

## Appendix A

### RF Test Data for BT V4.0(BDR/EDR) (Conducted Measurement)

Product Name: Smart phone

Trade Mark: S SMOOTH

Test Model: SMOOTH 5.0

#### Environmental Conditions

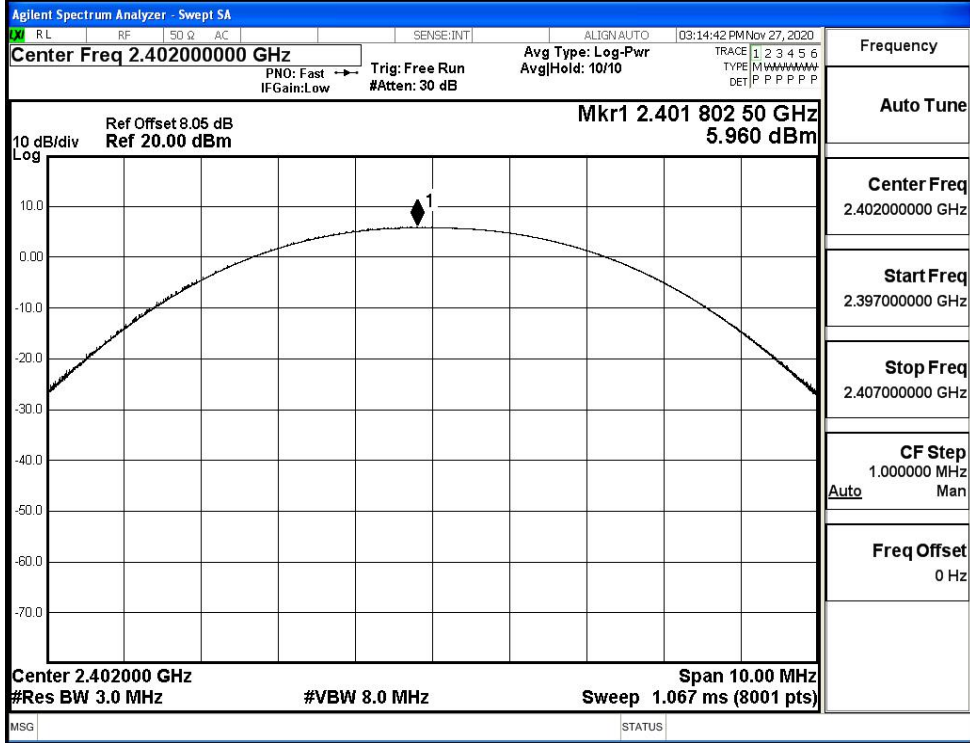
|                    |            |
|--------------------|------------|
| Temperature:       | 22.3° C    |
| Relative Humidity: | 53.4%      |
| ATM Pressure:      | 100.0 kPa  |
| Test Engineer:     | Diamond Lu |
| Supervised by:     | Li Huan    |

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

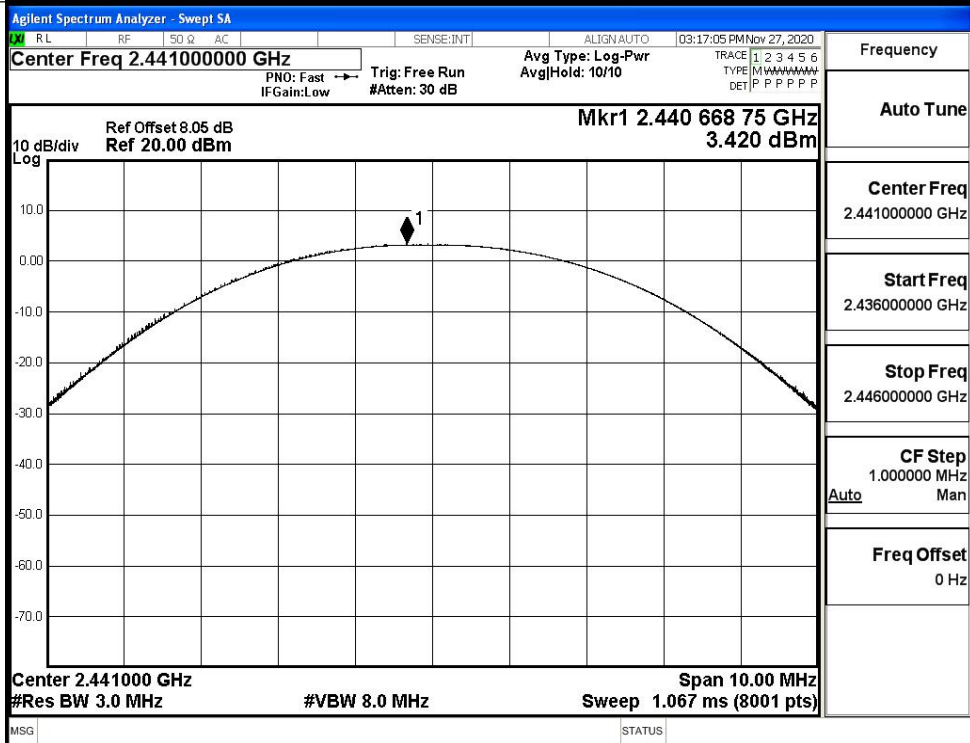
| Mode          | Channel. | Maximum Peak Output Power [dBm] | Limit [dBm] | Verdict |
|---------------|----------|---------------------------------|-------------|---------|
| GFSK          | LCH      | 5.960                           | 21          | PASS    |
|               | MCH      | 3.420                           | 21          | PASS    |
|               | HCH      | 2.467                           | 21          | PASS    |
| $\pi/4$ DQPSK | LCH      | 6.667                           | 21          | PASS    |
|               | MCH      | 3.831                           | 21          | PASS    |
|               | HCH      | 2.903                           | 21          | PASS    |
| 8DPSK         | LCH      | 6.991                           | 21          | PASS    |
|               | MCH      | 4.229                           | 21          | PASS    |
|               | HCH      | 3.360                           | 21          | PASS    |

Test Graphs

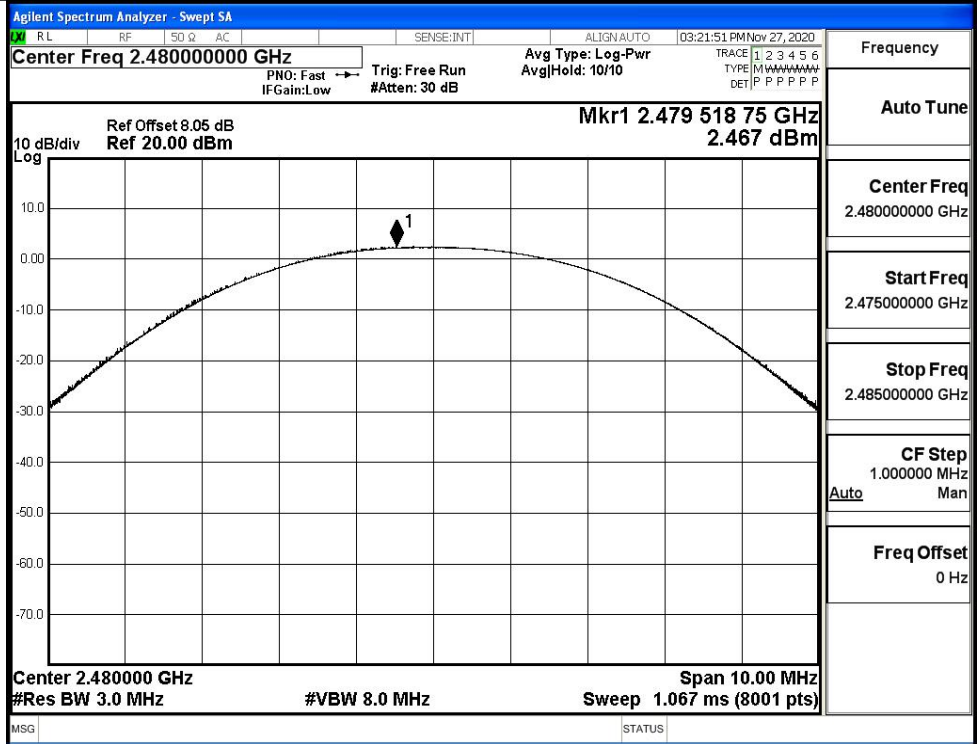
GFSK/LCH



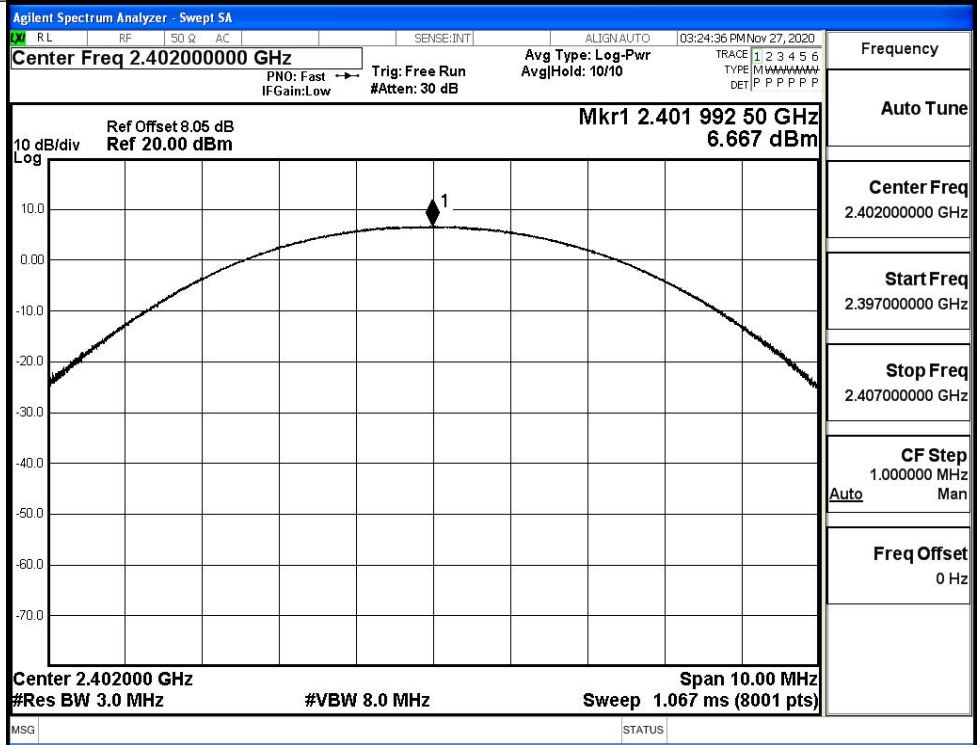
GFSK/MCH



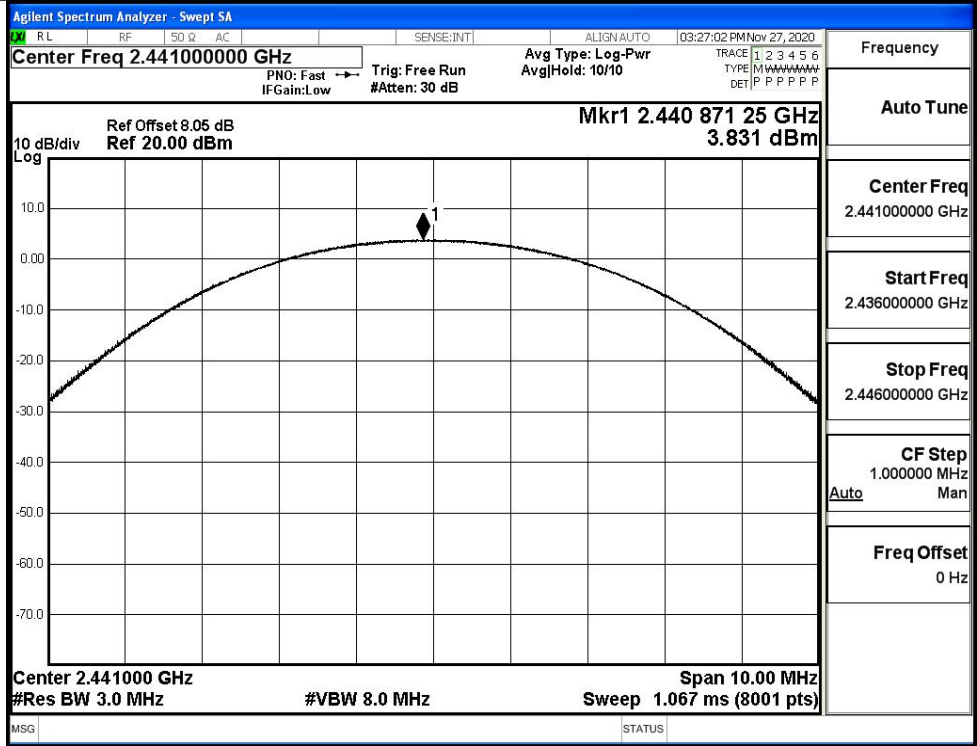
GFSK/HCH



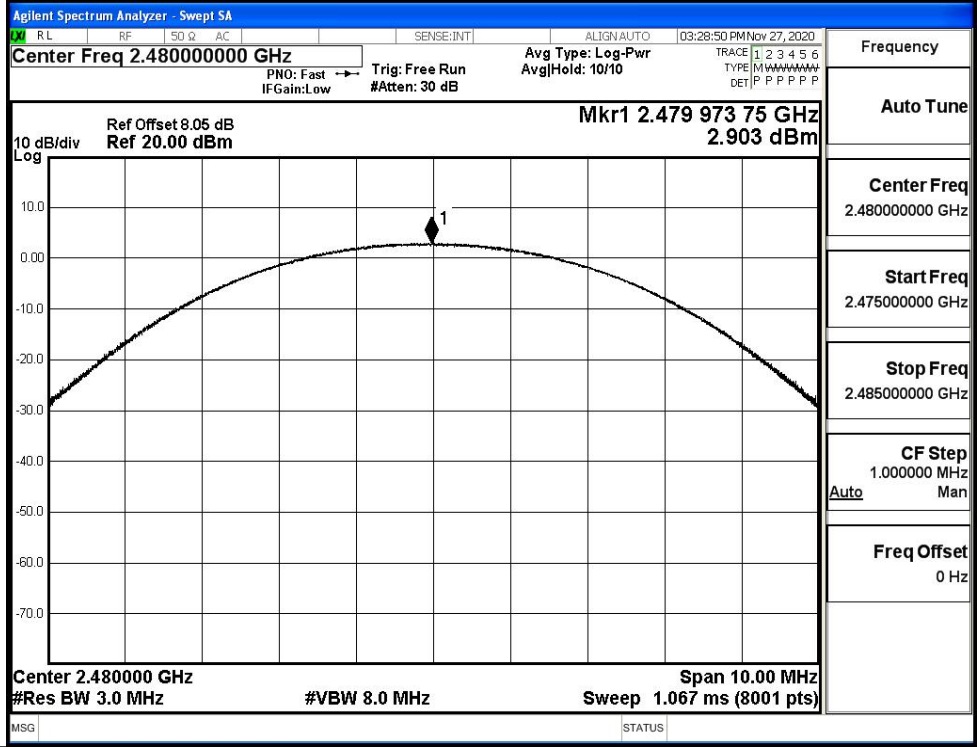
$\pi/4$ DQPSK/LCH



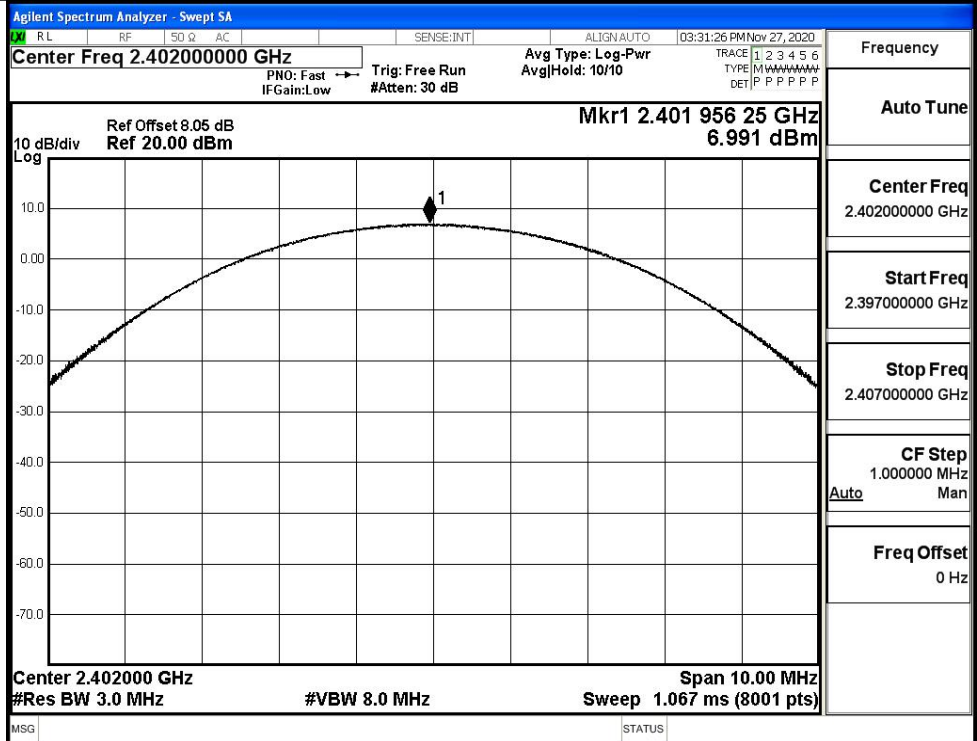
$\pi/4$ DQPSK/MCH



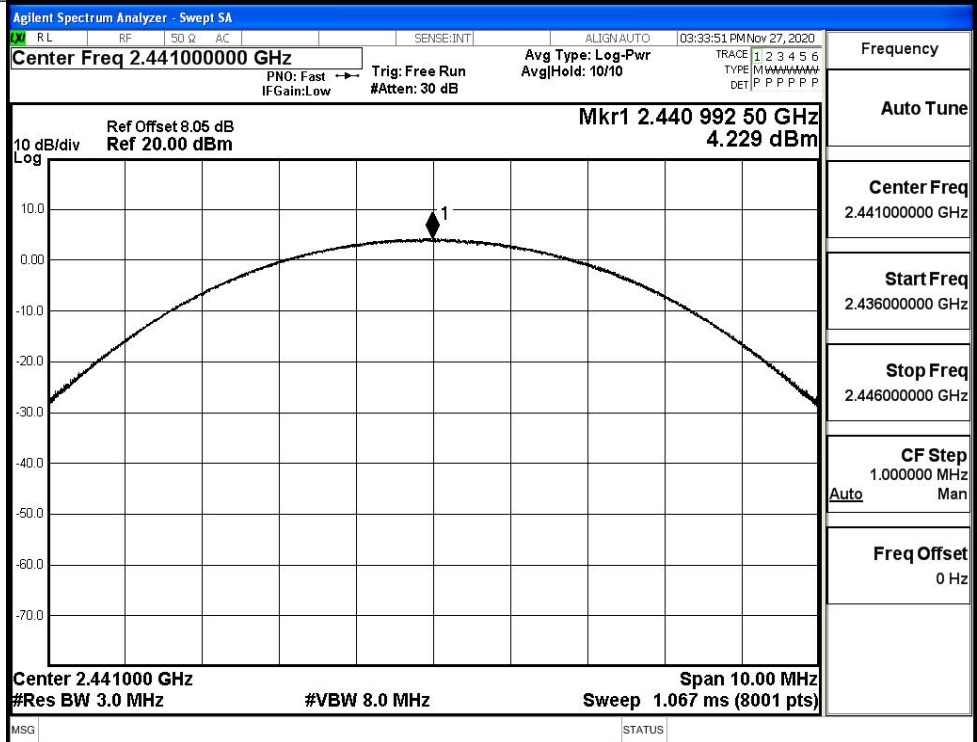
$\pi/4$ DQPSK/HCH



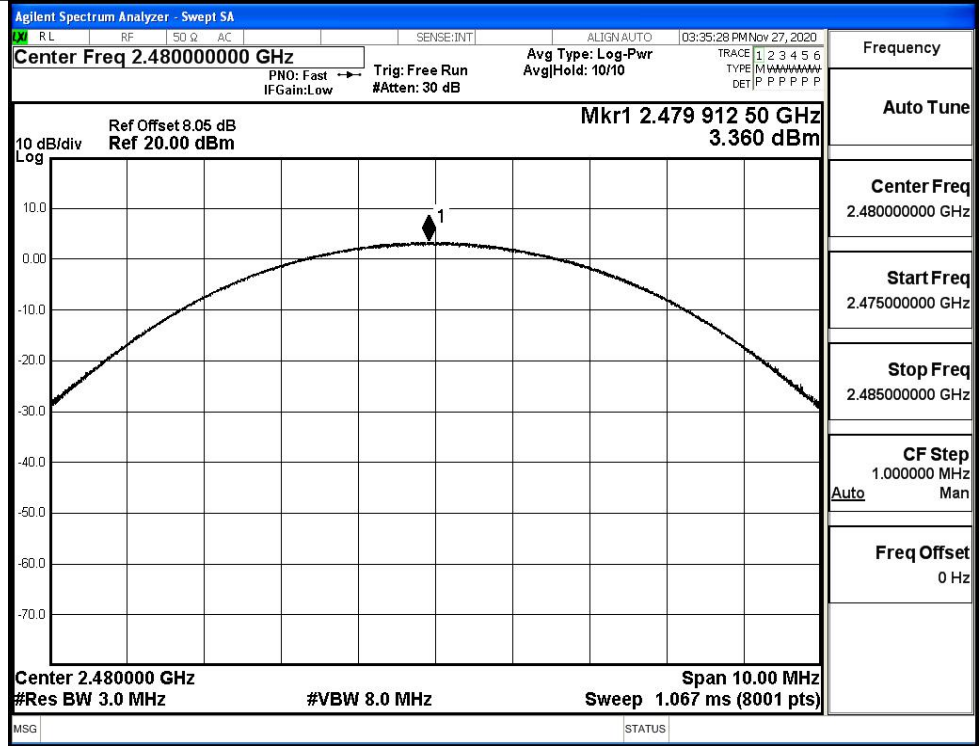
8DPSK/LCH



8DPSK/MCH



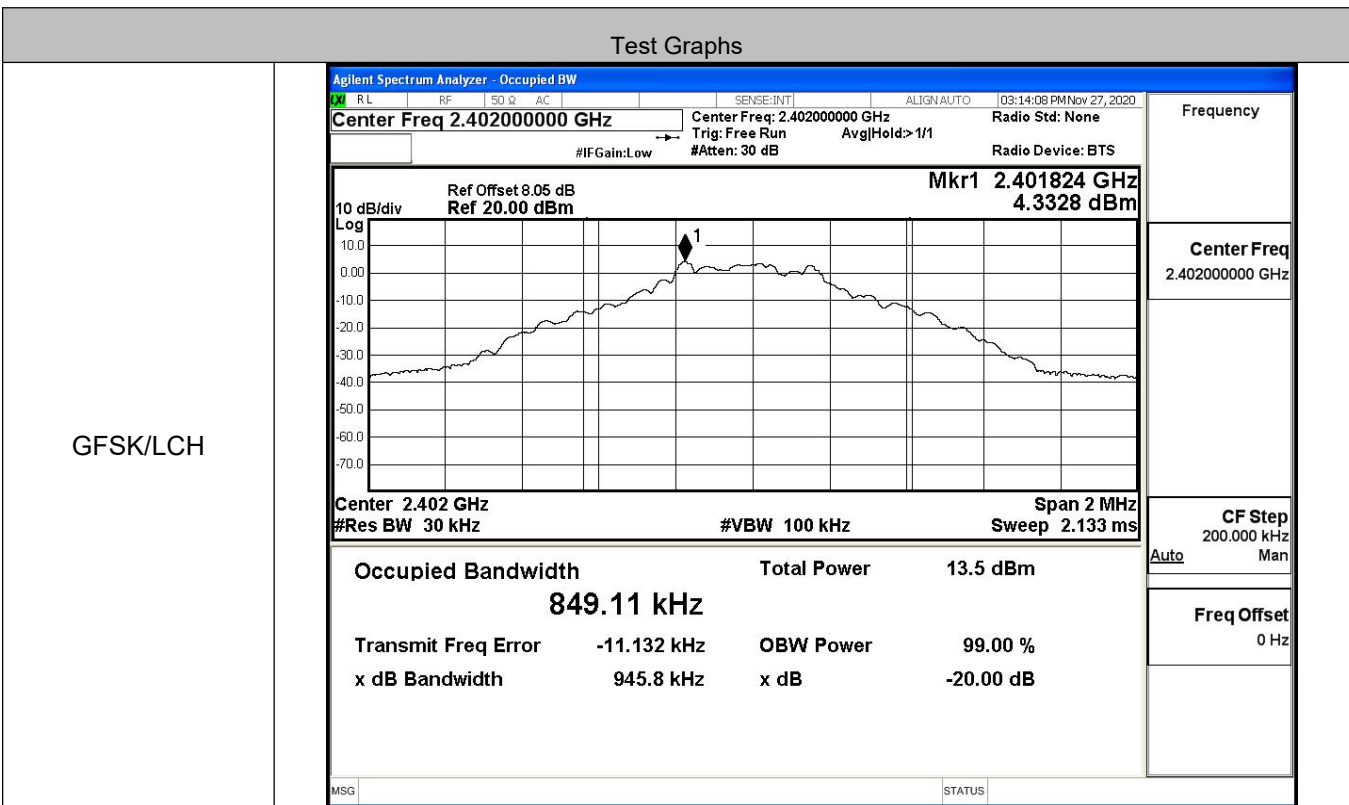
8DPSK/HCH



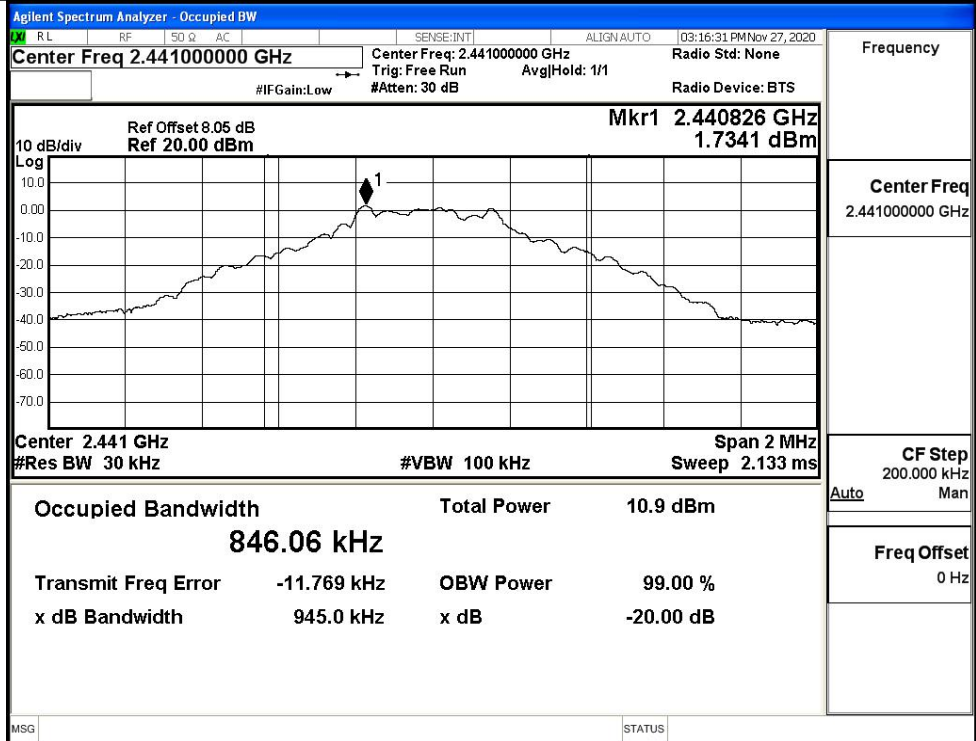
**A.2 20dB Bandwidth**

| Mode     | Channel. | 20dB Bandwidth [MHz] | Limit [MHz]   | Verdict |
|----------|----------|----------------------|---------------|---------|
| GFSK     | LCH      | 0.9458               | Not Specified | PASS    |
|          | MCH      | 0.9450               | Not Specified | PASS    |
|          | HCH      | 0.9444               | Not Specified | PASS    |
| π/4DQPSK | LCH      | 1.291                | Not Specified | PASS    |
|          | MCH      | 1.289                | Not Specified | PASS    |
|          | HCH      | 1.289                | Not Specified | PASS    |
| 8DPSK    | LCH      | 1.301                | Not Specified | PASS    |
|          | MCH      | 1.299                | Not Specified | PASS    |
|          | HCH      | 1.299                | Not Specified | PASS    |

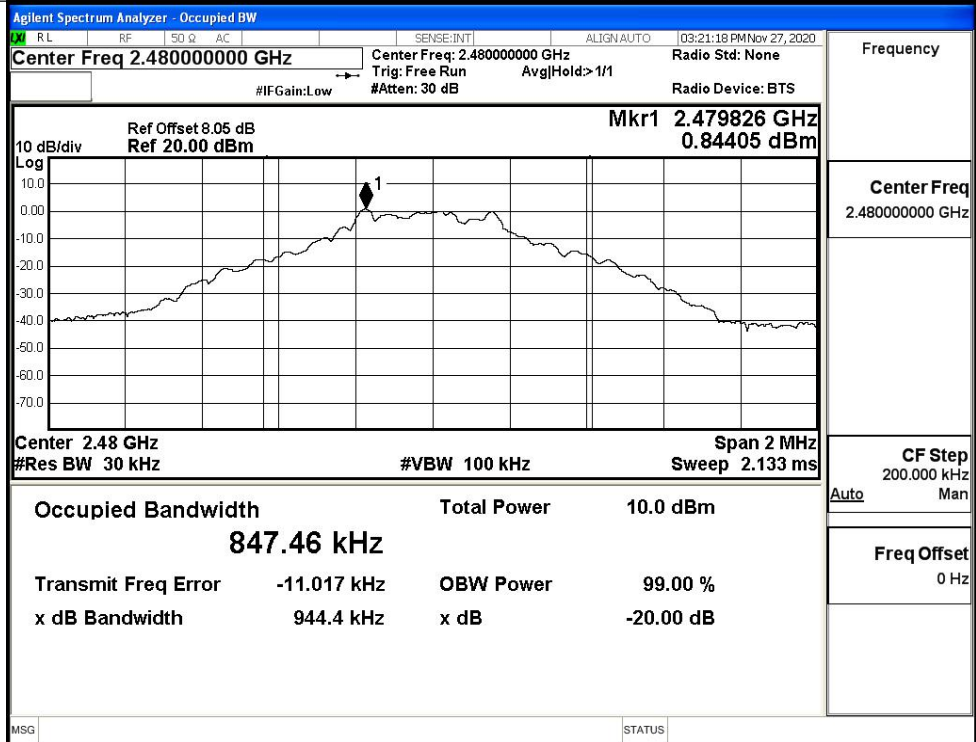
Test Graphs



GFSK/MCH

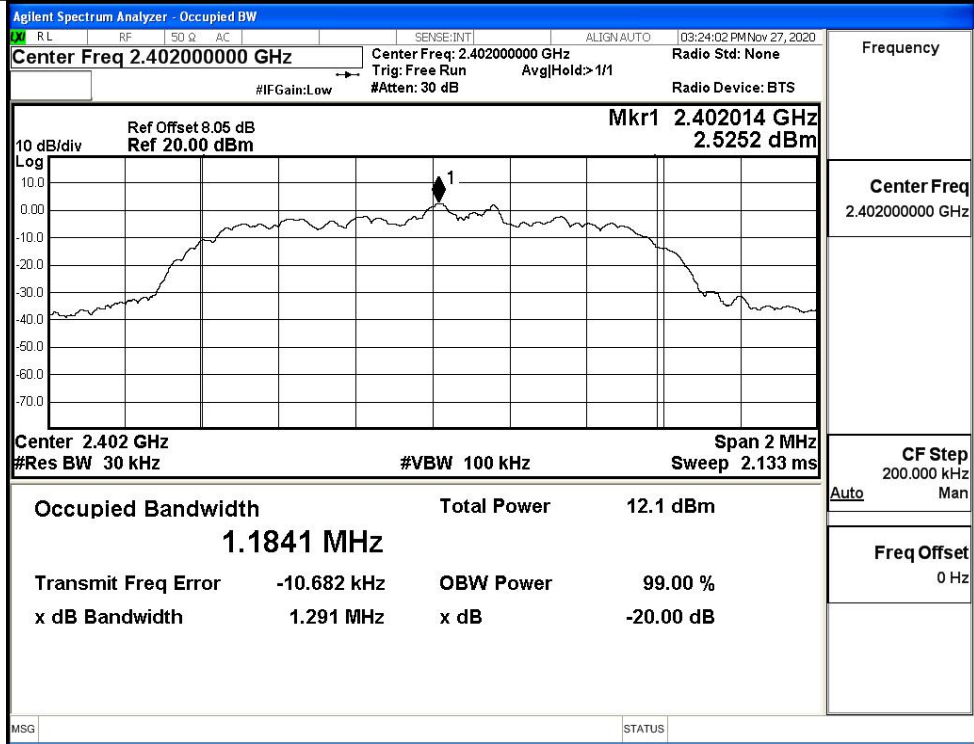


GFSK/HCH



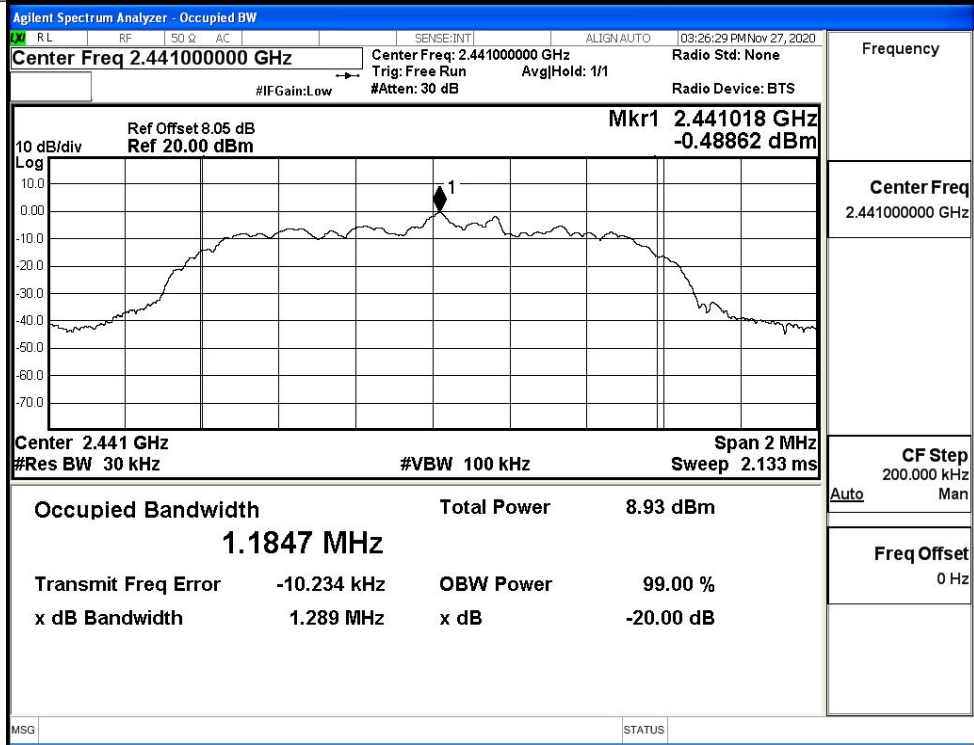


$\pi/4$ DQPSK/LCH



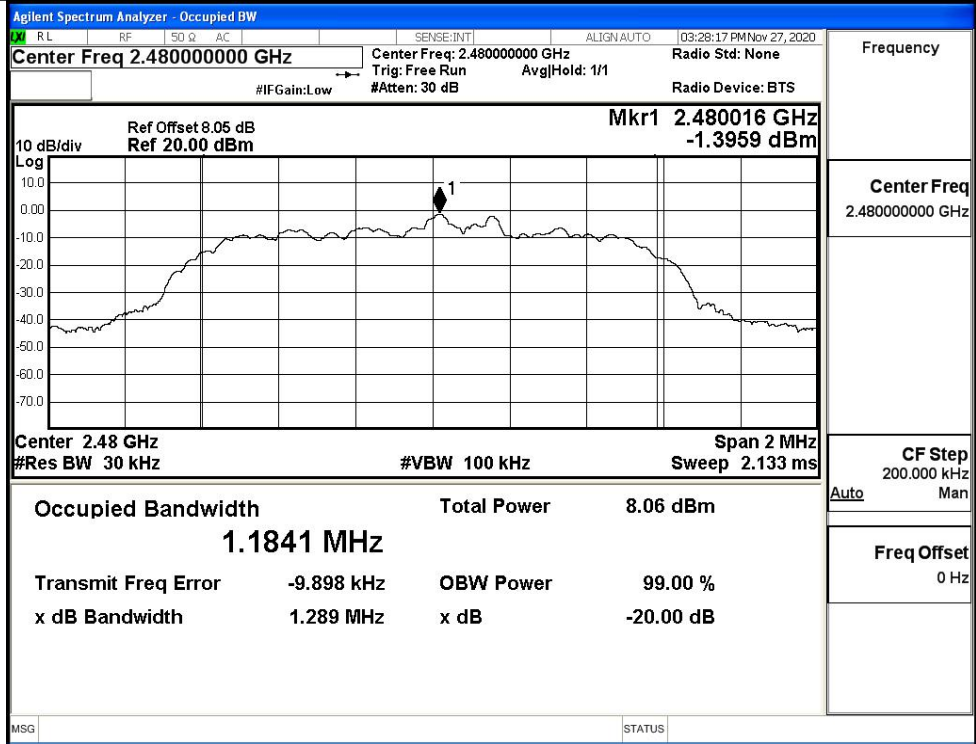
|             |                |
|-------------|----------------|
| Frequency   | 2.40200000 GHz |
| Center Freq | 2.40200000 GHz |
| CF Step     | 200.000 kHz    |
| Auto        | Man            |
| Freq Offset | 0 Hz           |

$\pi/4$ DQPSK/MCH

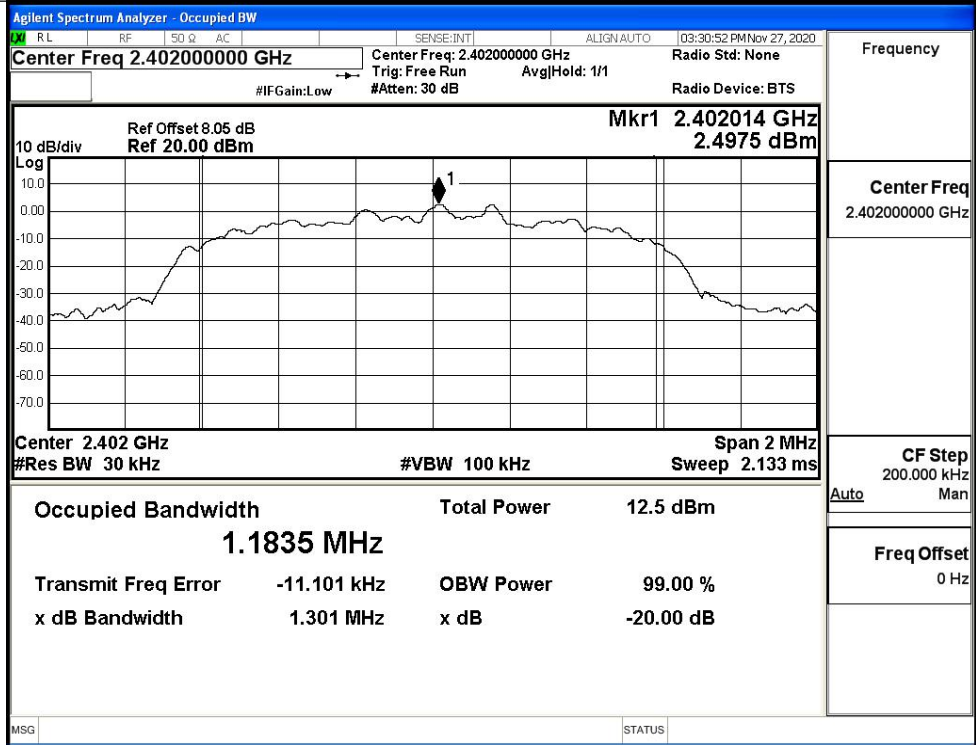


|             |                |
|-------------|----------------|
| Frequency   | 2.44100000 GHz |
| Center Freq | 2.44100000 GHz |
| CF Step     | 200.000 kHz    |
| Auto        | Man            |
| Freq Offset | 0 Hz           |

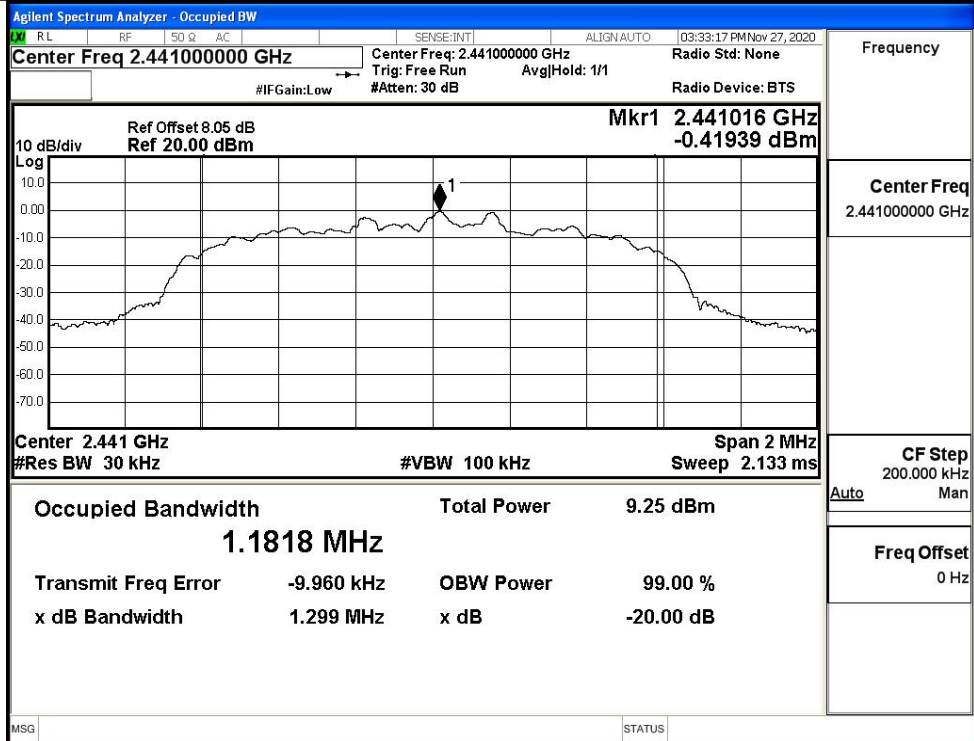
$\pi/4$ DQPSK/HCH



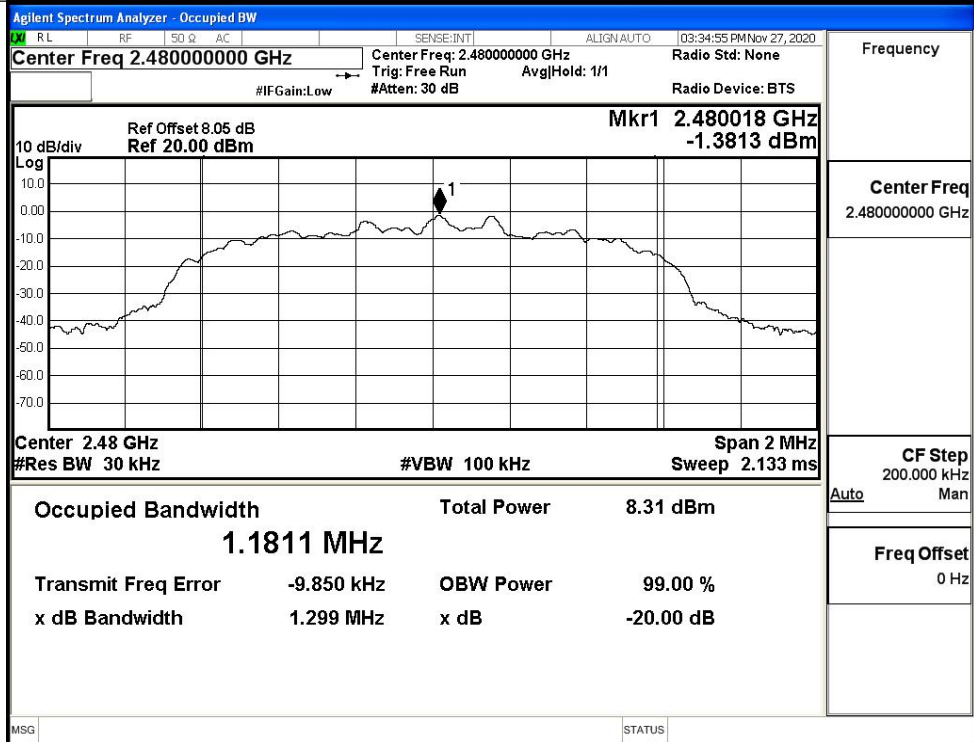
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH



### A.3 Carrier Frequency Separation

| Mode     | Channel | Carrier Frequency Separation [MHz] | Limit [MHz] | Verdict |
|----------|---------|------------------------------------|-------------|---------|
| GFSK     | LCH     | 0.690                              | 0.631       | PASS    |
|          | MCH     | 0.846                              | 0.631       | PASS    |
|          | HCH     | 1.056                              | 0.631       | PASS    |
| π/4DQPSK | LCH     | 1.102                              | 0.861       | PASS    |
|          | MCH     | 0.988                              | 0.861       | PASS    |
|          | HCH     | 1.044                              | 0.861       | PASS    |
| 8DPSK    | LCH     | 1.196                              | 0.867       | PASS    |
|          | MCH     | 1.022                              | 0.867       | PASS    |
|          | HCH     | 0.948                              | 0.867       | PASS    |

**Test Graphs**

GFSK/LCH

Agilent Spectrum Analyzer - Swept SA

Center Freq 2.402500000 GHz

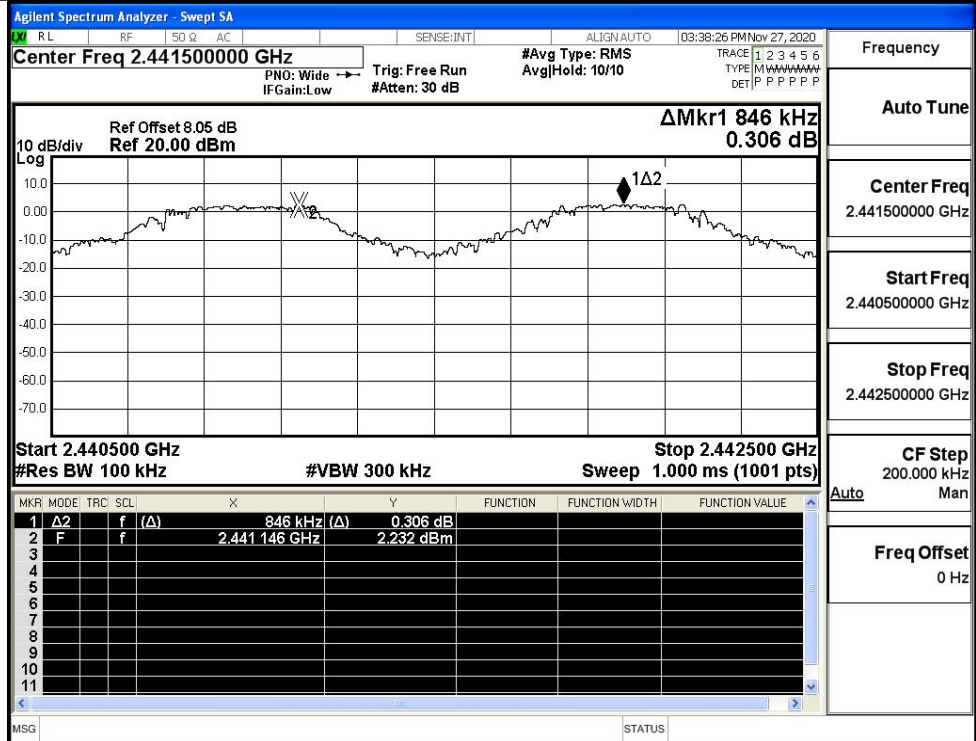
ΔMkr1 690.25 kHz  
0.656 dB

Start 2.401500 GHz #Res BW 100 kHz

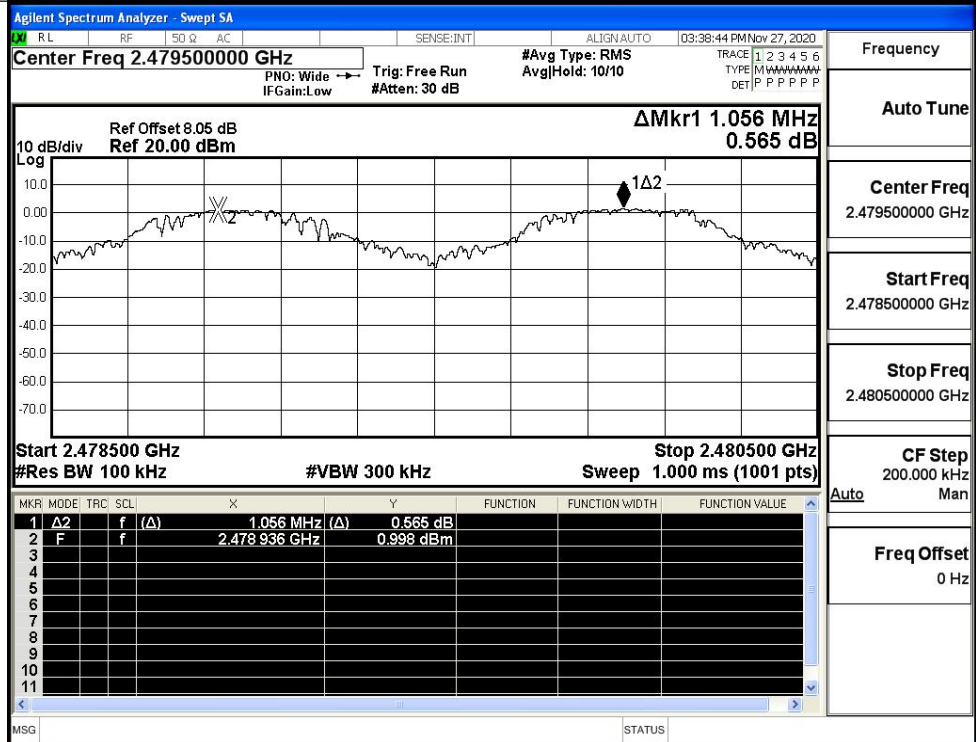
Stop 2.403500 GHz #VBW 300 kHz Sweep 1.067 ms (8001 pts)

| MKR | MODE | TRC | SCL | X              | Y         | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |
|-----|------|-----|-----|----------------|-----------|----------|----------------|----------------|
| 1   | Δ2   | f   | (Δ) | 690.25 kHz (Δ) | 0.656 dB  |          |                |                |
| 2   | F    | f   |     | 2.40213250 GHz | 4.892 dBm |          |                |                |
| 3   |      |     |     |                |           |          |                |                |
| 4   |      |     |     |                |           |          |                |                |
| 5   |      |     |     |                |           |          |                |                |
| 6   |      |     |     |                |           |          |                |                |
| 7   |      |     |     |                |           |          |                |                |
| 8   |      |     |     |                |           |          |                |                |
| 9   |      |     |     |                |           |          |                |                |
| 10  |      |     |     |                |           |          |                |                |
| 11  |      |     |     |                |           |          |                |                |

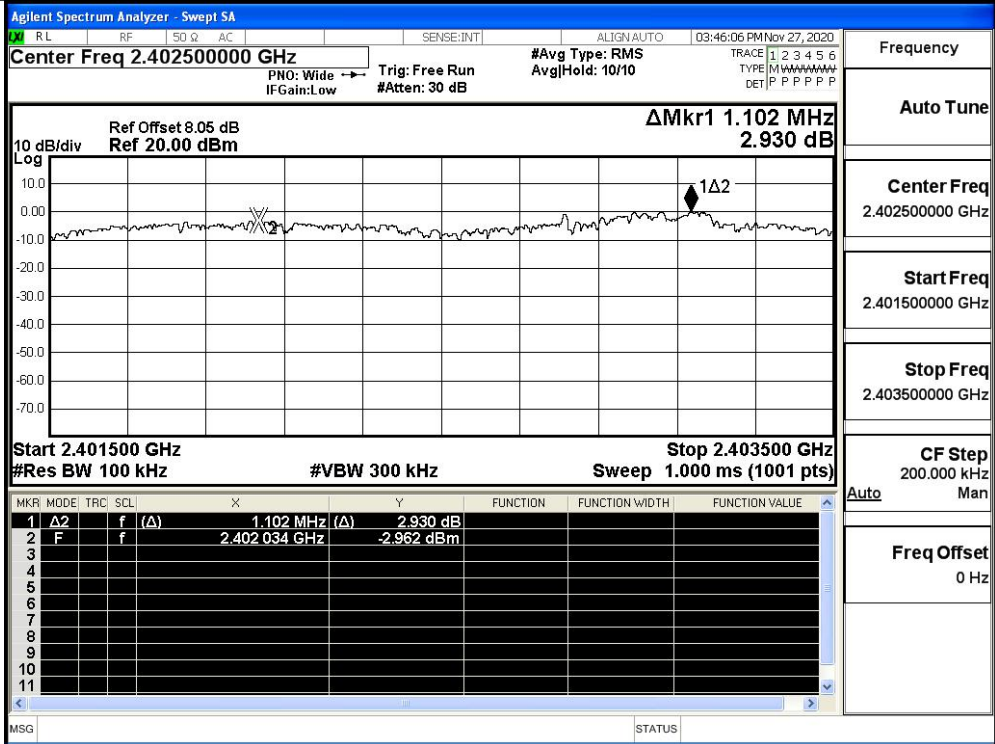
GFSK/MCH



GFSK/HCH



$\pi$ /4DQPSK/LCH



Frequency

Auto Tune

Center Freq  
2.402500000 GHz

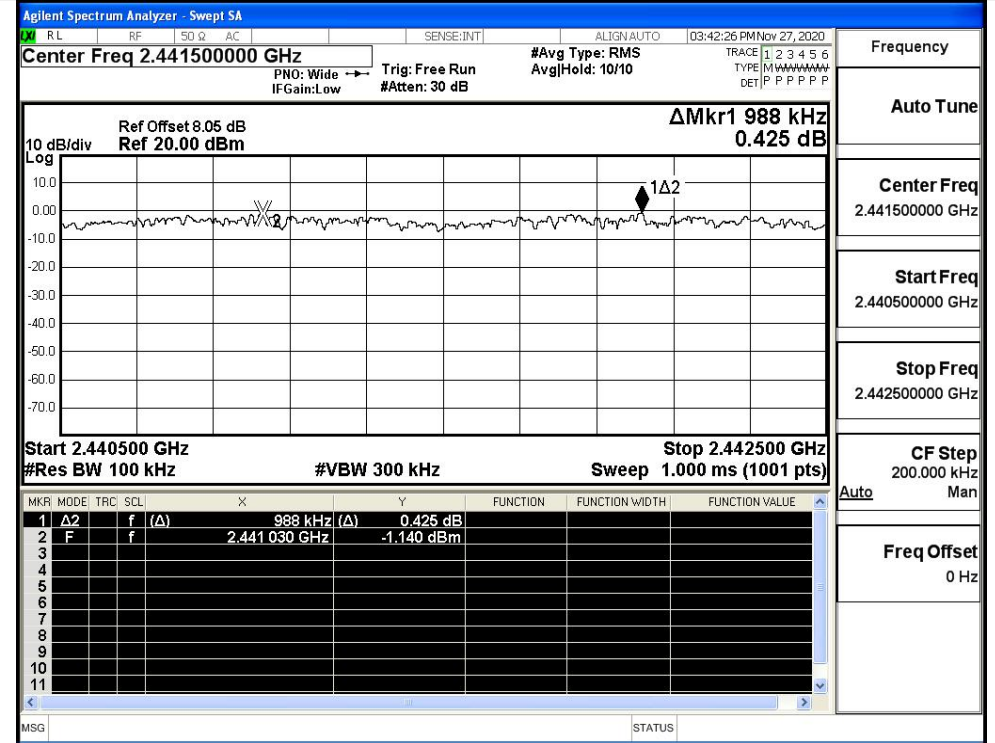
Start Freq  
2.401500000 GHz

Stop Freq  
2.403500000 GHz

CF Step  
200.000 kHz  
Auto Man

Freq Offset  
0 Hz

$\pi$ /4DQPSK/MCH



Frequency

Auto Tune

Center Freq  
2.441500000 GHz

Start Freq  
2.440500000 GHz

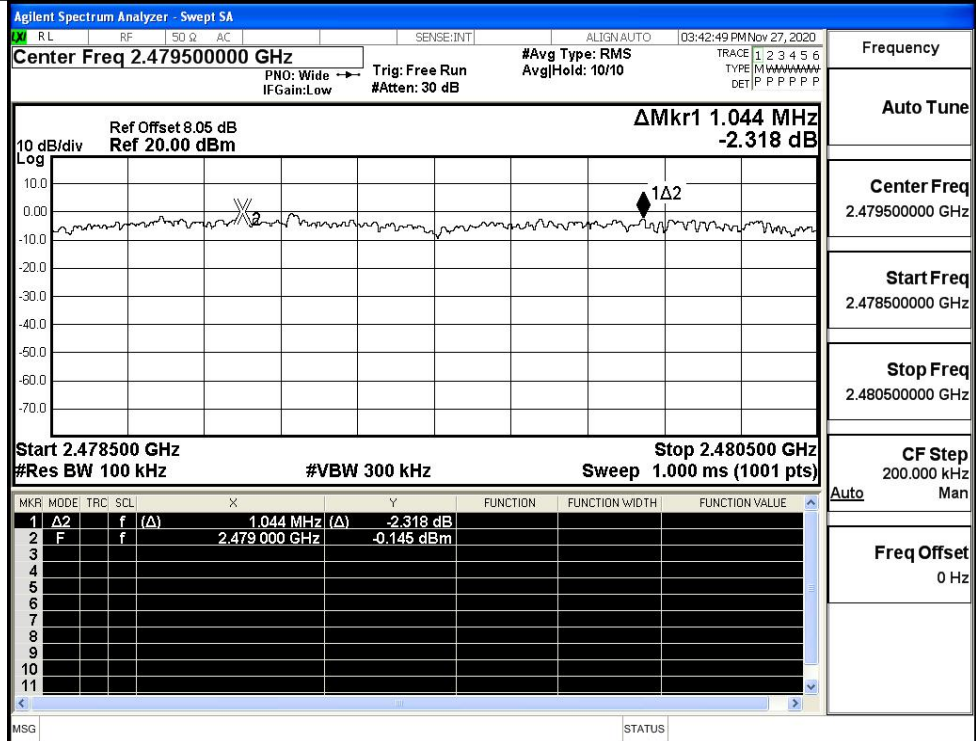
Stop Freq  
2.442500000 GHz

CF Step  
200.000 kHz  
Auto Man

Freq Offset  
0 Hz

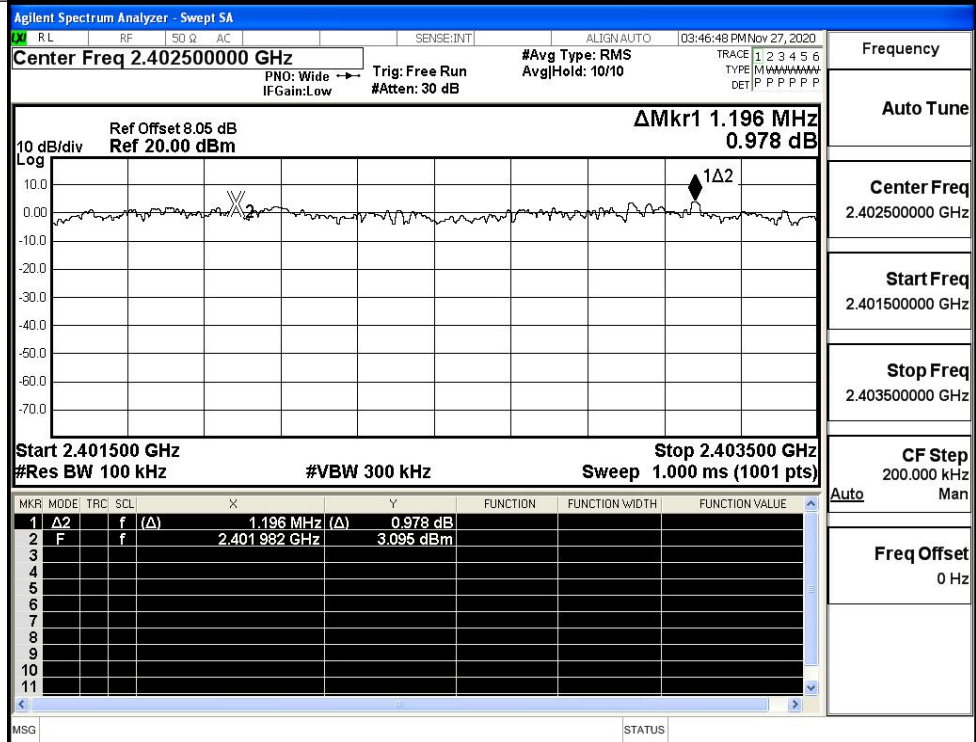


π/4DQPSK/HCH

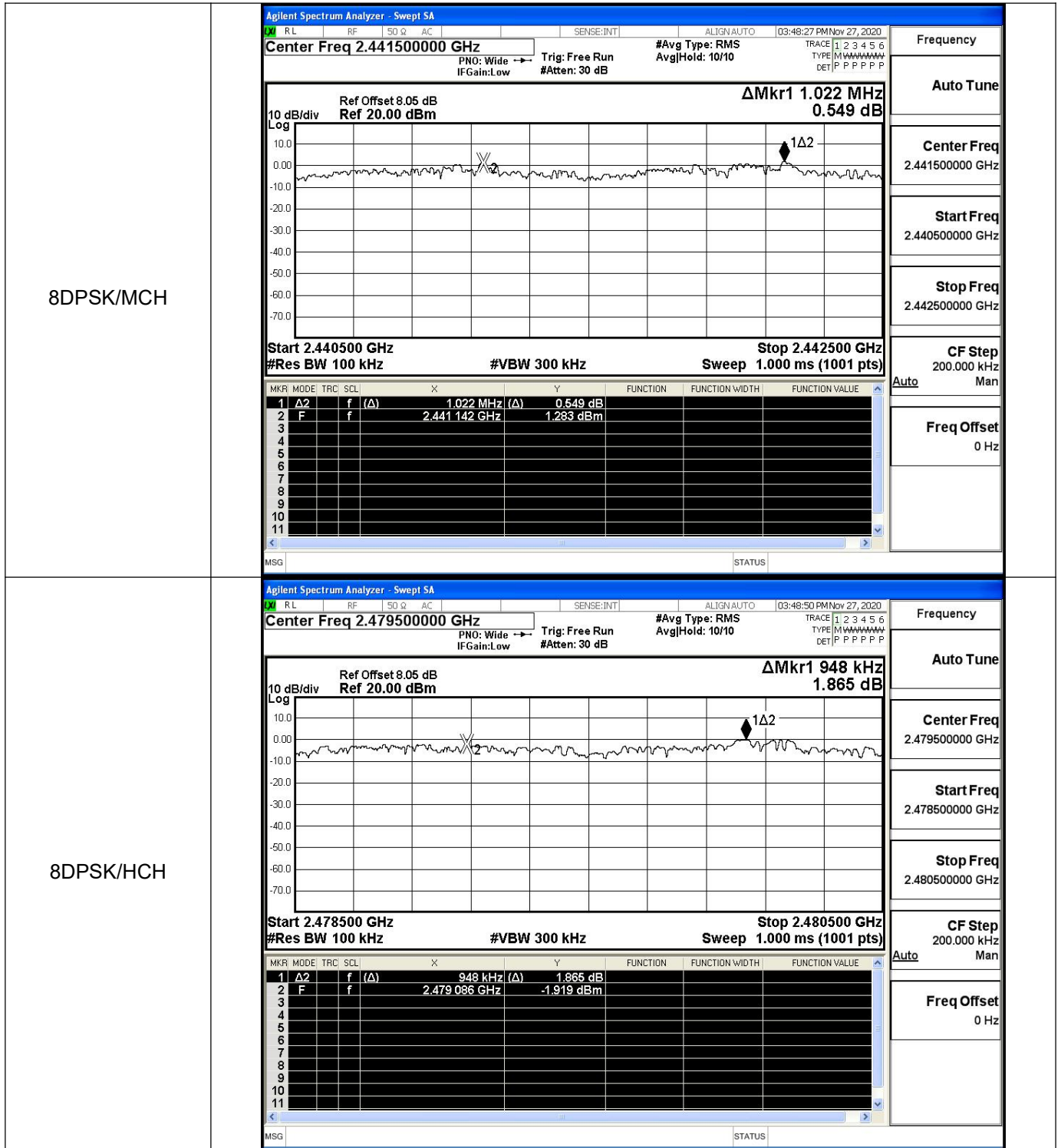


|             |                 |
|-------------|-----------------|
| Frequency   | 2.479500000 GHz |
| Auto Tune   |                 |
| Center Freq | 2.479500000 GHz |
| Start Freq  | 2.478500000 GHz |
| Stop Freq   | 2.480500000 GHz |
| CF Step     | 200.000 kHz     |
| Auto        | Man             |
| Freq Offset | 0 Hz            |

8DPSK/LCH



|             |                 |
|-------------|-----------------|
| Frequency   | 2.402500000 GHz |
| 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            |



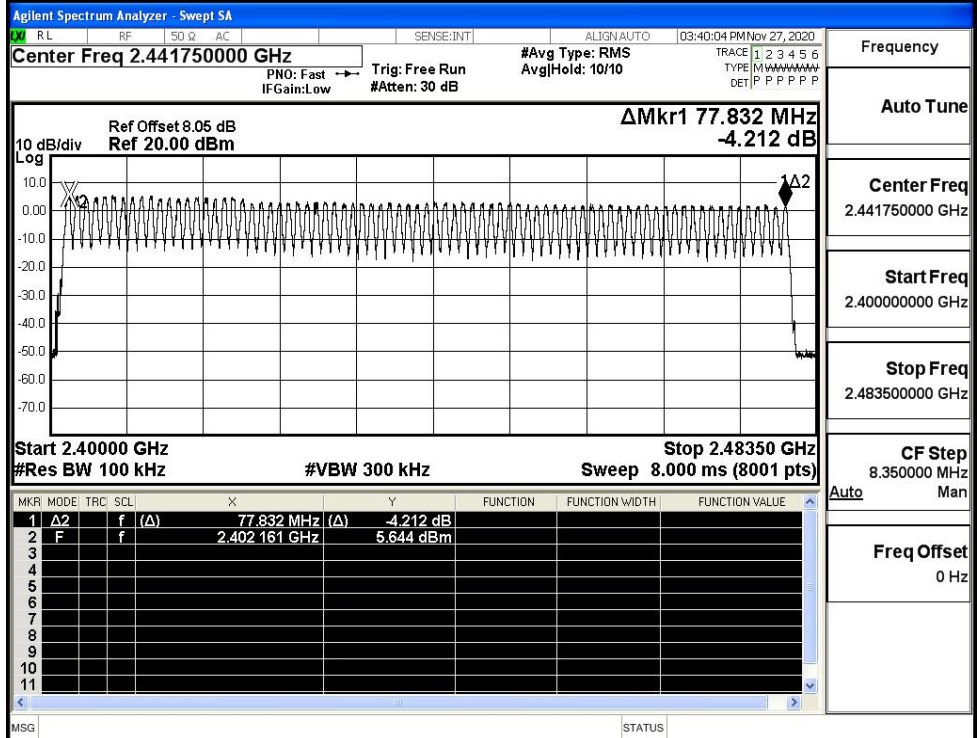
A.4 Hopping Channel Number

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



Test Graphs

GFSK/Hop



Frequency

Auto Tune

Center Freq  
2.441750000 GHz

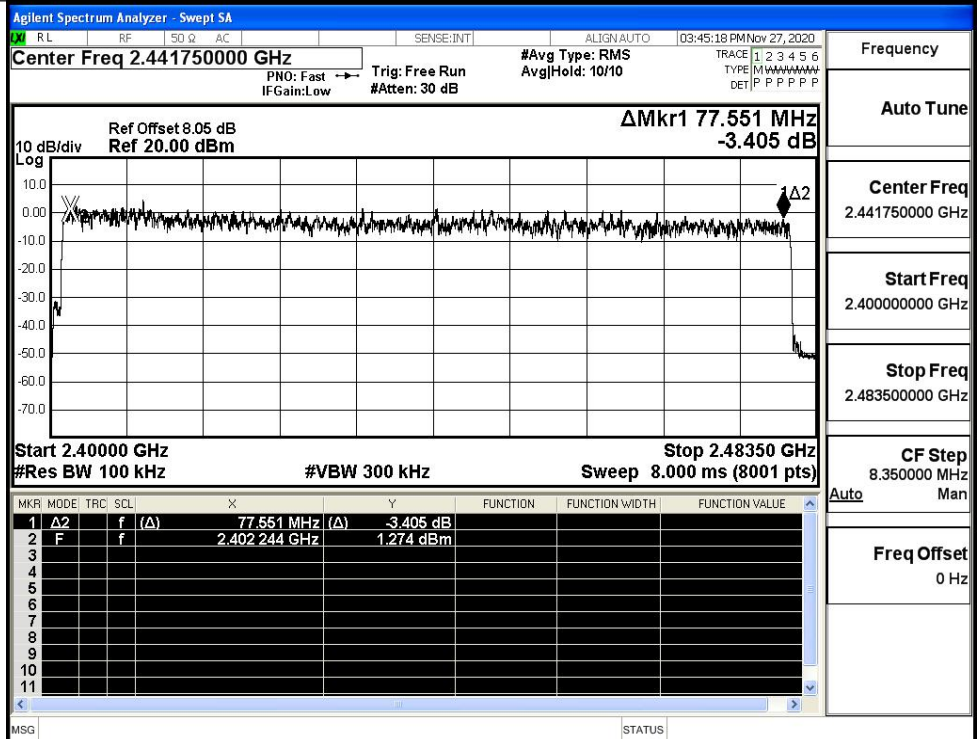
Start Freq  
2.400000000 GHz

Stop Freq  
2.483500000 GHz

CF Step  
8.350000 MHz

Freq Offset  
0 Hz

π/4DQPSK/Hop



Frequency

Auto Tune

Center Freq  
2.441750000 GHz

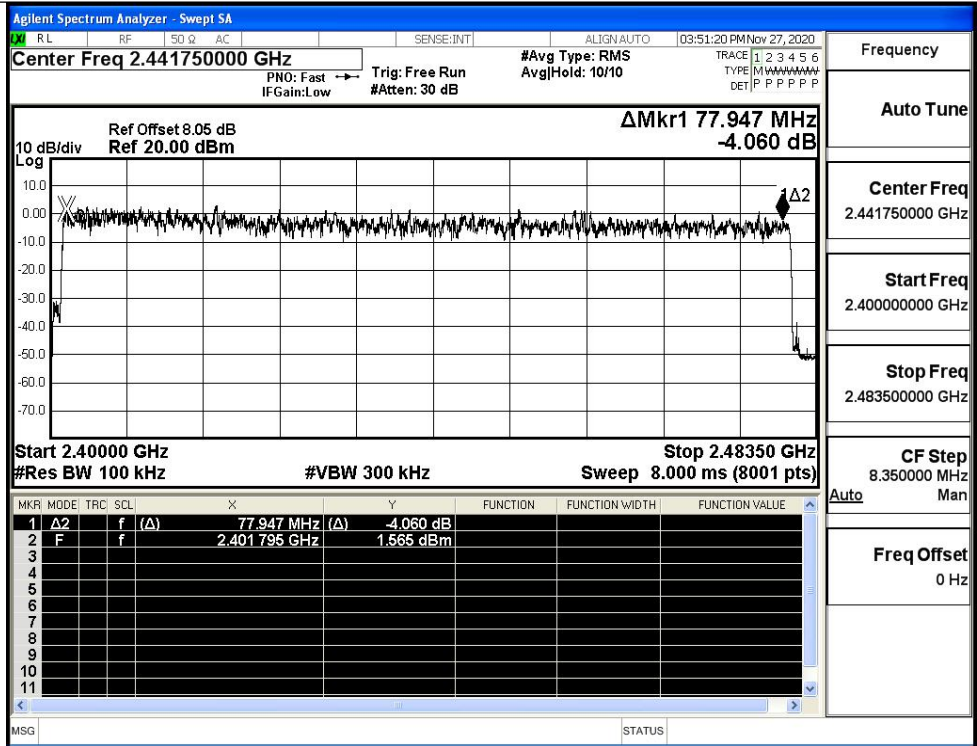
Start Freq  
2.400000000 GHz

Stop Freq  
2.483500000 GHz

CF Step  
8.350000 MHz

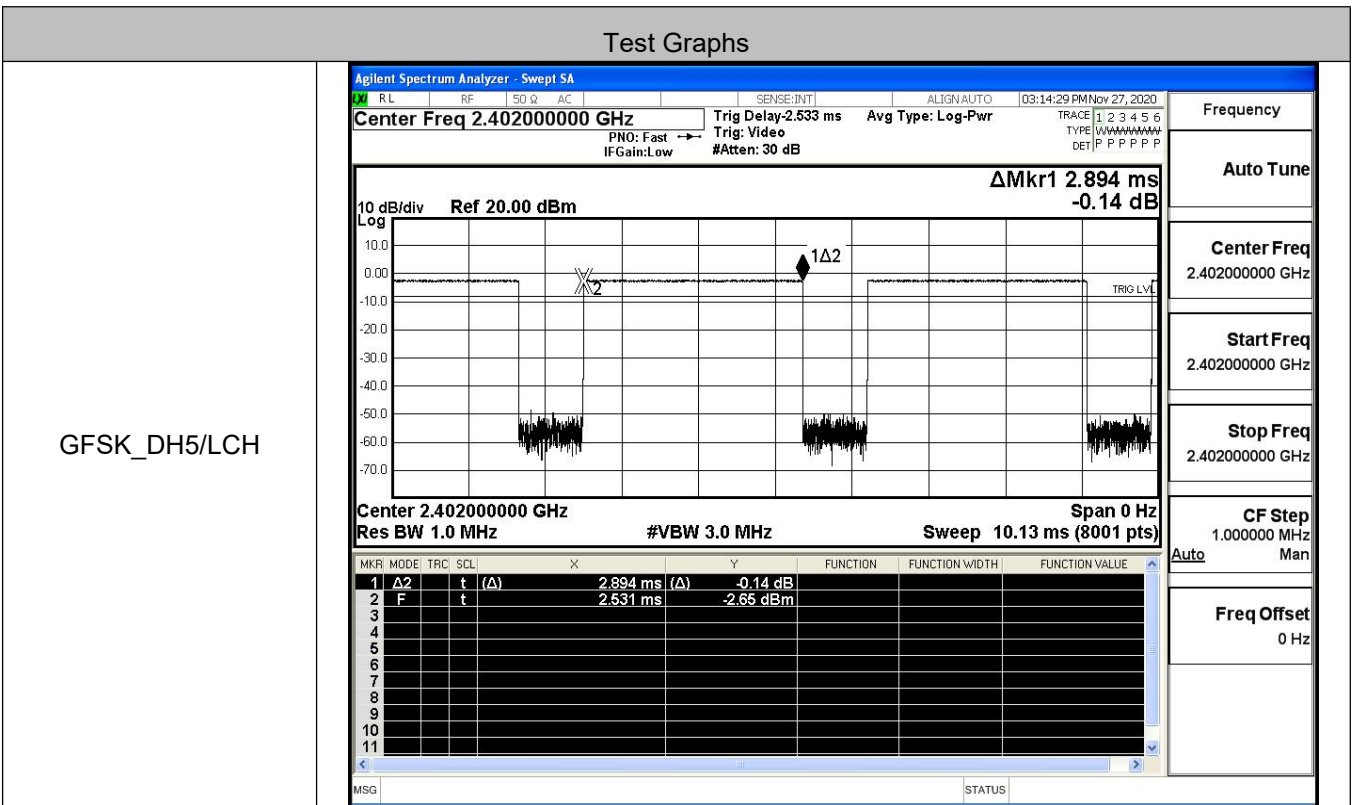
Freq Offset  
0 Hz

8DPSK/Hop

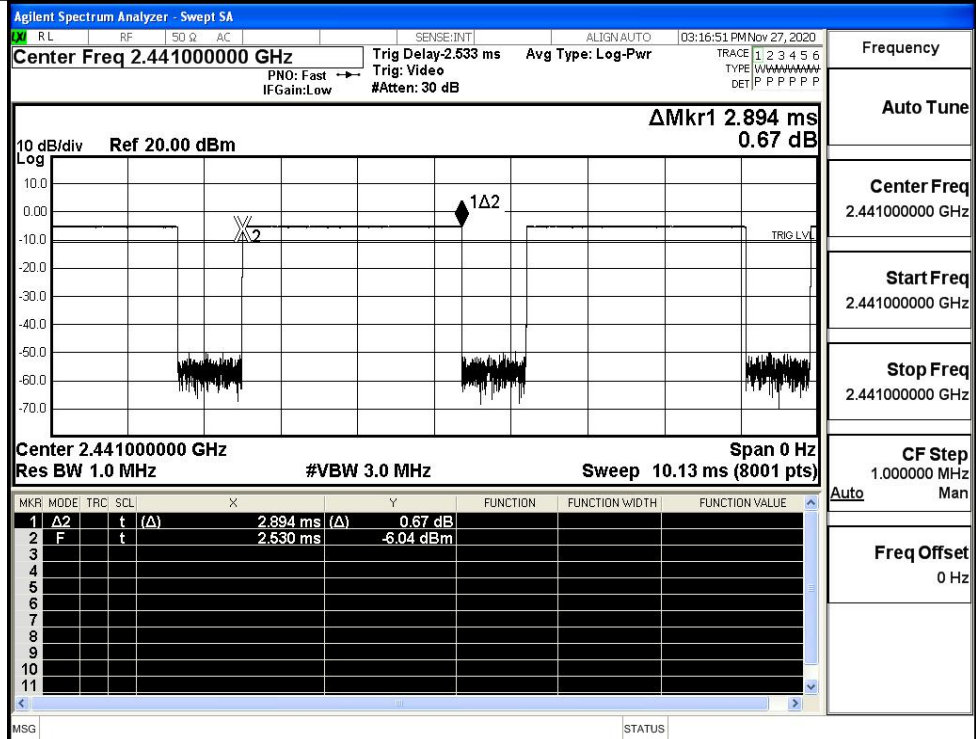


### A.5 Dwell Time

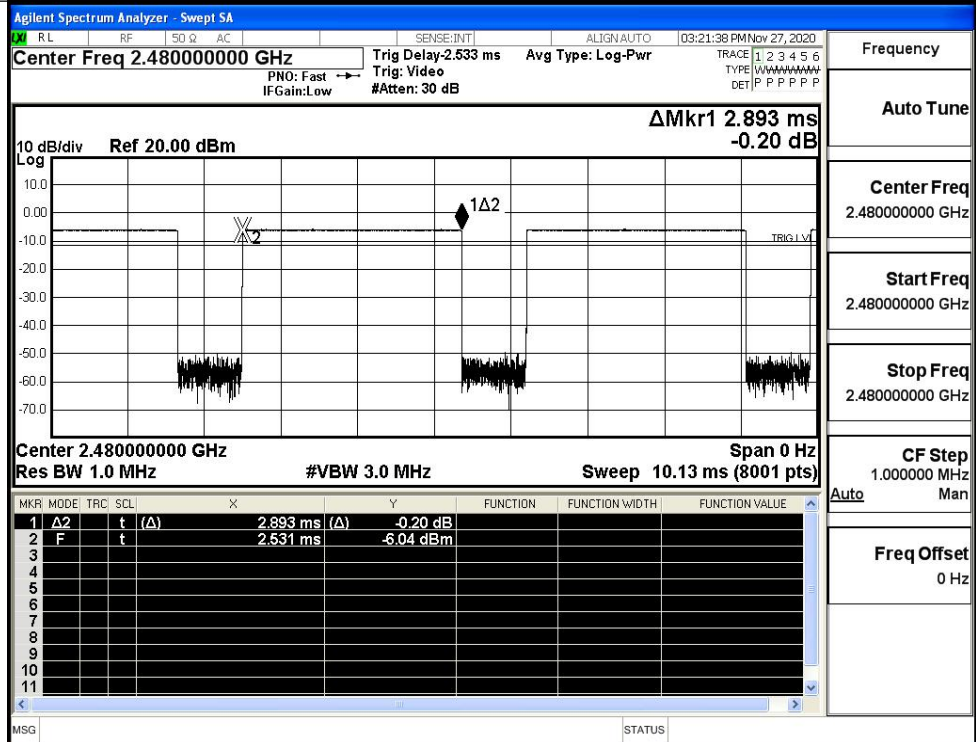
| Mode     | Packet | Channel | Burst Width [ms/hop/ch] | Total Hops[hop*ch] | Dwell Time[s] | Limit [s] | Verdict |
|----------|--------|---------|-------------------------|--------------------|---------------|-----------|---------|
| GFSK     | DH5    | LCH     | 2.89                    | 106.7              | 0.308         | 0.4       | PASS    |
|          | DH5    | MCH     | 2.89                    | 106.7              | 0.308         | 0.4       | PASS    |
|          | DH5    | HCH     | 2.89                    | 106.7              | 0.308         | 0.4       | PASS    |
| π/4DQPSK | 2DH5   | LCH     | 2.89                    | 106.7              | 0.307         | 0.4       | PASS    |
|          | 2DH5   | MCH     | 2.89                    | 106.7              | 0.307         | 0.4       | PASS    |
|          | 2DH5   | HCH     | 2.89                    | 106.7              | 0.307         | 0.4       | PASS    |
| 8DPSK    | 3DH5   | LCH     | 2.89                    | 106.7              | 0.307         | 0.4       | PASS    |
|          | 3DH5   | MCH     | 2.89                    | 106.7              | 0.307         | 0.4       | PASS    |
|          | 3DH5   | HCH     | 2.89                    | 106.7              | 0.307         | 0.4       | PASS    |



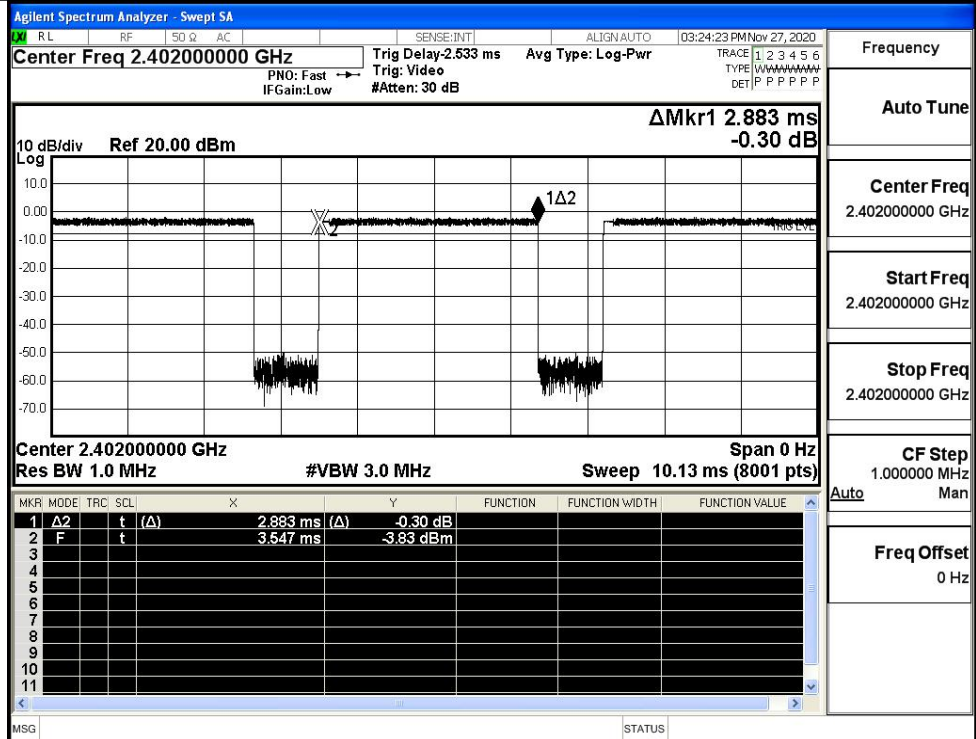
GFSK\_DH5/MCH



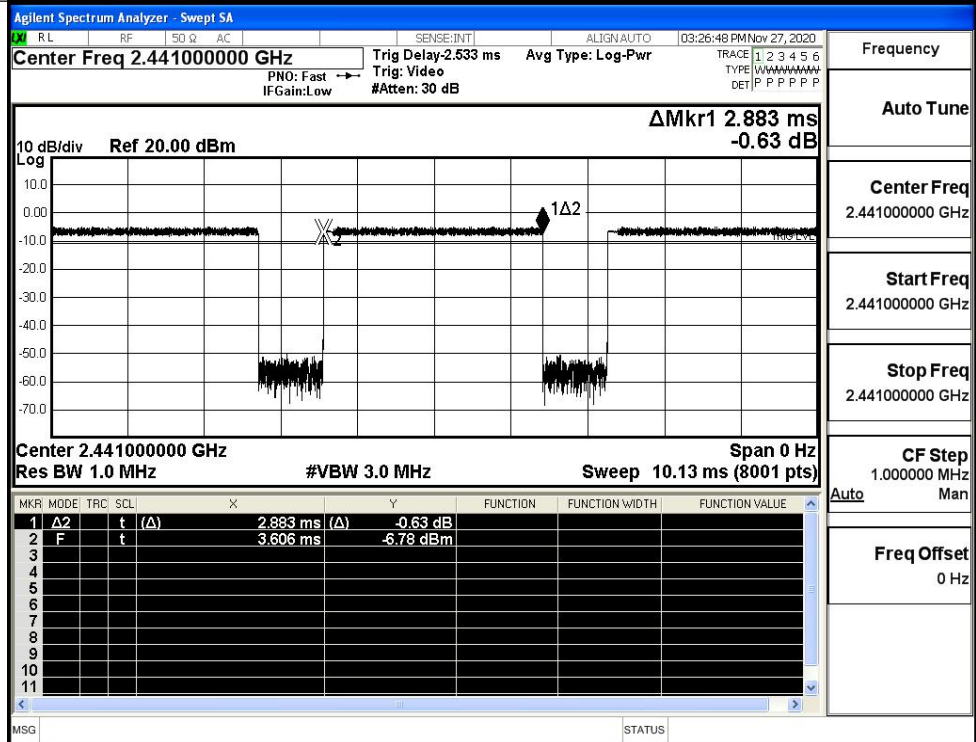
GFSK\_DH5/HCH



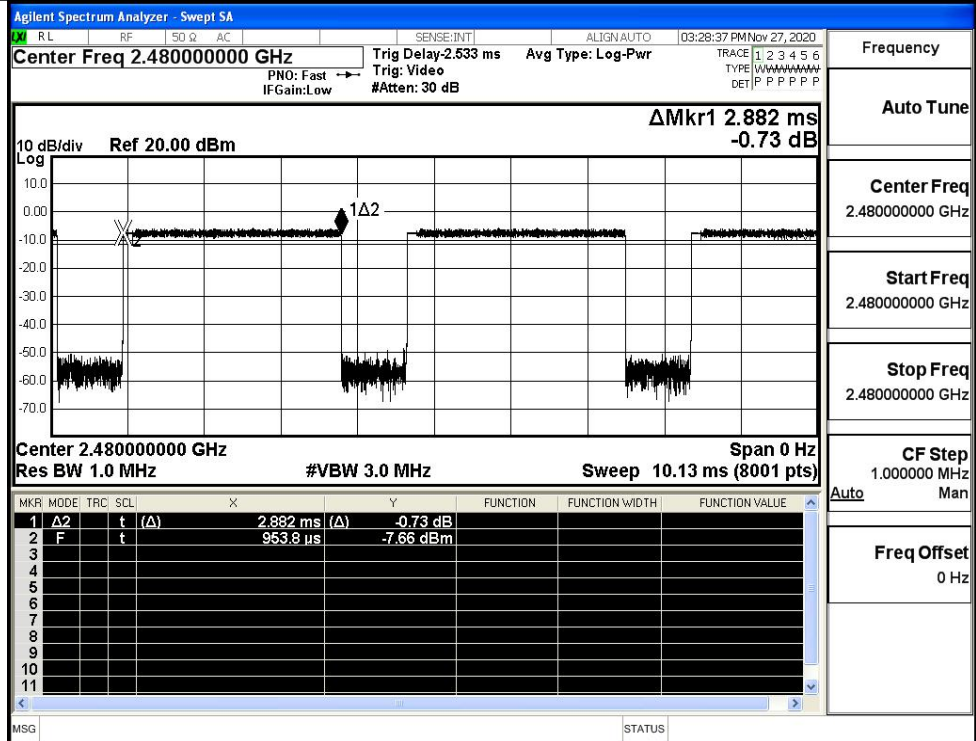
$\pi/4$ DQPSK  
\_2DH5/LCH



$\pi/4$ DQPSK  
\_2DH5/MCH

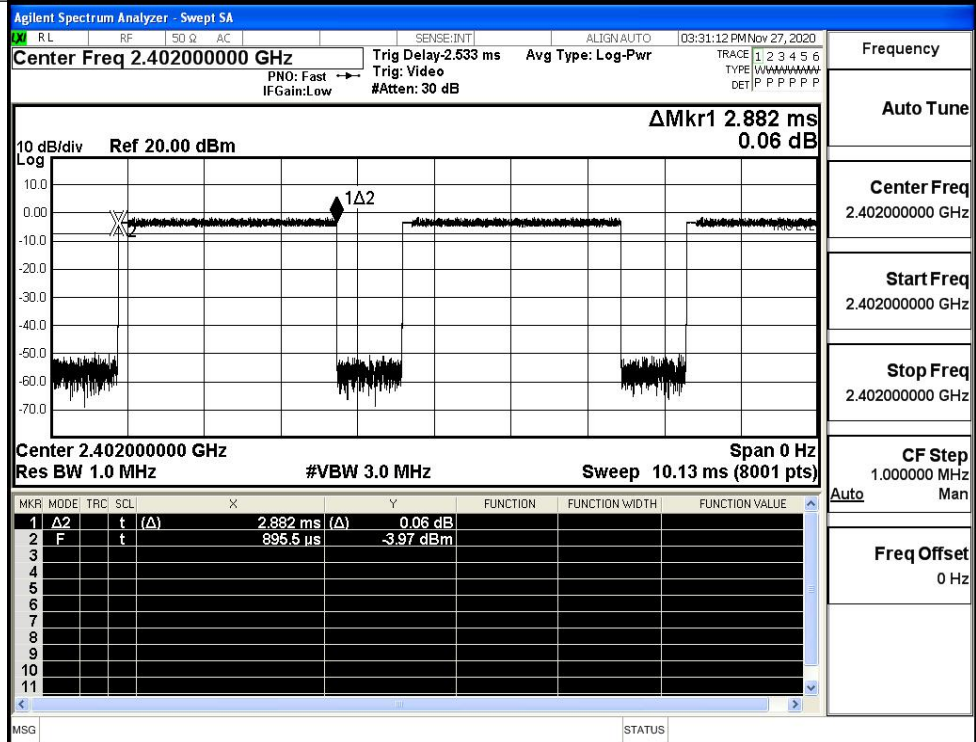


$\pi/4$ DQPSK  
\_2DH5/HCH



|             |                 |
|-------------|-----------------|
| 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            |

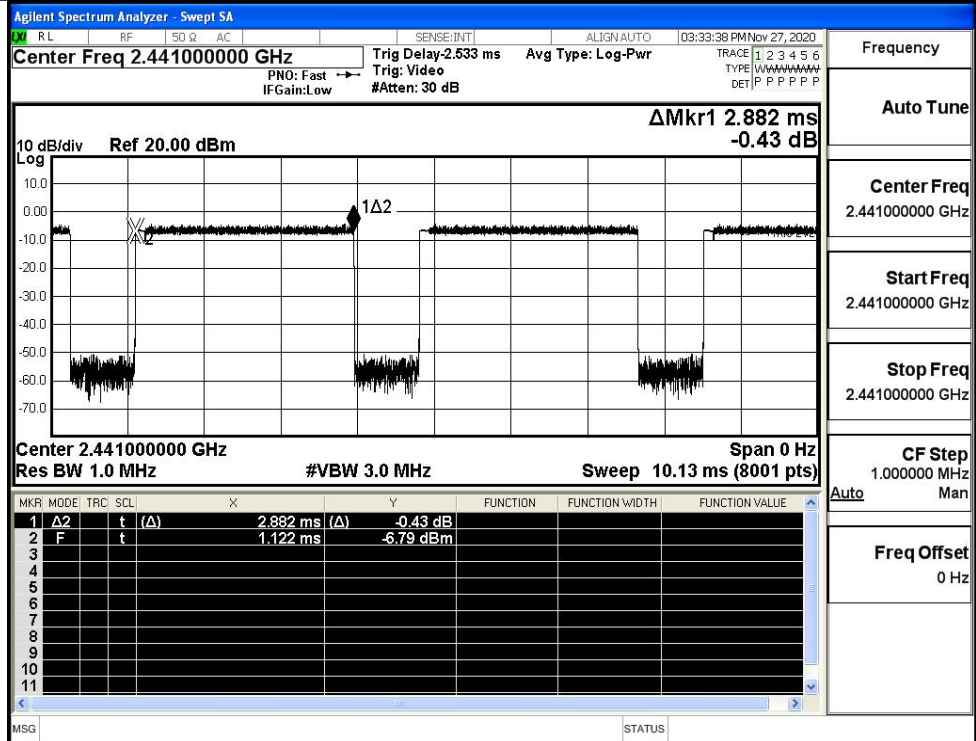
8DPSK\_3DH5/LCH



|             |                 |
|-------------|-----------------|
| 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

