



## Appendix D

### RF Test Data for 5.2GWIFI (Conducted Measurement)

Product Name: LCD PROJECTOR

Test Model: L011

#### Environmental Conditions

|                    |                  |
|--------------------|------------------|
| Temperature:       | 23.8° C          |
| Relative Humidity: | 52.1%            |
| ATM Pressure:      | 100.0 kPa        |
| Test Engineer:     | Nick Peng        |
|                    | <i>Nick Peng</i> |
| Supervised by:     | Ling Zhu         |
|                    | <i>Ling Zhu</i>  |





## D.1 Emission Bandwidth

### Test Result

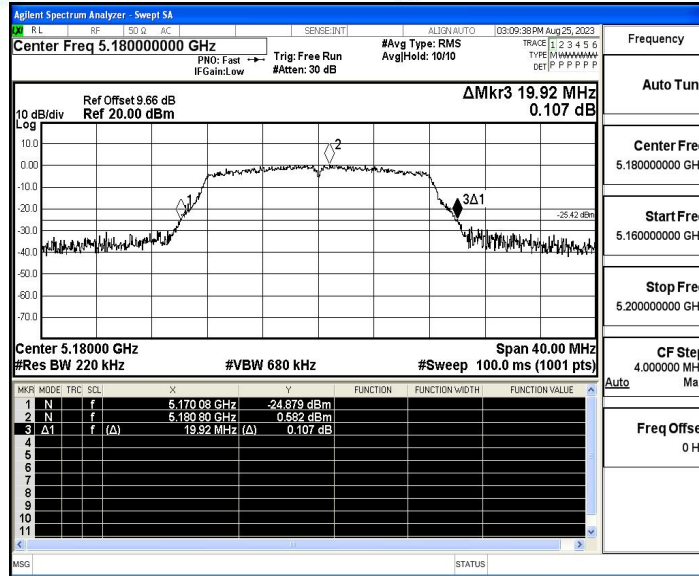
| TestMode  | Antenna | Frequency[MHz] | 26db EBW [MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|-----------|---------|----------------|----------------|----------|----------|------------|---------|
| 11A       | Ant1    | 5180           | 19.920         | 5170.080 | 5190.000 | ---        | ---     |
|           |         | 5220           | 19.920         | 5210.040 | 5229.960 | ---        | ---     |
|           |         | 5240           | 19.960         | 5229.920 | 5249.880 | ---        | ---     |
| 11N20SISO | Ant1    | 5180           | 20.200         | 5169.880 | 5190.080 | ---        | ---     |
|           |         | 5220           | 21.040         | 5209.760 | 5230.800 | ---        | ---     |
|           |         | 5240           | 20.600         | 5229.520 | 5250.120 | ---        | ---     |
| 11N40SISO | Ant1    | 5190           | 40.640         | 5169.600 | 5210.240 | ---        | ---     |
|           |         | 5230           | 40.400         | 5209.760 | 5250.160 | ---        | ---     |



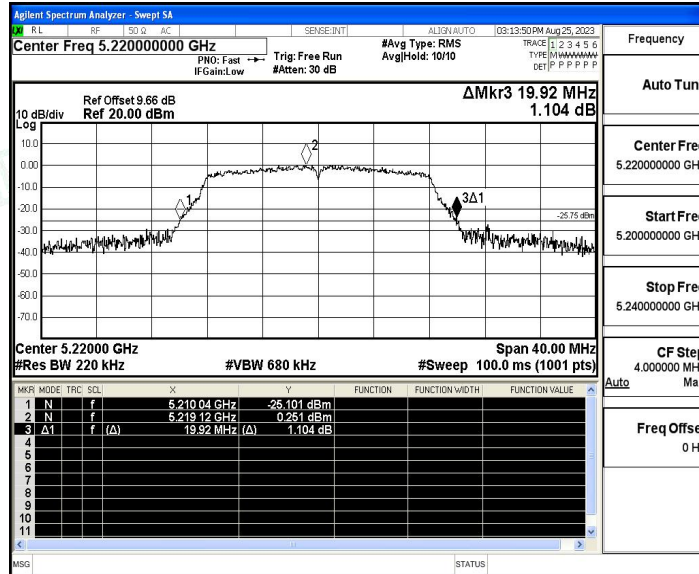


## Test Graphs

11A\_Ant1\_5180

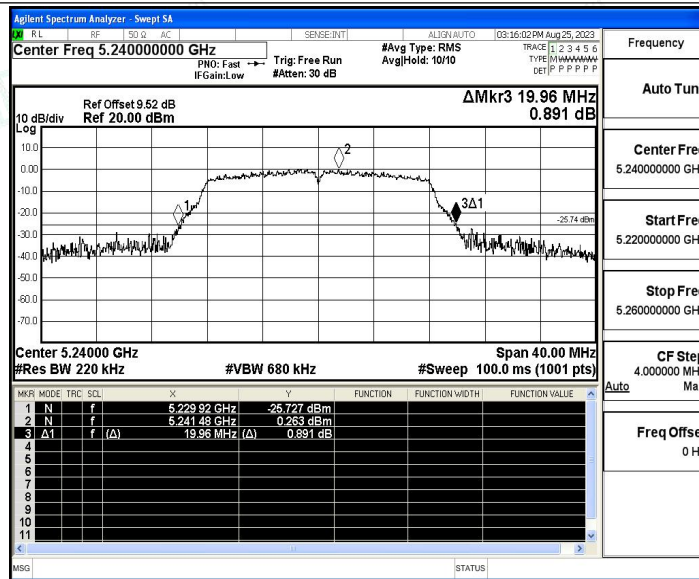


11A\_Ant1\_5220

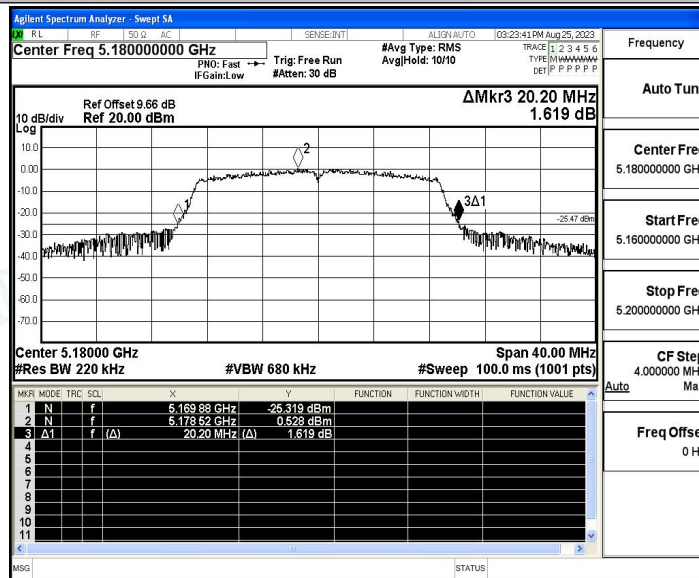


11A\_Ant1\_5240



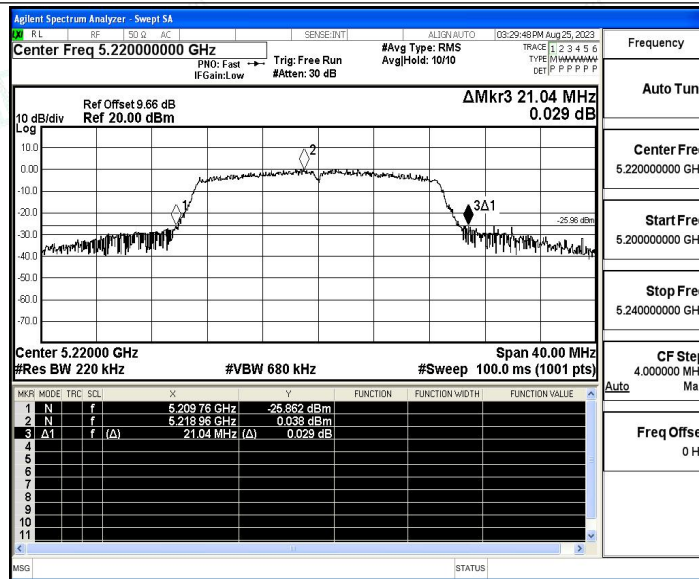


11N20SISO\_Ant1\_5180

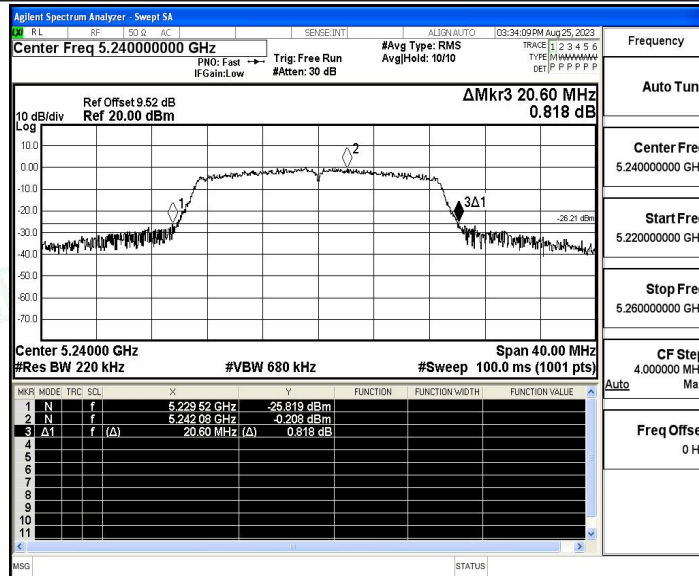


11N20SISO\_Ant1\_5220



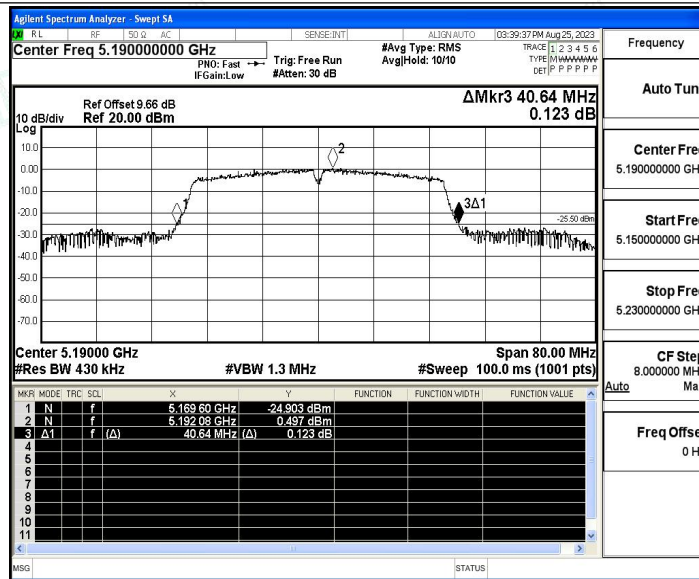


11N20SISO\_Ant1\_5240

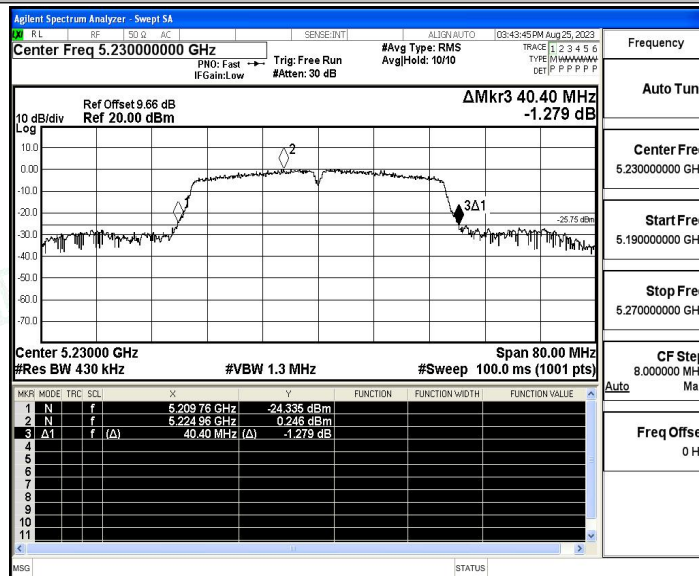


11N40SISO\_Ant1\_5190





11N40SISO\_Ant1\_5230





## D.2 Maximum conducted output power

### Test Result Channel Power

| Test Mode | Antenna | Frequency[ MHz] | Channel Power [dBm] | Duty Cycle [%] | DC Factor [dBm] | Result [dBm] | Limit [dBm] | Verdict |
|-----------|---------|-----------------|---------------------|----------------|-----------------|--------------|-------------|---------|
| 11A       | Ant1    | 5180            | 9.81                | 97.22          | 0.12            | 9.93         | ≤23.98      | PASS    |
|           |         | 5220            | 9.73                | 96.53          | 0.15            | 9.88         | ≤23.98      | PASS    |
|           |         | 5240            | 9.50                | 97.20          | 0.12            | 9.62         | ≤23.98      | PASS    |
| 11N20SISO | Ant1    | 5180            | 9.74                | 96.99          | 0.13            | 9.87         | ≤23.98      | PASS    |
|           |         | 5220            | 9.50                | 96.27          | 0.17            | 9.67         | ≤23.98      | PASS    |
|           |         | 5240            | 9.33                | 96.27          | 0.17            | 9.50         | ≤23.98      | PASS    |
| 11N40SISO | Ant1    | 5190            | 9.62                | 94.12          | 0.26            | 9.88         | ≤23.98      | PASS    |
|           |         | 5230            | 9.38                | 92.65          | 0.33            | 9.71         | ≤23.98      | PASS    |

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







### D.3 Maximum power spectral density

#### Test Result

| TestMode  | Antenna | Frequency[MHz] | Result [dBm/MHz] | Limit[dBm/MHz] | Verdict |
|-----------|---------|----------------|------------------|----------------|---------|
| 11A       | Ant1    | 5180           | -0.43            | ≤11.00         | PASS    |
|           |         | 5220           | -0.57            | ≤11.00         | PASS    |
|           |         | 5240           | -0.81            | ≤11.00         | PASS    |
| 11N20SISO | Ant1    | 5180           | -0.78            | ≤11.00         | PASS    |
|           |         | 5220           | -0.98            | ≤11.00         | PASS    |
|           |         | 5240           | -1.13            | ≤11.00         | PASS    |
| 11N40SISO | Ant1    | 5190           | -3.54            | ≤11.00         | PASS    |
|           |         | 5230           | -3.75            | ≤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.

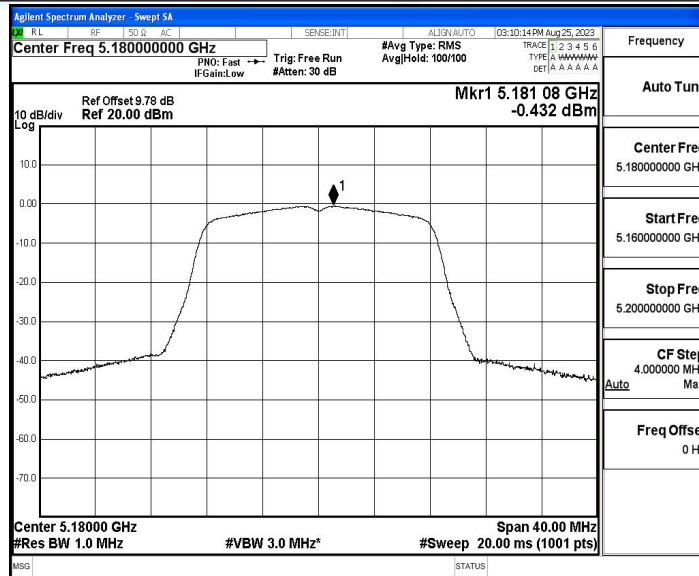




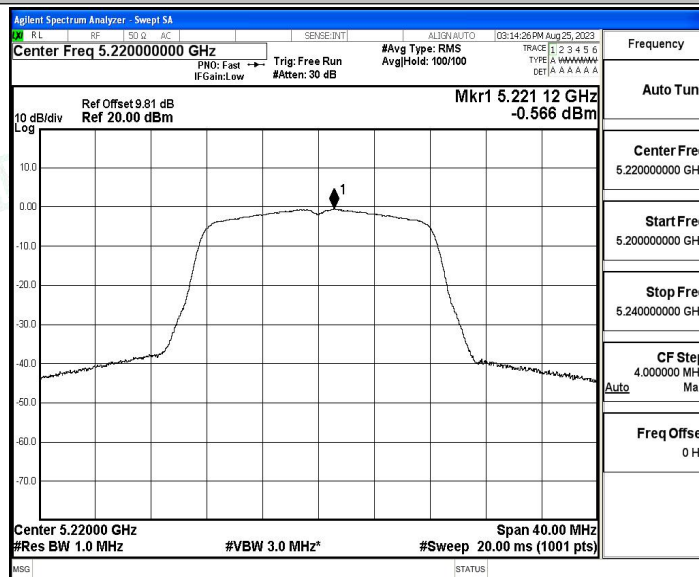


## Test Graphs

11A\_Ant1\_5180

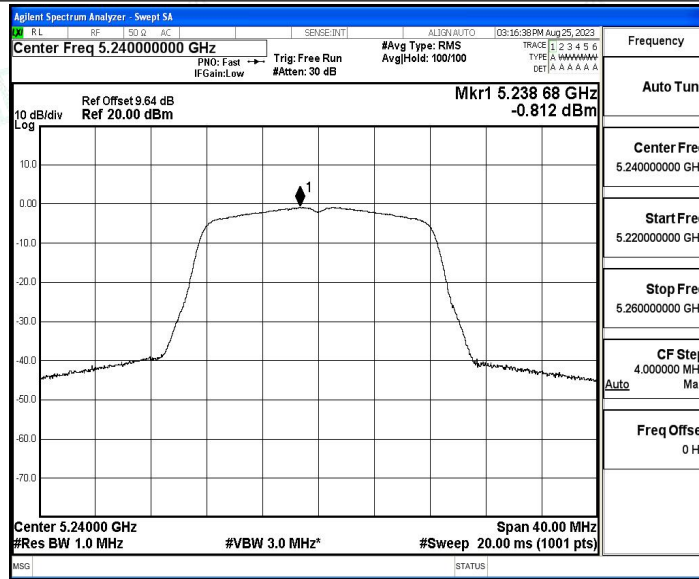


11A\_Ant1\_5220

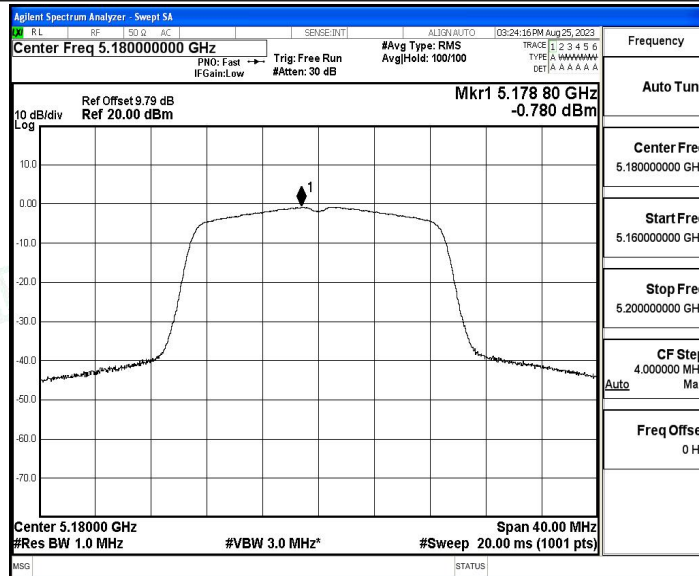


11A\_Ant1\_5240



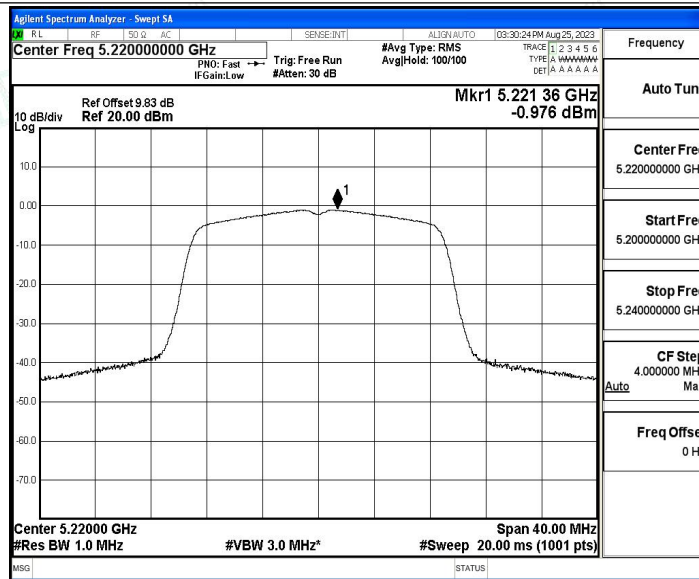


11N20SISO\_Ant1\_5180

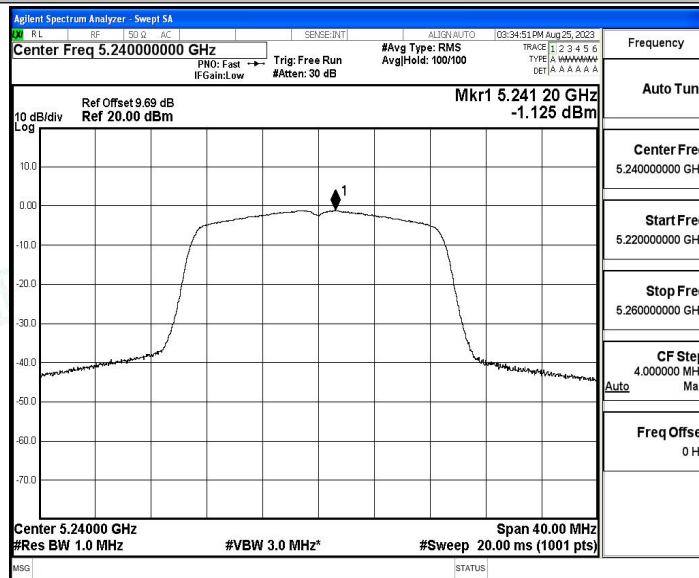


11N20SISO\_Ant1\_5220



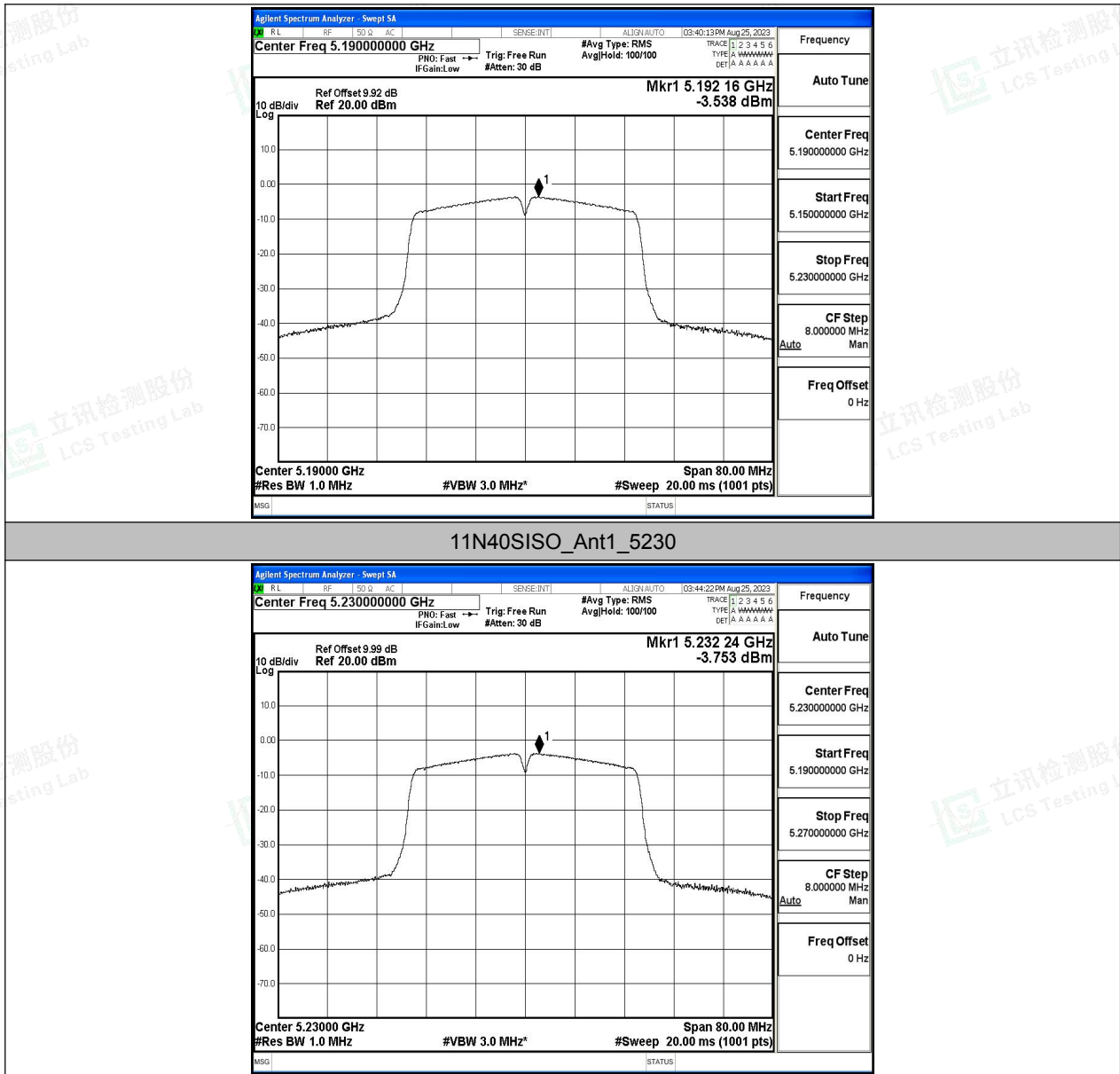


11N20SISO\_Ant1\_5240



11N40SISO\_Ant1\_5190







## D.4 Emissions in Restricted Bands

### Test Result

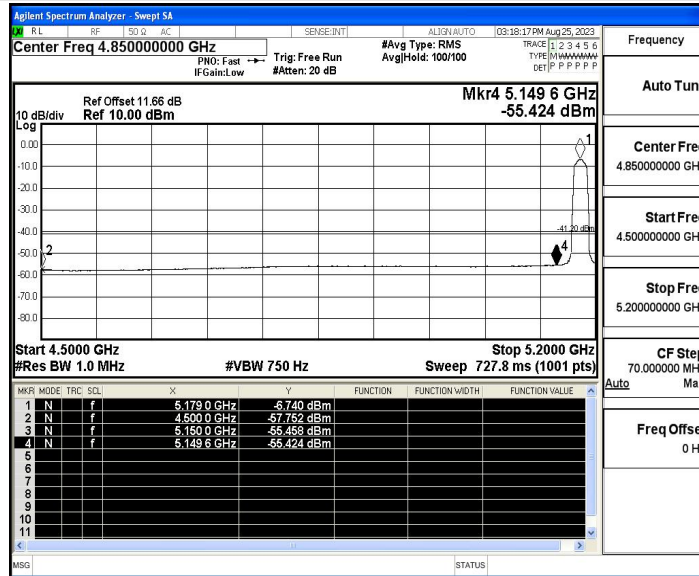
| TestMode      | Antenna | Channel Name | Frequency [MHz] | Detector | Freq [MHz] | Result [dBm] | Gain (dBi) | E (dBuV/m) | Limit [dBuV/m] | Verdict |
|---------------|---------|--------------|-----------------|----------|------------|--------------|------------|------------|----------------|---------|
| 11A           | Ant1    | Low          | 5180            | AV       | 4500.000   | -57.75       | 5.32       | 42.80      | ≤54            | PASS    |
|               |         |              |                 | AV       | 5149.600   | -55.42       | 5.32       | 45.13      | ≤54            | PASS    |
|               |         |              |                 | AV       | 5150.000   | -55.46       | 5.32       | 45.09      | ≤54            | PASS    |
|               |         |              |                 | Peak     | 4500.000   | -50.4        | 5.32       | 50.15      | ≤74            | PASS    |
|               |         |              |                 | Peak     | 4948.000   | -45.64       | 5.32       | 54.91      | ≤74            | PASS    |
|               |         |              |                 | Peak     | 5150.000   | -49.13       | 5.32       | 51.42      | ≤74            | PASS    |
|               |         | High         | 5240            | AV       | 5350.000   | -56.63       | 5.32       | 43.92      | ≤54            | PASS    |
|               |         |              |                 | AV       | 5390.160   | -56.42       | 5.32       | 44.13      | ≤54            | PASS    |
|               |         |              |                 | AV       | 5460.000   | -56.91       | 5.32       | 43.64      | ≤54            | PASS    |
|               |         |              |                 | Peak     | 5350.000   | -50.08       | 5.32       | 50.47      | ≤74            | PASS    |
|               |         |              |                 | Peak     | 5403.600   | -47.67       | 5.32       | 52.88      | ≤74            | PASS    |
|               |         |              |                 | Peak     | 5460.000   | -50.65       | 5.32       | 49.90      | ≤74            | PASS    |
| 11N20SI<br>SO | Ant1    | Low          | 5180            | AV       | 4500.000   | -57.8        | 5.32       | 42.75      | ≤54            | PASS    |
|               |         |              |                 | AV       | 5147.500   | -55.3        | 5.32       | 45.25      | ≤54            | PASS    |
|               |         |              |                 | AV       | 5150.000   | -55.47       | 5.32       | 45.08      | ≤54            | PASS    |
|               |         |              |                 | Peak     | 4500.000   | -51.88       | 5.32       | 48.67      | ≤74            | PASS    |
|               |         |              |                 | Peak     | 5097.100   | -46.88       | 5.32       | 53.67      | ≤74            | PASS    |
|               |         |              |                 | Peak     | 5150.000   | -47.5        | 5.32       | 53.05      | ≤74            | PASS    |
|               |         | High         | 5240            | AV       | 5350.000   | -56.74       | 5.32       | 43.81      | ≤54            | PASS    |
|               |         |              |                 | AV       | 5403.120   | -56.48       | 5.32       | 44.07      | ≤54            | PASS    |
|               |         |              |                 | AV       | 5460.000   | -56.96       | 5.32       | 43.59      | ≤54            | PASS    |
|               |         |              |                 | Peak     | 5350.000   | -51.67       | 5.32       | 48.88      | ≤74            | PASS    |
|               |         |              |                 | Peak     | 5360.160   | -47.25       | 5.32       | 53.30      | ≤74            | PASS    |
|               |         |              |                 | Peak     | 5460.000   | -50.46       | 5.32       | 50.09      | ≤74            | PASS    |
| 11N40SI<br>SO | Ant1    | Low          | 5190            | AV       | 4500.000   | -57.64       | 5.32       | 42.91      | ≤54            | PASS    |
|               |         |              |                 | AV       | 5142.600   | -55.07       | 5.32       | 45.48      | ≤54            | PASS    |
|               |         |              |                 | AV       | 5150.000   | -55.05       | 5.32       | 45.50      | ≤54            | PASS    |
|               |         |              |                 | Peak     | 4500.000   | -53.25       | 5.32       | 47.30      | ≤74            | PASS    |
|               |         |              |                 | Peak     | 4903.200   | -46.84       | 5.32       | 53.71      | ≤74            | PASS    |
|               |         |              |                 | Peak     | 5150.000   | -50.19       | 5.32       | 50.36      | ≤74            | PASS    |
|               |         | High         | 5230            | AV       | 5350.000   | -56.26       | 5.32       | 44.29      | ≤54            | PASS    |
|               |         |              |                 | AV       | 5354.180   | -55.97       | 5.32       | 44.58      | ≤54            | PASS    |
|               |         |              |                 | AV       | 5460.000   | -56.34       | 5.32       | 44.21      | ≤54            | PASS    |
|               |         |              |                 | Peak     | 5350.000   | -51.66       | 5.32       | 48.89      | ≤74            | PASS    |
|               |         |              |                 | Peak     | 5436.340   | -46.17       | 5.32       | 54.38      | ≤74            | PASS    |
|               |         |              |                 | Peak     | 5460.000   | -51.01       | 5.32       | 49.54      | ≤74            | PASS    |



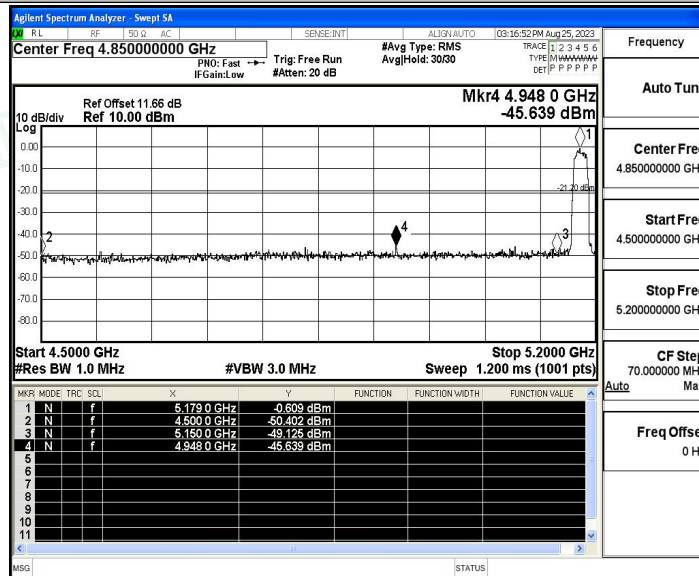


## Test Graphs

11A\_Ant1\_Low\_5180\_AV



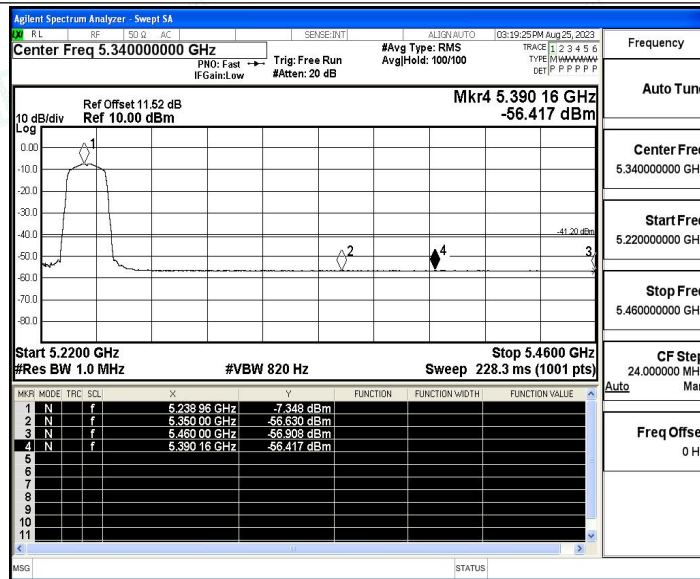
11A\_Ant1\_Low\_5180\_Peak



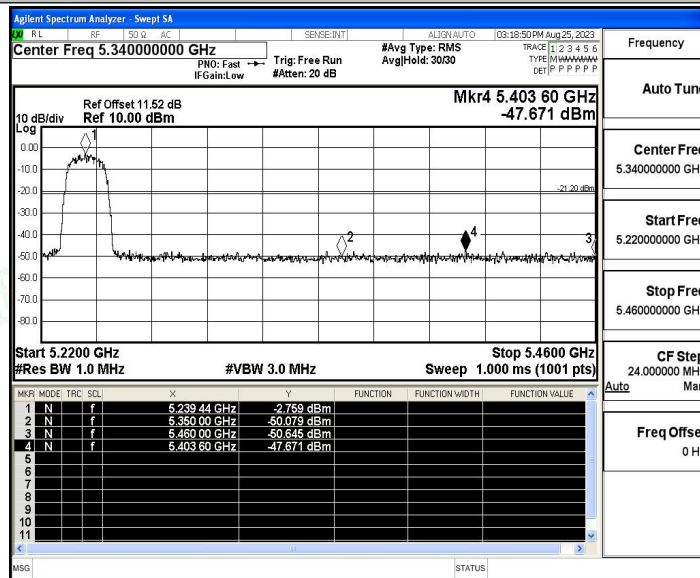
11A\_Ant1\_High\_5240\_AV







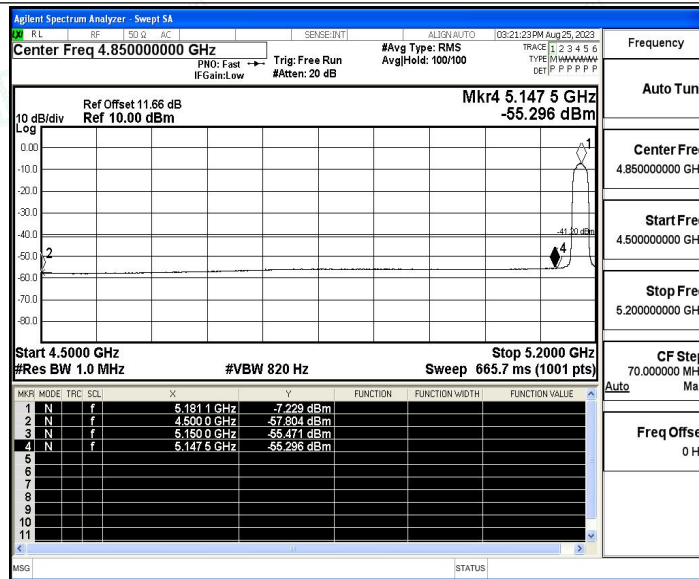
11A\_Ant1\_High\_5240\_Peak



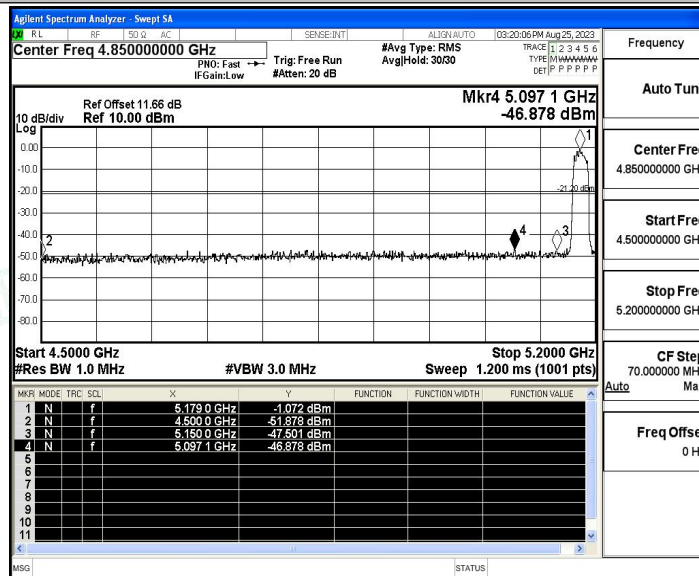
11N20SISO\_Ant1\_Low\_5180\_AV





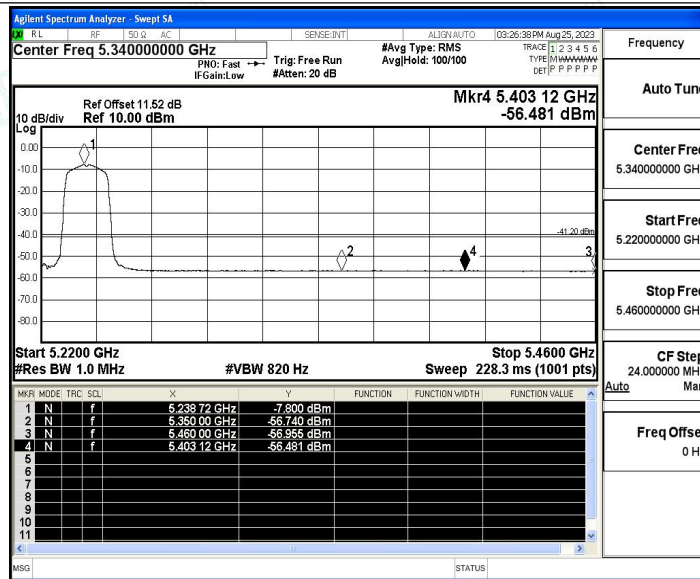


11N20SISO\_Ant1\_Low\_5180\_Peak

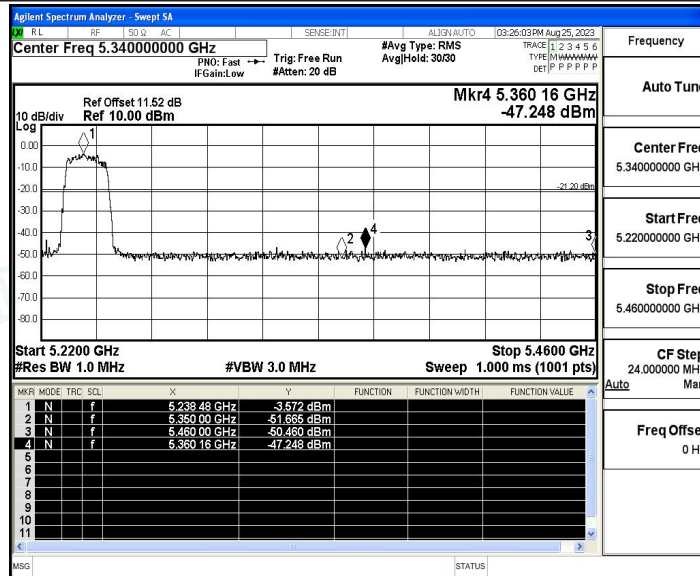


11N20SISO\_Ant1\_High\_5240\_AV



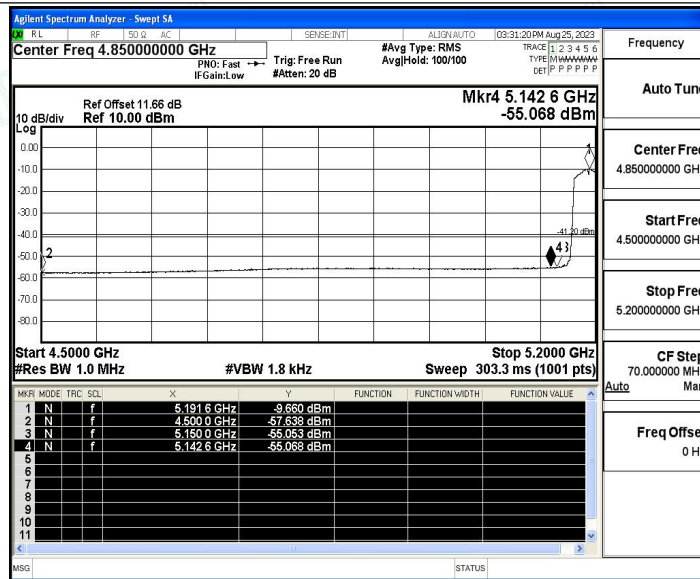


11N20SISO\_Ant1\_High\_5240\_Peak

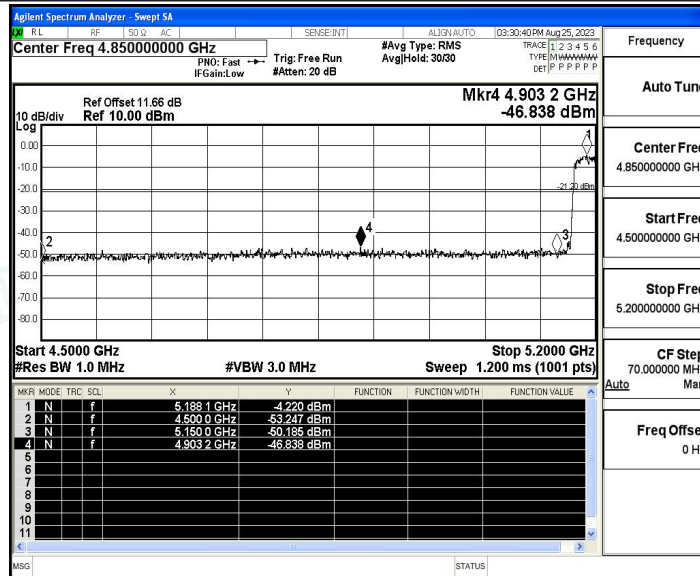


11N40SISO\_Ant1\_Low\_5190\_AV



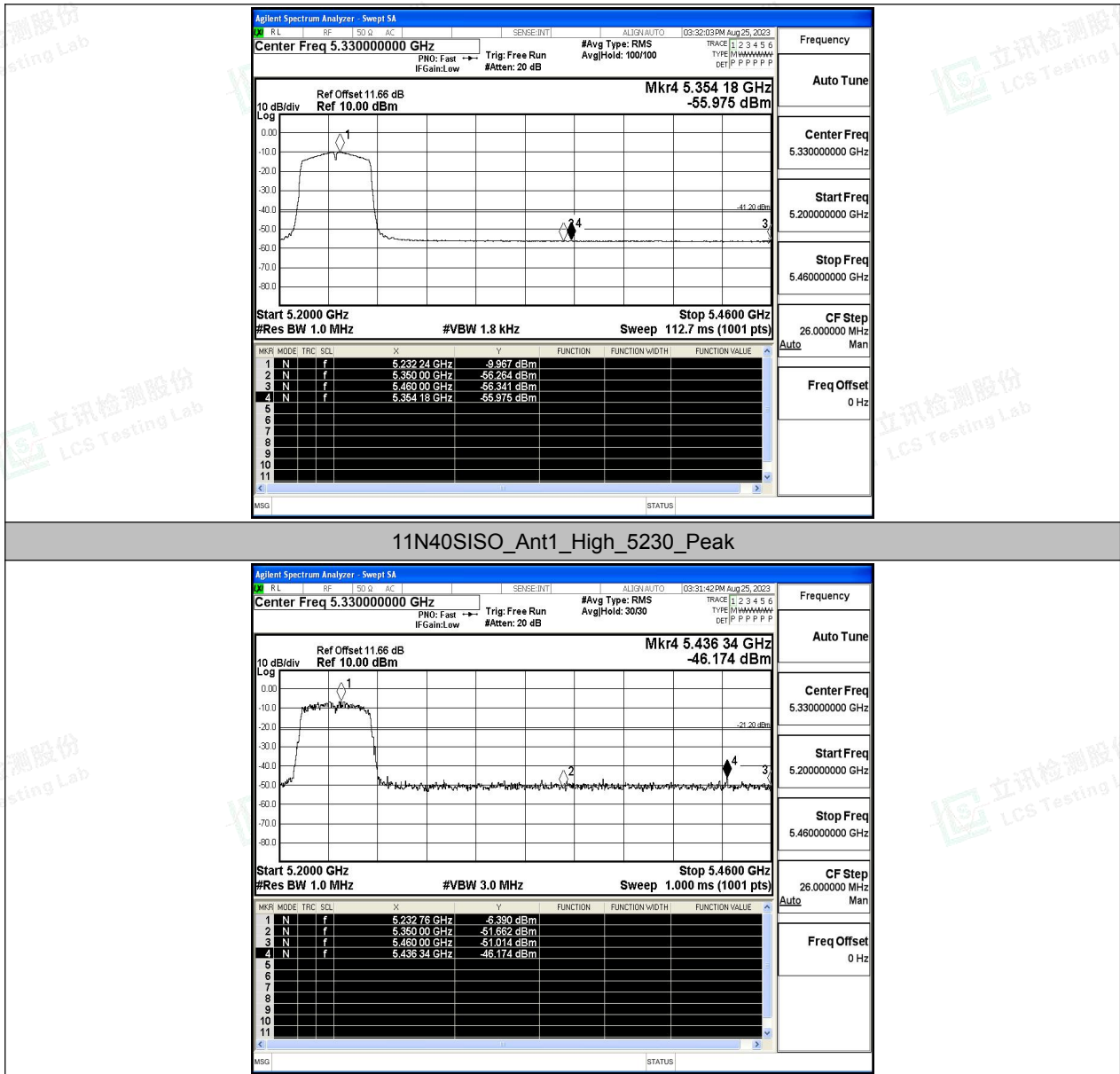


11N40SISO\_Ant1\_Low\_5190\_Peak



11N40SISO\_Ant1\_High\_5230\_AV





## D.5 Frequency Stability

### Test Result

| Voltage  |         |                    |                  |                         |                   |                    |                |         |
|----------|---------|--------------------|------------------|-------------------------|-------------------|--------------------|----------------|---------|
| TestMode | Antenna | Frequenc<br>y[MHz] | Voltage<br>[Vdc] | Tempera<br>ture<br>(°C) | Deviation<br>(Hz) | Deviation<br>(ppm) | Limit<br>(ppm) | Verdict |
| 11A      | Ant1    | 5180               | NV               | NT                      | -20000.00         | -3.861004          | 20             | PASS    |
|          |         |                    | LV               | NT                      | -40000.00         | -7.722008          | 20             | PASS    |
|          |         |                    | HV               | NT                      | -20000.00         | -3.861004          | 20             | PASS    |
|          |         | 5220               | NV               | NT                      | -20000.00         | -3.831418          | 20             | PASS    |
|          |         |                    | LV               | NT                      | -20000.00         | -3.831418          | 20             | PASS    |





|               |      |      |    |    |           |            |    |      |
|---------------|------|------|----|----|-----------|------------|----|------|
|               |      | 5240 | HV | NT | -20000.00 | -3.831418  | 20 | PASS |
|               |      |      | NV | NT | -20000.00 | -3.816794  | 20 | PASS |
|               |      |      | LV | NT | 0.00      | 0.000000   | 20 | PASS |
|               |      |      | HV | NT | -60000.00 | -11.450382 | 20 | PASS |
| 11N40SIS<br>O | Ant1 | 5190 | NV | NT | -40000.00 | -7.707129  | 20 | PASS |
|               |      |      | LV | NT | 0.00      | 0.000000   | 20 | PASS |
|               |      |      | HV | NT | 0.00      | 0.000000   | 20 | PASS |
|               |      | 5230 | NV | NT | -40000.00 | -7.648184  | 20 | PASS |
|               |      |      | LV | NT | 0.00      | 0.000000   | 20 | PASS |
|               |      |      | HV | NT | -40000.00 | -7.648184  | 20 | PASS |

| Temperature |         |                    |                  |                         |                   |                    |                |         |
|-------------|---------|--------------------|------------------|-------------------------|-------------------|--------------------|----------------|---------|
| TestMode    | Antenna | Frequenc<br>y[MHz] | Voltage<br>[Vdc] | Tempera<br>ture<br>(°C) | Deviation<br>(Hz) | Deviation<br>(ppm) | Limit<br>(ppm) | Verdict |
| 11A         | Ant1    | 5180               | NV               | -30                     | -20000.00         | -3.861004          | 20             | PASS    |
|             |         |                    | NV               | -20                     | -20000.00         | -3.861004          | 20             | PASS    |
|             |         |                    | NV               | -10                     | -20000.00         | -3.861004          | 20             | PASS    |
|             |         |                    | NV               | 0                       | -20000.00         | -3.861004          | 20             | PASS    |
|             |         |                    | NV               | 10                      | 0.00              | 0.000000           | 20             | PASS    |
|             |         |                    | NV               | 20                      | 0.00              | 0.000000           | 20             | PASS    |
|             |         |                    | NV               | 30                      | -20000.00         | -3.861004          | 20             | PASS    |
|             |         |                    | NV               | 40                      | 20000.00          | 3.861004           | 20             | PASS    |
|             |         | 5220               | NV               | 50                      | -20000.00         | -3.861004          | 20             | PASS    |
|             |         |                    | NV               | -30                     | -20000.00         | -3.831418          | 20             | PASS    |
|             |         |                    | NV               | -20                     | -40000.00         | -7.662835          | 20             | PASS    |
|             |         |                    | NV               | -10                     | -40000.00         | -7.662835          | 20             | PASS    |
|             |         |                    | NV               | 0                       | -40000.00         | -7.662835          | 20             | PASS    |
|             |         |                    | NV               | 10                      | 0.00              | 0.000000           | 20             | PASS    |
|             |         |                    | NV               | 20                      | -20000.00         | -3.831418          | 20             | PASS    |
|             |         |                    | NV               | 30                      | 0.00              | 0.000000           | 20             | PASS    |
|             |         |                    | NV               | 40                      | 0.00              | 0.000000           | 20             | PASS    |
|             |         | 5240               | NV               | 50                      | 0.00              | 0.000000           | 20             | PASS    |
|             |         |                    | NV               | -30                     | 0.00              | 0.000000           | 20             | PASS    |
|             |         |                    | NV               | -20                     | -20000.00         | -3.816794          | 20             | PASS    |
|             |         |                    | NV               | -10                     | -40000.00         | -7.633588          | 20             | PASS    |
|             |         |                    | NV               | 0                       | -40000.00         | -7.633588          | 20             | PASS    |
|             |         |                    | NV               | 10                      | -20000.00         | -3.816794          | 20             | PASS    |
|             |         |                    | NV               | 20                      | -20000.00         | -3.816794          | 20             | PASS    |
|             |         |                    | NV               | 30                      | -20000.00         | -3.816794          | 20             | PASS    |
|             |         |                    | NV               | 40                      | 0.00              | 0.000000           | 20             | PASS    |
|             |         |                    | NV               | 50                      | -60000.00         | -11.450382         | 20             | PASS    |





|               |      |      |    |     |           |            |    |      |
|---------------|------|------|----|-----|-----------|------------|----|------|
| 11N40SIS<br>O | Ant1 | 5190 | NV | -30 | 0.00      | 0.000000   | 20 | PASS |
|               |      |      | NV | -20 | -40000.00 | -7.707129  | 20 | PASS |
|               |      |      | NV | -10 | 0.00      | 0.000000   | 20 | PASS |
|               |      |      | NV | 0   | -40000.00 | -7.707129  | 20 | PASS |
|               |      |      | NV | 10  | 0.00      | 0.000000   | 20 | PASS |
|               |      |      | NV | 20  | -80000.00 | -15.414258 | 20 | PASS |
|               |      |      | NV | 30  | -40000.00 | -7.707129  | 20 | PASS |
|               |      |      | NV | 40  | -40000.00 | -7.707129  | 20 | PASS |
|               |      |      | NV | 50  | -40000.00 | -7.707129  | 20 | PASS |
|               |      | 5230 | NV | -30 | -40000.00 | -7.648184  | 20 | PASS |
|               |      |      | NV | -20 | -80000.00 | -15.296367 | 20 | PASS |
|               |      |      | NV | -10 | 40000.00  | 7.648184   | 20 | PASS |
|               |      |      | NV | 0   | -40000.00 | -7.648184  | 20 | PASS |
|               |      |      | NV | 10  | -40000.00 | -7.648184  | 20 | PASS |
|               |      |      | NV | 20  | -40000.00 | -7.648184  | 20 | PASS |
|               |      |      | NV | 30  | -40000.00 | -7.648184  | 20 | PASS |
|               |      |      | NV | 40  | 0.00      | 0.000000   | 20 | PASS |
|               |      |      | NV | 50  | -40000.00 | -7.648184  | 20 | PASS |







## D.6 Duty Cycle

### Test Result

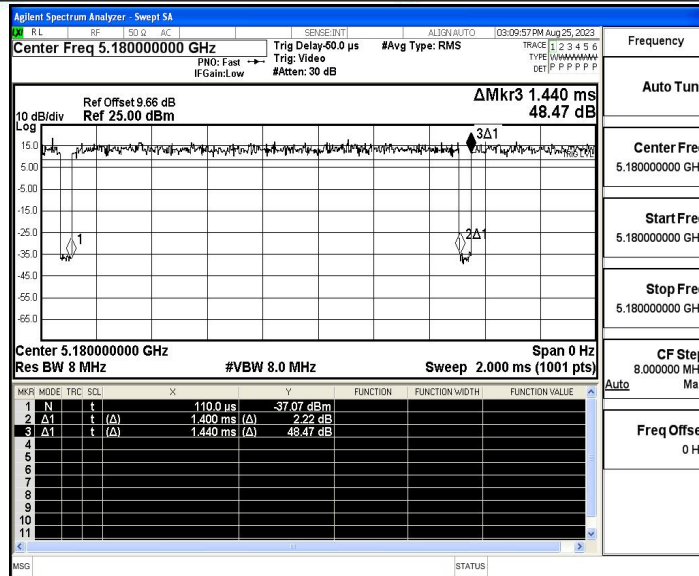
| TestMode  | Antenna | Frequency[MHz] | Transmission Duration [ms] | Transmission Period [ms] | Duty Cycle [%] |
|-----------|---------|----------------|----------------------------|--------------------------|----------------|
| 11A       | Ant1    | 5180           | 1.40                       | 1.44                     | 97.22          |
|           |         | 5220           | 1.39                       | 1.44                     | 96.53          |
|           |         | 5240           | 1.39                       | 1.43                     | 97.20          |
| 11N20SISO | Ant1    | 5180           | 1.29                       | 1.33                     | 96.99          |
|           |         | 5220           | 1.29                       | 1.34                     | 96.27          |
|           |         | 5240           | 1.29                       | 1.34                     | 96.27          |
| 11N40SISO | Ant1    | 5190           | 0.64                       | 0.68                     | 94.12          |
|           |         | 5230           | 0.63                       | 0.68                     | 92.65          |



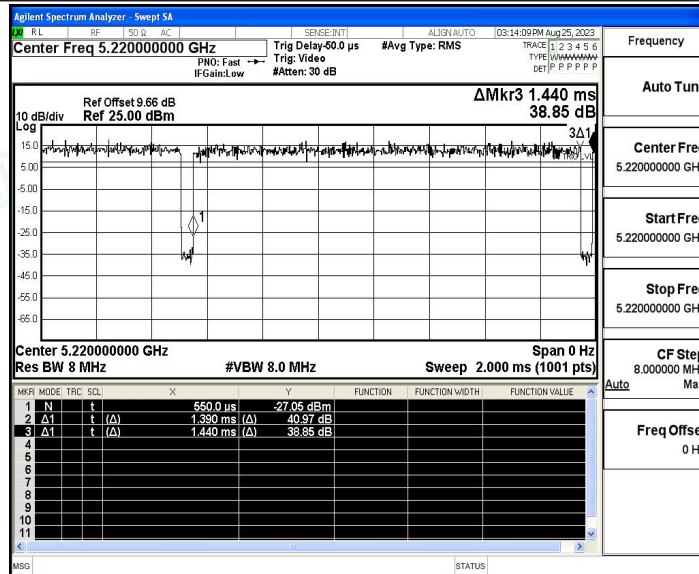


## Test Graphs

11A\_Ant1\_5180

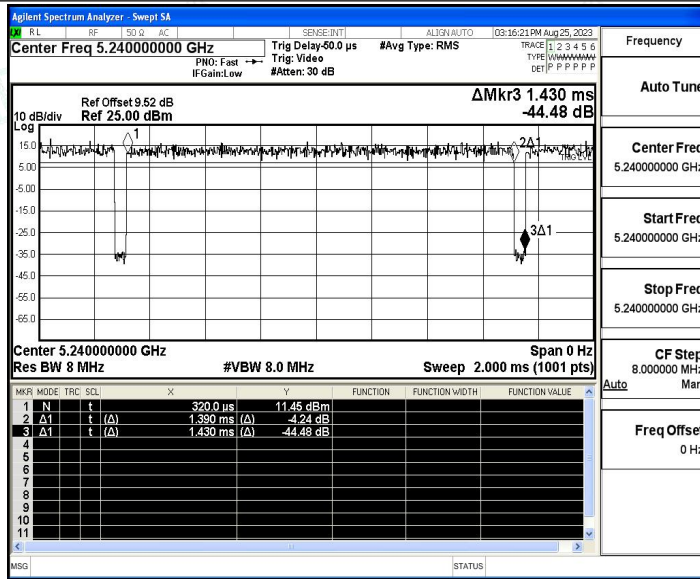


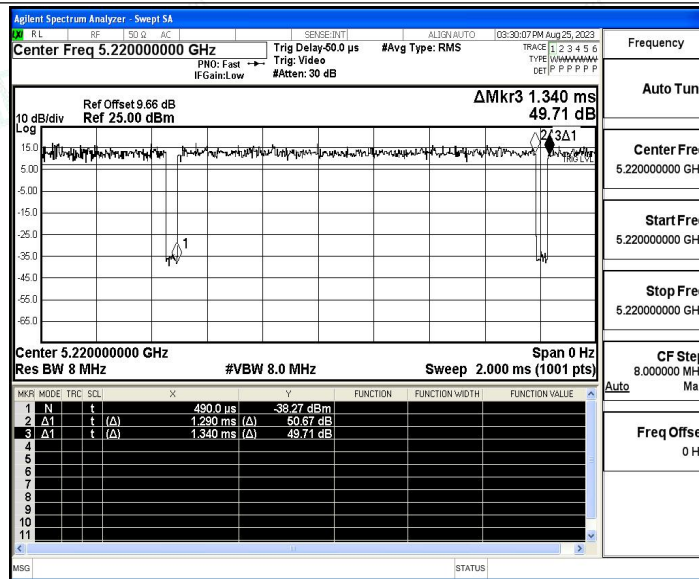
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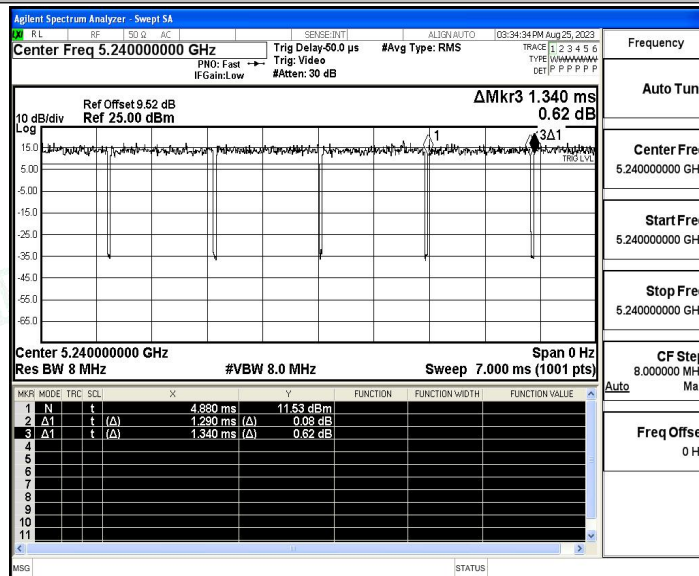
11A\_Ant1\_5240





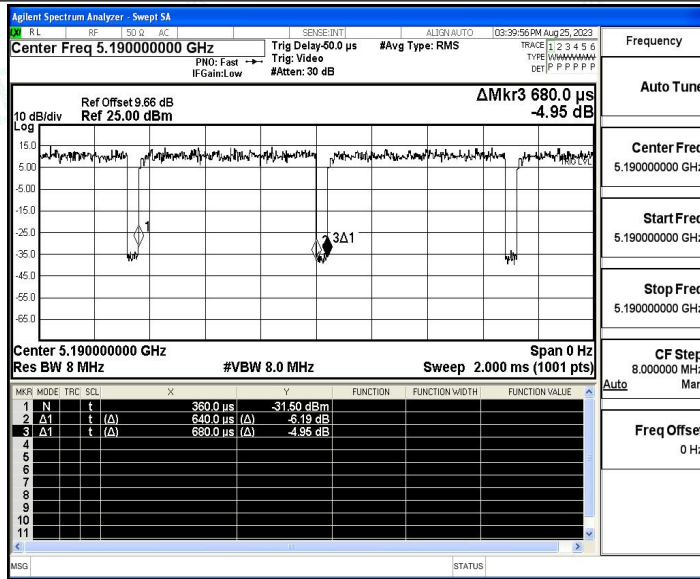


11N20SISO\_Ant1\_5240



11N40SISO\_Ant1\_5190





11N40SISO\_Ant1\_5230

