# Appendix C

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

**Product Name: Otoscope**

**Trade Mark: N/A**

**Test Model: Y200**

**Environmental Conditions**

| | |
|---|---|
| Temperature: | 25.6° C |
| Relative Humidity: | 52.4% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | Emiya lin |
| Supervised by: | Simba Haung |

# Contents

Page

**COVER PAGE**

1 Duty Cycle ..... 3
1.1 Test Result ..... 3
1.2 Test Graphs ..... 4
2 Maximum Conducted Output Power ..... 9
2.1 Test Result ..... 9
3 -6dB Bandwidth ..... 10
3.1 Test Result ..... 10
3.2 Test Graphs ..... 11
4 Maximum Power Spectral Density Level ..... 16
4.1 Test Result ..... 16
4.2 Test Graphs ..... 17
5 Band Edge ..... 22
5.1 Test Result ..... 22
5.2 Test Graphs ..... 23
6 Conducted RF Spurious Emission ..... 29
6.1 Test Result ..... 29
6.2 Test Graphs ..... 30
7 Restrict Band ..... 39
7.1 Test Result ..... 39
7.2 Test Graphs ..... 41

# 1 Duty Cycle

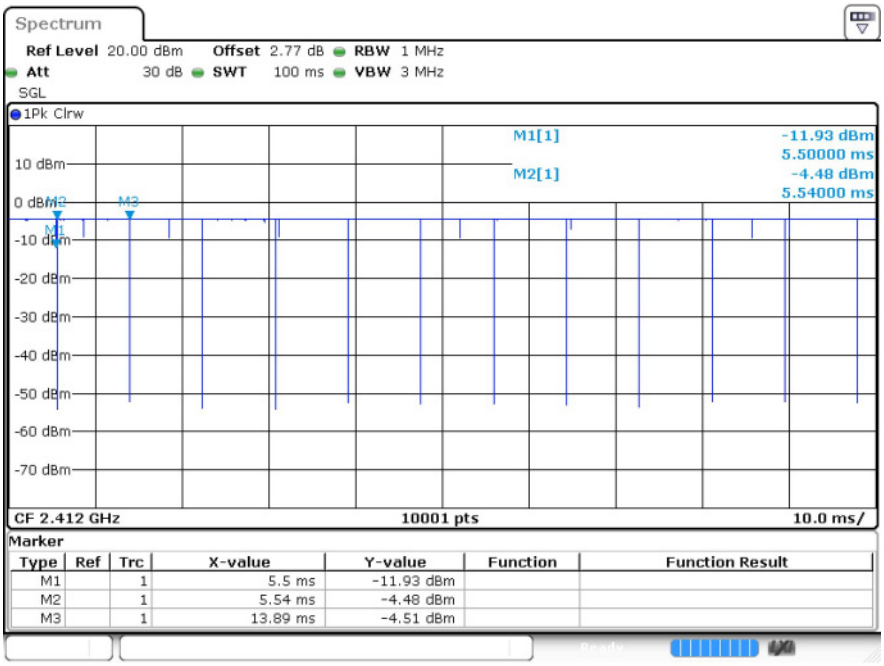
## 1.1 Test Result

| 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 | 86.77 | 0.62 | 4.76 |
| g | 2437 | Ant1 | 86.83 | 0.61 | 4.76 |
| g | 2462 | Ant1 | 86.69 | 0.62 | 4.76 |
| n20 | 2412 | Ant1 | 87.45 | 0.58 | 4.35 |
| n20 | 2437 | Ant1 | 87.46 | 0.58 | 4.35 |
| n20 | 2462 | Ant1 | 87.43 | 0.58 | 4.35 |

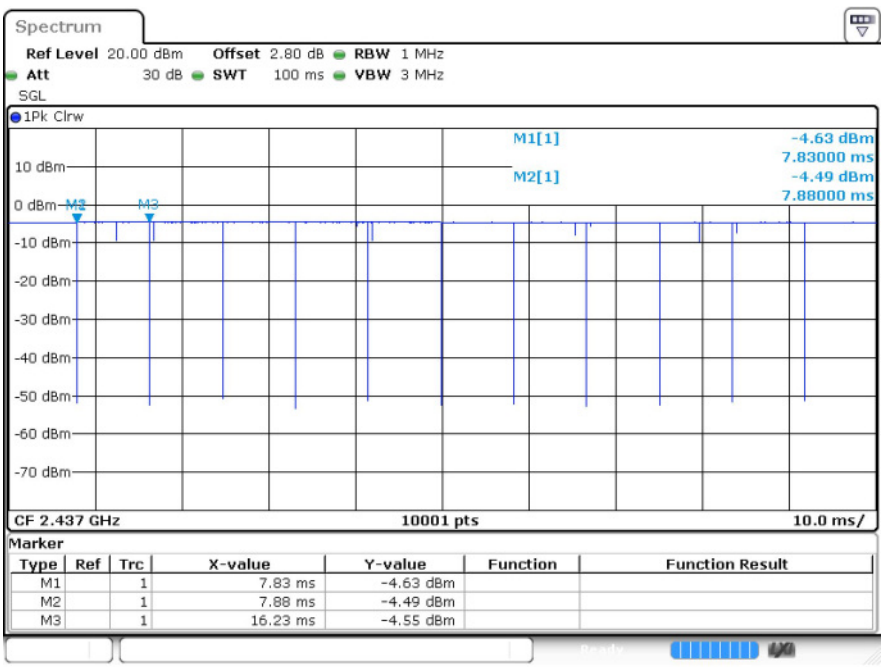
## 1.2 Test Graphs

Test Graphs

b 2412MHz Ant1

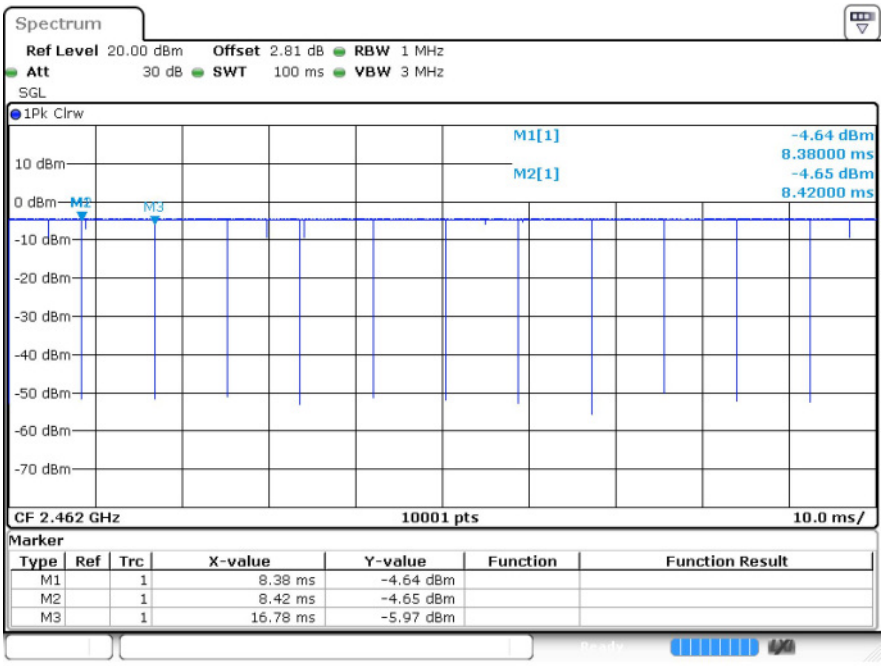



b 2437MHz Ant1

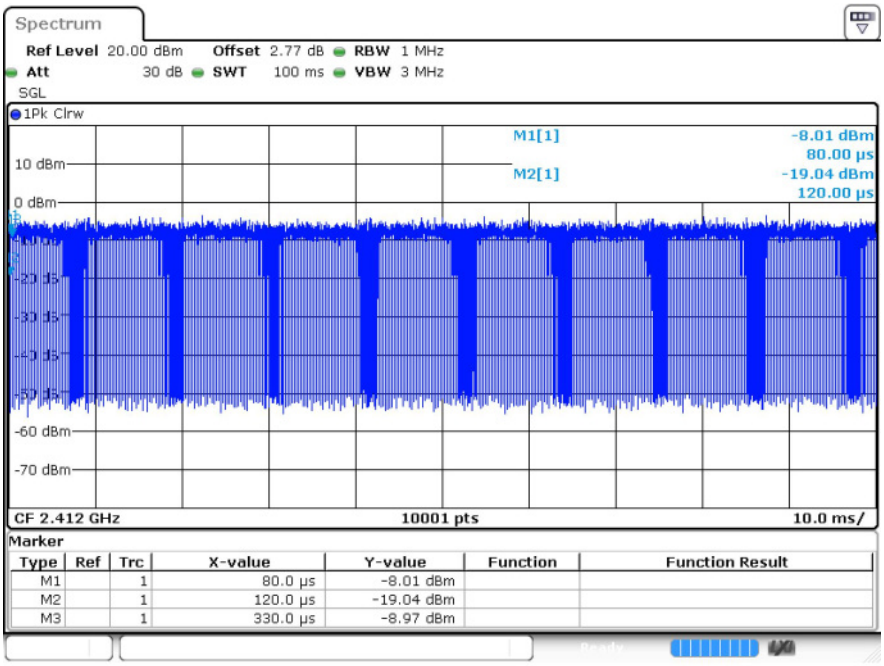


Test Graphs

b 2462MHz Ant1

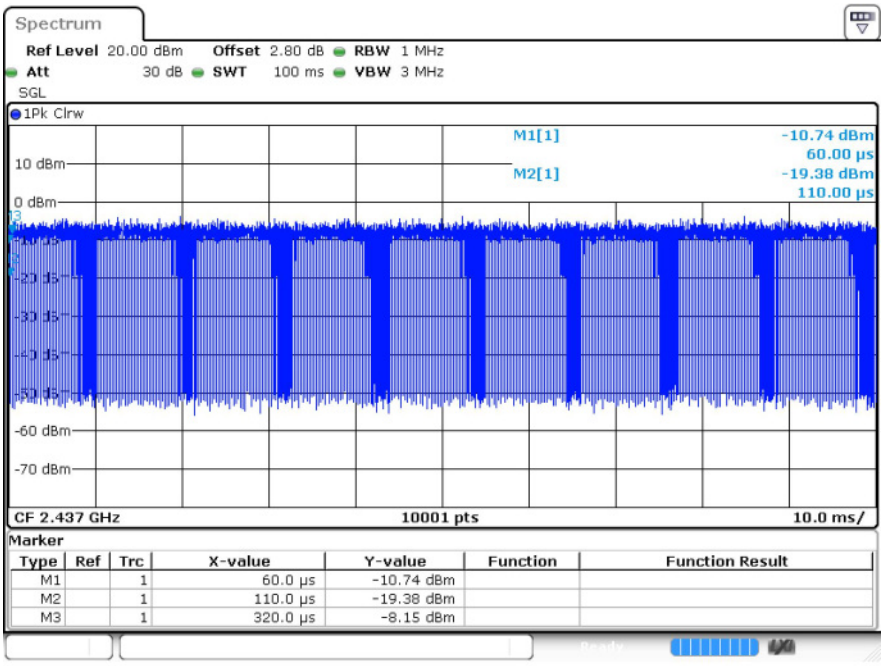



g 2412MHz Ant1

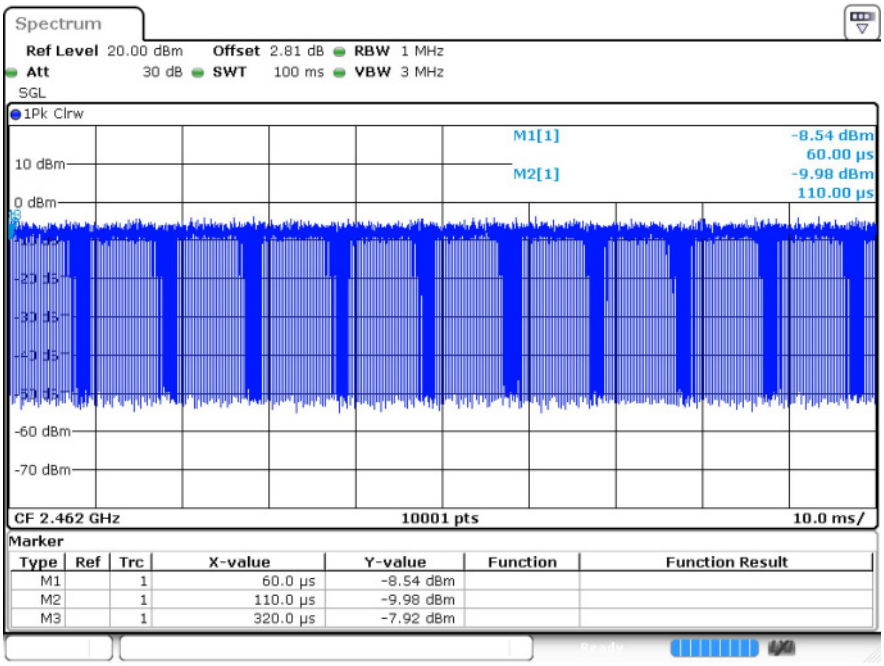


Test Graphs

g 2437MHz Ant1

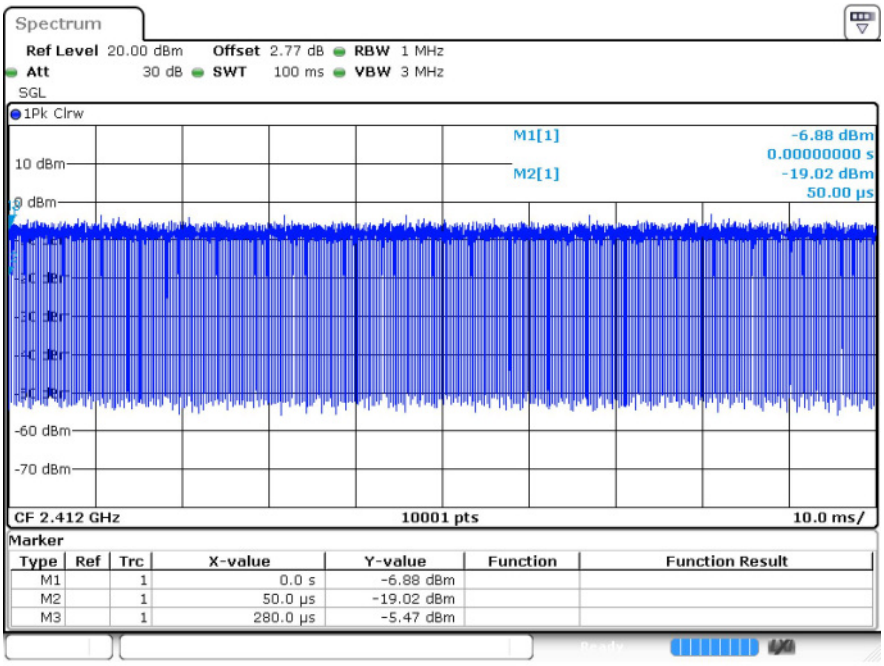



g 2462MHz Ant1

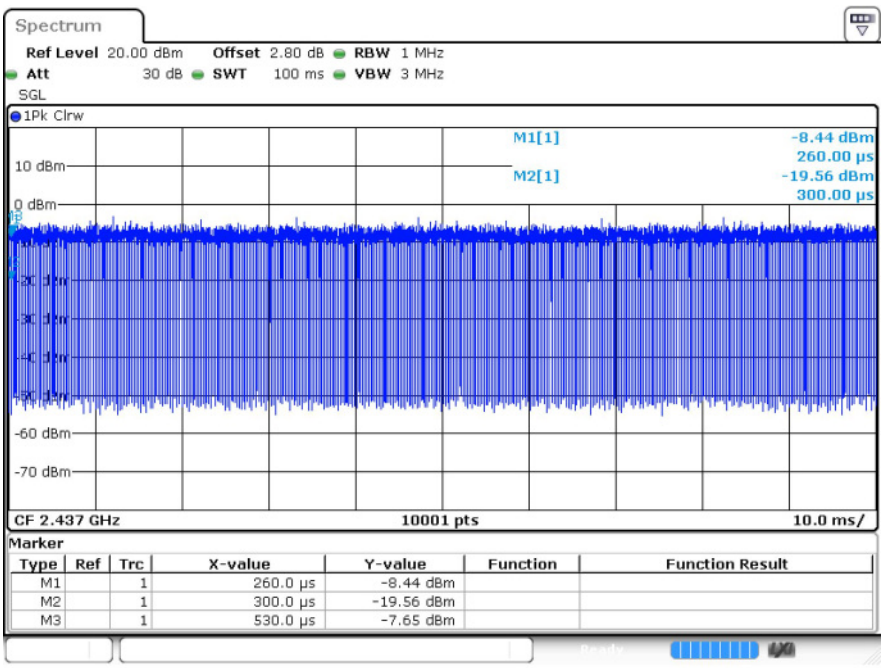


Test Graphs

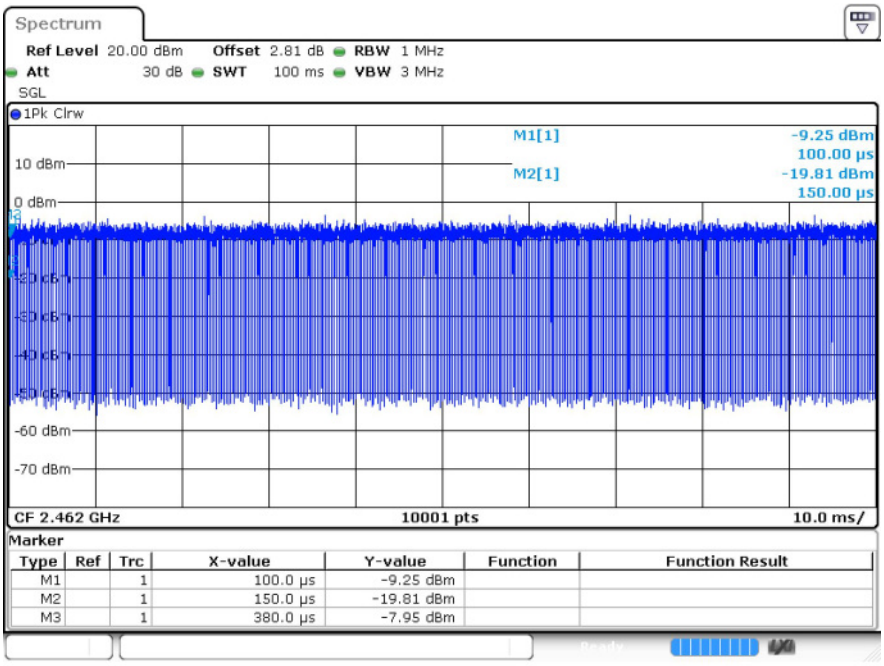
n20 2412MHz Ant1




n20 2437MHz Ant1



| Test Graphs |
|---|
| n20 2462MHz Ant1 |



# 2 Maximum Conducted Output Power

## 2.1 Test Result

| Mode | Frequency (MHz) | Antenna | Conducted Power (dBm) | Limit (dBm) | Verdict |
|---|---|---|---|---|---|
| b | 2412 | Ant1 | 6.05 | 30 | Pass |
| b | 2437 | Ant1 | 5.86 | 30 | Pass |
| b | 2462 | Ant1 | 5.79 | 30 | Pass |
| g | 2412 | Ant1 | 5.51 | 30 | Pass |
| g | 2437 | Ant1 | 5.56 | 30 | Pass |
| g | 2462 | Ant1 | 5.53 | 30 | Pass |
| n20 | 2412 | Ant1 | 5.46 | 30 | Pass |
| n20 | 2437 | Ant1 | 5.39 | 30 | Pass |
| n20 | 2462 | Ant1 | 5.43 | 30 | Pass |

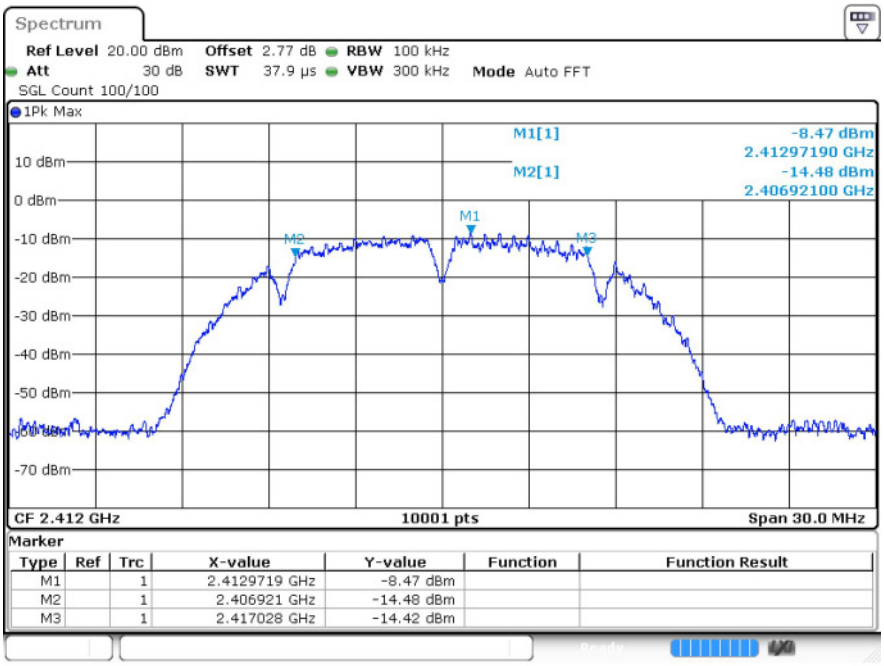
# 3 -6dB Bandwidth

## 3.1 Test Result

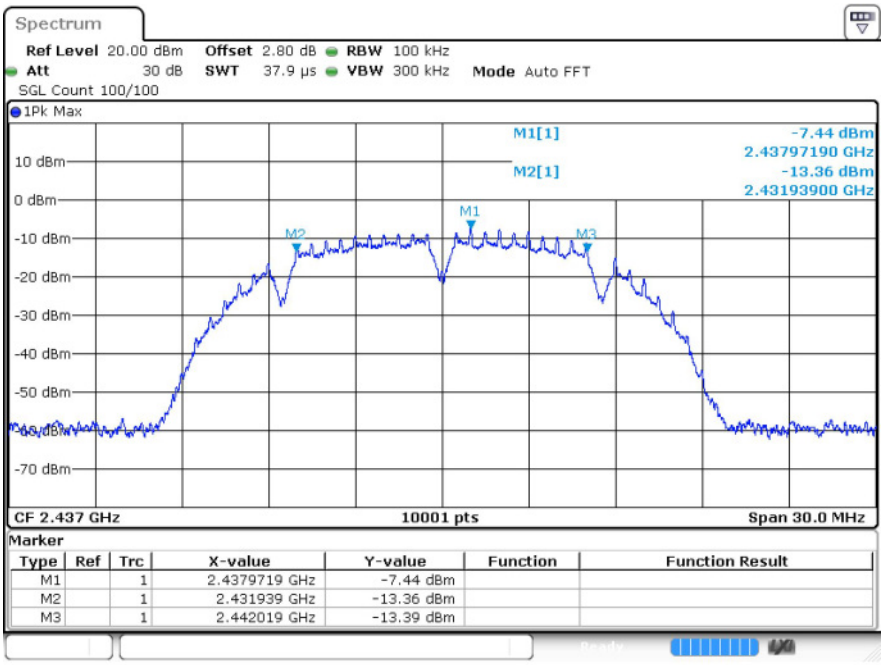
| Mode | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|---|---|---|---|---|---|
| b | 2412 | Ant1 | 10.107 | 0.5 | Pass |
| b | 2437 | Ant1 | 10.08 | 0.5 | Pass |
| b | 2462 | Ant1 | 10.089 | 0.5 | Pass |
| g | 2412 | Ant1 | 15.114 | 0.5 | Pass |
| g | 2437 | Ant1 | 15.093 | 0.5 | Pass |
| g | 2462 | Ant1 | 15.12 | 0.5 | Pass |
| n20 | 2412 | Ant1 | 15.105 | 0.5 | Pass |
| n20 | 2437 | Ant1 | 15.048 | 0.5 | Pass |
| n20 | 2462 | Ant1 | 15.114 | 0.5 | Pass |

## 3.2 Test Graphs

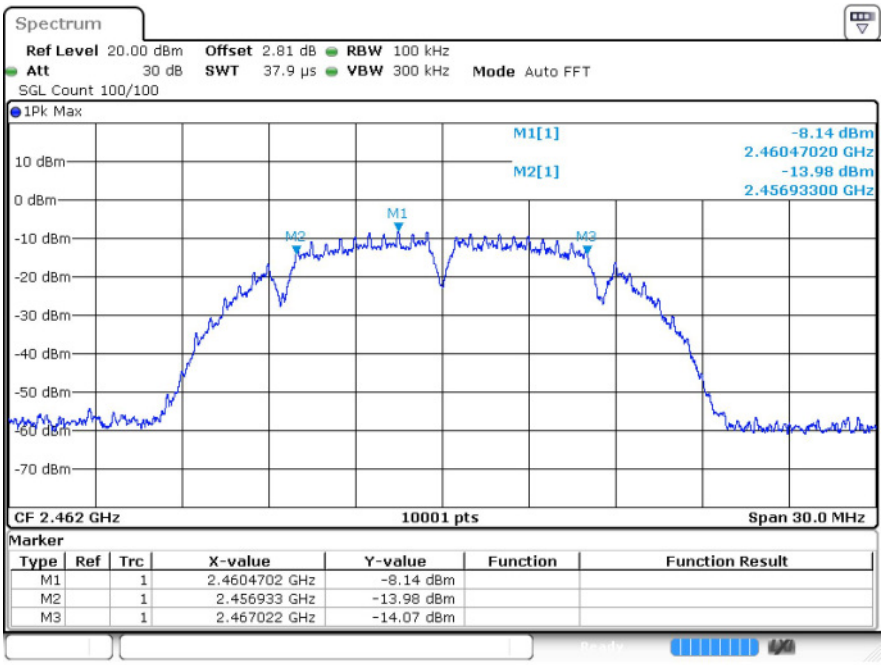
| Test Graphs |
|---|
| b 2412MHz Ant1 |



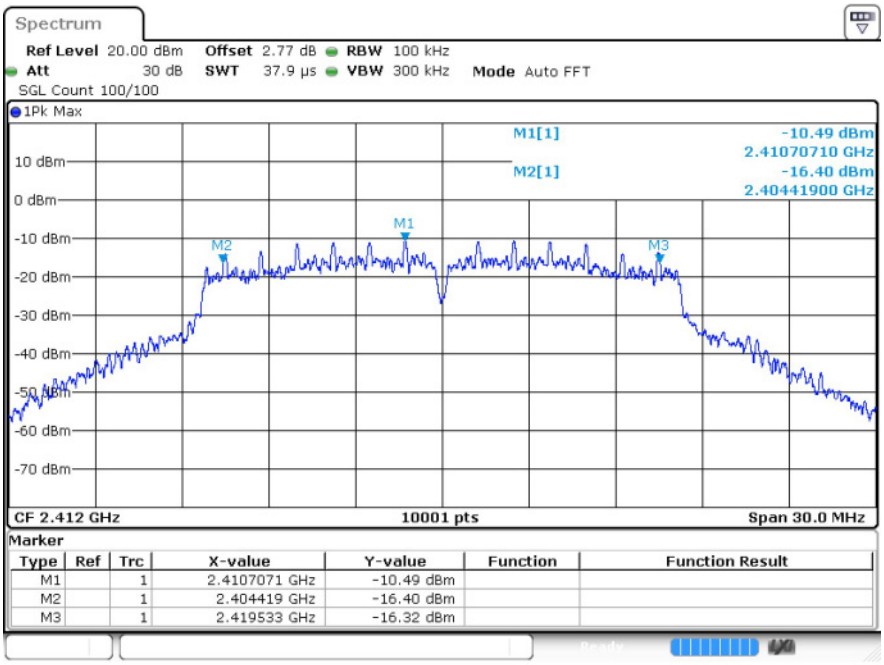

| b 2437MHz Ant1 |
|---|



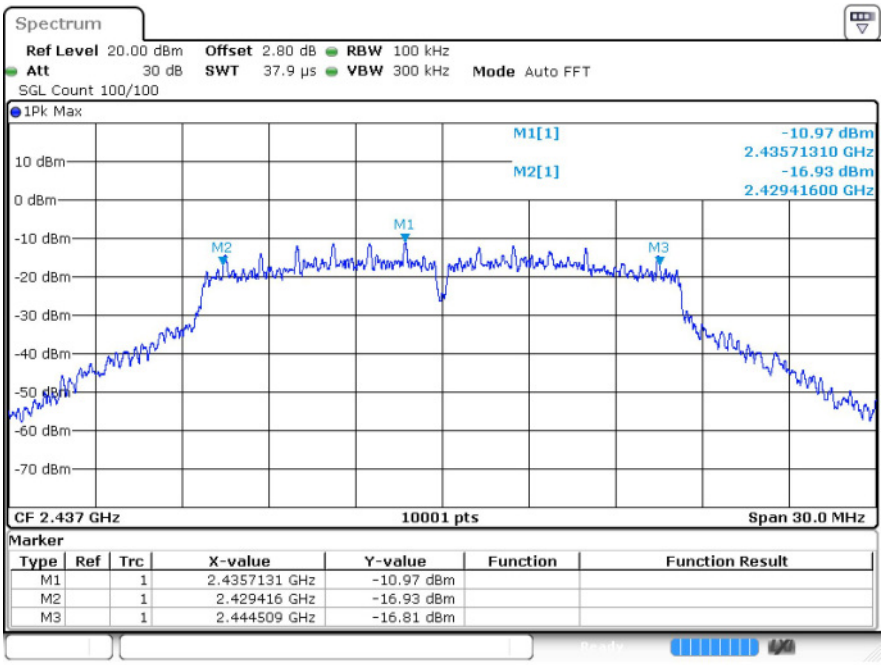
b 2462MHz Ant1



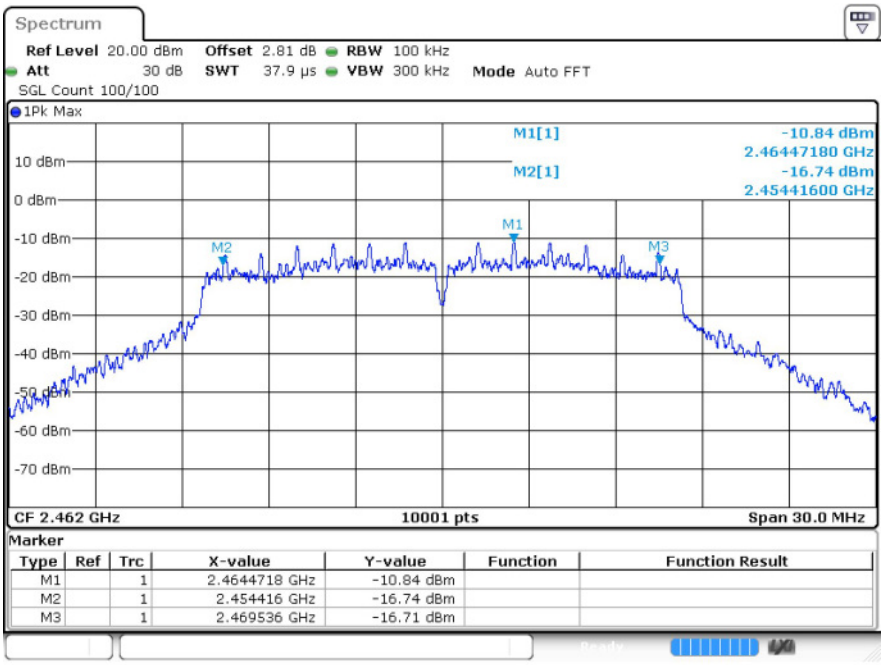

g 2412MHz Ant1



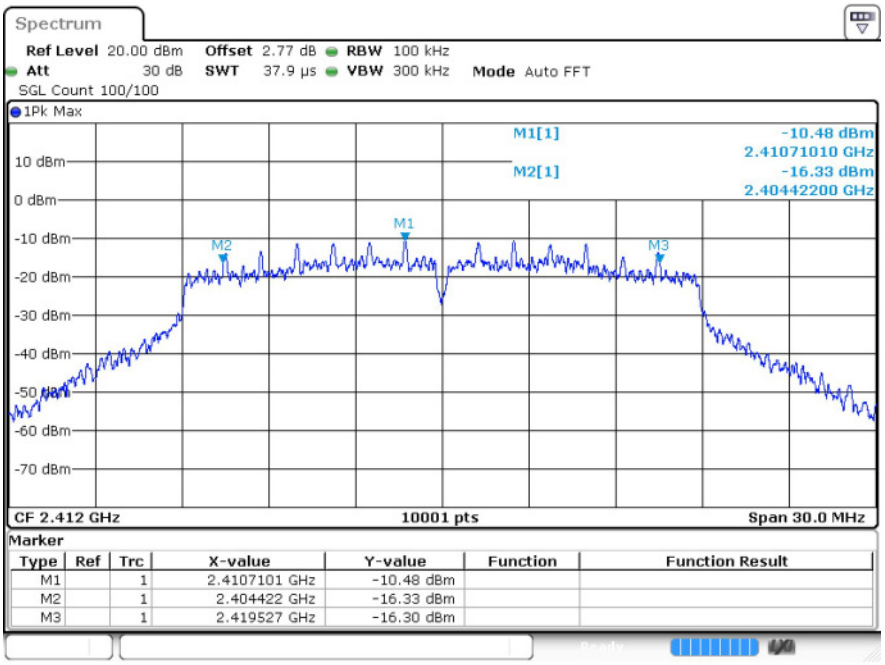
g 2437MHz Ant1



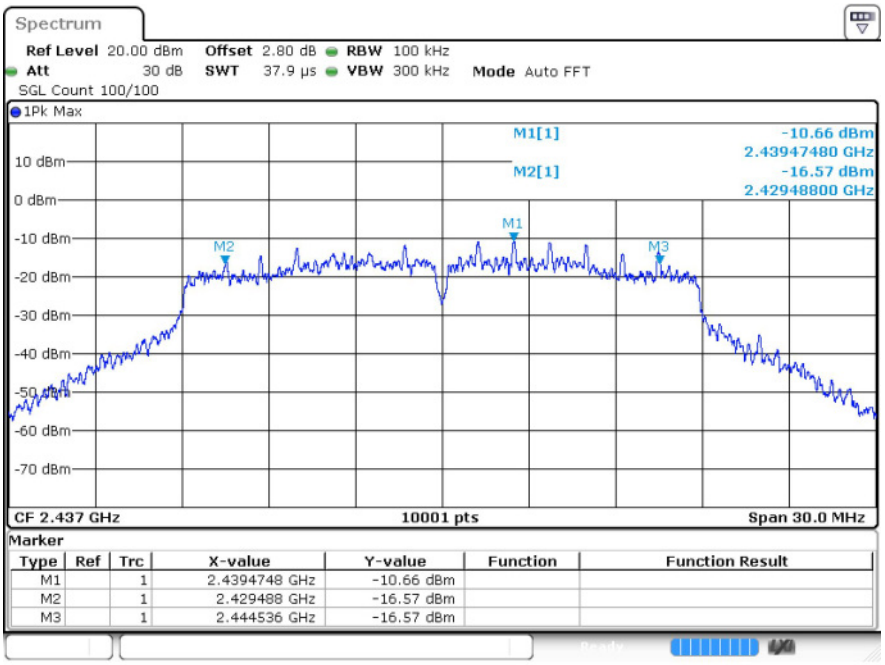

g 2462MHz Ant1



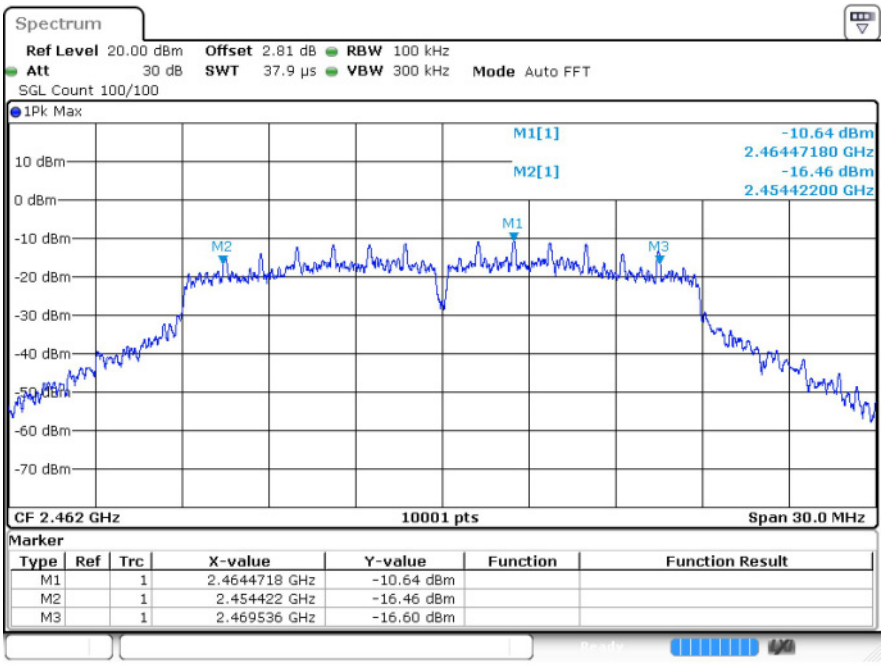
n20 2412MHz Ant1




n20 2437MHz Ant1



n20 2462MHz Ant1

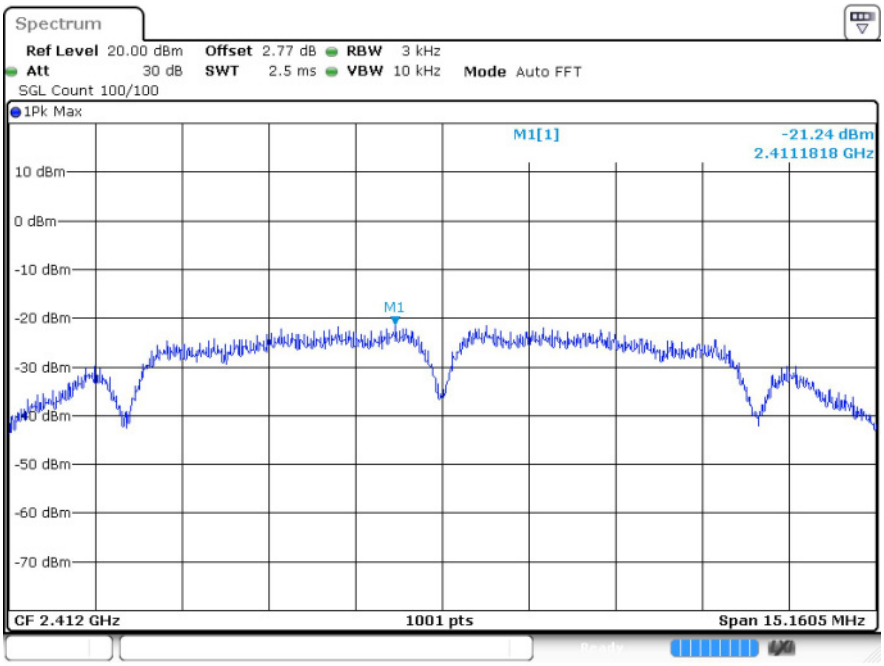
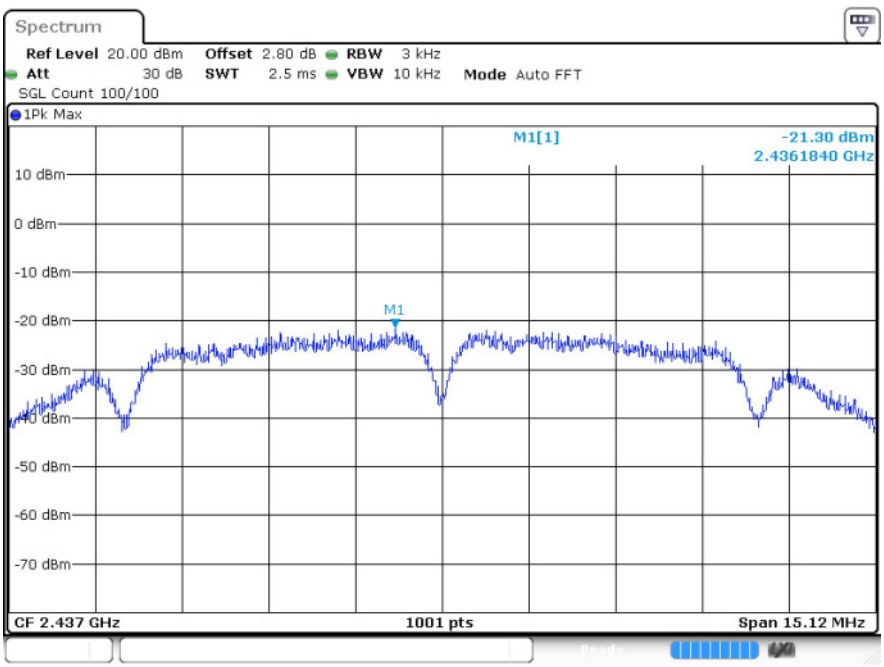


# 4 Maximum Power Spectral Density Level

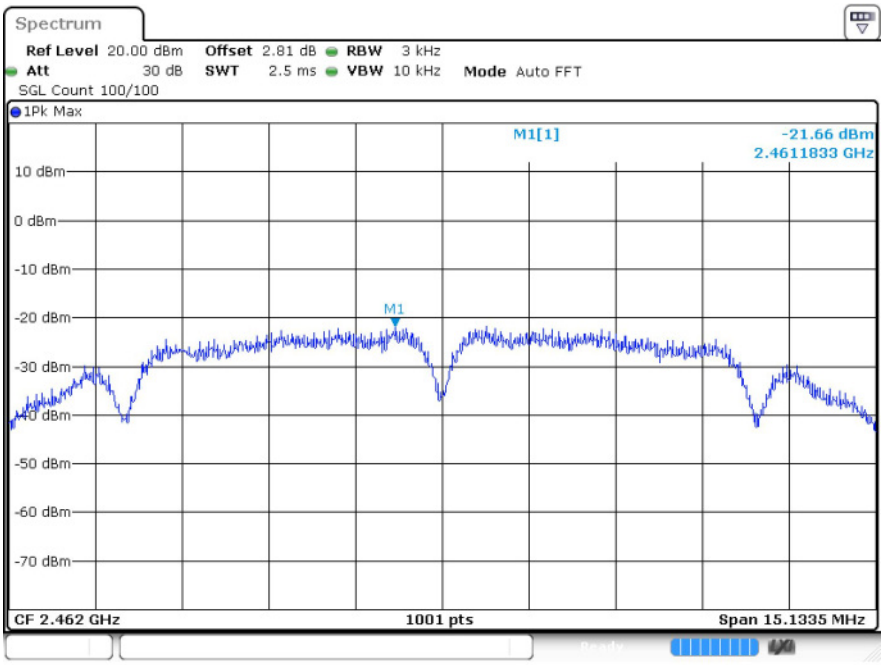
## 4.1 Test Result

| Mode | Frequency (MHz) | Antenna | Conducted PSD (dBm/3-100kHz) | Limit (dBm/3kHz) | Verdict |
|---|---|---|---|---|---|
| b | 2412 | Ant1 | -21.24 | ≤8 | Pass |
| b | 2437 | Ant1 | -21.3 | ≤8 | Pass |
| b | 2462 | Ant1 | -21.66 | ≤8 | Pass |
| g | 2412 | Ant1 | -24.78 | ≤8 | Pass |
| g | 2437 | Ant1 | -25.53 | ≤8 | Pass |
| g | 2462 | Ant1 | -25.59 | ≤8 | Pass |
| n20 | 2412 | Ant1 | -24.42 | ≤8 | Pass |
| n20 | 2437 | Ant1 | -24.83 | ≤8 | Pass |
| n20 | 2462 | Ant1 | -24.93 | ≤8 | Pass |

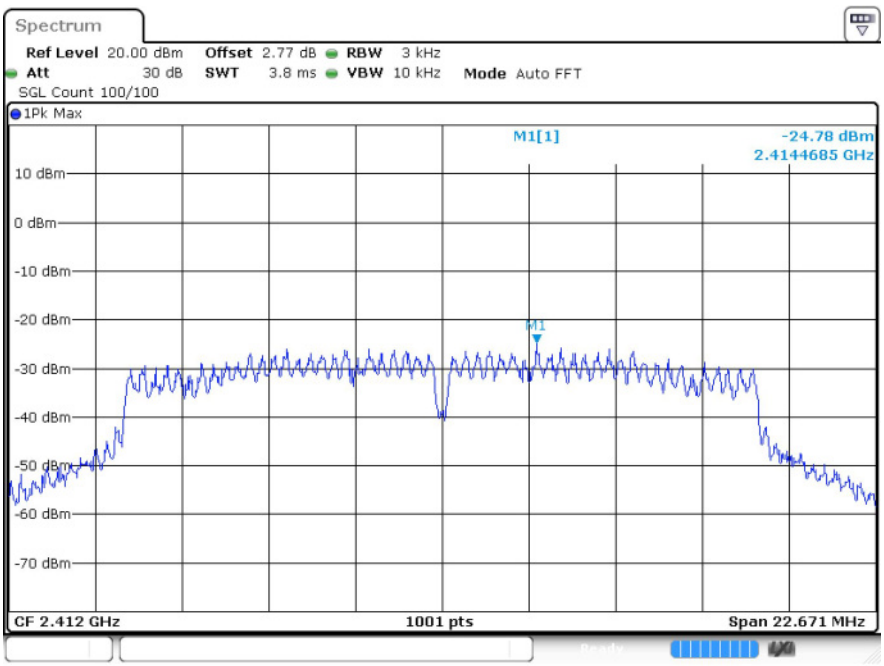
## 4.2 Test Graphs

| Test Graphs |
|---|
| b 2412MHz Ant1 |
|  |
| b 2437MHz Ant1 |
|  |

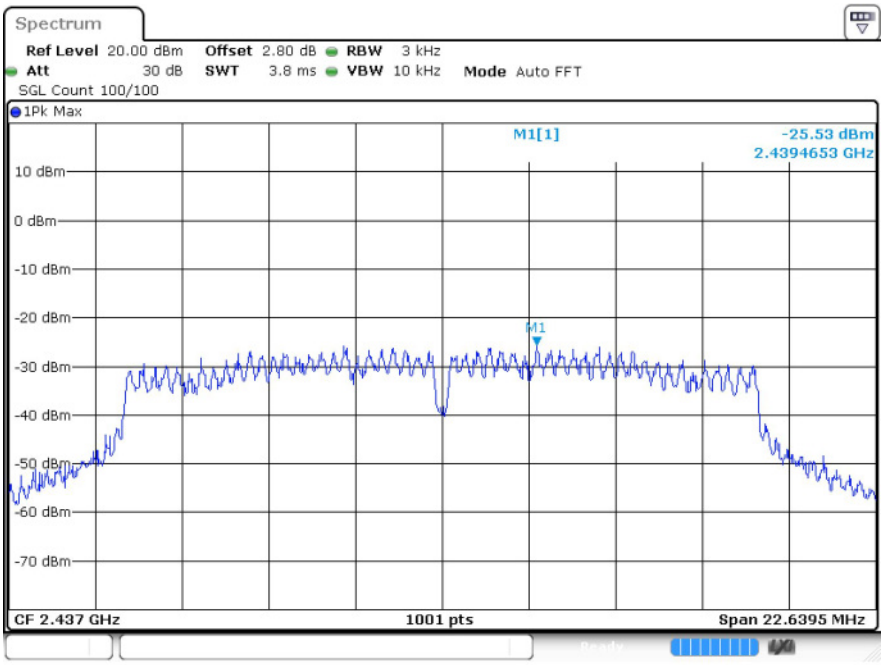
b 2462MHz Ant1



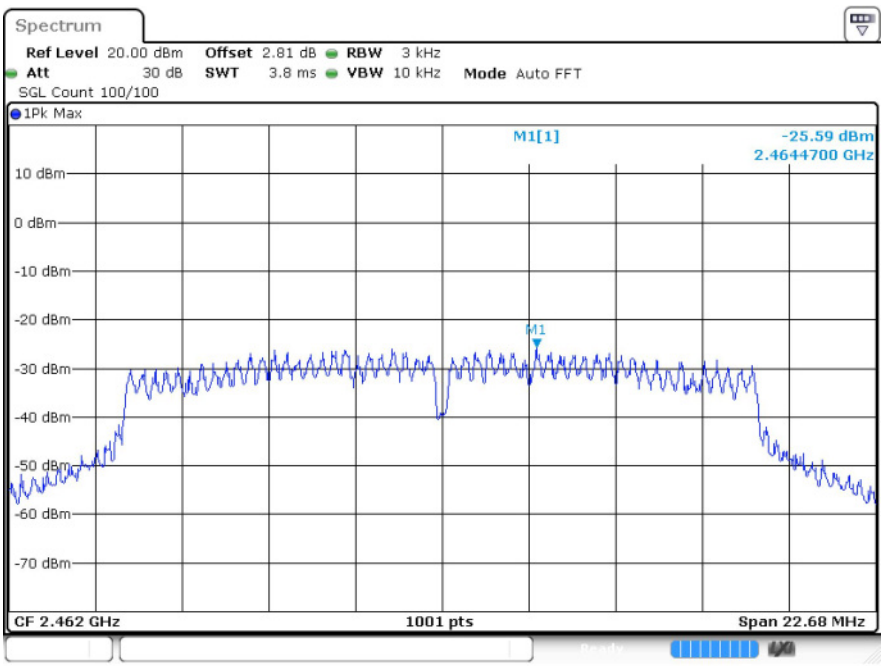

g 2412MHz Ant1



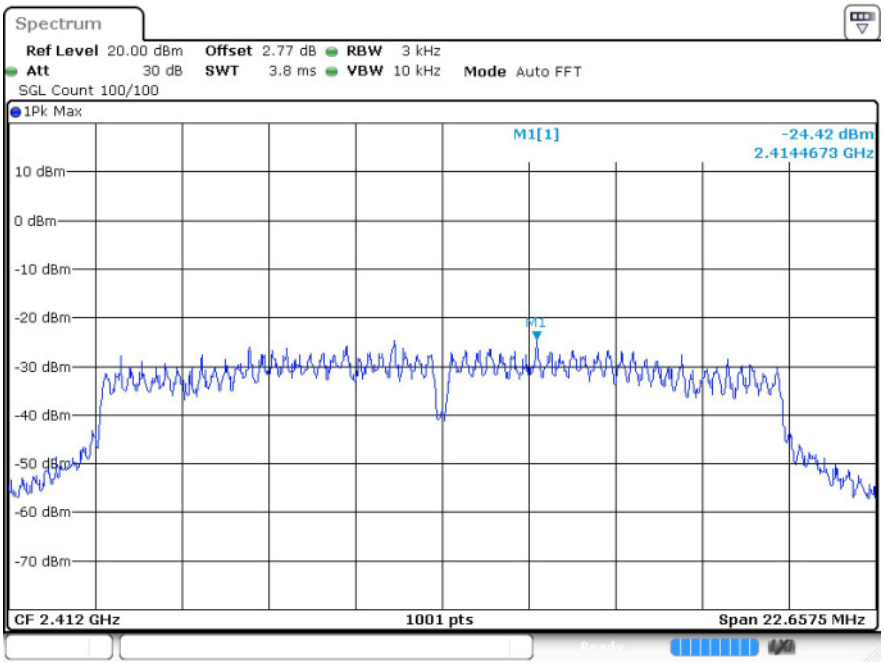
g 2437MHz Ant1



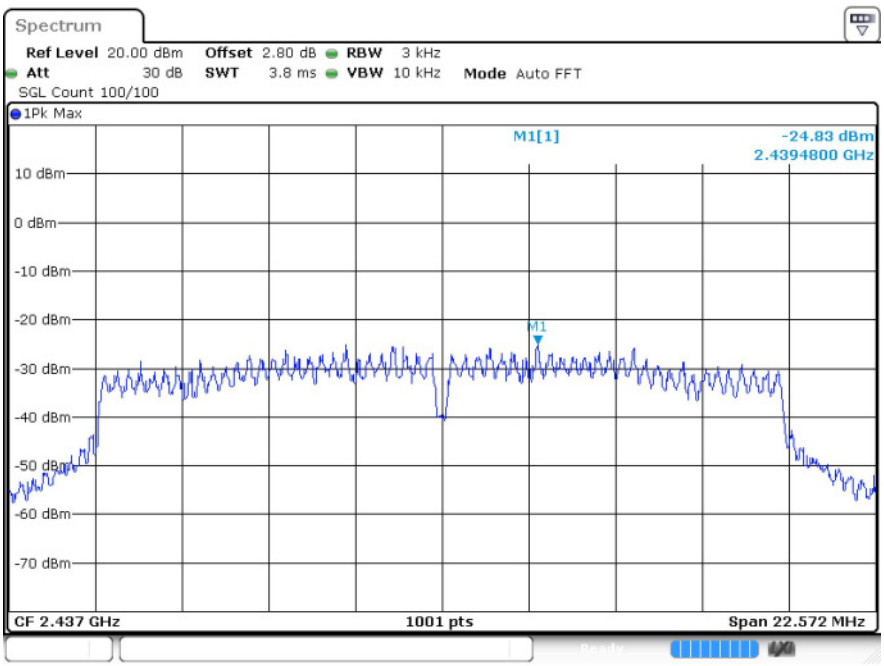

g 2462MHz Ant1



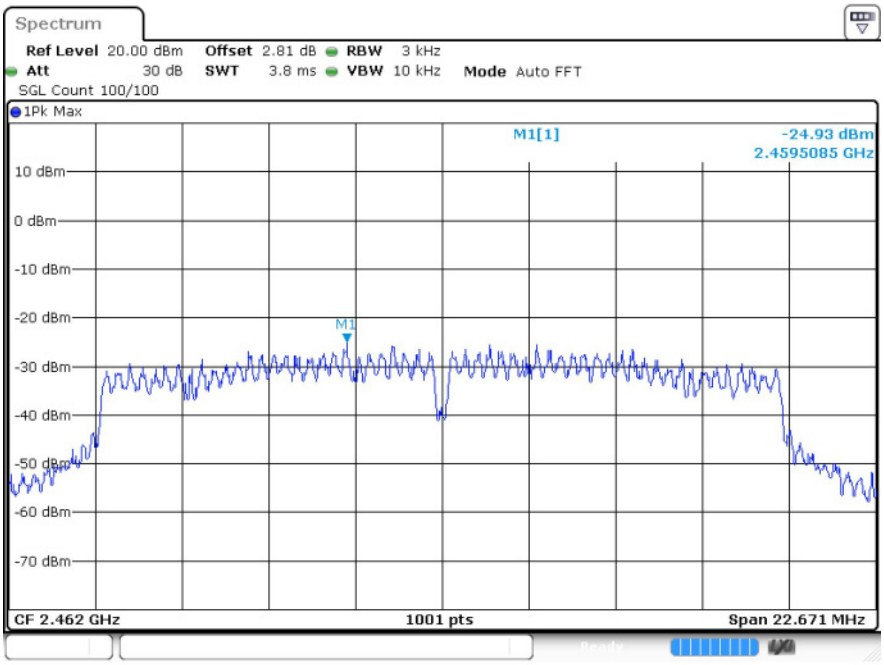
n20 2412MHz Ant1




n20 2437MHz Ant1



n20 2462MHz Ant1



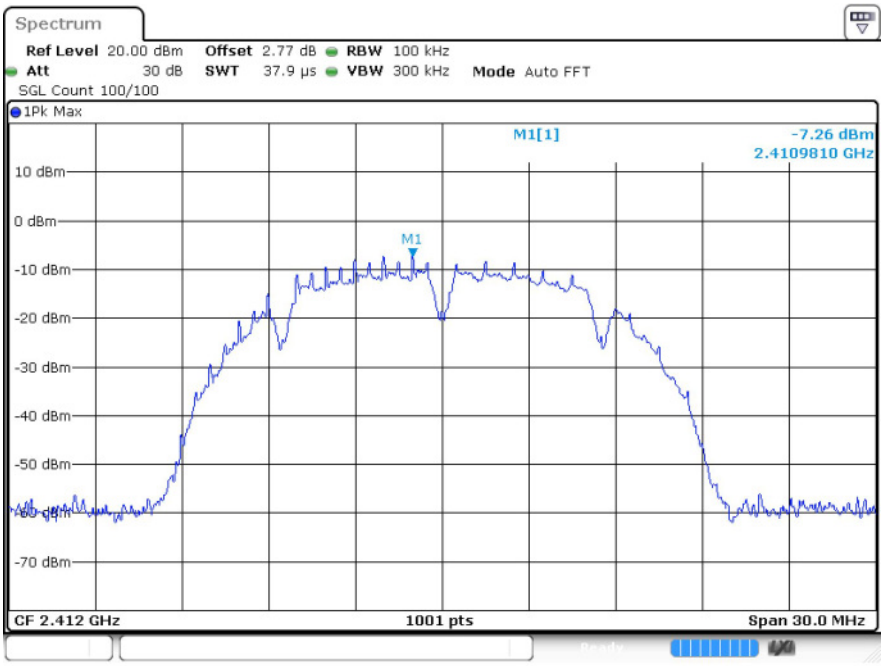
# 5 Band Edge

## 5.1 Test Result

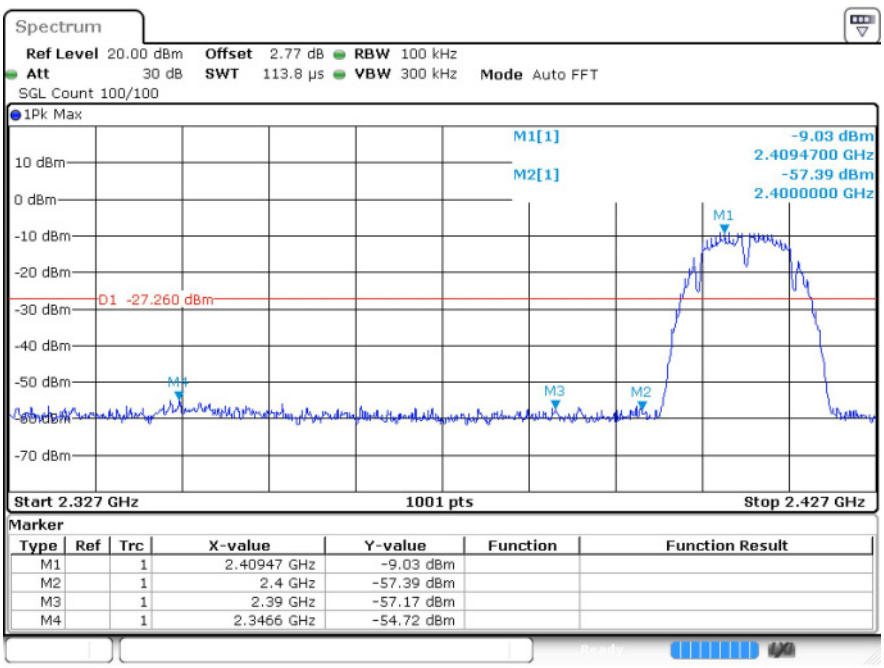
| Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|---|---|---|---|---|---|
| b | 2412 | Ant1 | -47.45 | -20 | Pass |
| b | 2462 | Ant1 | -45.73 | -20 | Pass |
| g | 2412 | Ant1 | -44.44 | -20 | Pass |
| g | 2462 | Ant1 | -46.34 | -20 | Pass |
| n20 | 2412 | Ant1 | -44.8 | -20 | Pass |
| n20 | 2462 | Ant1 | -46.14 | -20 | Pass |

## 5.2 Test Graphs

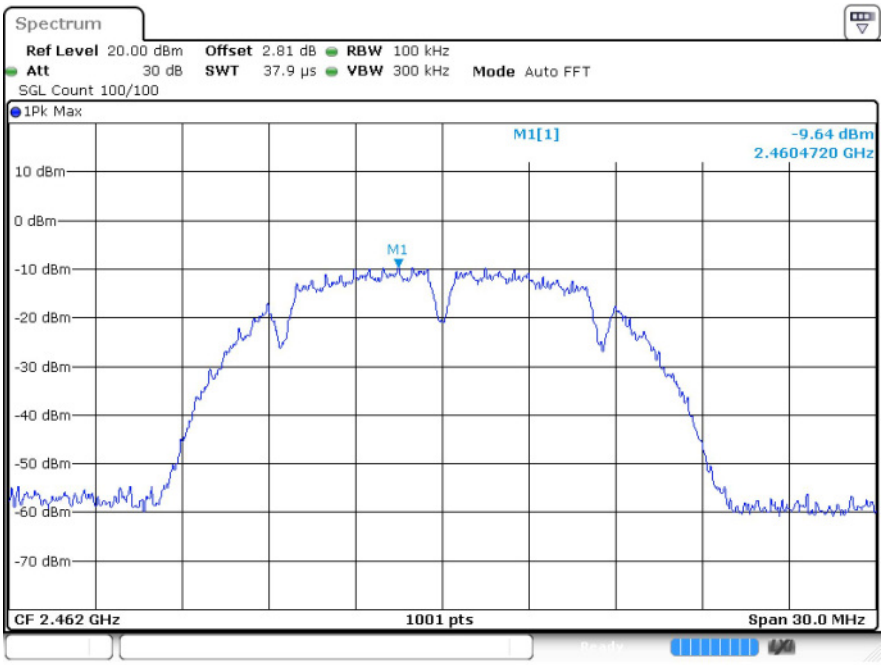
| Test Graphs |
|---|
| b 2412MHz Ant1 Ref |



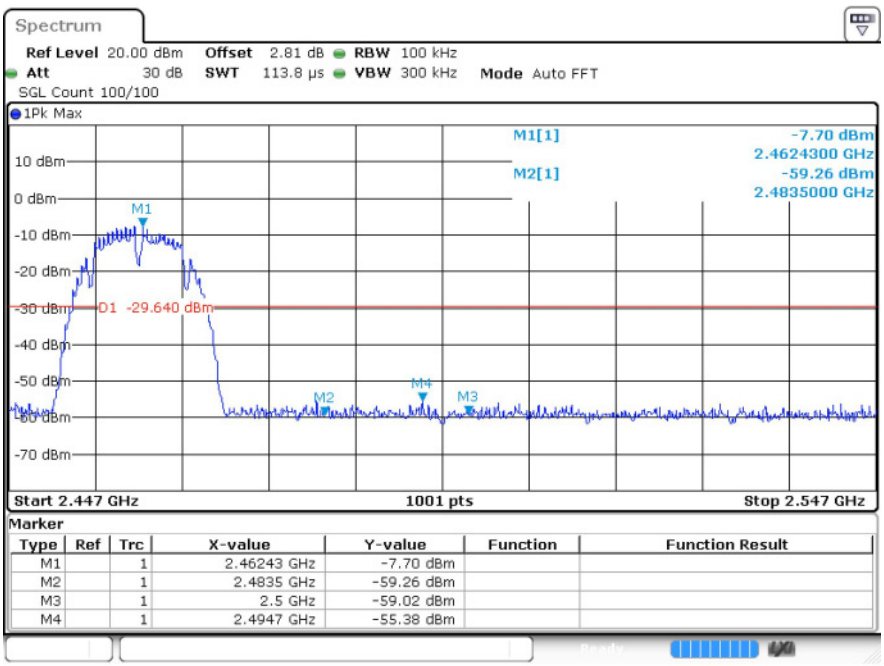

| b 2412MHz Ant1 Emission |
|---|



b 2462MHz Ant1 Ref



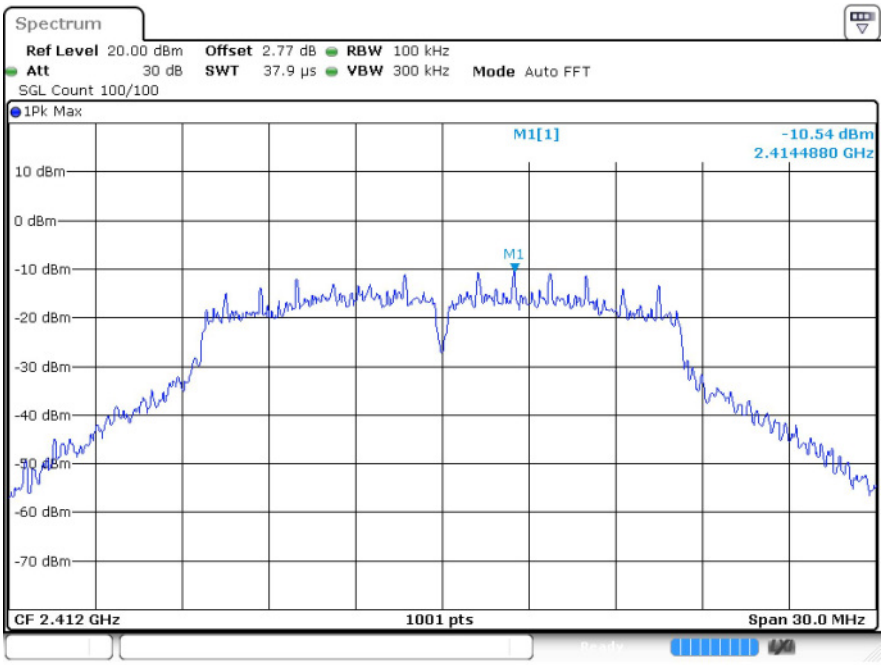

b 2462MHz Ant1 Emission



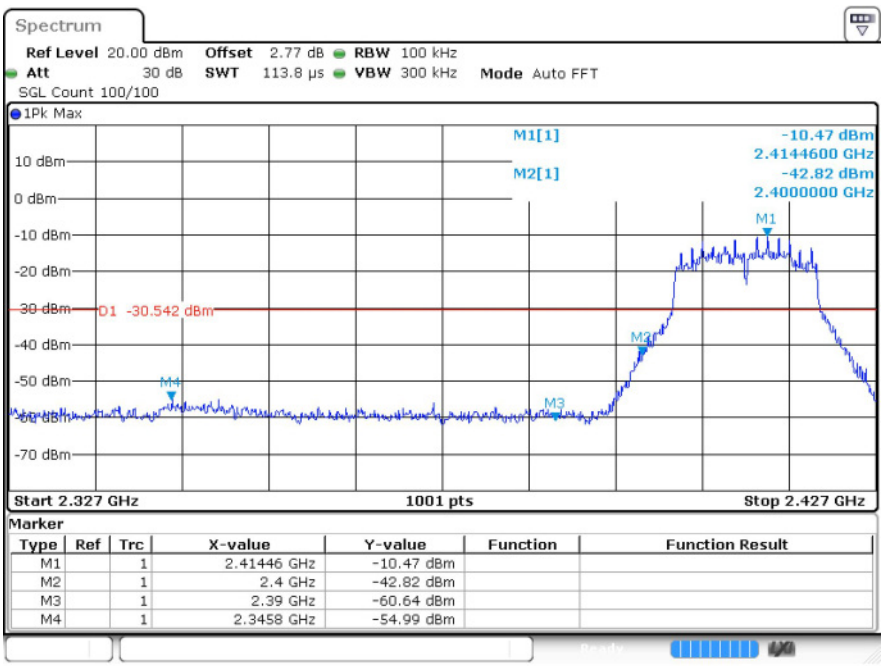

Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.46243 GHz | -7.70 dBm | | |
| M2 | | 1 | 2.4835 GHz | -59.26 dBm | | |
| M3 | | 1 | 2.5 GHz | -59.02 dBm | | |
| M4 | | 1 | 2.4947 GHz | -55.38 dBm | | |

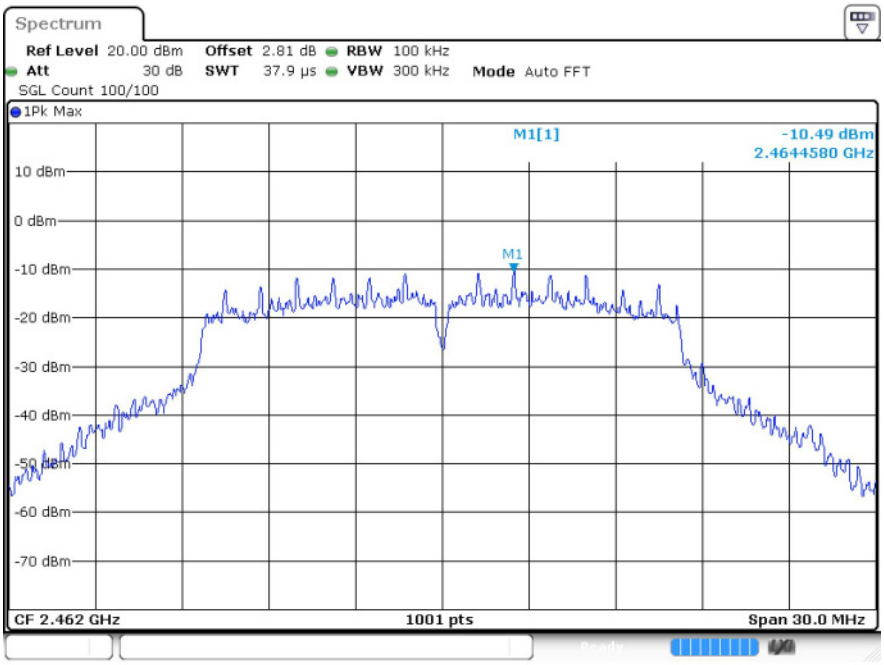
g 2412MHz Ant1 Ref



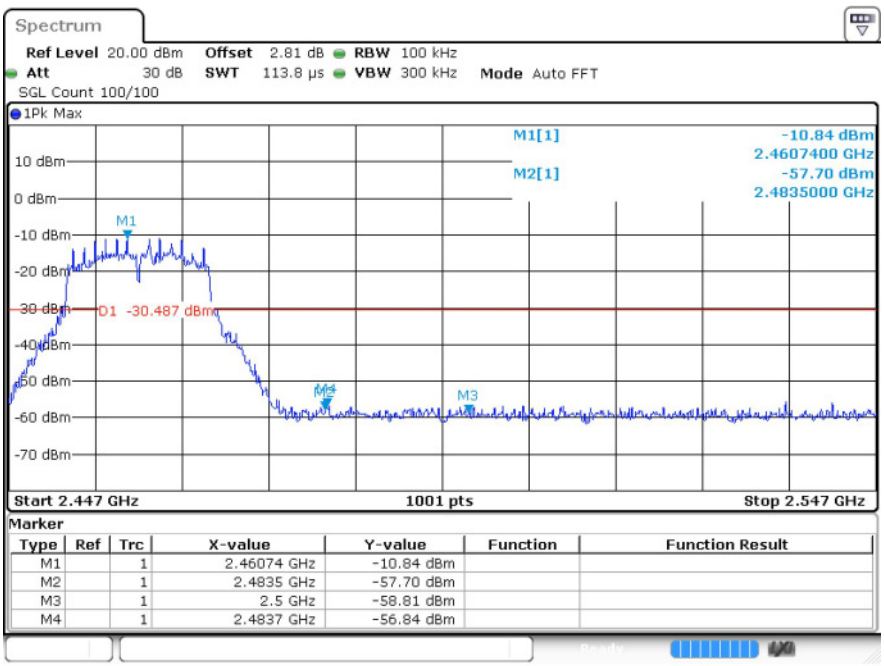

g 2412MHz Ant1 Emission



g 2462MHz Ant1 Ref



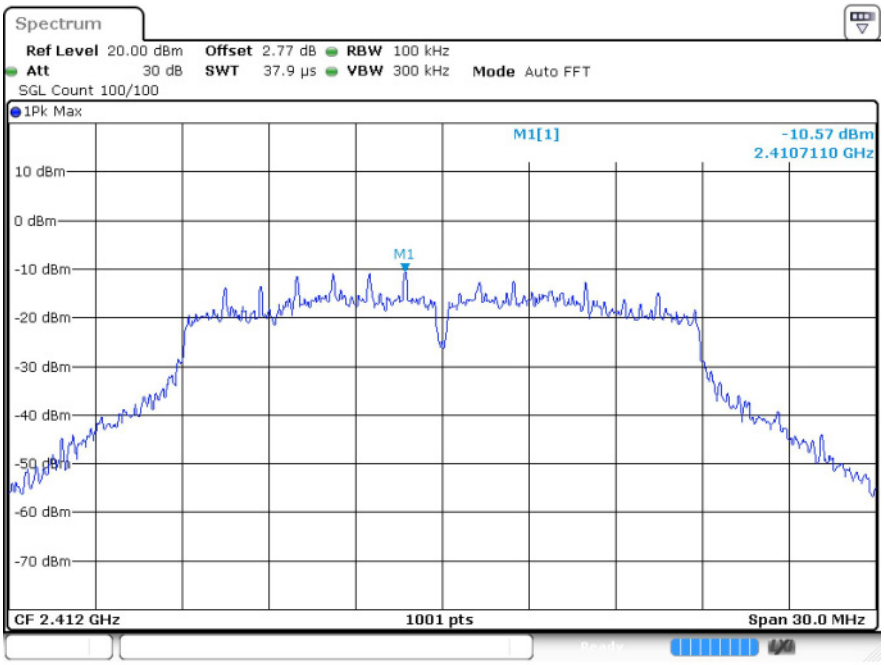

g 2462MHz Ant1 Emission




Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.46074 GHz | -10.84 dBm | | |
| M2 | | 1 | 2.4835 GHz | -57.70 dBm | | |
| M3 | | 1 | 2.5 GHz | -58.81 dBm | | |
| M4 | | 1 | 2.4837 GHz | -56.84 dBm | | |

n20 2412MHz Ant1 Ref

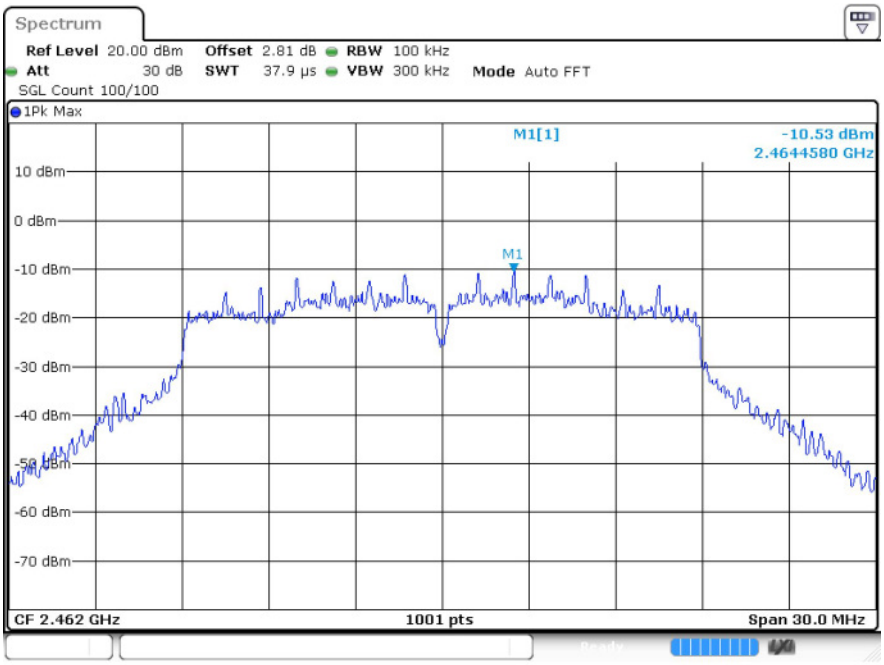



n20 2412MHz Ant1 Emission

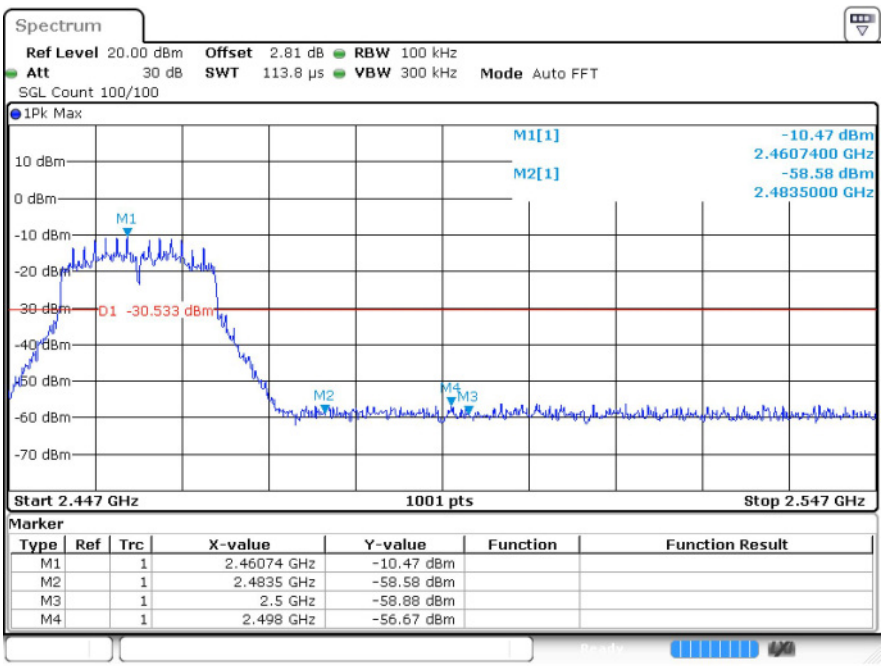
Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.41446 GHz | -10.83 dBm | | |
| M2 | | 1 | 2.4 GHz | -44.59 dBm | | |
| M3 | | 1 | 2.39 GHz | -59.28 dBm | | |
| M4 | | 1 | 2.3515 GHz | -55.37 dBm | | |

n20 2462MHz Ant1 Ref




n20 2462MHz Ant1 Emission




| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.46074 GHz | -10.47 dBm | | |
| M2 | | 1 | 2.4835 GHz | -58.58 dBm | | |
| M3 | | 1 | 2.5 GHz | -58.88 dBm | | |
| M4 | | 1 | 2.498 GHz | -56.67 dBm | | |

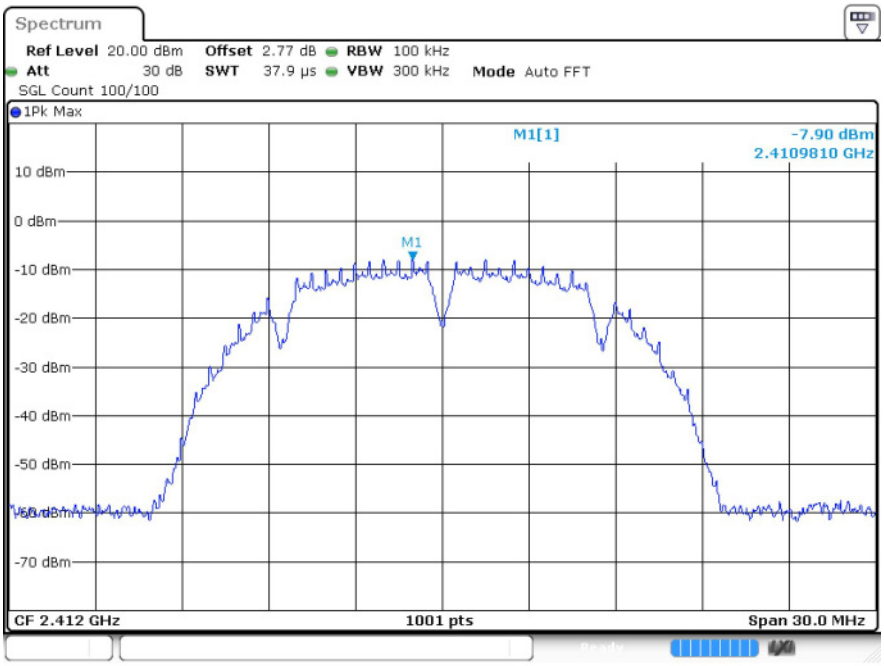
# 6 Conducted RF Spurious Emission

## 6.1 Test Result

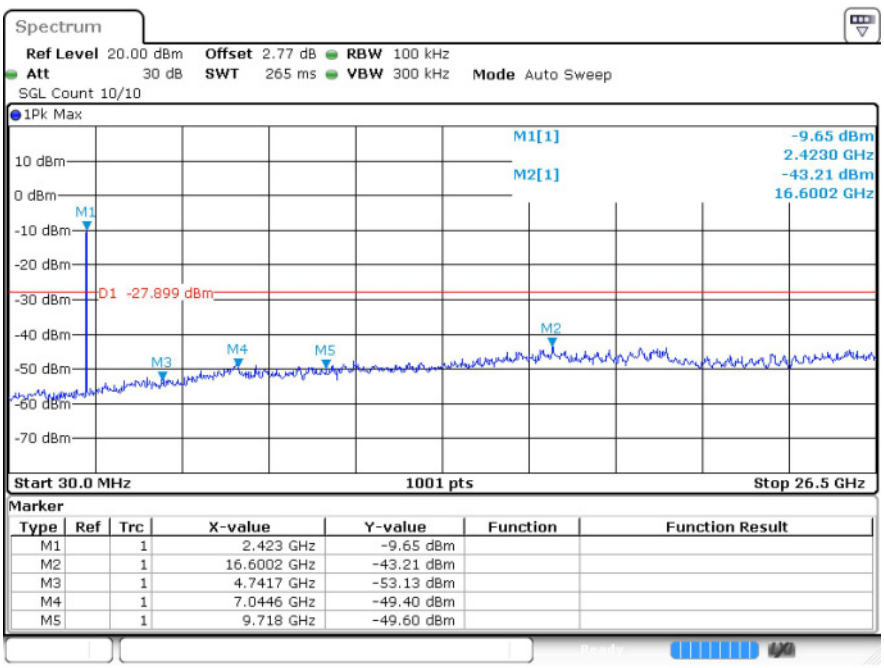
| Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|---|---|---|---|---|---|
| b | 2412 | Ant1 | -35.31 | -20 | Pass |
| b | 2437 | Ant1 | -34.52 | -20 | Pass |
| b | 2462 | Ant1 | -35.57 | -20 | Pass |
| g | 2412 | Ant1 | -32.76 | -20 | Pass |
| g | 2437 | Ant1 | -33.18 | -20 | Pass |
| g | 2462 | Ant1 | -32.48 | -20 | Pass |
| n20 | 2412 | Ant1 | -32.86 | -20 | Pass |
| n20 | 2437 | Ant1 | -33.01 | -20 | Pass |
| n20 | 2462 | Ant1 | -32.21 | -20 | Pass |

## 6.2 Test Graphs

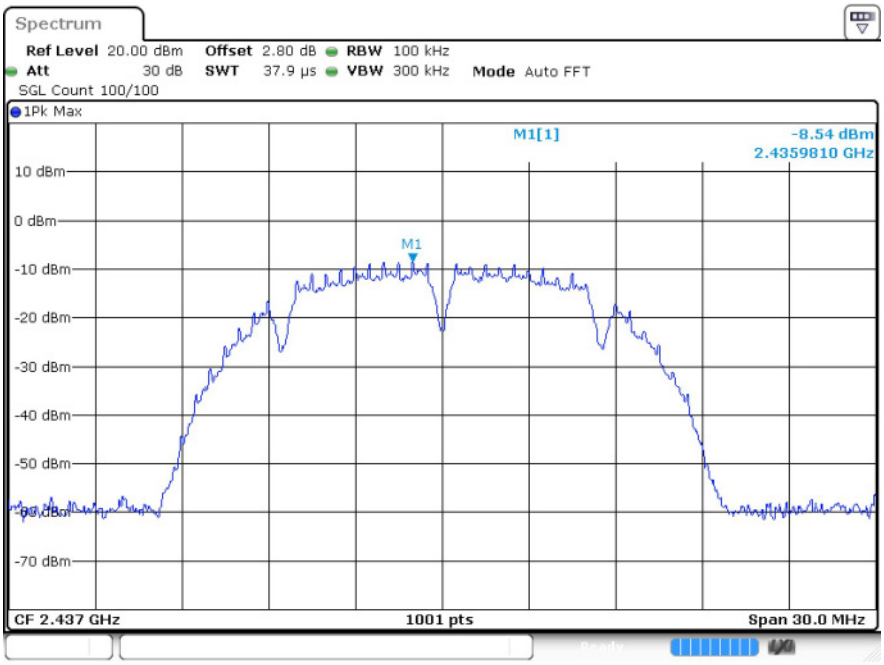
| Test Graphs |
|---|
| b 2412MHz Ant1 Ref |



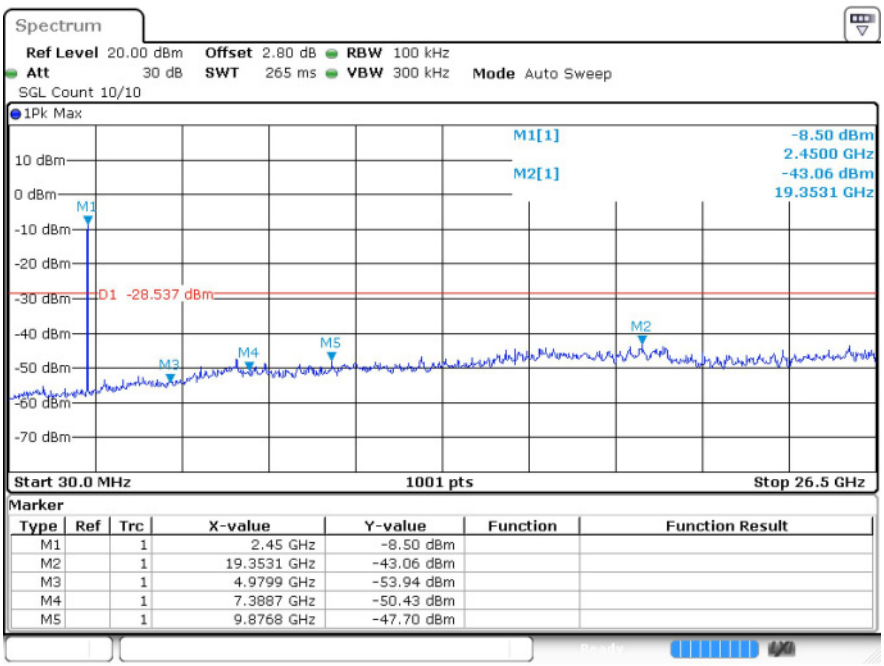

| b 2412MHz Ant1 Emission |
|---|



b 2437MHz Ant1 Ref



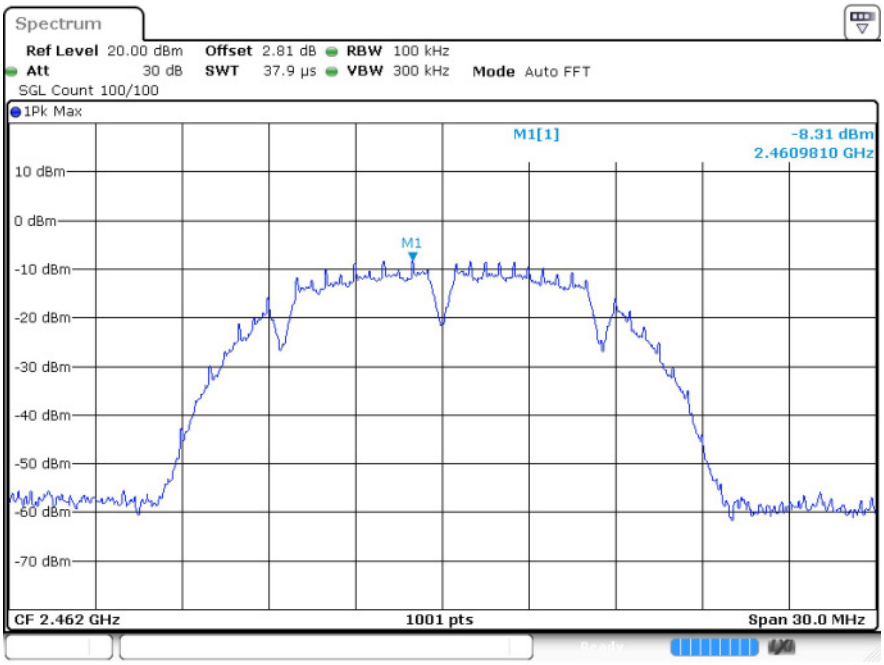

b 2437MHz Ant1 Emission



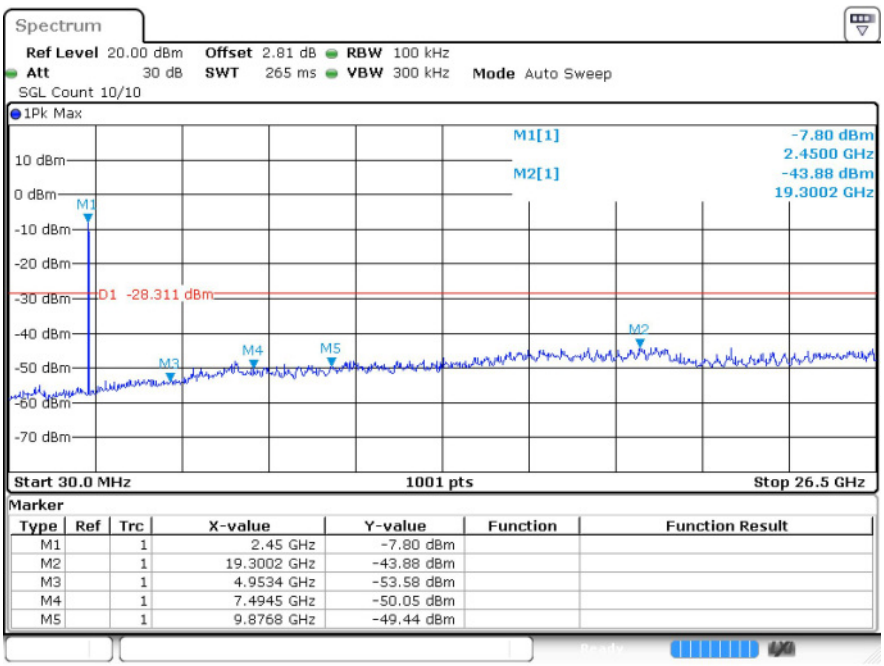

Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.45 GHz | -8.50 dBm | | |
| M2 | | 1 | 19.3531 GHz | -43.06 dBm | | |
| M3 | | 1 | 4.9799 GHz | -53.94 dBm | | |
| M4 | | 1 | 7.3887 GHz | -50.43 dBm | | |
| M5 | | 1 | 9.8768 GHz | -47.70 dBm | | |

b 2462MHz Ant1 Ref




b 2462MHz Ant1 Emission




Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.45 GHz | -7.80 dBm | | |
| M2 | | 1 | 19.3002 GHz | -43.88 dBm | | |
| M3 | | 1 | 4.9534 GHz | -53.58 dBm | | |
| M4 | | 1 | 7.4945 GHz | -50.05 dBm | | |
| M5 | | 1 | 9.8768 GHz | -49.44 dBm | | |