

## RF Test Data for 5G Wi-Fi (Conducted Measurements)

| General Description of EUT                                                                     |                         |
|------------------------------------------------------------------------------------------------|-------------------------|
| EUT Name:                                                                                      | HDMI Wireless extender  |
| Model:                                                                                         | W3103                   |
| Sample ID:                                                                                     | HC-C-202503-5122-01-02# |
| Test Standard:                                                                                 | FCC Part 15.407         |
| Environmental Conditions                                                                       |                         |
| Ambient Temperature:                                                                           | 25°C                    |
| Ambient Humidity:                                                                              | 45%RH                   |
| Test Power Supply:                                                                             | DC 5V                   |
| Test Engineer:                                                                                 | Rick Chen               |
| Note: For a more detailed features description, please refer to the report TBR-C-202503-5122-3 |                         |

## Contents

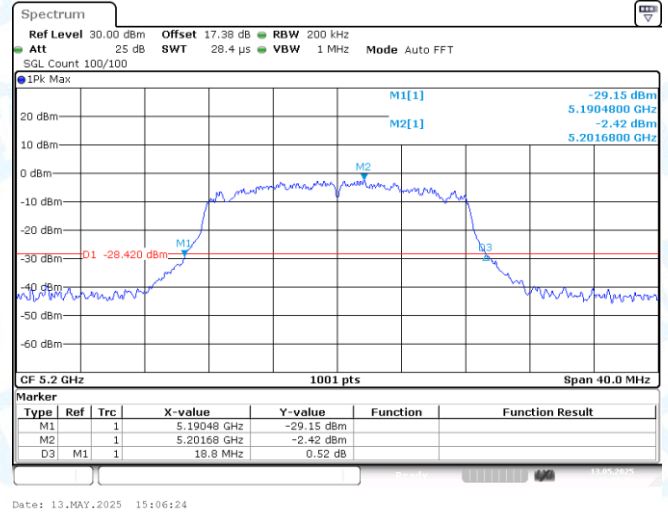
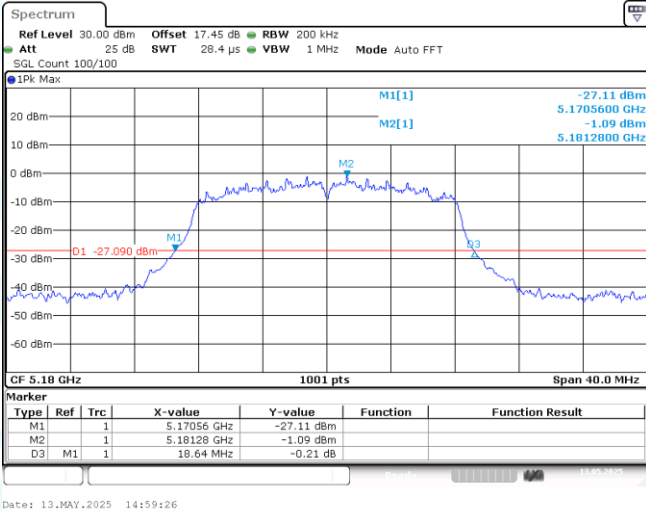
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## 1: Emission Bandwidth

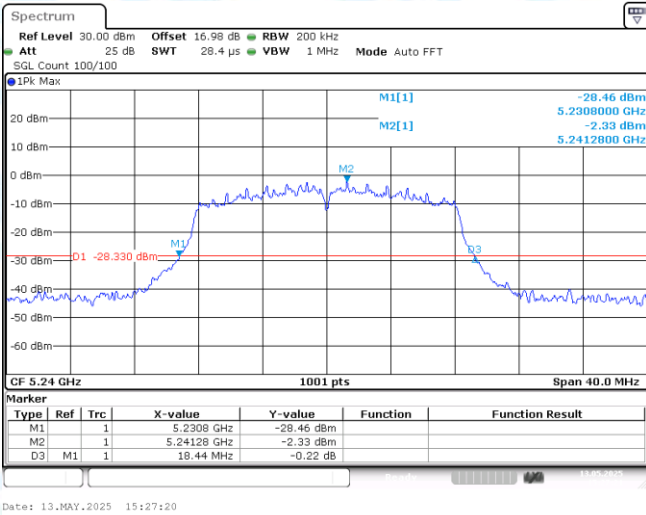
### 1.1 Test Result

| TestMode  | Antenna | Frequency[MHz] | 26dB EBW [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|-----------|---------|----------------|----------------|---------|---------|------------|---------|
| 11A       | Ant1    | 5180           | 18.64          | 5170.56 | 5189.20 | ---        | ---     |
| 11A       | Ant1    | 5200           | 18.80          | 5190.48 | 5209.28 | ---        | ---     |
| 11A       | Ant1    | 5240           | 18.44          | 5230.80 | 5249.24 | ---        | ---     |
| 11N20SISO | Ant1    | 5180           | 19.52          | 5170.36 | 5189.88 | ---        | ---     |
| 11N20SISO | Ant1    | 5200           | 19.16          | 5190.44 | 5209.60 | ---        | ---     |
| 11N20SISO | Ant1    | 5240           | 20.00          | 5229.92 | 5249.92 | ---        | ---     |

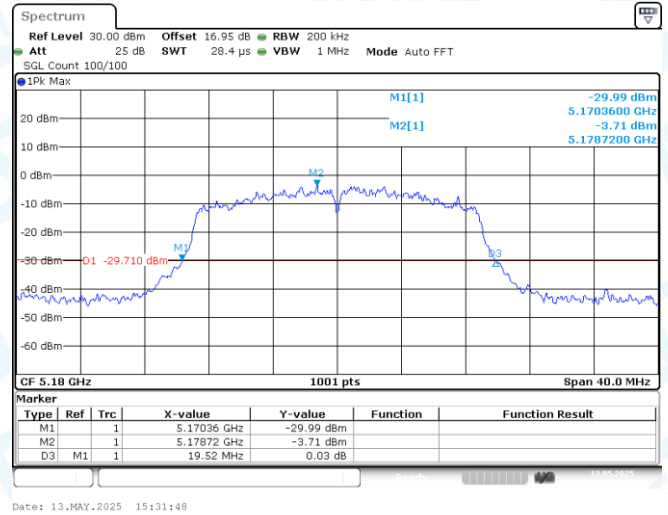
## 1.2 Test Graphs



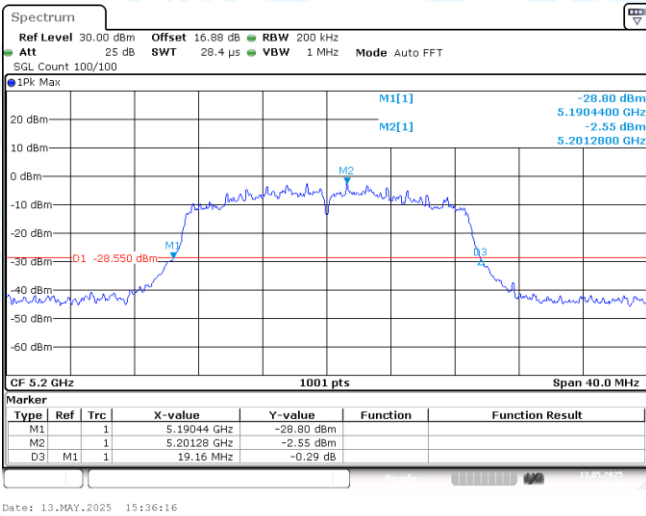
11A-Ant1-5180



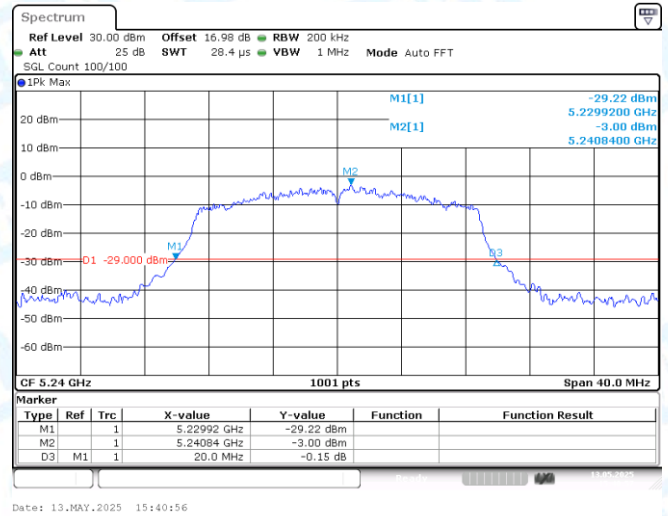
11A-Ant1-5200



11A-Ant1-5240



11N20SISO-Ant1-5180



11N20SISO-Ant1-5200

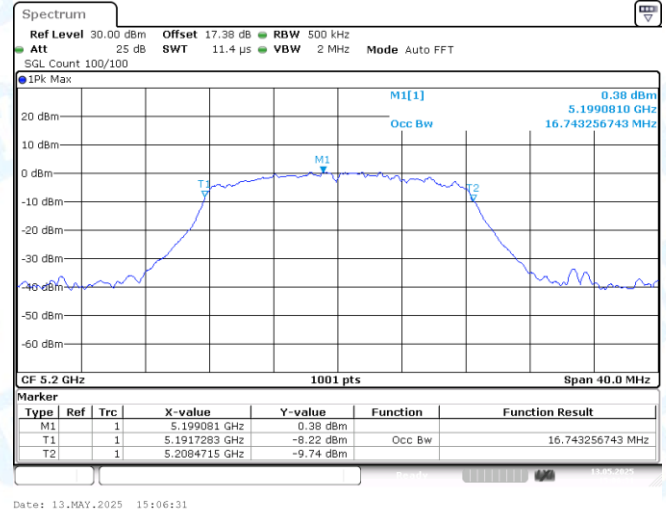
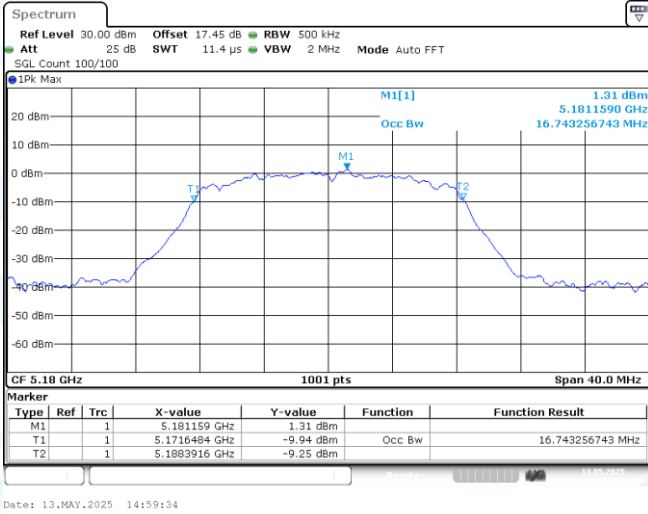
11N20SISO-Ant1-5240

## 2: Occupied channel bandwidth

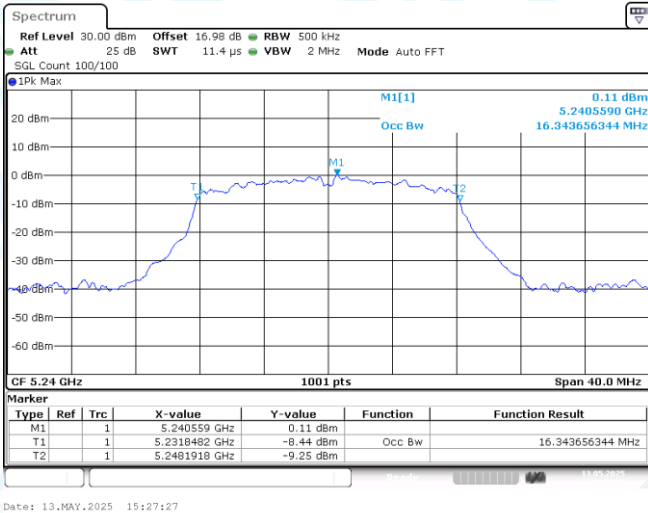
### 2.1 Test Result

| TestMode  | Antenna | Frequency[MHz] | OCB [MHz] | FL[MHz]   | FH[MHz]   | Limit[MHz] | Verdict |
|-----------|---------|----------------|-----------|-----------|-----------|------------|---------|
| 11A       | Ant1    | 5180           | 16.743    | 5171.6484 | 5188.3916 | ---        | ---     |
| 11A       | Ant1    | 5200           | 16.743    | 5191.7283 | 5208.4715 | ---        | ---     |
| 11A       | Ant1    | 5240           | 16.344    | 5231.8482 | 5248.1918 | ---        | ---     |
| 11N20SISO | Ant1    | 5180           | 17.502    | 5171.2887 | 5188.7912 | ---        | ---     |
| 11N20SISO | Ant1    | 5200           | 17.383    | 5191.2887 | 5208.6713 | ---        | ---     |
| 11N20SISO | Ant1    | 5240           | 17.463    | 5231.3287 | 5248.7912 | ---        | ---     |

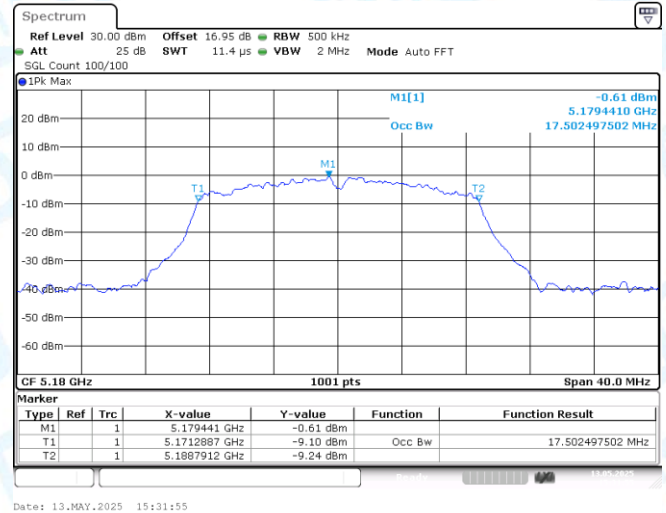
## 2.2 Test Graphs



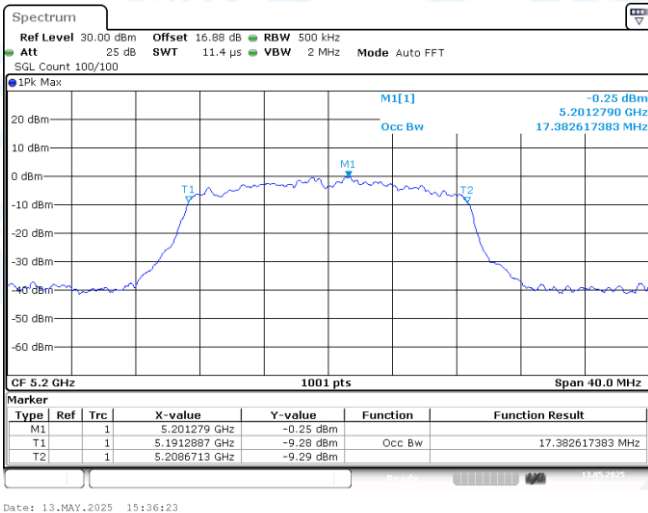
11A-Ant1-5180



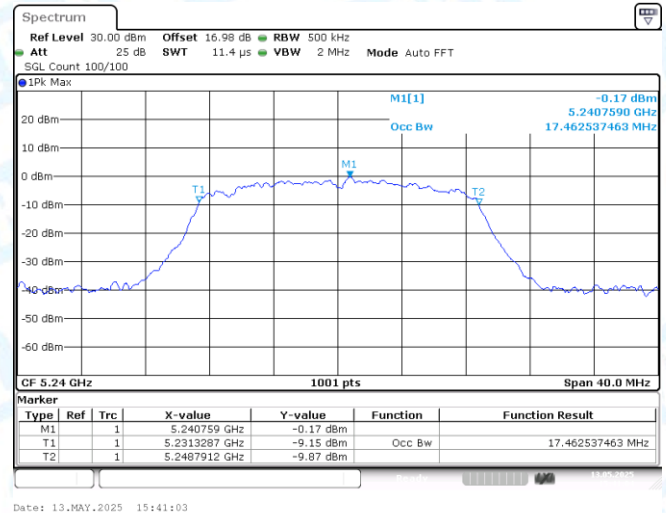
11A-Ant1-5200



11A-Ant1-5240



11N20SISO-Ant1-5180



11N20SISO-Ant1-5200

11N20SISO-Ant1-5240

### 3: Duty Cycle

#### 3.1 Test Result

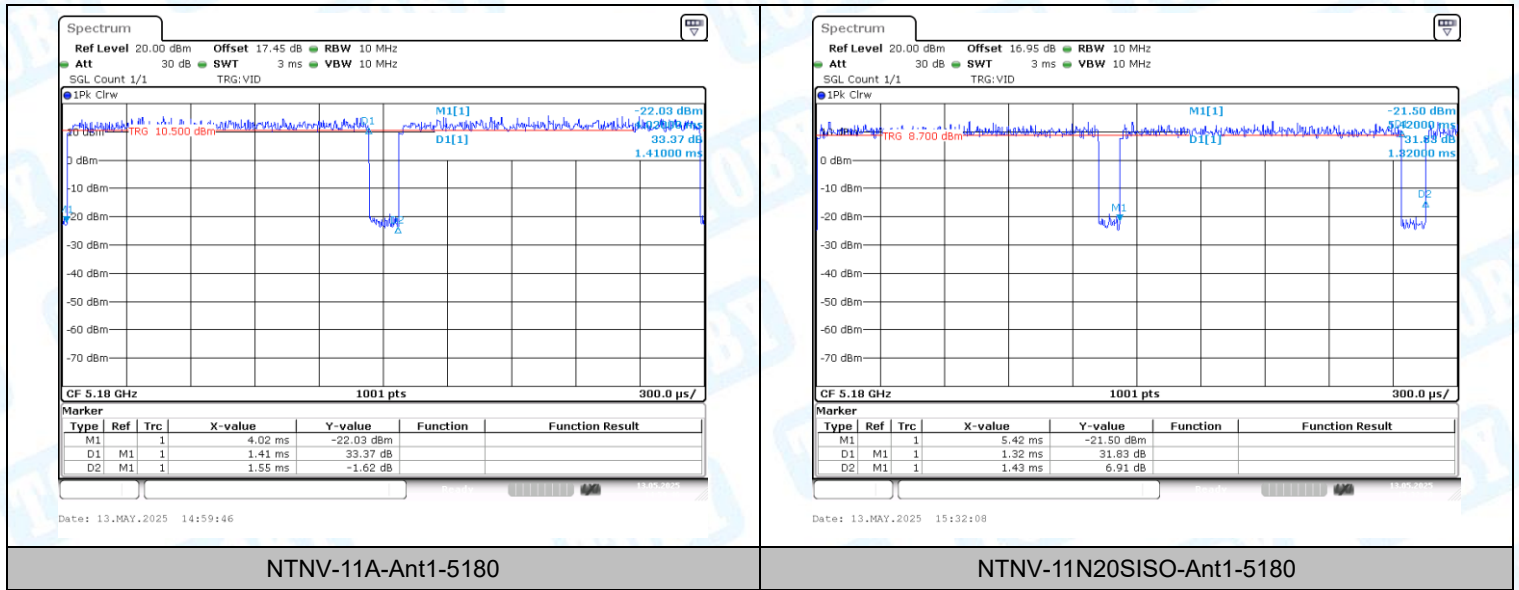
| TestMode  | Antenna | Frequency [MHz] | Transmission Duration [ms] | Transmission Period [ms] | Duty Cycle [%] | DC Factory | 1/T [kHz] |
|-----------|---------|-----------------|----------------------------|--------------------------|----------------|------------|-----------|
| 11A       | Ant1    | 5180            | 1.41                       | 1.55                     | 90.97          | 0.41       | 0.71      |
| 11N20SISO | Ant1    | 5180            | 1.32                       | 1.43                     | 92.31          | 0.35       | 0.76      |

Note: 1, Duty Cycle= Transmission Duration/ Transmission Period

2, DC Factory=10\*Log<sub>10</sub>(1/Duty Cycle)

3, 1/T=1/ Transmission Duration

### 3.2 Test Graphs



## 4: Maximum conducted output power

### 4.1 Test Result

| TestMode  | Antenna | Frequency [MHz] | Result [dBm] | Limit [dBm] | Verdict |
|-----------|---------|-----------------|--------------|-------------|---------|
| 11A       | Ant1    | 5180            | 5.00         | ≤23.98      | PASS    |
| 11A       | Ant1    | 5200            | 4.89         | ≤23.98      | PASS    |
| 11A       | Ant1    | 5240            | 5.58         | ≤23.98      | PASS    |
| 11N20SISO | Ant1    | 5180            | 4.70         | ≤23.98      | PASS    |
| 11N20SISO | Ant1    | 5200            | 4.79         | ≤23.98      | PASS    |
| 11N20SISO | Ant1    | 5240            | 5.27         | ≤23.98      | PASS    |

Note: The duty factor has been compensated into the result.

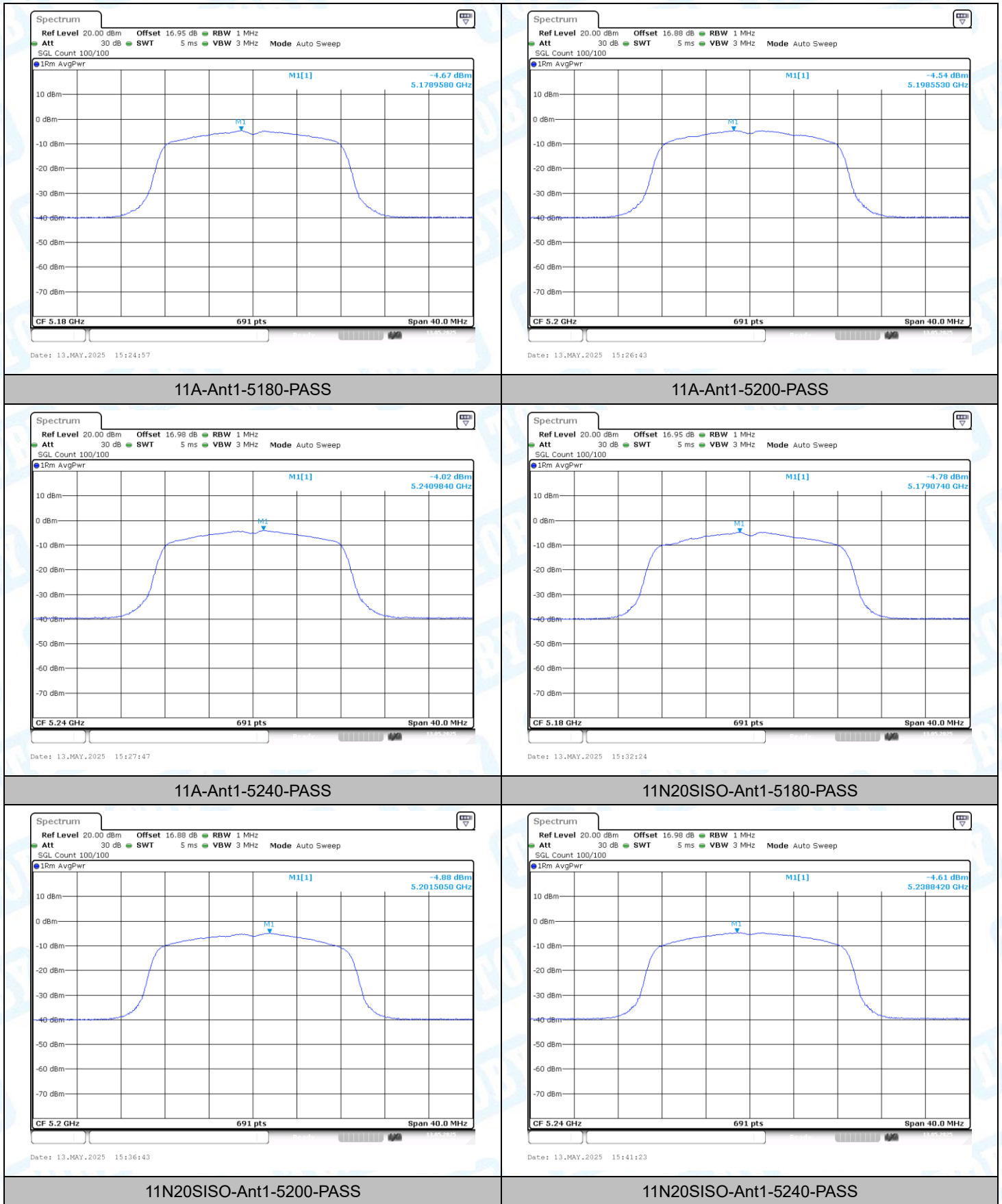
## 5: Maximum power spectral density

### 5.1 Test Result

| Test Mode | Ant. | Frequency<br>[MHz] | Result [dBm/MHz]<br>Result [dBm/500kHz] | Limit[dBm/MHz]<br>Limit[dBm/500kHz] | Verdict |
|-----------|------|--------------------|-----------------------------------------|-------------------------------------|---------|
| 11A       | Ant1 | 5180               | -4.26                                   | ≤11.00                              | PASS    |
| 11A       | Ant1 | 5200               | -3.96                                   | ≤11.00                              | PASS    |
| 11A       | Ant1 | 5240               | -3.54                                   | ≤11.00                              | PASS    |
| 11N20SISO | Ant1 | 5180               | -4.43                                   | ≤11.00                              | PASS    |
| 11N20SISO | Ant1 | 5200               | -4.30                                   | ≤11.00                              | PASS    |
| 11N20SISO | Ant1 | 5240               | -3.96                                   | ≤11.00                              | PASS    |

Note: 1.The Result and Limit Unit is dBm/500 kHz in the band 5.725–5.85 GHz.  
 2.The Duty Cycle Factor and RBW Factor is compensated in the graph.

## 5.2 Test Graphs

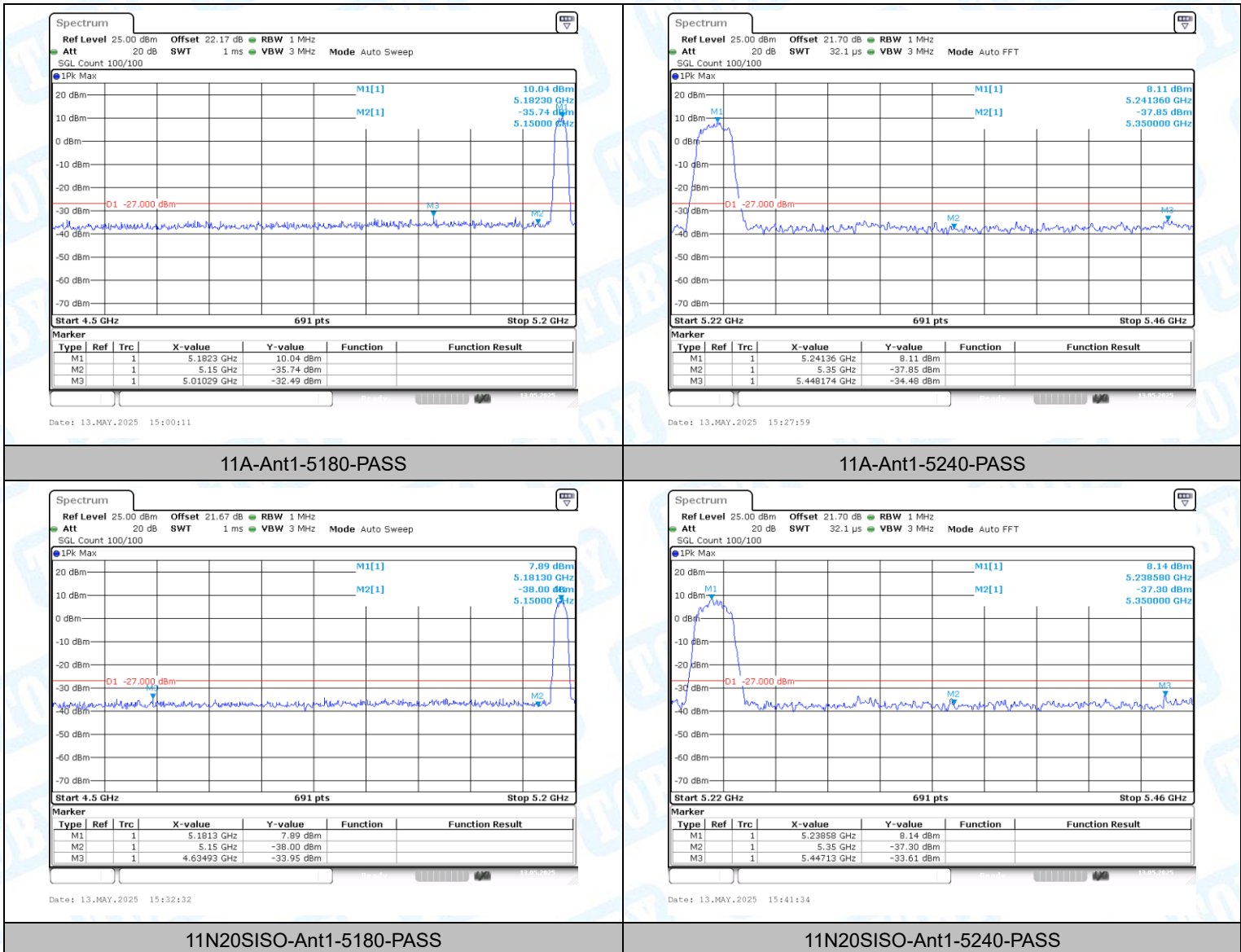


## 6: Band edge measurements

### 6.1 Test Result B1

| TestMode  | Antenna | ChName | Frequency[MHz] | Result[dBm] | Limit[dBm] | Verdict |
|-----------|---------|--------|----------------|-------------|------------|---------|
| 11A       | Ant1    | Low    | 5180           | -32.49      | ≤-27       | PASS    |
| 11A       | Ant1    | High   | 5240           | -34.48      | ≤-27       | PASS    |
| 11N20SISO | Ant1    | Low    | 5180           | -33.95      | ≤-27       | PASS    |
| 11N20SISO | Ant1    | High   | 5240           | -33.61      | ≤-27       | PASS    |

### 6.2 Test Graphs B1

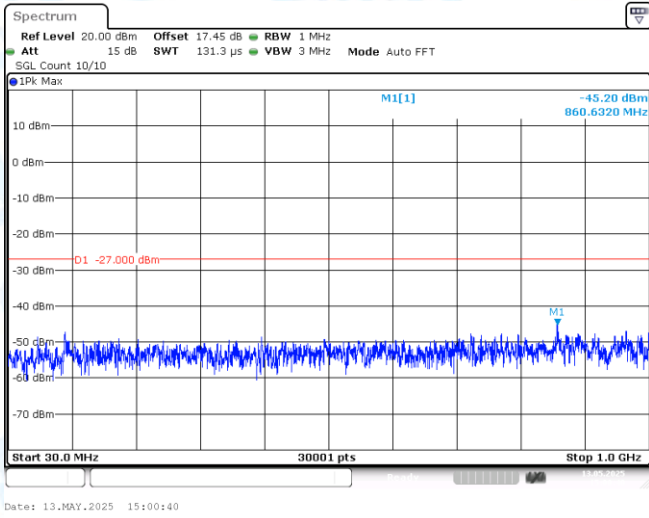


## 7: Conducted Spurious Emission

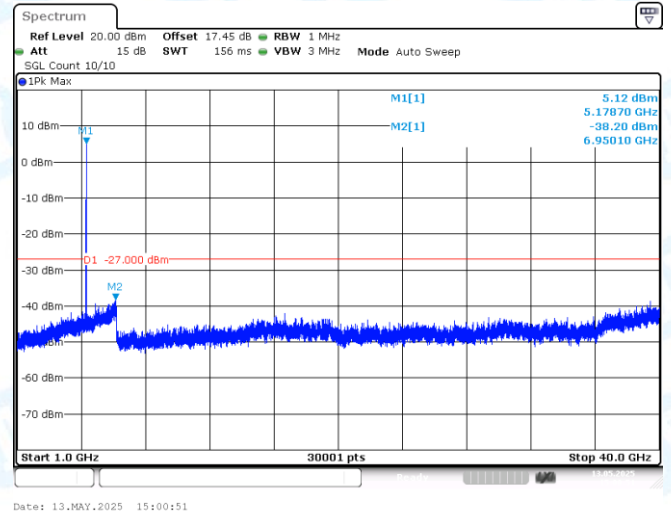
### 7.1 Test Result

| TestMode  | Antenna | Frequency [MHz] | FreqRange [MHz] | Max. Fre [MHz] | Max. Level [dBm] | Limit [dBm] | Verdict |
|-----------|---------|-----------------|-----------------|----------------|------------------|-------------|---------|
| 11A       | Ant1    | 5180            | 30~1000         | 860.63         | -45.2            | ≤-27        | PASS    |
| 11A       | Ant1    | 5180            | 1000~40000      | 6950.1         | -38.2            | ≤-27        | PASS    |
| 11A       | Ant1    | 5200            | 30~1000         | 894.42         | -46.32           | ≤-27        | PASS    |
| 11A       | Ant1    | 5200            | 1000~40000      | 6991.7         | -38.96           | ≤-27        | PASS    |
| 11A       | Ant1    | 5240            | 30~1000         | 860.63         | -46.38           | ≤-27        | PASS    |
| 11A       | Ant1    | 5240            | 1000~40000      | 6991.7         | -39.7            | ≤-27        | PASS    |
| 11N20SISO | Ant1    | 5180            | 30~1000         | 508.83         | -45.23           | ≤-27        | PASS    |
| 11N20SISO | Ant1    | 5180            | 1000~40000      | 6872.1         | -39.56           | ≤-27        | PASS    |
| 11N20SISO | Ant1    | 5200            | 30~1000         | 958.79         | -47.03           | ≤-27        | PASS    |
| 11N20SISO | Ant1    | 5200            | 1000~40000      | 6916.3         | -39.49           | ≤-27        | PASS    |
| 11N20SISO | Ant1    | 5240            | 30~1000         | 868.2          | -46.37           | ≤-27        | PASS    |
| 11N20SISO | Ant1    | 5240            | 1000~40000      | 6978.7         | -38.87           | ≤-27        | PASS    |

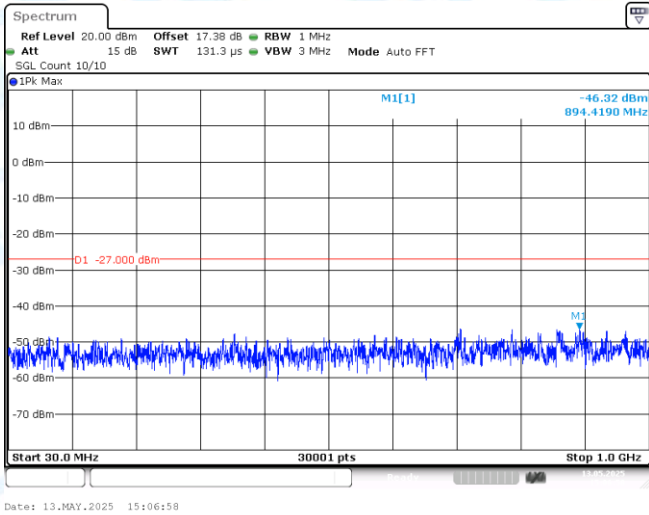
## 7.2 Test Graphs



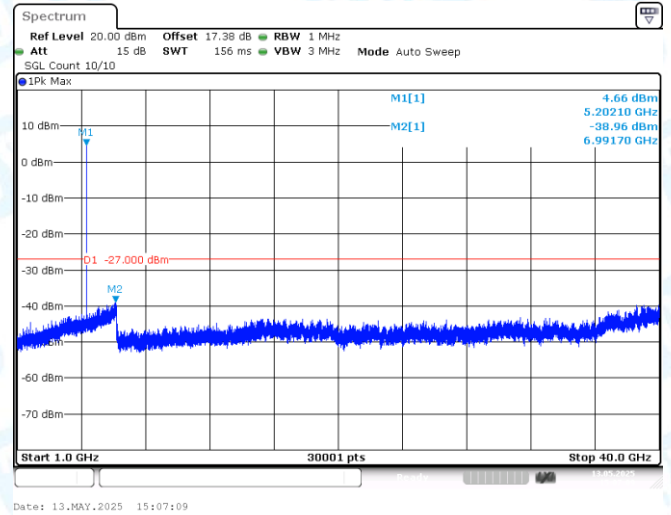
11A-Ant1-5180-30~1000-PASS



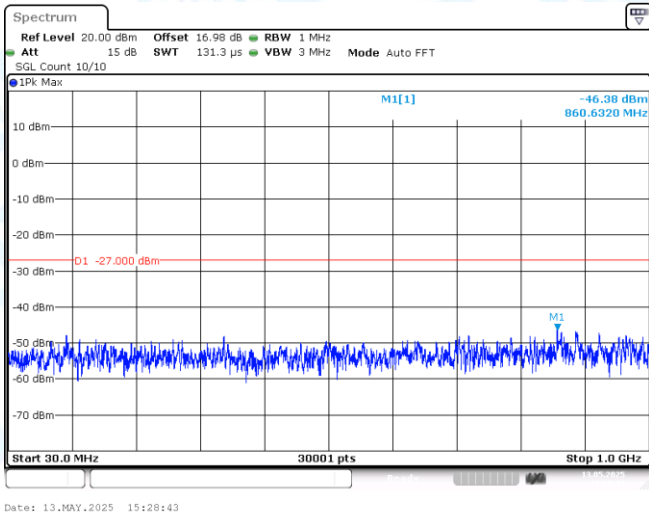
11A-Ant1-5180-1000~40000-PASS



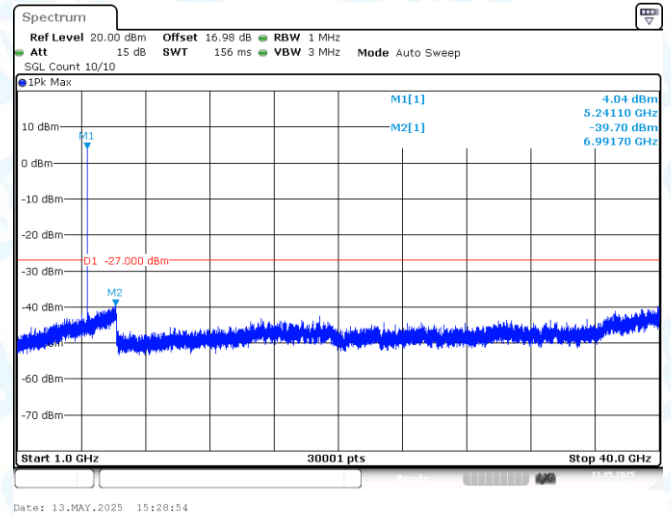
11A-Ant1-5200-30~1000-PASS



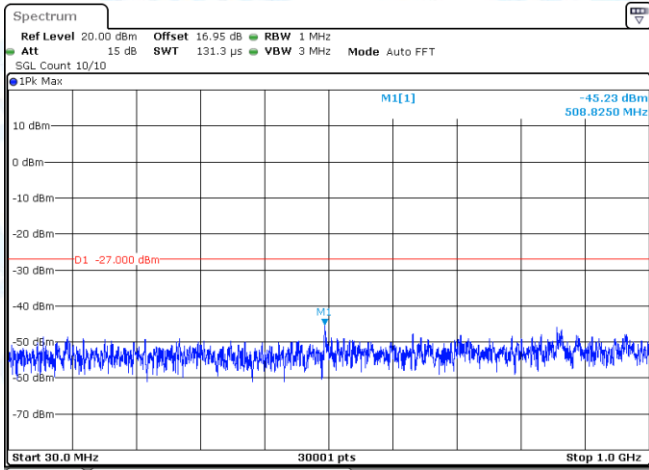
11A-Ant1-5200-1000~40000-PASS



11A-Ant1-5240-30~1000-PASS

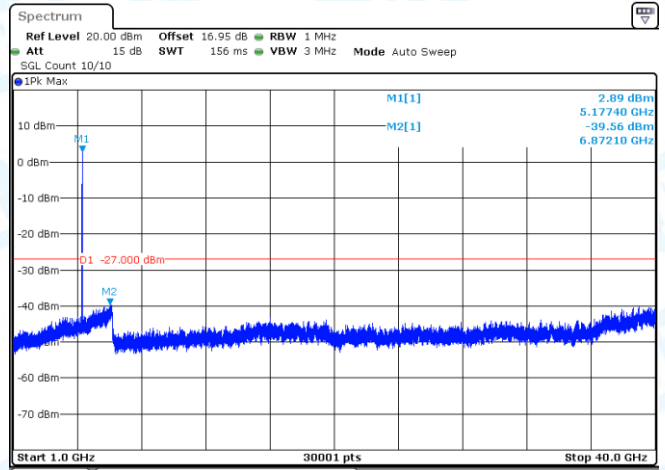


11A-Ant1-5240-1000~40000-PASS



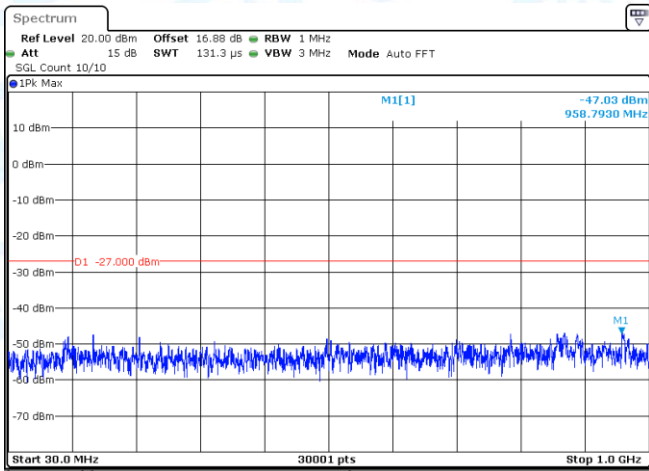
Date: 13.MAY.2025 15:33:01

11N20SISO-Ant1-5180-30~1000-PASS



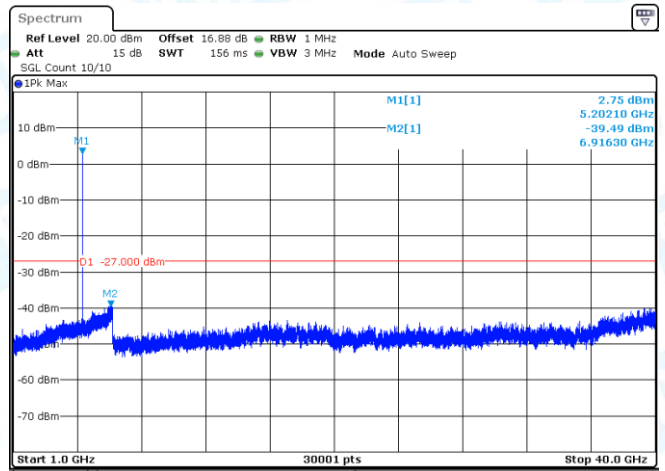
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11N20SISO-Ant1-5180-1000~40000-PASS



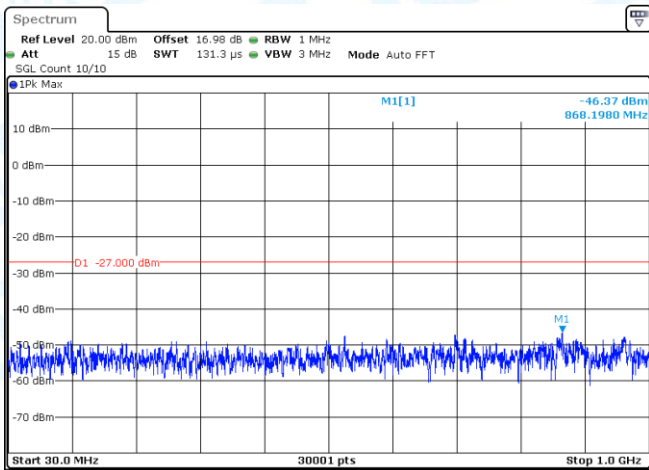
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11N20SISO-Ant1-5200-30~1000-PASS



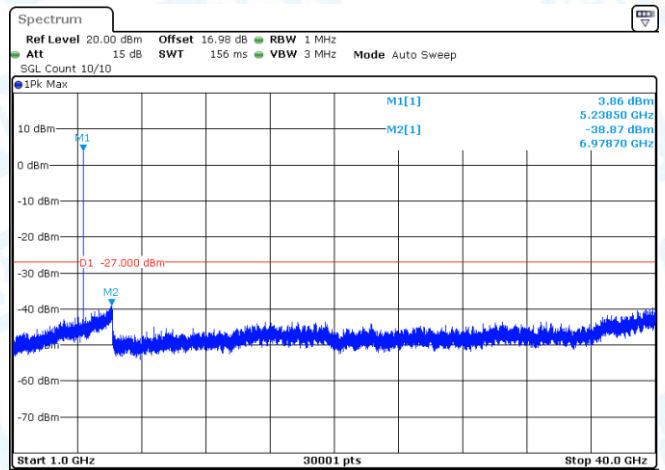
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11N20SISO-Ant1-5200-1000~40000-PASS



Date: 13.MAY.2025 15:42:19

11N20SISO-Ant1-5240-30~1000-PASS



Date: 13.MAY.2025 15:42:30

11N20SISO-Ant1-5240-1000~40000-PASS

## 8: Frequency Stability

### 8.1 Test Result

| TestMode  | Antenna | Frequency [MHz] | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
|-----------|---------|-----------------|---------------|------------------|----------------|-----------------|-------------|---------|
| 11A       | Ant1    | 5180            | NV            | NT               | 0.00           | 0.000000        | 20          | PASS    |
| 11A       | Ant1    | 5180            | LV            | NT               | 0.00           | 0.000000        | 20          | PASS    |
| 11A       | Ant1    | 5180            | HV            | NT               | 0.00           | 0.000000        | 20          | PASS    |
| 11A       | Ant1    | 5200            | NV            | NT               | 0.00           | 0.000000        | 20          | PASS    |
| 11A       | Ant1    | 5200            | LV            | NT               | 20000.00       | 3.846154        | 20          | PASS    |
| 11A       | Ant1    | 5200            | HV            | NT               | 0.00           | 0.000000        | 20          | PASS    |
| 11A       | Ant1    | 5240            | NV            | NT               | 20000.00       | 3.816794        | 20          | PASS    |
| 11A       | Ant1    | 5240            | LV            | NT               | 0.00           | 0.000000        | 20          | PASS    |
| 11A       | Ant1    | 5240            | HV            | NT               | -20000.00      | -3.816794       | 20          | PASS    |
| 11N20SISO | Ant1    | 5180            | NV            | NT               | -40000.00      | -7.722008       | 20          | PASS    |
| 11N20SISO | Ant1    | 5180            | LV            | NT               | 20000.00       | 3.861004        | 20          | PASS    |
| 11N20SISO | Ant1    | 5180            | HV            | NT               | -40000.00      | -7.722008       | 20          | PASS    |
| 11N20SISO | Ant1    | 5200            | NV            | NT               | -40000.00      | -7.692308       | 20          | PASS    |
| 11N20SISO | Ant1    | 5200            | LV            | NT               | 20000.00       | 3.846154        | 20          | PASS    |
| 11N20SISO | Ant1    | 5200            | HV            | NT               | 20000.00       | 3.846154        | 20          | PASS    |
| 11N20SISO | Ant1    | 5240            | NV            | NT               | 0.00           | 0.000000        | 20          | PASS    |
| 11N20SISO | Ant1    | 5240            | LV            | NT               | -20000.00      | -3.816794       | 20          | PASS    |
| 11N20SISO | Ant1    | 5240            | HV            | NT               | 20000.00       | 3.816794        | 20          | PASS    |

| TestMode  | Antenna | Frequency [MHz] | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
|-----------|---------|-----------------|---------------|------------------|----------------|-----------------|-------------|---------|
| 11A       | Ant1    | 5180            | NV            | 0                | 20000.00       | 3.861004        | 20          | PASS    |
| 11A       | Ant1    | 5180            | NV            | 10               | 40000.00       | 7.722008        | 20          | PASS    |
| 11A       | Ant1    | 5180            | NV            | 20               | 20000.00       | 3.861004        | 20          | PASS    |
| 11A       | Ant1    | 5180            | NV            | 30               | 0.00           | 0.000000        | 20          | PASS    |
| 11A       | Ant1    | 5180            | NV            | 45               | 0.00           | 0.000000        | 20          | PASS    |
| 11A       | Ant1    | 5200            | NV            | 0                | -20000.00      | -3.846154       | 20          | PASS    |
| 11A       | Ant1    | 5200            | NV            | 10               | -40000.00      | -7.692308       | 20          | PASS    |
| 11A       | Ant1    | 5200            | NV            | 20               | -20000.00      | -3.846154       | 20          | PASS    |
| 11A       | Ant1    | 5200            | NV            | 30               | -40000.00      | -7.692308       | 20          | PASS    |
| 11A       | Ant1    | 5200            | NV            | 45               | -40000.00      | -7.692308       | 20          | PASS    |
| 11A       | Ant1    | 5240            | NV            | 0                | -20000.00      | -3.816794       | 20          | PASS    |
| 11A       | Ant1    | 5240            | NV            | 10               | 0.00           | 0.000000        | 20          | PASS    |
| 11A       | Ant1    | 5240            | NV            | 20               | 20000.00       | 3.816794        | 20          | PASS    |
| 11A       | Ant1    | 5240            | NV            | 30               | -20000.00      | -3.816794       | 20          | PASS    |
| 11A       | Ant1    | 5240            | NV            | 45               | -20000.00      | -3.816794       | 20          | PASS    |
| 11N20SISO | Ant1    | 5180            | NV            | 0                | 20000.00       | 3.861004        | 20          | PASS    |
| 11N20SISO | Ant1    | 5180            | NV            | 10               | 0.00           | 0.000000        | 20          | PASS    |
| 11N20SISO | Ant1    | 5180            | NV            | 20               | 20000.00       | 3.861004        | 20          | PASS    |
| 11N20SISO | Ant1    | 5180            | NV            | 30               | 20000.00       | 3.861004        | 20          | PASS    |
| 11N20SISO | Ant1    | 5180            | NV            | 45               | -20000.00      | -3.861004       | 20          | PASS    |
| 11N20SISO | Ant1    | 5200            | NV            | 0                | -20000.00      | -3.846154       | 20          | PASS    |
| 11N20SISO | Ant1    | 5200            | NV            | 10               | 0.00           | 0.000000        | 20          | PASS    |
| 11N20SISO | Ant1    | 5200            | NV            | 20               | -20000.00      | -3.846154       | 20          | PASS    |
| 11N20SISO | Ant1    | 5200            | NV            | 30               | 0.00           | 0.000000        | 20          | PASS    |
| 11N20SISO | Ant1    | 5200            | NV            | 45               | 40000.00       | 7.692308        | 20          | PASS    |
| 11N20SISO | Ant1    | 5240            | NV            | 0                | 40000.00       | 7.633588        | 20          | PASS    |
| 11N20SISO | Ant1    | 5240            | NV            | 10               | 20000.00       | 3.816794        | 20          | PASS    |
| 11N20SISO | Ant1    | 5240            | NV            | 20               | -40000.00      | -7.633588       | 20          | PASS    |
| 11N20SISO | Ant1    | 5240            | NV            | 30               | 0.00           | 0.000000        | 20          | PASS    |
| 11N20SISO | Ant1    | 5240            | NV            | 45               | -40000.00      | -7.633588       | 20          | PASS    |

## 9: Emissions in Restricted Bands

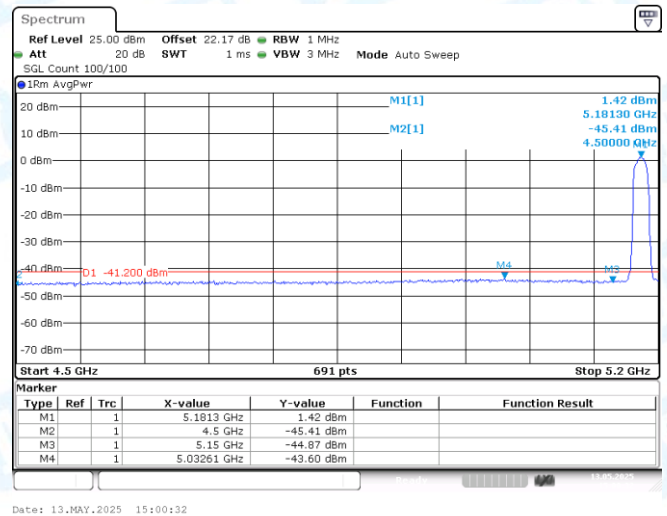
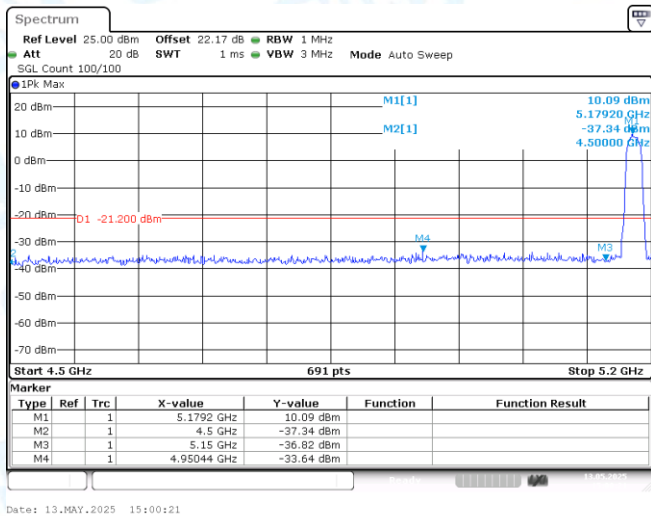
### 9.1 Test Result

| TestMode  | Ant. | ChName | Frequency [MHz] | Detector | Freq [MHz] | Result [dBm] | Limit [dBm] | Result [dBuV/m] | Limit [dBuV/m] | Verdict |
|-----------|------|--------|-----------------|----------|------------|--------------|-------------|-----------------|----------------|---------|
| 11A       | Ant1 | Low    | 5180            | Peak     | 4500.000   | -37.34       | ≤-21.20     | 57.86           | ≤74            | PASS    |
| 11A       | Ant1 | Low    | 5180            | Peak     | 5150.000   | -36.82       | ≤-21.20     | 58.38           | ≤74            | PASS    |
| 11A       | Ant1 | Low    | 5180            | Peak     | 4950.435   | -33.64       | ≤-21.20     | 61.56           | ≤74            | PASS    |
| 11A       | Ant1 | Low    | 5180            | AV       | 4500.000   | -45.41       | ≤-41.20     | 49.79           | ≤54            | PASS    |
| 11A       | Ant1 | Low    | 5180            | AV       | 5150.000   | -44.87       | ≤-41.20     | 50.33           | ≤54            | PASS    |
| 11A       | Ant1 | Low    | 5180            | AV       | 5032.609   | -43.6        | ≤-41.20     | 51.60           | ≤54            | PASS    |
| 11A       | Ant1 | High   | 5240            | Peak     | 5350.000   | -38.18       | ≤-21.20     | 57.02           | ≤74            | PASS    |
| 11A       | Ant1 | High   | 5240            | Peak     | 5460.000   | -34.22       | ≤-21.20     | 60.98           | ≤74            | PASS    |
| 11A       | Ant1 | High   | 5240            | Peak     | 5451.652   | -33.56       | ≤-21.20     | 61.64           | ≤74            | PASS    |
| 11A       | Ant1 | High   | 5240            | AV       | 5350.000   | -45.35       | ≤-41.20     | 49.85           | ≤54            | PASS    |
| 11A       | Ant1 | High   | 5240            | AV       | 5460.000   | -43.67       | ≤-41.20     | 51.53           | ≤54            | PASS    |
| 11A       | Ant1 | High   | 5240            | AV       | 5448.174   | -42.08       | ≤-41.20     | 53.12           | ≤54            | PASS    |
| 11N20SISO | Ant1 | Low    | 5180            | Peak     | 4500.000   | -38.46       | ≤-21.20     | 56.74           | ≤74            | PASS    |
| 11N20SISO | Ant1 | Low    | 5180            | Peak     | 5150.000   | -34.97       | ≤-21.20     | 60.23           | ≤74            | PASS    |
| 11N20SISO | Ant1 | Low    | 5180            | Peak     | 4929.130   | -33.98       | ≤-21.20     | 61.22           | ≤74            | PASS    |
| 11N20SISO | Ant1 | Low    | 5180            | AV       | 4500.000   | -45.86       | ≤-41.20     | 49.34           | ≤54            | PASS    |
| 11N20SISO | Ant1 | Low    | 5180            | AV       | 5150.000   | -44.79       | ≤-41.20     | 50.41           | ≤54            | PASS    |
| 11N20SISO | Ant1 | Low    | 5180            | AV       | 5009.275   | -44.25       | ≤-41.20     | 50.95           | ≤54            | PASS    |
| 11N20SISO | Ant1 | High   | 5240            | Peak     | 5350.000   | -37.56       | ≤-21.20     | 57.64           | ≤74            | PASS    |
| 11N20SISO | Ant1 | High   | 5240            | Peak     | 5460.000   | -37.6        | ≤-21.20     | 57.60           | ≤74            | PASS    |
| 11N20SISO | Ant1 | High   | 5240            | Peak     | 5447.826   | -33.98       | ≤-21.20     | 61.22           | ≤74            | PASS    |
| 11N20SISO | Ant1 | High   | 5240            | AV       | 5350.000   | -44.1        | ≤-41.20     | 51.10           | ≤54            | PASS    |
| 11N20SISO | Ant1 | High   | 5240            | AV       | 5460.000   | -45          | ≤-41.20     | 50.20           | ≤54            | PASS    |
| 11N20SISO | Ant1 | High   | 5240            | AV       | 5446.783   | -42.33       | ≤-41.20     | 52.87           | ≤54            | PASS    |

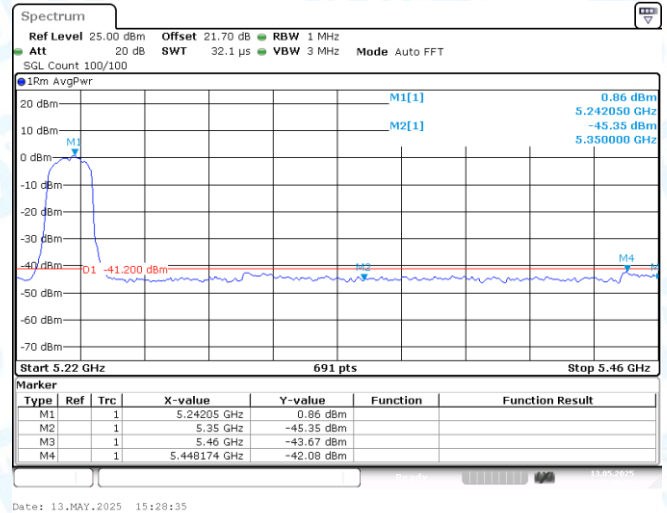
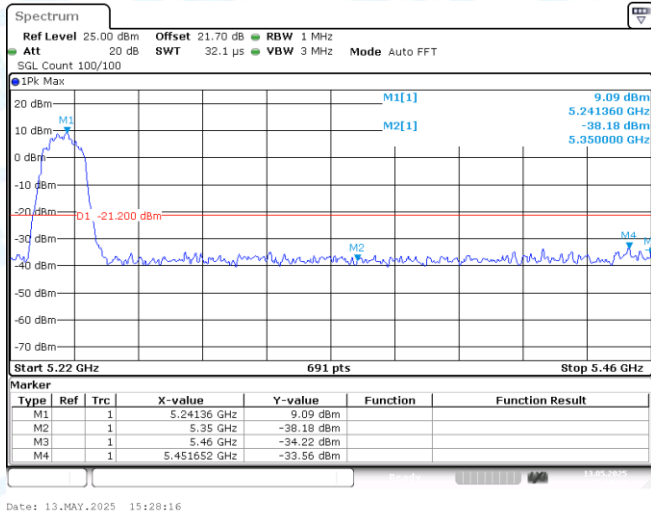
Note:

1. The Antenna Gain is compensated in the graph.
2. For transmitters operating in 5150-5350 GHz band and 5470-5725 GHz band: The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

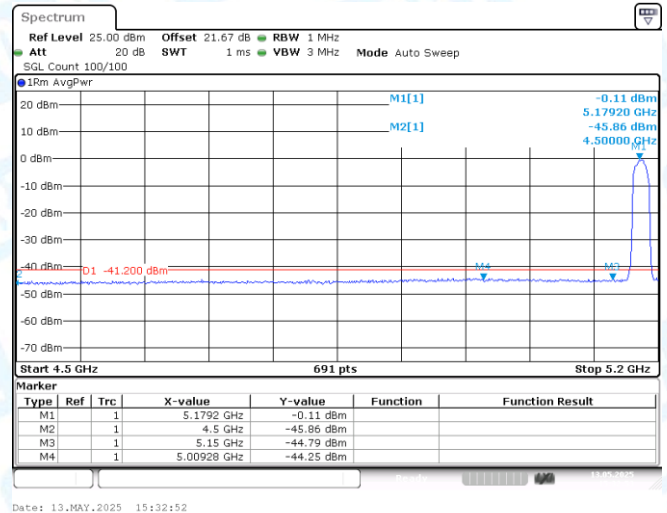
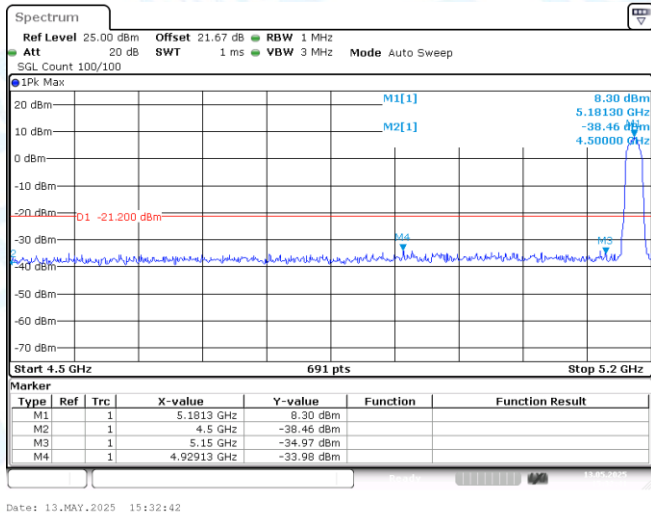
## 9.2 Test Graphs



11A-Ant1-5180-PASS

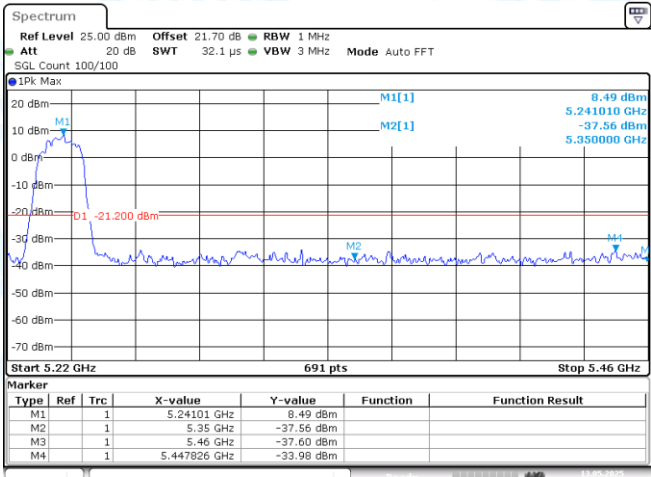


11A-Ant1-5240-PASS



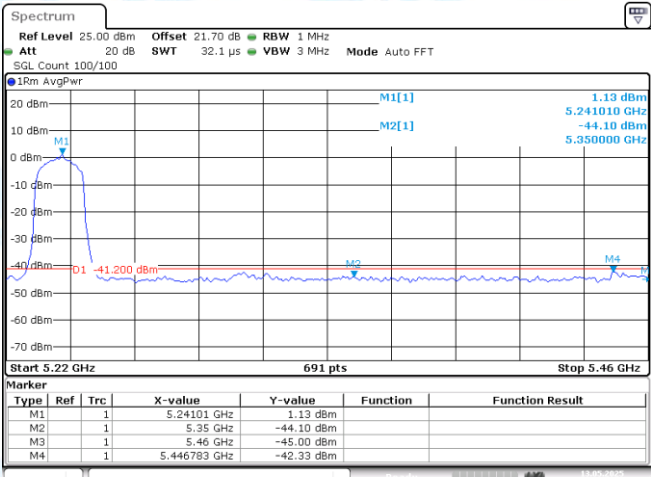
11N20SISO-Ant1-5180-PASS

11N20SISO-Ant1-5180-PASS



Date: 13.MAY.2025 15:41:52

11N20SISO-Ant1-5240-PASS



Date: 13.MAY.2025 15:42:11

11N20SISO-Ant1-5240-PASS

-----END OF THE REPORT-----