# RF Test Data for RLAN(5.2G) (Conducted Measurement)

**Product Name: Drone**

**Trade Mark: N/A**

**Test Model: U11MINI**

**FCC ID: 2AXQL-U11MINIYK**

## Environmental Conditions

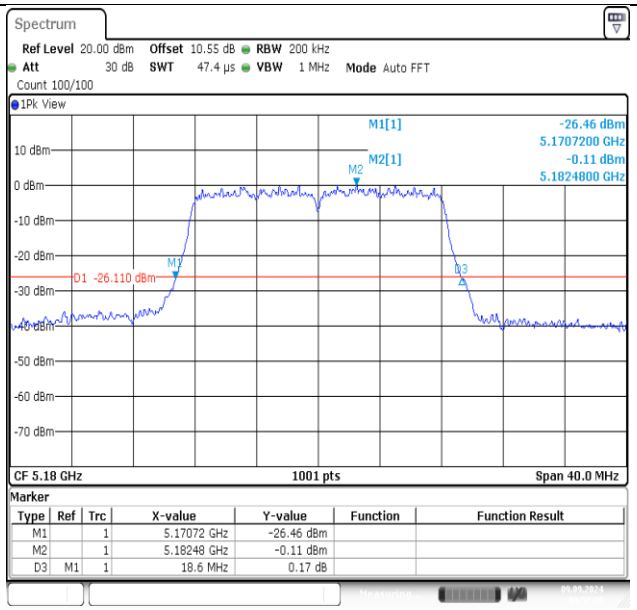
| | |
|---|---|
| Temperature: | 23.8℃ |
| Relative Humidity: | 58% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | Allen Lai |
| Supervised by: | Hugo Chen |
| NOTE | N/A |

## Appendix A1: Emission Bandwidth

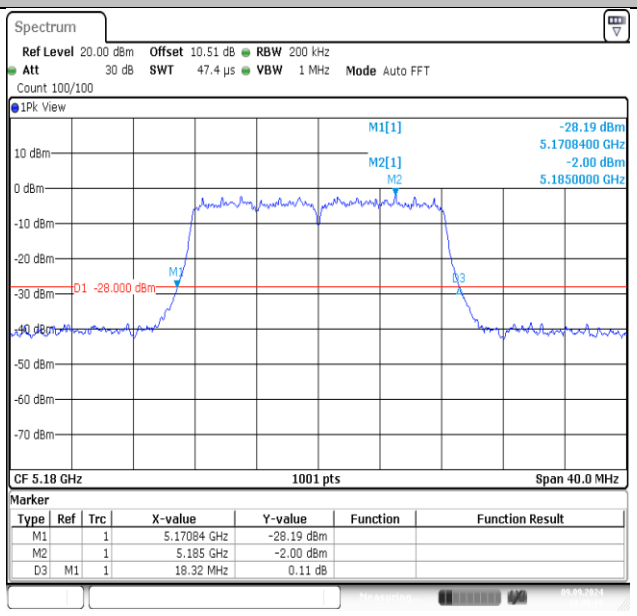
### Test Result

| TestMode | Antenna | Frequency[MHz] | 26db EBW [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|---|---|---|---|---|---|---|---|
| 11A | Ant1 | 5180 | 18.60 | 5170.72 | 5189.32 | --- | --- |
| 11A | Ant2 | 5180 | 18.32 | 5170.84 | 5189.16 | --- | --- |
| 11A | Ant1 | 5200 | 18.56 | 5190.76 | 5209.32 | --- | --- |
| 11A | Ant2 | 5200 | 18.52 | 5190.72 | 5209.24 | --- | --- |
| 11A | Ant1 | 5240 | 18.64 | 5230.72 | 5249.36 | --- | --- |
| 11A | Ant2 | 5240 | 18.44 | 5230.76 | 5249.20 | --- | --- |
| 11N20MIMO | Ant1 | 5180 | 19.48 | 5170.32 | 5189.80 | --- | --- |
| 11N20MIMO | Ant2 | 5180 | 19.40 | 5170.36 | 5189.76 | --- | --- |
| 11N20MIMO | Ant1 | 5200 | 19.44 | 5190.40 | 5209.84 | --- | --- |
| 11N20MIMO | Ant2 | 5200 | 19.48 | 5190.36 | 5209.84 | --- | --- |
| 11N20MIMO | Ant1 | 5240 | 19.52 | 5230.32 | 5249.84 | --- | --- |
| 11N20MIMO | Ant2 | 5240 | 19.60 | 5230.28 | 5249.88 | --- | --- |
| 11AC20MIMO | Ant1 | 5180 | 19.40 | 5170.48 | 5189.88 | --- | --- |
| 11AC20MIMO | Ant2 | 5180 | 19.40 | 5170.40 | 5189.80 | --- | --- |
| 11AC20MIMO | Ant1 | 5200 | 19.48 | 5190.36 | 5209.84 | --- | --- |
| 11AC20MIMO | Ant2 | 5200 | 19.52 | 5190.32 | 5209.84 | --- | --- |
| 11AC20MIMO | Ant1 | 5240 | 19.40 | 5230.36 | 5249.76 | --- | --- |
| 11AC20MIMO | Ant2 | 5240 | 19.48 | 5230.36 | 5249.84 | --- | --- |

## Test Graphs




11A-Ant1-5180

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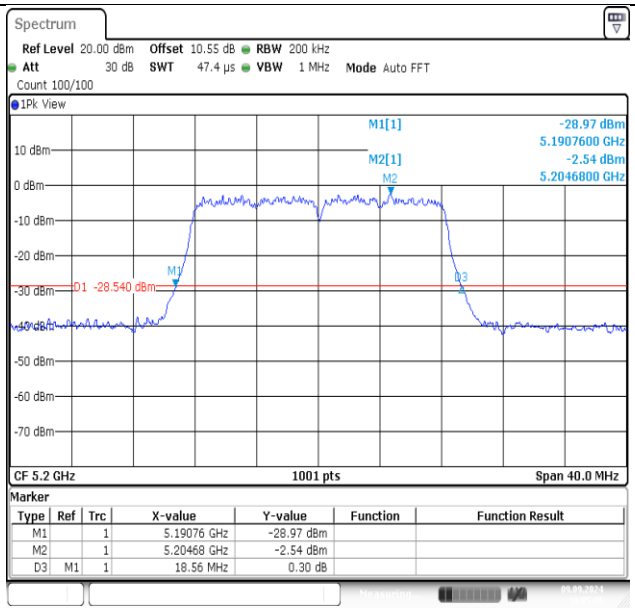


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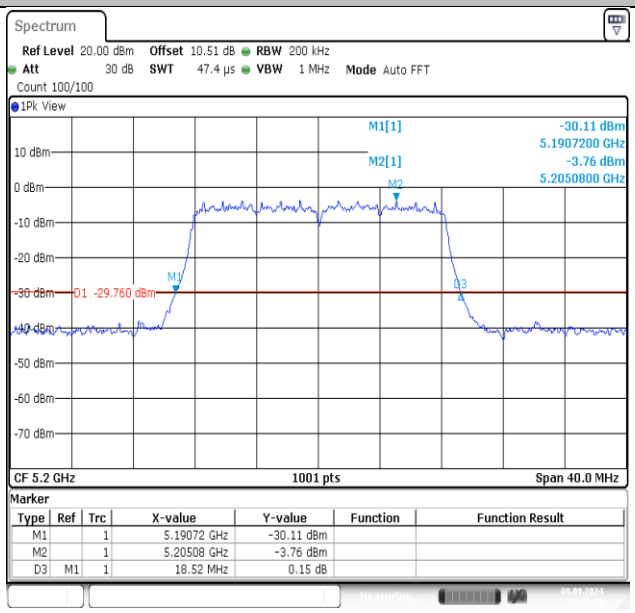


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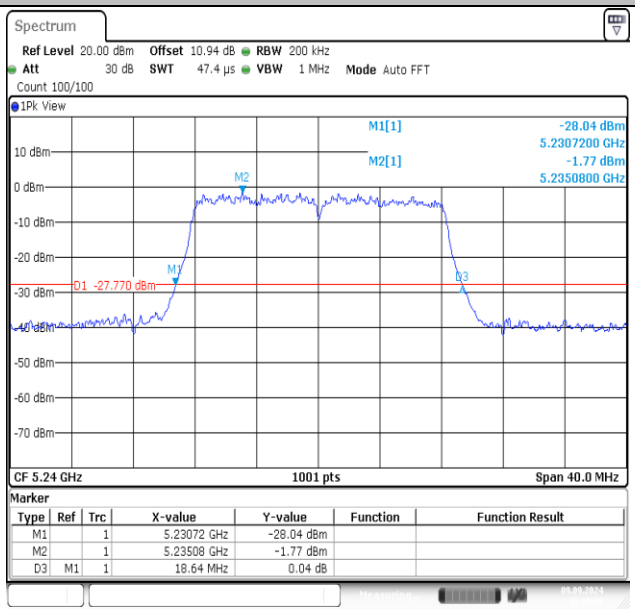


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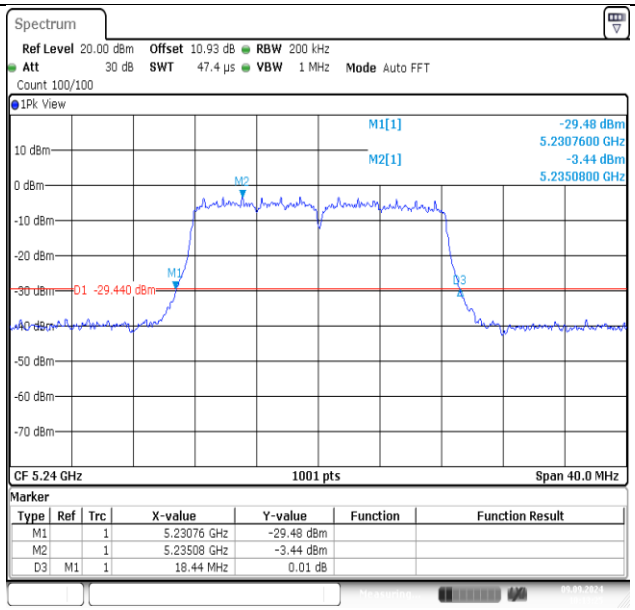
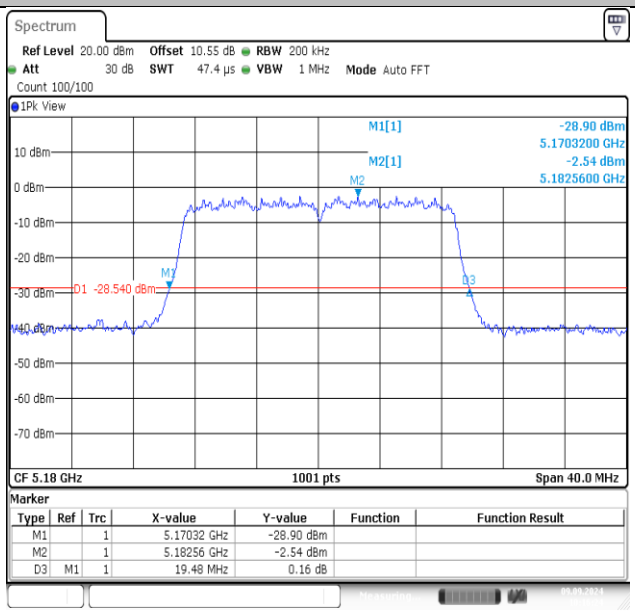
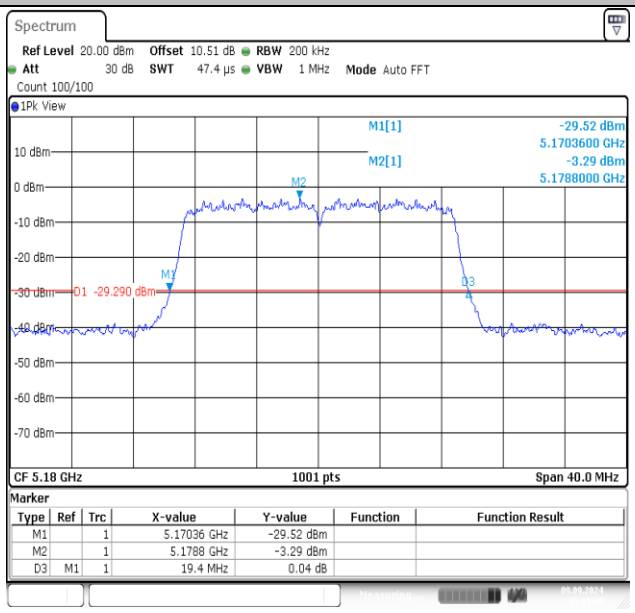



11A-Ant2-5240




11N20MIMO-Ant1-5180

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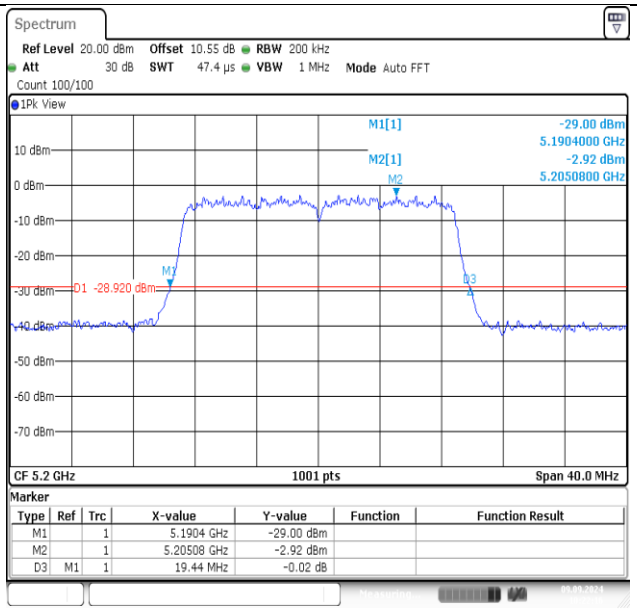


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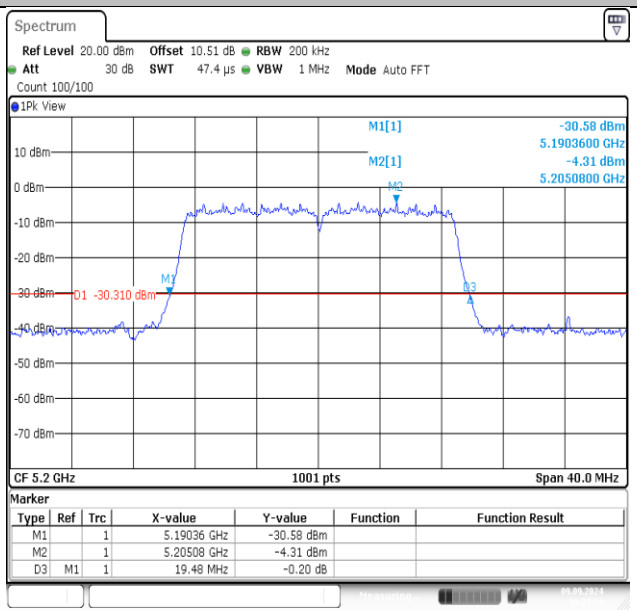


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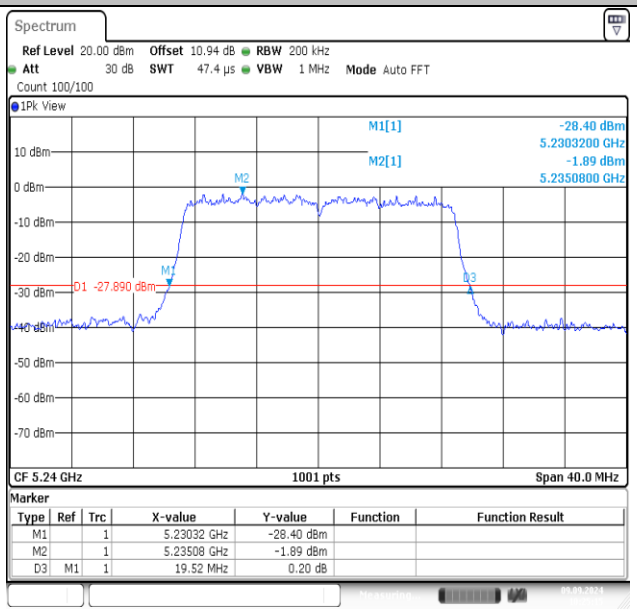


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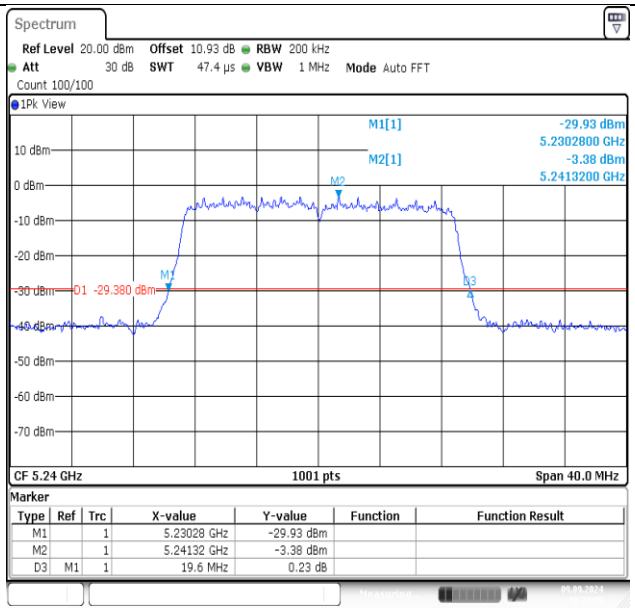


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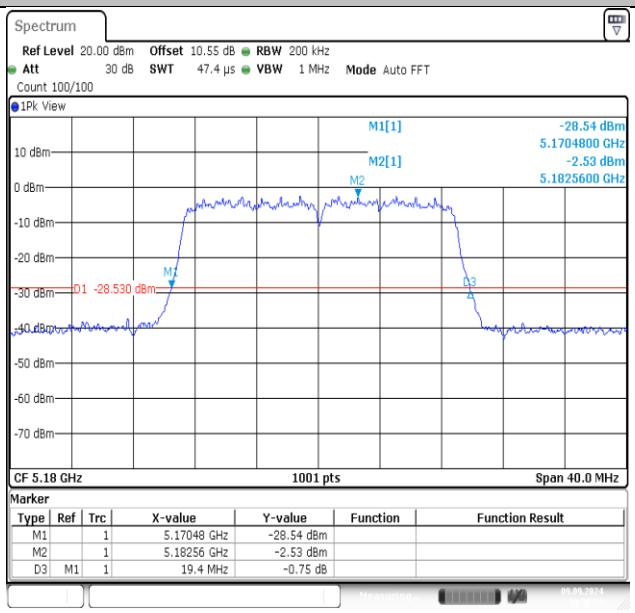
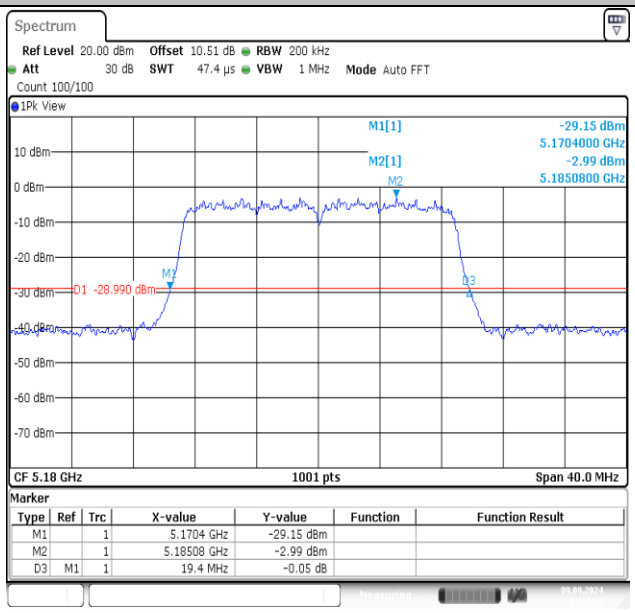
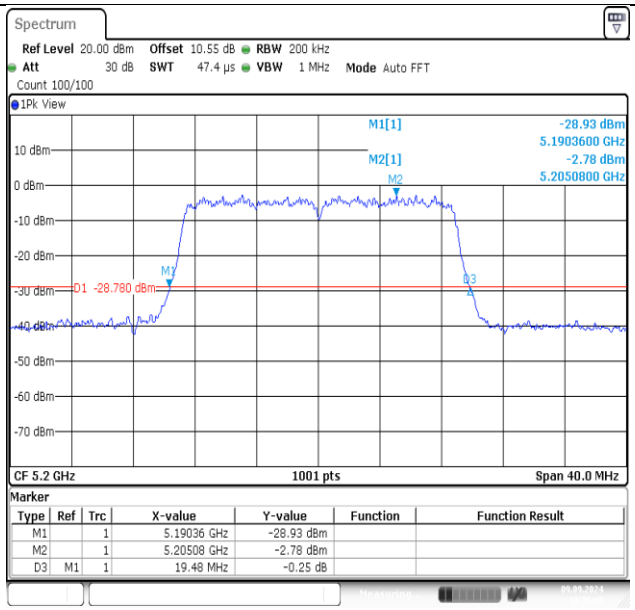


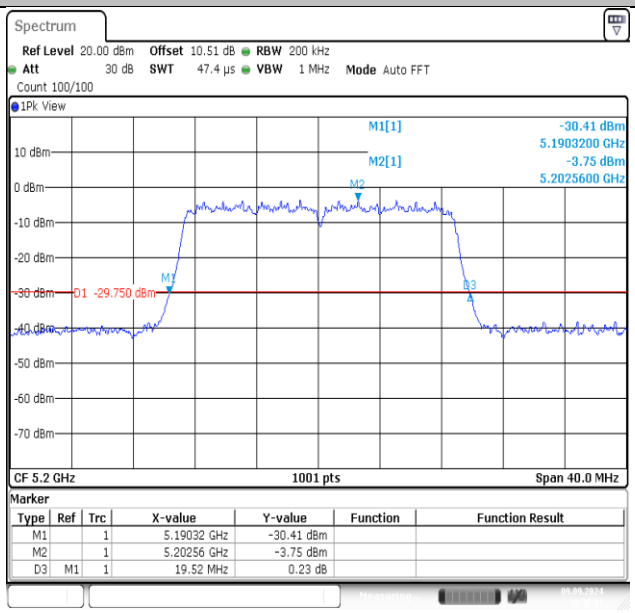

11AC20MIMO-Ant1-5180



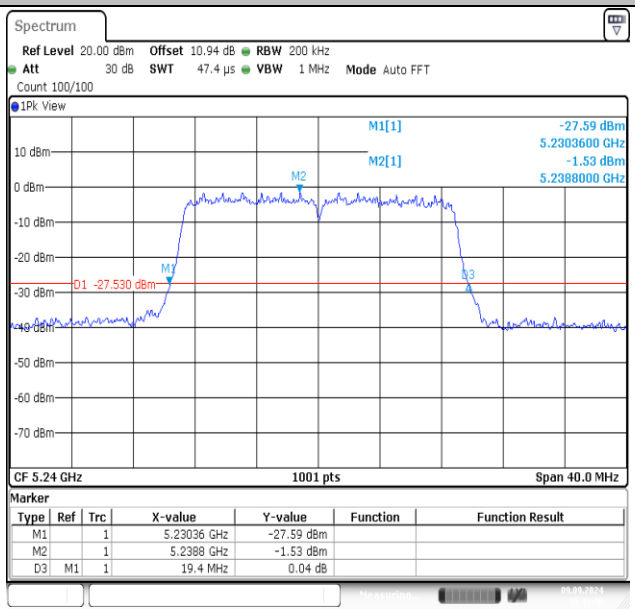

11AC20MIMO-Ant2-5180



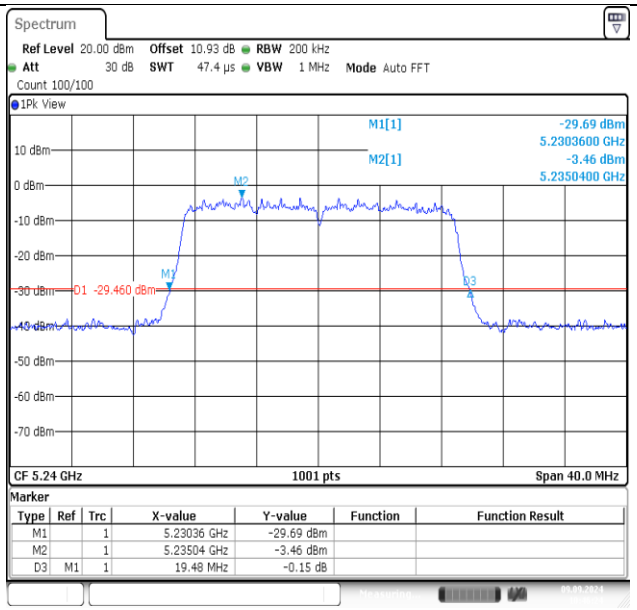

11AC20MIMO-Ant1-5200




11AC20MIMO-Ant2-5200




11AC20MIMO-Ant1-5240



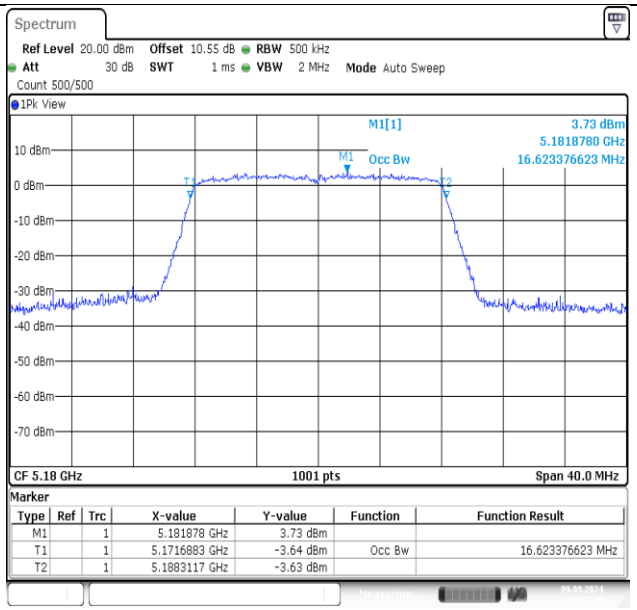

11AC20MIMO-Ant2-5240

# Appendix A2: Occupied channel bandwidth

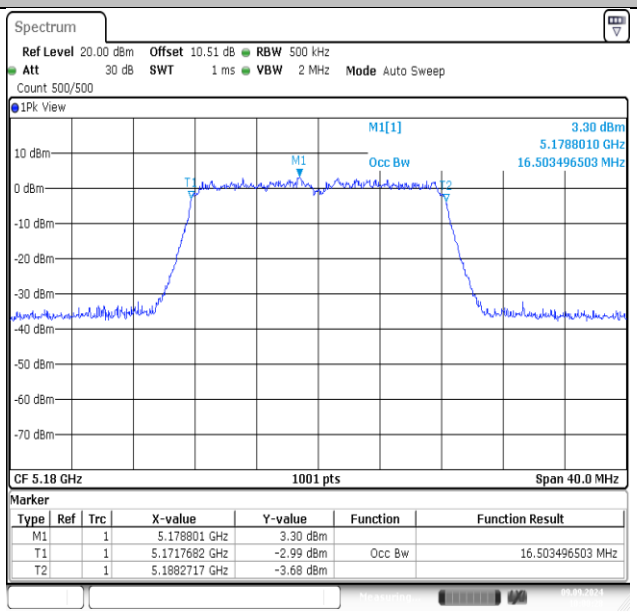
## Test Result

| TestMode | Antenna | Frequency[MHz] | OCB [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|---|---|---|---|---|---|---|---|
| 11A | Ant1 | 5180 | 16.623 | 5171.6883 | 5188.3117 | --- | --- |
| 11A | Ant2 | 5180 | 16.503 | 5171.7682 | 5188.2717 | --- | --- |
| 11A | Ant1 | 5200 | 16.623 | 5191.7682 | 5208.3916 | --- | --- |
| 11A | Ant2 | 5200 | 16.543 | 5191.8082 | 5208.3516 | --- | --- |
| 11A | Ant1 | 5240 | 16.623 | 5231.7682 | 5248.3916 | --- | --- |
| 11A | Ant2 | 5240 | 16.543 | 5231.8082 | 5248.3516 | --- | --- |
| 11N20MIMO | Ant1 | 5180 | 17.742 | 5171.2088 | 5188.9510 | --- | --- |
| 11N20MIMO | Ant2 | 5180 | 17.742 | 5171.2088 | 5188.9510 | --- | --- |
| 11N20MIMO | Ant1 | 5200 | 17.702 | 5191.2488 | 5208.9510 | --- | --- |
| 11N20MIMO | Ant2 | 5200 | 17.742 | 5191.2088 | 5208.9510 | --- | --- |
| 11N20MIMO | Ant1 | 5240 | 17.702 | 5231.2088 | 5248.9111 | --- | --- |
| 11N20MIMO | Ant2 | 5240 | 17.702 | 5231.2088 | 5248.9111 | --- | --- |
| 11AC20MIMO | Ant1 | 5180 | 17.702 | 5171.2488 | 5188.9510 | --- | --- |
| 11AC20MIMO | Ant2 | 5180 | 17.702 | 5171.2488 | 5188.9510 | --- | --- |
| 11AC20MIMO | Ant1 | 5200 | 17.702 | 5191.2488 | 5208.9510 | --- | --- |
| 11AC20MIMO | Ant2 | 5200 | 17.742 | 5191.2088 | 5208.9510 | --- | --- |
| 11AC20MIMO | Ant1 | 5240 | 17.702 | 5231.2088 | 5248.9111 | --- | --- |
| 11AC20MIMO | Ant2 | 5240 | 17.702 | 5231.2088 | 5248.9111 | --- | --- |

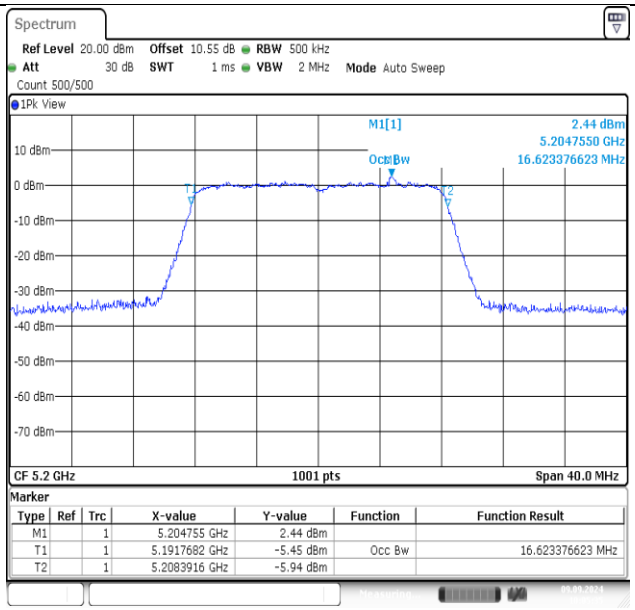
## Test Graphs



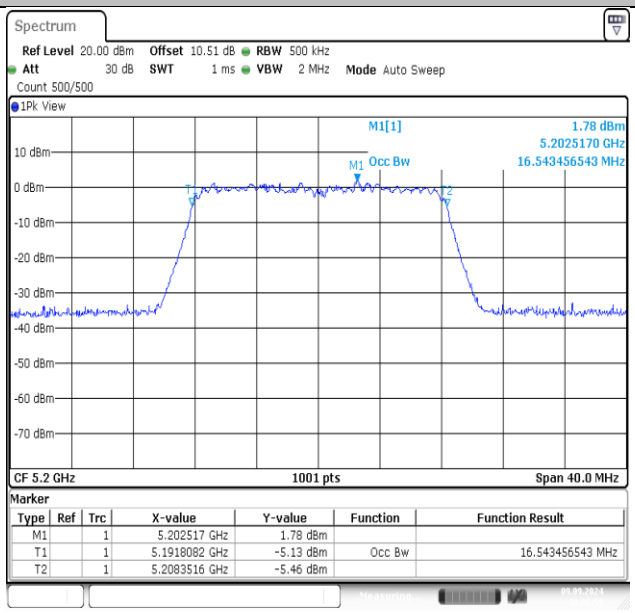

11A-Ant1-5180



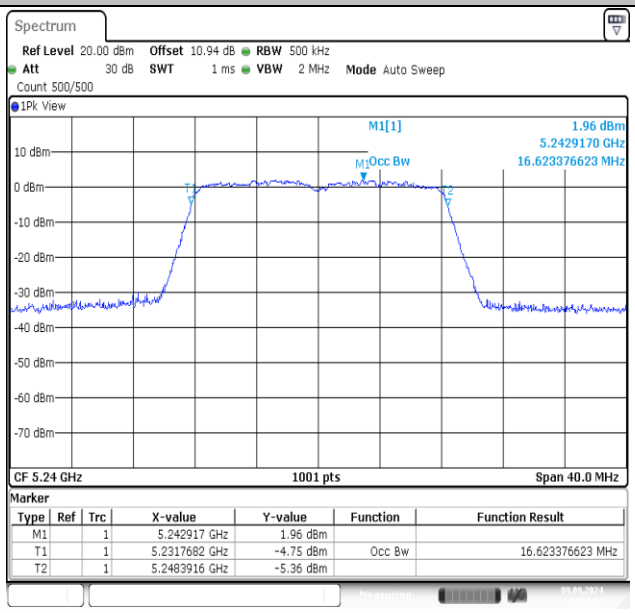

11A-Ant2-5180



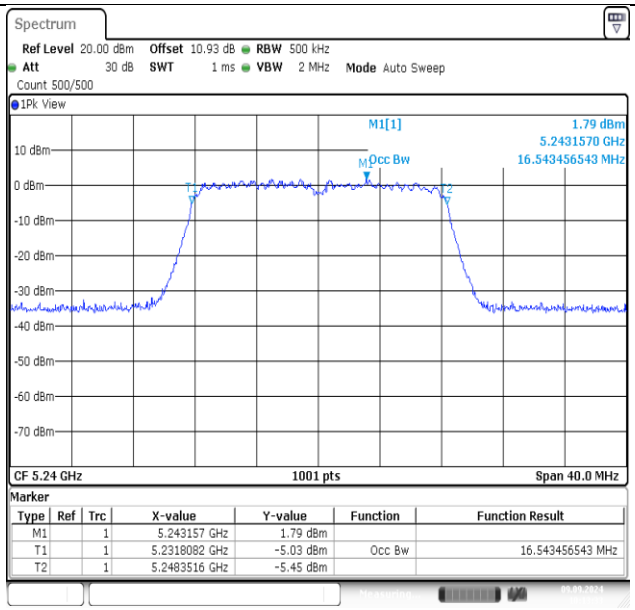

11A-Ant1-5200



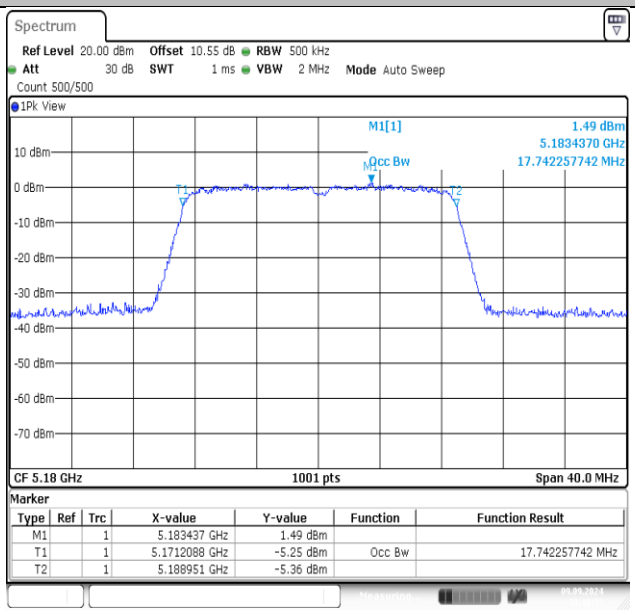

11A-Ant2-5200



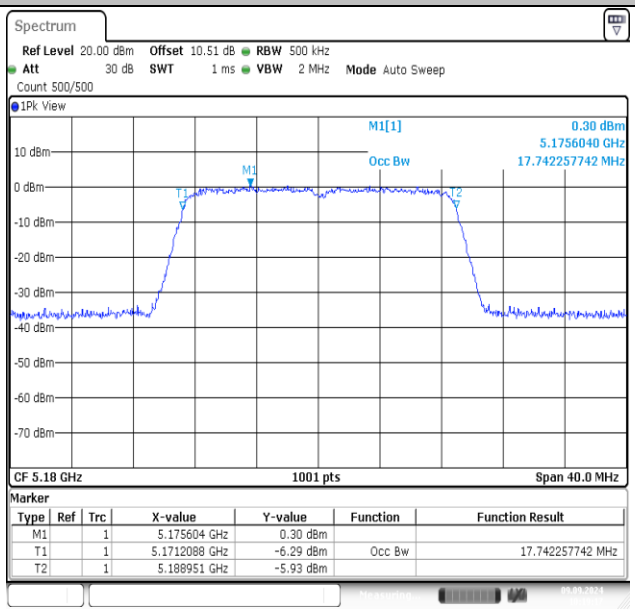

11A-Ant1-5240



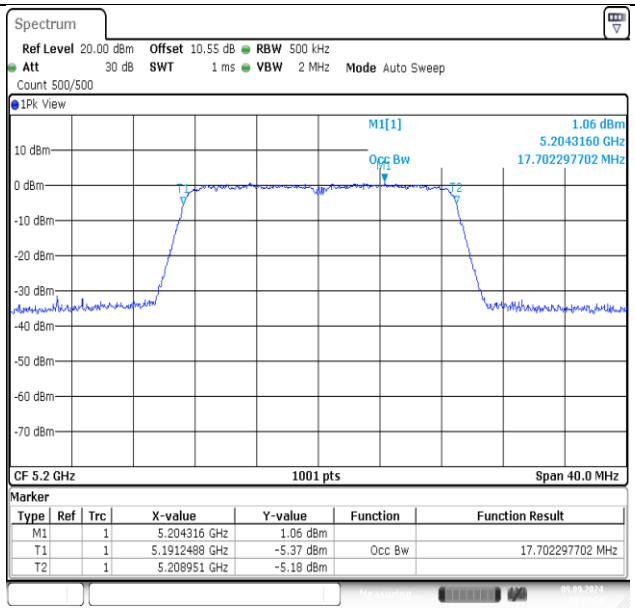

11A-Ant2-5240



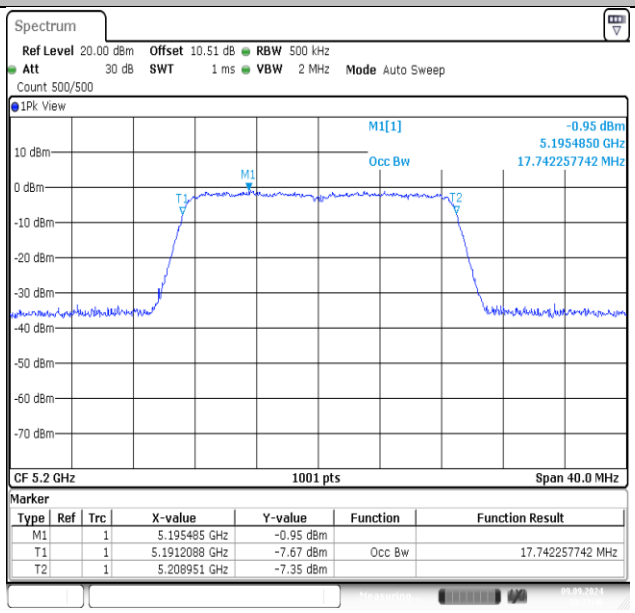

11N20MIMO-Ant1-5180



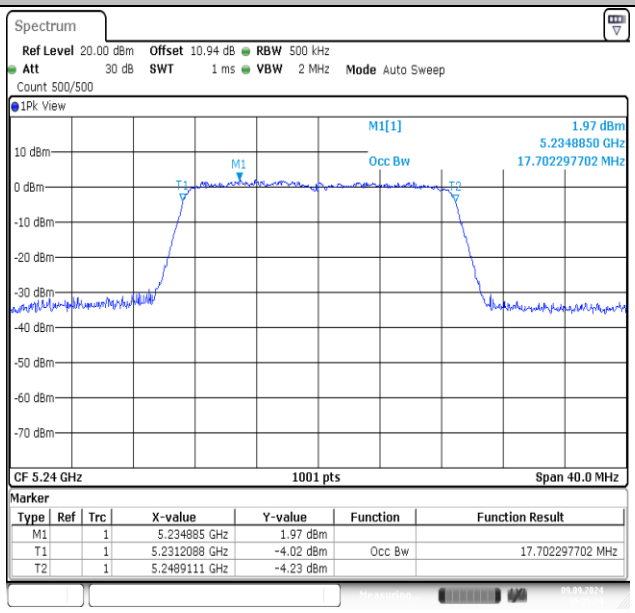

11N20MIMO-Ant2-5180



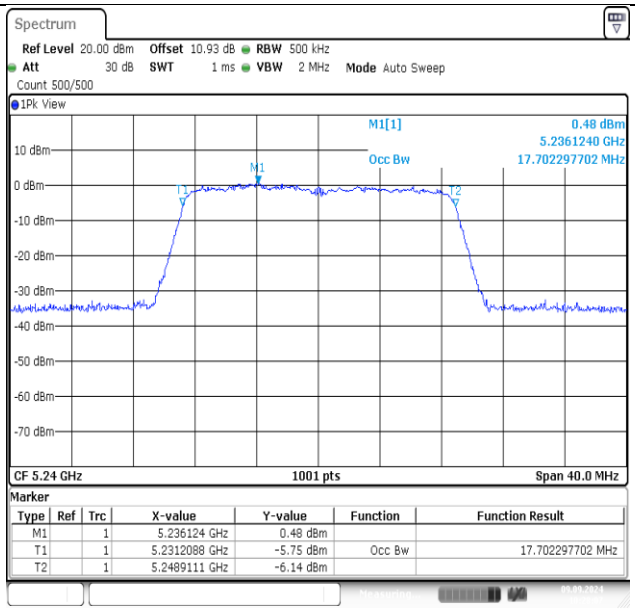

11N20MIMO-Ant1-5200



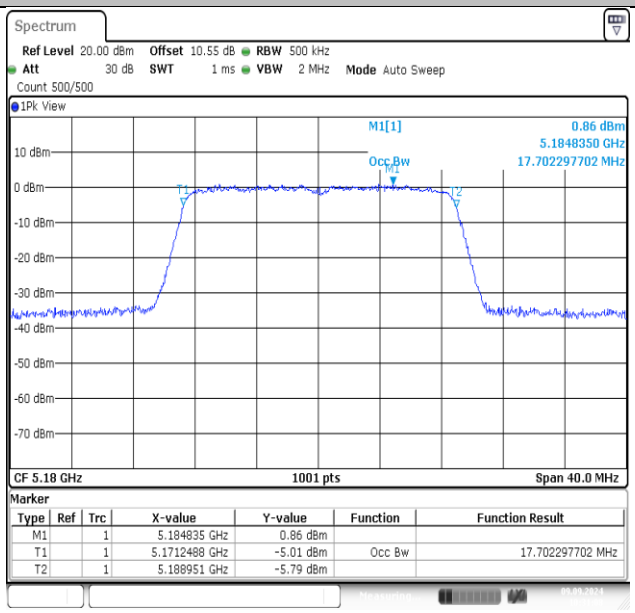

11N20MIMO-Ant2-5200



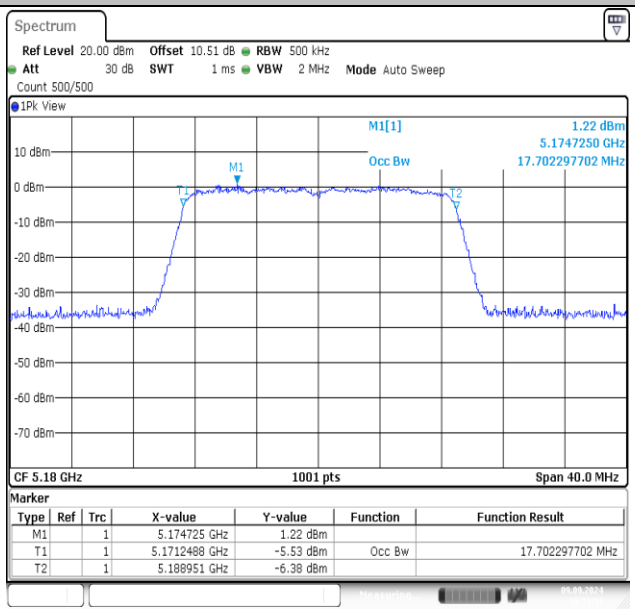

11N20MIMO-Ant1-5240



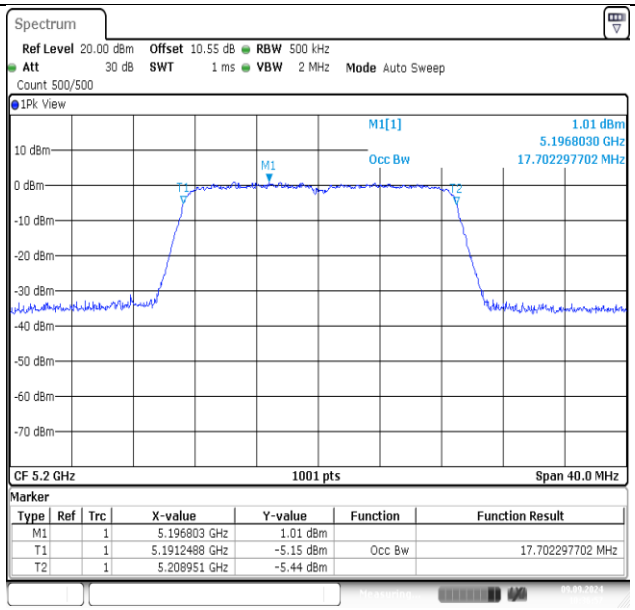

11N20MIMO-Ant2-5240



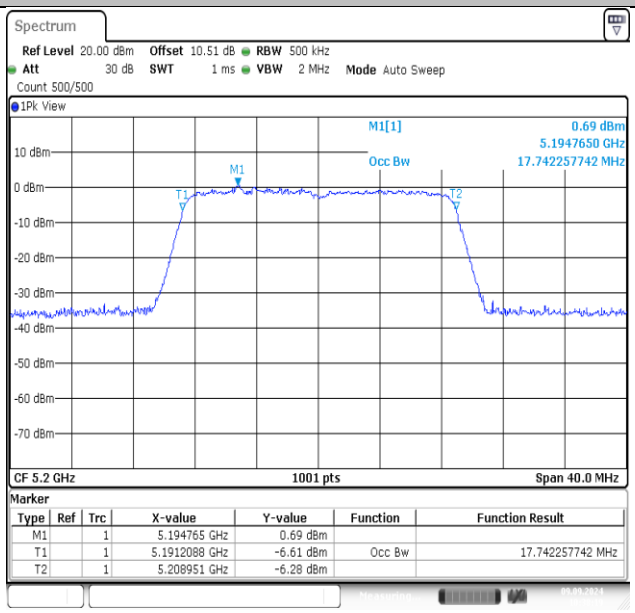

11AC20MIMO-Ant1-5180



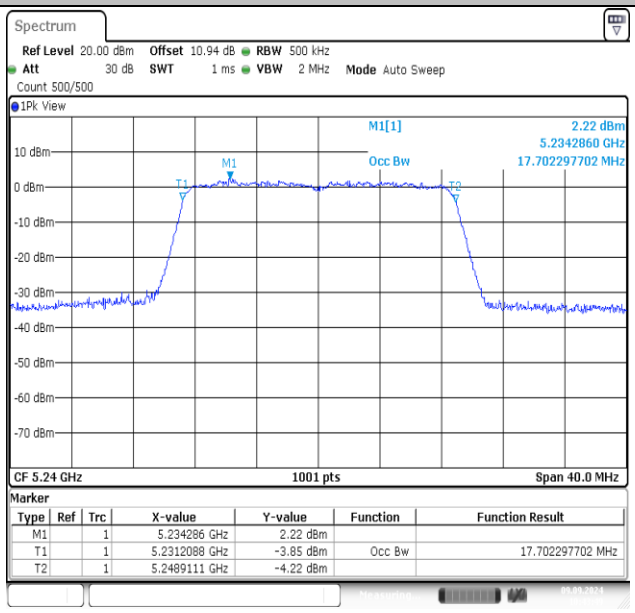

11AC20MIMO-Ant2-5180



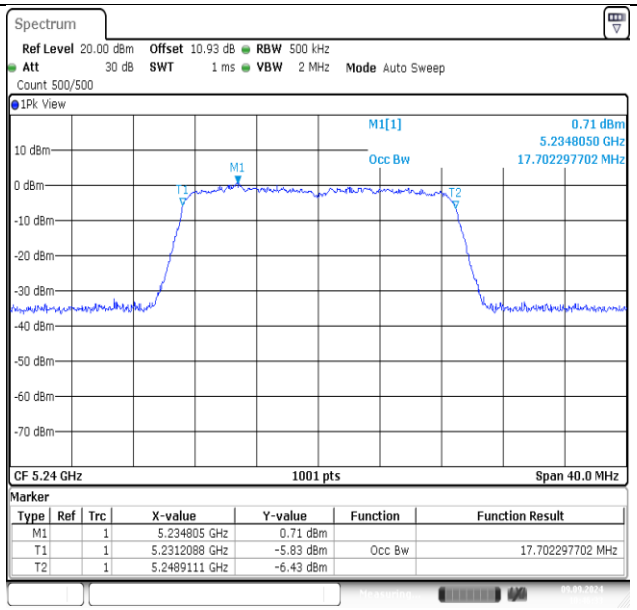

11AC20MIMO-Ant1-5200




11AC20MIMO-Ant2-5200




11AC20MIMO-Ant1-5240




11AC20MIMO-Ant2-5240

# Appendix B: Maximum conducted output power

## Test Result

| TestMode | Antenna | Frequency[MHz] | Conducted Power[dBm] | Conducted Limit[dBm] | Verdict |
|---|---|---|---|---|---|
| 11A | Ant1 | 5180 | 7.13 | ≤23.98 | PASS |
| 11A | Ant2 | 5180 | 2.08 | ≤23.98 | PASS |
| 11A | Ant1 | 5200 | 4.67 | ≤23.98 | PASS |
| 11A | Ant2 | 5200 | 0.34 | ≤23.98 | PASS |
| 11A | Ant1 | 5240 | 5.11 | ≤23.98 | PASS |
| 11A | Ant2 | 5240 | 0.82 | ≤23.98 | PASS |
| 11N20MIMO | Ant1 | 5180 | 4.23 | ≤23.98 | PASS |
| 11N20MIMO | Ant2 | 5180 | 0.97 | ≤23.98 | PASS |
| 11N20MIMO | total | 5180 | 5.91 | ≤23.98 | PASS |
| 11N20MIMO | total | 5200 | 6.31 | ≤23.98 | PASS |
| 11N20MIMO | Ant1 | 5200 | 4.01 | ≤23.98 | PASS |
| 11N20MIMO | Ant2 | 5200 | 2.45 | ≤23.98 | PASS |
| 11N20MIMO | Ant1 | 5240 | 4.87 | ≤23.98 | PASS |
| 11N20MIMO | Ant2 | 5240 | 3.09 | ≤23.98 | PASS |
| 11N20MIMO | total | 5240 | 7.08 | ≤23.98 | PASS |
| 11AC20MIMO | Ant1 | 5180 | 3.91 | ≤23.98 | PASS |
| 11AC20MIMO | Ant2 | 5180 | 2.56 | ≤23.98 | PASS |
| 11AC20MIMO | total | 5180 | 6.30 | ≤23.98 | PASS |
| 11AC20MIMO | Ant1 | 5200 | 3.87 | ≤23.98 | PASS |
| 11AC20MIMO | Ant2 | 5200 | 2.19 | ≤23.98 | PASS |
| 11AC20MIMO | total | 5200 | 6.12 | ≤23.98 | PASS |
| 11AC20MIMO | Ant1 | 5240 | 4.75 | ≤23.98 | PASS |
| 11AC20MIMO | Ant2 | 5240 | 3.09 | ≤23.98 | PASS |
| 11AC20MIMO | total | 5240 | 7.01 | ≤23.98 | PASS |

Note：The Duty Cycle Factor is compensated in the result.

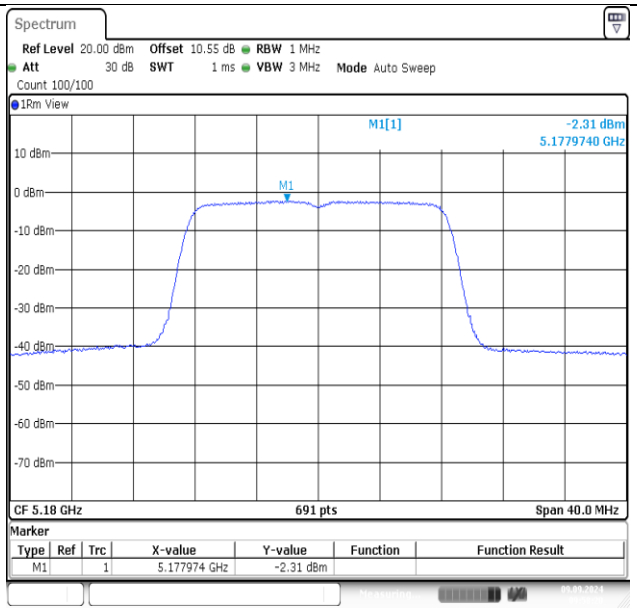
# Appendix C: Maximum power spectral density

## Test Result

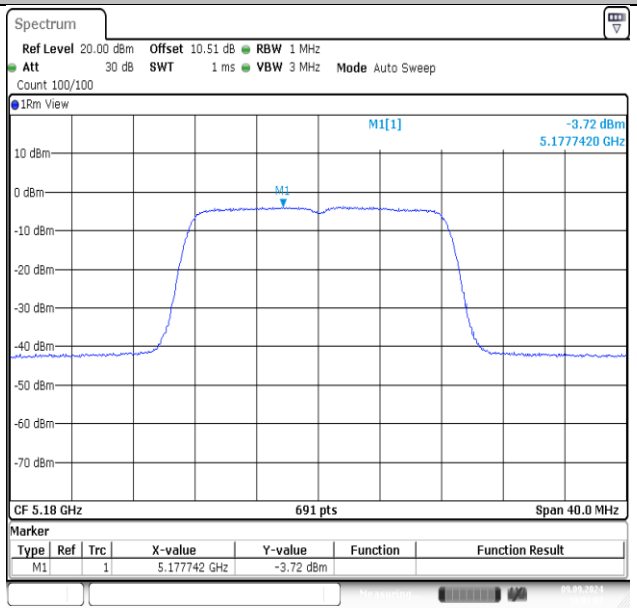
| TestMode | Antenna | Frequency[MHz] | Result [dBm/MHz] | Limit[dBm/MHz] | Verdict |
|---|---|---|---|---|---|
| 11A | Ant1 | 5180 | -2.31 | ≤11.00 | PASS |
| 11A | Ant2 | 5180 | -3.72 | ≤11.00 | PASS |
| 11A | Ant1 | 5200 | -3.86 | ≤11.00 | PASS |
| 11A | Ant2 | 5200 | -5.03 | ≤11.00 | PASS |
| 11A | Ant1 | 5240 | -2.96 | ≤11.00 | PASS |
| 11A | Ant2 | 5240 | -4.57 | ≤11.00 | PASS |
| 11N20MIMO | Ant1 | 5180 | -4.03 | ≤11.00 | PASS |
| 11N20MIMO | Ant2 | 5180 | -4.61 | ≤11.00 | PASS |
| 11N20MIMO | total | 5180 | -0.98 | ≤11.00 | PASS |
| 11N20MIMO | Ant1 | 5200 | -4.31 | ≤11.00 | PASS |
| 11N20MIMO | Ant2 | 5200 | -5.79 | ≤11.00 | PASS |
| 11N20MIMO | total | 5200 | -1.54 | ≤11.00 | PASS |
| 11N20MIMO | Ant1 | 5240 | -3.09 | ≤11.00 | PASS |
| 11N20MIMO | Ant2 | 5240 | -4.71 | ≤11.00 | PASS |
| 11N20MIMO | total | 5240 | -0.36 | ≤11.00 | PASS |
| 11AC20MIMO | Ant1 | 5180 | -3.83 | ≤11.00 | PASS |
| 11AC20MIMO | Ant2 | 5180 | -4.60 | ≤11.00 | PASS |
| 11AC20MIMO | total | 5180 | -0.84 | ≤11.00 | PASS |
| 11AC20MIMO | Ant1 | 5200 | -4.17 | ≤11.00 | PASS |
| 11AC20MIMO | Ant2 | 5200 | -5.36 | ≤11.00 | PASS |
| 11AC20MIMO | total | 5200 | -1.25 | ≤11.00 | PASS |
| 11AC20MIMO | Ant1 | 5240 | -3.13 | ≤11.00 | PASS |
| 11AC20MIMO | Ant2 | 5240 | -5.20 | ≤11.00 | PASS |
| 11AC20MIMO | total | 5240 | -0.53 | ≤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 result.

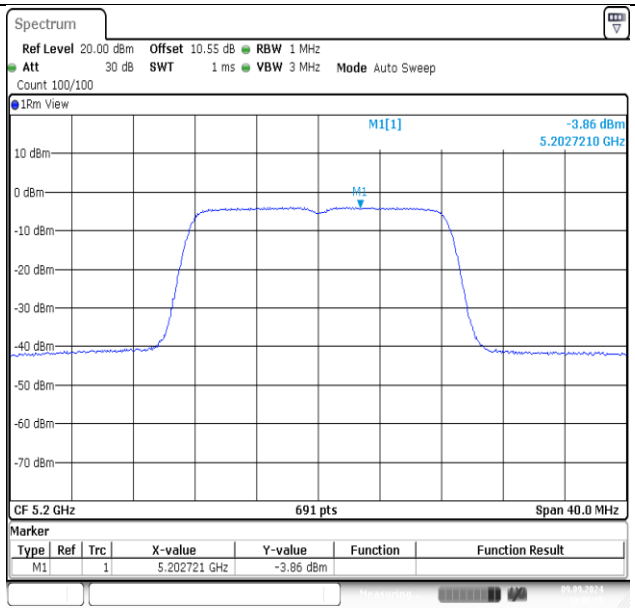
## Test Graphs



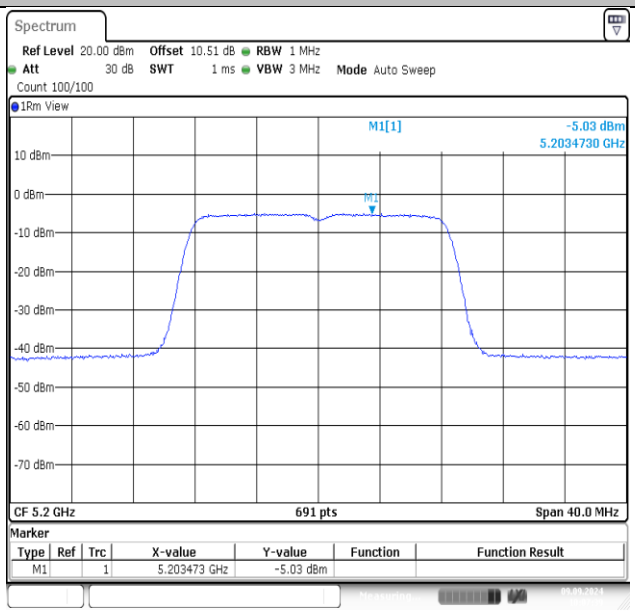

11A-Ant1-5180-PASS



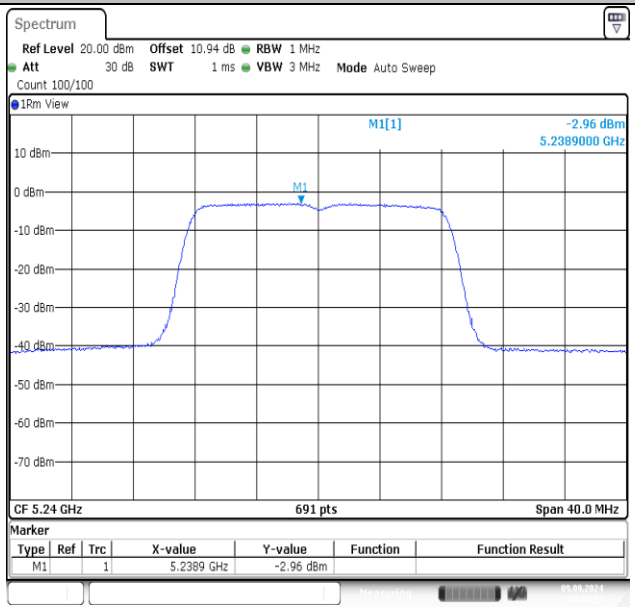

11A-Ant2-5180-PASS



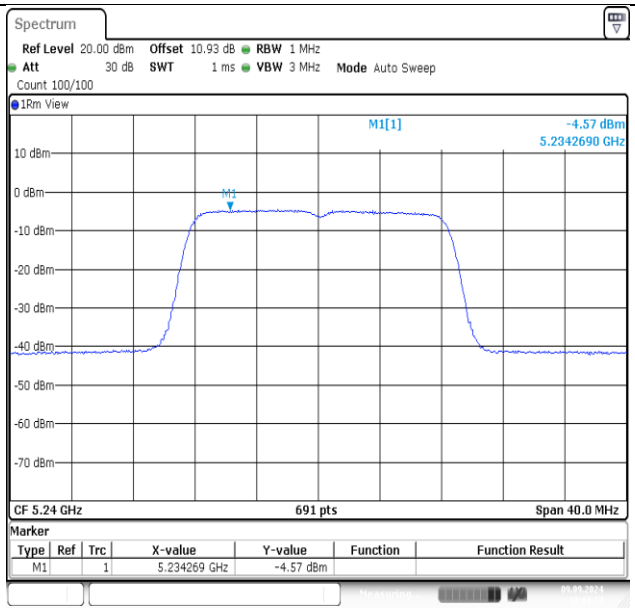

11A-Ant1-5200-PASS



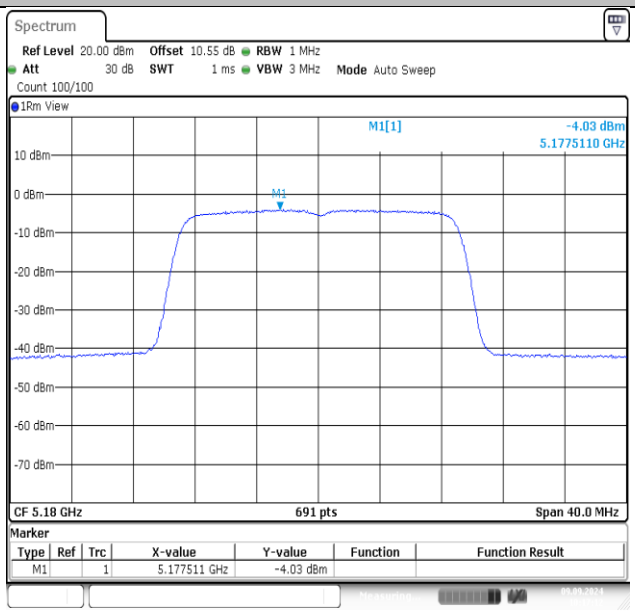

11A-Ant2-5200-PASS



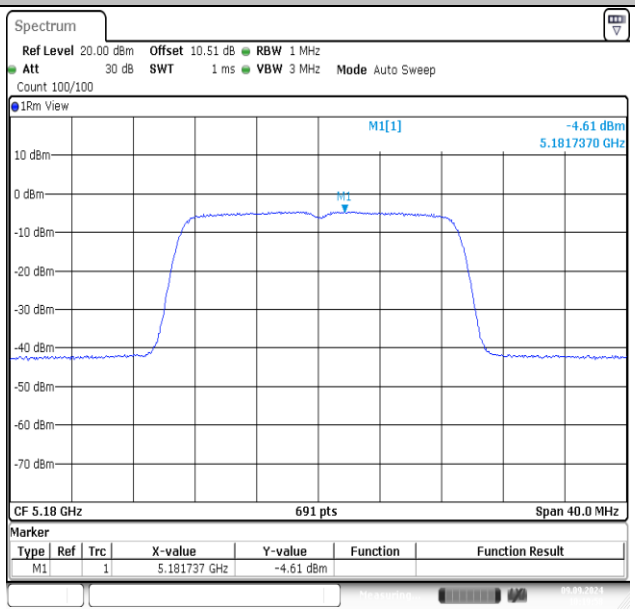

11A-Ant1-5240-PASS



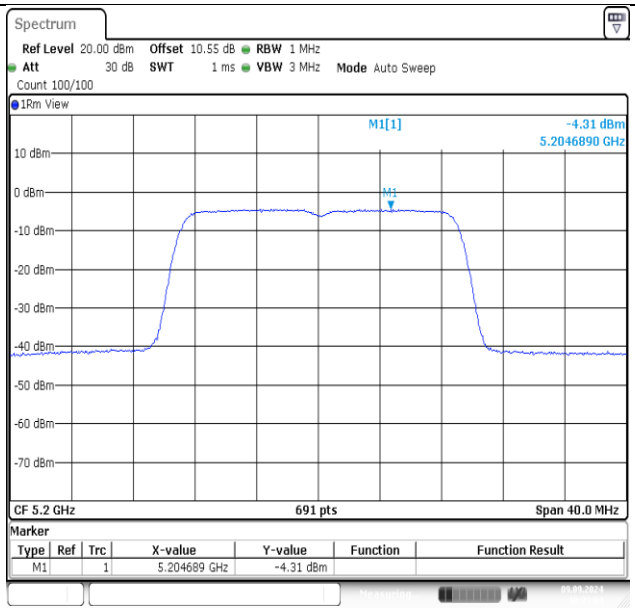

11A-Ant2-5240-PASS



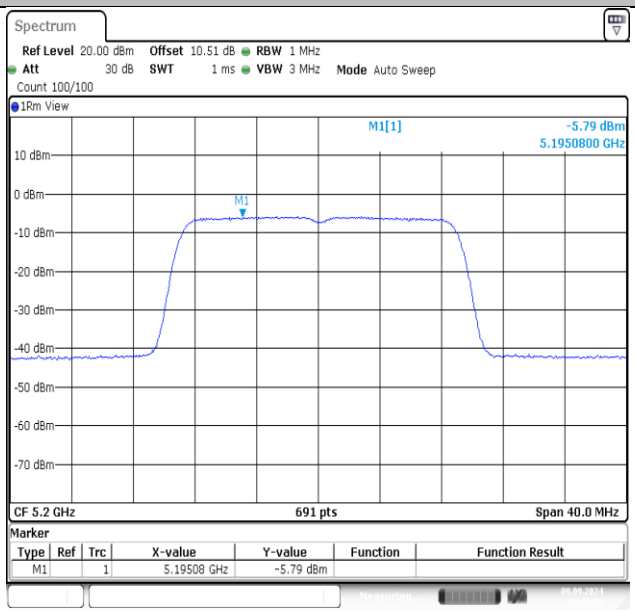

11N20MIMO-Ant1-5180-PASS



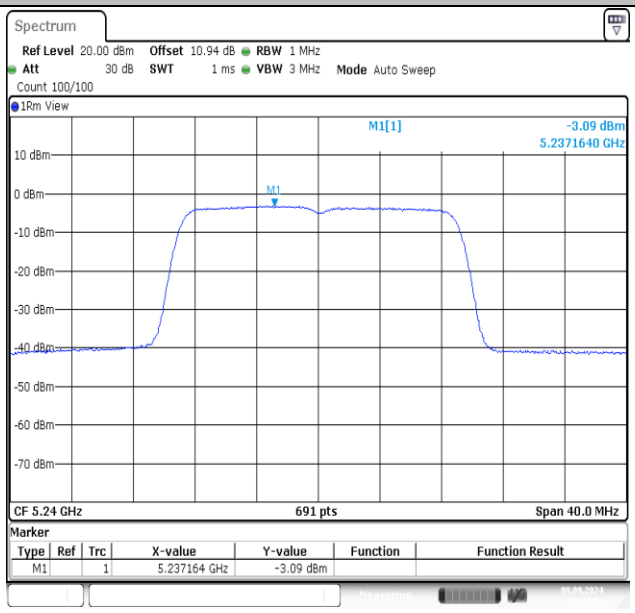

11N20MIMO-Ant2-5180-PASS



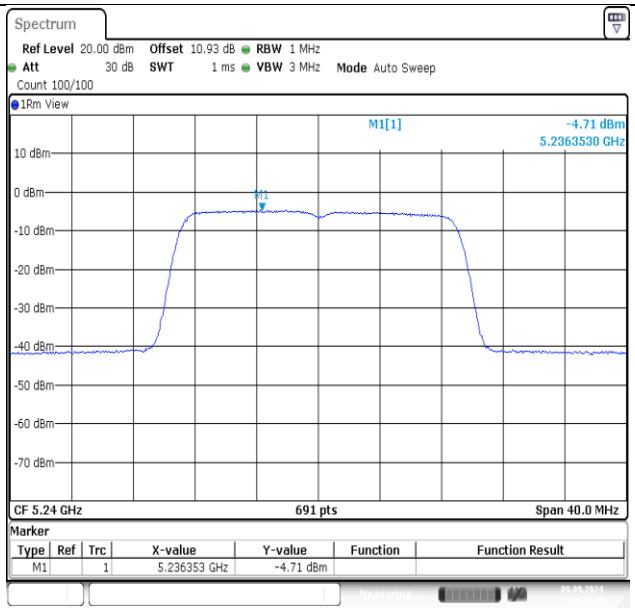

11N20MIMO-Ant1-5200-PASS



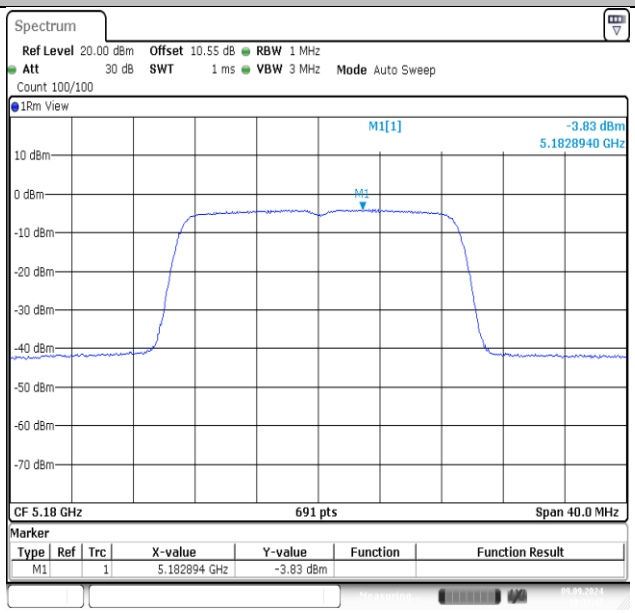

11N20MIMO-Ant2-5200-PASS



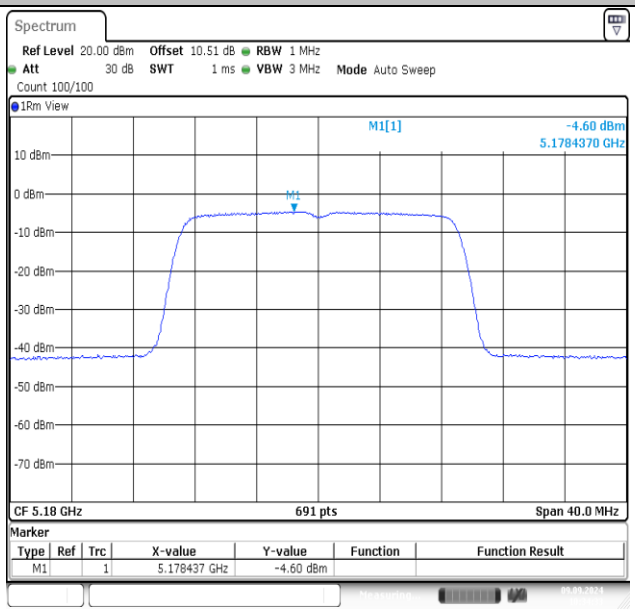

11N20MIMO-Ant1-5240-PASS



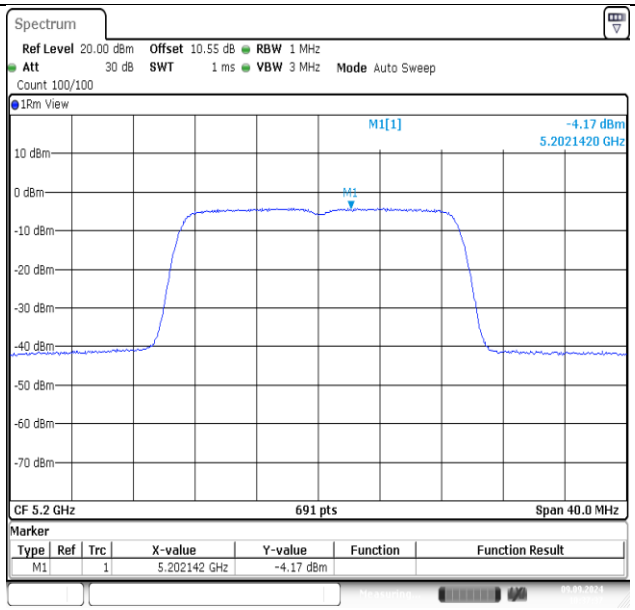

11N20MIMO-Ant2-5240-PASS



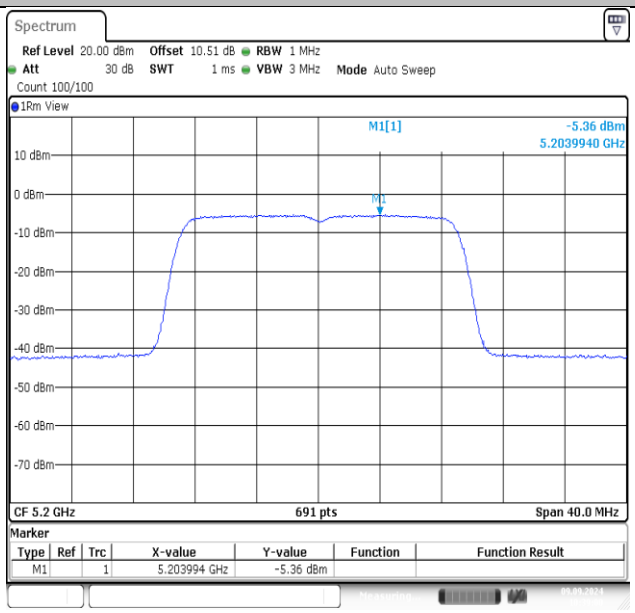

11AC20MIMO-Ant1-5180-PASS



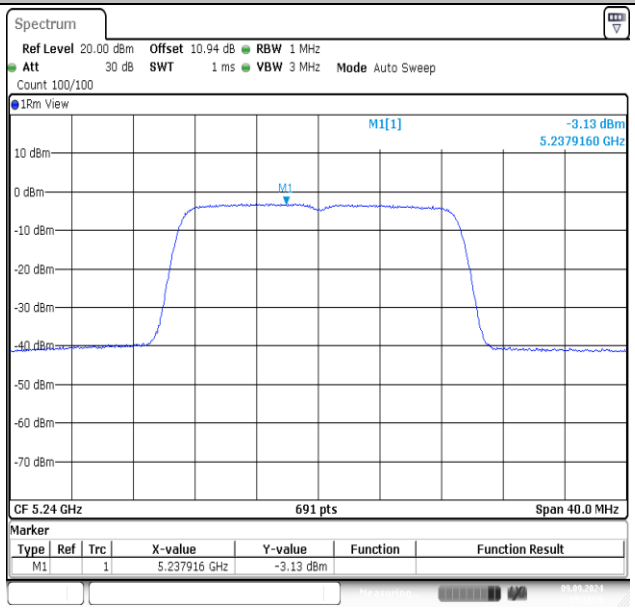

11AC20MIMO-Ant2-5180-PASS



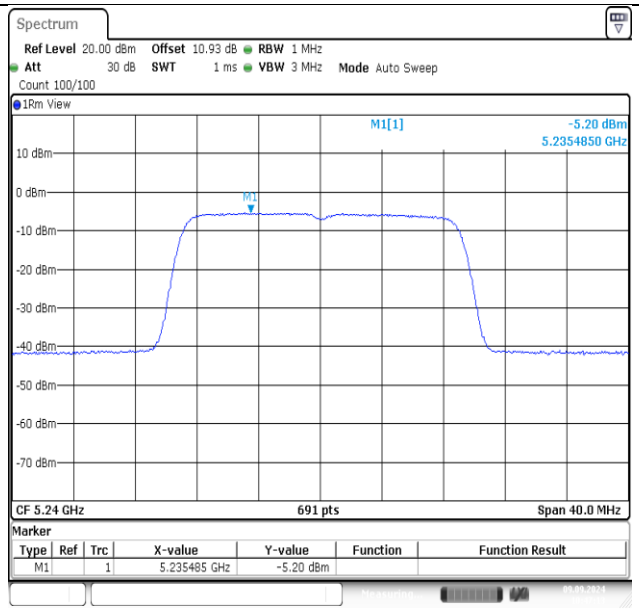

11AC20MIMO-Ant1-5200-PASS




11AC20MIMO-Ant2-5200-PASS




11AC20MIMO-Ant1-5240-PASS



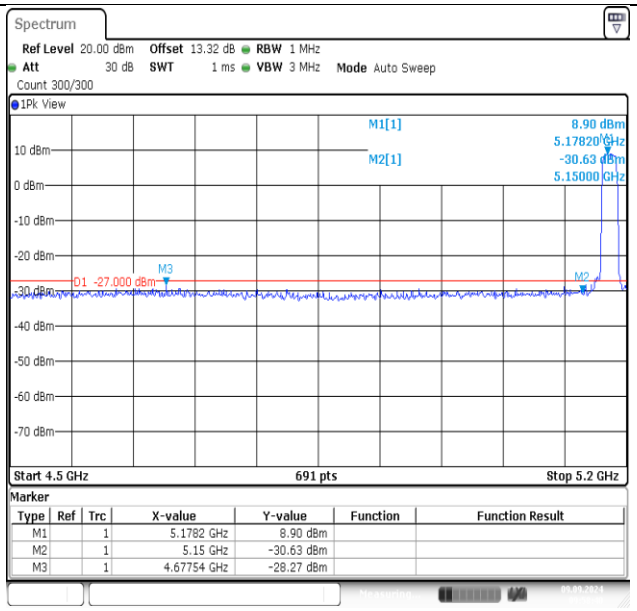

11AC20MIMO-Ant2-5240-PASS

# Appendix D: Band edge measurements

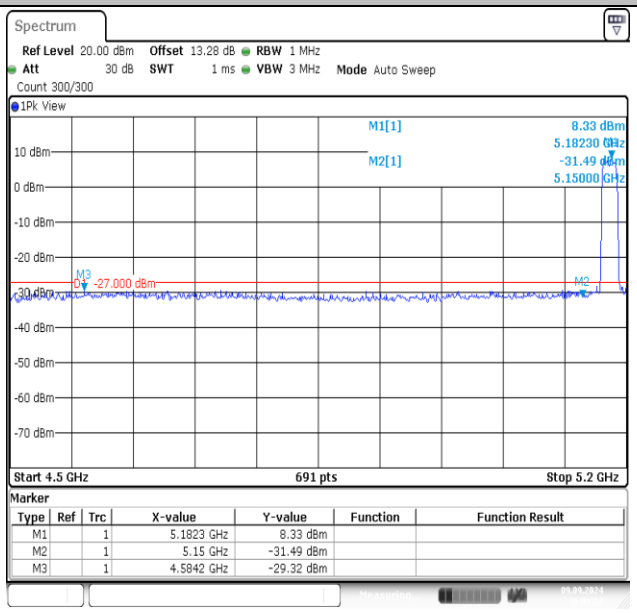
## Test Result

| TestMode | Antenna | ChName | Frequency[MHz] | Result[dBm] | Limit[dBm] | Verdict |
|---|---|---|---|---|---|---|
| 11A | Ant1 | Low | 5180 | -28.27 | ≤-27 | PASS |
| 11A | Ant2 | Low | 5180 | -29.32 | ≤-27 | PASS |
| 11A | Ant1 | High | 5240 | -36.6 | ≤-27 | PASS |
| 11A | Ant2 | High | 5240 | -36.64 | ≤-27 | PASS |
| 11N20MIMO | Ant1 | Low | 5180 | -28.57 | ≤-27 | PASS |
| 11N20MIMO | Ant2 | Low | 5180 | -29.07 | ≤-27 | PASS |
| 11N20MIMO | Ant1 | High | 5240 | -36.46 | ≤-27 | PASS |
| 11N20MIMO | Ant2 | High | 5240 | -36.72 | ≤-27 | PASS |
| 11AC20MIMO | Ant1 | Low | 5180 | -38.68 | ≤-27 | PASS |
| 11AC20MIMO | Ant2 | Low | 5180 | -38.3 | ≤-27 | PASS |
| 11AC20MIMO | Ant1 | High | 5240 | -36.35 | ≤-27 | PASS |
| 11AC20MIMO | Ant2 | High | 5240 | -36.35 | ≤-27 | PASS |

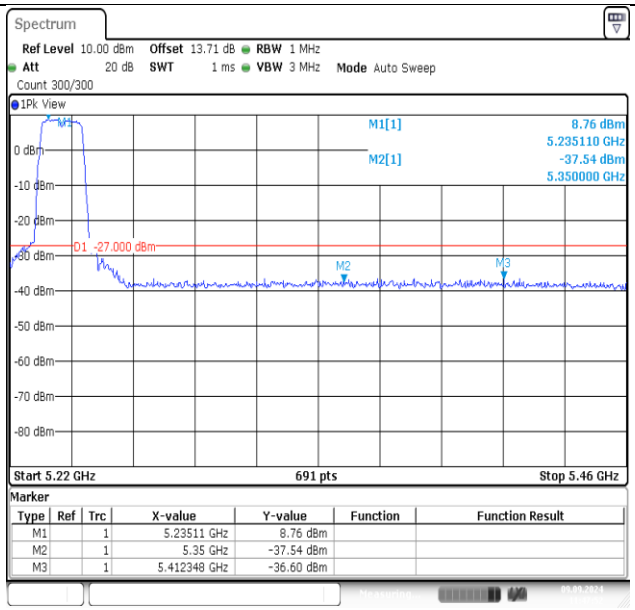
## Test Graphs



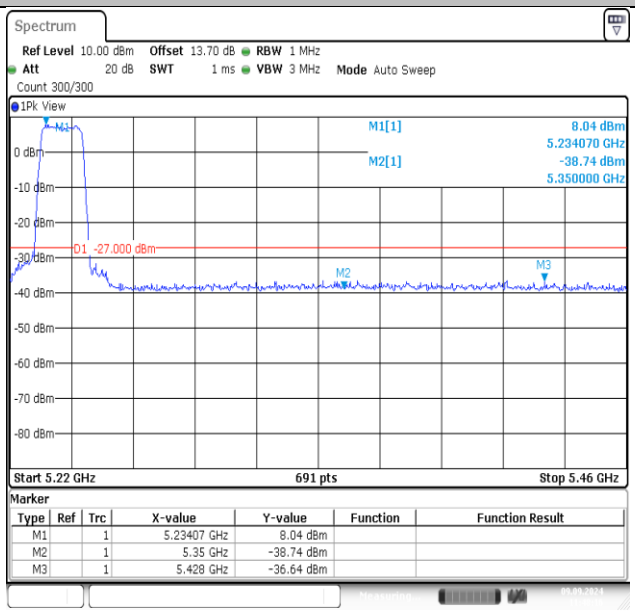

11A-Ant1-5180-PASS



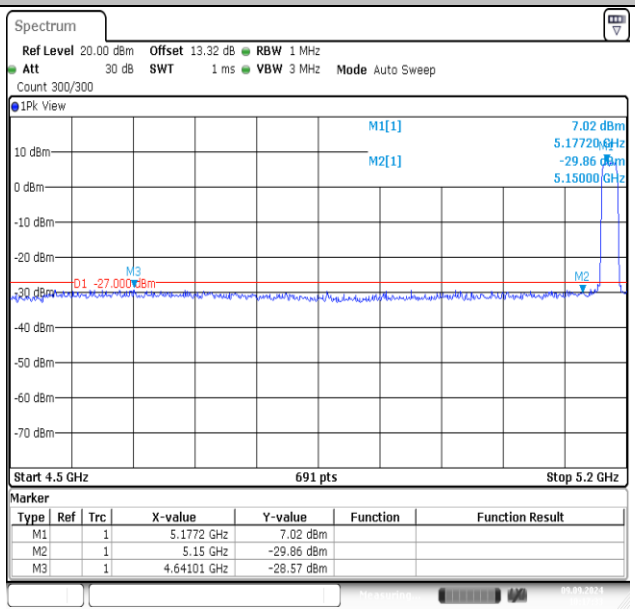

11A-Ant2-5180-PASS



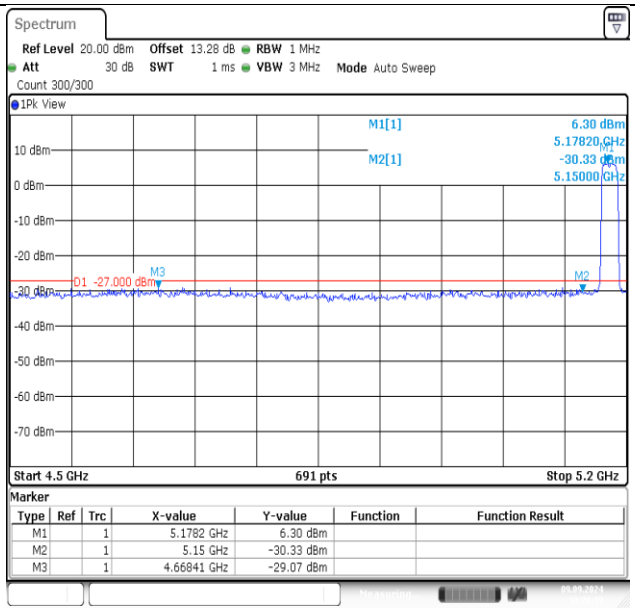

11A-Ant1-5240-PASS



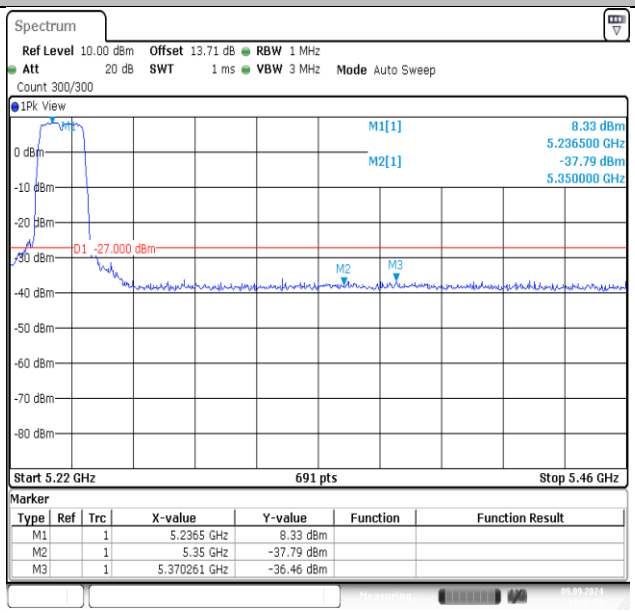

11A-Ant2-5240-PASS



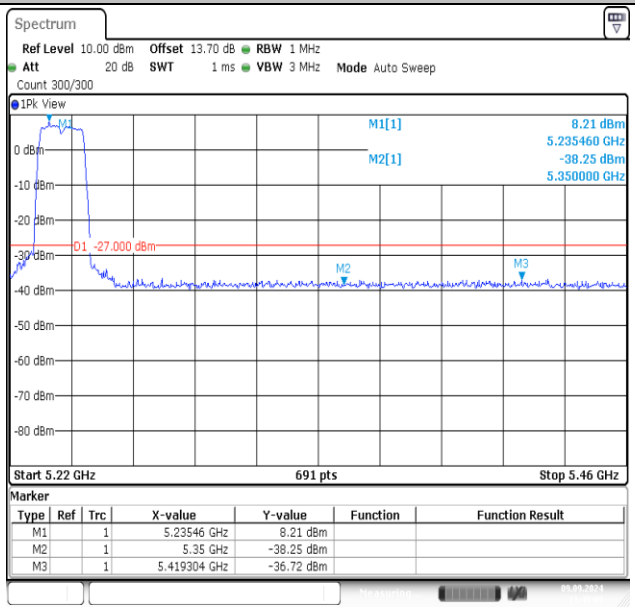

11N20MIMO-Ant1-5180-PASS



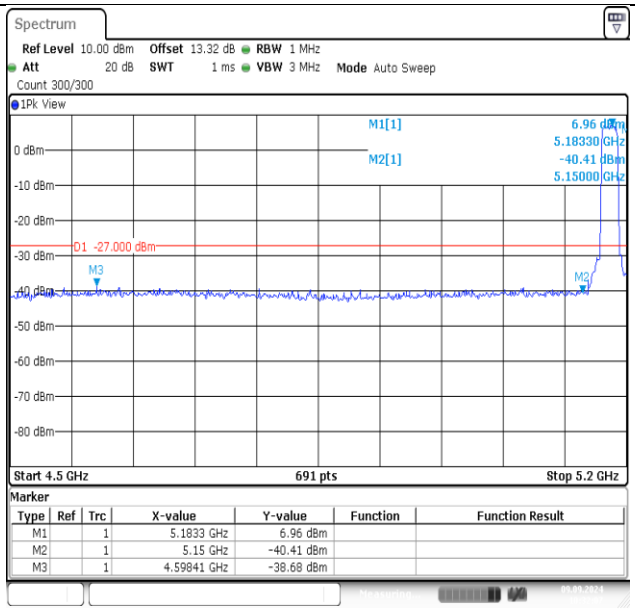

11N20MIMO-Ant2-5180-PASS



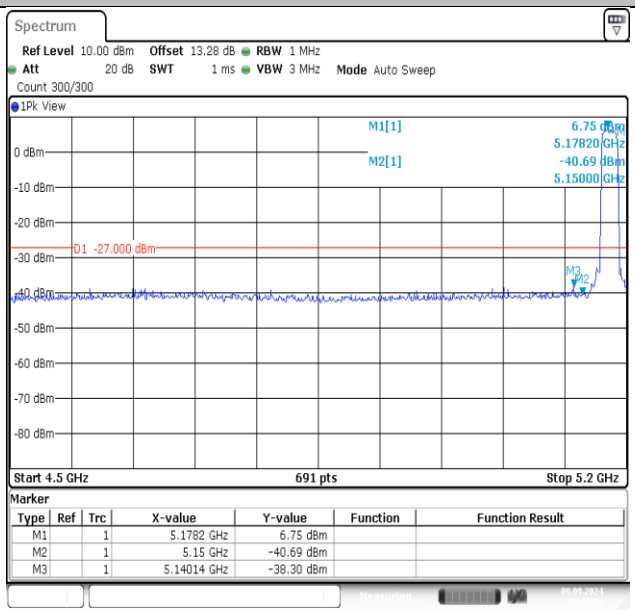

11N20MIMO-Ant1-5240-PASS



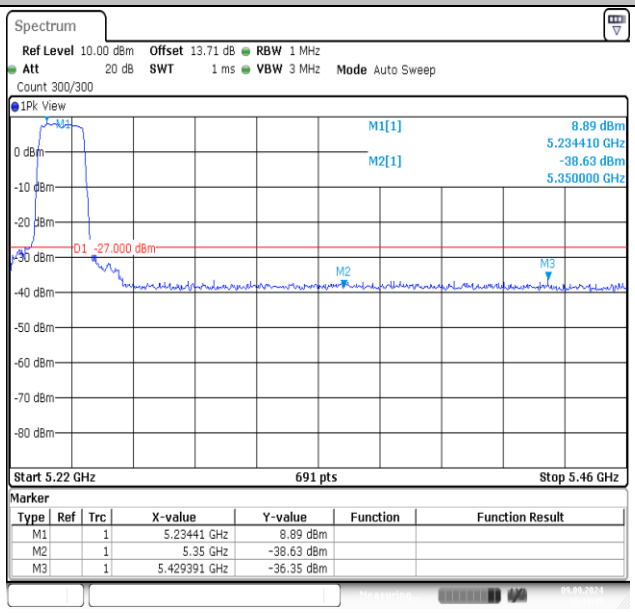

11N20MIMO-Ant2-5240-PASS



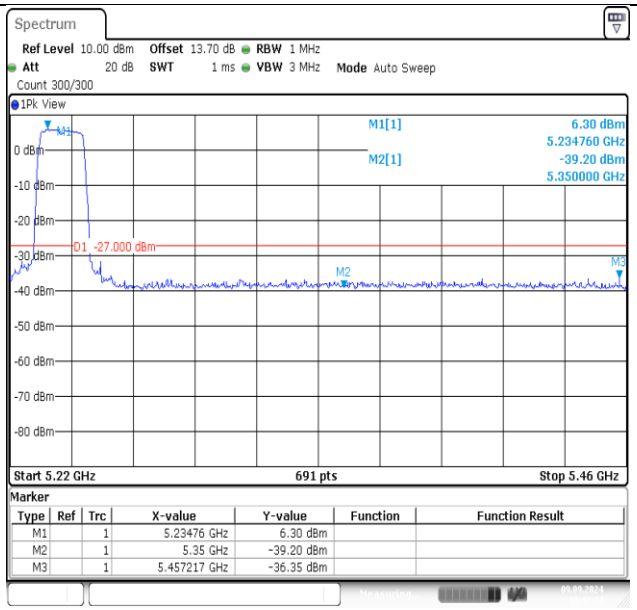

11AC20MIMO-Ant1-5180-PASS




11AC20MIMO-Ant2-5180-PASS




11AC20MIMO-Ant1-5240-PASS




11AC20MIMO-Ant2-5240-PASS

# Appendix E: Frequency Stability

## Test Result

**Ant1**

| Frequency (MHz) | Enviroment Temperature (Dregree) | Voltage (VAC) | Measured Frequency (MHz) | Limit Range (MHz) | Test Results |
|---|---|---|---|---|---|
| 5180 | 20 | 132 | 5180.005129 | 5150 – 5250 | PASS |
| 5180 | 20 | 108 | 5179.969335 | 5150 – 5250 | PASS |
| 5180 | 50 | 120 | 5180.034933 | 5150 – 5250 | PASS |
| 5180 | 40 | 120 | 5179.961207 | 5150 – 5250 | PASS |
| 5180 | 30 | 120 | 5179.944016 | 5150 – 5250 | PASS |
| 5180 | 20 | 120 | 5179.953366 | 5150 – 5250 | PASS |
| 5180 | 10 | 120 | 5179.926704 | 5150 – 5250 | PASS |
| 5180 | 0 | 120 | 5179.968161 | 5150 – 5250 | PASS |
| 5180 | -10 | 120 | 5180.093015 | 5150 – 5250 | PASS |
| 5180 | -20 | 120 | 5179.977630 | 5150 – 5250 | PASS |
| 5180 | -30 | 120 | 5179.939434 | 5150 – 5250 | PASS |

**Ant2**

| Frequency (MHz) | Enviroment Temperature (Dregree) | Voltage (VAC) | Measured Frequency (MHz) | Limit Range (MHz) | Test Results |
|---|---|---|---|---|---|
| 5180 | 20 | 132 | 5179.943117 | 5150 – 5250 | PASS |
| 5180 | 20 | 108 | 5180.089708 | 5150 – 5250 | PASS |
| 5180 | 50 | 120 | 5179.927032 | 5150 – 5250 | PASS |
| 5180 | 40 | 120 | 5180.079981 | 5150 – 5250 | PASS |
| 5180 | 30 | 120 | 5179.955466 | 5150 – 5250 | PASS |
| 5180 | 20 | 120 | 5180.093140 | 5150 – 5250 | PASS |
| 5180 | 10 | 120 | 5180.076612 | 5150 – 5250 | PASS |
| 5180 | 0 | 120 | 5179.939233 | 5150 – 5250 | PASS |
| 5180 | -10 | 120 | 5180.015180 | 5150 – 5250 | PASS |
| 5180 | -20 | 120 | 5179.904034 | 5150 – 5250 | PASS |
| 5180 | -30 | 120 | 5179.974530 | 5150 – 5250 | PASS |

**Ant1**

| Frequency (MHz) | Enviroment Temperature (Dregree) | Voltage (VAC) | Measured Frequency (MHz) | Limit Range (MHz) | Test Results |
|---|---|---|---|---|---|
| 5200 | 20 | 132 | 5199.946412 | 5150 – 5250 | PASS |
| 5200 | 20 | 108 | 5200.094176 | 5150 – 5250 | PASS |
| 5200 | 50 | 120 | 5200.039637 | 5150 – 5250 | PASS |
| 5200 | 40 | 120 | 5199.934464 | 5150 – 5250 | PASS |
| 5200 | 30 | 120 | 5200.037124 | 5150 – 5250 | PASS |
| 5200 | 20 | 120 | 5200.046432 | 5150 – 5250 | PASS |
| 5200 | 10 | 120 | 5199.944760 | 5150 – 5250 | PASS |
| 5200 | 0 | 120 | 5199.947695 | 5150 – 5250 | PASS |
| 5200 | -10 | 120 | 5199.921535 | 5150 – 5250 | PASS |
| 5200 | -20 | 120 | 5200.068697 | 5150 – 5250 | PASS |
| 5200 | -30 | 120 | 5200.019136 | 5150 – 5250 | PASS |

**Ant2**

| Frequency (MHz) | Enviroment Temperature (Dregree) | Voltage (VAC) | Measured Frequency (MHz) | Limit Range (MHz) | Test Results |
|---|---|---|---|---|---|
| 5200 | 20 | 132 | 5200.015771 | 5150 – 5250 | PASS |
| 5200 | 20 | 108 | 5200.084972 | 5150 – 5250 | PASS |
| 5200 | 50 | 120 | 5199.970996 | 5150 – 5250 | PASS |
| 5200 | 40 | 120 | 5200.057669 | 5150 – 5250 | PASS |
| 5200 | 30 | 120 | 5199.983715 | 5150 – 5250 | PASS |
| 5200 | 20 | 120 | 5200.020240 | 5150 – 5250 | PASS |
| 5200 | 10 | 120 | 5200.055100 | 5150 – 5250 | PASS |
| 5200 | 0 | 120 | 5199.999311 | 5150 – 5250 | PASS |
| 5200 | -10 | 120 | 5199.942525 | 5150 – 5250 | PASS |
| 5200 | -20 | 120 | 5200.051667 | 5150 – 5250 | PASS |
| 5200 | -30 | 120 | 5199.901170 | 5150 – 5250 | PASS |

**Ant1**

| Frequency (MHz) | Enviroment Temperature (Dregree) | Voltage (VAC) | Measured Frequency (MHz) | Limit Range (MHz) | Test Results |
|---|---|---|---|---|---|
| 5240 | 20 | 132 | 5240.022422 | 5150 – 5250 | PASS |
| 5240 | 20 | 108 | 5239.979973 | 5150 – 5250 | PASS |
| 5240 | 50 | 120 | 5239.911140 | 5150 – 5250 | PASS |
| 5240 | 40 | 120 | 5240.011221 | 5150 – 5250 | PASS |
| 5240 | 30 | 120 | 5240.076001 | 5150 – 5250 | PASS |
| 5240 | 20 | 120 | 5240.097196 | 5150 – 5250 | PASS |
| 5240 | 10 | 120 | 5239.964981 | 5150 – 5250 | PASS |
| 5240 | 0 | 120 | 5239.934266 | 5150 – 5250 | PASS |
| 5240 | -10 | 120 | 5239.964559 | 5150 – 5250 | PASS |
| 5240 | -20 | 120 | 5240.005501 | 5150 – 5250 | PASS |
| 5240 | -30 | 120 | 5239.949387 | 5150 – 5250 | PASS |

**Ant2**

| Frequency (MHz) | Enviroment Temperature (Dregree) | Voltage (VAC) | Measured Frequency (MHz) | Limit Range (MHz) | Test Results |
|---|---|---|---|---|---|
| 5240 | 20 | 132 | 5240.092594 | 5150 – 5250 | PASS |
| 5240 | 20 | 108 | 5240.034917 | 5150 – 5250 | PASS |
| 5240 | 50 | 120 | 5239.995319 | 5150 – 5250 | PASS |
| 5240 | 40 | 120 | 5239.907488 | 5150 – 5250 | PASS |
| 5240 | 30 | 120 | 5240.094972 | 5150 – 5250 | PASS |
| 5240 | 20 | 120 | 5239.992698 | 5150 – 5250 | PASS |
| 5240 | 10 | 120 | 5240.010046 | 5150 – 5250 | PASS |
| 5240 | 0 | 120 | 5239.900120 | 5150 – 5250 | PASS |
| 5240 | -10 | 120 | 5239.941660 | 5150 – 5250 | PASS |
| 5240 | -20 | 120 | 5239.973675 | 5150 – 5250 | PASS |
| 5240 | -30 | 120 | 5240.081840 | 5150 – 5250 | PASS |

**Ant1**

| Frequency (MHz) | Enviroment Temperature (Dregree) | Voltage (VAC) | Measured Frequency (MHz) | Limit Range (MHz) | Test Results |
|---|---|---|---|---|---|
| 5190 | 20 | 132 | 5190.087750 | 5150 – 5250 | PASS |
| 5190 | 20 | 108 | 5189.930950 | 5150 – 5250 | PASS |
| 5190 | 50 | 120 | 5189.928768 | 5150 – 5250 | PASS |
| 5190 | 40 | 120 | 5189.971984 | 5150 – 5250 | PASS |
| 5190 | 30 | 120 | 5189.981768 | 5150 – 5250 | PASS |
| 5190 | 20 | 120 | 5190.087799 | 5150 – 5250 | PASS |
| 5190 | 10 | 120 | 5190.093155 | 5150 – 5250 | PASS |
| 5190 | 0 | 120 | 5190.012565 | 5150 – 5250 | PASS |
| 5190 | -10 | 120 | 5190.021701 | 5150 – 5250 | PASS |
| 5190 | -20 | 120 | 5189.987662 | 5150 – 5250 | PASS |
| 5190 | -30 | 120 | 5190.027504 | 5150 – 5250 | PASS |

**Ant2**

| Frequency (MHz) | Enviroment Temperature (Dregree) | Voltage (VAC) | Measured Frequency (MHz) | Limit Range (MHz) | Test Results |
|---|---|---|---|---|---|
| 5190 | 20 | 132 | 5190.030027 | 5150 – 5250 | PASS |
| 5190 | 20 | 108 | 5190.061777 | 5150 – 5250 | PASS |
| 5190 | 50 | 120 | 5190.024711 | 5150 – 5250 | PASS |
| 5190 | 40 | 120 | 5190.032731 | 5150 – 5250 | PASS |
| 5190 | 30 | 120 | 5190.095051 | 5150 – 5250 | PASS |
| 5190 | 20 | 120 | 5189.994575 | 5150 – 5250 | PASS |
| 5190 | 10 | 120 | 5190.030037 | 5150 – 5250 | PASS |
| 5190 | 0 | 120 | 5189.953970 | 5150 – 5250 | PASS |
| 5190 | -10 | 120 | 5190.046604 | 5150 – 5250 | PASS |
| 5190 | -20 | 120 | 5189.936429 | 5150 – 5250 | PASS |
| 5190 | -30 | 120 | 5189.912859 | 5150 – 5250 | PASS |

**Ant1**

| Frequency (MHz) | Enviroment Temperature (Dregree) | Voltage (VAC) | Measured Frequency (MHz) | Limit Range (MHz) | Test Results |
|---|---|---|---|---|---|
| 5230 | 20 | 132 | 5229.942115 | 5150 – 5250 | PASS |
| 5230 | 20 | 108 | 5229.909968 | 5150 – 5250 | PASS |
| 5230 | 50 | 120 | 5230.079754 | 5150 – 5250 | PASS |
| 5230 | 40 | 120 | 5230.049069 | 5150 – 5250 | PASS |
| 5230 | 30 | 120 | 5230.053682 | 5150 – 5250 | PASS |
| 5230 | 20 | 120 | 5229.996703 | 5150 – 5250 | PASS |
| 5230 | 10 | 120 | 5230.037926 | 5150 – 5250 | PASS |
| 5230 | 0 | 120 | 5230.058278 | 5150 – 5250 | PASS |
| 5230 | -10 | 120 | 5230.070241 | 5150 – 5250 | PASS |
| 5230 | -20 | 120 | 5229.960882 | 5150 – 5250 | PASS |
| 5230 | -30 | 120 | 5229.926624 | 5150 – 5250 | PASS |

**Ant2**

| Frequency (MHz) | Enviroment Temperature (Dregree) | Voltage (VAC) | Measured Frequency (MHz) | Limit Range (MHz) | Test Results |
|---|---|---|---|---|---|
| 5230 | 20 | 132 | 5229.962000 | 5150 – 5250 | PASS |
| 5230 | 20 | 108 | 5229.904677 | 5150 – 5250 | PASS |
| 5230 | 50 | 120 | 5229.999759 | 5150 – 5250 | PASS |
| 5230 | 40 | 120 | 5230.062056 | 5150 – 5250 | PASS |
| 5230 | 30 | 120 | 5230.094389 | 5150 – 5250 | PASS |
| 5230 | 20 | 120 | 5229.943975 | 5150 – 5250 | PASS |
| 5230 | 10 | 120 | 5230.009883 | 5150 – 5250 | PASS |
| 5230 | 0 | 120 | 5230.037175 | 5150 – 5250 | PASS |
| 5230 | -10 | 120 | 5229.925838 | 5150 – 5250 | PASS |
| 5230 | -20 | 120 | 5230.030330 | 5150 – 5250 | PASS |
| 5230 | -30 | 120 | 5230.000707 | 5150 – 5250 | PASS |

**Ant1**

| Frequency (MHz) | Enviroment Temperature (Dregree) | Voltage (VAC) | Measured Frequency (MHz) | Limit Range (MHz) | Test Results |
|---|---|---|---|---|---|
| 5210 | 20 | 132 | 5210.091640 | 5150 – 5250 | PASS |
| 5210 | 20 | 108 | 5210.043473 | 5150 – 5250 | PASS |
| 5210 | 50 | 120 | 5210.032886 | 5150 – 5250 | PASS |
| 5210 | 40 | 120 | 5210.027515 | 5150 – 5250 | PASS |
| 5210 | 30 | 120 | 5210.042971 | 5150 – 5250 | PASS |
| 5210 | 20 | 120 | 5209.971419 | 5150 – 5250 | PASS |
| 5210 | 10 | 120 | 5210.047780 | 5150 – 5250 | PASS |
| 5210 | 0 | 120 | 5209.997254 | 5150 – 5250 | PASS |
| 5210 | -10 | 120 | 5209.970826 | 5150 – 5250 | PASS |
| 5210 | -20 | 120 | 5209.927968 | 5150 – 5250 | PASS |
| 5210 | -30 | 120 | 5210.061009 | 5150 – 5250 | PASS |

**Ant2**

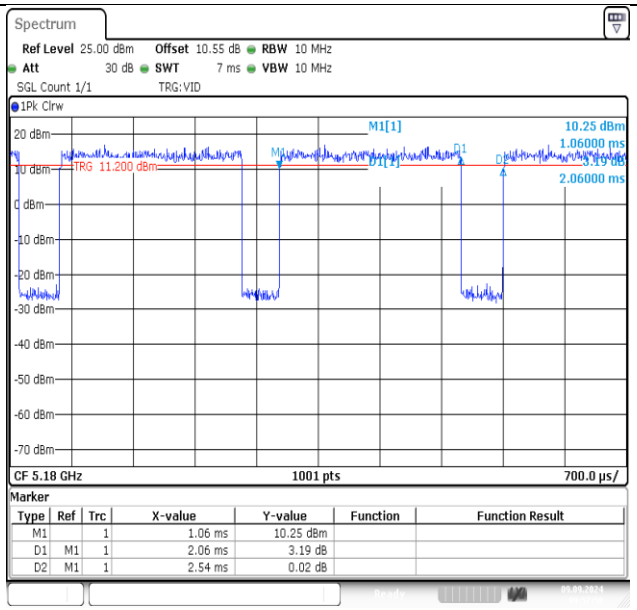
| Frequency (MHz) | Enviroment Temperature (Dregree) | Voltage (VAC) | Measured Frequency (MHz) | Limit Range (MHz) | Test Results |
|---|---|---|---|---|---|
| 5210 | 20 | 132 | 5209.960213 | 5150 – 5250 | PASS |
| 5210 | 20 | 108 | 5210.026727 | 5150 – 5250 | PASS |
| 5210 | 50 | 120 | 5210.017396 | 5150 – 5250 | PASS |
| 5210 | 40 | 120 | 5209.944325 | 5150 – 5250 | PASS |
| 5210 | 30 | 120 | 5210.072901 | 5150 – 5250 | PASS |
| 5210 | 20 | 120 | 5210.099086 | 5150 – 5250 | PASS |
| 5210 | 10 | 120 | 5210.089456 | 5150 – 5250 | PASS |
| 5210 | 0 | 120 | 5209.973485 | 5150 – 5250 | PASS |
| 5210 | -10 | 120 | 5209.941942 | 5150 – 5250 | PASS |
| 5210 | -20 | 120 | 5210.041055 | 5150 – 5250 | PASS |
| 5210 | -30 | 120 | 5210.093554 | 5150 – 5250 | PASS |

# Appendix F: Duty Cycle

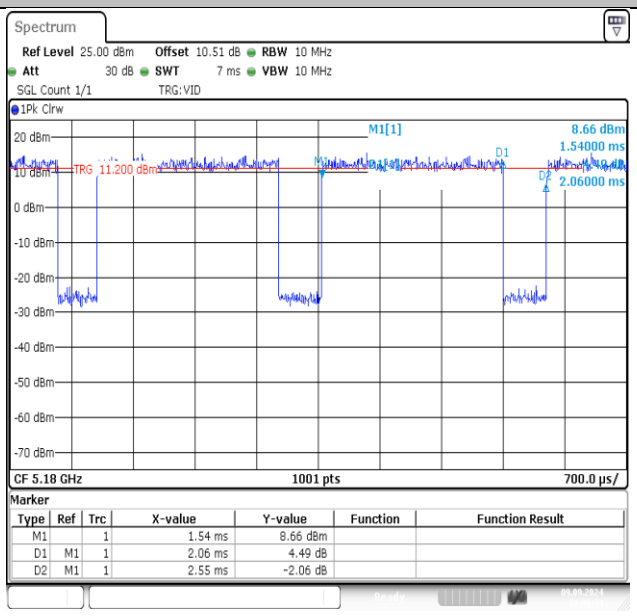
## Test Result

| TestMode | Antenna | Frequency[MHz] | Transmission Duration [ms] | Transmission Period [ms] | Duty Cycle [%] | Dc Factor [%] | 1/T [kHz] |
|---|---|---|---|---|---|---|---|
| 11A | Ant1 | 5180 | 2.06 | 2.54 | 81.10 | 0.91 | 0.49 |
| 11A | Ant2 | 5180 | 2.06 | 2.55 | 80.78 | 0.93 | 0.49 |
| 11A | Ant1 | 5200 | 2.07 | 2.28 | 90.79 | 0.42 | 0.48 |
| 11A | Ant2 | 5200 | 2.07 | 2.27 | 91.19 | 0.40 | 0.48 |
| 11A | Ant1 | 5240 | 2.06 | 2.26 | 91.15 | 0.40 | 0.49 |
| 11A | Ant2 | 5240 | 2.07 | 2.30 | 90.00 | 0.46 | 0.48 |
| 11N20MIMO | Ant1 | 5180 | 1.92 | 2.09 | 91.87 | 0.37 | 0.52 |
| 11N20MIMO | Ant2 | 5180 | 1.91 | 2.03 | 94.09 | 0.26 | 0.52 |
| 11N20MIMO | Ant1 | 5200 | 1.93 | 2.14 | 90.19 | 0.45 | 0.52 |
| 11N20MIMO | Ant2 | 5200 | 1.92 | 2.11 | 91.00 | 0.41 | 0.52 |
| 11N20MIMO | Ant1 | 5240 | 1.92 | 2.15 | 89.30 | 0.49 | 0.52 |
| 11N20MIMO | Ant2 | 5240 | 1.93 | 2.12 | 91.04 | 0.41 | 0.52 |
| 11AC20MIMO | Ant1 | 5180 | 1.94 | 2.11 | 91.94 | 0.36 | 0.52 |
| 11AC20MIMO | Ant2 | 5180 | 1.94 | 2.10 | 92.38 | 0.34 | 0.52 |
| 11AC20MIMO | Ant1 | 5200 | 1.94 | 2.19 | 88.58 | 0.53 | 0.52 |
| 11AC20MIMO | Ant2 | 5200 | 1.93 | 2.10 | 91.90 | 0.37 | 0.52 |
| 11AC20MIMO | Ant1 | 5240 | 1.94 | 2.17 | 89.40 | 0.49 | 0.52 |
| 11AC20MIMO | Ant2 | 5240 | 1.93 | 2.18 | 88.53 | 0.53 | 0.52 |

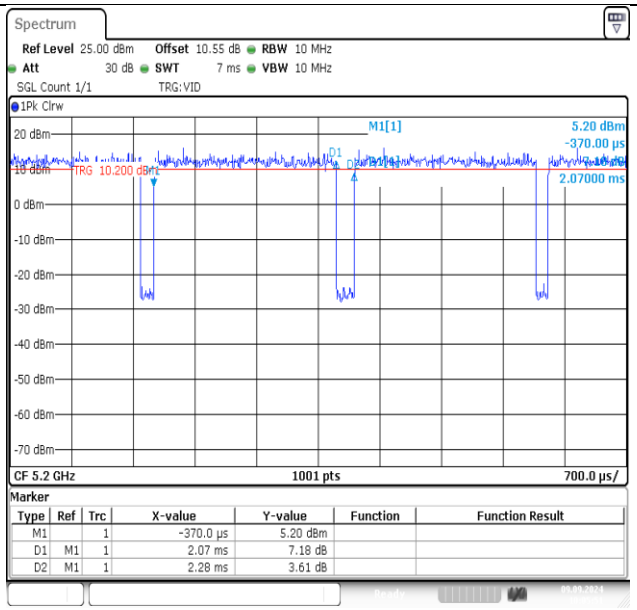
## Test Graphs



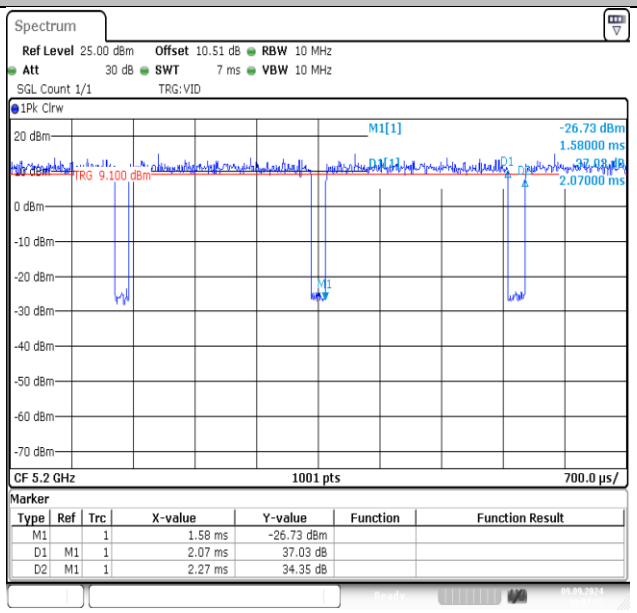

NTNV-11A-Ant1-5180



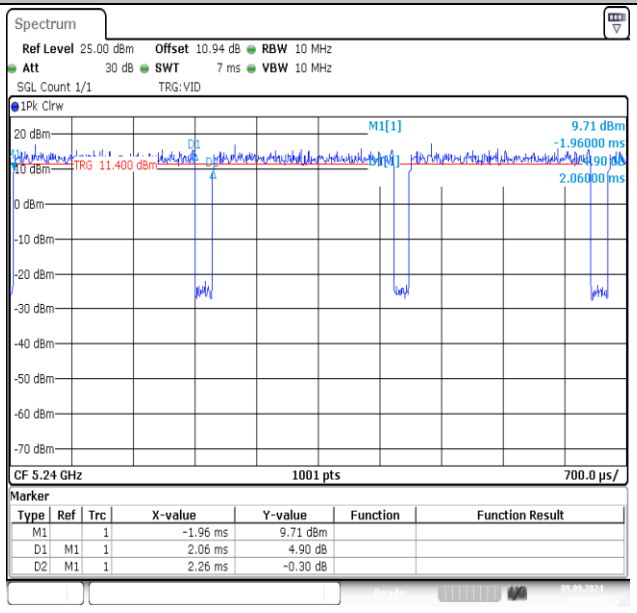

NTNV-11A-Ant2-5180



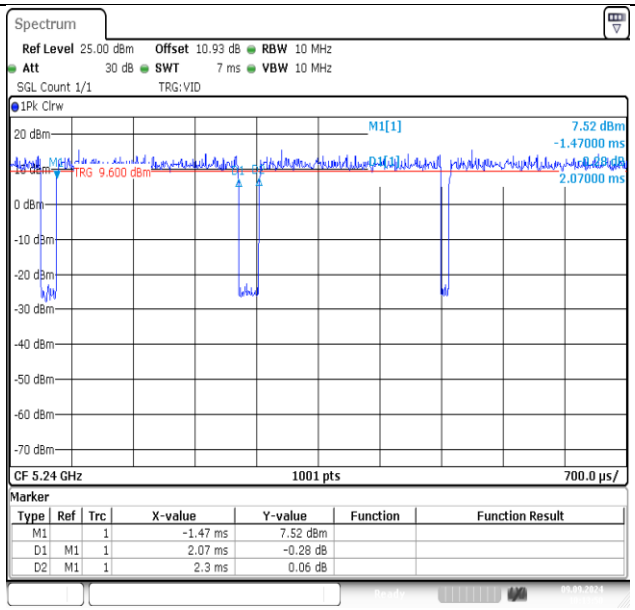

NTNV-11A-Ant1-5200



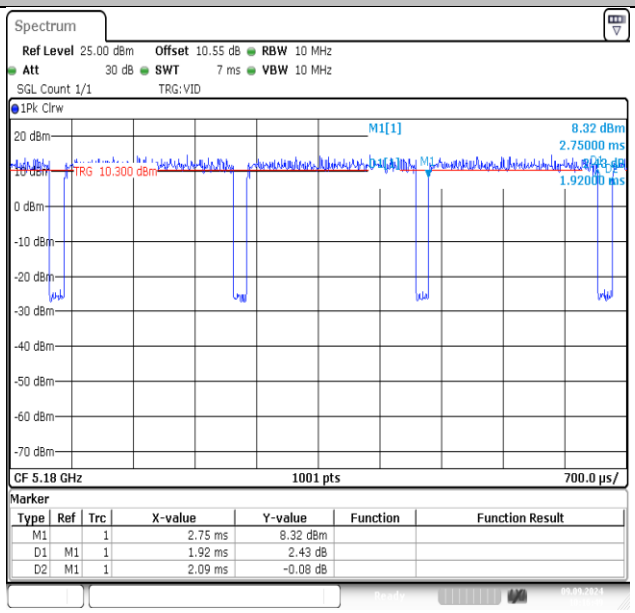

NTNV-11A-Ant2-5200



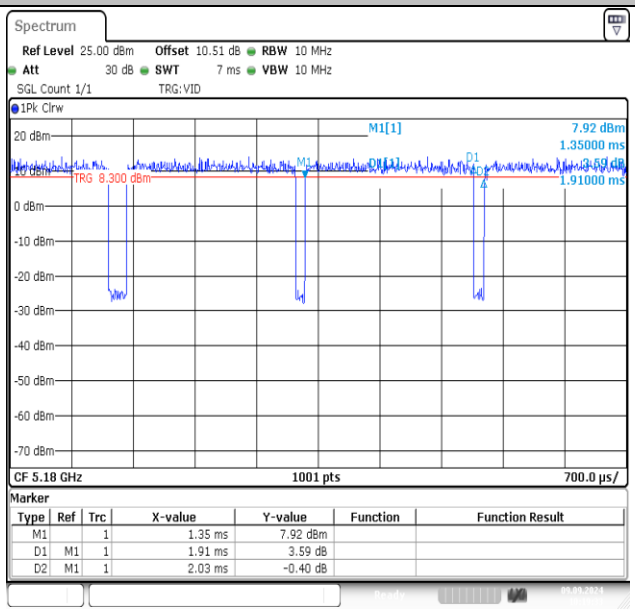

NTNV-11A-Ant1-5240



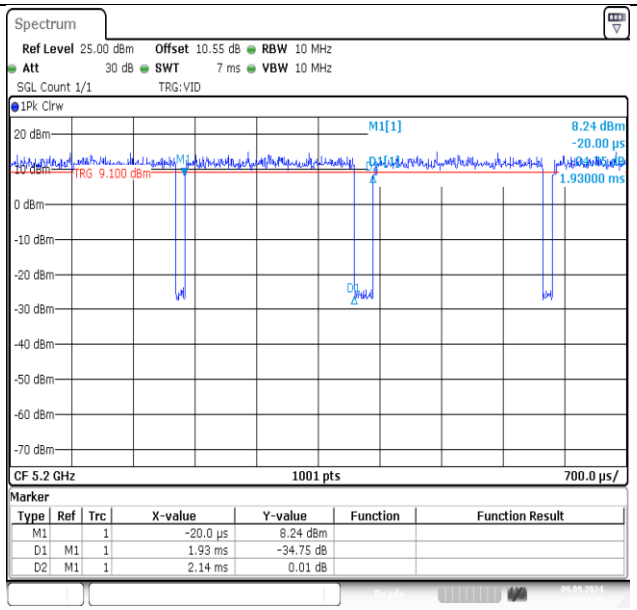

NTNV-11A-Ant2-5240



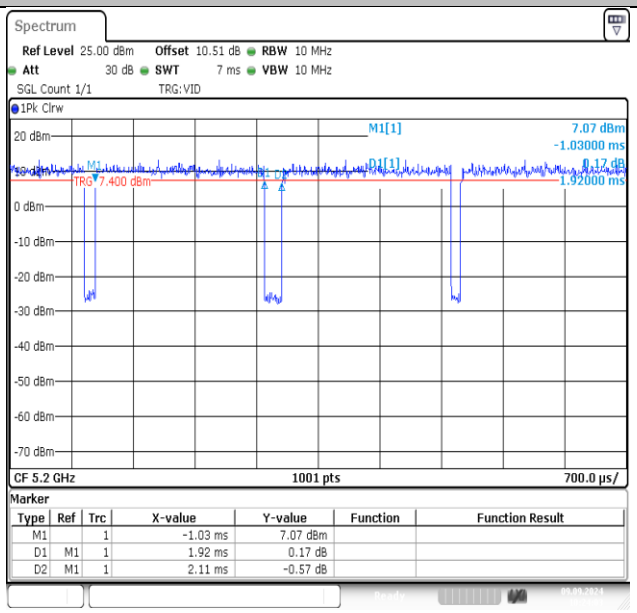

NTNV-11N20MIMO-Ant1-5180



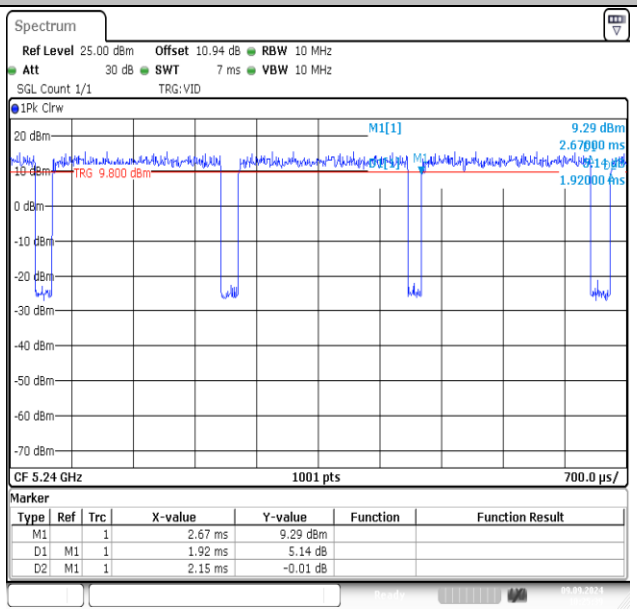

NTNV-11N20MIMO-Ant2-5180



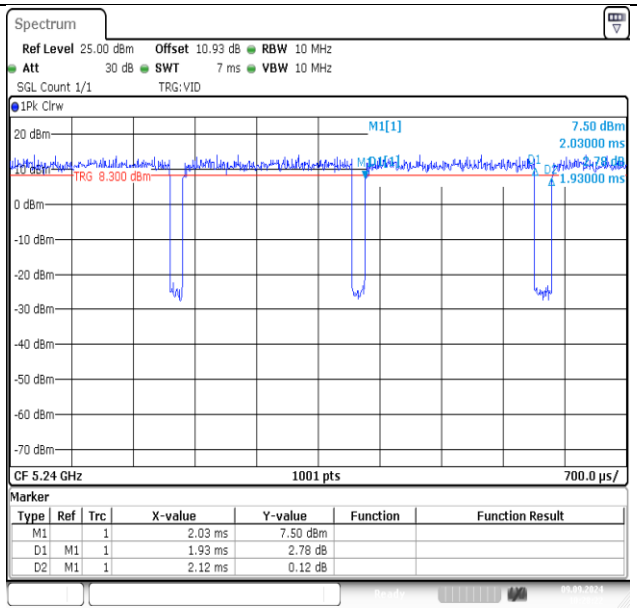

NTNV-11N20MIMO-Ant1-5200



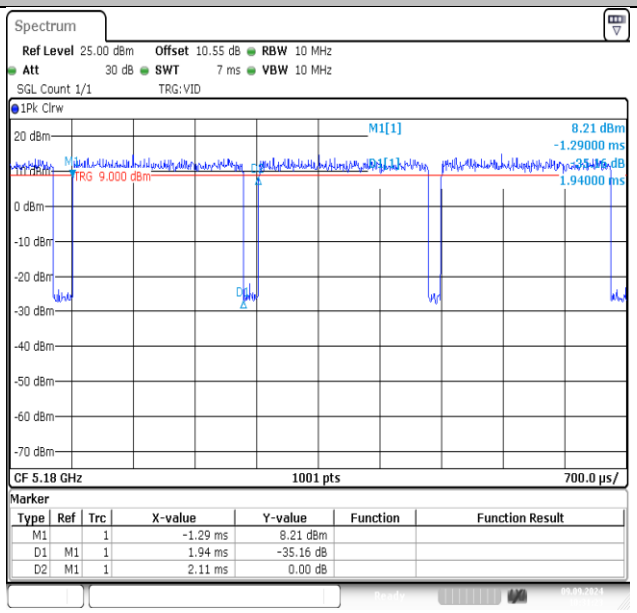

NTNV-11N20MIMO-Ant2-5200



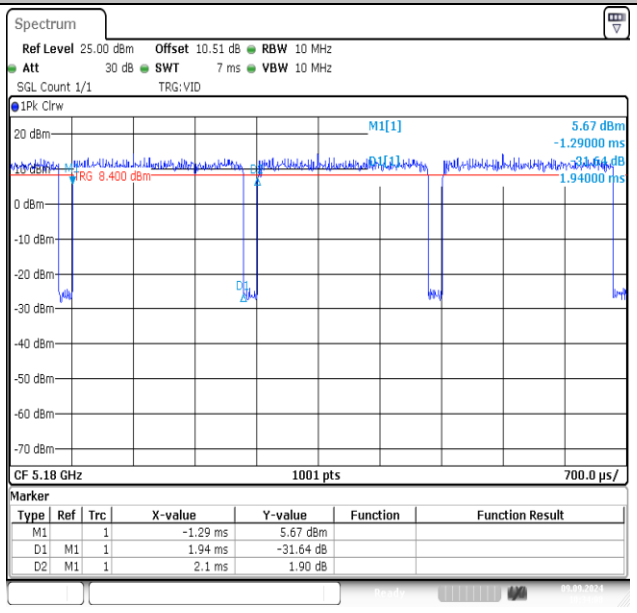

NTNV-11N20MIMO-Ant1-5240



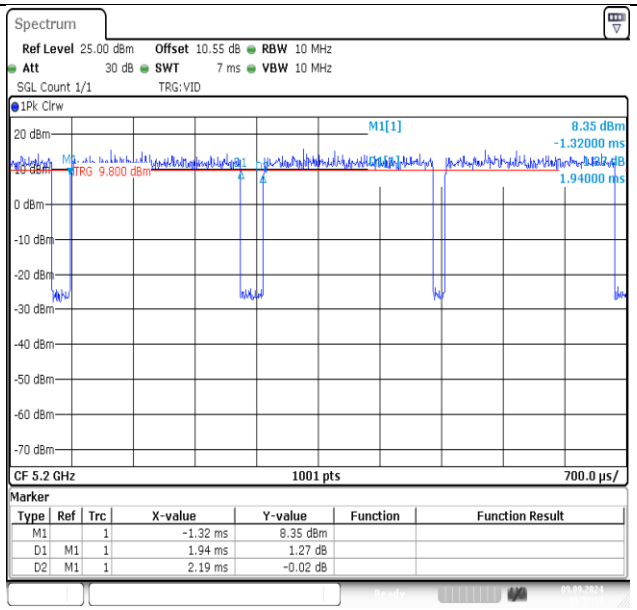

NTNV-11N20MIMO-Ant2-5240



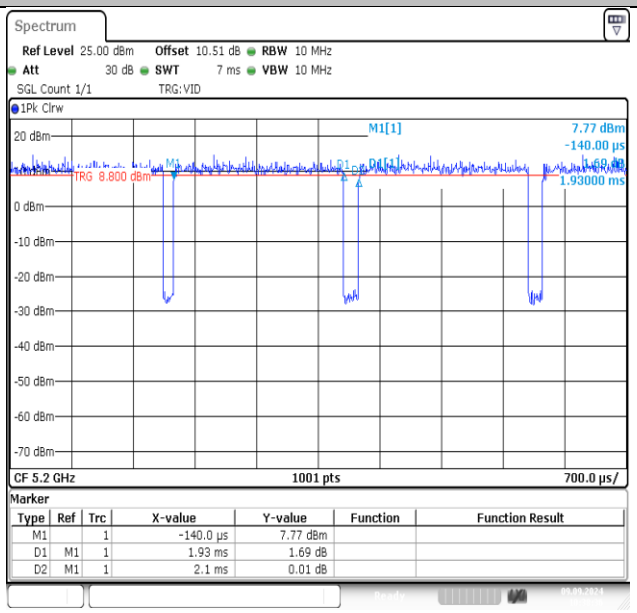

NTNV-11AC20MIMO-Ant1-5180



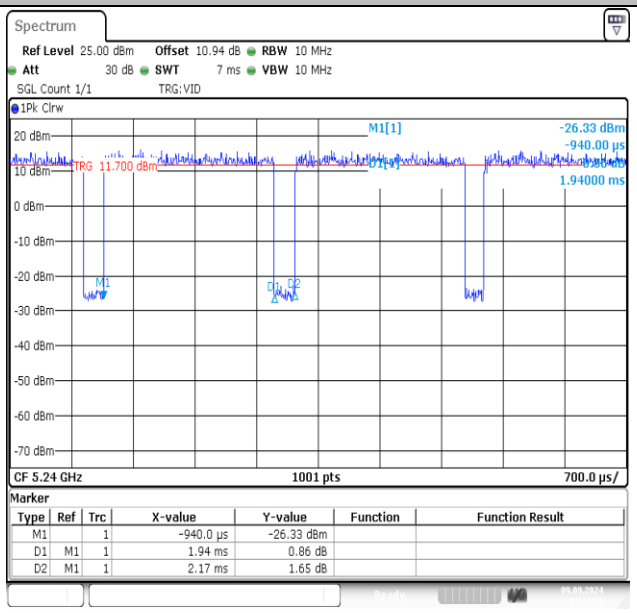

NTNV-11AC20MIMO-Ant2-5180



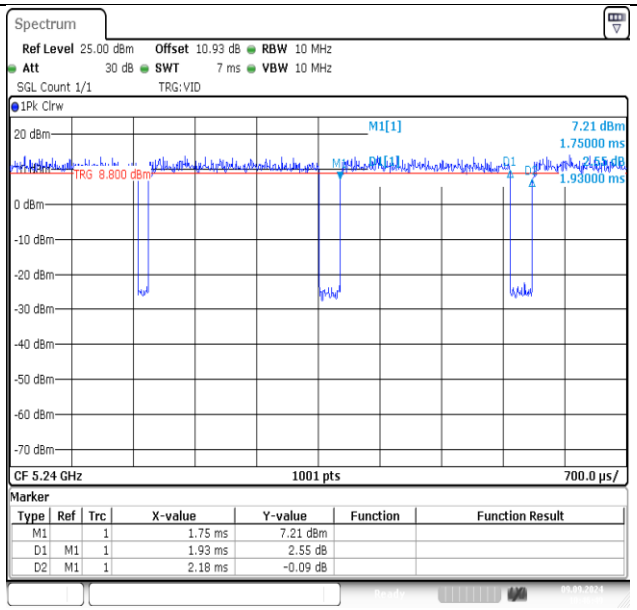

NTNV-11AC20MIMO-Ant1-5200




NTNV-11AC20MIMO-Ant2-5200




NTNV-11AC20MIMO-Ant1-5240




NTNV-11AC20MIMO-Ant2-5240