



## Appendix C

### RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: safe box

Trade Mark: N/A

Test Model: CS100-25FBW

Environmental Conditions

|                    |             |
|--------------------|-------------|
| Temperature:       | 24.6° C     |
| Relative Humidity: | 52.4%       |
| ATM Pressure:      | 100.0 kPa   |
| Test Engineer:     | Emiya Lin   |
| Supervised by:     | Simba Huang |



## Contents

|                                              | Page |
|----------------------------------------------|------|
| <b>COVER PAGE</b>                            |      |
| 1 Duty Cycle .....                           | 3    |
| 1.1 Test Result .....                        | 3    |
| 1.2 Test Graphs .....                        | 4    |
| 2 Maximum Conducted Output Power .....       | 10   |
| 2.1 Test Result .....                        | 10   |
| 3 -6dB Bandwidth .....                       | 11   |
| 3.1 Test Result .....                        | 11   |
| 3.2 Test Graphs .....                        | 12   |
| 4 Maximum Power Spectral Density Level ..... | 18   |
| 4.1 Test Result .....                        | 18   |
| 4.2 Test Graphs .....                        | 19   |
| 5 Band Edge .....                            | 25   |
| 5.1 Test Result .....                        | 25   |
| 5.2 Test Graphs .....                        | 26   |
| 6 Conducted RF Spurious Emission .....       | 34   |
| 6.1 Test Result .....                        | 34   |
| 6.2 Test Graphs .....                        | 35   |
| 7 Restrict Band .....                        | 47   |
| 7.1 Test Result .....                        | 47   |
| 7.2 Test Graphs .....                        | 49   |

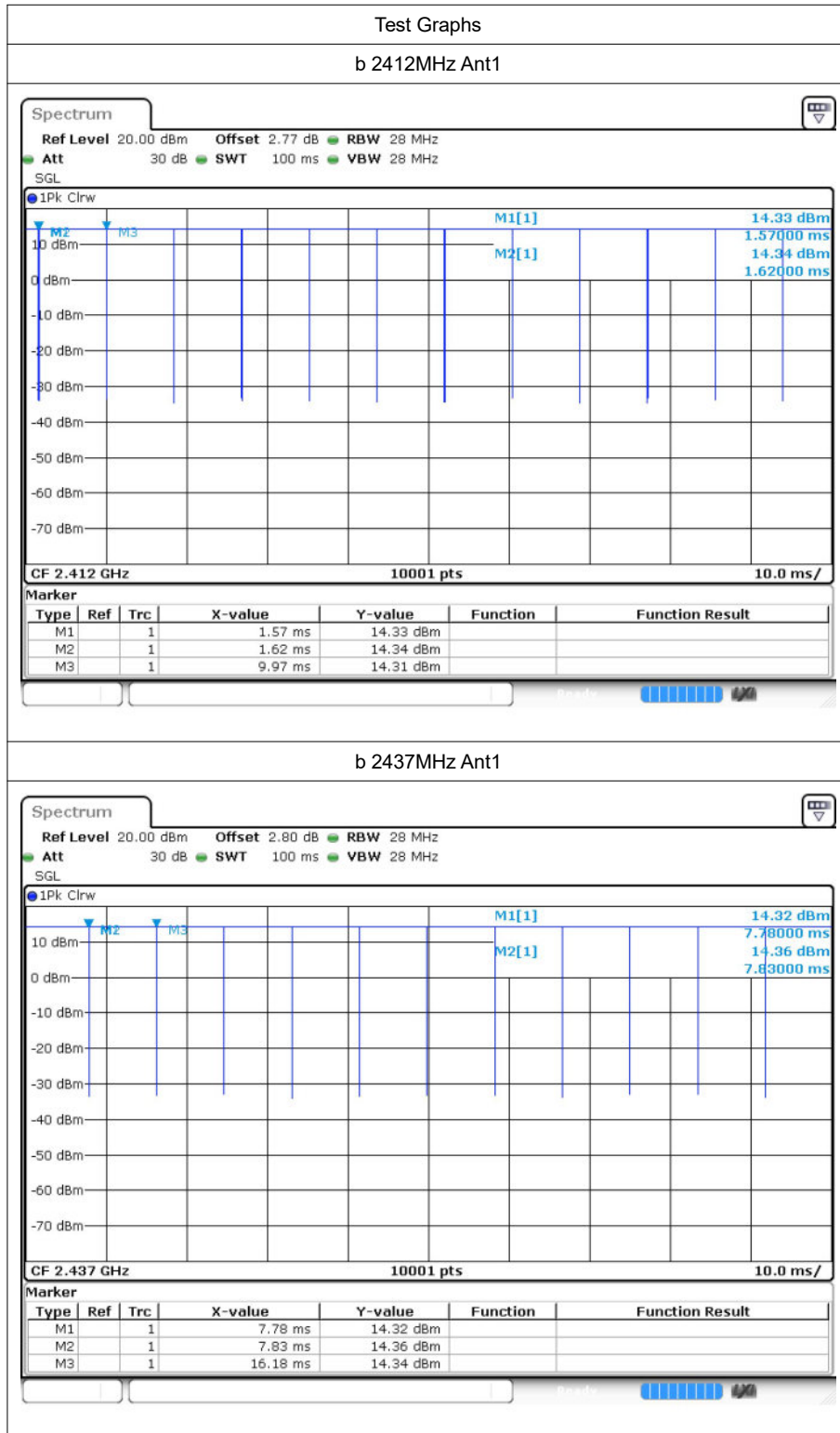


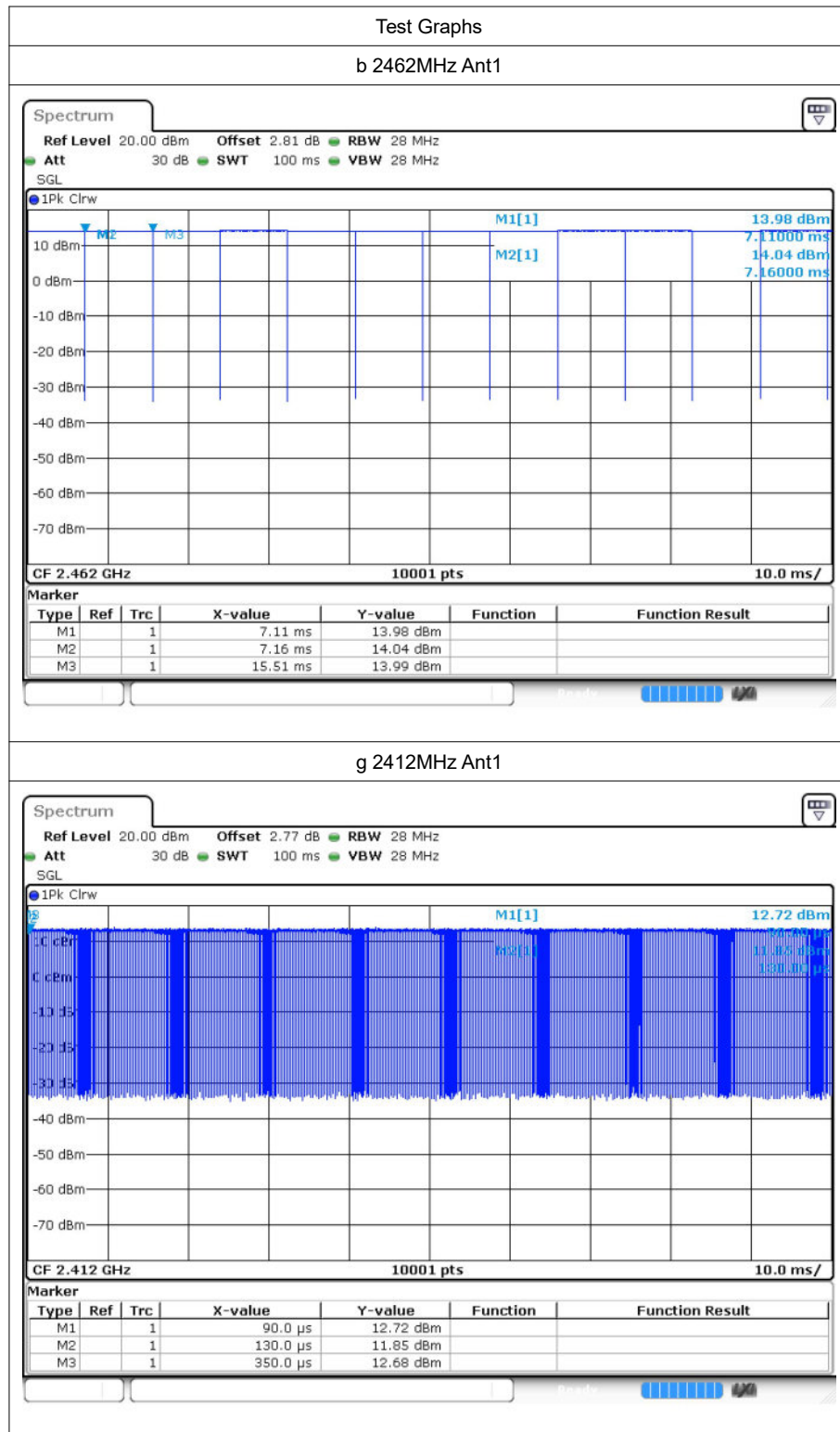
# 1 Duty Cycle

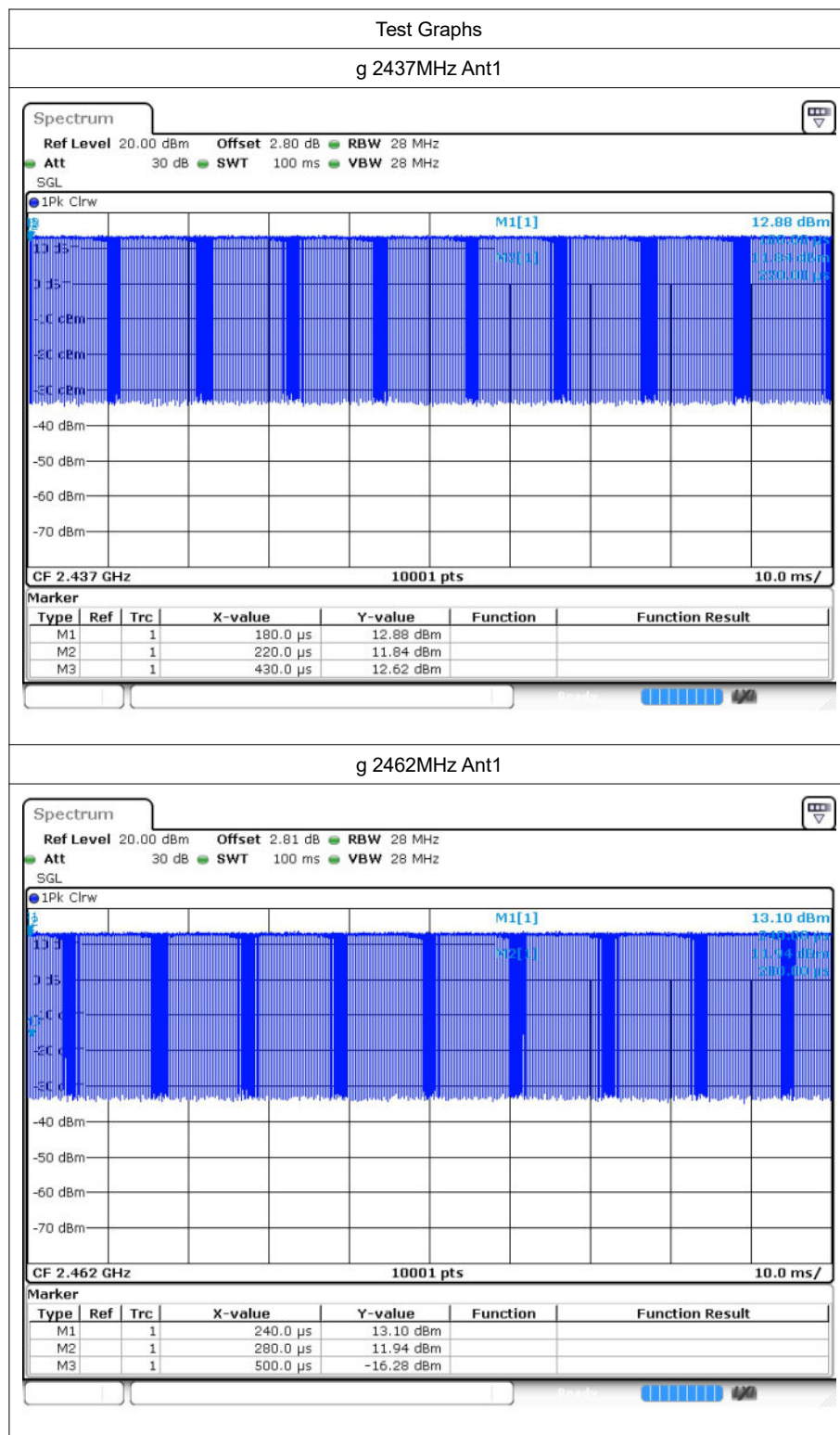
## 1.1 Test Result

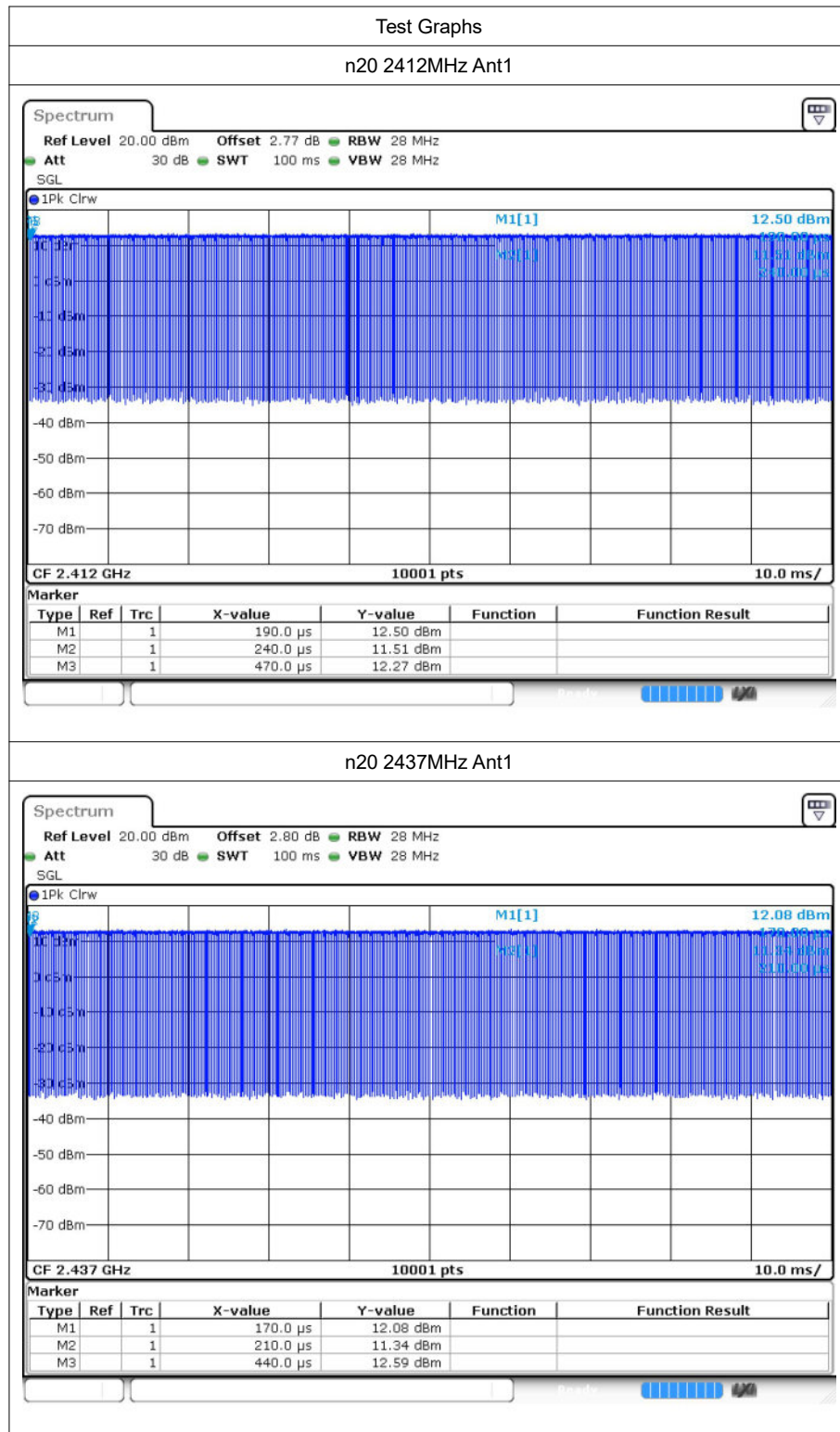
| Mode | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor | 1/T (kHz) |
|------|-----------------|---------|----------------|-------------------|-----------|
| b    | 2412            | Ant1    | 99.59          | 0.02              | 0.12      |
| b    | 2437            | Ant1    | 99.63          | 0.02              | 0.12      |
| b    | 2462            | Ant1    | 99.6           | 0.02              | 0.12      |
| g    | 2412            | Ant1    | 86.88          | 0.61              | 4.55      |
| g    | 2437            | Ant1    | 86.87          | 0.61              | 4.76      |
| g    | 2462            | Ant1    | 86.88          | 0.61              | 4.55      |
| n20  | 2412            | Ant1    | 87.51          | 0.58              | 4.35      |
| n20  | 2437            | Ant1    | 87.49          | 0.58              | 4.35      |
| n20  | 2462            | Ant1    | 87.5           | 0.58              | 4.35      |
| n40  | 2422            | Ant1    | 87.98          | 0.56              | 4         |
| n40  | 2437            | Ant1    | 87.99          | 0.56              | 4         |
| n40  | 2452            | Ant1    | 87.99          | 0.56              | 4         |

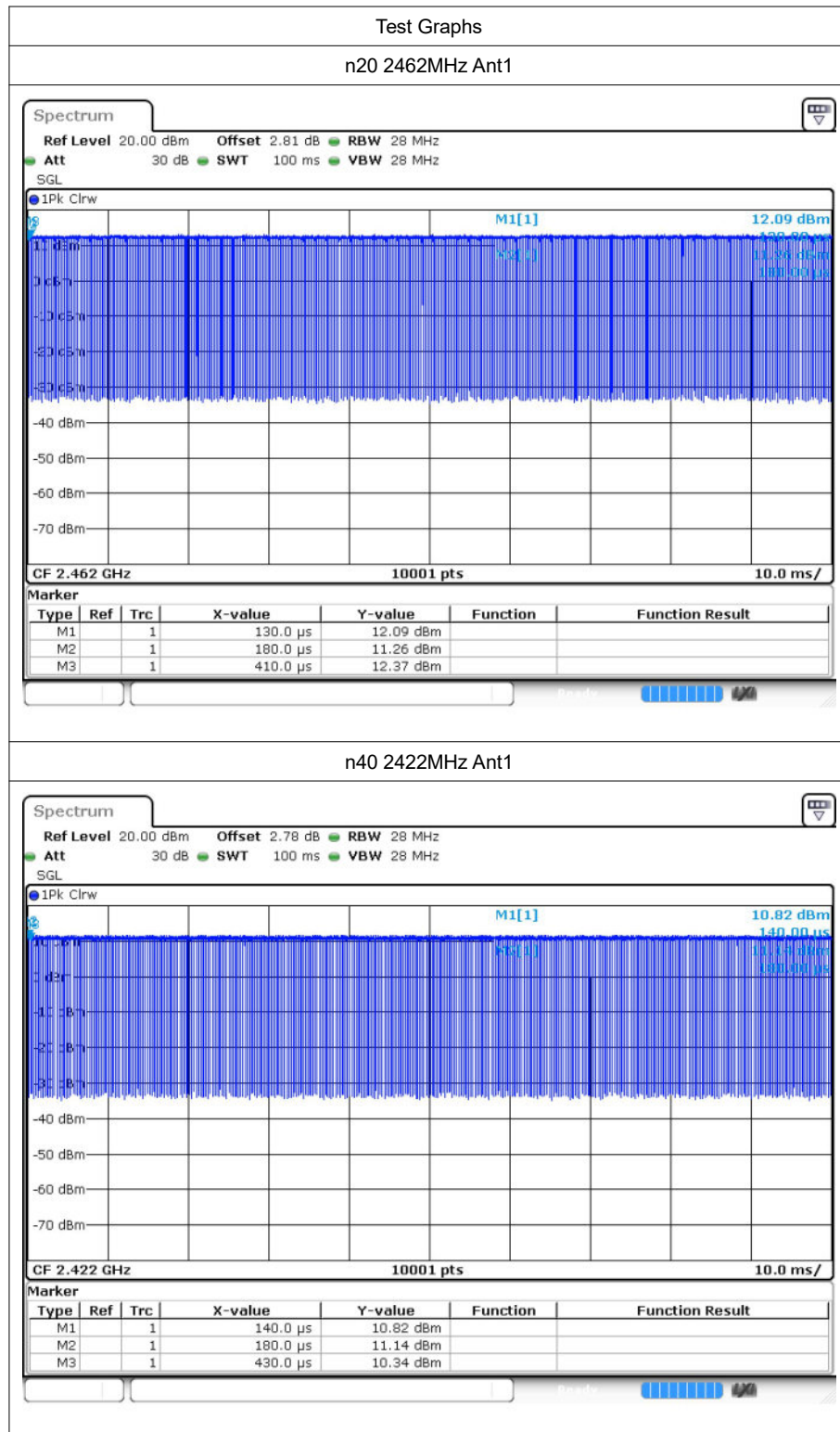
## 1.2 Test Graphs

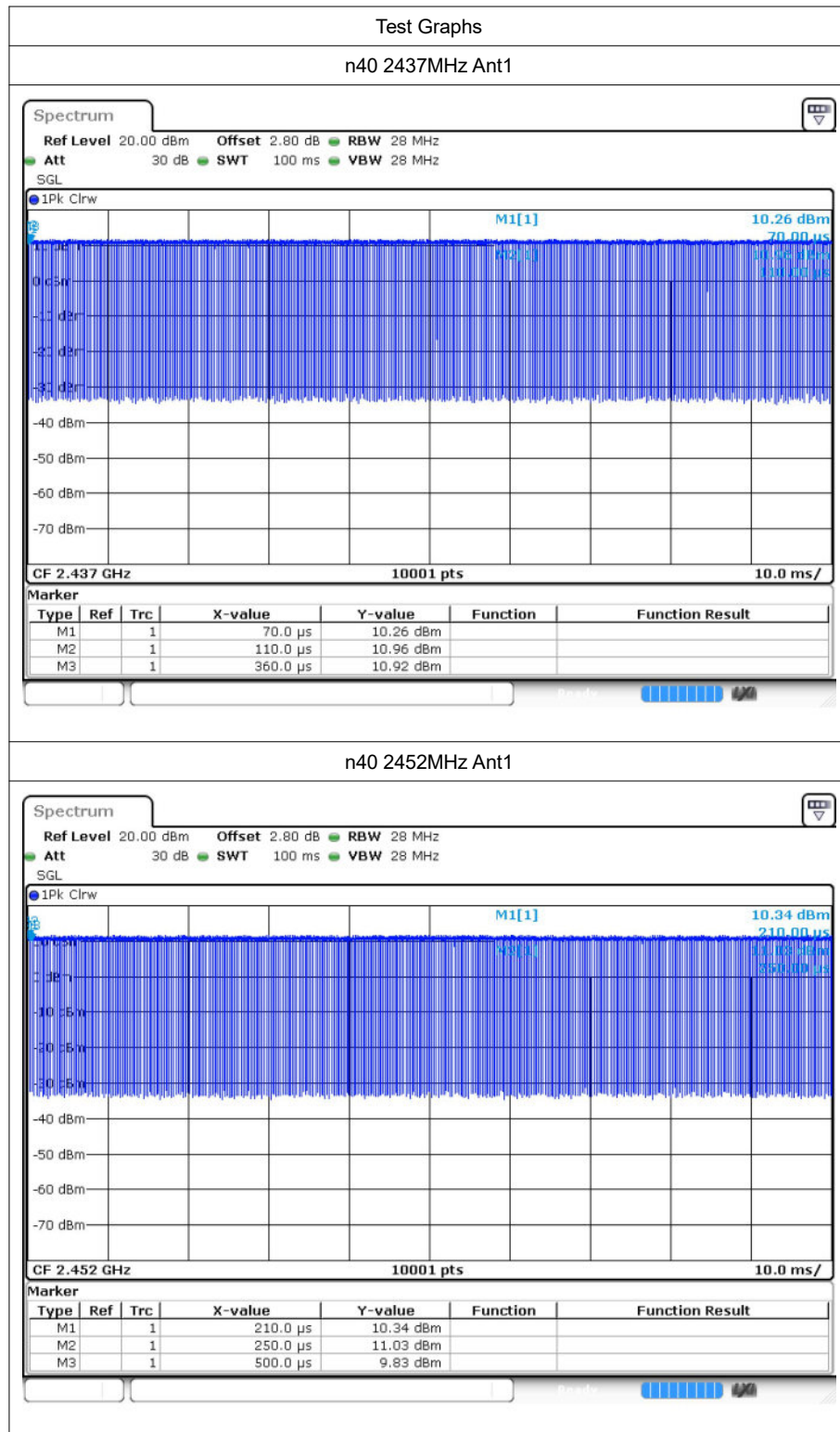














## 2 Maximum Conducted Output Power

### 2.1 Test Result

| Mode | Frequency (MHz) | Antenna | Conducted Power (dBm) | Limit (dBm) | Verdict |
|------|-----------------|---------|-----------------------|-------------|---------|
| b    | 2412            | Ant1    | 15.43                 | 30          | Pass    |
| b    | 2437            | Ant1    | 15.39                 | 30          | Pass    |
| b    | 2462            | Ant1    | 15.29                 | 30          | Pass    |
| g    | 2412            | Ant1    | 14.86                 | 30          | Pass    |
| g    | 2437            | Ant1    | 14.92                 | 30          | Pass    |
| g    | 2462            | Ant1    | 14.62                 | 30          | Pass    |
| n20  | 2412            | Ant1    | 14.6                  | 30          | Pass    |
| n20  | 2437            | Ant1    | 14.21                 | 30          | Pass    |
| n20  | 2462            | Ant1    | 14.11                 | 30          | Pass    |
| n40  | 2422            | Ant1    | 14.26                 | 30          | Pass    |
| n40  | 2437            | Ant1    | 14.3                  | 30          | Pass    |
| n40  | 2452            | Ant1    | 14.08                 | 30          | Pass    |

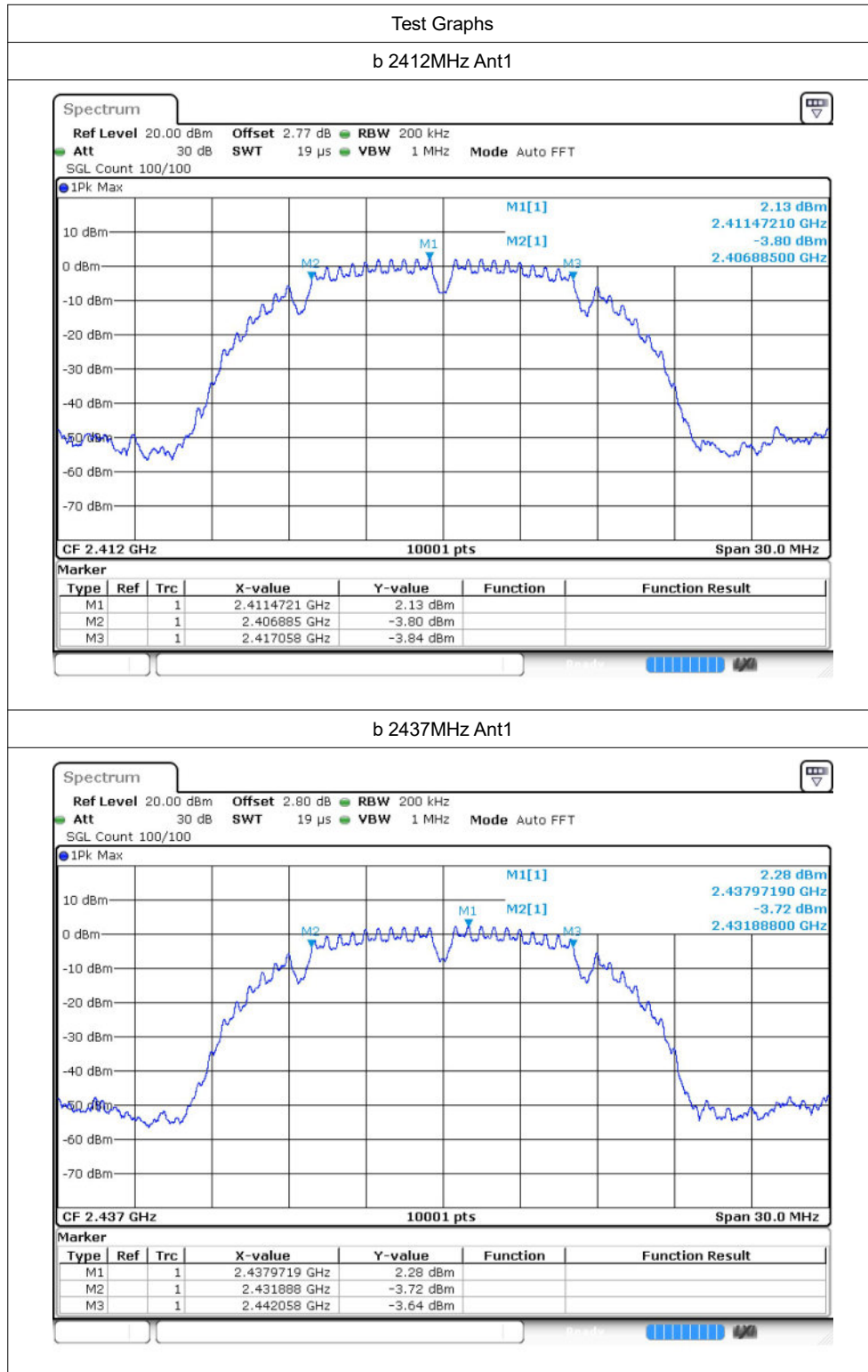


### 3 -6dB Bandwidth

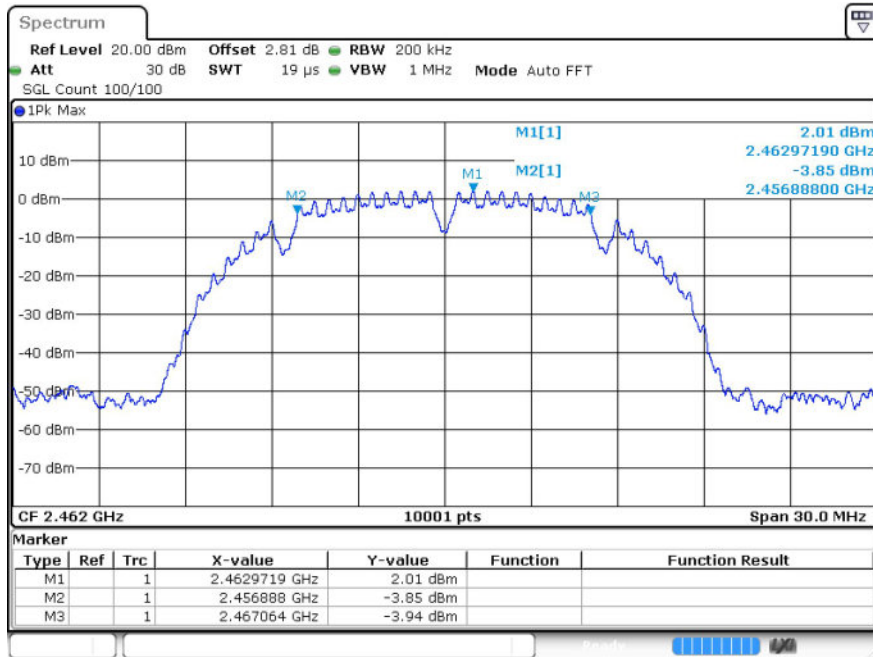
#### 3.1 Test Result

| Mode | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|------|-----------------|---------|-----------------------|-----------------------------|---------|
| b    | 2412            | Ant1    | 10.173                | 0.5                         | Pass    |
| b    | 2437            | Ant1    | 10.17                 | 0.5                         | Pass    |
| b    | 2462            | Ant1    | 10.176                | 0.5                         | Pass    |
| g    | 2412            | Ant1    | 15.201                | 0.5                         | Pass    |
| g    | 2437            | Ant1    | 15.201                | 0.5                         | Pass    |
| g    | 2462            | Ant1    | 15.213                | 0.5                         | Pass    |
| n20  | 2412            | Ant1    | 15.381                | 0.5                         | Pass    |
| n20  | 2437            | Ant1    | 16.104                | 0.5                         | Pass    |
| n20  | 2462            | Ant1    | 17.19                 | 0.5                         | Pass    |
| n40  | 2422            | Ant1    | 35.898                | 0.5                         | Pass    |
| n40  | 2437            | Ant1    | 34.158                | 0.5                         | Pass    |
| n40  | 2452            | Ant1    | 36.048                | 0.5                         | Pass    |

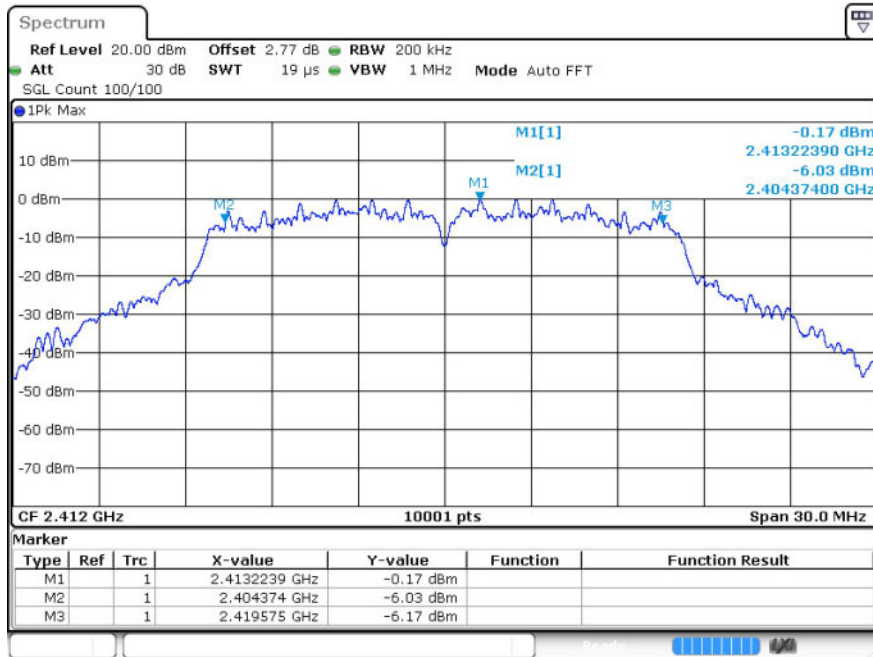
## 3.2 Test Graphs



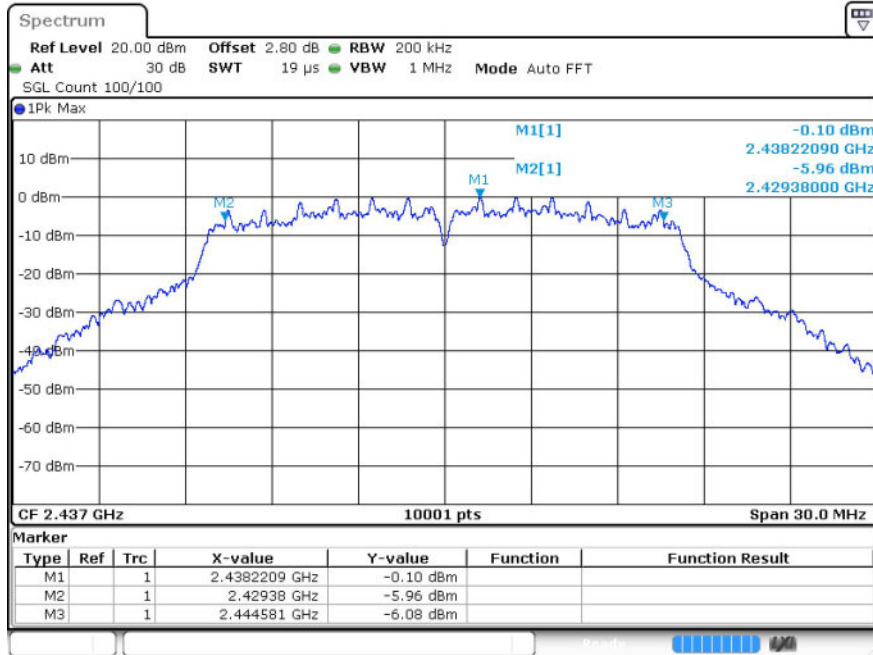
b 2462MHz Ant1



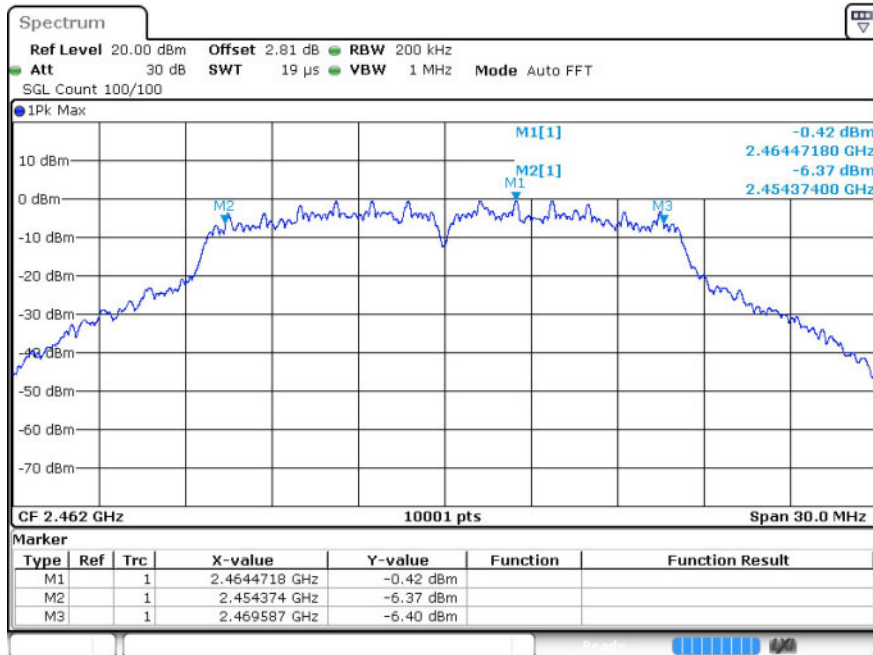
g 2412MHz Ant1

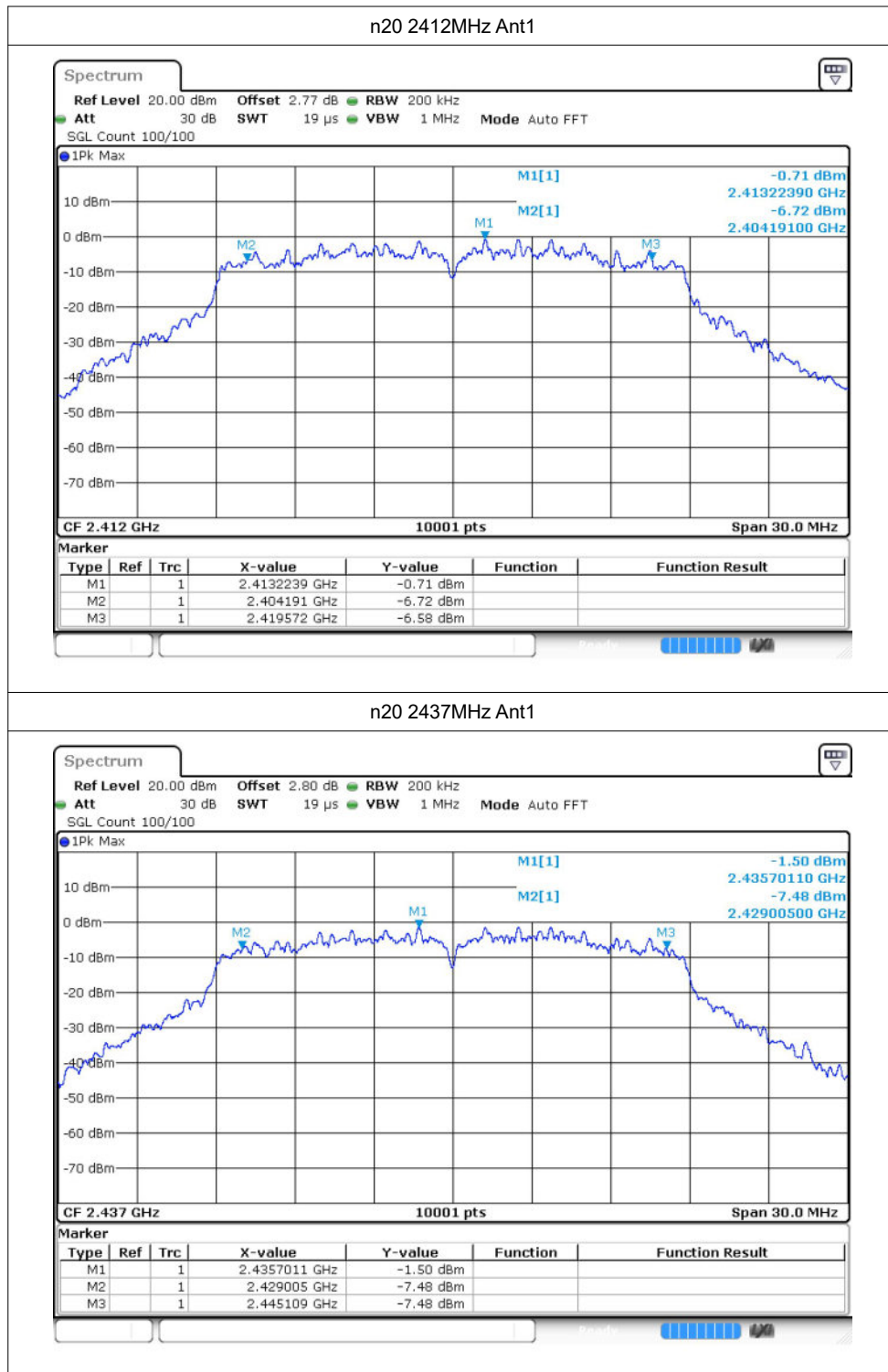


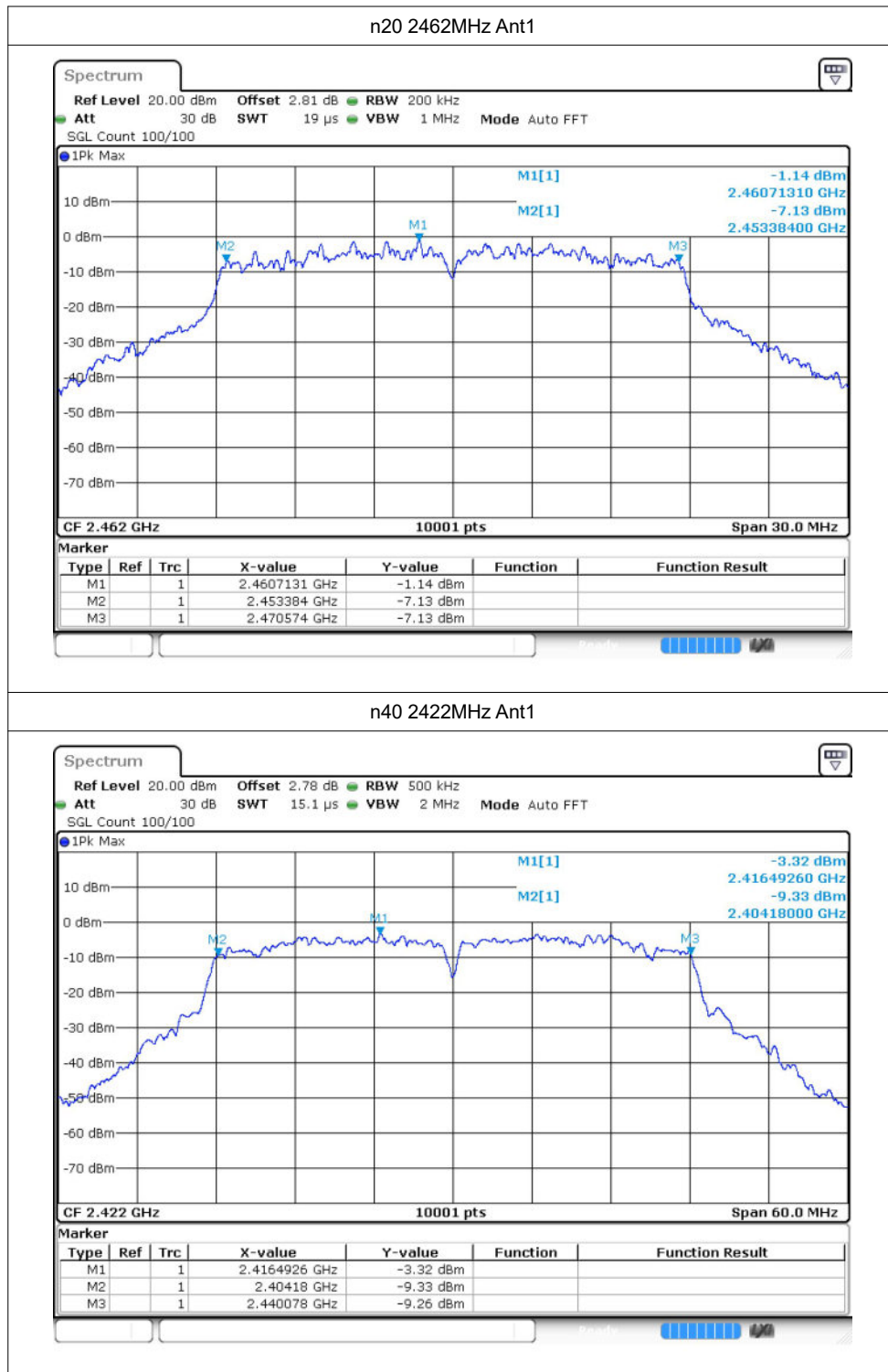
g 2437MHz Ant1



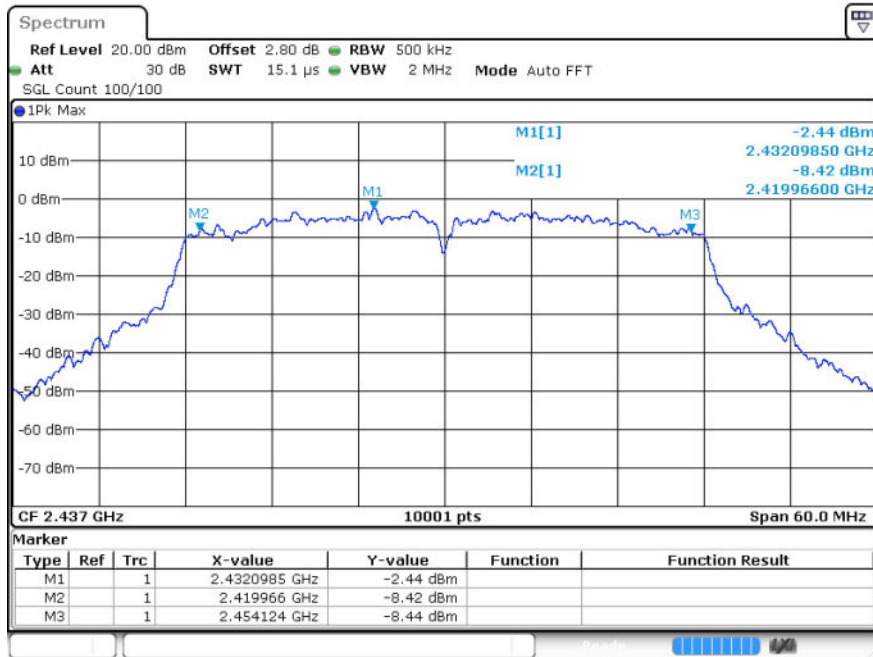
g 2462MHz Ant1



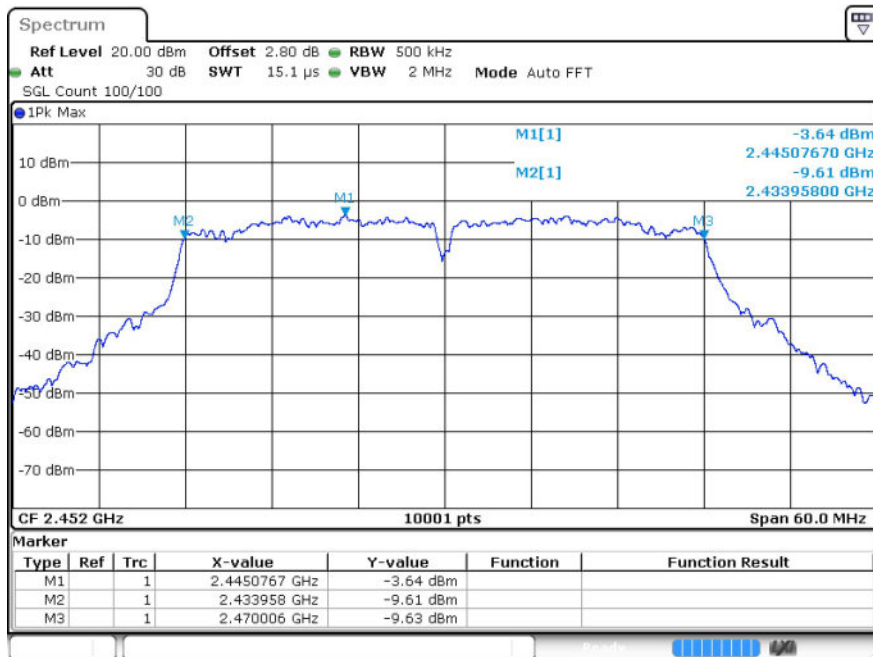




n40 2437MHz Ant1



n40 2452MHz Ant1

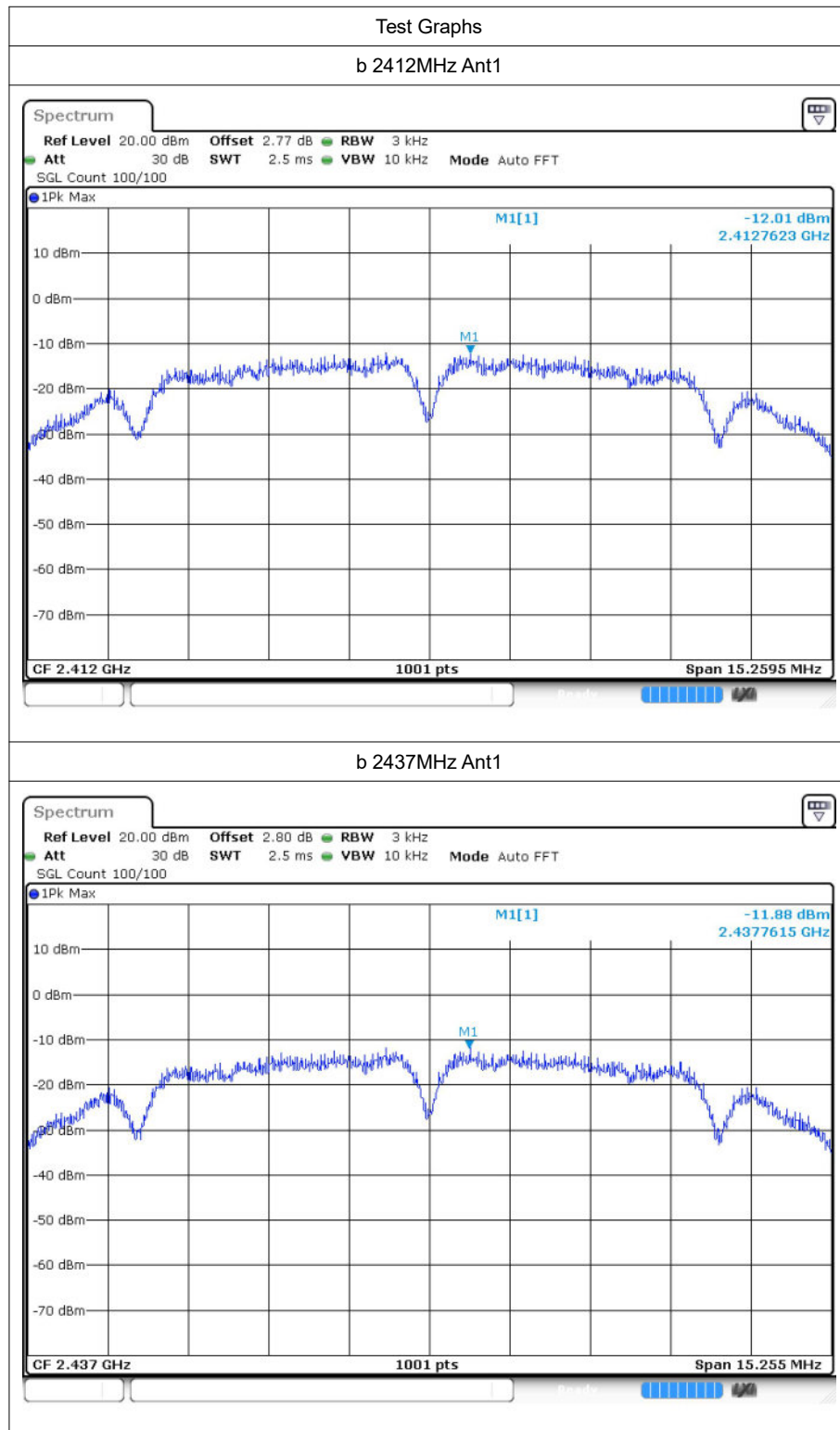


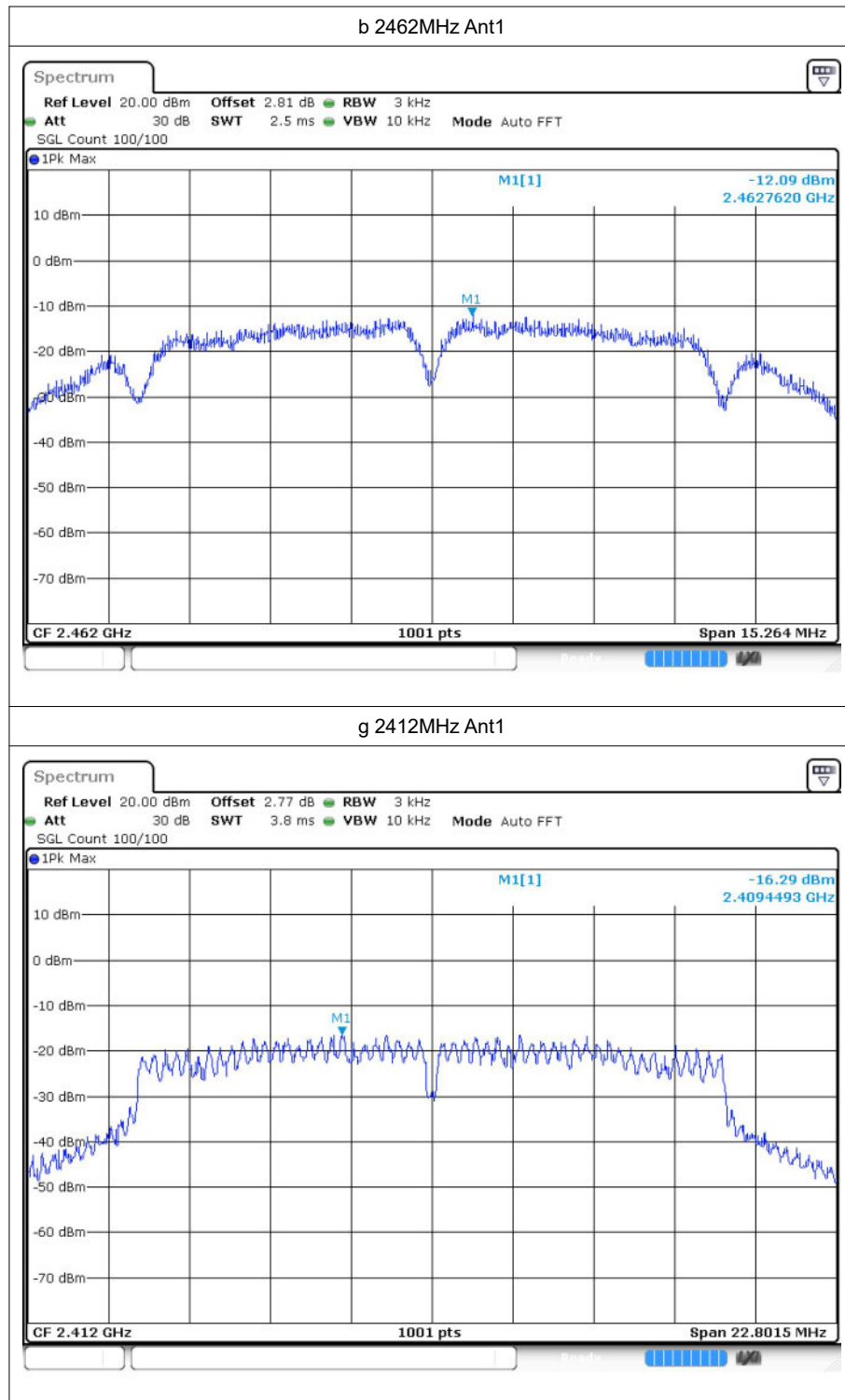
## 4 Maximum Power Spectral Density Level

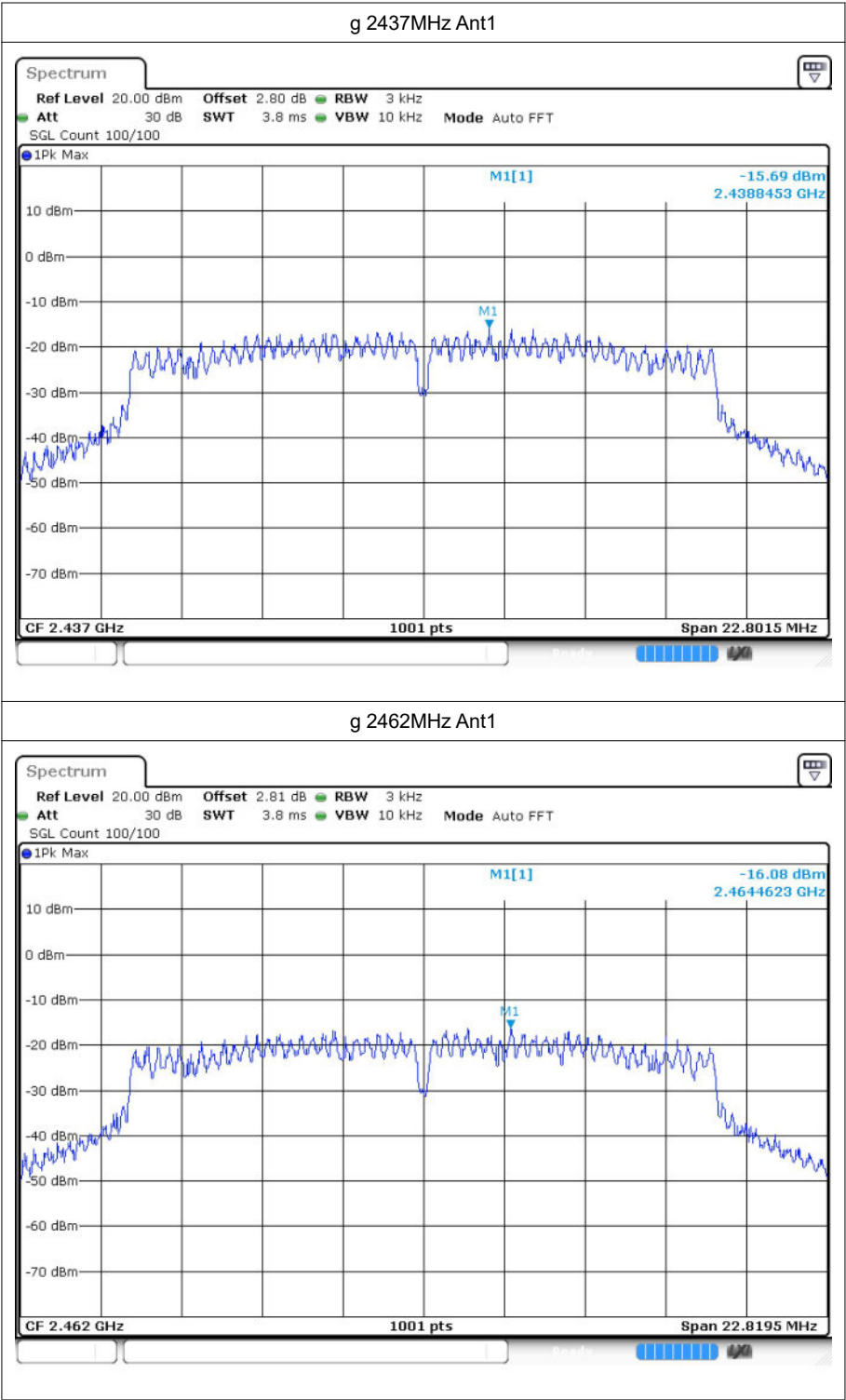
### 4.1 Test Result

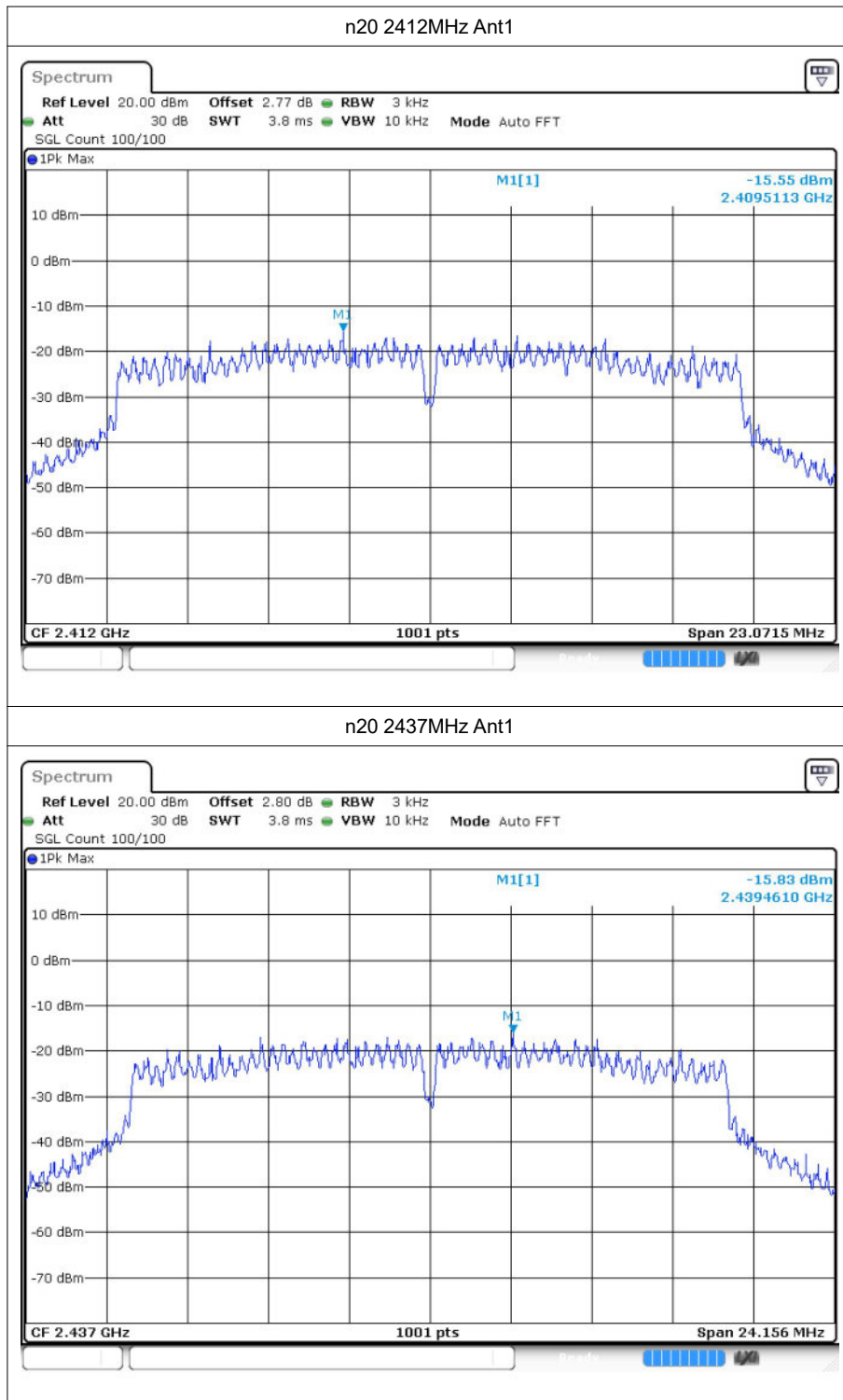
| Mode | Frequency (MHz) | Antenna | Conducted PSD<br>(dBm/3-100kHz) | Limit<br>(dBm/3kHz) | Verdict |
|------|-----------------|---------|---------------------------------|---------------------|---------|
| b    | 2412            | Ant1    | -12.01                          | ≤8                  | Pass    |
| b    | 2437            | Ant1    | -11.88                          | ≤8                  | Pass    |
| b    | 2462            | Ant1    | -12.09                          | ≤8                  | Pass    |
| g    | 2412            | Ant1    | -16.29                          | ≤8                  | Pass    |
| g    | 2437            | Ant1    | -15.69                          | ≤8                  | Pass    |
| g    | 2462            | Ant1    | -16.08                          | ≤8                  | Pass    |
| n20  | 2412            | Ant1    | -15.55                          | ≤8                  | Pass    |
| n20  | 2437            | Ant1    | -15.83                          | ≤8                  | Pass    |
| n20  | 2462            | Ant1    | -16.31                          | ≤8                  | Pass    |
| n40  | 2422            | Ant1    | -19.82                          | ≤8                  | Pass    |
| n40  | 2437            | Ant1    | -19.51                          | ≤8                  | Pass    |
| n40  | 2452            | Ant1    | -20.58                          | ≤8                  | Pass    |

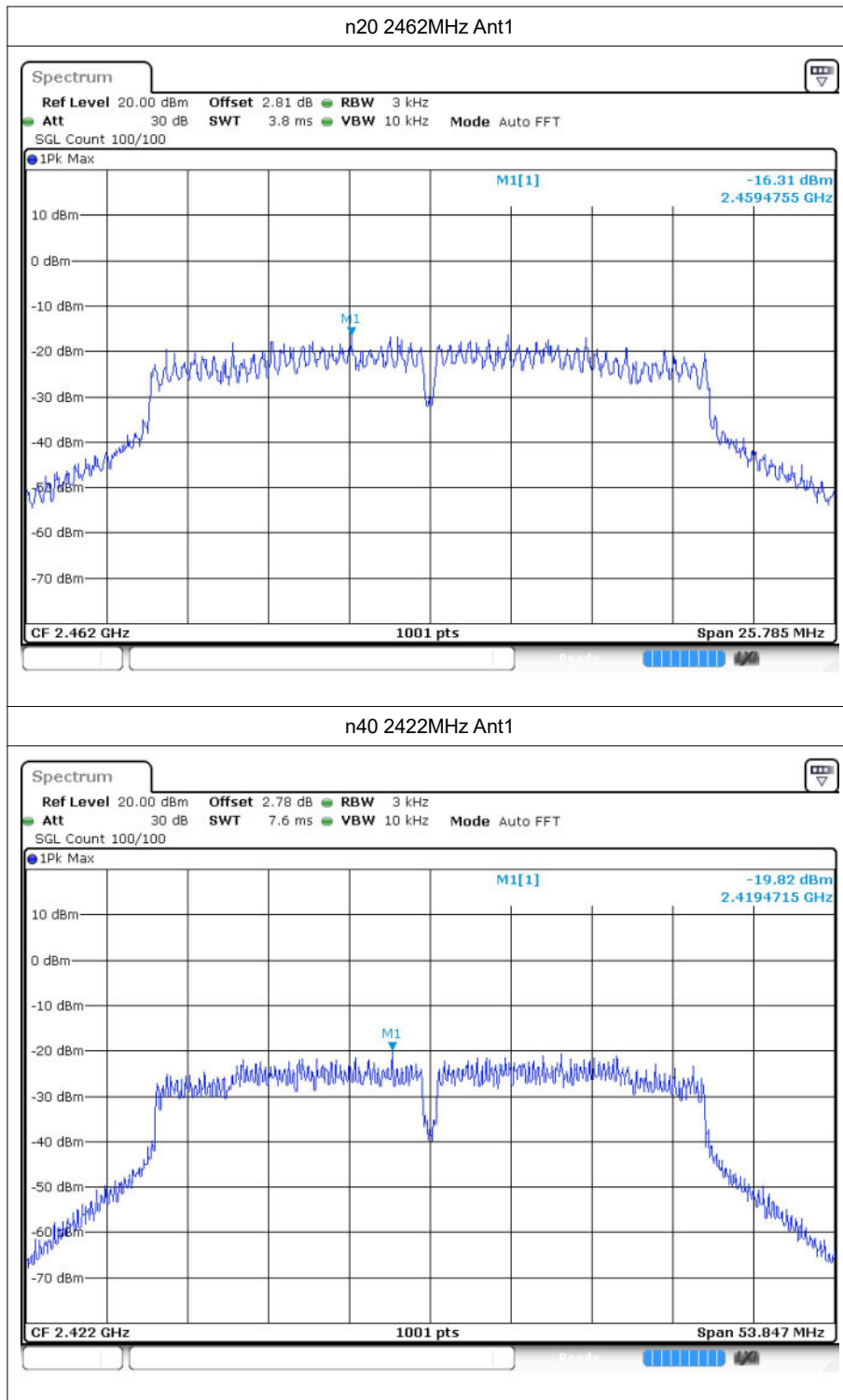
## 4.2 Test Graphs

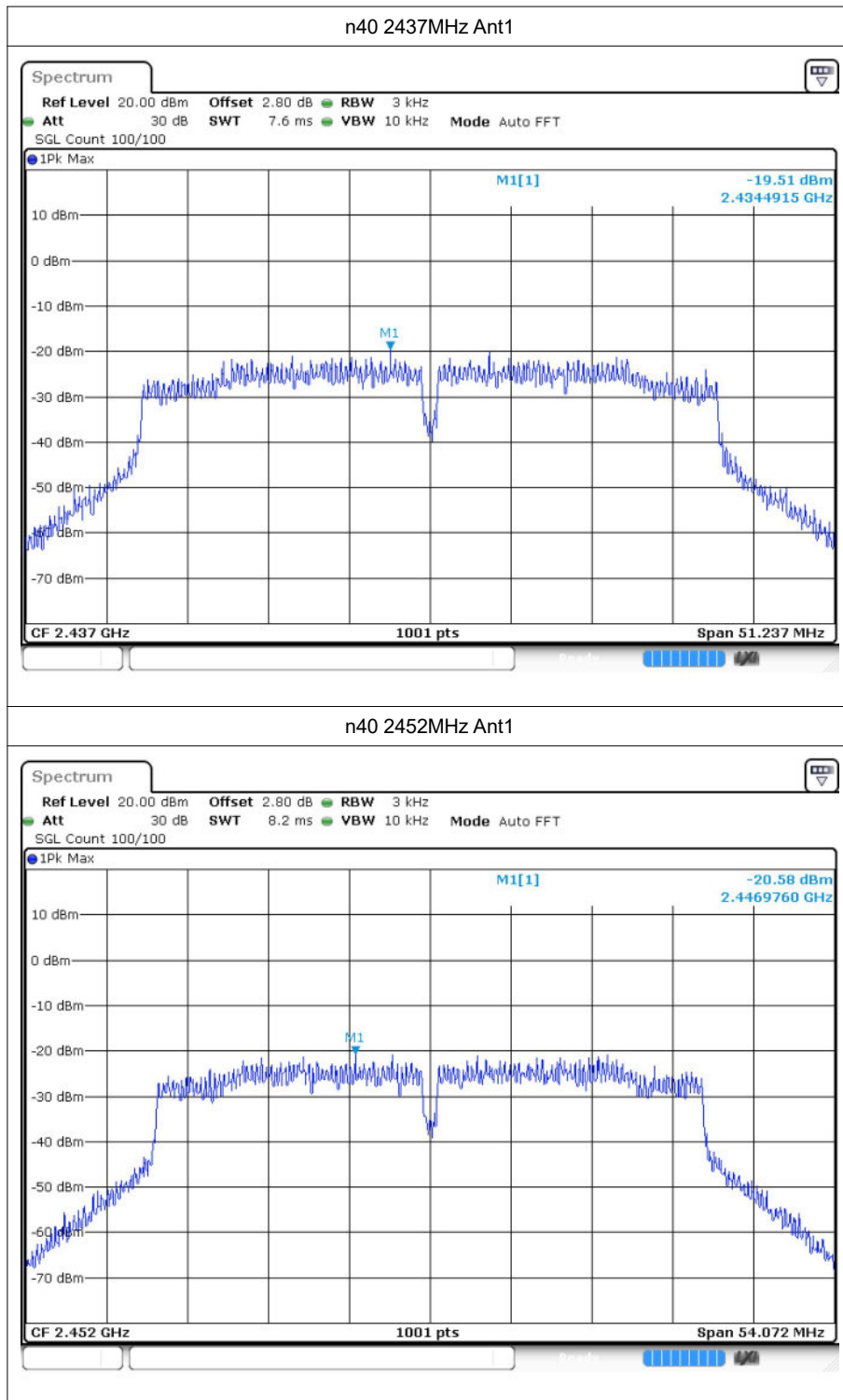












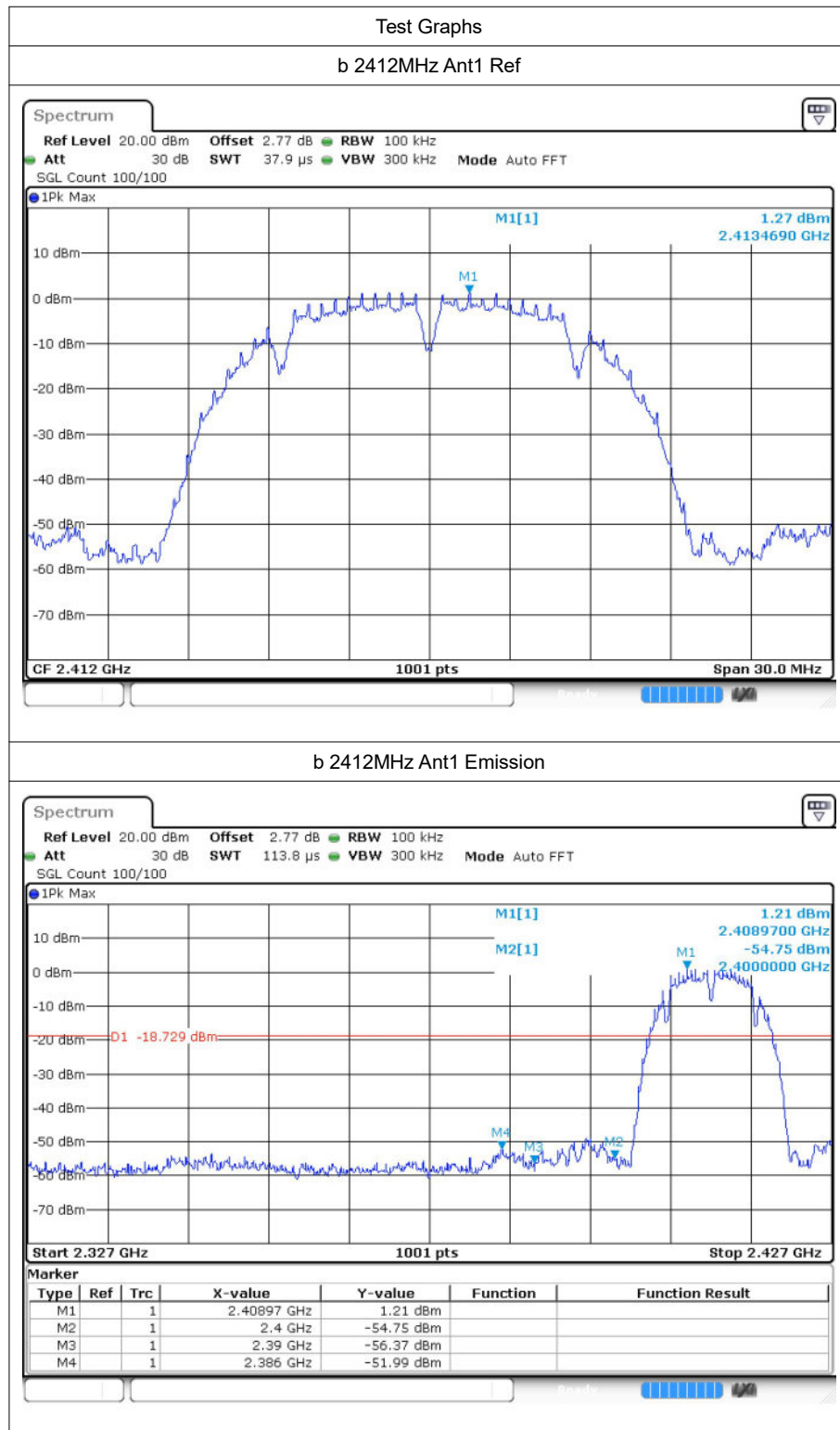


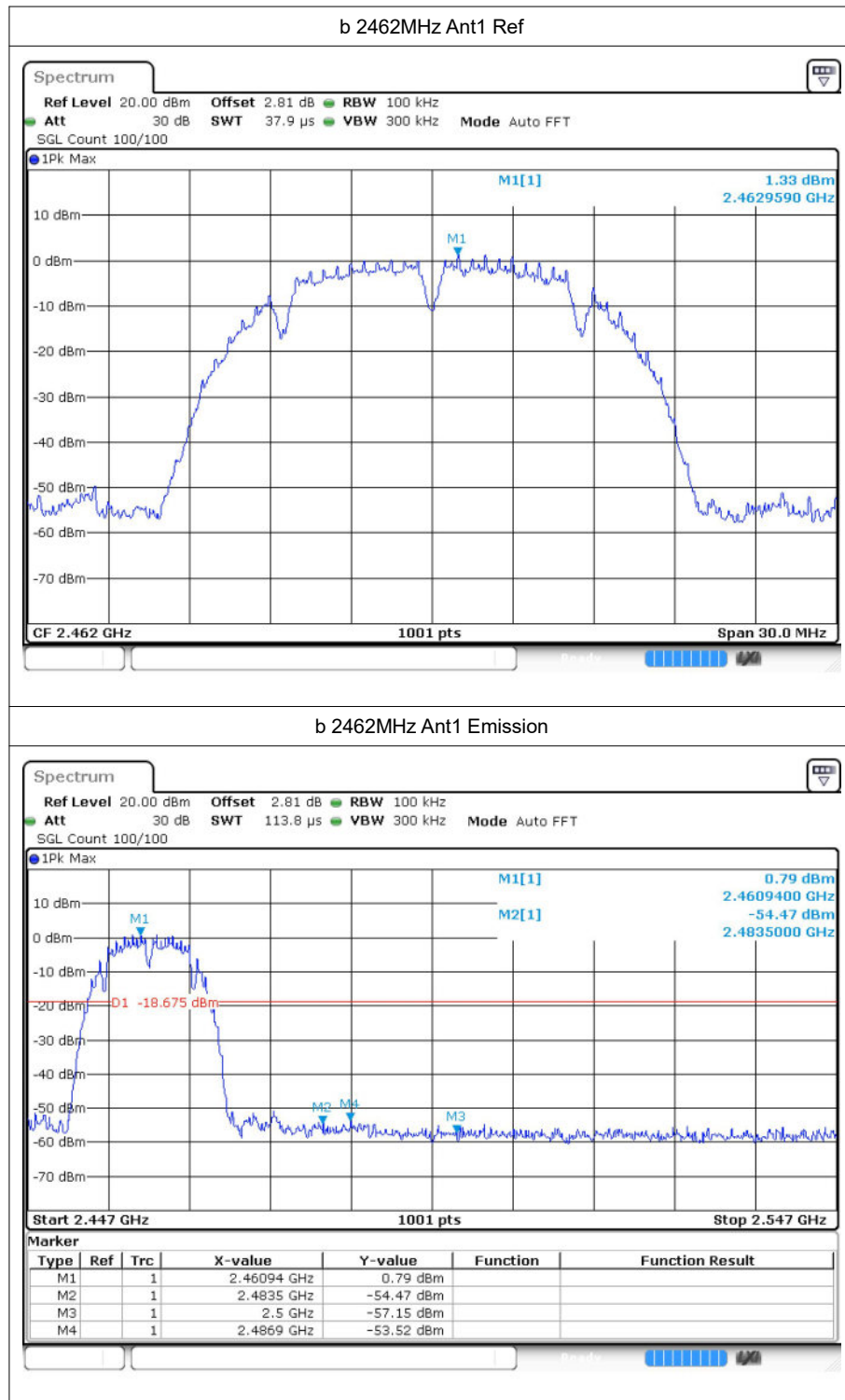
## 5 Band Edge

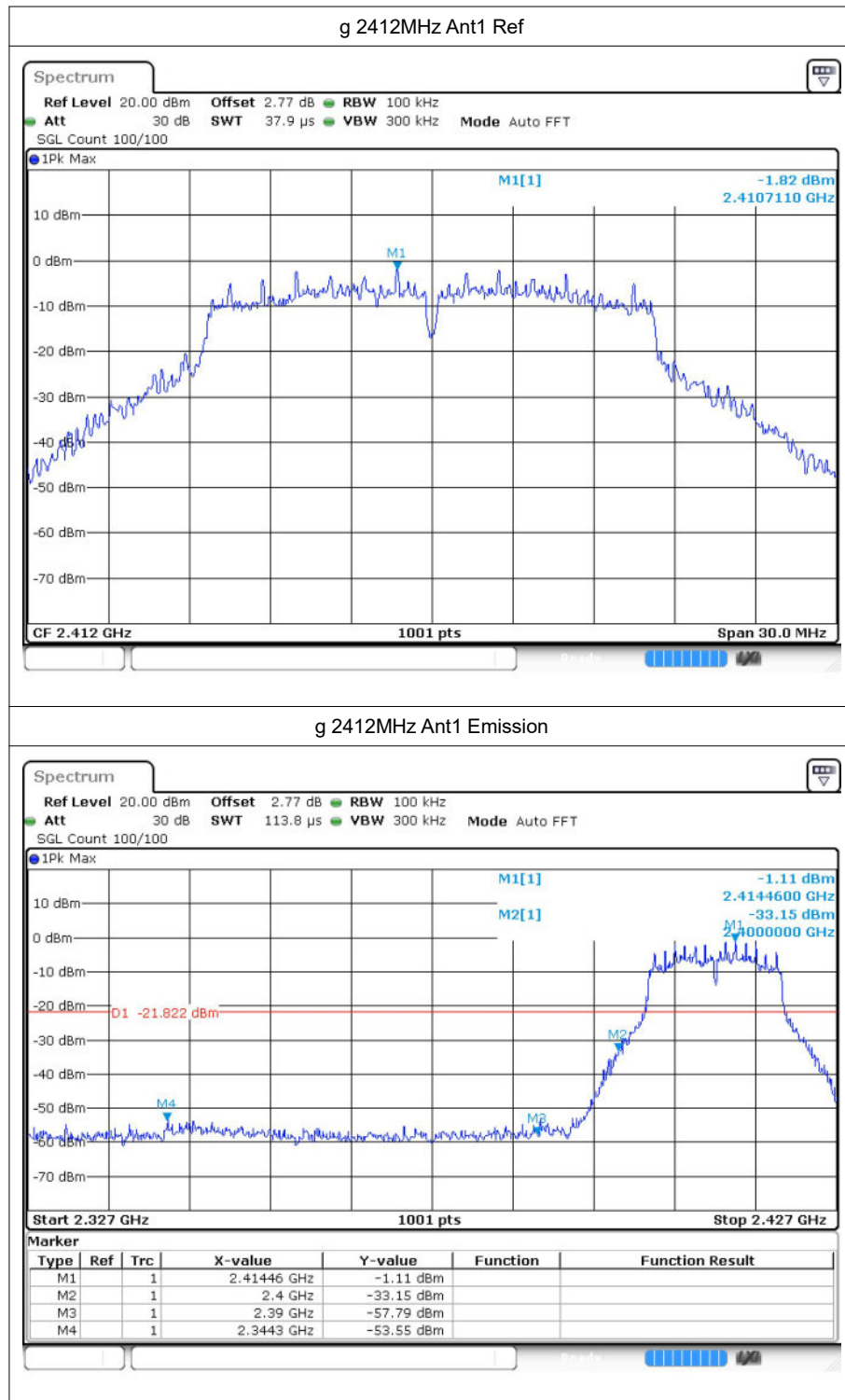
### 5.1 Test Result

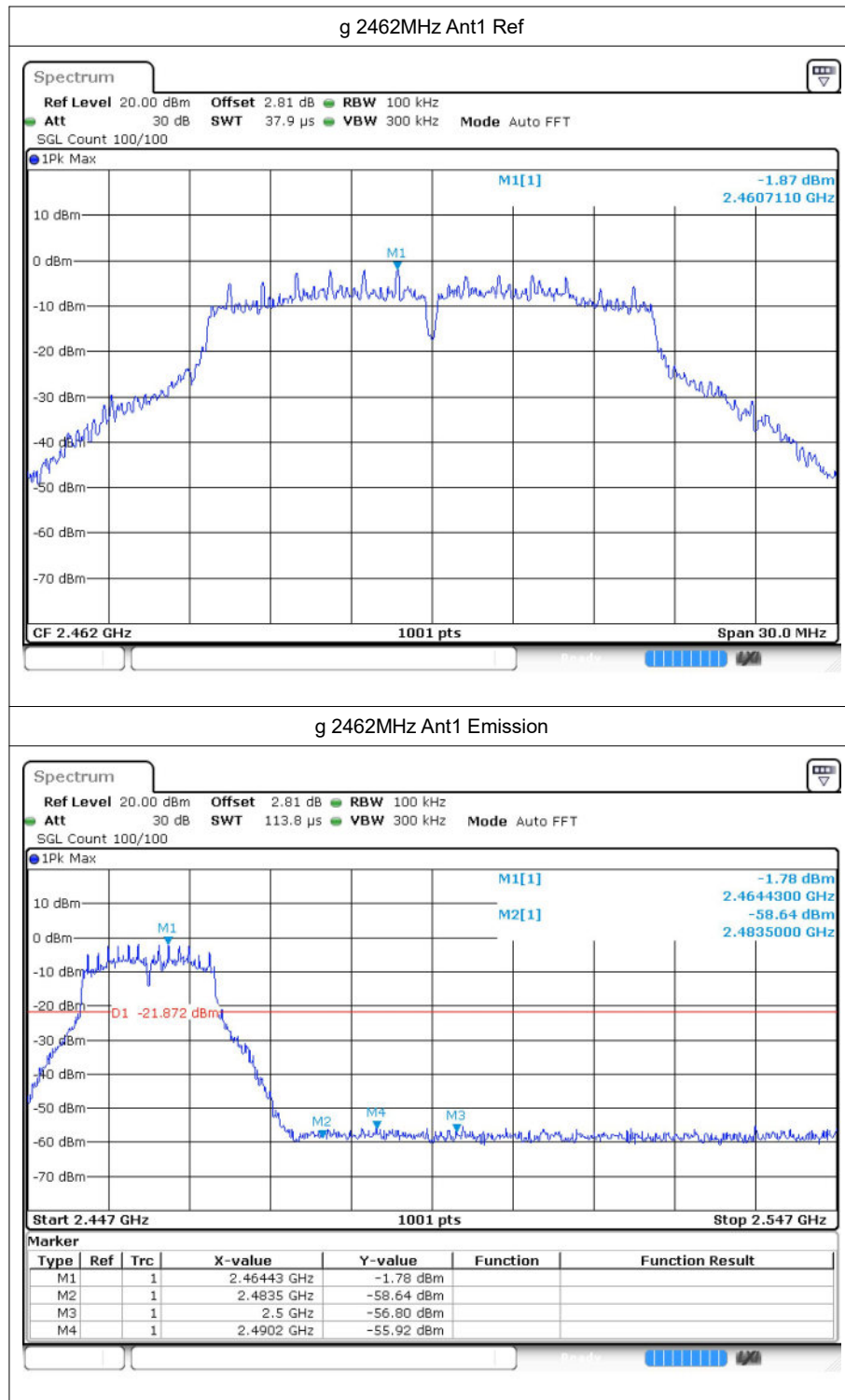
| Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|------|-----------------|---------|-----------------|-------------|---------|
| b    | 2412            | Ant1    | -53.25          | -20         | Pass    |
| b    | 2462            | Ant1    | -54.85          | -20         | Pass    |
| g    | 2412            | Ant1    | -51.73          | -20         | Pass    |
| g    | 2462            | Ant1    | -54.05          | -20         | Pass    |
| n20  | 2412            | Ant1    | -52.11          | -20         | Pass    |
| n20  | 2462            | Ant1    | -53.04          | -20         | Pass    |
| n40  | 2422            | Ant1    | -49.89          | -20         | Pass    |
| n40  | 2452            | Ant1    | -48.57          | -20         | Pass    |

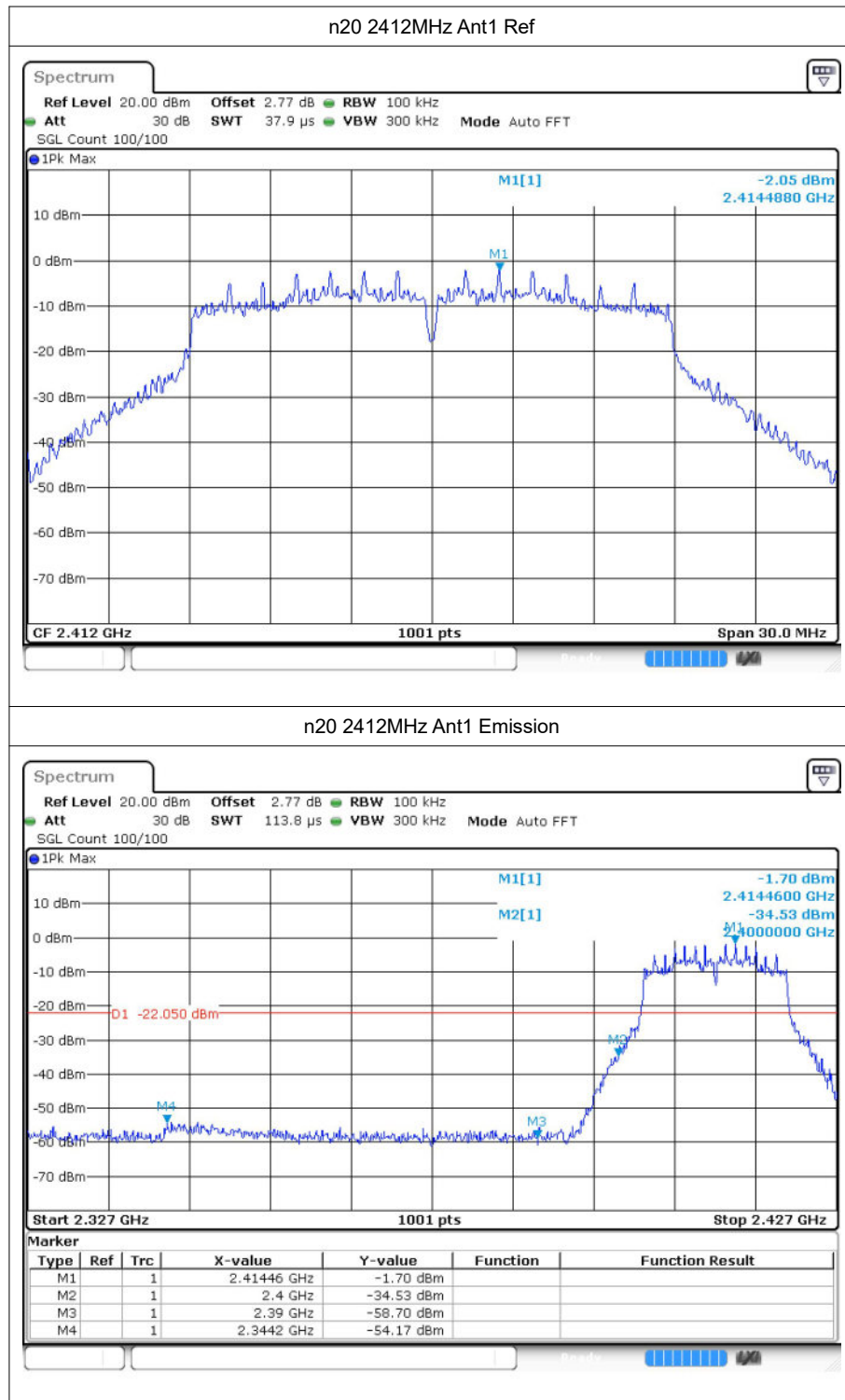
## 5.2 Test Graphs

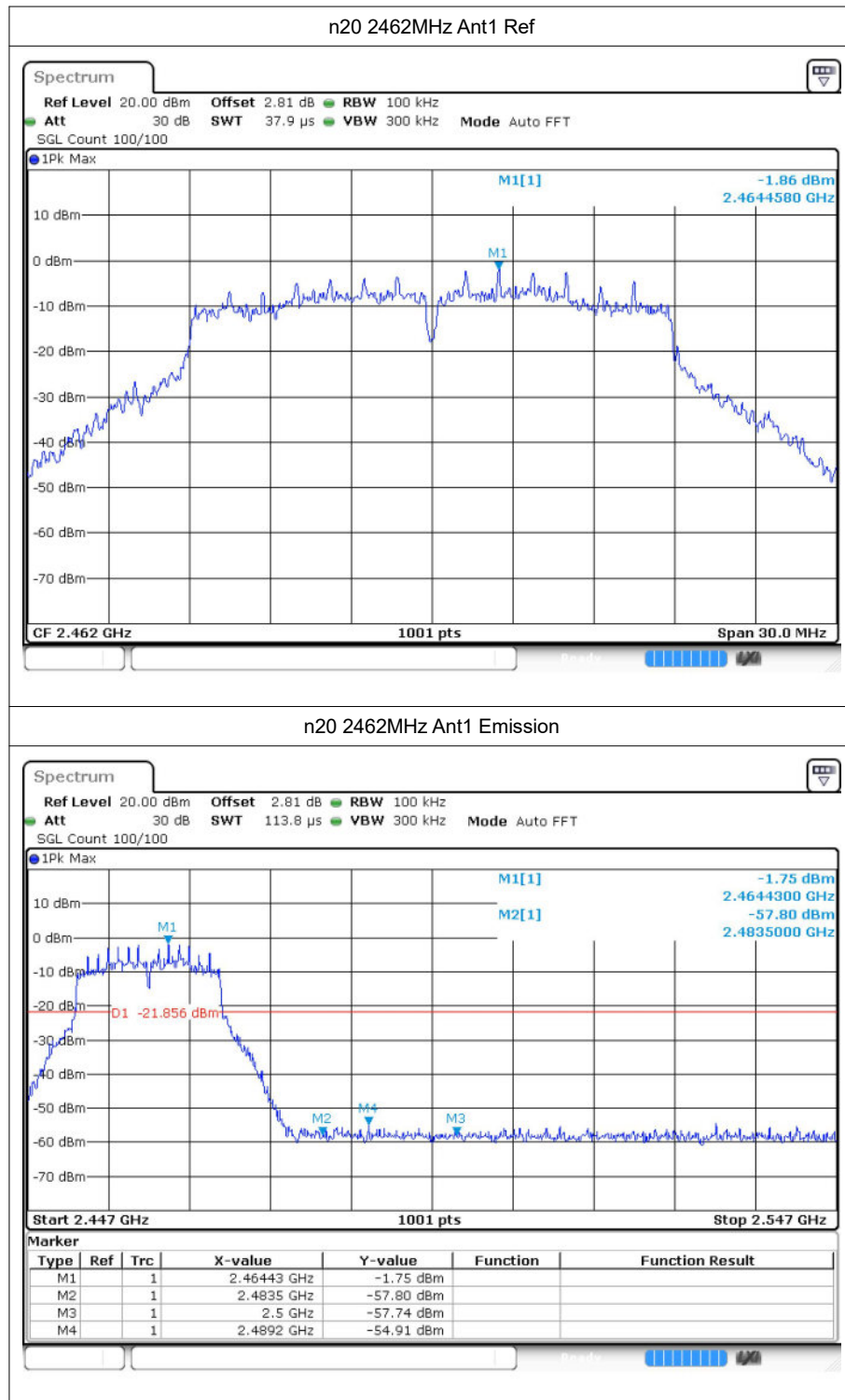


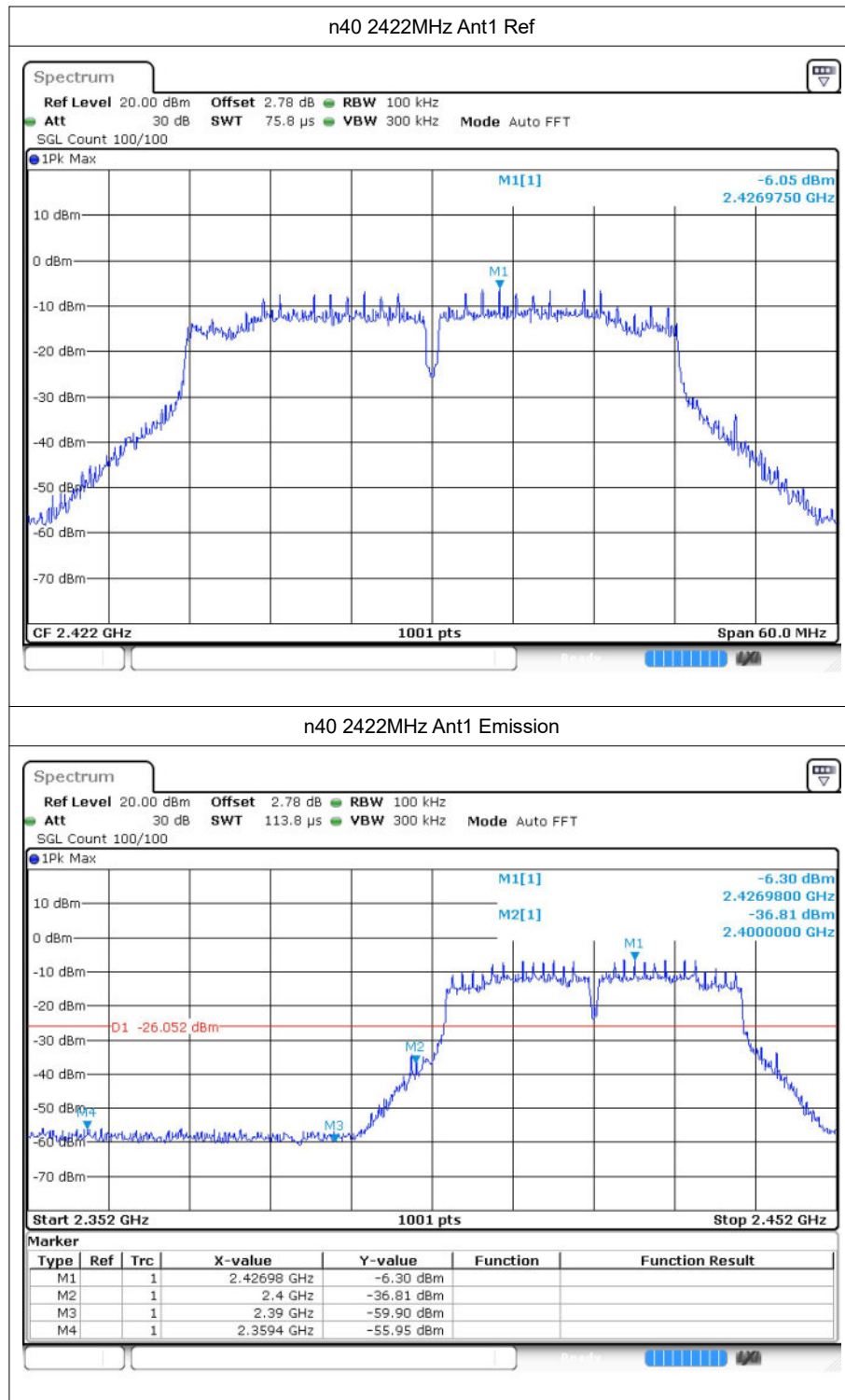


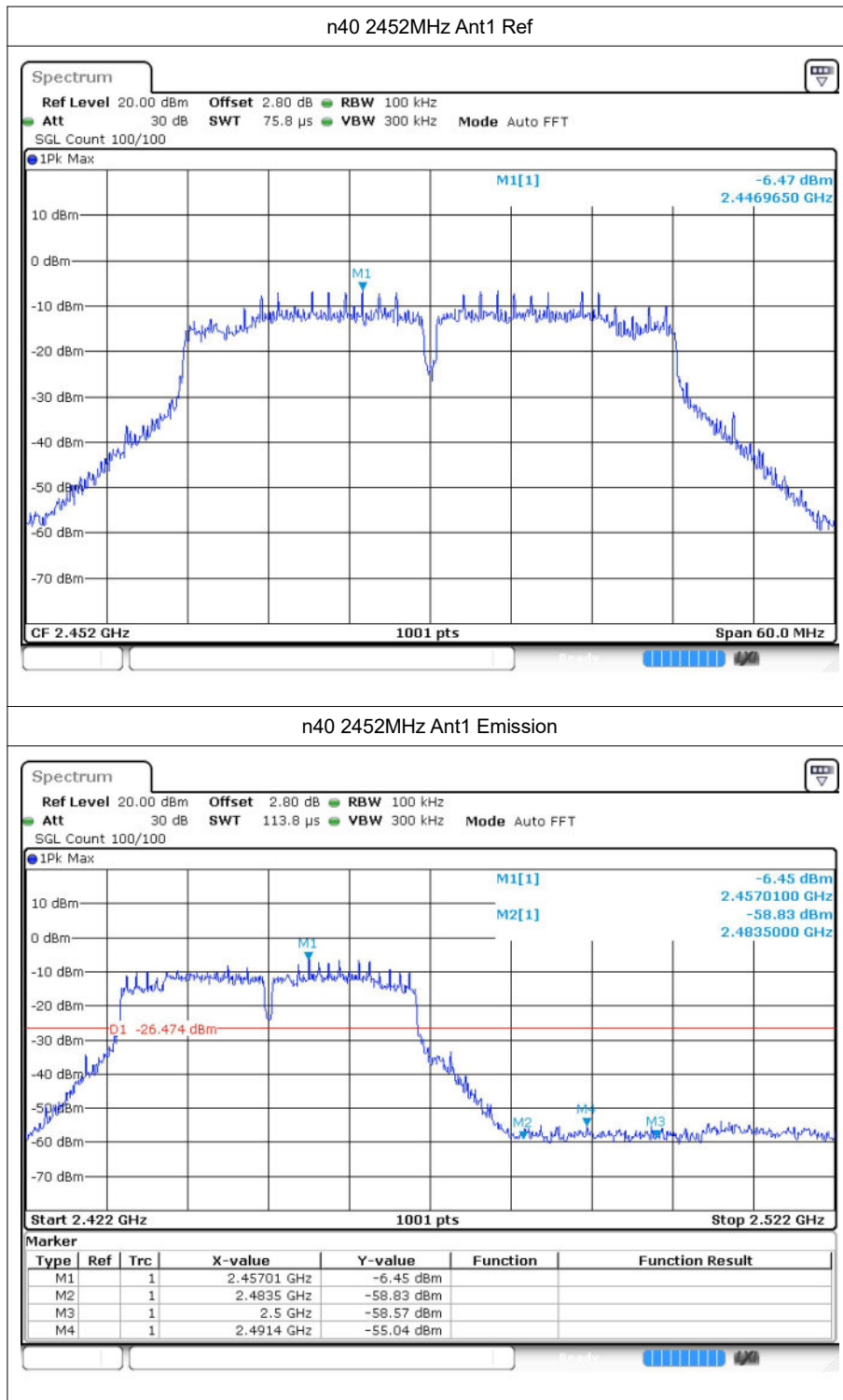














## 6 Conducted RF Spurious Emission

### 6.1 Test Result

| Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|------|-----------------|---------|-----------------|-------------|---------|
| b    | 2412            | Ant1    | -42.34          | -20         | Pass    |
| b    | 2437            | Ant1    | -42.24          | -20         | Pass    |
| b    | 2462            | Ant1    | -43.43          | -20         | Pass    |
| g    | 2412            | Ant1    | -39.83          | -20         | Pass    |
| g    | 2437            | Ant1    | -40.89          | -20         | Pass    |
| g    | 2462            | Ant1    | -40.24          | -20         | Pass    |
| n20  | 2412            | Ant1    | -40.03          | -20         | Pass    |
| n20  | 2437            | Ant1    | -40.03          | -20         | Pass    |
| n20  | 2462            | Ant1    | -39.67          | -20         | Pass    |
| n40  | 2422            | Ant1    | -35.15          | -20         | Pass    |
| n40  | 2437            | Ant1    | -35.54          | -20         | Pass    |
| n40  | 2452            | Ant1    | -35.02          | -20         | Pass    |

## 6.2 Test Graphs

