



## Appendix A

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

Product Name: Wireless Earphones

Trade Mark: N/A

Test Model: C63

#### Environmental Conditions

|                    |             |
|--------------------|-------------|
| Temperature:       | 24.8℃       |
| Relative Humidity: | 52.3%       |
| ATM Pressure:      | 101Kpa      |
| Test Engineer:     | Emiya lin   |
| Supervised by:     | Simba Haung |



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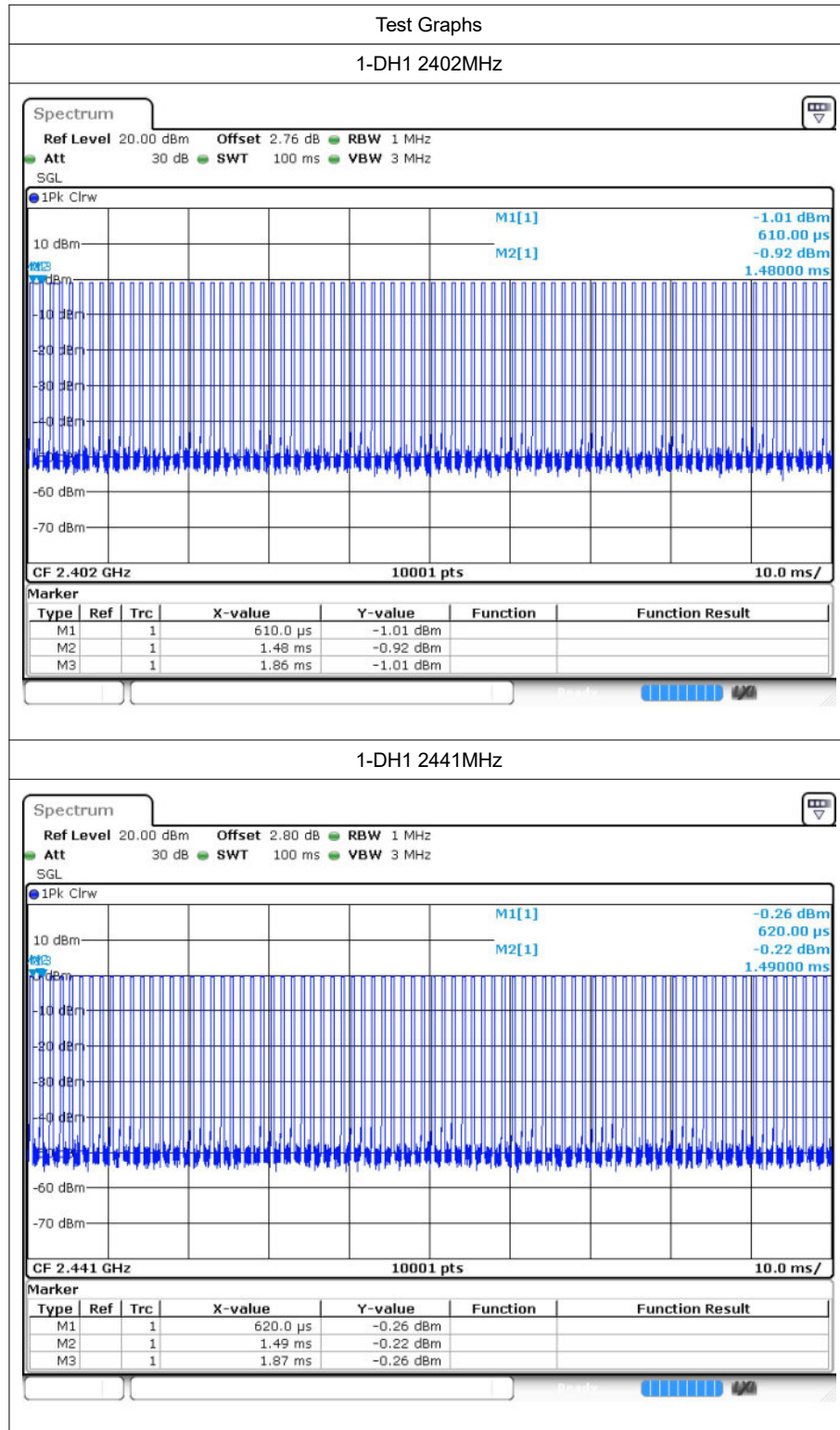
# 1 Duty Cycle

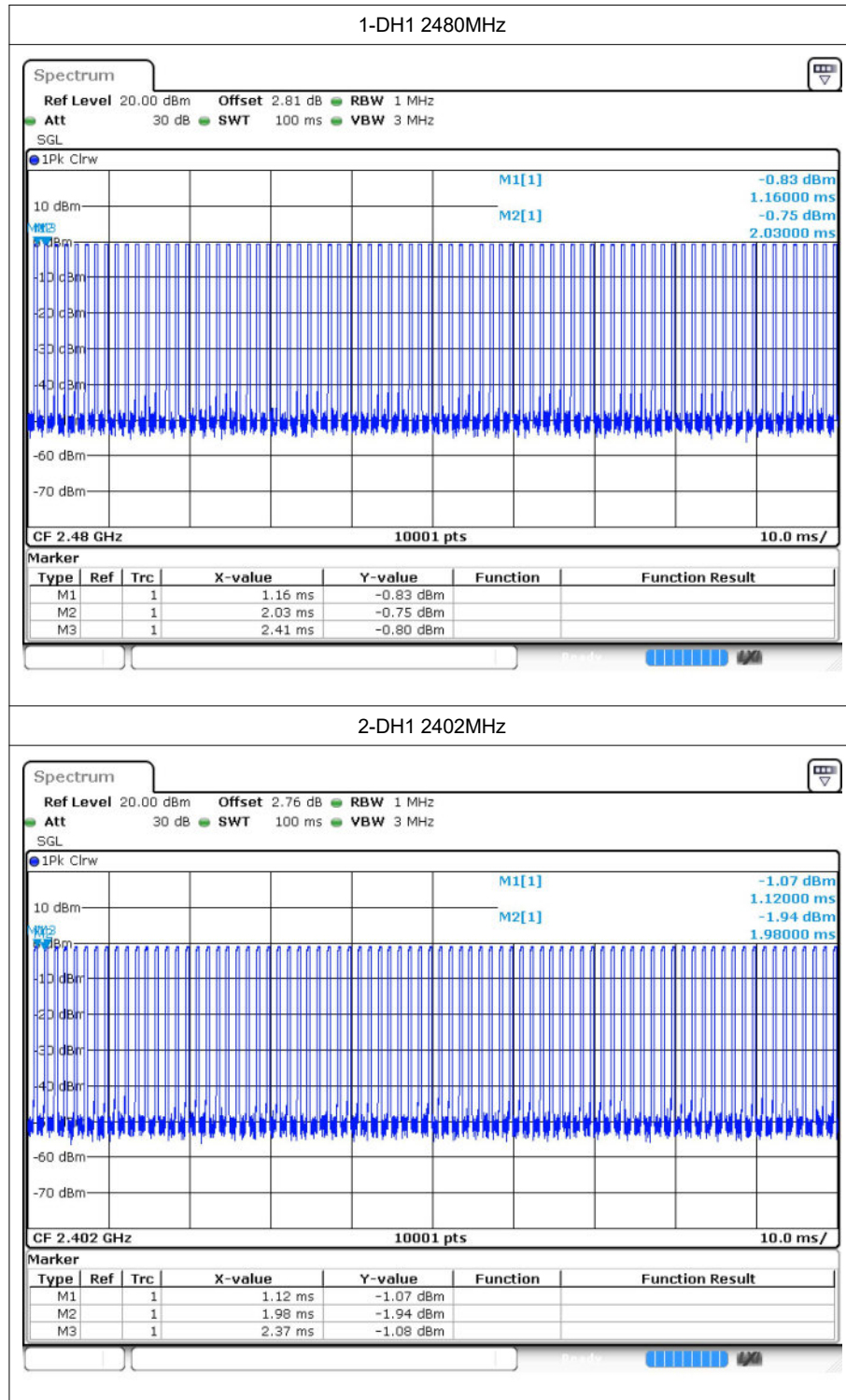
## 1.1 Test Result

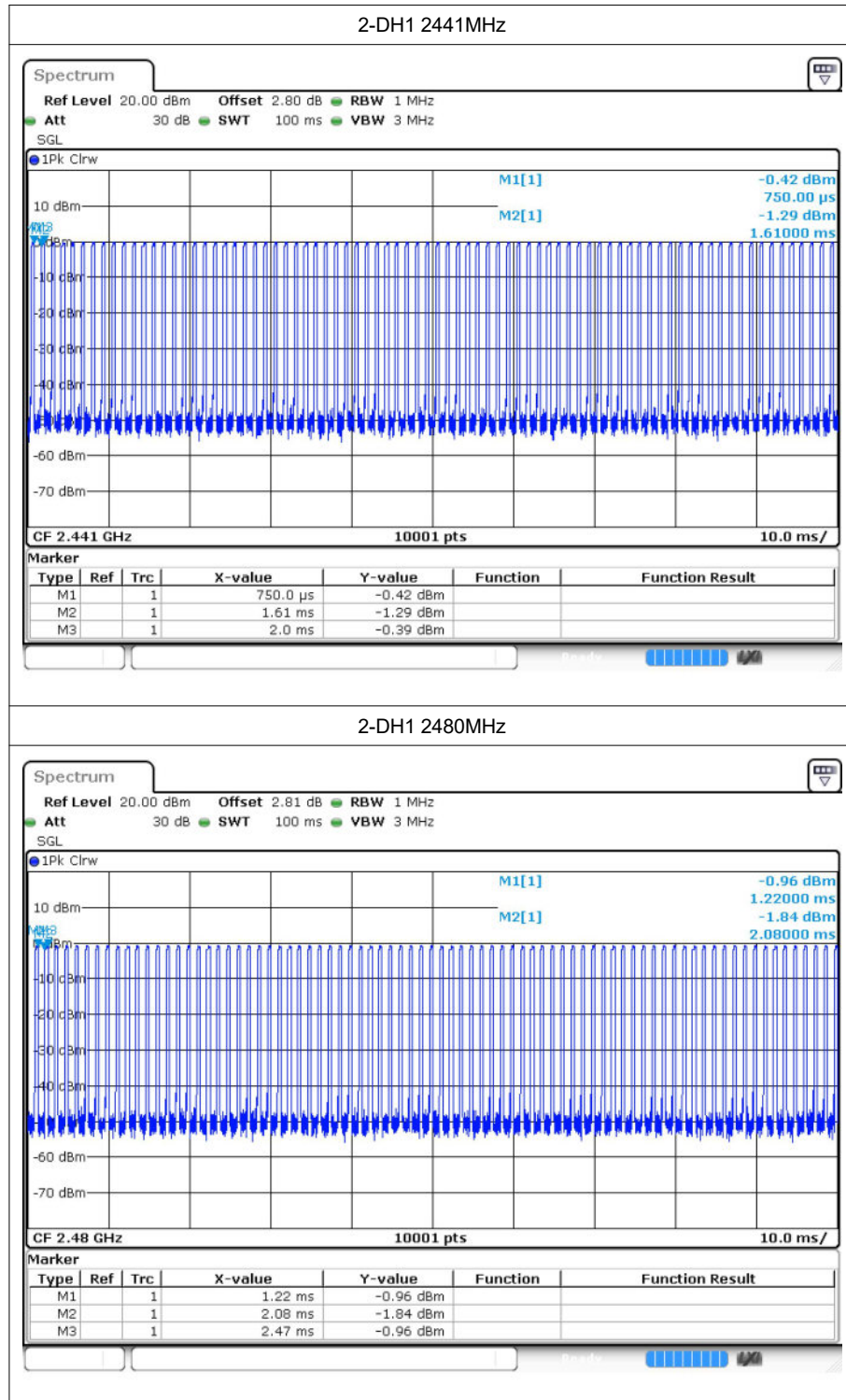
| Mode  | Frequency (MHz) | Duty Cycle (%) | Correction Factor | 1/T (kHz) |
|-------|-----------------|----------------|-------------------|-----------|
| 1-DH1 | 2402            | 31.2           | 5.06              | 2.63      |
| 1-DH1 | 2441            | 31.2           | 5.06              | 2.63      |
| 1-DH1 | 2480            | 31.2           | 5.06              | 2.63      |
| 2-DH1 | 2402            | 32             | 4.95              | 2.56      |
| 2-DH1 | 2441            | 32             | 4.95              | 2.56      |
| 2-DH1 | 2480            | 32             | 4.95              | 2.56      |
| 3-DH1 | 2402            | 32             | 4.95              | 2.56      |
| 3-DH1 | 2441            | 32.01          | 4.95              | 2.56      |
| 3-DH1 | 2480            | 31.9           | 4.96              | 2.56      |

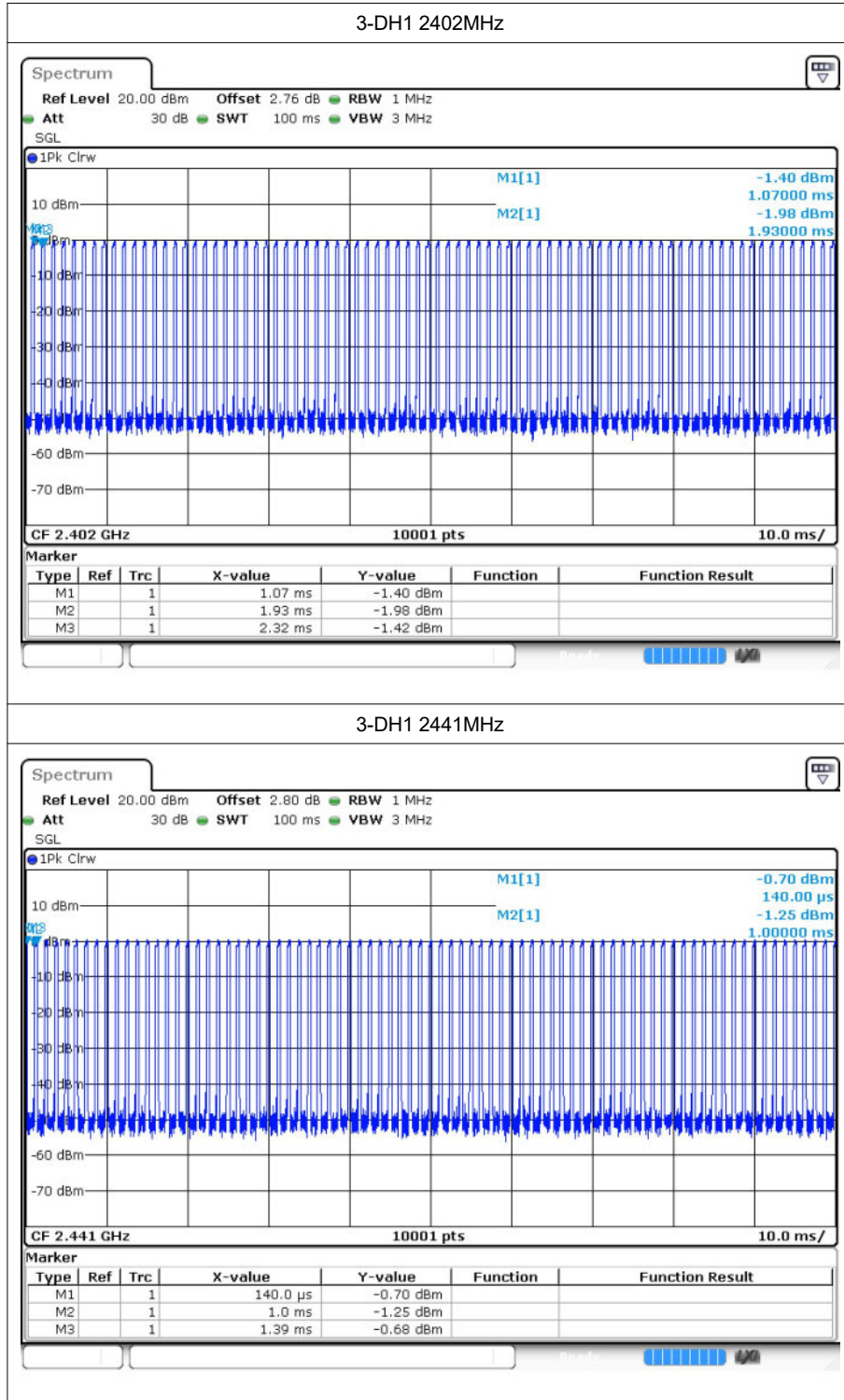
Note: Left and right ear have been tested and the only shows the worst case mode.

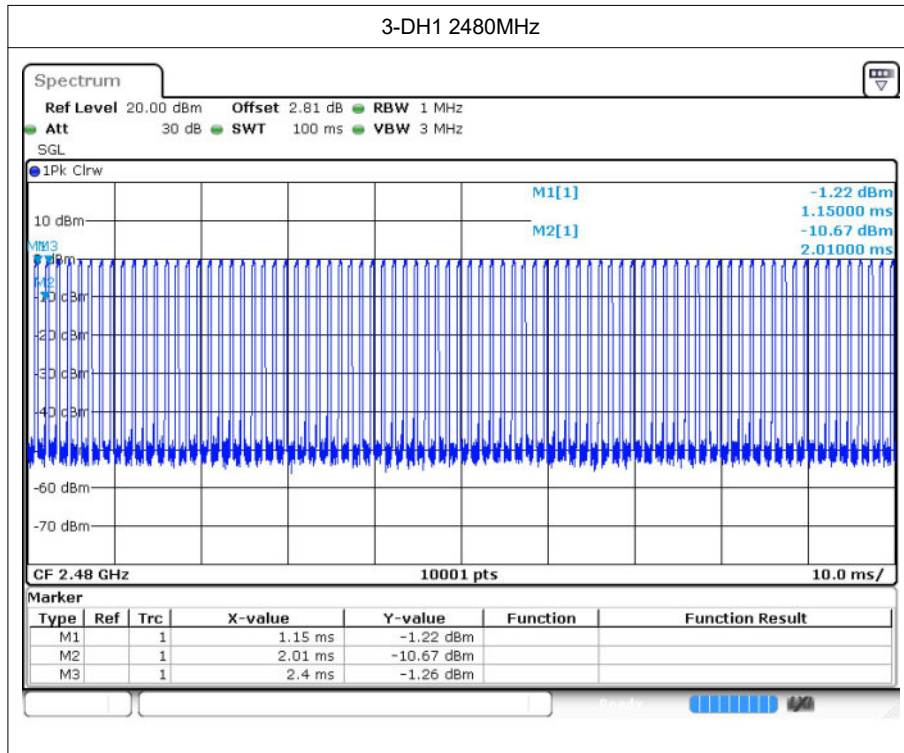
## 1.2 Test Graphs











## 2 Maximum Conducted Peak Output Power

### 2.1 Test Result

Left:

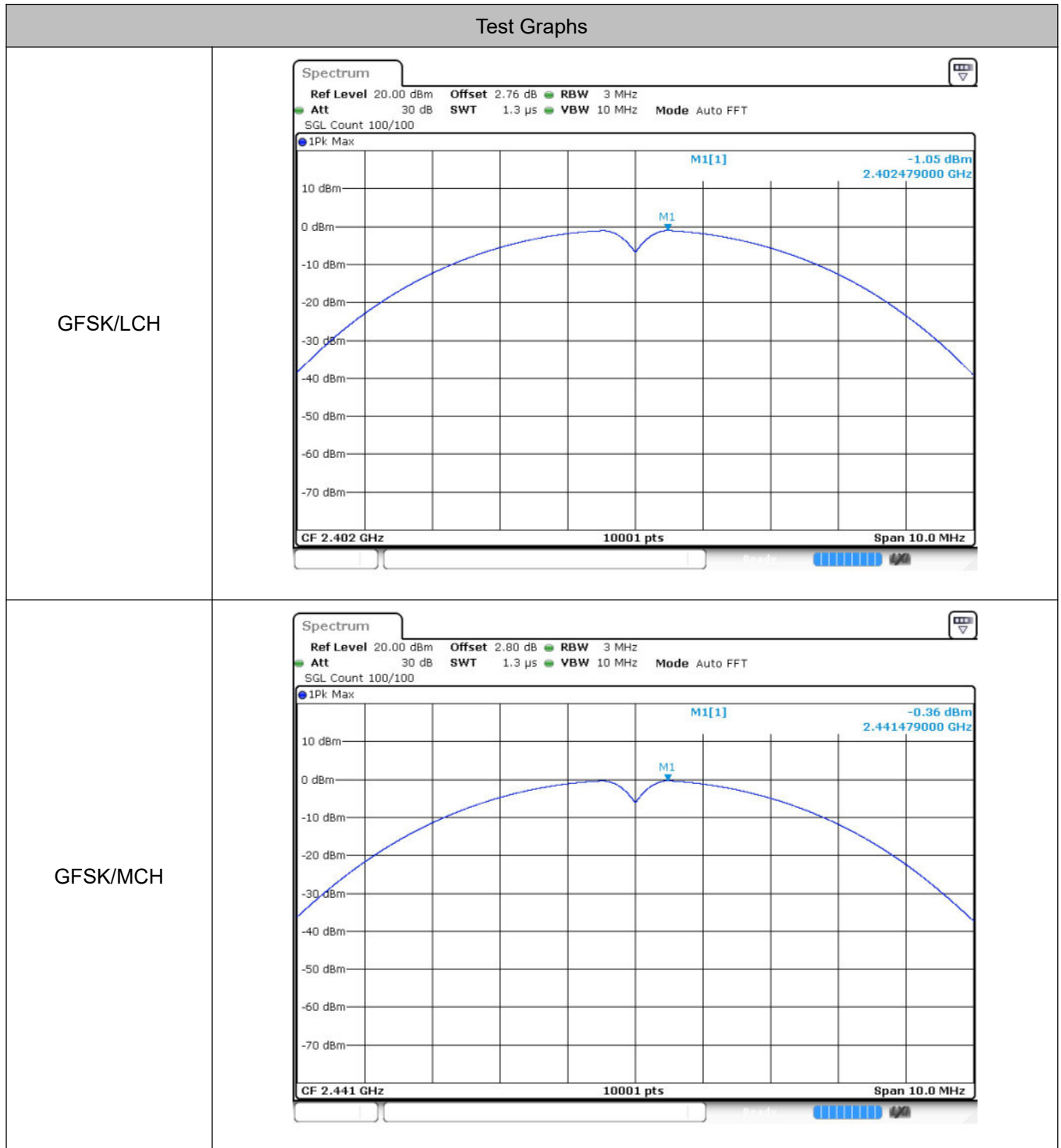
| Mode          | Channel. | Maximum Peak Output Power [dBm] | Limit [dBm] | Verdict |
|---------------|----------|---------------------------------|-------------|---------|
| GFSK          | LCH      | -1.05                           | 21          | Pass    |
|               | MCH      | -0.36                           | 21          | Pass    |
|               | HCH      | -0.92                           | 21          | Pass    |
| $\pi/4$ DQPSK | LCH      | 0.19                            | 21          | Pass    |
|               | MCH      | 0.62                            | 21          | Pass    |
|               | HCH      | -0.26                           | 21          | Pass    |
| 8DPSK         | LCH      | 0.26                            | 21          | Pass    |
|               | MCH      | 0.84                            | 21          | Pass    |
|               | HCH      | -0.15                           | 21          | Pass    |

Right:

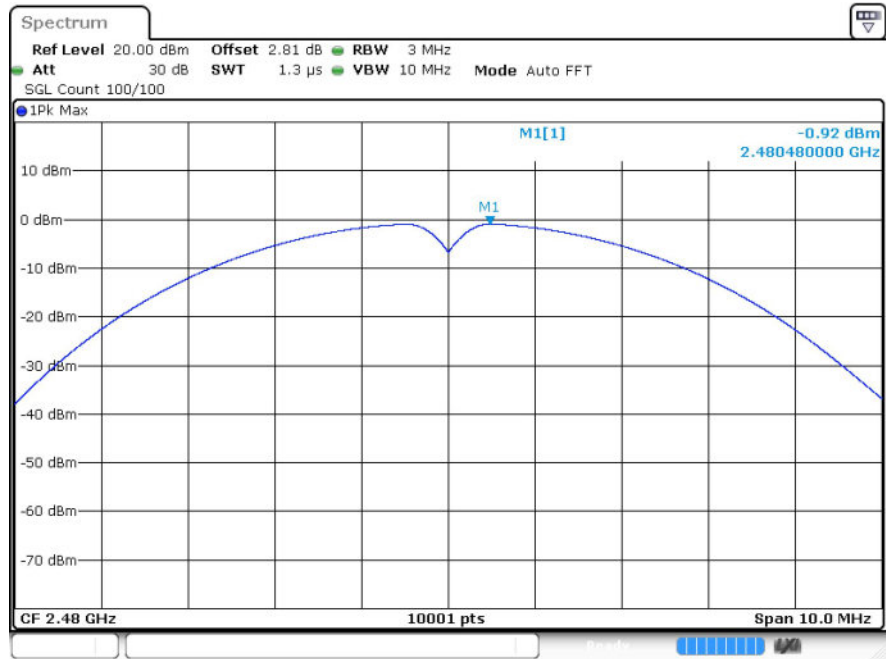
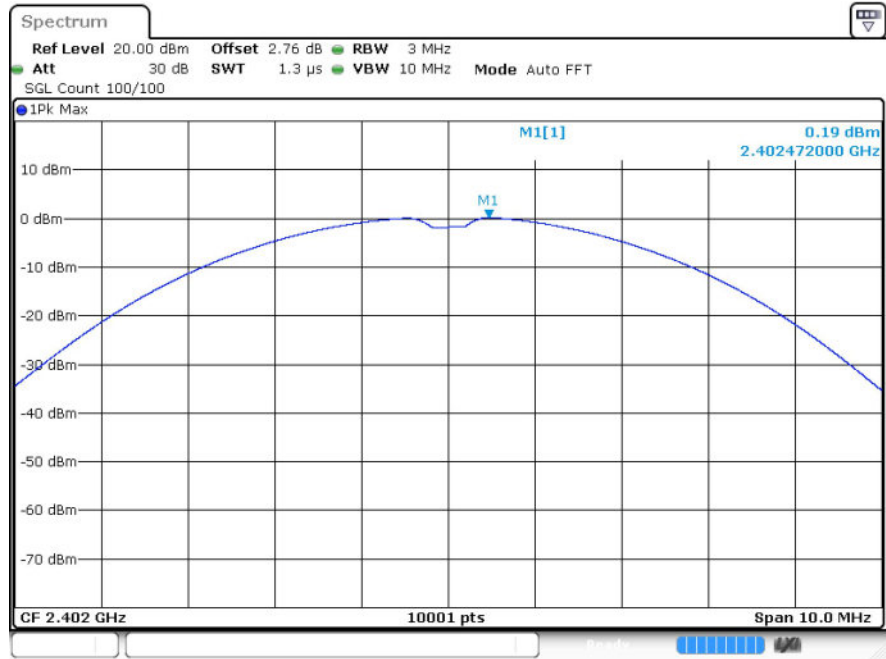
| Mode          | Channel. | Maximum Peak Output Power [dBm] | Limit [dBm] | Verdict |
|---------------|----------|---------------------------------|-------------|---------|
| GFSK          | LCH      | -1.67                           | 21          | Pass    |
|               | MCH      | -1.78                           | 21          | Pass    |
|               | HCH      | -2.18                           | 21          | Pass    |
| $\pi/4$ DQPSK | LCH      | -1.42                           | 21          | Pass    |
|               | MCH      | -1.37                           | 21          | Pass    |
|               | HCH      | -1.48                           | 21          | Pass    |
| 8DPSK         | LCH      | -1.63                           | 21          | Pass    |
|               | MCH      | -1.77                           | 21          | Pass    |
|               | HCH      | -2.28                           | 21          | Pass    |

## 2.2 Test Graphs

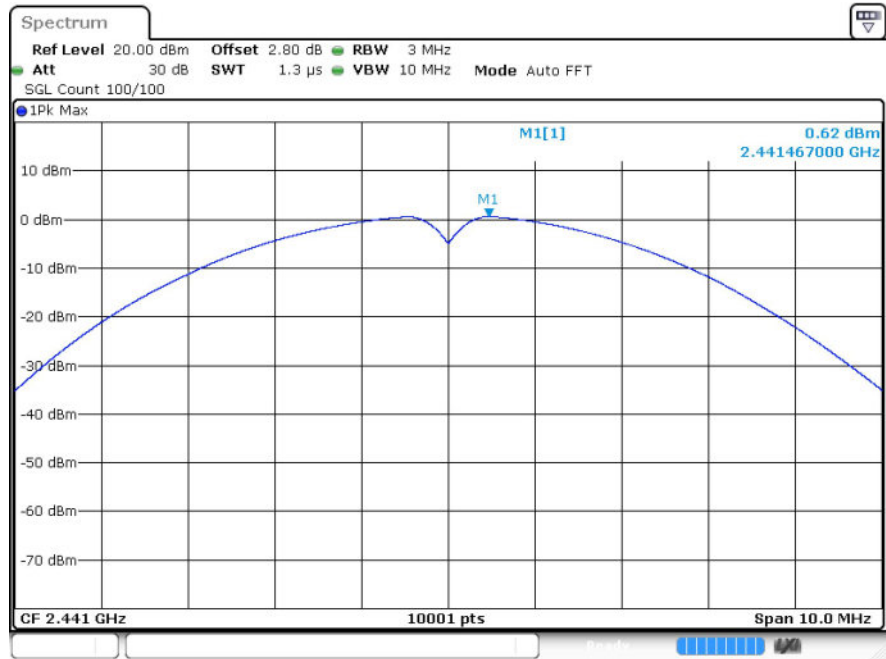
Left:



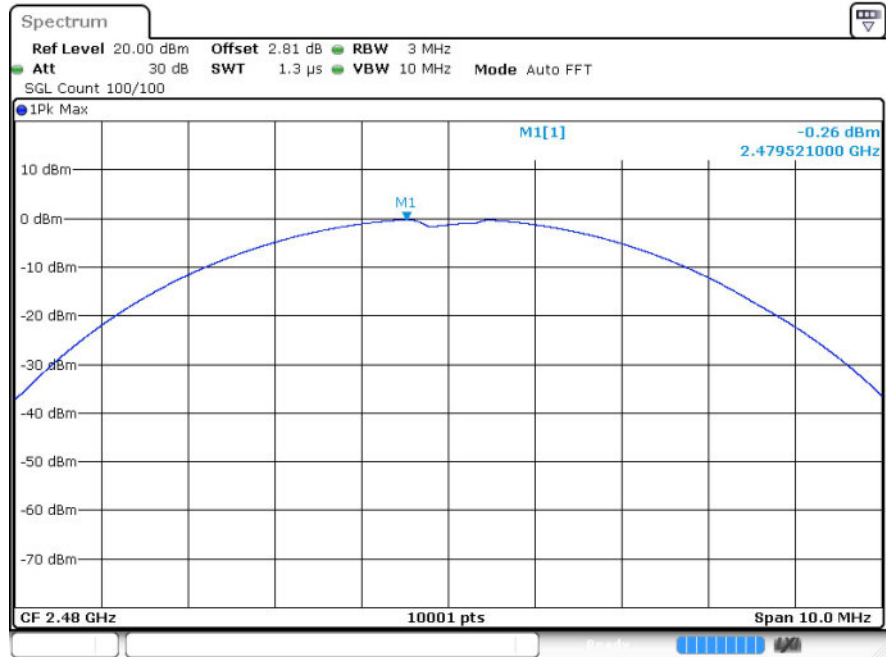
GFSK/HCH


 $\pi/4$ DQPSK/LCH


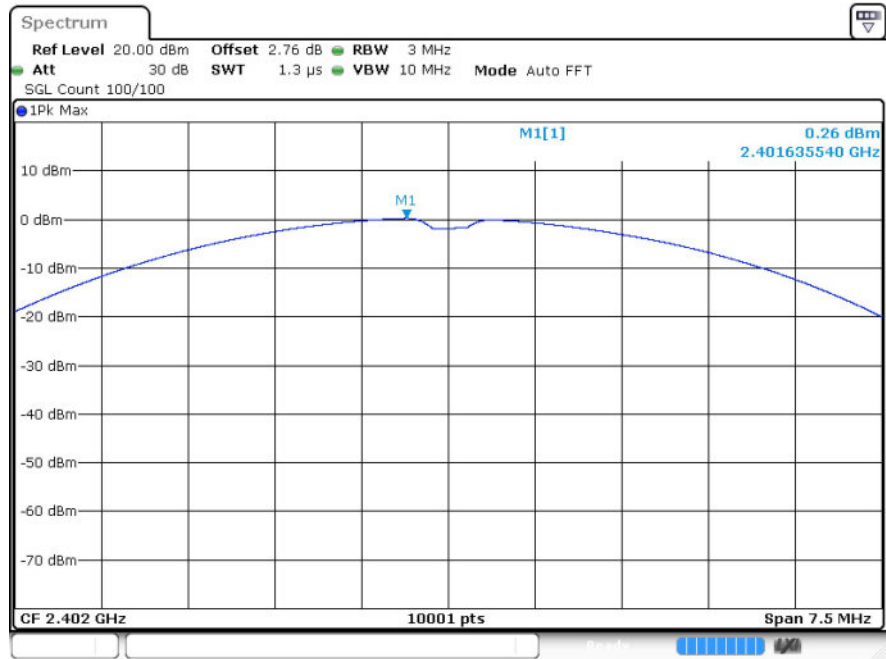
$\pi/4$ DQPSK/MCH



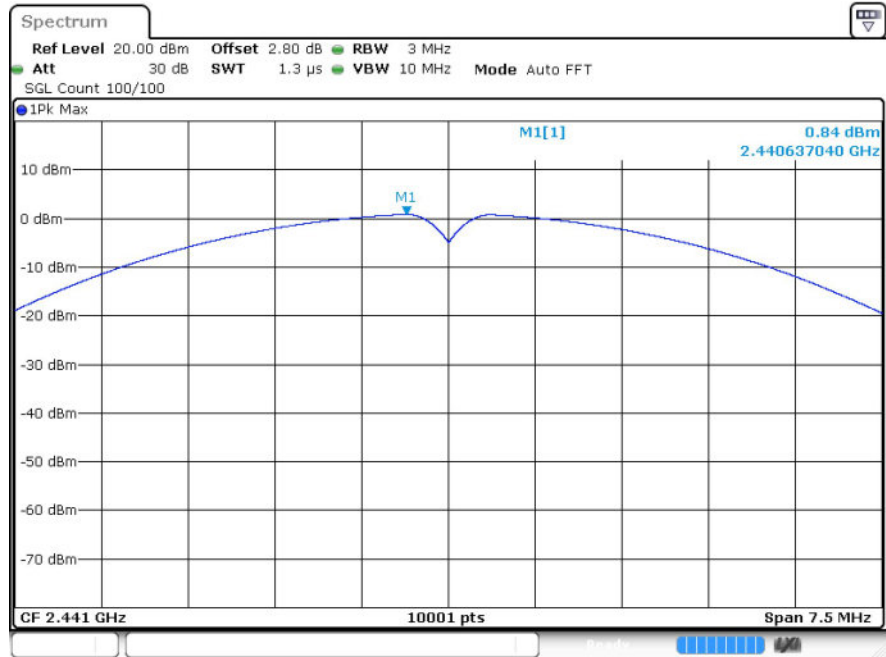
$\pi/4$ DQPSK/HCH



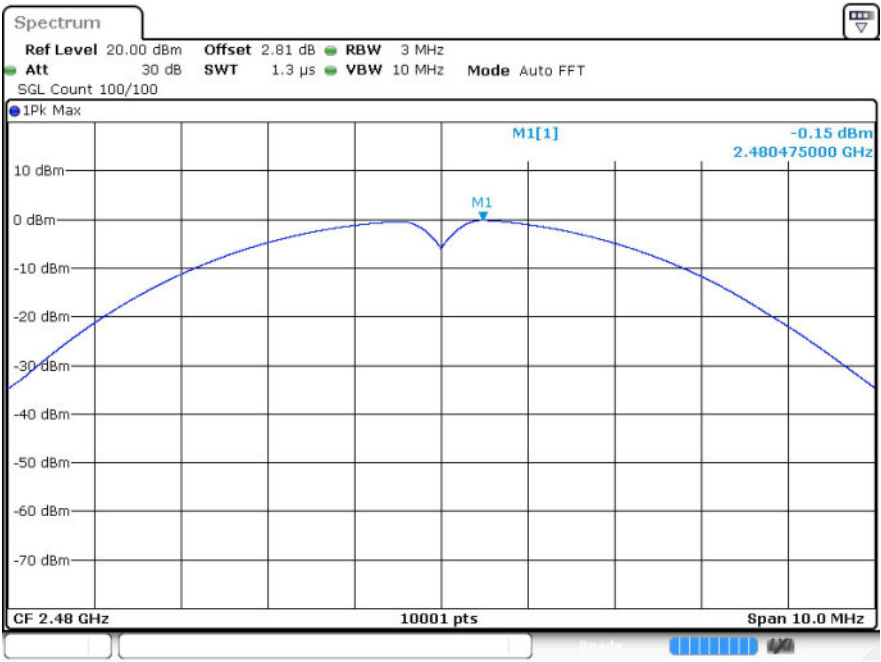
8DPSK/LCH



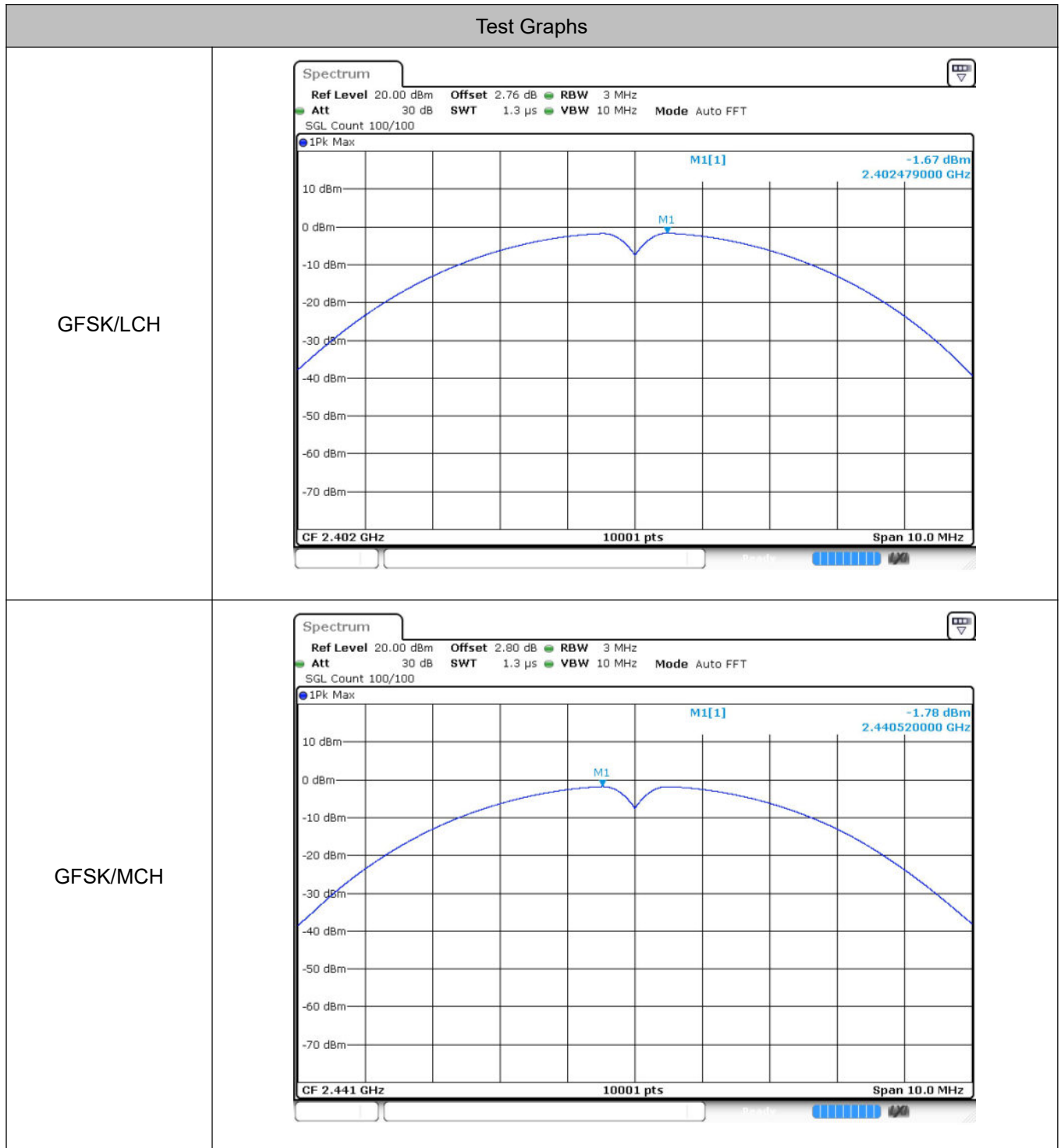
8DPSK/MCH



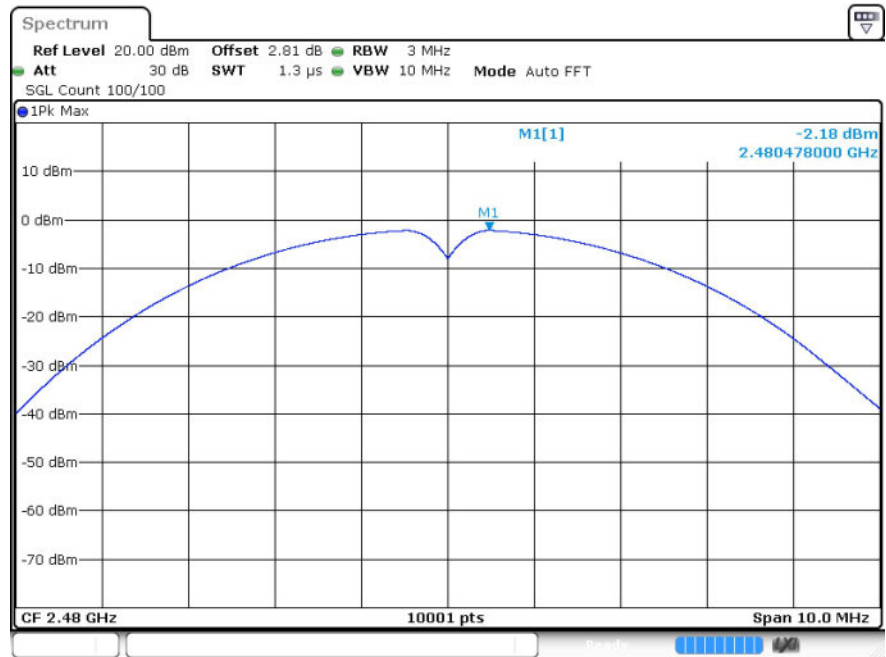
8DPSK/HCH



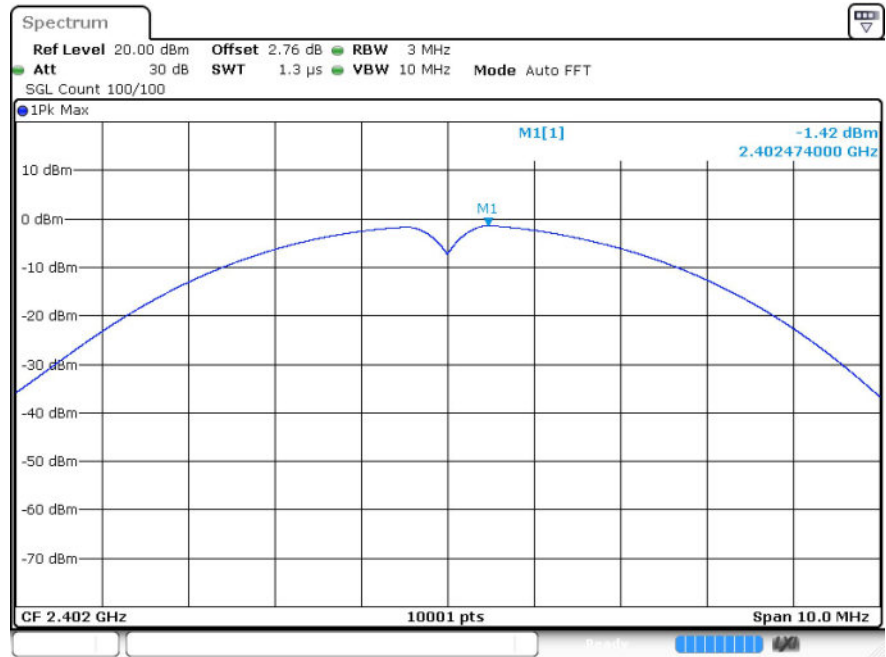
Right:



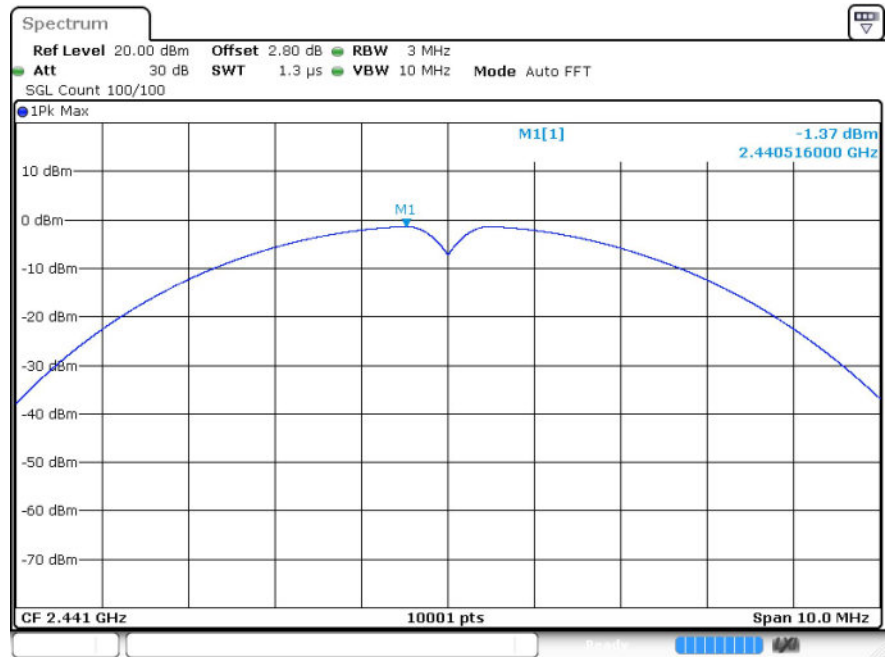
GFSK/HCH



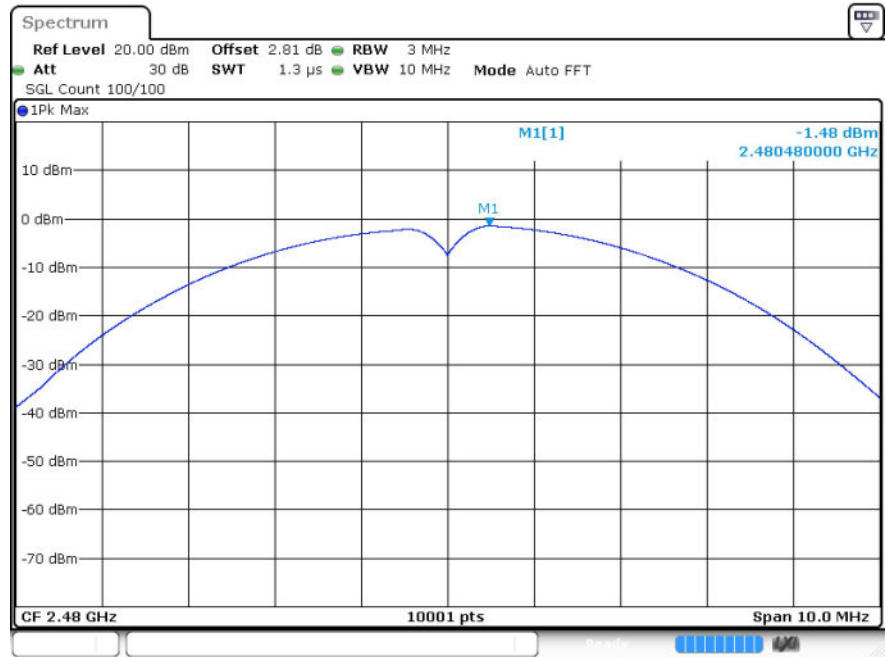
$\pi/4$ DQPSK/LCH



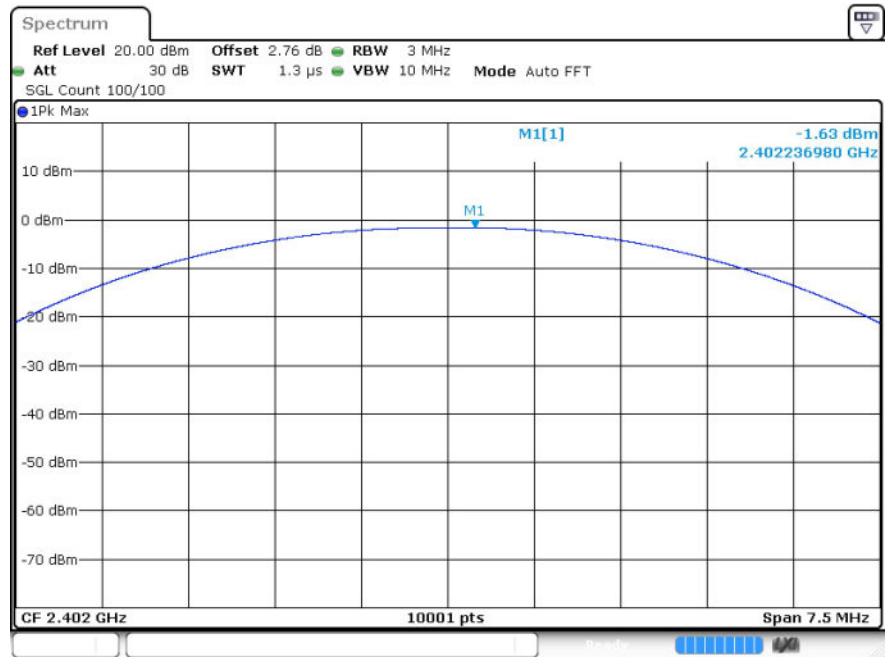
$\pi/4$ DQPSK/MCH



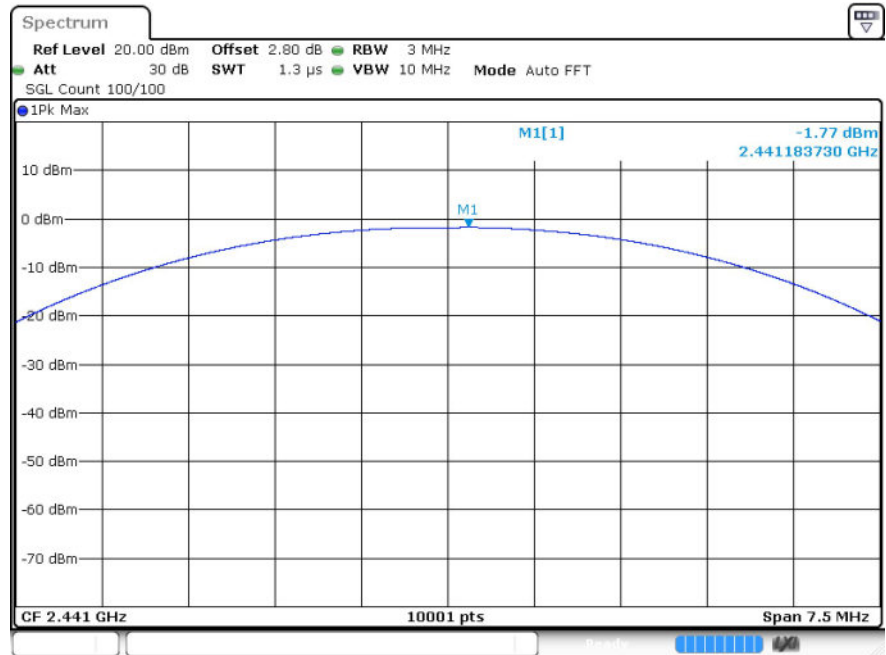
$\pi/4$ DQPSK/HCH



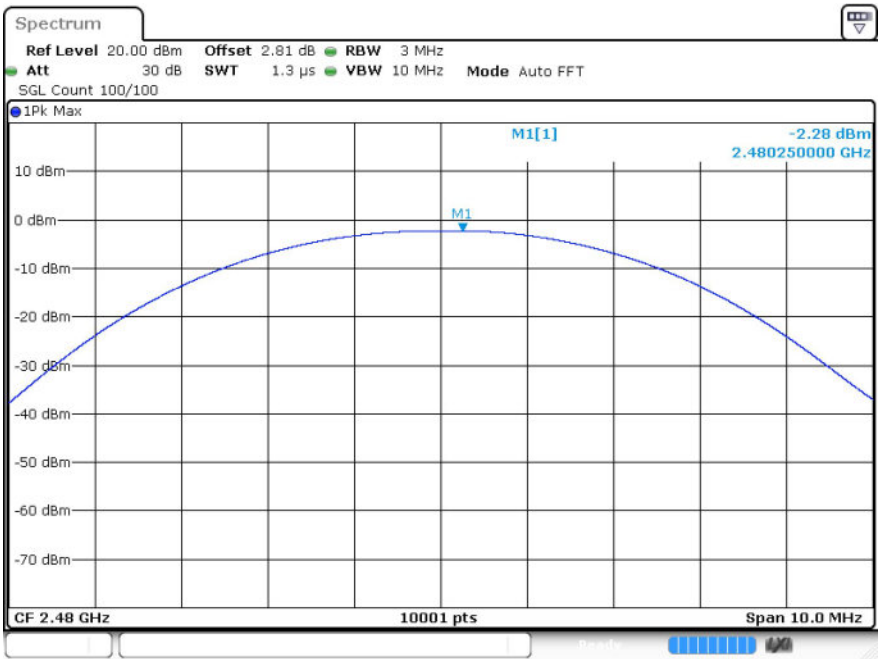
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH



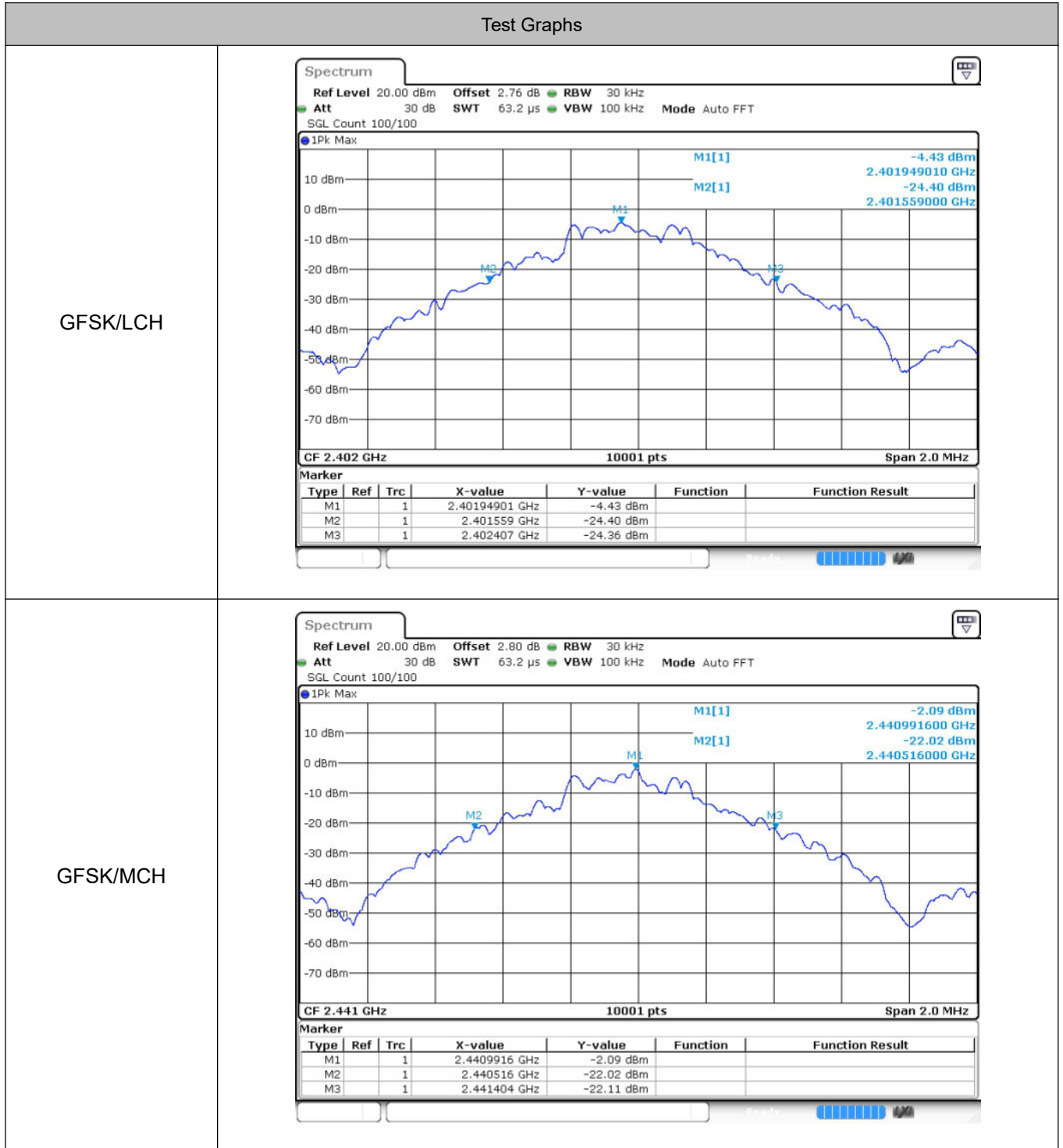
### 3 20dB Bandwidth

#### 3.1 Test Result

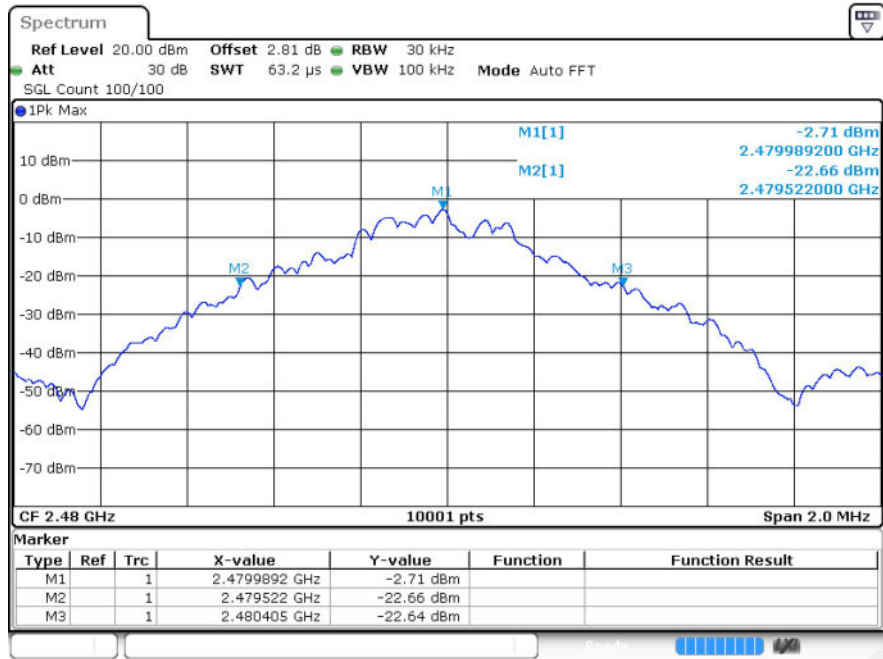
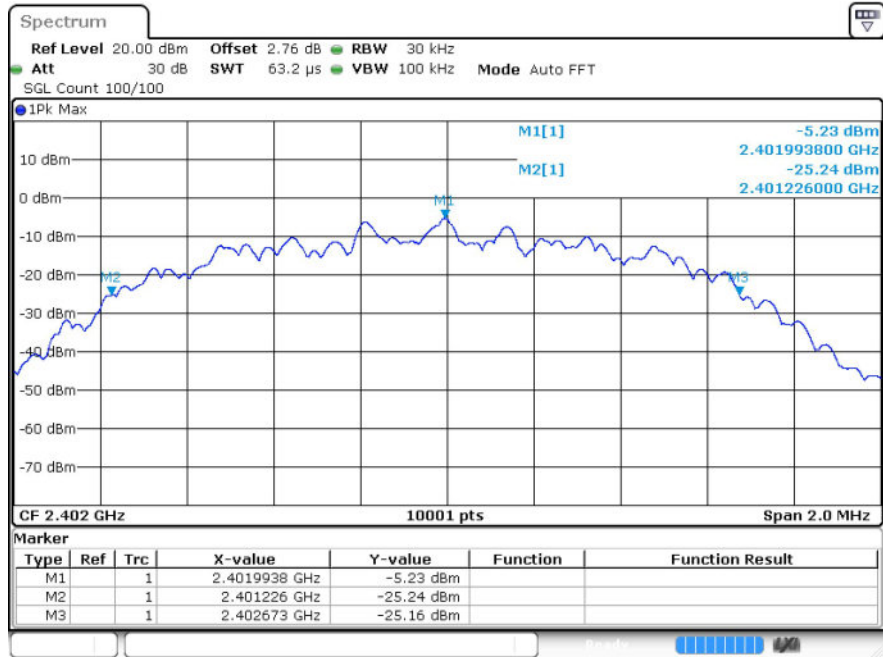
| Mode          | Channel. | 20dB Bandwidth [MHz] | Limit [MHz]   | Verdict |
|---------------|----------|----------------------|---------------|---------|
| GFSK          | LCH      | 0.848                | Not Specified | Pass    |
|               | MCH      | 0.888                | Not Specified | Pass    |
|               | HCH      | 0.883                | Not Specified | Pass    |
| $\pi/4$ DQPSK | LCH      | 1.447                | Not Specified | Pass    |
|               | MCH      | 1.423                | Not Specified | Pass    |
|               | HCH      | 1.395                | Not Specified | Pass    |
| 8DPSK         | LCH      | 1.434                | Not Specified | Pass    |
|               | MCH      | 1.44                 | Not Specified | Pass    |
|               | HCH      | 1.396                | Not Specified | Pass    |

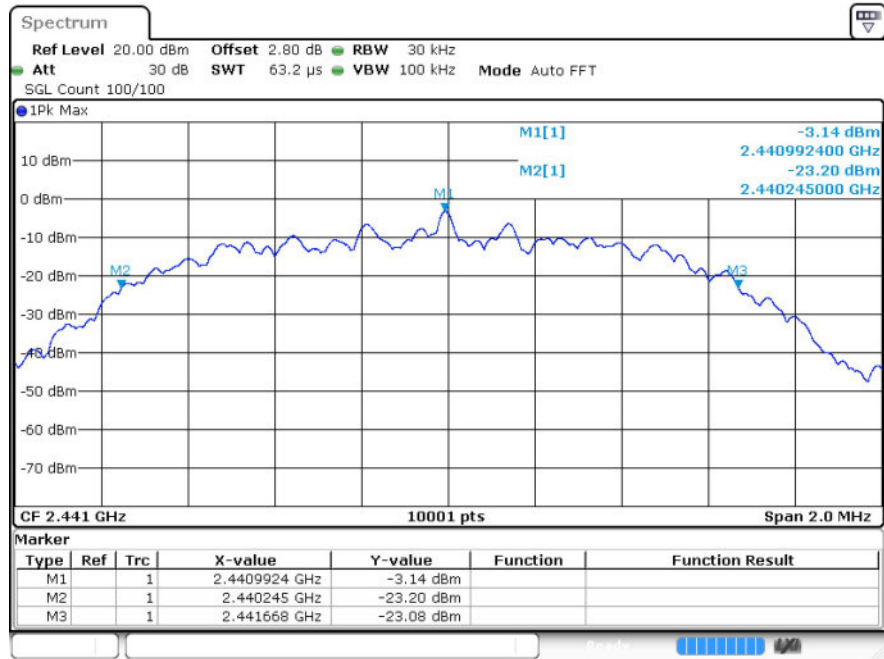
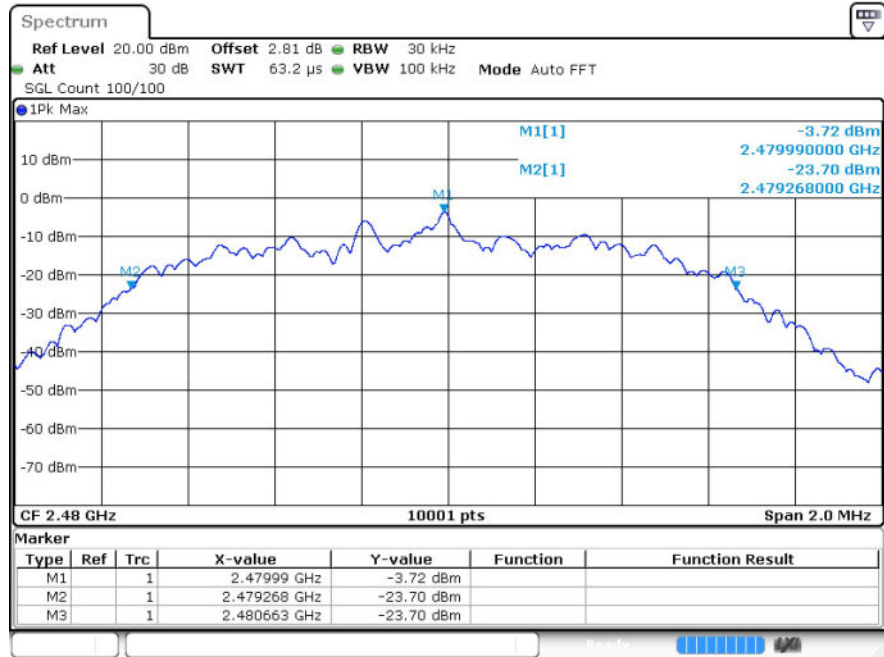
Note: Left and right ear have been tested and the only shows the worst case mode.

### 3.2 Test Graphs

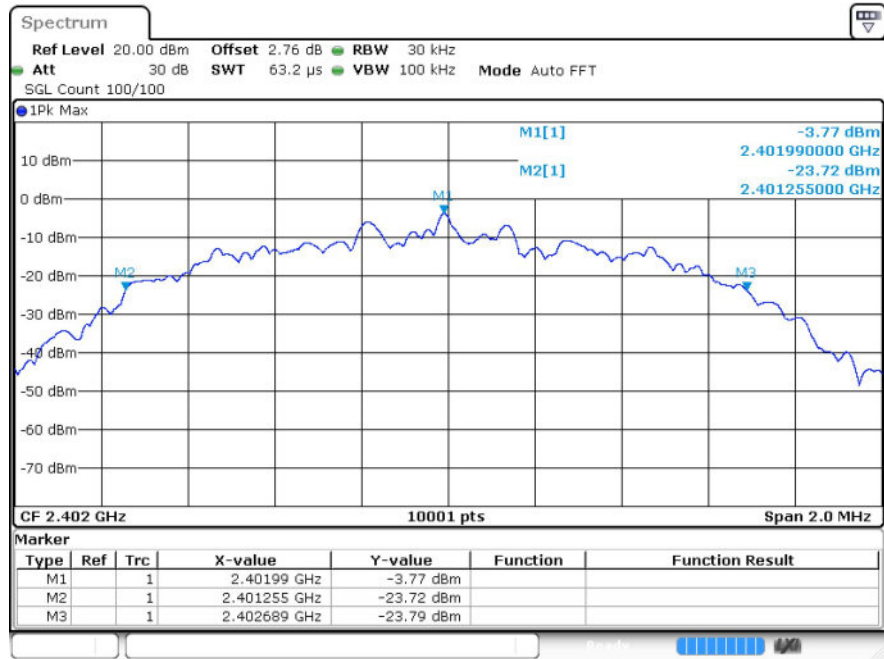


GFSK/HCH

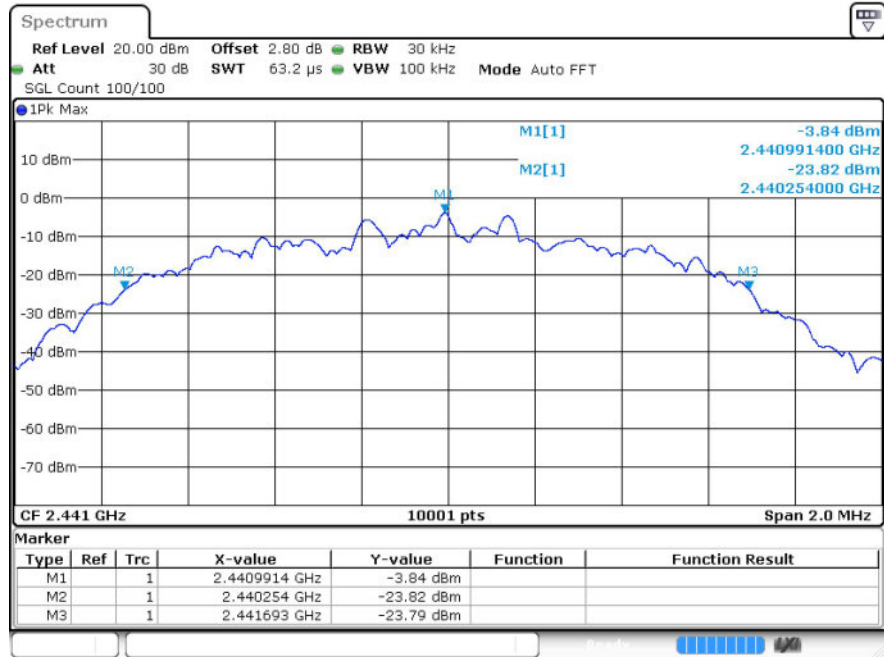

 $\pi/4$ DQPSK/LCH


$\pi/4$ DQPSK/MCH

 $\pi/4$ DQPSK/HCH


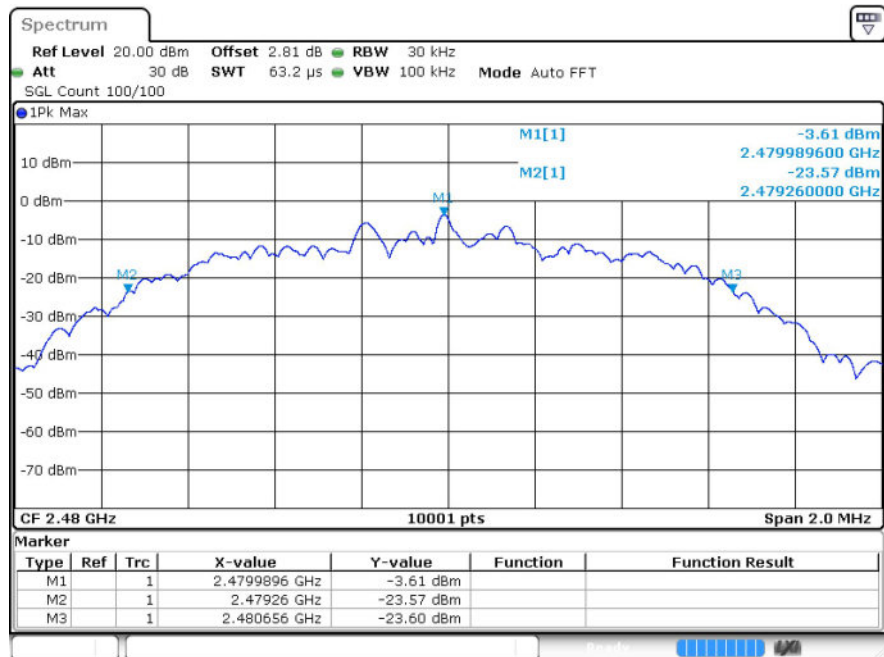
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH



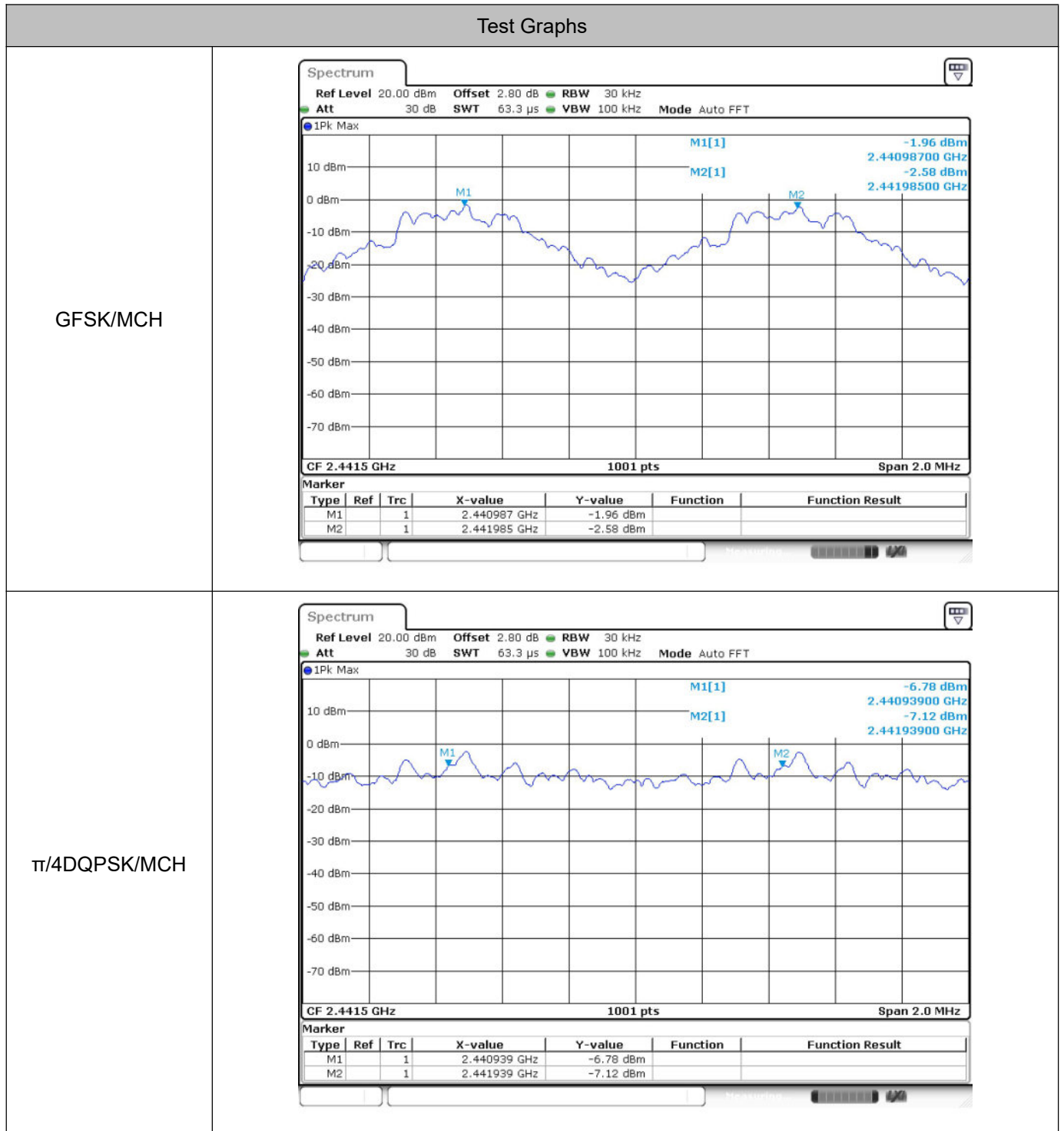
## 4 Carrier Frequency Separation

### 4.1 Test Result

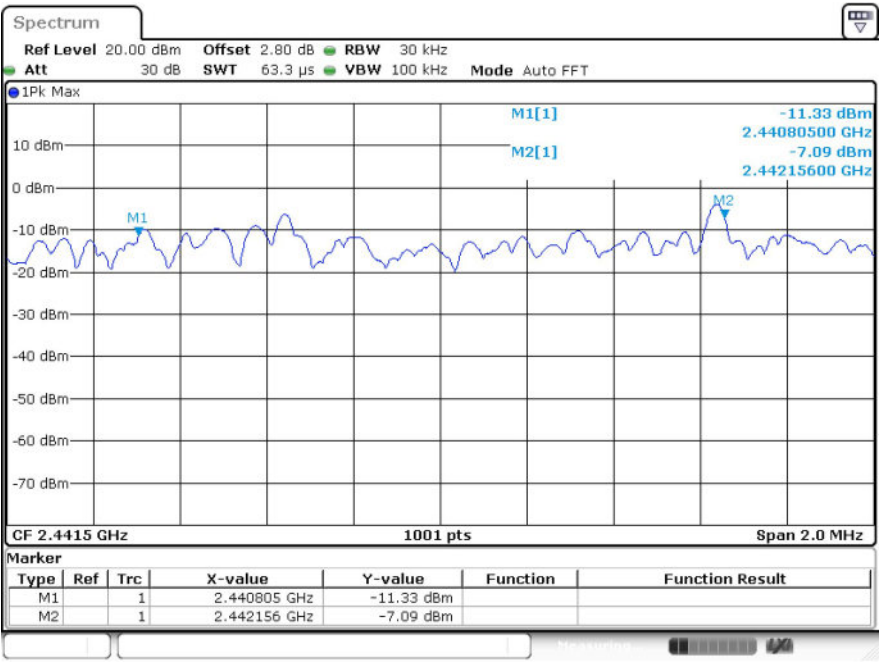
| Mode          | Channel. | Carrier Frequency Separation [MHz] | Limit [MHz] | Verdict |
|---------------|----------|------------------------------------|-------------|---------|
| GFSK          | MCH      | 0.998                              | 0.592       | Pass    |
| $\pi/4$ DQPSK | MCH      | 1                                  | 0.949       | Pass    |
| 8DPSK         | MCH      | 1.351                              | 0.96        | Pass    |

Note: Left and right ear have been tested and the only shows the worst case mode.

## 4.2 Test Graphs



8DPSK/MCH



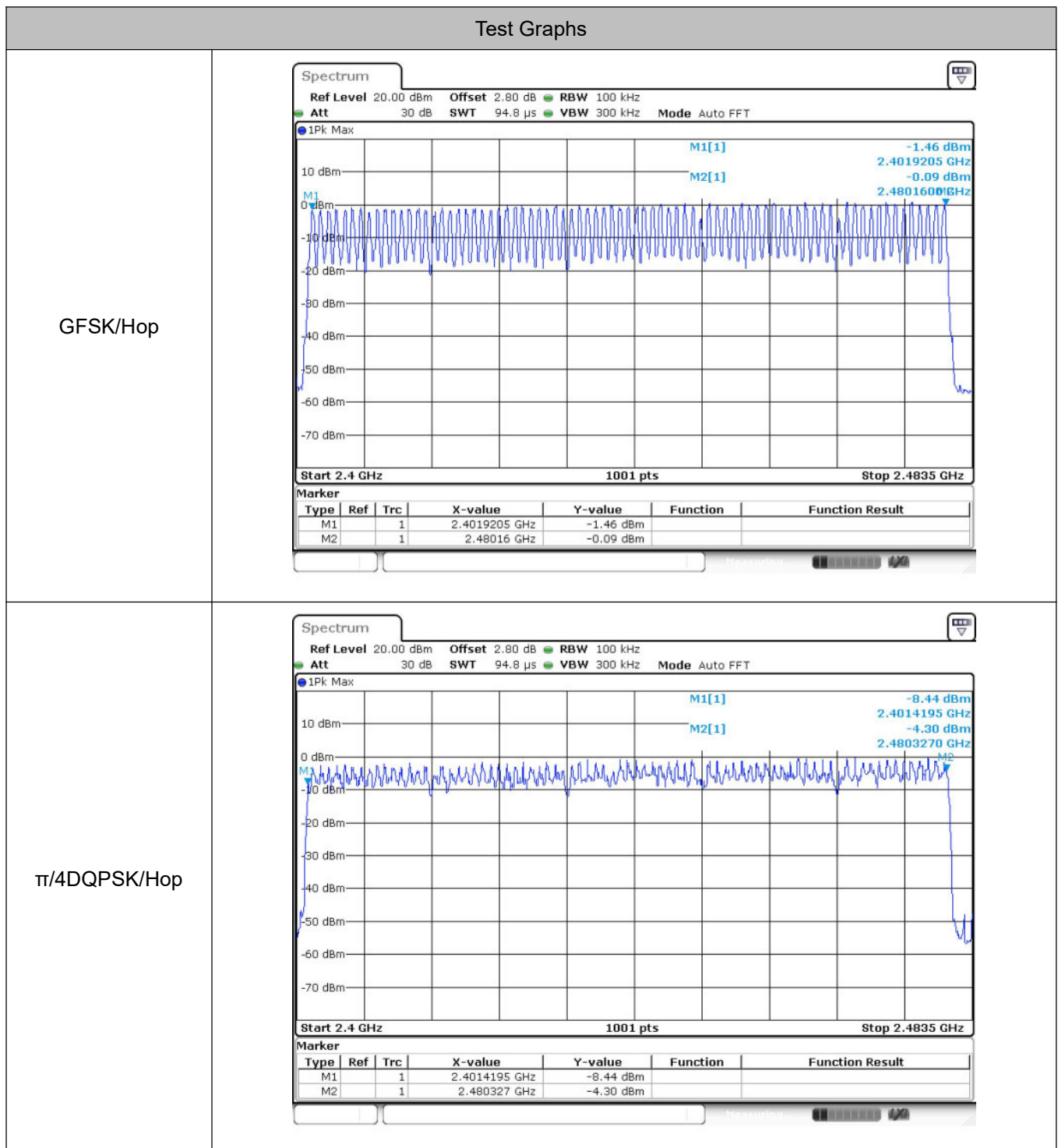
## 5 Hopping Channel Number

### 5.1 Test Result

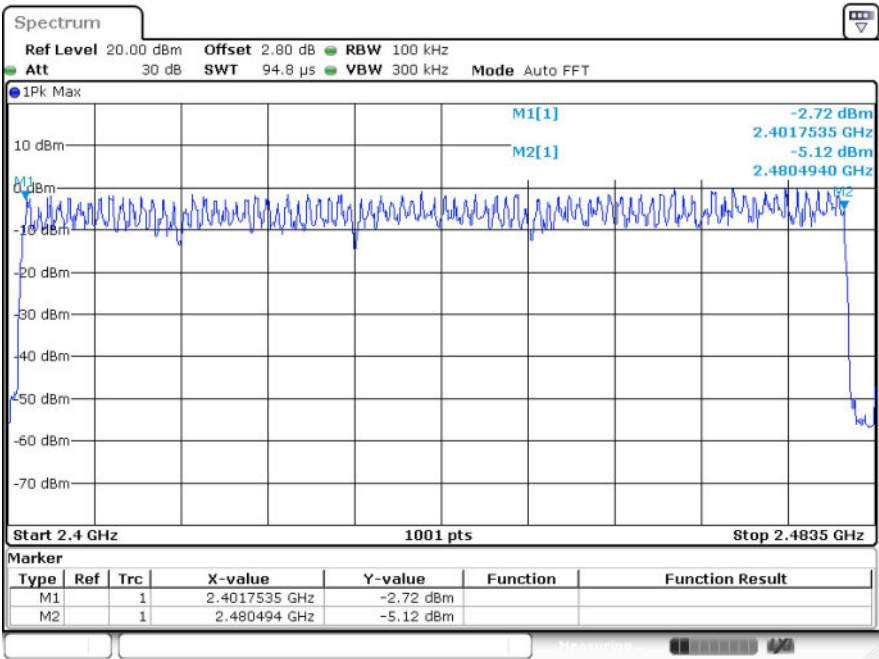
| Mode          | Channel. | Number of Hopping Channel [N] | Limit [N] | Verdict |
|---------------|----------|-------------------------------|-----------|---------|
| GFSK          | Hop      | 79                            | $\geq 15$ | PASS    |
| $\pi/4$ DQPSK | Hop      | 79                    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

Note: Left and right ear have been tested and the only shows the worst case mode.

## 5.2 Test Graphs



8DPSK/Hop





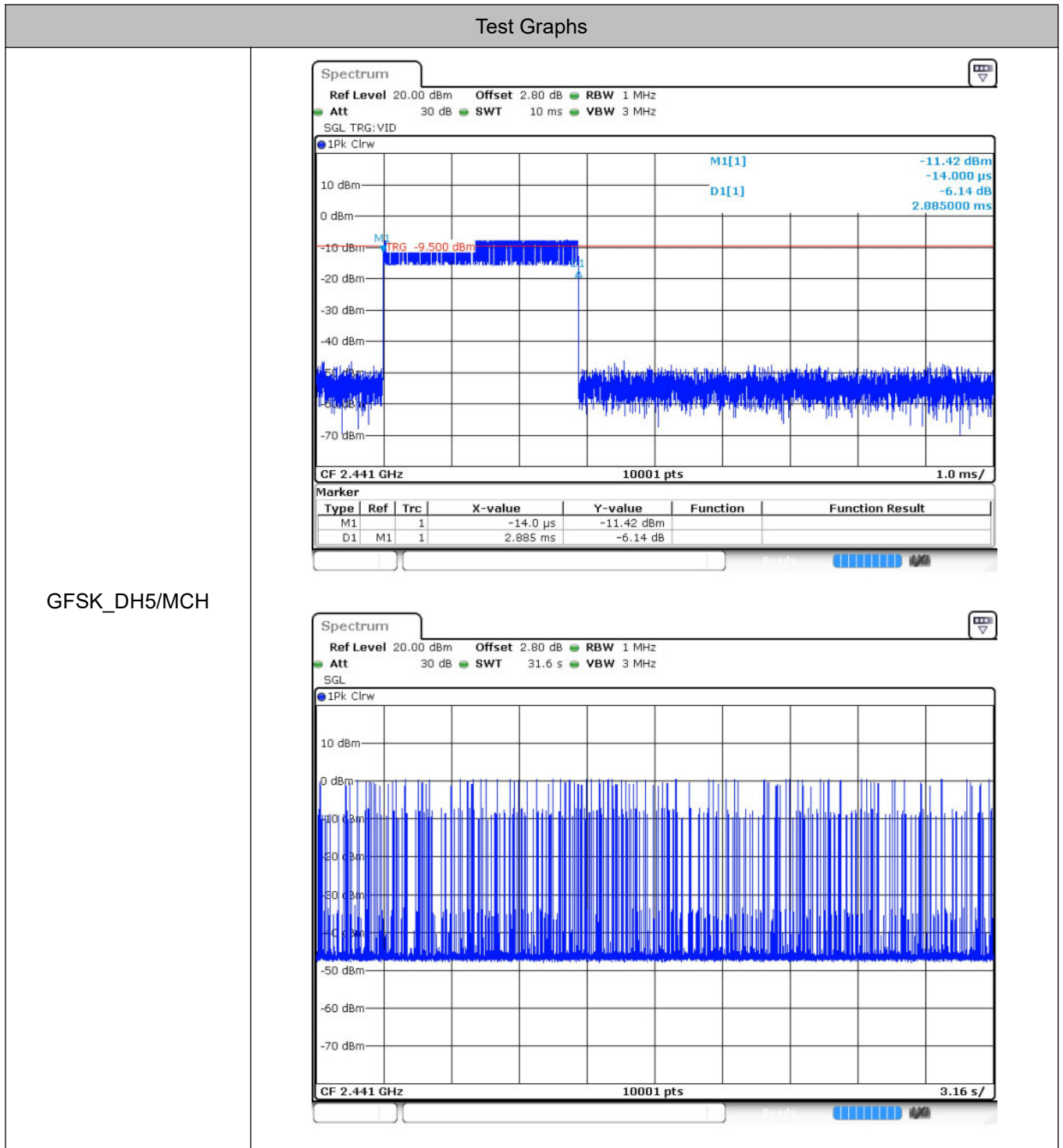
## 6 Dwell Time

### 6.1 Test Result

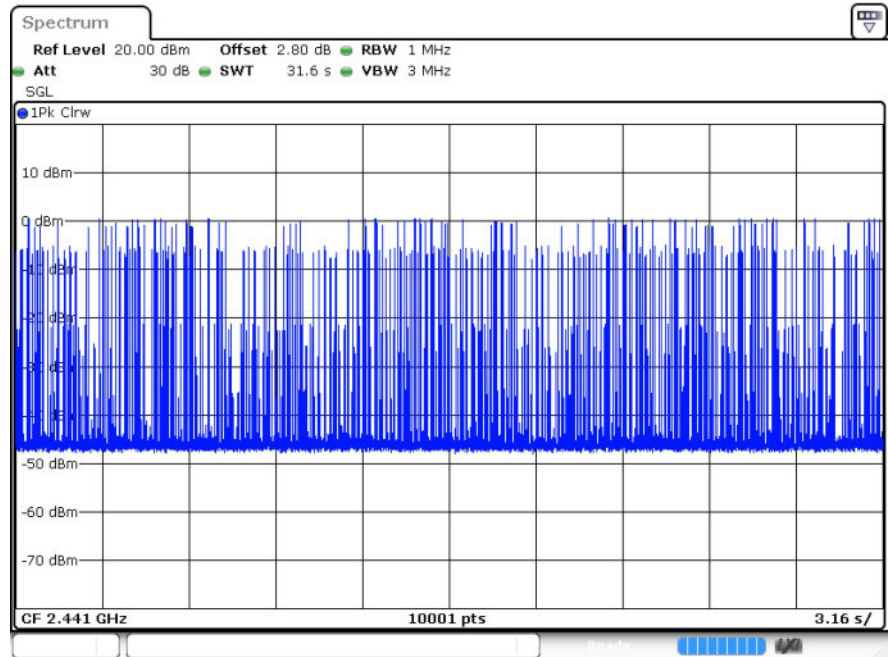
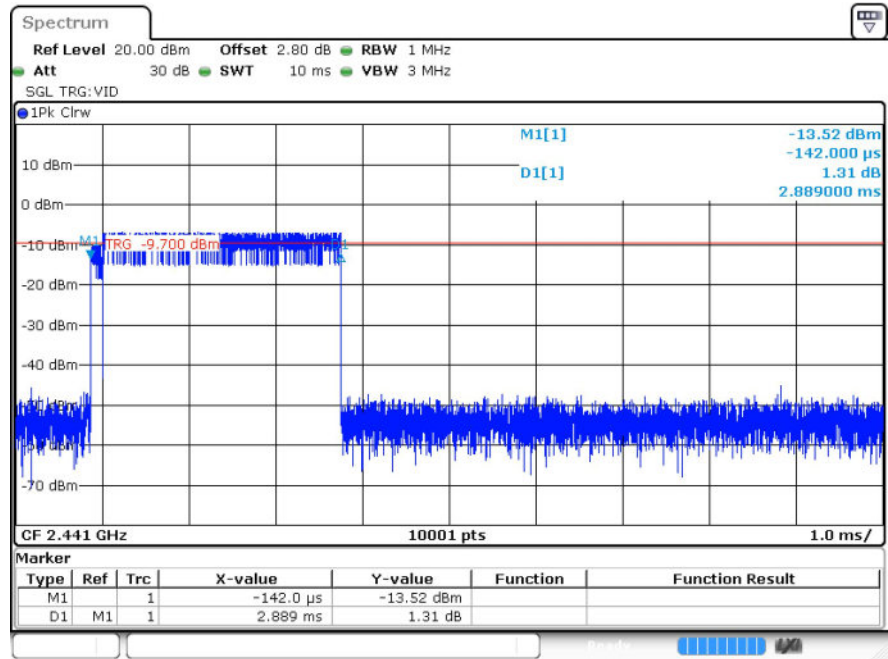
| Mode          | Packet | Channel | Burst Width<br>[ms/hop/ch] | Total<br>Hops[hop*ch] | Dwell Time[ms] | Limit [s] | Verdict |
|---------------|--------|---------|----------------------------|-----------------------|----------------|-----------|---------|
| GFSK          | DH5    | MCH     | 2.885                      | 114                   | 328.89         | 0.4       | Pass    |
| $\pi/4$ DQPSK | 2DH5   | MCH     | 2.889                      | 102                   | 294.678        | 0.4       | Pass    |
| 8DPSK         | 3DH5   | MCH     | 2.892                      | 100                   | 289.2          | 0.4       | Pass    |

Note: Left and right ear have been tested and the only shows the worst case mode.

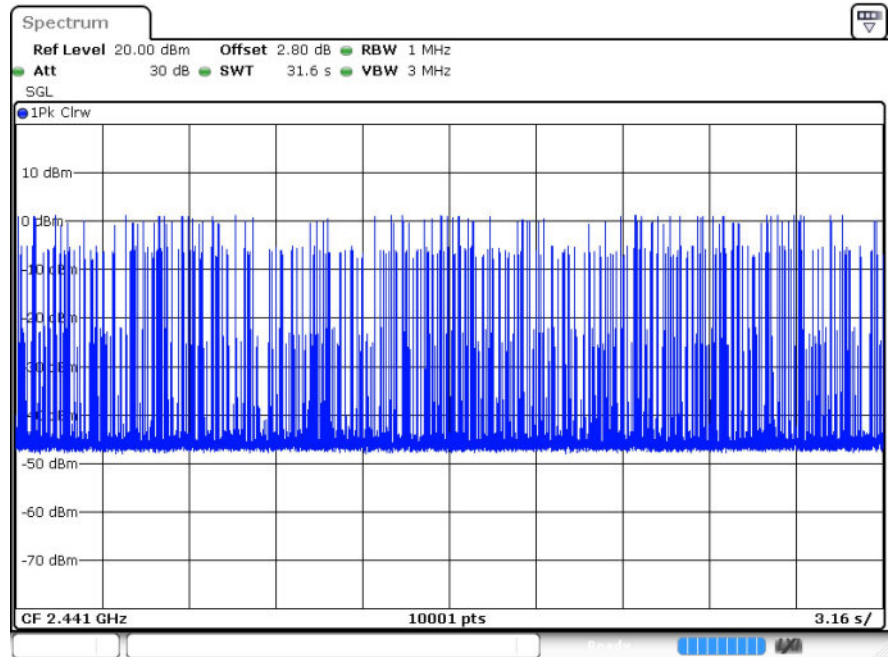
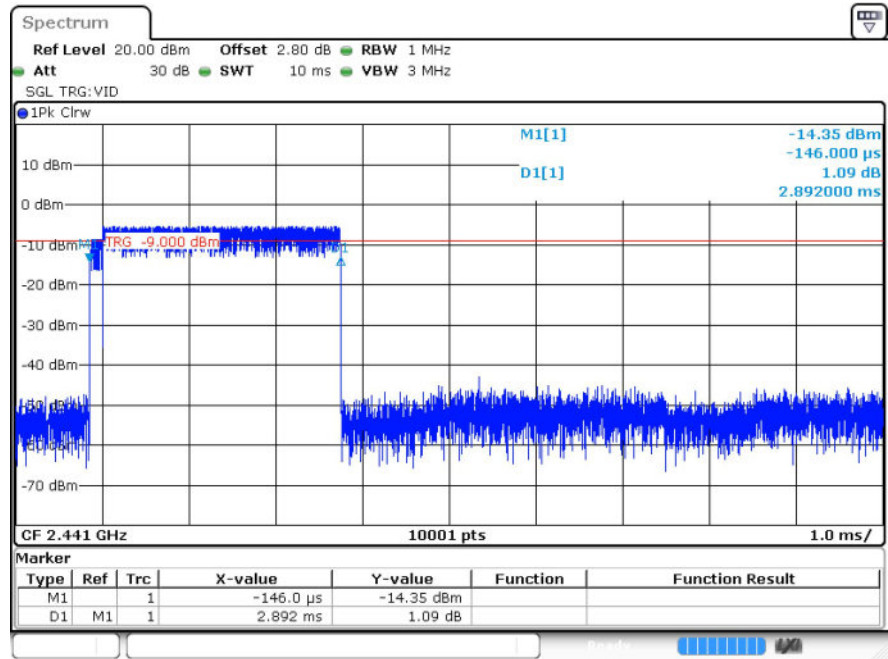
## 6.2 Test Graphs



$\pi/4$ DQPSK  
\_2DH5/MCH



8DPSK\_3DH5/MCH



## 7 RF Conducted Spurious Emissions

### 7.1 Test Result

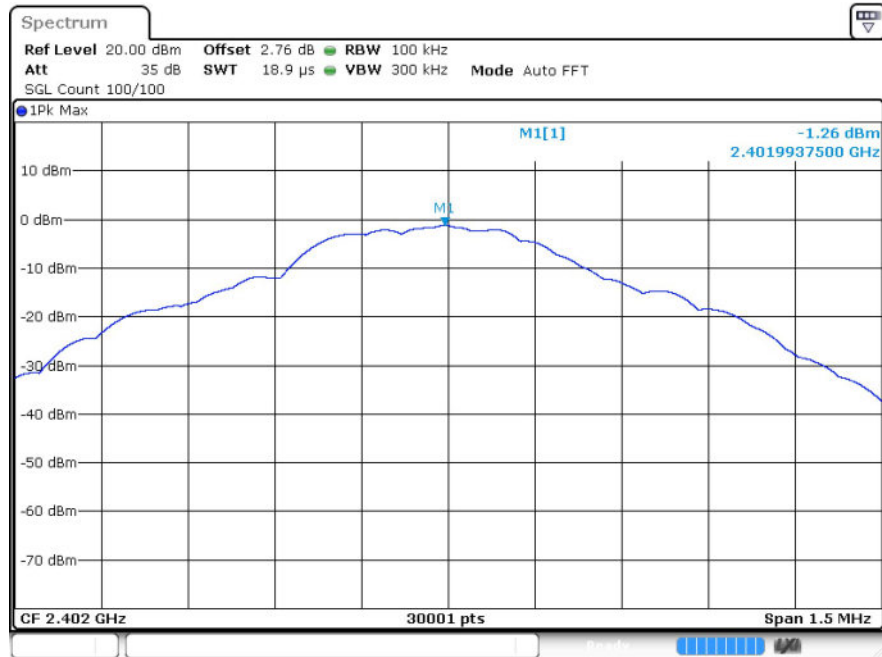
| Mode          | Channel | Max. Level [dBc] | Limit [dBc] | Verdict |
|---------------|---------|------------------|-------------|---------|
| GFSK          | LCH     | -39.47           | -20         | Pass    |
|               | MCH     | -40.8            | -20         | Pass    |
|               | HCH     | -40.52           | -20         | Pass    |
| $\pi$ /4DQPSK | LCH     | -38.47           | -20         | Pass    |
|               | MCH     | -39.37           | -20         | Pass    |
|               | HCH     | -38.98           | -20         | Pass    |
| 8DPSK         | LCH     | -38.36           | -20         | Pass    |
|               | MCH     | -40.21           | -20         | Pass    |
|               | HCH     | -38.67           | -20         | Pass    |

Note: Left and right ear have been tested and the only shows the worst case mode.

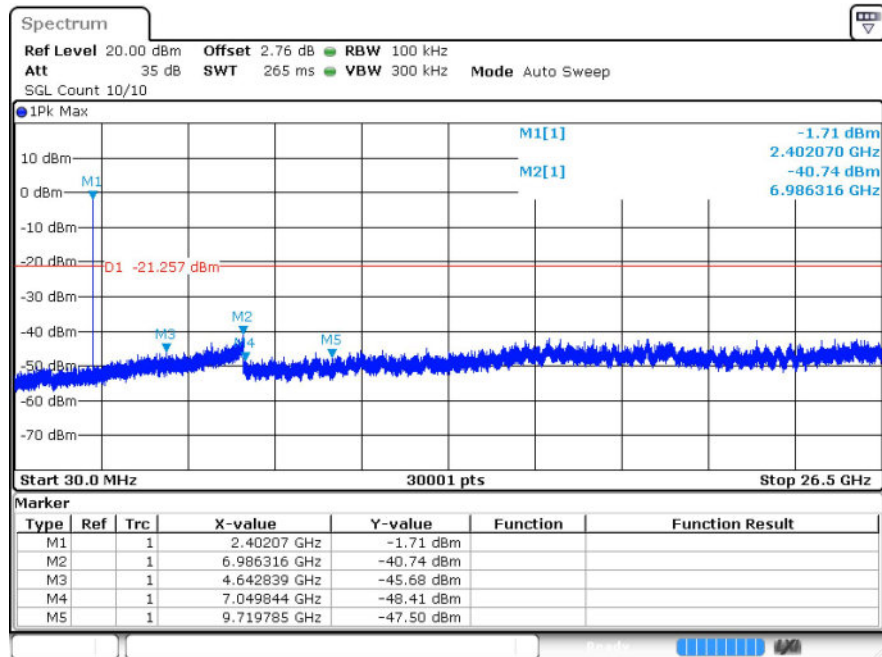
## 7.2 Test Graphs

GFSK\_LCH\_Graphs

Pref

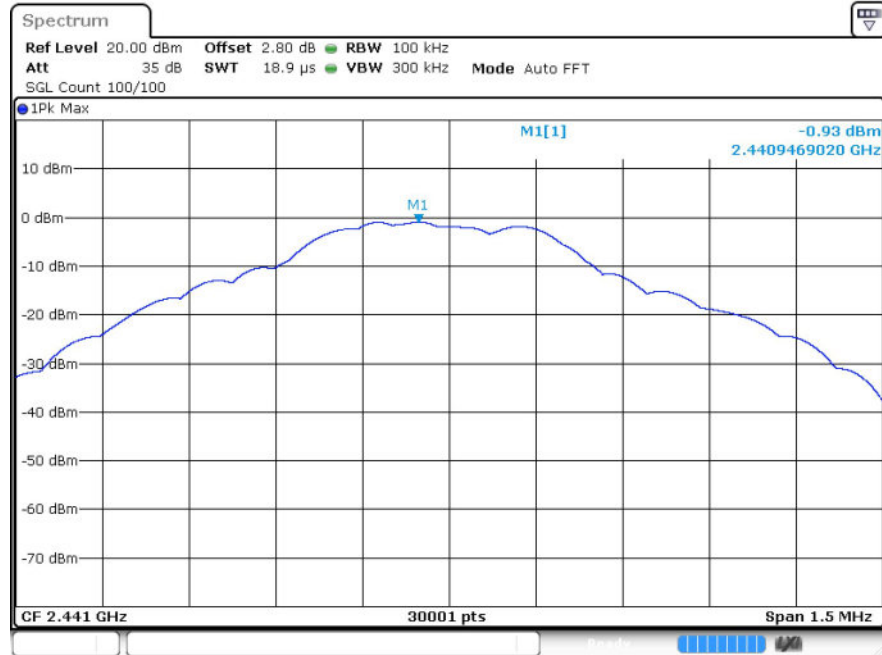


Puw

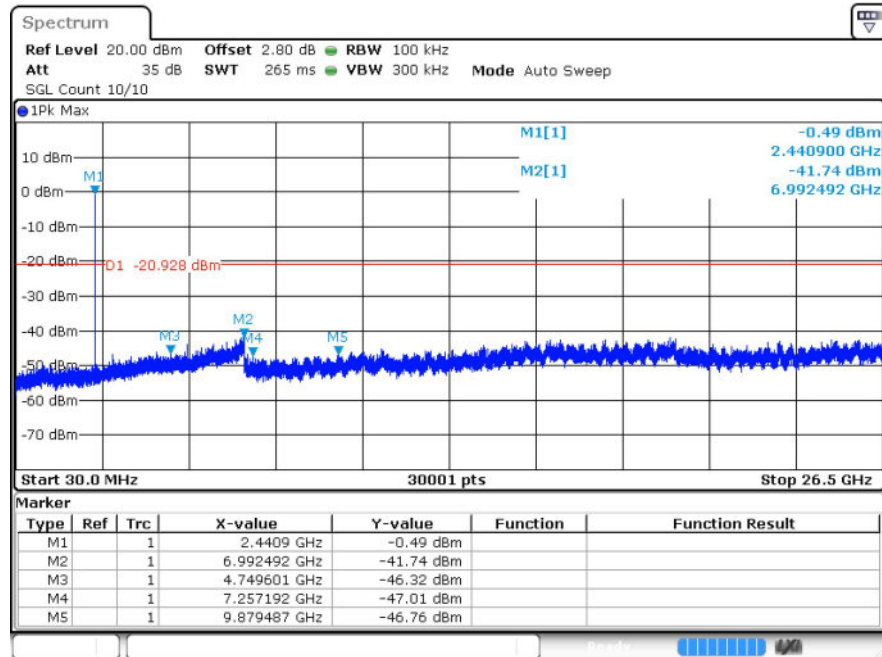


## GFSK\_MCH\_Graphs

Pref

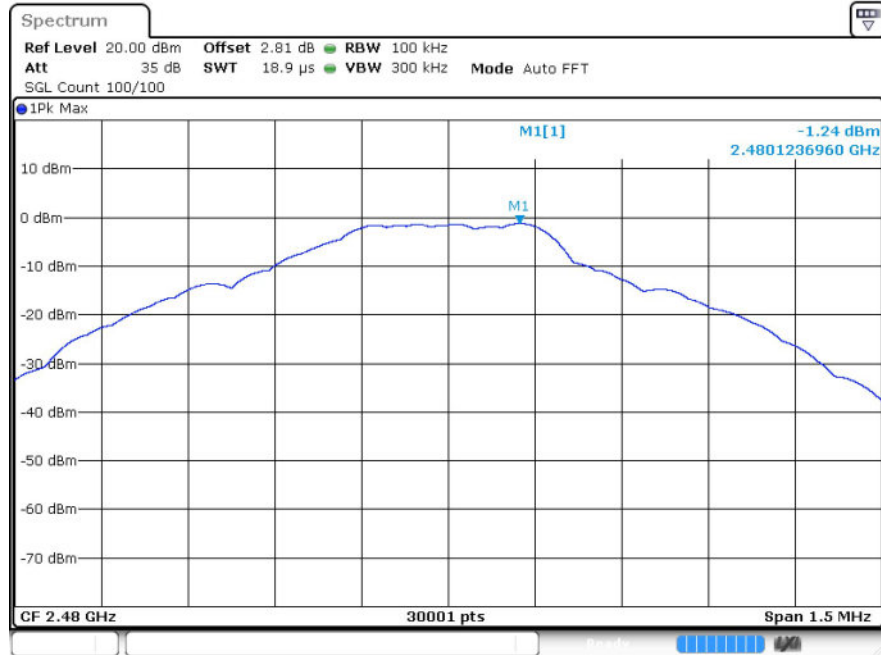


Puw

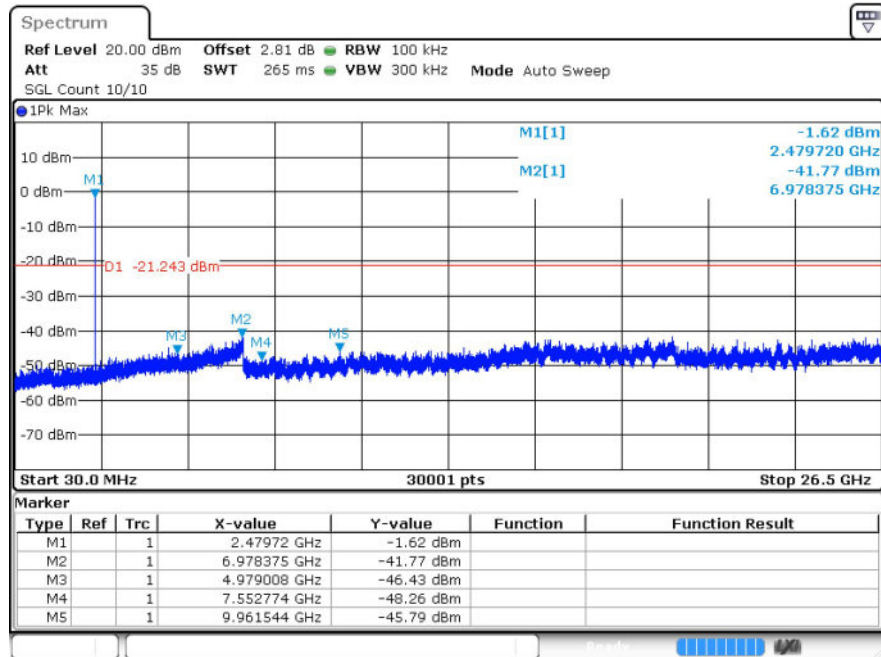


## GFSK\_HCH\_Graphs

Pref

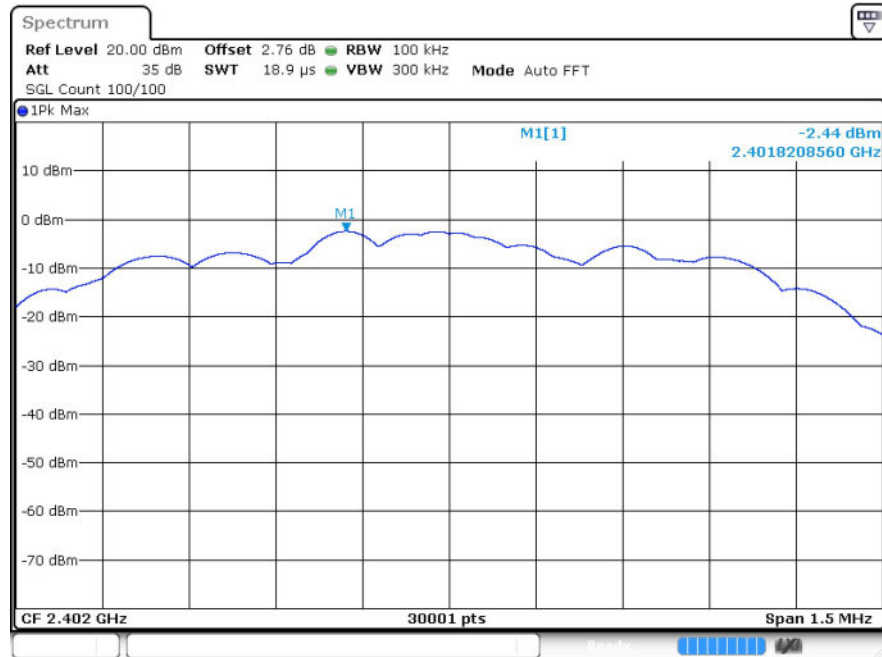


Puw

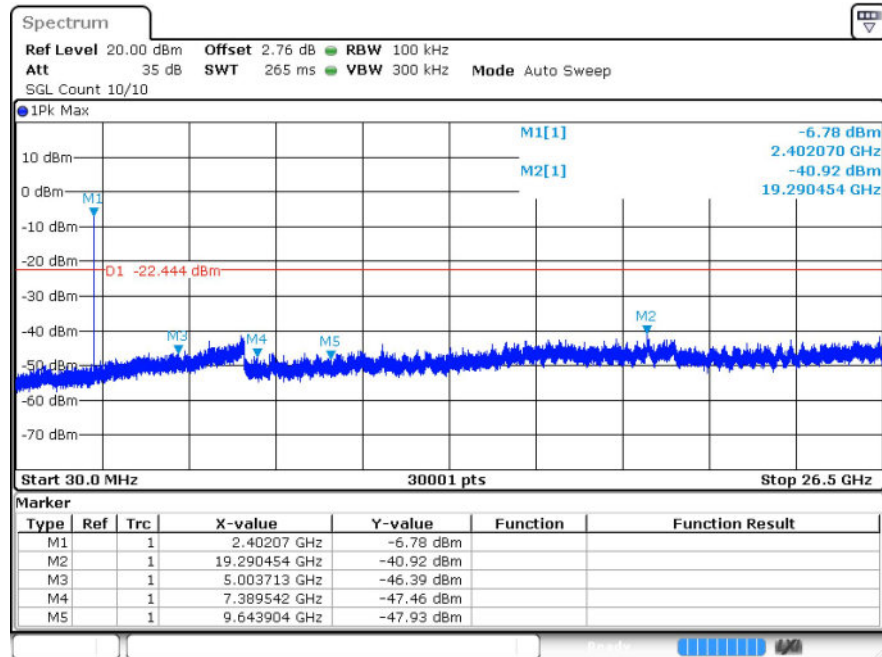


# $\pi/4$ DQPSK\_LCH\_Graphs

Pref

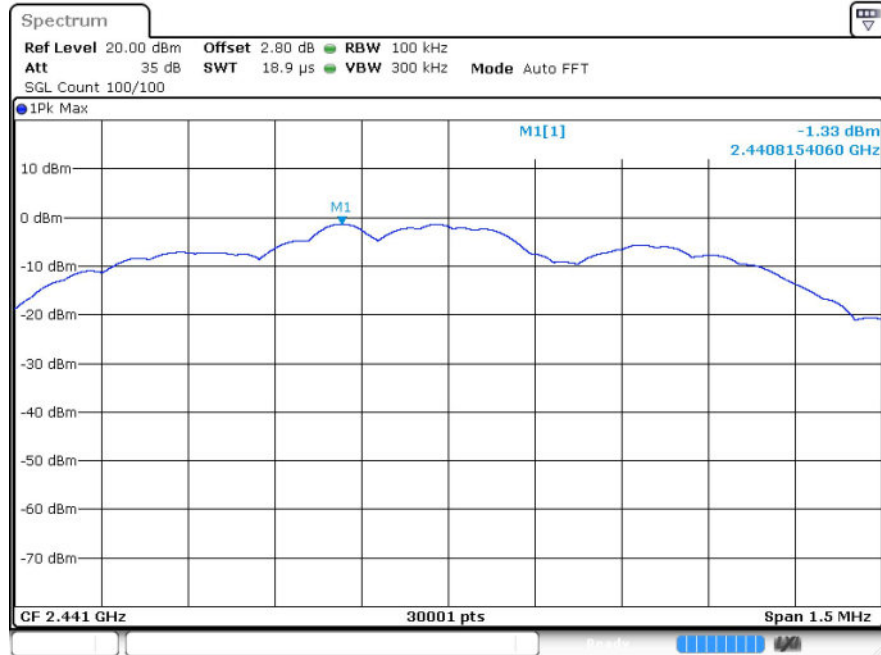


Puw

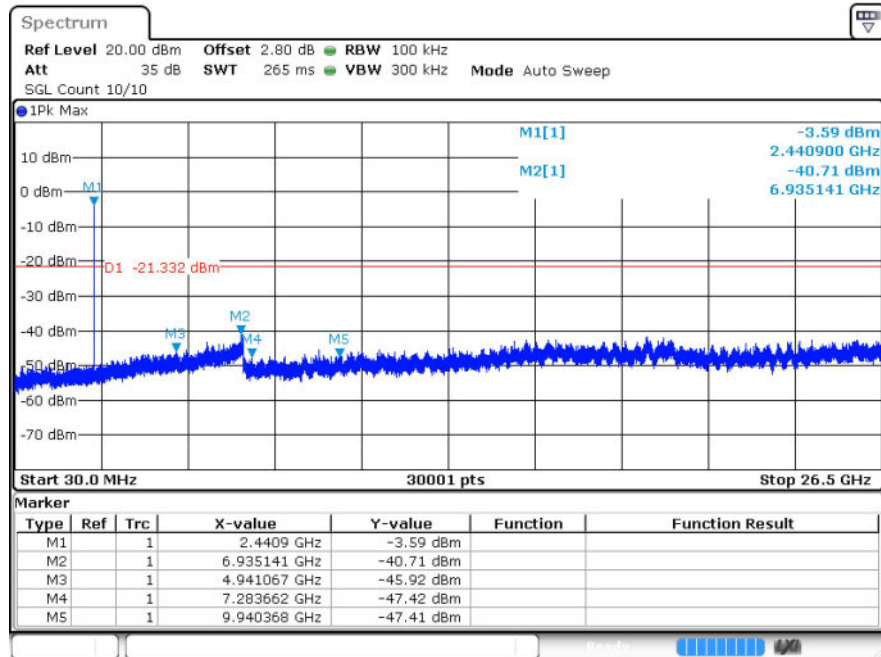


# $\pi/4$ DQPSK\_MCH\_Graphs

Pref

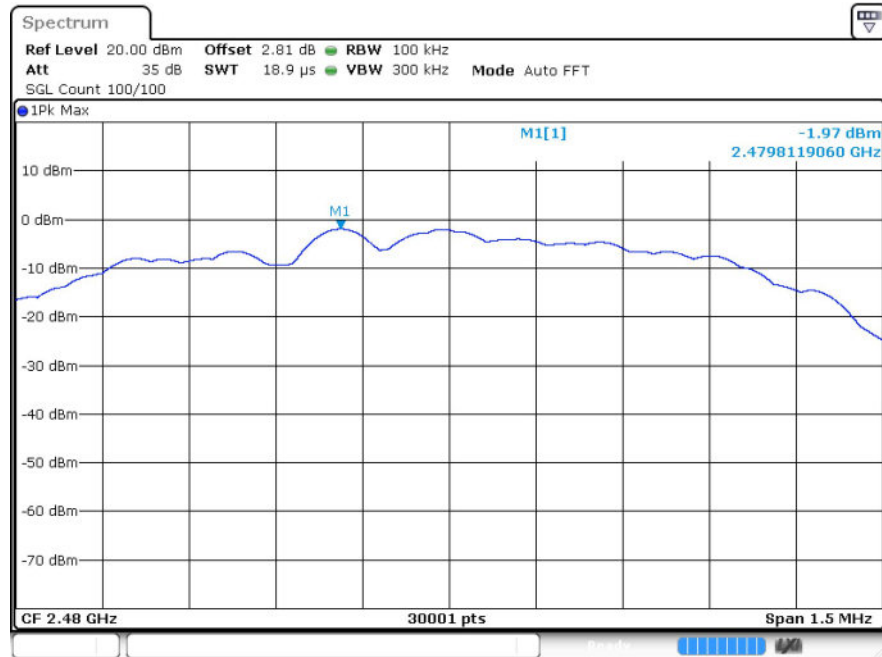


Puw



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

Pref



Puw

