

## Appendix A

|                |                     |
|----------------|---------------------|
| Report No.:    | CISRR24040202501    |
| FCC ID:        | 2BC25-YINPAGE-FREE1 |
| Product Name:  | Wireless earphone   |
| Model No.:     | YINPAGE Free 1      |
| Test Engineer: | Lucas Huang         |
| Supervised by: | Rory Huang          |

## Conducted Peak Output Power

### Test Result

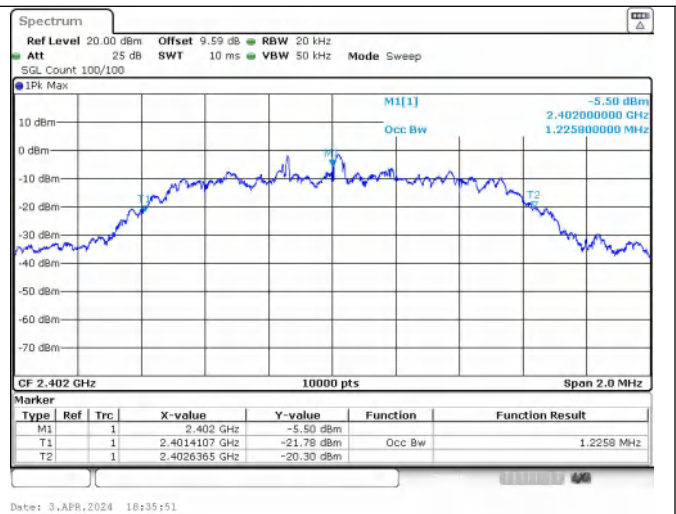
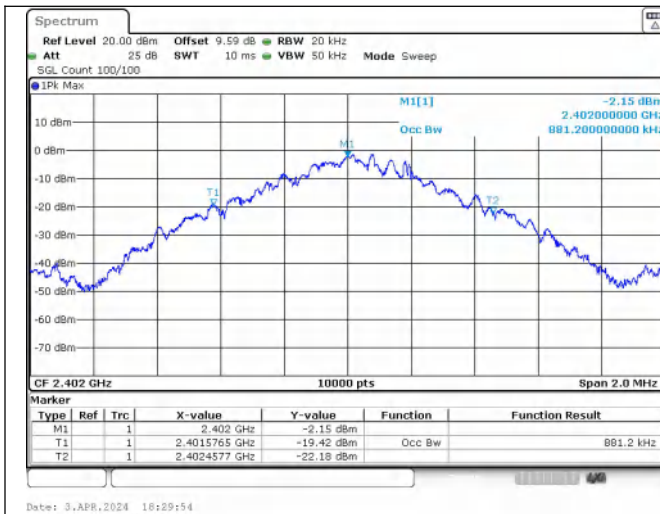
| Modulation    | Packet Type | Channel | Peak Output Power (dBm) | Peak Output Power (mW) | Limit (dBm) | Result |
|---------------|-------------|---------|-------------------------|------------------------|-------------|--------|
| GFSK          | DH5         | 0       | 2.428                   | 1.749                  | 30          | PASS   |
|               |             | 39      | 2.982                   | 1.987                  |             | PASS   |
|               |             | 78      | 3.330                   | 2.153                  |             | PASS   |
| $\pi/4$ DQPSK | 2-DH5       | 0       | 2.975                   | 1.984                  | 20.97       | PASS   |
|               |             | 39      | 3.362                   | 2.169                  |             | PASS   |
|               |             | 78      | 3.681                   | 2.334                  |             | PASS   |
| 8DPSK         | 3-DH5       | 0       | 3.079                   | 2.032                  |             | PASS   |
|               |             | 39      | 3.467                   | 2.222                  |             | PASS   |
|               |             | 78      | 3.788                   | 2.392                  |             | PASS   |

## 99% Bandwidth

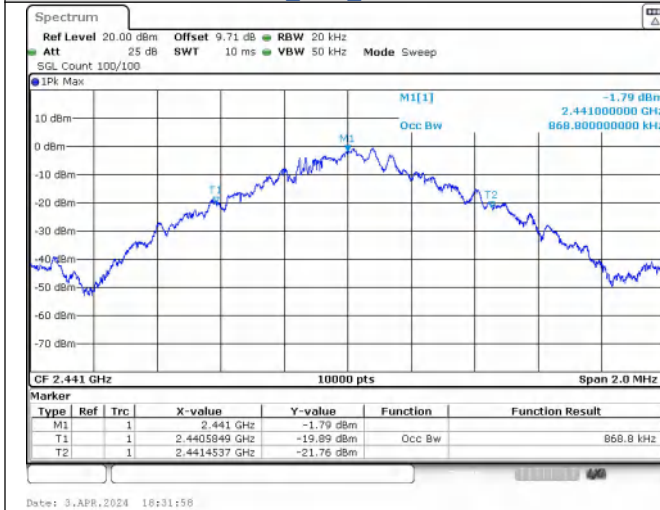
### Test Result

| Modulation    | Channel | 99% BW (MHz) |
|---------------|---------|--------------|
| GFSK          | 0       | 0.88120      |
|               | 39      | 0.86880      |
|               | 78      | 0.85940      |
| $\pi/4$ DQPSK | 0       | 1.2260       |
|               | 39      | 1.2350       |
|               | 78      | 1.2250       |
| 8DPSK         | 0       | 1.2340       |
|               | 39      | 1.2300       |
|               | 78      | 1.2230       |

### Test Graphs

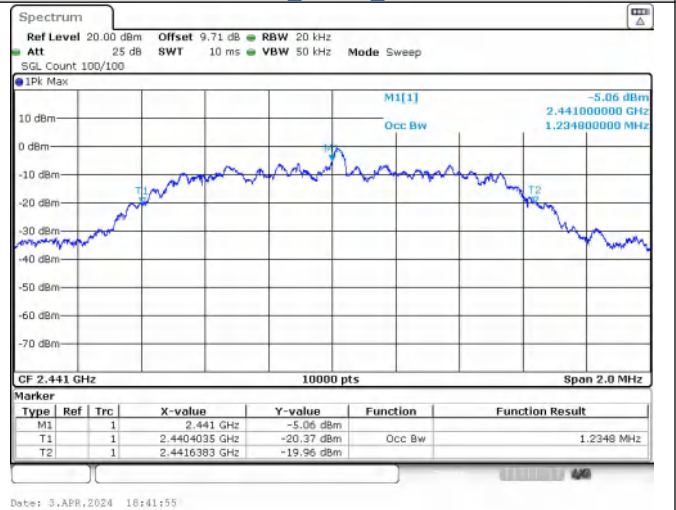


#### GFSK\_DH5\_Channel 0

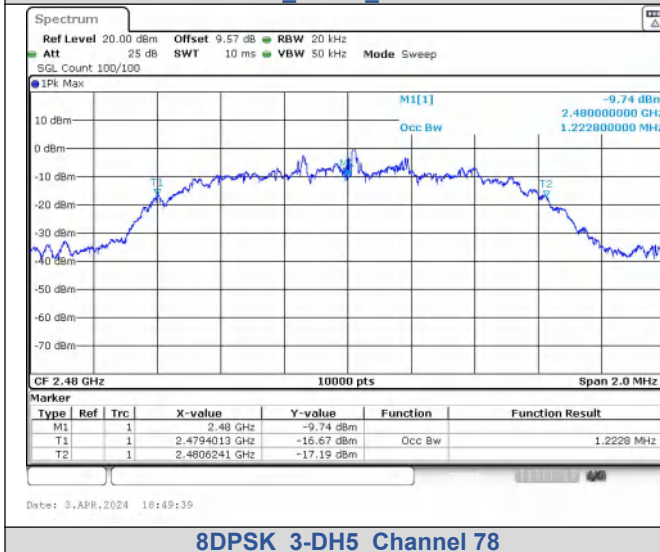
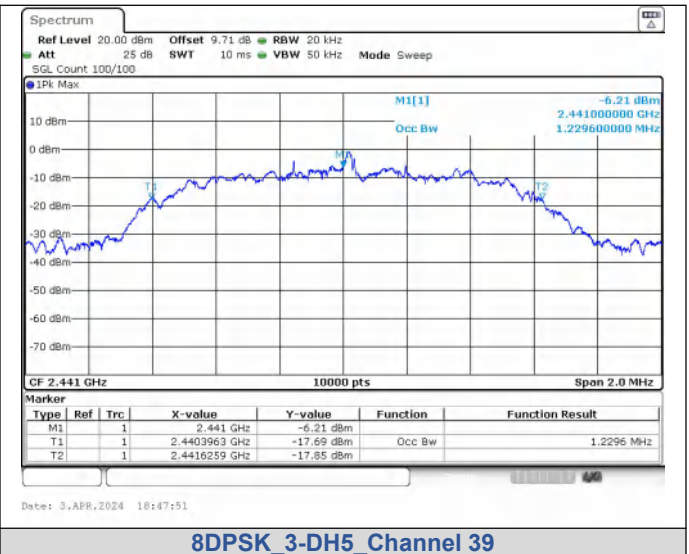
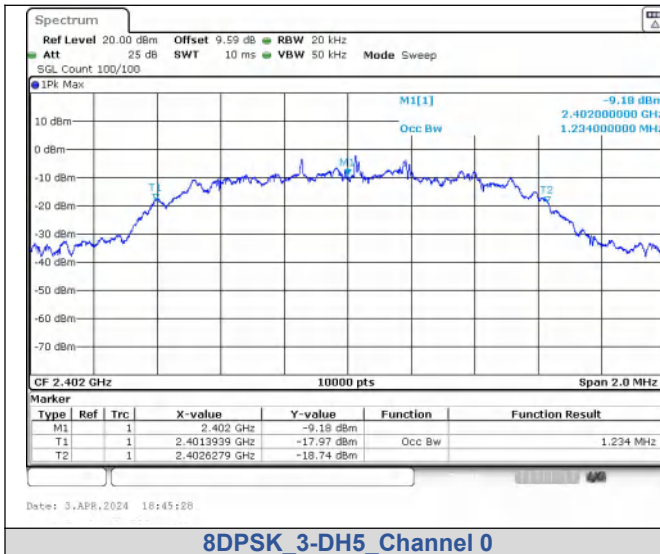
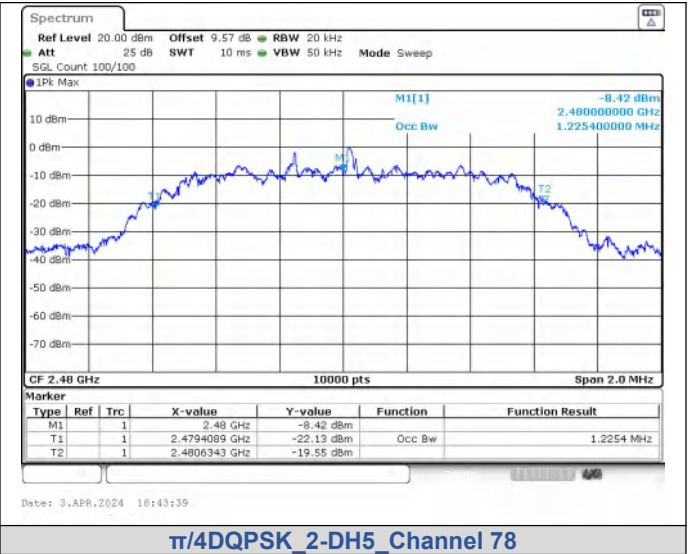
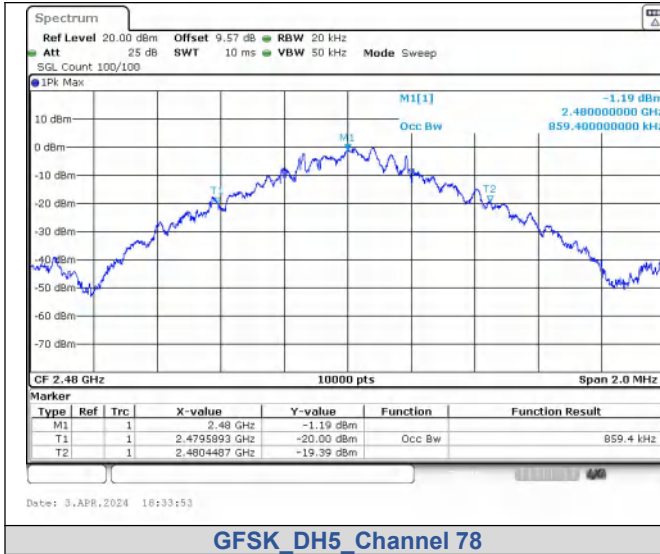


#### GFSK\_DH5\_Channel 39

#### $\pi/4$ DQPSK\_2-DH5\_Channel 0



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

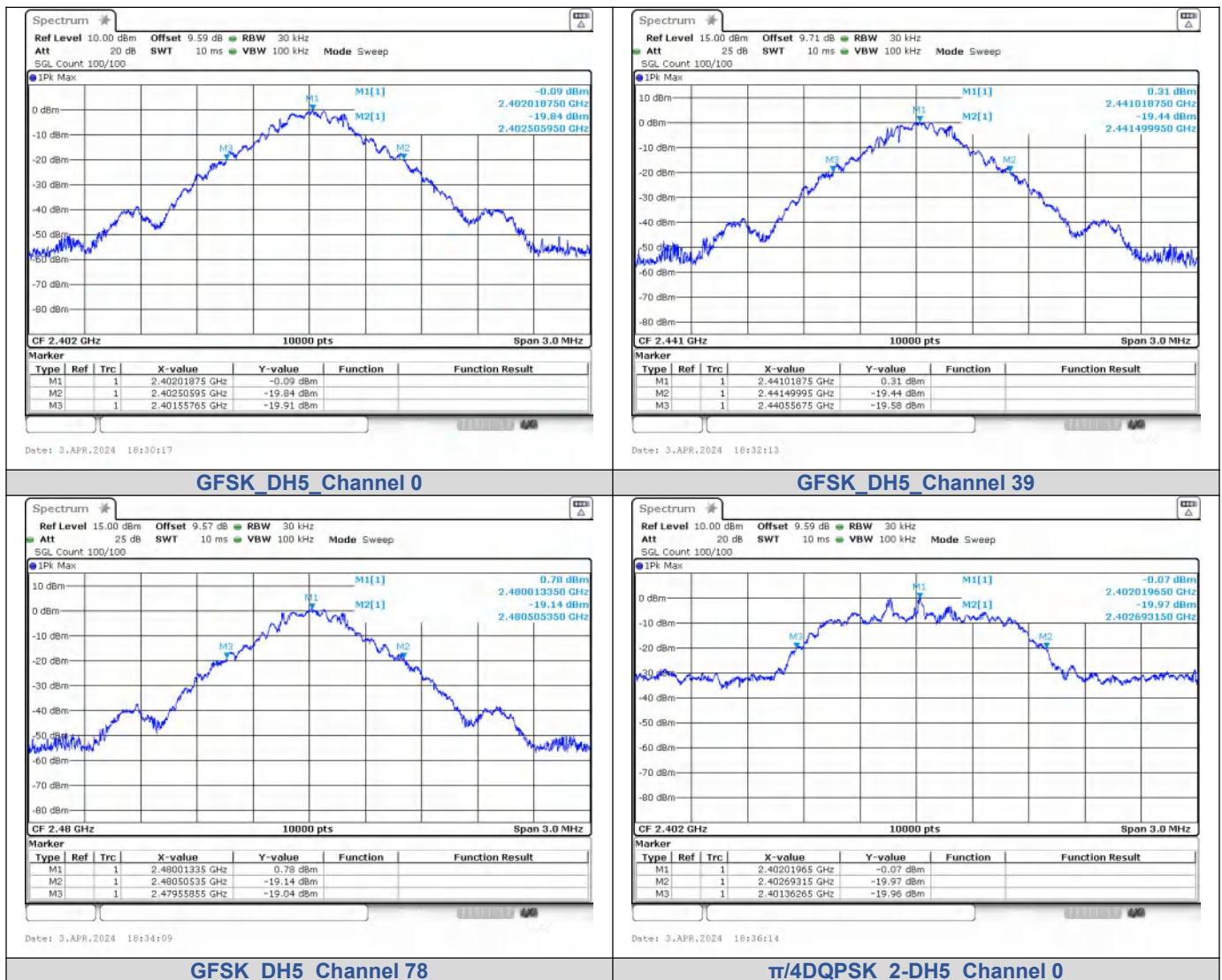


## 20dB Bandwidth

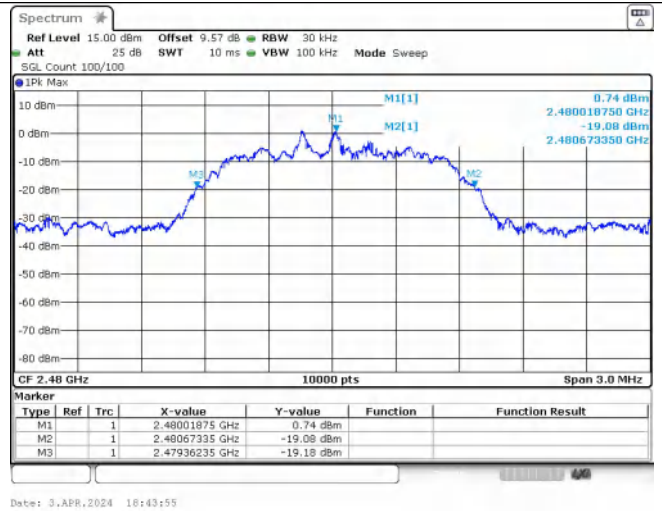
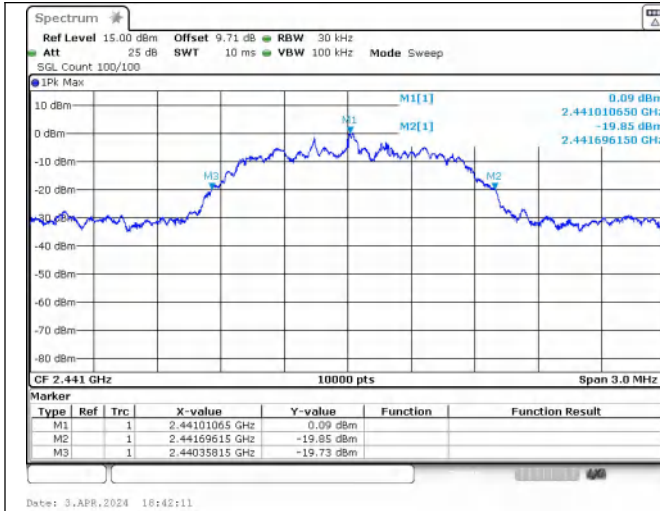
### Test Result

| Modulation    | Channel | Center Frequency (MHz) | 20 dB Bandwidth (MHz) |
|---------------|---------|------------------------|-----------------------|
| GFSK          | 0       | 2402 MHz               | 0.9500                |
|               | 39      | 2441 MHz               | 0.9400                |
|               | 78      | 2480 MHz               | 0.9500                |
| $\pi/4$ DQPSK | 0       | 2402 MHz               | 1.330                 |
|               | 39      | 2441 MHz               | 1.340                 |
|               | 78      | 2480 MHz               | 1.310                 |
| 8DPSK         | 0       | 2402 MHz               | 1.340                 |
|               | 39      | 2441 MHz               | 1.310                 |
|               | 78      | 2480 MHz               | 1.310                 |

### Test Graphs



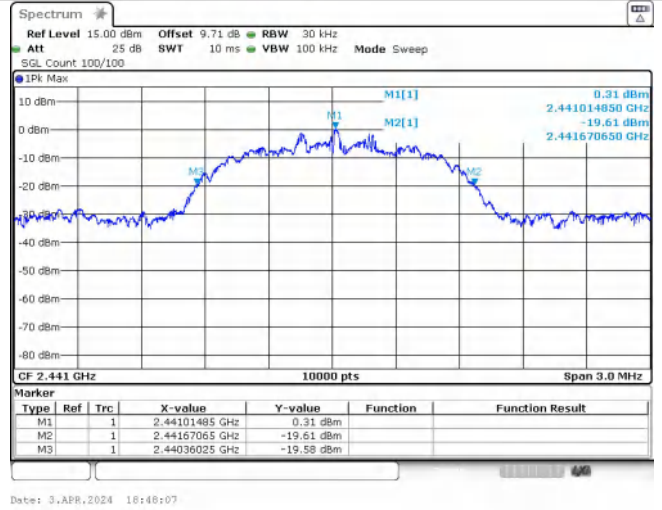




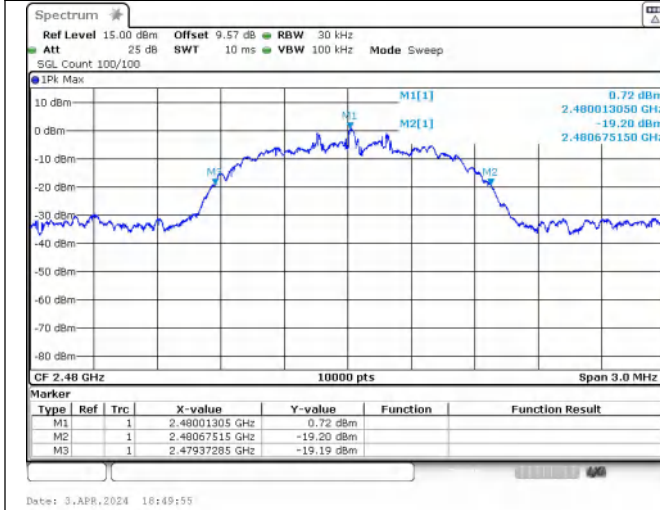
**$\pi/4$ DQPSK\_2-DH5\_Channel 39**



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



**8DPSK\_3-DH5\_Channel 0**



**8DPSK\_3-DH5\_Channel 39**



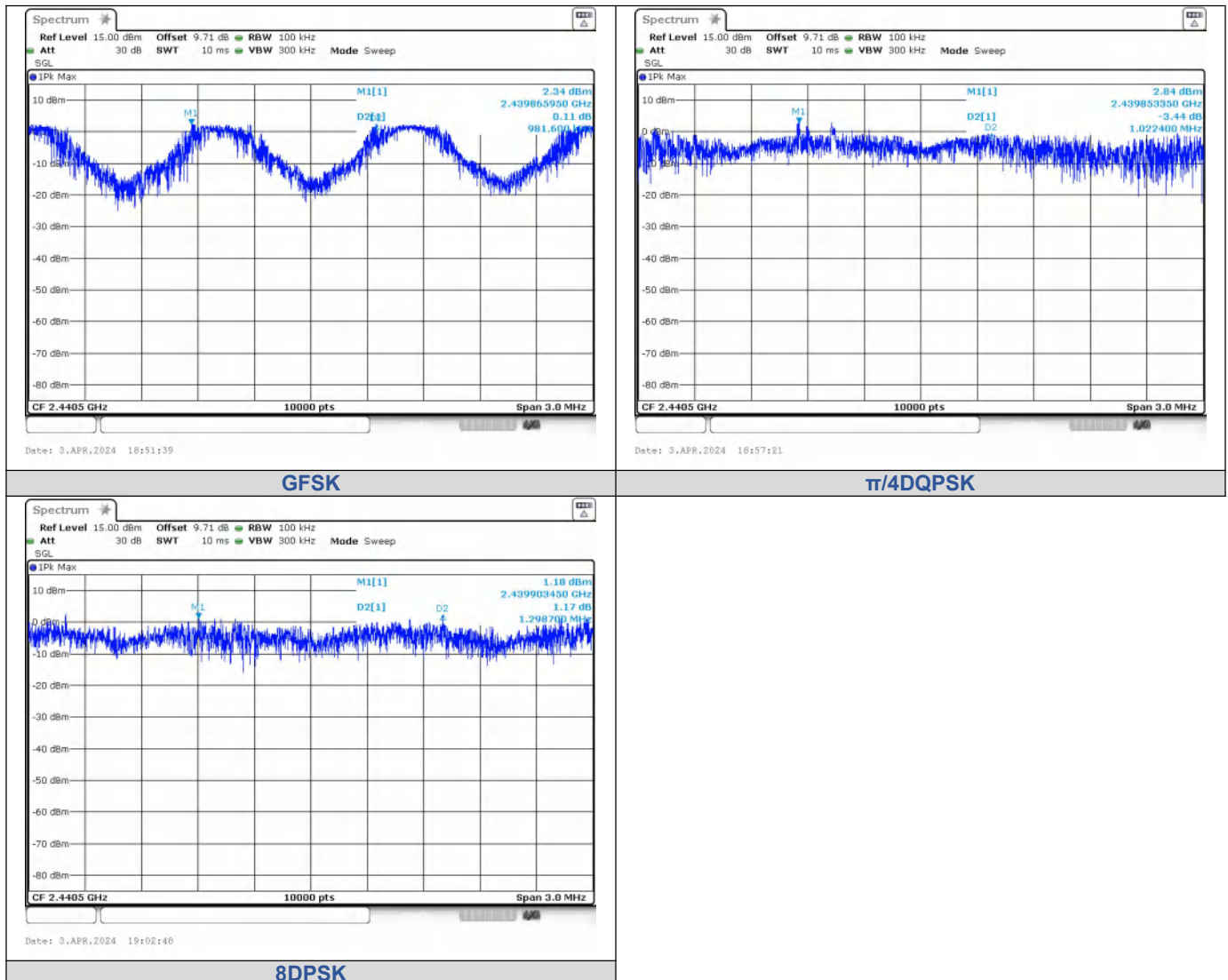
**8DPSK\_3-DH5\_Channel 78**

## Carrier Frequencies Separation

### Test Result

| Modulation    | Packet | Left Center frequency (MHz) | Right Center frequency (MHz) | Hopping Frequency Separation (MHz) | Limit (MHz) | Result |
|---------------|--------|-----------------------------|------------------------------|------------------------------------|-------------|--------|
| GFSK          | DH5    | 2439.8659                   | 2440.8475                    | 0.9816                             | 0.633       | PASS   |
| $\pi/4$ DQPSK | 2-DH5  | 2439.8533                   | 2440.8758                    | 1.0224                             | 0.887       | PASS   |
| 8DPSK         | 3-DH5  | 2439.9034                   | 2441.2022                    | 1.2987                             | 0.893       | PASS   |

### Test Graphs



## Conducted Out Of Band Emission

### Test Result

#### Non-Hopping

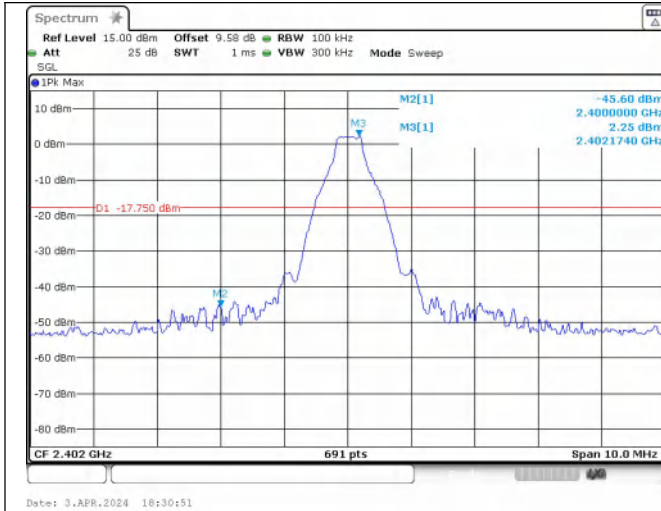
| Modulation    | Packet | Channel | OOB Emission Frequency (MHz) | OOB Emission Level (dBm) | Limit (dBm) | Over Limit (dB) | Result |
|---------------|--------|---------|------------------------------|--------------------------|-------------|-----------------|--------|
| GFSK          | DH5    | 0       | 2400.00                      | -45.599                  | -17.75      | -27.849         | PASS   |
|               |        |         | 7205.96                      | -31.712                  | -17.75      | -13.962         | PASS   |
|               |        | 39      | 7323.32                      | -32.272                  | -17.2       | -15.072         | PASS   |
|               |        | 78      | 2483.50                      | -51.727                  | -16.77      | -34.957         | PASS   |
|               |        |         | 7439.85                      | -34.284                  | -16.77      | -17.514         | PASS   |
| $\pi/4$ DQPSK | 2-DH5  | 0       | 2400.00                      | -45.834                  | -17.6       | -28.234         | PASS   |
|               |        |         | 7205.96                      | -34.268                  | -17.6       | -16.668         | PASS   |
|               |        | 39      | 7322.49                      | -35.809                  | -17.15      | -18.659         | PASS   |
|               |        | 78      | 2483.50                      | -51.683                  | -16.87      | -34.813         | PASS   |
|               |        |         | 9920.20                      | -38.332                  | -16.87      | -21.462         | PASS   |
| 8DPSK         | 3-DH5  | 0       | 2400.00                      | -45.075                  | -17.82      | -27.255         | PASS   |
|               |        |         | 7205.96                      | -36.306                  | -17.82      | -18.486         | PASS   |
|               |        | 39      | 7322.49                      | -35.625                  | -17.32      | -18.305         | PASS   |
|               |        | 78      | 2483.50                      | -51.296                  | -16.82      | -34.476         | PASS   |
|               |        |         | 9920.20                      | -38.603                  | -16.82      | -21.783         | PASS   |

#### Hopping

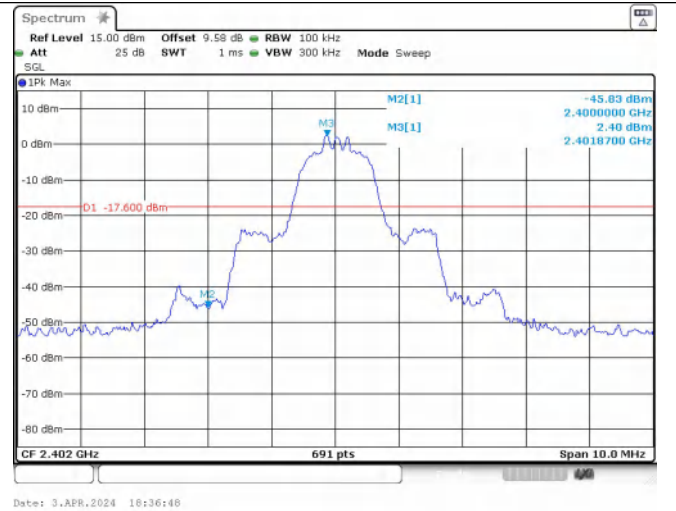
| Modulation | Packet | Channel | OOB Emission Frequency (MHz) | OOB Emission Level (dBm) | Limit (dBm) | Over Limit (dB) | Result |
|------------|--------|---------|------------------------------|--------------------------|-------------|-----------------|--------|
| GFSK       | DH5    | Hopping | 2396.54                      | -49.530                  | -17.85      | -31.680         | PASS   |
|            |        |         | 2400.00                      | -52.442                  | -17.85      | -34.592         | PASS   |
|            |        |         | 2483.50                      | -52.457                  | -16.95      | -35.507         | PASS   |
|            |        |         | 2398.94                      | -49.521                  | -17.79      | -31.731         | PASS   |
|            |        |         | 2400.00                      | -49.735                  | -17.79      | -31.945         | PASS   |
|            |        |         | 2483.50                      | -51.369                  | -17.17      | -34.199         | PASS   |
| π/4DQPSK   | 2-DH5  |         | 2400.00                      | -46.048                  | -18.07      | -27.978         | PASS   |
|            |        |         | 2483.50                      | -51.559                  | -16.78      | -34.779         | PASS   |
|            |        |         | 2398.67                      | -49.617                  | -19.25      | -30.367         | PASS   |
|            |        |         | 2400.00                      | -50.057                  | -19.25      | -30.807         | PASS   |
|            |        |         | 2483.50                      | -51.181                  | -17.5       | -33.681         | PASS   |
| 8DPSK      | 3-DH5  |         | 2395.98                      | -50.745                  | -14.86      | -35.885         | PASS   |
|            |        |         | 2400.00                      | -51.783                  | -14.86      | -36.923         | PASS   |
|            |        |         | 2483.50                      | -50.564                  | -15.76      | -34.804         | PASS   |
|            |        |         | 2400.00                      | -49.436                  | -14.87      | -34.566         | PASS   |
|            |        |         | 2483.50                      | -50.818                  | -16.05      | -34.768         | PASS   |

### Test Graphs

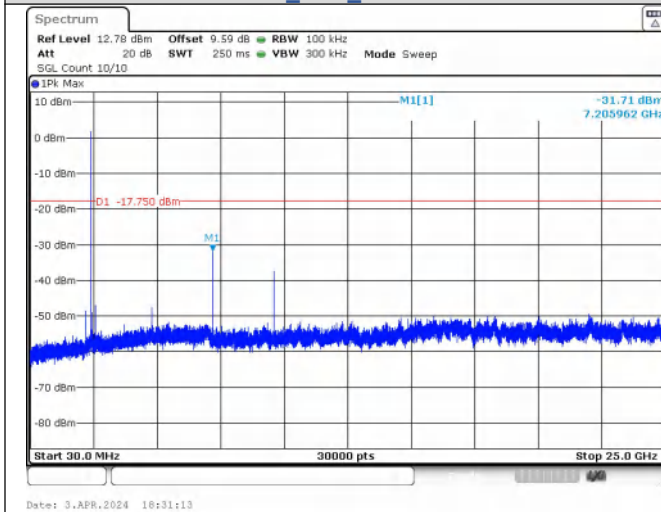




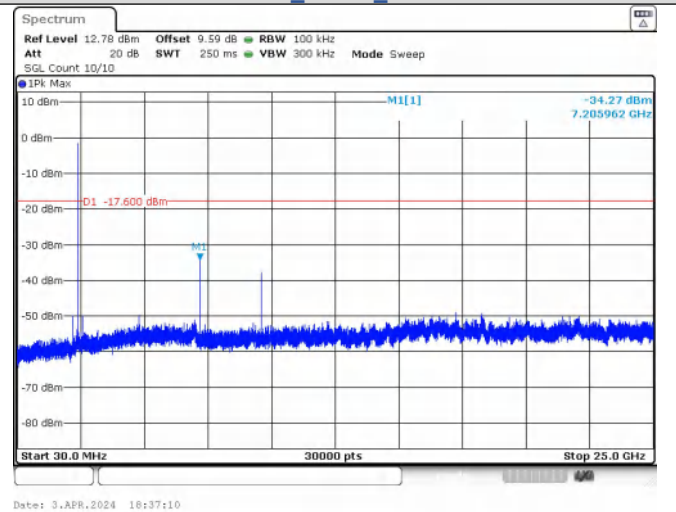
**Out Of Band Emission  
GFSK\_DH5\_Channel 0**



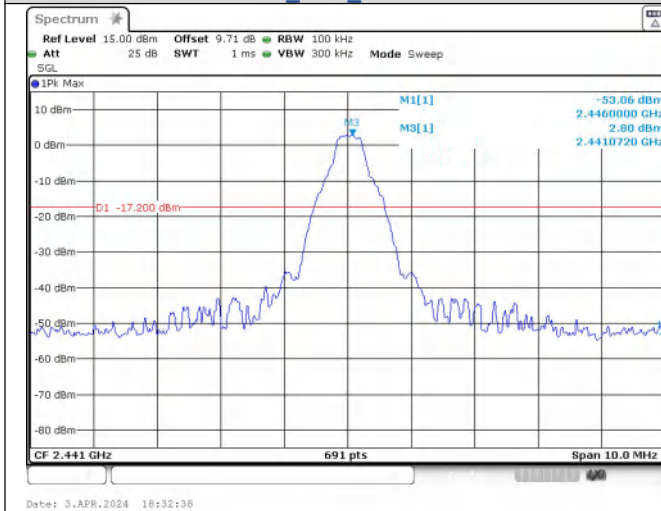
**Out Of Band Emission  
 $\pi/4$ DQPSK\_2-DH5\_Channel 0**



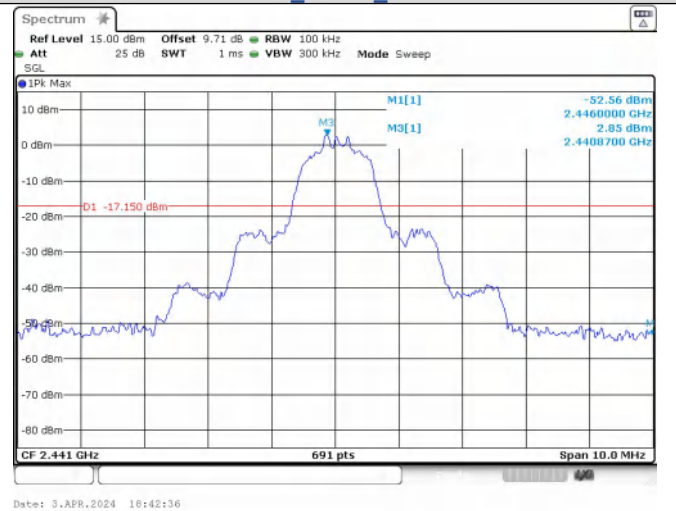
**Spurious Emission  
GFSK\_DH5\_Channel 0**



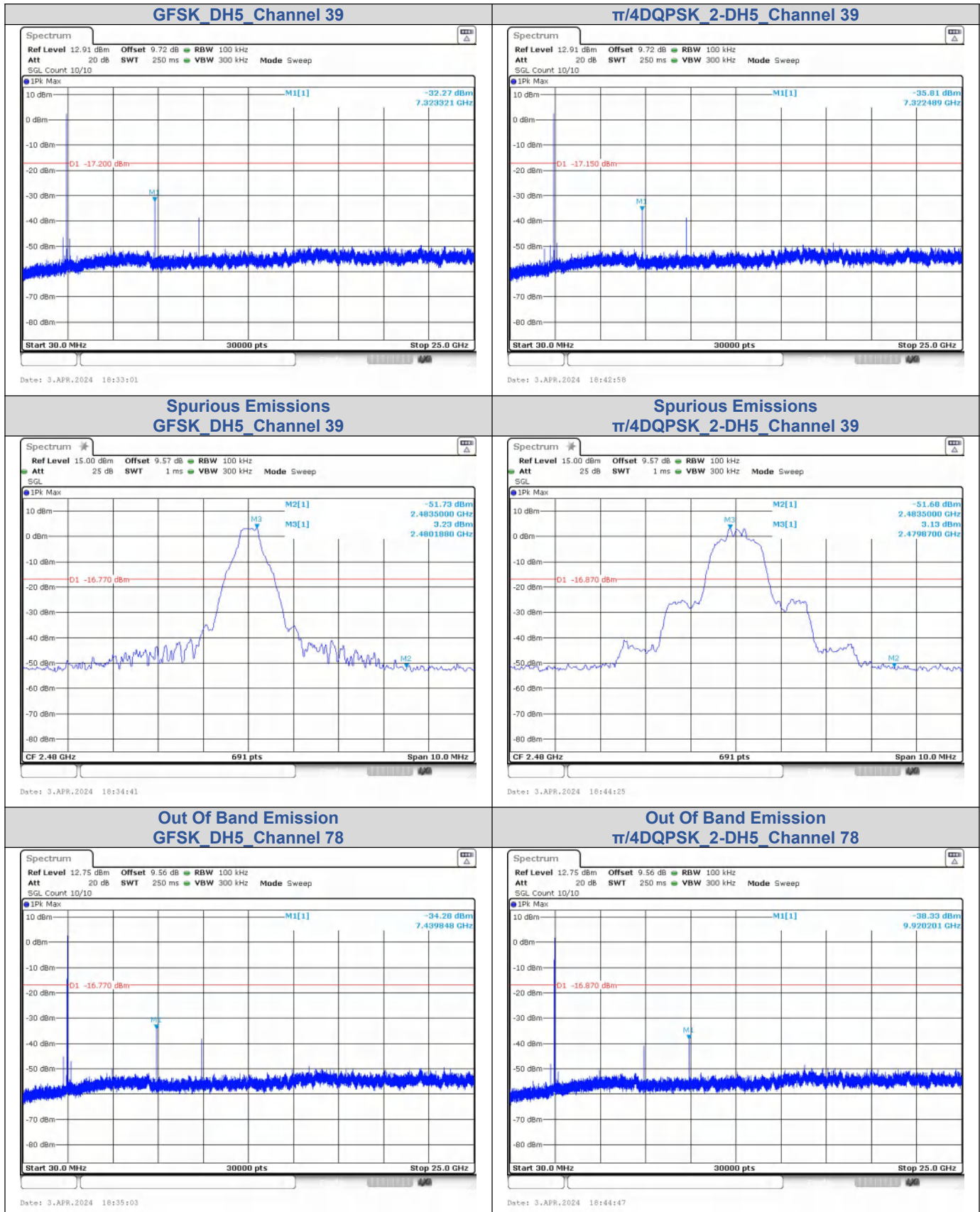
**Spurious Emission  
 $\pi/4$ DQPSK\_2-DH5\_Channel 0**



**Out Of Band Emission**

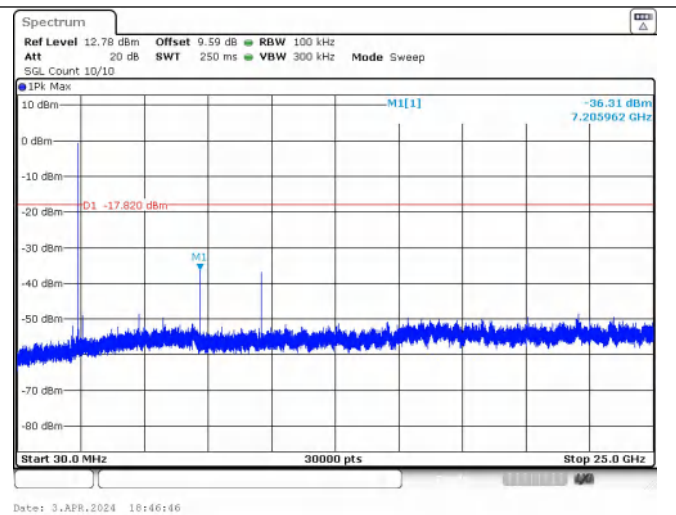
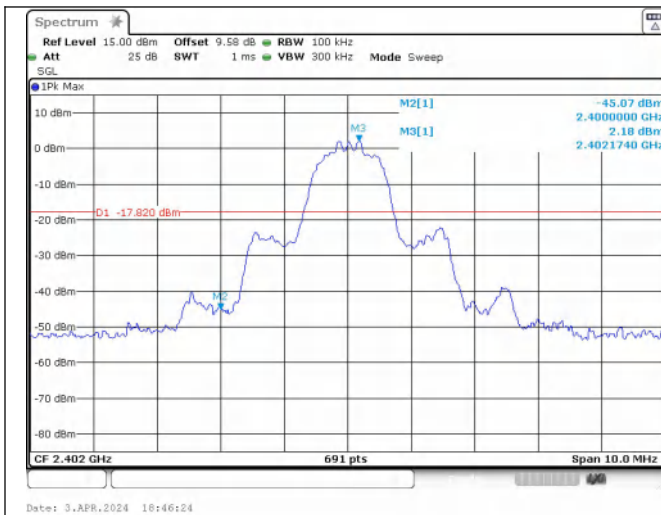


**Out Of Band Emission**



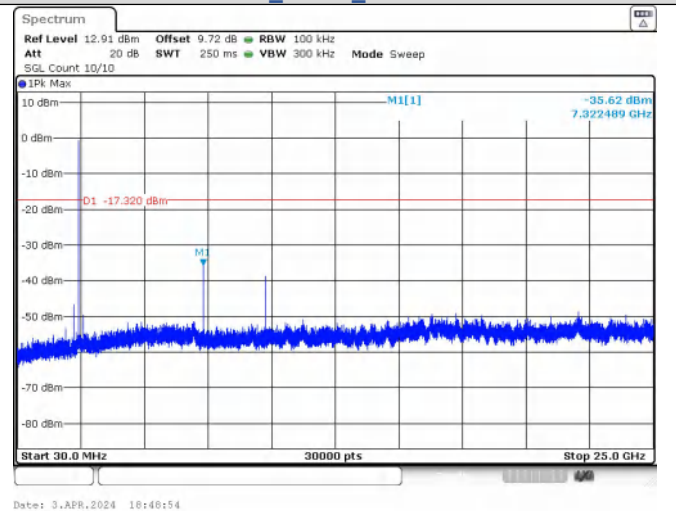
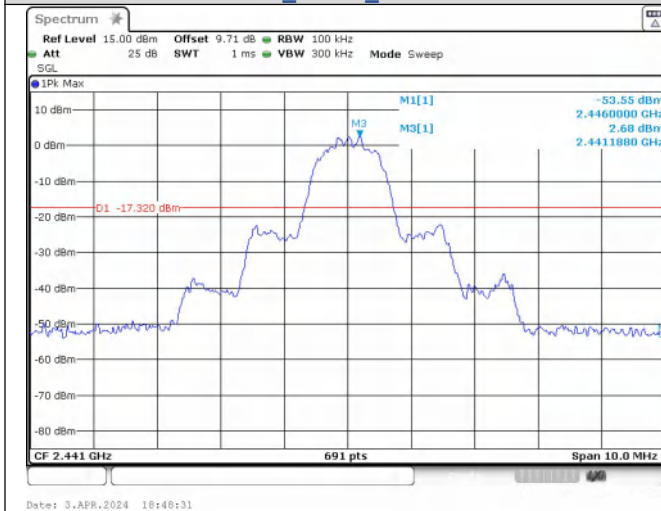
**Spurious Emission**  
**GFSK\_DH5\_Channel 78**

**Spurious Emission**  
 **$\pi/4$ DQPSK\_2-DH5\_Channel 78**



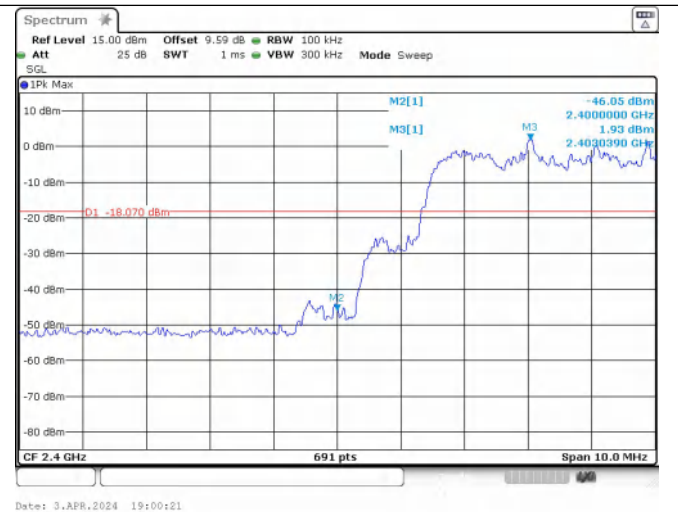
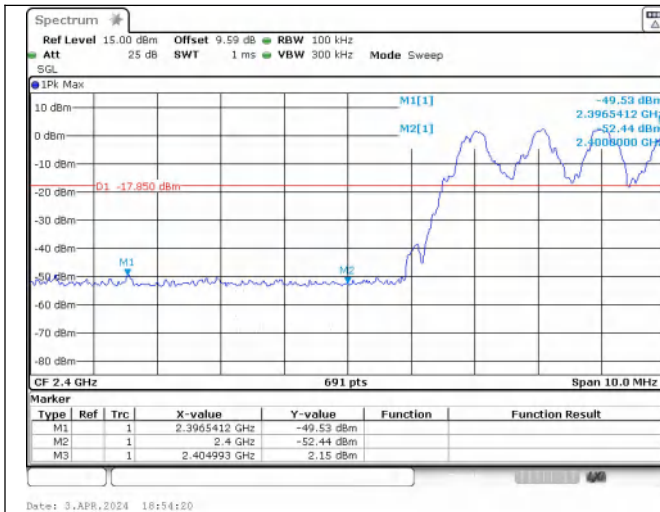
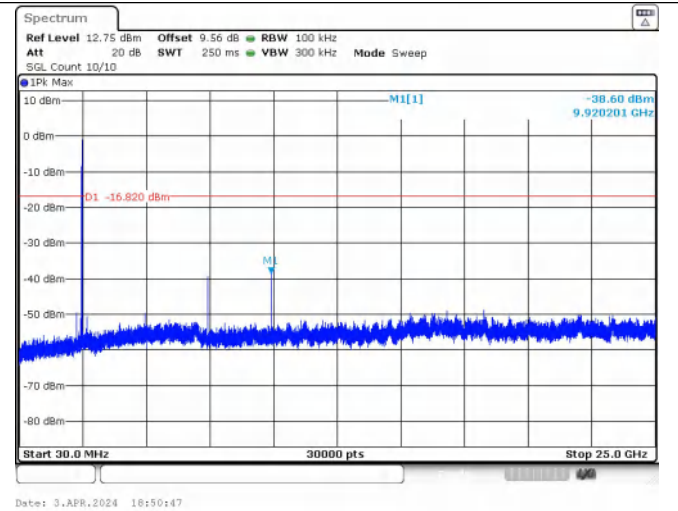
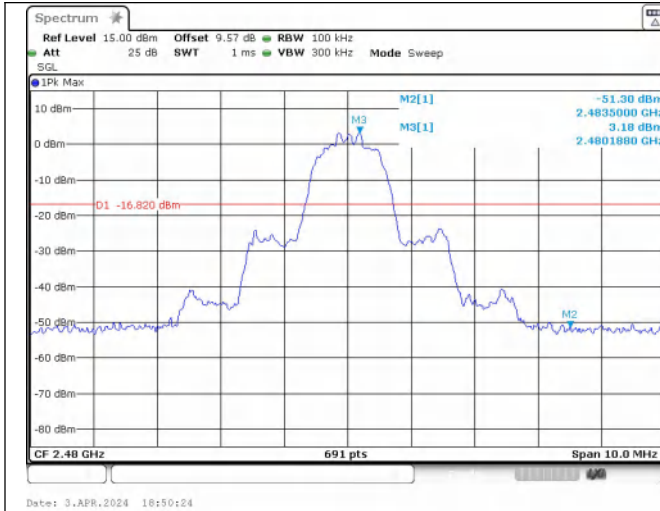
**Out Of Band Emission**  
**8DPSK\_3-DH5\_Channel 0**

**Spurious Emission**  
**8DPSK\_3-DH5\_Channel 0**

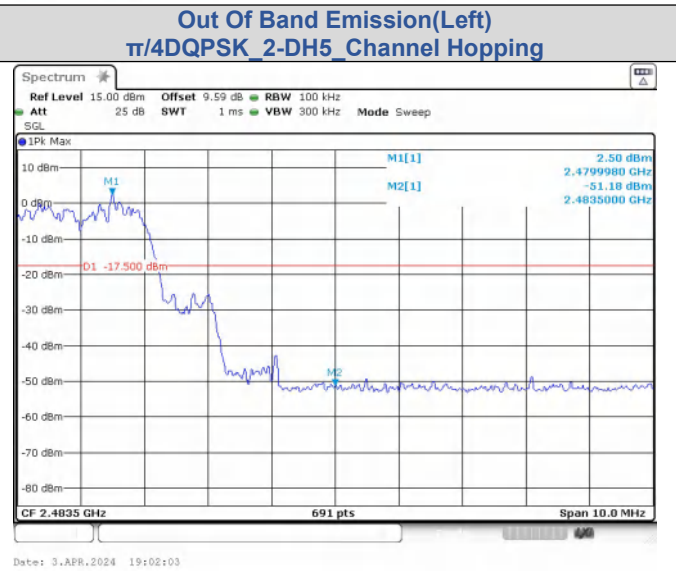
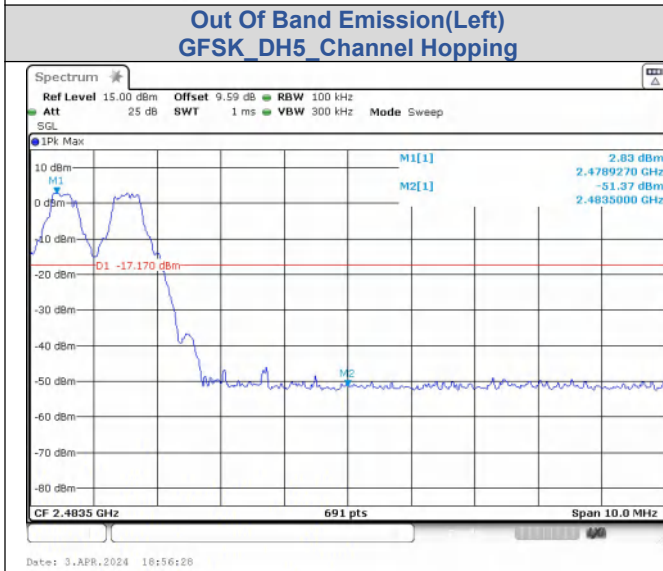
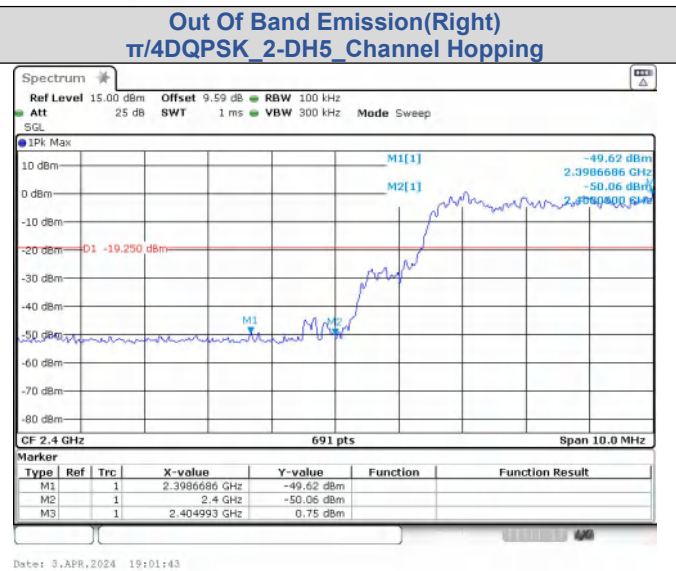
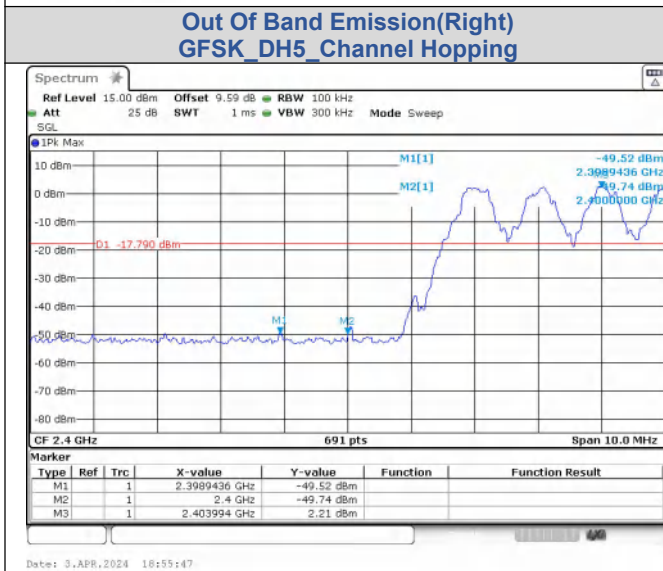
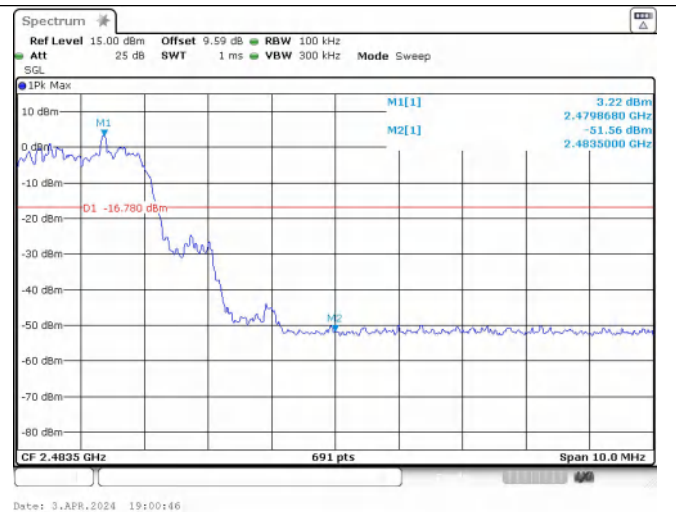
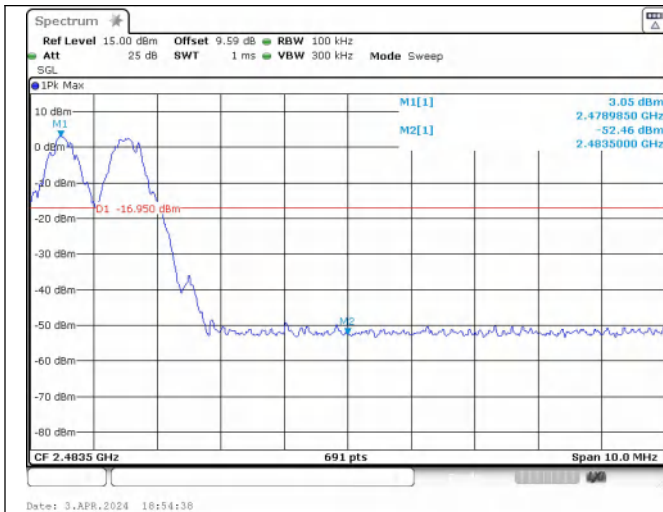


**Out Of Band Emission**  
**8DPSK\_3-DH5\_Channel 39**

**Spurious Emissions**  
**8DPSK\_3-DH5\_Channel 39**





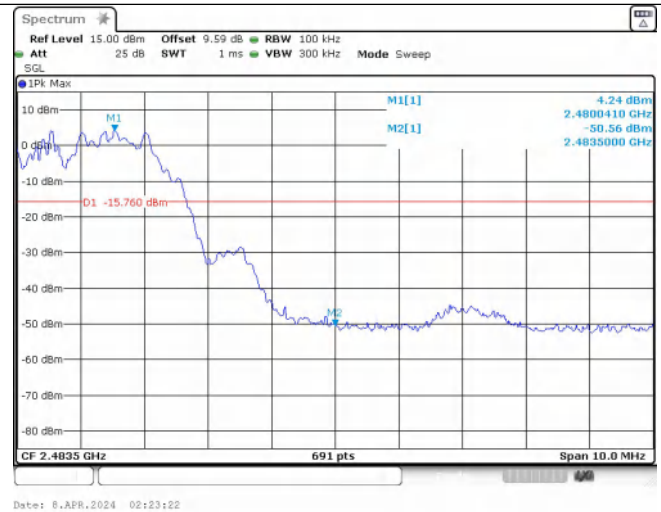
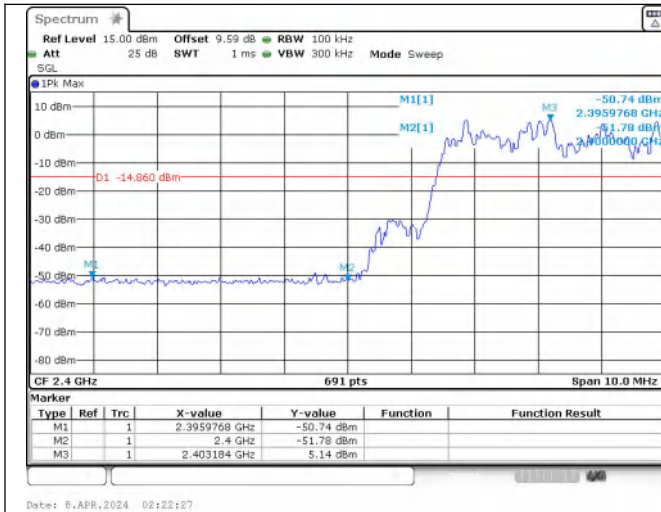


**Out Of Band Emission(Right)**

**Out Of Band Emission(Right)**

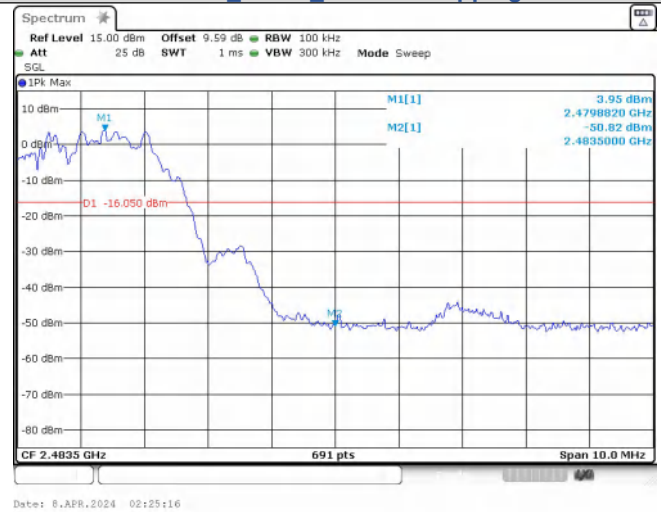
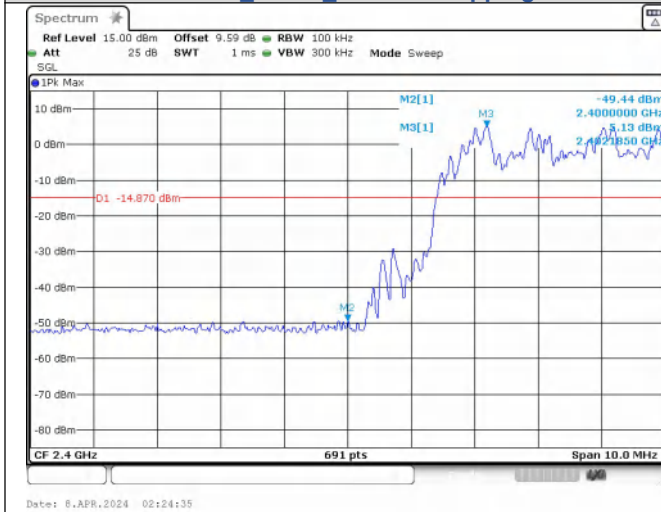
### GFSK\_DH5\_Channel Hopping

### $\pi/4$ 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



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

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

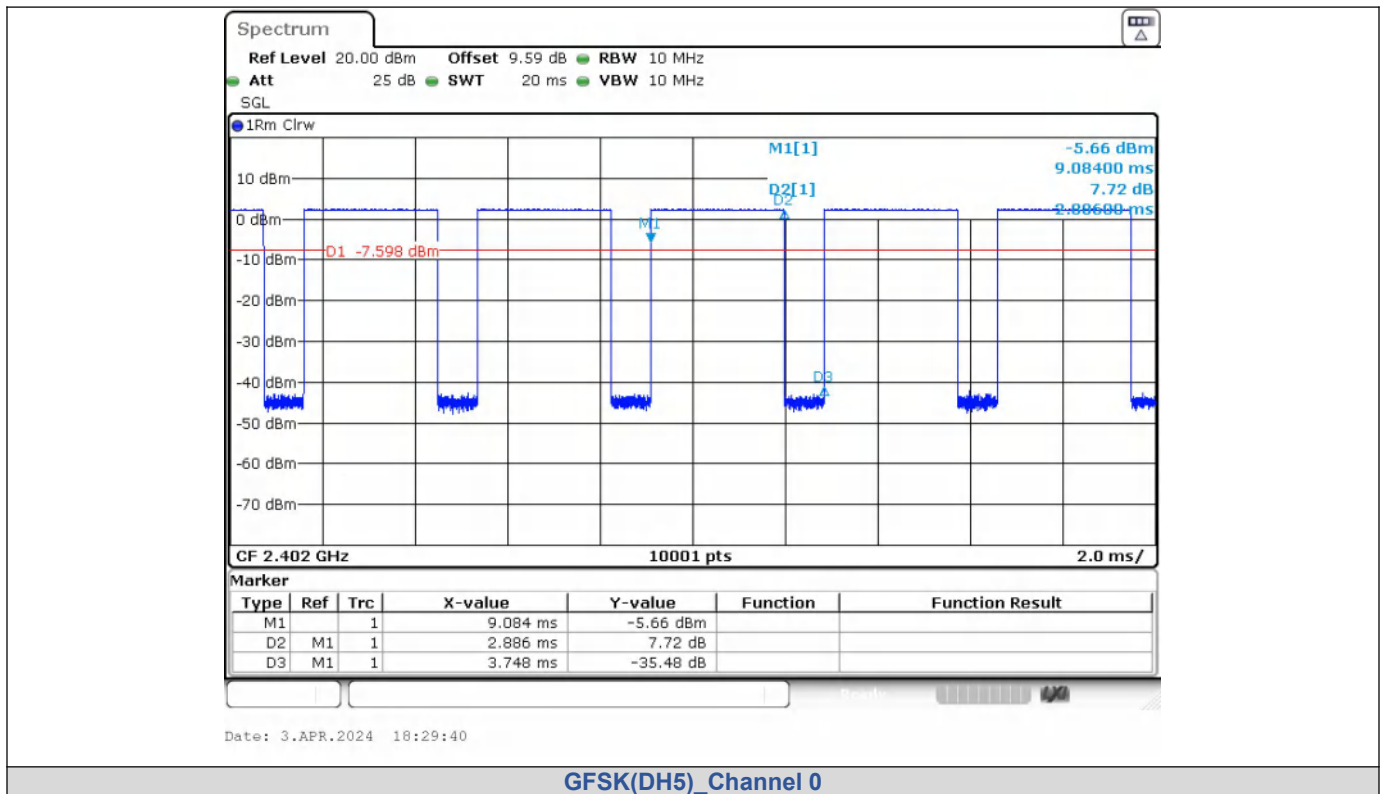


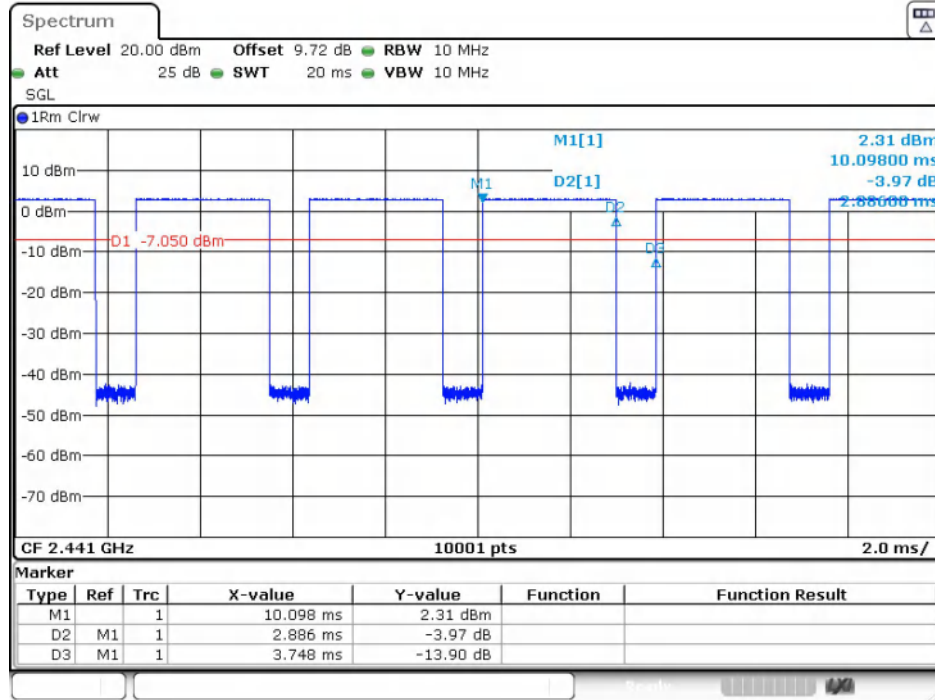
## Duty Cycle

### Test Result

| 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       | 2.890        | 3.748       | 77.11          | 0.7711              | 1.1289                 | 0.35 |
|               |         | 39      | 2.892        | 3.748       | 77.16          | 0.7716              | 1.1261                 | 0.35 |
|               |         | 78      | 2.890        | 3.748       | 77.11          | 0.7711              | 1.1289                 | 0.35 |
| 8DPSK         | 3-DH5   | 0       | 2.892        | 3.748       | 77.16          | 0.7716              | 1.1261                 | 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 |

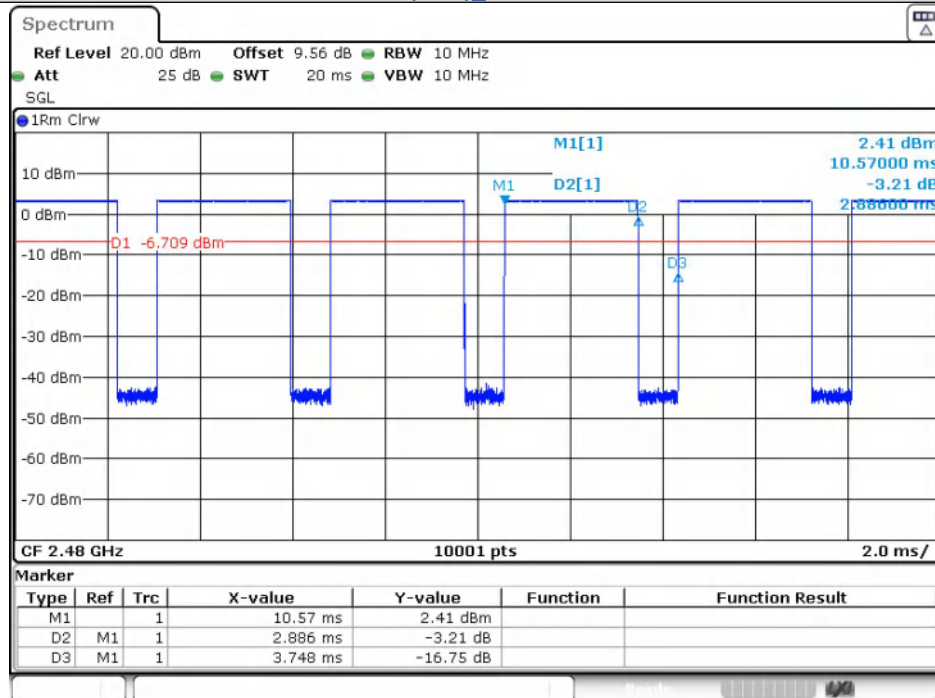
### Test Graphs





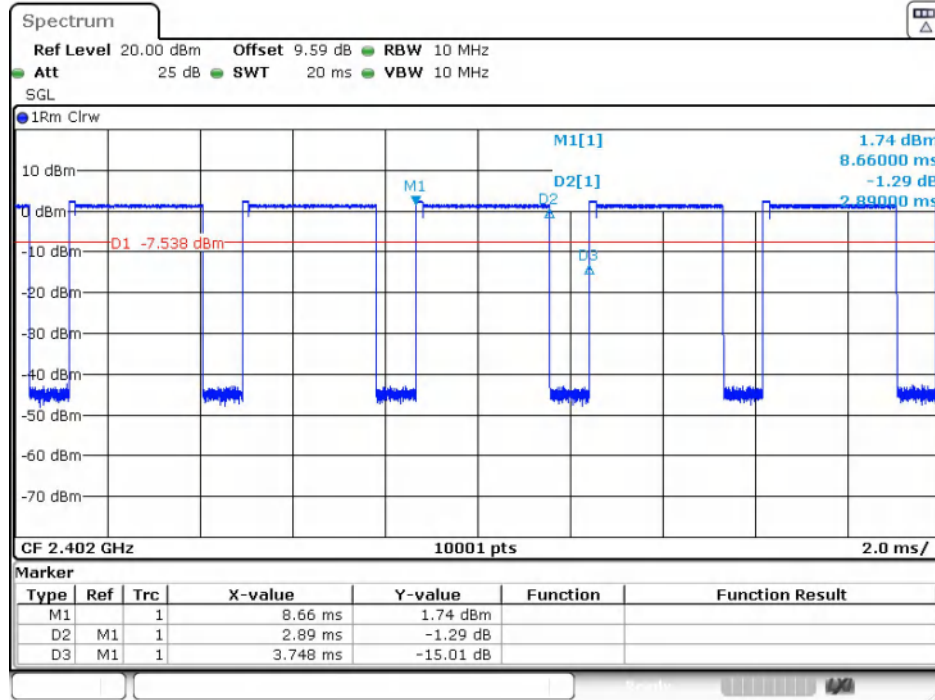
Date: 3.APR.2024 18:31:43

### GFSK(DH5)\_Channel 39



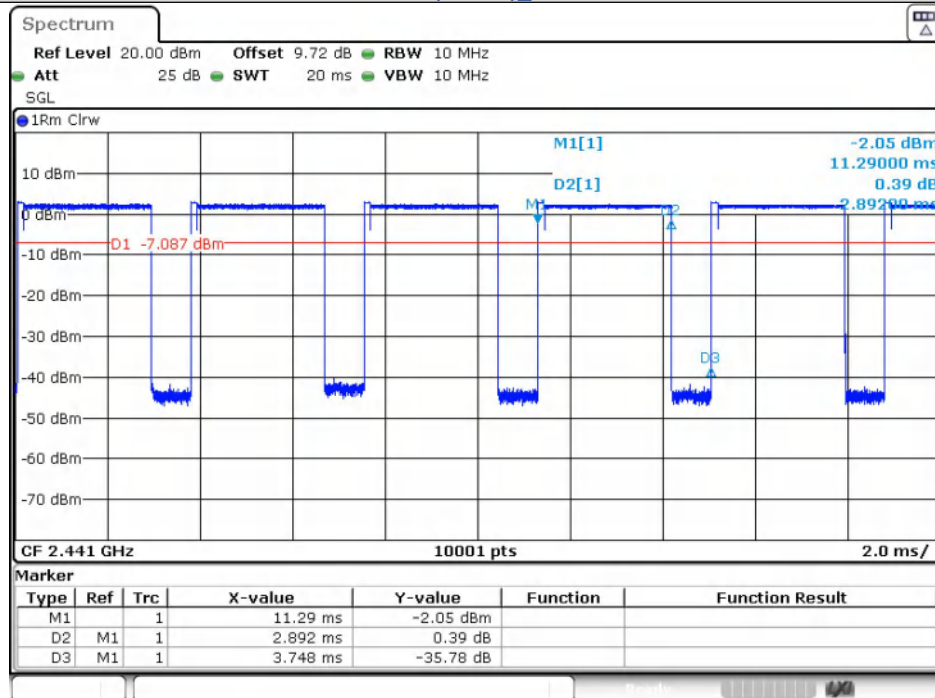
Date: 3.APR.2024 18:33:39

### GFSK(DH5)\_Channel 78



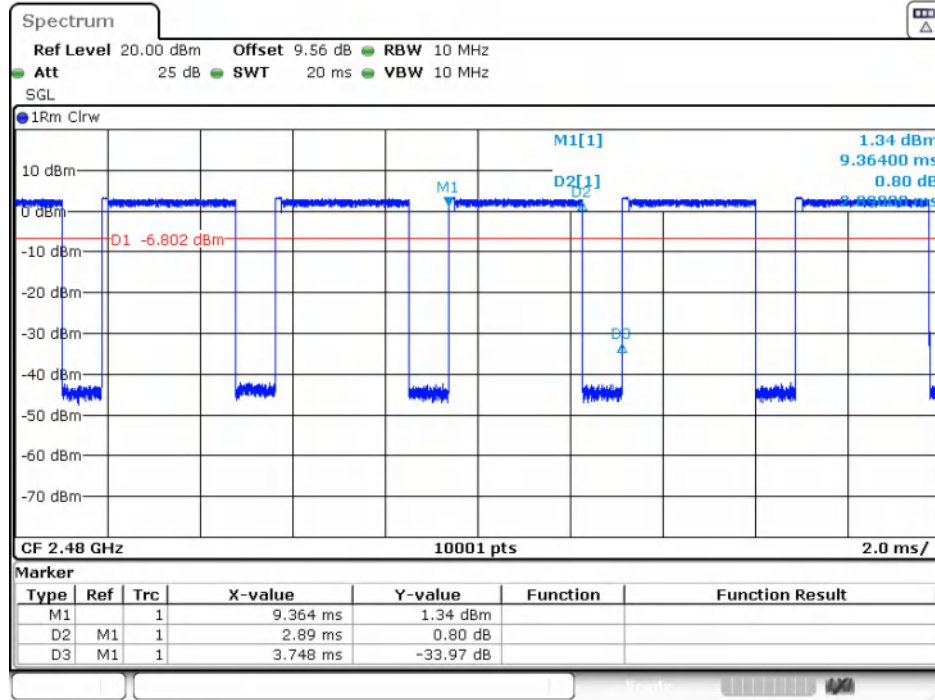
Date: 3.APR.2024 18:35:37

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



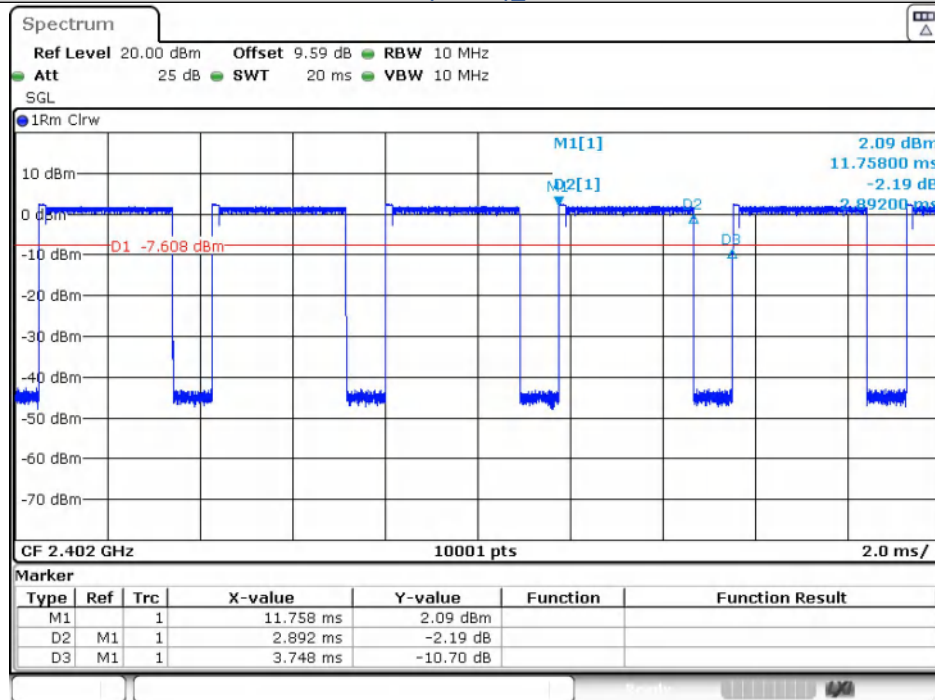
Date: 3.APR.2024 18:41:41

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



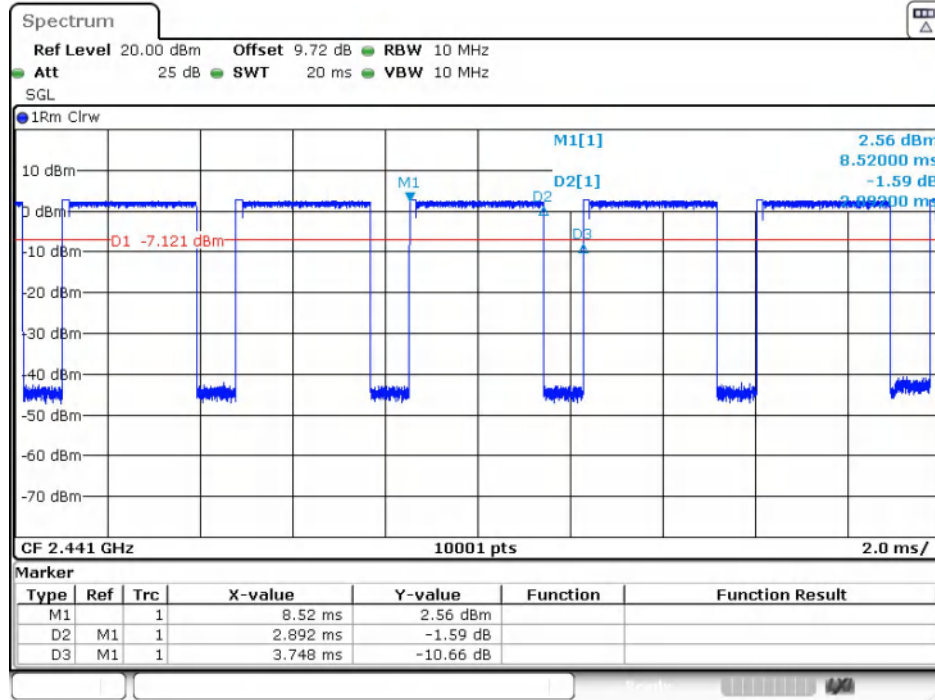
Date: 3.APR.2024 18:43:25

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



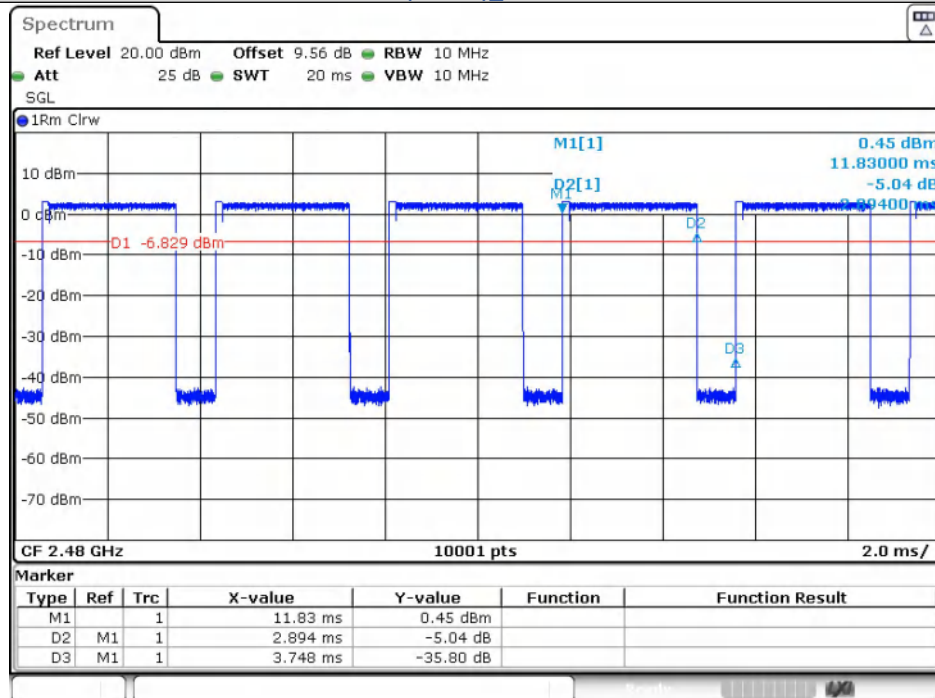
Date: 3.APR.2024 18:45:14

**8DPSK(3-DH5)\_Channel 0**



Date: 3.APR.2024 18:47:37

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



Date: 3.APR.2024 18:49:25

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

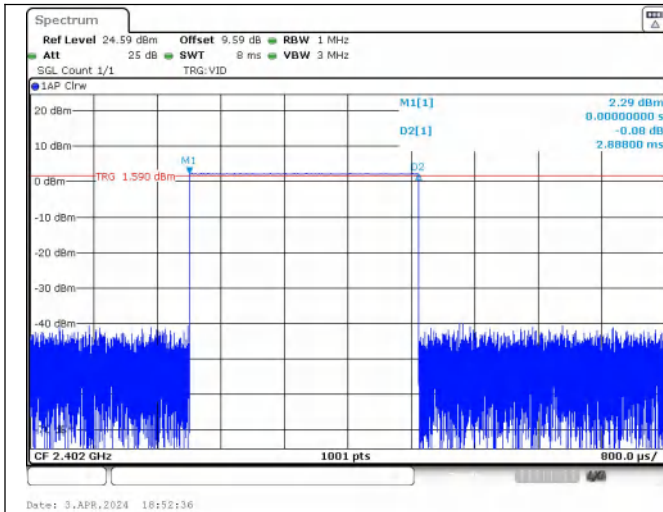


## Dwell Time

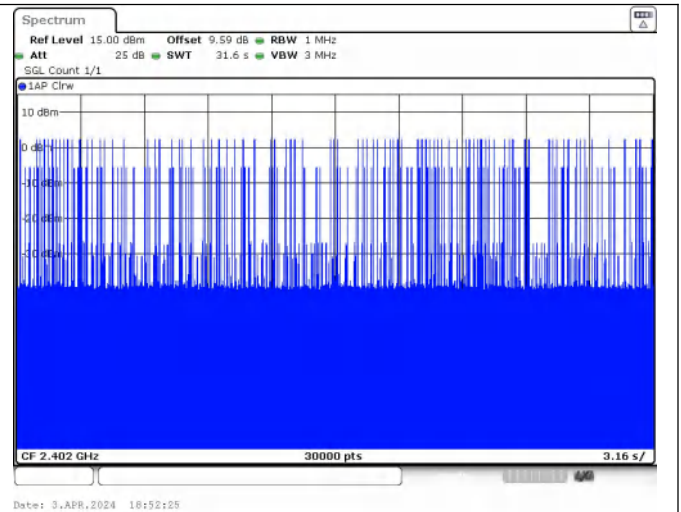
### Test Result

| 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            | 109                              | 314.79          | < 400      | PASS   |
| $\pi/4$ DQPSK | 2-DH5  |                  | 2.896            | 108                              | 312.77          |            | PASS   |
| 8DPSK         | 3-DH5  |                  | 0.4880           | 165                              | 80.52           |            | PASS   |

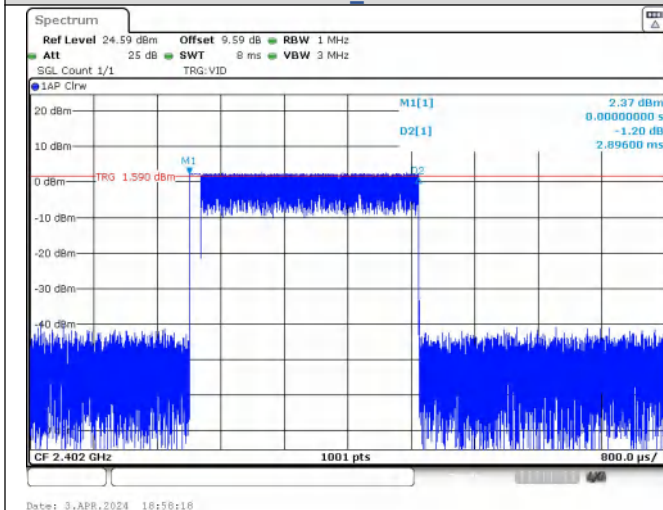
### Test Graphs



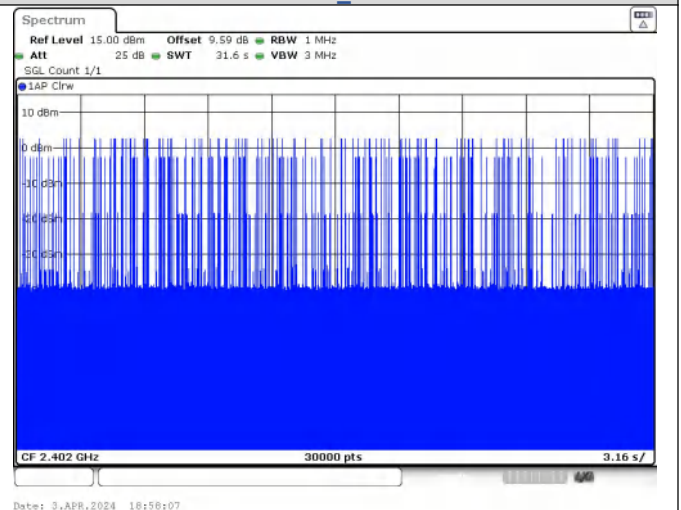
**Pulse Width  
GFSK\_DH5**



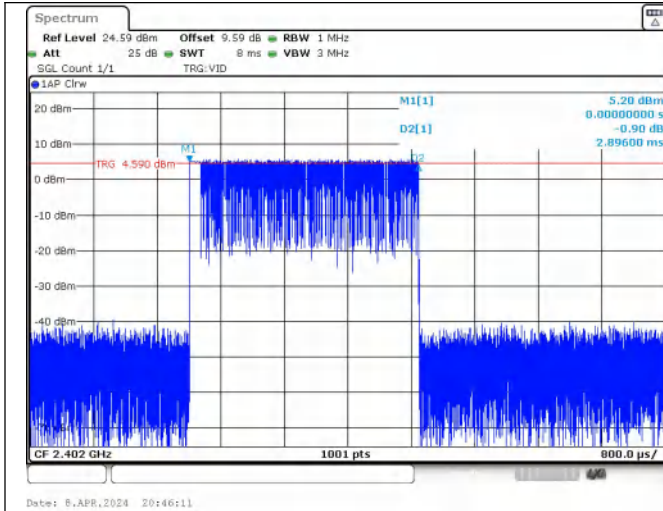
**Number of Pulses in 31.6 seconds  
GFSK\_DH5**



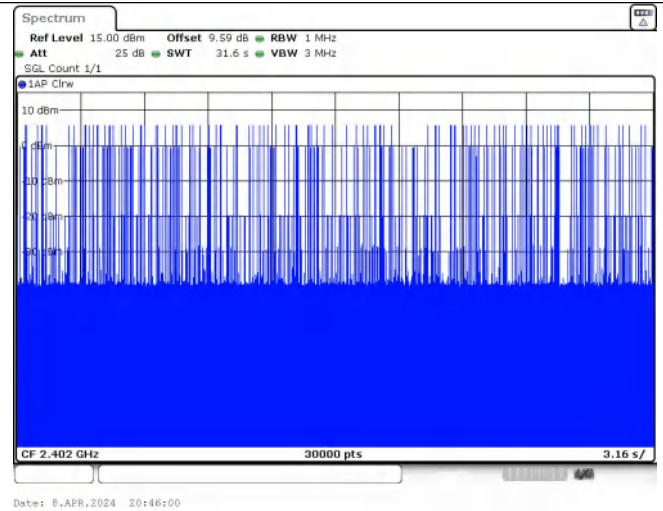
**Pulse Width  
 $\pi/4$ DQPSK\_2-DH5**



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



Pulse Width  
8DPSK\_3-DH5



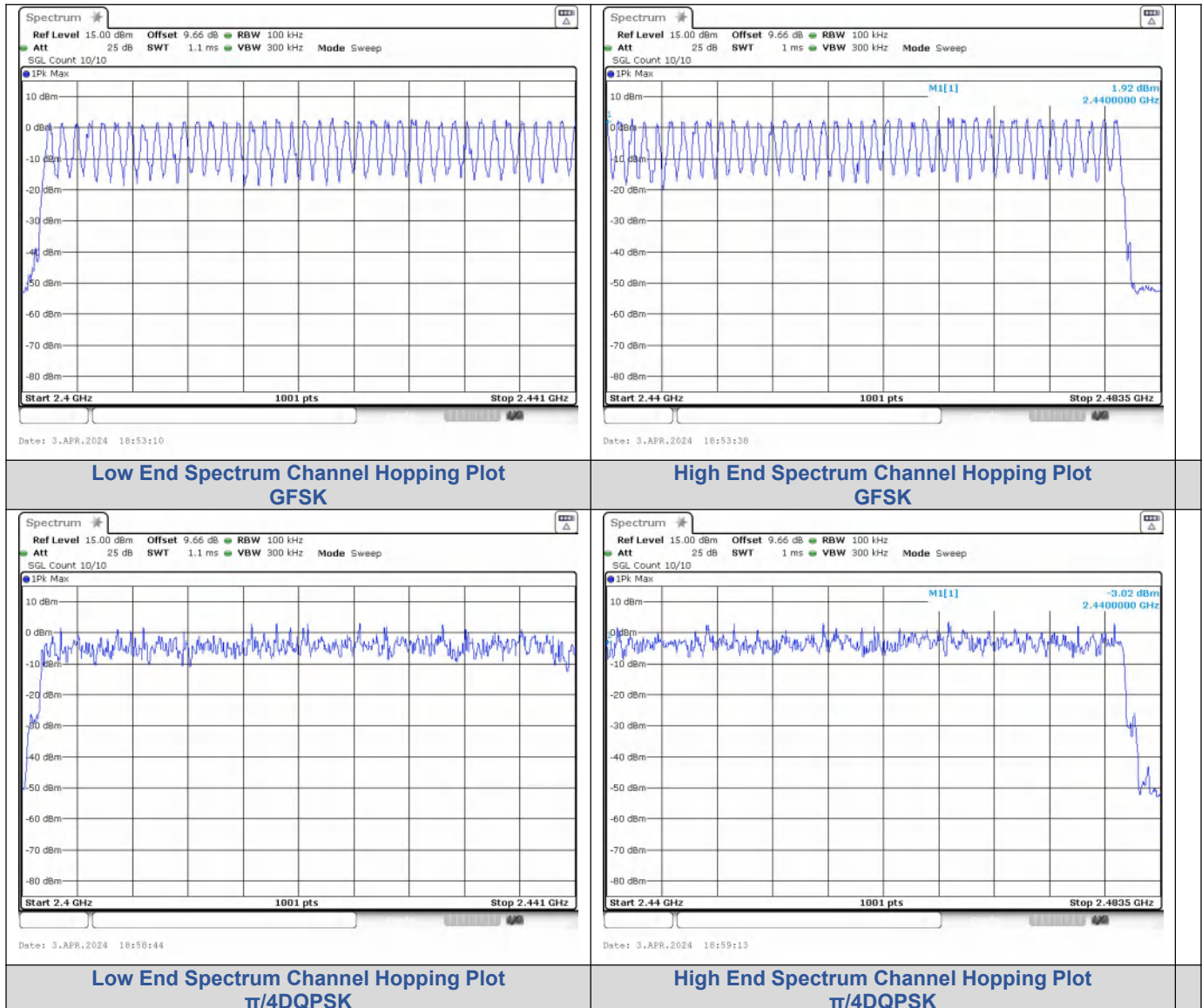
Number of Pulses in 31.6 seconds  
8DPSK\_3-DH5

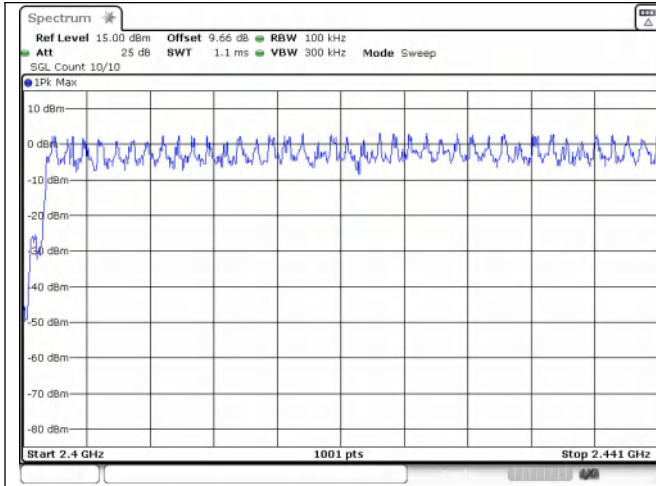
## Number Of Hopping Channel

### Test Result

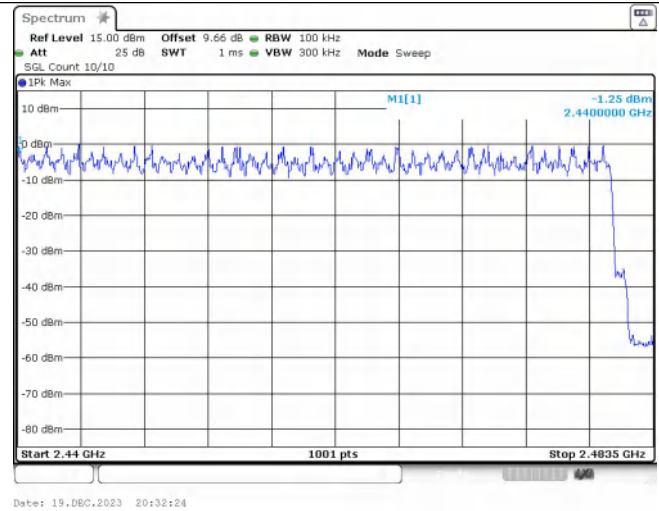
| Modulation    | Packet | Number of Hopping Channel | Limit | Result |
|---------------|--------|---------------------------|-------|--------|
| GFSK          | DH5    | 79                        | 15    | PASS   |
| $\pi/4$ DQPSK | 2-DH5  | 79                        | 15    | PASS   |
| 8DPSK     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

### Test Graphs





**Low End Spectrum Channel Hopping Plot  
8DPSK**



**High End Spectrum Channel Hopping Plot  
8DPSK**