

## Appendix A

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

Product Name: LTE smartphone

Trade Mark: N/A

Test Model: HEROSP001

FCC ID: 2AVYL-HEROSP001

### Environmental Conditions

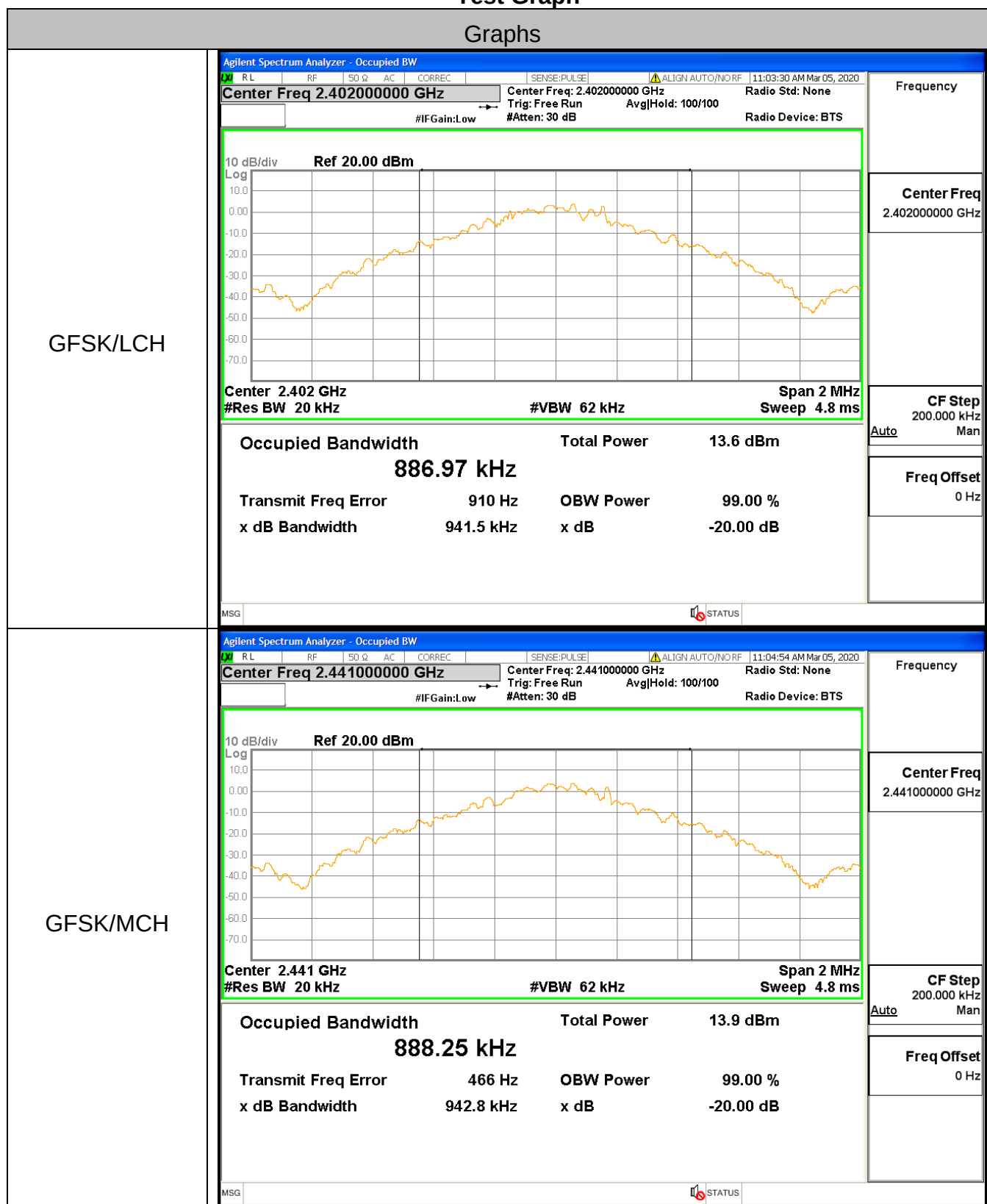
|                    |           |
|--------------------|-----------|
| Temperature:       | 22.8° C   |
| Relative Humidity: | 50%       |
| ATM Pressure:      | 100.0 kPa |
| Test Engineer:     | Anna Hu   |
| Supervised by:     | Hugo Chen |
| NOTE               | N/A       |

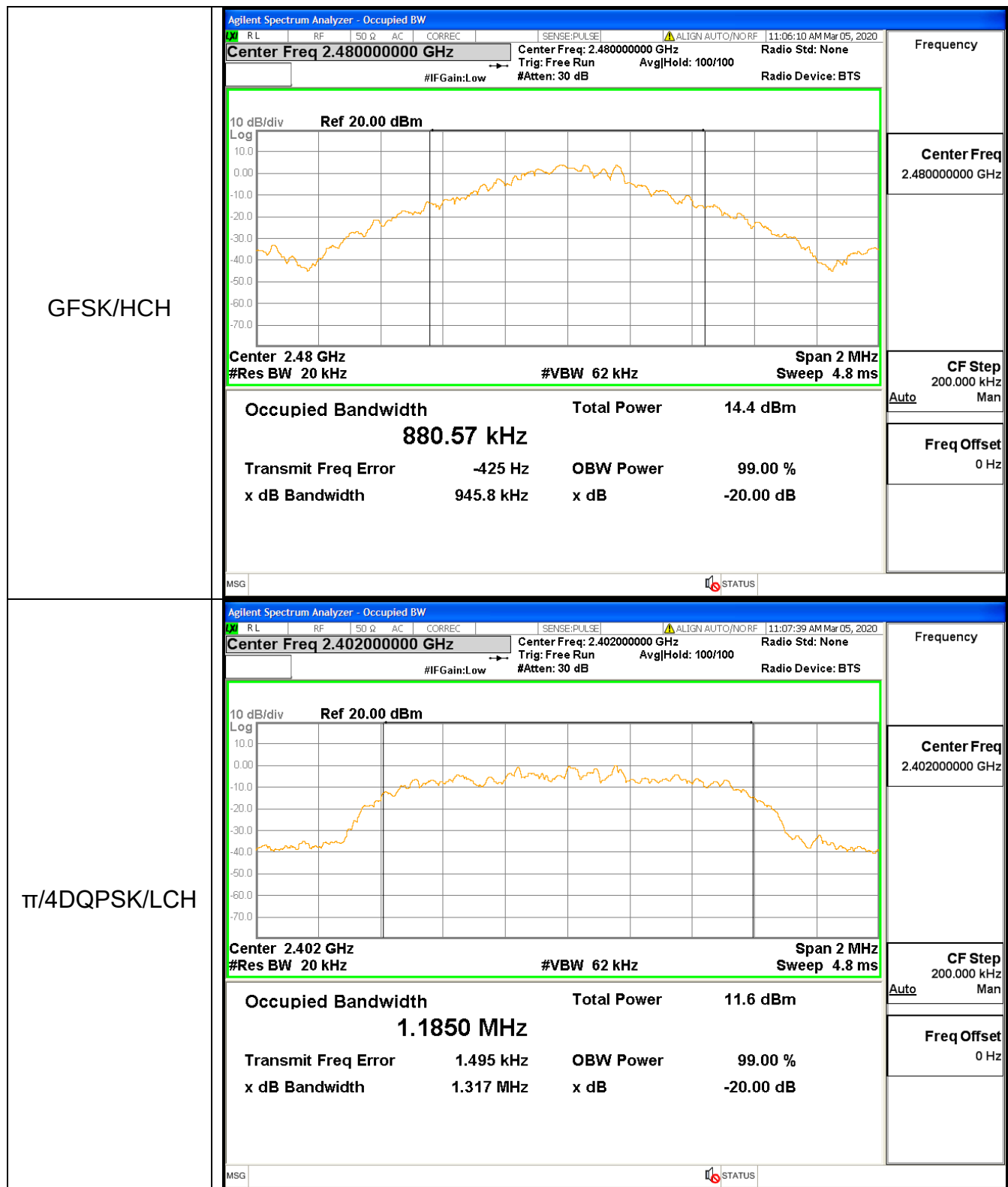
### A.1 20 dB Bandwidth

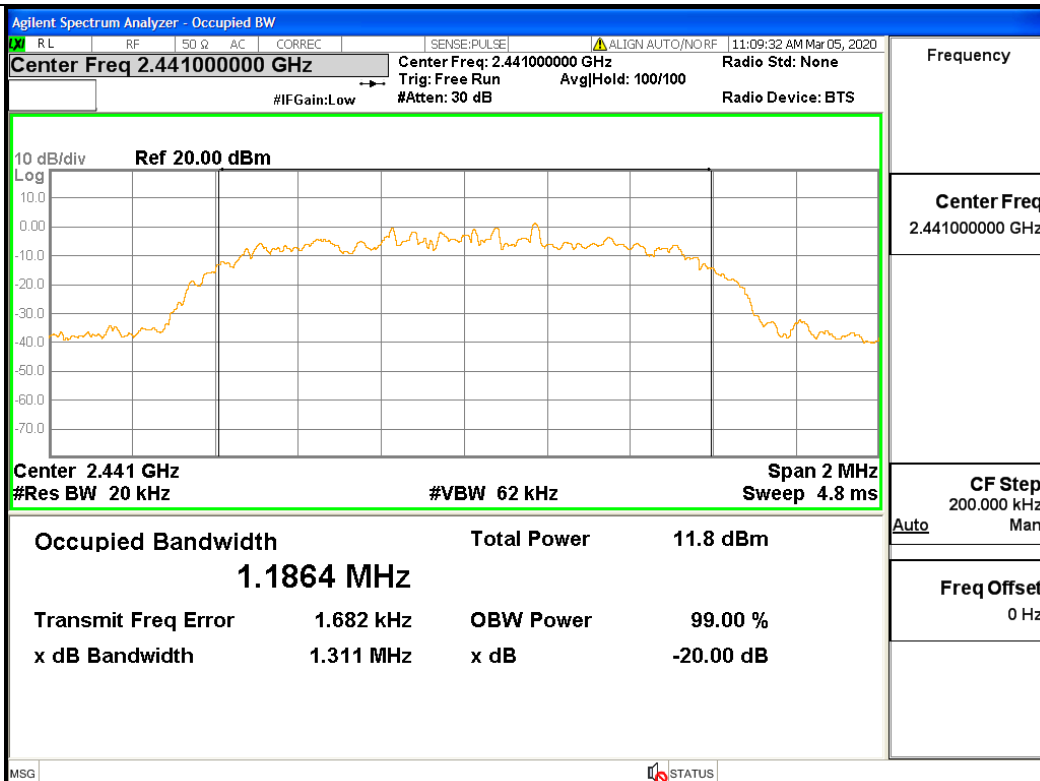
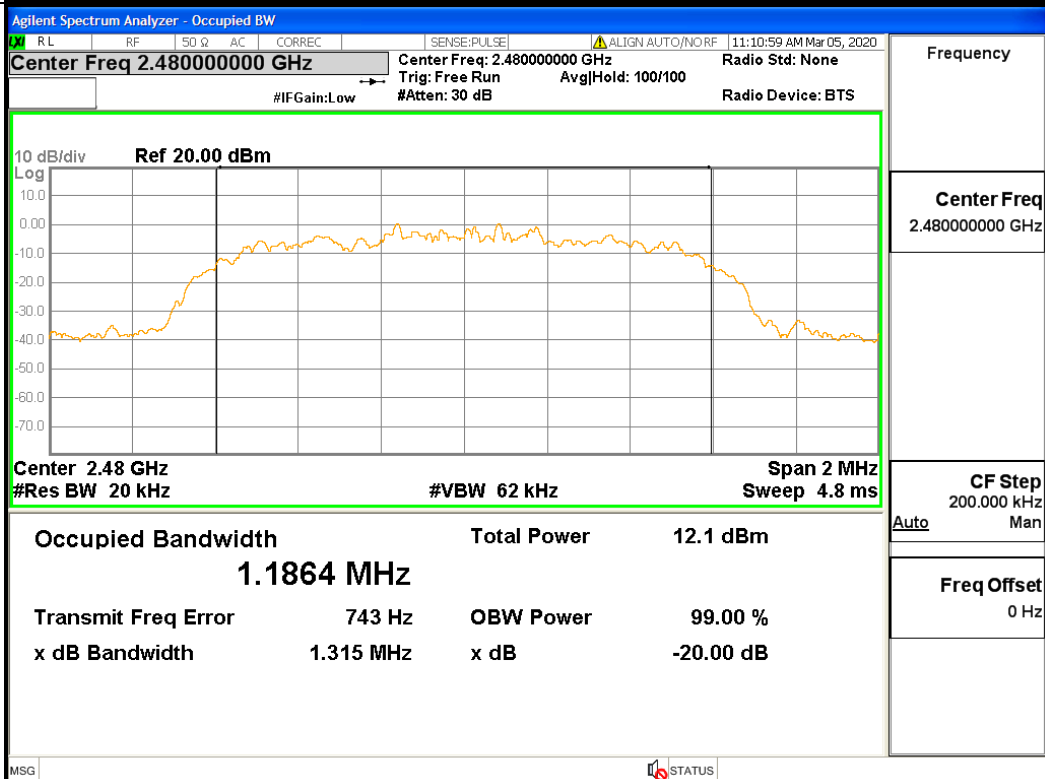
| Mode          | Channel. | 20dB Bandwidth [MHz] | Limit(MHz)    | Verdict |
|---------------|----------|----------------------|---------------|---------|
| GFSK          | LCH      | 0.942                | Not Specified | PASS    |
| GFSK          | MCH      | 0.943                | Not Specified | PASS    |
| GFSK          | HCH      | 0.946                | Not Specified | PASS    |
| $\pi/4$ DQPSK | LCH      | 1.317                | Not Specified | PASS    |
| $\pi/4$ DQPSK | MCH      | 1.311                | Not Specified | PASS    |
| $\pi/4$ DQPSK | HCH      | 1.315                | Not Specified | PASS    |
| 8DPSK         | LCH      | 1.294                | Not Specified | PASS    |
| 8DPSK         | MCH      | 1.301                | Not Specified | PASS    |
| 8DPSK         | HCH      | 1.267                | Not Specified | PASS    |

## Test Graph

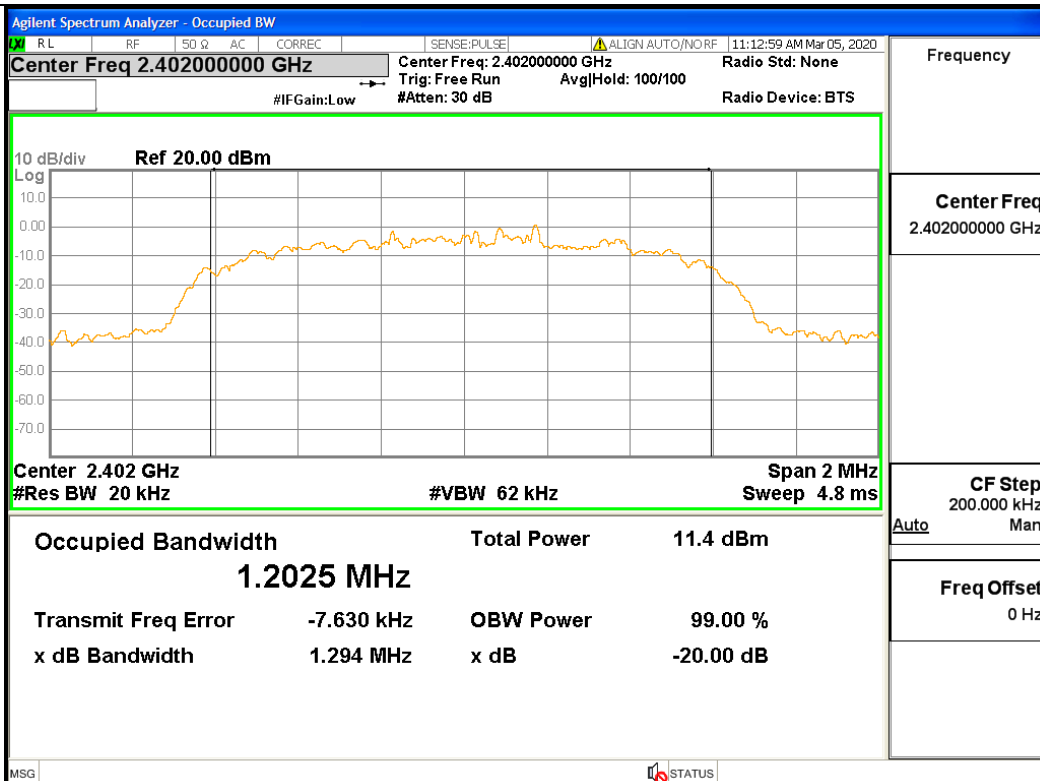
## Graphs



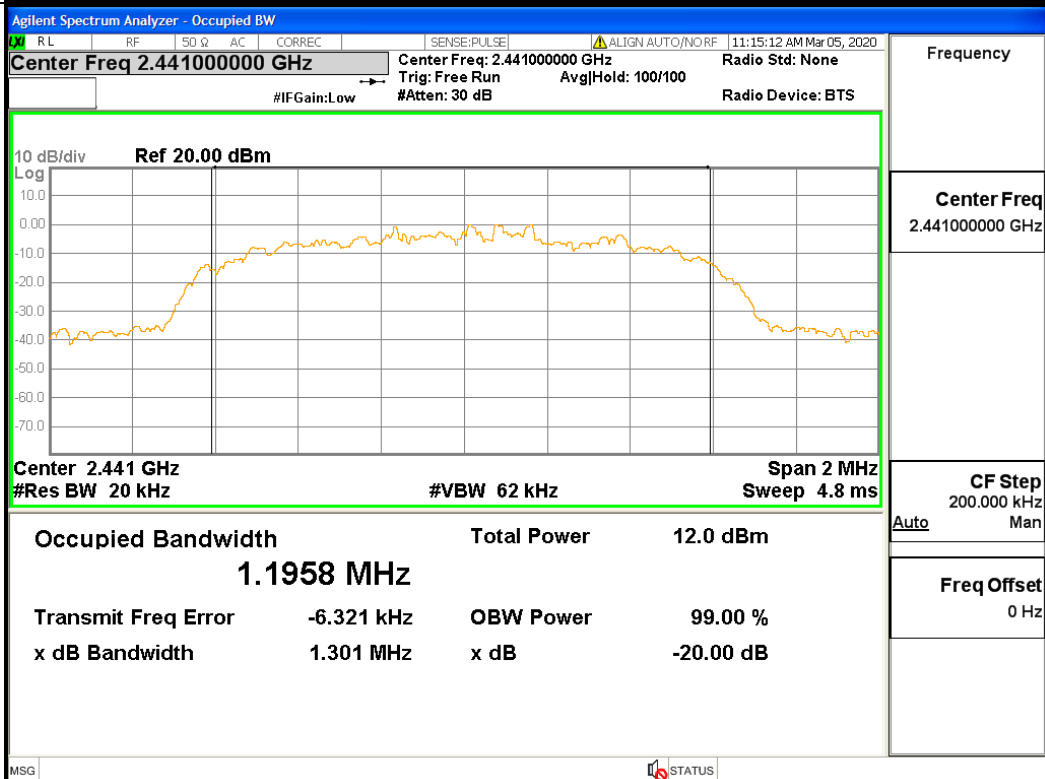


$\pi$ /4DQPSK/MCH $\pi$ /4DQPSK/HCH

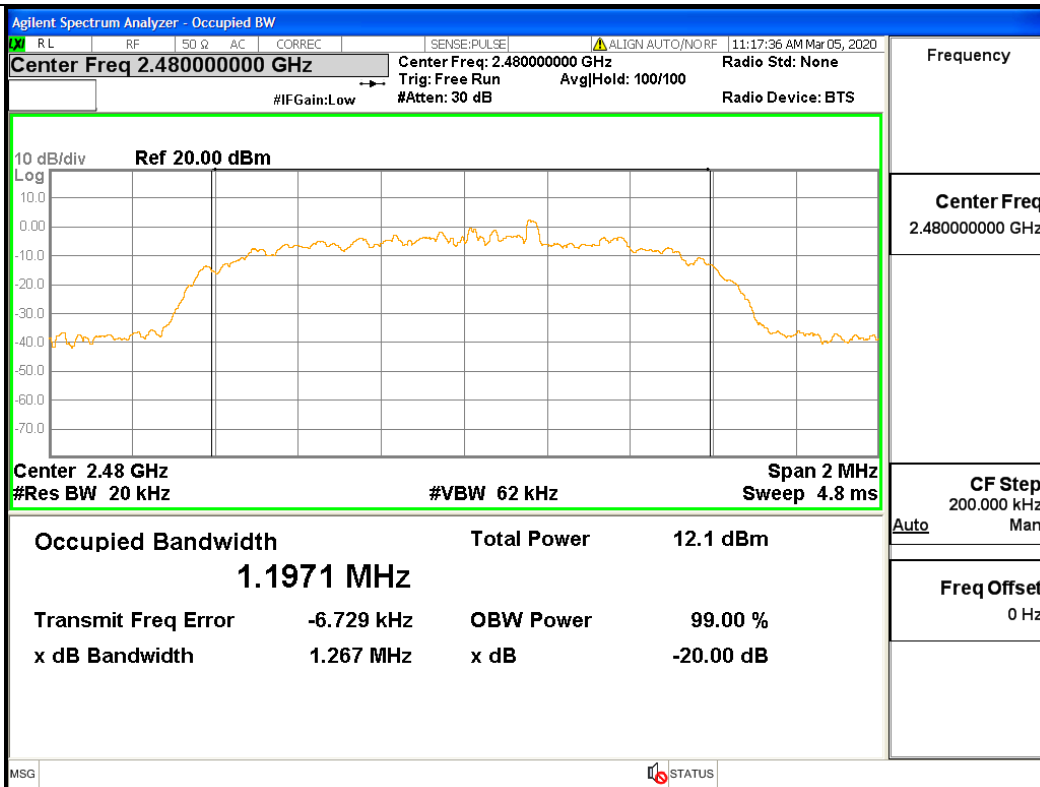
8DPSK/LCH



8DPSK/MCH



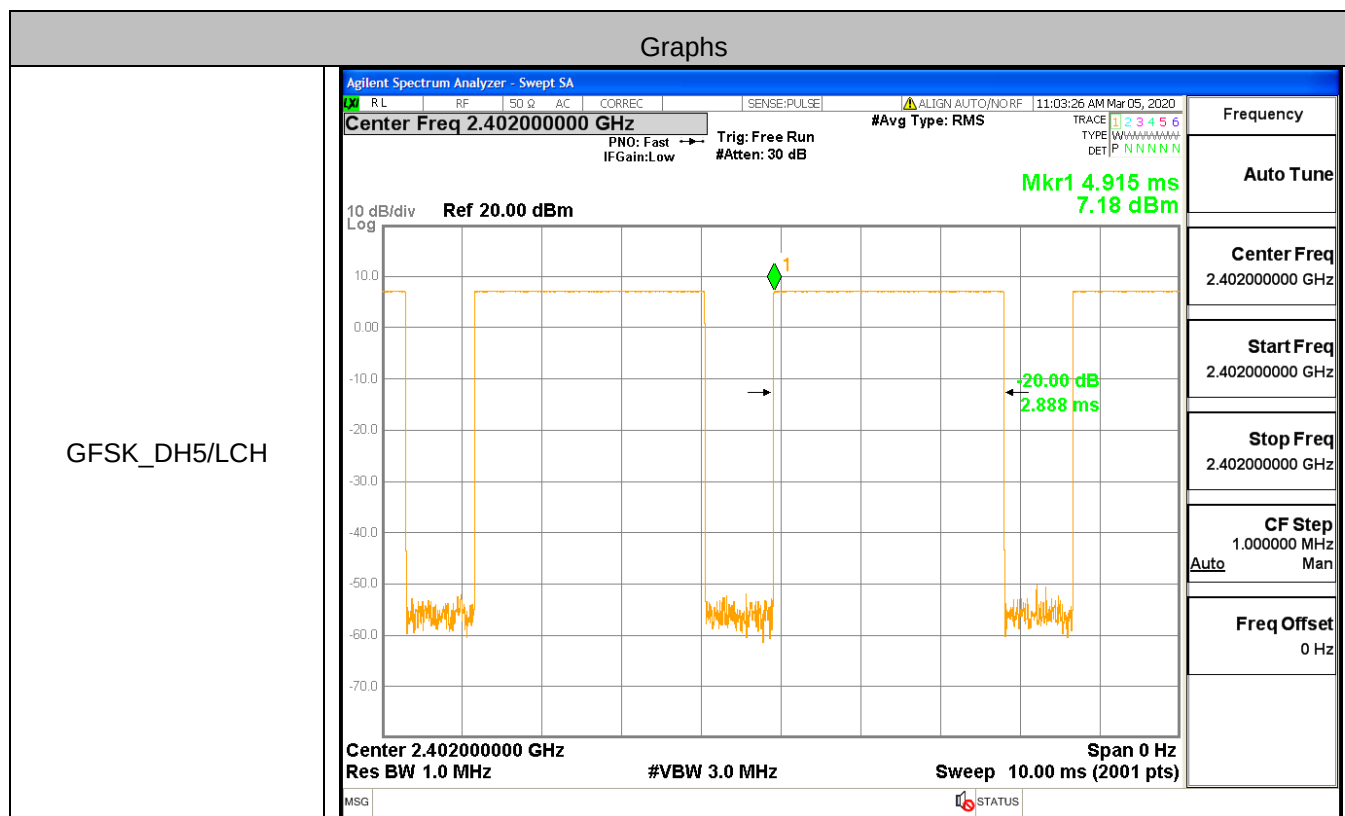
8DPSK/HCH

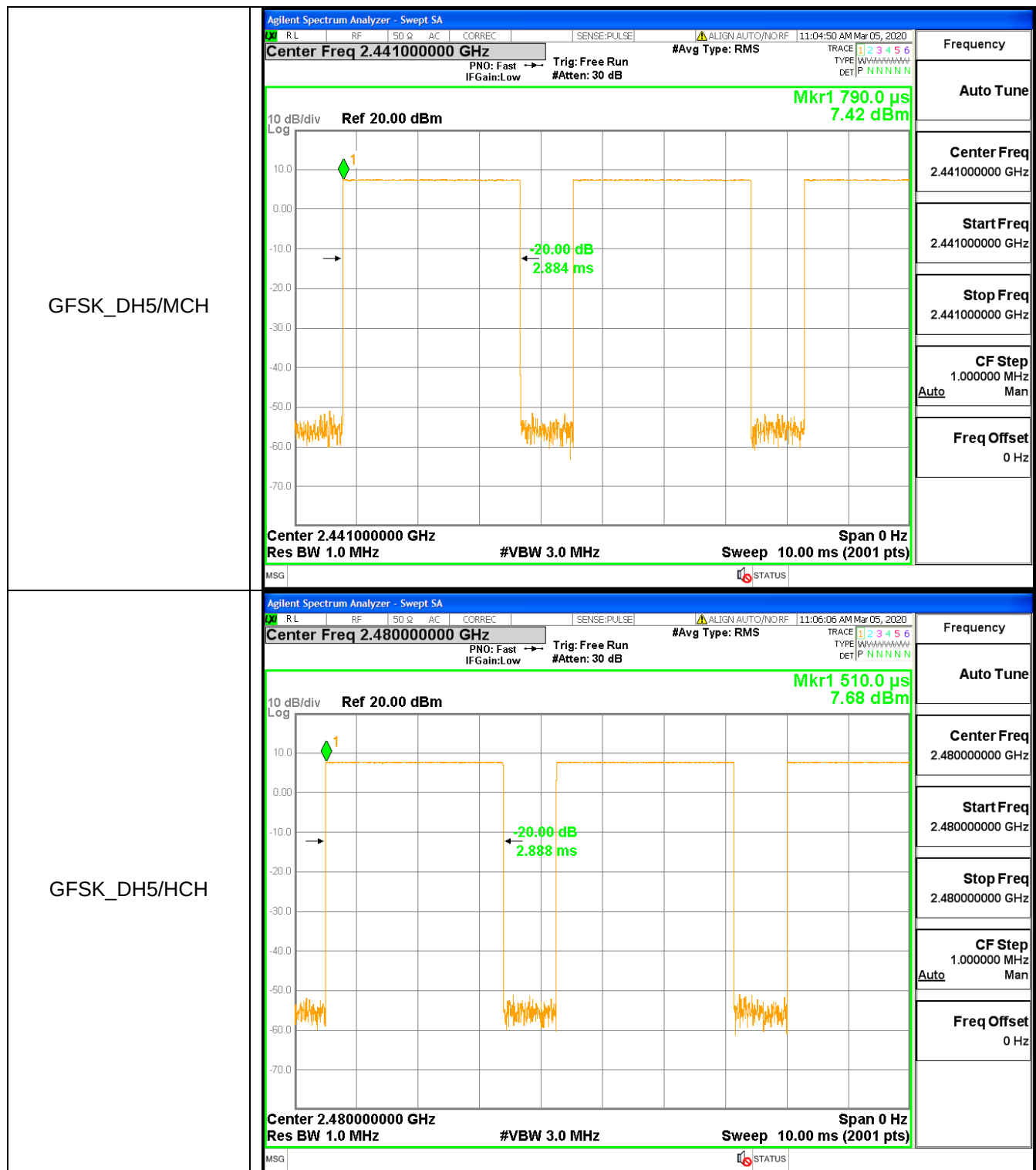


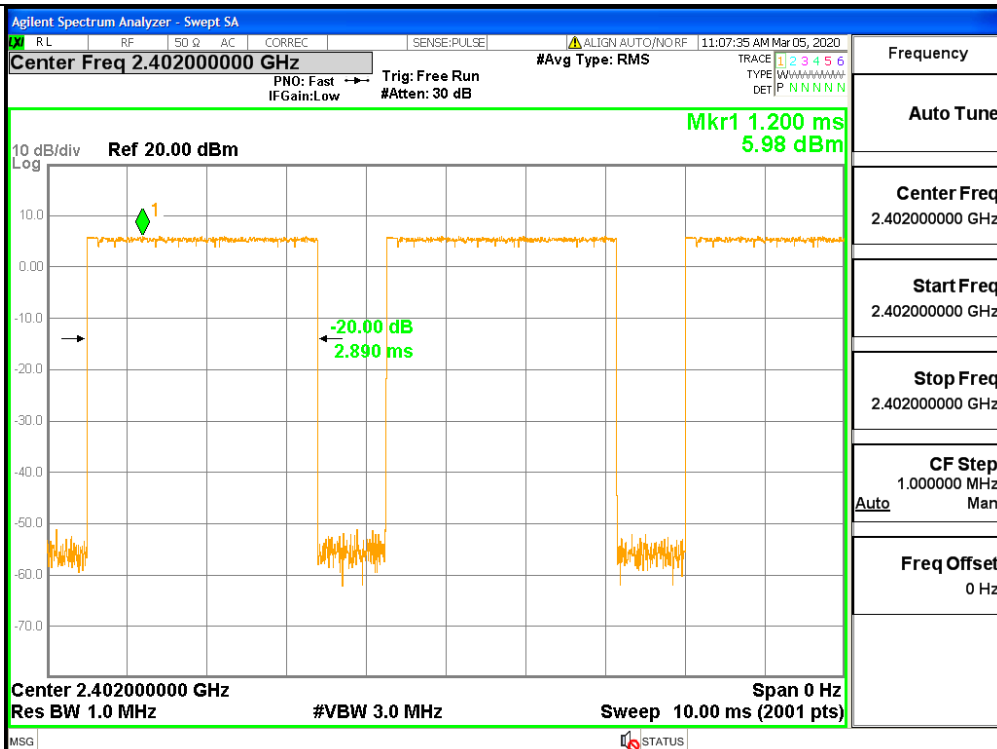
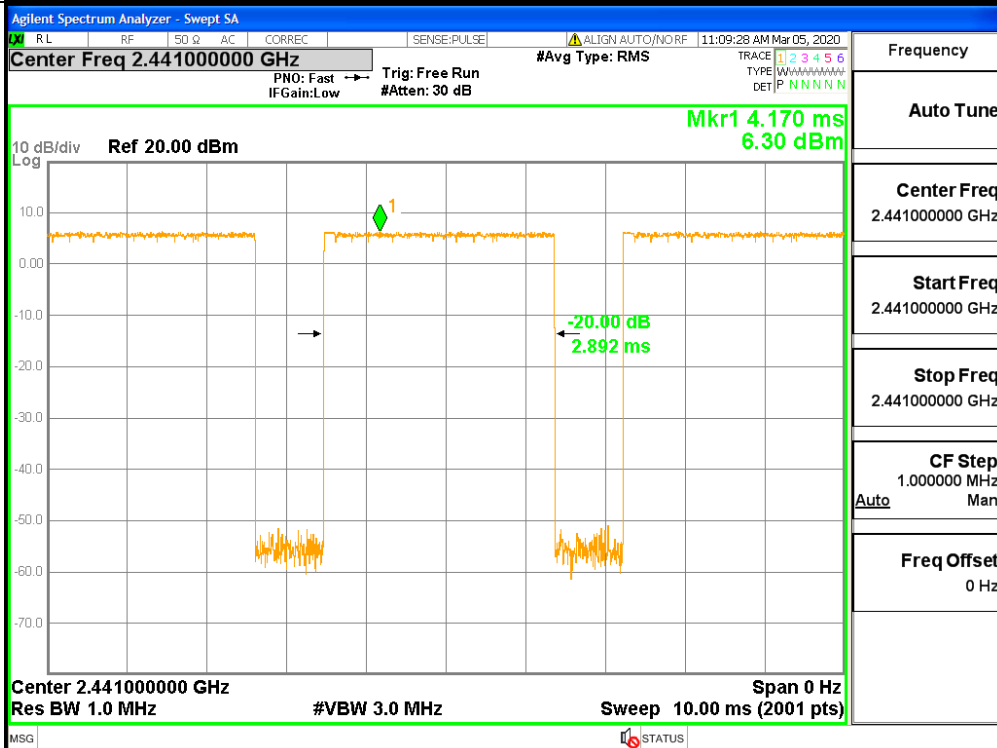
## A.2 Dwell Time

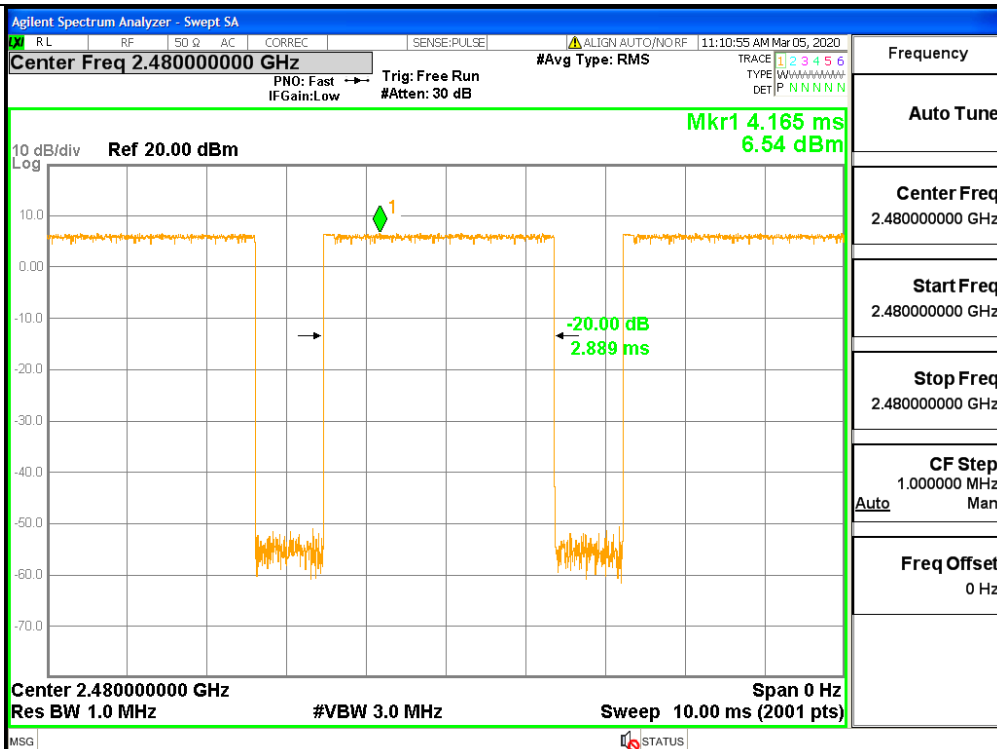
| Mode          | Packet | Channel | Burst Width<br>[ms/hop/ch] | Total<br>Hops[hop*ch] | Dwell<br>Time[s] | Limit [s] | Verdict |
|---------------|--------|---------|----------------------------|-----------------------|------------------|-----------|---------|
| GFSK          | DH5    | LCH     | 2.888                      | 106.7                 | 0.308            | 0.4       | PASS    |
| GFSK          | DH5    | MCH     | 2.884                      | 106.7                 | 0.308            | 0.4       | PASS    |
| GFSK          | DH5    | HCH     | 2.888                      | 106.7                 | 0.308            | 0.4       | PASS    |
| $\pi/4$ DQPSK | 2DH5   | LCH     | 2.890                      | 106.7                 | 0.308            | 0.4       | PASS    |
| $\pi/4$ DQPSK | 2DH5   | MCH     | 2.892                      | 106.7                 | 0.309            | 0.4       | PASS    |
| $\pi/4$ DQPSK | 2DH5   | HCH     | 2.889                      | 106.7                 | 0.308            | 0.4       | PASS    |
| 8DPSK         | 3DH5   | LCH     | 2.892                      | 106.7                 | 0.309            | 0.4       | PASS    |
| 8DPSK         | 3DH5   | MCH     | 2.892                      | 106.7                 | 0.309            | 0.4       | PASS    |
| 8DPSK         | 3DH5   | HCH     | 2.892                      | 106.7                 | 0.309            | 0.4       | PASS    |

Test Graph

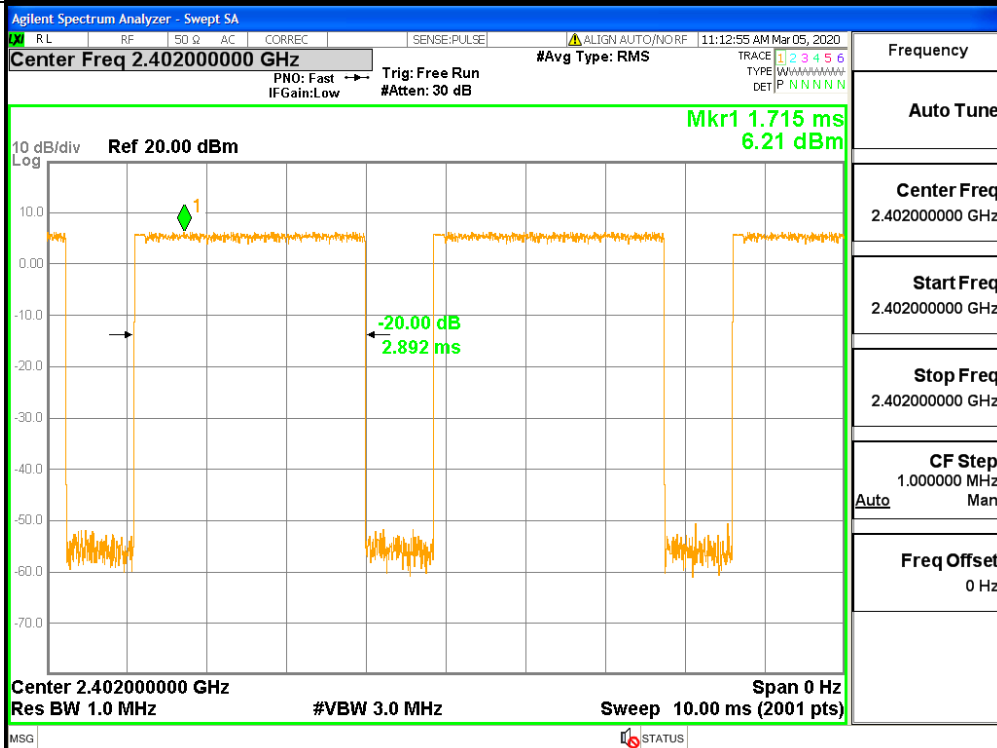




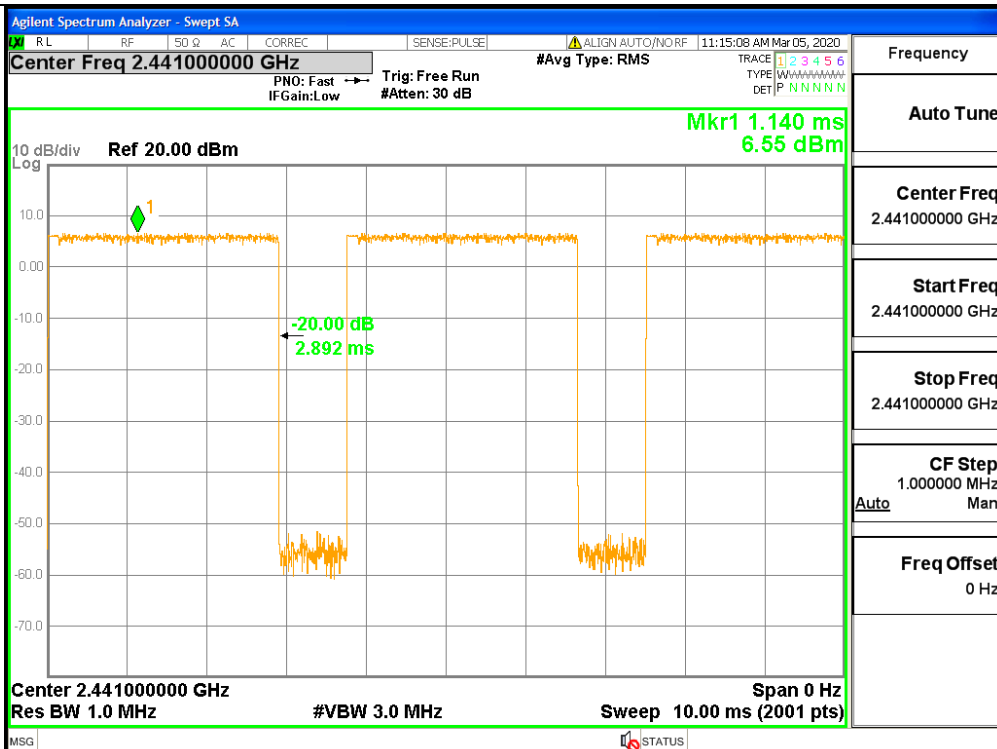
$\pi/4$ DQPSK  
\_2DH5/LCH $\pi/4$ DQPSK  
\_2DH5/MCH

$\pi/4$ DQPSK  
\_2DH5/HCH

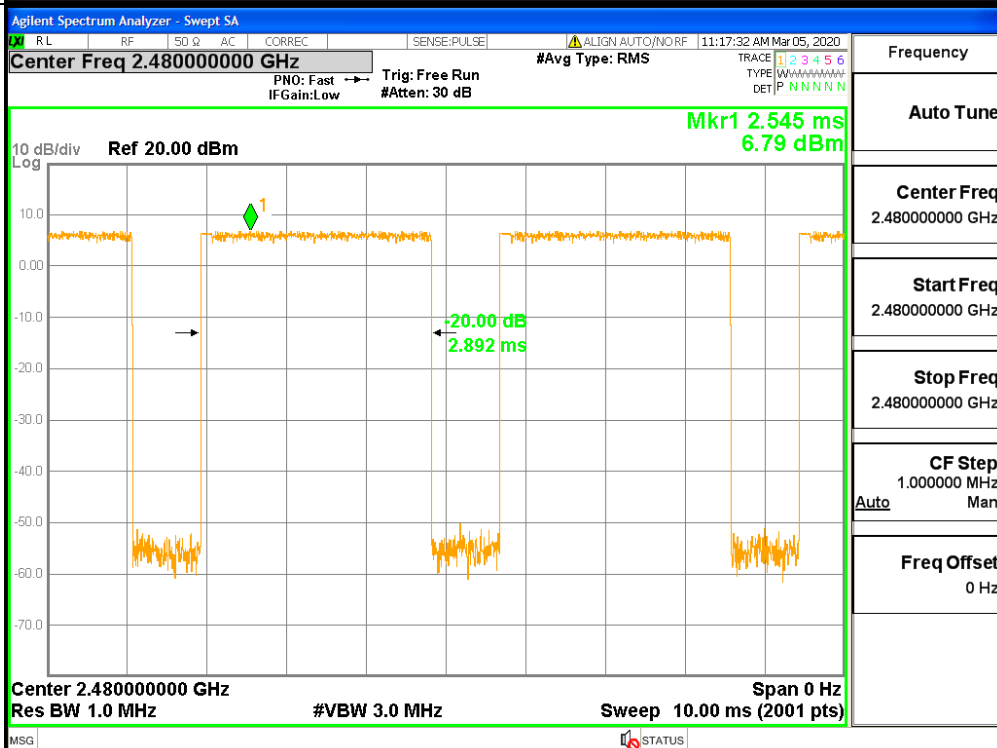
8DPSK\_3DH5/LCH



8DPSK\_3DH5/MCH

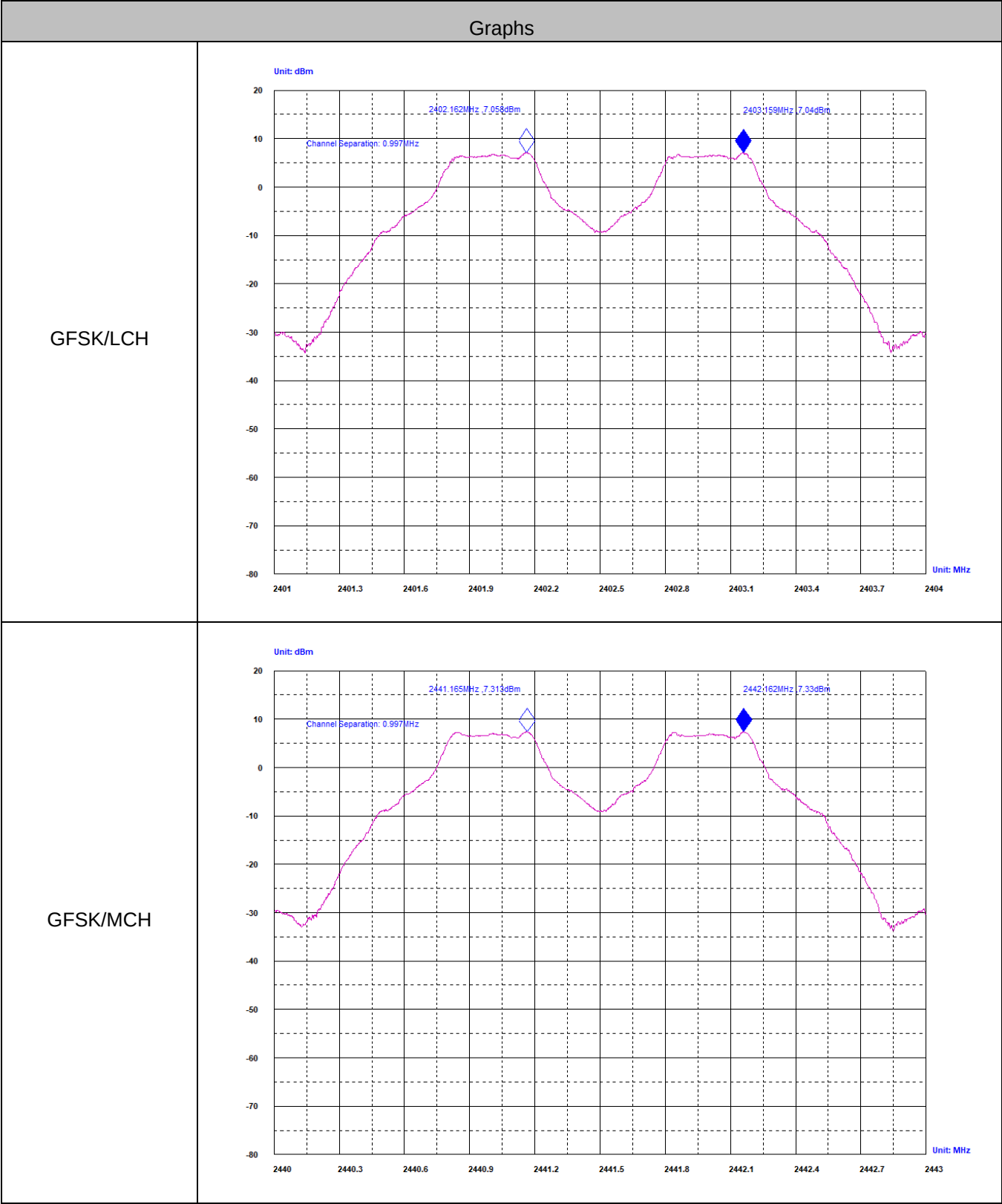


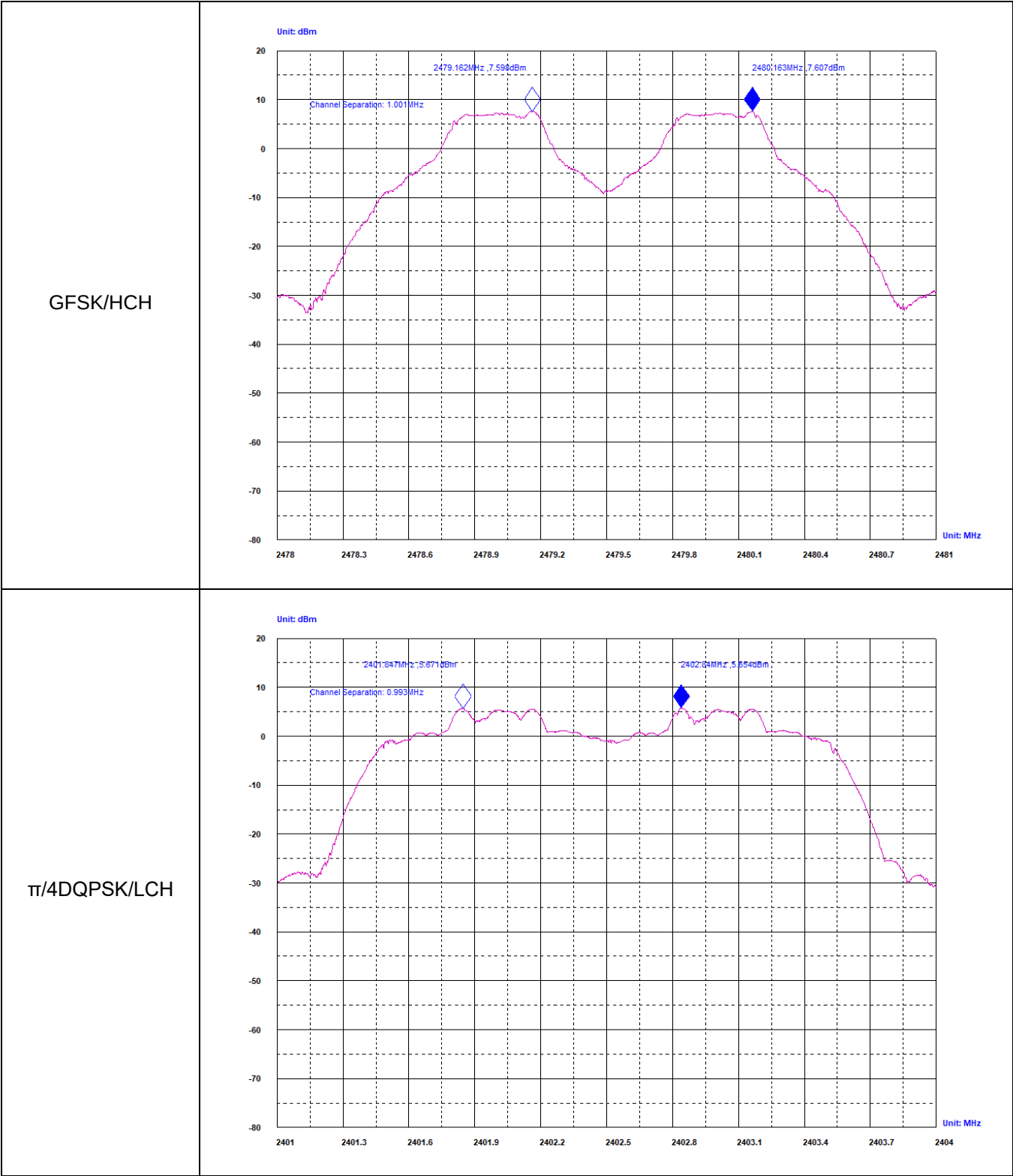
8DPSK\_3DH5/HCH

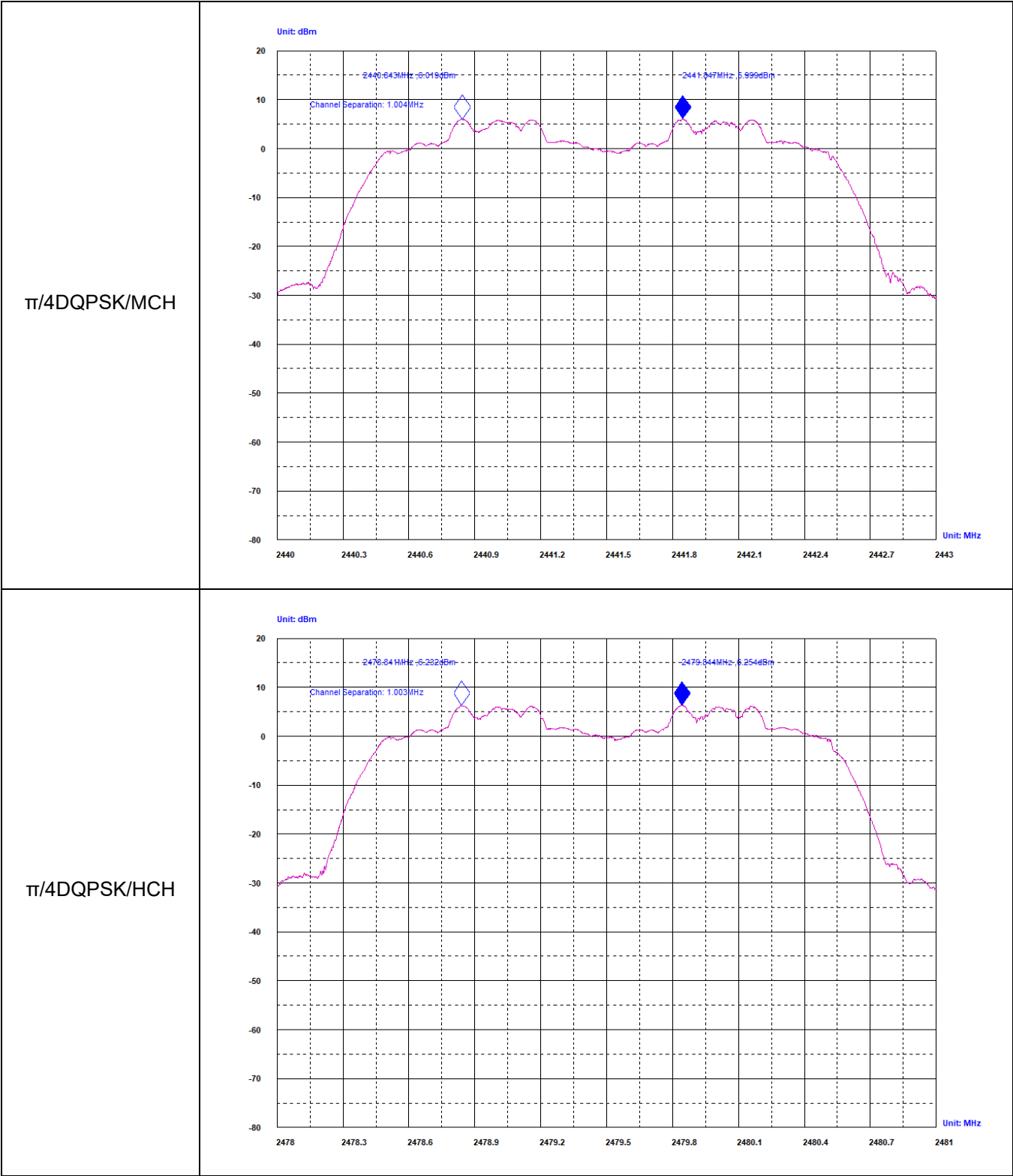


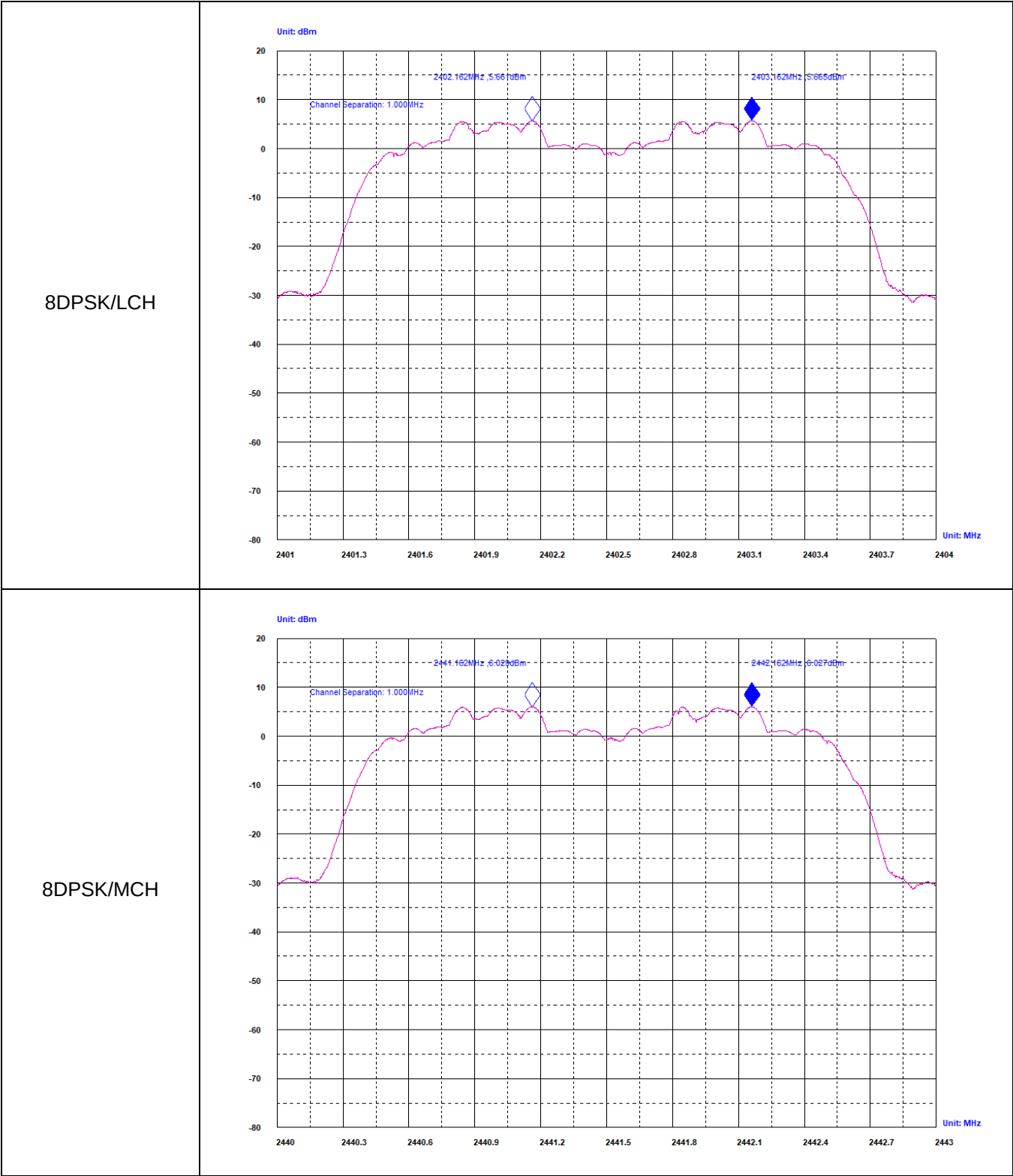
### A.3 Carrier Frequency Separation

| Mode          | Channel. | Carrier Frequency Separation<br>[MHz] | Limit<br>[MHz] | Verdict |
|---------------|----------|---------------------------------------|----------------|---------|
| GFSK          | LCH      | 0.997                                 | 0.627          | PASS    |
| GFSK          | MCH      | 0.997                                 | 0.629          | PASS    |
| GFSK          | HCH      | 1.001                                 | 0.631          | PASS    |
| $\pi/4$ DQPSK | LCH      | 0.993                                 | 0.878          | PASS    |
| $\pi/4$ DQPSK | MCH      | 1.004                                 | 0.874          | PASS    |
| $\pi/4$ DQPSK | HCH      | 1.003                                 | 0.877          | PASS    |
| 8DPSK         | LCH      | 1.000                                 | 0.863          | PASS    |
| 8DPSK         | MCH      | 1.000                                 | 0.867          | PASS    |
| 8DPSK         | HCH      | 0.999                                 | 0.845          | PASS    |

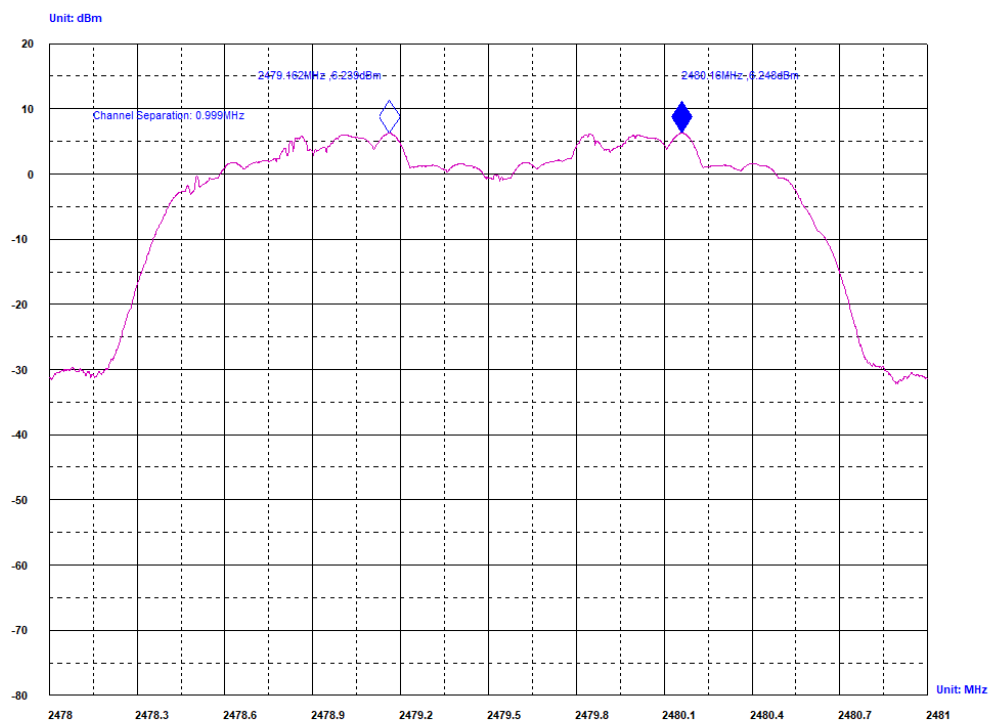








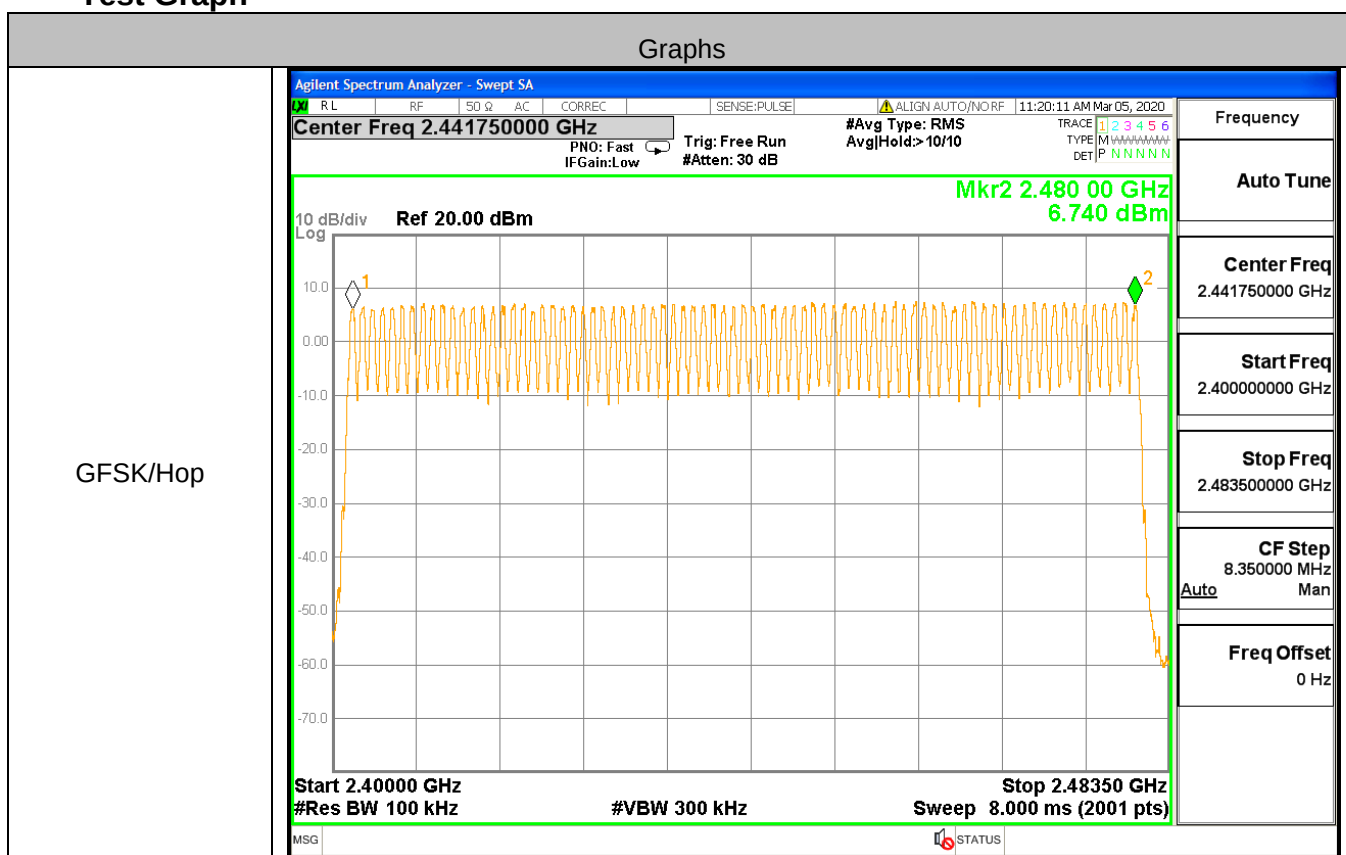
8DPSK/HCH

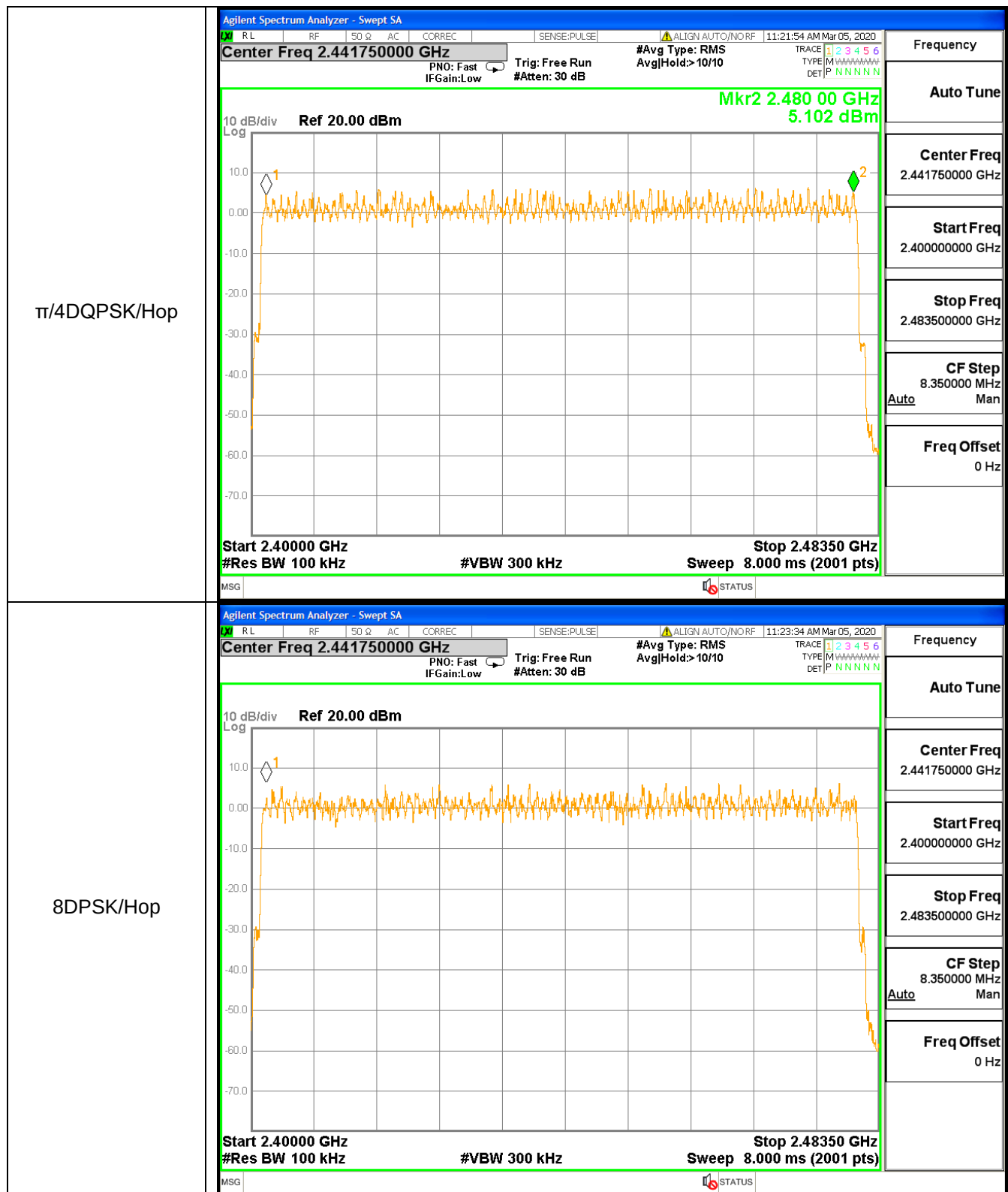


## A.4 Hopping Channel Number

| 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 Graph

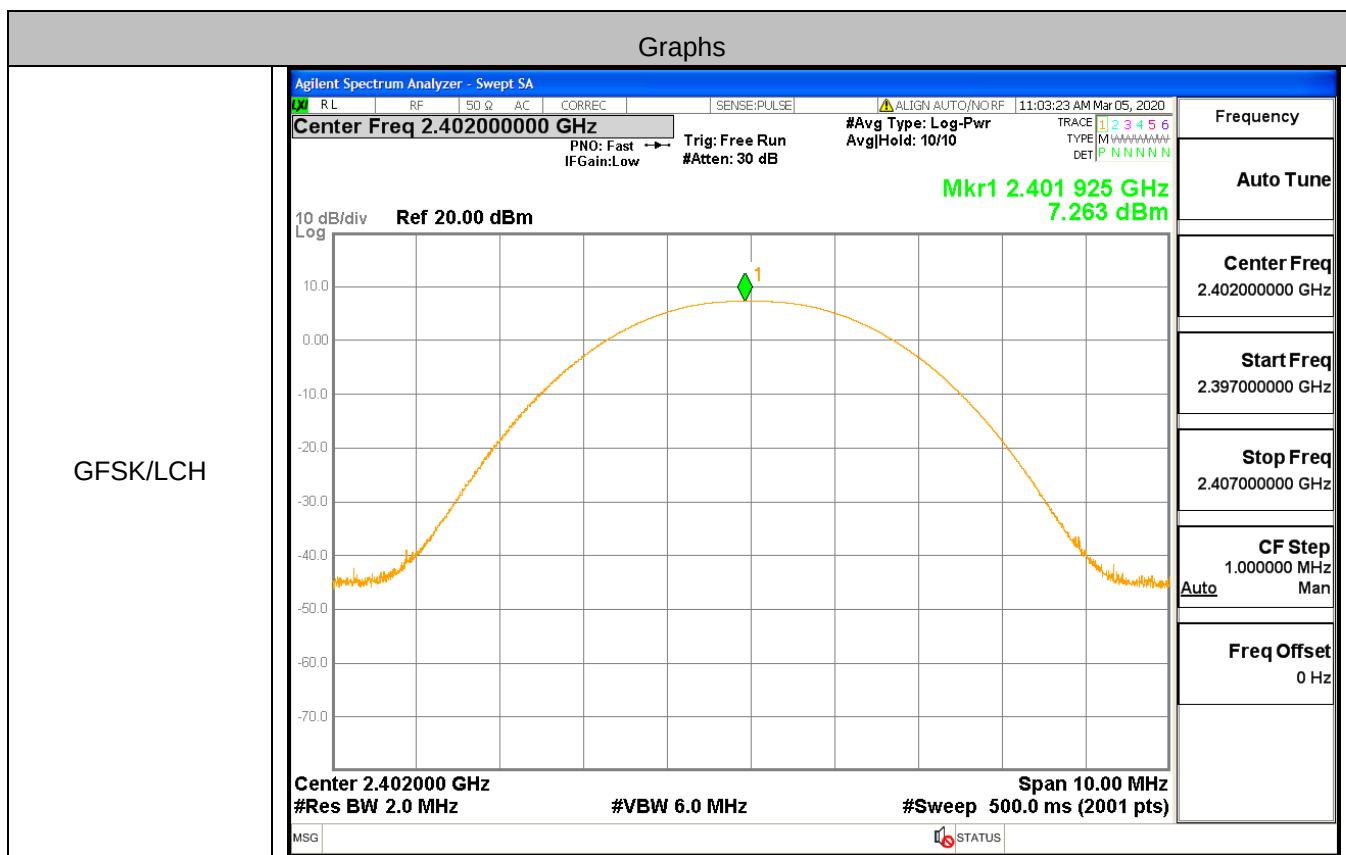


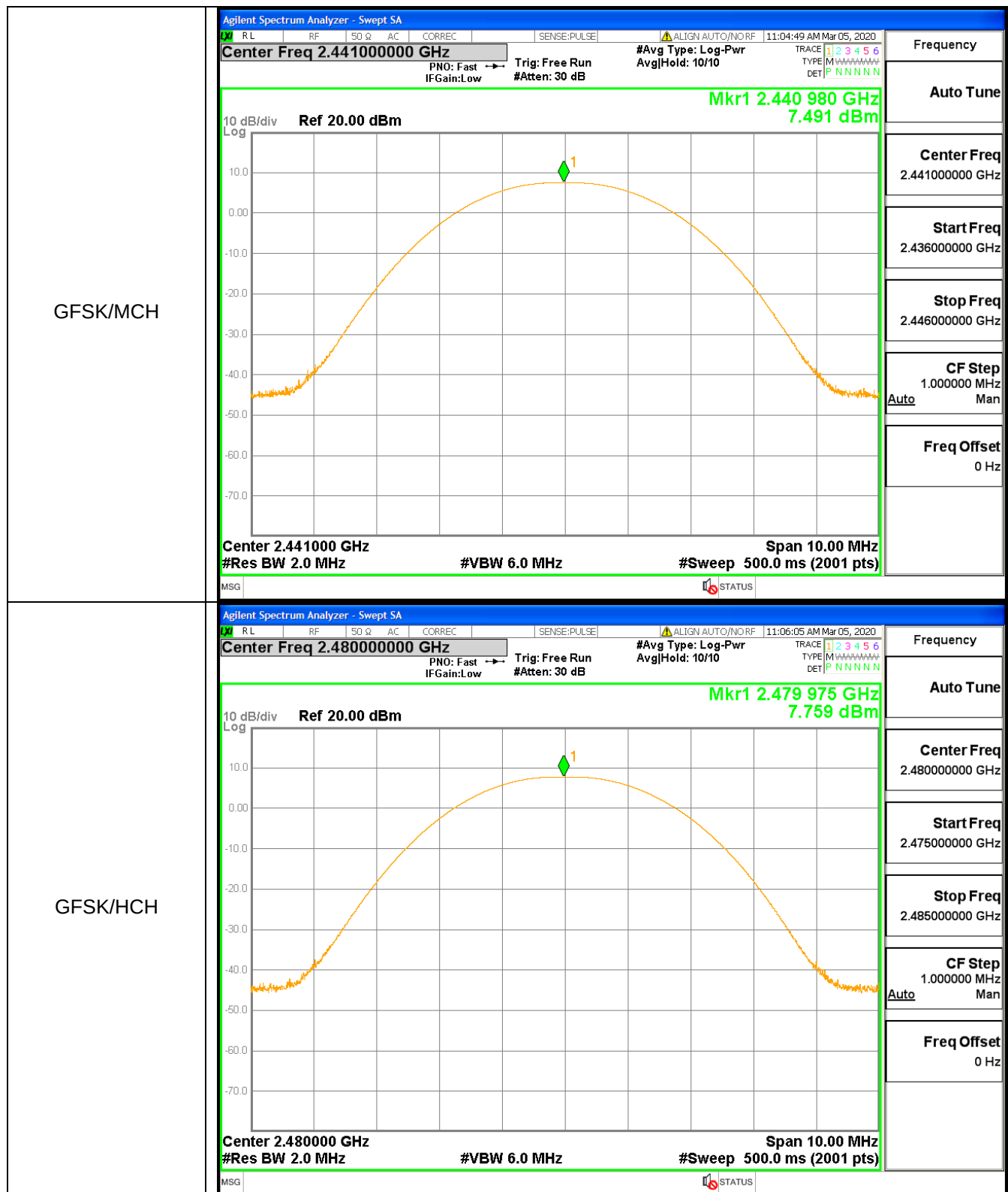


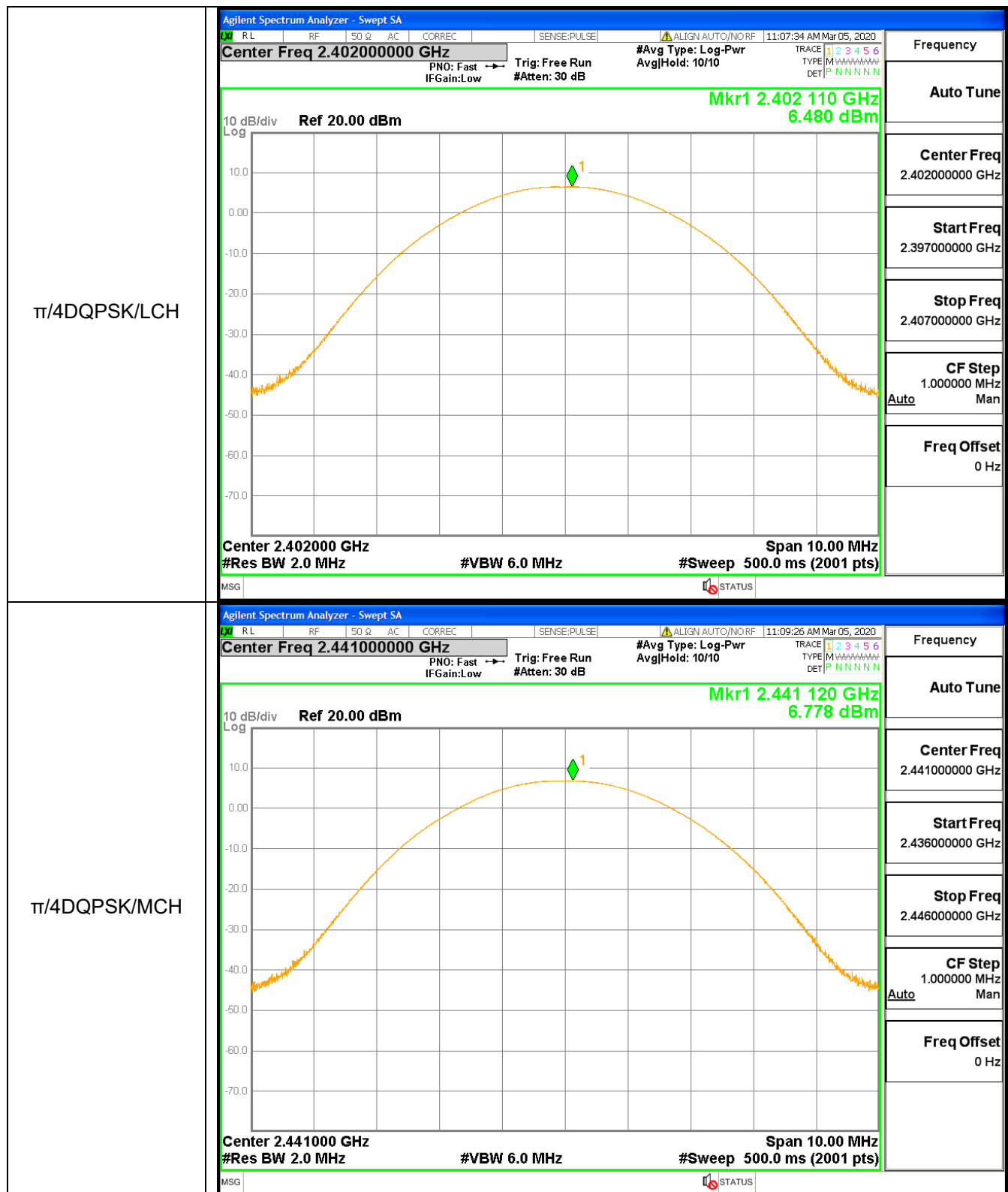
## A.5 Conducted Peak Output Power

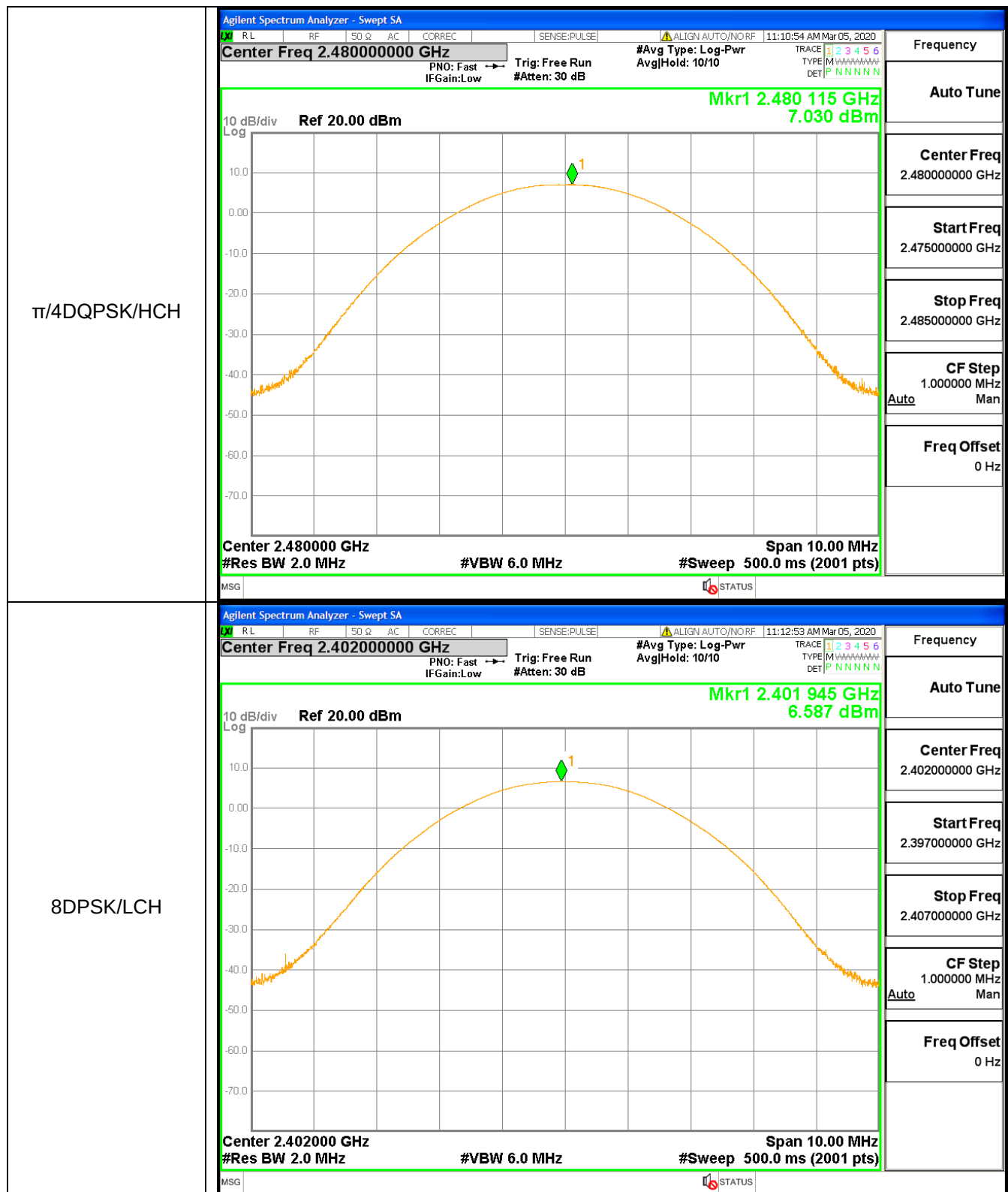
| Mode          | Channel. | Maximum Peak Output Power<br>[dBm] | Limit<br>[dBm] | Verdict |
|---------------|----------|------------------------------------|----------------|---------|
| GFSK          | LCH      | 7.263                              | 21             | PASS    |
| GFSK          | MCH      | 7.491                              | 21             | PASS    |
| GFSK          | HCH      | 7.759                              | 21             | PASS    |
| $\pi/4$ DQPSK | LCH      | 6.480                              | 21             | PASS    |
| $\pi/4$ DQPSK | MCH      | 6.778                              | 21             | PASS    |
| $\pi/4$ DQPSK | HCH      | 7.030                              | 21             | PASS    |
| 8DPSK         | LCH      | 6.587                              | 21             | PASS    |
| 8DPSK         | MCH      | 6.900                              | 21             | PASS    |
| 8DPSK         | HCH      | 7.156                              | 21             | PASS    |

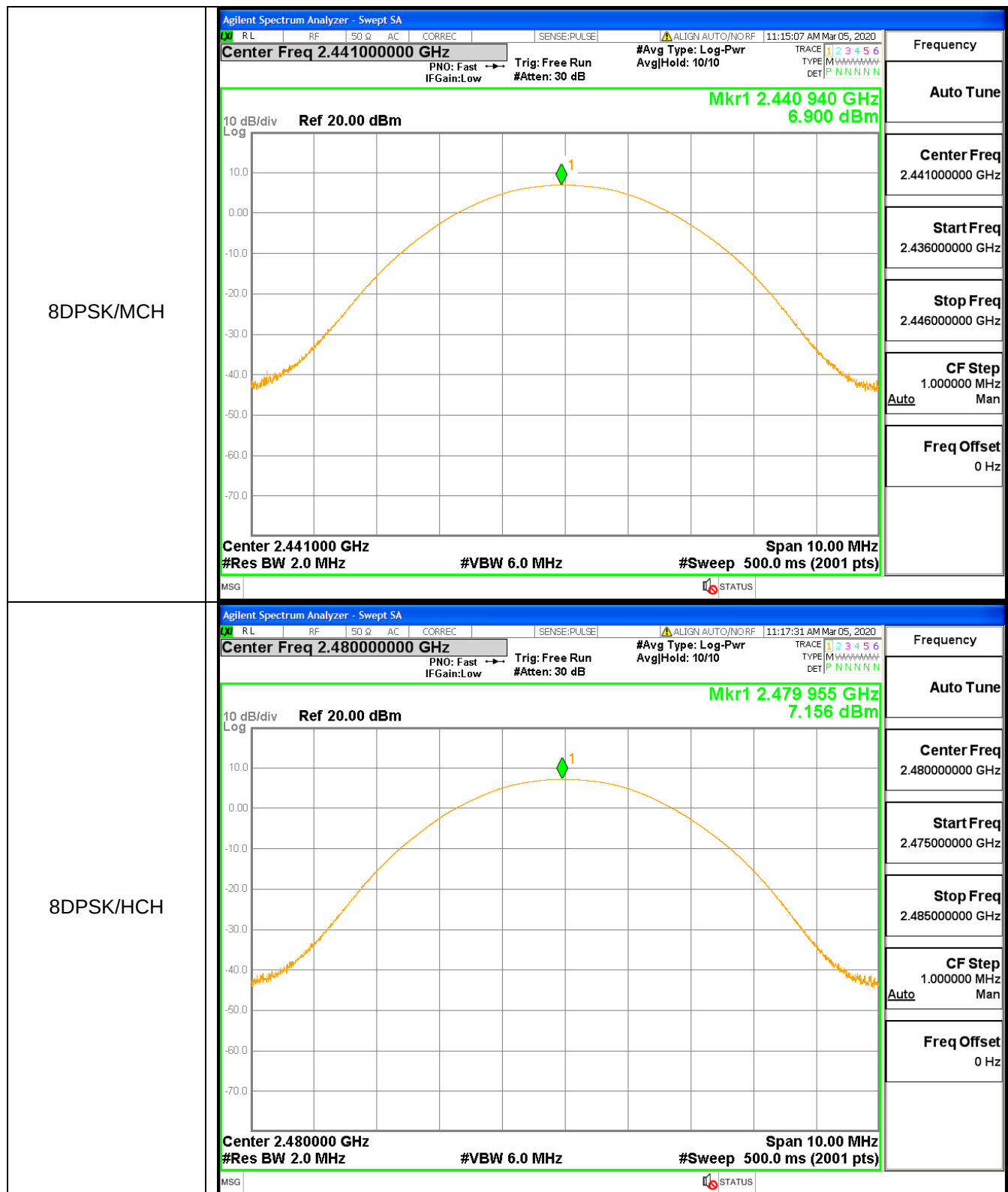
## Test Graph











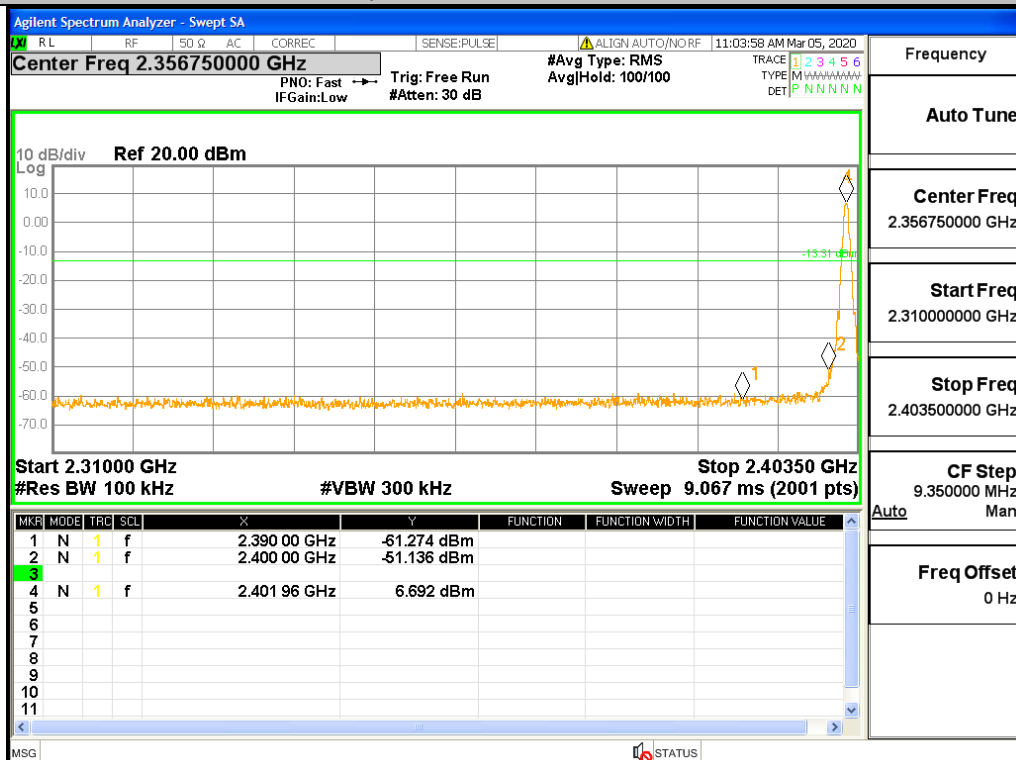
**A.6 Band-edge for RF Conducted Emissions**

| Type         | Carrier Frequency(MHz) | Frequency(MHz) | Carrier Frequency Power [dBm] | Bandedge Peak(dBm) | Upper limit(dBm) | Conclusion |
|--------------|------------------------|----------------|-------------------------------|--------------------|------------------|------------|
| 1DH5         | 2402                   | 2400           | 6.692                         | -51.14             | -13.308          | Pass       |
| 1DH5         | 2480                   | 2483.832       | 7.354                         | -56.186            | -12.646          | Pass       |
| 2DH5         | 2402                   | 2400           | 2.588                         | -51.47             | -17.412          | Pass       |
| 2DH5         | 2480                   | 2483.5         | 5.933                         | -57.79             | -14.067          | Pass       |
| 3DH5         | 2402                   | 2400           | 3.815                         | -53.32             | -16.185          | Pass       |
| 3DH5         | 2480                   | 2483.5         | 4.494                         | -58.82             | -15.506          | Pass       |
| 1DH5-Hopping | 2402                   | 2399.73        | 6.915                         | -54.66             | -13.085          | Pass       |
| 1DH5-Hopping | 2480                   | 2483.5         | 7.46                          | -60.2              | -12.54           | Pass       |
| 2DH5-Hopping | 2402                   | 2400           | 5.283                         | -51.73             | -14.717          | Pass       |
| 2DH5-Hopping | 2480                   | 2483.5         | 6.194                         | -60.74             | -13.806          | Pass       |
| 3DH5-Hopping | 2402                   | 2400           | 5.576                         | -55.27             | -14.424          | Pass       |
| 3DH5-Hopping | 2480                   | 2483.5         | 6.165                         | -58.15             | -13.835          | Pass       |

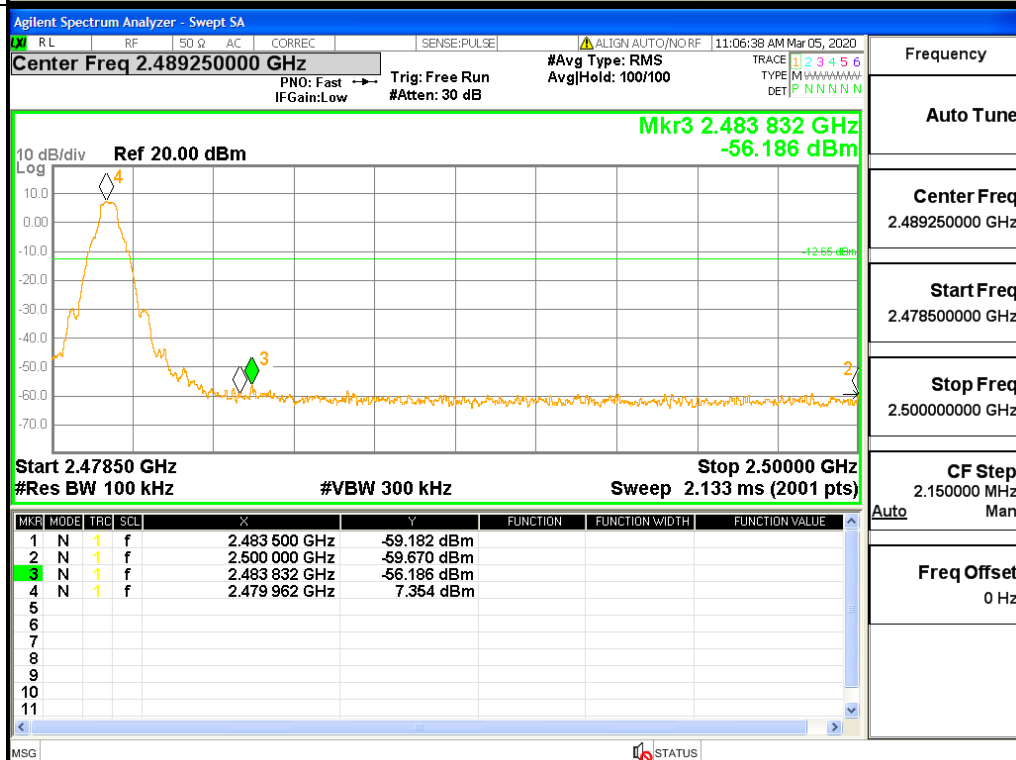
## Test Graph

## Graphs

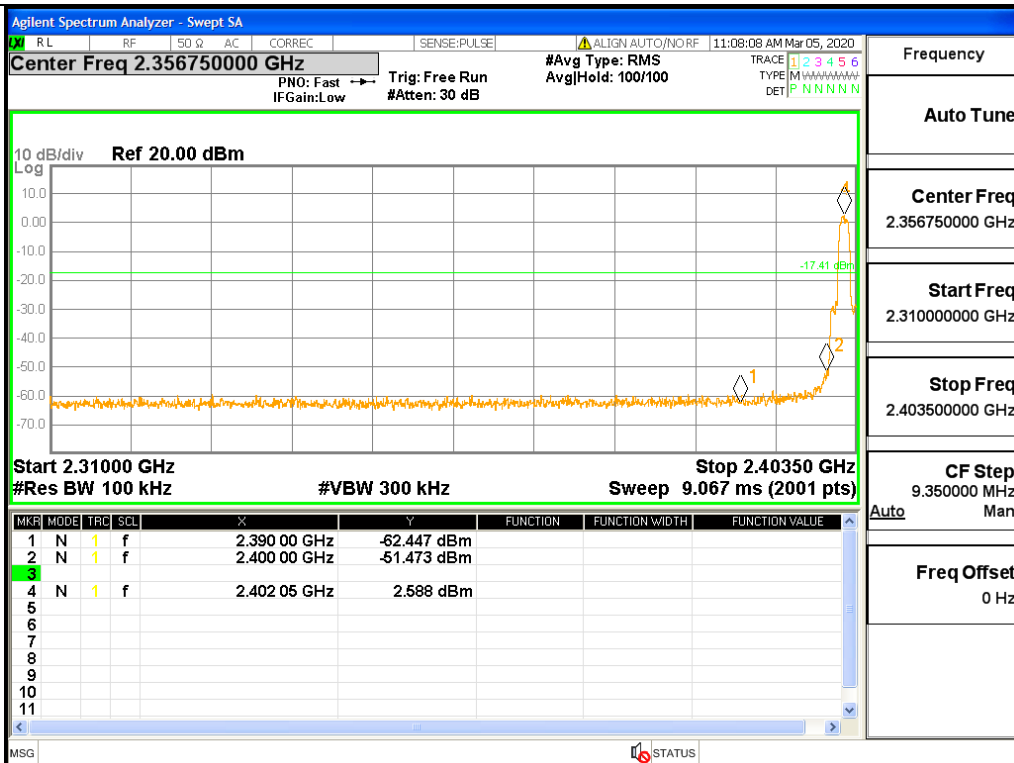
GFSK/LCH/No Hop



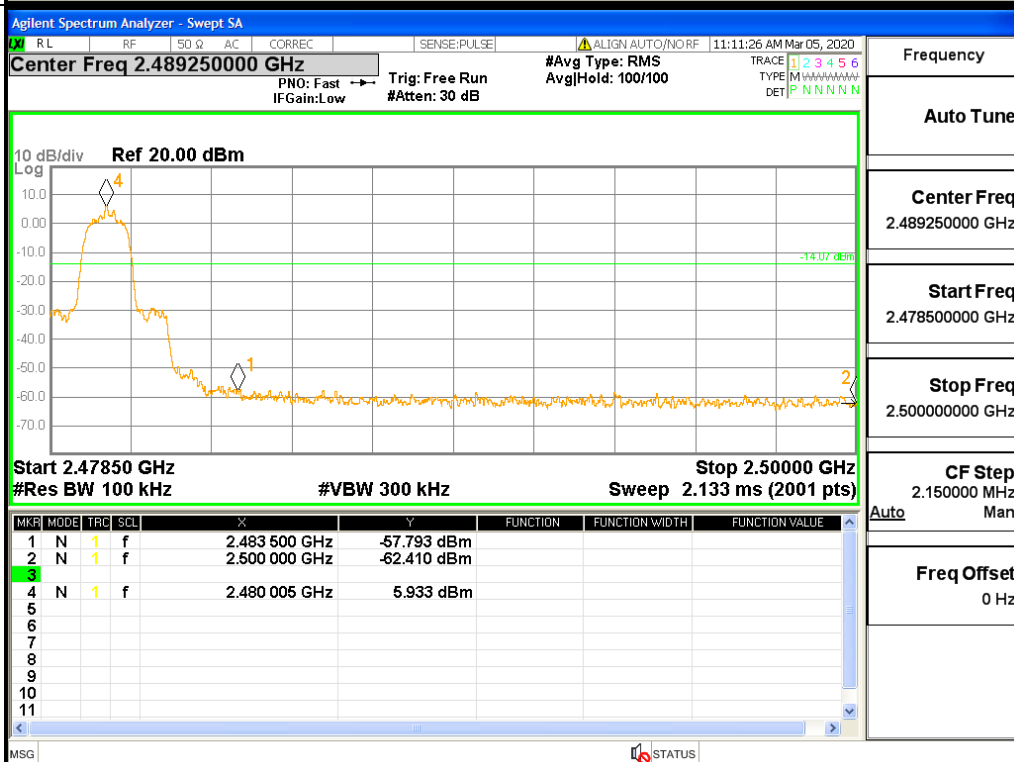
GFSK/HCH/No Hop



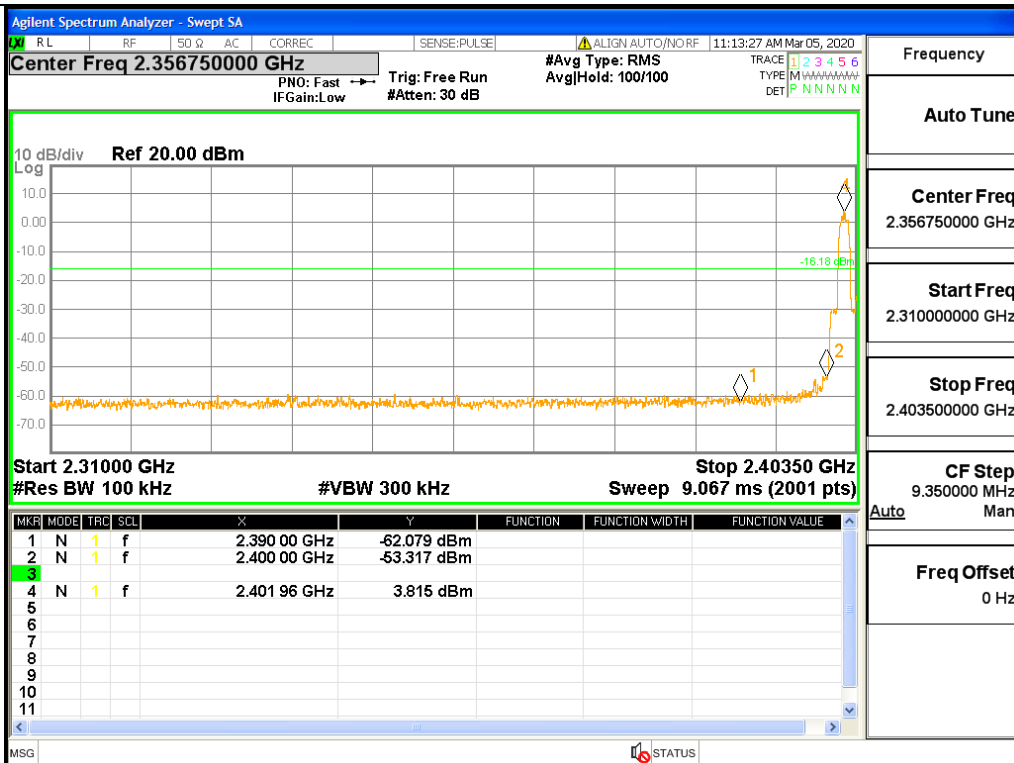
$\pi/4$ DQPSK/LCH/No  
Hop



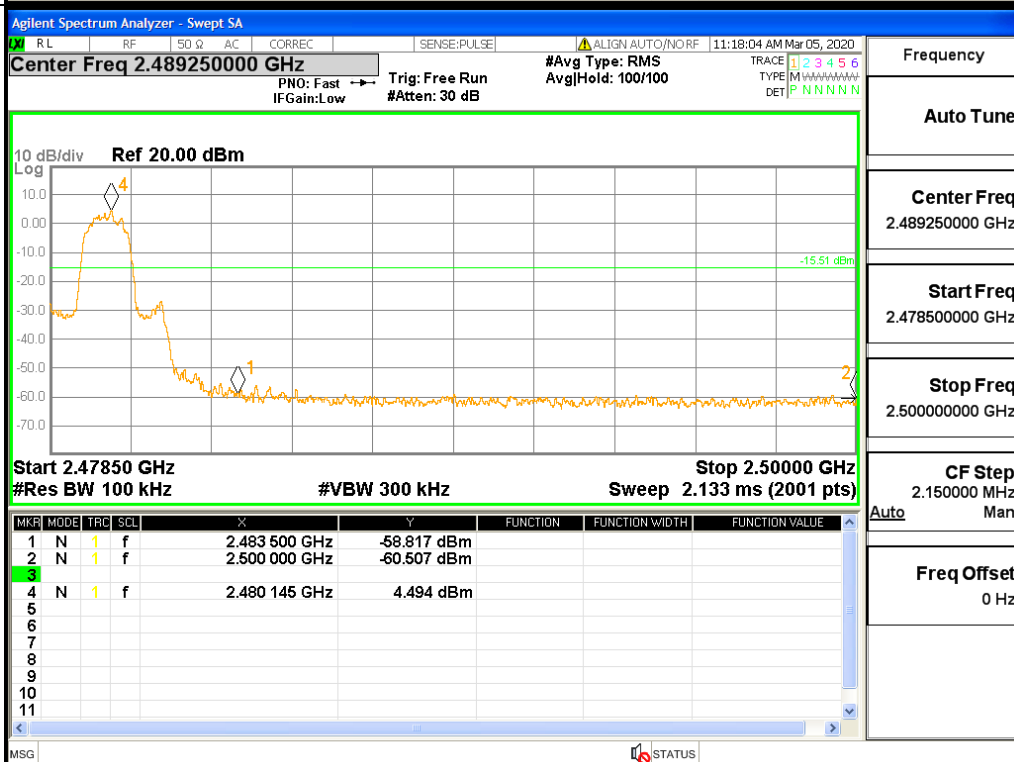
$\pi/4$ DQPSK/HCH/No  
Hop



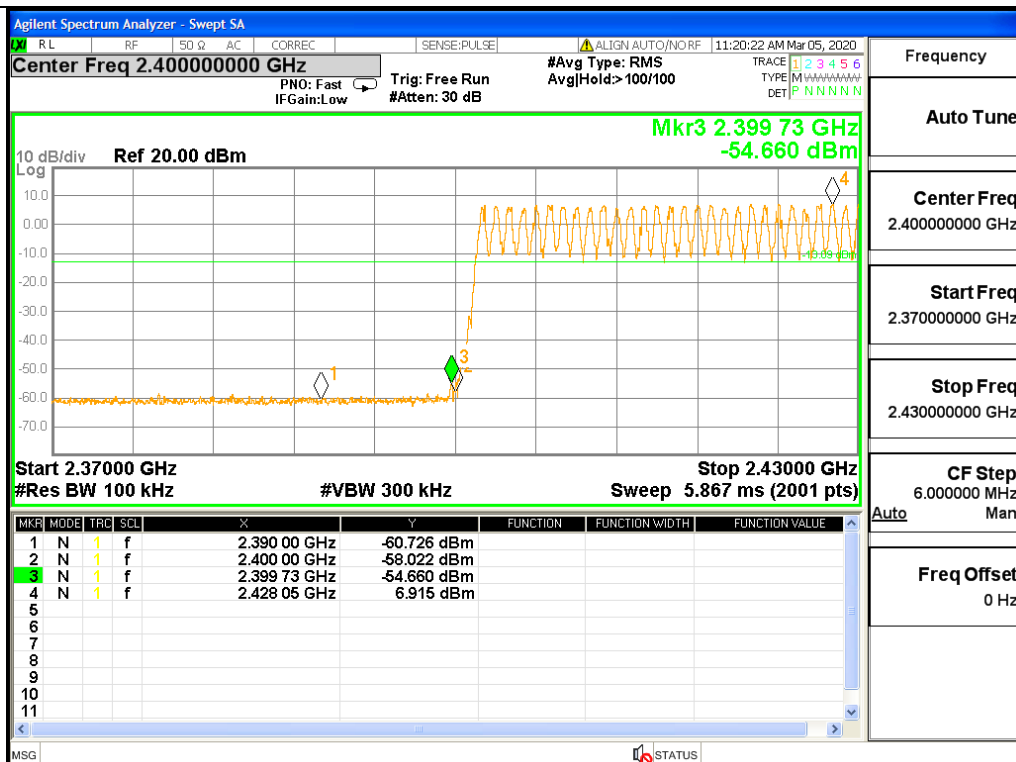
8DPSK/LCH/No Hop



8DPSK/HCH/No Hop

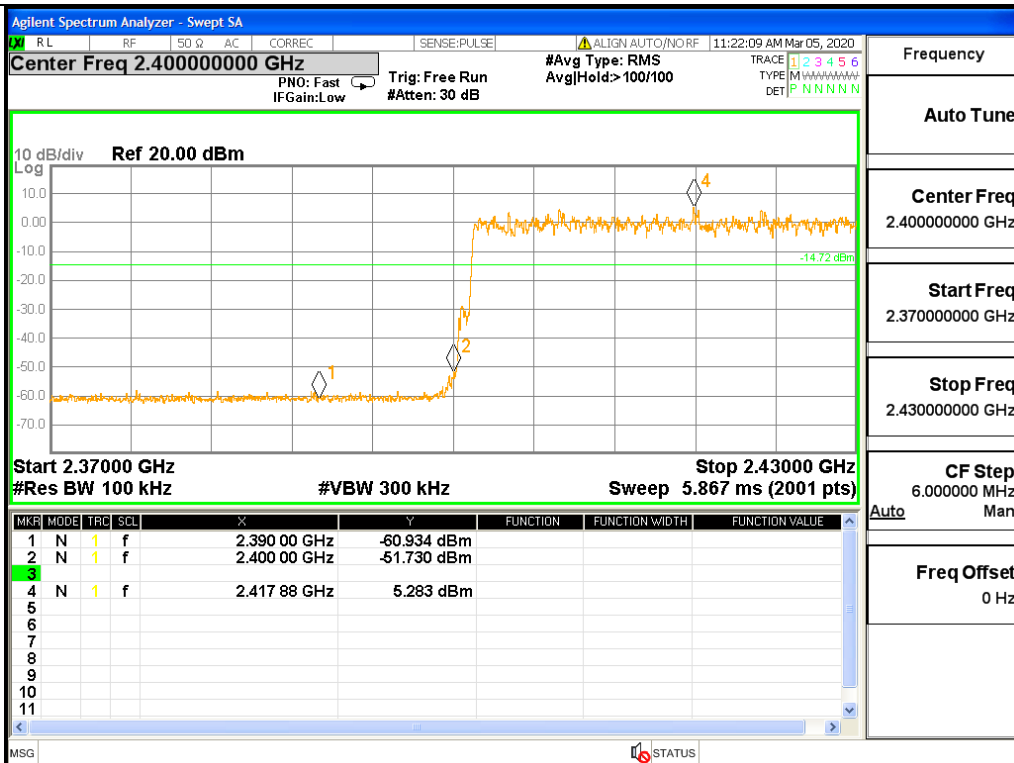
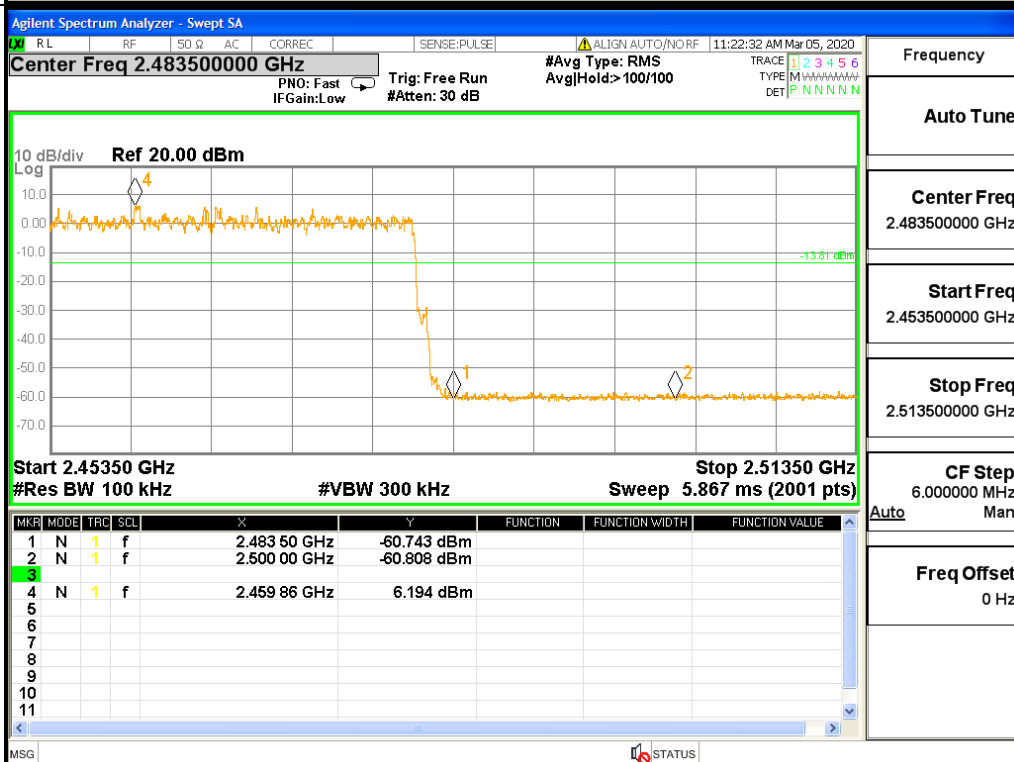


GFSK/LCH/Hop

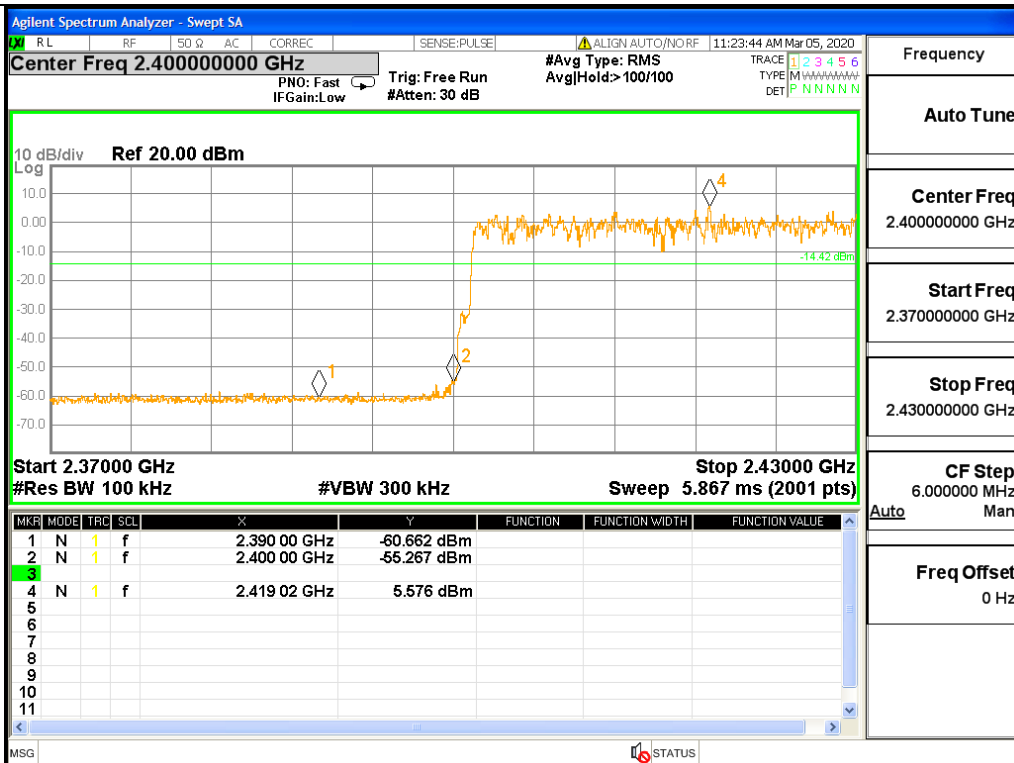


GFSK/HCH/Hop

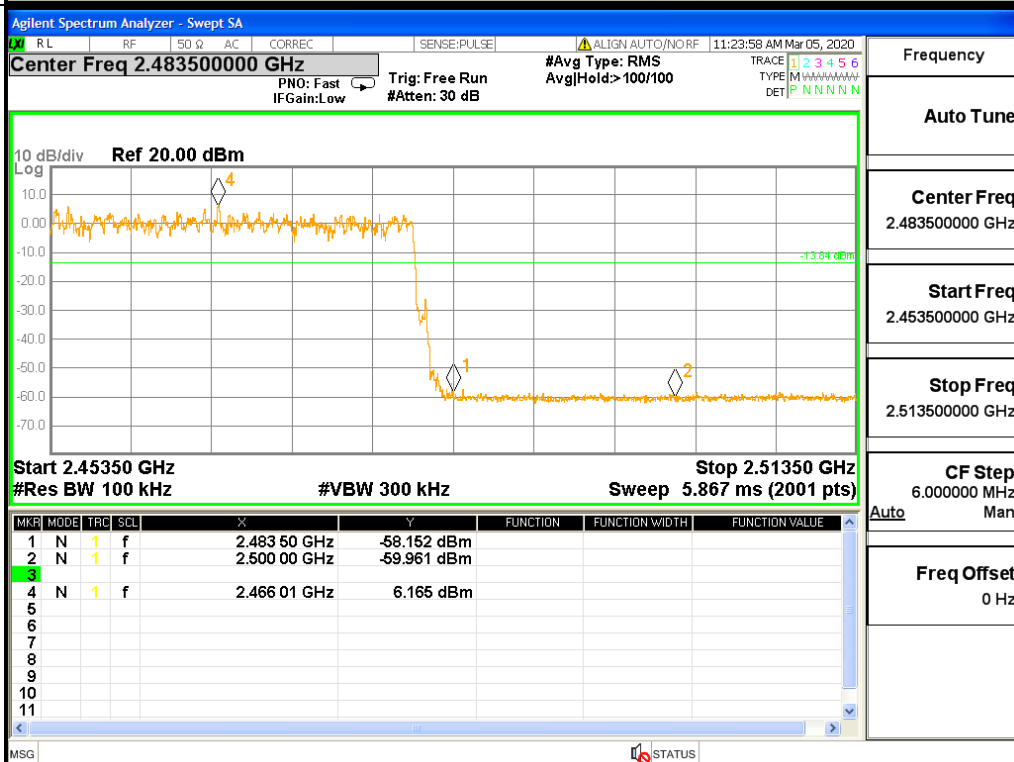


$\pi/4$ DQPSK/LCH/Hop $\pi/4$ DQPSK/HCH/Hop

8DPSK/LCH/Hop

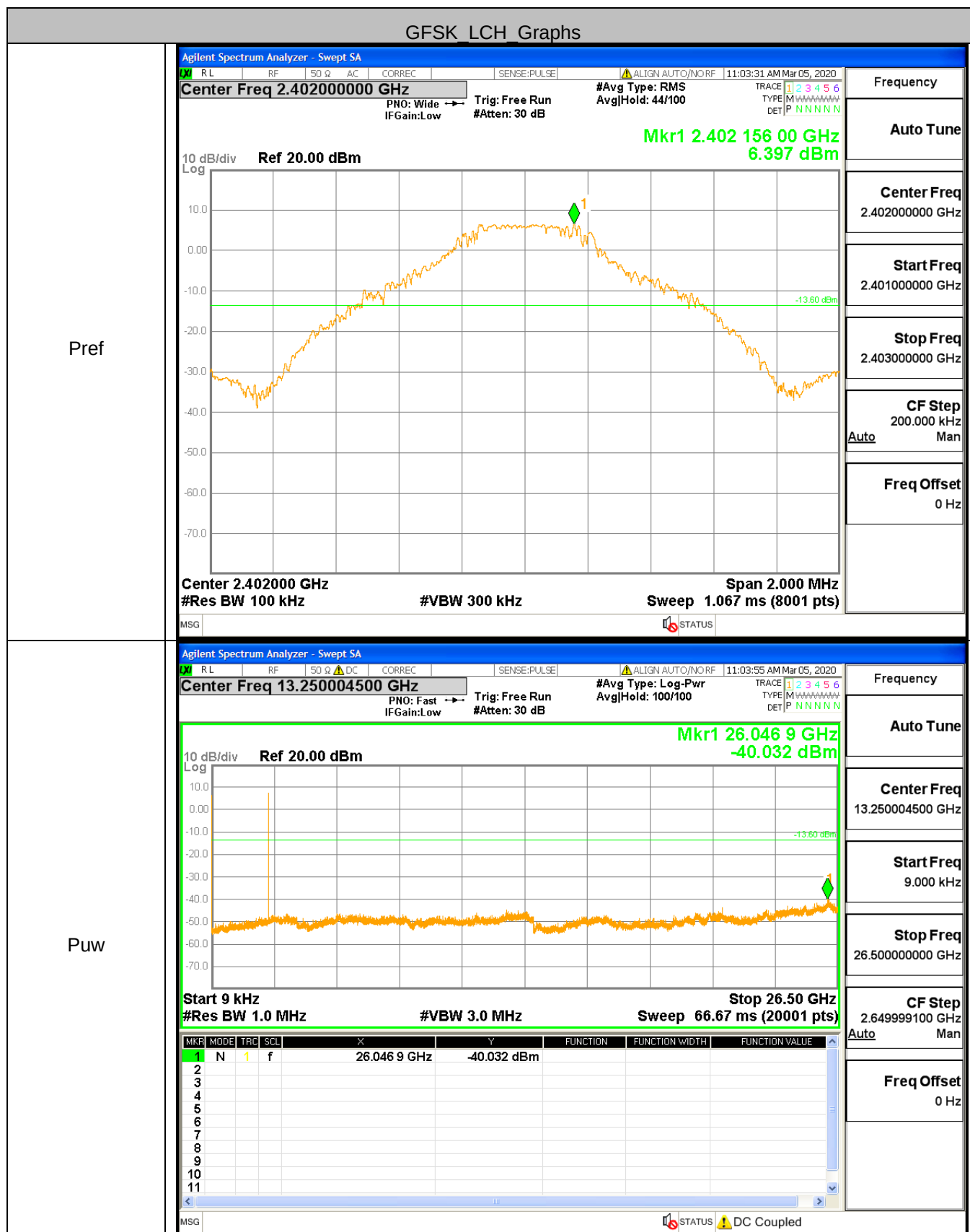


8DPSK/HCH/Hop



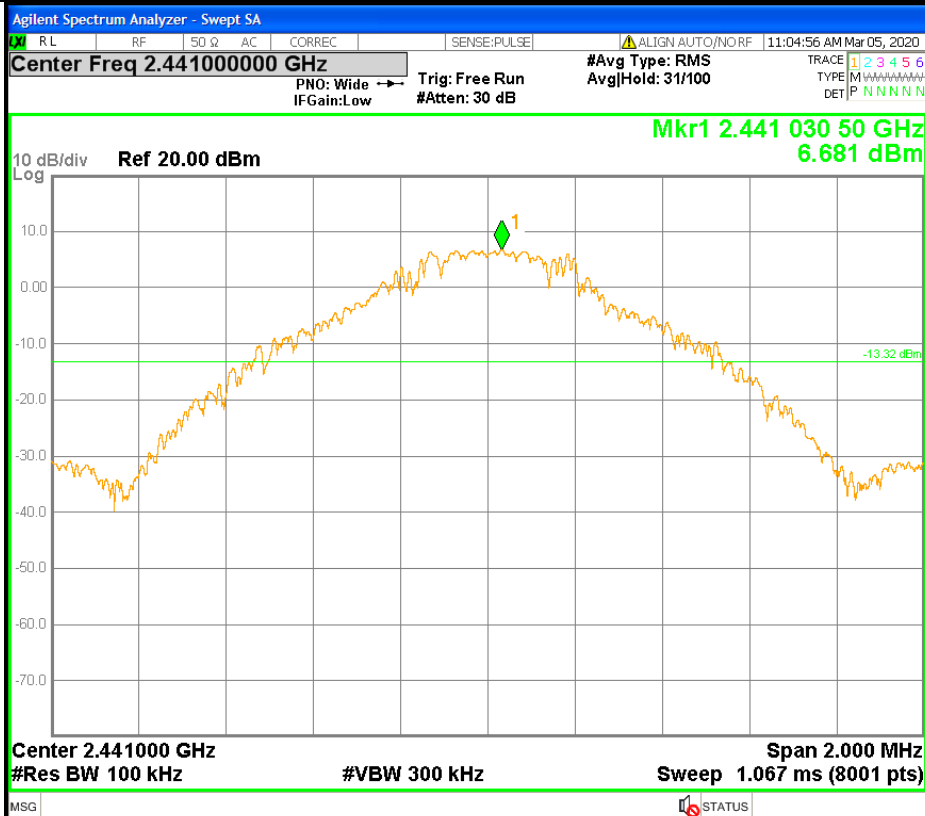
## A.7 RF Conducted Spurious Emissions

## Test Graph

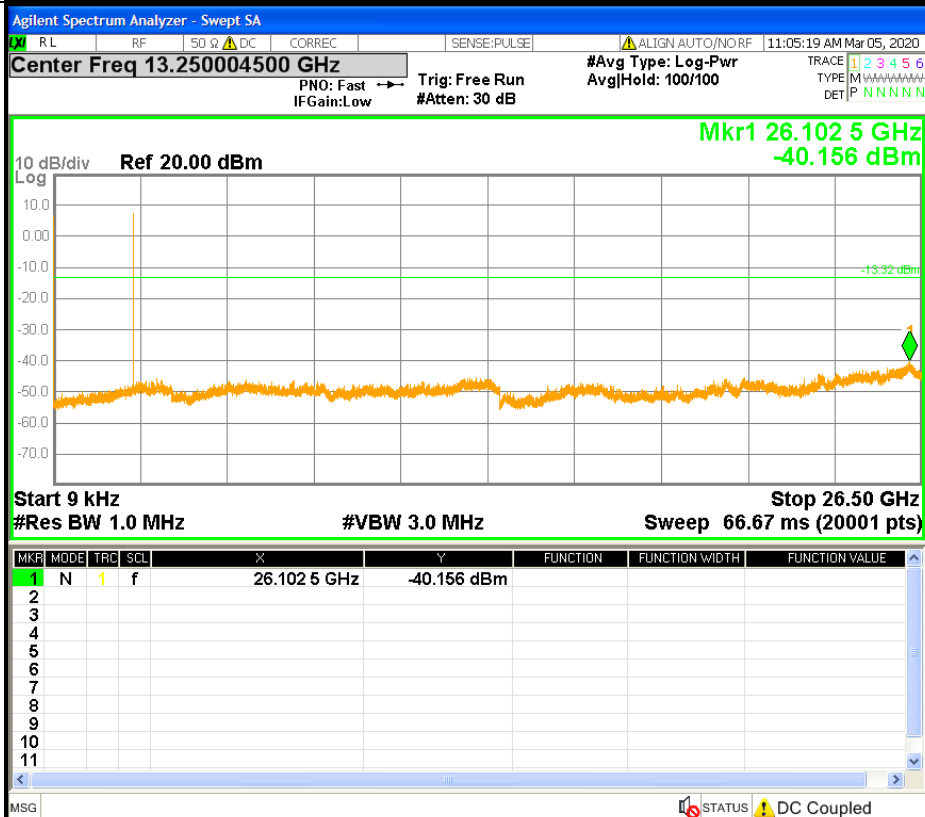


## GFSK\_MCH\_Graphs

Pref

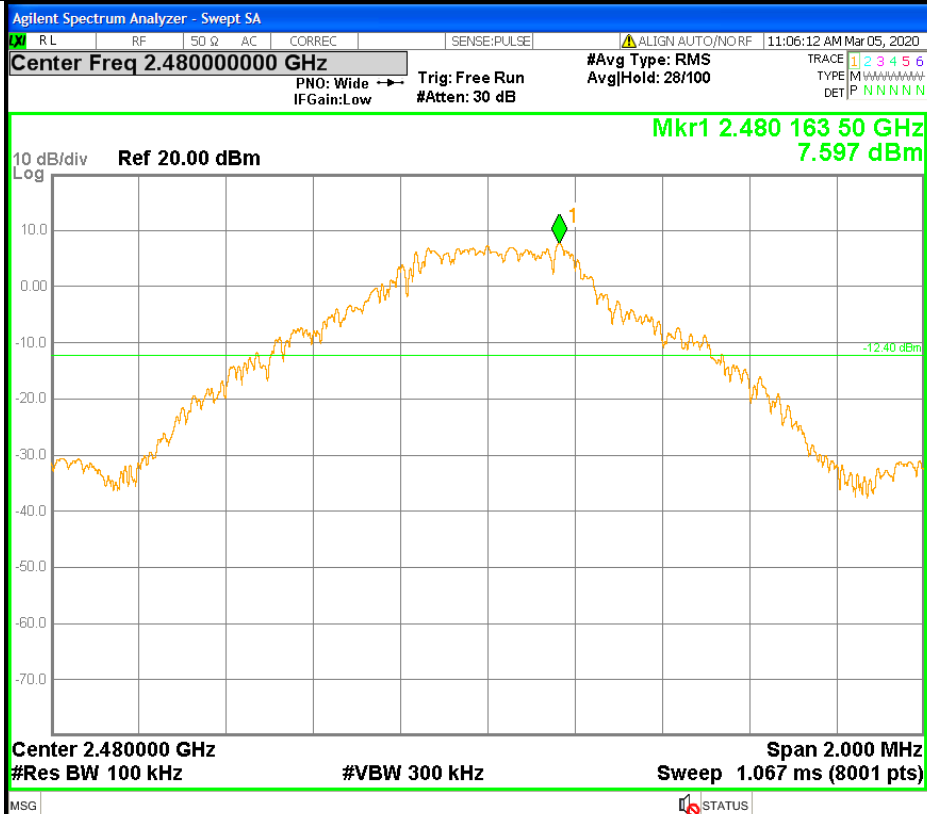


Puw

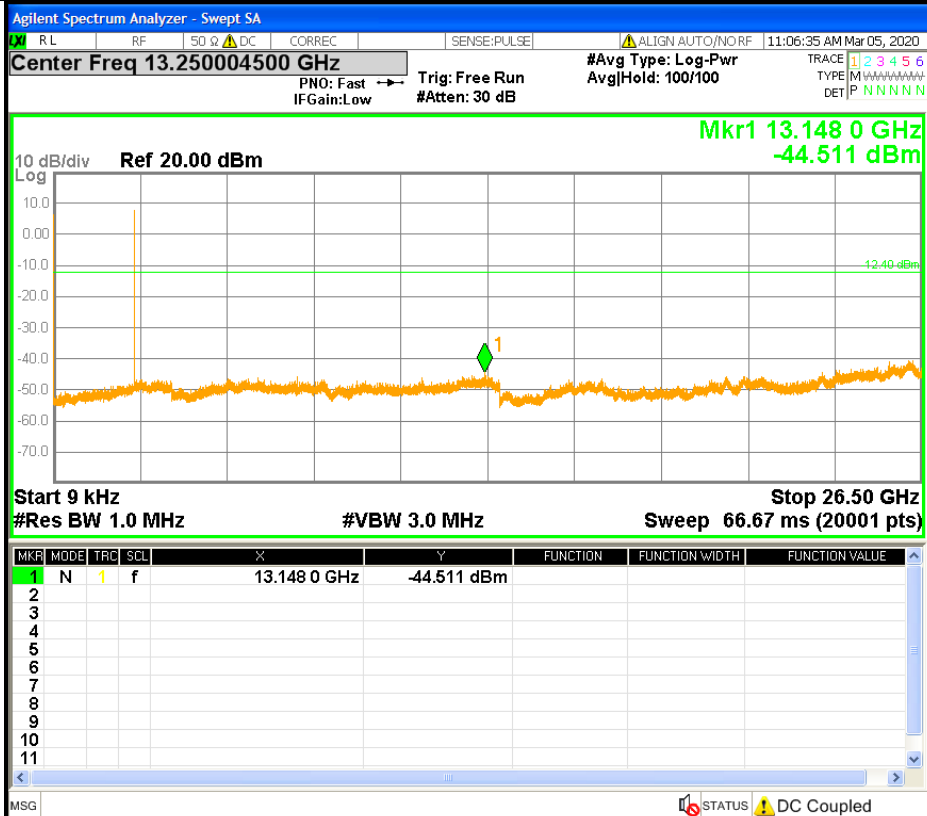


## GFSK\_HCH\_Graphs

Pref

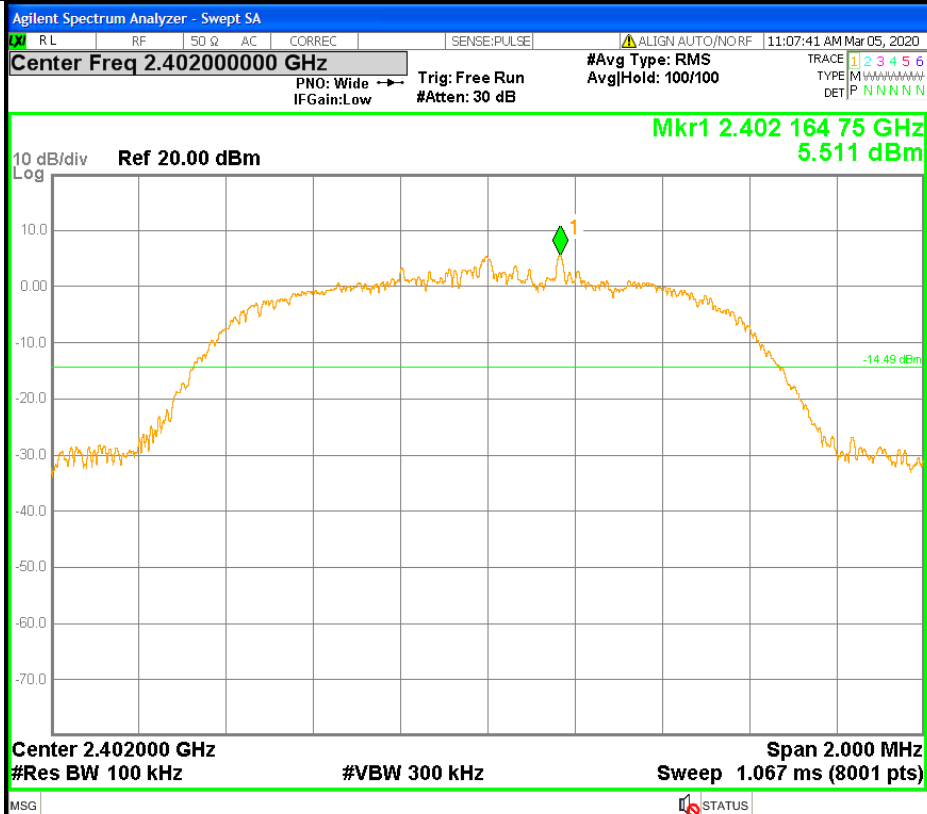


Puw

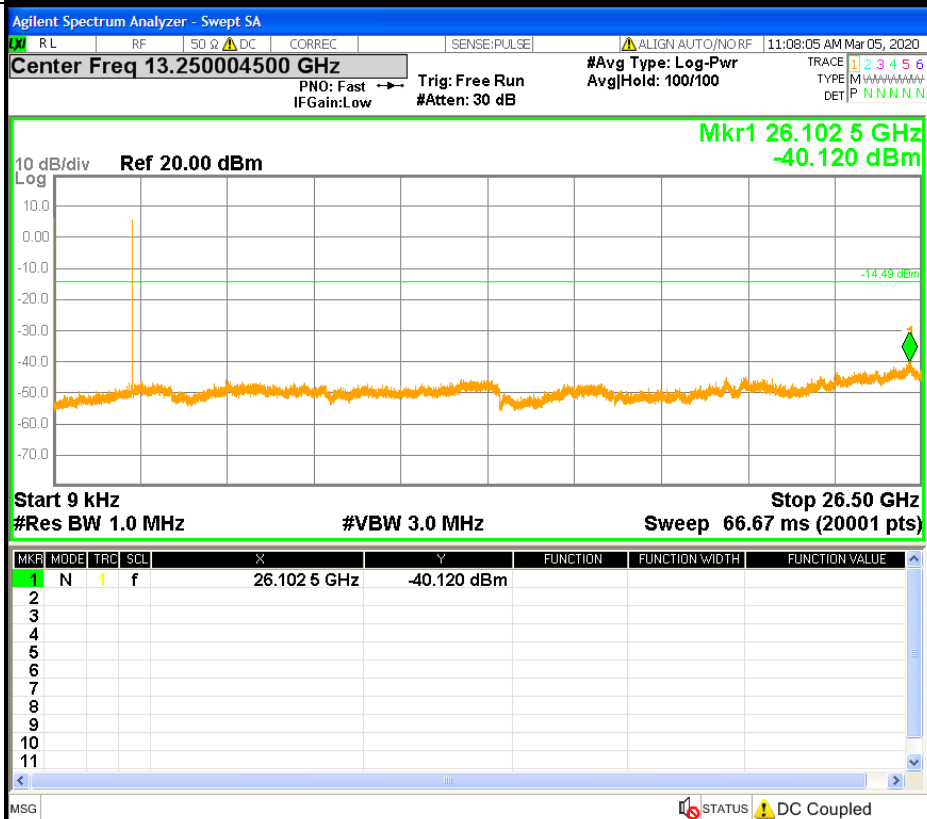


$\pi/4$ DQPSK\_LCH\_Graphs

Pref

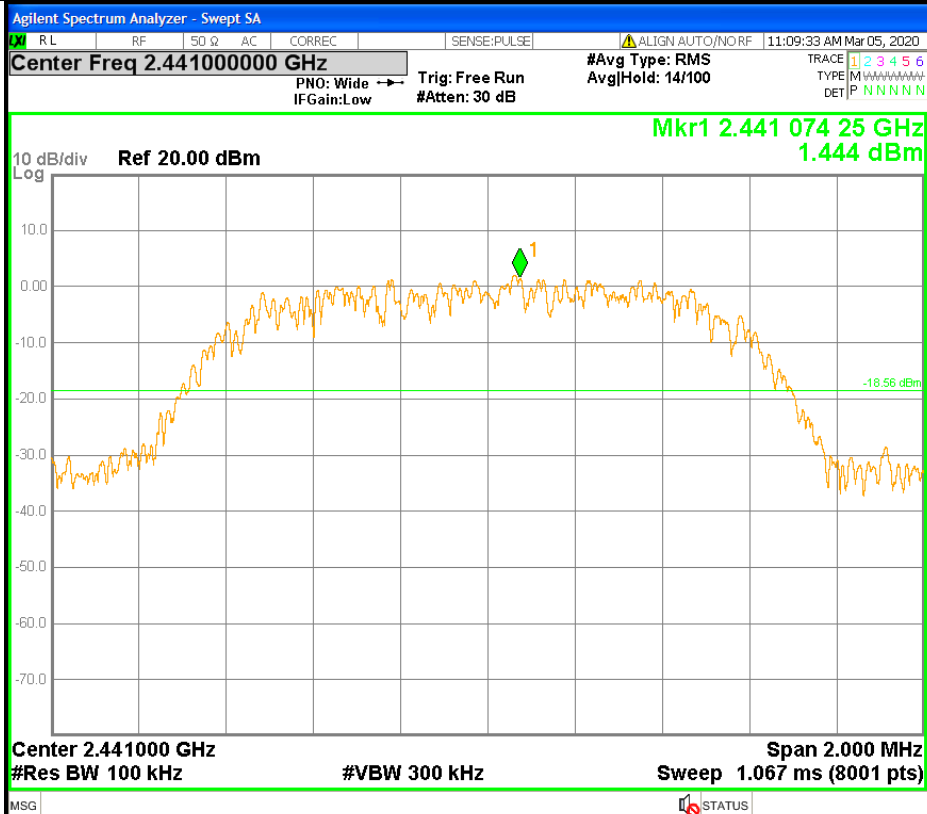


Puw

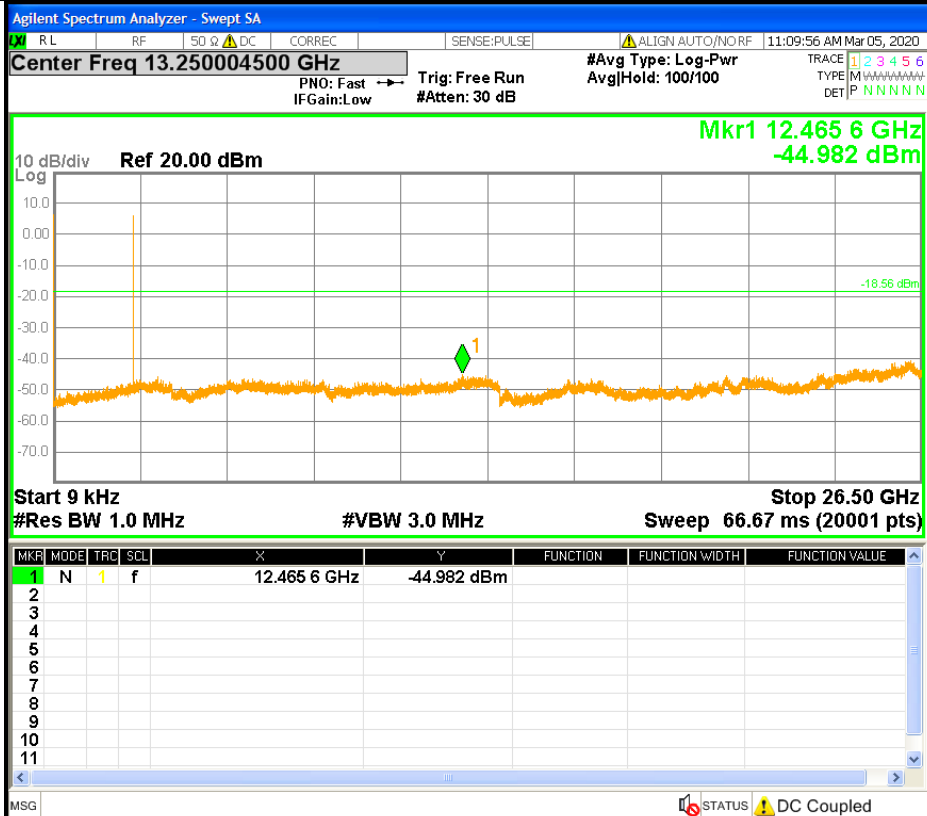


$\pi/4$ DQPSK\_MCH\_Graphs

Pref

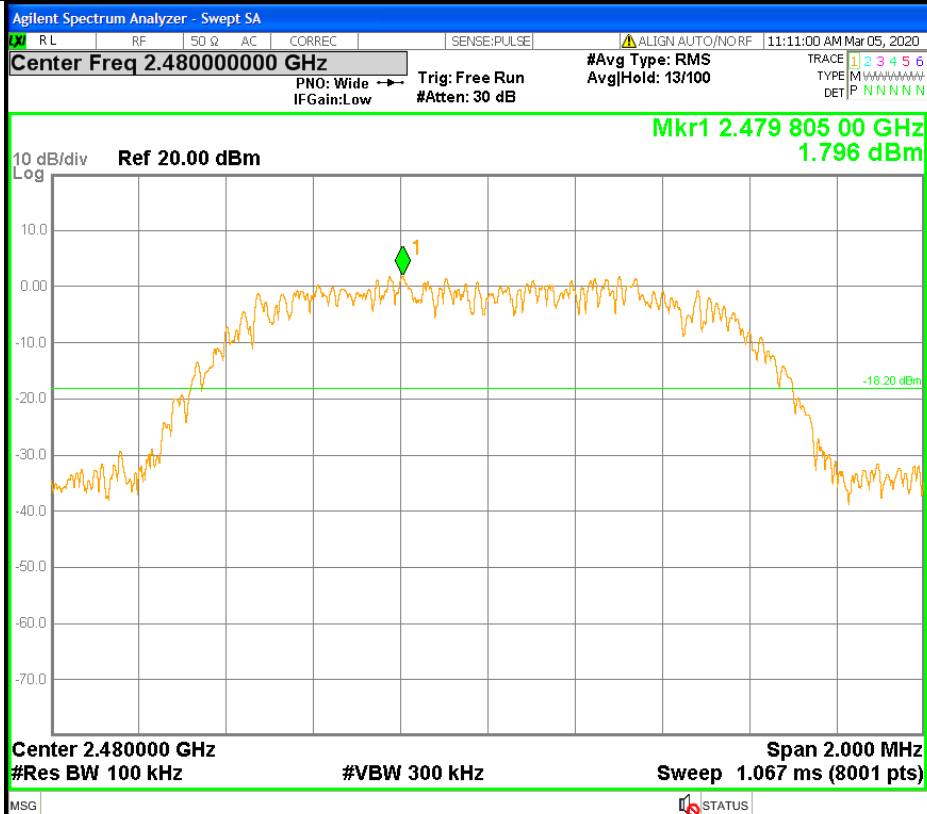


Puw

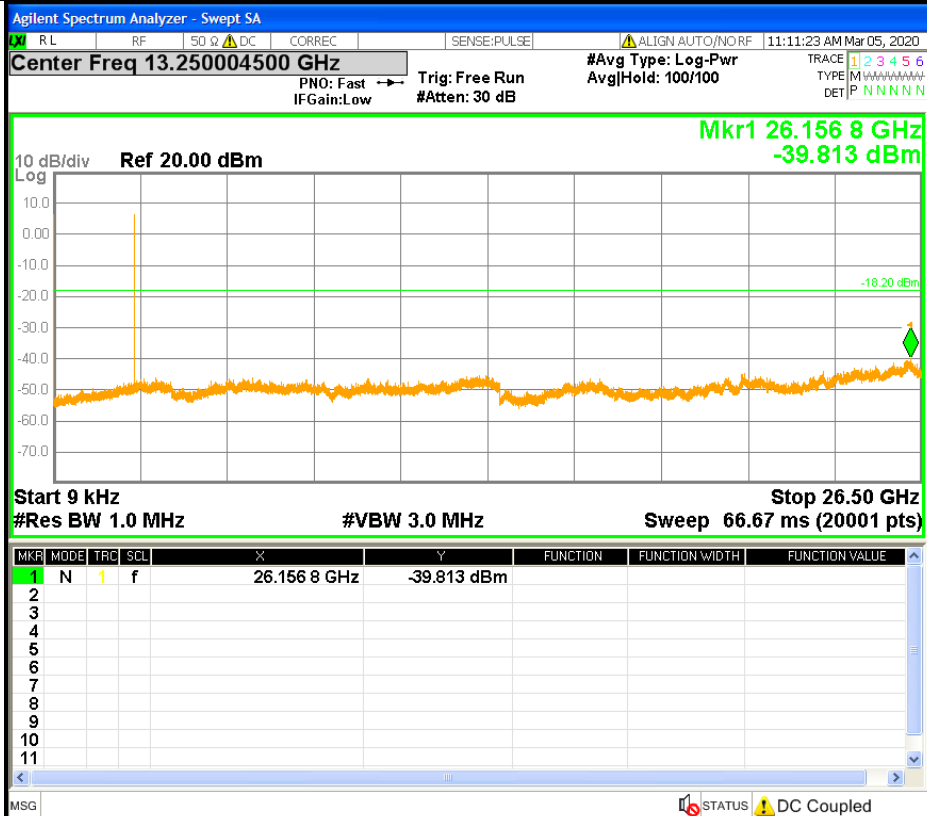


$\pi/4$ DQPSK\_HCH\_Graphs

Pref

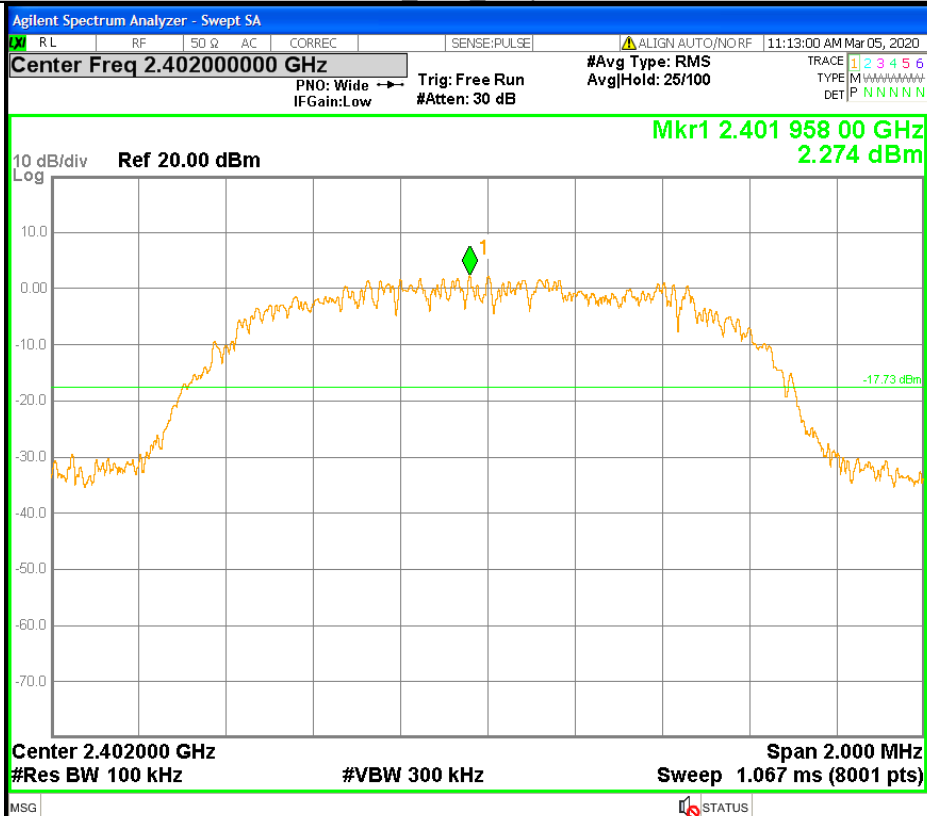


Puw

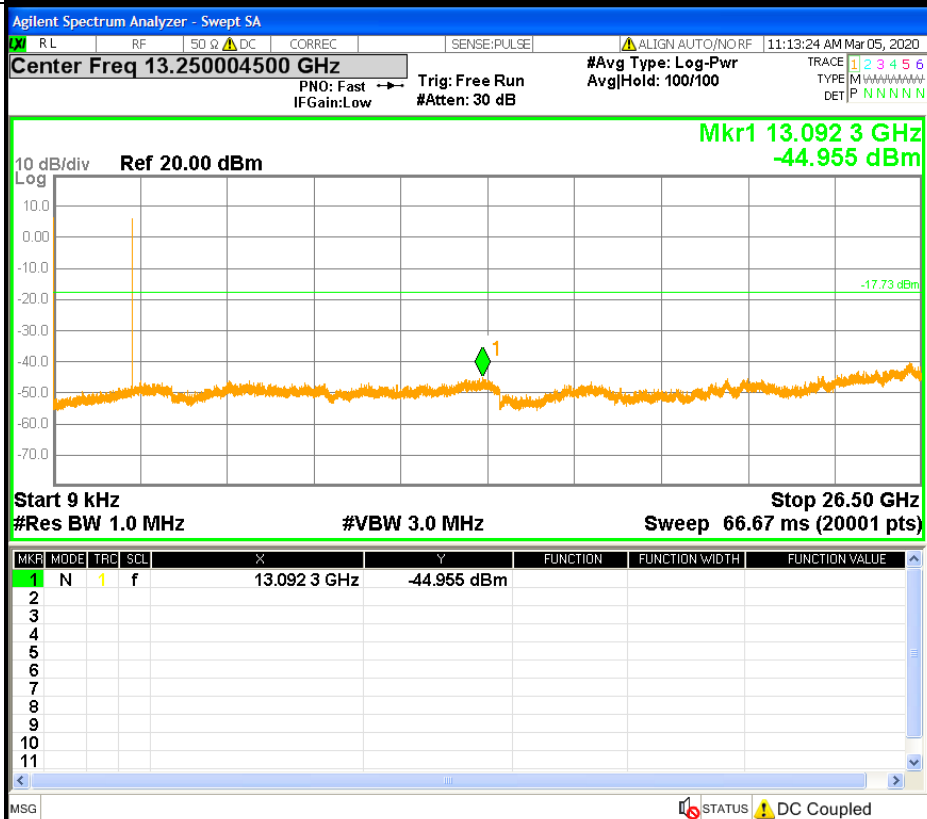


## 8DPSK LCH\_Graphs

Pref

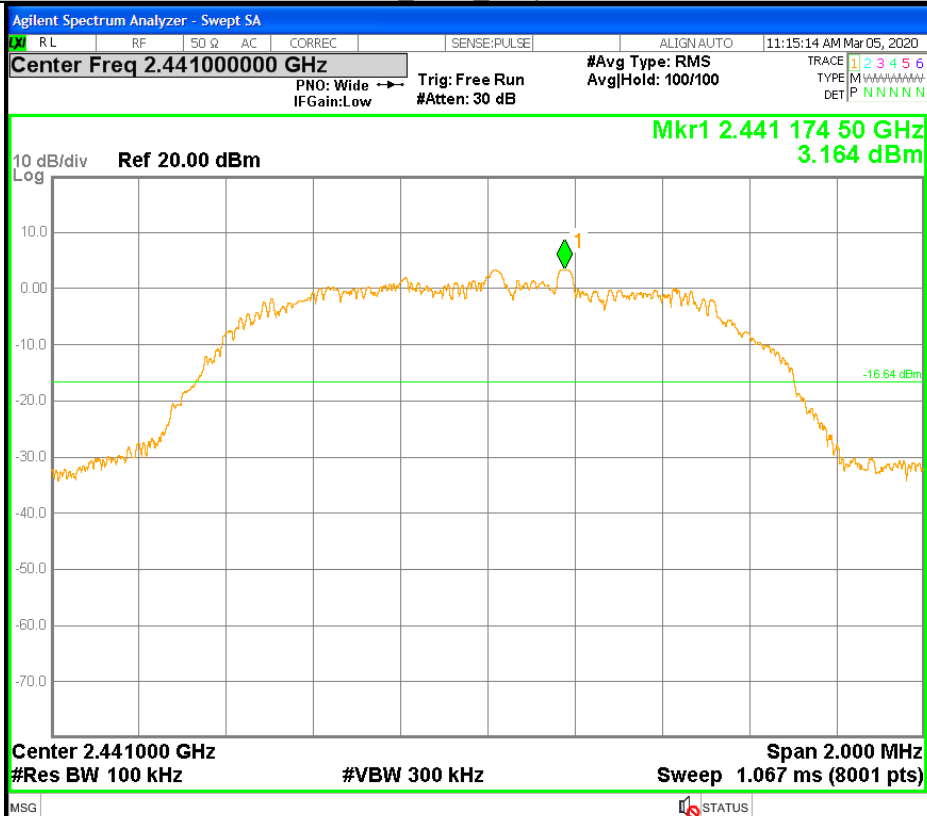


Puw

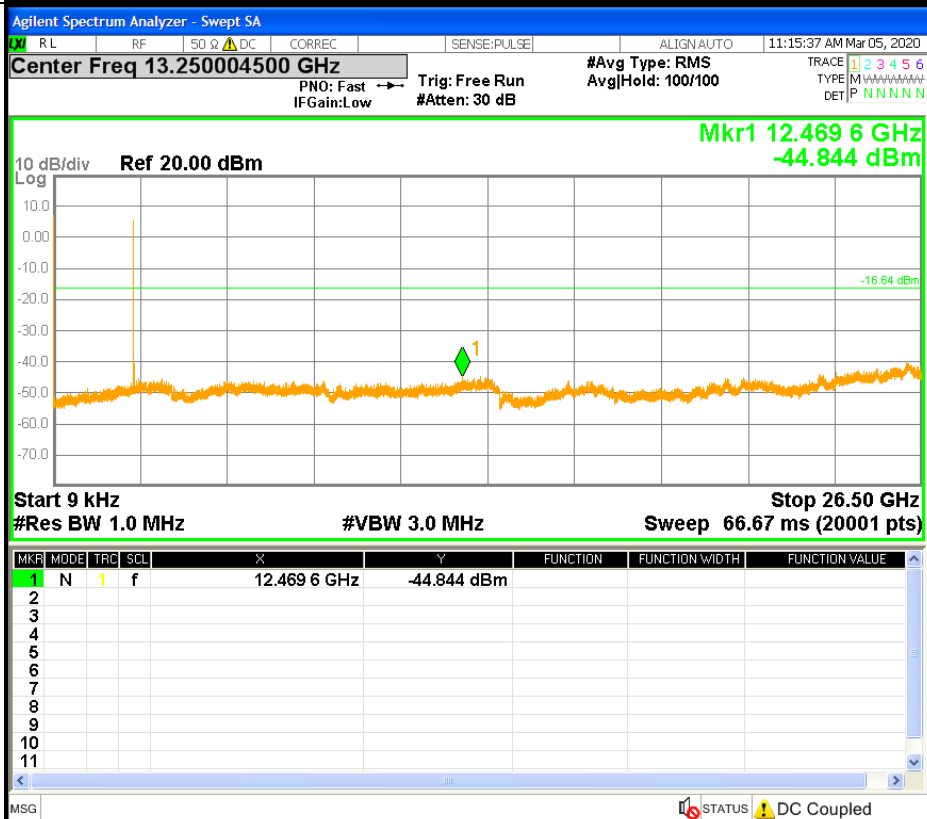


## 8DPSK\_MCH\_Graphs

Pref

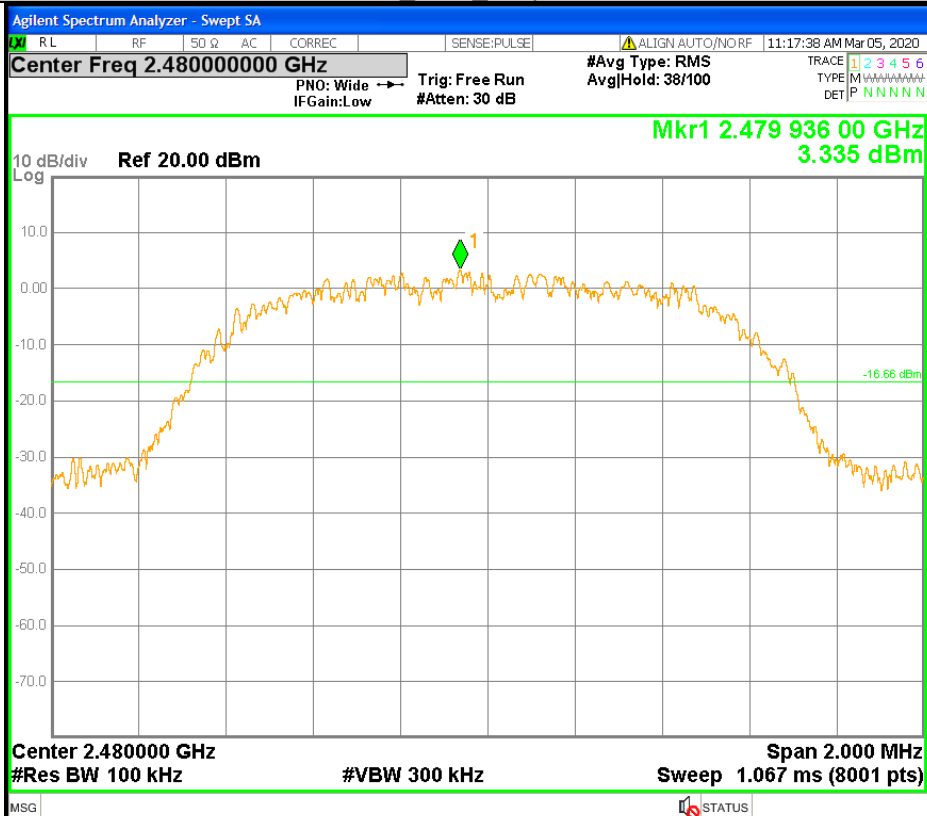


Puw

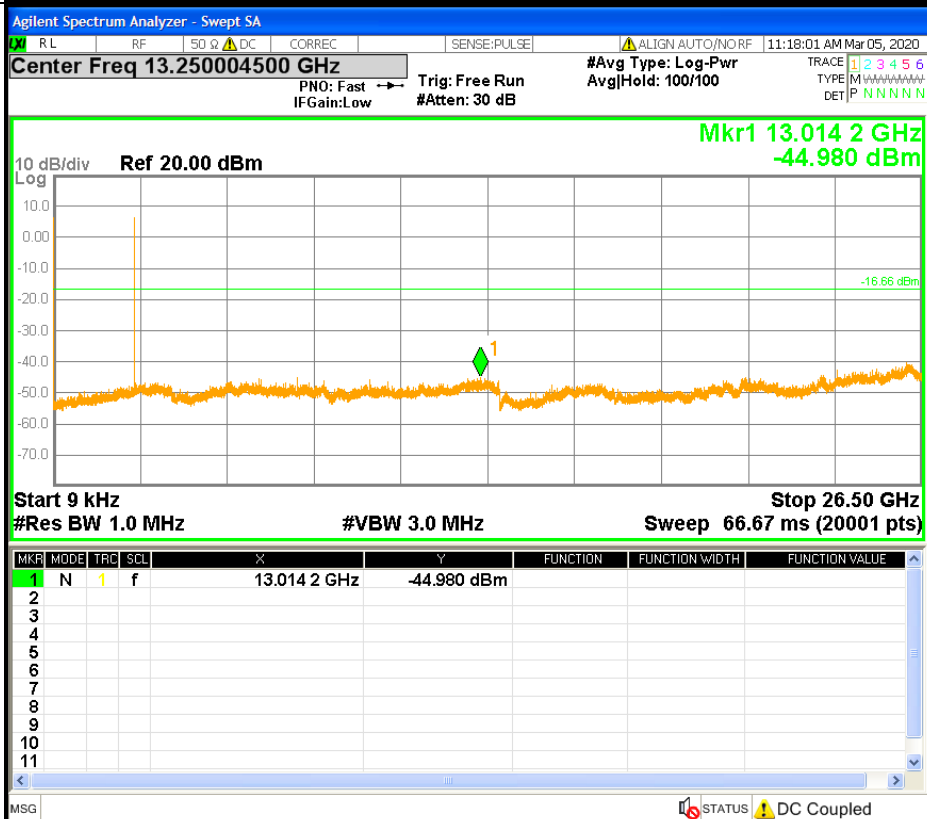


## 8DPSK\_HCH\_Graphs

Pref



Puw

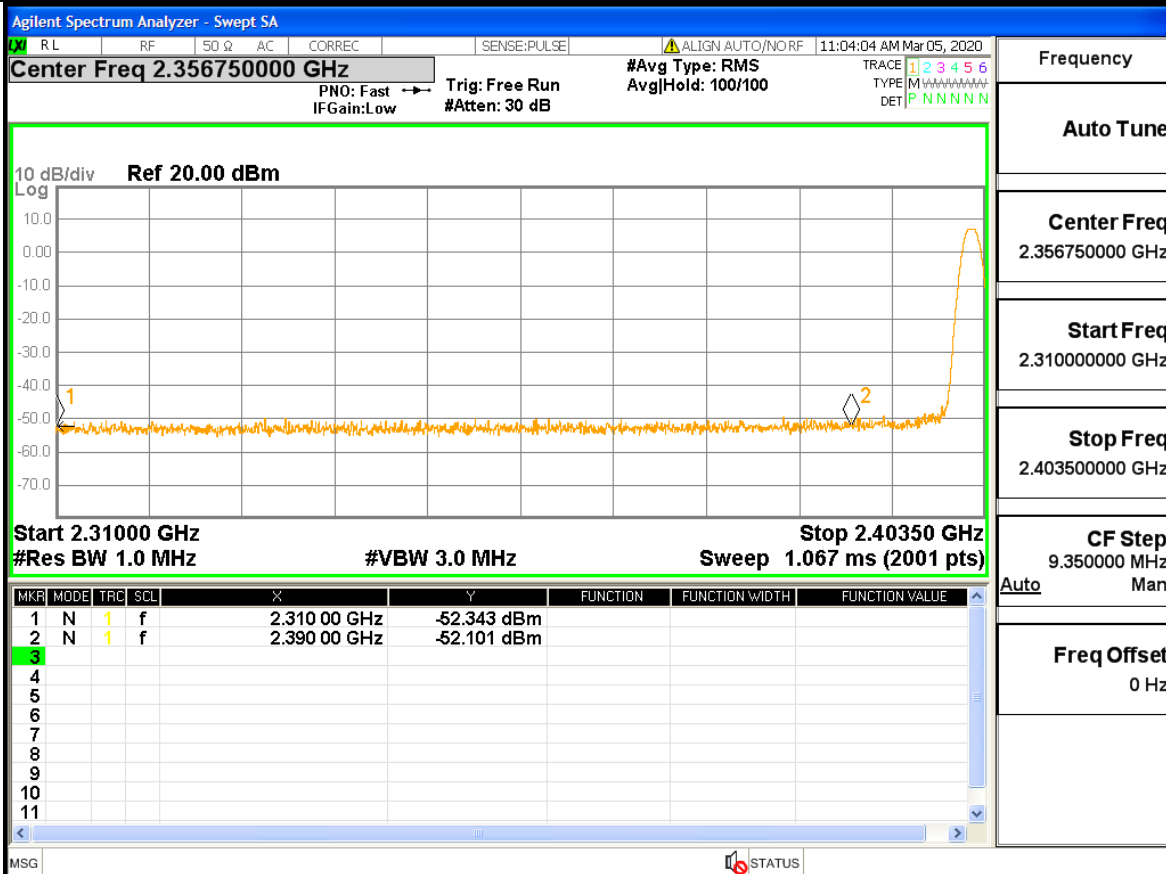


**A.8 Restrict-band band-edge measurements**

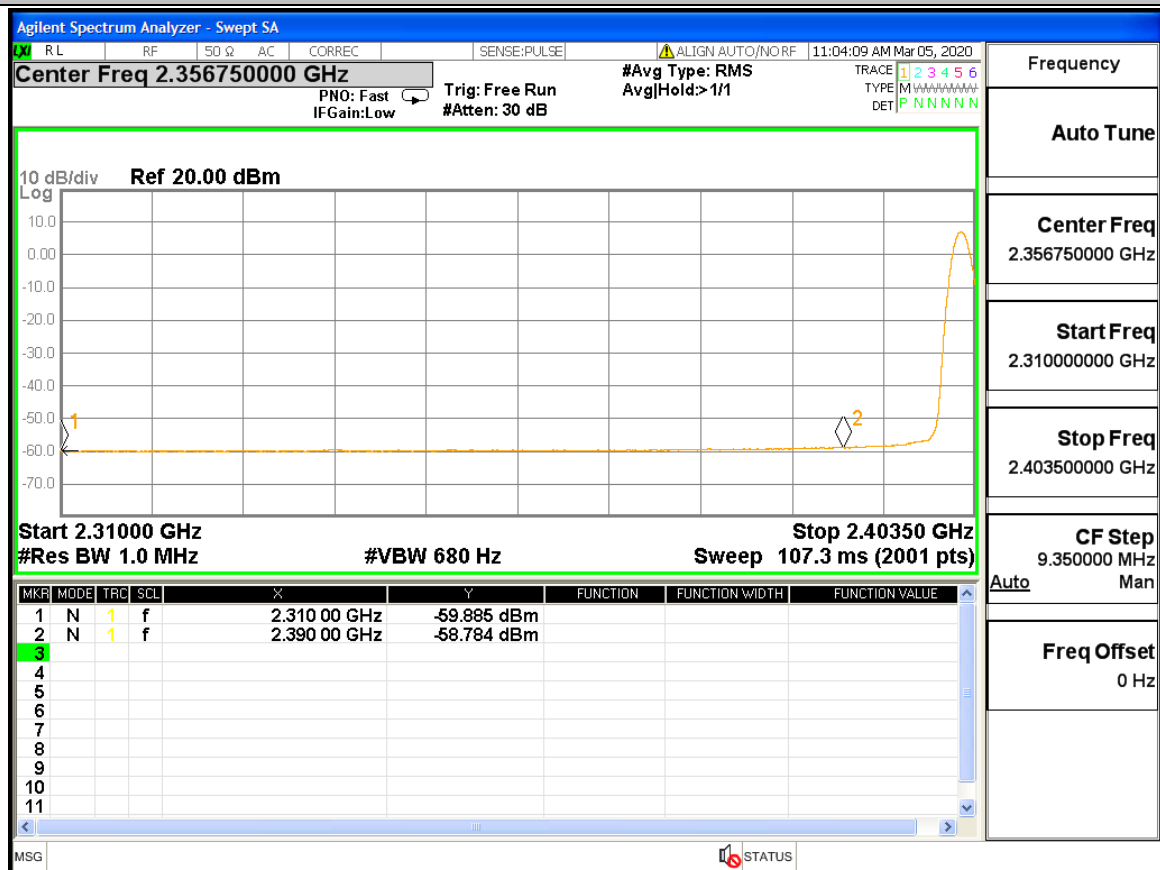
| Type | Carrier Frequency (MHz) | Frequency(M Hz) | Gain | Ground Factor | Peak Value(dBm) | E [dBuV/m] | Limit [dBuV/m] | Conclusion |
|------|-------------------------|-----------------|------|---------------|-----------------|------------|----------------|------------|
| 1DH5 | 2402                    | 2390            | 2.84 | 0.00          | -52.101         | 45.939     | 74             | Pass       |
| 1DH5 | 2480                    | 2483.5          | 2.84 | 0.00          | -50.053         | 47.987     | 74             | Pass       |
| 2DH5 | 2402                    | 2390            | 2.84 | 0.00          | -52.386         | 45.654     | 74             | Pass       |
| 2DH5 | 2480                    | 2483.5          | 2.84 | 0.00          | -47.076         | 50.964     | 74             | Pass       |
| 3DH5 | 2402                    | 2335.946        | 2.84 | 0.00          | -49.382         | 48.658     | 74             | Pass       |
| 3DH5 | 2480                    | 2497.334        | 2.84 | 0.00          | -47.811         | 50.229     | 74             | Pass       |

| Type | Carrier Frequency (MHz) | Frequency(M Hz) | Gain | Ground Factor | Average Value(dBm) | E [dBuV/m] | Limit [dBuV/m] | Conclusion |
|------|-------------------------|-----------------|------|---------------|--------------------|------------|----------------|------------|
| 1DH5 | 2402                    | 2390            | 2.84 | 0.00          | -58.784            | 39.256     | 54             | Pass       |
| 1DH5 | 2480                    | 2483.5          | 2.84 | 0.00          | -49.655            | 48.385     | 54             | Pass       |
| 2DH5 | 2402                    | 2390            | 2.84 | 0.00          | -58.779            | 39.261     | 54             | Pass       |
| 2DH5 | 2480                    | 2483.5          | 2.84 | 0.00          | -49.436            | 48.604     | 54             | Pass       |
| 3DH5 | 2402                    | 2335.946        | 2.84 | 0.00          | -58.432            | 39.608     | 54             | Pass       |
| 3DH5 | 2480                    | 2497.334        | 2.84 | 0.00          | -49.316            | 48.724     | 54             | Pass       |

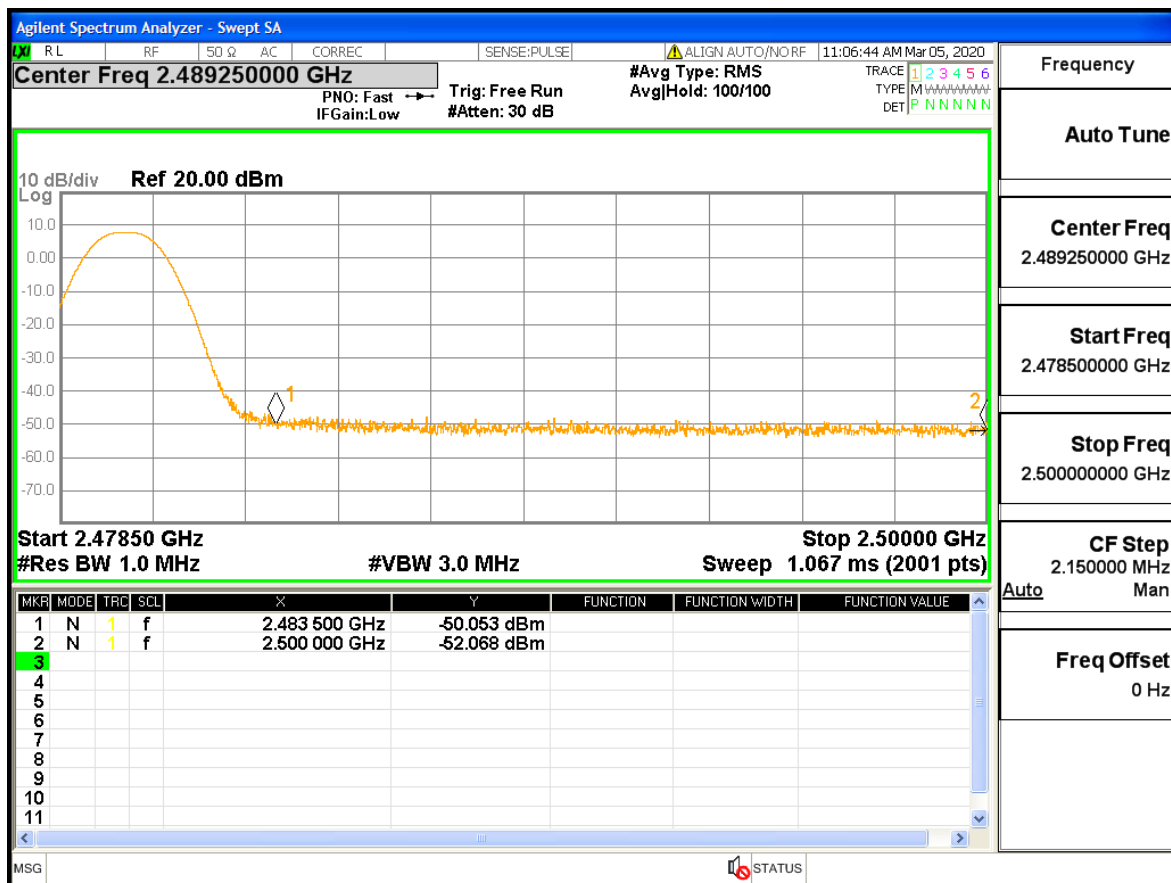
## Restrict-band band-edge measurements\_2402\_PEAK\_DH5



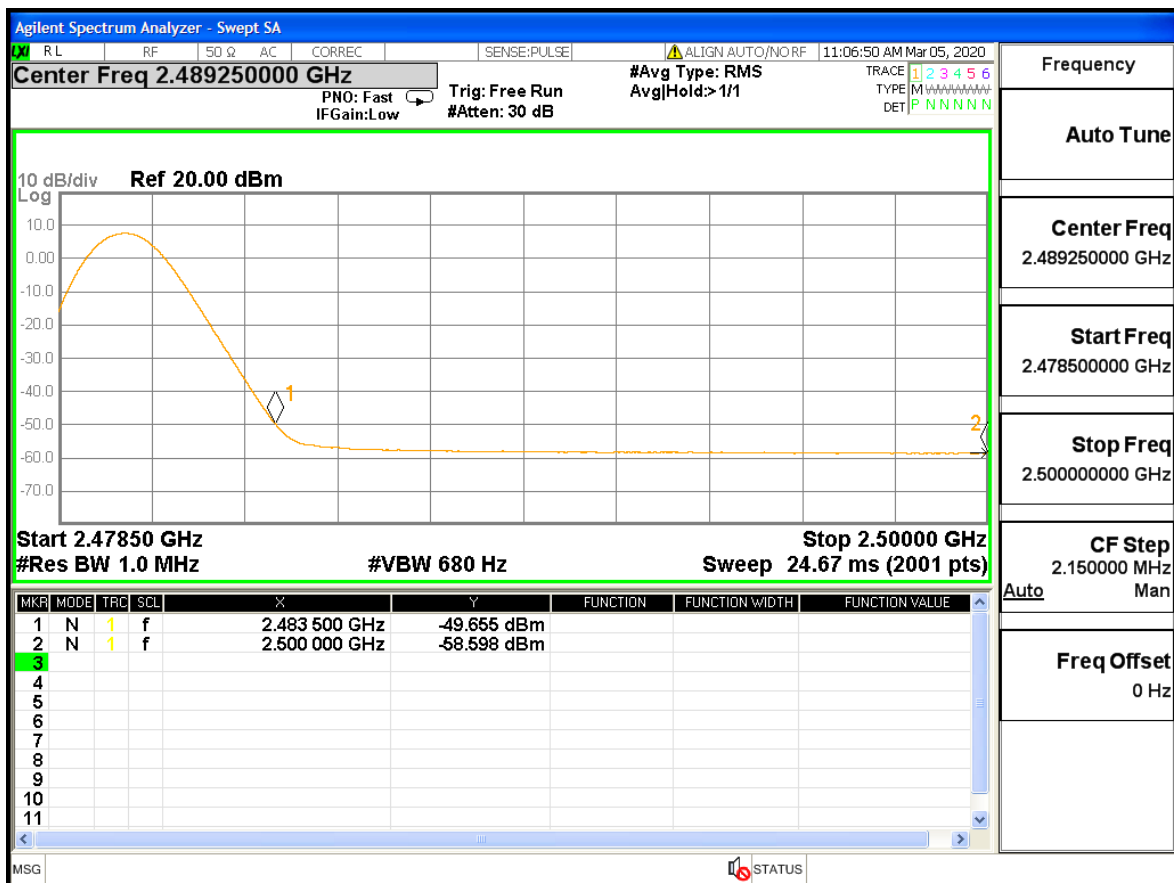
## Restrict-band band-edge measurements\_2402\_AV\_DH5



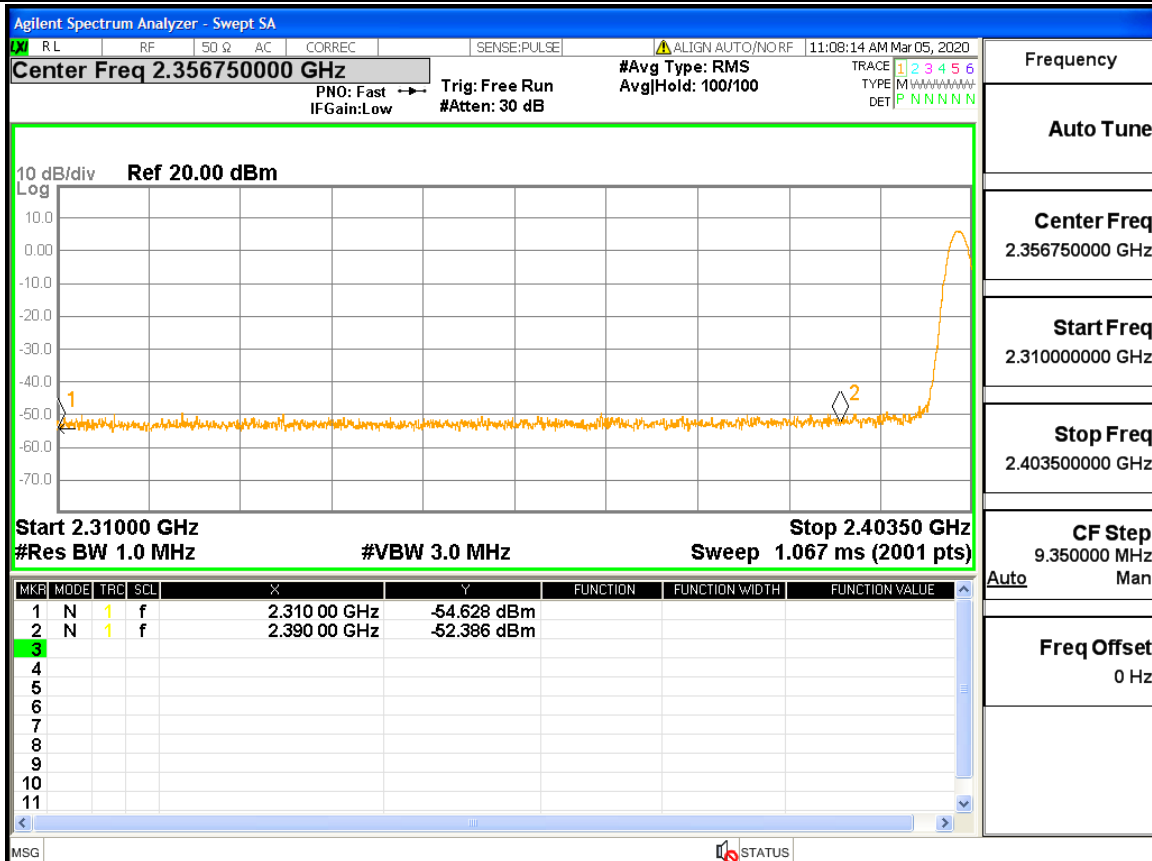
## Restrict-band band-edge measurements\_2480\_PEAK\_DH5



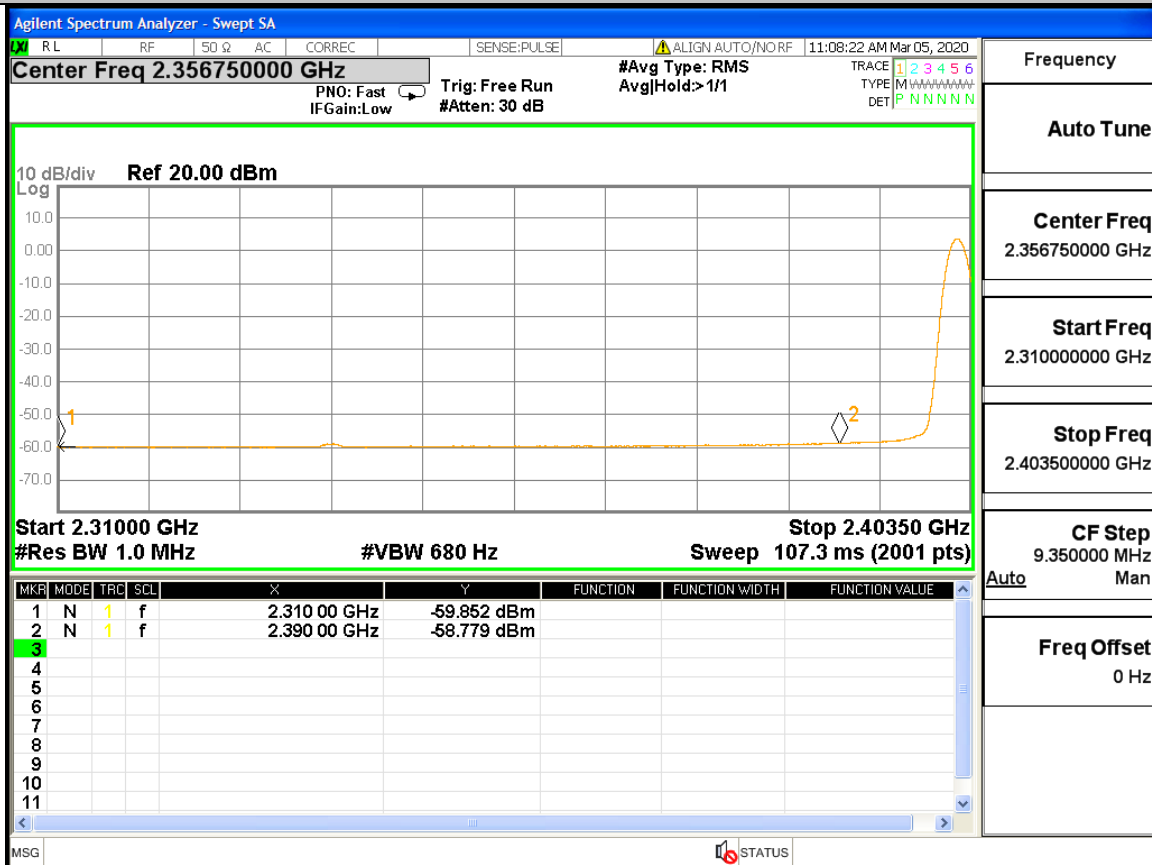
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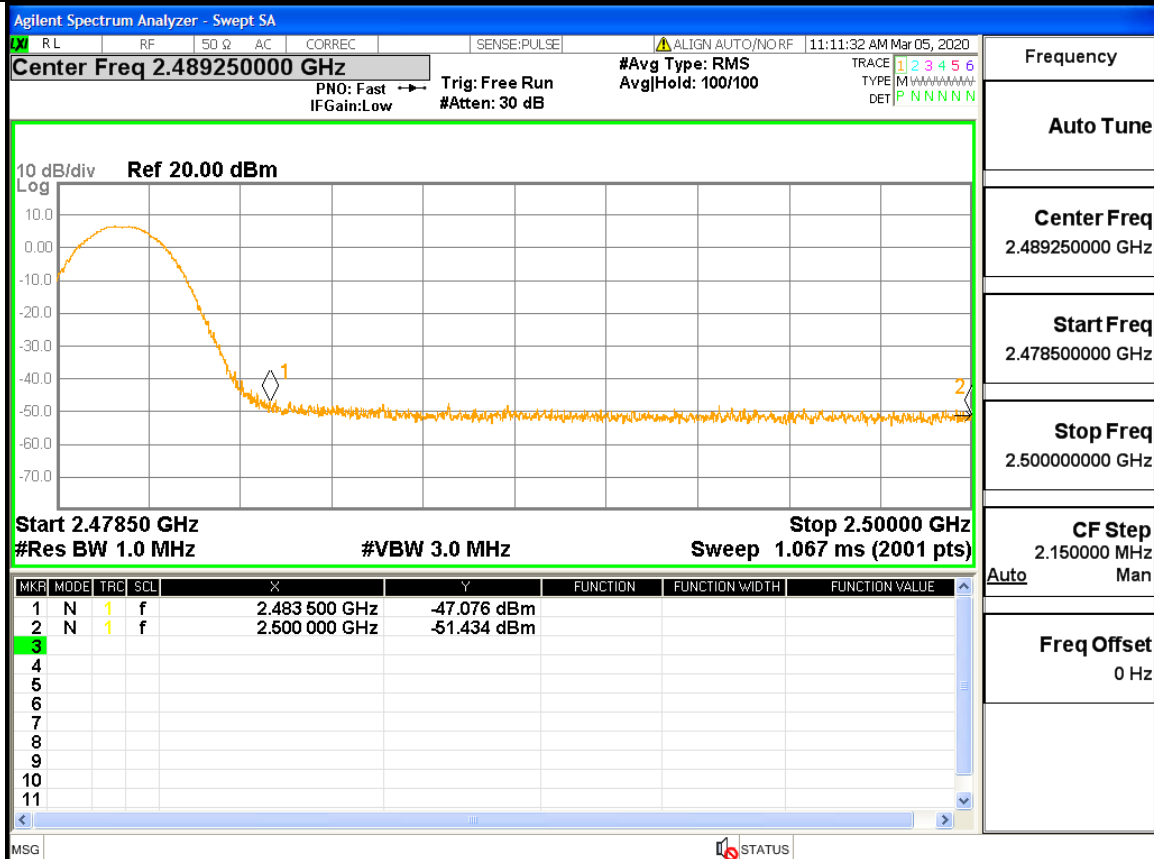
## Restrict-band band-edge measurements\_2402\_PEAK\_2DH5



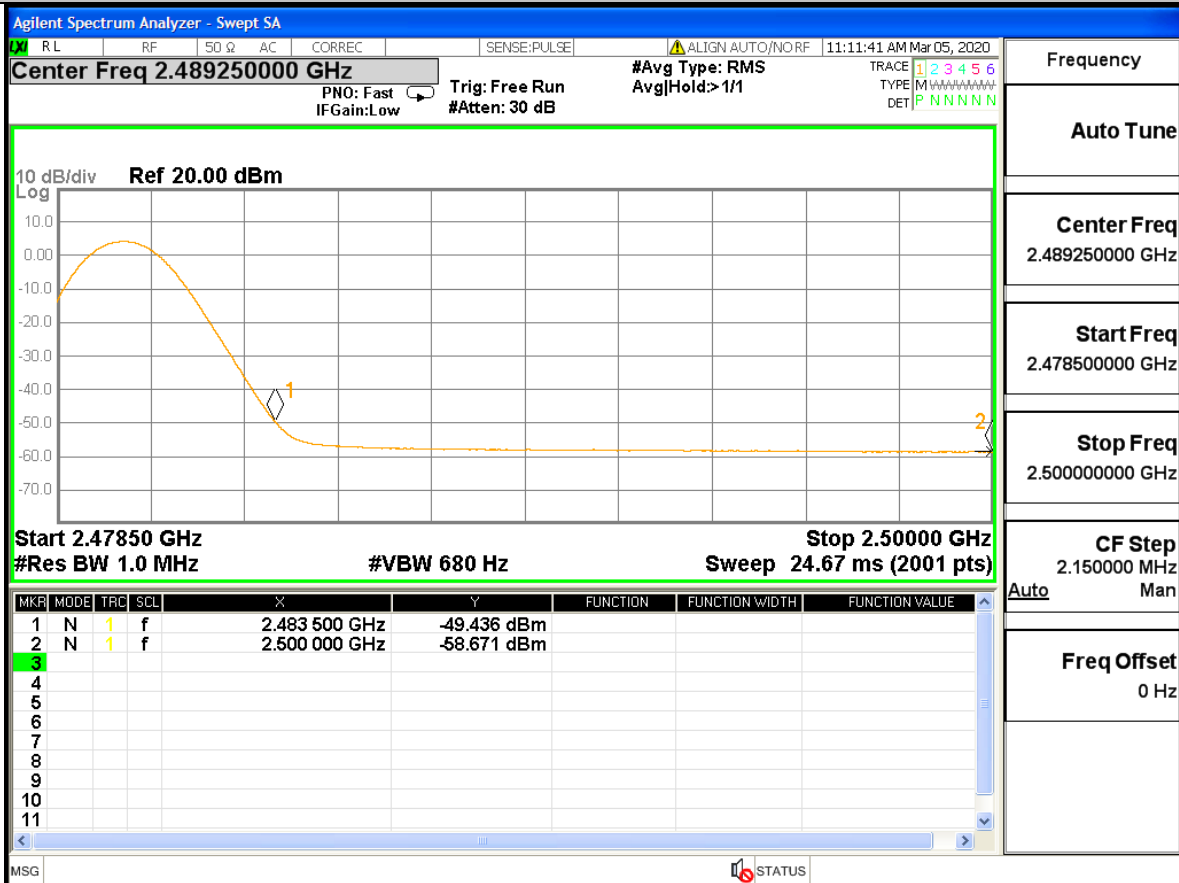
## Restrict-band band-edge measurements\_2402\_AV\_2DH5



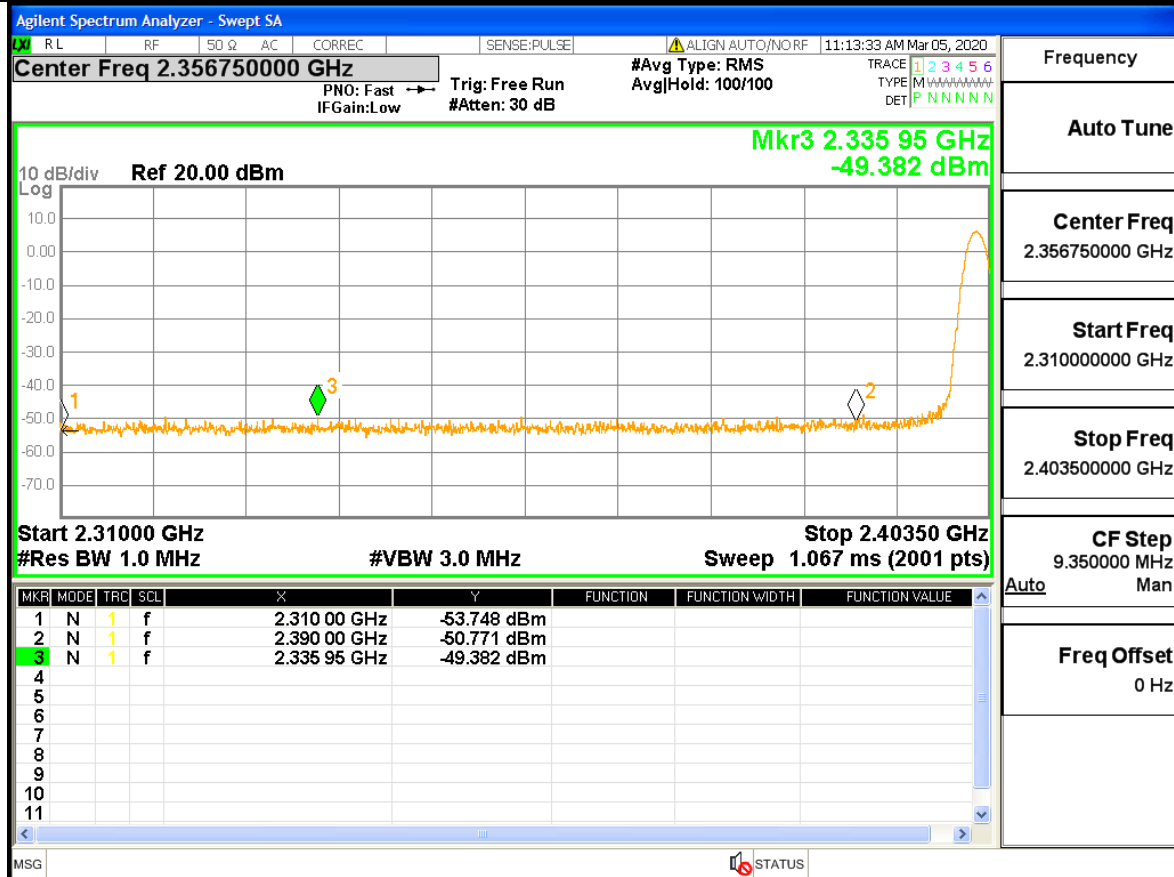
## Restrict-band band-edge measurements\_2480\_PEAK\_2DH5



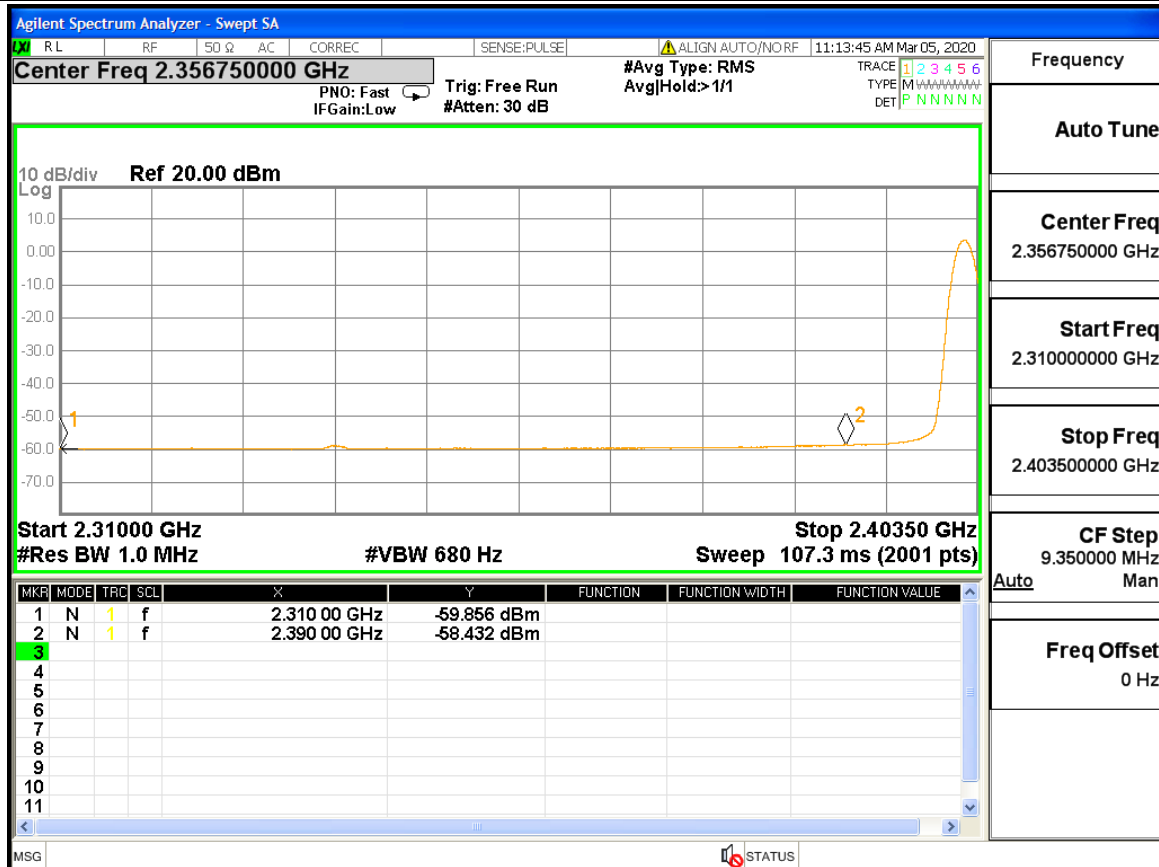
## Restrict-band band-edge measurements\_2480\_AV\_2DH5



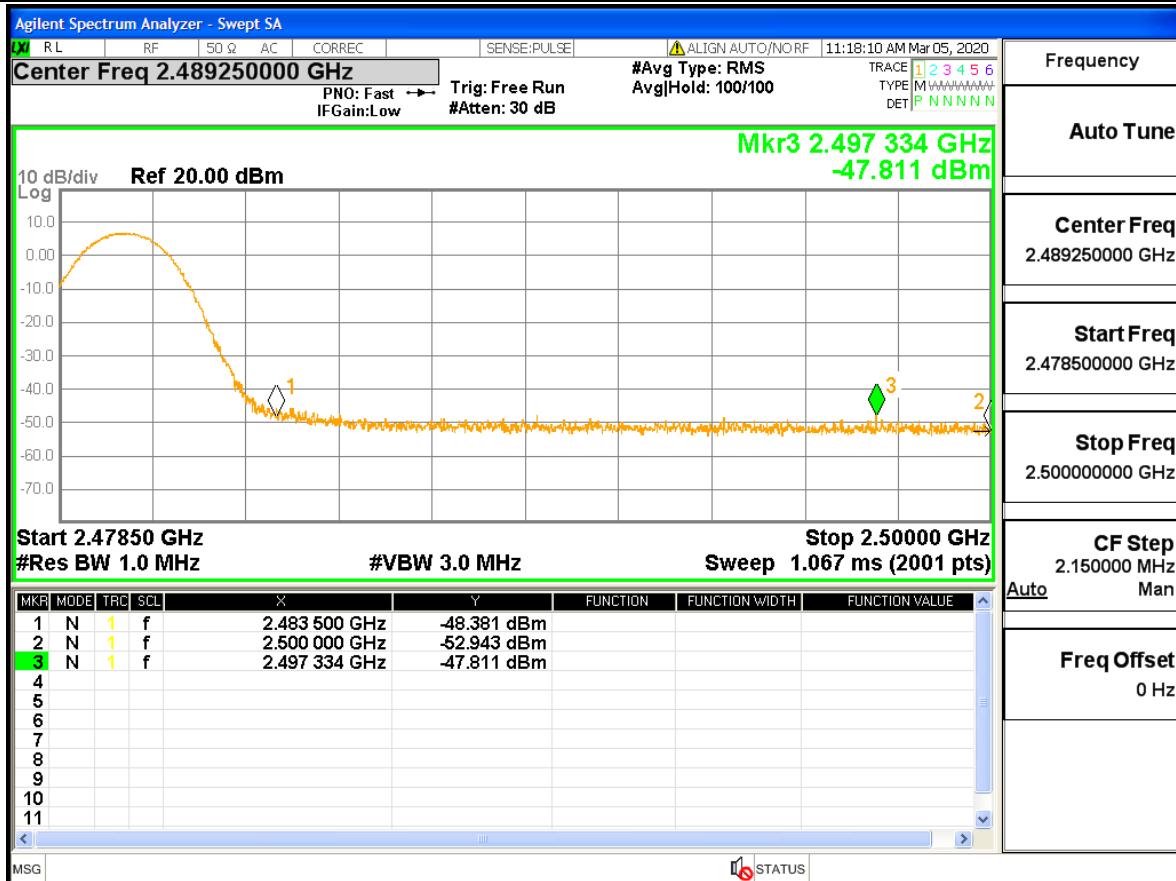
## Restrict-band band-edge measurements\_2402\_PEAK\_3DH5



## Restrict-band band-edge measurements\_2402\_AV\_3DH5



## Restrict-band band-edge measurements\_2480\_PEAK\_3DH5



## Restrict-band band-edge measurements\_2480\_AV\_3DH5

