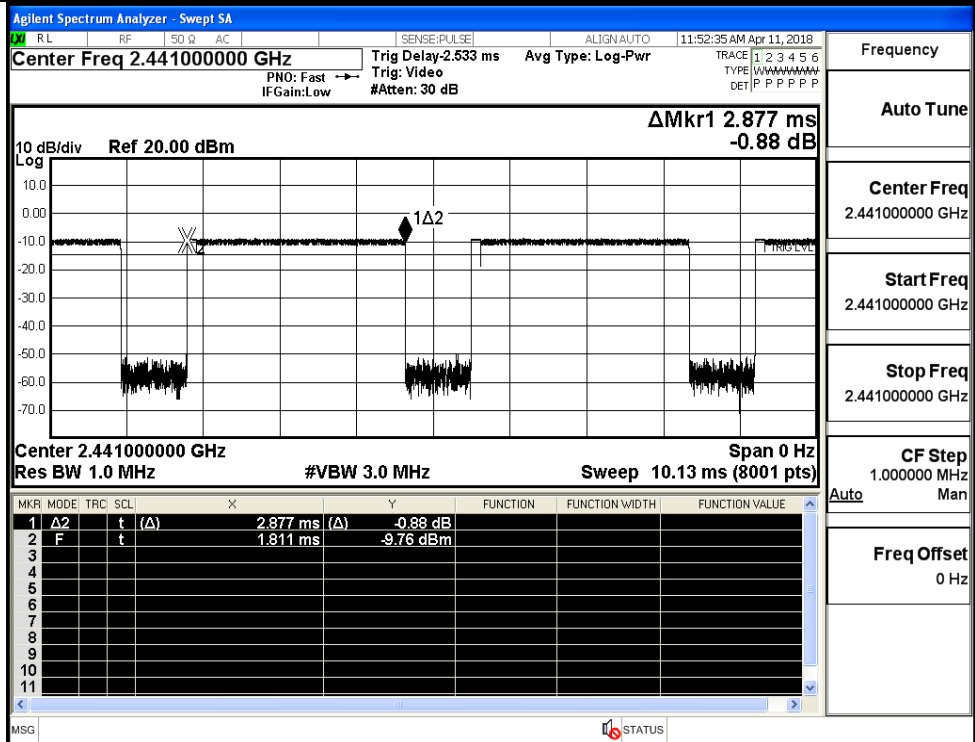
GFSK_DH5/HCH



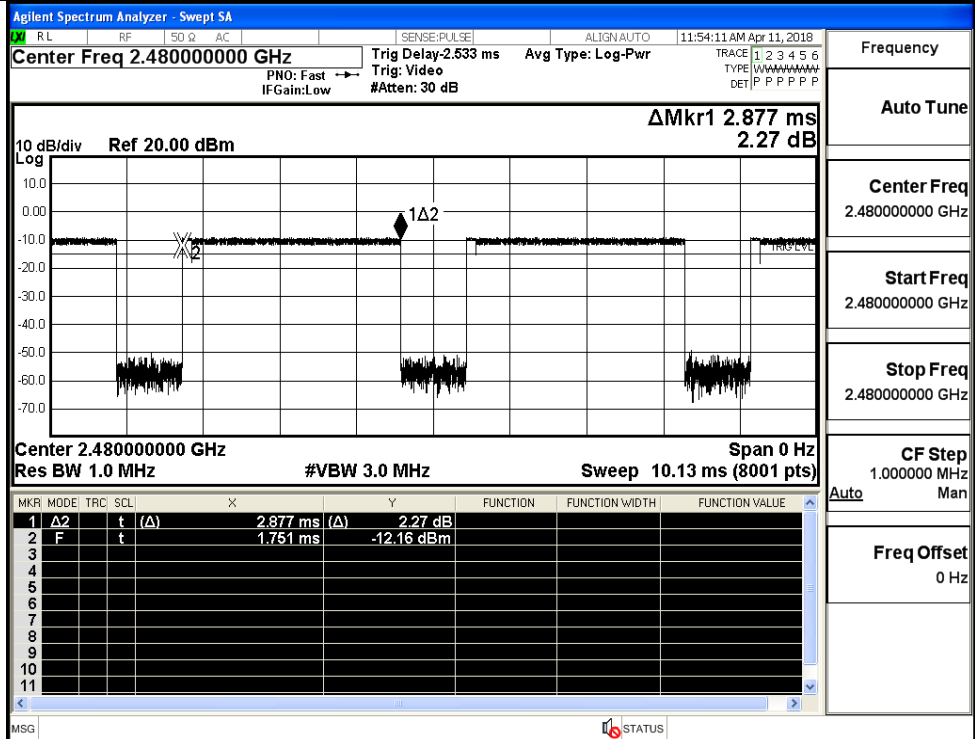
$\pi/4$ DQPSK
_2DH5/LCH



$\pi/4$ DQPSK
_2DH5/MCH

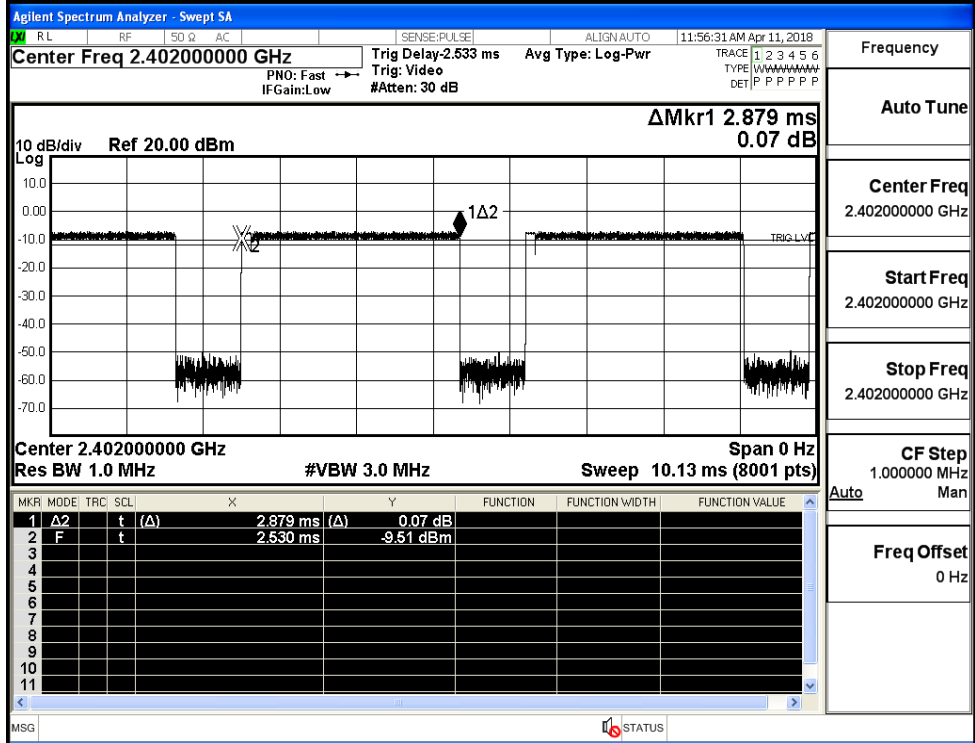


$\pi/4$ DQPSK
_2DH5/HCH



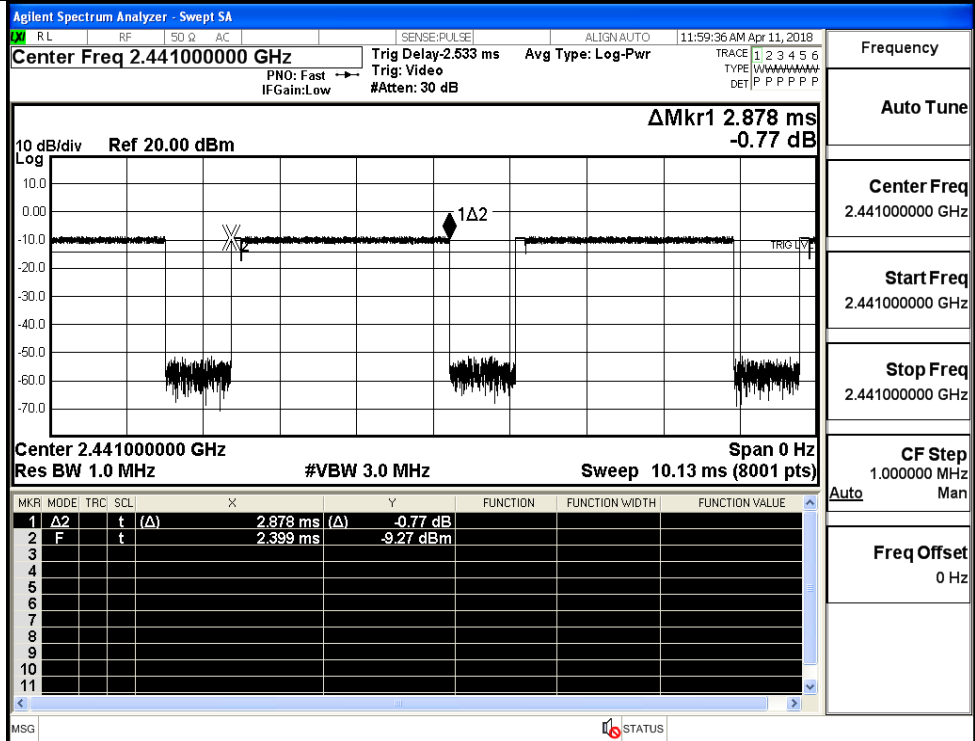
Frequency	2.48000000 GHz
Auto Tune	
Center Freq	2.48000000 GHz
Start Freq	2.48000000 GHz
Stop Freq	2.48000000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

8DPSK_3DH5/LCH

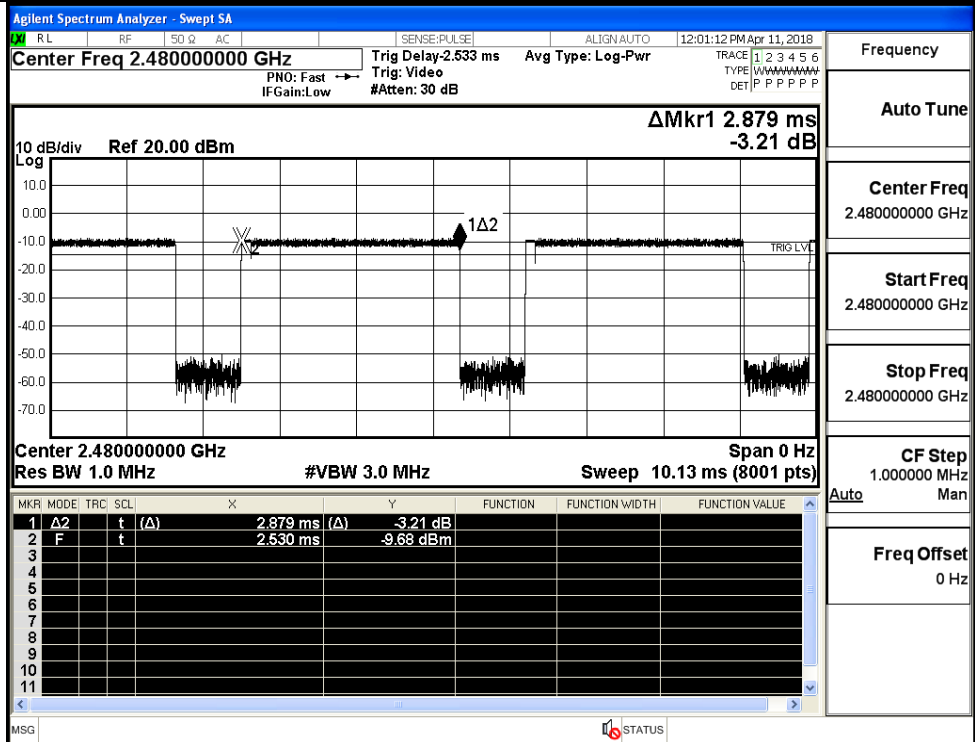


Frequency	2.40200000 GHz
Auto Tune	
Center Freq	2.40200000 GHz
Start Freq	2.40200000 GHz
Stop Freq	2.40200000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

8DPSK_3DH5/MCH



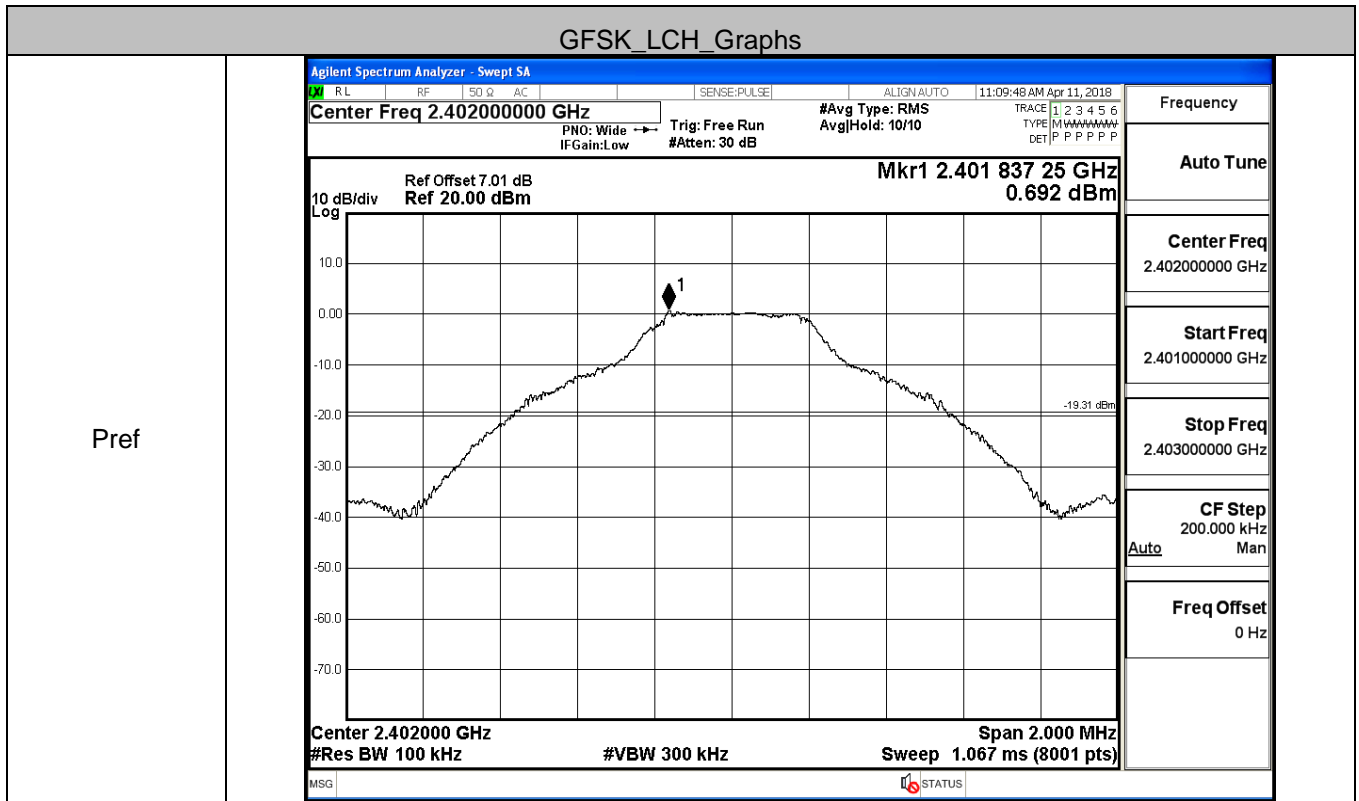
8DPSK_3DH5/HCH

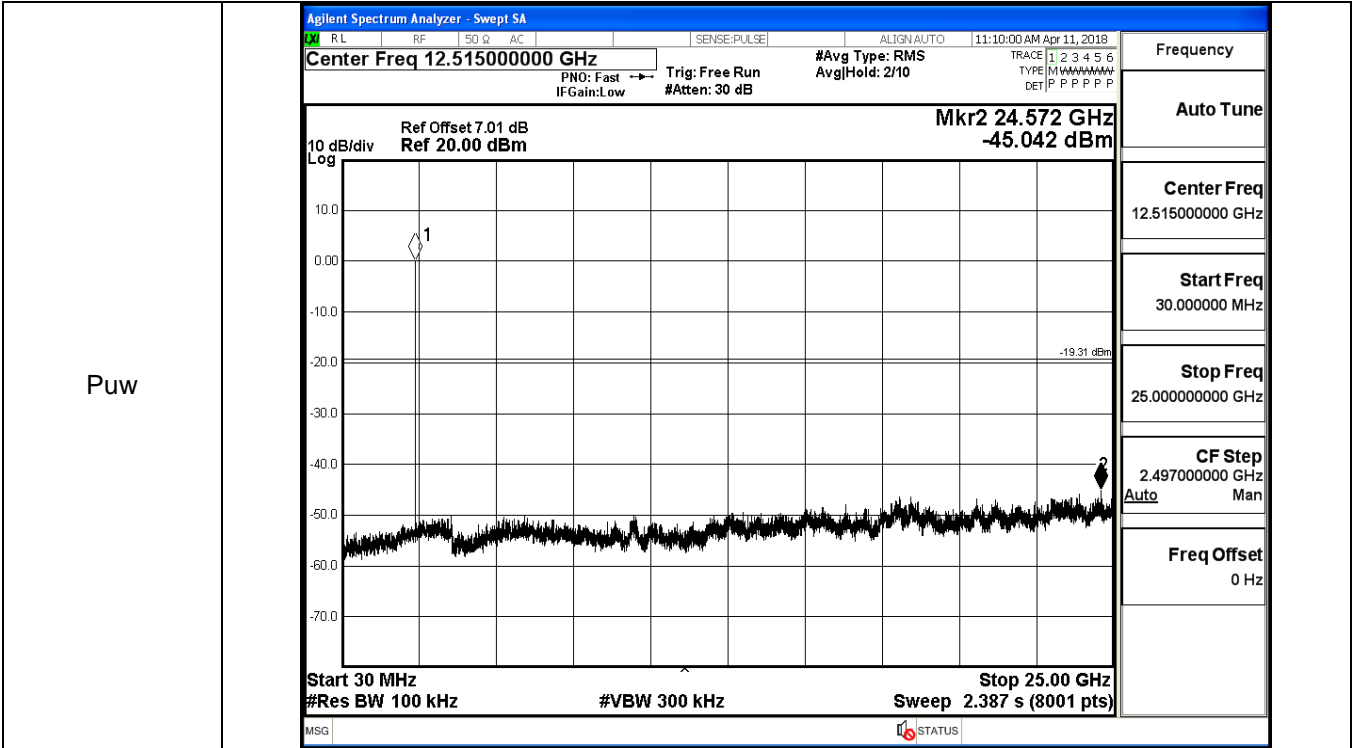


A.6 RF Conducted Spurious Emissions

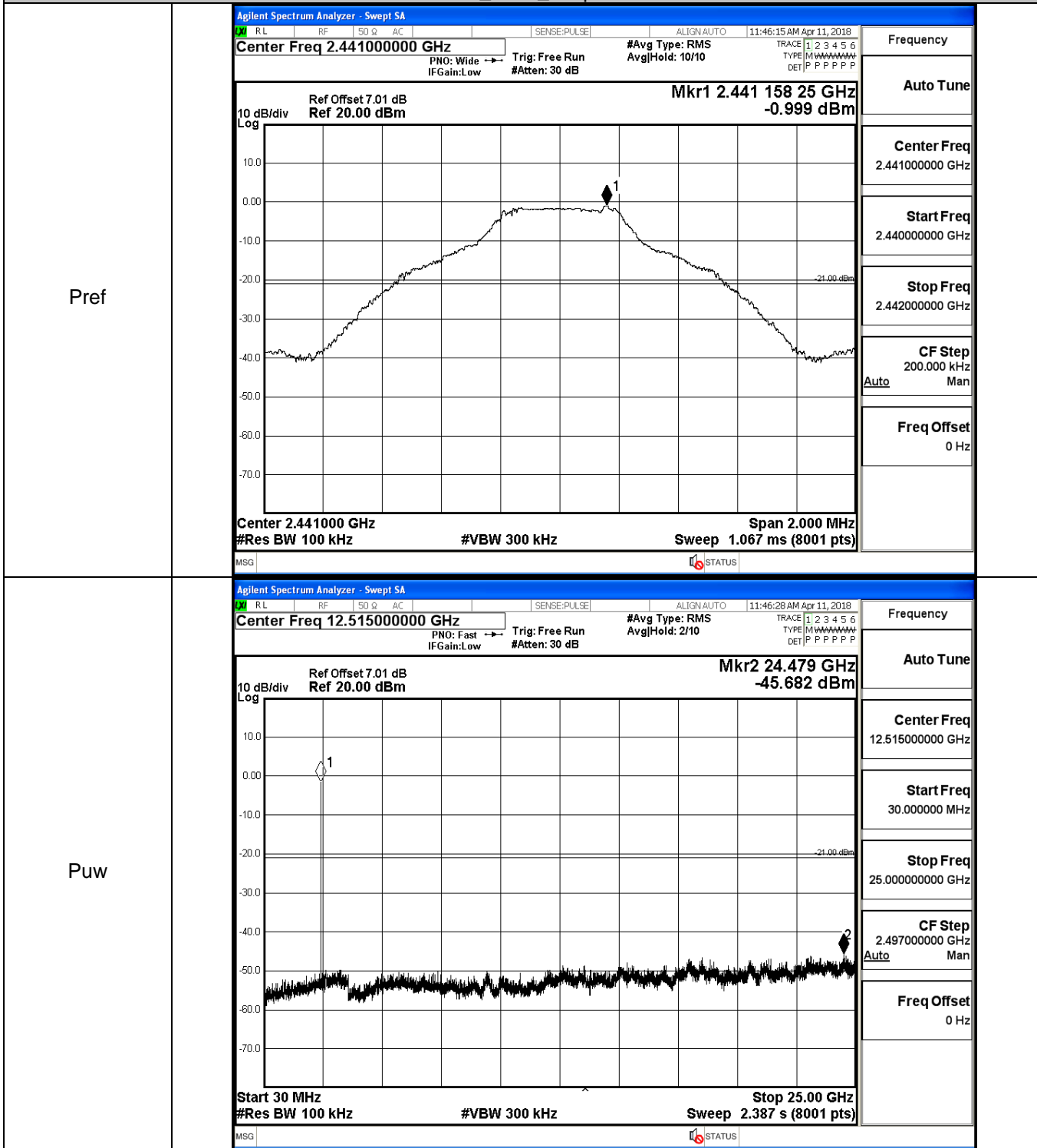
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.692	-45.042	-19.308	PASS
	MCH	-0.999	-45.682	-20.999	PASS
	HCH	-1.127	-45.946	-21.127	PASS
π /4DQPSK	LCH	-0.721	-44.887	-20.721	PASS
	MCH	-2.201	-45.519	-22.201	PASS
	HCH	-2.262	-45.582	-22.262	PASS
8DPSK	LCH	-0.615	-46.214	-20.615	PASS
	MCH	-2.097	-46.701	-22.097	PASS
	HCH	-2.604	-45.698	-22.604	PASS

GFSK_LCH_Graphs



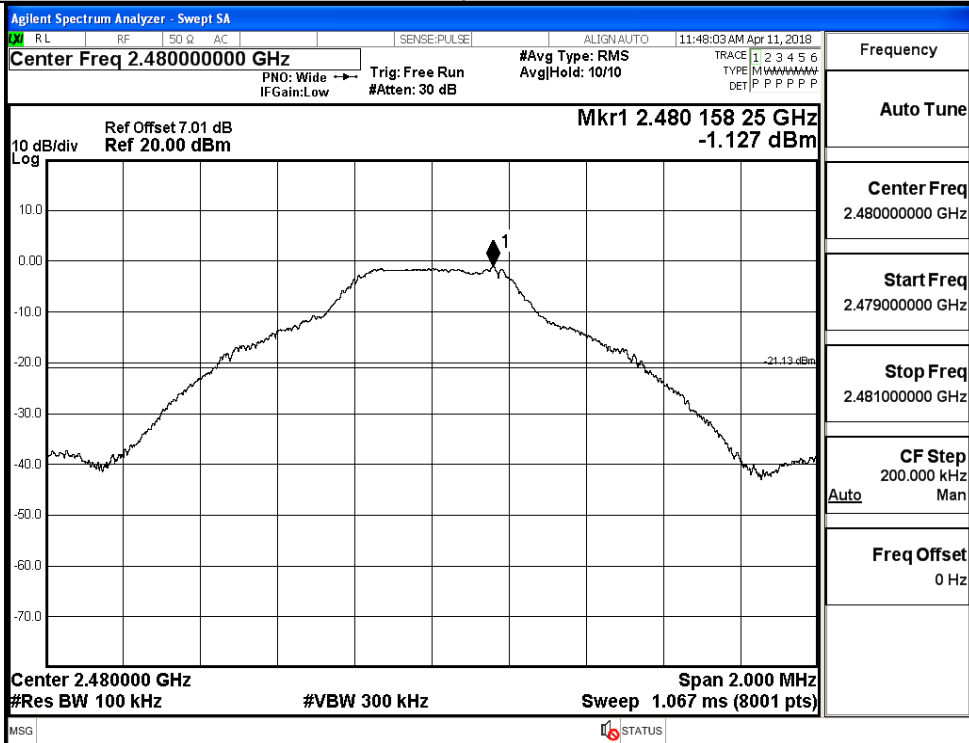


GFSK_MCH_Graphs

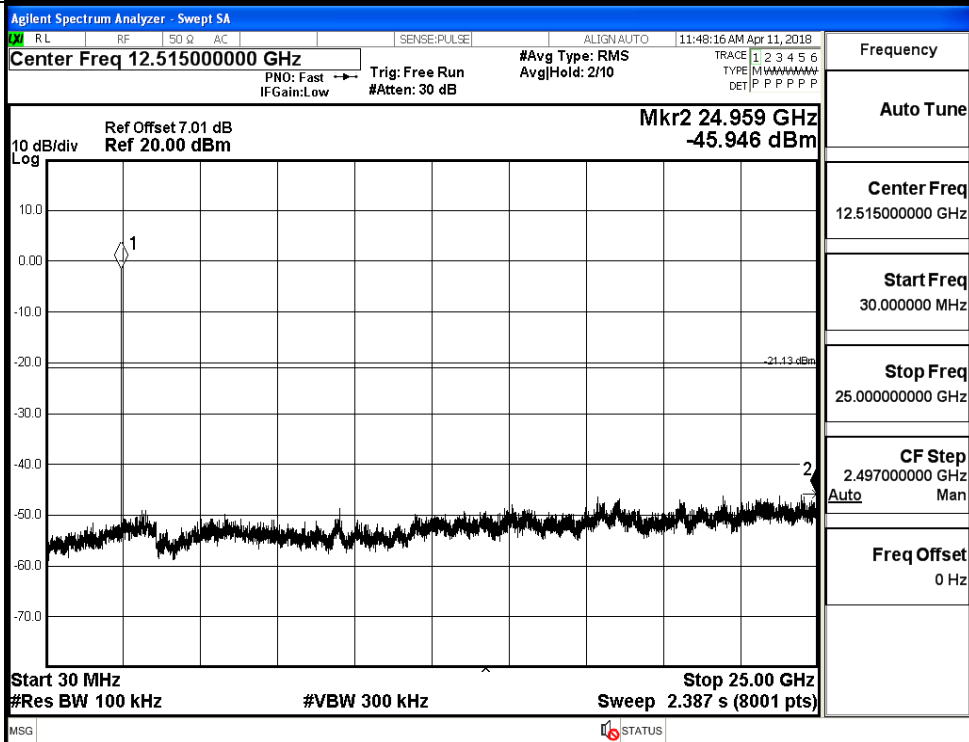


GFSK_HCH_Graphs

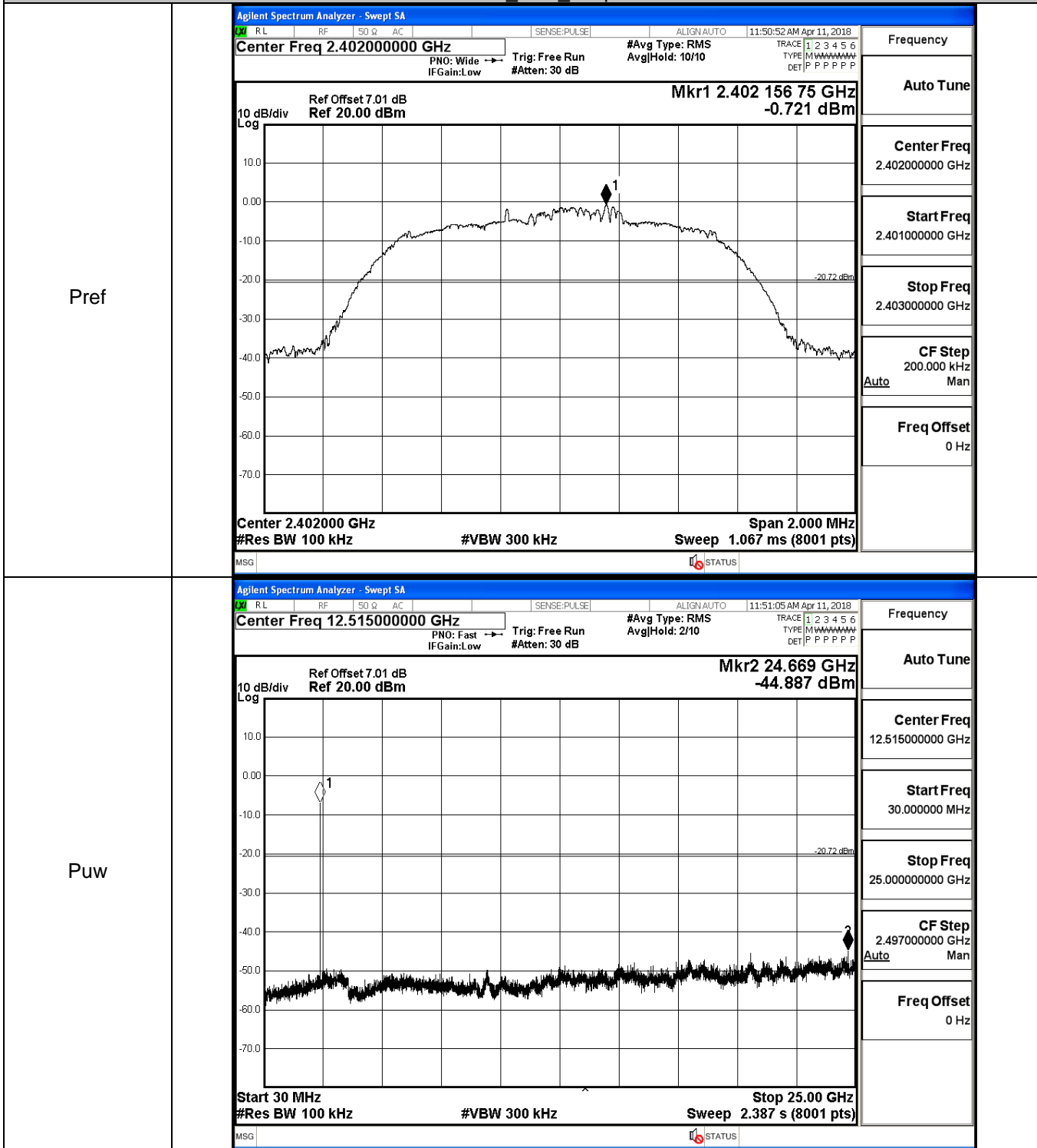
Pref



Puw

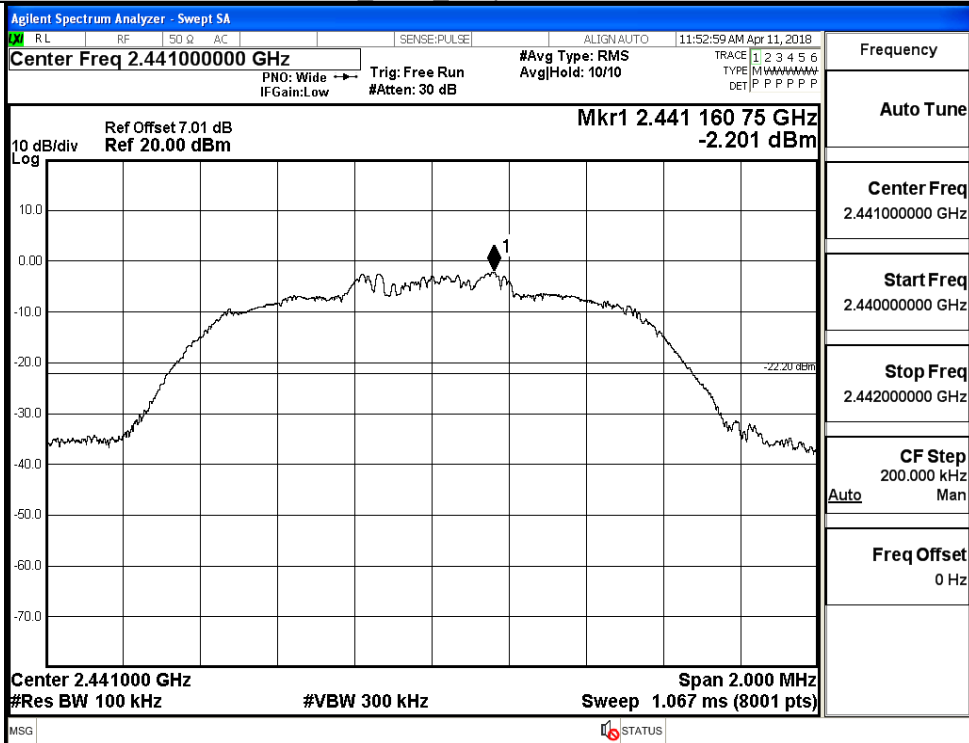


$\pi/4$ DQPSK_LCH_Graphs



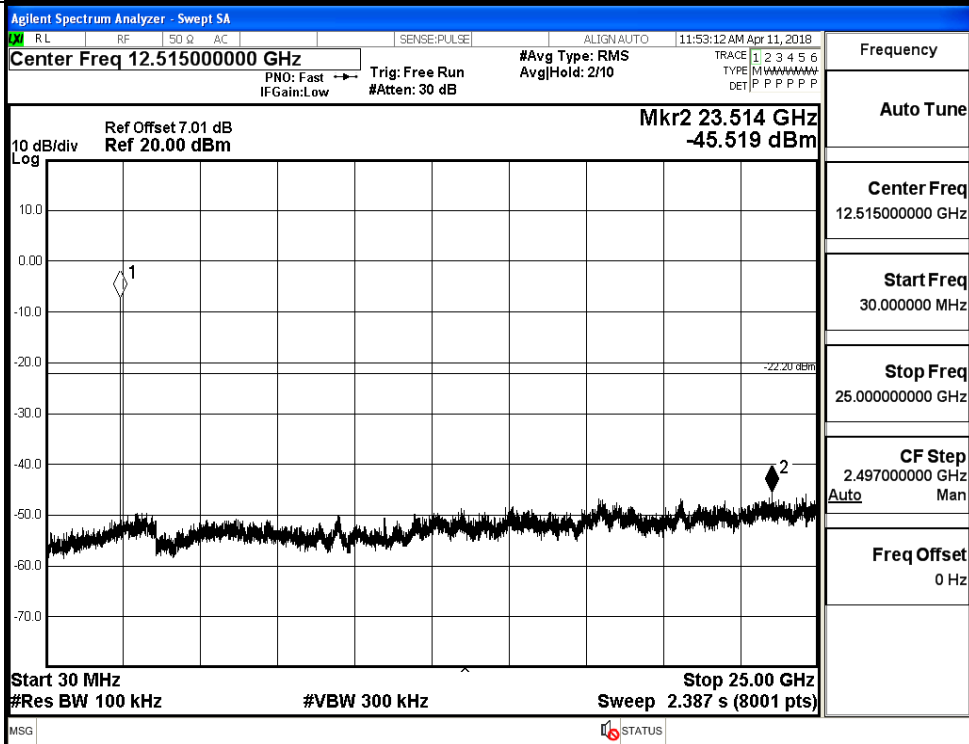
π /4DQPSK_MCH_Graphs

Pref



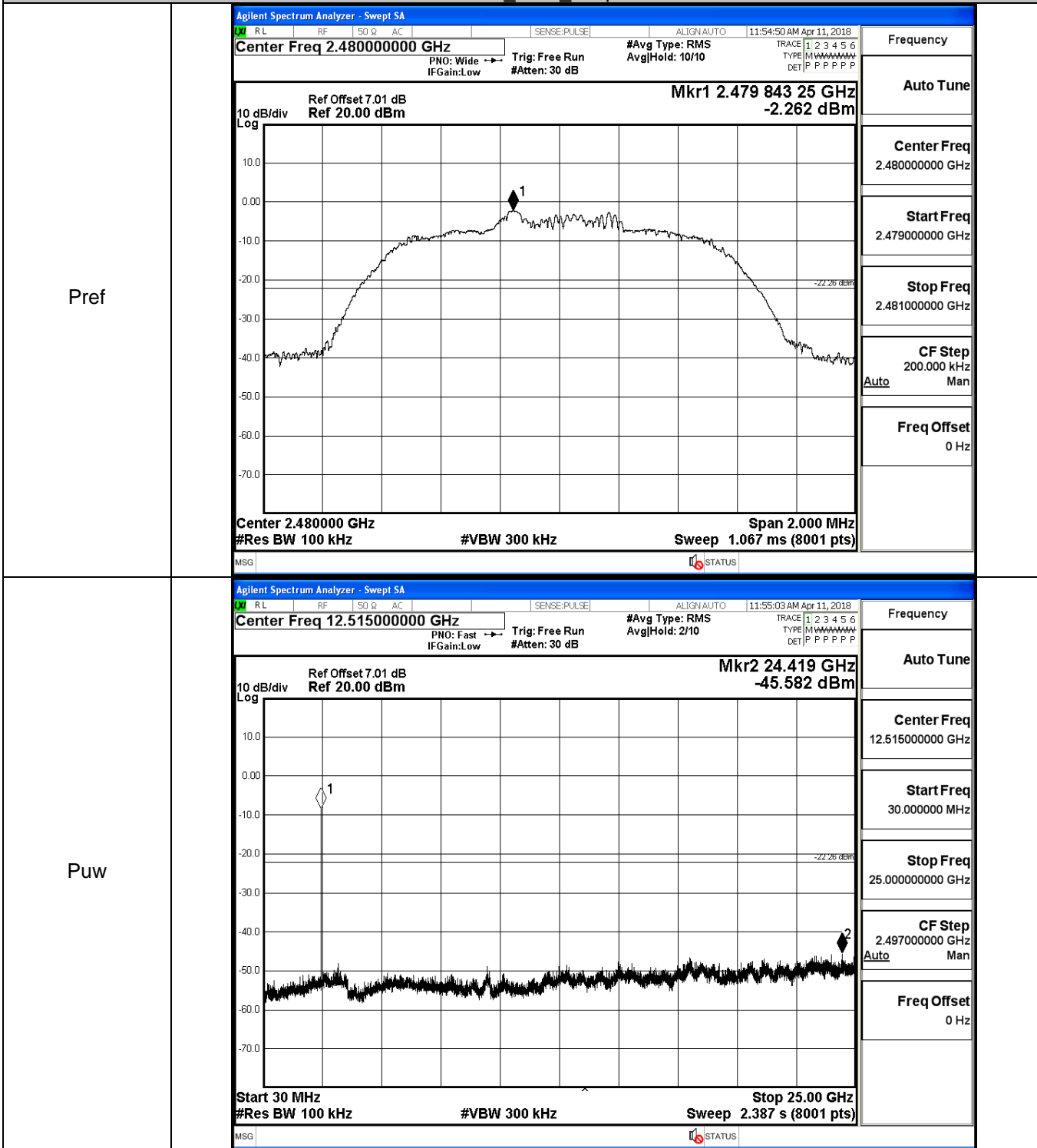
Frequency
Auto Tune
Center Freq 2.441000000 GHz
Start Freq 2.440000000 GHz
Stop Freq 2.442000000 GHz
CF Step 200.000 kHz Auto Man
Freq Offset 0 Hz

Puw



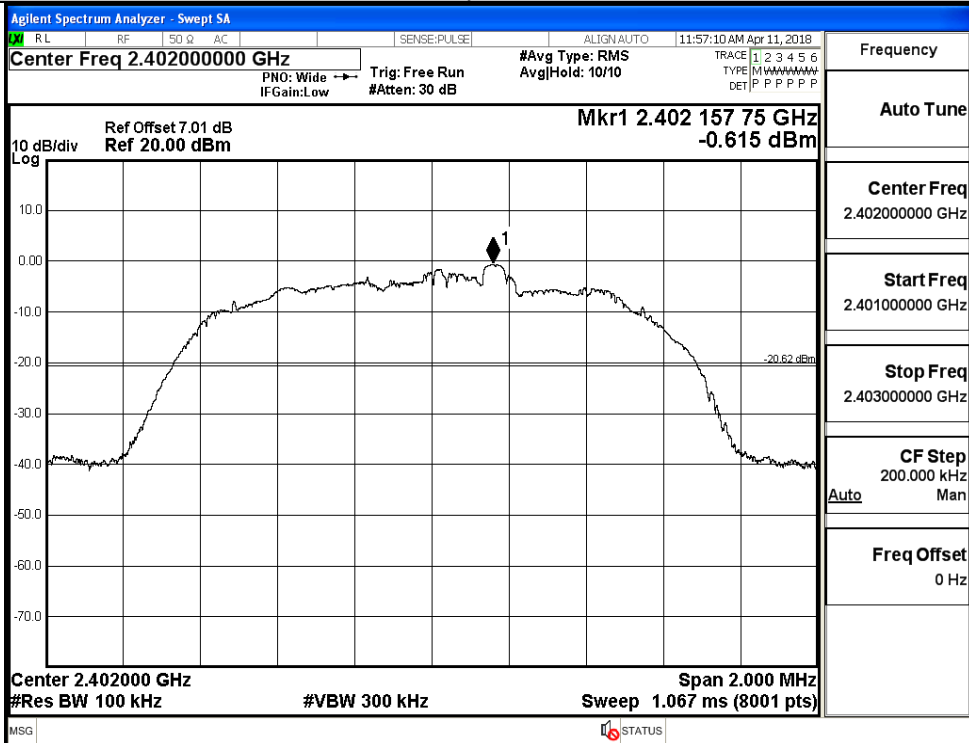
Frequency
Auto Tune
Center Freq 12.515000000 GHz
Start Freq 30.000000 MHz
Stop Freq 25.000000000 GHz
CF Step 2.497000000 GHz Auto Man
Freq Offset 0 Hz

$\pi/4$ DQPSK_HCH_Graphs

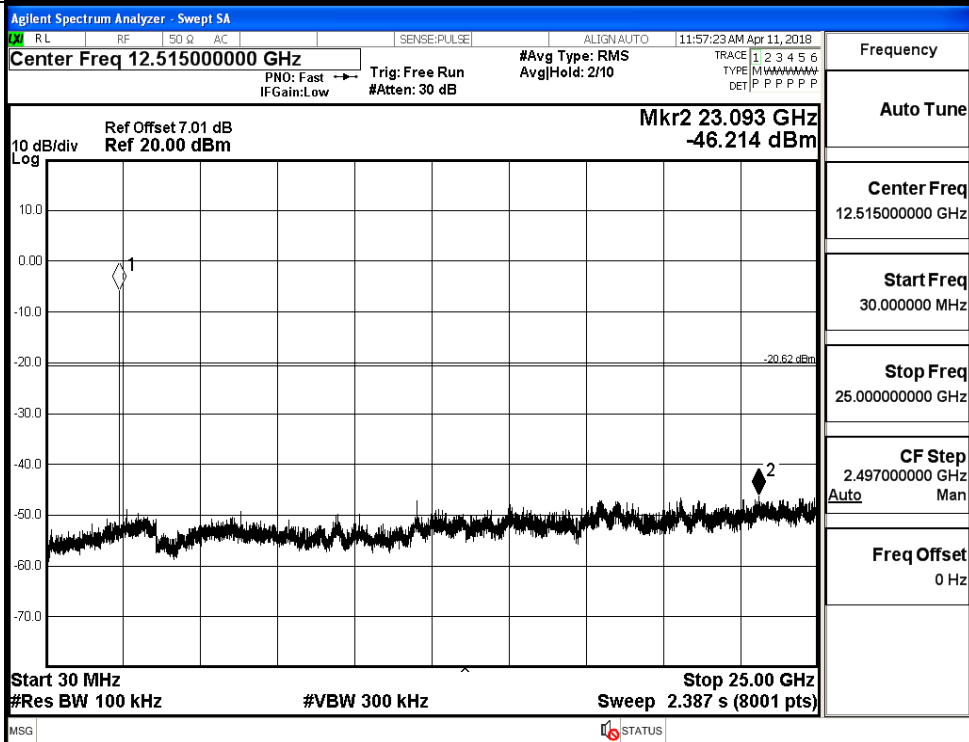


8DPSK_LCH_Graphs

Pref

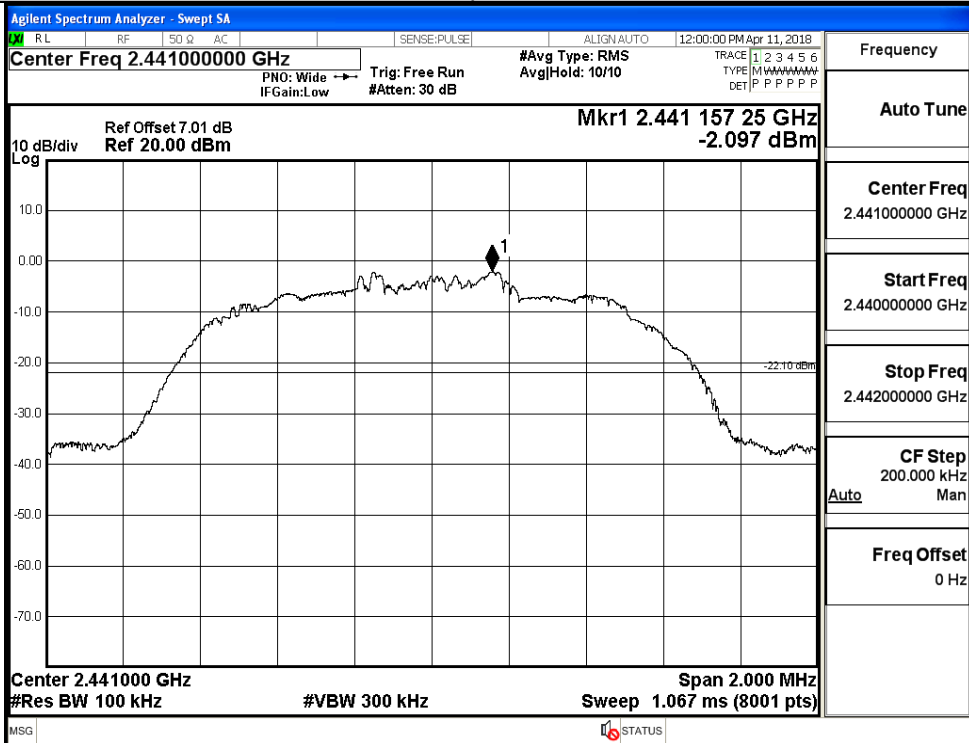


Puw

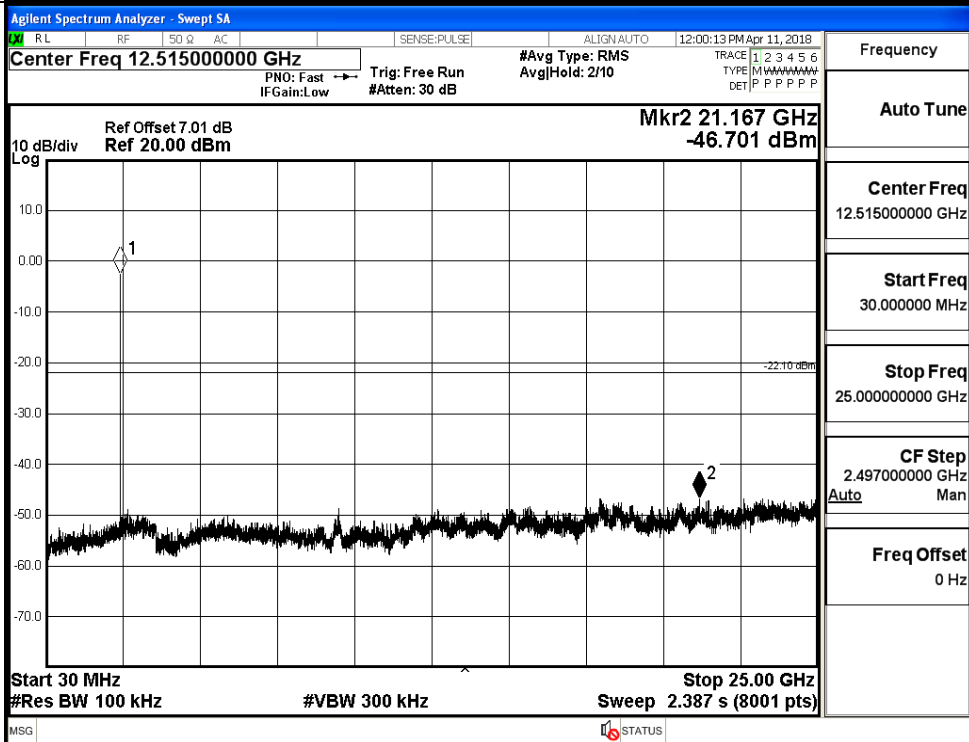


8DPSK_MCH_Graphs

Pref

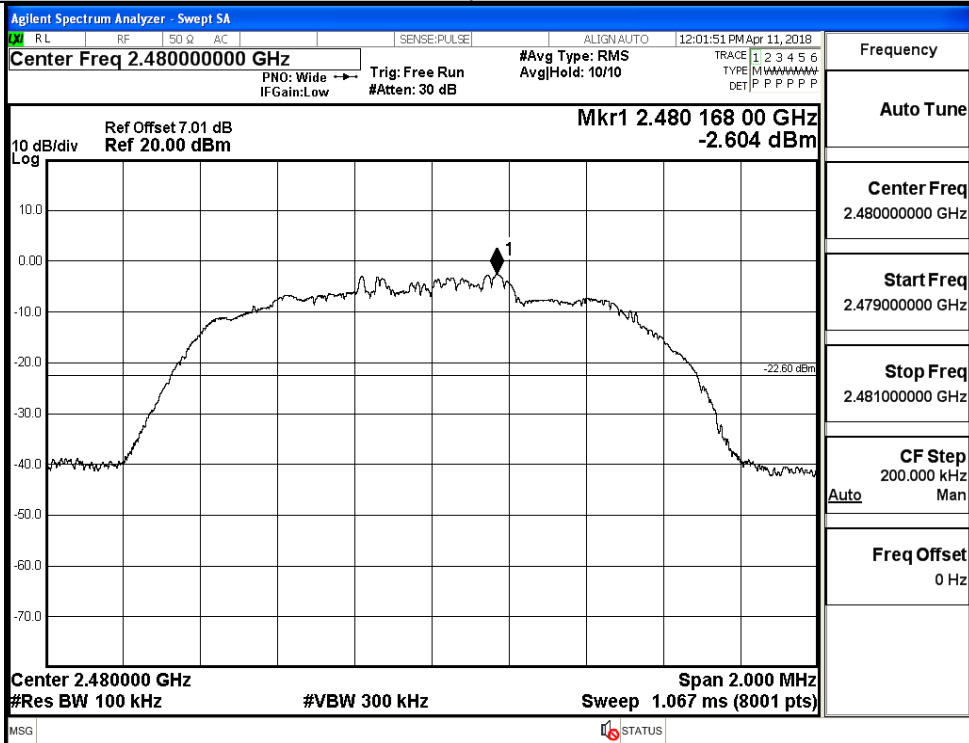


Puw

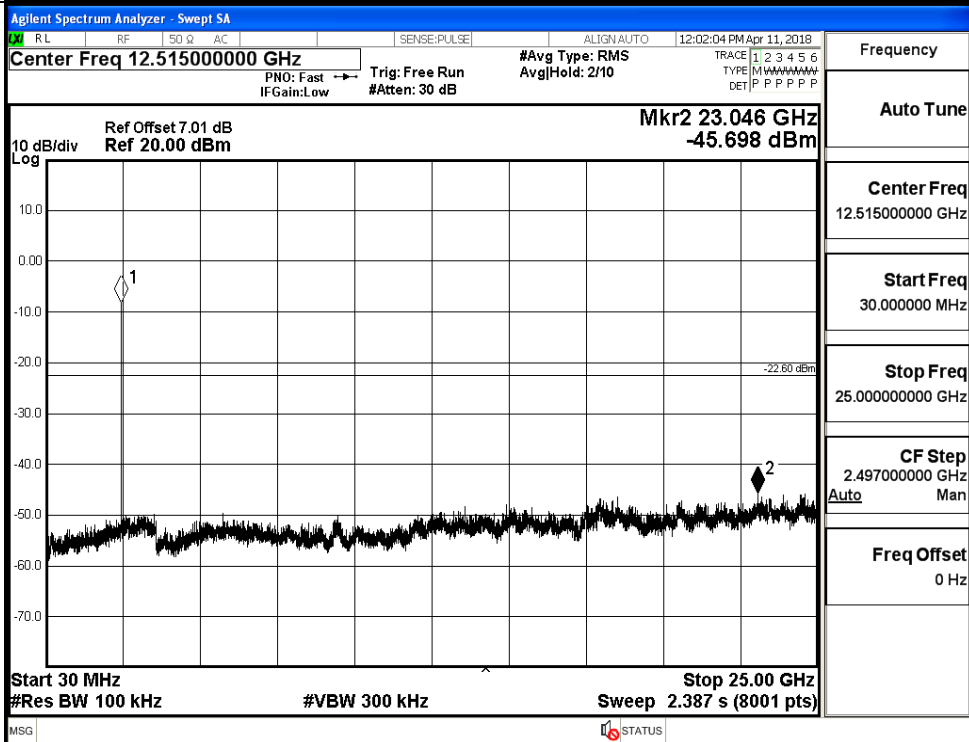


8DPSK_HCH_Graphs

Pref



Puw

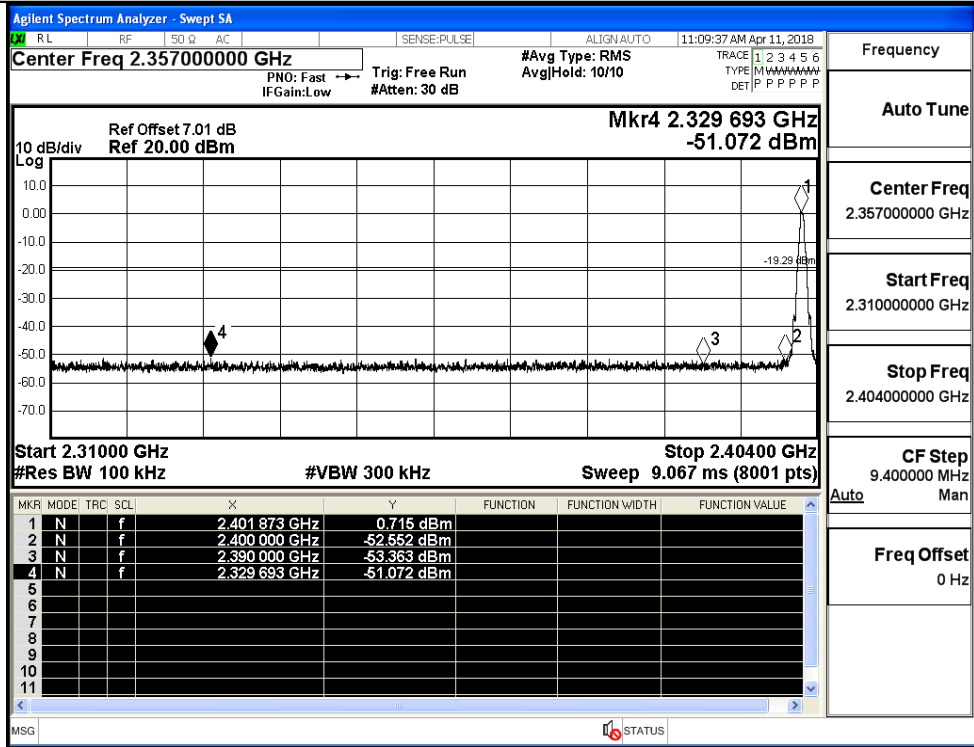


A.7 Band-edge for RF Conducted Emissions

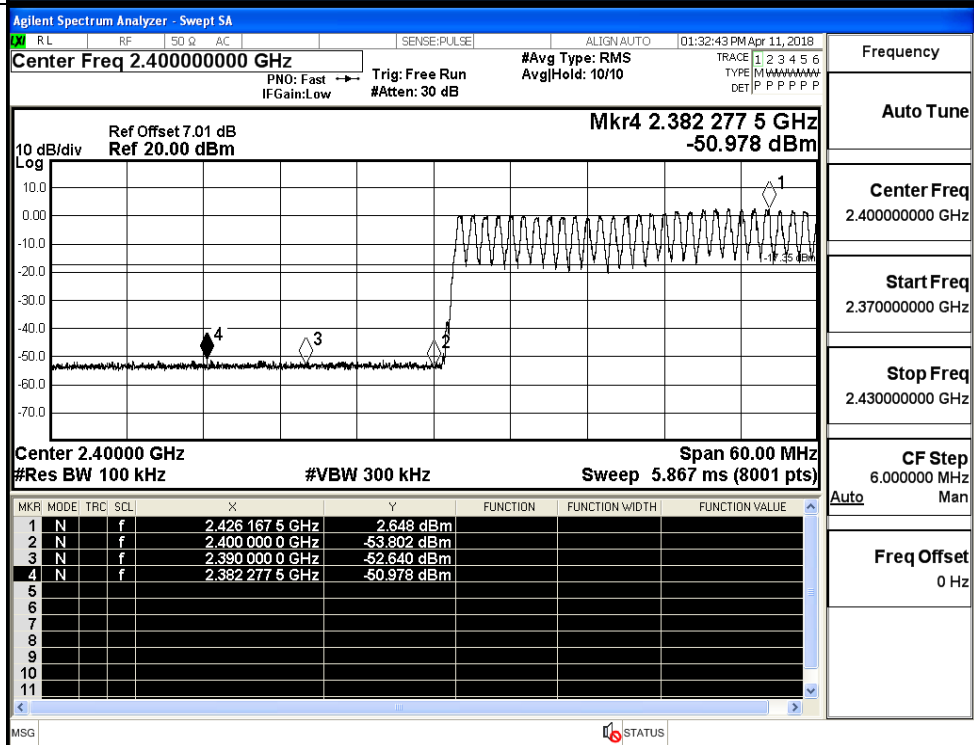
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	0.715	Off	-51.072	-19.29	PASS
			2.648	On	-50.978	-17.35	PASS
	HCH	2480	-1.001	Off	-50.837	-21	PASS
			2.038	On	-50.851	-17.96	PASS
$\pi/4$ DQPSK	LCH	2402	-0.578	Off	-50.982	-20.58	PASS
			-0.911	On	-50.110	-20.91	PASS
	HCH	2480	-3.276	Off	-50.649	-23.28	PASS
			0.215	On	-50.481	-19.79	PASS
8DPSK	LCH	2402	-0.856	Off	-51.111	-20.86	PASS
			-0.818	On	-50.740	-20.82	PASS
	HCH	2480	-2.448	Off	-50.378	-22.45	PASS
			0.291	On	-50.343	-19.71	PASS

Test Graphs

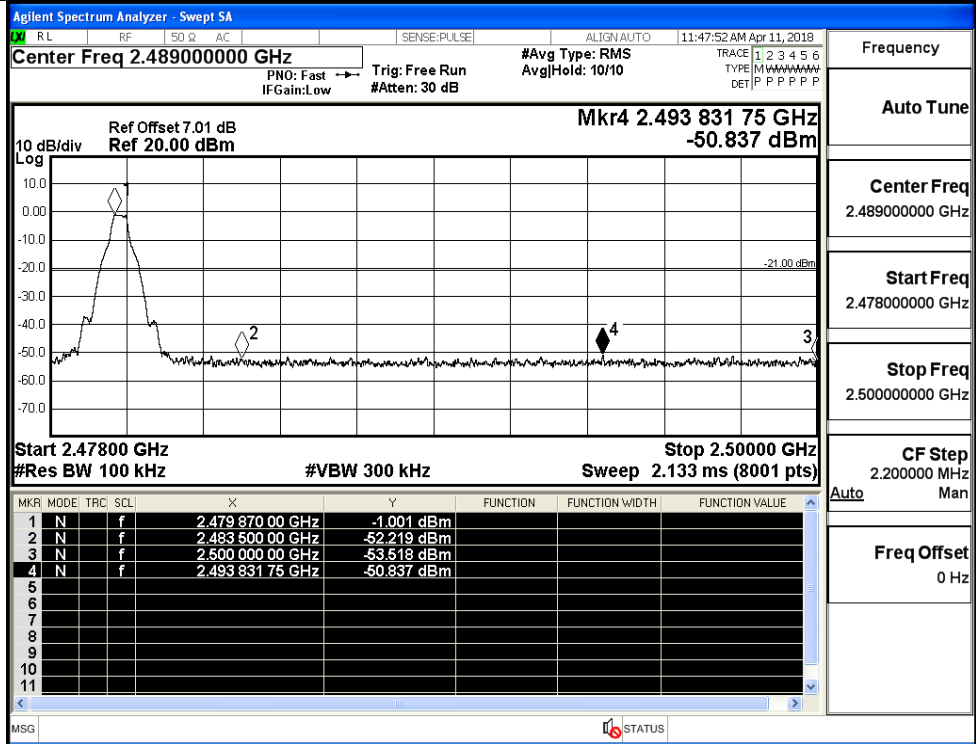
GFSK/LCH/No Hop



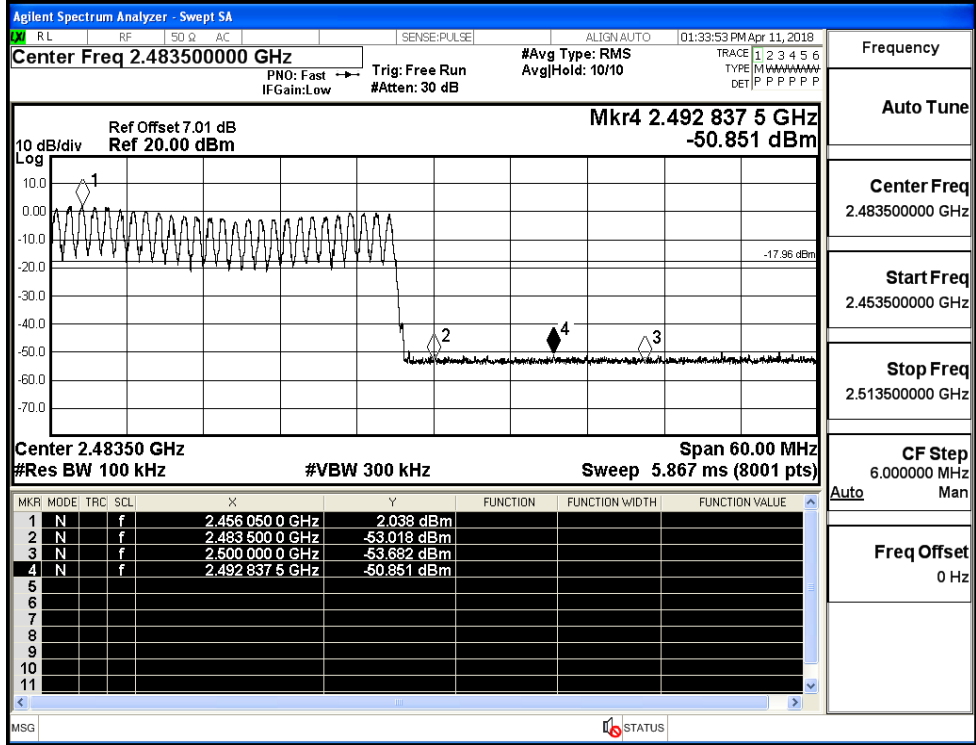
GFSK/LCH/Hop



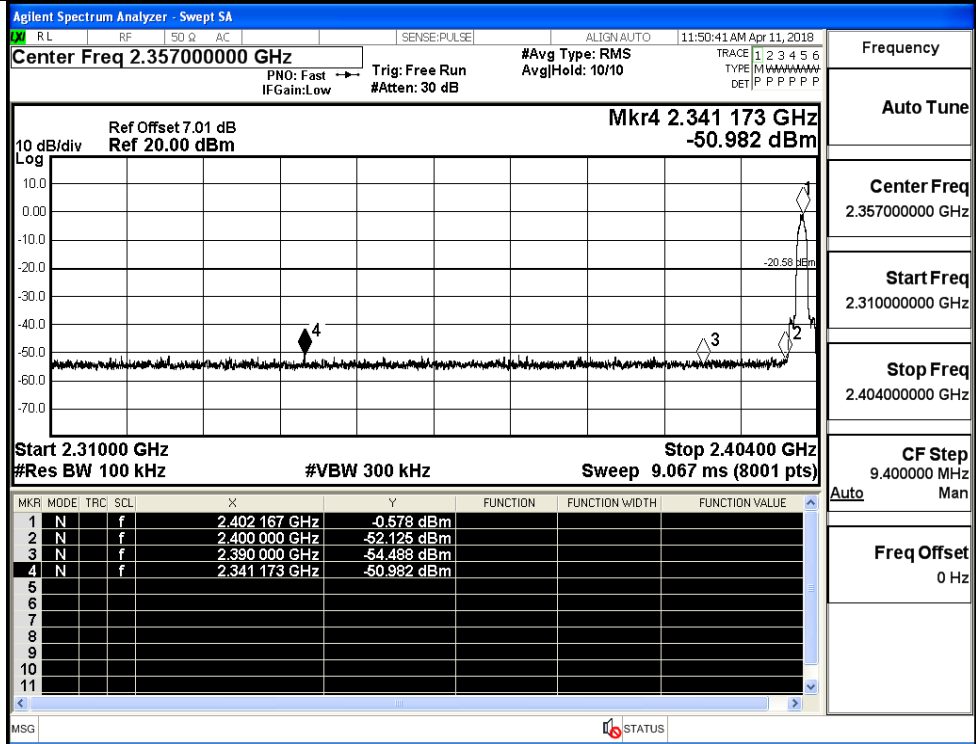
GFSK/HCH/No Hop



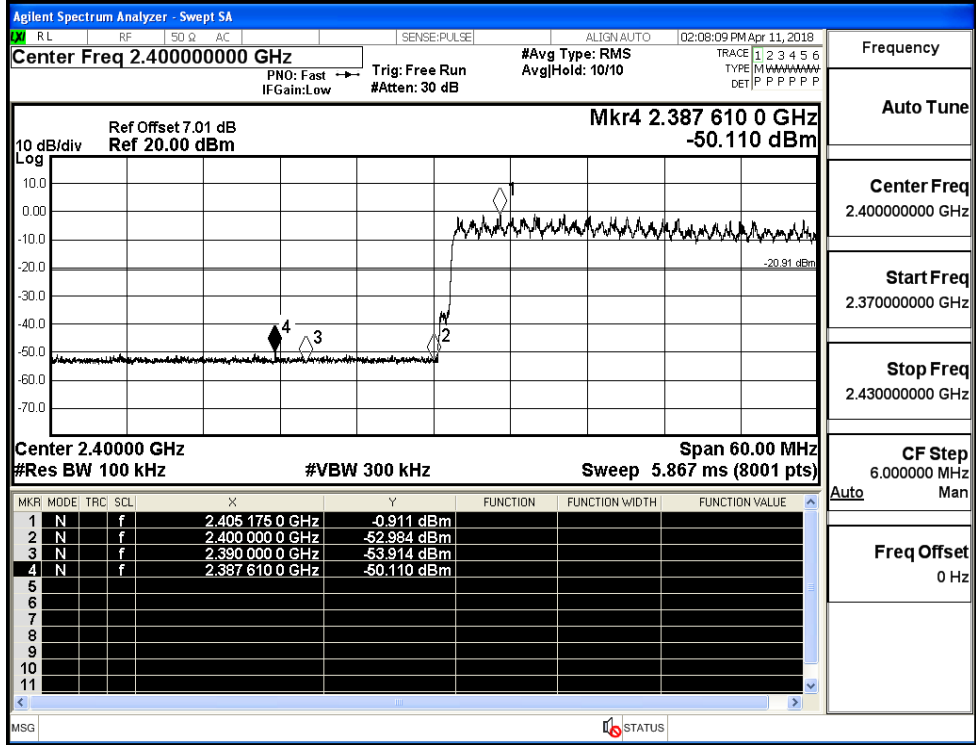
GFSK/HCH/Hop



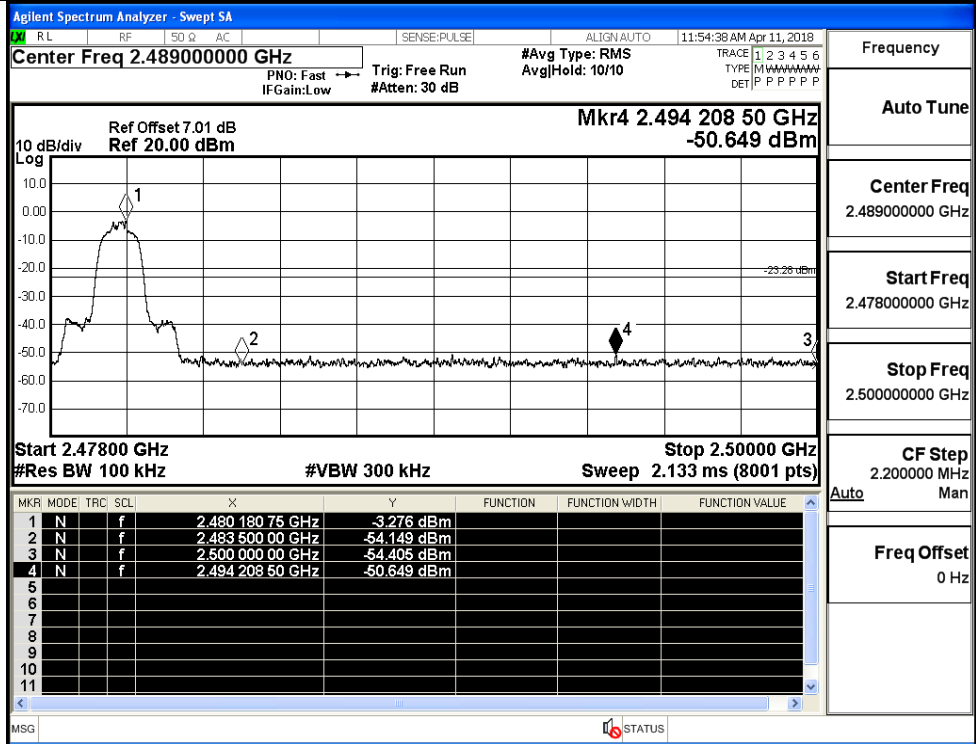
$\pi/4$ DQPSK/LCH/No
Hop



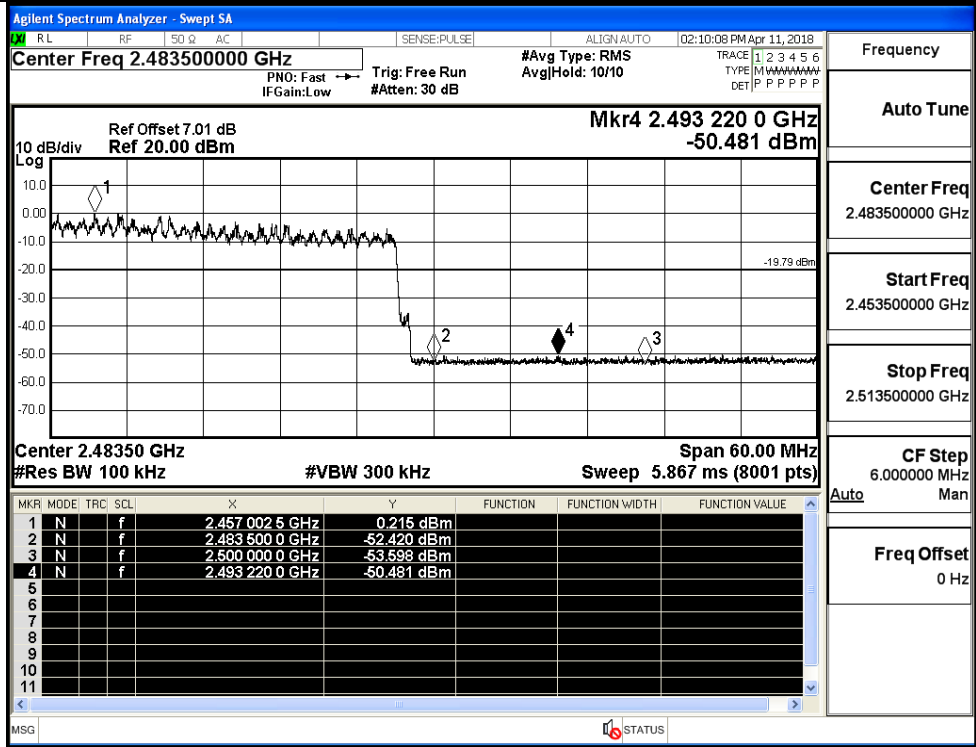
$\pi/4$ DQPSK/LCH/Hop



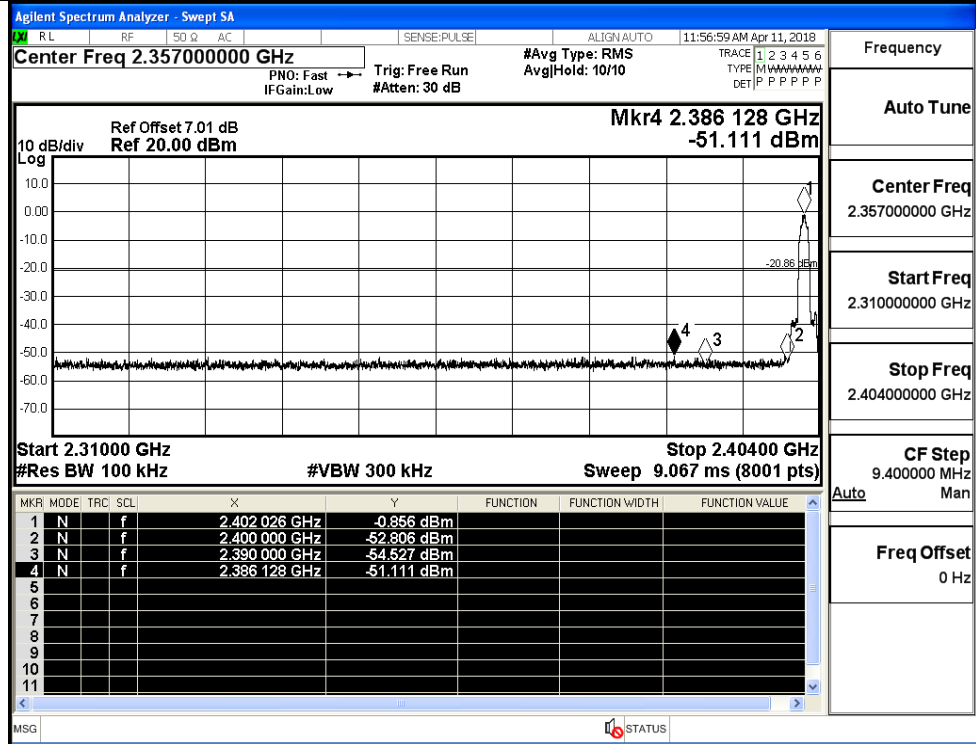
$\pi/4$ DQPSK/HCH/No
Hop



$\pi/4$ DQPSK/HCH/Hop



8DPSK/LCH/No Hop



Frequency

Auto Tune

Center Freq
2.357000000 GHz

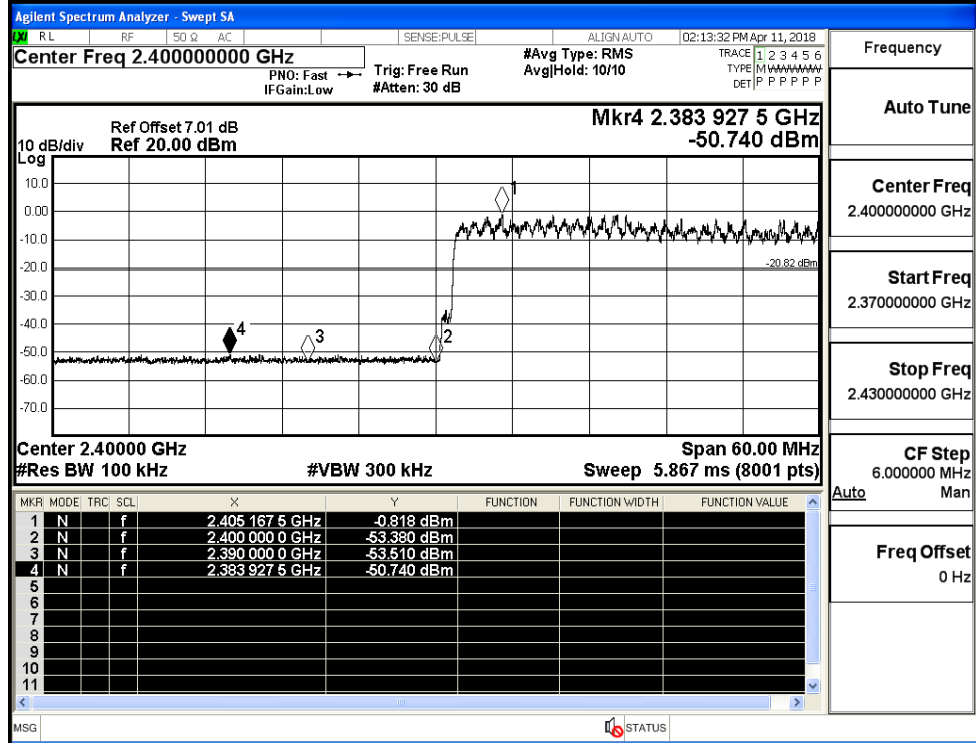
Start Freq
2.310000000 GHz

Stop Freq
2.404000000 GHz

CF Step
9.400000 MHz

Freq Offset
0 Hz

8DPSK/LCH/Hop



Frequency

Auto Tune

Center Freq
2.400000000 GHz

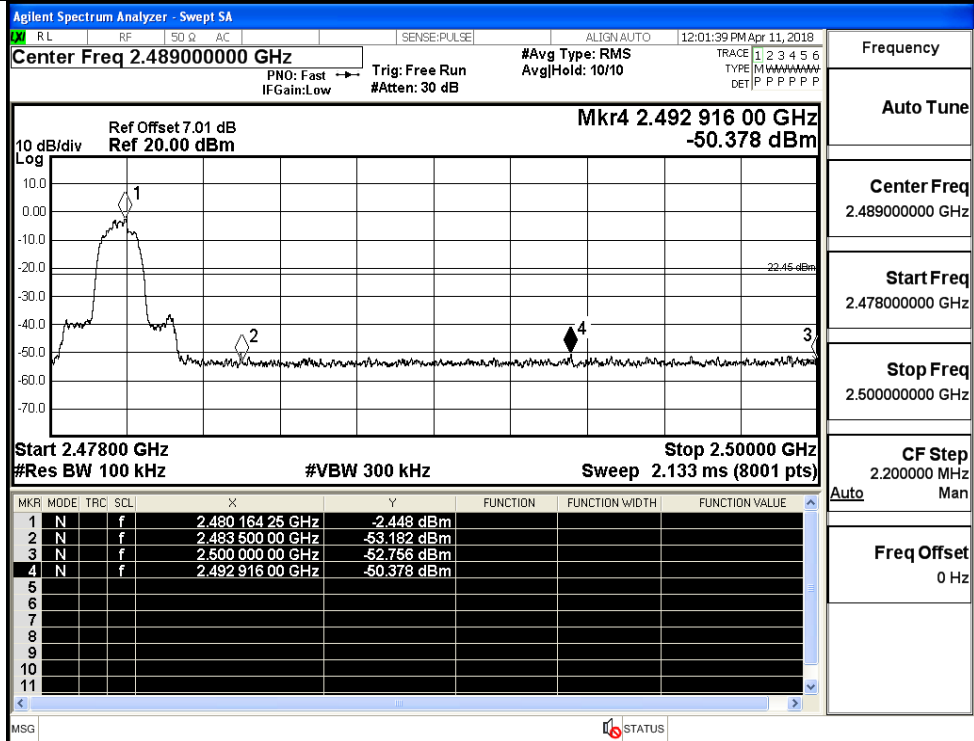
Start Freq
2.370000000 GHz

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

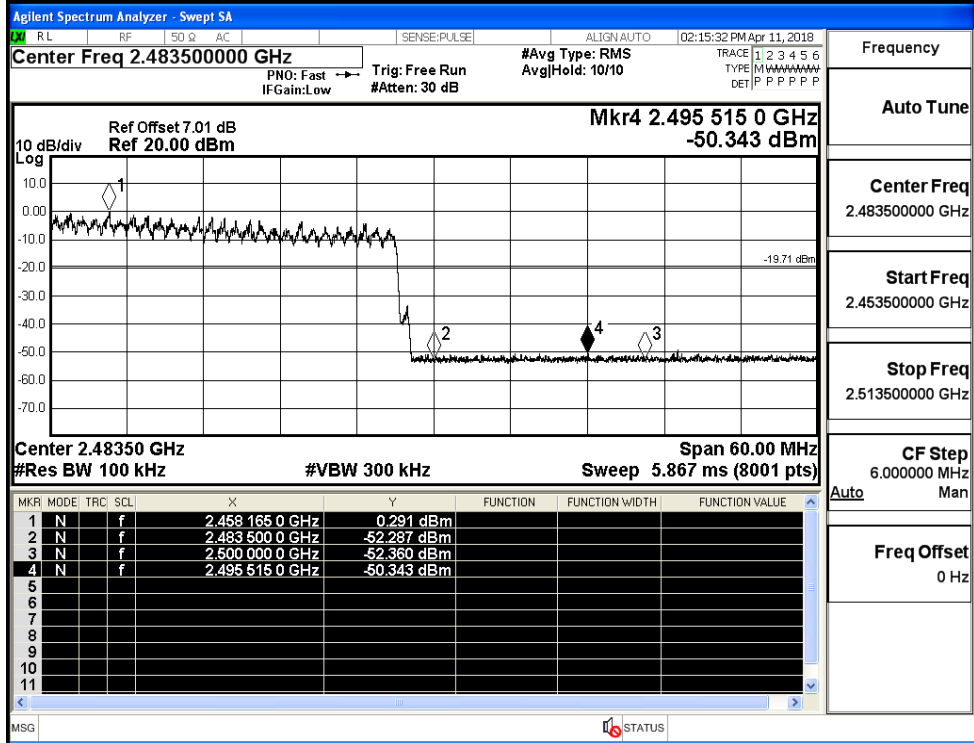
Start Freq
2.478000000 GHz

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

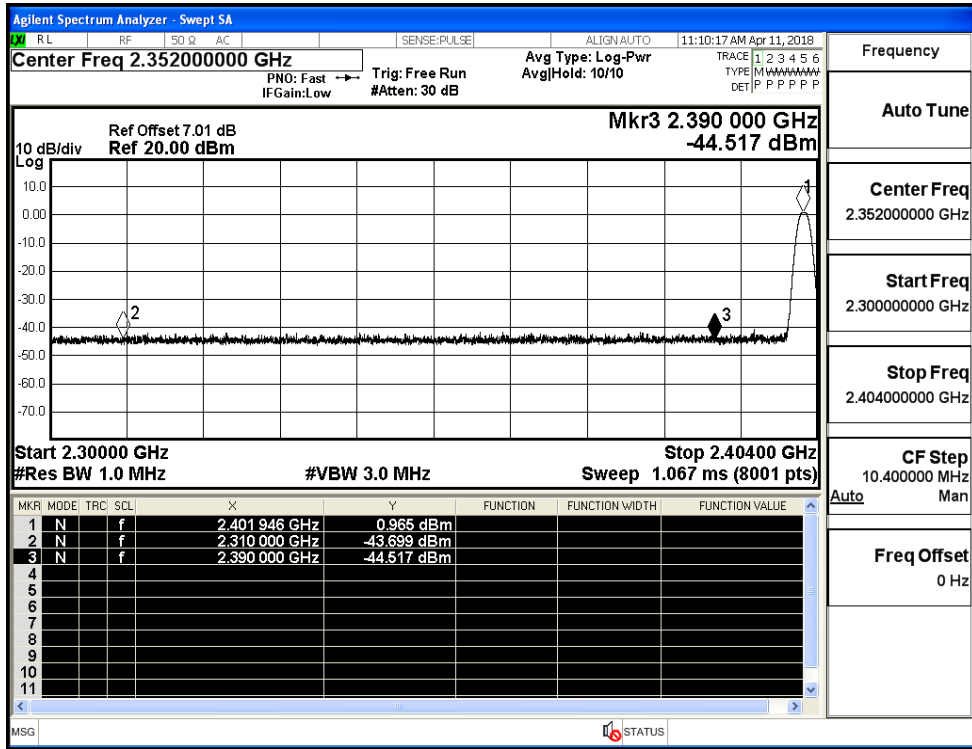
CF Step
6.000000 MHz

Freq Offset
0 Hz

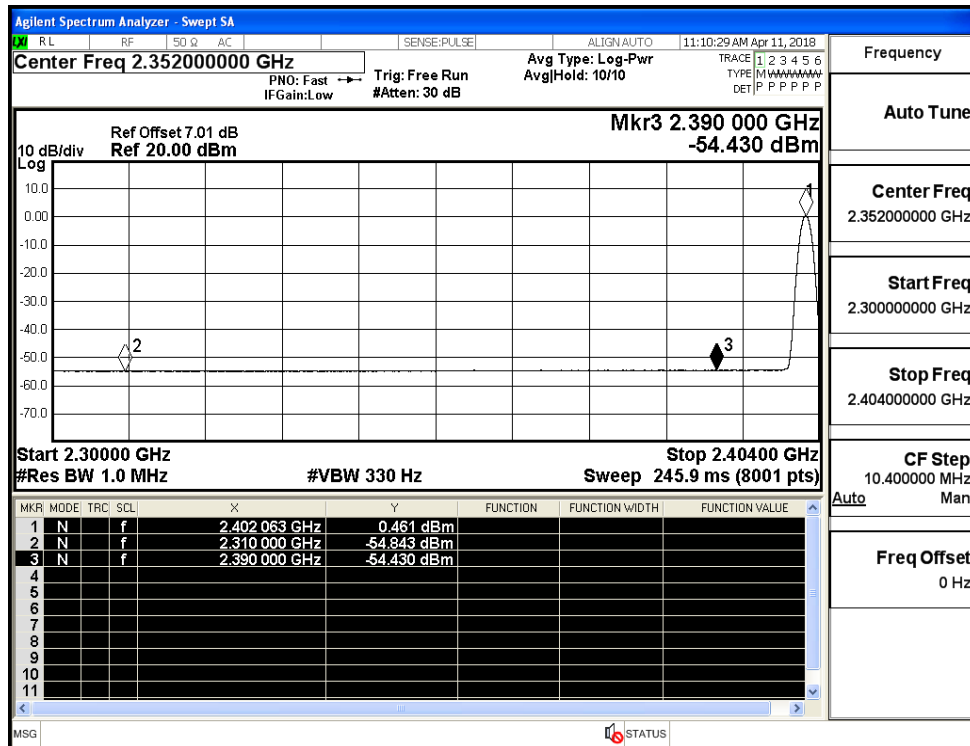
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.70	2.0	0	51.56	PEAK	74	PASS
	Off	2310.0	-54.84	2.0	0	40.41	AV	54	PASS
	Off	2390.0	-44.52	2.0	0	50.74	PEAK	74	PASS
	Off	2390.0	-54.43	2.0	0	40.83	AV	54	PASS
	Off	2483.5	-43.65	2.0	0	51.60	PEAK	74	PASS
	Off	2483.5	-54.25	2.0	0	41.01	AV	54	PASS
	Off	2500.0	-43.86	2.0	0	51.40	PEAK	74	PASS
	Off	2500.0	-54.17	2.0	0	41.08	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-44.31	2.0	0	50.95	PEAK	74	PASS
	Off	2310.0	-54.79	2.0	0	40.47	AV	54	PASS
	Off	2390.0	-42.97	2.0	0	52.29	PEAK	74	PASS
	Off	2390.0	-54.57	2.0	0	40.69	AV	54	PASS
	Off	2483.5	-43.88	2.0	0	51.37	PEAK	74	PASS
	Off	2483.5	-54.27	2.0	0	40.99	AV	54	PASS
	Off	2500.0	-44.30	2.0	0	50.95	PEAK	74	PASS
	Off	2500.0	-54.15	2.0	0	41.11	AV	54	PASS
8DPSK	Off	2310.0	-46.17	2.0	0	49.09	PEAK	74	PASS
	Off	2310.0	-54.83	2.0	0	40.43	AV	54	PASS
	Off	2390.0	-43.53	2.0	0	51.73	PEAK	74	PASS
	Off	2390.0	-54.58	2.0	0	40.68	AV	54	PASS
	Off	2483.5	-43.84	2.0	0	51.42	PEAK	74	PASS
	Off	2483.5	-54.20	2.0	0	41.06	AV	54	PASS
	Off	2500.0	-44.65	2.0	0	50.61	PEAK	74	PASS
	Off	2500.0	-54.03	2.0	0	41.23	AV	54	PASS

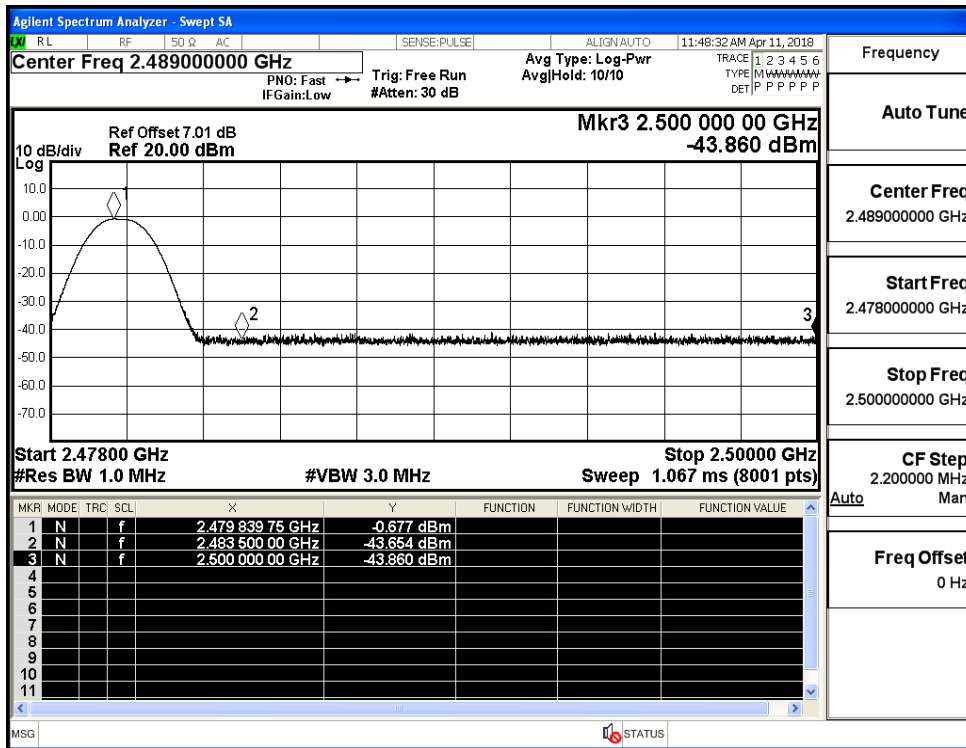
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



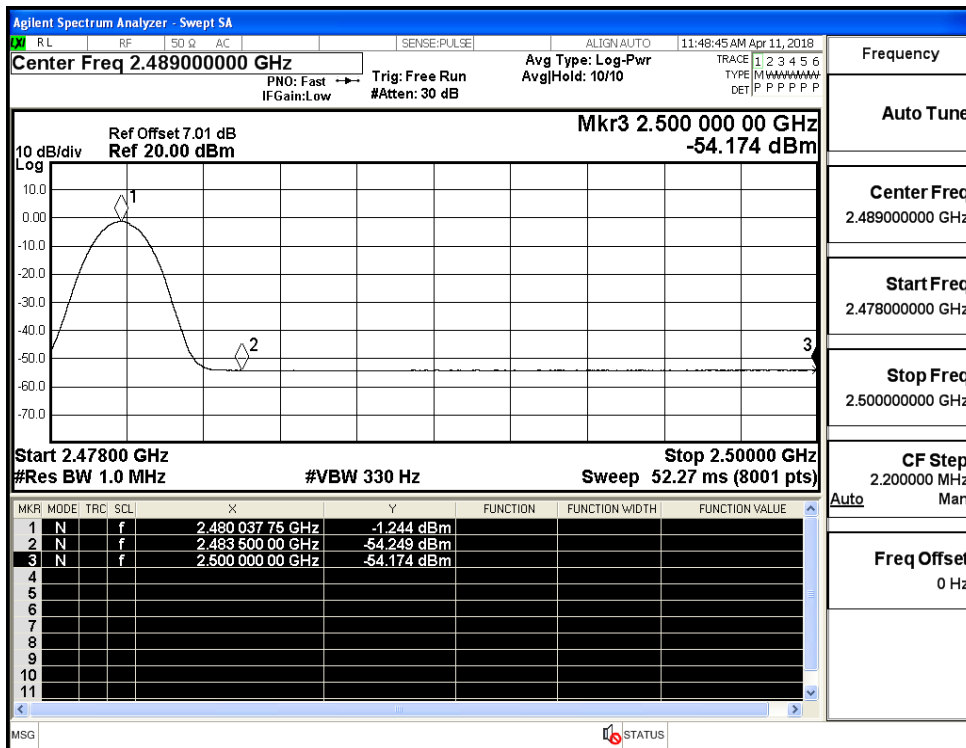
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



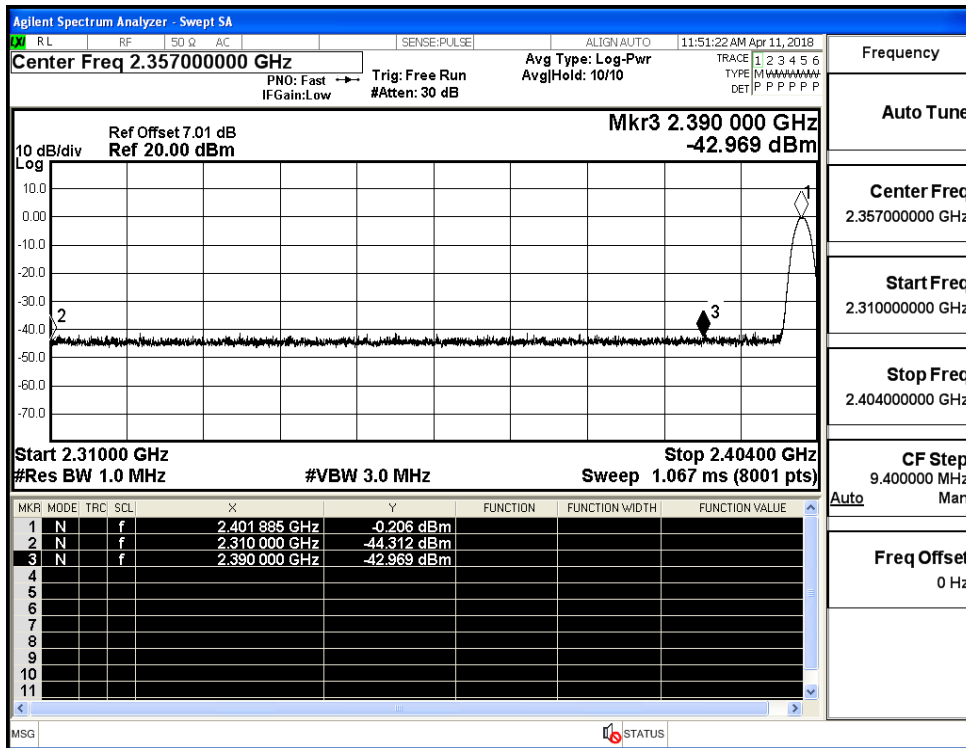
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



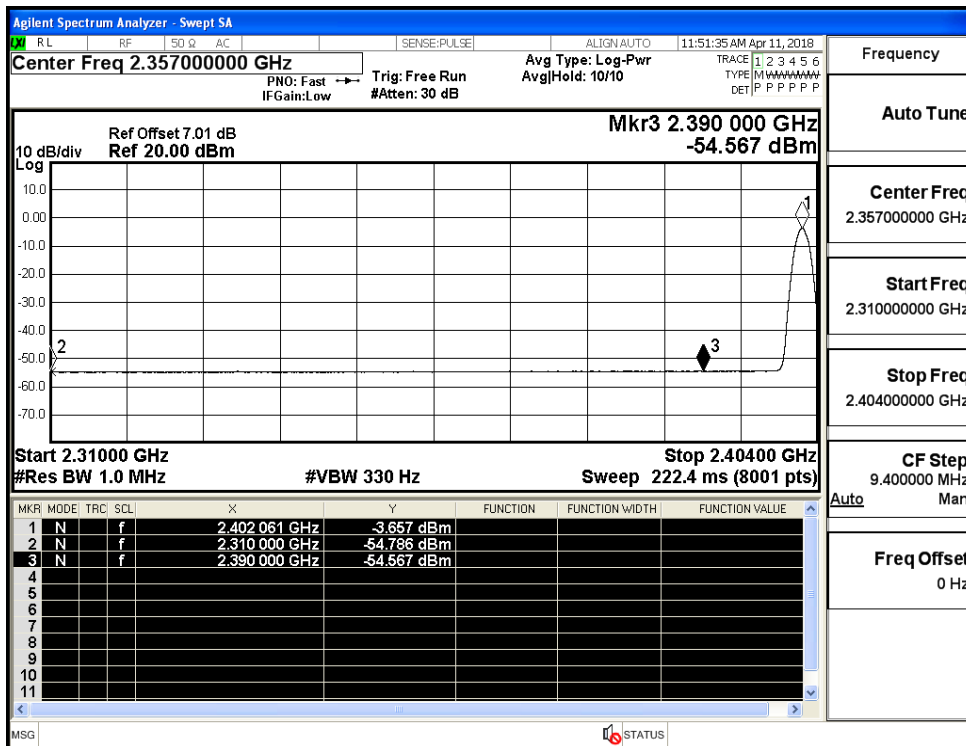
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



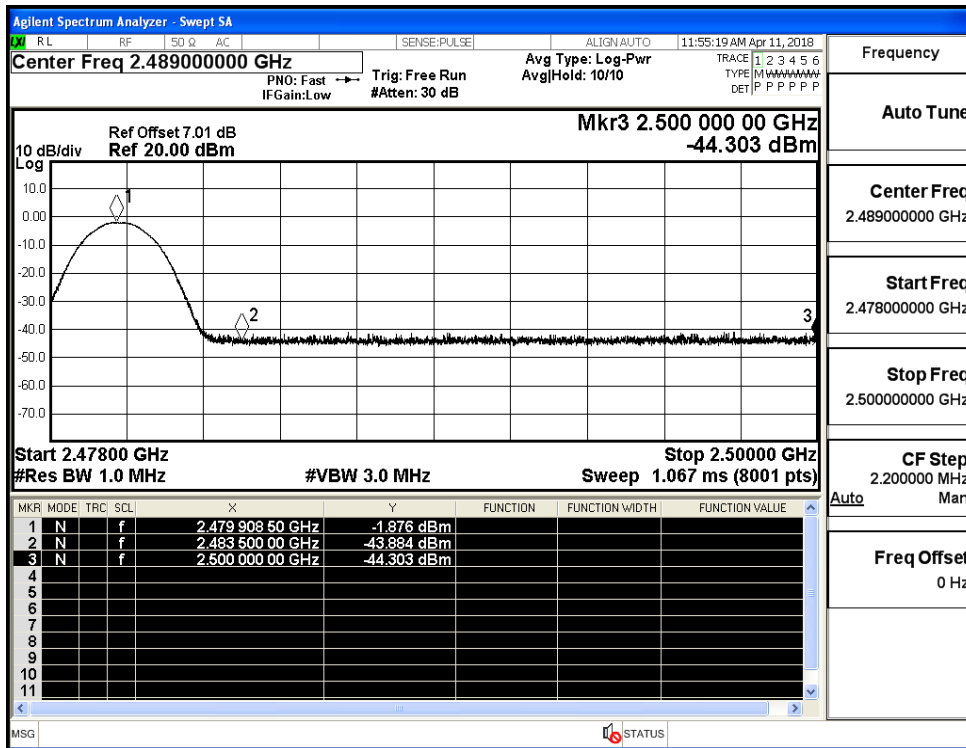
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)



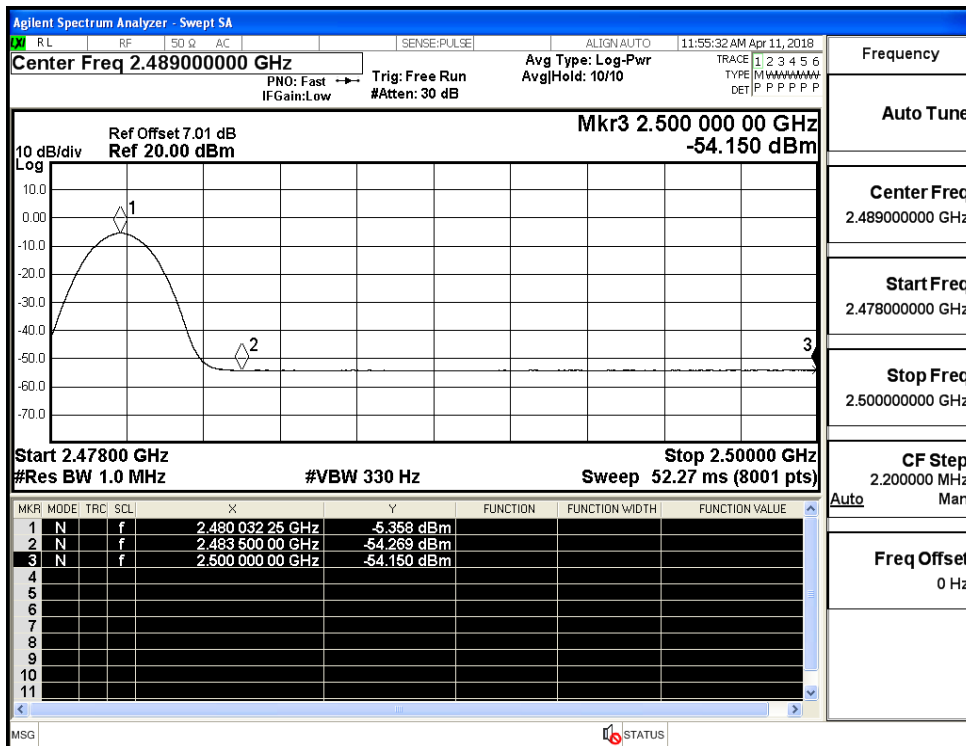
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)



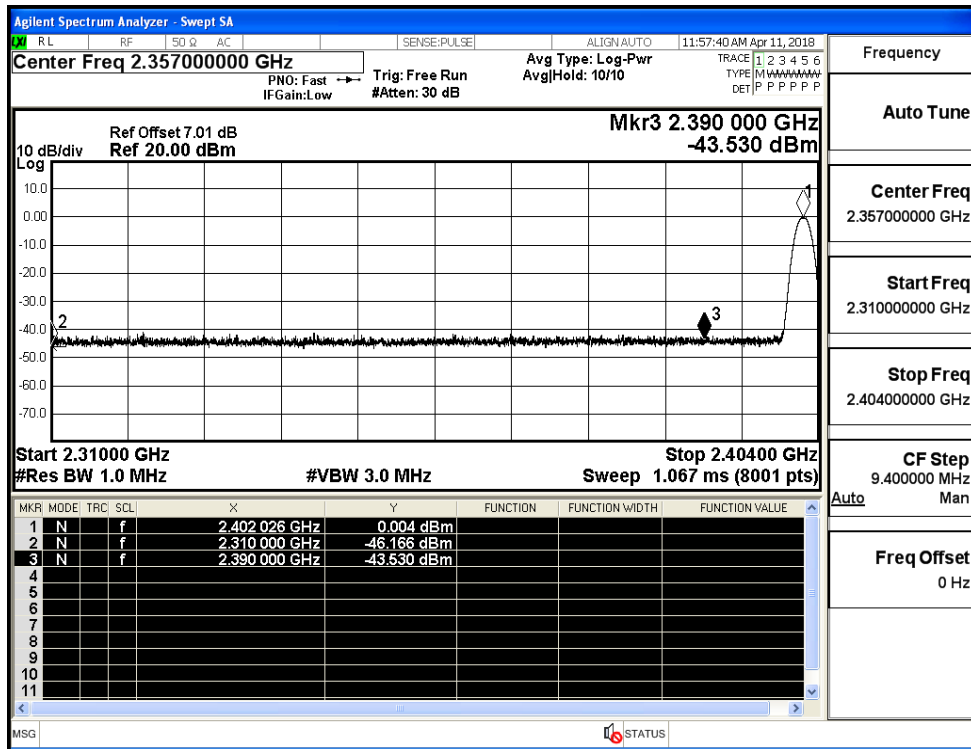
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



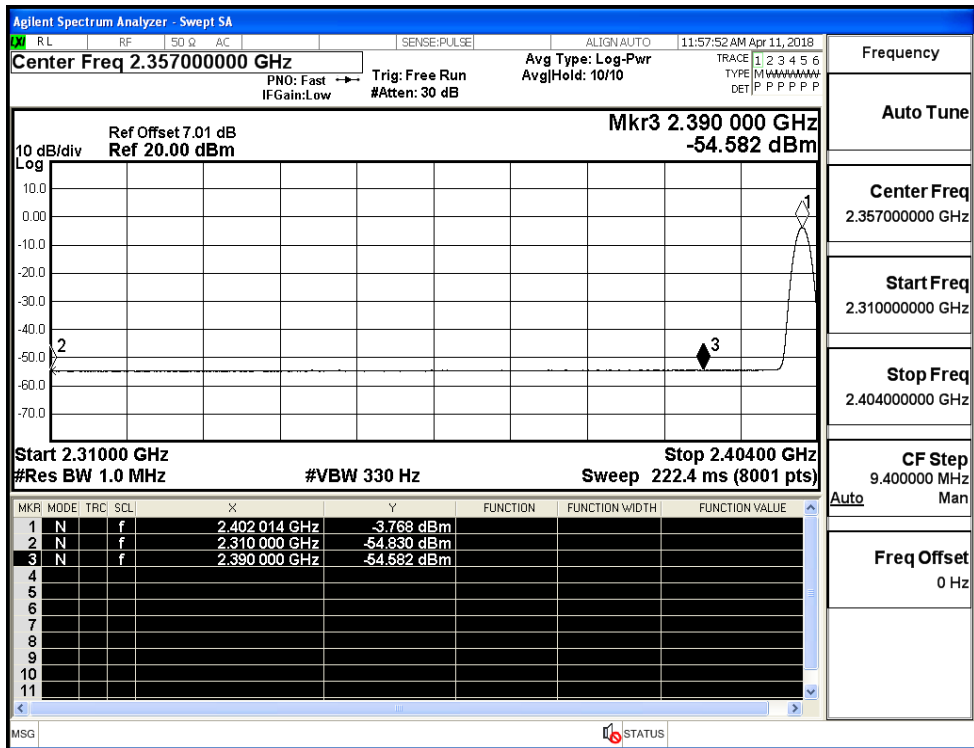
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



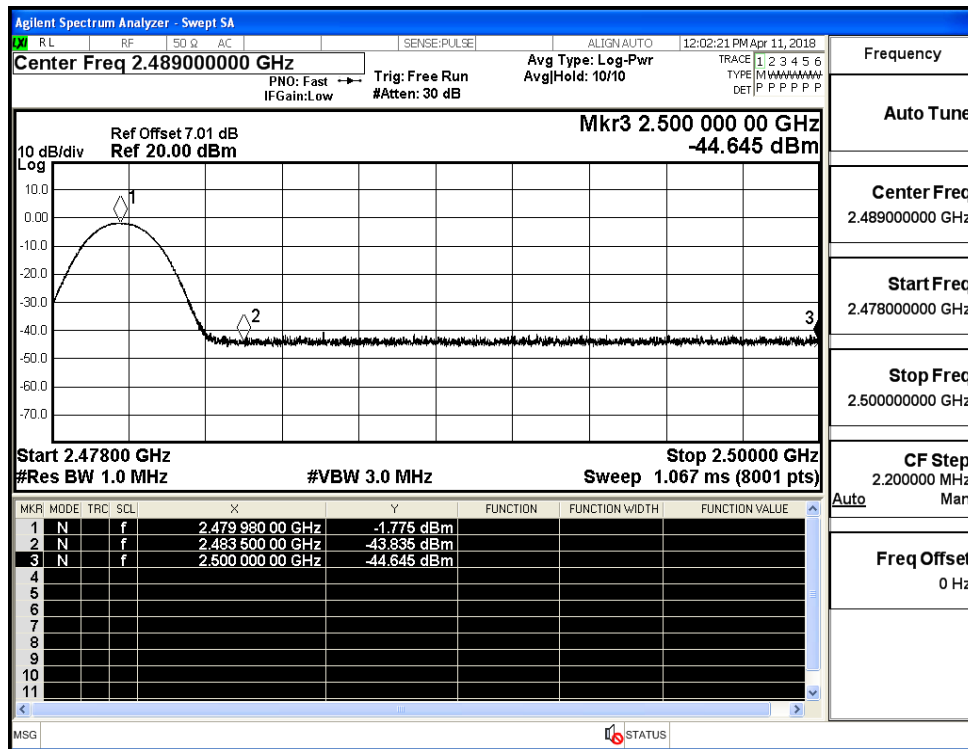
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

