



## Appendix A

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

Product Name: LED PROJECTOR

Trade Mark: OSCAL

Test Model: PV800

#### Environmental Conditions

|                    |             |
|--------------------|-------------|
| Temperature:       | 25.3° C     |
| Relative Humidity: | 52.4%       |
| ATM Pressure:      | 100.0 kPa   |
| Test Engineer:     | Emiya lin   |
| Supervised by:     | Simba Huang |



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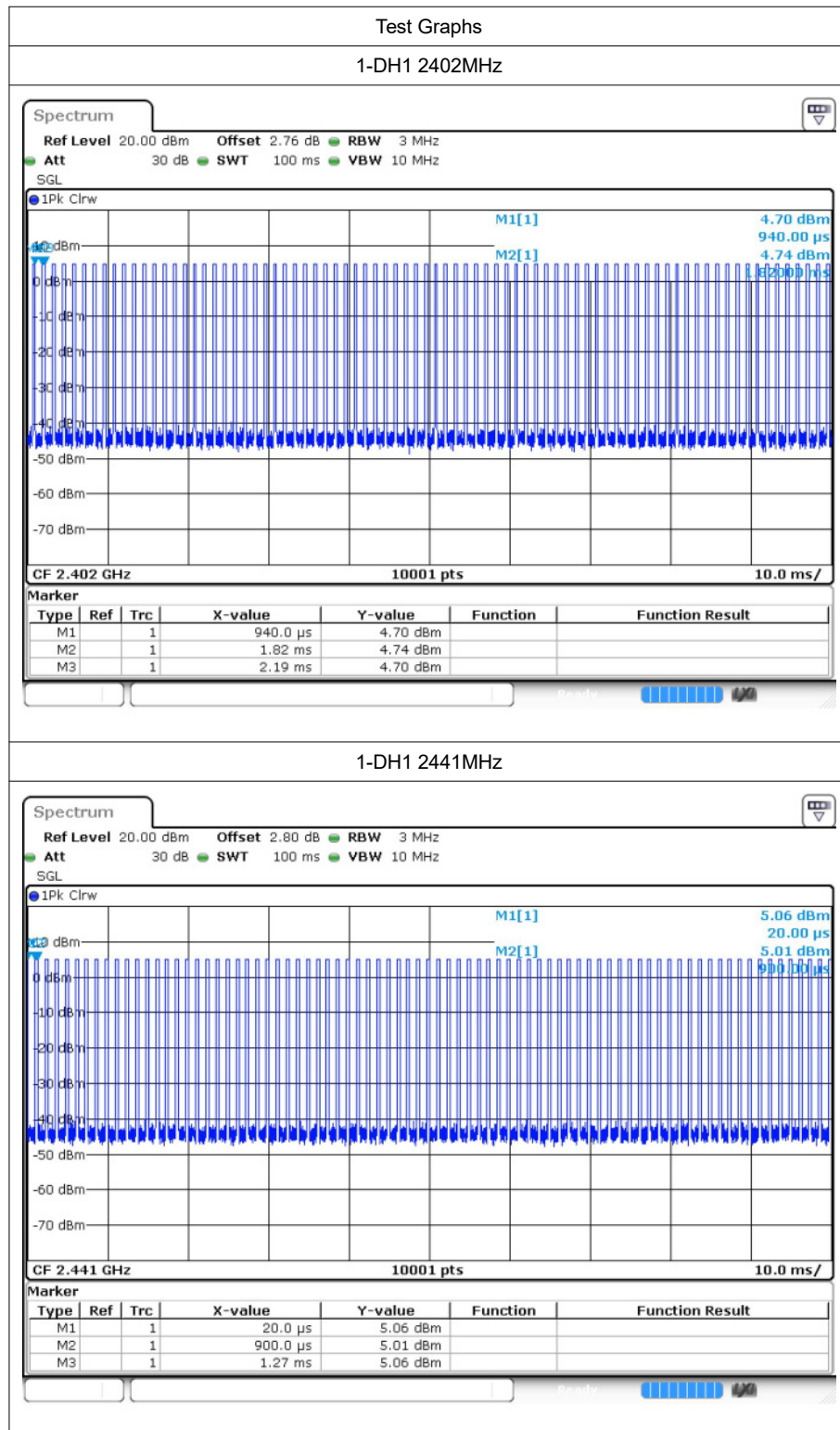
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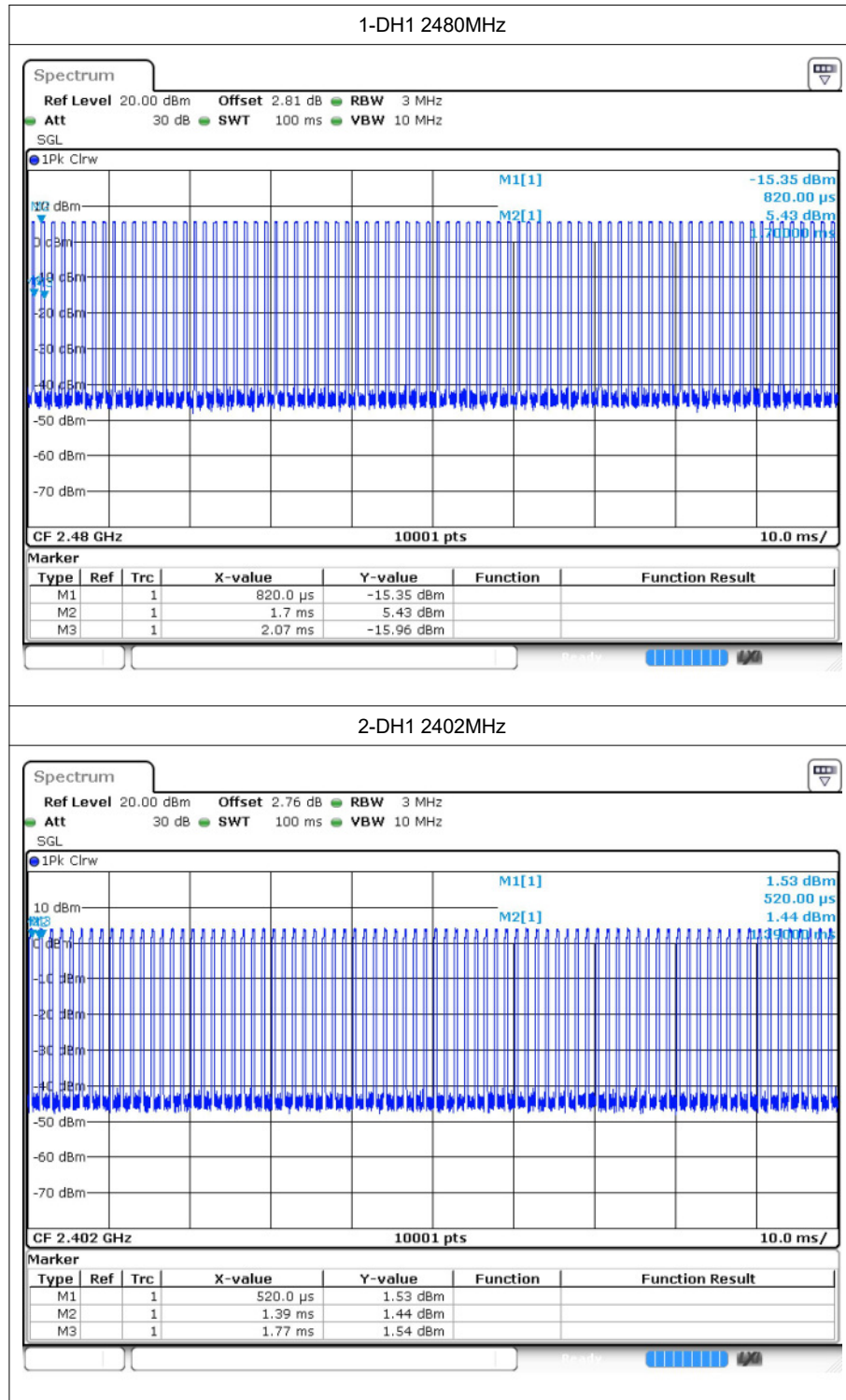
# 1 Duty Cycle

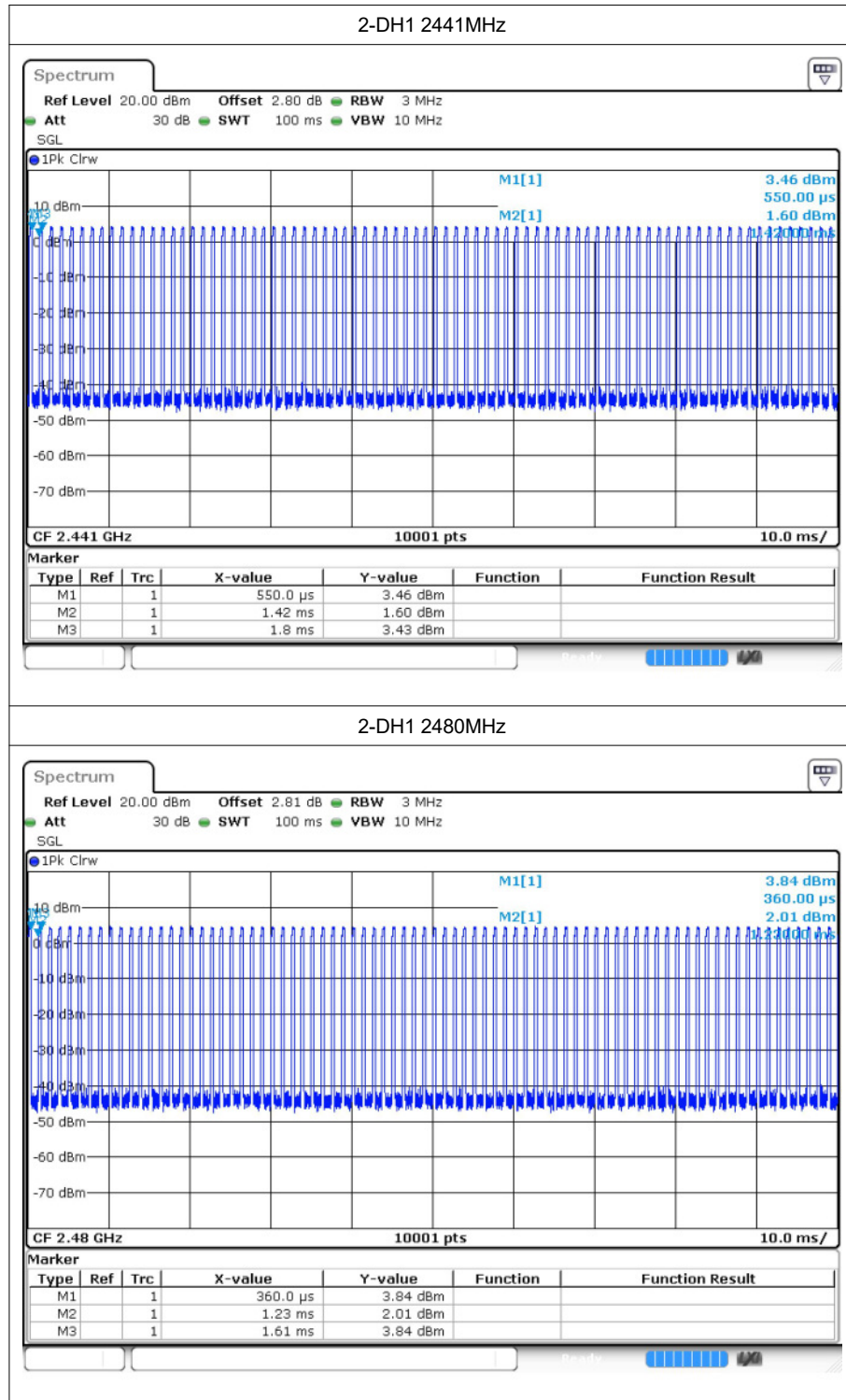
## 1.1 Test Result

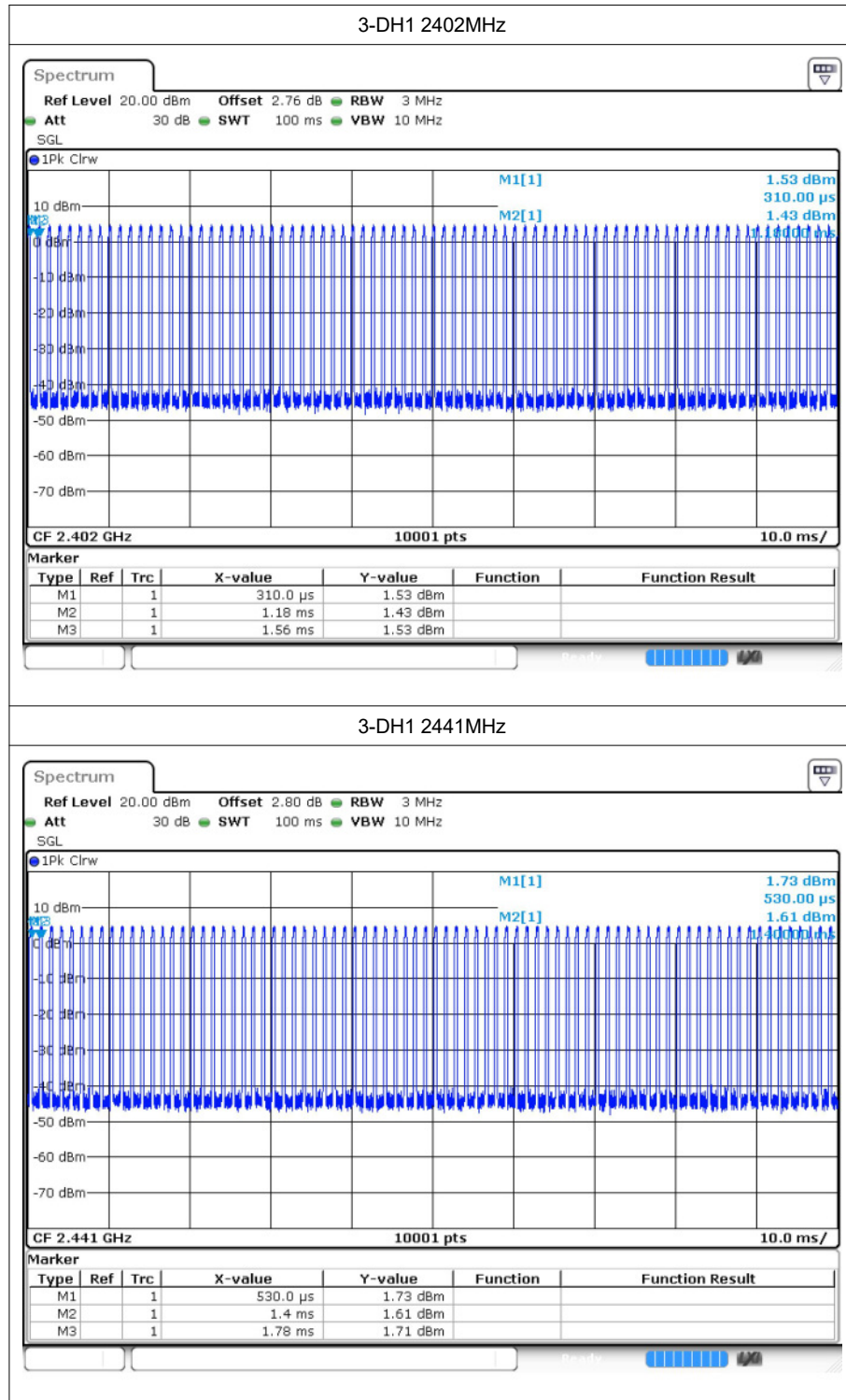
| Mode  | Frequency (MHz) | Duty Cycle (%) | Correction Factor | 1/T (kHz) |
|-------|-----------------|----------------|-------------------|-----------|
| 1-DH1 | 2402            | 30.4           | 5.17              | 2.7       |
| 1-DH1 | 2441            | 30.41          | 5.17              | 2.7       |
| 1-DH1 | 2480            | 30.4           | 5.17              | 2.7       |
| 2-DH1 | 2402            | 31.2           | 5.06              | 2.63      |
| 2-DH1 | 2441            | 31.2           | 5.06              | 2.63      |
| 2-DH1 | 2480            | 31.21          | 5.06              | 2.63      |
| 3-DH1 | 2402            | 31.21          | 5.06              | 2.63      |
| 3-DH1 | 2441            | 31.2           | 5.06              | 2.63      |
| 3-DH1 | 2480            | 30.41          | 5.17              | 2.7       |

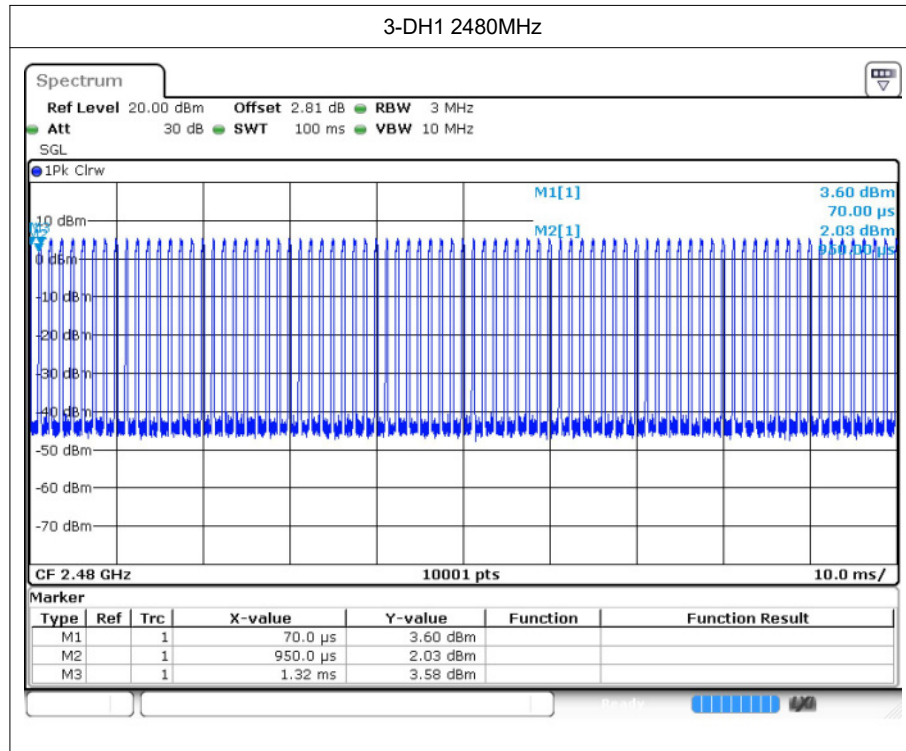
## 1.2 Test Graphs









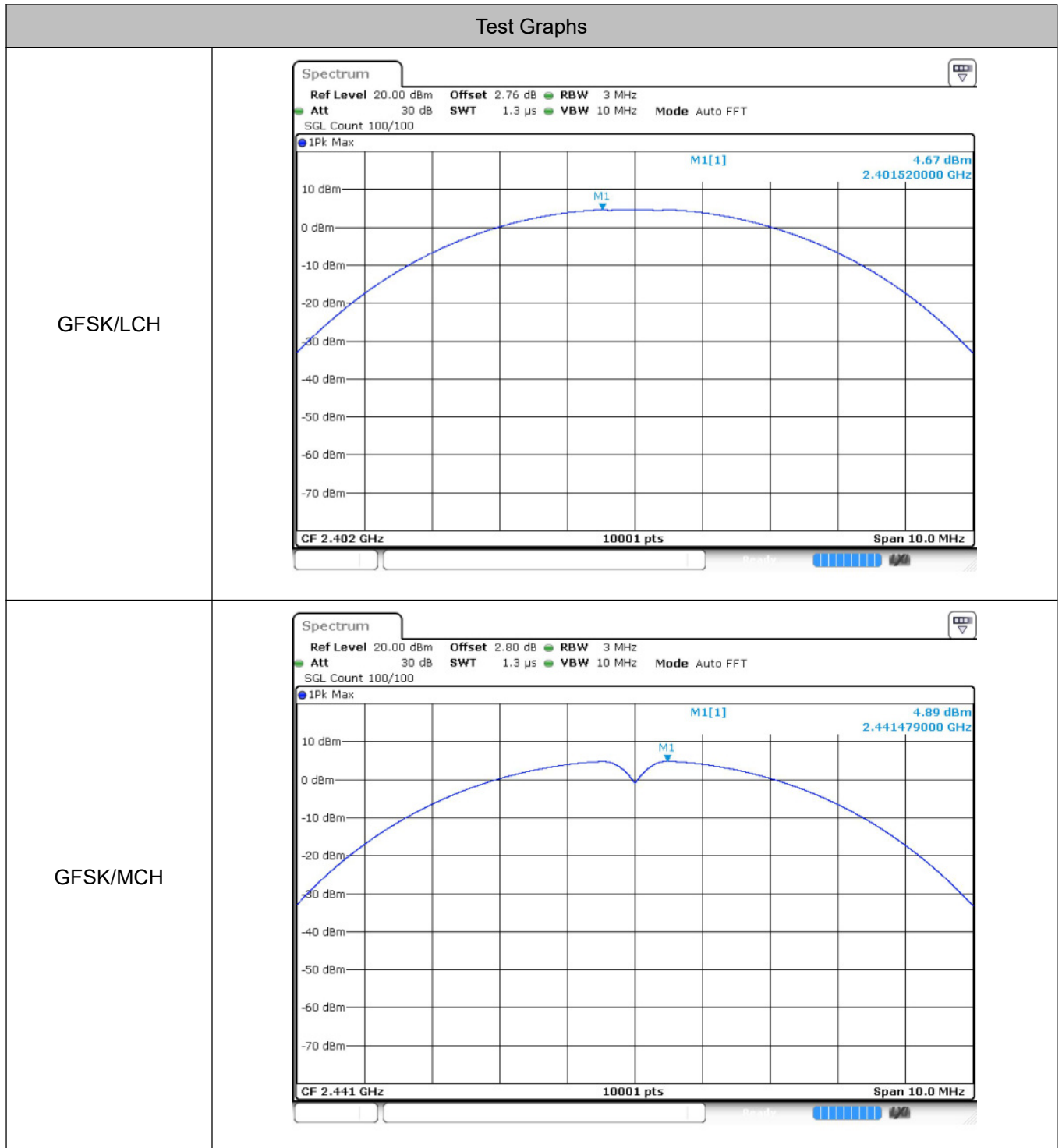


## 2 Maximum Conducted Peak Output Power

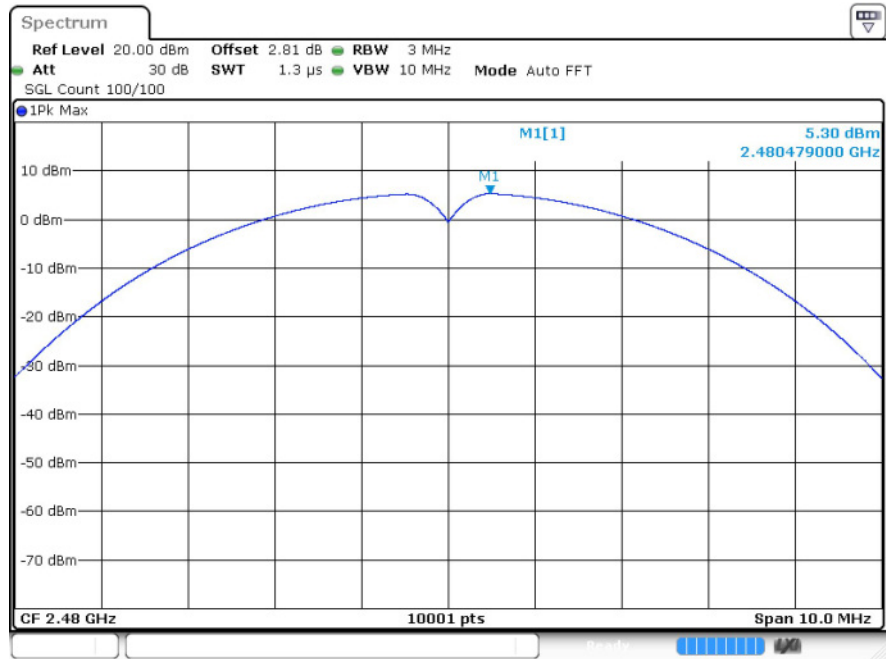
### 2.1 Test Result

| Mode          | Channel. | Maximum Peak Output Power [dBm] | Limit [dBm] | Verdict |
|---------------|----------|---------------------------------|-------------|---------|
| GFSK          | LCH      | 4.67                            | 21          | Pass    |
|               | MCH      | 4.89                            | 21          | Pass    |
|               | HCH      | 5.3                             | 21          | Pass    |
| $\pi/4$ DQPSK | LCH      | 2.93                            | 21          | Pass    |
|               | MCH      | 3.43                            | 21          | Pass    |
|               | HCH      | 4.09                            | 21          | Pass    |
| 8DPSK         | LCH      | 3.35                            | 21          | Pass    |
|               | MCH      | 4.14                            | 21          | Pass    |
|               | HCH      | 4.15                            | 21          | Pass    |

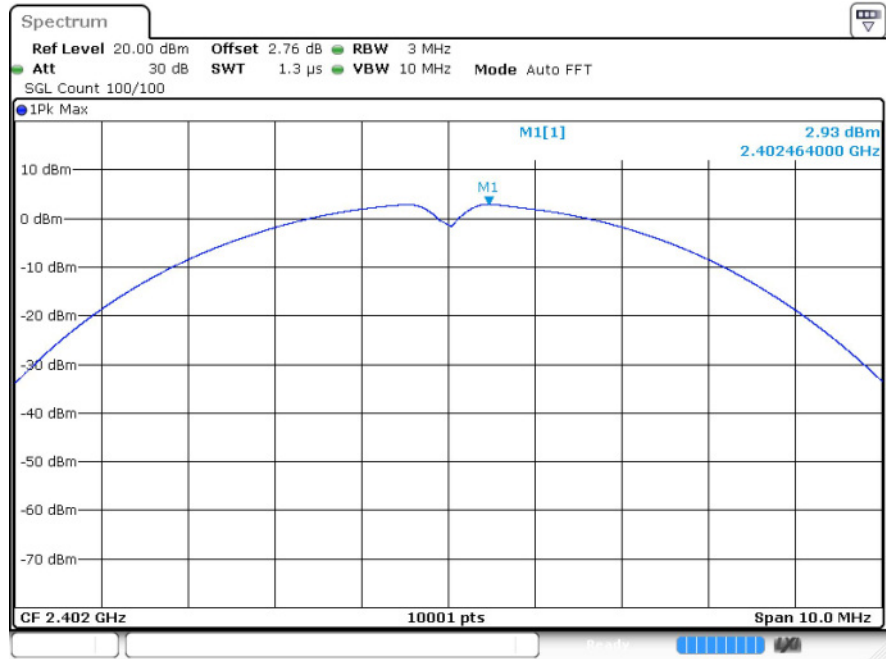
## 2.2 Test Graphs



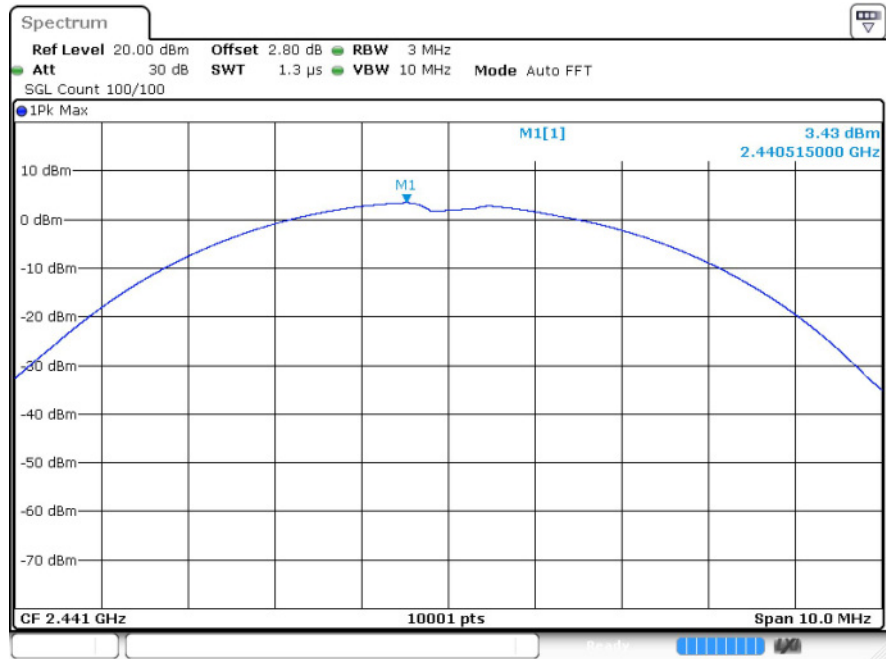
GFSK/HCH



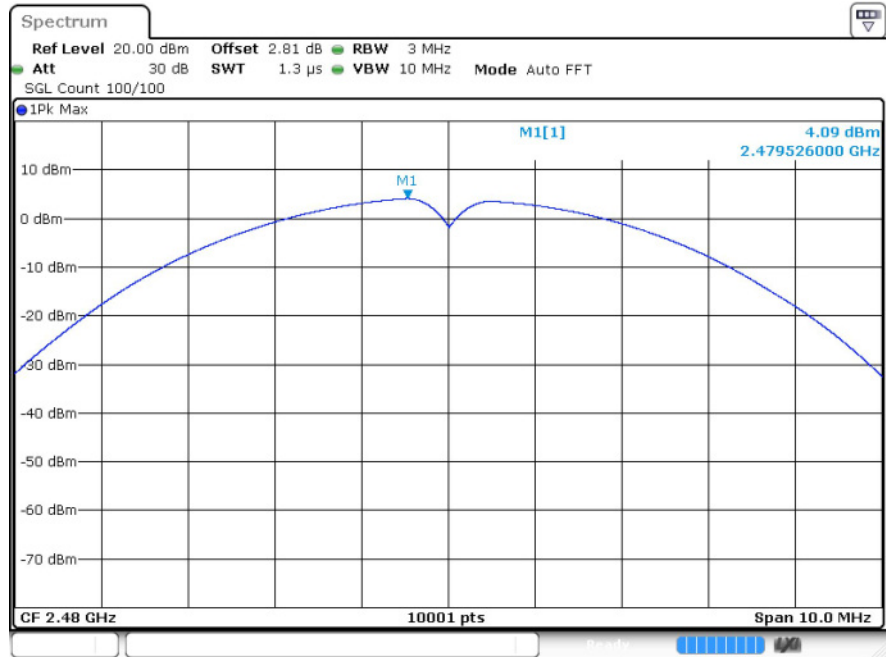
$\pi/4$ DQPSK/LCH



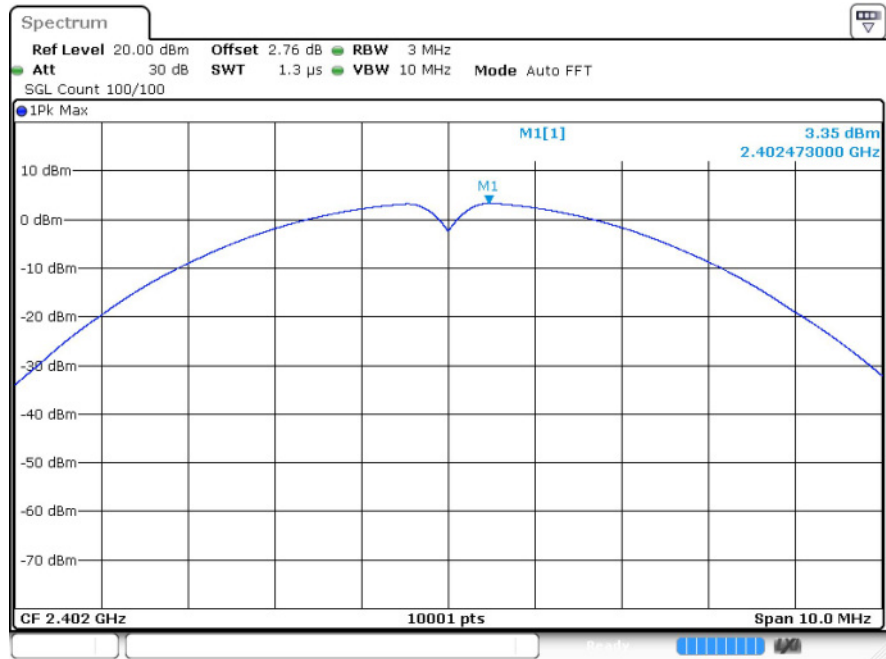
$\pi/4$ DQPSK/MCH



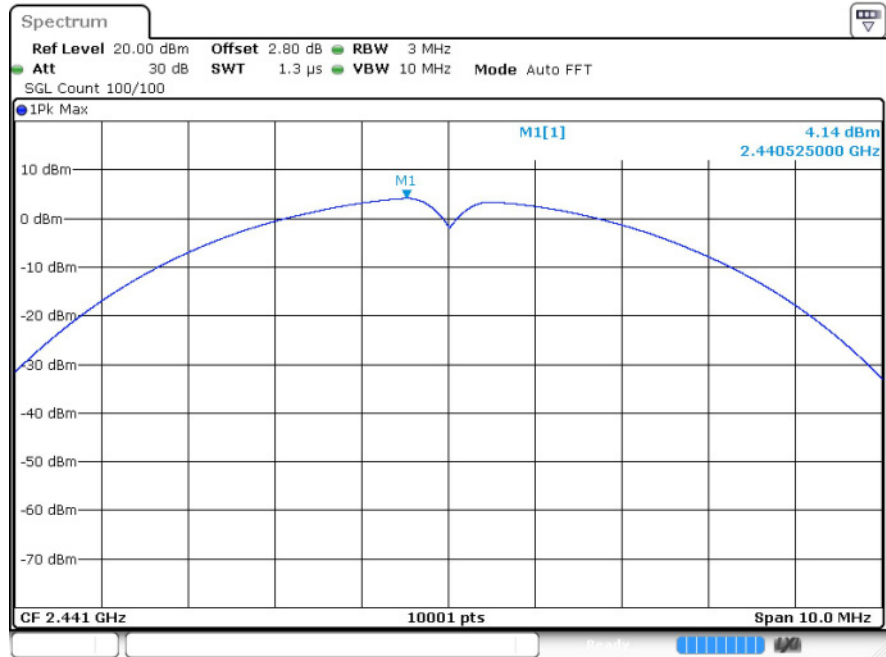
$\pi/4$ DQPSK/HCH



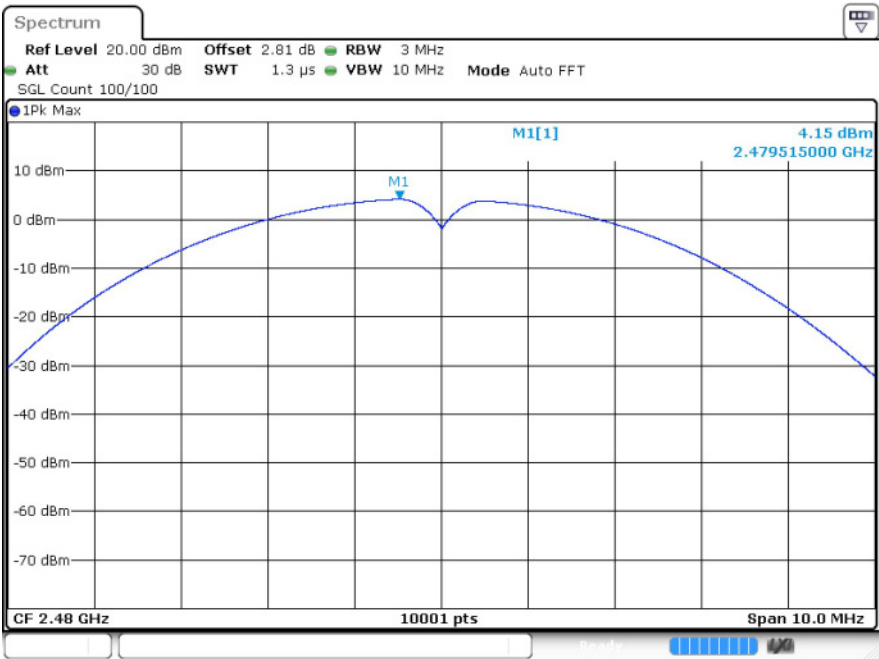
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

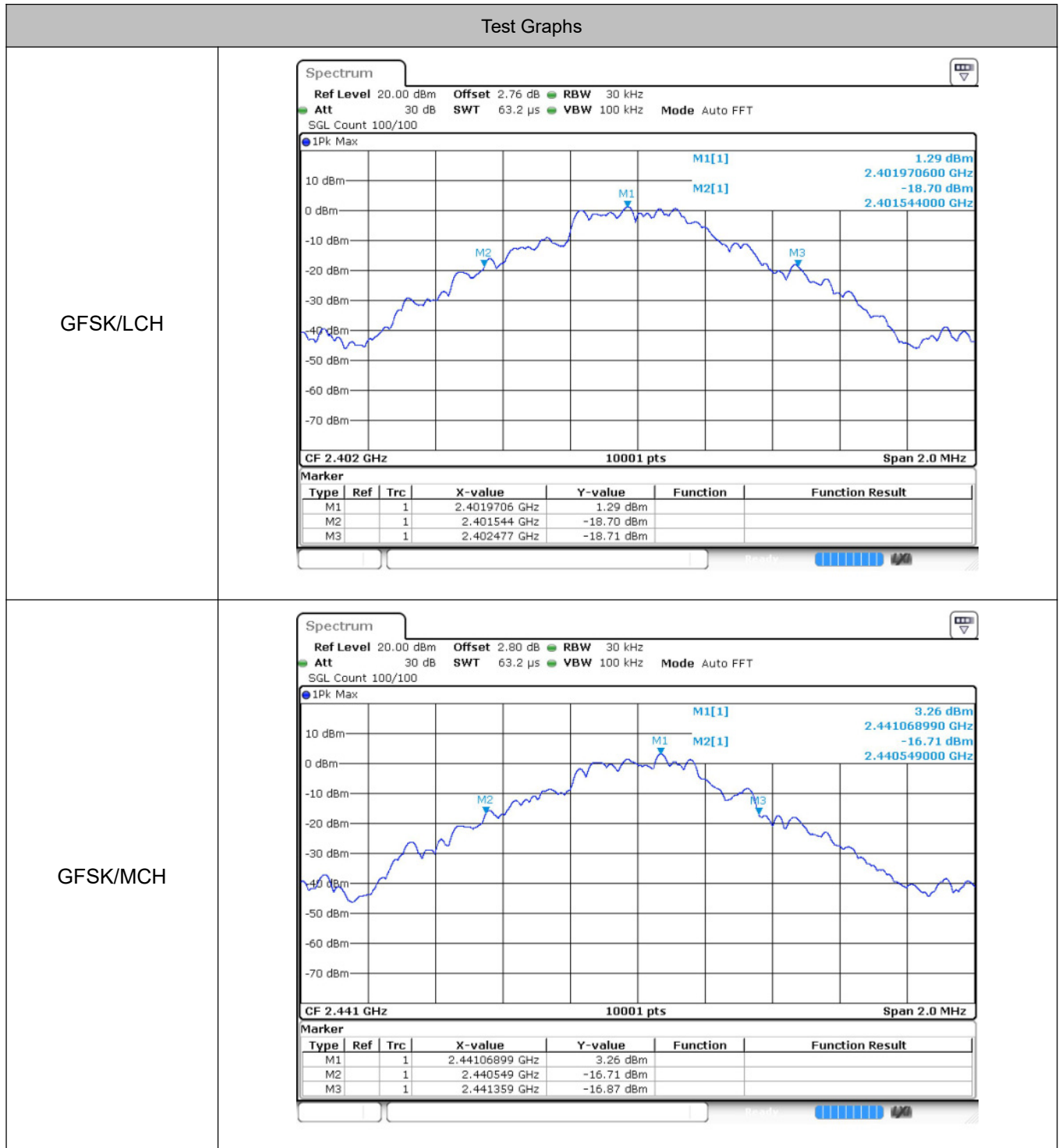


### 3 20dB Bandwidth

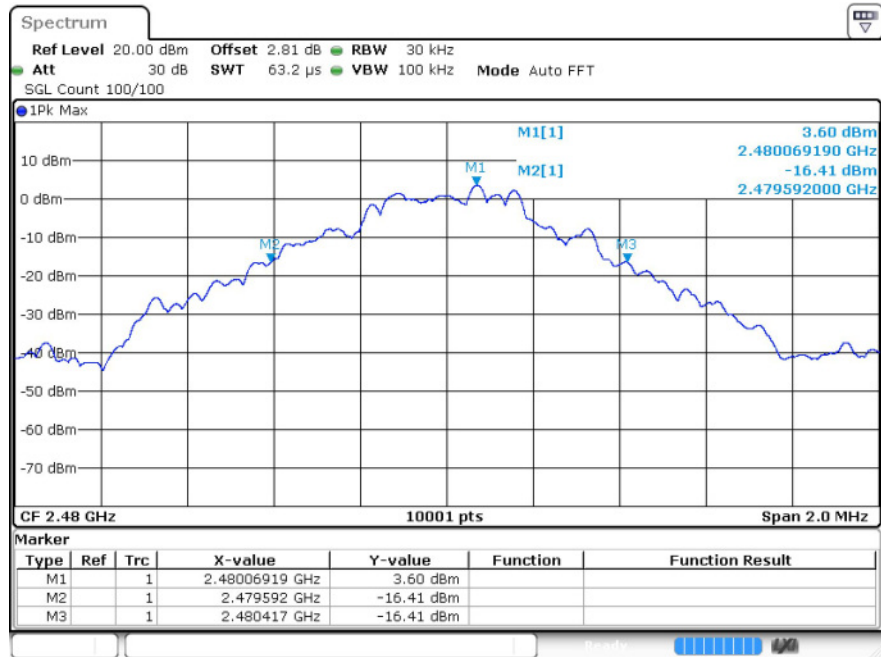
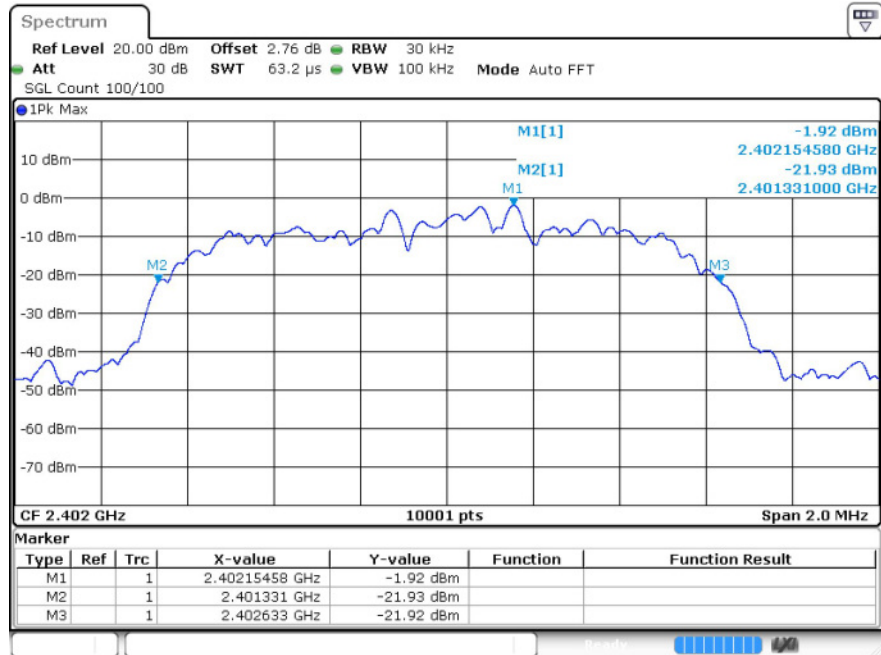
#### 3.1 Test Result

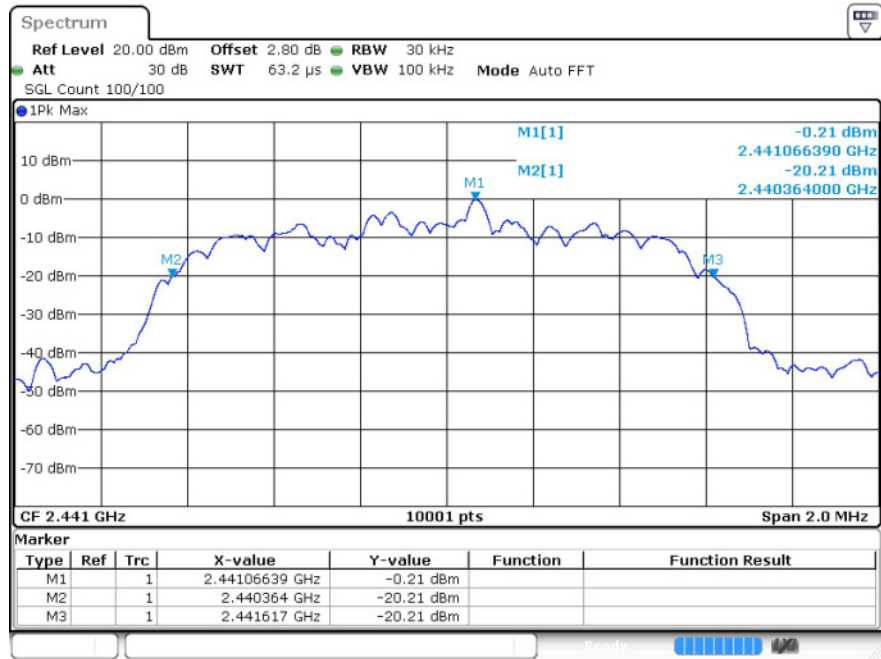
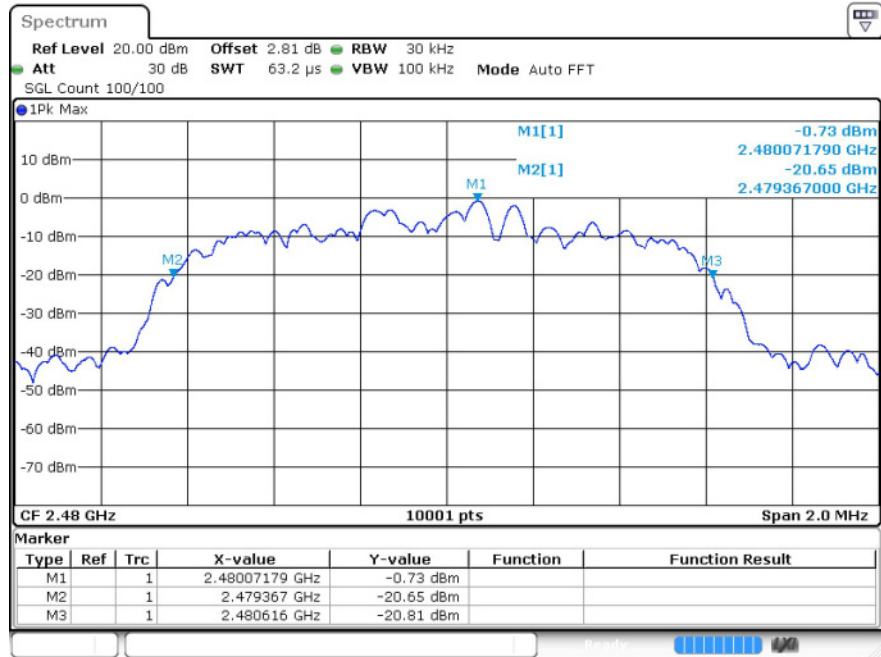
| Mode          | Channel. | 20dB Bandwidth [MHz] | Limit [MHz]   | Verdict |
|---------------|----------|----------------------|---------------|---------|
| GFSK          | LCH      | 0.933                | Not Specified | Pass    |
|               | MCH      | 0.81                 | Not Specified | Pass    |
|               | HCH      | 0.825                | Not Specified | Pass    |
| $\pi/4$ DQPSK | LCH      | 1.302                | Not Specified | Pass    |
|               | MCH      | 1.253                | Not Specified | Pass    |
|               | HCH      | 1.249                | Not Specified | Pass    |
| 8DPSK         | LCH      | 1.251                | Not Specified | Pass    |
|               | MCH      | 1.239                | Not Specified | Pass    |
|               | HCH      | 1.242                | Not Specified | Pass    |

### 3.2 Test Graphs

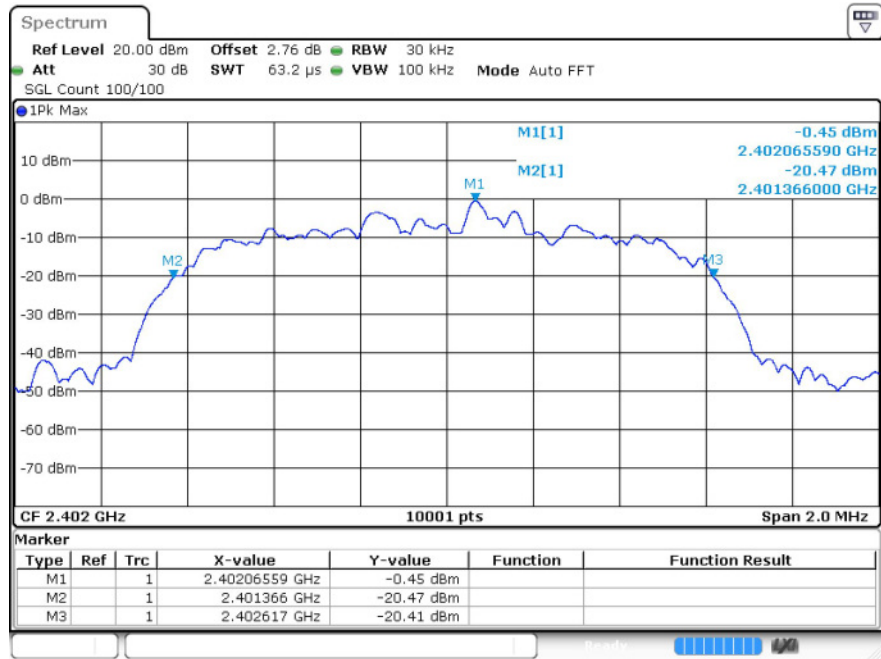


GFSK/HCH

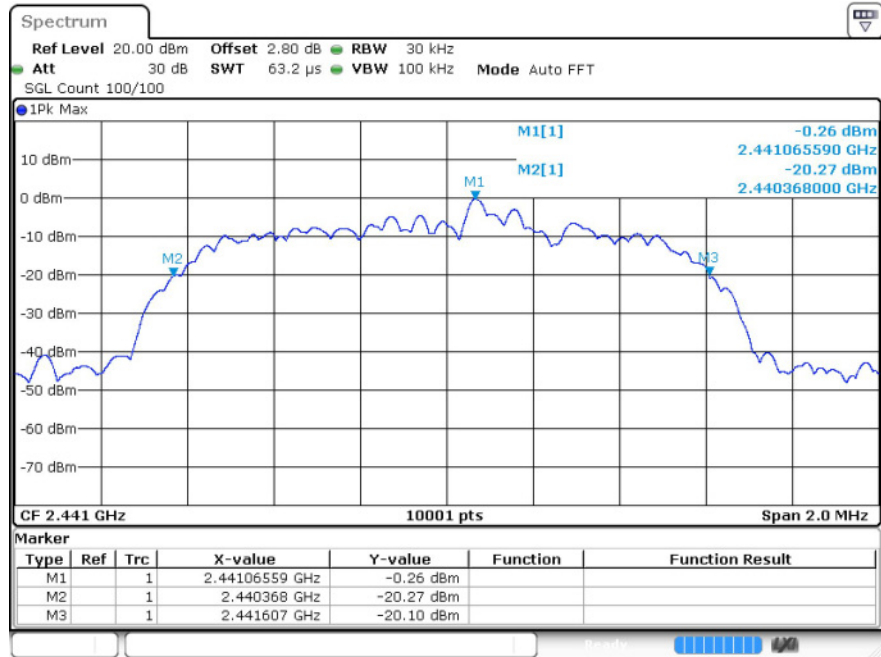

 $\pi/4$ DQPSK/LCH


$\pi/4$ DQPSK/MCH

 $\pi/4$ DQPSK/HCH


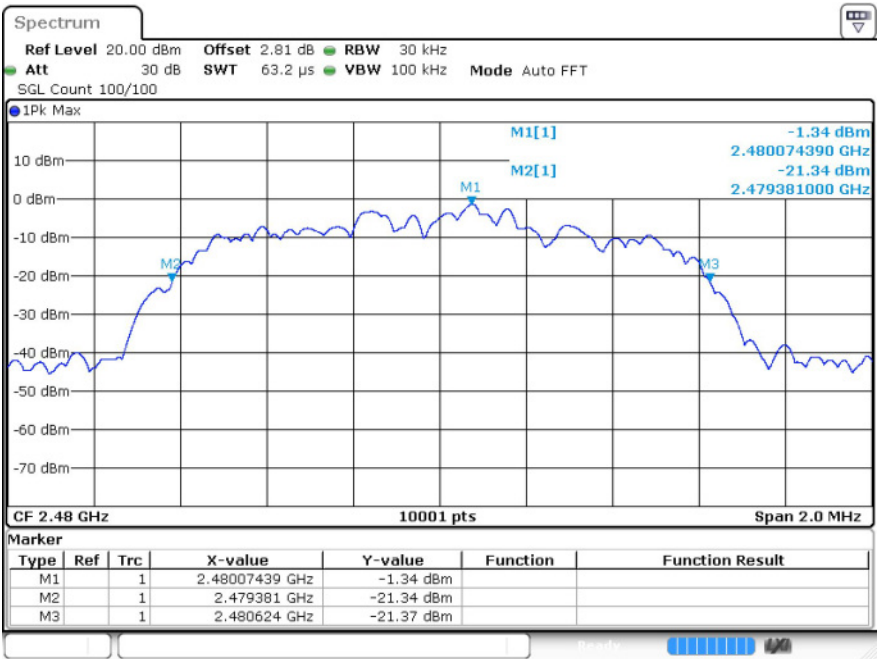
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

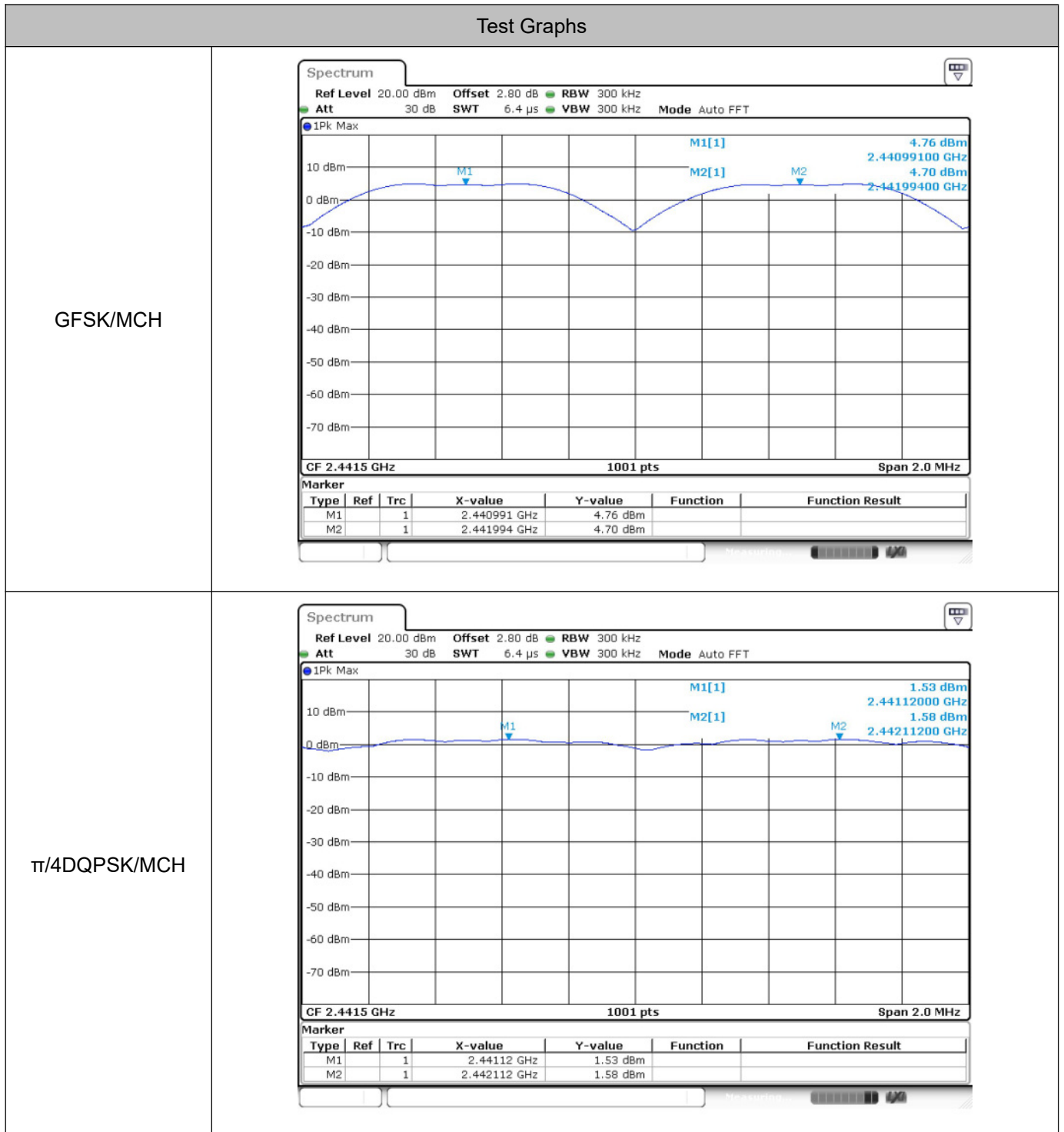


## 4 Carrier Frequency Separation

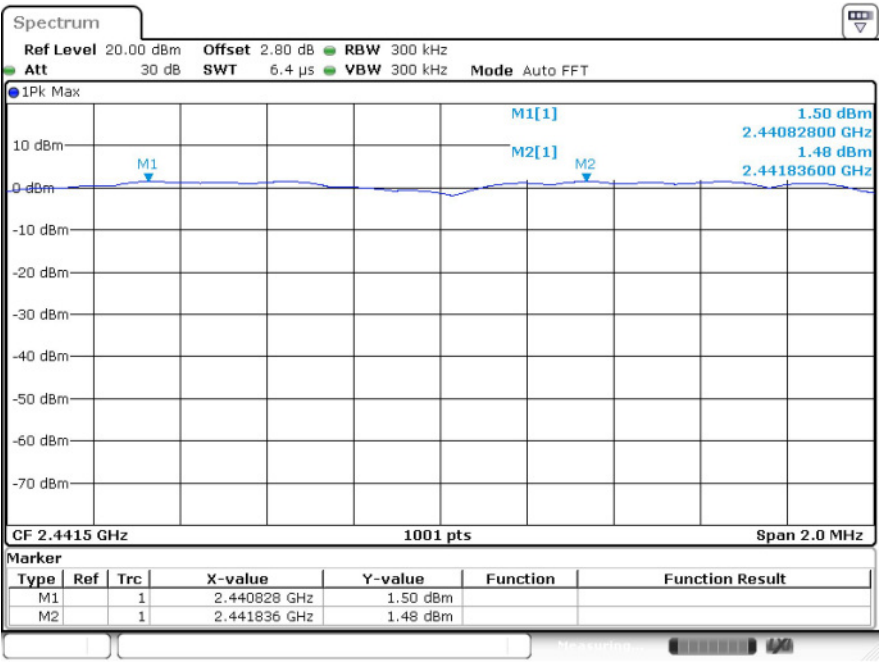
### 4.1 Test Result

| Mode          | Channel. | Carrier Frequency Separation [MHz] | Limit [MHz] | Verdict |
|---------------|----------|------------------------------------|-------------|---------|
| GFSK          | MCH      | 1.003                              | 0.54        | Pass    |
| $\pi/4$ DQPSK | MCH      | 0.992                              | 0.835       | Pass    |
| 8DPSK         | MCH      | 1.008                              | 0.826       | Pass    |

## 4.2 Test Graphs



8DPSK/MCH

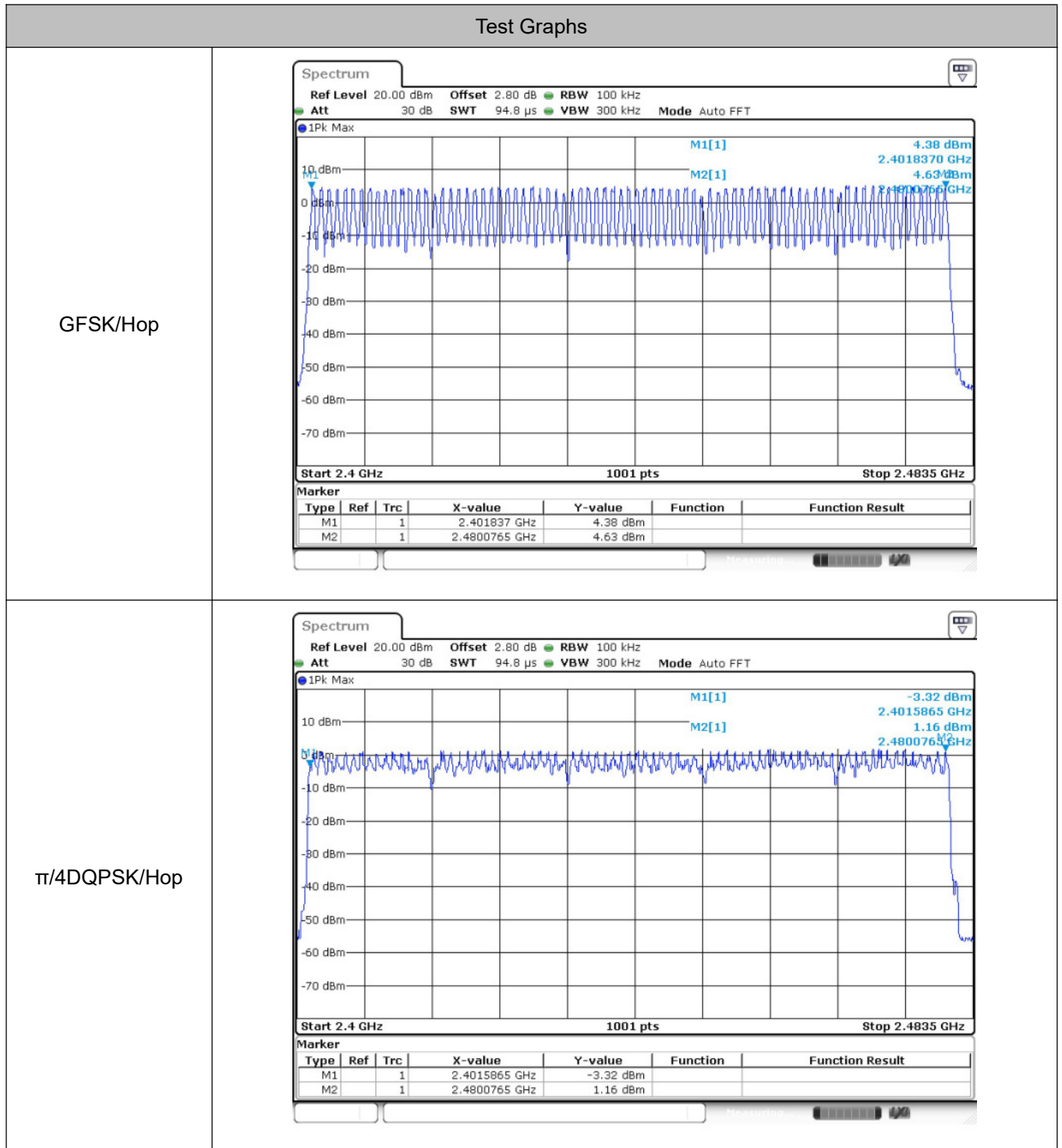


## 5 Hopping Channel Number

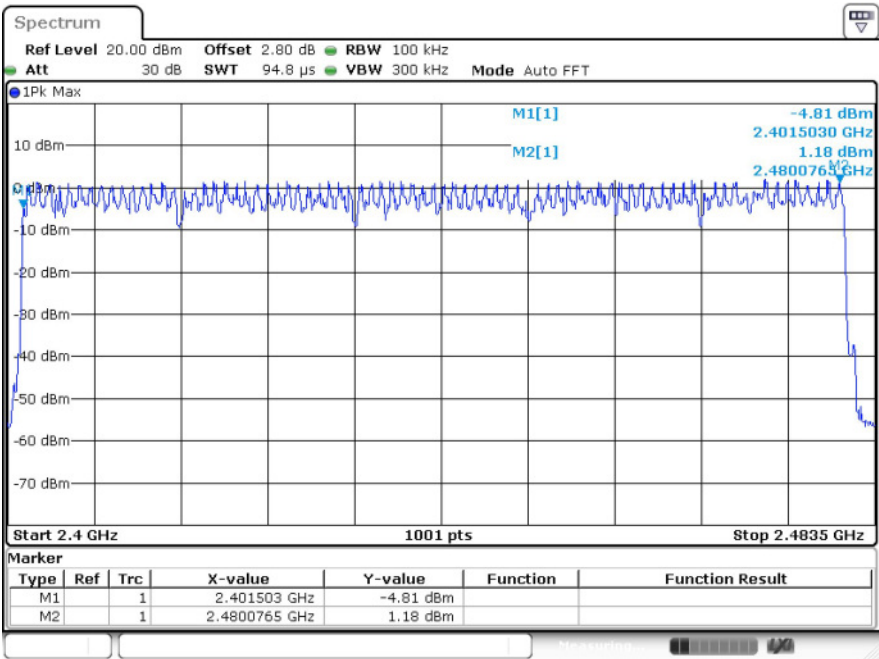
### 5.1 Test Result

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

## 5.2 Test Graphs



8DPSK/Hop

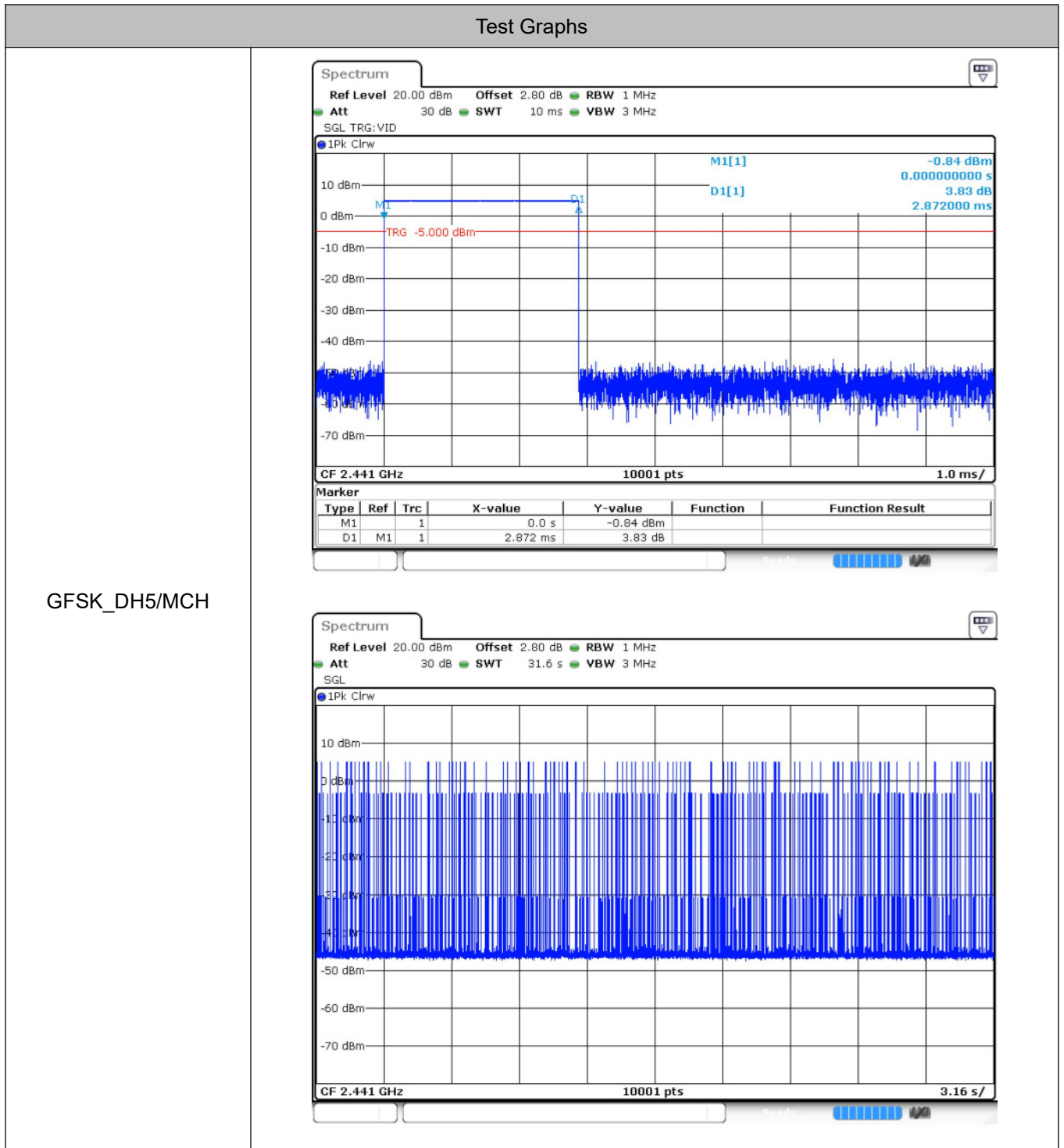


## 6 Dwell Time

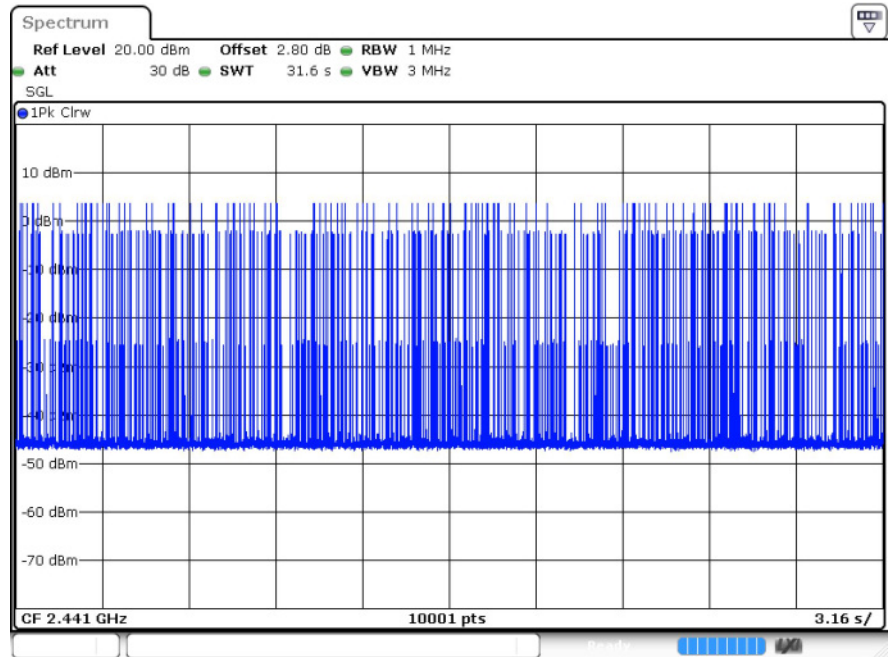
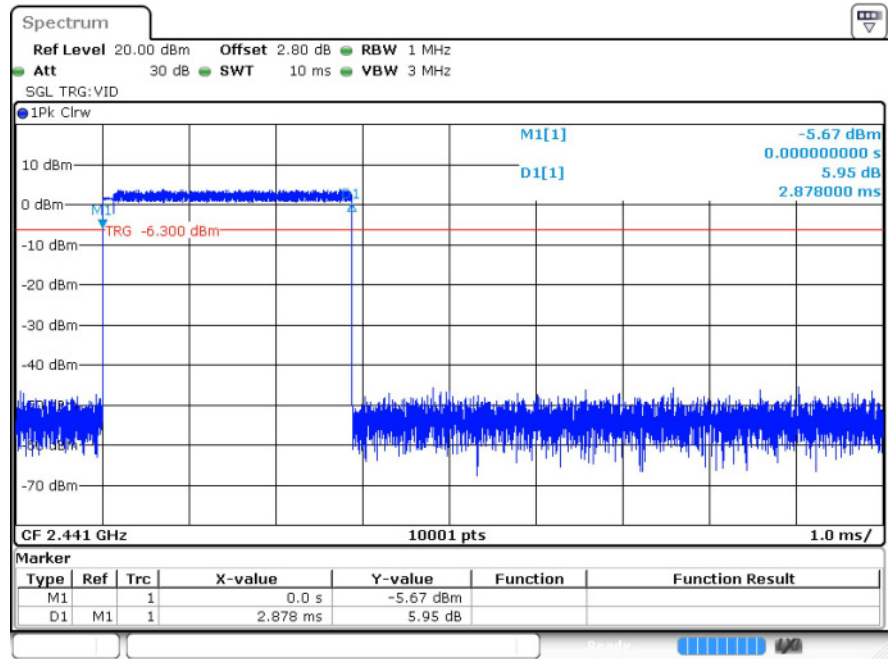
### 6.1 Test Result

| Mode          | Packet | Channel | Burst Width<br>[ms/hop/ch] | Total<br>Hops[hop*ch] | Dwell Time[ms] | Limit [s] | Verdict |
|---------------|--------|---------|----------------------------|-----------------------|----------------|-----------|---------|
| GFSK          | DH5    | MCH     | 2.872                      | 115                   | 330.28         | 0.4       | Pass    |
| $\pi/4$ DQPSK | 2DH5   | MCH     | 2.878                      | 117                   | 336.726        | 0.4       | Pass    |
| 8DPSK         | 3DH5   | MCH     | 2.879                      | 108                   | 310.932        | 0.4       | Pass    |

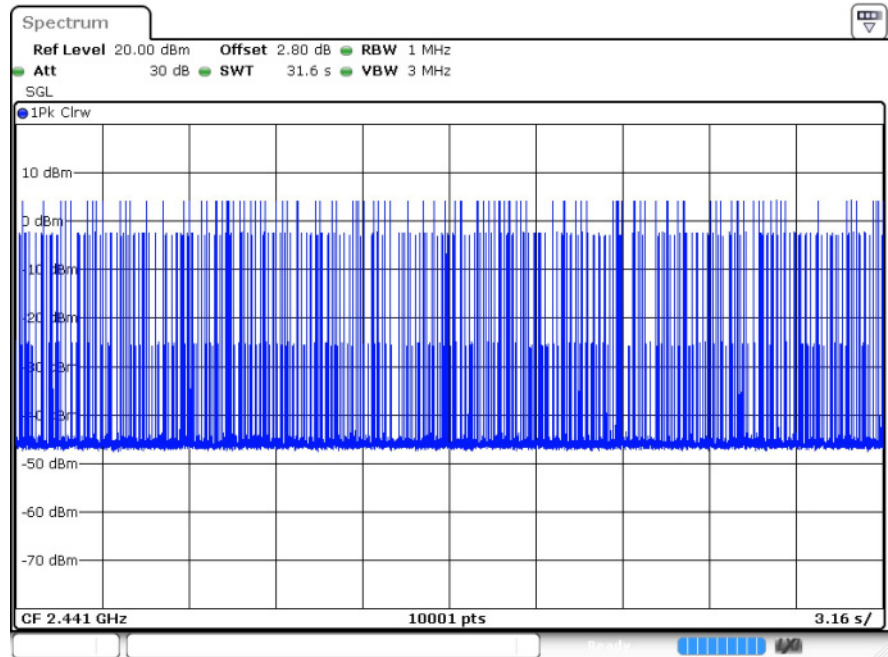
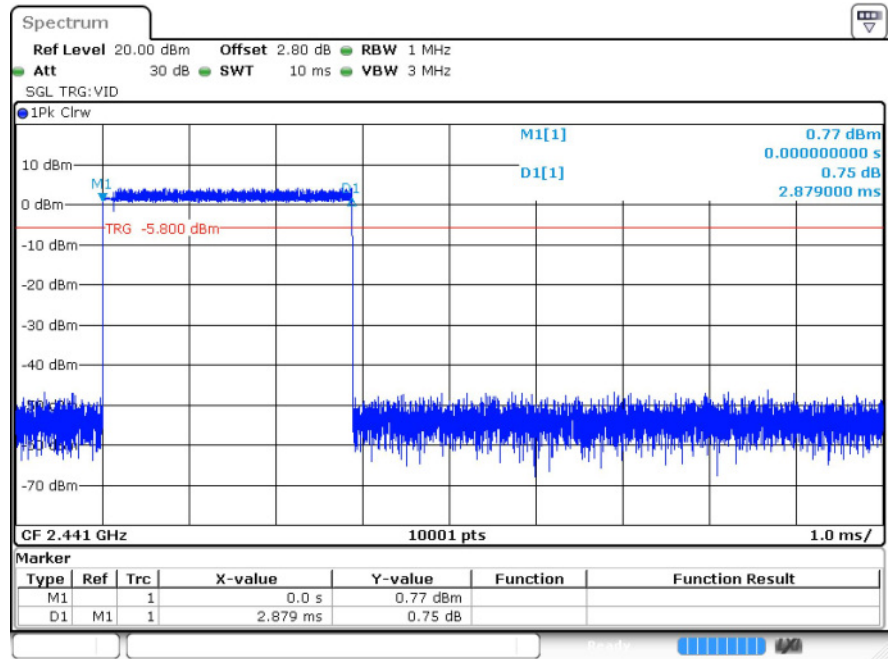
## 6.2 Test Graphs



$\pi/4$ DQPSK  
\_2DH5/MCH



8DPSK\_3DH5/MCH

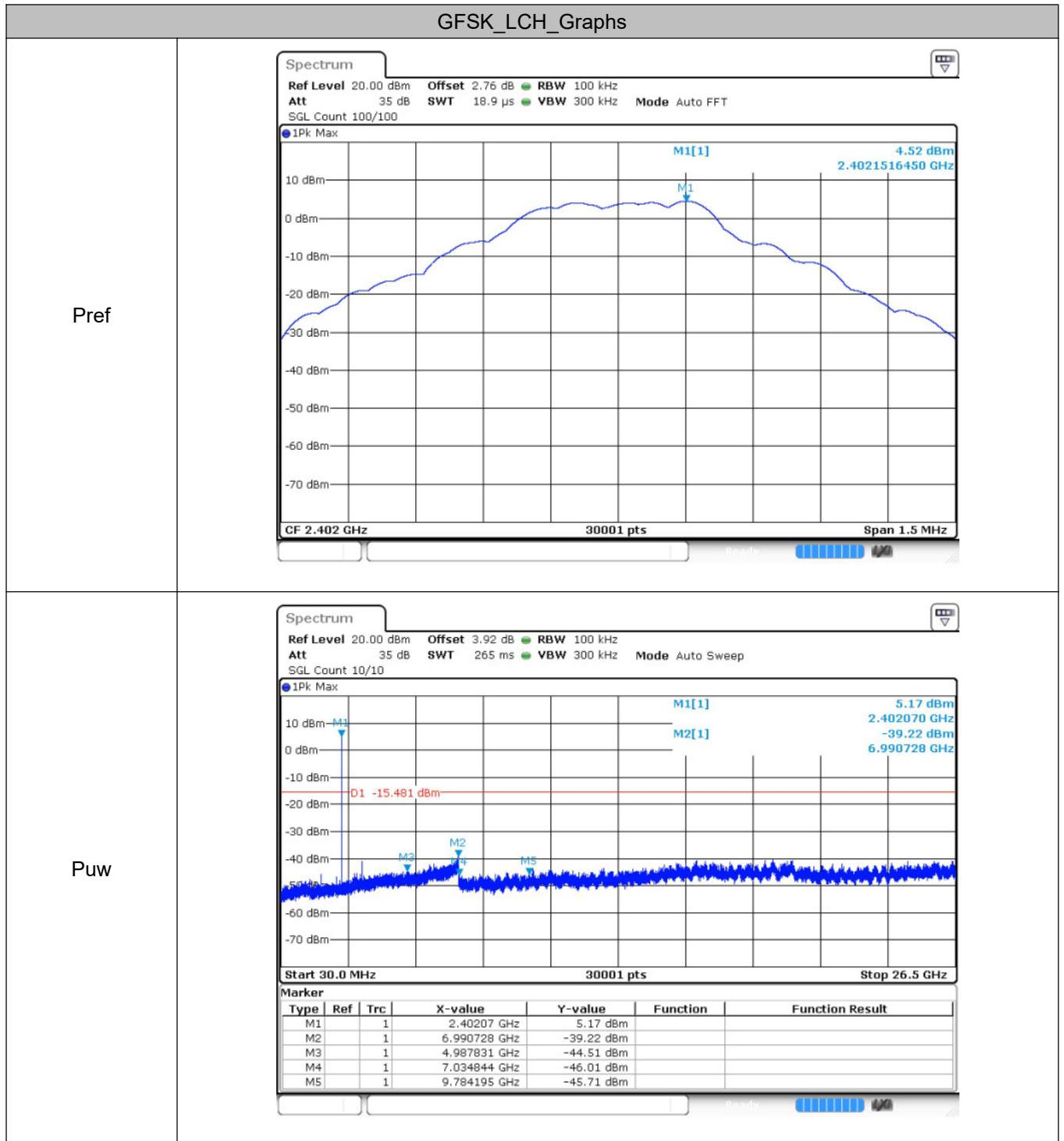


## 7 RF Conducted Spurious Emissions

### 7.1 Test Result

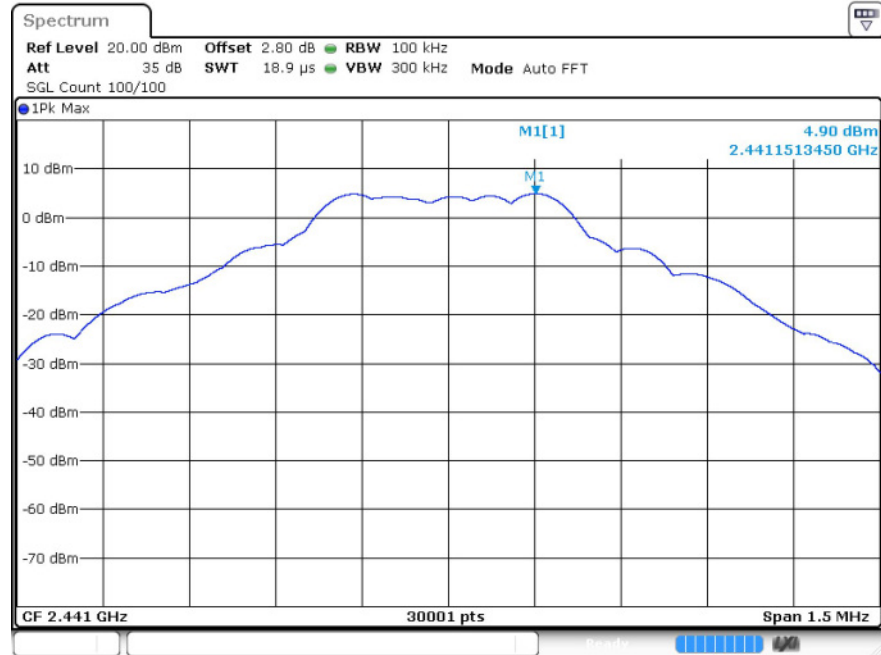
| Mode          | Channel | Max. Level [dBc] | Limit [dBc] | Verdict |
|---------------|---------|------------------|-------------|---------|
| GFSK          | LCH     | -43.73           | -20         | Pass    |
|               | MCH     | -44.37           | -20         | Pass    |
|               | HCH     | -45.02           | -20         | Pass    |
| $\pi/4$ DQPSK | LCH     | -39.62           | -20         | Pass    |
|               | MCH     | -39.75           | -20         | Pass    |
|               | HCH     | -41.25           | -20         | Pass    |
| 8DPSK         | LCH     | -41.38           | -20         | Pass    |
|               | MCH     | -40.34           | -20         | Pass    |
|               | HCH     | -40.89           | -20         | Pass    |

## 7.2 Test Graphs

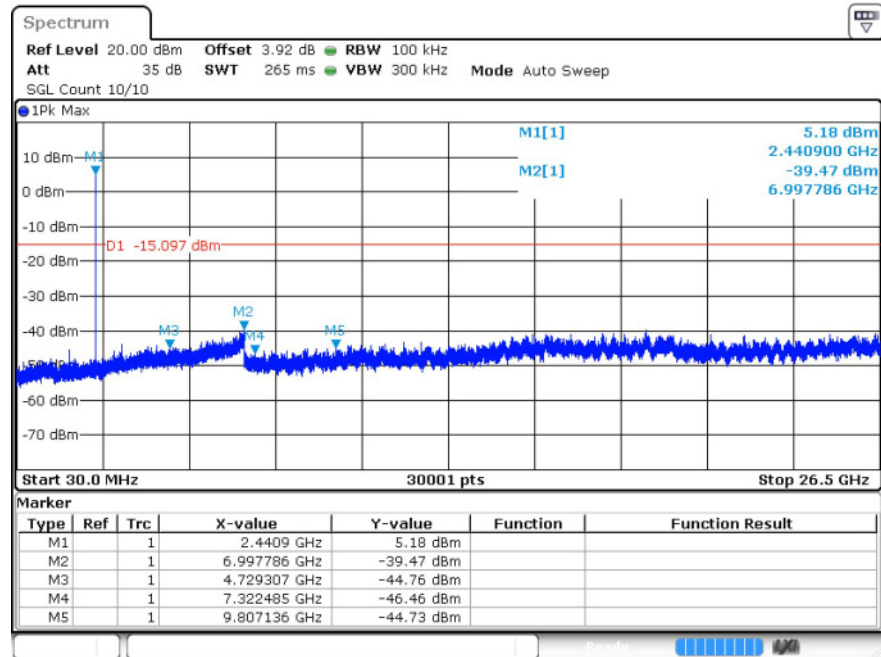


## GFSK\_MCH\_Graphs

Pref

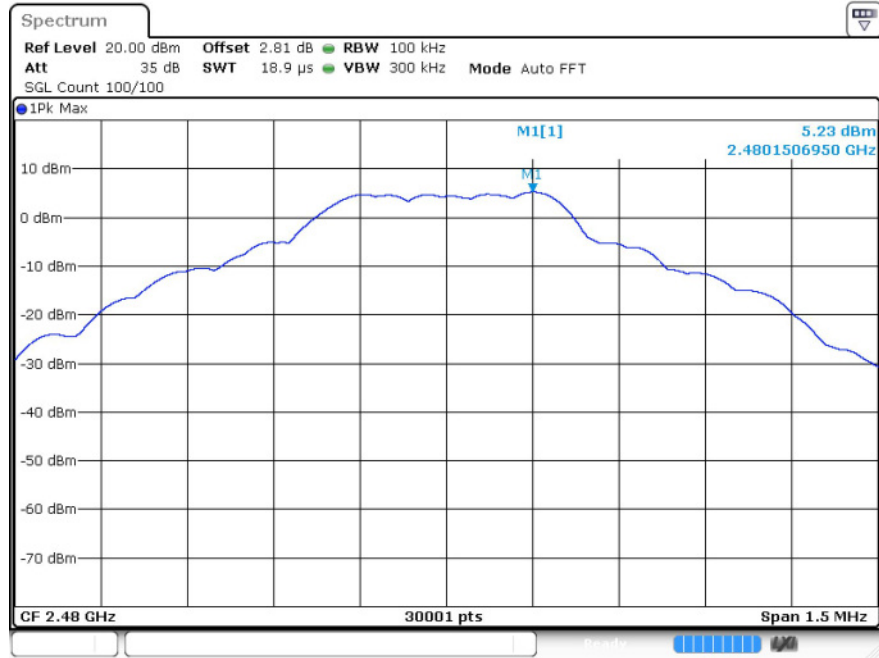


Puw

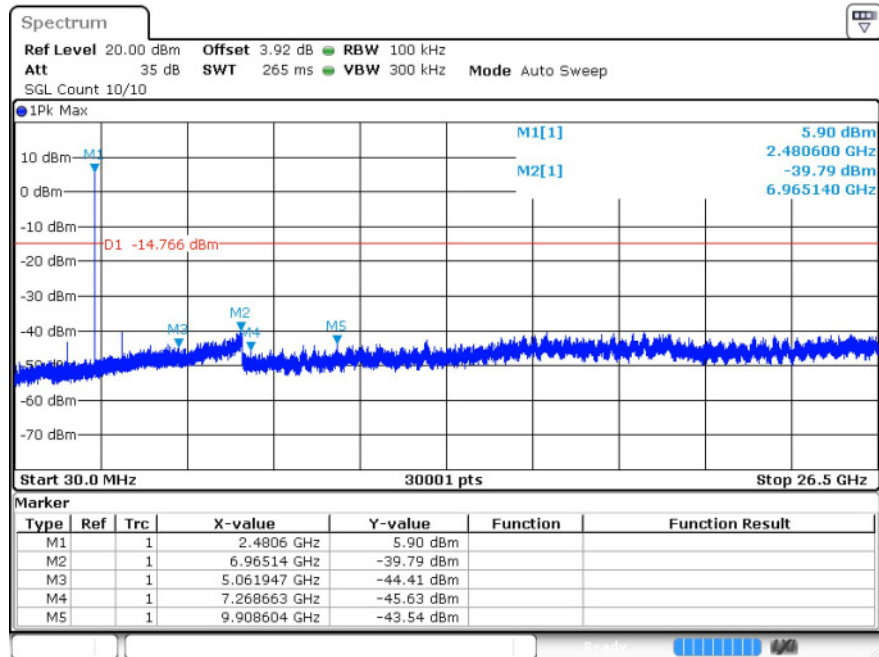


## GFSK\_HCH\_Graphs

Pref

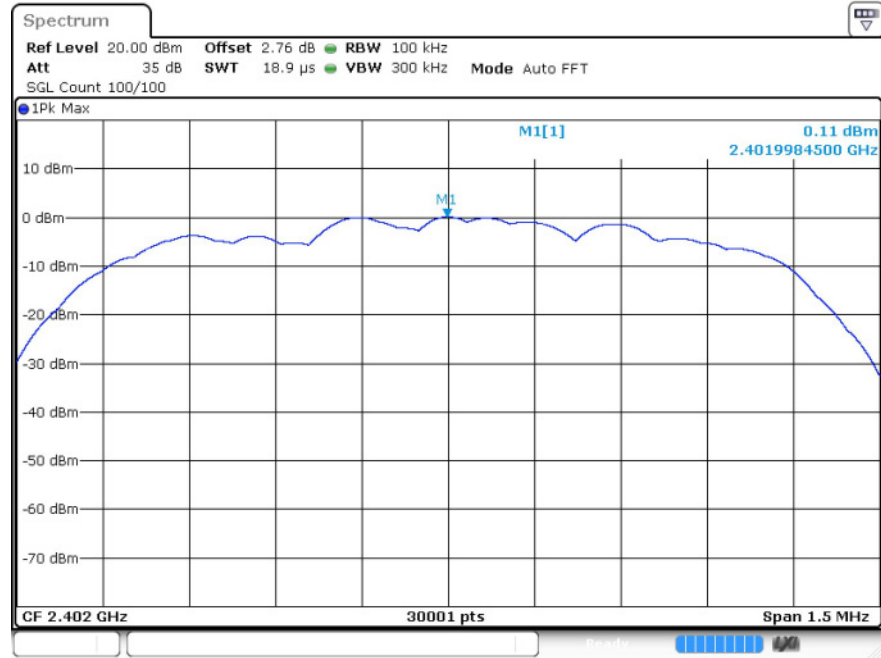


Puw

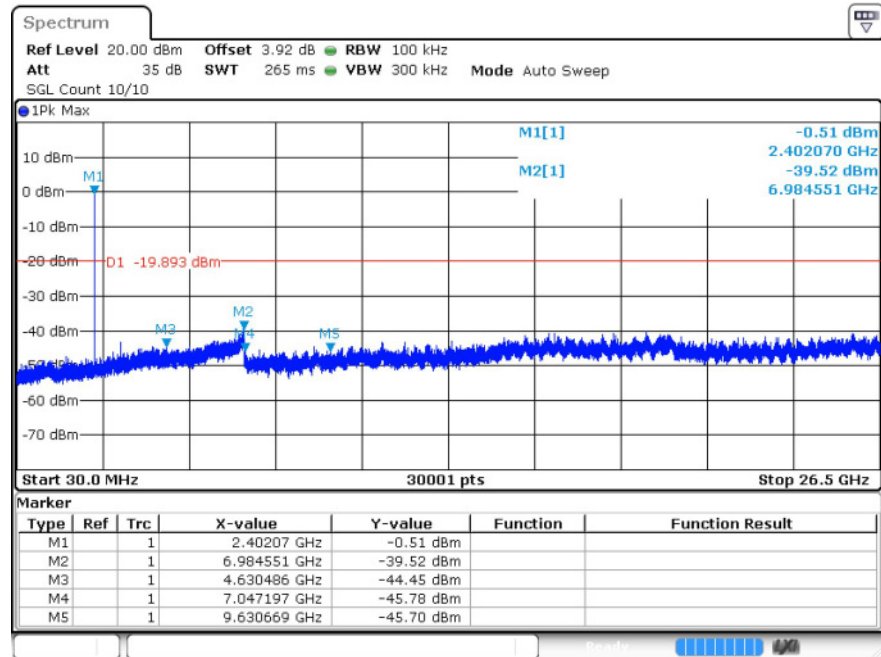


# $\pi/4$ DQPSK\_LCH\_Graphs

Pref

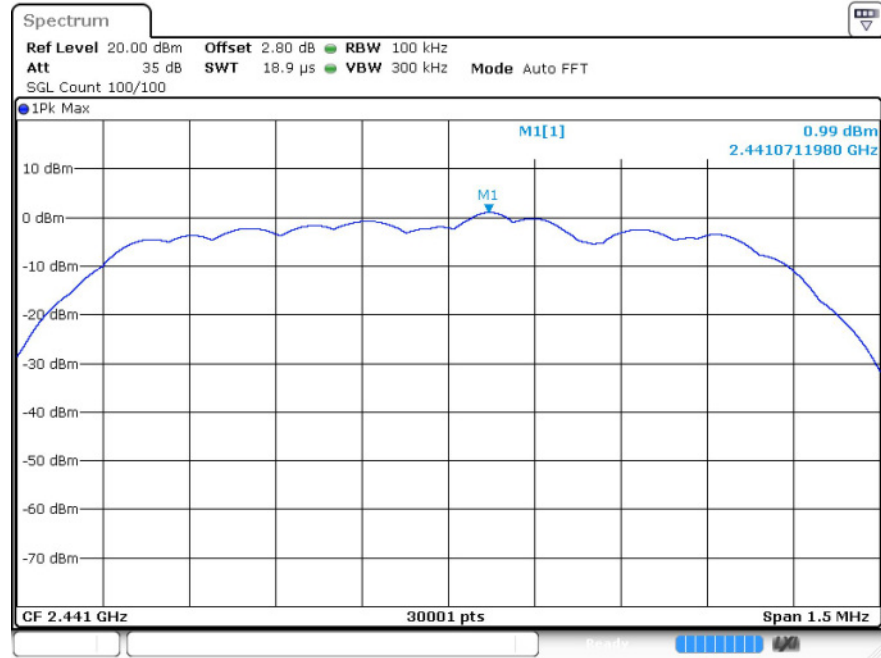


Puw

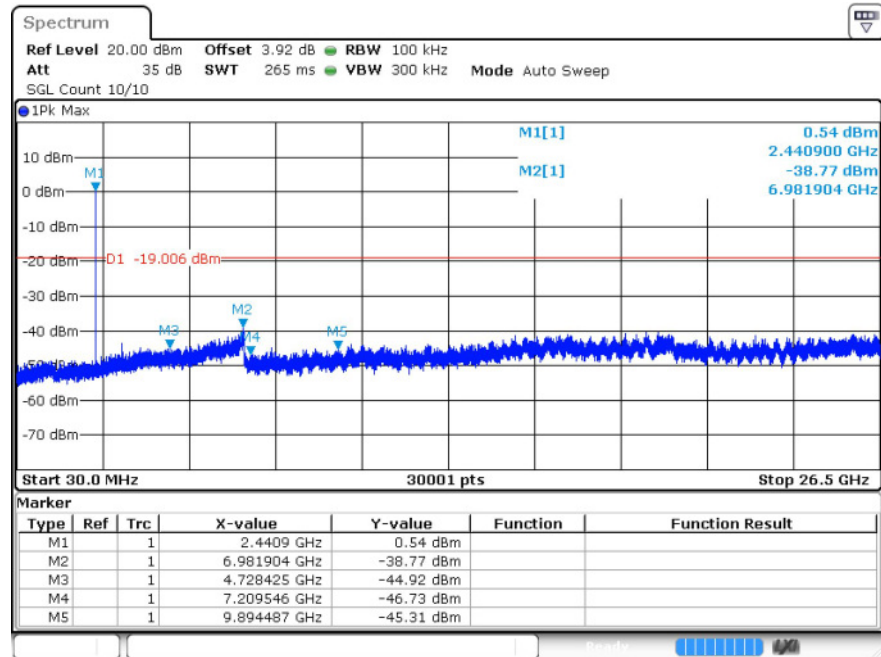


# $\pi$ /4DQPSK\_MCH\_Graphs

Pref

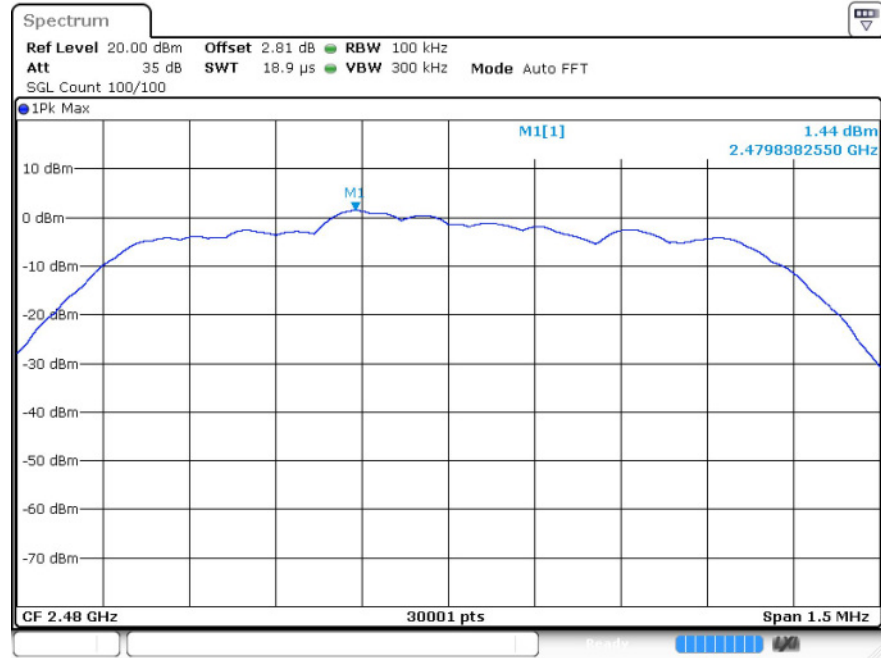


Puw



# $\pi/4$ DQPSK\_HCH\_Graphs

Pref



Puw

