

## Appendix A

### RF Test Data for BT V5.0(BDR/EDR) (Conducted Measurement)

Product Name: Radio  
Trade Mark: LANKAIMILANIX  
Test Model: MXC-8

#### Environmental Conditions

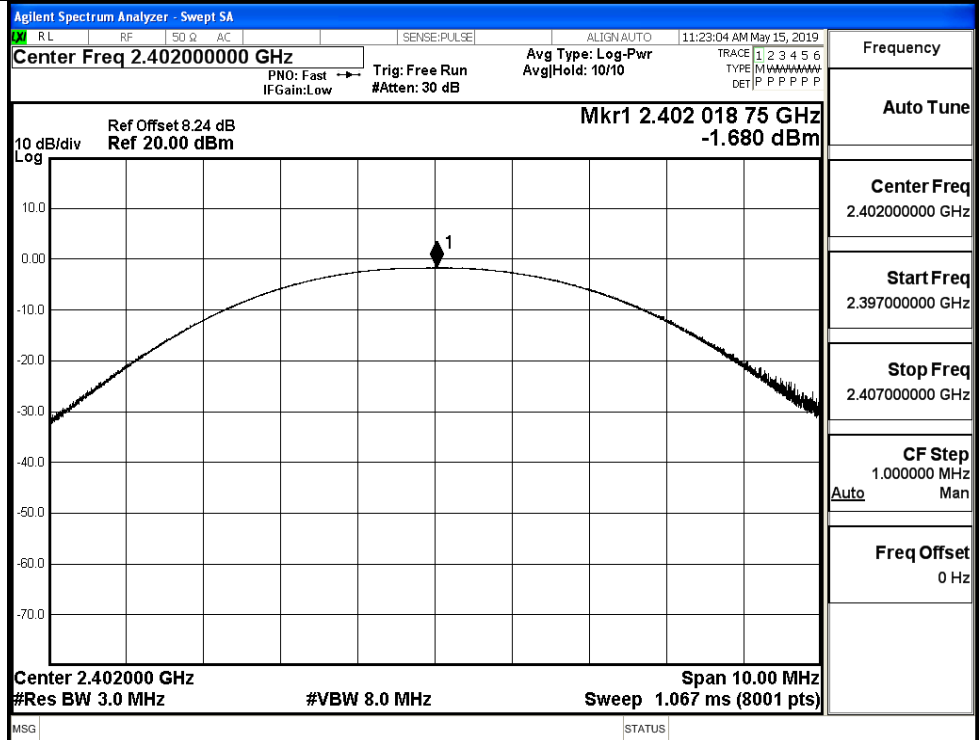
|                    |            |
|--------------------|------------|
| Temperature:       | 22.9 ° C   |
| Relative Humidity: | 52.4%      |
| ATM Pressure:      | 100.0 kPa  |
| Test Engineer:     | JERRY.ZENG |
| Supervised by:     | Tom.Liu    |

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

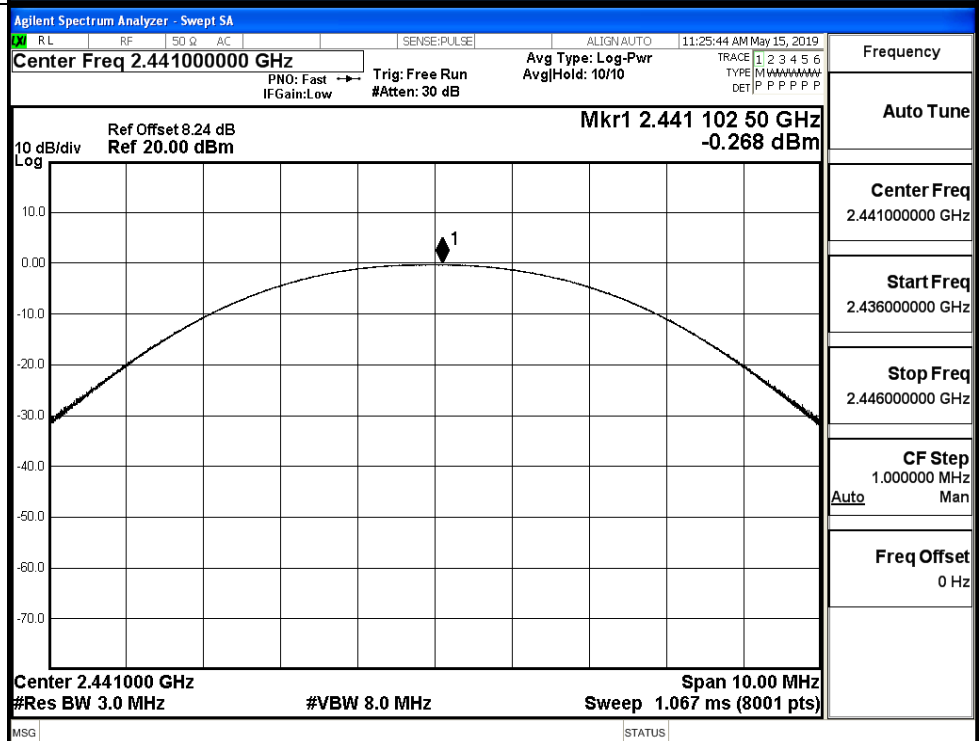
| Mode          | Channel. | Maximum Peak Output Power [dBm] | Limit [dBm] | Verdict |
|---------------|----------|---------------------------------|-------------|---------|
| GFSK          | LCH      | -1.680                          | 30          | PASS    |
|               | MCH      | -0.268                          | 30          | PASS    |
|               | HCH      | -1.414                          | 30          | PASS    |
| $\pi/4$ DQPSK | LCH      | -2.277                          | 21          | PASS    |
|               | MCH      | -1.021                          | 21          | PASS    |
|               | HCH      | -1.977                          | 21          | PASS    |

### Test Graphs

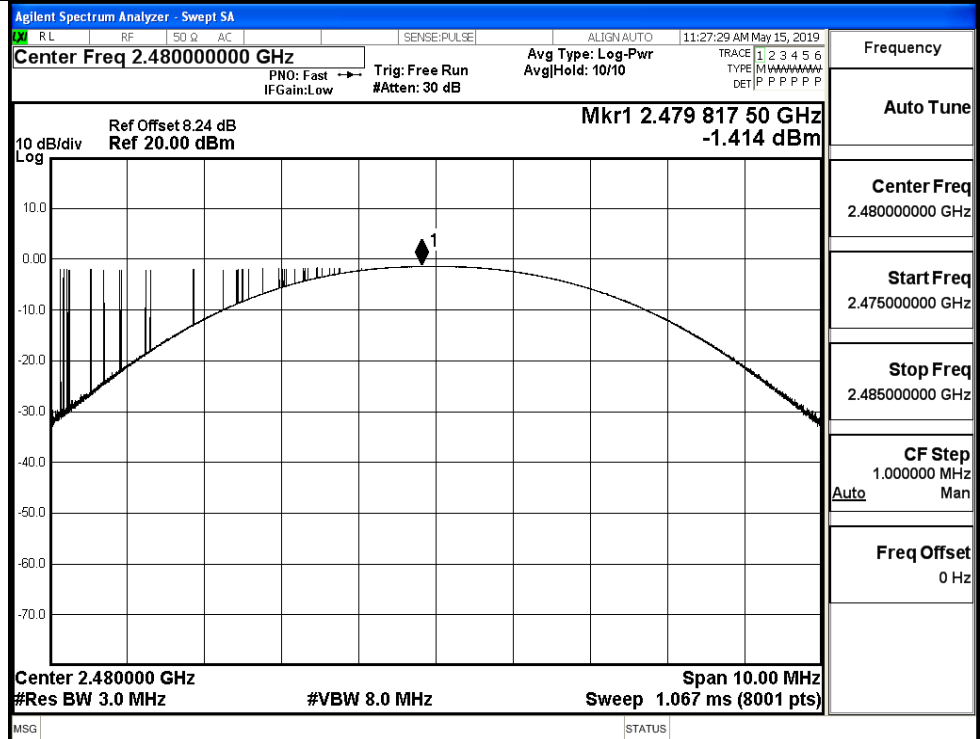
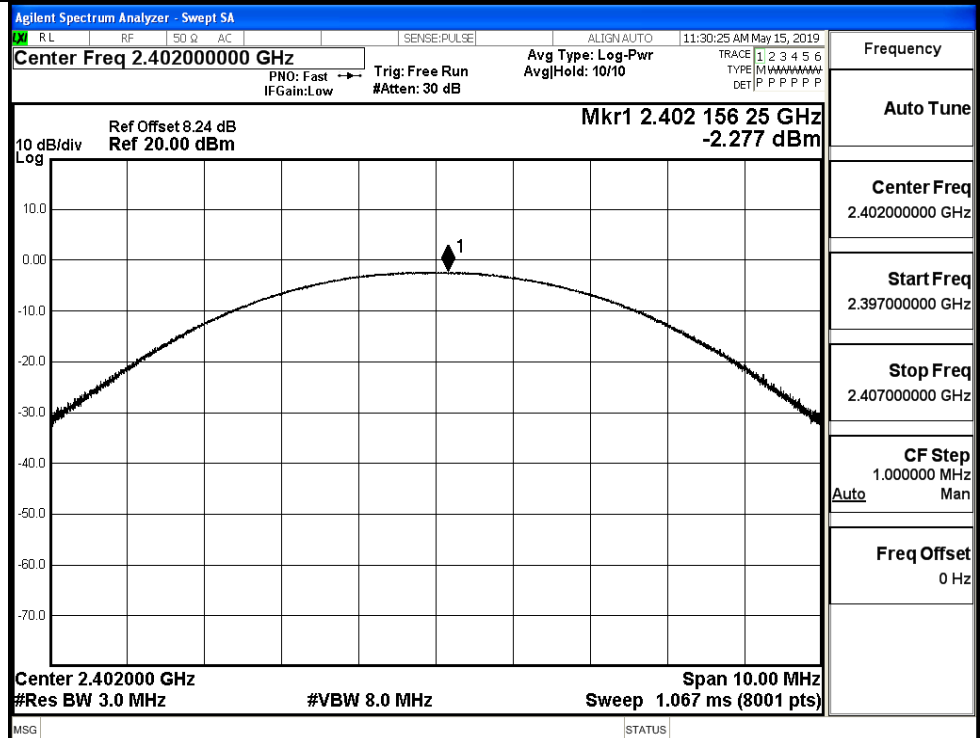
GFSK/LCH

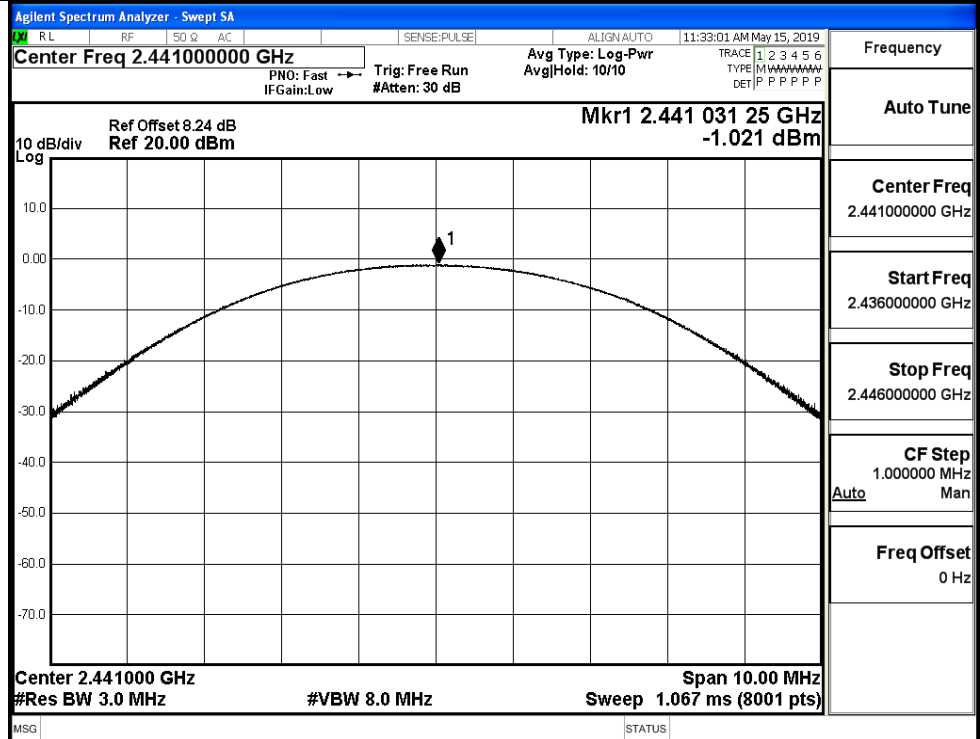
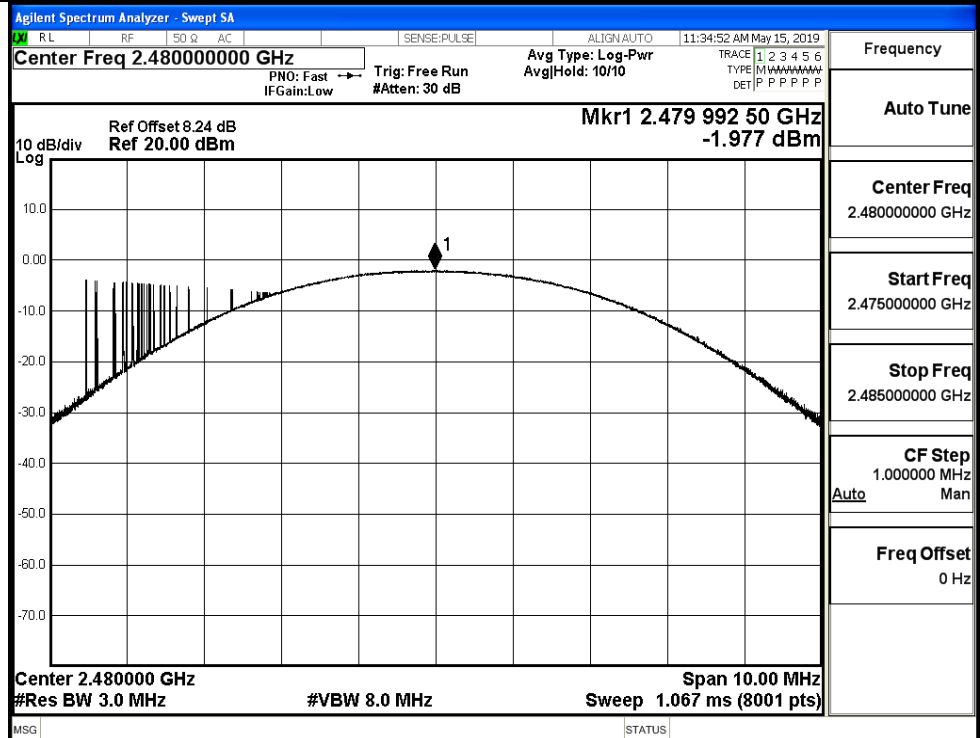


GFSK/MCH



GFSK/HCH

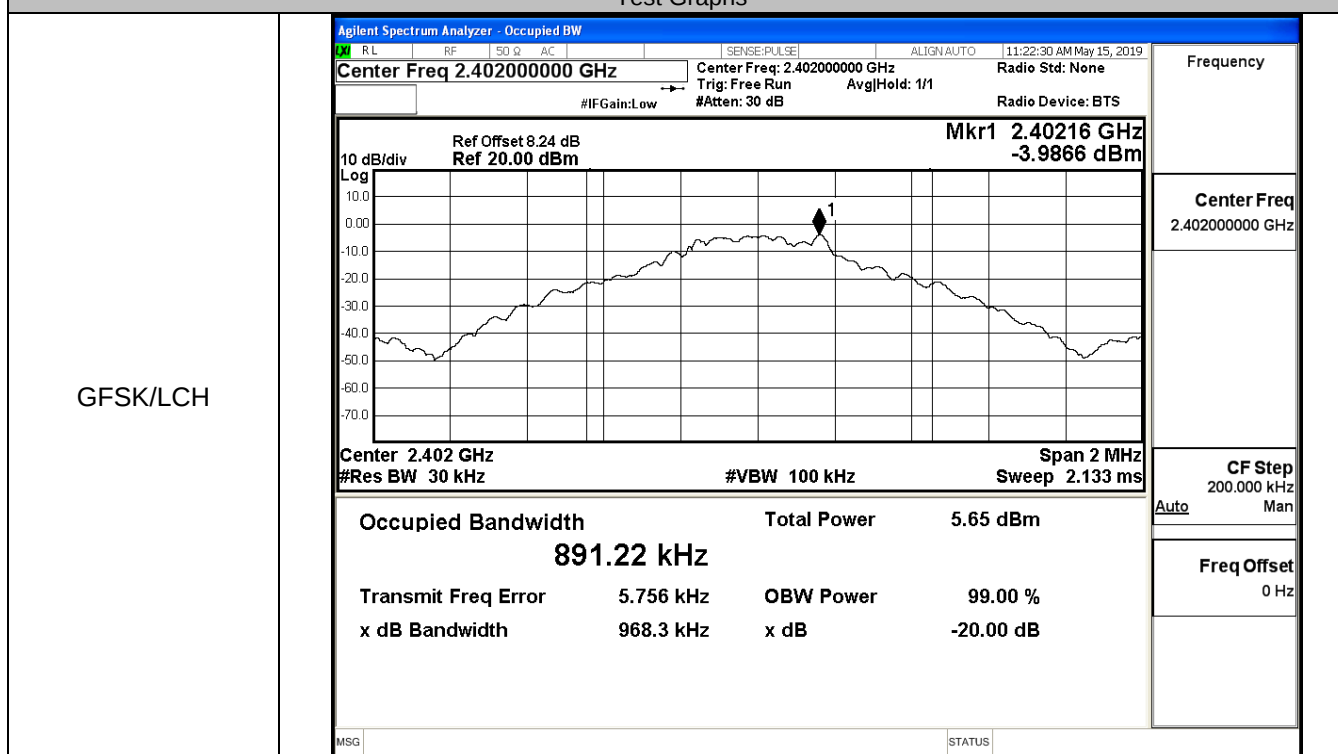
 $\pi$ /4DQPSK/LCH

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

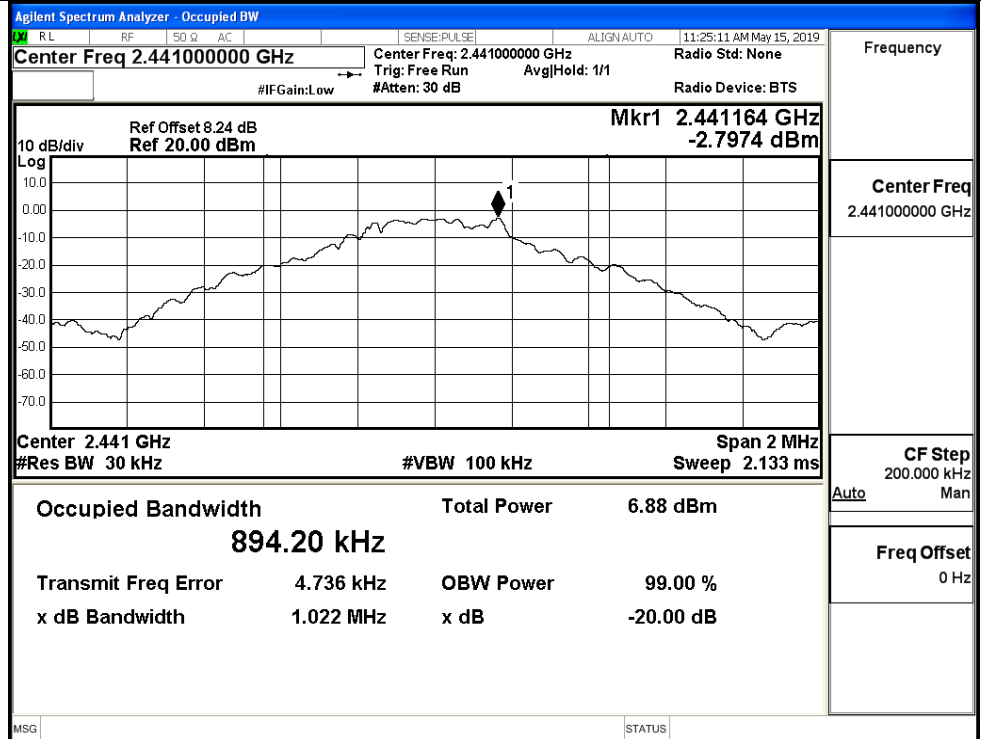
## A.2 20dB Bandwidth

| Mode          | Channel. | 20dB Bandwidth [MHz] | Limit [MHz]   | Verdict |
|---------------|----------|----------------------|---------------|---------|
| GFSK          | LCH      | 0.9683               | Not Specified | PASS    |
|               | MCH      | 1.022                | Not Specified | PASS    |
|               | HCH      | 1.024                | Not Specified | PASS    |
| $\pi/4$ DQPSK | LCH      | 1.313                | Not Specified | PASS    |
|               | MCH      | 1.307                | Not Specified | PASS    |
|               | HCH      | 1.319                | Not Specified | PASS    |

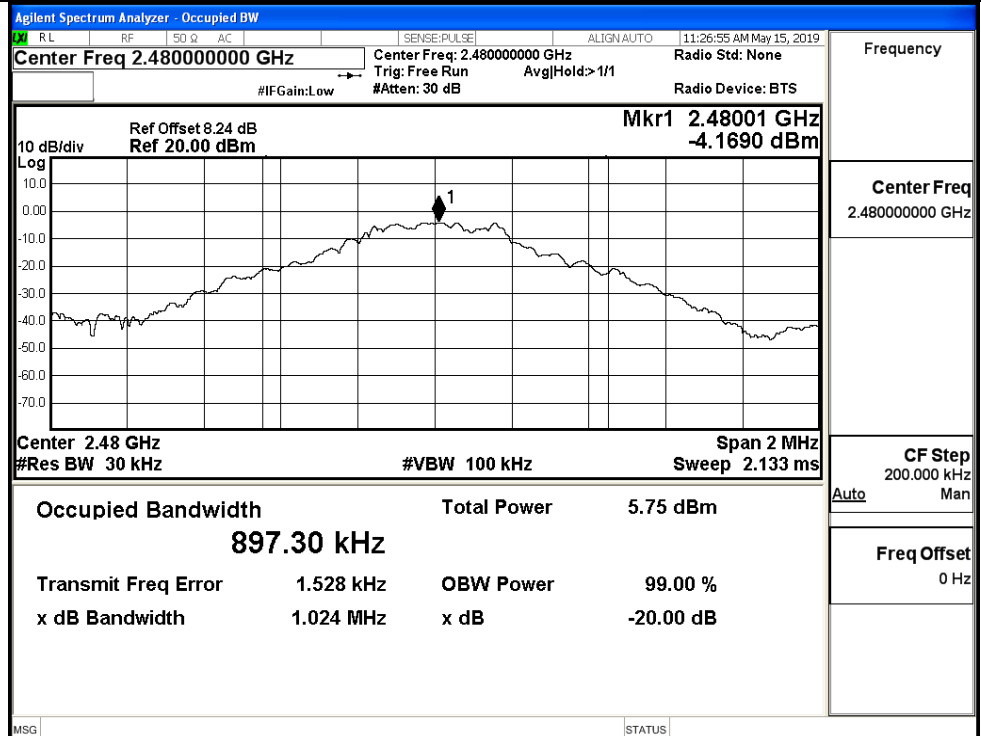
Test Graphs

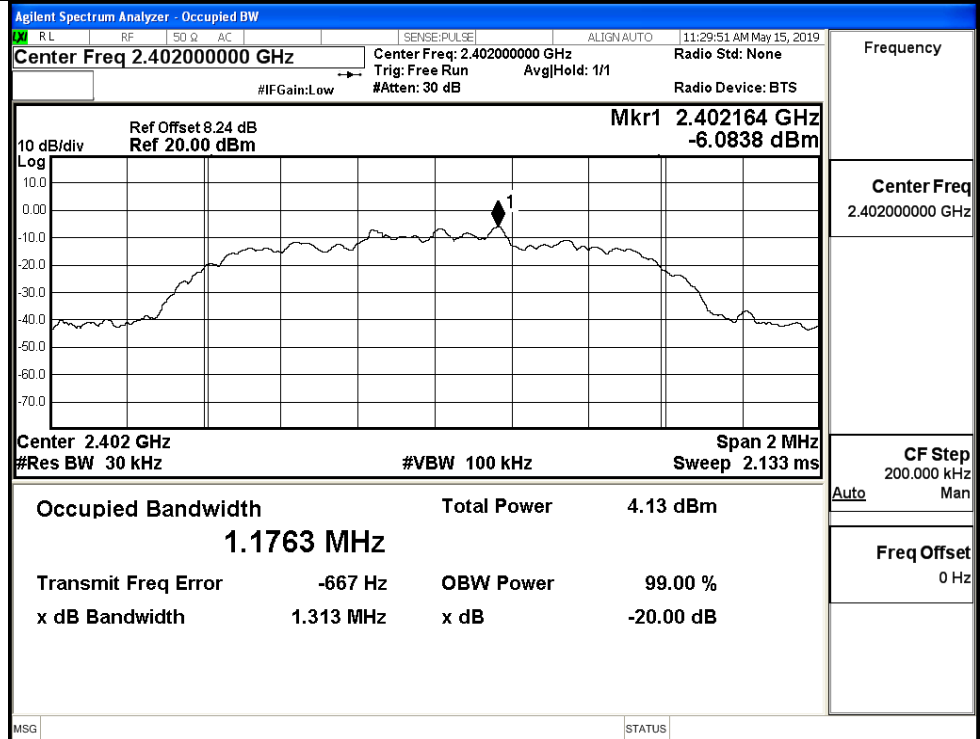
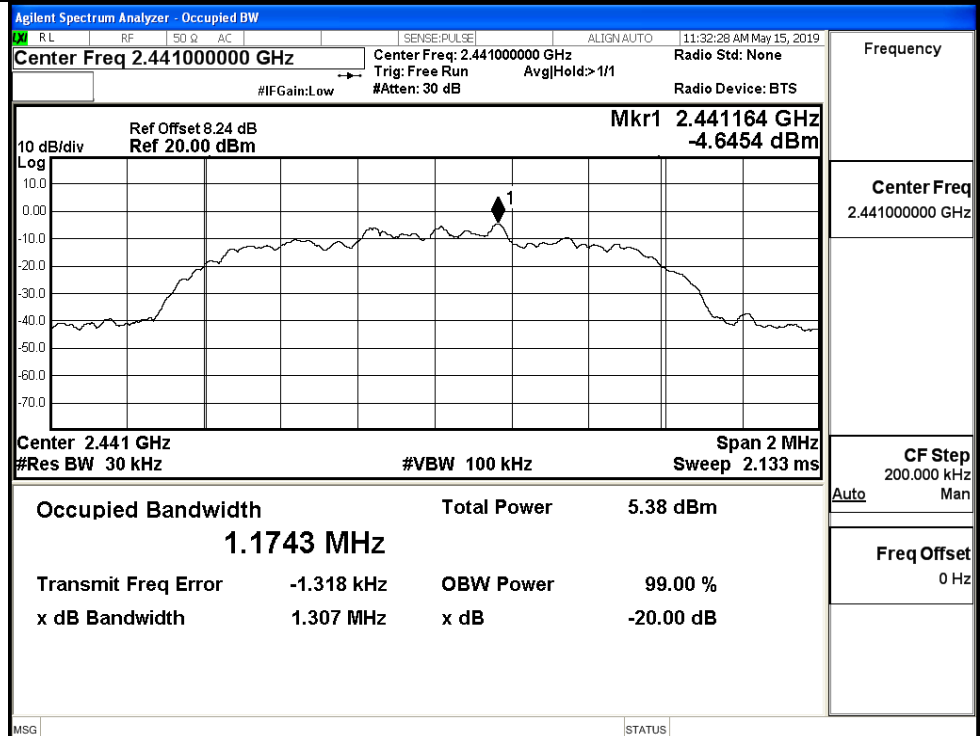


GFSK/MCH

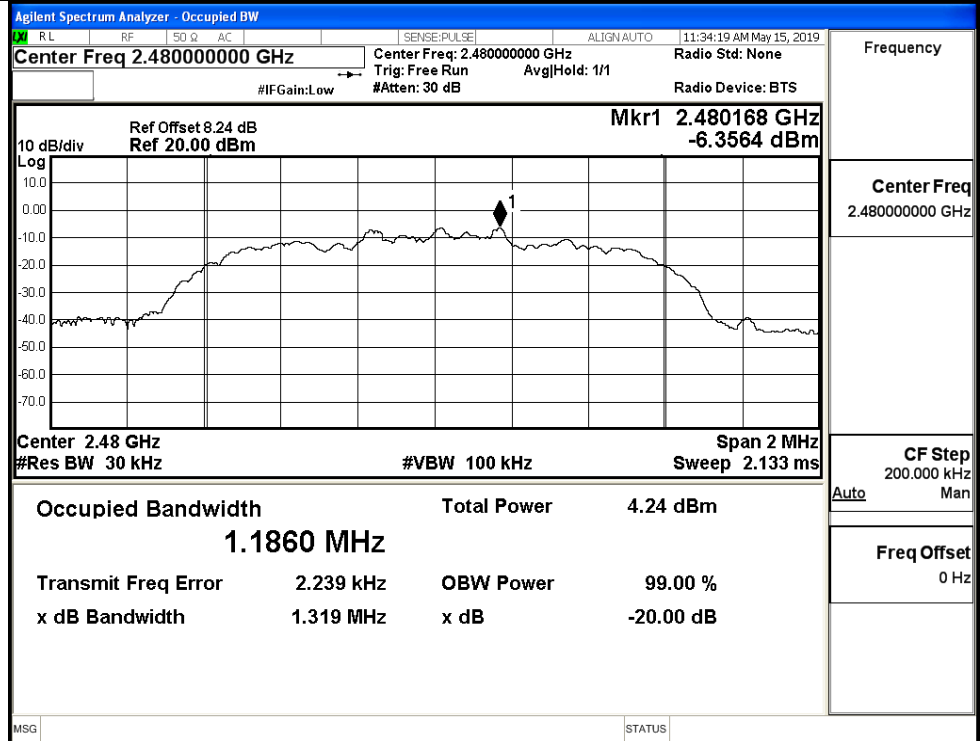


GFSK/HCH



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

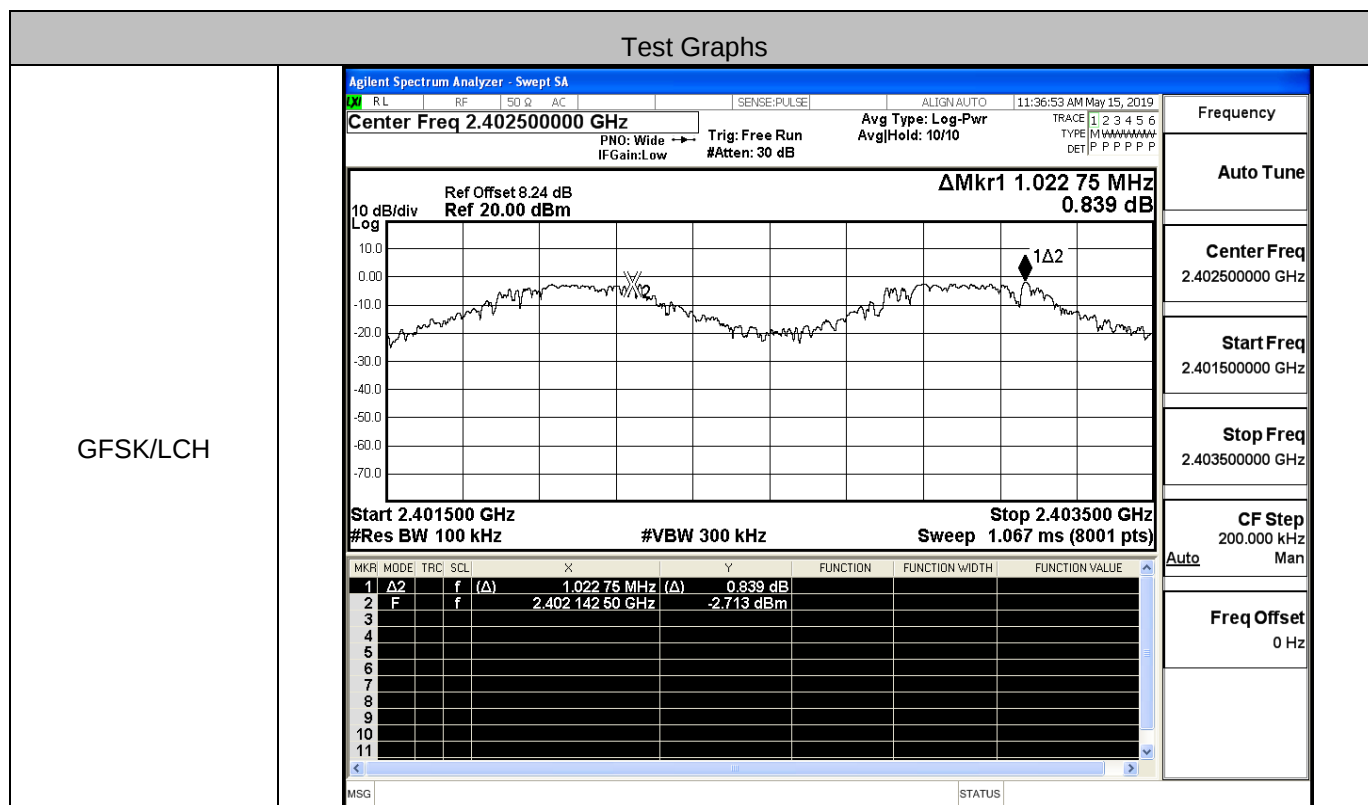
$\pi/4$ DQPSK/HCH



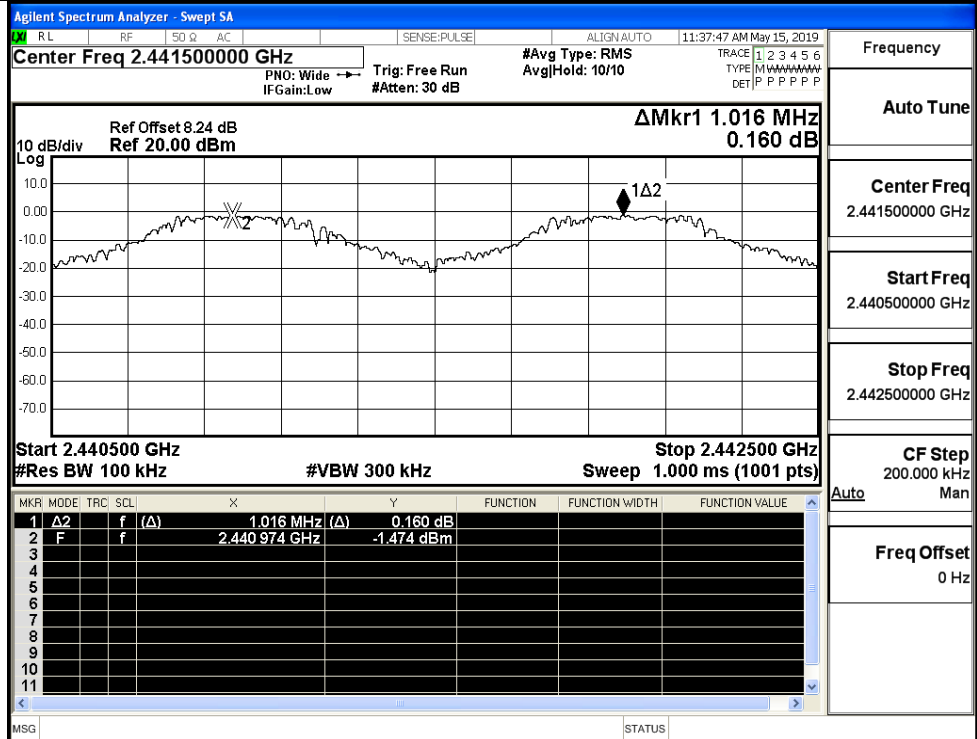
### A.3 Carrier Frequency Separation

| Mode          | Channel. | Carrier Frequency Separation [MHz] | Limit [MHz] | Verdict |
|---------------|----------|------------------------------------|-------------|---------|
| GFSK          | LCH      | 1.023                              | 0.683       | PASS    |
|               | MCH      | 1.016                              | 0.683       | PASS    |
|               | HCH      | 0.952                              | 0.683       | PASS    |
| $\pi$ /4DQPSK | LCH      | 1.060                              | 0.879       | PASS    |
|               | MCH      | 1.032                              | 0.879       | PASS    |
|               | HCH      | 1.138                              | 0.879       | PASS    |

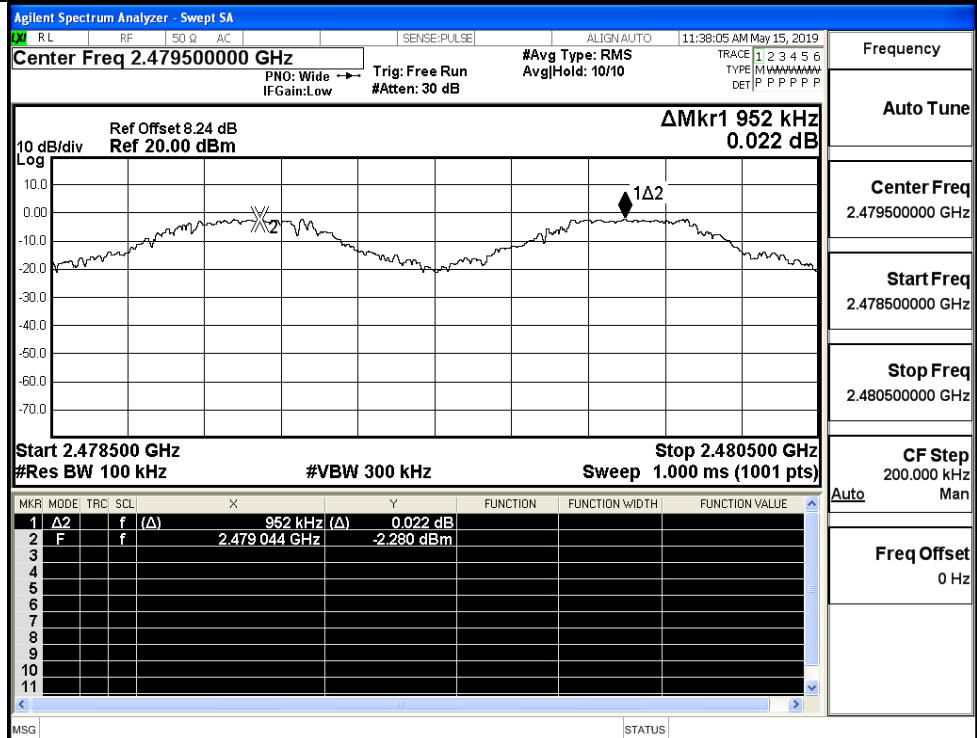
Test Graphs

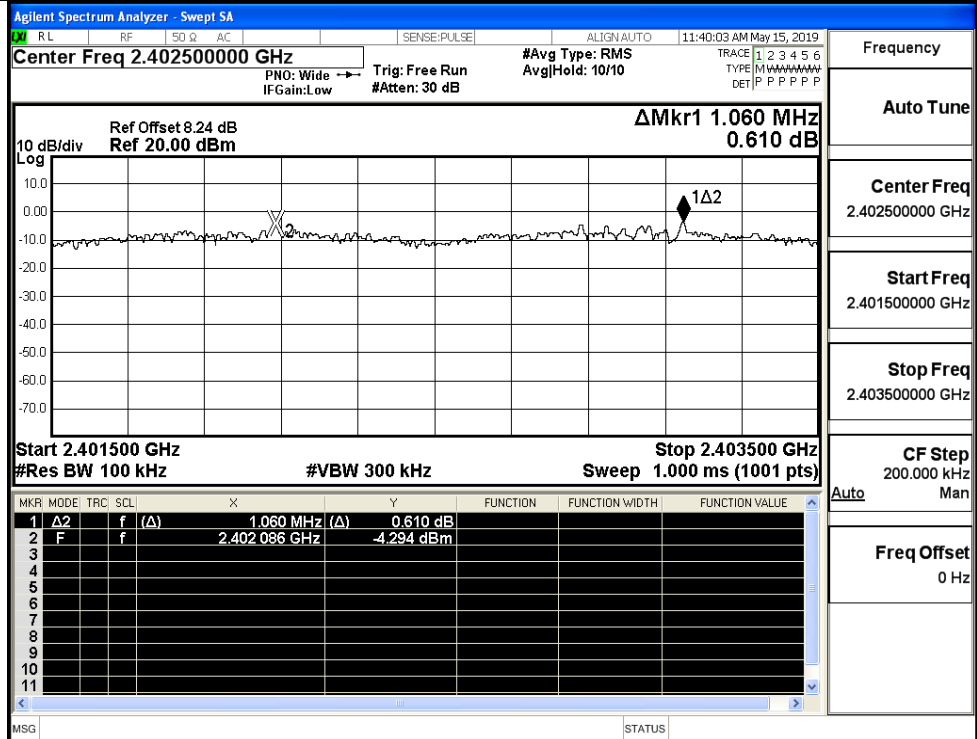
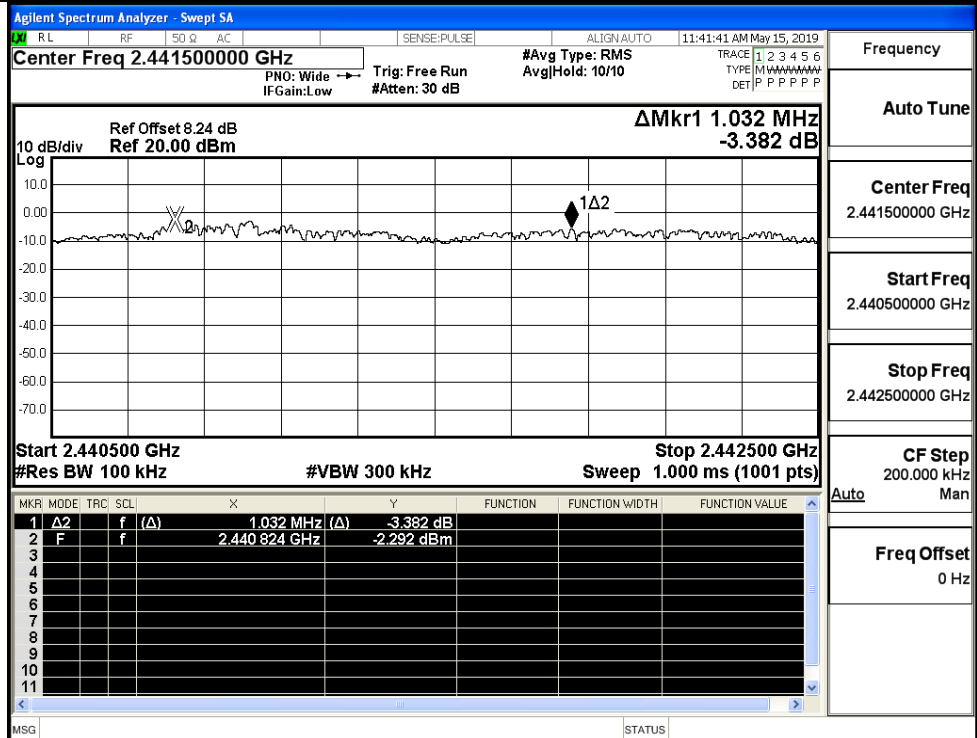


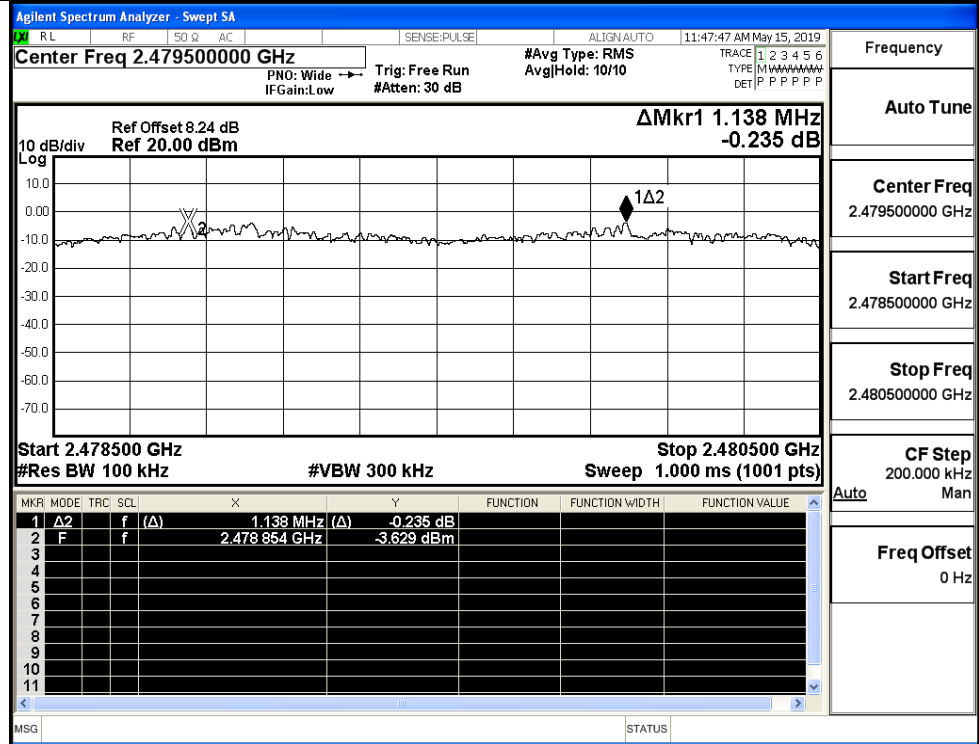
GFSK/MCH



GFSK/HCH



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

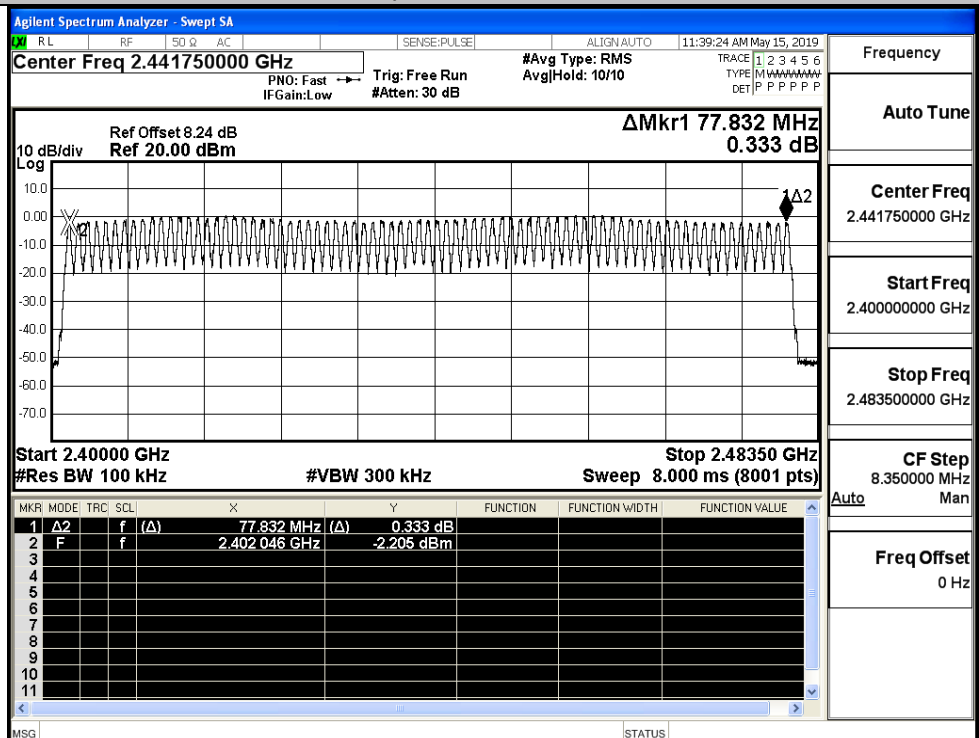
$\pi/4$ DQPSK/HCH

#### A.4 Hopping Channel Number

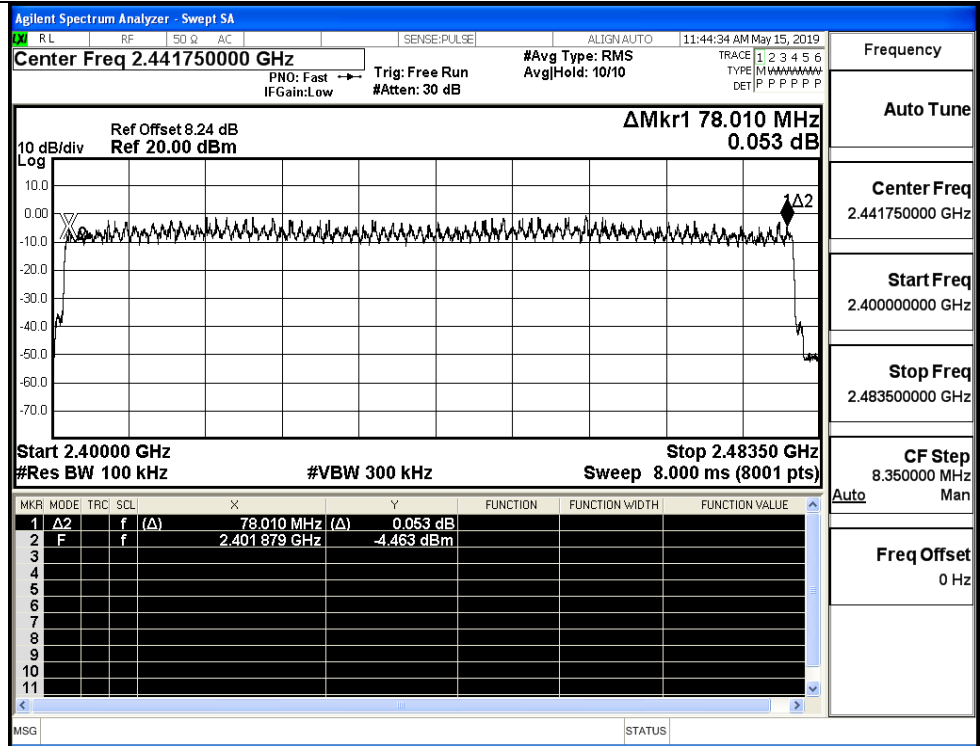
| Mode          | Channel. | Number of Hopping Channel [N] | Limit [N] | Verdict |
|---------------|----------|-------------------------------|-----------|---------|
| GFSK          | Hop      | 79                            | $\geq 15$ | PASS    |
| $\pi/4$ DQPSK | Hop      | 79                    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

#### Test Graphs

GFSK/Hop



$\pi/4$ DQPSK/Hop

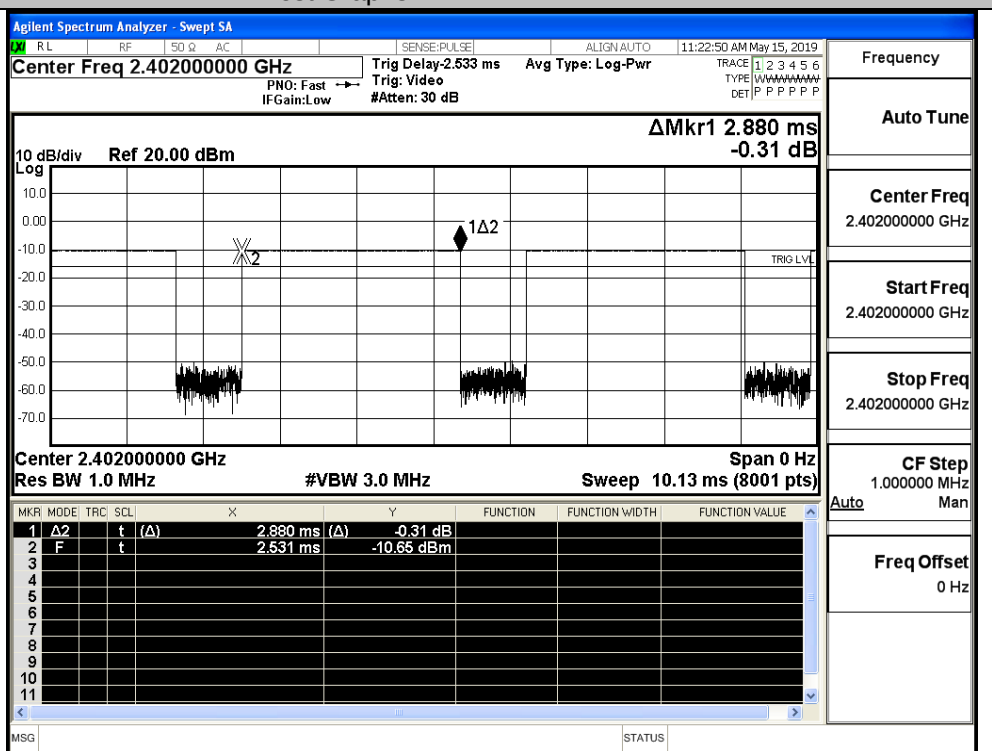


## A.5 Dwell Time

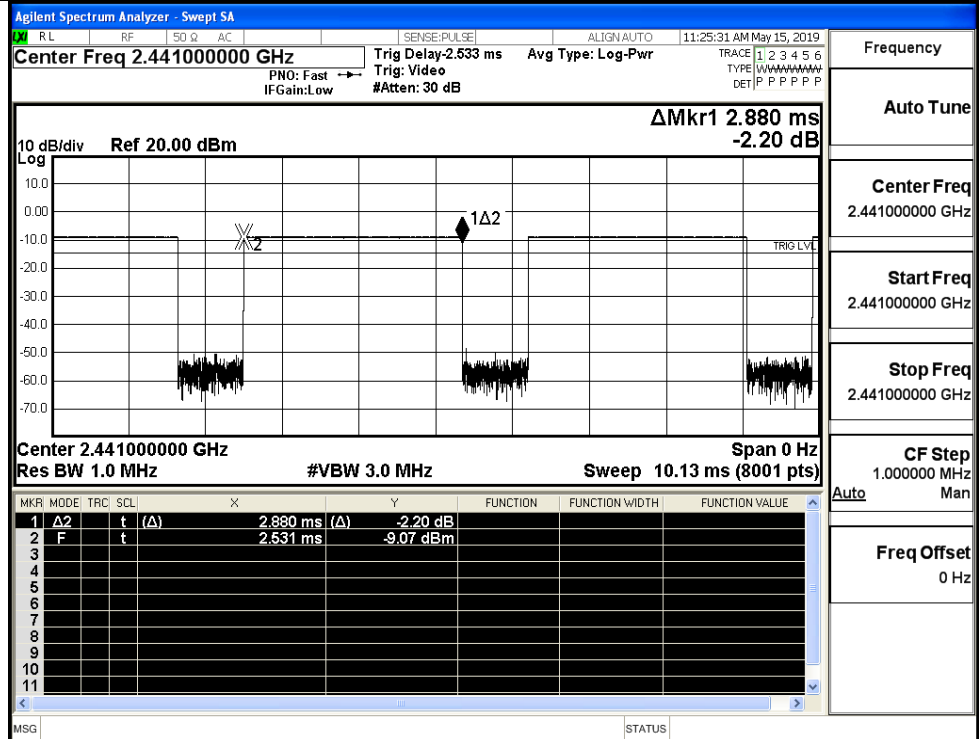
| Mode          | Packet | Channel | Burst Width<br>[ms/hop/ch] | Total<br>Hops[hop*ch] | Dwell Time[s] | Limit [s] | Verdict |
|---------------|--------|---------|----------------------------|-----------------------|---------------|-----------|---------|
| GFSK          | DH5    | LCH     | 2.88                       | 106.7                 | 0.307         | 0.4       | PASS    |
|               | DH5    | MCH     | 2.88                       | 106.7                 | 0.307         | 0.4       | PASS    |
|               | DH5    | HCH     | 3.08                       | 106.7                 | 0.329         | 0.4       | PASS    |
| $\pi/4$ DQPSK | 2DH5   | LCH     | 2.88                       | 106.7                 | 0.162         | 0.4       | PASS    |
|               | 2DH5   | MCH     | 2.88                       | 106.7                 | 0.307         | 0.4       | PASS    |
|               | 2DH5   | HCH     | 3.08                       | 106.7                 | 0.329         | 0.4       | PASS    |

## Test Graphs

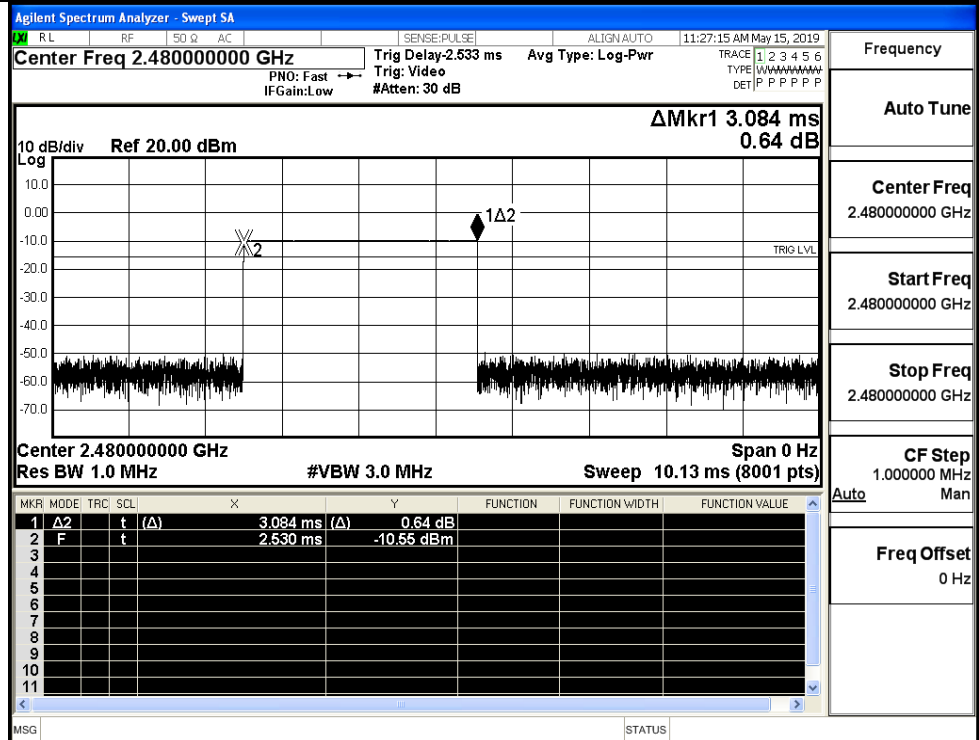
GFSK\_DH5/LCH



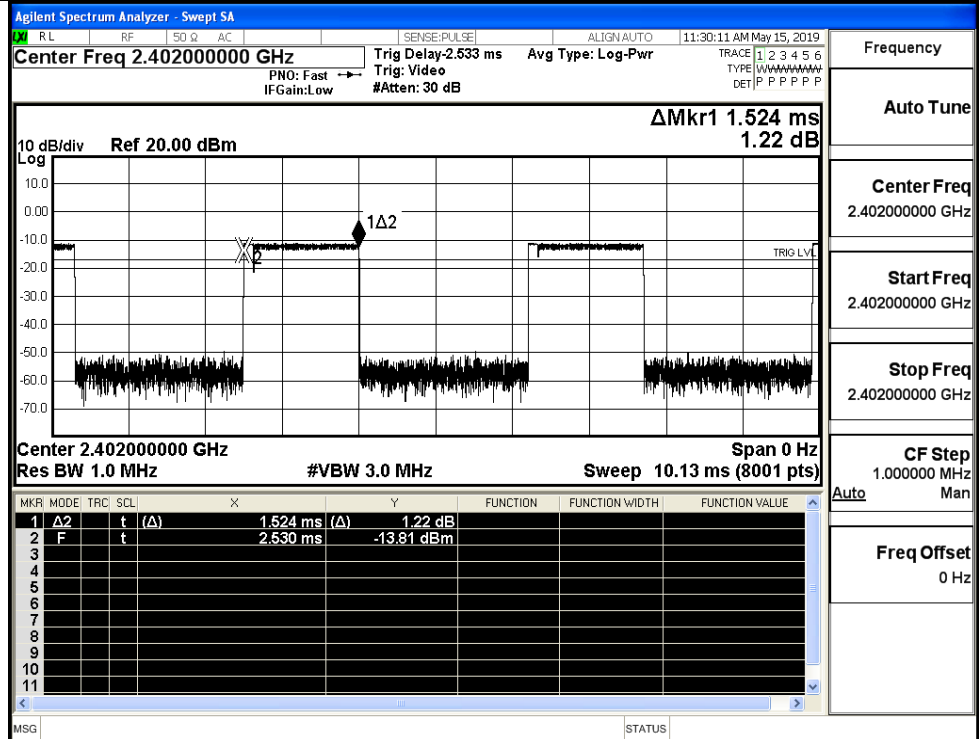
GFSK\_DH5/MCH



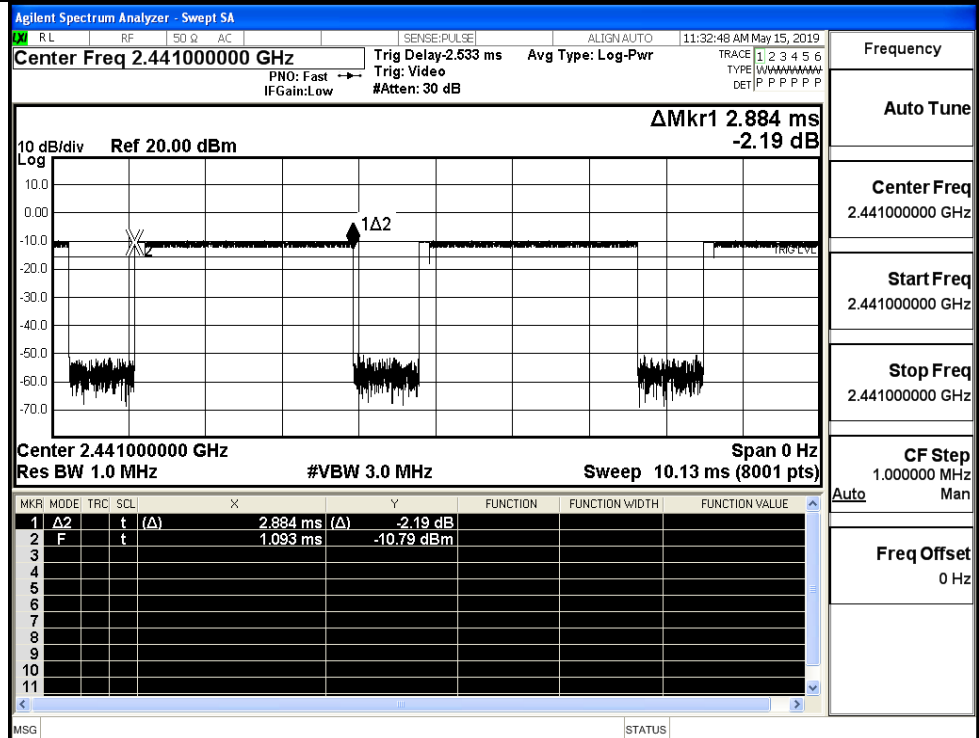
GFSK\_DH5/HCH



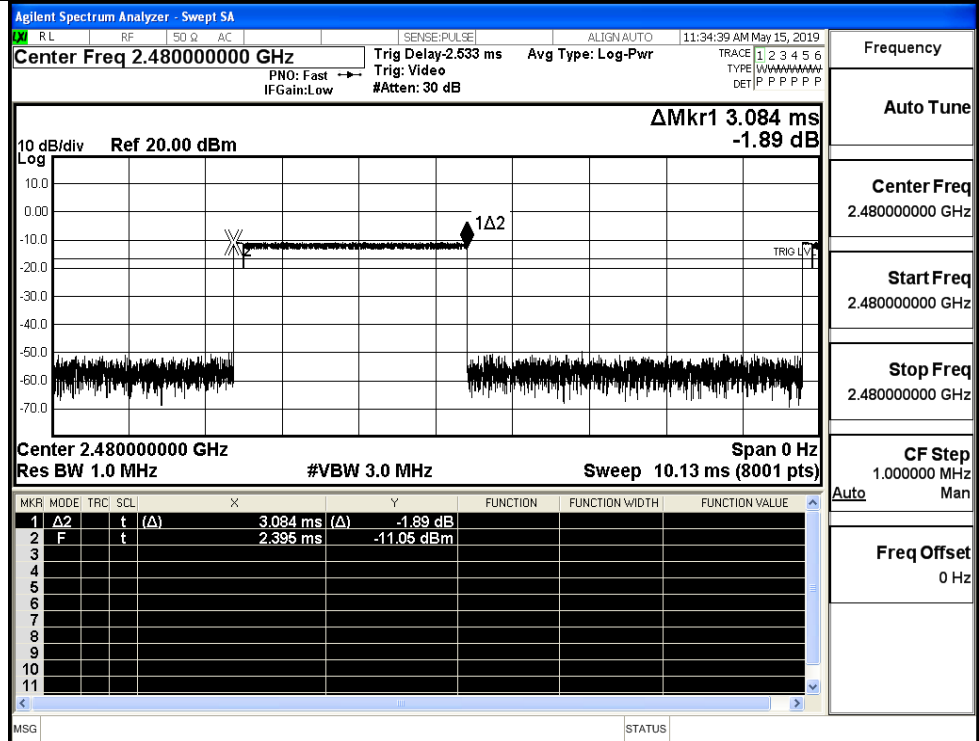
$\pi/4$ DQPSK  
\_2DH5/LCH



$\pi/4$ DQPSK  
\_2DH5/MCH

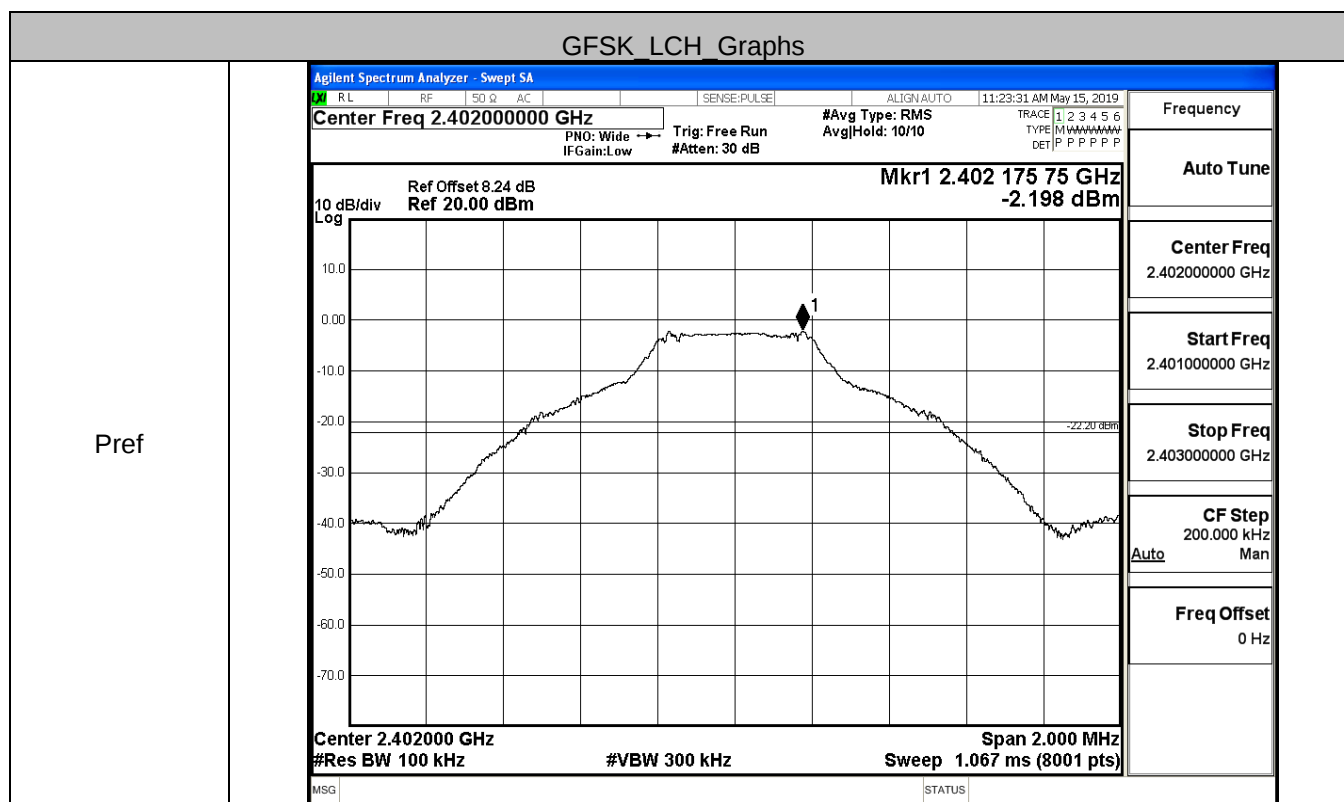


$\pi/4$ DQPSK  
\_2DH5/HCH

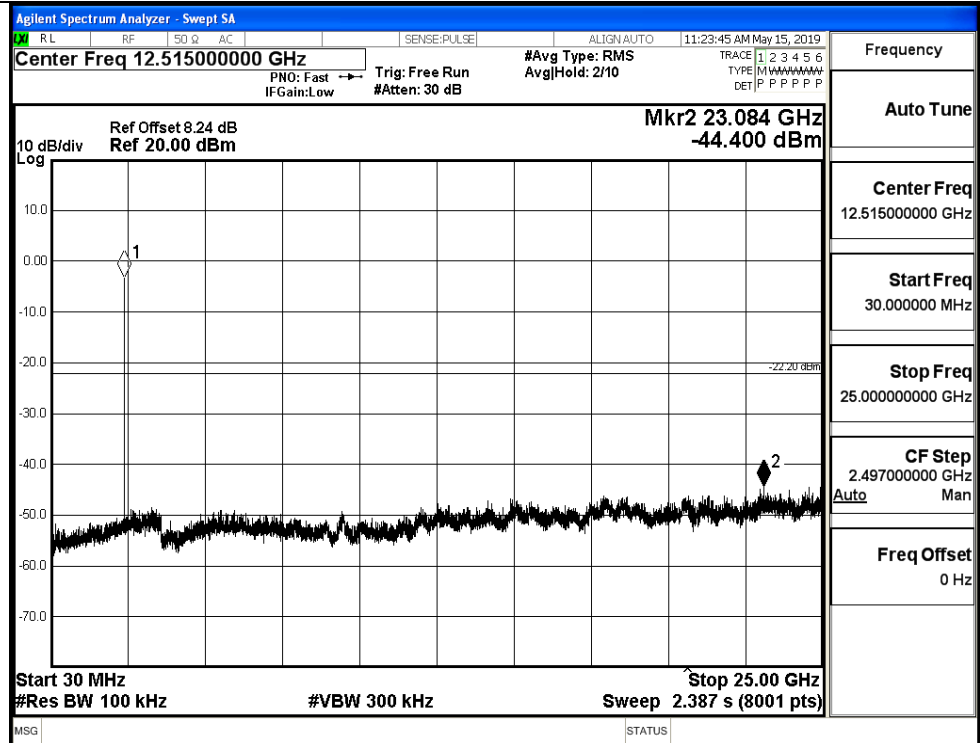


## A.6 RF Conducted Spurious Emissions

| Mode          | Channel | Pref [dBm] | Max. Level [dBm] | Limit [dBm] | Verdict |
|---------------|---------|------------|------------------|-------------|---------|
| GFSK          | LCH     | -2.198     | -44.400          | -22.198     | PASS    |
|               | MCH     | -0.68      | -43.744          | -20.680     | PASS    |
|               | HCH     | -1.956     | -44.370          | -21.956     | PASS    |
| $\pi/4$ DQPSK | LCH     | -3.182     | -44.736          | -23.182     | PASS    |
|               | MCH     | -1.892     | -44.656          | -21.892     | PASS    |
|               | HCH     | -3.263     | -44.131          | -23.263     | PASS    |

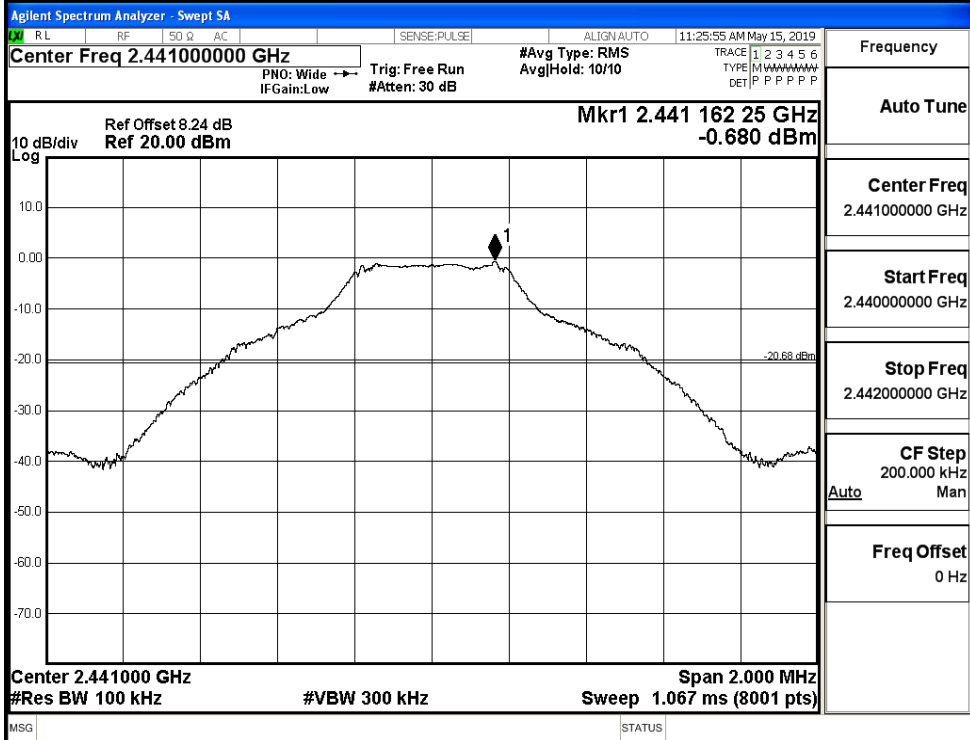


Puw

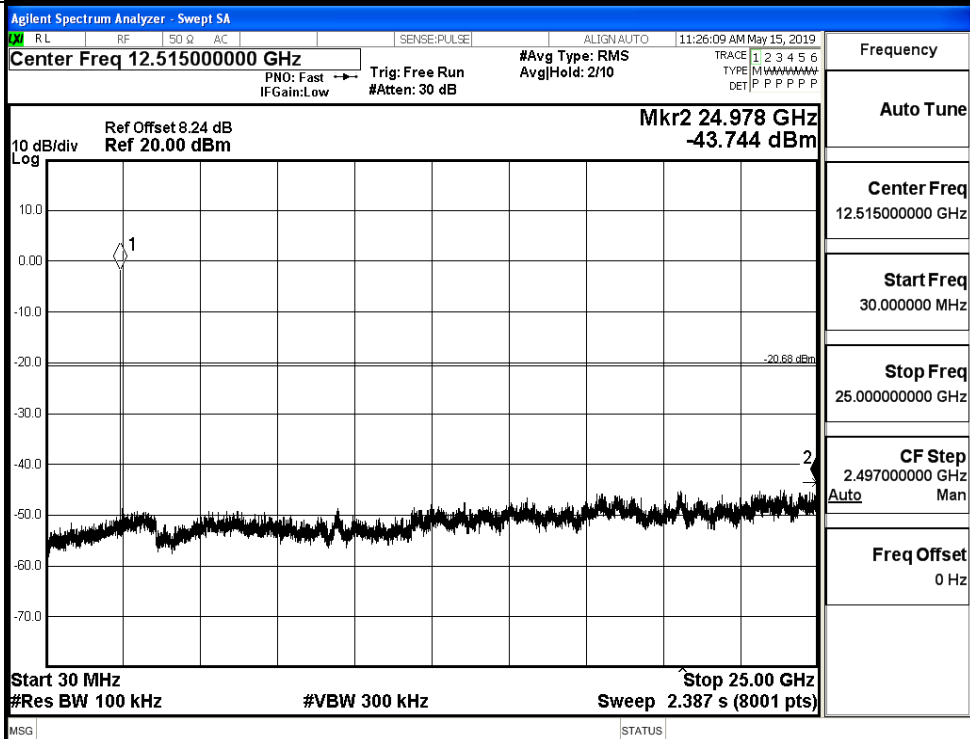


# GFSK MCH Graphs

Pref

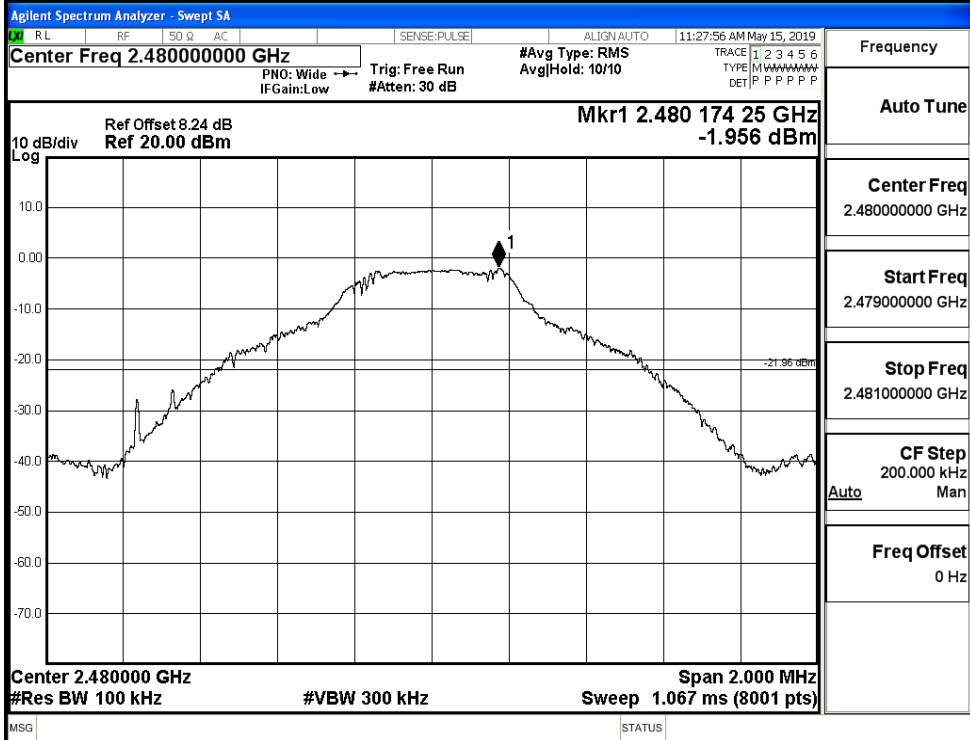


Puw

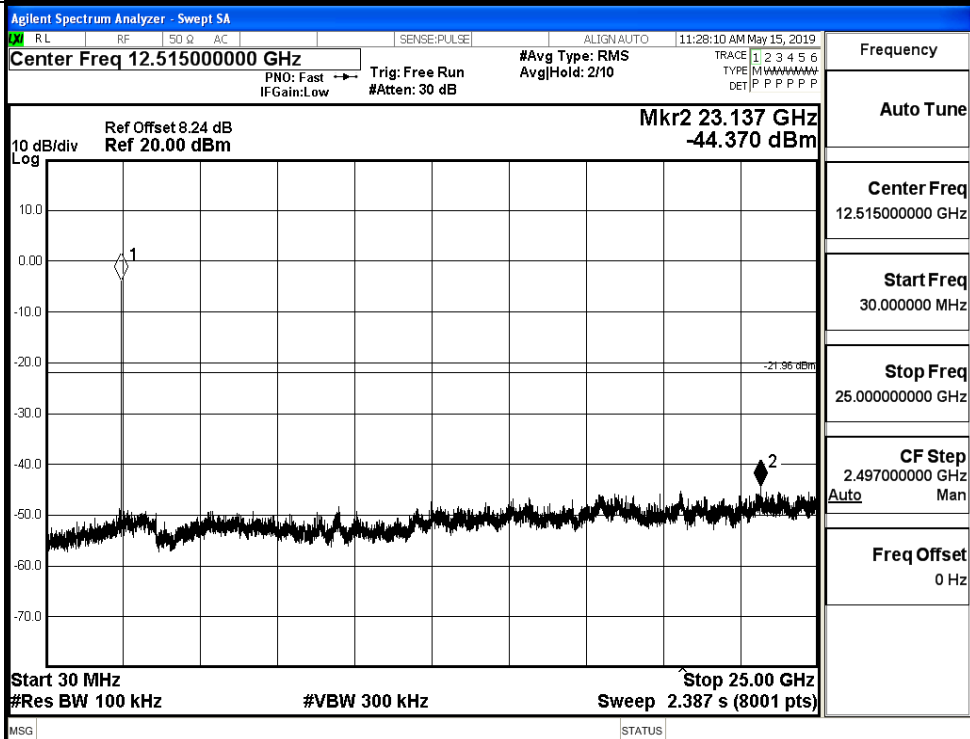


# GFSK HCH Graphs

Pref

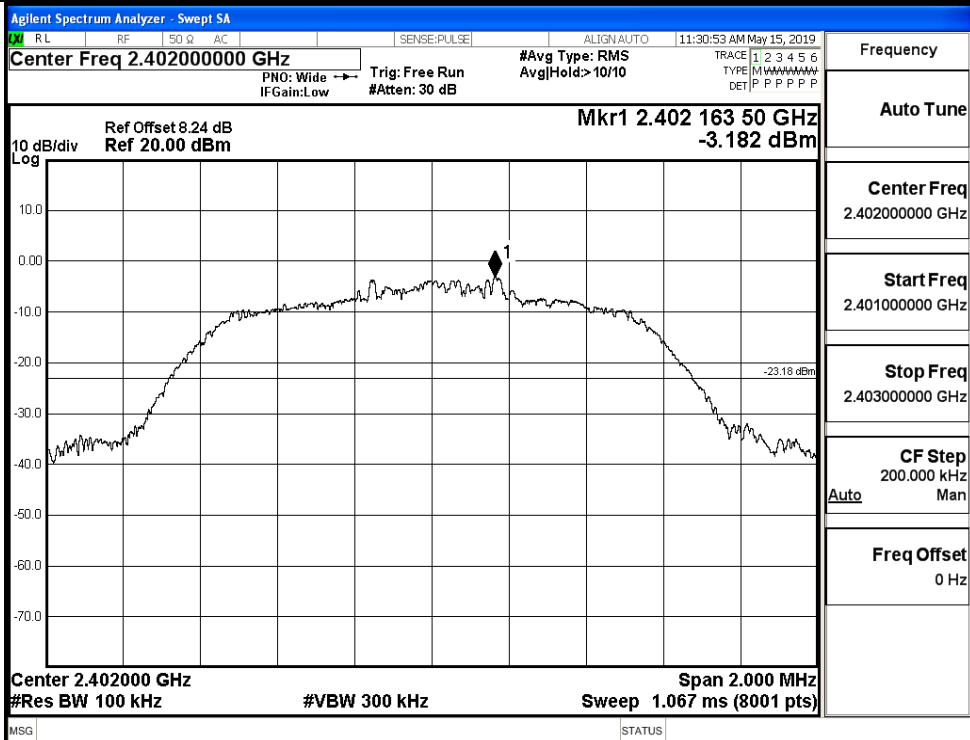


Puw

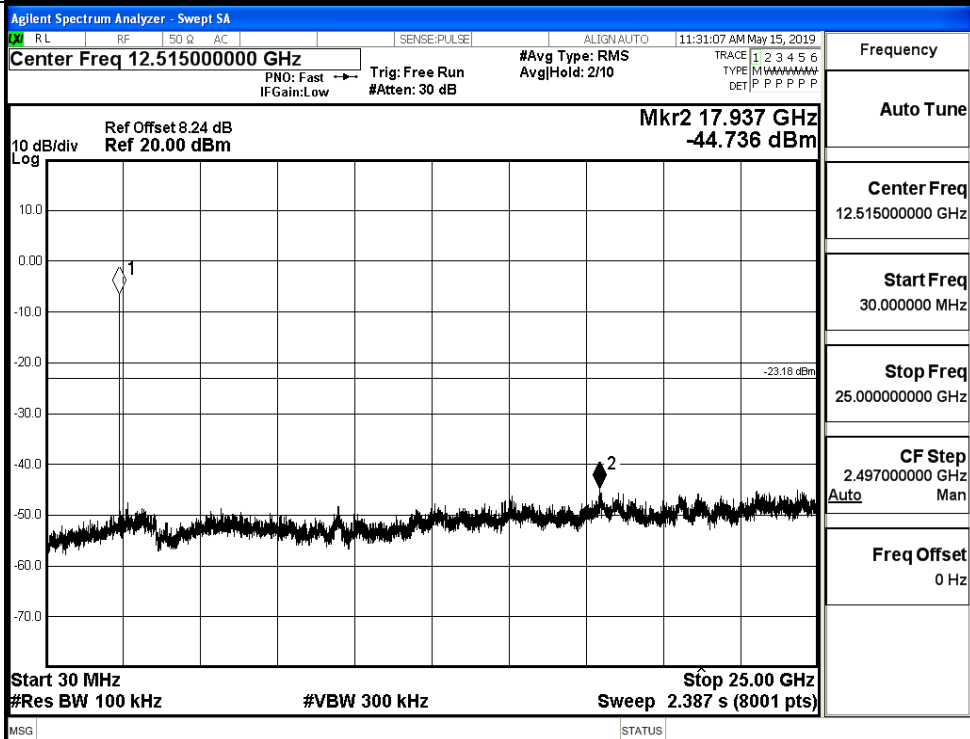


$\pi/4$ DQPSK LCH Graphs

Pref

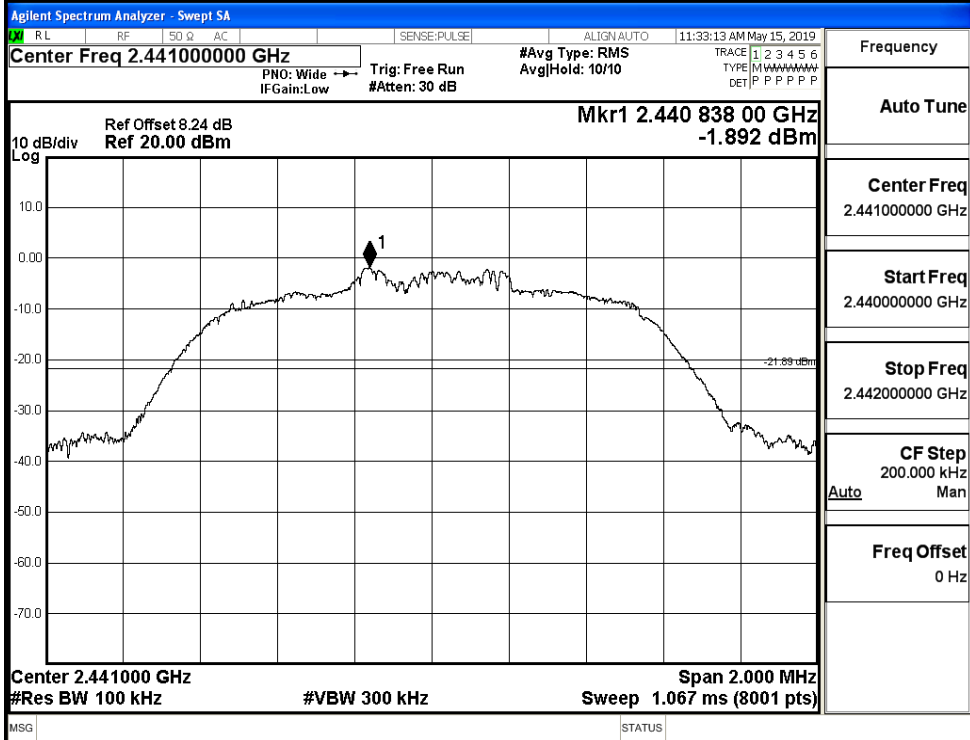


Puw

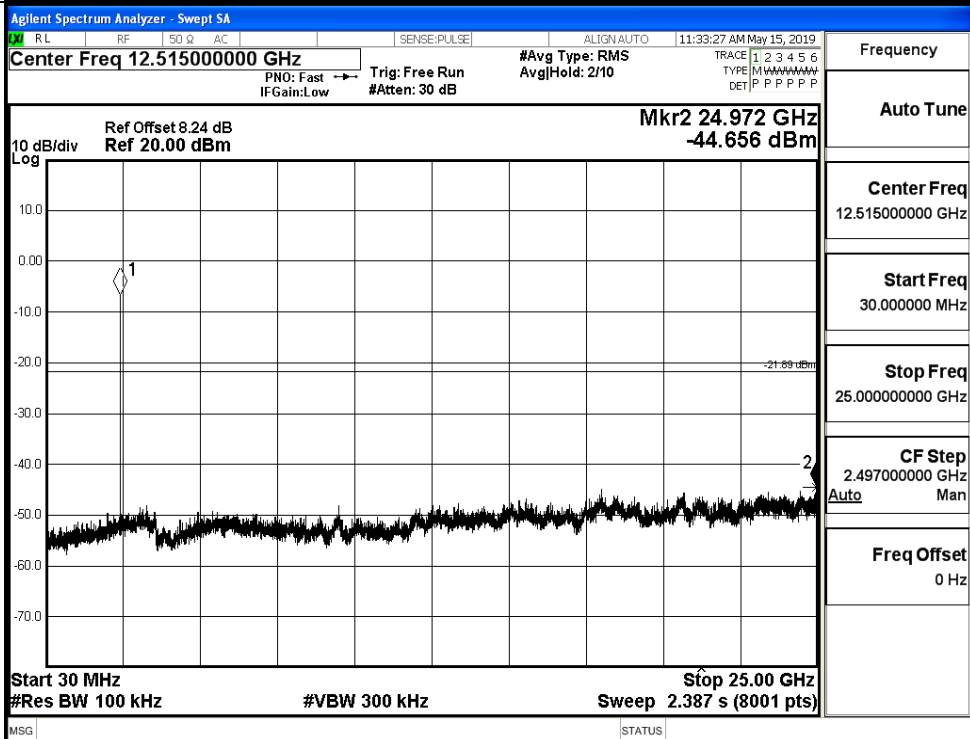


$\pi$ /4DQPSK MCH Graphs

Pref

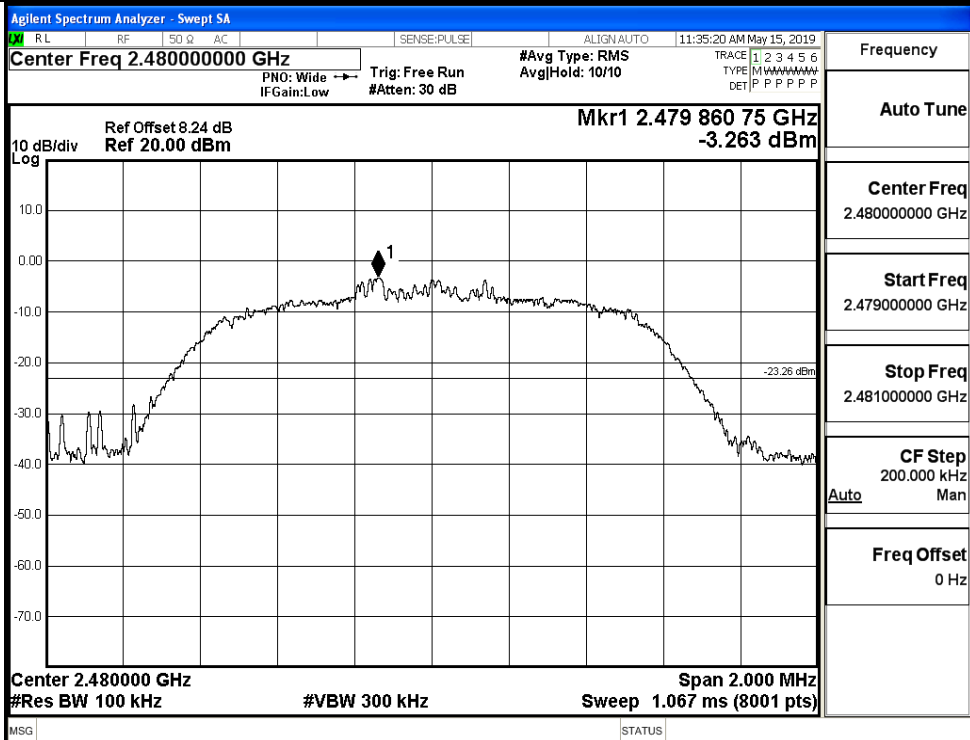


Puw

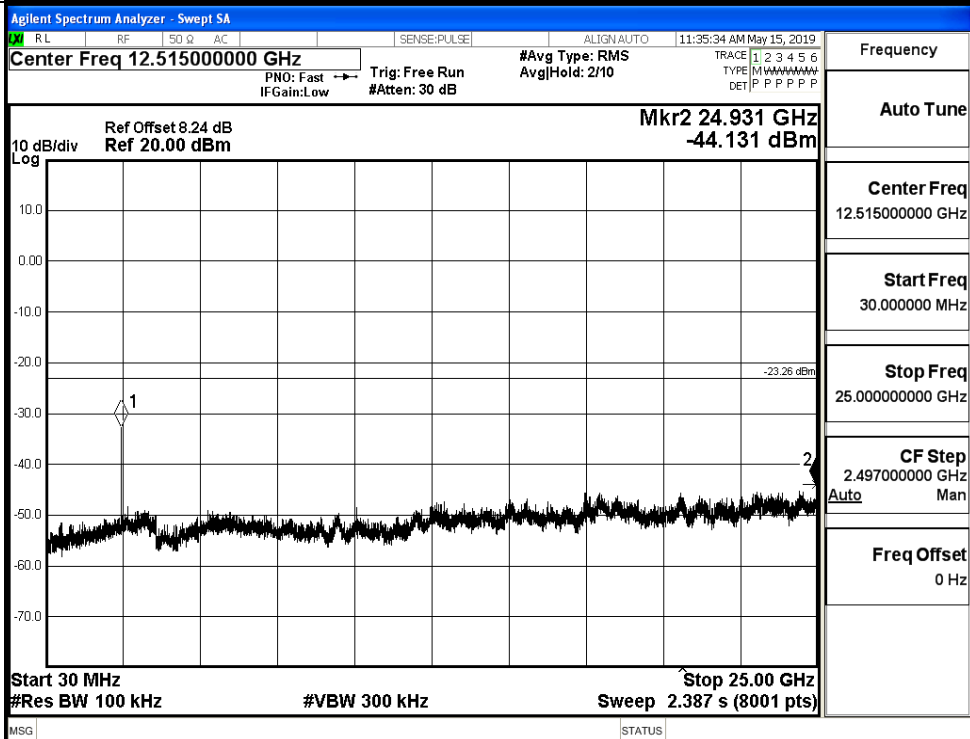


$\pi/4$ DQPSK HCH Graphs

Pref



Puw

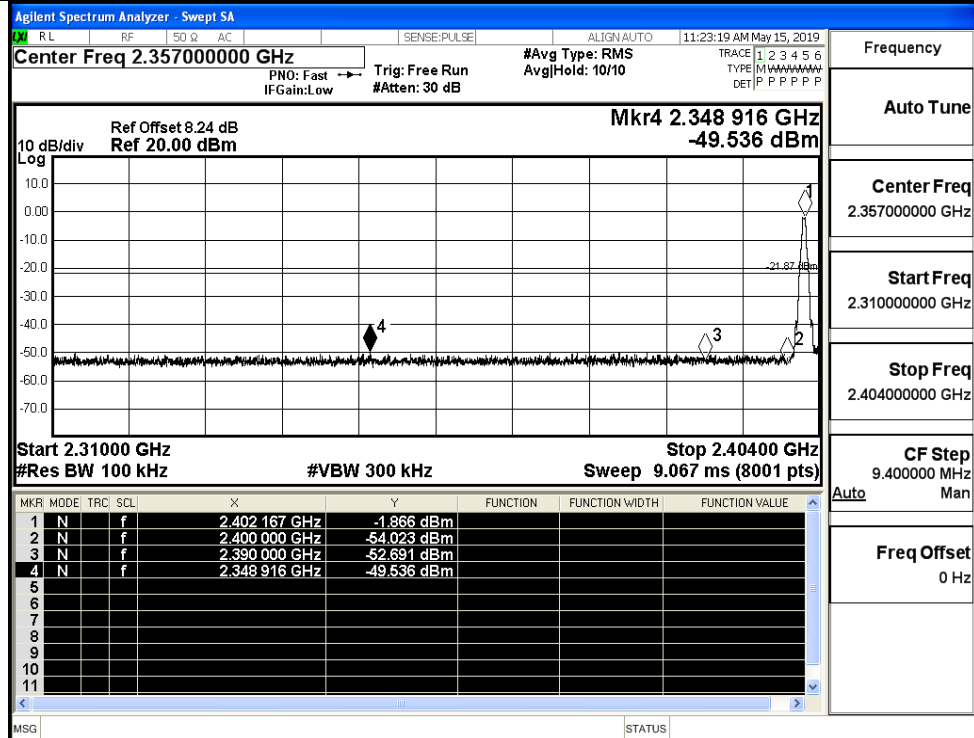


## A.7 Band-edge for RF Conducted Emissions

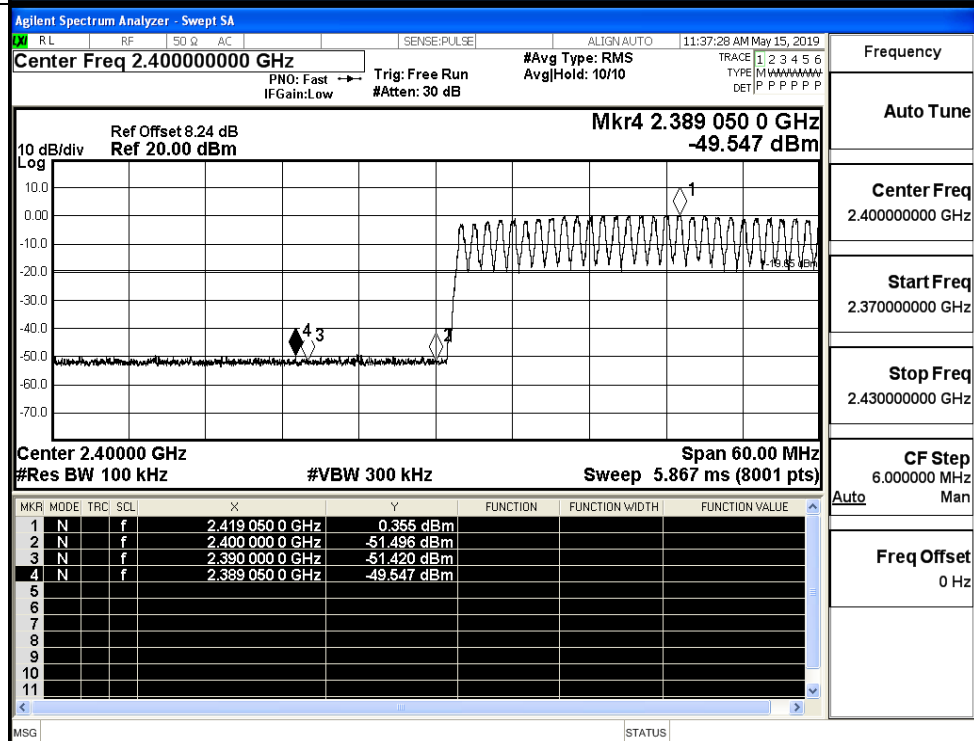
| Mode          | Channel | Carrier Frequency [MHz] | Carrier Power [dBm] | Frequency Hopping | Max Spurious Level [dBm] | Limit [dBm] | Verdict |
|---------------|---------|-------------------------|---------------------|-------------------|--------------------------|-------------|---------|
| GFSK          | LCH     | 2402                    | -1.866              | Off               | -49.536                  | -21.87      | PASS    |
|               |         |                         | 0.355               | On                | -49.547                  | -19.65      | PASS    |
|               | HCH     | 2480                    | -1.585              | Off               | -49.091                  | -21.59      | PASS    |
|               |         |                         | 0.358               | On                | -49.195                  | -19.64      | PASS    |
| $\pi/4$ DQPSK | LCH     | 2402                    | -3.126              | Off               | -48.744                  | -23.13      | PASS    |
|               |         |                         | -0.938              | On                | -49.556                  | -20.94      | PASS    |
|               | HCH     | 2480                    | -2.735              | Off               | -48.348                  | -22.74      | PASS    |
|               |         |                         | -0.706              | On                | -47.590                  | -20.71      | PASS    |

## Test Graphs

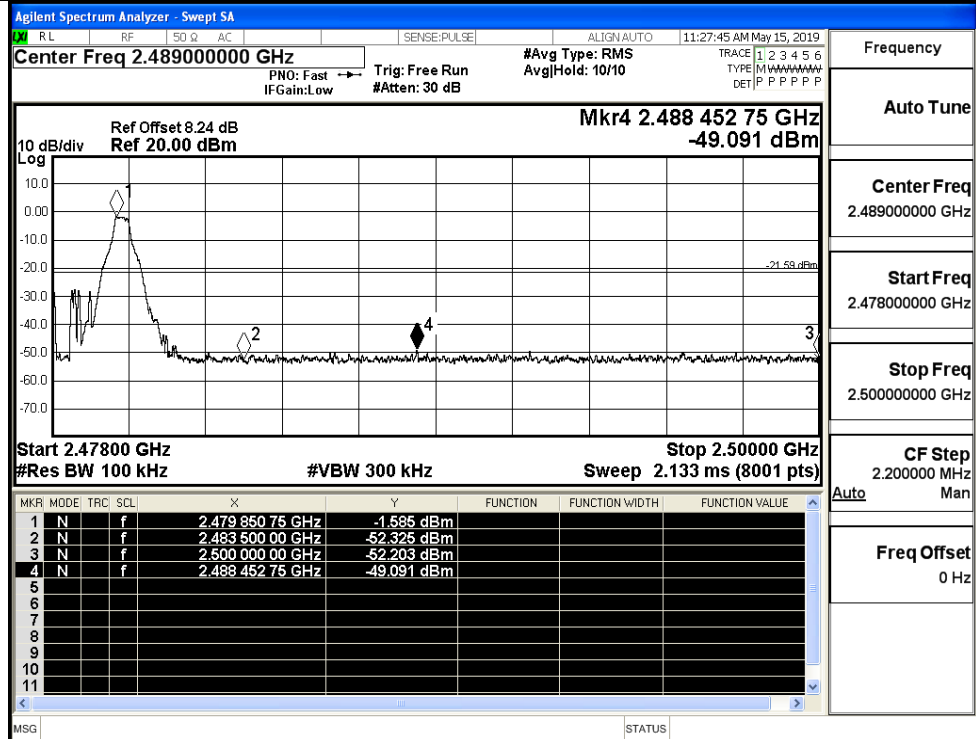
GFSK/LCH/No Hop



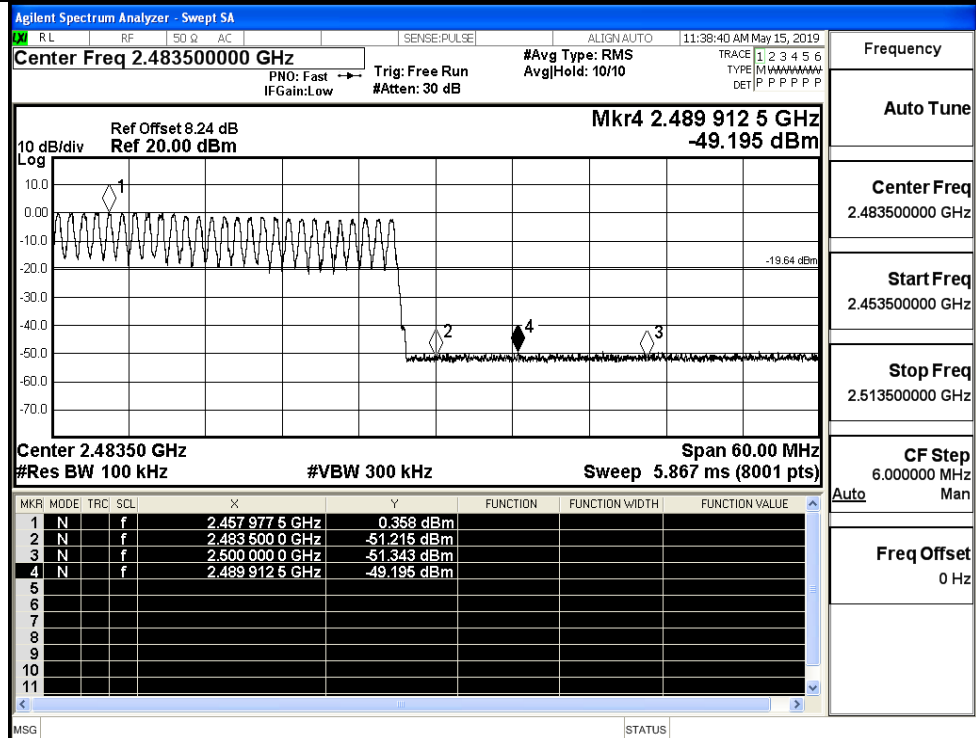
GFSK/LCH/Hop



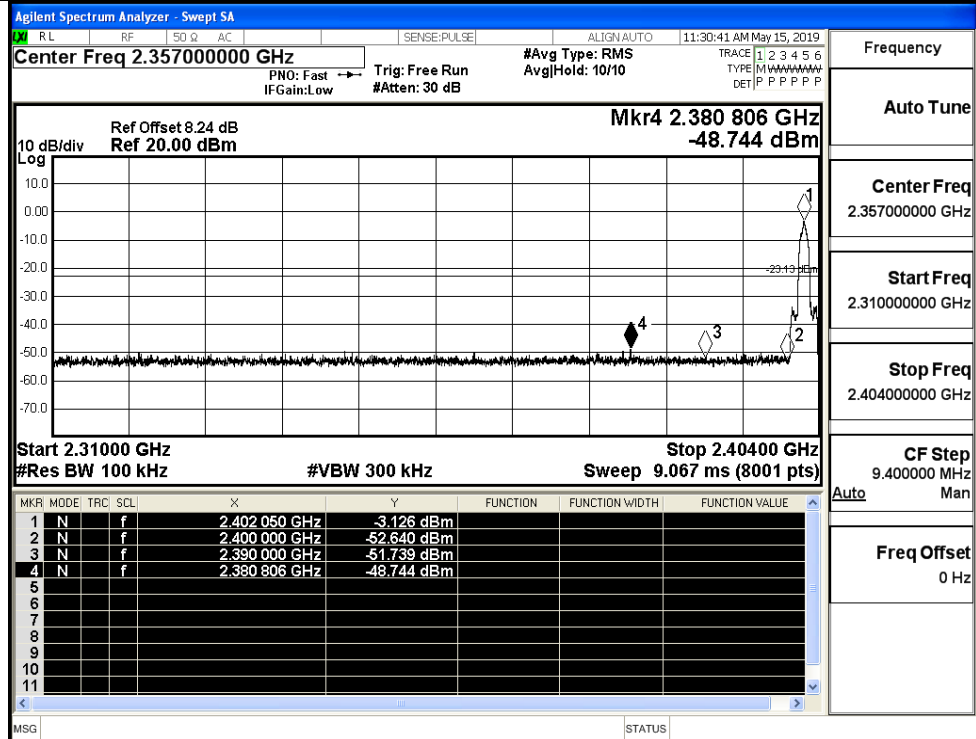
GFSK/HCH/No Hop



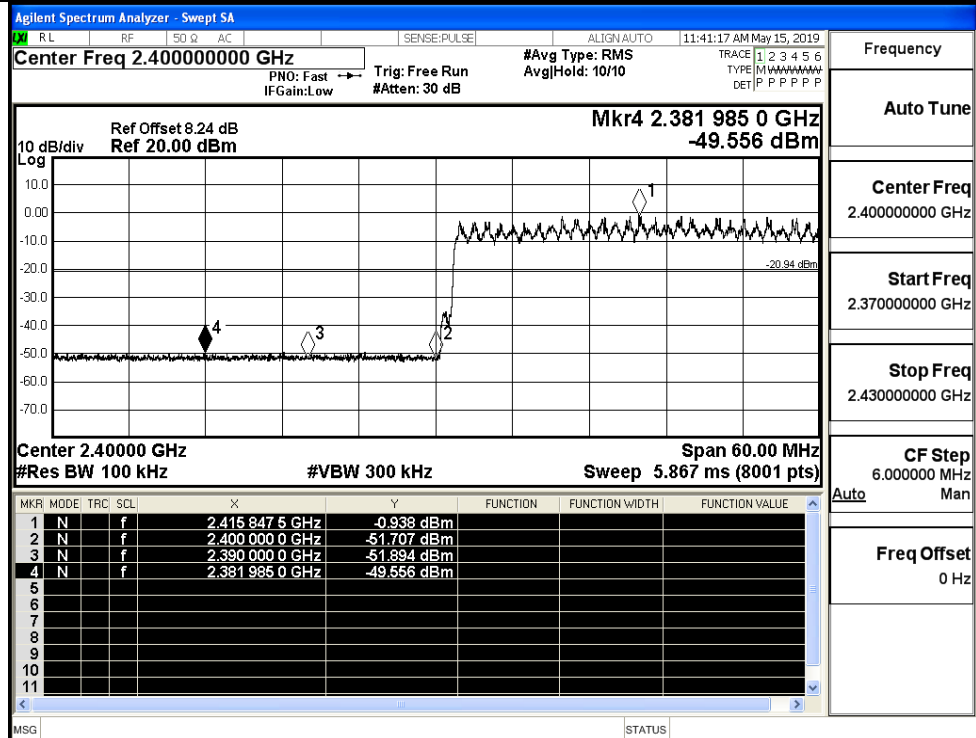
GFSK/HCH/Hop



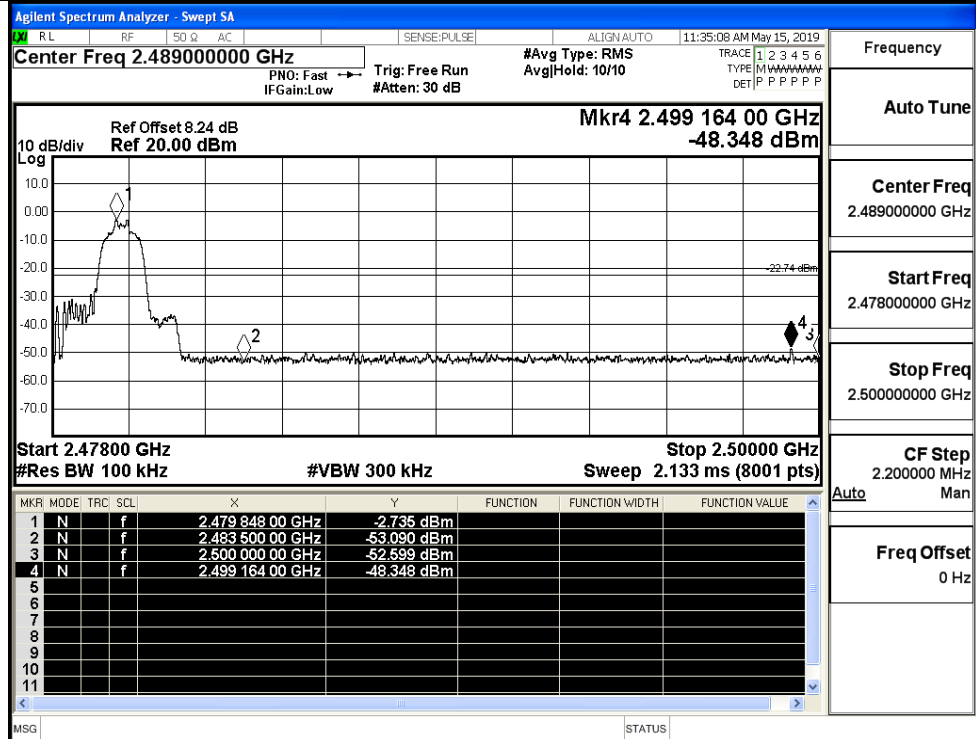
$\pi/4$ DQPSK/LCH/No  
Hop



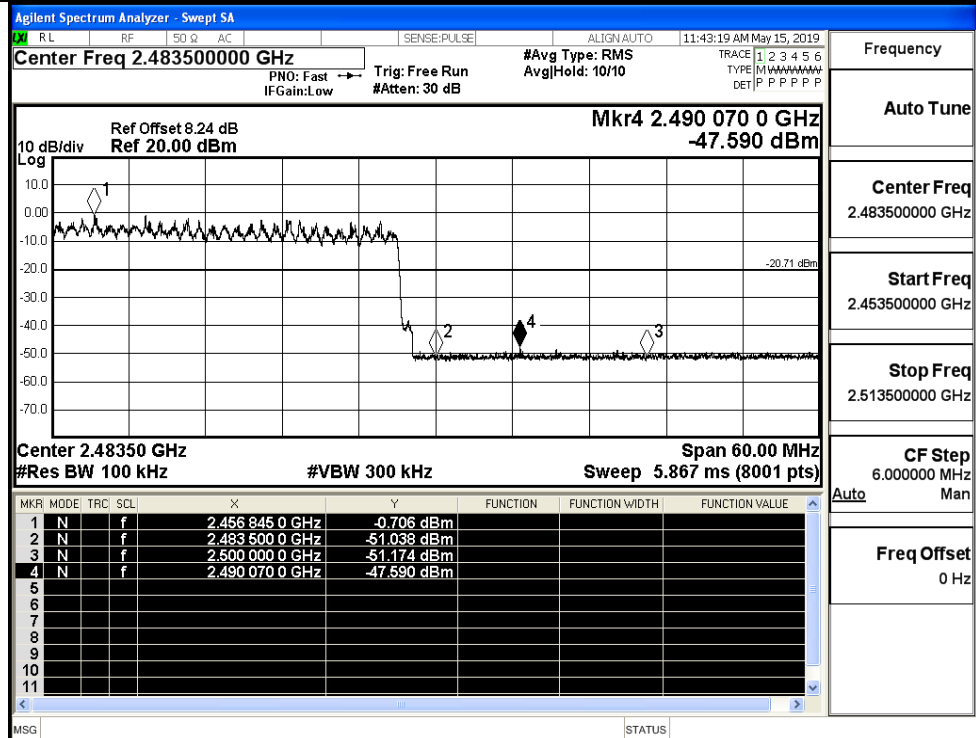
$\pi/4$ DQPSK/LCH/Hop



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



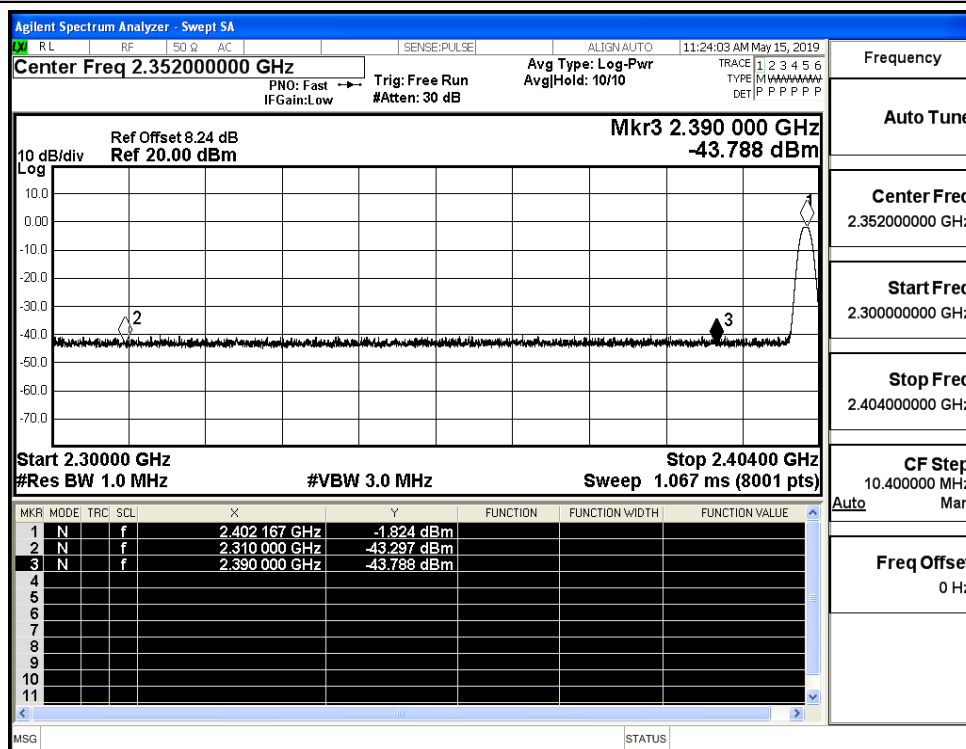
$\pi/4$ DQPSK/HCH/Hop



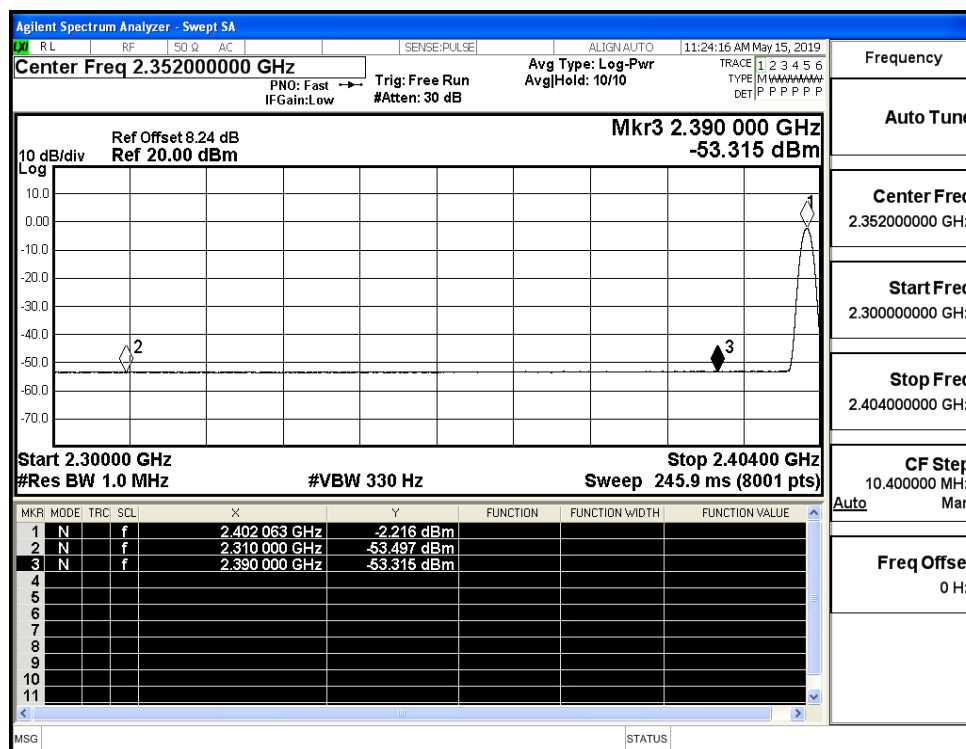
## A.8 Restrict-band band-edge measurements

| Test Mode     | Hopping | Freq.  | Power [dBm] | Gain | Ground Factor | E [dBuV/m] | Detector | Limit [dBuV/m] | Verdict |
|---------------|---------|--------|-------------|------|---------------|------------|----------|----------------|---------|
| GFSK          | Off     | 2310.0 | -43.30      | 2.0  | 0             | 51.96      | PEAK     | 74             | PASS    |
|               | Off     | 2310.0 | -53.50      | 2.0  | 0             | 41.76      | AV       | 54             | PASS    |
|               | Off     | 2390.0 | -43.79      | 2.0  | 0             | 51.47      | PEAK     | 74             | PASS    |
|               | Off     | 2390.0 | -53.32      | 2.0  | 0             | 41.94      | AV       | 54             | PASS    |
|               | Off     | 2483.5 | -42.55      | 2.0  | 0             | 52.71      | PEAK     | 74             | PASS    |
|               | Off     | 2483.5 | -53.02      | 2.0  | 0             | 42.23      | AV       | 54             | PASS    |
|               | Off     | 2500.0 | -44.00      | 2.0  | 0             | 51.26      | PEAK     | 74             | PASS    |
|               | Off     | 2500.0 | -52.86      | 2.0  | 0             | 42.39      | AV       | 54             | PASS    |
| $\pi/4$ DQPSK | Off     | 2310.0 | -39.64      | 2.0  | 0             | 55.62      | PEAK     | 74             | PASS    |
|               | Off     | 2310.0 | -53.46      | 2.0  | 0             | 41.80      | AV       | 54             | PASS    |
|               | Off     | 2390.0 | -43.13      | 2.0  | 0             | 52.12      | PEAK     | 74             | PASS    |
|               | Off     | 2390.0 | -53.22      | 2.0  | 0             | 42.04      | AV       | 54             | PASS    |
|               | Off     | 2483.5 | -42.58      | 2.0  | 0             | 52.68      | PEAK     | 74             | PASS    |
|               | Off     | 2483.5 | -52.93      | 2.0  | 0             | 42.33      | AV       | 54             | PASS    |
|               | Off     | 2500.0 | -43.25      | 2.0  | 0             | 52.01      | PEAK     | 74             | PASS    |
|               | Off     | 2500.0 | -52.75      | 2.0  | 0             | 42.51      | AV       | 54             | PASS    |

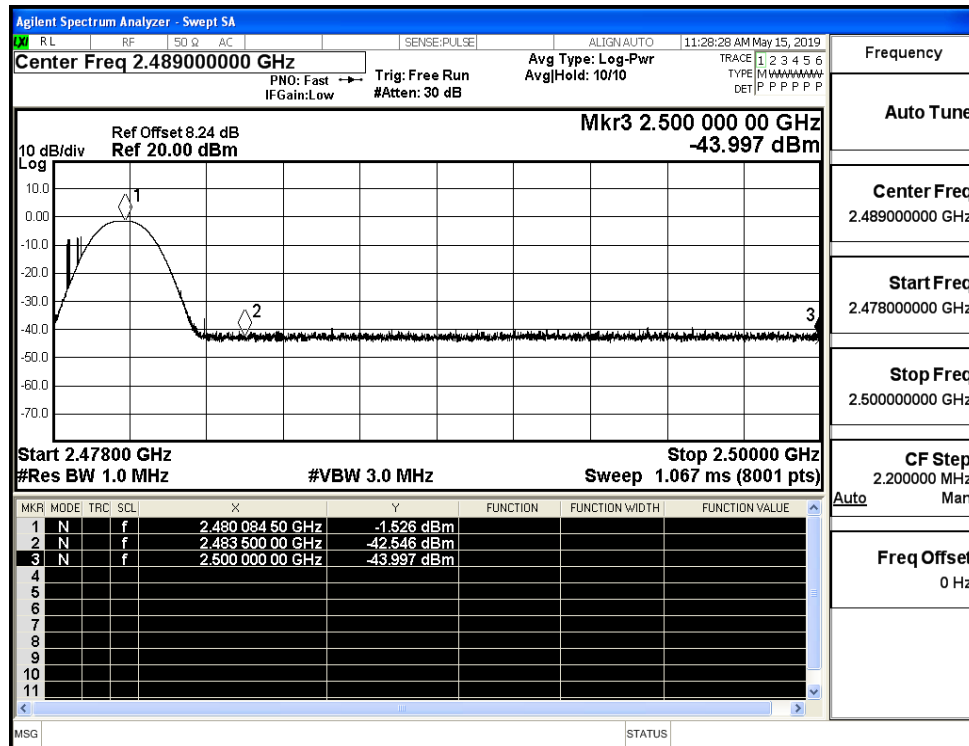
# Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (Low Channel)



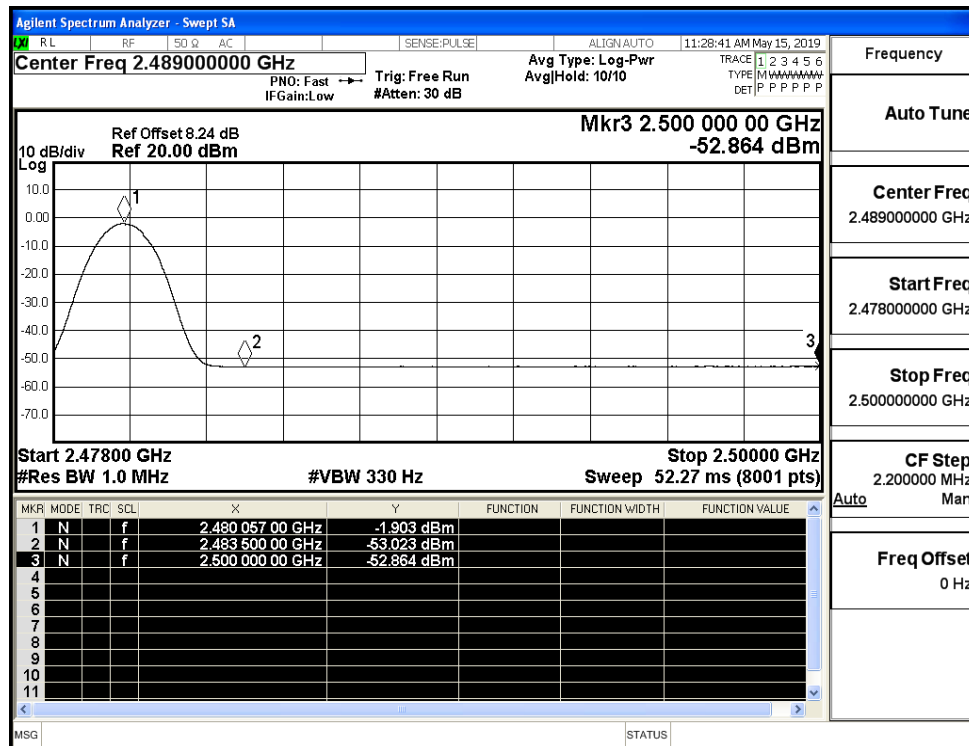
# Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (Low Channel)

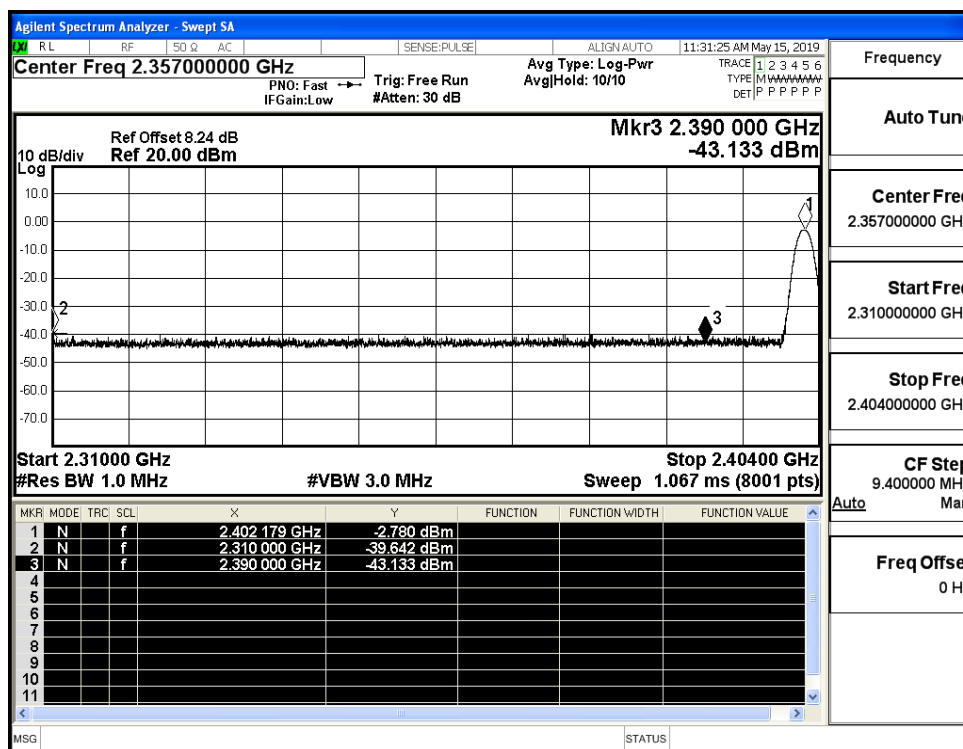
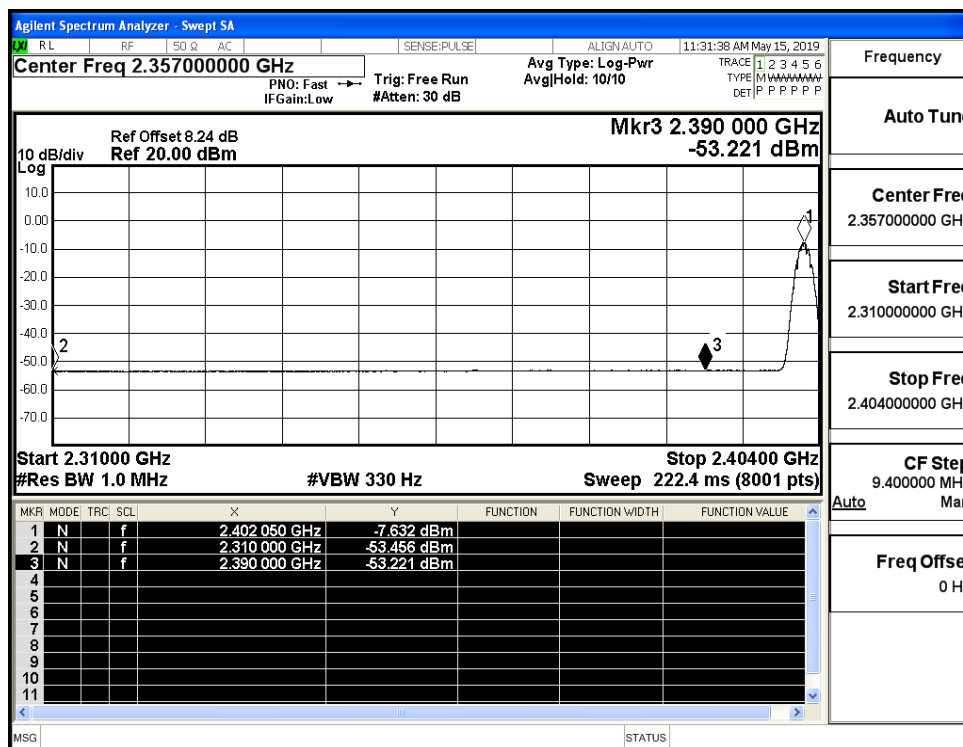


Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (High Channel)

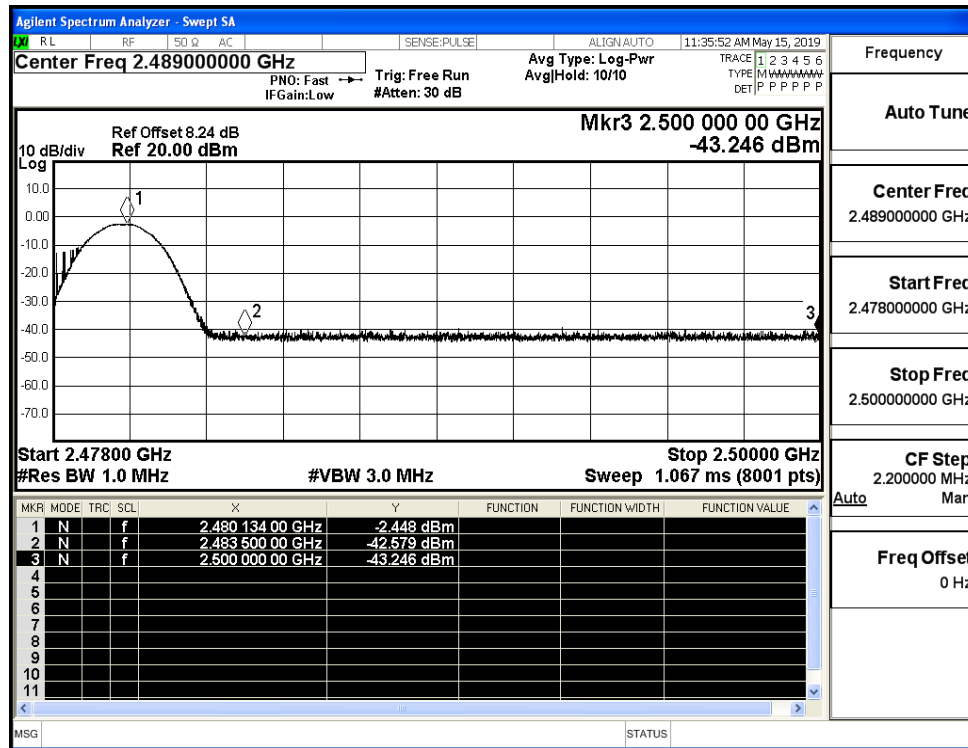


Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (High Channel)



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)

