



## Appendix C

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

Product Name: UV Photocuring 3D Printer

Trade Mark: ELEGOO

Test Model: Mars 5 Ultra

Environmental Conditions

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



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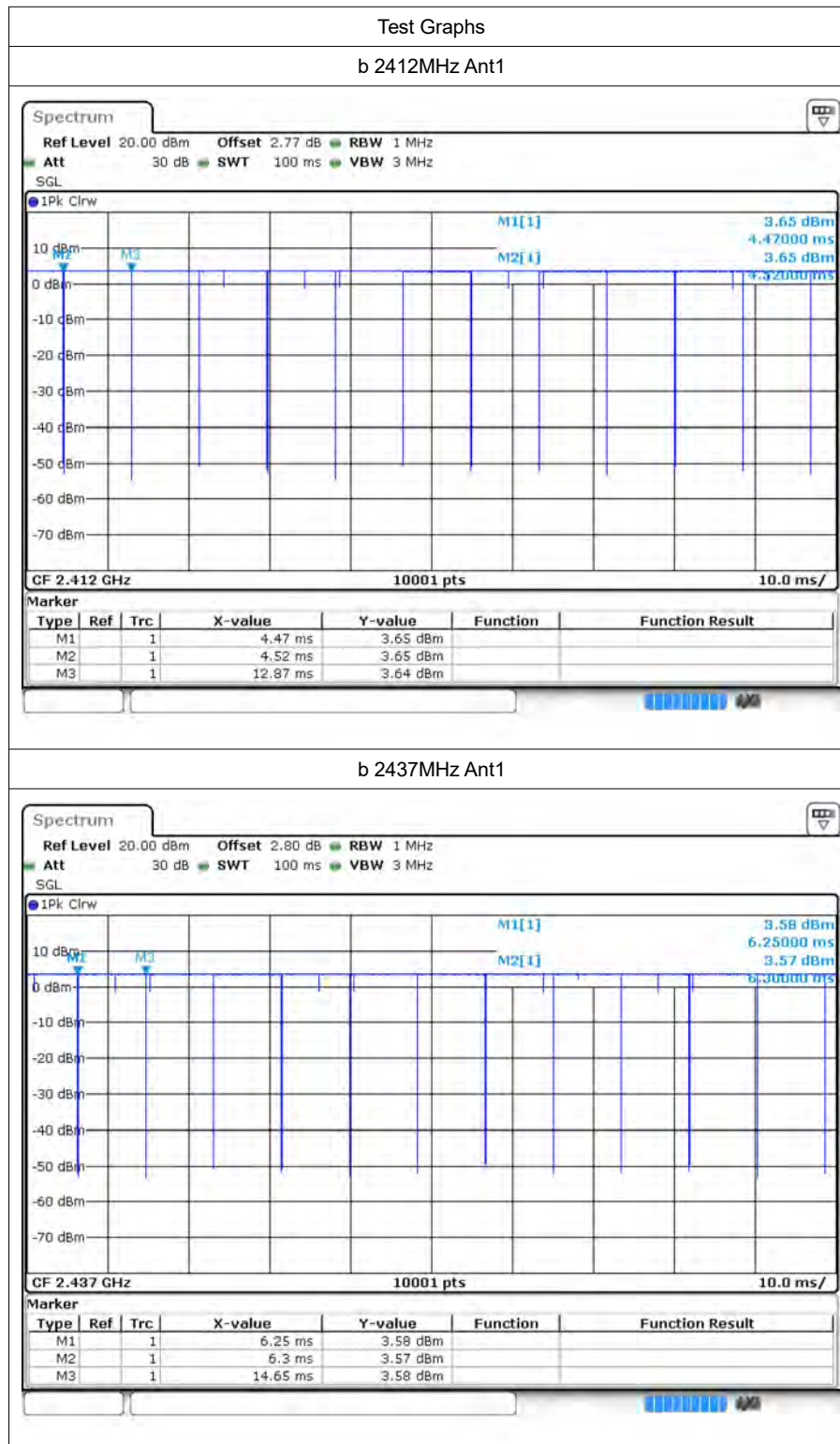


# 1 Duty Cycle

## 1.1 Test Result

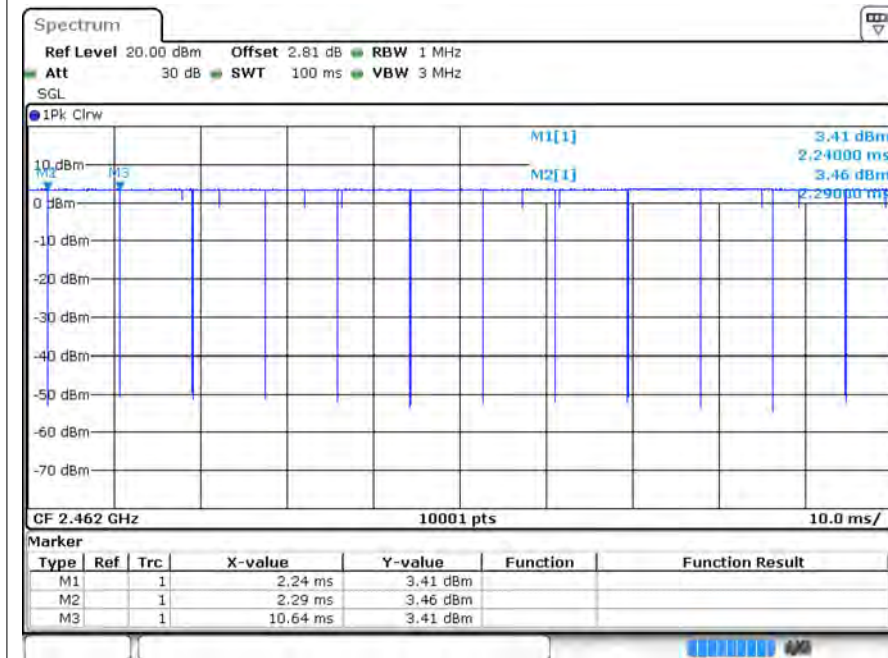
| Mode | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor | 1/T (kHz) |
|------|-----------------|---------|----------------|-------------------|-----------|
| b    | 2412            | Ant1    | 99.6           | 0.02              | 0.12      |
| b    | 2437            | Ant1    | 99.59          | 0.02              | 0.12      |
| b    | 2462            | Ant1    | 99.6           | 0.02              | 0.12      |
| g    | 2412            | Ant1    | 86.95          | 0.61              | 4.76      |
| g    | 2437            | Ant1    | 86.96          | 0.61              | 4.76      |
| g    | 2462            | Ant1    | 86.85          | 0.61              | 4.76      |
| n20  | 2412            | Ant1    | 87.57          | 0.58              | 4.35      |
| n20  | 2437            | Ant1    | 87.52          | 0.58              | 4.35      |
| n20  | 2462            | Ant1    | 87.56          | 0.58              | 4.35      |
| n40  | 2422            | Ant1    | 88.03          | 0.55              | 4         |
| n40  | 2437            | Ant1    | 88.04          | 0.55              | 4         |
| n40  | 2452            | Ant1    | 88.08          | 0.55              | 4         |

## 1.2 Test Graphs



## Test Graphs

b 2462MHz Ant1



g 2412MHz Ant1

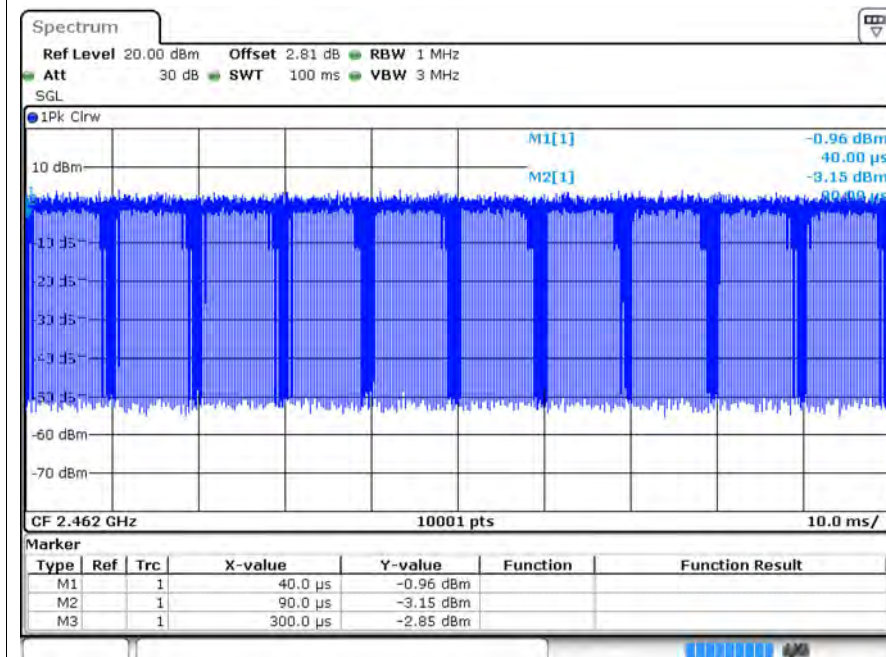


## Test Graphs

## g 2437MHz Ant1

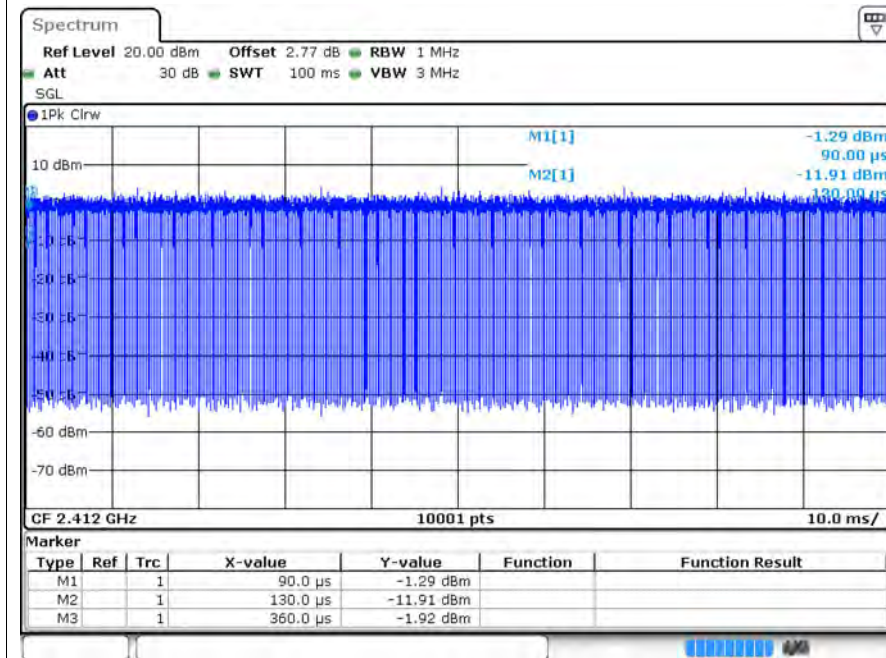


## g 2462MHz Ant1

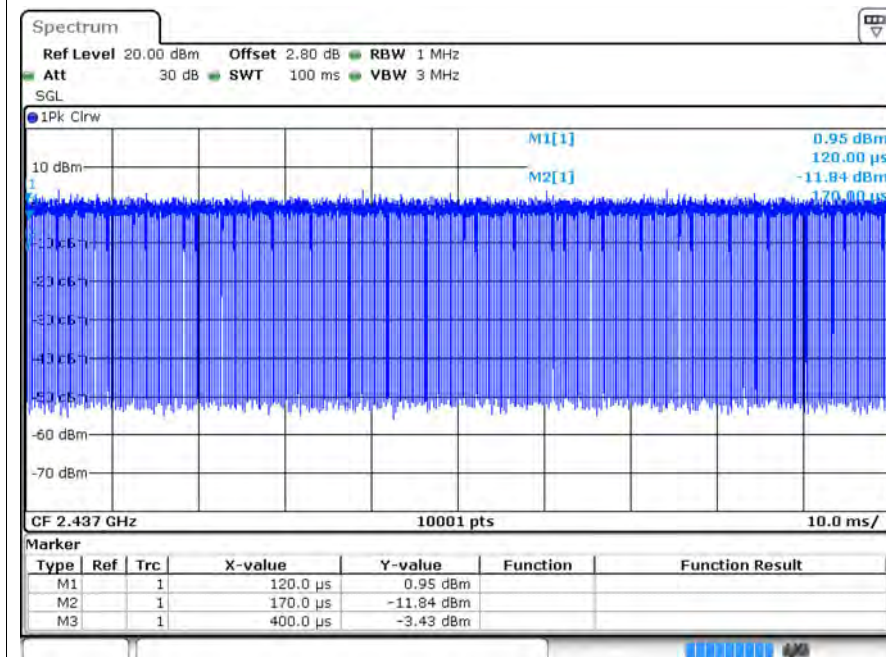


## Test Graphs

## n20 2412MHz Ant1

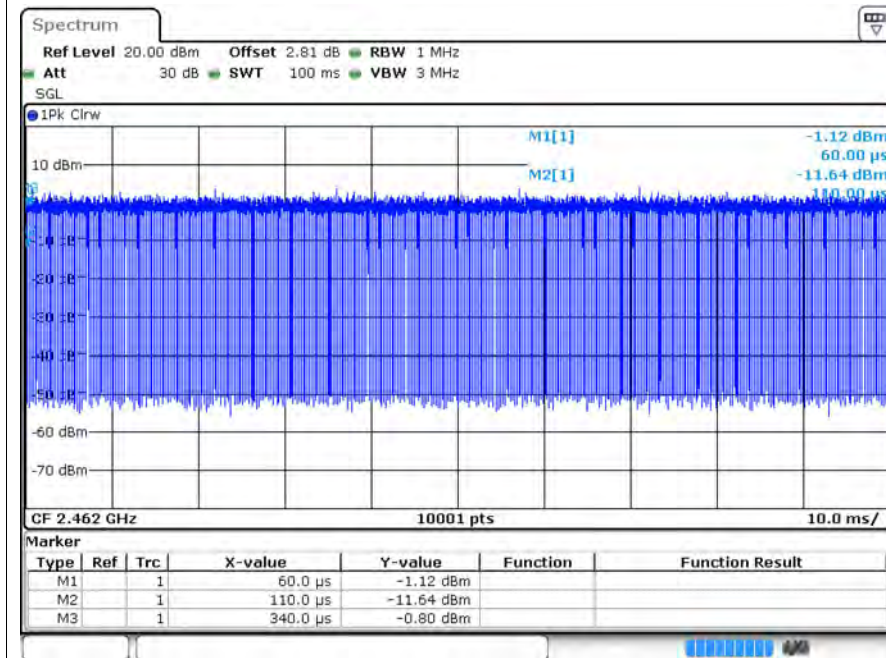


## n20 2437MHz Ant1

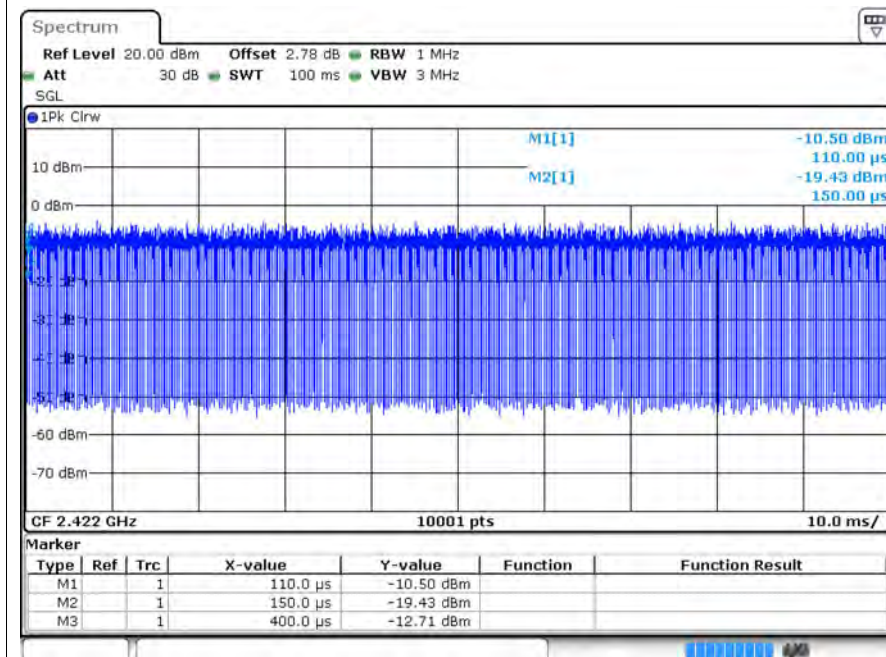


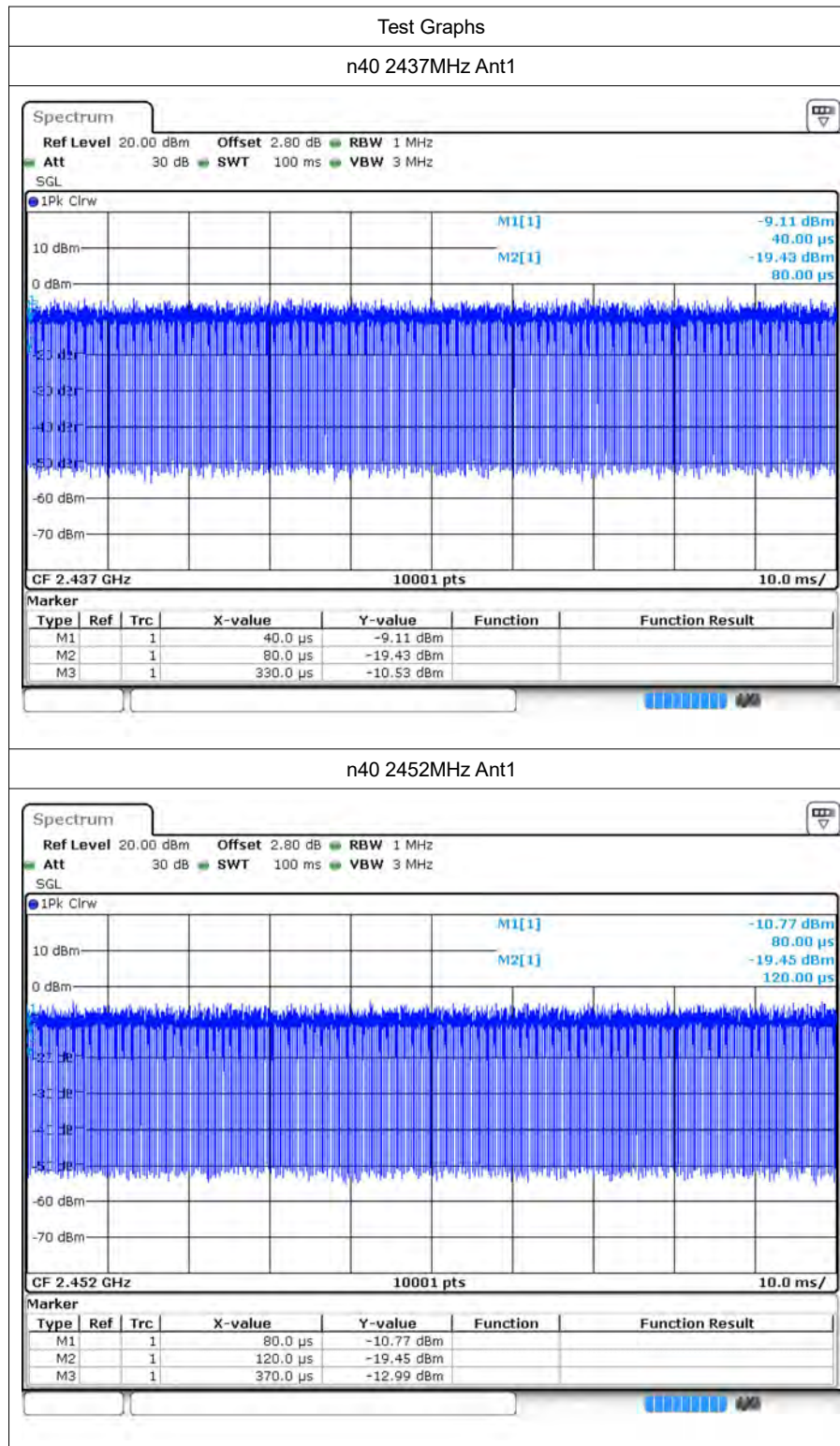
## Test Graphs

n20 2462MHz Ant1



n40 2422MHz Ant1







## 2 Maximum Conducted Output Power

### 2.1 Test Result

| Mode | Frequency (MHz) | Antenna | Conducted Power (dBm) | Limit (dBm) | Verdict |
|------|-----------------|---------|-----------------------|-------------|---------|
| b    | 2412            | Ant1    | 14.04                 | 30          | Pass    |
| b    | 2437            | Ant1    | 13.94                 | 30          | Pass    |
| b    | 2462            | Ant1    | 13.96                 | 30          | Pass    |
| g    | 2412            | Ant1    | 13.51                 | 30          | Pass    |
| g    | 2437            | Ant1    | 13.28                 | 30          | Pass    |
| g    | 2462            | Ant1    | 13.3                  | 30          | Pass    |
| n20  | 2412            | Ant1    | 12.9                  | 30          | Pass    |
| n20  | 2437            | Ant1    | 12.75                 | 30          | Pass    |
| n20  | 2462            | Ant1    | 12.83                 | 30          | Pass    |
| n40  | 2422            | Ant1    | 12.11                 | 30          | Pass    |
| n40  | 2437            | Ant1    | 12.11                 | 30          | Pass    |
| n40  | 2452            | Ant1    | 12.02                 | 30          | Pass    |

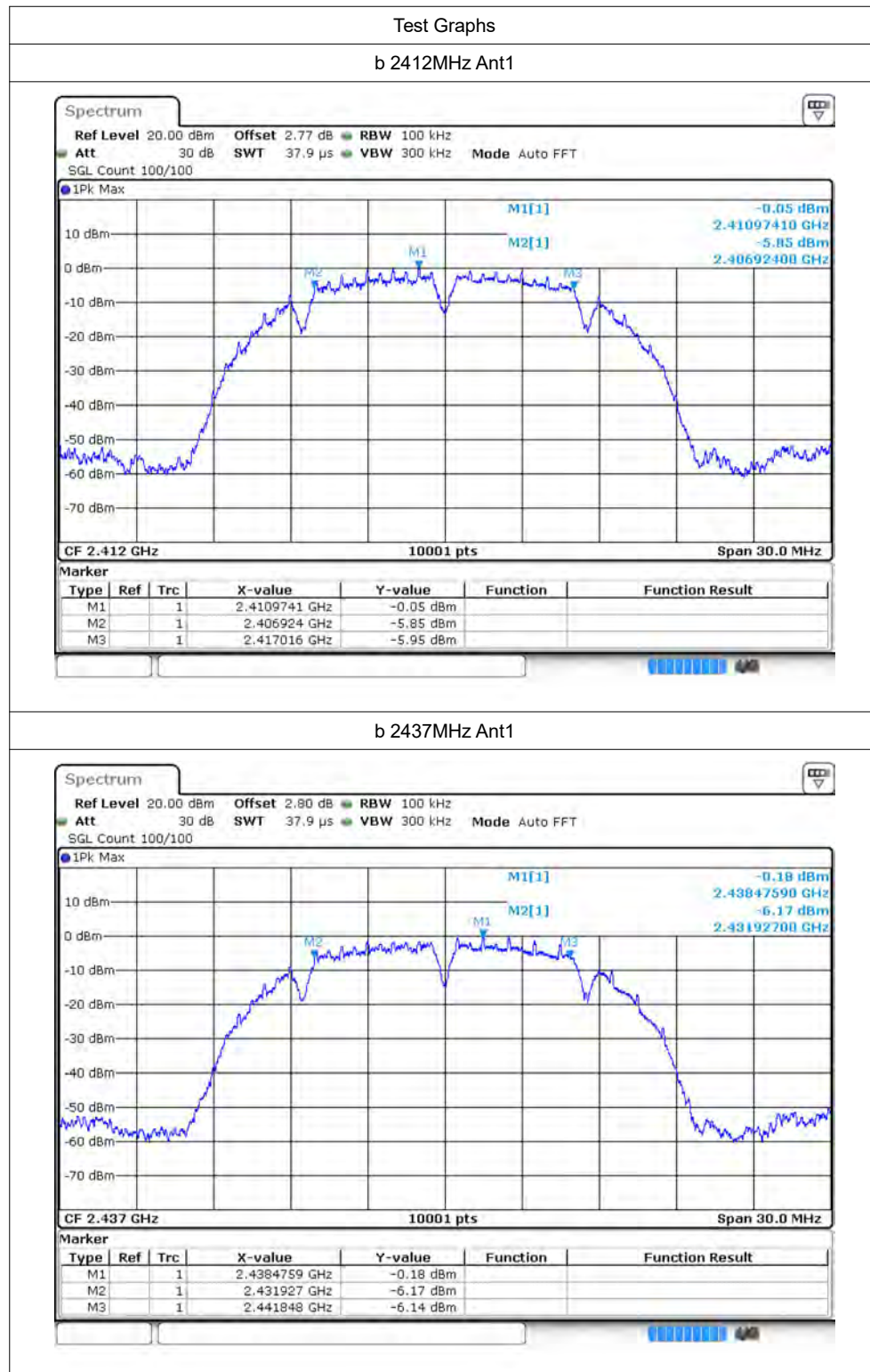


### 3 -6dB Bandwidth

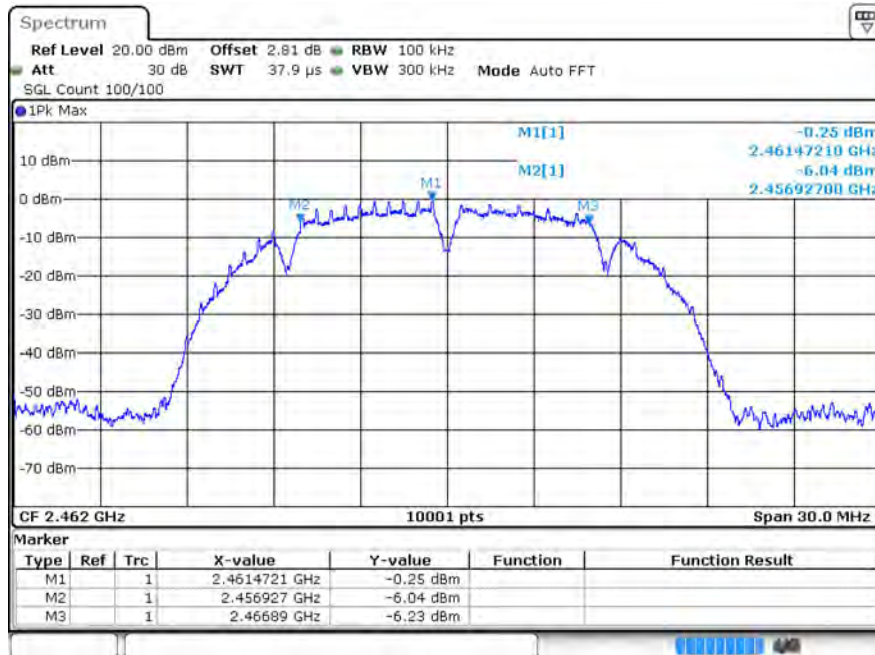
#### 3.1 Test Result

| Mode | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|------|-----------------|---------|-----------------------|-----------------------------|---------|
| b    | 2412            | Ant1    | 10.092                | 0.5                         | Pass    |
| b    | 2437            | Ant1    | 9.921                 | 0.5                         | Pass    |
| b    | 2462            | Ant1    | 9.963                 | 0.5                         | Pass    |
| g    | 2412            | Ant1    | 15.111                | 0.5                         | Pass    |
| g    | 2437            | Ant1    | 15.108                | 0.5                         | Pass    |
| g    | 2462            | Ant1    | 15.117                | 0.5                         | Pass    |
| n20  | 2412            | Ant1    | 15.084                | 0.5                         | Pass    |
| n20  | 2437            | Ant1    | 15.102                | 0.5                         | Pass    |
| n20  | 2462            | Ant1    | 15.111                | 0.5                         | Pass    |
| n40  | 2422            | Ant1    | 35.082                | 0.5                         | Pass    |
| n40  | 2437            | Ant1    | 31.332                | 0.5                         | Pass    |
| n40  | 2452            | Ant1    | 35.076                | 0.5                         | Pass    |

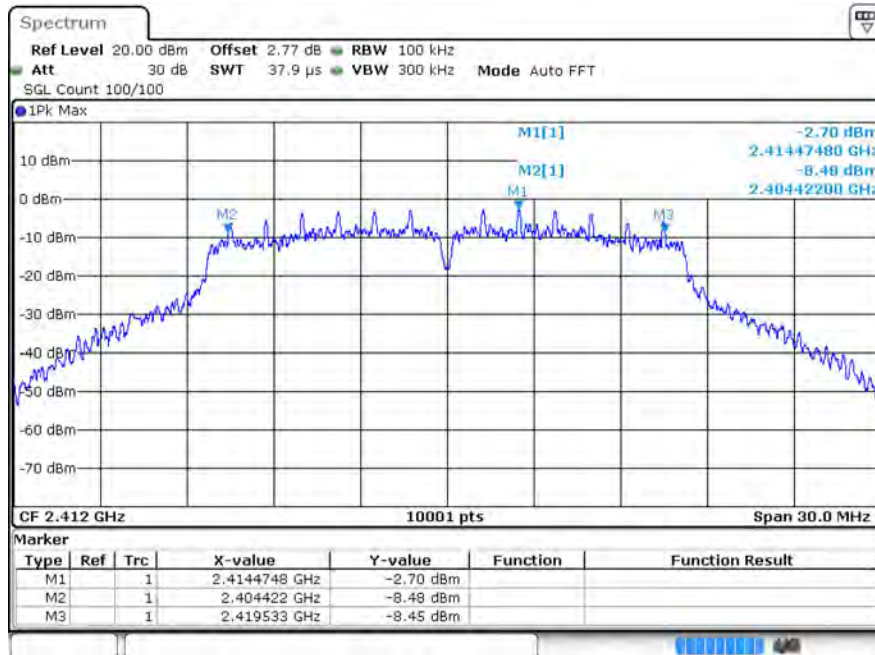
### 3.2 Test Graphs



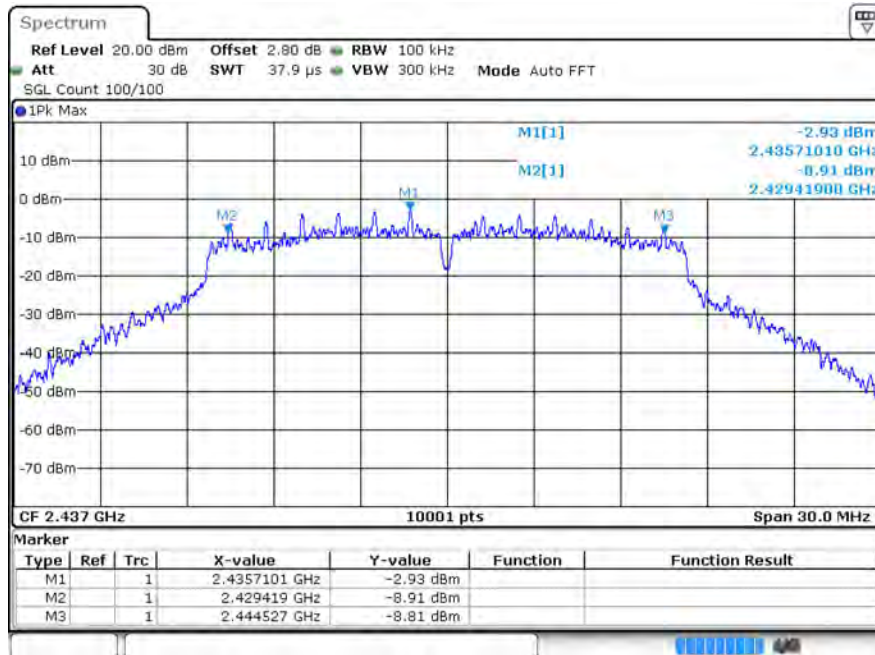
b 2462MHz Ant1



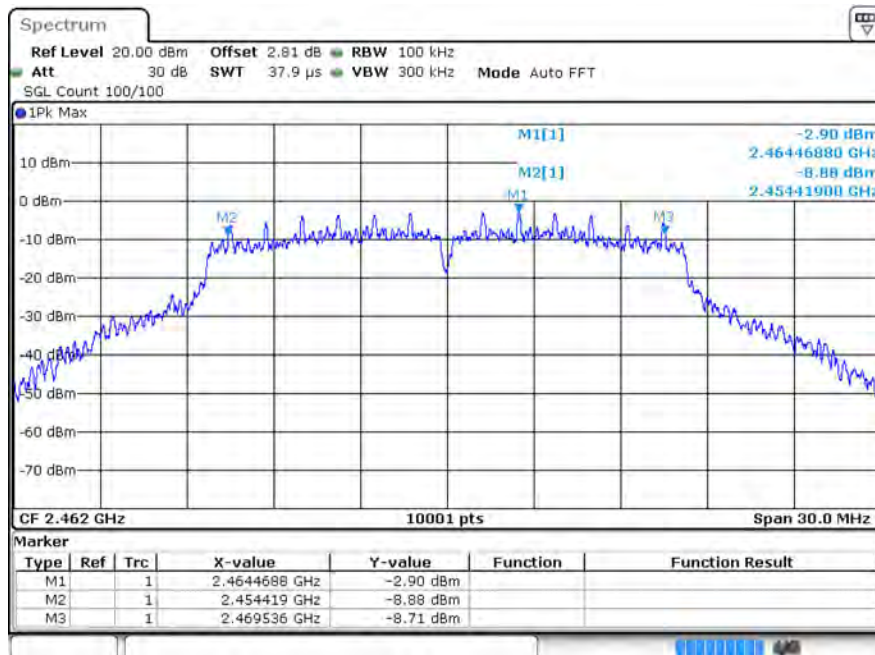
g 2412MHz Ant1



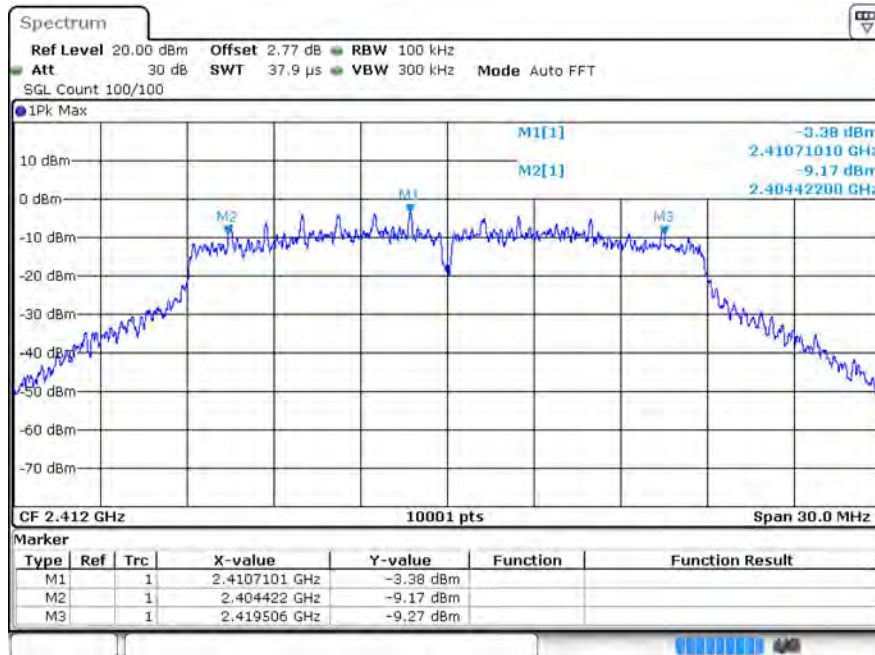
g 2437MHz Ant1



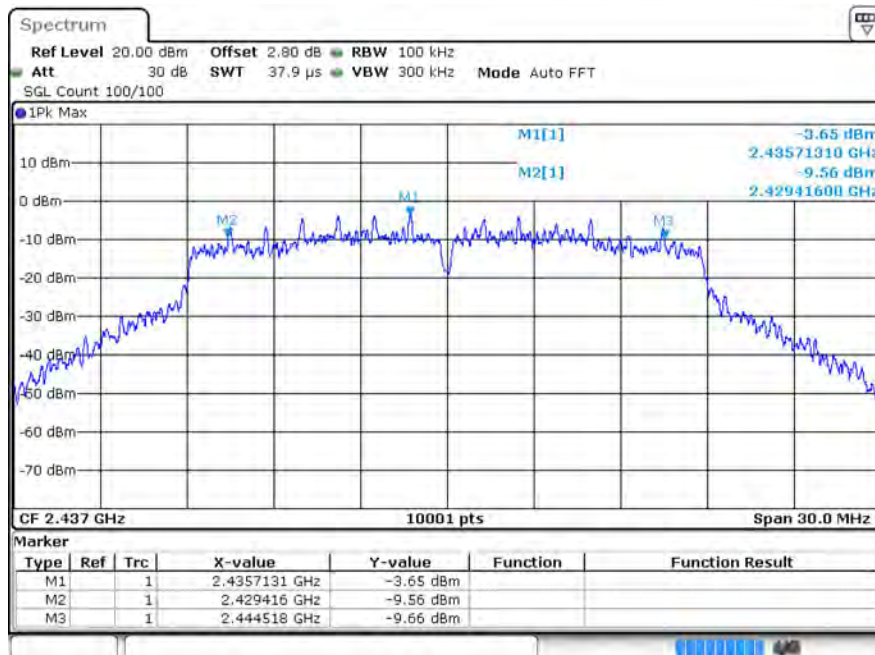
g 2462MHz Ant1



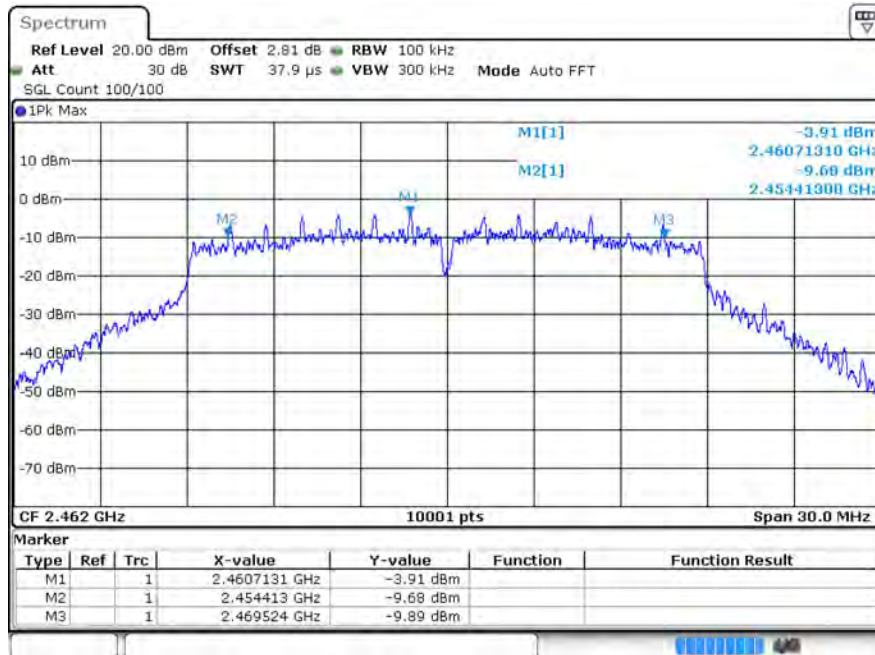
n20 2412MHz Ant1



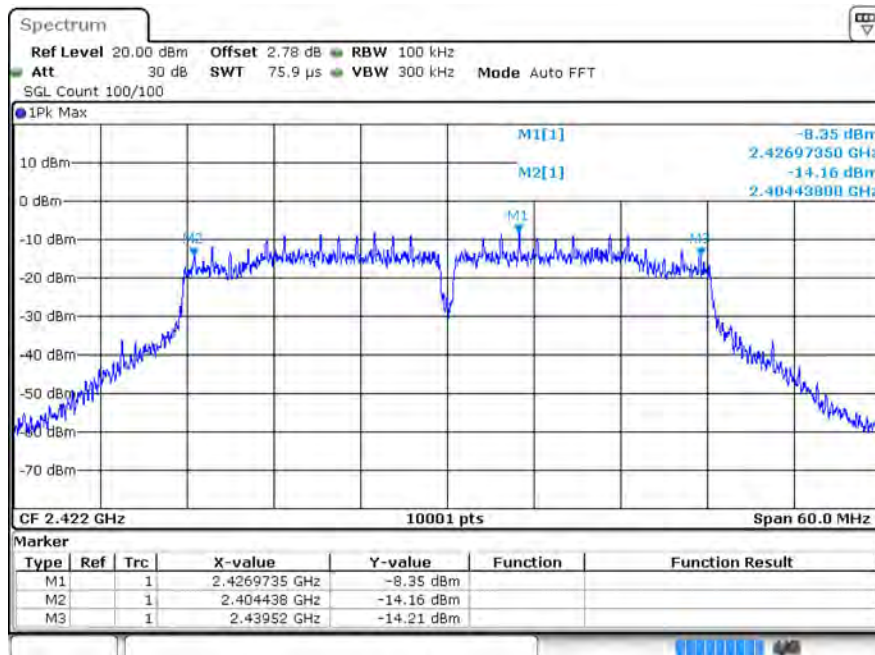
n20 2437MHz Ant1



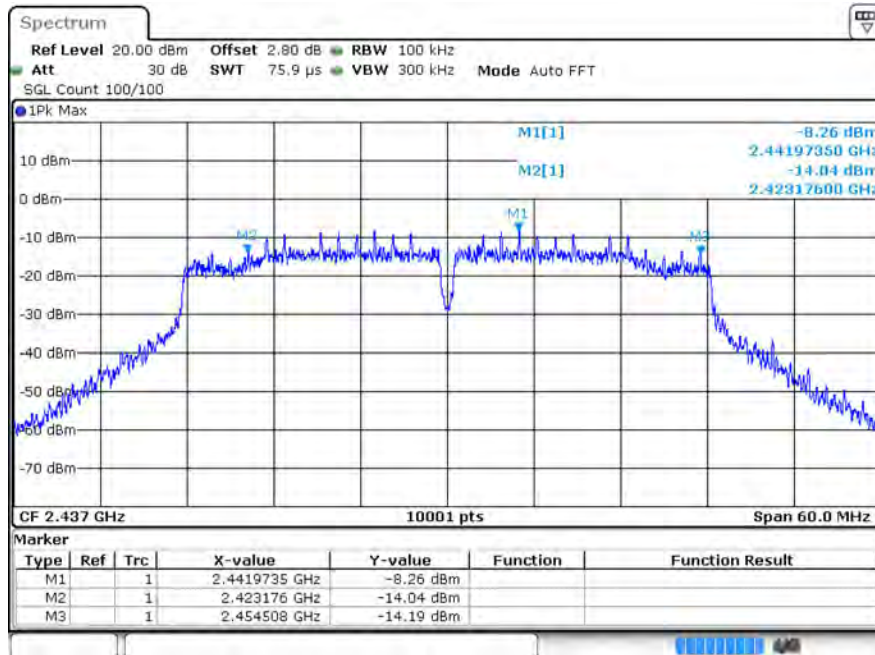
n20 2462MHz Ant1



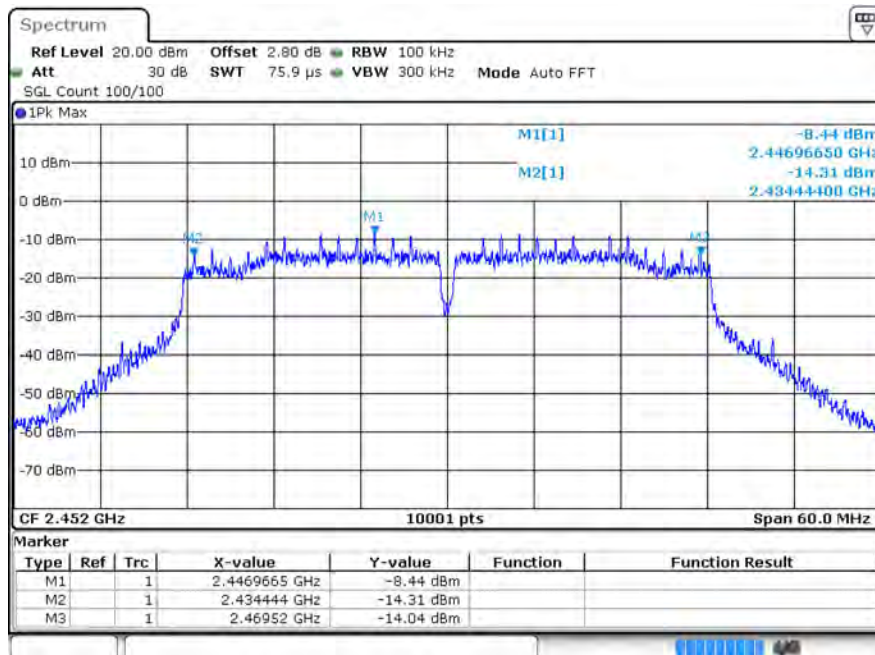
n40 2422MHz Ant1



n40 2437MHz Ant1



n40 2452MHz Ant1

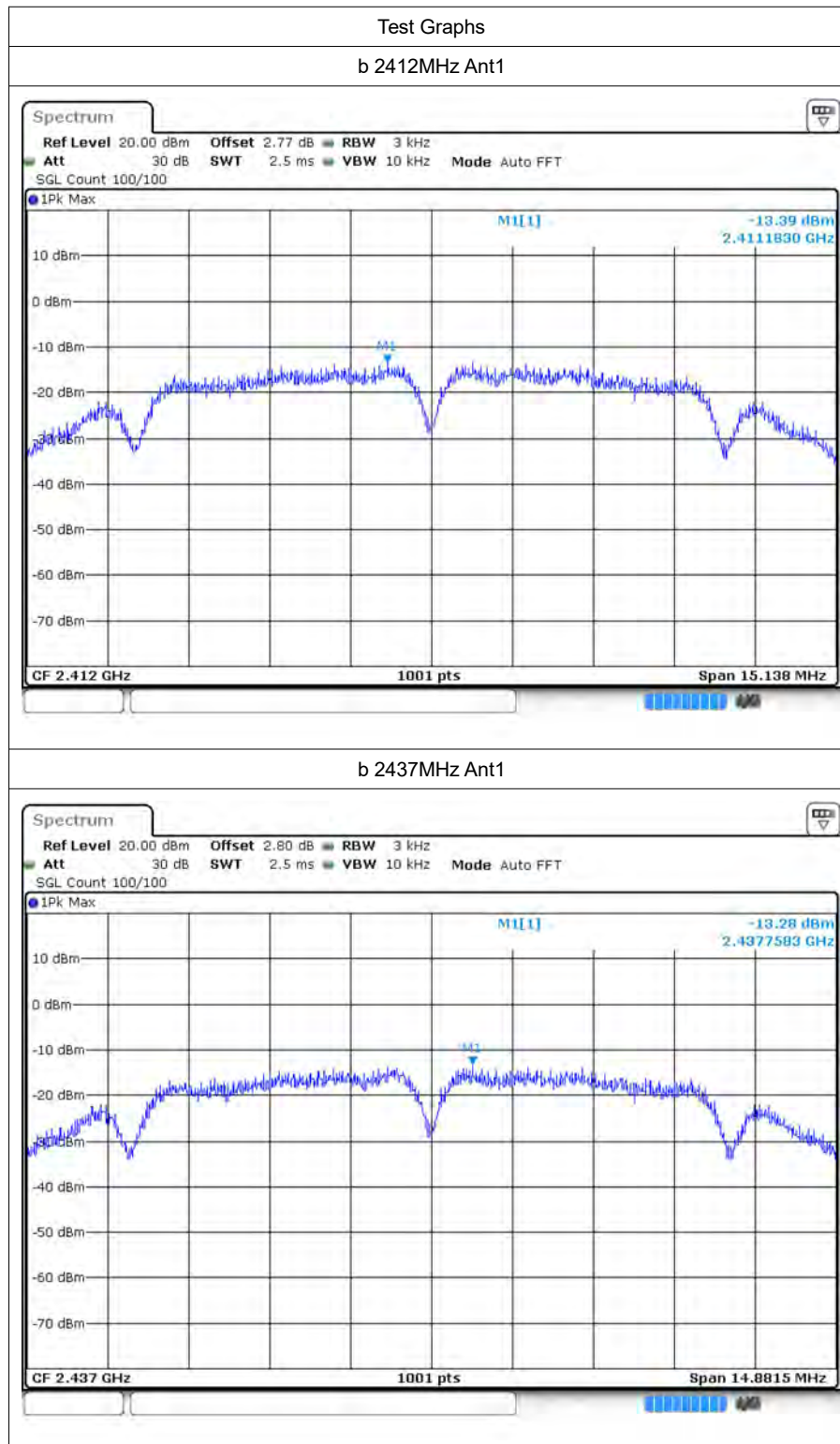


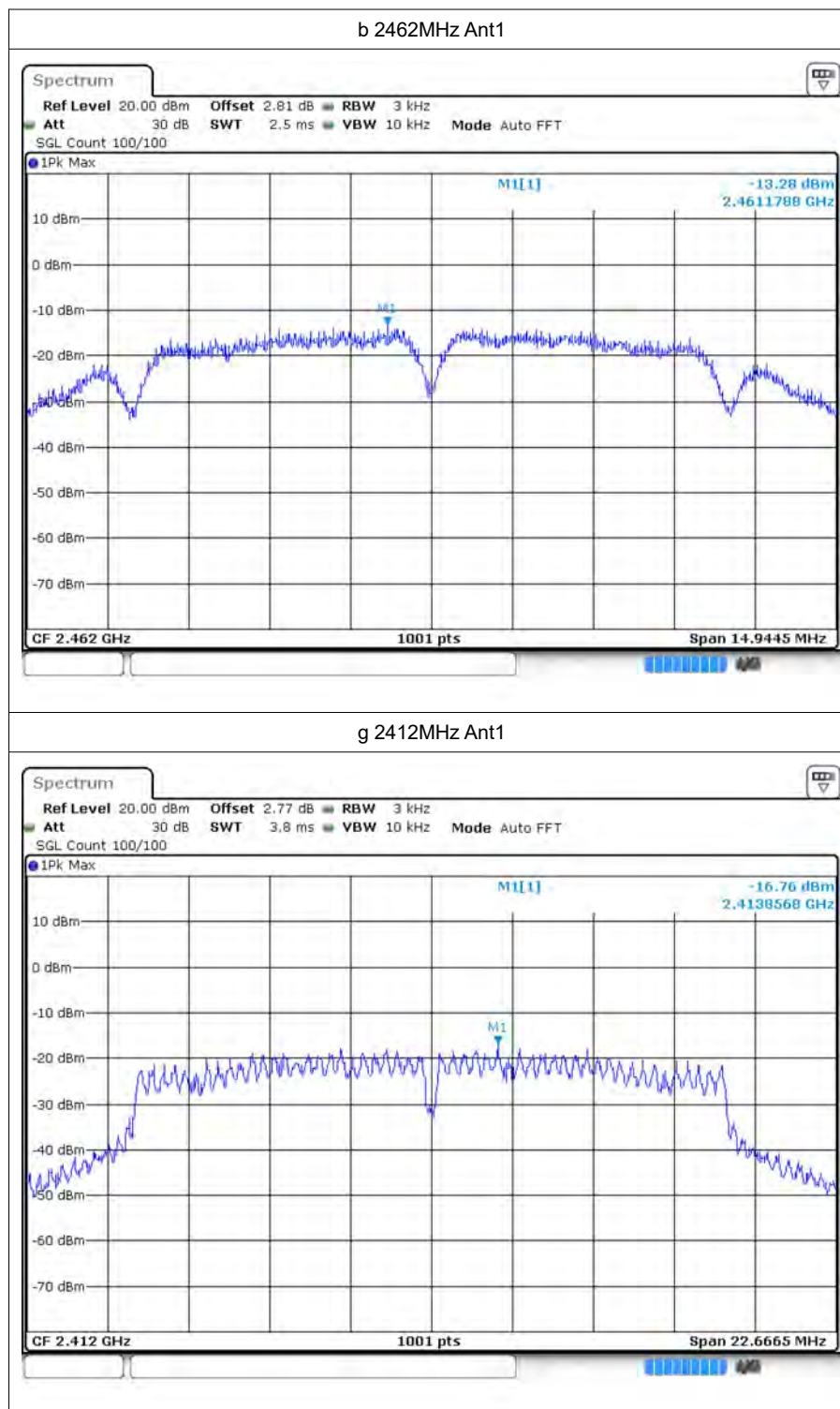
## 4 Maximum Power Spectral Density Level

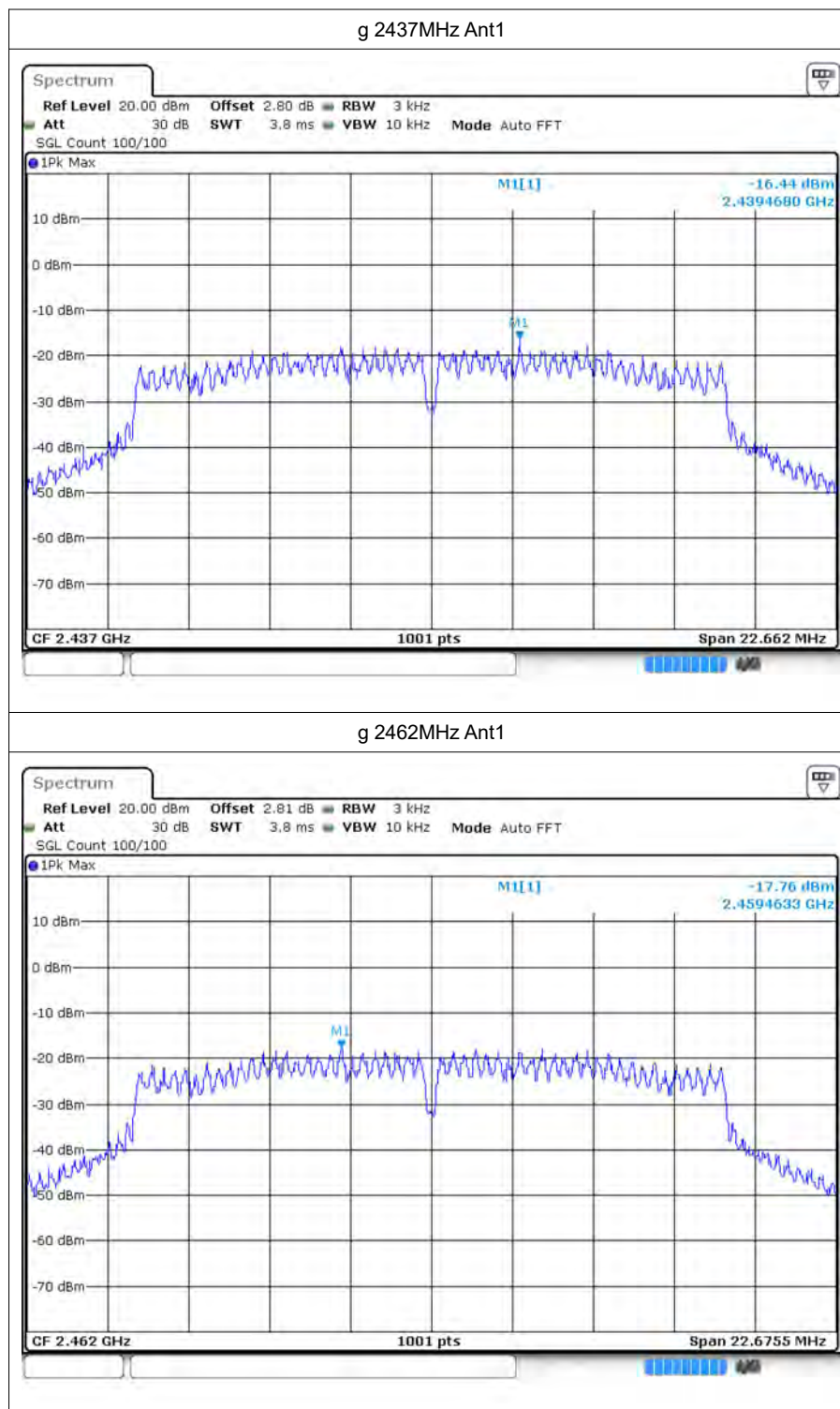
### 4.1 Test Result

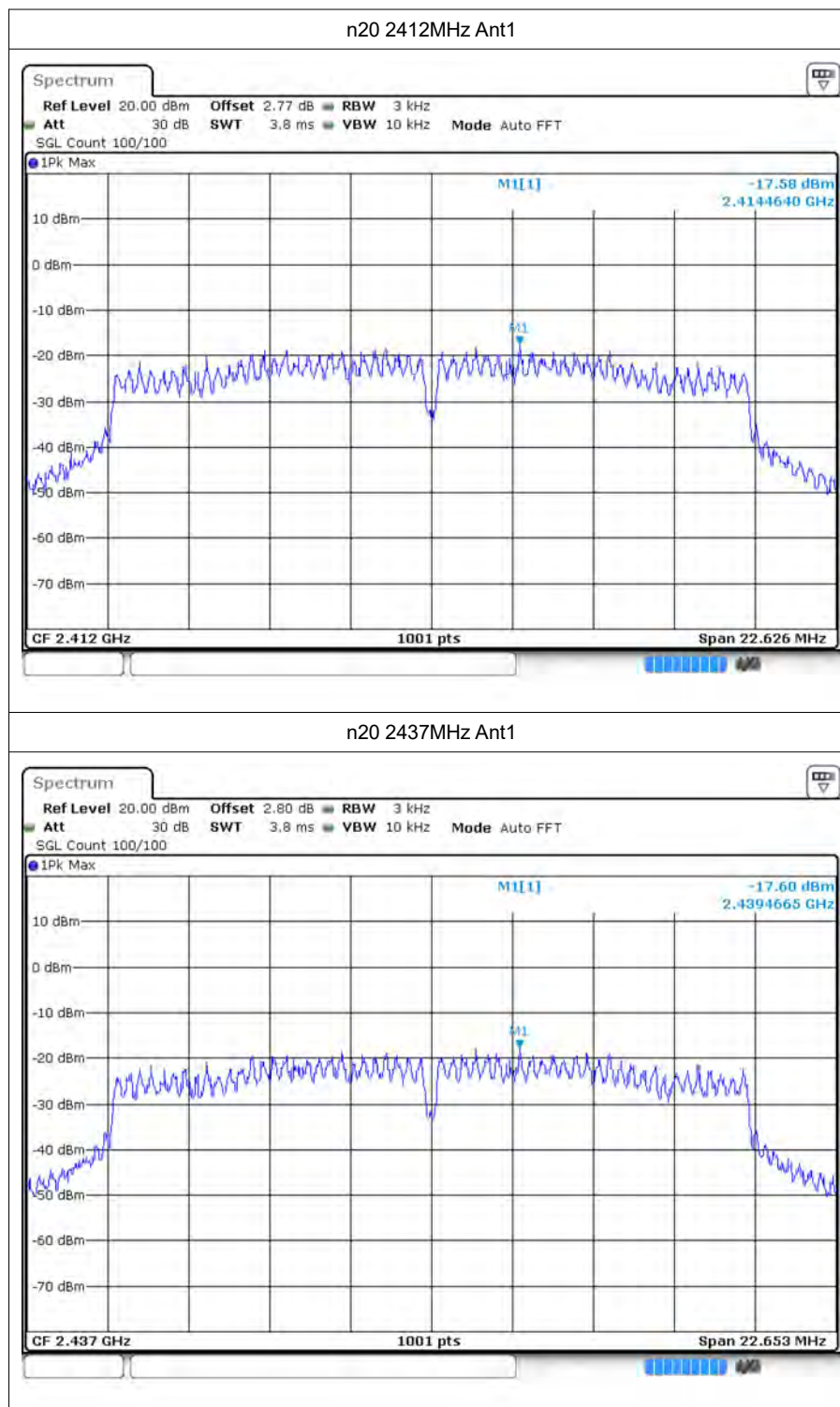
| Mode | Frequency (MHz) | Antenna | Conducted PSD<br>(dBm/3-100kHz) | Limit<br>(dBm/3kHz) | Verdict |
|------|-----------------|---------|---------------------------------|---------------------|---------|
| b    | 2412            | Ant1    | -13.39                          | $\leq 8$            | Pass    |
| b    | 2437            | Ant1    | -13.28                          | $\leq 8$            | Pass    |
| b    | 2462            | Ant1    | -13.28                          | $\leq 8$            | Pass    |
| g    | 2412            | Ant1    | -16.76                          | $\leq 8$            | Pass    |
| g    | 2437            | Ant1    | -16.44                          | $\leq 8$            | Pass    |
| g    | 2462            | Ant1    | -17.76                          | $\leq 8$            | Pass    |
| n20  | 2412            | Ant1    | -17.58                          | $\leq 8$            | Pass    |
| n20  | 2437            | Ant1    | -17.6                           | $\leq 8$            | Pass    |
| n20  | 2462            | Ant1    | -17.4                           | $\leq 8$            | Pass    |
| n40  | 2422            | Ant1    | -22.67                          | $\leq 8$            | Pass    |
| n40  | 2437            | Ant1    | -23.07                          | $\leq 8$            | Pass    |
| n40  | 2452            | Ant1    | -22.47                          | $\leq 8$            | Pass    |

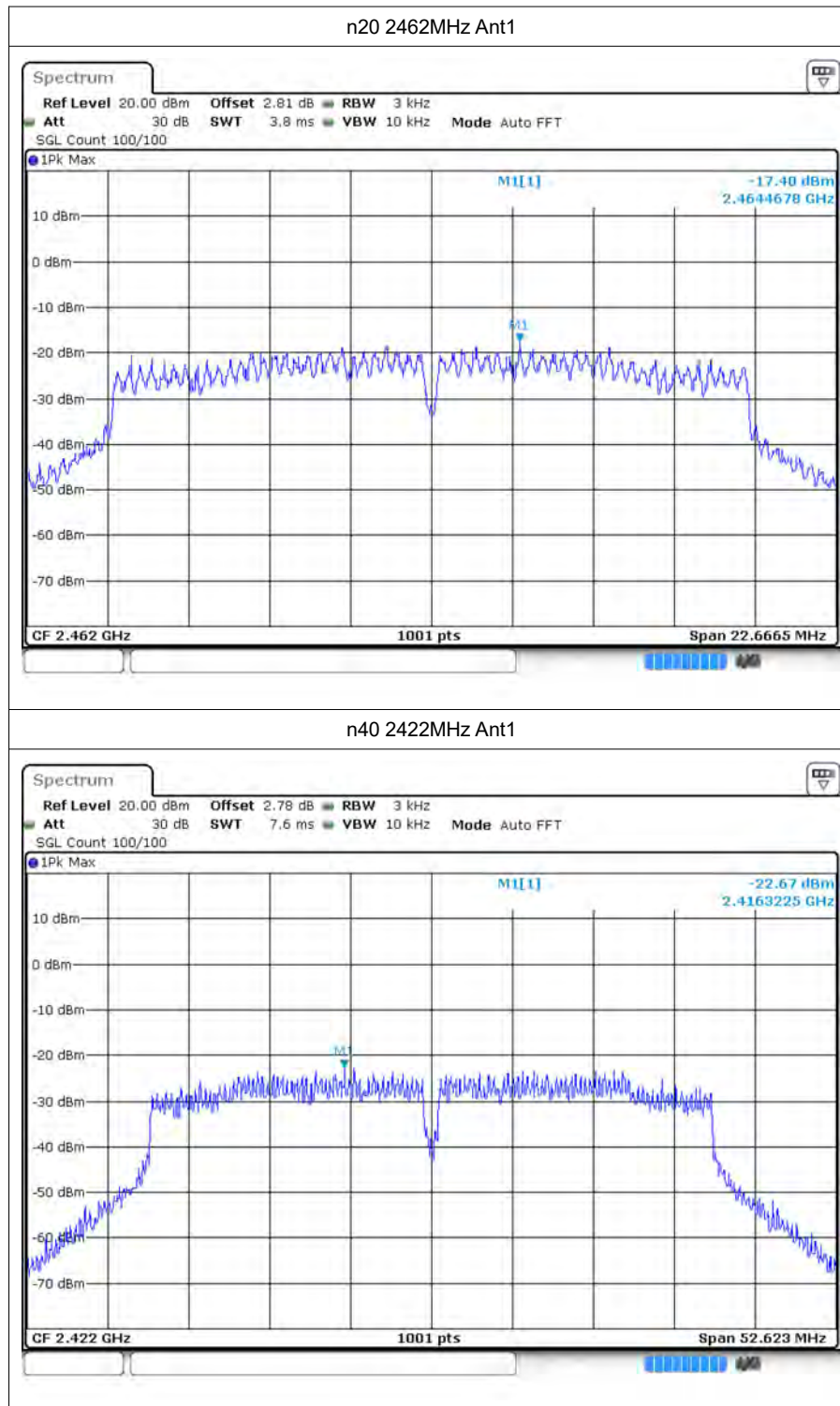
## 4.2 Test Graphs

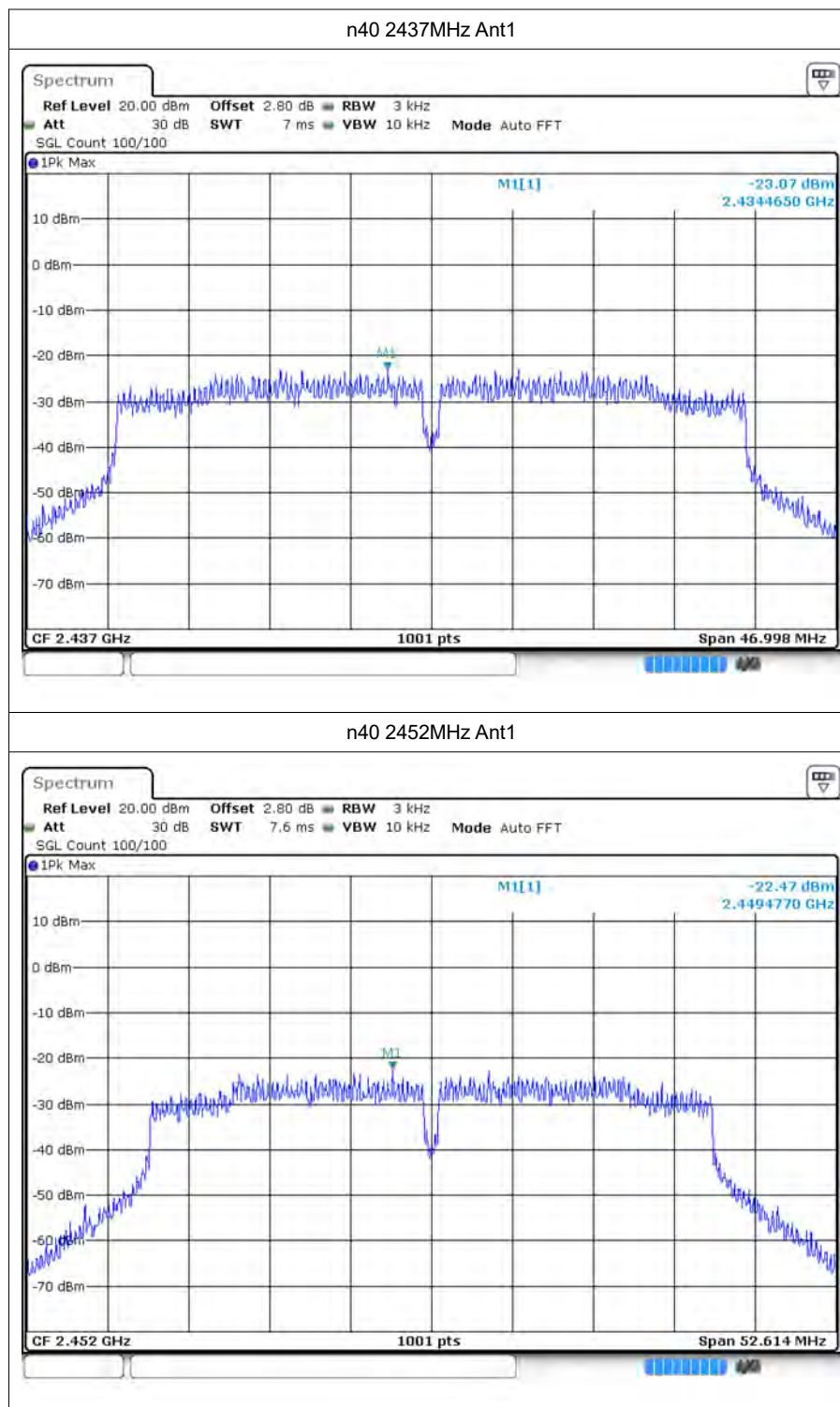












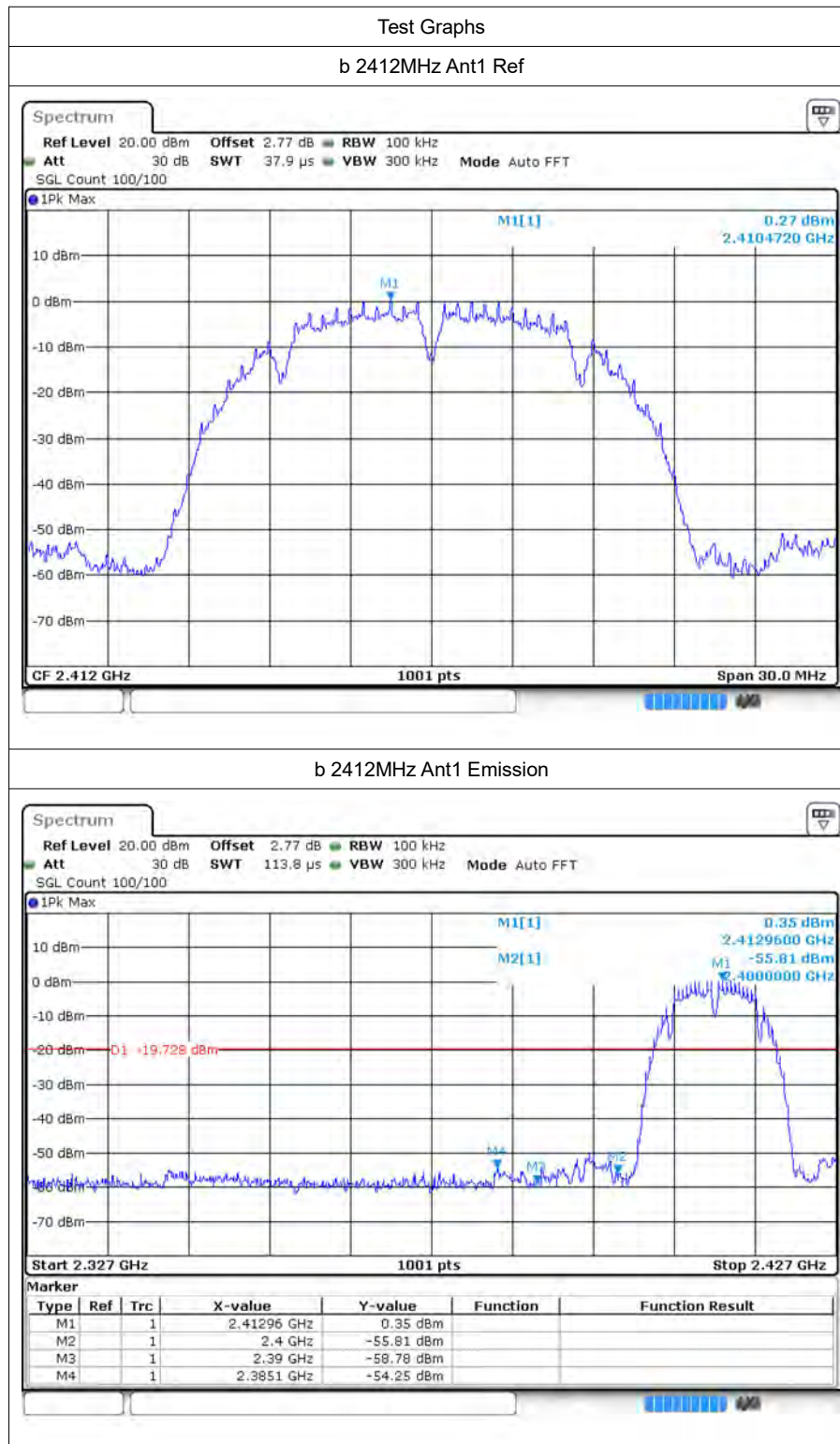


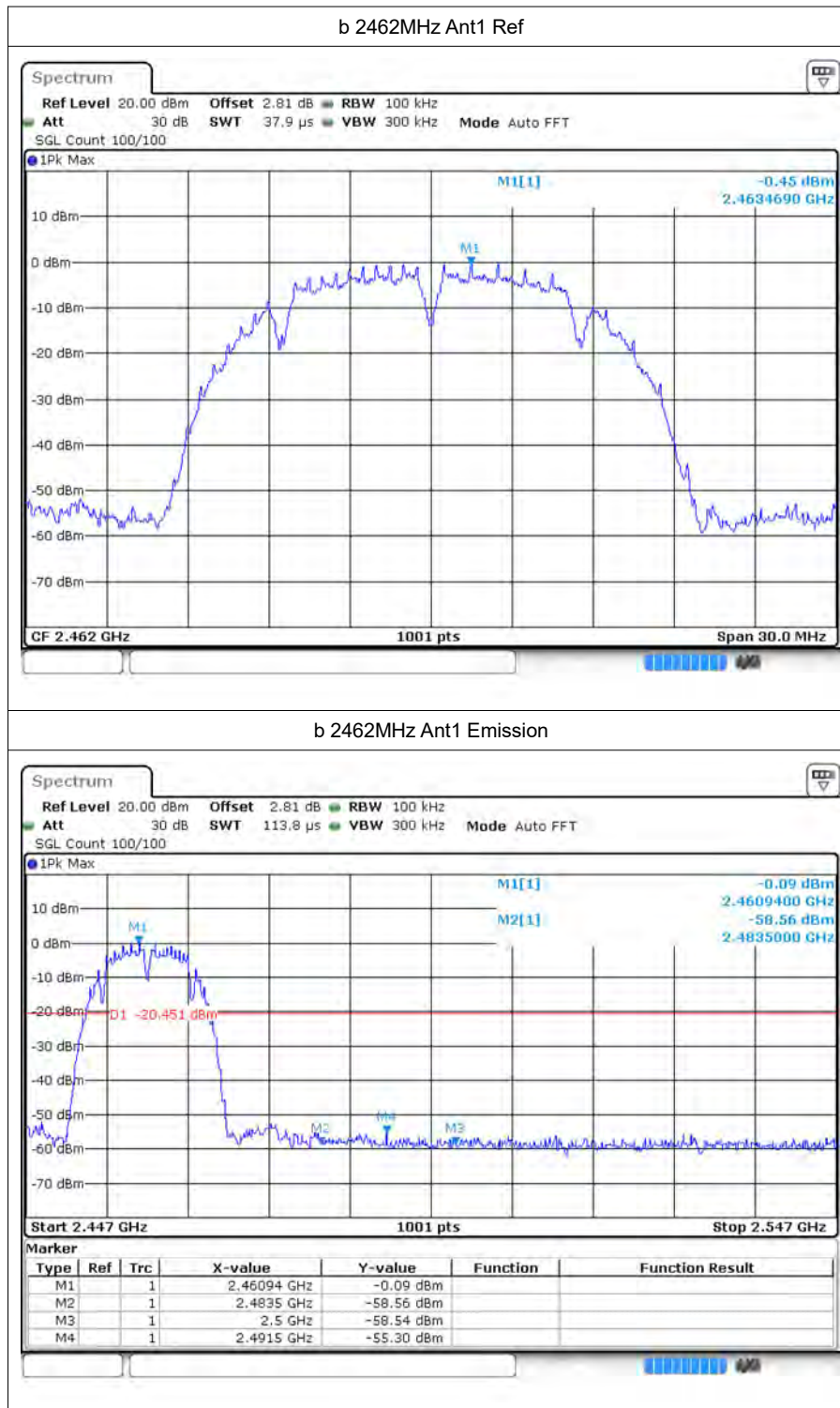
## 5 Band Edge

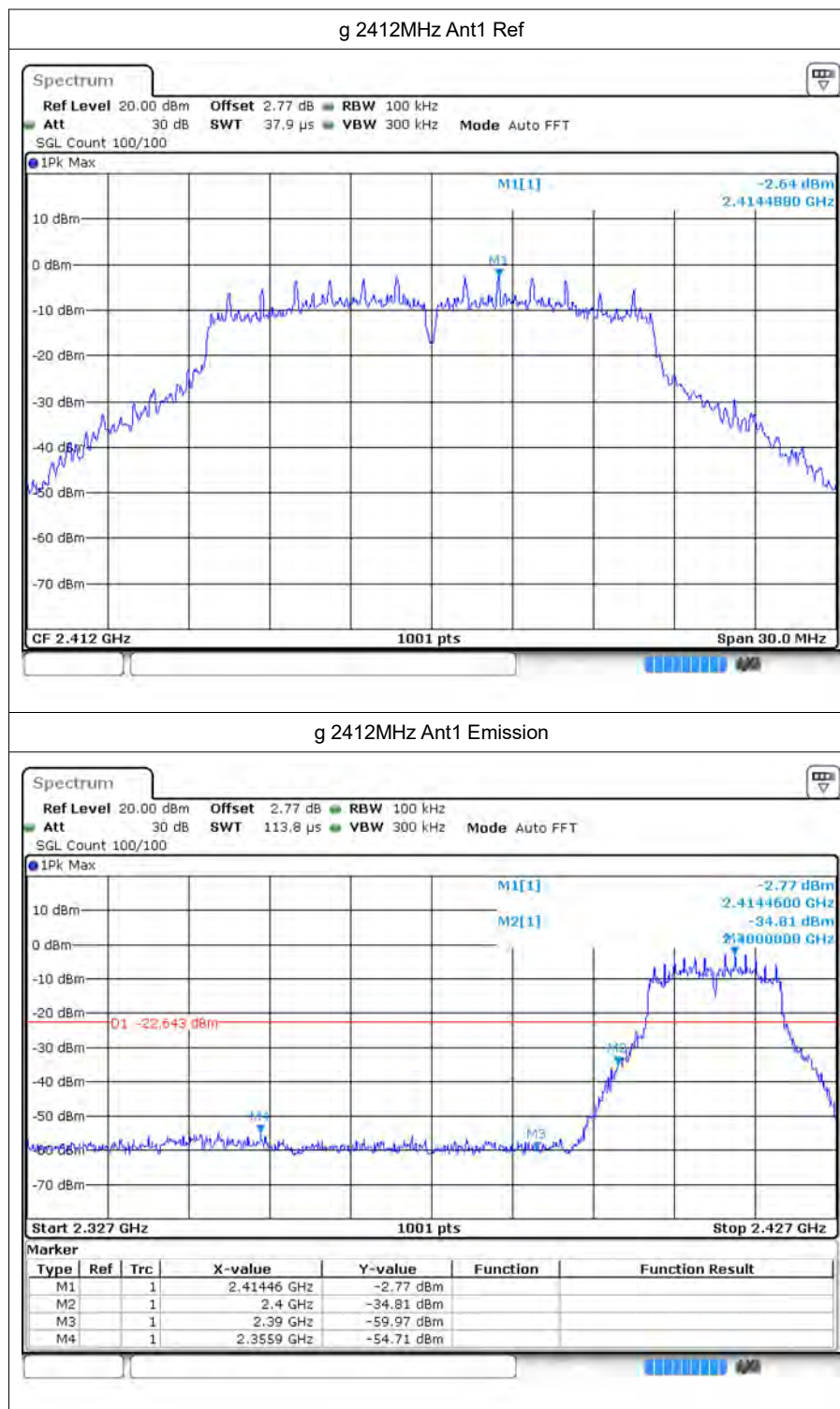
### 5.1 Test Result

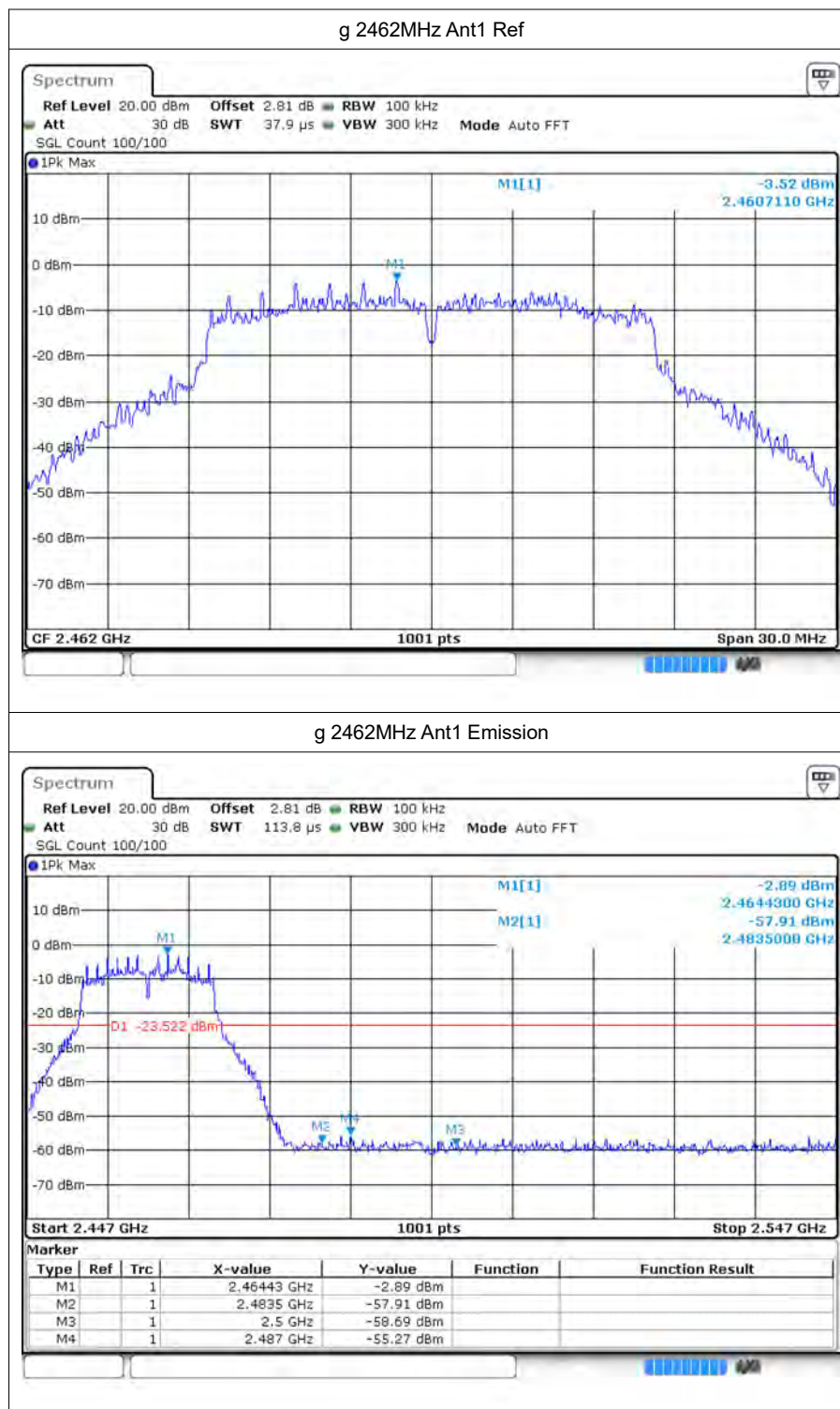
| Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|------|-----------------|---------|-----------------|-------------|---------|
| b    | 2412            | Ant1    | -54.51          | -20         | Pass    |
| b    | 2462            | Ant1    | -54.84          | -20         | Pass    |
| g    | 2412            | Ant1    | -52.06          | -20         | Pass    |
| g    | 2462            | Ant1    | -51.75          | -20         | Pass    |
| n20  | 2412            | Ant1    | -50.96          | -20         | Pass    |
| n20  | 2462            | Ant1    | -52.2           | -20         | Pass    |
| n40  | 2422            | Ant1    | -47.73          | -20         | Pass    |
| n40  | 2452            | Ant1    | -45.41          | -20         | Pass    |

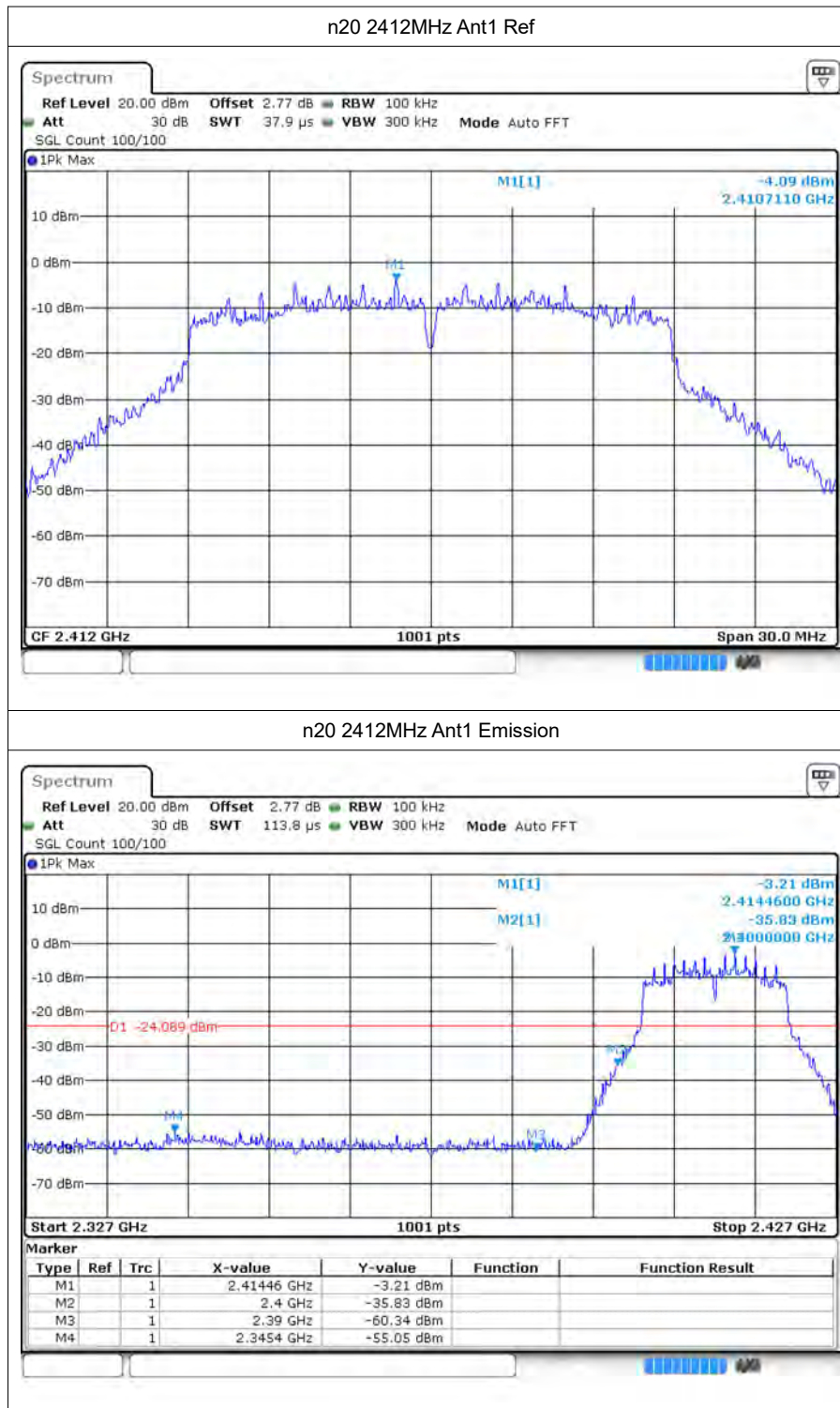
## 5.2 Test Graphs

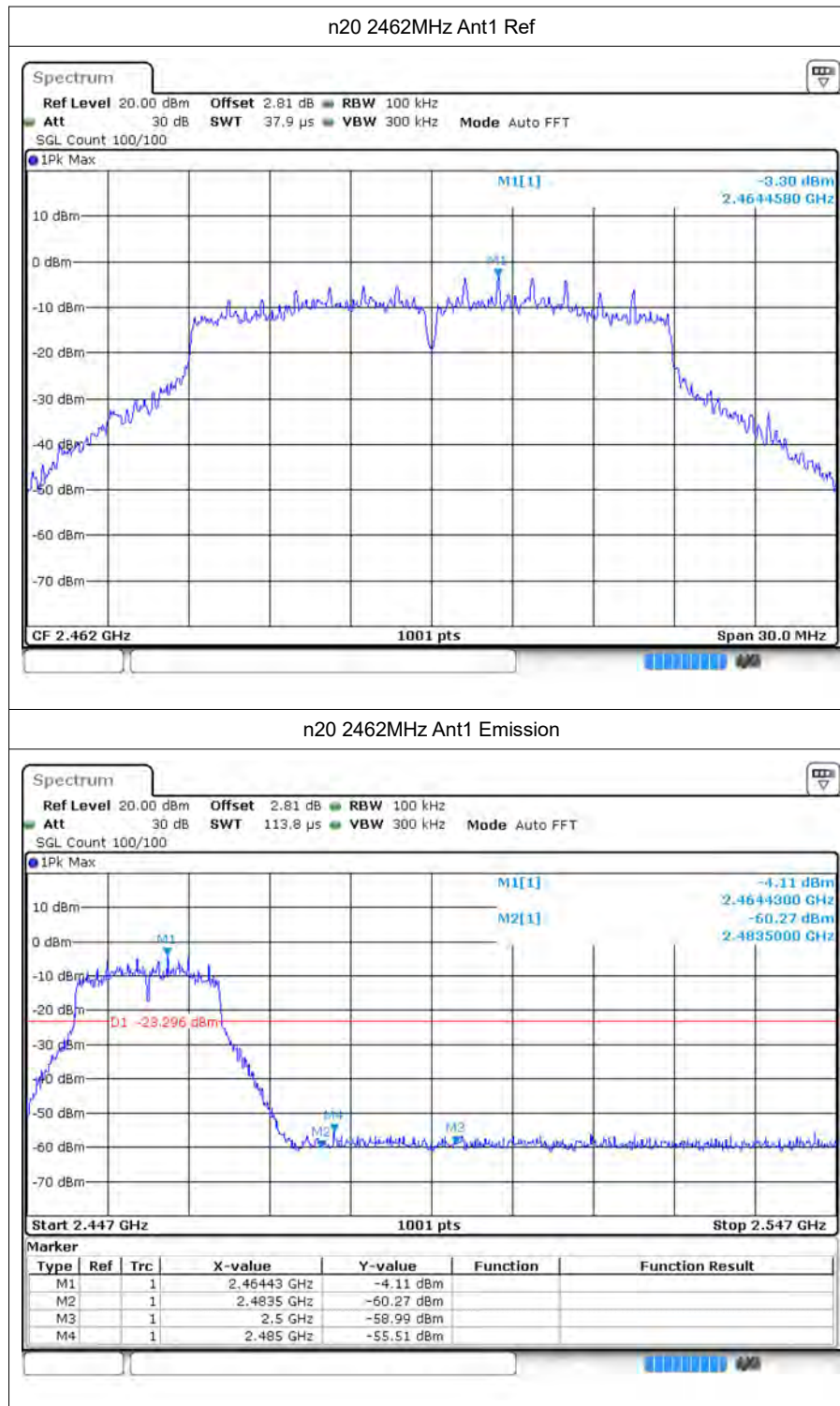


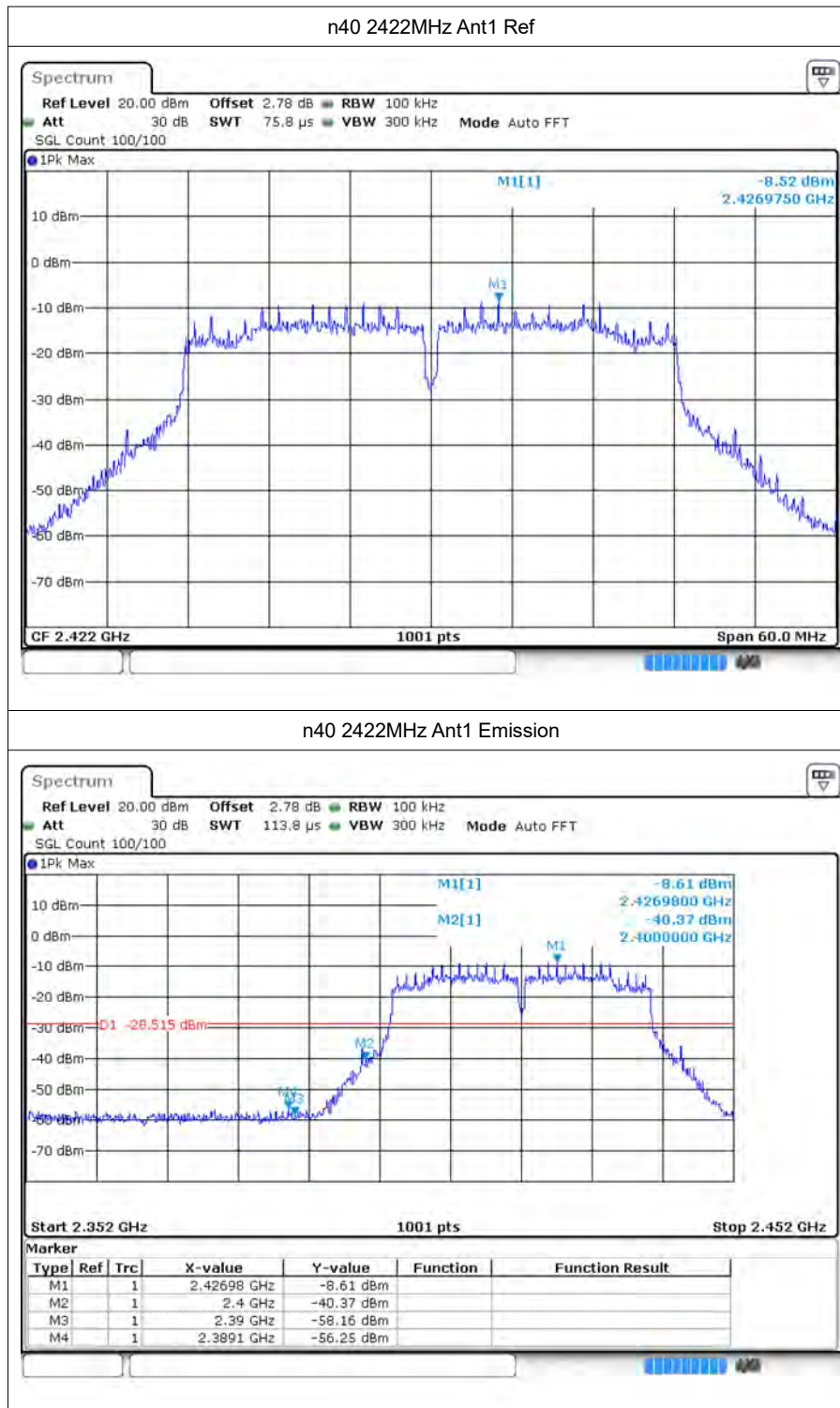


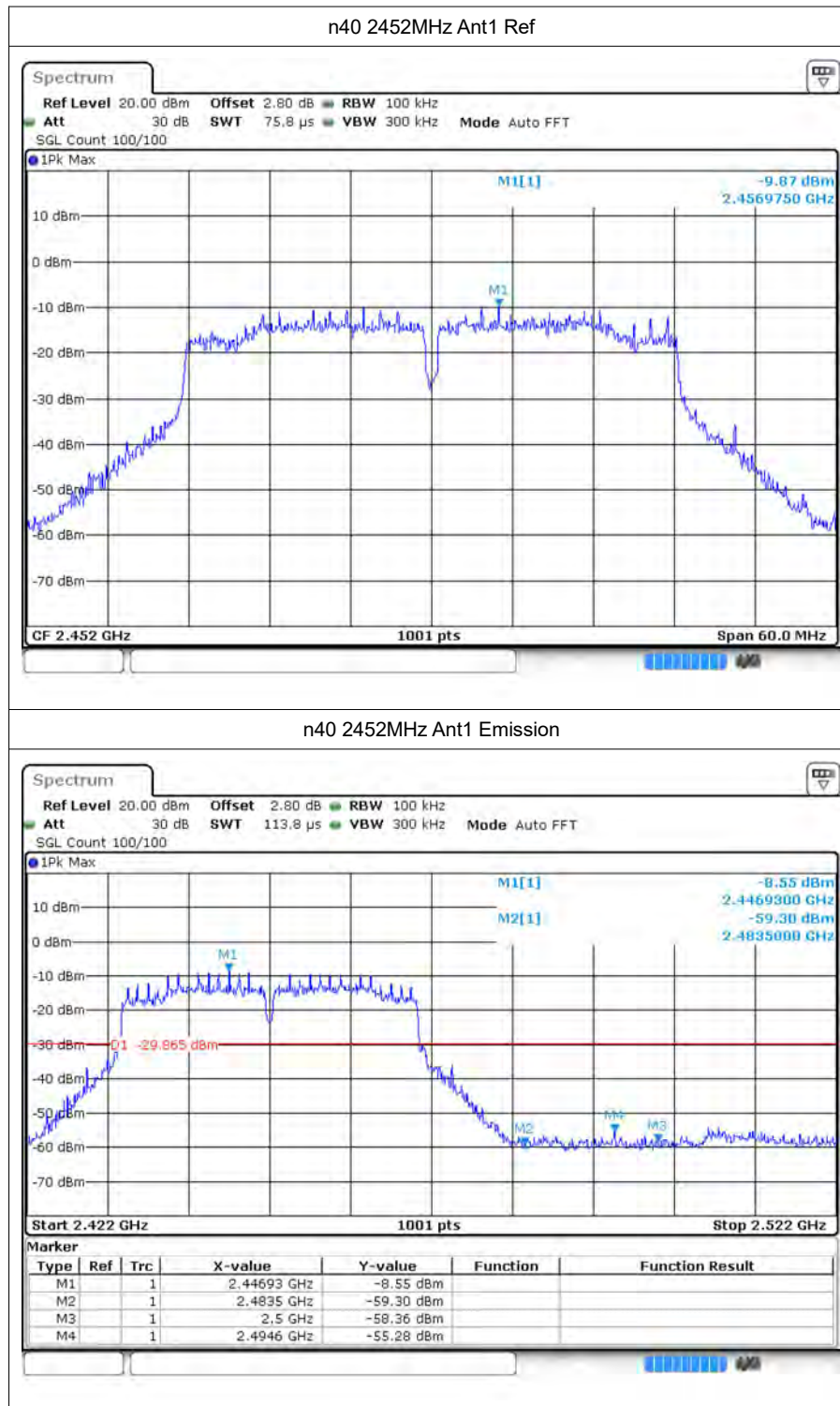












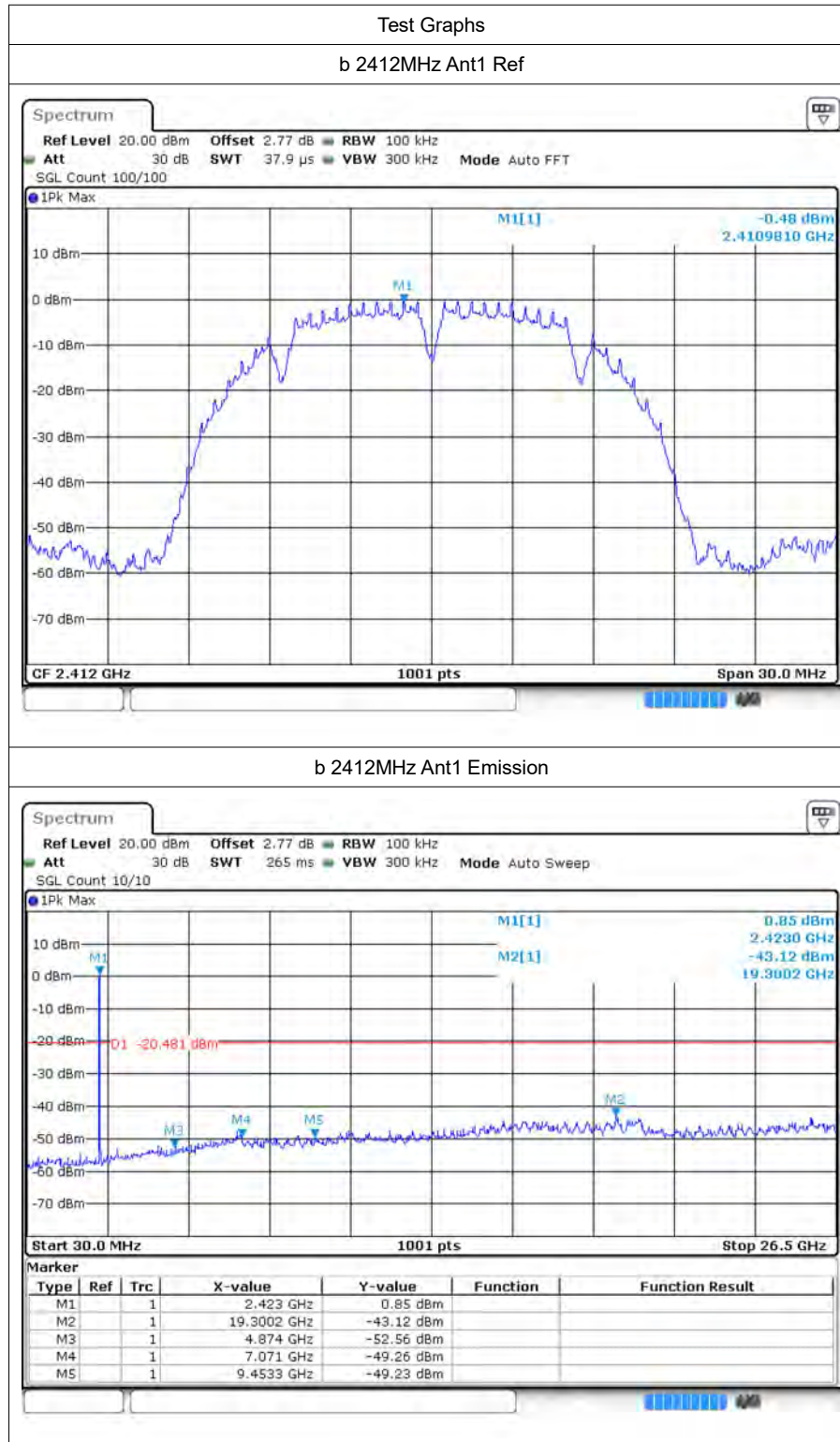


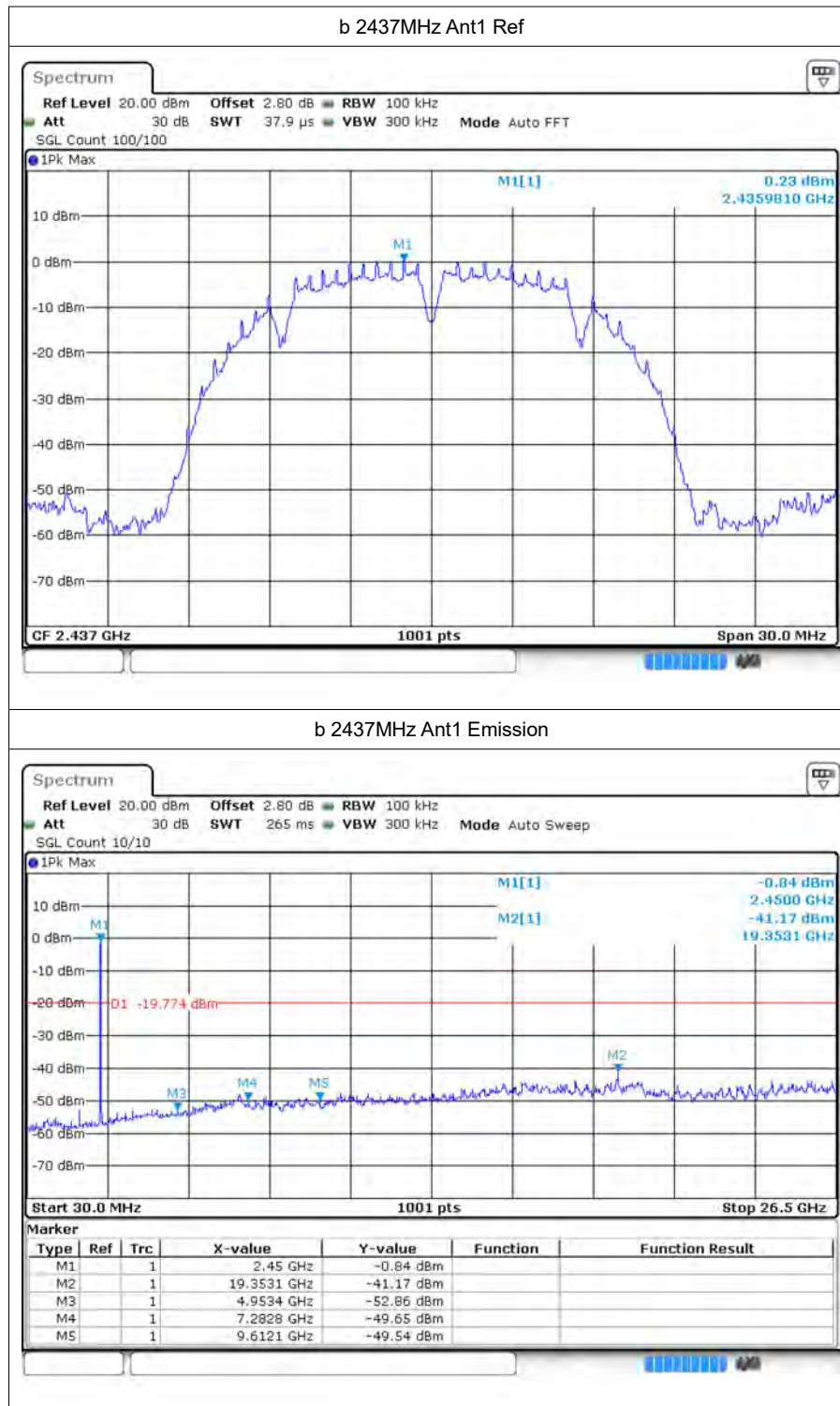
## 6 Conducted RF Spurious Emission

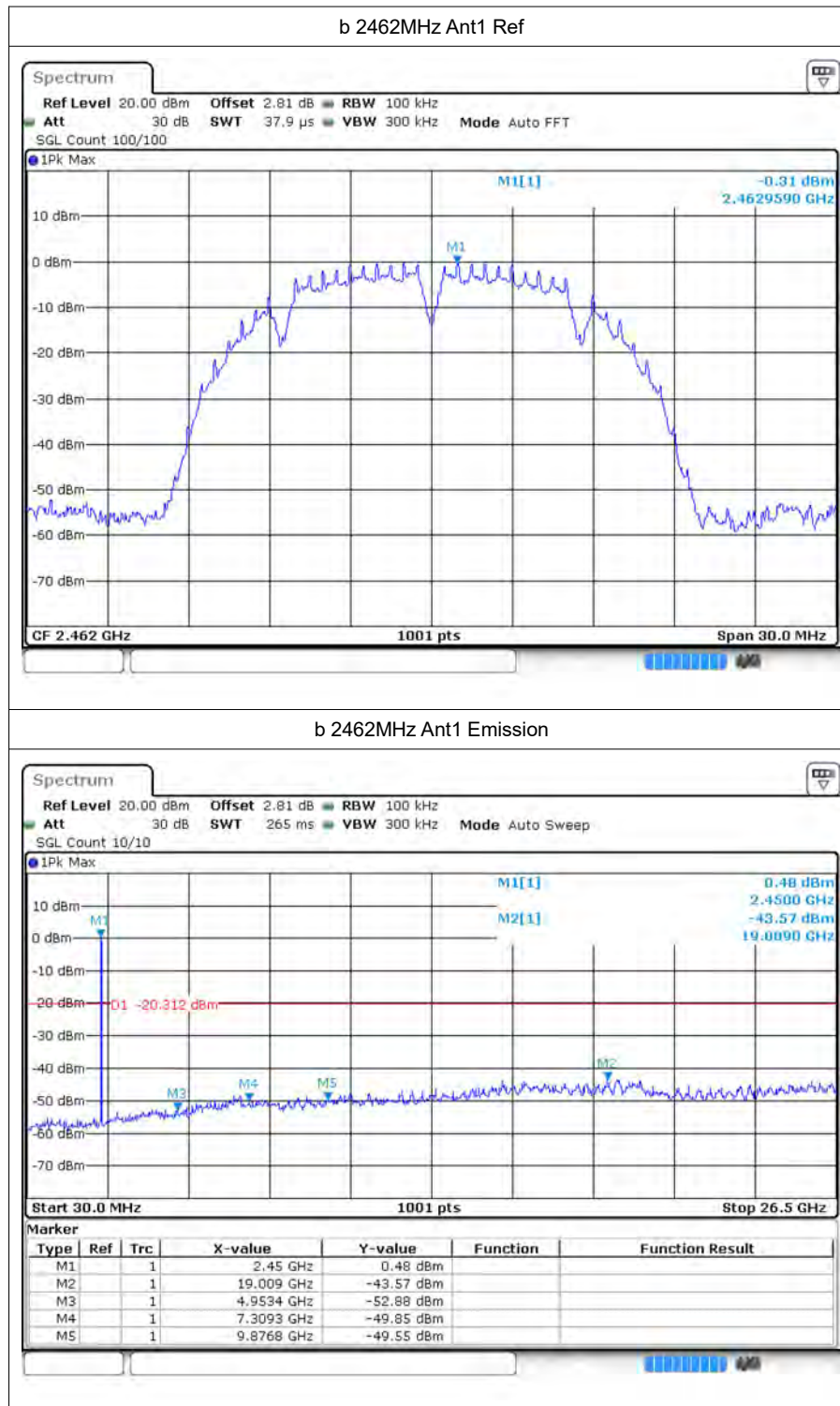
### 6.1 Test Result

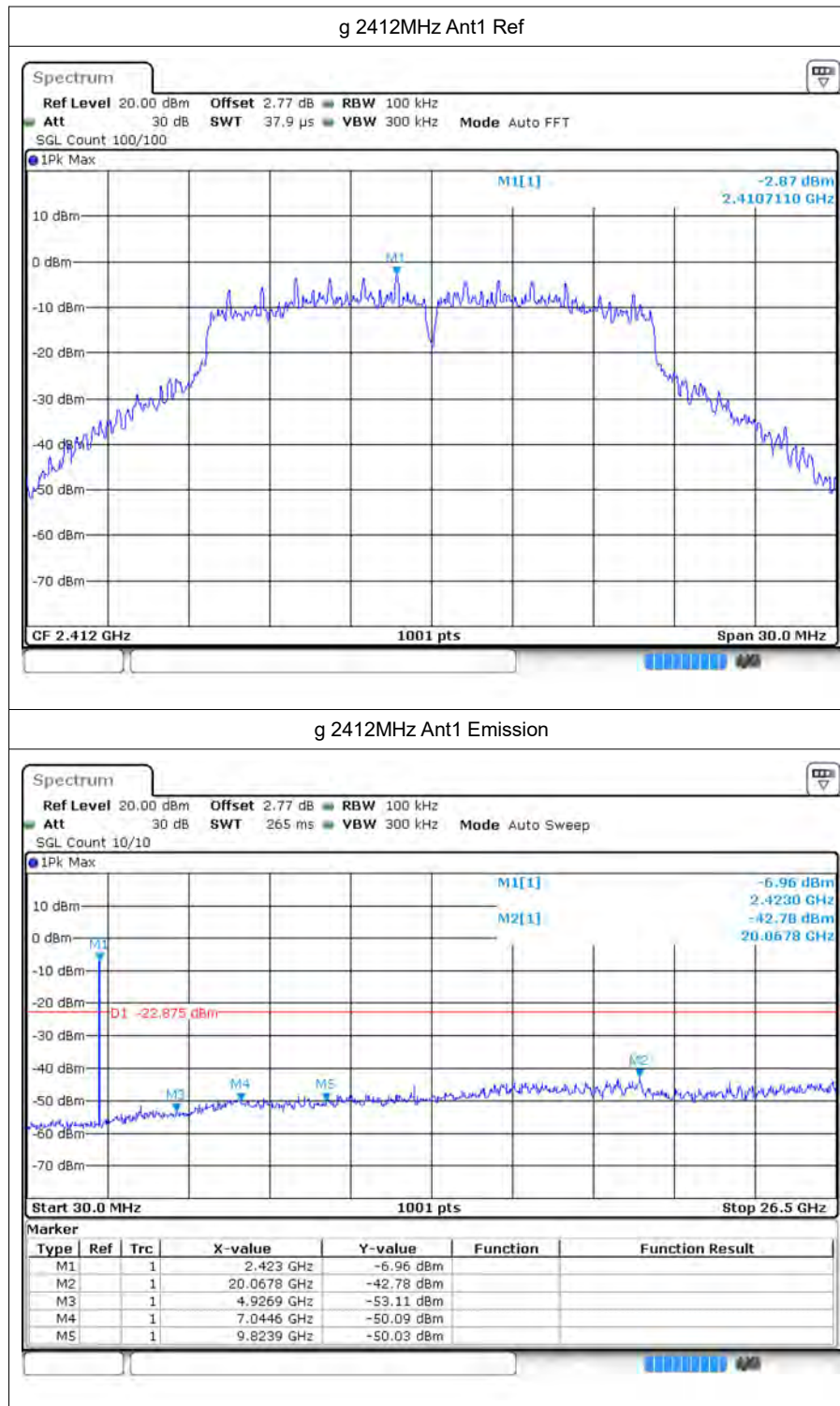
| Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|------|-----------------|---------|-----------------|-------------|---------|
| b    | 2412            | Ant1    | -42.63          | -20         | Pass    |
| b    | 2437            | Ant1    | -41.39          | -20         | Pass    |
| b    | 2462            | Ant1    | -43.26          | -20         | Pass    |
| g    | 2412            | Ant1    | -39.91          | -20         | Pass    |
| g    | 2437            | Ant1    | -40.49          | -20         | Pass    |
| g    | 2462            | Ant1    | -40.19          | -20         | Pass    |
| n20  | 2412            | Ant1    | -40.02          | -20         | Pass    |
| n20  | 2437            | Ant1    | -39.59          | -20         | Pass    |
| n20  | 2462            | Ant1    | -39.65          | -20         | Pass    |
| n40  | 2422            | Ant1    | -34.42          | -20         | Pass    |
| n40  | 2437            | Ant1    | -35.29          | -20         | Pass    |
| n40  | 2452            | Ant1    | -34.8           | -20         | Pass    |

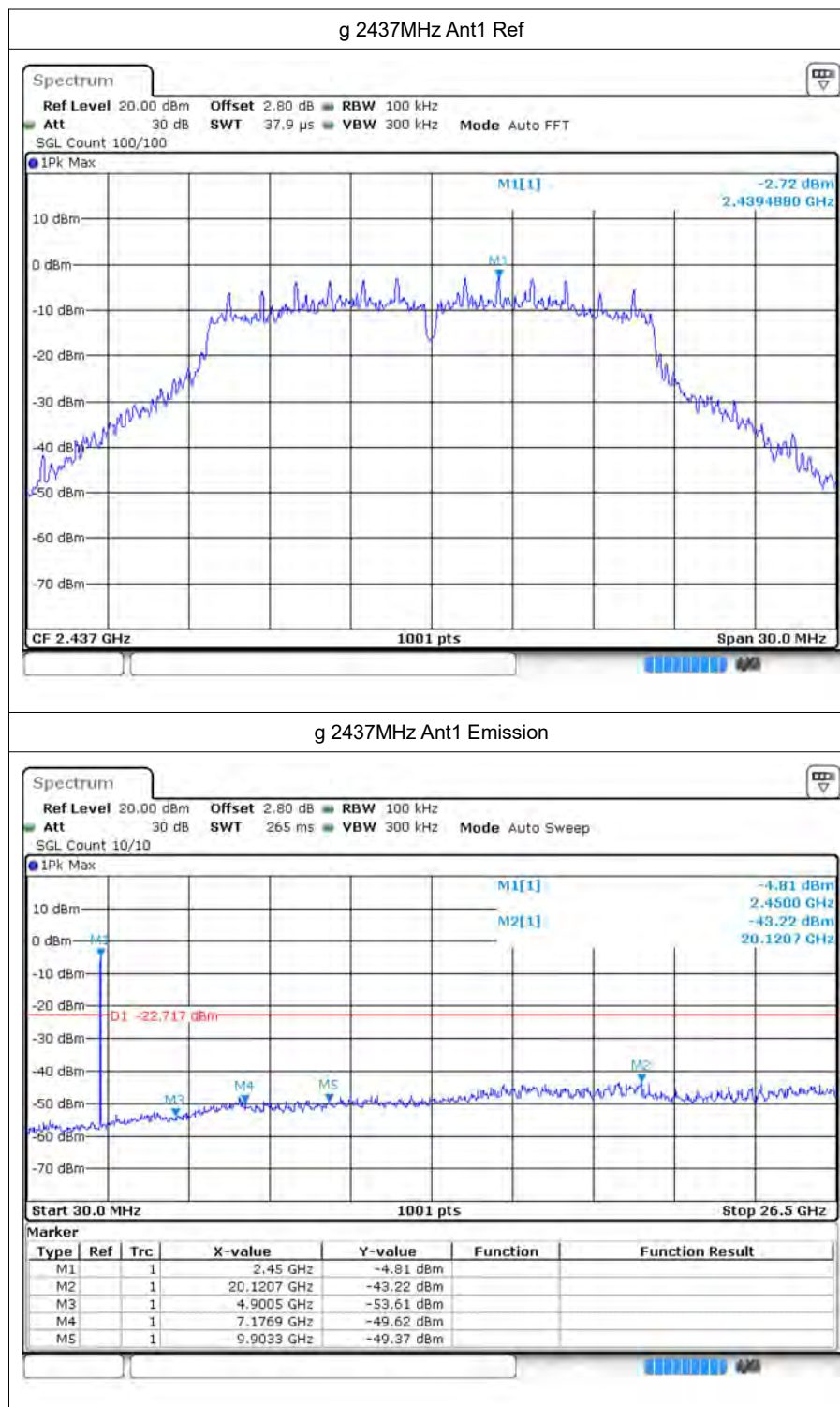
## 6.2 Test Graphs

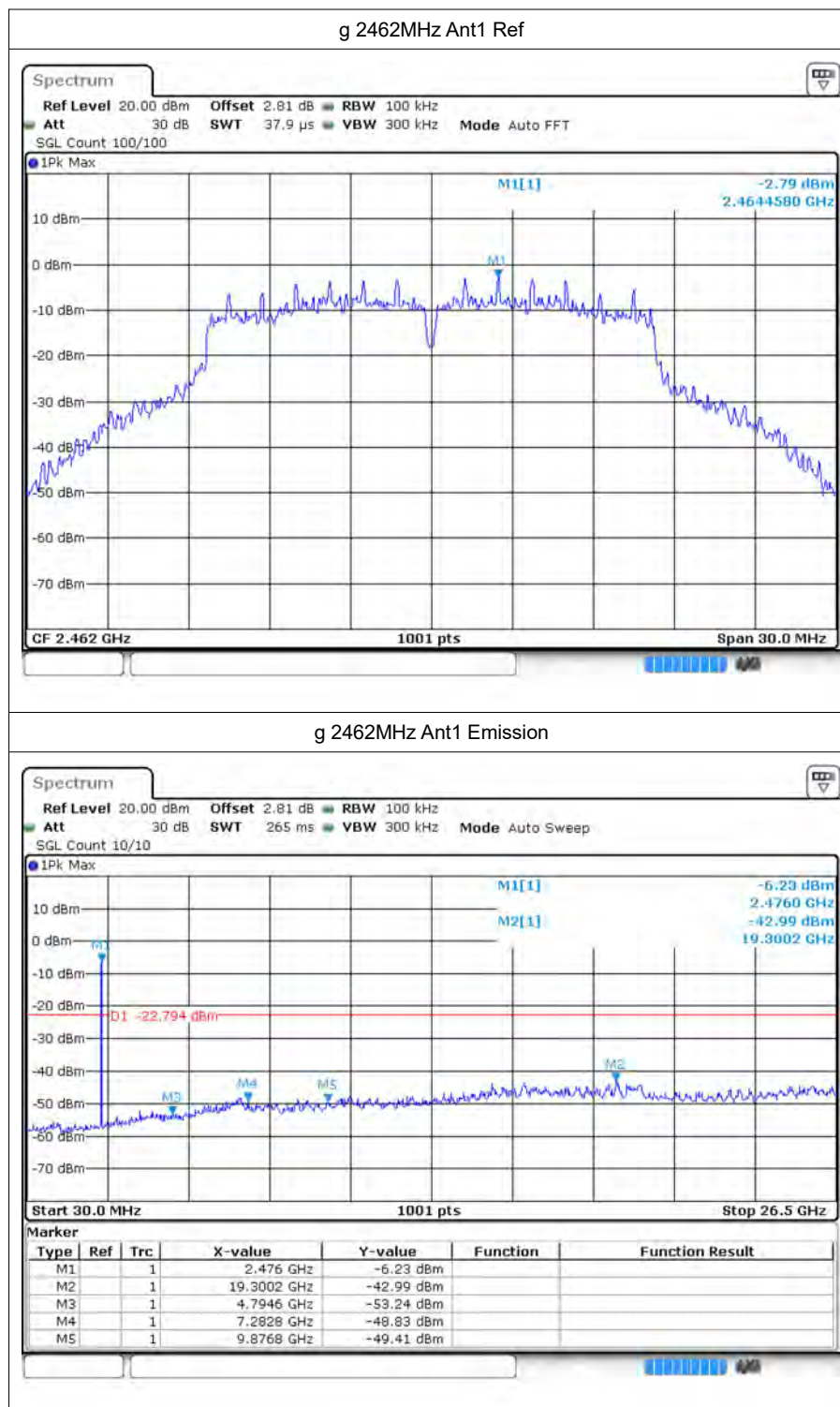


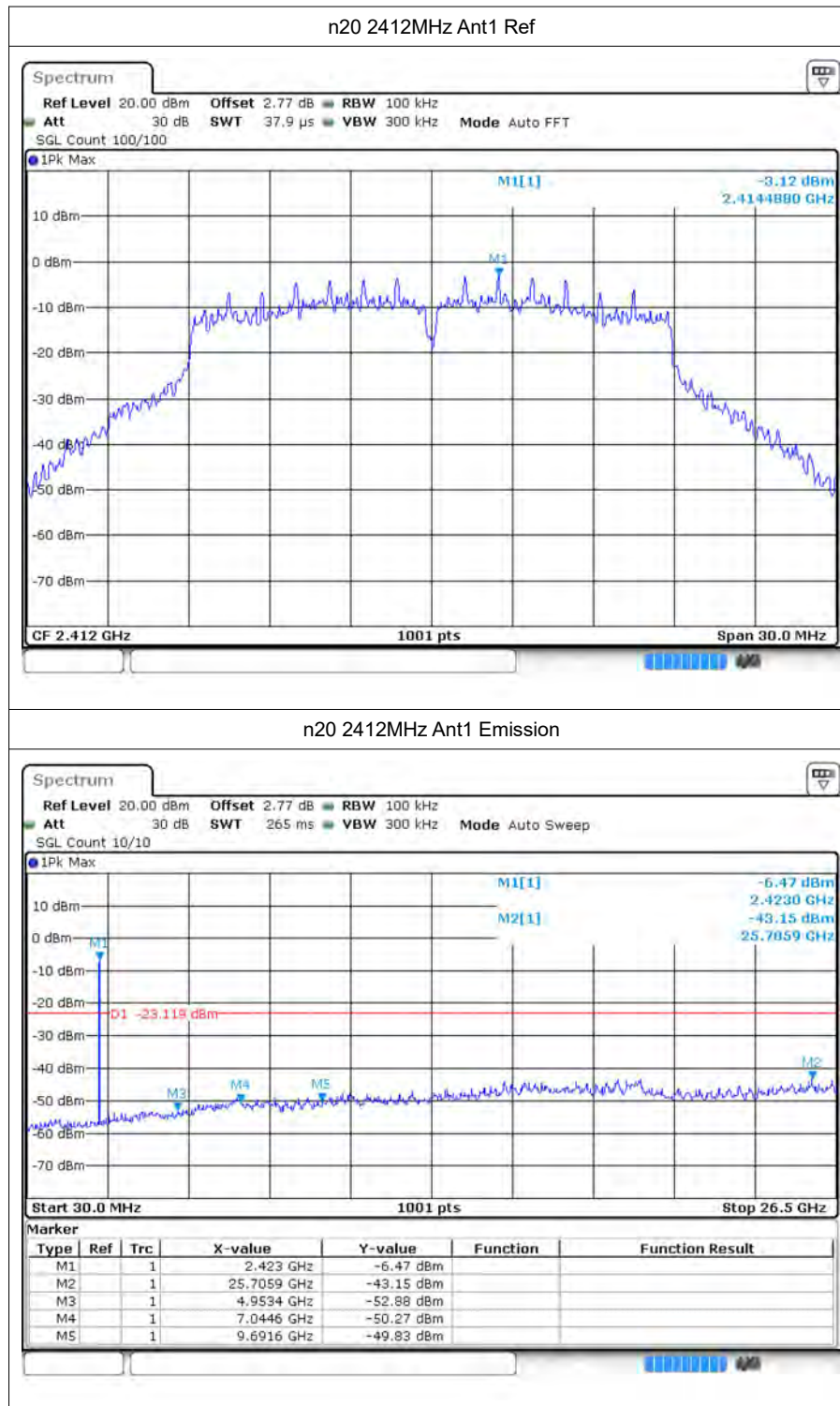


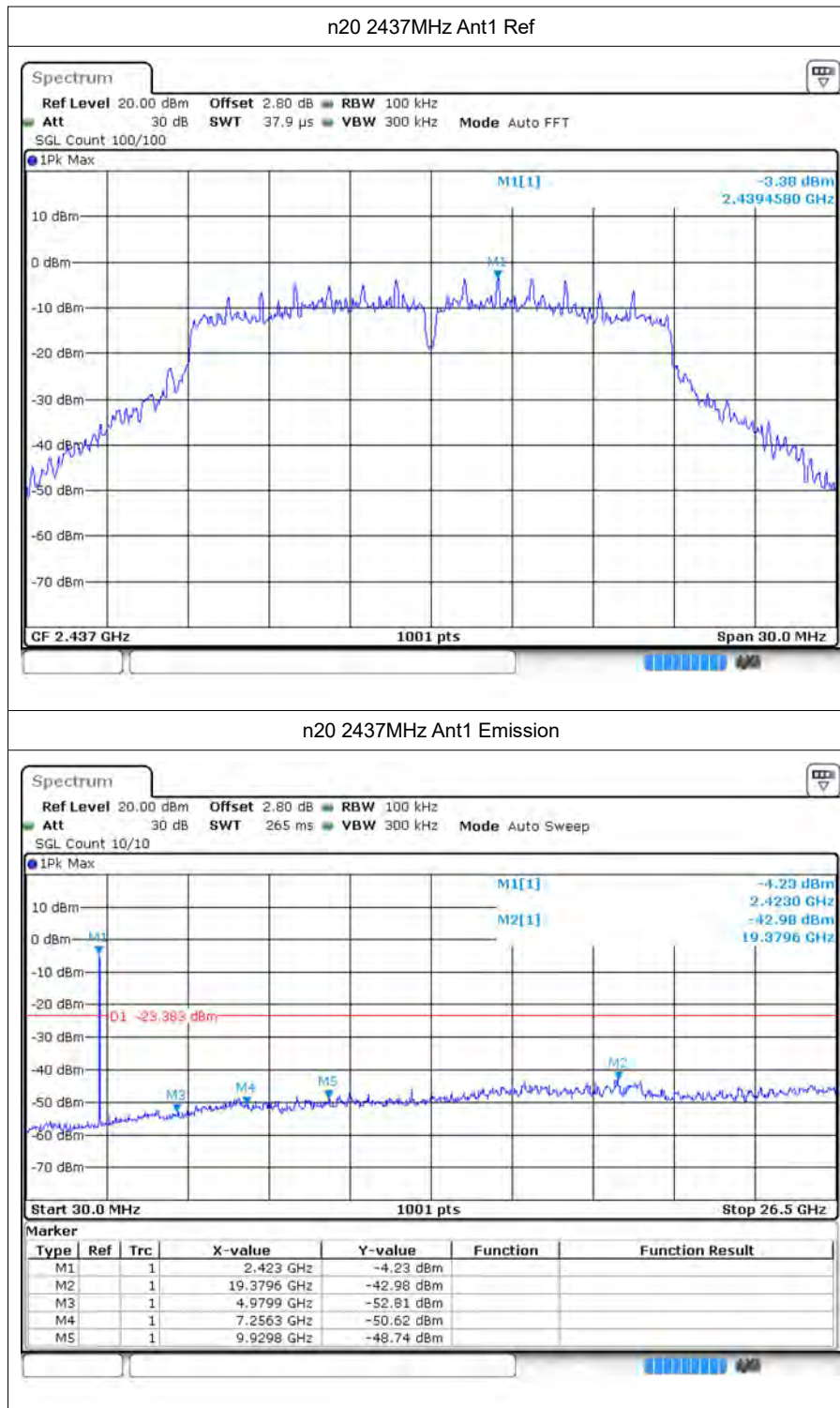


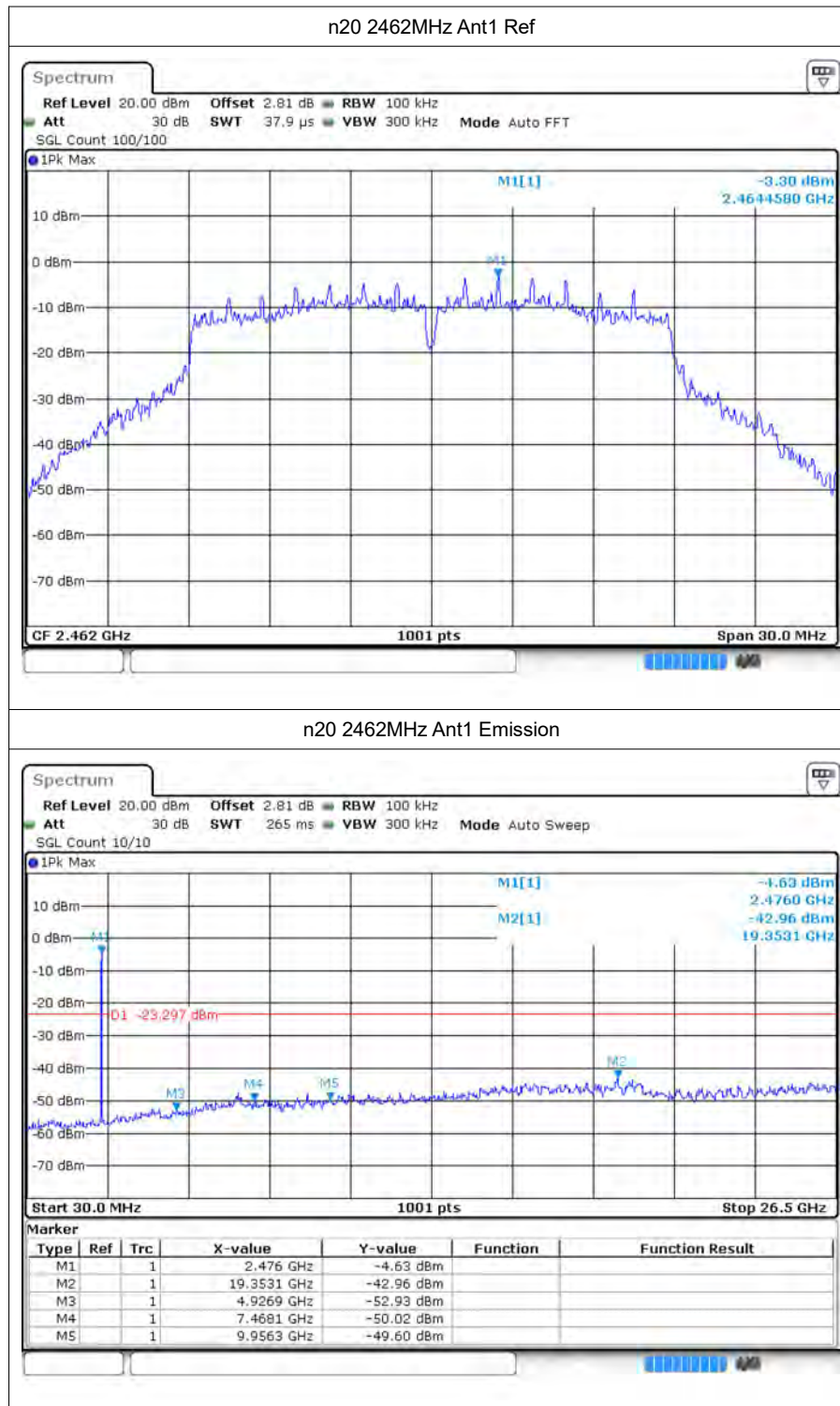


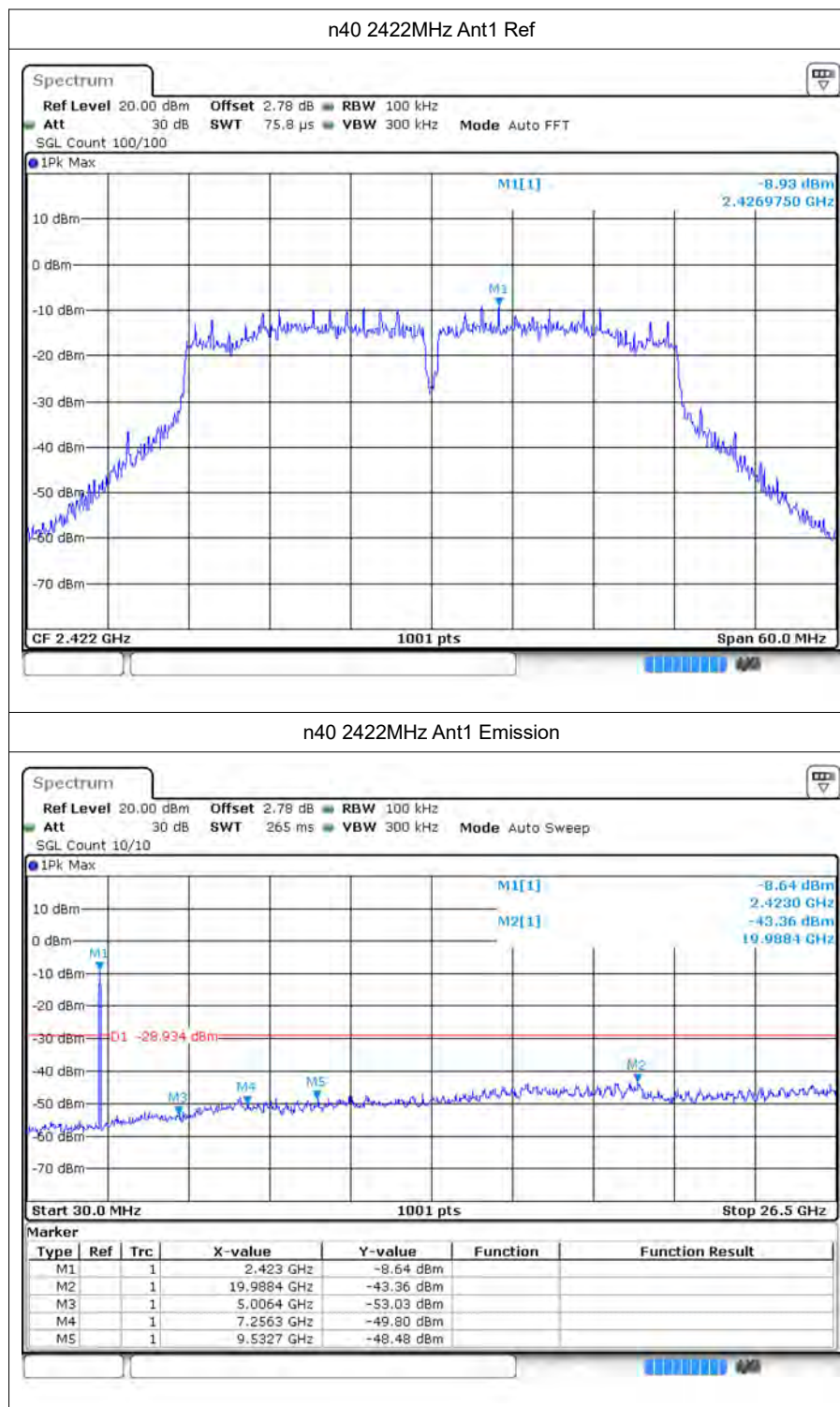


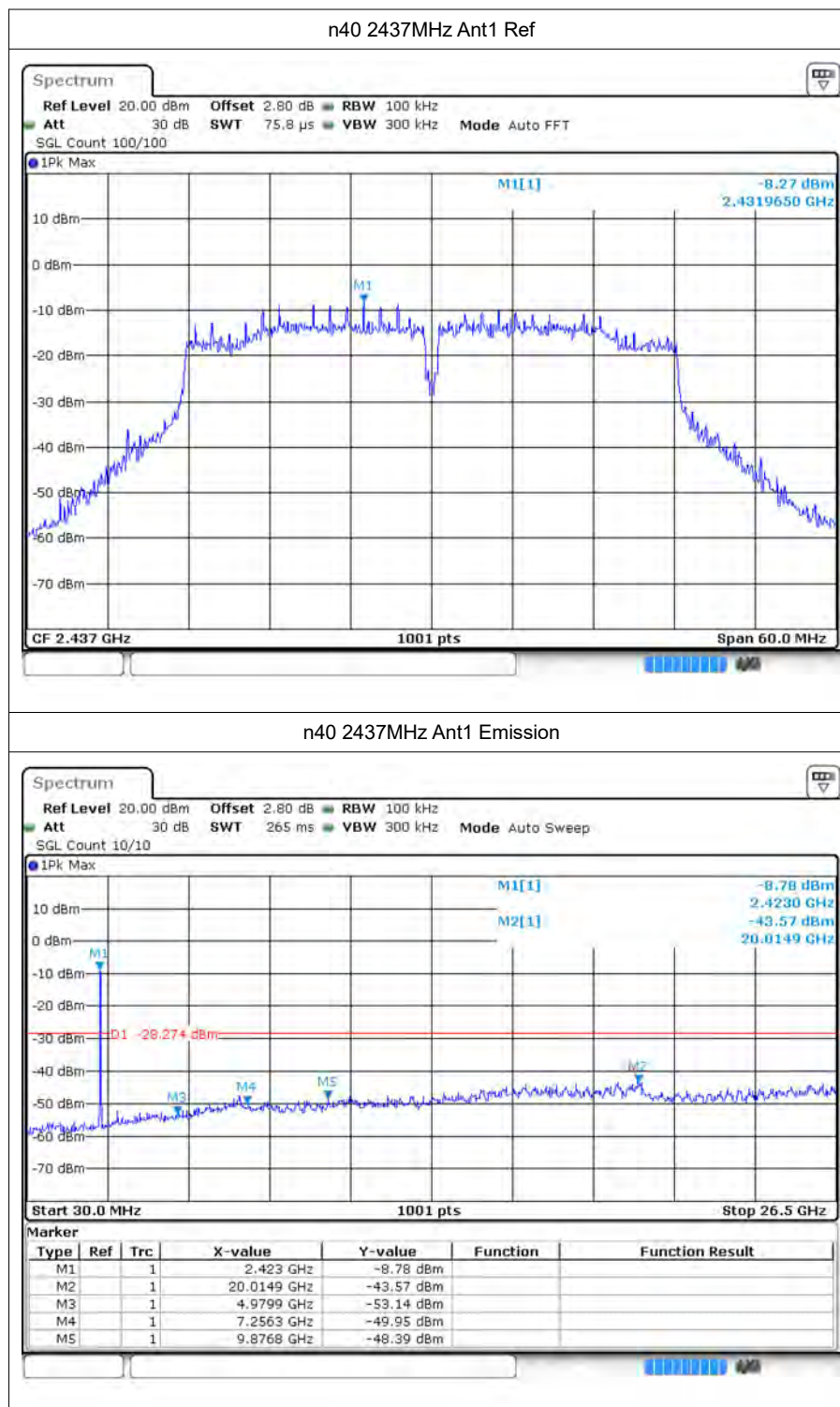


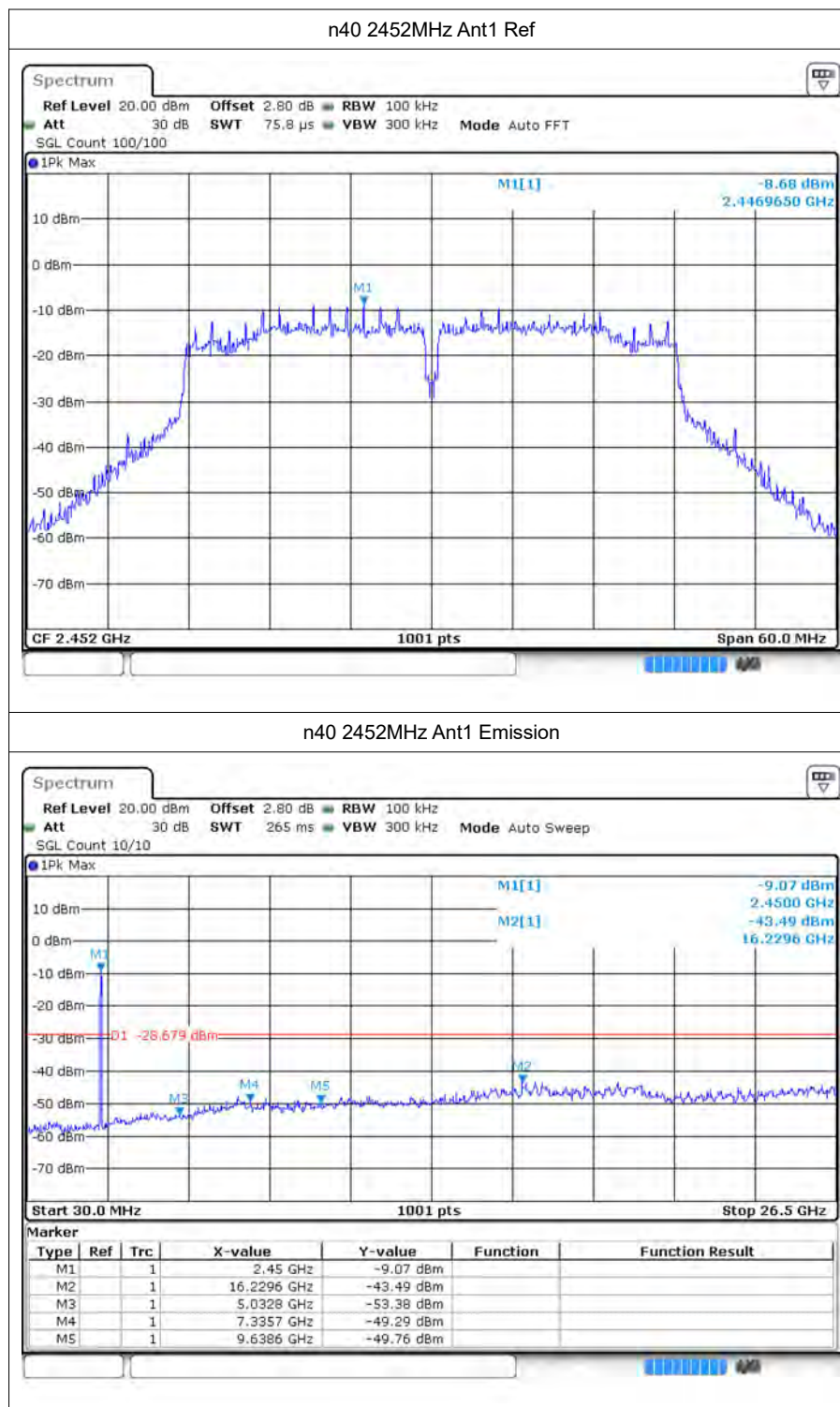














## 7 Restrict Band

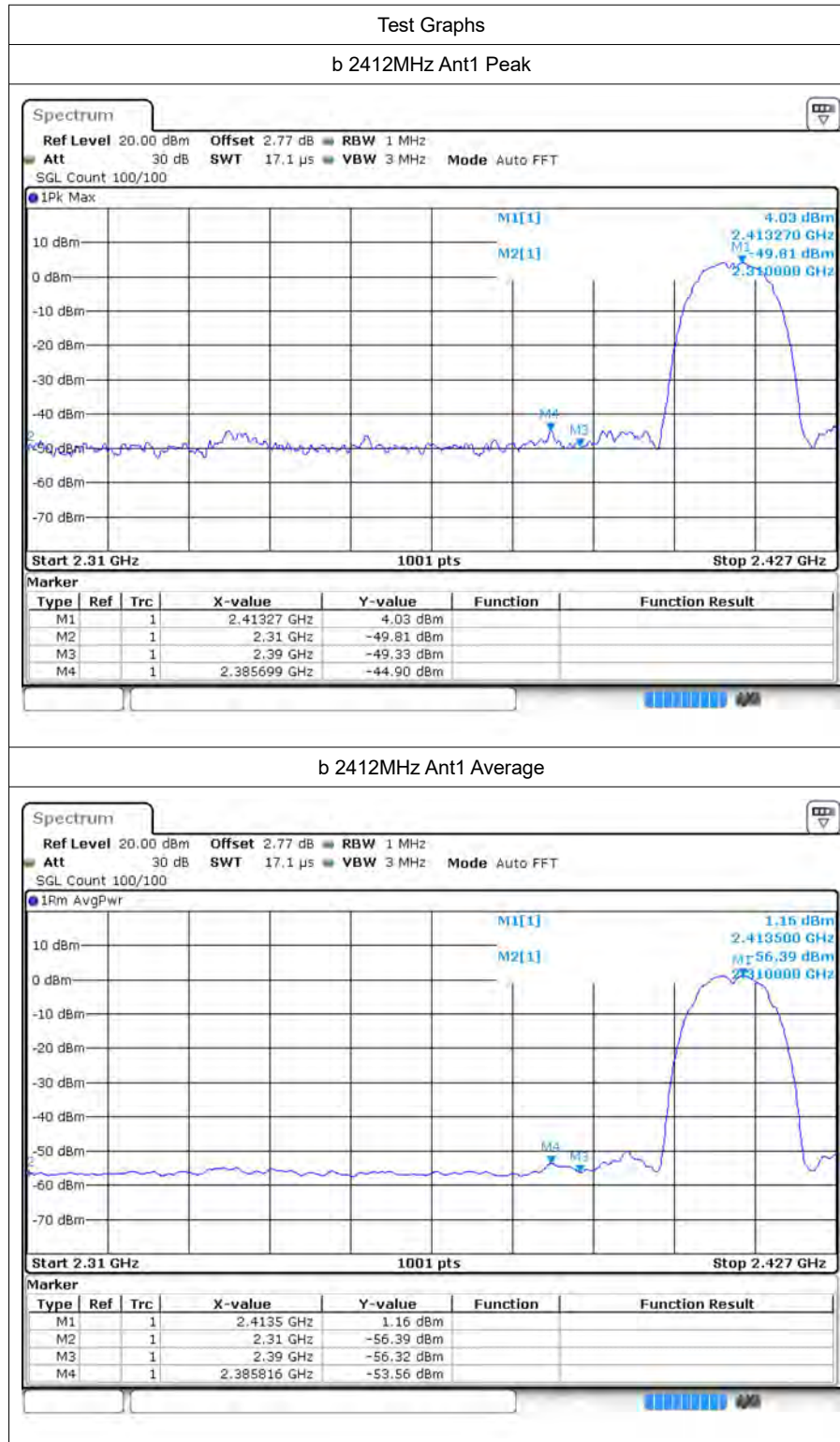
### 7.1 Test Result

| Mode | Frequency (MHz) | Antenna | Spur Freq (MHz) | Power (dBm) | Gain (dBi) | Duty Factor | E (dBuV/m) | Detector | Limit (dBuV/m) | Verdict |
|------|-----------------|---------|-----------------|-------------|------------|-------------|------------|----------|----------------|---------|
| b    | 2412            | Ant1    | 2310            | -49.81      | 2          | -           | 47.45      | Peak     | 74             | Pass    |
| b    | 2412            | Ant1    | 2310            | -56.39      | 2          | 0           | 40.87      | Average  | 54             | Pass    |
| b    | 2412            | Ant1    | 2385.699        | -44.89      | 2          | -           | 52.37      | Peak     | 74             | Pass    |
| b    | 2412            | Ant1    | 2385.816        | -53.56      | 2          | 0           | 43.7       | Average  | 54             | Pass    |
| b    | 2412            | Ant1    | 2390            | -49.33      | 2          | -           | 47.93      | Peak     | 74             | Pass    |
| b    | 2412            | Ant1    | 2390            | -56.32      | 2          | 0           | 40.94      | Average  | 54             | Pass    |
| b    | 2462            | Ant1    | 2483.5          | -47.8       | 2          | -           | 49.46      | Peak     | 74             | Pass    |
| b    | 2462            | Ant1    | 2483.5          | -55.26      | 2          | 0           | 42         | Average  | 54             | Pass    |
| b    | 2462            | Ant1    | 2490.142        | -46.67      | 2          | -           | 50.59      | Peak     | 74             | Pass    |
| b    | 2462            | Ant1    | 2485.425        | -55.03      | 2          | 0           | 42.23      | Average  | 54             | Pass    |
| b    | 2462            | Ant1    | 2500            | -49.06      | 2          | -           | 48.2       | Peak     | 74             | Pass    |
| b    | 2462            | Ant1    | 2500            | -55.65      | 2          | 0           | 41.61      | Average  | 54             | Pass    |
| g    | 2412            | Ant1    | 2310            | -50.77      | 2          | -           | 46.49      | Peak     | 74             | Pass    |
| g    | 2412            | Ant1    | 2310            | -57.01      | 2          | 0.61        | 40.83      | Average  | 54             | Pass    |
| g    | 2412            | Ant1    | 2339.133        | -46.32      | 2          | -           | 50.91      | Peak     | 74             | Pass    |
| g    | 2412            | Ant1    | 2339.25         | -54.34      | 2          | 0.61        | 43.50      | Average  | 54             | Pass    |
| g    | 2412            | Ant1    | 2390            | -50.07      | 2          | -           | 47.16      | Peak     | 74             | Pass    |
| g    | 2412            | Ant1    | 2390            | -57.14      | 2          | 0.61        | 40.70      | Average  | 54             | Pass    |
| g    | 2462            | Ant1    | 2483.5          | -47.81      | 2          | -           | 49.45      | Peak     | 74             | Pass    |
| g    | 2462            | Ant1    | 2483.5          | -56.49      | 2          | 0.61        | 41.38      | Average  | 54             | Pass    |
| g    | 2462            | Ant1    | 2490.142        | -46.29      | 2          | -           | 50.97      | Peak     | 74             | Pass    |
| g    | 2462            | Ant1    | 2493.269        | -55.76      | 2          | 0.61        | 42.11      | Average  | 54             | Pass    |
| g    | 2462            | Ant1    | 2500            | -48.62      | 2          | -           | 48.2       | Peak     | 74             | Pass    |
| g    | 2462            | Ant1    | 2500            | -56.2       | 2          | 0.61        | 41.67      | Average  | 54             | Pass    |
| n20  | 2412            | Ant1    | 2310            | -50.47      | 2          | -           | 46.79      | Peak     | 74             | Pass    |
| n20  | 2412            | Ant1    | 2310            | -56.44      | 2          | 0.58        | 41.4       | Average  | 54             | Pass    |
| n20  | 2412            | Ant1    | 2323.689        | -46.66      | 2          | -           | 50.6       | Peak     | 74             | Pass    |
| n20  | 2412            | Ant1    | 2339.952        | -54.1       | 2          | 0.58        | 43.74      | Average  | 54             | Pass    |
| n20  | 2412            | Ant1    | 2390            | -51.28      | 2          | -           | 45.98      | Peak     | 74             | Pass    |
| n20  | 2412            | Ant1    | 2390            | -56.77      | 2          | 0.58        | 41.07      | Average  | 54             | Pass    |
| n20  | 2462            | Ant1    | 2483.5          | -50.08      | 2          | -           | 47.18      | Peak     | 74             | Pass    |
| n20  | 2462            | Ant1    | 2483.5          | -56.08      | 2          | 0.58        | 41.76      | Average  | 54             | Pass    |
| n20  | 2462            | Ant1    | 2495.601        | -47.19      | 2          | -           | 50.07      | Peak     | 74             | Pass    |
| n20  | 2462            | Ant1    | 2483.941        | -55.89      | 2          | 0.58        | 41.95      | Average  | 54             | Pass    |

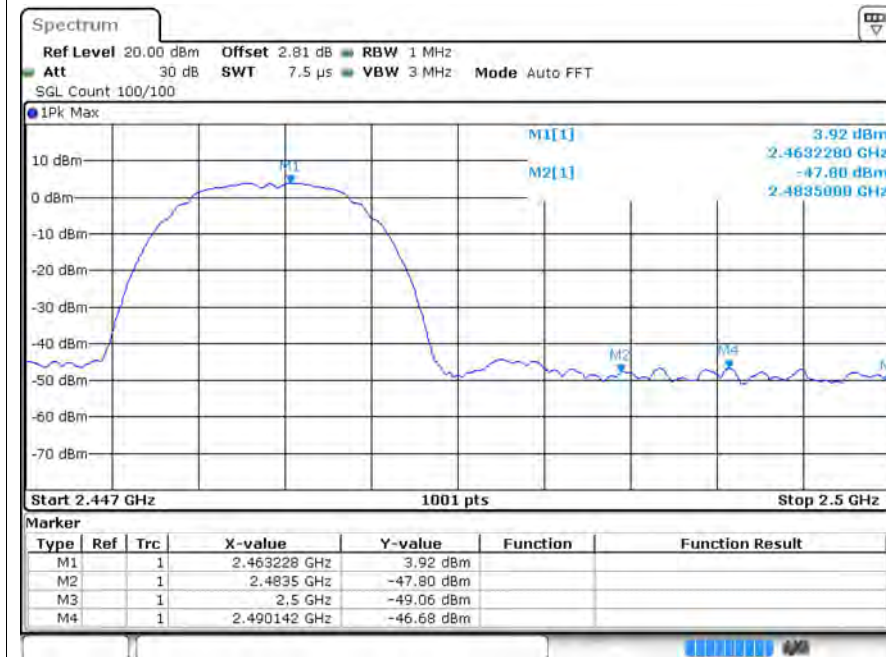


|     |      |      |          |        |   |      |       |         |    |      |
|-----|------|------|----------|--------|---|------|-------|---------|----|------|
| n20 | 2462 | Ant1 | 2500     | -49.5  | 2 | -    | 47.76 | Peak    | 74 | Pass |
| n20 | 2462 | Ant1 | 2500     | -56.36 | 2 | 0.58 | 41.48 | Average | 54 | Pass |
| n40 | 2422 | Ant1 | 2310     | -48.56 | 2 | -    | 48.7  | Peak    | 74 | Pass |
| n40 | 2422 | Ant1 | 2310     | -57.38 | 2 | 0.55 | 40.43 | Average | 54 | Pass |
| n40 | 2422 | Ant1 | 2342.376 | -44.64 | 2 | -    | 52.62 | Peak    | 74 | Pass |
| n40 | 2422 | Ant1 | 2339.962 | -53.98 | 2 | 0.55 | 43.83 | Average | 54 | Pass |
| n40 | 2422 | Ant1 | 2390     | -47.74 | 2 | -    | 49.52 | Peak    | 74 | Pass |
| n40 | 2422 | Ant1 | 2390     | -56.88 | 2 | 0.55 | 40.93 | Average | 54 | Pass |
| n40 | 2452 | Ant1 | 2483.5   | -49.7  | 2 | -    | 47.56 | Peak    | 74 | Pass |
| n40 | 2452 | Ant1 | 2483.5   | -56.34 | 2 | 0.55 | 41.47 | Average | 54 | Pass |
| n40 | 2452 | Ant1 | 2497.894 | -46.72 | 2 | -    | 50.54 | Peak    | 74 | Pass |
| n40 | 2452 | Ant1 | 2492.512 | -55.69 | 2 | 0.55 | 42.12 | Average | 54 | Pass |
| n40 | 2452 | Ant1 | 2500     | -50.47 | 2 | -    | 46.79 | Peak    | 74 | Pass |
| n40 | 2452 | Ant1 | 2500     | -56.26 | 2 | 0.55 | 41.55 | Average | 54 | Pass |

## 7.2 Test Graphs

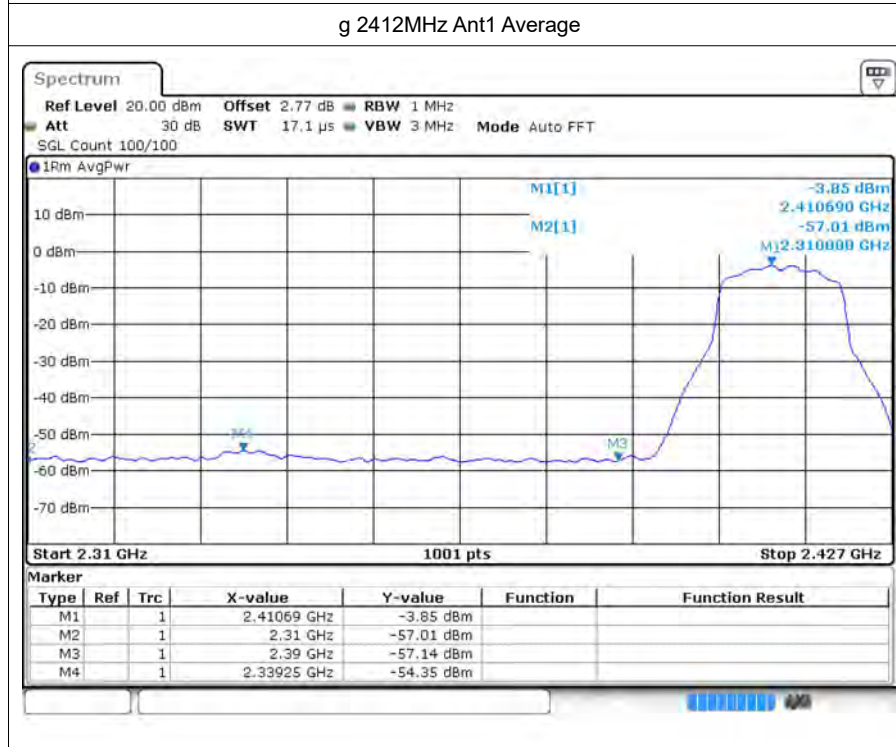
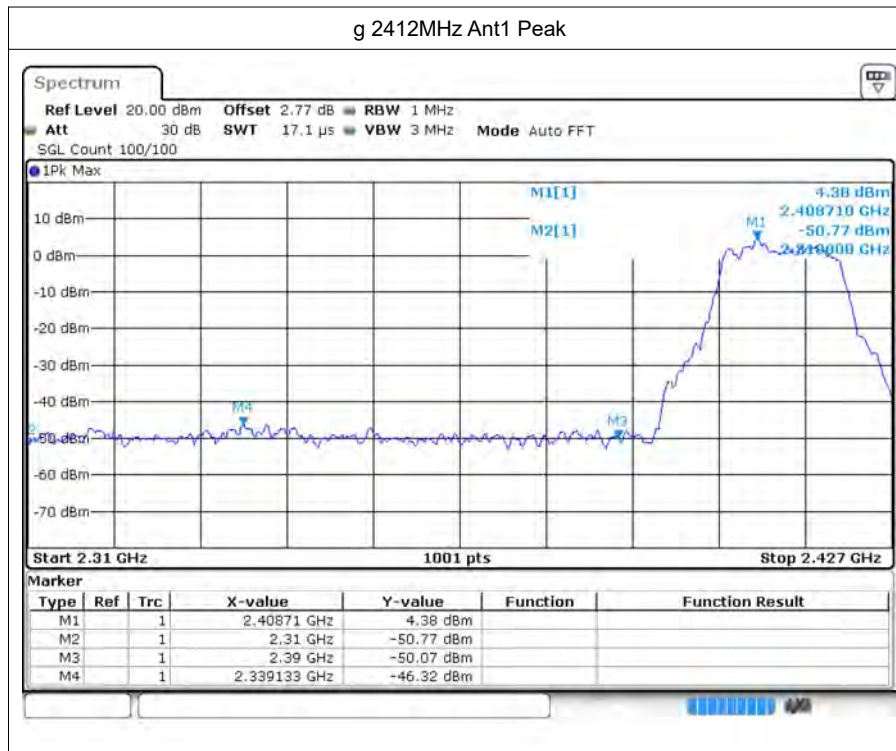


b 2462MHz Ant1 Peak

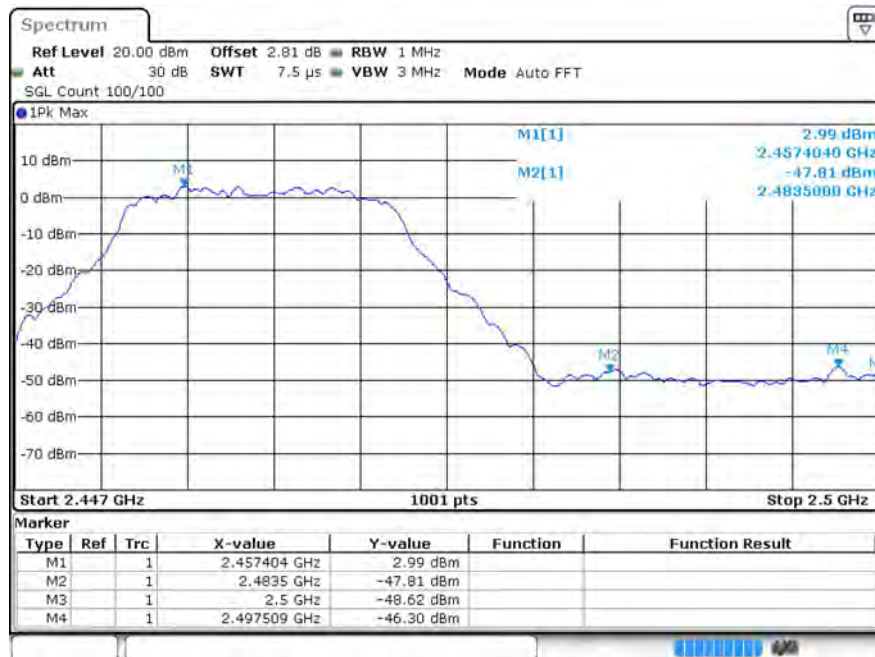


b 2462MHz Ant1 Average

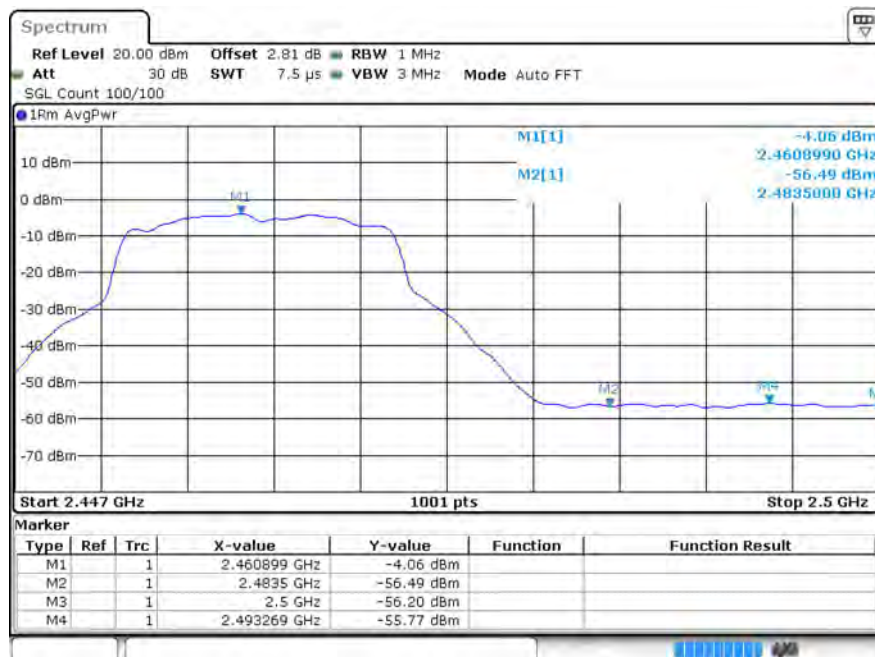


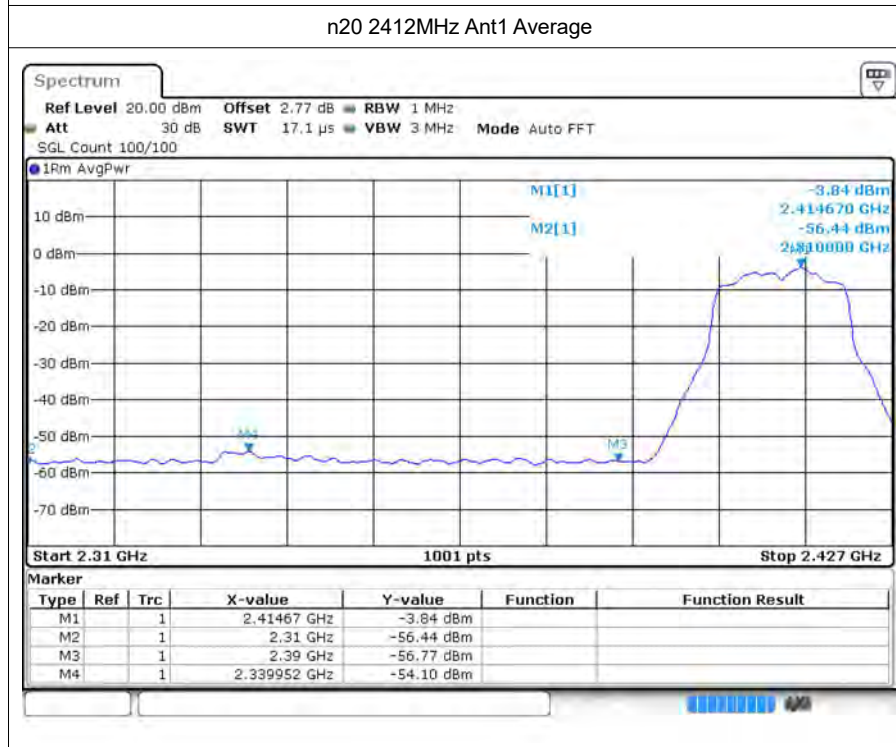
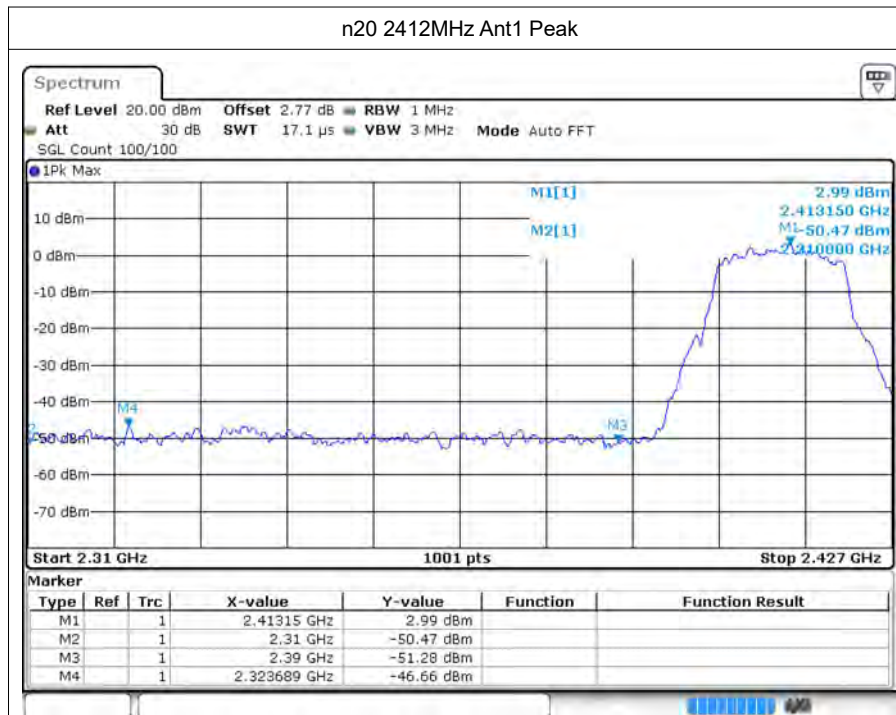


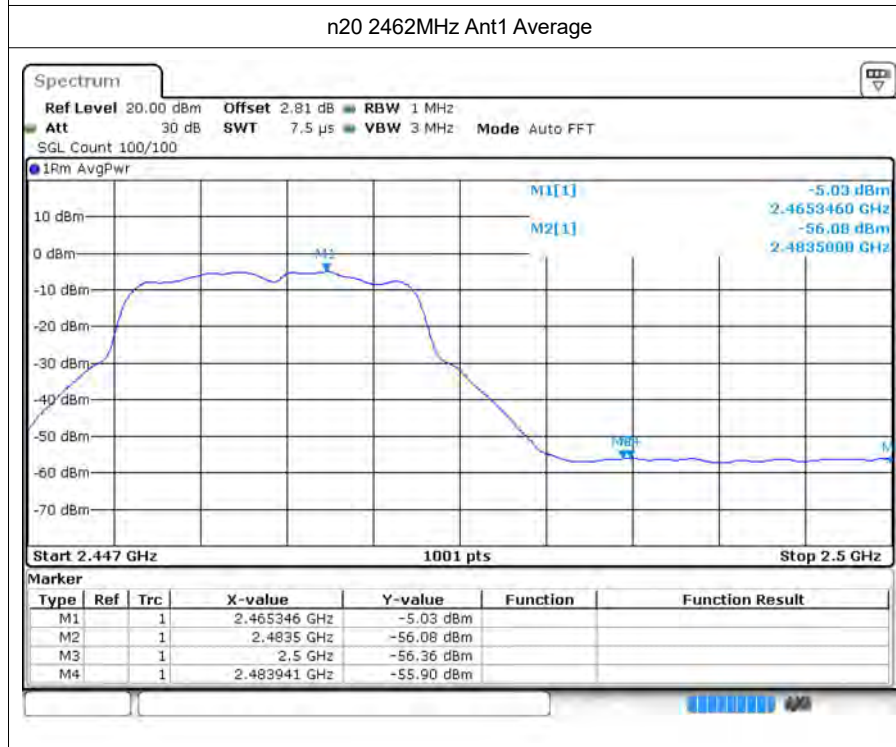
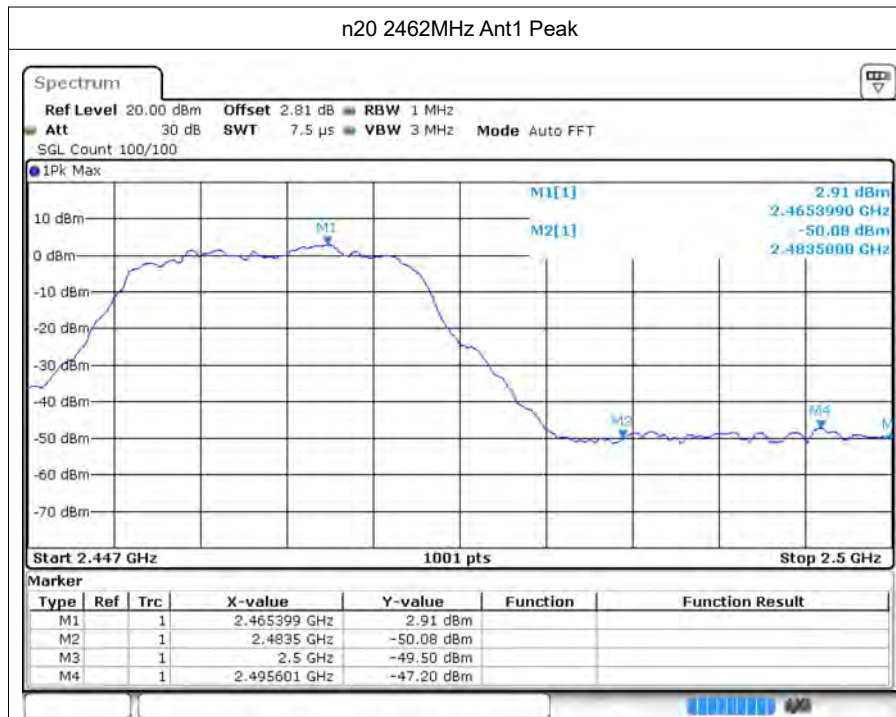
g 2462MHz Ant1 Peak

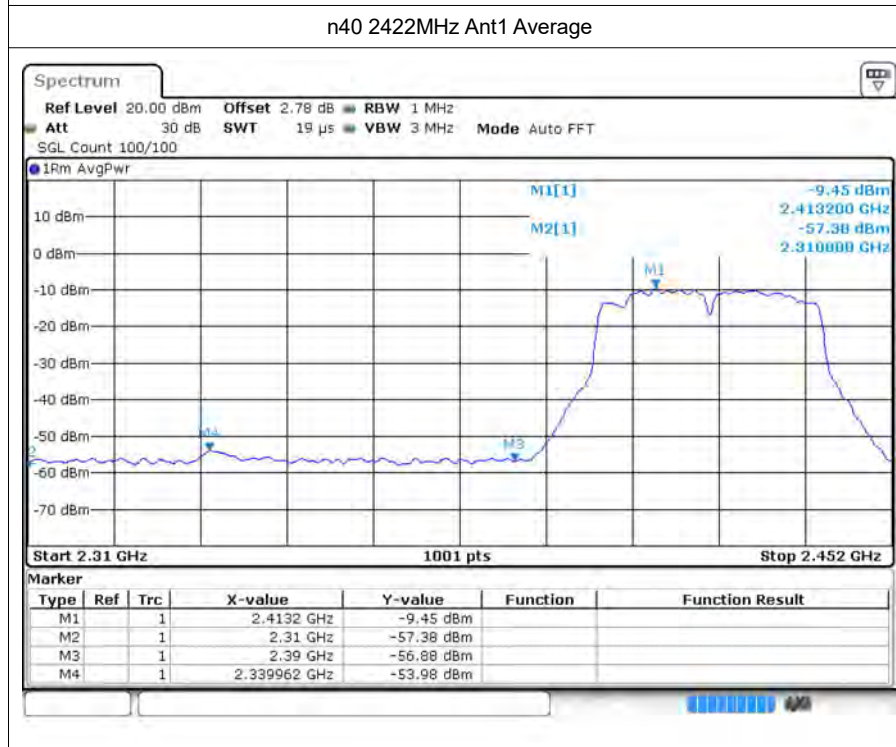


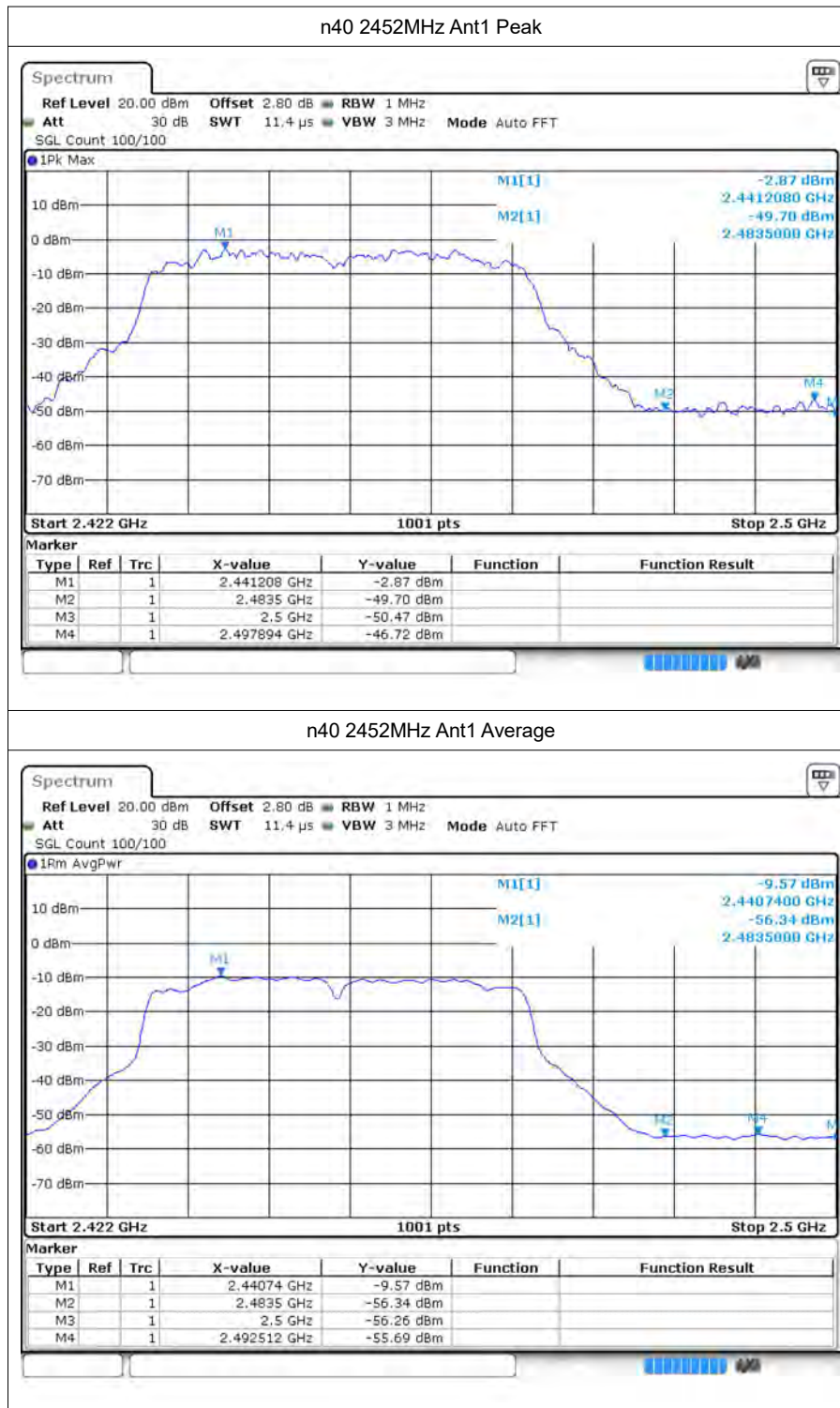
g 2462MHz Ant1 Average











---The End---