

## Appendix A

|                |                     |
|----------------|---------------------|
| Report No.:    | CISRR241008001      |
| FCC ID:        | 2BG5IGS-01          |
| Product Name:  | Smart Music Eyewear |
| Model No.:     | GS-01               |
| Test Engineer: | Mark Fu             |
| Supervised by: | Rory Huang          |

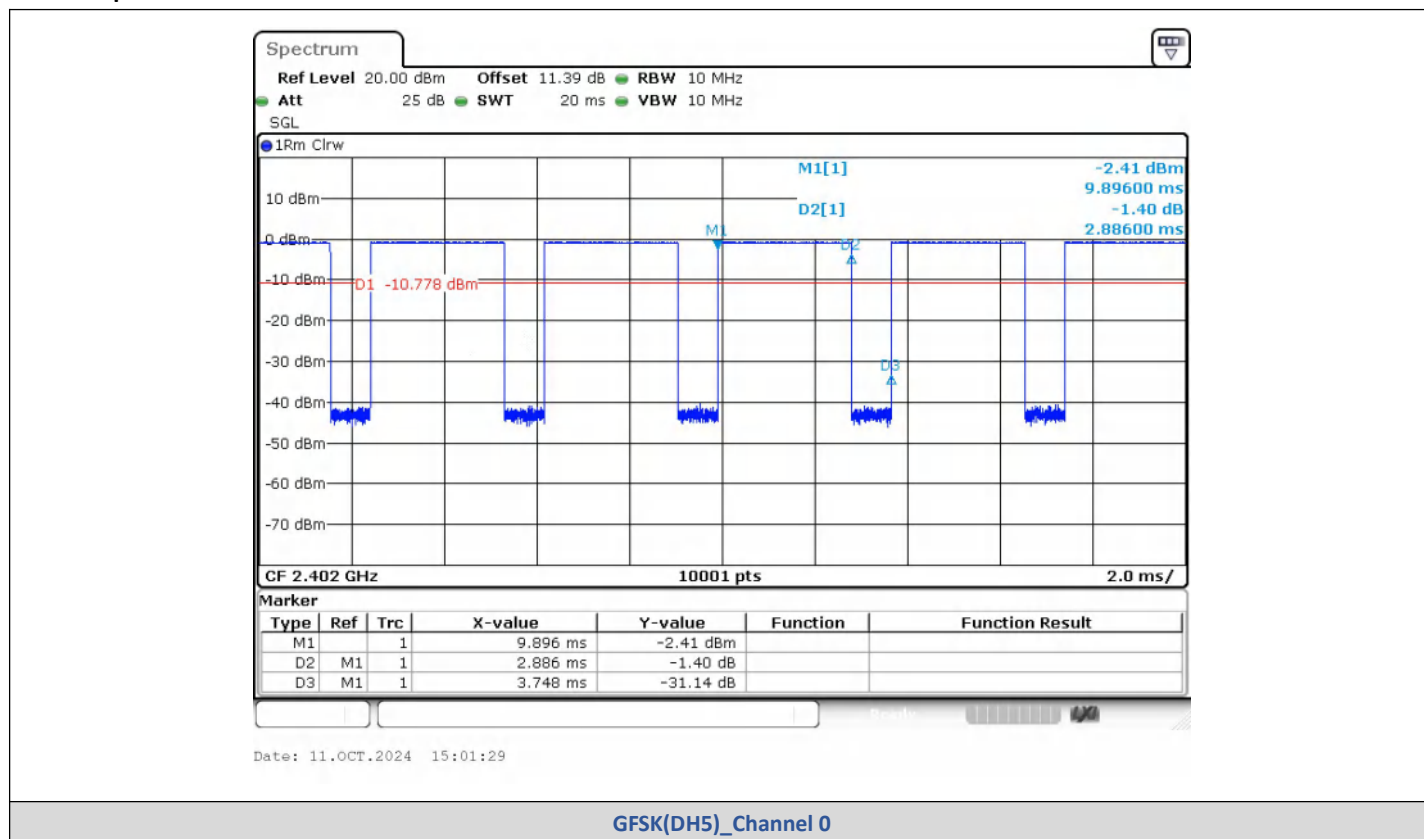
# 1) Duty Cycle

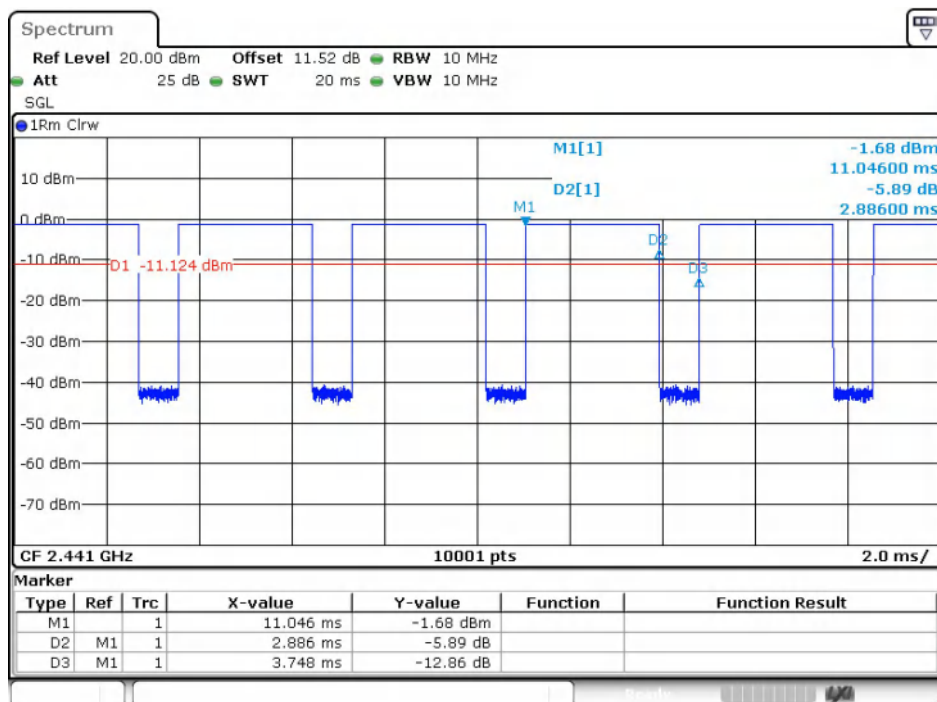
## Test Result

Left:

| Modulation    | Packets | Channel | On Time (ms) | Period (ms) | Duty Cycle (%) | Duty Cycle (linear) | Duty Cycle Factor (dB) | 1/T  |
|---------------|---------|---------|--------------|-------------|----------------|---------------------|------------------------|------|
| GFSK          | DH5     | 0       | 2.886        | 3.748       | 77.00          | 0.7700              | 1.1351                 | 0.35 |
|               |         | 39      | 2.886        | 3.748       | 77.00          | 0.7700              | 1.1351                 | 0.35 |
|               |         | 78      | 2.886        | 3.748       | 77.00          | 0.7700              | 1.1351                 | 0.35 |
| $\pi/4$ DQPSK | 2-DH5   | 0       | 2.892        | 3.748       | 77.16          | 0.7716              | 1.1261                 | 0.35 |
|               |         | 39      | 2.890        | 3.748       | 77.11          | 0.7711              | 1.1289                 | 0.35 |
|               |         | 78      | 2.892        | 3.748       | 77.16          | 0.7716              | 1.1261                 | 0.35 |
| 8DPSK         | 3-DH5   | 0       | 2.894        | 3.748       | 77.21          | 0.7721              | 1.1233                 | 0.35 |
|               |         | 39      | 2.894        | 3.748       | 77.21          | 0.7721              | 1.1233                 | 0.35 |
|               |         | 78      | 2.894        | 3.748       | 77.21          | 0.7721              | 1.1233                 | 0.35 |

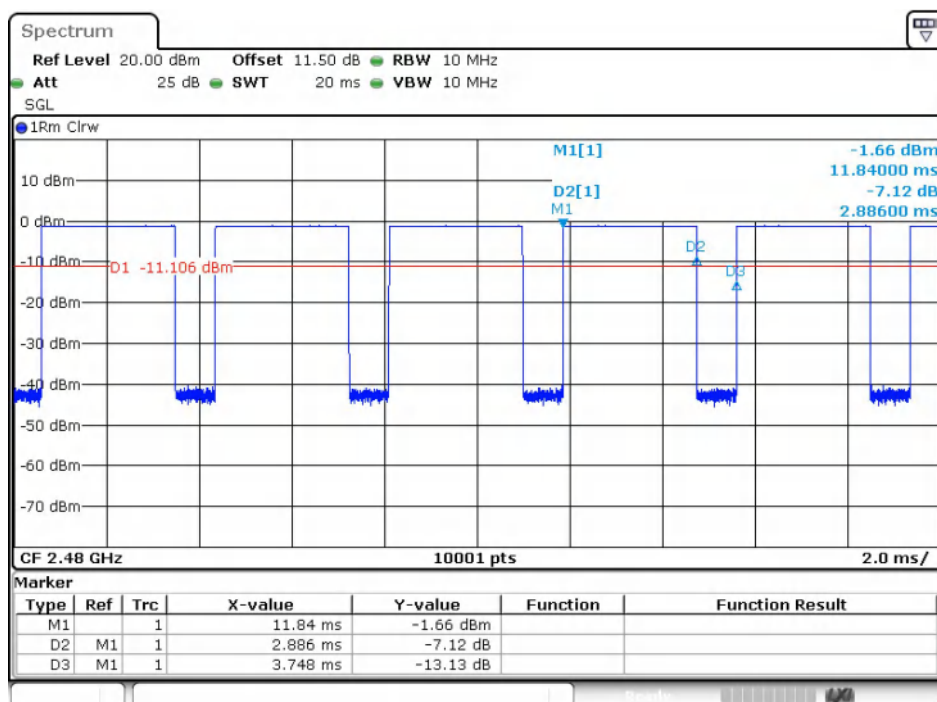
## Test Graphs





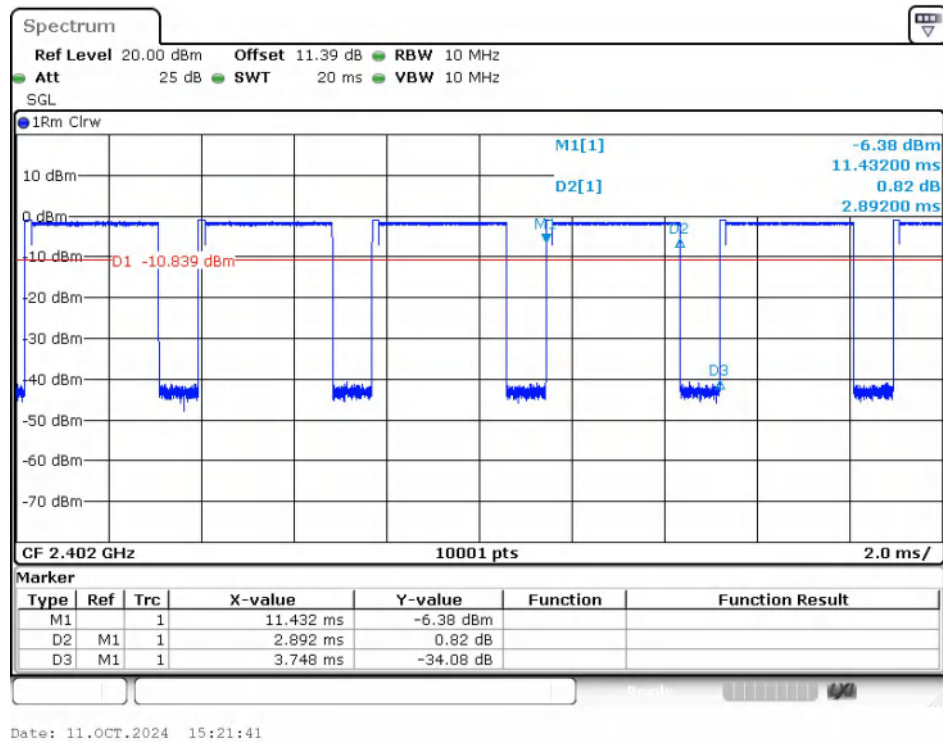
Date: 11.OCT.2024 15:16:26

### GFSK(DH5)\_Channel 39

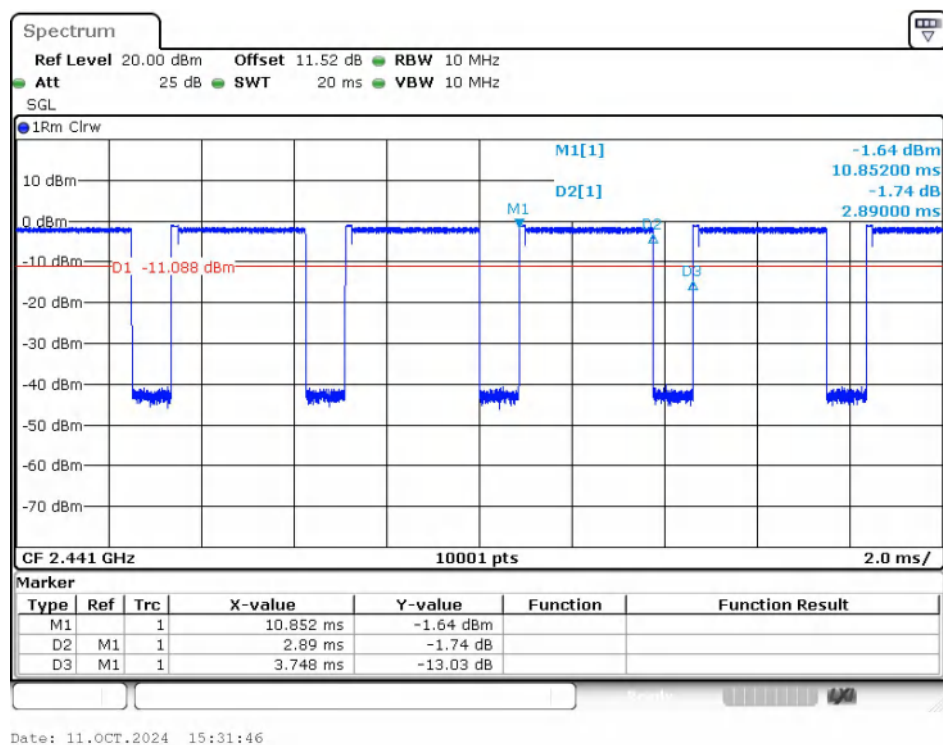


Date: 11.OCT.2024 15:18:54

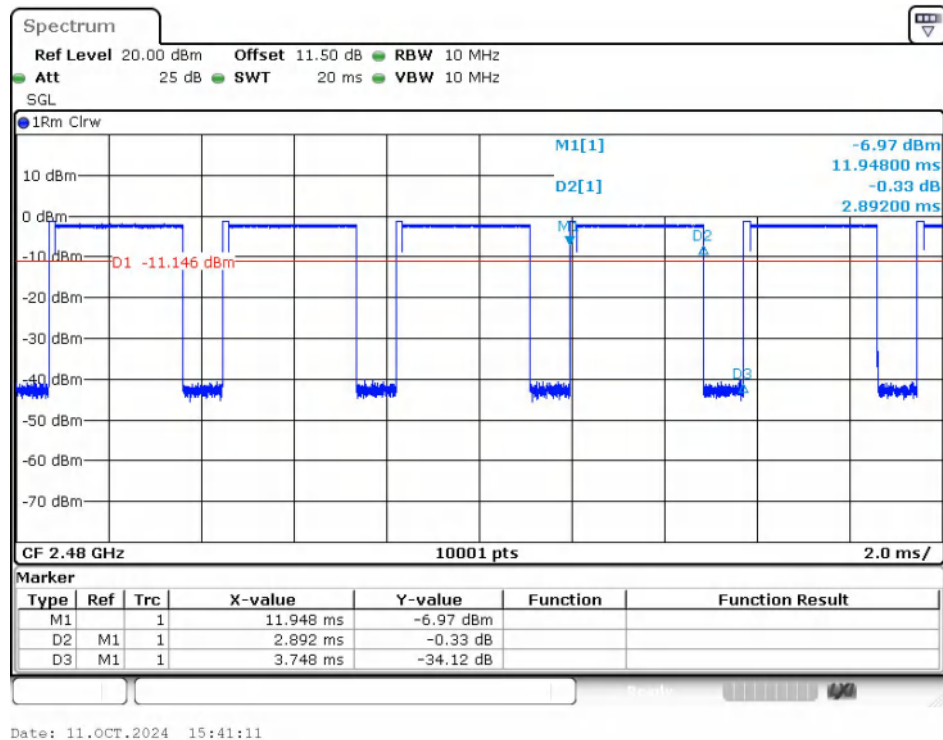
### GFSK(DH5)\_Channel 78



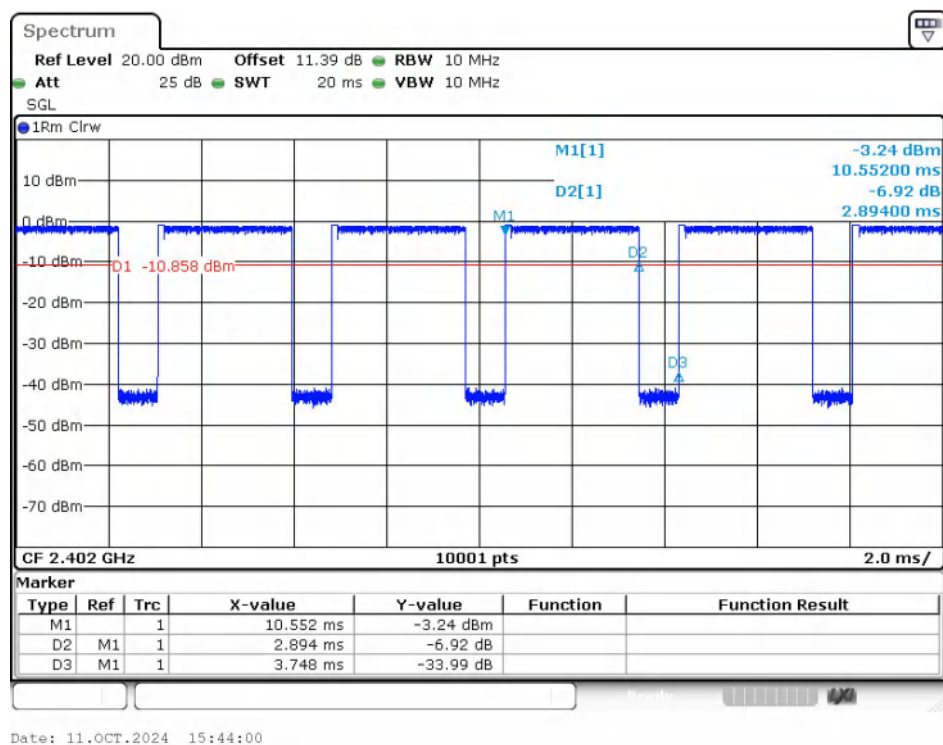
$\pi/4$ DQPSK(2-DH5)\_Channel 0



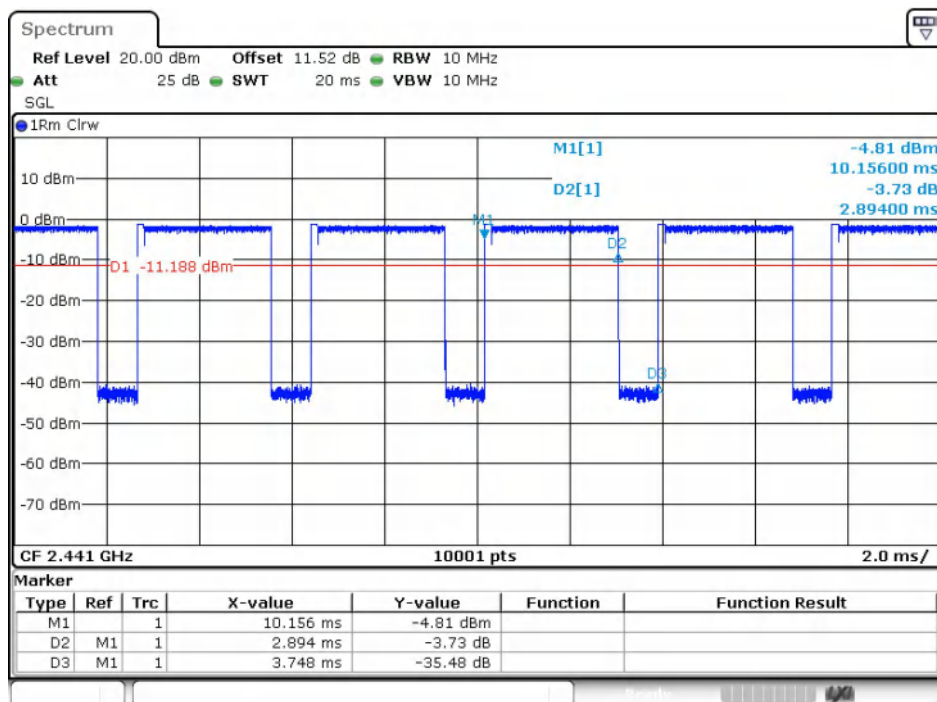
$\pi/4$ DQPSK(2-DH5)\_Channel 39



$\pi/4$ DQPSK(2-DH5)\_Channel 78

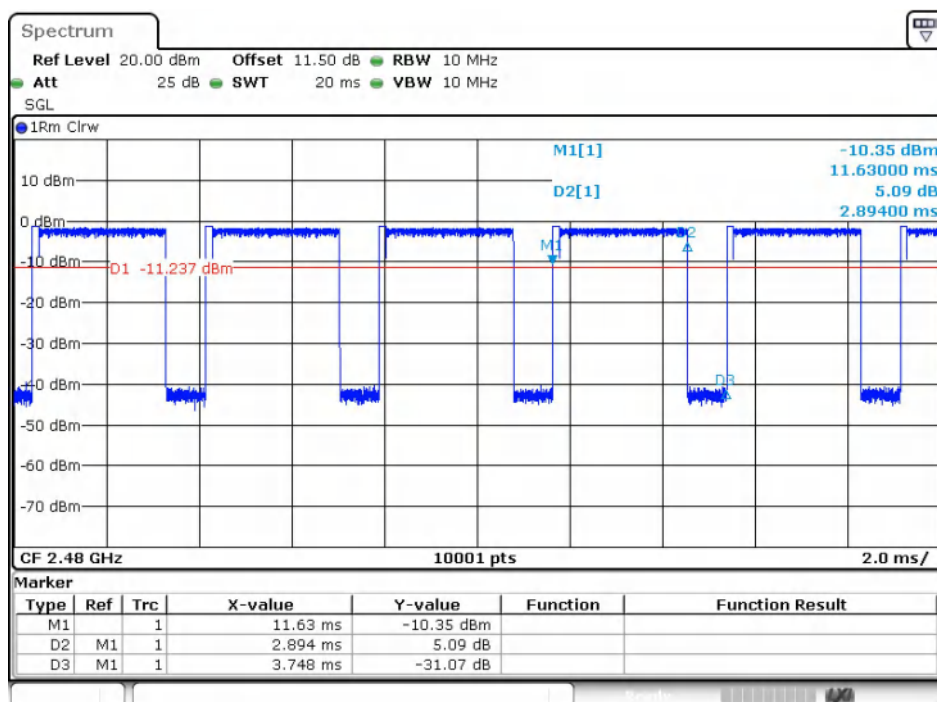


8DPSK(3-DH5)\_Channel 0



Date: 11.OCT.2024 15:51:31

### 8DPSK(3-DH5)\_Channel 39



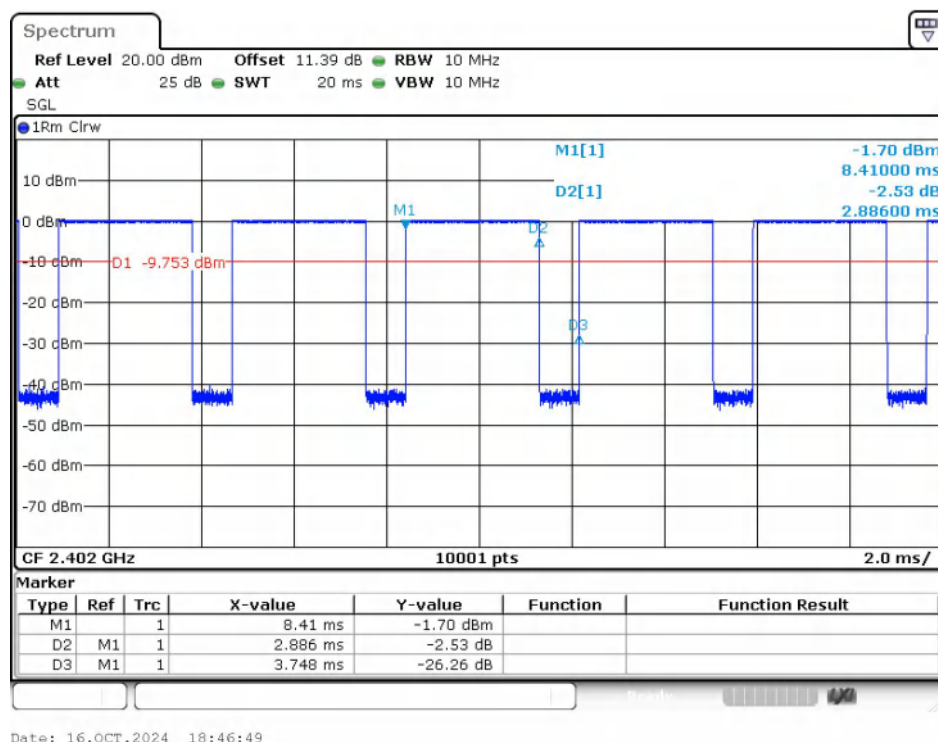
Date: 11.OCT.2024 15:53:50

### 8DPSK(3-DH5)\_Channel 78

Right:

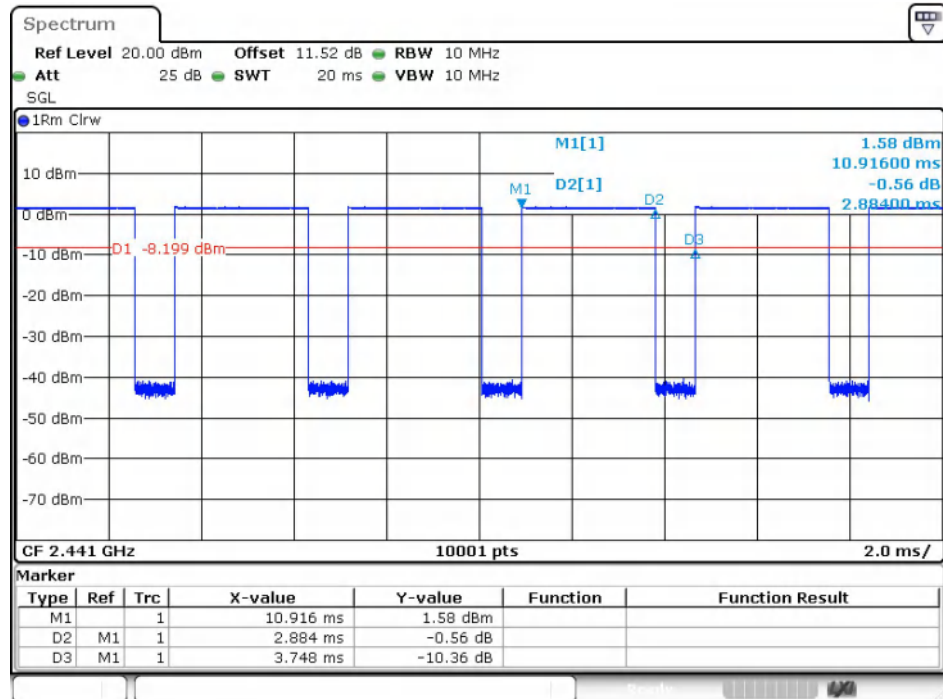
| Modulation    | Packets | Channel | On Time (ms) | Period (ms) | Duty Cycle (%) | Duty Cycle (linear) | Duty Cycle Factor (dB) | 1/T  |
|---------------|---------|---------|--------------|-------------|----------------|---------------------|------------------------|------|
| GFSK          | DH5     | 0       | 2.886        | 3.748       | 77.00          | 0.7700              | 1.1351                 | 0.35 |
|               |         | 39      | 2.884        | 3.748       | 76.95          | 0.7695              | 1.1379                 | 0.35 |
|               |         | 78      | 2.886        | 3.748       | 77.00          | 0.7700              | 1.1351                 | 0.35 |
| $\pi/4$ DQPSK | 2-DH5   | 0       | 2.890        | 3.748       | 77.11          | 0.7711              | 1.1289                 | 0.35 |
|               |         | 39      | 2.890        | 3.748       | 77.11          | 0.7711              | 1.1289                 | 0.35 |
|               |         | 78      | 2.892        | 3.748       | 77.16          | 0.7716              | 1.1261                 | 0.35 |
| 8DPSK         | 3-DH5   | 0       | 2.894        | 3.748       | 77.21          | 0.7721              | 1.1233                 | 0.35 |
|               |         | 39      | 2.892        | 3.748       | 77.16          | 0.7716              | 1.1261                 | 0.35 |
|               |         | 78      | 2.894        | 3.748       | 77.21          | 0.7721              | 1.1233                 | 0.35 |

## Test Graphs



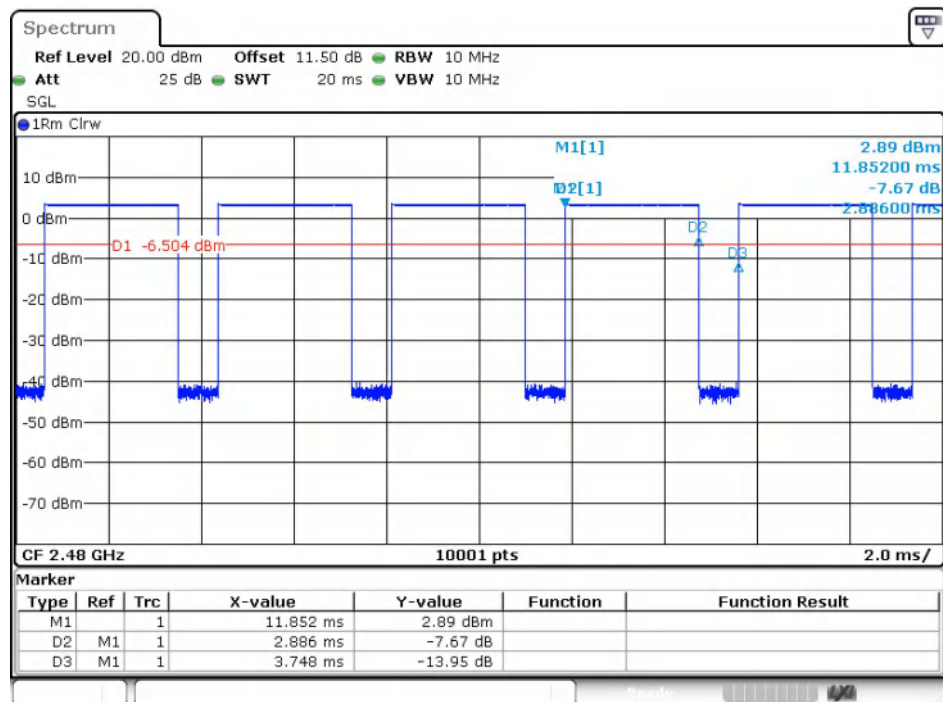
GFSK(DH5)\_Channel 0





Date: 16.OCT.2024 18:58:54

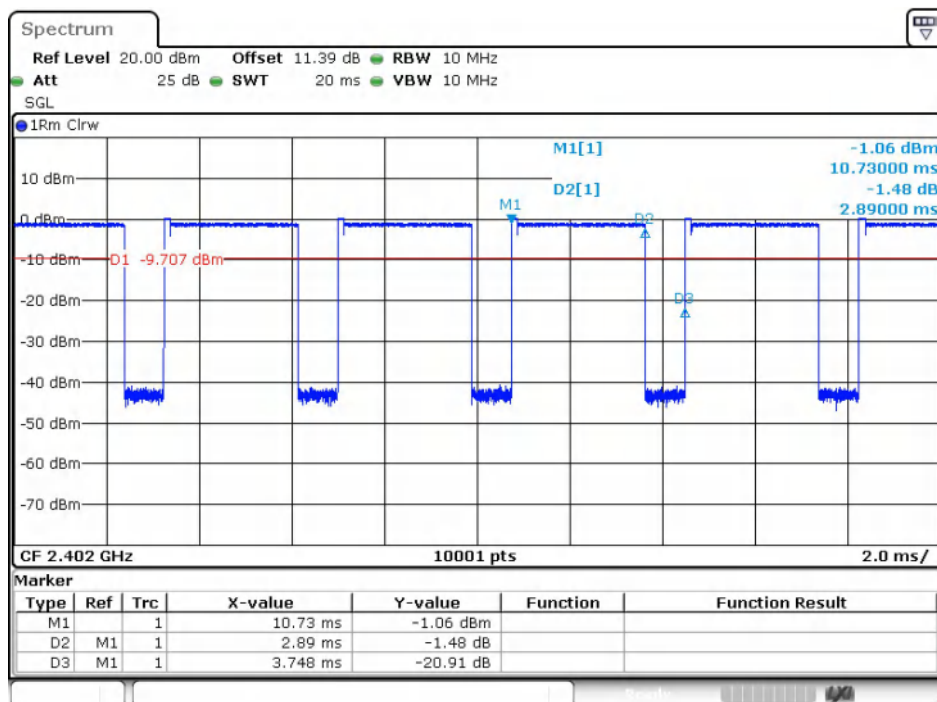
### GFSK(DH5)\_Channel 39



Date: 16.OCT.2024 19:01:16

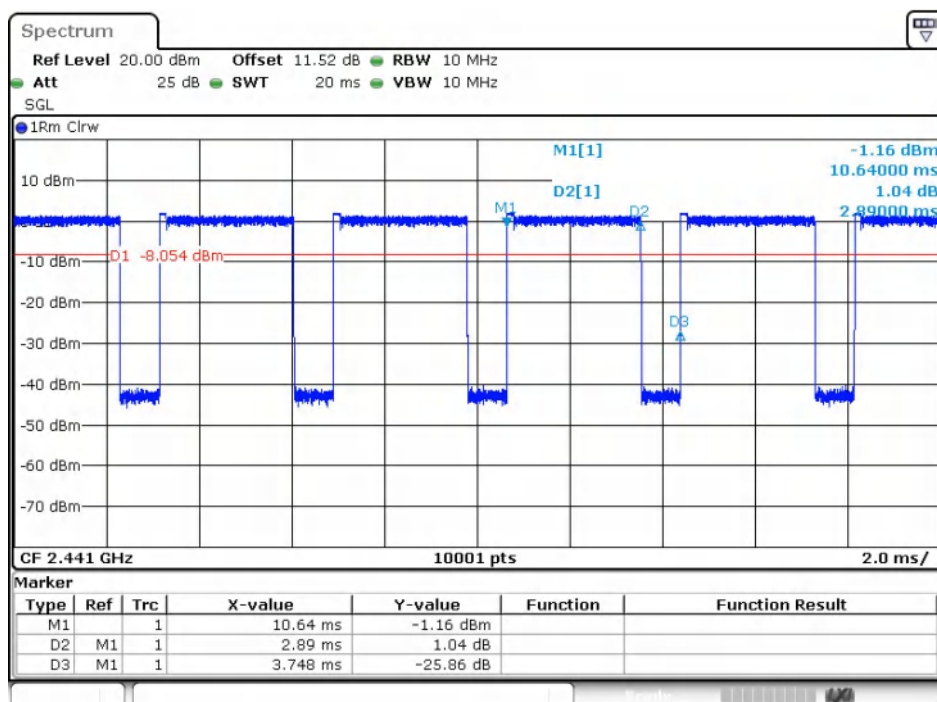
### GFSK(DH5)\_Channel 78





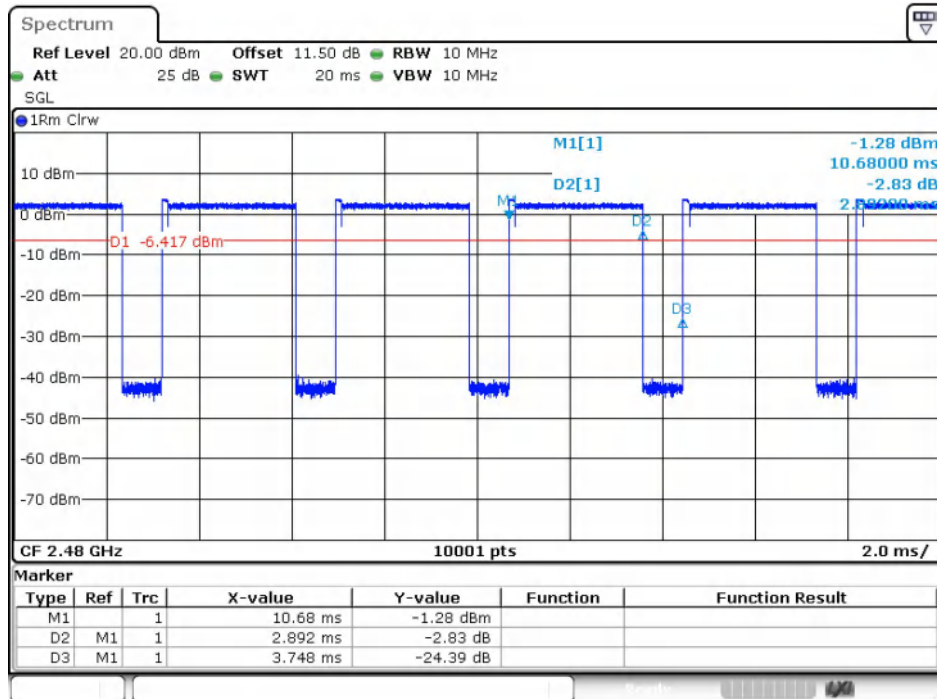
Date: 16, OCT, 2024 19:03:29

$\pi/4$ QPSK(2-DH5)\_Channel 0



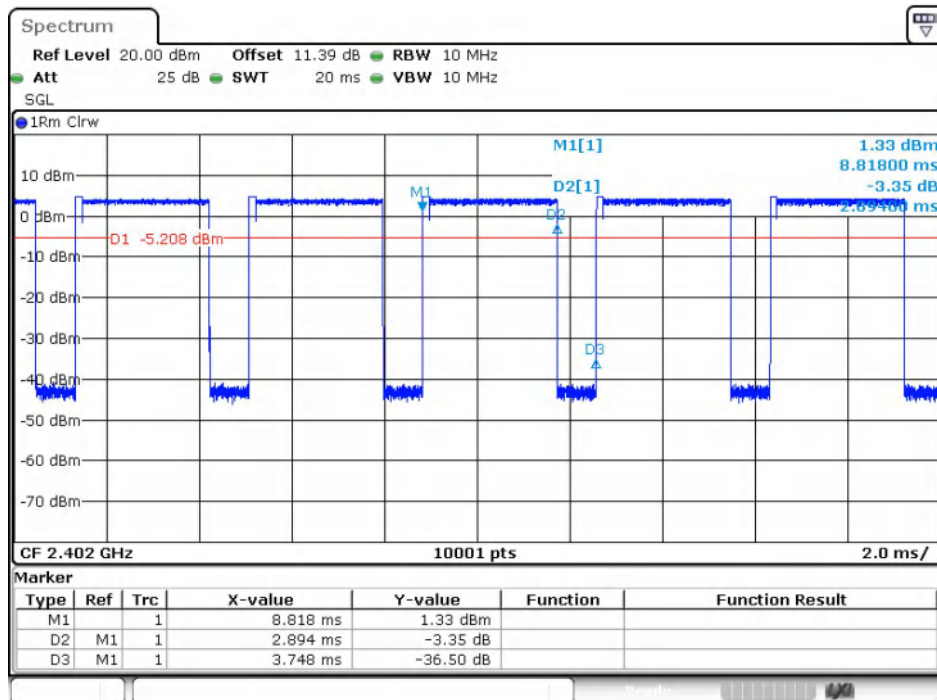
Date: 16, OCT, 2024 19:13:35

$\pi/4$ QPSK(2-DH5)\_Channel 39



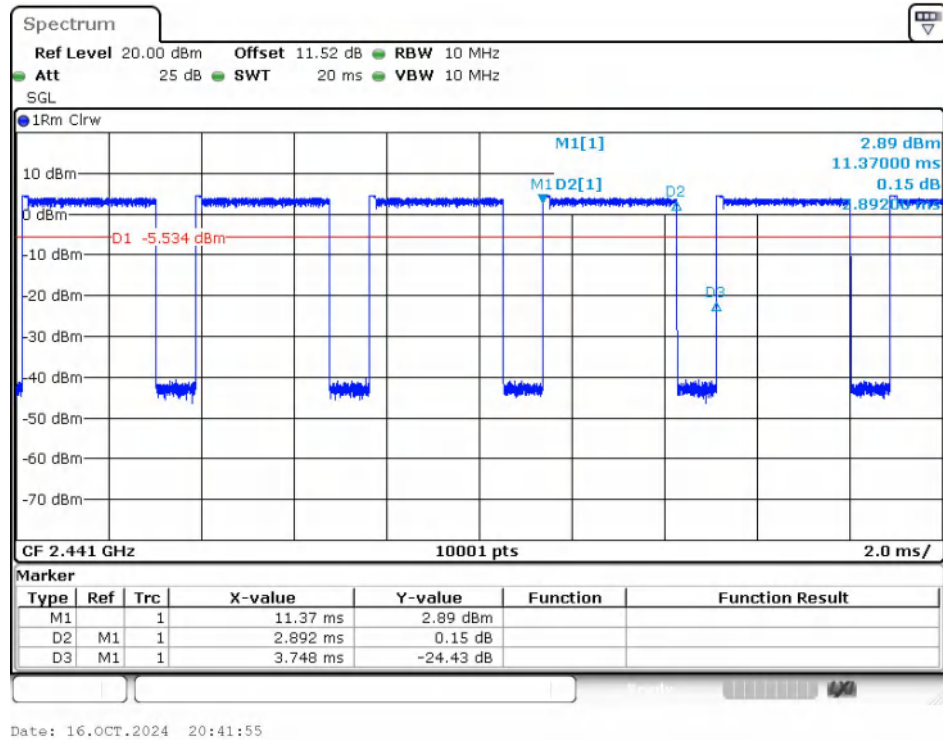
Date: 16, OCT, 2024 19:15:55

$\pi/4$ QPSK(2-DH5)\_Channel 78

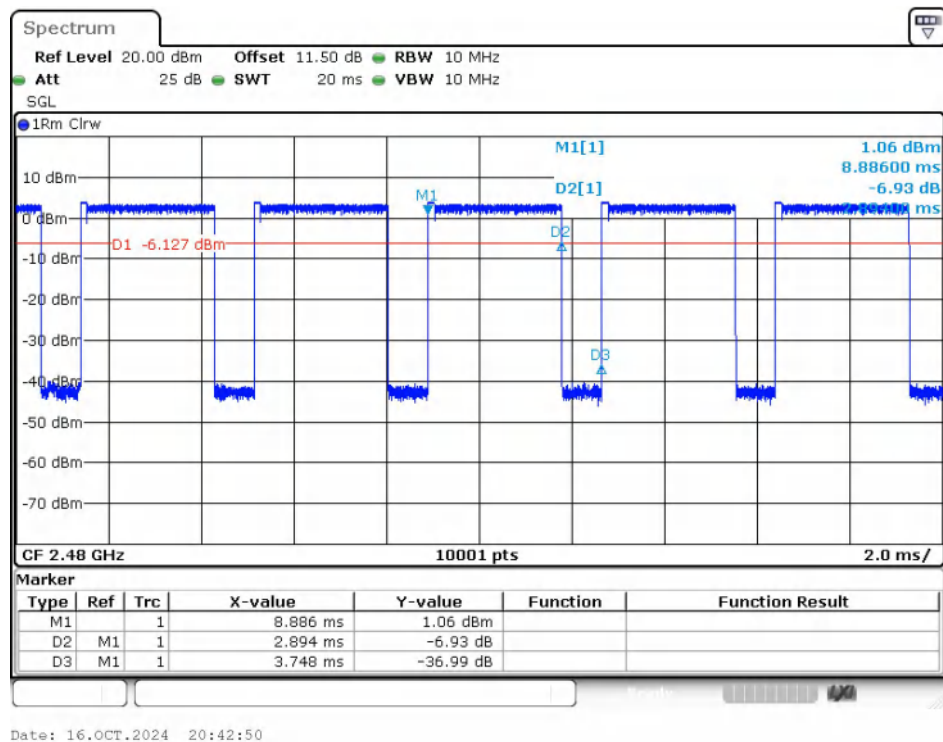


Date: 16, OCT, 2024 20:37:43

8DPSK(3-DH5)\_Channel 0



8DPSK(3-DH5)\_Channel 39



8DPSK(3-DH5)\_Channel 78

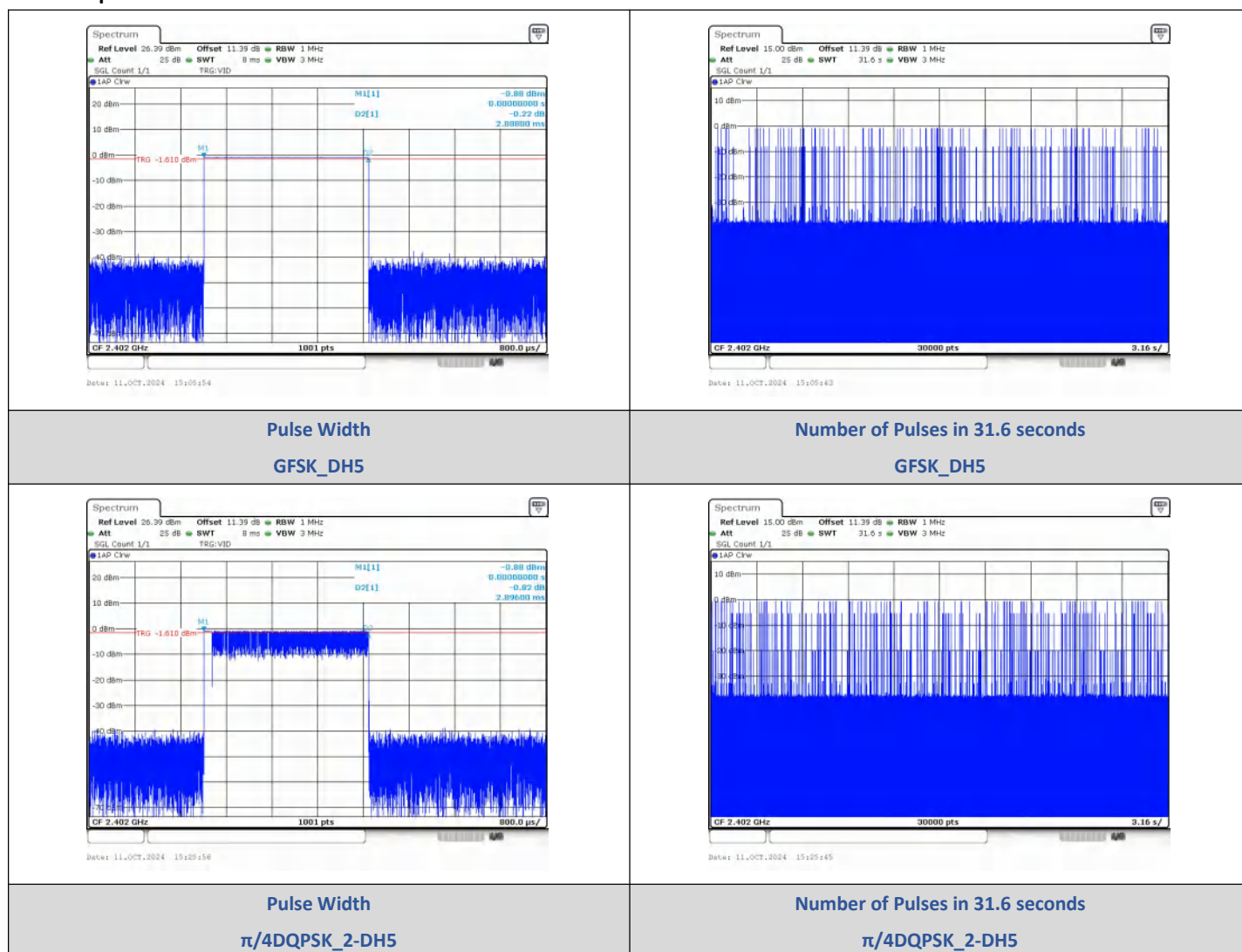
## 2) Dwell Time

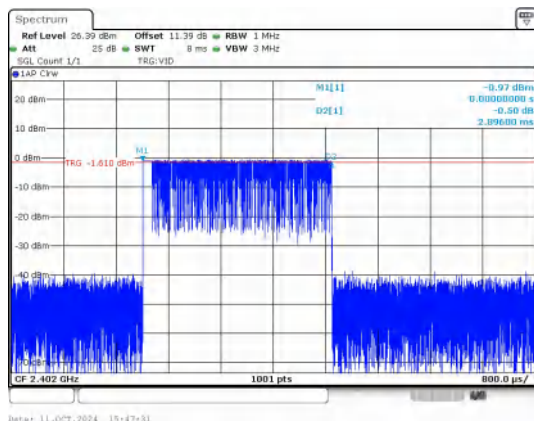
### Test Result

Left:

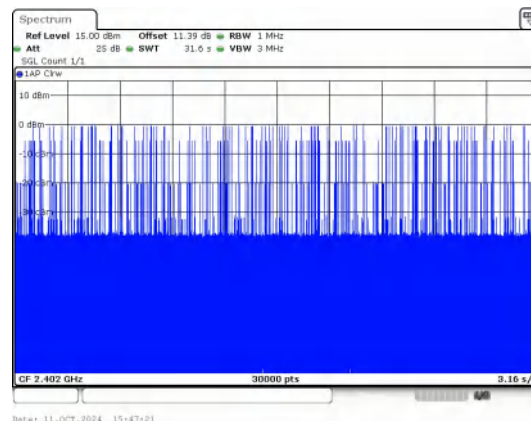
| Modulation    | Packet | Channel          | Pulse Width (ms) | Number of Pulses in 31.6 seconds | Dwell Time (ms) | Limit (ms) | Result |
|---------------|--------|------------------|------------------|----------------------------------|-----------------|------------|--------|
| GFSK          | DH5    | CH0<br>(2402MHz) | 2.888            | 88                               | 254.14          | < 400      | PASS   |
| $\pi/4$ DQPSK | 2-DH5  |                  | 2.896            | 107                              | 309.87          |            | PASS   |
| 8DPSK         | 3-DH5  |                  | 2.896            | 94                               | 272.22          |            | PASS   |

### Test Graphs





**Pulse Width**  
**8DPSK\_3-DH5**

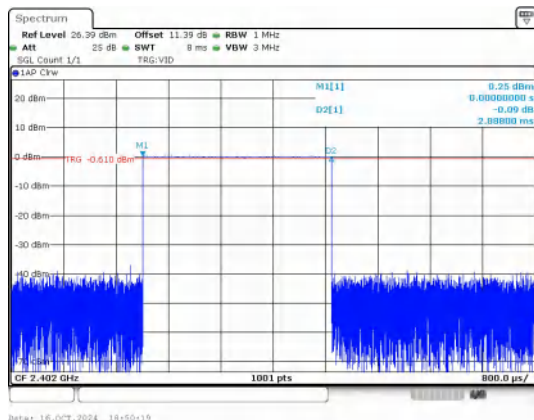


**Number of Pulses in 31.6 seconds**  
**8DPSK\_3-DH5**

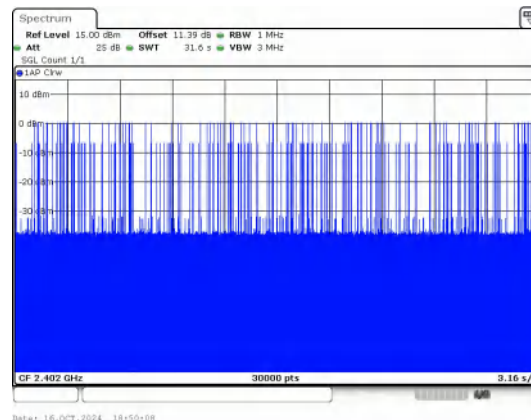
Right:

| Modulation    | Packet | Channel          | Pulse Width (ms) | Number of Pulses in 31.6 seconds | Dwell Time (ms) | Limit (ms) | Result |
|---------------|--------|------------------|------------------|----------------------------------|-----------------|------------|--------|
| GFSK          | DH5    | CH0<br>(2402MHz) | 2.888            | 100                              | 288.8           | < 400      | PASS   |
| $\pi/4$ DQPSK | 2-DH5  |                  | 2.896            | 114                              | 330.14          |            | PASS   |
| 8DPSK         | 3-DH5  |                  | 2.896            | 111                              | 321.46          |            | PASS   |

## Test Graphs

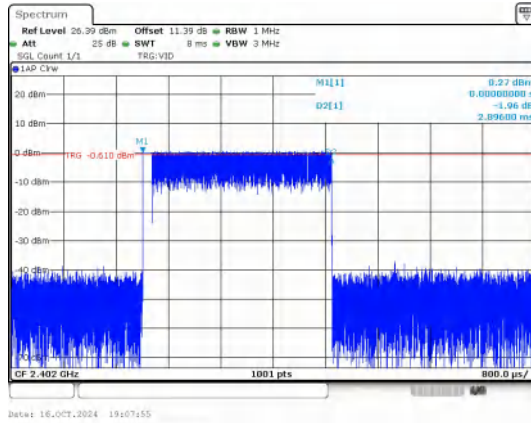


**Pulse Width**  
**GFSK\_DH5**

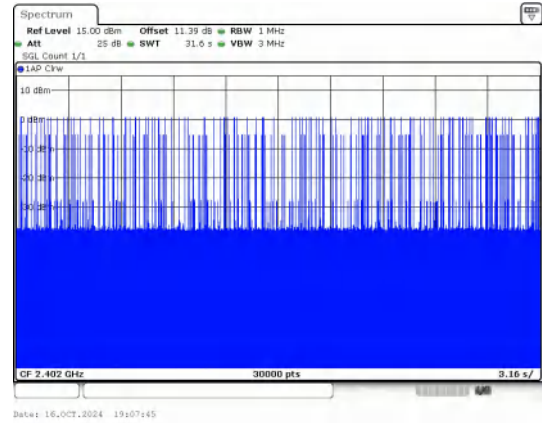


**Number of Pulses in 31.6 seconds**  
**GFSK\_DH5**

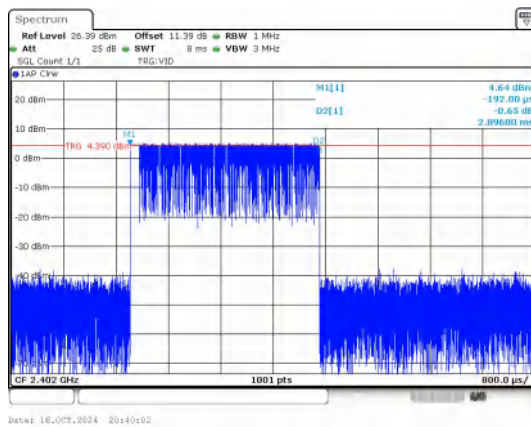




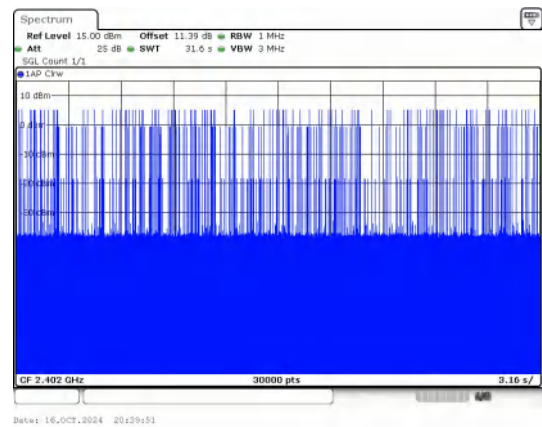
Pulse Width  
 $\pi/4$ DQPSK\_2-DH5



Number of Pulses in 31.6 seconds  
 $\pi/4$ DQPSK\_2-DH5



Pulse Width  
8DPSK\_3-DH5



Number of Pulses in 31.6 seconds  
8DPSK\_3-DH5

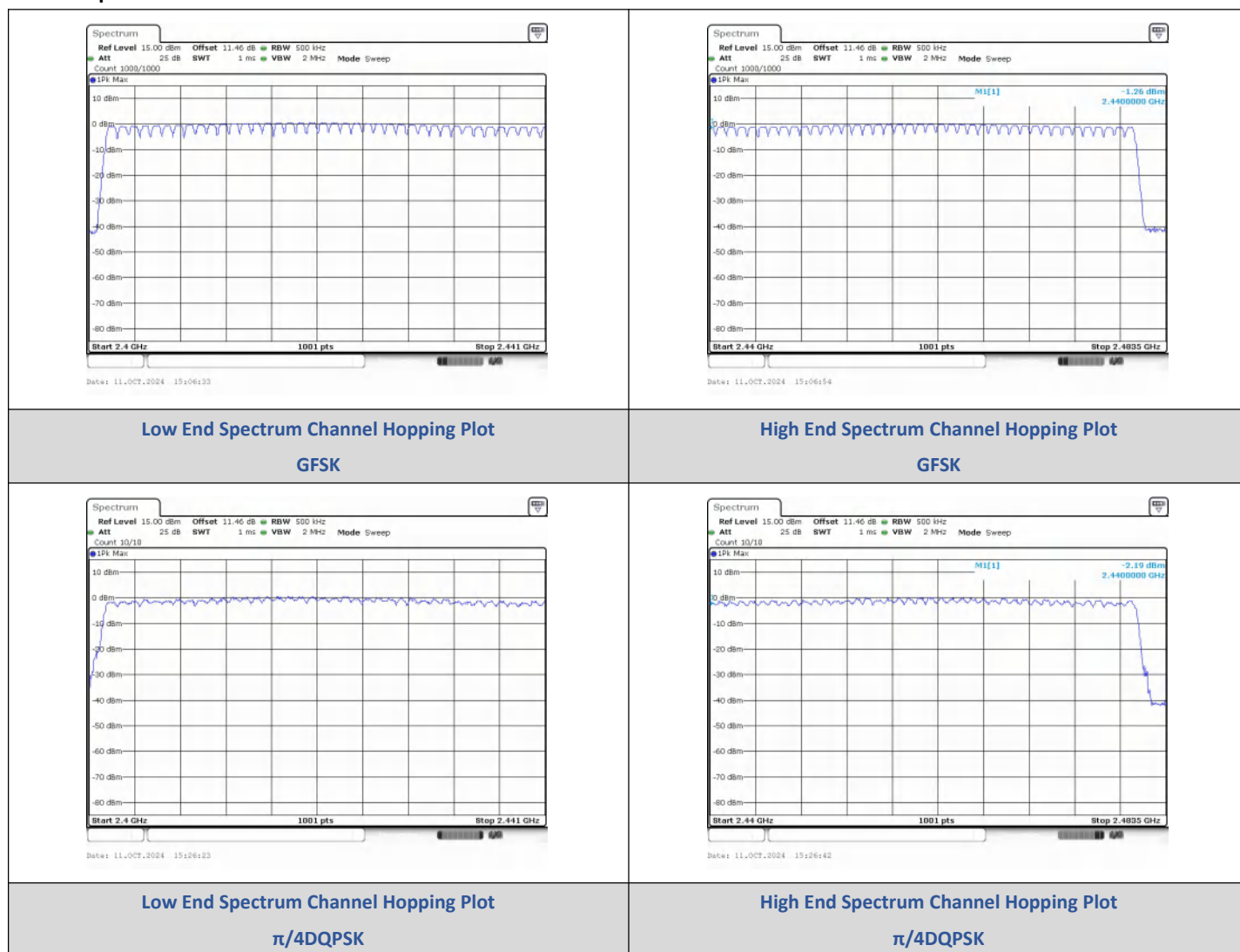
### 3) Number Of Hopping Channel

#### Test Result

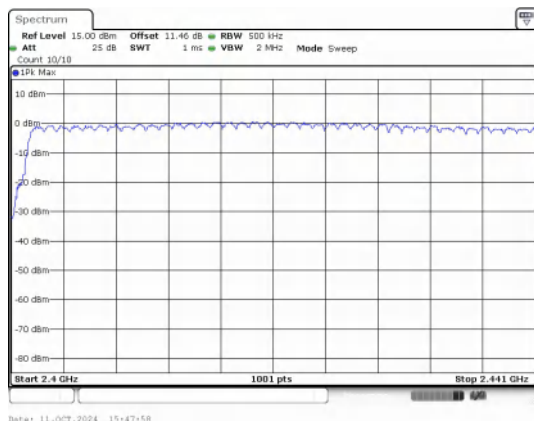
Left:

| Modulation    | Packet | Number of Hopping Channel | Limit | Result |
|---------------|--------|---------------------------|-------|--------|
| GFSK          | DH5    | 79                        | 15    | PASS   |
| $\pi/4$ DQPSK | 2-DH5  | 79                        | 15    | PASS   |
| 8DPSK         | 3-DH5  | 79                        | 15    | PASS   |

#### Test Graphs

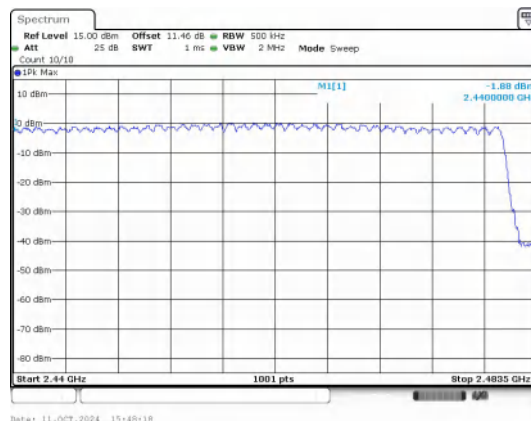






Low End Spectrum Channel Hopping Plot

8DPSK



High End Spectrum Channel Hopping Plot

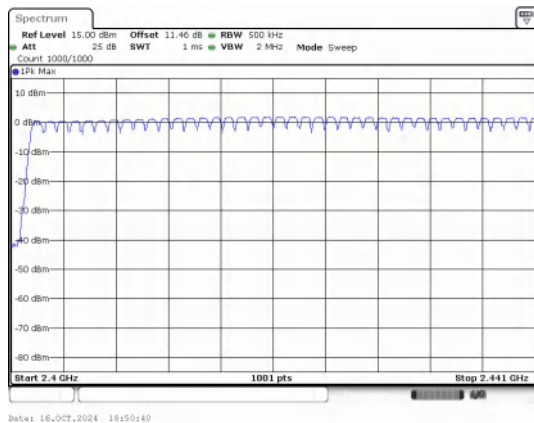
8DPSK

Right:

### Test Result

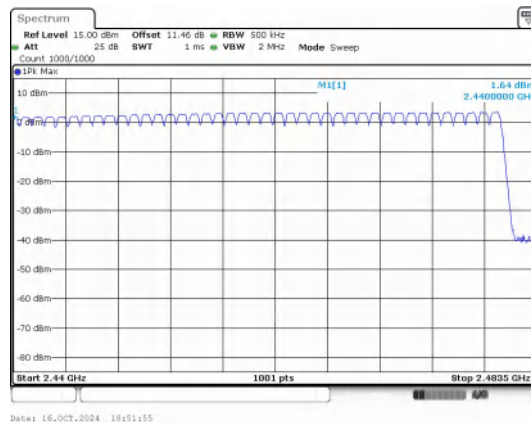
| Modulation    | Packet | Number of Hopping Channel | Limit | Result |
|---------------|--------|---------------------------|-------|--------|
| GFSK          | DH5    | 79                        | 15    | PASS   |
| $\pi/4$ DQPSK | 2-DH5  | 79                        | 15    | PASS   |
| 8DPSK         | 3-DH5  | 79                        | 15    | PASS   |

### Test Graphs



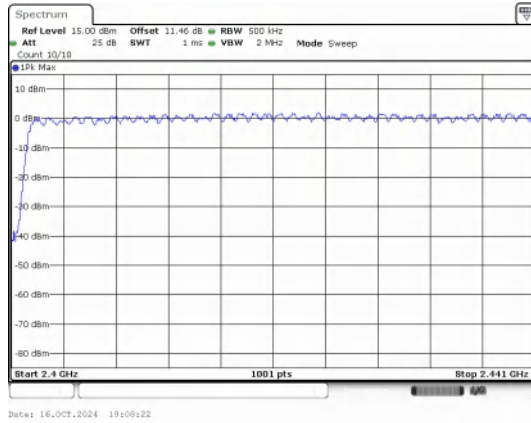
Low End Spectrum Channel Hopping Plot

GFSK

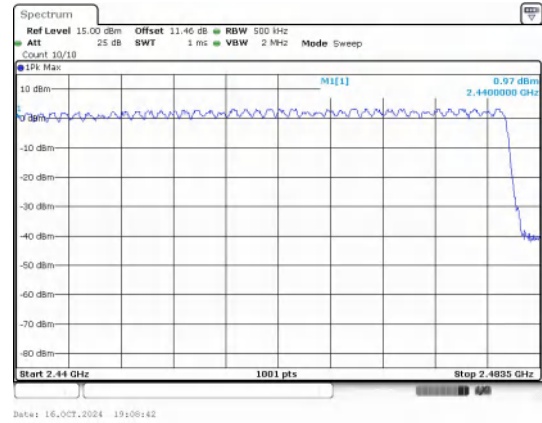


High End Spectrum Channel Hopping Plot

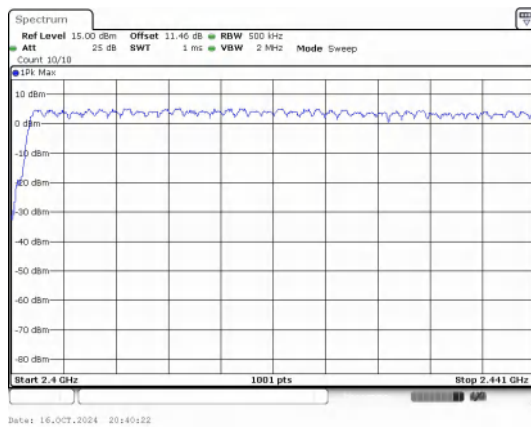
GFSK



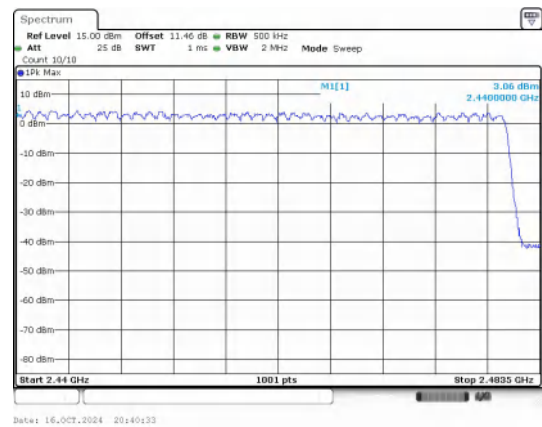
Low End Spectrum Channel Hopping Plot  
 $\pi/4$ DQPSK



High End Spectrum Channel Hopping Plot  
 $\pi/4$ DQPSK



Low End Spectrum Channel Hopping Plot  
8DPSK



High End Spectrum Channel Hopping Plot  
8DPSK

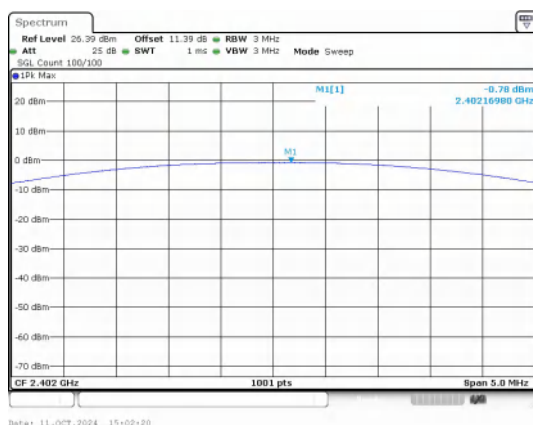
## 4) Conducted Peak Output Power

### Test Result

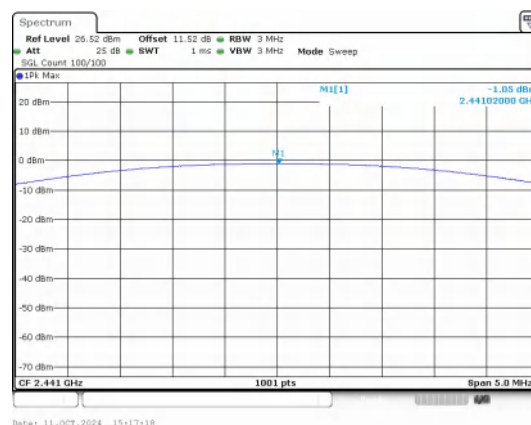
Left:

| Modulation    | Packet Type | Channel | Peak Output Power (dBm) | Peak Output Power (mW) | Limit (dBm) | Result |
|---------------|-------------|---------|-------------------------|------------------------|-------------|--------|
| GFSK          | DH5         | 0       | -0.78                   | 0.84                   | ≤30         | PASS   |
|               |             | 39      | -1.05                   | 0.79                   |             | PASS   |
|               |             | 78      | -1.04                   | 0.79                   |             | PASS   |
| $\pi/4$ DQPSK | 2-DH5       | 0       | -0.36                   | 0.92                   | ≤20.97      | PASS   |
|               |             | 39      | -0.56                   | 0.88                   |             | PASS   |
|               |             | 78      | -0.52                   | 0.89                   |             | PASS   |
| 8DPSK         | 3-DH5       | 0       | -0.26                   | 0.94                   |             | PASS   |
|               |             | 39      | -0.54                   | 0.88                   |             | PASS   |
|               |             | 78      | -0.45                   | 0.90                   |             | PASS   |

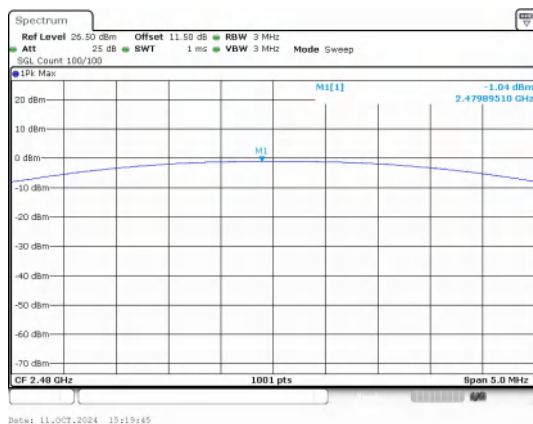
### Test Graphs



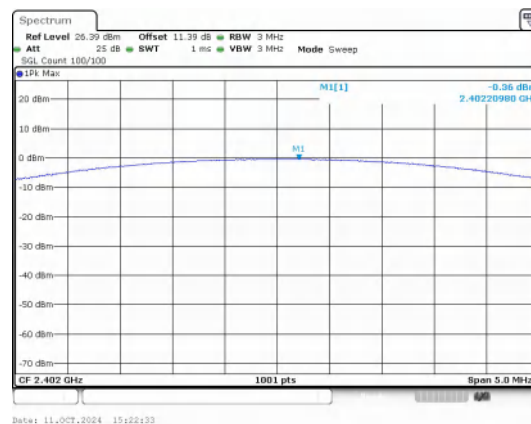
Peak Output Power  
GFSK\_Channel 0



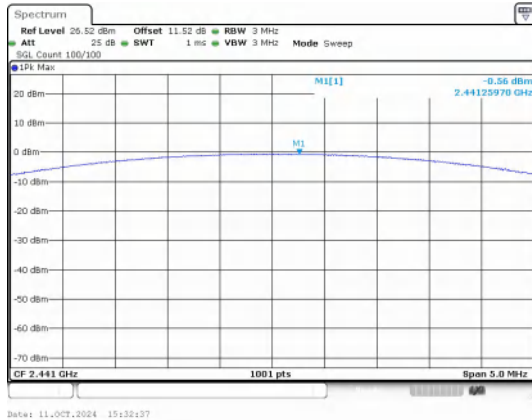
Peak Output Power  
GFSK\_Channel 39



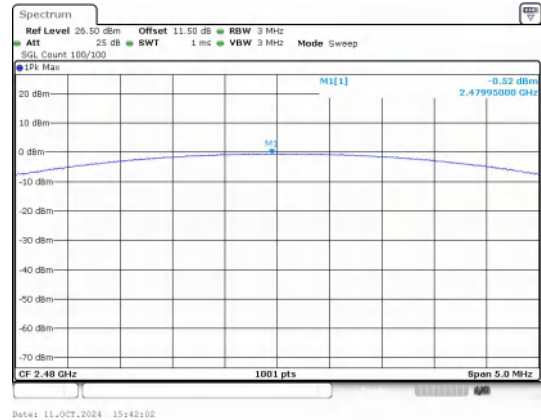
Peak Output Power  
GFSK\_Channel 78



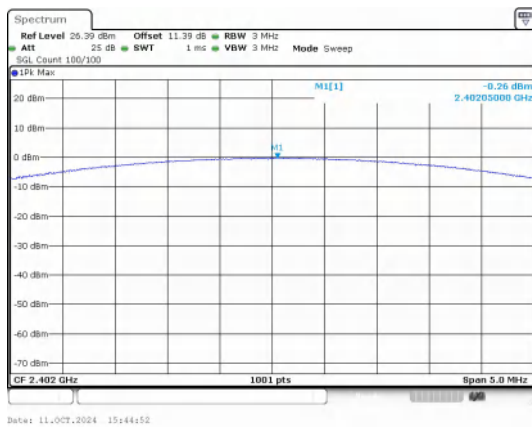
Peak Output Power  
 $\pi/4$ DQPSK\_Channel 0



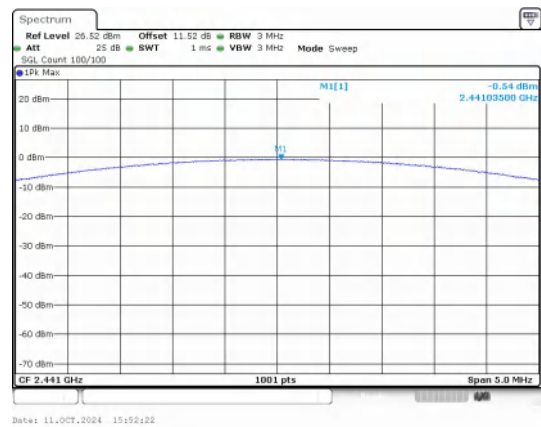
**Peak Output Power**  
 **$\pi/4$ DQPSK\_Channel 39**



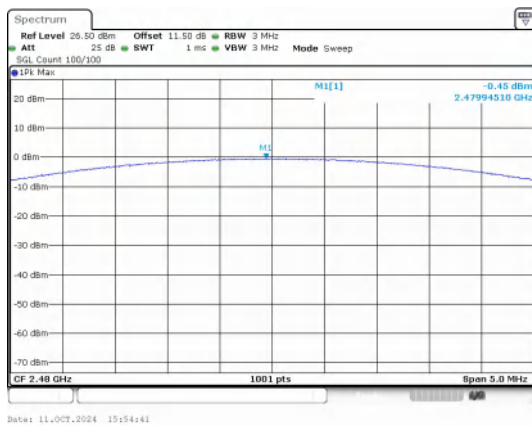
**Peak Output Power**  
 **$\pi/4$ DQPSK\_Channel 78**



**Peak Output Power**  
**8DPSK\_Channel 0**



**Peak Output Power**  
**8DPSK\_Channel 39**



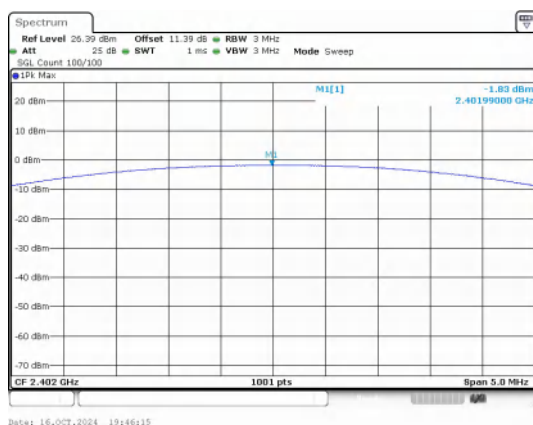
**Peak Output Power**  
**8DPSK\_Channel 78**

Right:

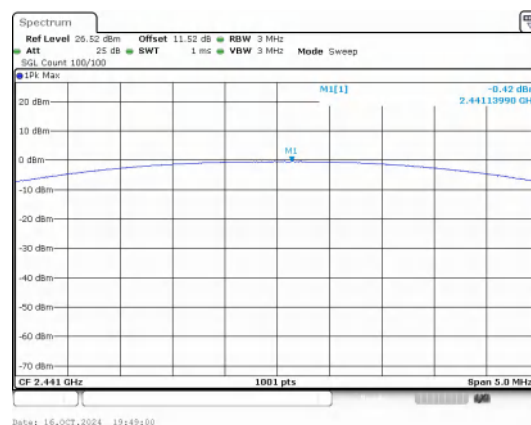
## Test Result

| Modulation    | Packet Type | Channel | Peak Output Power (dBm) | Peak Output Power (mW) | Limit (dBm) | Result |
|---------------|-------------|---------|-------------------------|------------------------|-------------|--------|
| GFSK          | DH5         | 0       | -1.83                   | 0.66                   | ≤30         | PASS   |
|               |             | 39      | -0.42                   | 0.91                   |             | PASS   |
|               |             | 78      | 0.36                    | 1.09                   |             | PASS   |
| $\pi/4$ DQPSK | 2-DH5       | 0       | -1.38                   | 0.73                   | ≤20.97      | PASS   |
|               |             | 39      | 0.35                    | 1.08                   |             | PASS   |
|               |             | 78      | 1.08                    | 1.28                   |             | PASS   |
| 8DPSK         | 3-DH5       | 0       | -1.21                   | 0.76                   |             | PASS   |
|               |             | 39      | 0.84                    | 1.21                   |             | PASS   |
|               |             | 78      | -1.53                   | 0.70                   |             | PASS   |

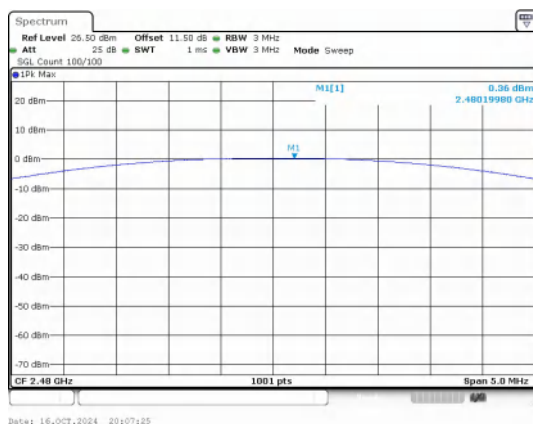
## Test Graphs



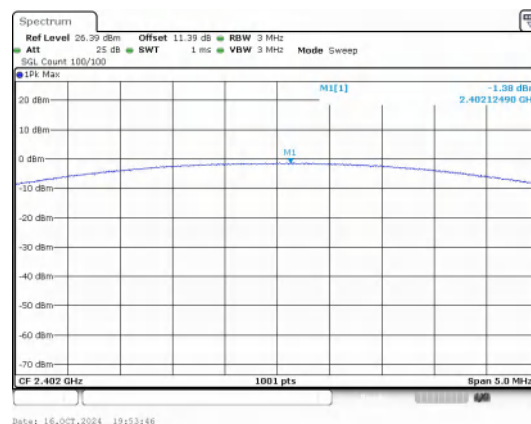
Peak Output Power  
GFSK\_Channel 0



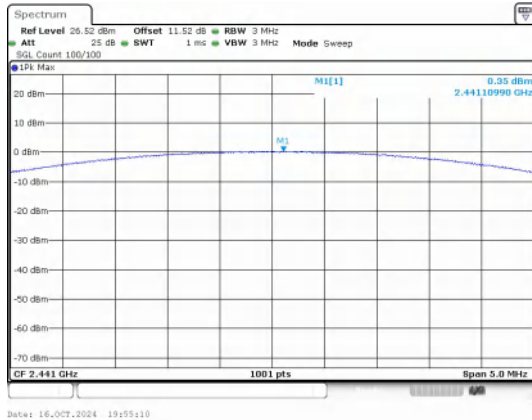
Peak Output Power  
GFSK\_Channel 39



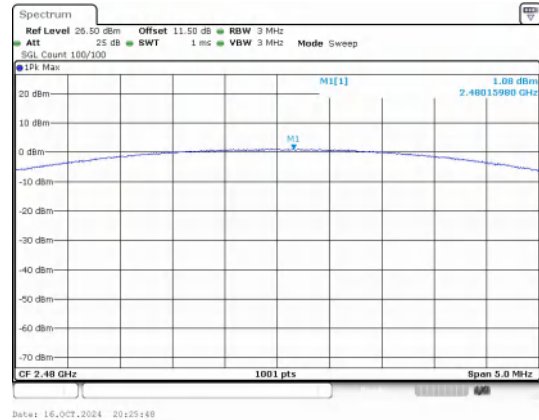
Peak Output Power  
GFSK\_Channel 78



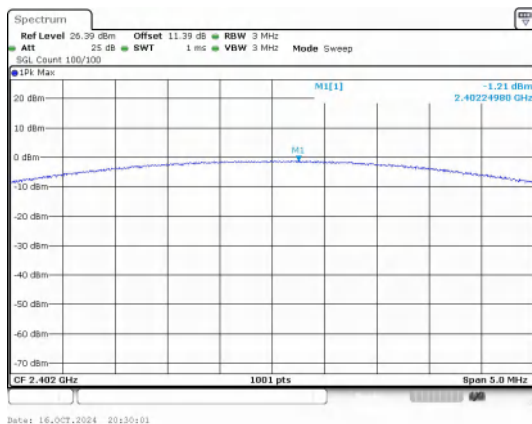
Peak Output Power  
 $\pi/4$ DQPSK\_Channel 0



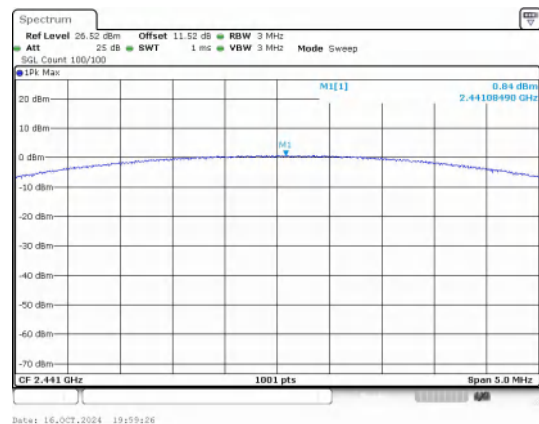
**Peak Output Power**  
 **$\pi/4$ DQPSK\_Channel 39**



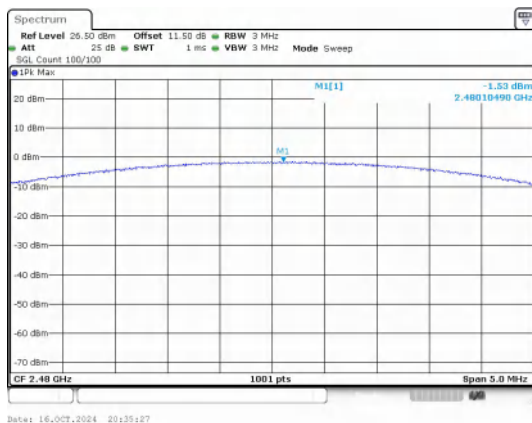
**Peak Output Power**  
 **$\pi/4$ DQPSK\_Channel 78**



**Peak Output Power**  
**8DPSK\_Channel 0**



**Peak Output Power**  
**8DPSK\_Channel 39**



**Peak Output Power**  
**8DPSK\_Channel 78**



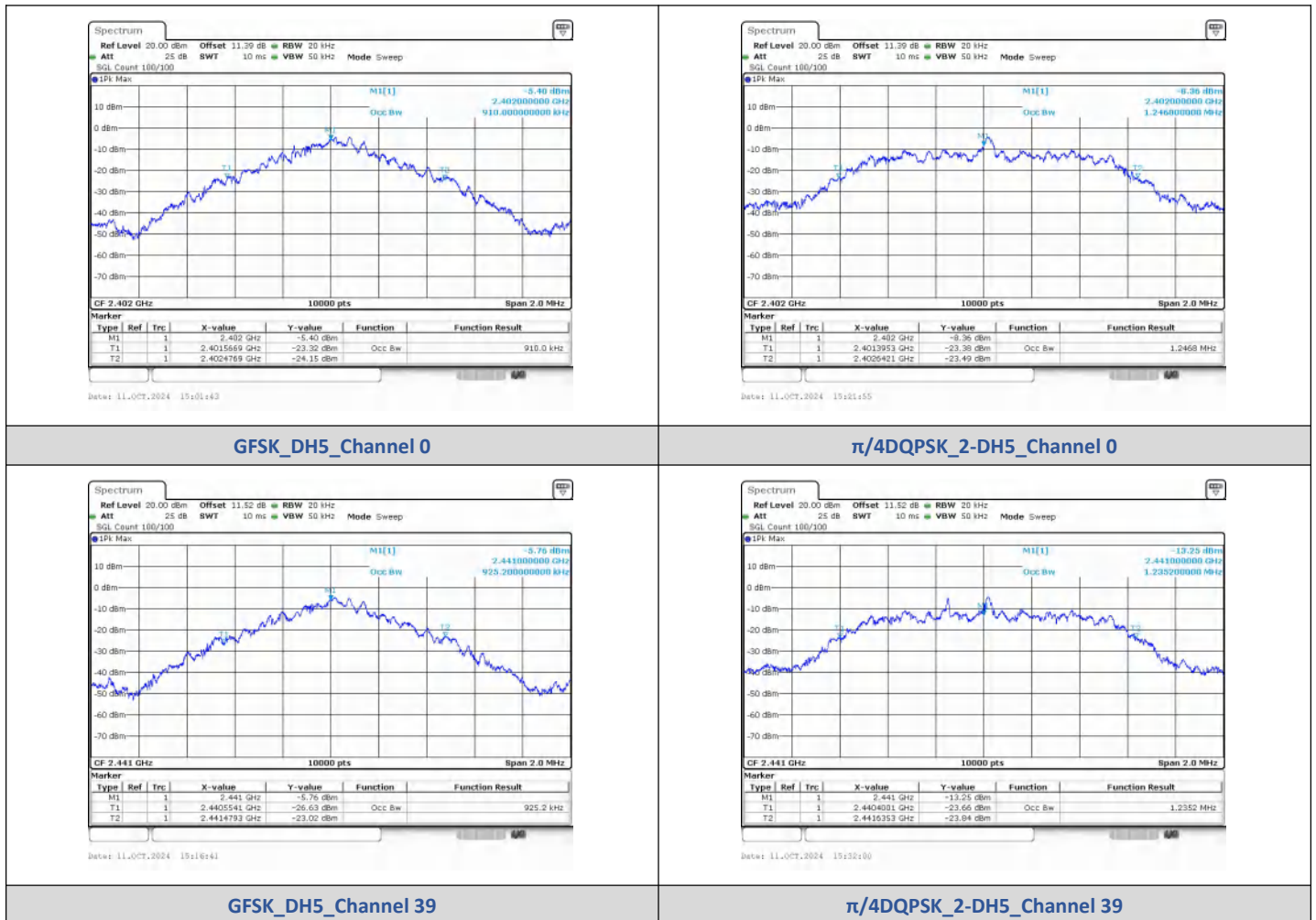
## 5) 99% Bandwidth

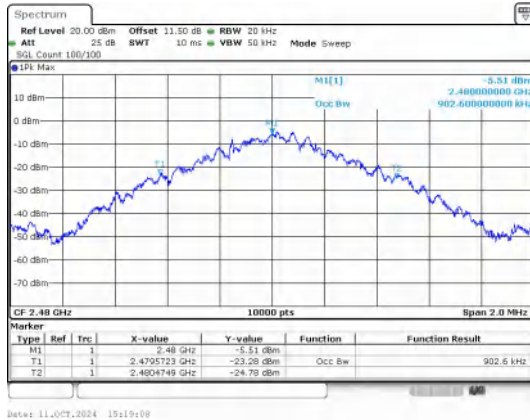
### Test Result

Left:

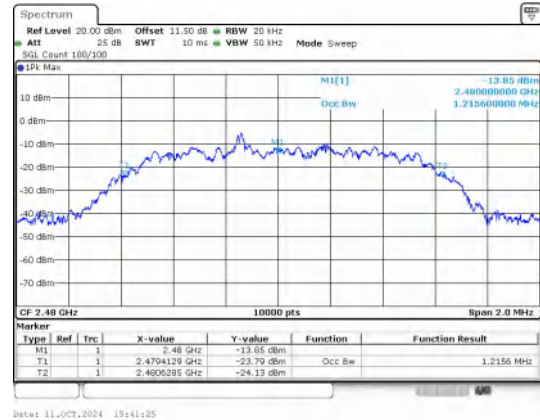
| Modulation    | Channel | Center Frequency (MHz) | 99% BW (MHz) |
|---------------|---------|------------------------|--------------|
| GFSK          | 0       | 2402                   | 0.91000      |
|               | 39      | 2441                   | 0.92520      |
|               | 78      | 2480                   | 0.90260      |
| $\pi/4$ DQPSK | 0       | 2402                   | 1.2468       |
|               | 39      | 2441                   | 1.2352       |
|               | 78      | 2480                   | 1.2156       |
| 8DPSK         | 0       | 2402                   | 1.2452       |
|               | 39      | 2441                   | 1.2398       |
|               | 78      | 2480                   | 1.2222       |

### Test Graphs

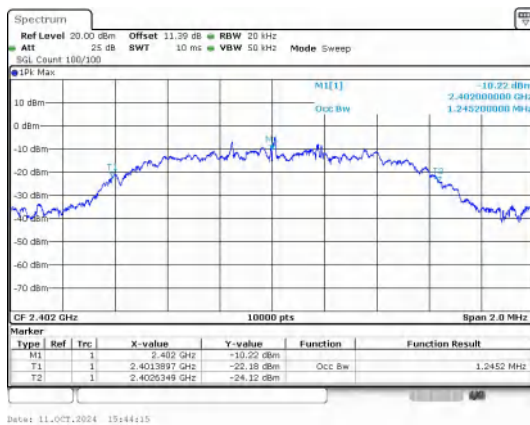




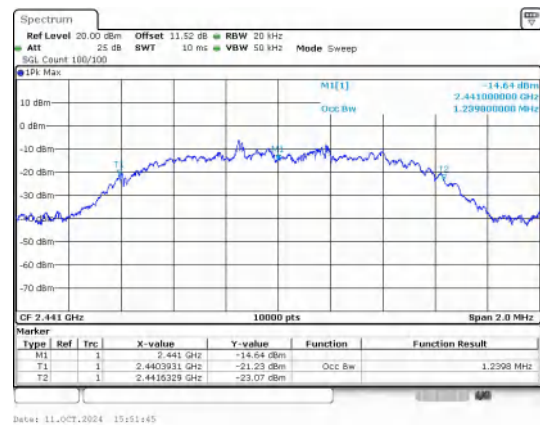
GFSK\_DH5\_Channel 78



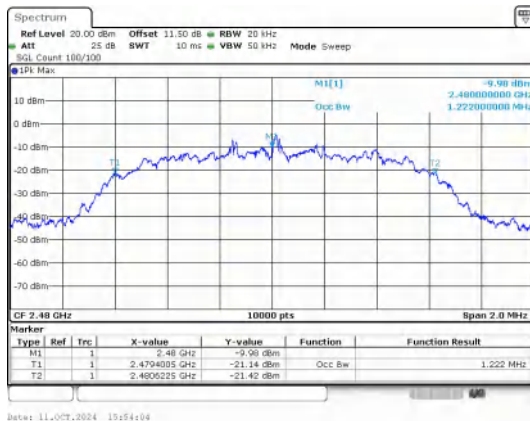
$\pi/4$ DQPSK\_2-DH5\_Channel 78



8DPSK\_3-DH5\_Channel 0



8DPSK\_3-DH5\_Channel 39

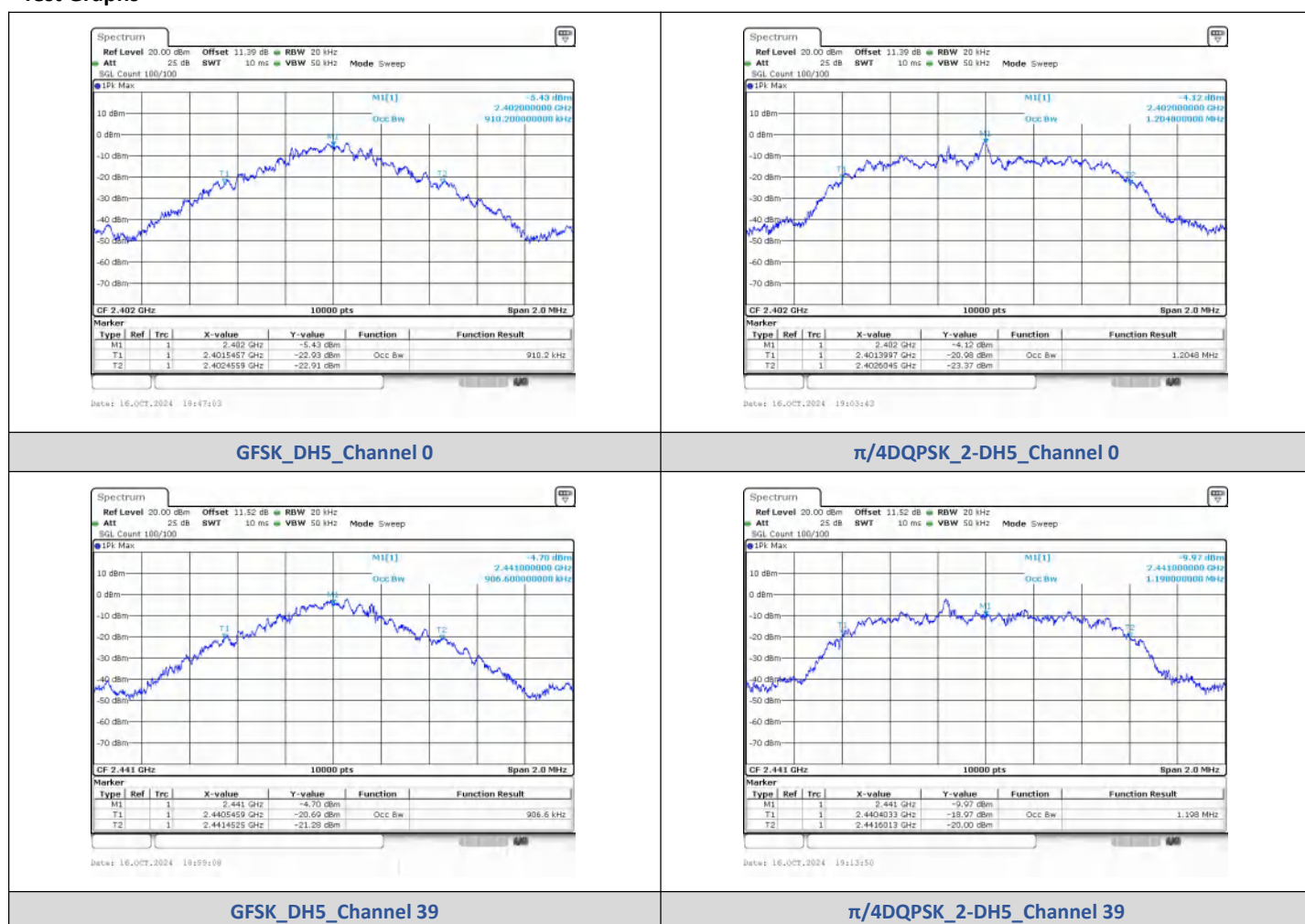


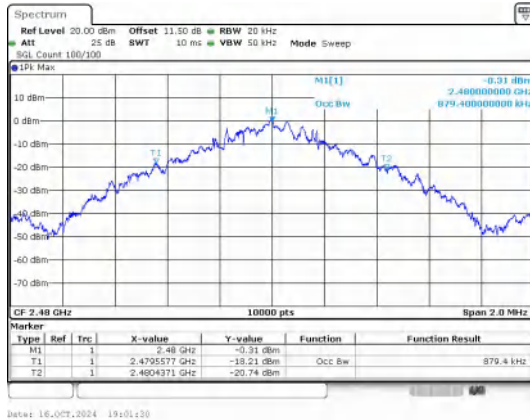
8DPSK\_3-DH5\_Channel 78

Right:

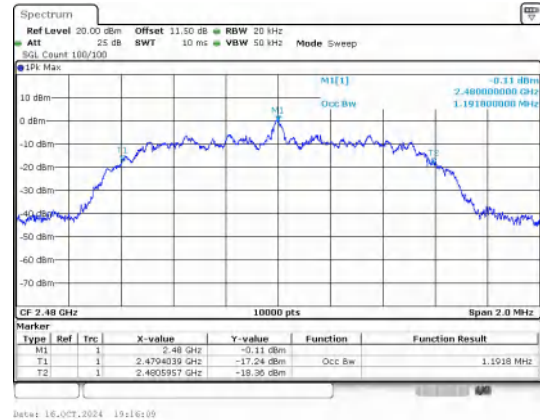
| Modulation    | Channel | Center Frequency (MHz) | 99% BW (MHz) |
|---------------|---------|------------------------|--------------|
| GFSK          | 0       | 2402                   | 0.91020      |
|               | 39      | 2441                   | 0.90660      |
|               | 78      | 2480                   | 0.87940      |
| $\pi/4$ DQPSK | 0       | 2402                   | 1.2048       |
|               | 39      | 2441                   | 1.1980       |
|               | 78      | 2480                   | 1.1918       |
| 8DPSK         | 0       | 2402                   | 1.2232       |
|               | 39      | 2441                   | 1.2178       |
|               | 78      | 2480                   | 1.2110       |

## Test Graphs

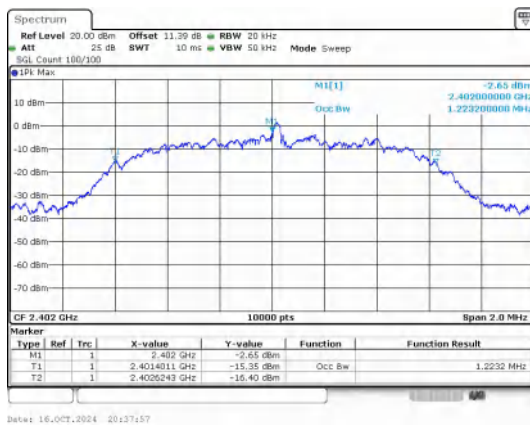




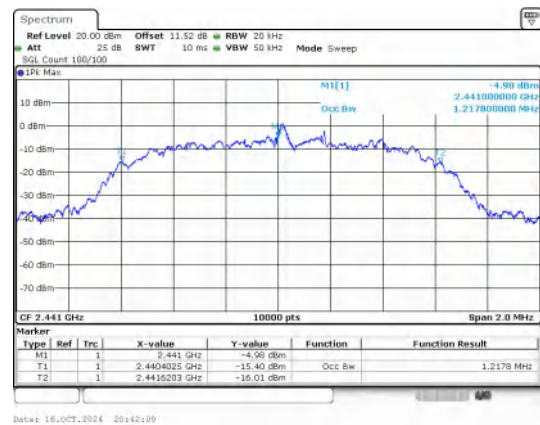
GFSK\_DH5\_Channel 78



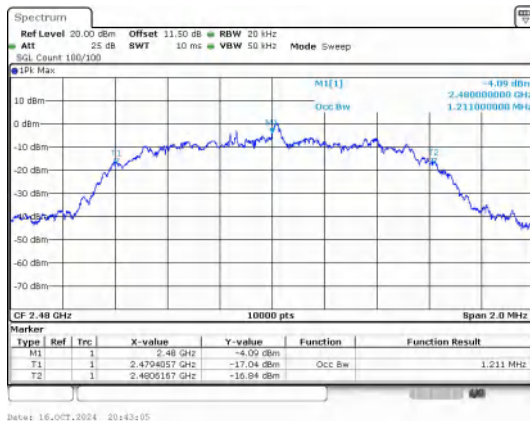
$\pi/4$ DQPSK\_2-DH5\_Channel 78



8DPSK\_3-DH5\_Channel 0



8DPSK\_3-DH5\_Channel 39



8DPSK\_3-DH5\_Channel 78

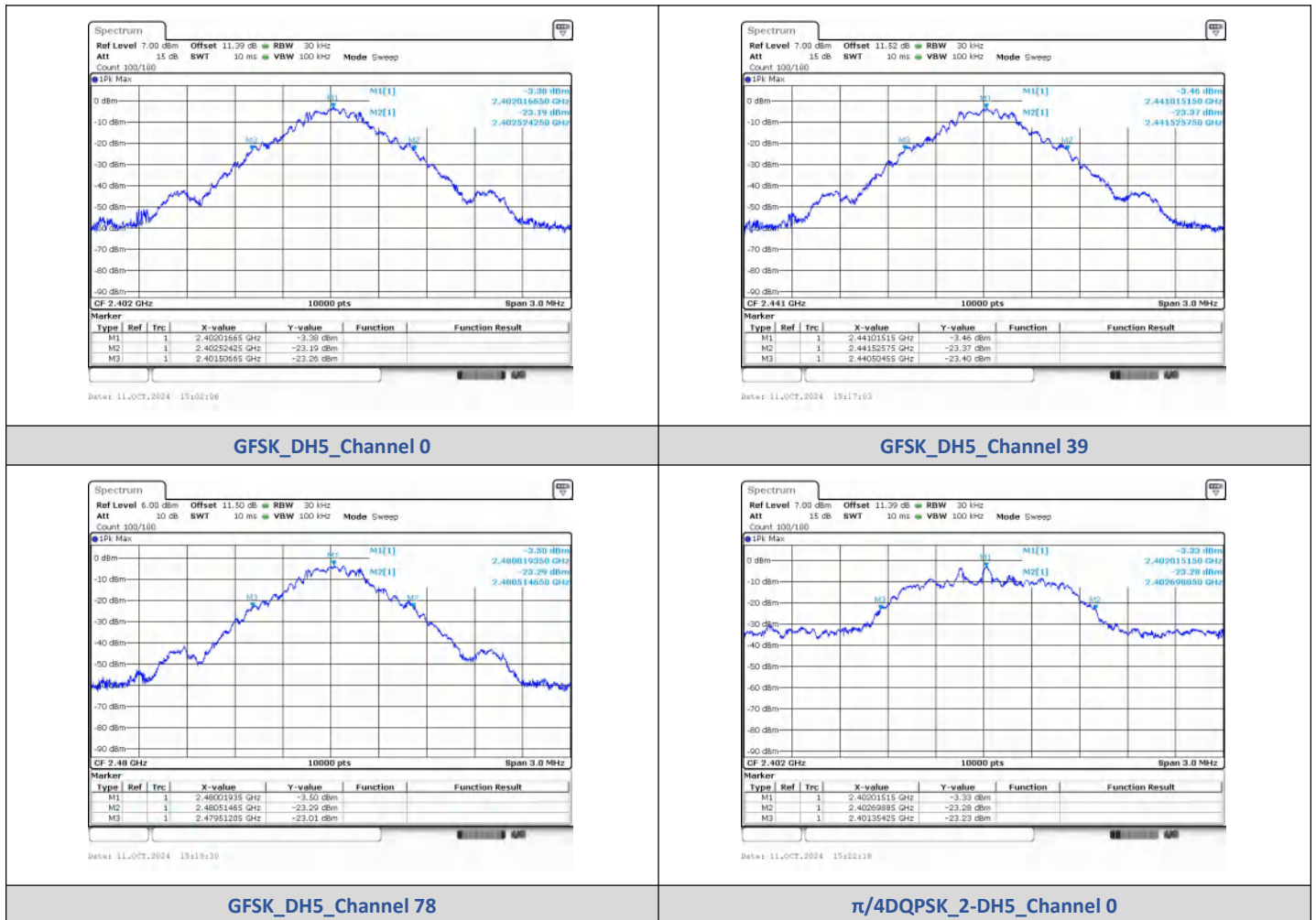
## 6) 20dB Bandwidth

### Test Result

Left:

| Modulation    | Channel | Center Frequency (MHz) | 20 dB Bandwidth (MHz) |
|---------------|---------|------------------------|-----------------------|
| GFSK          | 0       | 2402 MHz               | 1.010                 |
|               | 39      | 2441 MHz               | 1.030                 |
|               | 78      | 2480 MHz               | 1.000                 |
| $\pi/4$ DQPSK | 0       | 2402 MHz               | 1.350                 |
|               | 39      | 2441 MHz               | 1.330                 |
|               | 78      | 2480 MHz               | 1.320                 |
| 8DPSK         | 0       | 2402 MHz               | 1.310                 |
|               | 39      | 2441 MHz               | 1.310                 |
|               | 78      | 2480 MHz               | 1.300                 |

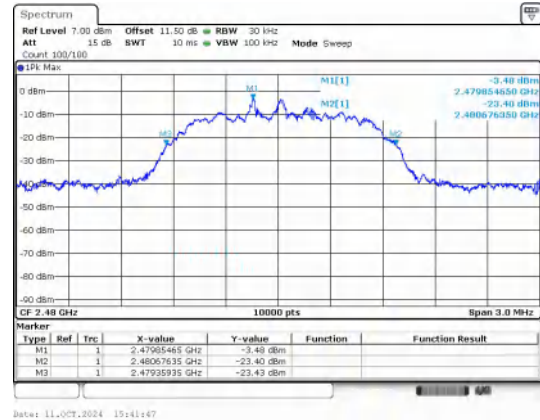
### Test Graphs



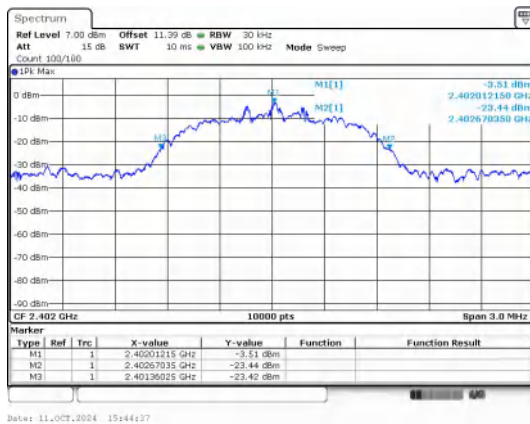




$\pi/4$ DQPSK\_2-DH5\_Channel 39



$\pi/4$ DQPSK\_2-DH5\_Channel 78



8DPSK\_3-DH5\_Channel 0



8DPSK\_3-DH5\_Channel 39

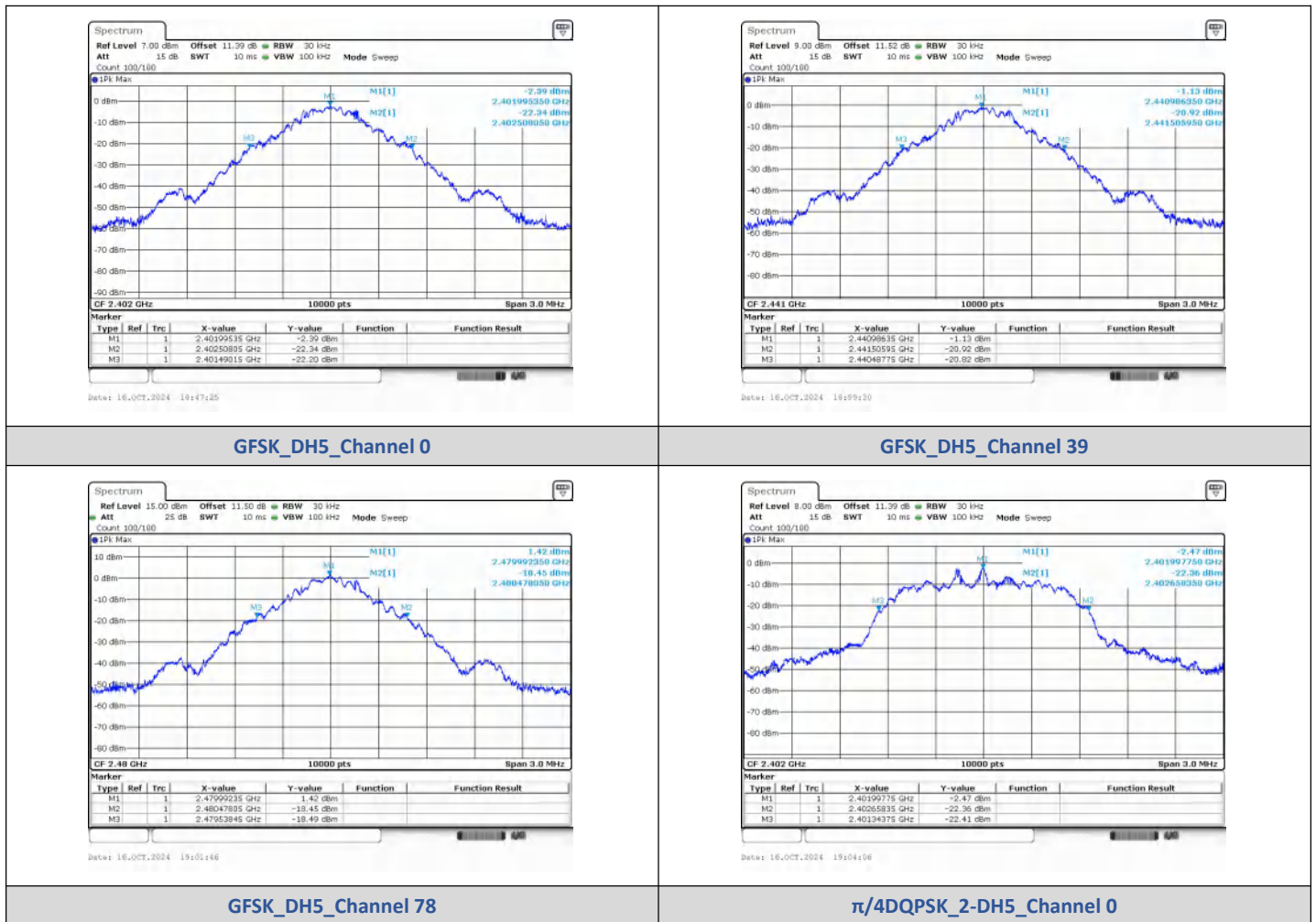


8DPSK\_3-DH5\_Channel 78

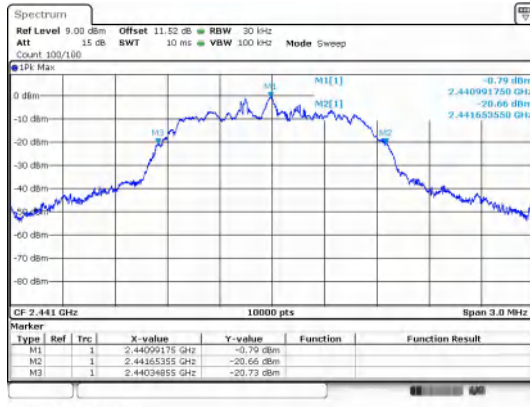
Right:

| Modulation    | Channel | Center Frequency (MHz) | 20 dB Bandwidth (MHz) |
|---------------|---------|------------------------|-----------------------|
| GFSK          | 0       | 2402 MHz               | 1.020                 |
|               | 39      | 2441 MHz               | 1.020                 |
|               | 78      | 2480 MHz               | 0.9400                |
| $\pi/4$ DQPSK | 0       | 2402 MHz               | 1.320                 |
|               | 39      | 2441 MHz               | 1.300                 |
|               | 78      | 2480 MHz               | 1.280                 |
| 8DPSK         | 0       | 2402 MHz               | 1.300                 |
|               | 39      | 2441 MHz               | 1.310                 |
|               | 78      | 2480 MHz               | 1.290                 |

### Test Graphs



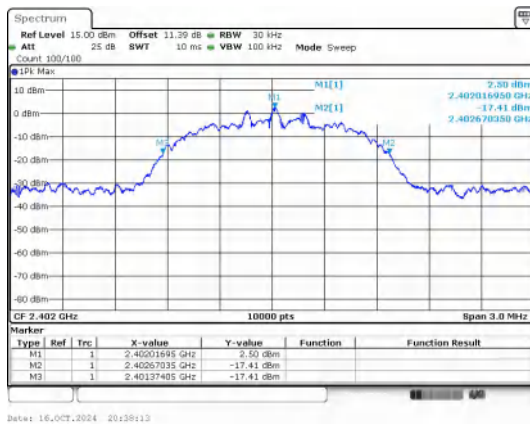




$\pi/4$ DQPSK\_2-DH5\_Channel 39



$\pi/4$ DQPSK\_2-DH5\_Channel 78



8DPSK\_3-DH5\_Channel 0



8DPSK\_3-DH5\_Channel 39



8DPSK\_3-DH5\_Channel 78

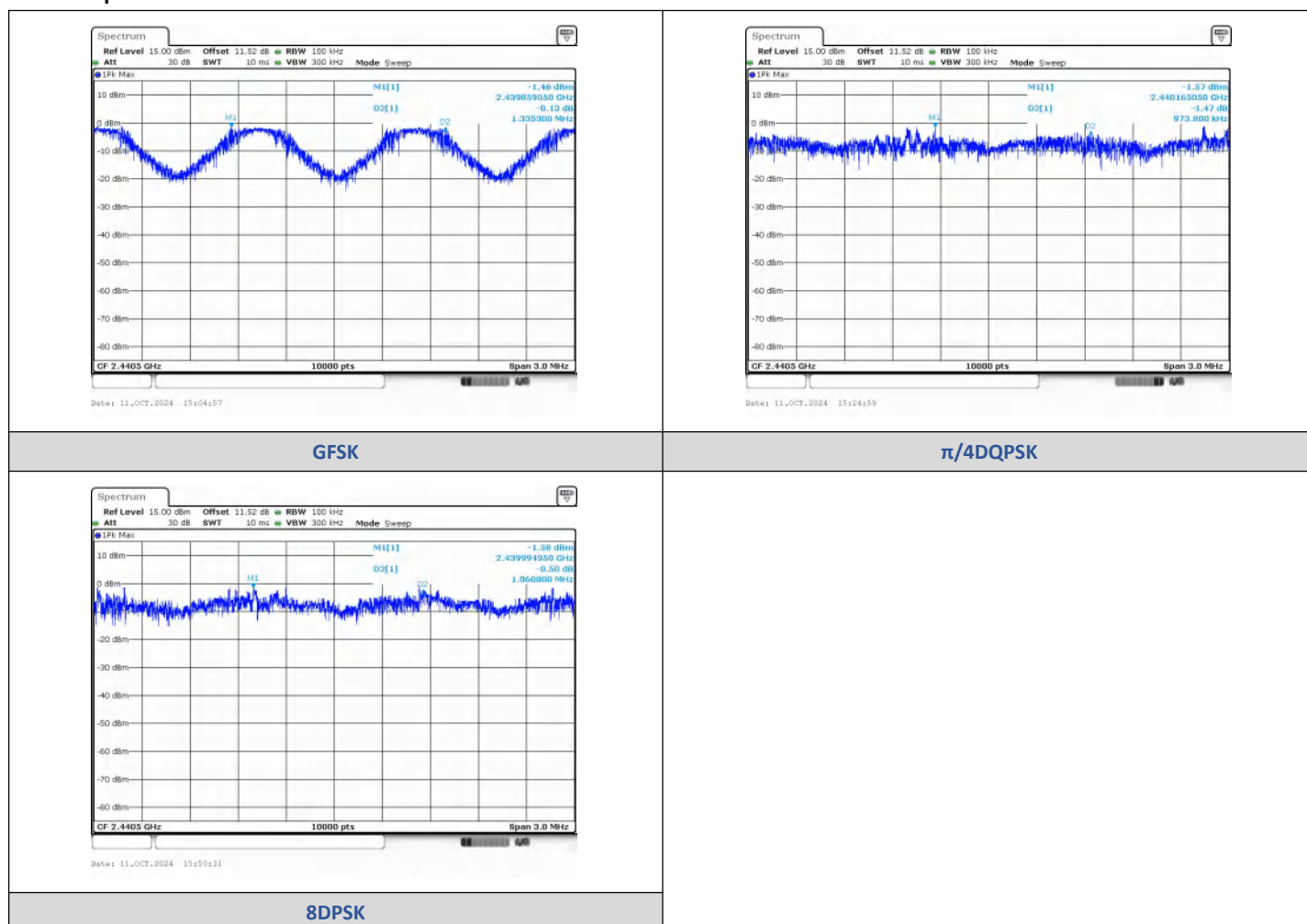
## 7) Carrier Frequencies Separation

### Test Result

Left:

| Modulation    | Packet | Left Center frequency (MHz) | Right Center frequency (MHz) | Hopping Frequency Separation (MHz) | Limit (MHz) | Result |
|---------------|--------|-----------------------------|------------------------------|------------------------------------|-------------|--------|
| GFSK          | DH5    | 2439.8591                   | 2441.1944                    | 1.3353                             | 1.030       | PASS   |
| $\pi/4$ DQPSK | 2-DH5  | 2440.1651                   | 2441.1388                    | 0.9738                             | 0.9         | PASS   |
| 8DPSK         | 3-DH5  | 2439.9949                   | 2441.0557                    | 1.0608                             | 0.873       | PASS   |

### Test Graphs

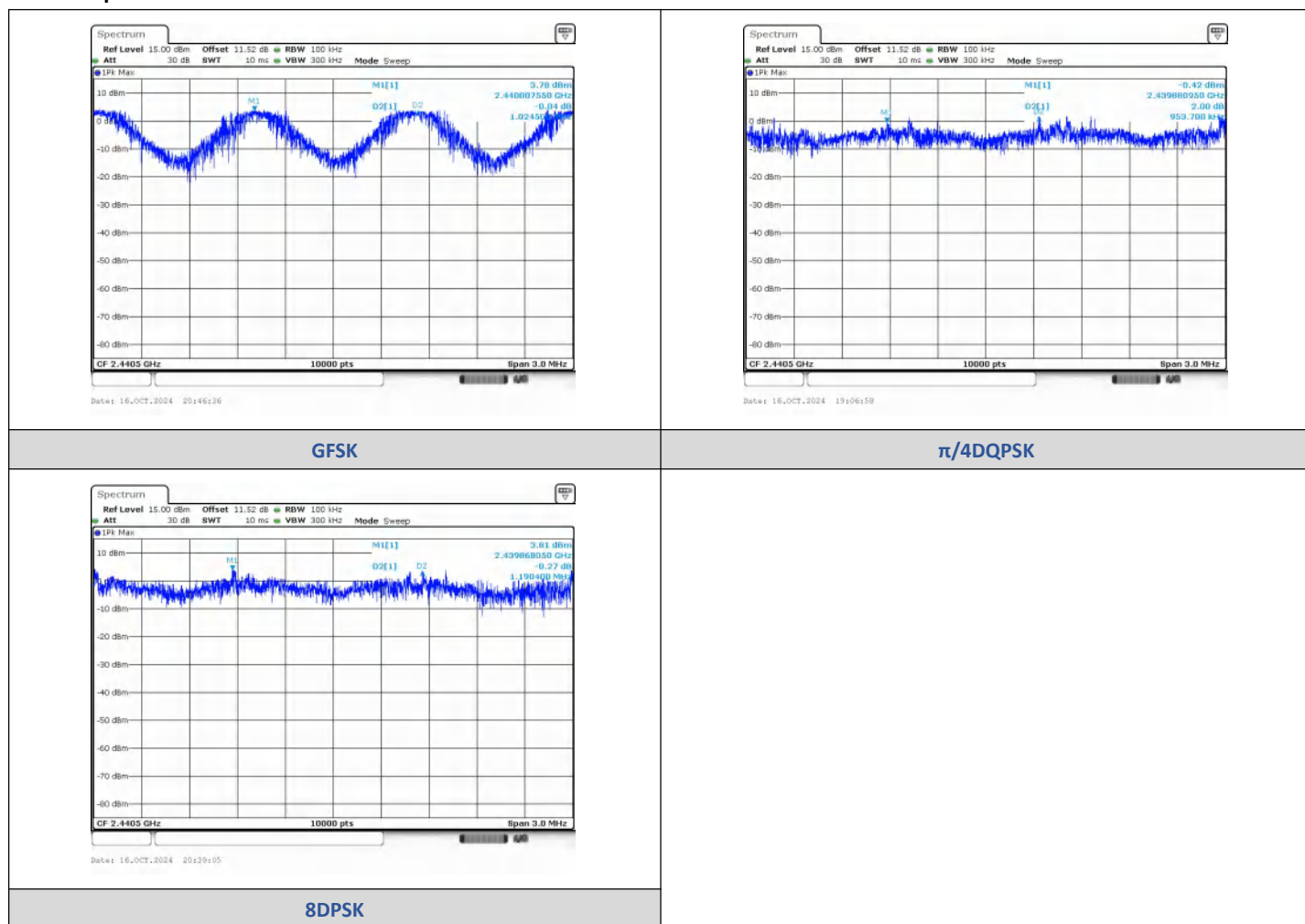


Right:

## Test Result

| Modulation    | Packet | Left Center frequency (MHz) | Right Center frequency (MHz) | Hopping Frequency Separation (MHz) | Limit (MHz) | Result |
|---------------|--------|-----------------------------|------------------------------|------------------------------------|-------------|--------|
| GFSK          | DH5    | 2440.0075                   | 2441.032                     | 1.0245                             | 1.02        | PASS   |
| $\pi/4$ DQPSK | 2-DH5  | 2439.881                    | 2440.8346                    | 0.9537                             | 0.88        | PASS   |
| 8DPSK         | 3-DH5  | 2439.8681                   | 2441.0584                    | 1.1904                             | 0.867       | PASS   |

## Test Graphs



## 8) Conducted Out Of Band Emission

### Test Result

#### Left:

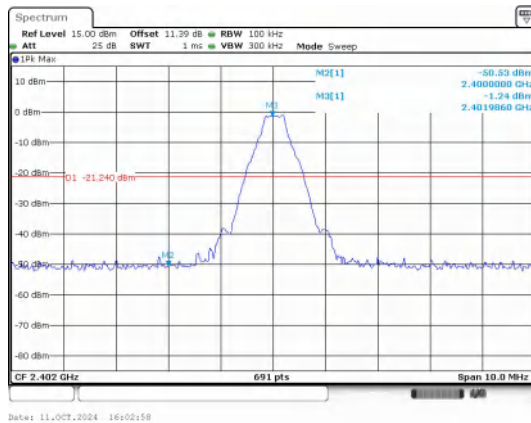
#### Non-Hopping

| Modulation    | Packet | Channel | OOB Emission Frequency (MHz) | OOB Emission Level (dBm) | Limit (dBm) | Over Limit (dB) | Result |
|---------------|--------|---------|------------------------------|--------------------------|-------------|-----------------|--------|
| GFSK          | DH5    | 0       | 2399.00                      | -48.715                  | -21.24      | -27.475         | PASS   |
|               |        |         | 2400.00                      | -50.531                  | -21.24      | -29.291         | PASS   |
|               |        |         | 7206.80                      | -35.924                  | -21.24      | -14.684         | PASS   |
|               |        | 39      | 9763.72                      | -39.032                  | -21.13      | -17.902         | PASS   |
|               |        | 78      | 2483.50                      | -49.585                  | -21.15      | -28.435         | PASS   |
|               |        |         | 9920.20                      | -38.402                  | -21.15      | -17.252         | PASS   |
| $\pi/4$ DQPSK | 2-DH5  | 0       | 2400.00                      | -41.209                  | -20.89      | -20.319         | PASS   |
|               |        |         | 7205.96                      | -38.442                  | -20.89      | -17.552         | PASS   |
|               |        | 39      | 9763.72                      | -38.721                  | -21.17      | -17.551         | PASS   |
|               |        | 78      | 2483.50                      | -50.526                  | -21.23      | -29.296         | PASS   |
|               |        |         | 9920.20                      | -38.291                  | -21.23      | -17.061         | PASS   |
| 8DPSK         | 3-DH5  | 0       | 2400.00                      | -41.121                  | -20.9       | -20.221         | PASS   |
|               |        |         | 7206.79                      | -32.030                  | -20.9       | -11.130         | PASS   |
|               |        | 39      | 9763.72                      | -39.513                  | -21.29      | -18.223         | PASS   |
|               |        | 78      | 2483.50                      | -50.745                  | -21.33      | -29.416         | PASS   |
|               |        |         | 9920.20                      | -38.736                  | -21.33      | -17.406         | PASS   |

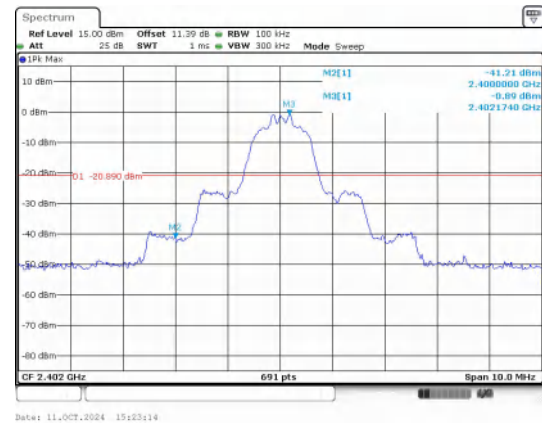
#### Hopping

| Modulation | Packet | Channel | OOB Emission<br>Frequency<br>(MHz) | OOB Emission<br>Level<br>(dBm) | Limit<br>(dBm) | Over Limit<br>(dB) | Result |
|------------|--------|---------|------------------------------------|--------------------------------|----------------|--------------------|--------|
| GFSK       | DH5    | Hopping | 2397.18                            | -48.401                        | -21.09         | -27.311            | PASS   |
|            |        |         | 2400.00                            | -50.832                        | -21.09         | -29.742            | PASS   |
|            |        |         | 2483.50                            | -50.778                        | -21.48         | -29.298            | PASS   |
| π/4DQPSK   | 2-DH5  |         | 2400.00                            | -45.373                        | -22.76         | -22.613            | PASS   |
|            |        |         | 2483.50                            | -50.577                        | -23.14         | -27.437            | PASS   |
| 8DPSK      | 3-DH5  |         | 2400.00                            | -41.729                        | -21.44         | -20.289            | PASS   |
|            |        |         | 2483.50                            | -48.951                        | -21.31         | -27.641            | PASS   |

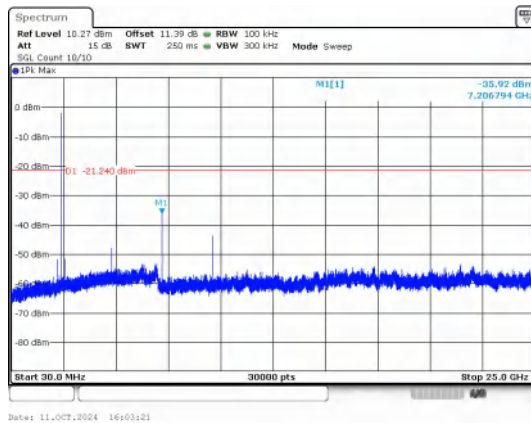
## Test Graphs



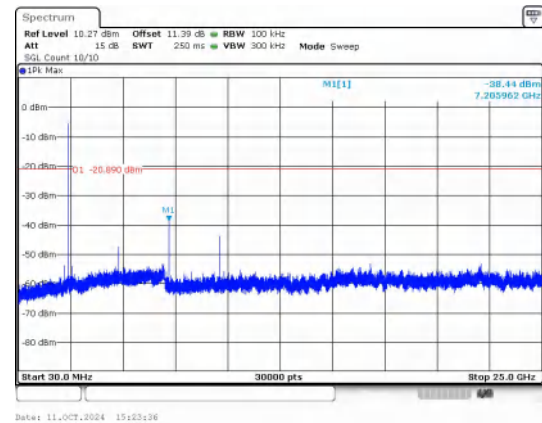
**Out Of Band Emission  
GFSK\_DH5\_Channel 0**



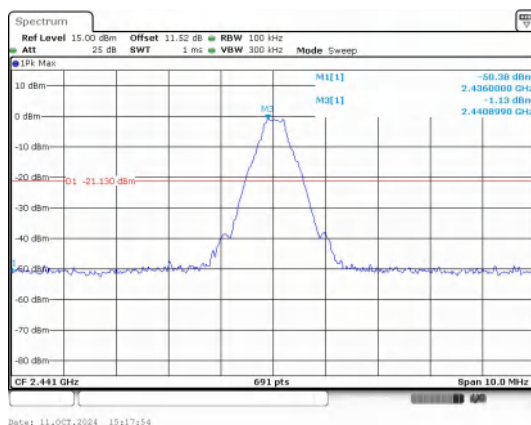
**Out Of Band Emission  
 $\pi/4$ DQPSK\_2-DH5\_Channel 0**



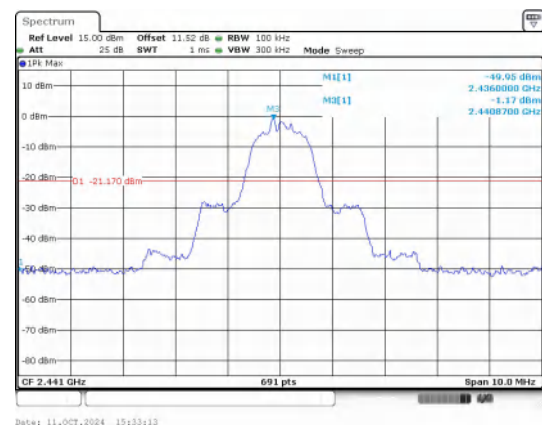
**30.0 MHz - 25000.0 MHz  
GFSK\_DH5\_Channel 0**



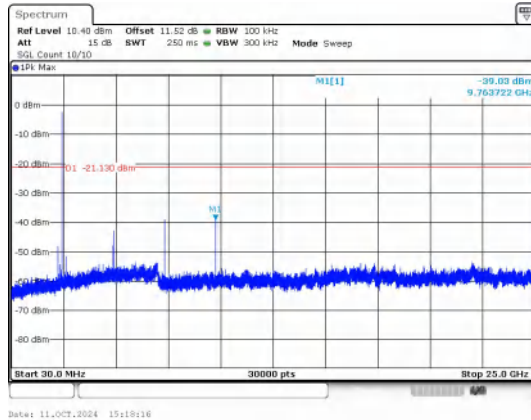
**30.0 MHz - 25000.0 MHz  
 $\pi/4$ DQPSK\_2-DH5\_Channel 0**



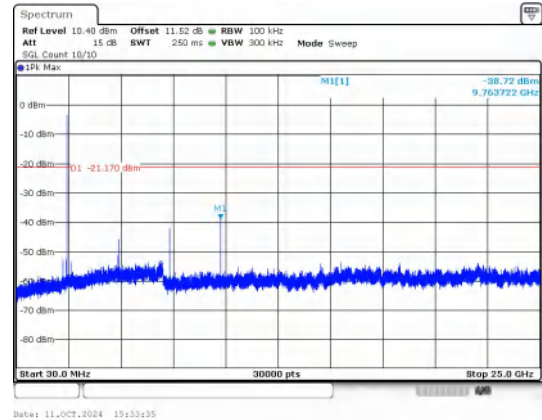
**Out Of Band Emission  
GFSK\_DH5\_Channel 39**



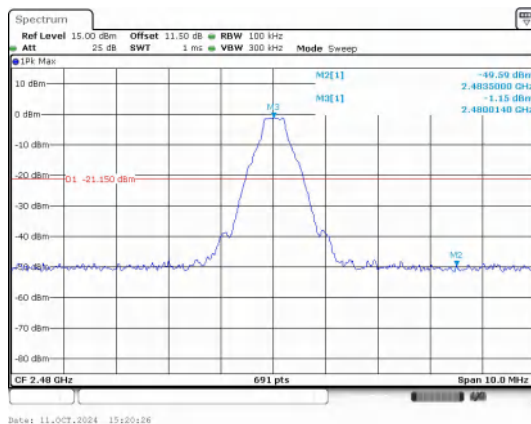
**Out Of Band Emission  
 $\pi/4$ DQPSK\_2-DH5\_Channel 39**



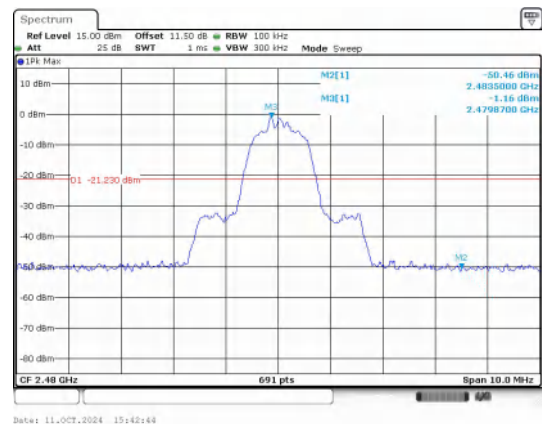
30.0 MHz - 25000.0 MHz  
GFSK\_DH5\_Channel 39



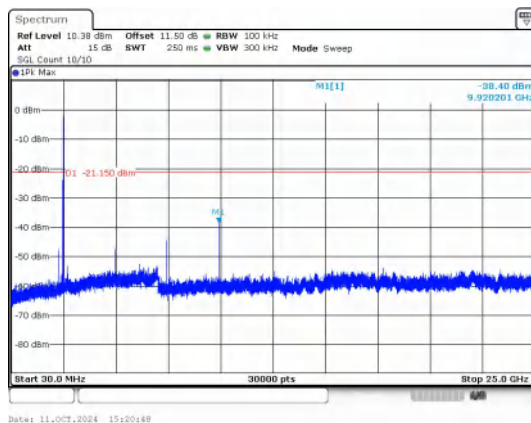
30.0 MHz - 25000.0 MHz  
 $\pi/4$ DQPSK\_2-DH5\_Channel 39



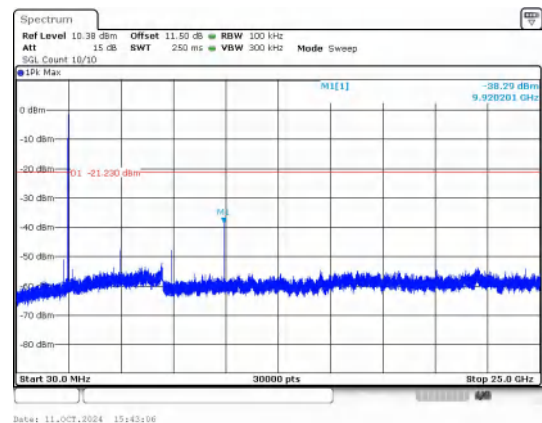
Out Of Band Emission  
GFSK\_DH5\_Channel 78



Out Of Band Emission  
 $\pi/4$ DQPSK\_2-DH5\_Channel 78

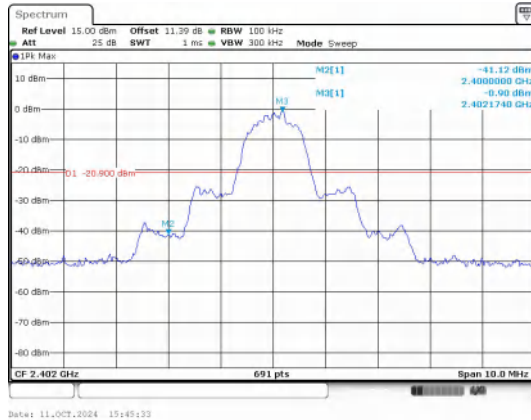


30.0 MHz - 25000.0 MHz  
GFSK\_DH5\_Channel 78

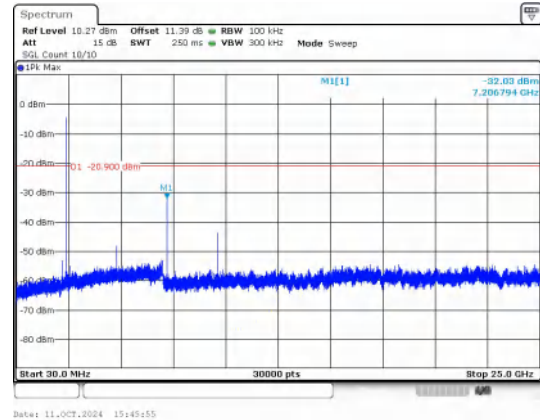


30.0 MHz - 25000.0 MHz  
 $\pi/4$ DQPSK\_2-DH5\_Channel 78

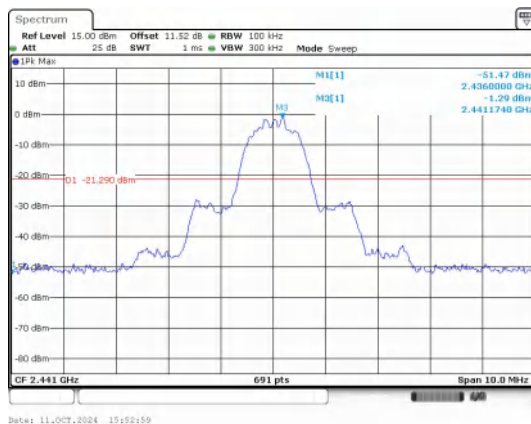




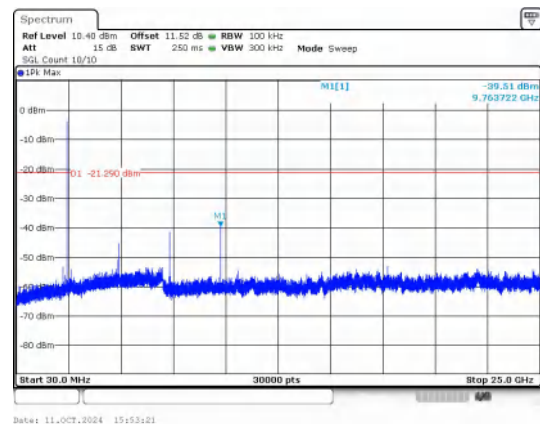
Out Of Band Emission  
8DPSK\_3-DH5\_Channel 0



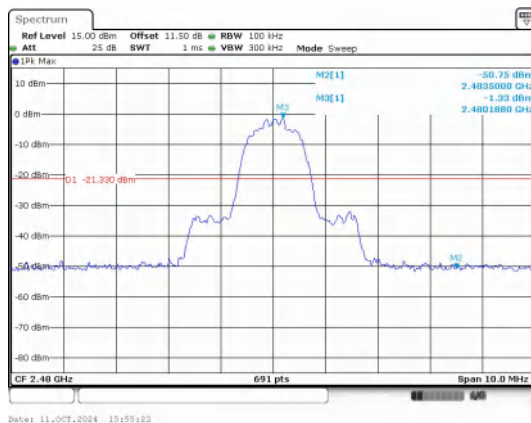
30.0 MHz - 25000.0 MHz  
8DPSK\_3-DH5\_Channel 0



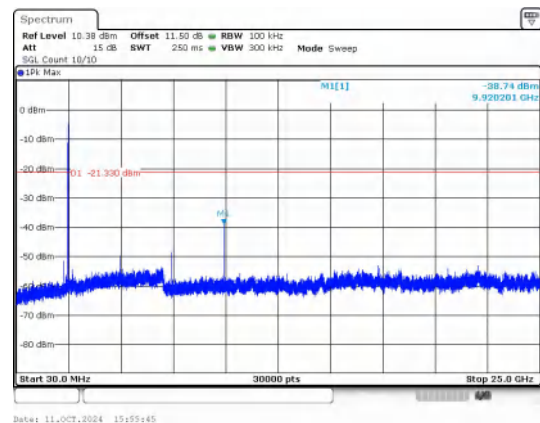
Out Of Band Emission  
8DPSK\_3-DH5\_Channel 39



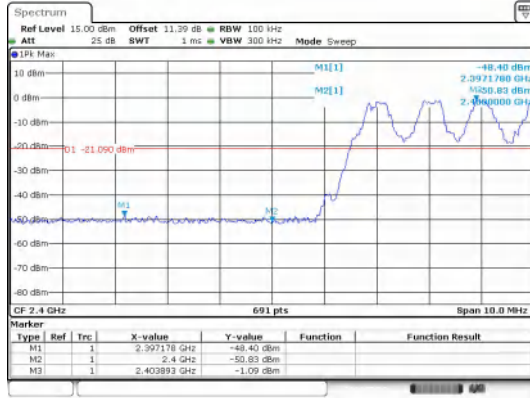
30.0 MHz - 25000.0 MHz  
8DPSK\_3-DH5\_Channel 39



Out Of Band Emission  
8DPSK\_3-DH5\_Channel 78

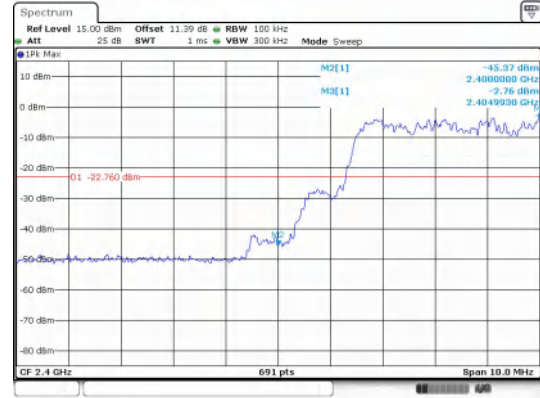


30.0 MHz - 25000.0 MHz  
8DPSK\_3-DH5\_Channel 78



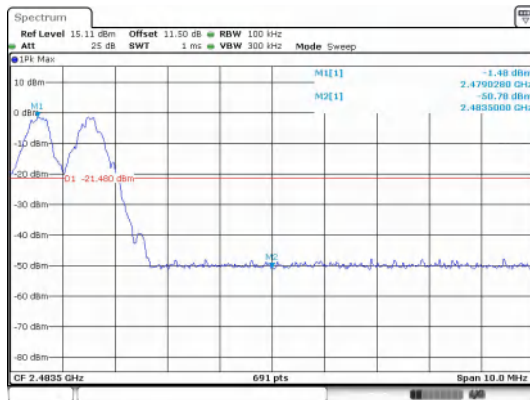
Date: 11.OCT.2024 15:07:25

Out Of Band Emission(Left)  
GFSK\_DH5\_Channel Hopping



Date: 11.OCT.2024 15:28:02

Out Of Band Emission(Left)  
 $\pi/4$ DQPSK\_2-DH5\_Channel Hopping



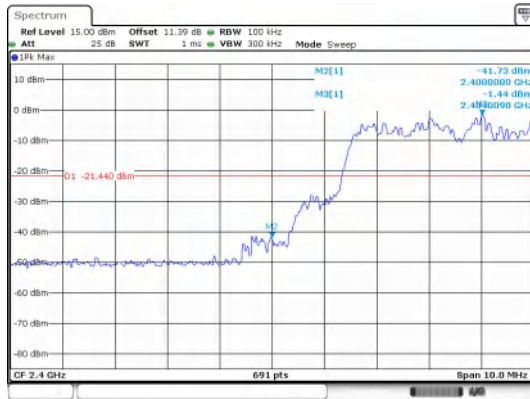
Date: 11.OCT.2024 15:07:46

Out Of Band Emission(Right)  
GFSK\_DH5\_Channel Hopping



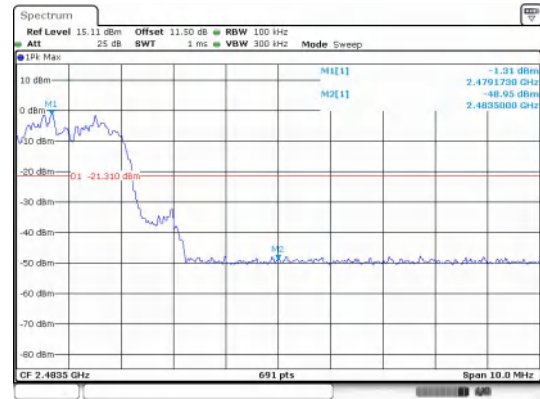
Date: 11.OCT.2024 15:28:26

Out Of Band Emission(Right)  
 $\pi/4$ DQPSK\_2-DH5\_Channel Hopping



Date: 11.OCT.2024 15:49:57

Out Of Band Emission(Left)  
8DPSK\_3-DH5\_Channel Hopping



Date: 11.OCT.2024 15:49:48

Out Of Band Emission(Right)  
8DPSK\_3-DH5\_Channel Hopping

Right:  
Test Result  
Non-Hopping

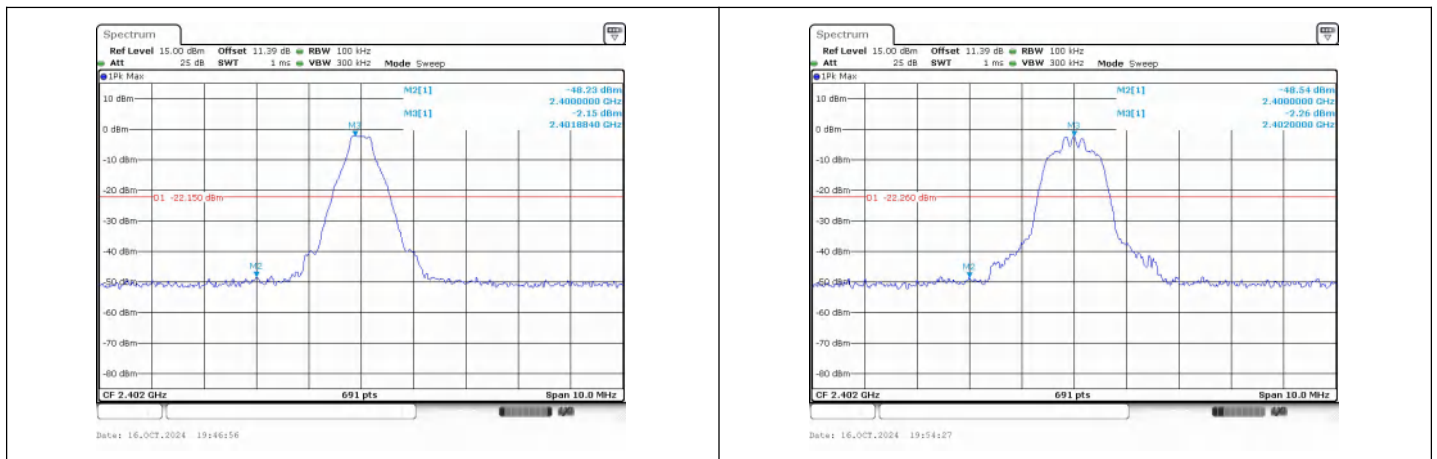
| Modulation | Packet | Channel | OOB Emission | OOB Emission | Limit | Over Limit | Result |
|------------|--------|---------|--------------|--------------|-------|------------|--------|
|------------|--------|---------|--------------|--------------|-------|------------|--------|

|               |       |    | Frequency<br>(MHz) | Level<br>(dBm) | (dBm)  | (dB)    |      |
|---------------|-------|----|--------------------|----------------|--------|---------|------|
| GFSK          | DH5   | 0  | 2400.00            | -48.323        | -22.15 | -26.173 | PASS |
|               |       |    | 9608.08            | -43.601        | -22.15 | -21.451 | PASS |
|               |       | 39 | 9763.72            | -42.789        | -20.68 | -22.109 | PASS |
|               |       | 78 | 2483.50            | -50.974        | -19.94 | -31.034 | PASS |
|               |       |    | 9920.20            | -44.569        | -19.94 | -24.629 | PASS |
| $\pi$ /4DQPSK | 2-DH5 | 0  | 2400.00            | -48.540        | -22.26 | -26.280 | PASS |
|               |       |    | 9608.08            | -43.774        | -22.26 | -21.514 | PASS |
|               |       | 39 | 9763.72            | -42.426        | -20.64 | -21.786 | PASS |
|               |       | 78 | 2483.50            | -50.364        | -19.89 | -30.474 | PASS |
|               |       |    | 9920.20            | -44.019        | -19.89 | -24.129 | PASS |
| 8DPSK         | 3-DH5 | 0  | 2400.00            | -48.653        | -22.03 | -26.623 | PASS |
|               |       |    | 7205.96            | -44.584        | -22.03 | -22.554 | PASS |
|               |       | 39 | 9763.72            | -43.564        | -20.18 | -23.384 | PASS |
|               |       | 78 | 2483.50            | -50.447        | -22.52 | -27.927 | PASS |
|               |       |    | 9920.20            | -46.614        | -22.52 | -24.094 | PASS |

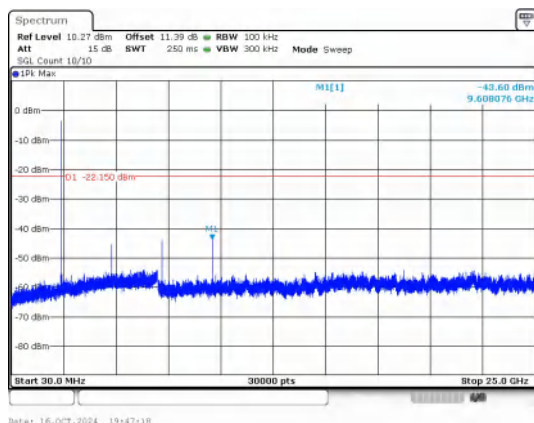
## Hopping

| Modulation    | Packet | Channel | OOB Emission<br>Frequency<br>(MHz) | OOB Emission<br>Level<br>(dBm) | Limit<br>(dBm) | Over Limit<br>(dB) | Result |
|---------------|--------|---------|------------------------------------|--------------------------------|----------------|--------------------|--------|
| GFSK          | DH5    | Hopping | 2397.87                            | -47.768                        | -19.74         | -28.028            | PASS   |
|               |        |         | 2400.00                            | -48.908                        | -19.74         | -29.168            | PASS   |
|               |        |         | 2483.50                            | -47.563                        | -16.68         | -30.883            | PASS   |
| $\pi$ /4DQPSK | 2-DH5  |         | 2397.63                            | -48.440                        | -19.85         | -28.590            | PASS   |
|               |        |         | 2400.00                            | -50.187                        | -19.85         | -30.337            | PASS   |
|               |        |         | 2483.50                            | -48.573                        | -16.66         | -31.913            | PASS   |
| 8DPSK         | 3-DH5  |         | 2398.49                            | -48.805                        | -15.89         | -32.915            | PASS   |
|               |        |         | 2400.00                            | -50.241                        | -15.89         | -34.351            | PASS   |
|               |        |         | 2483.50                            | -50.716                        | -17.51         | -33.206            | PASS   |

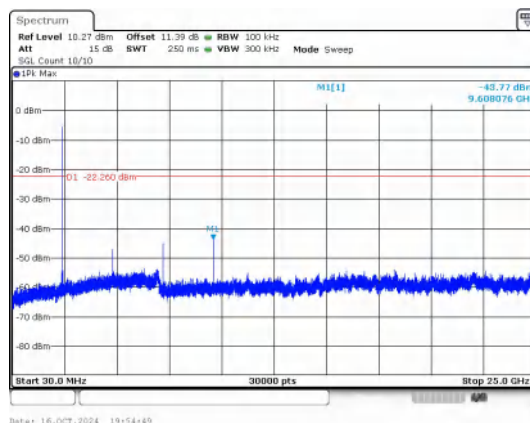
## Test Graphs



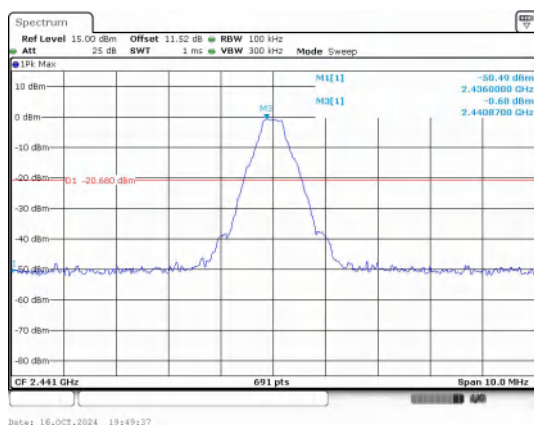
Out Of Band Emission  
GFSK\_DH5\_Channel 0



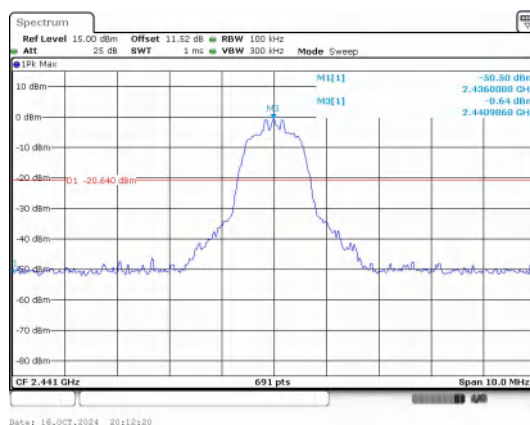
Out Of Band Emission  
 $\pi/4$ DQPSK\_2-DH5\_Channel 0



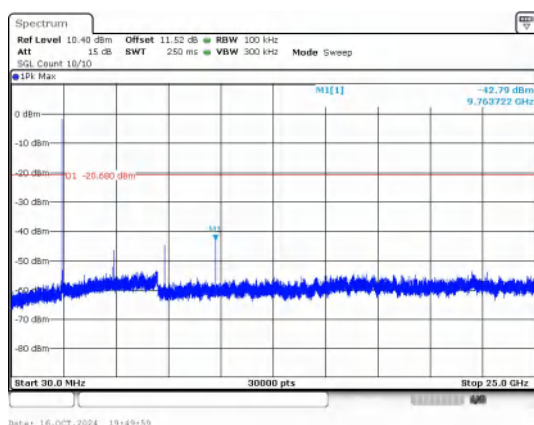
30.0 MHz - 25000.0 MHz  
GFSK\_DH5\_Channel 0



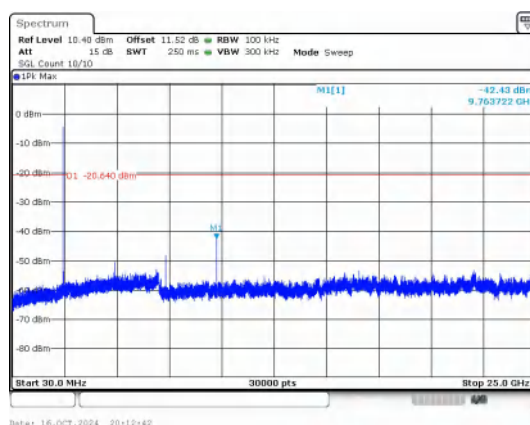
30.0 MHz - 25000.0 MHz  
 $\pi/4$ DQPSK\_2-DH5\_Channel 0



Out Of Band Emission  
GFSK\_DH5\_Channel 39

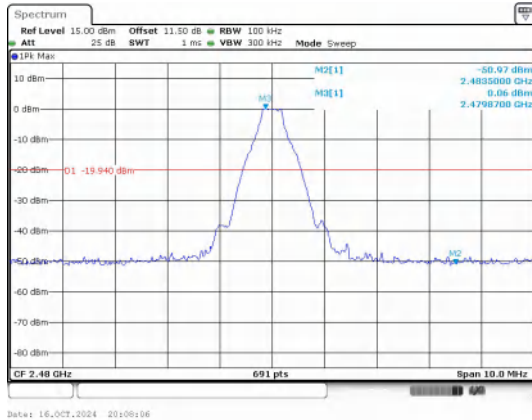


Out Of Band Emission  
 $\pi/4$ DQPSK\_2-DH5\_Channel 39

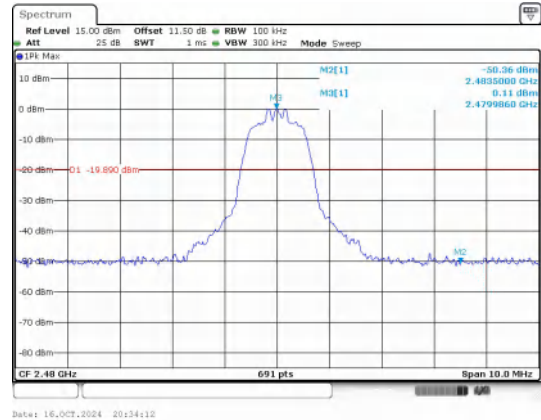


30.0 MHz - 25000.0 MHz  
GFSK\_DH5\_Channel 39

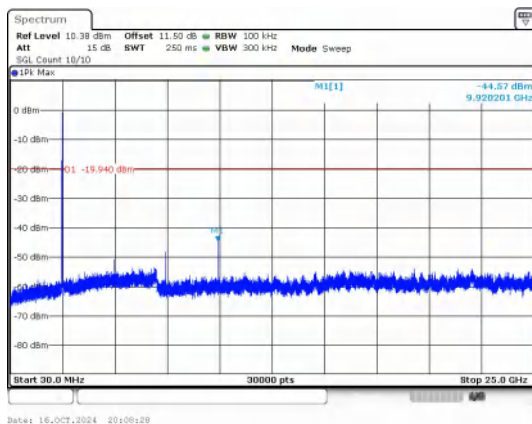
30.0 MHz - 25000.0 MHz  
 $\pi/4$ DQPSK\_2-DH5\_Channel 39



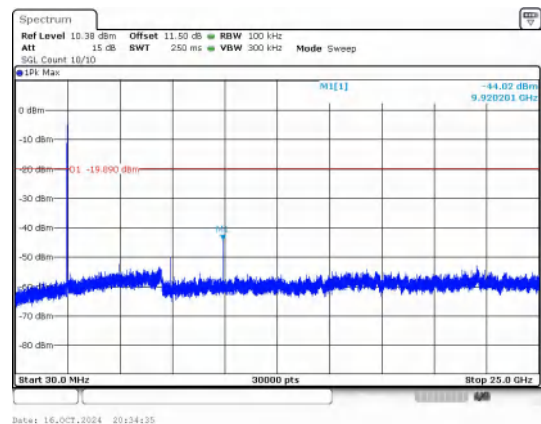
Out Of Band Emission  
GFSK\_DH5\_Channel 78



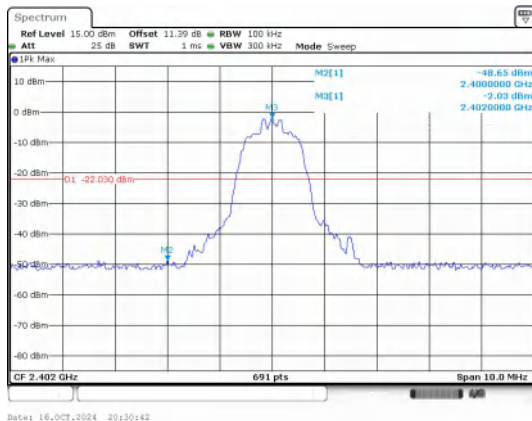
Out Of Band Emission  
 $\pi/4$ DQPSK\_2-DH5\_Channel 78



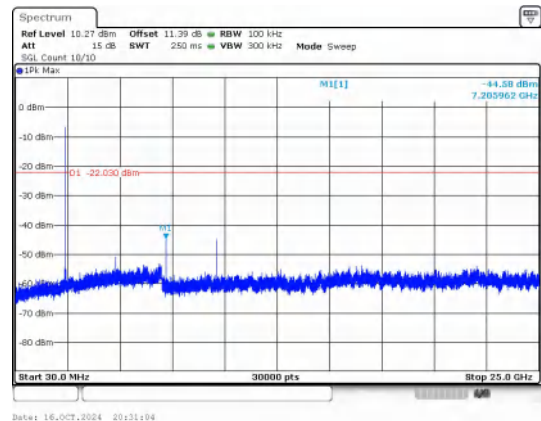
30.0 MHz - 25000.0 MHz  
GFSK\_DH5\_Channel 78



30.0 MHz - 25000.0 MHz  
 $\pi/4$ DQPSK\_2-DH5\_Channel 78

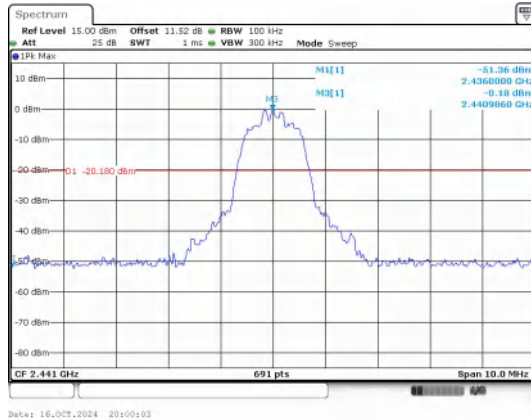


Out Of Band Emission  
8DPSK\_3-DH5\_Channel 0

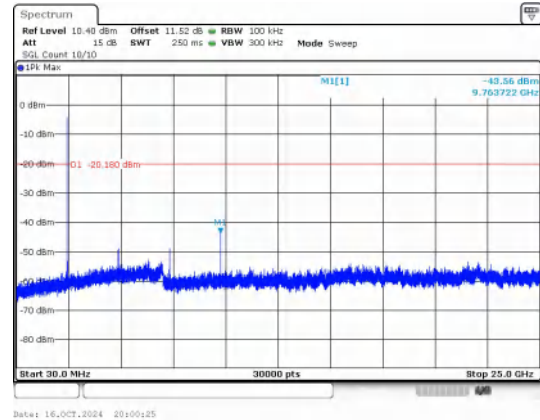


30.0 MHz - 25000.0 MHz  
8DPSK\_3-DH5\_Channel 0

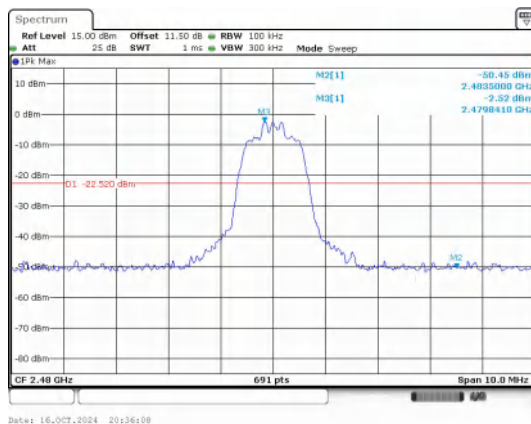




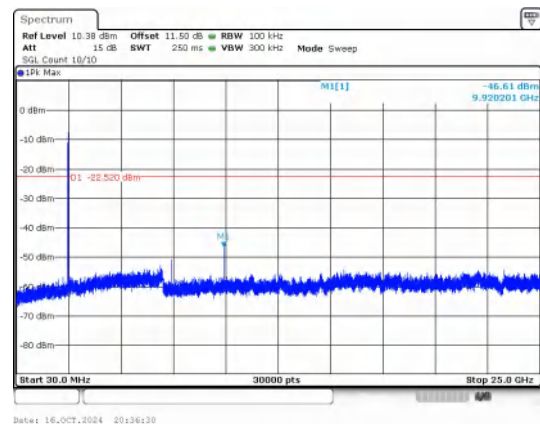
Out Of Band Emission  
8DPSK\_3-DH5\_Channel 39



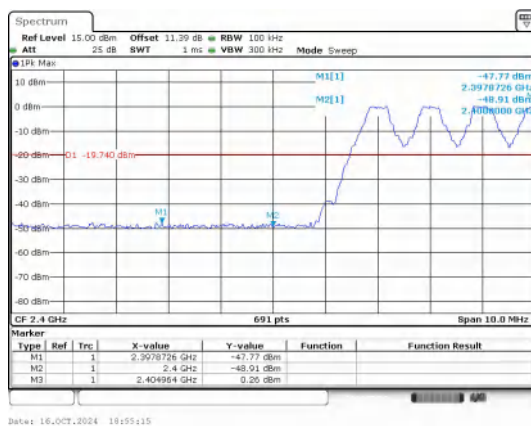
30.0 MHz - 25000.0 MHz  
8DPSK\_3-DH5\_Channel 39



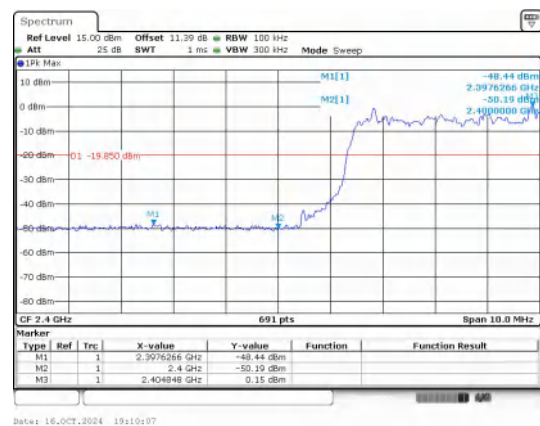
Out Of Band Emission  
8DPSK\_3-DH5\_Channel 78



30.0 MHz - 25000.0 MHz  
8DPSK\_3-DH5\_Channel 78

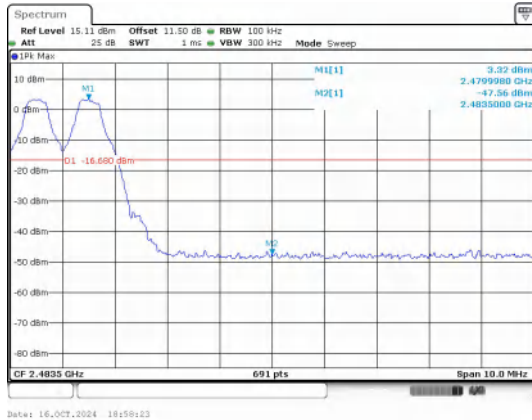


Out Of Band Emission(Left)  
GFSK\_DH5\_Channel Hopping

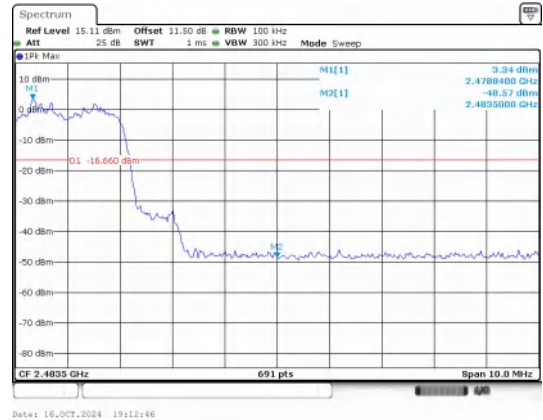


Out Of Band Emission(Left)  
 $\pi/4$ DQPSK\_2-DH5\_Channel Hopping

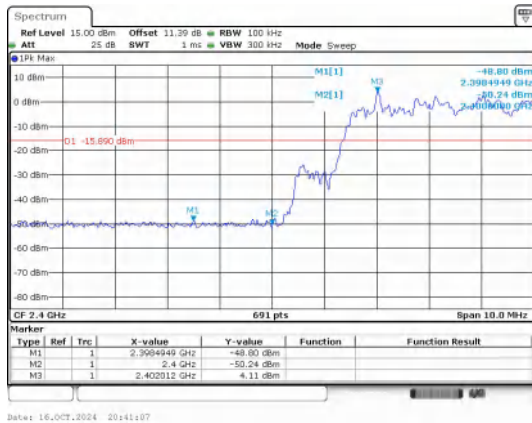




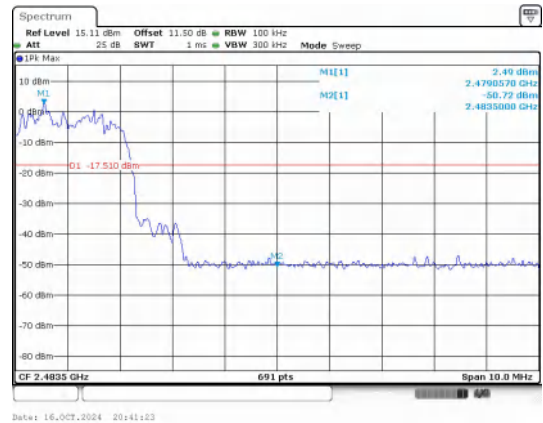
Out Of Band Emission(Right)  
GFSK\_DH5\_Channel Hopping



Out Of Band Emission(Right)  
 $\pi/4$ DQPSK\_2-DH5\_Channel Hopping



Out Of Band Emission(Left)  
8DPSK\_3-DH5\_Channel Hopping



Out Of Band Emission(Right)  
8DPSK\_3-DH5\_Channel Hopping