

Appendix A

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

Product Name: 4G Smartphones

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

Test Model: Y50

Environmental Conditions

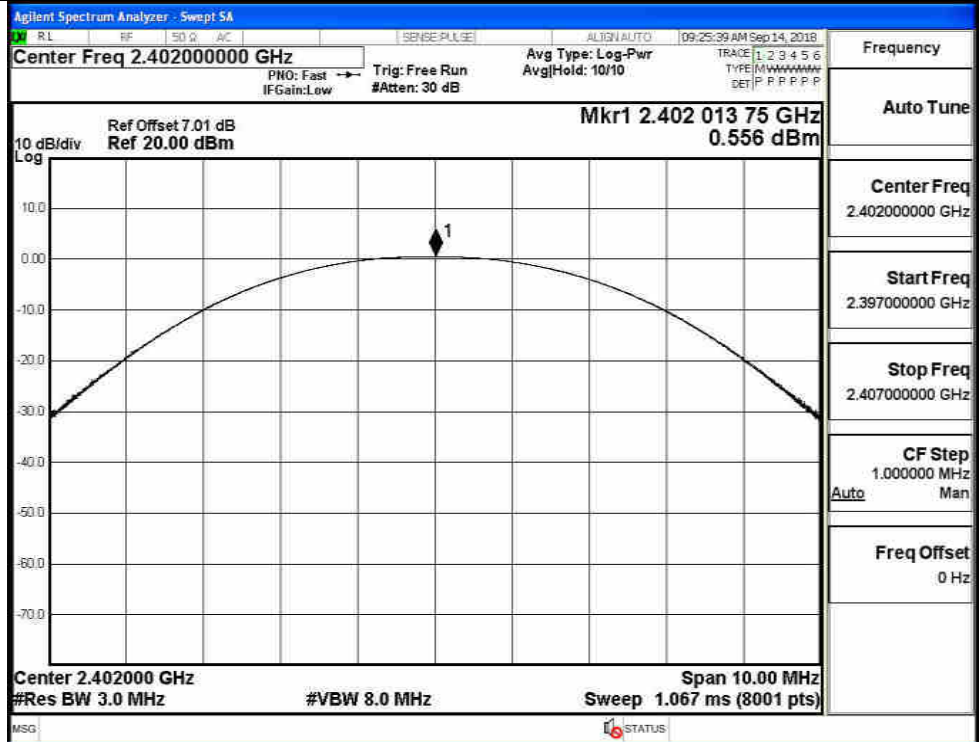
Temperature:	24.6 ° C
Relative Humidity:	52.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Mina.Xu
Supervised by:	Jayden.Zhuo

A.1 Maxmum Conducted Peak Output Power

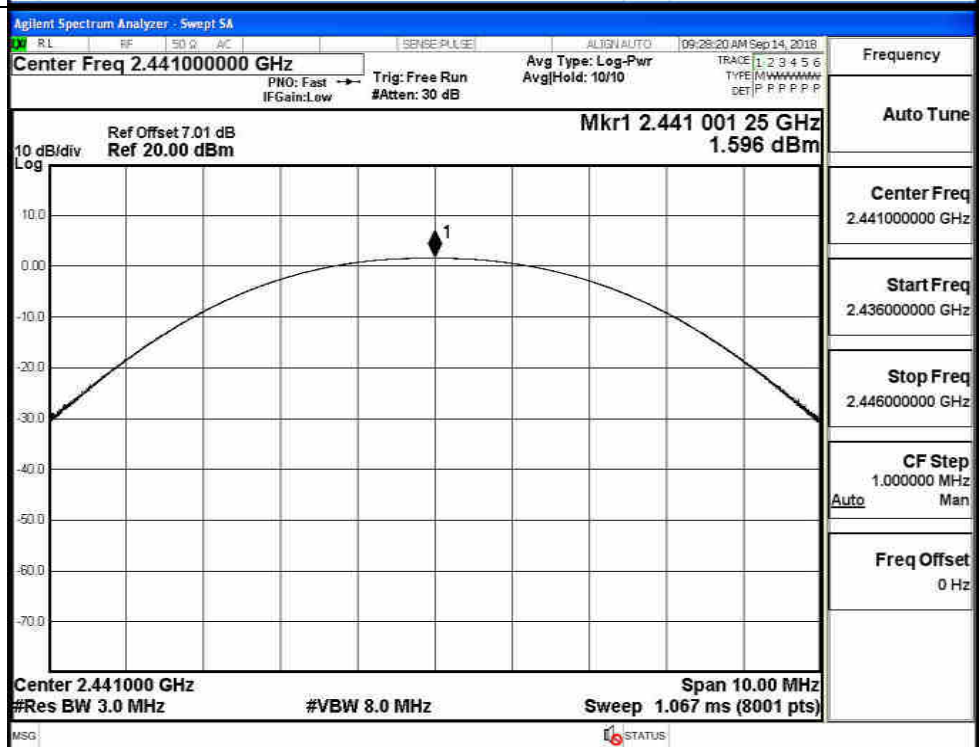
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.556	21	PASS
	MCH	1.596	21	PASS
	HCH	1.783	21	PASS
$\pi/4$ DQPSK	LCH	0.285	21	PASS
	MCH	1.381	21	PASS
	HCH	1.572	21	PASS
8DPSK	LCH	0.400	21	PASS
	MCH	1.490	21	PASS
	HCH	1.679	21	PASS

Test Graphs

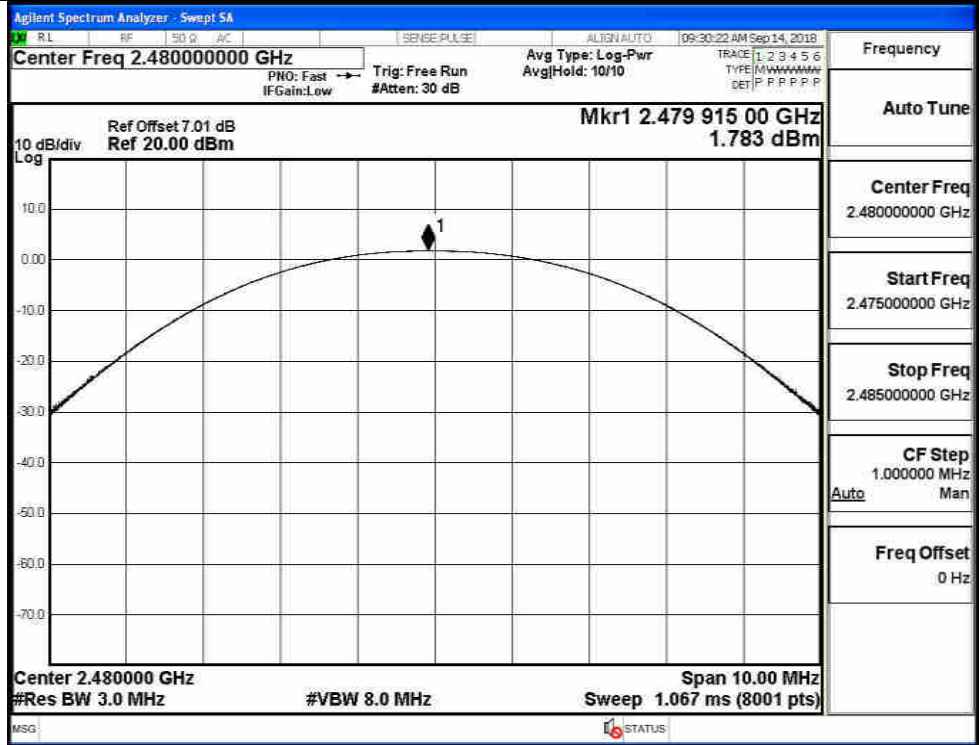
GFSK/LCH



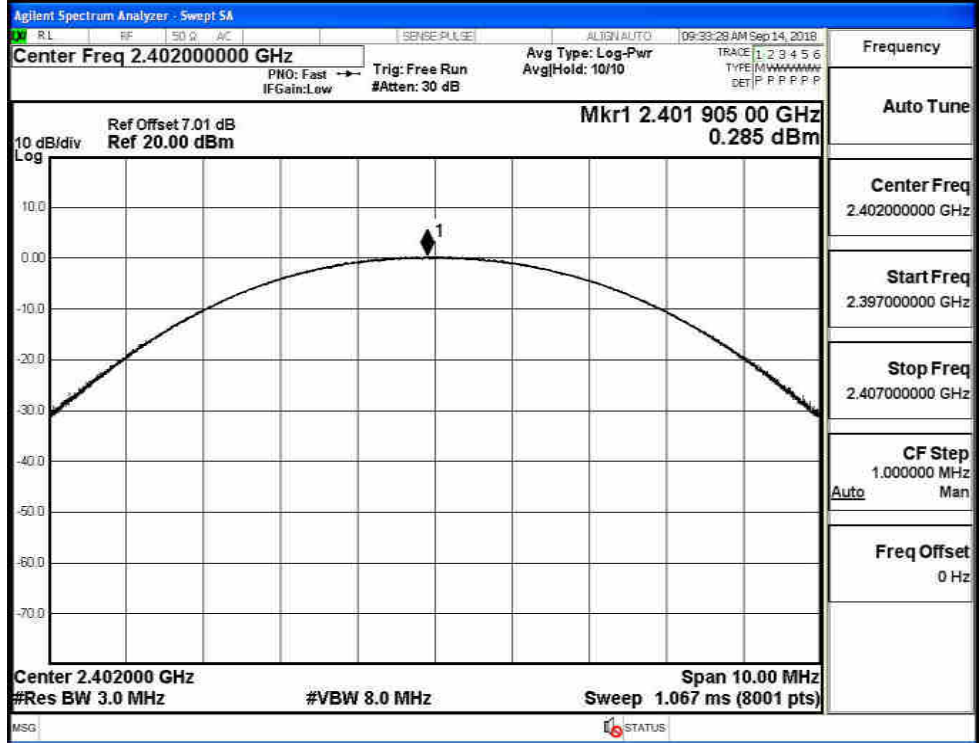
GFSK/MCH



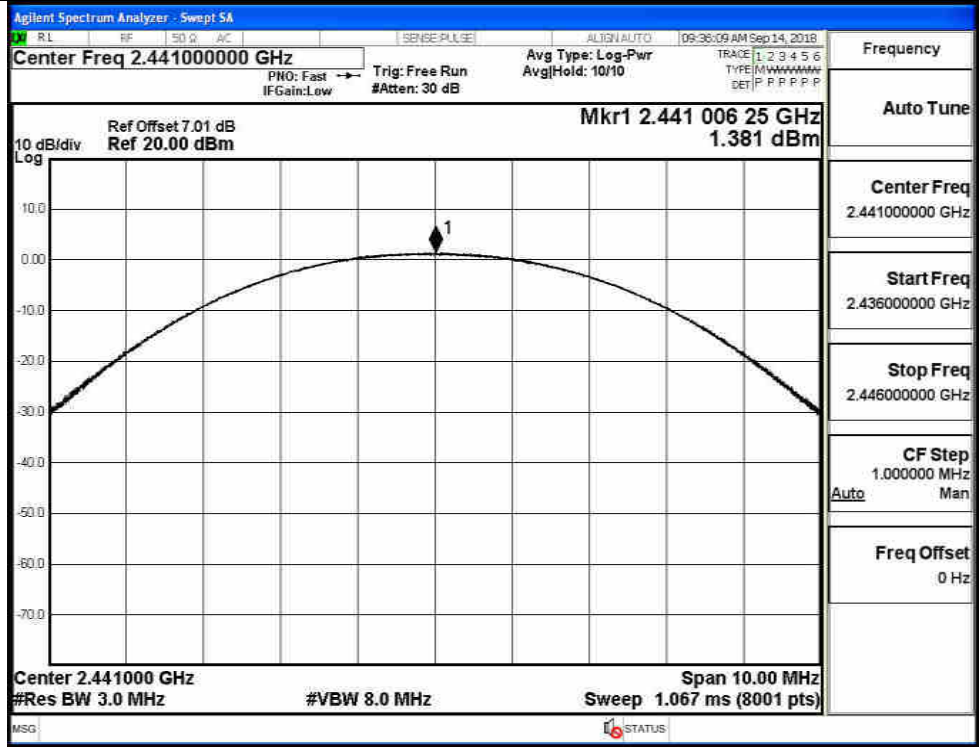
GFSK/HCH



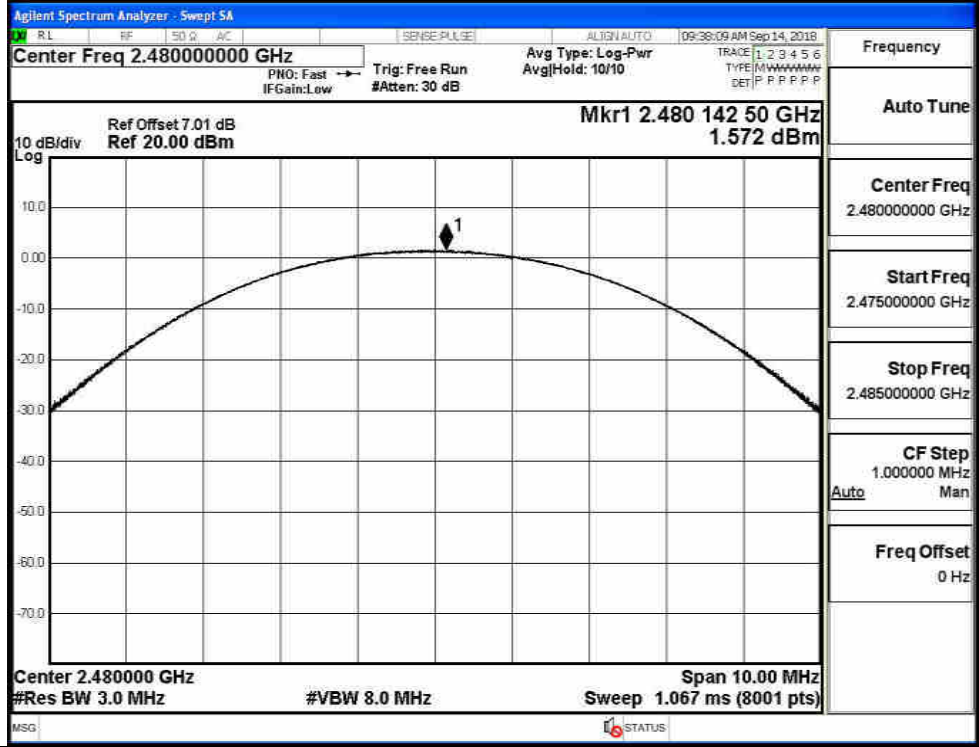
π /4DQPSK/LCH



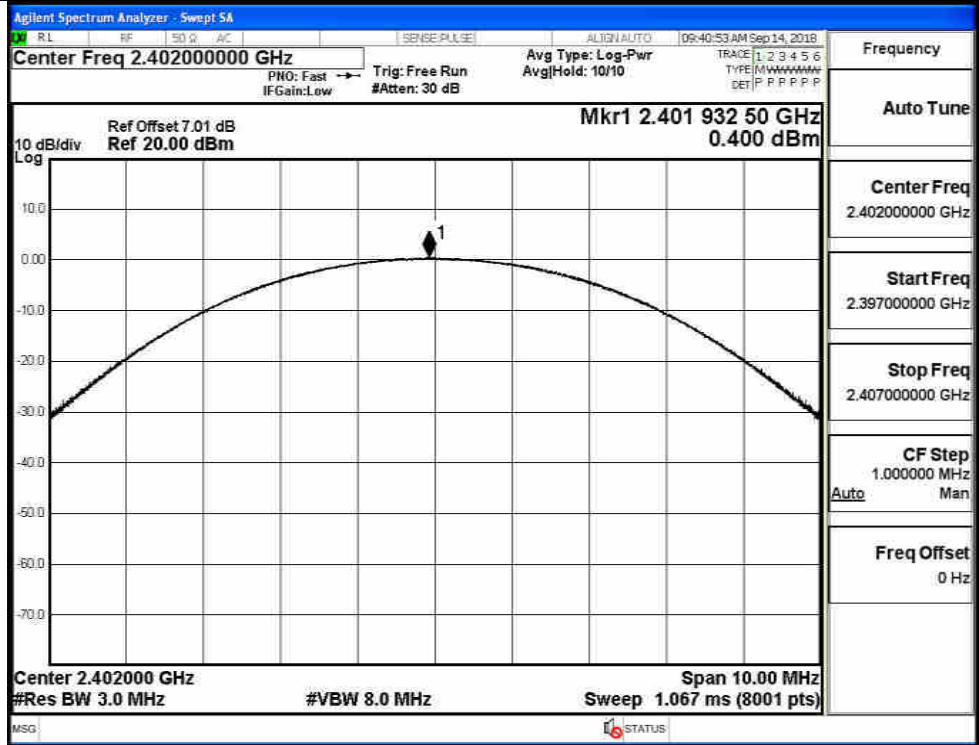
π /4DQPSK/MCH



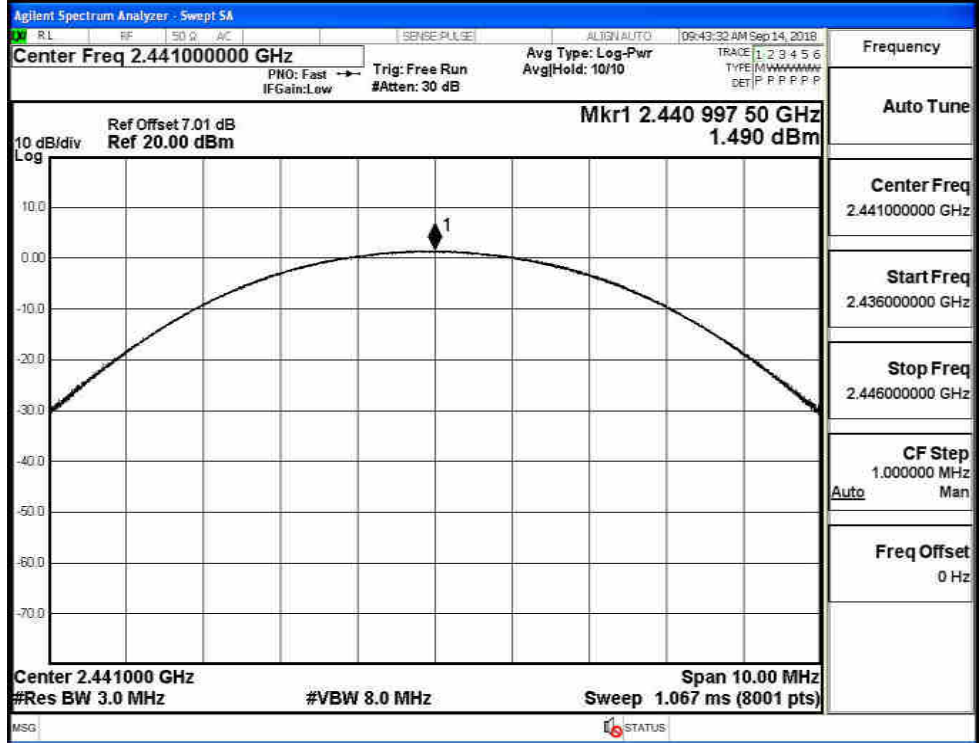
π /4DQPSK/HCH



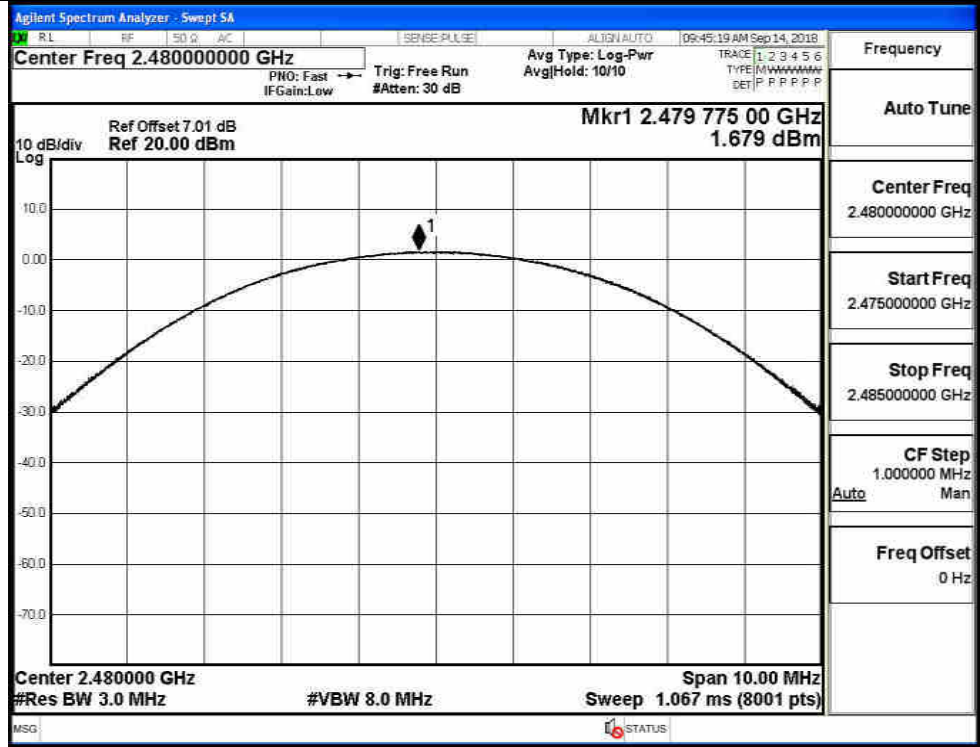
8DPSK/LCH



8DPSK/MCH

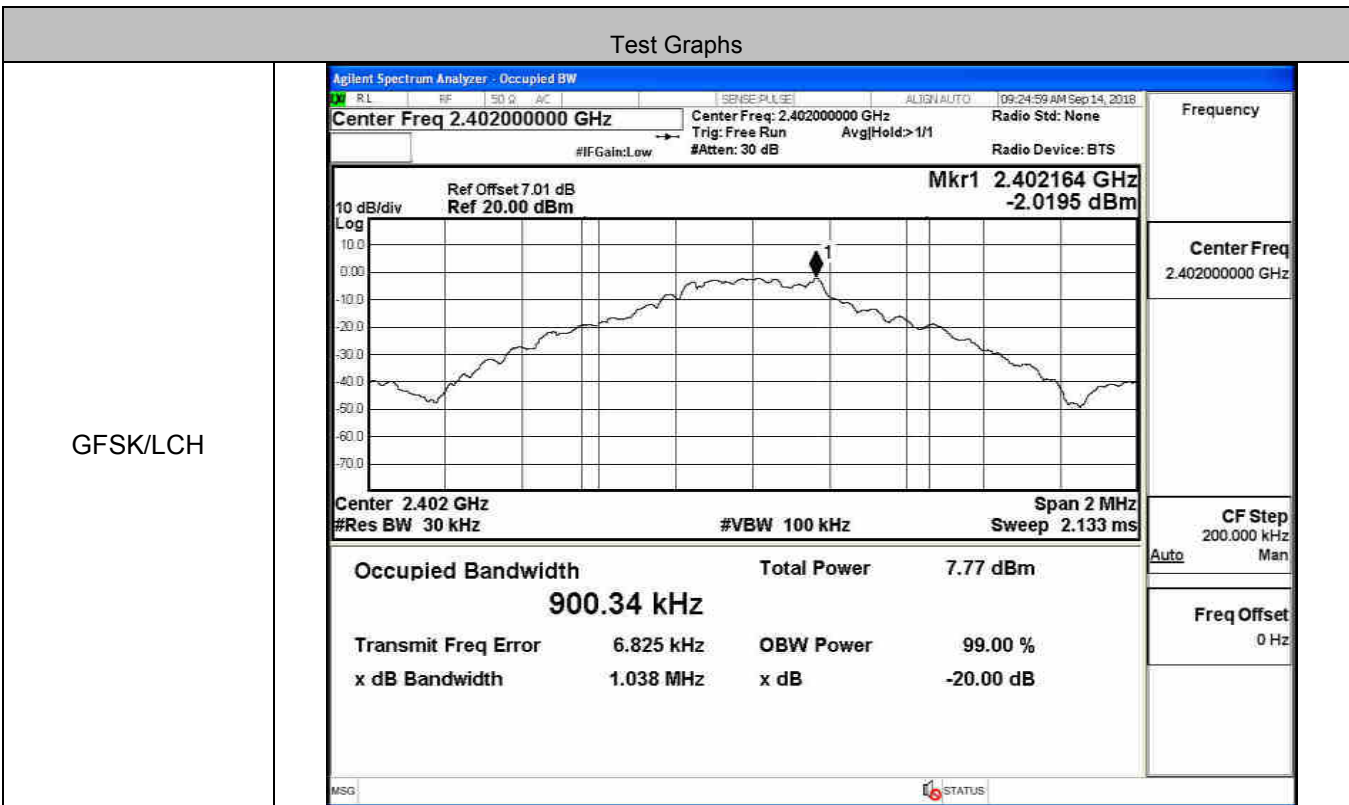


8DPSK/HCH

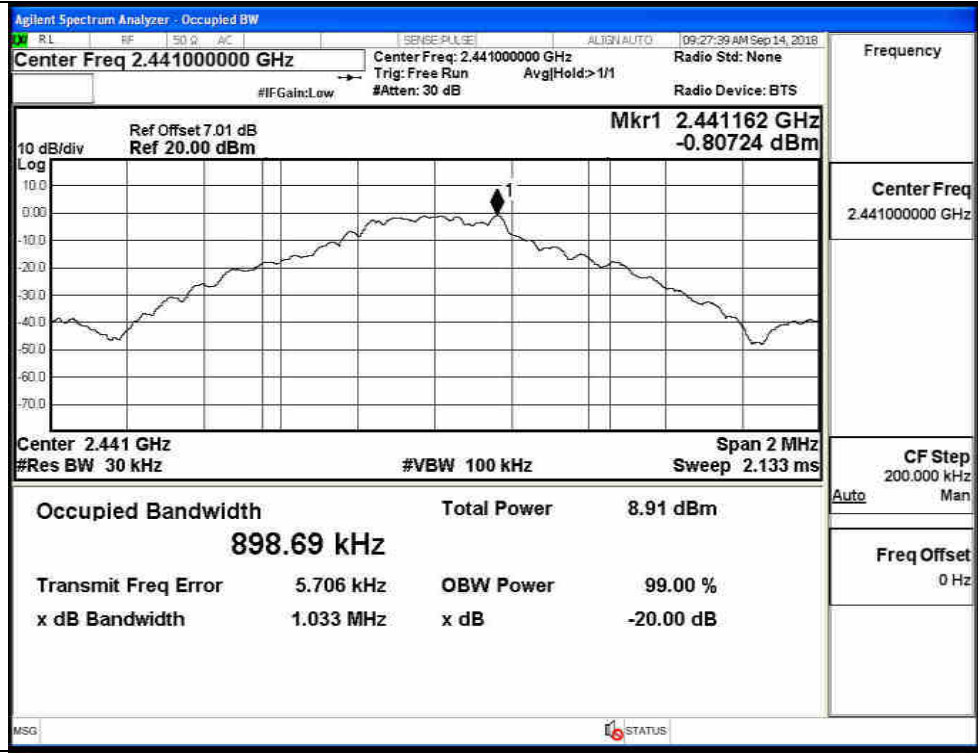


A.2 20dB Bandwidth

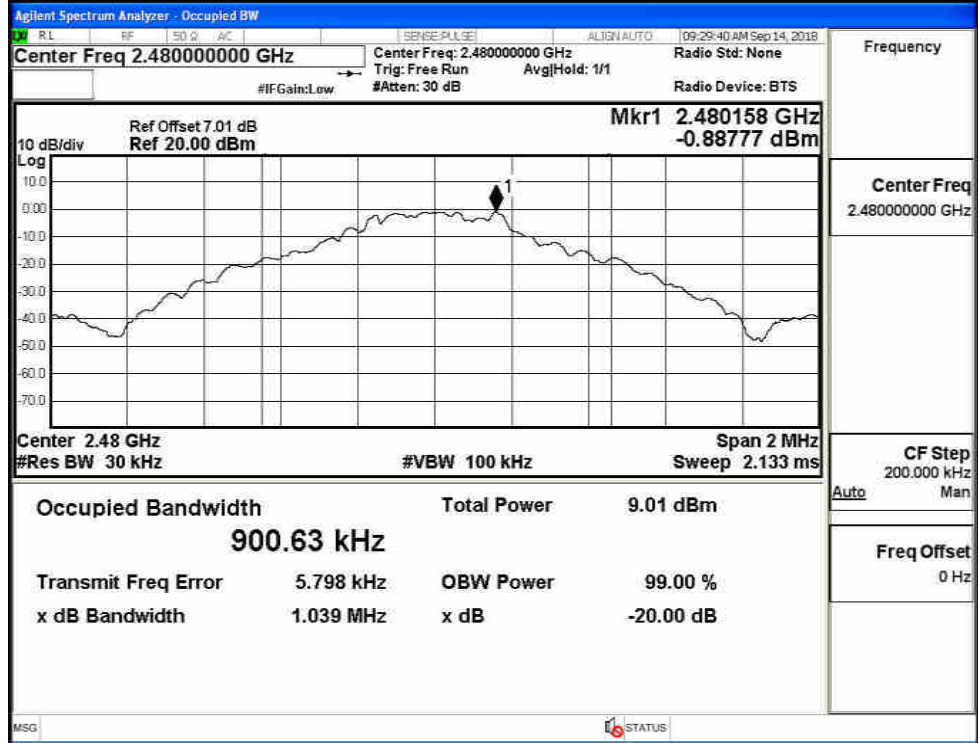
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.038	Not Specified	PASS
	MCH	1.033	Not Specified	PASS
	HCH	1.039	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.286	Not Specified	PASS
	MCH	1.288	Not Specified	PASS
	HCH	1.292	Not Specified	PASS
8DPSK	LCH	1.284	Not Specified	PASS
	MCH	1.287	Not Specified	PASS
	HCH	1.286	Not Specified	PASS



GFSK/MCH



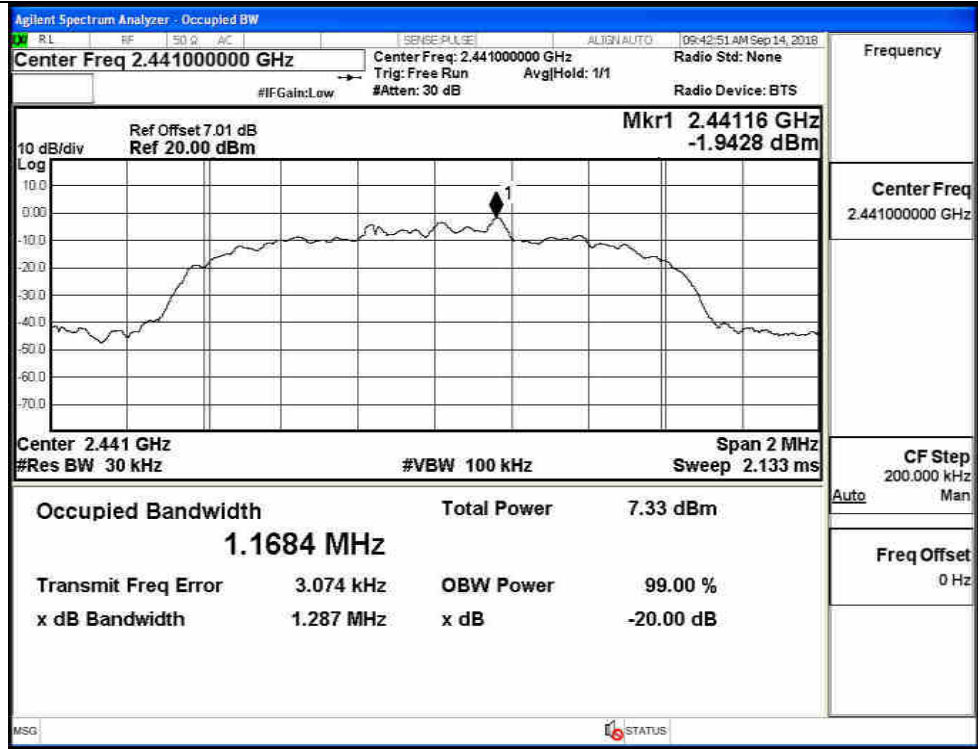
GFSK/HCH



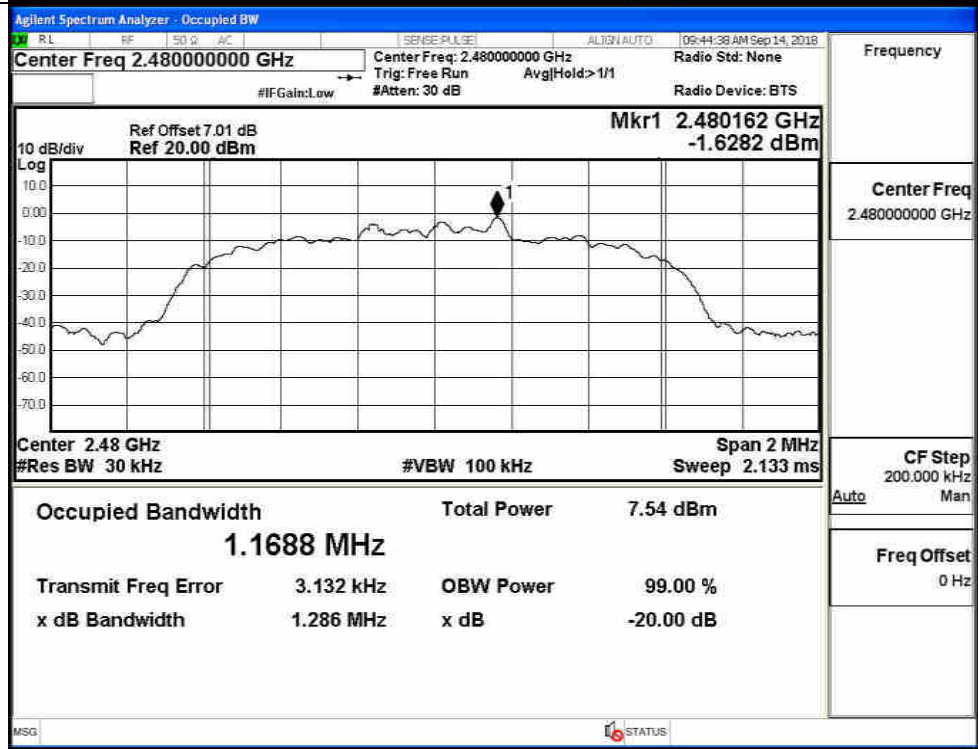
<p>$\pi/4$DQPSK/LCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.40200000 GHz</p> <p>Mkr1 2.402162 GHz -3.6522 dBm</p> <p>10 dB/div Ref Offset 7.01 dB Ref 20.00 dBm</p> <p>Center 2.402 GHz Span 2 MHz</p> <p>Occupied Bandwidth 1.1673 MHz Total Power 6.25 dBm</p> <p>Transmit Freq Error 286 Hz OBW Power 99.00 %</p> <p>x dB Bandwidth 1.286 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>$\pi/4$DQPSK/MCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.44100000 GHz</p> <p>Mkr1 2.441164 GHz -2.5557 dBm</p> <p>10 dB/div Ref Offset 7.01 dB Ref 20.00 dBm</p> <p>Center 2.441 GHz Span 2 MHz</p> <p>Occupied Bandwidth 1.1673 MHz Total Power 7.37 dBm</p> <p>Transmit Freq Error 194 Hz OBW Power 99.00 %</p> <p>x dB Bandwidth 1.288 MHz x dB -20.00 dB</p>

<p style="text-align: center;">π/4DQPSK/HCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.48000000 GHz</p> <p>Mkr1 2.480164 GHz -2.8978 dBm</p> <p>Center 2.48 GHz Span 2 MHz</p> <p>Occupied Bandwidth 1.1676 MHz Total Power 7.56 dBm</p> <p>Transmit Freq Error 19 Hz OBW Power 99.00 %</p> <p>x dB Bandwidth 1.292 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 style="text-align: center;">8DPSK/LCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.40200000 GHz</p> <p>Mkr1 2.402162 GHz -2.9184 dBm</p> <p>Center 2.402 GHz Span 2 MHz</p> <p>Occupied Bandwidth 1.1686 MHz Total Power 6.22 dBm</p> <p>Transmit Freq Error 3.115 kHz OBW Power 99.00 %</p> <p>x dB Bandwidth 1.284 MHz x dB -20.00 dB</p>

8DPSK/MCH

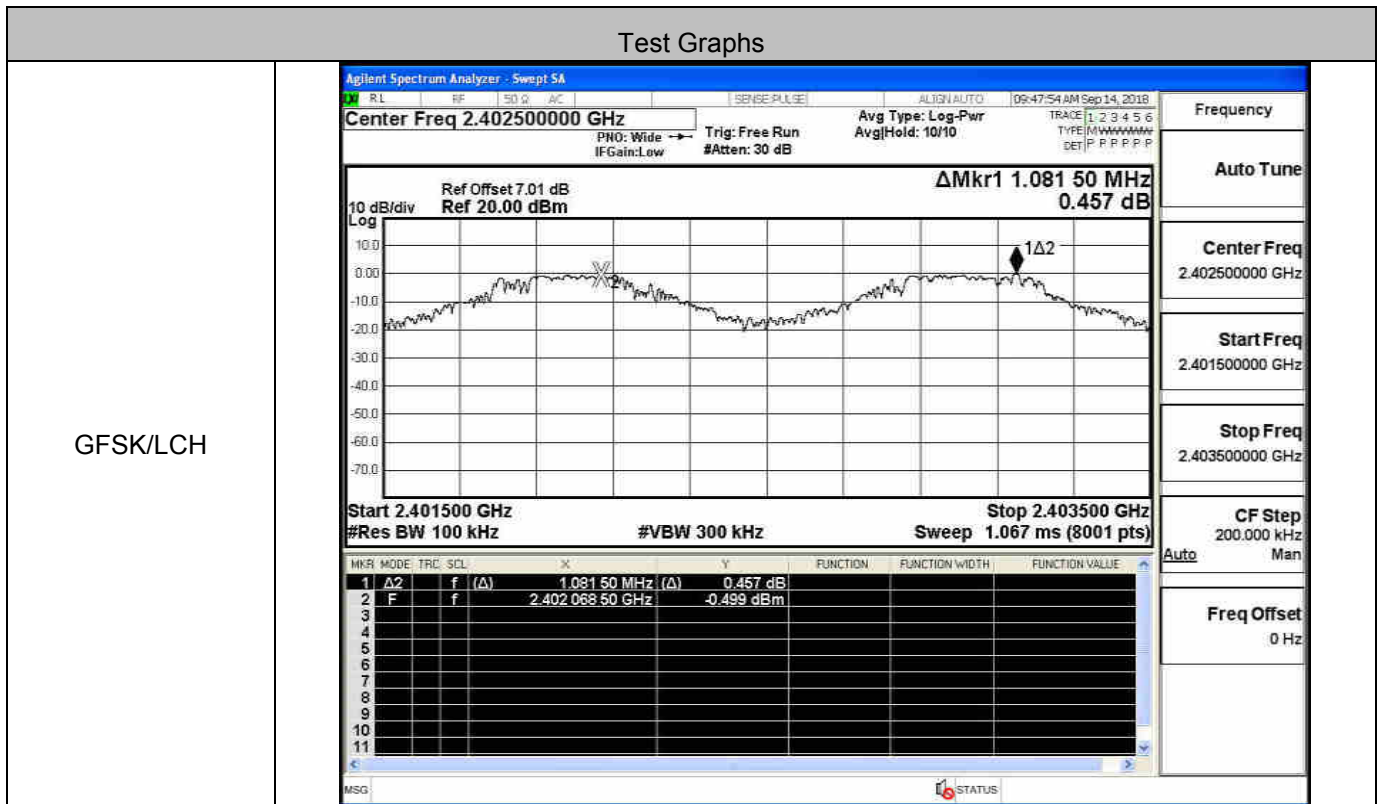


8DPSK/HCH

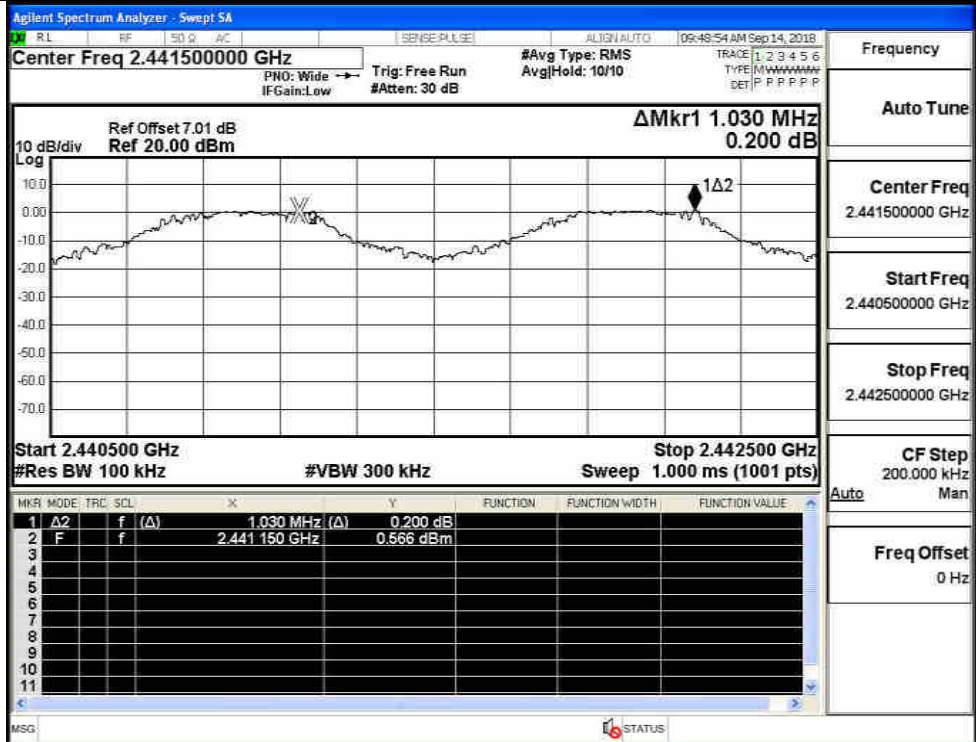


A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.082	0.693	PASS
	MCH	1.030	0.693	PASS
	HCH	0.920	0.693	PASS
π/4DQPSK	LCH	0.866	0.861	PASS
	MCH	1.320	0.861	PASS
	HCH	1.050	0.861	PASS
8DPSK	LCH	1.274	0.858	PASS
	MCH	1.216	0.858	PASS
	HCH	1.122	0.858	PASS

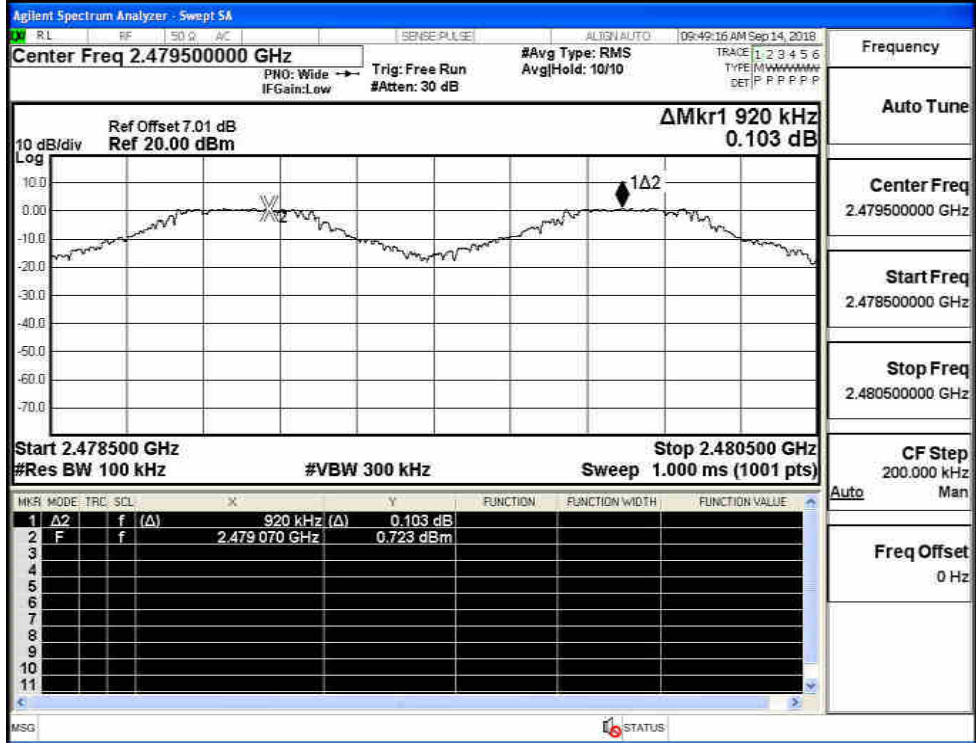


GFSK/MCH



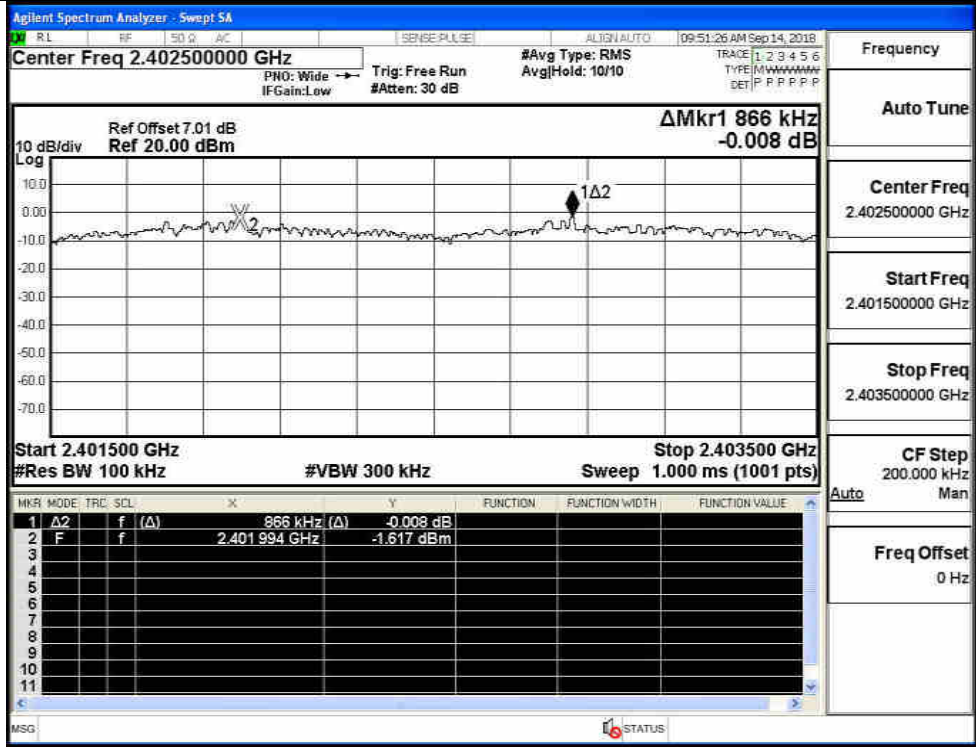
Frequency
Auto Tune
Center Freq
2.441500000 GHz
Start Freq
2.440500000 GHz
Stop Freq
2.442500000 GHz
CF Step
200.000 kHz
Man
Freq Offset
0 Hz

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
Man
Freq Offset
0 Hz

$\pi/4$ DQPSK/LCH



Frequency

Auto Tune

Center Freq
2.402500000 GHz

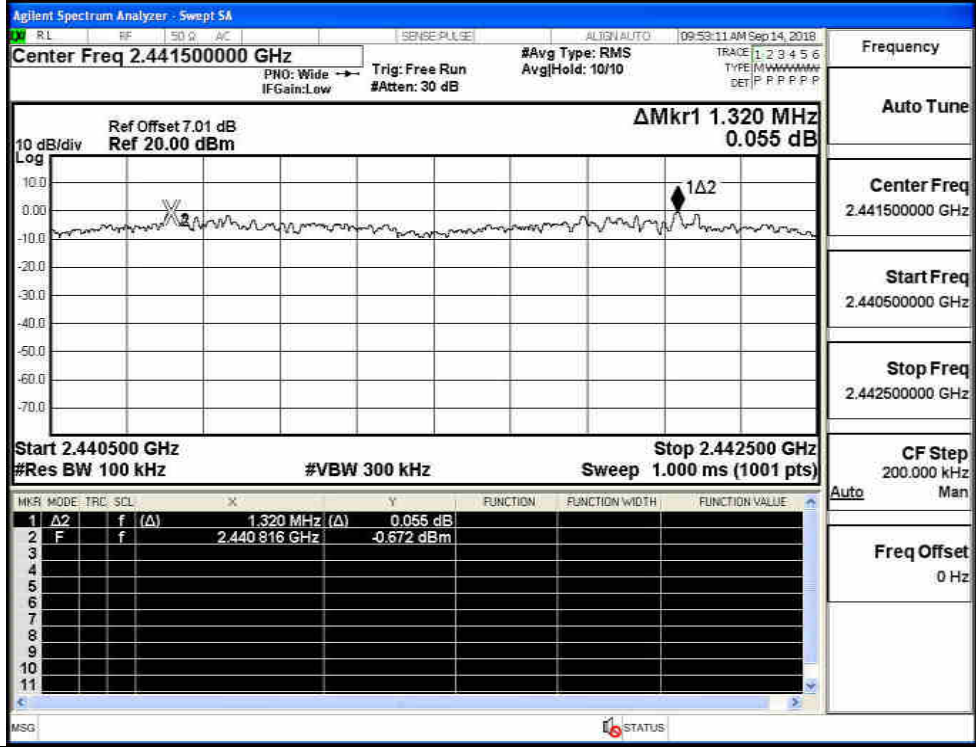
Start Freq
2.401500000 GHz

Stop Freq
2.403500000 GHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

$\pi/4$ DQPSK/MCH



Frequency

Auto Tune

Center Freq
2.441500000 GHz

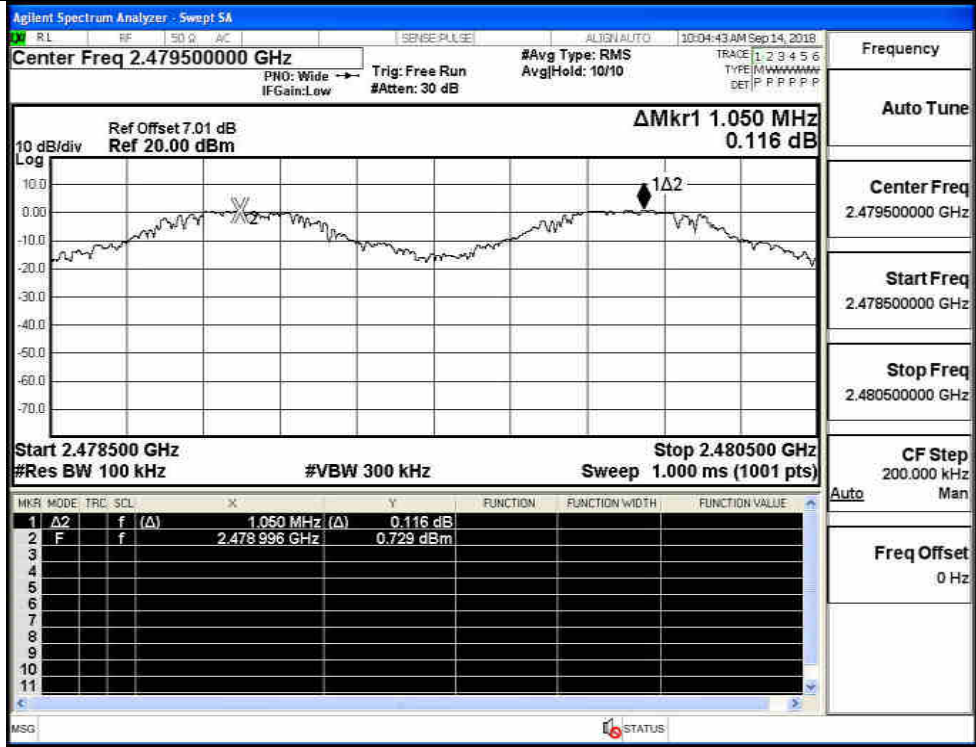
Start Freq
2.440500000 GHz

Stop Freq
2.442500000 GHz

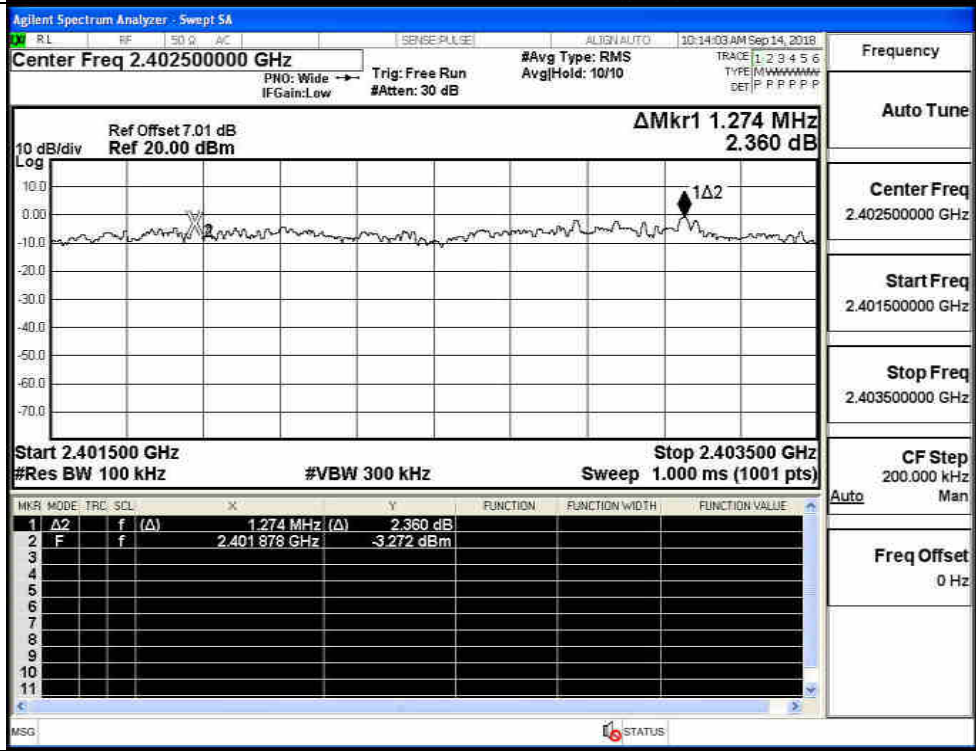
CF Step
200.000 kHz
Auto Man

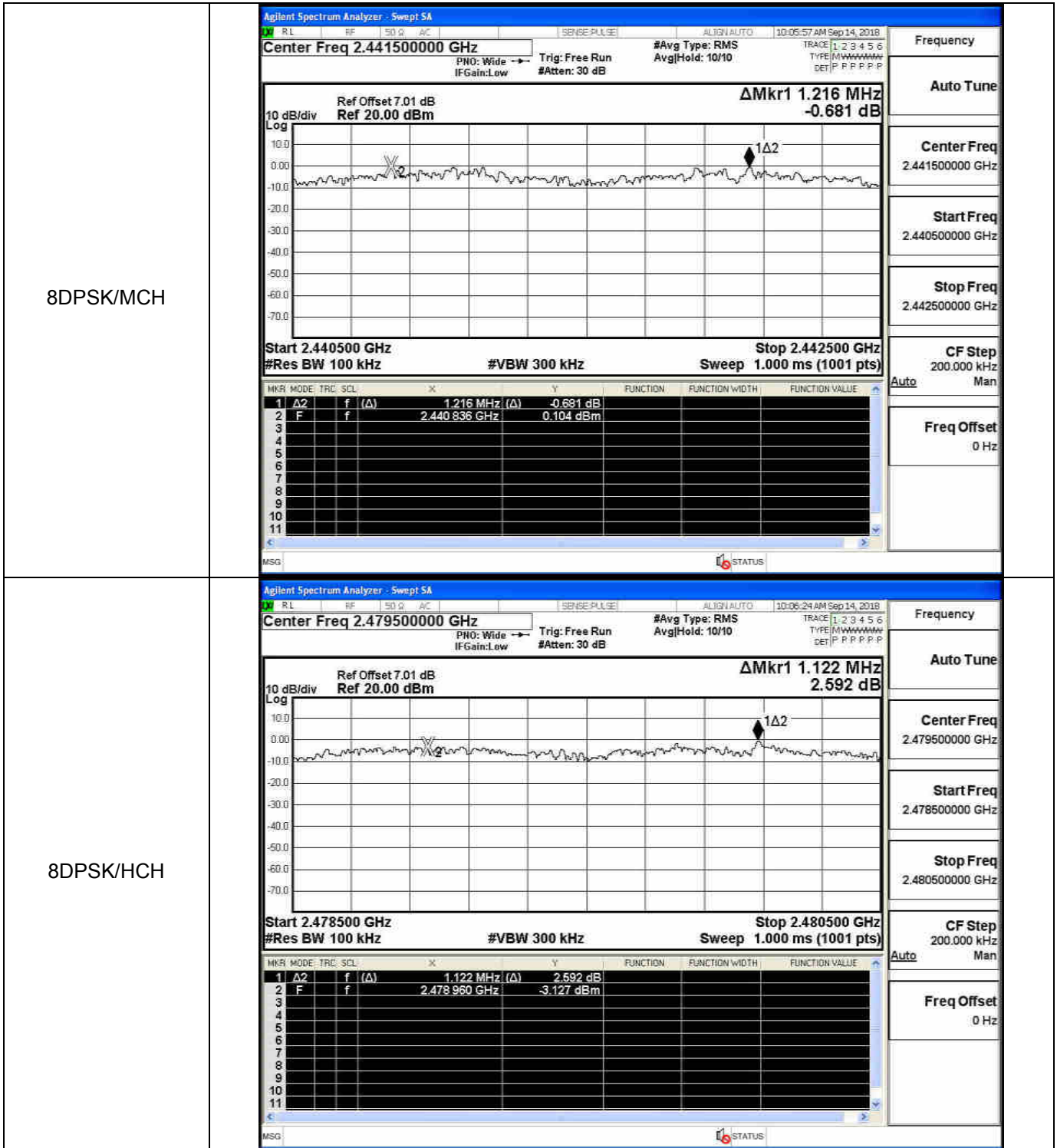
Freq Offset
0 Hz

π/4DQPSK/HCH



8DPSK/LCH



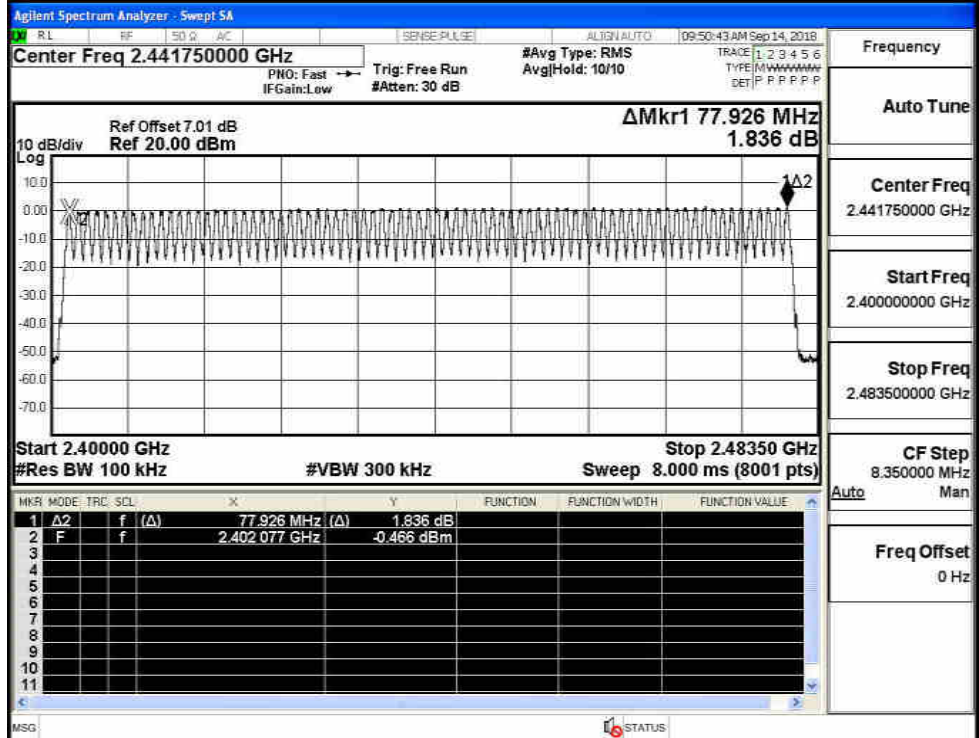


A.4 Hopping Channel Number

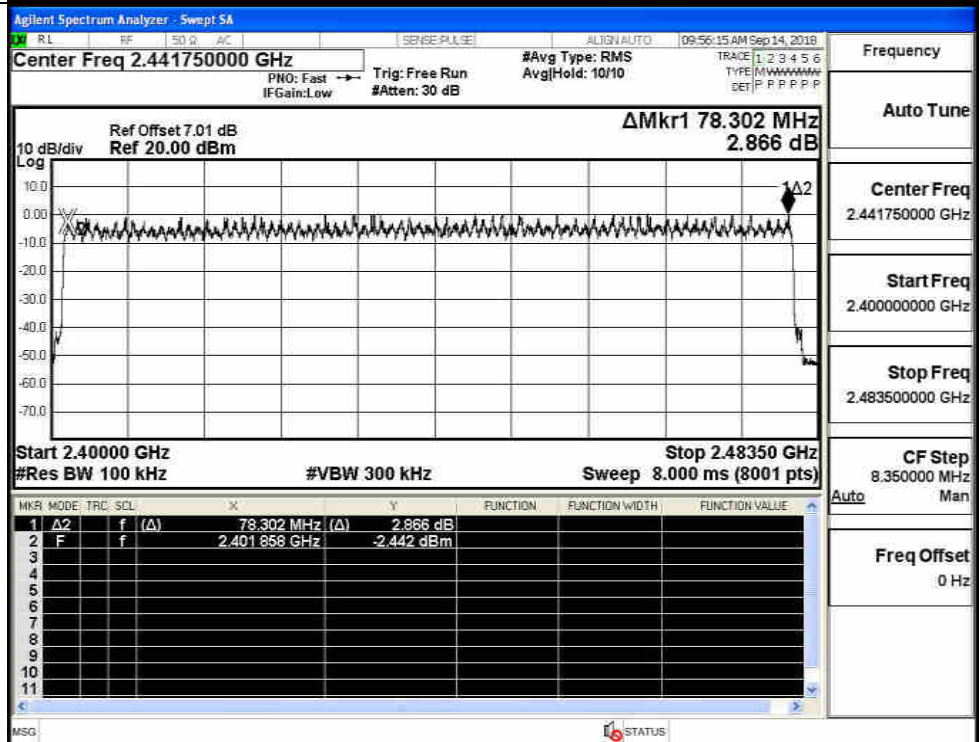
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

Test Graphs

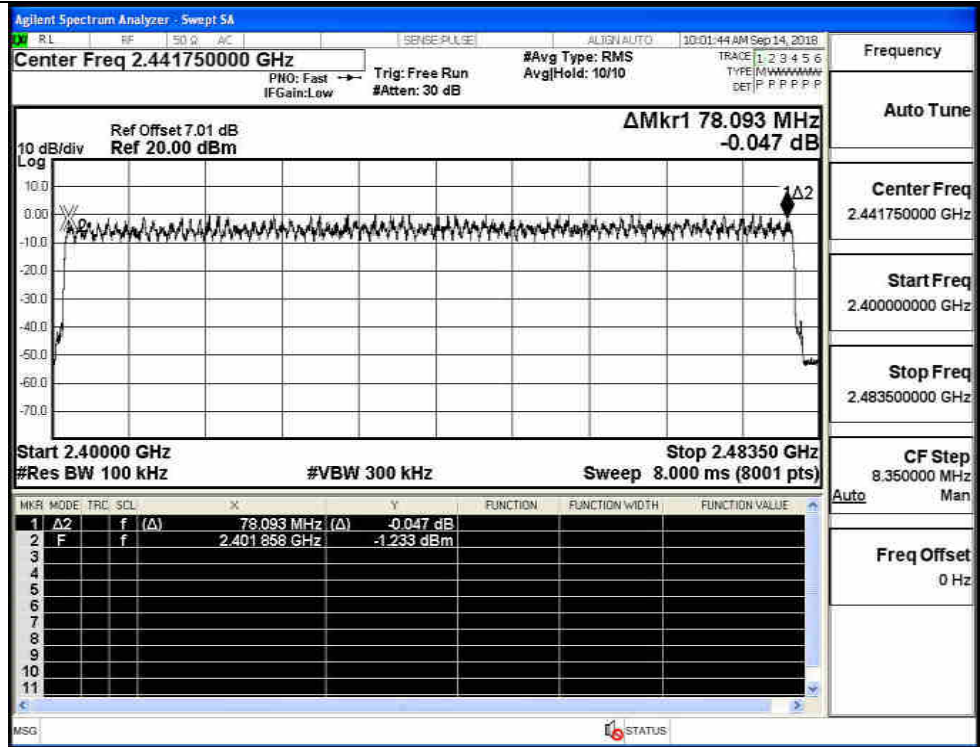
GFSK/Hop



$\pi/4$ DQPSK/Hop

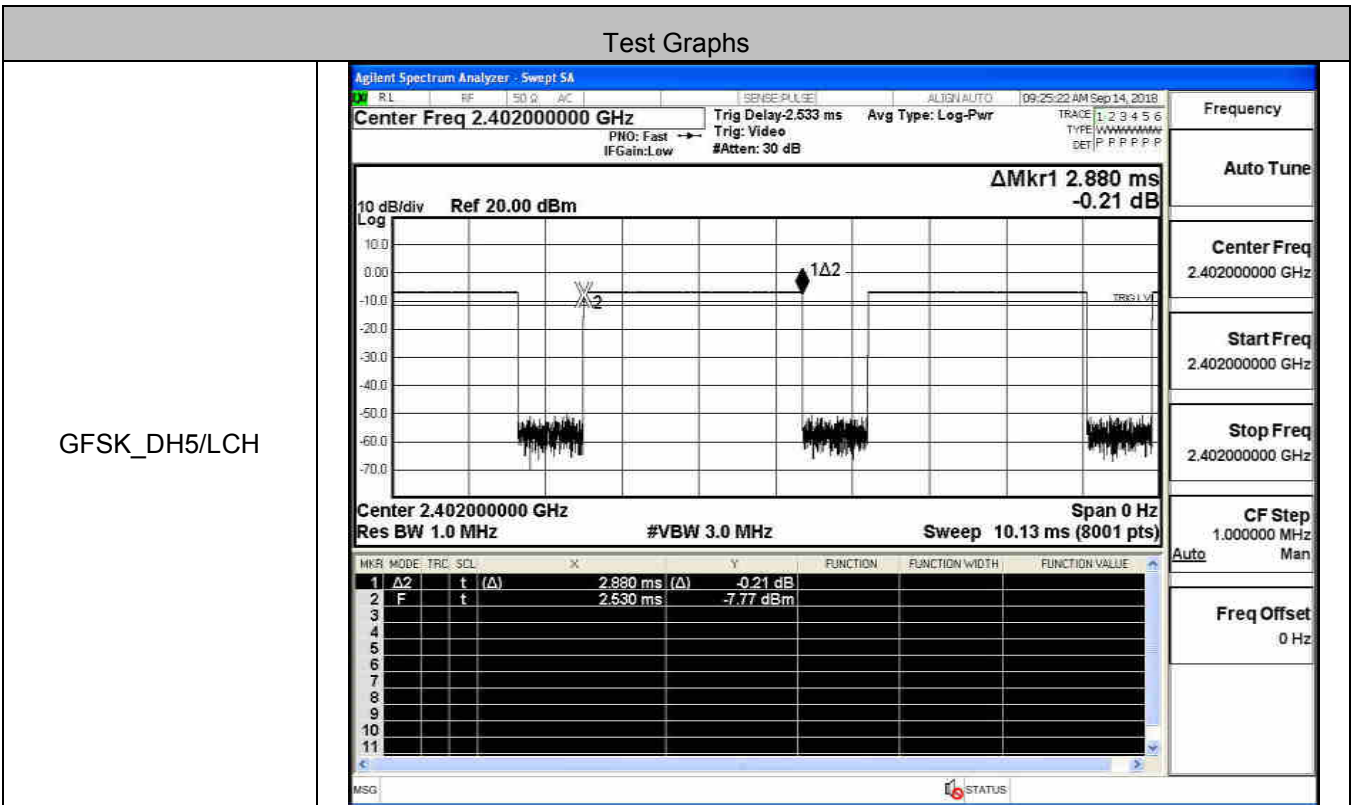


8DPSK/Hop

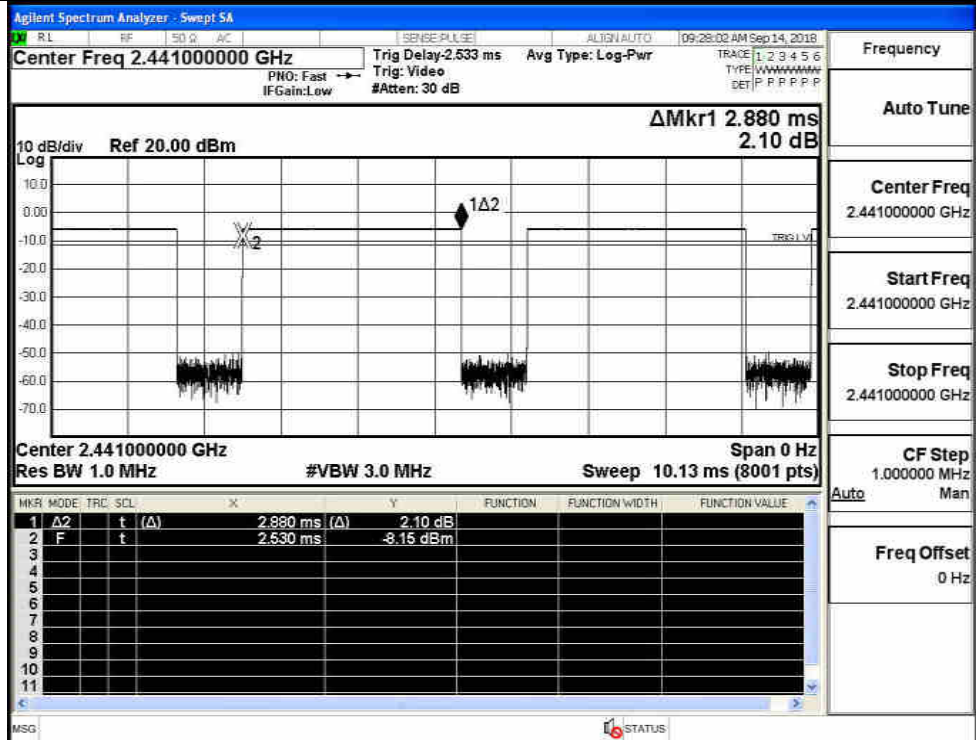


A.5 Dwell Time

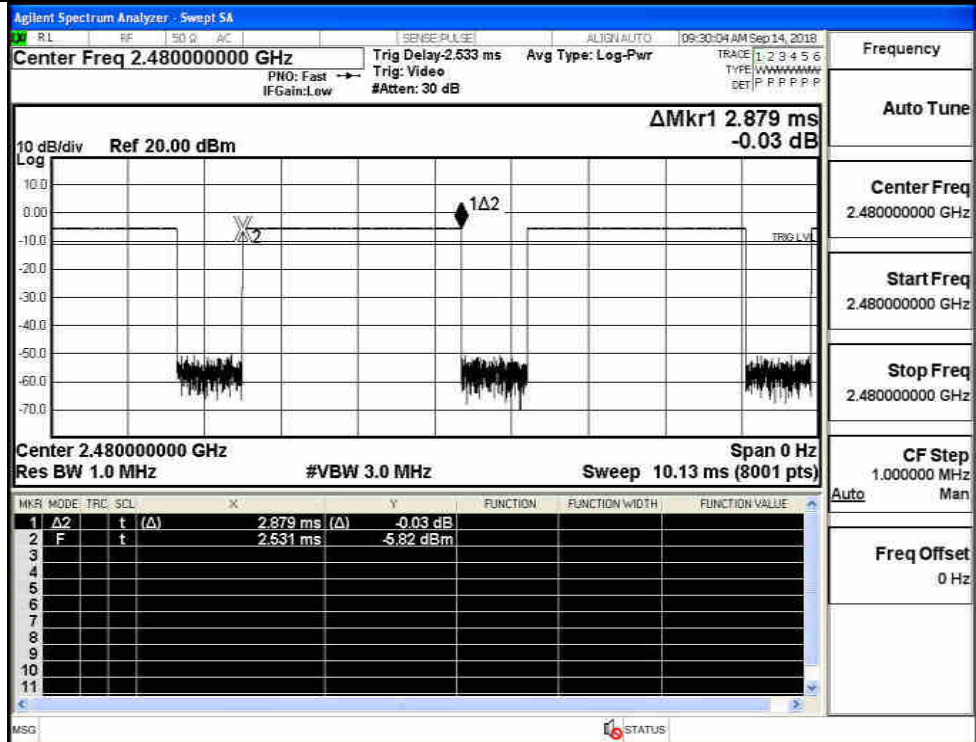
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7	0.307	0.4	PASS
8DPSK	3DH5	LCH	2.88	106.7	0.308	0.4	PASS
	3DH5	MCH	2.88	106.7	0.308	0.4	PASS
	3DH5	HCH	2.88	106.7	0.308	0.4	PASS



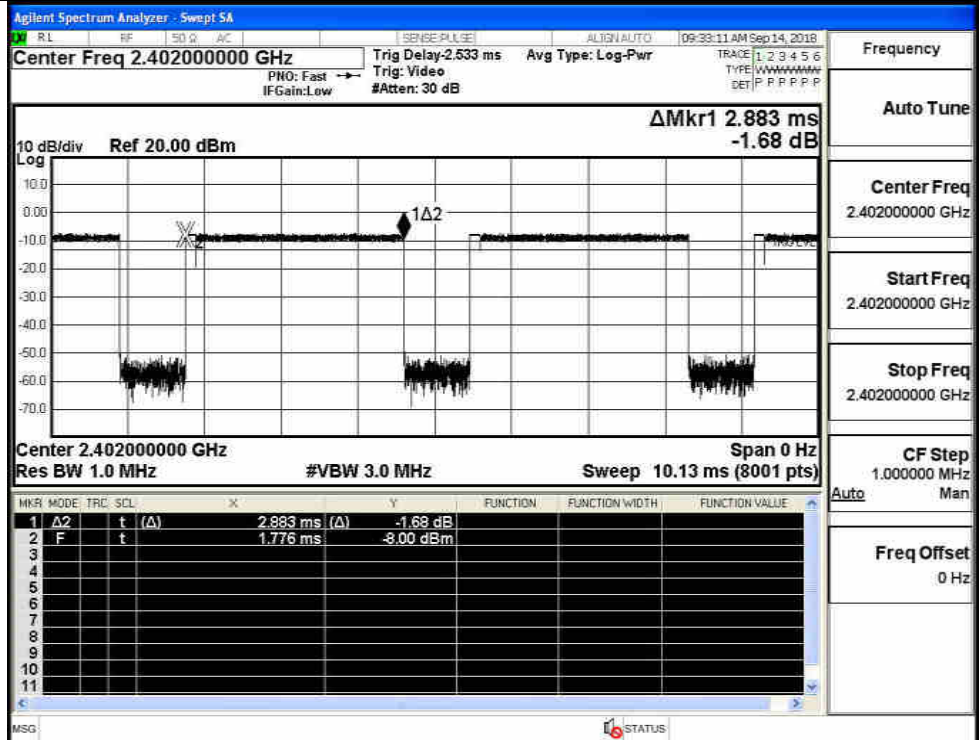
GFSK_DH5/MCH



GFSK_DH5/HCH

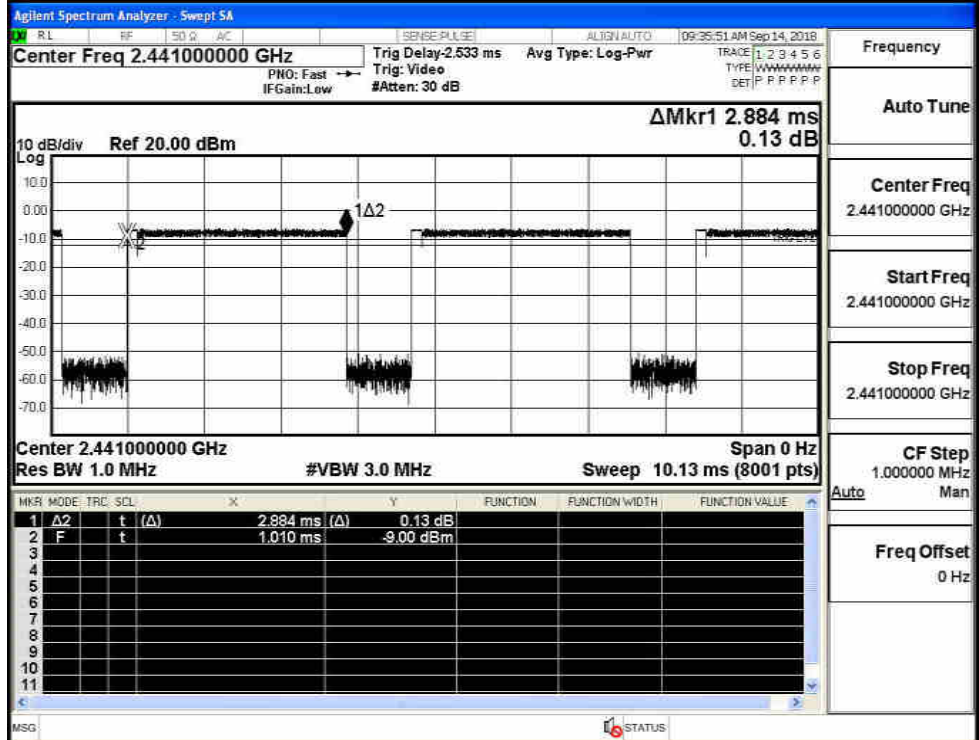


$\pi/4$ DQPSK
_2DH5/LCH



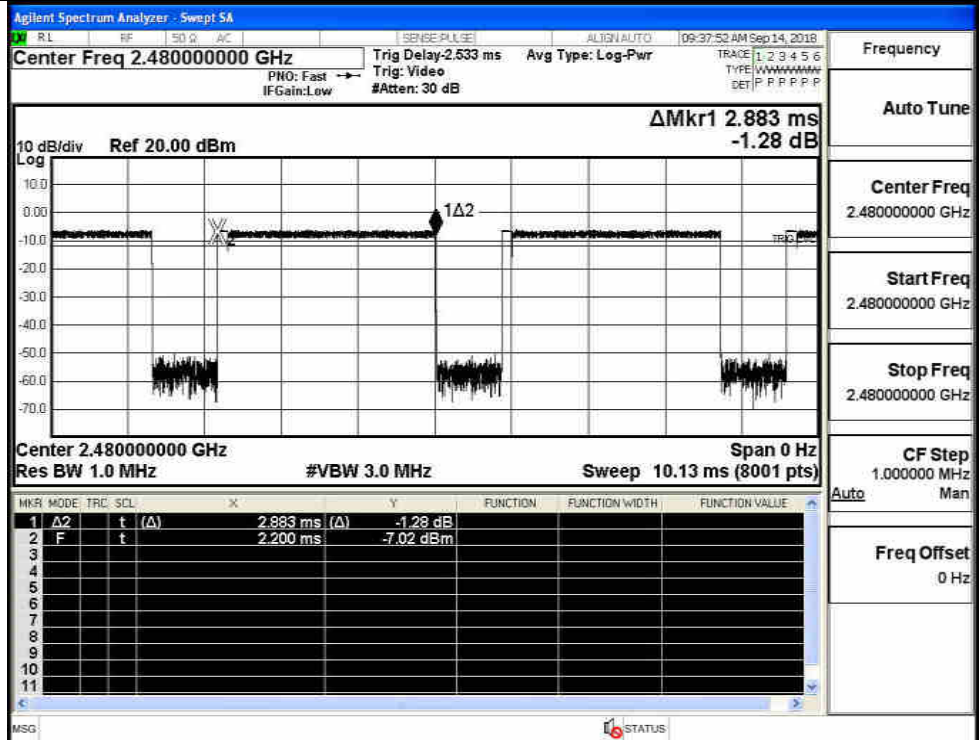
Frequency	2.402000000 GHz
Auto Tune	
Center Freq	2.402000000 GHz
Start Freq	2.402000000 GHz
Stop Freq	2.402000000 GHz
CF Step	1.000000 MHz
Freq Offset	0 Hz

$\pi/4$ DQPSK
_2DH5/MCH

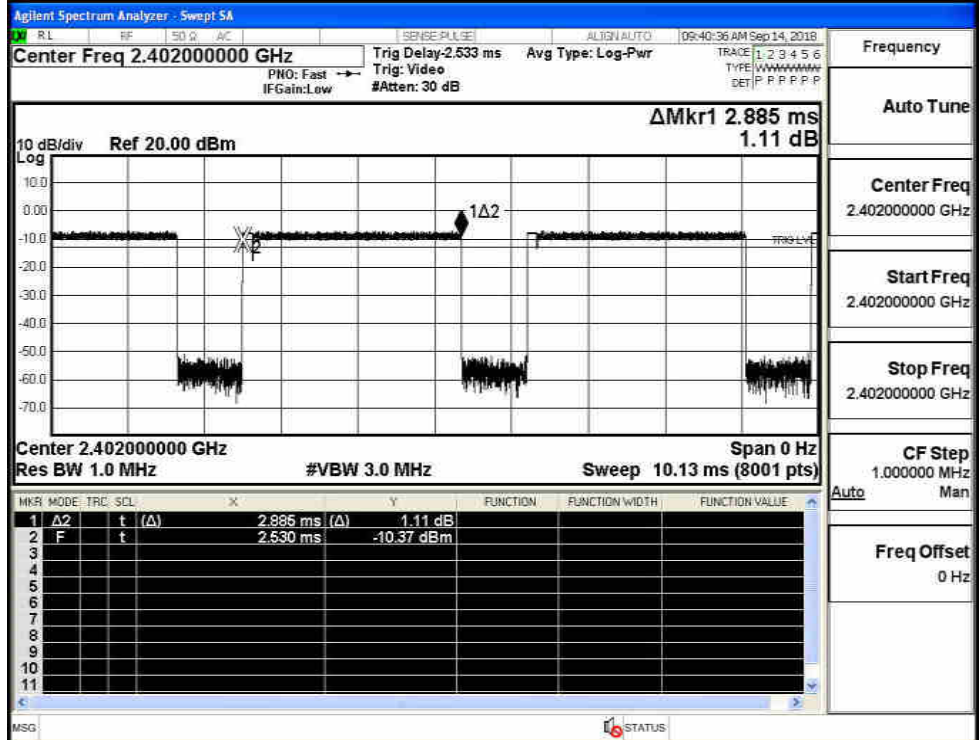


Frequency	2.441000000 GHz
Auto Tune	
Center Freq	2.441000000 GHz
Start Freq	2.441000000 GHz
Stop Freq	2.441000000 GHz
CF Step	1.000000 MHz
Freq Offset	0 Hz

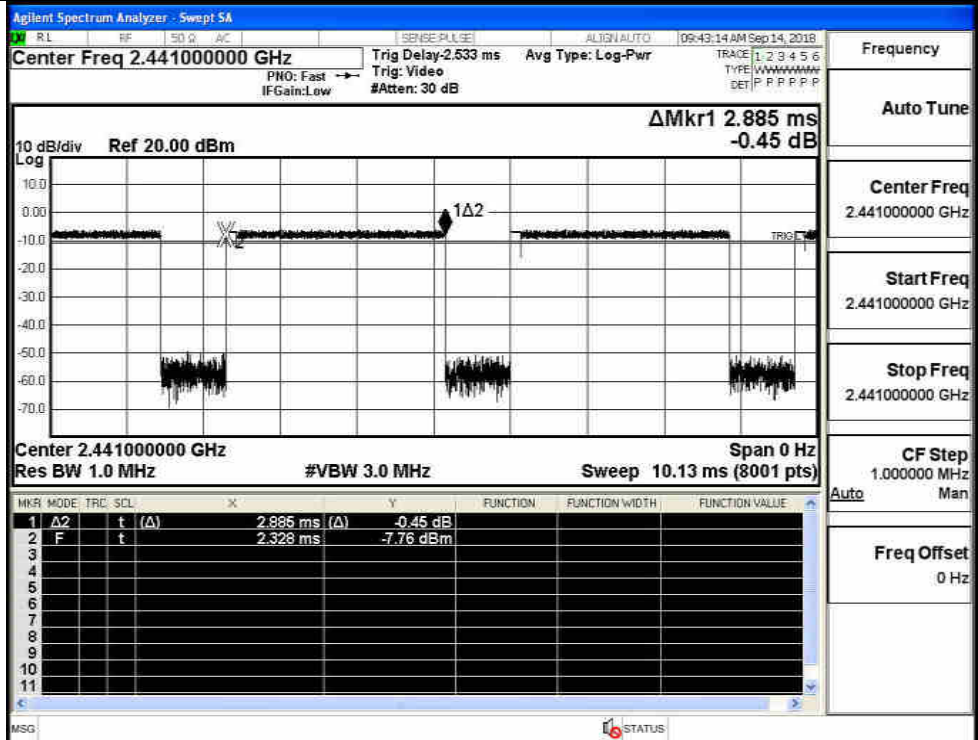
$\pi/4$ DQPSK
_2DH5/HCH



8DPSK_3DH5/LCH



8DPSK_3DH5/MCH



Frequency

Auto Tune

Center Freq 2.441000000 GHz

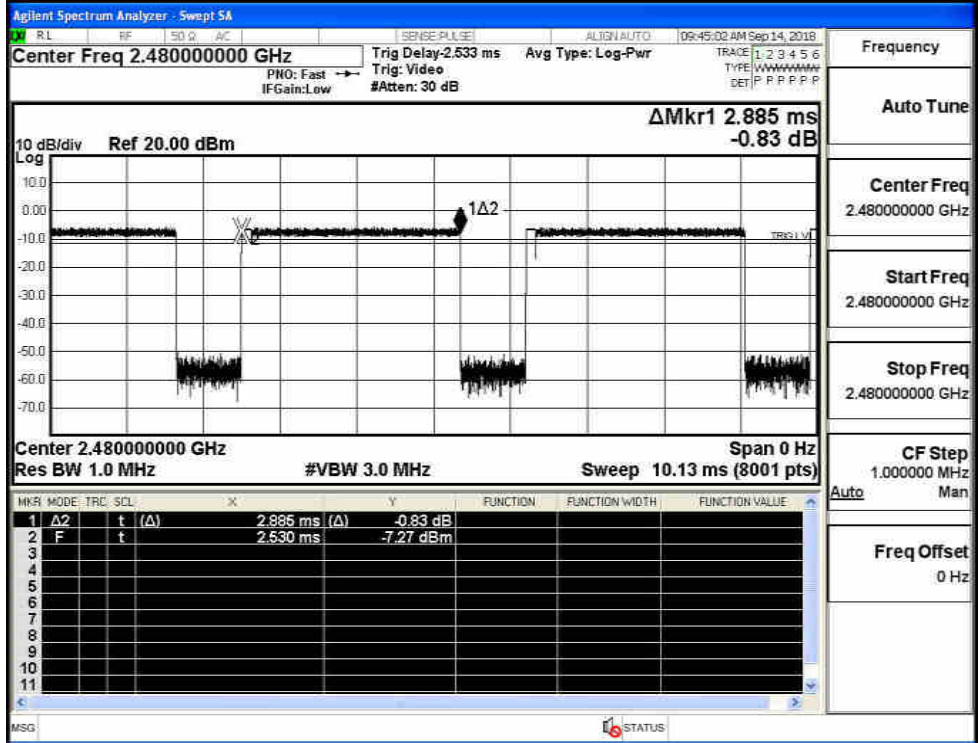
Start Freq 2.441000000 GHz

Stop Freq 2.441000000 GHz

CF Step 1.000000 MHz

Freq Offset 0 Hz

8DPSK_3DH5/HCH



Frequency

Auto Tune

Center Freq 2.480000000 GHz

Start Freq 2.480000000 GHz

Stop Freq 2.480000000 GHz

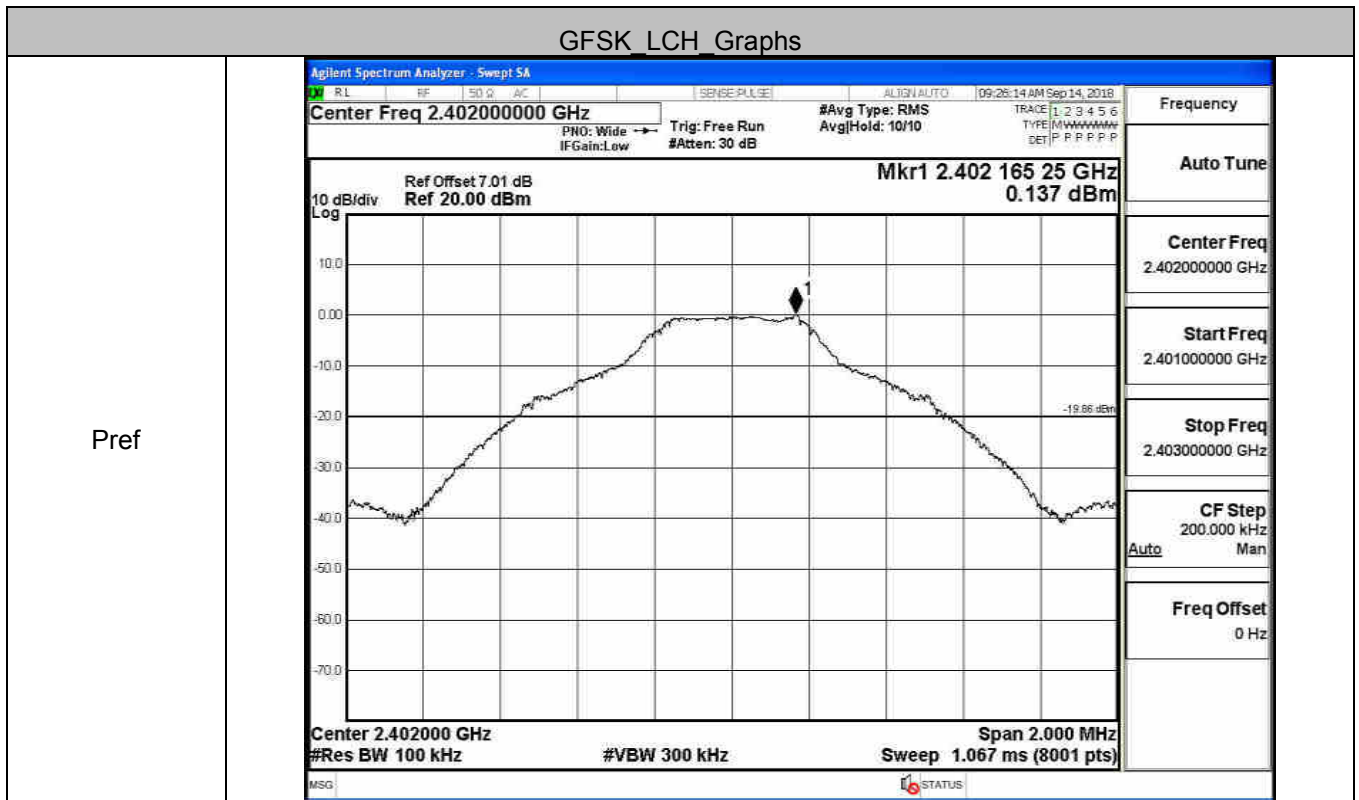
CF Step 1.000000 MHz

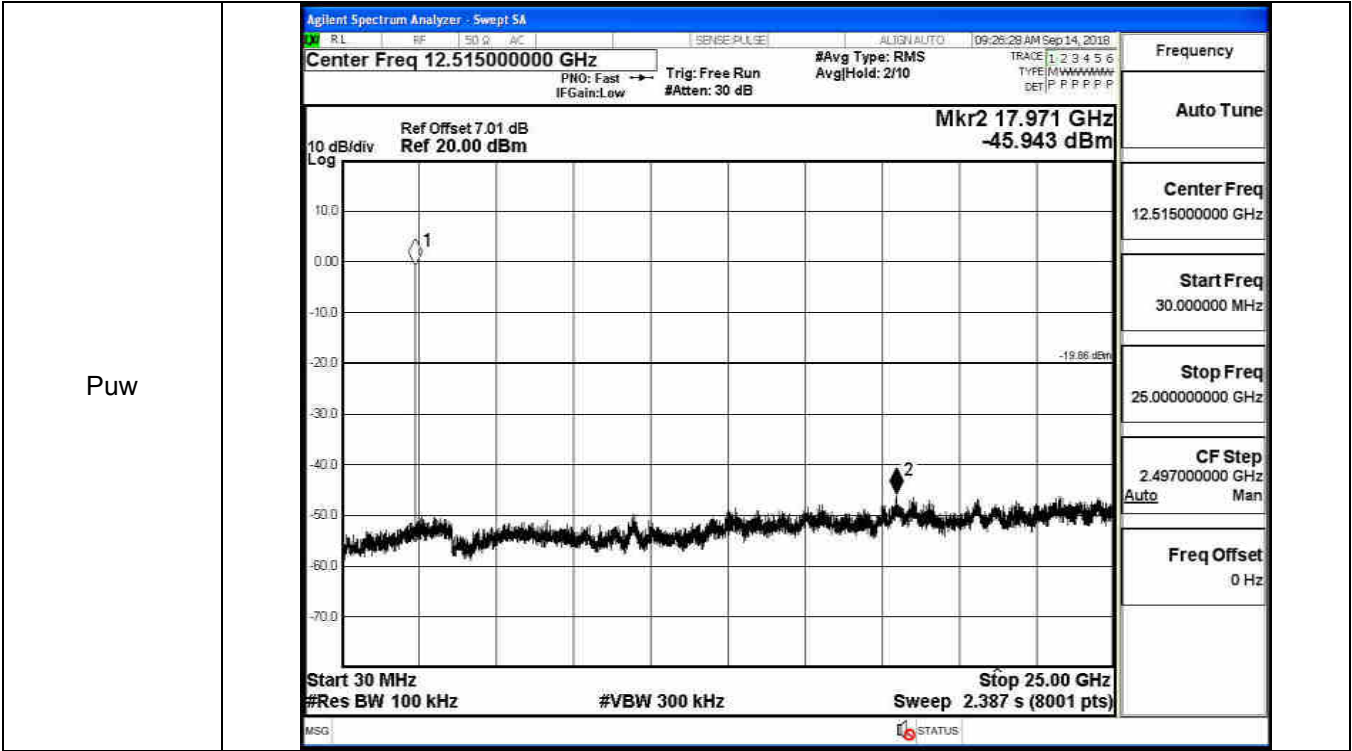
Freq Offset 0 Hz

A.6 RF Conducted Spurious Emissions

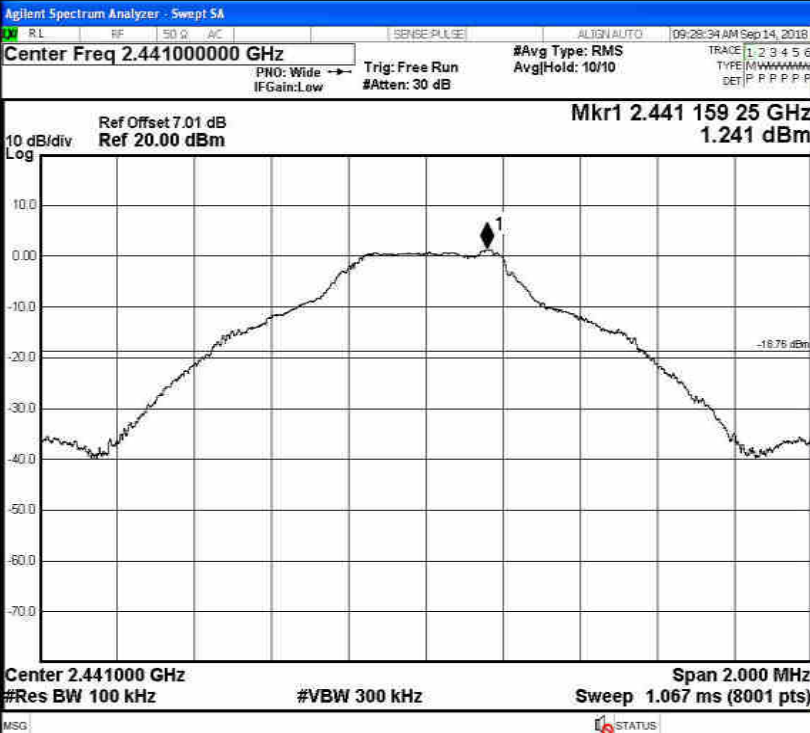
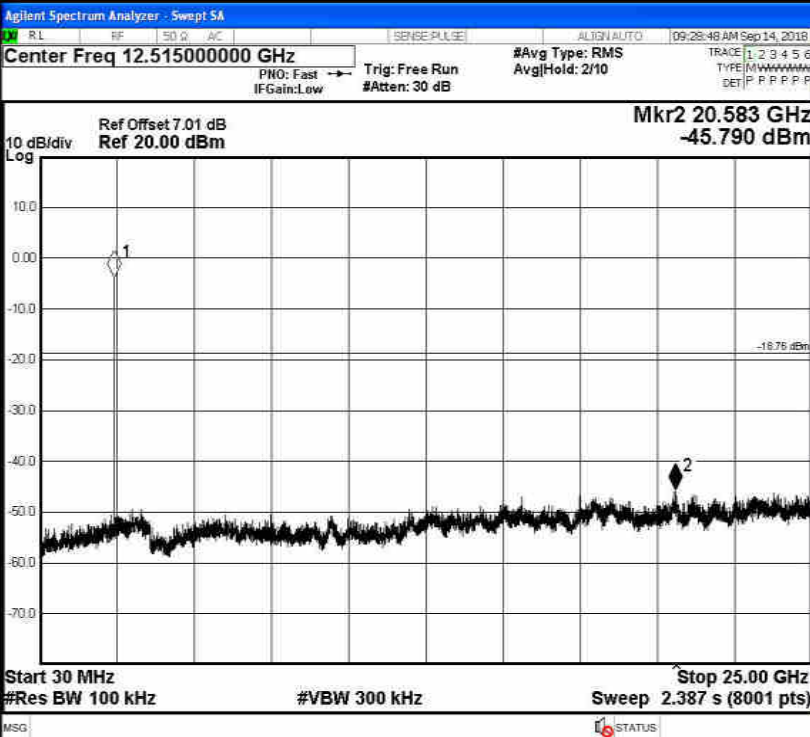
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.137	-45.943	-19.863	PASS
	MCH	1.241	-45.790	-18.759	PASS
	HCH	1.422	-46.032	-18.578	PASS
π /4DQPSK	LCH	-0.882	-45.784	-20.882	PASS
	MCH	0.185	-45.579	-19.815	PASS
	HCH	0.461	-44.784	-19.539	PASS
8DPSK	LCH	-0.832	-45.134	-20.832	PASS
	MCH	0.219	-46.185	-19.781	PASS
	HCH	0.231	-44.776	-19.769	PASS

GFSK LCH Graphs



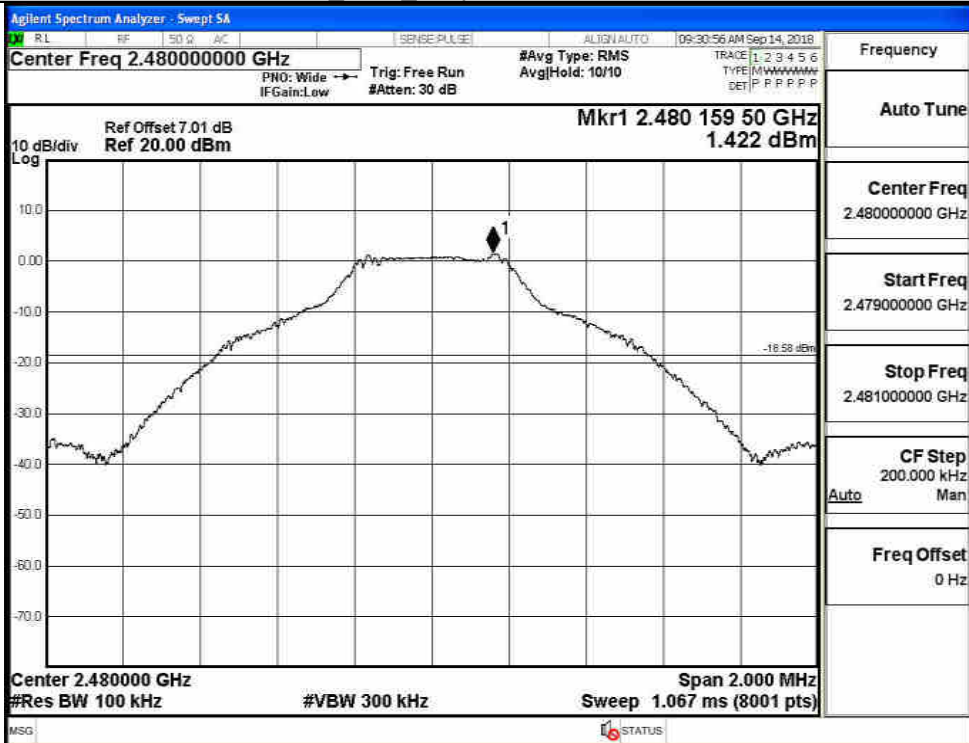


GFSK_MCH_Graphs

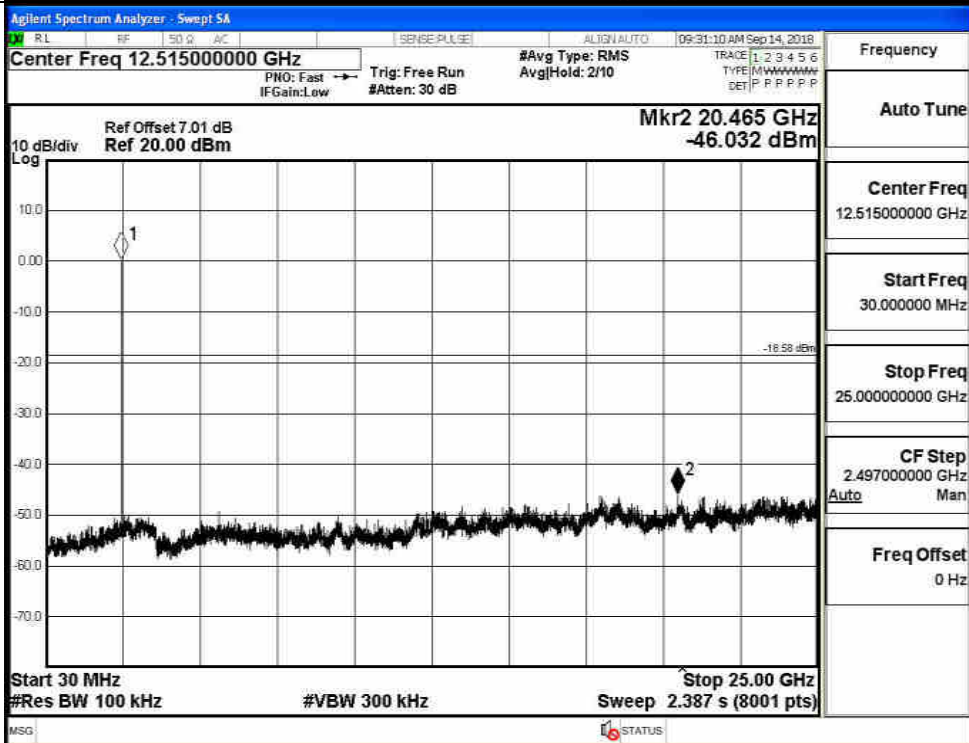
<p>Pref</p>		<table border="1"> <tr><td>Frequency</td></tr> <tr><td>Auto Tune</td></tr> <tr><td>Center Freq 2.441000000 GHz</td></tr> <tr><td>Start Freq 2.440000000 GHz</td></tr> <tr><td>Stop Freq 2.442000000 GHz</td></tr> <tr><td>CF Step 200.000 kHz Auto Man</td></tr> <tr><td>Freq Offset 0 Hz</td></tr>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

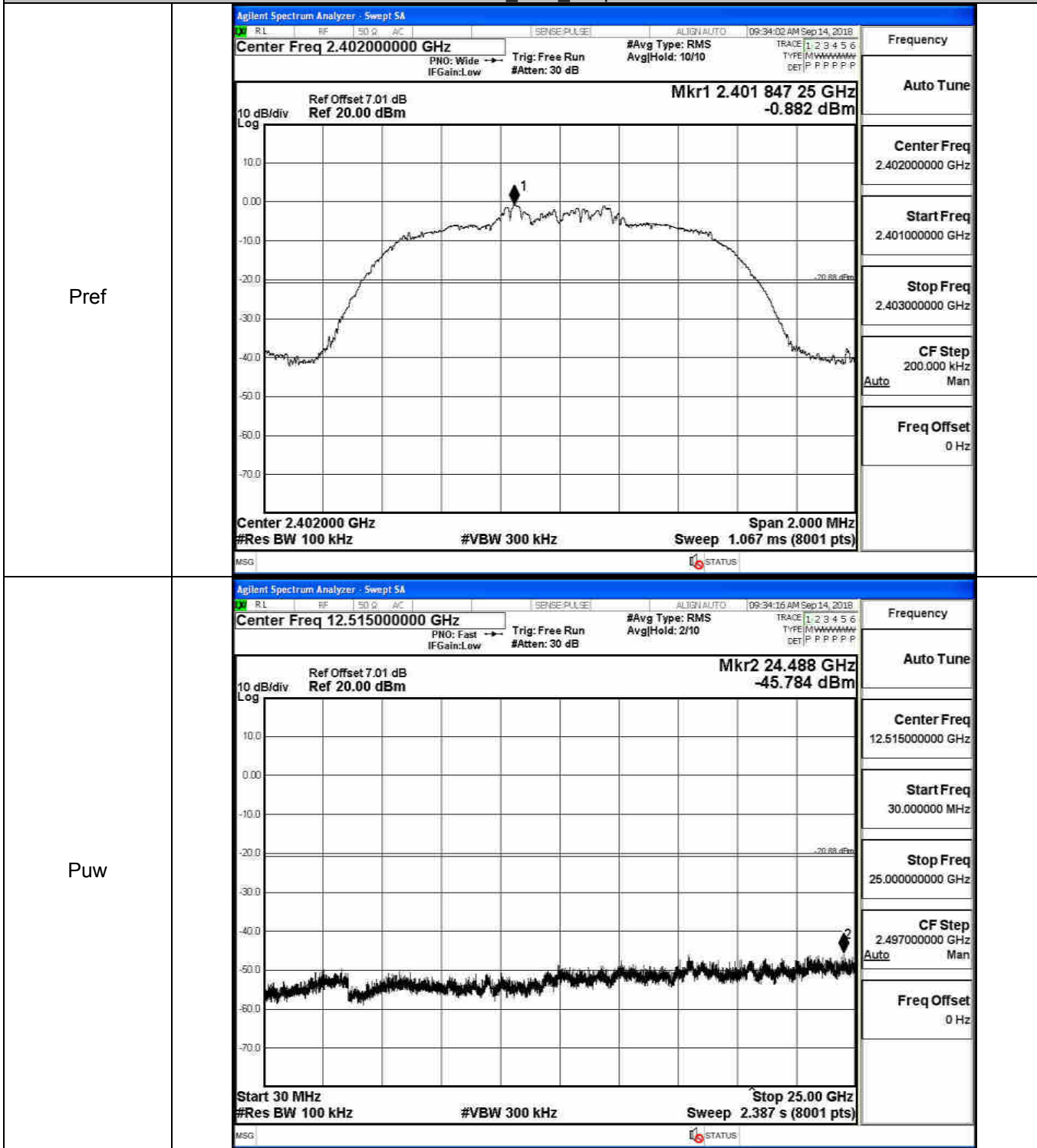
Pref



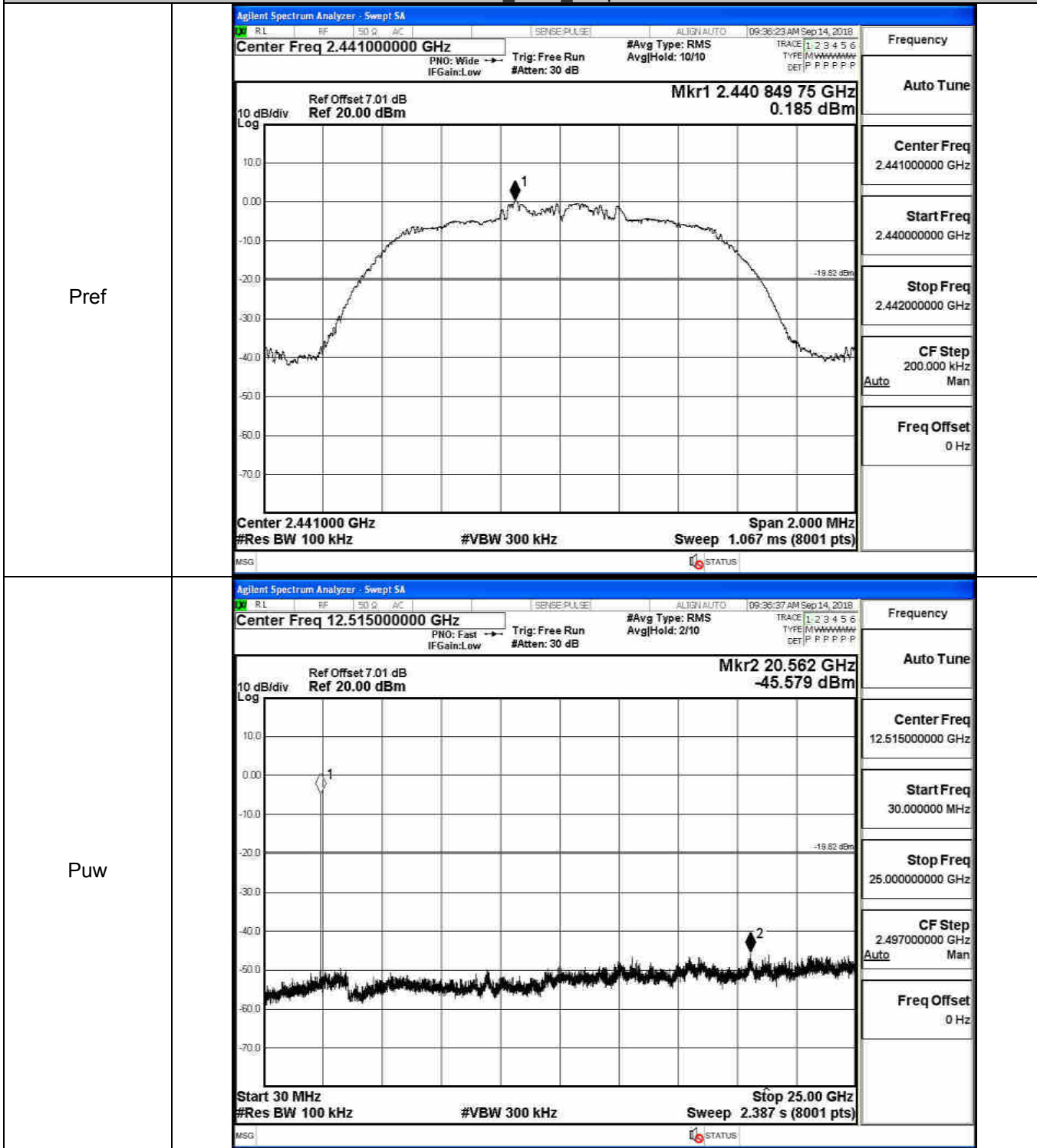
Puw



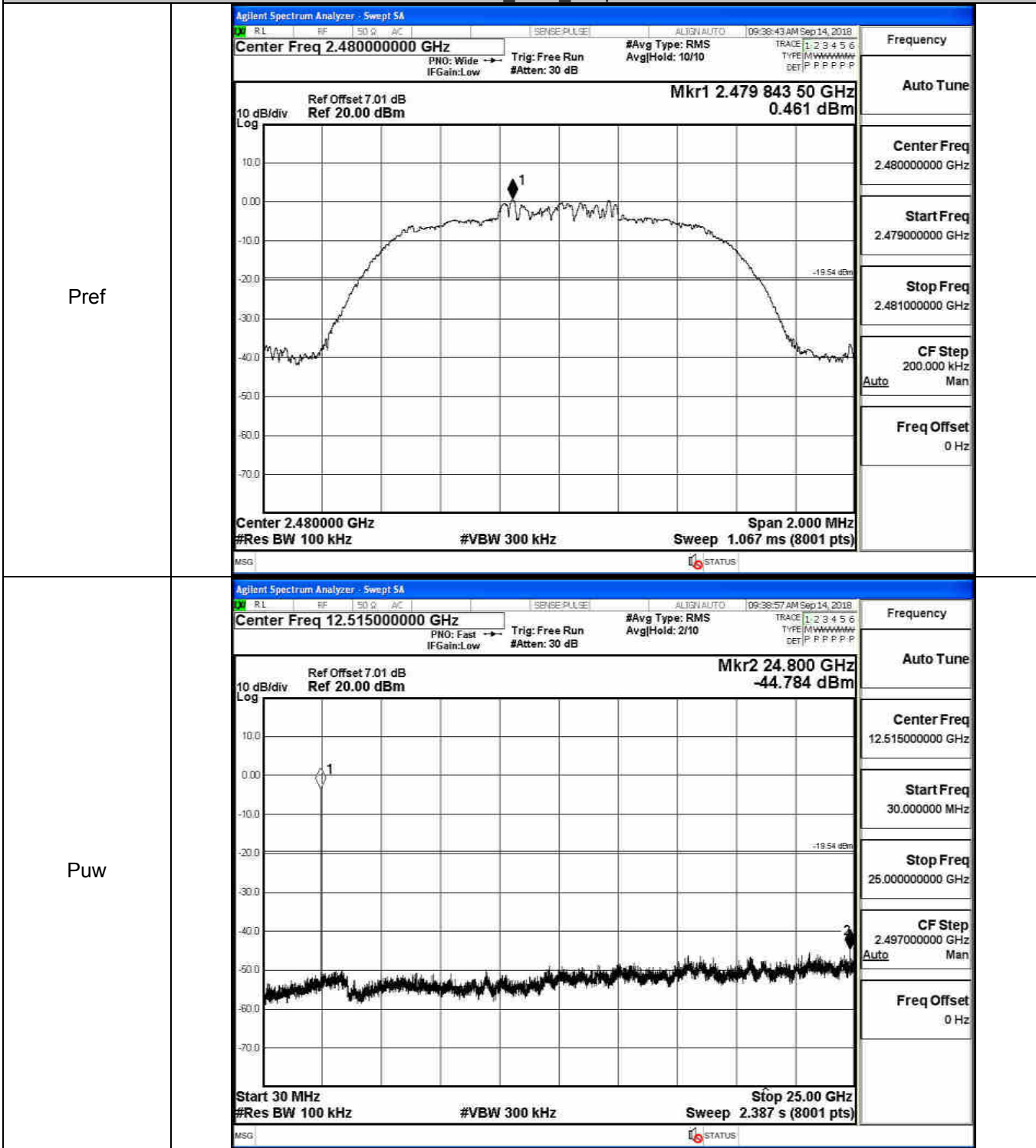
$\pi/4$ DQPSK_LCH_Graphs



π /4DQPSK_MCH_Graphs

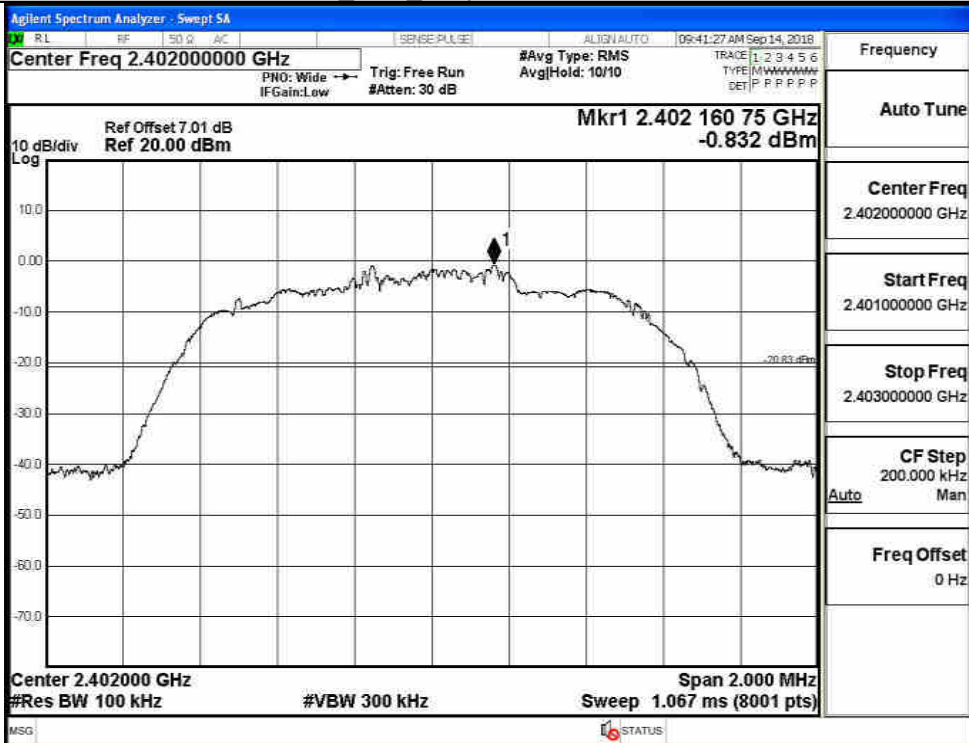


$\pi/4$ DQPSK_HCH_Graphs

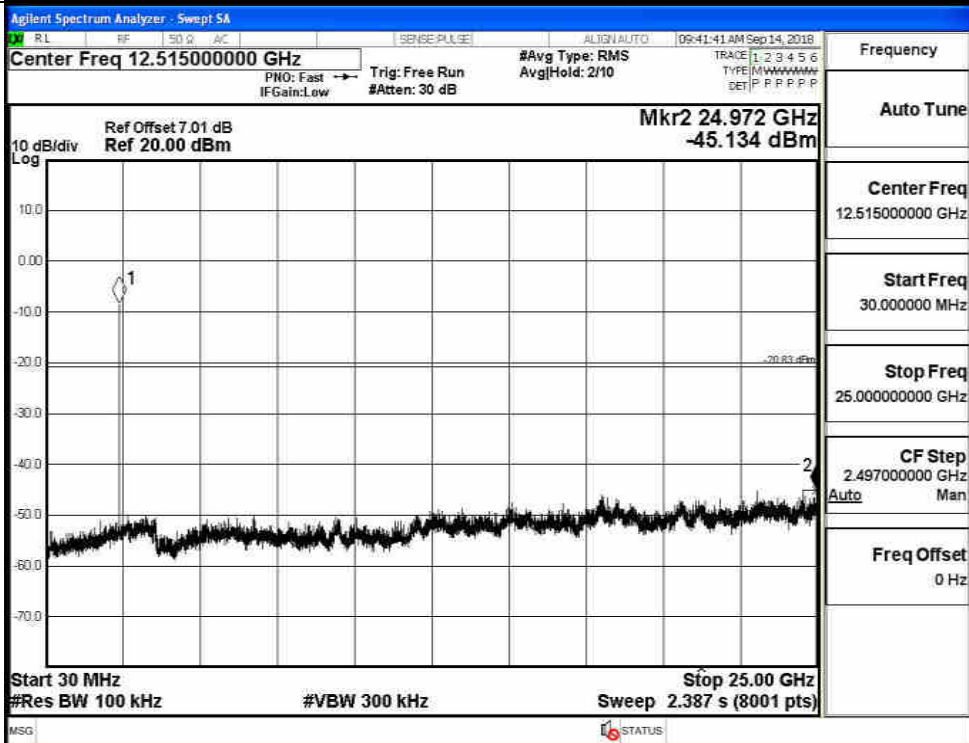


8DPSK_LCH_Graphs

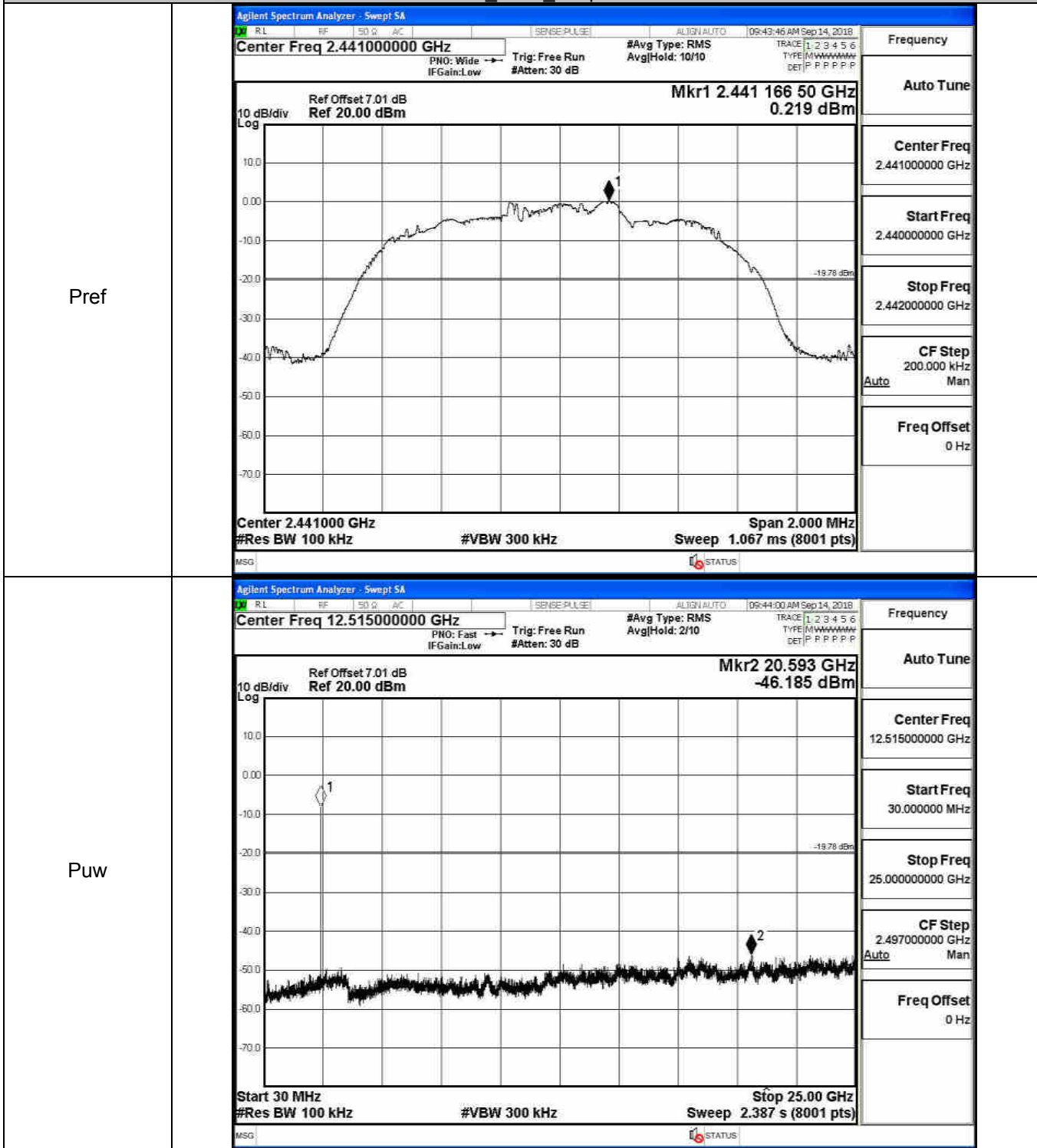
Pref



Puw

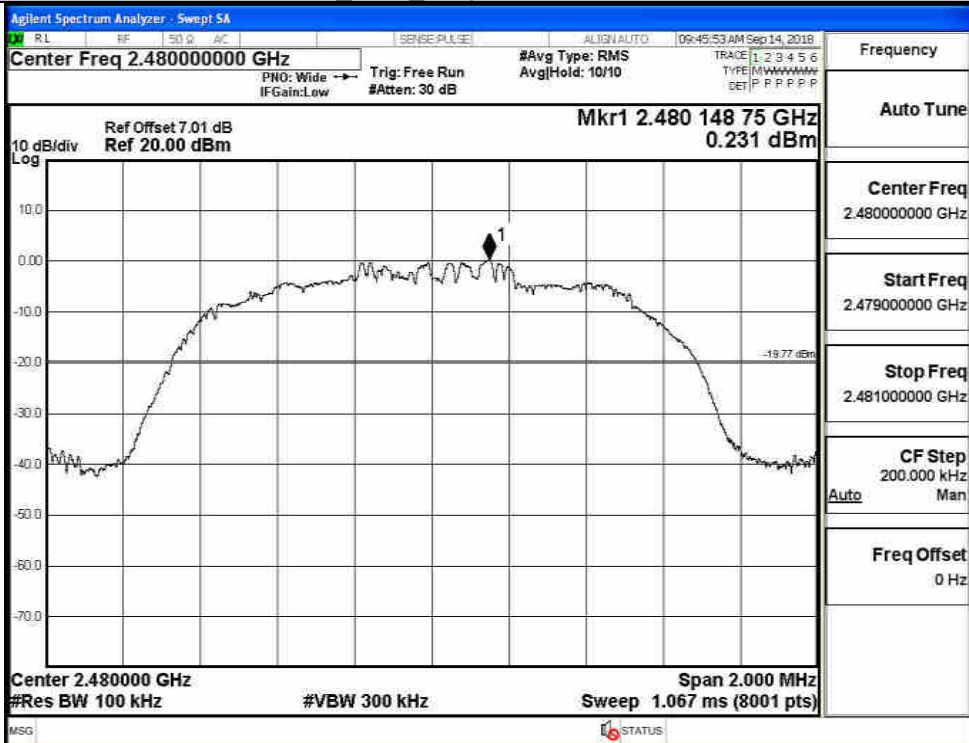


8DPSK_MCH_Graphs

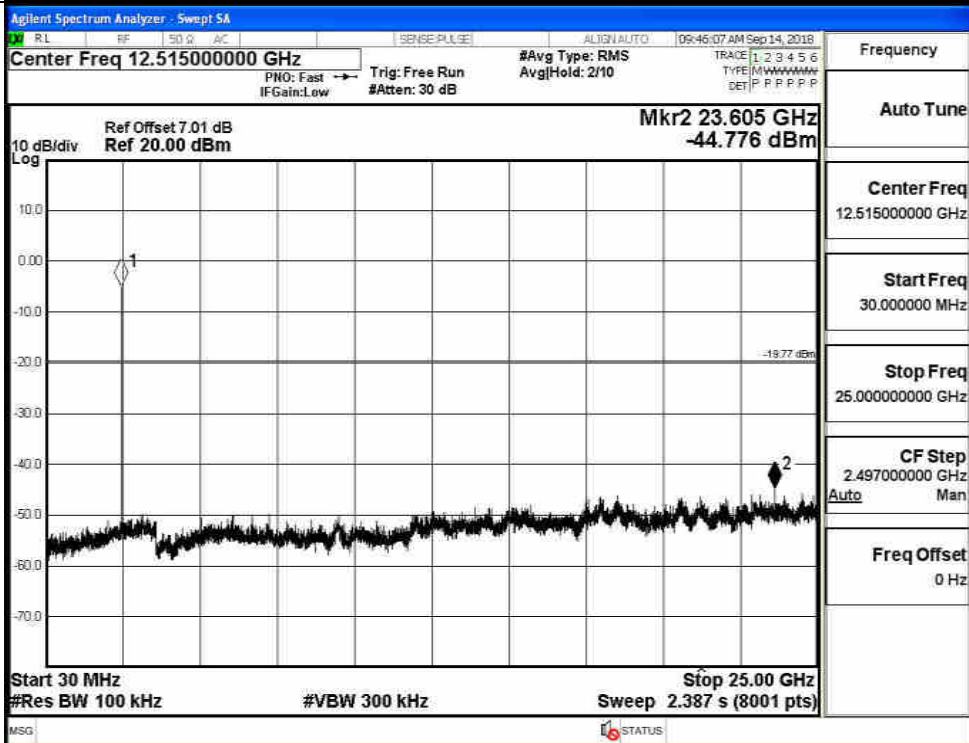


8DPSK_HCH_Graphs

Pref



Puw

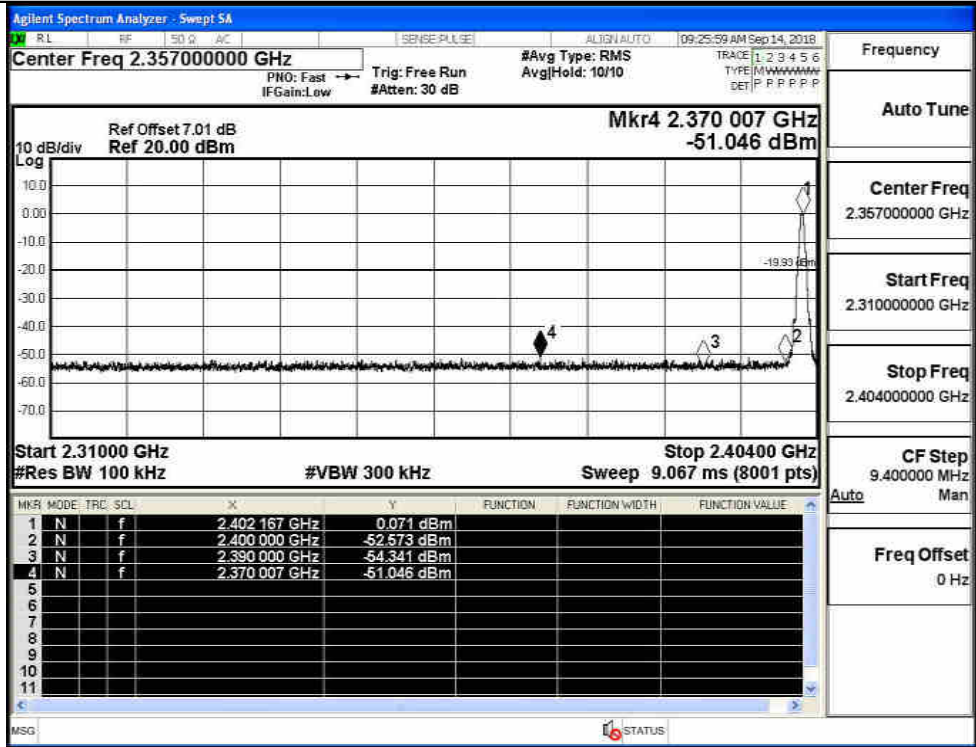


A.7 Band-edge for RF Conducted Emissions

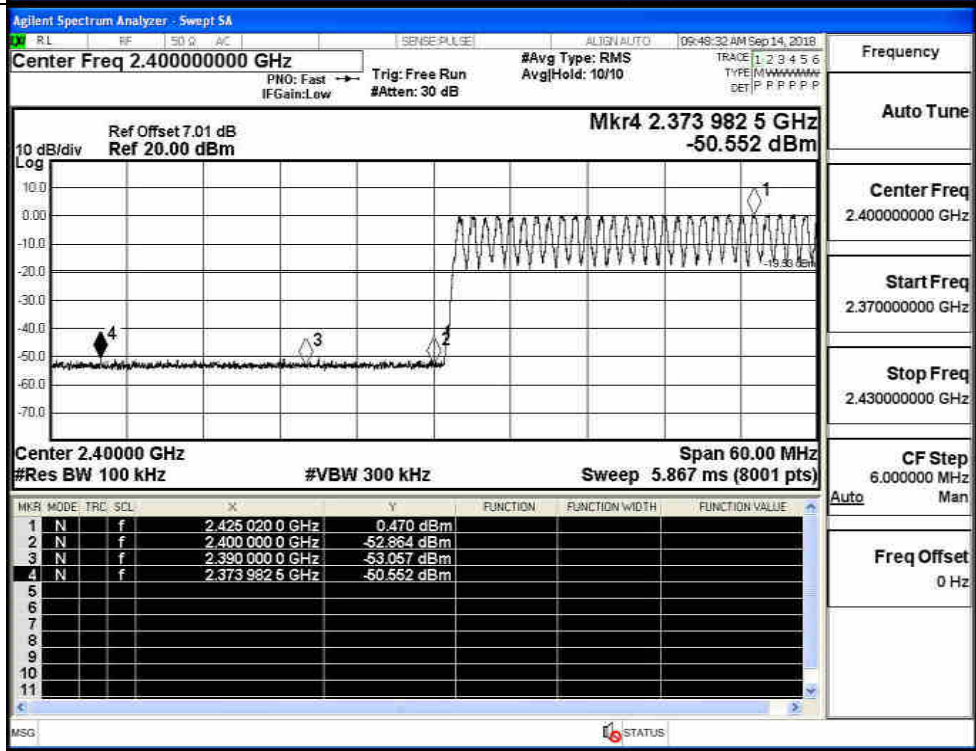
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	0.071	Off	-51.046	-19.93	PASS
			0.470	On	-50.552	-19.53	PASS
	HCH	2480	1.411	Off	-50.828	-18.59	PASS
			1.366	On	-50.332	-18.63	PASS
$\pi/4$ DQPSK	LCH	2402	-0.873	Off	-50.913	-20.87	PASS
			-0.148	On	-50.588	-20.15	PASS
	HCH	2480	0.507	Off	-50.916	-19.49	PASS
			0.393	On	-50.133	-19.61	PASS
8DPSK	LCH	2402	-0.945	Off	-50.728	-20.95	PASS
			-0.060	On	-50.552	-20.06	PASS
	HCH	2480	0.391	Off	-50.717	-19.61	PASS
			0.469	On	-50.188	-19.53	PASS

Test Graphs

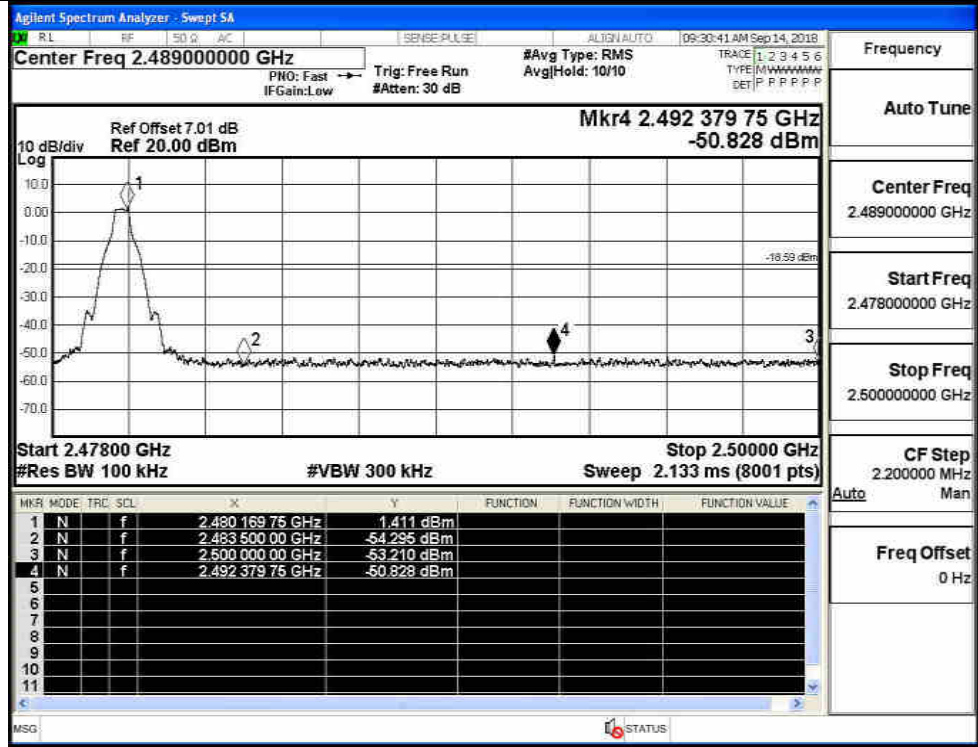
GFSK/LCH/No Hop



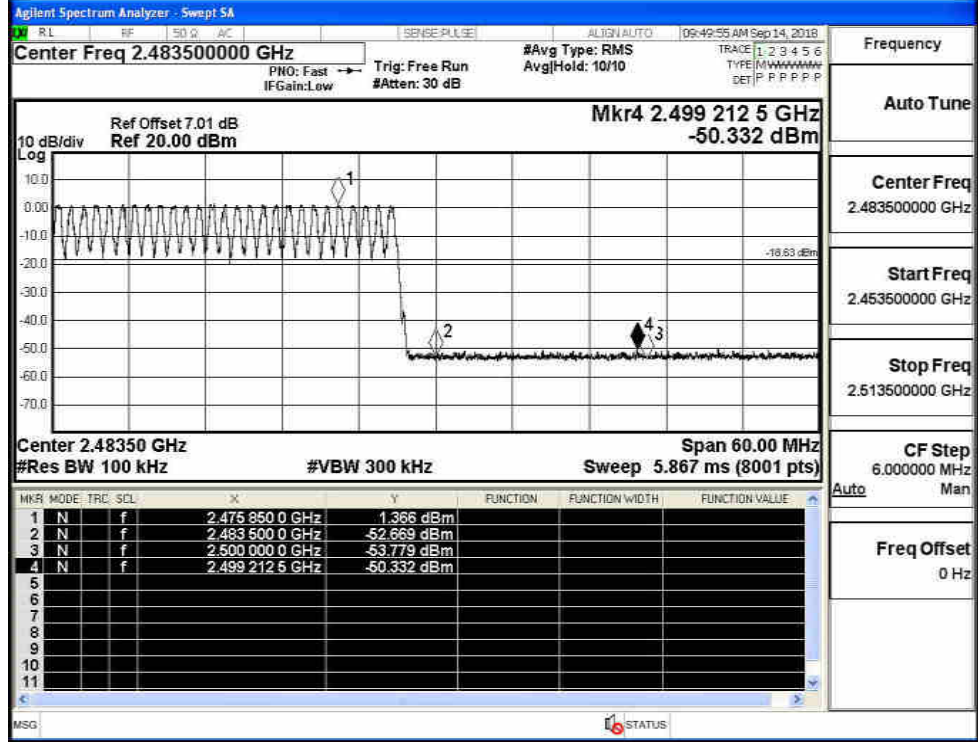
GFSK/LCH/Hop



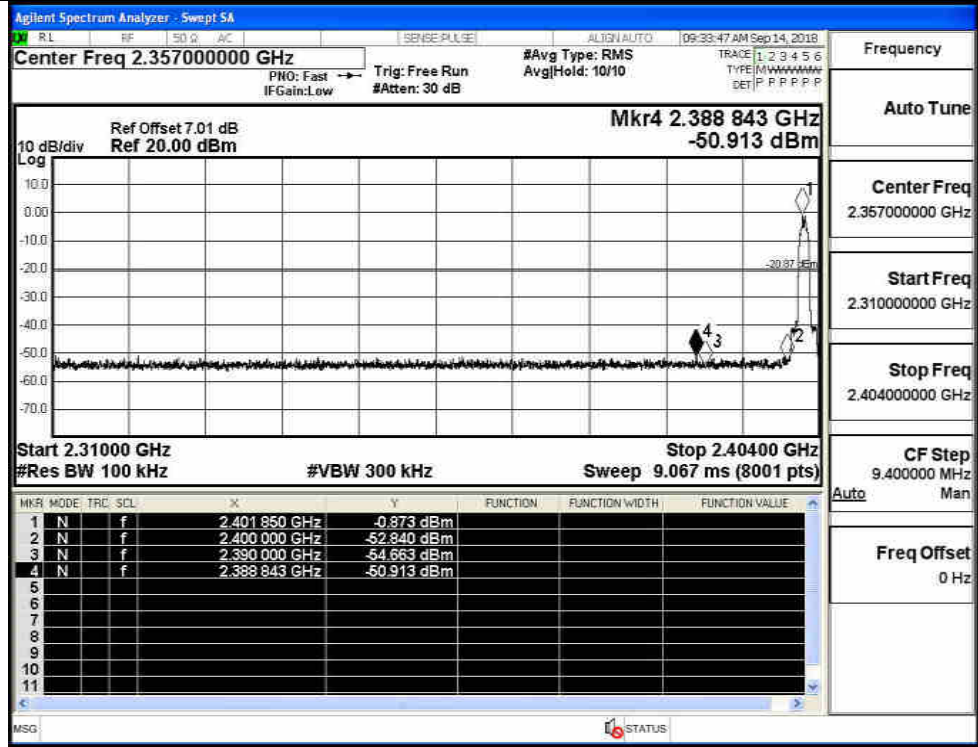
GFSK/HCH/No Hop



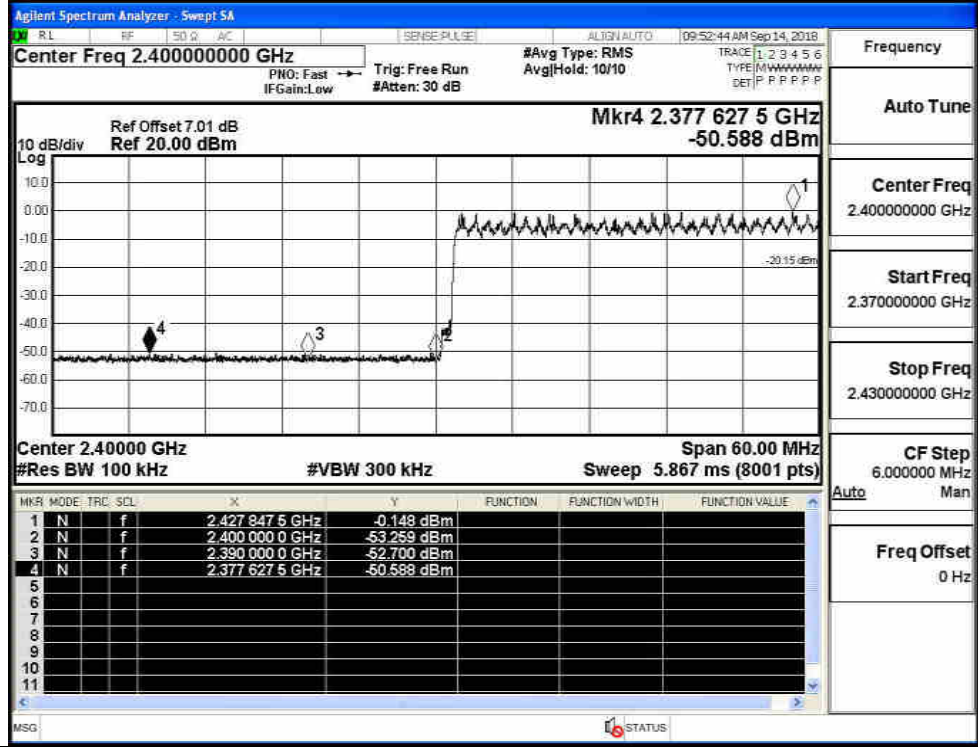
GFSK/HCH/Hop



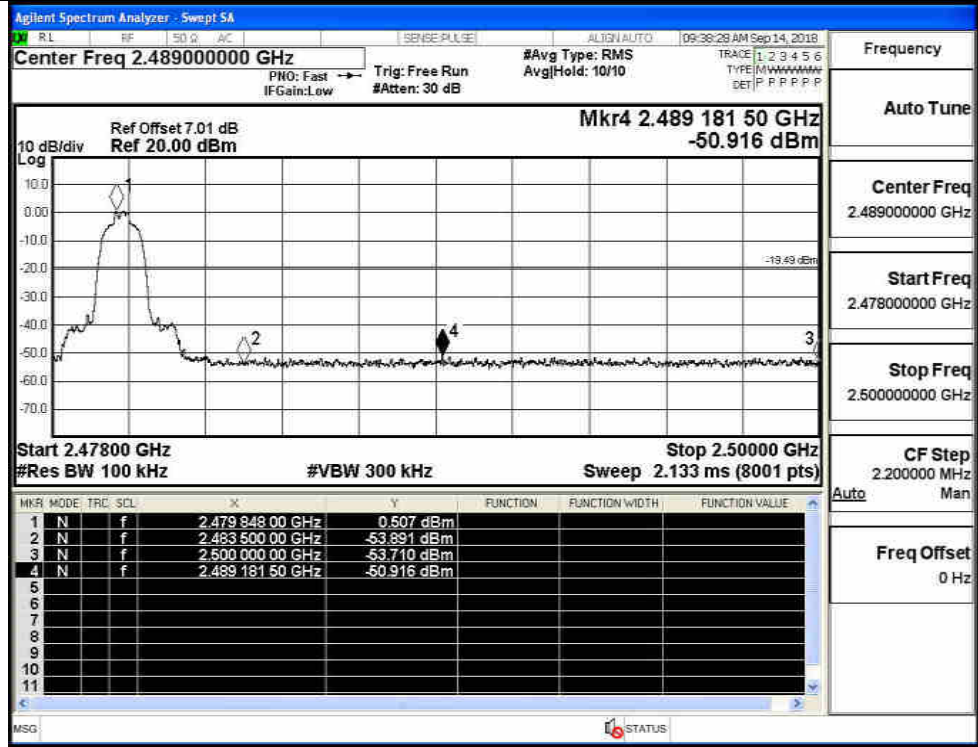
$\pi/4$ DQPSK/LCH/No
Hop



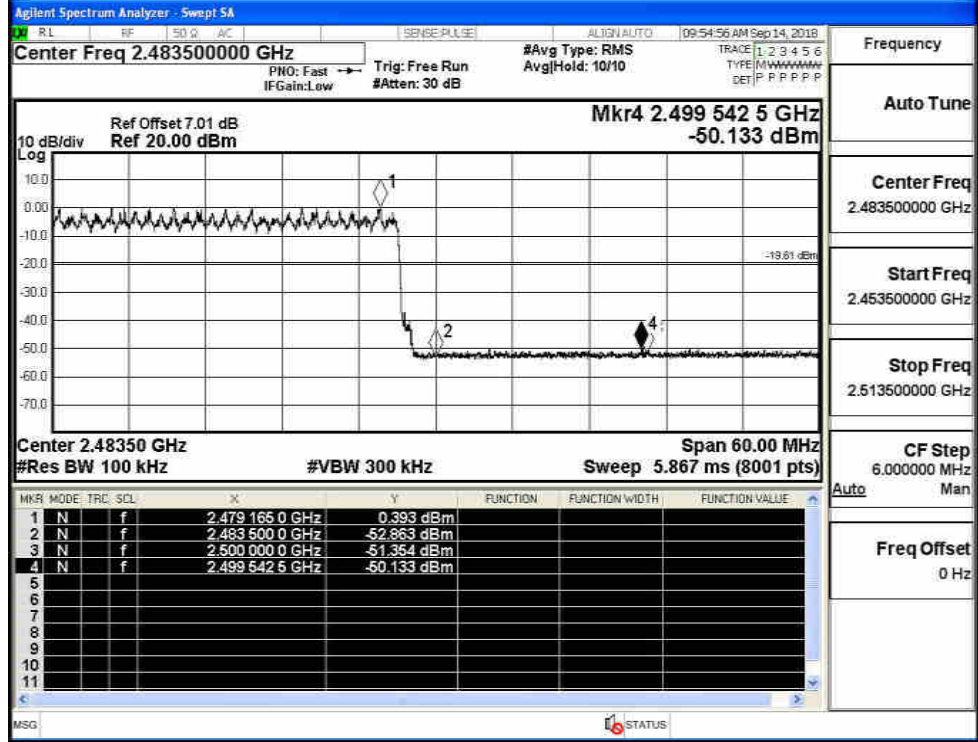
$\pi/4$ DQPSK/LCH/Hop



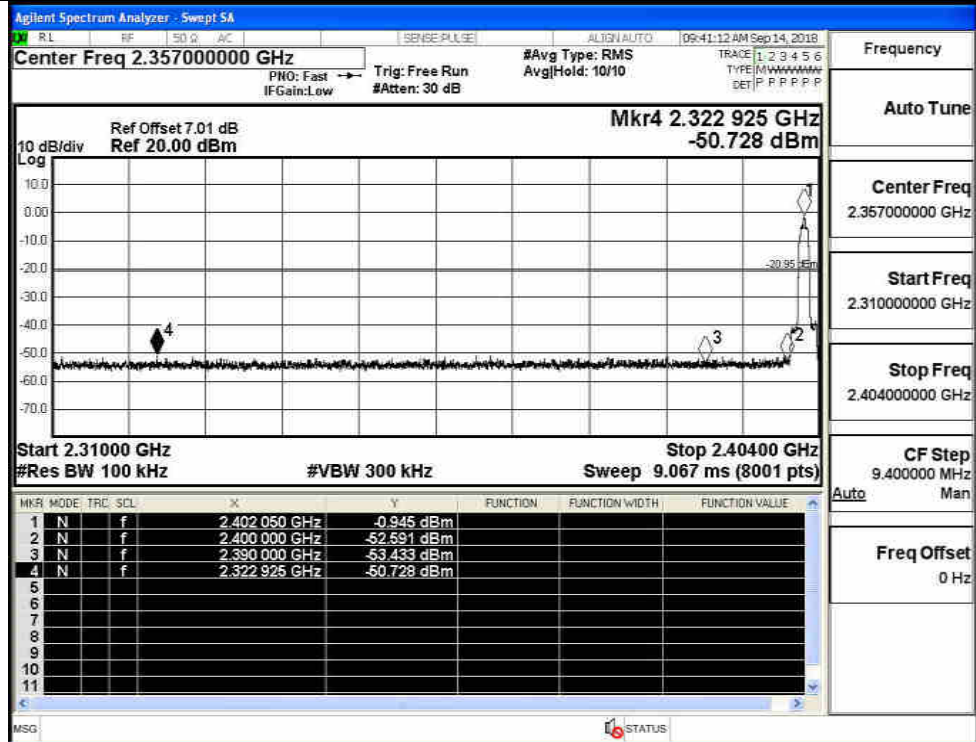
π /4DQPSK/HCH/No
Hop



π /4DQPSK/HCH/Hop

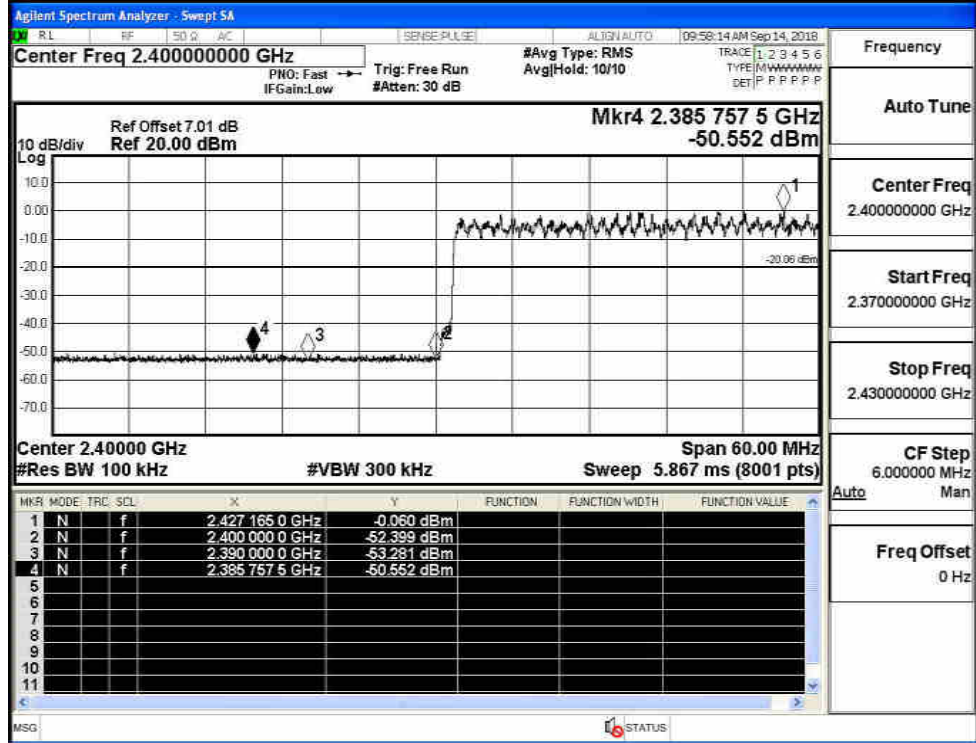


8DPSK/LCH/No Hop



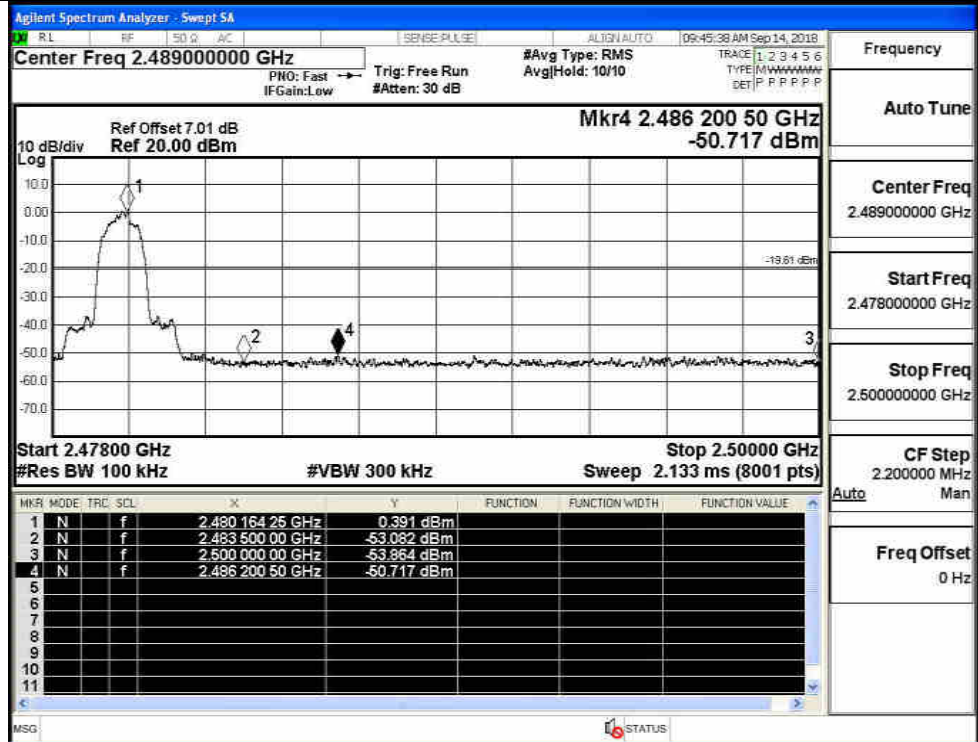
Frequency	2.357000000 GHz
Auto Tune	
Center Freq	2.357000000 GHz
Start Freq	2.310000000 GHz
Stop Freq	2.404000000 GHz
CF Step	9.400000 MHz
Freq Offset	0 Hz

8DPSK/LCH/Hop



Frequency	2.400000000 GHz
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

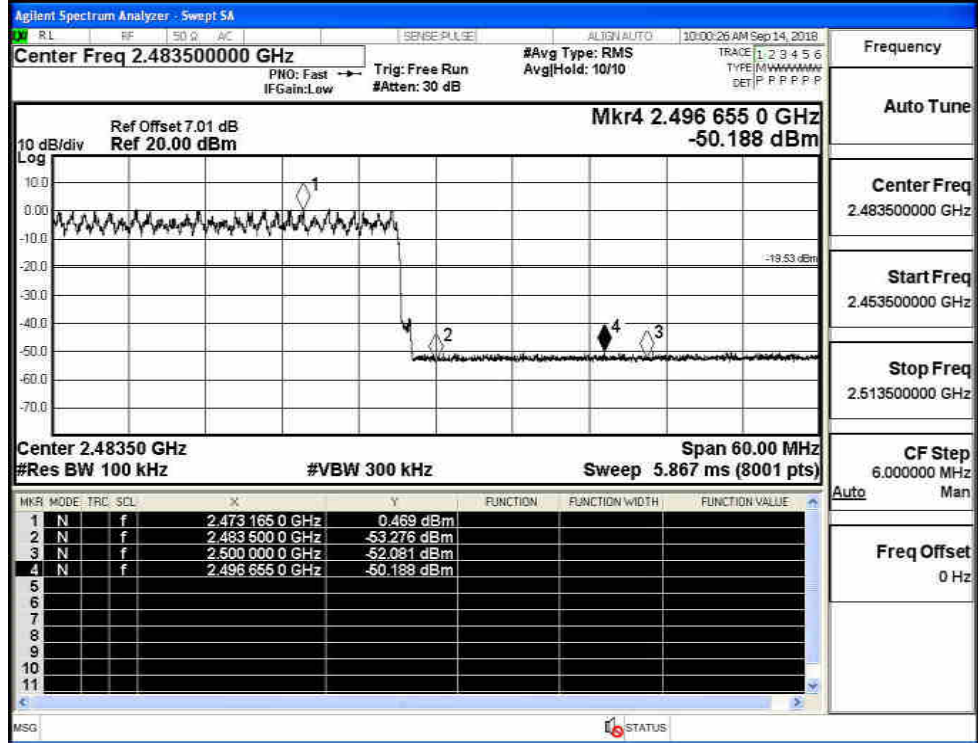
Start Freq
2.478000000 GHz

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

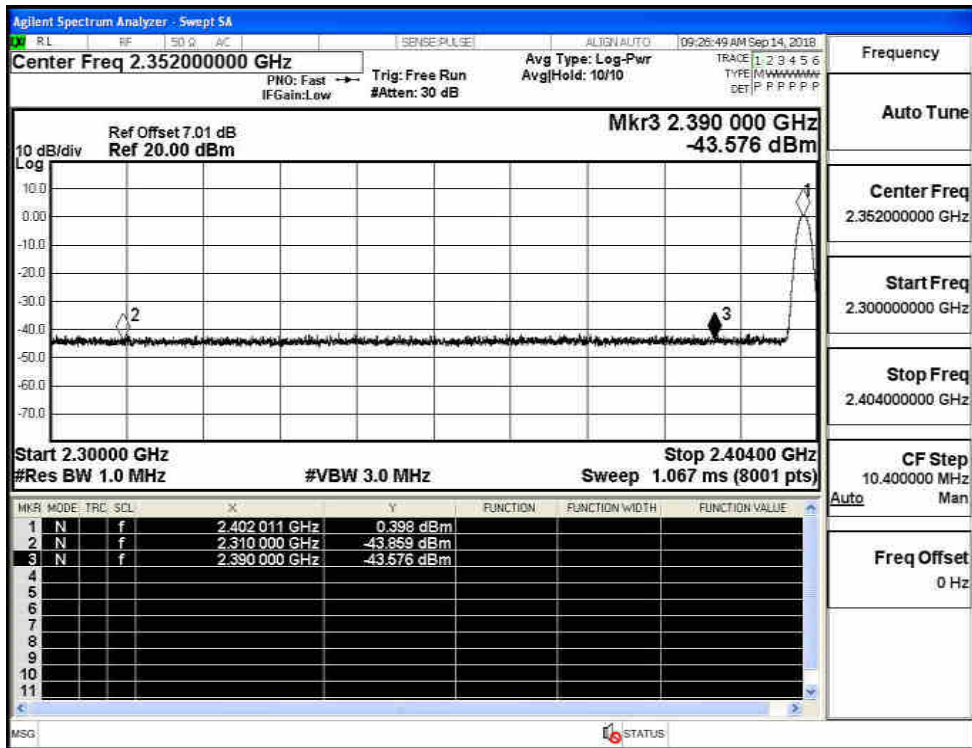
CF Step
6.000000 MHz

Freq Offset
0 Hz

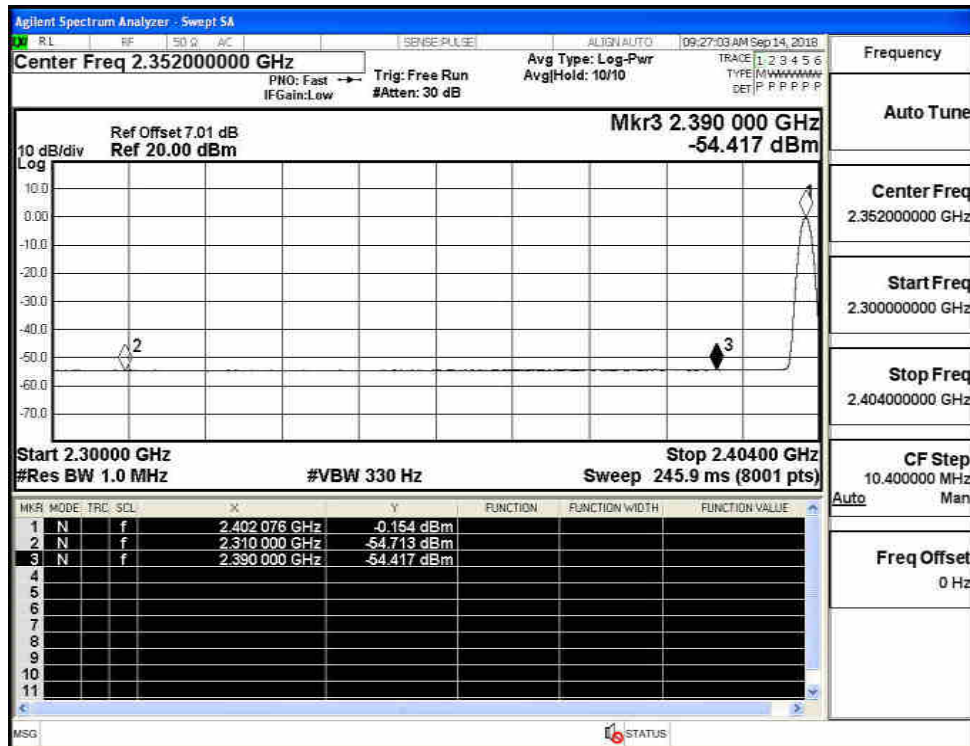
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.86	2.0	0	53.37	PEAK	74	PASS
	Off	2310.0	-54.71	2.0	0	42.52	AV	54	PASS
	Off	2390.0	-43.58	2.0	0	53.65	PEAK	74	PASS
	Off	2390.0	-54.42	2.0	0	42.81	AV	54	PASS
	Off	2483.5	-43.26	2.0	0	53.97	PEAK	74	PASS
	Off	2483.5	-54.01	2.0	0	43.22	AV	54	PASS
	Off	2500.0	-43.41	2.0	0	53.82	PEAK	74	PASS
	Off	2500.0	-54.07	2.0	0	43.16	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.66	2.0	0	53.57	PEAK	74	PASS
	Off	2310.0	-54.61	2.0	0	42.62	AV	54	PASS
	Off	2390.0	-43.44	2.0	0	53.79	PEAK	74	PASS
	Off	2390.0	-54.35	2.0	0	42.88	AV	54	PASS
	Off	2483.5	-44.61	2.0	0	52.62	PEAK	74	PASS
	Off	2483.5	-54.02	2.0	0	43.21	AV	54	PASS
	Off	2500.0	-44.75	2.0	0	52.48	PEAK	74	PASS
	Off	2500.0	-54.06	2.0	0	43.17	AV	54	PASS
8DPSK	Off	2310.0	-43.30	2.0	0	53.93	PEAK	74	PASS
	Off	2310.0	-54.62	2.0	0	42.61	AV	54	PASS
	Off	2390.0	-44.36	2.0	0	52.87	PEAK	74	PASS
	Off	2390.0	-54.36	2.0	0	42.87	AV	54	PASS
	Off	2483.5	-41.65	2.0	0	55.58	PEAK	74	PASS
	Off	2483.5	-53.95	2.0	0	43.28	AV	54	PASS
	Off	2500.0	-44.46	2.0	0	52.77	PEAK	74	PASS
	Off	2500.0	-53.99	2.0	0	43.24	AV	54	PASS

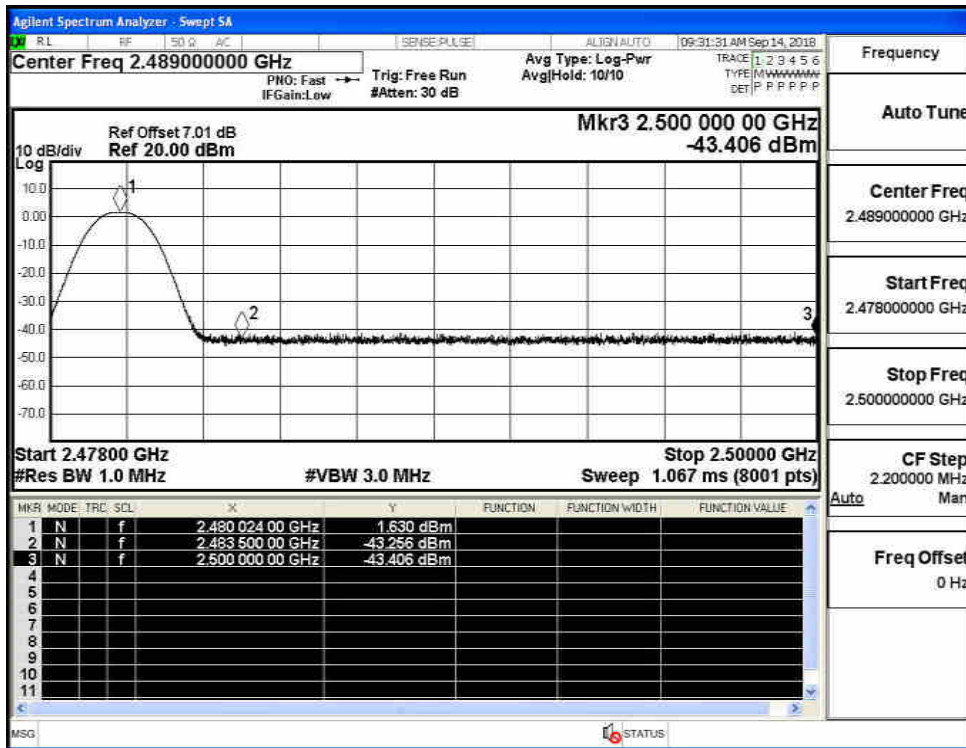
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



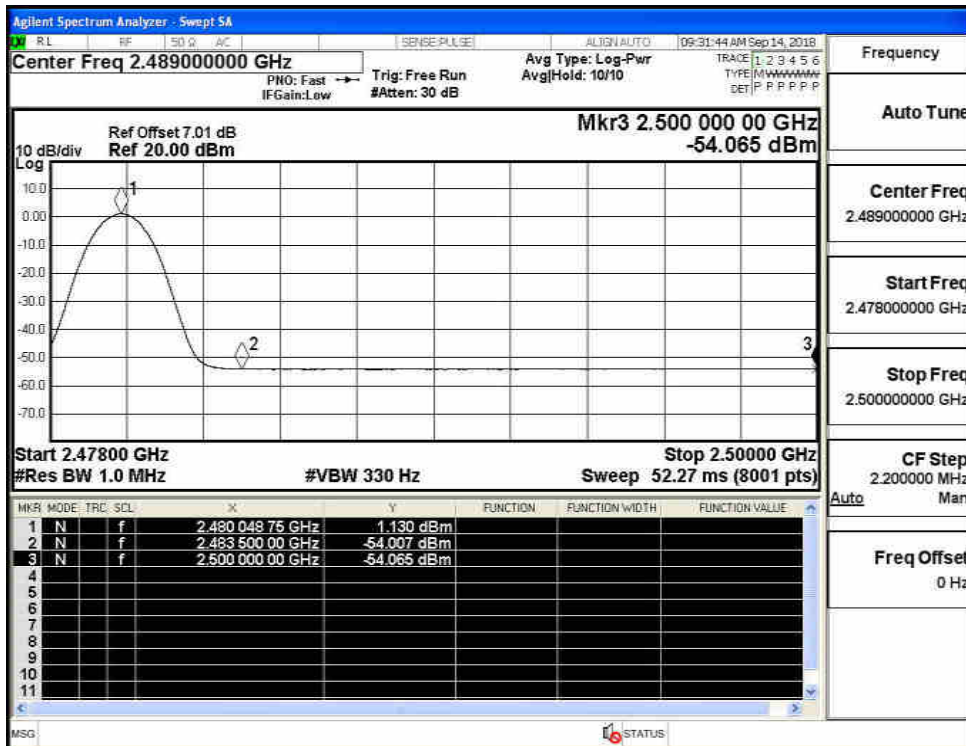
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



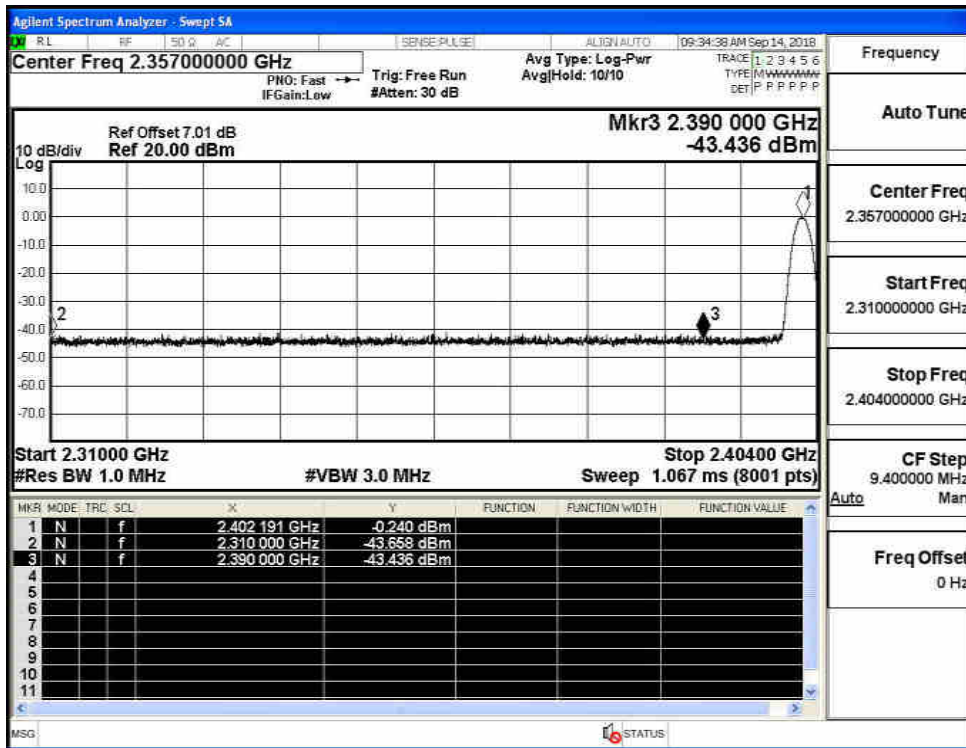
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



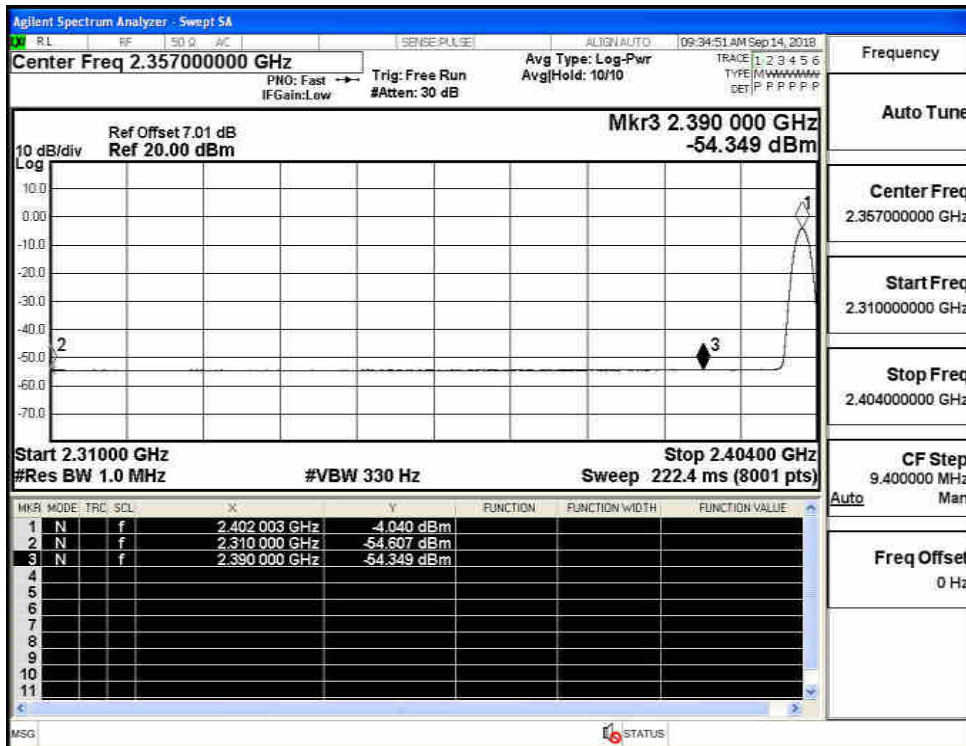
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



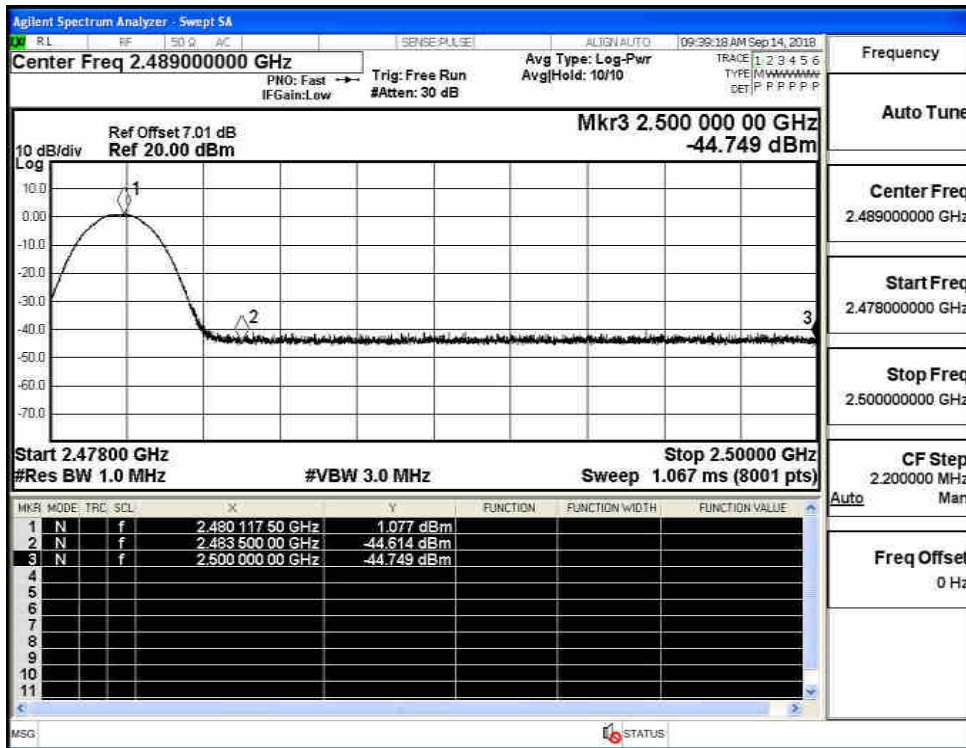
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)



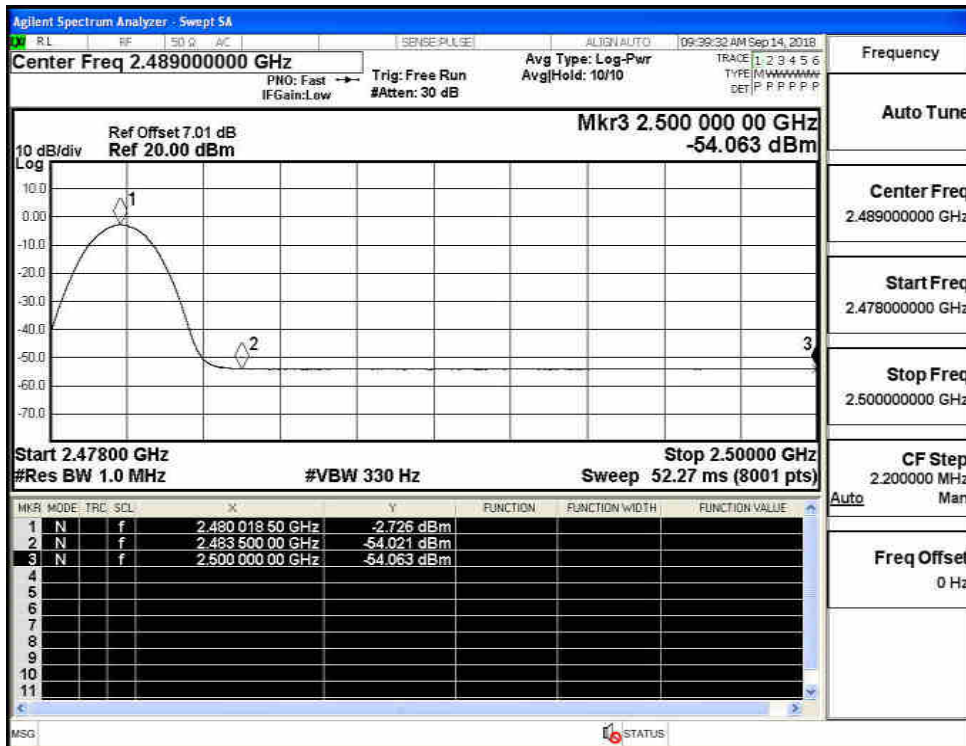
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)



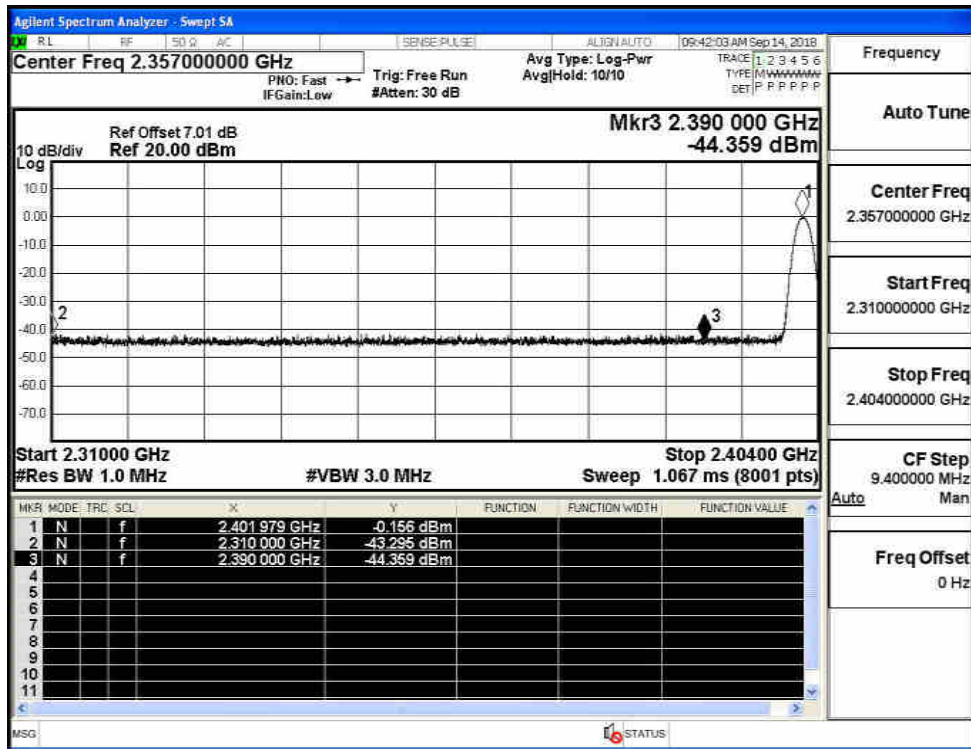
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



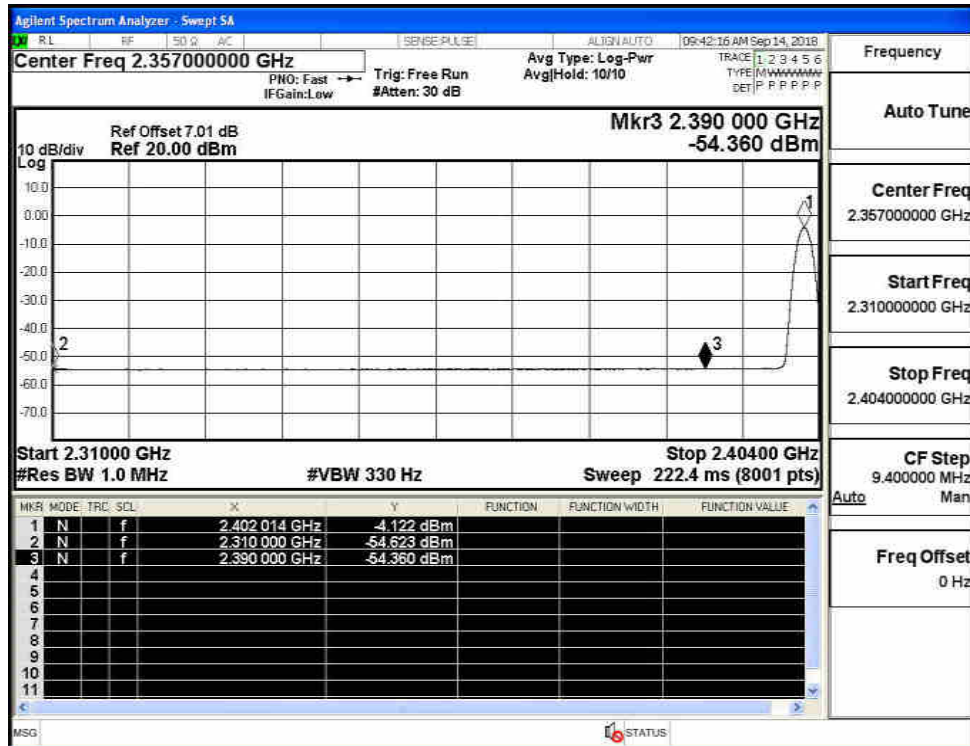
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



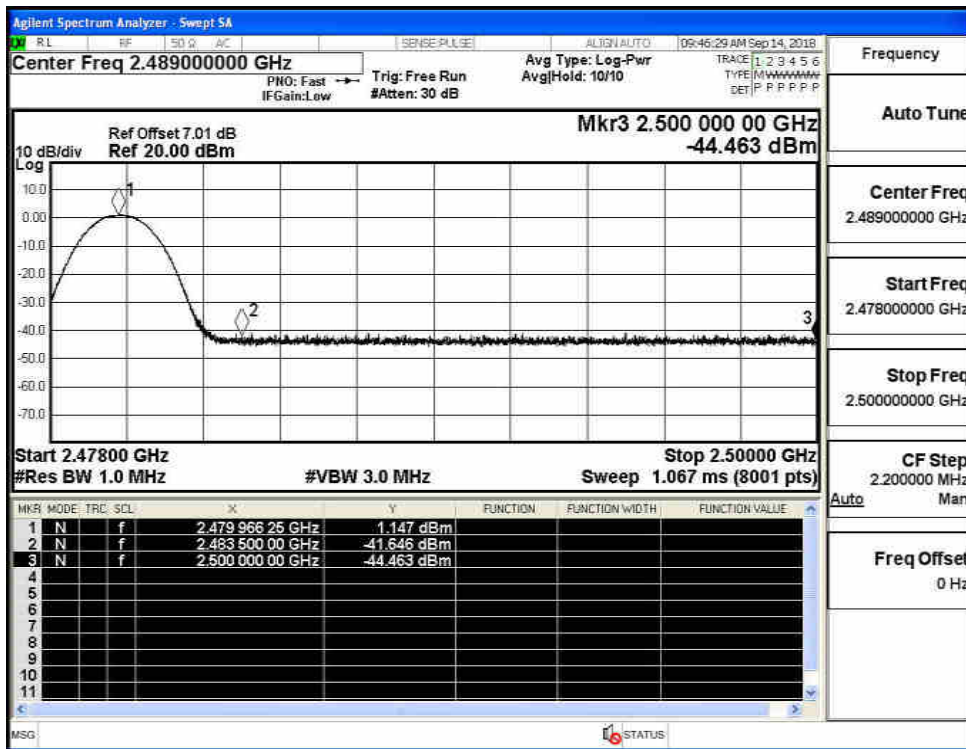
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

