



## Appendix A

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

Product Name: SLEEPING MASK HEADSET

Trade Mark: IJOY

Test Model: IJHP2268

Environmental Conditions

|                    |             |
|--------------------|-------------|
| Temperature:       | 25.6℃       |
| Relative Humidity: | 58.4%       |
| ATM Pressure:      | 101Kpa      |
| Test Engineer:     | Simba Huang |
| Supervised by:     | Seal Chen   |



# Contents

Page

**COVER PAGE**

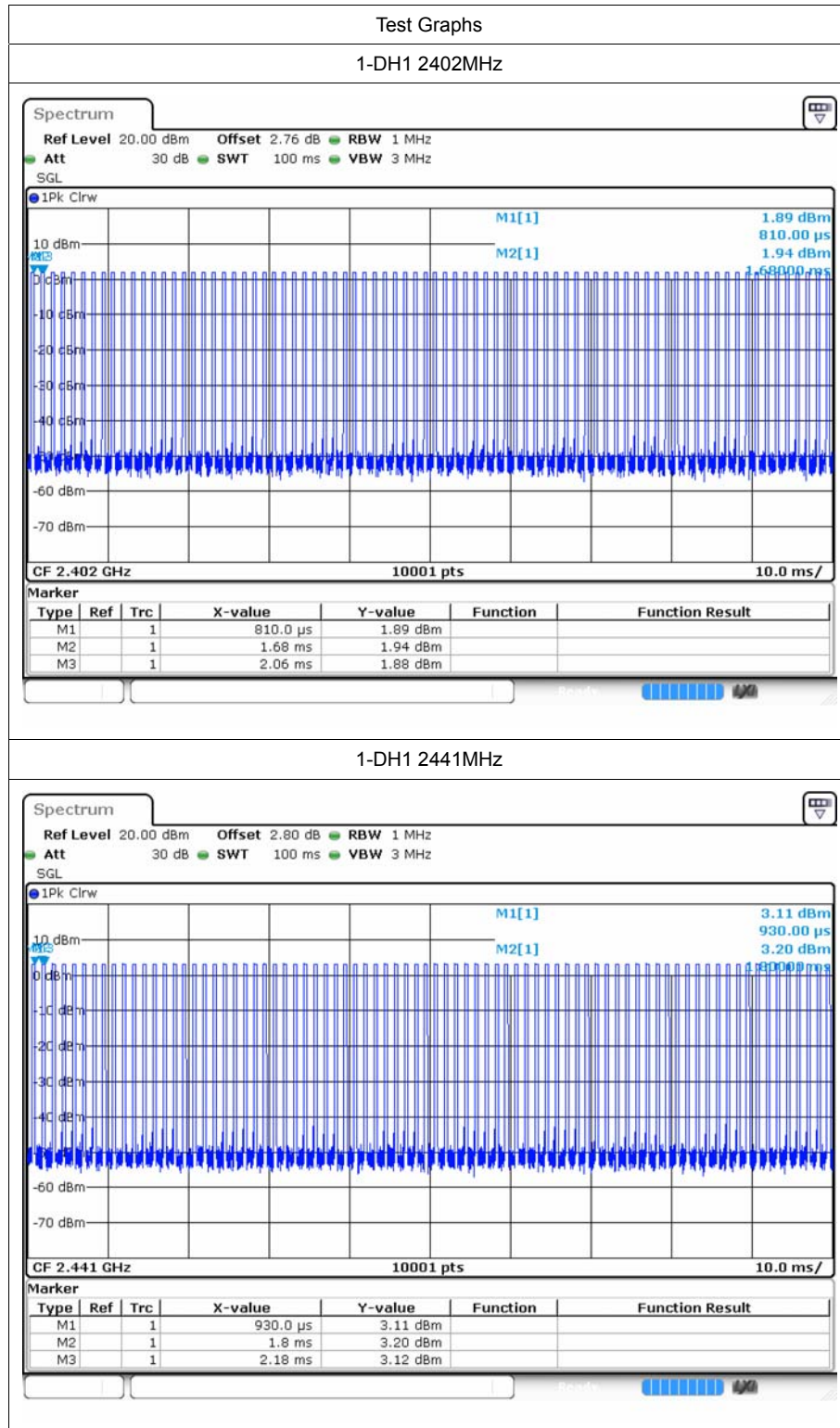
|     |                                            |    |
|-----|--------------------------------------------|----|
| 1   | Duty Cycle .....                           | 3  |
| 1.1 | Test Result.....                           | 3  |
| 1.2 | Test Graphs .....                          | 4  |
| 2   | Maximum Conducted Peak Output Power .....  | 9  |
| 2.1 | Test Result.....                           | 9  |
| 2.2 | Test Graphs .....                          | 10 |
| 3   | 20dB Bandwidth .....                       | 15 |
| 3.1 | Test Result.....                           | 15 |
| 3.2 | Test Graphs .....                          | 16 |
| 4   | Carrier Frequency Separation .....         | 21 |
| 4.1 | Test Result.....                           | 21 |
| 4.2 | Test Graphs .....                          | 22 |
| 5   | Hopping Channel Number.....                | 24 |
| 5.1 | Test Result.....                           | 24 |
| 5.2 | Test Graphs .....                          | 25 |
| 6   | Dwell Time .....                           | 27 |
| 6.1 | Test Result.....                           | 27 |
| 6.2 | Test Graphs .....                          | 28 |
| 7   | RF Conducted Spurious Emissions.....       | 31 |
| 7.1 | Test Result.....                           | 31 |
| 7.2 | Test Graphs .....                          | 32 |
| 8   | Band-edge for RF Conducted Emissions ..... | 41 |
| 8.1 | Test Result.....                           | 41 |
| 8.2 | Test Graphs .....                          | 42 |
| 9   | Restrict-band band-edge measurements ..... | 54 |
| 9.1 | Test Result.....                           | 54 |
| 9.2 | Test Graphs .....                          | 56 |

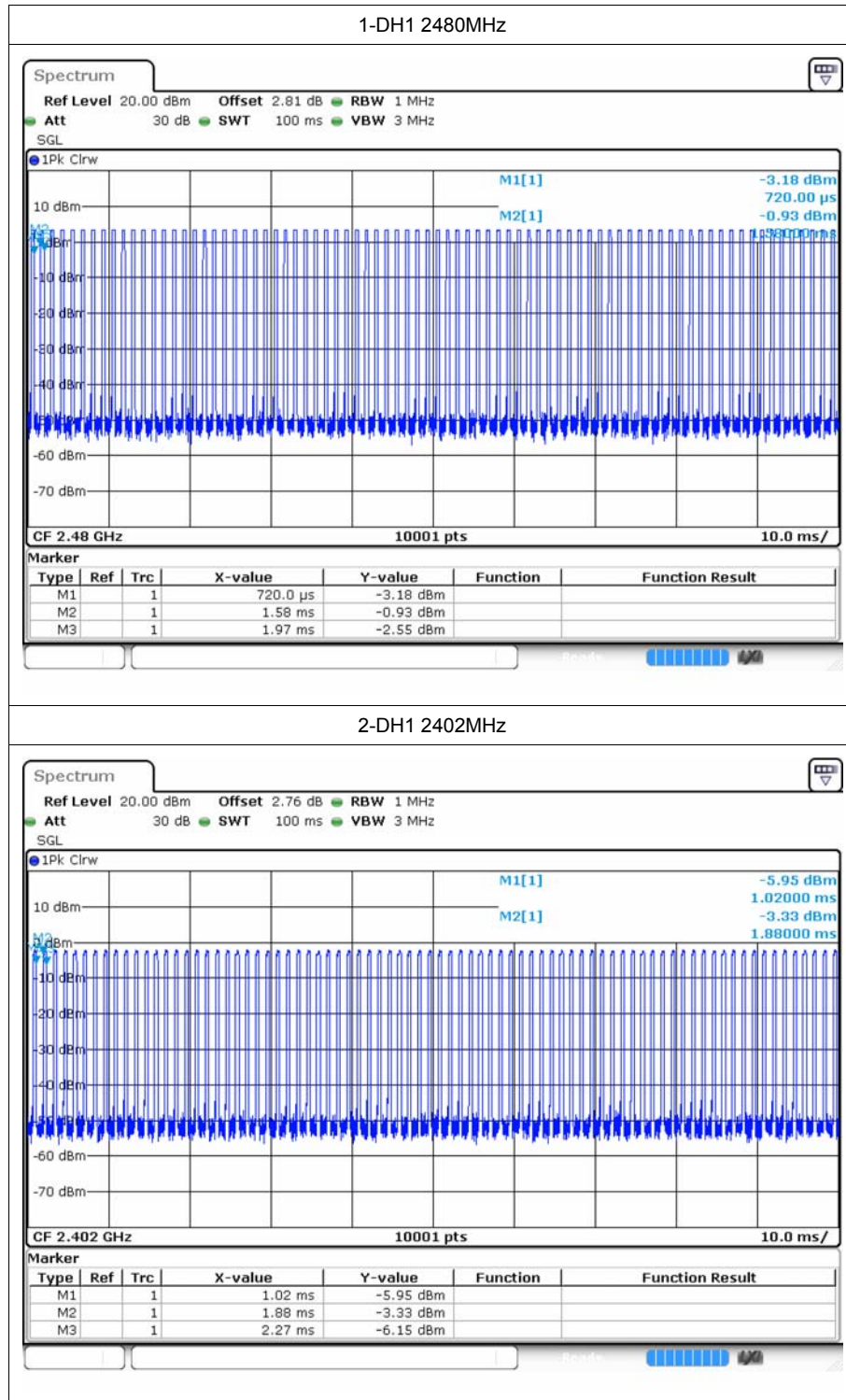
# 1 Duty Cycle

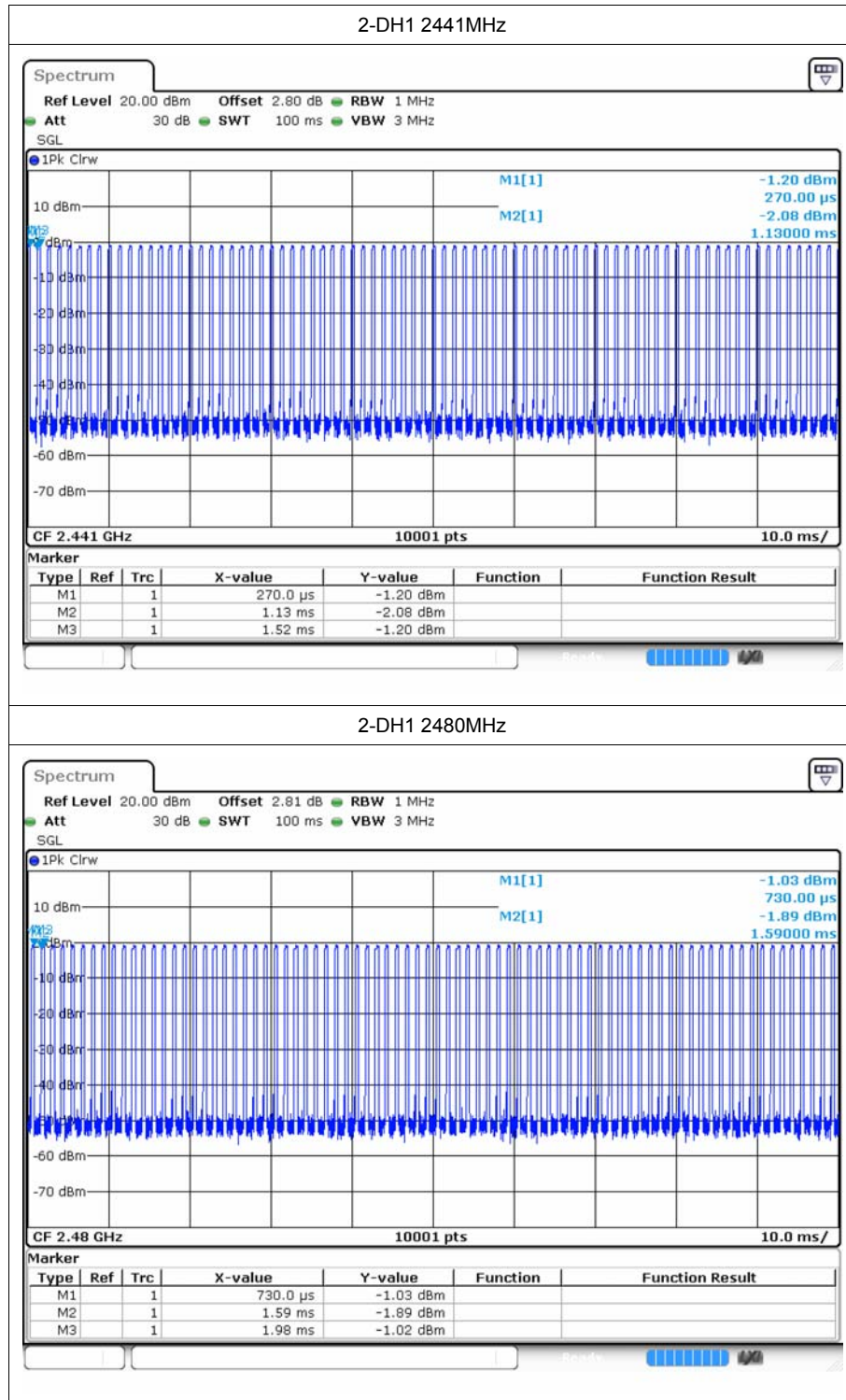
## 1.1 Test Result

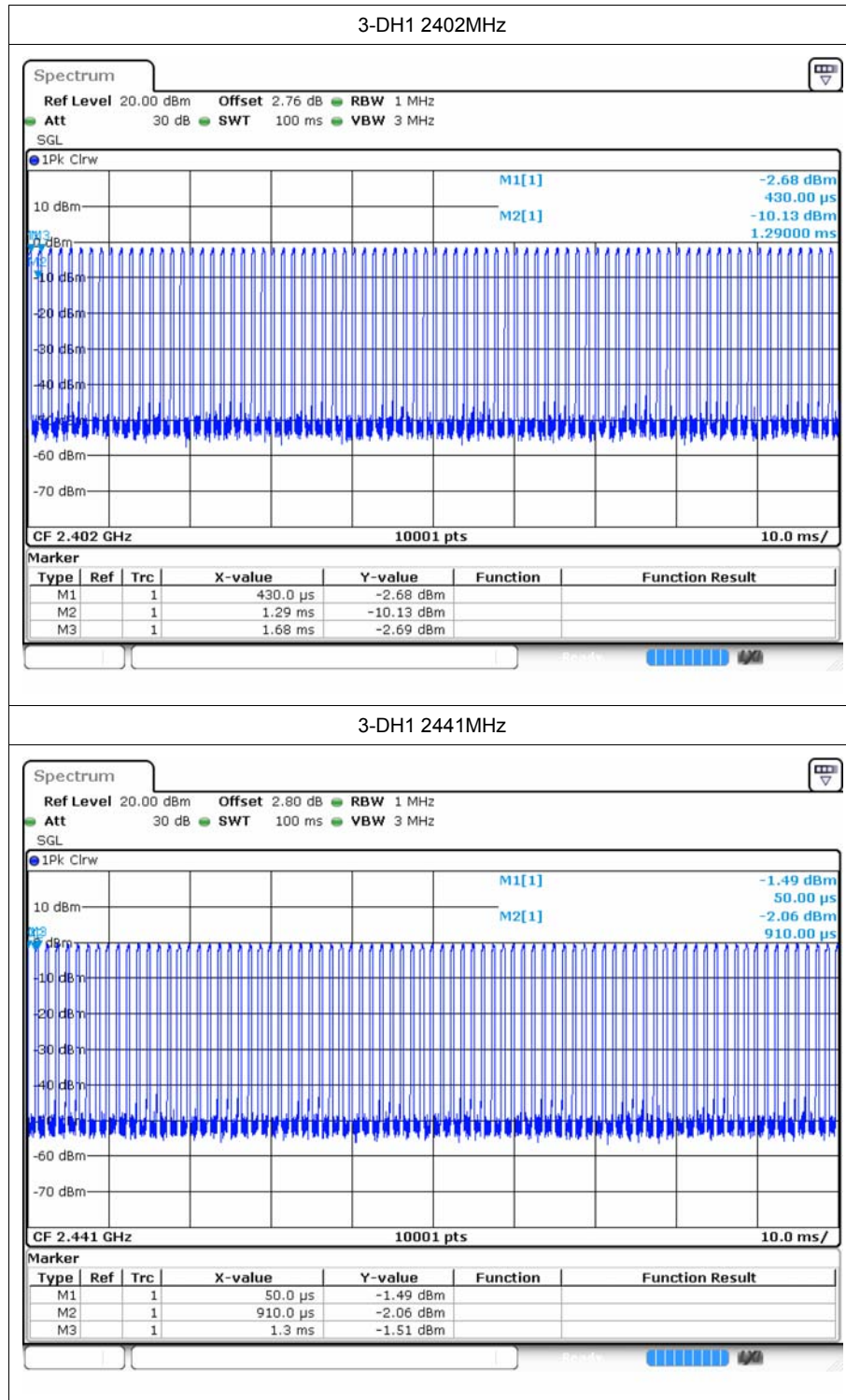
| Mode  | Frequency (MHz) | Duty Cycle (%) | 1/T (kHz) |
|-------|-----------------|----------------|-----------|
| 1-DH1 | 2402            | 31.67          | 2.63      |
| 1-DH1 | 2441            | 31.84          | 2.63      |
| 1-DH1 | 2480            | 31.87          | 2.56      |
| 2-DH1 | 2402            | 32             | 2.56      |
| 2-DH1 | 2441            | 32.01          | 2.56      |
| 2-DH1 | 2480            | 32             | 2.56      |
| 3-DH1 | 2402            | 31.98          | 2.56      |
| 3-DH1 | 2441            | 32.01          | 2.56      |
| 3-DH1 | 2480            | 32.01          | 2.56      |

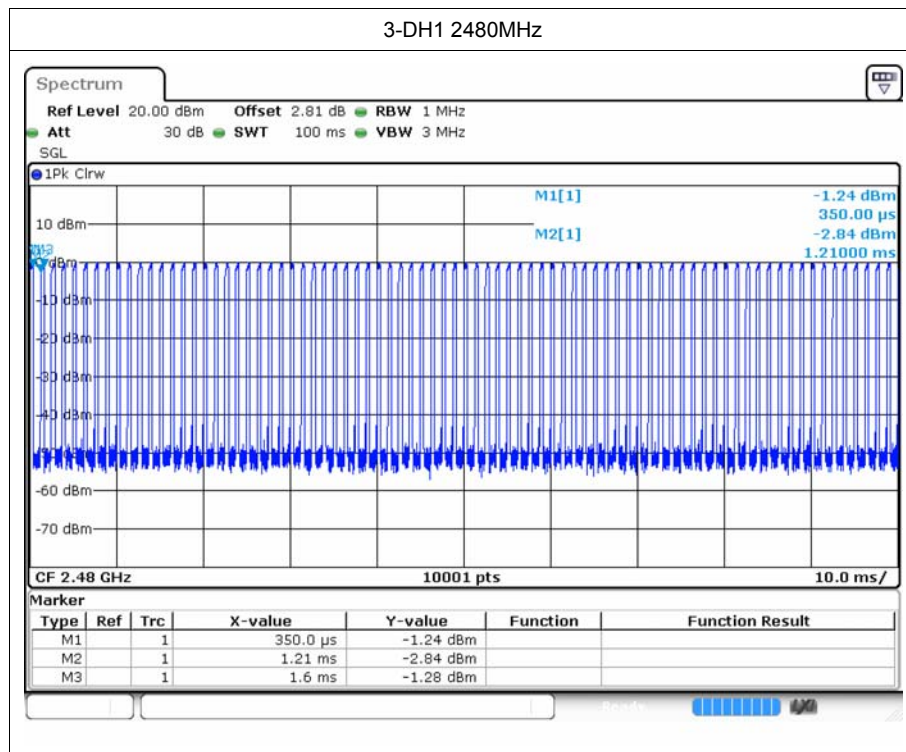
## 1.2 Test Graphs









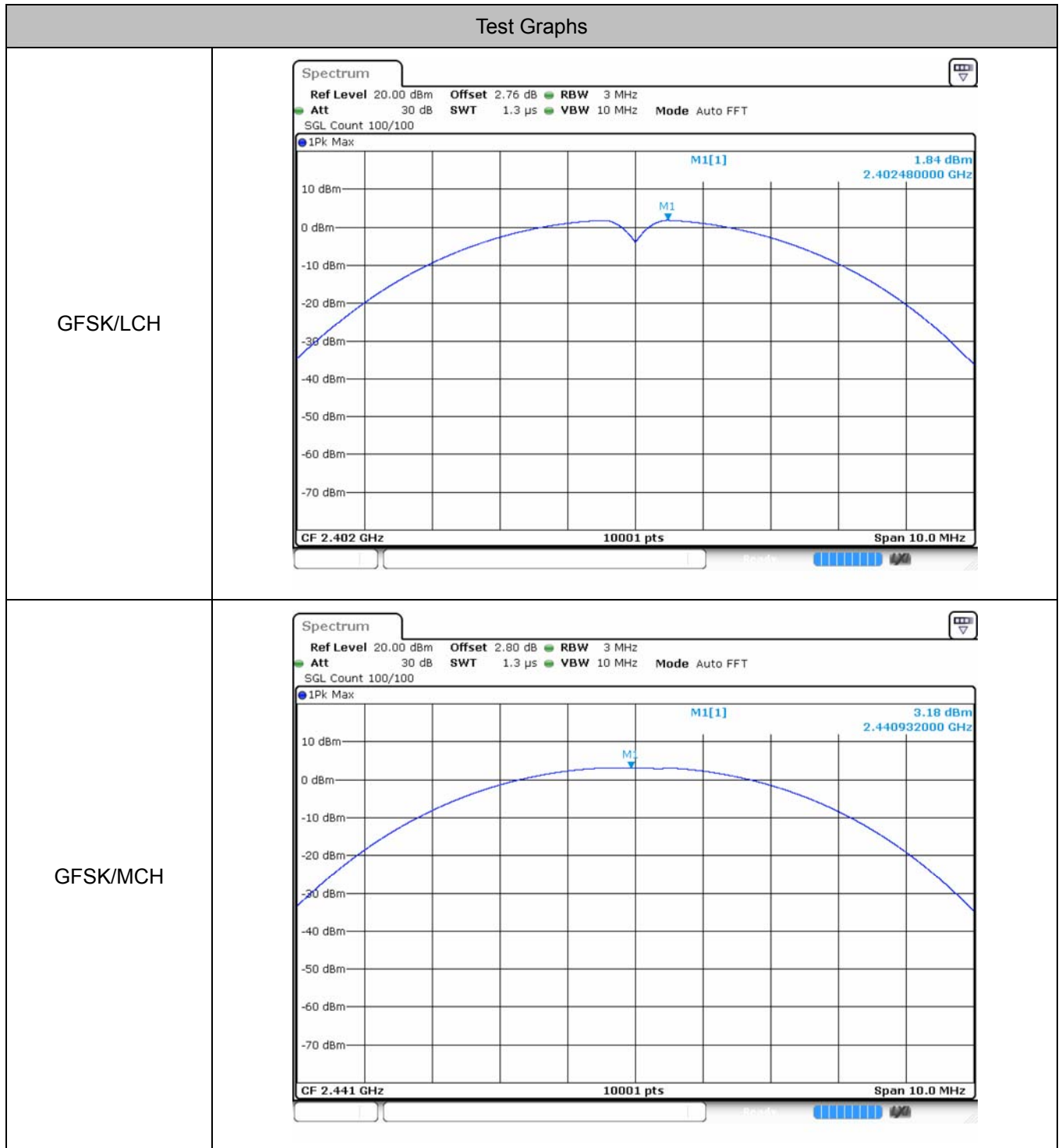


## 2 Maximum Conducted Peak Output Power

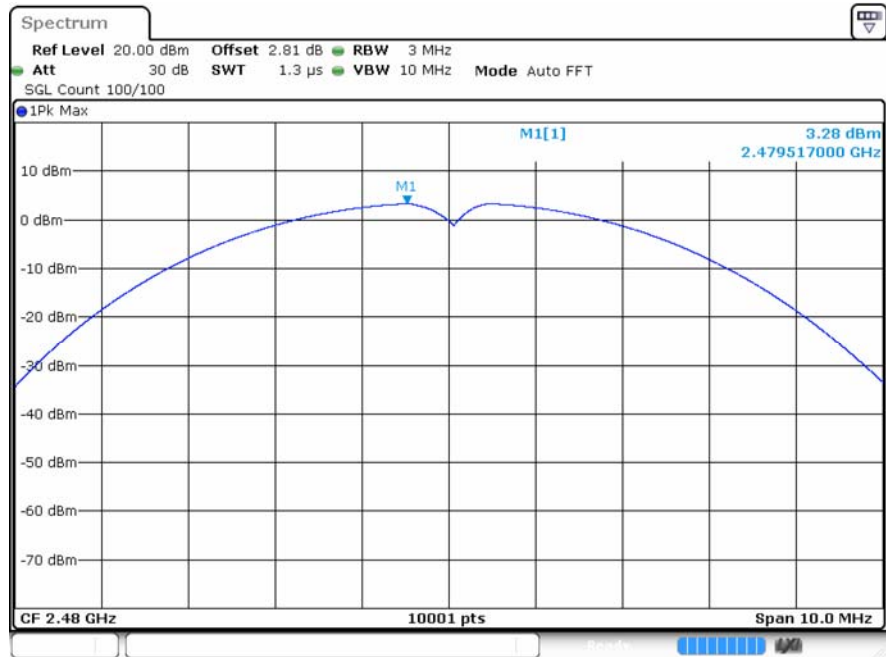
### 2.1 Test Result

| Mode          | Channel. | Maximum Peak Output Power<br>[dBm] | Limit<br>[dBm] | Verdict |
|---------------|----------|------------------------------------|----------------|---------|
| GFSK          | LCH      | 1.84                               | 21             | Pass    |
|               | MCH      | 3.18                               | 21             | Pass    |
|               | HCH      | 3.28                               | 21             | Pass    |
| $\pi/4$ DQPSK | LCH      | -1.18                              | 21             | Pass    |
|               | MCH      | 0.11                               | 21             | Pass    |
|               | HCH      | -0.06                              | 21             | Pass    |
| 8DPSK         | LCH      | -1.07                              | 21             | Pass    |
|               | MCH      | -0.13                              | 21             | Pass    |
|               | HCH      | 0.14                               | 21             | Pass    |

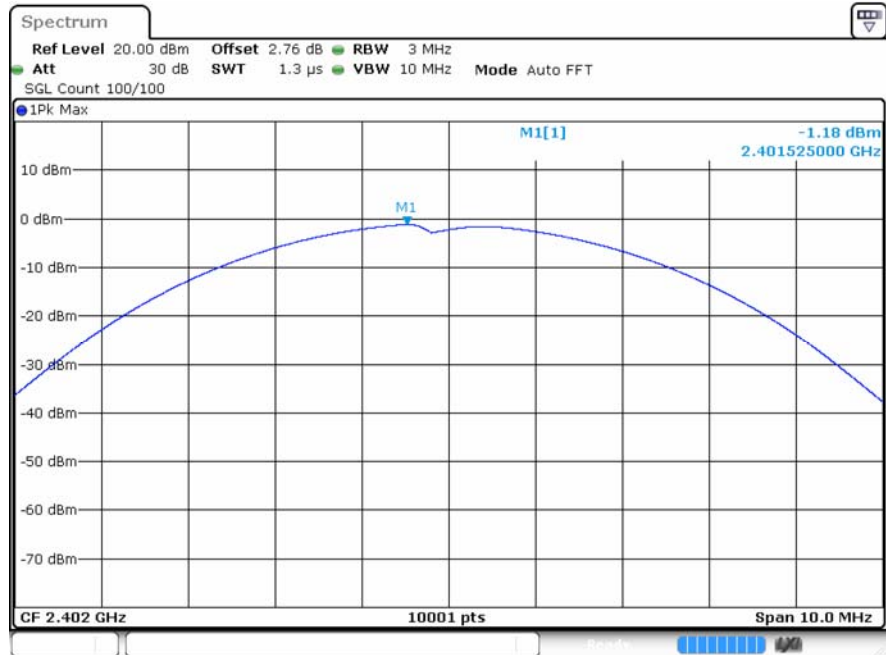
## 2.2 Test Graphs



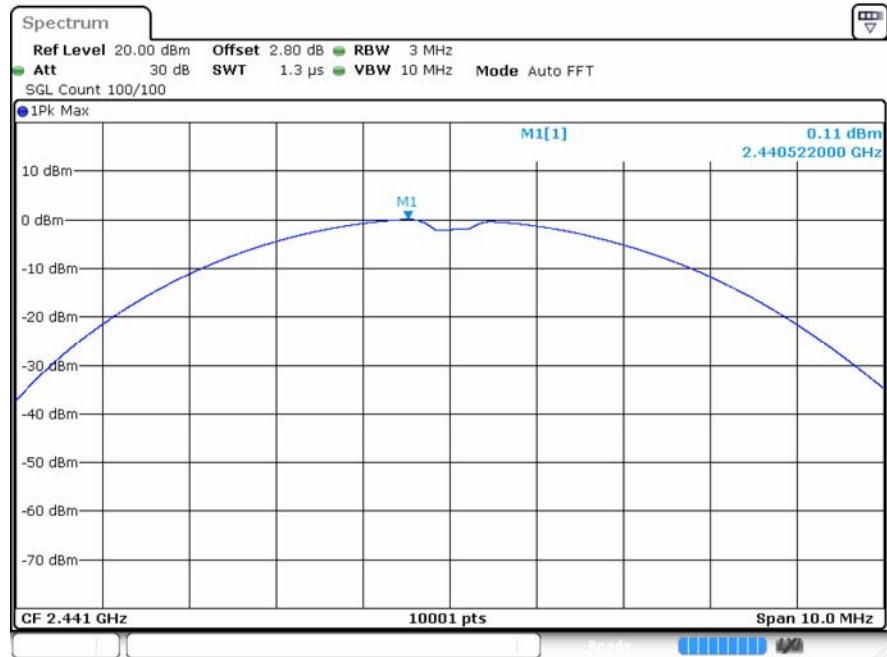
GFSK/HCH



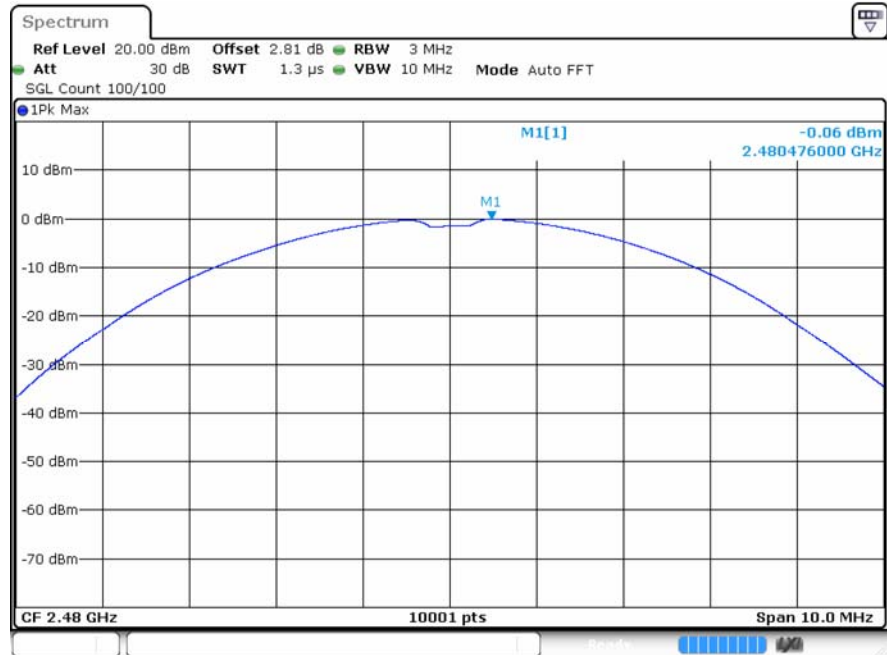
$\pi/4$ DQPSK/LCH



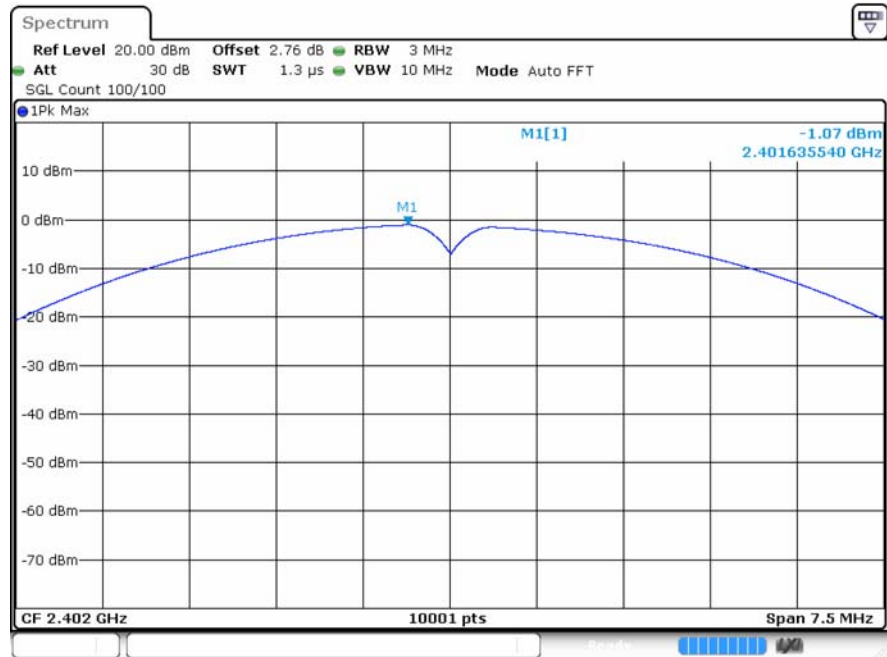
$\pi/4$ DQPSK/MCH



$\pi/4$ DQPSK/HCH



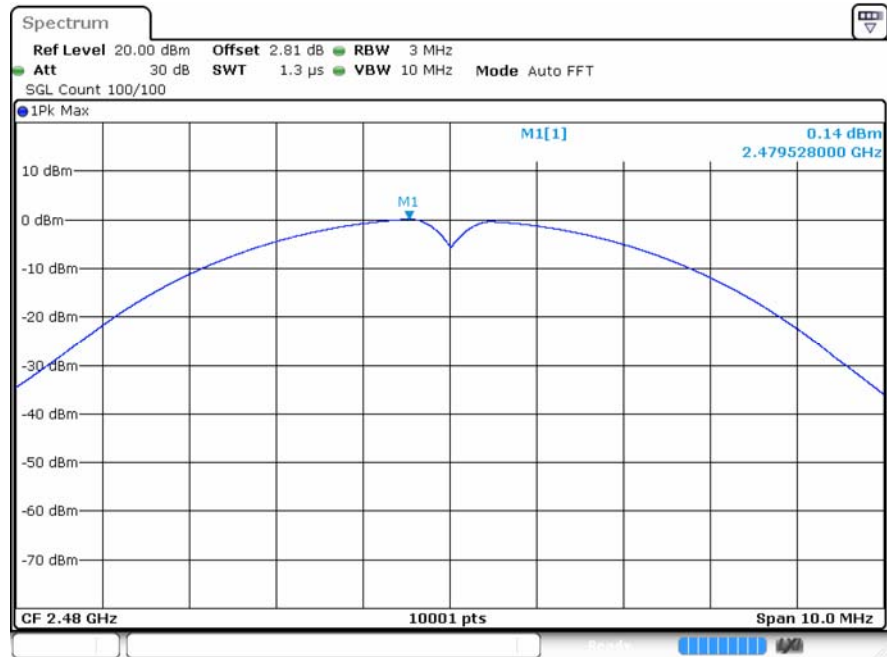
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

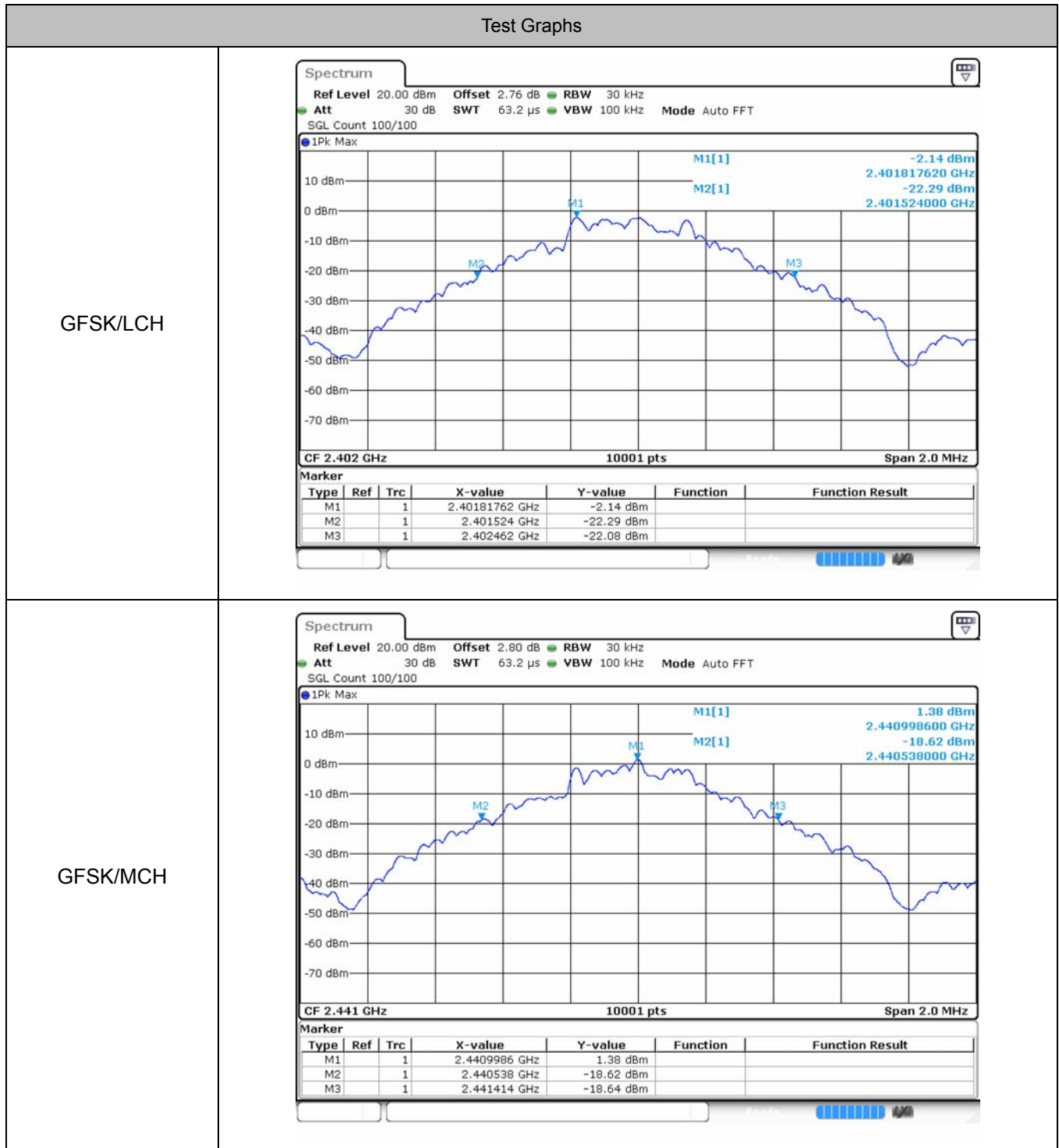


### 3 20dB Bandwidth

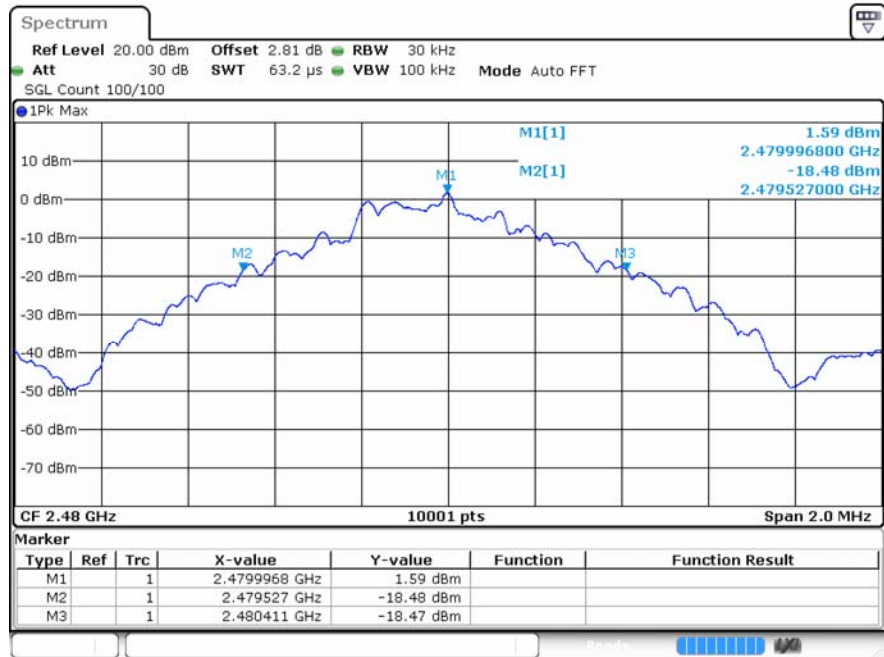
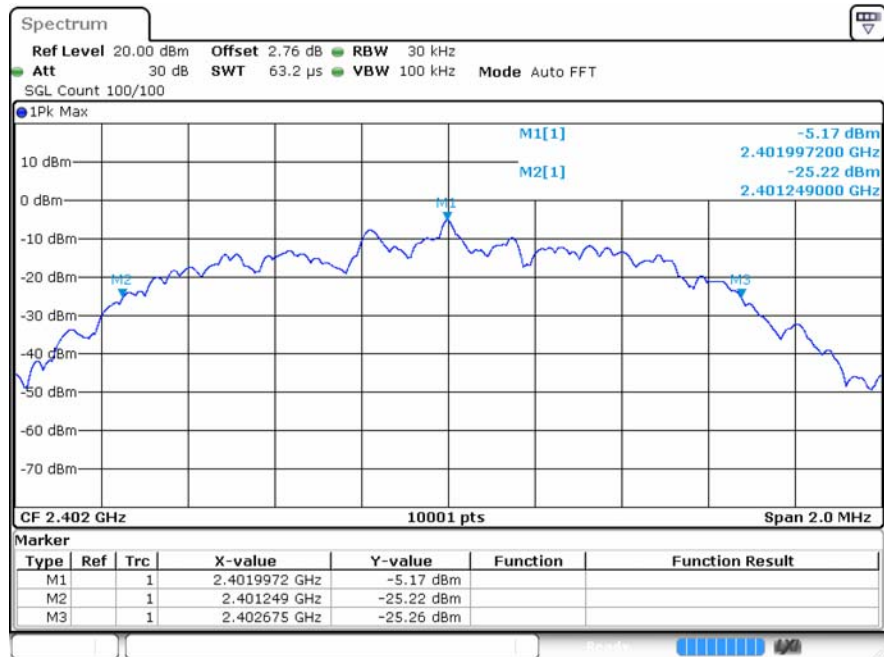
#### 3.1 Test Result

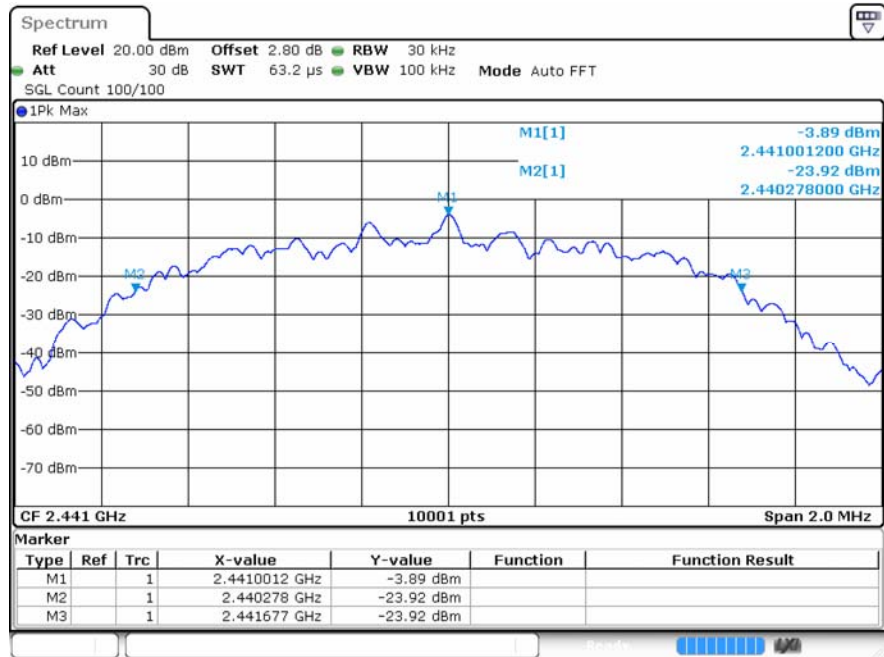
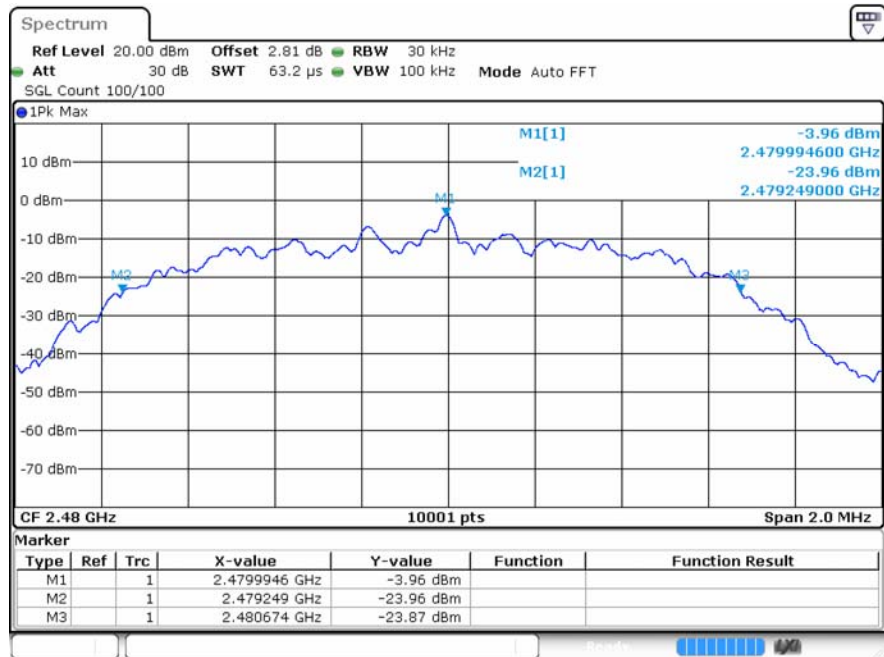
| Mode          | Channel. | 20dB Bandwidth [MHz] | Limit [MHz]   | Verdict |
|---------------|----------|----------------------|---------------|---------|
| GFSK          | LCH      | 0.938                | Not Specified | Pass    |
|               | MCH      | 0.876                | Not Specified | Pass    |
|               | HCH      | 0.883                | Not Specified | Pass    |
| $\pi/4$ DQPSK | LCH      | 1.425                | Not Specified | Pass    |
|               | MCH      | 1.399                | Not Specified | Pass    |
|               | HCH      | 1.425                | Not Specified | Pass    |
| 8DPSK         | LCH      | 1.432                | Not Specified | Pass    |
|               | MCH      | 1.423                | Not Specified | Pass    |
|               | HCH      | 1.436                | Not Specified | Pass    |

### 3.2 Test Graphs

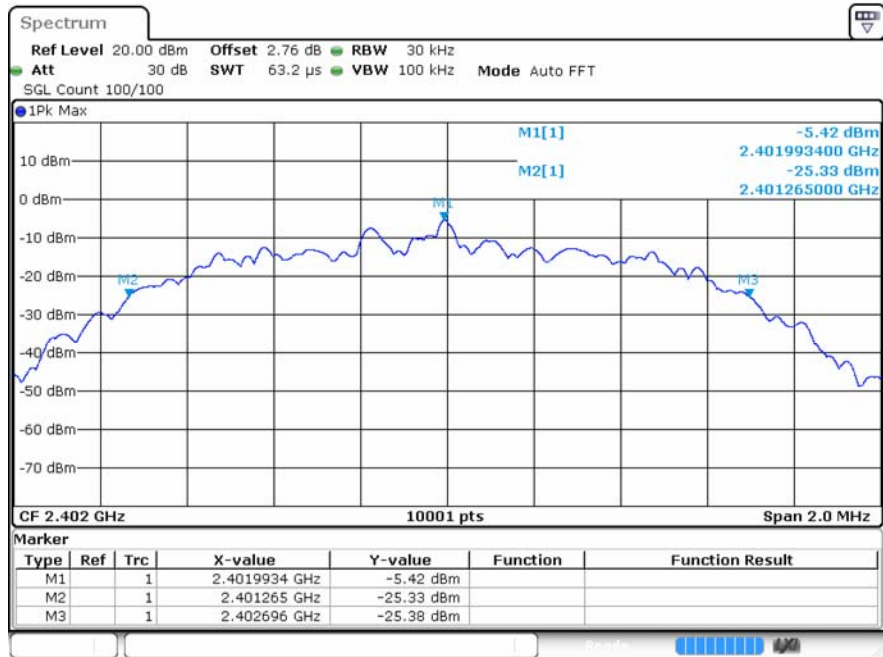


GFSK/HCH

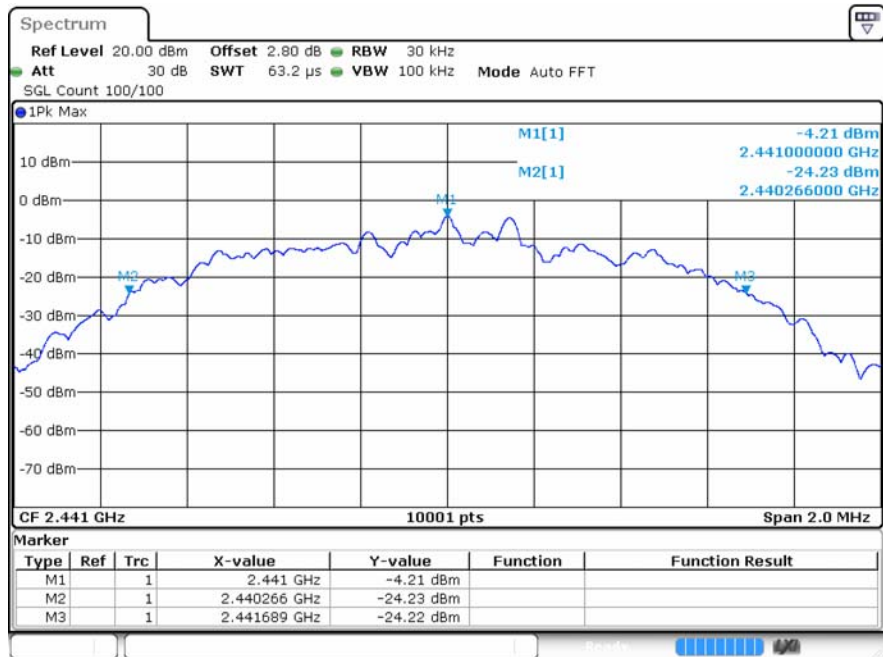

 $\pi/4$ DQPSK/LCH


$\pi/4$ DQPSK/MCH

 $\pi/4$ DQPSK/HCH


8DPSK/LCH

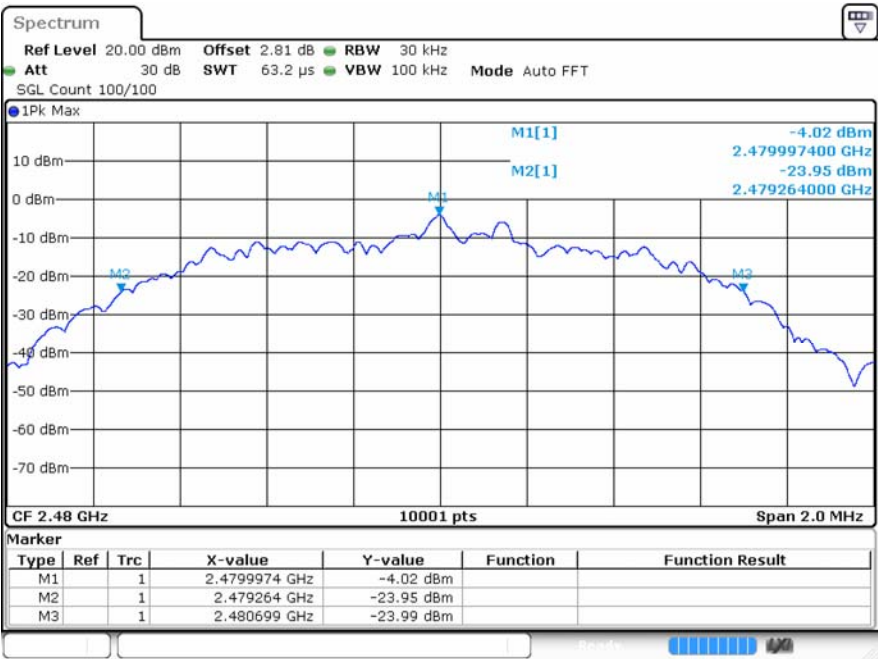


8DPSK/MCH





8DPSK/HCH



## 4 Carrier Frequency Separation

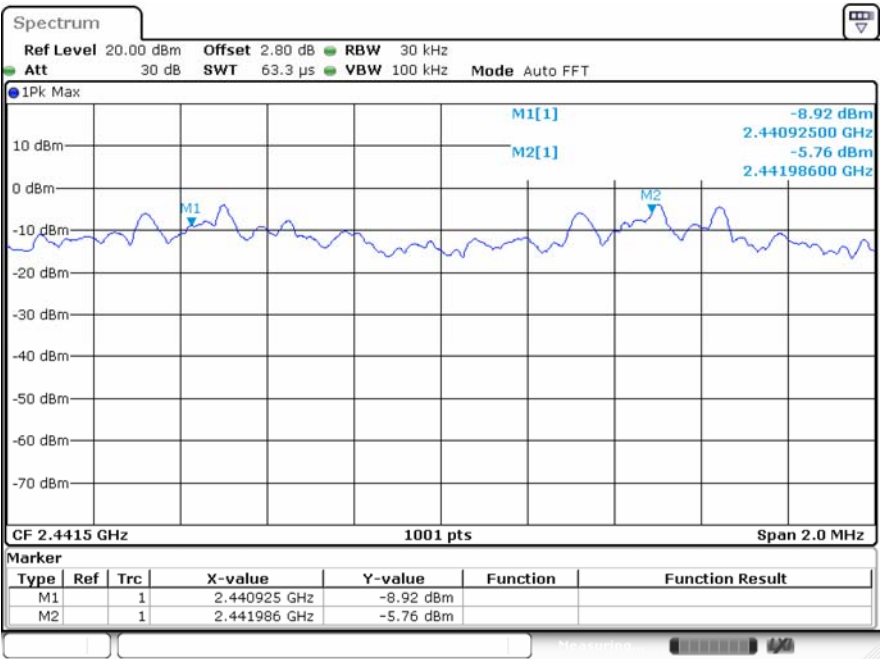
### 4.1 Test Result

| Mode          | Channel. | Carrier Frequency Separation [MHz] | Limit [MHz] | Verdict |
|---------------|----------|------------------------------------|-------------|---------|
| GFSK          | MCH      | 1                                  | 0.584       | Pass    |
| $\pi/4$ DQPSK | MCH      | 1.009                              | 0.933       | Pass    |
| 8DPSK         | MCH      | 1.061                              | 0.949       | Pass    |

## 4.2 Test Graphs



8DPSK/MCH

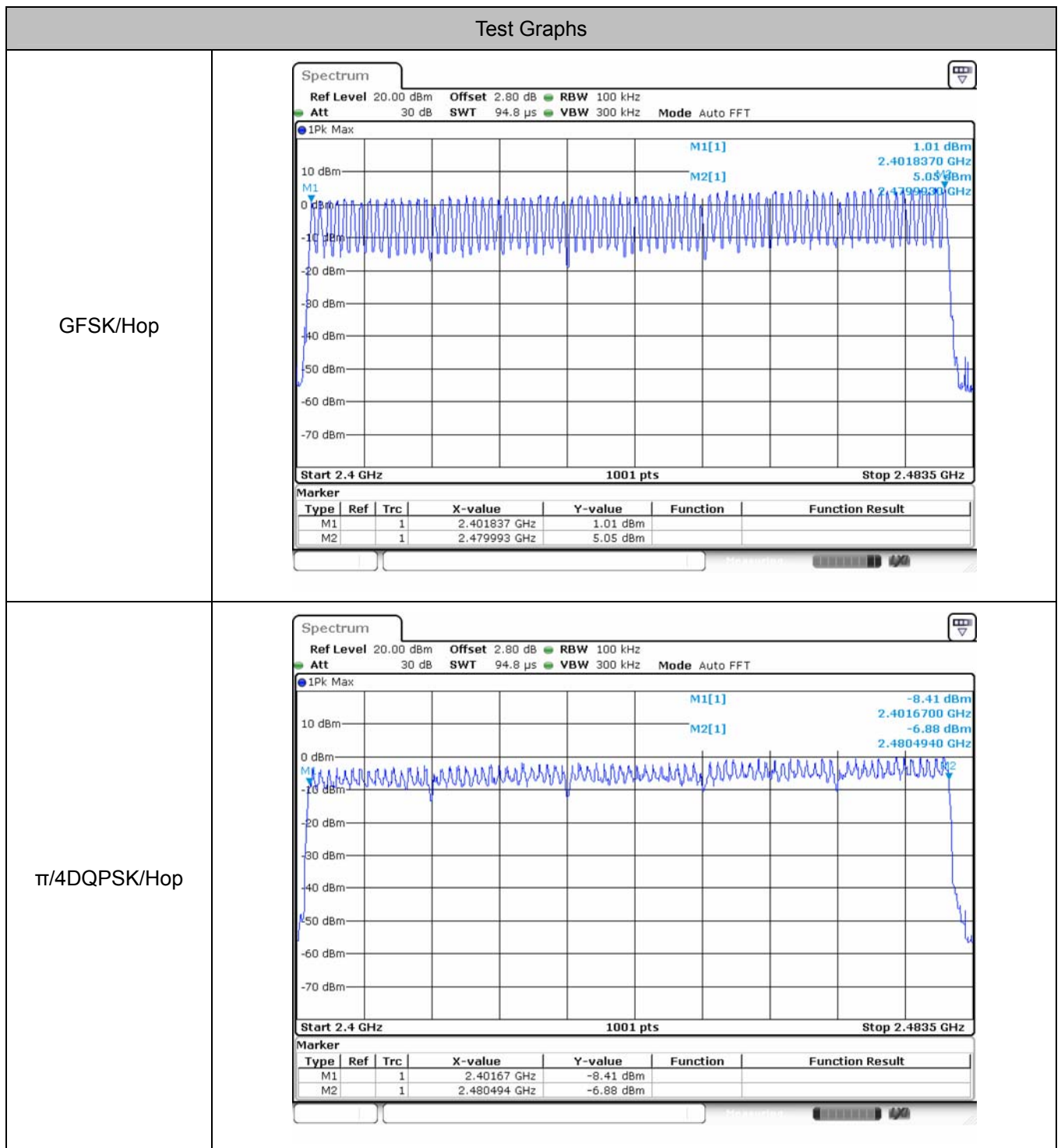


## 5 Hopping Channel Number

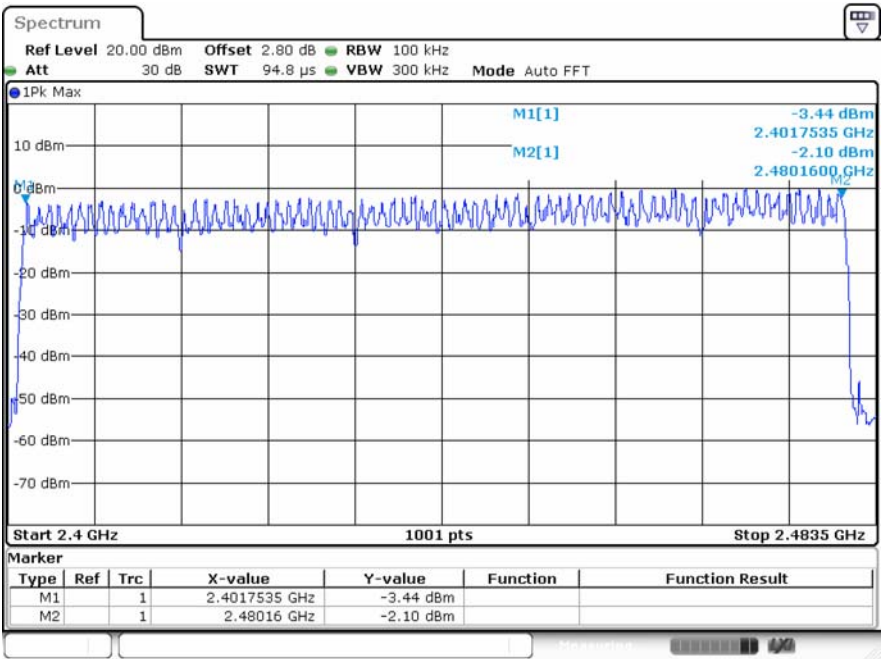
### 5.1 Test Result

| 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

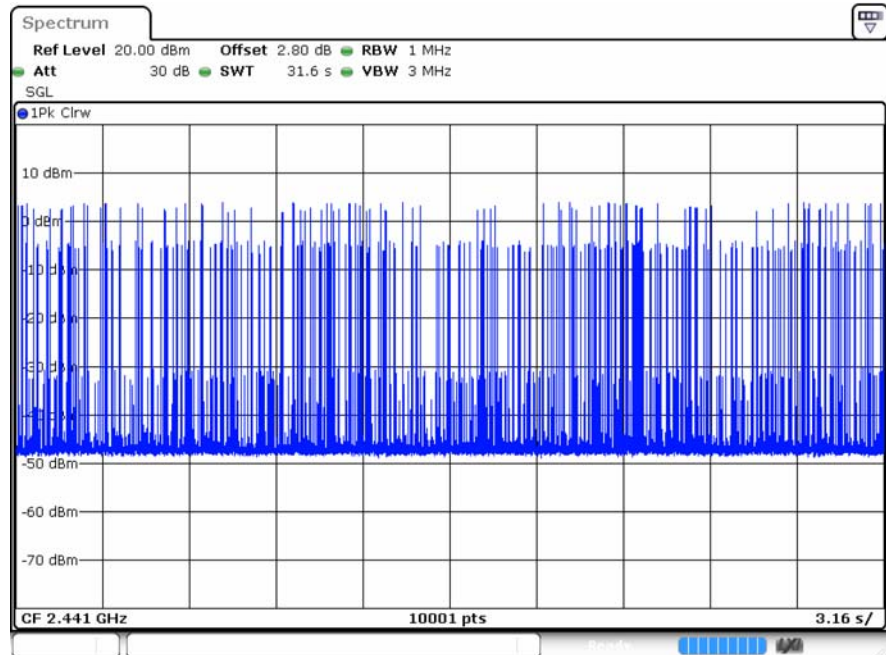
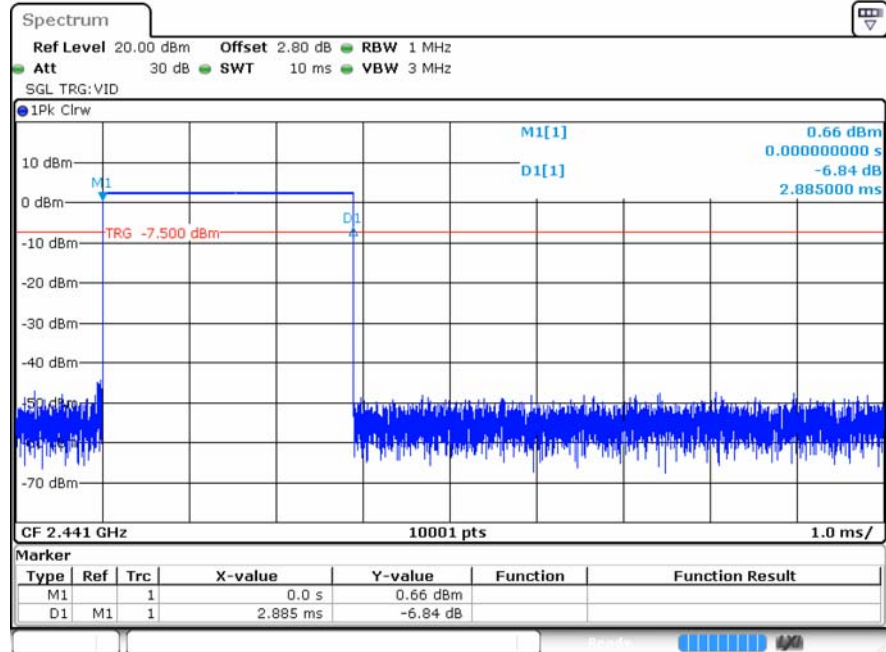
### 6.1 Test Result

| Mode          | Packet | Channel | Burst Width<br>[ms/hop/ch] | Total<br>Hops[hop*ch] | Dwell Time[ms] | Limit [s] | Verdict |
|---------------|--------|---------|----------------------------|-----------------------|----------------|-----------|---------|
| GFSK          | DH5    | MCH     | 2.885                      | 99                    | 285.615        | 0.4       | Pass    |
| $\pi/4$ DQPSK | 2DH5   | MCH     | 2.889                      | 97                    | 280.233        | 0.4       | Pass    |
| 8DPSK         | 3DH5   | MCH     | 2.892                      | 102                   | 294.984        | 0.4       | Pass    |

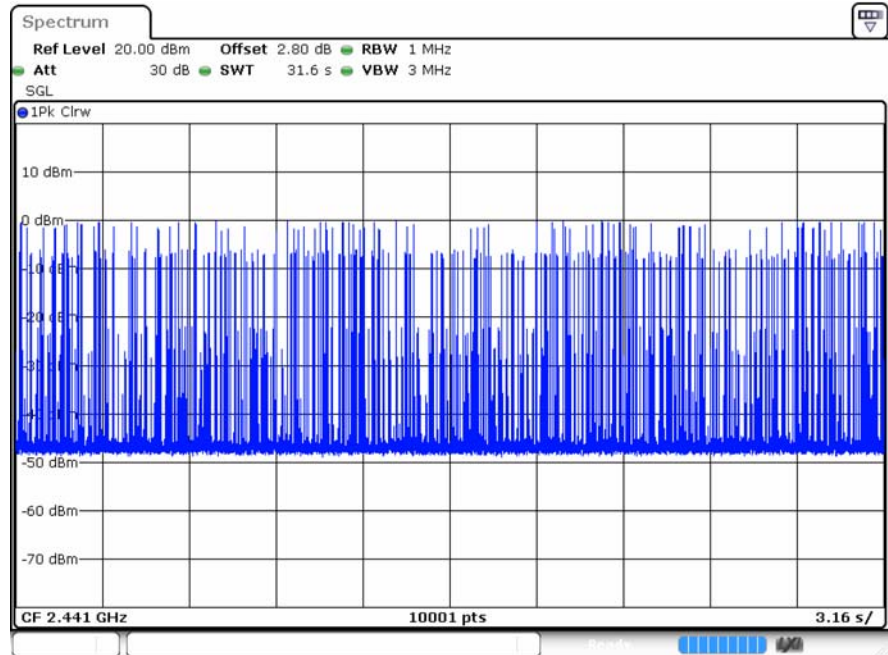
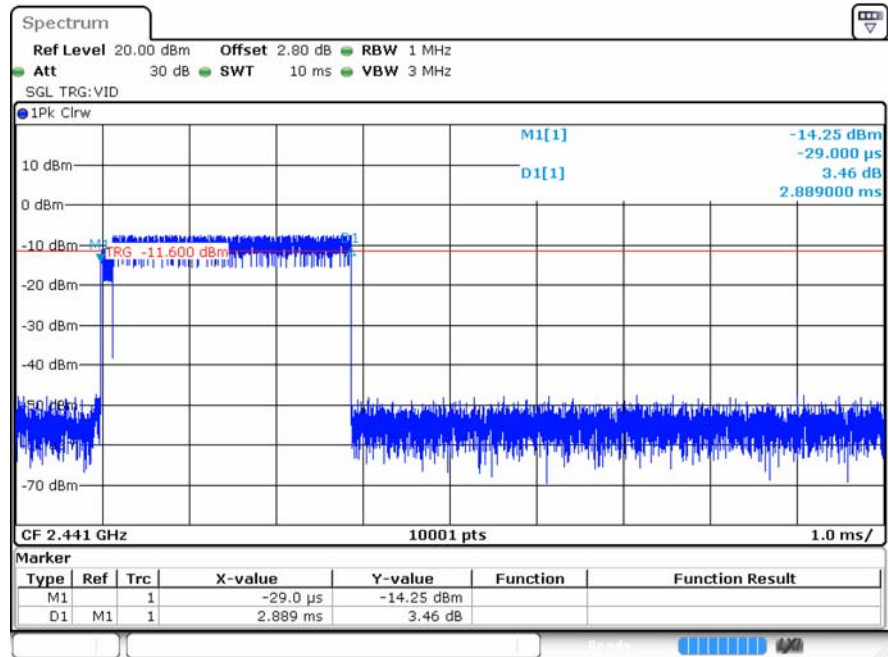
## 6.2 Test Graphs

### Test Graphs

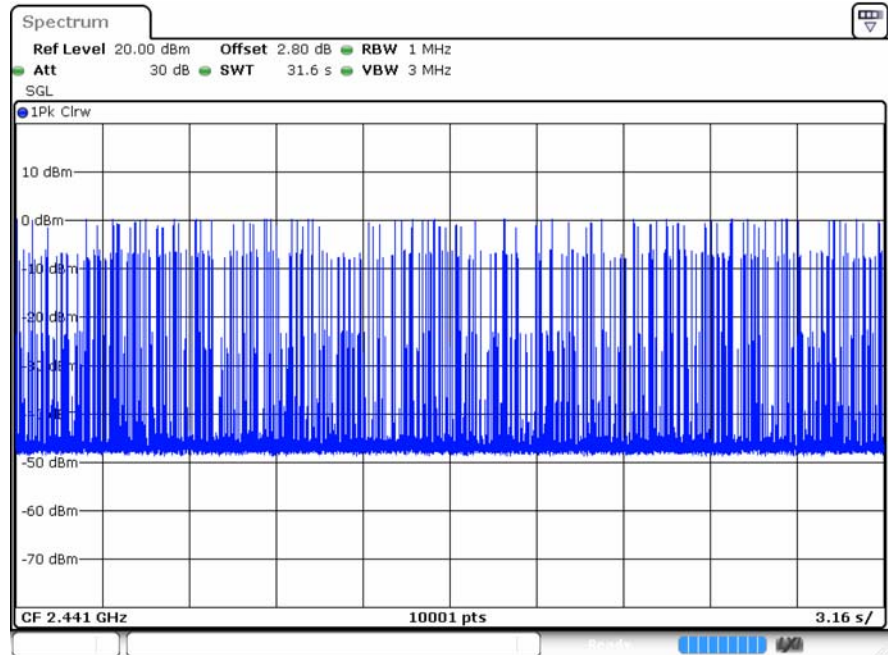
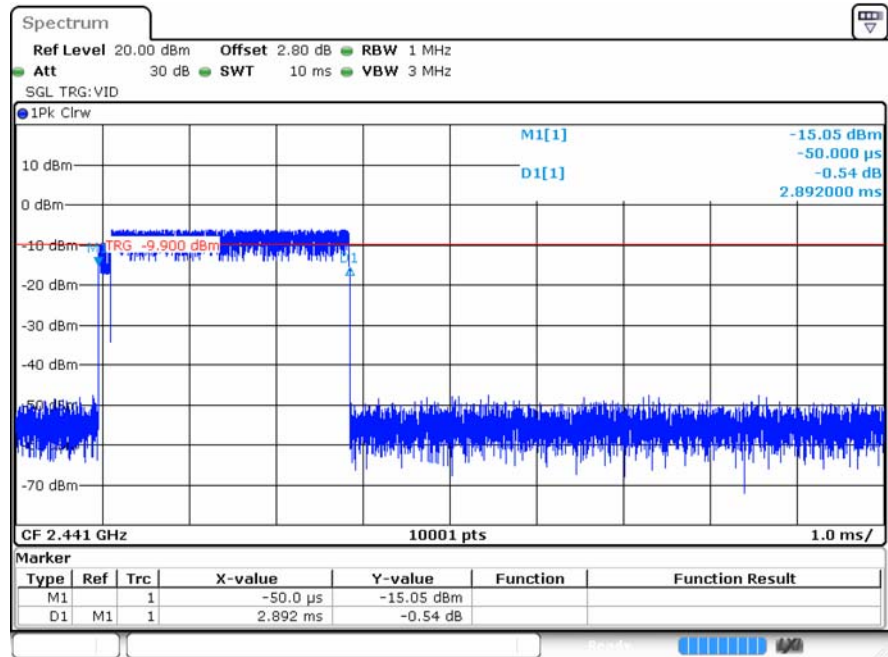
GFSK\_DH5/MCH



$\pi/4$ DQPSK  
\_2DH5/MCH



8DPSK\_3DH5/MCH

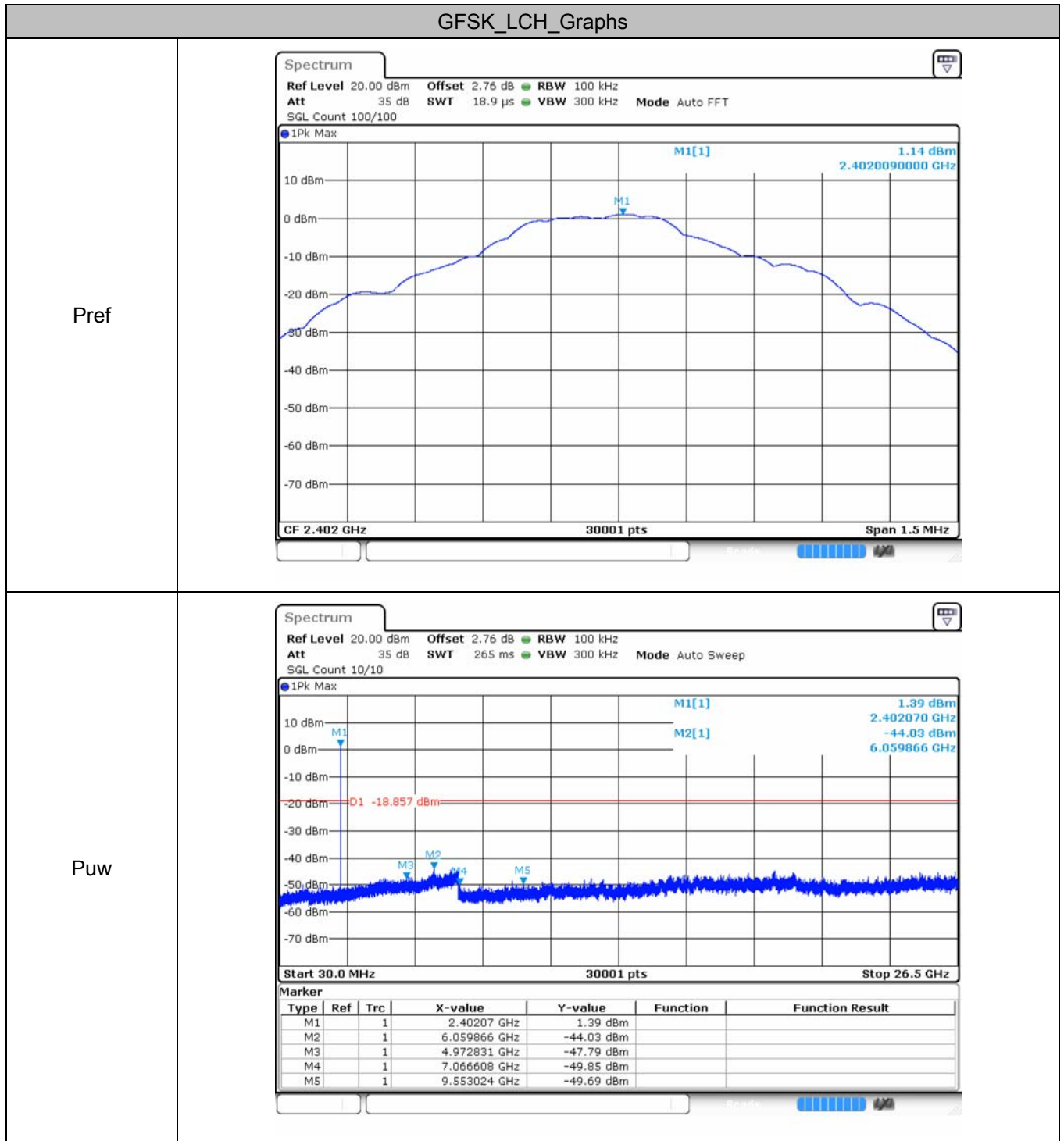


## 7 RF Conducted Spurious Emissions

### 7.1 Test Result

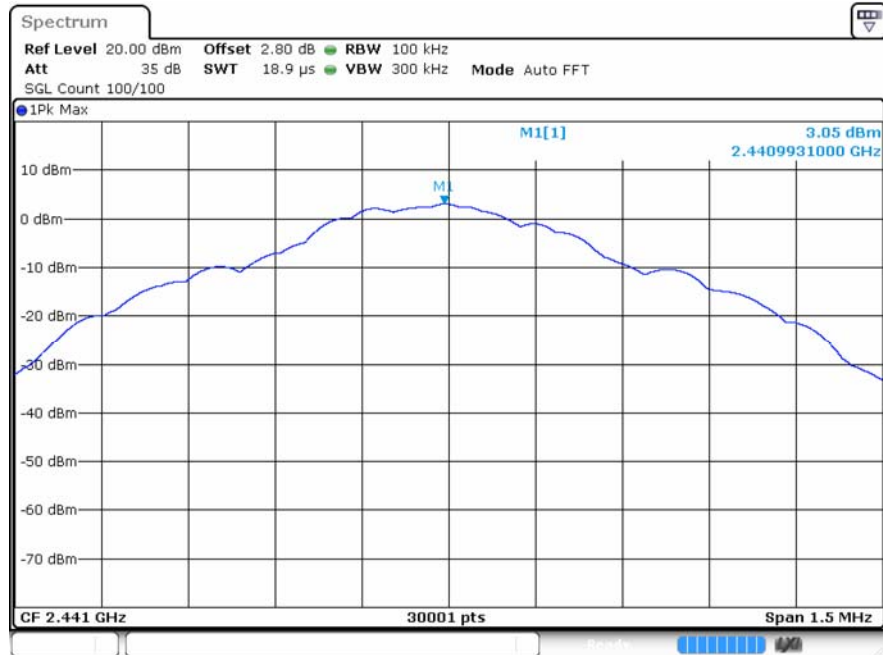
| Mode          | Channel | Max. Level [dBc] | Limit [dBc] | Verdict |
|---------------|---------|------------------|-------------|---------|
| GFSK          | LCH     | -45.16           | -20         | Pass    |
|               | MCH     | -47.53           | -20         | Pass    |
|               | HCH     | -47.31           | -20         | Pass    |
| $\pi/4$ DQPSK | LCH     | -40.87           | -20         | Pass    |
|               | MCH     | -41.74           | -20         | Pass    |
|               | HCH     | -42.21           | -20         | Pass    |
| 8DPSK         | LCH     | -40.29           | -20         | Pass    |
|               | MCH     | -41.6            | -20         | Pass    |
|               | HCH     | -42.89           | -20         | Pass    |

## 7.2 Test Graphs

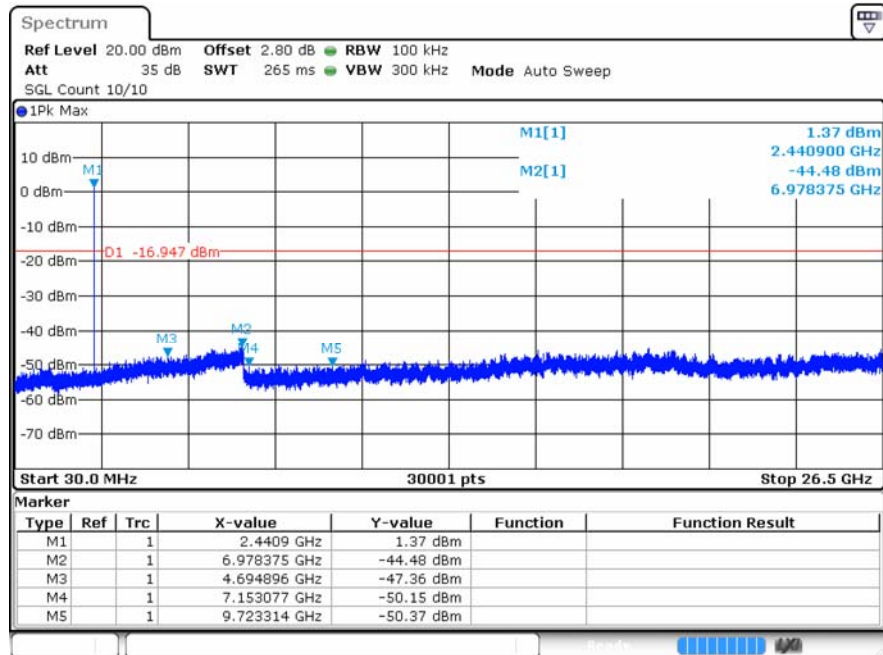


## GFSK\_MCH\_Graphs

Pref



Puw

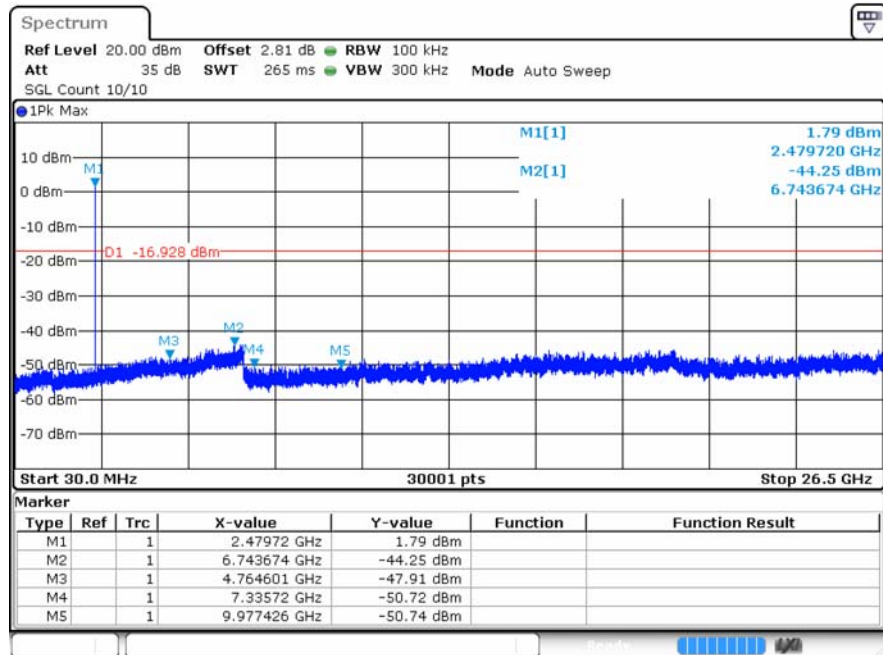


## GFSK\_HCH\_Graphs

Pref

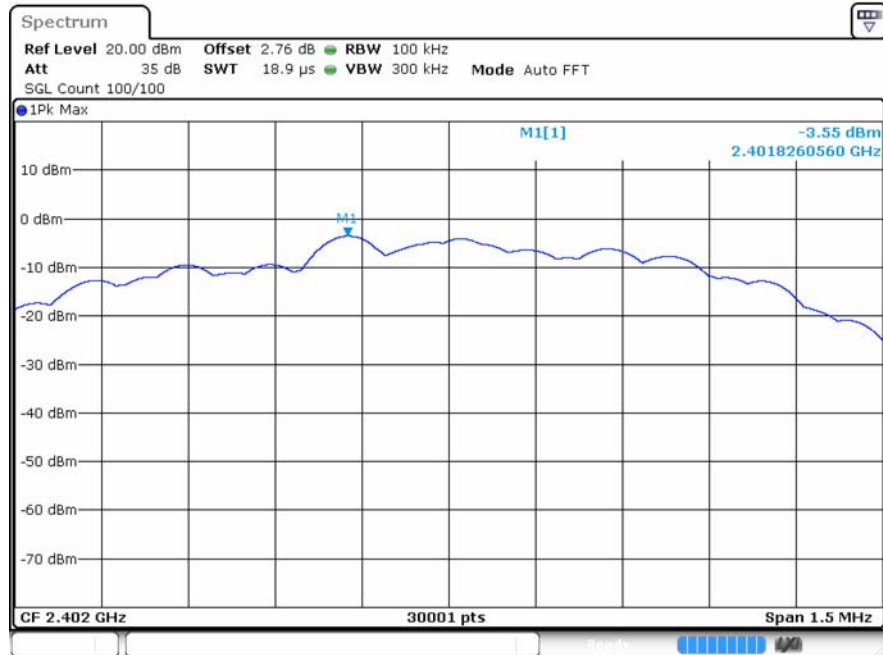


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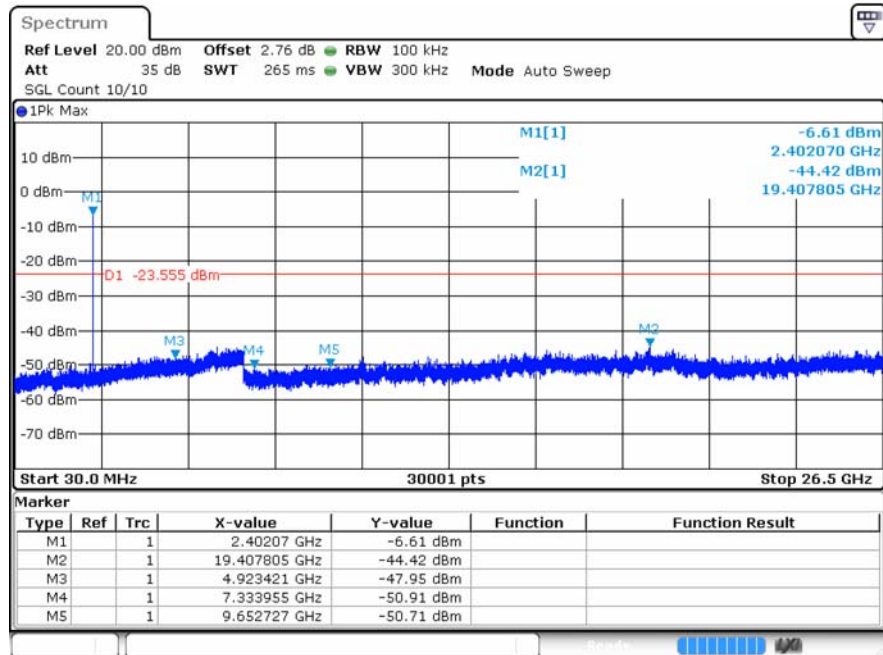


$\pi/4$ DQPSK\_LCH\_Graphs

Pref

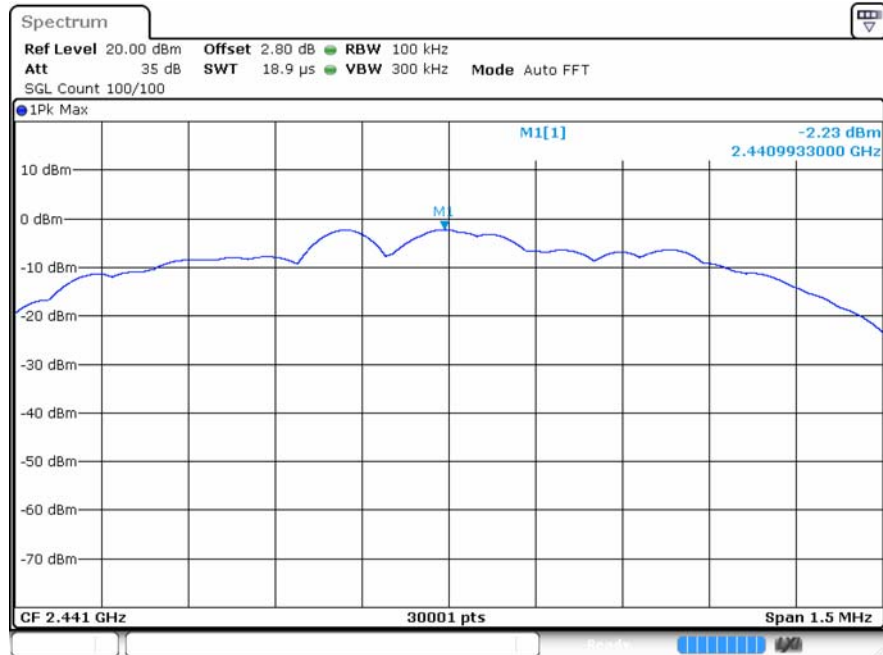


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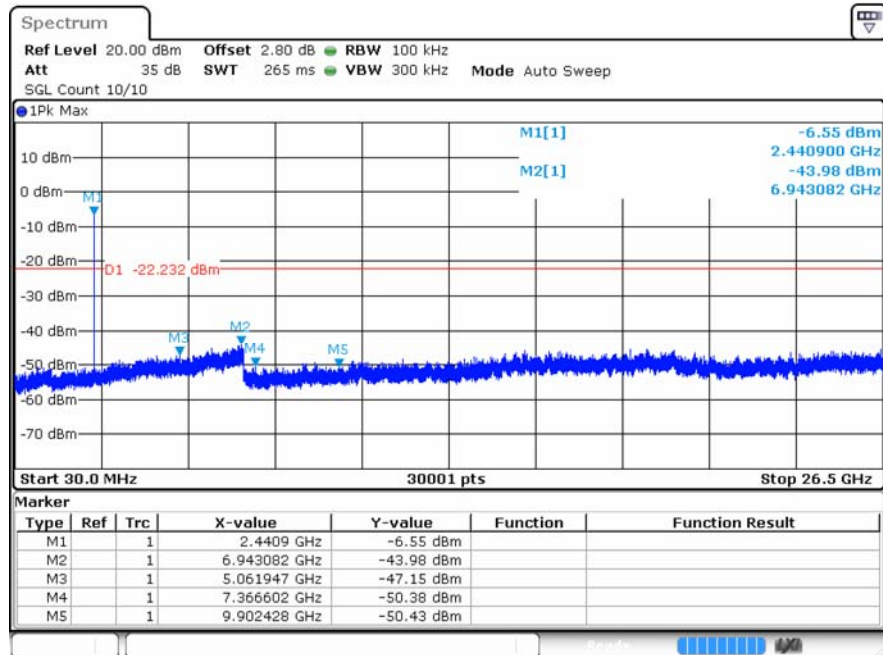


# $\pi$ /4DQPSK\_MCH\_Graphs

Pref

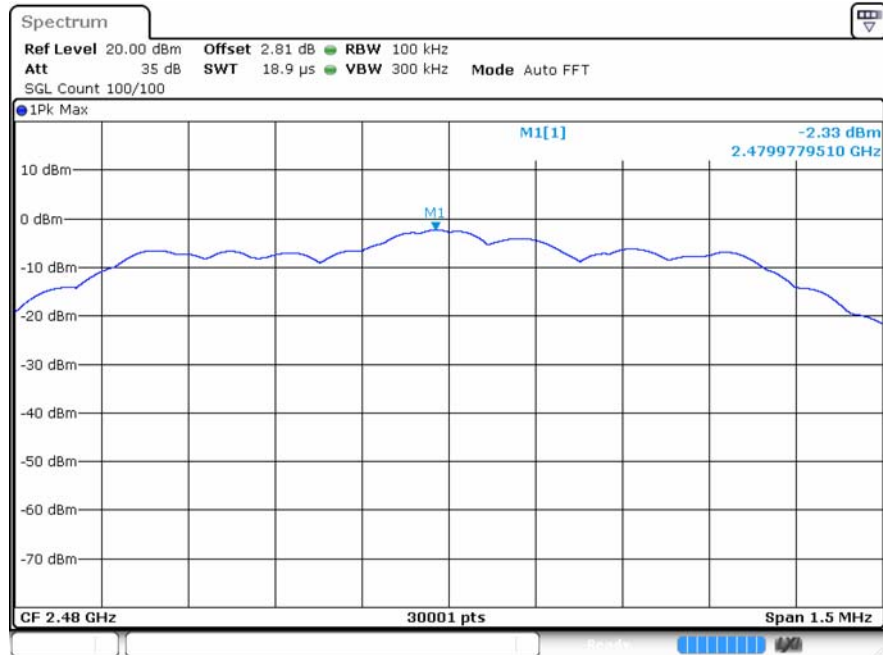


Puw

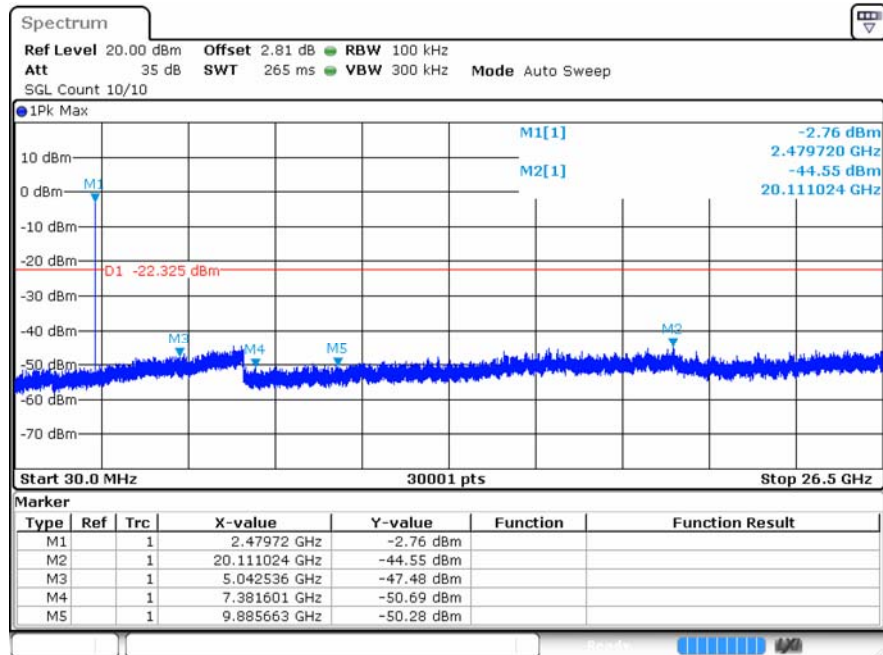


### $\pi/4$ DQPSK\_HCH\_Graphs

Pref

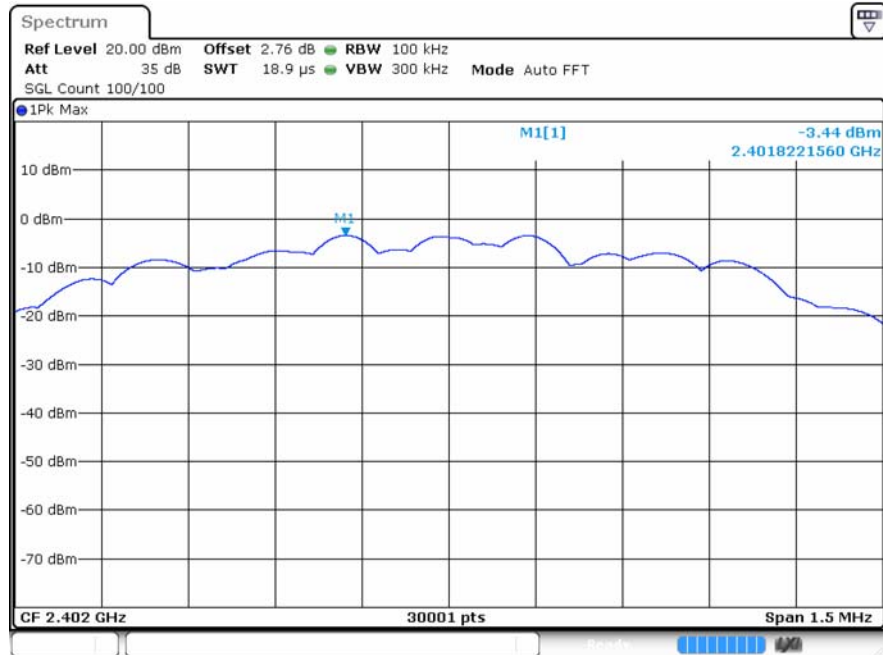


Puw

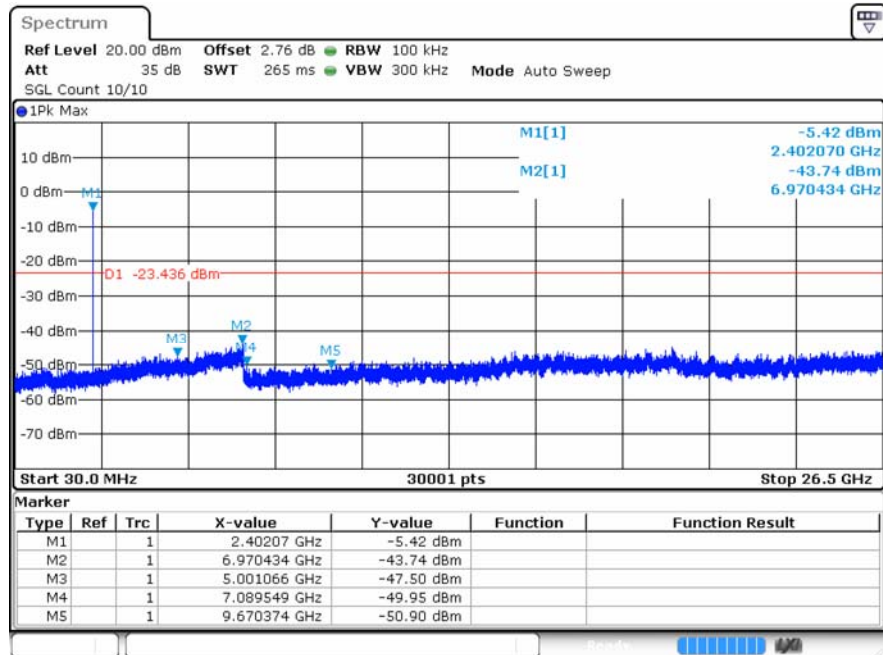


## 8DPSK\_LCH\_Graphs

Pref

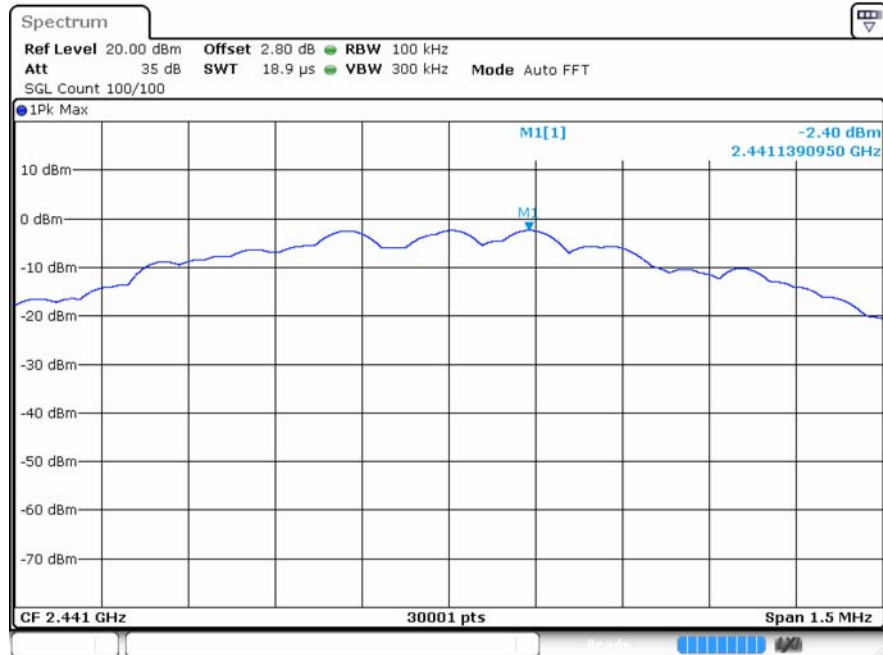


Puw

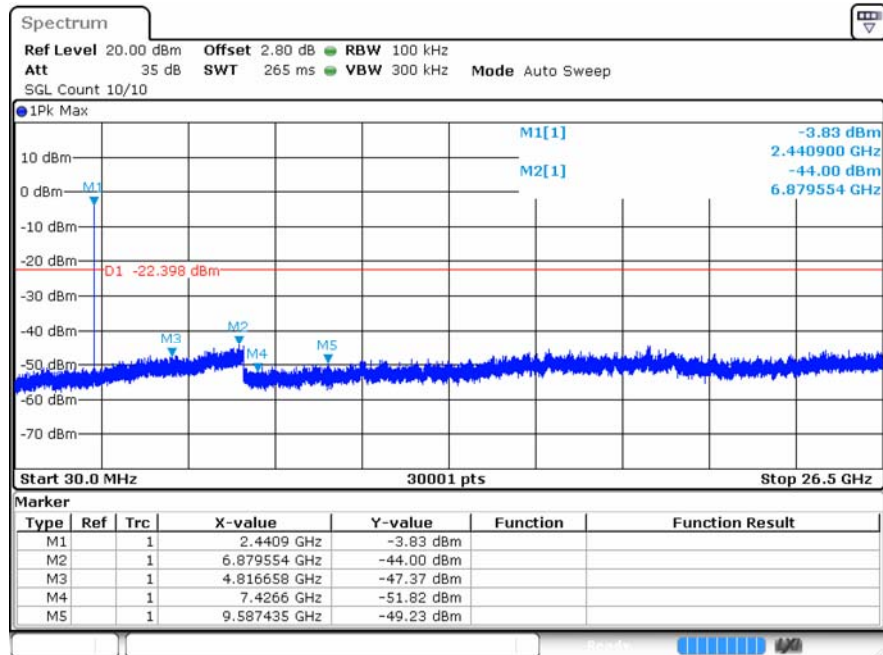


## 8DPSK\_MCH\_Graphs

Pref

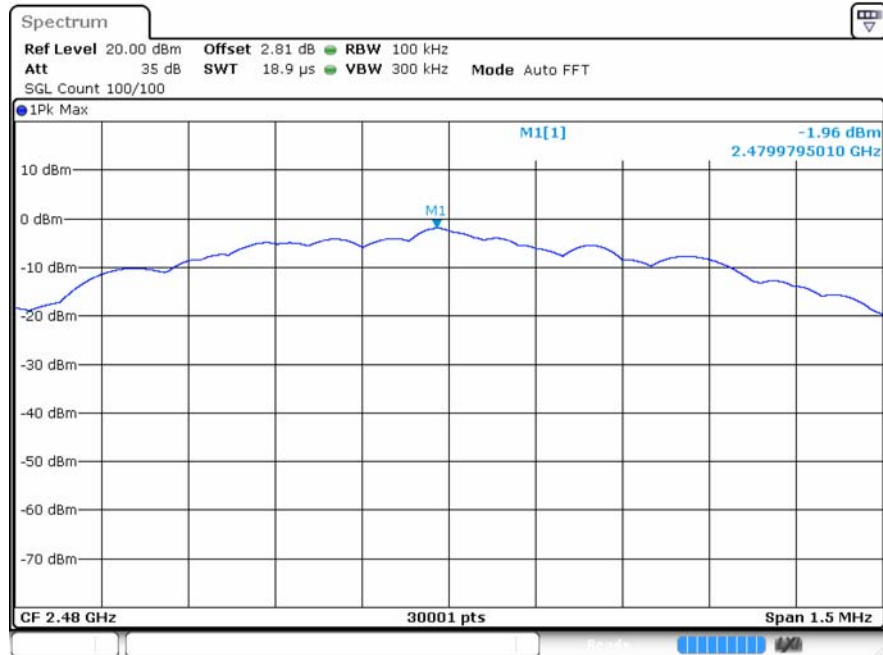


Puw

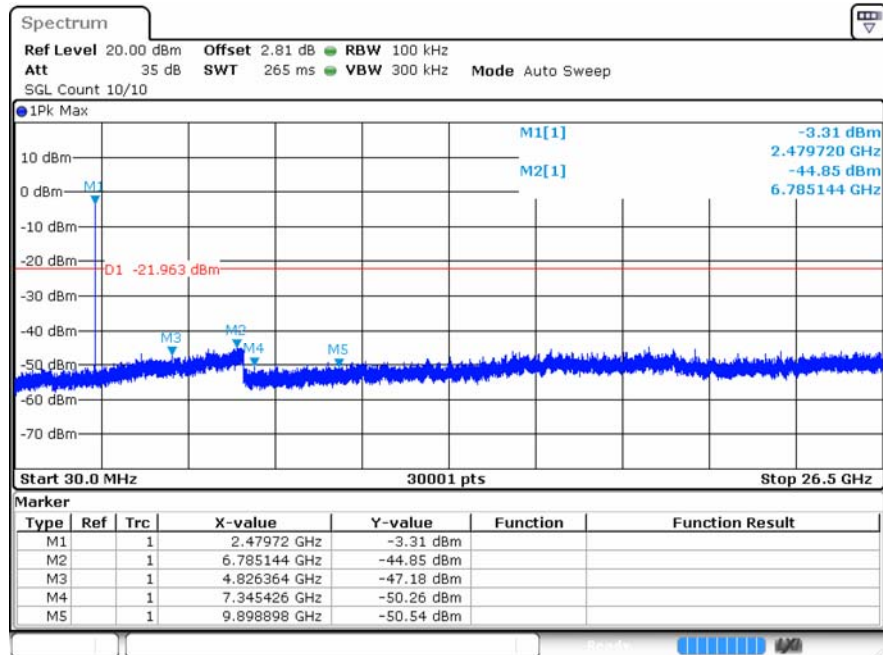


## 8DPSK\_HCH\_Graphs

Pref



Puw

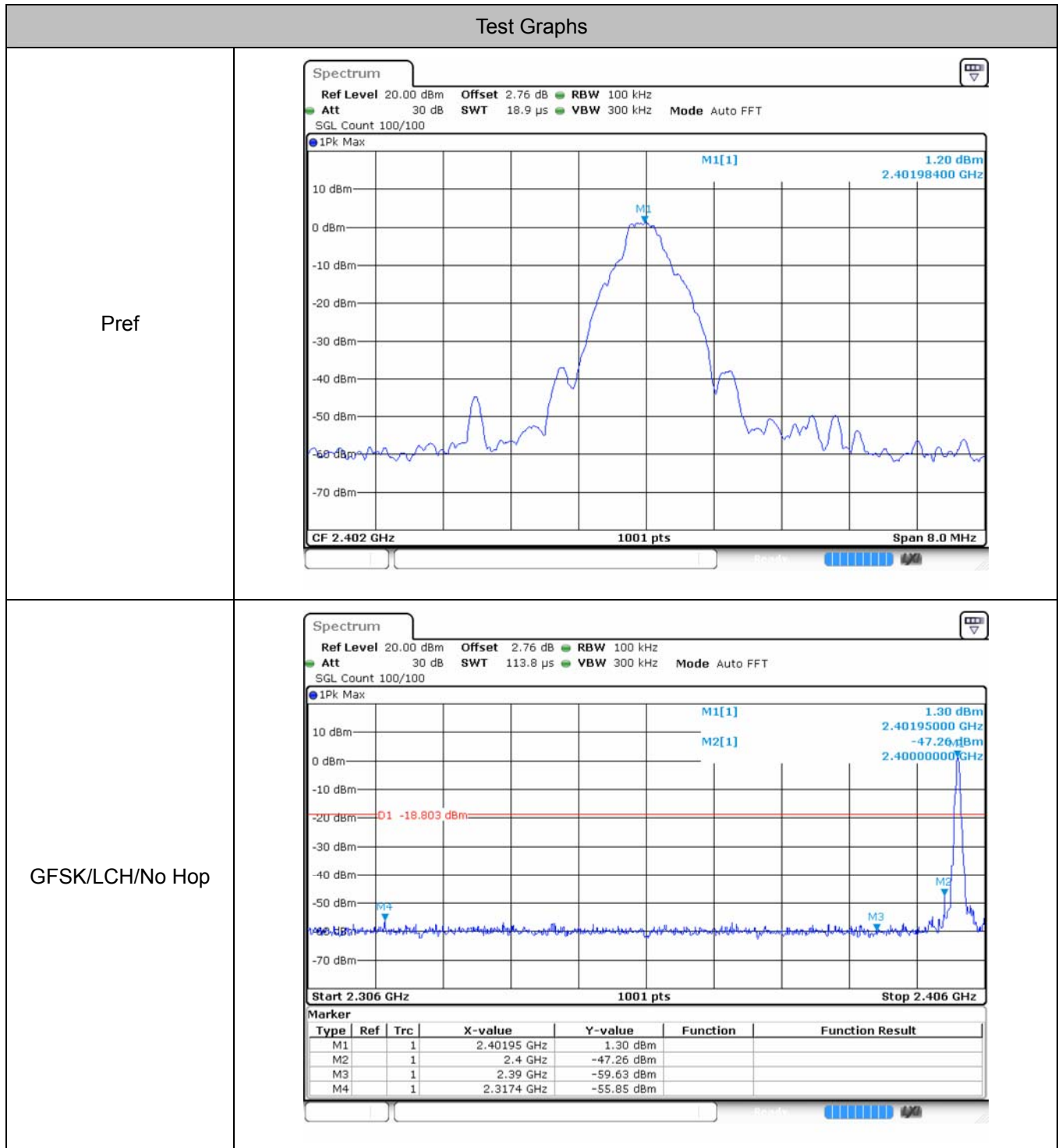


## 8 Band-edge for RF Conducted Emissions

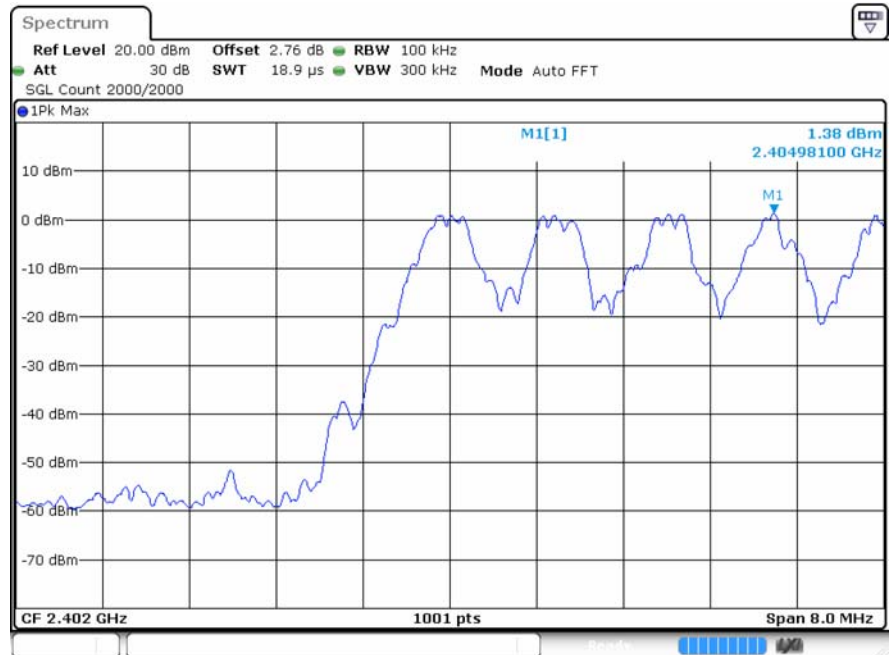
### 8.1 Test Result

| Mode          | Channel | Carrier Frequency [MHz] | Frequency Hopping | Max Spurious Level [dBc] | Limit [dBc] | Verdict |
|---------------|---------|-------------------------|-------------------|--------------------------|-------------|---------|
| GFSK          | LCH     | 2402                    | Off               | -57.04                   | -20         | Pass    |
|               |         |                         | On                | -53.86                   | -20         | Pass    |
|               | HCH     | 2480                    | Off               | -59.33                   | -20         | Pass    |
|               |         |                         | On                | -55.34                   | -20         | Pass    |
| $\pi/4$ DQPSK | LCH     | 2402                    | Off               | -52.24                   | -20         | Pass    |
|               |         |                         | On                | -52.52                   | -20         | Pass    |
|               | HCH     | 2480                    | Off               | -47.95                   | -20         | Pass    |
|               |         |                         | On                | -45.97                   | -20         | Pass    |
| 8DPSK         | LCH     | 2402                    | Off               | -53.24                   | -20         | Pass    |
|               |         |                         | On                | -51.43                   | -20         | Pass    |
|               | HCH     | 2480                    | Off               | -48.61                   | -20         | Pass    |
|               |         |                         | On                | -45.52                   | -20         | Pass    |

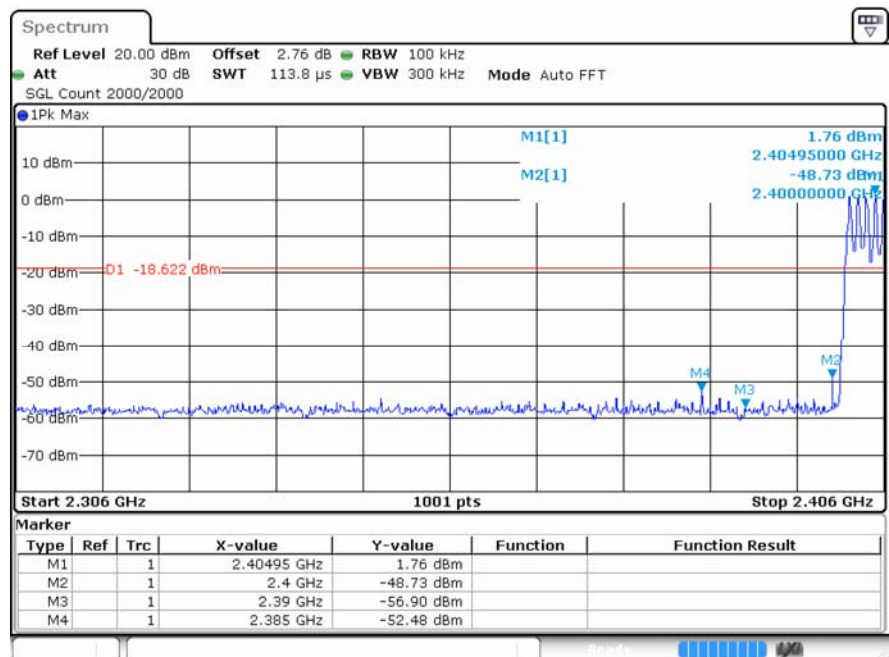
## 8.2 Test Graphs



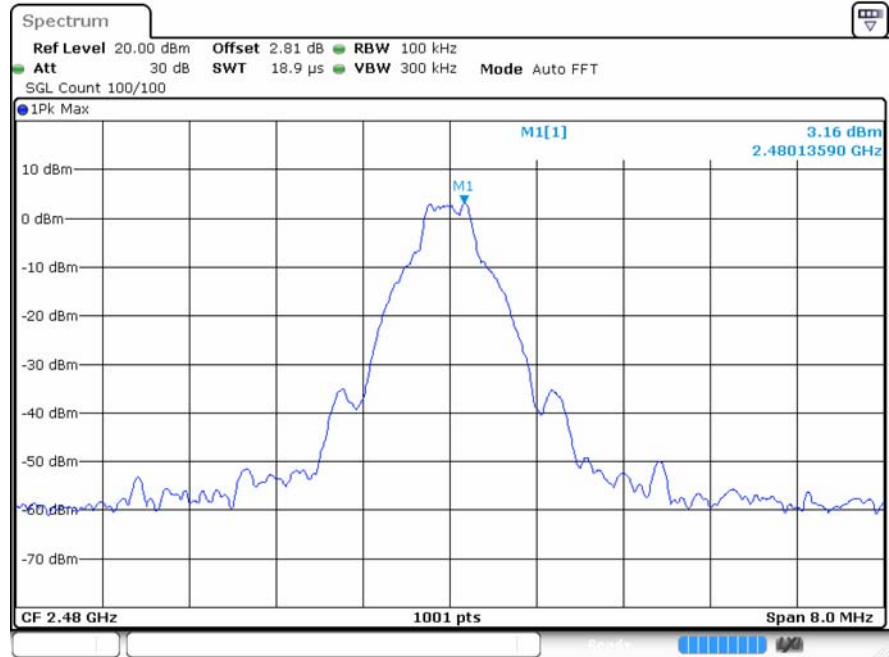
Ref



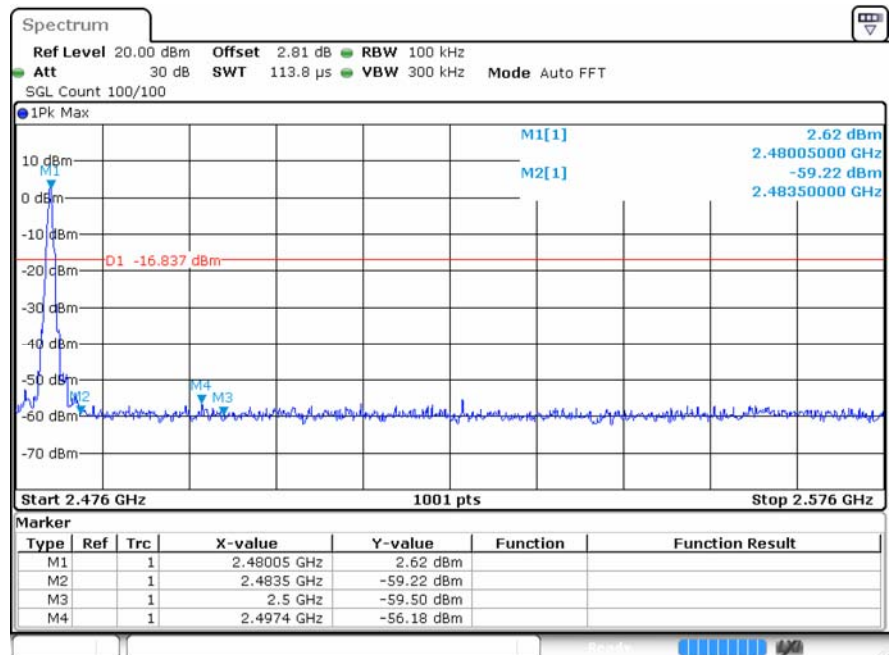
GFSK/LCH/Hop



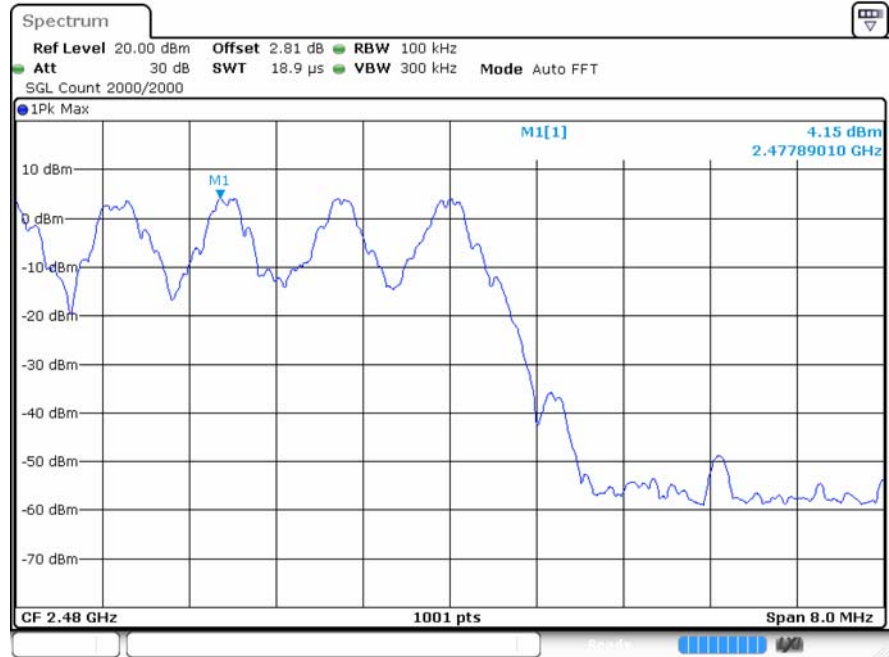
Ref



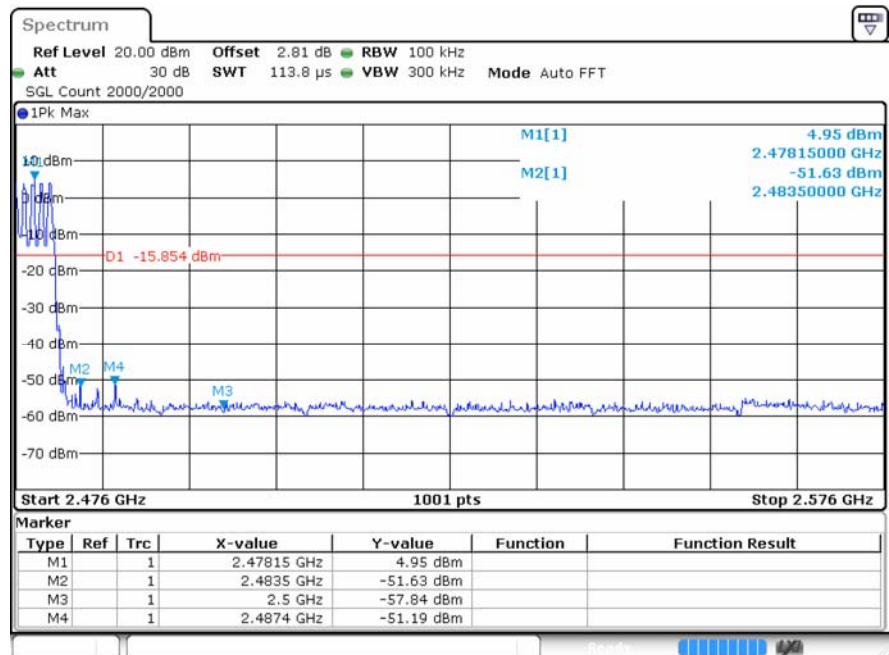
GFSK/HCH/No Hop



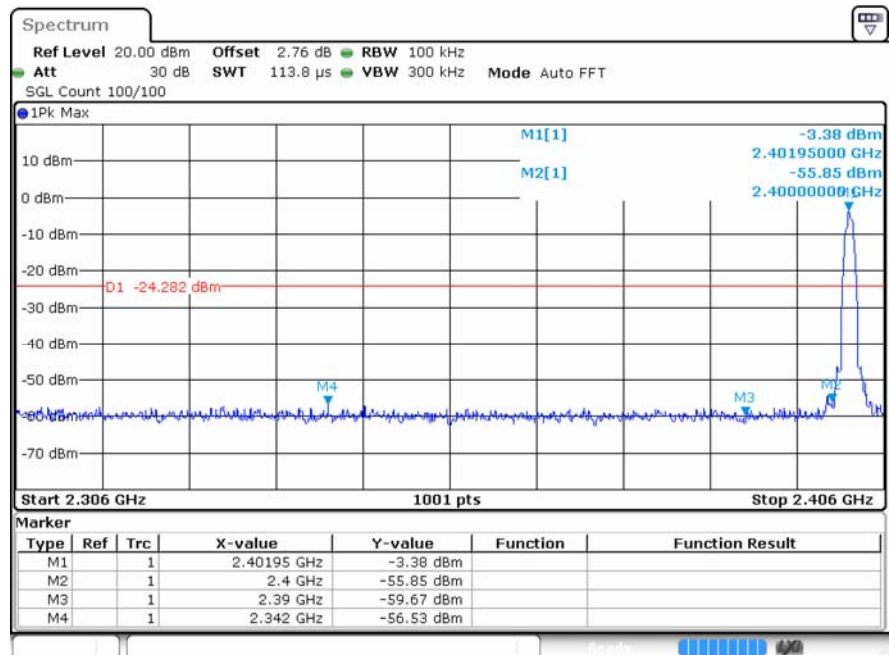
Ref.



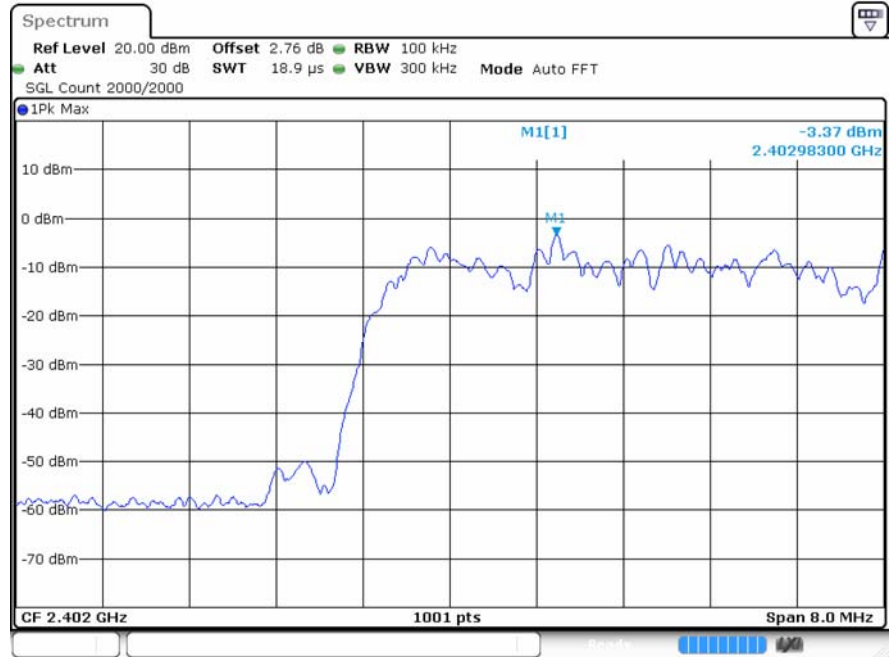
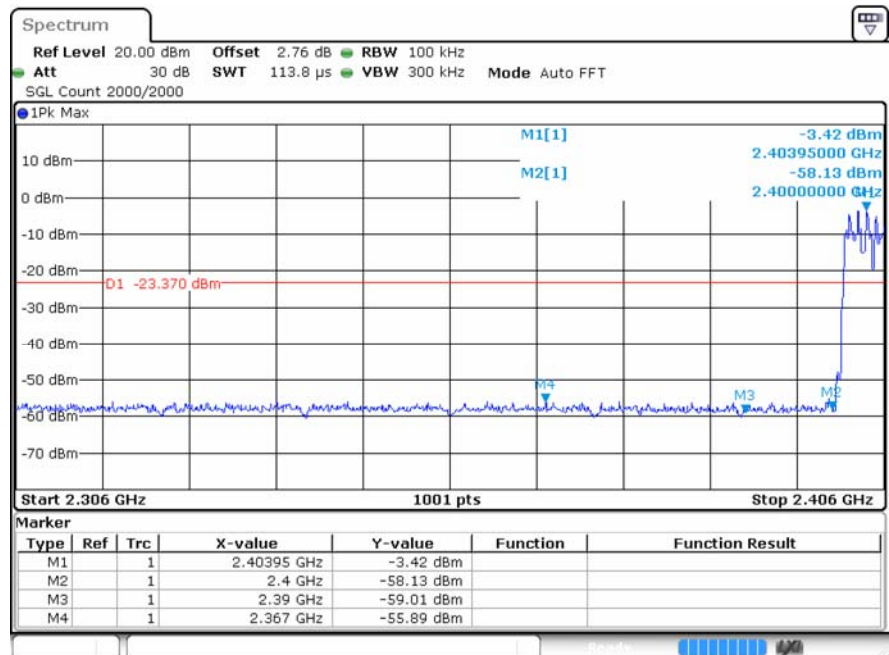
GFSK/HCH/Hop



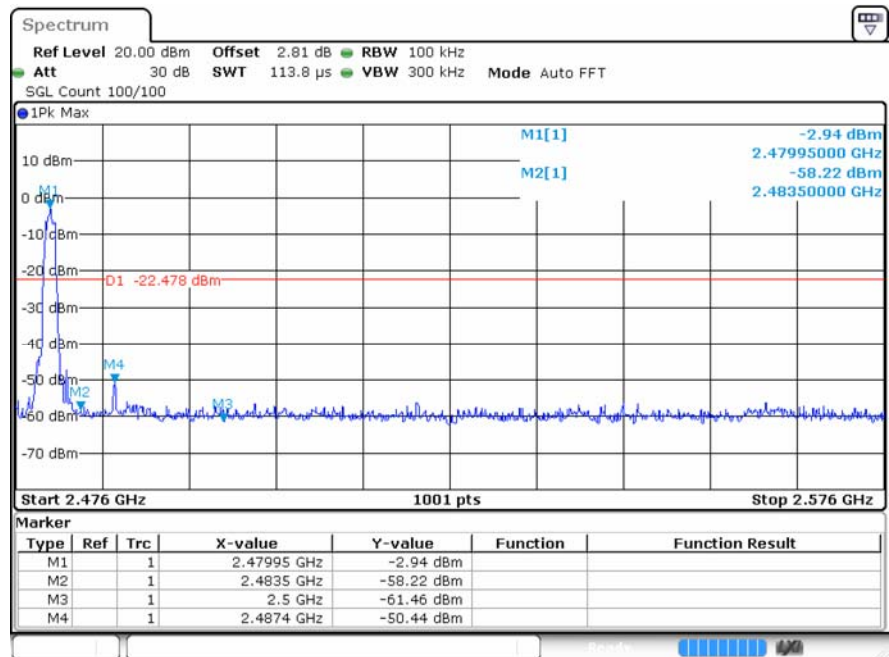
Ref


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


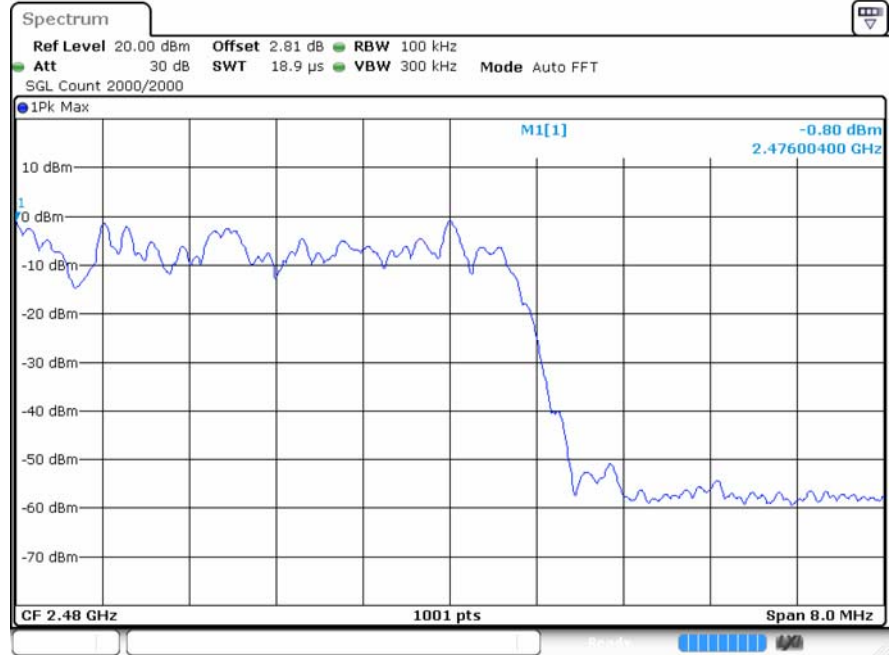
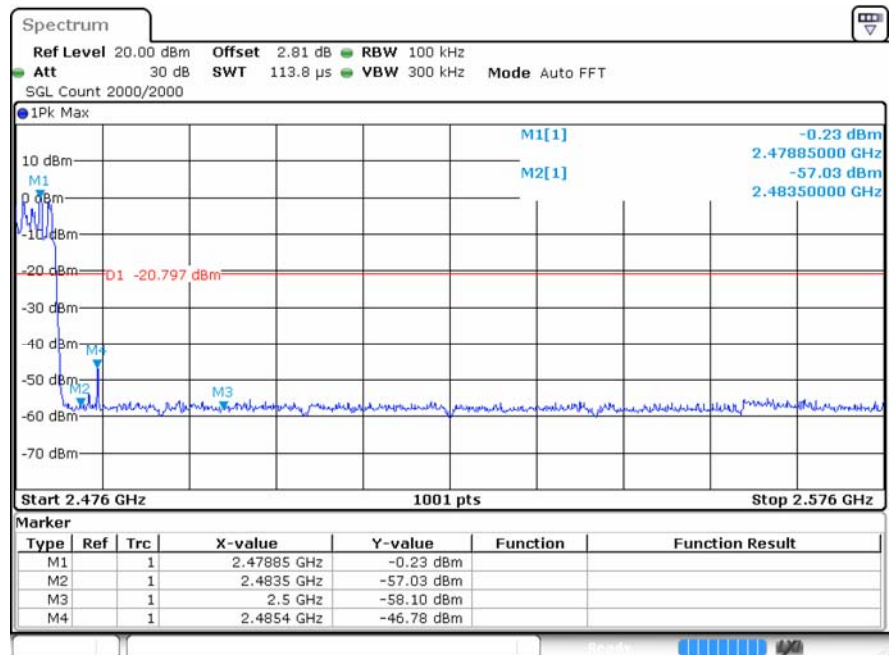
Ref


 $\pi/4$ DQPSK/LCH/Hop


Ref


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


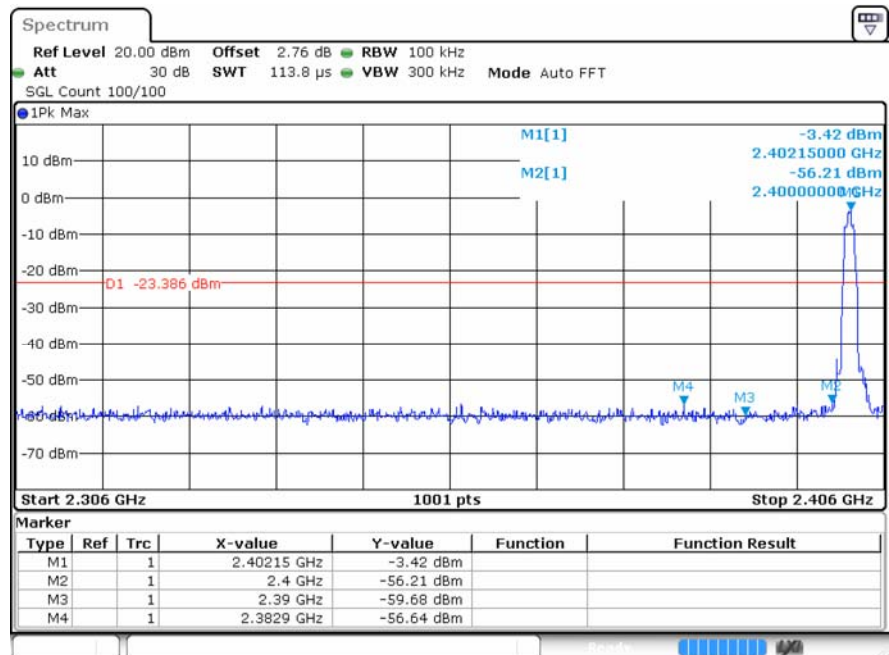
Ref


 $\pi/4$ DQPSK/HCH/Hop


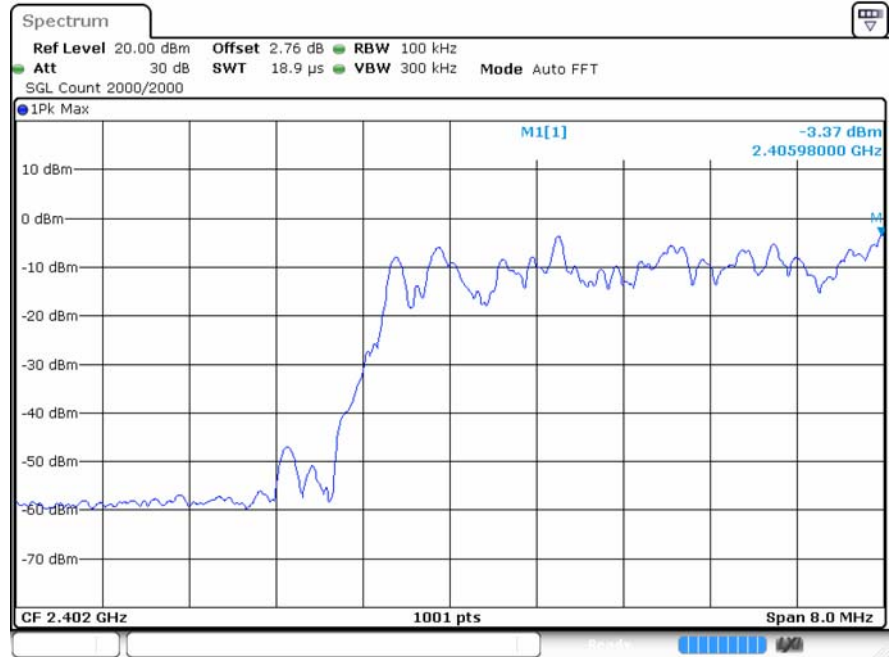
Ref



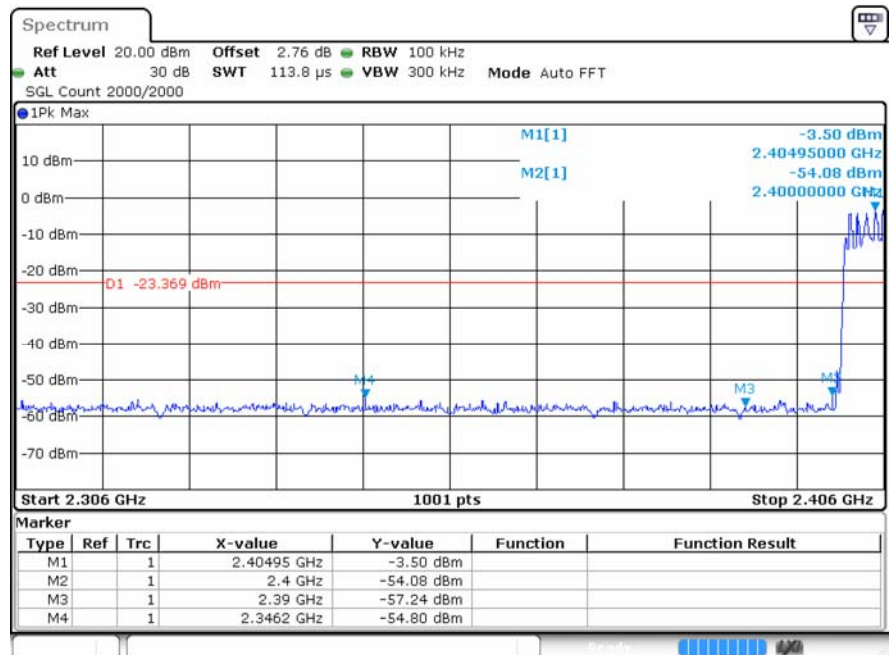
8DPSK/LCH/No Hop



Ref



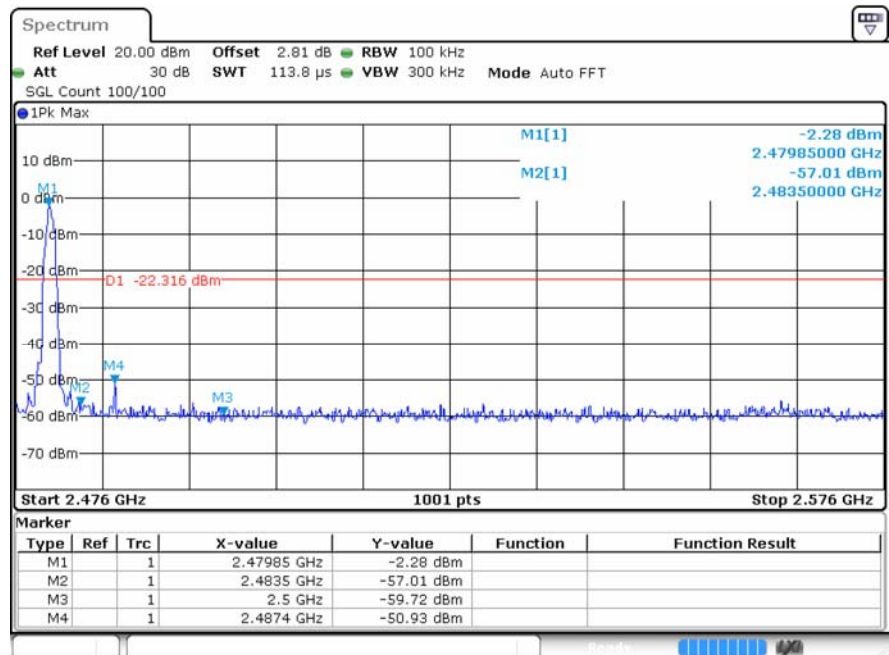
8DPSK/LCH/Hop



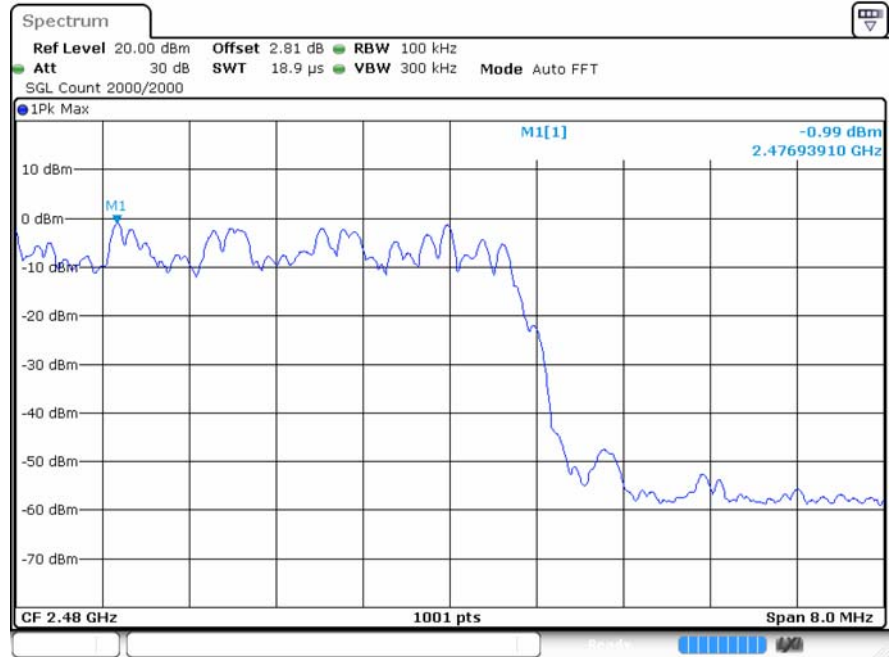
Ref



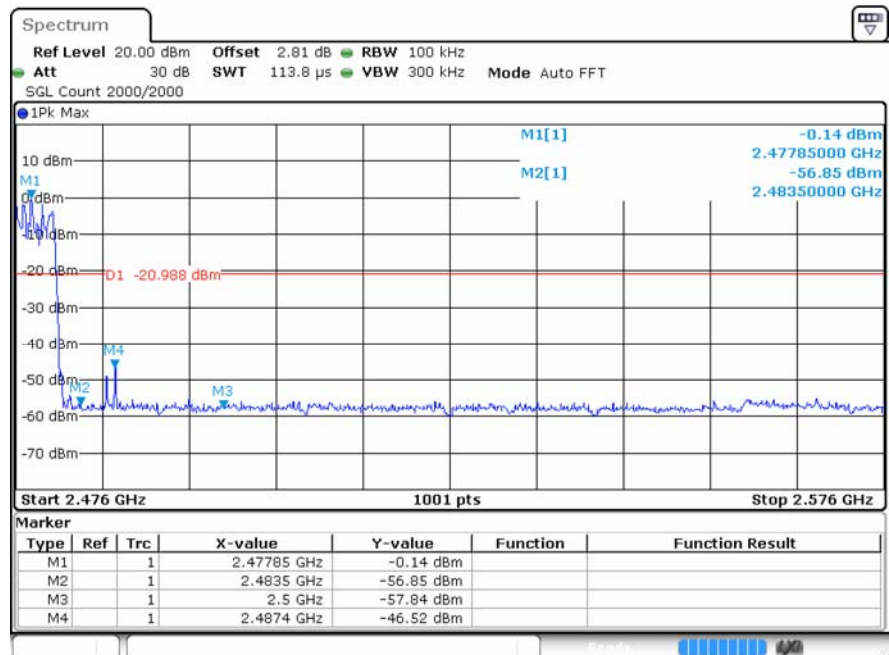
8DPSK/HCH/No Hop



Ref



8DPSK/HCH/Hop



## 9 Restrict-band band-edge measurements

### 9.1 Test Result

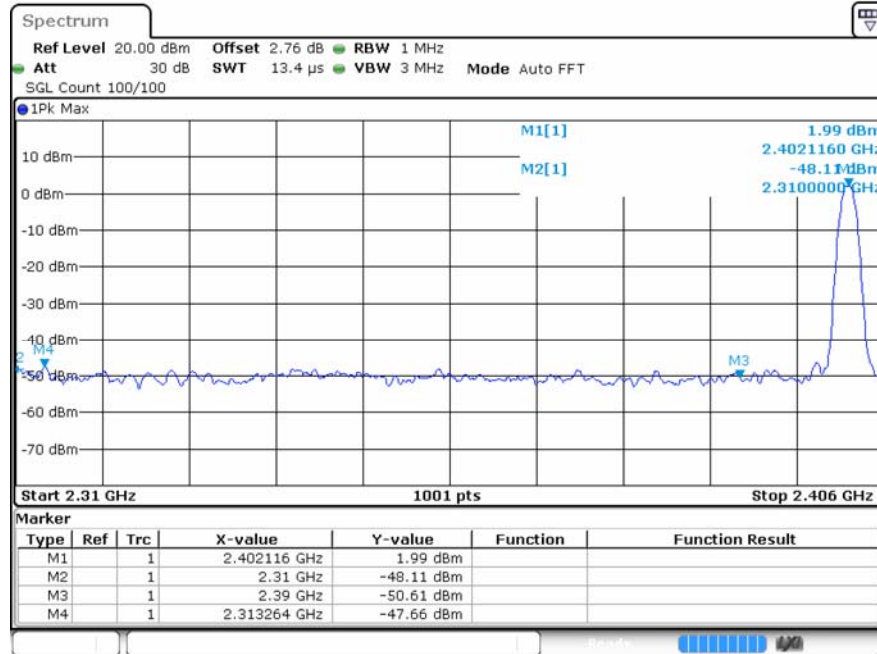
| Test Mode     | Hopping | Freq.    | Power [dBm] | Gain | E [dBuV/m] | Detector | Limit [dBuV/m] | Verdict |
|---------------|---------|----------|-------------|------|------------|----------|----------------|---------|
| GFSK          | Off     | 2310.0   | -48.1       | 2    | 49.16      | PEAK     | 74             | Pass    |
|               | Off     | 2310.0   | -58.6       | 2    | 38.66      | AV       | 54             | Pass    |
|               | Off     | 2313.264 | -47.65      | 2    | 49.61      | PEAK     | 74             | Pass    |
|               | Off     | 2342.064 | -56.26      | 2    | 41         | AV       | 54             | Pass    |
|               | Off     | 2390.0   | -50.6       | 2    | 46.66      | PEAK     | 74             | Pass    |
|               | Off     | 2390.0   | -58.77      | 2    | 38.49      | AV       | 54             | Pass    |
|               | Off     | 2483.5   | -49.11      | 2    | 48.15      | PEAK     | 74             | Pass    |
|               | Off     | 2483.5   | -55.49      | 2    | 41.77      | AV       | 54             | Pass    |
|               | Off     | 2483.872 | -48.47      | 2    | 48.79      | PEAK     | 74             | Pass    |
|               | Off     | 2483.512 | -55.49      | 2    | 41.77      | AV       | 54             | Pass    |
|               | Off     | 2500.0   | -50.83      | 2    | 46.43      | PEAK     | 74             | Pass    |
|               | Off     | 2500.0   | -58.19      | 2    | 39.07      | AV       | 54             | Pass    |
| $\pi/4$ DQPSK | Off     | 2310.0   | -50.85      | 2    | 46.41      | PEAK     | 74             | Pass    |
|               | Off     | 2310.0   | -58.46      | 2    | 38.8       | AV       | 54             | Pass    |
|               | Off     | 2338.032 | -46.96      | 2    | 50.3       | PEAK     | 74             | Pass    |
|               | Off     | 2341.008 | -56.61      | 2    | 40.65      | AV       | 54             | Pass    |
|               | Off     | 2390.0   | -49.41      | 2    | 47.85      | PEAK     | 74             | Pass    |
|               | Off     | 2390.0   | -58.36      | 2    | 38.9       | AV       | 54             | Pass    |
|               | Off     | 2483.5   | -50.48      | 2    | 46.78      | PEAK     | 74             | Pass    |
|               | Off     | 2483.5   | -56.62      | 2    | 40.64      | AV       | 54             | Pass    |
|               | Off     | 2487.352 | -43.17      | 2    | 54.09      | PEAK     | 74             | Pass    |
|               | Off     | 2483.944 | -56.41      | 2    | 40.85      | AV       | 54             | Pass    |
|               | Off     | 2500.0   | -50.7       | 2    | 46.56      | PEAK     | 74             | Pass    |
|               | Off     | 2500.0   | -58.21      | 2    | 39.05      | AV       | 54             | Pass    |
| 8DPSK         | Off     | 2310.0   | -51.42      | 2    | 45.84      | PEAK     | 74             | Pass    |
|               | Off     | 2310.0   | -58.85      | 2    | 38.41      | AV       | 54             | Pass    |
|               | Off     | 2340.72  | -46.51      | 2    | 50.75      | PEAK     | 74             | Pass    |
|               | Off     | 2340.432 | -56.53      | 2    | 40.73      | AV       | 54             | Pass    |



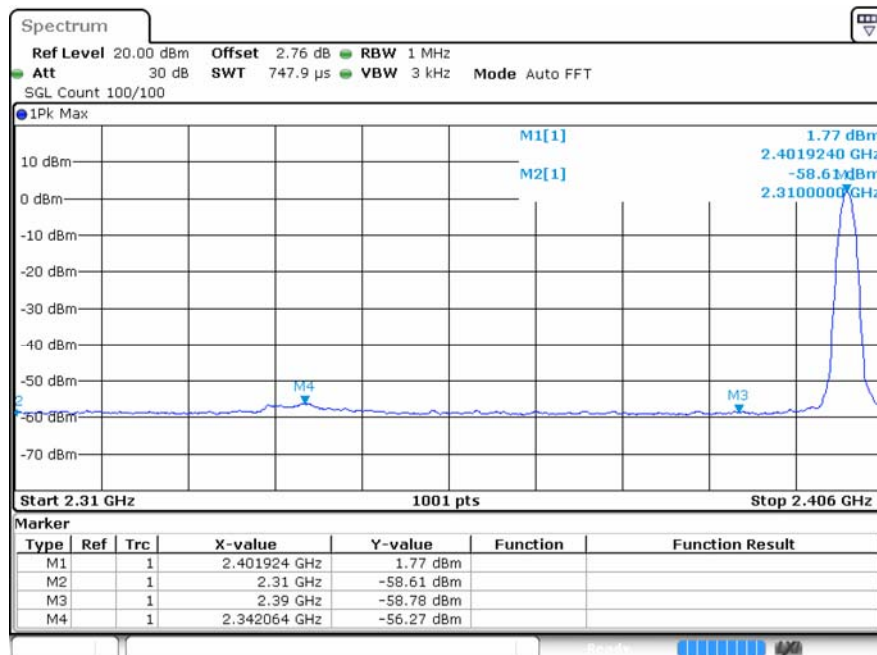
|  |     |          |        |   |       |      |    |      |
|--|-----|----------|--------|---|-------|------|----|------|
|  | Off | 2390.0   | -50.97 | 2 | 46.29 | PEAK | 74 | Pass |
|  | Off | 2390.0   | -58.64 | 2 | 38.62 | AV   | 54 | Pass |
|  | Off | 2483.5   | -49.88 | 2 | 47.38 | PEAK | 74 | Pass |
|  | Off | 2483.5   | -56.45 | 2 | 40.81 | AV   | 54 | Pass |
|  | Off | 2487.16  | -45.89 | 2 | 51.37 | PEAK | 74 | Pass |
|  | Off | 2484.256 | -56.05 | 2 | 41.21 | AV   | 54 | Pass |
|  | Off | 2500.0   | -50.74 | 2 | 46.52 | PEAK | 74 | Pass |
|  | Off | 2500.0   | -58.35 | 2 | 38.91 | AV   | 54 | Pass |

## 9.2 Test Graphs

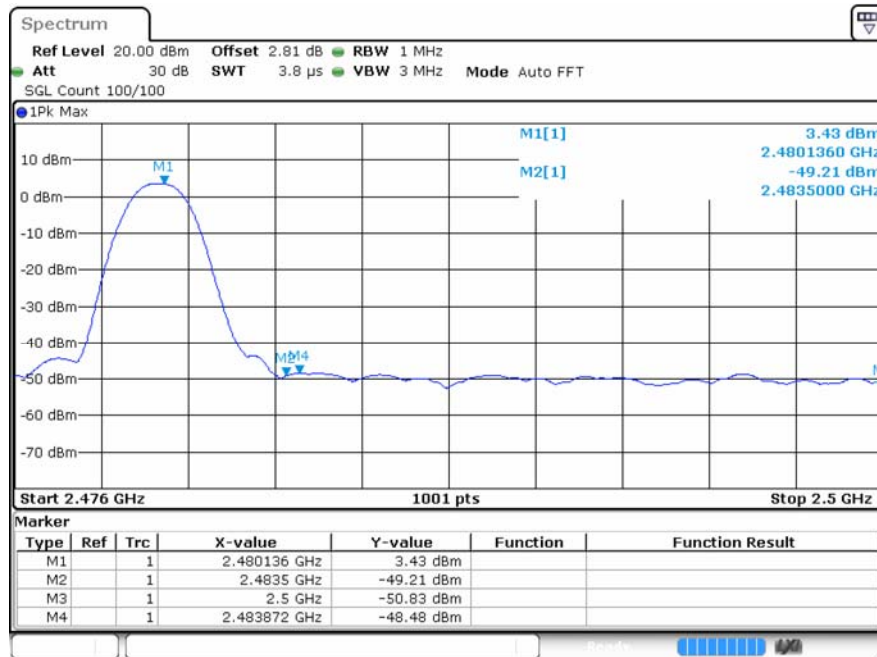
Restrict-band band-edge measurements\_Hopping Off\_ GFSK\_PEAK (Low Channel)



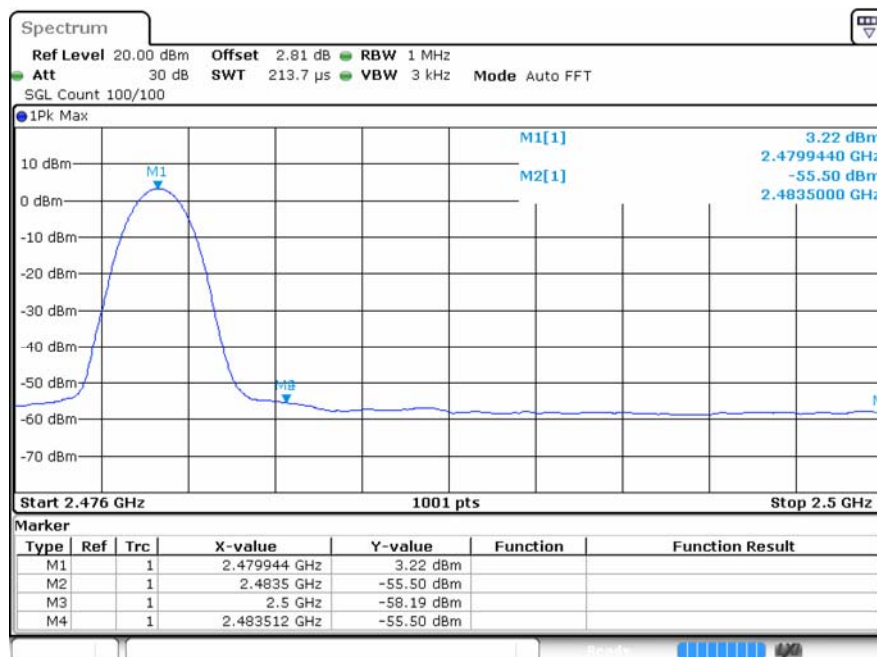
Restrict-band band-edge measurements\_Hopping Off\_ GFSK\_Average (Low Channel)



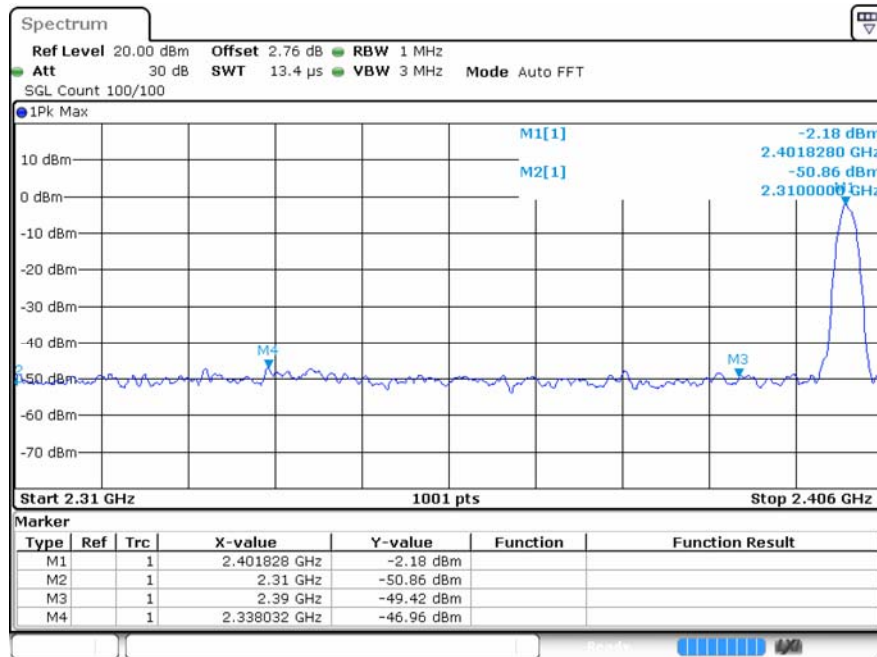
## Restrict-band band-edge measurements\_Hopping Off\_ GFSK\_PEAK (High Channel)



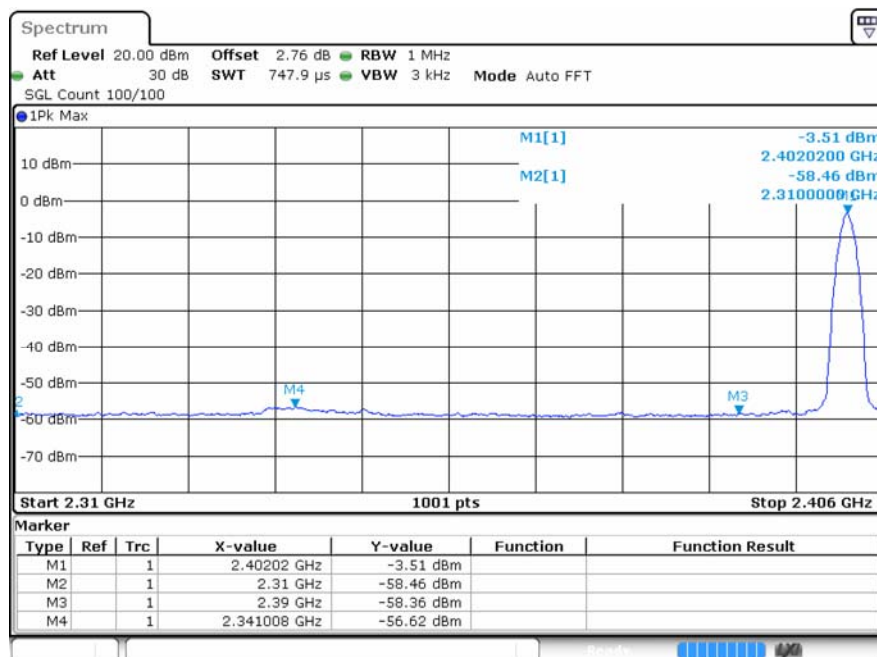
## Restrict-band band-edge measurements\_Hopping Off\_ GFSK\_Average (High Channel)



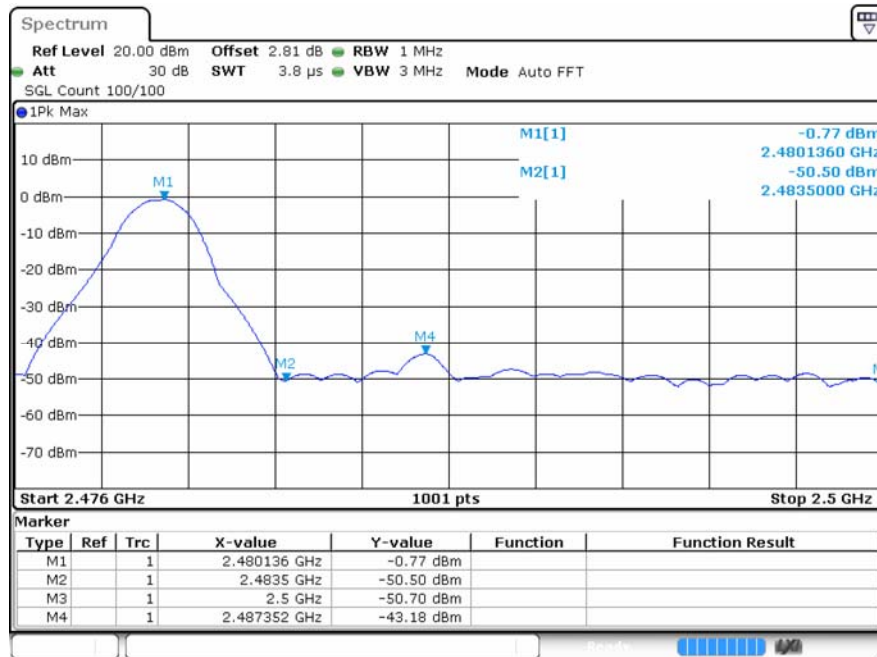
## Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_PEAK (Low Channel)



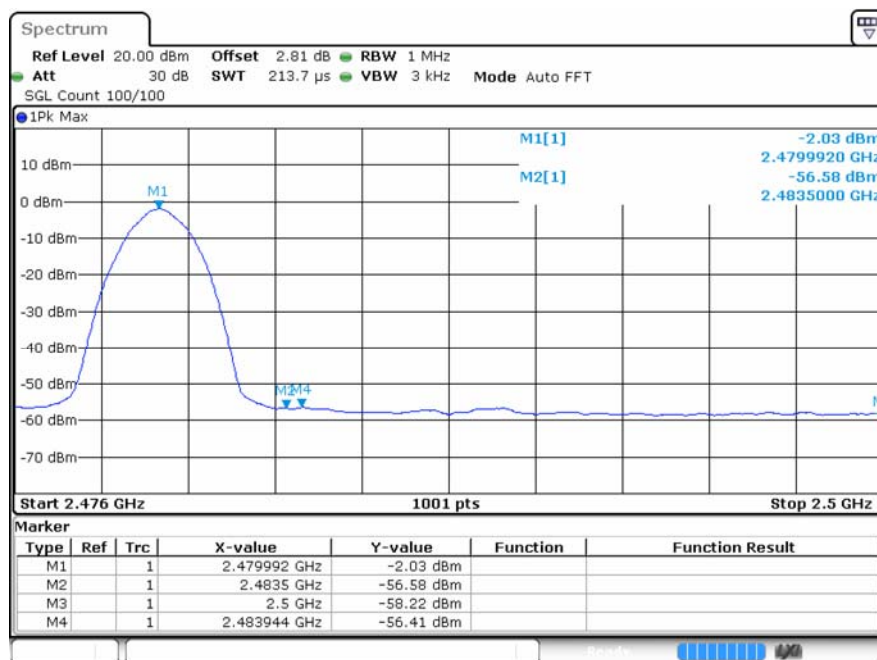
## Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_Average (Low Channel)



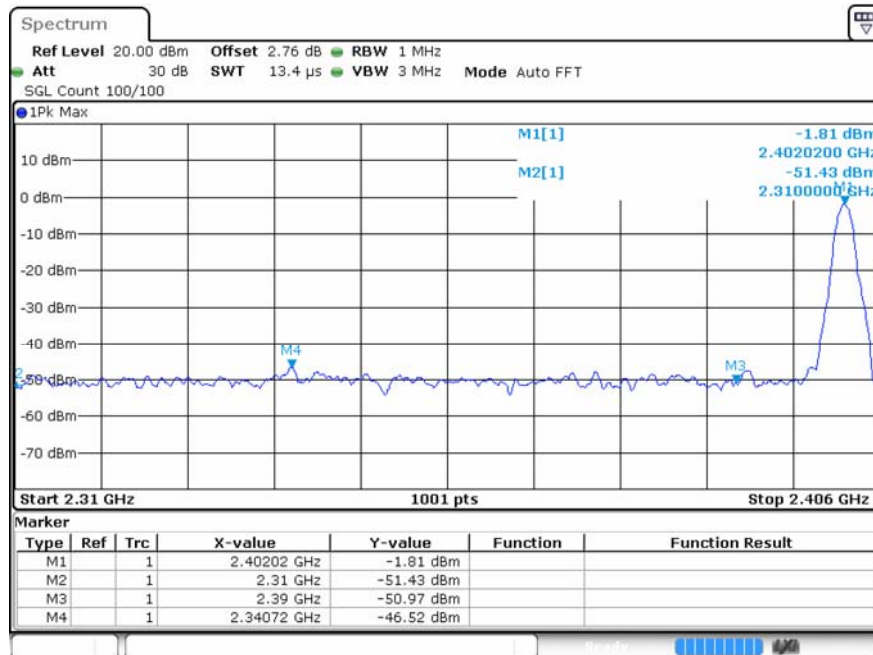
## Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_PEAK (High Channel)



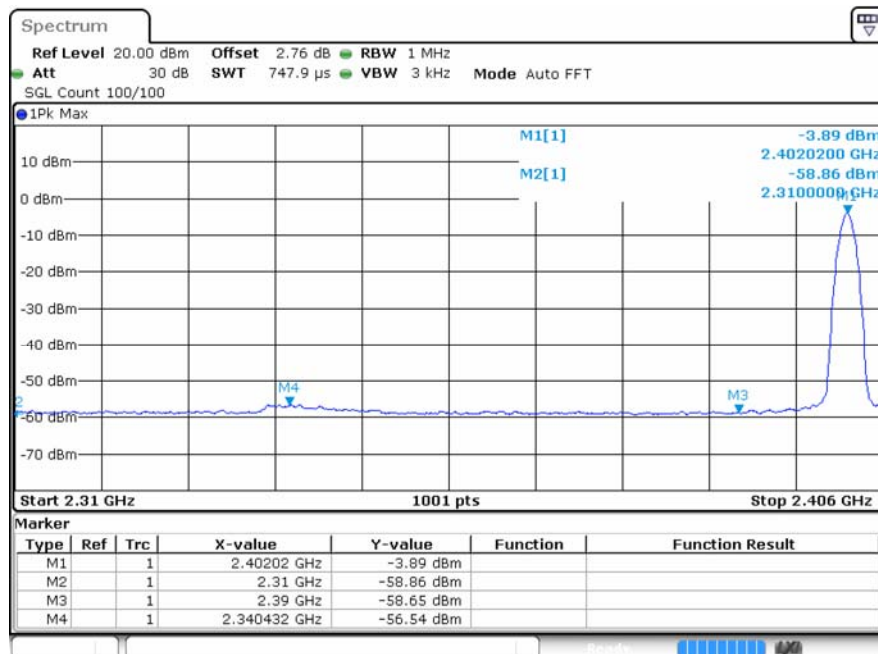
## Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_Average (High Channel)



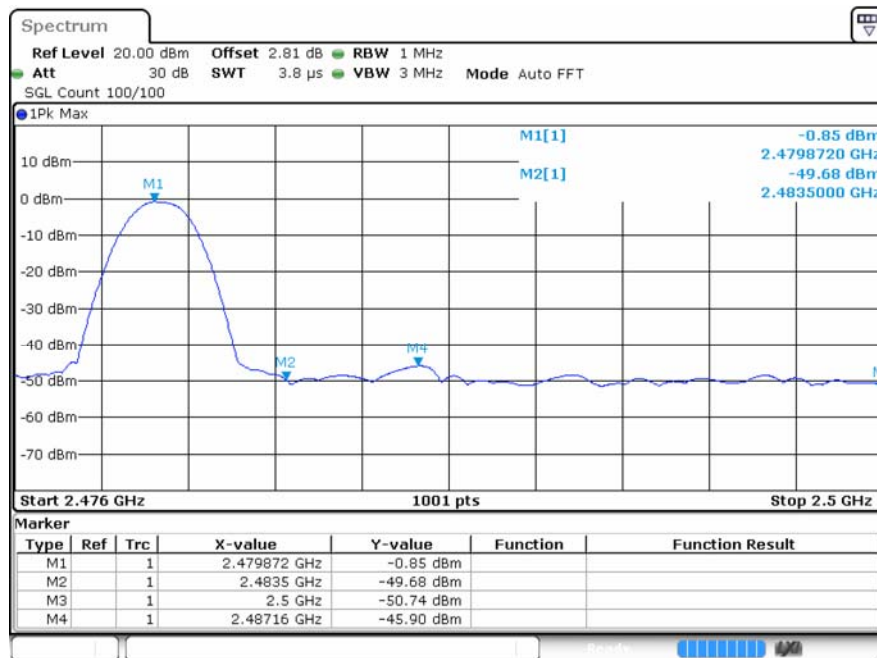
## Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_PEAK (Low Channel)



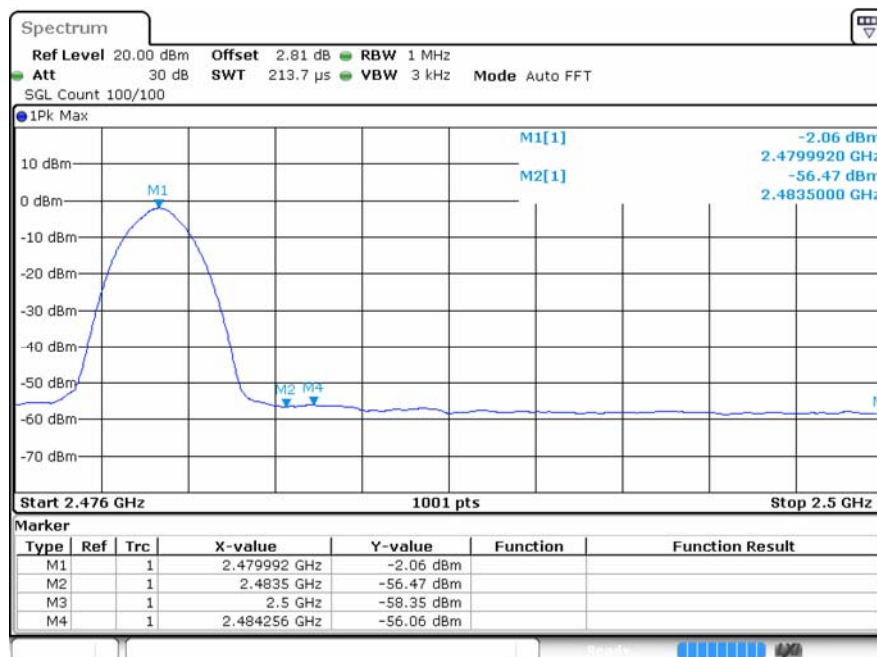
## Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_Average (Low Channel)



## Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_PEAK (High Channel)



## Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_Average (High Channel)



---The End---