

## Appendix A

### RF Test Data for BT V2.1(DSS) (Conducted Measurement)

Product Name: PORTABLE DVD PLAYER

Trade Mark: GPX

Test Model: PDB1077B

#### Environmental Conditions

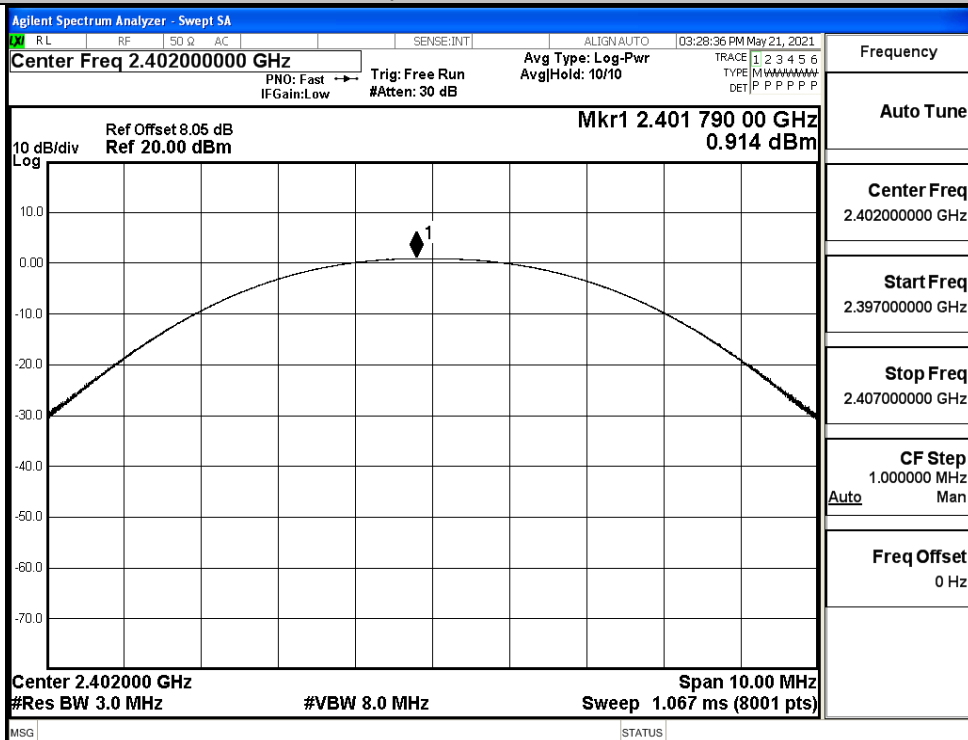
|                    |           |
|--------------------|-----------|
| Temperature:       | 22.3 ° C  |
| Relative Humidity: | 51.5%     |
| ATM Pressure:      | 100.0 kPa |
| Test Engineer:     | Carl Fu   |
| Supervised by:     | Li Huan   |

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

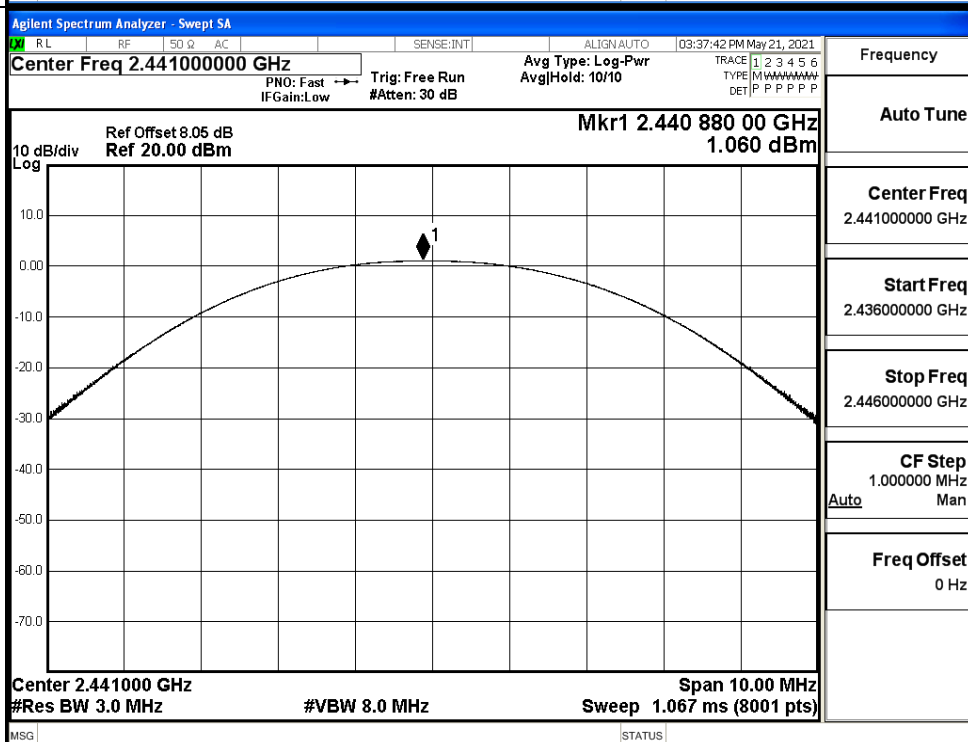
| Mode          | Channel. | Maximum Peak Output Power [dBm] | Limit [dBm] | Verdict |
|---------------|----------|---------------------------------|-------------|---------|
| GFSK          | LCH      | 0.914                           | 21          | PASS    |
|               | MCH      | 1.060                           | 21          | PASS    |
|               | HCH      | 2.220                           | 21          | PASS    |
| $\pi/4$ DQPSK | LCH      | 3.449                           | 21          | PASS    |
|               | MCH      | 3.929                           | 21          | PASS    |
|               | HCH      | 4.213                           | 21          | PASS    |
| 8DPSK         | LCH      | 4.033                           | 21          | PASS    |
|               | MCH      | 4.000                           | 21          | PASS    |
|               | HCH      | 4.792                           | 21          | PASS    |

## Test Graphs

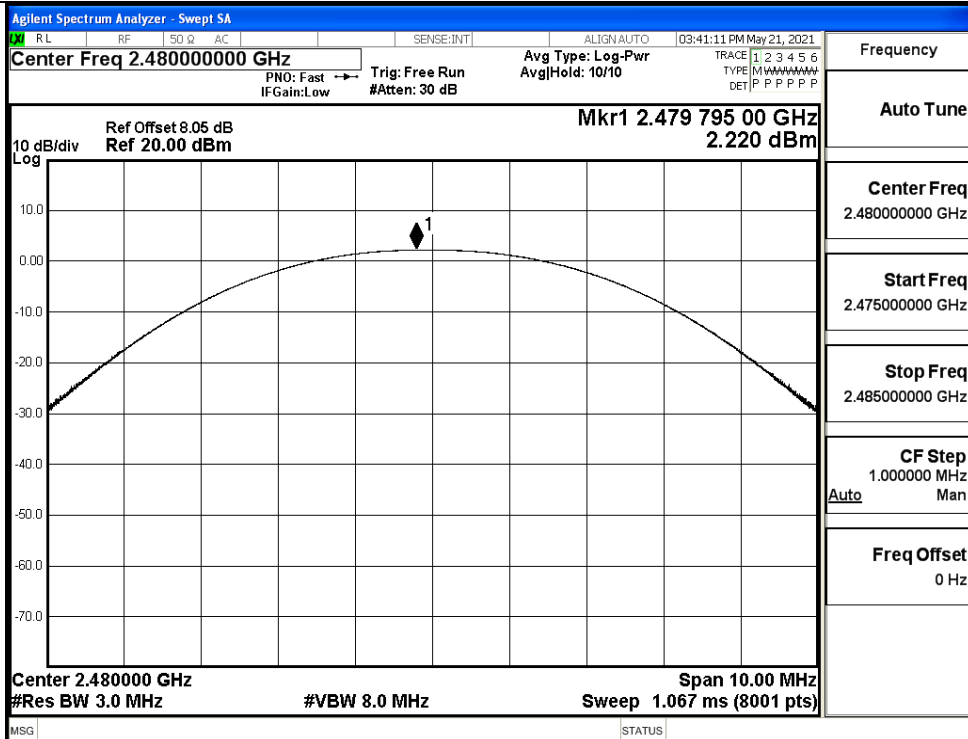
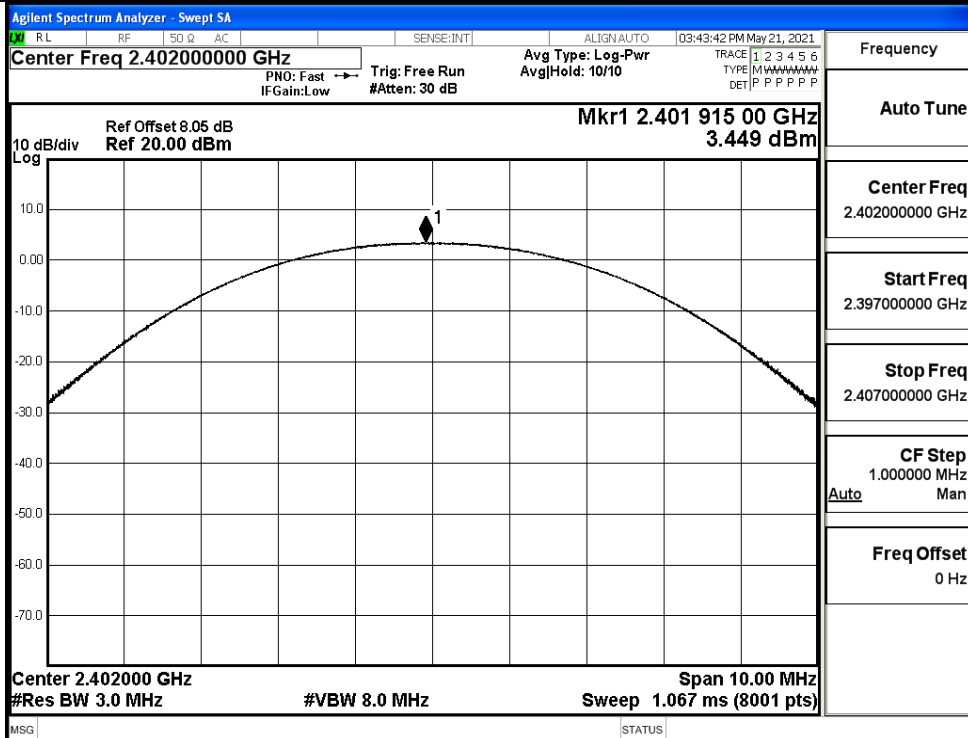
GFSK/LCH

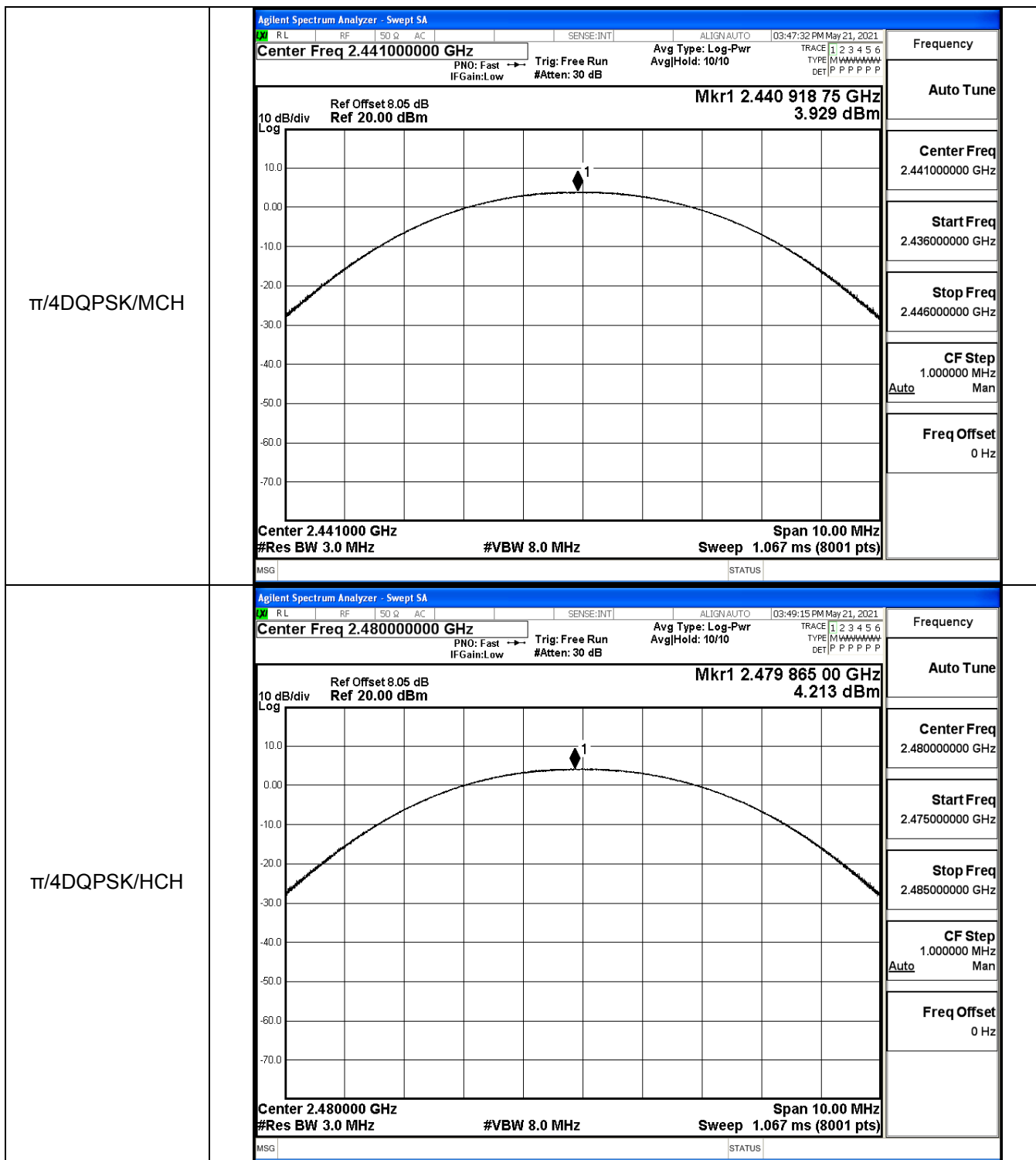


GFSK/MCH

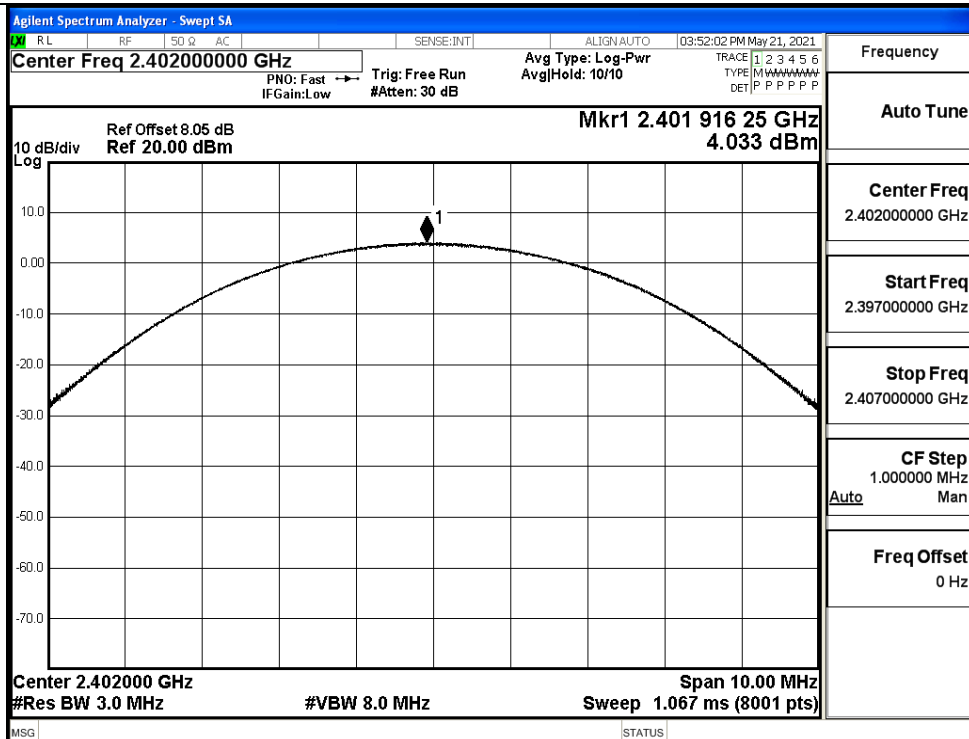


GFSK/HCH

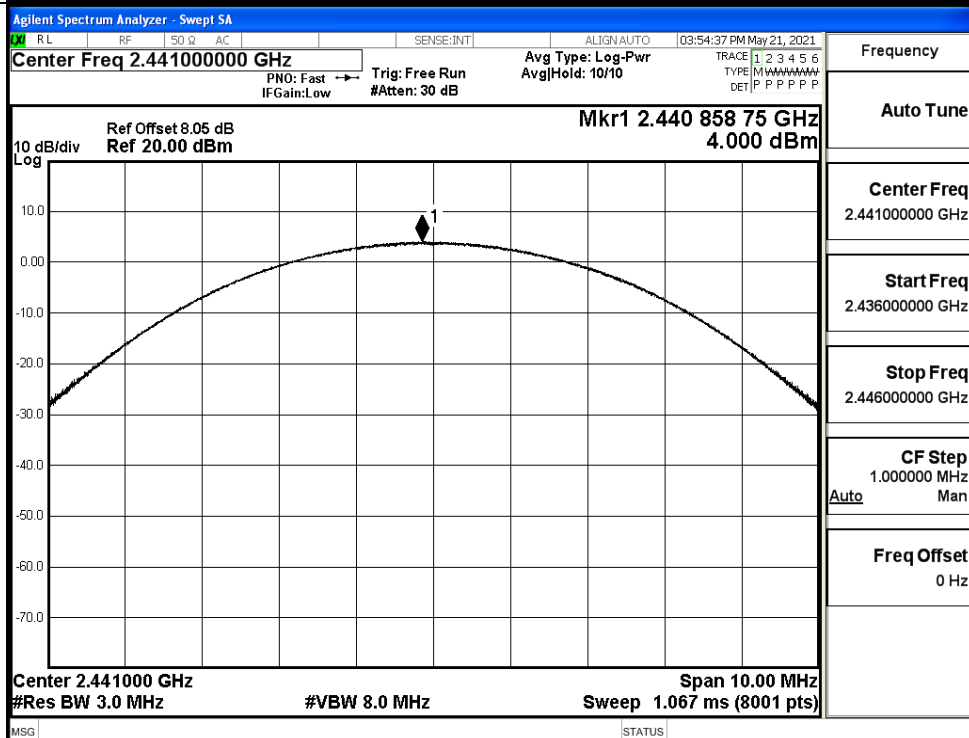
 $\pi/4$ DQPSK/LCH



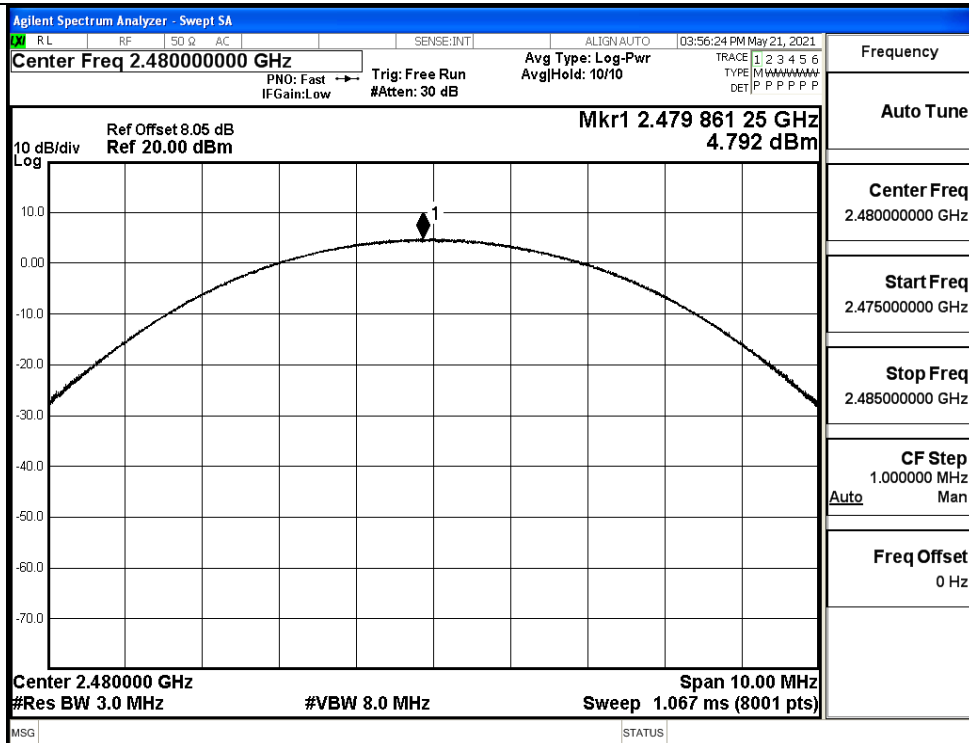
8DPSK/LCH



8DPSK/MCH



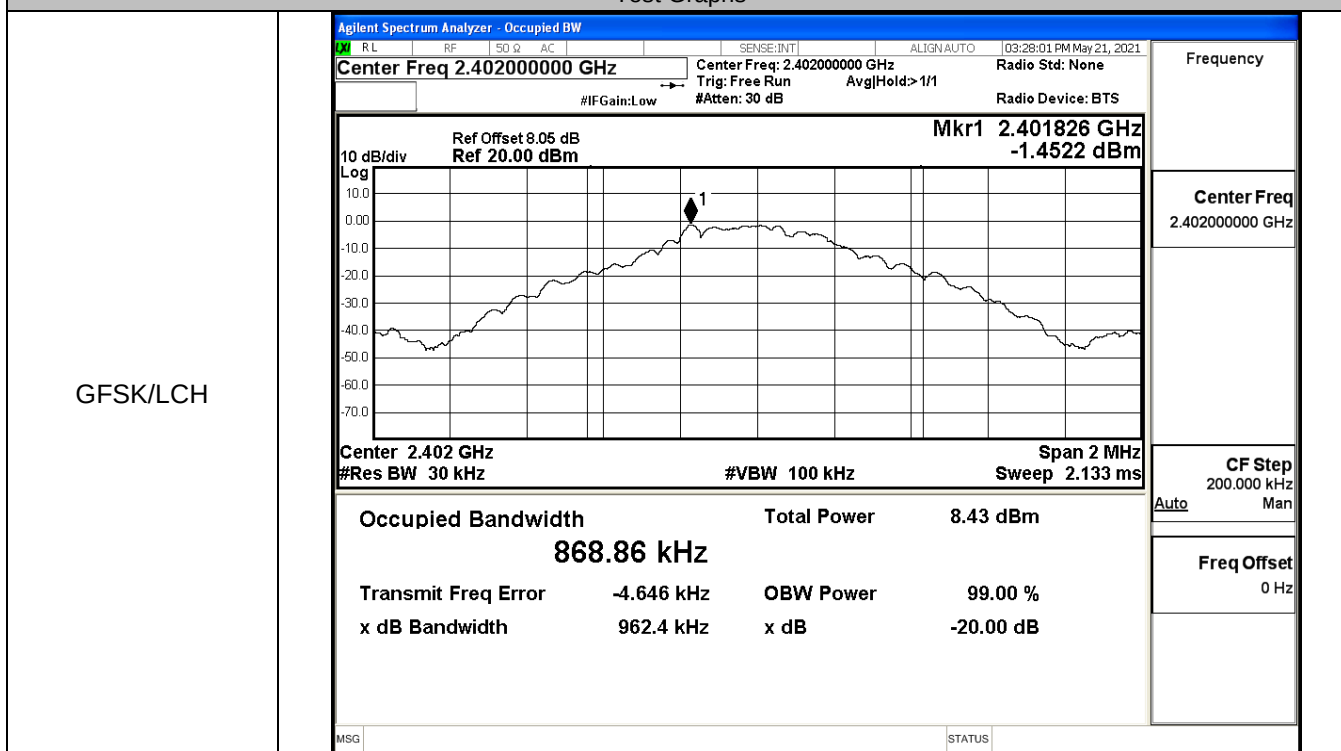
8DPSK/HCH



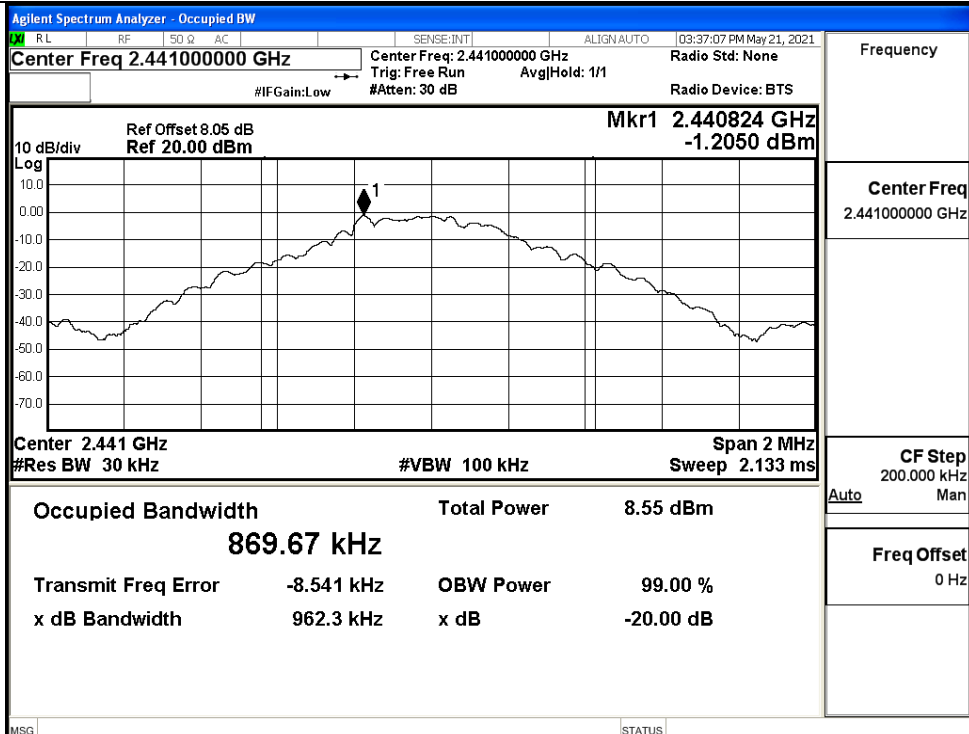
## A.2 20dB Bandwidth

| Mode          | Channel. | 20dB Bandwidth [MHz] | Limit [MHz]   | Verdict |
|---------------|----------|----------------------|---------------|---------|
| GFSK          | LCH      | 0.9624               | Not Specified | PASS    |
|               | MCH      | 0.9623               | Not Specified | PASS    |
|               | HCH      | 0.9600               | Not Specified | PASS    |
| $\pi/4$ DQPSK | LCH      | 1.281                | Not Specified | PASS    |
|               | MCH      | 1.281                | Not Specified | PASS    |
|               | HCH      | 1.282                | Not Specified | PASS    |
| 8DPSK         | LCH      | 1.301                | Not Specified | PASS    |
|               | MCH      | 1.300                | Not Specified | PASS    |
|               | HCH      | 1.299                | Not Specified | PASS    |

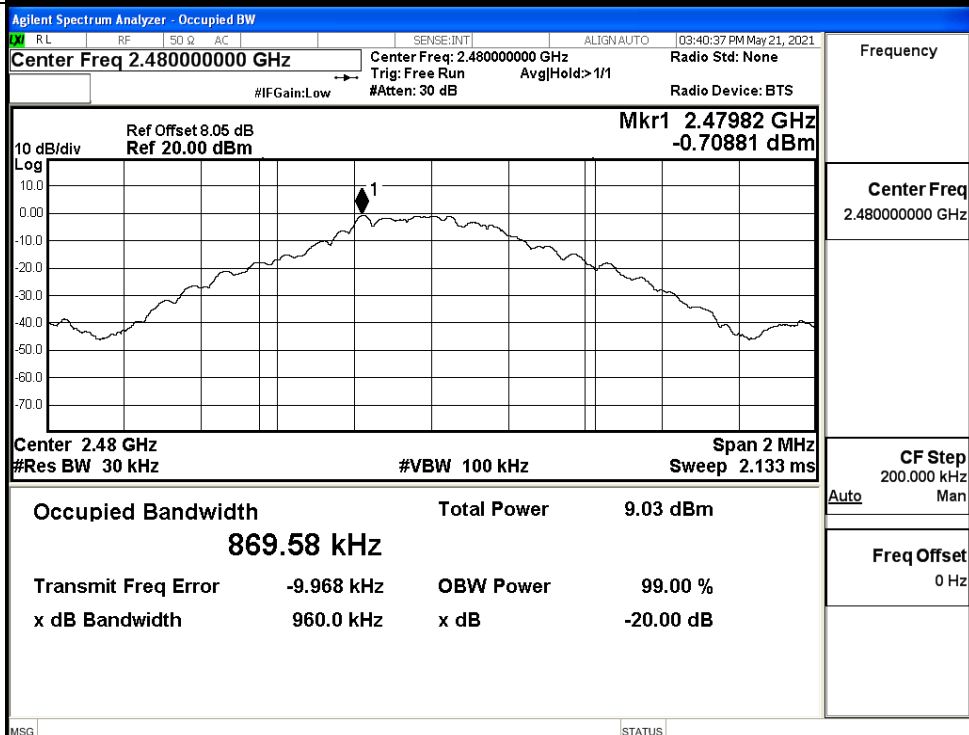
Test Graphs



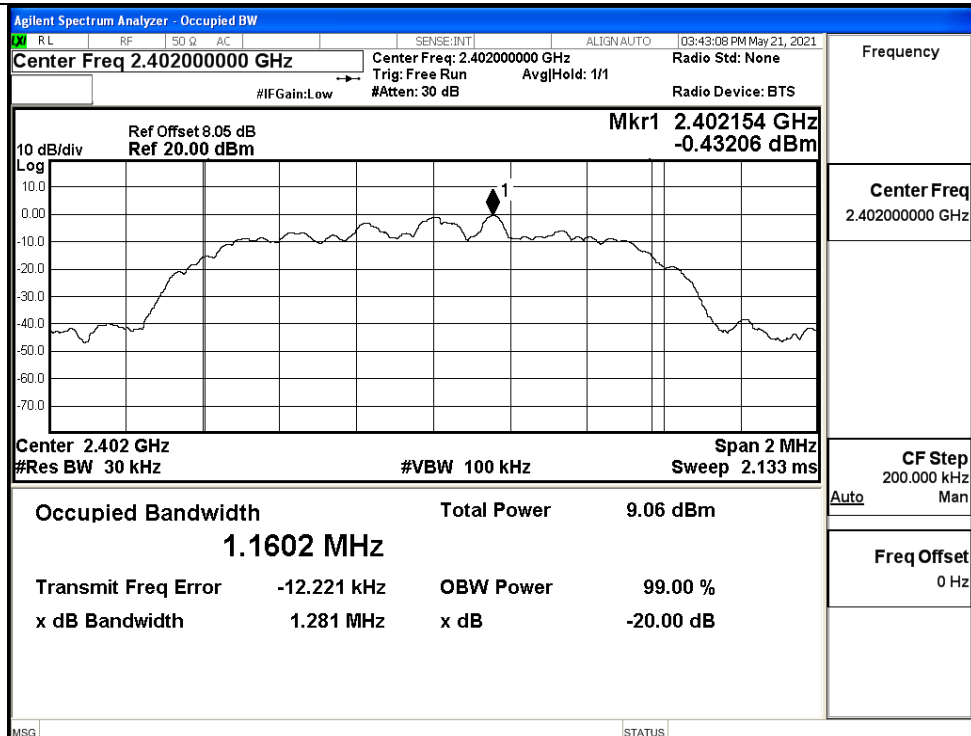
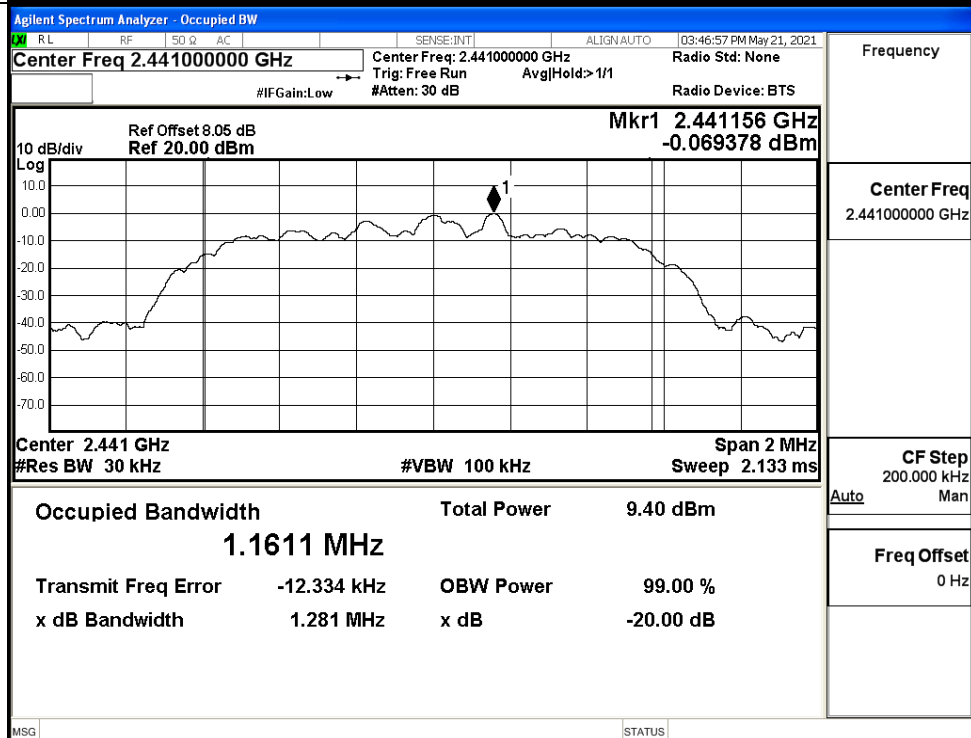
GFSK/MCH

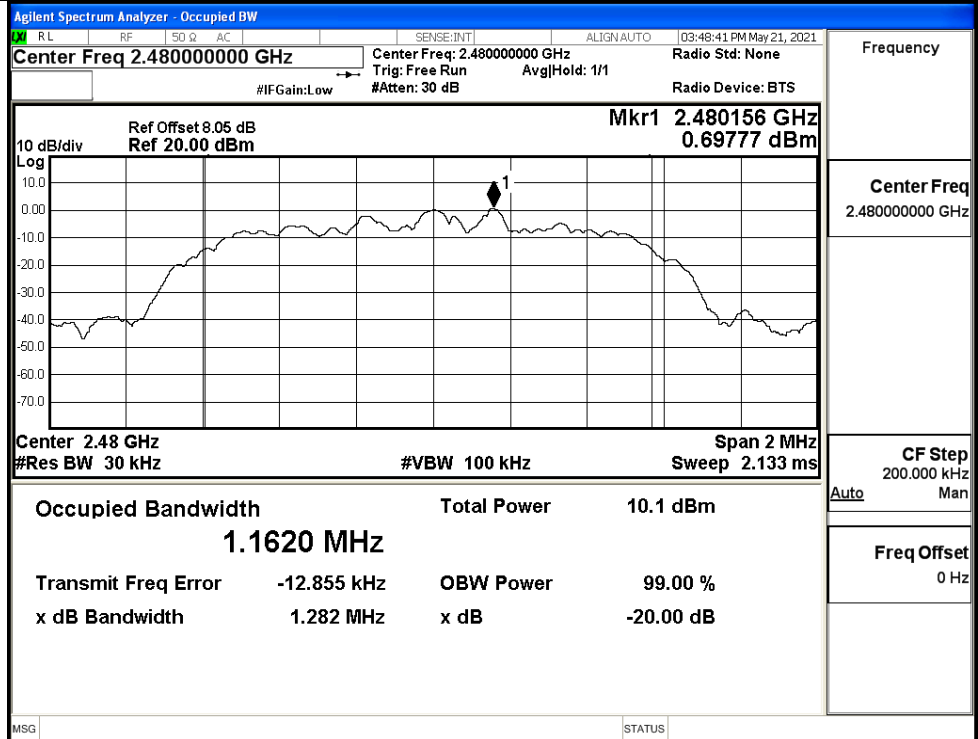


GFSK/HCH

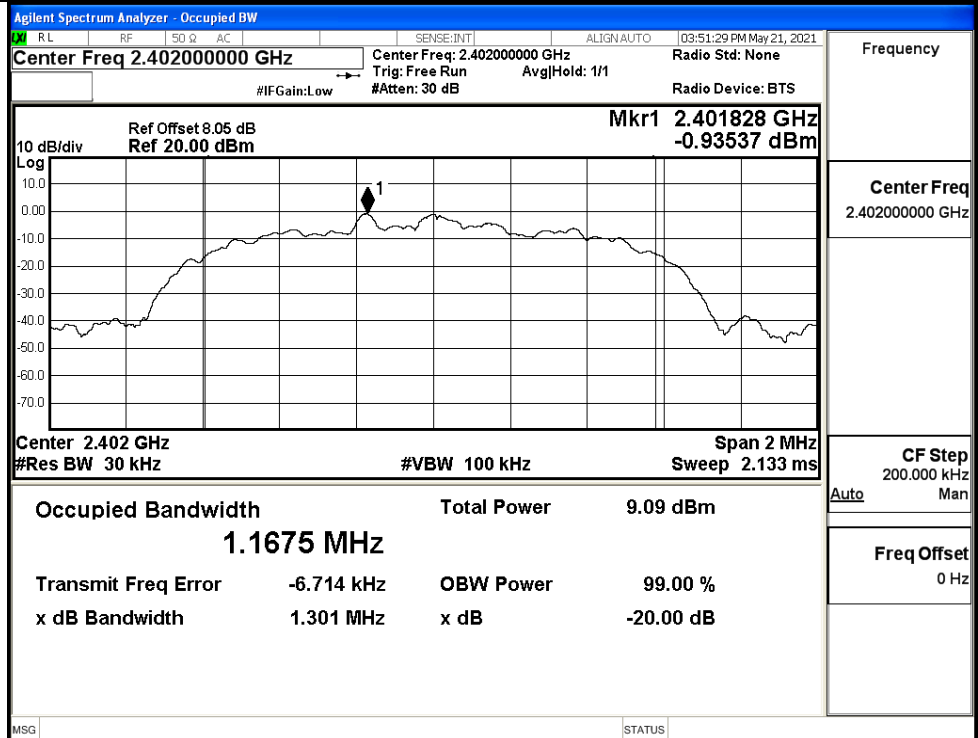




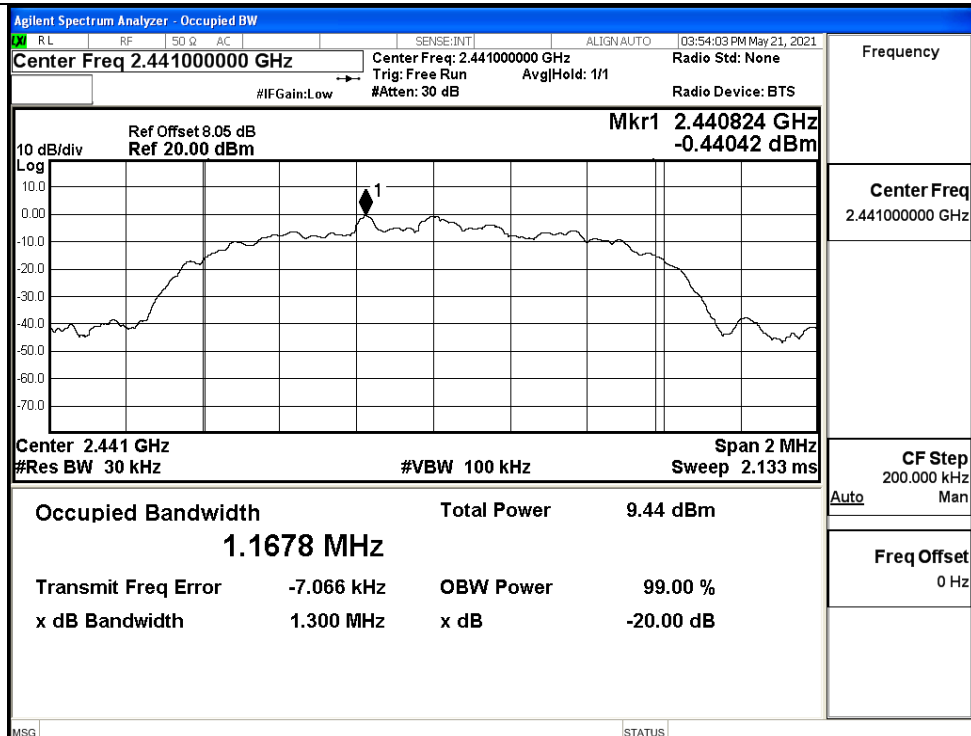
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

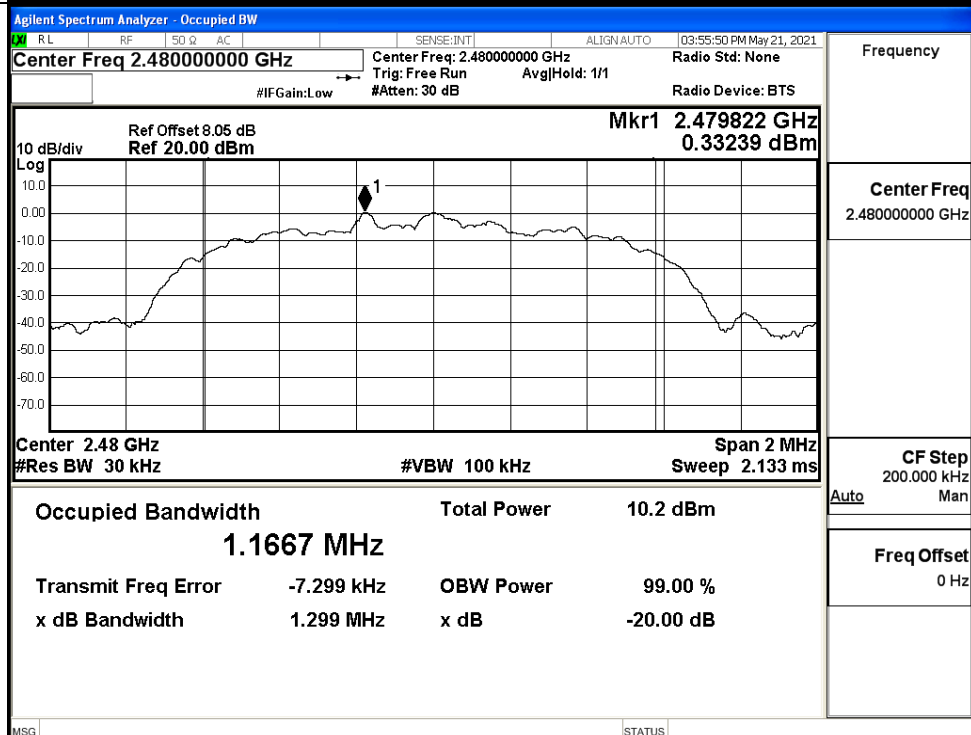
8DPSK/LCH



8DPSK/MCH



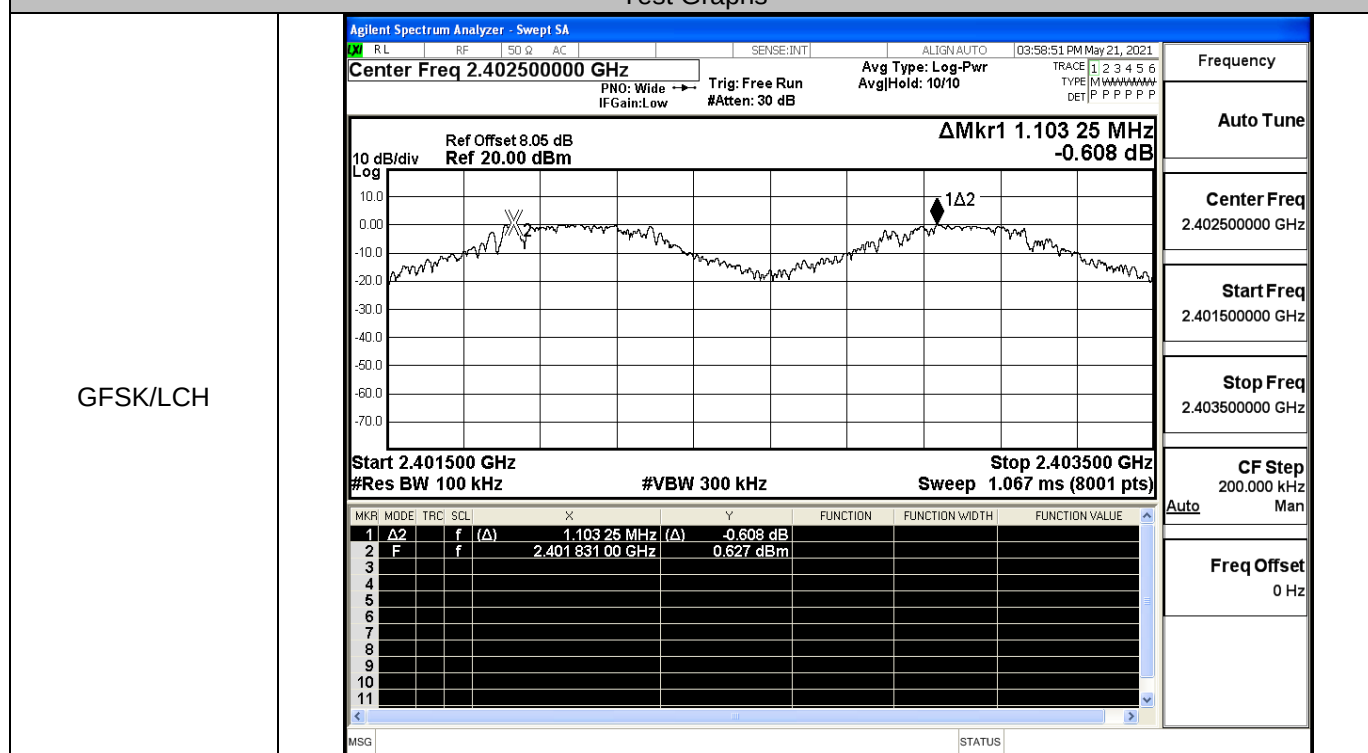
8DPSK/HCH



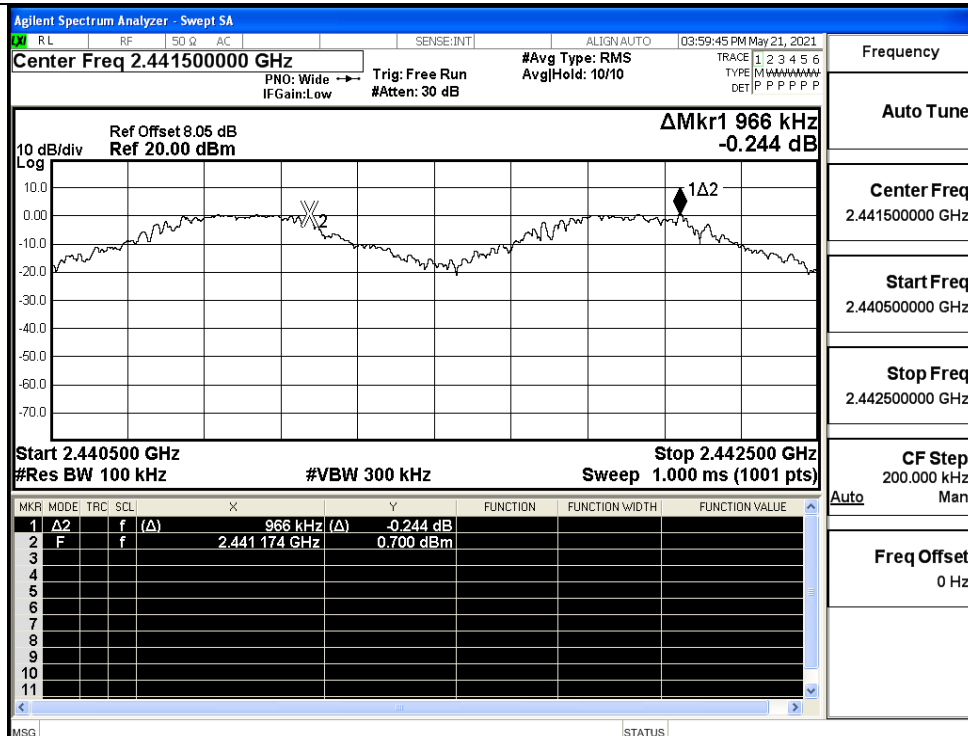
### A.3 Carrier Frequency Separation

| Mode          | Channel. | Carrier Frequency Separation [MHz] | Limit [MHz] | Verdict |
|---------------|----------|------------------------------------|-------------|---------|
| GFSK          | LCH      | 1.103                              | 0.642       | PASS    |
|               | MCH      | 0.966                              | 0.642       | PASS    |
|               | HCH      | 0.836                              | 0.642       | PASS    |
| $\pi/4$ DQPSK | LCH      | 1.254                              | 0.855       | PASS    |
|               | MCH      | 1.056                              | 0.855       | PASS    |
|               | HCH      | 0.862                              | 0.855       | PASS    |
| 8DPSK         | LCH      | 1.252                              | 0.867       | PASS    |
|               | MCH      | 1.030                              | 0.867       | PASS    |
|               | HCH      | 1.098                              | 0.867       | PASS    |

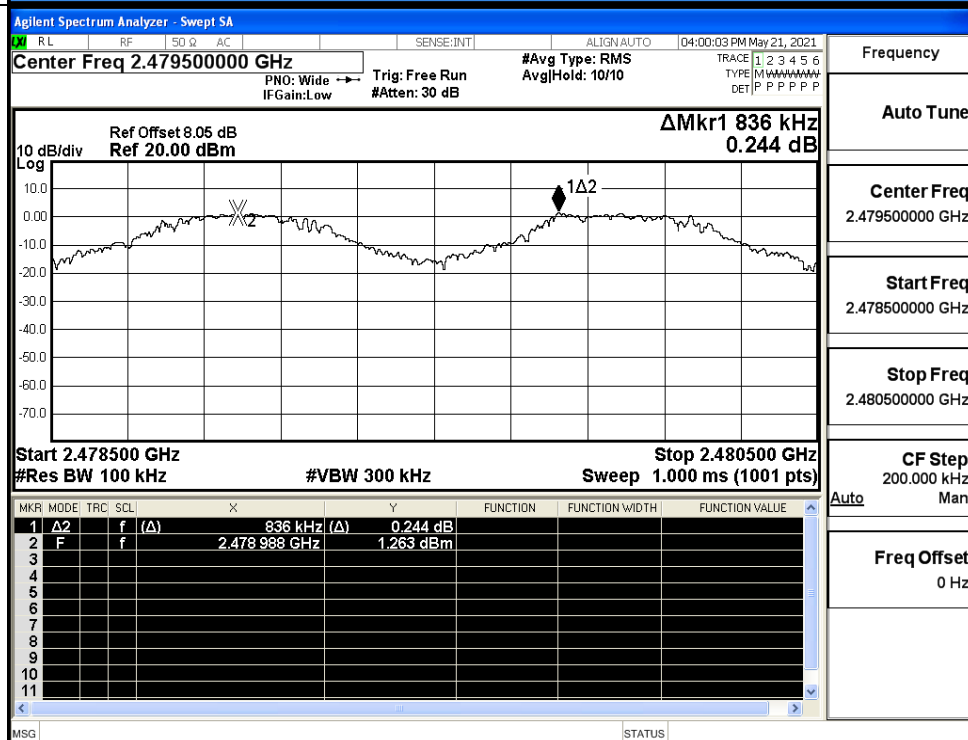
#### Test Graphs

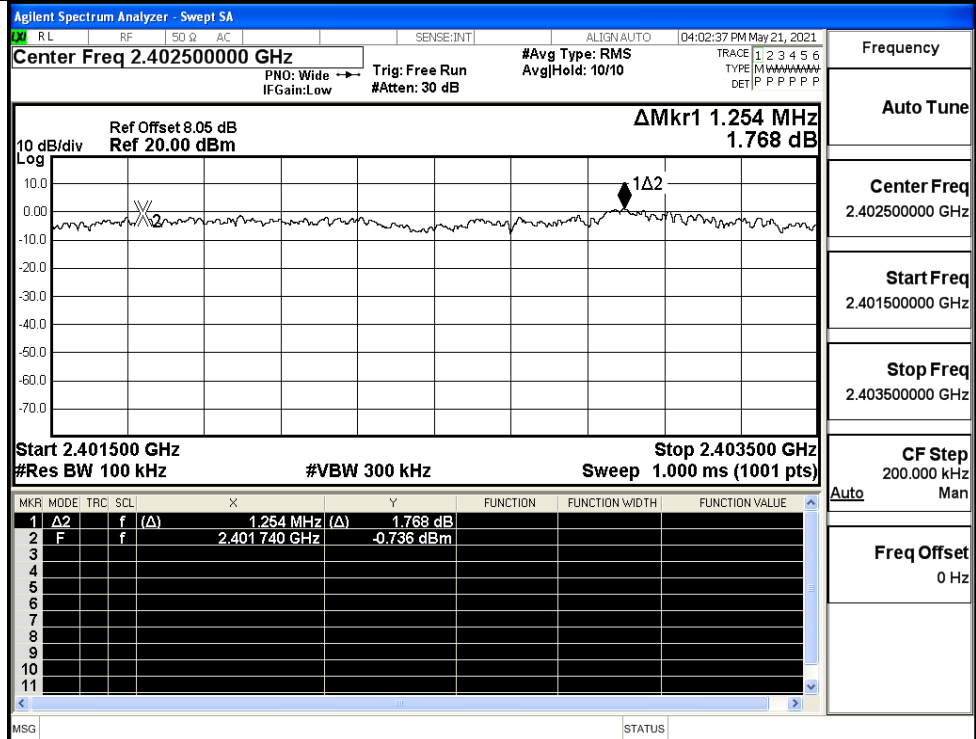
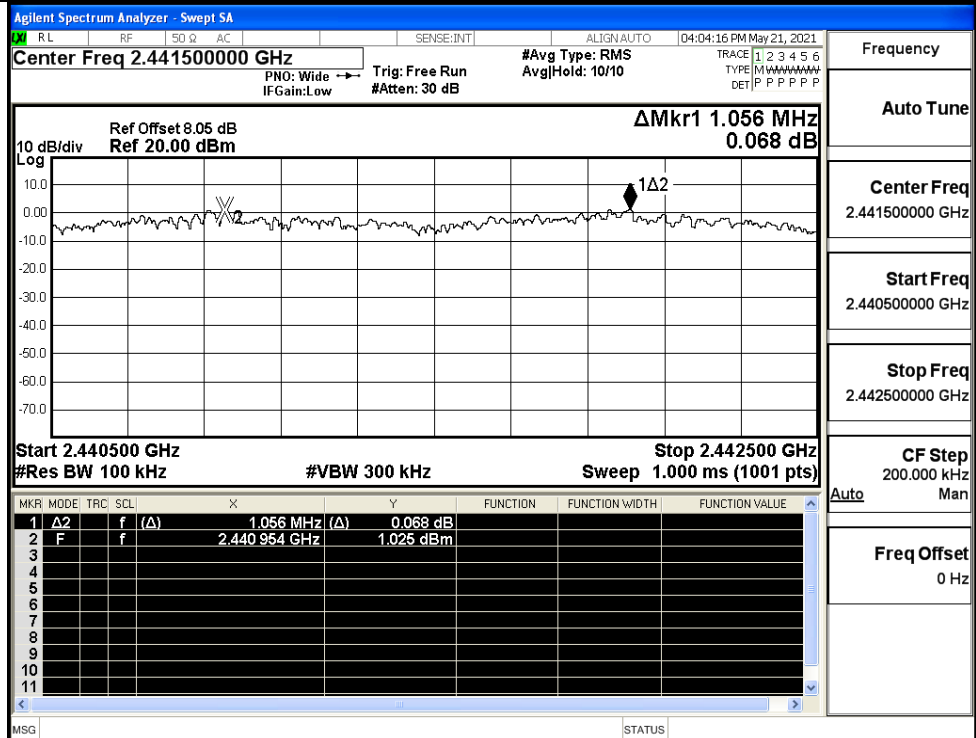


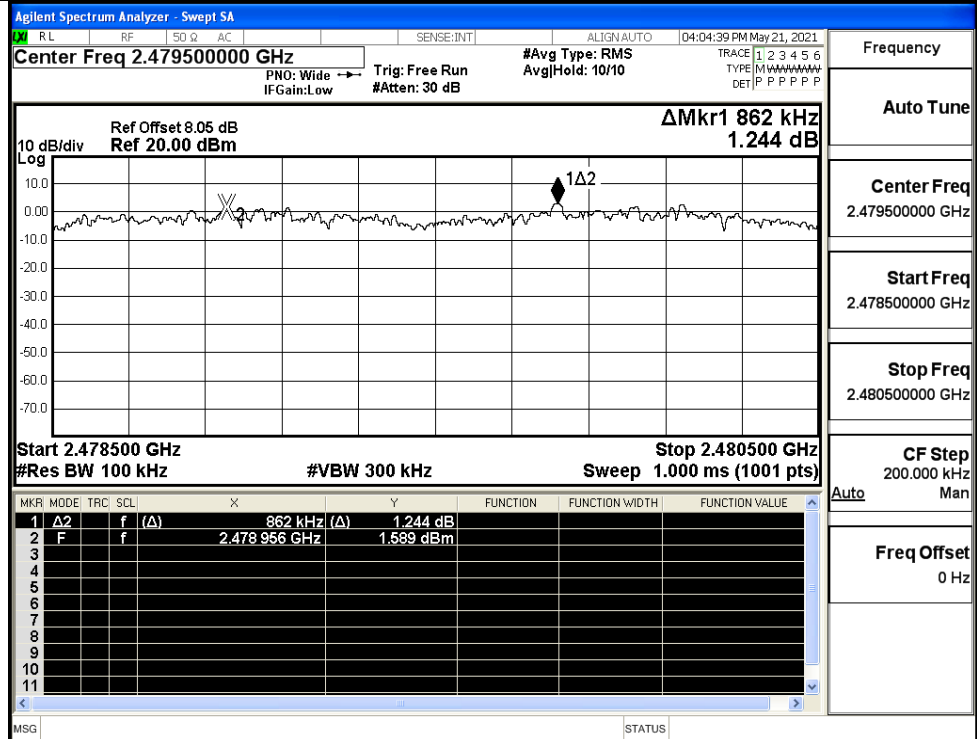
GFSK/MCH



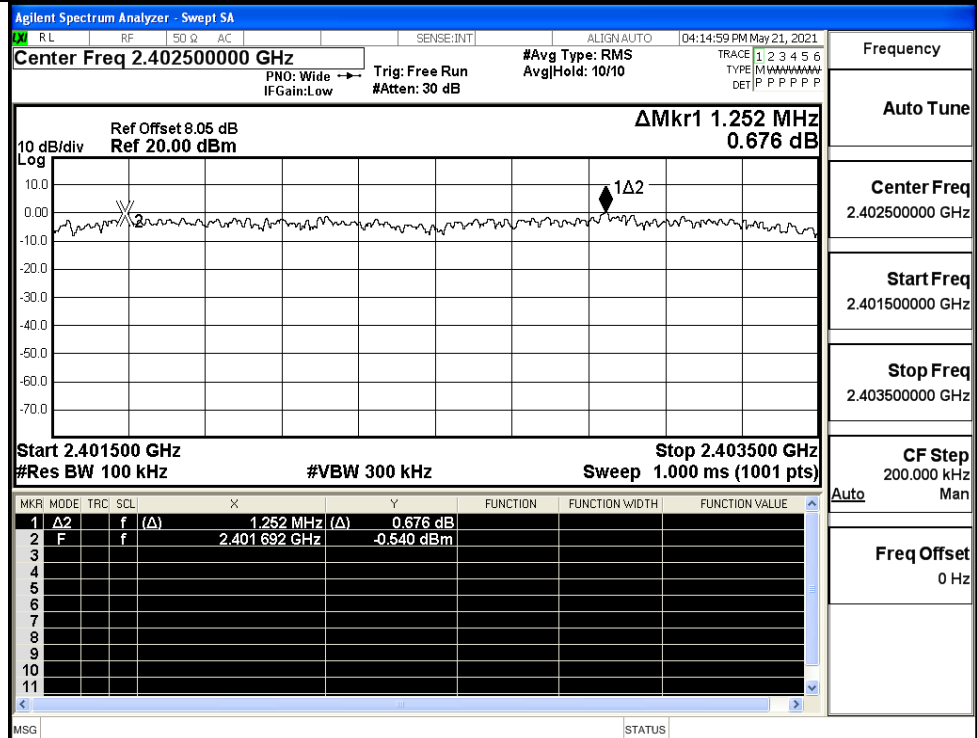
GFSK/HCH



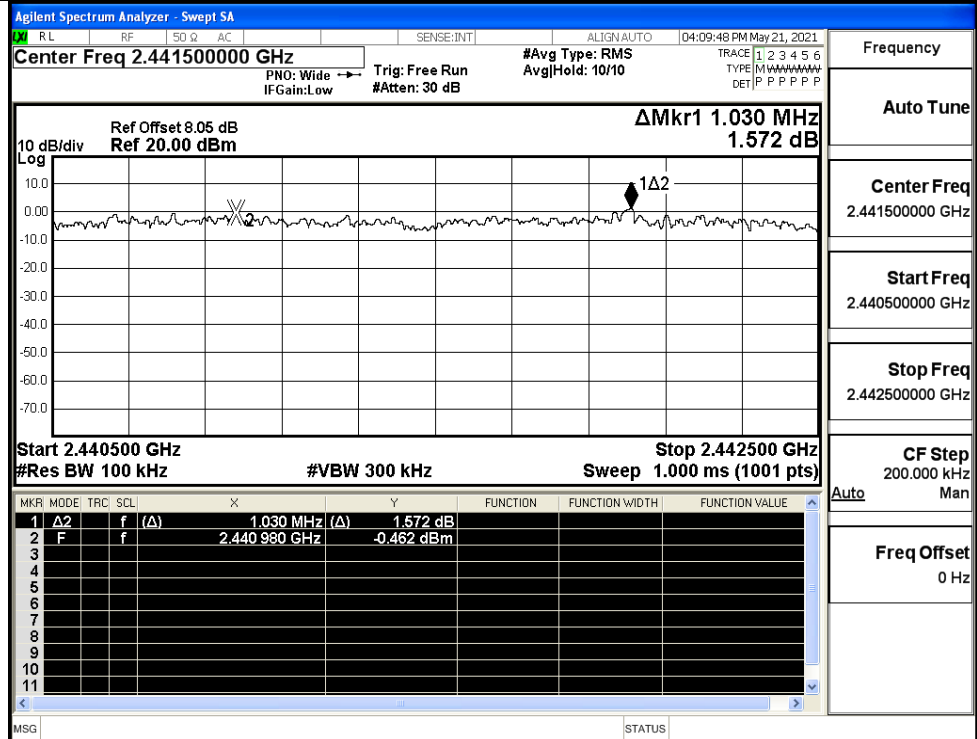
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

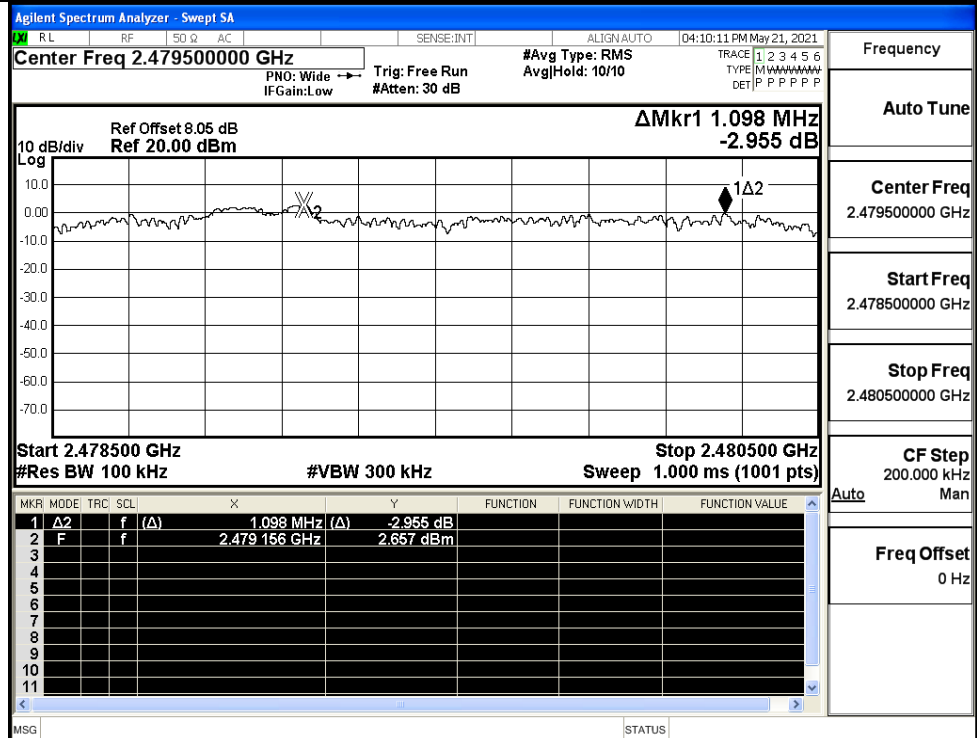
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH



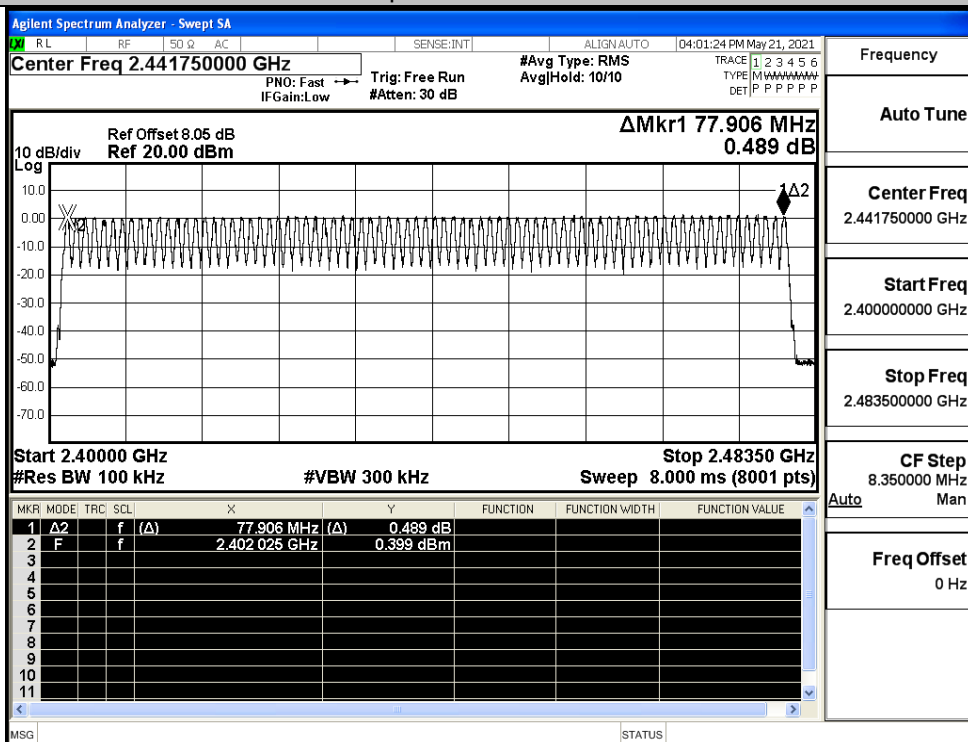
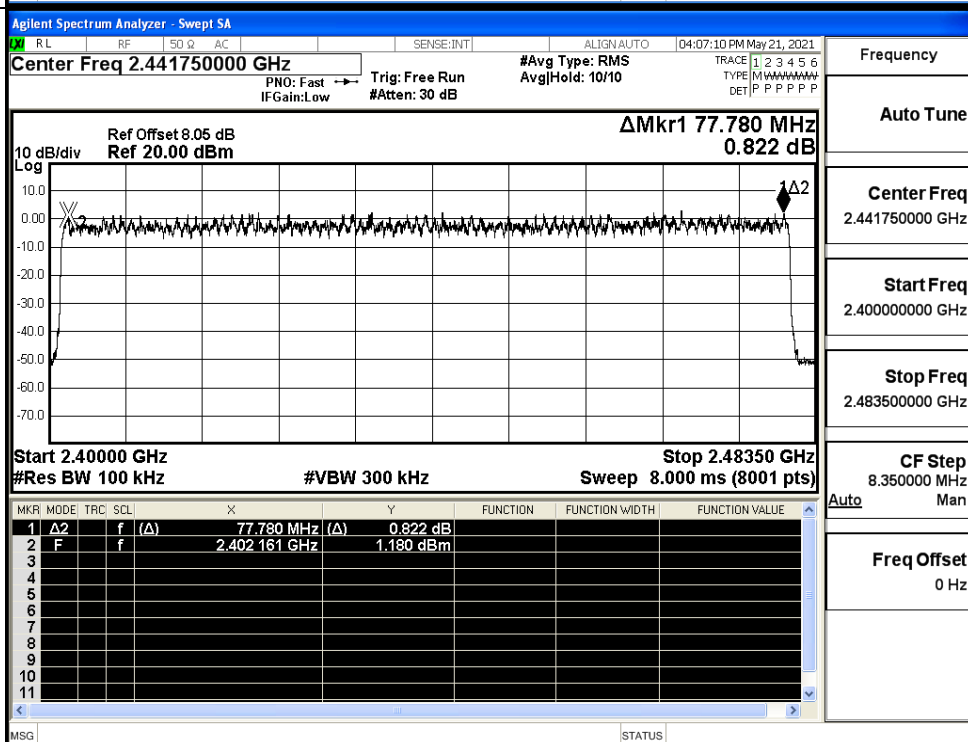


## A.4 Hopping Channel Number

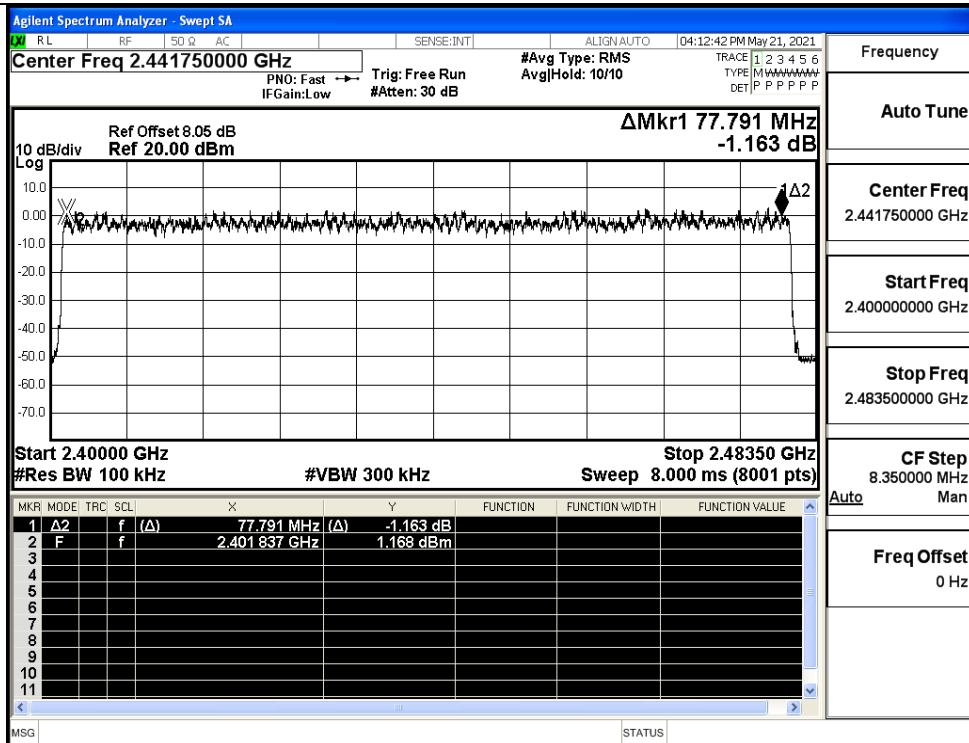
| Mode          | Channel. | Number of Hopping Channel [N] | Limit [N] | Verdict |
|---------------|----------|-------------------------------|-----------|---------|
| GFSK          | Hop      | 79                            | $\geq 15$ | PASS    |
| $\pi/4$ DQPSK | Hop      | 79                    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

### Test Graphs

GFSK/Hop

 $\pi/4$ DQPSK/Hop

8DPSK/Hop

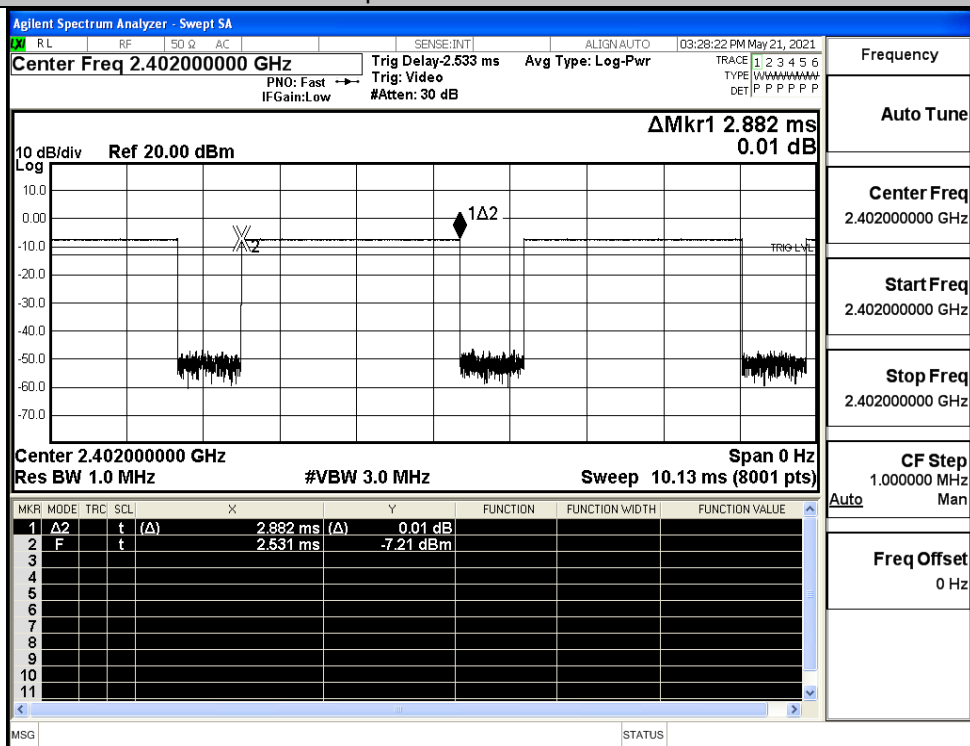


## A.5 Dwell Time

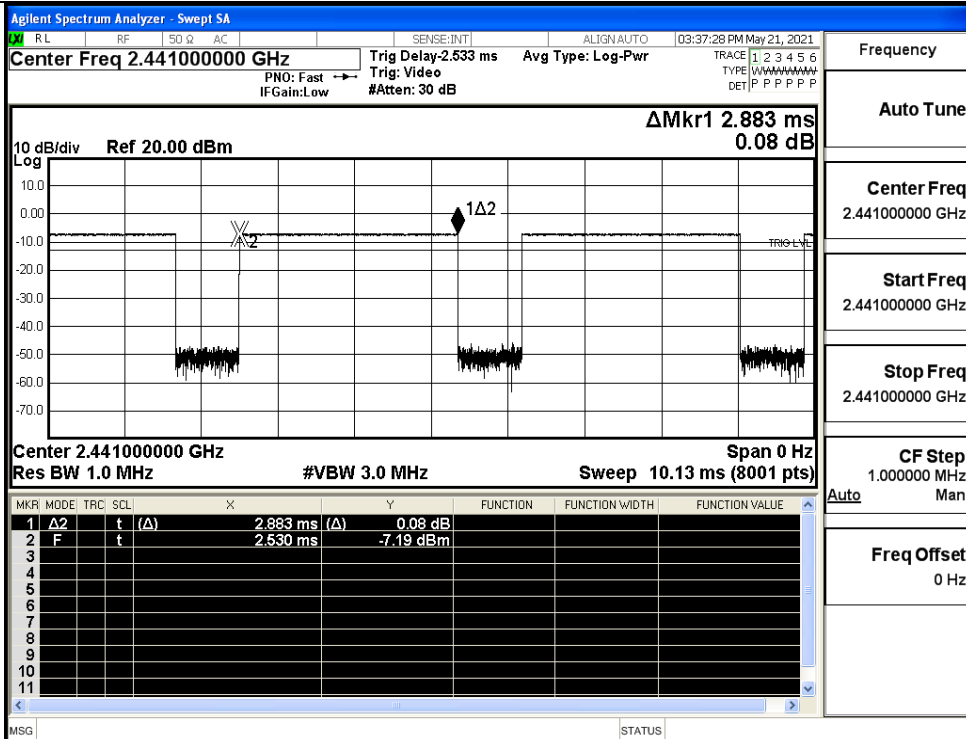
| Mode          | Packet | Channel | Burst Width<br>[ms/hop/ch] | Total<br>Hops[hop*ch] | Dwell Time[s] | Limit [s] | Verdict |
|---------------|--------|---------|----------------------------|-----------------------|---------------|-----------|---------|
| GFSK          | DH5    | LCH     | 2.88                       | 106.7                 | 0.307         | 0.4       | PASS    |
|               | DH5    | MCH     | 2.88                       | 106.7                 | 0.307         | 0.4       | PASS    |
|               | DH5    | HCH     | 2.88                       | 106.7                 | 0.307         | 0.4       | PASS    |
| $\pi/4$ DQPSK | 2DH5   | LCH     | 2.88                       | 106.7                 | 0.308         | 0.4       | PASS    |
|               | 2DH5   | MCH     | 2.88                       | 106.7                 | 0.308         | 0.4       | PASS    |
|               | 2DH5   | HCH     | 2.88                       | 106.7                 | 0.015         | 0.4       | PASS    |
| 8DPSK         | 3DH5   | LCH     | 2.88                       | 106.7                 | 0.015         | 0.4       | PASS    |
|               | 3DH5   | MCH     | 2.88                       | 106.7                 | 0.015         | 0.4       | PASS    |
|               | 3DH5   | HCH     | 2.88                       | 106.7                 | 0.015         | 0.4       | PASS    |

Test Graphs

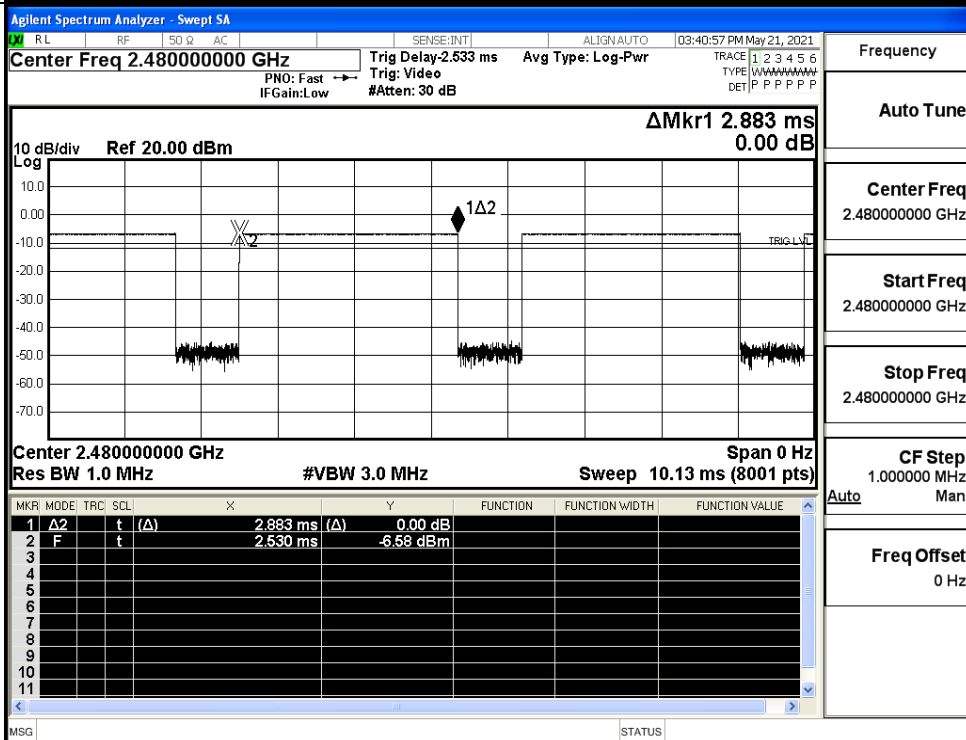
GFSK\_DH5/LCH



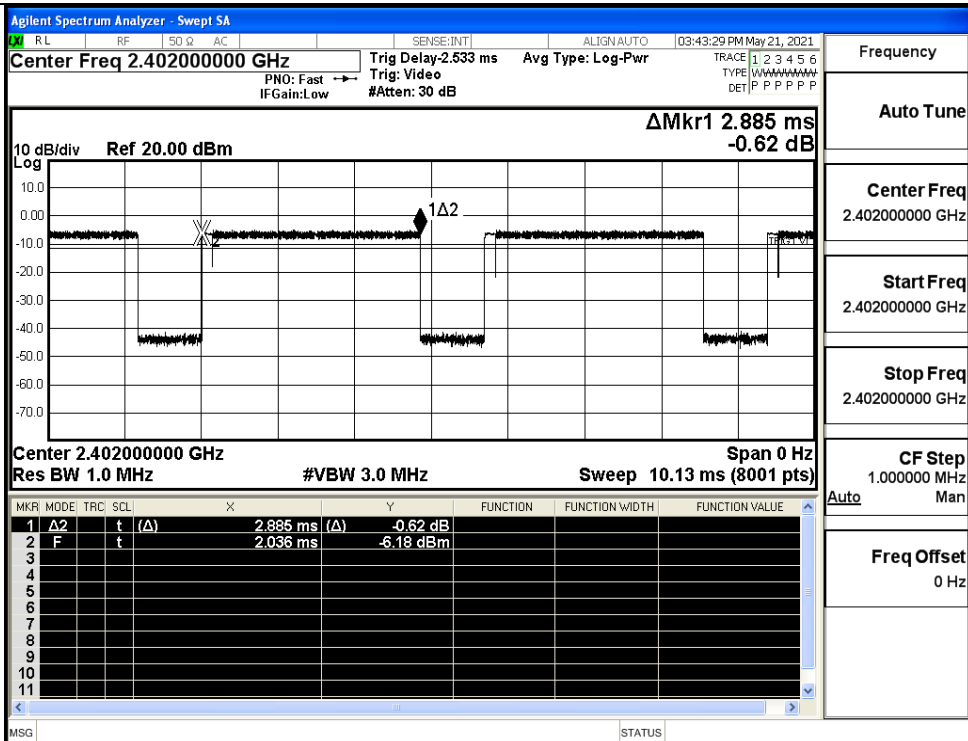
GFSK\_DH5/MCH



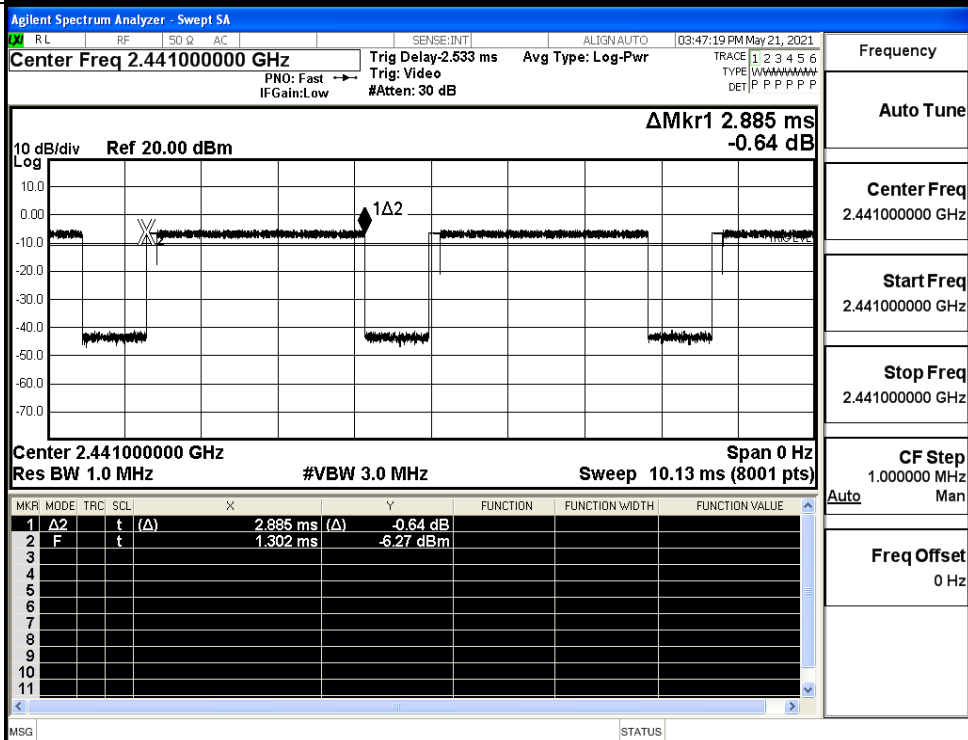
GFSK\_DH5/HCH



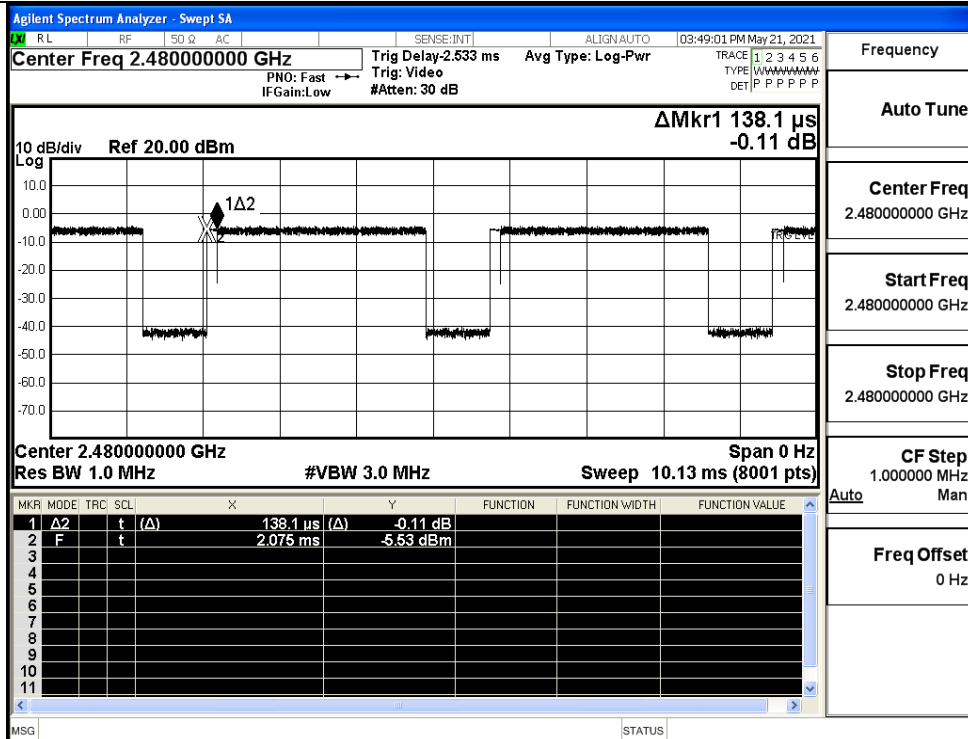
$\pi/4$ DQPSK  
\_2DH5/LCH



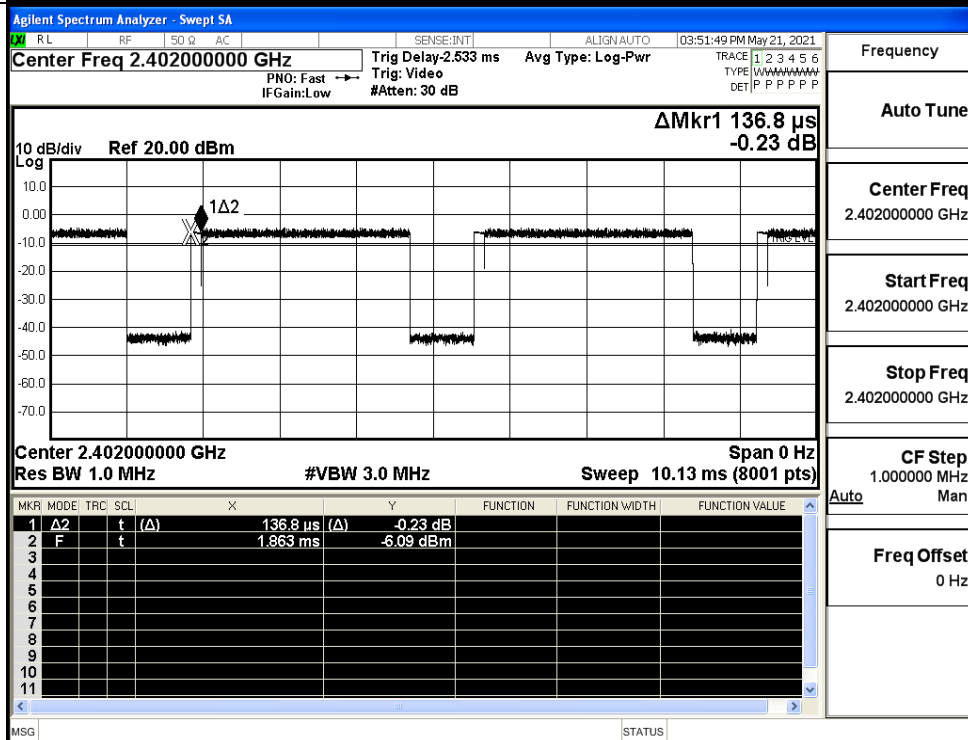
$\pi/4$ DQPSK  
\_2DH5/MCH



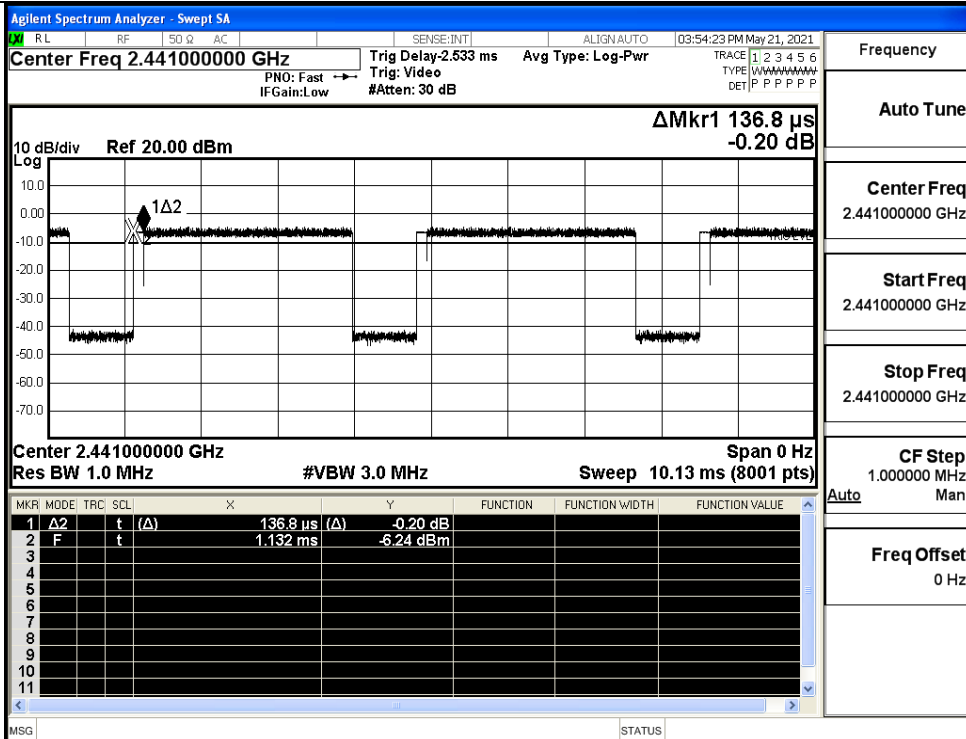
$\pi/4$ DQPSK  
\_2DH5/HCH



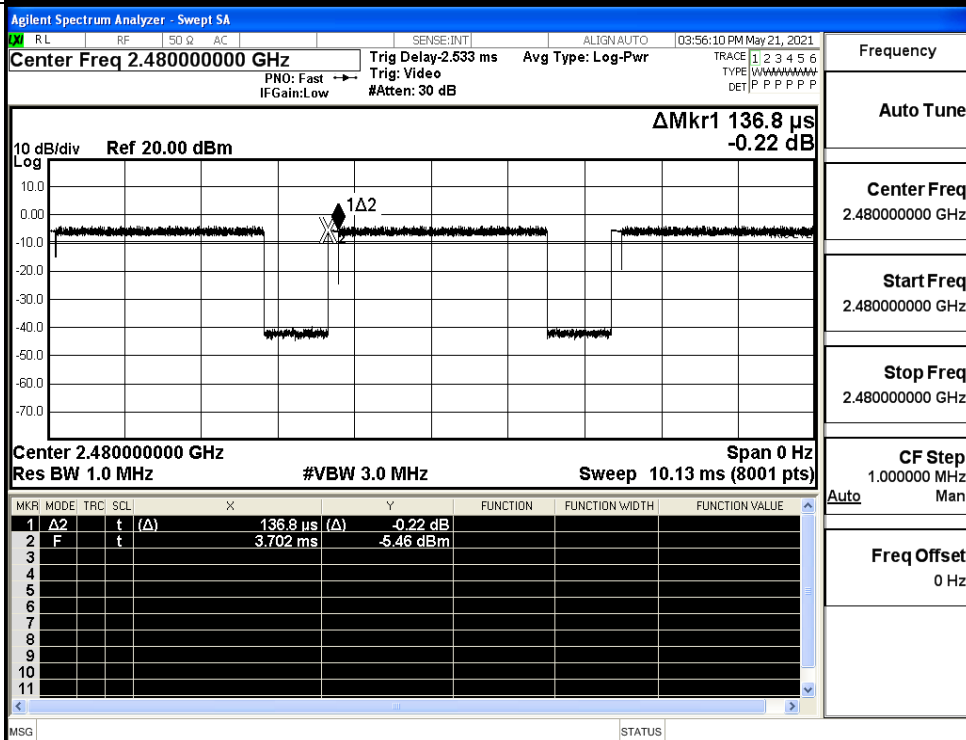
8DPSK \_3DH5/LCH



8DPSK\_3DH5/MCH



8DPSK\_3DH5/HCH

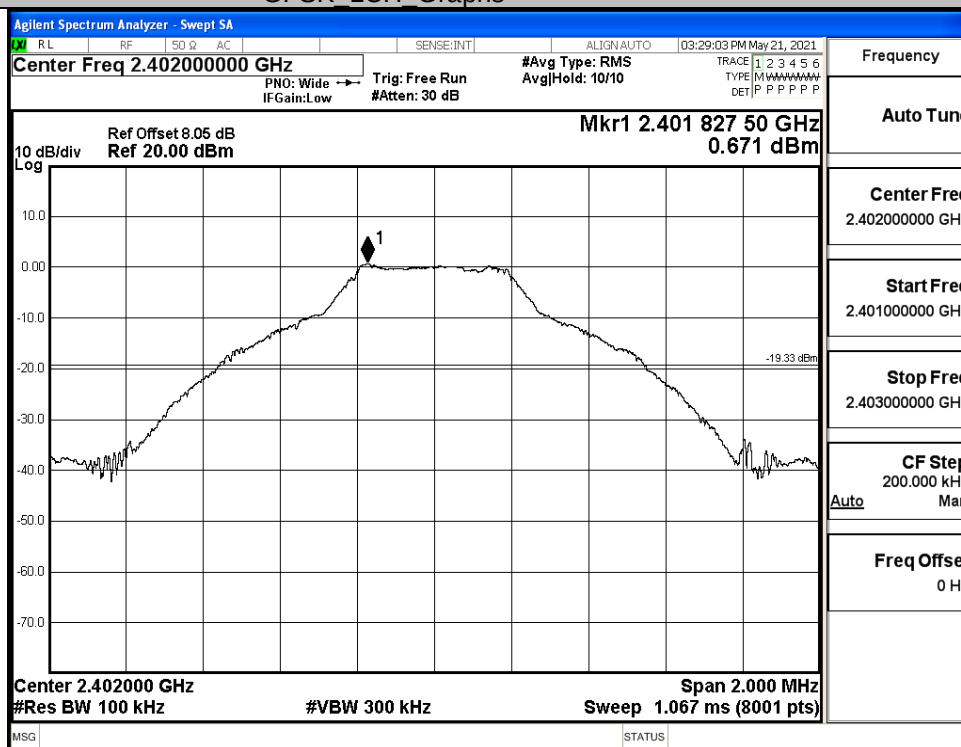


## A.6 RF Conducted Spurious Emissions

| Mode          | Channel | Pref [dBm] | Max. Level [dBm] | Limit [dBm] | Verdict |
|---------------|---------|------------|------------------|-------------|---------|
| GFSK          | LCH     | 0.671      | -37.599          | -19.329     | PASS    |
|               | MCH     | 0.822      | -37.780          | -19.178     | PASS    |
|               | HCH     | 1.955      | -38.041          | -18.045     | PASS    |
| $\pi/4$ DQPSK | LCH     | 1.757      | -37.340          | -18.243     | PASS    |
|               | MCH     | 2.206      | -37.829          | -17.794     | PASS    |
|               | HCH     | 2.928      | -38.276          | -17.072     | PASS    |
| 8DPSK         | LCH     | 1.817      | -28.546          | -18.183     | PASS    |
|               | MCH     | 1.737      | -37.796          | -18.263     | PASS    |
|               | HCH     | 2.942      | -38.017          | -17.058     | PASS    |

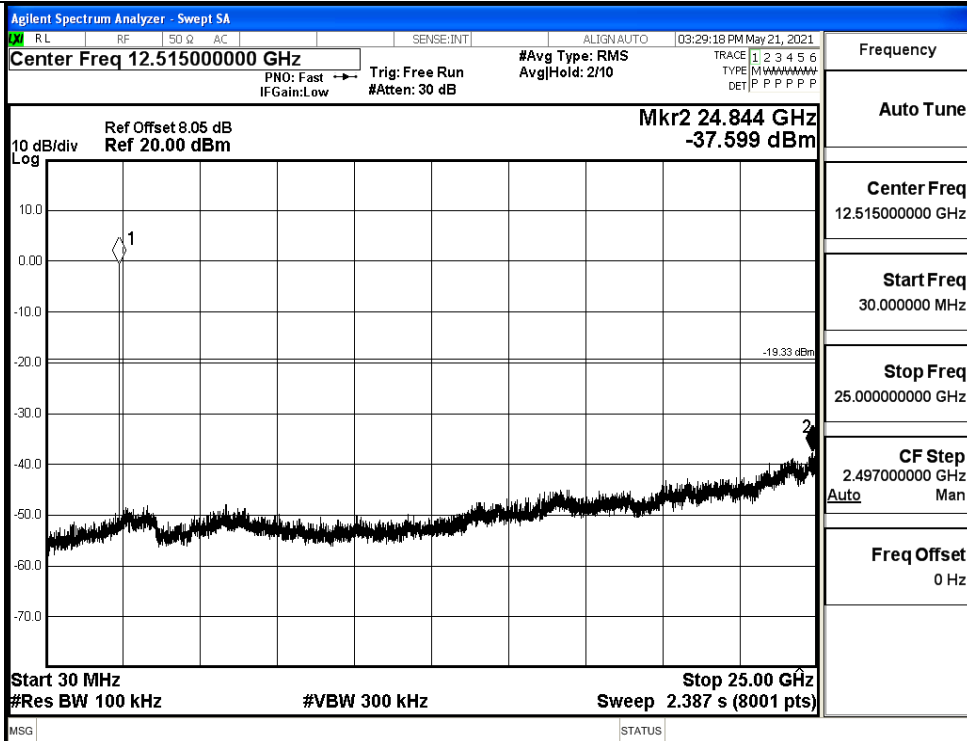
GFSK LCH Graphs

Pref



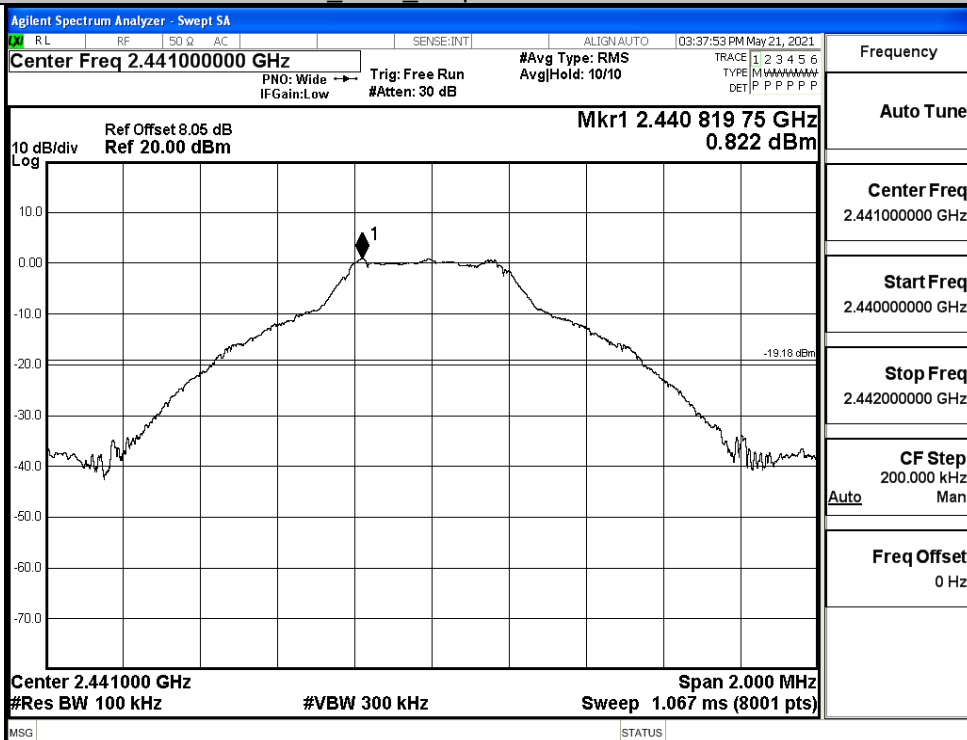


Puw

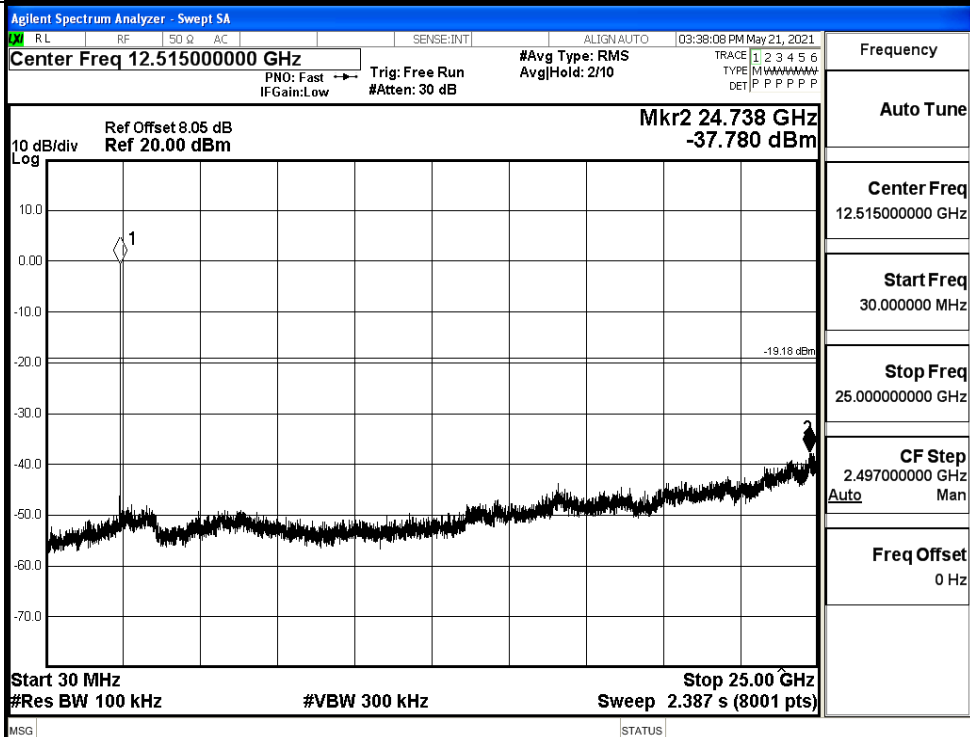


## GFSK\_MCH\_Graphs

Pref

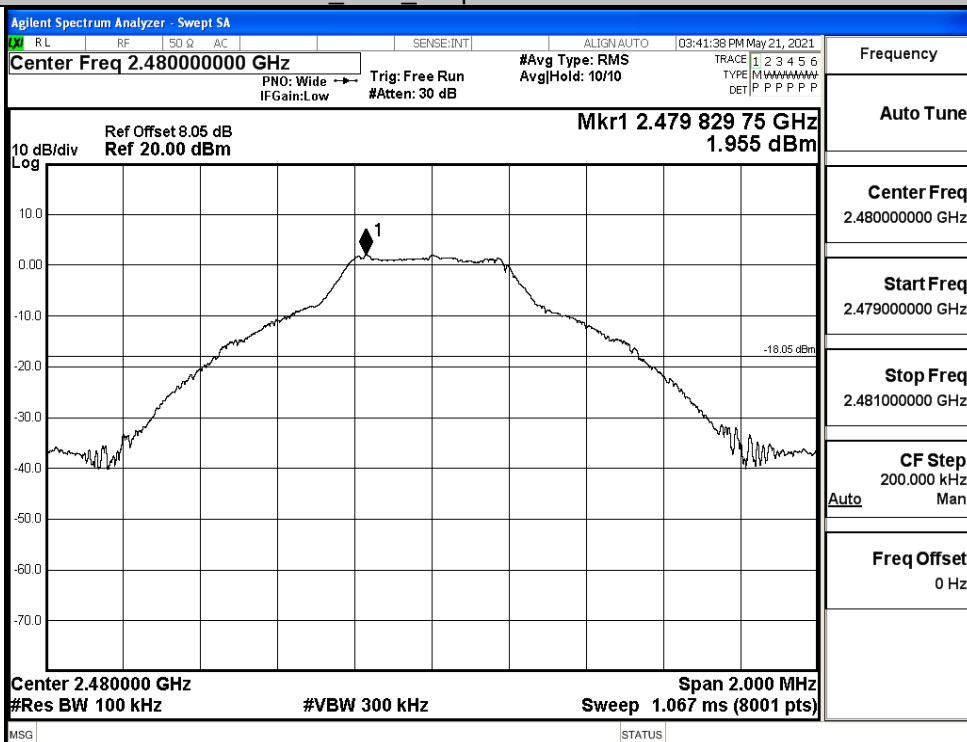


Puw

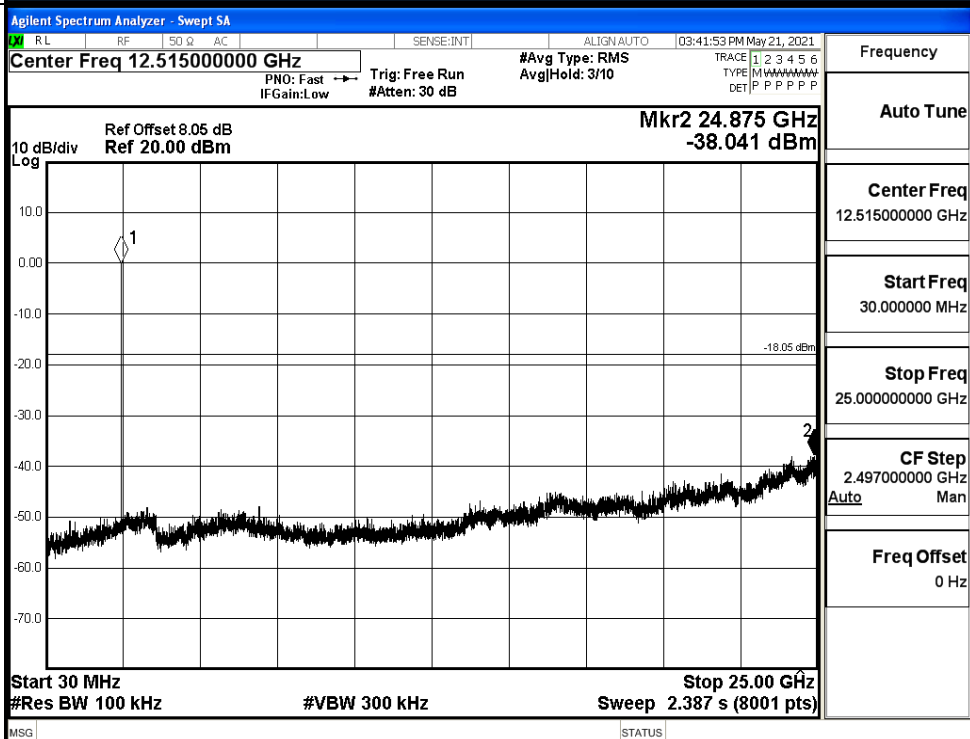


## GFSK HCH\_Graphs

Pref

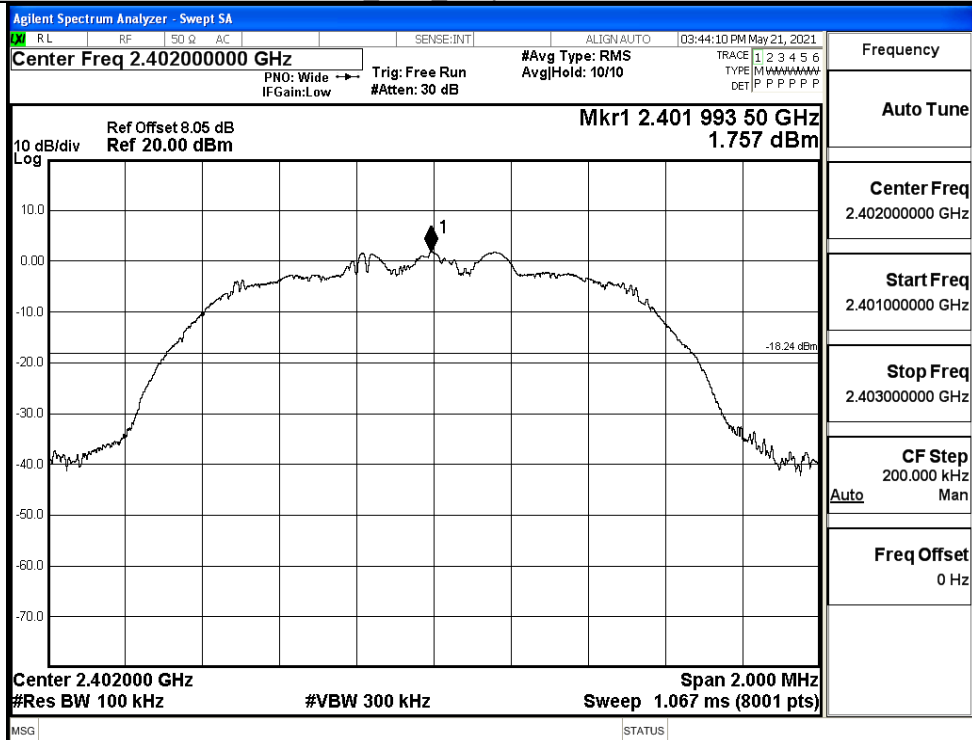


Puw

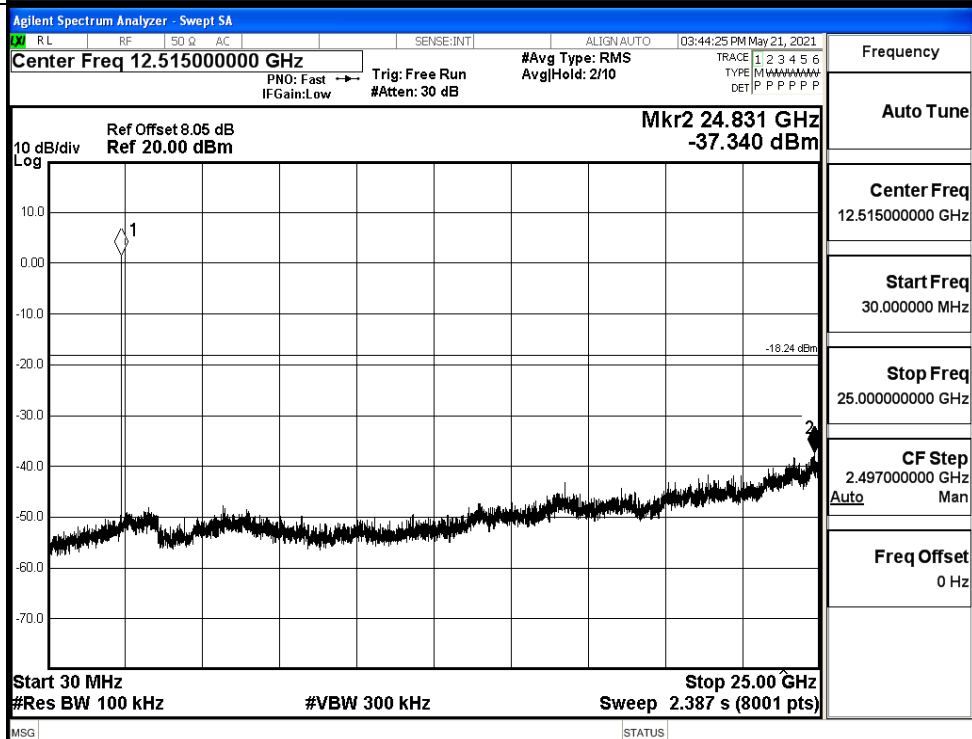


$\pi/4$ DQPSK\_LCH\_Graphs

Pref

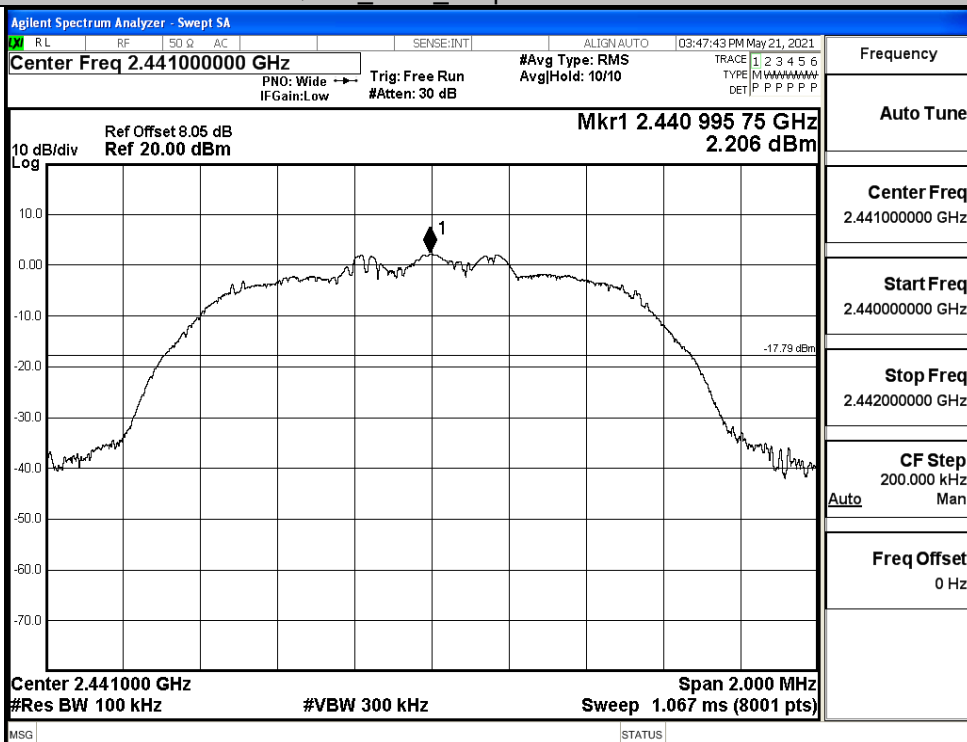


Puw

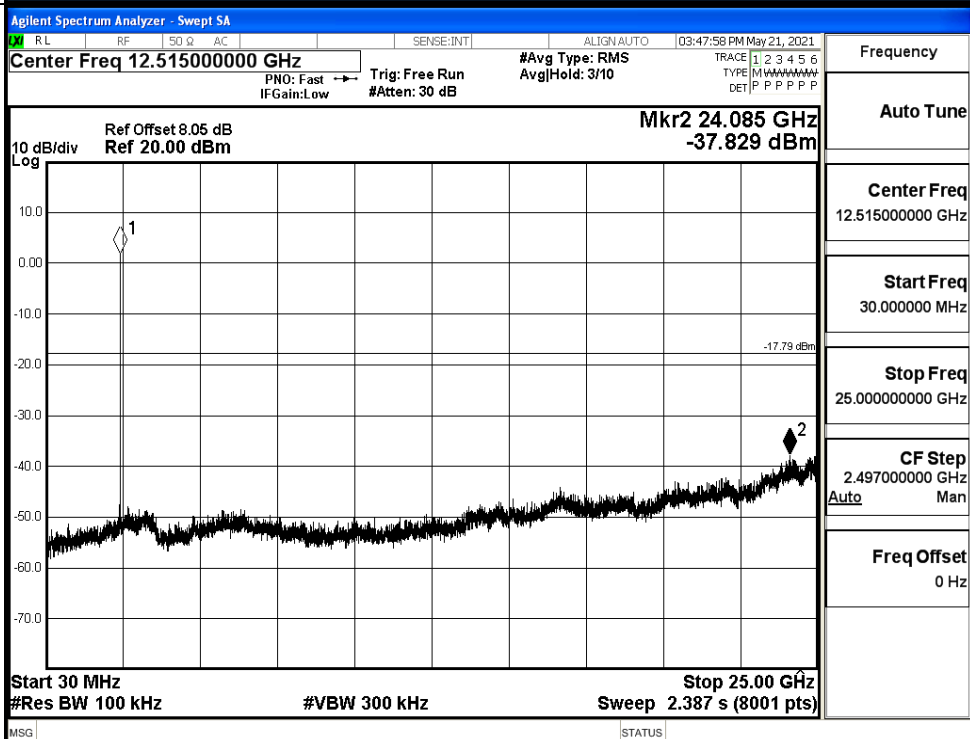


$\pi$ /4DQPSK\_MCH\_Graphs

Pref

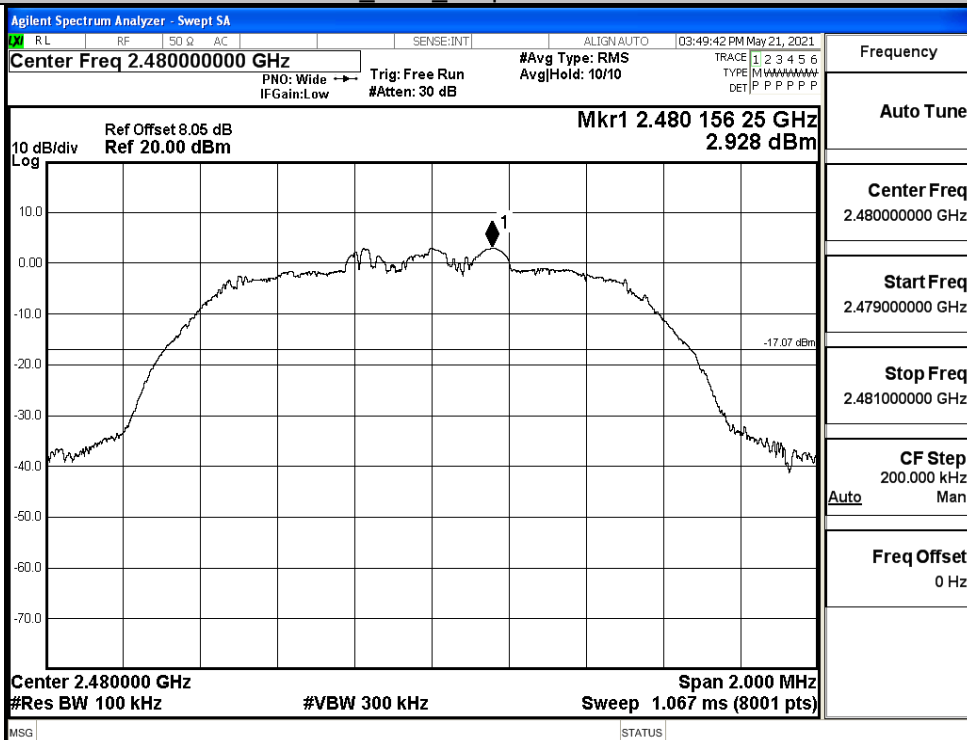


Puw

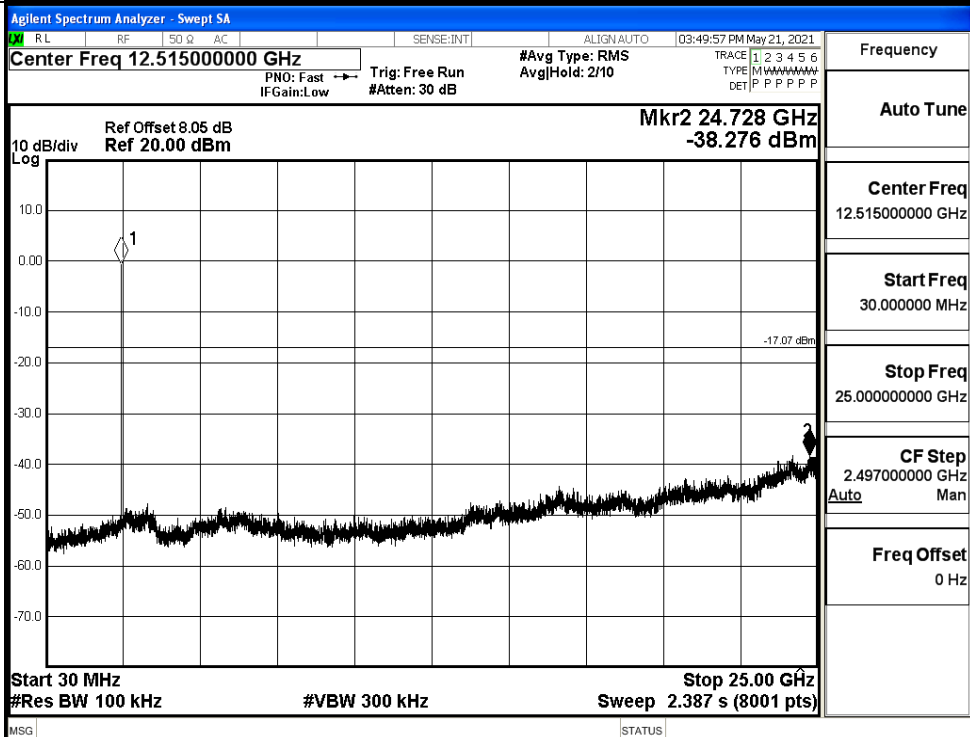


$\pi$ /4DQPSK\_HCH\_Graphs

Pref

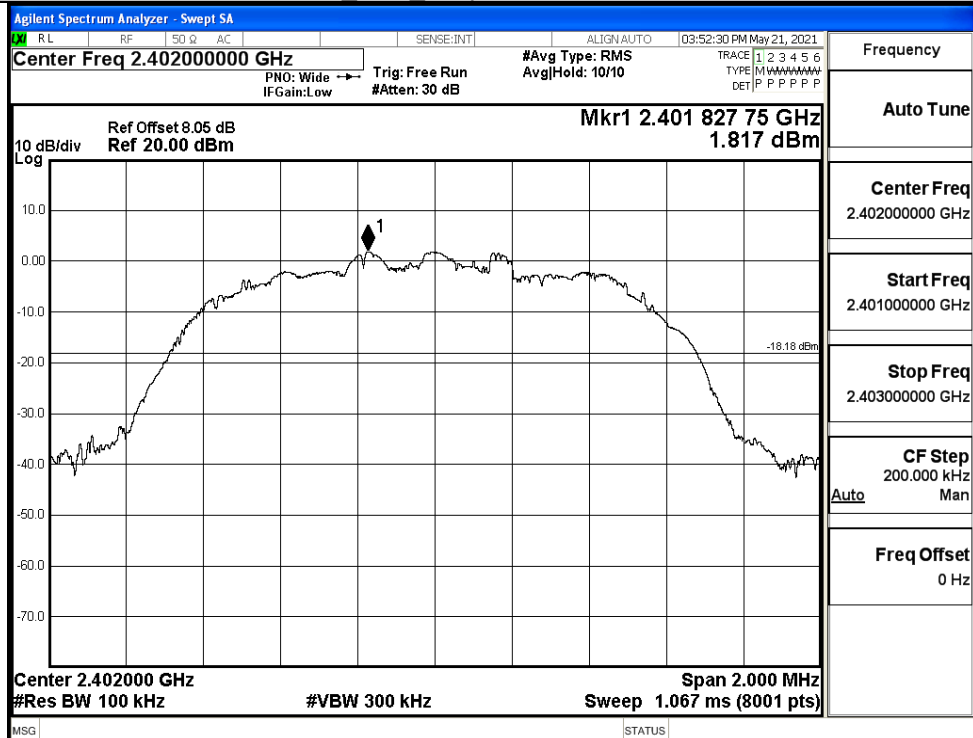


Puw

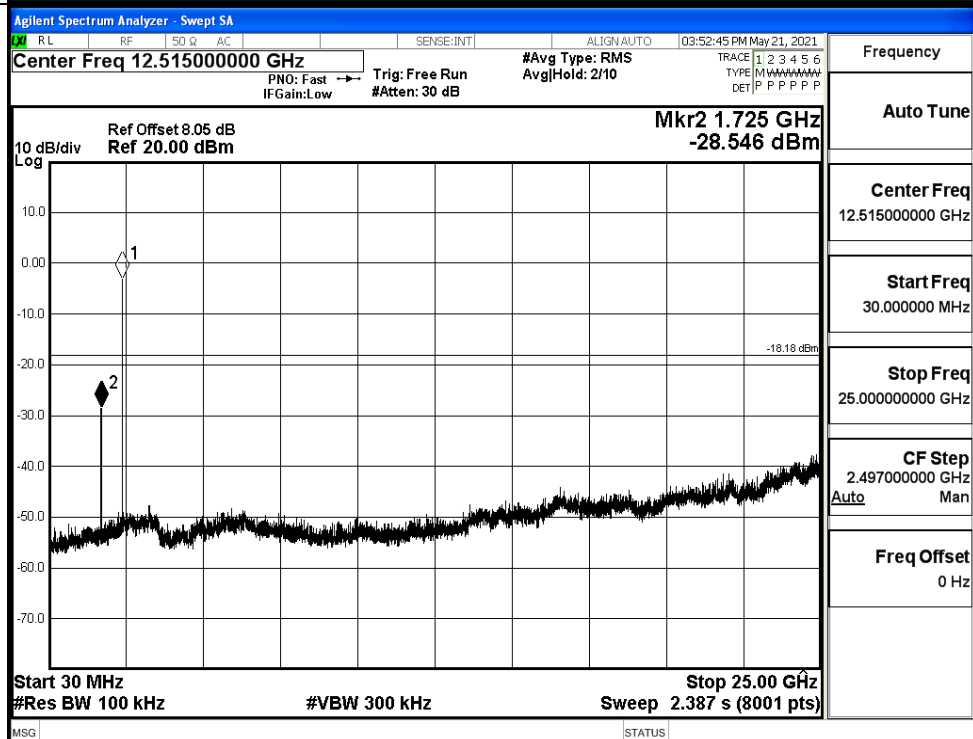


## 8DPSK\_LCH\_Graphs

Pref

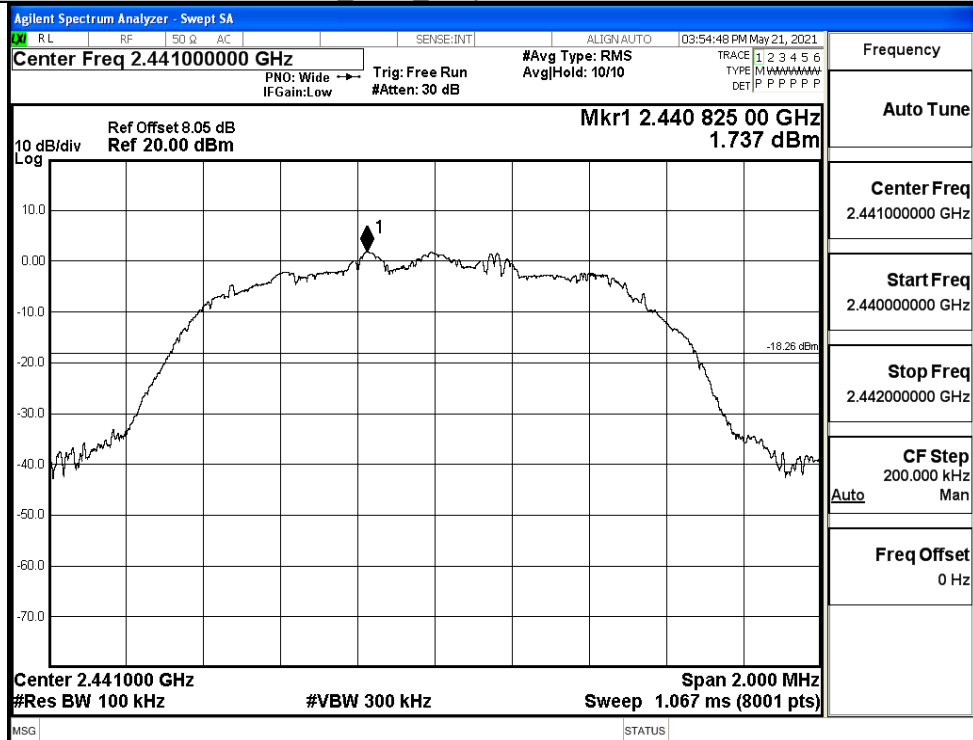


Puw

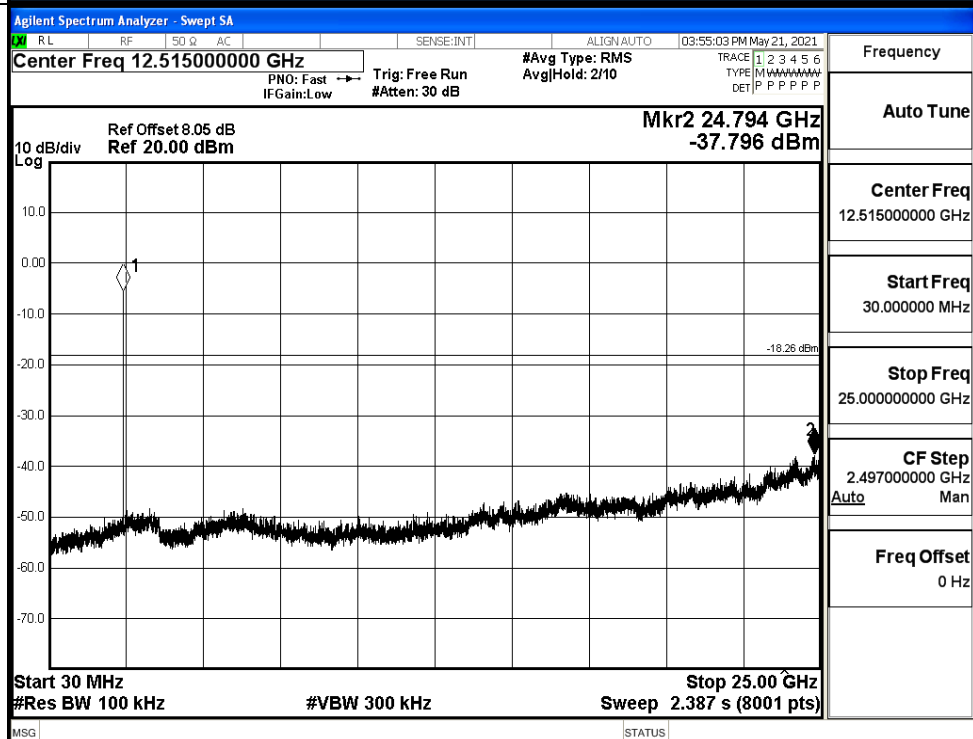


## 8DPSK\_MCH\_Graphs

Pref



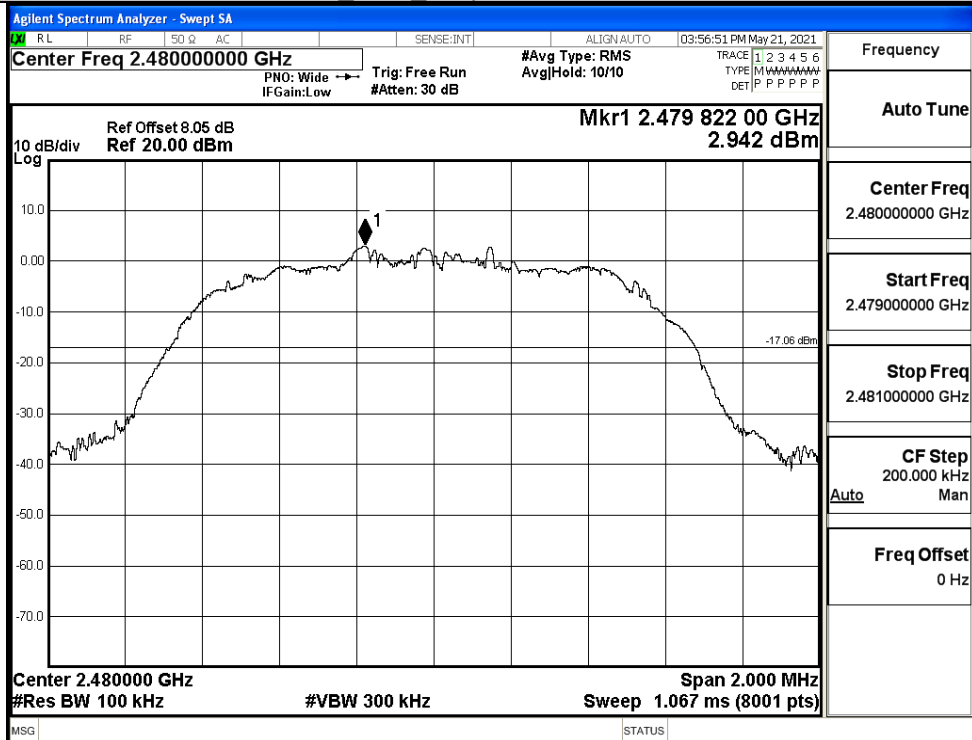
Puw



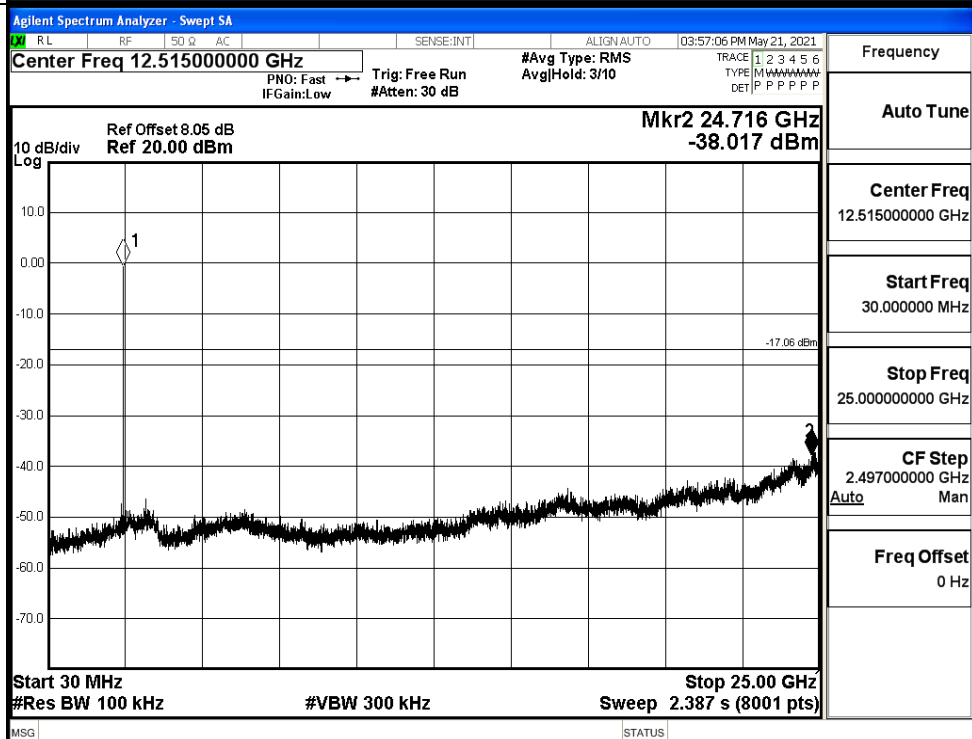


## 8DPSK\_HCH\_Graphs

Pref



Puw

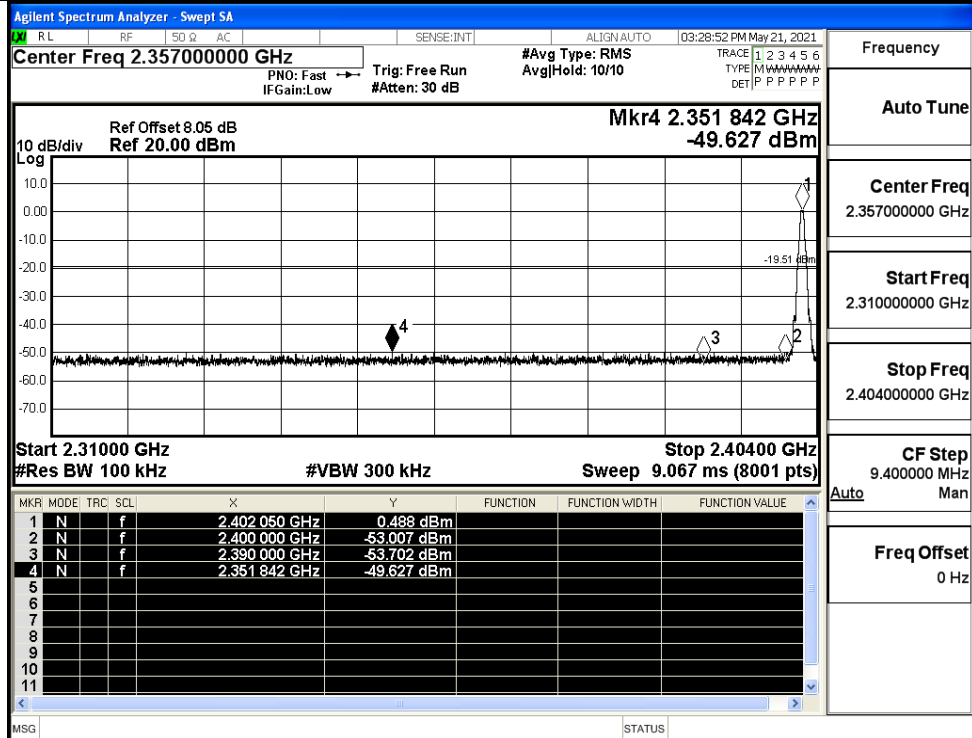


## A.7 Band-edge for RF Conducted Emissions

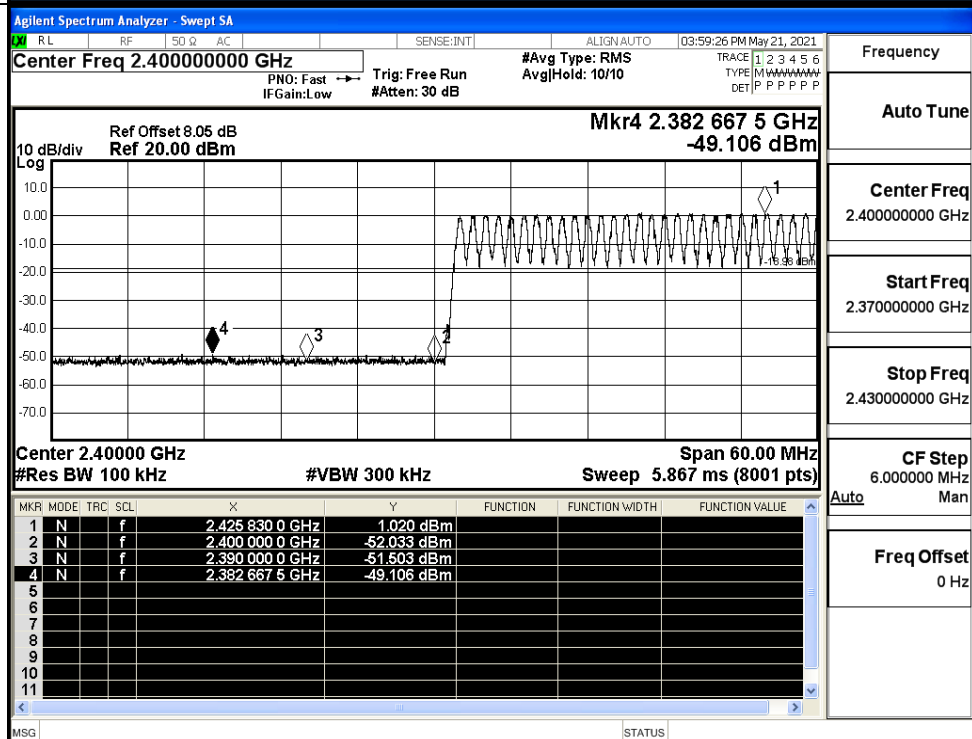
| Mode          | Channel | Carrier Frequency [MHz] | Carrier Power [dBm] | Frequency Hopping | Max Spurious Level [dBm] | Limit [dBm] | Verdict |
|---------------|---------|-------------------------|---------------------|-------------------|--------------------------|-------------|---------|
| GFSK          | LCH     | 2402                    | 0.488               | Off               | -49.627                  | -19.51      | PASS    |
|               |         |                         | 1.020               | On                | -49.106                  | -18.98      | PASS    |
|               | HCH     | 2480                    | 2.093               | Off               | -48.216                  | -17.91      | PASS    |
|               |         |                         | 1.457               | On                | -48.437                  | -18.54      | PASS    |
| $\pi/4$ DQPSK | LCH     | 2402                    | 1.874               | Off               | -49.341                  | -18.13      | PASS    |
|               |         |                         | 2.203               | On                | -48.738                  | -17.8       | PASS    |
|               | HCH     | 2480                    | 2.944               | Off               | -49.047                  | -17.06      | PASS    |
|               |         |                         | 2.706               | On                | -48.354                  | -17.29      | PASS    |
| 8DPSK         | LCH     | 2402                    | 1.298               | Off               | -49.286                  | -18.7       | PASS    |
|               |         |                         | 1.815               | On                | -49.404                  | -18.19      | PASS    |
|               | HCH     | 2480                    | 2.856               | Off               | -48.567                  | -17.14      | PASS    |
|               |         |                         | 2.745               | On                | -49.024                  | -17.26      | PASS    |

## Test Graphs

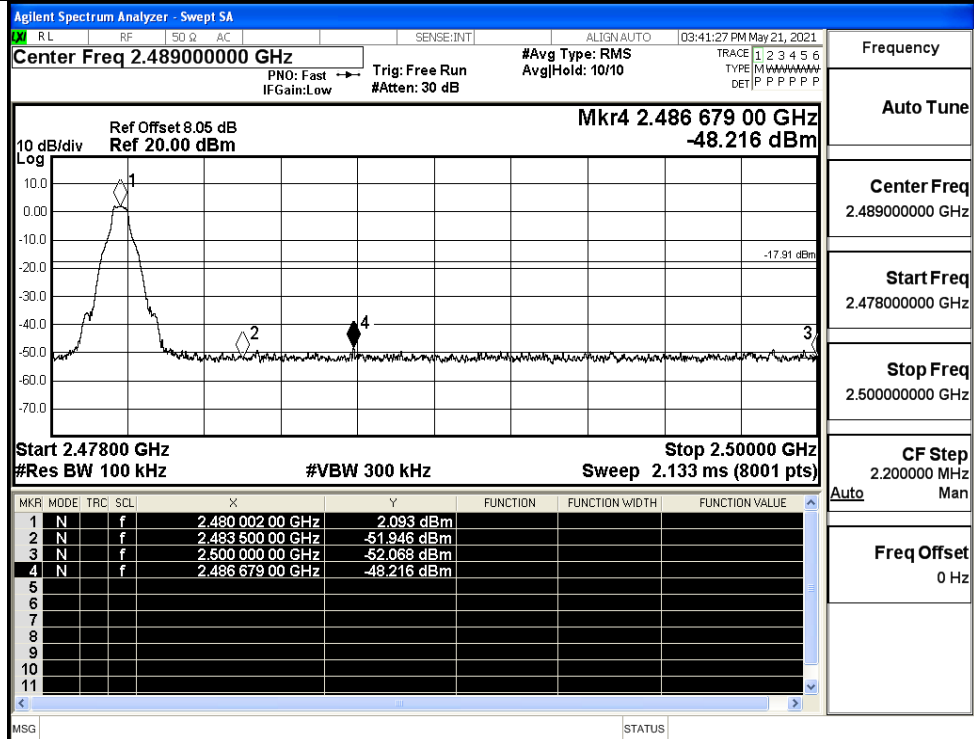
GFSK/LCH/No Hop



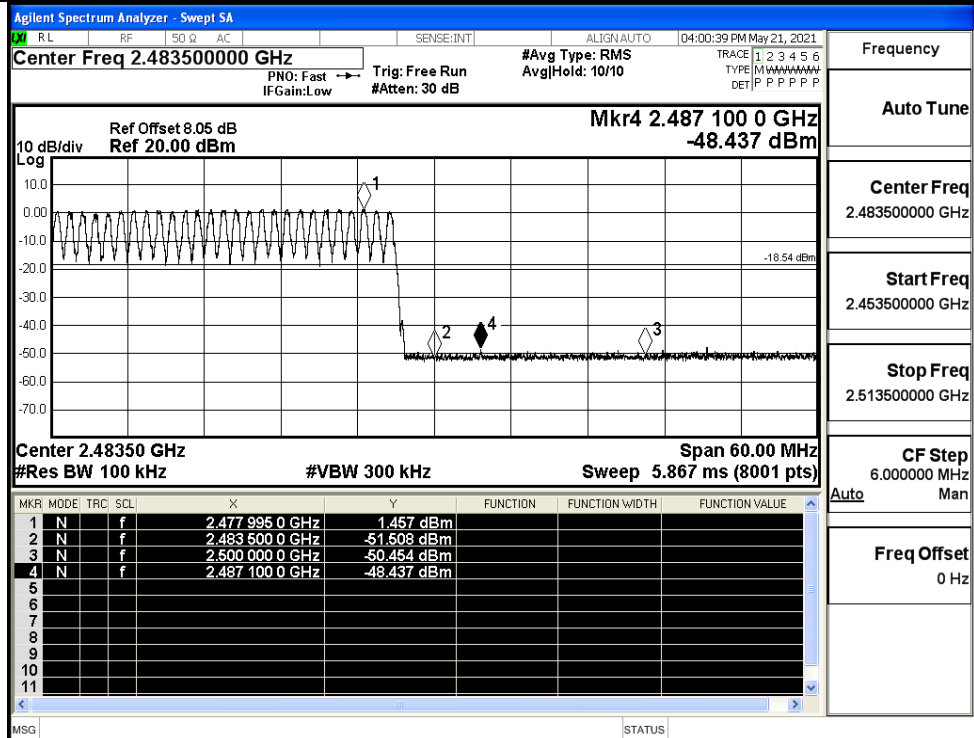
GFSK/LCH/Hop



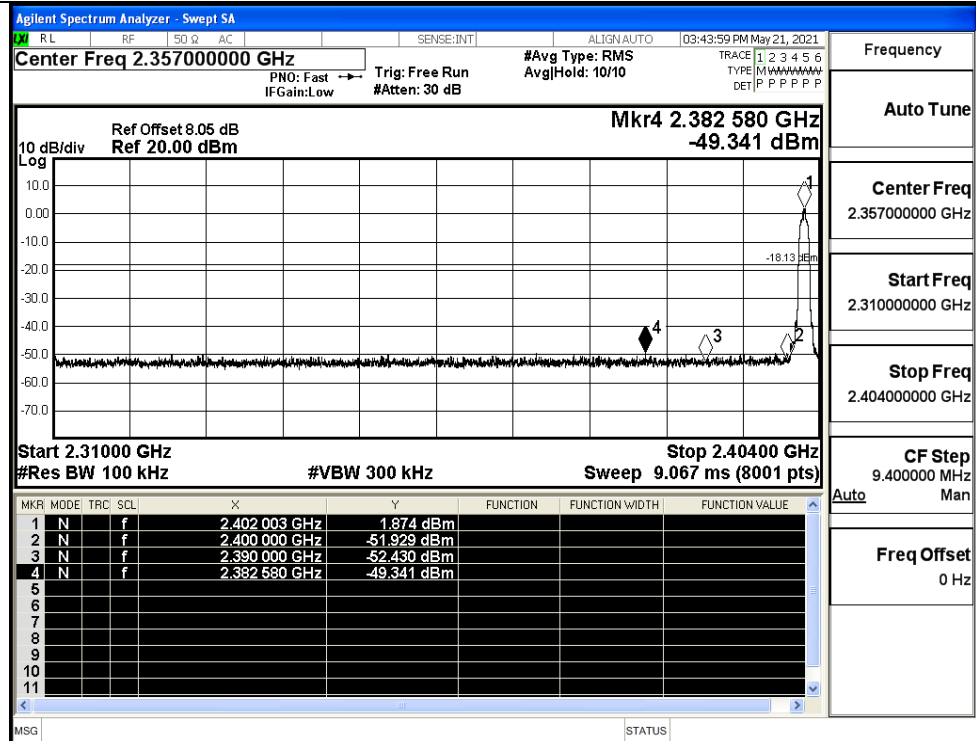
GFSK/HCH/No Hop



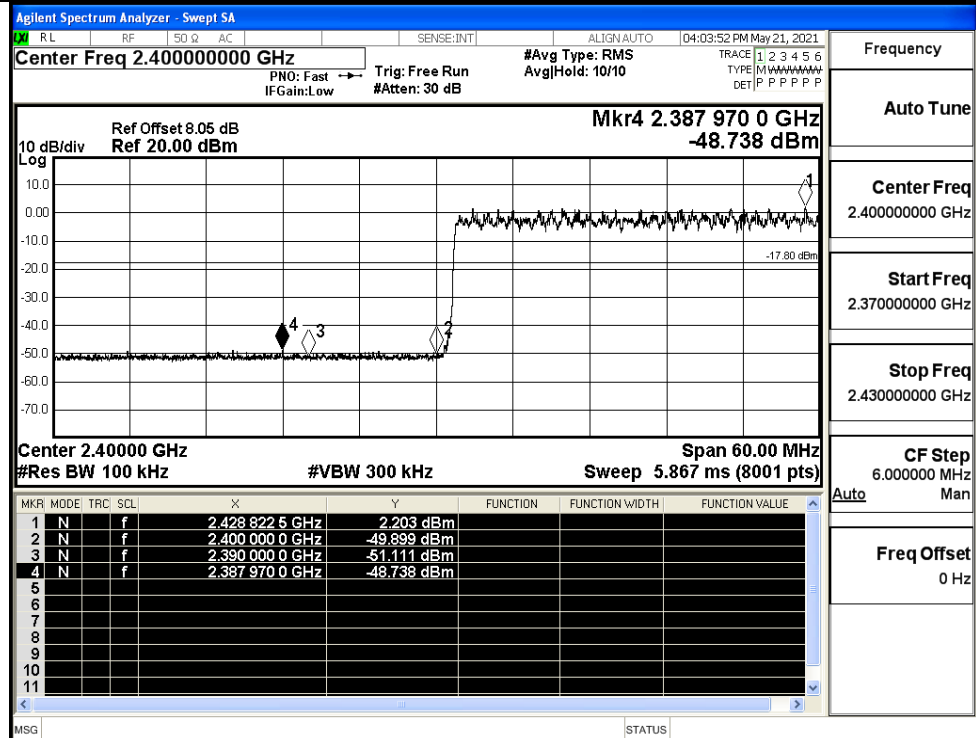
GFSK/HCH/Hop



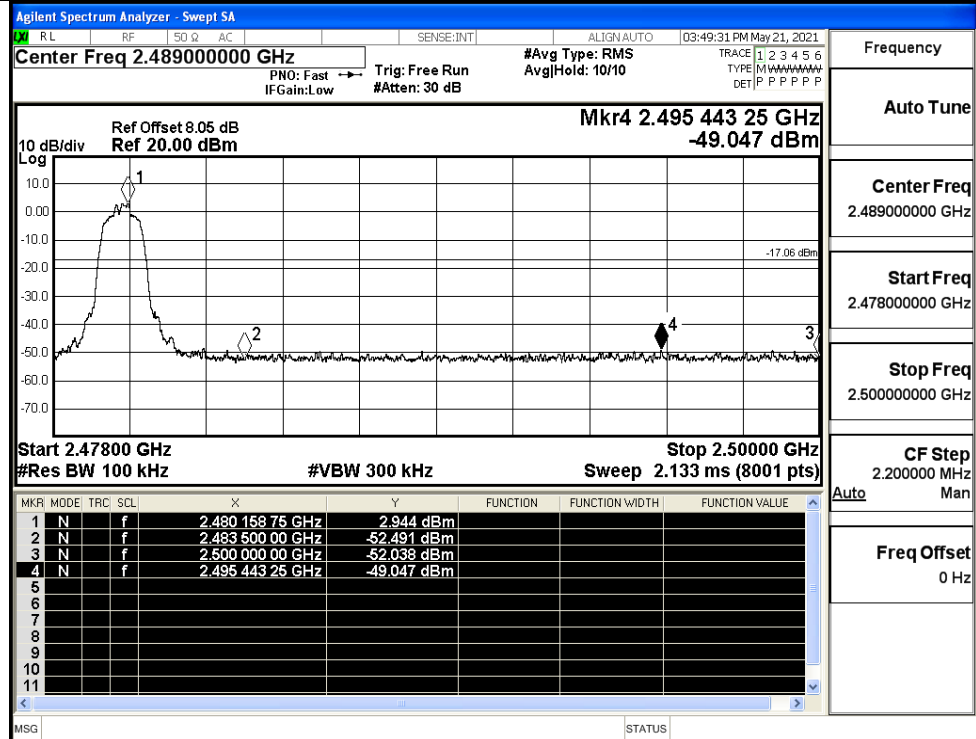
$\pi/4$ DQPSK/LCH/No  
Hop



$\pi/4$ DQPSK/LCH/Hop



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

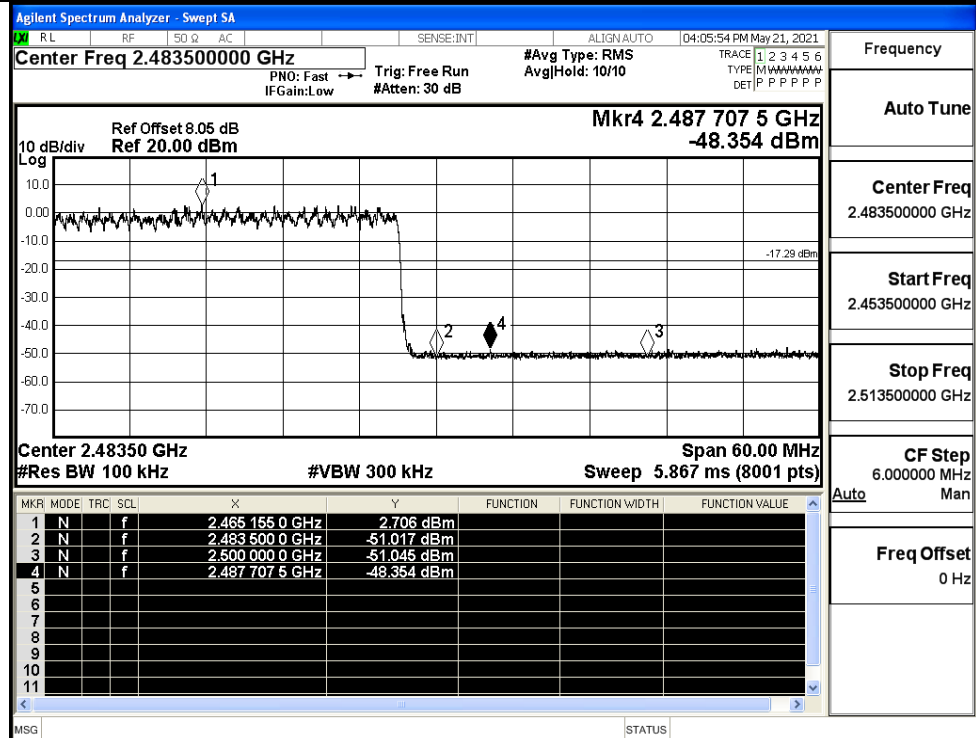


Frequency

Auto Tune

Center Freq  
2.489000000 GHzStart Freq  
2.478000000 GHzStop Freq  
2.500000000 GHzCF Step  
2.200000 MHz  
Auto ManFreq Offset  
0 Hz

$\pi/4$ DQPSK/HCH/Hop

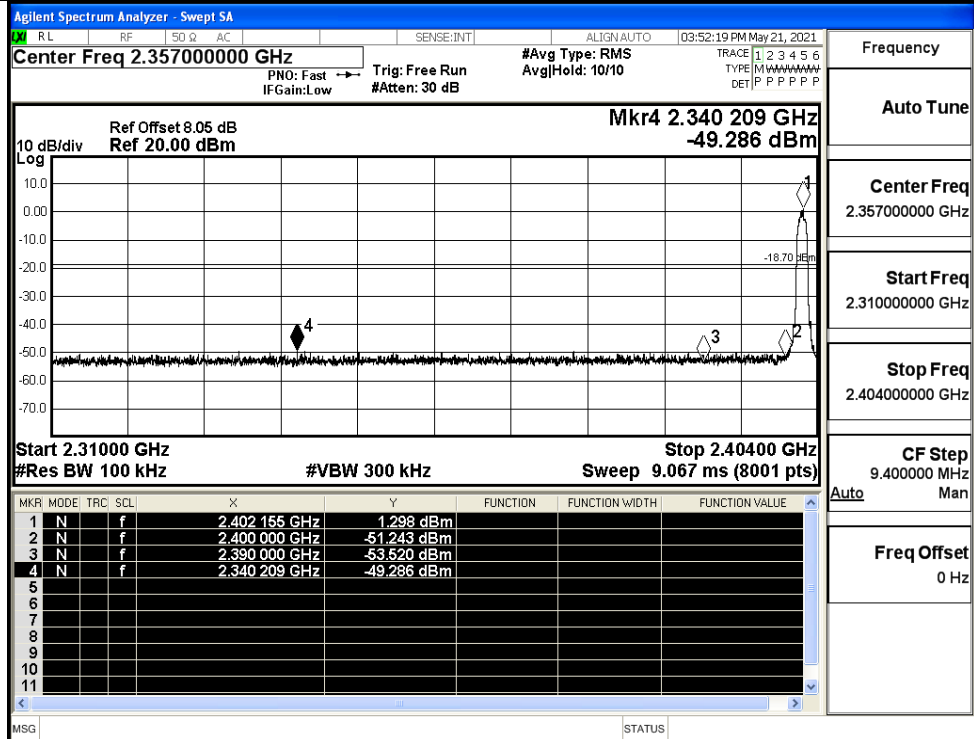


Frequency

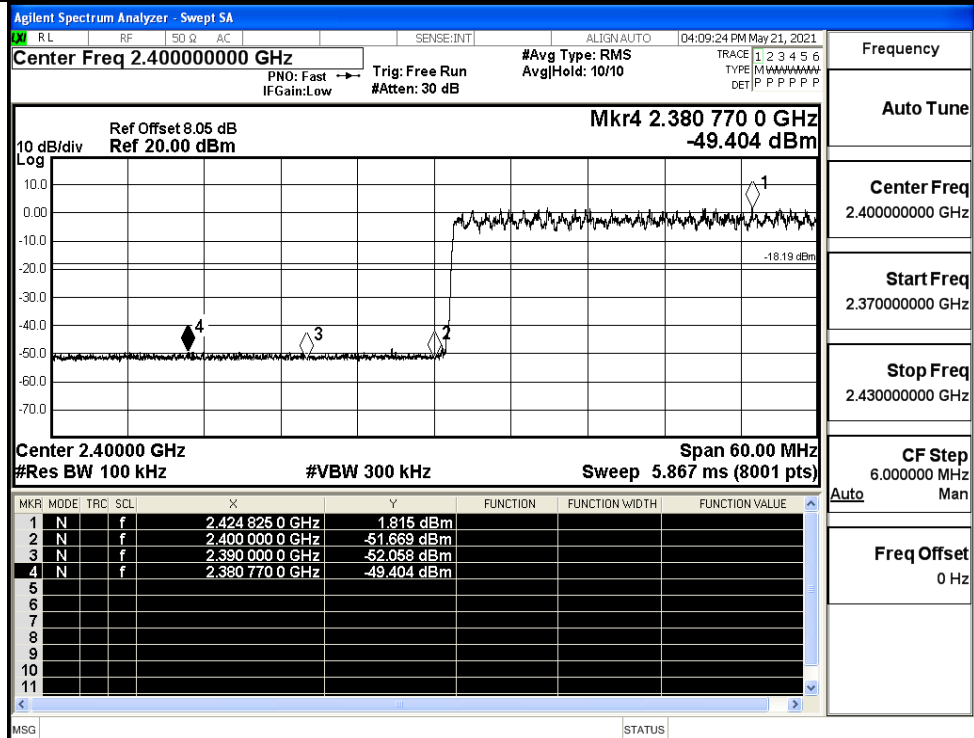
Auto Tune

Center Freq  
2.483500000 GHzStart Freq  
2.453500000 GHzStop Freq  
2.513500000 GHzCF Step  
6.000000 MHz  
Auto ManFreq Offset  
0 Hz

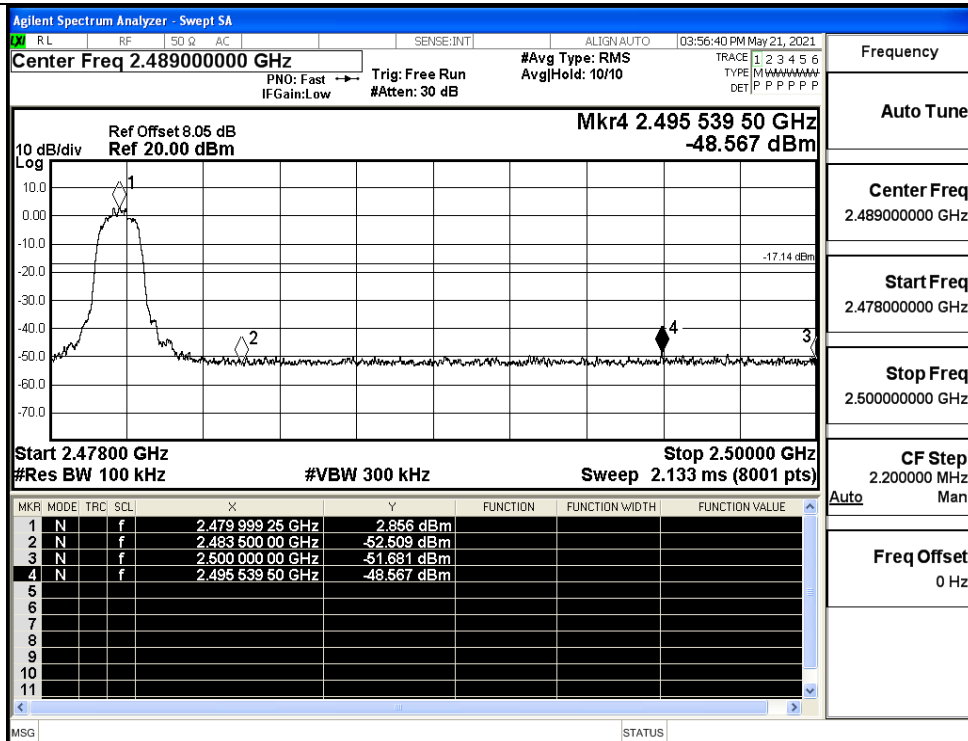
8DPSK/LCH/No Hop



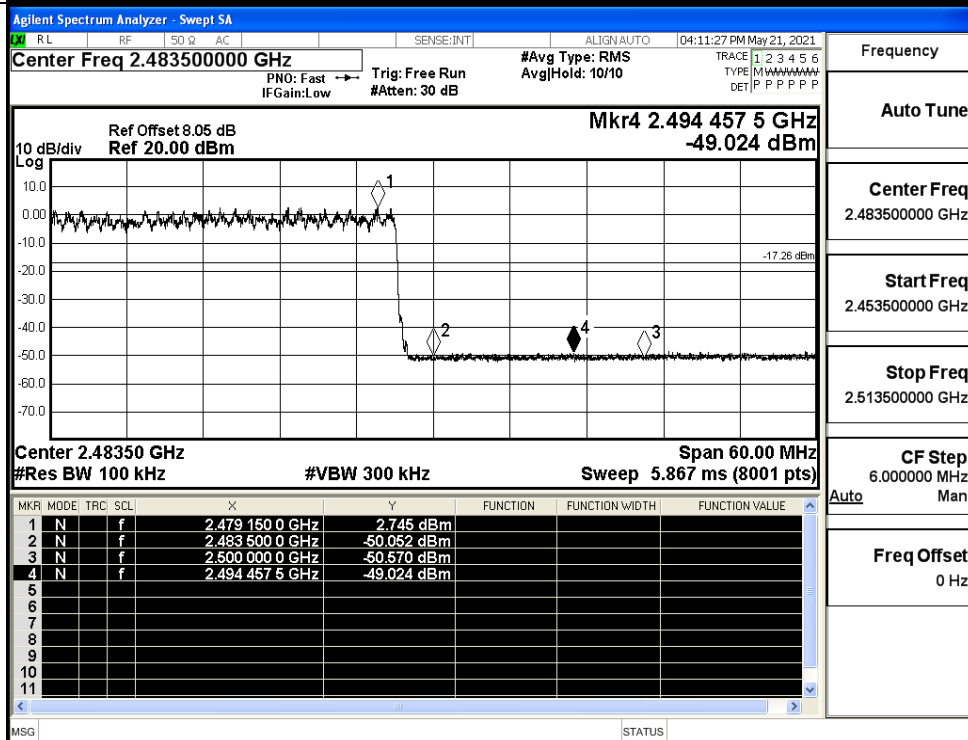
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



8DPSK/HCH/Hop

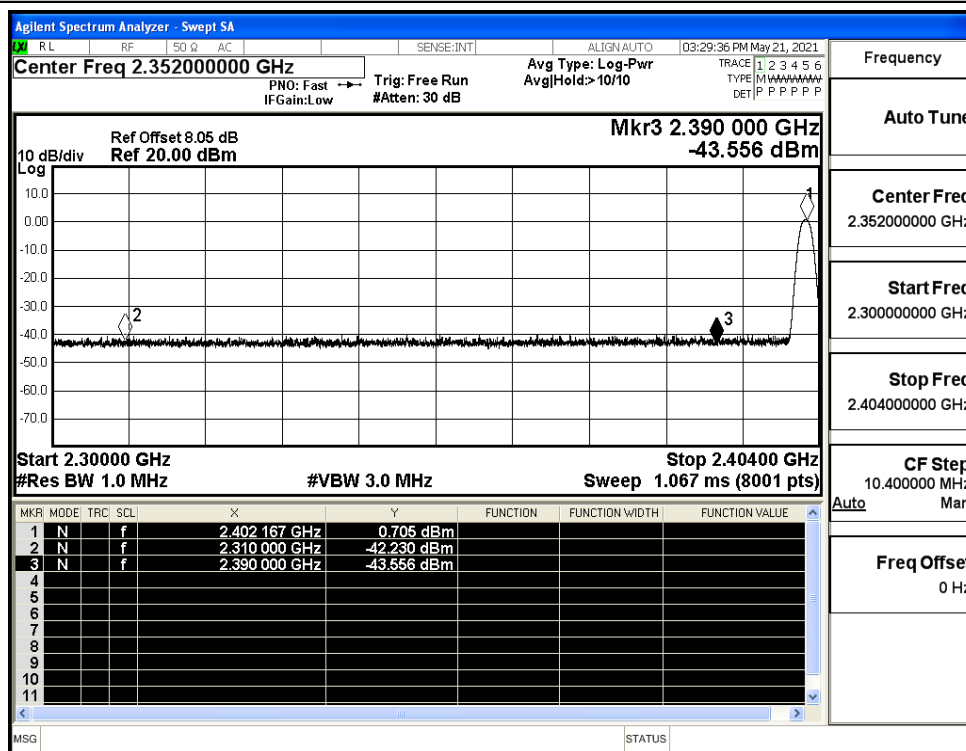




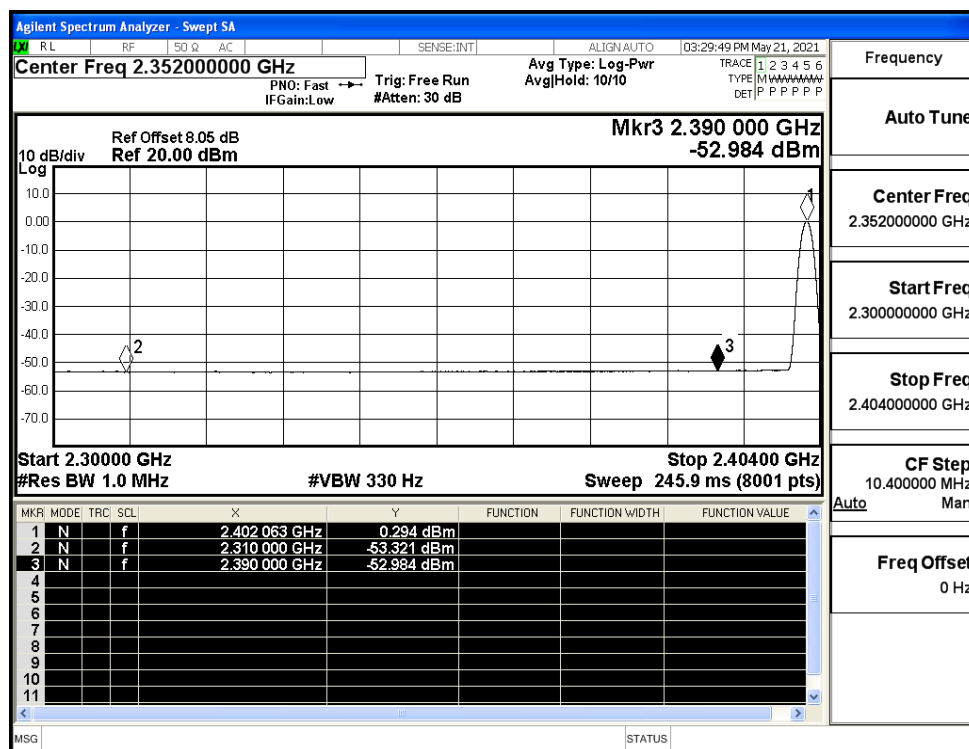
## A.8 Restrict-band band-edge measurements

| Test Mode     | Hopping | Freq.  | Power [dBm] | Gain | Ground Factor | E [dBuV/m] | Detector | Limit [dBuV/m] | Verdict |
|---------------|---------|--------|-------------|------|---------------|------------|----------|----------------|---------|
| GFSK          | Off     | 2310.0 | -42.23      | 2.0  | 0             | 55.03      | PEAK     | 74             | PASS    |
|               | Off     | 2310.0 | -53.32      | 2.0  | 0             | 43.94      | AV       | 54             | PASS    |
|               | Off     | 2390.0 | -43.56      | 2.0  | 0             | 53.7       | PEAK     | 74             | PASS    |
|               | Off     | 2390.0 | -52.98      | 2.0  | 0             | 44.27      | AV       | 54             | PASS    |
|               | Off     | 2483.5 | -42.45      | 2.0  | 0             | 54.81      | PEAK     | 74             | PASS    |
|               | Off     | 2483.5 | -52.29      | 2.0  | 0             | 44.97      | AV       | 54             | PASS    |
|               | Off     | 2500.0 | -40.90      | 2.0  | 0             | 56.36      | PEAK     | 74             | PASS    |
|               | Off     | 2500.0 | -52.20      | 2.0  | 0             | 45.06      | AV       | 54             | PASS    |
| $\pi/4$ DQPSK | Off     | 2310.0 | -44.11      | 2.0  | 0             | 53.15      | PEAK     | 74             | PASS    |
|               | Off     | 2310.0 | -53.28      | 2.0  | 0             | 43.98      | AV       | 54             | PASS    |
|               | Off     | 2390.0 | -43.33      | 2.0  | 0             | 53.93      | PEAK     | 74             | PASS    |
|               | Off     | 2390.0 | -52.89      | 2.0  | 0             | 44.36      | AV       | 54             | PASS    |
|               | Off     | 2483.5 | -41.39      | 2.0  | 0             | 55.86      | PEAK     | 74             | PASS    |
|               | Off     | 2483.5 | -52.29      | 2.0  | 0             | 44.97      | AV       | 54             | PASS    |
|               | Off     | 2500.0 | -41.65      | 2.0  | 0             | 55.61      | PEAK     | 74             | PASS    |
|               | Off     | 2500.0 | -52.30      | 2.0  | 0             | 44.96      | AV       | 54             | PASS    |
| 8DPSK         | Off     | 2310.0 | -43.58      | 2.0  | 0             | 53.68      | PEAK     | 74             | PASS    |
|               | Off     | 2310.0 | -53.32      | 2.0  | 0             | 43.94      | AV       | 54             | PASS    |
|               | Off     | 2390.0 | -43.61      | 2.0  | 0             | 53.65      | PEAK     | 74             | PASS    |
|               | Off     | 2390.0 | -52.92      | 2.0  | 0             | 44.33      | AV       | 54             | PASS    |
|               | Off     | 2483.5 | -42.41      | 2.0  | 0             | 54.84      | PEAK     | 74             | PASS    |
|               | Off     | 2483.5 | -52.28      | 2.0  | 0             | 44.98      | AV       | 54             | PASS    |
|               | Off     | 2500.0 | -42.97      | 2.0  | 0             | 54.29      | PEAK     | 74             | PASS    |
|               | Off     | 2500.0 | -52.27      | 2.0  | 0             | 44.98      | AV       | 54             | PASS    |

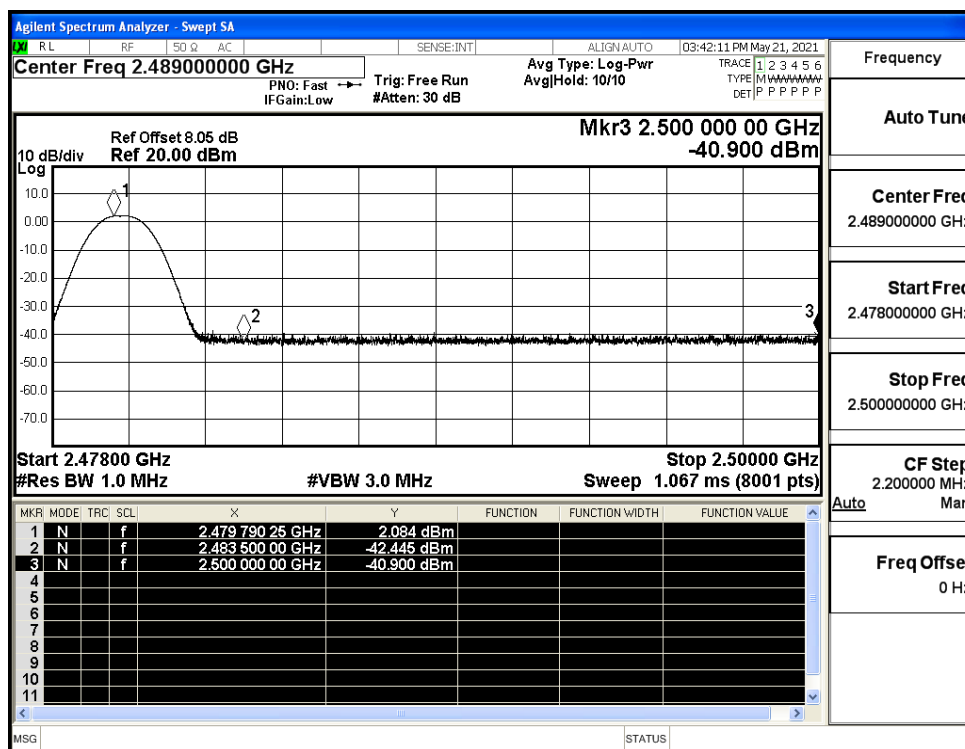
## Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (Low Channel)



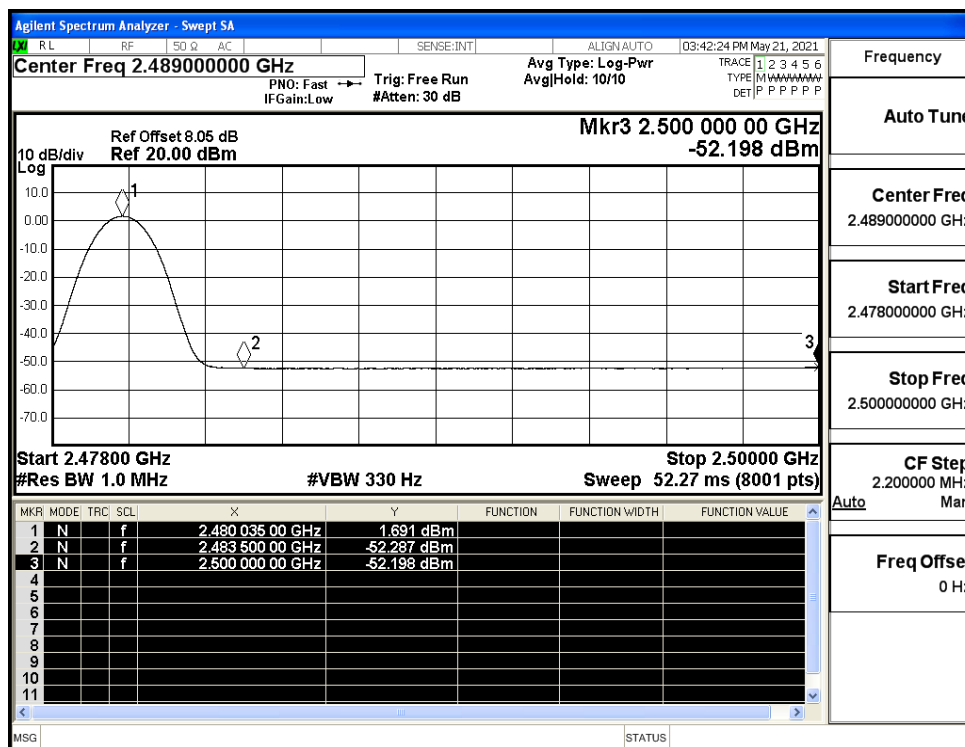
## Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (Low Channel)

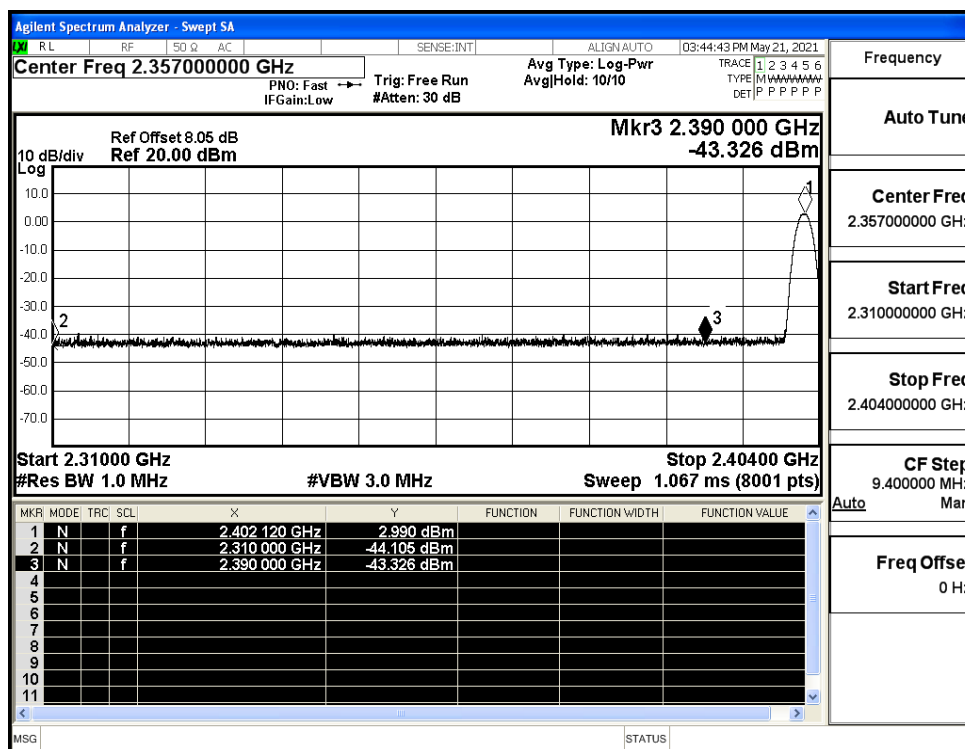
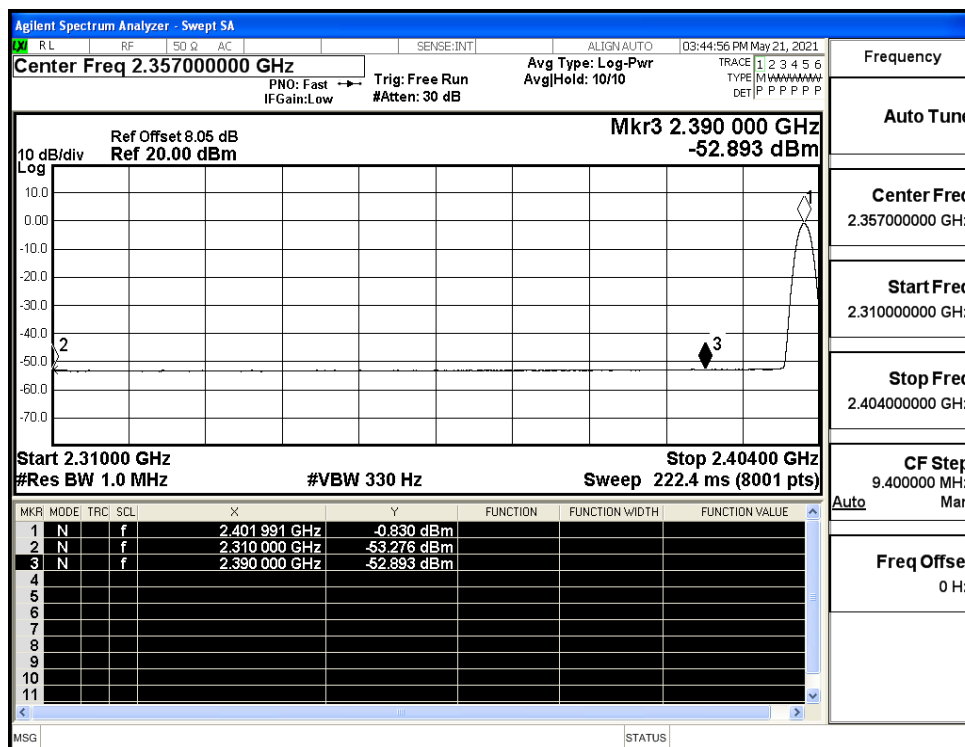


## Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (High Channel)

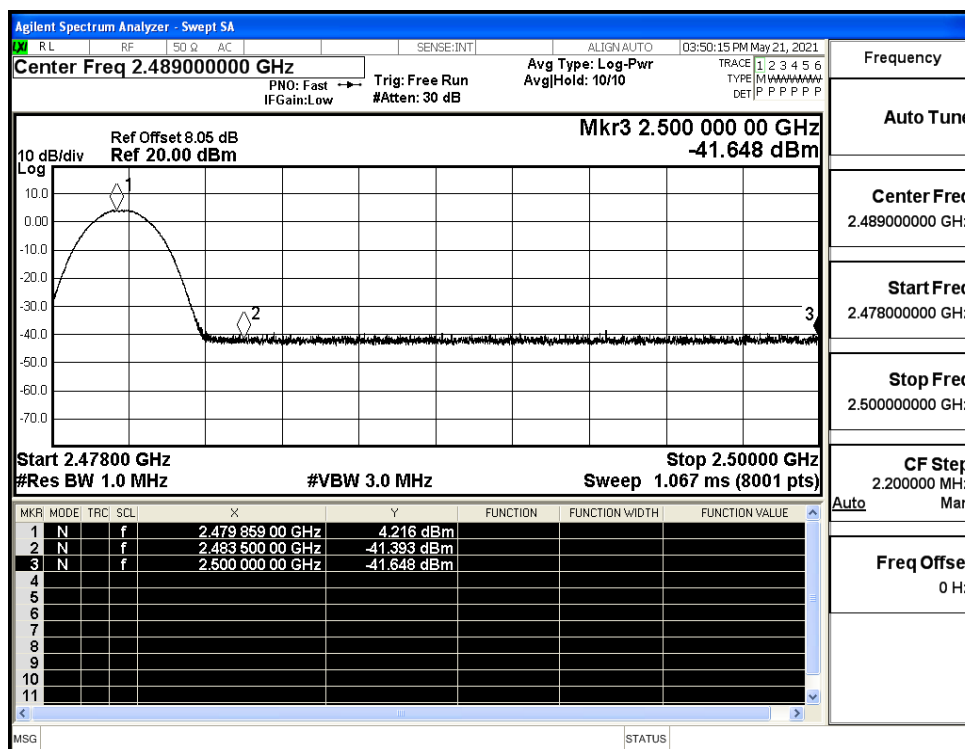


## Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (High Channel)

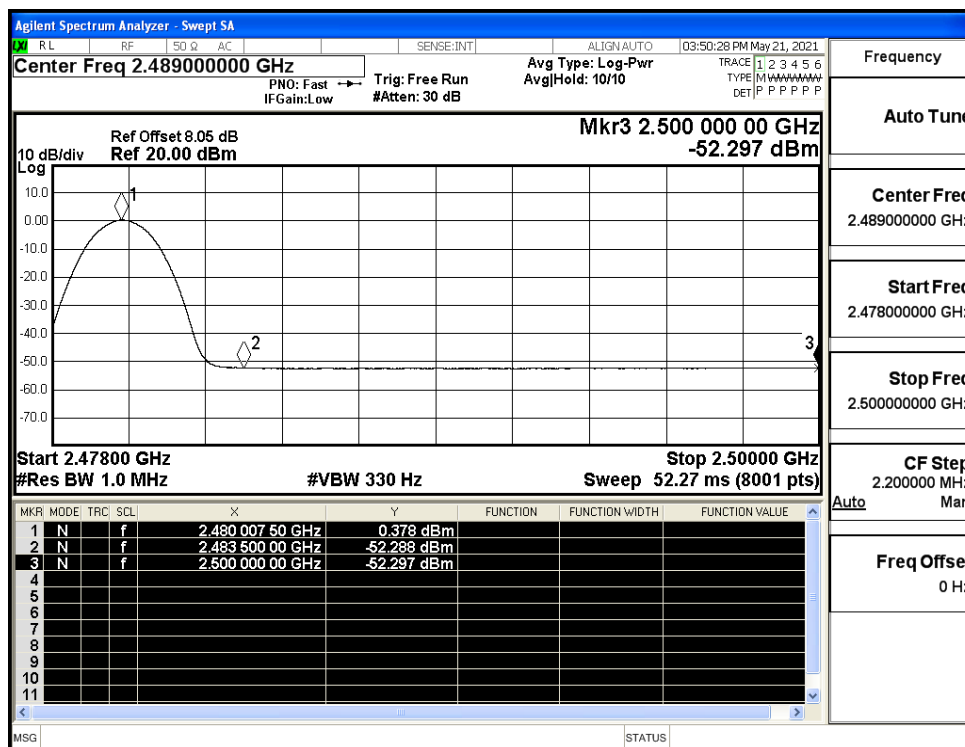


Restrict-band band-edge measurements\_Hopping Off  $\pi/4$ -DQPSK\_PEAK (Low Channel)Restrict-band band-edge measurements\_Hopping Off  $\pi/4$ -DQPSK\_Average (Low Channel)

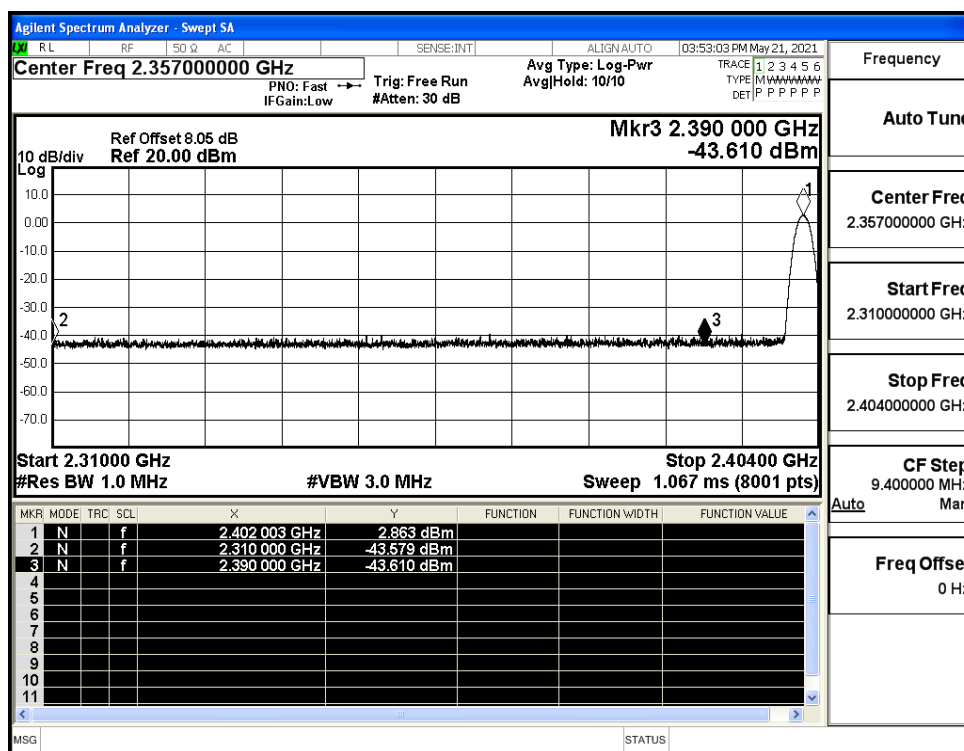
## Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_PEAK (High Channel)



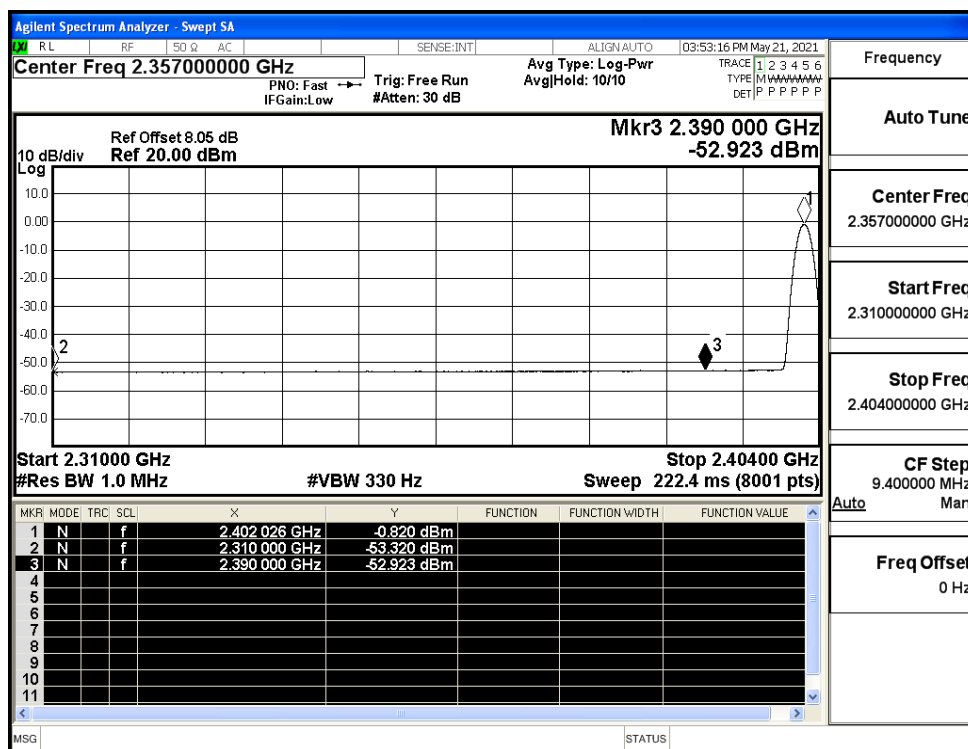
## Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_Average (High Channel)



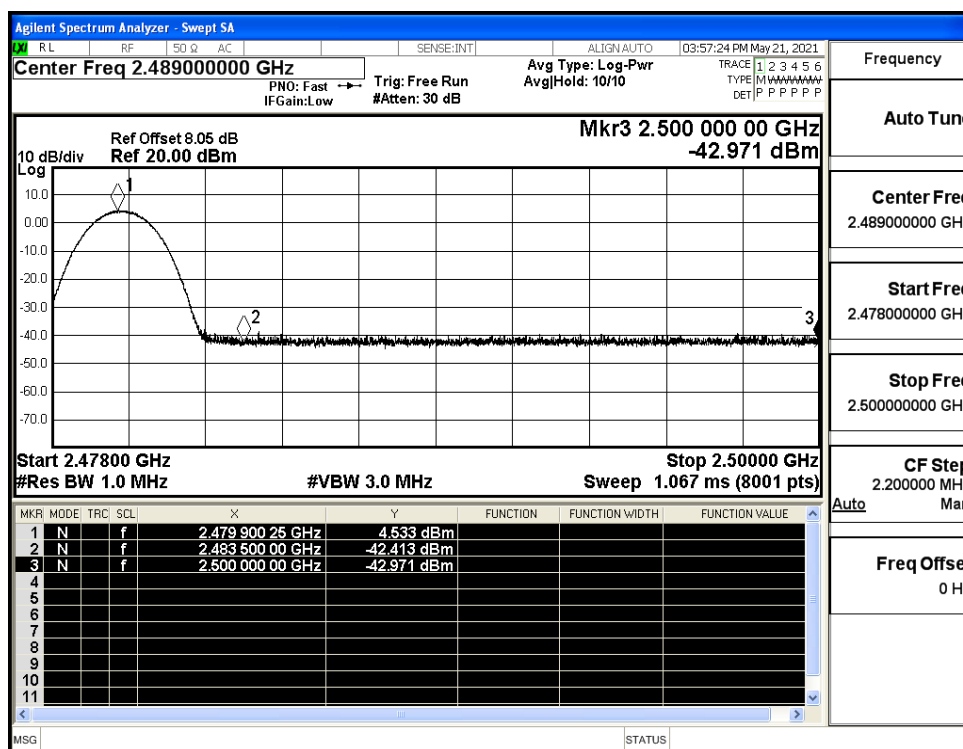
## Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_PEAK (Low Channel)



## 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)

