# Appendix C

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

**Product Name: Air aromatherapy purifier**

**Trade Mark: N/A**

**Test Model: WG-03**

**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

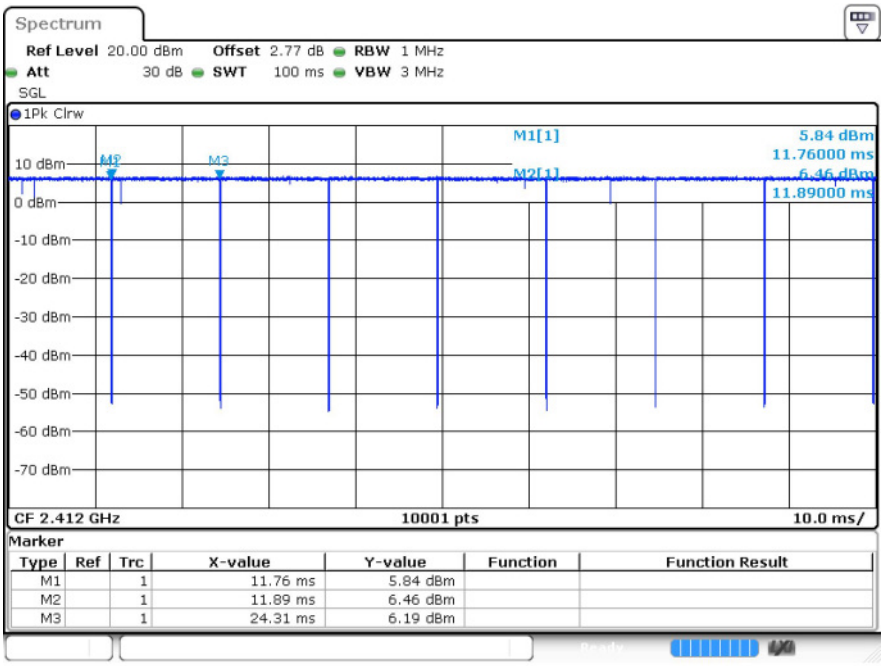
## 1.1 Test Result

| Mode | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor | 1/T (kHz) |
|---|---|---|---|---|---|
| b | 2412 | Ant1 | 99.04 | 0.04 | 0.08 |
| b | 2437 | Ant1 | 99.06 | 0.04 | 0.08 |
| b | 2462 | Ant1 | 99.05 | 0.04 | 0.08 |
| g | 2412 | Ant1 | 94.53 | 0.24 | 0.49 |
| g | 2437 | Ant1 | 94.51 | 0.25 | 0.49 |
| g | 2462 | Ant1 | 94.5 | 0.25 | 0.48 |
| n20 | 2412 | Ant1 | 94.15 | 0.26 | 0.52 |
| n20 | 2437 | Ant1 | 94.12 | 0.26 | 0.52 |
| n20 | 2462 | Ant1 | 94.12 | 0.26 | 0.52 |

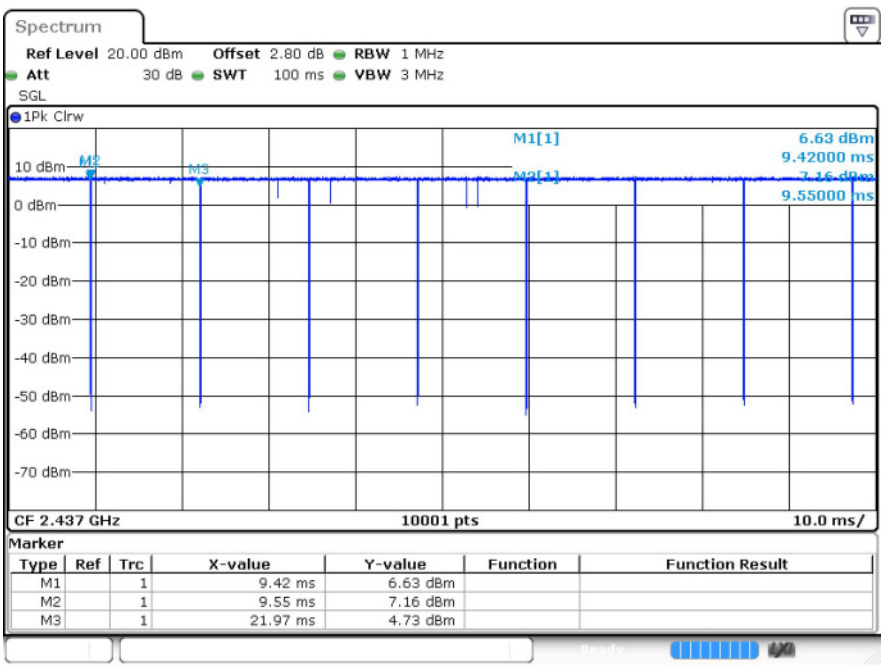
## 1.2 Test Graphs

Test Graphs

b 2412MHz Ant1

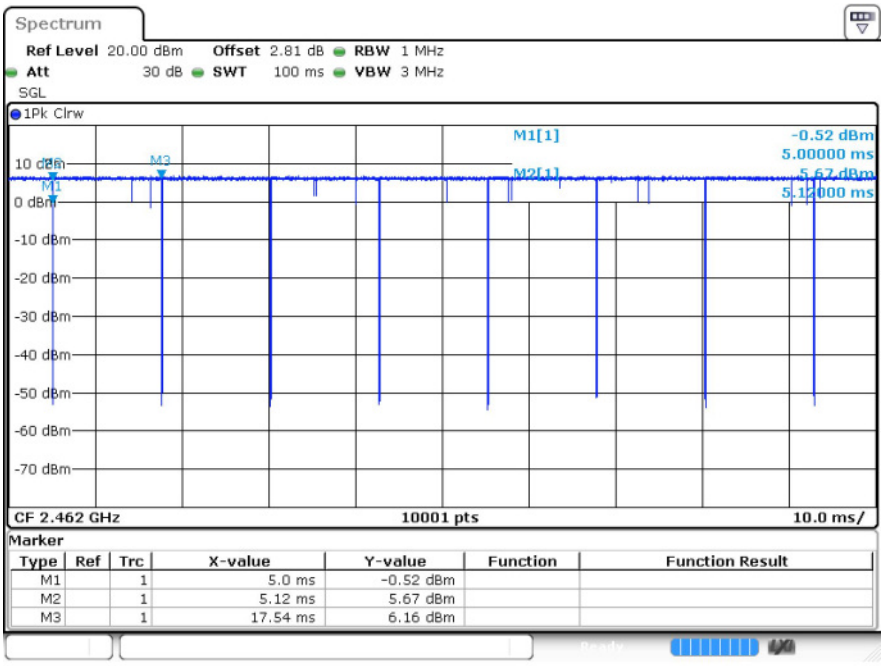



b 2437MHz Ant1

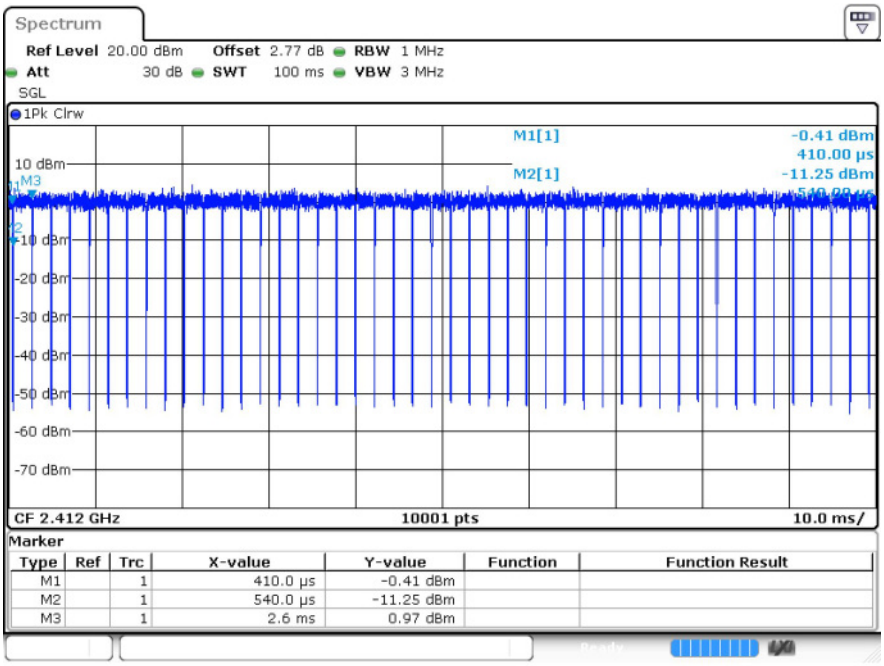


Test Graphs

b 2462MHz Ant1

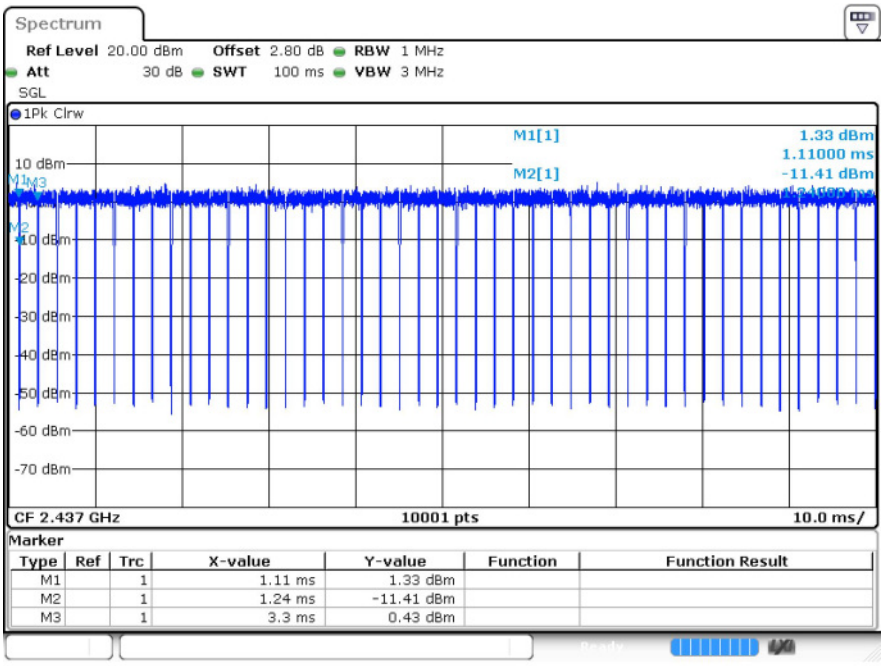



g 2412MHz Ant1

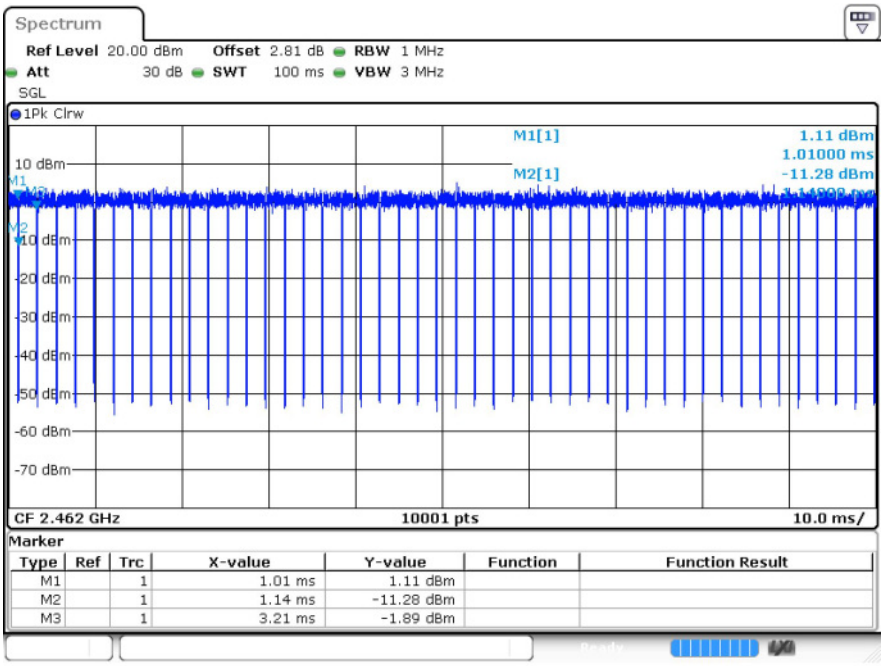


Test Graphs

g 2437MHz Ant1

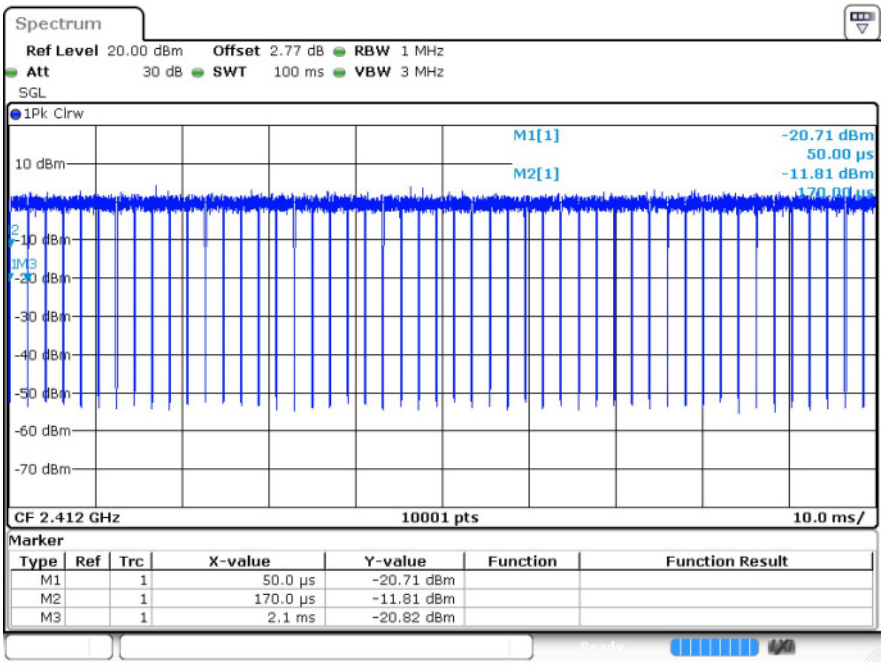



g 2462MHz Ant1

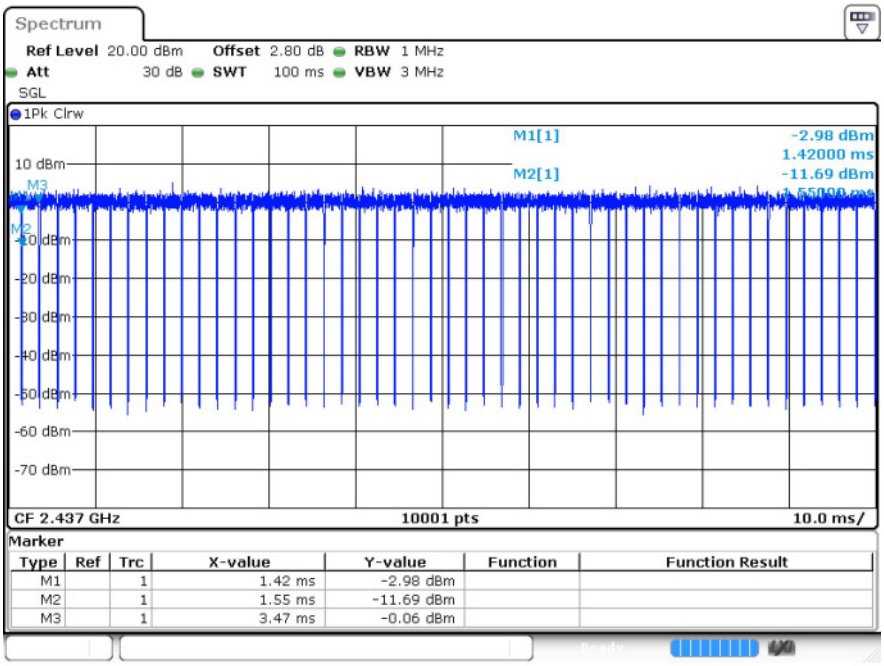


Test Graphs

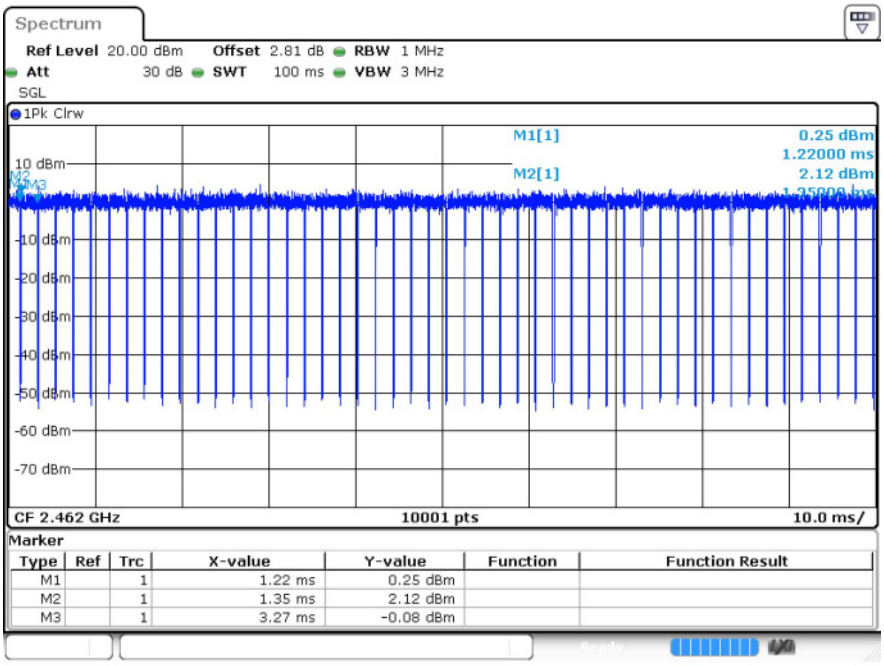
n20 2412MHz Ant1




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 | 15.31 | 30 | Pass |
| b | 2437 | Ant1 | 15.81 | 30 | Pass |
| b | 2462 | Ant1 | 15.29 | 30 | Pass |
| g | 2412 | Ant1 | 13.85 | 30 | Pass |
| g | 2437 | Ant1 | 14.31 | 30 | Pass |
| g | 2462 | Ant1 | 14.12 | 30 | Pass |
| n20 | 2412 | Ant1 | 13.46 | 30 | Pass |
| n20 | 2437 | Ant1 | 13.85 | 30 | Pass |
| n20 | 2462 | Ant1 | 13.84 | 30 | Pass |

# 3 -6dB Bandwidth

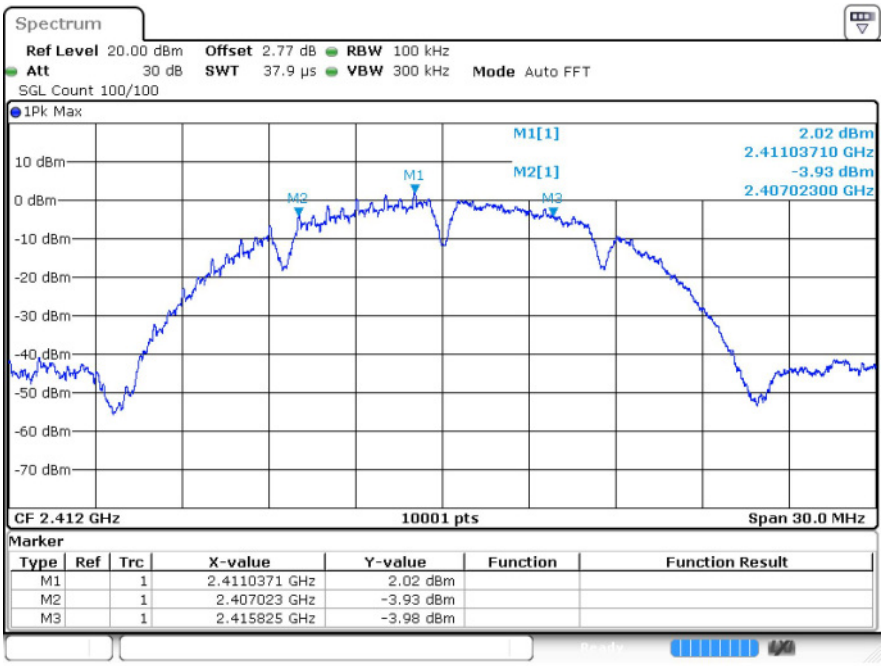
## 3.1 Test Result

| Mode | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|---|---|---|---|---|---|
| b | 2412 | Ant1 | 8.802 | 0.5 | Pass |
| b | 2437 | Ant1 | 8.088 | 0.5 | Pass |
| b | 2462 | Ant1 | 8.586 | 0.5 | Pass |
| g | 2412 | Ant1 | 16.347 | 0.5 | Pass |
| g | 2437 | Ant1 | 16.416 | 0.5 | Pass |
| g | 2462 | Ant1 | 16.311 | 0.5 | Pass |
| n20 | 2412 | Ant1 | 17.751 | 0.5 | Pass |
| n20 | 2437 | Ant1 | 17.649 | 0.5 | Pass |
| n20 | 2462 | Ant1 | 17.691 | 0.5 | Pass |

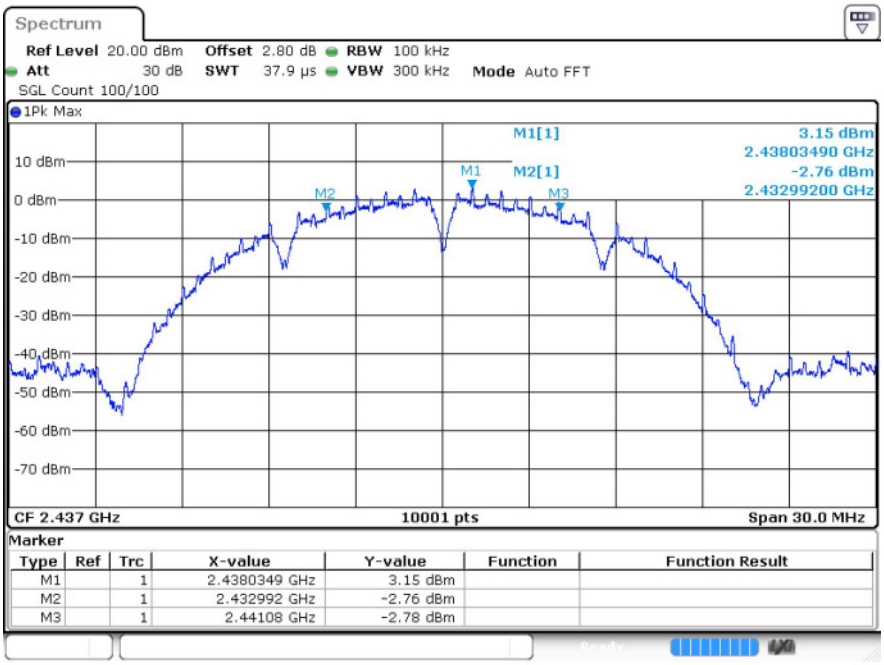
## 3.2 Test Graphs

Test Graphs

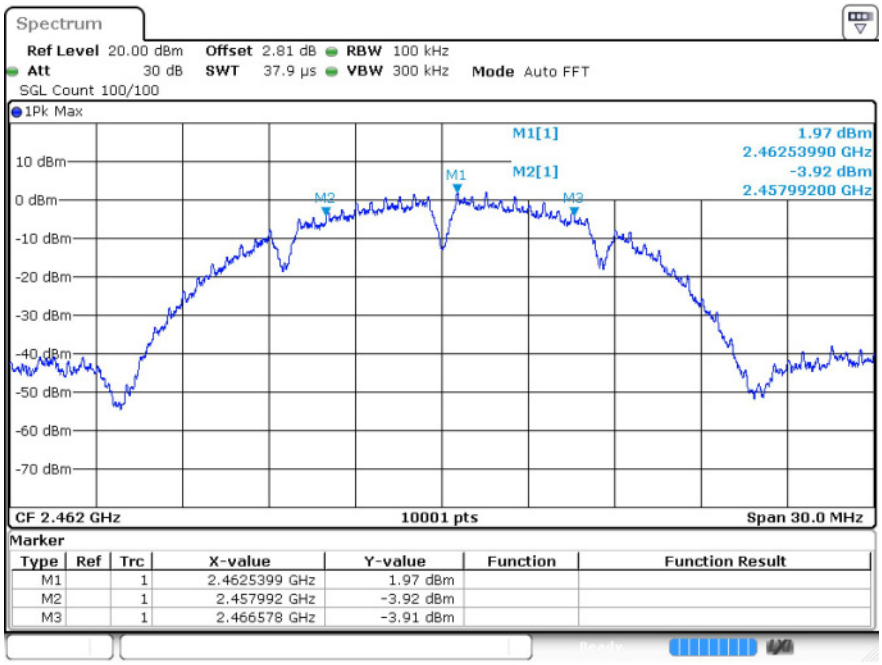
b 2412MHz Ant1



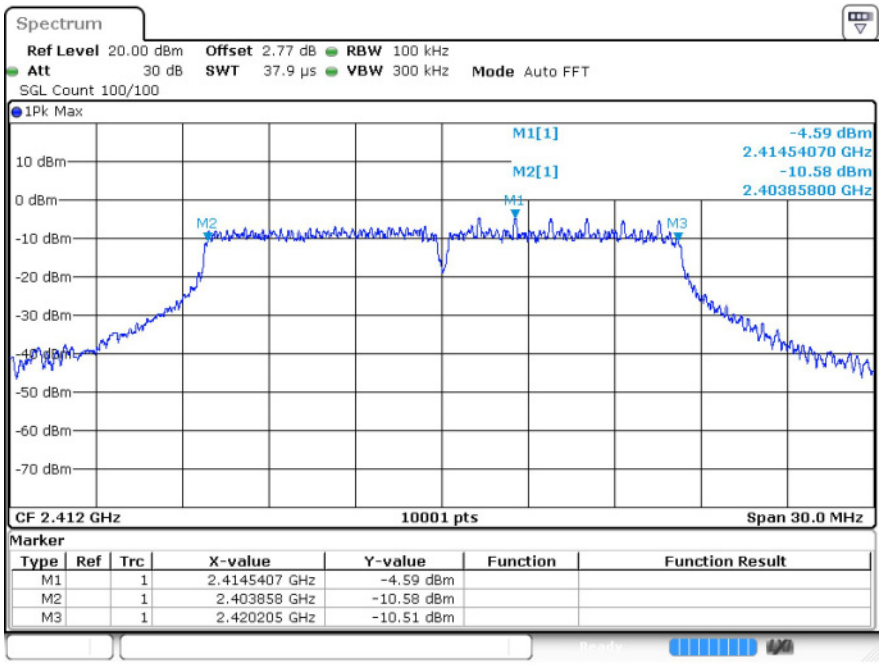

b 2437MHz Ant1



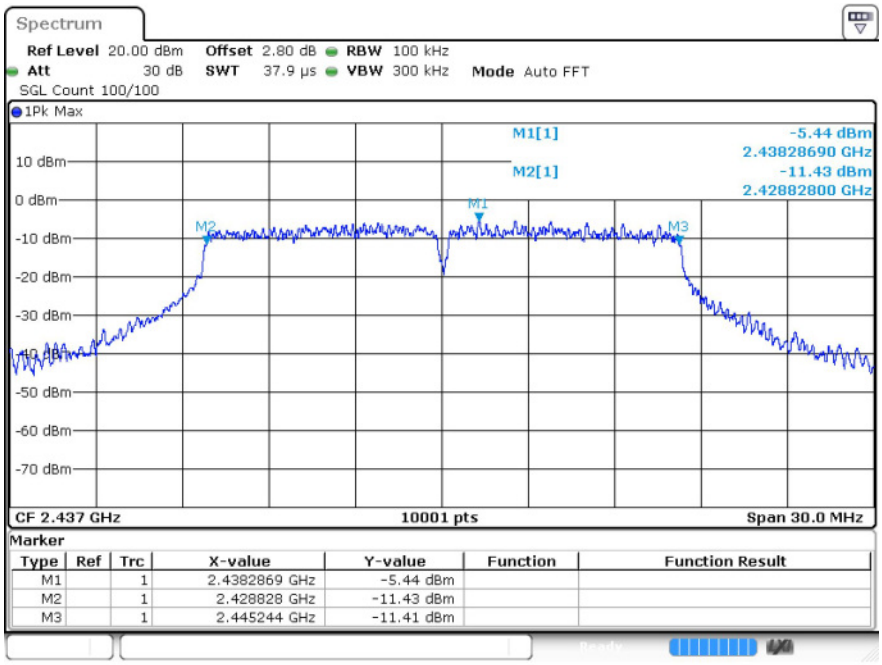
b 2462MHz Ant1



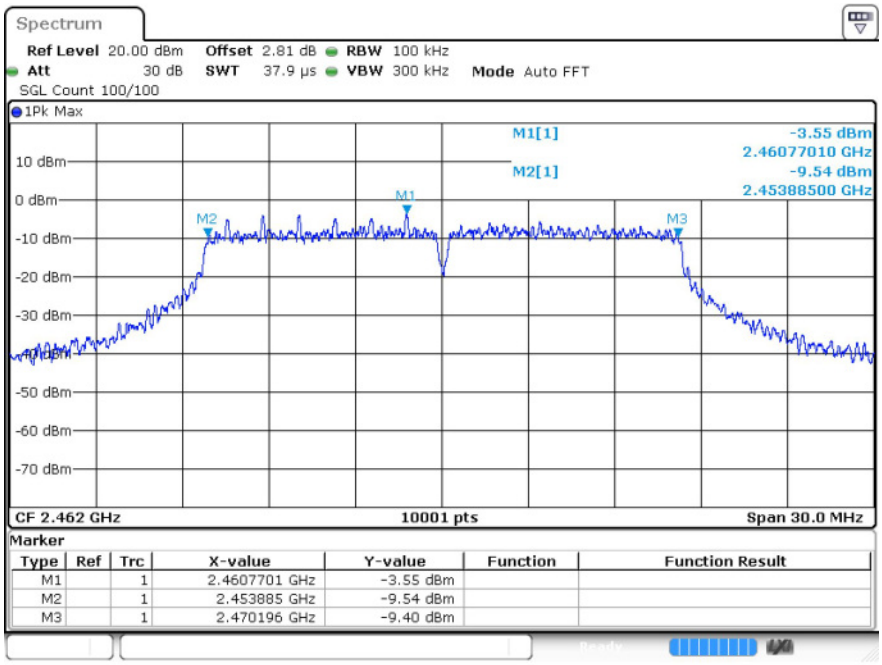

g 2412MHz Ant1



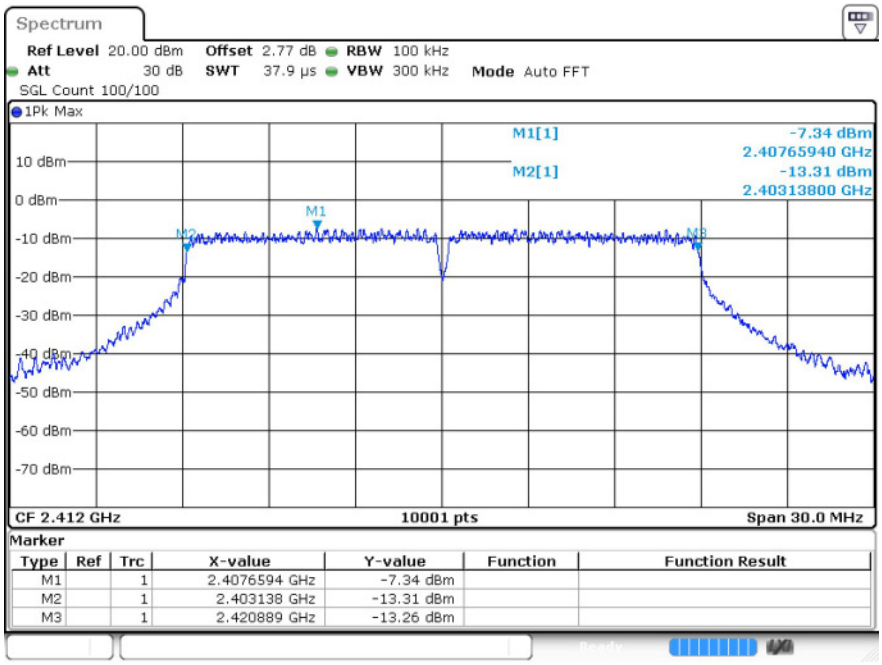
g 2437MHz Ant1



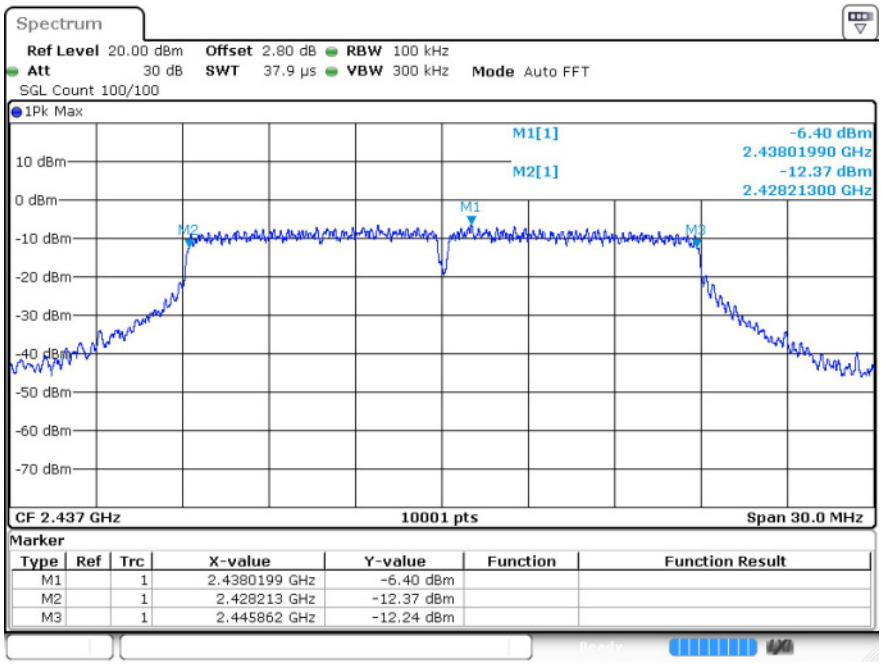

g 2462MHz Ant1



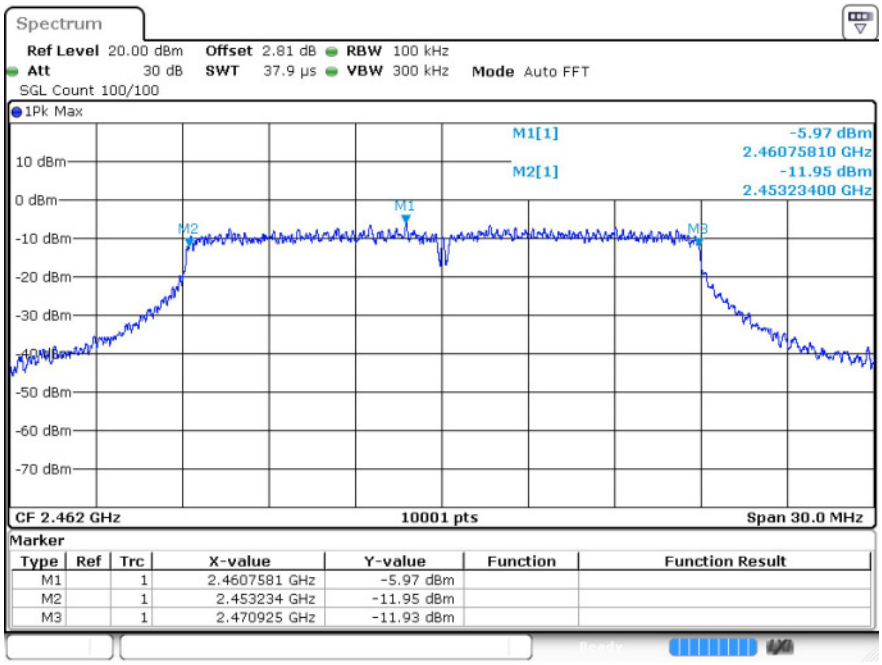
n20 2412MHz Ant1




n20 2437MHz Ant1



n20 2462MHz Ant1

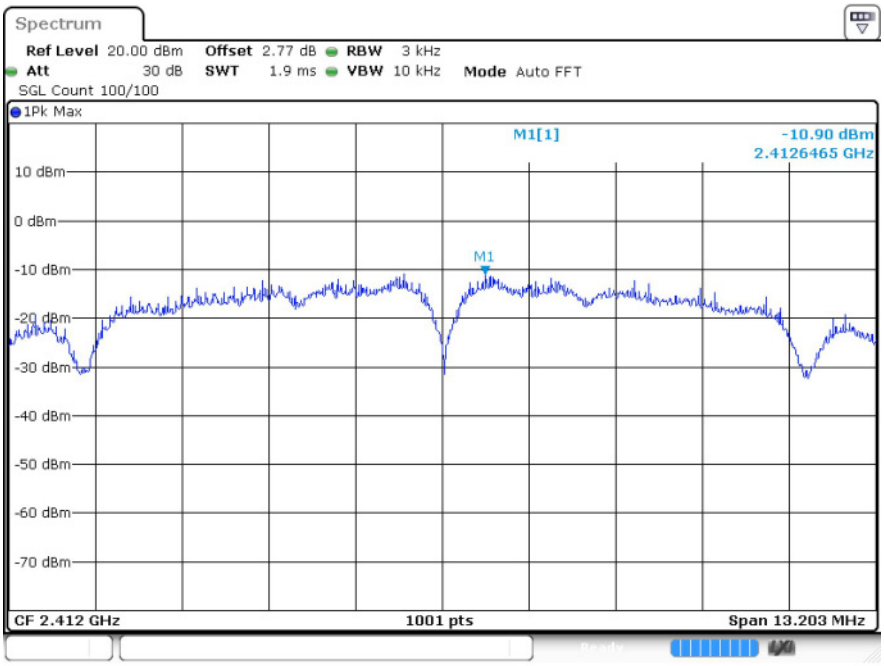
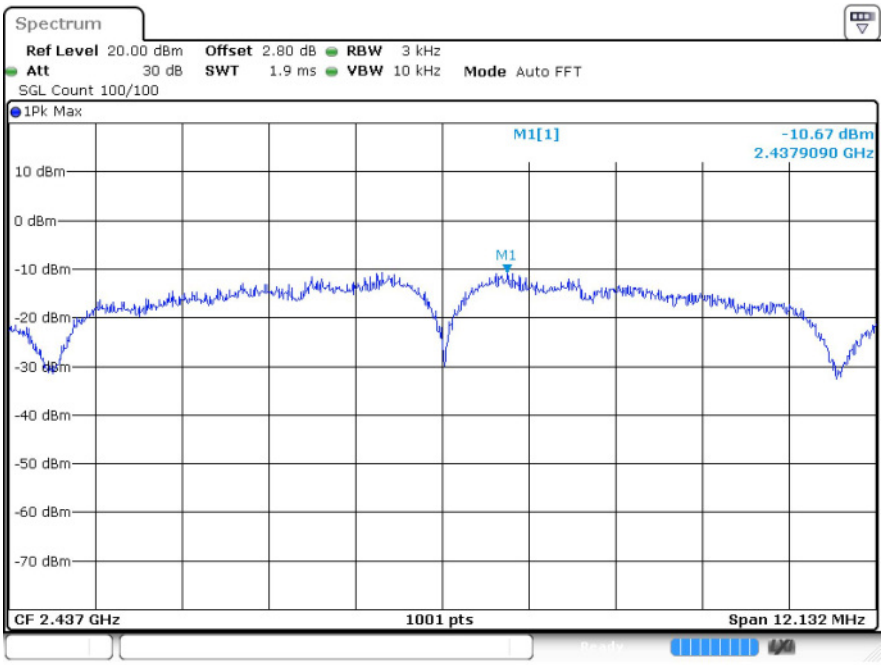


# 4 Maximum Power Spectral Density Level

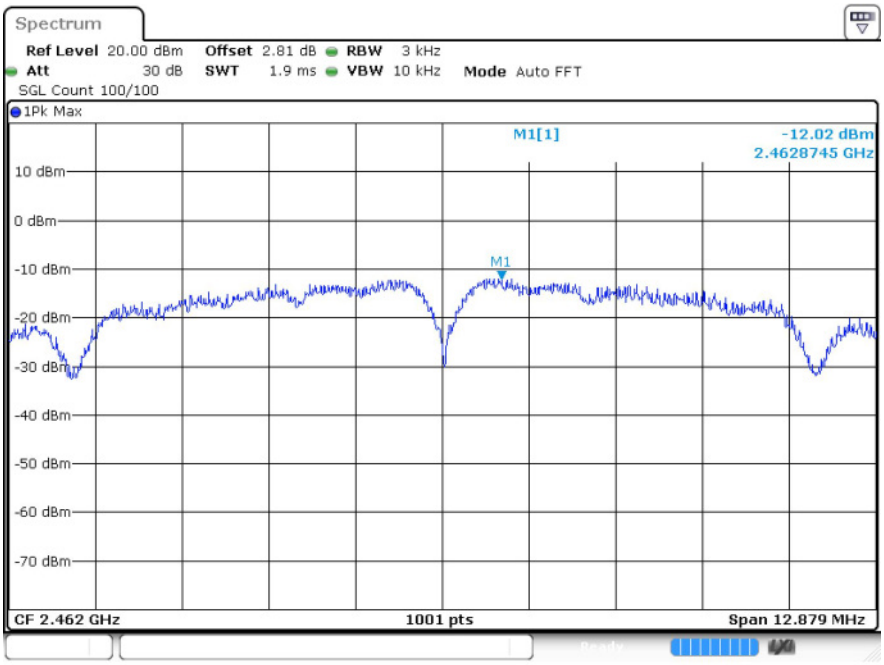
## 4.1 Test Result

| Mode | Frequency (MHz) | Antenna | Conducted PSD (dBm/3-100kHz) | Limit (dBm/3kHz) | Verdict |
|---|---|---|---|---|---|
| b | 2412 | Ant1 | -10.9 | ≤8 | Pass |
| b | 2437 | Ant1 | -10.67 | ≤8 | Pass |
| b | 2462 | Ant1 | -12.02 | ≤8 | Pass |
| g | 2412 | Ant1 | -17.51 | ≤8 | Pass |
| g | 2437 | Ant1 | -16.3 | ≤8 | Pass |
| g | 2462 | Ant1 | -16.99 | ≤8 | Pass |
| n20 | 2412 | Ant1 | -17.53 | ≤8 | Pass |
| n20 | 2437 | Ant1 | -16.04 | ≤8 | Pass |
| n20 | 2462 | Ant1 | -17.15 | ≤8 | Pass |

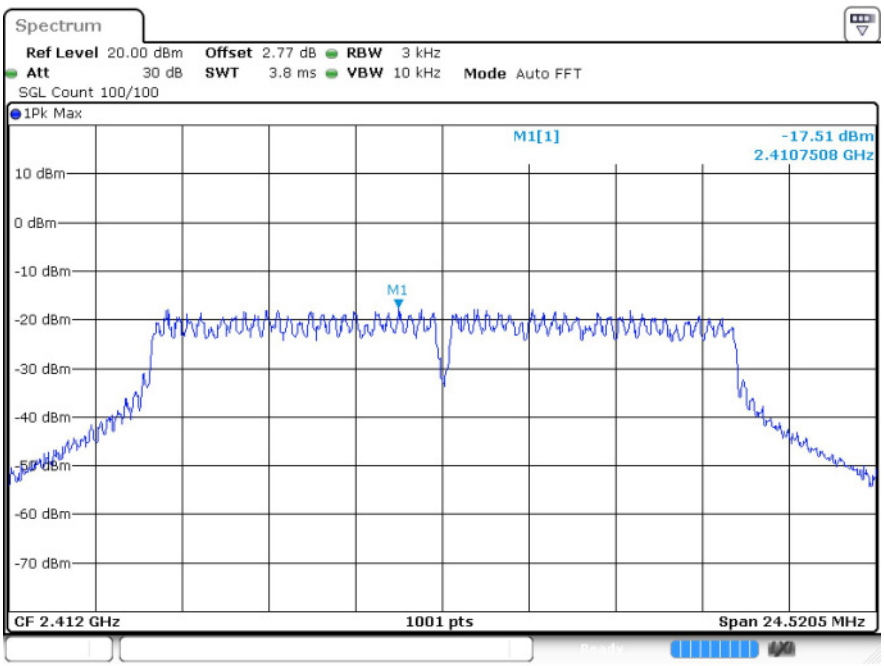
## 4.2 Test Graphs

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

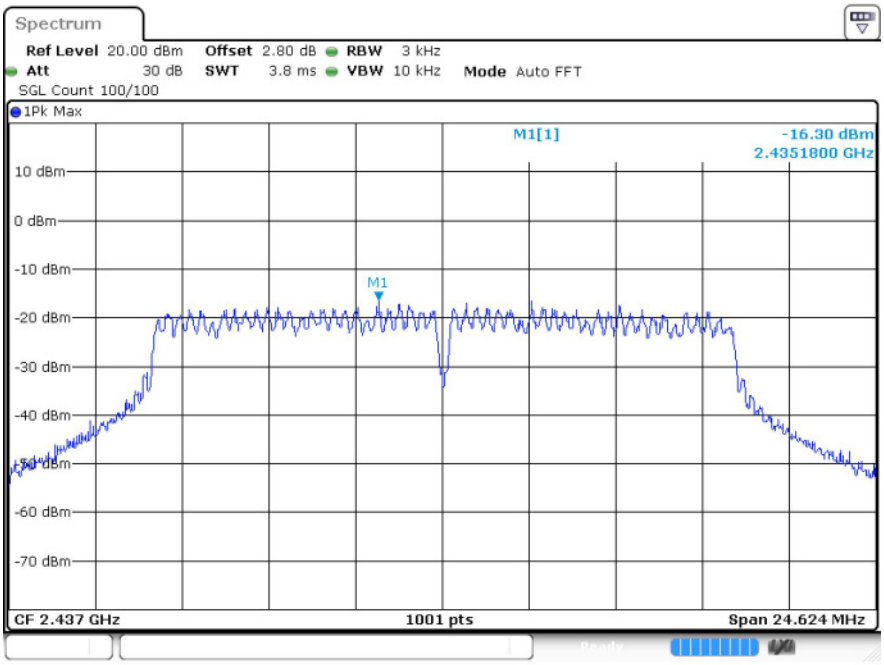
b 2462MHz Ant1



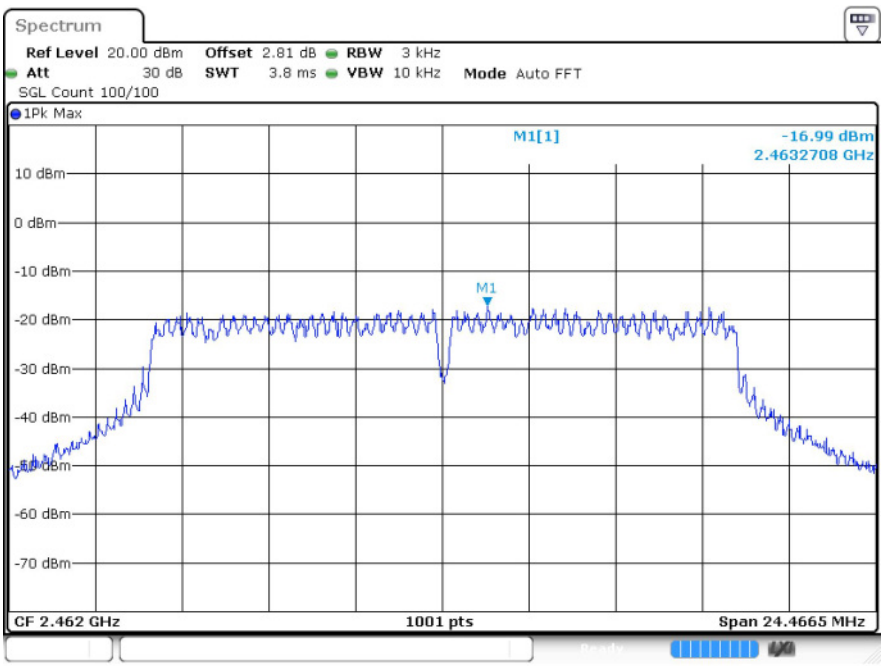

g 2412MHz Ant1



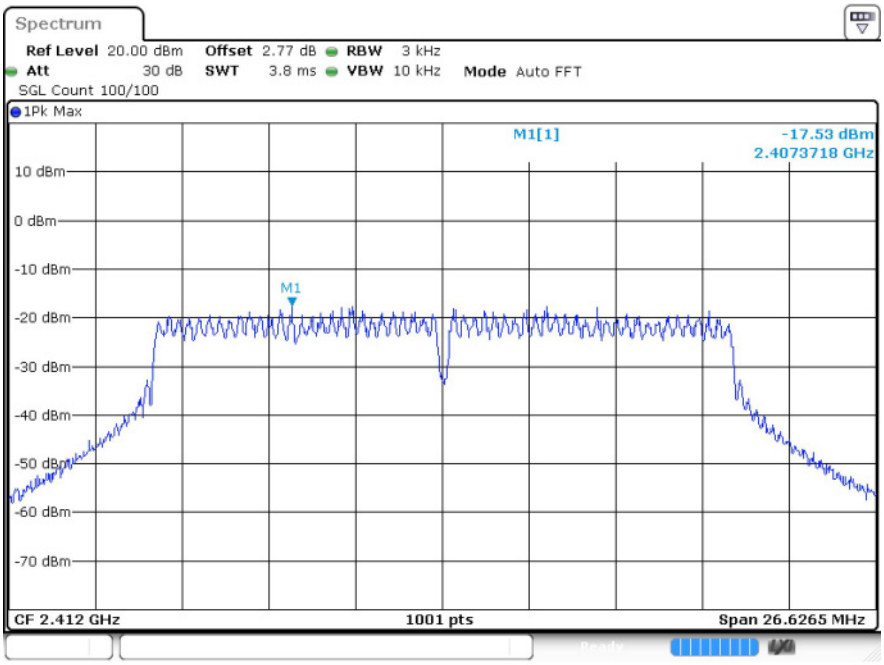
g 2437MHz Ant1



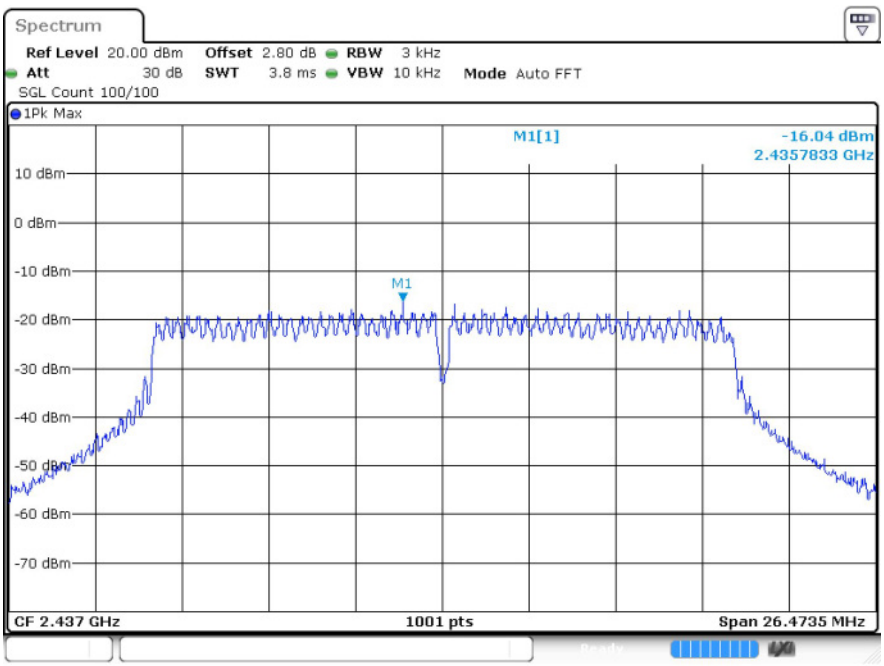

g 2462MHz Ant1



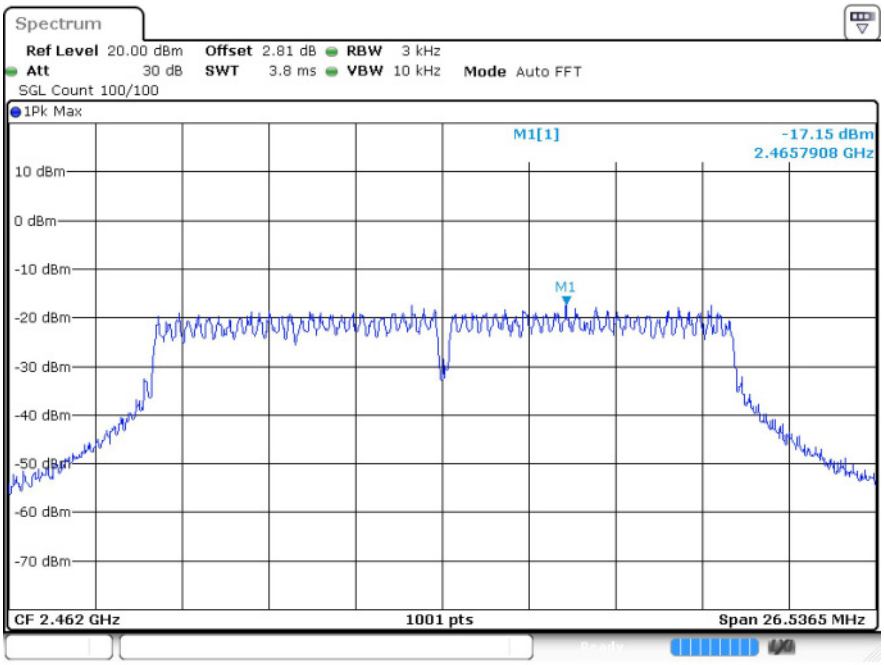
n20 2412MHz Ant1




n20 2437MHz Ant1



n20 2462MHz Ant1



# 5 Band Edge

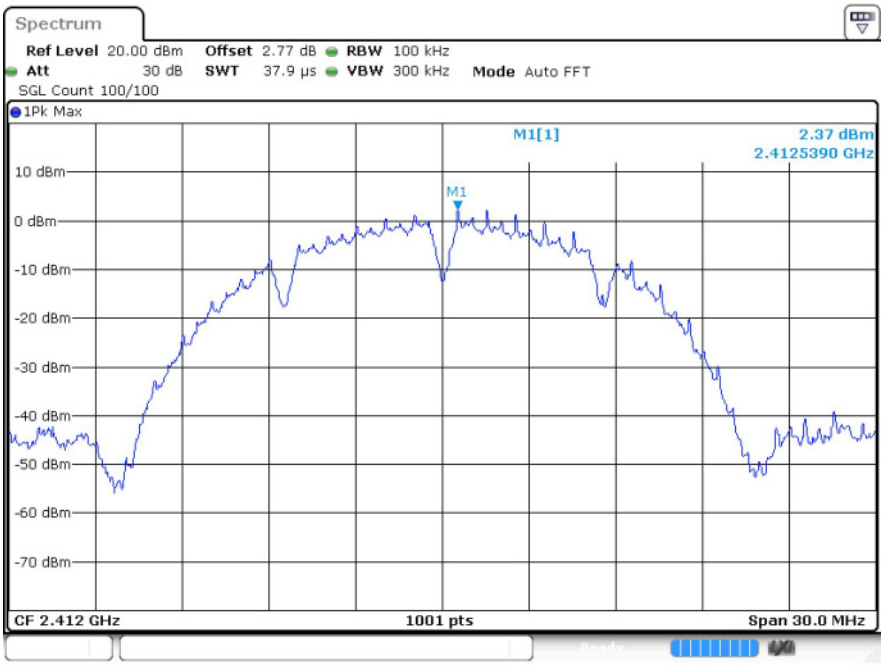
## 5.1 Test Result

| Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|---|---|---|---|---|---|
| b | 2412 | Ant1 | -56.88 | -20 | Pass |
| b | 2462 | Ant1 | -55.84 | -20 | Pass |
| g | 2412 | Ant1 | -50.04 | -20 | Pass |
| g | 2462 | Ant1 | -41.5 | -20 | Pass |
| n20 | 2412 | Ant1 | -47.34 | -20 | Pass |
| n20 | 2462 | Ant1 | -42.45 | -20 | Pass |

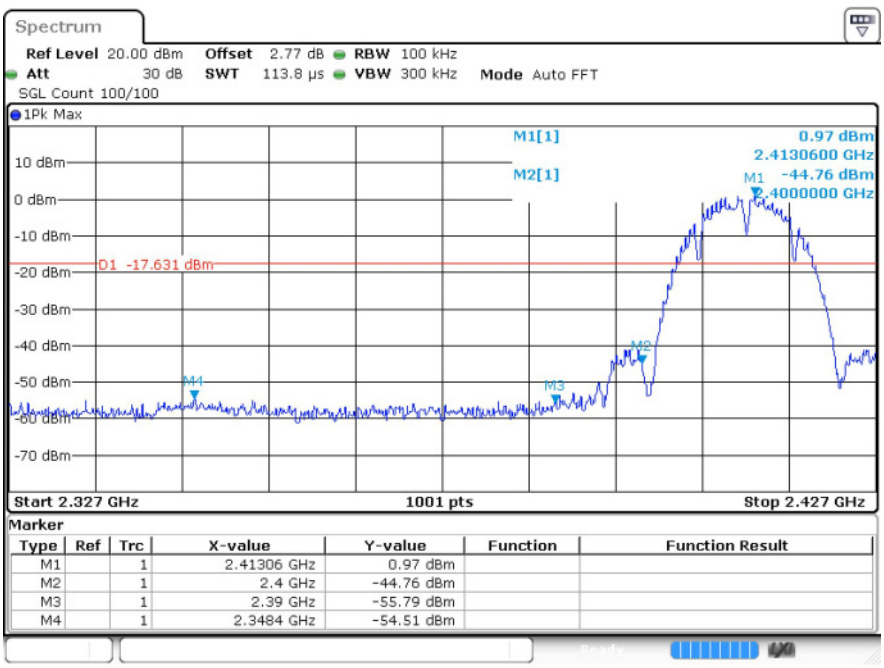
## 5.2 Test Graphs

Test Graphs

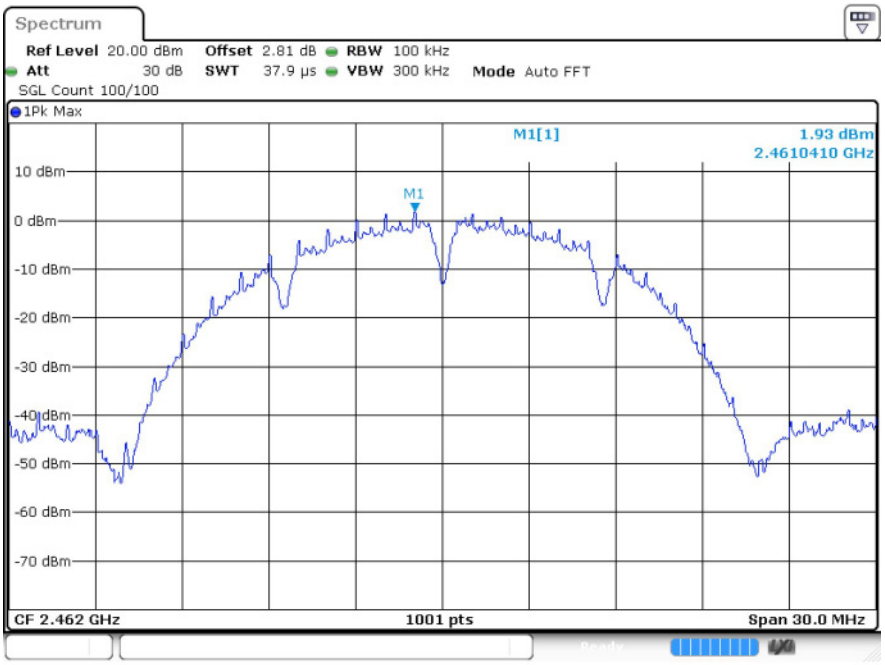
b 2412MHz Ant1 Ref



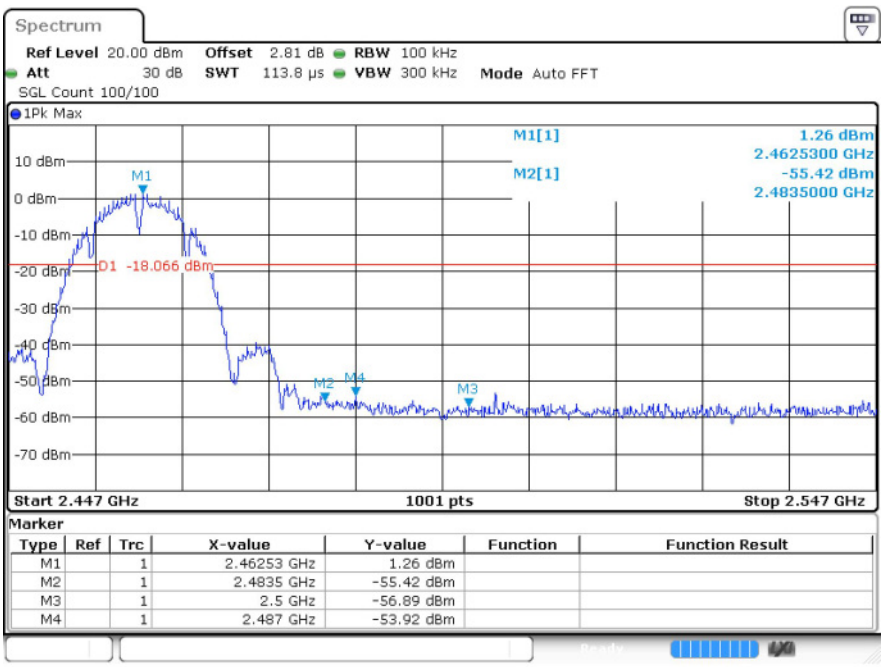

b 2412MHz Ant1 Emission



b 2462MHz Ant1 Ref



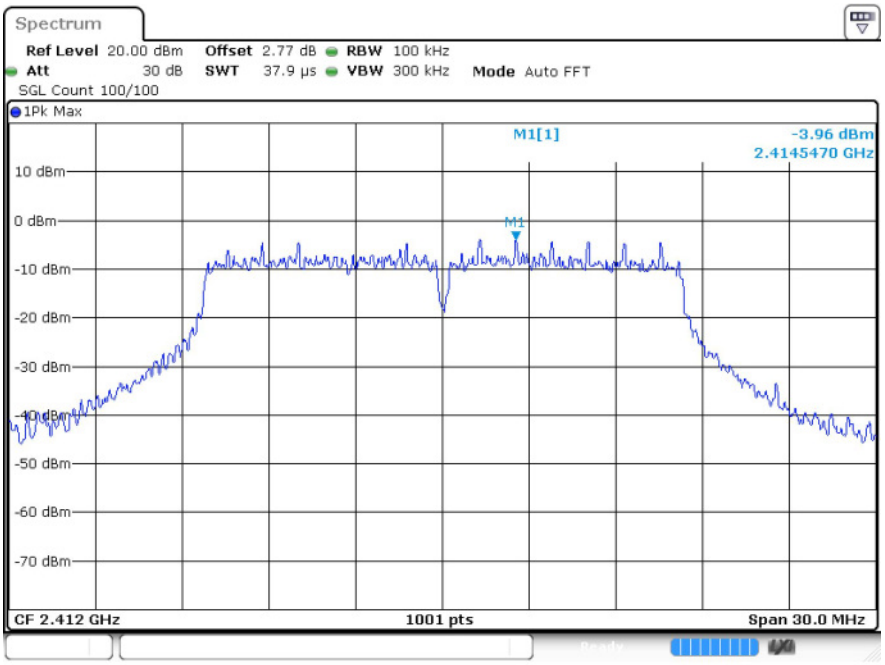

b 2462MHz Ant1 Emission



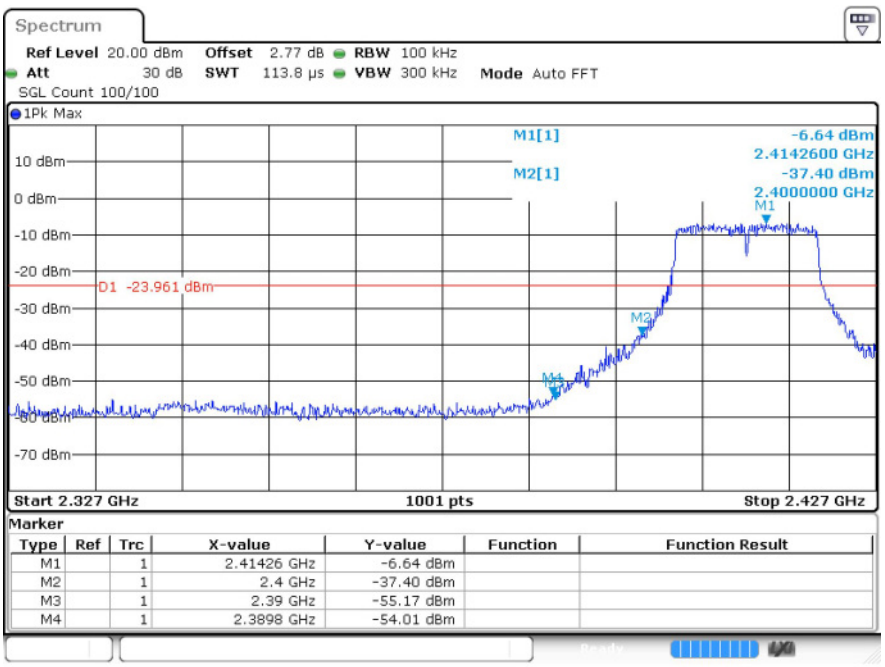

Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.46253 GHz | 1.26 dBm | | |
| M2 | | 1 | 2.4835 GHz | -55.42 dBm | | |
| M3 | | 1 | 2.5 GHz | -56.89 dBm | | |
| M4 | | 1 | 2.487 GHz | -53.92 dBm | | |

g 2412MHz Ant1 Ref

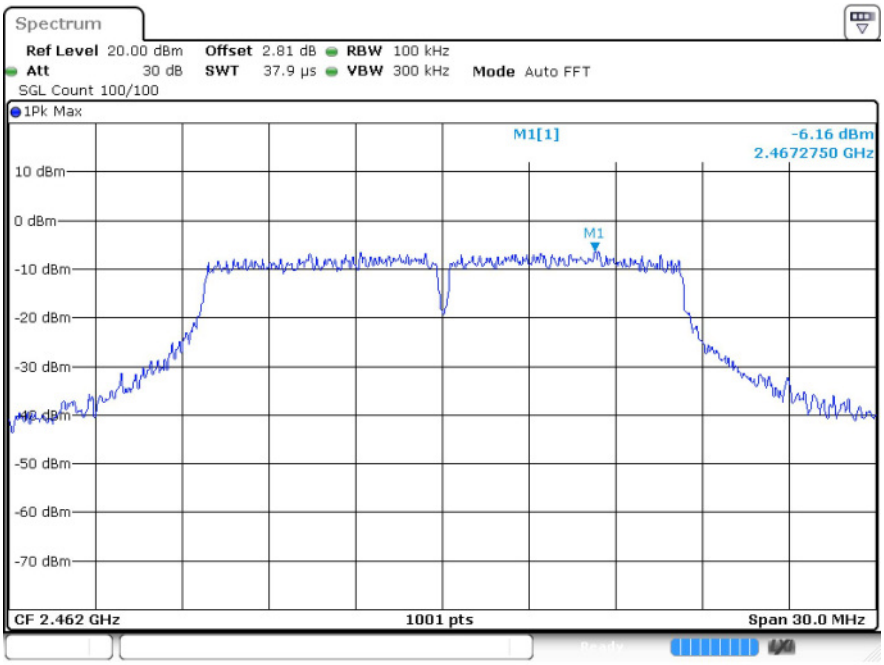



g 2412MHz Ant1 Emission

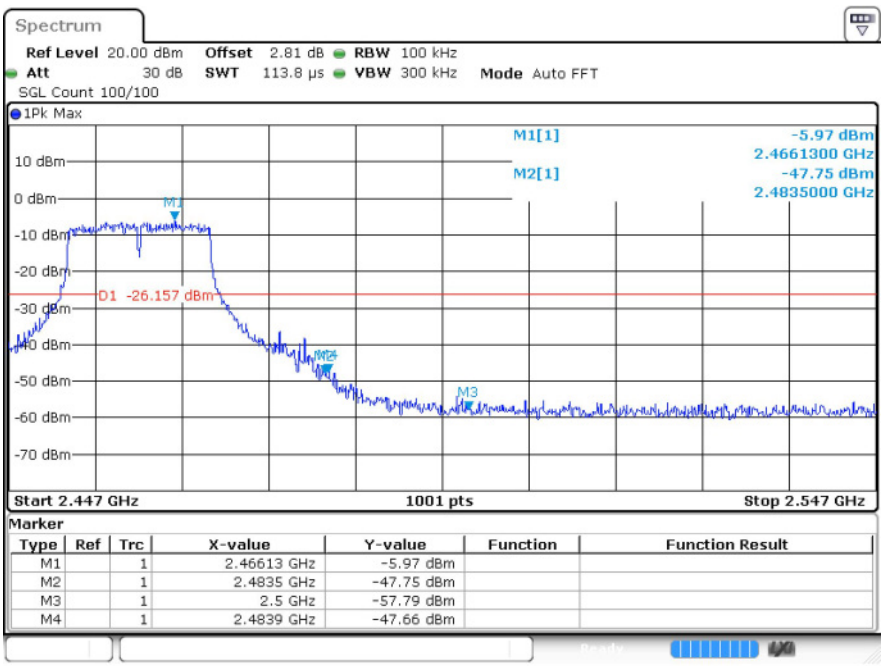



| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.41426 GHz | -6.64 dBm | | |
| M2 | | 1 | 2.4 GHz | -37.40 dBm | | |
| M3 | | 1 | 2.39 GHz | -55.17 dBm | | |
| M4 | | 1 | 2.3898 GHz | -54.01 dBm | | |

g 2462MHz Ant1 Ref



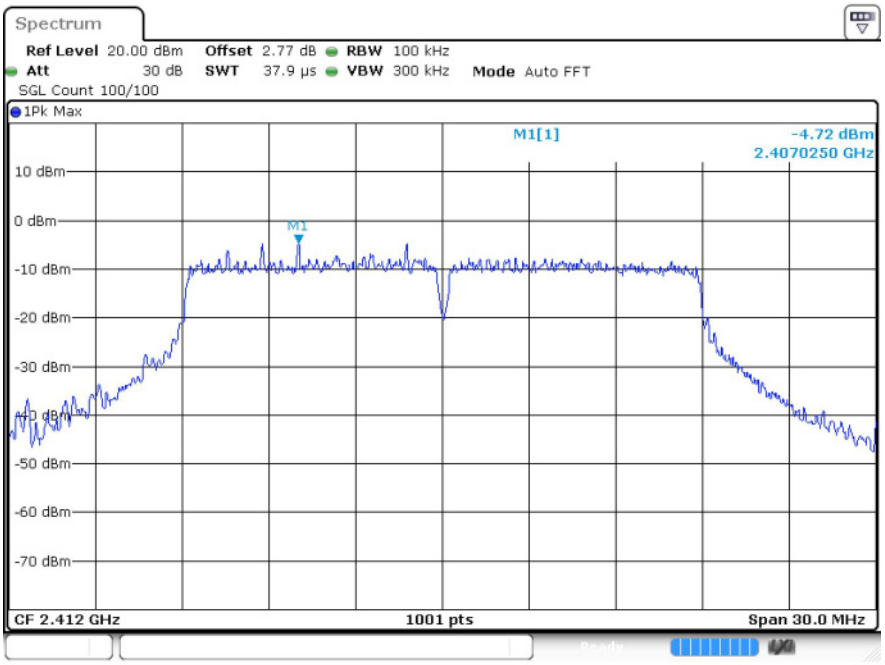

g 2462MHz Ant1 Emission




Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.46613 GHz | -5.97 dBm | | |
| M2 | | 1 | 2.4835 GHz | -47.75 dBm | | |
| M3 | | 1 | 2.5 GHz | -57.79 dBm | | |
| M4 | | 1 | 2.4839 GHz | -47.66 dBm | | |

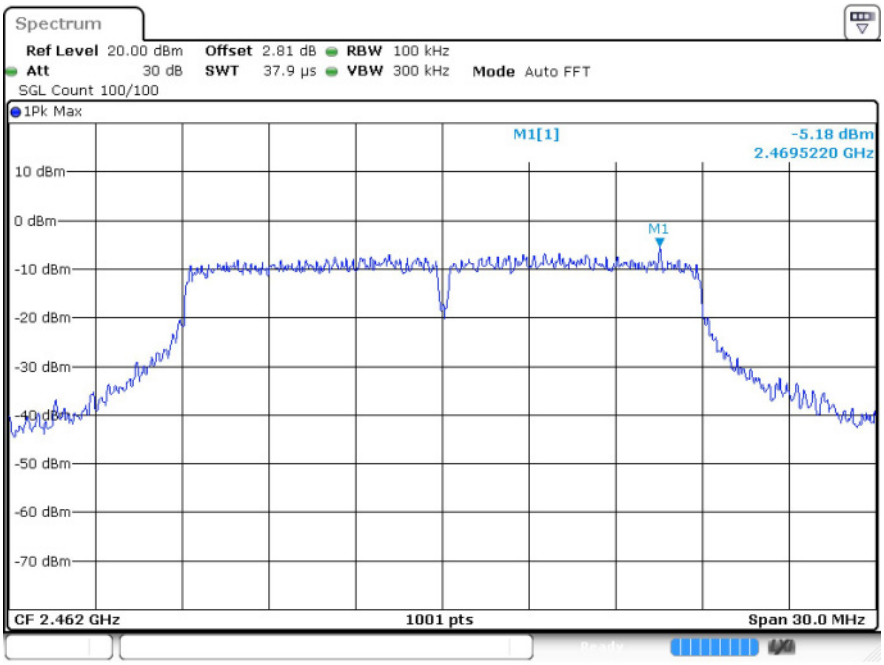
n20 2412MHz Ant1 Ref



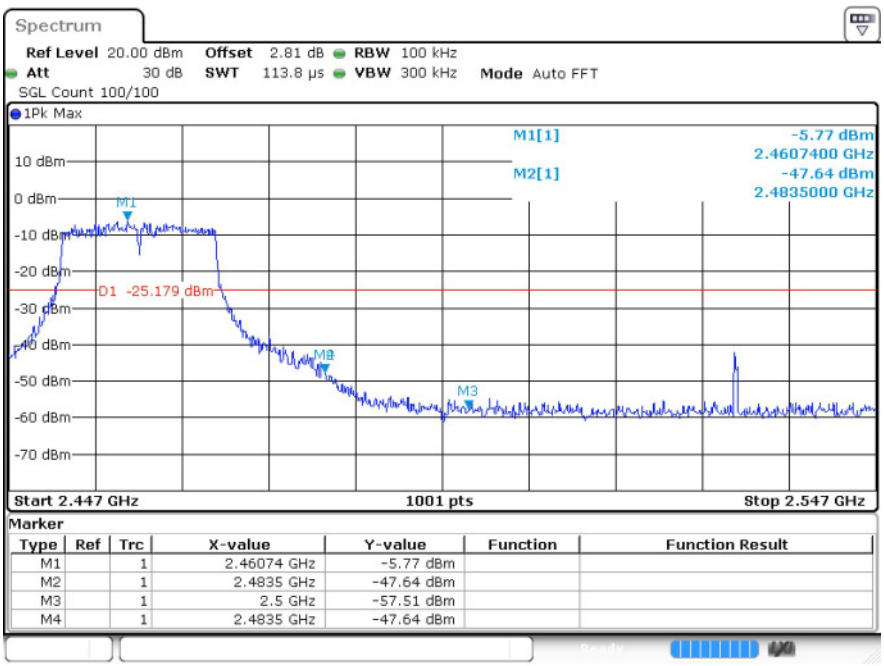

n20 2412MHz Ant1 Emission

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.40947 GHz | -6.85 dBm | | |
| M2 | | 1 | 2.4 GHz | -37.97 dBm | | |
| M3 | | 1 | 2.39 GHz | -55.76 dBm | | |
| M4 | | 1 | 2.3893 GHz | -52.07 dBm | | |

n20 2462MHz Ant1 Ref




n20 2462MHz Ant1 Emission




| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.46074 GHz | -5.77 dBm | | |
| M2 | | 1 | 2.4835 GHz | -47.64 dBm | | |
| M3 | | 1 | 2.5 GHz | -57.51 dBm | | |
| M4 | | 1 | 2.4835 GHz | -47.64 dBm | | |

# 6 Conducted RF Spurious Emission

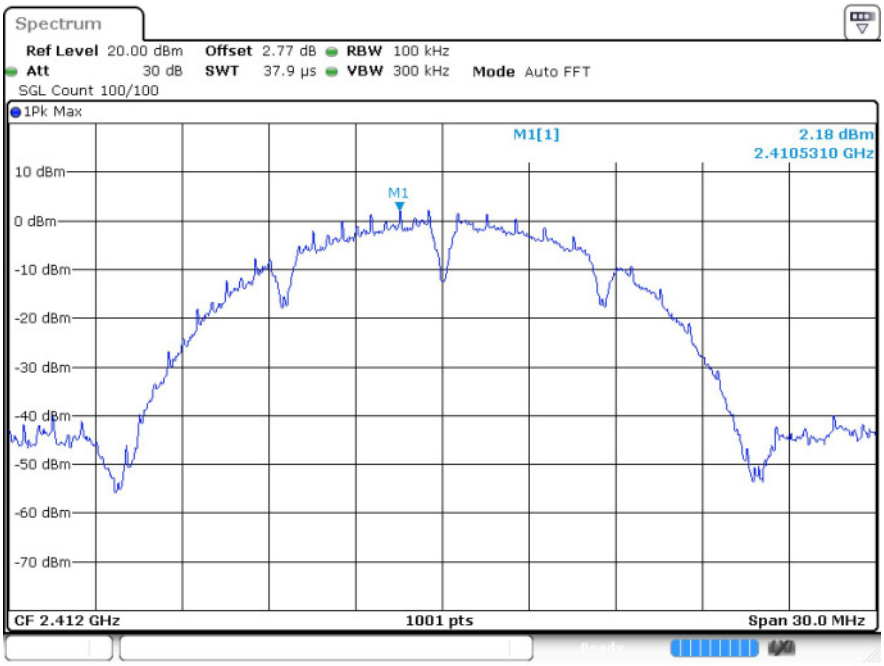
## 6.1 Test Result

| Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|---|---|---|---|---|---|
| b | 2412 | Ant1 | -45.25 | -20 | Pass |
| b | 2437 | Ant1 | -45.28 | -20 | Pass |
| b | 2462 | Ant1 | -45.18 | -20 | Pass |
| g | 2412 | Ant1 | -36.35 | -20 | Pass |
| g | 2437 | Ant1 | -40.5 | -20 | Pass |
| g | 2462 | Ant1 | -37.11 | -20 | Pass |
| n20 | 2412 | Ant1 | -37.11 | -20 | Pass |
| n20 | 2437 | Ant1 | -37.9 | -20 | Pass |
| n20 | 2462 | Ant1 | -36.96 | -20 | Pass |

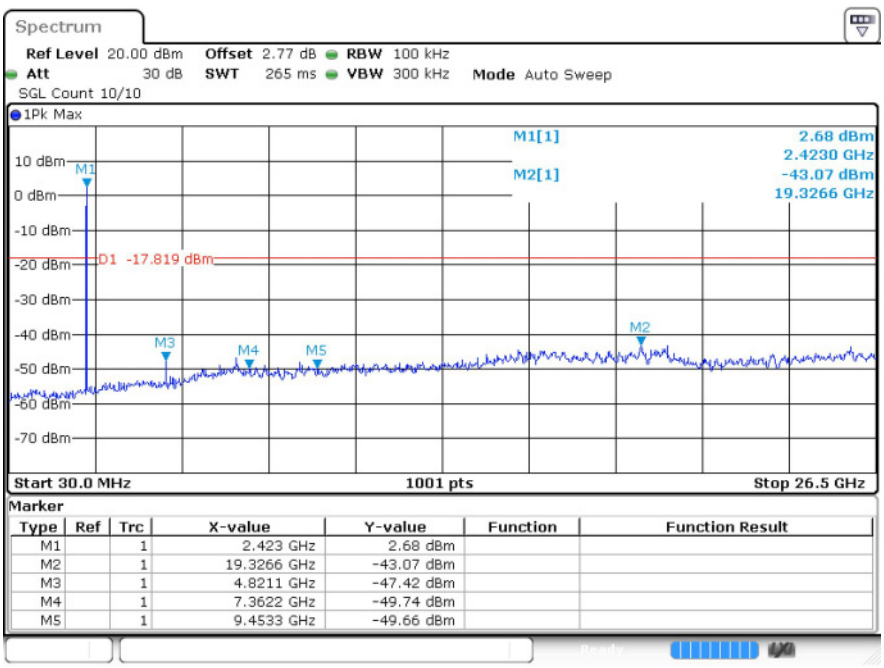
## 6.2 Test Graphs

Test Graphs

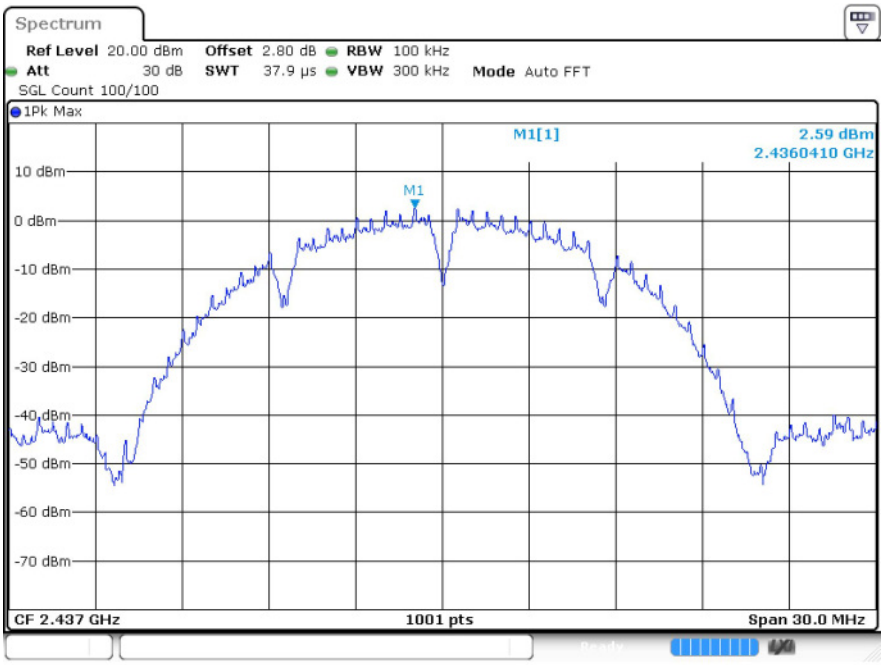
b 2412MHz Ant1 Ref



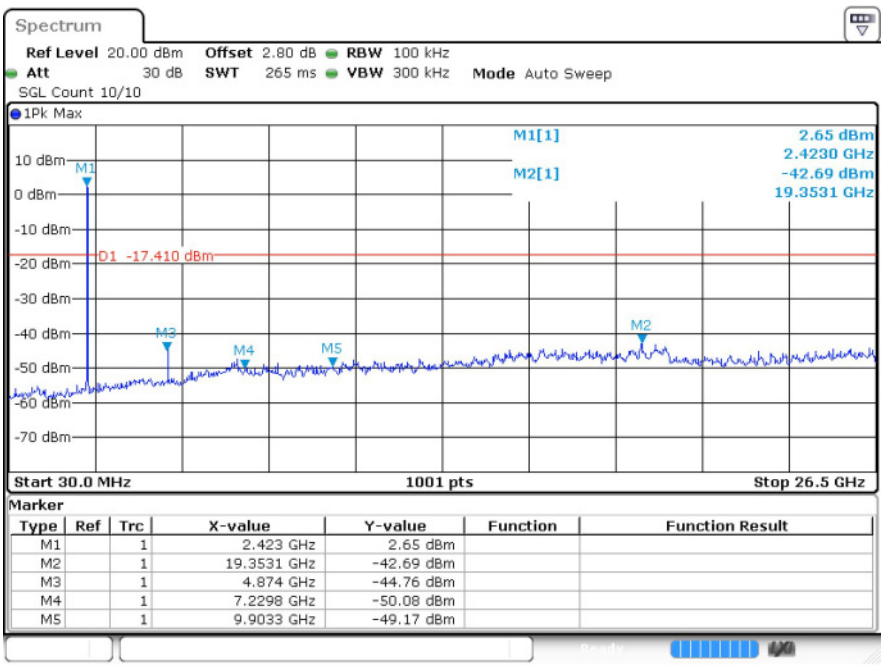

b 2412MHz Ant1 Emission



b 2437MHz Ant1 Ref



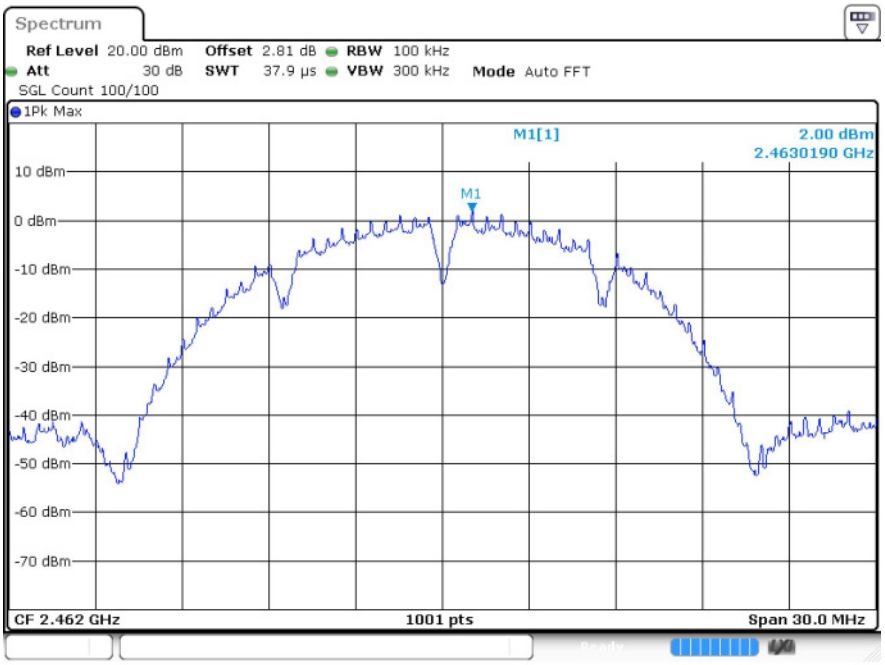

b 2437MHz Ant1 Emission

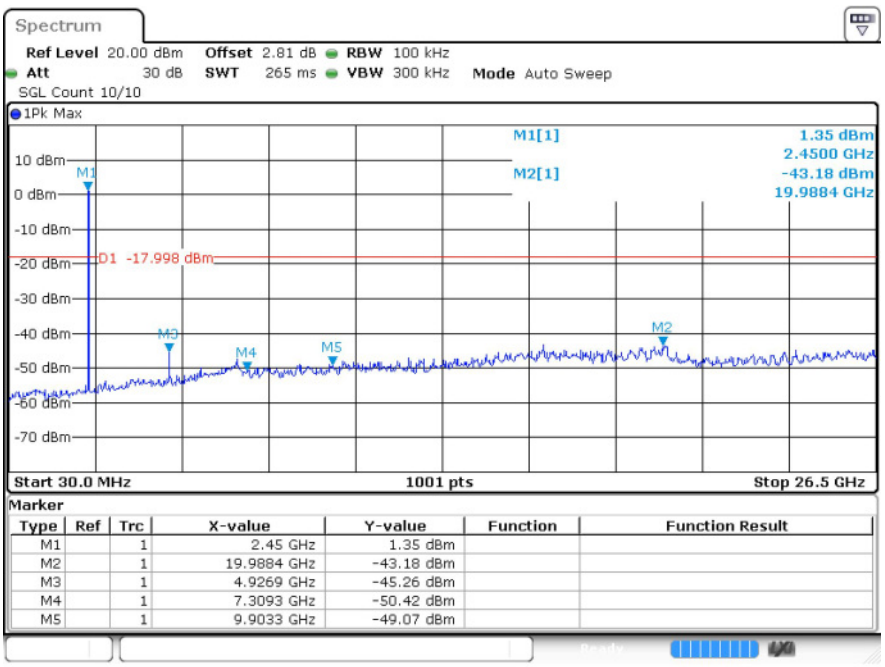



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.423 GHz | 2.65 dBm | | |
| M2 | | 1 | 19.3531 GHz | -42.69 dBm | | |
| M3 | | 1 | 4.874 GHz | -44.76 dBm | | |
| M4 | | 1 | 7.2298 GHz | -50.08 dBm | | |
| M5 | | 1 | 9.9033 GHz | -49.17 dBm | | |

b 2462MHz Ant1 Ref




b 2462MHz Ant1 Emission