



## Appendix A

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

Product Name: AMPLIFIER

Trade Mark: PYLE

Test Model: PTA1000BT

#### Environmental Conditions

|                    |             |
|--------------------|-------------|
| Temperature:       | 24.2℃       |
| Relative Humidity: | 51.2%       |
| ATM Pressure:      | 101Kpa      |
| Test Engineer:     | Simba Huang |
| Supervised by:     | Seal Chen   |



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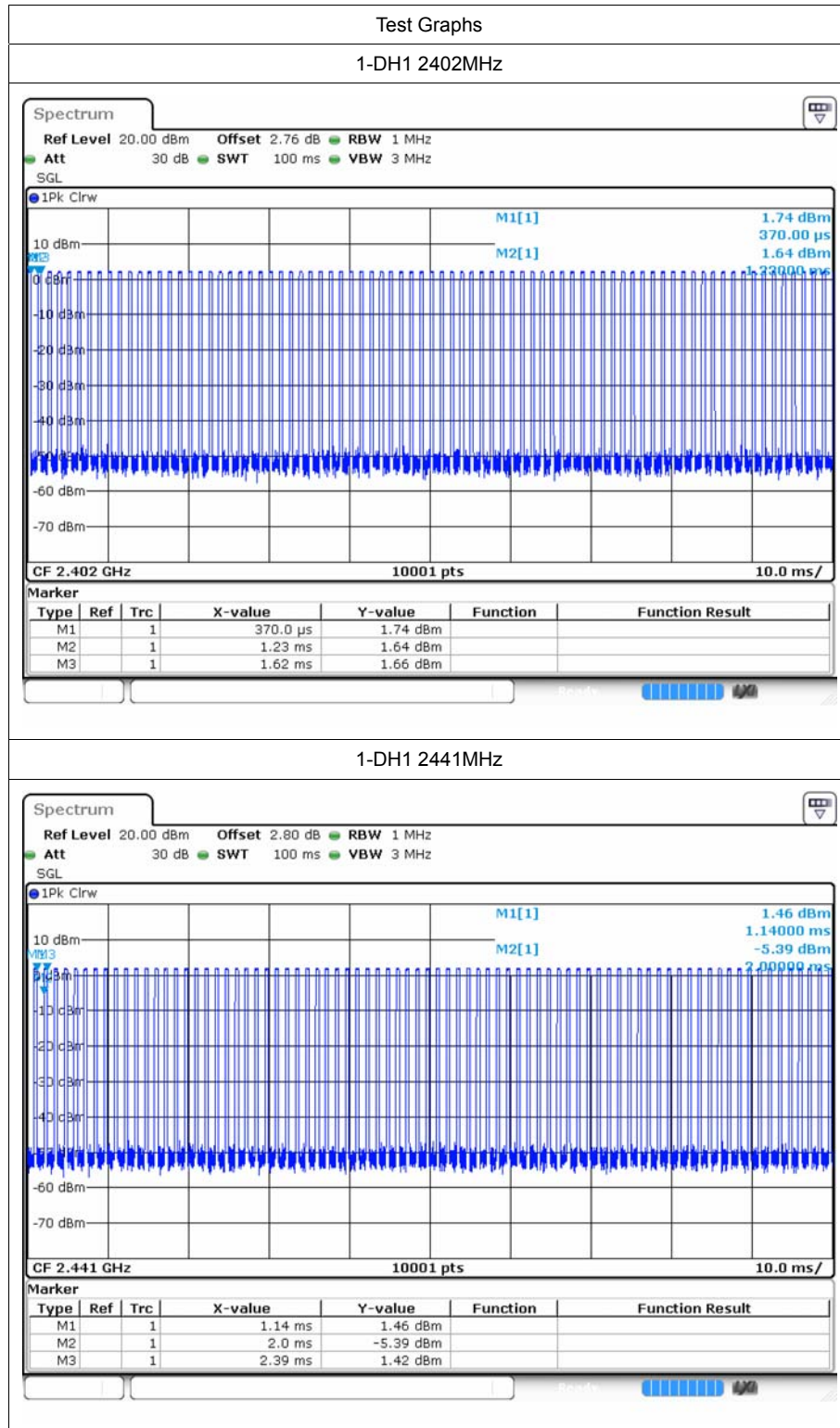
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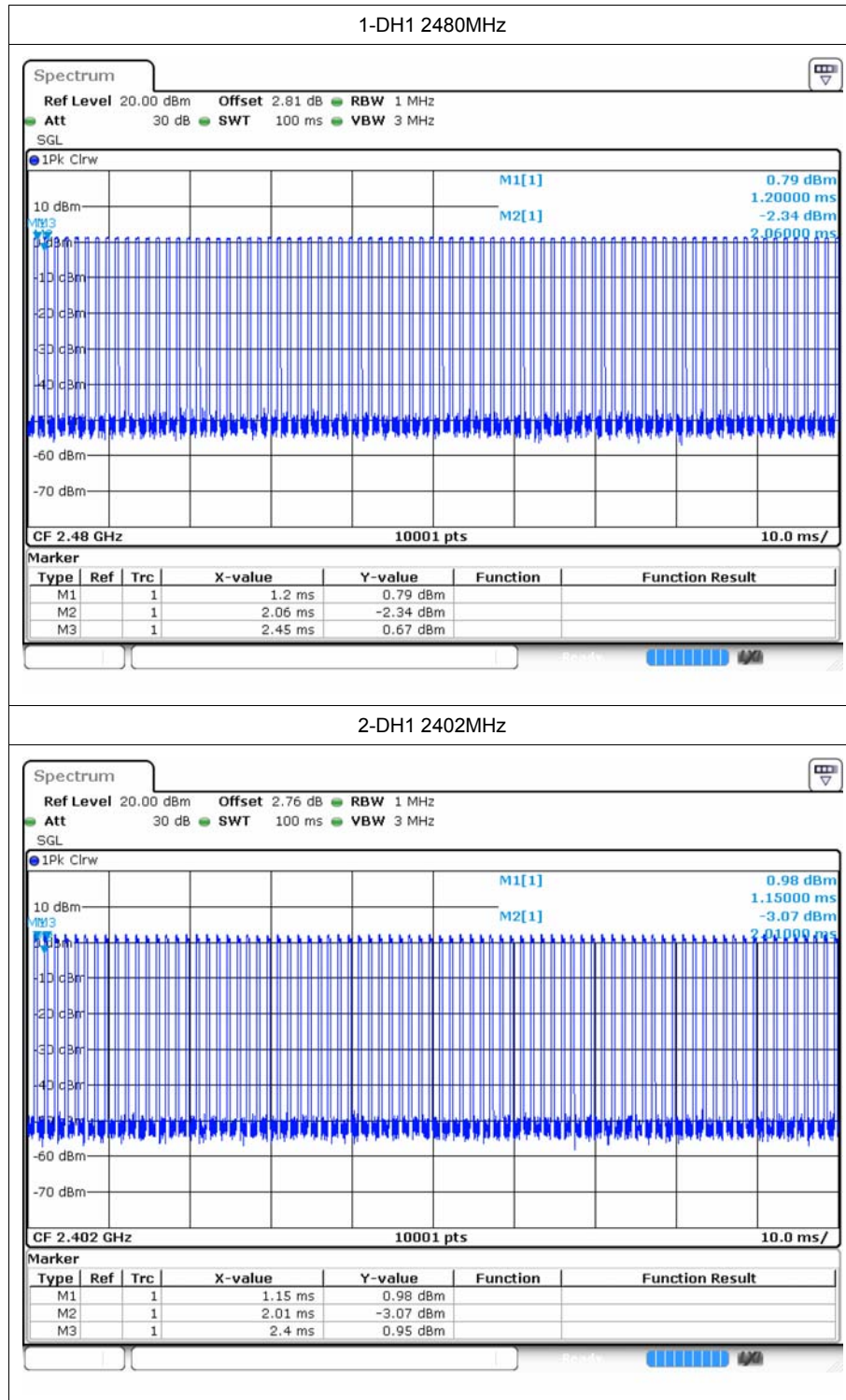
# 1 Duty Cycle

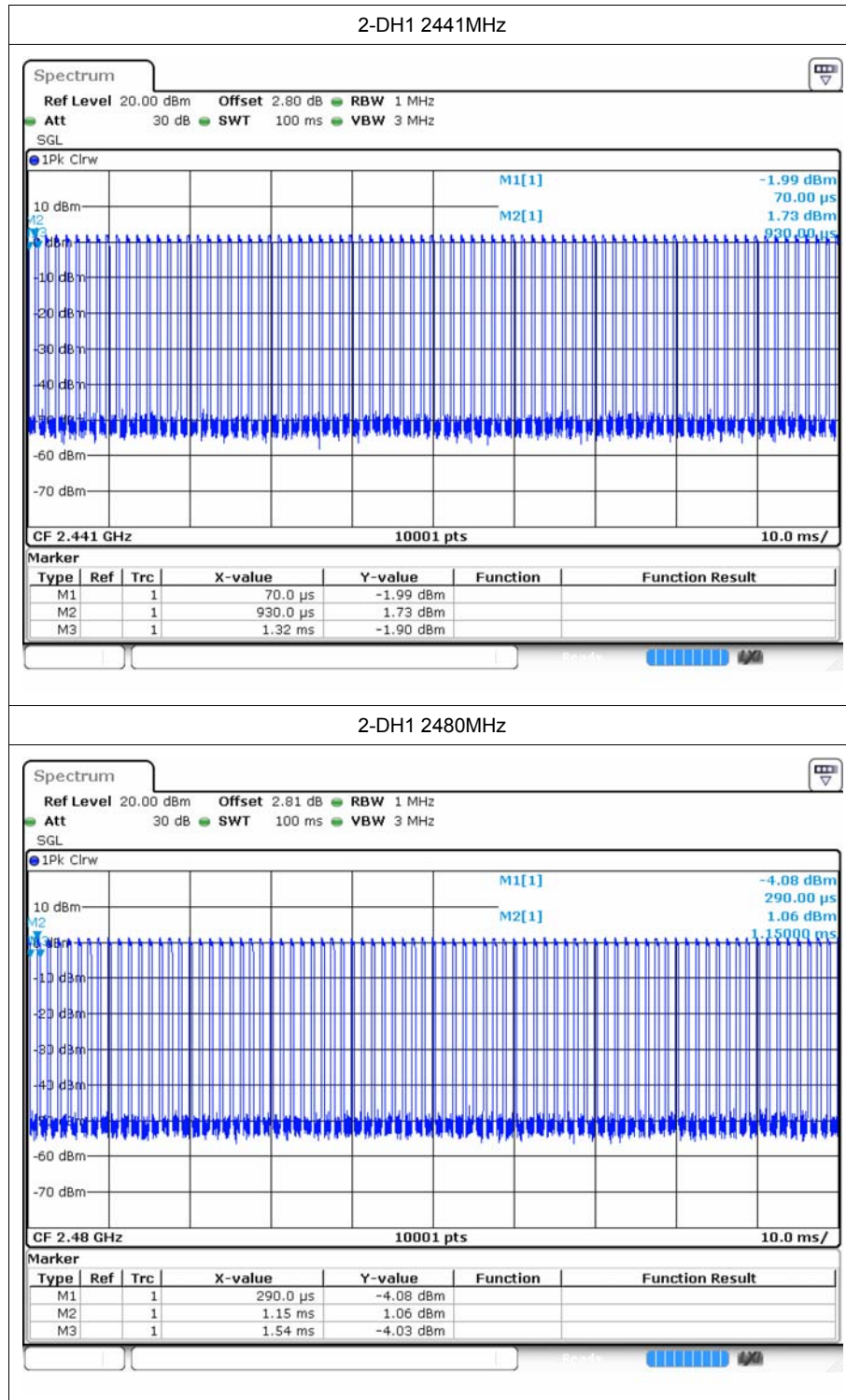
## 1.1 Test Result

| Mode  | Frequency (MHz) | Duty Cycle (%) | 1/T (kHz) |
|-------|-----------------|----------------|-----------|
| 1-DH1 | 2402            | 32.01          | 2.56      |
| 1-DH1 | 2441            | 32.31          | 2.56      |
| 1-DH1 | 2480            | 32             | 2.56      |
| 2-DH1 | 2402            | 32             | 2.56      |
| 2-DH1 | 2441            | 32.01          | 2.56      |
| 2-DH1 | 2480            | 32.01          | 2.56      |

## 1.2 Test Graphs





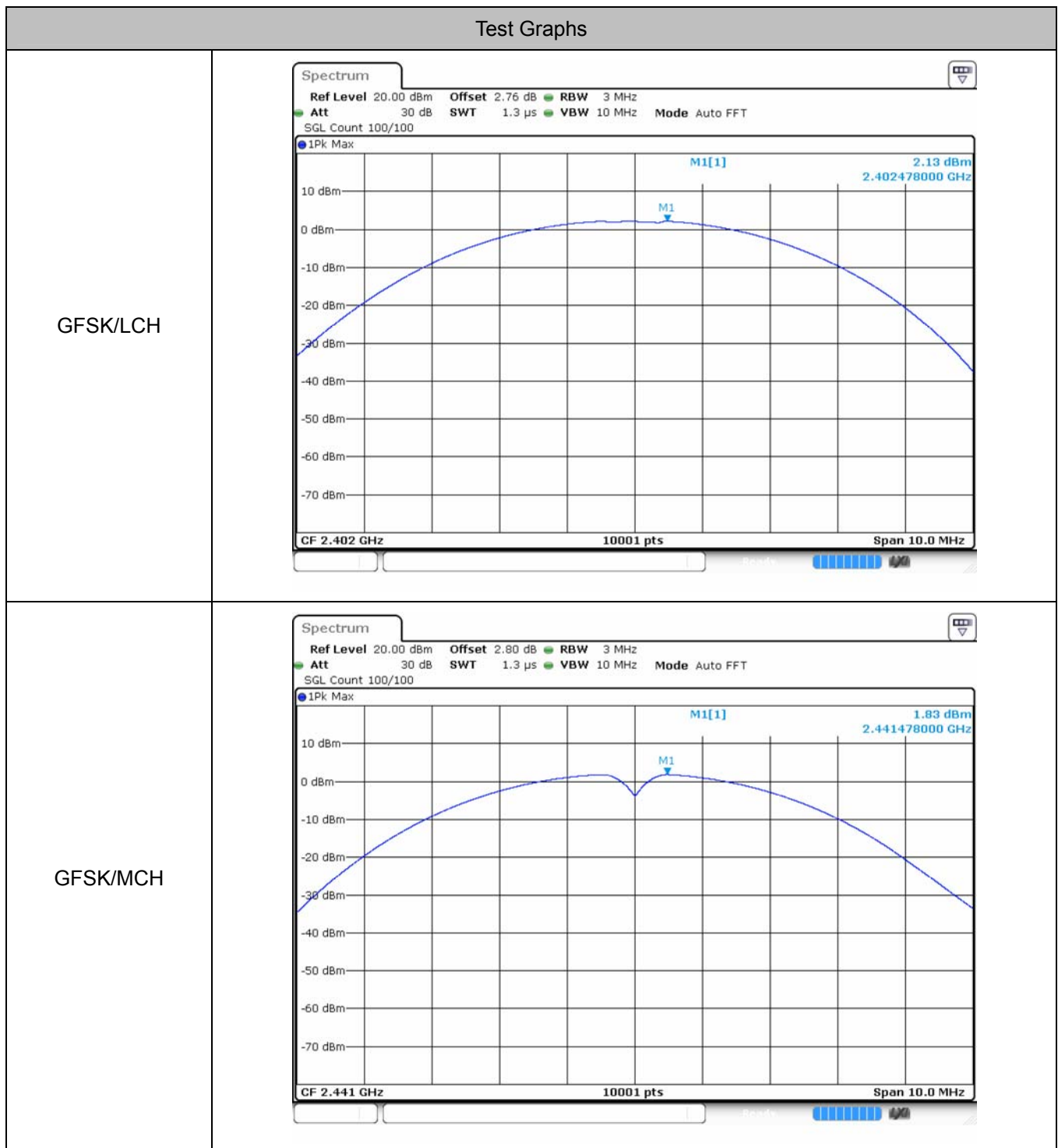


## 2 Maximum Conducted Peak Output Power

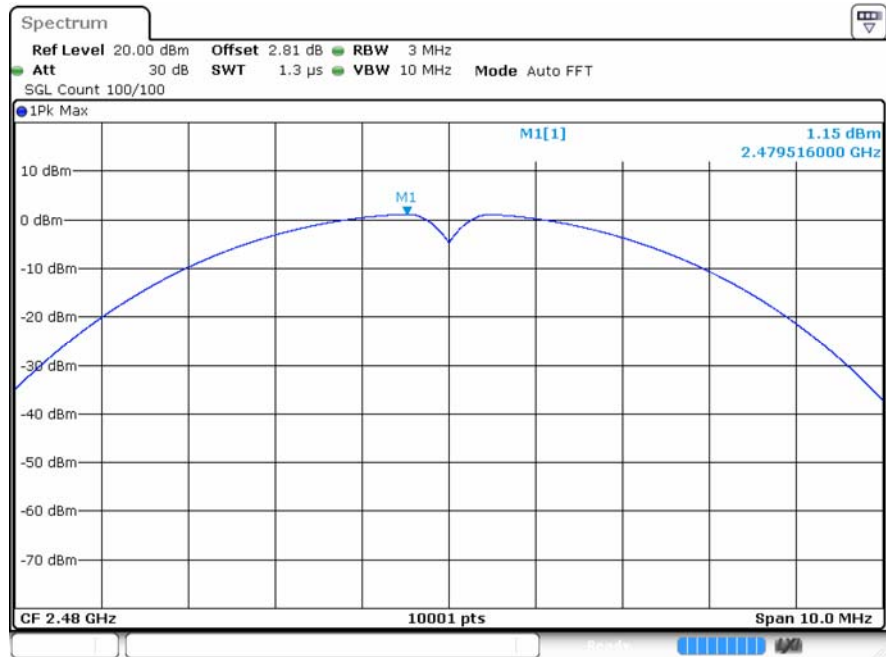
### 2.1 Test Result

| Mode          | Channel. | Maximum Peak Output Power<br>[dBm] | Limit<br>[dBm] | Verdict |
|---------------|----------|------------------------------------|----------------|---------|
| GFSK          | LCH      | 2.13                               | 21             | Pass    |
|               | MCH      | 1.83                               | 21             | Pass    |
|               | HCH      | 1.15                               | 21             | Pass    |
| $\pi/4$ DQPSK | LCH      | 2.13                               | 21             | Pass    |
|               | MCH      | 1.93                               | 21             | Pass    |
|               | HCH      | 1.07                               | 21             | Pass    |

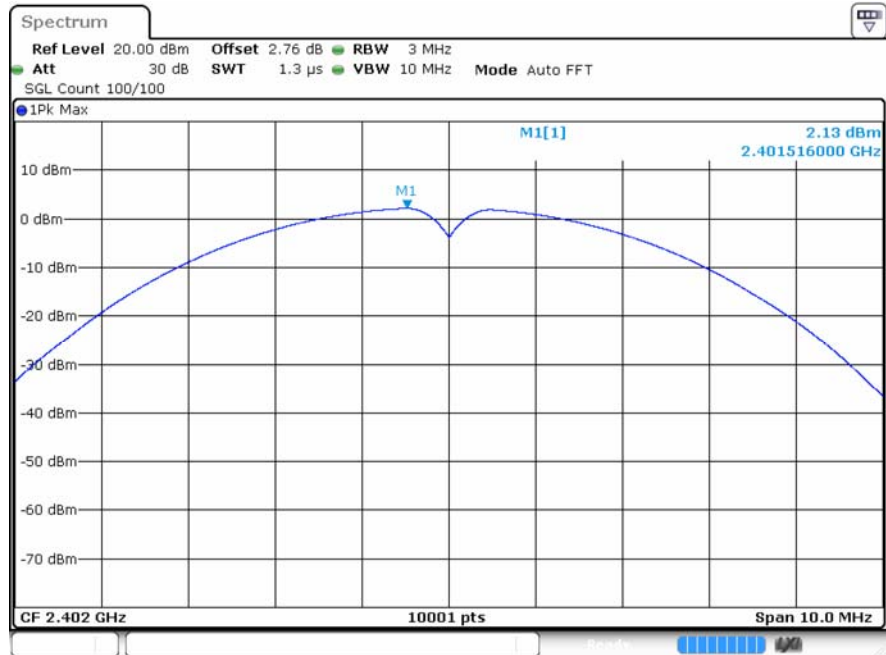
## 2.2 Test Graphs



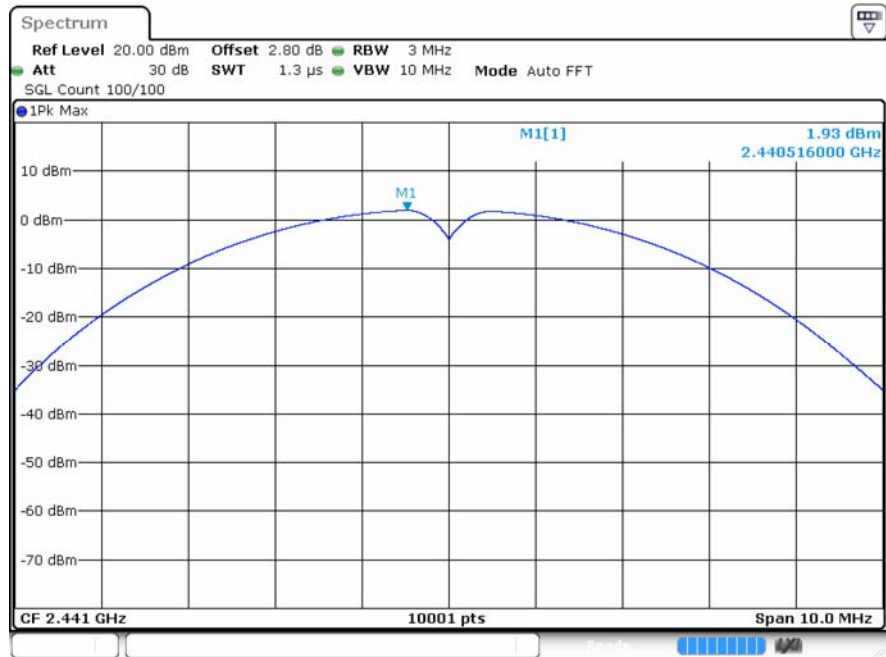
GFSK/HCH



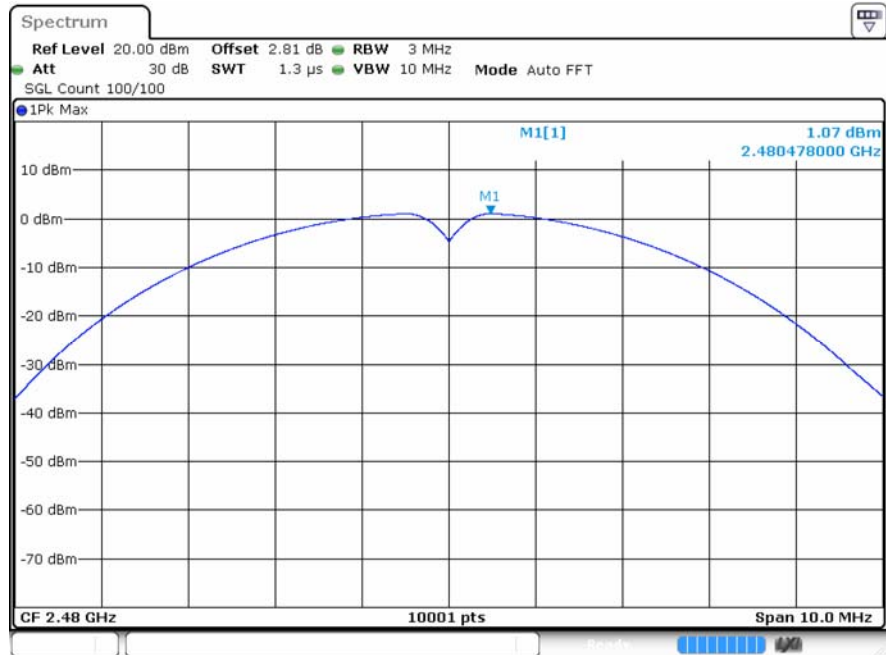
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



$\pi/4$ DQPSK/HCH

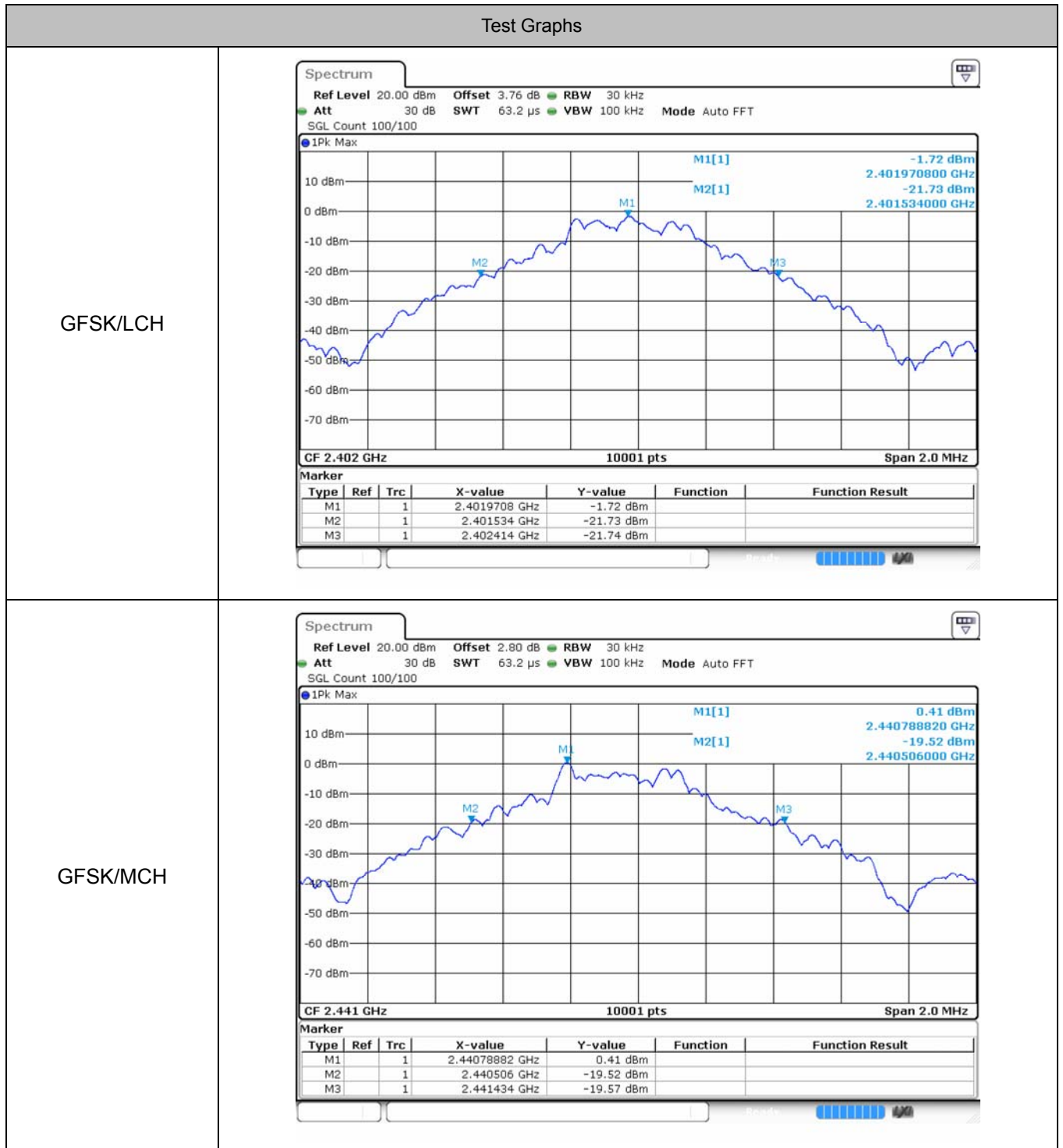


### 3 20dB Bandwidth

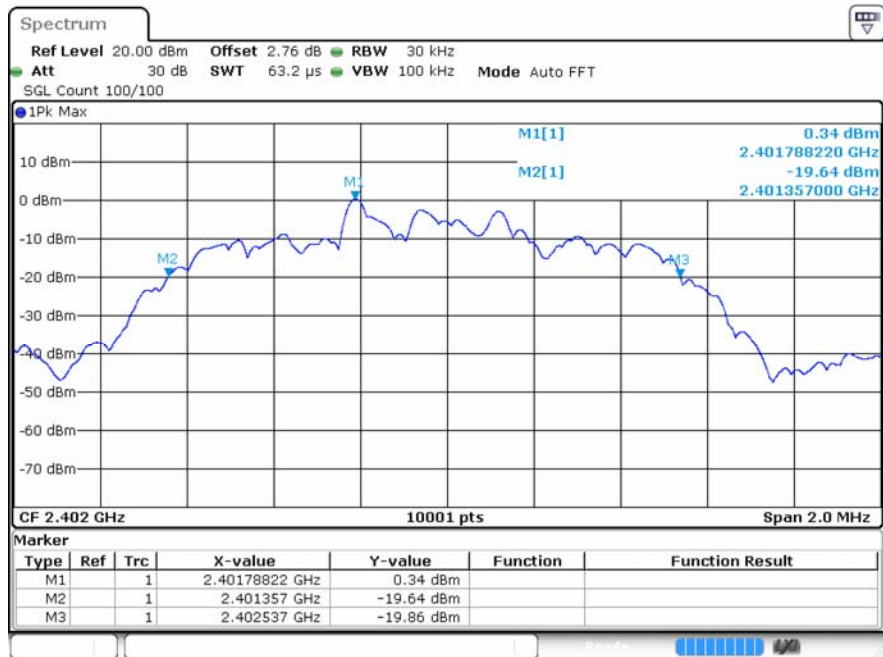
#### 3.1 Test Result

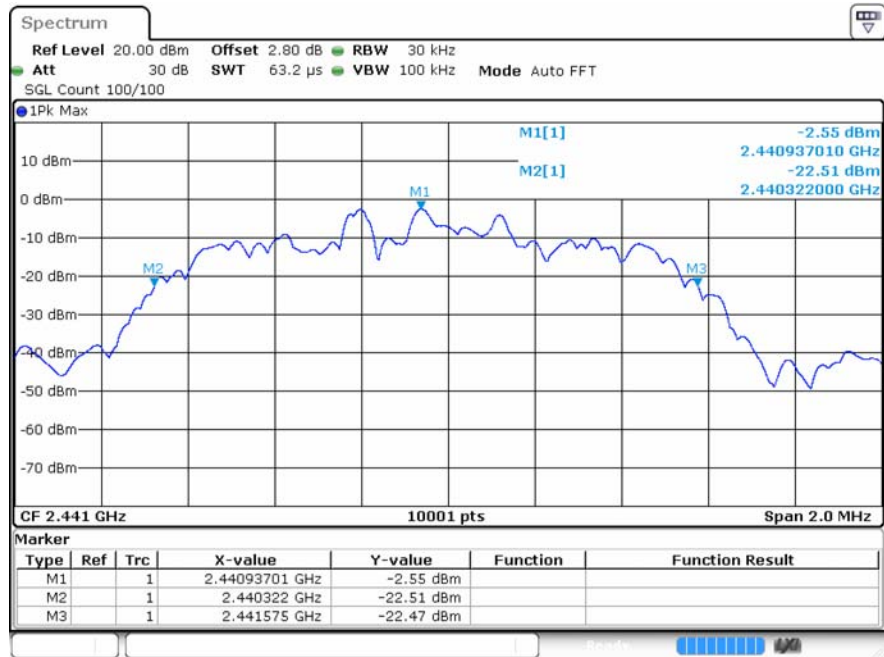
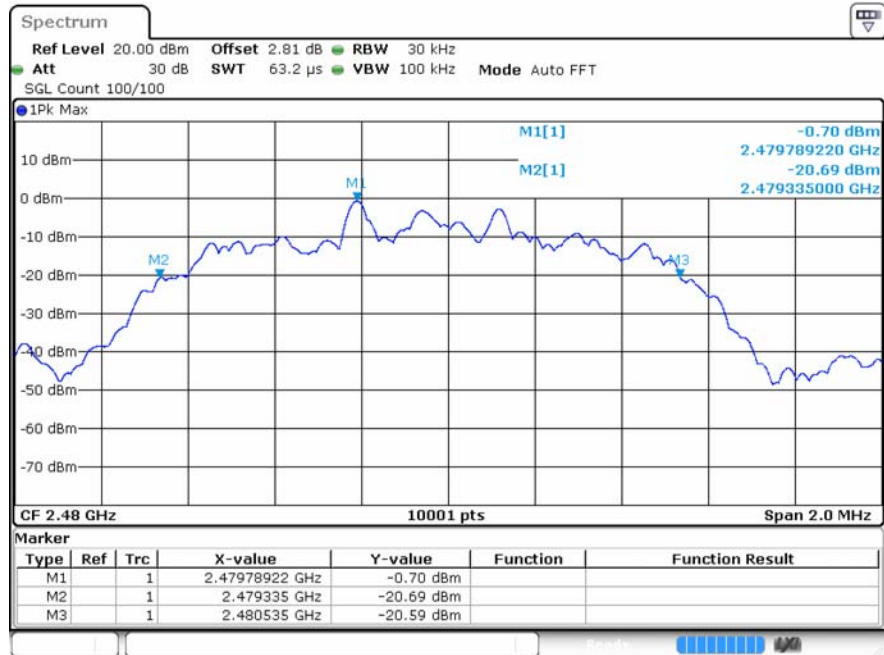
| Mode          | Channel. | 20dB Bandwidth [MHz] | Limit [MHz]   | Verdict |
|---------------|----------|----------------------|---------------|---------|
| GFSK          | LCH      | 0.880                | Not Specified | Pass    |
|               | MCH      | 0.928                | Not Specified | Pass    |
|               | HCH      | 1.045                | Not Specified | Pass    |
| $\pi/4$ DQPSK | LCH      | 1.18                 | Not Specified | Pass    |
|               | MCH      | 1.253                | Not Specified | Pass    |
|               | HCH      | 1.2                  | 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      | 1.001                              | 0.619       | Pass    |
| $\pi/4$ DQPSK | MCH      | 1                                  | 0.835       | Pass    |

## 4.2 Test Graphs

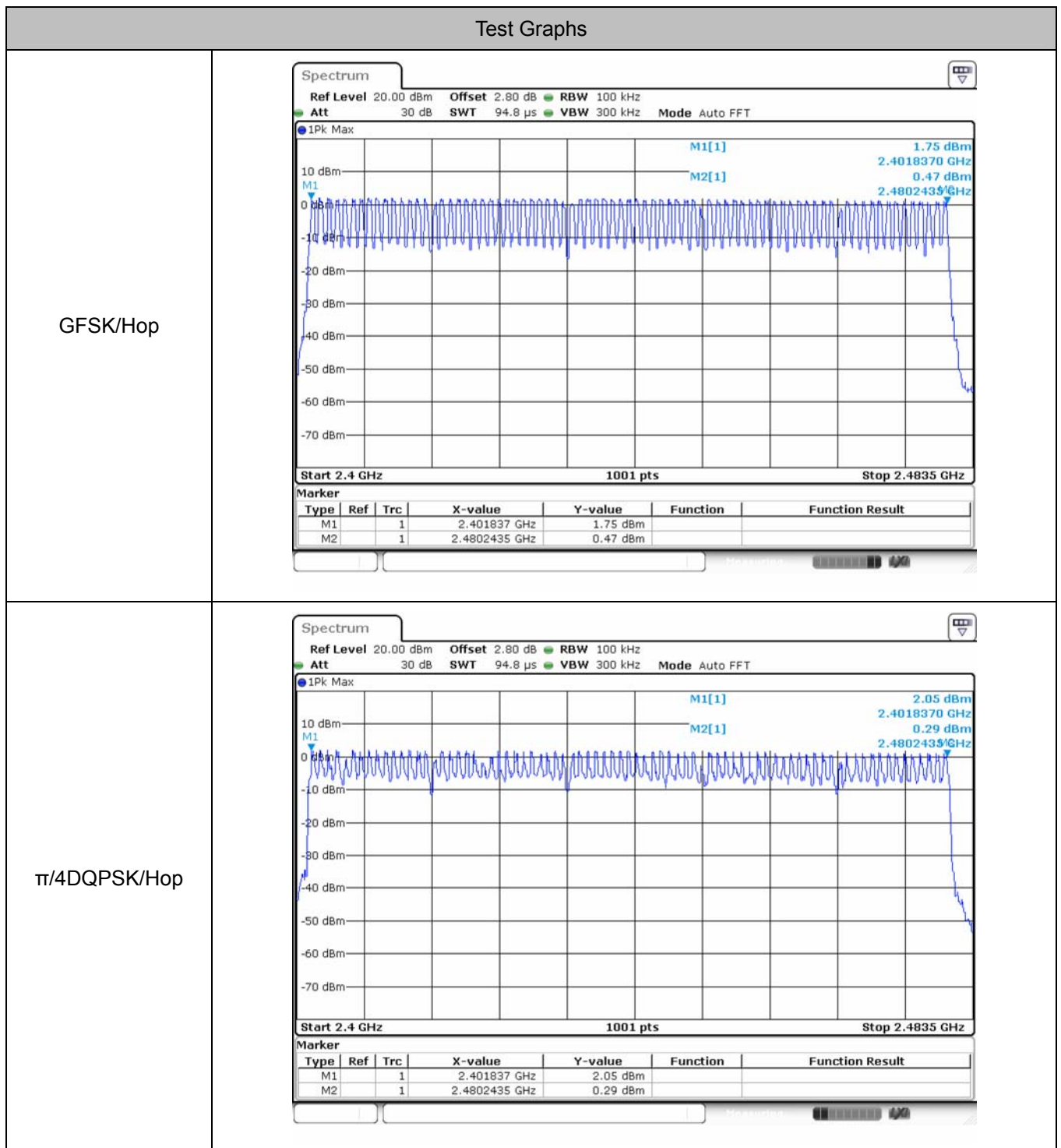


## 5 Hopping Channel Number

### 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

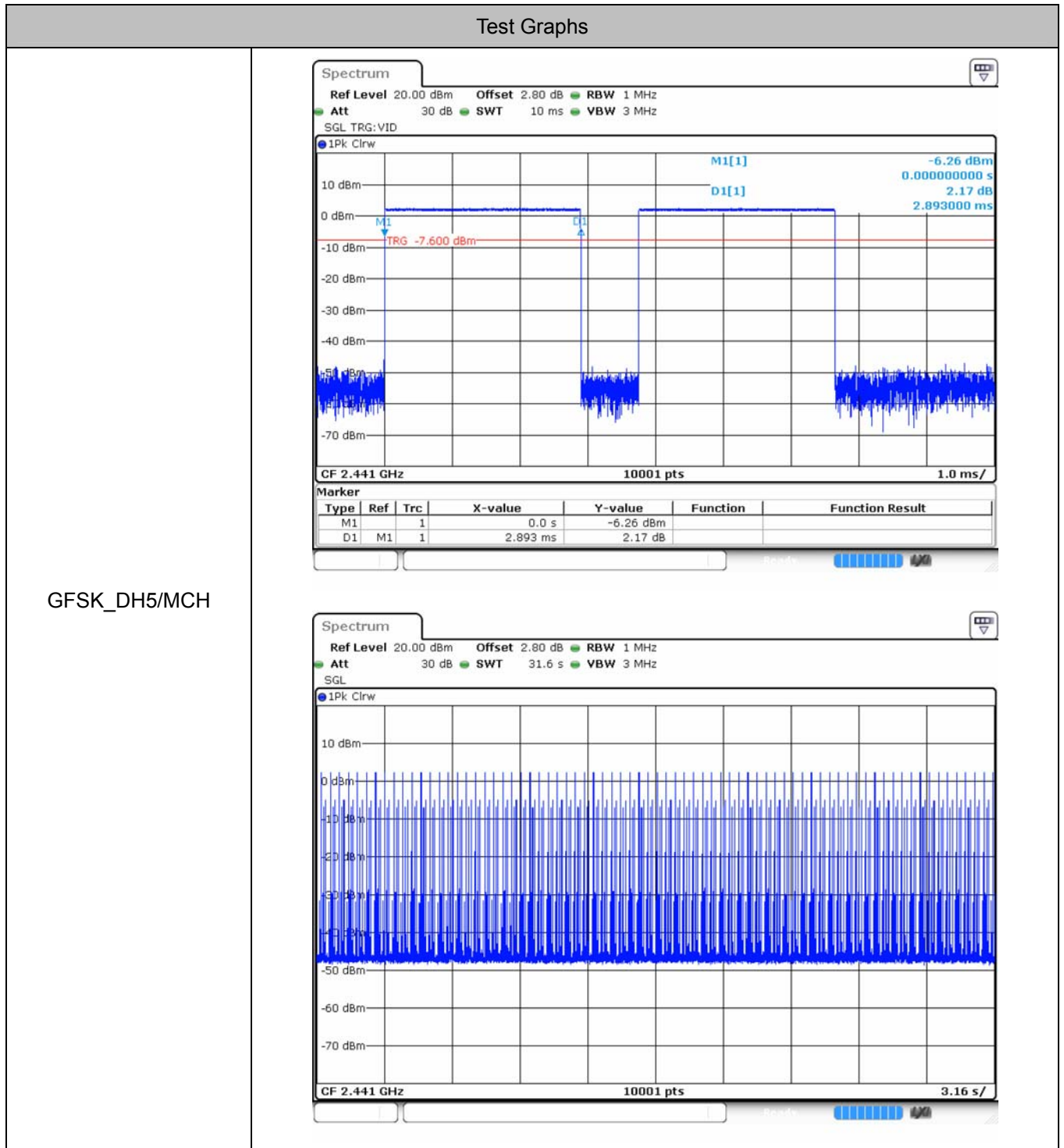


## 6 Dwell Time

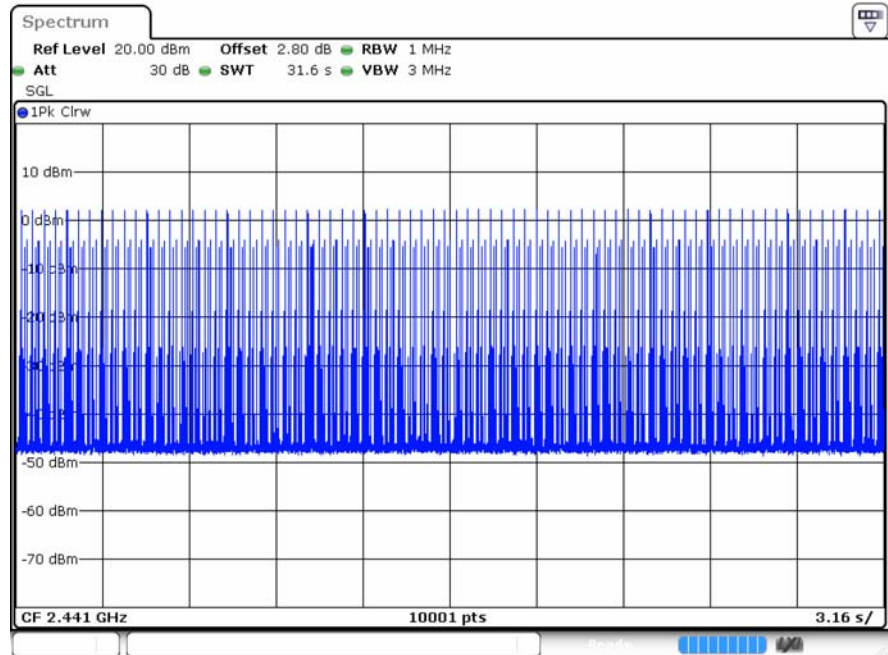
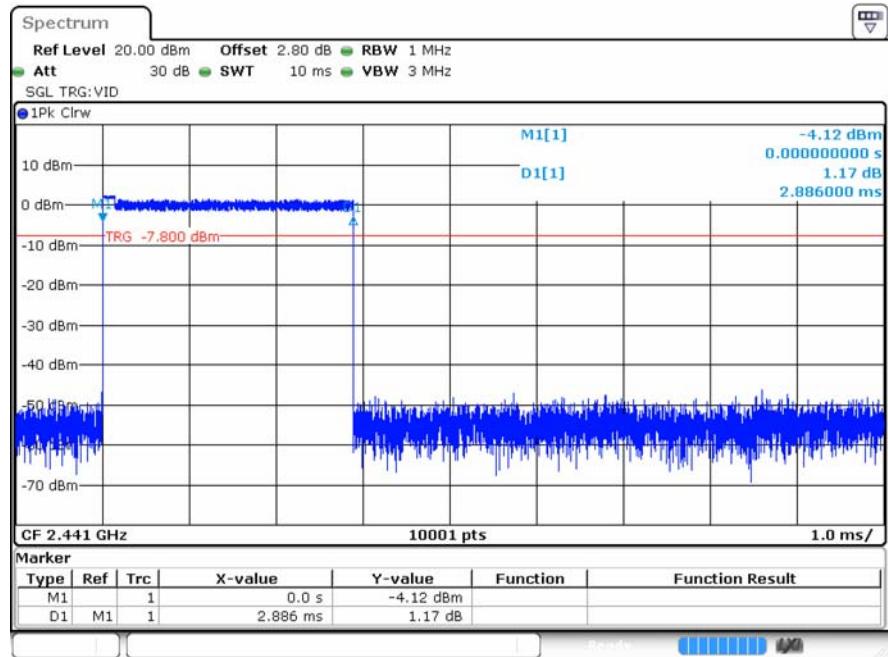
### 6.1 Test Result

| Mode          | Packet | Channel | Burst Width<br>[ms/hop/ch] | Total<br>Hops[hop*ch] | Dwell Time[ms] | Limit [s] | Verdict |
|---------------|--------|---------|----------------------------|-----------------------|----------------|-----------|---------|
| GFSK          | DH5    | MCH     | 2.893                      | 75                    | 216.975        | 0.4       | Pass    |
| $\pi/4$ DQPSK | 2DH5   | MCH     | 2.886                      | 76                    | 219.336        | 0.4       | Pass    |

## 6.2 Test Graphs



$\pi/4$ DQPSK  
\_2DH5/MCH

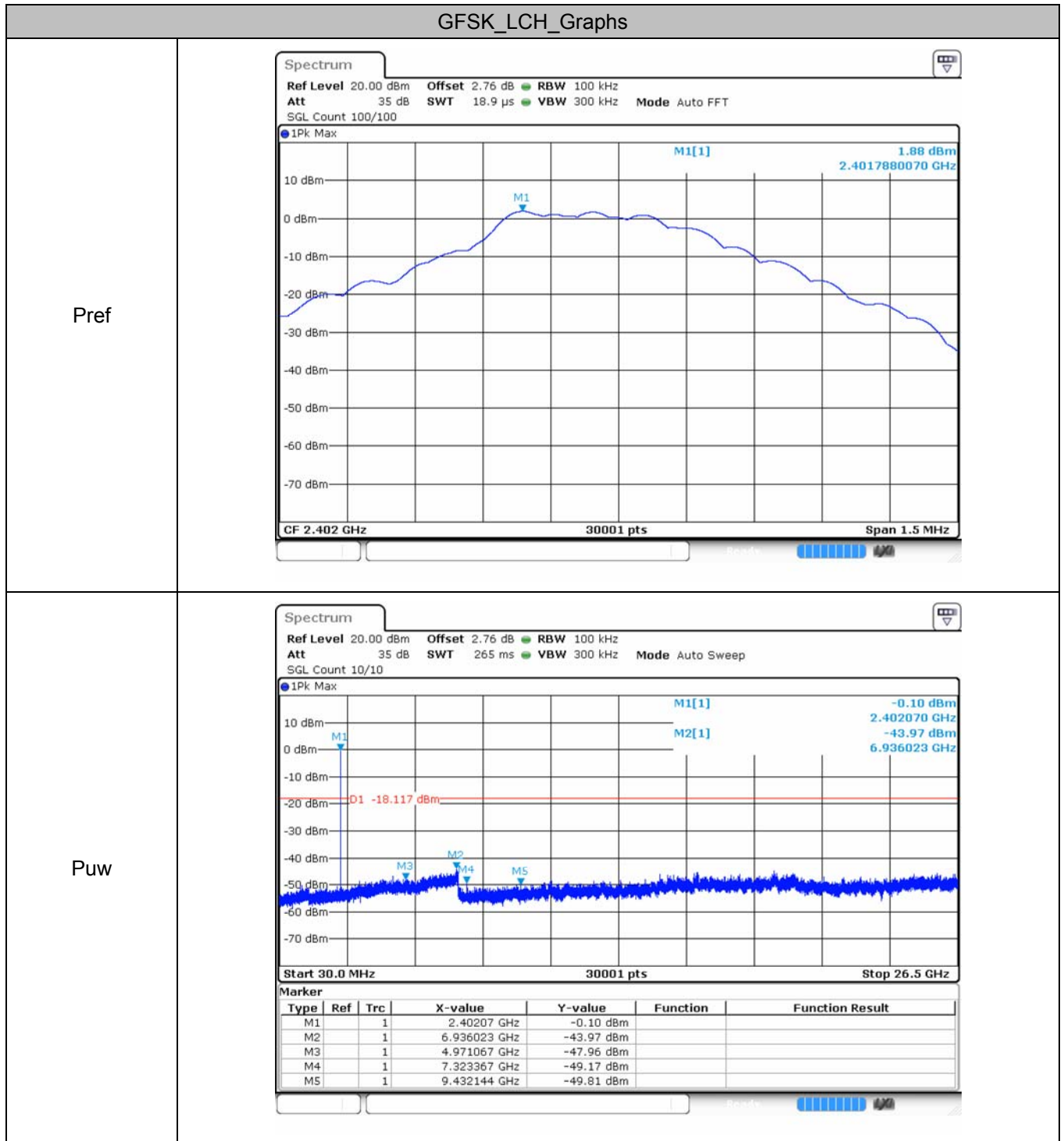


## 7 RF Conducted Spurious Emissions

### 7.1 Test Result

| Mode          | Channel | Max. Level [dBc] | Limit [dBc] | Verdict |
|---------------|---------|------------------|-------------|---------|
| GFSK          | LCH     | -45.84           | -20         | Pass    |
|               | MCH     | -45.38           | -20         | Pass    |
|               | HCH     | -45.28           | -20         | Pass    |
| $\pi/4$ DQPSK | LCH     | -45.23           | -20         | Pass    |
|               | MCH     | -45.9            | -20         | Pass    |
|               | HCH     | -45.19           | -20         | Pass    |

## 7.2 Test Graphs

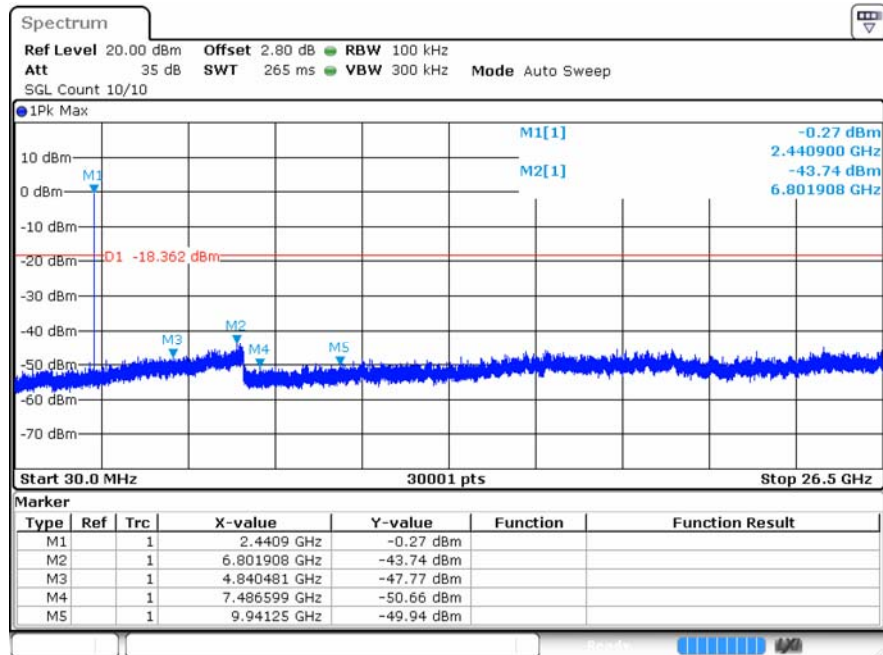


## GFSK\_MCH\_Graphs

Pref

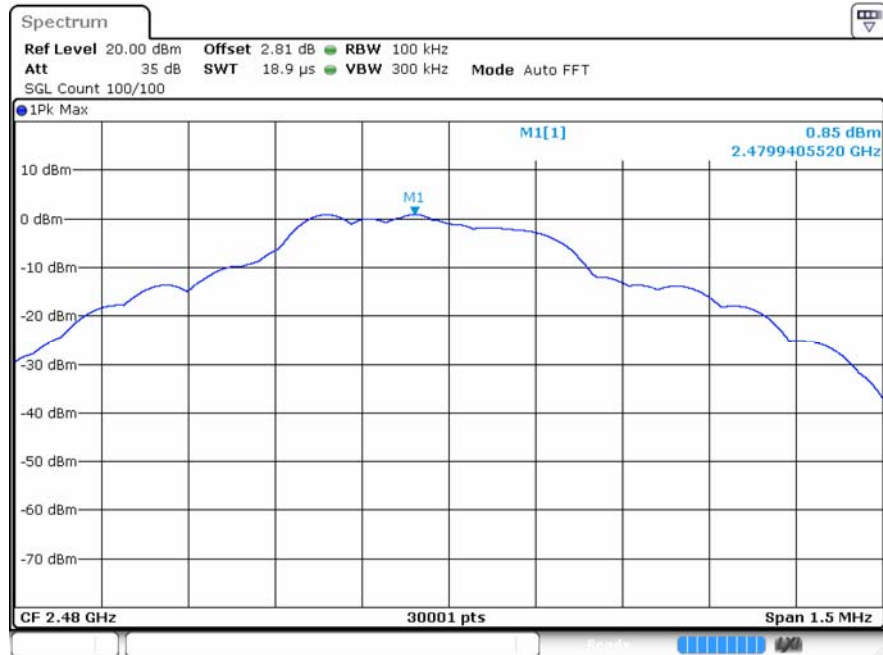


Puw

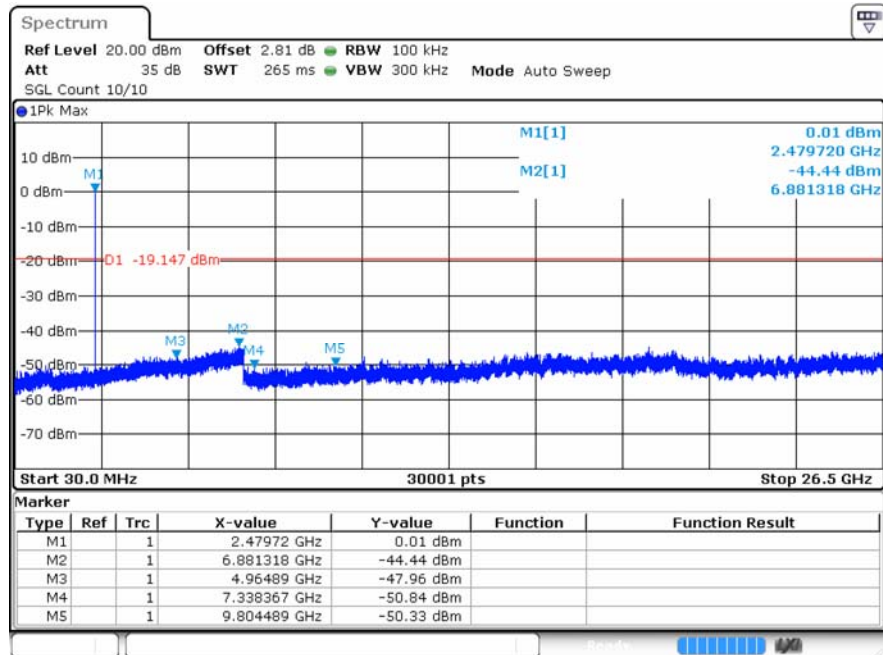


## GFSK\_HCH\_Graphs

Pref

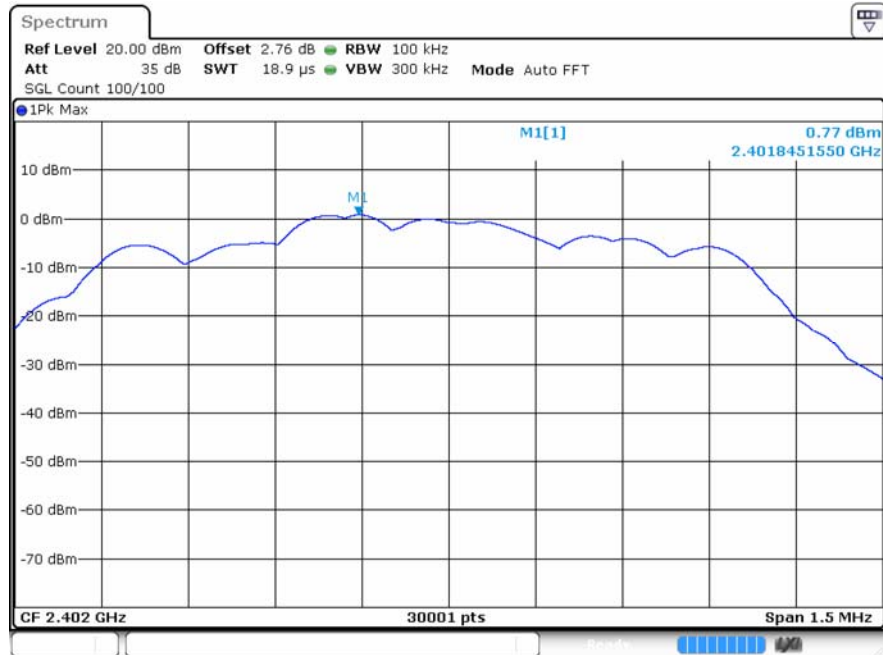


Puw

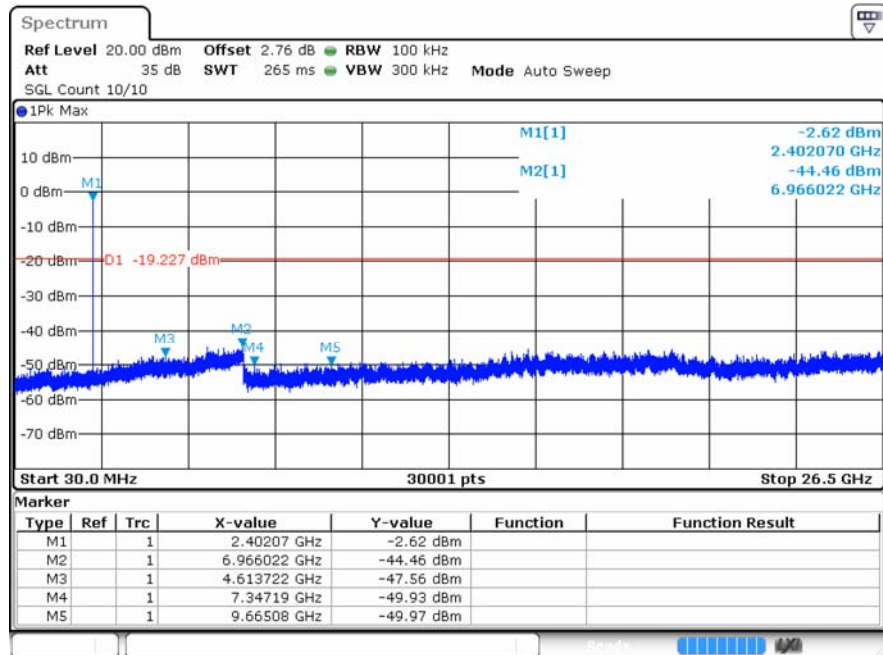


# $\pi/4$ DQPSK\_LCH\_Graphs

Pref



Puw

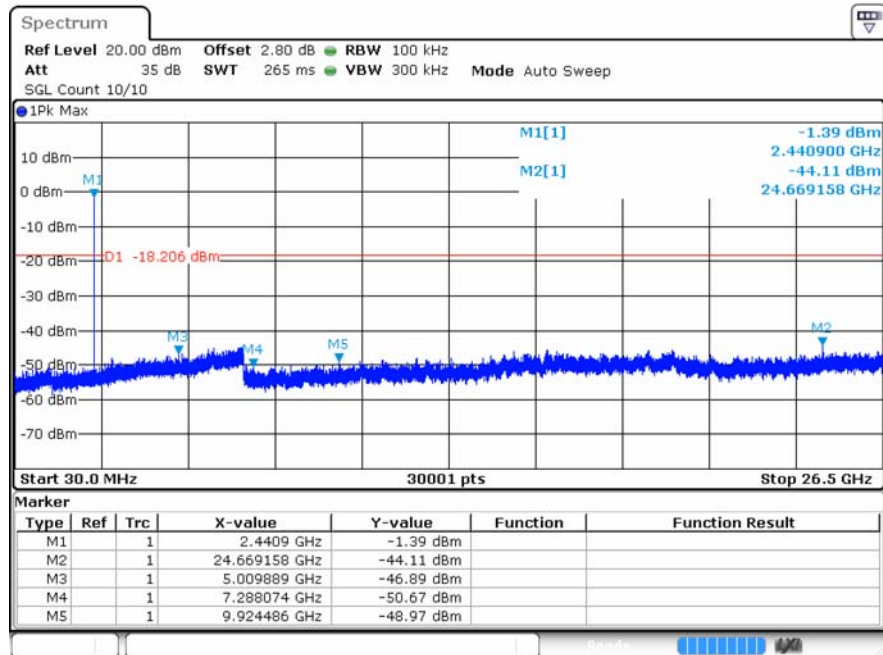


# $\pi/4$ DQPSK\_MCH\_Graphs

Pref



Puw

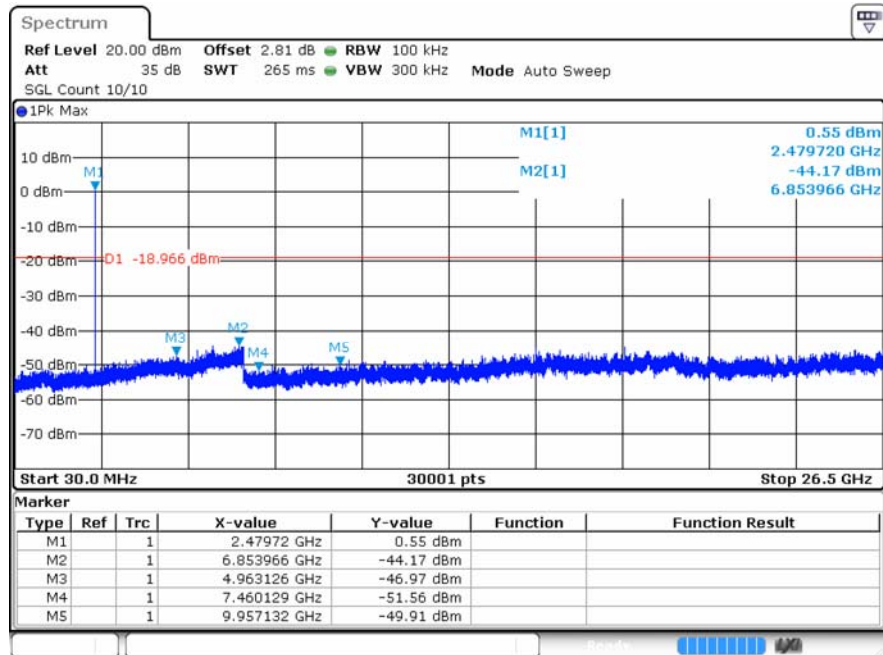


### $\pi/4$ DQPSK\_HCH\_Graphs

Pref



Puw

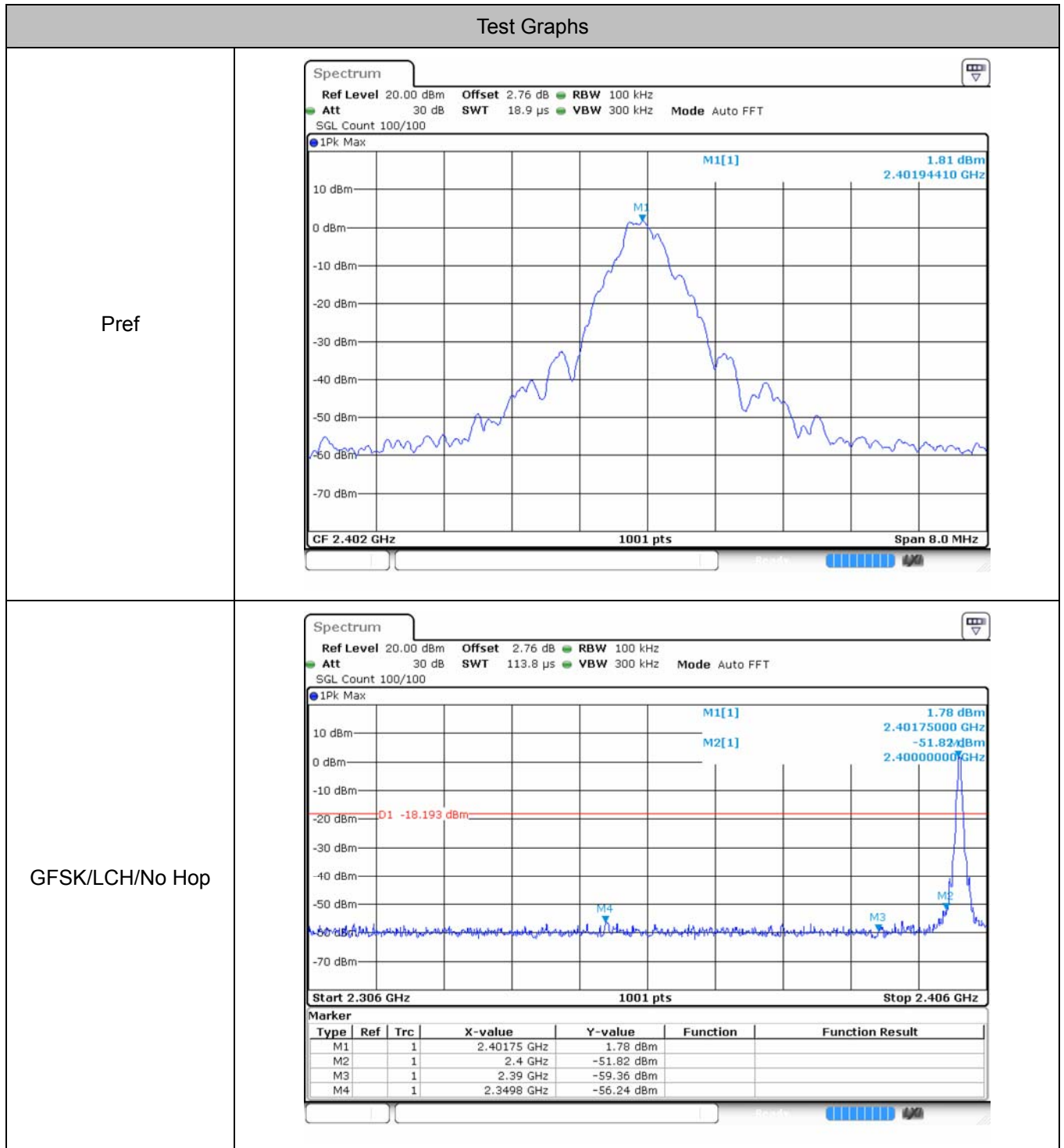


## 8 Band-edge for RF Conducted Emissions

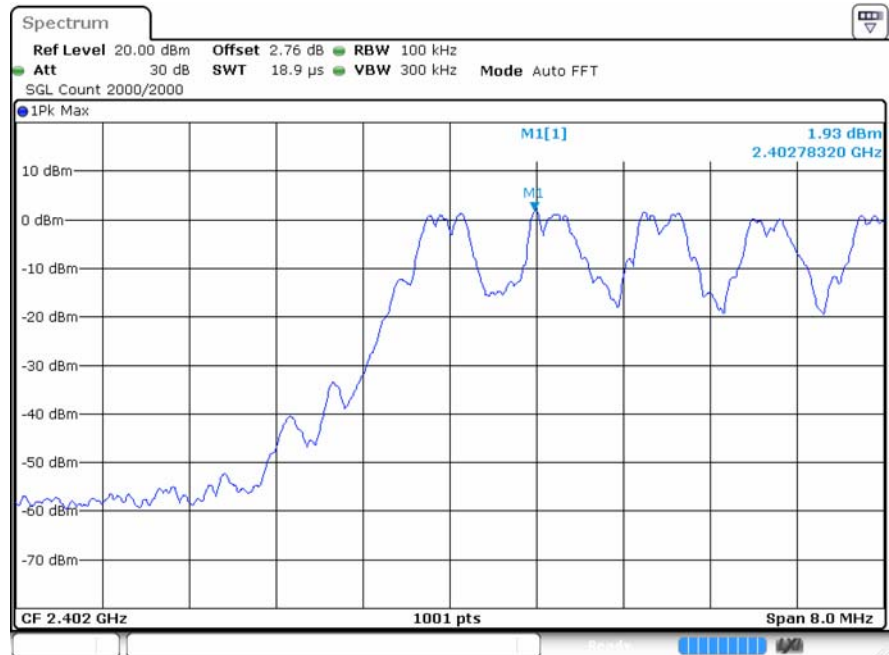
### 8.1 Test Result

| Mode          | Channel | Carrier Frequency [MHz] | Frequency Hopping | Max Spurious Level [dBc] | Limit [dBc] | Verdict |
|---------------|---------|-------------------------|-------------------|--------------------------|-------------|---------|
| GFSK          | LCH     | 2402                    | Off               | -58.05                   | -20         | Pass    |
|               |         |                         | On                | -55.98                   | -20         | Pass    |
|               | HCH     | 2480                    | Off               | -56.94                   | -20         | Pass    |
|               |         |                         | On                | -55.22                   | -20         | Pass    |
| $\pi/4$ DQPSK | LCH     | 2402                    | Off               | -57.78                   | -20         | Pass    |
|               |         |                         | On                | -55.51                   | -20         | Pass    |
|               | HCH     | 2480                    | Off               | -57.55                   | -20         | Pass    |
|               |         |                         | On                | -54.91                   | -20         | Pass    |

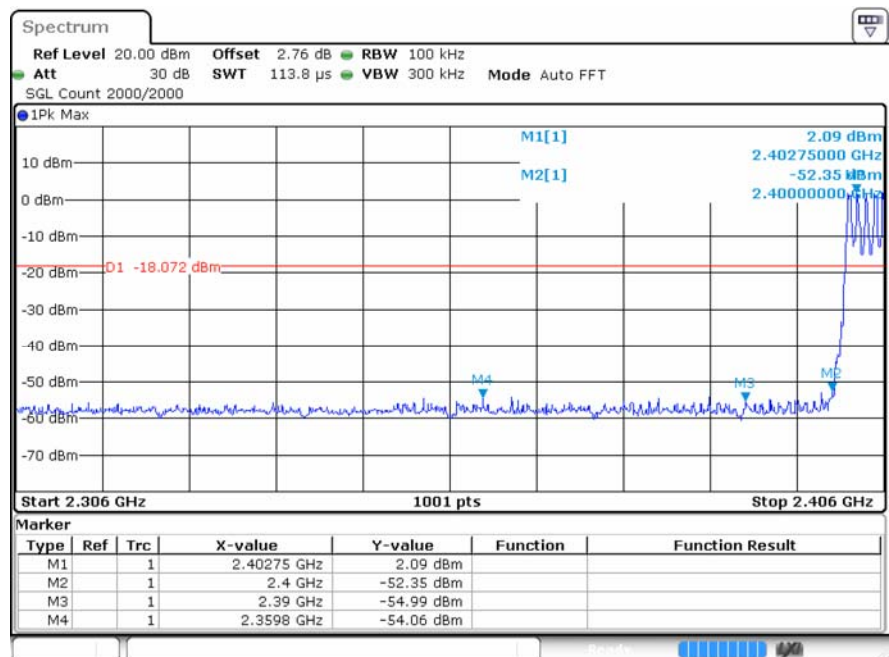
## 8.2 Test Graphs



Ref



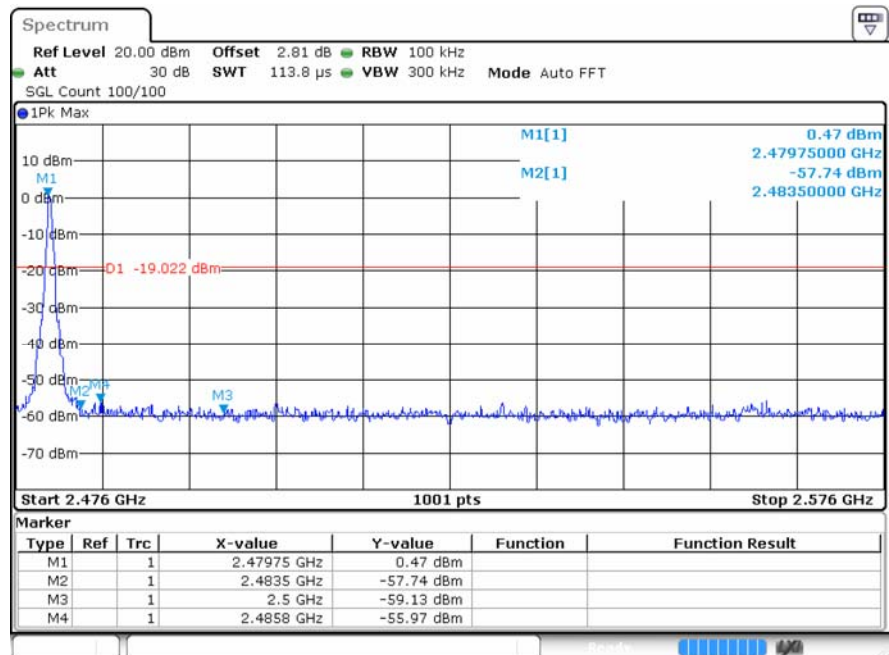
GFSK/LCH/Hop



Ref



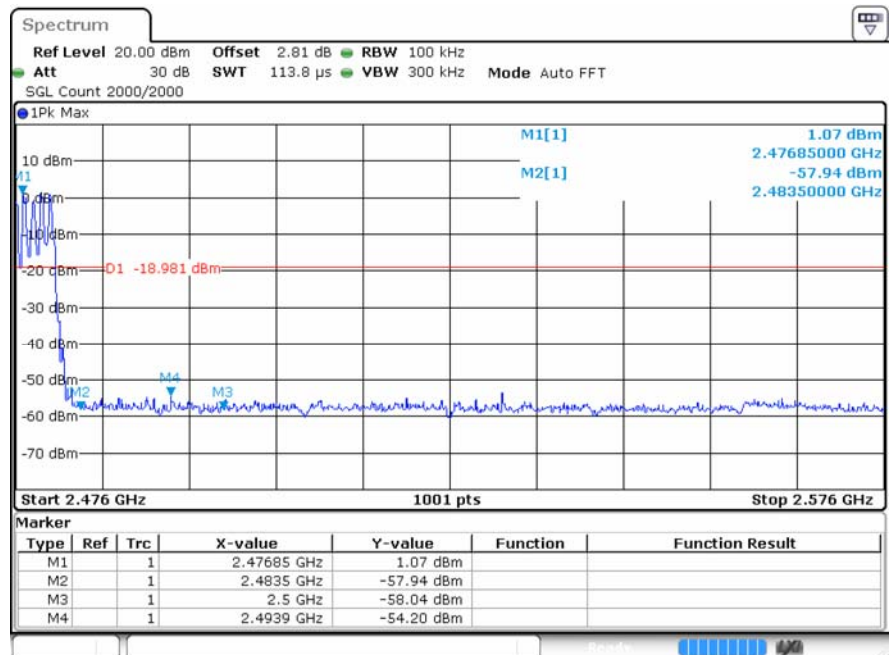
GFSK/HCH/No Hop



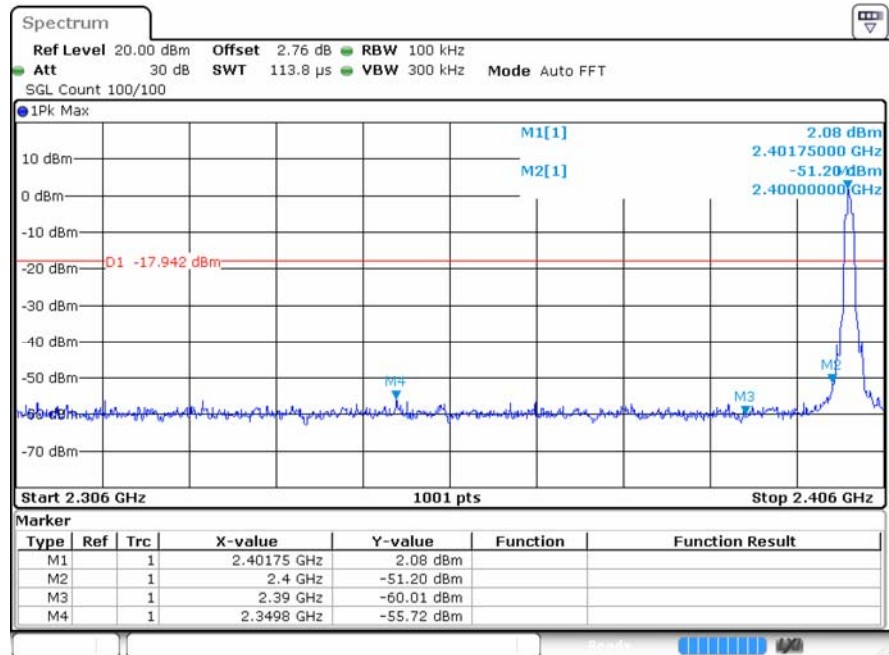
Ref.



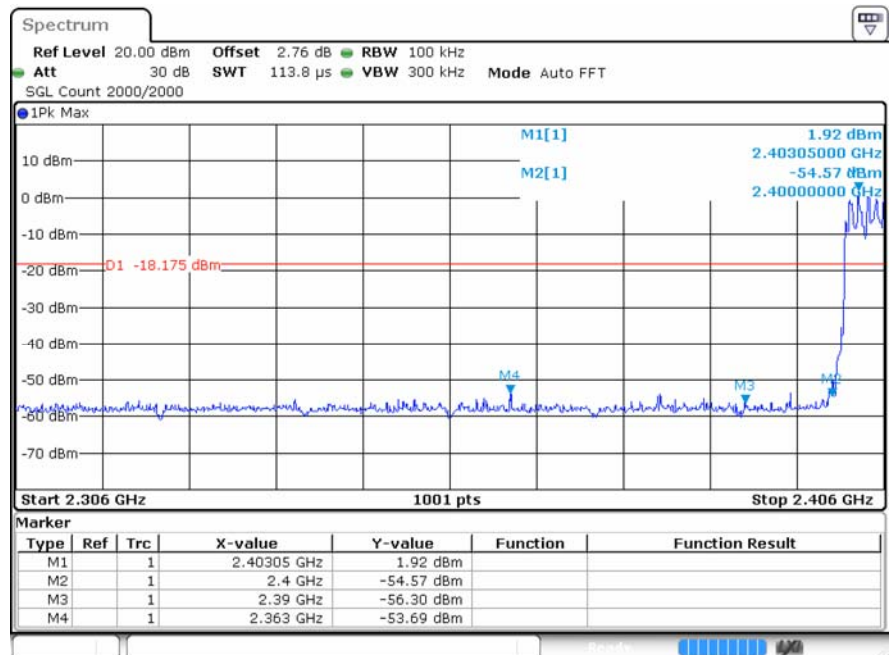
GFSK/HCH/Hop



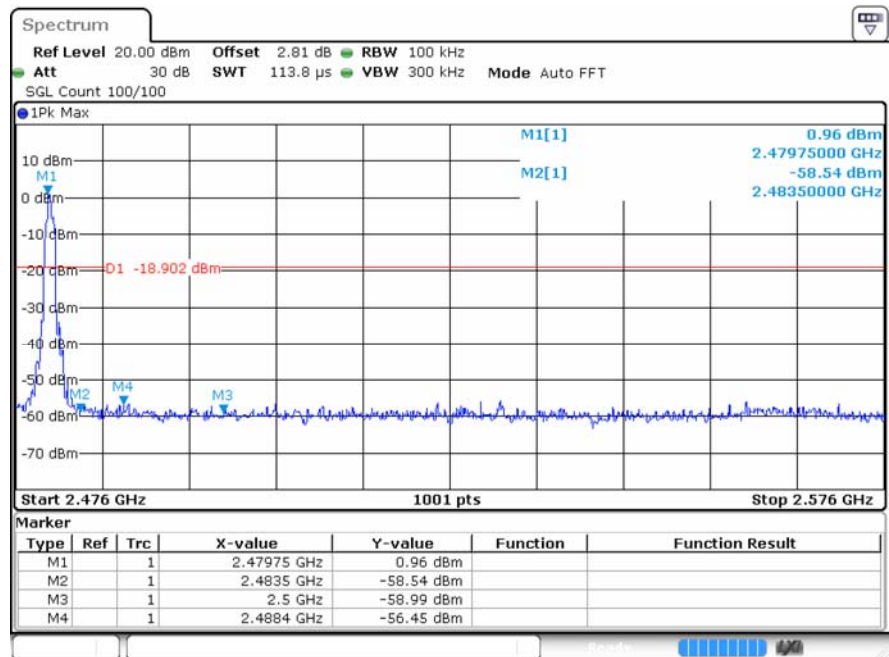
Ref


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


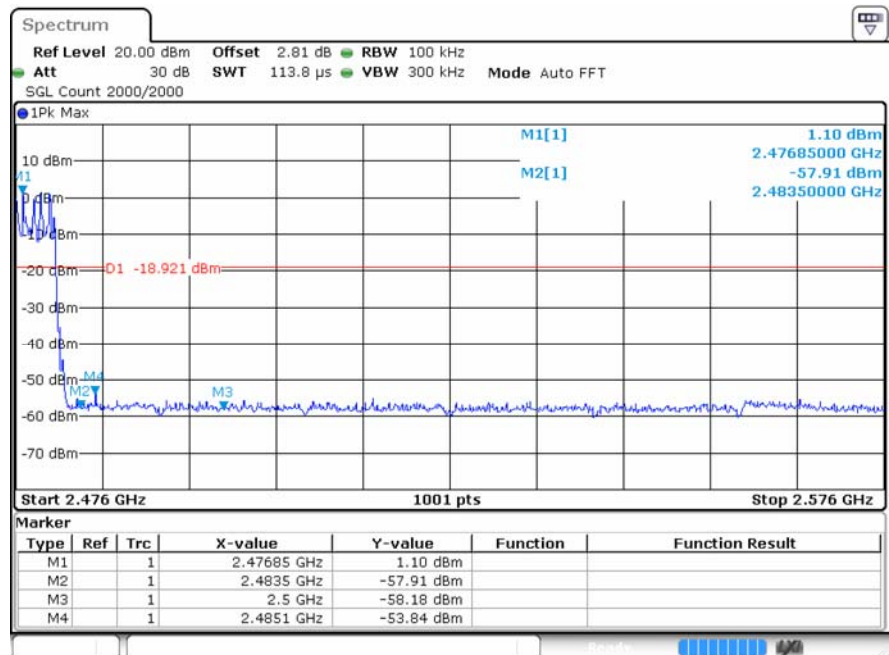
Ref


 $\pi/4$ DQPSK/LCH/Hop


Ref


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


Ref


 $\pi/4$ DQPSK/HCH/Hop


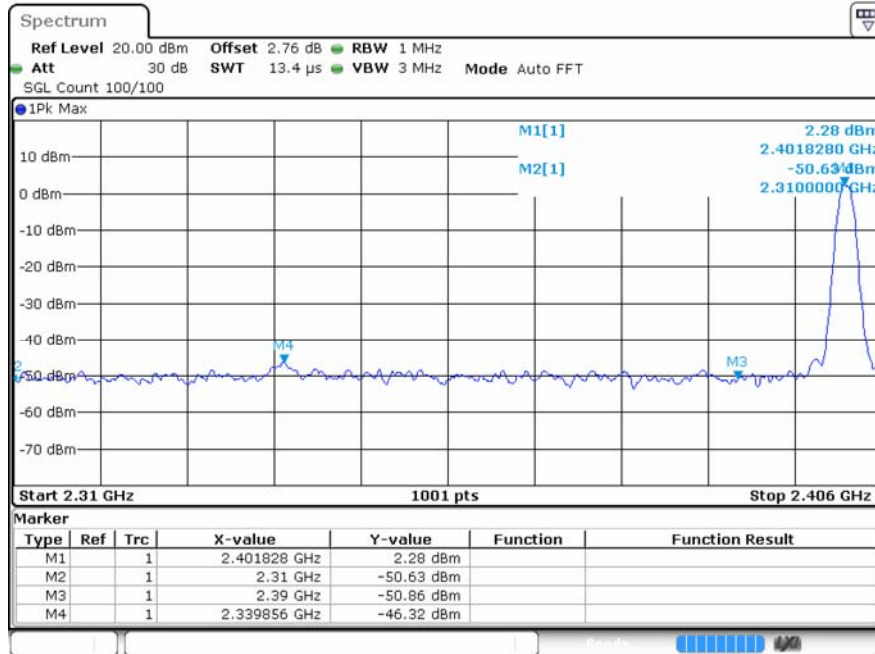
## 9 Restrict-band band-edge measurements

### 9.1 Test Result

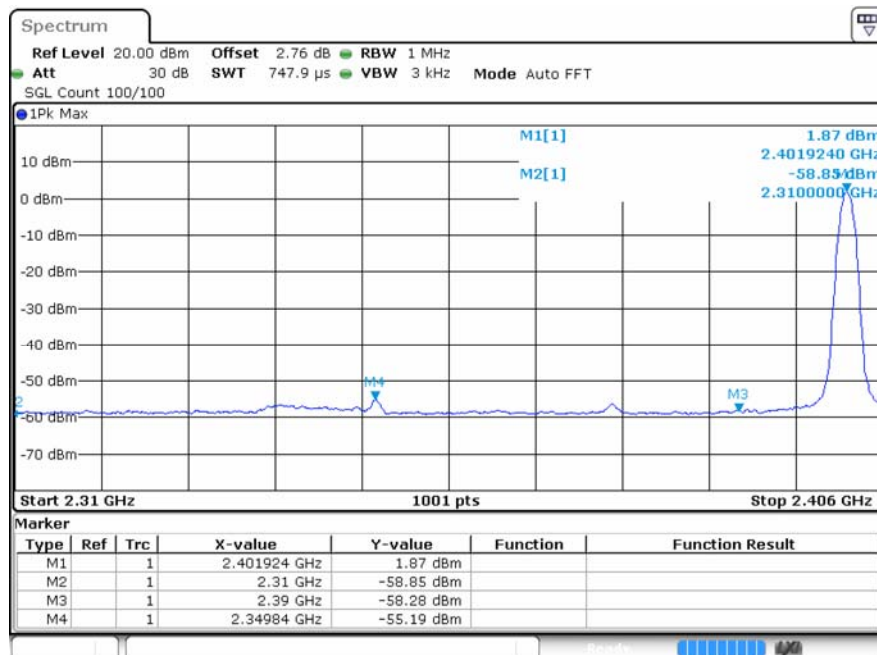
| Test Mode     | Hopping | Freq.    | Power [dBm] | Gain | E [dBuV/m] | Detector | Limit [dBuV/m] | Verdict |
|---------------|---------|----------|-------------|------|------------|----------|----------------|---------|
| GFSK          | Off     | 2310.0   | -50.63      | 2    | 46.63      | PEAK     | 74             | Pass    |
|               | Off     | 2310.0   | -58.85      | 2    | 38.41      | AV       | 54             | Pass    |
|               | Off     | 2339.856 | -46.31      | 2    | 50.95      | PEAK     | 74             | Pass    |
|               | Off     | 2349.84  | -55.19      | 2    | 42.07      | AV       | 54             | Pass    |
|               | Off     | 2390.0   | -50.85      | 2    | 46.41      | PEAK     | 74             | Pass    |
|               | Off     | 2390.0   | -58.27      | 2    | 38.99      | AV       | 54             | Pass    |
|               | Off     | 2483.5   | -46.77      | 2    | 50.49      | PEAK     | 74             | Pass    |
|               | Off     | 2483.5   | -55.85      | 2    | 41.41      | AV       | 54             | Pass    |
|               | Off     | 2483.8   | -46         | 2    | 51.26      | PEAK     | 74             | Pass    |
|               | Off     | 2483.536 | -55.84      | 2    | 41.42      | AV       | 54             | Pass    |
|               | Off     | 2500.0   | -50.97      | 2    | 46.29      | PEAK     | 74             | Pass    |
|               | Off     | 2500.0   | -58.14      | 2    | 39.12      | AV       | 54             | Pass    |
| $\pi/4$ DQPSK | Off     | 2310.0   | -50.22      | 2    | 47.04      | PEAK     | 74             | Pass    |
|               | Off     | 2310.0   | -58.55      | 2    | 38.71      | AV       | 54             | Pass    |
|               | Off     | 2338.8   | -46.96      | 2    | 50.3       | PEAK     | 74             | Pass    |
|               | Off     | 2338.992 | -56.38      | 2    | 40.88      | AV       | 54             | Pass    |
|               | Off     | 2390.0   | -51.19      | 2    | 46.07      | PEAK     | 74             | Pass    |
|               | Off     | 2390.0   | -58.35      | 2    | 38.91      | AV       | 54             | Pass    |
|               | Off     | 2483.5   | -45.63      | 2    | 51.63      | PEAK     | 74             | Pass    |
|               | Off     | 2483.5   | -56.31      | 2    | 40.95      | AV       | 54             | Pass    |
|               | Off     | 2483.512 | -45.63      | 2    | 51.63      | PEAK     | 74             | Pass    |
|               | Off     | 2483.512 | -56.31      | 2    | 40.95      | AV       | 54             | Pass    |
|               | Off     | 2500.0   | -49.65      | 2    | 47.61      | PEAK     | 74             | Pass    |
|               | Off     | 2500.0   | -57.82      | 2    | 39.44      | AV       | 54             | Pass    |

## 9.2 Test Graphs

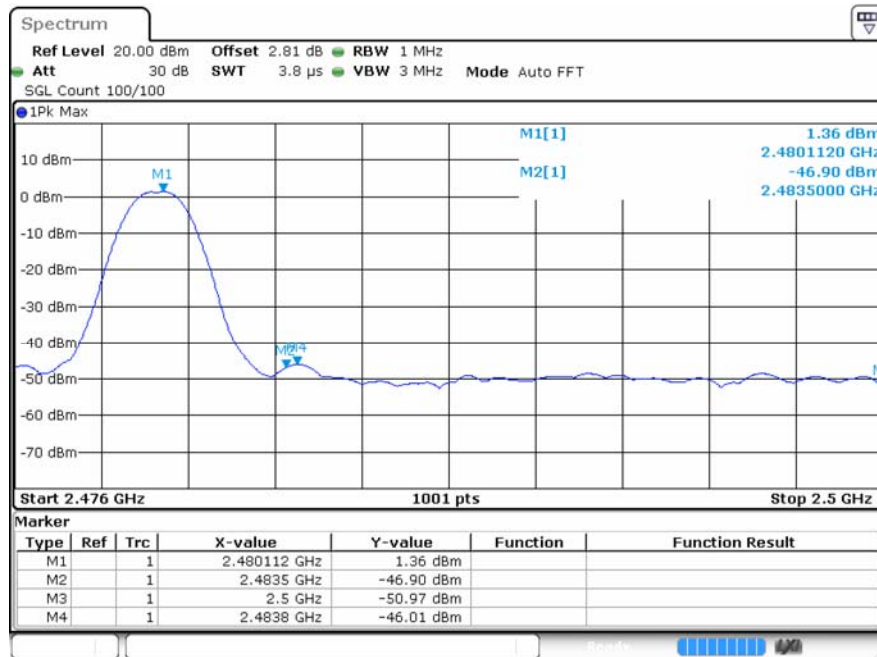
Restrict-band band-edge measurements\_Hopping Off\_ GFSK\_PEAK (Low Channel)



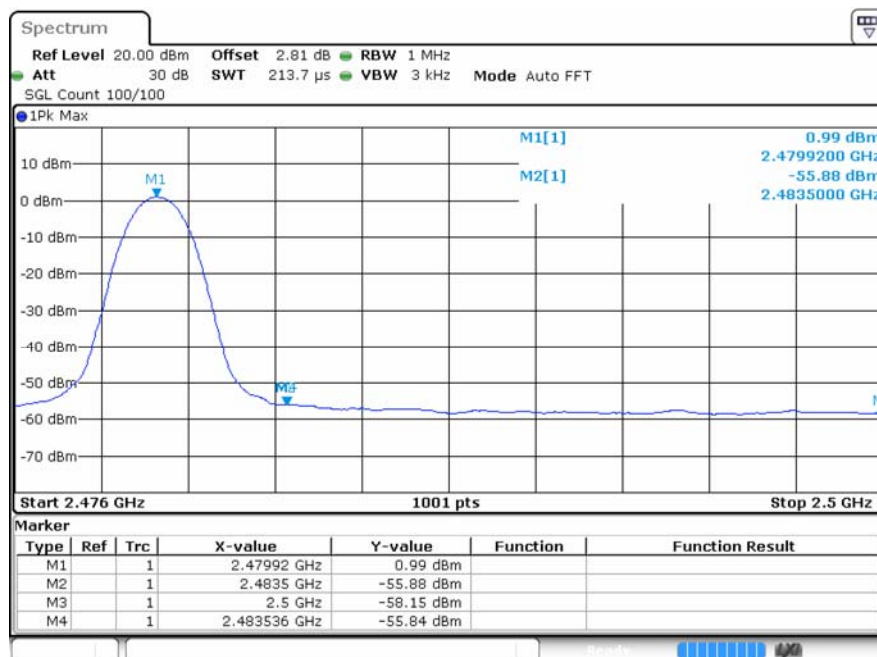
Restrict-band band-edge measurements\_Hopping Off\_ GFSK\_Average (Low Channel)



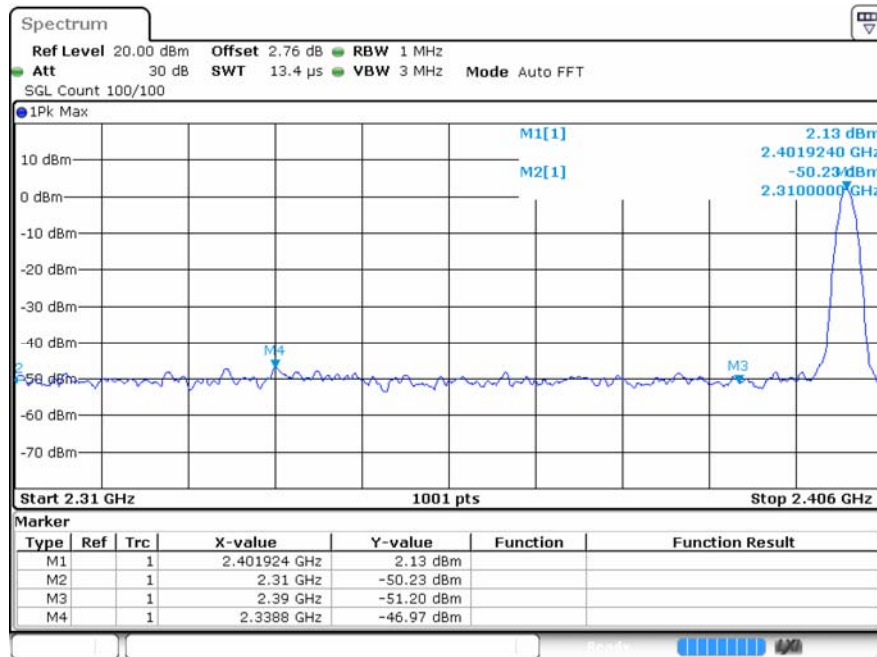
## Restrict-band band-edge measurements\_Hopping Off\_ GFSK\_PEAK (High Channel)



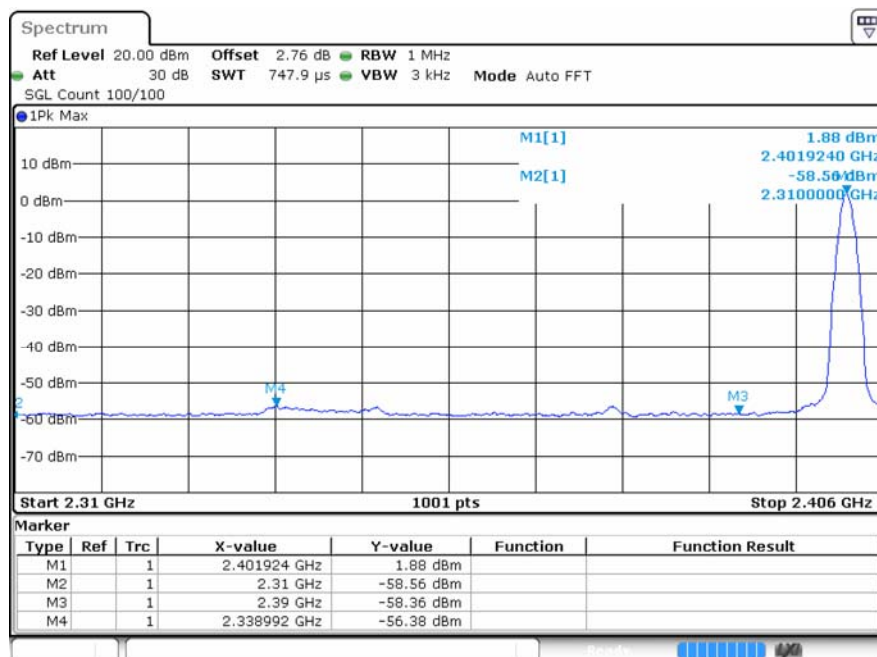
## Restrict-band band-edge measurements\_Hopping Off\_ GFSK\_Average (High Channel)



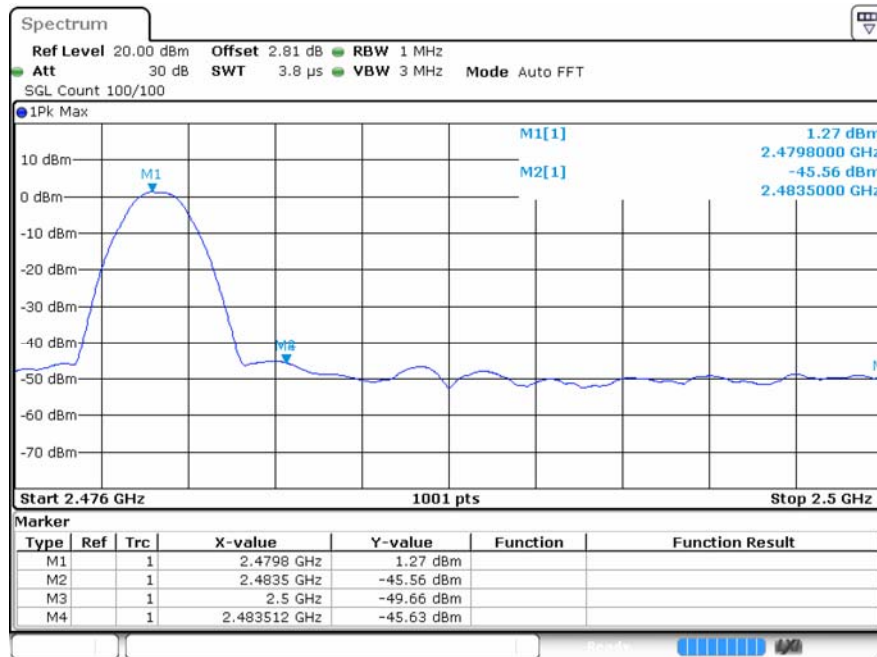
## Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_PEAK (Low Channel)



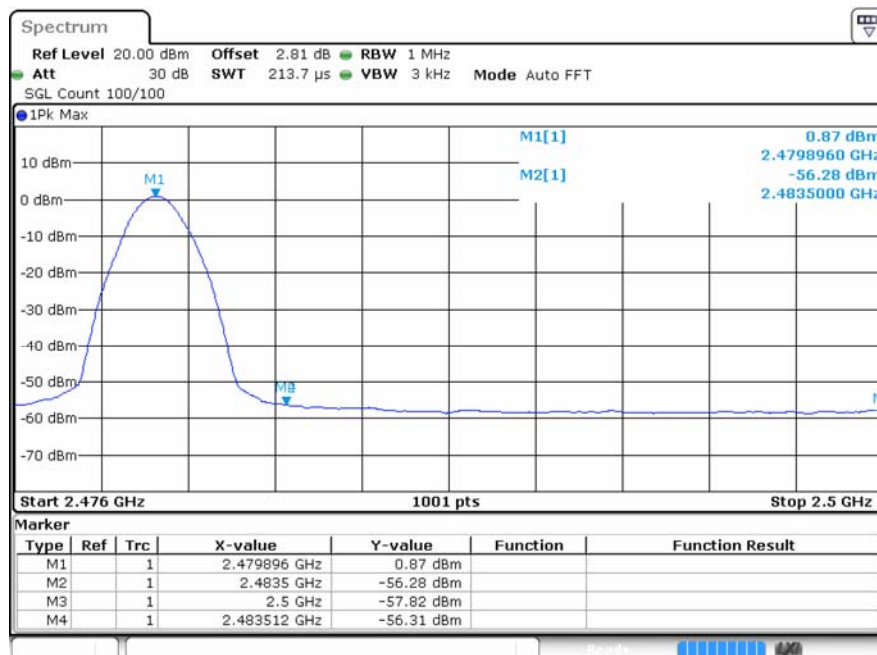
## Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_Average (Low Channel)



## 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---