

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

Product Name: Wanbo Projector

Trade Mark: Wanbo

Test Model: WPC14

FCC ID: 2A7PI-WPC14

### Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 23.5℃     |
| Relative Humidity: | 58%       |
| ATM Pressure:      | 100.0 kPa |
| Test Engineer:     | Allen Lai |
| Supervised by:     | Hugo Chen |
| NOTE               | N/A       |

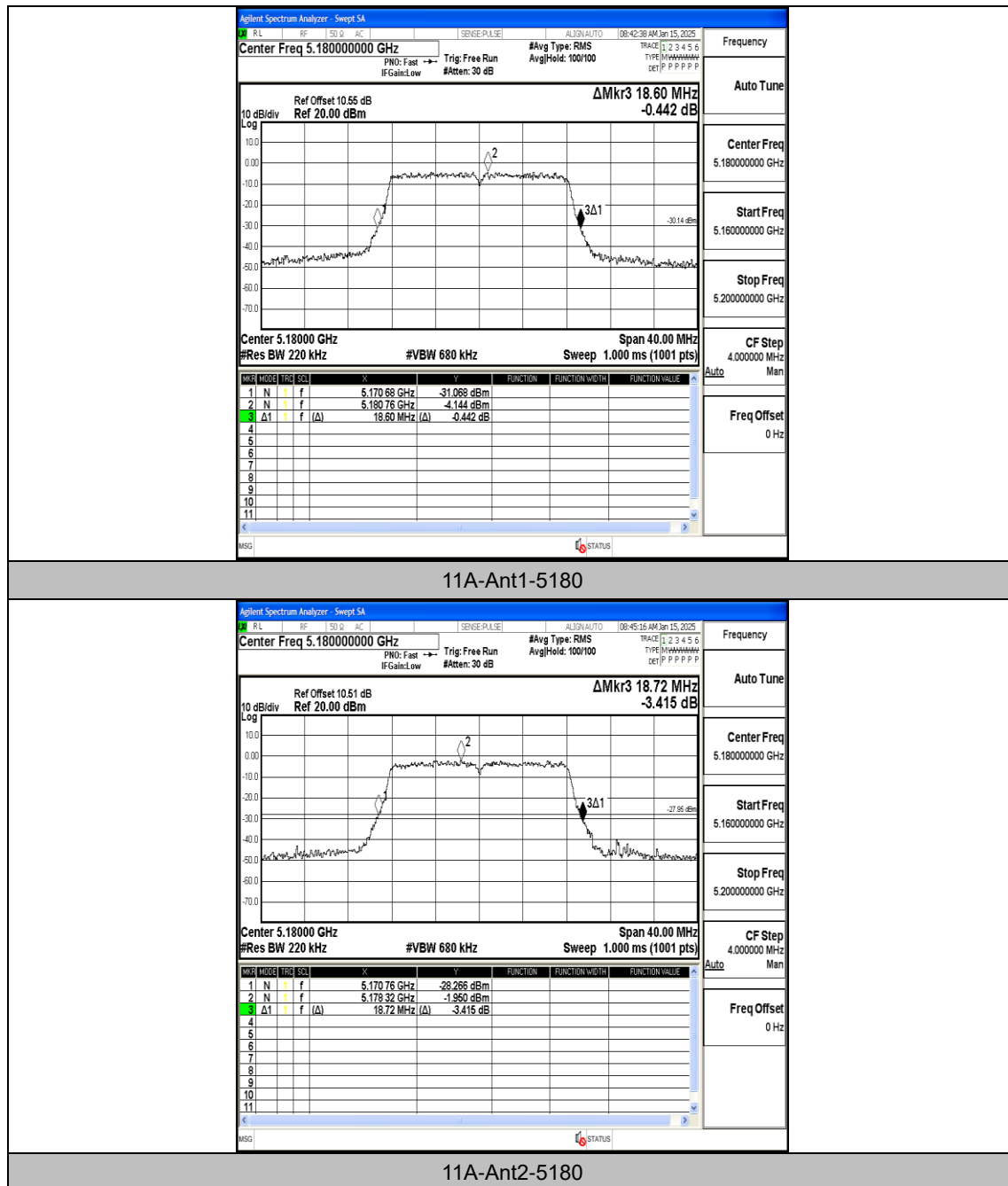
## Appendix A1: Emission Bandwidth

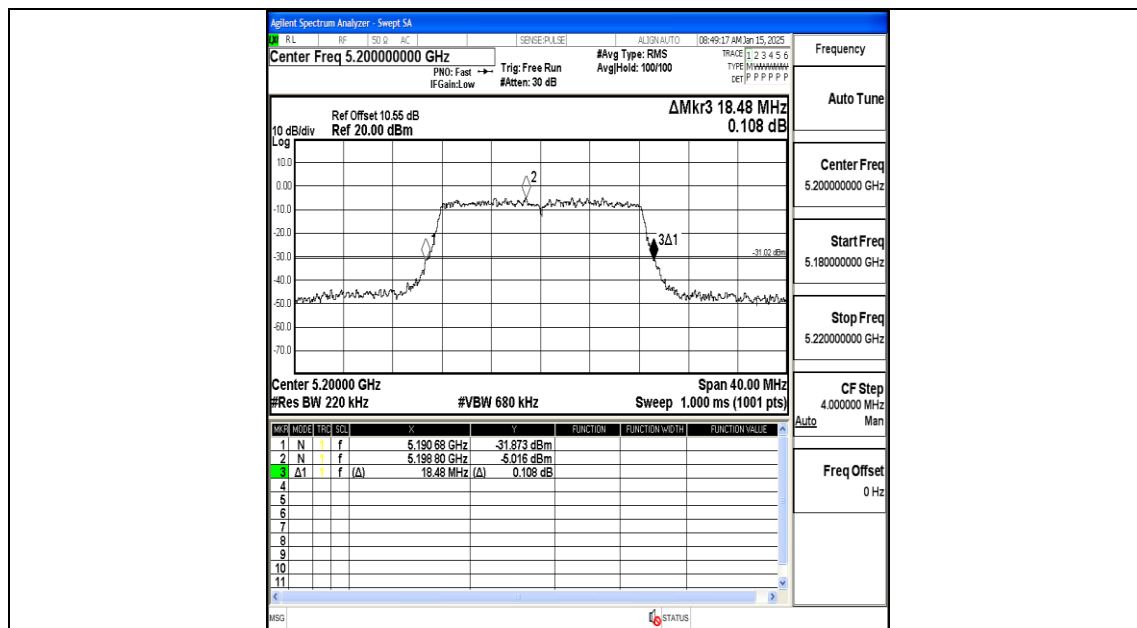
### Test Result

| Test Mode  | Antenna | Frequency [MHz] | 26db EBW [MHz] | FL [MHz] | FH [MHz] | Limit [MHz] | Verdict |
|------------|---------|-----------------|----------------|----------|----------|-------------|---------|
| 11A        | Ant1    | 5180            | 18.600         | 5170.680 | 5189.280 | ---         | ---     |
| 11A        | Ant2    | 5180            | 18.720         | 5170.760 | 5189.480 | ---         | ---     |
| 11A        | Ant1    | 5200            | 18.480         | 5190.680 | 5209.160 | ---         | ---     |
| 11A        | Ant2    | 5200            | 18.400         | 5190.880 | 5209.280 | ---         | ---     |
| 11A        | Ant1    | 5240            | 18.280         | 5230.960 | 5249.240 | ---         | ---     |
| 11A        | Ant2    | 5240            | 18.400         | 5230.960 | 5249.360 | ---         | ---     |
| 11N20MIMO  | Ant1    | 5180            | 19.280         | 5170.320 | 5189.600 | ---         | ---     |
| 11N20MIMO  | Ant2    | 5180            | 19.080         | 5170.440 | 5189.520 | ---         | ---     |
| 11N20MIMO  | Ant1    | 5200            | 19.320         | 5190.360 | 5209.680 | ---         | ---     |
| 11N20MIMO  | Ant2    | 5200            | 19.320         | 5190.400 | 5209.720 | ---         | ---     |
| 11N20MIMO  | Ant1    | 5240            | 19.240         | 5230.440 | 5249.680 | ---         | ---     |
| 11N20MIMO  | Ant2    | 5240            | 19.280         | 5230.320 | 5249.600 | ---         | ---     |
| 11N40MIMO  | Ant1    | 5190            | 40.720         | 5169.760 | 5210.480 | ---         | ---     |
| 11N40MIMO  | Ant2    | 5190            | 39.760         | 5170.480 | 5210.240 | ---         | ---     |
| 11N40MIMO  | Ant1    | 5230            | 40.560         | 5209.520 | 5250.080 | ---         | ---     |
| 11N40MIMO  | Ant2    | 5230            | 40.240         | 5210.000 | 5250.240 | ---         | ---     |
| 11AC20MIMO | Ant1    | 5180            | 19.280         | 5170.360 | 5189.640 | ---         | ---     |
| 11AC20MIMO | Ant2    | 5180            | 19.320         | 5170.360 | 5189.680 | ---         | ---     |
| 11AC20MIMO | Ant1    | 5200            | 19.280         | 5190.440 | 5209.720 | ---         | ---     |
| 11AC20MIMO | Ant2    | 5200            | 19.360         | 5190.320 | 5209.680 | ---         | ---     |
| 11AC20MIMO | Ant1    | 5240            | 19.200         | 5230.400 | 5249.600 | ---         | ---     |
| 11AC20MIMO | Ant2    | 5240            | 19.080         | 5230.480 | 5249.560 | ---         | ---     |
| 11AC40MIMO | Ant1    | 5190            | 40.000         | 5169.760 | 5209.760 | ---         | ---     |
| 11AC40MIMO | Ant2    | 5190            | 40.480         | 5169.760 | 5210.240 | ---         | ---     |
| 11AC40MIMO | Ant1    | 5230            | 40.080         | 5209.680 | 5249.760 | ---         | ---     |

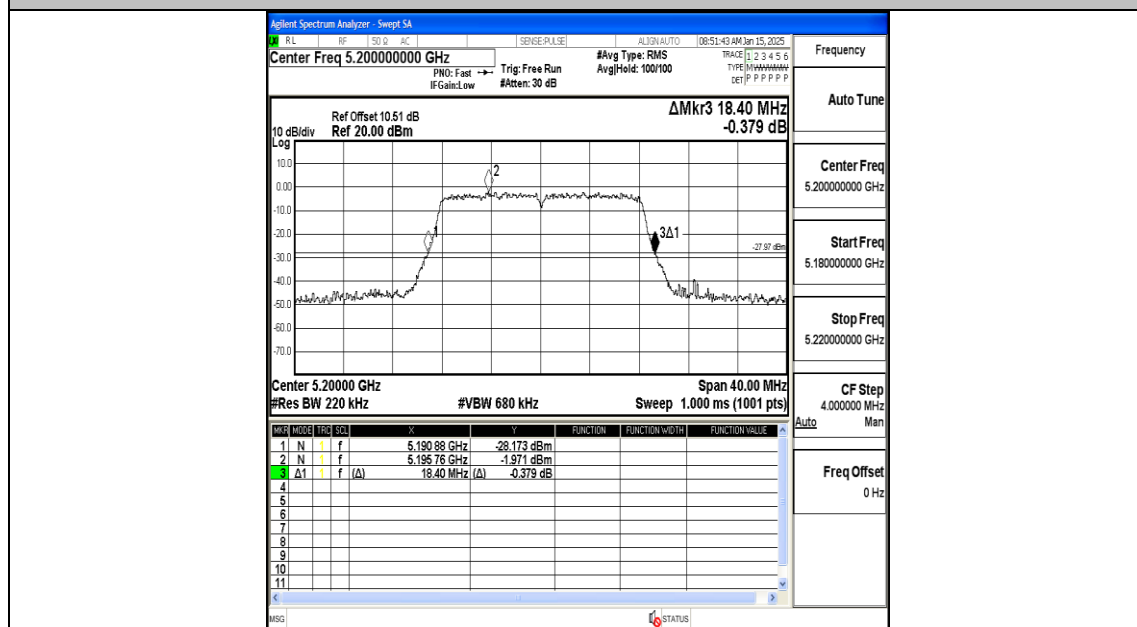
|            |      |      |        |          |          |     |     |
|------------|------|------|--------|----------|----------|-----|-----|
| 11AC40MIMO | Ant2 | 5230 | 40.080 | 5209.840 | 5249.920 | --- | --- |
| 11AC80MIMO | Ant1 | 5210 | 79.840 | 5170.320 | 5250.160 | --- | --- |
| 11AC80MIMO | Ant2 | 5210 | 80.960 | 5170.000 | 5250.960 | --- | --- |

## Test Graphs

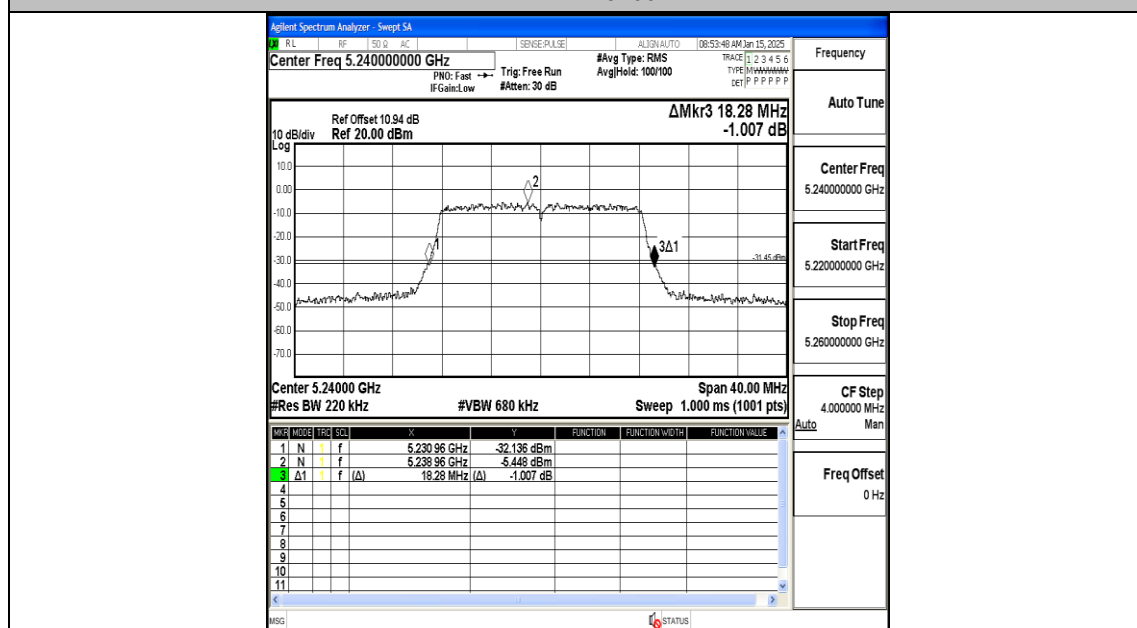




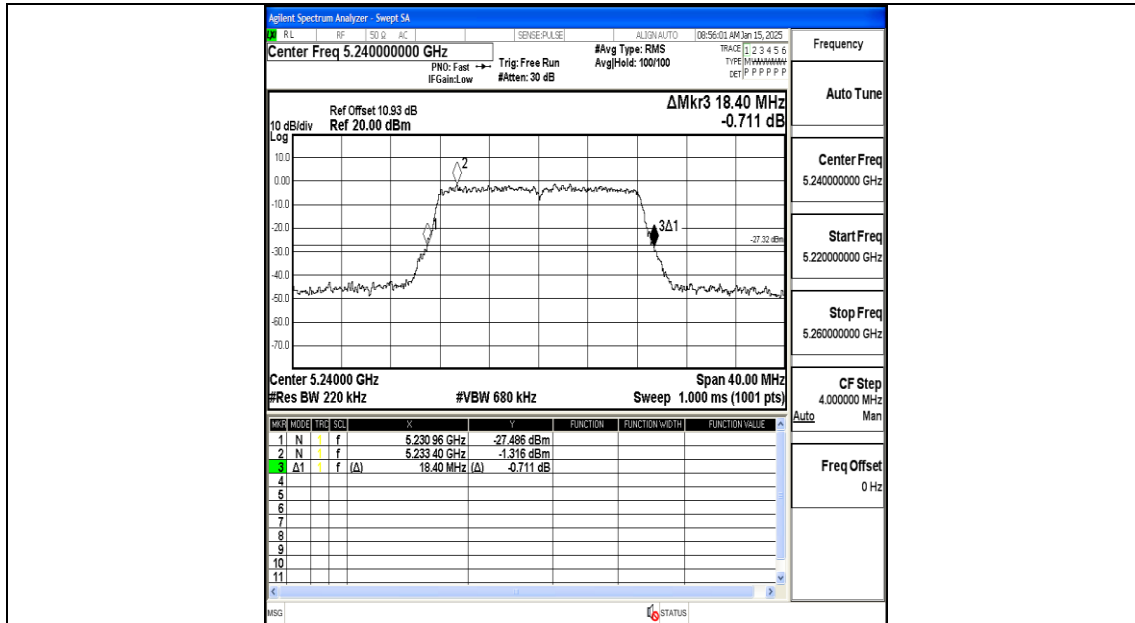
11A-Ant1-5200



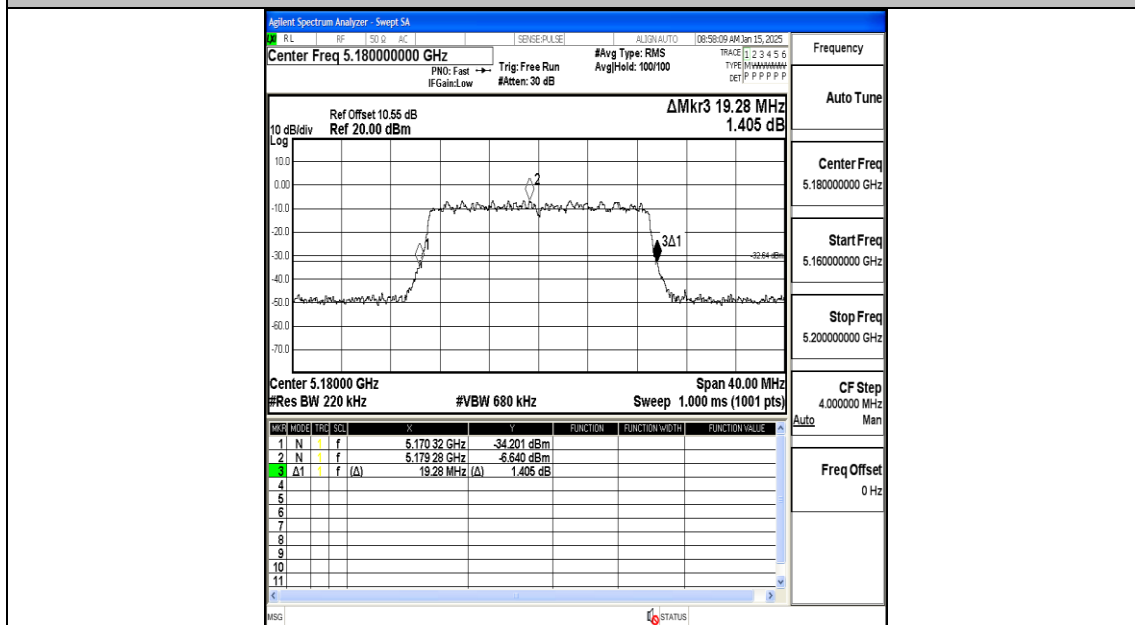
11A-Ant2-5200



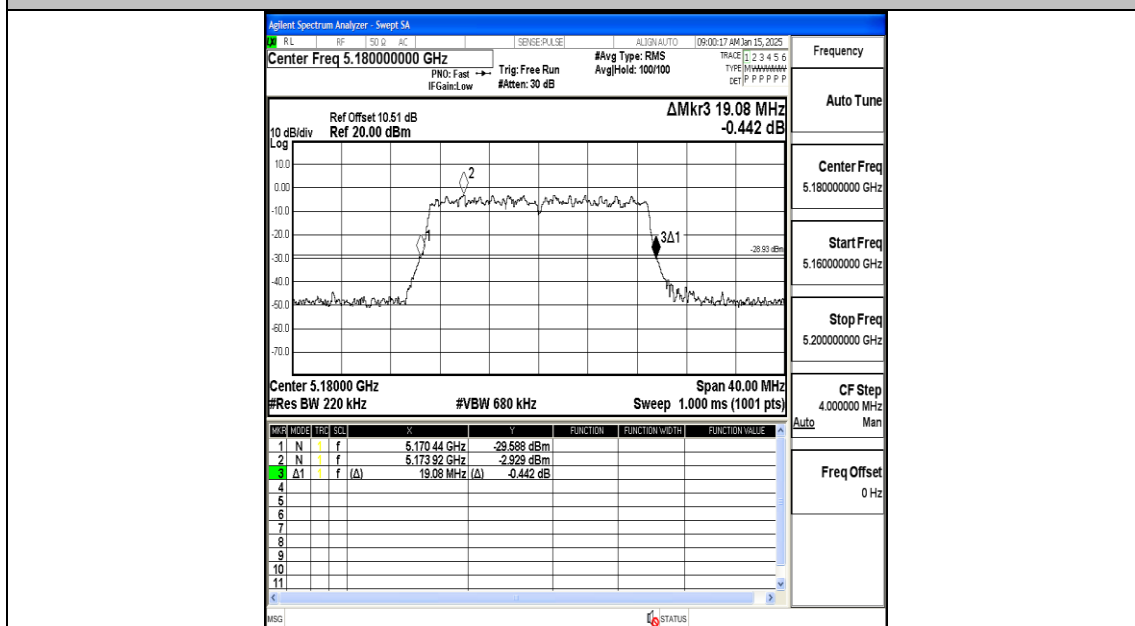
11A-Ant1-5240



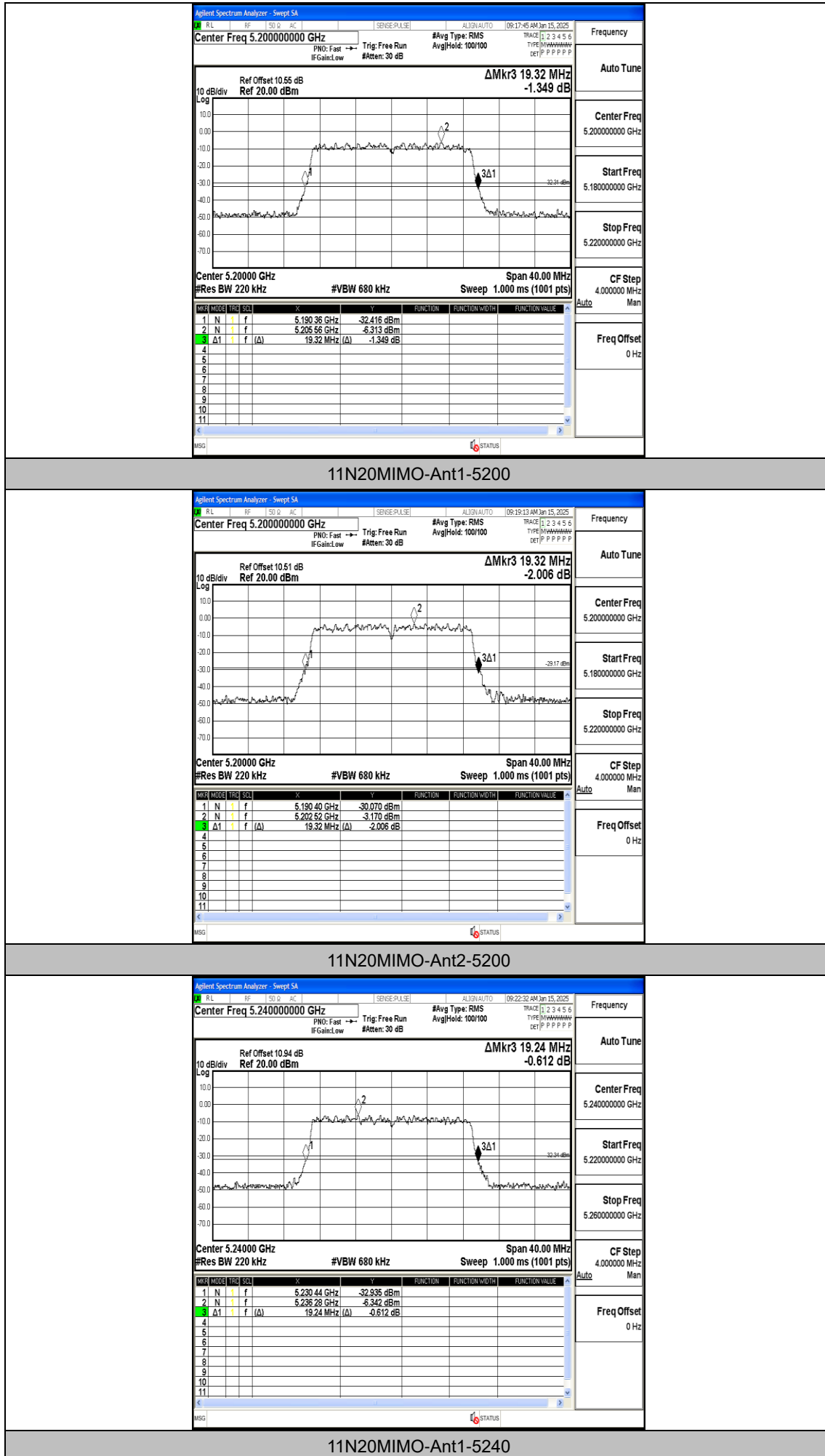
11A-Ant2-5240

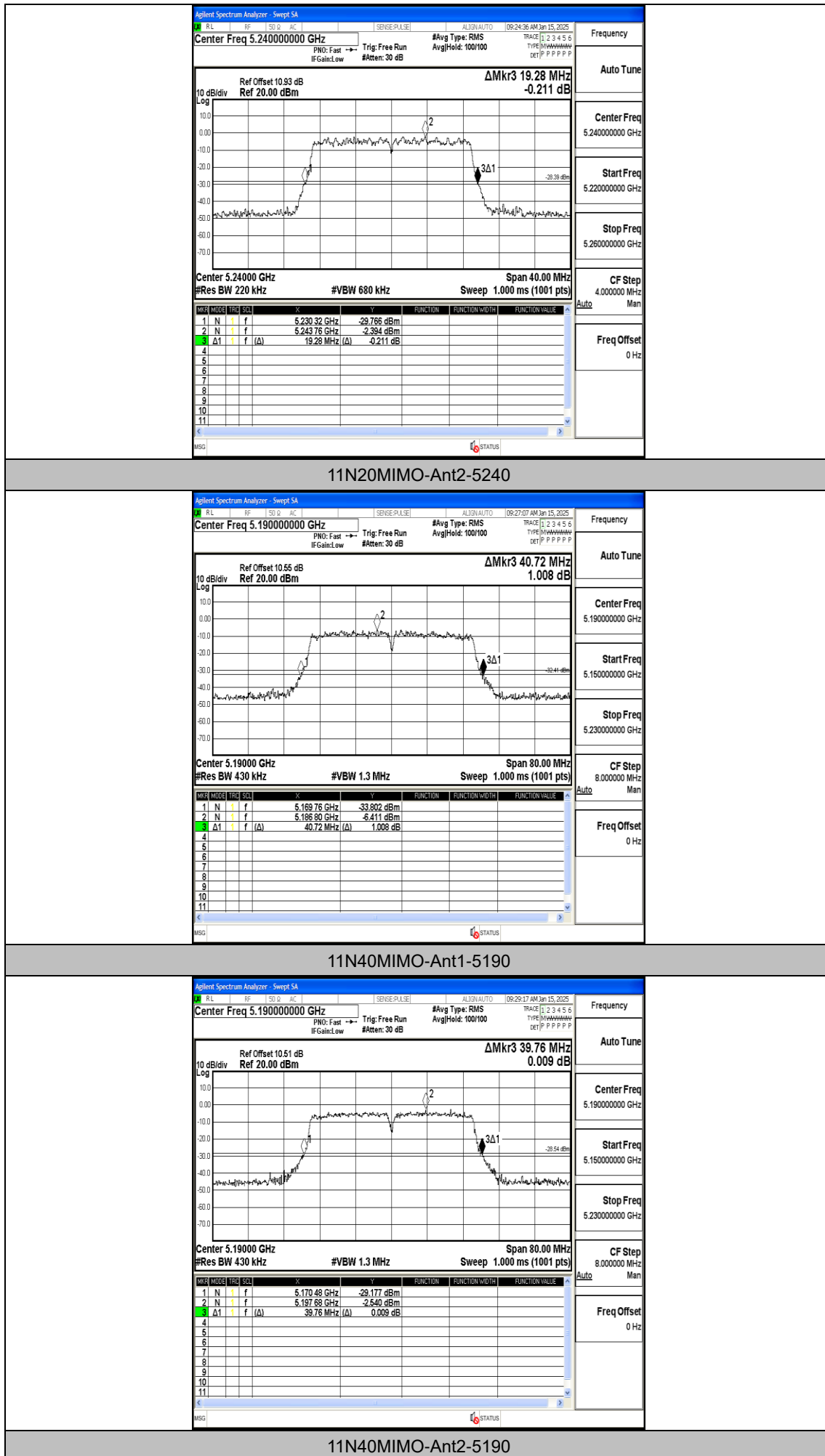


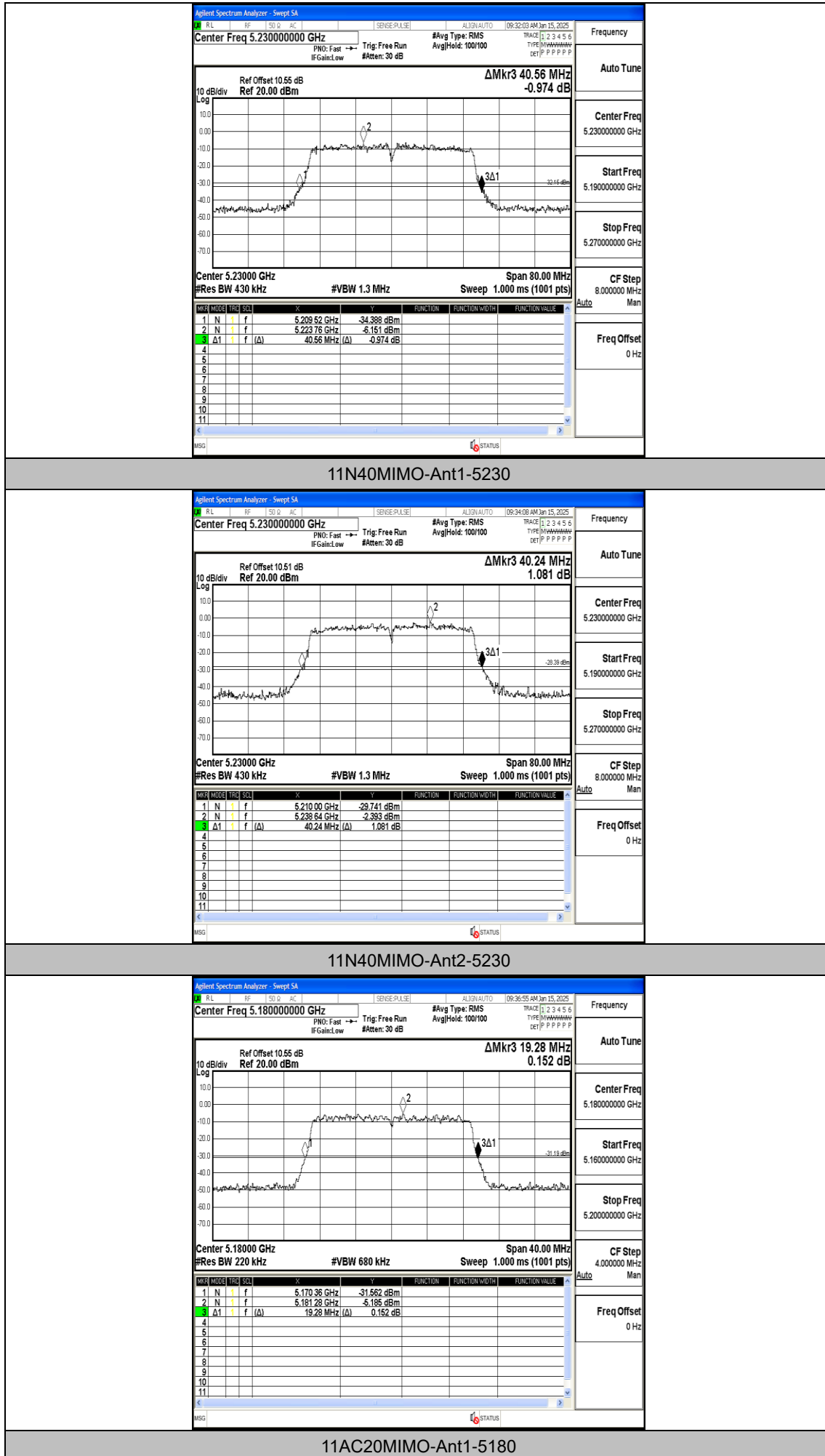
11N20MIMO-Ant1-5180



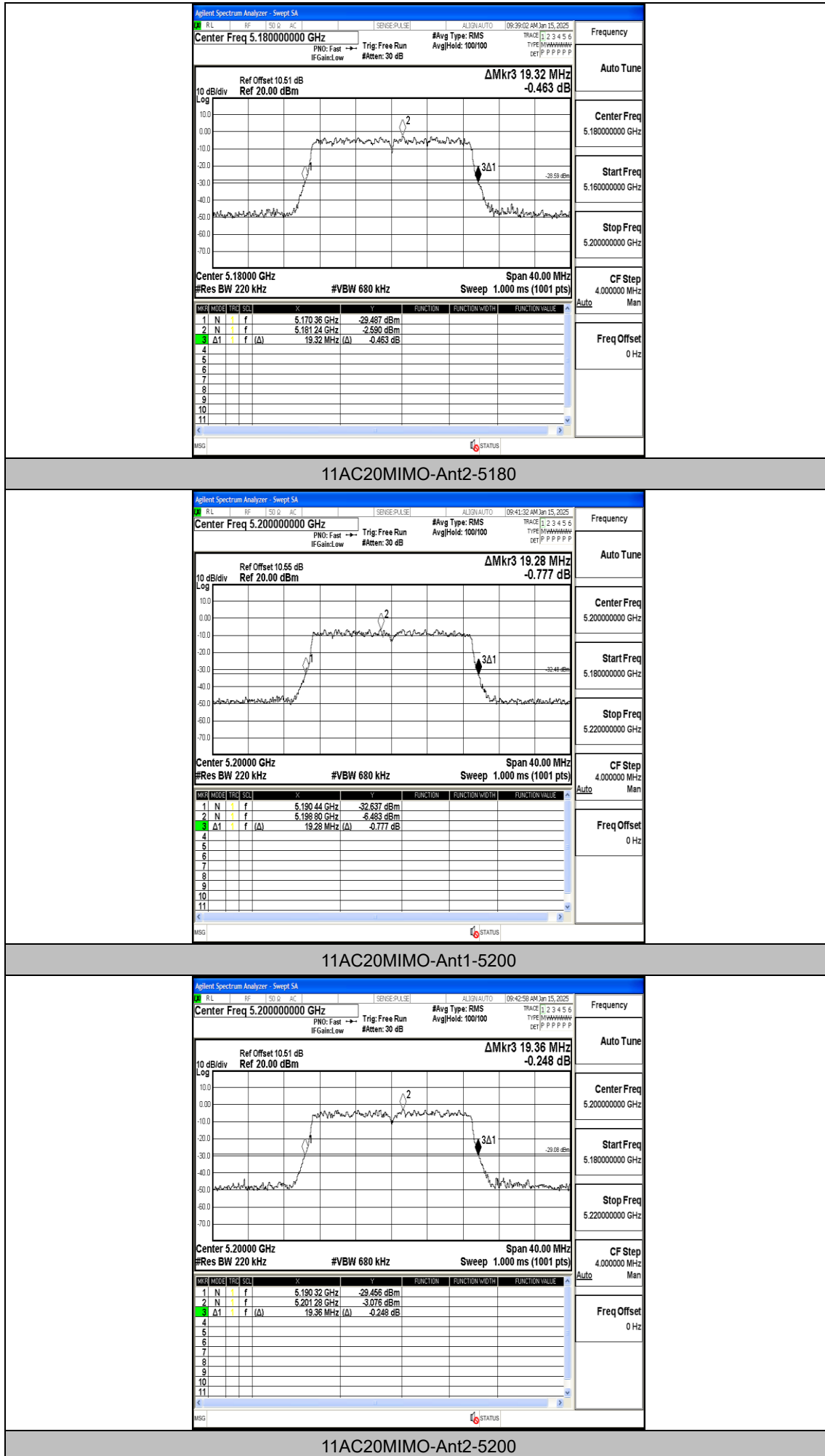
11N20MIMO-Ant2-5180

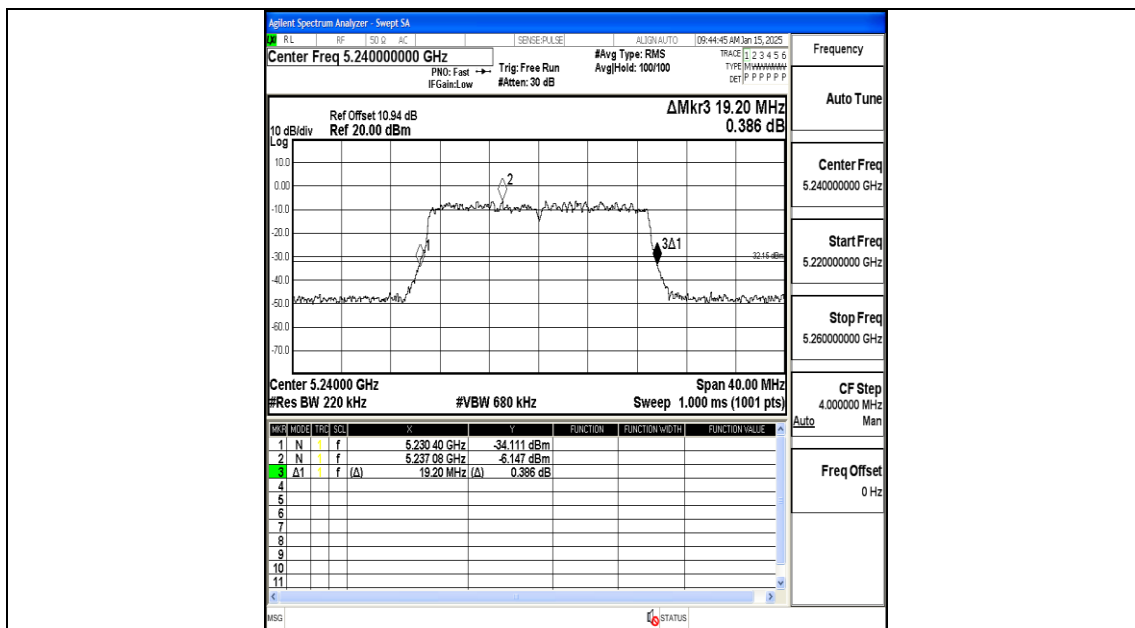




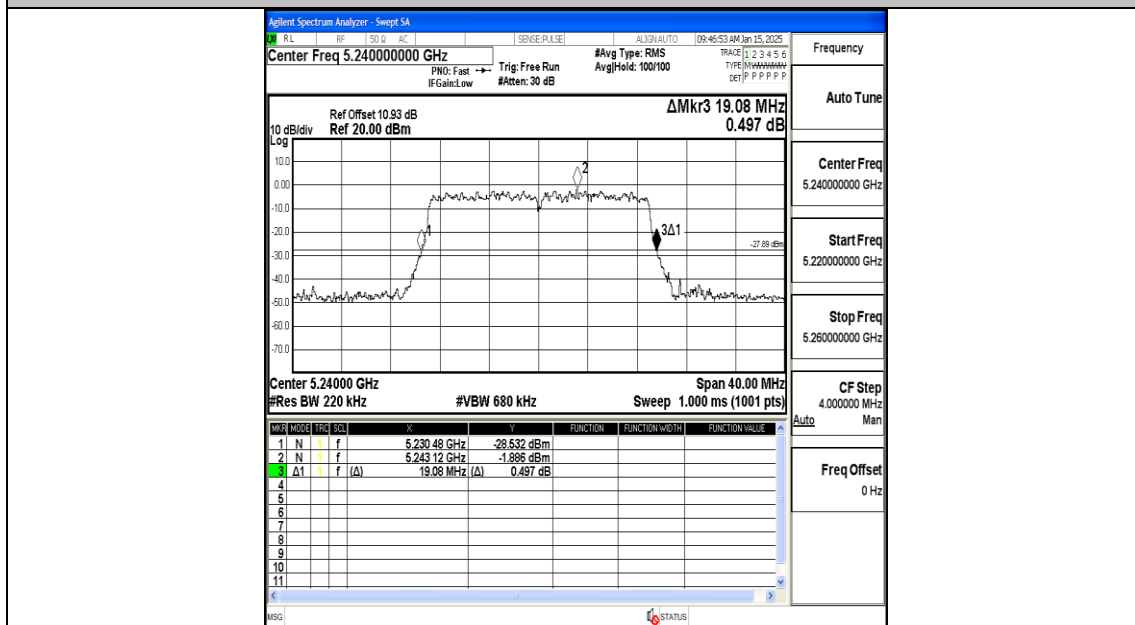




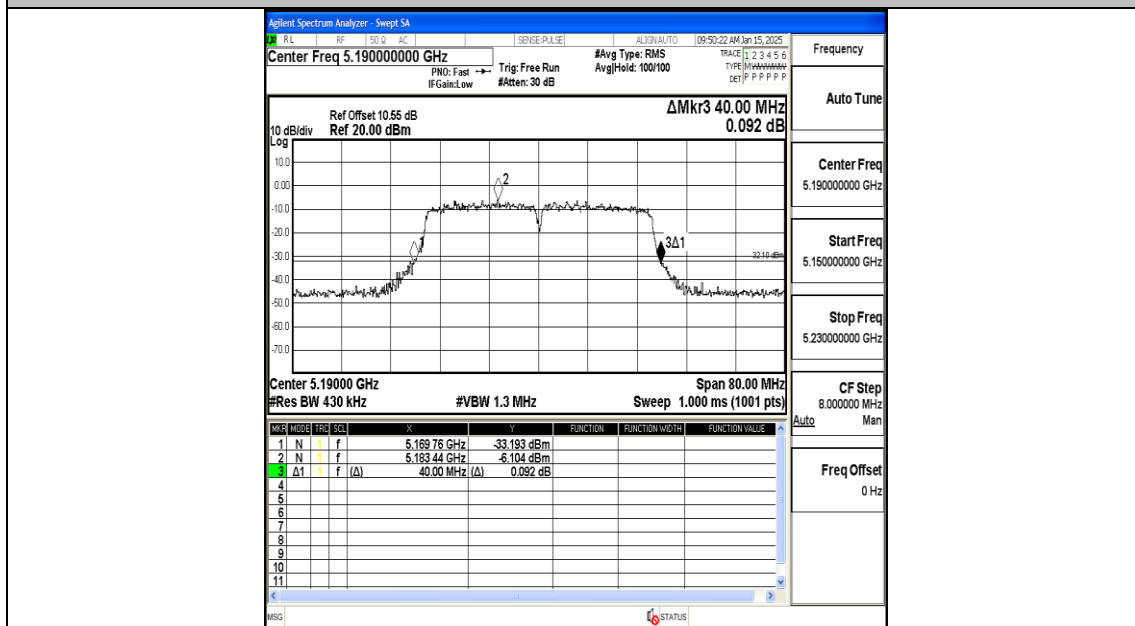




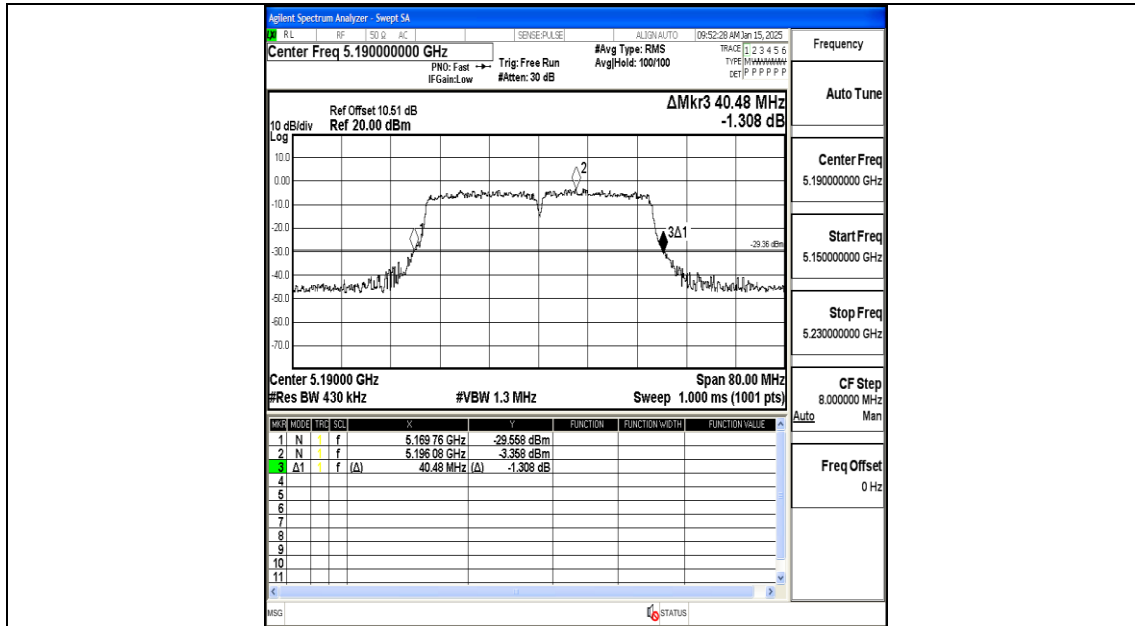
11AC20MIMO-Ant1-5240



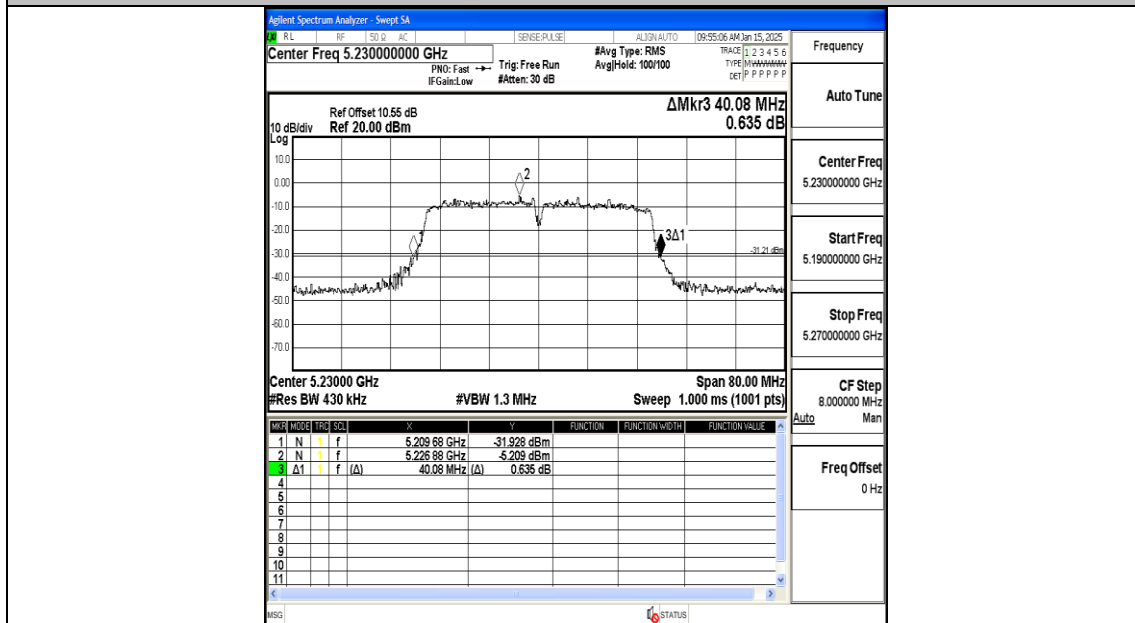
11AC20MIMO-Ant2-5240



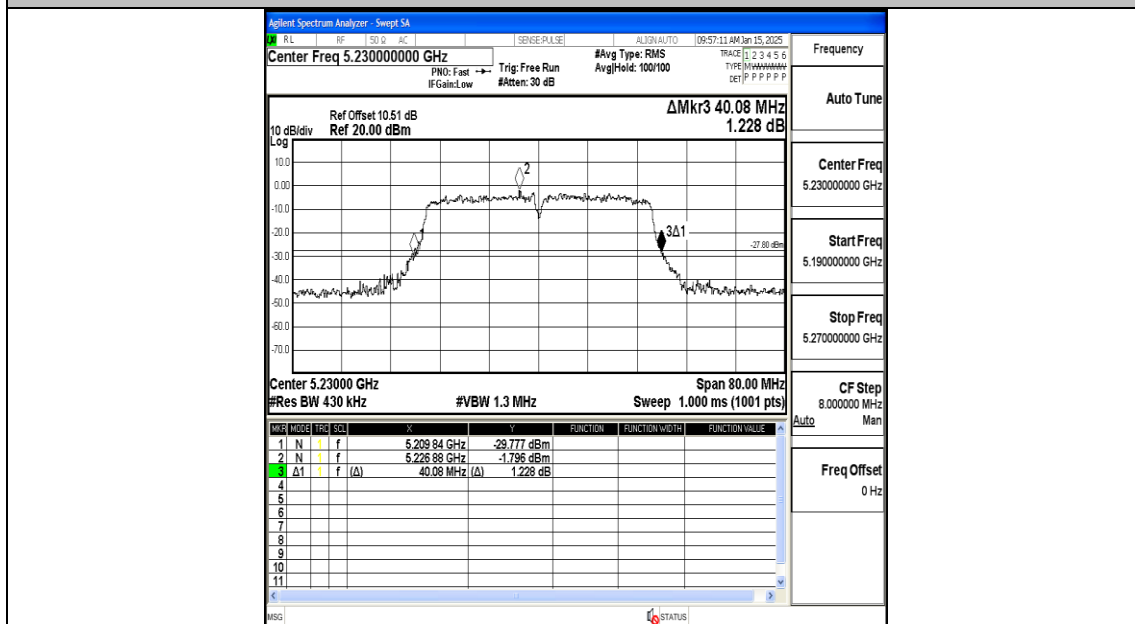
11AC40MIMO-Ant1-5190



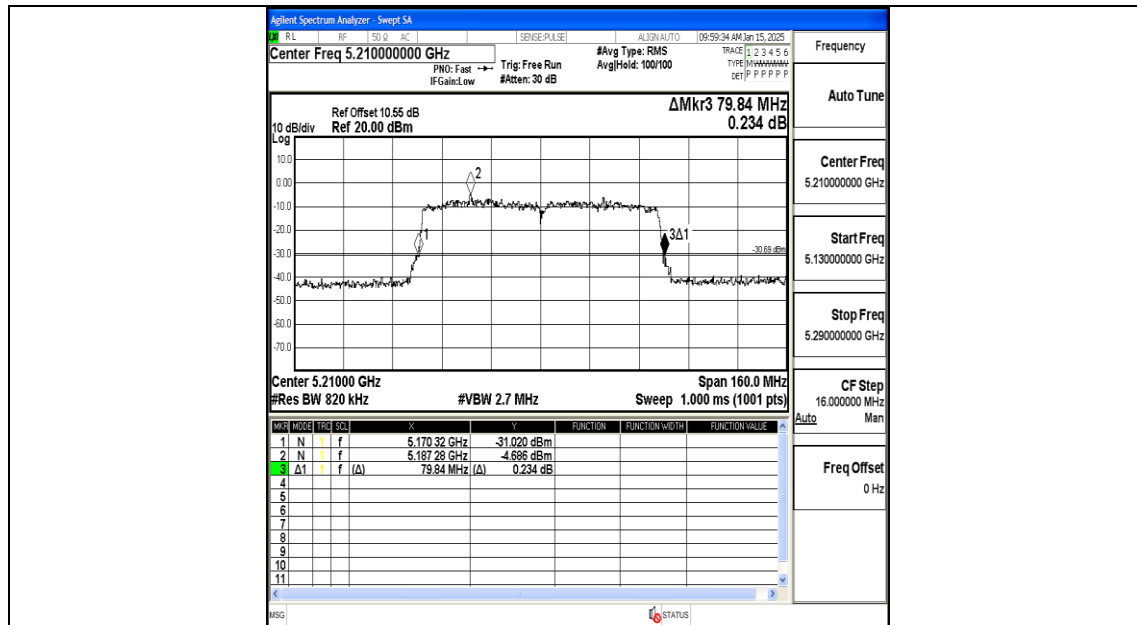
11AC40MIMO-Ant2-5190



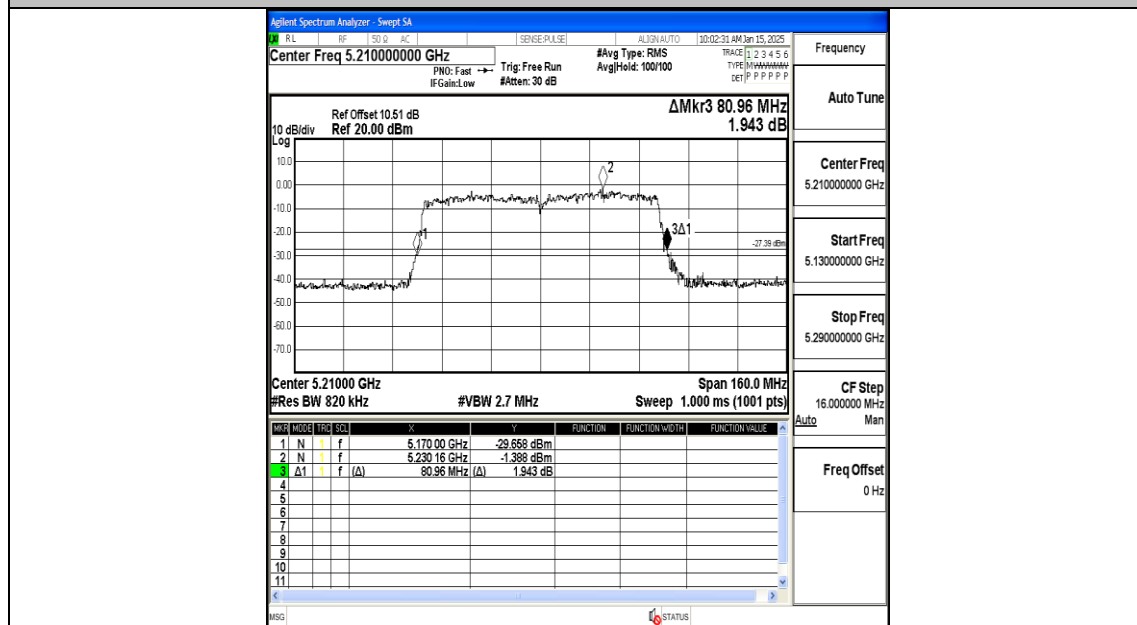
11AC40MIMO-Ant1-5230



11AC40MIMO-Ant2-5230



11AC80MIMO-Ant1-5210



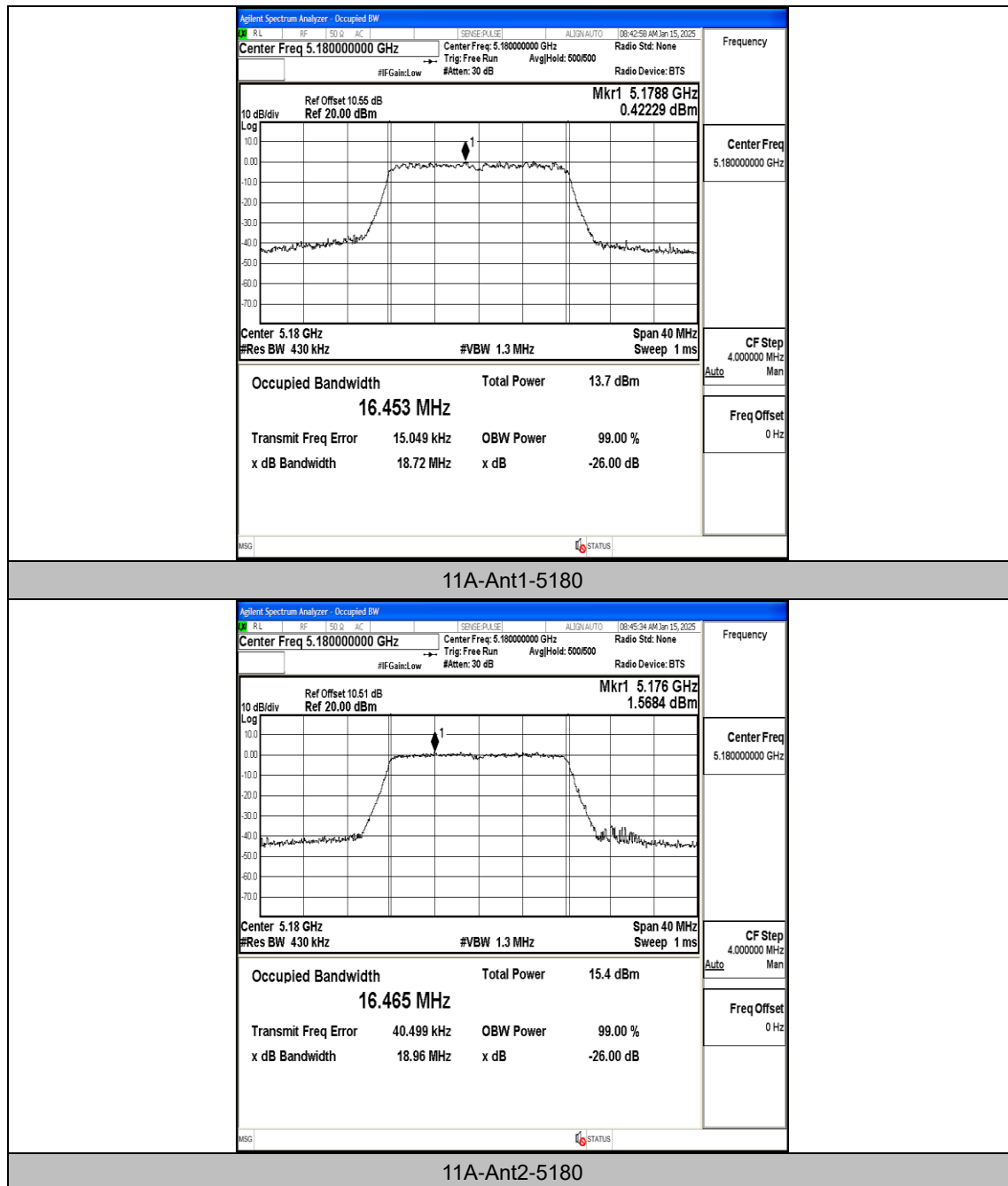
11AC80MIMO-Ant2-5210

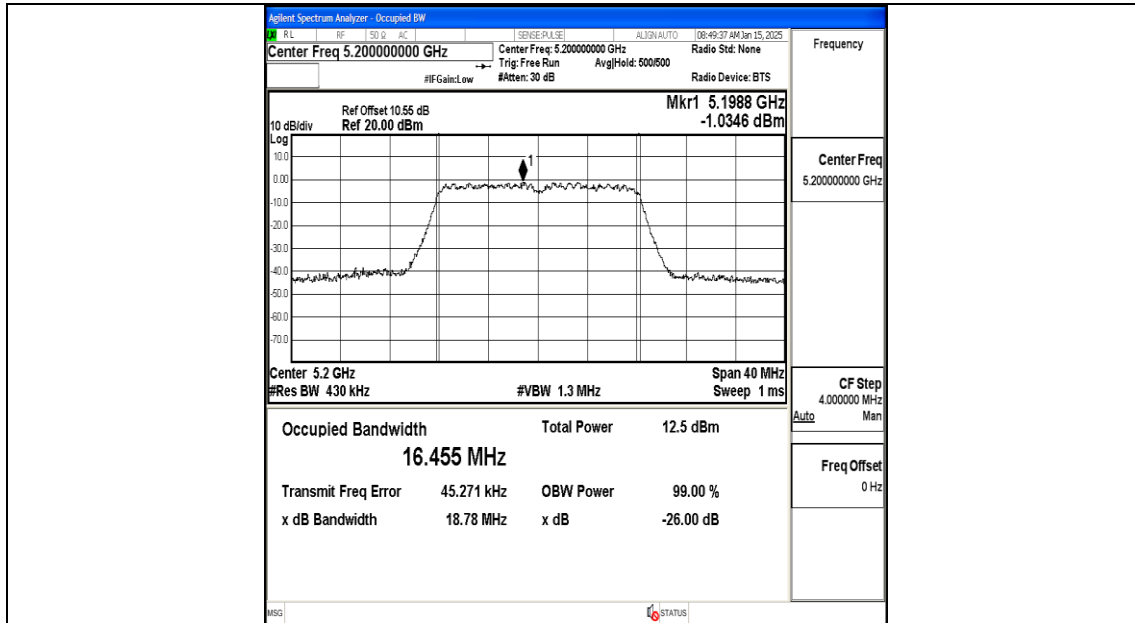
## Appendix A2: Occupied channel bandwidth

### Test Result

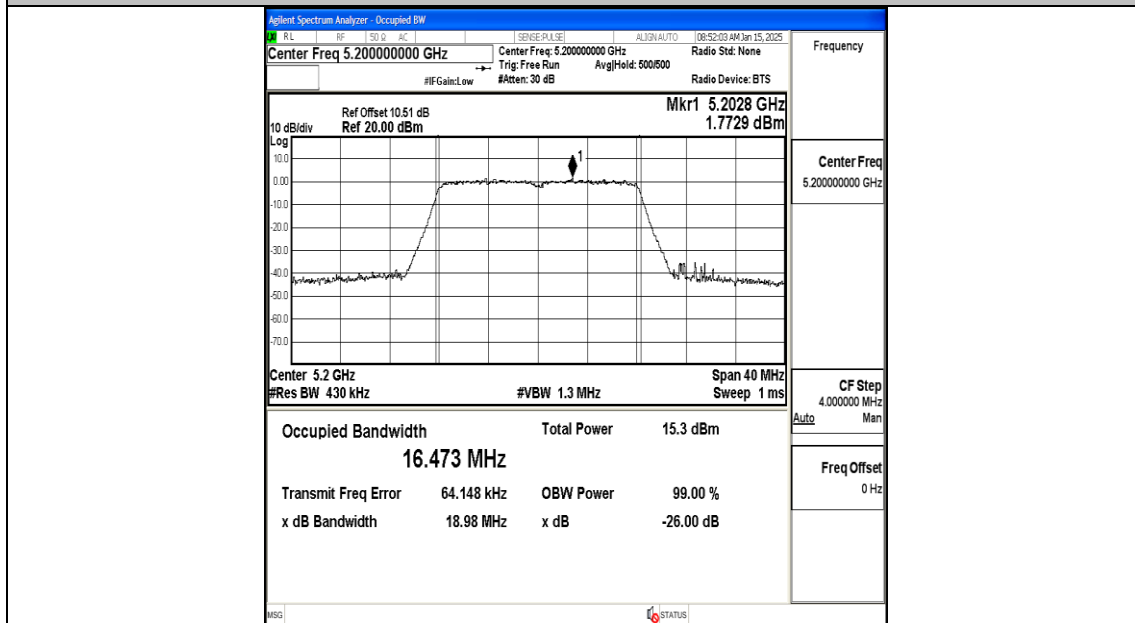
| Test Mode  | Antenna | Frequency [MHz] | OCB [MHz] | FL [MHz]  | FH [MHz]  | Limit [MHz] | Verdict |
|------------|---------|-----------------|-----------|-----------|-----------|-------------|---------|
| 11A        | Ant1    | 5180            | 16.453    | 5171.7886 | 5188.2416 | ---         | ---     |
| 11A        | Ant2    | 5180            | 16.465    | 5171.8080 | 5188.2730 | ---         | ---     |
| 11A        | Ant1    | 5200            | 16.455    | 5191.8178 | 5208.2728 | ---         | ---     |
| 11A        | Ant2    | 5200            | 16.473    | 5191.8277 | 5208.3007 | ---         | ---     |
| 11A        | Ant1    | 5240            | 16.452    | 5231.8269 | 5248.2789 | ---         | ---     |
| 11A        | Ant2    | 5240            | 16.485    | 5231.8315 | 5248.3165 | ---         | ---     |
| 11N20MIMO  | Ant1    | 5180            | 17.719    | 5171.1648 | 5188.8838 | ---         | ---     |
| 11N20MIMO  | Ant2    | 5180            | 17.730    | 5171.1407 | 5188.8707 | ---         | ---     |
| 11N20MIMO  | Ant1    | 5200            | 17.741    | 5191.1456 | 5208.8866 | ---         | ---     |
| 11N20MIMO  | Ant2    | 5200            | 17.896    | 5191.0843 | 5208.9803 | ---         | ---     |
| 11N20MIMO  | Ant1    | 5240            | 17.759    | 5231.1034 | 5248.8624 | ---         | ---     |
| 11N20MIMO  | Ant2    | 5240            | 17.677    | 5231.1878 | 5248.8648 | ---         | ---     |
| 11N40MIMO  | Ant1    | 5190            | 36.500    | 5171.8563 | 5208.3563 | ---         | ---     |
| 11N40MIMO  | Ant2    | 5190            | 36.373    | 5171.9315 | 5208.3045 | ---         | ---     |
| 11N40MIMO  | Ant1    | 5230            | 36.359    | 5211.8708 | 5248.2298 | ---         | ---     |
| 11N40MIMO  | Ant2    | 5230            | 36.295    | 5211.9735 | 5248.2685 | ---         | ---     |
| 11AC20MIMO | Ant1    | 5180            | 17.756    | 5171.1509 | 5188.9069 | ---         | ---     |
| 11AC20MIMO | Ant2    | 5180            | 17.756    | 5171.1643 | 5188.9203 | ---         | ---     |
| 11AC20MIMO | Ant1    | 5200            | 17.783    | 5191.1457 | 5208.9287 | ---         | ---     |
| 11AC20MIMO | Ant2    | 5200            | 17.787    | 5191.1615 | 5208.9485 | ---         | ---     |
| 11AC20MIMO | Ant1    | 5240            | 17.760    | 5231.1373 | 5248.8973 | ---         | ---     |
| 11AC20MIMO | Ant2    | 5240            | 17.760    | 5231.1653 | 5248.9253 | ---         | ---     |
| 11AC40MIMO | Ant1    | 5190            | 36.334    | 5171.8053 | 5208.1393 | ---         | ---     |
| 11AC40MIMO | Ant2    | 5190            | 36.297    | 5171.8987 | 5208.1957 | ---         | ---     |
| 11AC40MIMO | Ant1    | 5230            | 36.297    | 5211.8186 | 5248.1156 | ---         | ---     |
| 11AC40MIMO | Ant2    | 5230            | 36.247    | 5211.9541 | 5248.2011 | ---         | ---     |
| 11AC80MIMO | Ant1    | 5210            | 75.849    | 5171.9537 | 5247.8027 | ---         | ---     |
| 11AC80MIMO | Ant2    | 5210            | 75.825    | 5172.3721 | 5248.1971 | ---         | ---     |

## Test Graphs

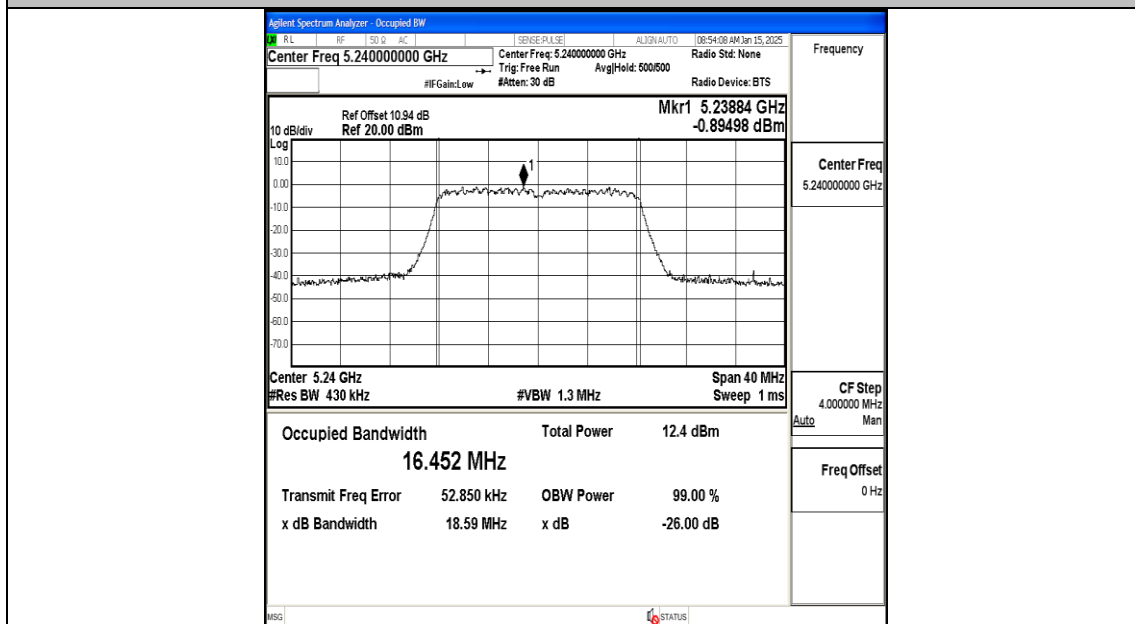




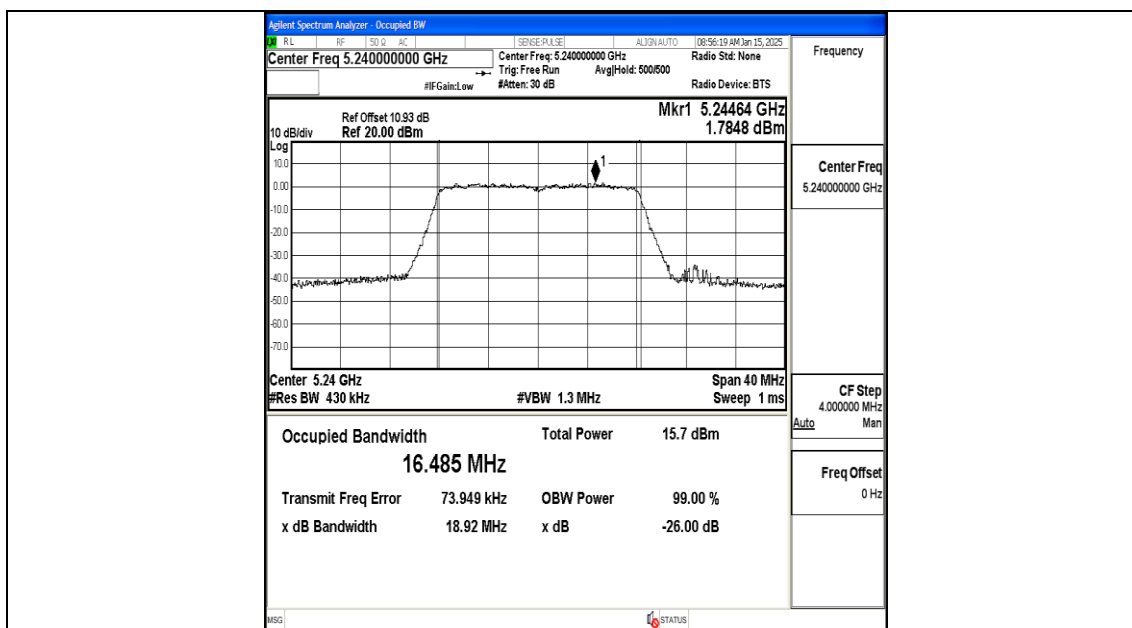
11A-Ant1-5200



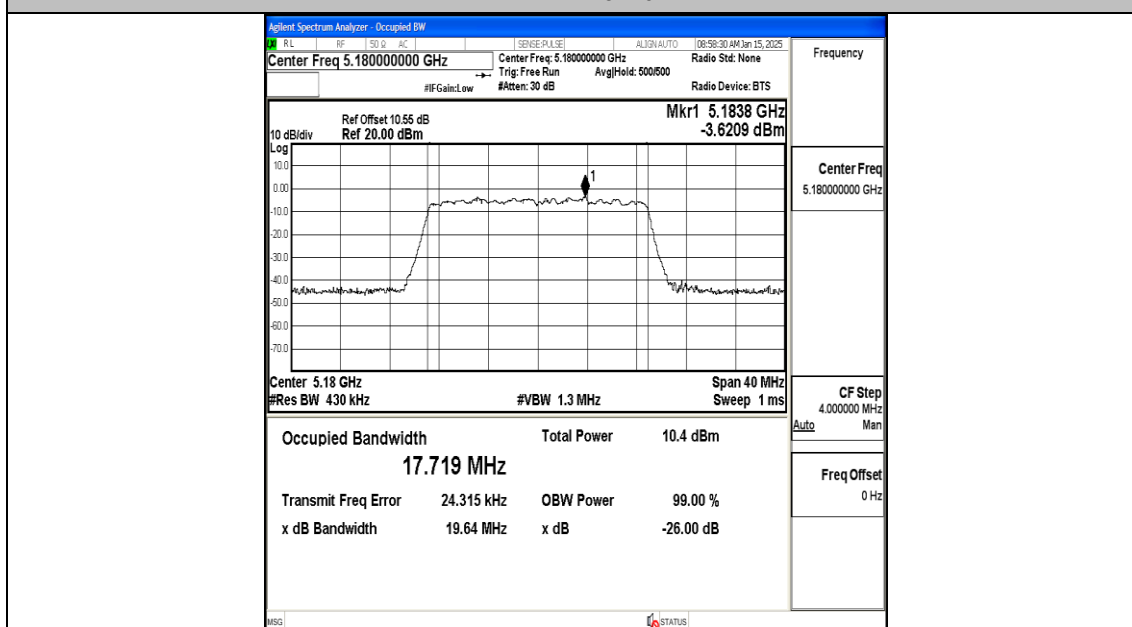
11A-Ant2-5200



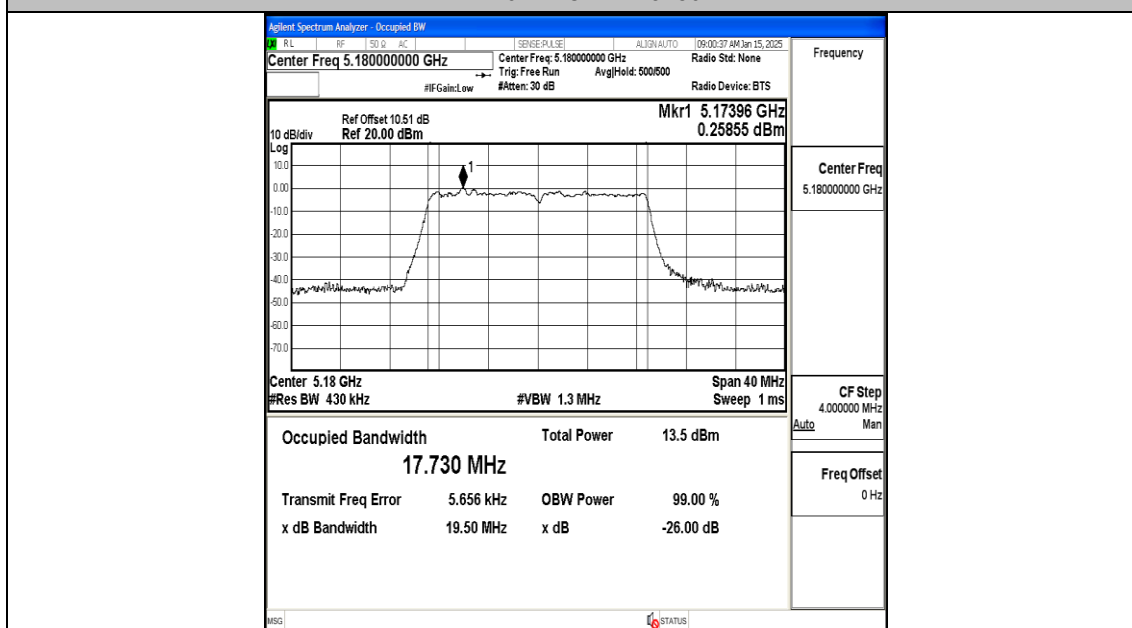
11A-Ant1-5240



11A-Ant2-5240

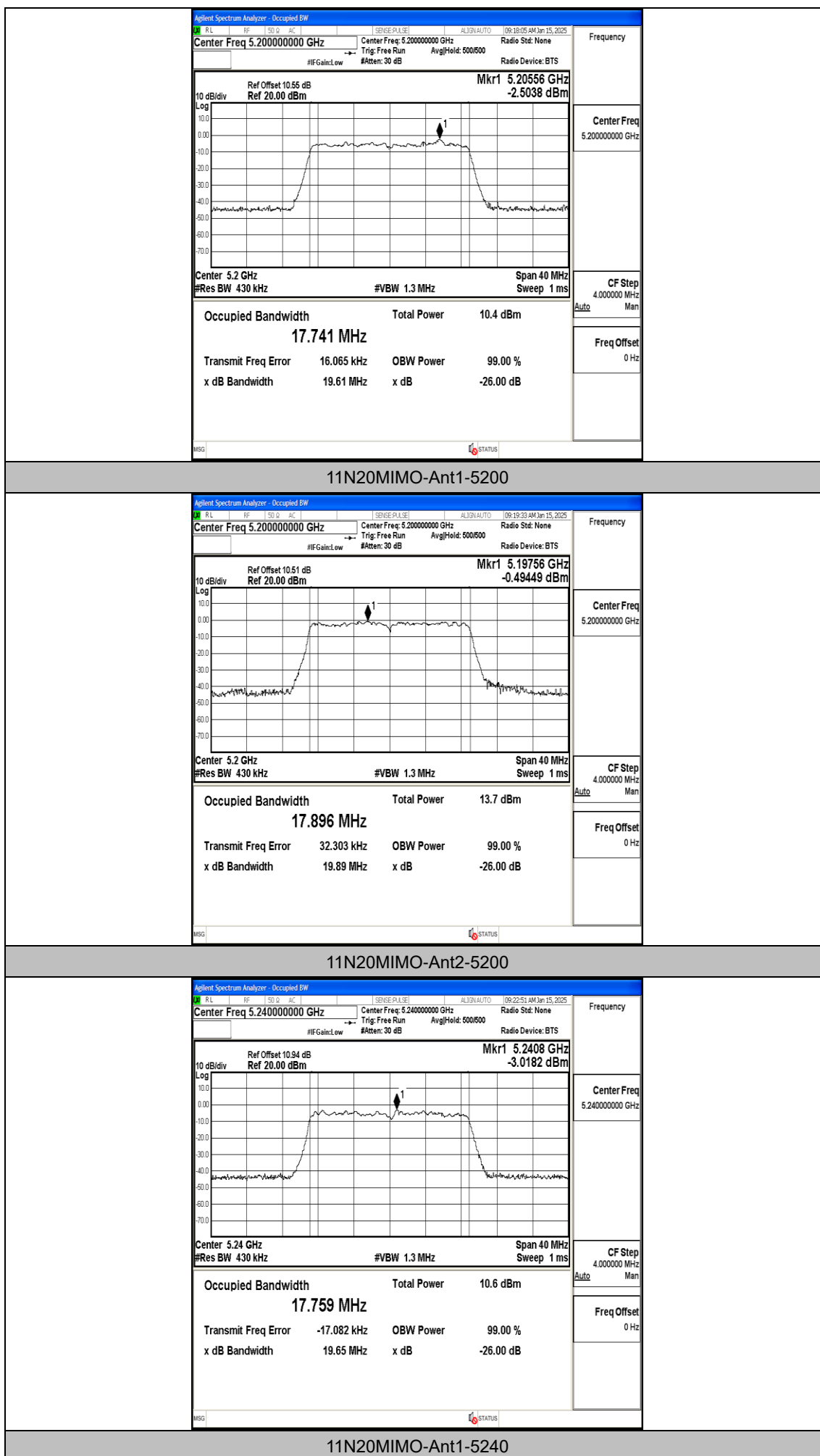


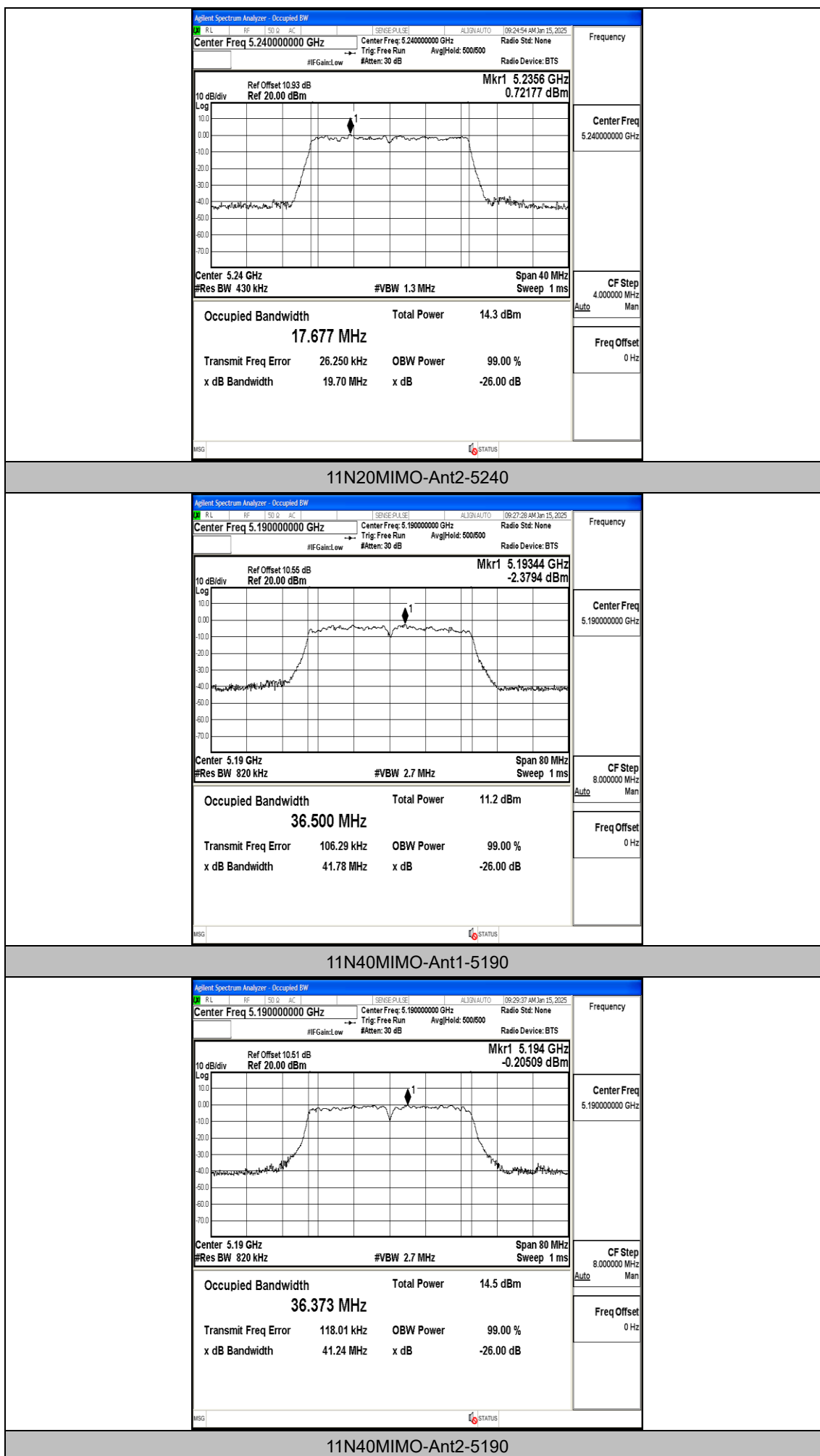
11N20MIMO-Ant1-5180

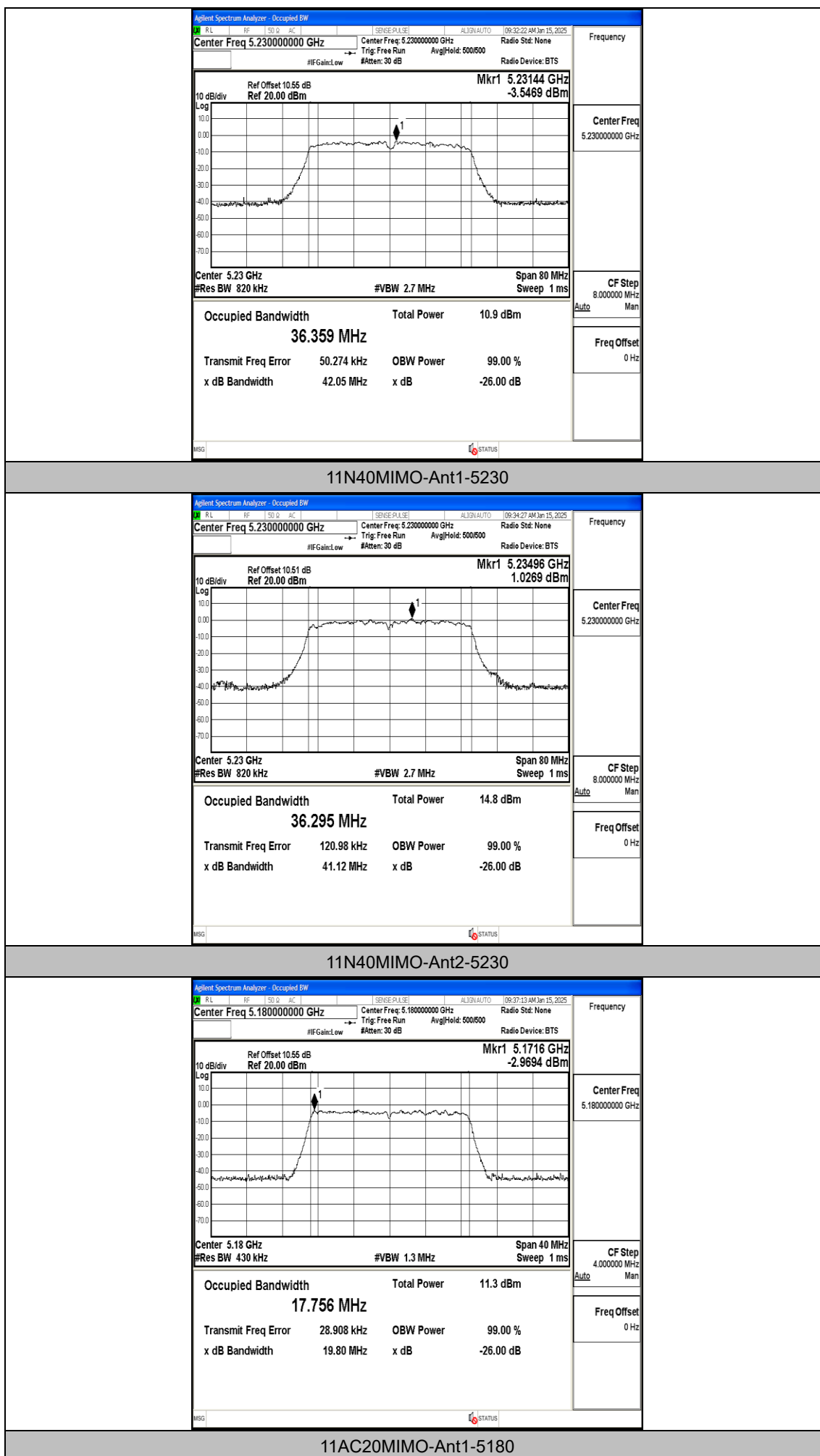


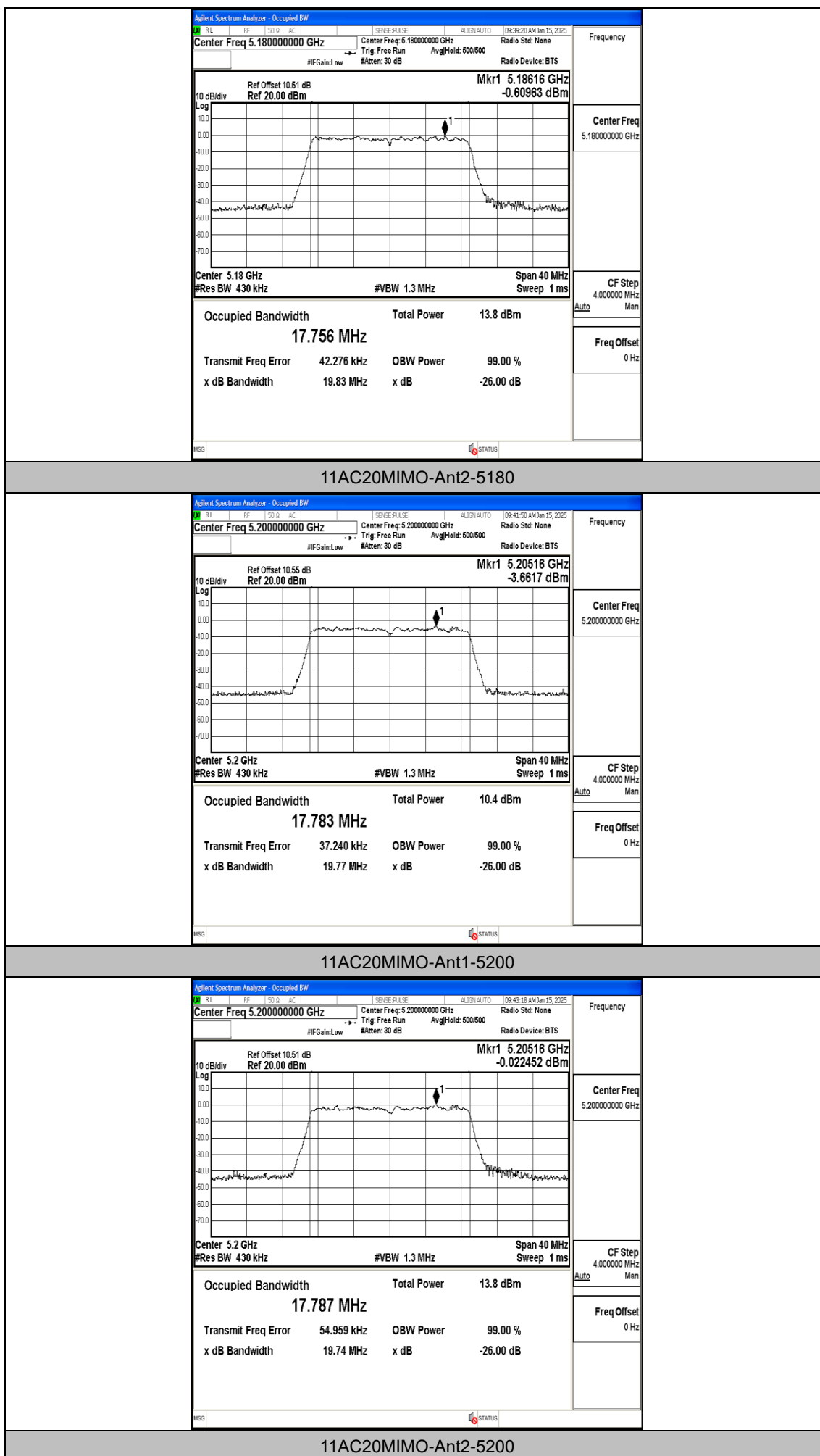
11N20MIMO-Ant2-5180

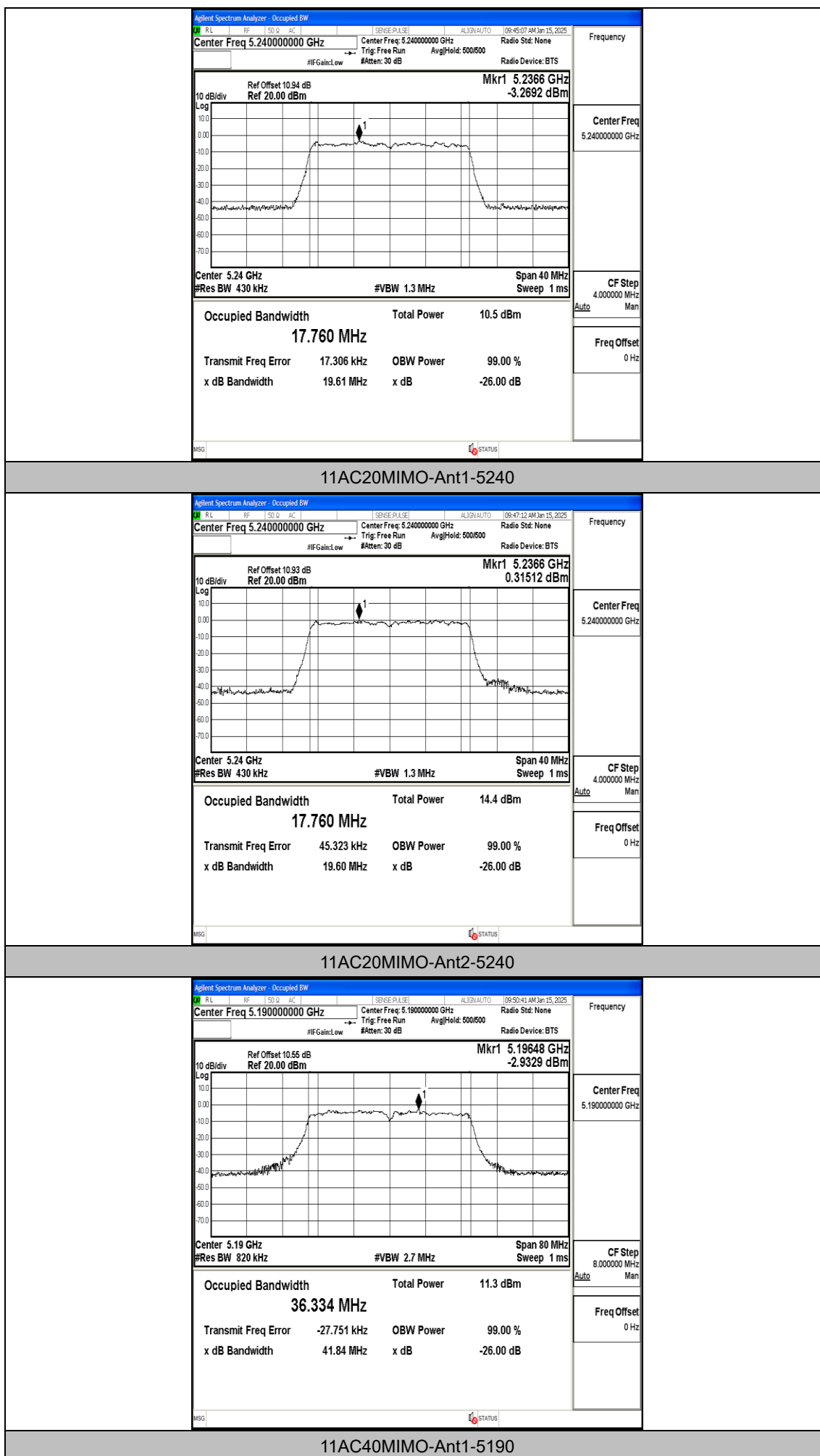


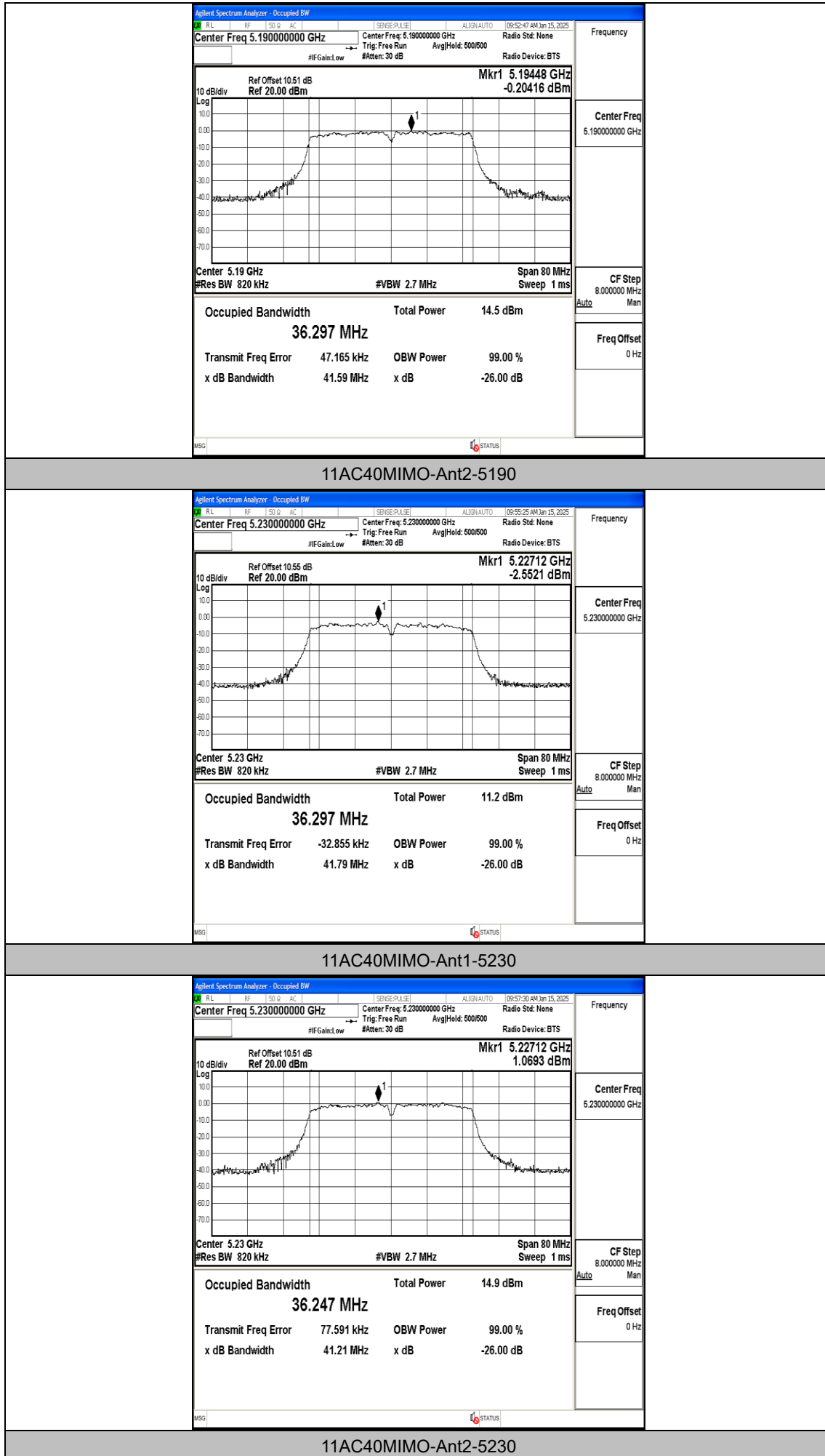


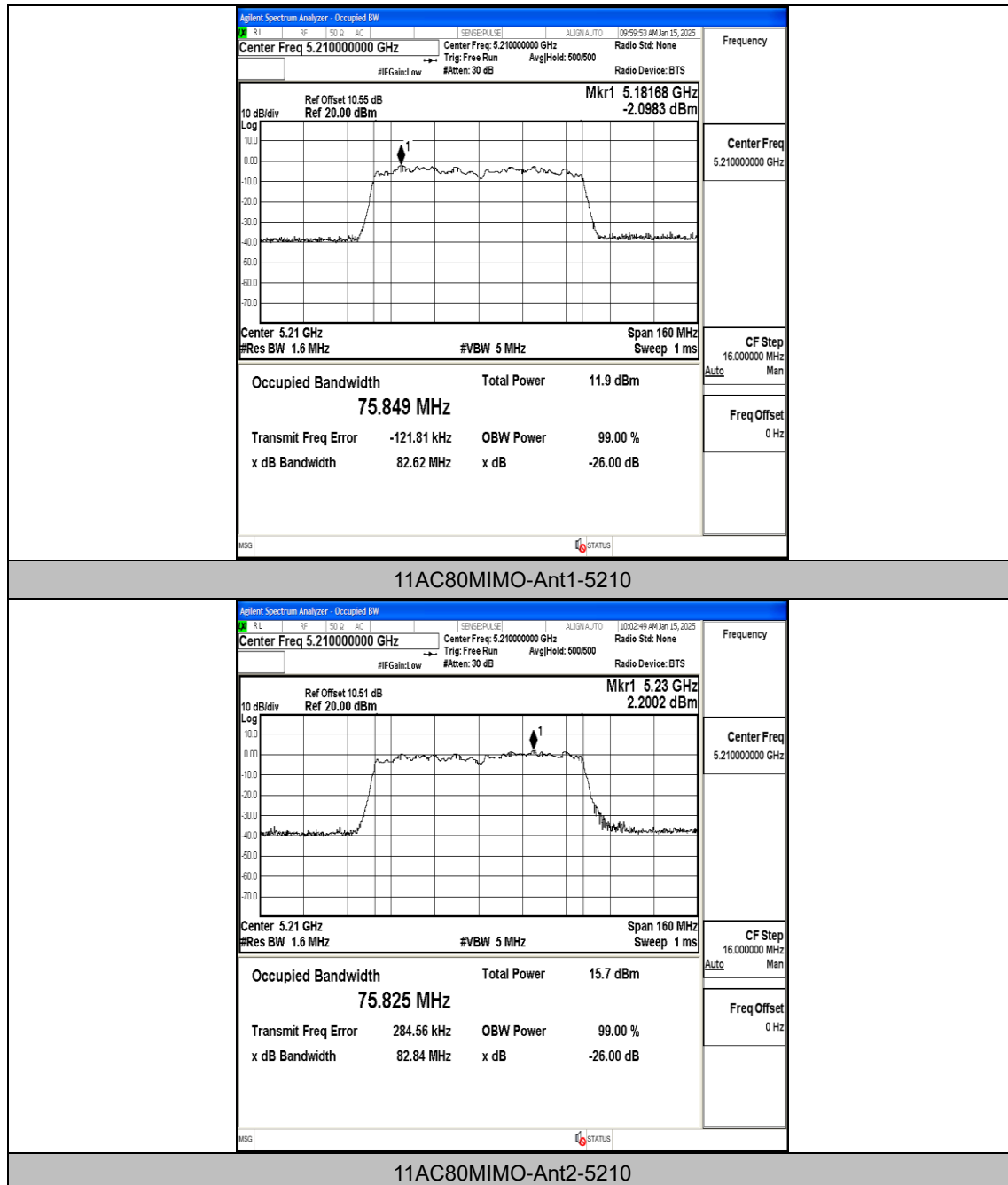












## Appendix B: Maximum conducted output power

### Test Result

| Test Mode  | Antenna | Frequency [MHz] | Conducted Power [dBm] | Conducted Limit [dBm] | Verdict |
|------------|---------|-----------------|-----------------------|-----------------------|---------|
| 11A        | Ant1    | 5180            | 6.36                  | ≤23.98                | PASS    |
| 11A        | Ant2    | 5180            | 8.65                  | ≤23.98                | PASS    |
| 11A        | Ant1    | 5200            | 5.36                  | ≤23.98                | PASS    |
| 11A        | Ant2    | 5200            | 8.80                  | ≤23.98                | PASS    |
| 11A        | Ant1    | 5240            | 5.45                  | ≤23.98                | PASS    |
| 11A        | Ant2    | 5240            | 9.16                  | ≤23.98                | PASS    |
| 11N20MIMO  | Ant1    | 5180            | 5.14                  | ≤23.98                | PASS    |
| 11N20MIMO  | Ant2    | 5180            | 7.99                  | ≤23.98                | PASS    |
| 11N20MIMO  | total   | 5180            | 9.81                  | ≤23.98                | PASS    |
| 11N20MIMO  | Ant1    | 5200            | 5.44                  | ≤23.98                | PASS    |
| 11N20MIMO  | Ant2    | 5200            | 7.66                  | ≤23.98                | PASS    |
| 11N20MIMO  | total   | 5200            | 9.70                  | ≤23.98                | PASS    |
| 11N20MIMO  | Ant1    | 5240            | 4.90                  | ≤23.98                | PASS    |
| 11N20MIMO  | Ant2    | 5240            | 9.03                  | ≤23.98                | PASS    |
| 11N20MIMO  | total   | 5240            | 10.45                 | ≤23.98                | PASS    |
| 11N40MIMO  | Ant1    | 5190            | 5.38                  | ≤23.98                | PASS    |
| 11N40MIMO  | Ant2    | 5190            | 8.28                  | ≤23.98                | PASS    |
| 11N40MIMO  | total   | 5190            | 10.08                 | ≤23.98                | PASS    |
| 11N40MIMO  | Ant1    | 5230            | 4.79                  | ≤23.98                | PASS    |
| 11N40MIMO  | Ant2    | 5230            | 8.50                  | ≤23.98                | PASS    |
| 11N40MIMO  | total   | 5230            | 10.04                 | ≤23.98                | PASS    |
| 11AC20MIMO | Ant1    | 5180            | 5.24                  | ≤23.98                | PASS    |
| 11AC20MIMO | Ant2    | 5180            | 7.71                  | ≤23.98                | PASS    |
| 11AC20MIMO | total   | 5180            | 9.66                  | ≤23.98                | PASS    |
| 11AC20MIMO | Ant1    | 5200            | 4.53                  | ≤23.98                | PASS    |
| 11AC20MIMO | Ant2    | 5200            | 7.95                  | ≤23.98                | PASS    |
| 11AC20MIMO | total   | 5200            | 9.58                  | ≤23.98                | PASS    |
| 11AC20MIMO | Ant1    | 5240            | 4.47                  | ≤23.98                | PASS    |
| 11AC20MIMO | Ant2    | 5240            | 7.61                  | ≤23.98                | PASS    |
| 11AC20MIMO | total   | 5240            | 9.33                  | ≤23.98                | PASS    |
| 11AC40MIMO | Ant1    | 5190            | 4.69                  | ≤23.98                | PASS    |
| 11AC40MIMO | Ant2    | 5190            | 8.29                  | ≤23.98                | PASS    |
| 11AC40MIMO | total   | 5190            | 9.86                  | ≤23.98                | PASS    |
| 11AC40MIMO | Ant1    | 5230            | 4.53                  | ≤23.98                | PASS    |
| 11AC40MIMO | Ant2    | 5230            | 8.67                  | ≤23.98                | PASS    |
| 11AC40MIMO | total   | 5230            | 10.09                 | ≤23.98                | PASS    |
| 11AC80MIMO | Ant1    | 5210            | 4.52                  | ≤23.98                | PASS    |
| 11AC80MIMO | Ant2    | 5210            | 8.45                  | ≤23.98                | PASS    |
| 11AC80MIMO | total   | 5210            | 9.93                  | ≤23.98                | PASS    |

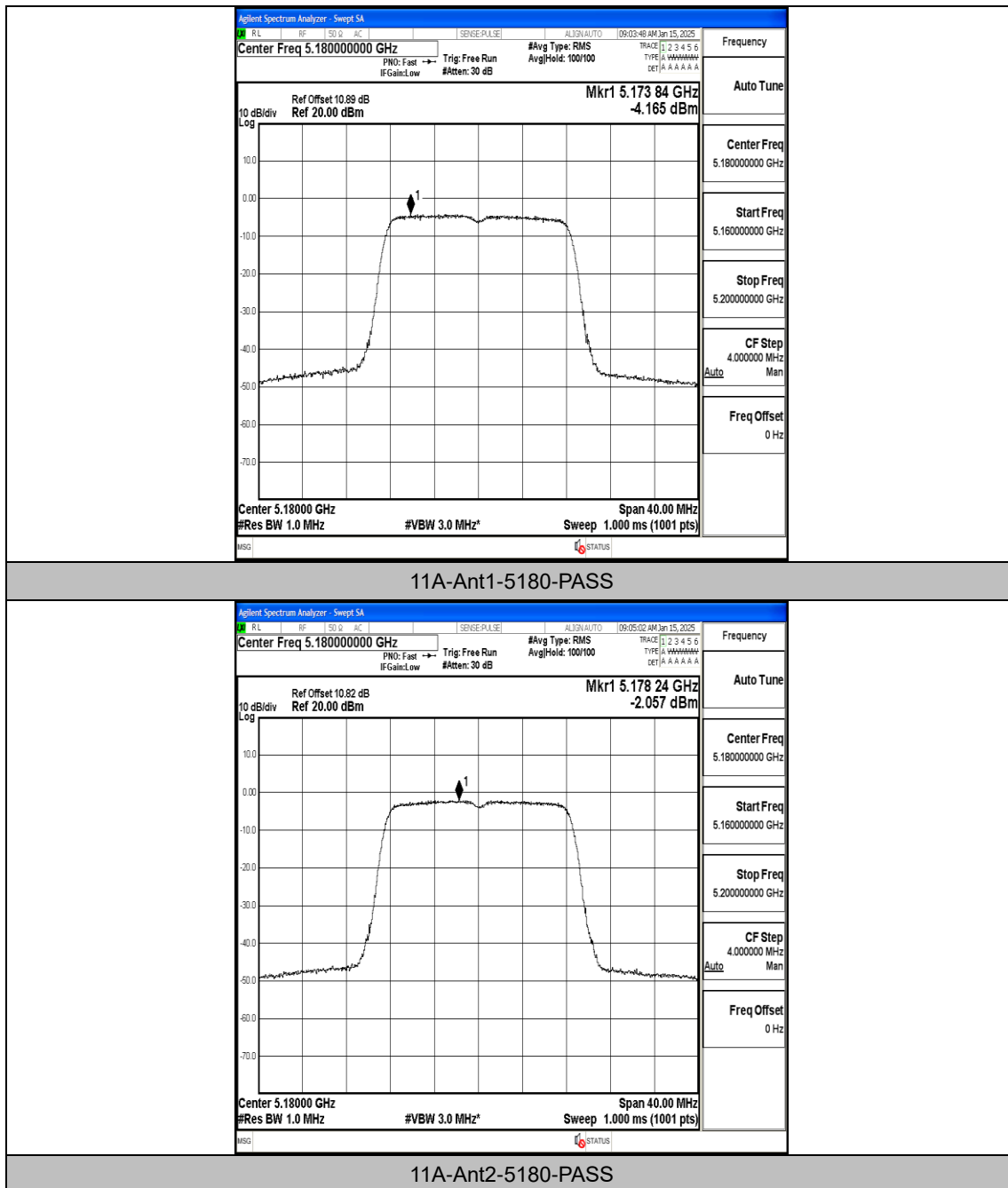


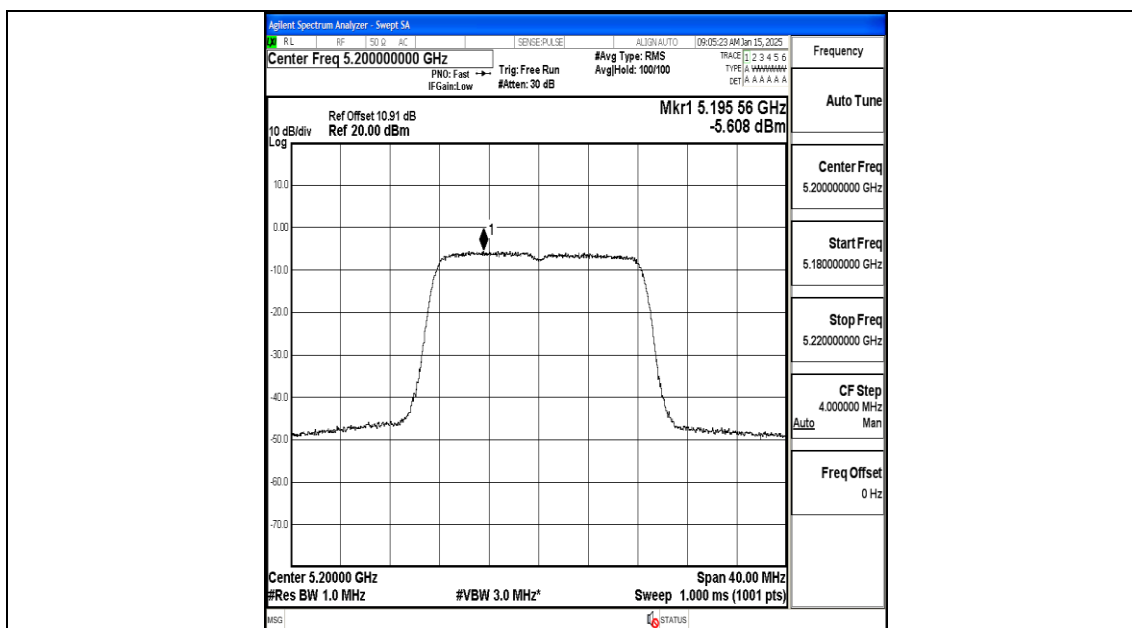
## Appendix C: Maximum power spectral density

### Test Result

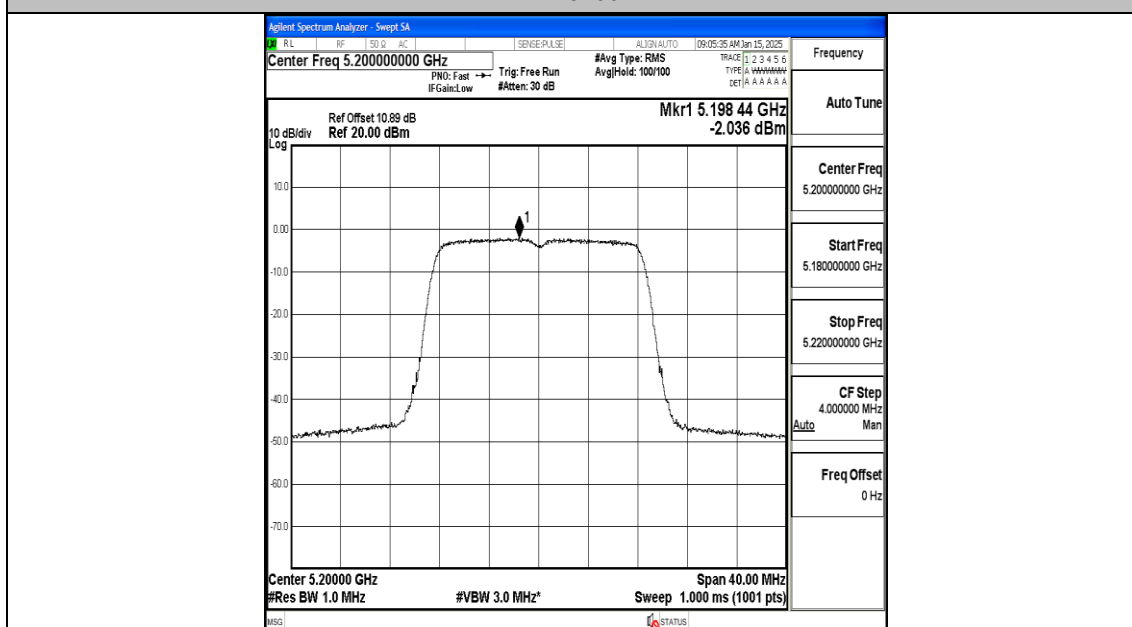
| Test Mode  | Antenna | Frequency [MHz] | Result [dBm/MHz] | Limit [dBm/MHz] | Verdict |
|------------|---------|-----------------|------------------|-----------------|---------|
| 11A        | Ant1    | 5180            | -4.17            | ≤11.00          | PASS    |
| 11A        | Ant2    | 5180            | -2.06            | ≤11.00          | PASS    |
| 11A        | Ant1    | 5200            | -5.61            | ≤11.00          | PASS    |
| 11A        | Ant2    | 5200            | -2.04            | ≤11.00          | PASS    |
| 11A        | Ant1    | 5240            | -5.37            | ≤11.00          | PASS    |
| 11A        | Ant2    | 5240            | -1.84            | ≤11.00          | PASS    |
| 11N20MIMO  | Ant1    | 5180            | -5.99            | ≤11.00          | PASS    |
| 11N20MIMO  | Ant2    | 5180            | -3.39            | ≤11.00          | PASS    |
| 11N20MIMO  | total   | 5180            | -1.49            | ≤10.64          | PASS    |
| 11N20MIMO  | Ant1    | 5200            | -5.06            | ≤11.00          | PASS    |
| 11N20MIMO  | Ant2    | 5200            | -2.46            | ≤11.00          | PASS    |
| 11N20MIMO  | total   | 5200            | -0.56            | ≤10.64          | PASS    |
| 11N20MIMO  | Ant1    | 5240            | -5.51            | ≤11.00          | PASS    |
| 11N20MIMO  | Ant2    | 5240            | -1.81            | ≤11.00          | PASS    |
| 11N20MIMO  | total   | 5240            | -0.27            | ≤10.64          | PASS    |
| 11N40MIMO  | Ant1    | 5190            | -7.40            | ≤11.00          | PASS    |
| 11N40MIMO  | Ant2    | 5190            | -4.91            | ≤11.00          | PASS    |
| 11N40MIMO  | total   | 5190            | -2.97            | ≤10.64          | PASS    |
| 11N40MIMO  | Ant1    | 5230            | -8.41            | ≤11.00          | PASS    |
| 11N40MIMO  | Ant2    | 5230            | -4.70            | ≤11.00          | PASS    |
| 11N40MIMO  | total   | 5230            | -3.16            | ≤10.64          | PASS    |
| 11AC20MIMO | Ant1    | 5180            | -5.18            | ≤11.00          | PASS    |
| 11AC20MIMO | Ant2    | 5180            | -3.05            | ≤11.00          | PASS    |
| 11AC20MIMO | total   | 5180            | -0.98            | ≤10.64          | PASS    |
| 11AC20MIMO | Ant1    | 5200            | -6.51            | ≤11.00          | PASS    |
| 11AC20MIMO | Ant2    | 5200            | -3.08            | ≤11.00          | PASS    |
| 11AC20MIMO | total   | 5200            | -1.45            | ≤10.64          | PASS    |
| 11AC20MIMO | Ant1    | 5240            | -6.17            | ≤11.00          | PASS    |
| 11AC20MIMO | Ant2    | 5240            | -2.77            | ≤11.00          | PASS    |
| 11AC20MIMO | total   | 5240            | -1.14            | ≤10.64          | PASS    |
| 11AC40MIMO | Ant1    | 5190            | -8.49            | ≤11.00          | PASS    |
| 11AC40MIMO | Ant2    | 5190            | -4.36            | ≤11.00          | PASS    |
| 11AC40MIMO | total   | 5190            | -2.94            | ≤10.64          | PASS    |
| 11AC40MIMO | Ant1    | 5230            | -8.92            | ≤11.00          | PASS    |
| 11AC40MIMO | Ant2    | 5230            | -4.40            | ≤11.00          | PASS    |
| 11AC40MIMO | total   | 5230            | -3.09            | ≤10.64          | PASS    |
| 11AC80MIMO | Ant1    | 5210            | -11.65           | ≤11.00          | PASS    |
| 11AC80MIMO | Ant2    | 5210            | -7.15            | ≤11.00          | PASS    |
| 11AC80MIMO | total   | 5210            | -5.83            | ≤10.64          | PASS    |

## Test Graphs

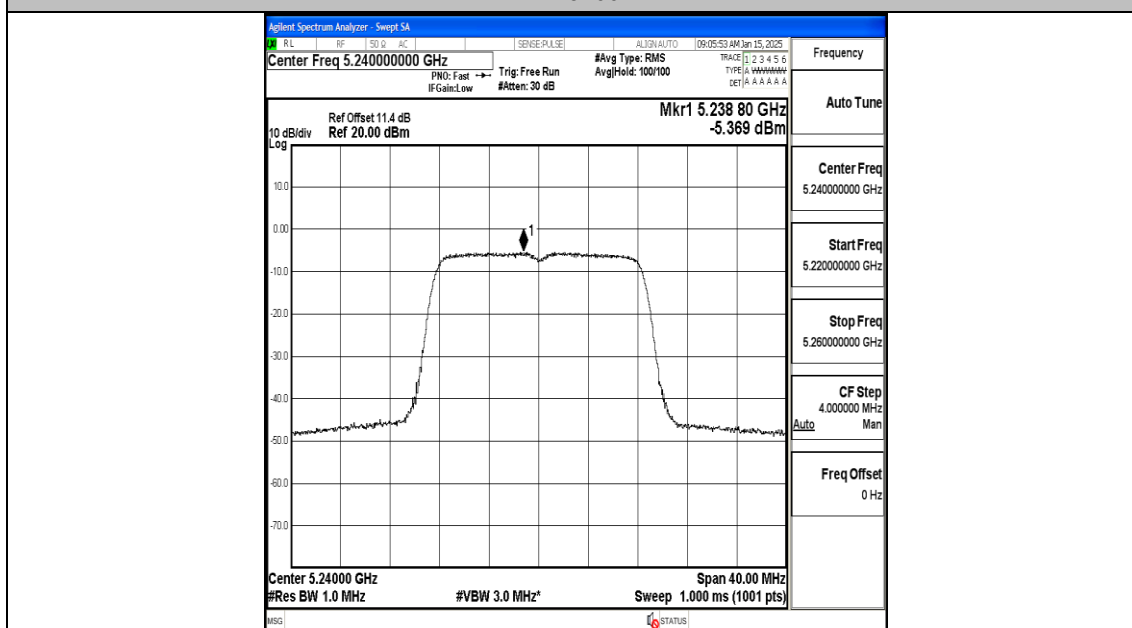




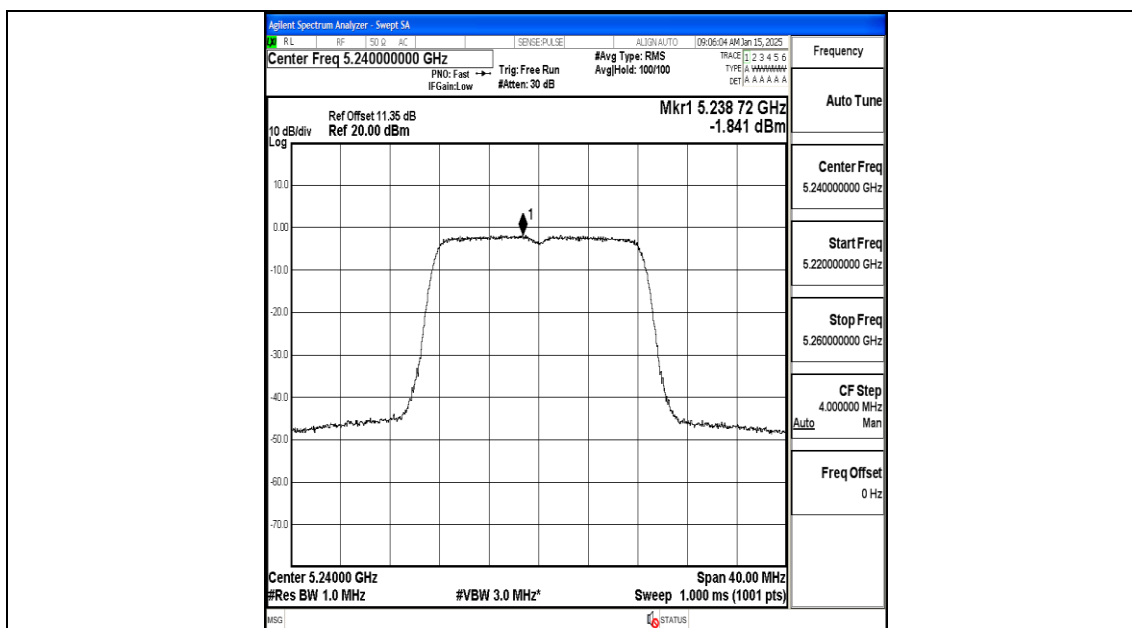
11A-Ant1-5200-PASS



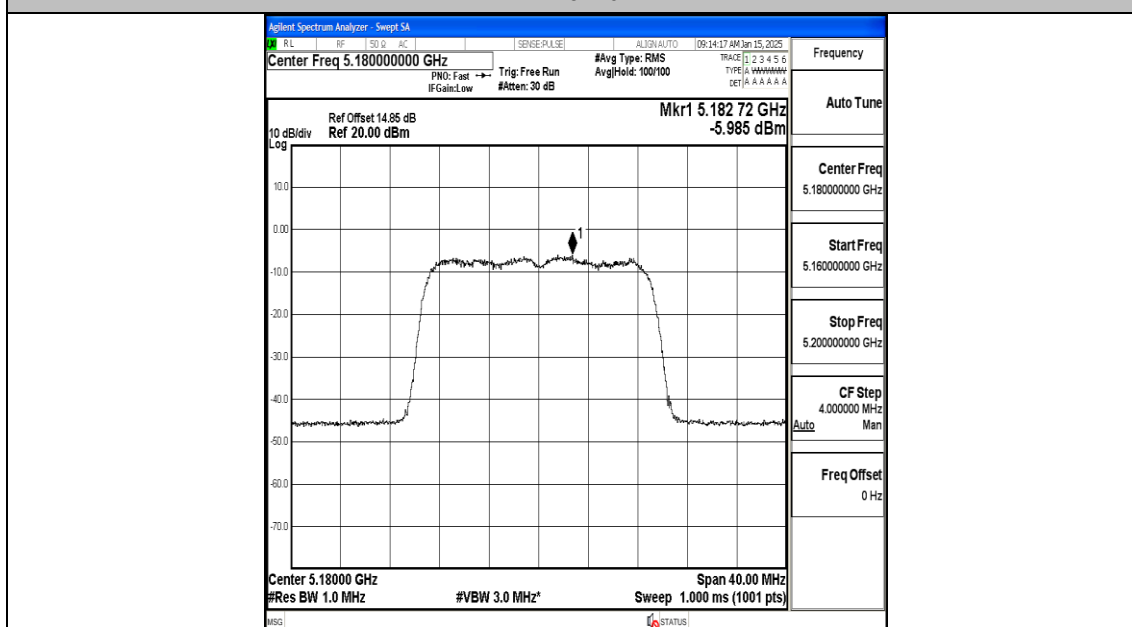
11A-Ant2-5200-PASS



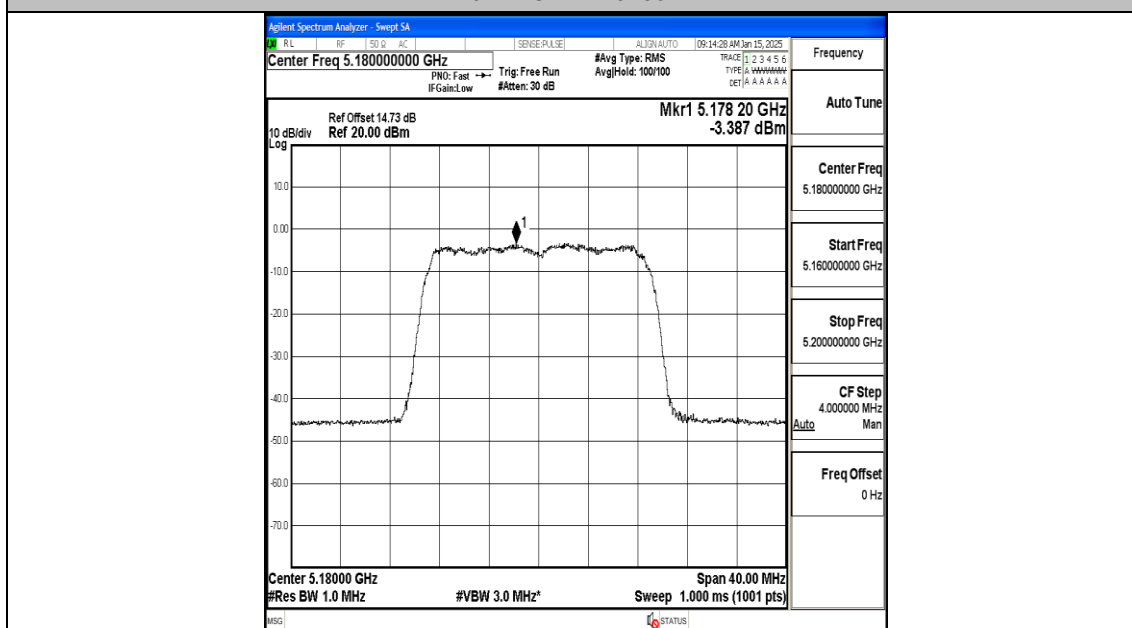
11A-Ant1-5240-PASS



11A-Ant2-5240-PASS



11N20MIMO-Ant1-5180-PASS



11N20MIMO-Ant2-5180-PASS