



## Appendix D

### RF Test Data for B1WIFI(Conducted Measurement)

Product Name: UV Photocuring 3D Printer

Trade Mark: ELEGOO

Test Model: Saturn 4 Ultra 16K

Environmental Conditions

|                    |             |
|--------------------|-------------|
| Temperature:       | 24.8° C     |
| Relative Humidity: | 52.3%       |
| ATM Pressure:      | 100.0 kPa   |
| Test Engineer:     | Emiya Lin   |
| Supervised by:     | Simba Huang |



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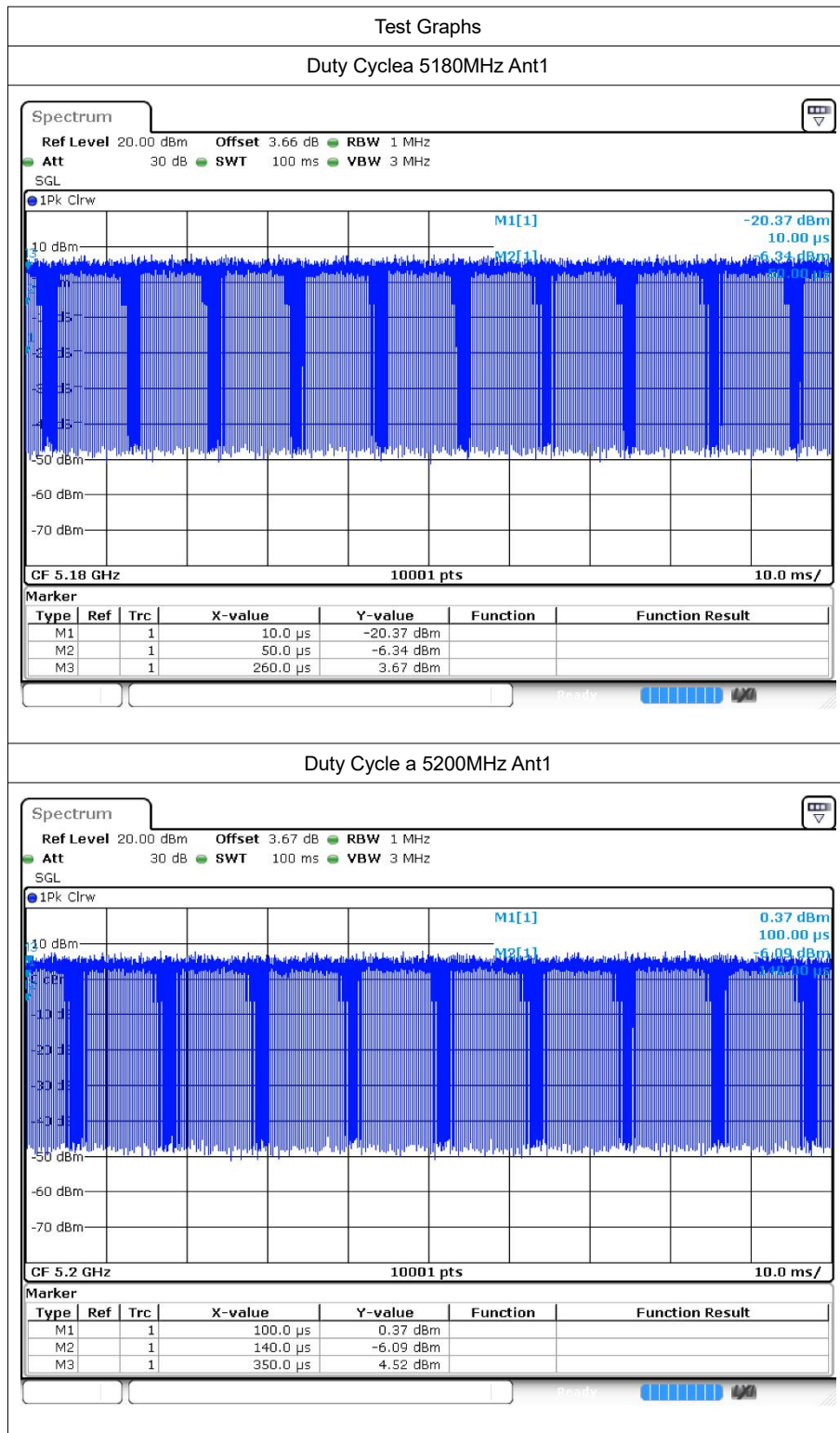


# 1 Duty Cycle

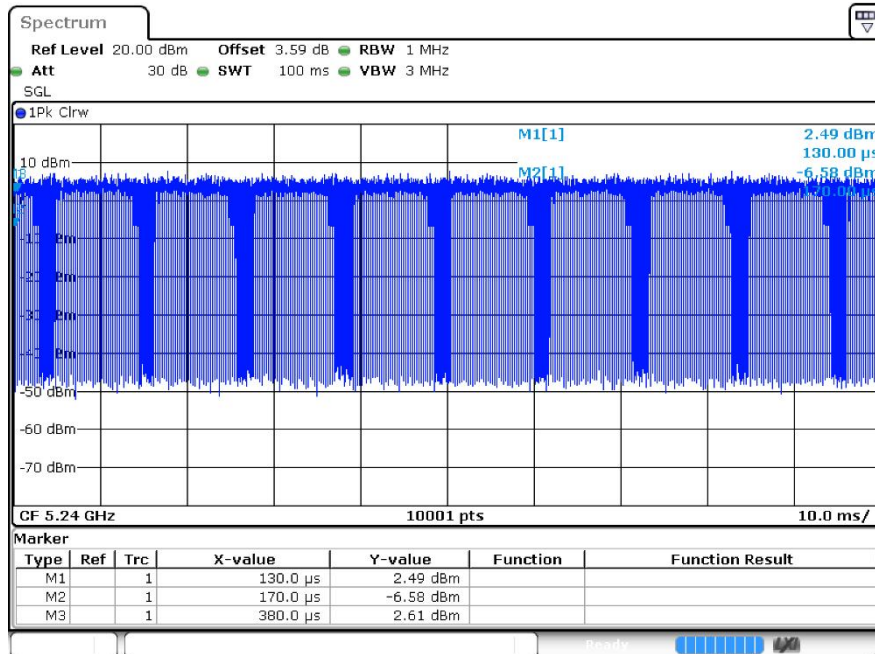
## 1.1 Test Result

| Mode | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|------|-----------------|---------|----------------|------------------------|-----------|
| a    | 5180            | Ant1    | 86.85          | 0.61                   | 4.76      |
| a    | 5200            | Ant1    | 87.06          | 0.6                    | 4.76      |
| a    | 5240            | Ant1    | 87.06          | 0.6                    | 4.76      |
| n20  | 5180            | Ant1    | 87.6           | 0.57                   | 4.35      |
| n20  | 5200            | Ant1    | 87.64          | 0.57                   | 4.35      |
| n20  | 5240            | Ant1    | 87.62          | 0.57                   | 4.35      |
| n40  | 5190            | Ant1    | 88.11          | 0.55                   | 4.17      |
| n40  | 5230            | Ant1    | 88.16          | 0.55                   | 4         |
| ac20 | 5180            | Ant1    | 87.19          | 0.6                    | 4.55      |
| ac20 | 5200            | Ant1    | 87.37          | 0.59                   | 4.35      |
| ac20 | 5240            | Ant1    | 87.23          | 0.59                   | 4.35      |
| ac40 | 5190            | Ant1    | 87.08          | 0.6                    | 4.55      |
| ac40 | 5230            | Ant1    | 85.62          | 0.67                   | 4.55      |
| ac80 | 5210            | Ant1    | 87.41          | 0.58                   | 4.35      |

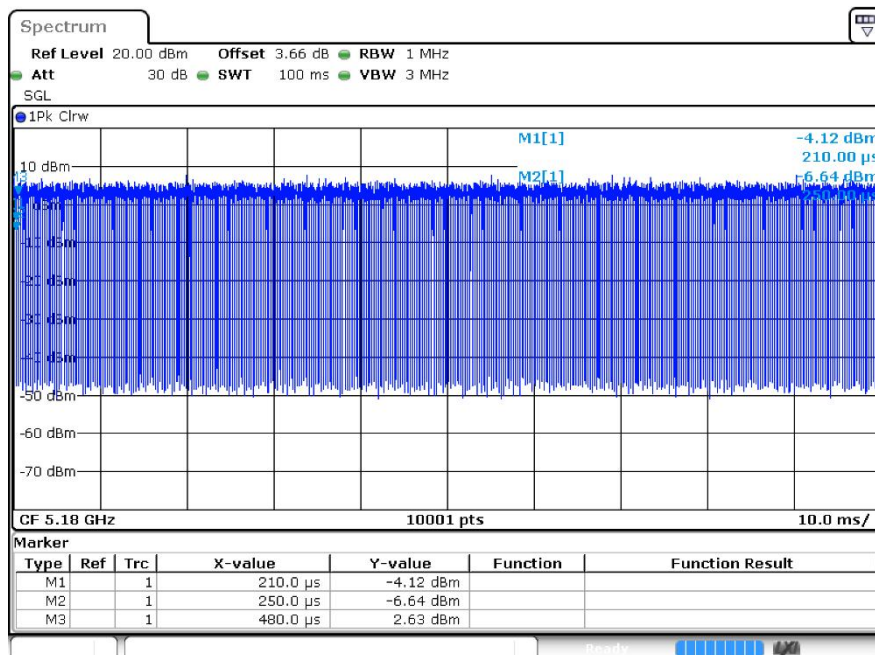
## 1.2 Test Graphs



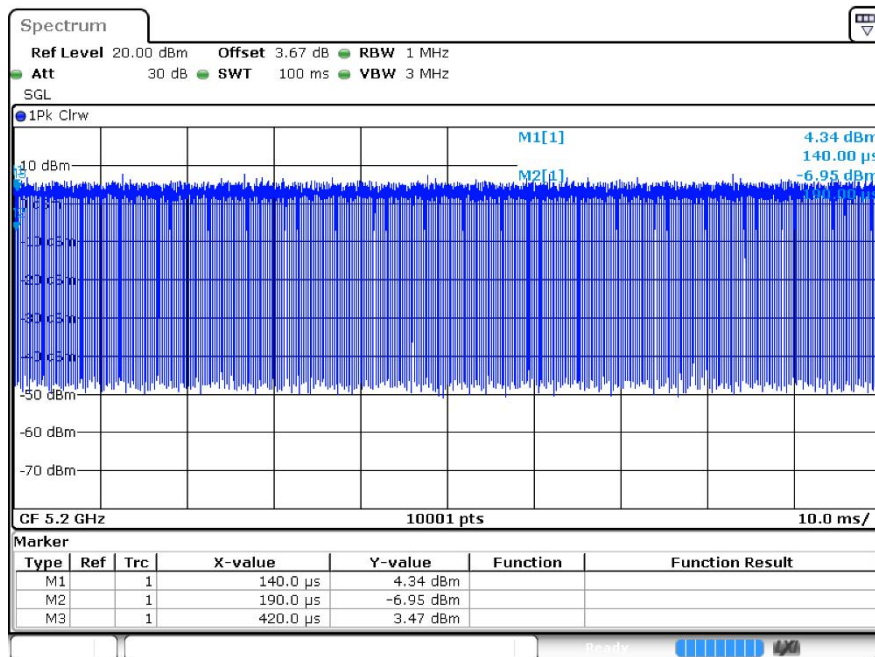
## Duty Cyclea 5240MHz Ant1



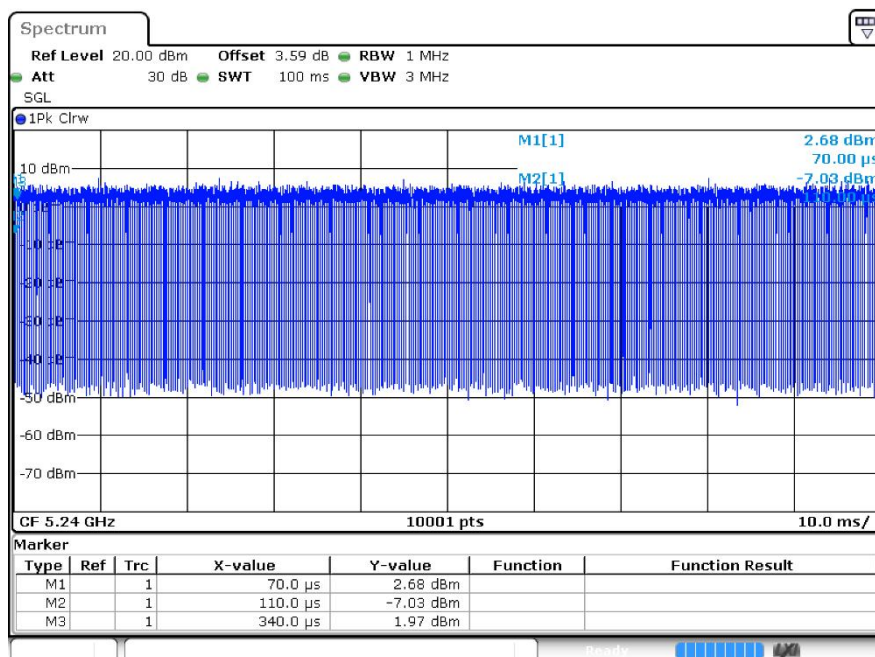
## Duty Cycle n20 5180MHz Ant1

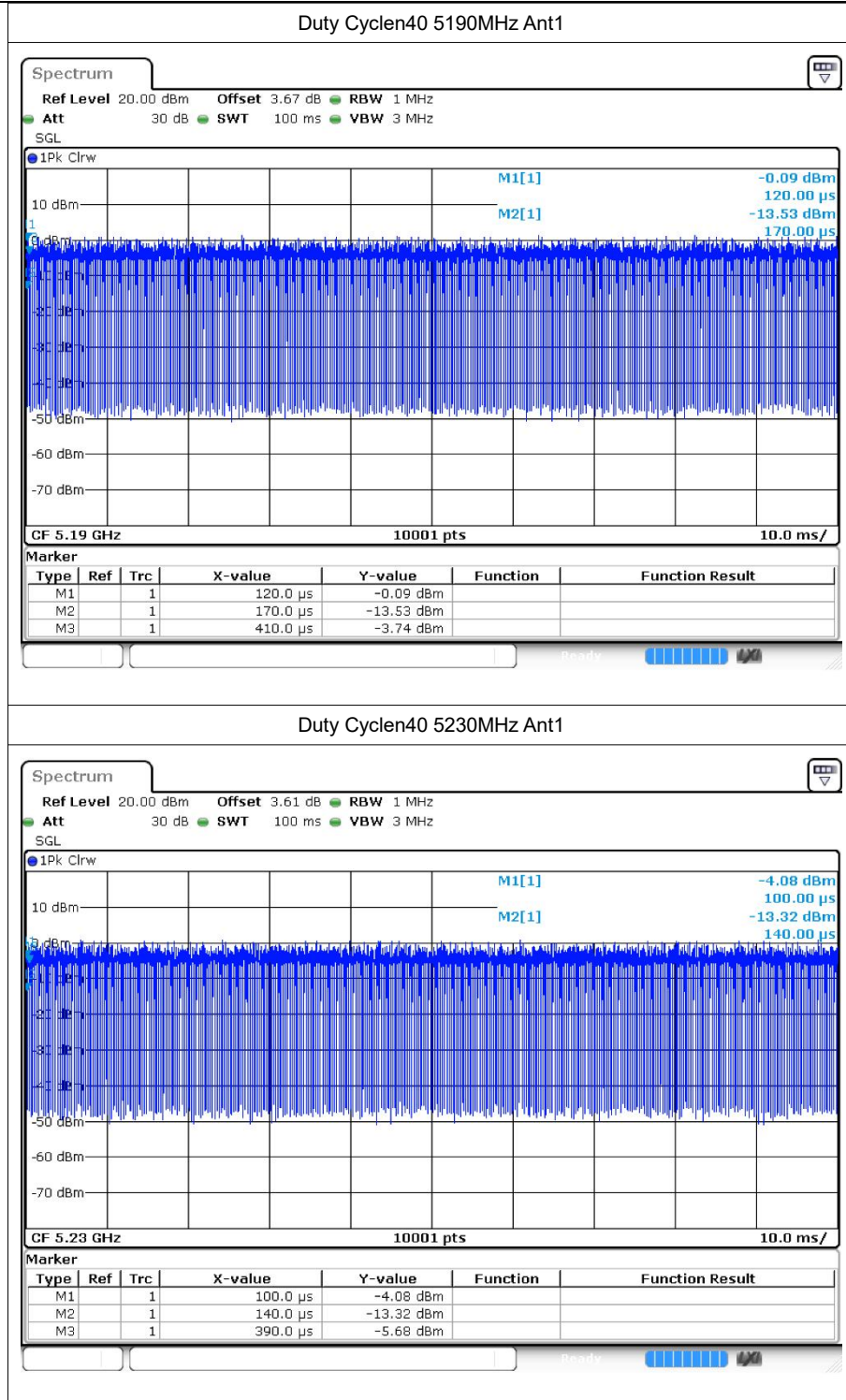


## Duty Cycle n20 5200MHz Ant1

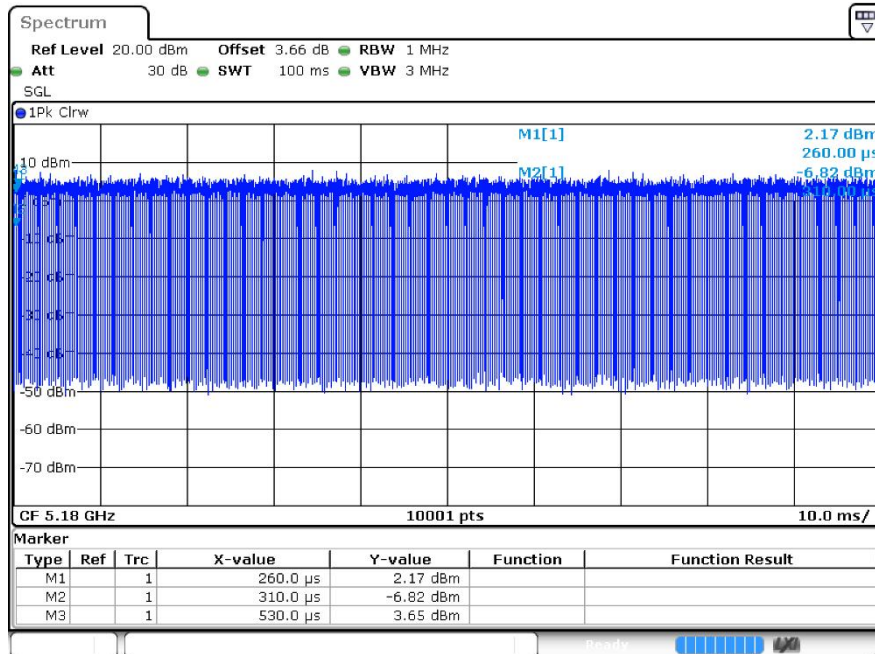


## Duty Cycle n20 5240MHz Ant1

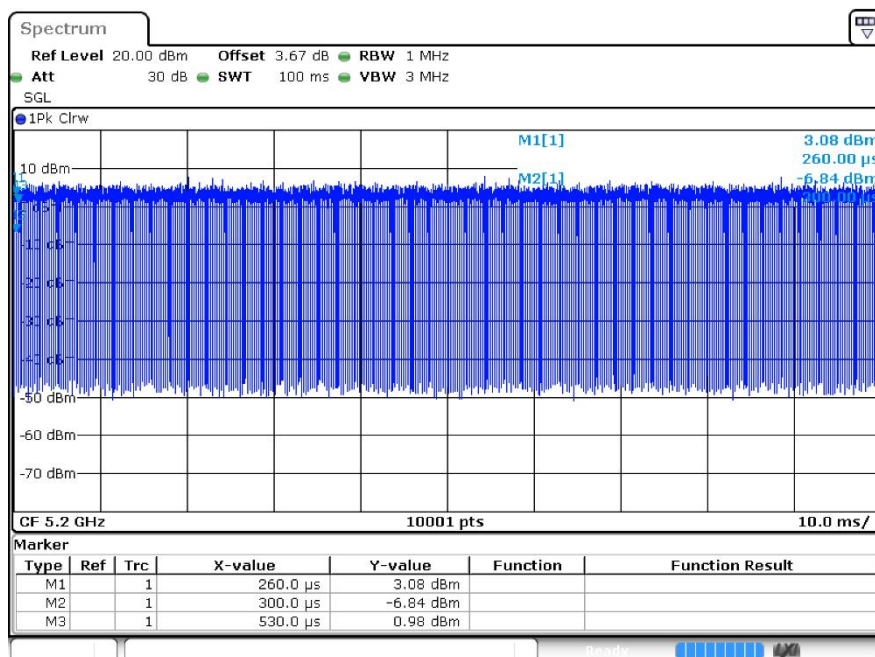




## Duty Cycle ac20 5180MHz Ant1

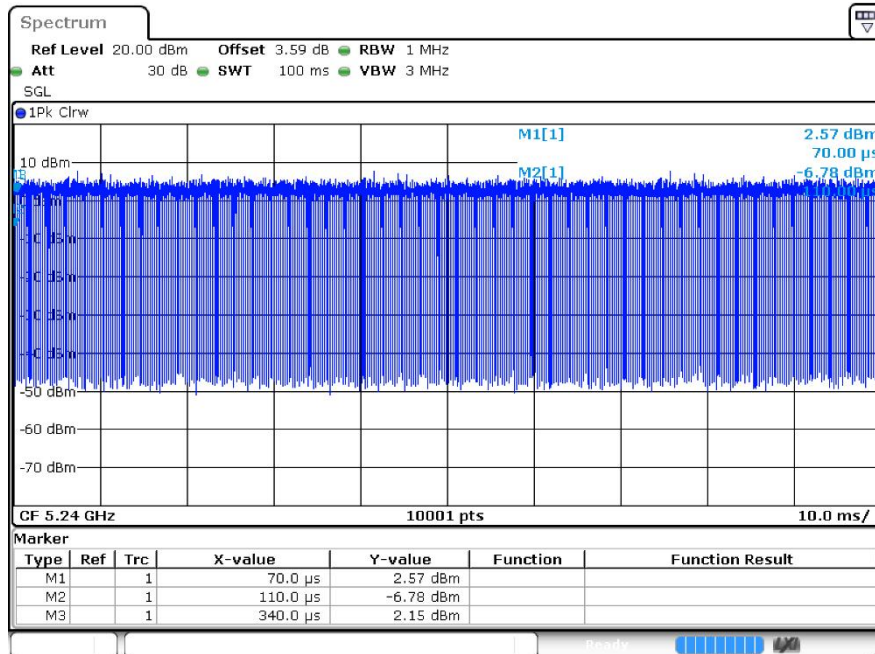


## Duty Cycle ac20 5200MHz Ant1

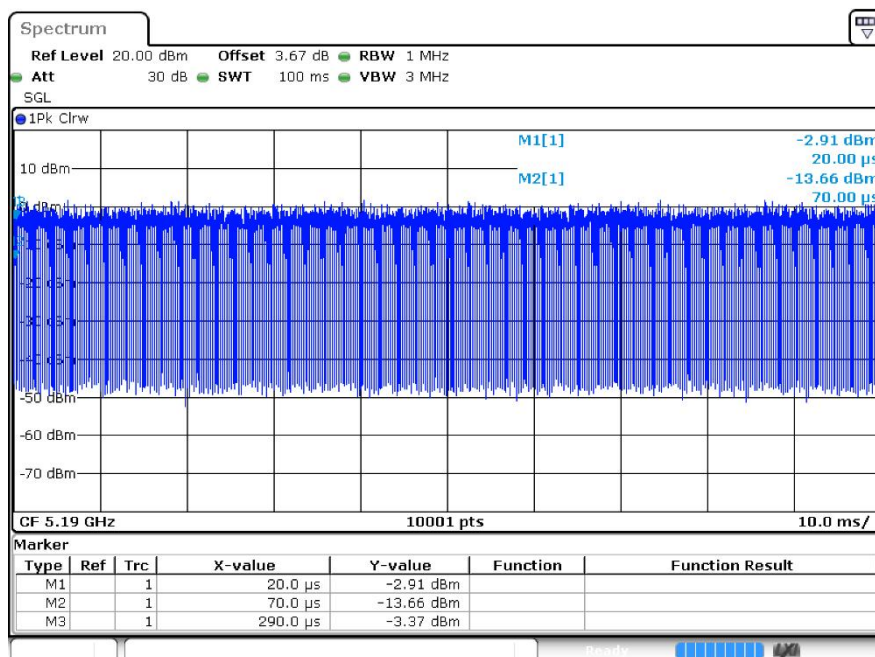


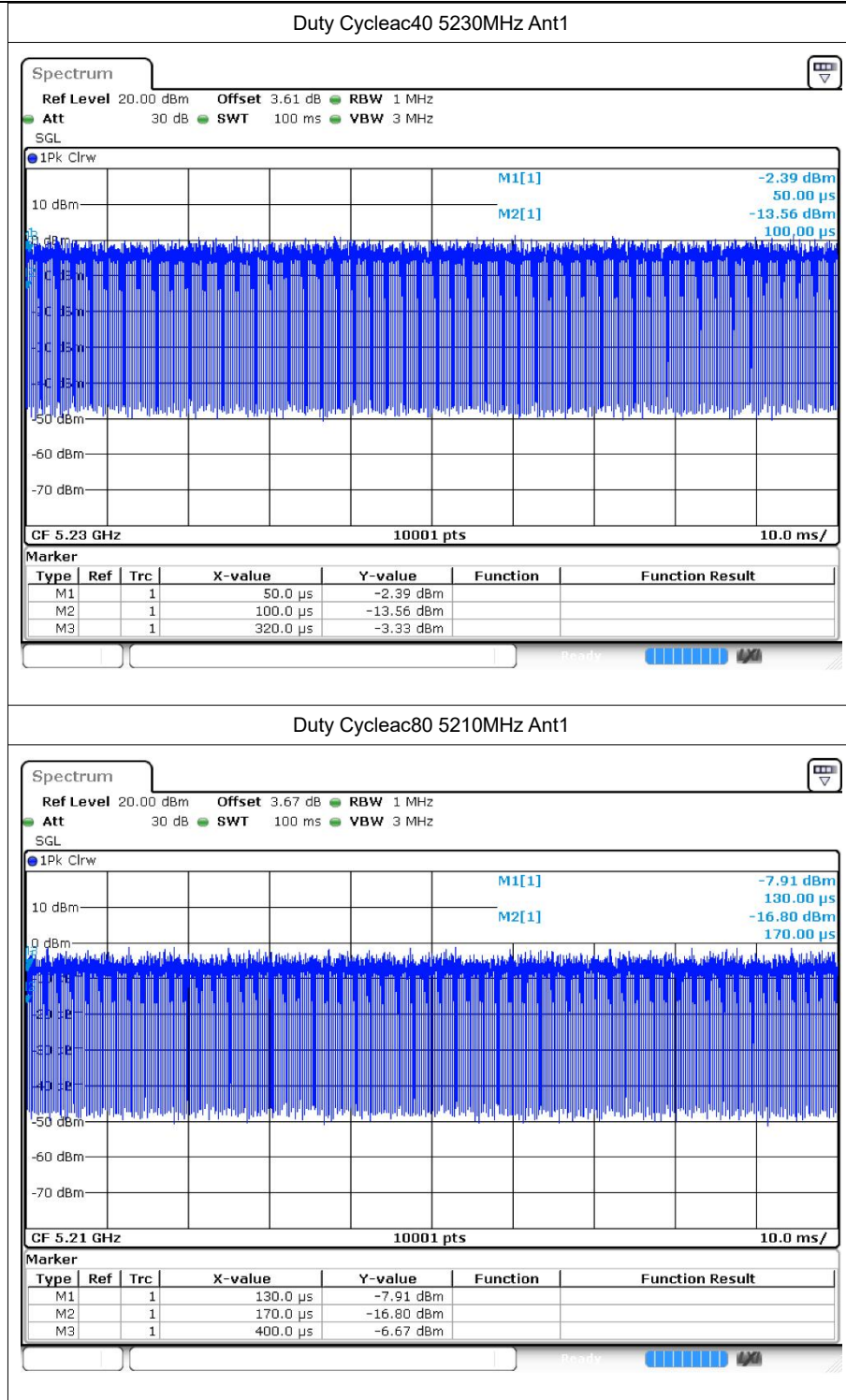


## Duty Cycle ac20 5240MHz Ant1



## Duty Cycleac40 5190MHz Ant1







## 2 Maximum Conducted Output Power

### 2.1 Test Result

| Mode | Frequency (MHz) | Antenna | Conducted Power (dBm) | Limit (dBm) | Verdict |
|------|-----------------|---------|-----------------------|-------------|---------|
| a    | 5180            | Ant1    | 14.36                 | 24          | Pass    |
| a    | 5200            | Ant1    | 14.2                  | 24          | Pass    |
| a    | 5240            | Ant1    | 13.9                  | 24          | Pass    |
| n20  | 5180            | Ant1    | 13.83                 | 24          | Pass    |
| n20  | 5200            | Ant1    | 13.72                 | 24          | Pass    |
| n20  | 5240            | Ant1    | 13.46                 | 24          | Pass    |
| n40  | 5190            | Ant1    | 13.58                 | 24          | Pass    |
| n40  | 5230            | Ant1    | 13.18                 | 24          | Pass    |
| ac20 | 5180            | Ant1    | 13.78                 | 24          | Pass    |
| ac20 | 5200            | Ant1    | 13.65                 | 24          | Pass    |
| ac20 | 5240            | Ant1    | 13.35                 | 24          | Pass    |
| ac40 | 5190            | Ant1    | 13.44                 | 24          | Pass    |
| ac40 | 5230            | Ant1    | 13.18                 | 24          | Pass    |
| ac80 | 5210            | Ant1    | 13.25                 | 24          | Pass    |

Note:

The duty factor has been compensated into the result.

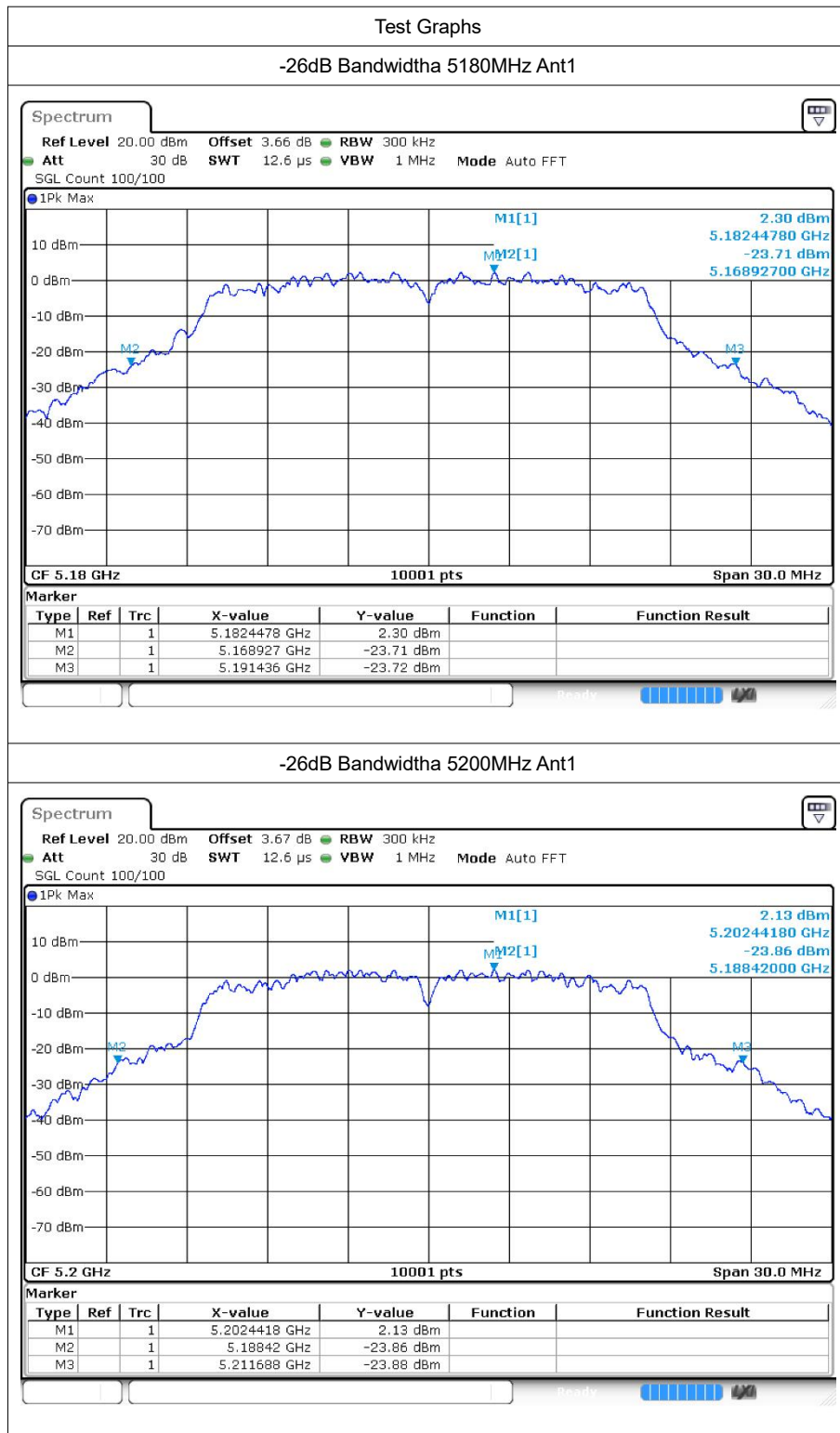


### 3 -26dB Bandwidth

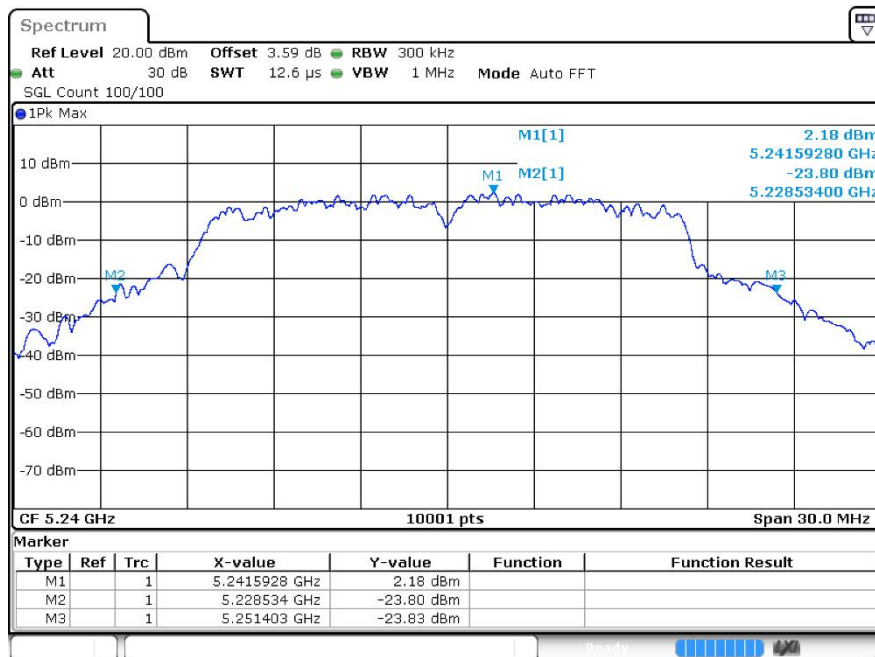
#### 3.1 Test Result

| Mode | Frequency (MHz) | Antenna | -26 dB Bandwidth (MHz) | Limit -26 dB Bandwidth (MHz) | Verdict |
|------|-----------------|---------|------------------------|------------------------------|---------|
| a    | 5180            | Ant1    | 22.509                 | 0.5                          | Pass    |
| a    | 5200            | Ant1    | 23.268                 | 0.5                          | Pass    |
| a    | 5240            | Ant1    | 22.869                 | 0.5                          | Pass    |
| n20  | 5180            | Ant1    | 22.218                 | 0.5                          | Pass    |
| n20  | 5200            | Ant1    | 22.611                 | 0.5                          | Pass    |
| n20  | 5240            | Ant1    | 23.289                 | 0.5                          | Pass    |
| n40  | 5190            | Ant1    | 40.98                  | 0.5                          | Pass    |
| n40  | 5230            | Ant1    | 42.048                 | 0.5                          | Pass    |
| ac20 | 5180            | Ant1    | 22.155                 | 0.5                          | Pass    |
| ac20 | 5200            | Ant1    | 22.23                  | 0.5                          | Pass    |
| ac20 | 5240            | Ant1    | 23.046                 | 0.5                          | Pass    |
| ac40 | 5190            | Ant1    | 41.478                 | 0.5                          | Pass    |
| ac40 | 5230            | Ant1    | 42.54                  | 0.5                          | Pass    |
| ac80 | 5210            | Ant1    | 82.944                 | 0.5                          | Pass    |

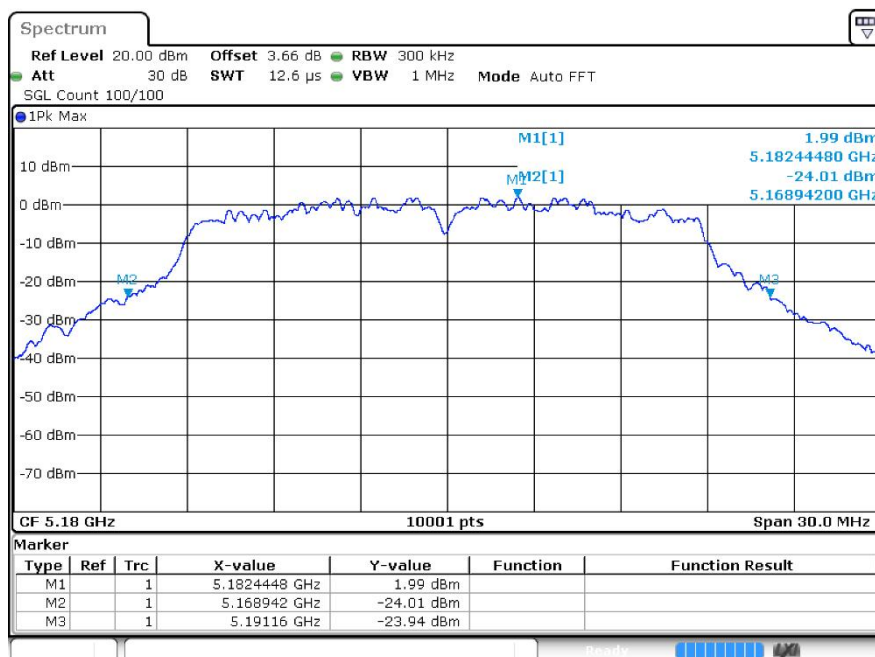
## 3.2 Test Graphs



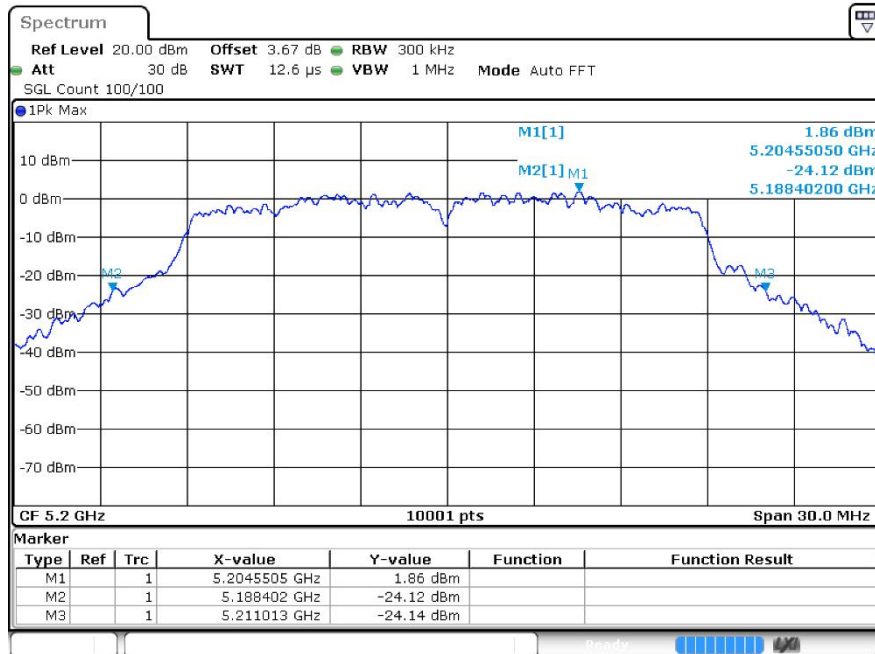
## -26dB Bandwidtha 5240MHz Ant1



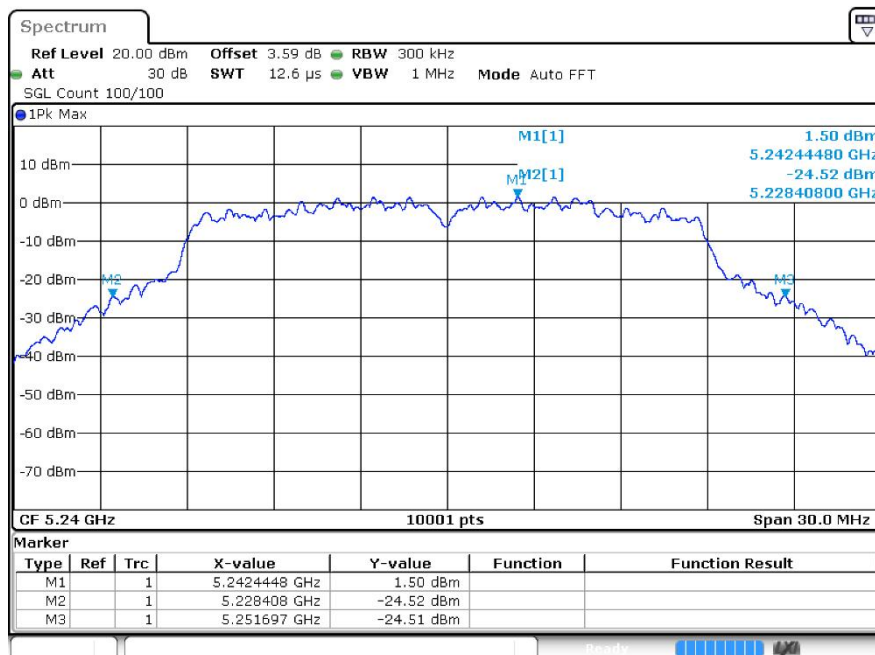
## -26dB Bandwidth n20 5180MHz Ant1



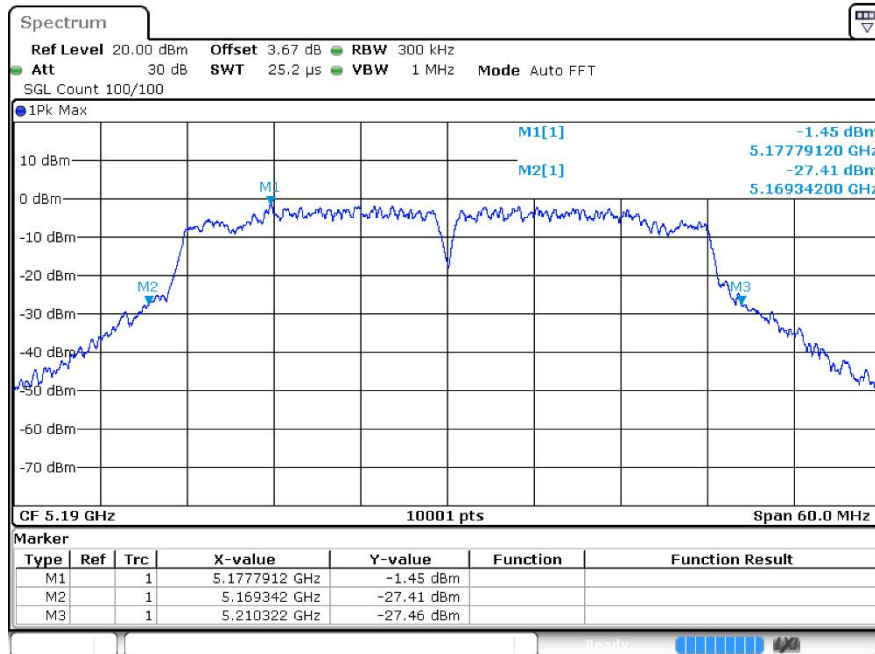
## -26dB Bandwidth n20 5200MHz Ant1



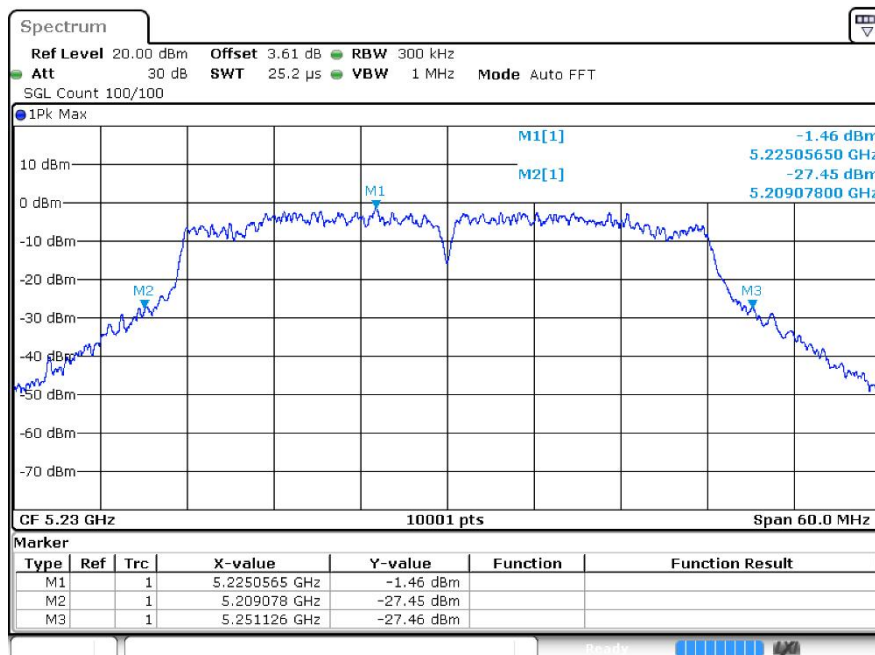
## -26dB Bandwidth n20 5240MHz Ant1



## -26dB Bandwidthn40 5190MHz Ant1

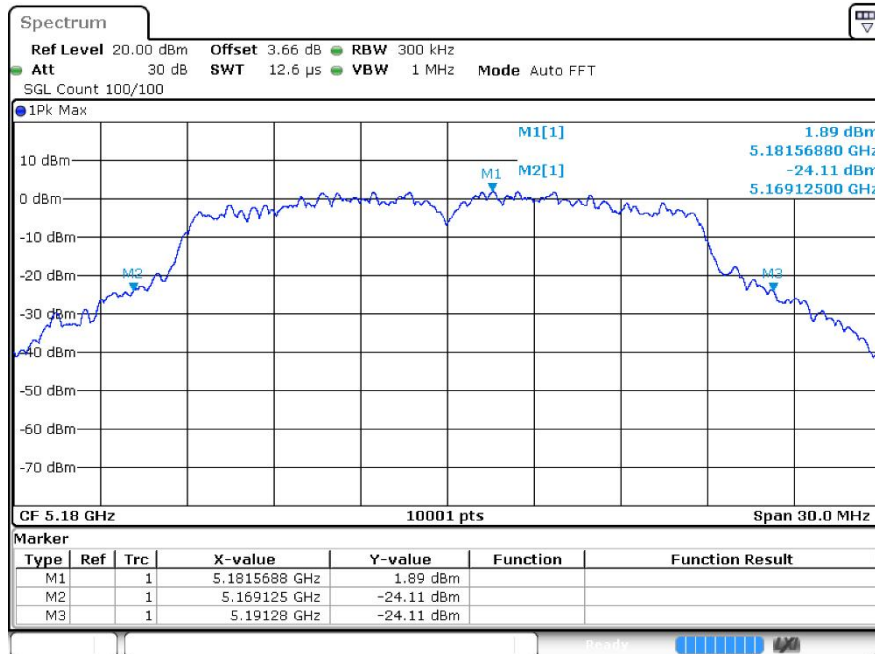


## -26dB Bandwidthn40 5230MHz Ant1

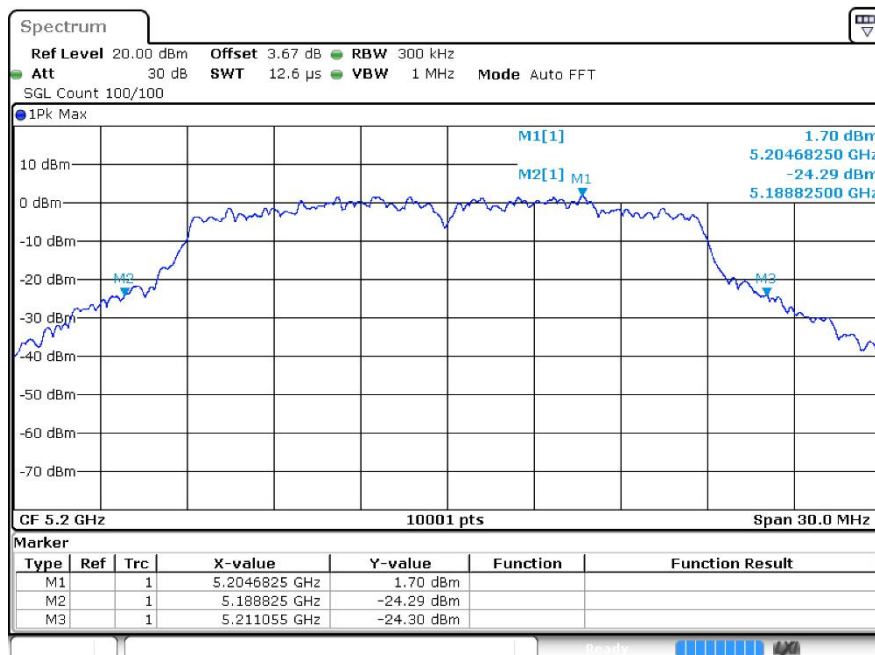




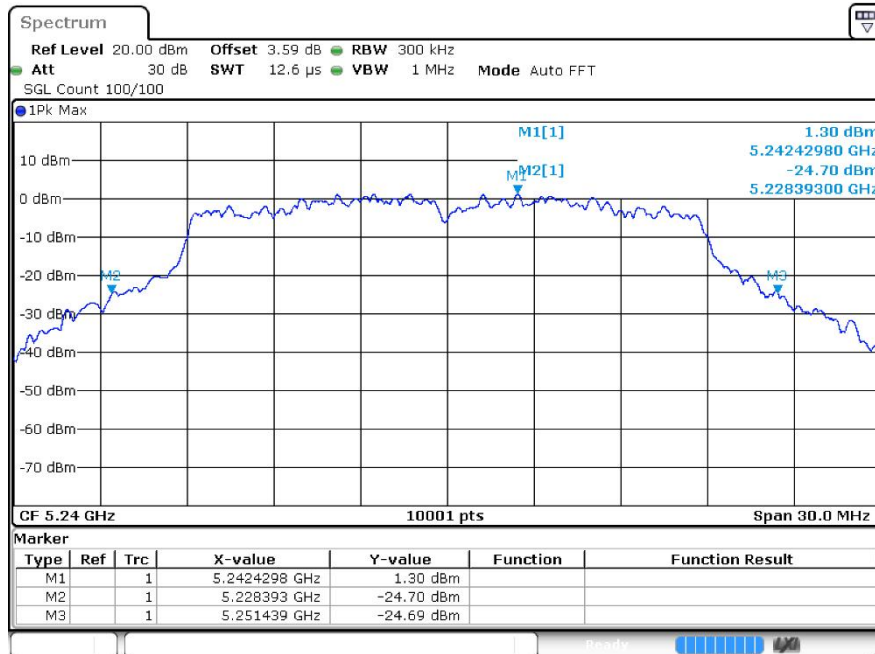
## -26dB Bandwidth ac20 5180MHz Ant1



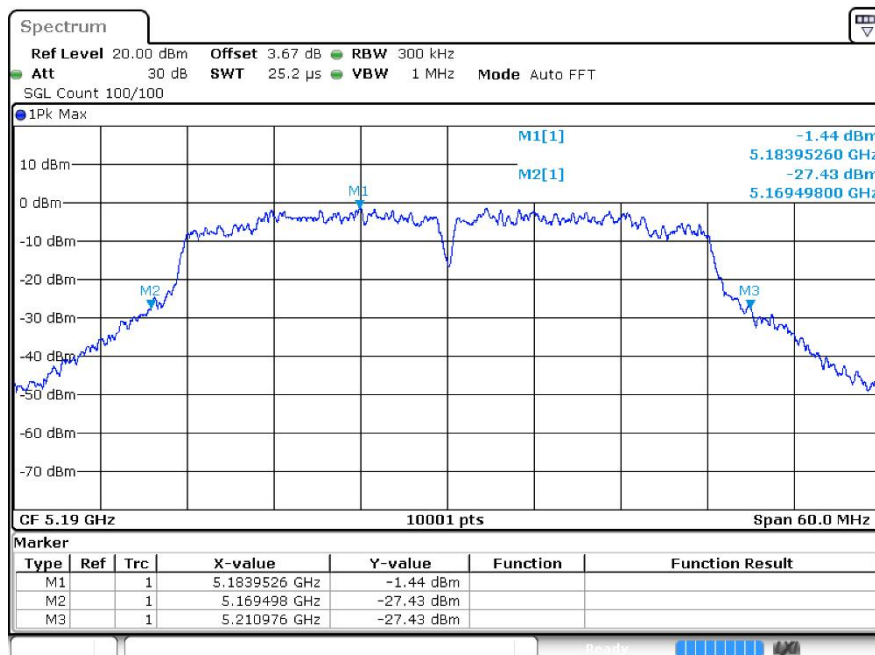
## -26dB Bandwidth ac20 5200MHz Ant1



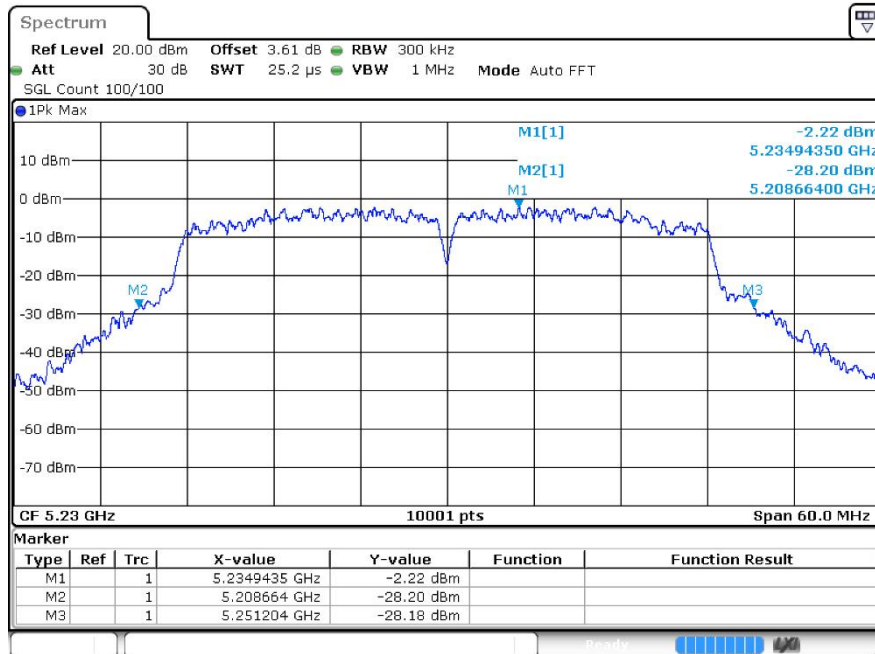
## -26dB Bandwidth ac20 5240MHz Ant1



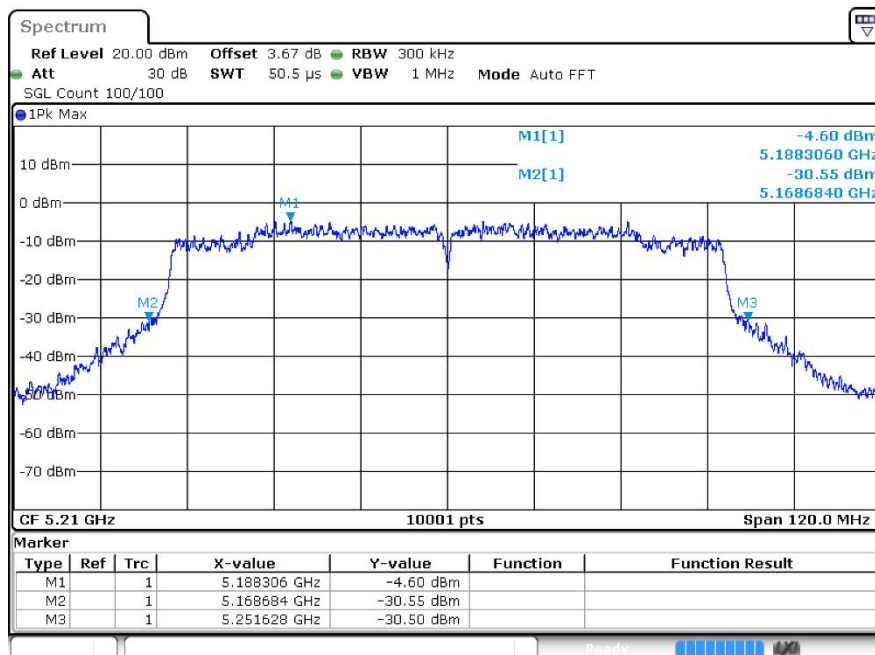
## -26dB Bandwidthac40 5190MHz Ant1



## -26dB Bandwidthac40 5230MHz Ant1



## -26dB Bandwidthac80 5210MHz Ant1



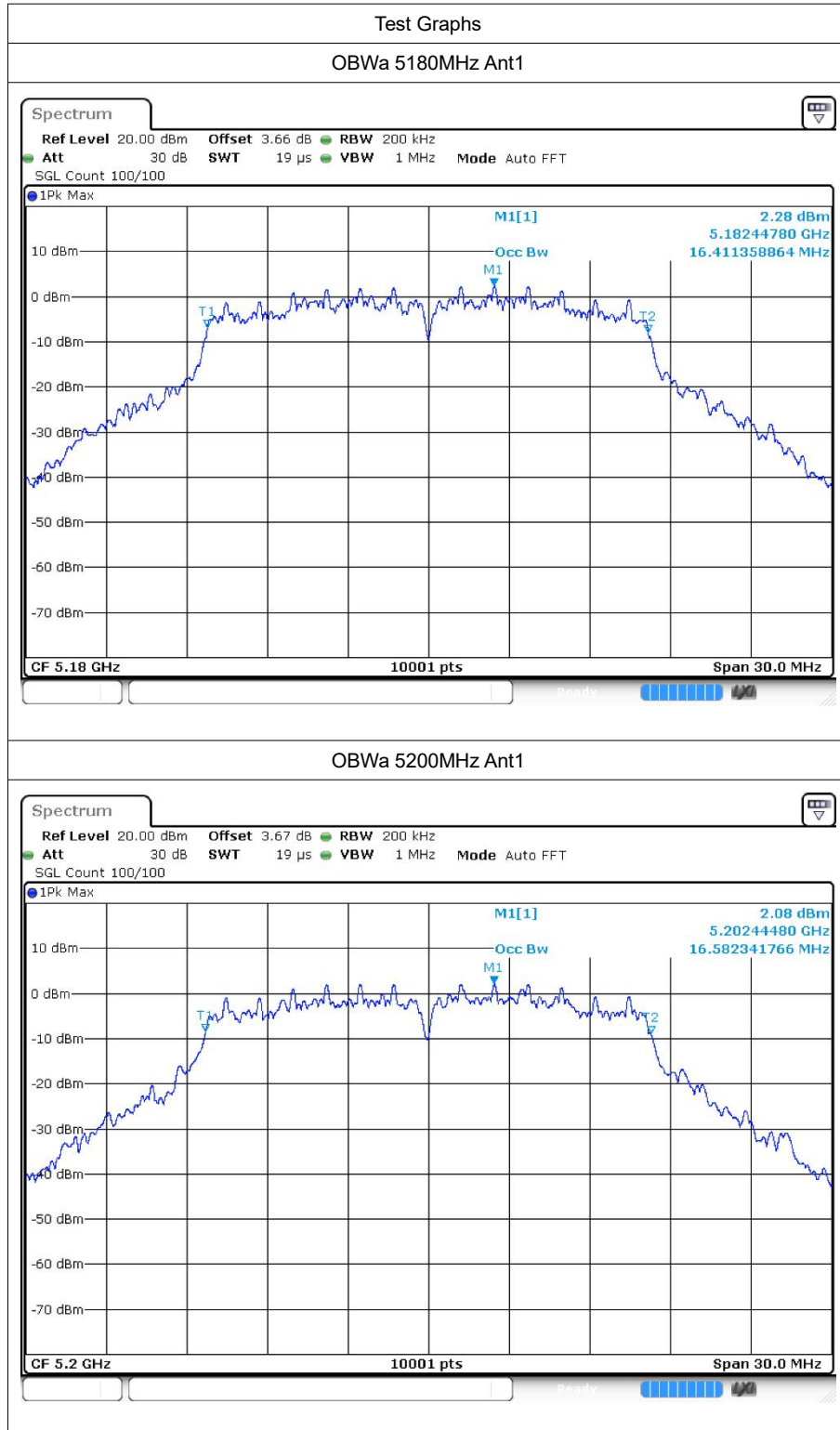


## 4 Occupied Channel Bandwidth

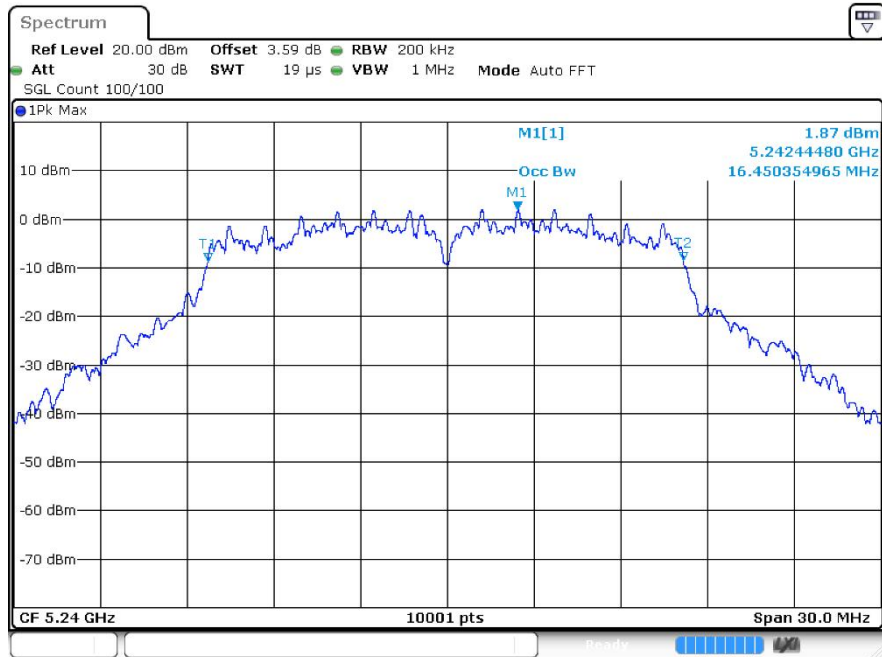
### 4.1 Test Result

| Mode | Frequency (MHz) | Antenna | 99% OBW (MHz) |
|------|-----------------|---------|---------------|
| a    | 5180            | Ant1    | 16.411        |
| a    | 5200            | Ant1    | 16.582        |
| a    | 5240            | Ant1    | 16.45         |
| n20  | 5180            | Ant1    | 17.539        |
| n20  | 5200            | Ant1    | 17.611        |
| n20  | 5240            | Ant1    | 17.602        |
| n40  | 5190            | Ant1    | 35.936        |
| n40  | 5230            | Ant1    | 36.134        |
| ac20 | 5180            | Ant1    | 17.584        |
| ac20 | 5200            | Ant1    | 17.545        |
| ac20 | 5240            | Ant1    | 17.62         |
| ac40 | 5190            | Ant1    | 36.044        |
| ac40 | 5230            | Ant1    | 35.978        |
| ac80 | 5210            | Ant1    | 75.088        |

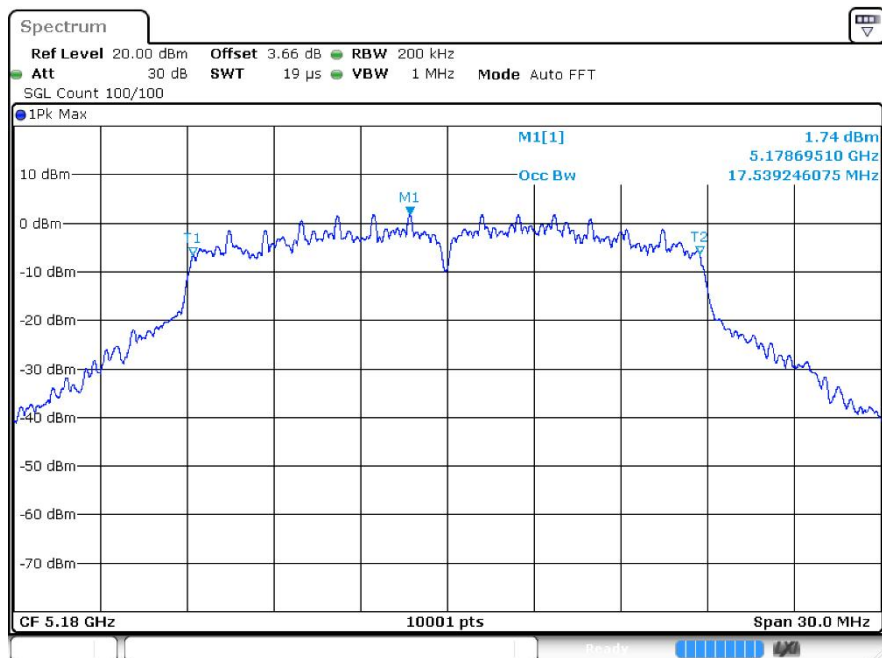
## 4.2 Test Graphs



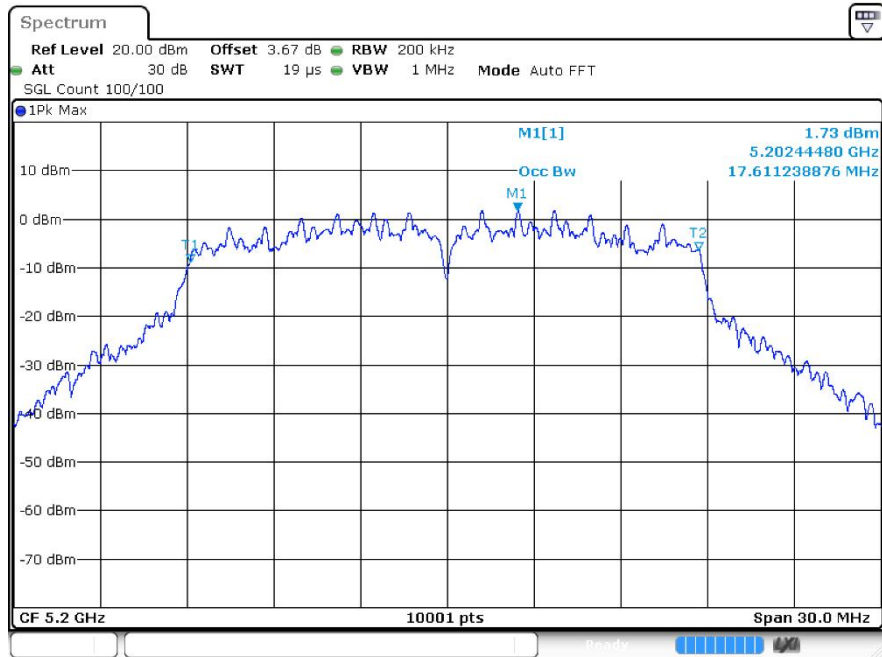
## OBWa 5240MHz Ant1



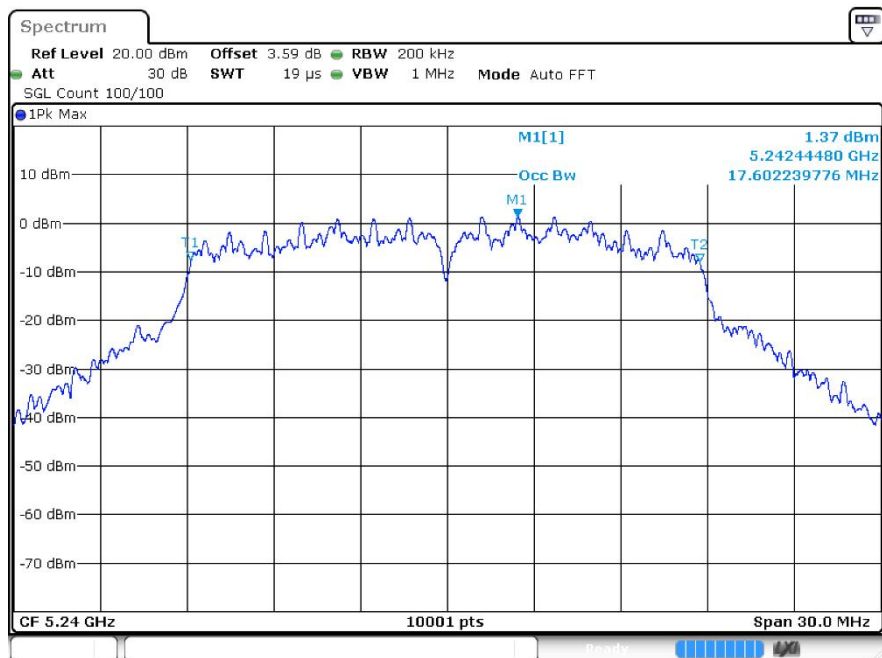
## OBW n20 5180MHz Ant1



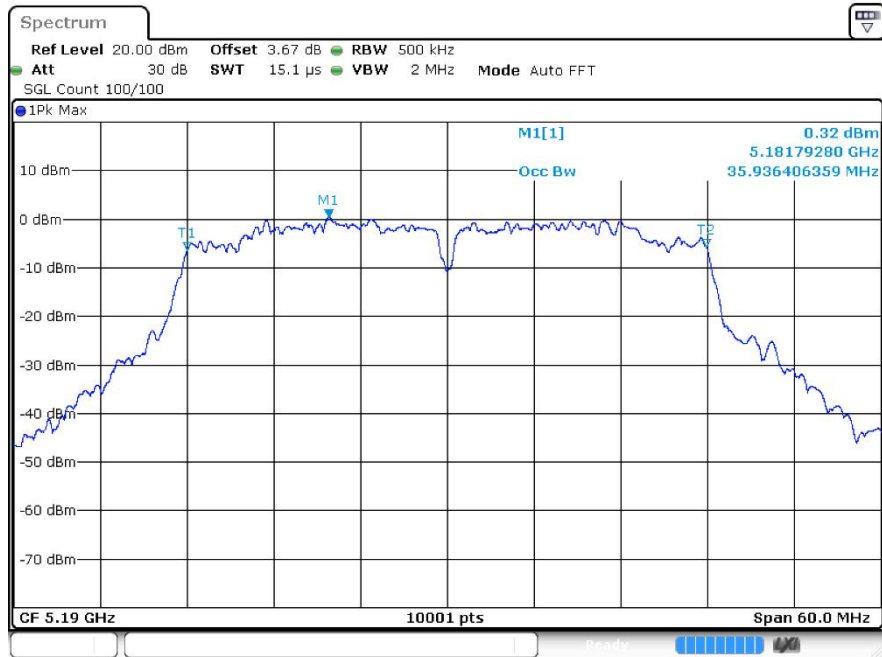
OBW n20 5200MHz Ant1



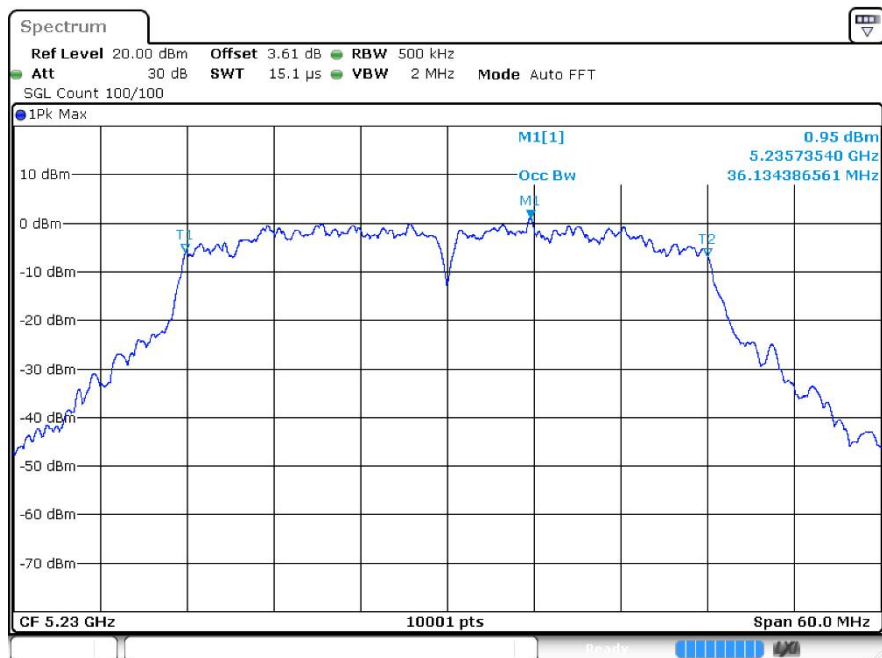
OBW n20 5240MHz Ant1



## OBWn40 5190MHz Ant1

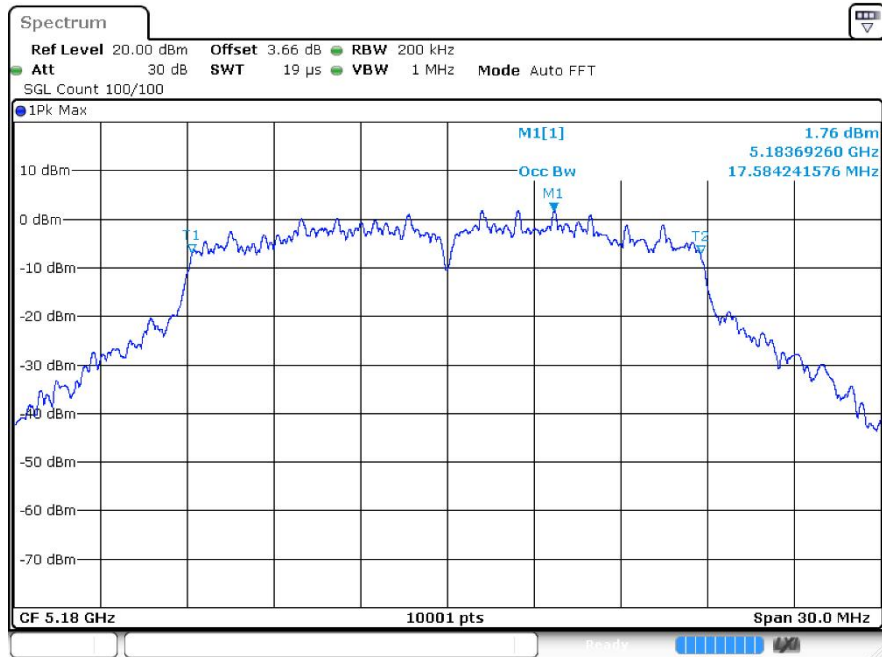


## OBWn40 5230MHz Ant1

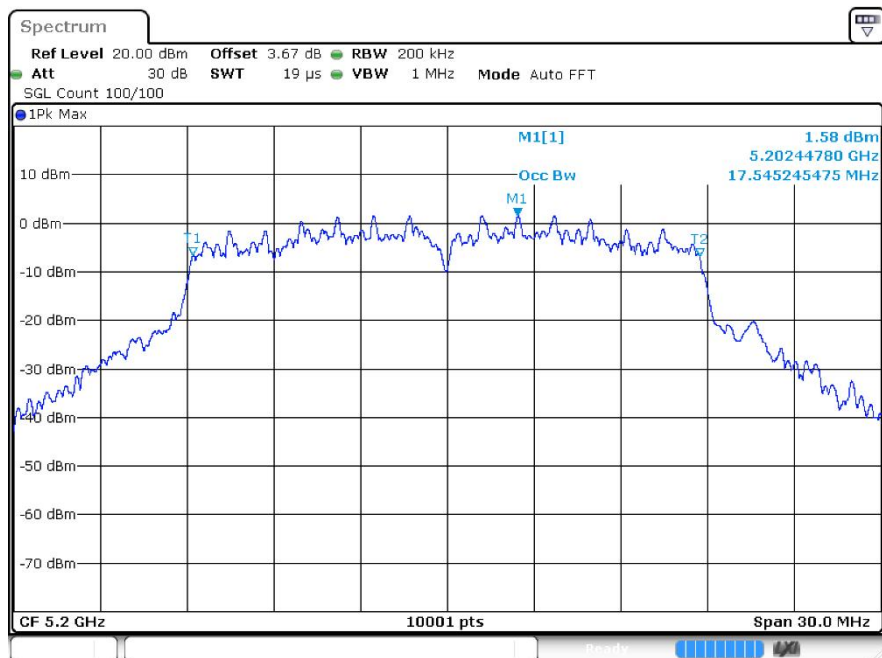




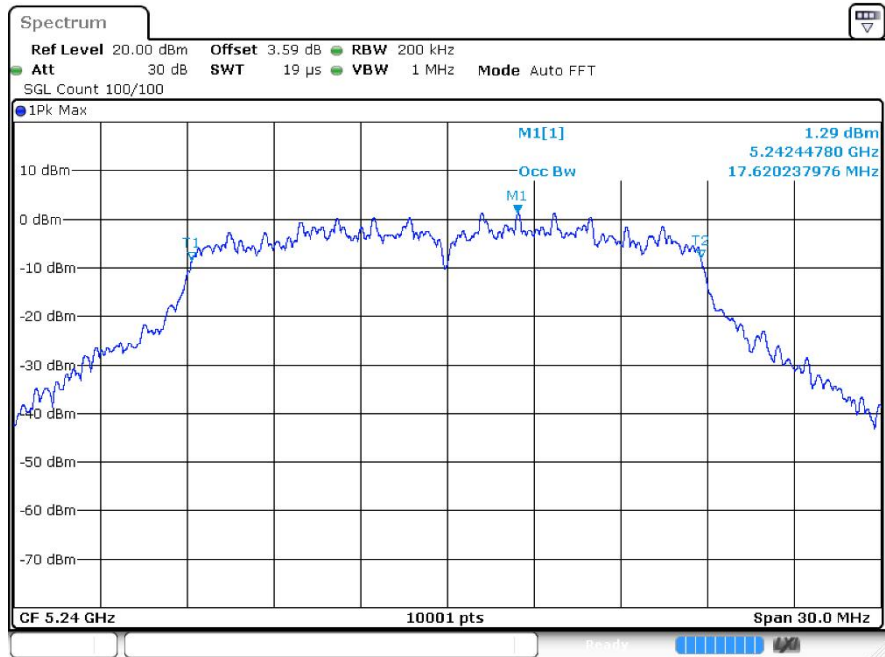
OBW ac20 5180MHz Ant1



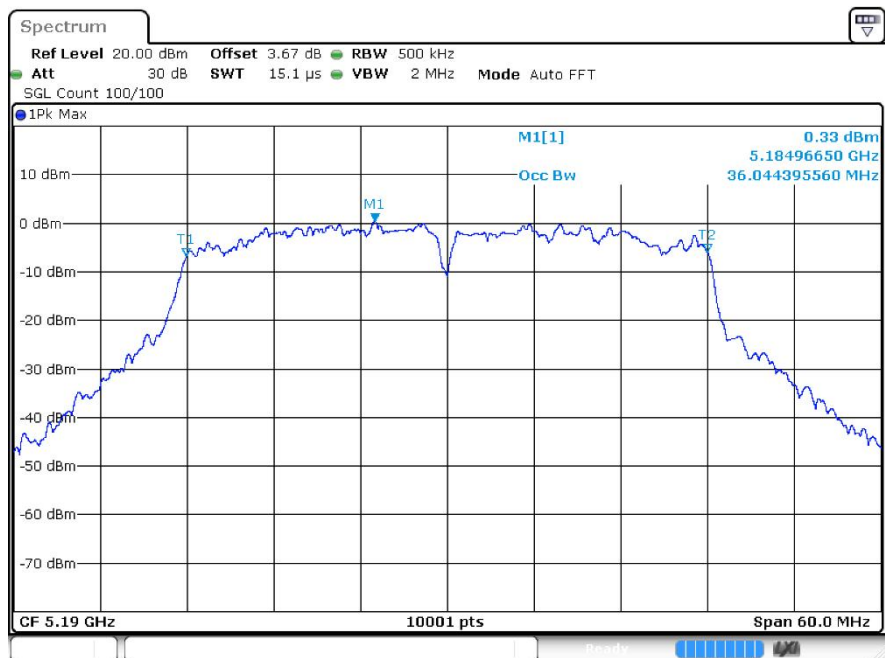
OBW ac20 5200MHz Ant1



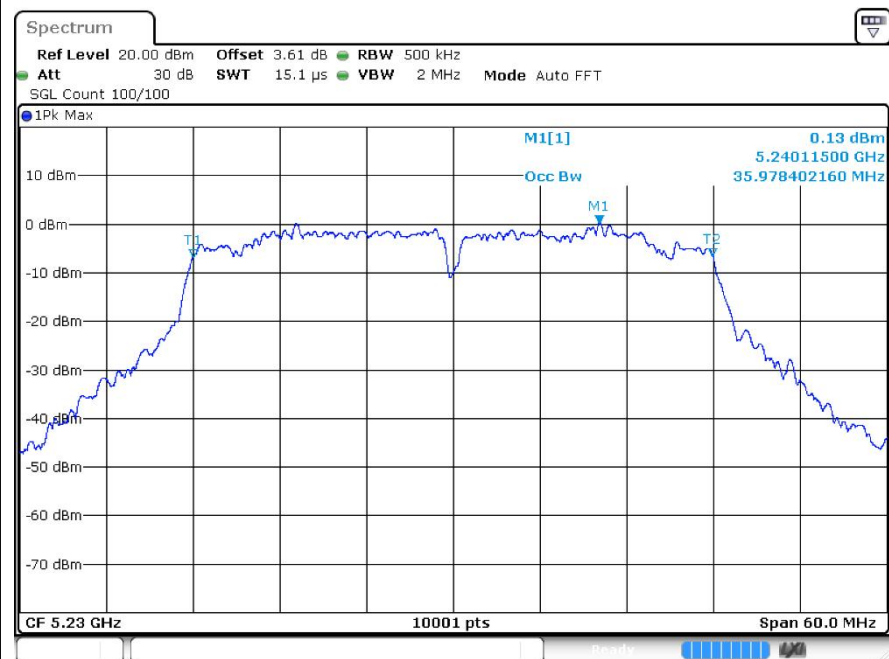
OBW ac20 5240MHz Ant1



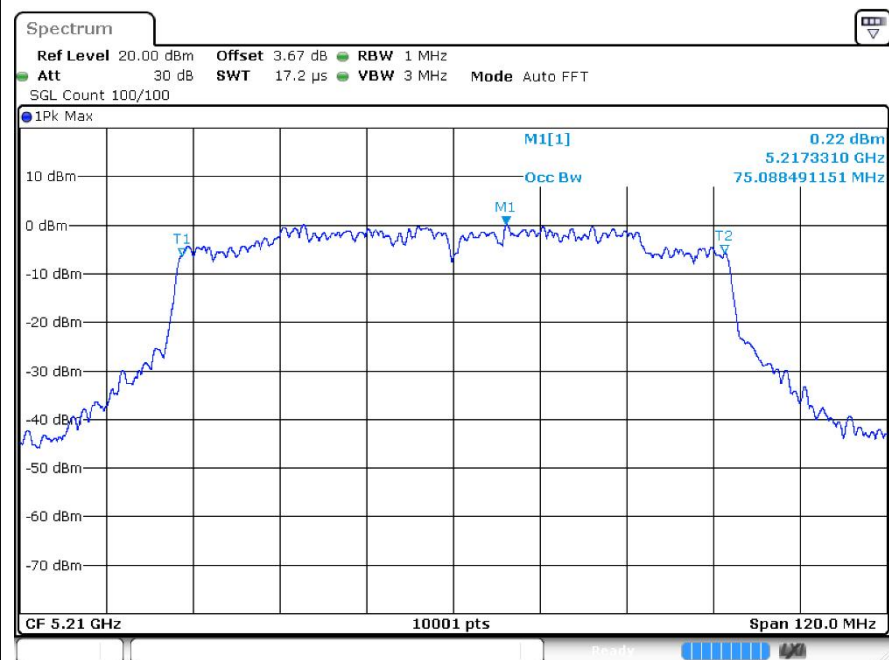
OBWac40 5190MHz Ant1



OBWac40 5230MHz Ant1



OBWac80 5210MHz Ant1



## 5 Maximum Power Spectral Density Level

### 5.1 Test Result

| Mode | Frequency (MHz) | Antenna | Conducted PSD (dBm) | Duty Factor (dB) | Total PSD (dBm) | Limit (dBm) | Verdict |
|------|-----------------|---------|---------------------|------------------|-----------------|-------------|---------|
| a    | 5180            | Ant1    | 0.07                | 0.61             | 0.68            | 11          | Pass    |
| a    | 5200            | Ant1    | 0.5                 | 0.6              | 1.1             | 11          | Pass    |
| a    | 5240            | Ant1    | -0.49               | 0.6              | 0.11            | 11          | Pass    |
| n20  | 5180            | Ant1    | -0.36               | 0.57             | 0.21            | 11          | Pass    |
| n20  | 5200            | Ant1    | -0.43               | 0.57             | 0.14            | 11          | Pass    |
| n20  | 5240            | Ant1    | -0.67               | 0.57             | -0.1            | 11          | Pass    |
| n40  | 5190            | Ant1    | -4.15               | 0.55             | -3.6            | 11          | Pass    |
| n40  | 5230            | Ant1    | -5.11               | 0.55             | -4.56           | 11          | Pass    |
| ac20 | 5180            | Ant1    | -1.42               | 0.6              | -0.82           | 11          | Pass    |
| ac20 | 5200            | Ant1    | -1.23               | 0.59             | -0.64           | 11          | Pass    |
| ac20 | 5240            | Ant1    | -1.12               | 0.59             | -0.53           | 11          | Pass    |
| ac40 | 5190            | Ant1    | -4.98               | 0.6              | -4.38           | 11          | Pass    |
| ac40 | 5230            | Ant1    | -4.33               | 0.67             | -3.66           | 11          | Pass    |
| ac80 | 5210            | Ant1    | -7.53               | 0.58             | -6.95           | 11          | Pass    |

## 5.2 Test Graphs

