

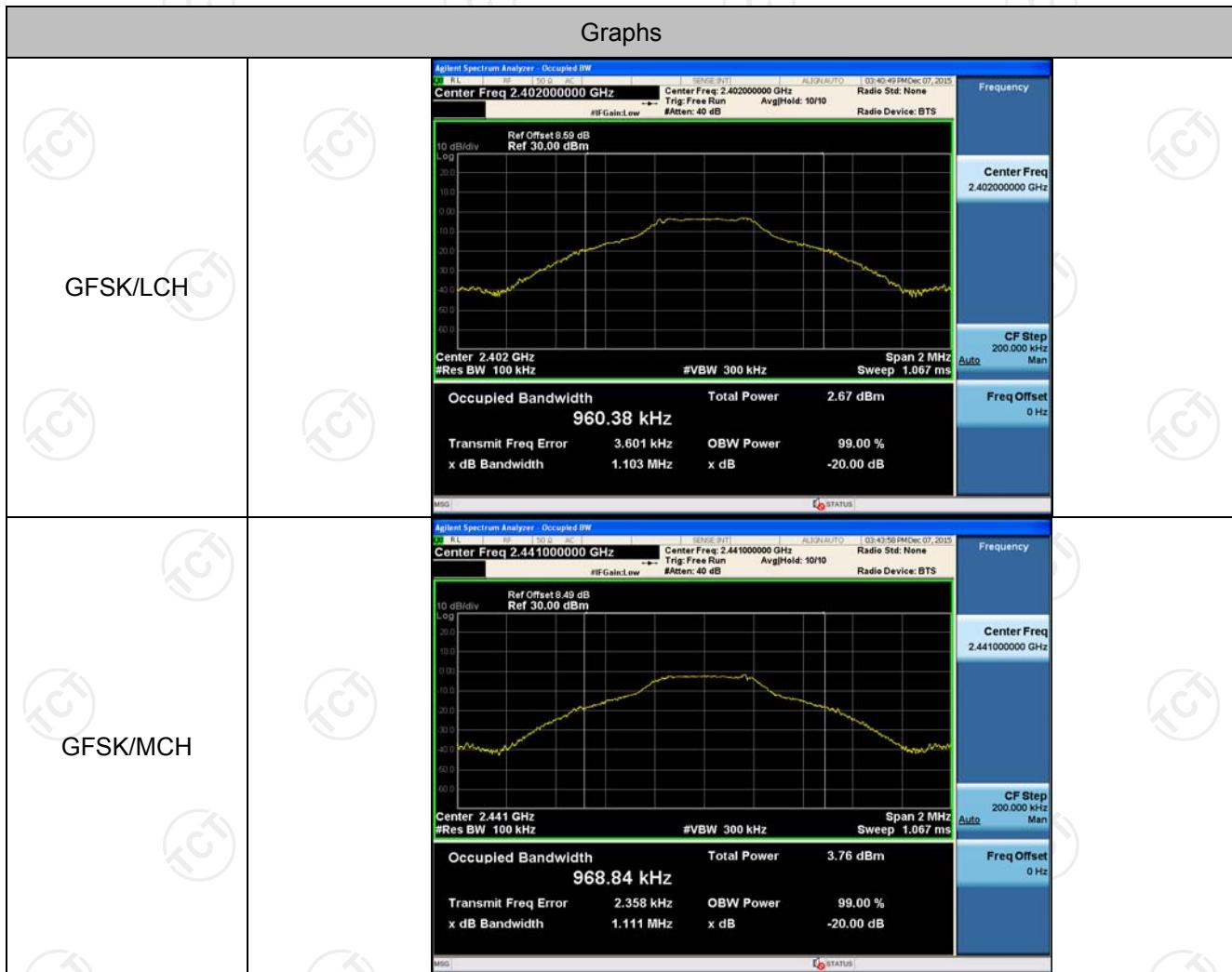
## Appendix A: Test Result of Conducted Test

### 20dB Occupied Bandwidth

#### Test Result

| Mode          | Channel. | 20dB Bandwidth [MHz] | 99% OBW [MHz] | Verdict |
|---------------|----------|----------------------|---------------|---------|
| GFSK          | LCH      | 1.103                | 0.96038       | PASS    |
| GFSK          | MCH      | 1.111                | 0.96884       | PASS    |
| GFSK          | HCH      | 1.123                | 0.96869       | PASS    |
| $\pi/4$ DQPSK | LCH      | 1.343                | 1.1982        | PASS    |
| $\pi/4$ DQPSK | MCH      | 1.338                | 1.2001        | PASS    |
| $\pi/4$ DQPSK | HCH      | 1.343                | 1.2012        | PASS    |
| 8DPSK         | LCH      | 1.351                | 1.2179        | PASS    |
| 8DPSK         | MCH      | 1.356                | 1.2112        | PASS    |
| 8DPSK         | HCH      | 1.360                | 1.2109        | PASS    |

#### Test Graph



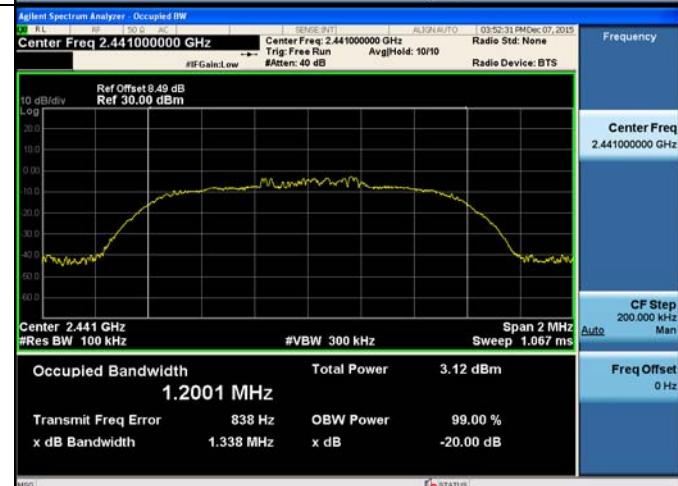
GFSK/HCH



π/4DQPSK/LCH



π/4DQPSK/MCH



|              |  |
|--------------|--|
| π/4DQPSK/HCH |  <p><b>Agilent Spectrum Analyzer - Occupied BW</b></p> <p>Center Freq 2.48000000 GHz</p> <p>Ref Offset 8.49 dB<br/>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 3.29 dBm<br/><b>1.2012 MHz</b></p> <p>Transmit Freq Error 1.321 kHz OBW Power 99.00 %<br/>x dB Bandwidth 1.343 MHz x dB -20.00 dB</p>    |
| 8DPSK/LCH    |  <p><b>Agilent Spectrum Analyzer - Occupied BW</b></p> <p>Center Freq 2.40200000 GHz</p> <p>Ref Offset 8.59 dB<br/>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 2.11 dBm<br/><b>1.2179 MHz</b></p> <p>Transmit Freq Error 2.693 kHz OBW Power 99.00 %<br/>x dB Bandwidth 1.351 MHz x dB -20.00 dB</p>  |
| 8DPSK/MCH    |  <p><b>Agilent Spectrum Analyzer - Occupied BW</b></p> <p>Center Freq 2.44100000 GHz</p> <p>Ref Offset 8.49 dB<br/>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 3.35 dBm<br/><b>1.2112 MHz</b></p> <p>Transmit Freq Error 2.331 kHz OBW Power 99.00 %<br/>x dB Bandwidth 1.356 MHz x dB -20.00 dB</p> |

8DPSK/HCH



## Carrier Frequency Separation

### Result Table

| Mode          | Channel. | Carrier Frequency Separation [MHz] | Verdict |
|---------------|----------|------------------------------------|---------|
| GFSK          | LCH      | 0.718                              | PASS    |
| GFSK          | MCH      | 0.960                              | PASS    |
| GFSK          | HCH      | 1.015                              | PASS    |
| $\pi/4$ DQPSK | LCH      | 1.305                              | PASS    |
| $\pi/4$ DQPSK | MCH      | 0.884                              | PASS    |
| $\pi/4$ DQPSK | HCH      | 0.861                              | PASS    |
| 8DPSK         | LCH      | 1.148                              | PASS    |
| 8DPSK         | MCH      | 1.005                              | PASS    |
| 8DPSK         | HCH      | 0.890                              | PASS    |

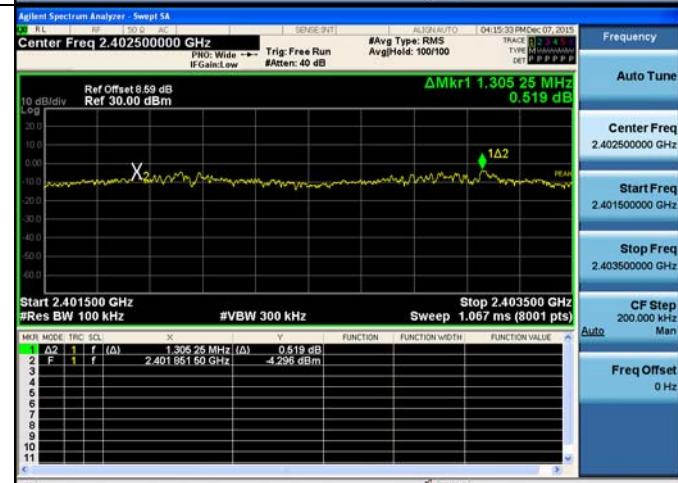
### Test Graph



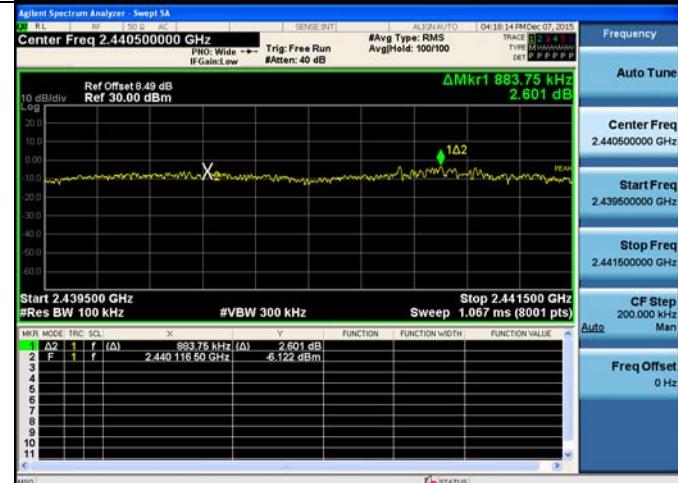
GFSK/HCH

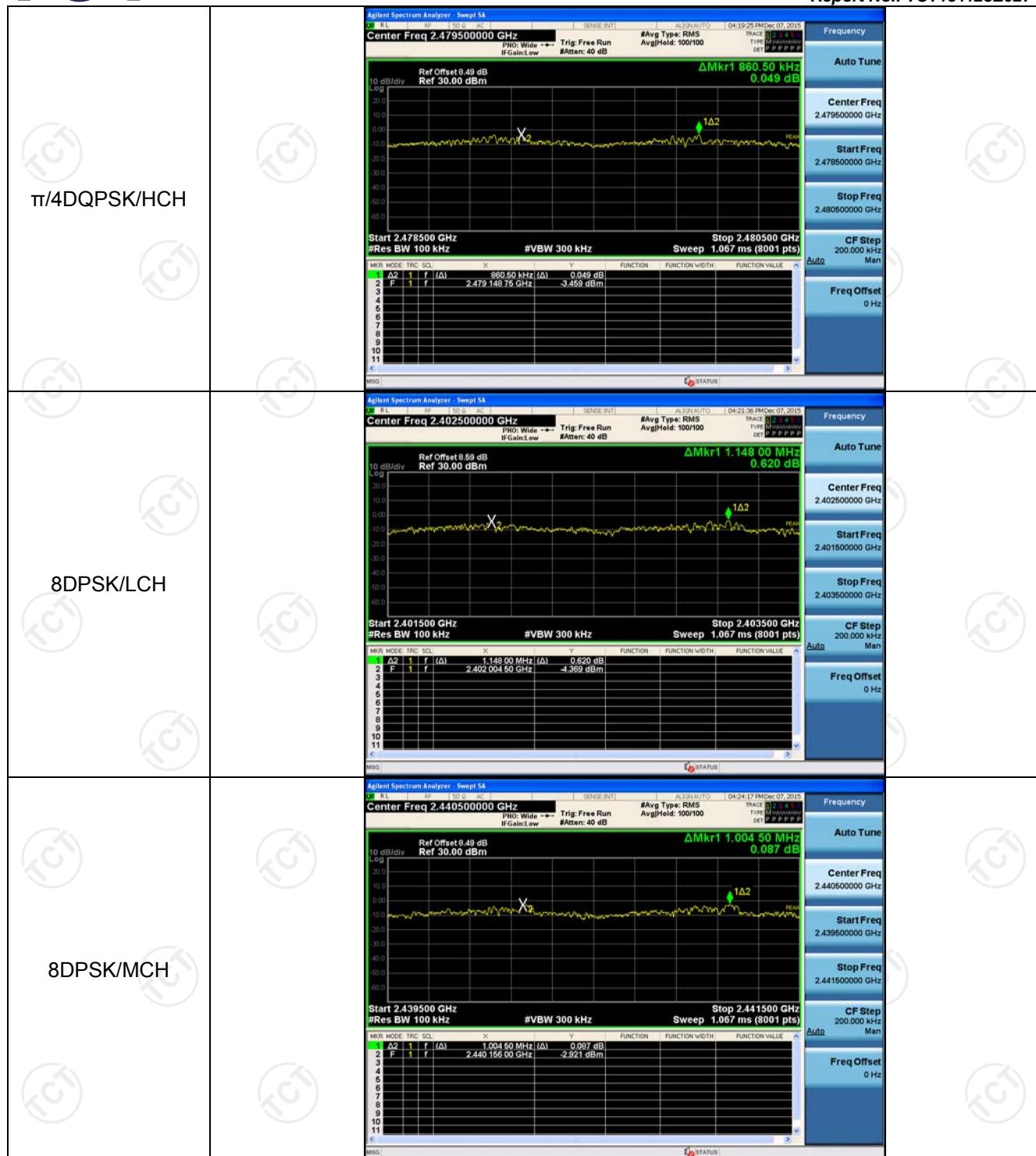


π/4DQPSK/LCH

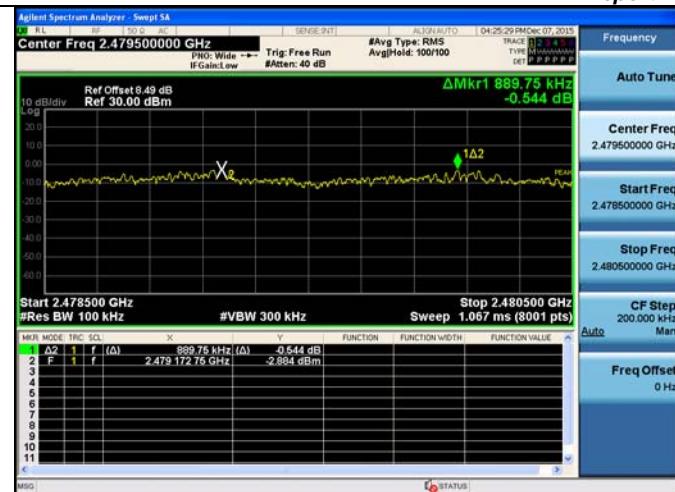


π/4DQPSK/MCH





8DPSK/HCH



## Dwell Time

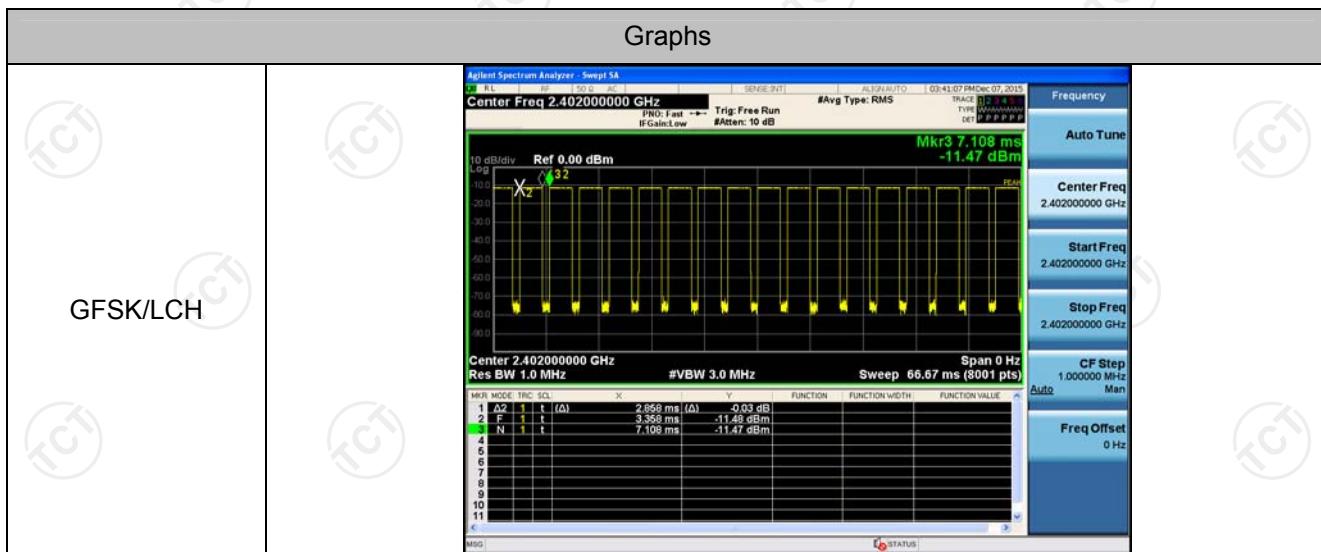
### Result Table

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

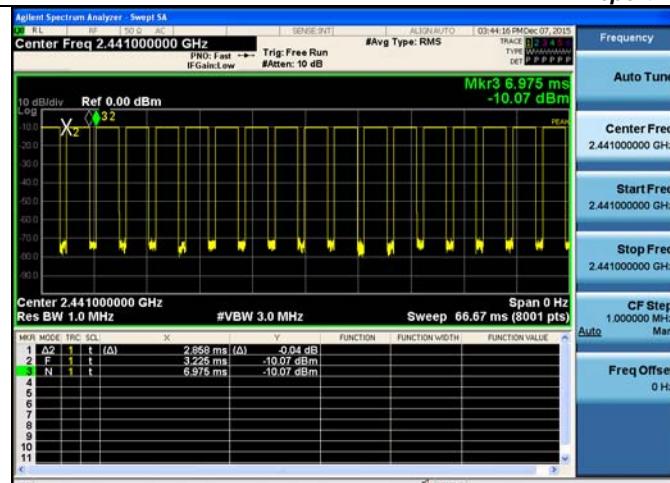
- The duration for dwell time calculation:  $0.4[\text{s}]*\text{hopping number}=0.4[\text{s}]*79[\text{ch}]=31.6[\text{s}*\text{ch}]$ ;
- The burst width [ms/hop/ch], which is directly measured, refers to the duration on one channel hop.
- The hops per second for all channels: The selected EUT Conf 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     | 2.867                   | 106.7              | 0.306         | 76.44          | PASS    |
| $\pi/4$ DQPSK | LCH     | 2.867                   | 106.7              | 0.306         | 76.44          | PASS    |
| $\pi/4$ DQPSK | MCH     | 2.858                   | 106.7              | 0.305         | 76.22          | PASS    |
| $\pi/4$ DQPSK | HCH     | 2.858                   | 106.7              | 0.305         | 76.22          | 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    |

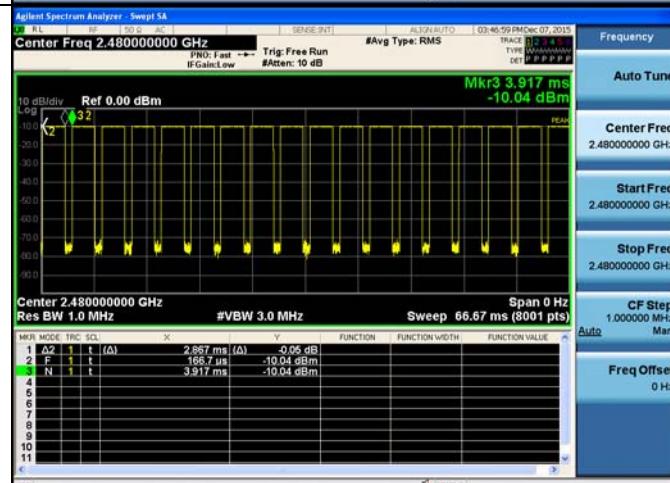
### Test Graph



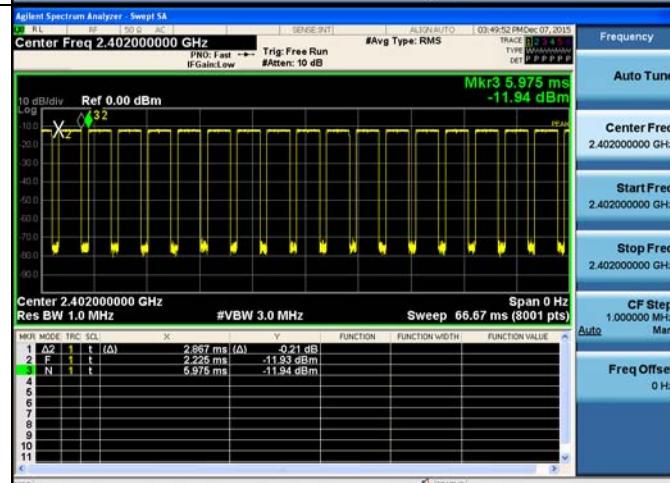
GFSK/MCH



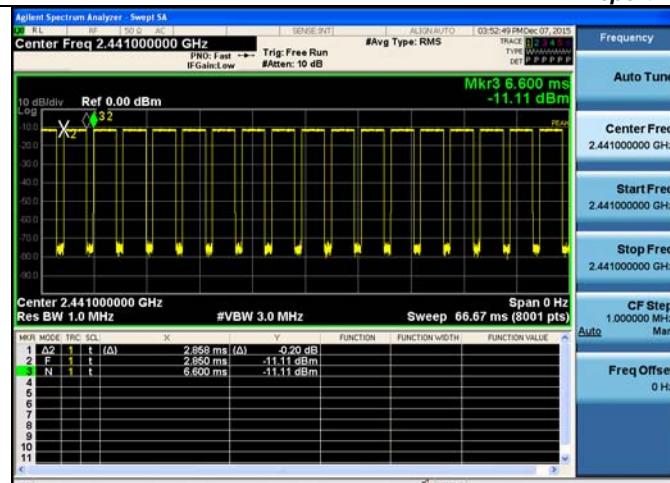
GFSK/HCH



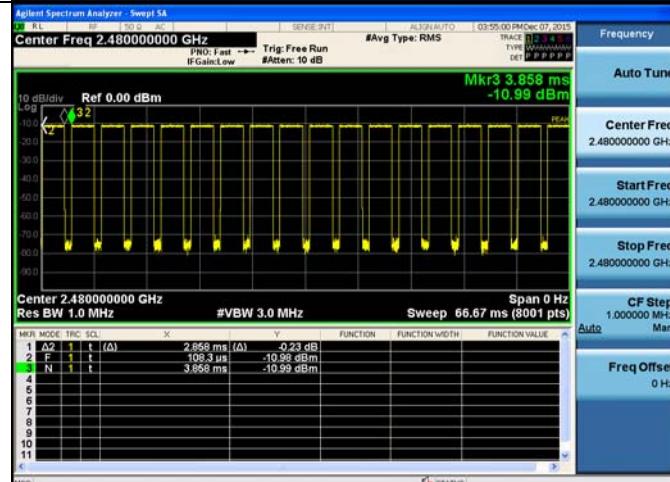
π/4DQPSK/LCH



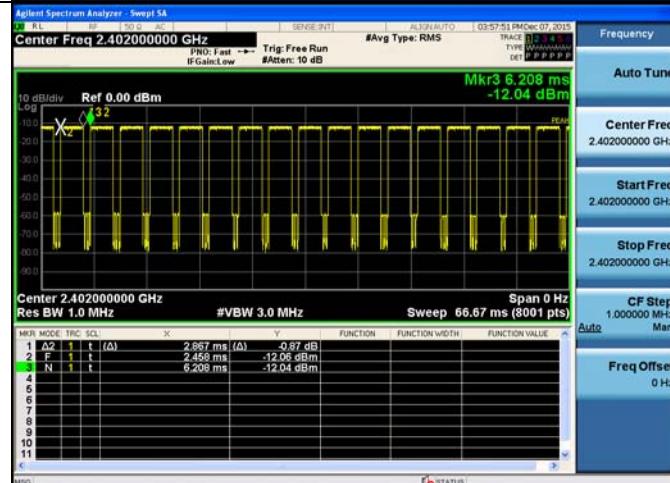
π/4DQPSK/MCH



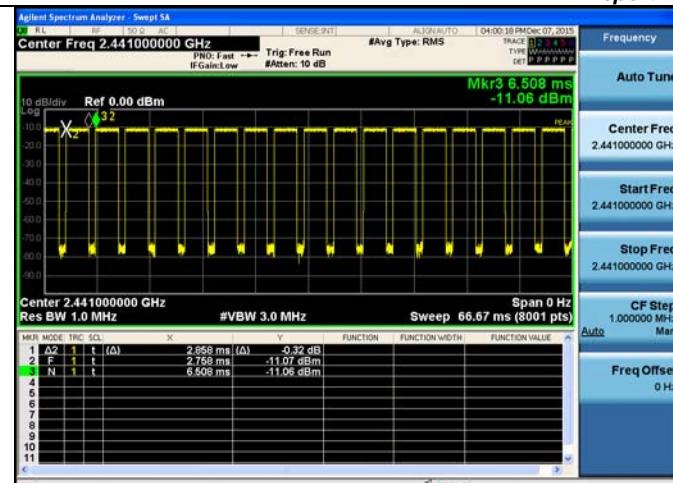
π/4DQPSK/HCH



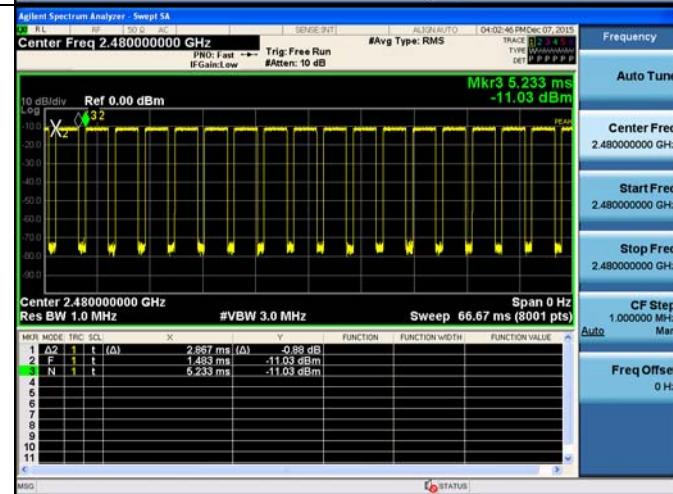
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

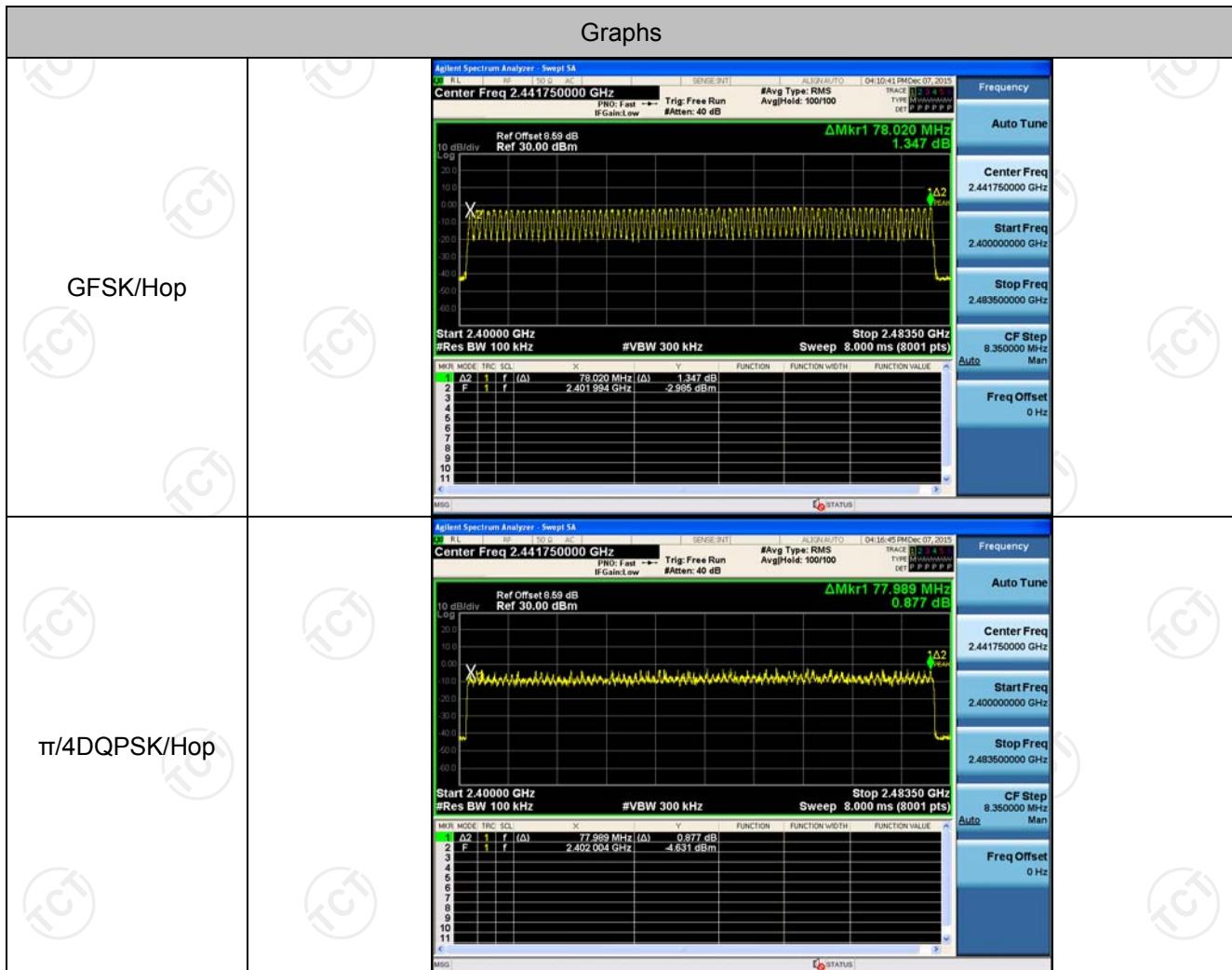


## Hopping Channel Number

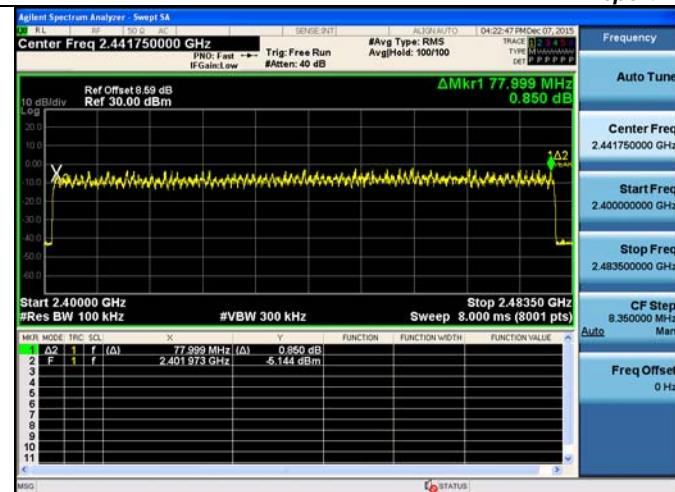
### Result Table

| 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



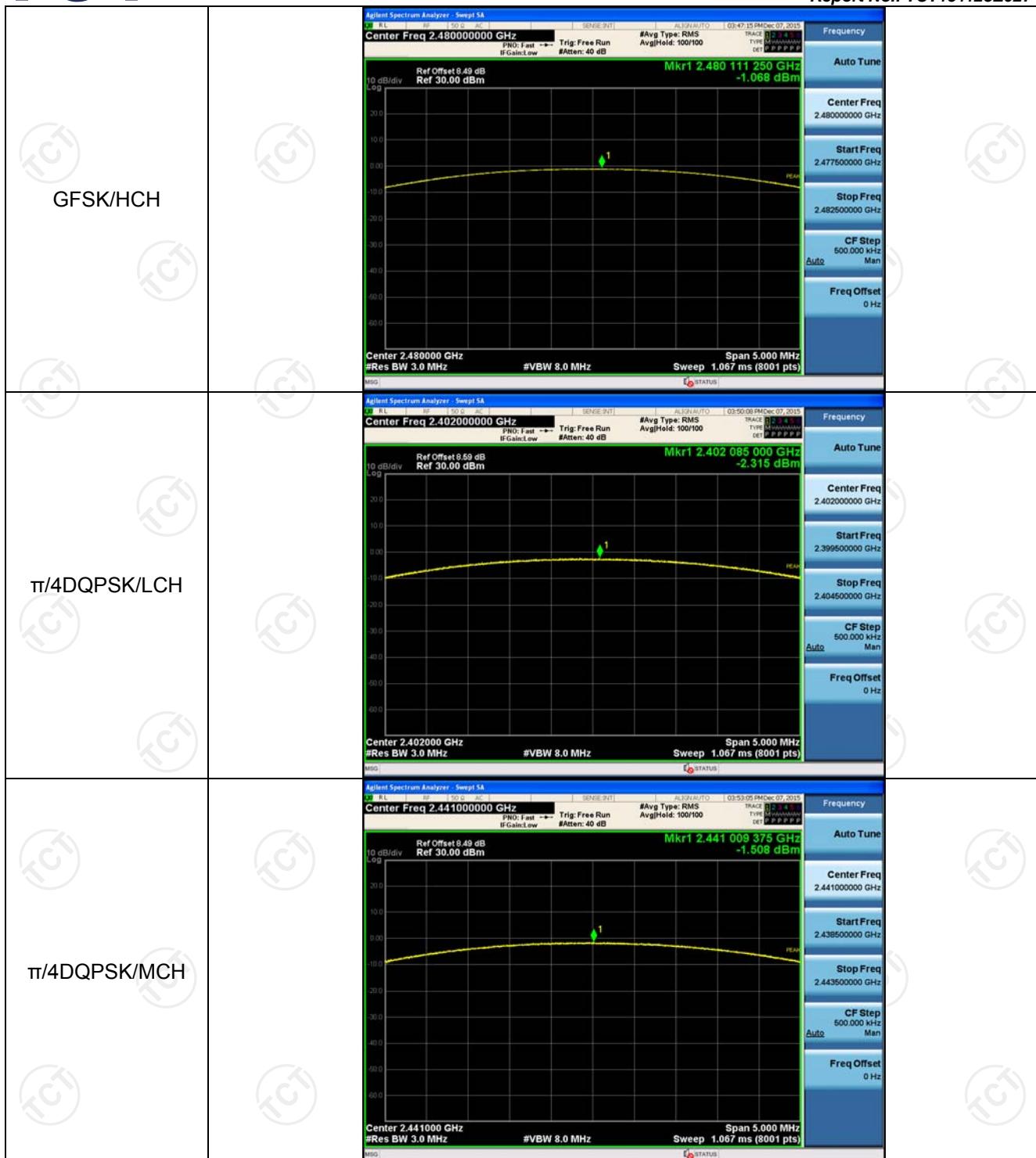
## Conducted Peak Output Power

### Result Table

| Mode          | Channel. | Maximum Peak Output Power [dBm] | Verdict |
|---------------|----------|---------------------------------|---------|
| GFSK          | LCH      | -2.442                          | PASS    |
| GFSK          | MCH      | -1.191                          | PASS    |
| GFSK          | HCH      | -1.068                          | PASS    |
| $\pi/4$ DQPSK | LCH      | -2.315                          | PASS    |
| $\pi/4$ DQPSK | MCH      | -1.508                          | PASS    |
| $\pi/4$ DQPSK | HCH      | -1.342                          | PASS    |
| 8DPSK         | LCH      | -2.204                          | PASS    |
| 8DPSK         | MCH      | -1.303                          | PASS    |
| 8DPSK         | HCH      | -1.199                          | PASS    |

### Test Graph







8DPSK/HCH

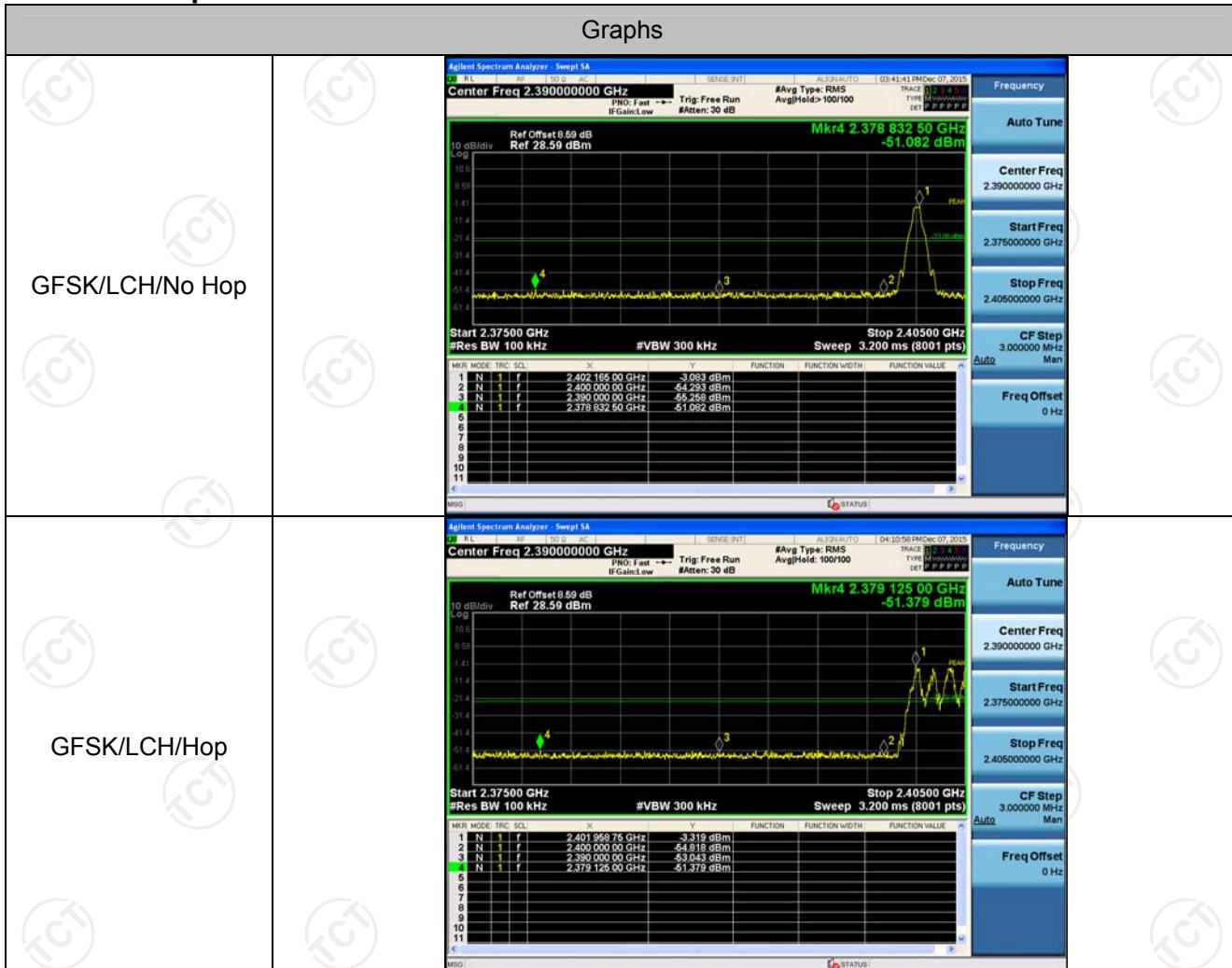


## Band-edge for RF Conducted Emissions

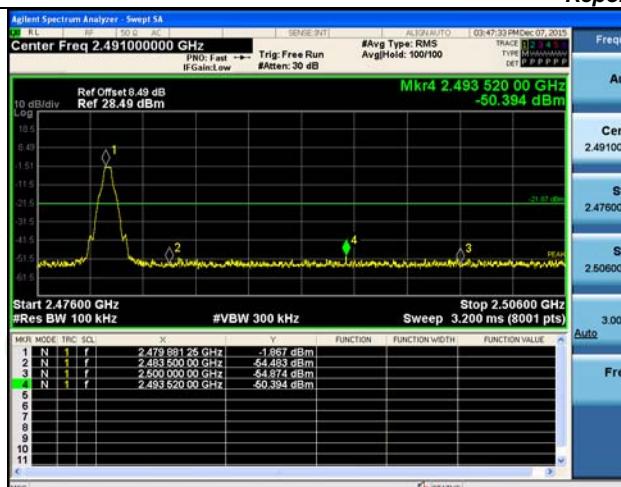
**Result Table**

| Mode          | Channel | Carrier Frequency [MHz] | Carrier Power [dBm] | Frequency Hopping | Max Spurious Level [dBm] | Limit [dBm] | Verdict |
|---------------|---------|-------------------------|---------------------|-------------------|--------------------------|-------------|---------|
| GFSK          | LCH     | 2402                    | -3.083              | Off               | -51.082                  | -23.08      | PASS    |
|               |         |                         | -3.319              | On                | -51.379                  | -23.32      | PASS    |
| GFSK          | HCH     | 2480                    | -1.867              | Off               | -50.394                  | -21.87      | PASS    |
|               |         |                         | -1.695              | On                | -50.823                  | -21.7       | PASS    |
| $\pi/4$ DQPSK | LCH     | 2402                    | -3.565              | Off               | -51.323                  | -23.57      | PASS    |
|               |         |                         | -7.474              | On                | -51.499                  | -27.47      | PASS    |
| $\pi/4$ DQPSK | HCH     | 2480                    | -2.679              | Off               | -51.063                  | -22.68      | PASS    |
|               |         |                         | -6.543              | On                | -50.961                  | -26.54      | PASS    |
| 8DPSK         | LCH     | 2402                    | -4.004              | Off               | -51.619                  | -24         | PASS    |
|               |         |                         | -7.396              | On                | -51.210                  | -27.4       | PASS    |
| 8DPSK         | HCH     | 2480                    | -2.695              | Off               | -51.286                  | -22.7       | PASS    |
|               |         |                         | -6.061              | On                | -51.484                  | -26.06      | PASS    |

**Test Graph**

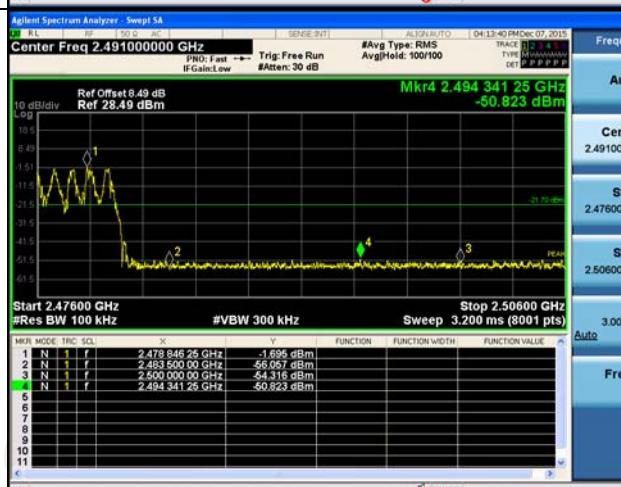


GFSK/HCH/No Hop

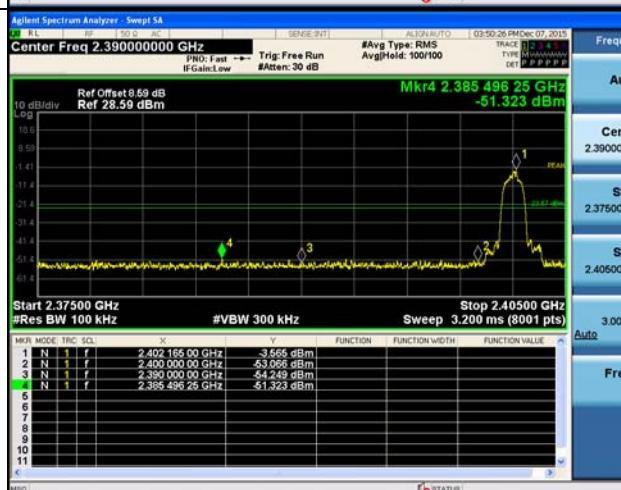


Frequency  
Auto Tune  
Center Freq  
2.491000000 GHz  
Start Freq  
2.476000000 GHz  
Stop Freq  
2.506000000 GHz  
CF Step  
3.000000 MHz  
Auto Man  
Freq Offset  
0 Hz

GFSK/HCH/Hop

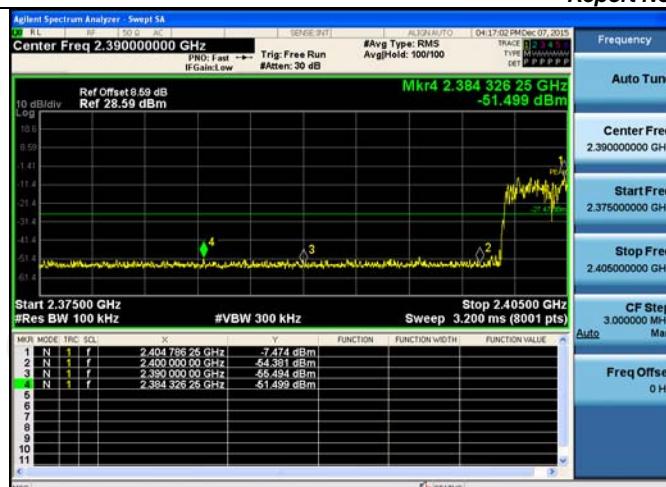


Frequency  
Auto Tune  
Center Freq  
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Start Freq  
2.476000000 GHz  
Stop Freq  
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CF Step  
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Auto Man  
Freq Offset  
0 Hz

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


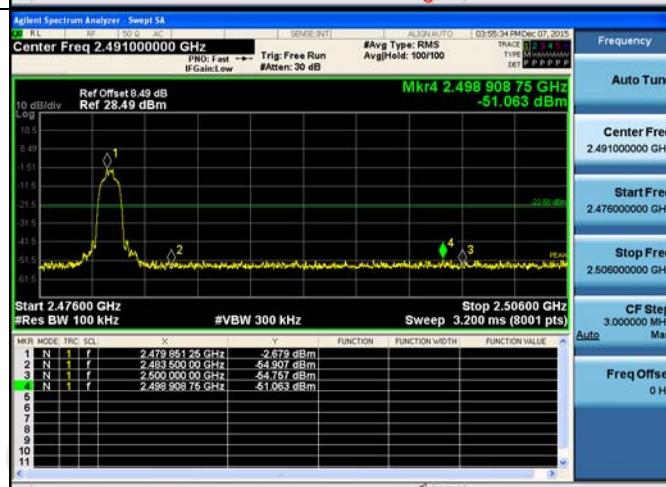
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Start Freq  
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Freq Offset  
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π/4DQPSK/LCH/Hop



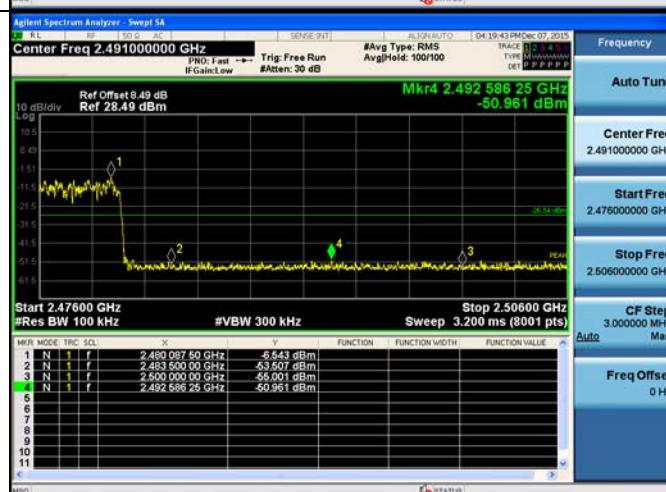
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π/4DQPSK/HCH/No Hop



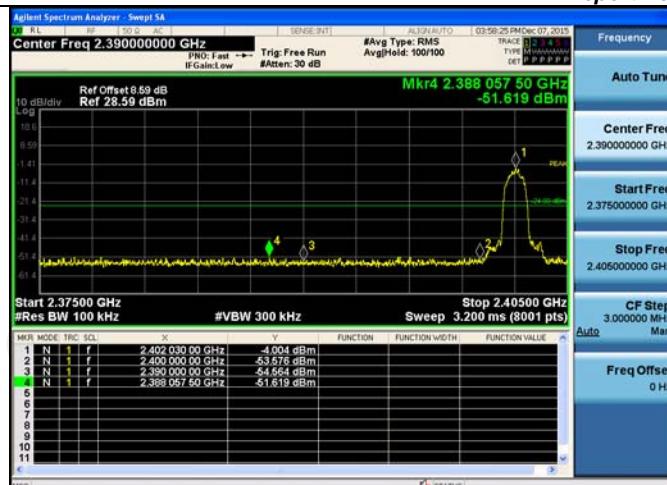
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Start Freq  
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Stop Freq  
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CF Step  
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Auto Man  
Freq Offset  
0 Hz

π/4DQPSK/HCH/Hop

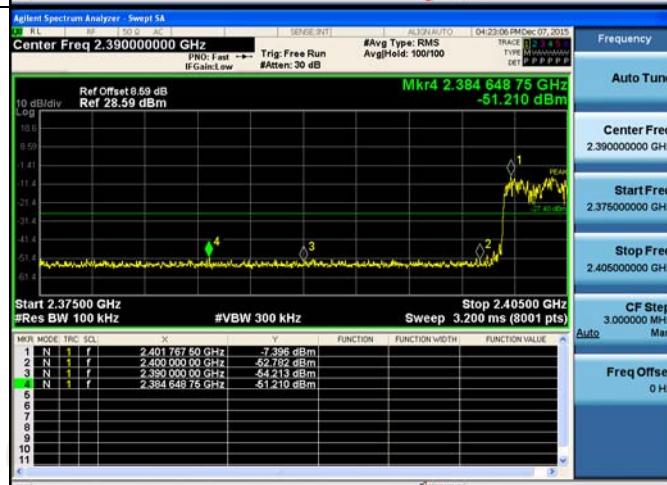


Frequency  
Auto Tune  
Center Freq  
2.491000000 GHz  
Start Freq  
2.476000000 GHz  
Stop Freq  
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CF Step  
3.000000 MHz  
Auto Man  
Freq Offset  
0 Hz

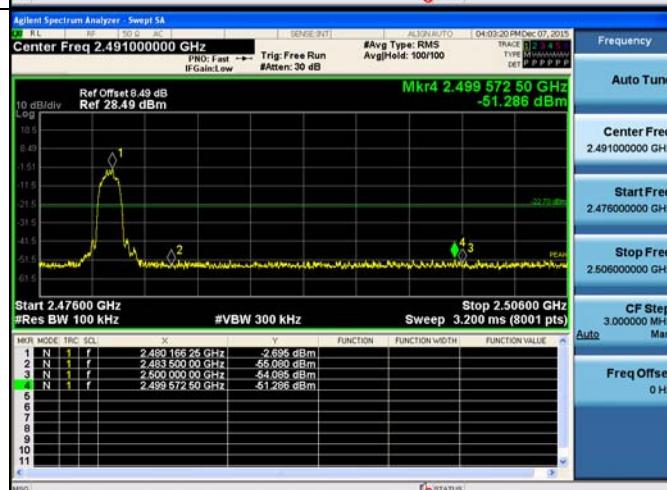
8DPSK/LCH/No Hop



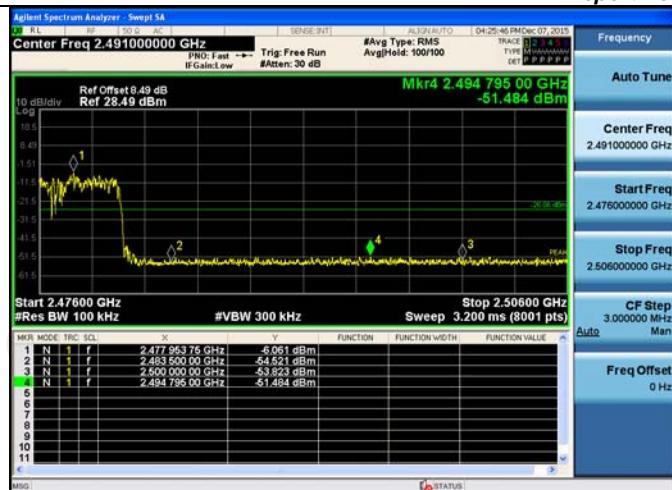
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



8DPSK/HCH/Hop

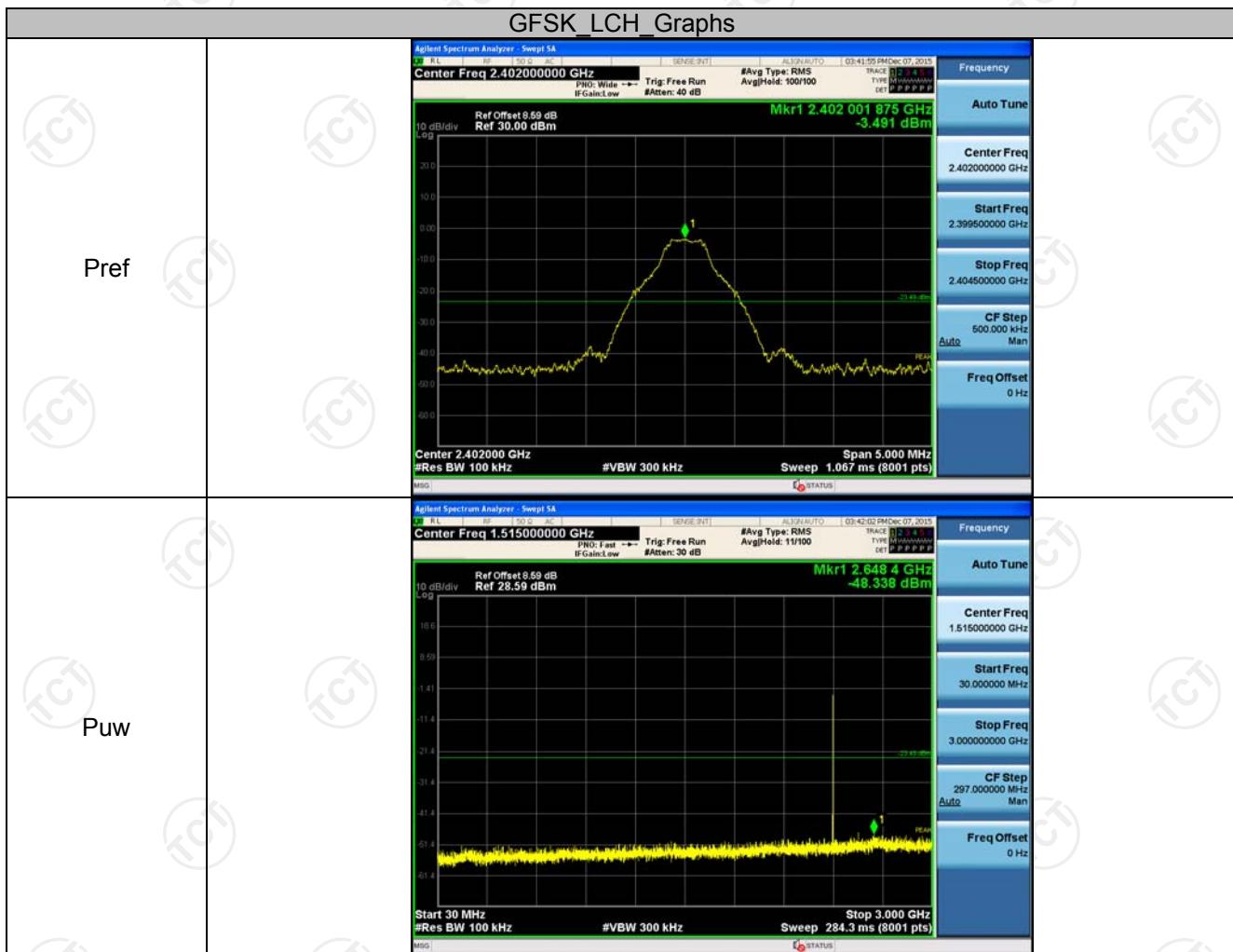


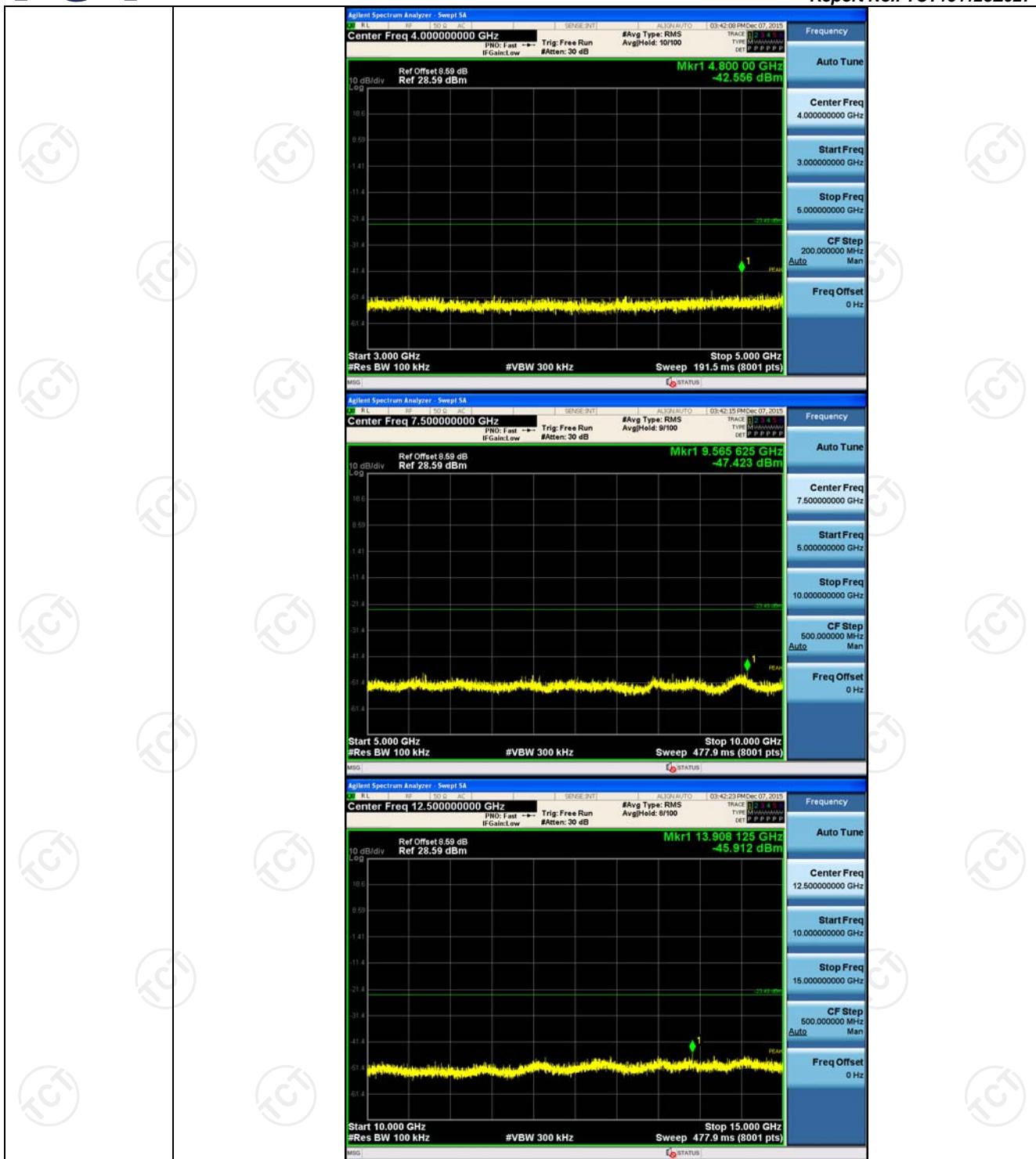
## RF Conducted Spurious Emissions

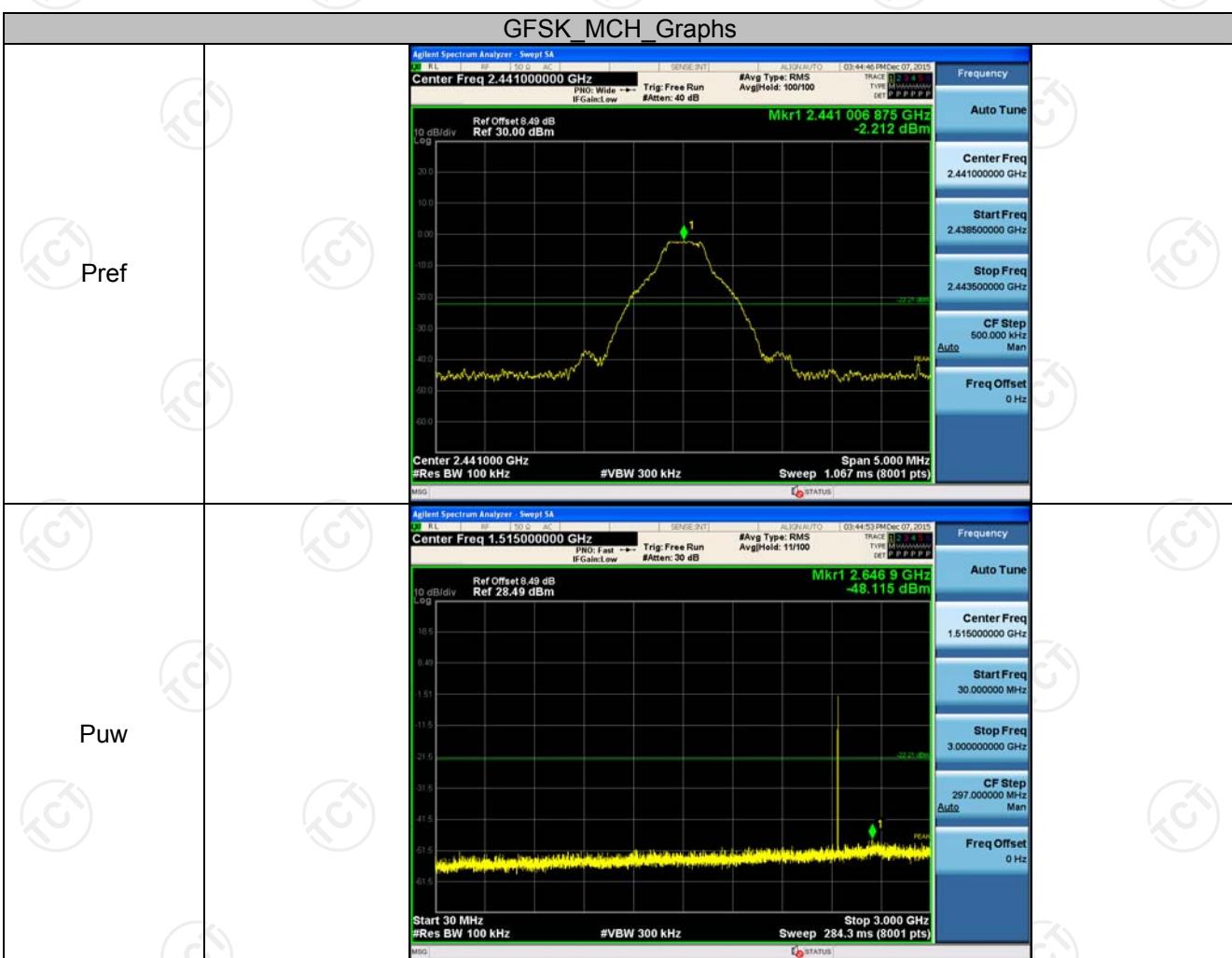
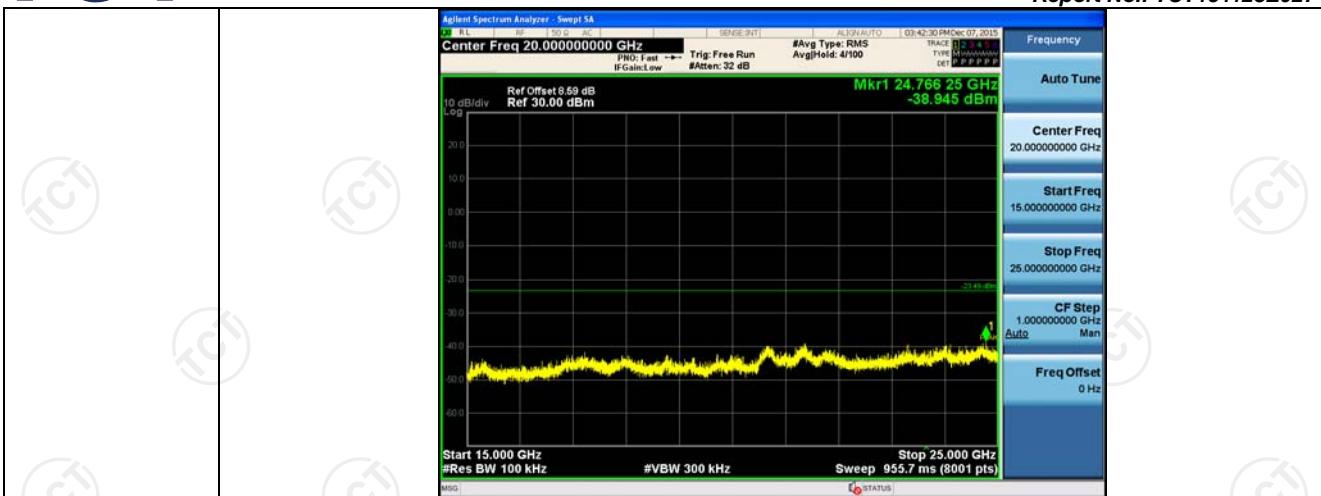
### Result Table

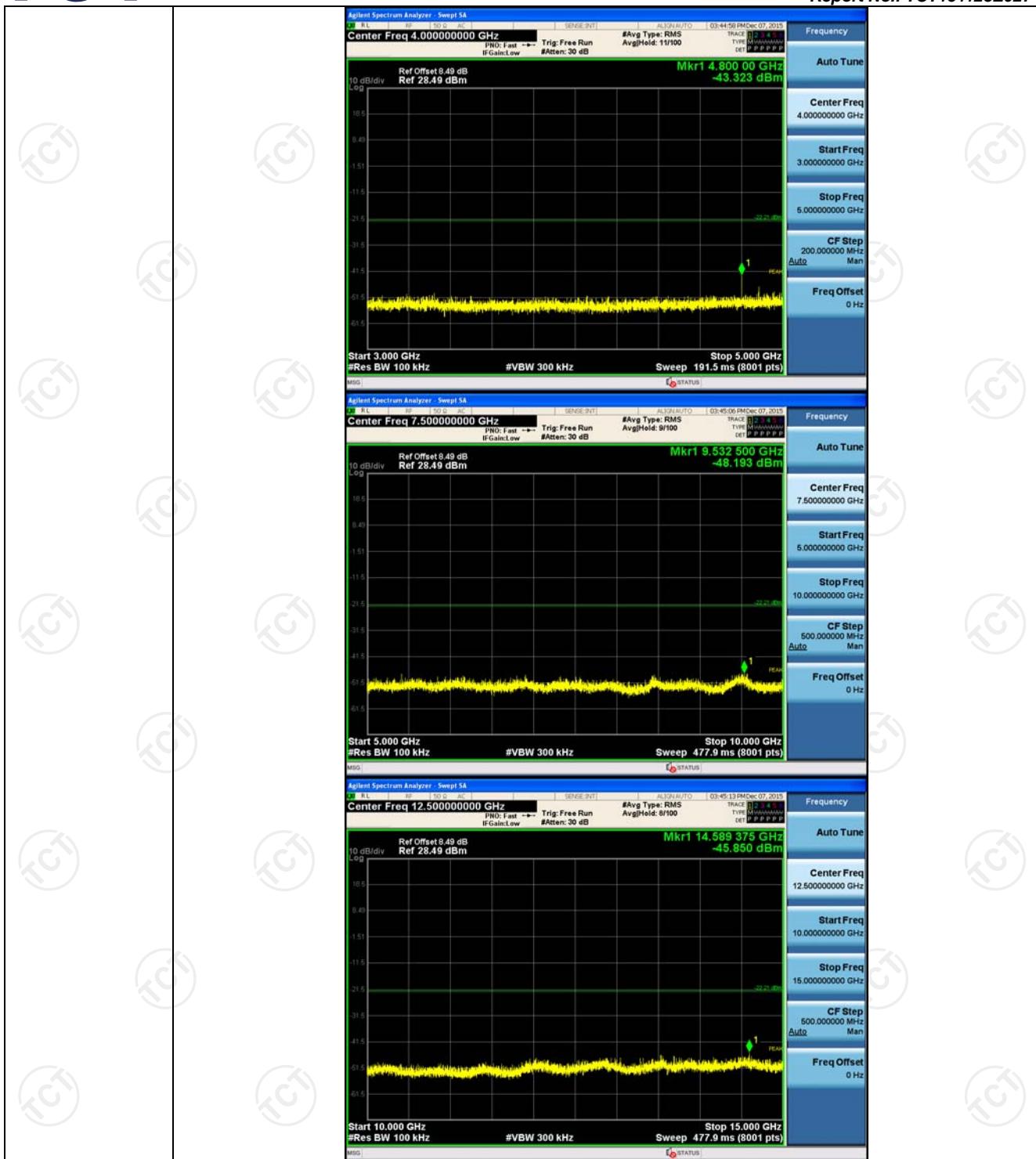
| Mode     | Channel | Pref [dBm] | Puw[dBm] | Verdict |
|----------|---------|------------|----------|---------|
| GFSK     | LCH     | -3.491     | <Limit   | PASS    |
| GFSK     | MCH     | -2.212     | <Limit   | PASS    |
| GFSK     | HCH     | -2.062     | <Limit   | PASS    |
| π/4DQPSK | LCH     | -3.749     | <Limit   | PASS    |
| π/4DQPSK | MCH     | -3.541     | <Limit   | PASS    |
| π/4DQPSK | HCH     | -2.809     | <Limit   | PASS    |
| 8DPSK    | LCH     | -5.705     | <Limit   | PASS    |
| 8DPSK    | MCH     | -2.912     | <Limit   | PASS    |
| 8DPSK    | HCH     | -3.12      | <Limit   | PASS    |

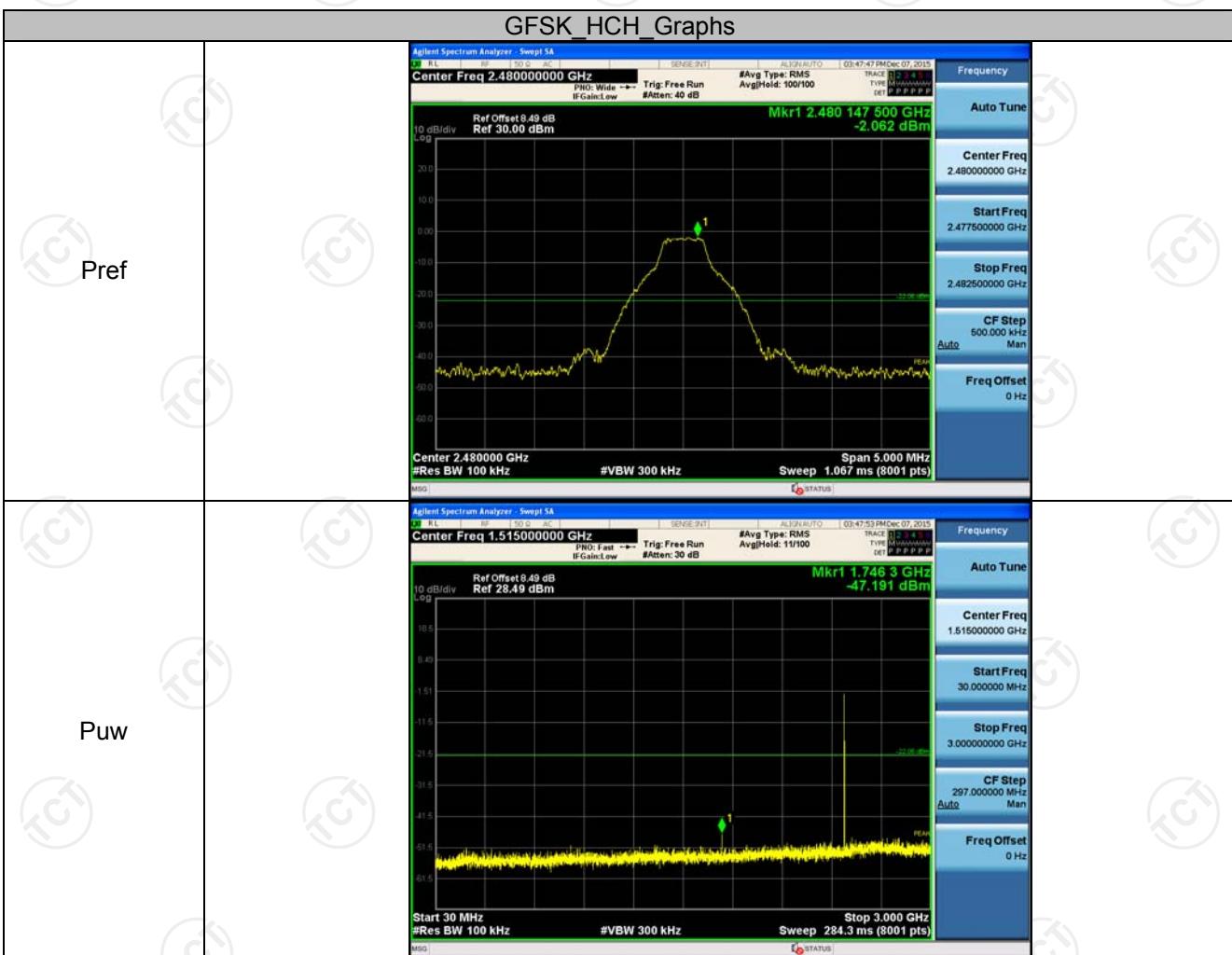
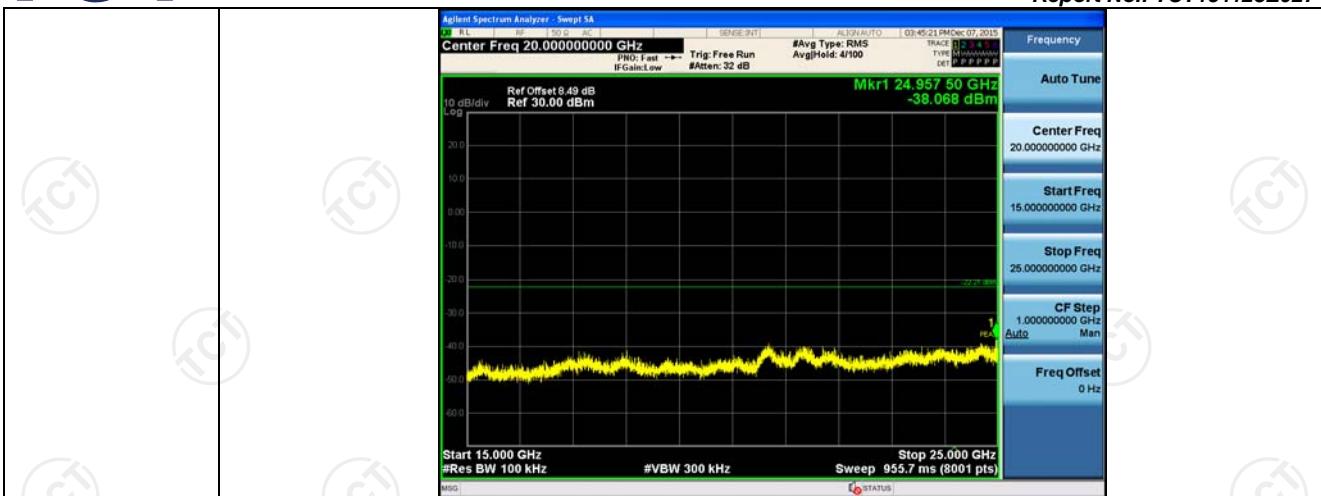
### Test Graph

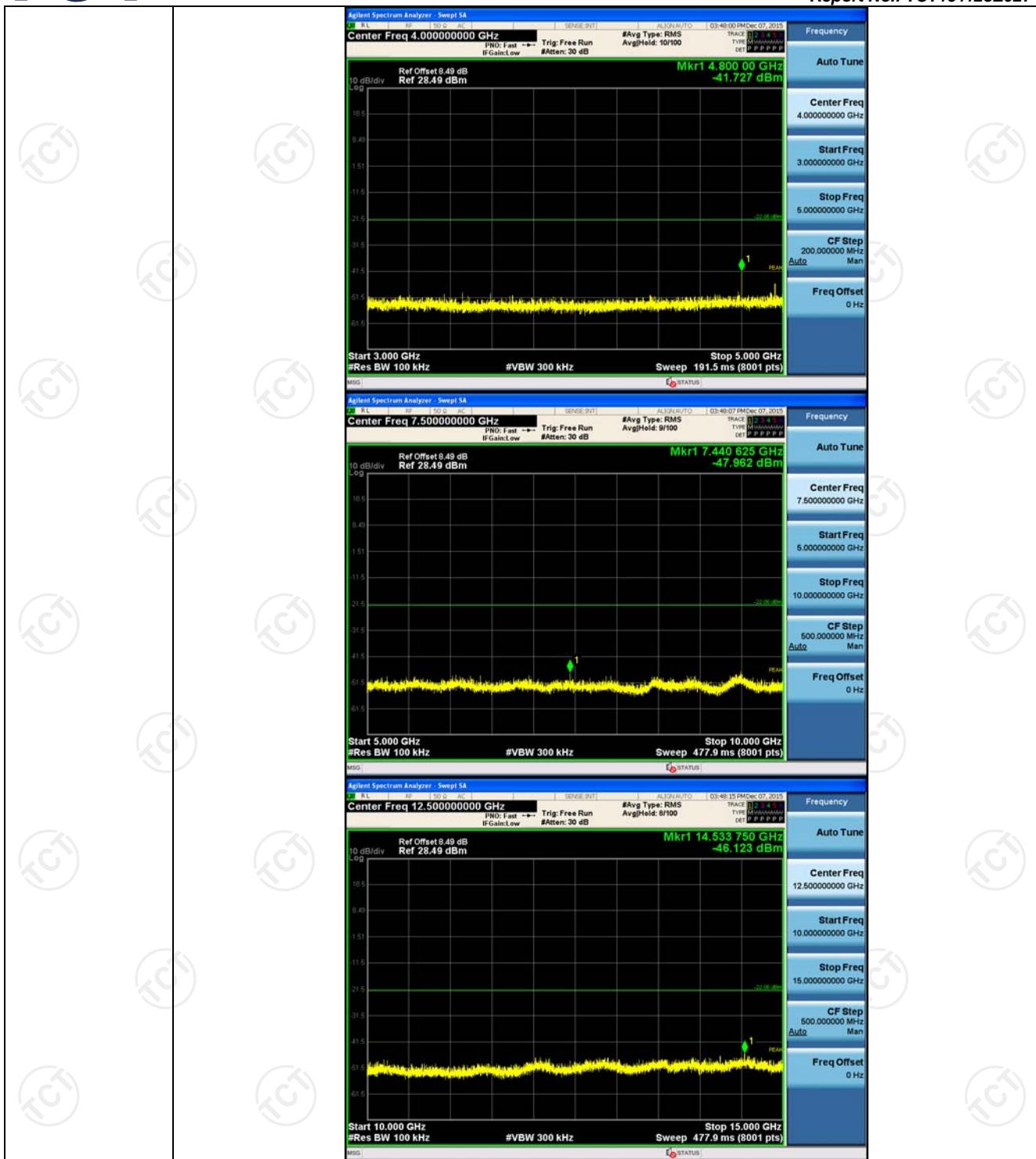


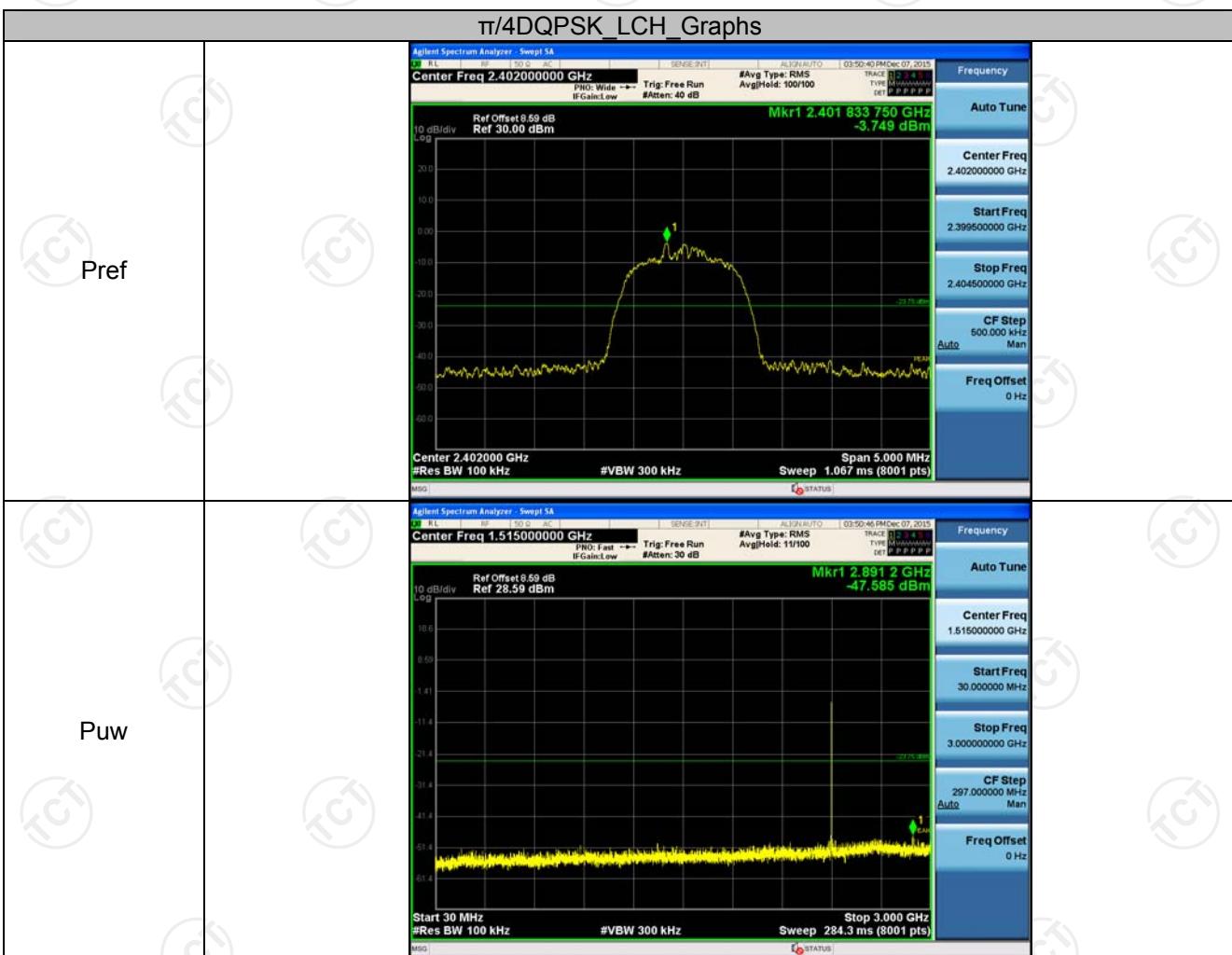
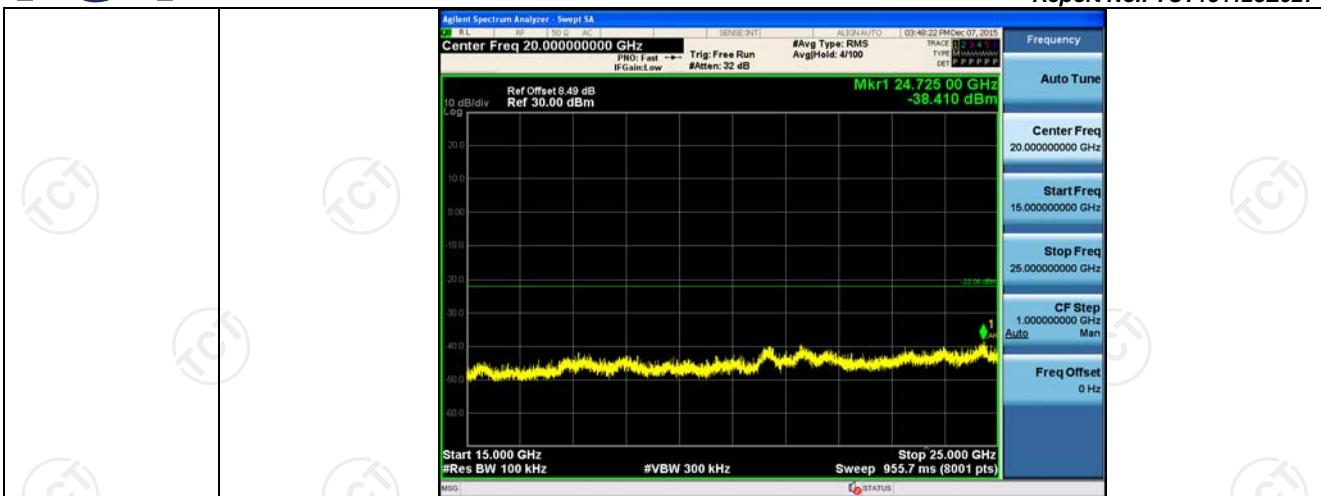


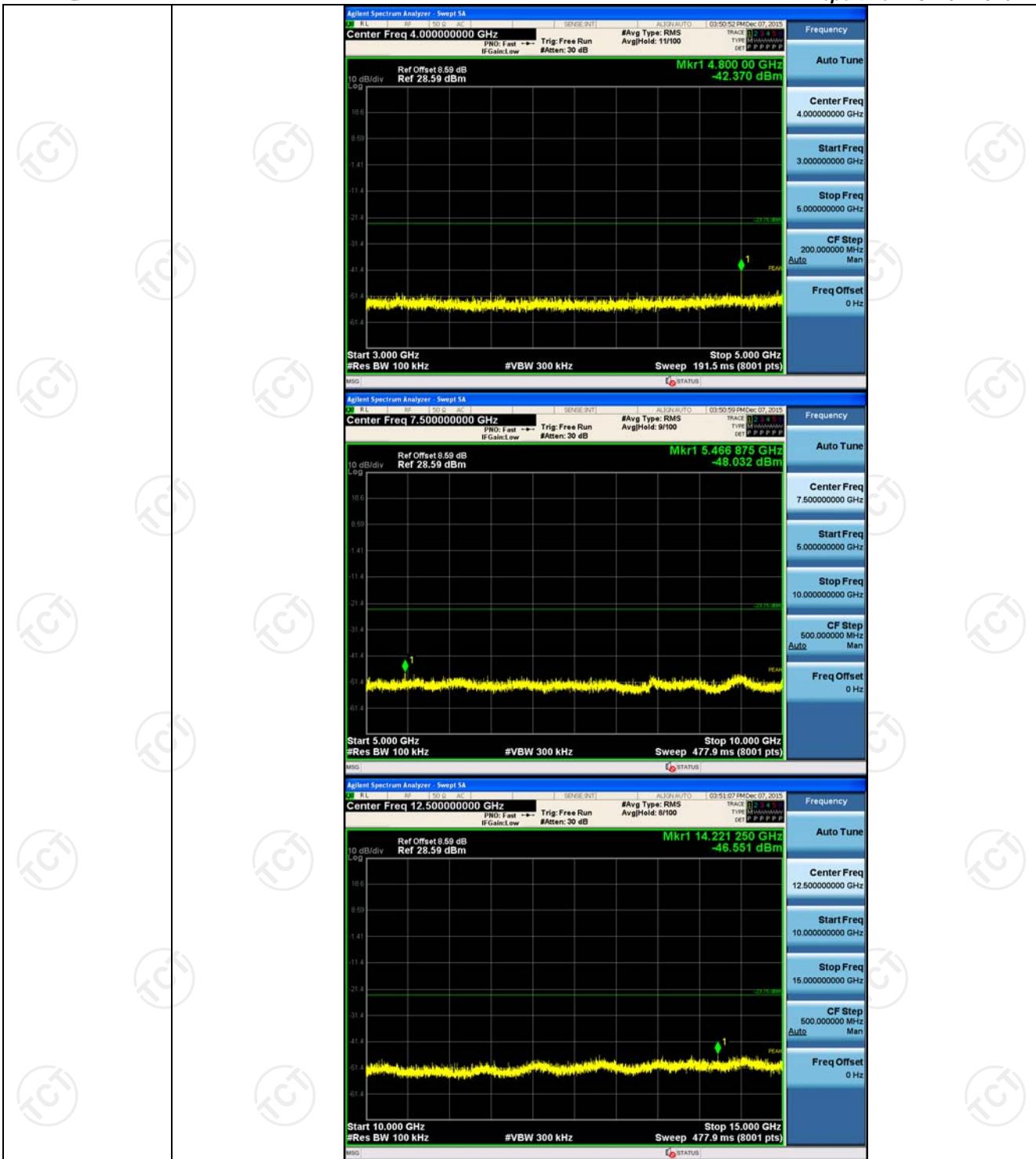


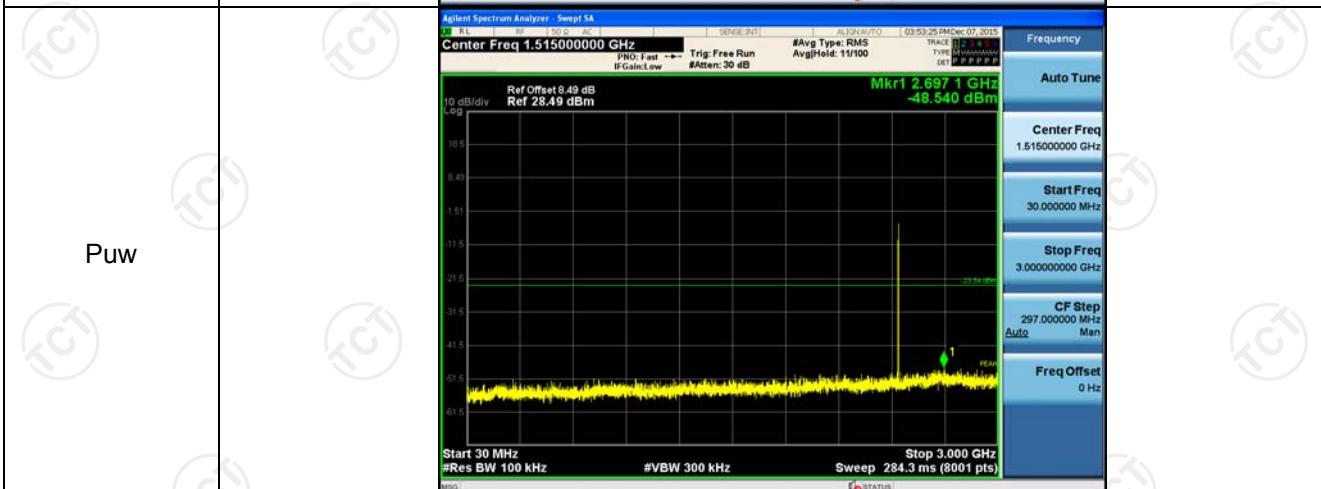
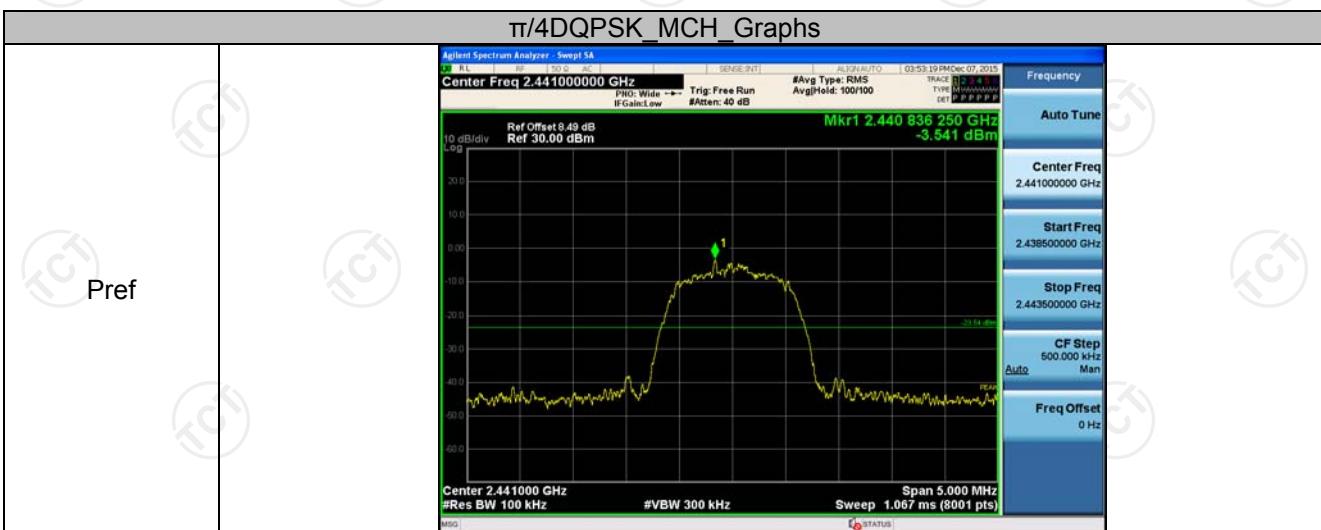
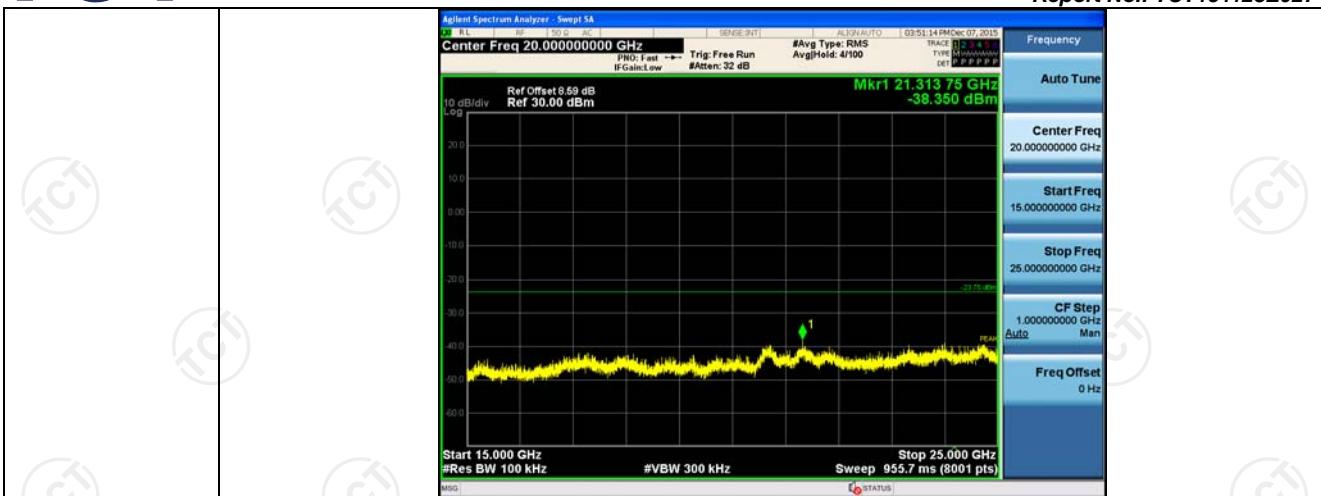


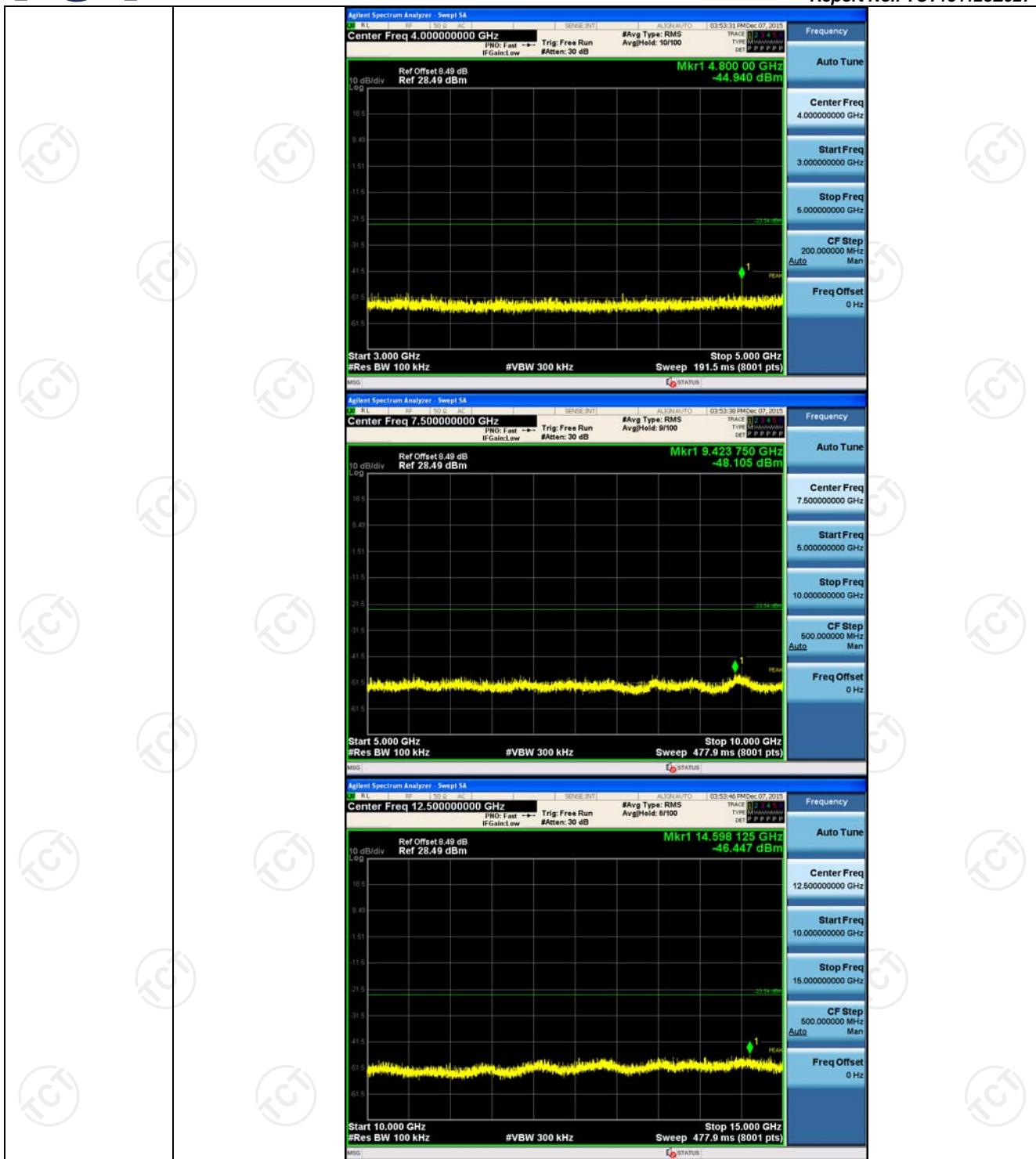


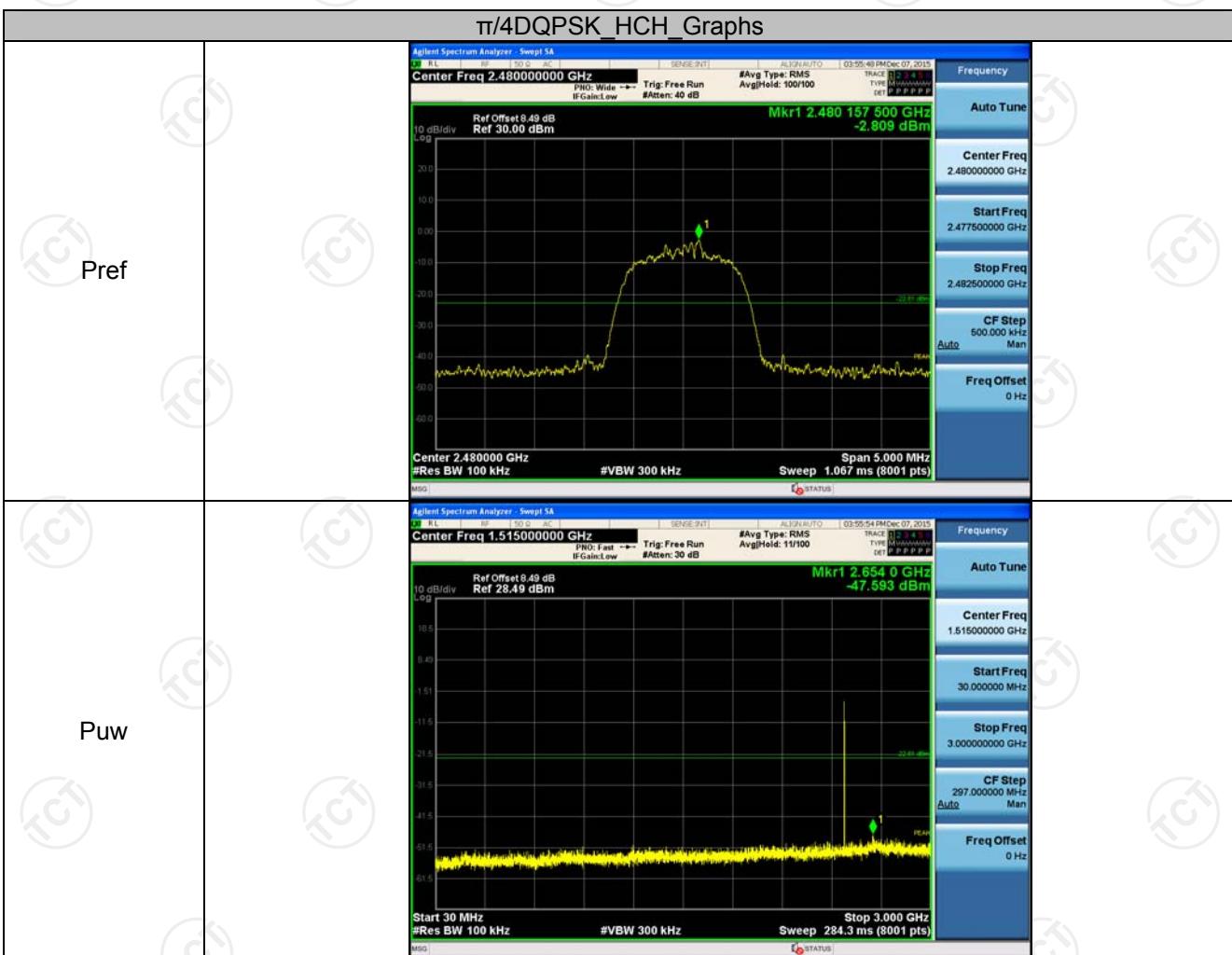
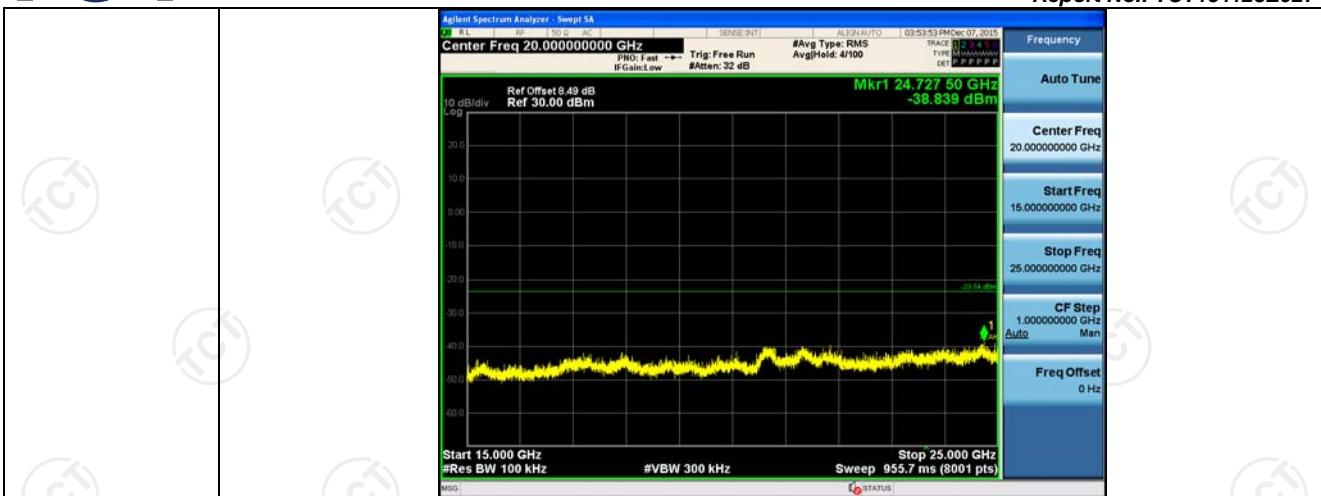


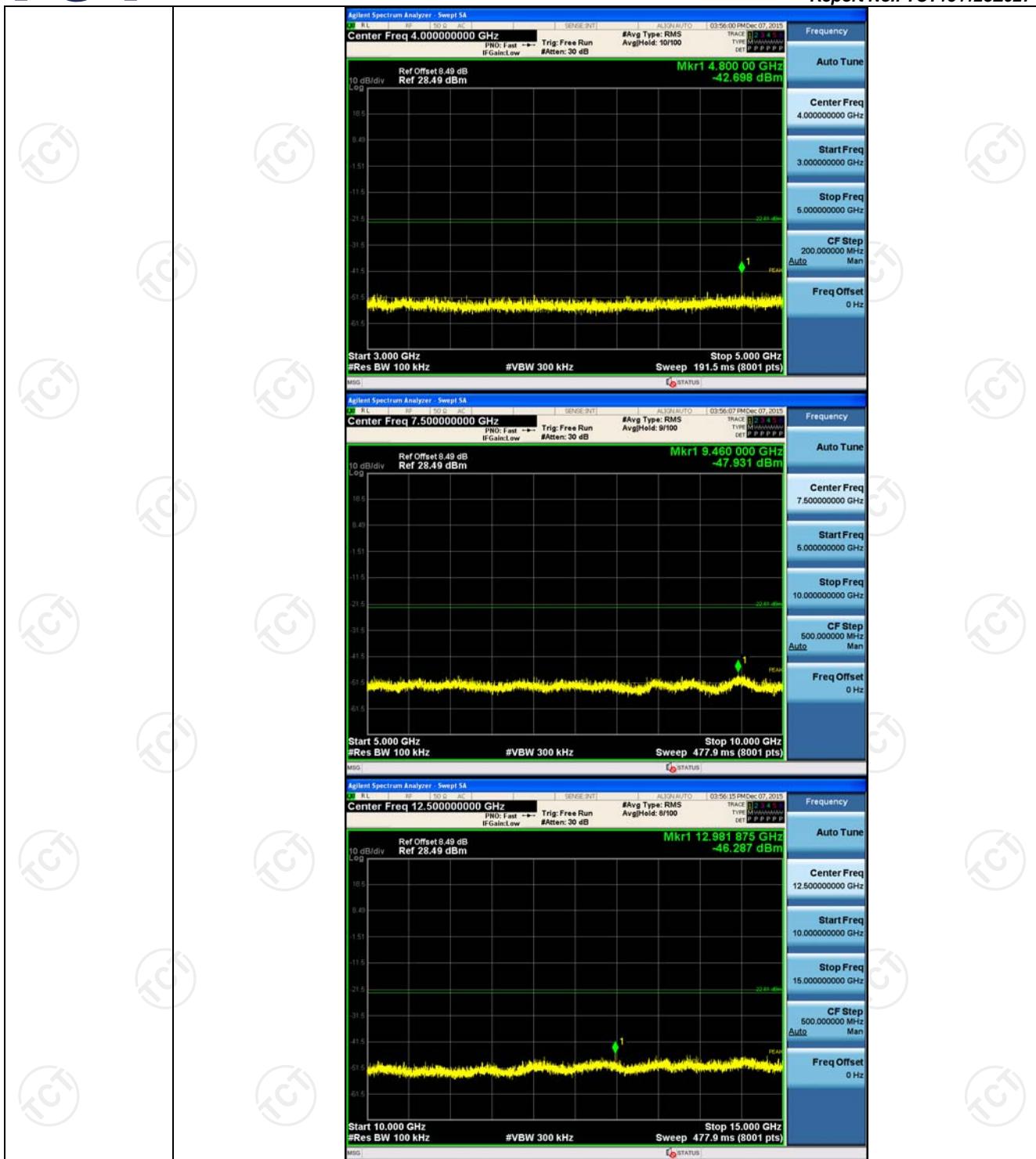


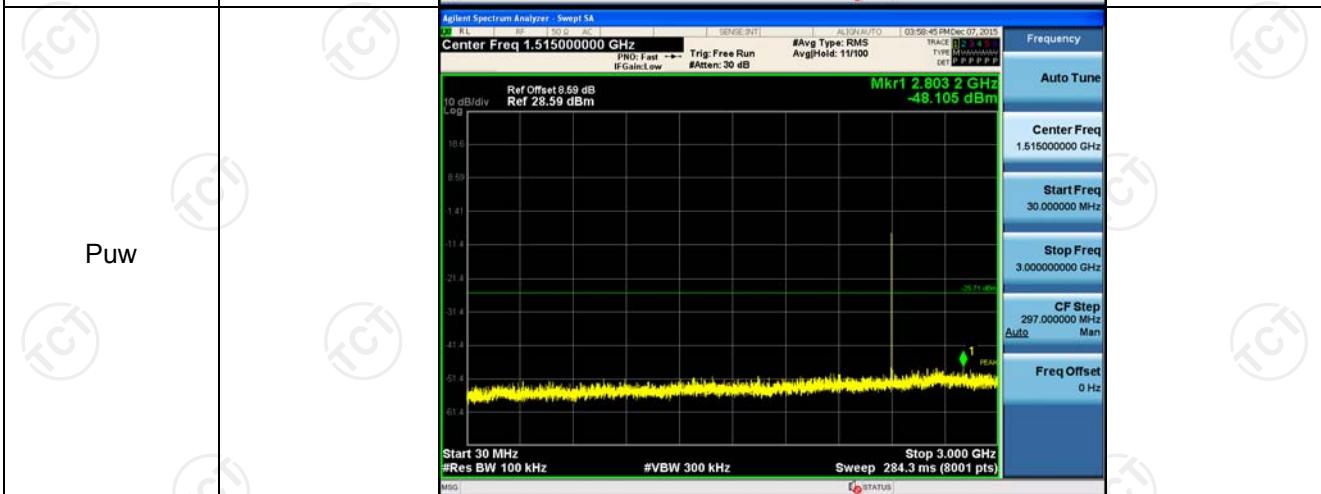
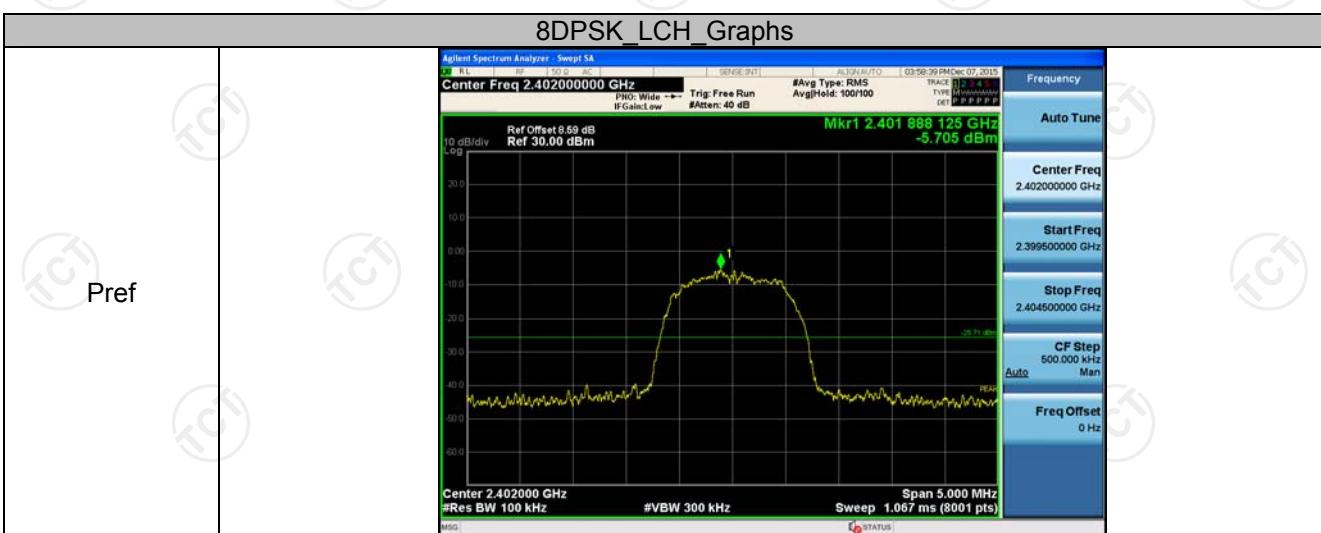
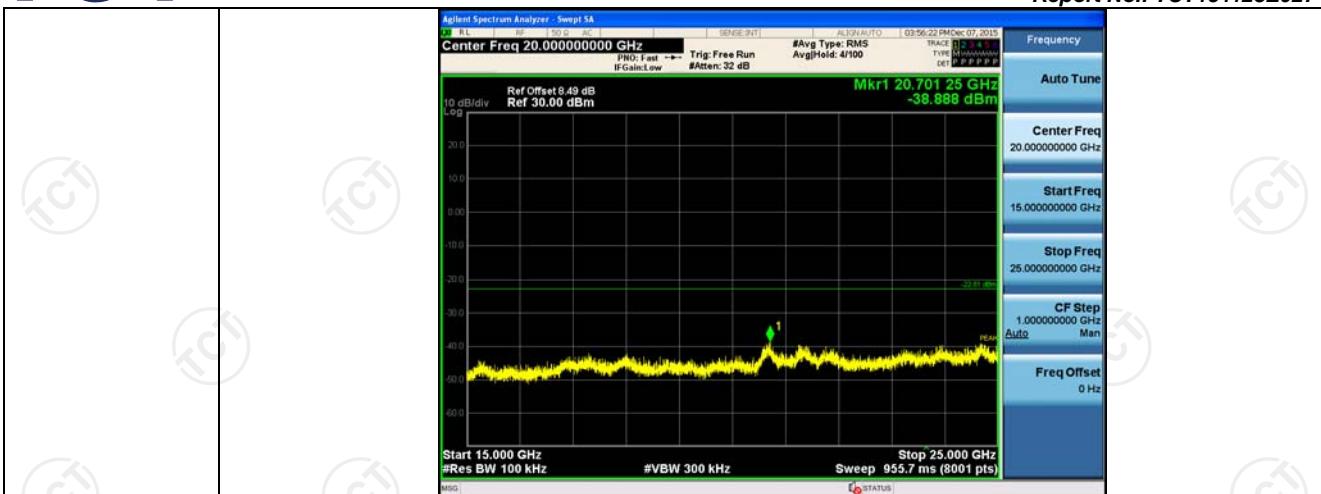


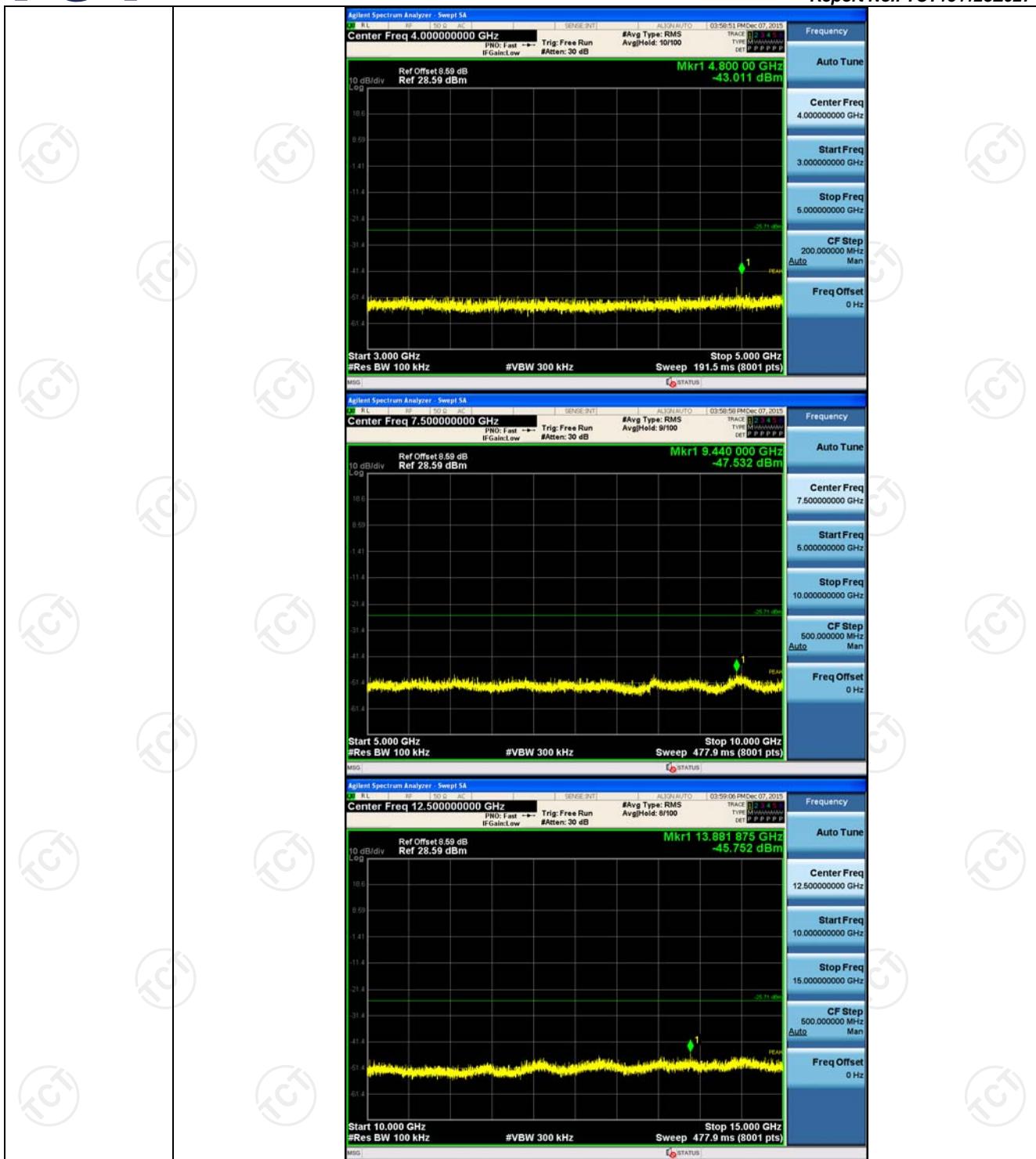


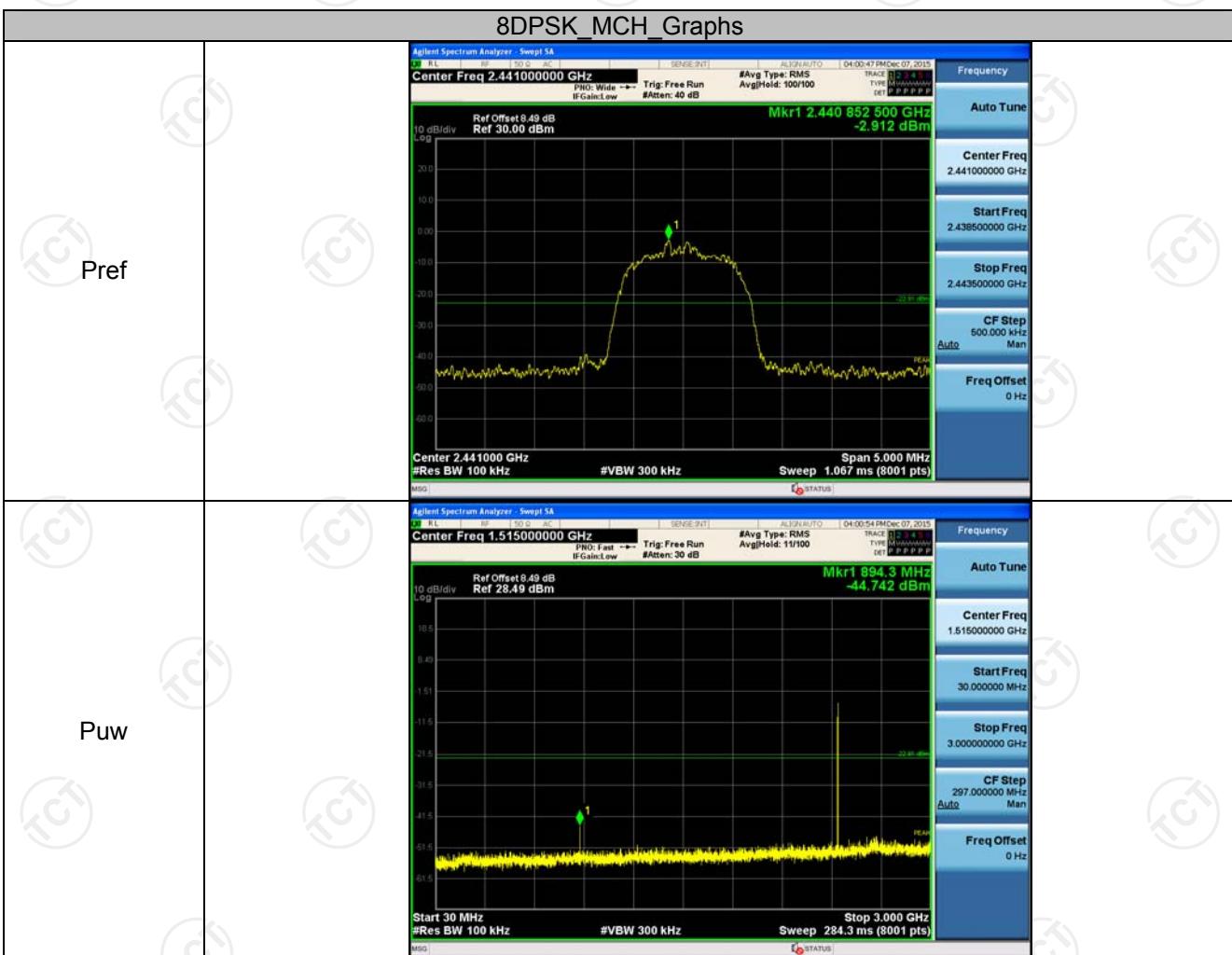
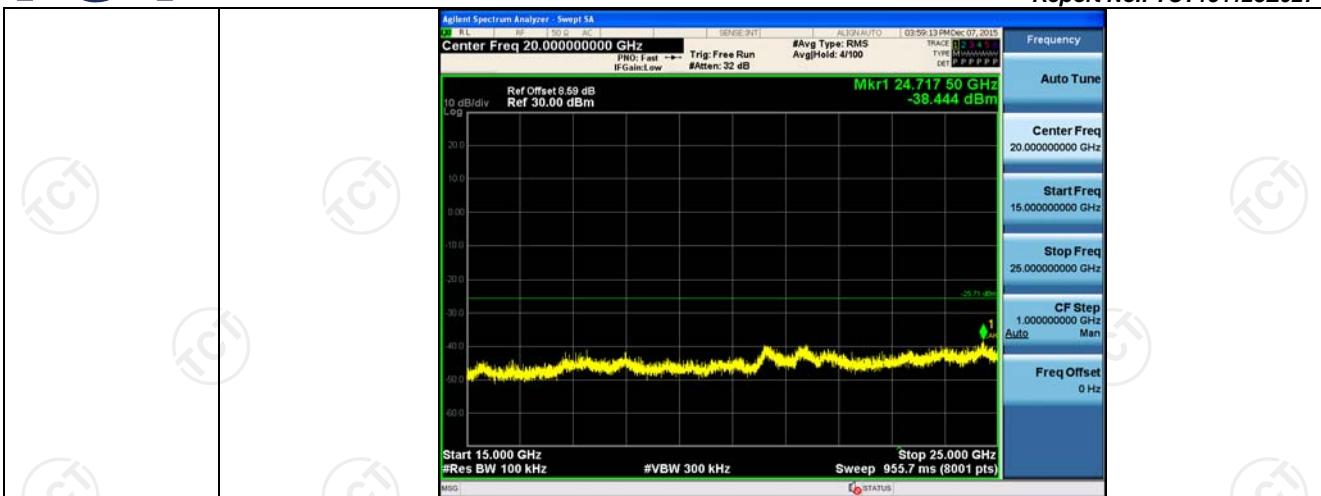


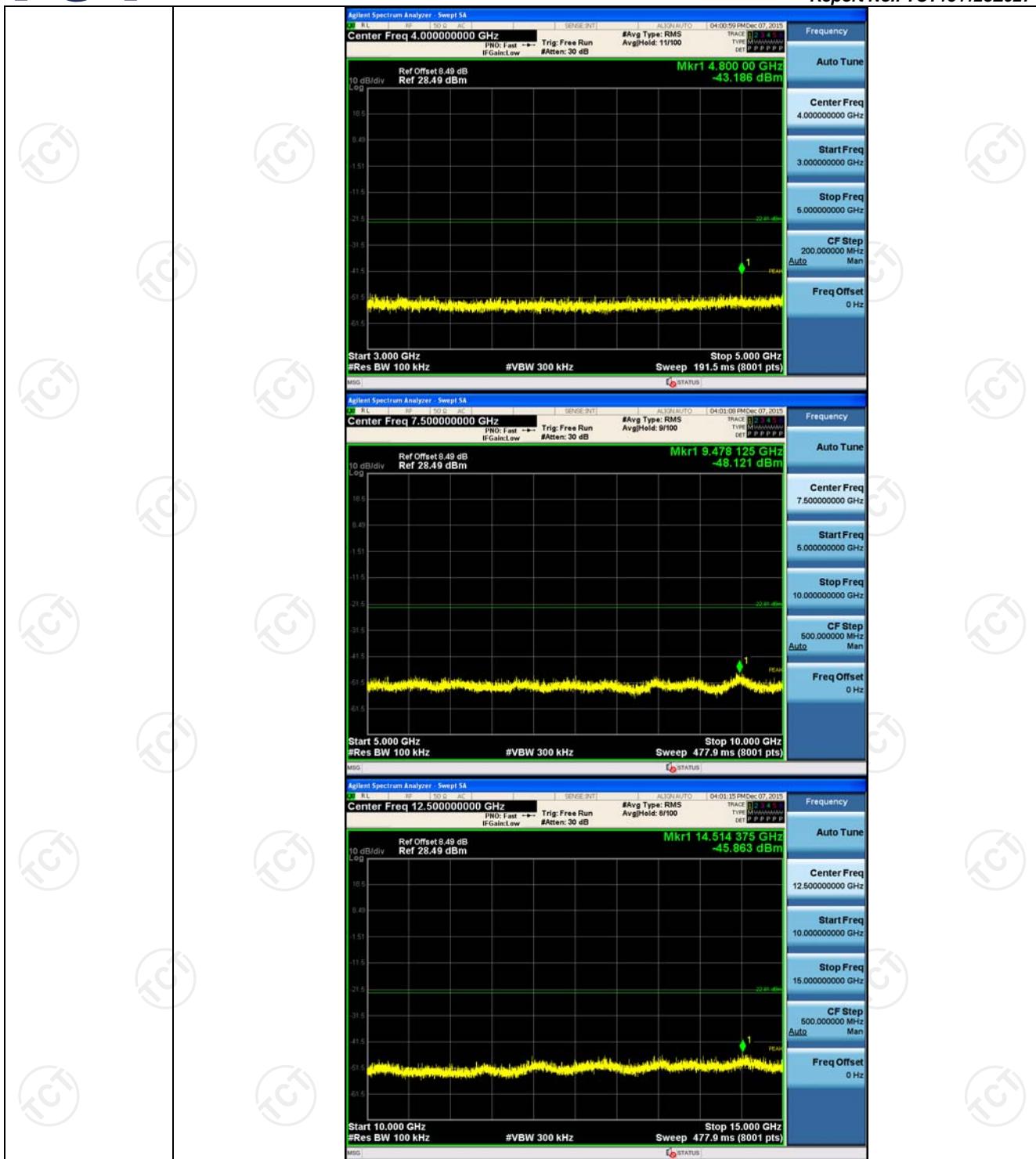


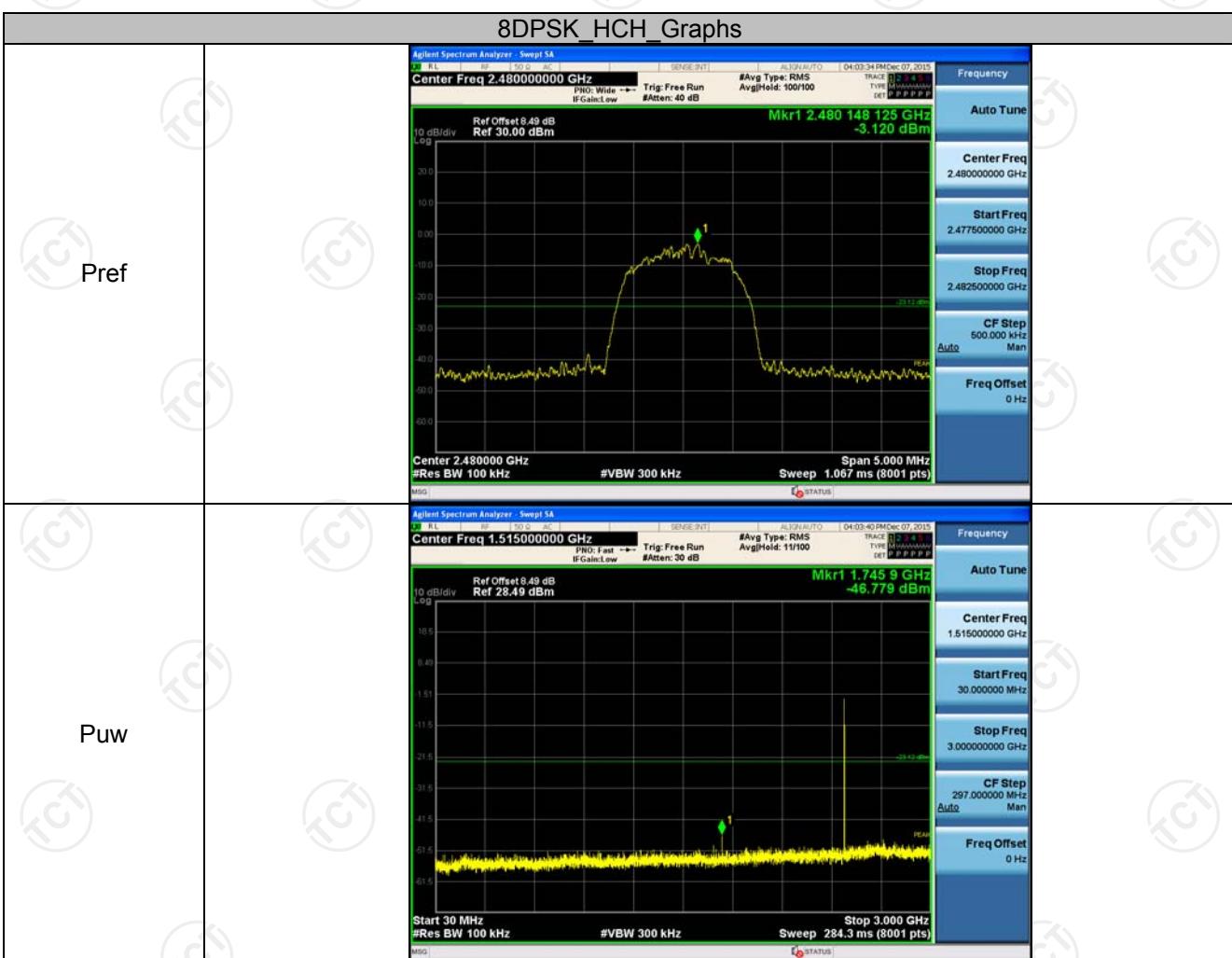
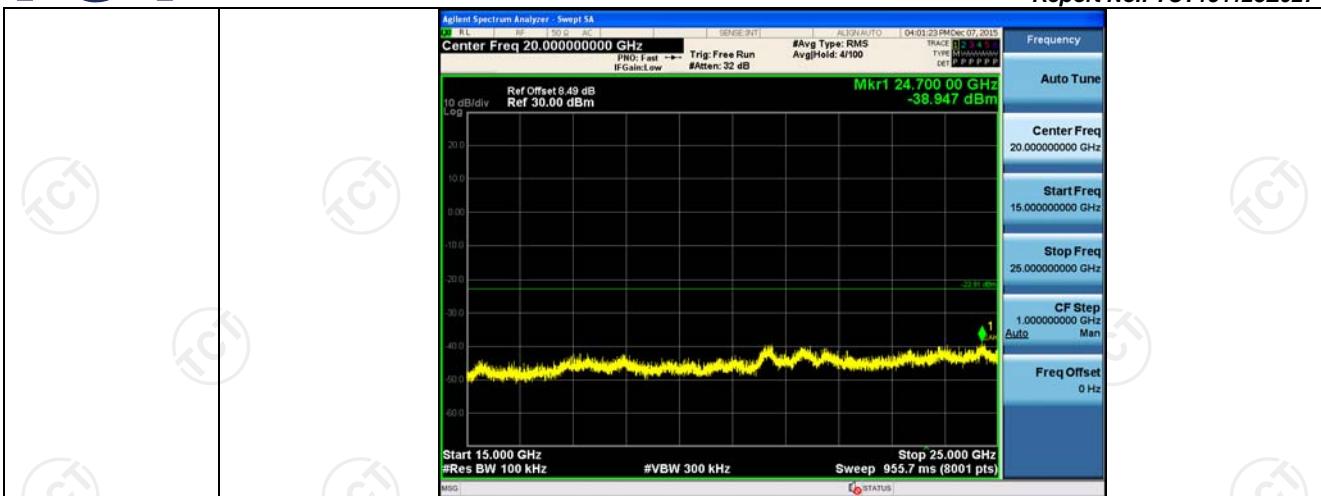


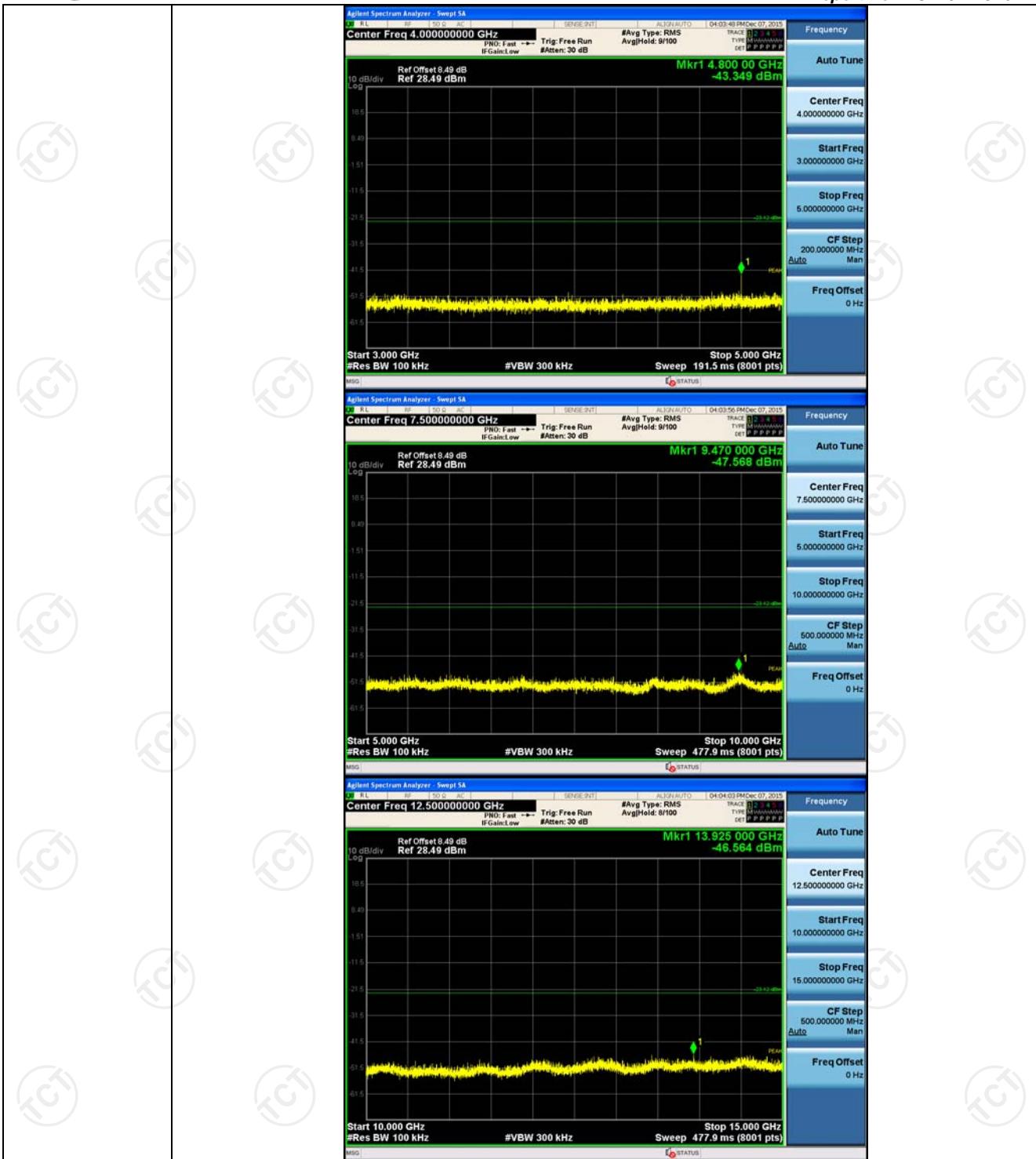


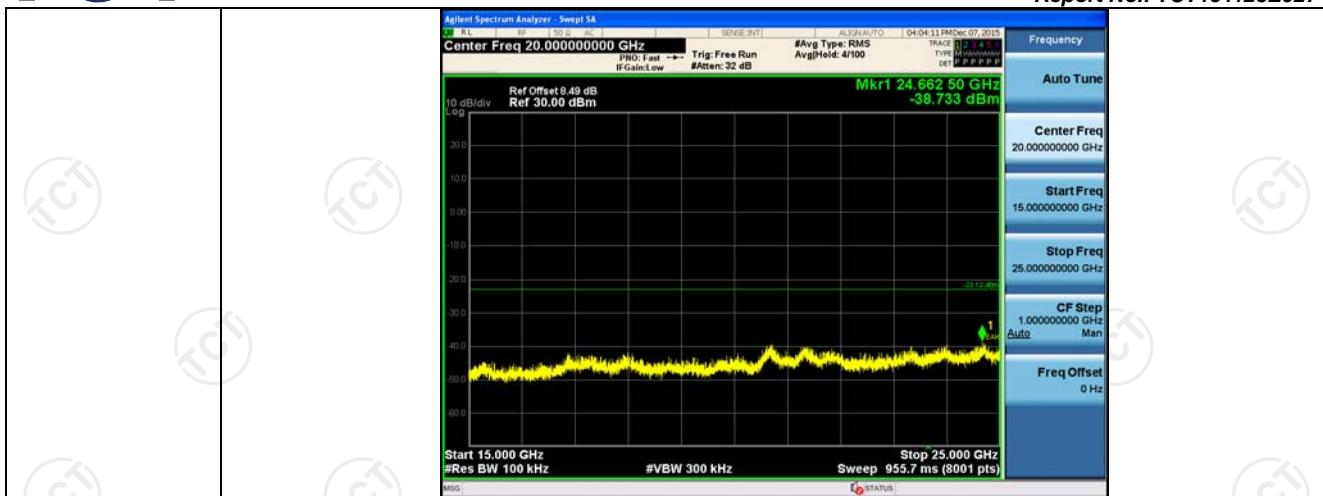












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