



## Appendix A

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

Product Name: LED WIRELESS SPEAKER

Trade Mark: N/A

Test Model: STG-6954-KB

Environmental Conditions

|                    |             |
|--------------------|-------------|
| Temperature:       | 24.4℃       |
| Relative Humidity: | 52.3%       |
| ATM Pressure:      | 101Kpa      |
| Test Engineer:     | Simba Huang |
| Supervised by:     | Seal Chen   |

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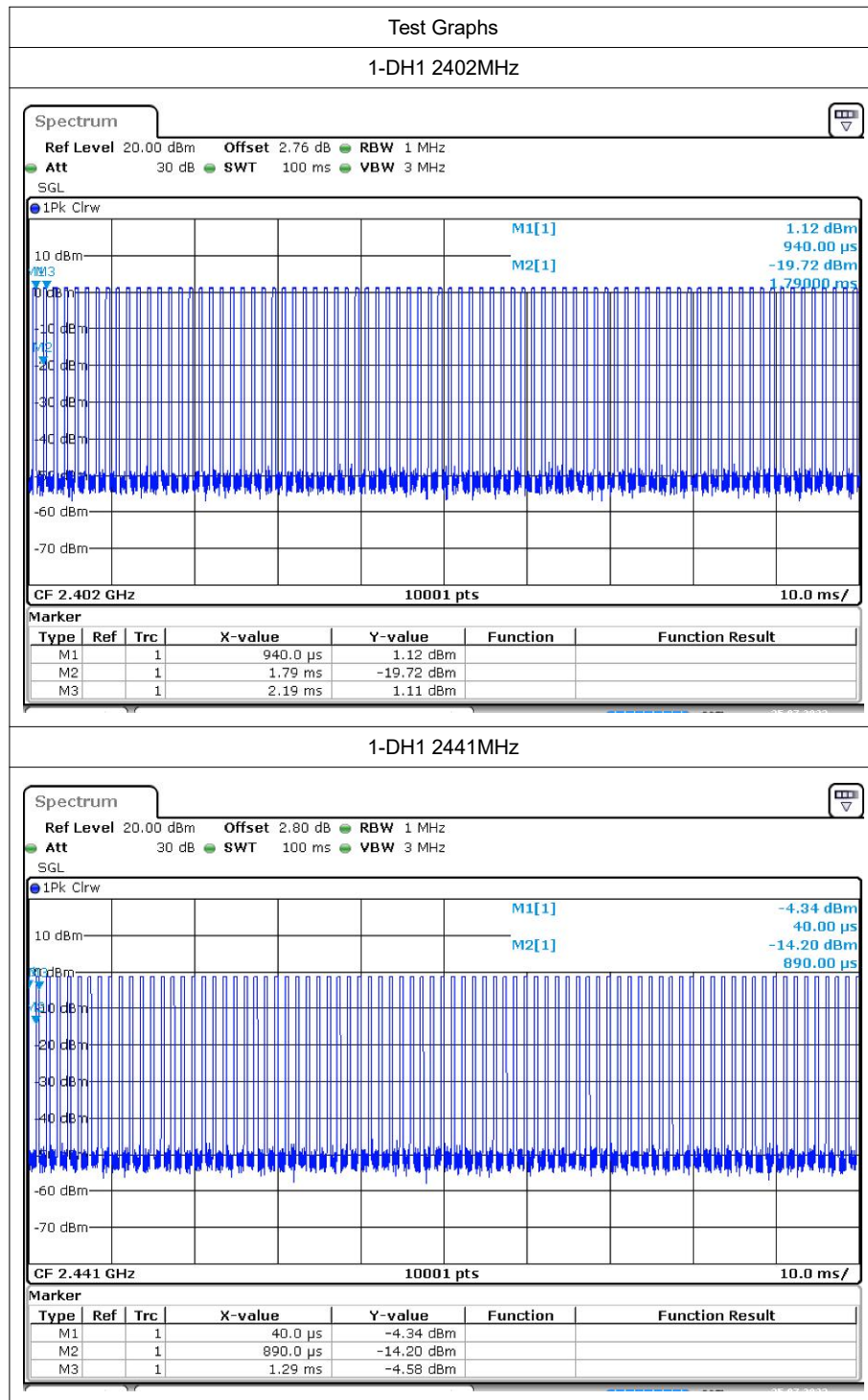
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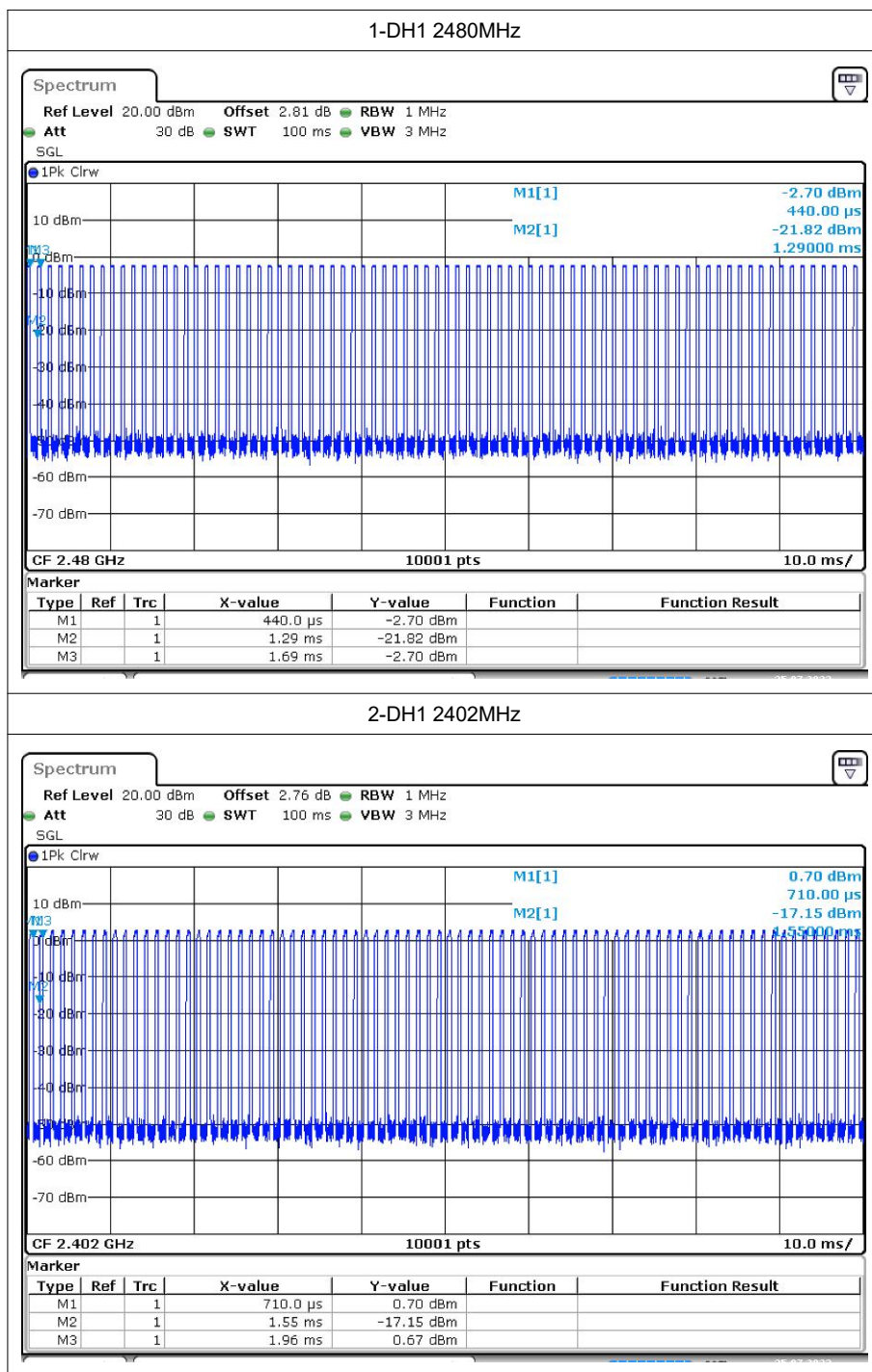
# 1 Duty Cycle

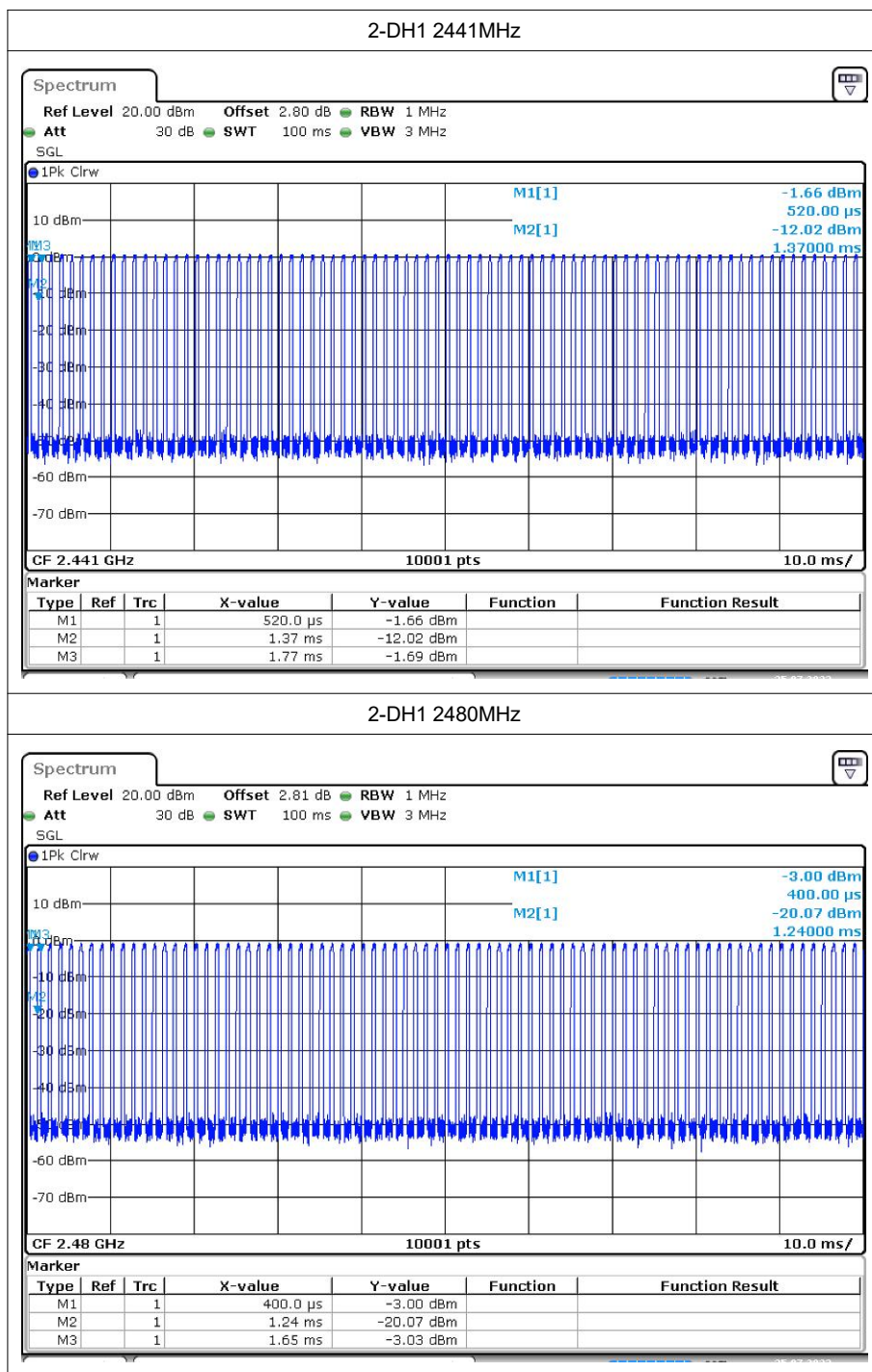
## 1.1 Test Result

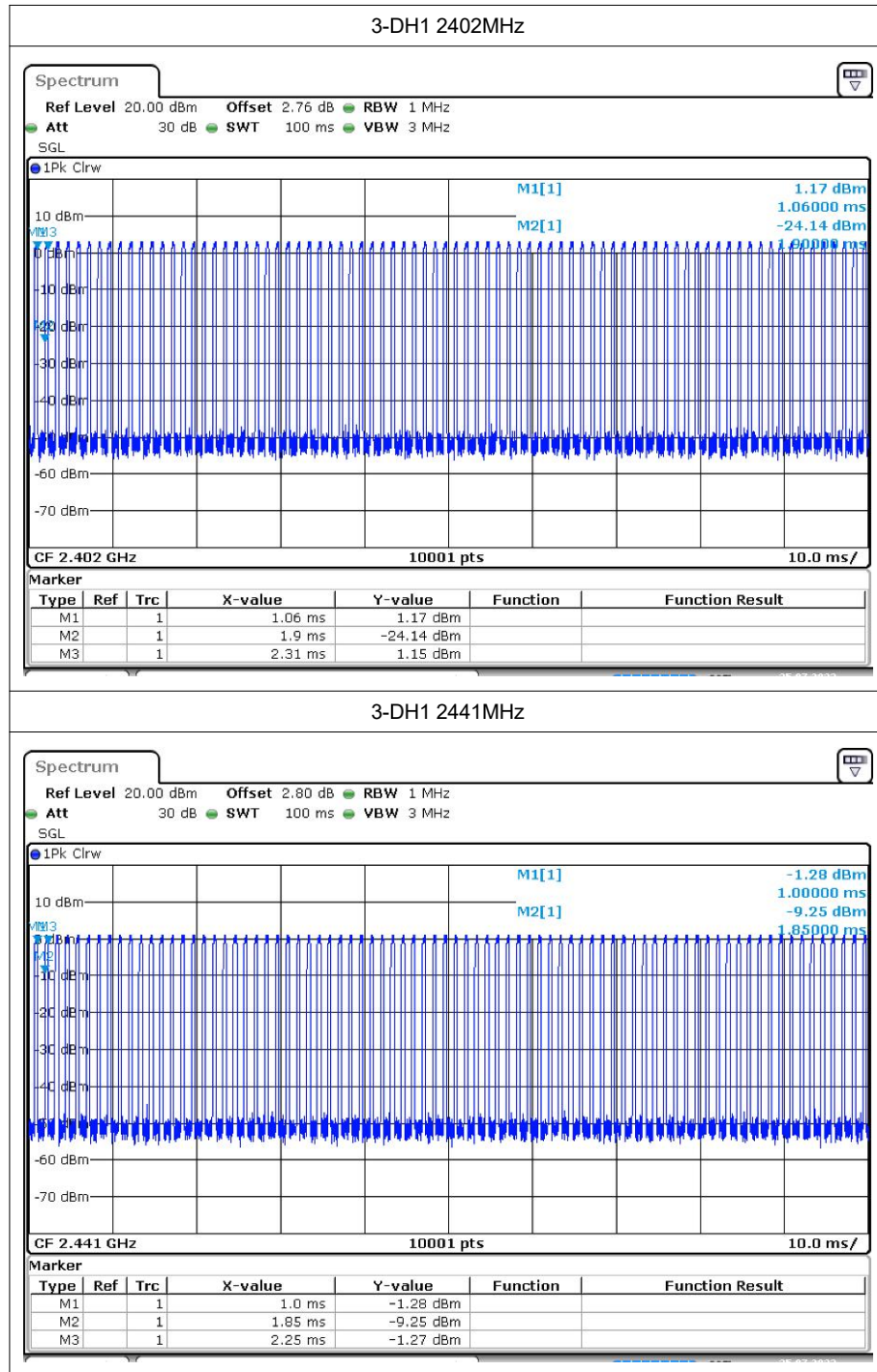
| Mode  | Frequency (MHz) | Duty Cycle (%) | 1/T (kHz) |
|-------|-----------------|----------------|-----------|
| 1-DH1 | 2402            | 32.8           | 2.5       |
| 1-DH1 | 2441            | 32.44          | 2.5       |
| 1-DH1 | 2480            | 32.8           | 2.5       |
| 2-DH1 | 2402            | 33.6           | 2.44      |
| 2-DH1 | 2441            | 32.8           | 2.5       |
| 2-DH1 | 2480            | 33.61          | 2.44      |
| 3-DH1 | 2402            | 33.6           | 2.44      |
| 3-DH1 | 2441            | 33.41          | 2.5       |
| 3-DH1 | 2480            | 33.61          | 2.44      |

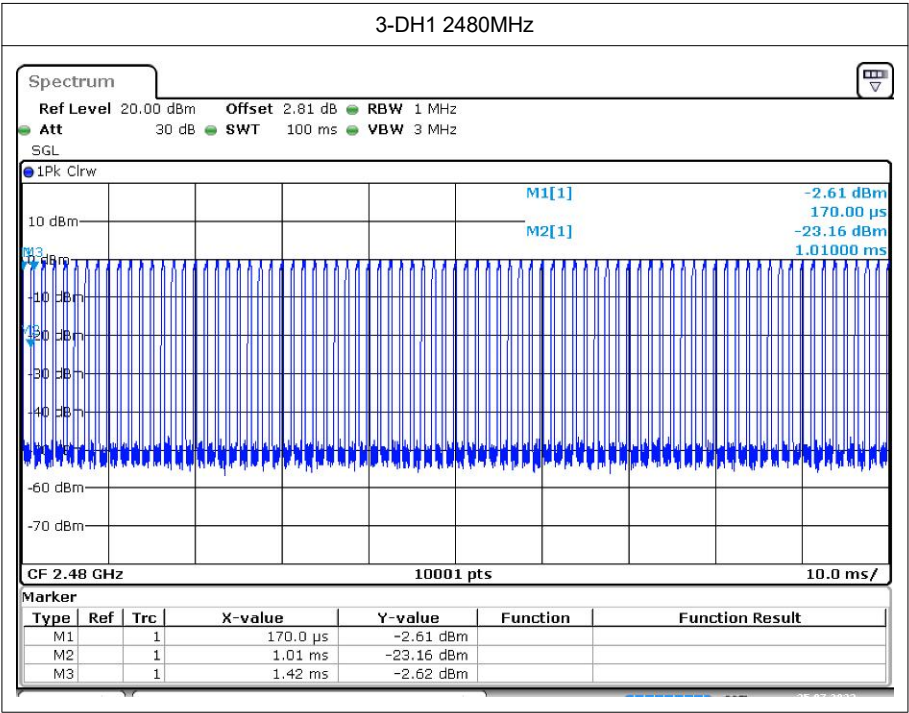
## 1.2 Test Graphs









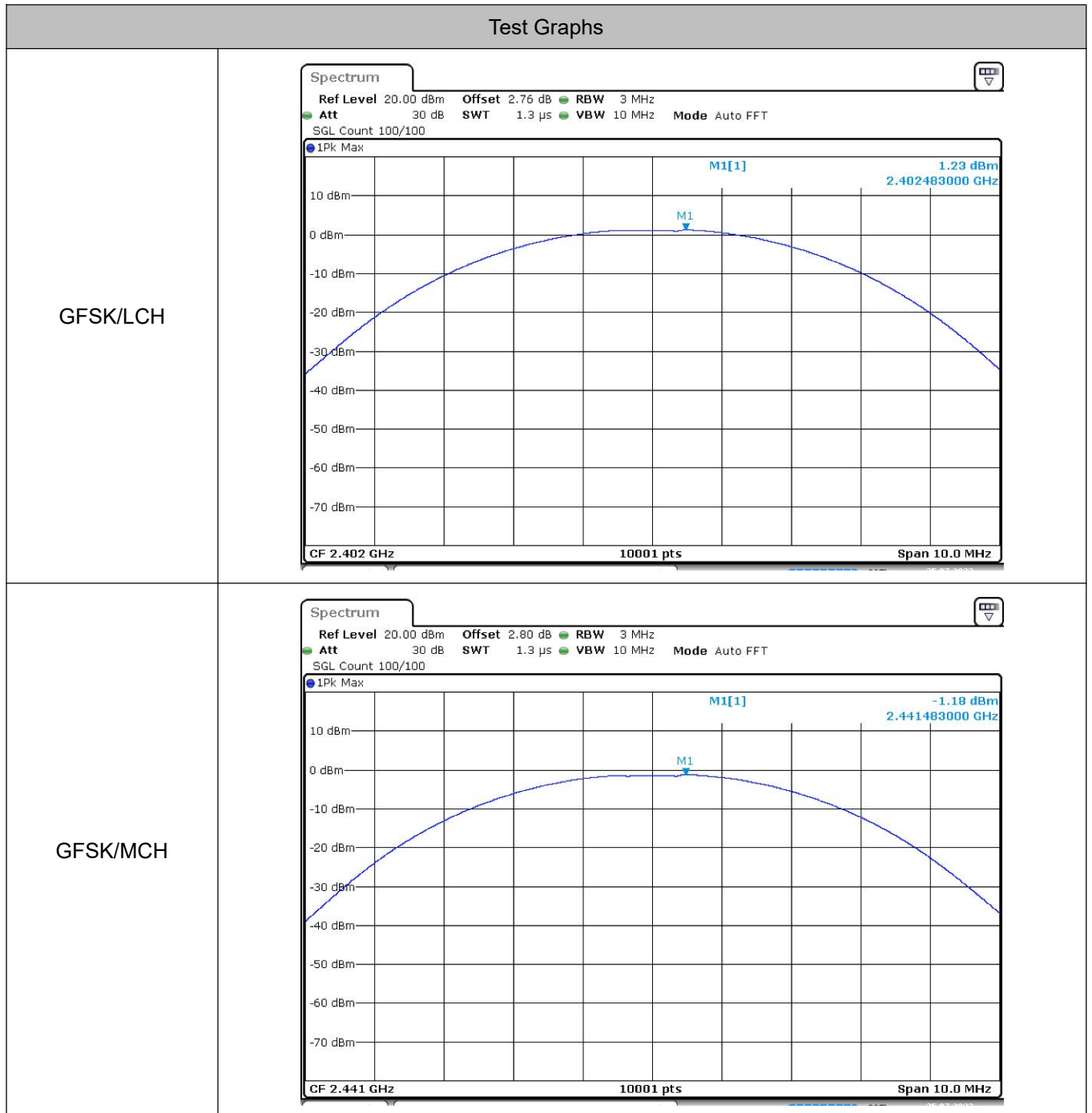


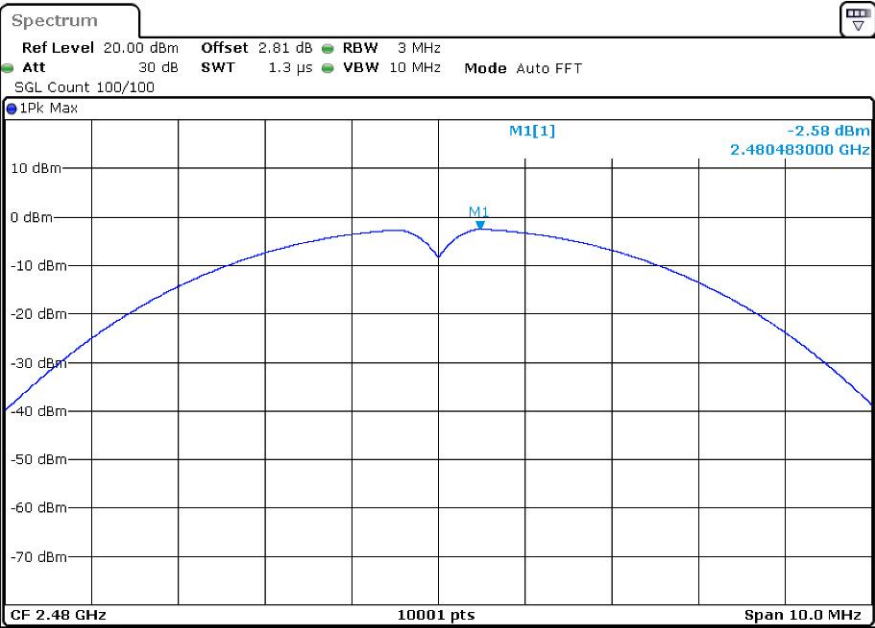
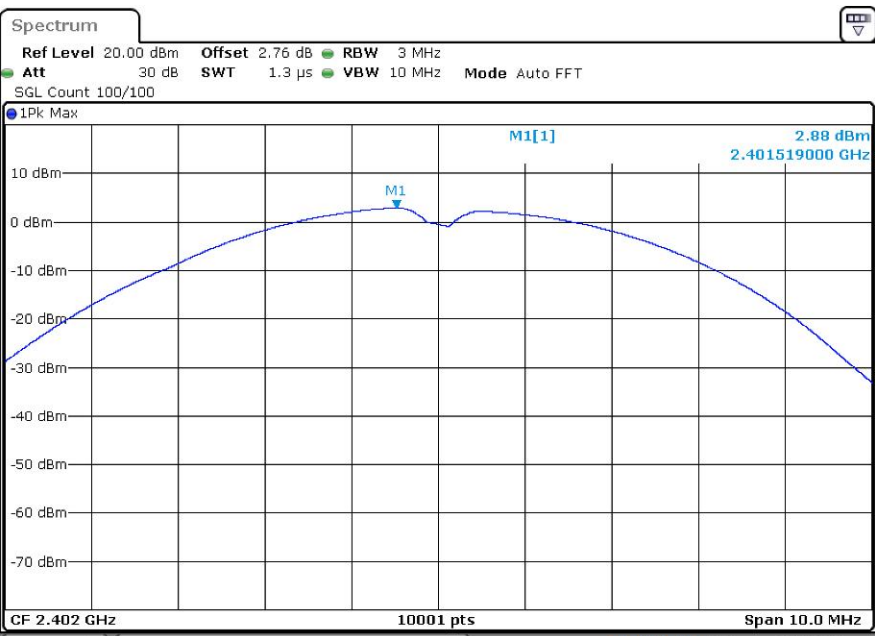
## 2 Maximum Conducted Peak Output Power

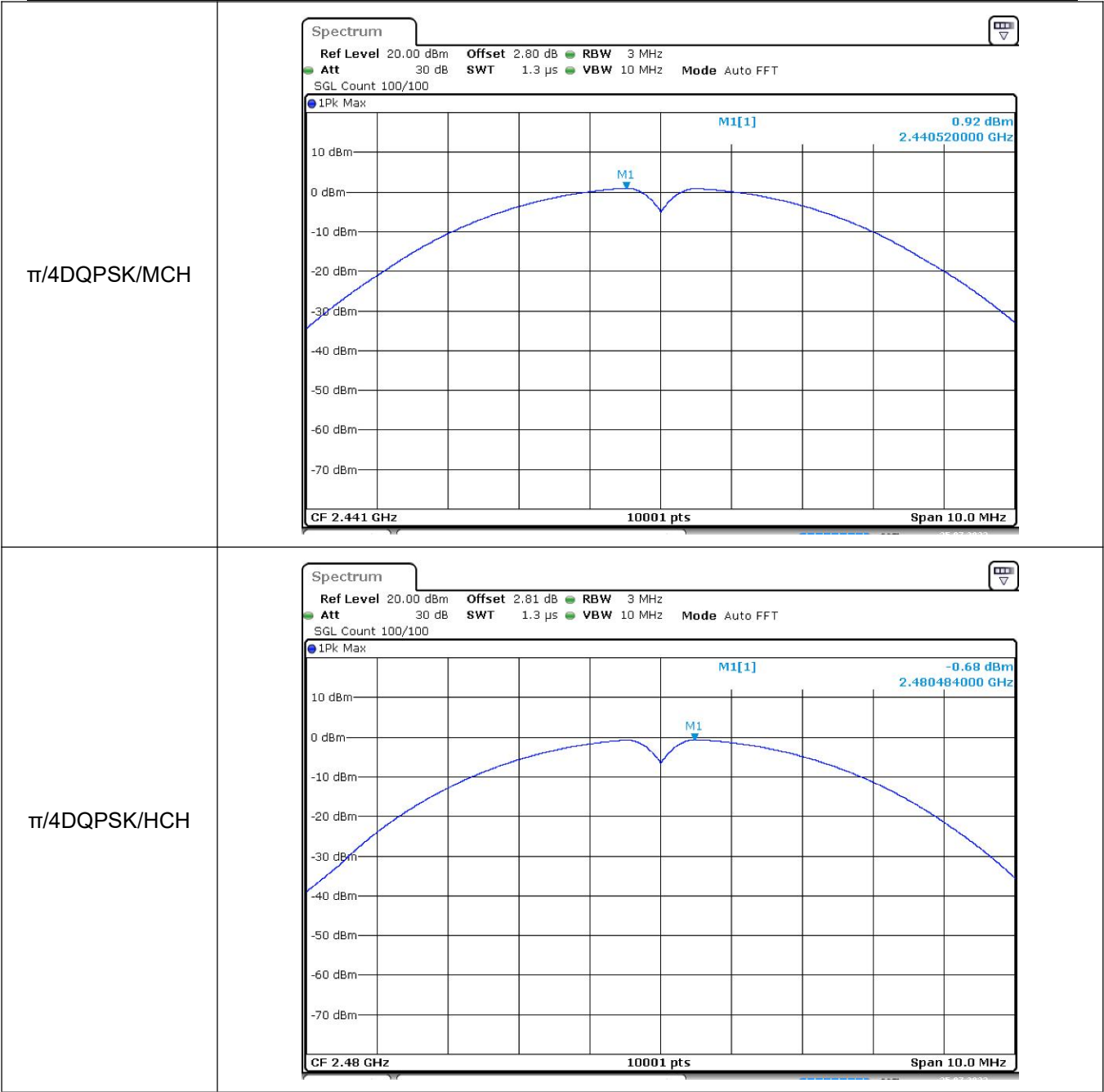
### 2.1 Test Result

| Mode          | Channel. | Maximum Peak Output Power<br>[dBm] | Limit<br>[dBm] | Verdict |
|---------------|----------|------------------------------------|----------------|---------|
| GFSK          | LCH      | 1.23                               | 21             | Pass    |
|               | MCH      | -1.18                              | 21             | Pass    |
|               | HCH      | -2.58                              | 21             | Pass    |
| $\pi/4$ DQPSK | LCH      | 2.88                               | 21             | Pass    |
|               | MCH      | 0.92                               | 21             | Pass    |
|               | HCH      | -0.68                              | 21             | Pass    |
| 8DPSK         | LCH      | 2.35                               | 21             | Pass    |
|               | MCH      | 1.22                               | 21             | Pass    |
|               | HCH      | -0.52                              | 21             | Pass    |

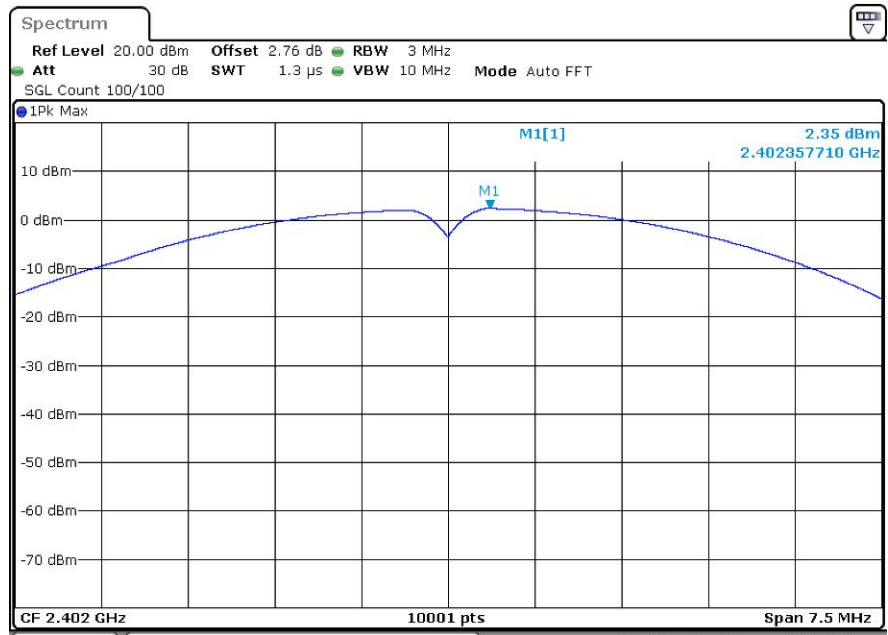
## 2.2 Test Graphs



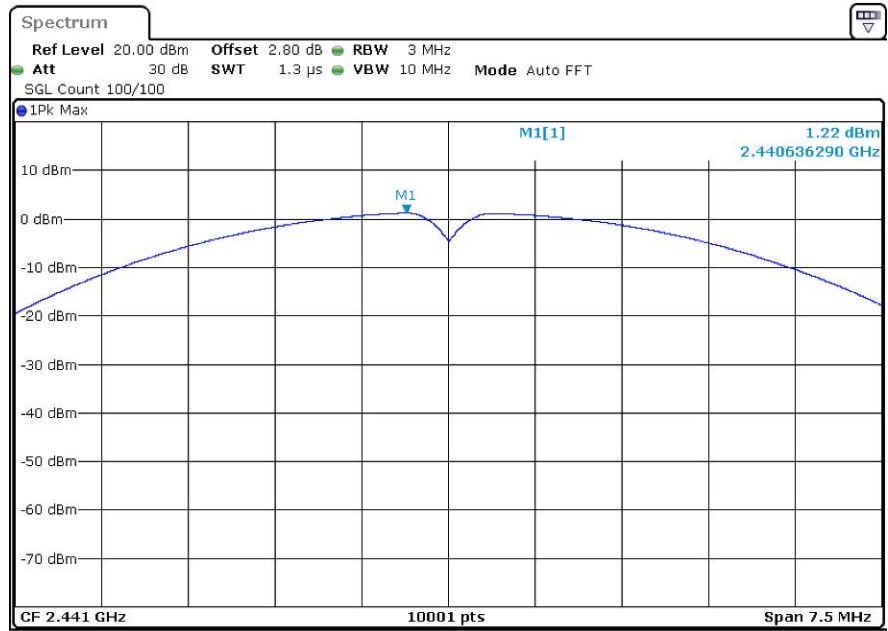
|                                    |                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>GFSK/HCH</p>                    |  <p><b>Spectrum</b><br/> Ref Level 20.00 dBm Offset 2.81 dB RBW 3 MHz<br/> Att 30 dB SWT 1.3 <math>\mu</math>s VBW 10 MHz Mode Auto FFT<br/> SGL Count 100/100</p> <p>1Pk Max</p> <p>M1[1] -2.58 dBm<br/>2.480483000 GHz</p> <p>CF 2.48 GHz 10001 pts Span 10.0 MHz</p>  |
| <p><math>\pi</math>/4DQPSK/LCH</p> |  <p><b>Spectrum</b><br/> Ref Level 20.00 dBm Offset 2.76 dB RBW 3 MHz<br/> Att 30 dB SWT 1.3 <math>\mu</math>s VBW 10 MHz Mode Auto FFT<br/> SGL Count 100/100</p> <p>1Pk Max</p> <p>M1[1] 2.88 dBm<br/>2.401519000 GHz</p> <p>CF 2.402 GHz 10001 pts Span 10.0 MHz</p> |



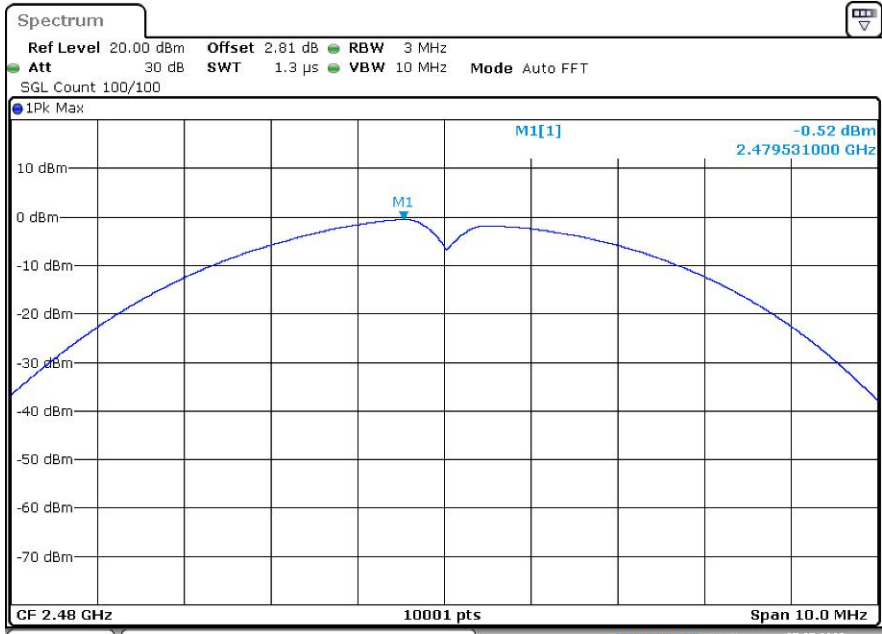
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

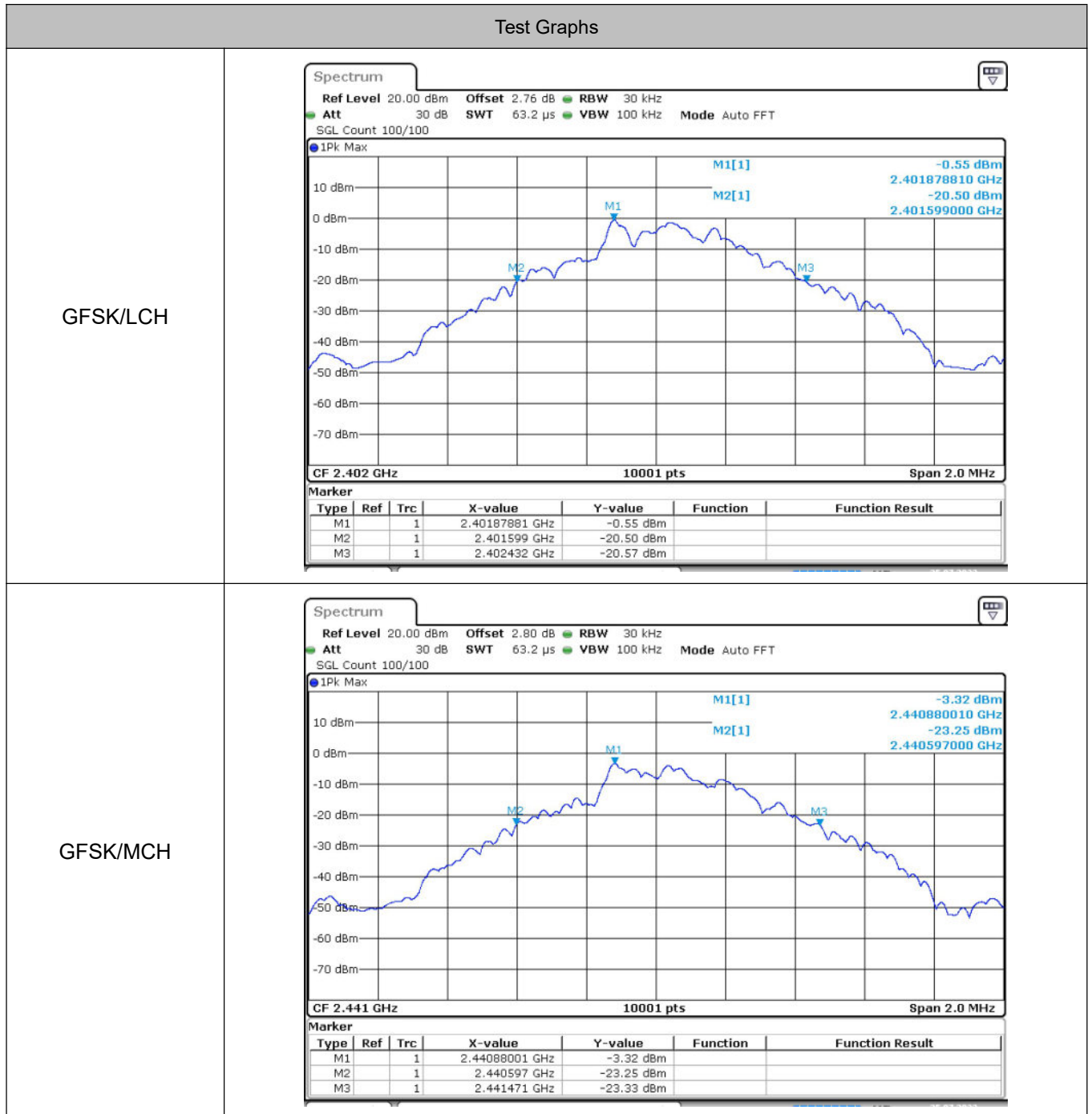


### 3 20dB Bandwidth

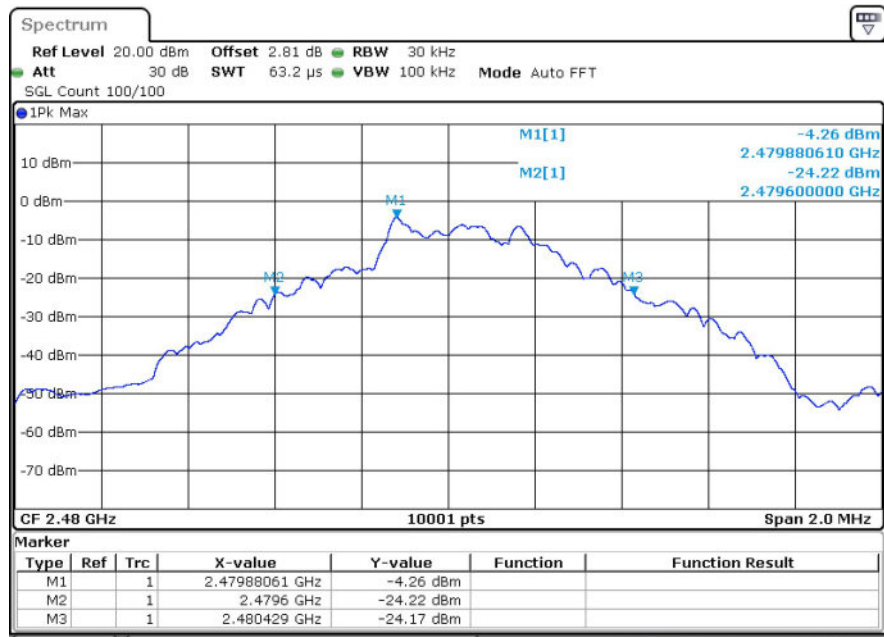
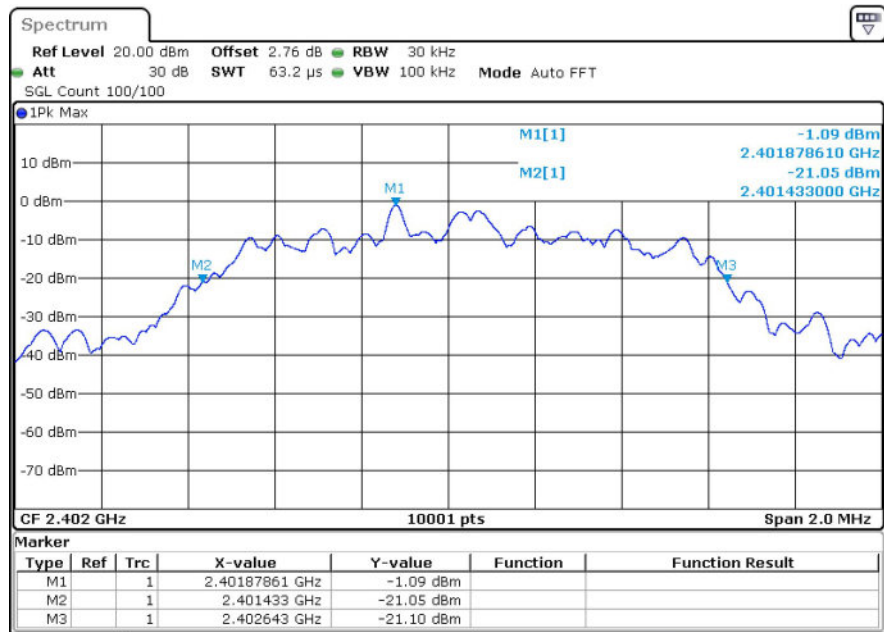
#### 3.1 Test Result

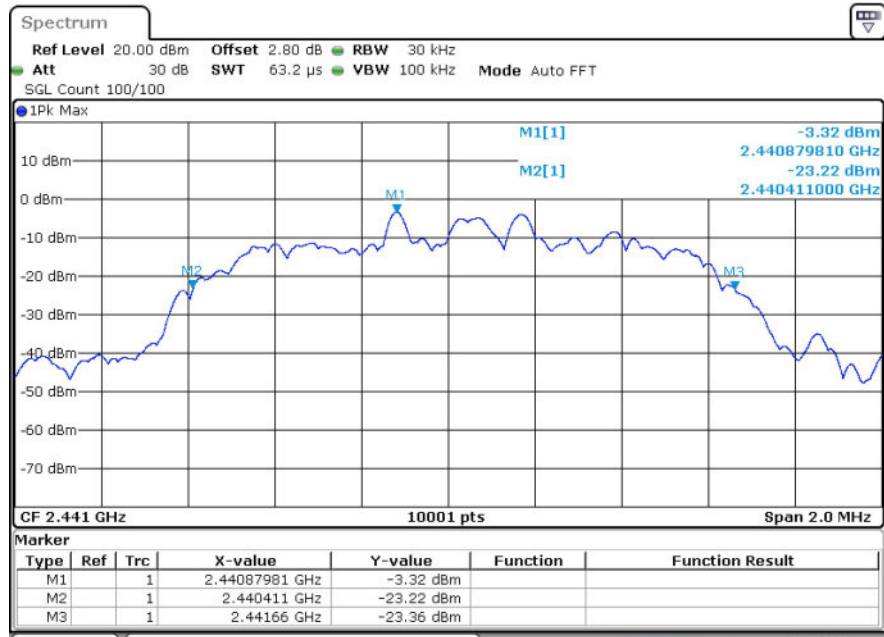
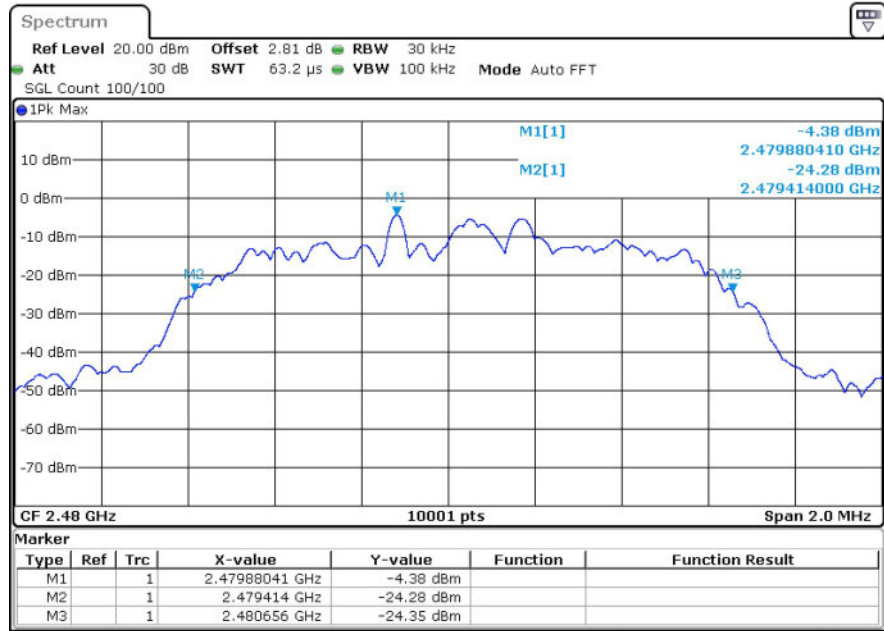
| Mode          | Channel. | 20dB Bandwidth [MHz] | Limit [MHz]   | Verdict |
|---------------|----------|----------------------|---------------|---------|
| GFSK          | LCH      | 0.833                | Not Specified | Pass    |
|               | MCH      | 0.874                | Not Specified | Pass    |
|               | HCH      | 0.83                 | Not Specified | Pass    |
| $\pi/4$ DQPSK | LCH      | 1.21                 | Not Specified | Pass    |
|               | MCH      | 1.249                | Not Specified | Pass    |
|               | HCH      | 1.242                | Not Specified | Pass    |
| 8DPSK         | LCH      | 1.218                | Not Specified | Pass    |
|               | MCH      | 1.246                | Not Specified | Pass    |
|               | HCH      | 1.224                | Not Specified | Pass    |

### 3.2 Test Graphs

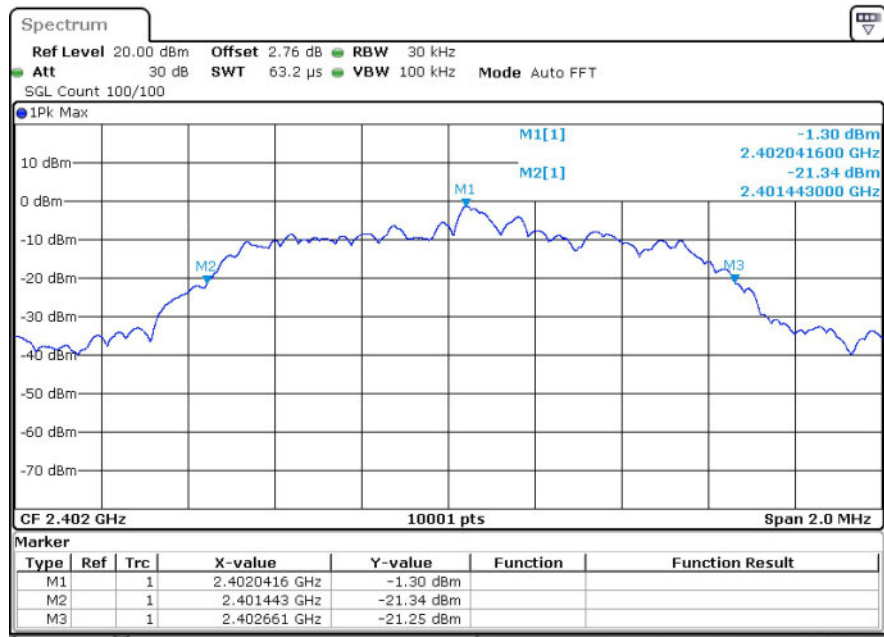


GFSK/HCH

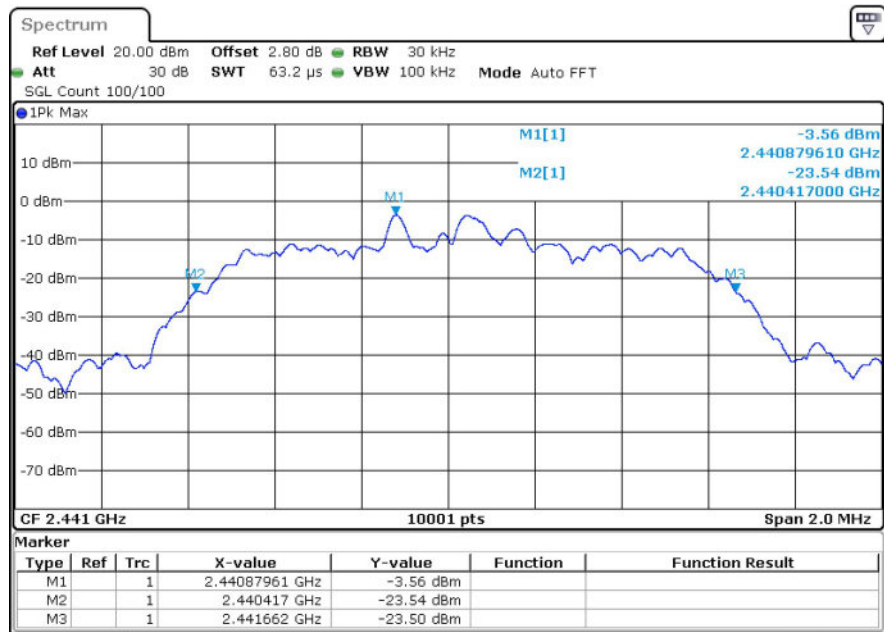

 $\pi/4$ DQPSK/LCH


$\pi/4$ DQPSK/MCH

 $\pi/4$ DQPSK/HCH


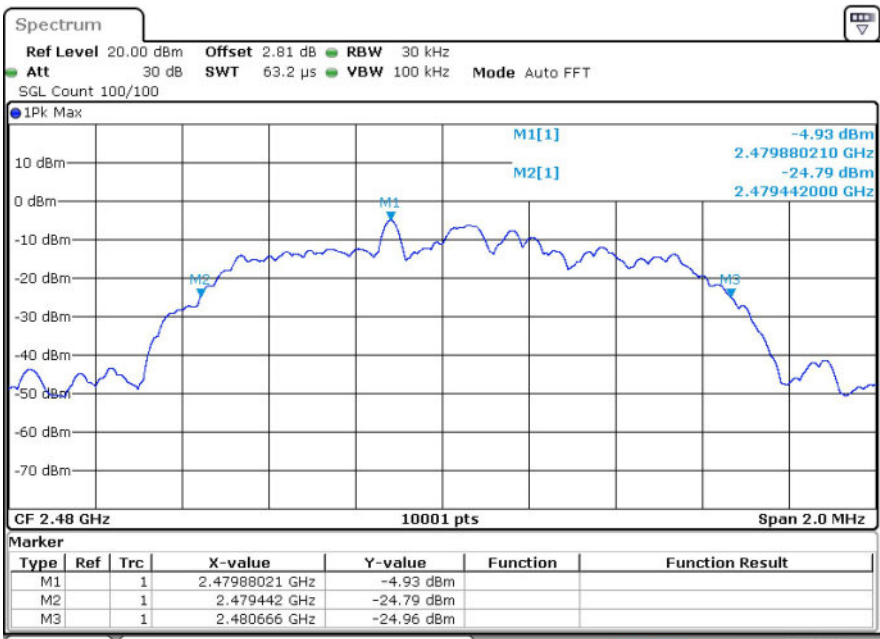
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

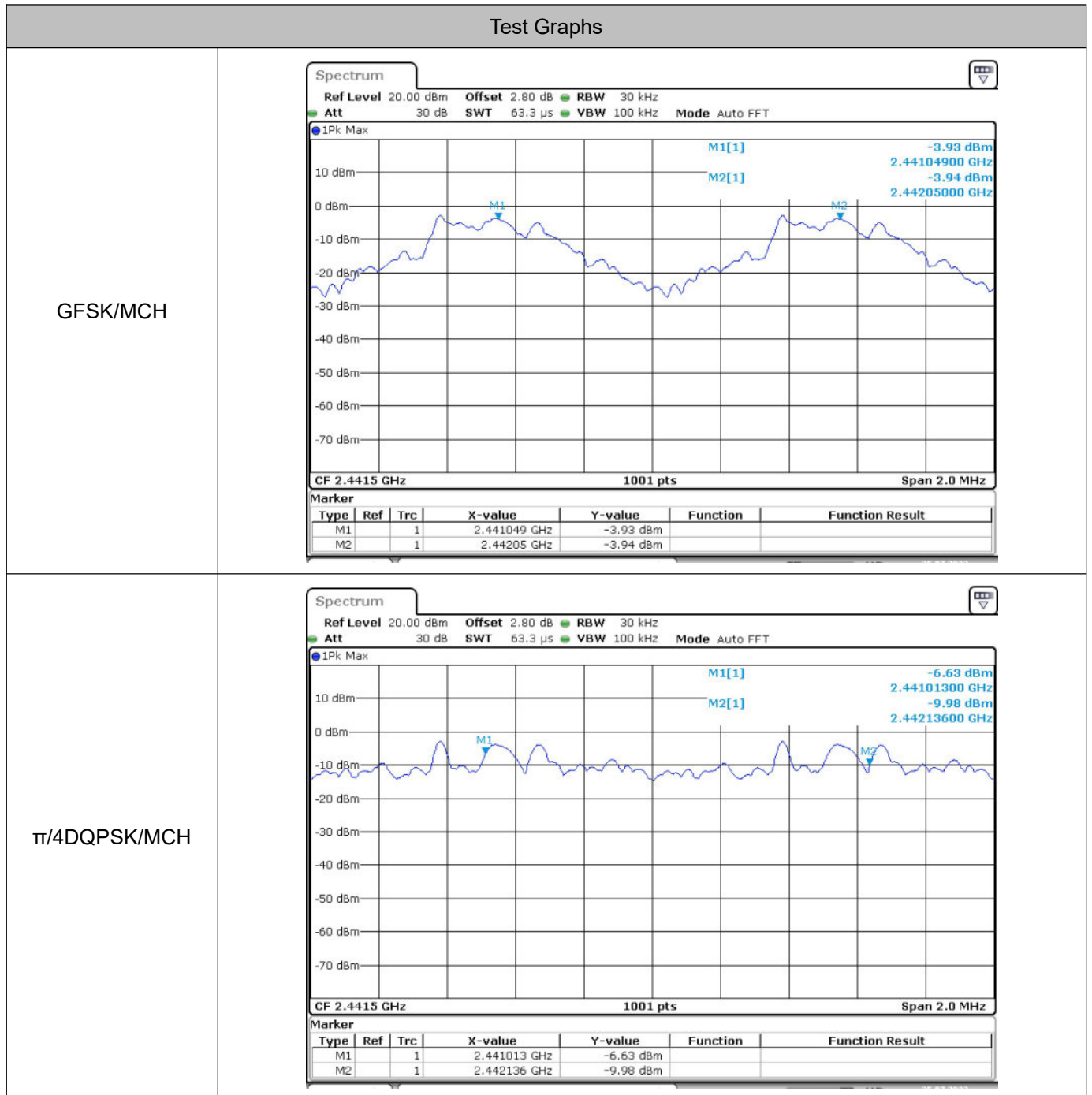


## 4 Carrier Frequency Separation

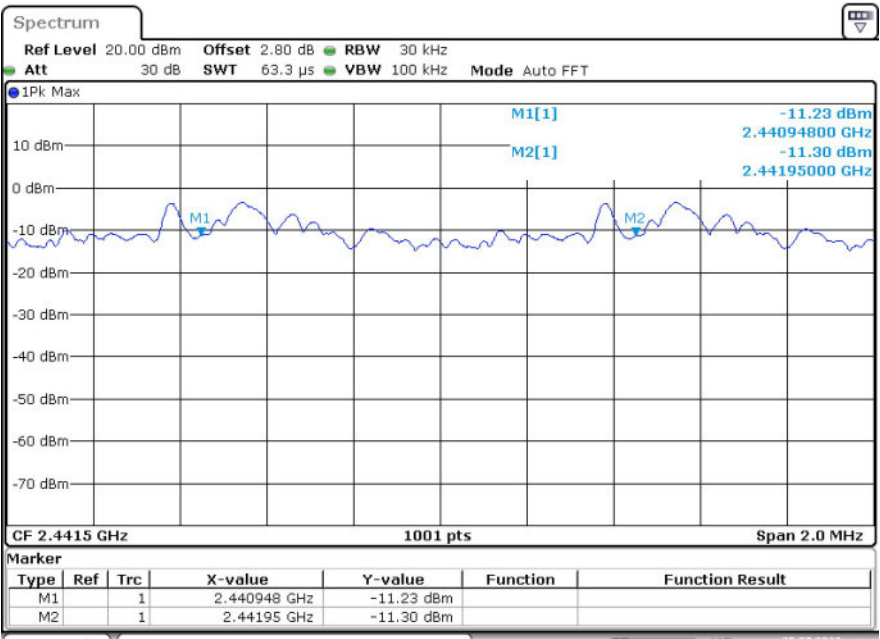
### 4.1 Test Result

| Mode          | Channel. | Carrier Frequency Separation [MHz] | Limit [MHz] | Verdict |
|---------------|----------|------------------------------------|-------------|---------|
| GFSK          | MCH      | 1.001                              | 0.583       | Pass    |
| $\pi/4$ DQPSK | MCH      | 1.123                              | 0.833       | Pass    |
| 8DPSK         | MCH      | 1.002                              | 0.831       | Pass    |

## 4.2 Test Graphs



8DPSK/MCH

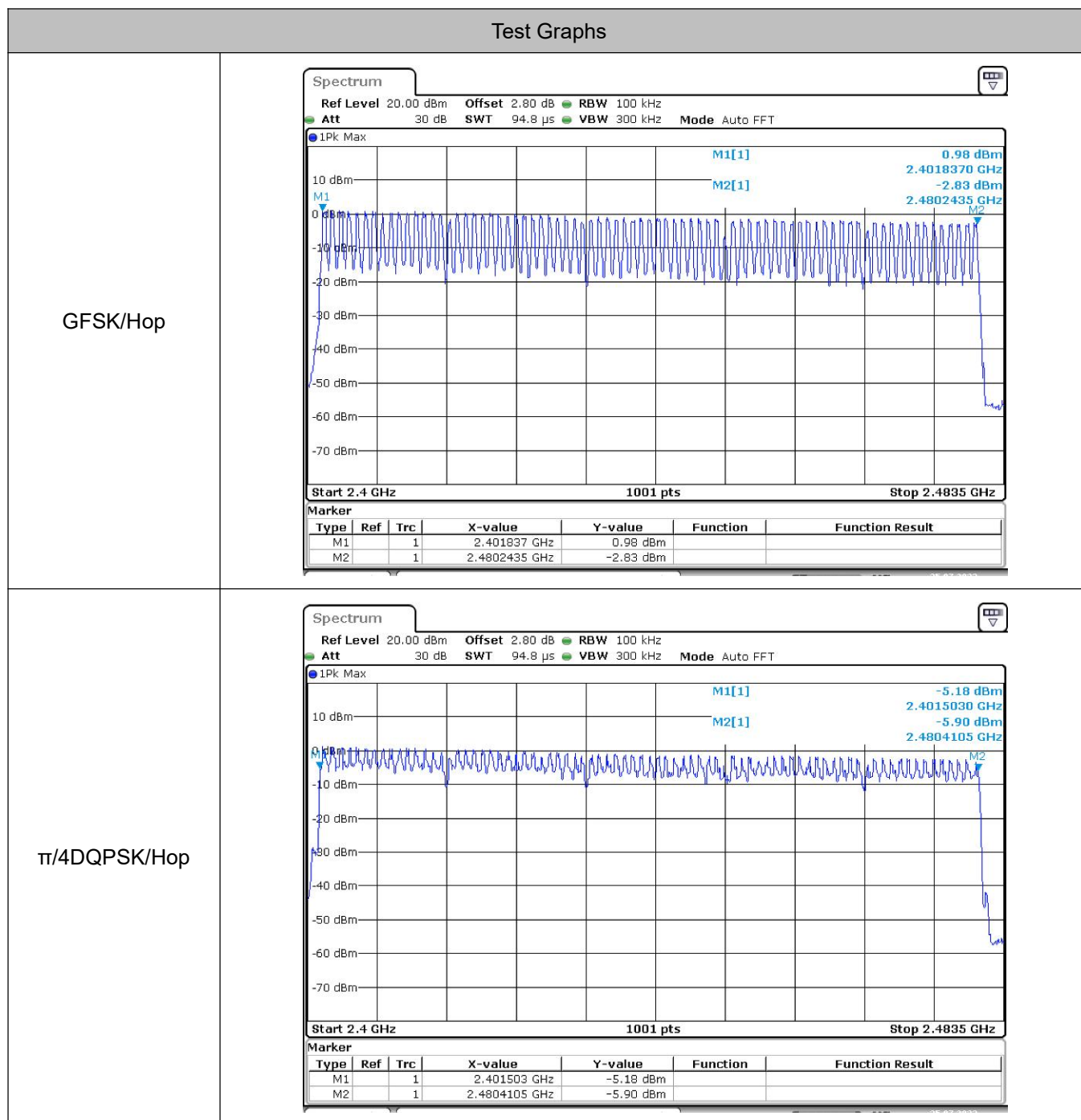


## 5 Hopping Channel Number

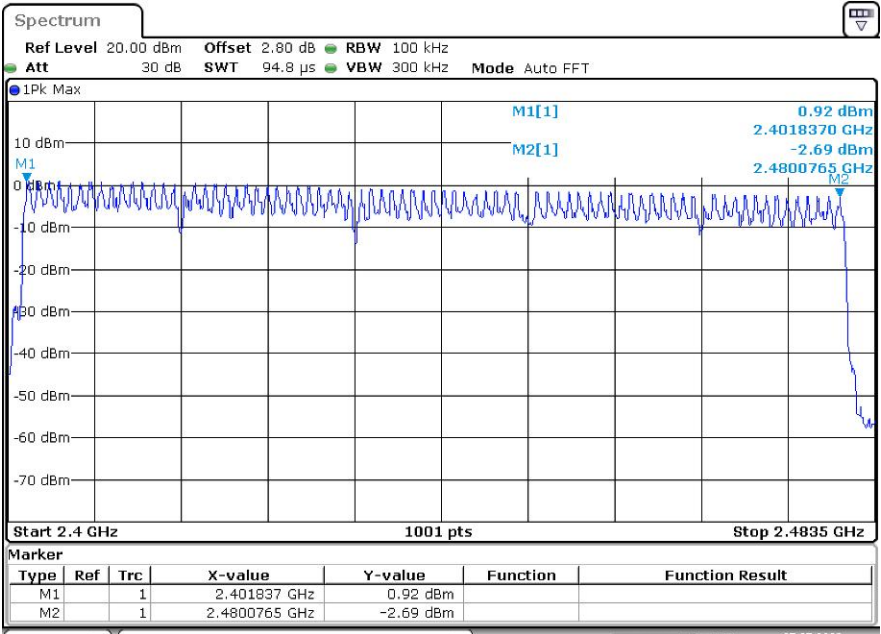
### 5.1 Test Result

| 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

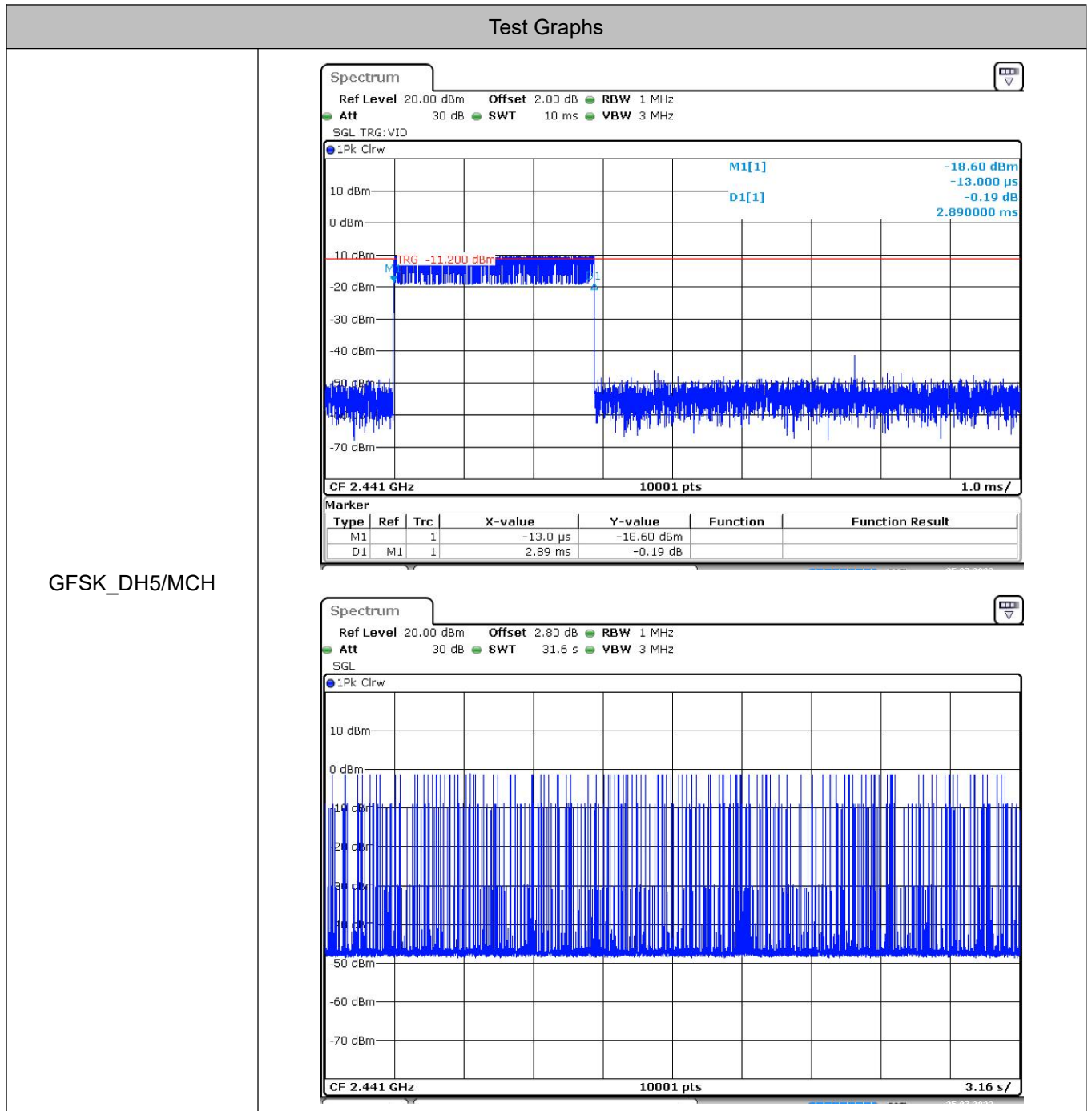


## 6 Dwell Time

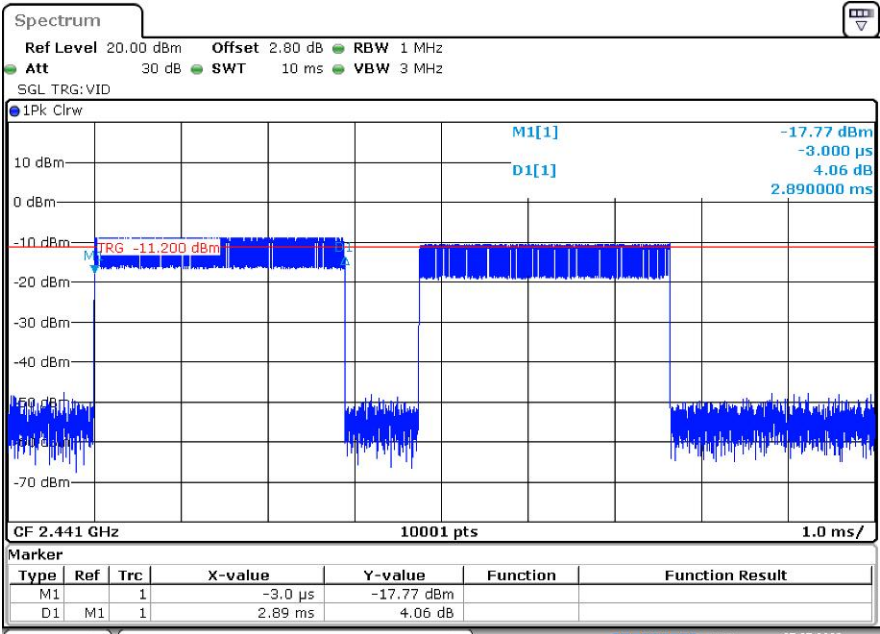
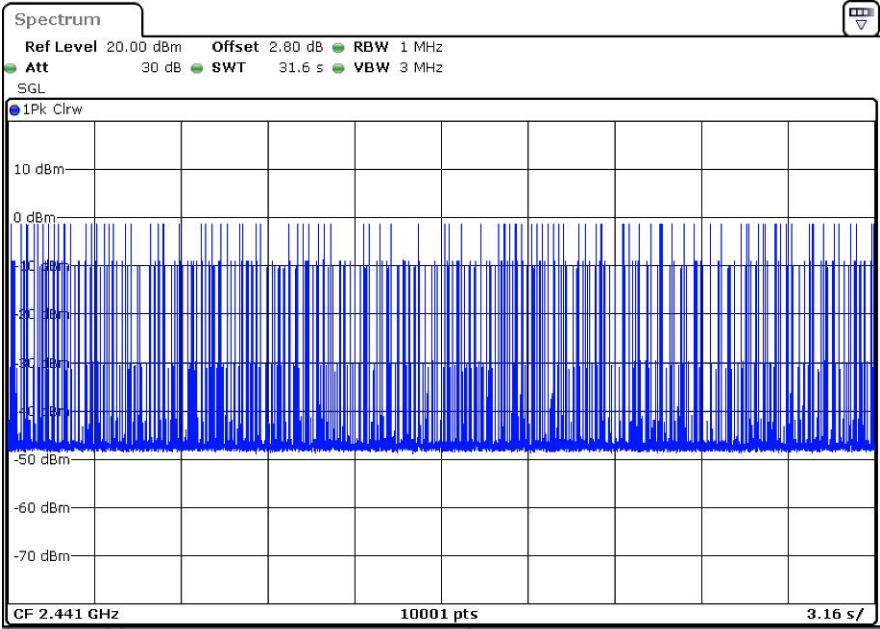
### 6.1 Test Result

| Mode          | Packet | Channel | Burst Width<br>[ms/hop/ch] | Total<br>Hops[hop*ch] | Dwell Time[ms] | Limit [s] | Verdict |
|---------------|--------|---------|----------------------------|-----------------------|----------------|-----------|---------|
| GFSK          | DH5    | MCH     | 2.89                       | 119                   | 343.91         | 0.4       | Pass    |
| $\pi/4$ DQPSK | 2DH5   | MCH     | 2.89                       | 104                   | 300.56         | 0.4       | Pass    |
| 8DPSK         | 3DH5   | MCH     | 2.897                      | 101                   | 292.597        | 0.4       | Pass    |

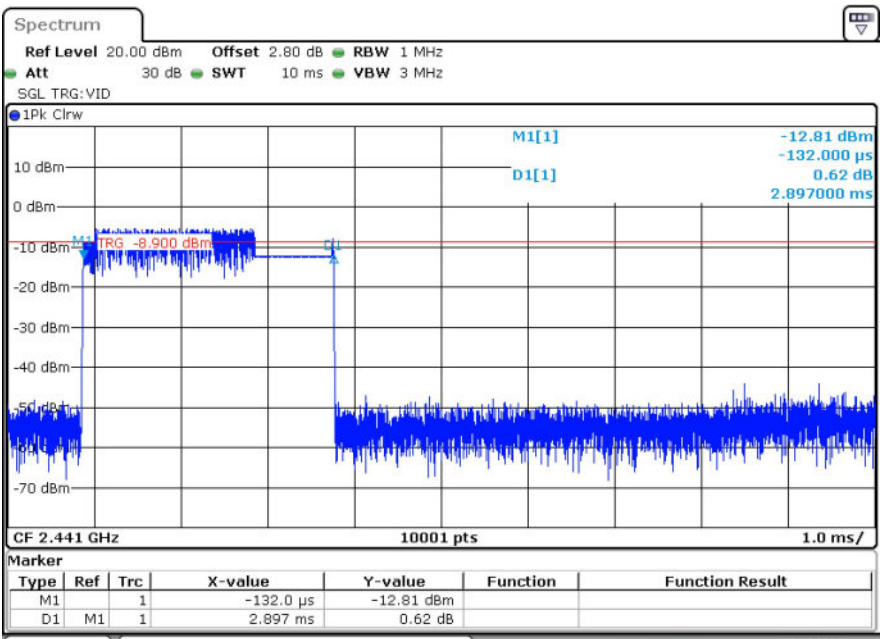
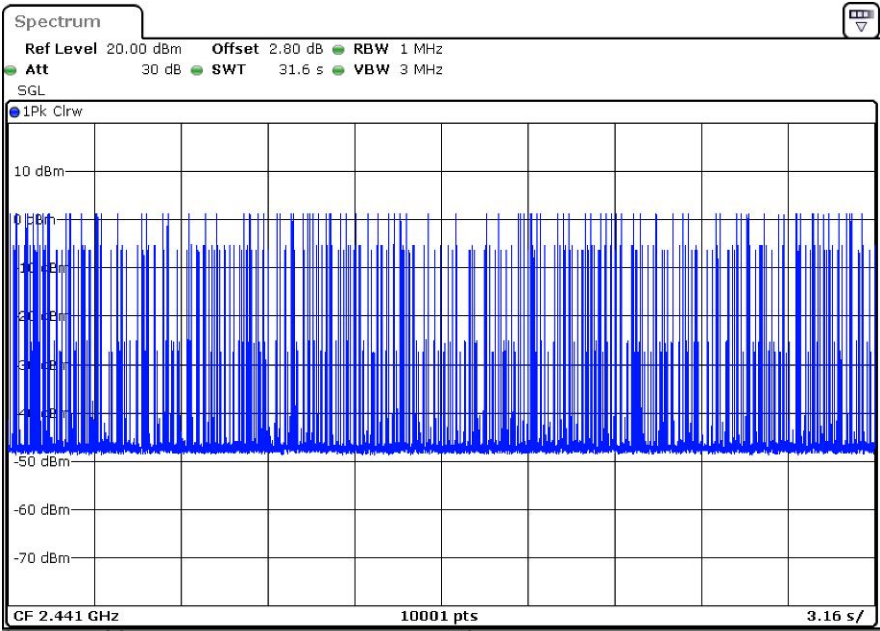
## 6.2 Test Graphs



$\pi/4$ DQPSK  
\_2DH5/MCH



8DPSK\_3DH5/MCH

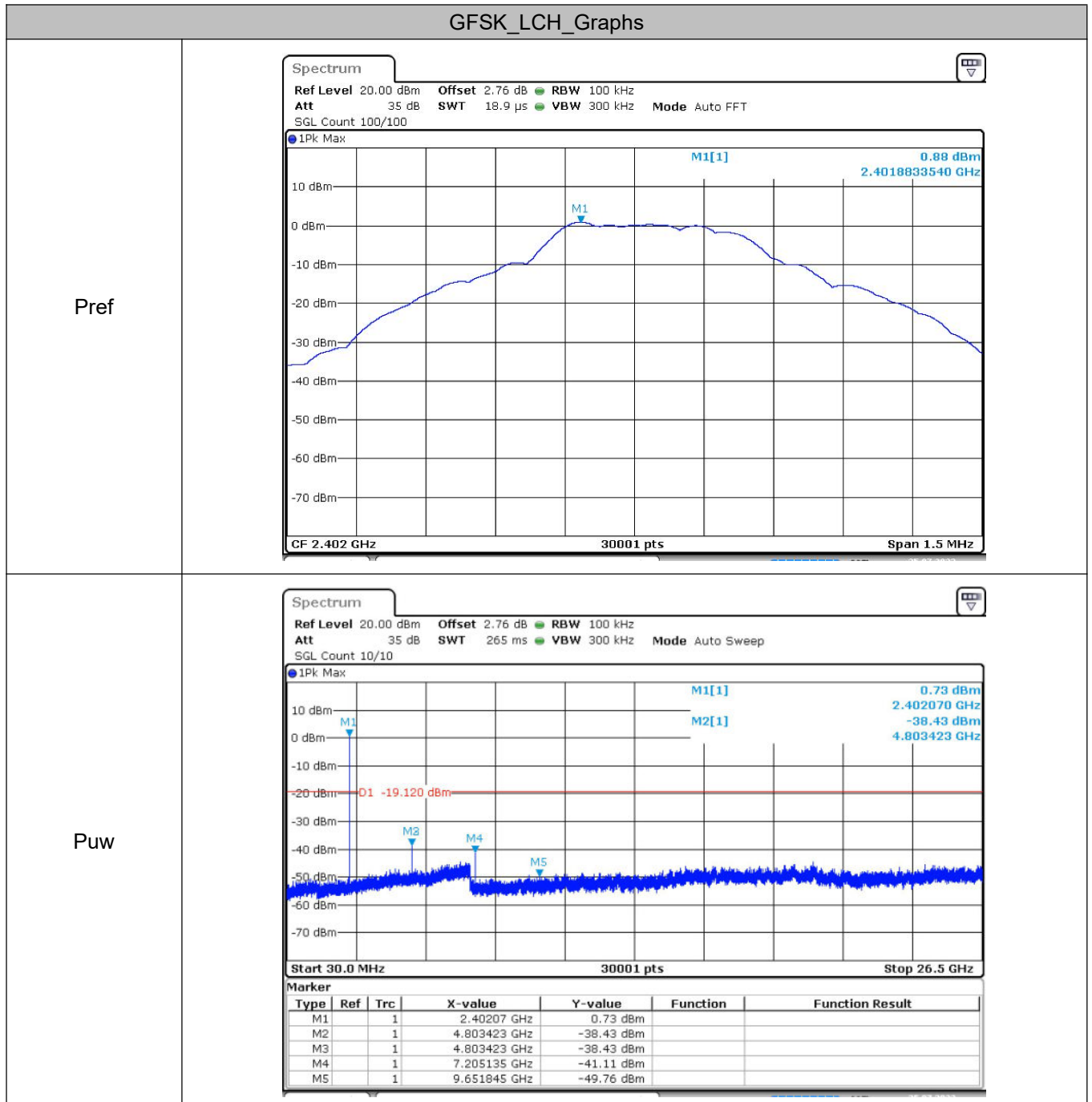


## 7 RF Conducted Spurious Emissions

### 7.1 Test Result

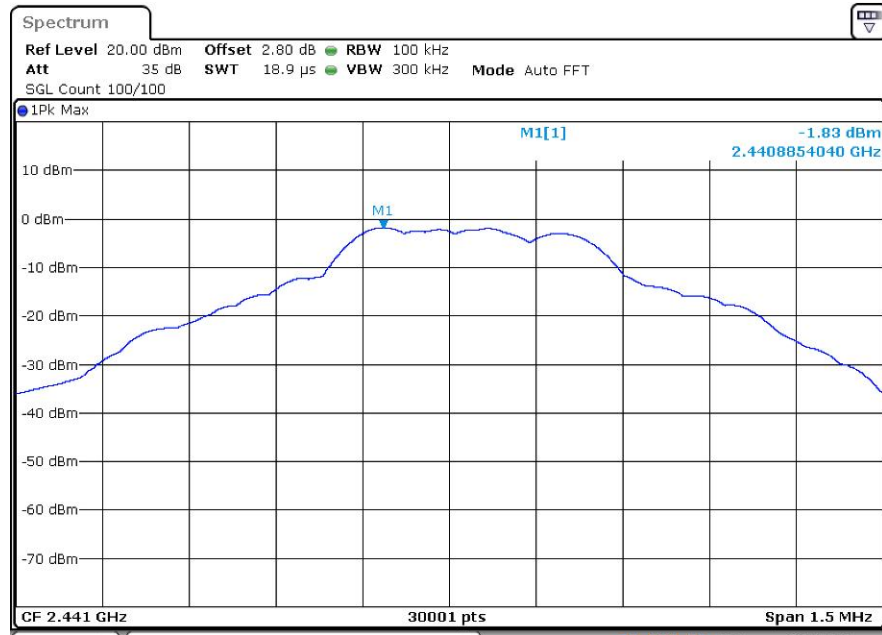
| Mode          | Channel | Max. Level [dBc] | Limit [dBc] | Verdict |
|---------------|---------|------------------|-------------|---------|
| GFSK          | LCH     | -39.3            | -20         | Pass    |
|               | MCH     | -39.02           | -20         | Pass    |
|               | HCH     | -41.4            | -20         | Pass    |
| $\pi/4$ DQPSK | LCH     | -41.26           | -20         | Pass    |
|               | MCH     | -40.31           | -20         | Pass    |
|               | HCH     | -37.31           | -20         | Pass    |
| 8DPSK         | LCH     | -36.36           | -20         | Pass    |
|               | MCH     | -35.38           | -20         | Pass    |
|               | HCH     | -38.19           | -20         | Pass    |

## 7.2 Test Graphs

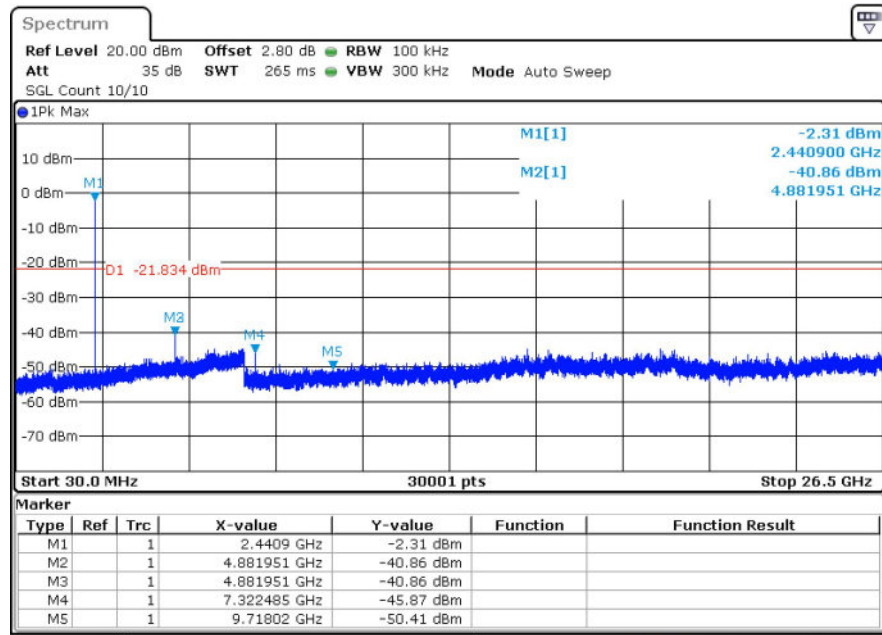


## GFSK\_MCH\_Graphs

Pref

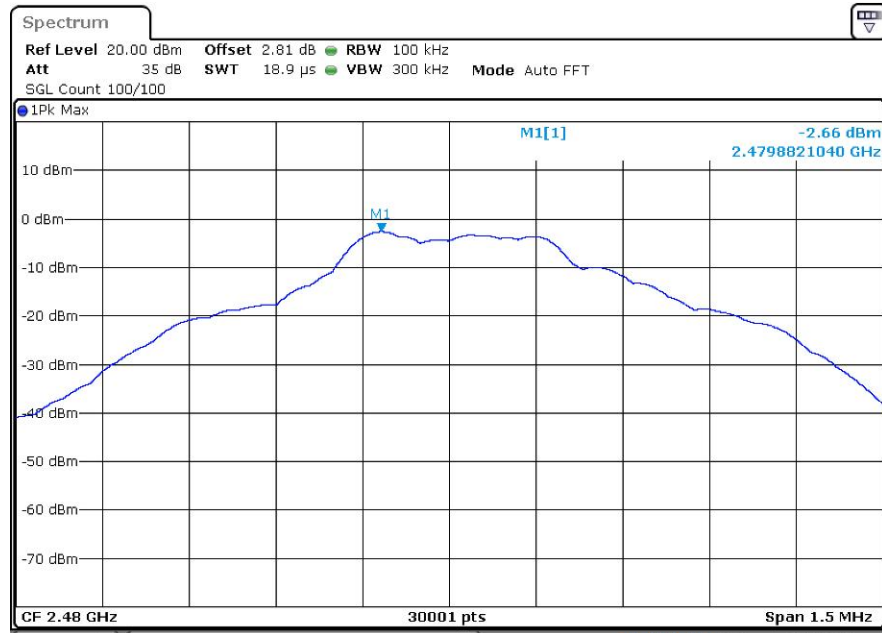


Puw

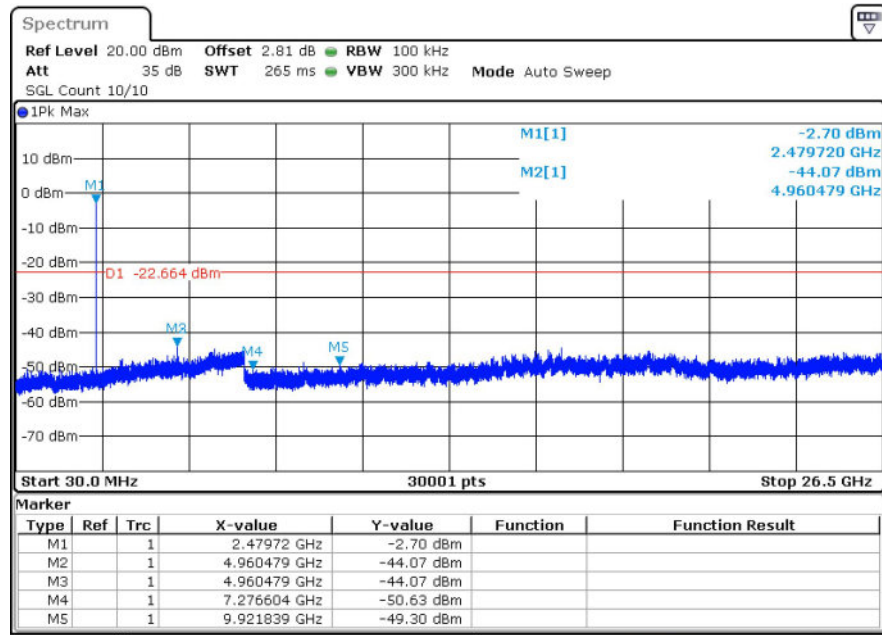


## GFSK\_HCH\_Graphs

Pref

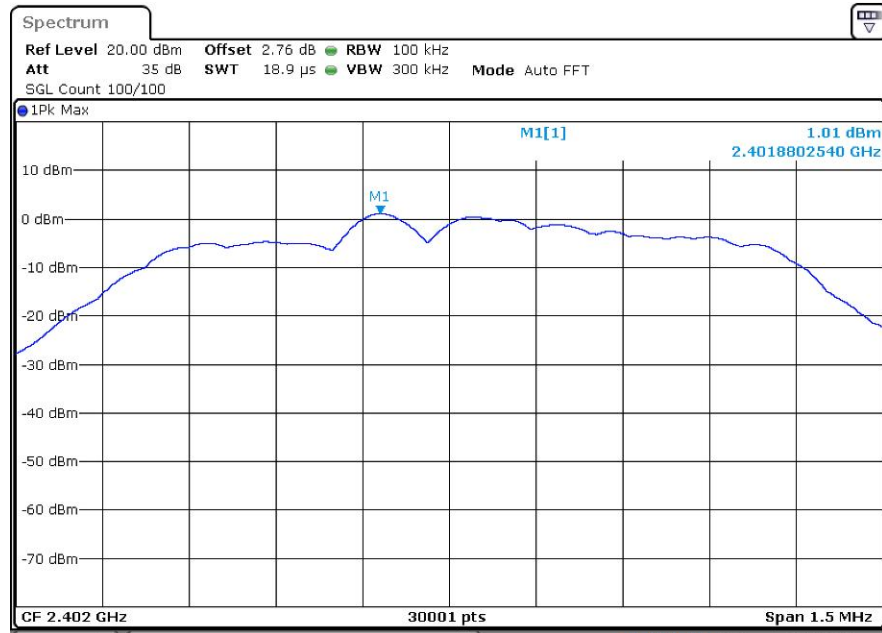


Puw

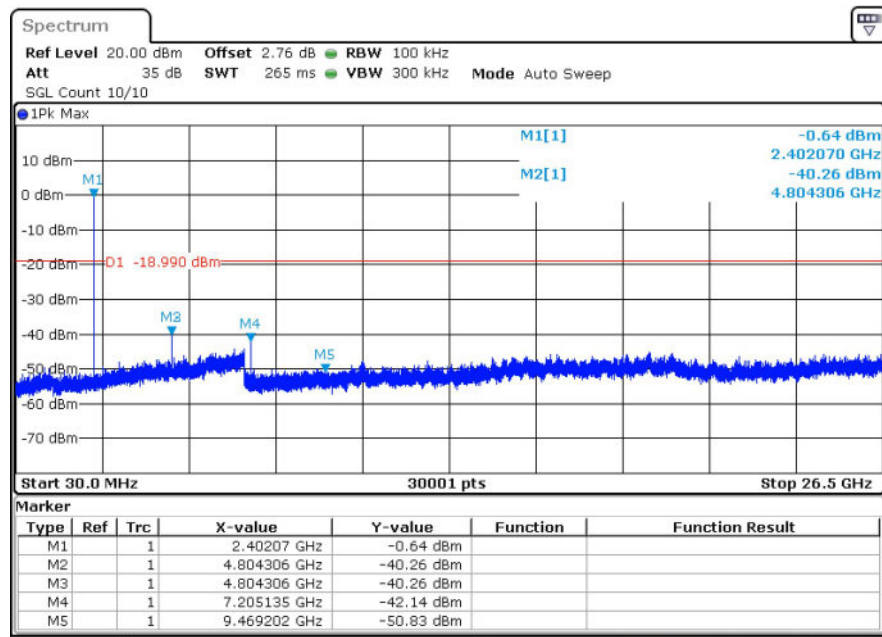


### $\pi/4$ DQPSK\_LCH\_Graphs

Pref

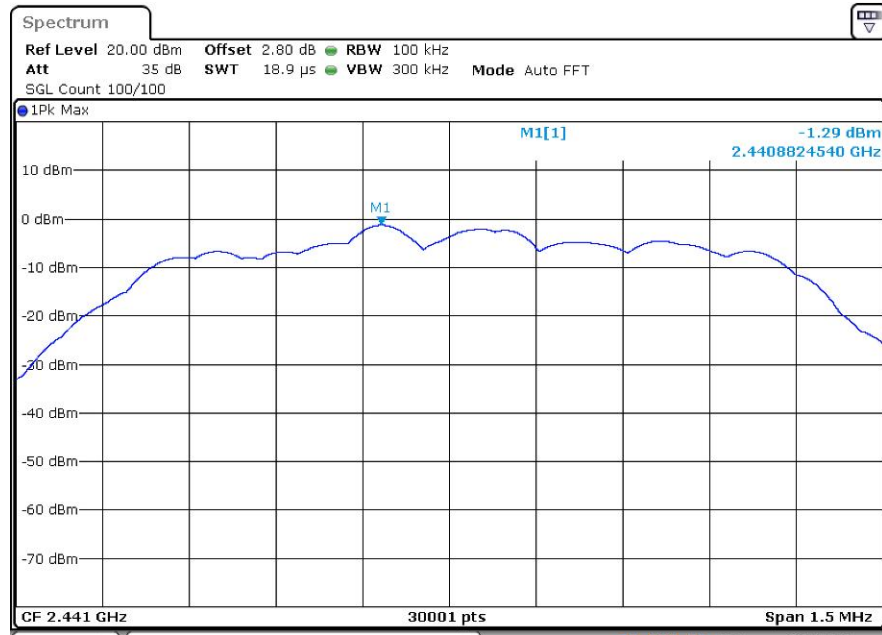


Puw

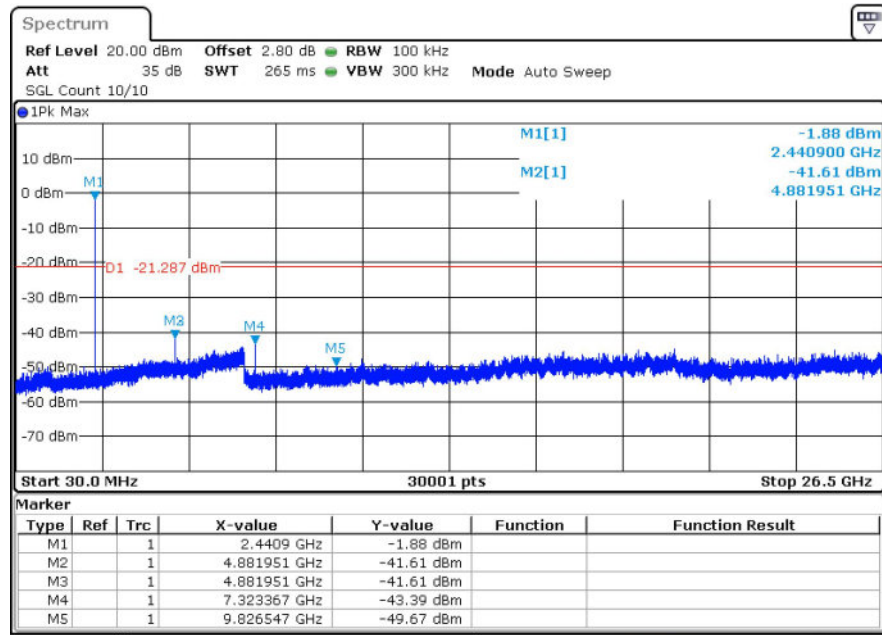


### $\pi$ /4DQPSK\_MCH\_Graphs

Pref

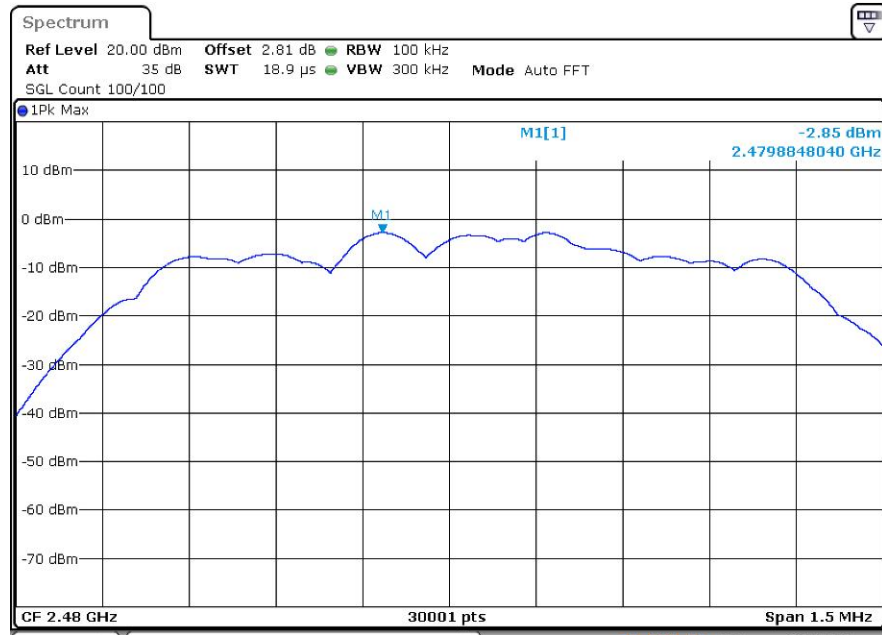


Puw

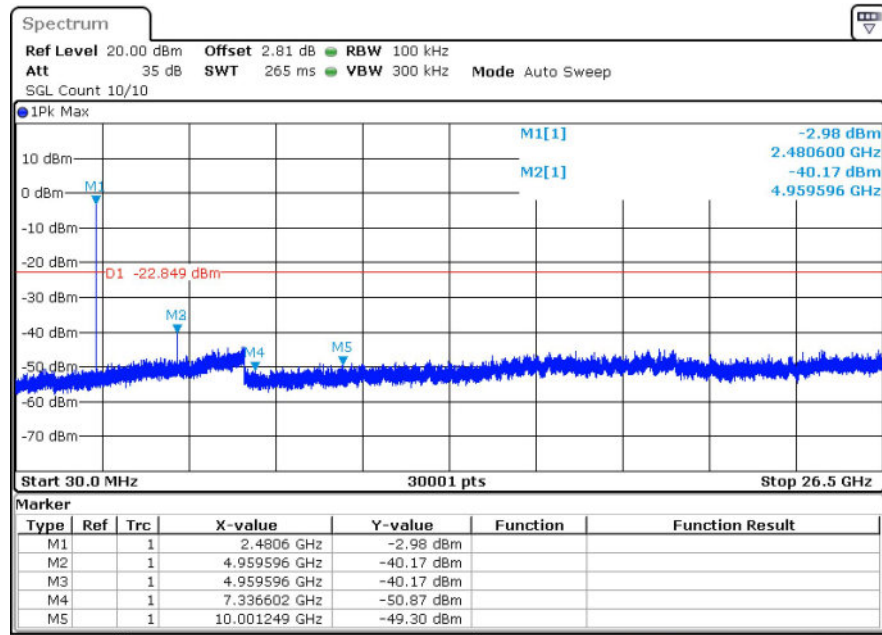


### $\pi/4$ DQPSK\_HCH\_Graphs

Pref

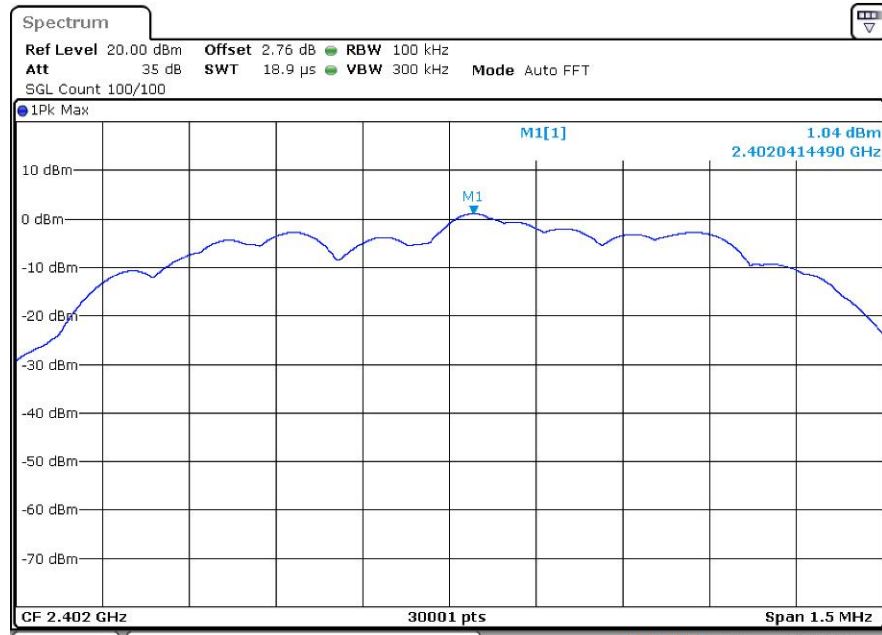


Puw



## 8DPSK\_LCH\_Graphs

Pref



Puw

