



## Appendix E

### RF Test Data for 5.8GWIFI(Conducted Measurement)

Product Name: Dash camera

Trade Mark: N/A

Test Model: M820

#### Environmental Conditions

|                    |             |
|--------------------|-------------|
| Temperature:       | 25.4° C     |
| Relative Humidity: | 52.4%       |
| ATM Pressure:      | 100.0 kPa   |
| Test Engineer:     | Emiya lin   |
| Supervised by:     | Simba Haung |



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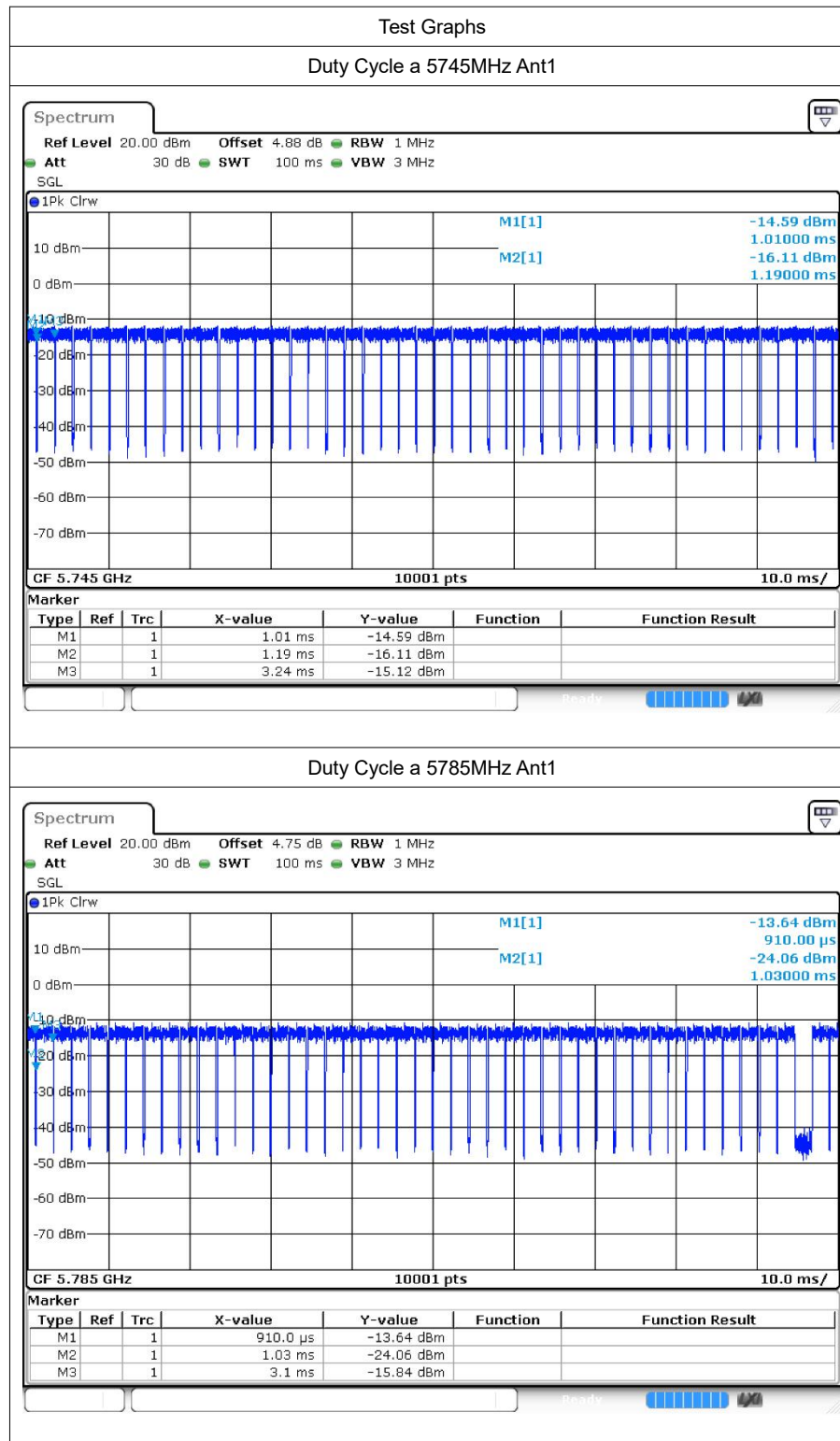


# 1 Duty Cycle

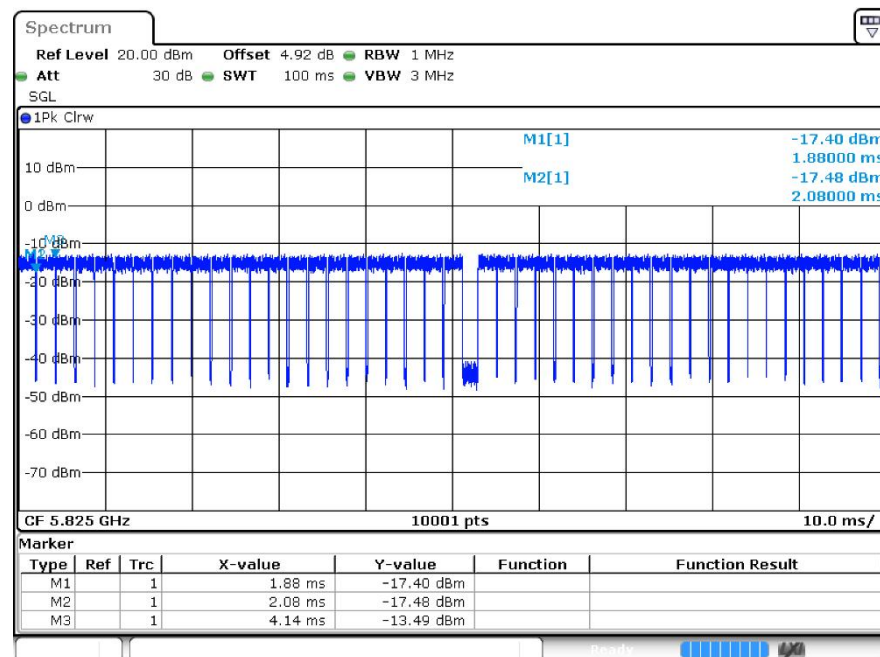
## 1.1 Test Result

| Mode | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|------|-----------------|---------|----------------|------------------------|-----------|
| a    | 5745            | Ant1    | 92.57          | 0.34                   | 0.49      |
| a    | 5785            | Ant1    | 91.15          | 0.4                    | 0.48      |
| a    | 5825            | Ant1    | 91.26          | 0.4                    | 0.49      |
| n20  | 5745            | Ant1    | 89.52          | 0.48                   | 0.52      |
| n20  | 5785            | Ant1    | 90.79          | 0.42                   | 0.52      |
| n20  | 5825            | Ant1    | 90.59          | 0.43                   | 0.52      |
| n40  | 5755            | Ant1    | 80.93          | 0.92                   | 1.1       |
| n40  | 5795            | Ant1    | 81.12          | 0.91                   | 1.1       |

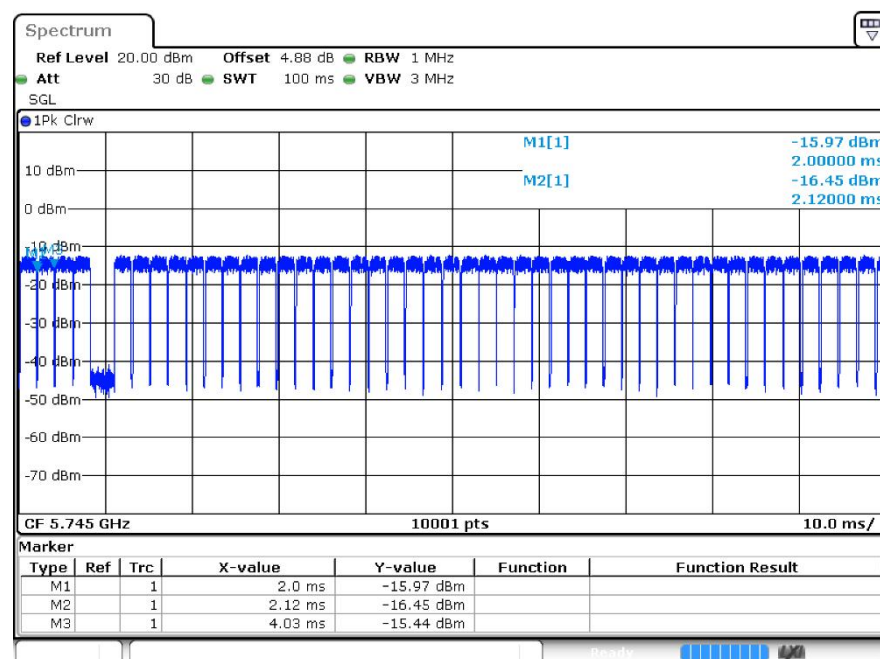
## 1.2 Test Graphs



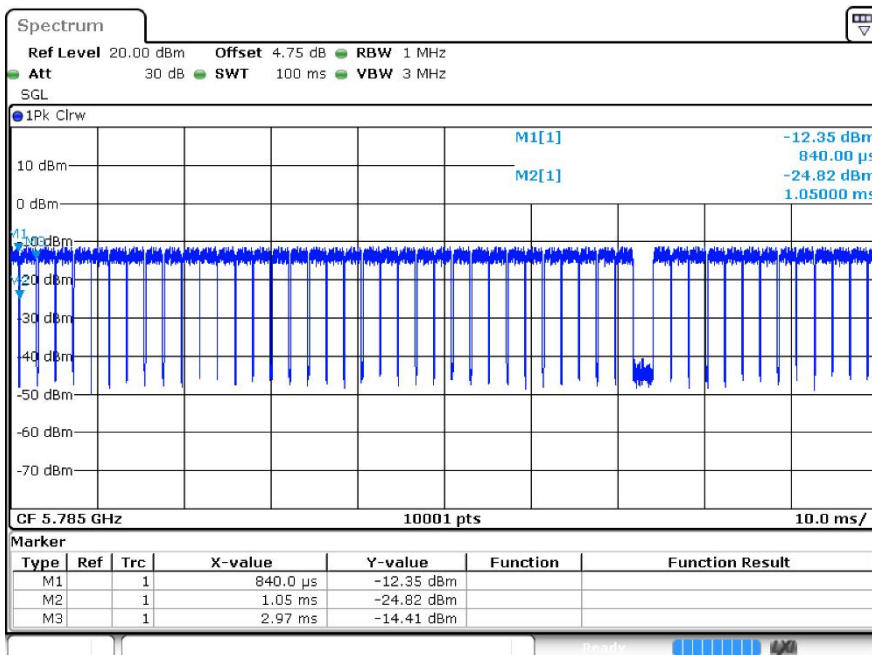
## Duty Cycle a 5825MHz Ant1



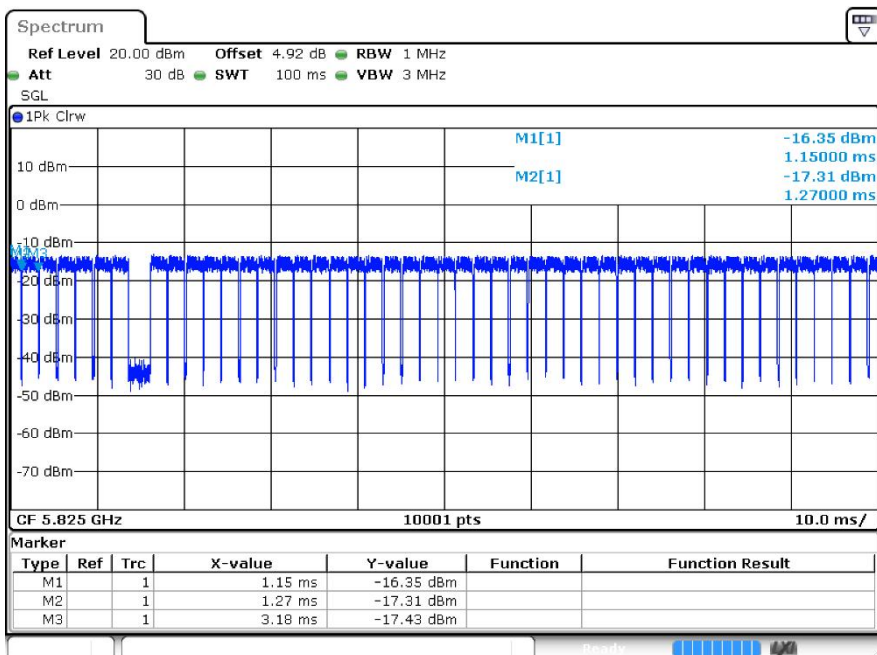
## Duty Cycle n20 5745MHz Ant1



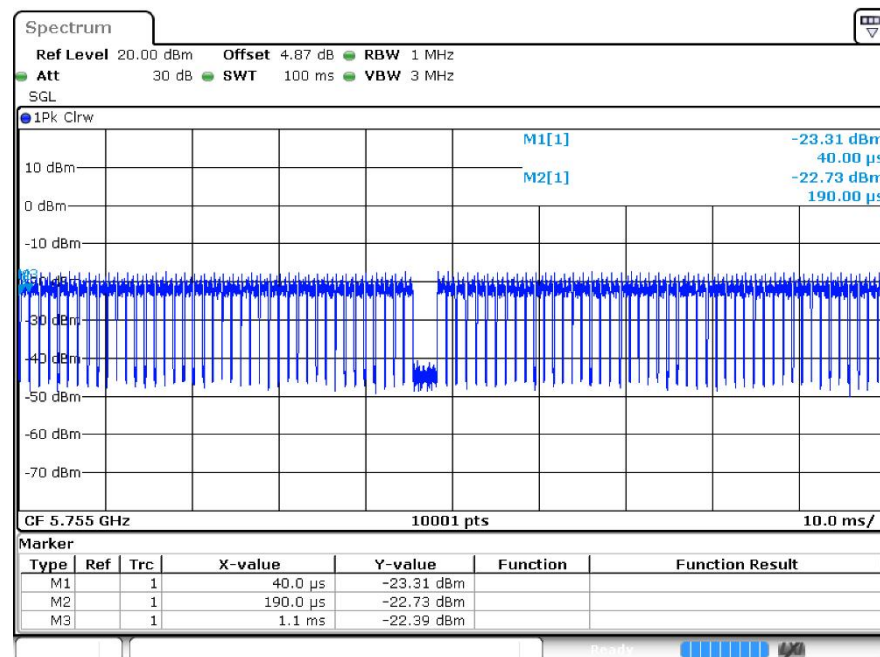
## Duty Cycle n20 5785MHz Ant1



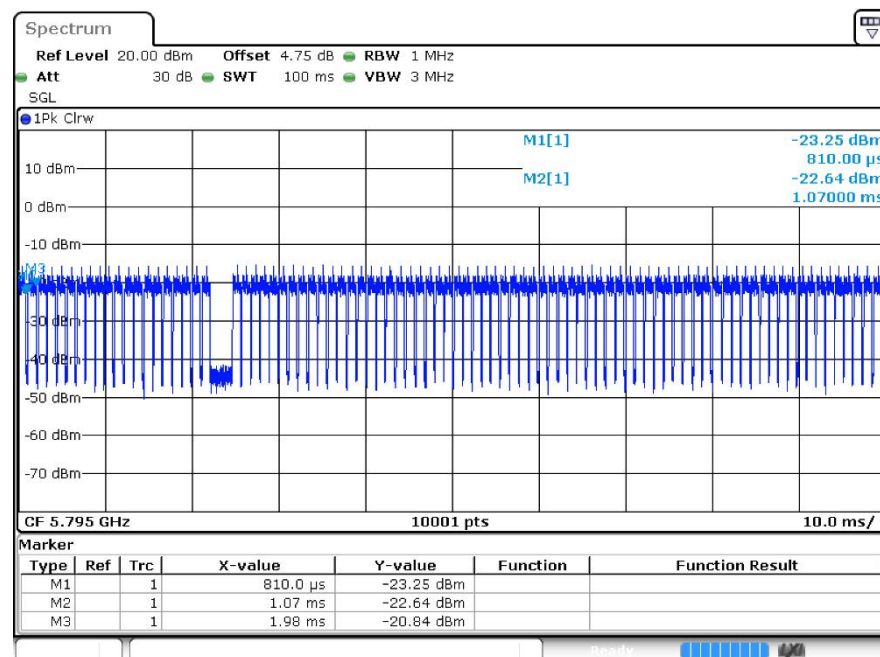
## Duty Cycle n20 5825MHz Ant1



## Duty Cycle n40 5755MHz Ant1



## Duty Cycle n40 5795MHz Ant1



## 2 Maximum Conducted Output Power

### 2.1 Test Result

| Mode | Frequency<br>(MHz) | Antenna | Conducted Power<br>(dBm) | Limit<br>(dBm) | Verdict |
|------|--------------------|---------|--------------------------|----------------|---------|
| a    | 5745               | Ant1    | -5.21                    | 30             | Pass    |
| a    | 5785               | Ant1    | -4.65                    | 30             | Pass    |
| a    | 5825               | Ant1    | -6.27                    | 30             | Pass    |
| n20  | 5745               | Ant1    | -5.56                    | 30             | Pass    |
| n20  | 5785               | Ant1    | -4.52                    | 30             | Pass    |
| n20  | 5825               | Ant1    | -6.45                    | 30             | Pass    |
| n40  | 5755               | Ant1    | -5.49                    | 30             | Pass    |
| n40  | 5795               | Ant1    | -5.24                    | 30             | Pass    |

Note:

The duty factor has been compensated into the result.

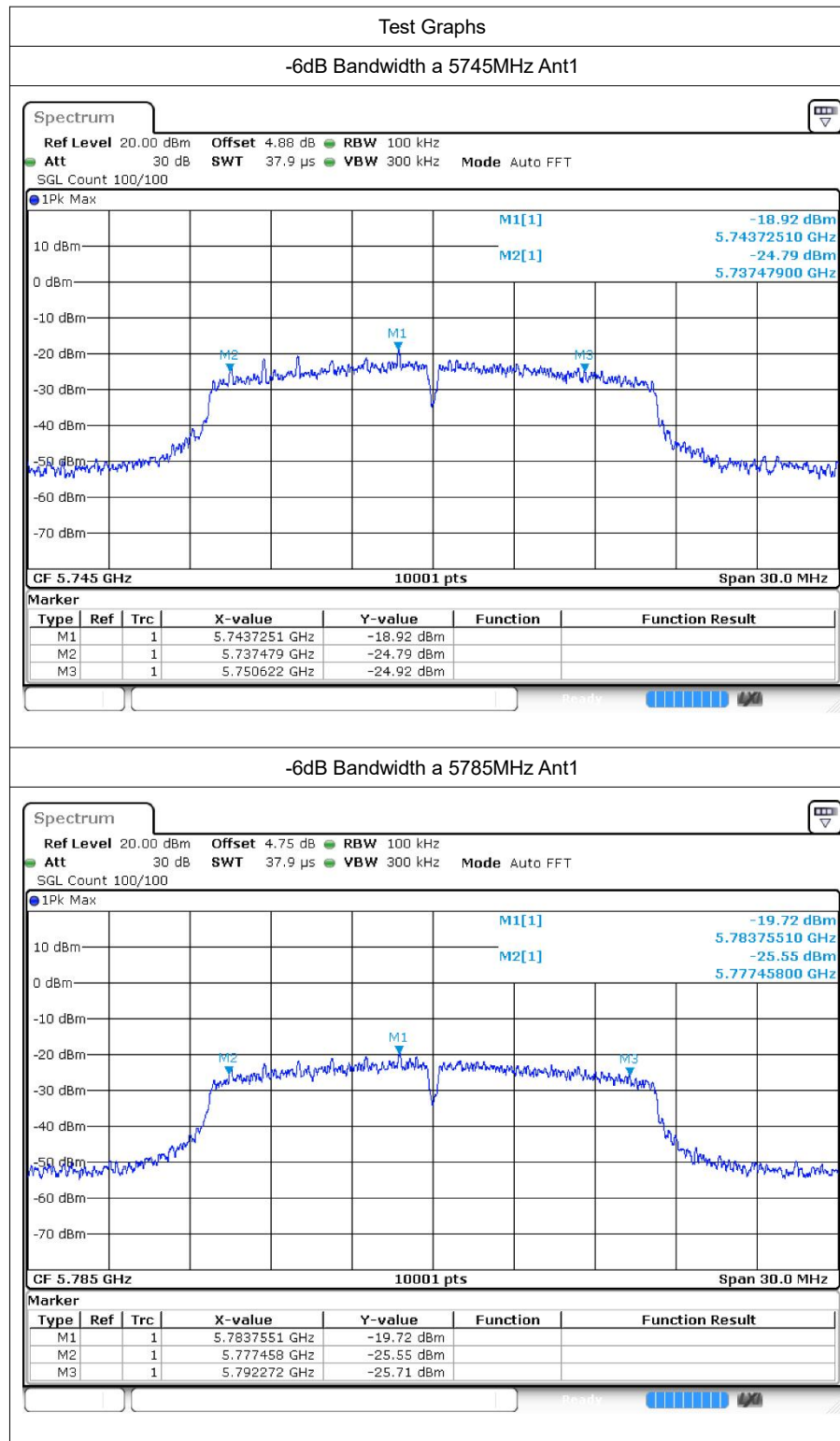


### 3 -6dB Bandwidth

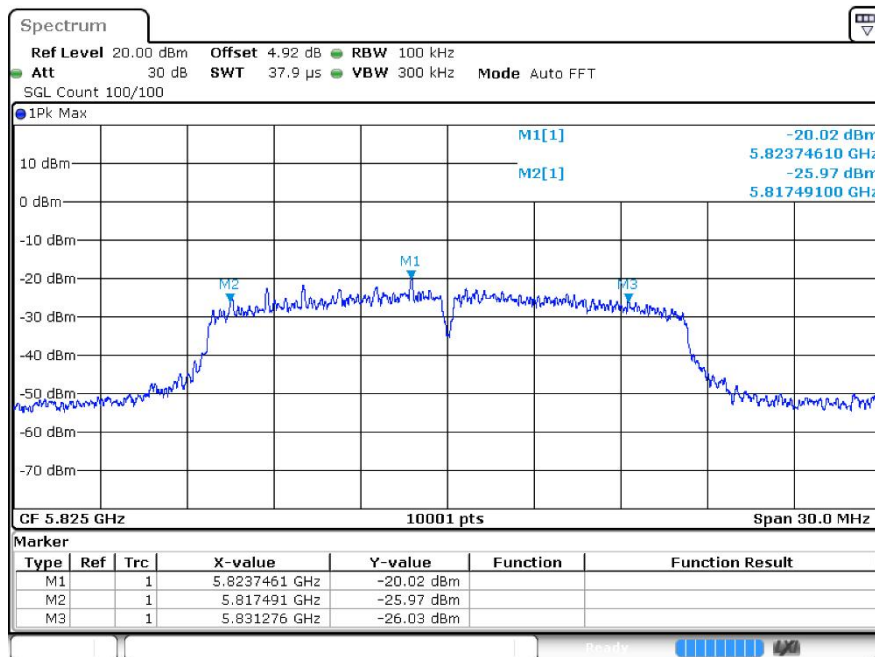
#### 3.1 Test Result

| Mode | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|------|-----------------|---------|-----------------------|-----------------------------|---------|
| a    | 5745            | Ant1    | 13.143                | 0.5                         | Pass    |
| a    | 5785            | Ant1    | 14.814                | 0.5                         | Pass    |
| a    | 5825            | Ant1    | 13.785                | 0.5                         | Pass    |
| n20  | 5745            | Ant1    | 14.037                | 0.5                         | Pass    |
| n20  | 5785            | Ant1    | 16.026                | 0.5                         | Pass    |
| n20  | 5825            | Ant1    | 14.676                | 0.5                         | Pass    |
| n40  | 5755            | Ant1    | 31.326                | 0.5                         | Pass    |
| n40  | 5795            | Ant1    | 26.304                | 0.5                         | Pass    |

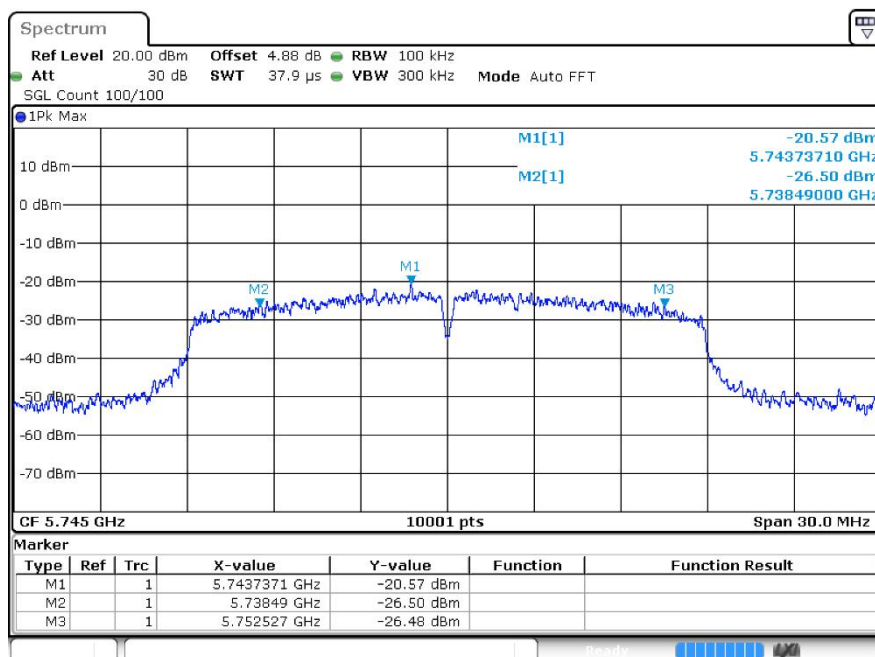
## 3.2 Test Graphs



## -6dB Bandwidth a 5825MHz Ant1

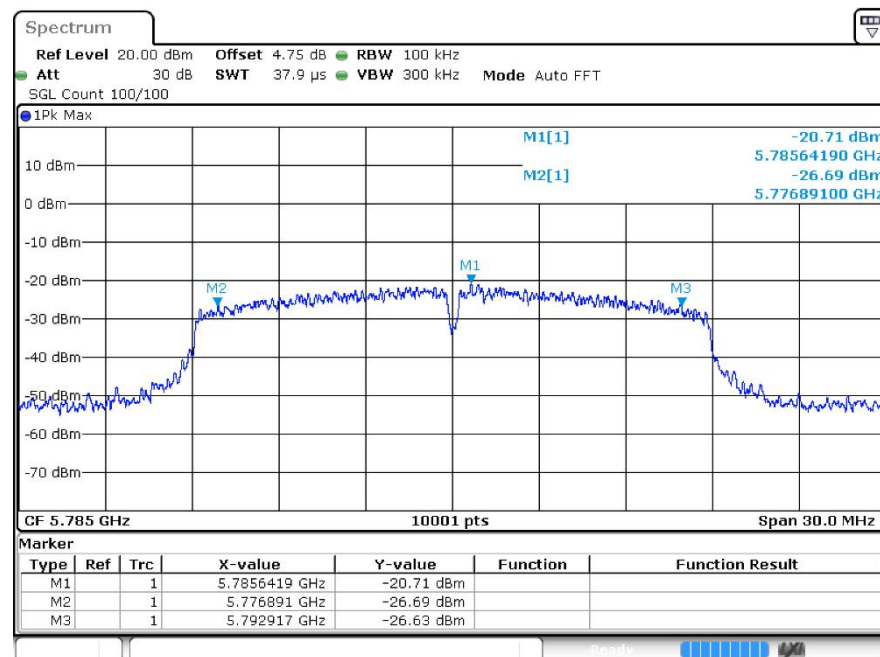


## -6dB Bandwidth n20 5745MHz Ant1

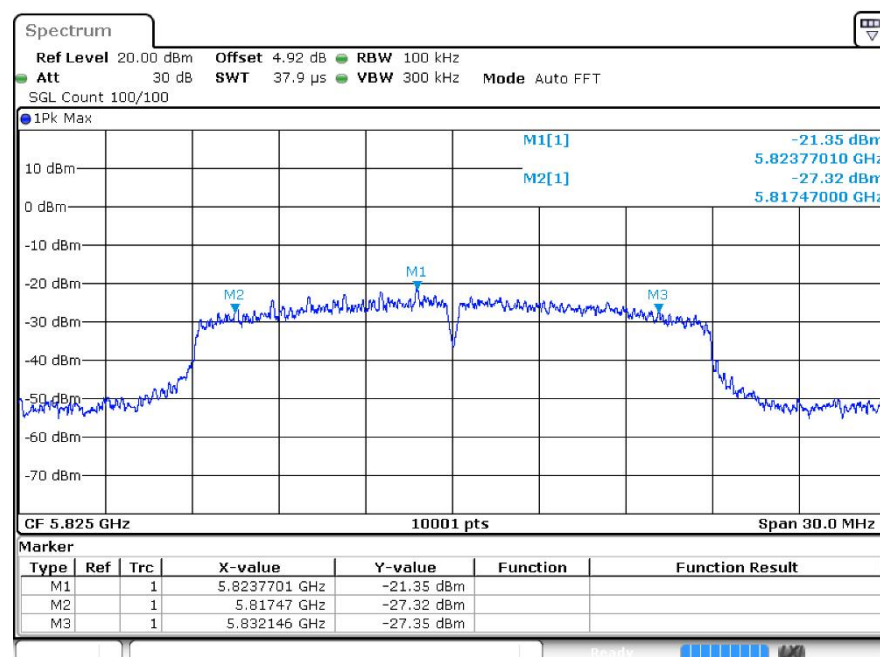




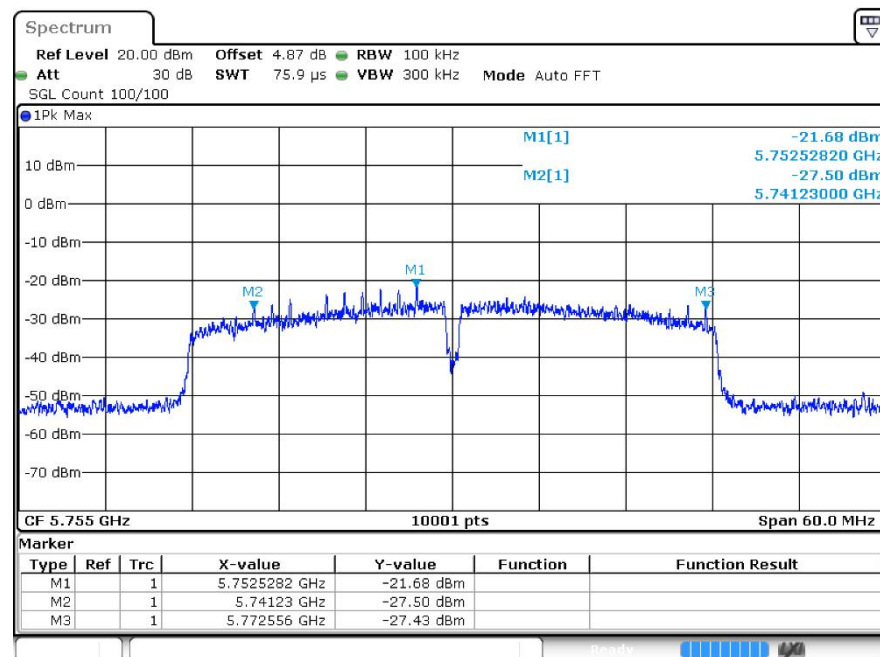
-6dB Bandwidth n20 5785MHz Ant1



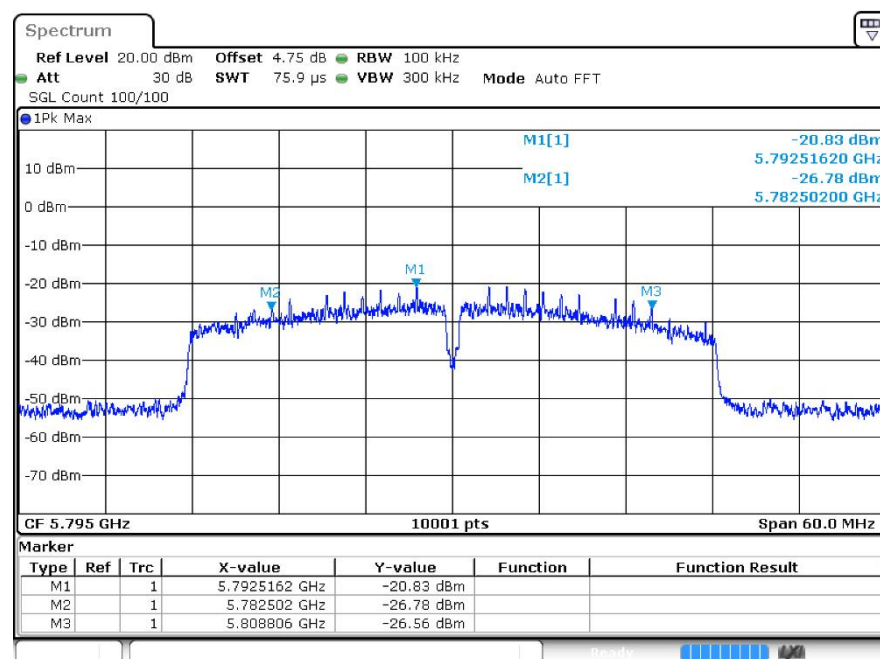
-6dB Bandwidth n20 5825MHz Ant1



## -6dB Bandwidth n40 5755MHz Ant1



## -6dB Bandwidth n40 5795MHz Ant1



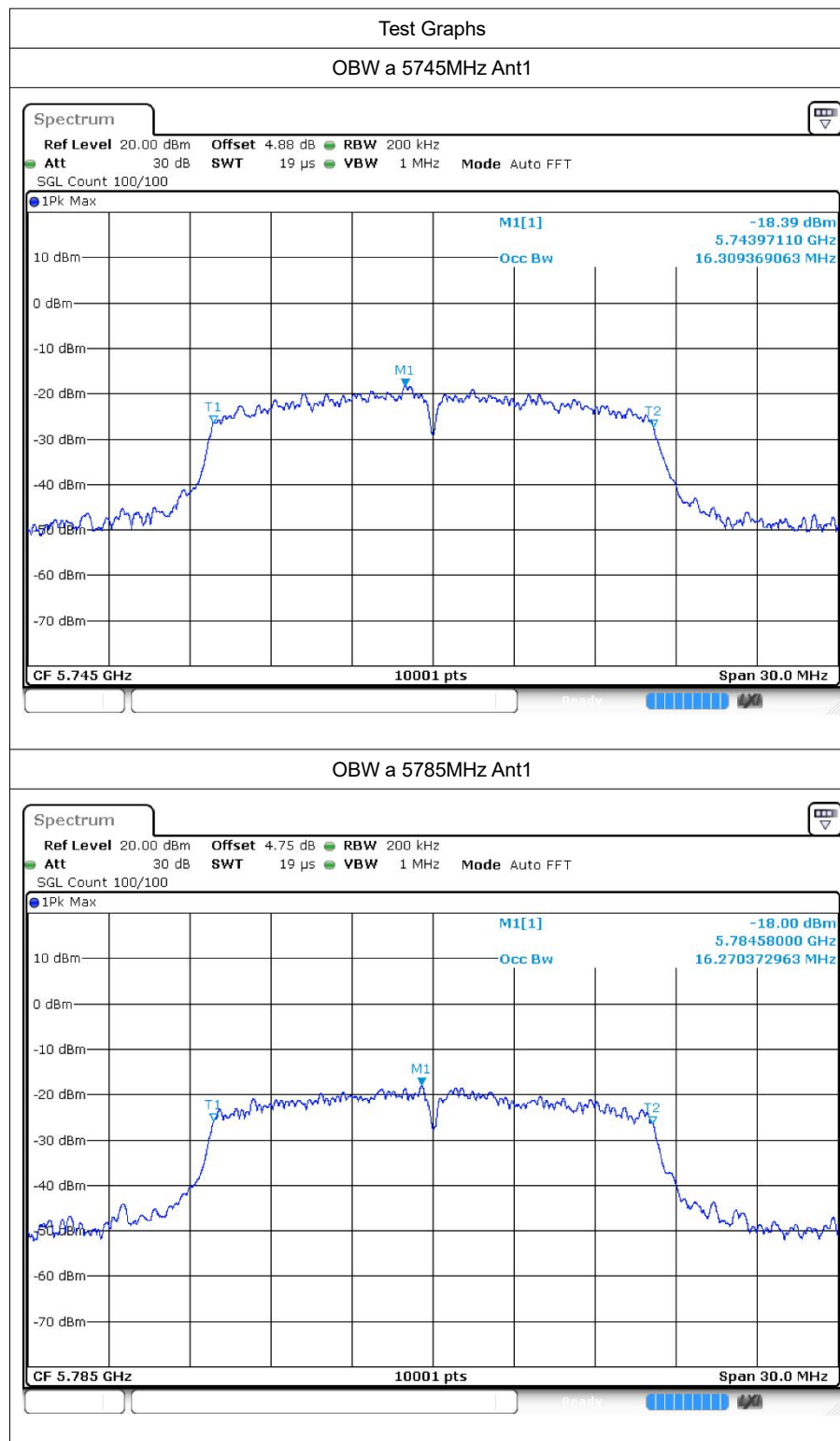


## 4 Occupied Channel Bandwidth

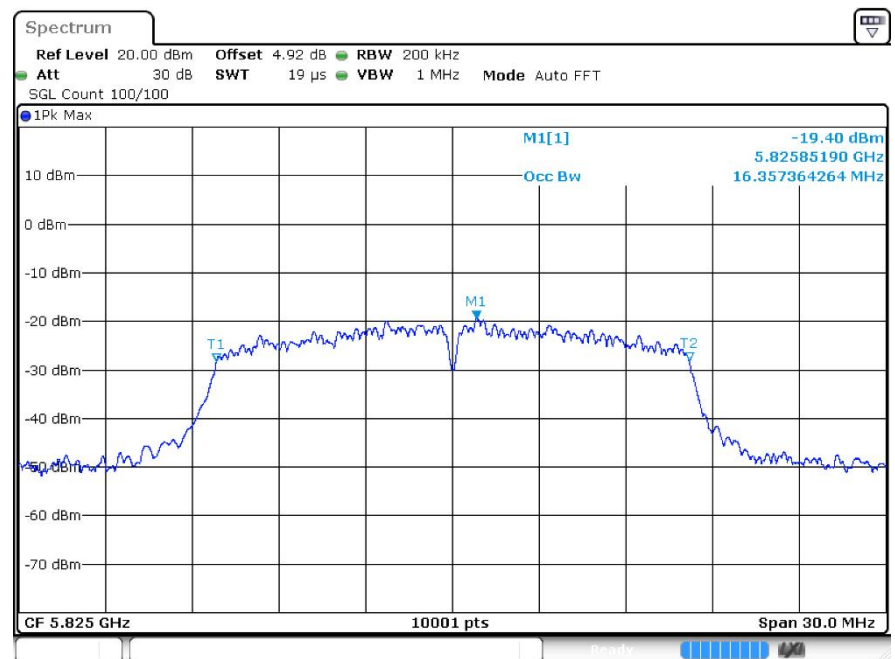
### 4.1 Test Result

| Mode | Frequency (MHz) | Antenna | 99% OBW (MHz) |
|------|-----------------|---------|---------------|
| a    | 5745            | Ant1    | 16.309        |
| a    | 5785            | Ant1    | 16.27         |
| a    | 5825            | Ant1    | 16.357        |
| n20  | 5745            | Ant1    | 17.392        |
| n20  | 5785            | Ant1    | 17.419        |
| n20  | 5825            | Ant1    | 17.383        |
| n40  | 5755            | Ant1    | 35.696        |
| n40  | 5795            | Ant1    | 35.42         |

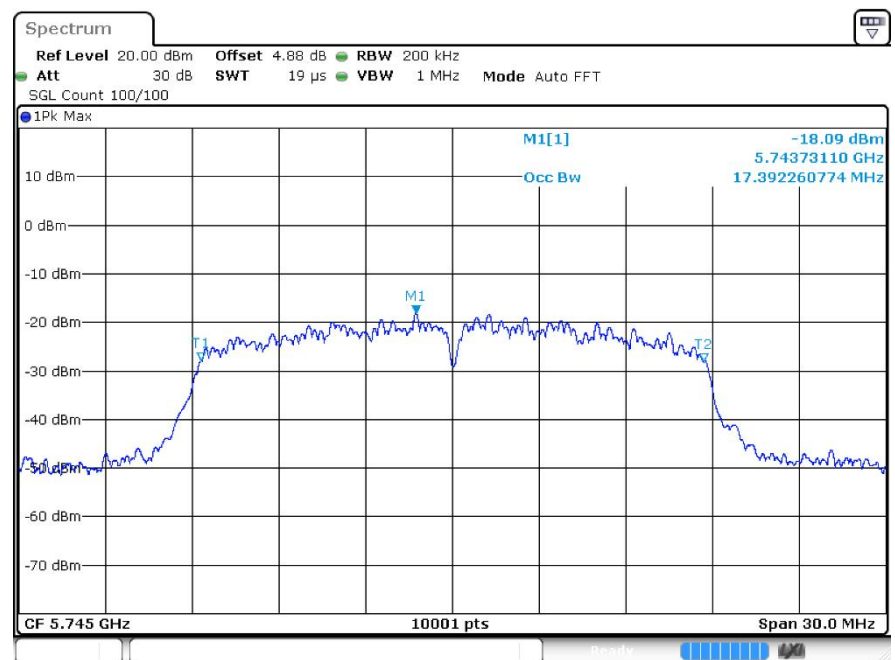
## 4.2 Test Graphs



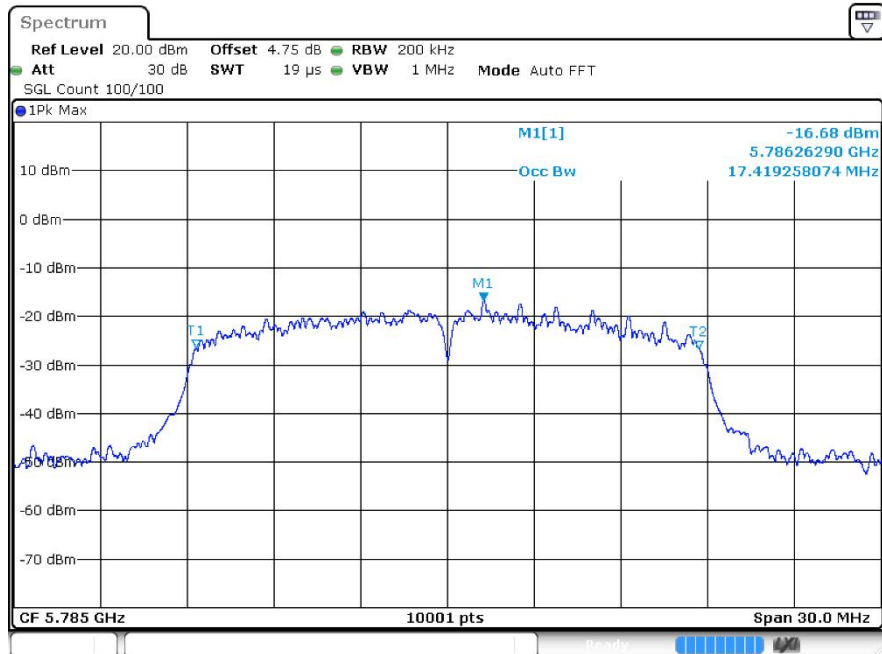
OBW a 5825MHz Ant1



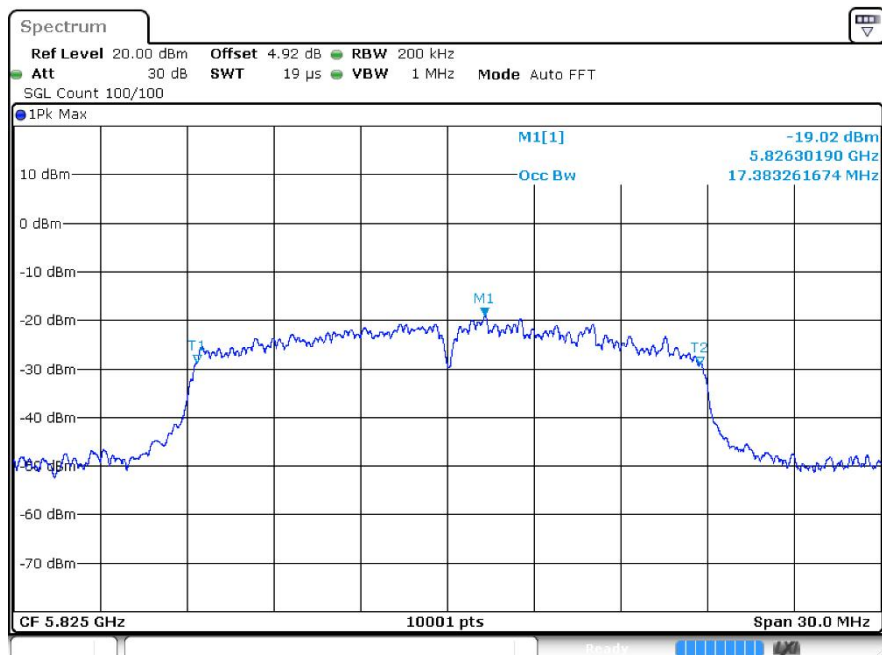
OBW n20 5745MHz Ant1



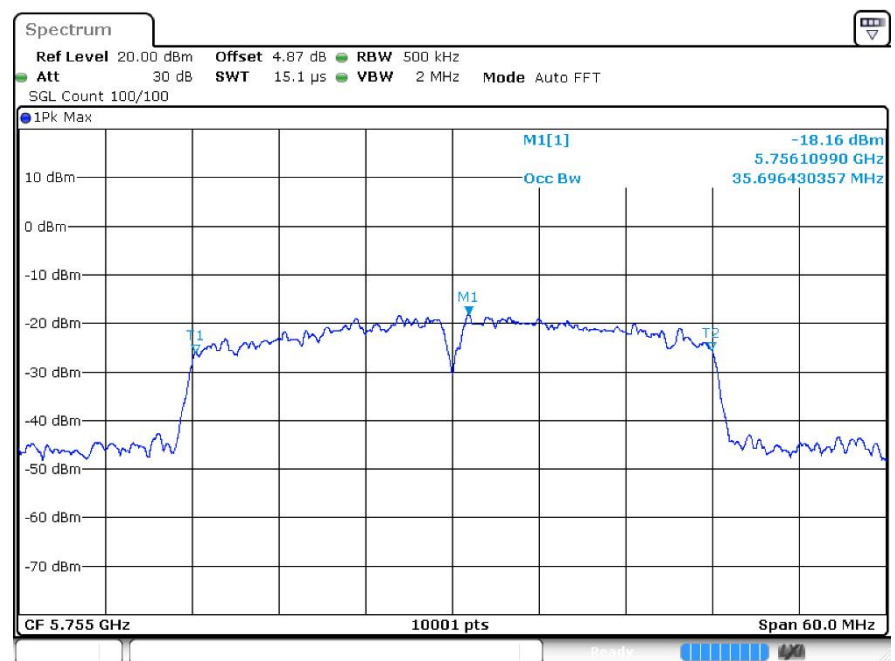
OBW n20 5785MHz Ant1



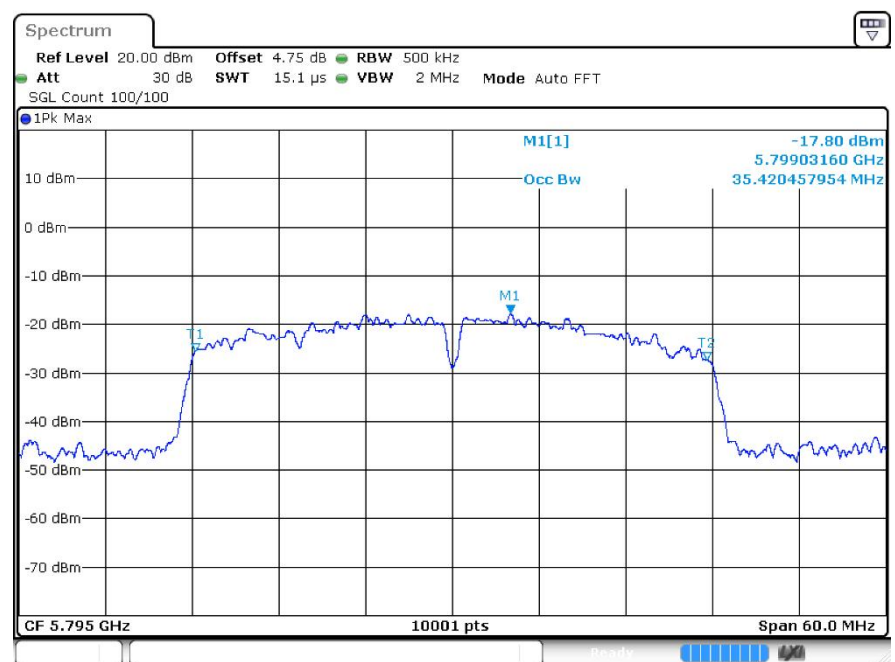
OBW n20 5825MHz Ant1



## OBW n40 5755MHz Ant1



## OBW n40 5795MHz Ant1



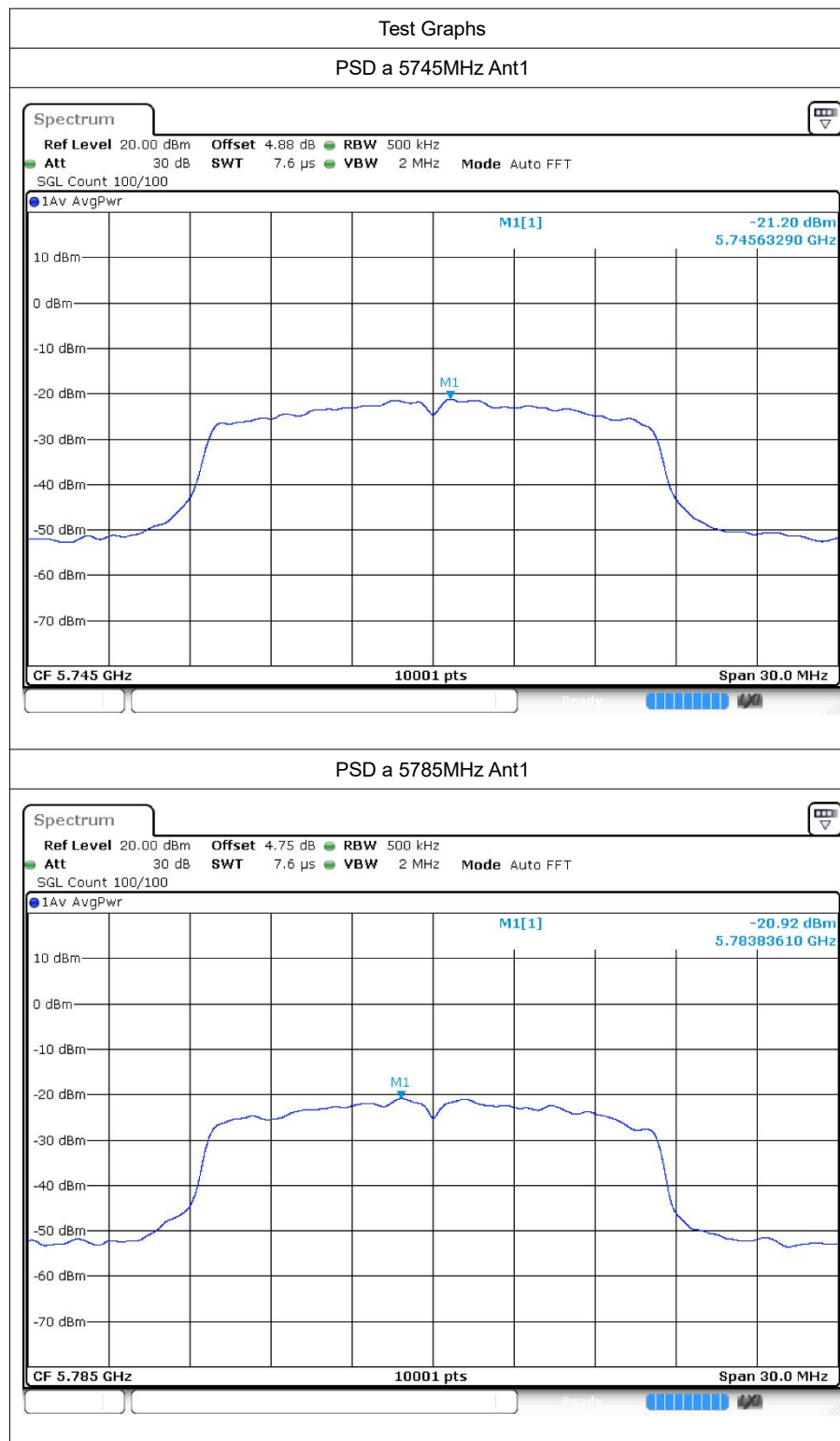


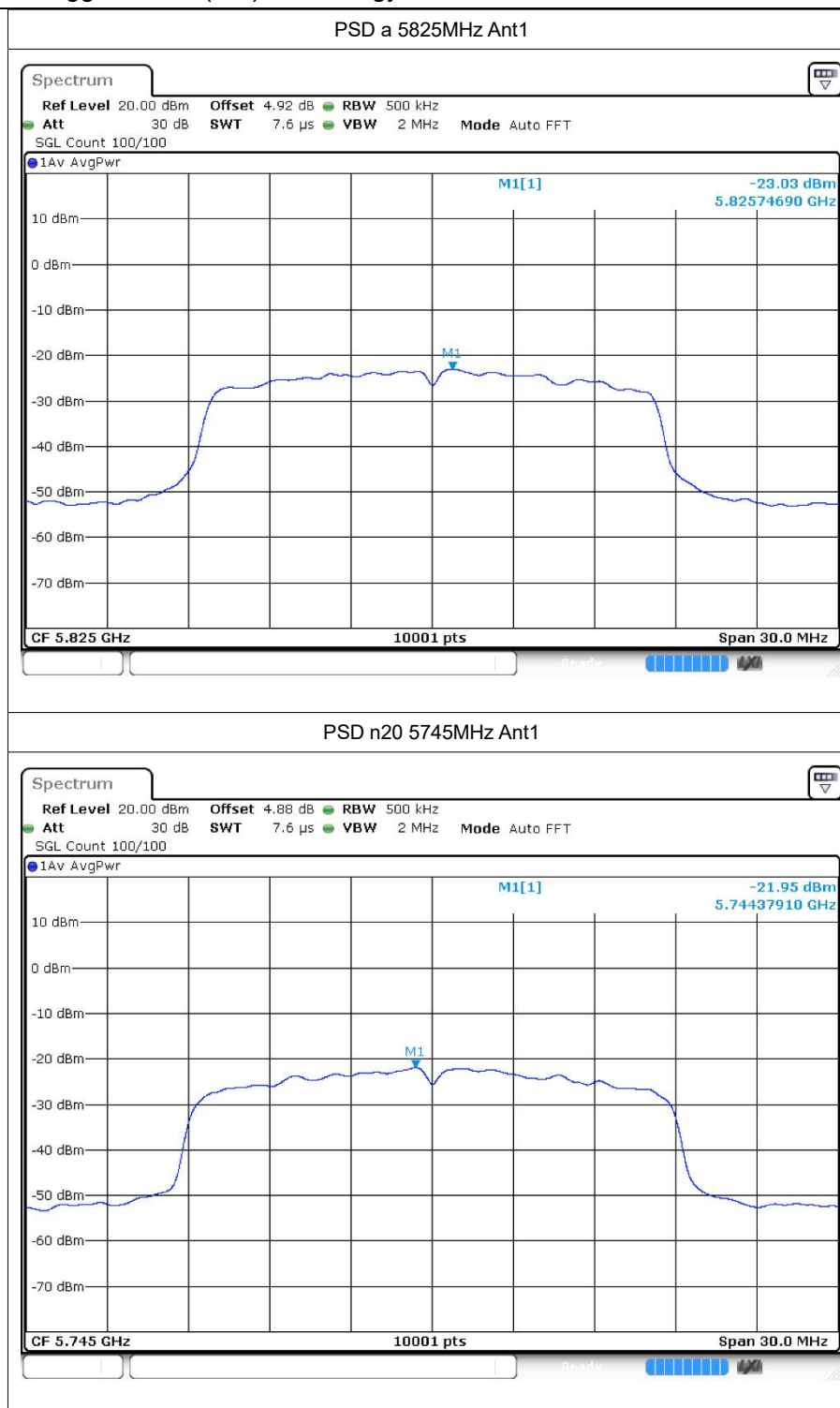
## 5 Maximum Power Spectral Density Level

### 5.1 Test Result

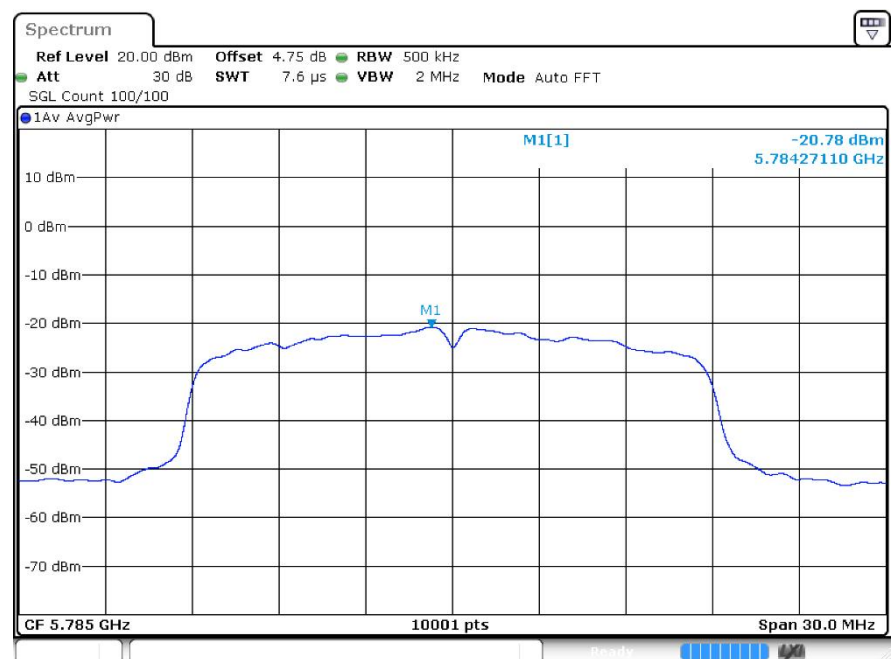
| Mode | Frequency (MHz) | Antenna | Conducted PSD (dBm) | Duty Factor (dB) | Total PSD (dBm) | Limit (dBm) | Verdict |
|------|-----------------|---------|---------------------|------------------|-----------------|-------------|---------|
| a    | 5745            | Ant1    | -21.2               | 0.34             | -20.86          | 30          | Pass    |
| a    | 5785            | Ant1    | -20.92              | 0.4              | -20.52          | 30          | Pass    |
| a    | 5825            | Ant1    | -23.03              | 0.4              | -22.63          | 30          | Pass    |
| n20  | 5745            | Ant1    | -21.95              | 0.48             | -21.47          | 30          | Pass    |
| n20  | 5785            | Ant1    | -20.78              | 0.42             | -20.36          | 30          | Pass    |
| n20  | 5825            | Ant1    | -23.17              | 0.43             | -22.74          | 30          | Pass    |
| n40  | 5755            | Ant1    | -25.32              | 0.92             | -24.4           | 30          | Pass    |
| n40  | 5795            | Ant1    | -24.47              | 0.91             | -23.56          | 30          | Pass    |

## 5.2 Test Graphs

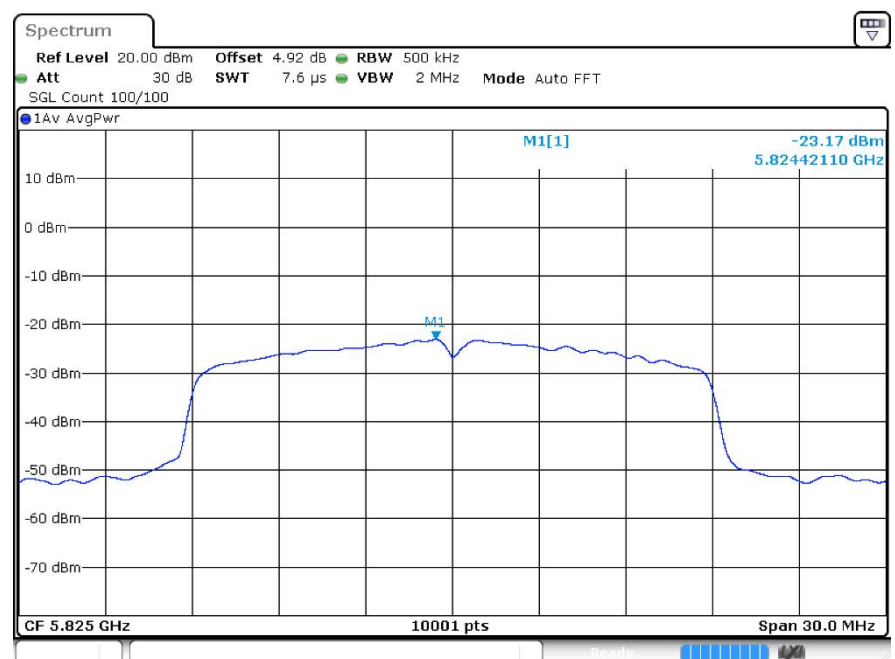




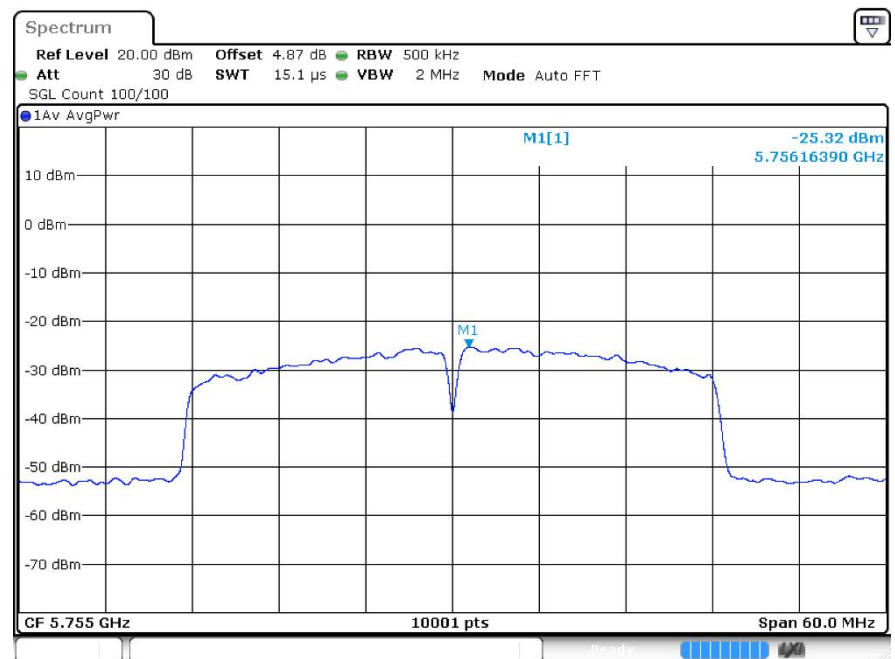
PSD n20 5785MHz Ant1



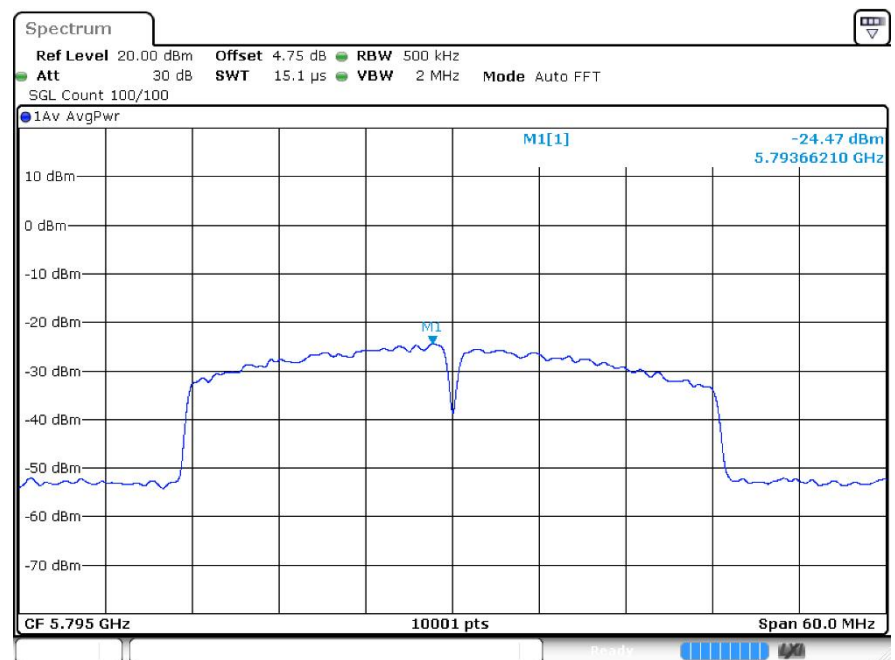
PSD n20 5825MHz Ant1



PSD n40 5755MHz Ant1



PSD n40 5795MHz Ant1





## 6 Frequency Stability

### 6.1 Test Result

| Condition | Mode | Frequency (MHz) | Antenna | Measured Frequency (MHz) | Frequency Error (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
|-----------|------|-----------------|---------|--------------------------|----------------------|-----------------|-------------|---------|
| 20C 21.6V | a    | 5745            | Ant1    | 5745                     | 0                    | 0               | 25          | Pass    |
| 20C 24V   | a    | 5745            | Ant1    | 5744.98                  | -20000               | -3.48           | 25          | Pass    |
| 20C 26.4V | a    | 5745            | Ant1    | 5744.96                  | -40000               | -6.96           | 25          | Pass    |
| -20C 24V  | a    | 5745            | Ant1    | 5744.98                  | -20000               | -3.48           | 25          | Pass    |
| -10C 24V  | a    | 5745            | Ant1    | 5744.98                  | -20000               | -3.48           | 25          | Pass    |
| 0C 24V    | a    | 5745            | Ant1    | 5744.98                  | -20000               | -3.48           | 25          | Pass    |
| 10C 24V   | a    | 5745            | Ant1    | 5745                     | 0                    | 0               | 25          | Pass    |
| 30C 24V   | a    | 5745            | Ant1    | 5745                     | 0                    | 0               | 25          | Pass    |
| 40C 24V   | a    | 5745            | Ant1    | 5744.98                  | -20000               | -3.48           | 25          | Pass    |
| 50C 24V   | a    | 5745            | Ant1    | 5744.98                  | -20000               | -3.48           | 25          | Pass    |
| 20C 21.6V | a    | 5785            | Ant1    | 5784.96                  | -40000               | -6.91           | 25          | Pass    |
| 20C 24V   | a    | 5785            | Ant1    | 5784.96                  | -40000               | -6.91           | 25          | Pass    |
| 20C 26.4V | a    | 5785            | Ant1    | 5784.96                  | -40000               | -6.91           | 25          | Pass    |
| -20C 24V  | a    | 5785            | Ant1    | 5785                     | 0                    | 0               | 25          | Pass    |
| -10C 24V  | a    | 5785            | Ant1    | 5784.96                  | -40000               | -6.91           | 25          | Pass    |
| 0C 24V    | a    | 5785            | Ant1    | 5784.98                  | -20000               | -3.46           | 25          | Pass    |
| 10C 24V   | a    | 5785            | Ant1    | 5784.94                  | -60000               | -10.37          | 25          | Pass    |
| 30C 24V   | a    | 5785            | Ant1    | 5784.94                  | -60000               | -10.37          | 25          | Pass    |
| 40C 24V   | a    | 5785            | Ant1    | 5784.96                  | -40000               | -6.91           | 25          | Pass    |
| 50C 24V   | a    | 5785            | Ant1    | 5784.96                  | -40000               | -6.91           | 25          | Pass    |
| 20C 21.6V | a    | 5825            | Ant1    | 5825.04                  | 40000                | 6.87            | 25          | Pass    |
| 20C 24V   | a    | 5825            | Ant1    | 5824.94                  | -60000               | -10.3           | 25          | Pass    |
| 20C 26.4V | a    | 5825            | Ant1    | 5825.02                  | 20000                | 3.43            | 25          | Pass    |
| -20C 24V  | a    | 5825            | Ant1    | 5825.04                  | 40000                | 6.87            | 25          | Pass    |
| -10C 24V  | a    | 5825            | Ant1    | 5825                     | 0                    | 0               | 25          | Pass    |
| 0C 24V    | a    | 5825            | Ant1    | 5825                     | 0                    | 0               | 25          | Pass    |
| 10C 24V   | a    | 5825            | Ant1    | 5825.02                  | 20000                | 3.43            | 25          | Pass    |
| 30C 24V   | a    | 5825            | Ant1    | 5825.02                  | 20000                | 3.43            | 25          | Pass    |
| 40C 24V   | a    | 5825            | Ant1    | 5825                     | 0                    | 0               | 25          | Pass    |
| 50C 24V   | a    | 5825            | Ant1    | 5825.02                  | 20000                | 3.43            | 25          | Pass    |
| 20C 21.6V | n20  | 5745            | Ant1    | 5745.14                  | 140000               | 24.37           | 25          | Pass    |
| 20C 24V   | n20  | 5745            | Ant1    | 5745.02                  | 20000                | 3.48            | 25          | Pass    |
| 20C 26.4V | n20  | 5745            | Ant1    | 5745.02                  | 20000                | 3.48            | 25          | Pass    |
| -20C 24V  | n20  | 5745            | Ant1    | 5745                     | 0                    | 0               | 25          | Pass    |
| -10C 24V  | n20  | 5745            | Ant1    | 5745.04                  | 40000                | 6.96            | 25          | Pass    |



|           |     |      |      |         |        |       |    |      |
|-----------|-----|------|------|---------|--------|-------|----|------|
| 0C 24V    | n20 | 5745 | Ant1 | 5744.98 | -20000 | -3.48 | 25 | Pass |
| 10C 24V   | n20 | 5745 | Ant1 | 5745    | 0      | 0     | 25 | Pass |
| 30C 24V   | n20 | 5745 | Ant1 | 5745.04 | 40000  | 6.96  | 25 | Pass |
| 40C 24V   | n20 | 5745 | Ant1 | 5745.02 | 20000  | 3.48  | 25 | Pass |
| 50C 24V   | n20 | 5745 | Ant1 | 5745    | 0      | 0     | 25 | Pass |
| 20C 21.6V | n20 | 5785 | Ant1 | 5785    | 0      | 0     | 25 | Pass |
| 20C 24V   | n20 | 5785 | Ant1 | 5785    | 0      | 0     | 25 | Pass |
| 20C 26.4V | n20 | 5785 | Ant1 | 5785    | 0      | 0     | 25 | Pass |
| -20C 24V  | n20 | 5785 | Ant1 | 5785.02 | 20000  | 3.46  | 25 | Pass |
| -10C 24V  | n20 | 5785 | Ant1 | 5785    | 0      | 0     | 25 | Pass |
| 0C 24V    | n20 | 5785 | Ant1 | 5785.02 | 20000  | 3.46  | 25 | Pass |
| 10C 24V   | n20 | 5785 | Ant1 | 5785.02 | 20000  | 3.46  | 25 | Pass |
| 30C 24V   | n20 | 5785 | Ant1 | 5785.02 | 20000  | 3.46  | 25 | Pass |
| 40C 24V   | n20 | 5785 | Ant1 | 5784.98 | -20000 | -3.46 | 25 | Pass |
| 50C 24V   | n20 | 5785 | Ant1 | 5785.04 | 40000  | 6.91  | 25 | Pass |
| 20C 21.6V | n20 | 5825 | Ant1 | 5825.02 | 20000  | 3.43  | 25 | Pass |
| 20C 24V   | n20 | 5825 | Ant1 | 5825.02 | 20000  | 3.43  | 25 | Pass |
| 20C 26.4V | n20 | 5825 | Ant1 | 5825    | 0      | 0     | 25 | Pass |
| -20C 24V  | n20 | 5825 | Ant1 | 5825.02 | 20000  | 3.43  | 25 | Pass |
| -10C 24V  | n20 | 5825 | Ant1 | 5825    | 0      | 0     | 25 | Pass |
| 0C 24V    | n20 | 5825 | Ant1 | 5825.04 | 40000  | 6.87  | 25 | Pass |
| 10C 24V   | n20 | 5825 | Ant1 | 5825    | 0      | 0     | 25 | Pass |
| 30C 24V   | n20 | 5825 | Ant1 | 5825.08 | 80000  | 13.73 | 25 | Pass |
| 40C 24V   | n20 | 5825 | Ant1 | 5825.02 | 20000  | 3.43  | 25 | Pass |
| 50C 24V   | n20 | 5825 | Ant1 | 5825.06 | 60000  | 10.3  | 25 | Pass |
| 20C 21.6V | n40 | 5755 | Ant1 | 5755    | 0      | 0     | 25 | Pass |
| 20C 24V   | n40 | 5755 | Ant1 | 5755    | 0      | 0     | 25 | Pass |
| 20C 26.4V | n40 | 5755 | Ant1 | 5755.04 | 40000  | 6.95  | 25 | Pass |
| -20C 24V  | n40 | 5755 | Ant1 | 5755.04 | 40000  | 6.95  | 25 | Pass |
| -10C 24V  | n40 | 5755 | Ant1 | 5755.04 | 40000  | 6.95  | 25 | Pass |
| 0C 24V    | n40 | 5755 | Ant1 | 5755.04 | 40000  | 6.95  | 25 | Pass |
| 10C 24V   | n40 | 5755 | Ant1 | 5755.04 | 40000  | 6.95  | 25 | Pass |
| 30C 24V   | n40 | 5755 | Ant1 | 5755    | 0      | 0     | 25 | Pass |
| 40C 24V   | n40 | 5755 | Ant1 | 5755    | 0      | 0     | 25 | Pass |
| 50C 24V   | n40 | 5755 | Ant1 | 5755    | 0      | 0     | 25 | Pass |
| 20C 21.6V | n40 | 5795 | Ant1 | 5795.04 | 40000  | 6.9   | 25 | Pass |
| 20C 24V   | n40 | 5795 | Ant1 | 5795    | 0      | 0     | 25 | Pass |
| 20C 26.4V | n40 | 5795 | Ant1 | 5795    | 0      | 0     | 25 | Pass |
| -20C 24V  | n40 | 5795 | Ant1 | 5795    | 0      | 0     | 25 | Pass |
| -10C 24V  | n40 | 5795 | Ant1 | 5795    | 0      | 0     | 25 | Pass |
| 0C 24V    | n40 | 5795 | Ant1 | 5795    | 0      | 0     | 25 | Pass |
| 10C 24V   | n40 | 5795 | Ant1 | 5795    | 0      | 0     | 25 | Pass |
| 30C 24V   | n40 | 5795 | Ant1 | 5795    | 0      | 0     | 25 | Pass |



|         |     |      |      |      |   |   |    |      |
|---------|-----|------|------|------|---|---|----|------|
| 40C 24V | n40 | 5795 | Ant1 | 5795 | 0 | 0 | 25 | Pass |
| 50C 24V | n40 | 5795 | Ant1 | 5795 | 0 | 0 | 25 | Pass |

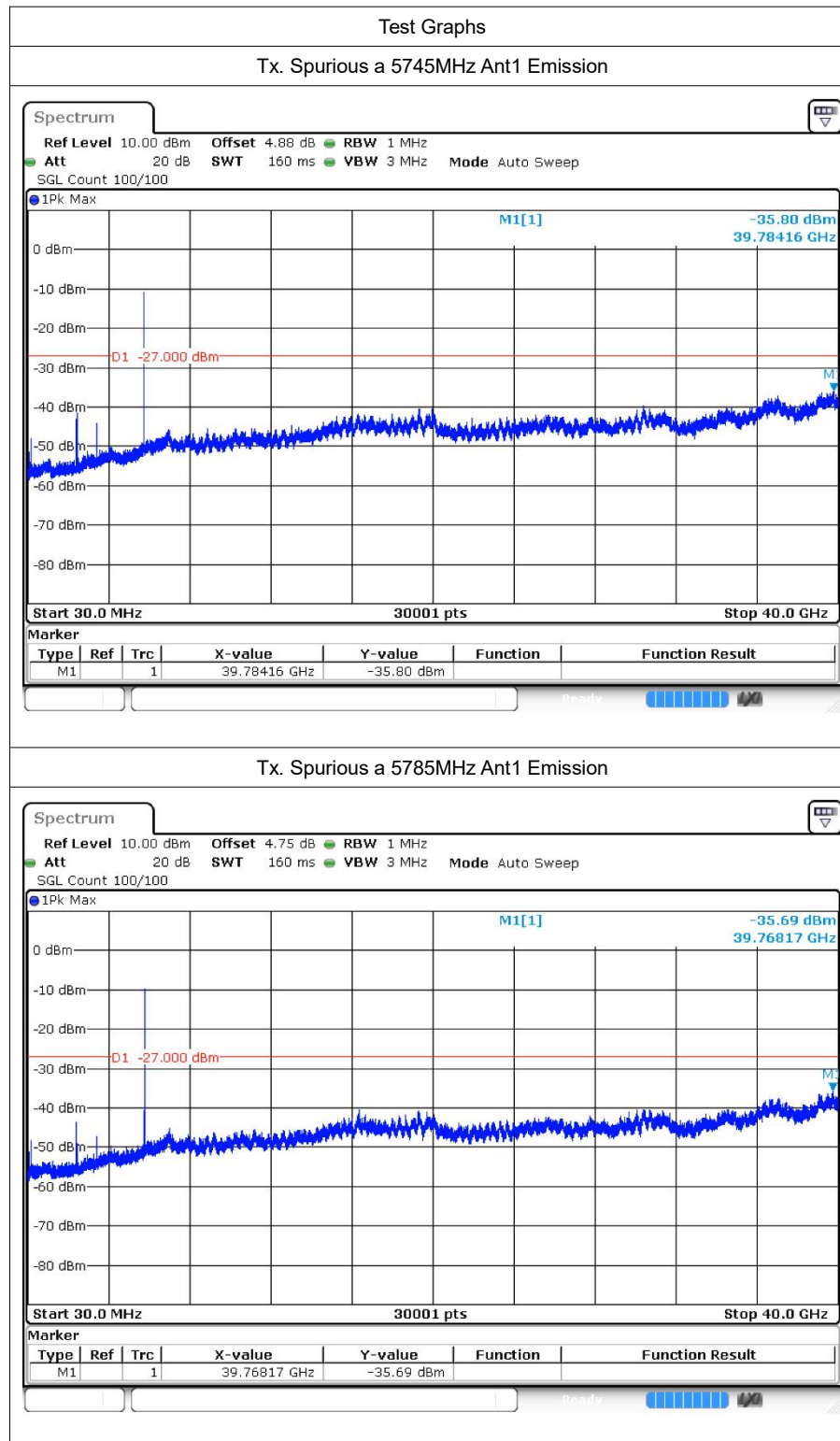


## 7 Conducted RF Spurious Emission

### 7.1 Test Result

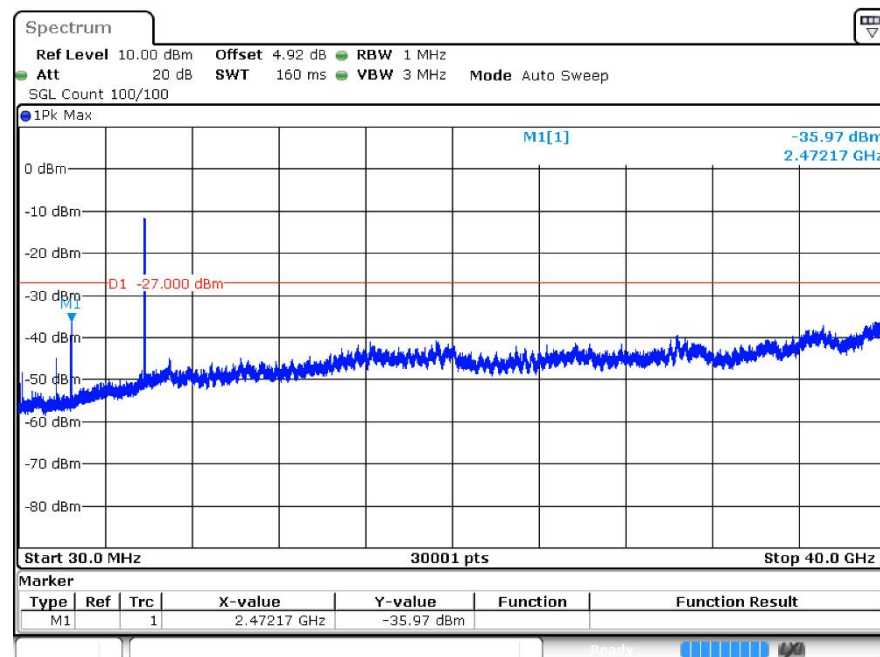
| Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|------|-----------------|---------|-----------------|-------------|---------|
| a    | 5745            | Ant1    | -35.8           | -27         | Pass    |
| a    | 5785            | Ant1    | -35.69          | -27         | Pass    |
| a    | 5825            | Ant1    | -35.97          | -27         | Pass    |
| n20  | 5745            | Ant1    | -35.95          | -27         | Pass    |
| n20  | 5785            | Ant1    | -35.95          | -27         | Pass    |
| n20  | 5825            | Ant1    | -36.25          | -27         | Pass    |
| n40  | 5755            | Ant1    | -35.19          | -27         | Pass    |
| n40  | 5795            | Ant1    | -35.59          | -27         | Pass    |

## 7.2 Test Graphs

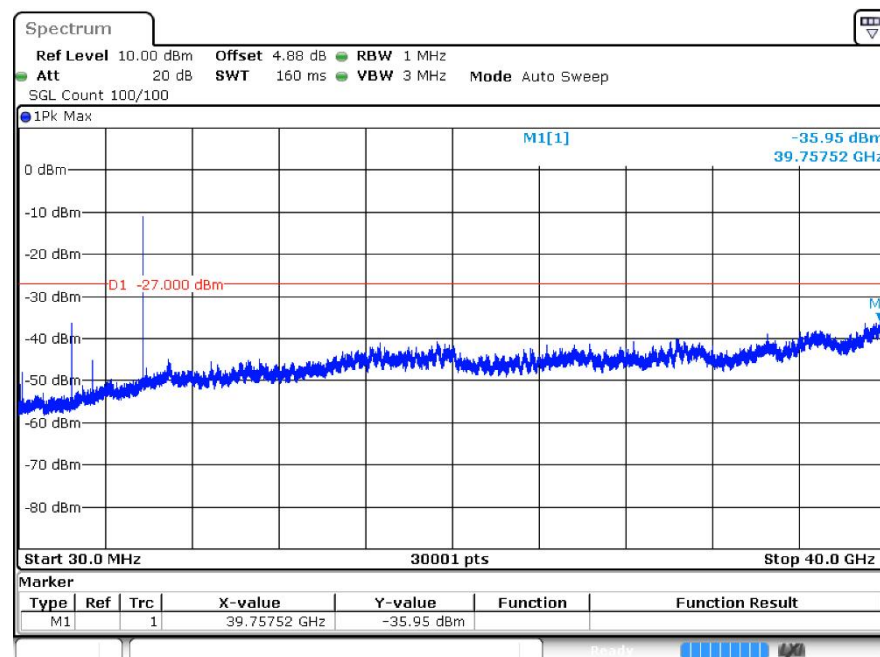




Tx. Spurious a 5825MHz Ant1 Emission

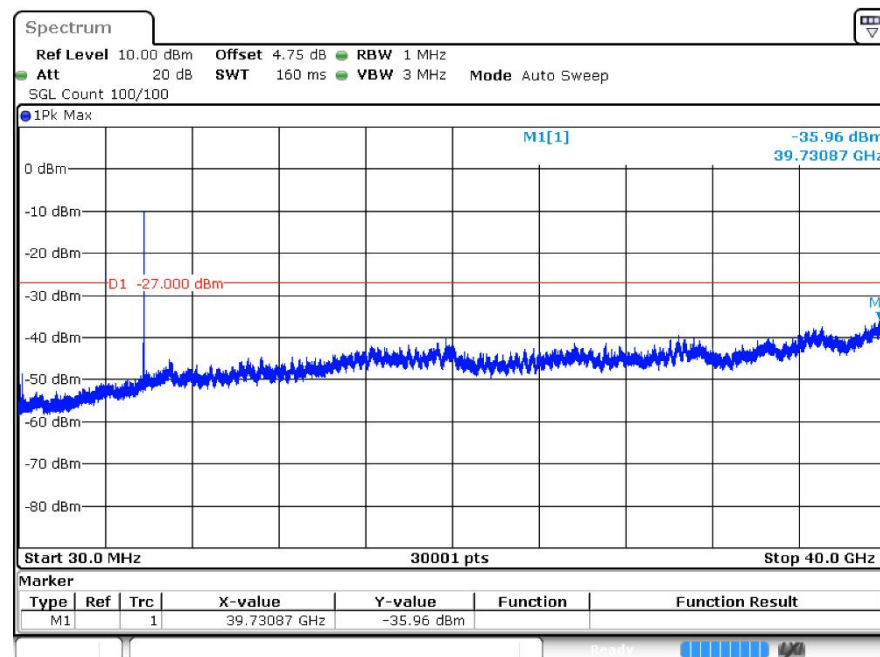


Tx. Spurious n20 5745MHz Ant1 Emission

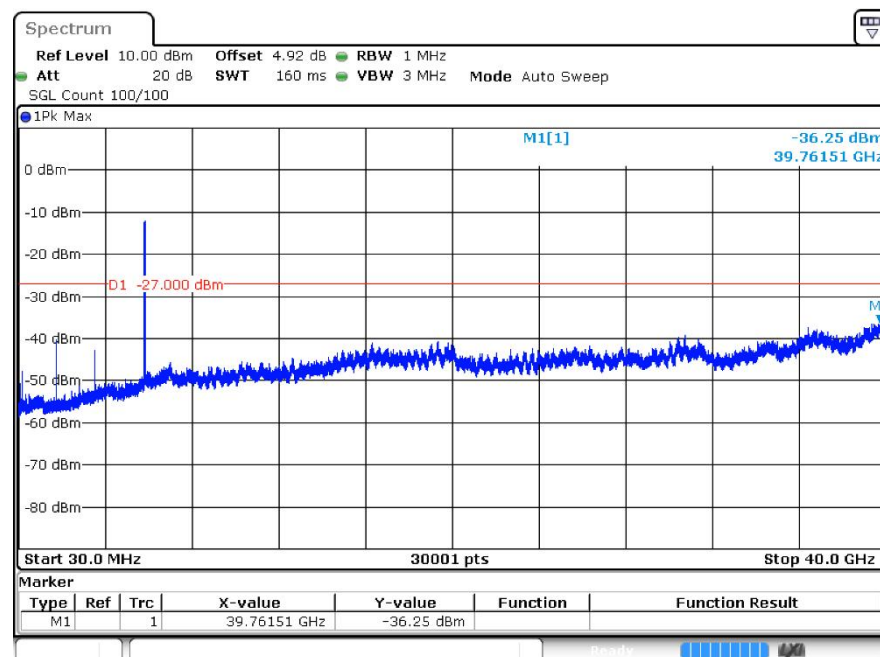




Tx. Spurious n20 5785MHz Ant1 Emission

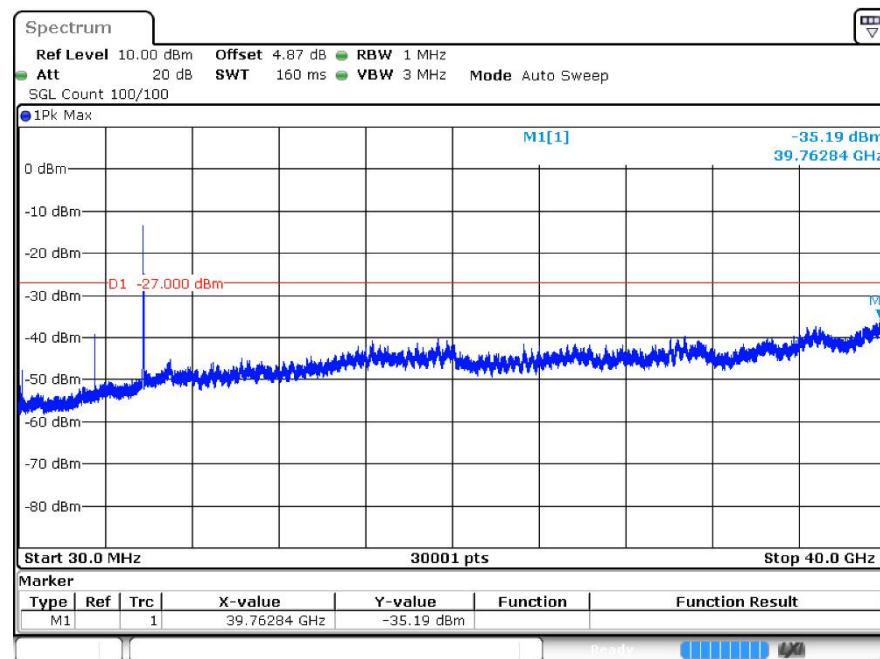


Tx. Spurious n20 5825MHz Ant1 Emission

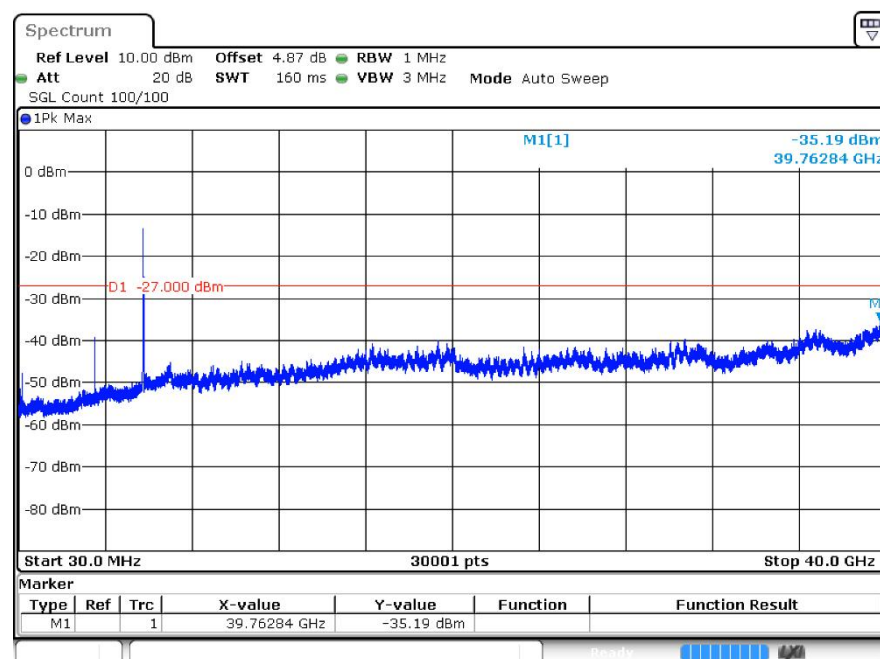




Tx. Spurious n40 5755MHz Ant1 Emission



Tx. Spurious n40 5795MHz Ant1 Emission



---The End---