

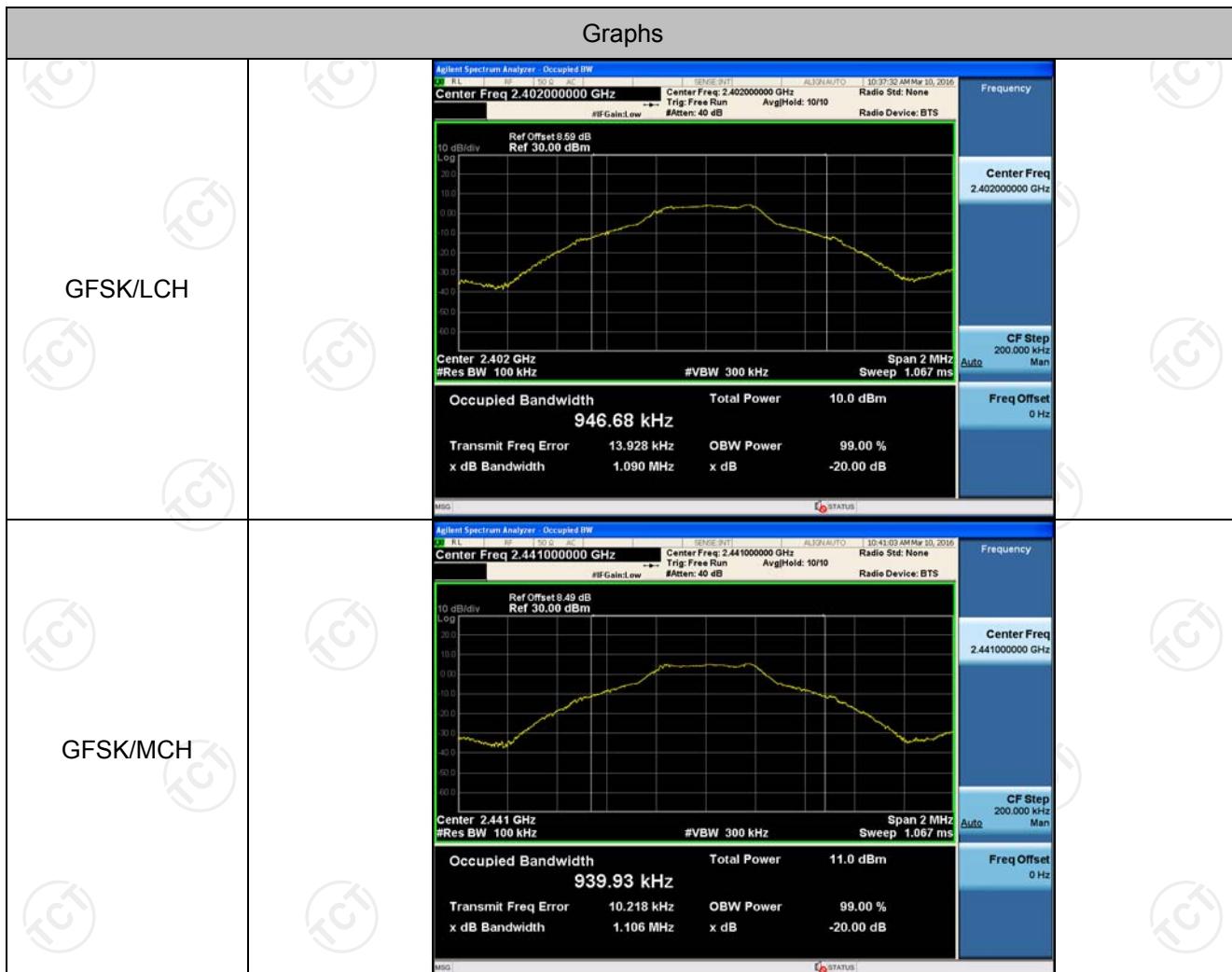
Appendix A: Test Result of Conducted Test

20dB Occupied Bandwidth

Test Result

Mode	Channel.	20dB Bandwidth [MHz]	99% OBW [MHz]	Verdict
GFSK	LCH	1.090	0.94668	PASS
GFSK	MCH	1.106	0.93993	PASS
GFSK	HCH	1.109	0.96642	PASS
$\pi/4$ DQPSK	LCH	1.359	1.2014	PASS
$\pi/4$ DQPSK	MCH	1.349	1.2040	PASS
$\pi/4$ DQPSK	HCH	1.359	1.2062	PASS
8DPSK	LCH	1.355	1.2141	PASS
8DPSK	MCH	1.357	1.2110	PASS
8DPSK	HCH	1.360	1.2163	PASS

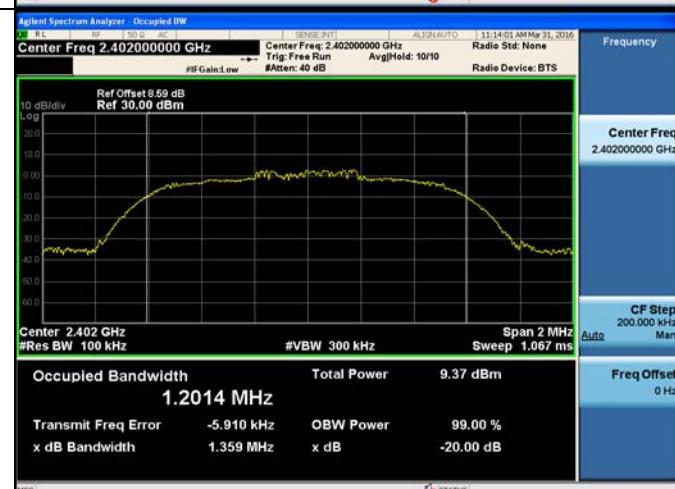
Test Graph



GFSK/HCH



π/4DQPSK/LCH



π/4DQPSK/MCH



π/4DQPSK/HCH	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.48000000 GHz</p> <p>Ref Offset 8.49 dB Ref 30.00 dBm</p> <p>10 dB/div Log</p> <p>Center 2.48 GHz #Res BW 100 kHz #VBW 300 kHz Span 2 MHz Sweep 1.067 ms</p> <p>Occupied Bandwidth Total Power 8.03 dBm 1.2062 MHz</p> <p>Transmit Freq Error -7.648 kHz OBW Power 99.00 % x dB Bandwidth 1.359 MHz x dB -20.00 dB</p> <p>MSG STATUS</p>
8DPSK/LCH	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.40200000 GHz</p> <p>Ref Offset 8.59 dB Ref 30.00 dBm</p> <p>10 dB/div Log</p> <p>Center 2.402 GHz #Res BW 100 kHz #VBW 300 kHz Span 2 MHz Sweep 1.067 ms</p> <p>Occupied Bandwidth Total Power 9.17 dBm 1.2141 MHz</p> <p>Transmit Freq Error -4.388 kHz OBW Power 99.00 % x dB Bandwidth 1.355 MHz x dB -20.00 dB</p> <p>MSG STATUS</p>
8DPSK/MCH	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.44100000 GHz</p> <p>Ref Offset 8.49 dB Ref 30.00 dBm</p> <p>10 dB/div Log</p> <p>Center 2.441 GHz #Res BW 100 kHz #VBW 300 kHz Span 2 MHz Sweep 1.067 ms</p> <p>Occupied Bandwidth Total Power 7.81 dBm 1.2110 MHz</p> <p>Transmit Freq Error -5.979 kHz OBW Power 99.00 % x dB Bandwidth 1.357 MHz x dB -20.00 dB</p> <p>MSG STATUS</p>

8DPSK/HCH



Carrier Frequency Separation

Result Table

Mode	Channel.	Carrier Frequency Separation [MHz]	Verdict
GFSK	LCH	1.343	PASS
GFSK	MCH	0.837	PASS
GFSK	HCH	1.133	PASS
π/4DQPSK	LCH	0.785	PASS
π/4DQPSK	MCH	1.034	PASS
π/4DQPSK	HCH	1.313	PASS
8DPSK	LCH	0.978	PASS
8DPSK	MCH	1.255	PASS
8DPSK	HCH	0.856	PASS

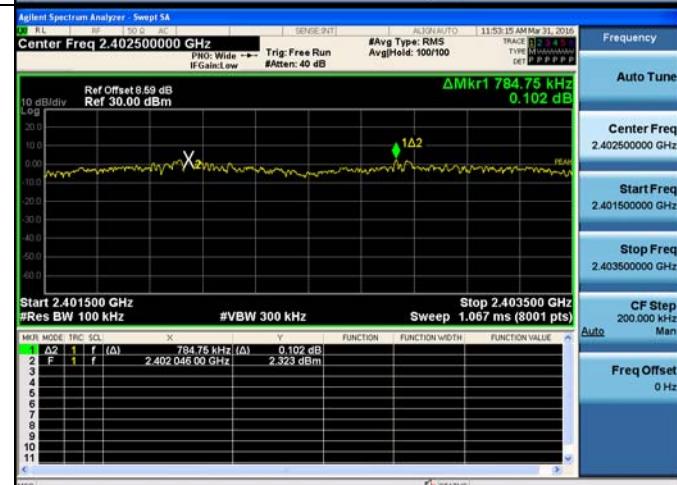
Test Graph



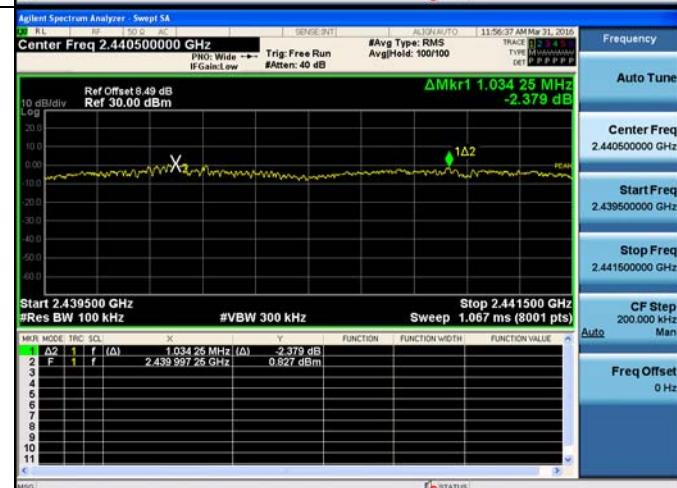
GFSK/HCH

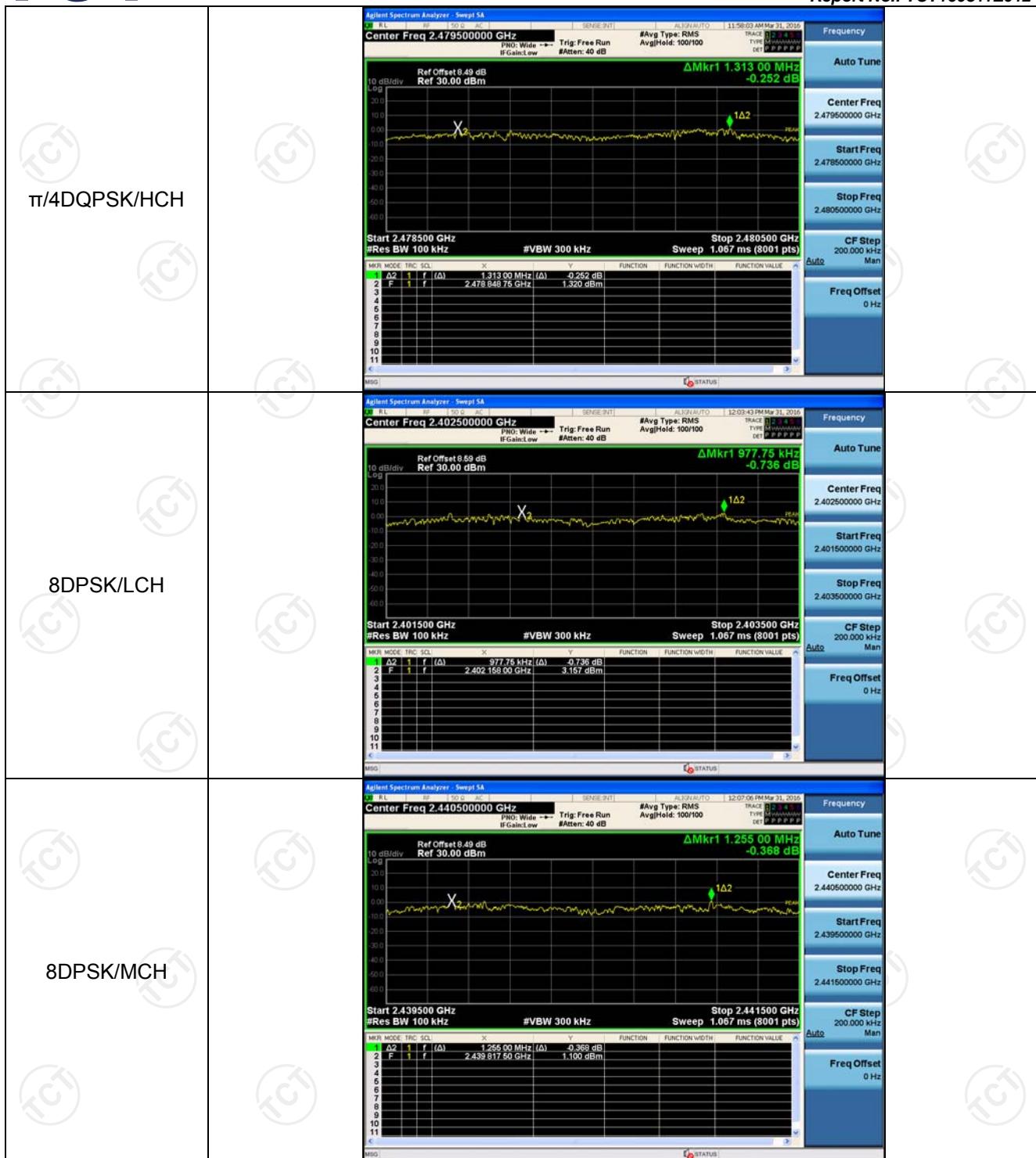


π/4DQPSK/LCH

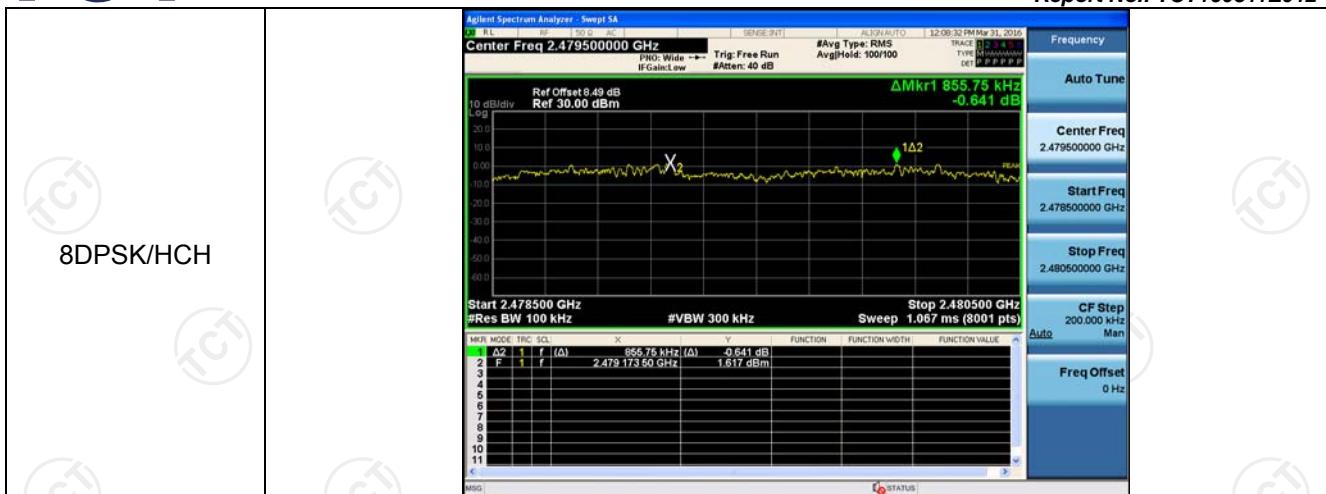


π/4DQPSK/MCH





8DPSK/HCH



Dwell Time

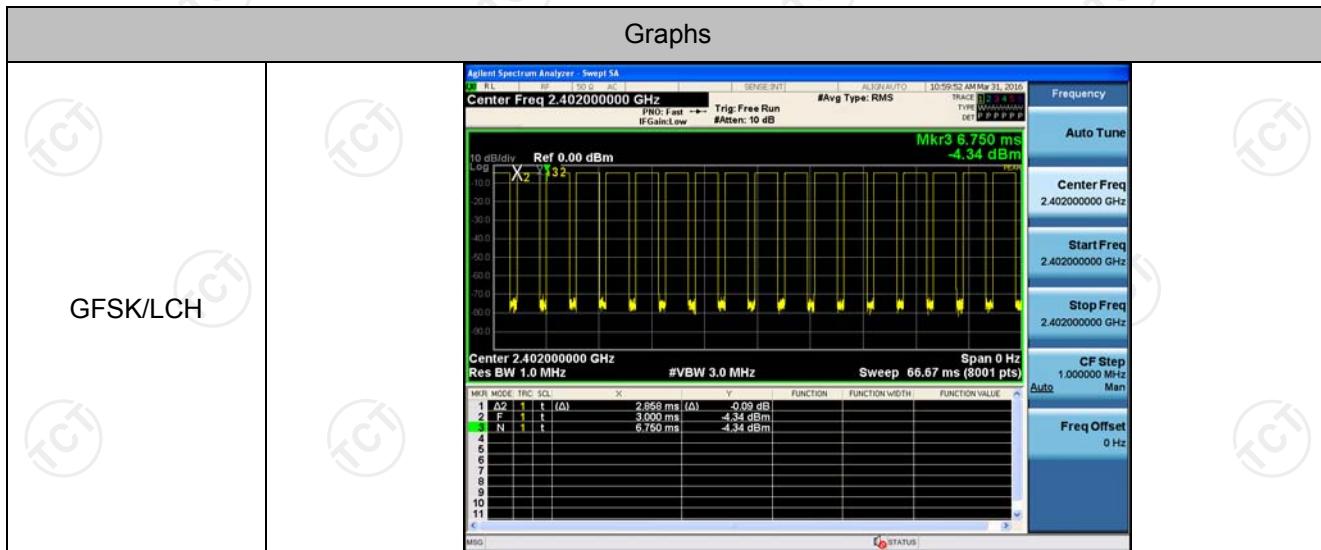
Result Table

The Dwell Time=Burst Width*Total Hops. The detailed calculations are showed as follows:

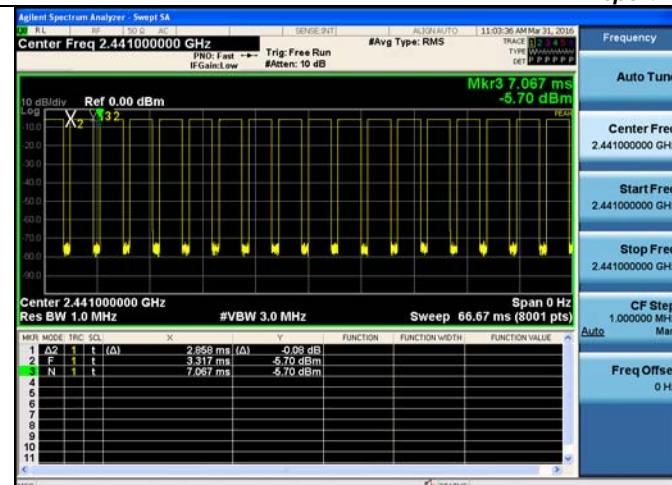
- The duration for dwell time calculation: $0.4[\text{s}]*\text{hopping number}=0.4[\text{s}]*79[\text{ch}]=31.6[\text{s}*\text{ch}]$;
- The burst width [ms/hop/ch], which is directly measured, refers to the duration on one channel hop.
- The hops per second for all channels: The selected EUT Conf uses a slot type of 5-Tx&1-Rx and a hopping rate of 1600 [ch*hop/s] for all channels. So the final hopping rate for all channels is $1600/6=266.67 [\text{ch}*\text{hop}/\text{s}]$
- The hops per second on one channel: $266.67 [\text{ch}*\text{hop}/\text{s}]/79 [\text{ch}]=3.38 [\text{hop}/\text{s}]$;
- The total hops for all channels within the dwell time calculation duration: $3.38 [\text{hop}/\text{s}]*31.6[\text{s}*\text{ch}]=106.67 [\text{hop}*\text{ch}]$;
- The dwell time for all channels hopping: $106.67 [\text{hop}*\text{ch}]*\text{Burst Width} [\text{ms}/\text{hop}/\text{ch}]$.

Mode	Channel	Burst Width [ms/hop/ch]	Total Hops [hop*ch]	Dwell Time [s]	Duty Cycle [%]	Verdict
GFSK	LCH	2.858	106.7	0.305	76.22	PASS
GFSK	MCH	2.858	106.7	0.305	76.22	PASS
GFSK	HCH	2.858	106.7	0.305	76.22	PASS
$\pi/4$ DQPSK	LCH	2.858	106.7	0.305	76.22	PASS
$\pi/4$ DQPSK	MCH	2.867	106.7	0.306	76.44	PASS
$\pi/4$ DQPSK	HCH	2.867	106.7	0.306	76.44	PASS
8DPSK	LCH	2.867	106.7	0.306	76.44	PASS
8DPSK	MCH	2.858	106.7	0.305	76.22	PASS
8DPSK	HCH	2.867	106.7	0.306	76.44	PASS

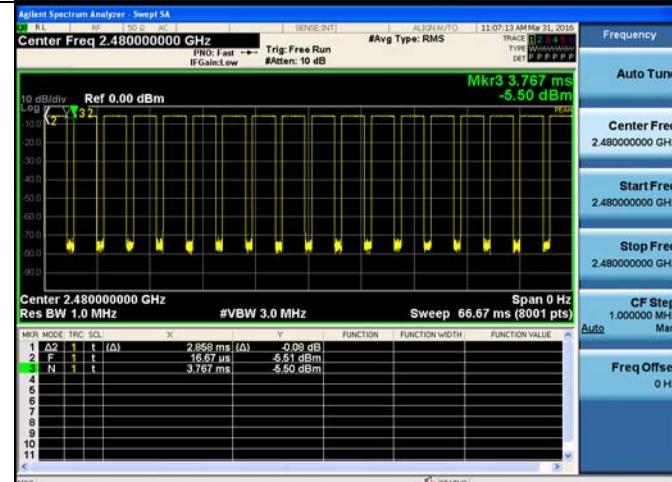
Test Graph



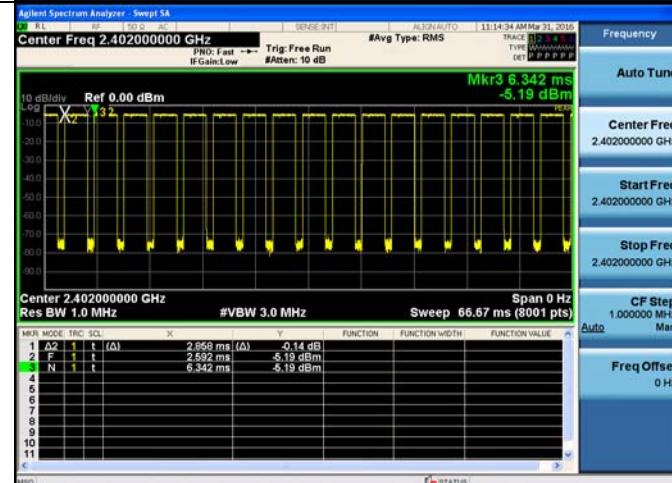
GFSK/MCH



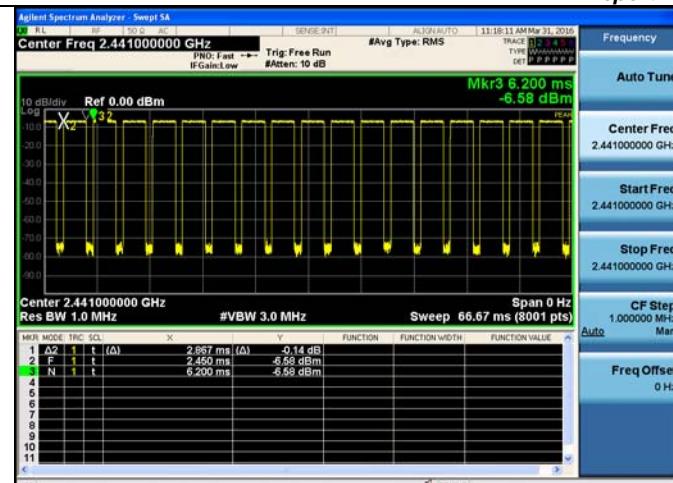
GFSK/HCH



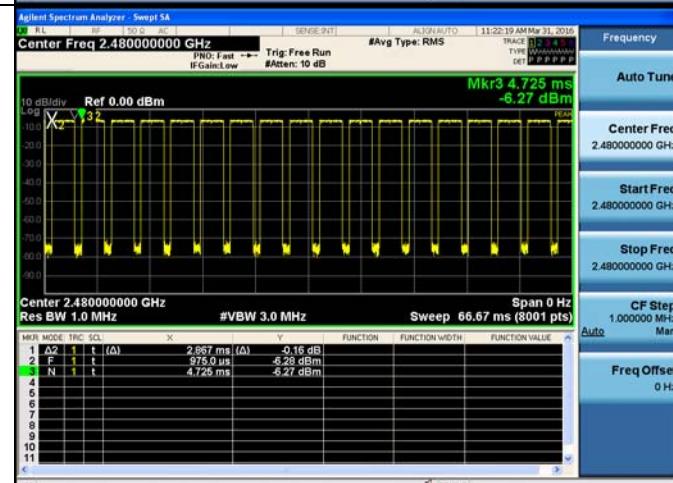
π/4DQPSK/LCH



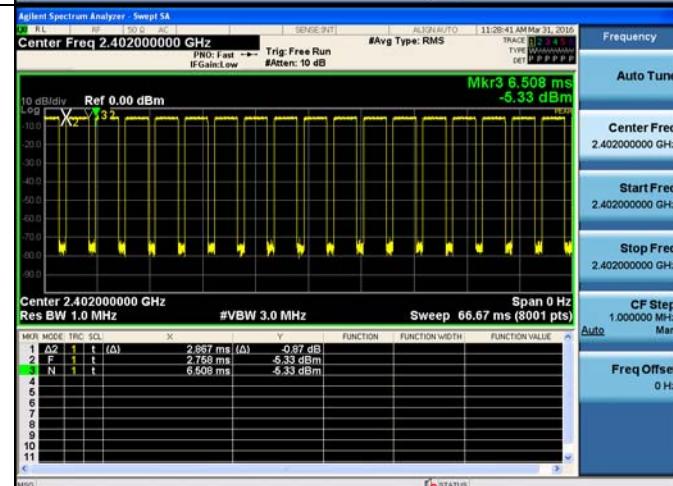
π/4DQPSK/MCH



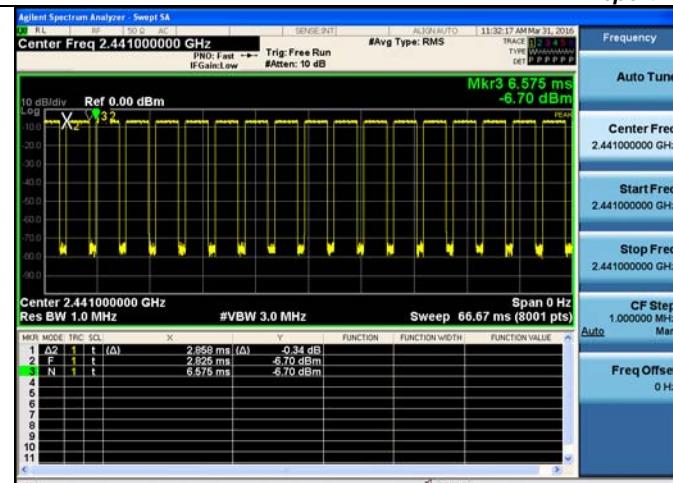
π/4DQPSK/HCH



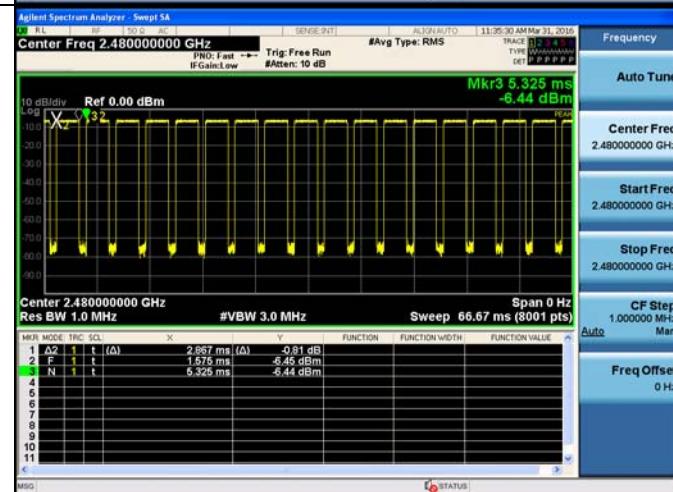
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

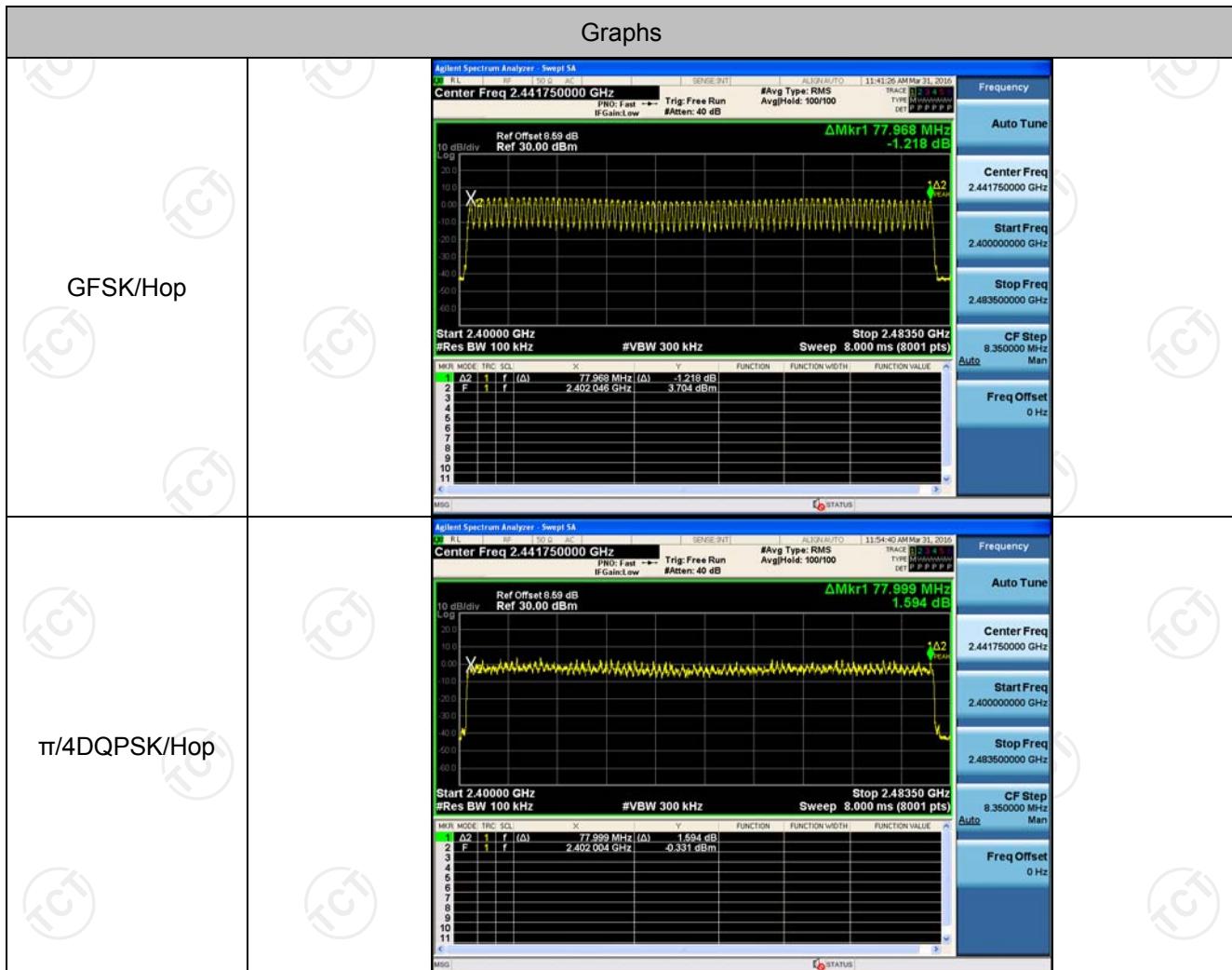


Hopping Channel Number

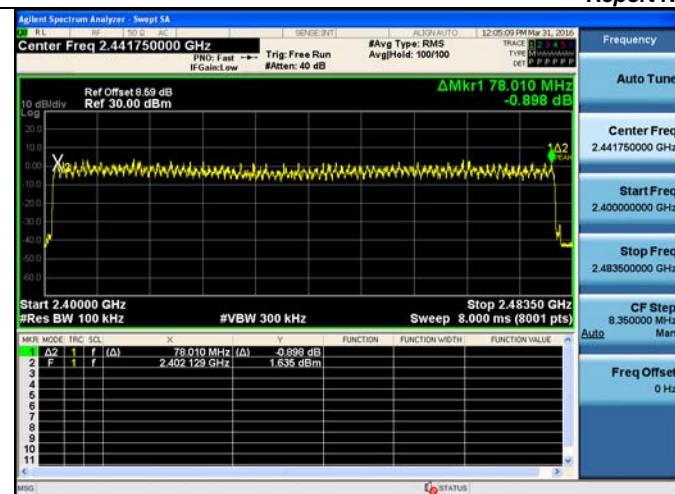
Result Table

Mode	Channel.	Number of Hopping Channel	Verdict
GFSK	Hop	79	PASS
$\pi/4$ DQPSK	Hop	79	PASS
8DPSK	Hop	79	PASS

Test Graph



8DPSK/Hop



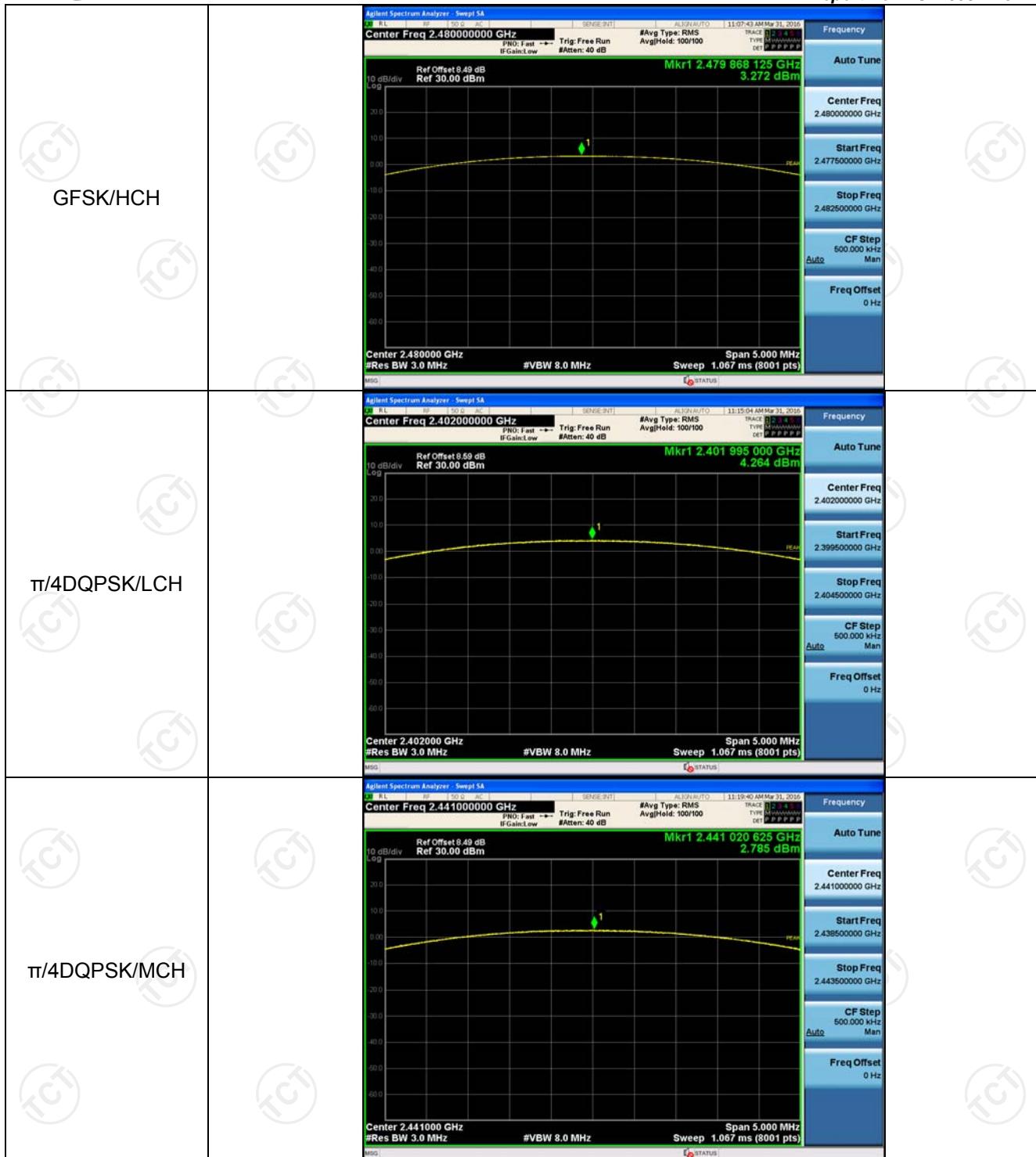
Conducted Peak Output Power

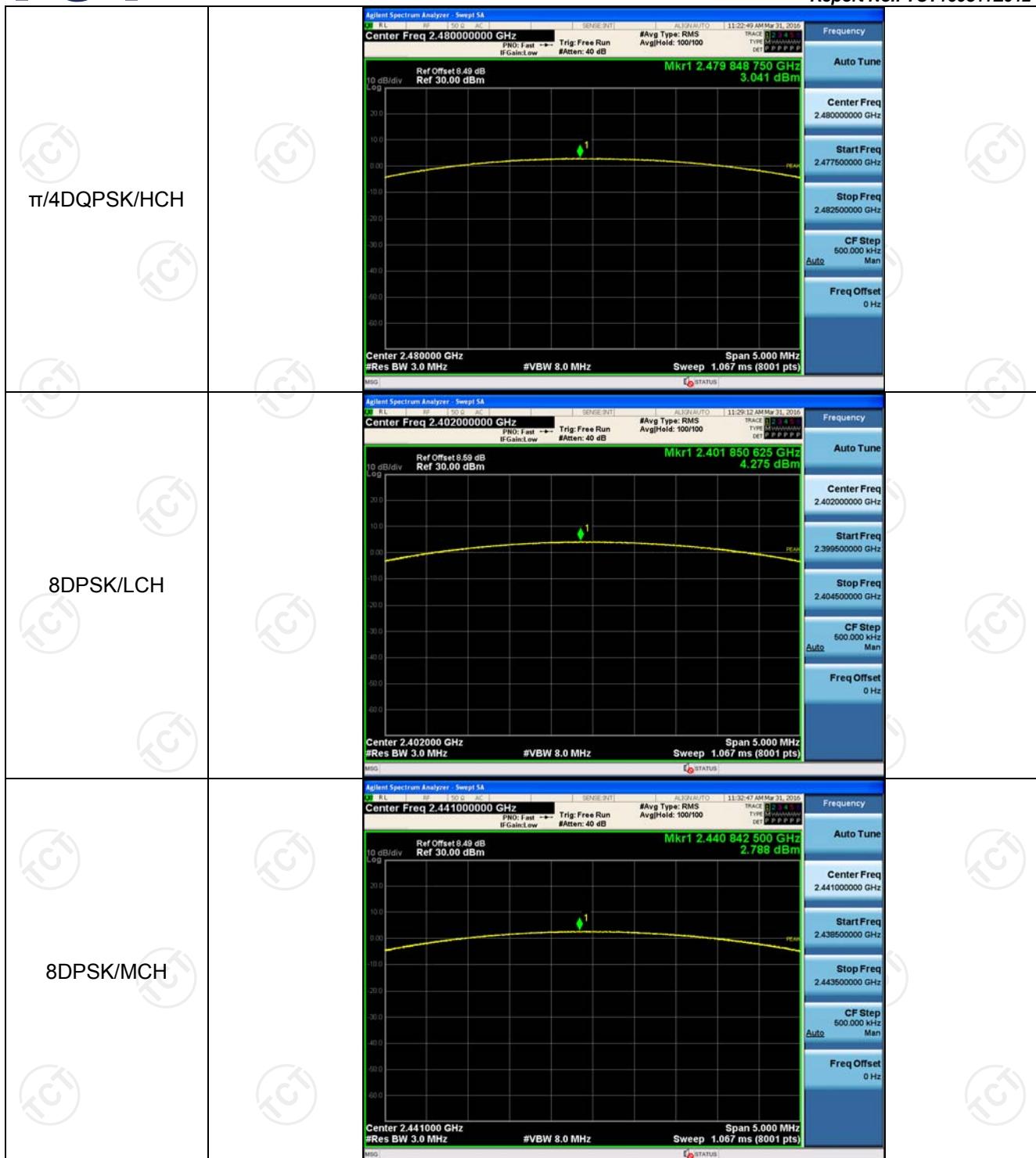
Result Table

Mode	Channel.	Maximum Peak Output Power [dBm]	Verdict
GFSK	LCH	4.513	PASS
GFSK	MCH	3.054	PASS
GFSK	HCH	3.272	PASS
π/4DQPSK	LCH	4.264	PASS
π/4DQPSK	MCH	2.785	PASS
π/4DQPSK	HCH	3.041	PASS
8DPSK	LCH	4.275	PASS
8DPSK	MCH	2.788	PASS
8DPSK	HCH	3.008	PASS

Test Graph







8DPSK/HCH

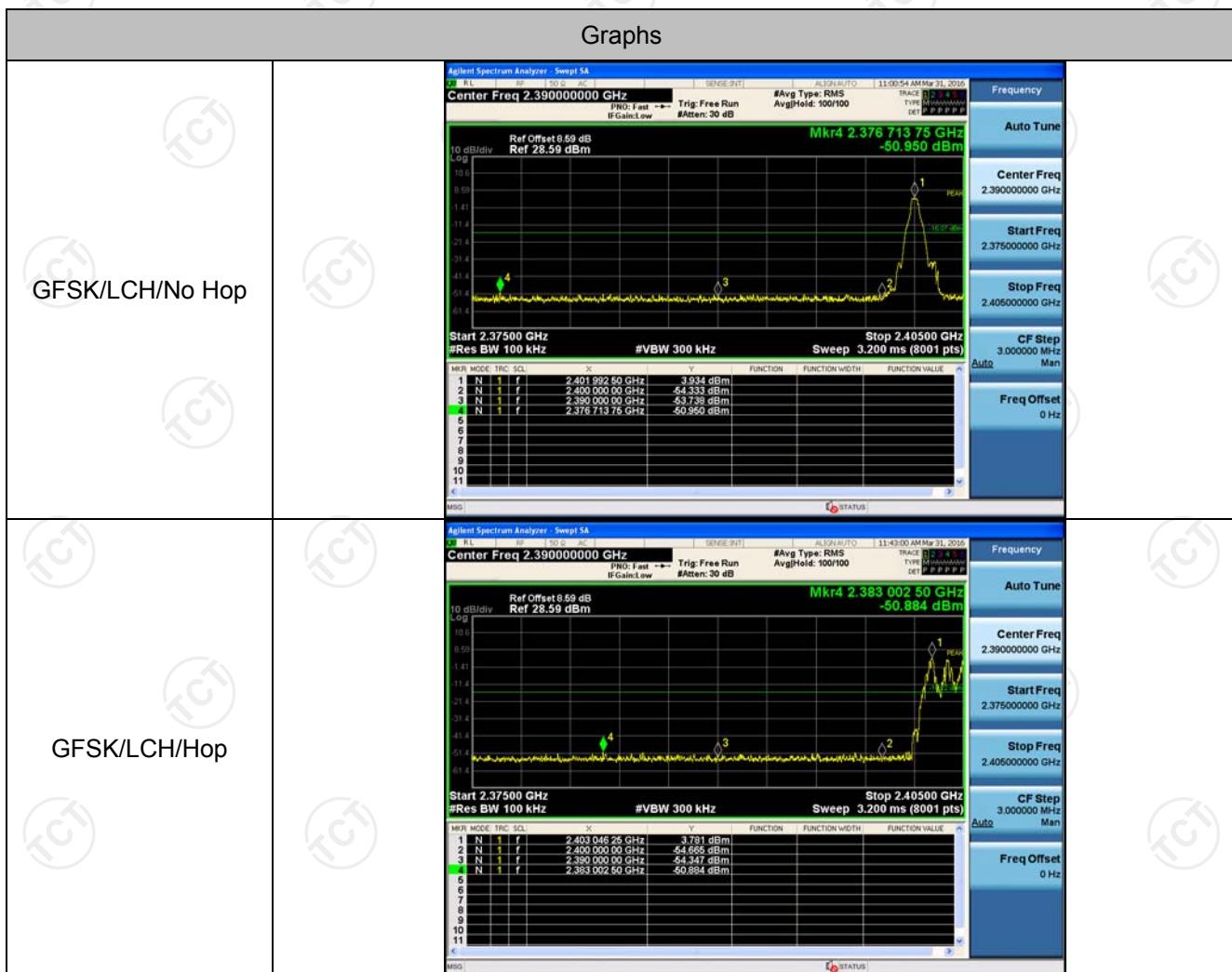


Band-edge for RF Conducted Emissions

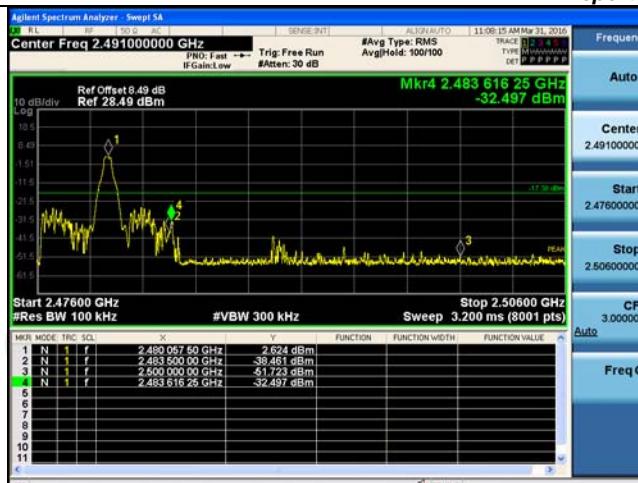
Result Table

Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	3.934	Off	-50.950	-16.07	PASS
			3.781	On	-50.884	-16.22	PASS
GFSK	HCH	2480	2.624	Off	-32.497	-17.38	PASS
			2.526	On	-50.311	-17.47	PASS
$\pi/4$ DQPSK	LCH	2402	2.233	Off	-51.503	-17.77	PASS
			1.465	On	-51.621	-18.54	PASS
$\pi/4$ DQPSK	HCH	2480	1.746	Off	-51.179	-18.25	PASS
			1.602	On	-51.354	-18.4	PASS
8DPSK	LCH	2402	3.168	Off	-51.443	-16.83	PASS
			-0.857	On	-51.687	-20.86	PASS
8DPSK	HCH	2480	1.934	Off	-50.921	-18.07	PASS
			-0.862	On	-51.269	-20.86	PASS

Test Graph

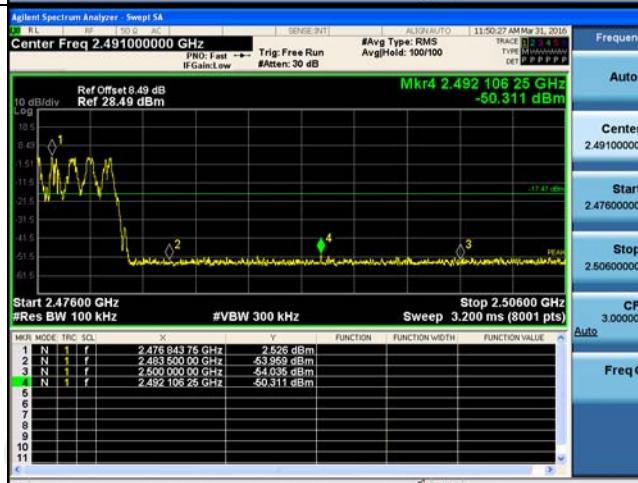


GFSK/HCH/No Hop

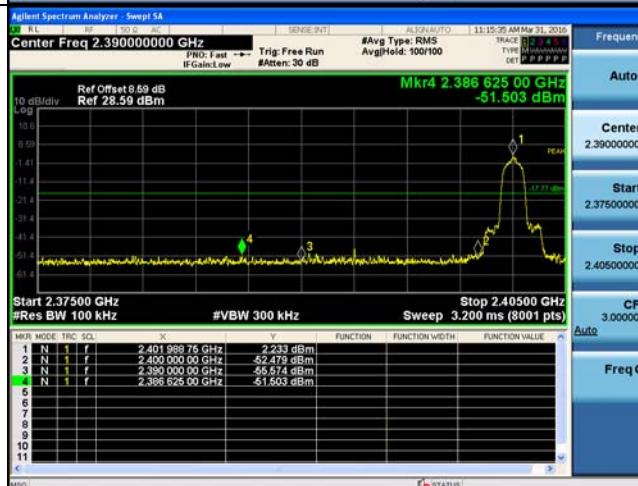


Frequency
Auto Tune
Center Freq
2.491000000 GHz
Start Freq
2.476000000 GHz
Stop Freq
2.506000000 GHz
CF Step
3.000000 MHz
Auto Man
Freq Offset
0 Hz

GFSK/HCH/Hop

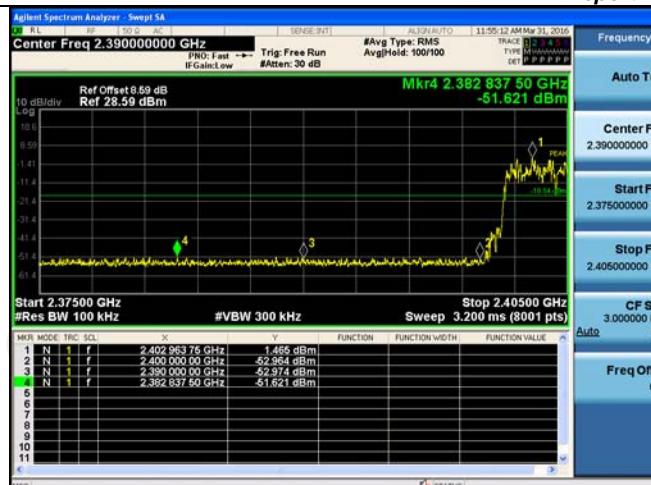


Frequency
Auto Tune
Center Freq
2.491000000 GHz
Start Freq
2.476000000 GHz
Stop Freq
2.506000000 GHz
CF Step
3.000000 MHz
Auto Man
Freq Offset
0 Hz

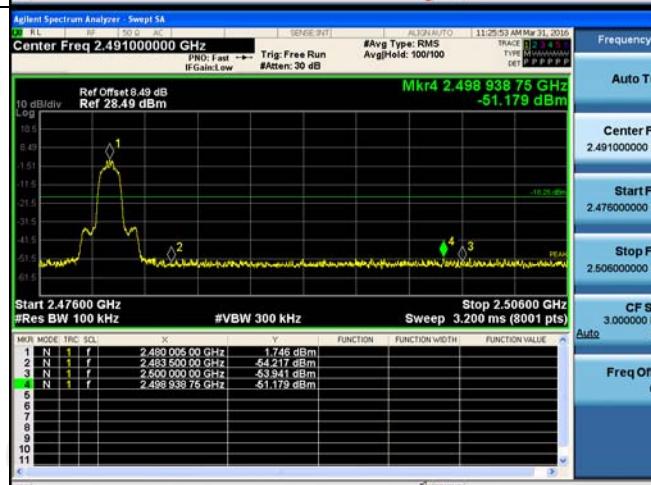
 $\pi/4$ DQPSK/LCH/No Hop


Frequency
Auto Tune
Center Freq
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Start Freq
2.375000000 GHz
Stop Freq
2.405000000 GHz
CF Step
3.000000 MHz
Auto Man
Freq Offset
0 Hz

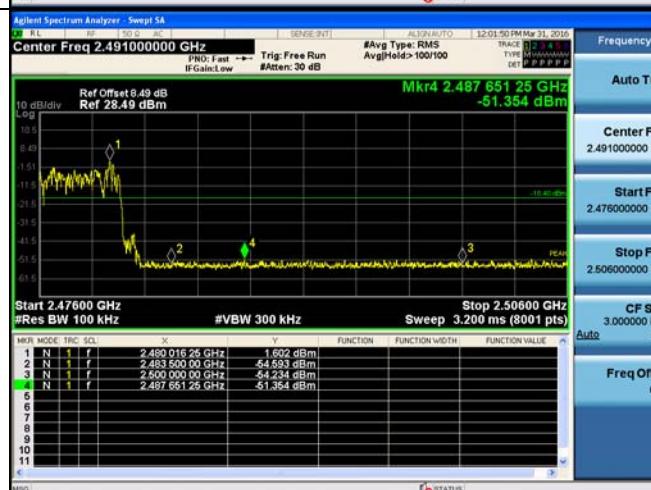
$\pi/4$ DQPSK/LCH/Hop



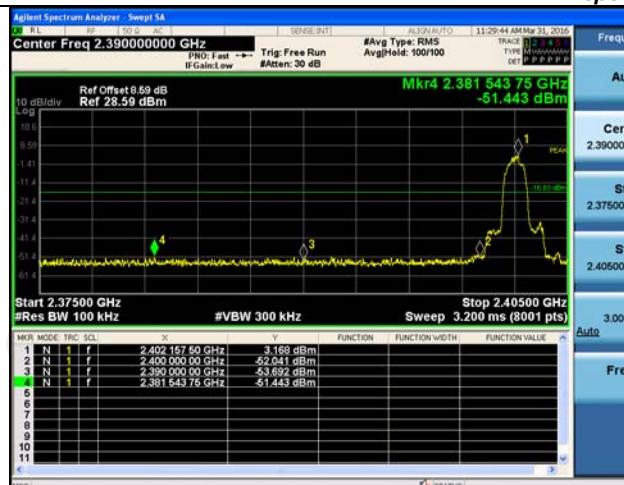
$\pi/4$ DQPSK/HCH/No Hop



$\pi/4$ DQPSK/HCH/Hop



8DPSK/LCH/No Hop



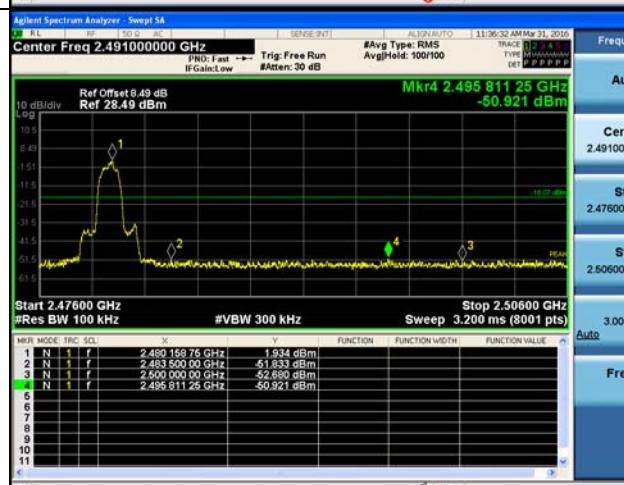
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Start Freq
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CF Step
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Auto
Man
Freq Offset
0 Hz

8DPSK/LCH/Hop



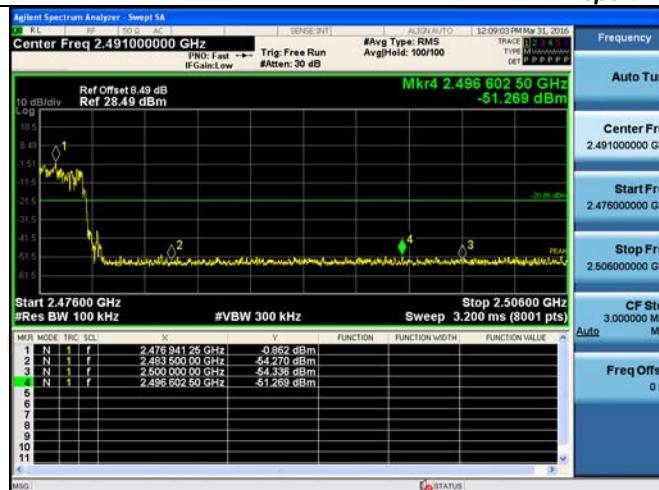
Frequency
Auto Tune
Center Freq
2.390000000 GHz
Start Freq
2.375000000 GHz
Stop Freq
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CF Step
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Auto
Man
Freq Offset
0 Hz

8DPSK/HCH/No Hop



Frequency
Auto Tune
Center Freq
2.491000000 GHz
Start Freq
2.476000000 GHz
Stop Freq
2.506000000 GHz
CF Step
3.000000 MHz
Auto
Man
Freq Offset
0 Hz

8DPSK/HCH/Hop



RF Conducted Spurious Emissions

Result Table

Mode	Channel	Pref [dBm]	Puw[dBm]	Verdict
GFSK	LCH	3.742	<Limit	PASS
GFSK	MCH	2.713	<Limit	PASS
GFSK	HCH	2.907	<Limit	PASS
π/4DQPSK	LCH	2.678	<Limit	PASS
π/4DQPSK	MCH	1.447	<Limit	PASS
π/4DQPSK	HCH	1.846	<Limit	PASS
8DPSK	LCH	2.398	<Limit	PASS
8DPSK	MCH	1.647	<Limit	PASS
8DPSK	HCH	1.702	<Limit	PASS

Test Graph

