

## Appendix A

### RF Test Data for BT V4.1 (BDR/EDR) (Conducted Measurement)

Product Name: Turntable Player  
Trade Mark: JYK, POPSKY, VIFLYKOO  
Test Model: TT249

#### Environmental Conditions

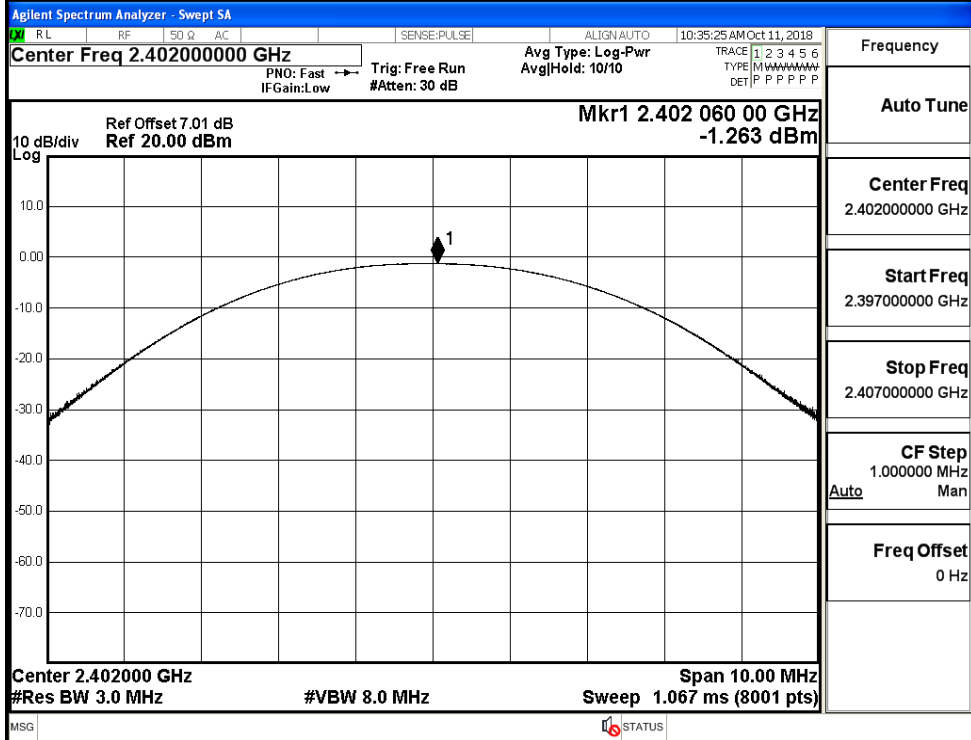
|                    |             |
|--------------------|-------------|
| Temperature:       | 23.8° C     |
| Relative Humidity: | 53.2%       |
| ATM Pressure:      | 100.0 kPa   |
| Test Engineer:     | Diamond.Lu  |
| Supervised by:     | Jayden.Zhuo |

#### A.1 Maximum Conducted Peak Output Power

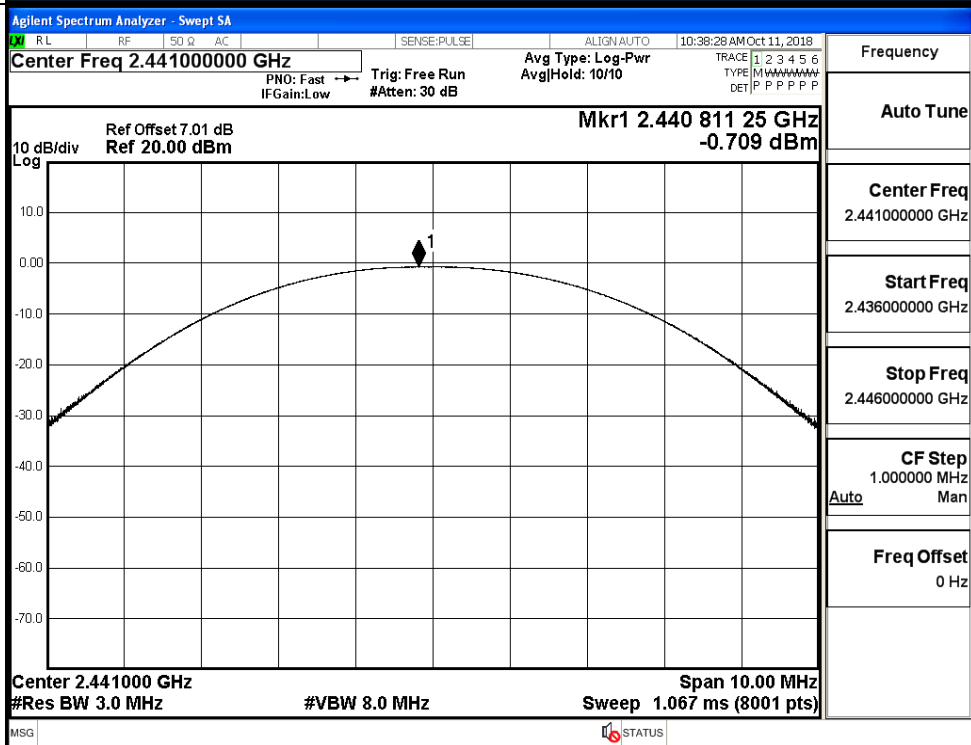
| Mode          | Channel. | Maximum Peak Output Power [dBm] | Limit [dBm] | Verdict |
|---------------|----------|---------------------------------|-------------|---------|
| GFSK          | LCH      | -1.263                          | 21          | PASS    |
|               | MCH      | -0.709                          | 21          | PASS    |
|               | HCH      | -0.930                          | 21          | PASS    |
| $\pi/4$ DQPSK | LCH      | -2.051                          | 21          | PASS    |
|               | MCH      | -1.457                          | 21          | PASS    |
|               | HCH      | -1.823                          | 21          | PASS    |
| 8DPSK         | LCH      | -1.870                          | 21          | PASS    |
|               | MCH      | -1.309                          | 21          | PASS    |
|               | HCH      | -1.691                          | 21          | PASS    |

Test Graphs

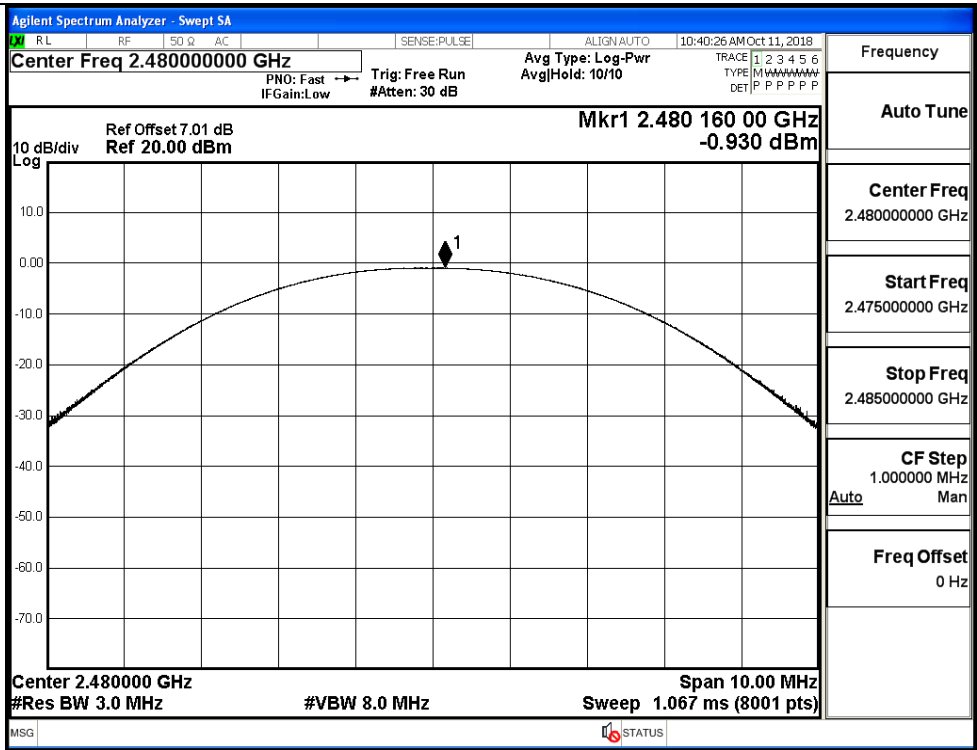
GFSK/LCH



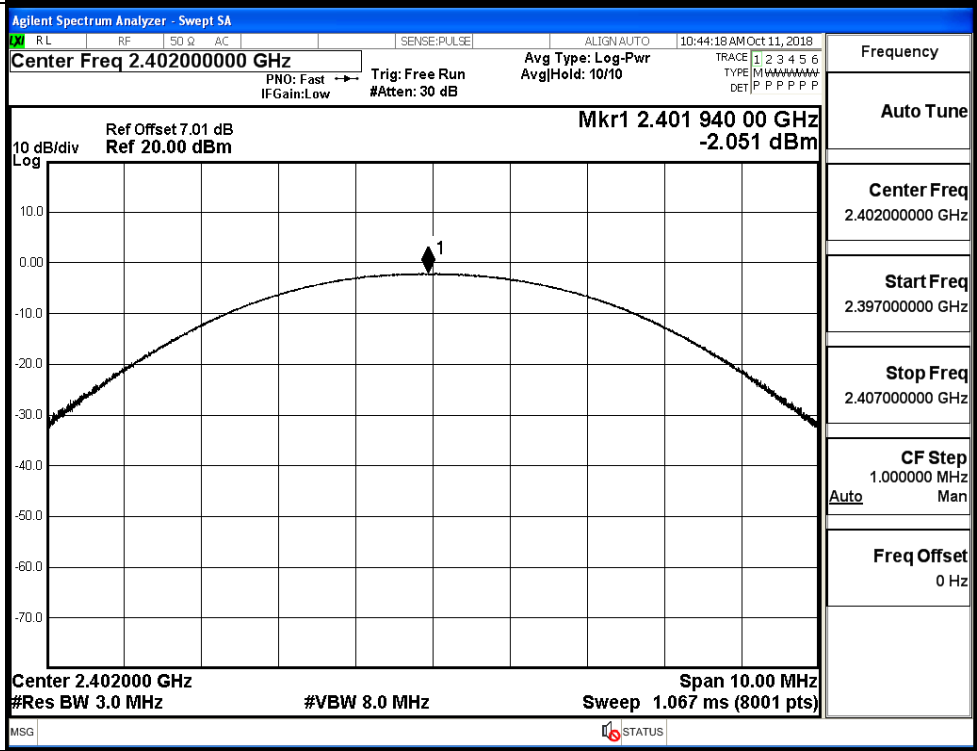
GFSK/MCH



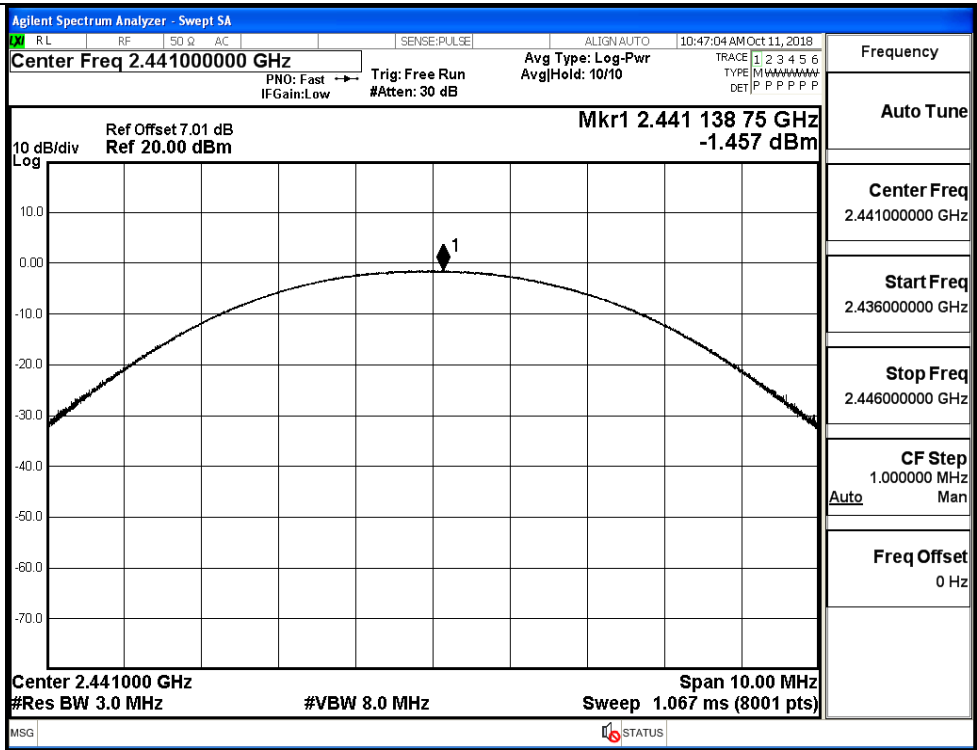
GFSK/HCH



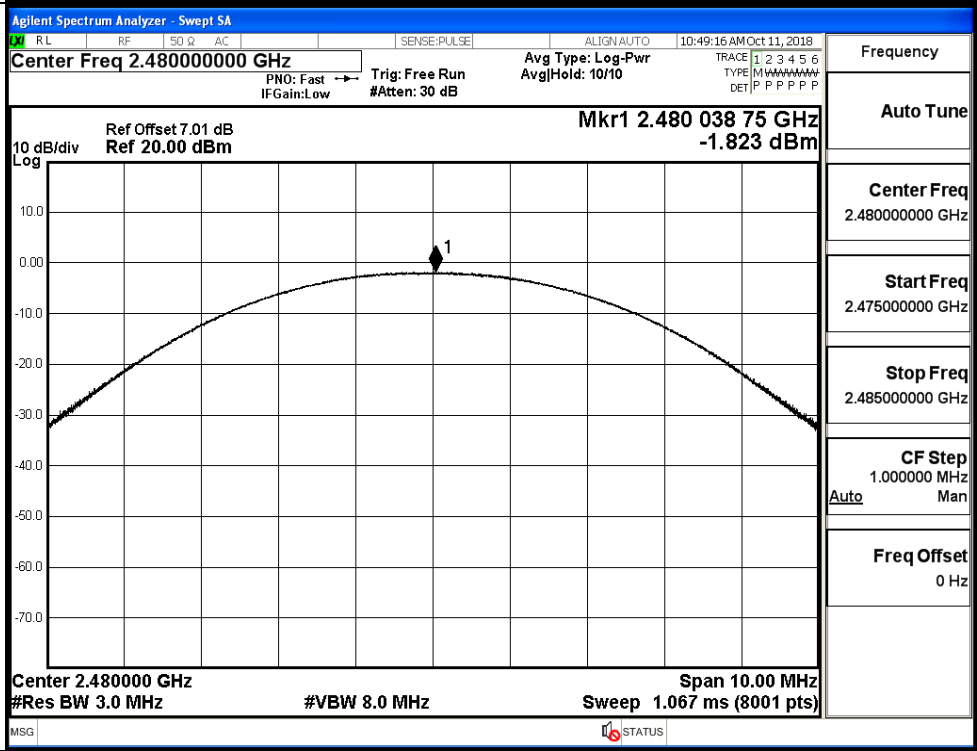
$\pi/4$ DQPSK/LCH



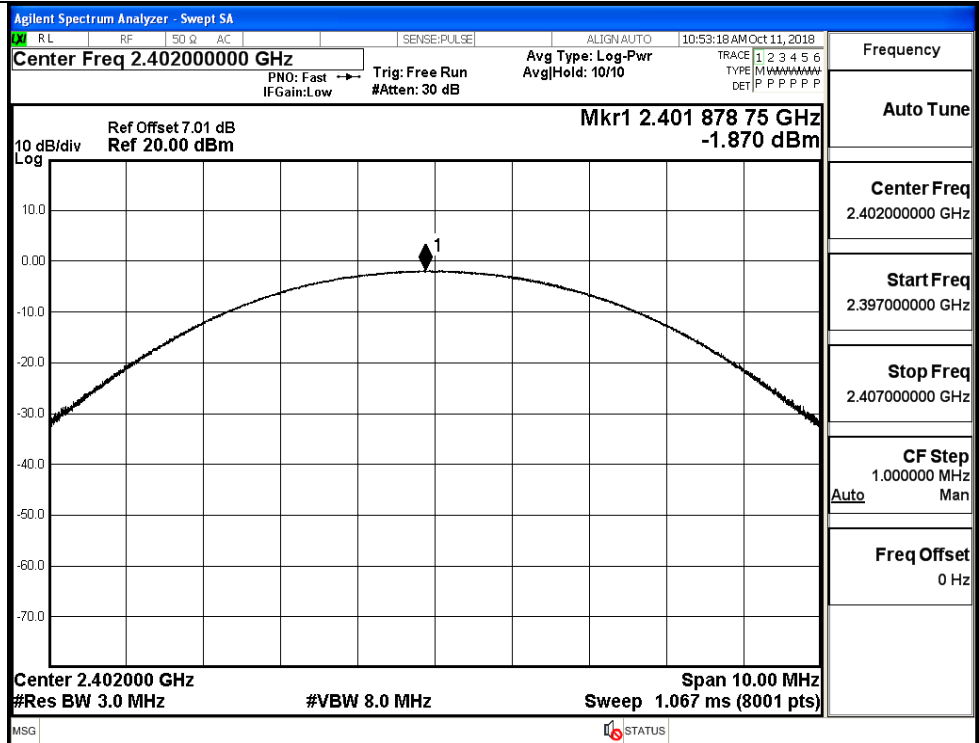
$\pi$ /4DQPSK/MCH



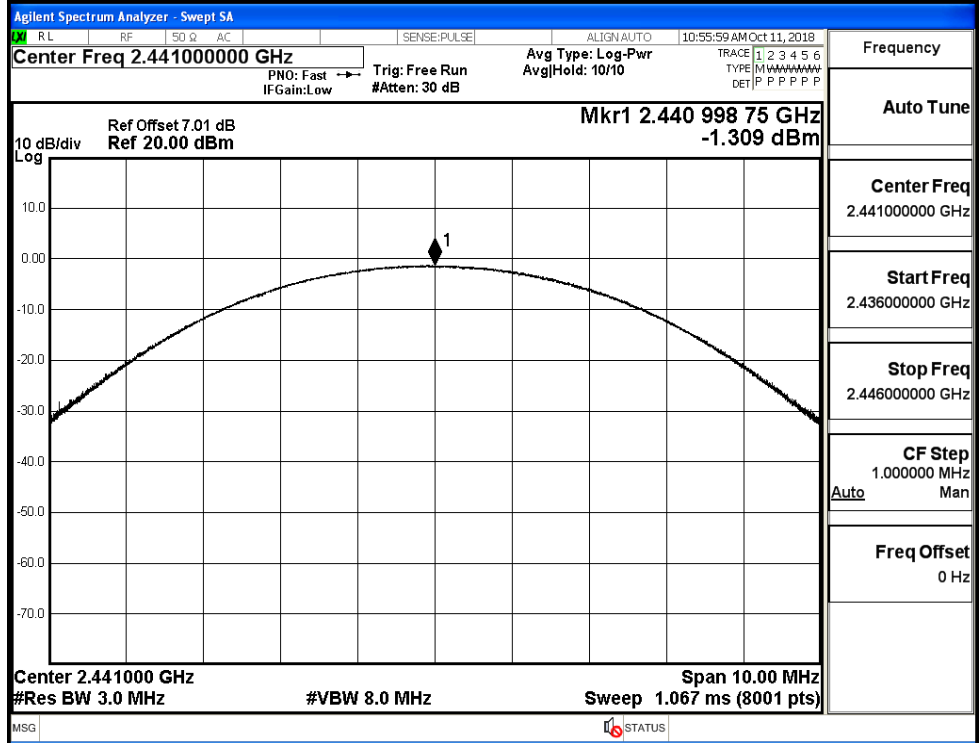
$\pi$ /4DQPSK/HCH



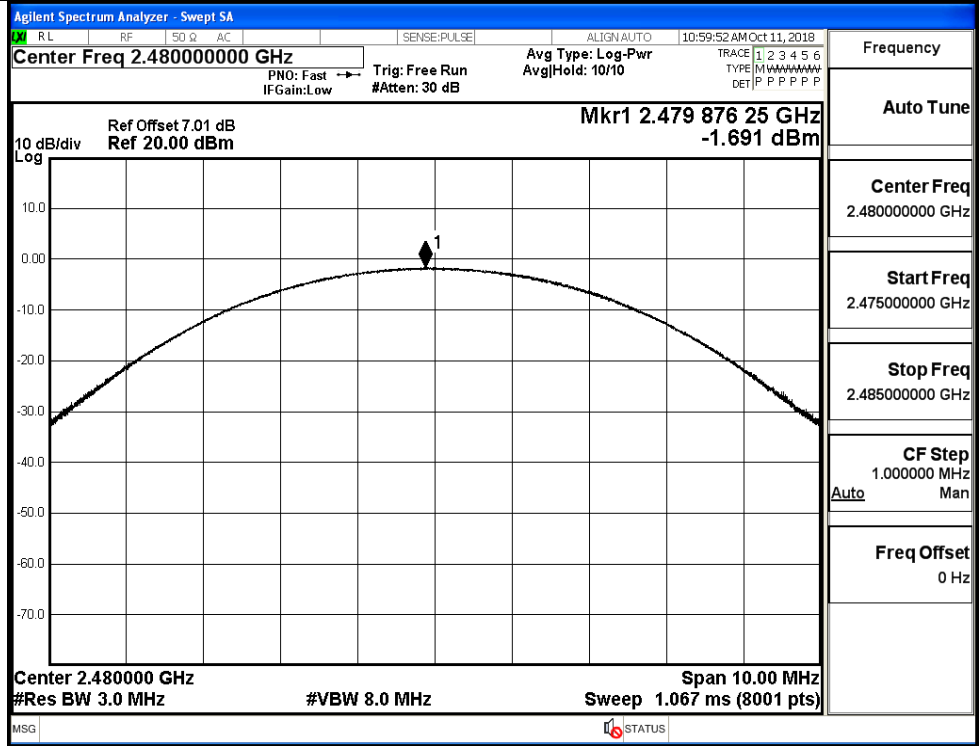
8DPSK/LCH



8DPSK/MCH

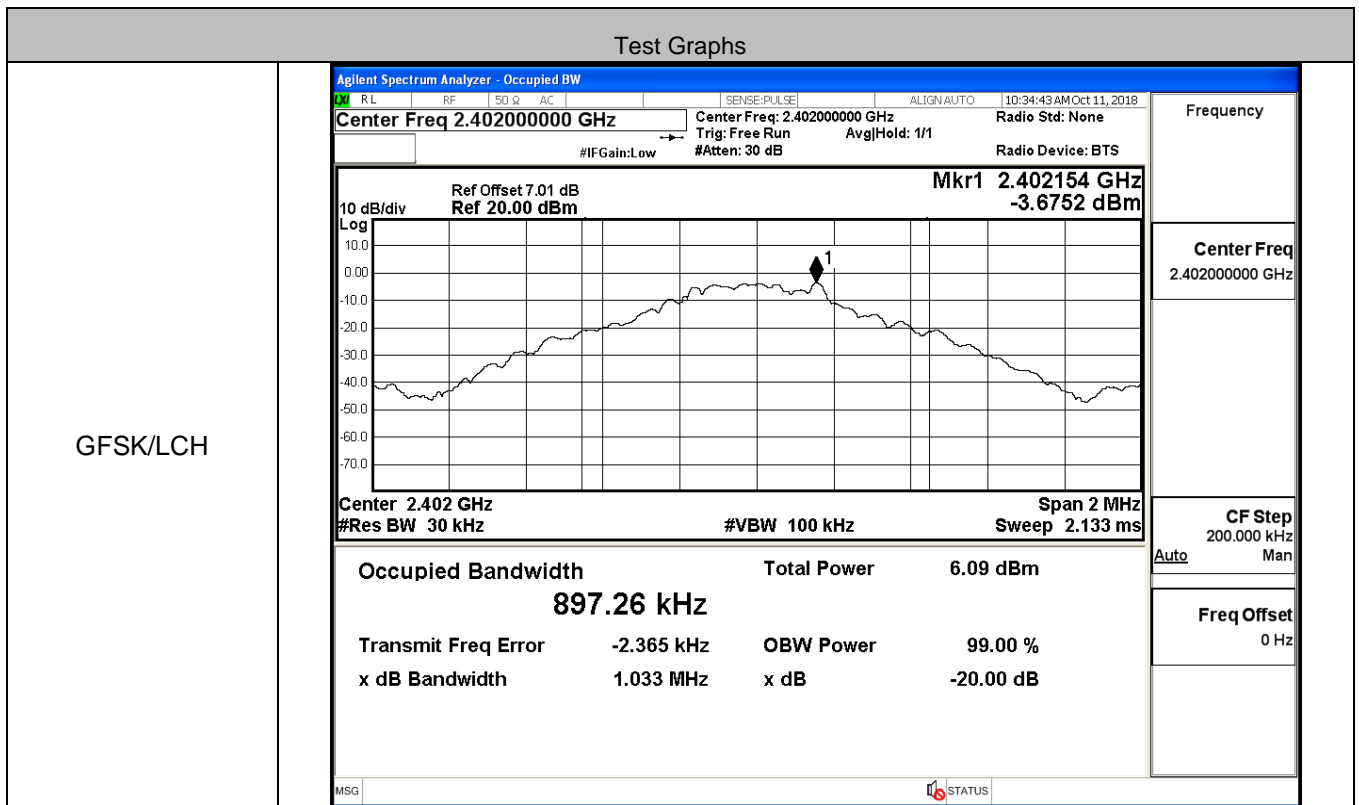


8DPSK/HCH

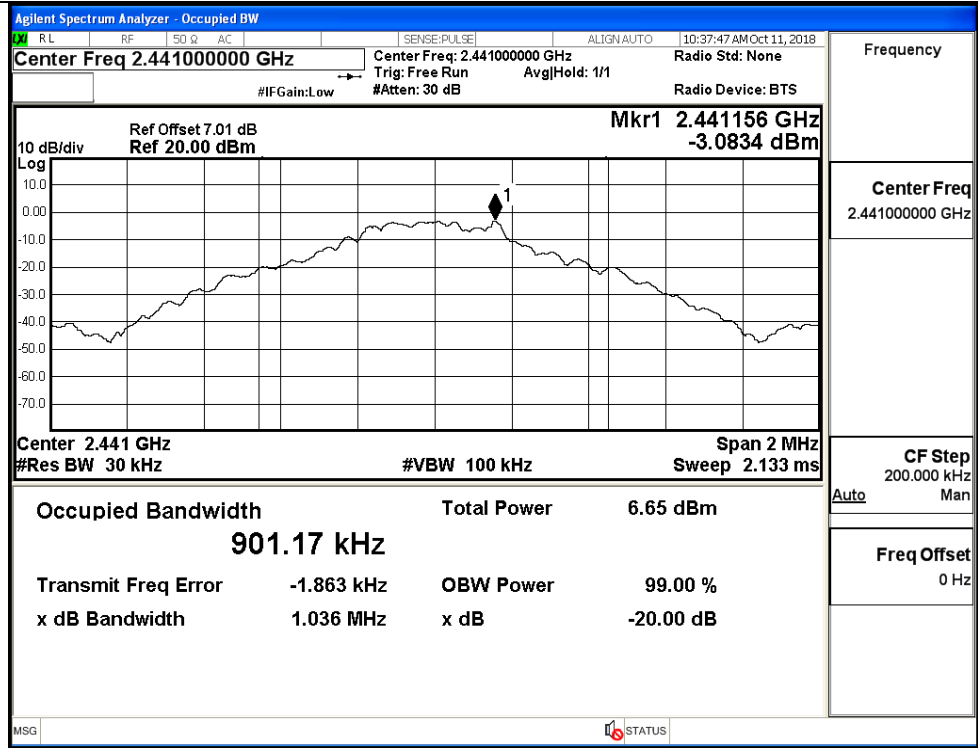


**A.2 99% and 20dB Bandwidth**

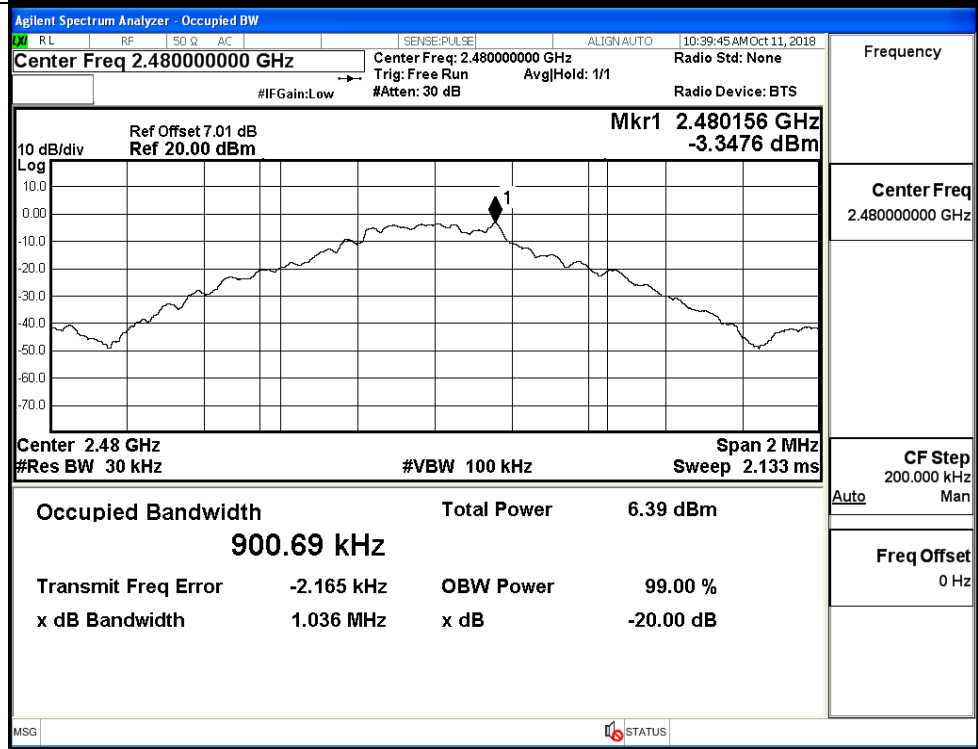
| Mode     | Channel. | 99% Bandwidth [MHz] | 20dB Bandwidth [MHz] | Limit [MHz]   | Verdict |
|----------|----------|---------------------|----------------------|---------------|---------|
| GFSK     | LCH      | 0.89726             | 1.033                | Not Specified | PASS    |
|          | MCH      | 0.90117             | 1.036                | Not Specified | PASS    |
|          | HCH      | 0.90069             | 1.036                | Not Specified | PASS    |
| π/4DQPSK | LCH      | 1.1753              | 1.309                | Not Specified | PASS    |
|          | MCH      | 1.1711              | 1.290                | Not Specified | PASS    |
|          | HCH      | 1.1721              | 1.317                | Not Specified | PASS    |
| 8DPSK    | LCH      | 1.1869              | 1.298                | Not Specified | PASS    |
|          | MCH      | 1.1803              | 1.297                | Not Specified | PASS    |
|          | HCH      | 1.1774              | 1.293                | Not Specified | PASS    |



GFSK/MCH

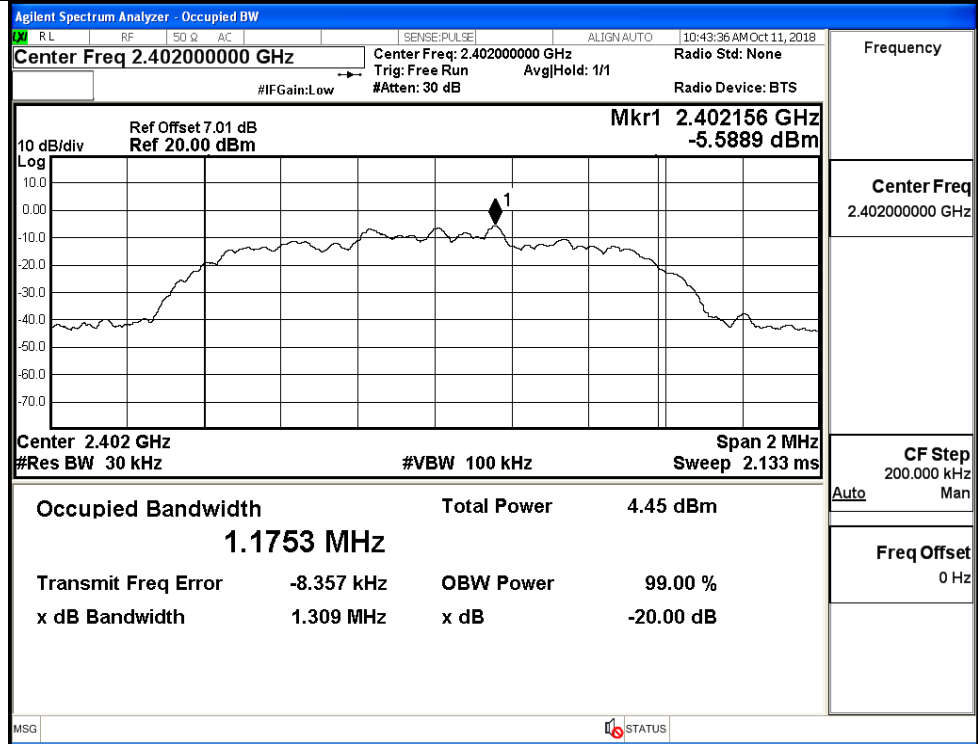


GFSK/HCH

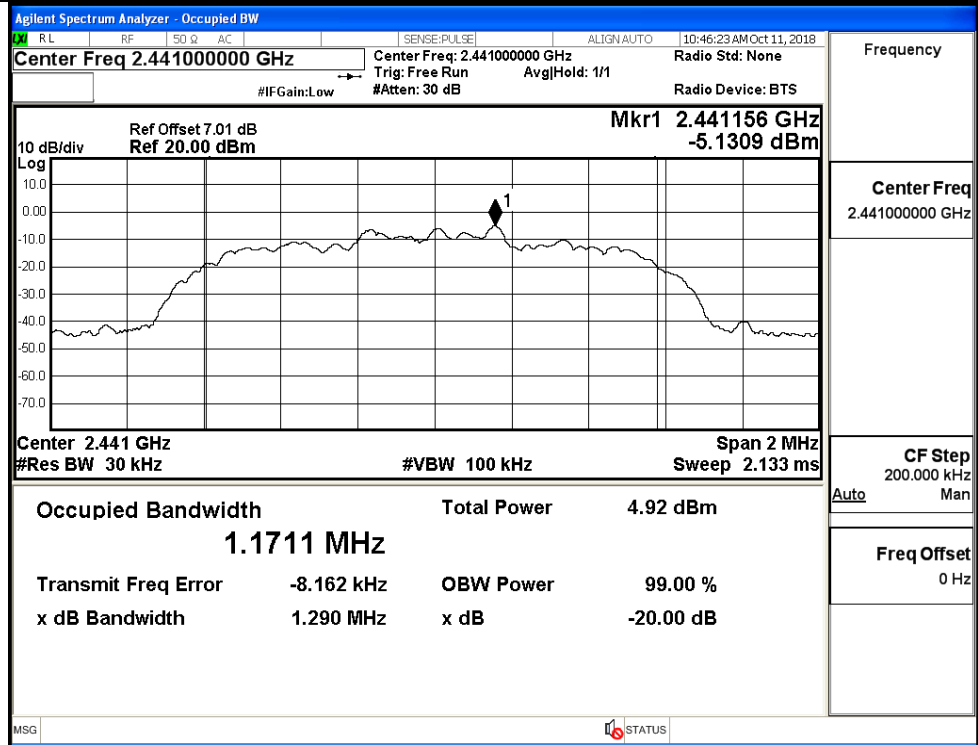




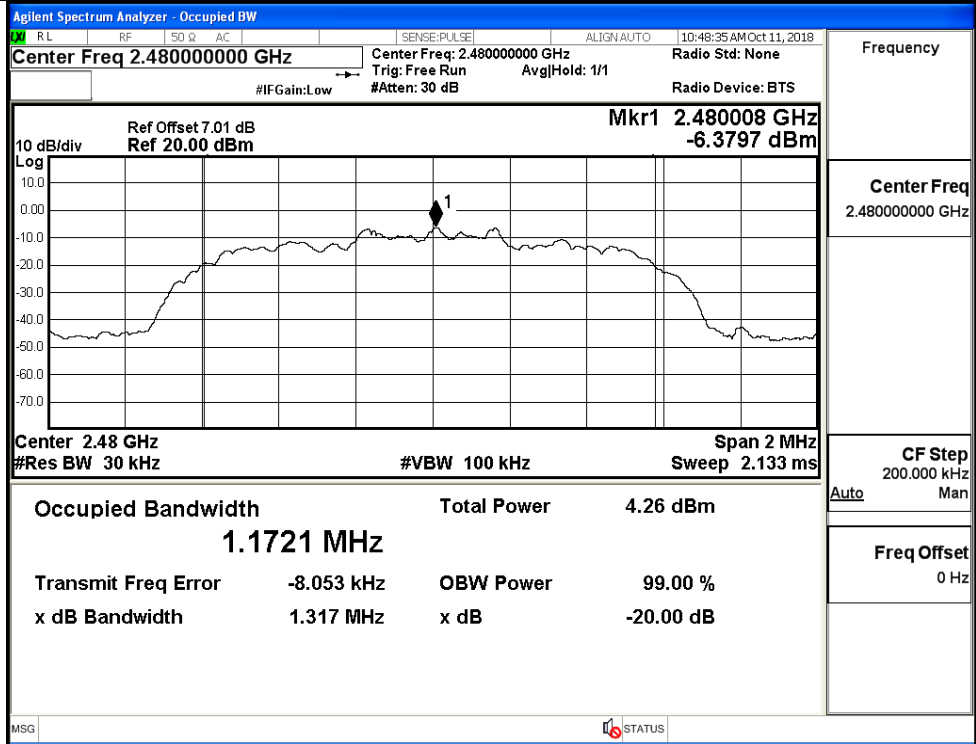
$\pi/4$ DQPSK/LCH



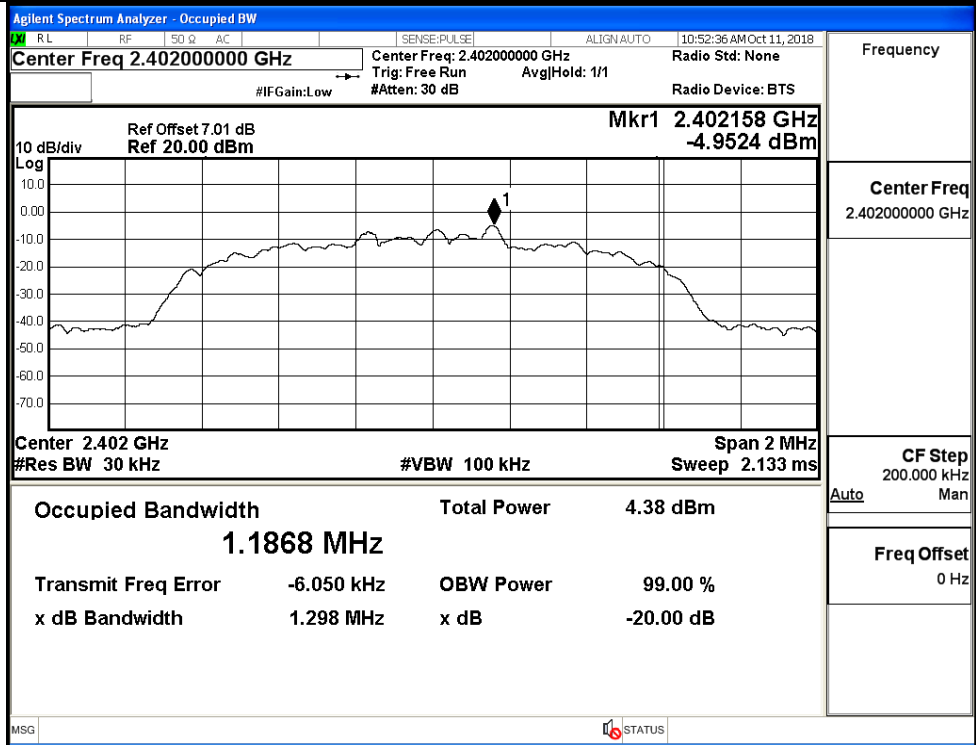
$\pi/4$ DQPSK/MCH



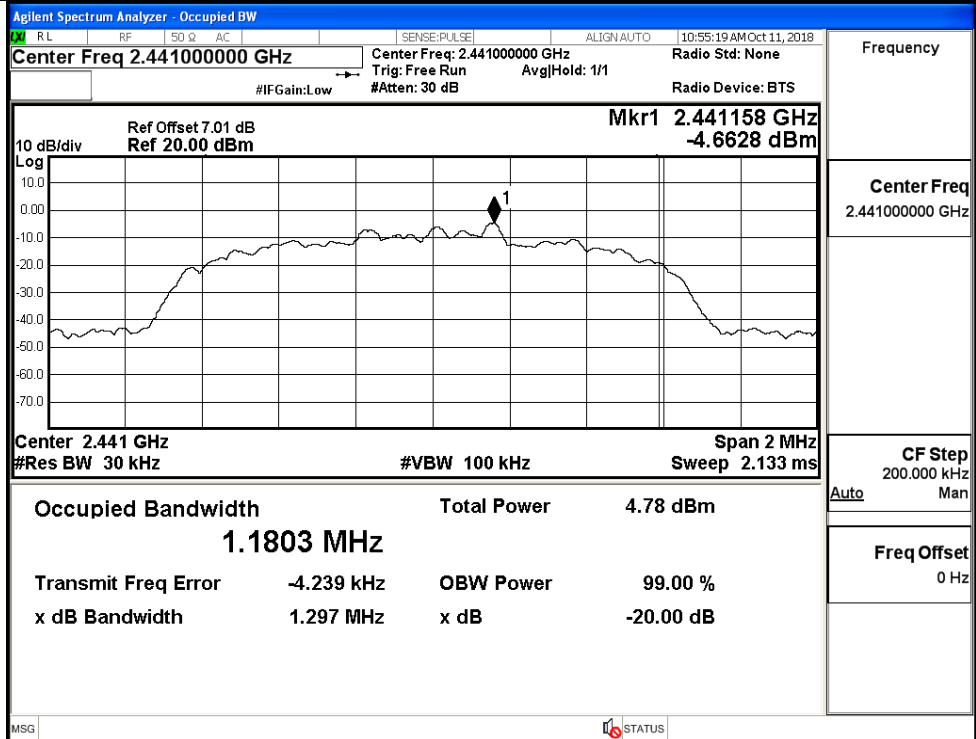
$\pi/4$ DQPSK/HCH



8DPSK/LCH



8DPSK/MCH



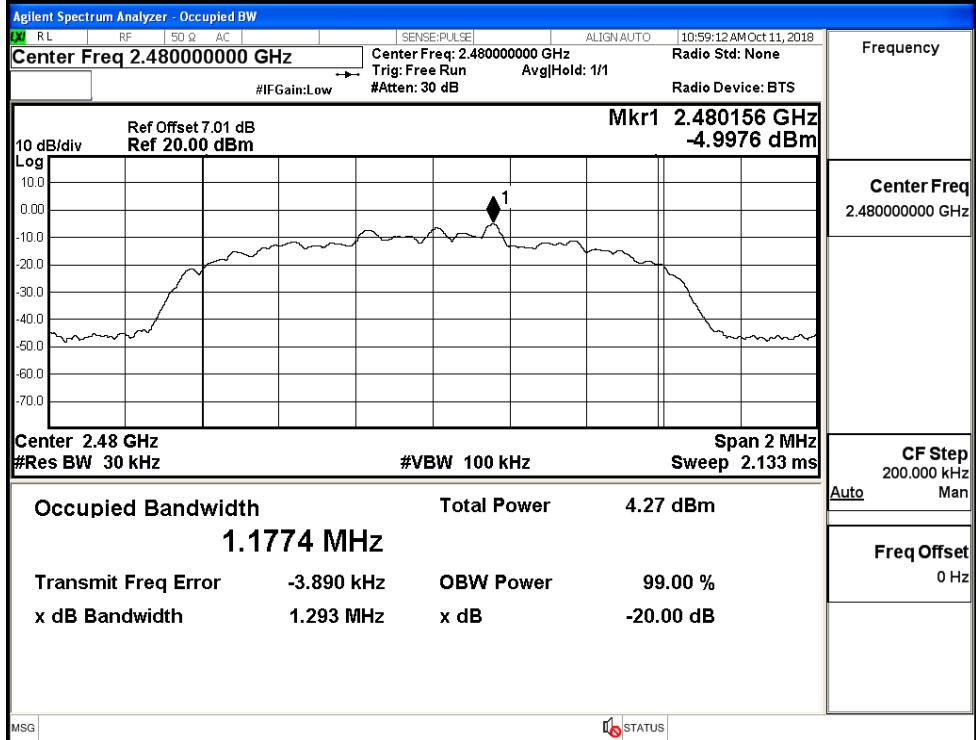
Frequency

Center Freq  
2.441000000 GHz

CF Step  
200.000 kHz

Freq Offset  
0 Hz

8DPSK/HCH



Frequency

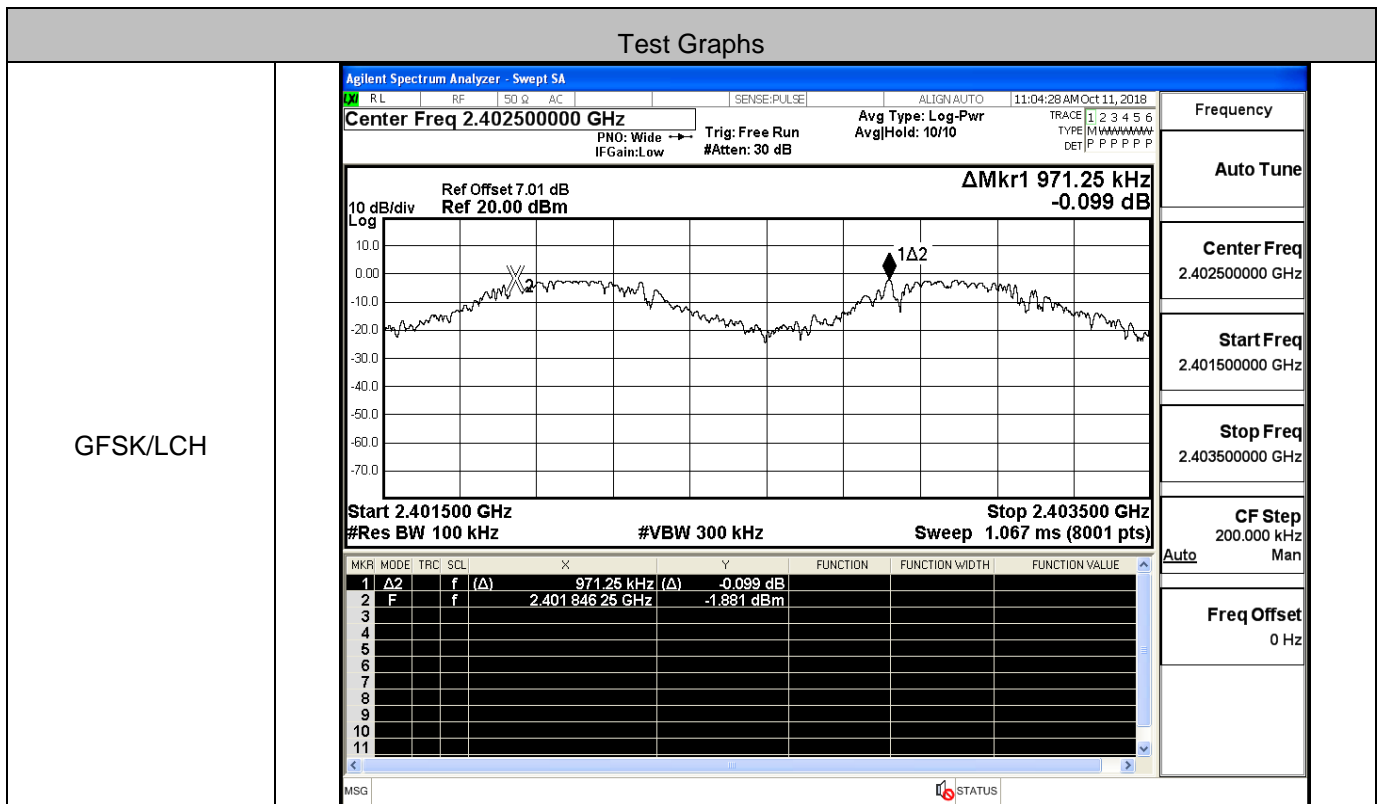
Center Freq  
2.480000000 GHz

CF Step  
200.000 kHz

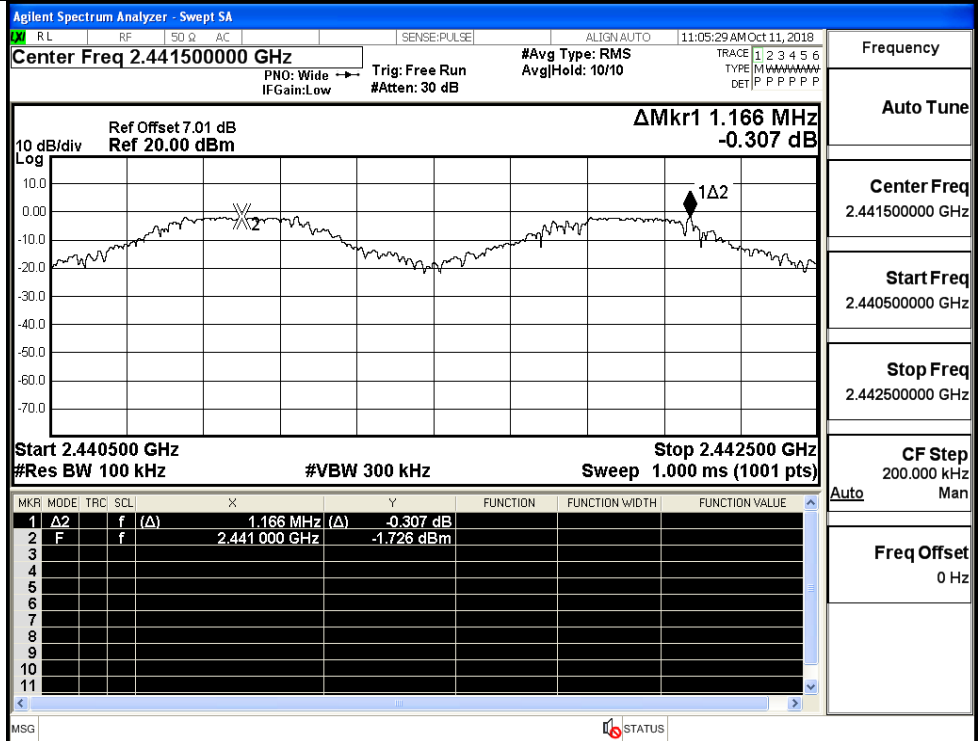
Freq Offset  
0 Hz

### A.3 Carrier Frequency Separation

| Mode     | Channel | Carrier Frequency Separation [MHz] | Limit [MHz] | Verdict |
|----------|---------|------------------------------------|-------------|---------|
| GFSK     | LCH     | 0.971                              | 0.691       | PASS    |
|          | MCH     | 1.166                              | 0.691       | PASS    |
|          | HCH     | 0.960                              | 0.691       | PASS    |
| π/4DQPSK | LCH     | 1.298                              | 0.878       | PASS    |
|          | MCH     | 1.332                              | 0.878       | PASS    |
|          | HCH     | 1.148                              | 0.878       | PASS    |
| 8DPSK    | LCH     | 1.034                              | 0.865       | PASS    |
|          | MCH     | 0.956                              | 0.865       | PASS    |
|          | HCH     | 0.994                              | 0.865       | PASS    |



GFSK/MCH



Frequency

Auto Tune

Center Freq  
2.441500000 GHz

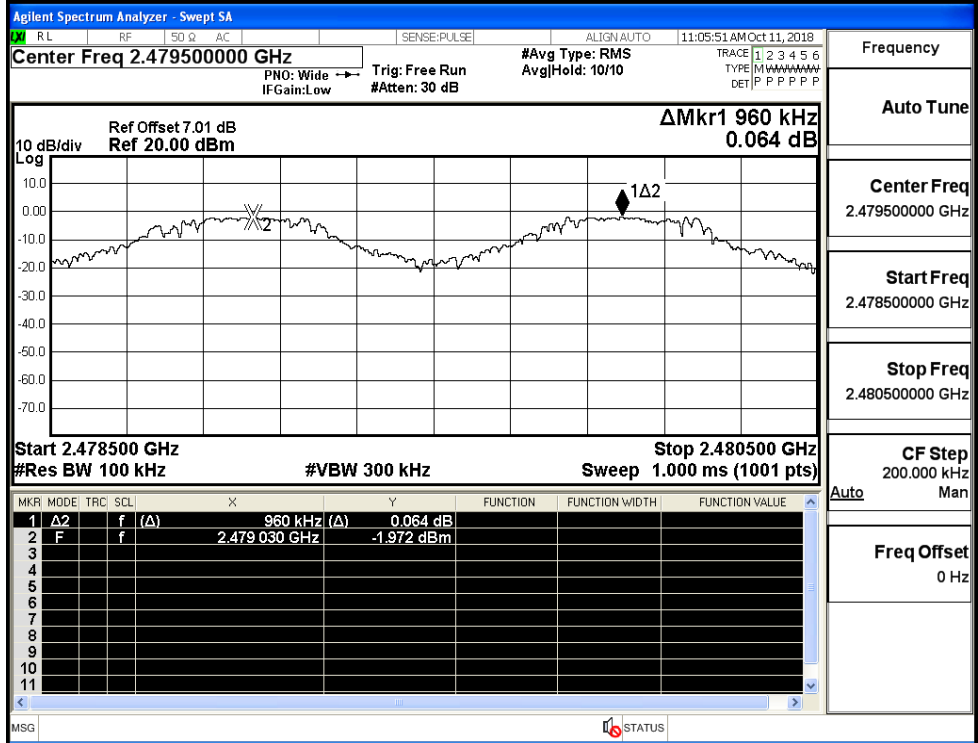
Start Freq  
2.440500000 GHz

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

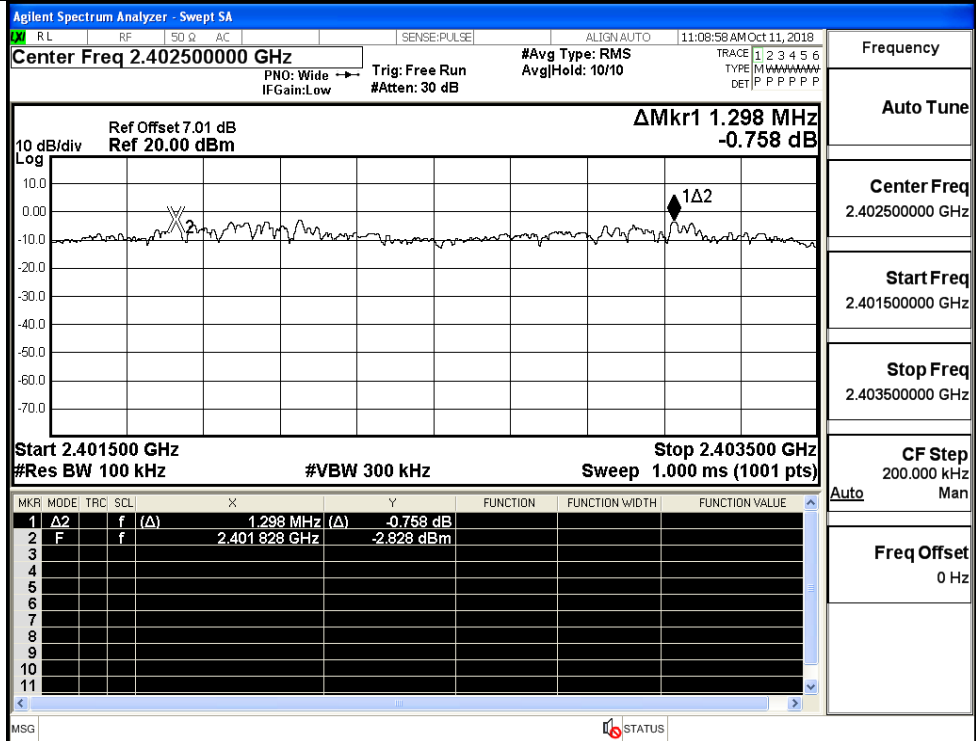
Start Freq  
2.478500000 GHz

Stop Freq  
2.480500000 GHz

CF Step  
200.000 kHz  
Man

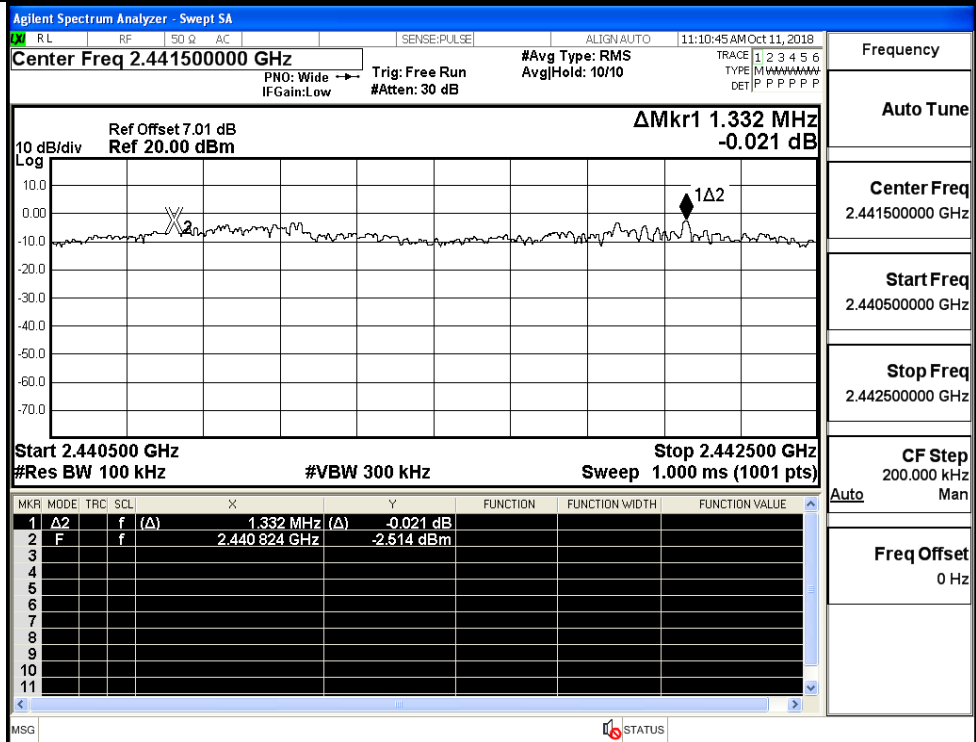
Freq Offset  
0 Hz

$\pi/4$ DQPSK/LCH



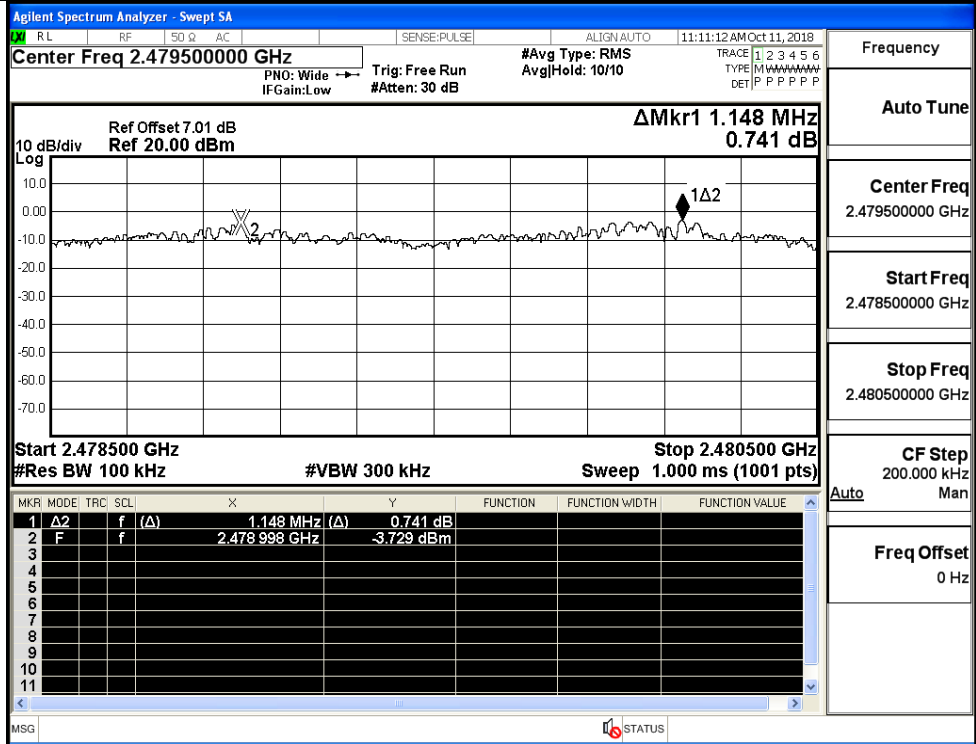
Frequency  
Auto Tune  
Center Freq  
2.402500000 GHz  
Start Freq  
2.401500000 GHz  
Stop Freq  
2.403500000 GHz  
CF Step  
200.000 kHz  
Auto  
Man  
Freq Offset  
0 Hz

$\pi/4$ DQPSK/MCH

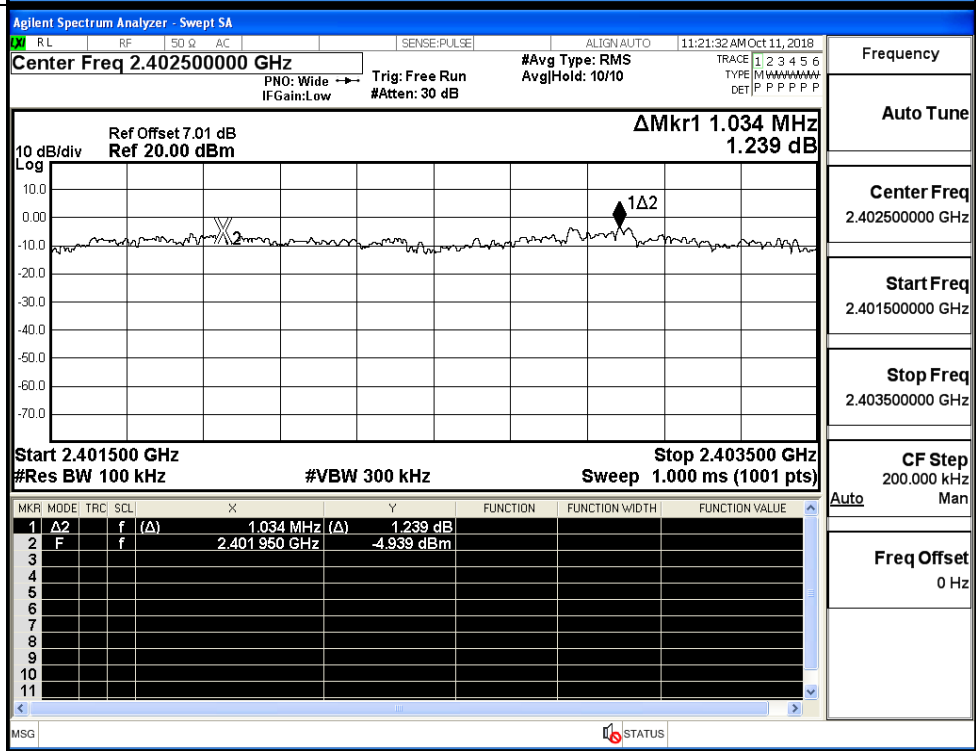


Frequency  
Auto Tune  
Center Freq  
2.441500000 GHz  
Start Freq  
2.440500000 GHz  
Stop Freq  
2.442500000 GHz  
CF Step  
200.000 kHz  
Auto  
Man  
Freq Offset  
0 Hz

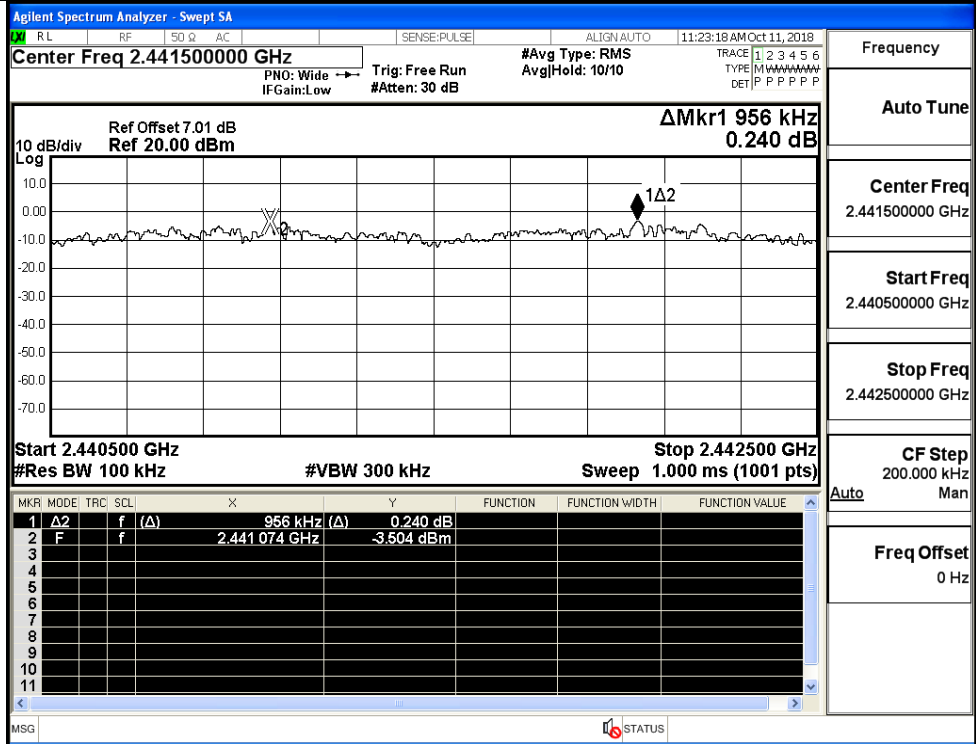
π/4DQPSK/HCH



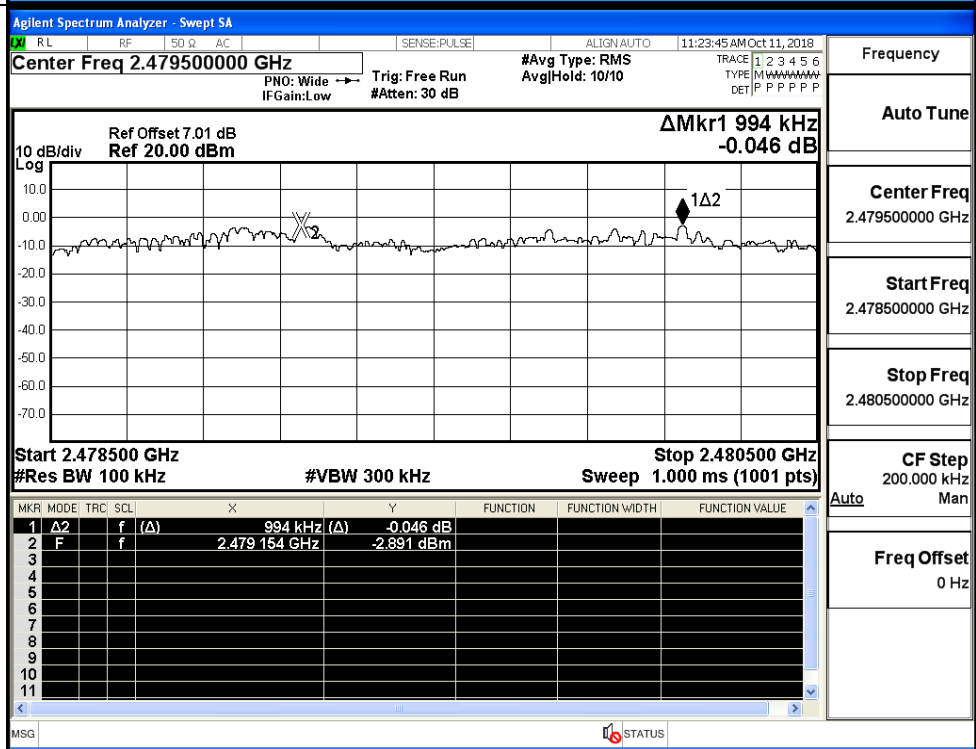
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH



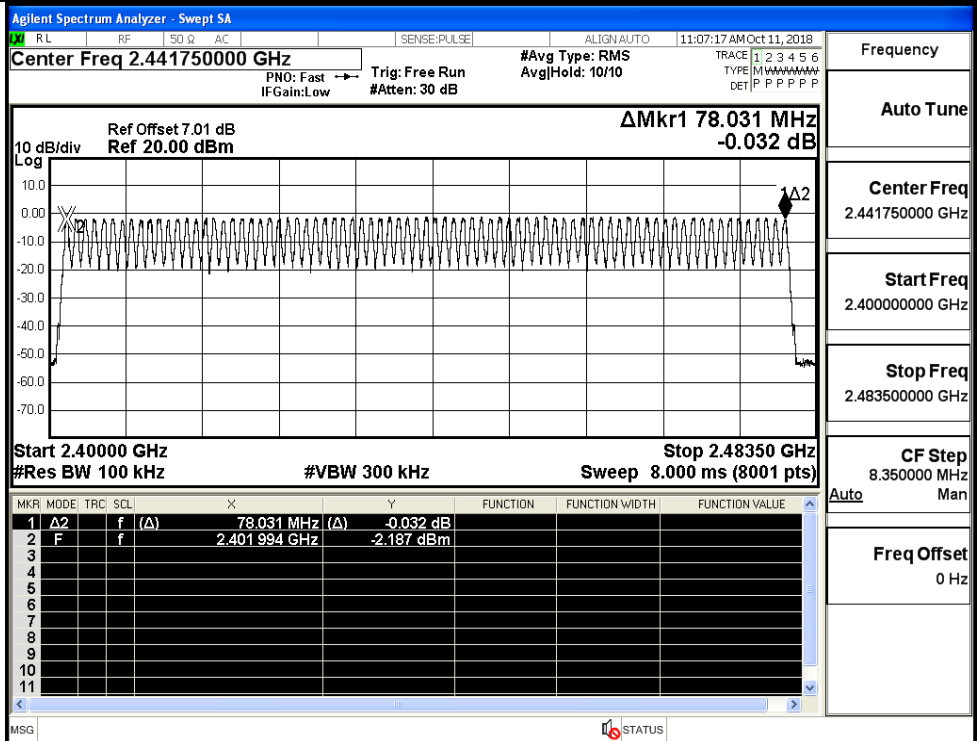


### A.4 Hopping Channel Number

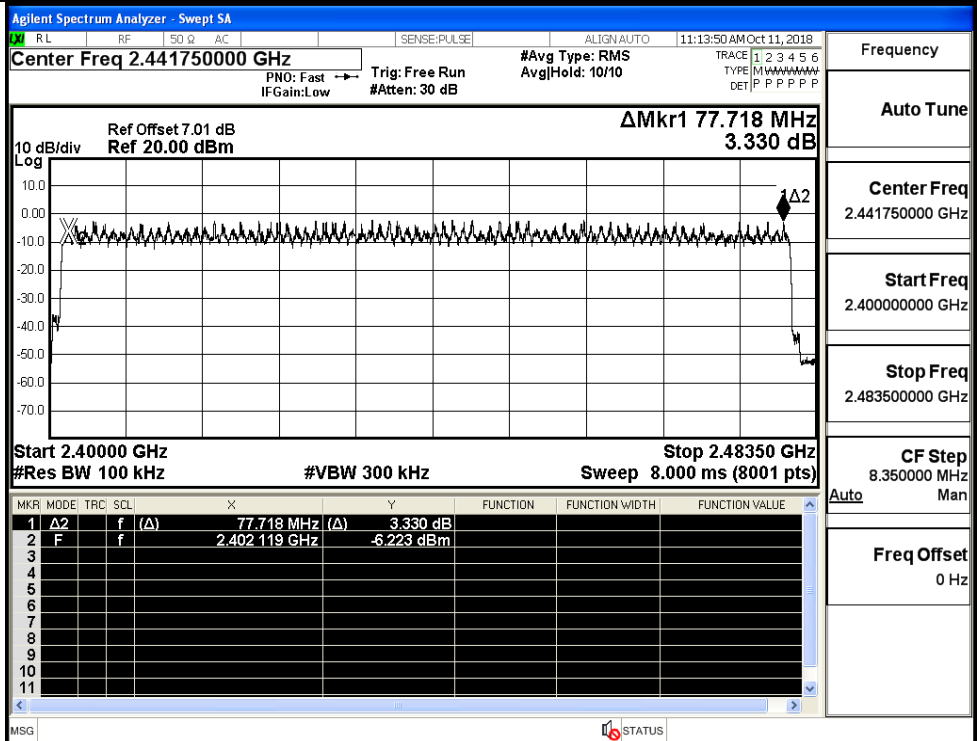
| Mode          | Channel. | Number of Hopping Channel [N] | Limit [N] | Verdict |
|---------------|----------|-------------------------------|-----------|---------|
| GFSK          | Hop      | 79                            | >=15      | PASS    |
| $\pi/4$ DQPSK | Hop      | 79                    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

#### Test Graphs

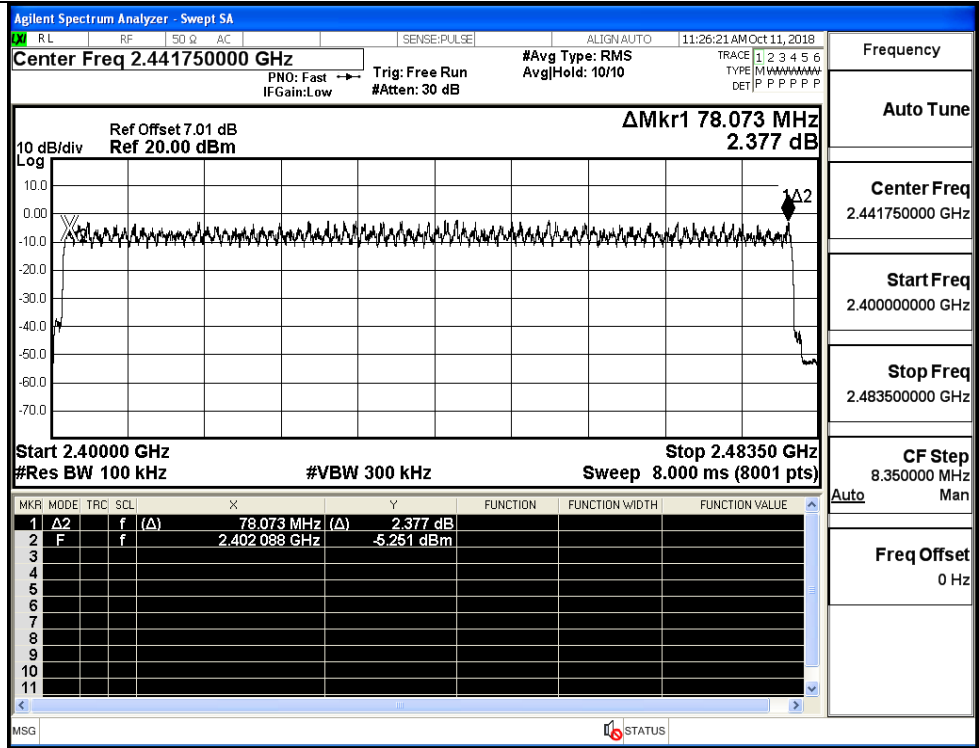
GFSK/Hop



$\pi/4$ DQPSK/Hop

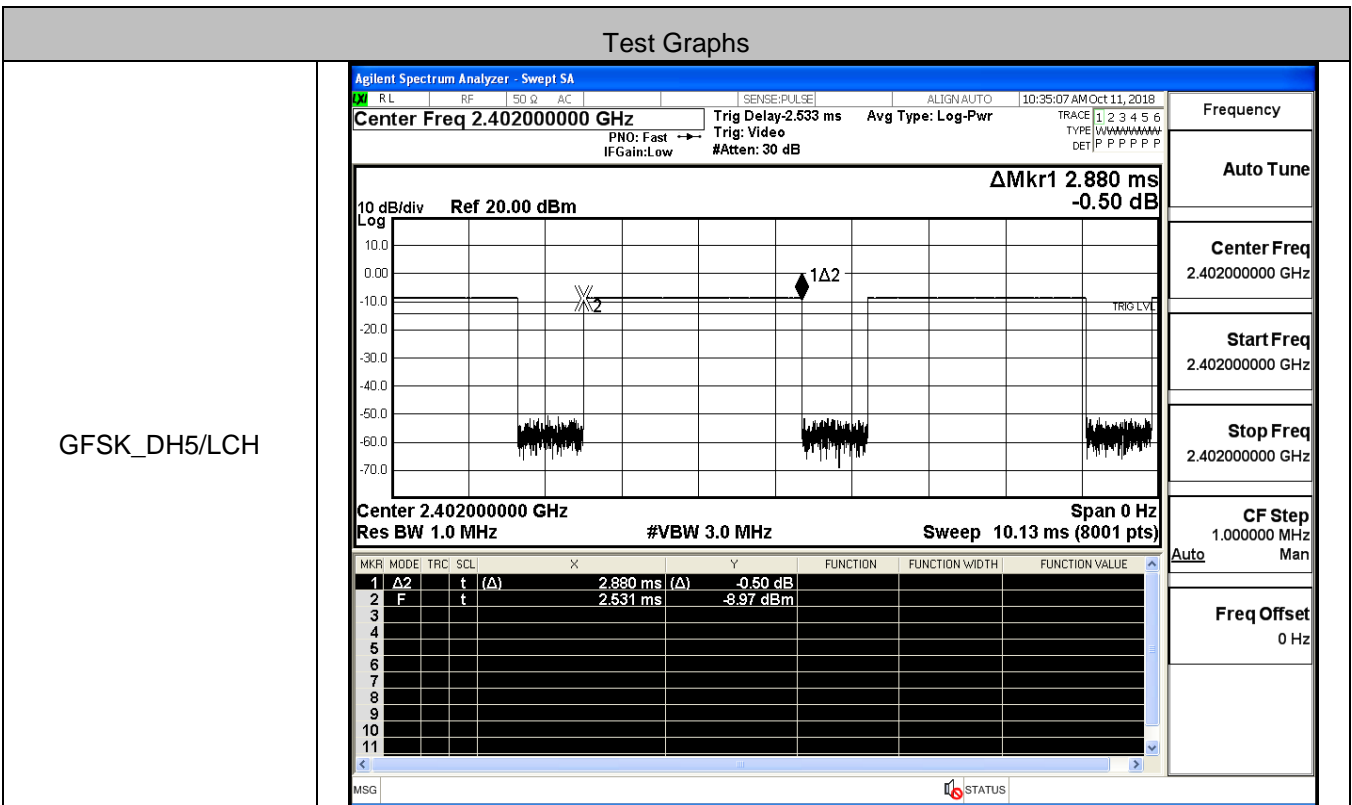


8DPSK/Hop

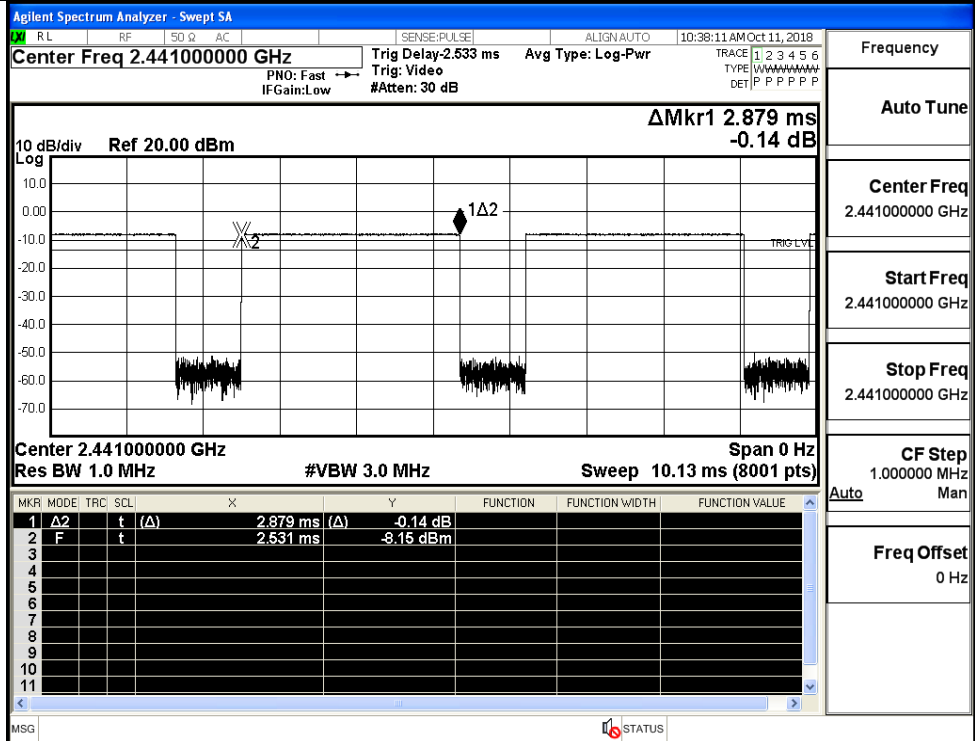


**A.5 Dwell Time**

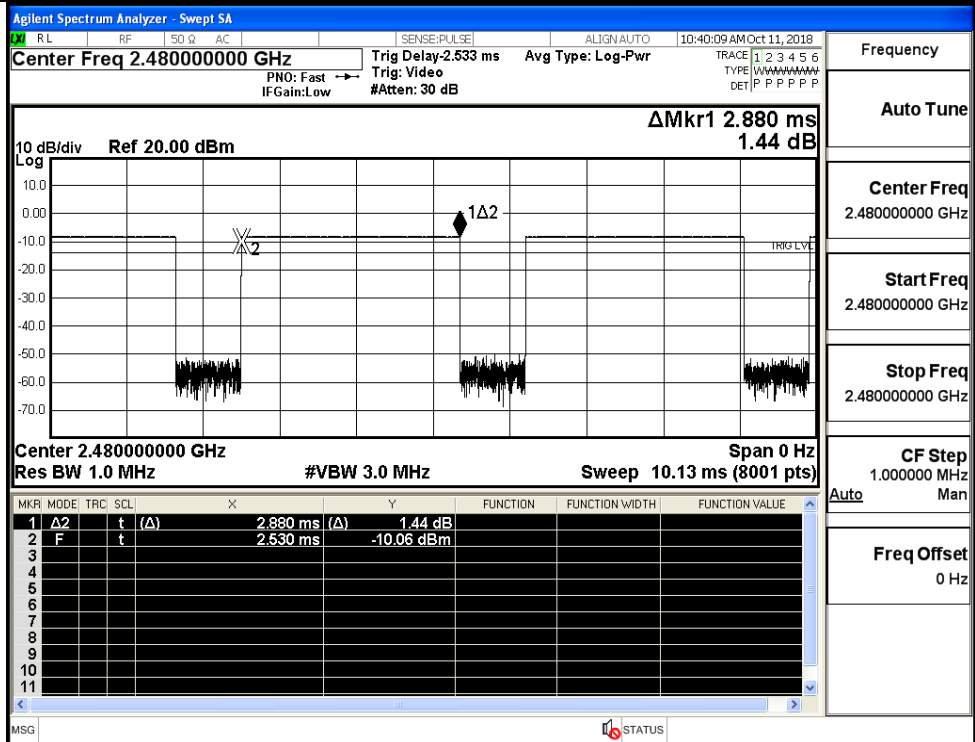
| Mode     | Packet | Channel | Burst Width [ms/hop/ch] | Total Hops[hop*ch] | Dwell Time[s] | Limit [s] | Verdict |
|----------|--------|---------|-------------------------|--------------------|---------------|-----------|---------|
| GFSK     | DH5    | LCH     | 2.88                    | 106.7              | 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    |
| π/4DQPSK | 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     | 2.89                    | 106.7              | 0.308         | 0.4       | PASS    |
|          | 3DH5   | MCH     | 2.89                    | 106.7              | 0.308         | 0.4       | PASS    |
|          | 3DH5   | HCH     | 2.89                    | 106.7              | 0.308         | 0.4       | PASS    |



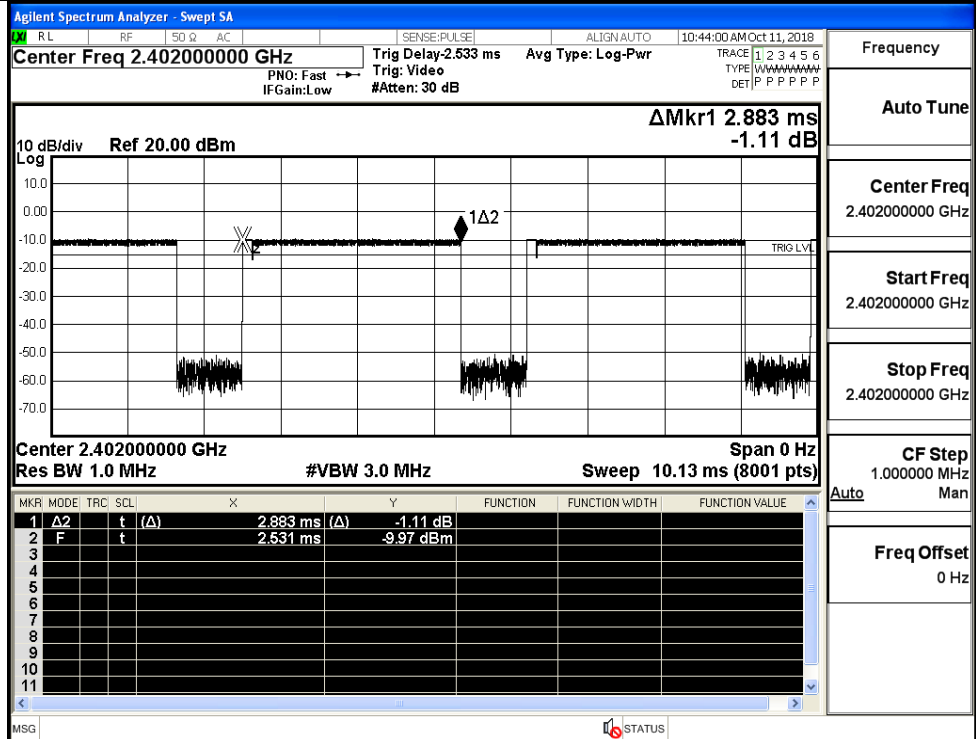
GFSK\_DH5/MCH



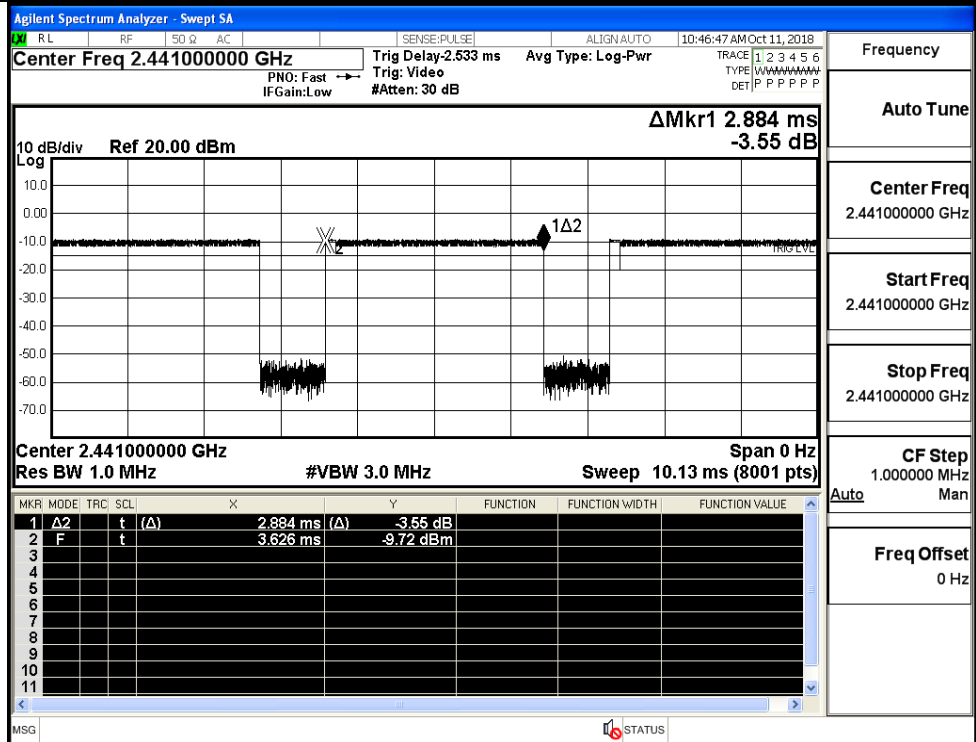
GFSK\_DH5/HCH



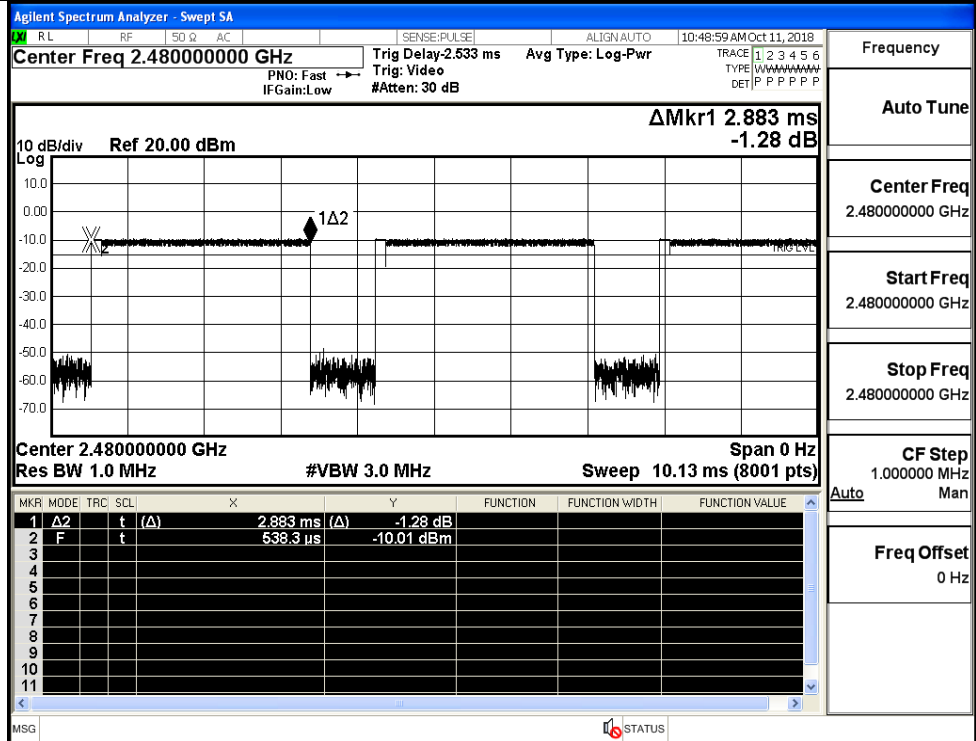
$\pi/4$ DQPSK  
\_2DH5/LCH



$\pi/4$ DQPSK  
\_2DH5/MCH



$\pi/4$ DQPSK  
\_2DH5/HCH



Frequency

Auto Tune

Center Freq  
2.480000000 GHz

Start Freq  
2.480000000 GHz

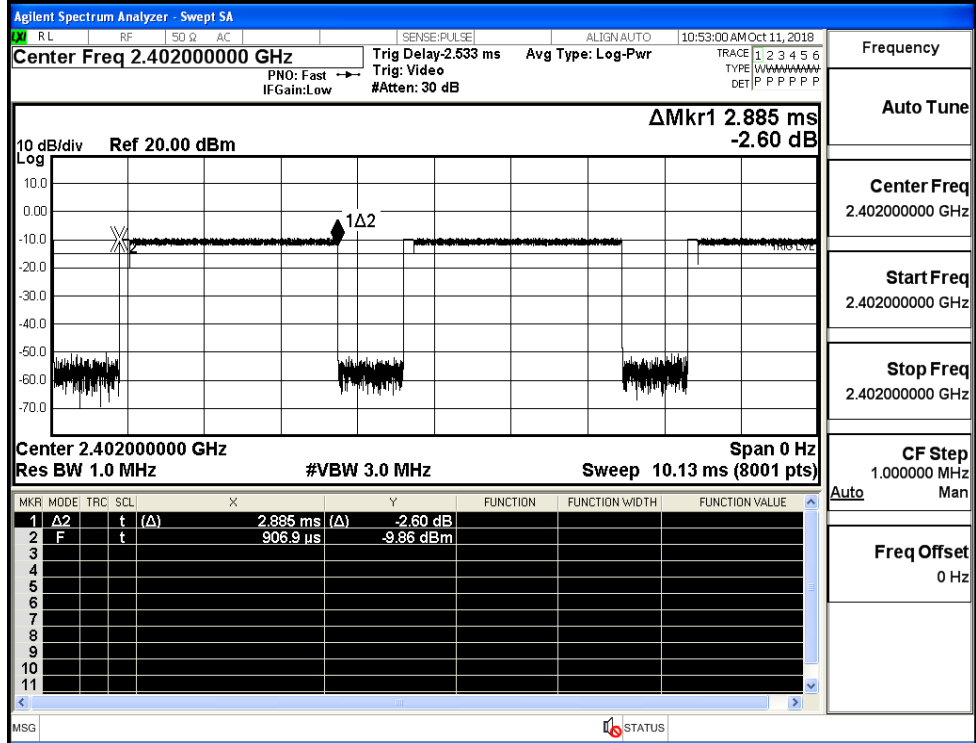
Stop Freq  
2.480000000 GHz

CF Step  
1.000000 MHz

Auto Man

Freq Offset  
0 Hz

8DPSK\_3DH5/LCH



Frequency

Auto Tune

Center Freq  
2.402000000 GHz

Start Freq  
2.402000000 GHz

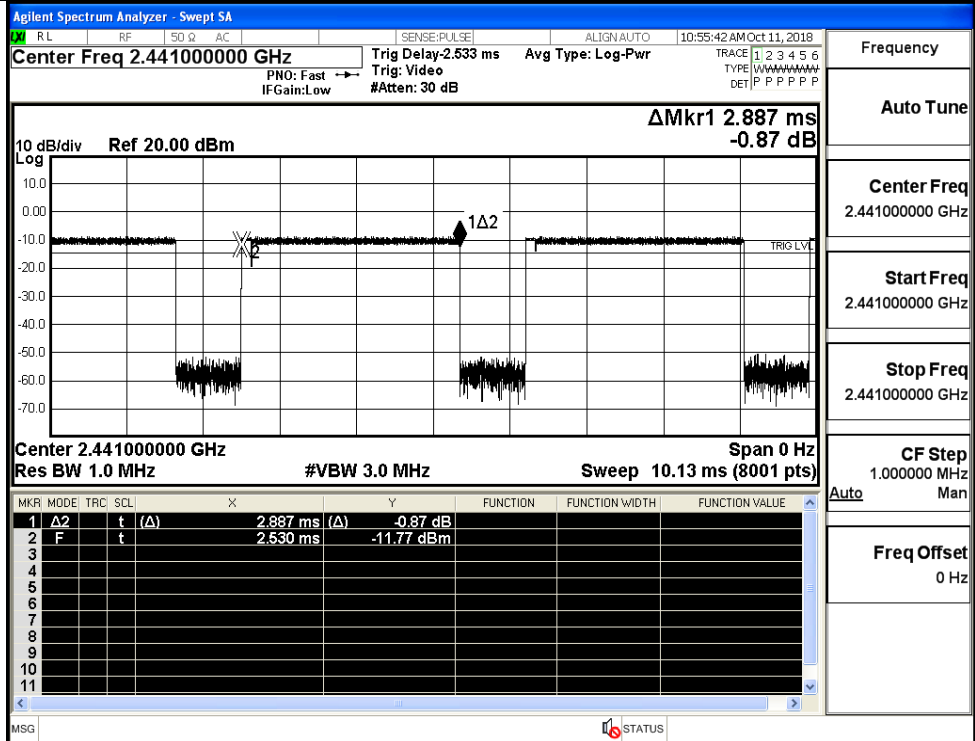
Stop Freq  
2.402000000 GHz

CF Step  
1.000000 MHz

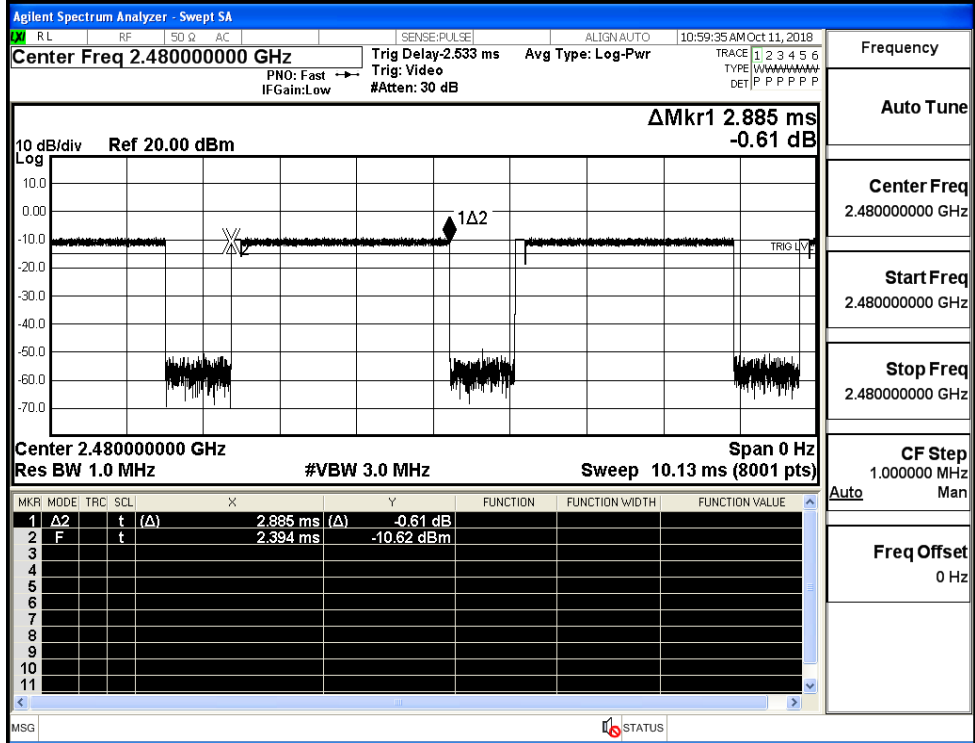
Auto Man

Freq Offset  
0 Hz

8DPSK\_3DH5/MCH



8DPSK\_3DH5/HCH



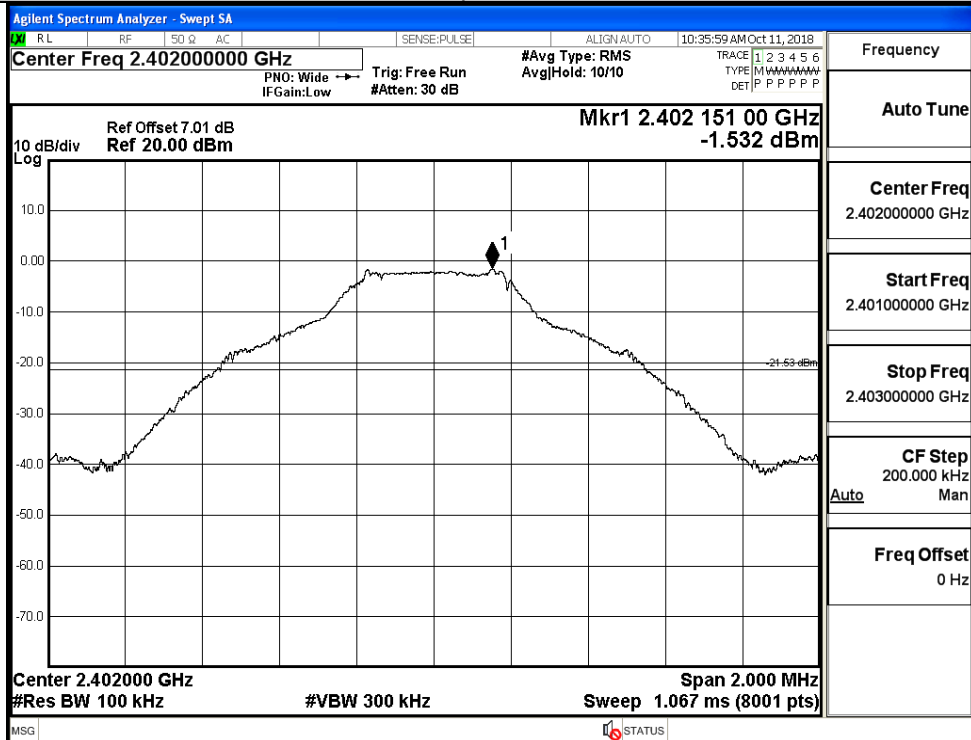
## A.6 RF Conducted Spurious Emissions

| Mode          | Channel | Pref [dBm] | Max. Level [dBm] | Limit [dBm] | Verdict |
|---------------|---------|------------|------------------|-------------|---------|
| GFSK          | LCH     | -1.532     | -45.832          | -21.532     | PASS    |
|               | MCH     | -1.022     | -45.329          | -21.022     | PASS    |
|               | HCH     | -1.334     | -45.263          | -21.334     | PASS    |
| $\pi/4$ DQPSK | LCH     | -2.944     | -45.335          | -22.944     | PASS    |
|               | MCH     | -2.502     | -46.048          | -22.502     | PASS    |
|               | HCH     | -2.866     | -45.913          | -22.866     | PASS    |
| 8DPSK         | LCH     | -2.87      | -45.945          | -22.870     | PASS    |
|               | MCH     | -2.424     | -45.988          | -22.424     | PASS    |
|               | HCH     | -2.96      | -45.331          | -22.960     | PASS    |

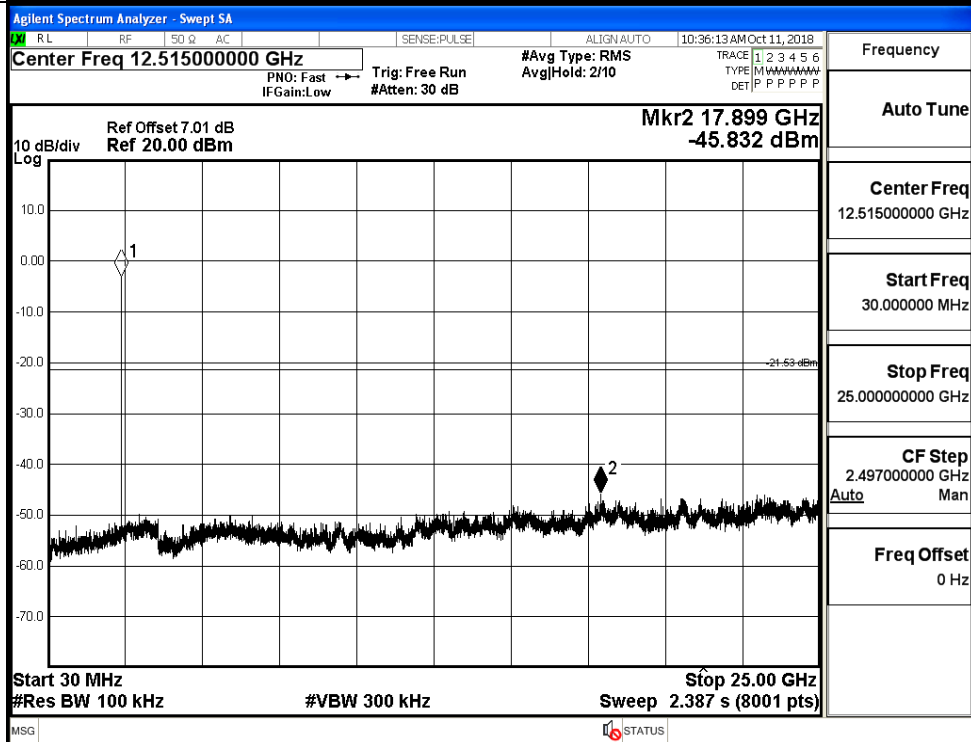


GFSK\_LCH\_Graphs

Pref

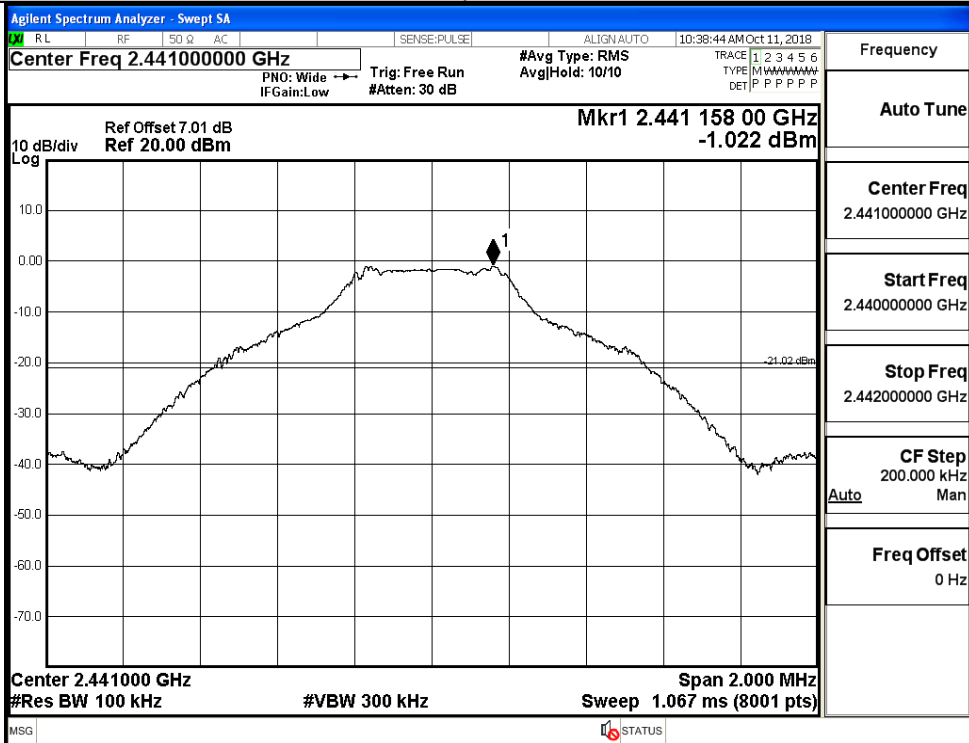


Puw

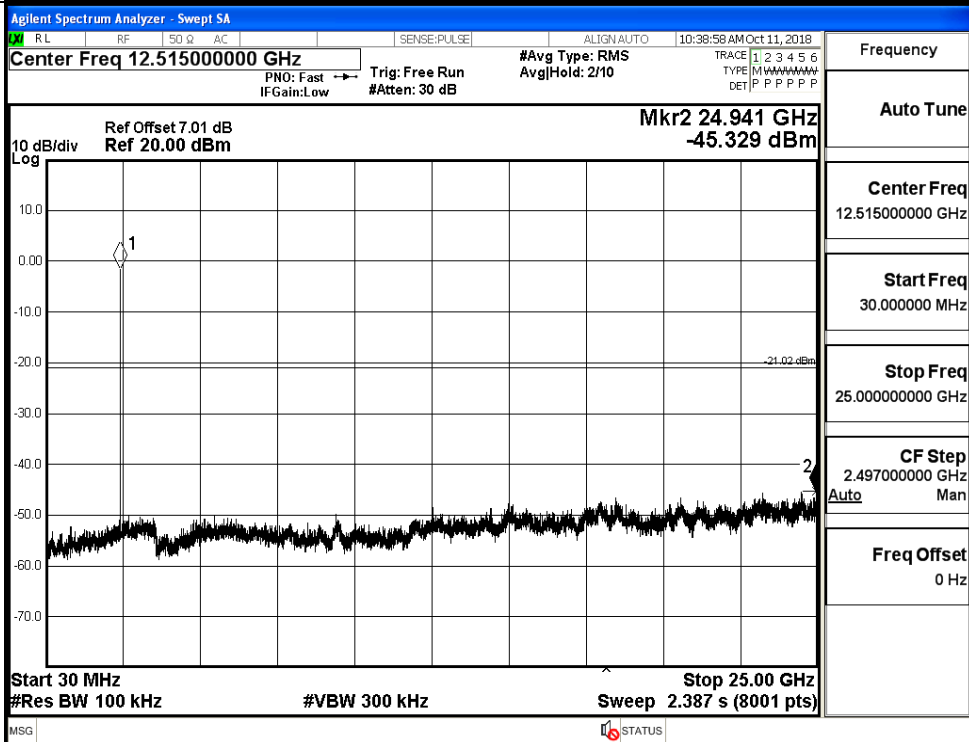


GFSK\_MCH\_Graphs

Pref

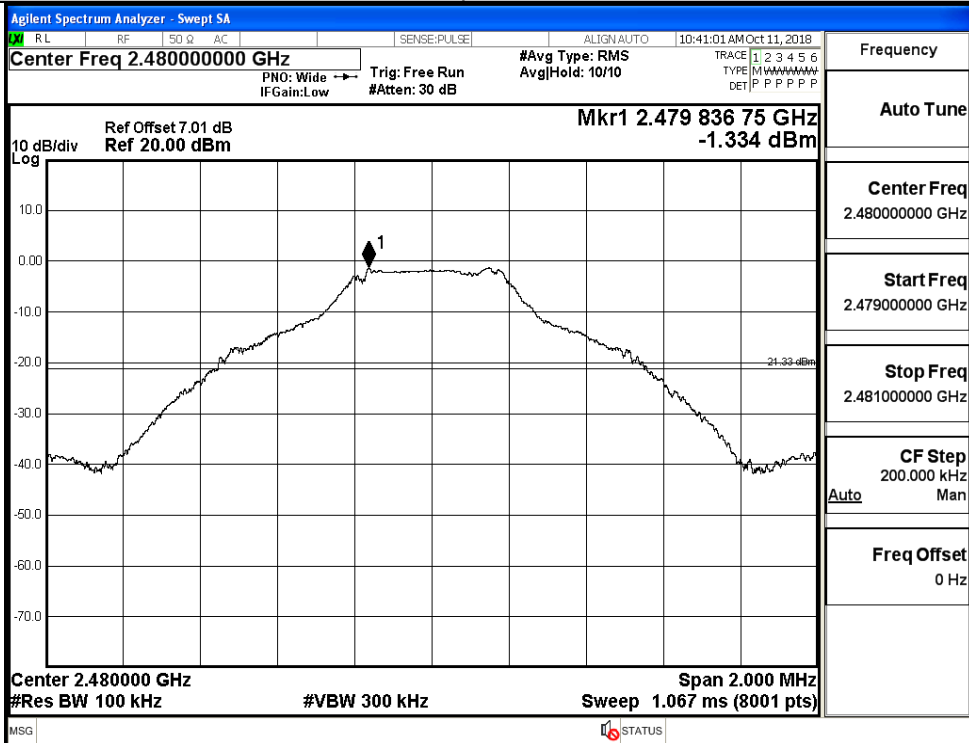


Puw

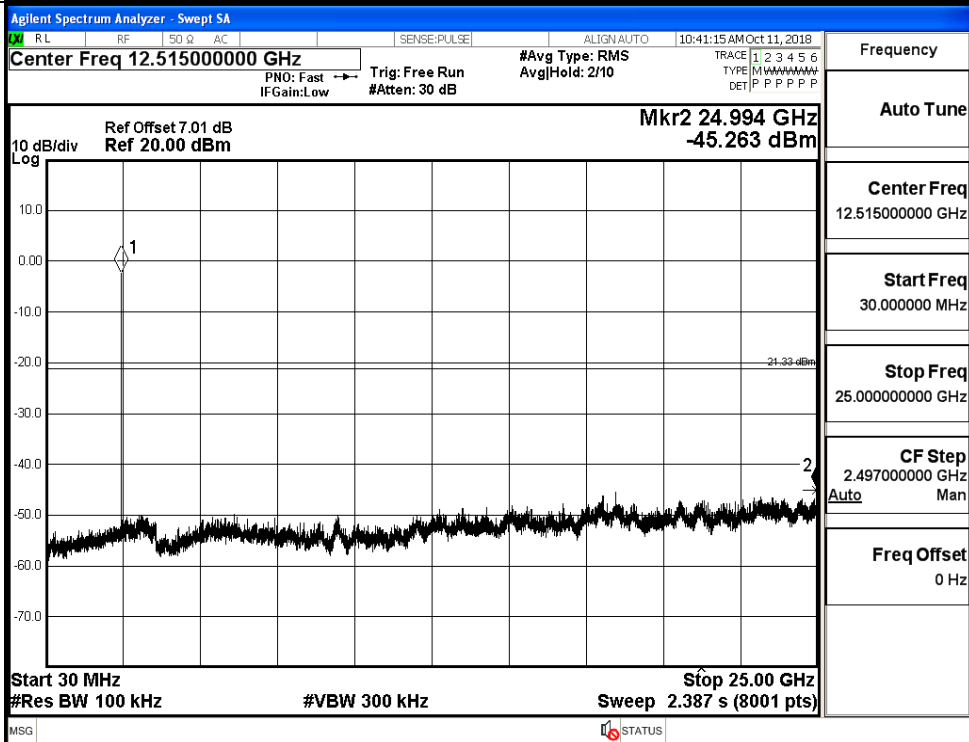


GFSK\_HCH\_Graphs

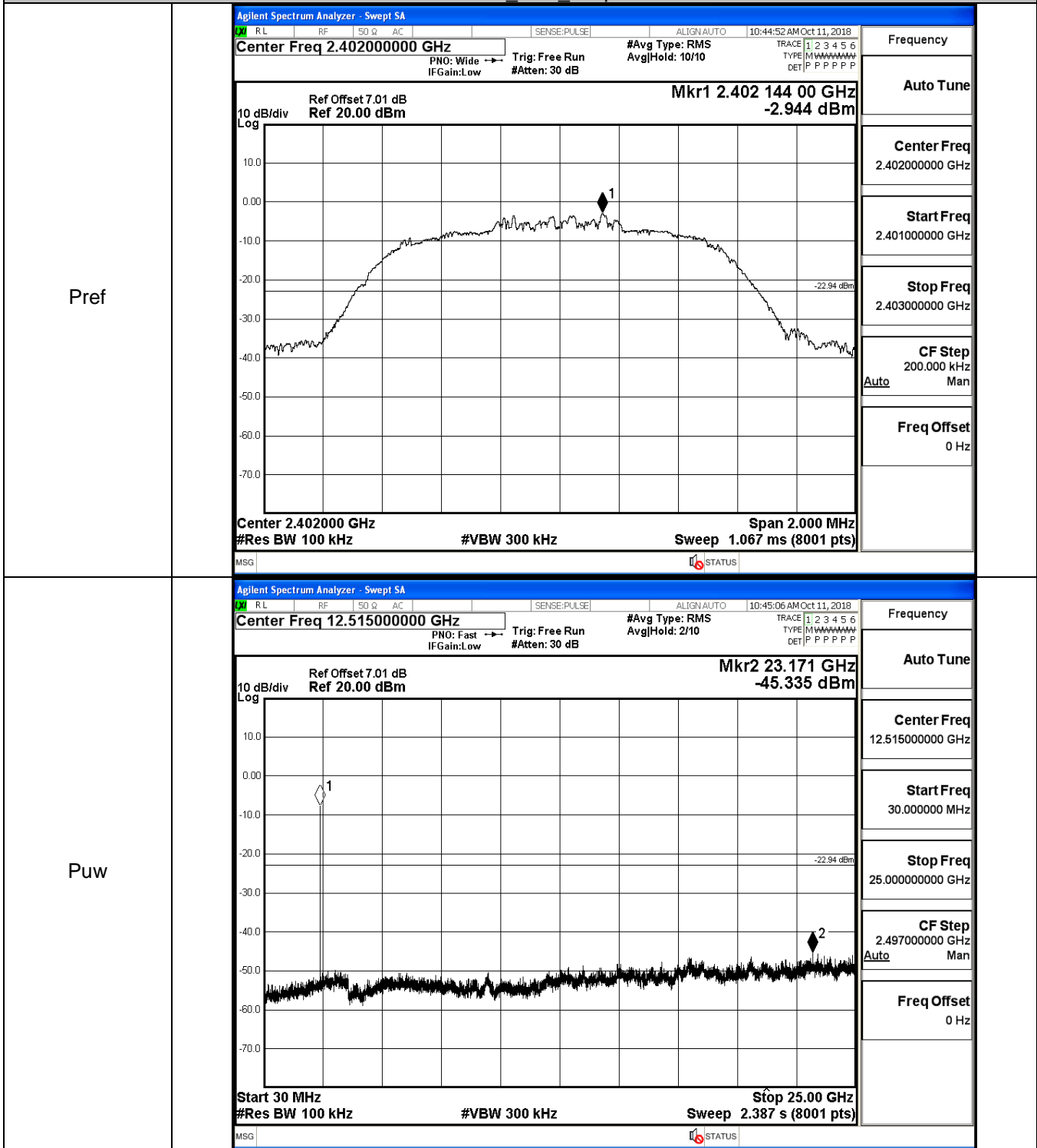
Pref



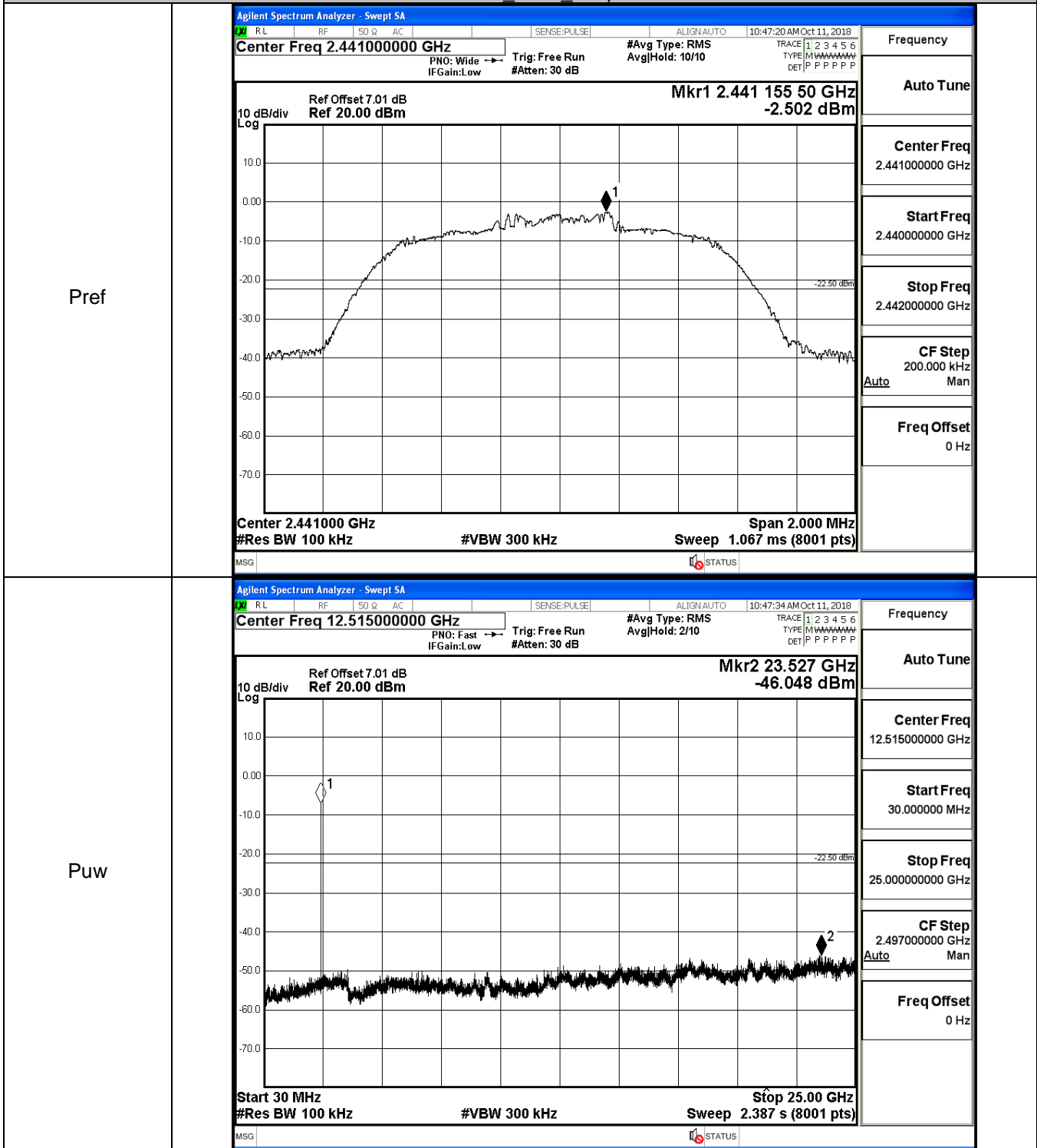
Puw



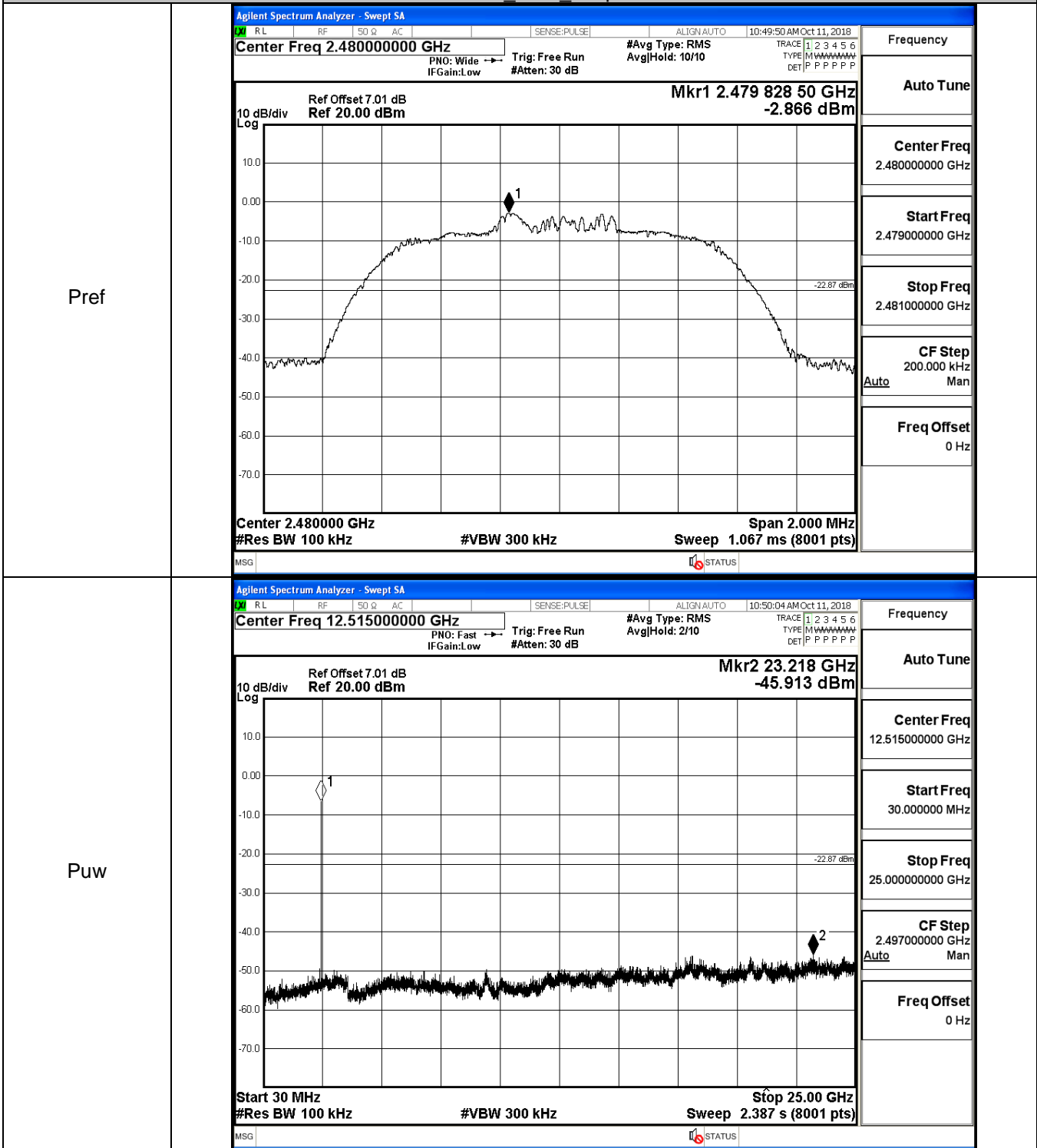
$\pi/4$ DQPSK LCH\_Graphs



$\pi$ /4DQPSK\_MCH\_Graphs

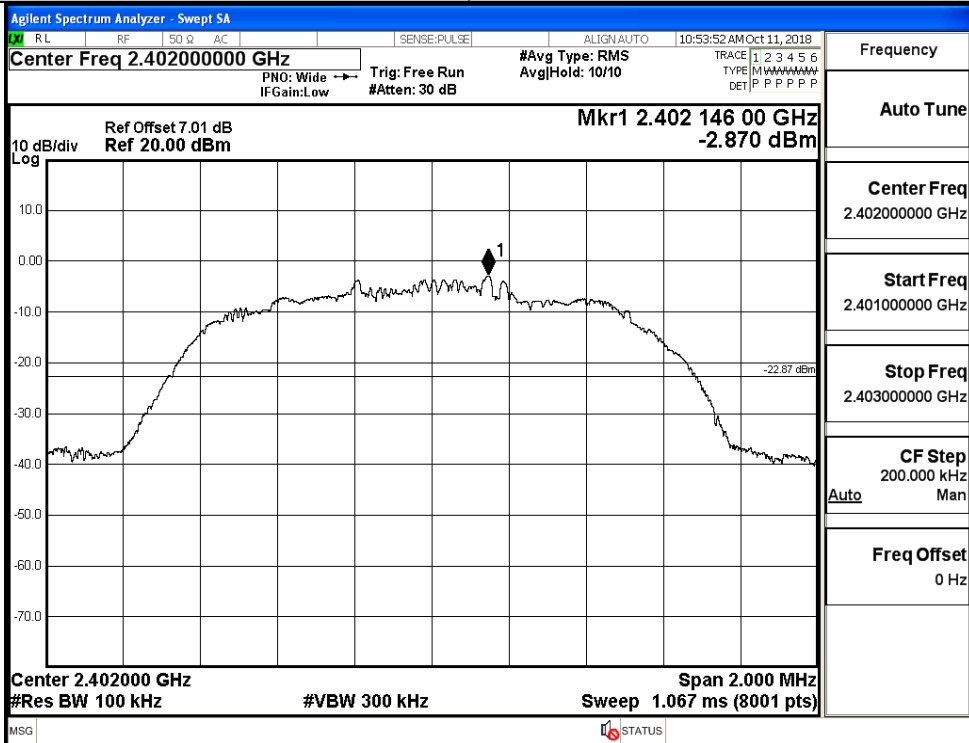


$\pi/4$ DQPSK\_HCH\_Graphs

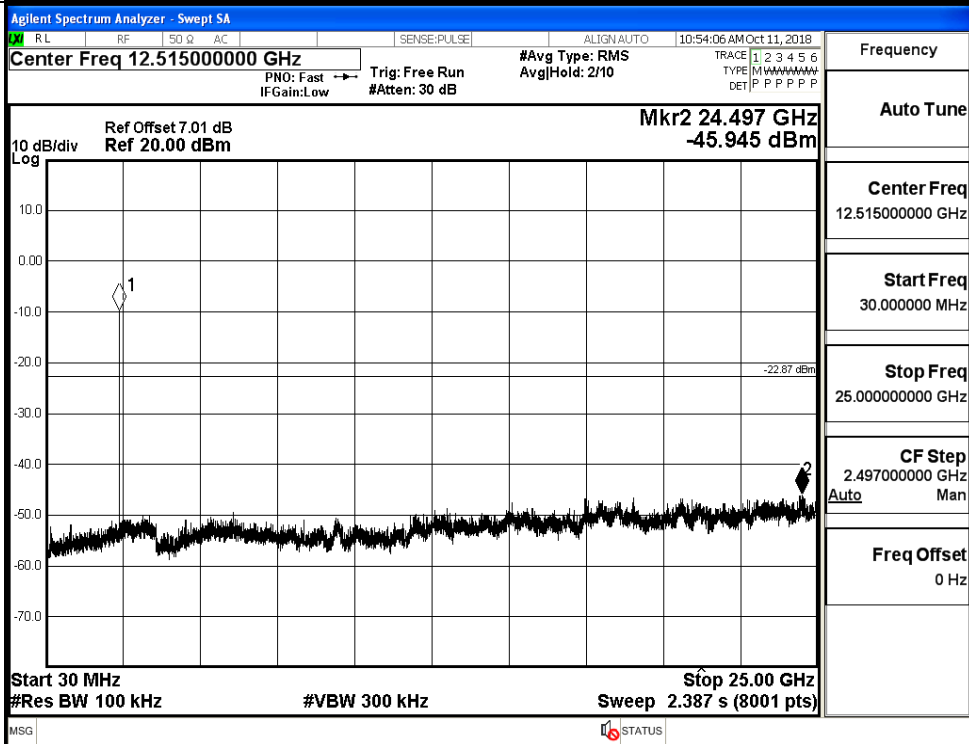


8DPSK\_LCH\_Graphs

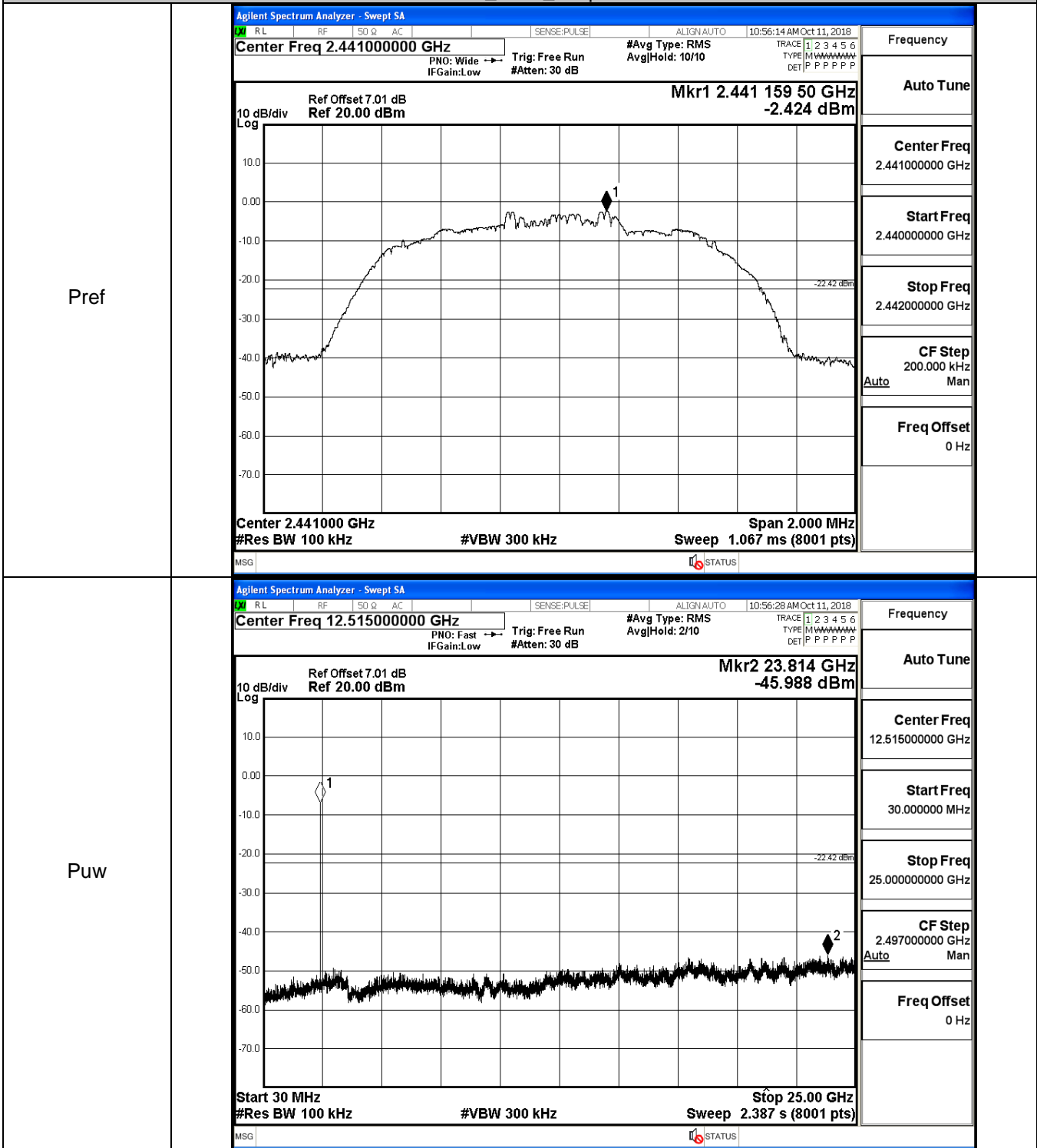
Pref



Puw



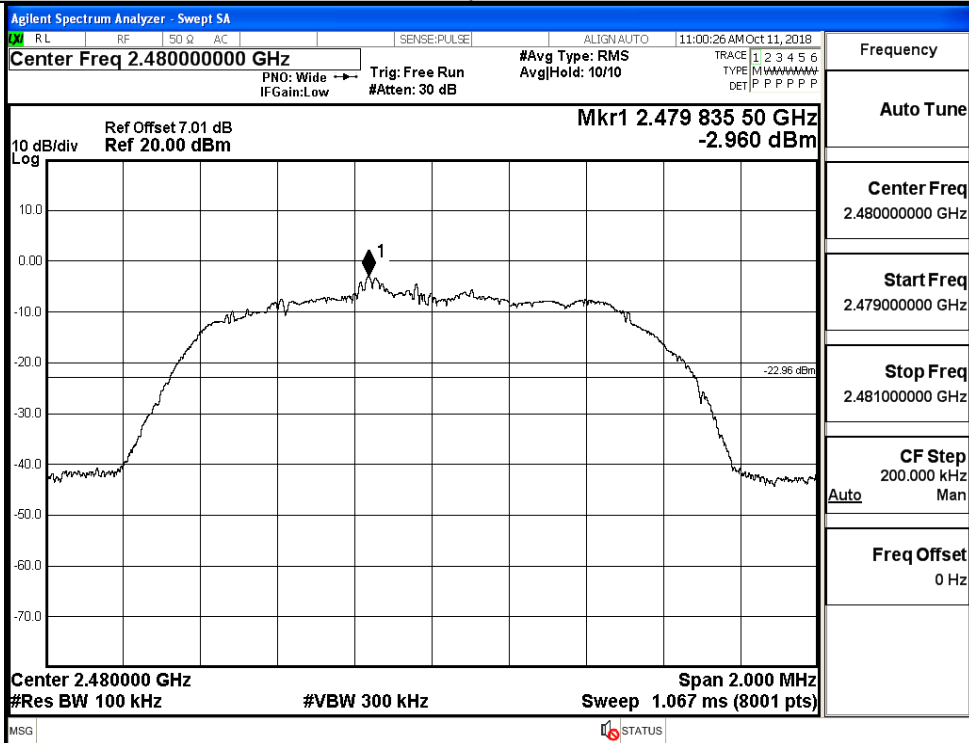
8DPSK\_MCH\_Graphs



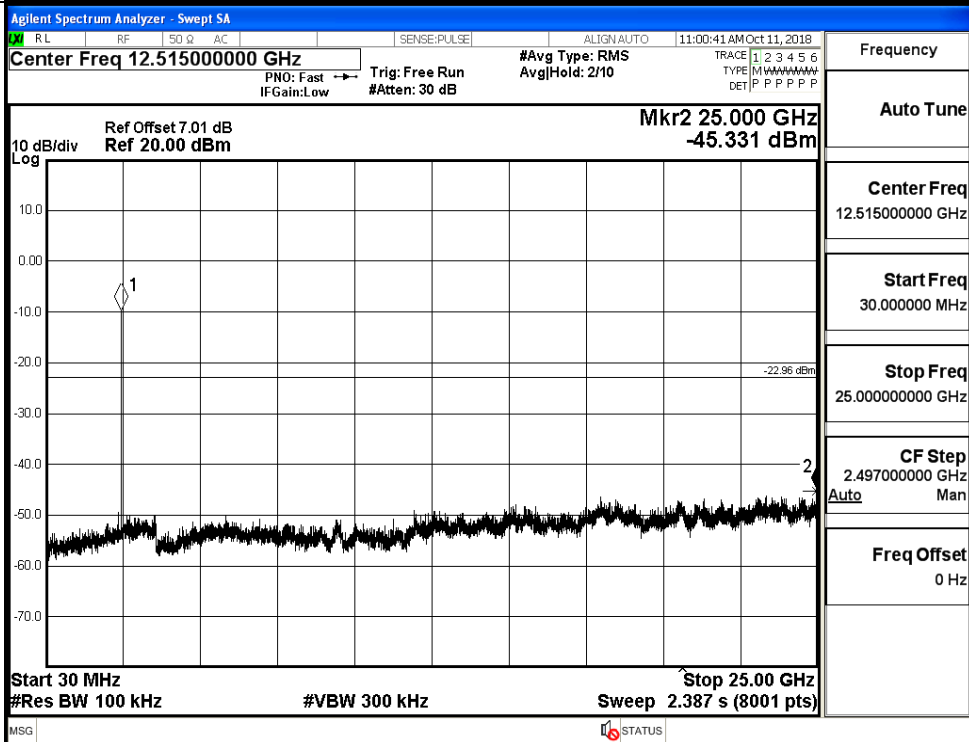


8DPSK\_HCH\_Graphs

Pref



Puw

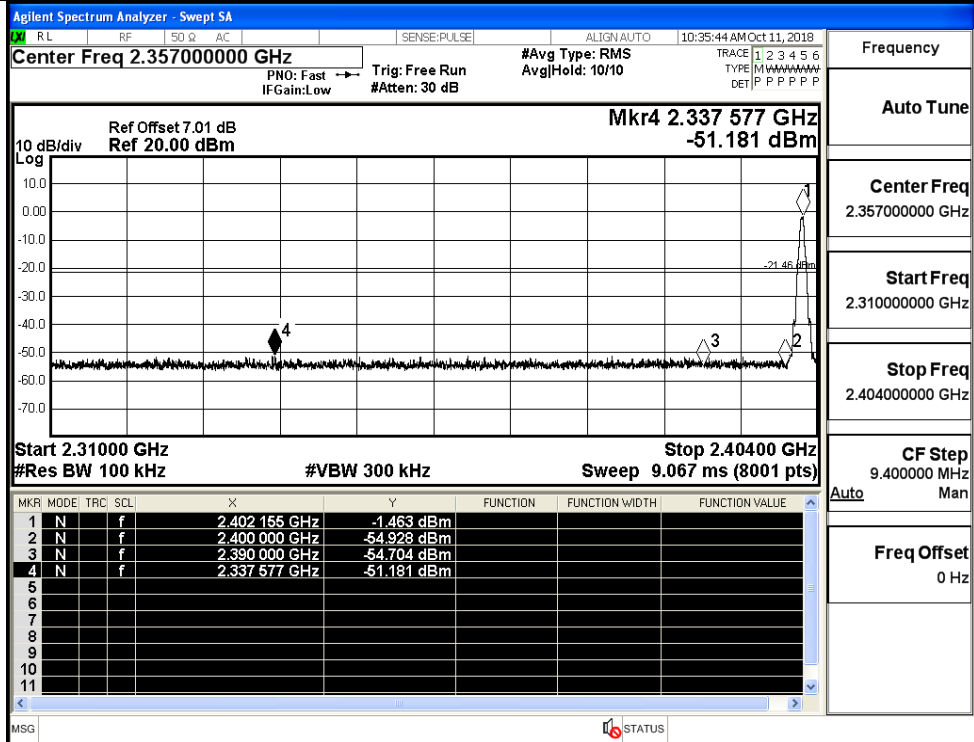


## A.7 Band-edge for RF Conducted Emissions

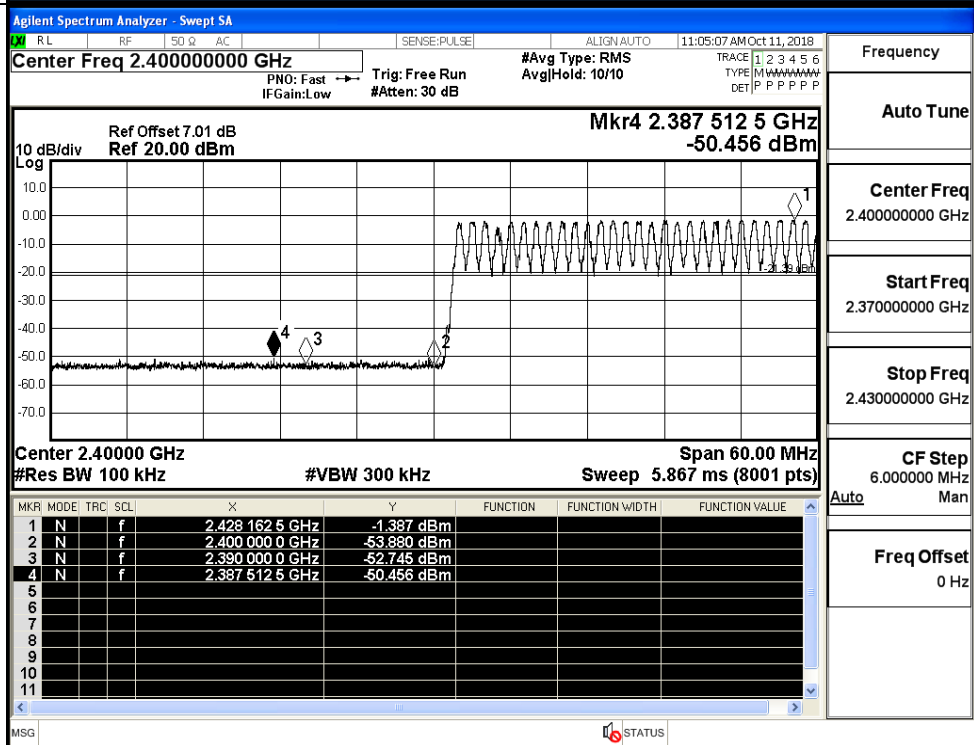
| Mode          | Channel | Carrier Frequency [MHz] | Carrier Power [dBm] | Frequency Hopping | Max Spurious Level [dBm] | Limit [dBm] | Verdict |
|---------------|---------|-------------------------|---------------------|-------------------|--------------------------|-------------|---------|
| GFSK          | LCH     | 2402                    | -1.463              | Off               | -51.181                  | -21.46      | PASS    |
|               |         |                         | -1.387              | On                | -50.456                  | -21.39      | PASS    |
|               | HCH     | 2480                    | -1.336              | Off               | -50.935                  | -21.34      | PASS    |
|               |         |                         | -1.058              | On                | -50.635                  | -21.06      | PASS    |
| $\pi/4$ DQPSK | LCH     | 2402                    | -2.907              | Off               | -51.013                  | -22.91      | PASS    |
|               |         |                         | -2.466              | On                | -49.999                  | -22.47      | PASS    |
|               | HCH     | 2480                    | -2.826              | Off               | -51.462                  | -22.83      | PASS    |
|               |         |                         | -2.472              | On                | -49.688                  | -22.47      | PASS    |
| 8DPSK         | LCH     | 2402                    | -2.866              | Off               | -50.622                  | -22.87      | PASS    |
|               |         |                         | -2.535              | On                | -50.858                  | -22.54      | PASS    |
|               | HCH     | 2480                    | -2.842              | Off               | -50.400                  | -22.84      | PASS    |
|               |         |                         | -2.635              | On                | -49.888                  | -22.64      | PASS    |

Test Graphs

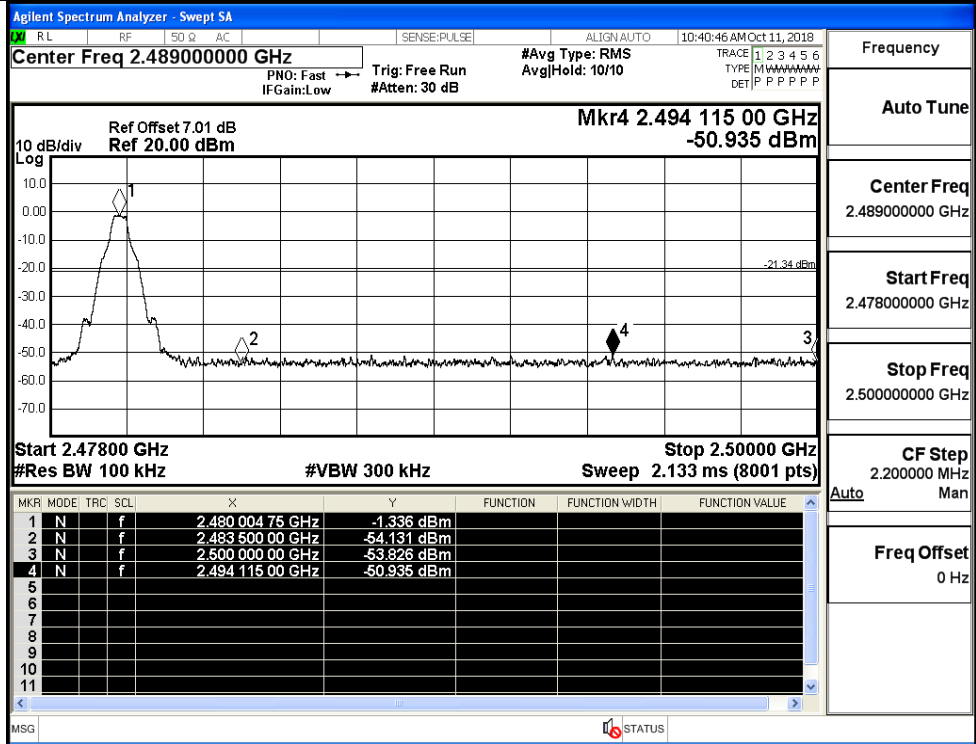
GFSK/LCH/No Hop



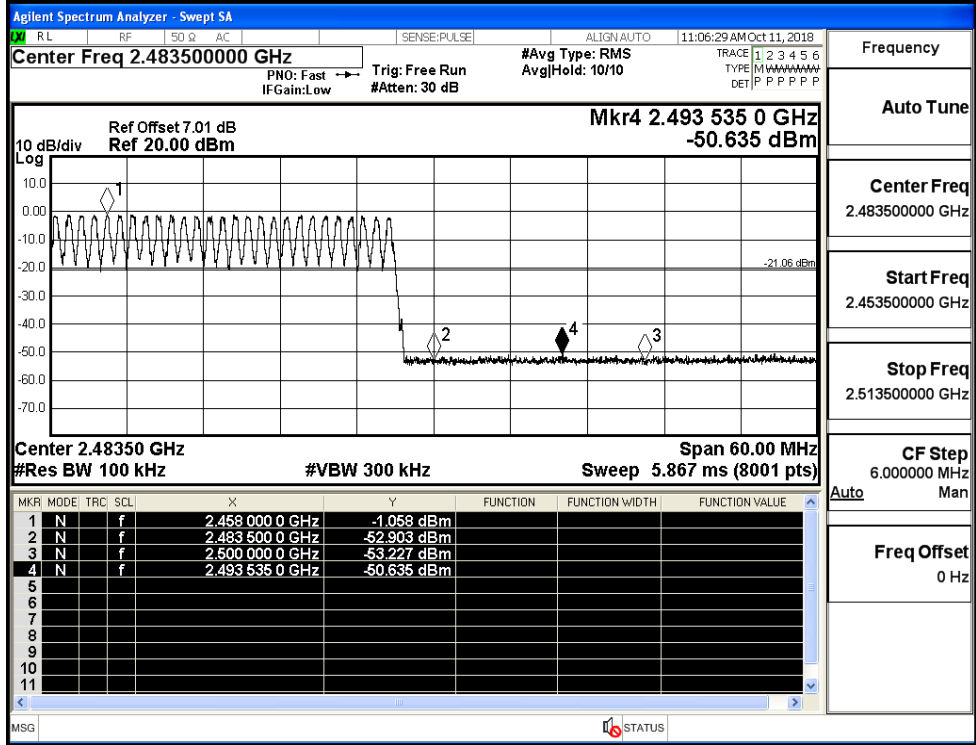
GFSK/LCH/Hop



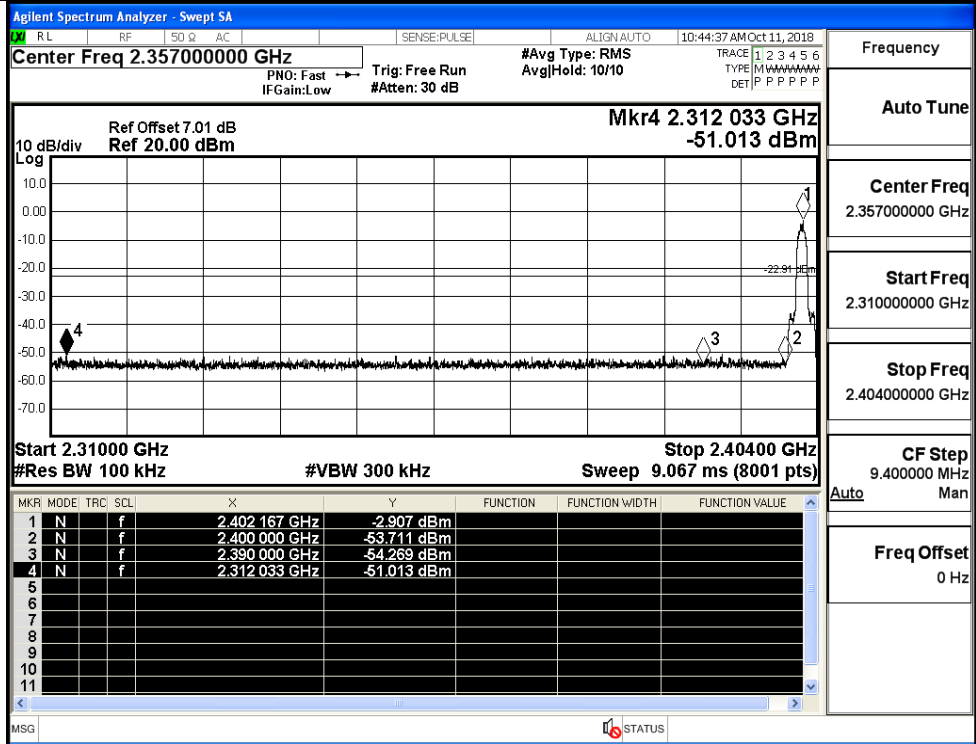
GFSK/HCH/No Hop



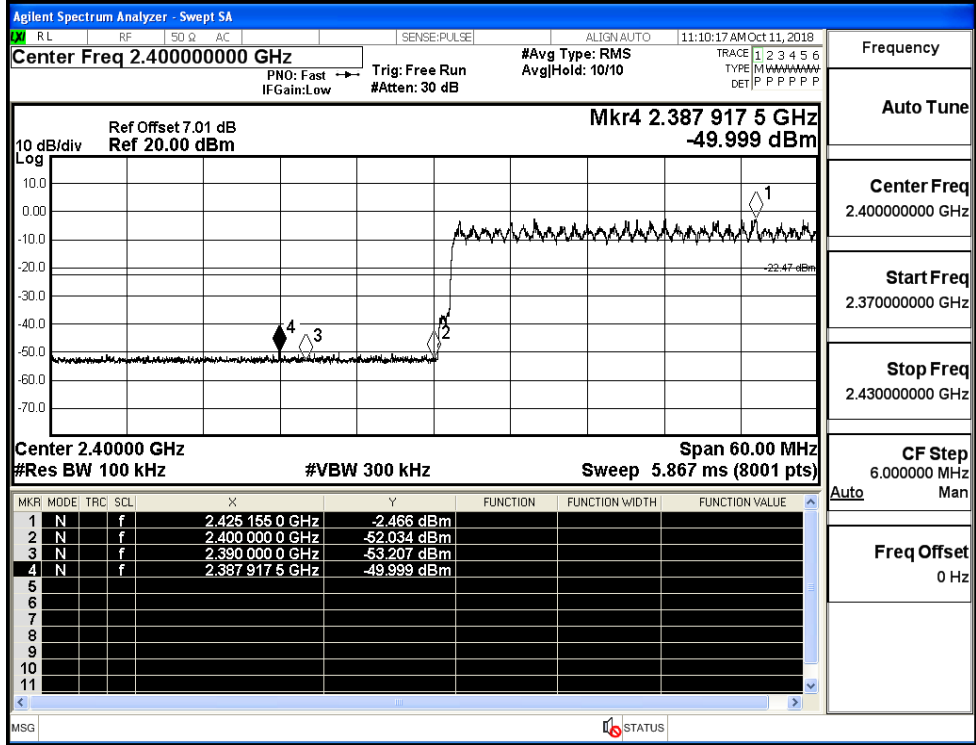
GFSK/HCH/Hop



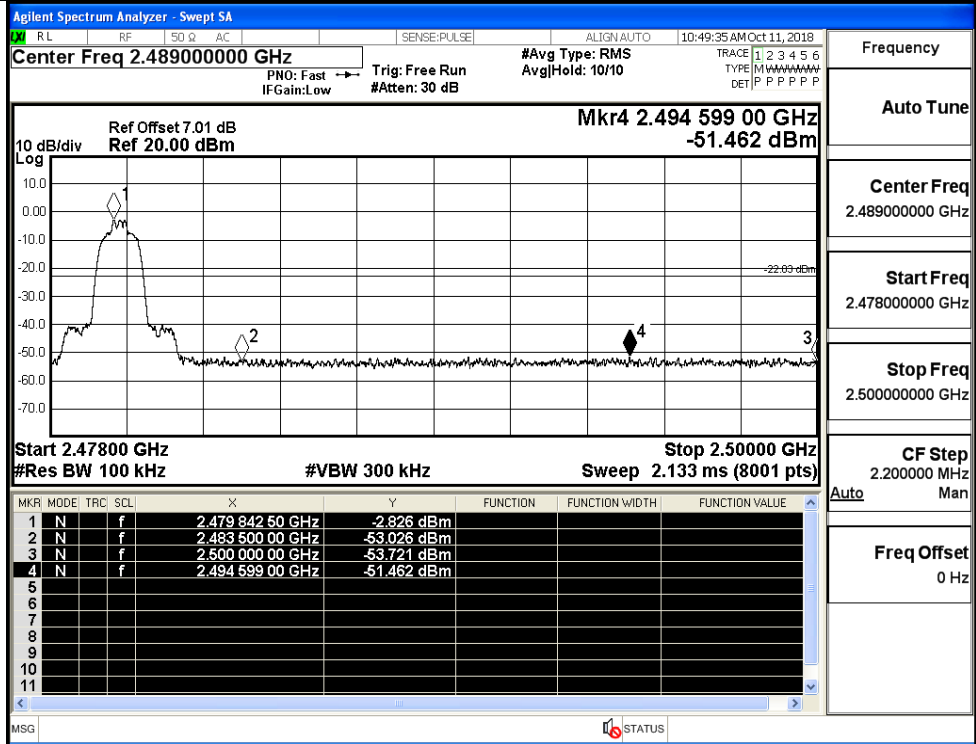
$\pi/4$ DQPSK/LCH/No  
Hop



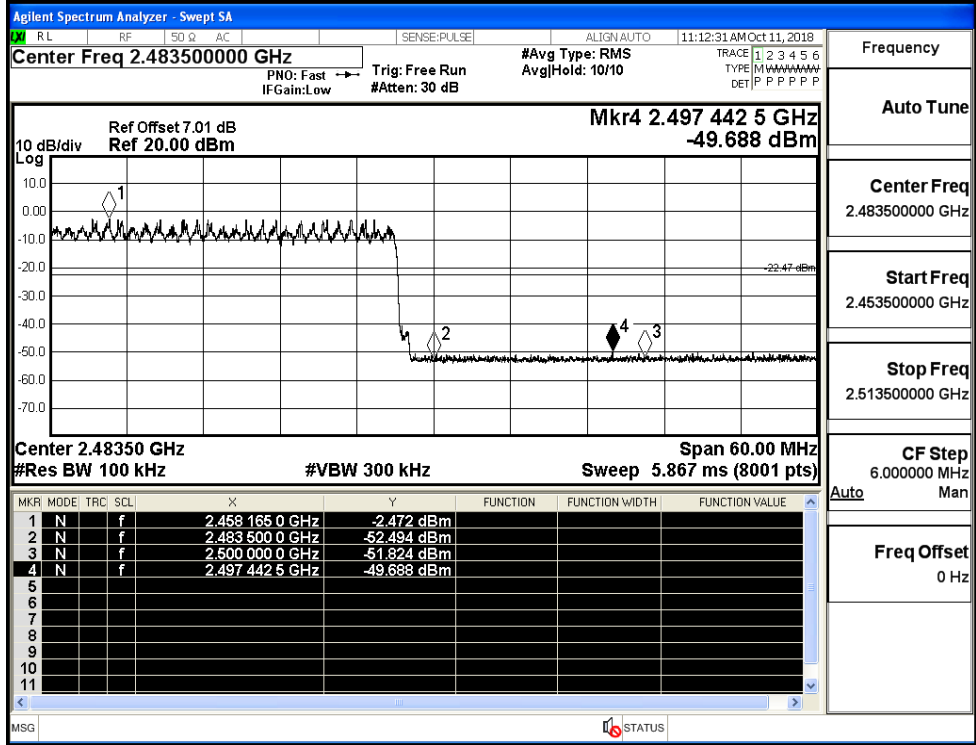
$\pi/4$ DQPSK/LCH/Hop



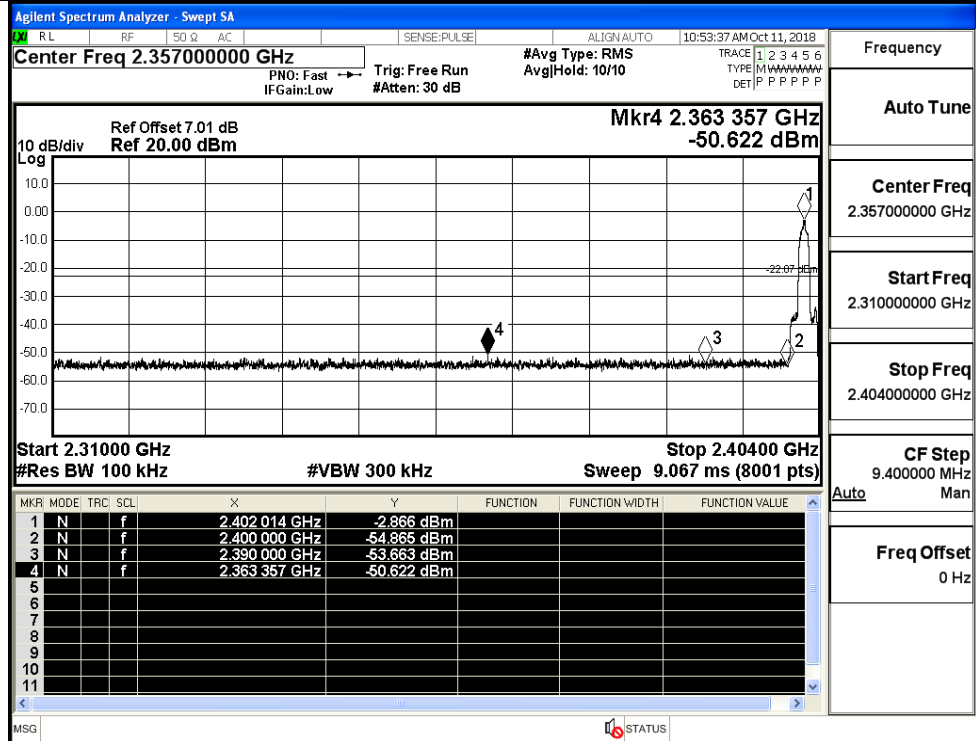
$\pi/4$ DQPSK/HCH/No  
Hop



$\pi/4$ DQPSK/HCH/Hop

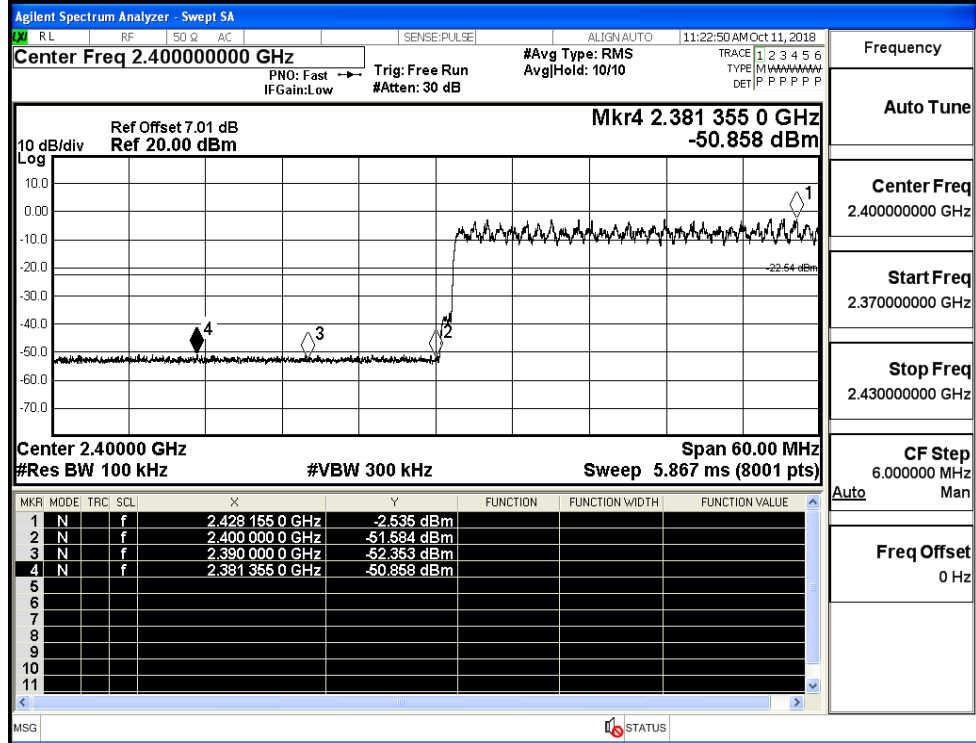


8DPSK/LCH/No Hop



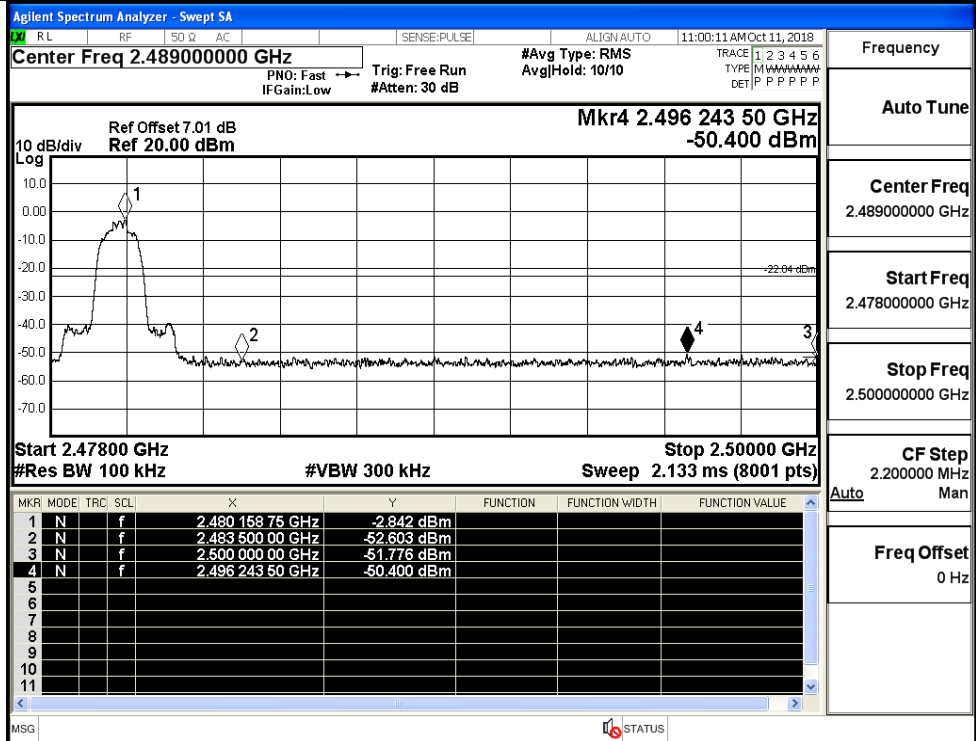
Frequency  
Auto Tune  
Center Freq  
2.357000000 GHz  
Start Freq  
2.310000000 GHz  
Stop Freq  
2.404000000 GHz  
CF Step  
9.400000 MHz  
Auto Man  
Freq Offset  
0 Hz

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  
Auto Man  
Freq Offset  
0 Hz

8DPSK/HCH/No Hop



Frequency

Auto Tune

Center Freq  
2.489000000 GHz

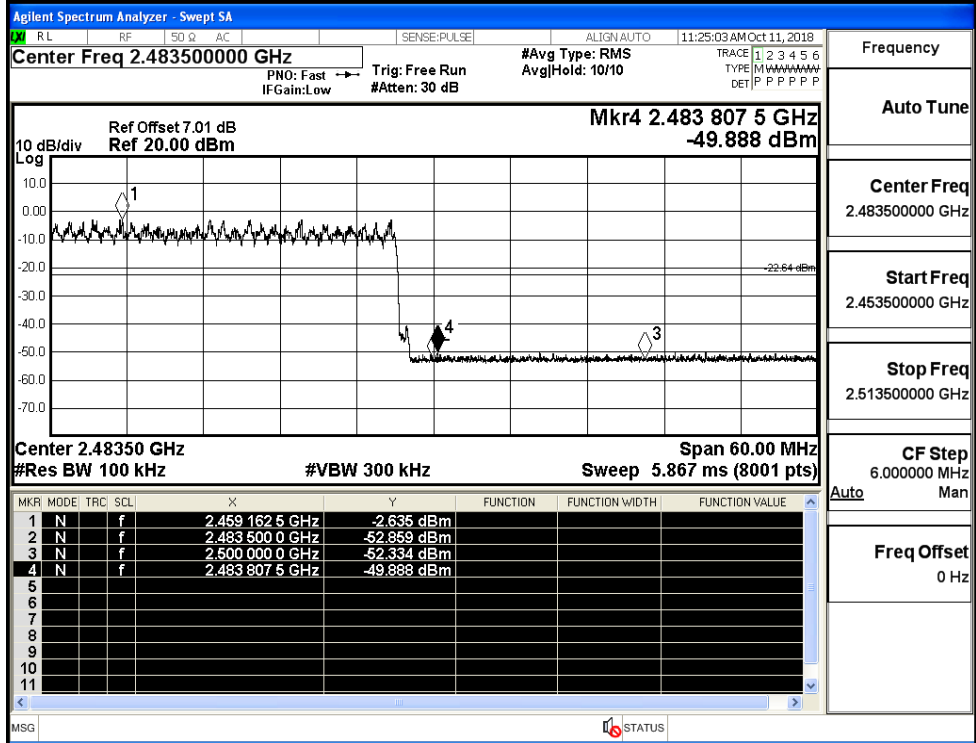
Start Freq  
2.478000000 GHz

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

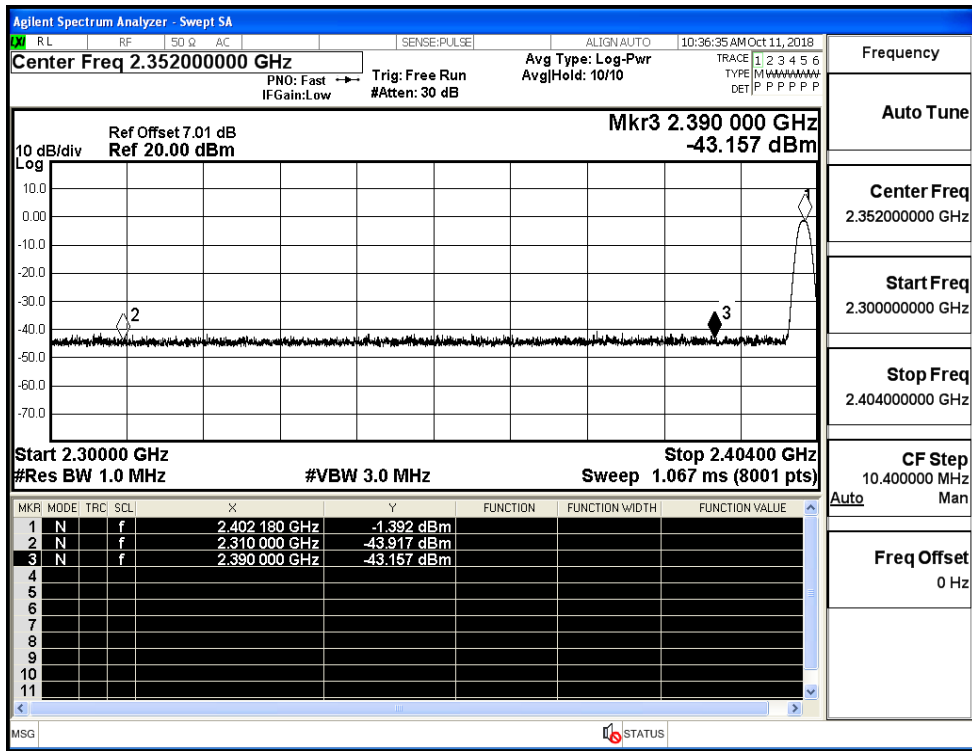
Freq Offset  
0 Hz



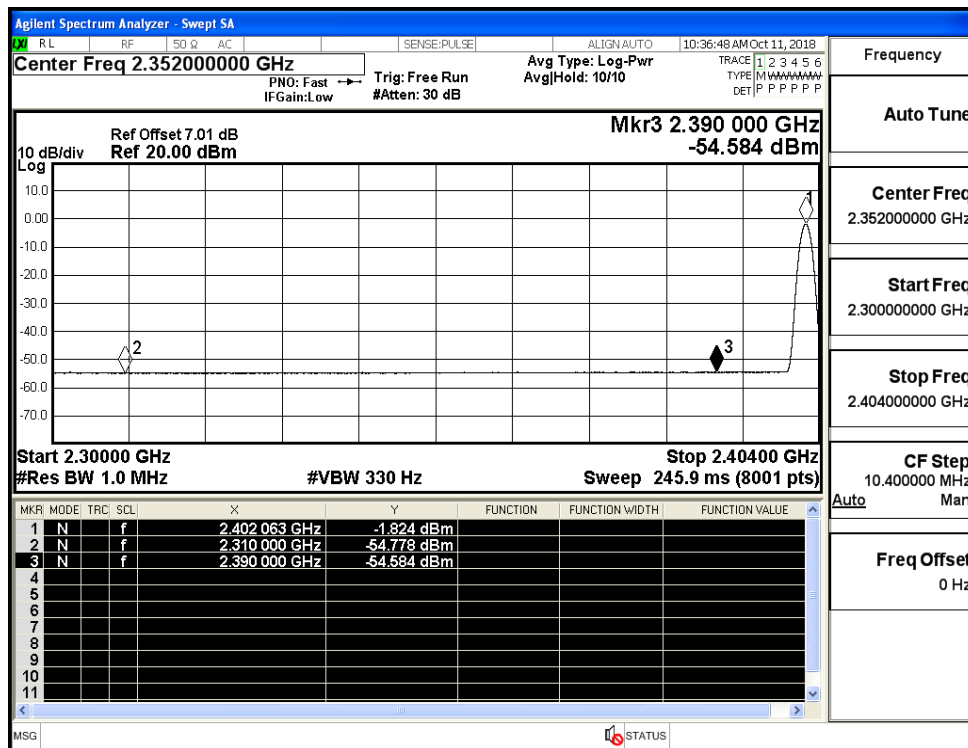
## A.8 Restrict-band band-edge measurements

| Test Mode     | Hopping | Freq.  | Power [dBm] | Gain | Ground Factor | E [dBuV/m] | Detector | Limit [dBuV/m] | Verdict |
|---------------|---------|--------|-------------|------|---------------|------------|----------|----------------|---------|
| GFSK          | Off     | 2310.0 | -43.92      | 2.0  | 0             | 51.34      | PEAK     | 74             | PASS    |
|               | Off     | 2310.0 | -54.78      | 2.0  | 0             | 40.48      | AV       | 54             | PASS    |
|               | Off     | 2390.0 | -43.16      | 2.0  | 0             | 52.10      | PEAK     | 74             | PASS    |
|               | Off     | 2390.0 | -54.58      | 2.0  | 0             | 40.67      | AV       | 54             | PASS    |
|               | Off     | 2483.5 | -44.77      | 2.0  | 0             | 50.49      | PEAK     | 74             | PASS    |
|               | Off     | 2483.5 | -54.30      | 2.0  | 0             | 40.96      | AV       | 54             | PASS    |
|               | Off     | 2500.0 | -43.48      | 2.0  | 0             | 51.78      | PEAK     | 74             | PASS    |
|               | Off     | 2500.0 | -54.10      | 2.0  | 0             | 41.15      | AV       | 54             | PASS    |
| $\pi/4$ DQPSK | Off     | 2310.0 | -44.02      | 2.0  | 0             | 51.24      | PEAK     | 74             | PASS    |
|               | Off     | 2310.0 | -54.68      | 2.0  | 0             | 40.58      | AV       | 54             | PASS    |
|               | Off     | 2390.0 | -42.45      | 2.0  | 0             | 52.81      | PEAK     | 74             | PASS    |
|               | Off     | 2390.0 | -54.43      | 2.0  | 0             | 40.83      | AV       | 54             | PASS    |
|               | Off     | 2483.5 | -44.10      | 2.0  | 0             | 51.16      | PEAK     | 74             | PASS    |
|               | Off     | 2483.5 | -54.26      | 2.0  | 0             | 41.00      | AV       | 54             | PASS    |
|               | Off     | 2500.0 | -44.08      | 2.0  | 0             | 51.18      | PEAK     | 74             | PASS    |
|               | Off     | 2500.0 | -54.15      | 2.0  | 0             | 41.10      | AV       | 54             | PASS    |
| 8DPSK         | Off     | 2310.0 | -44.49      | 2.0  | 0             | 50.76      | PEAK     | 74             | PASS    |
|               | Off     | 2310.0 | -54.83      | 2.0  | 0             | 40.43      | AV       | 54             | PASS    |
|               | Off     | 2390.0 | -43.76      | 2.0  | 0             | 51.50      | PEAK     | 74             | PASS    |
|               | Off     | 2390.0 | -54.44      | 2.0  | 0             | 40.82      | AV       | 54             | PASS    |
|               | Off     | 2483.5 | -43.22      | 2.0  | 0             | 52.04      | PEAK     | 74             | PASS    |
|               | Off     | 2483.5 | -54.22      | 2.0  | 0             | 41.03      | AV       | 54             | PASS    |
|               | Off     | 2500.0 | -43.29      | 2.0  | 0             | 51.96      | PEAK     | 74             | PASS    |
|               | Off     | 2500.0 | -54.10      | 2.0  | 0             | 41.16      | AV       | 54             | PASS    |

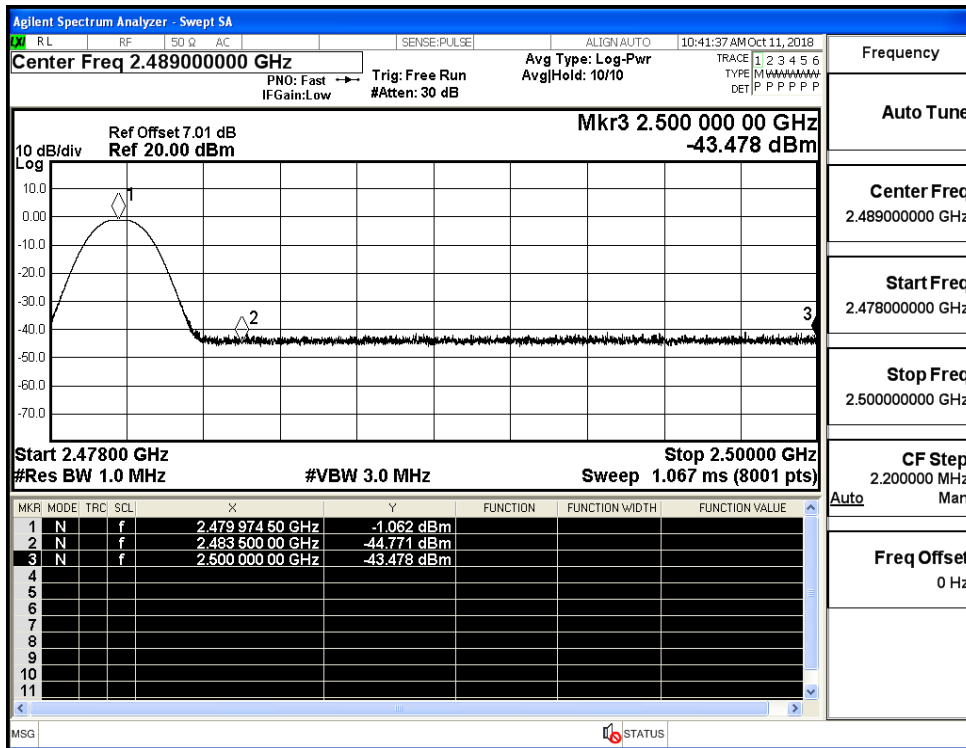
Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (Low Channel)



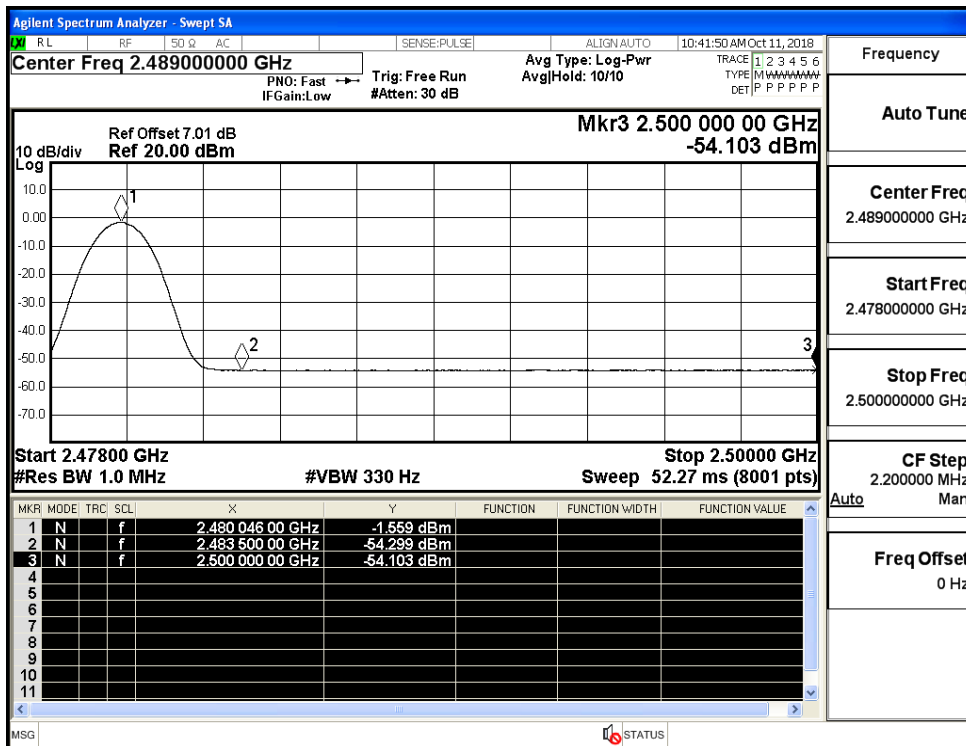
Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (Low Channel)



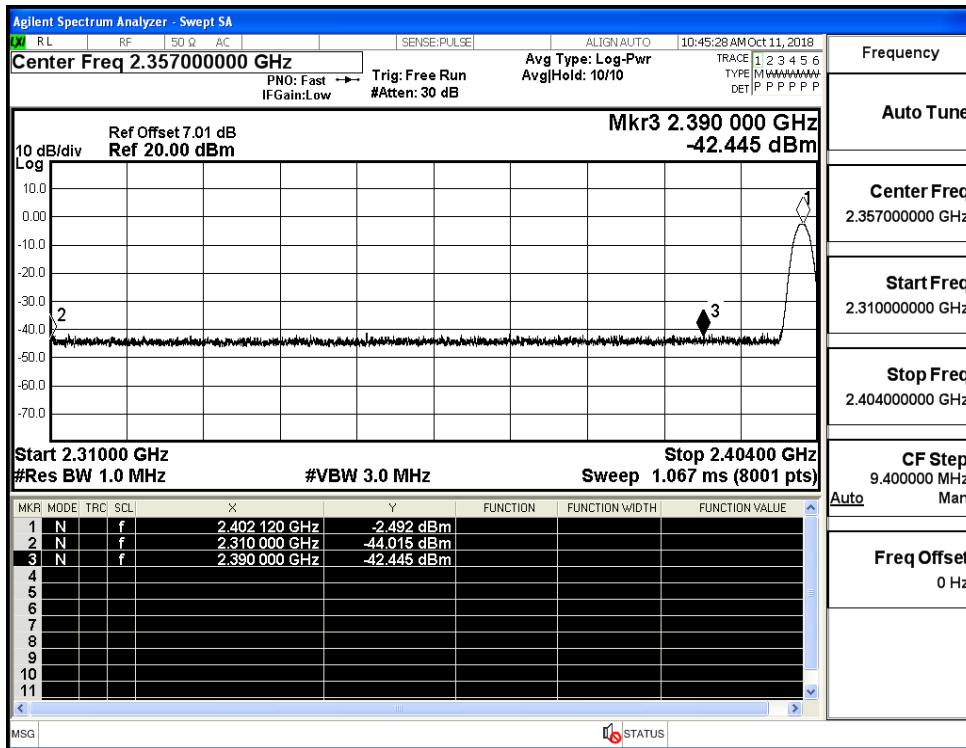
Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (High Channel)



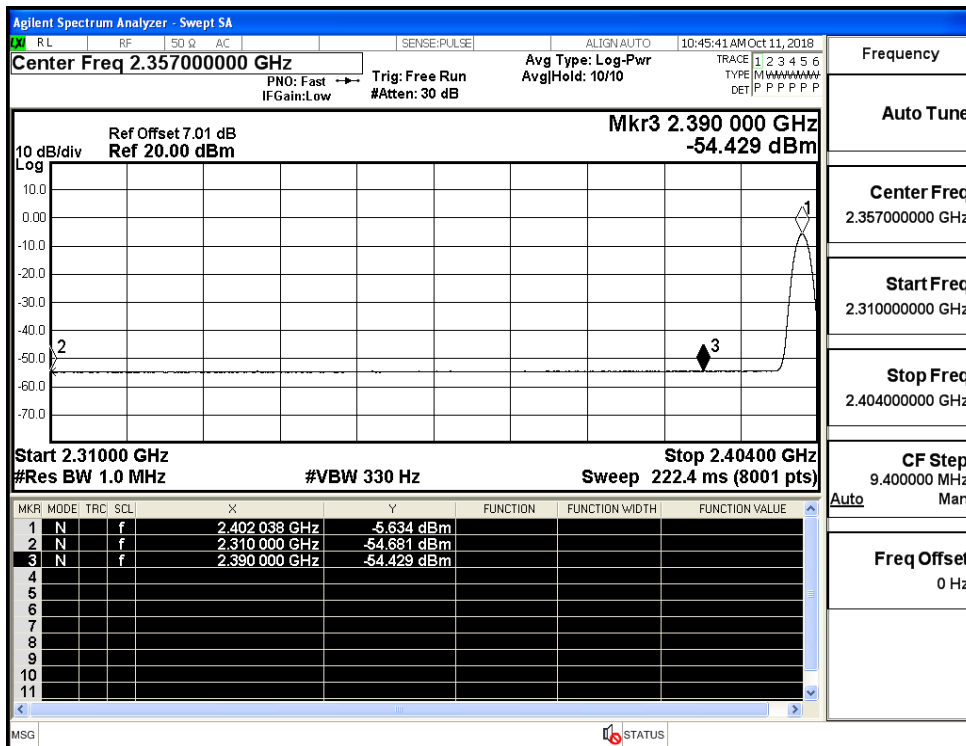
Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (High Channel)



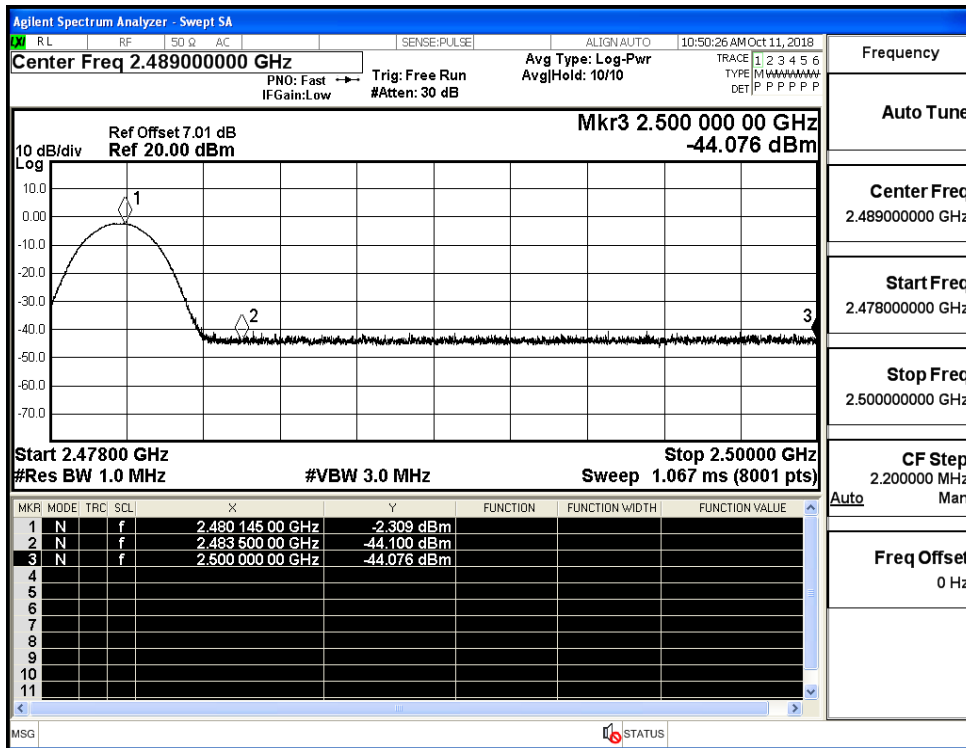
Restrict-band band-edge measurements\_Hopping Off  $\pi/4$ -DQPSK\_PEAK (Low Channel)



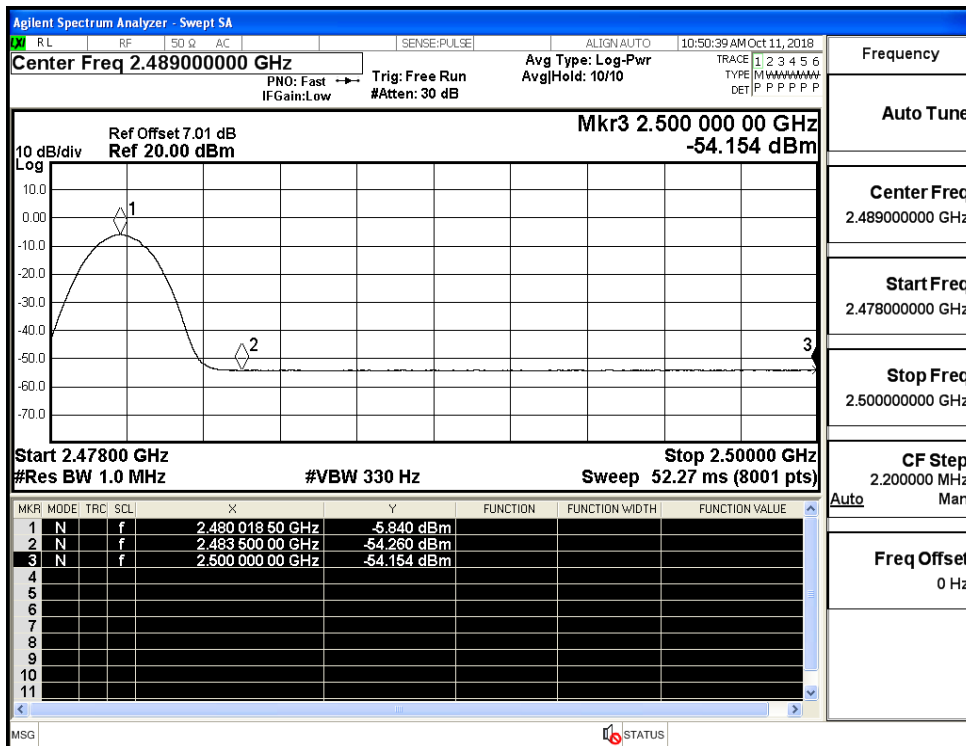
Restrict-band band-edge measurements\_Hopping Off  $\pi/4$ -DQPSK\_Average (Low Channel)



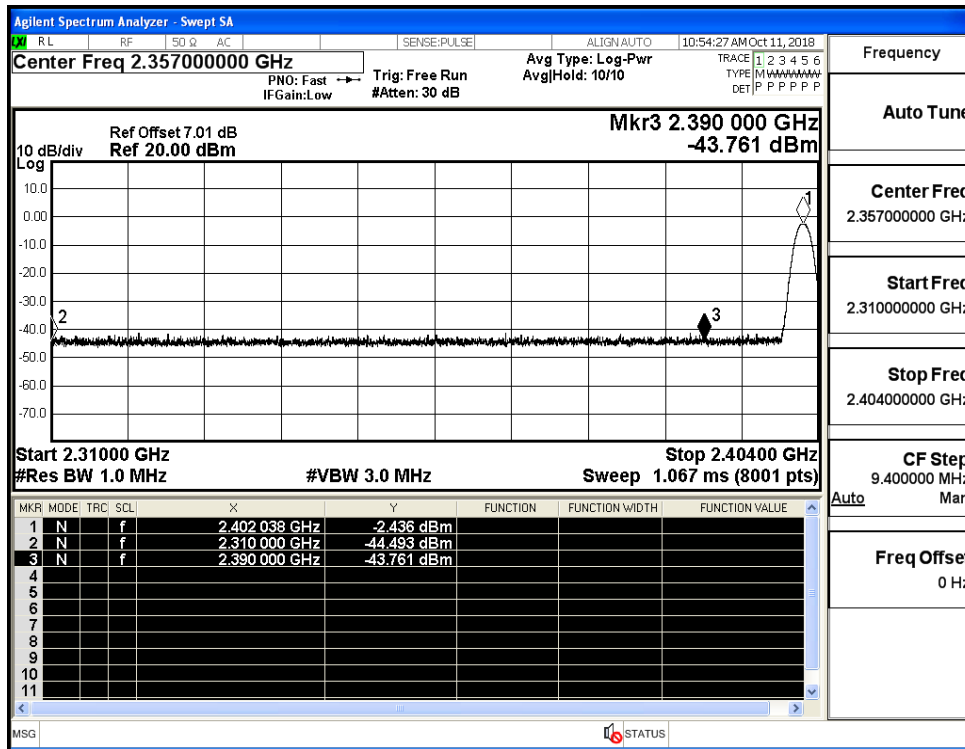
Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_PEAK (High Channel)



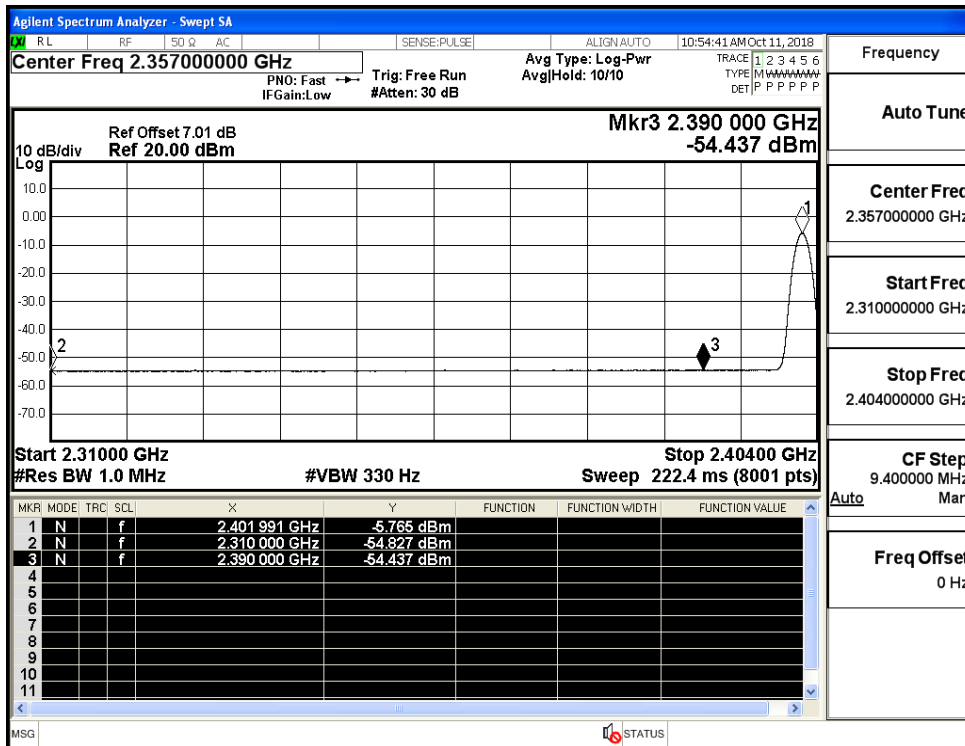
Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_Average (High Channel)



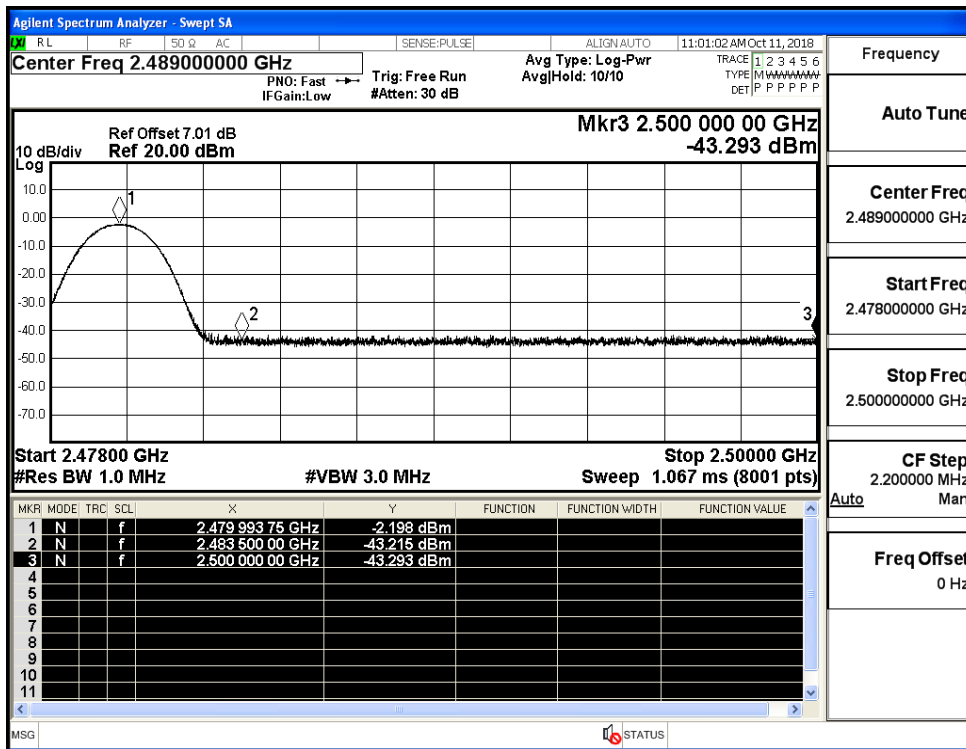
Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_PEAK (Low Channel)



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)

