



## Appendix A

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

Product Name: Game Console Accessories

Trade Mark: Gaowaisen

Test Model: G11001

#### Environmental Conditions

|                    |             |
|--------------------|-------------|
| Temperature:       | 24.9℃       |
| Relative Humidity: | 52.8%       |
| ATM Pressure:      | 101Kpa      |
| Test Engineer:     | Simba Huang |
| Supervised by:     | Seal Chen   |



# Contents

Page

**COVER PAGE**

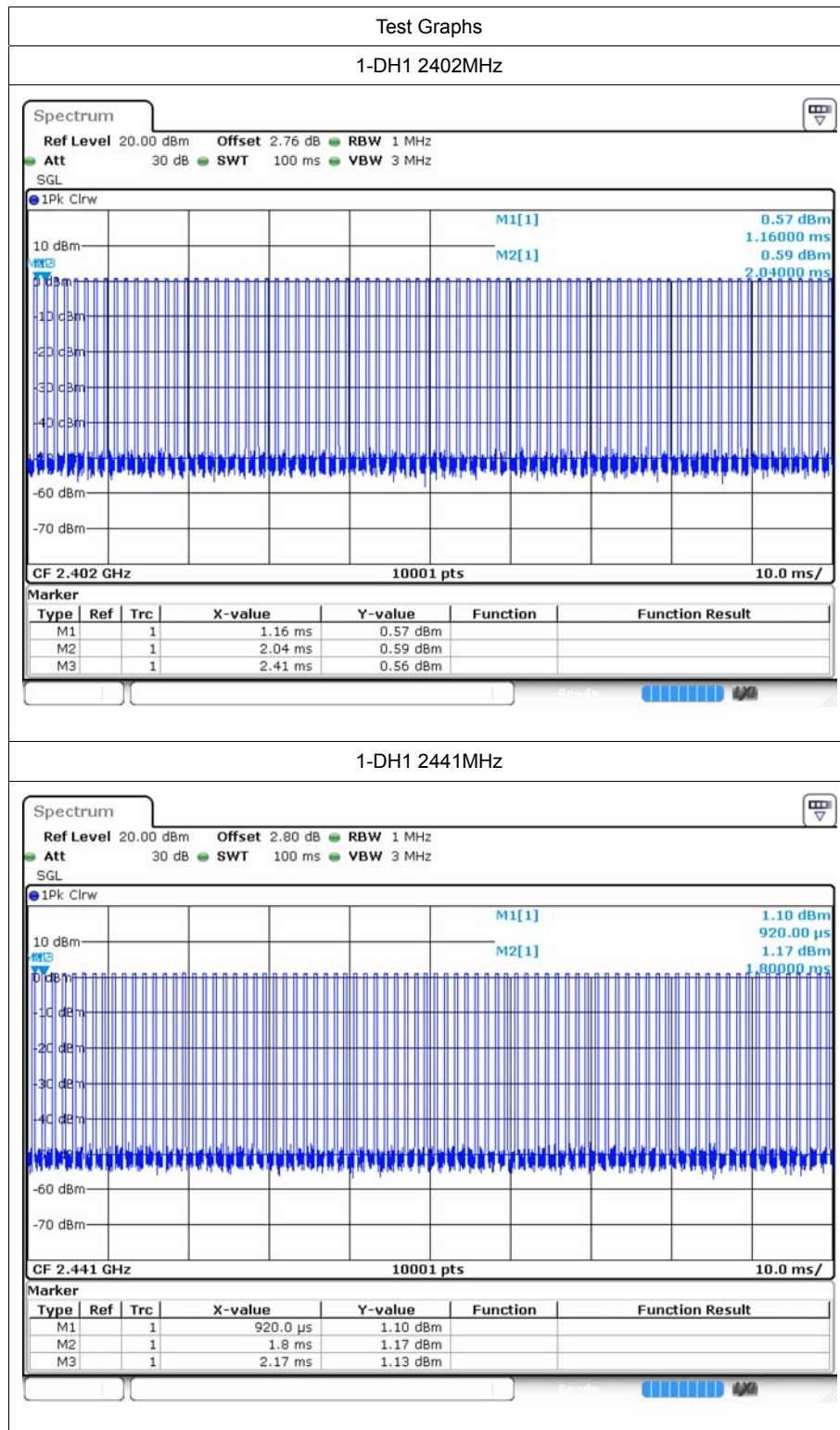
|     |                                            |    |
|-----|--------------------------------------------|----|
| 1   | Duty Cycle .....                           | 3  |
| 1.1 | Test Result.....                           | 3  |
| 1.2 | Test Graphs .....                          | 4  |
| 2   | Maximum Conducted Peak Output Power .....  | 7  |
| 2.1 | Test Result.....                           | 7  |
| 2.2 | Test Graphs .....                          | 8  |
| 3   | 20dB Bandwidth .....                       | 11 |
| 3.1 | Test Result.....                           | 11 |
| 3.2 | Test Graphs .....                          | 12 |
| 4   | Carrier Frequency Separation .....         | 15 |
| 4.1 | Test Result.....                           | 15 |
| 4.2 | Test Graphs .....                          | 16 |
| 5   | Hopping Channel Number.....                | 17 |
| 5.1 | Test Result.....                           | 17 |
| 5.2 | Test Graphs .....                          | 18 |
| 6   | Dwell Time .....                           | 19 |
| 6.1 | Test Result.....                           | 19 |
| 6.2 | Test Graphs .....                          | 20 |
| 7   | RF Conducted Spurious Emissions.....       | 22 |
| 7.1 | Test Result.....                           | 22 |
| 7.2 | Test Graphs .....                          | 23 |
| 8   | Band-edge for RF Conducted Emissions ..... | 29 |
| 8.1 | Test Result.....                           | 29 |
| 8.2 | Test Graphs .....                          | 30 |
| 9   | Restrict-band band-edge measurements ..... | 38 |
| 9.1 | Test Result.....                           | 38 |
| 9.2 | Test Graphs .....                          | 39 |

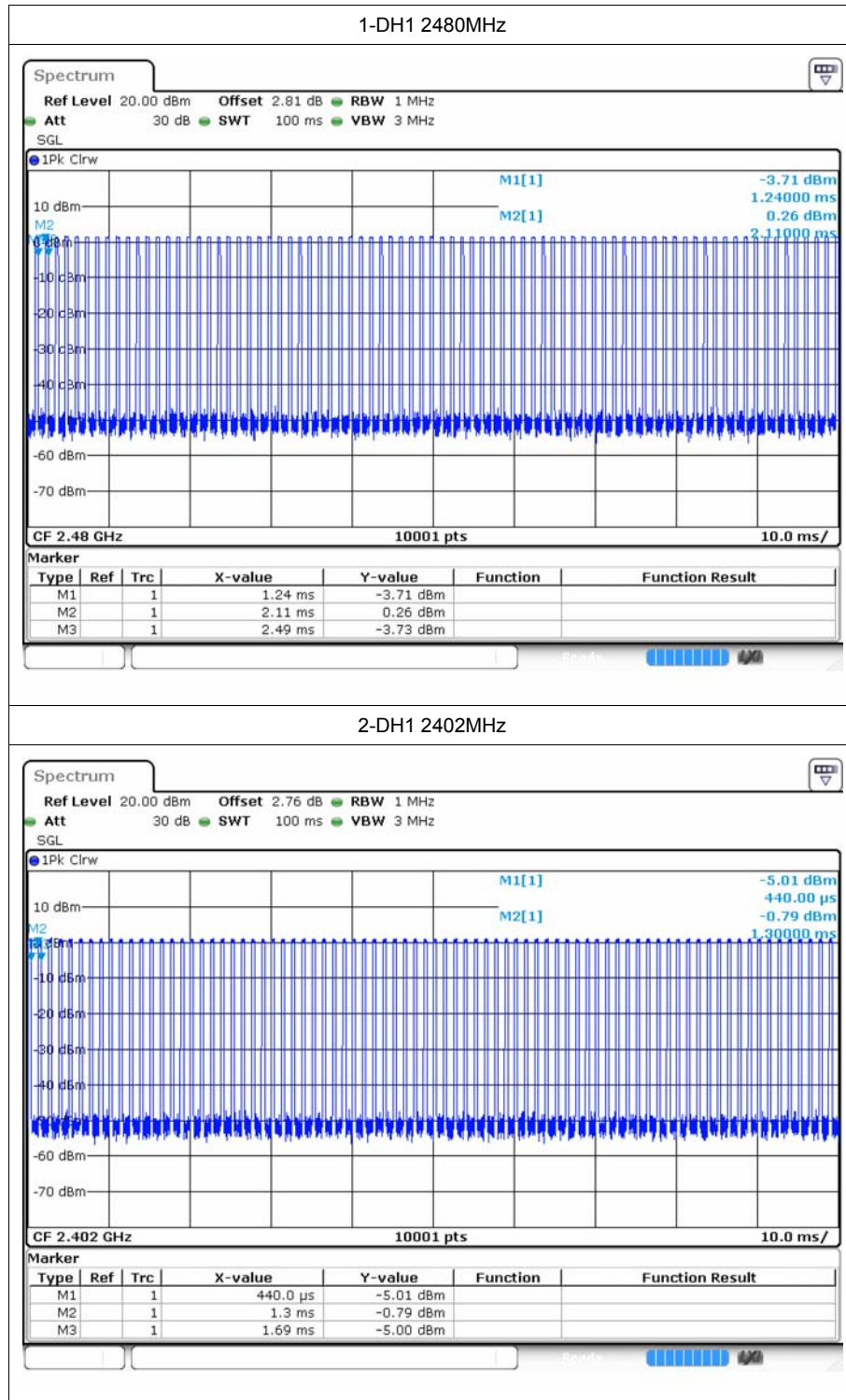
# 1 Duty Cycle

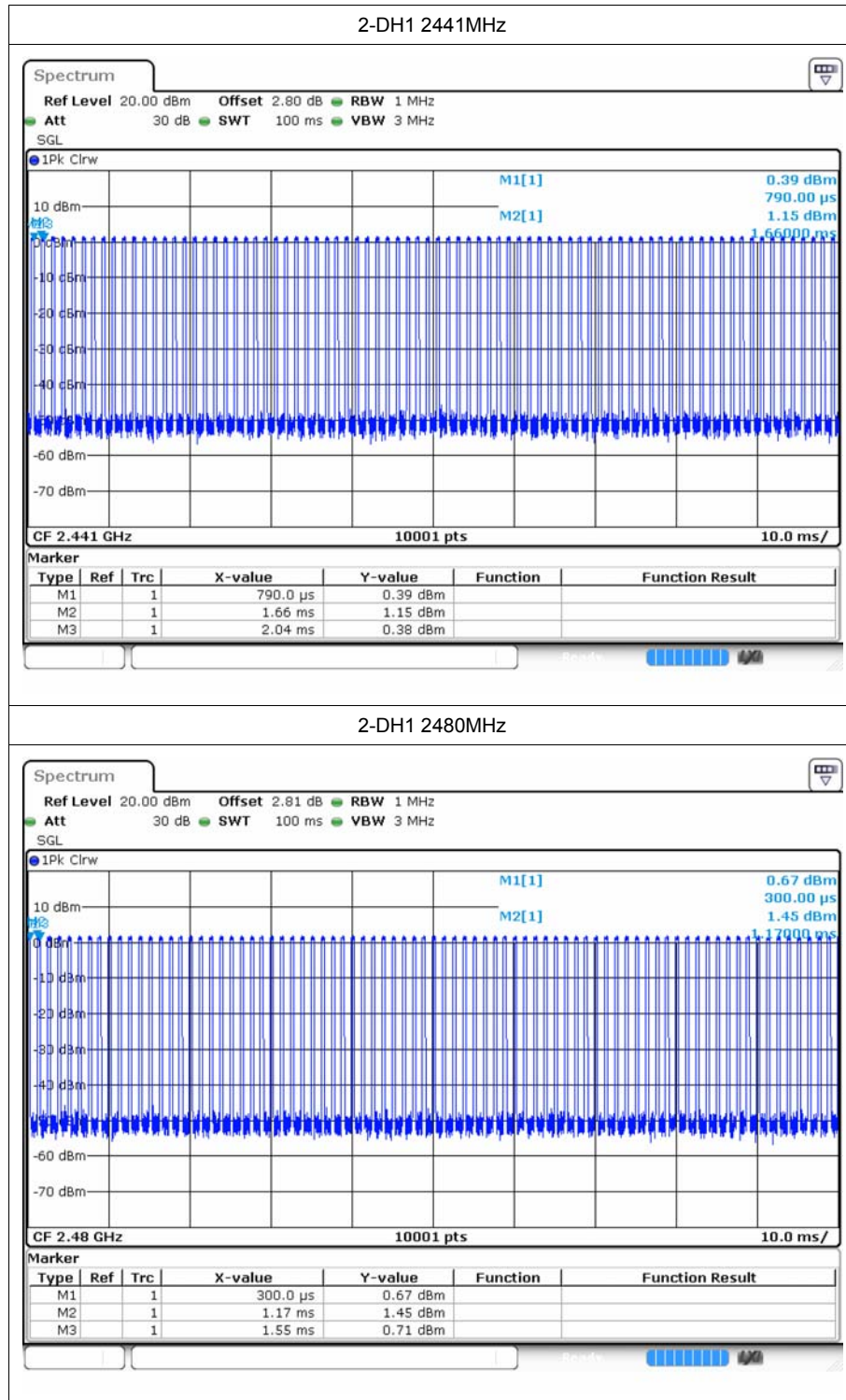
## 1.1 Test Result

| Mode  | Frequency (MHz) | Duty Cycle (%) | 1/T (kHz) |
|-------|-----------------|----------------|-----------|
| 1-DH1 | 2402            | 30.42          | 2.7       |
| 1-DH1 | 2441            | 30.4           | 2.7       |
| 1-DH1 | 2480            | 31.2           | 2.63      |
| 2-DH1 | 2402            | 32             | 2.56      |
| 2-DH1 | 2441            | 31.2           | 2.63      |
| 2-DH1 | 2480            | 31.21          | 2.63      |

## 1.2 Test Graphs





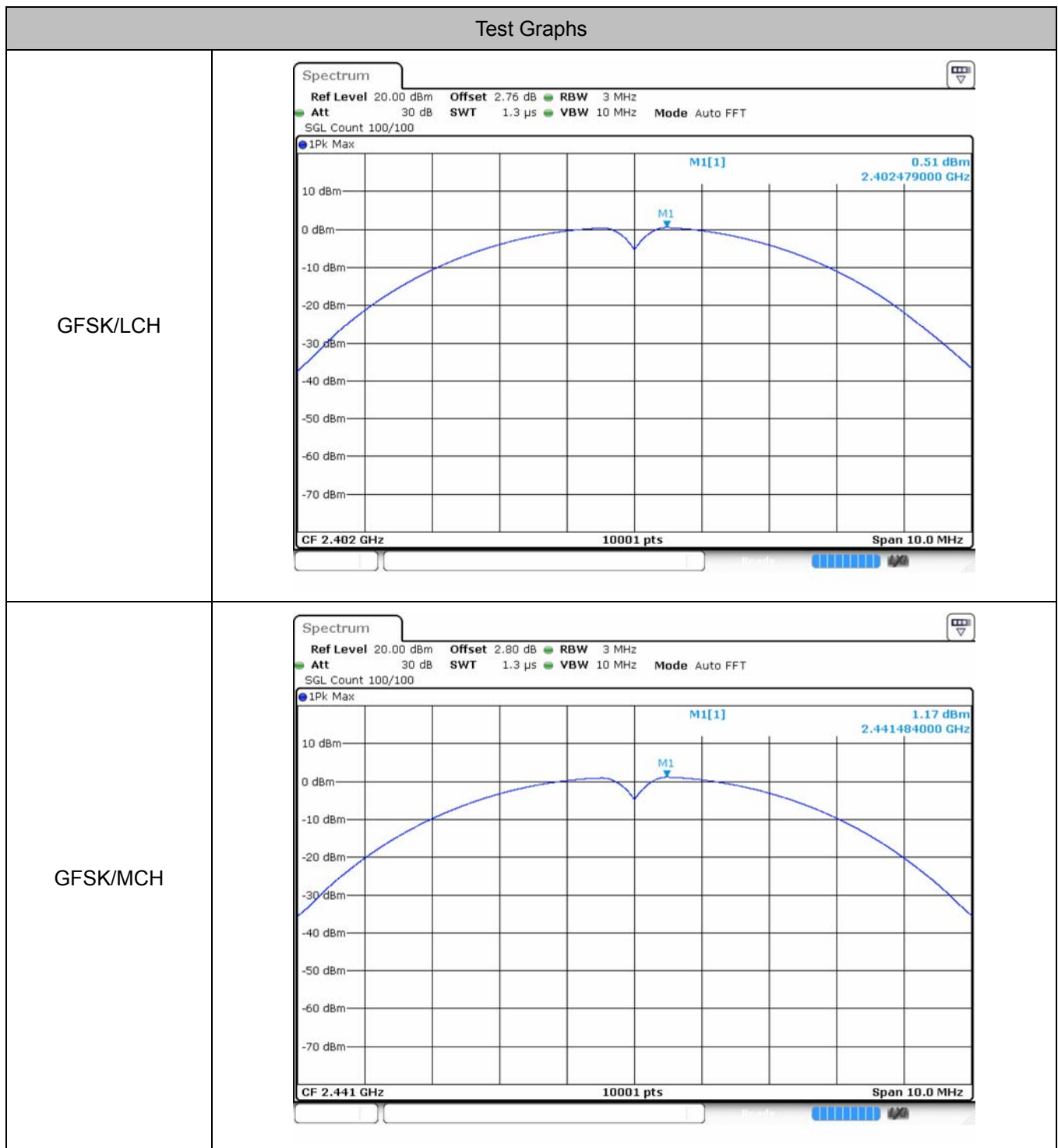


## 2 Maximum Conducted Peak Output Power

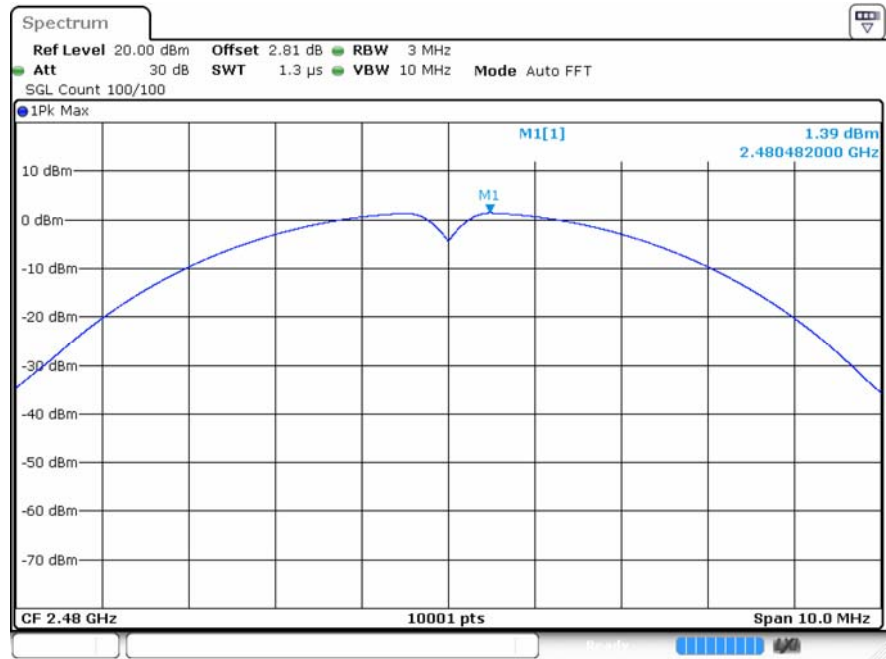
### 2.1 Test Result

| Mode          | Channel. | Maximum Peak Output Power<br>[dBm] | Limit<br>[dBm] | Verdict |
|---------------|----------|------------------------------------|----------------|---------|
| GFSK          | LCH      | 0.51                               | 21             | Pass    |
|               | MCH      | 1.17                               | 21             | Pass    |
|               | HCH      | 1.39                               | 21             | Pass    |
| $\pi/4$ DQPSK | LCH      | 0.74                               | 21             | Pass    |
|               | MCH      | 1.59                               | 21             | Pass    |
|               | HCH      | 1.67                               | 21             | Pass    |

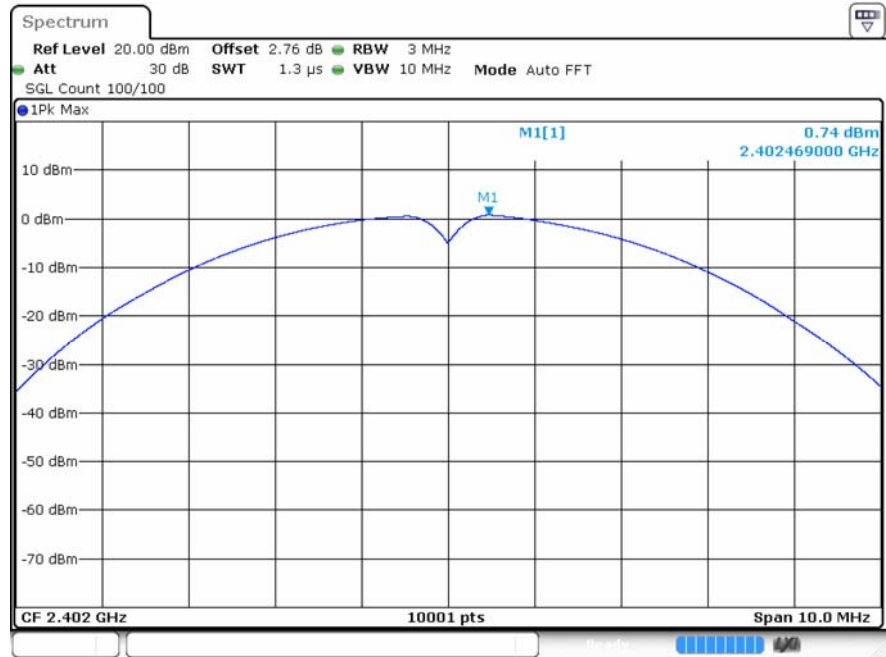
## 2.2 Test Graphs



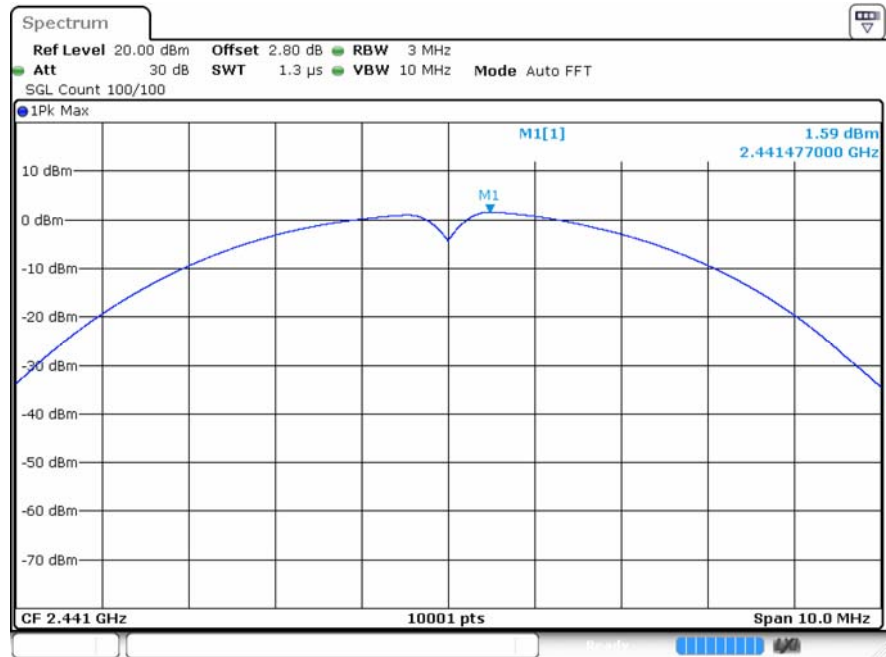
GFSK/HCH



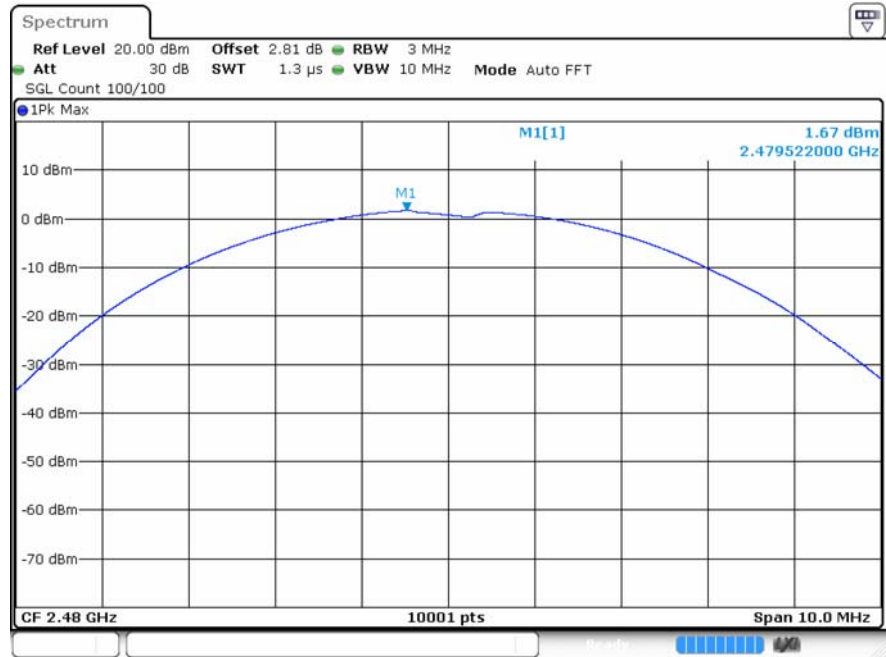
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



$\pi/4$ DQPSK/HCH

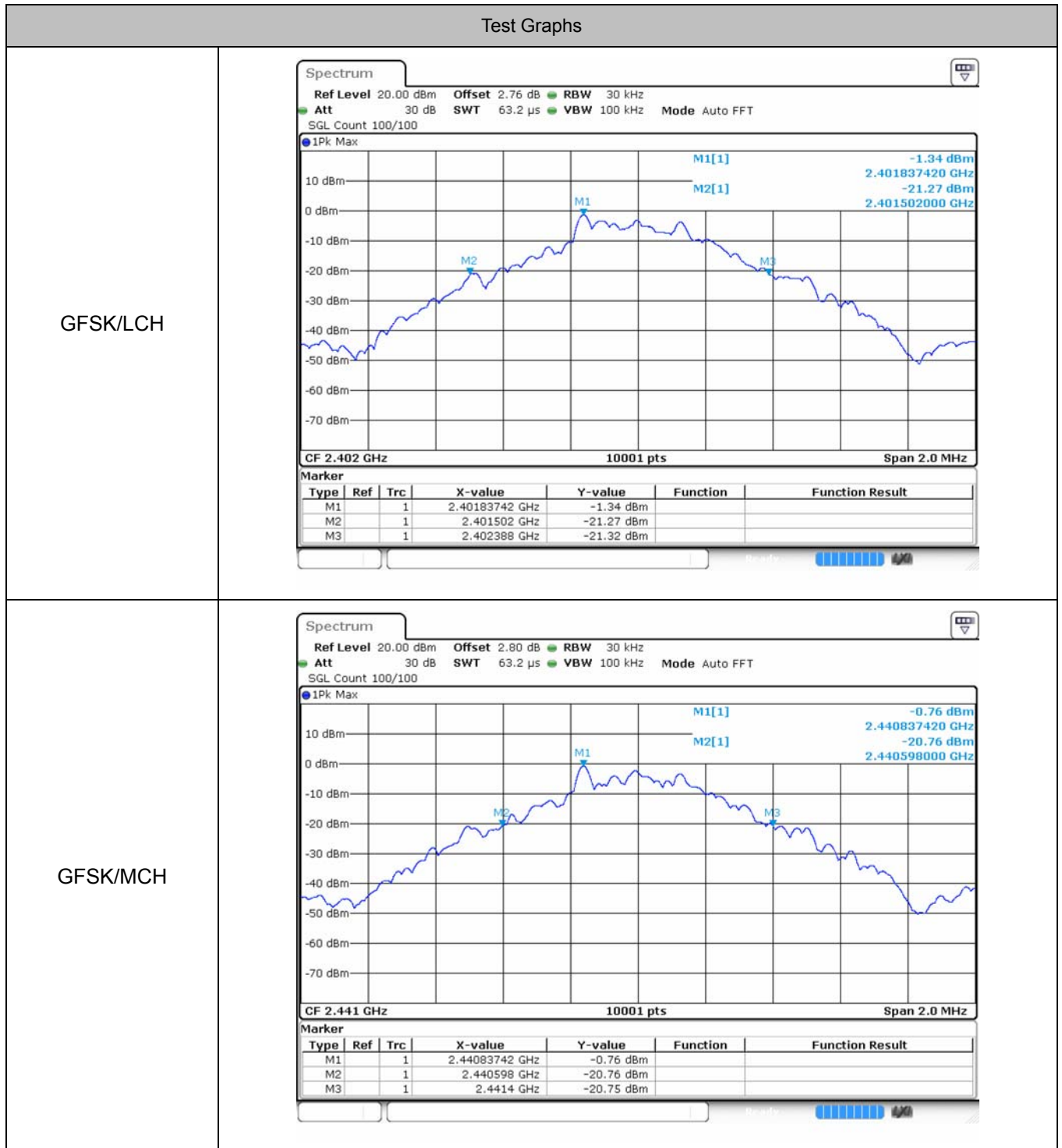


### 3 20dB Bandwidth

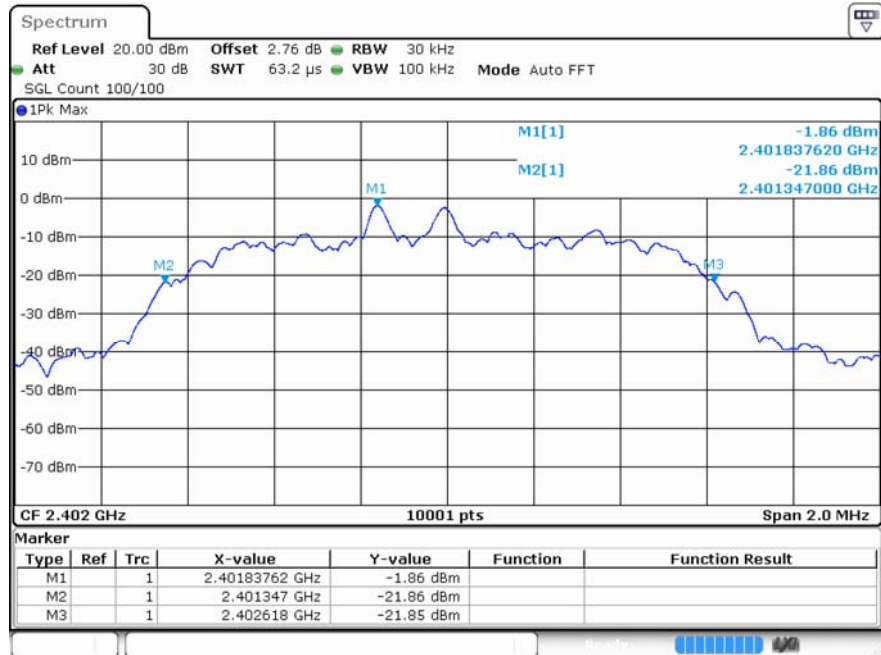
#### 3.1 Test Result

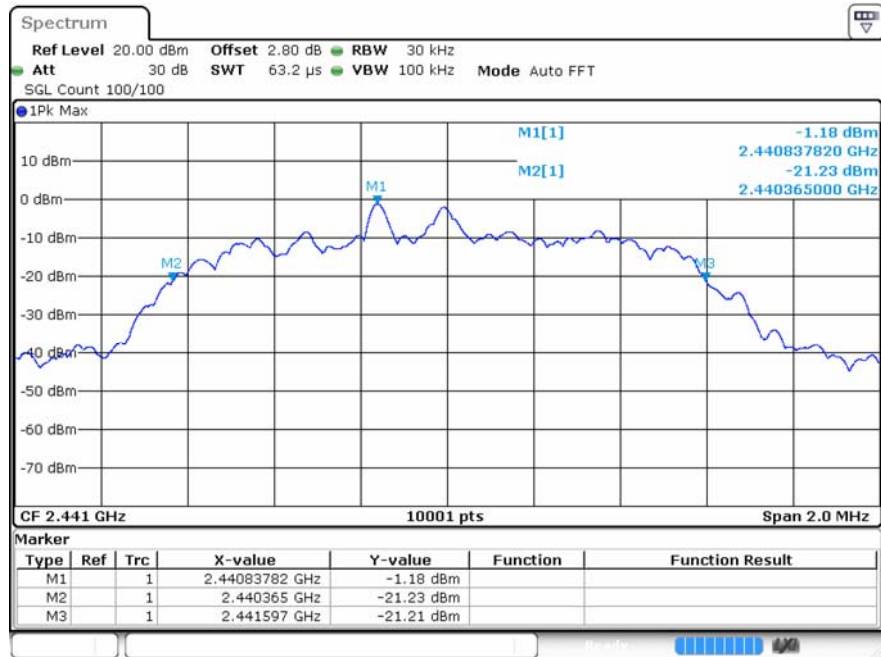
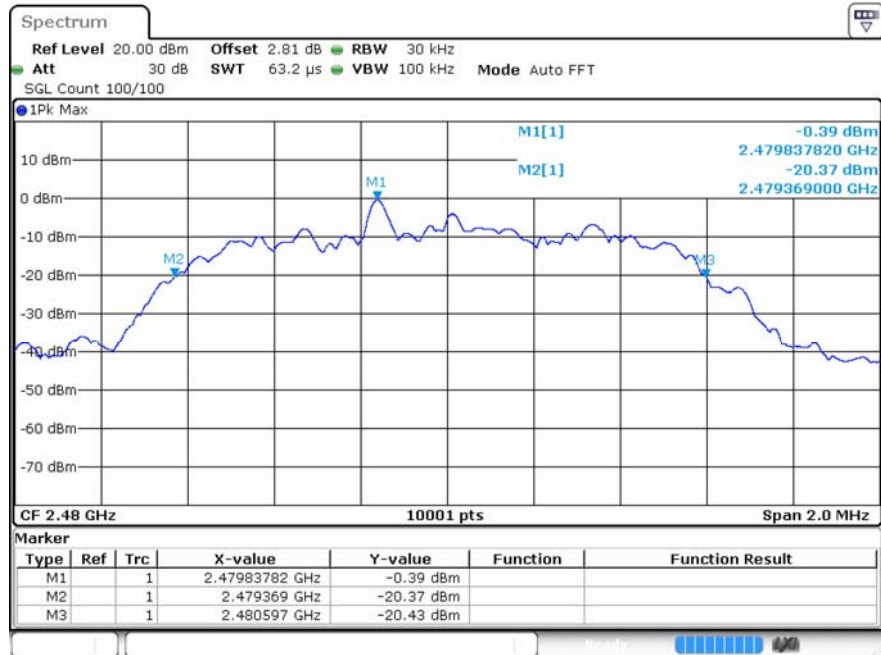
| Mode          | Channel. | 20dB Bandwidth [MHz] | Limit [MHz]   | Verdict |
|---------------|----------|----------------------|---------------|---------|
| GFSK          | LCH      | 0.886                | Not Specified | Pass    |
|               | MCH      | 0.802                | Not Specified | Pass    |
|               | HCH      | 0.922                | Not Specified | Pass    |
| $\pi/4$ DQPSK | LCH      | 1.271                | Not Specified | Pass    |
|               | MCH      | 1.231                | Not Specified | Pass    |
|               | HCH      | 1.228                | Not Specified | Pass    |

### 3.2 Test Graphs



GFSK/HCH


 $\pi/4$ DQPSK/LCH


$\pi/4$ DQPSK/MCH

 $\pi/4$ DQPSK/HCH


## 4 Carrier Frequency Separation

### 4.1 Test Result

| Mode          | Channel. | Carrier Frequency Separation [MHz] | Limit [MHz] | Verdict |
|---------------|----------|------------------------------------|-------------|---------|
| GFSK          | MCH      | 0.988                              | 0.535       | Pass    |
| $\pi/4$ DQPSK | MCH      | 1.002                              | 0.821       | Pass    |

## 4.2 Test Graphs

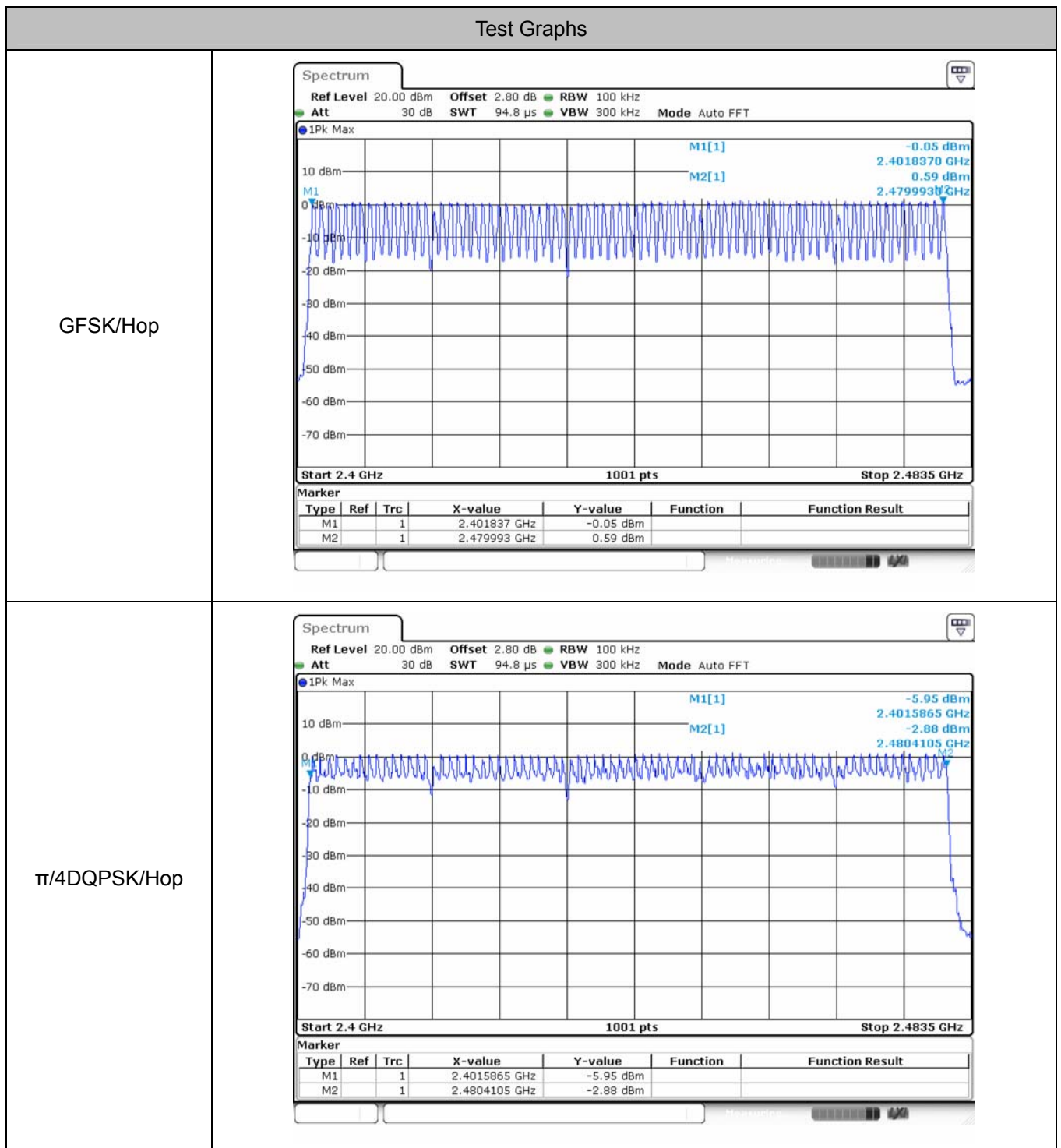


## 5 Hopping Channel Number

### 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    |

## 5.2 Test Graphs

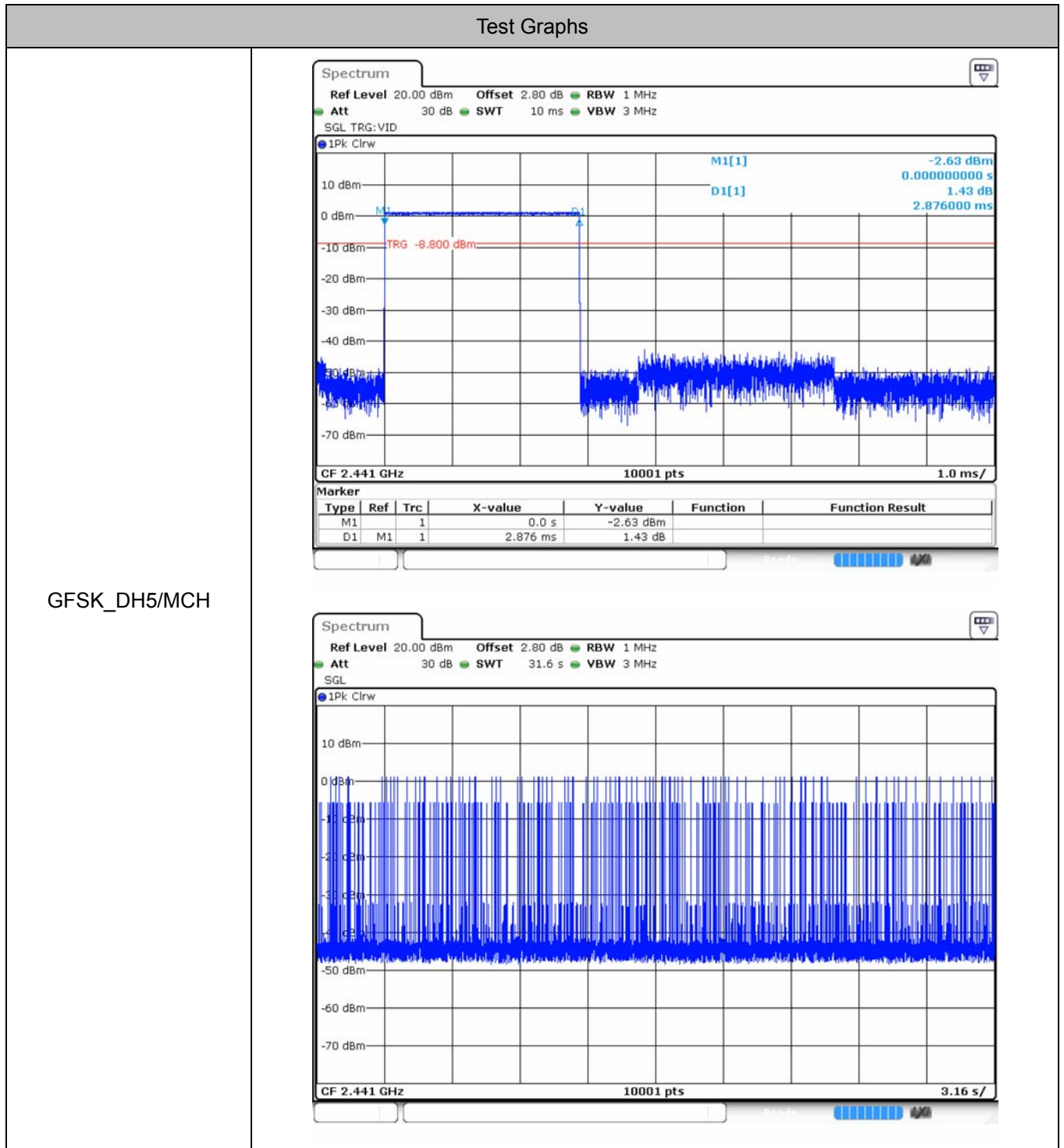


## 6 Dwell Time

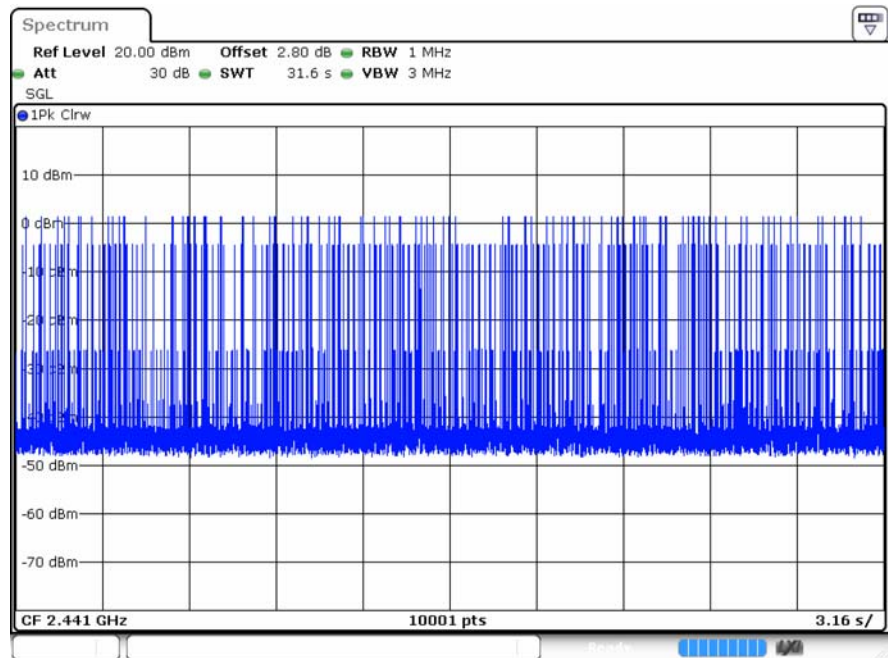
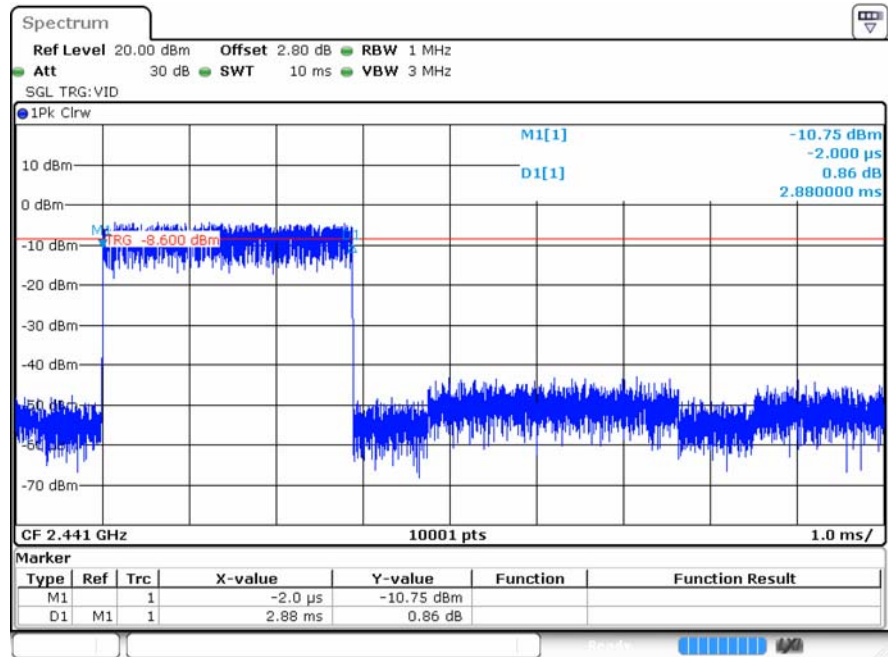
### 6.1 Test Result

| Mode          | Packet | Channel | Burst Width<br>[ms/hop/ch] | Total<br>Hops[hop*ch] | Dwell Time[ms] | Limit [s] | Verdict |
|---------------|--------|---------|----------------------------|-----------------------|----------------|-----------|---------|
| GFSK          | DH5    | MCH     | 2.876                      | 97                    | 278.972        | 0.4       | Pass    |
| $\pi/4$ DQPSK | 2DH5   | MCH     | 2.88                       | 104                   | 299.52         | 0.4       | Pass    |

## 6.2 Test Graphs



$\pi/4$ DQPSK  
\_2DH5/MCH

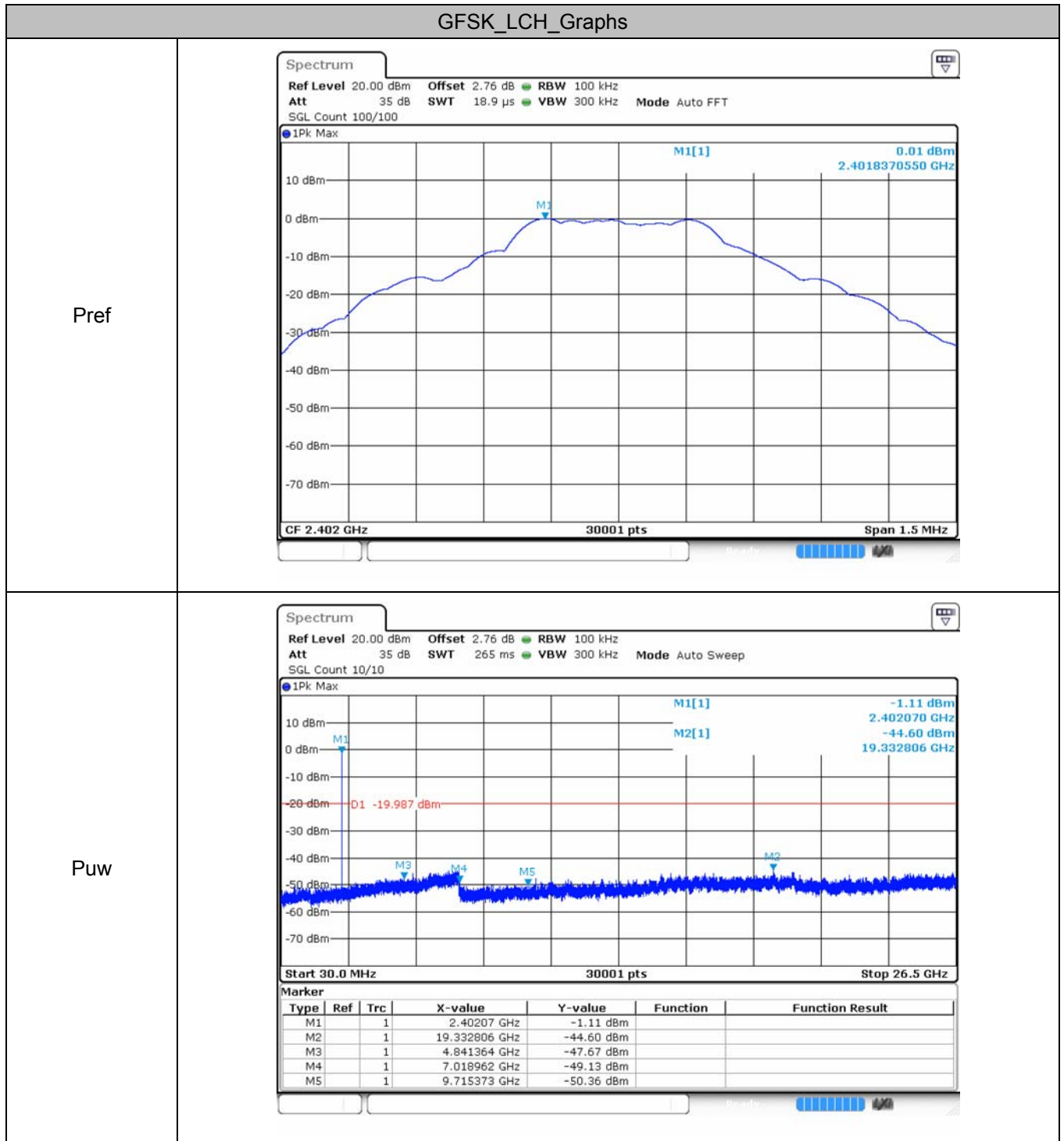


## 7 RF Conducted Spurious Emissions

### 7.1 Test Result

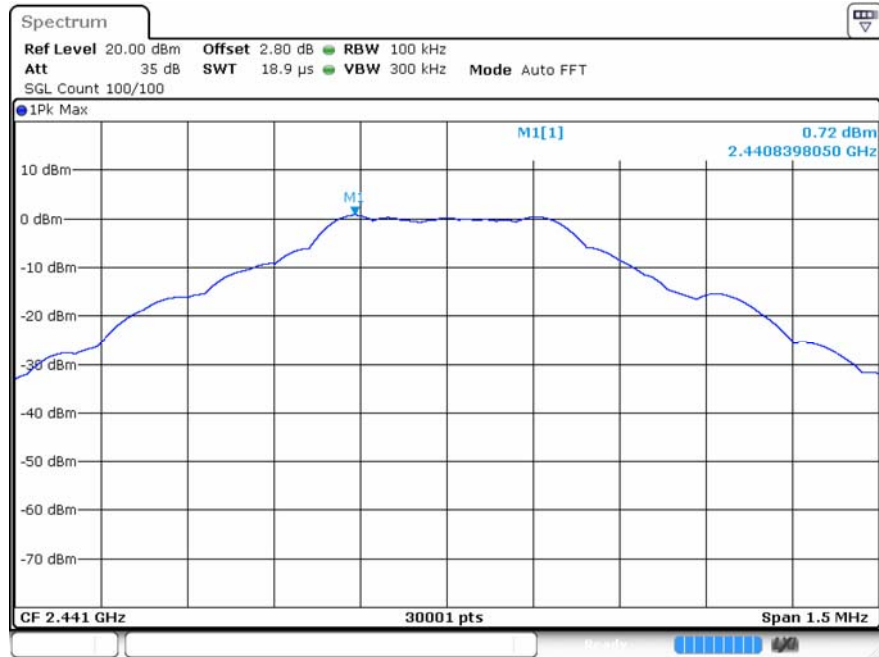
| Mode          | Channel | Max. Level [dBc] | Limit [dBc] | Verdict |
|---------------|---------|------------------|-------------|---------|
| GFSK          | LCH     | -44.6            | -20         | Pass    |
|               | MCH     | -44.77           | -20         | Pass    |
|               | HCH     | -45.57           | -20         | Pass    |
| $\pi/4$ DQPSK | LCH     | -44.47           | -20         | Pass    |
|               | MCH     | -44.3            | -20         | Pass    |
|               | HCH     | -44.32           | -20         | Pass    |

## 7.2 Test Graphs

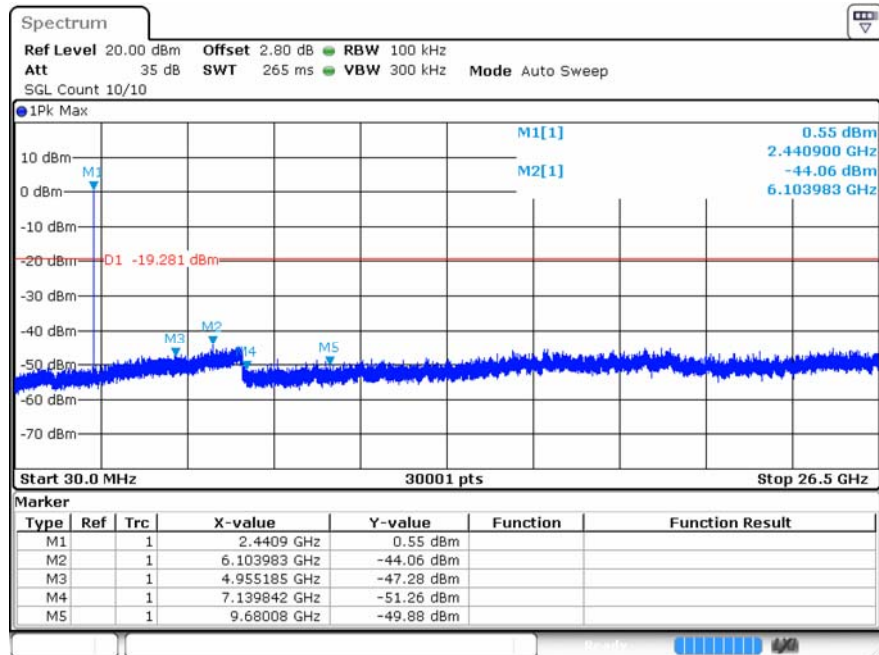


## GFSK\_MCH\_Graphs

Pref

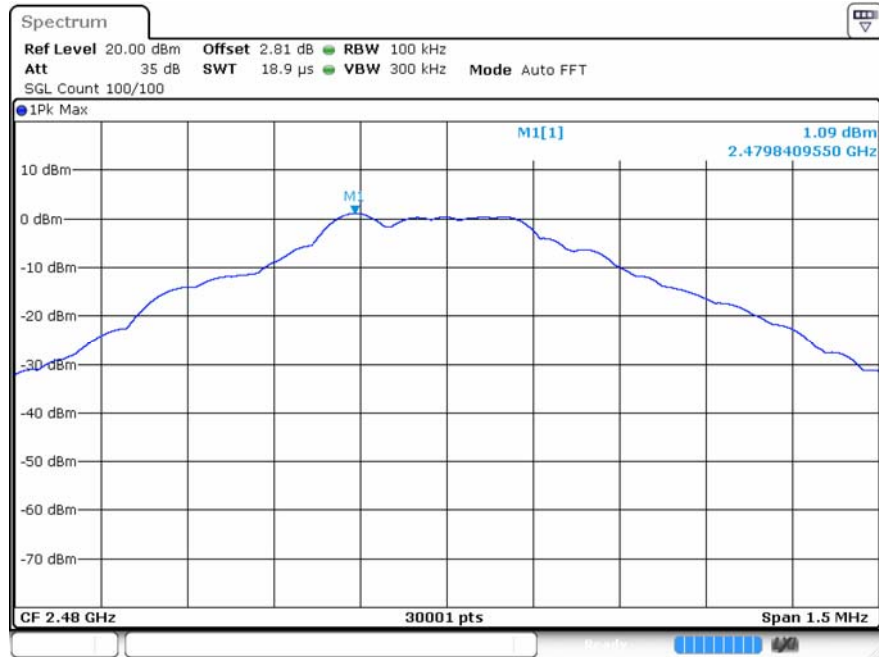


Puw

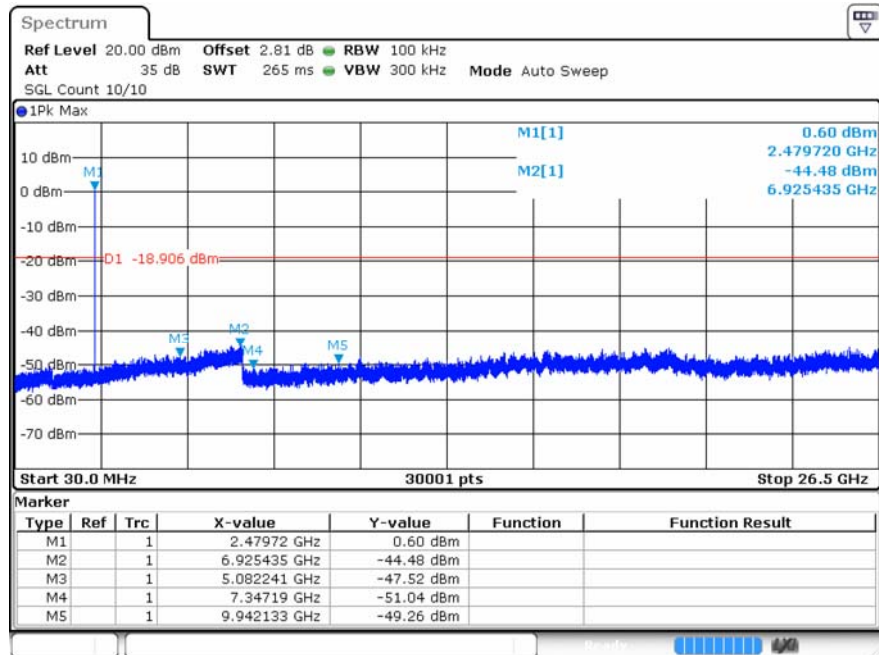


## GFSK\_HCH\_Graphs

Pref

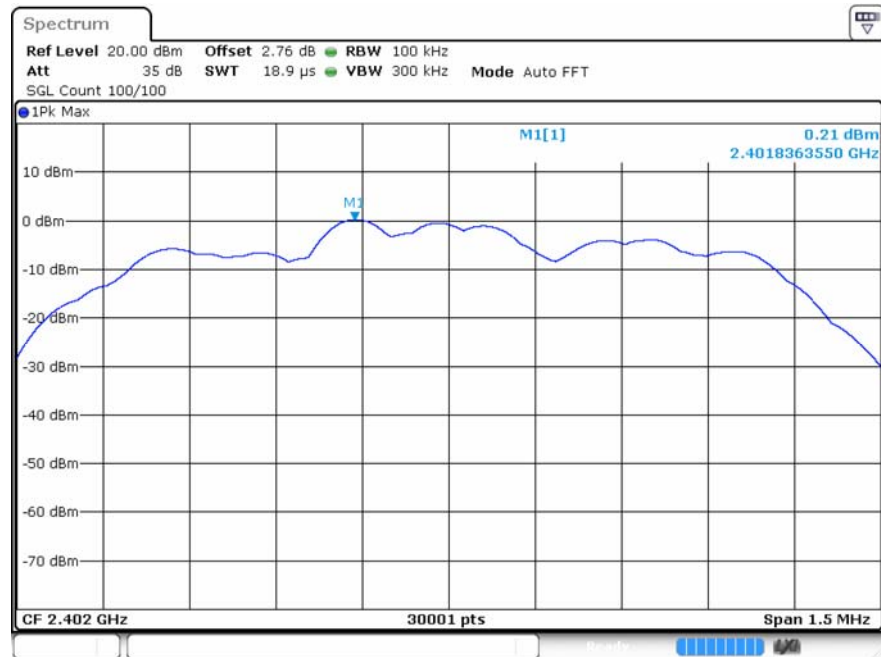


Puw

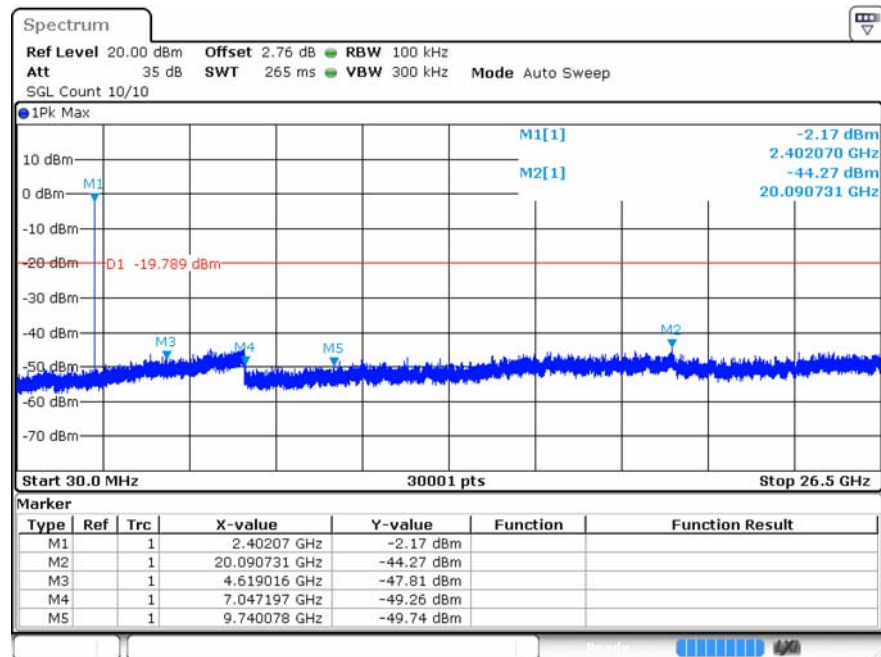


### $\pi/4$ DQPSK\_LCH\_Graphs

Pref

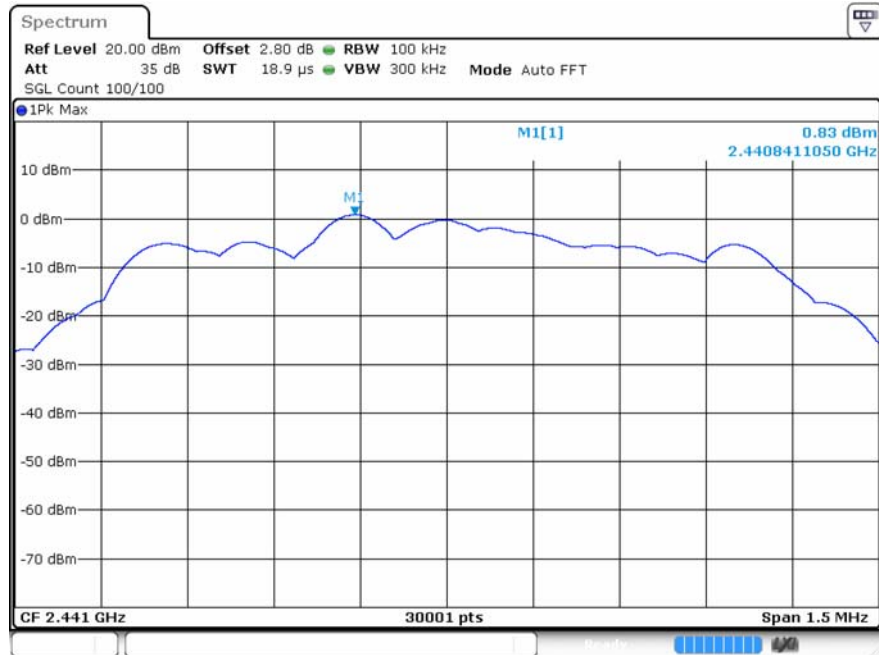


Puw

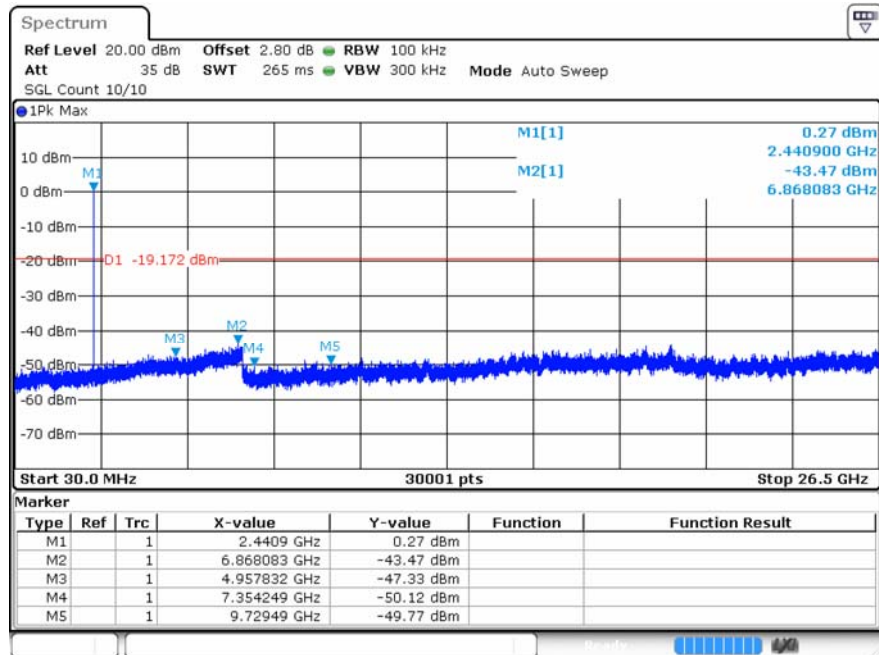


# $\pi$ /4DQPSK\_MCH\_Graphs

Pref

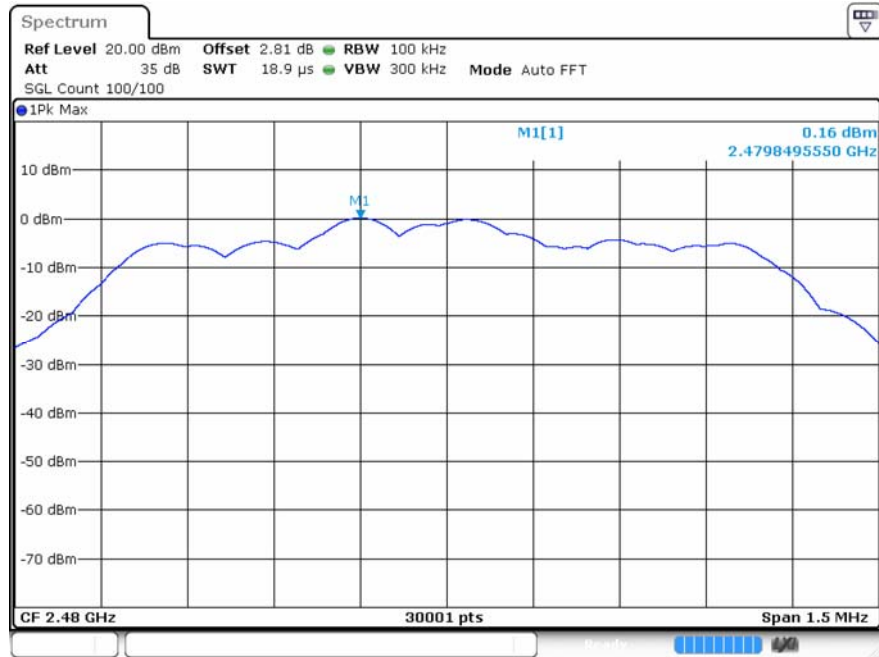


Puw

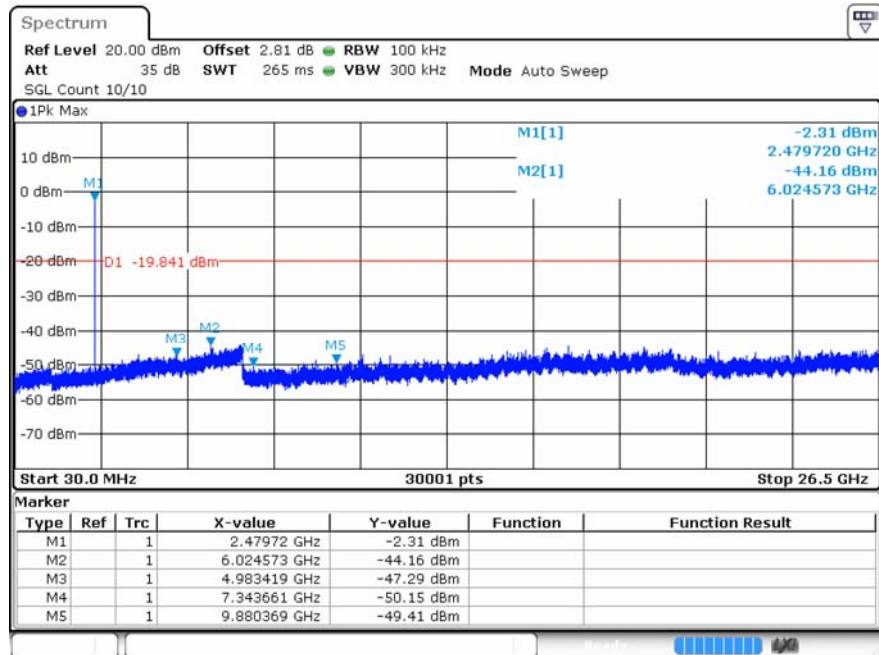


### $\pi/4$ DQPSK\_HCH\_Graphs

Pref



Puw

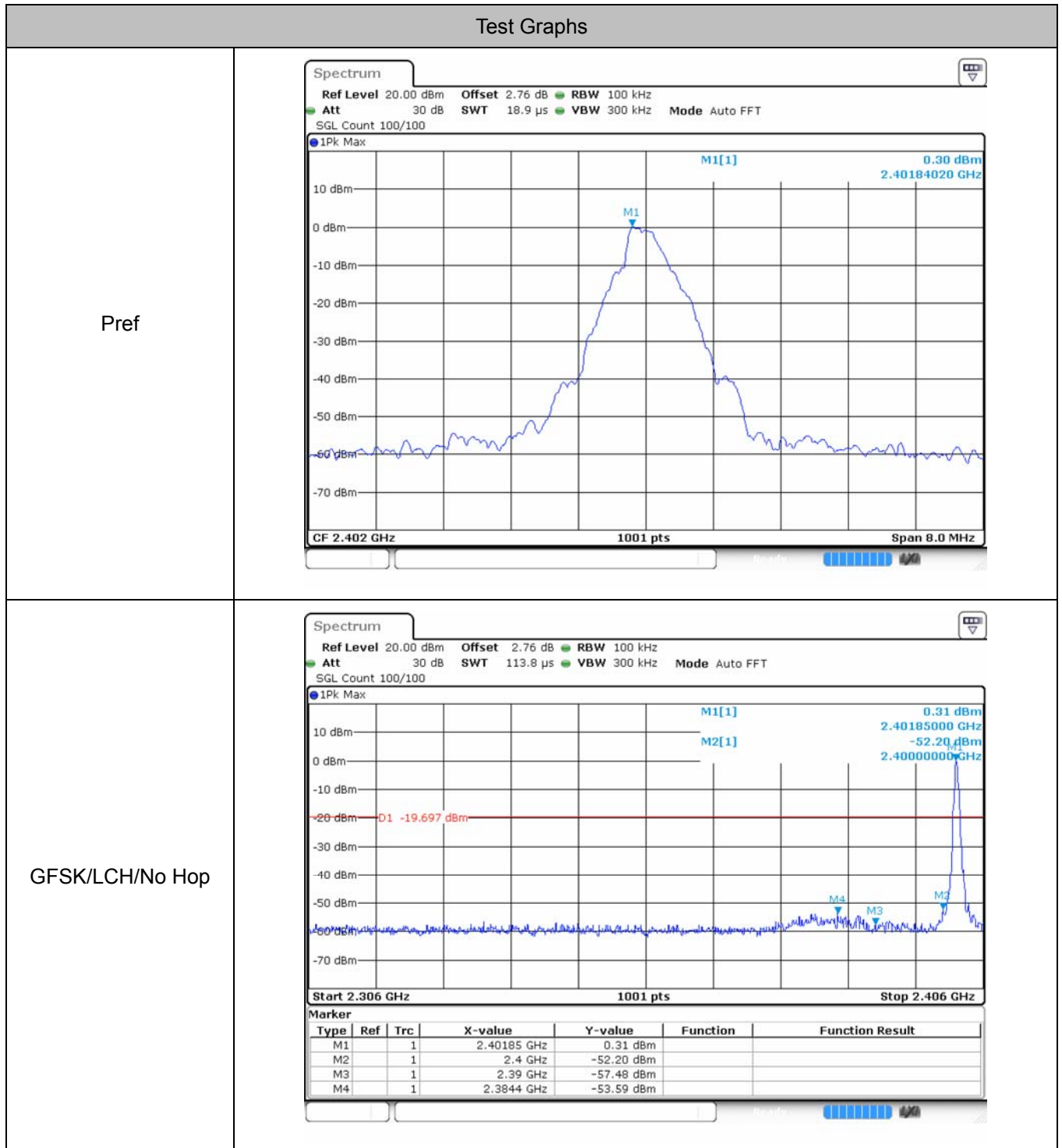


## 8 Band-edge for RF Conducted Emissions

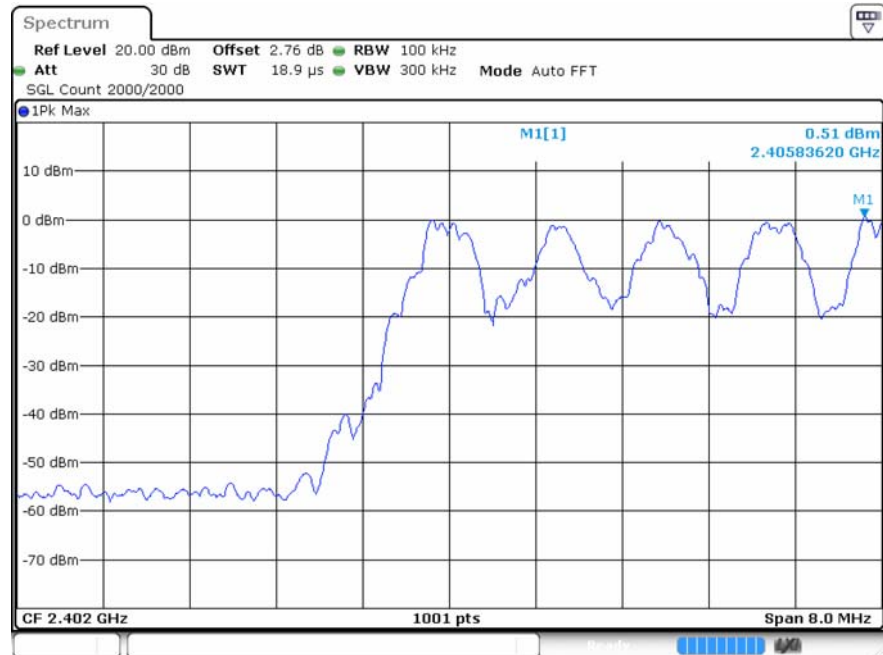
### 8.1 Test Result

| Mode          | Channel | Carrier Frequency [MHz] | Frequency Hopping | Max Spurious Level [dBc] | Limit [dBc] | Verdict |
|---------------|---------|-------------------------|-------------------|--------------------------|-------------|---------|
| GFSK          | LCH     | 2402                    | Off               | -53.88                   | -20         | Pass    |
|               |         |                         | On                | -53.91                   | -20         | Pass    |
|               | HCH     | 2480                    | Off               | -53.83                   | -20         | Pass    |
|               |         |                         | On                | -52.68                   | -20         | Pass    |
| $\pi/4$ DQPSK | LCH     | 2402                    | Off               | -52.97                   | -20         | Pass    |
|               |         |                         | On                | -52.96                   | -20         | Pass    |
|               | HCH     | 2480                    | Off               | -52.2                    | -20         | Pass    |
|               |         |                         | On                | -52.33                   | -20         | Pass    |

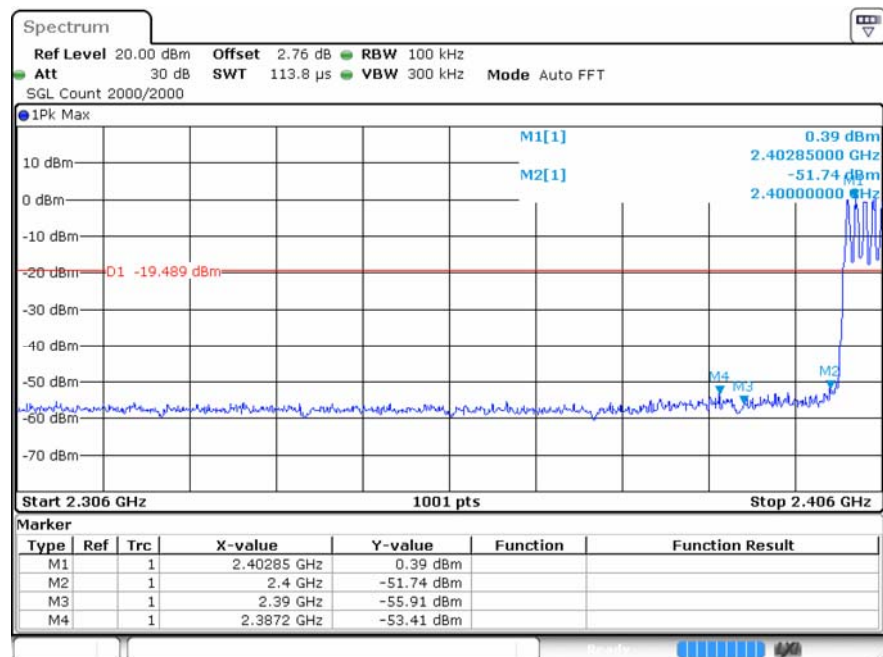
## 8.2 Test Graphs



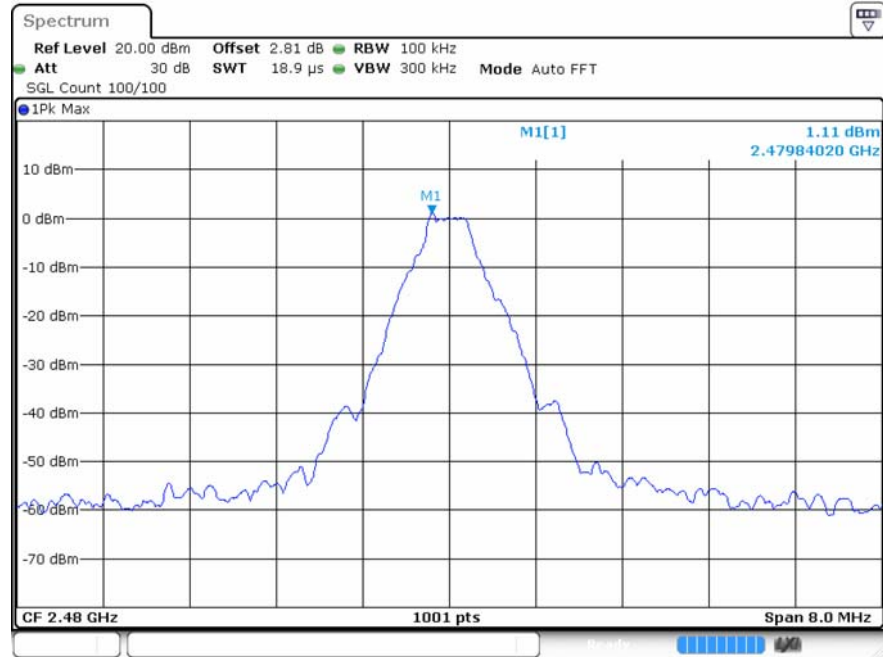
Ref



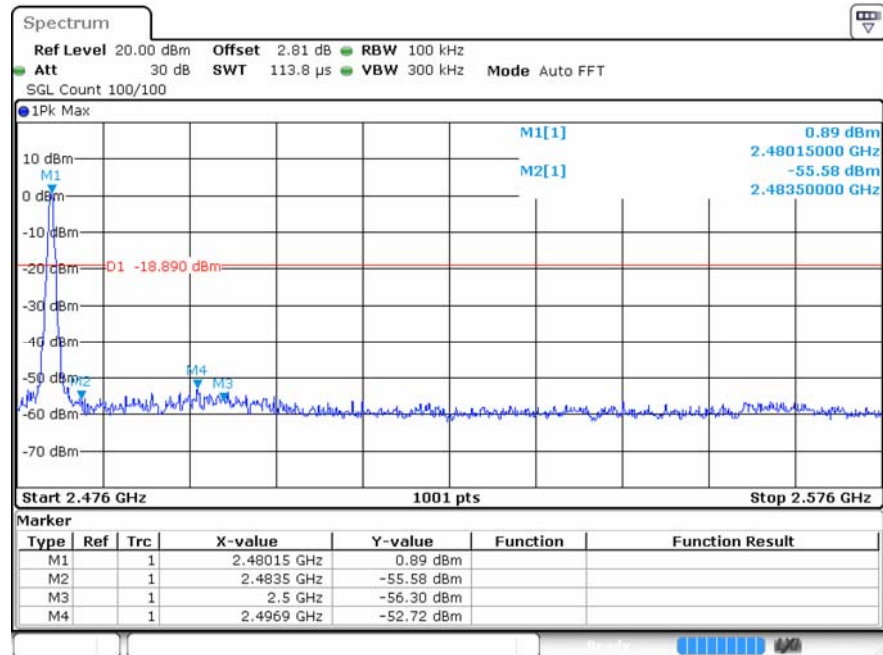
GFSK/LCH/Hop



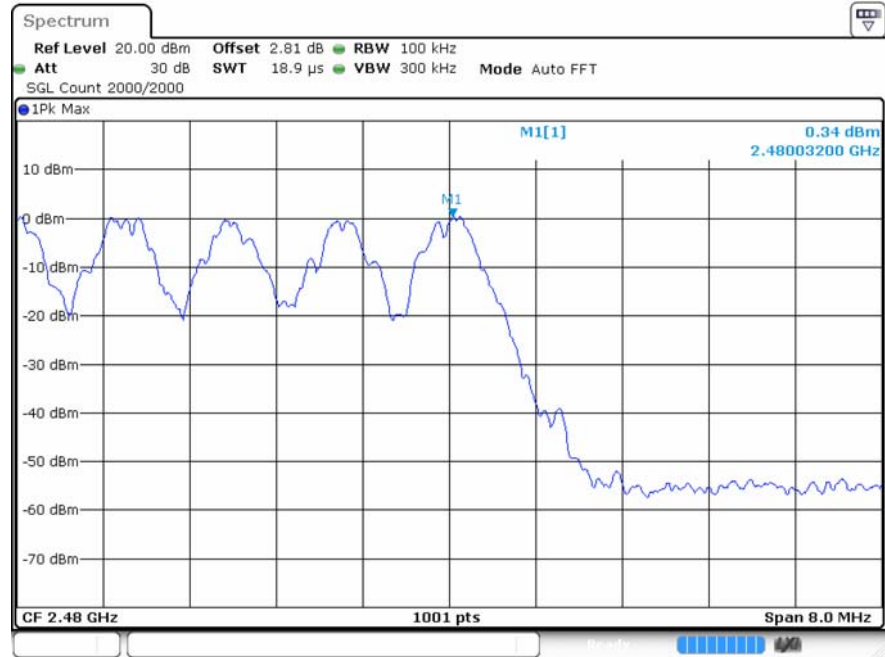
Ref



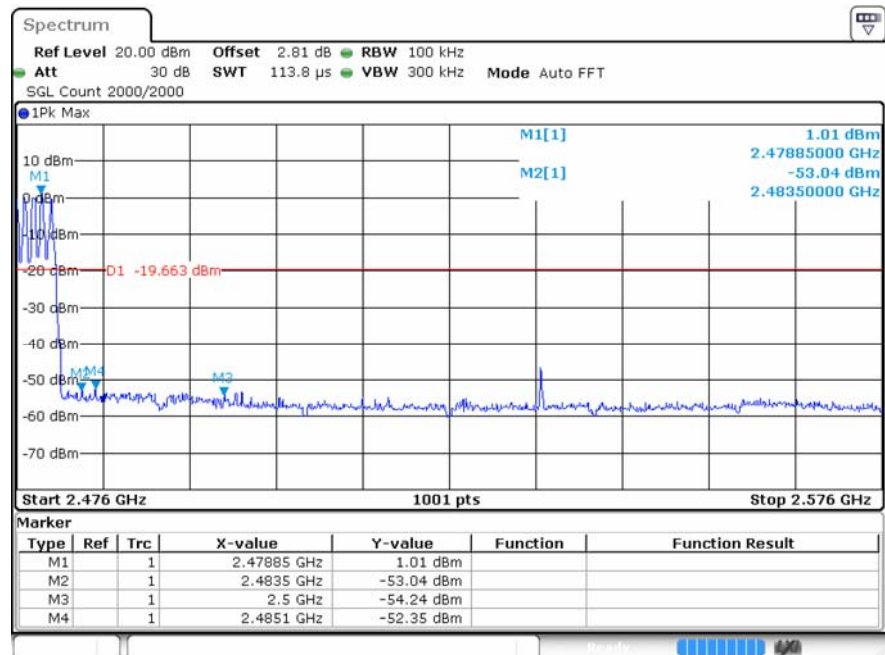
GFSK/HCH/No Hop



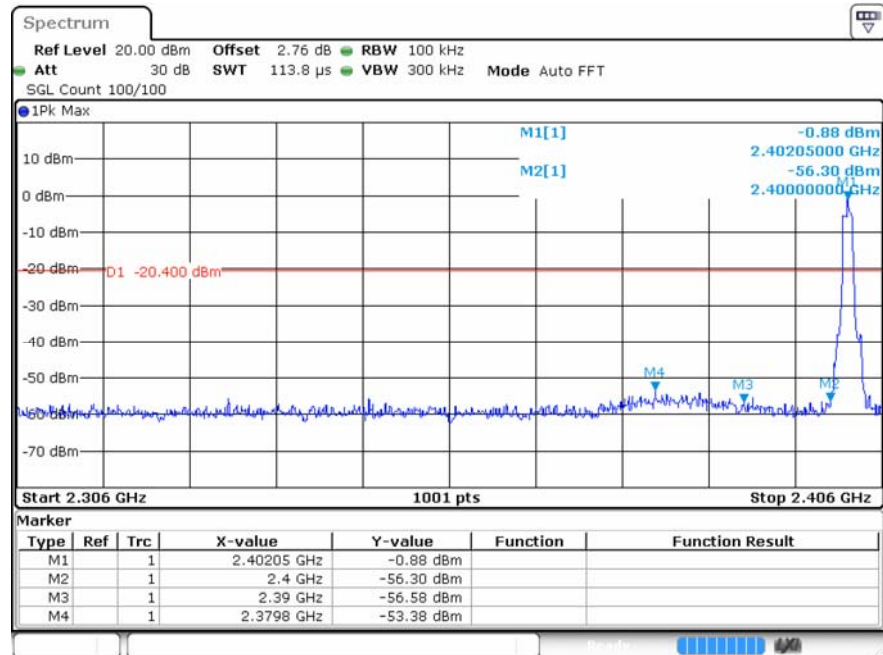
Ref.



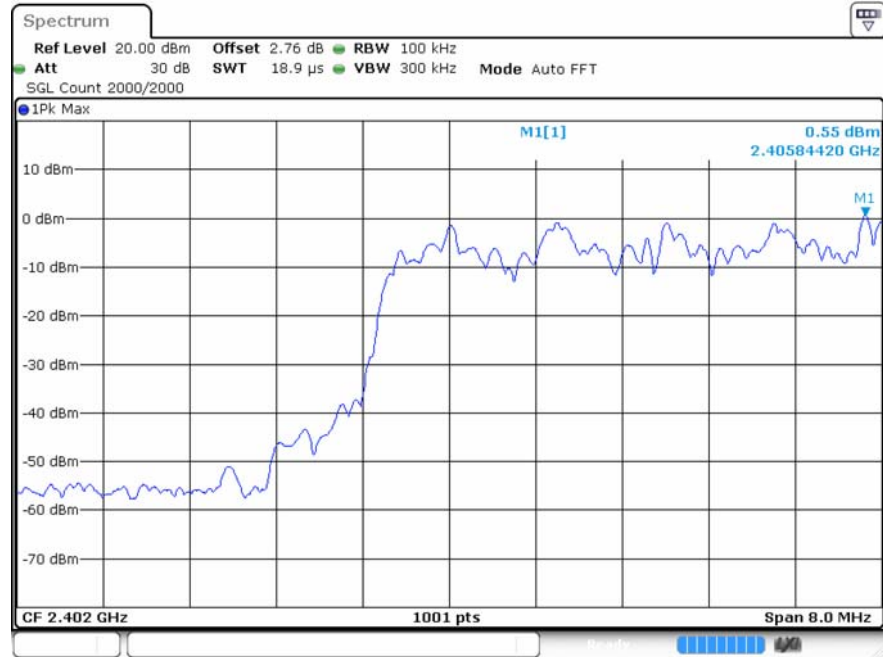
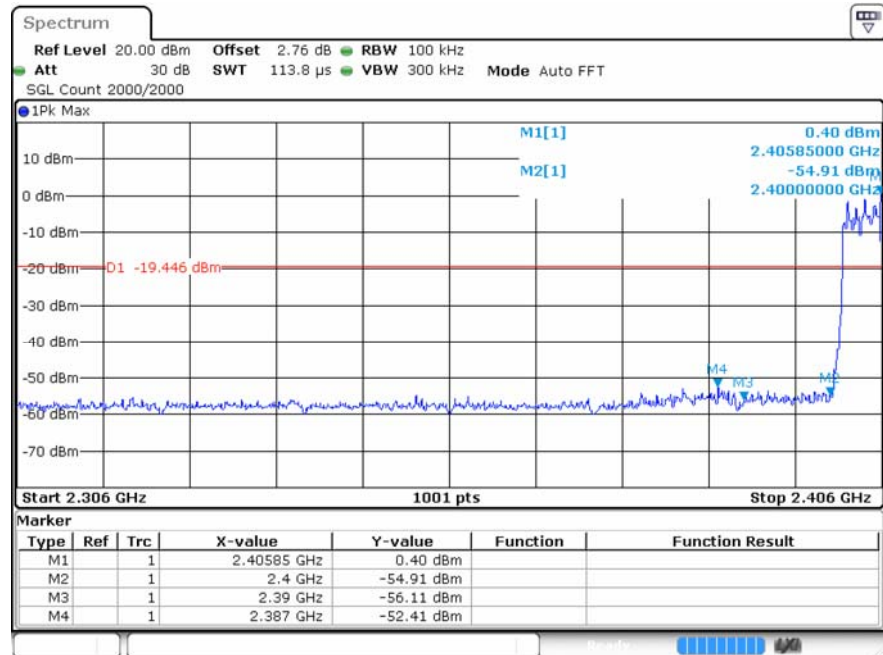
GFSK/HCH/Hop



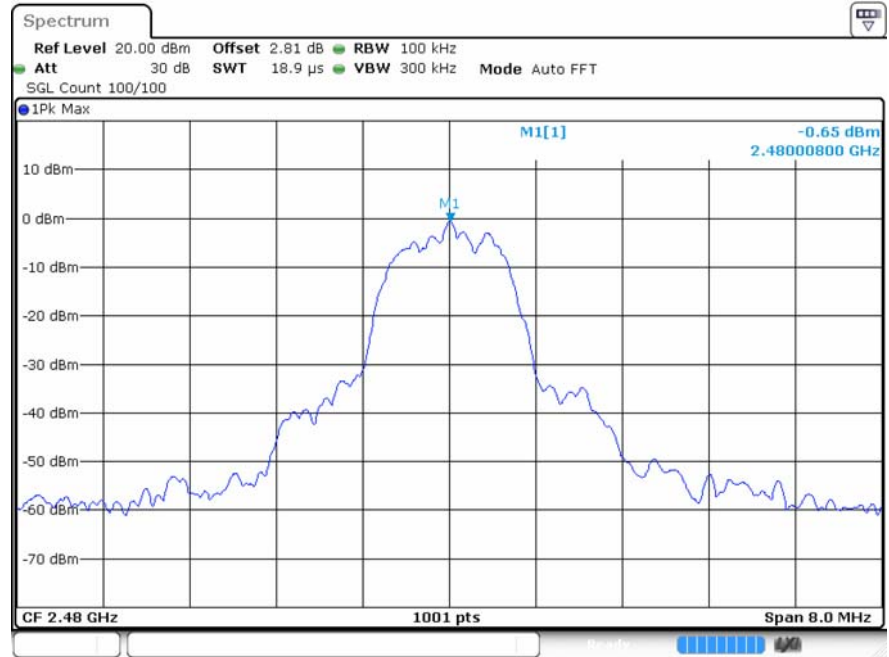
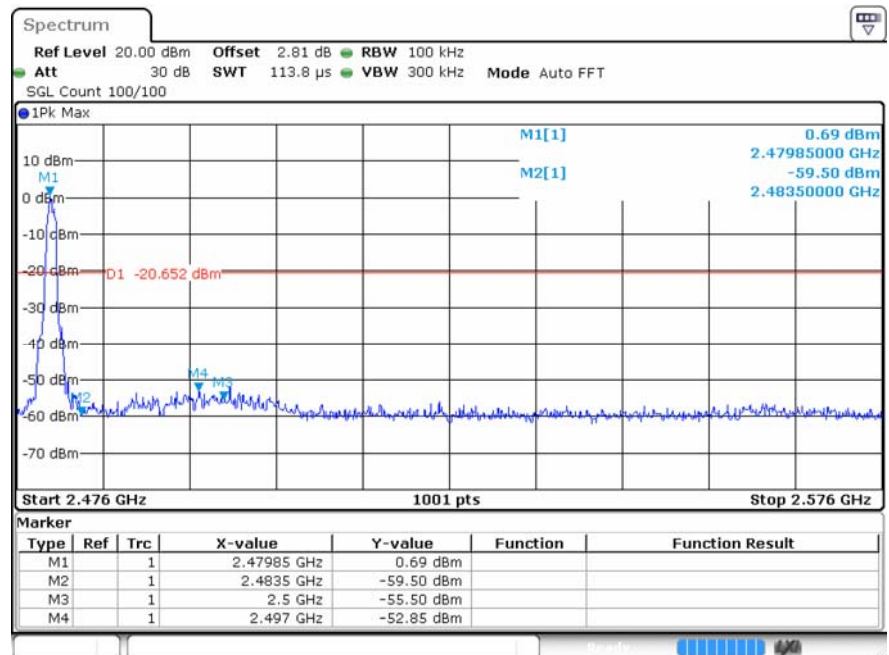
Ref


 $\pi/4$ DQPSK/LCH/No Hop


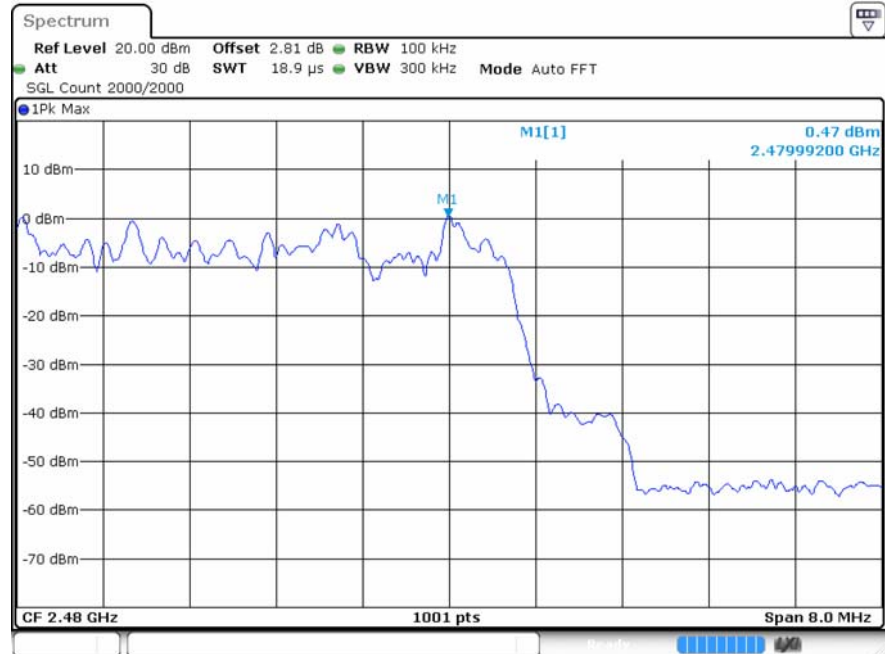
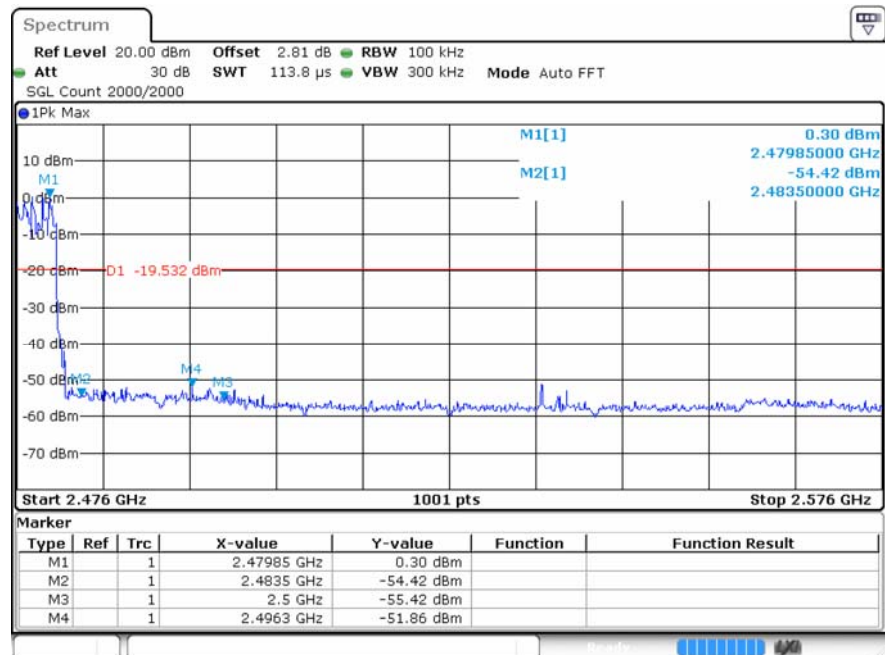
Ref


 $\pi/4$ DQPSK/LCH/Hop


Ref


 $\pi/4$ DQPSK/HCH/No  
Hop


Ref


 $\pi/4$ DQPSK/HCH/Hop


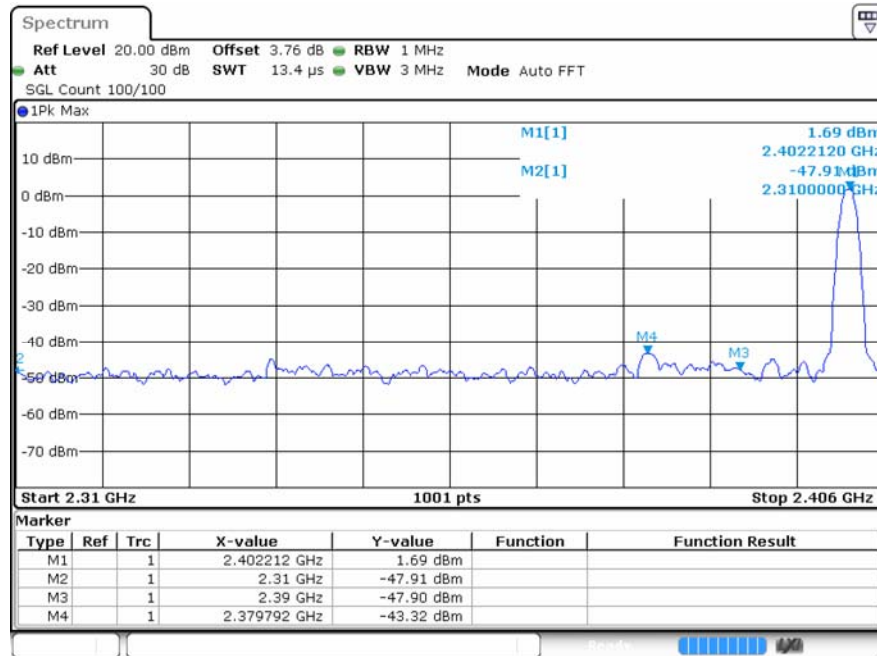
## 9 Restrict-band band-edge measurements

### 9.1 Test Result

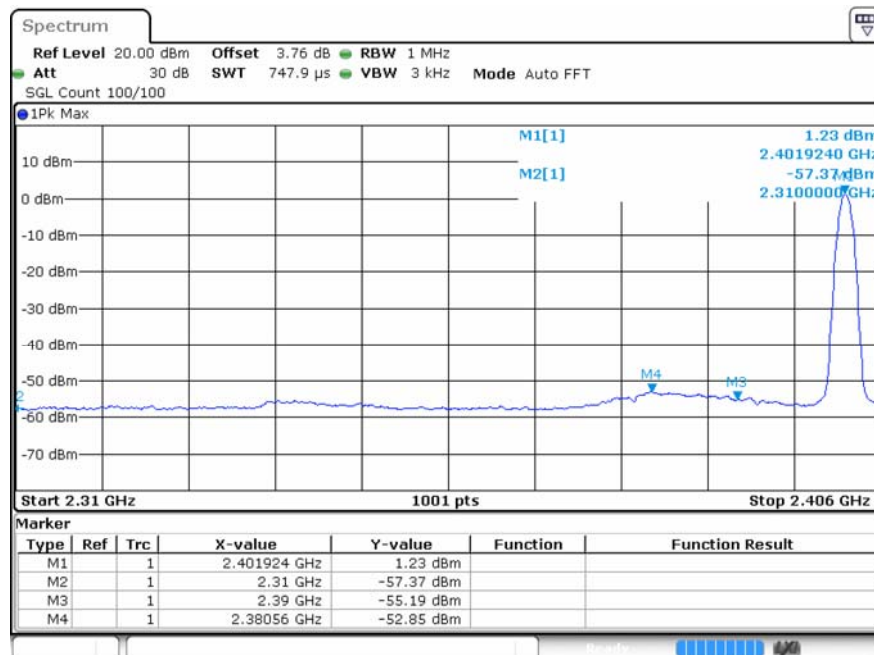
| Test Mode     | Hopping | Freq.    | Power [dBm] | Gain | E [dBuV/m] | Detector | Limit [dBuV/m] | Verdict |
|---------------|---------|----------|-------------|------|------------|----------|----------------|---------|
| GFSK          | Off     | 2310.0   | -47.9       | 2    | 49.36      | PEAK     | 74             | Pass    |
|               | Off     | 2310.0   | -57.37      | 2    | 39.89      | AV       | 54             | Pass    |
|               | Off     | 2379.792 | -43.31      | 2    | 53.95      | PEAK     | 74             | Pass    |
|               | Off     | 2380.56  | -52.84      | 2    | 44.42      | AV       | 54             | Pass    |
|               | Off     | 2390.0   | -47.89      | 2    | 49.37      | PEAK     | 74             | Pass    |
|               | Off     | 2390.0   | -55.18      | 2    | 42.08      | AV       | 54             | Pass    |
|               | Off     | 2483.5   | -48.51      | 2    | 48.75      | PEAK     | 74             | Pass    |
|               | Off     | 2483.5   | -55.42      | 2    | 41.84      | AV       | 54             | Pass    |
|               | Off     | 2500     | -42.57      | 2    | 54.69      | PEAK     | 74             | Pass    |
|               | Off     | 2499.448 | -52.32      | 2    | 44.94      | AV       | 54             | Pass    |
|               | Off     | 2500.0   | -42.57      | 2    | 54.69      | PEAK     | 74             | Pass    |
|               | Off     | 2500.0   | -53.16      | 2    | 44.1       | AV       | 54             | Pass    |
| $\pi/4$ DQPSK | Off     | 2310.0   | -47.98      | 2    | 49.28      | PEAK     | 74             | Pass    |
|               | Off     | 2310.0   | -57.48      | 2    | 39.78      | AV       | 54             | Pass    |
|               | Off     | 2381.712 | -42.99      | 2    | 54.27      | PEAK     | 74             | Pass    |
|               | Off     | 2383.152 | -52.65      | 2    | 44.61      | AV       | 54             | Pass    |
|               | Off     | 2390.0   | -46.61      | 2    | 50.65      | PEAK     | 74             | Pass    |
|               | Off     | 2390.0   | -54.73      | 2    | 42.53      | AV       | 54             | Pass    |
|               | Off     | 2483.5   | -46.66      | 2    | 50.6       | PEAK     | 74             | Pass    |
|               | Off     | 2483.5   | -55.89      | 2    | 41.37      | AV       | 54             | Pass    |
|               | Off     | 2498.824 | -42.46      | 2    | 54.8       | PEAK     | 74             | Pass    |
|               | Off     | 2499.328 | -51.96      | 2    | 45.3       | AV       | 54             | Pass    |
|               | Off     | 2500.0   | -46.25      | 2    | 51.01      | PEAK     | 74             | Pass    |
|               | Off     | 2500.0   | -52.04      | 2    | 45.22      | AV       | 54             | Pass    |

## 9.2 Test Graphs

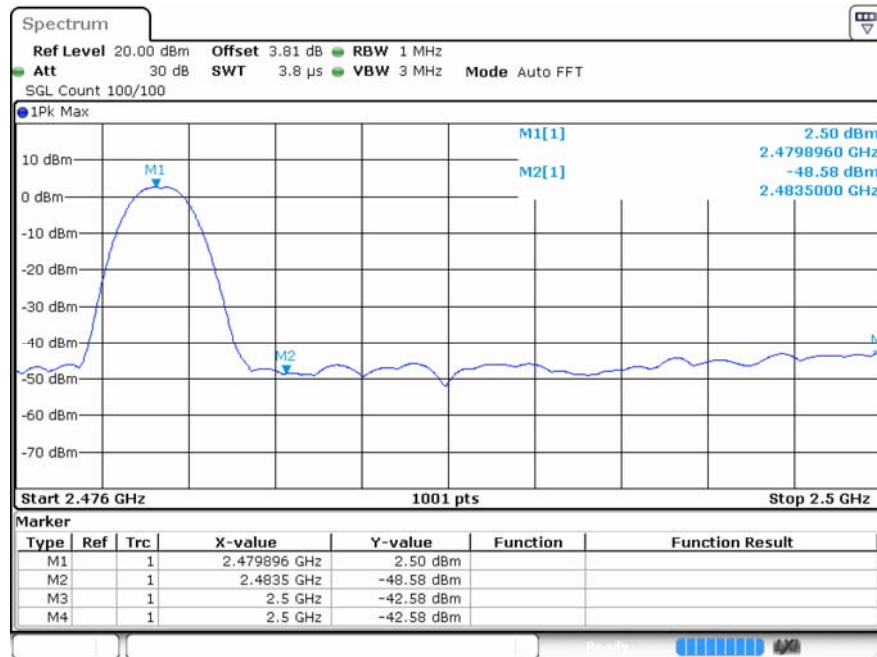
Restrict-band band-edge measurements\_Hopping Off\_ GFSK\_PEAK (Low Channel)



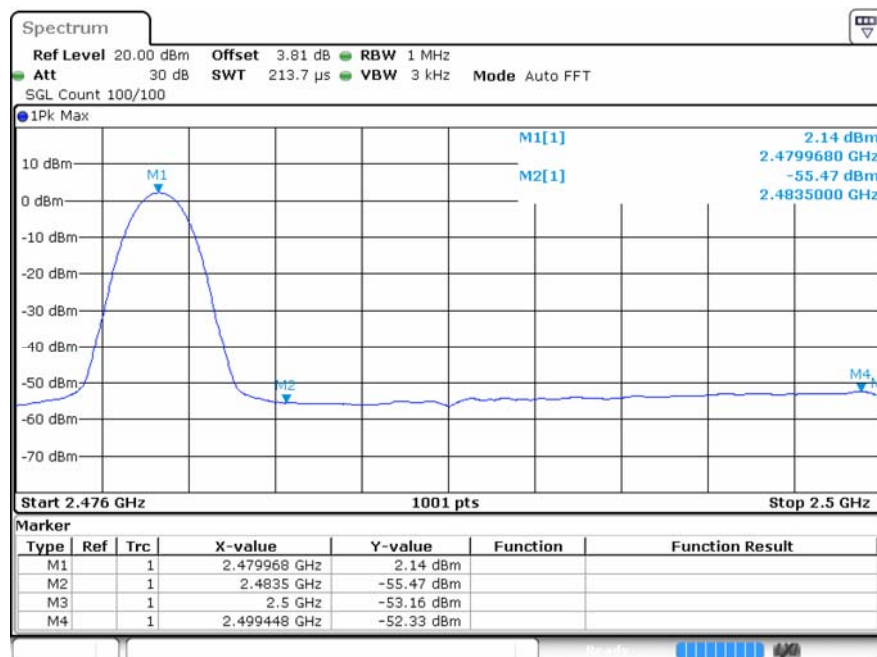
Restrict-band band-edge measurements\_Hopping Off\_ GFSK\_Average (Low Channel)



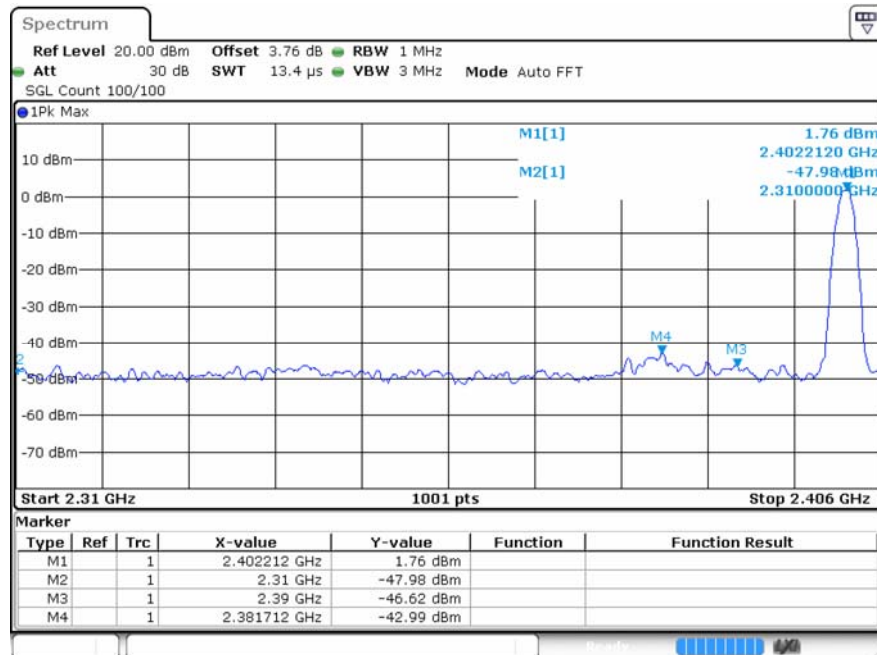
## Restrict-band band-edge measurements\_Hopping Off\_ GFSK\_PEAK (High Channel)



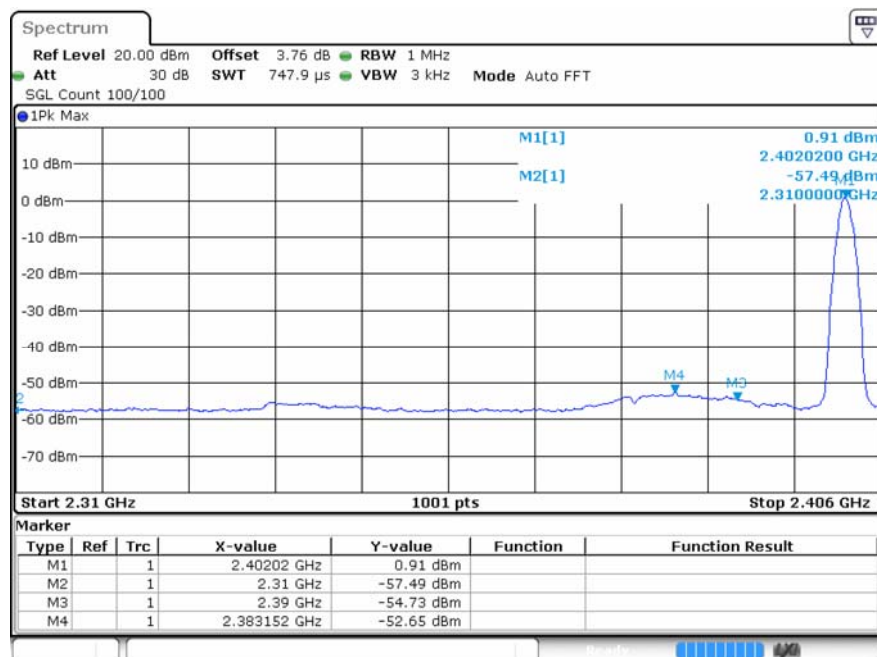
## Restrict-band band-edge measurements\_Hopping Off\_ GFSK\_Average (High Channel)



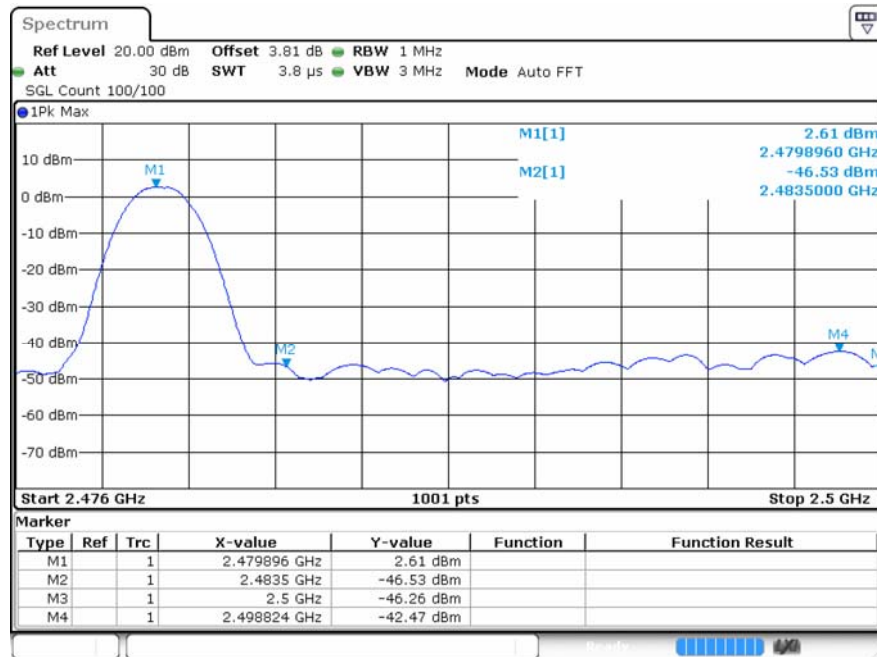
## Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_PEAK (Low Channel)



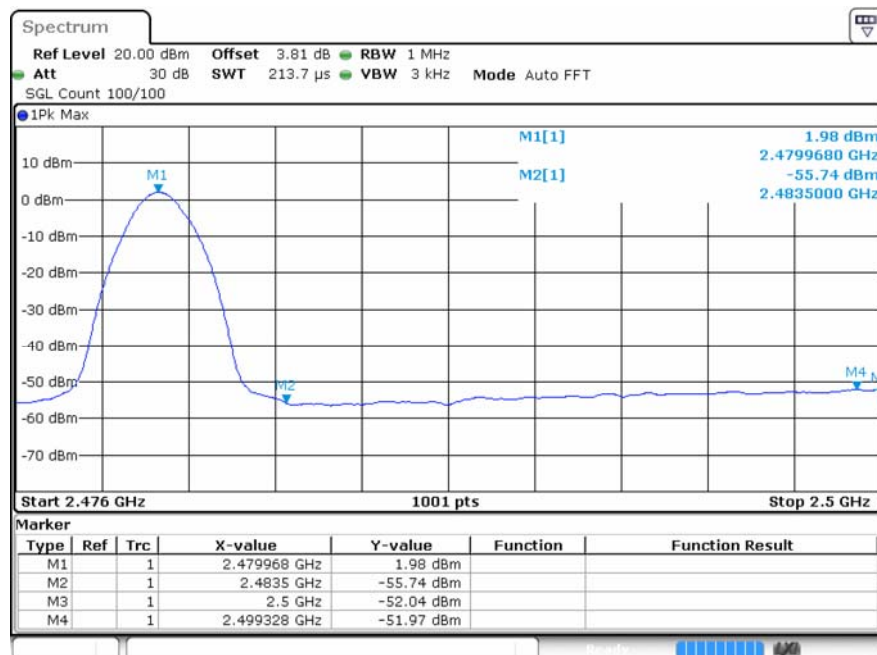
## Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_Average (Low Channel)



## Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_PEAK (High Channel)



## Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_Average (High Channel)



---The End---