



## Appendix C

### RF Test Data for 2.4GWIFI (Conducted Measurement)

**Product Name:** Smartphone

**Test Model:** Hyline Pro

#### Environmental Conditions

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



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Scan code to check authenticity



## C.1 DTS Bandwidth

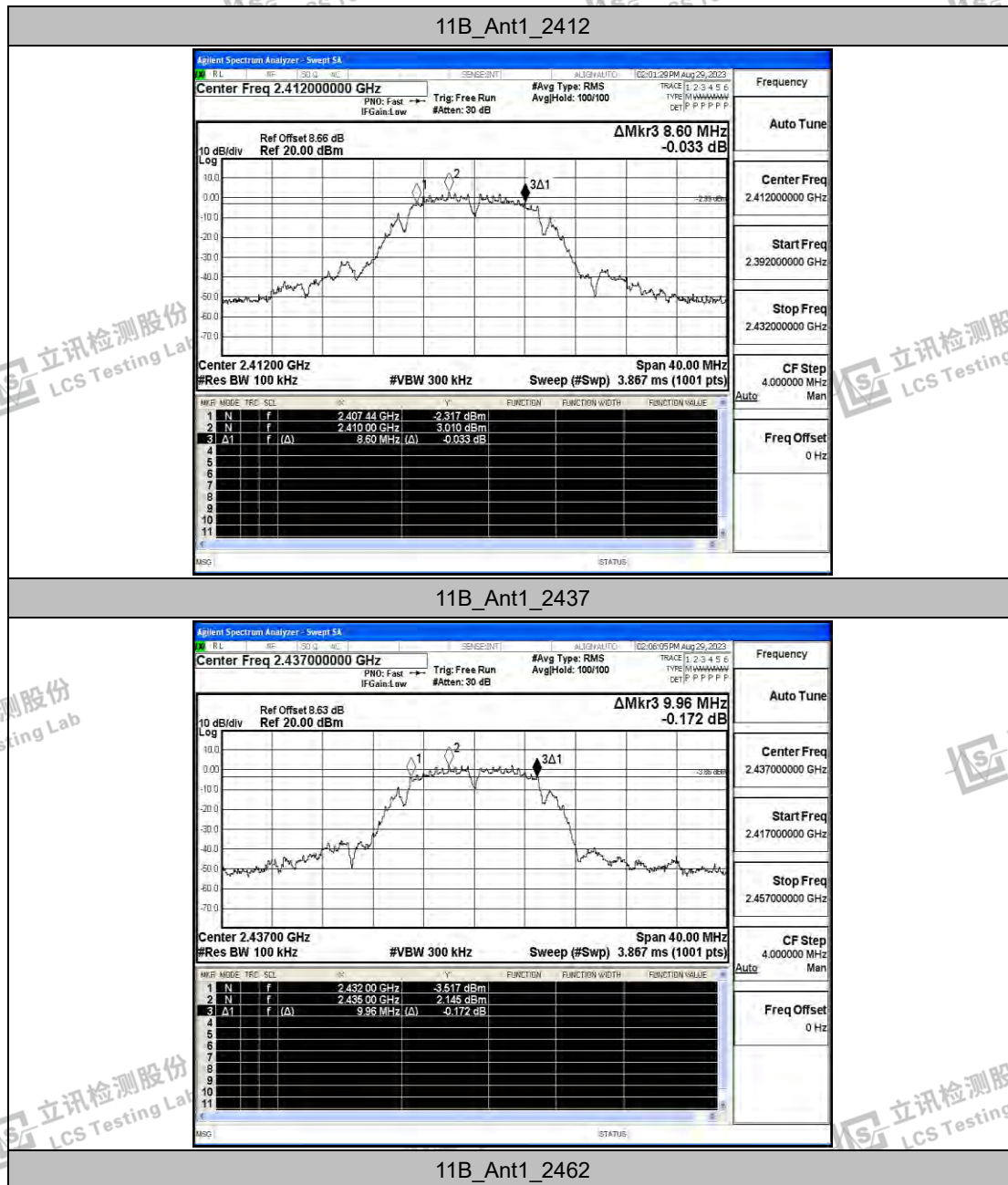
### Test Result

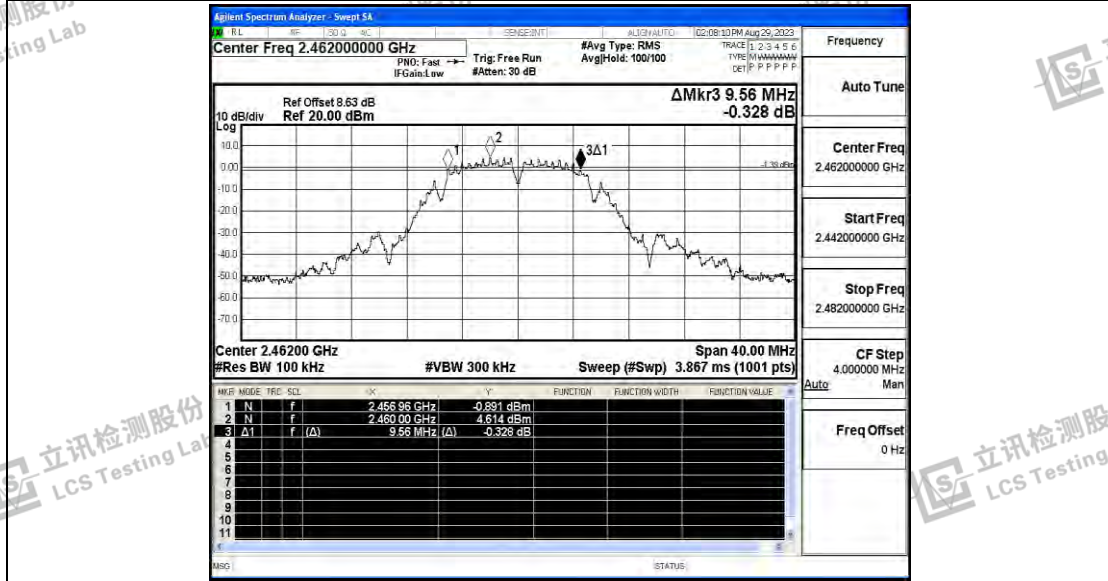
| TestMode  | Antenna | Freq(MHz) | DTS BW [MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|-----------|---------|-----------|--------------|----------|----------|------------|---------|
| 11B       | Ant1    | 2412      | 8.600        | 2407.440 | 2416.040 | 0.5        | PASS    |
|           |         | 2437      | 9.960        | 2432.000 | 2441.960 | 0.5        | PASS    |
|           |         | 2462      | 9.560        | 2456.960 | 2466.520 | 0.5        | PASS    |
| 11G       | Ant1    | 2412      | 14.680       | 2403.840 | 2418.520 | 0.5        | PASS    |
|           |         | 2437      | 16.360       | 2428.840 | 2445.200 | 0.5        | PASS    |
|           |         | 2462      | 16.360       | 2453.800 | 2470.160 | 0.5        | PASS    |
| 11N20SISO | Ant1    | 2412      | 17.280       | 2403.360 | 2420.640 | 0.5        | PASS    |
|           |         | 2437      | 16.720       | 2428.920 | 2445.640 | 0.5        | PASS    |
|           |         | 2462      | 16.880       | 2453.480 | 2470.360 | 0.5        | PASS    |
| 11N40SISO | Ant1    | 2422      | 34.560       | 2405.680 | 2440.240 | 0.5        | PASS    |
|           |         | 2437      | 35.760       | 2419.400 | 2455.160 | 0.5        | PASS    |
|           |         | 2452      | 34.320       | 2434.000 | 2468.320 | 0.5        | PASS    |



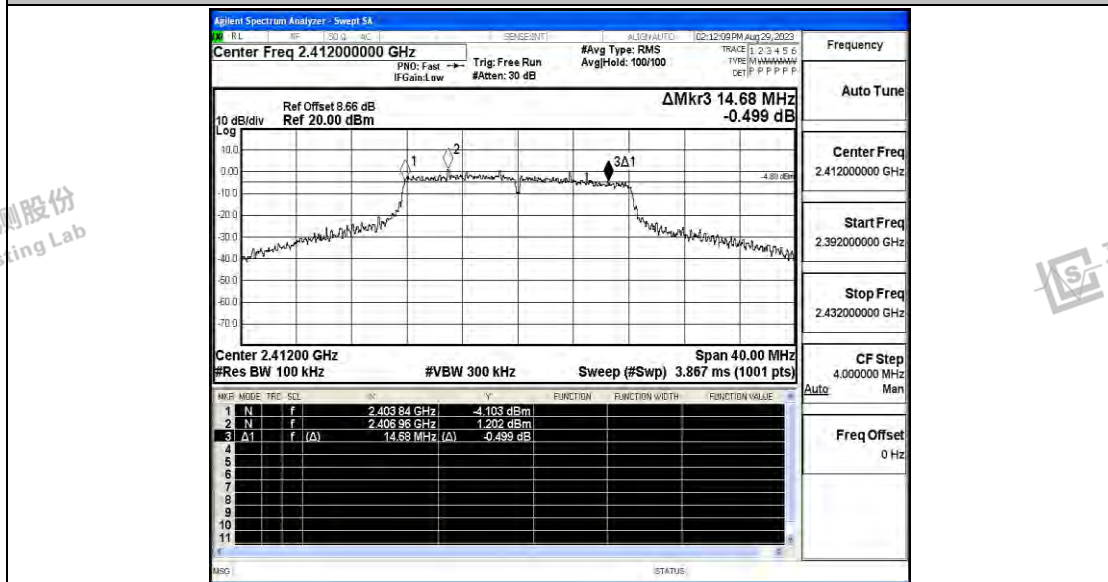


## Test Graphs



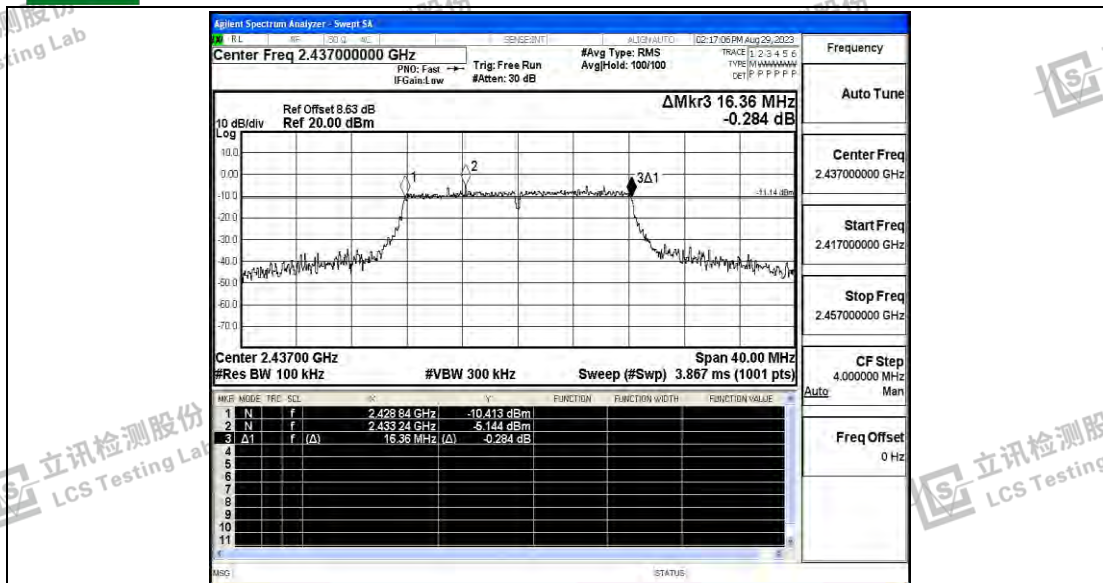


11G\_Ant1\_2412

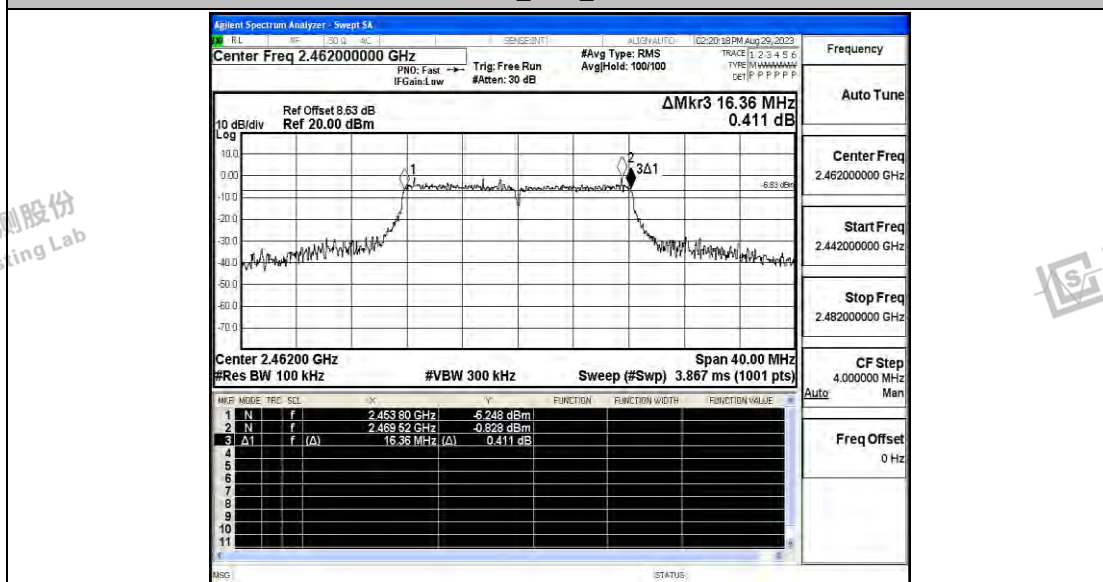


11G\_Ant1\_2437



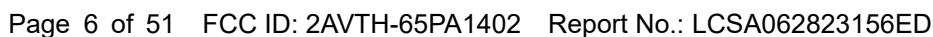


11G\_Ant1\_2462



11N20SISO\_Ant1\_2412

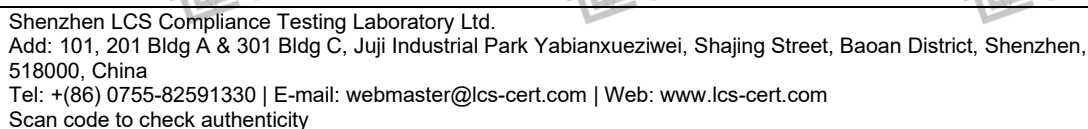


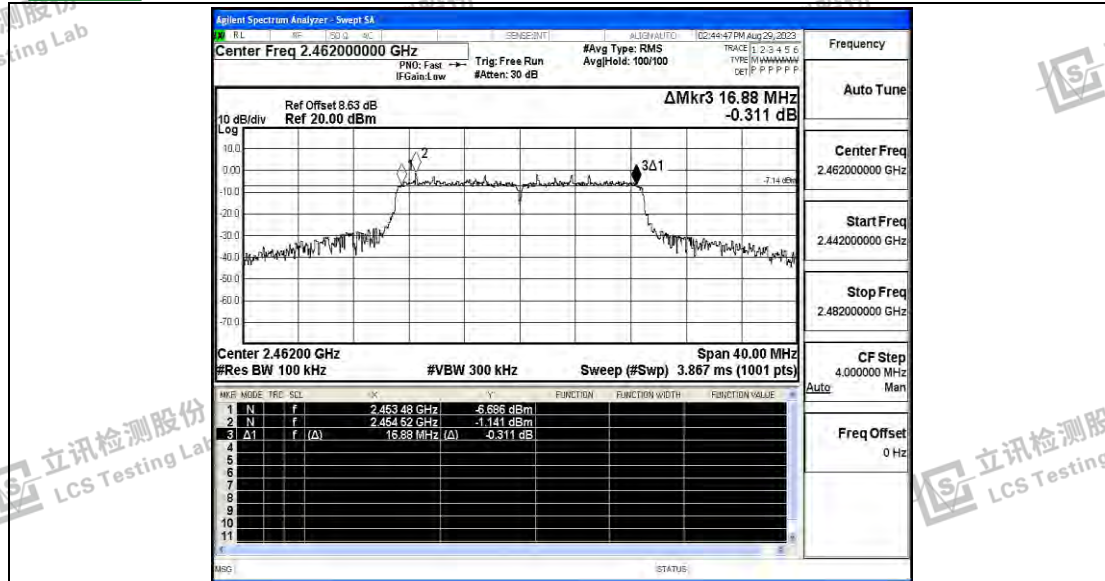


立讯检测股份  
LCS Testing Lab

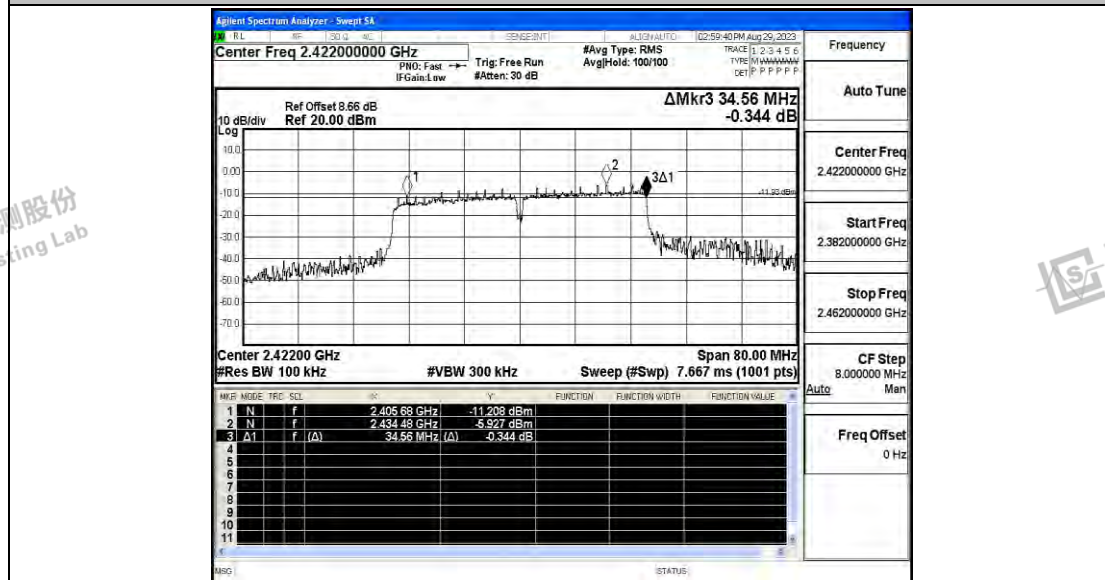


立讯检测  
LCS Testing Lab



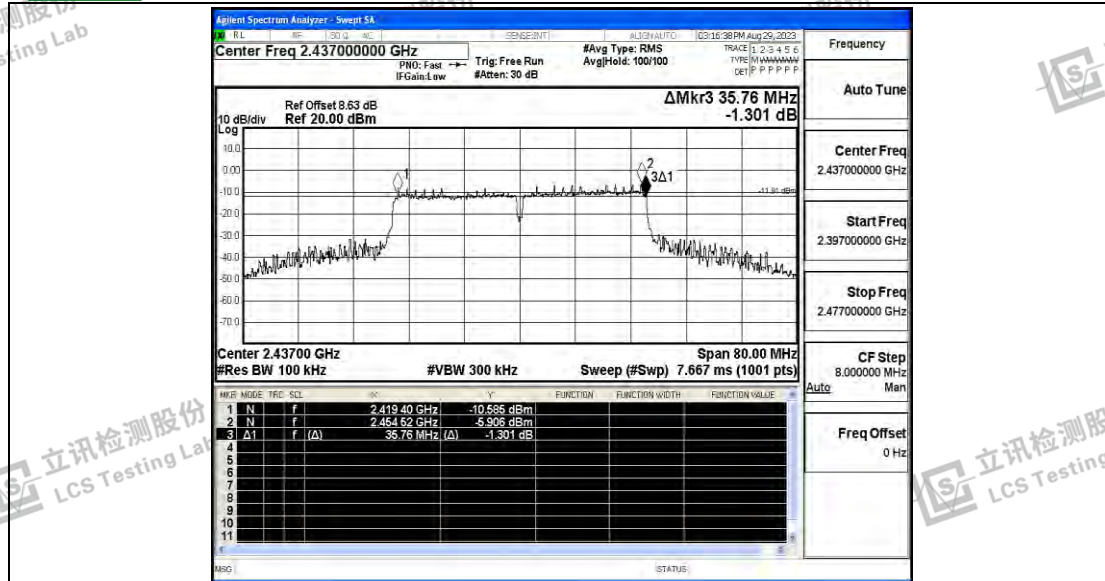


11N40SISO\_Ant1\_2422

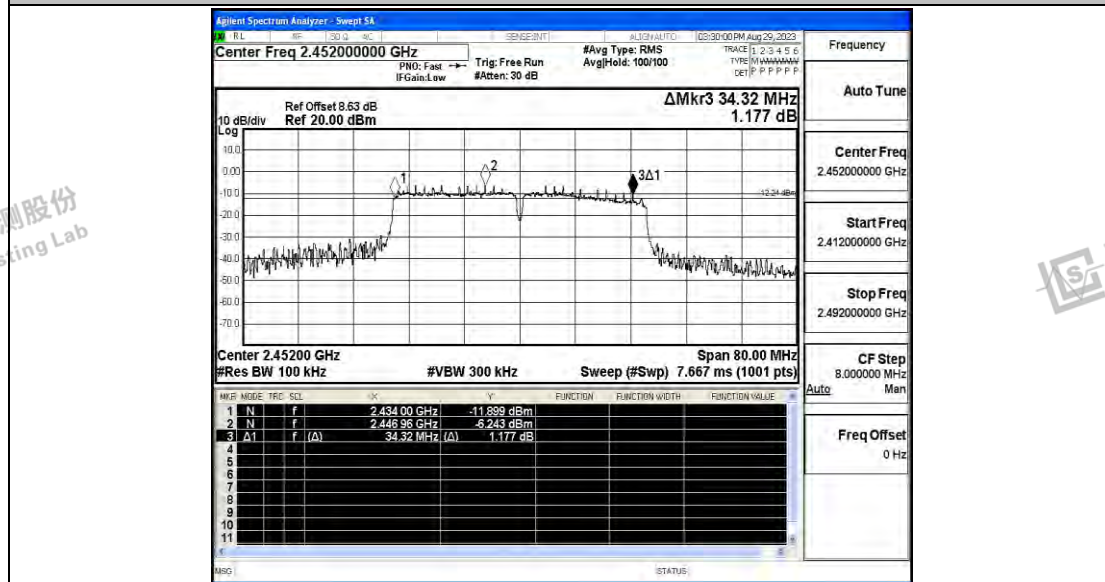


11N40SISO\_Ant1\_2437





11N40SISO\_Ant1\_2452





## C.2 Maximum conducted output power

### Test Result Peak

| TestMode  | Antenna | Freq(MHz) | Peak Power[dBm] | Conducted Limit[dBm] | Verdict |
|-----------|---------|-----------|-----------------|----------------------|---------|
| 11B       | Ant1    | 2412      | 14.38           | ≤30.00               | PASS    |
|           |         | 2437      | 14.40           | ≤30.00               | PASS    |
|           |         | 2462      | 16.53           | ≤30.00               | PASS    |
| 11G       | Ant1    | 2412      | 14.18           | ≤30.00               | PASS    |
|           |         | 2437      | 14.01           | ≤30.00               | PASS    |
|           |         | 2462      | 16.78           | ≤30.00               | PASS    |
| 11N20SISO | Ant1    | 2412      | 14.33           | ≤30.00               | PASS    |
|           |         | 2437      | 13.21           | ≤30.00               | PASS    |
|           |         | 2462      | 13.93           | ≤30.00               | PASS    |
| 11N40SISO | Ant1    | 2422      | 13.26           | ≤30.00               | PASS    |
|           |         | 2437      | 13.46           | ≤30.00               | PASS    |
|           |         | 2452      | 14.00           | ≤30.00               | PASS    |





### C.3 Maximum power spectral density

#### Test Result

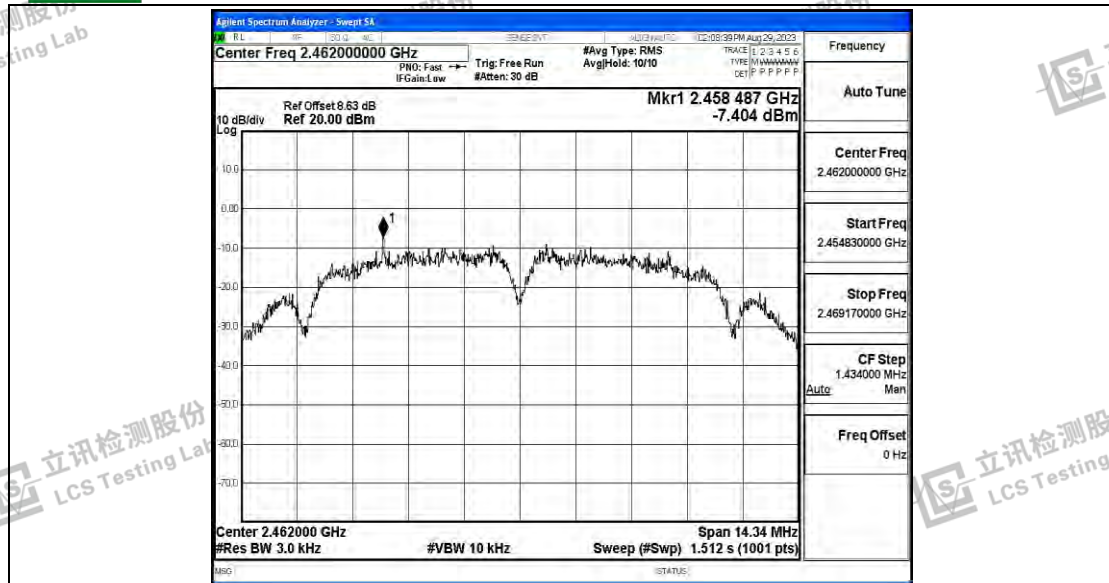
| TestMode  | Antenna | Freq(MHz) | Result<br>[dBm/3-100kHz] | Limit<br>[dBm/3kHz] | Gain<br>[dBi] | EIRP<br>[dBm/3-100kHz] | Limit<br>[dBm/3kHz] | Verdict |
|-----------|---------|-----------|--------------------------|---------------------|---------------|------------------------|---------------------|---------|
| 11B       | Ant1    | 2412      | -10.9                    | ≤8.00               | 0.00          | -10.90                 | ---                 | PASS    |
|           |         | 2437      | -11.83                   | ≤8.00               | 0.00          | -11.83                 | ---                 | PASS    |
|           |         | 2462      | -7.4                     | ≤8.00               | 0.00          | -7.40                  | ---                 | PASS    |
| 11G       | Ant1    | 2412      | -18.48                   | ≤8.00               | 0.00          | -18.48                 | ---                 | PASS    |
|           |         | 2437      | -17.87                   | ≤8.00               | 0.00          | -17.87                 | ---                 | PASS    |
|           |         | 2462      | -16.03                   | ≤8.00               | 0.00          | -16.03                 | ---                 | PASS    |
| 11N20SISO | Ant1    | 2412      | -18.07                   | ≤8.00               | 0.00          | -18.07                 | ---                 | PASS    |
|           |         | 2437      | -18.54                   | ≤8.00               | 0.00          | -18.54                 | ---                 | PASS    |
|           |         | 2462      | -17.51                   | ≤8.00               | 0.00          | -17.51                 | ---                 | PASS    |
| 11N40SISO | Ant1    | 2422      | -20.33                   | ≤8.00               | 0.00          | -20.33                 | ---                 | PASS    |
|           |         | 2437      | -21.41                   | ≤8.00               | 0.00          | -21.41                 | ---                 | PASS    |
|           |         | 2452      | -20.28                   | ≤8.00               | 0.00          | -20.28                 | ---                 | PASS    |



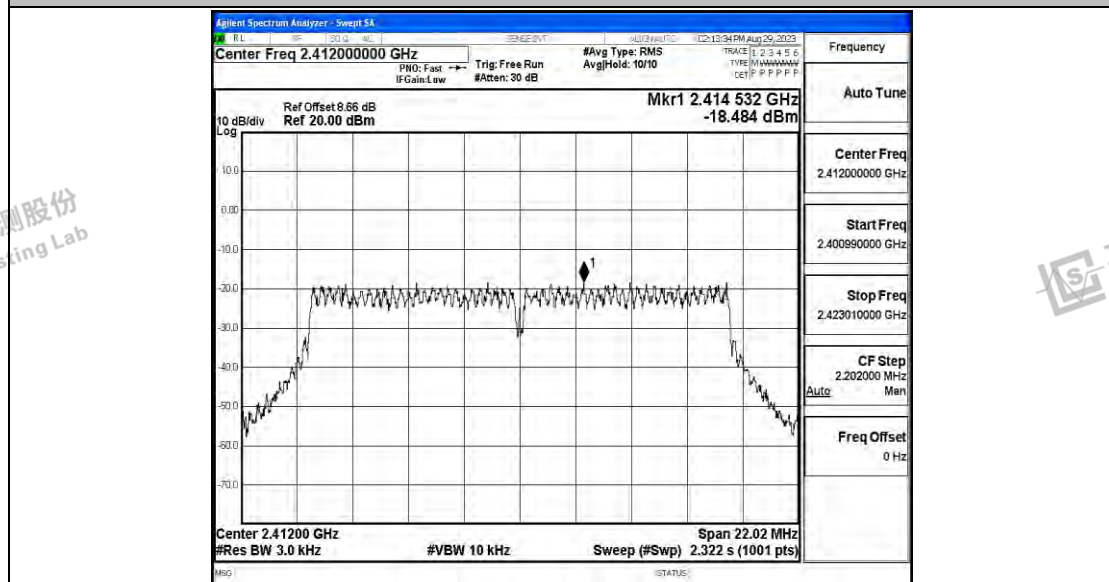


## Test Graphs



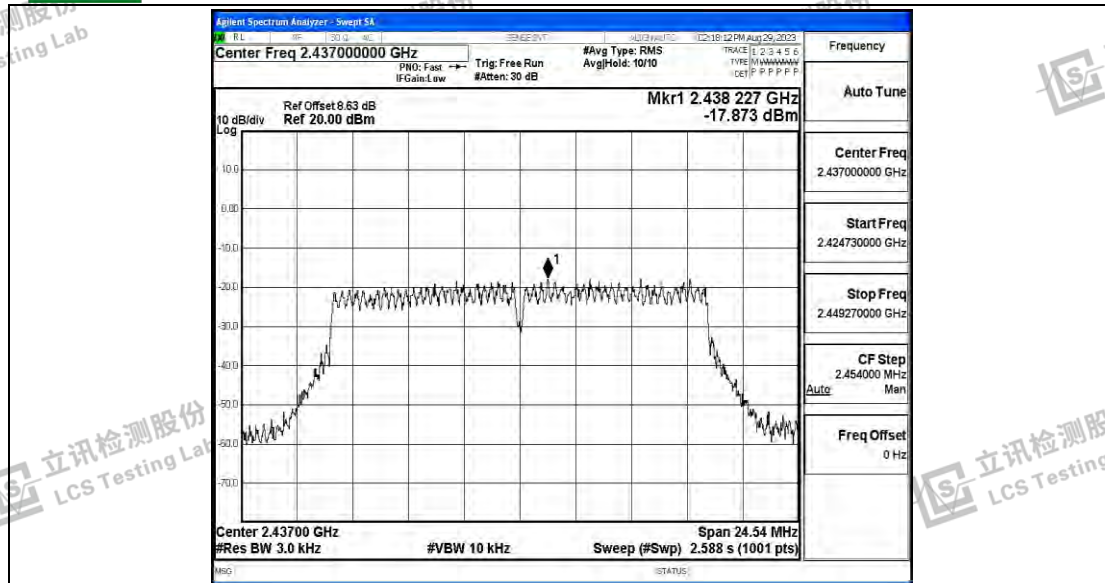


11G\_Ant1\_2412

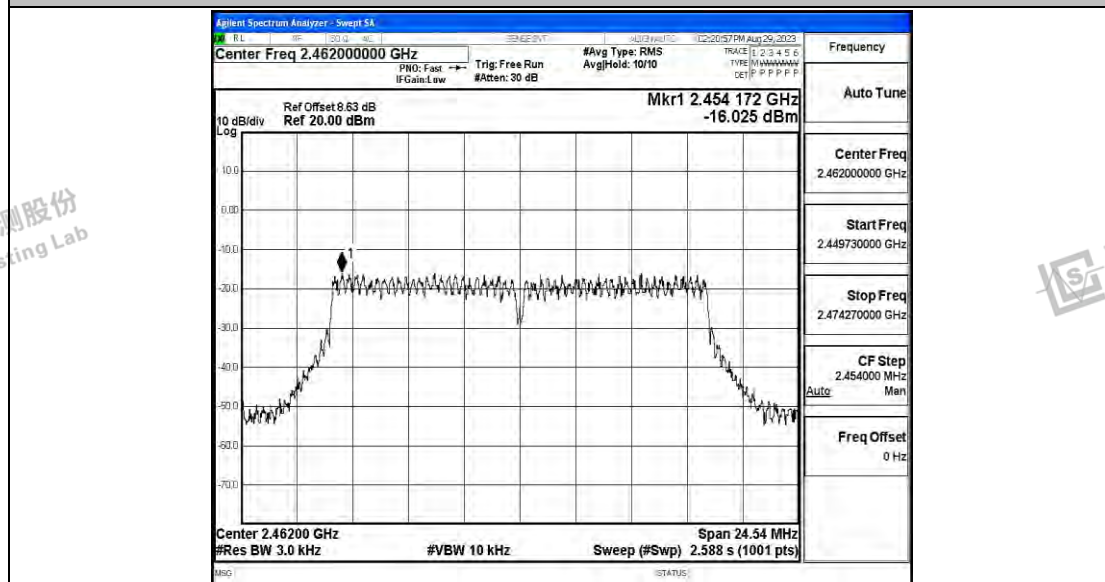


11G\_Ant1\_2437



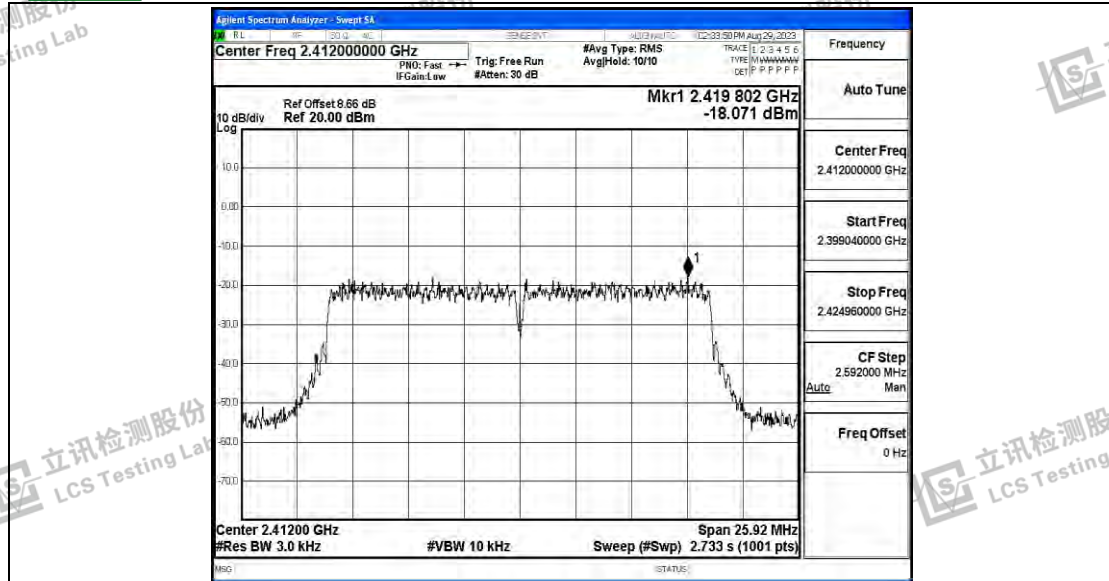


11G\_Ant1\_2462

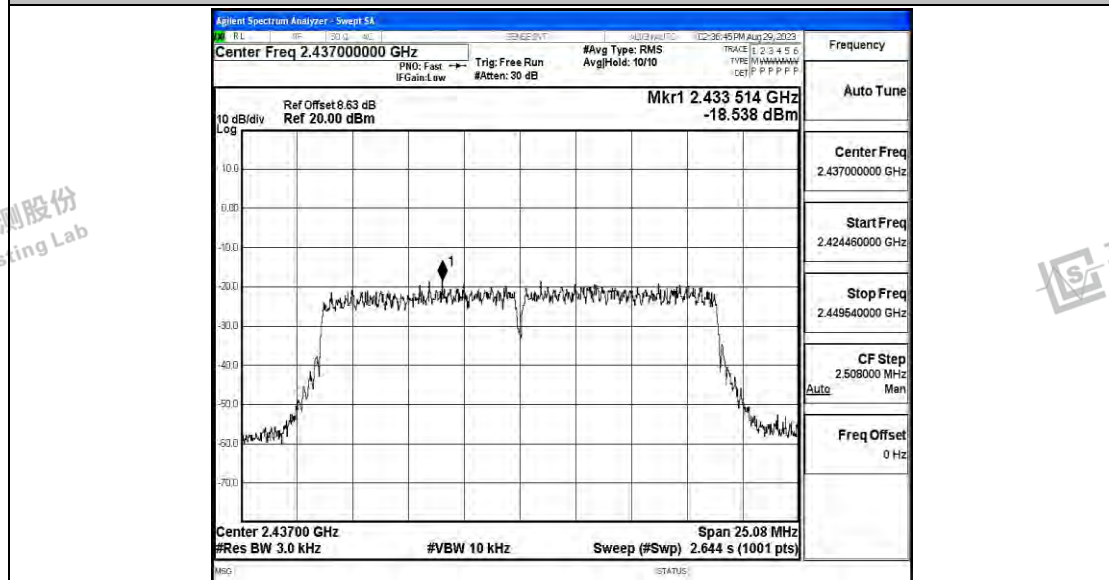


11N20SISO\_Ant1\_2412



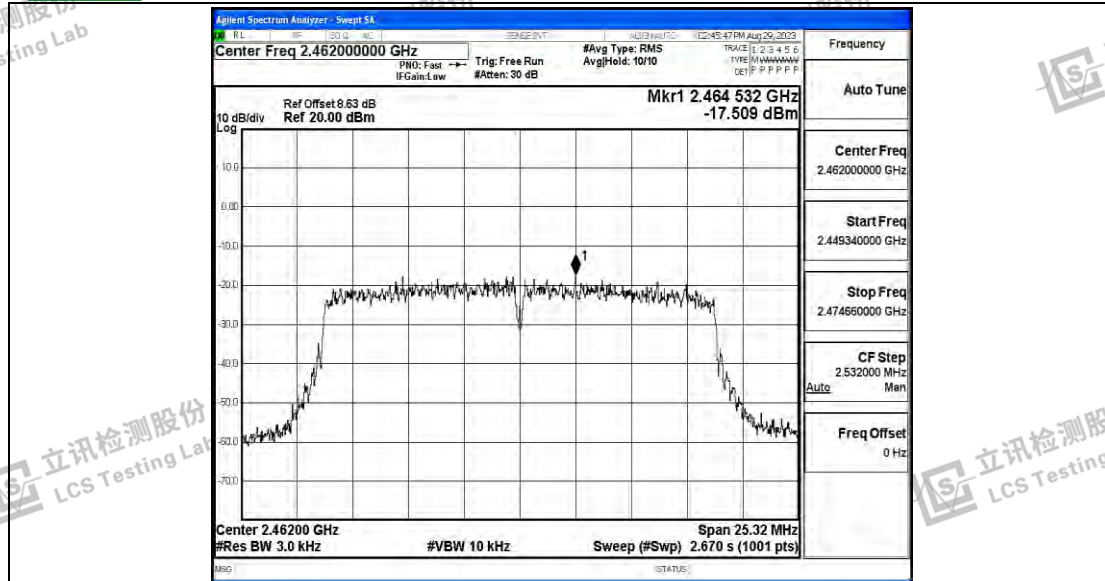


11N20SISO\_Ant1\_2437

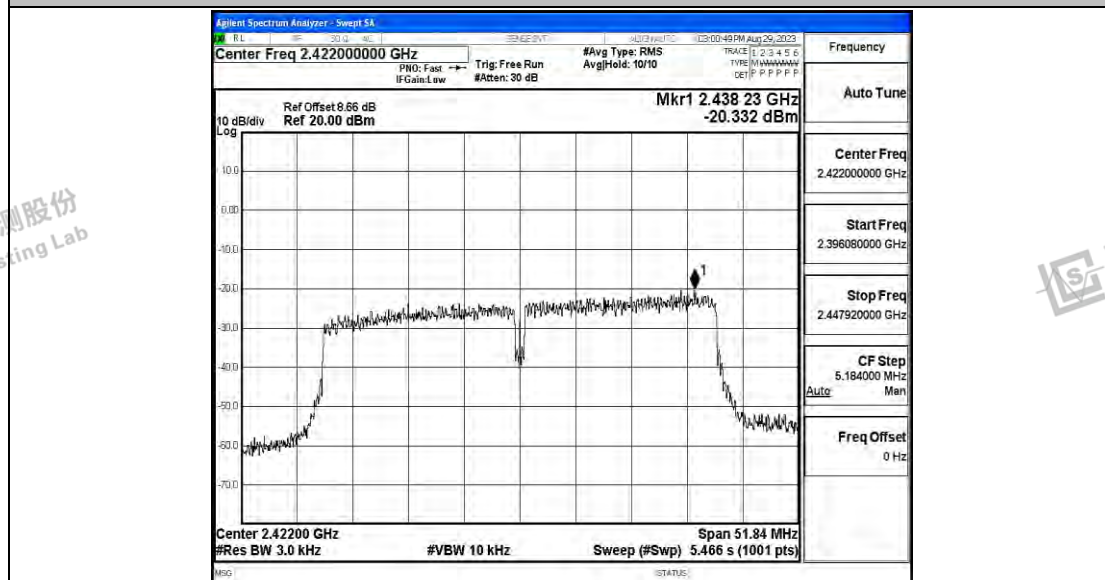


11N20SISO\_Ant1\_2462



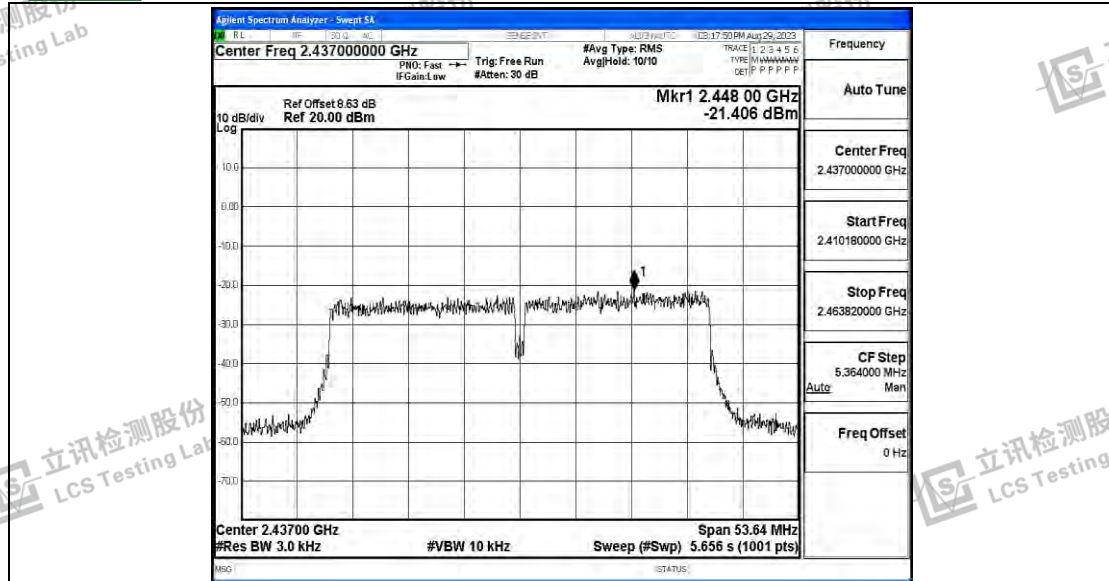


11N40SISO\_Ant1\_2422

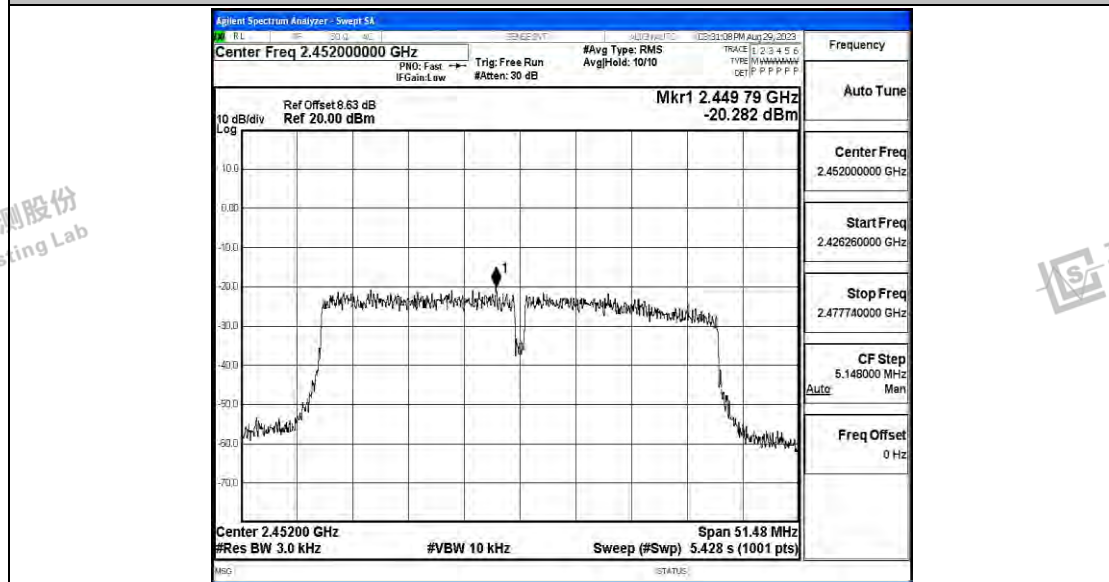


11N40SISO\_Ant1\_2437





11N40SISO\_Ant1\_2452





## C.4 Band edge measurements

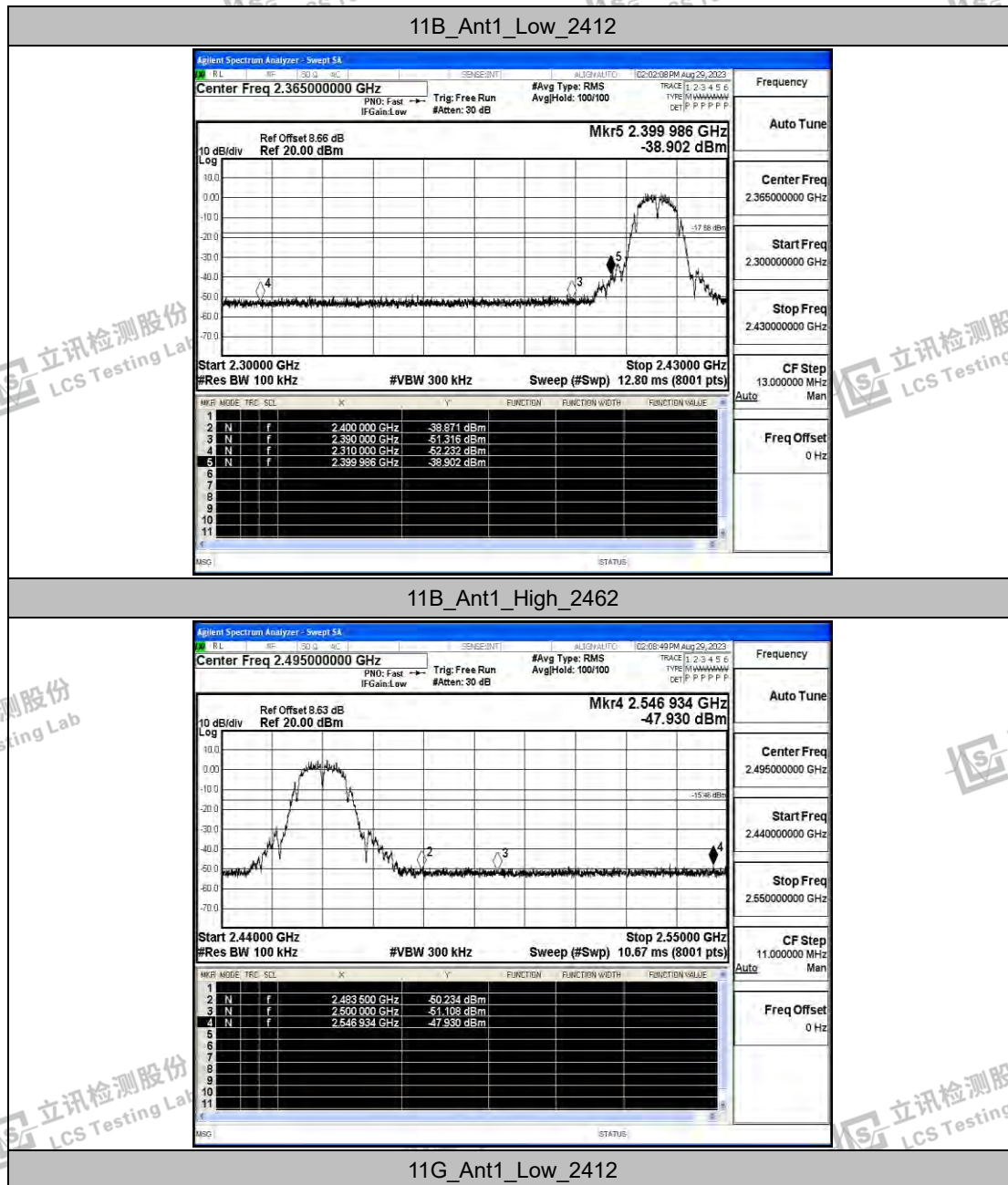
### Test Result

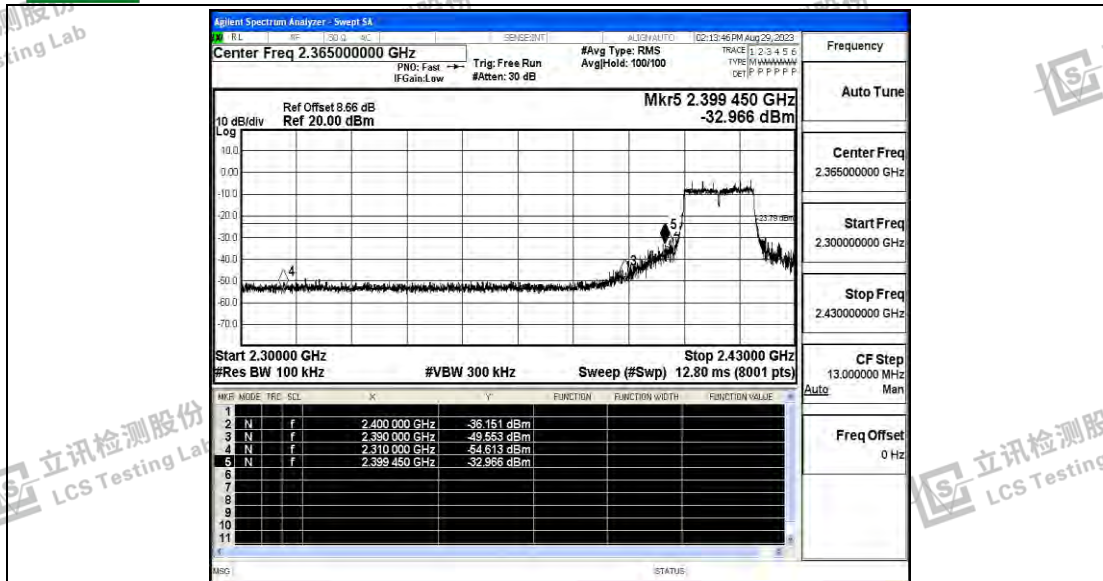
| TestMode  | Antenna | Channel | Freq(MHz) | RefLevel[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|-----------|---------|---------|-----------|---------------|-------------|------------|---------|
| 11B       | Ant1    | Low     | 2412      | 2.12          | -38.9       | ≤-17.88    | PASS    |
|           |         | High    | 2462      | 4.52          | -47.93      | ≤-15.48    | PASS    |
| 11G       | Ant1    | Low     | 2412      | -3.79         | -32.97      | ≤-23.79    | PASS    |
|           |         | High    | 2462      | -0.86         | -38.45      | ≤-20.86    | PASS    |
| 11N20SISO | Ant1    | Low     | 2412      | -4.05         | -31.29      | ≤-24.05    | PASS    |
|           |         | High    | 2462      | -3.55         | -47.89      | ≤-23.55    | PASS    |
| 11N40SISO | Ant1    | Low     | 2422      | -5.88         | -37.92      | ≤-25.88    | PASS    |
|           |         | High    | 2452      | -6.23         | -38.68      | ≤-26.23    | PASS    |



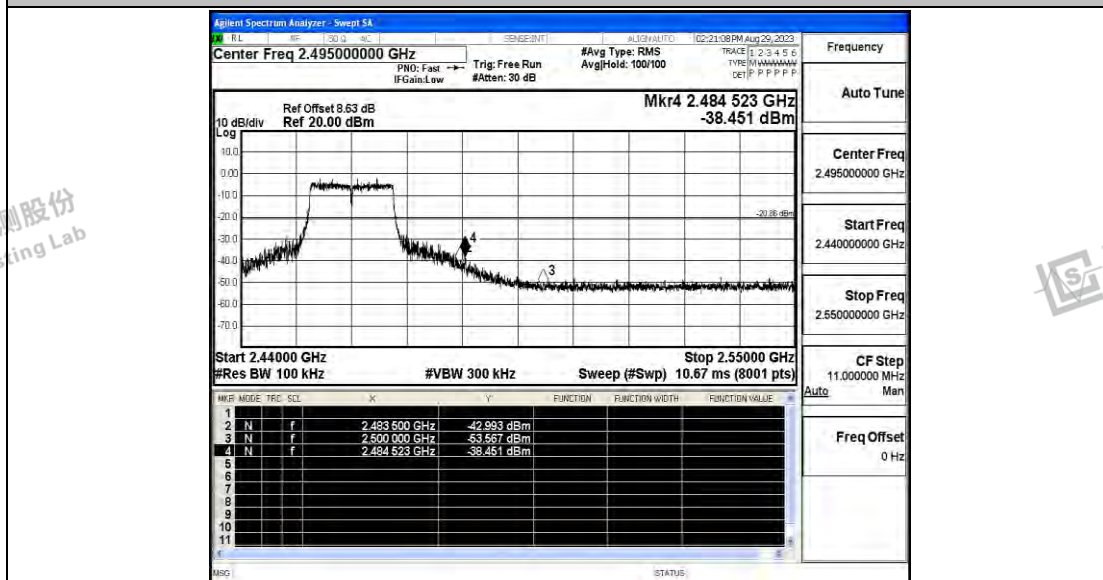


## Test Graphs



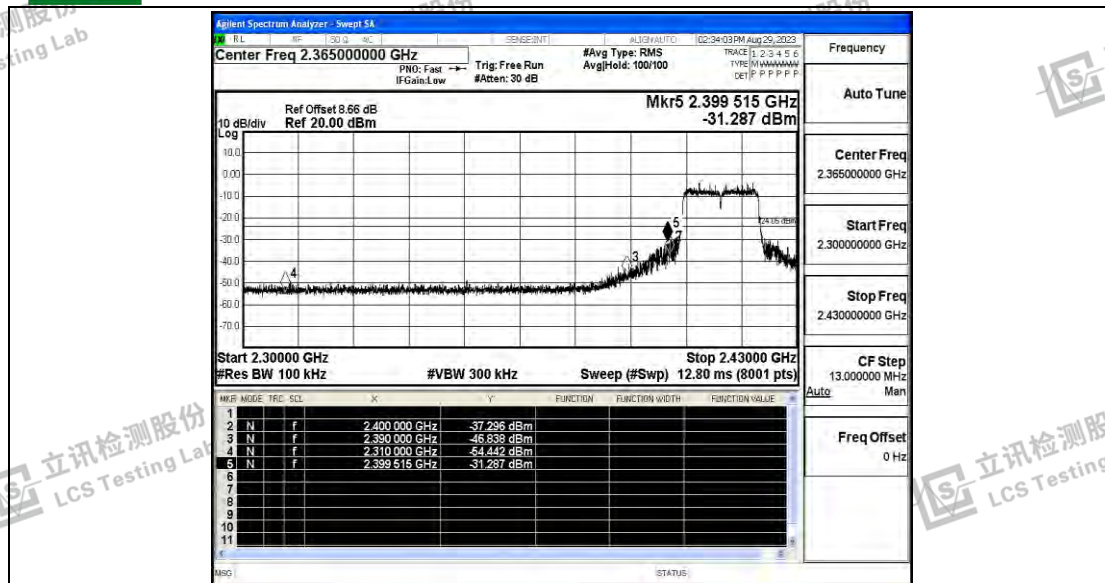


11G\_Ant1\_High\_2462

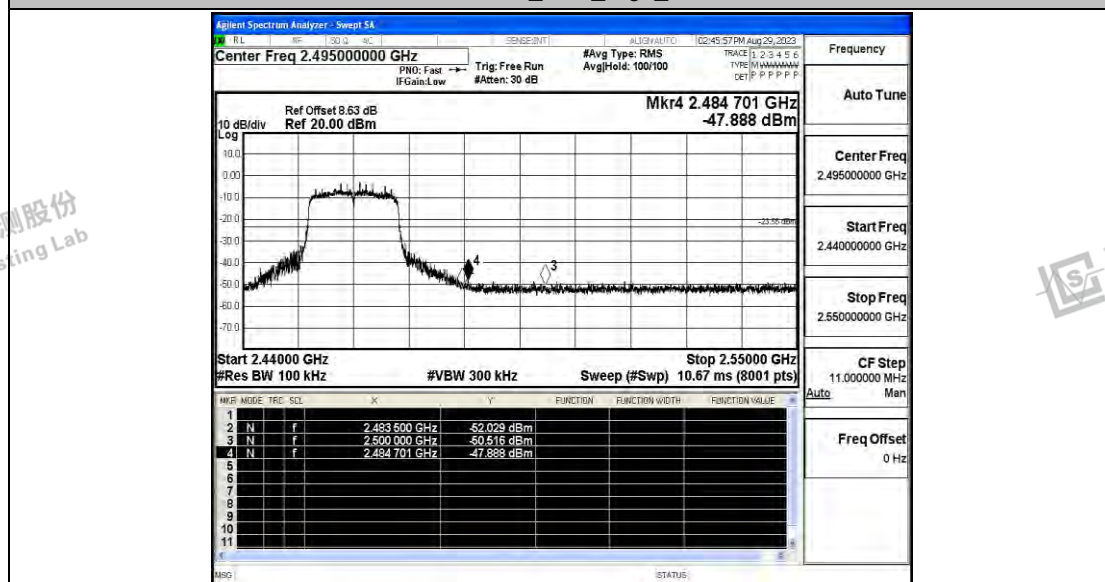


11N20SISO\_Ant1\_Low\_2412



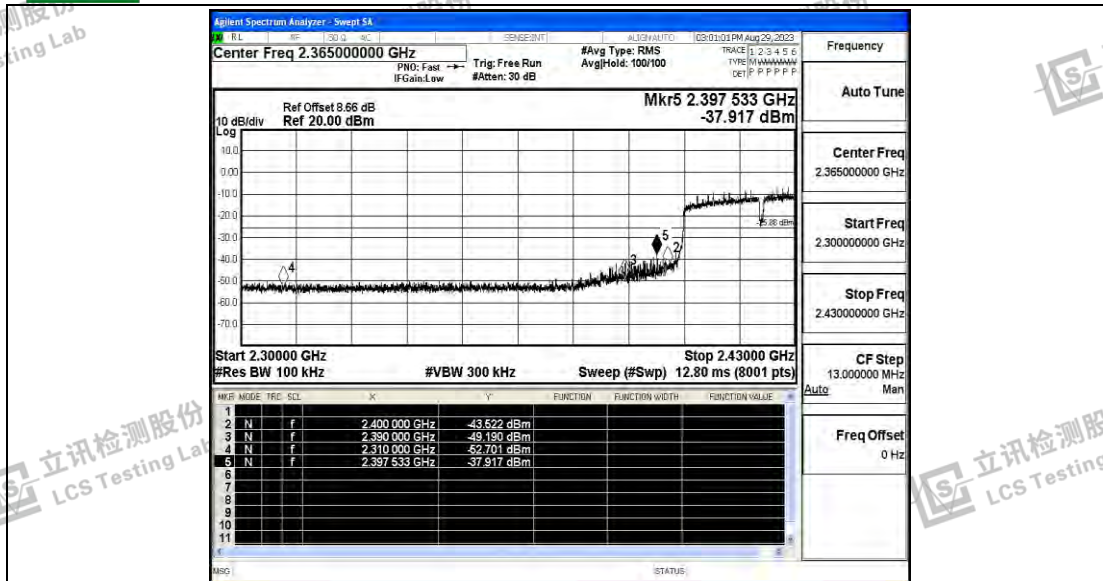


11N20SISO\_Ant1\_High\_2462

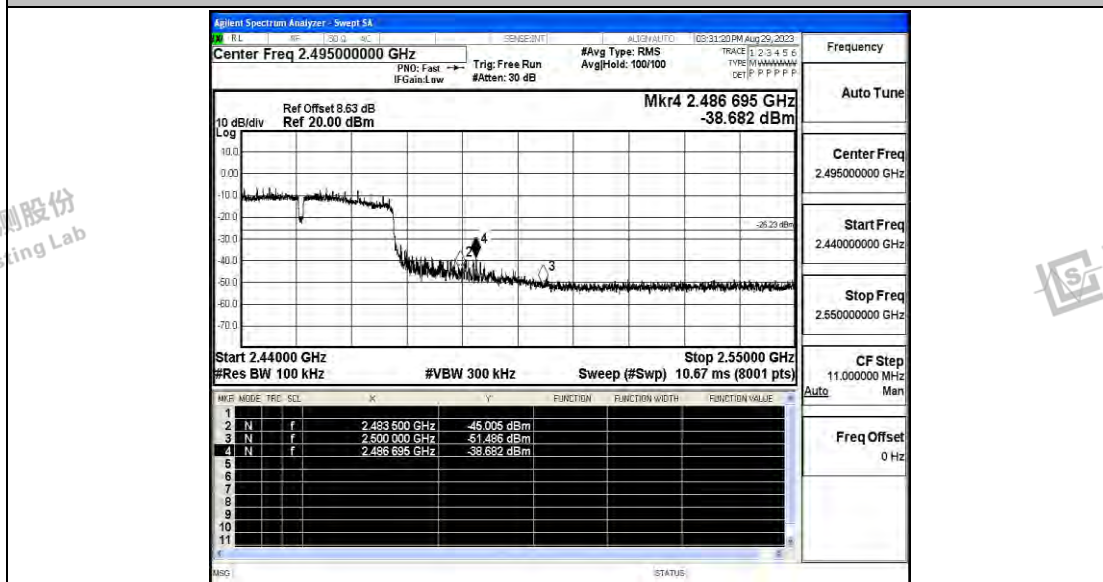


11N40SISO\_Ant1\_Low\_2422





11N40SISO\_Ant1\_High\_2452





## C.5 Conducted Spurious Emission

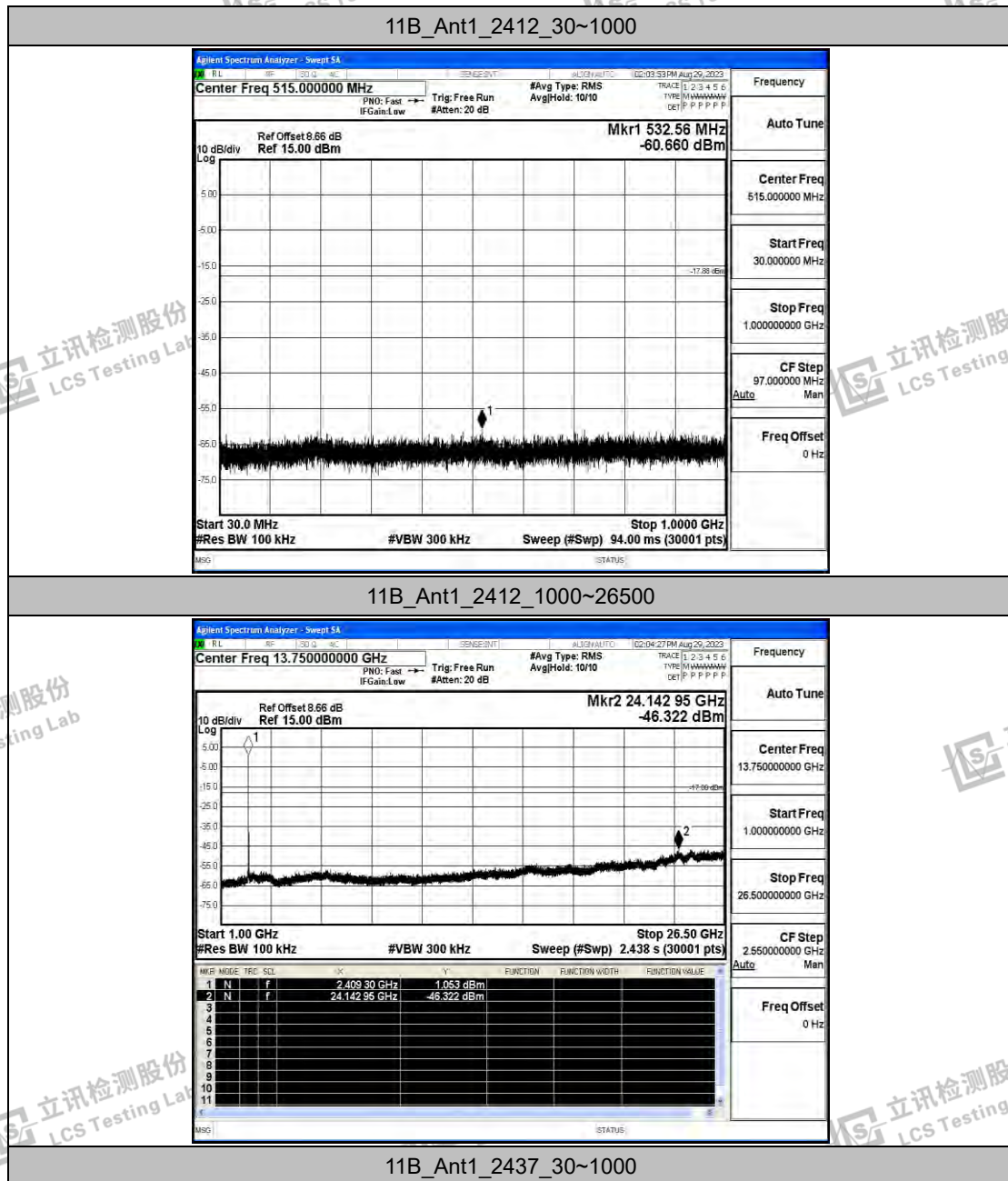
### Test Result

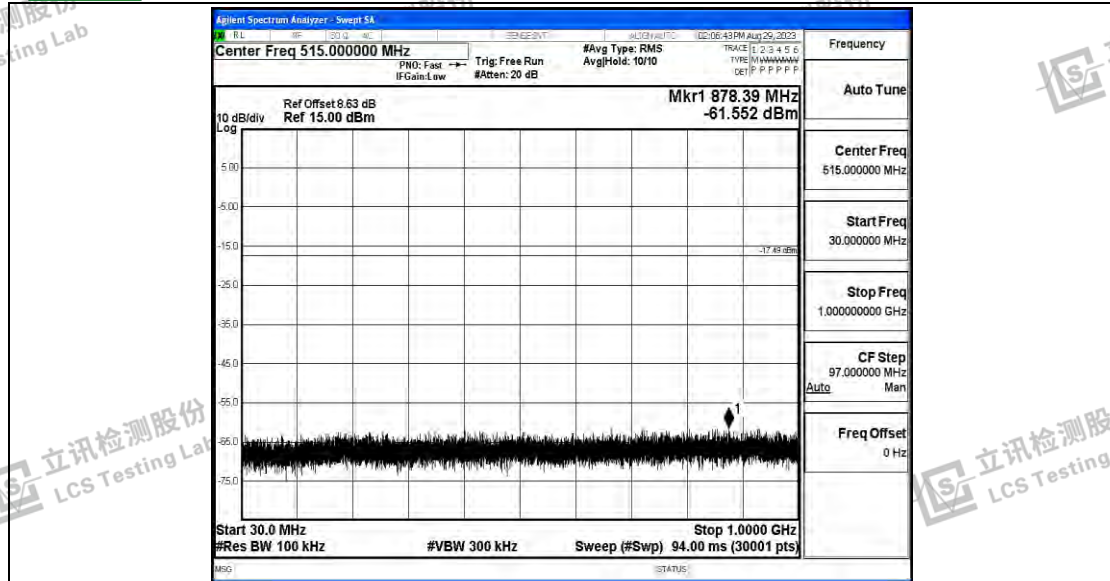
| TestMode  | Antenna | Freq(MHz) | FreqRange [Mhz] | RefLevel [dBm] | Result [dBm] | Limit [dBm] | Verdict |
|-----------|---------|-----------|-----------------|----------------|--------------|-------------|---------|
| 11B       | Ant1    | 2412      | 30~1000         | 2.12           | -60.66       | ≤-17.88     | PASS    |
|           |         |           | 1000~26500      | 2.12           | -46.32       | ≤-17.88     | PASS    |
|           |         | 2437      | 30~1000         | 2.51           | -61.55       | ≤-17.49     | PASS    |
|           |         |           | 1000~26500      | 2.51           | -46.4        | ≤-17.49     | PASS    |
|           |         | 2462      | 30~1000         | 4.52           | -60.88       | ≤-15.48     | PASS    |
|           |         |           | 1000~26500      | 4.52           | -46.63       | ≤-15.48     | PASS    |
| 11G       | Ant1    | 2412      | 30~1000         | -3.79          | -60.56       | ≤-23.79     | PASS    |
|           |         |           | 1000~26500      | -3.79          | -45.82       | ≤-23.79     | PASS    |
|           |         | 2437      | 30~1000         | -3.25          | -43.13       | ≤-23.25     | PASS    |
|           |         |           | 1000~26500      | -3.25          | -46.52       | ≤-23.25     | PASS    |
|           |         | 2462      | 30~1000         | -0.86          | -60.65       | ≤-20.86     | PASS    |
|           |         |           | 1000~26500      | -0.86          | -45.38       | ≤-20.86     | PASS    |
| 11N20SISO | Ant1    | 2412      | 30~1000         | -4.05          | -61.09       | ≤-24.05     | PASS    |
|           |         |           | 1000~26500      | -4.05          | -46.27       | ≤-24.05     | PASS    |
|           |         | 2437      | 30~1000         | -3.91          | -61.12       | ≤-23.91     | PASS    |
|           |         |           | 1000~26500      | -3.91          | -46.32       | ≤-23.91     | PASS    |
|           |         | 2462      | 30~1000         | -3.55          | -60.72       | ≤-23.55     | PASS    |
|           |         |           | 1000~26500      | -3.55          | -46.84       | ≤-23.55     | PASS    |
| 11N40SISO | Ant1    | 2422      | 30~1000         | -5.88          | -60.99       | ≤-25.88     | PASS    |
|           |         |           | 1000~26500      | -5.88          | -46.48       | ≤-25.88     | PASS    |
|           |         | 2437      | 30~1000         | -5.98          | -61.35       | ≤-25.98     | PASS    |
|           |         |           | 1000~26500      | -5.98          | -47.22       | ≤-25.98     | PASS    |
|           |         | 2452      | 30~1000         | -6.23          | -60.6        | ≤-26.23     | PASS    |
|           |         |           | 1000~26500      | -6.23          | -46.71       | ≤-26.23     | PASS    |



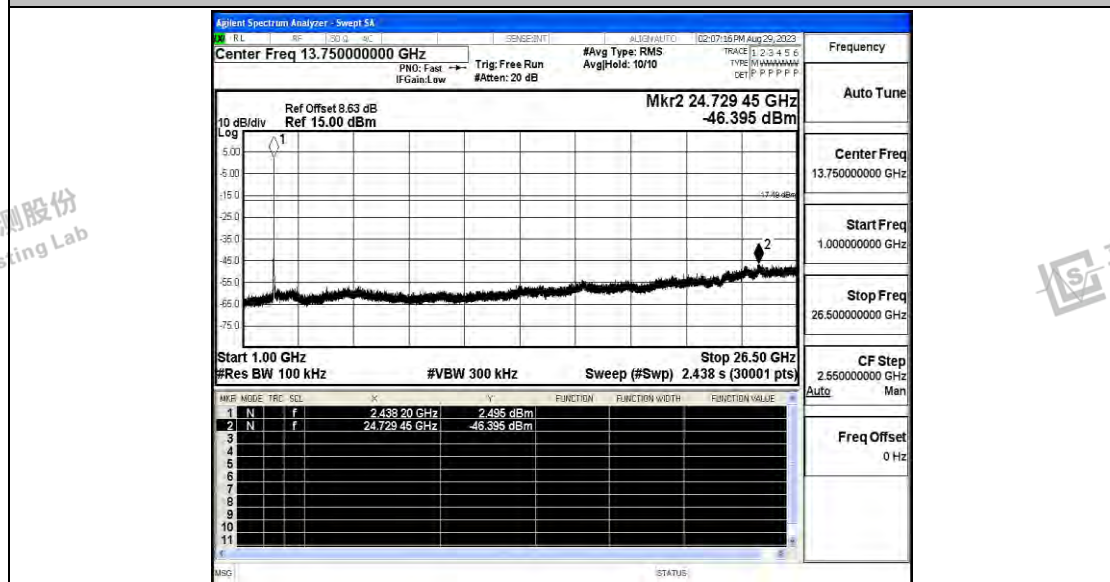


## Test Graphs



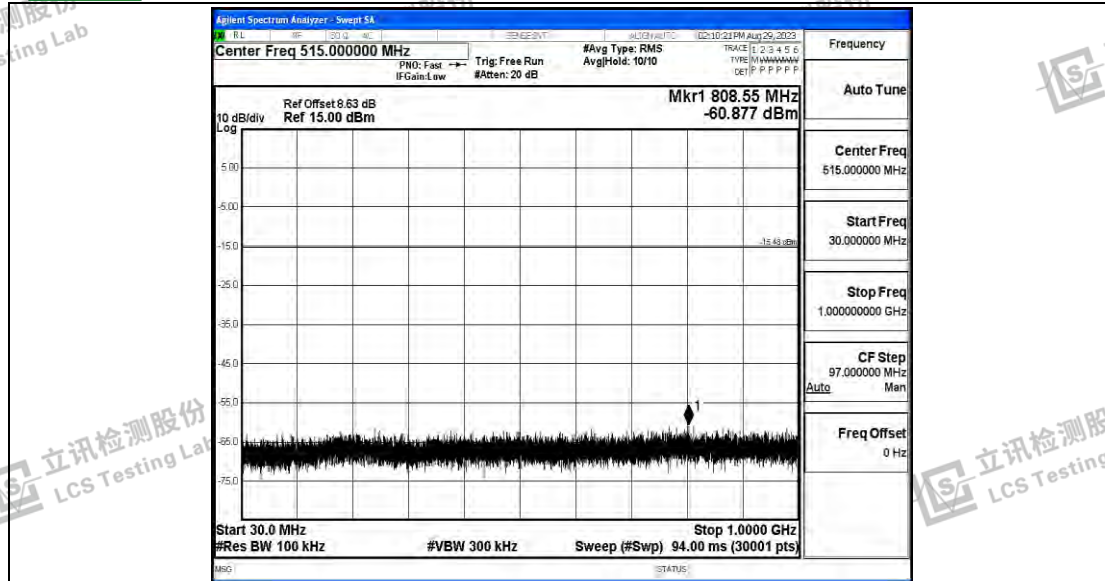


11B\_Ant1\_2437\_1000~26500

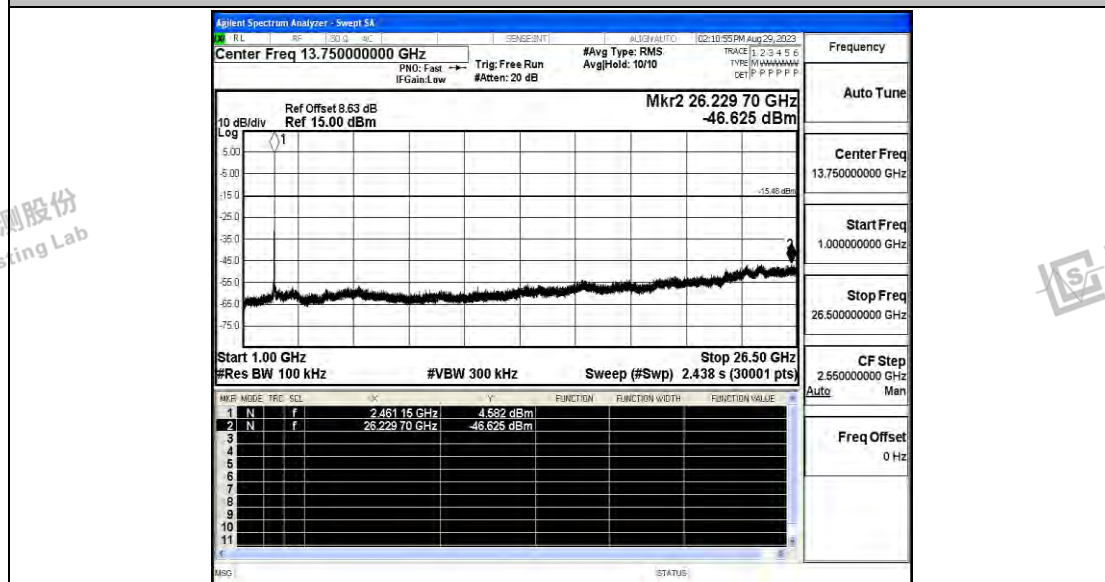


11B\_Ant1\_2462\_30~1000



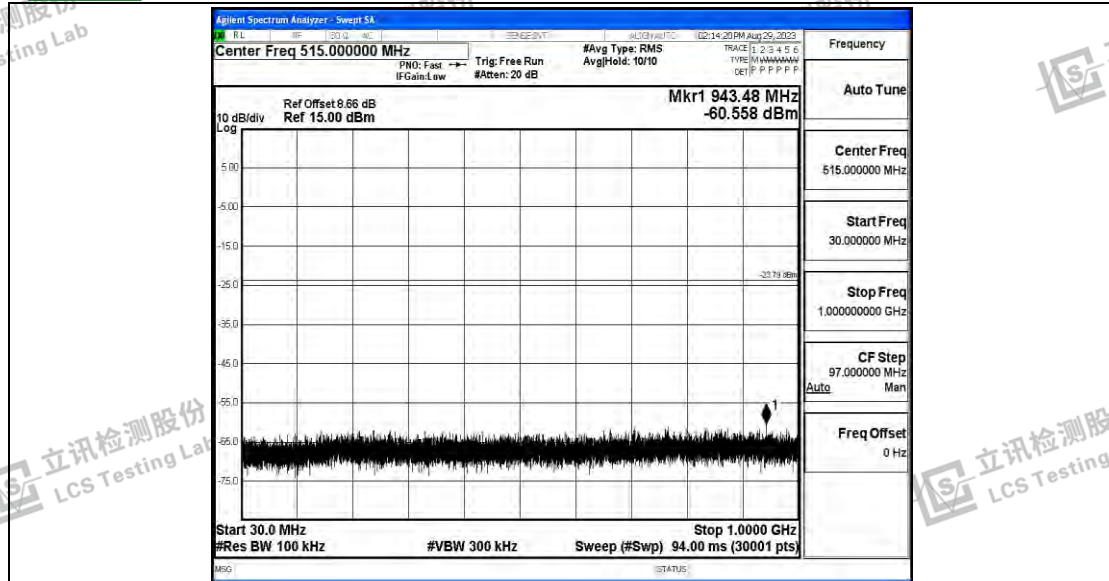


11B\_Ant1\_2462\_1000~26500

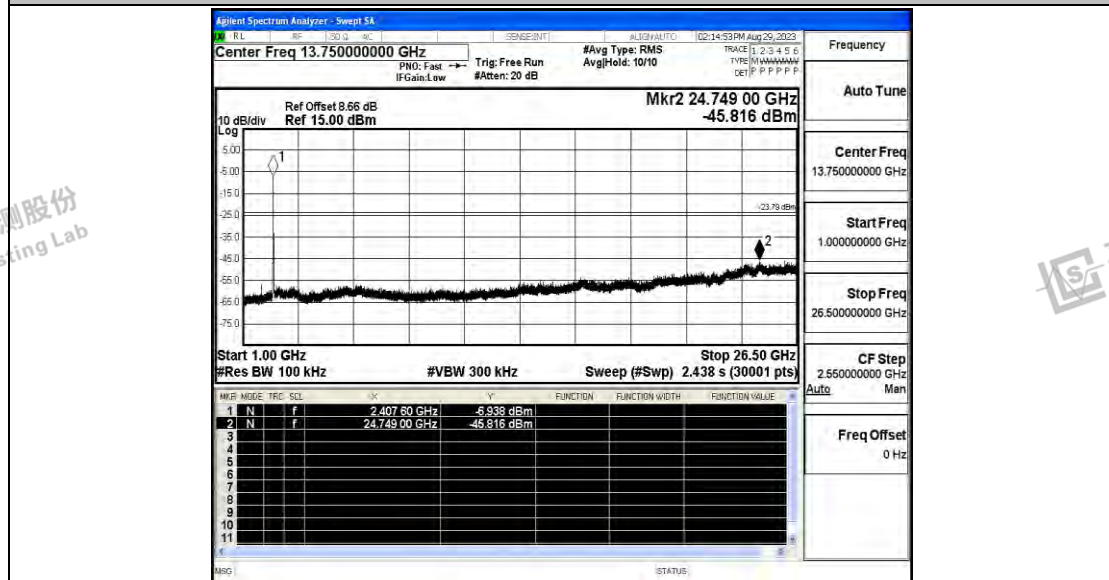


11G\_Ant1\_2412\_30~1000



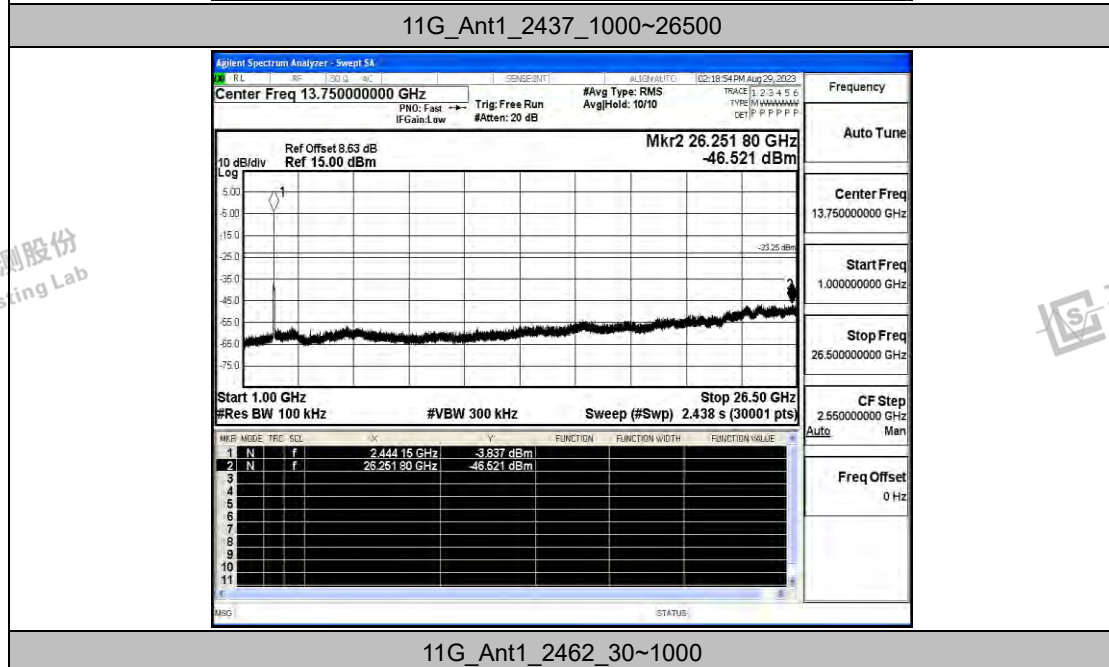
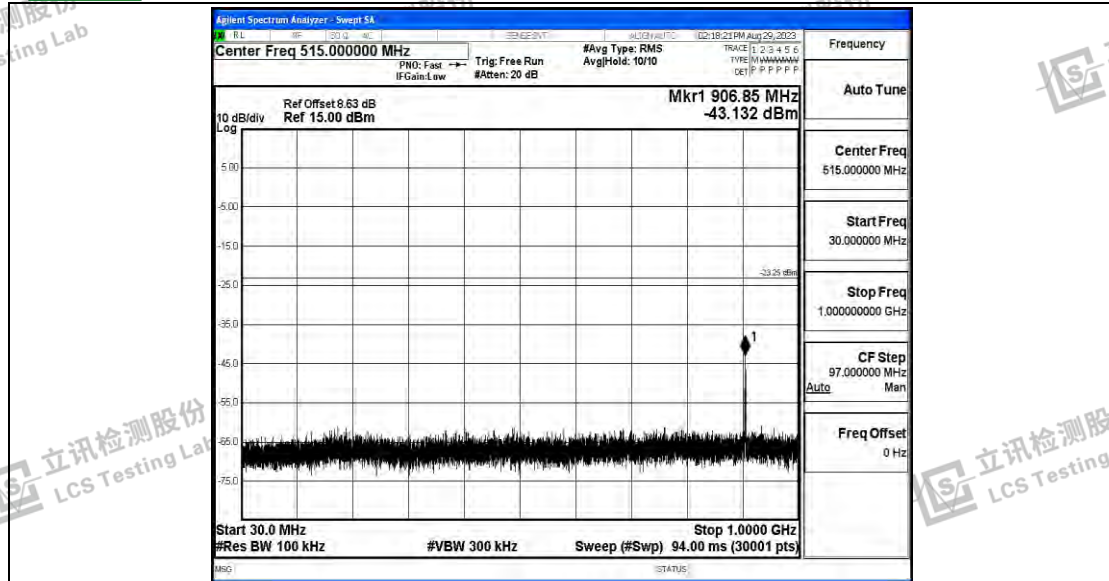


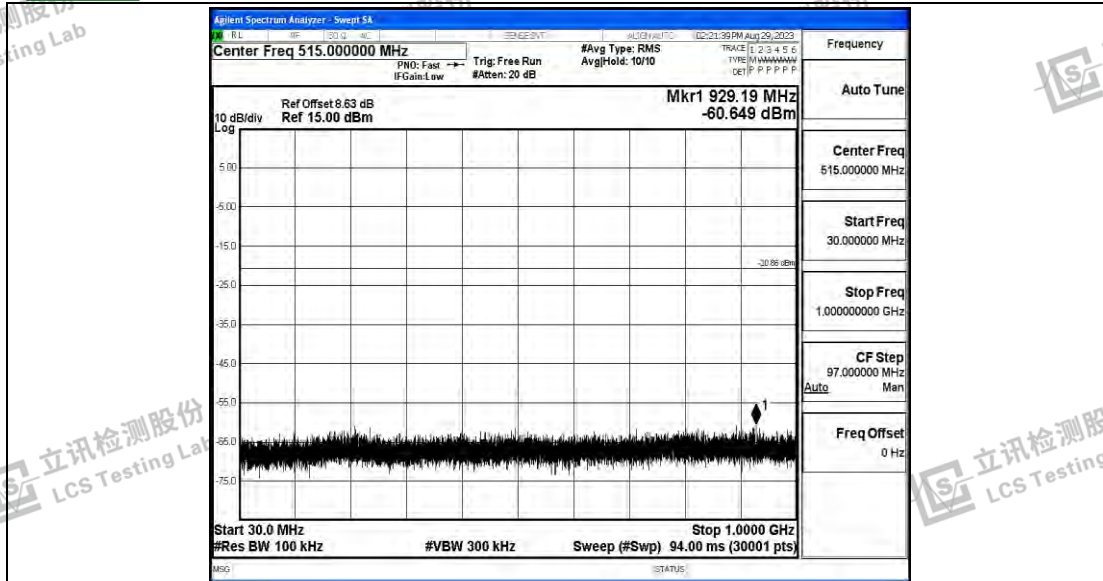
11G\_Ant1\_2412\_1000~26500



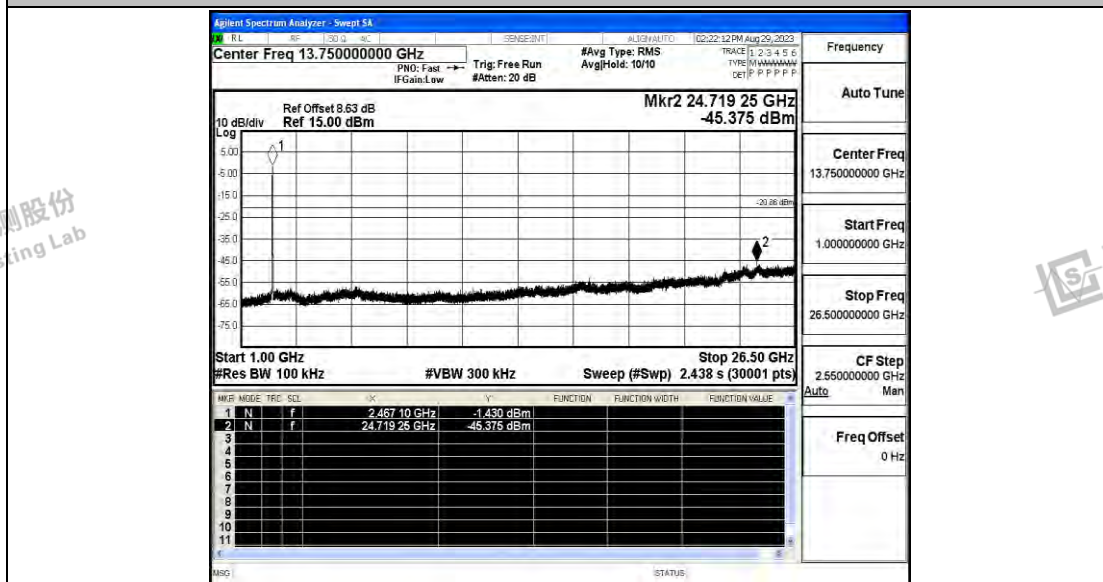
11G\_Ant1\_2437\_30~1000





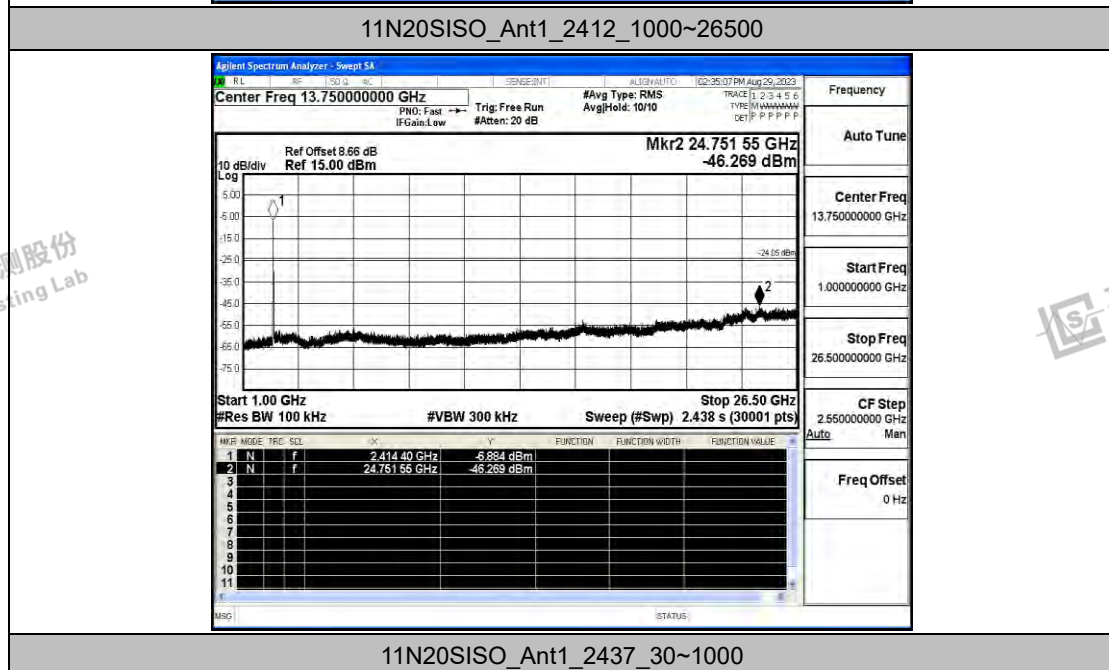
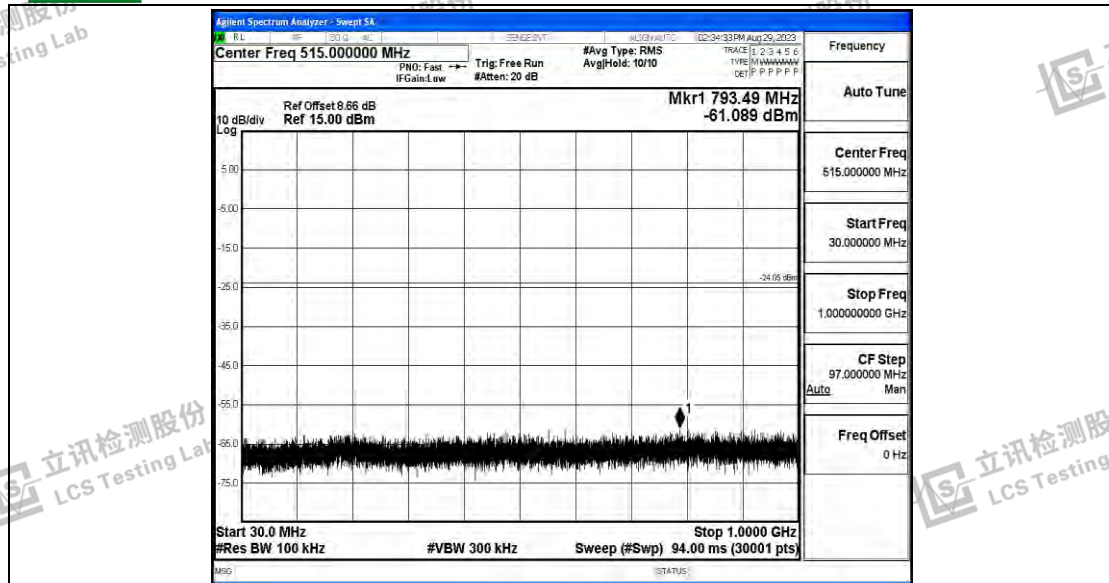


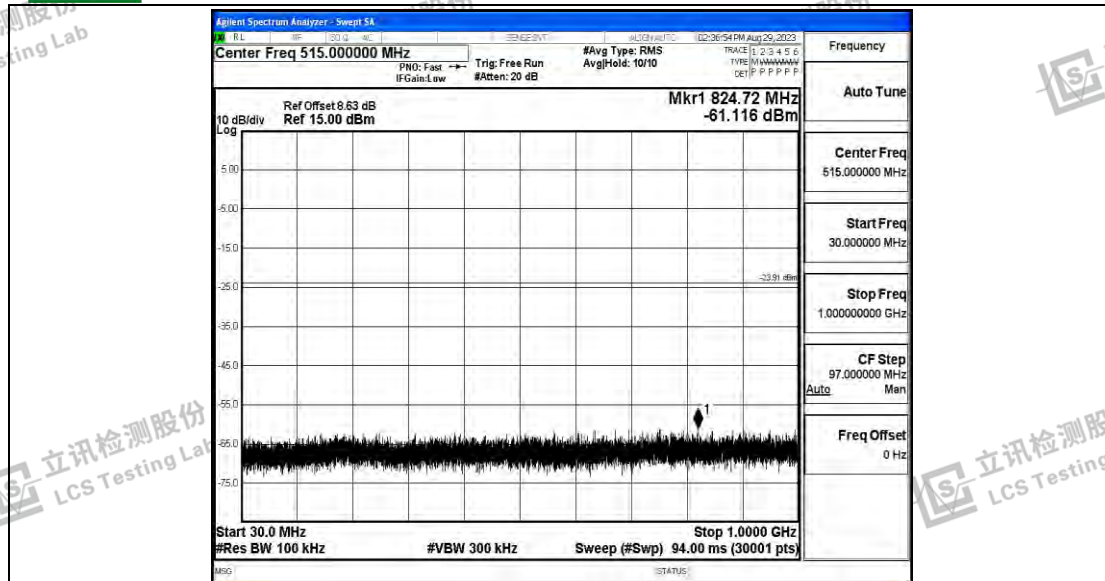
11G\_Ant1\_2462\_1000~26500



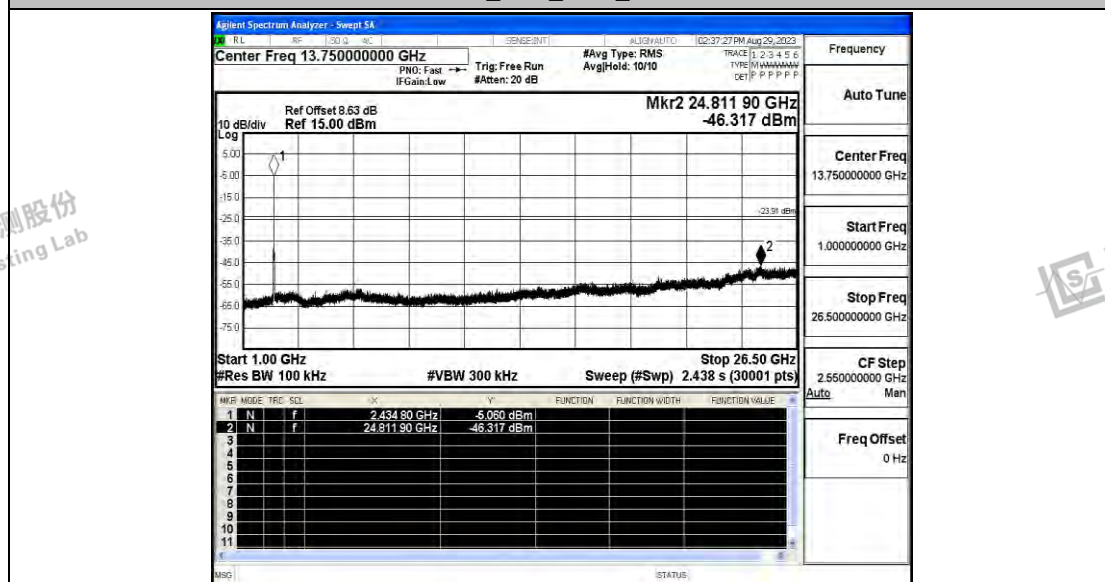
11N20SISO\_Ant1\_2412\_30~1000





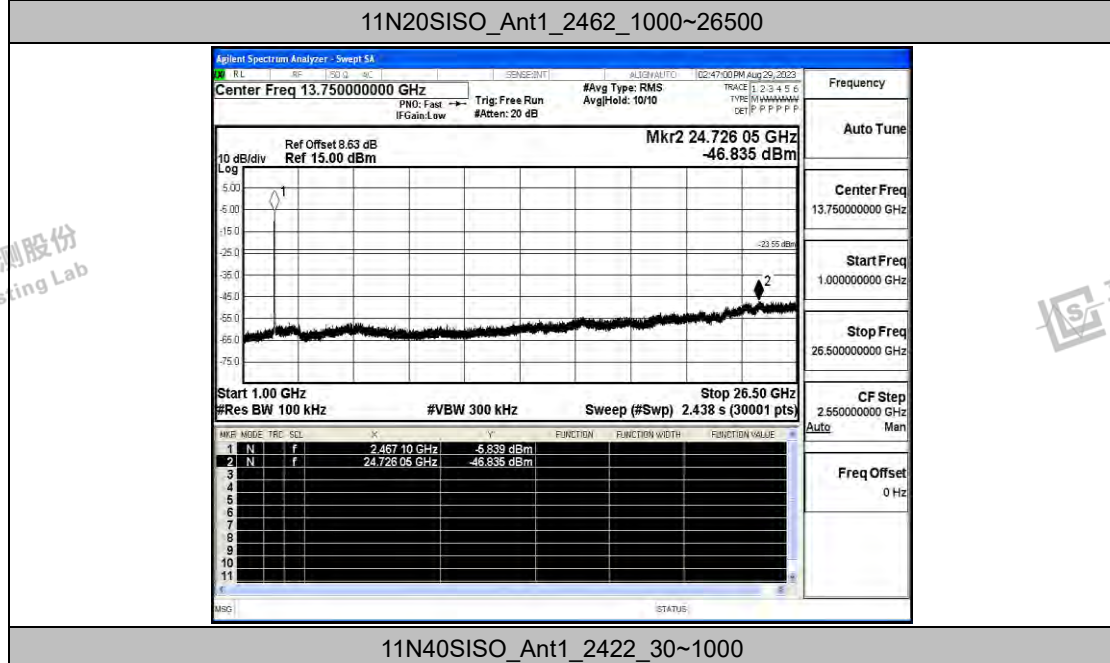
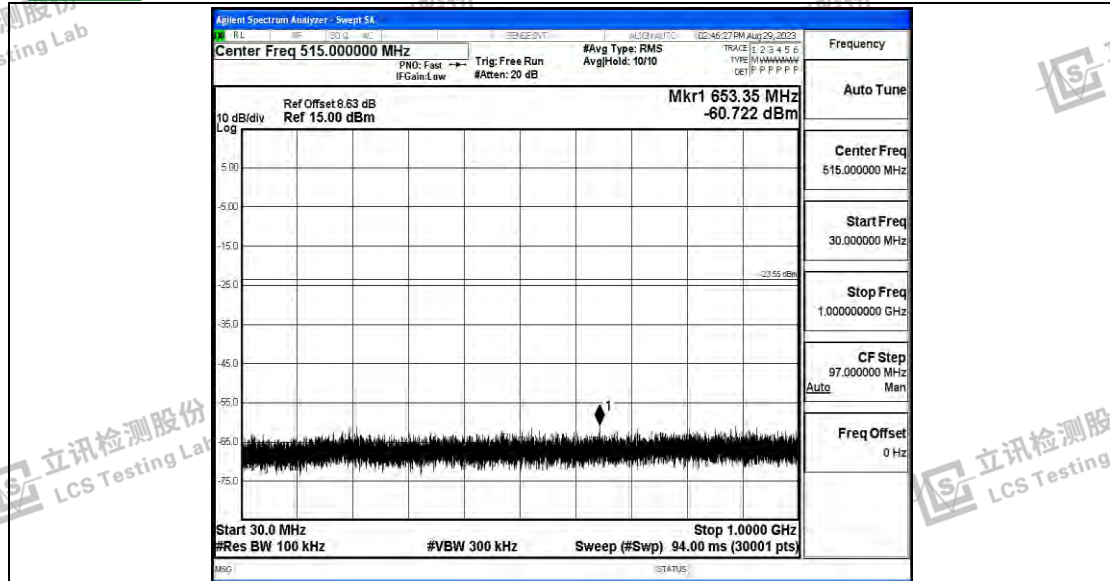


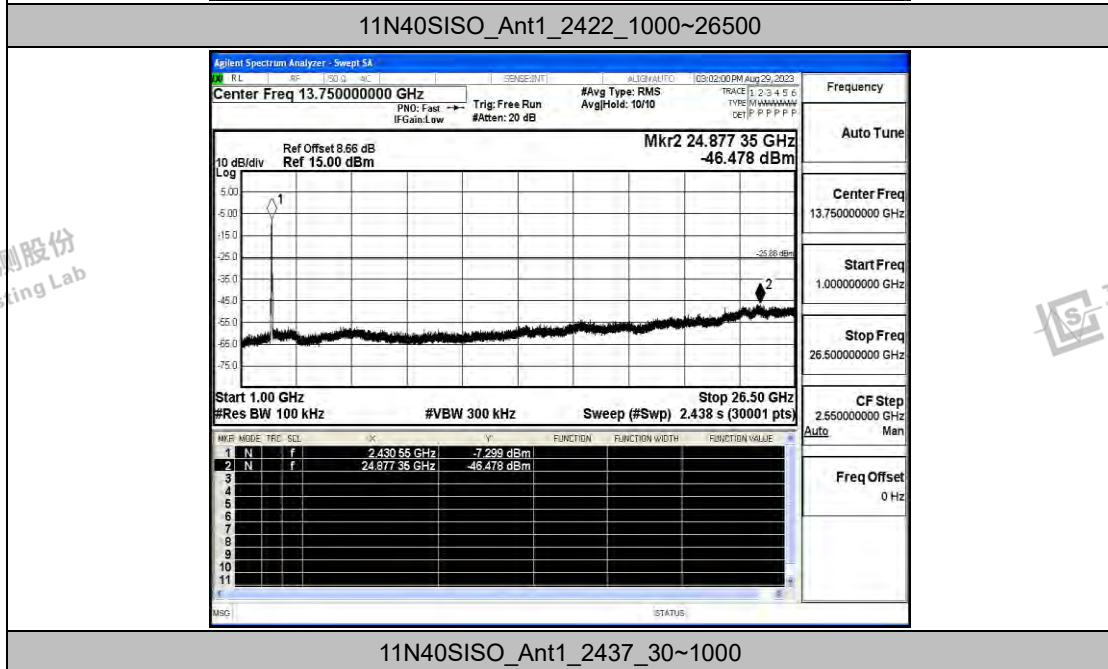
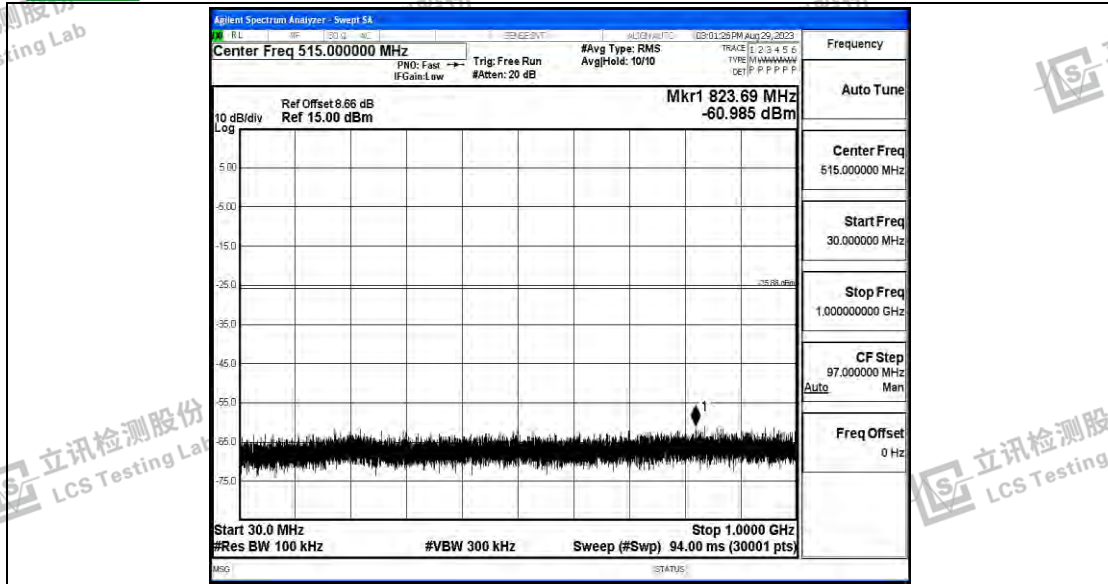
11N20SISO\_Ant1\_2437\_1000~26500

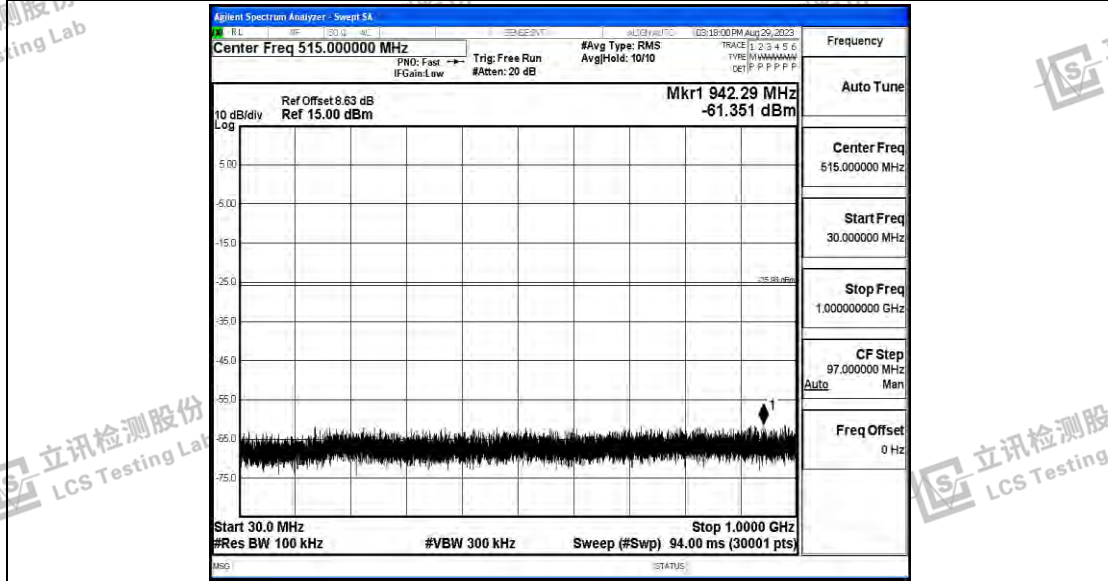


11N20SISO\_Ant1\_2462\_30~1000

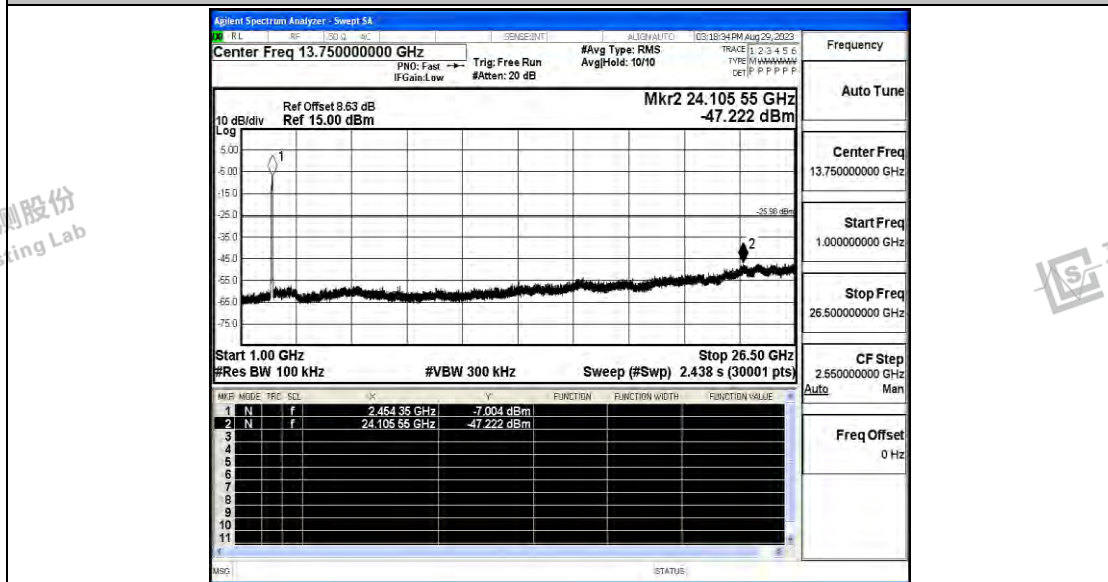






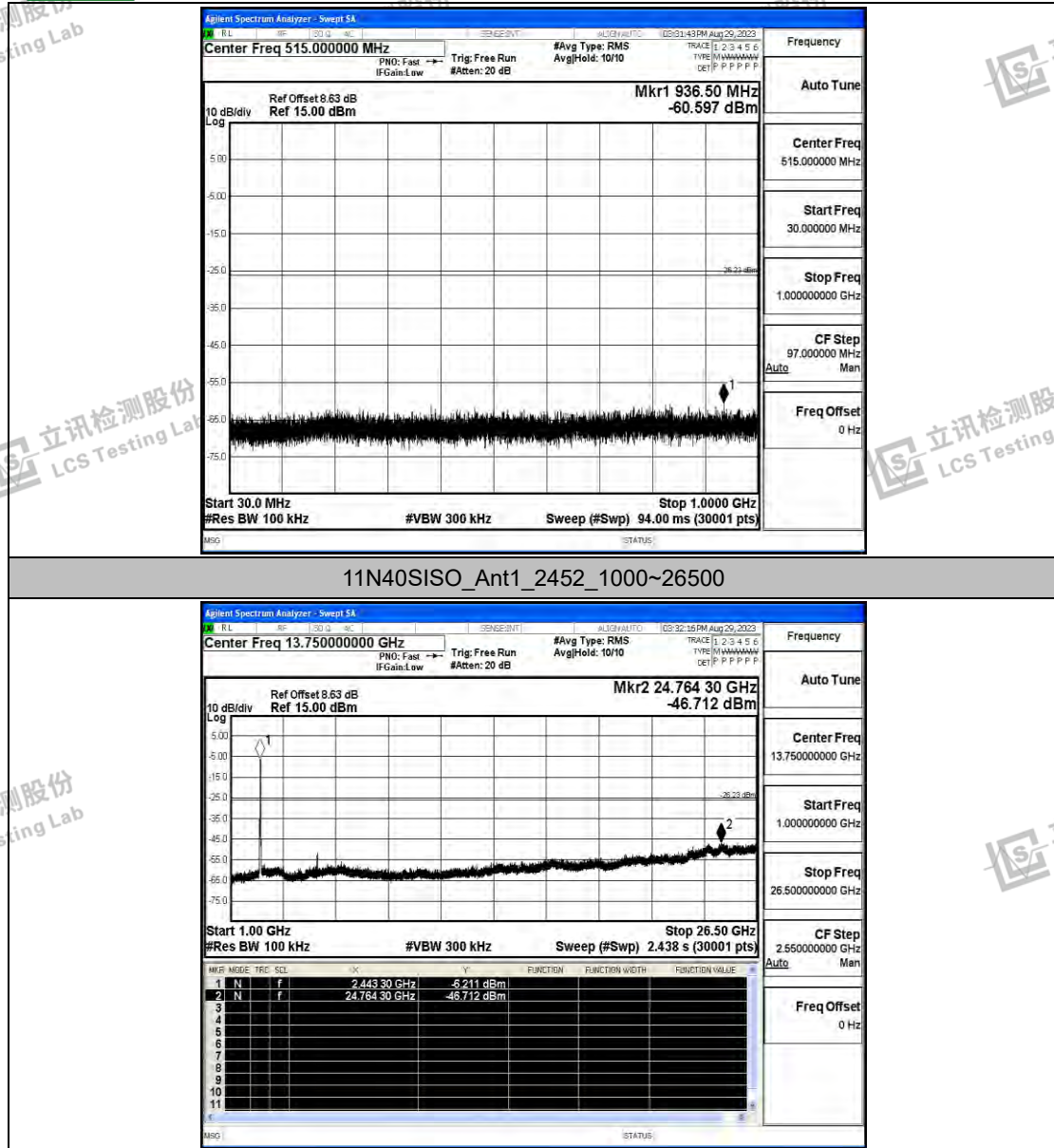


11N40SISO\_Ant1\_2437\_1000~26500



11N40SISO\_Ant1\_2452\_30~1000







## C.6 Duty Cycle

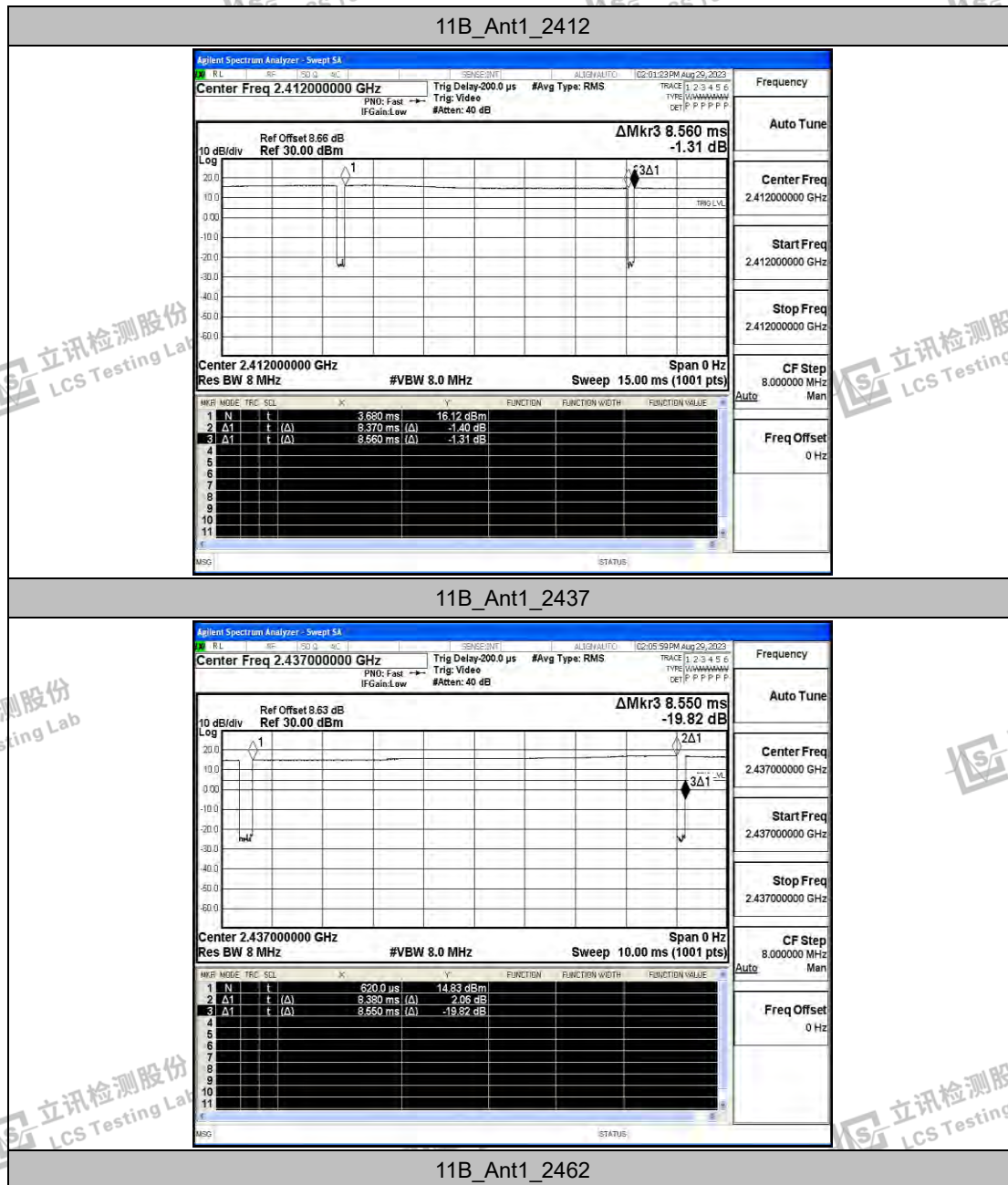
### Test Result

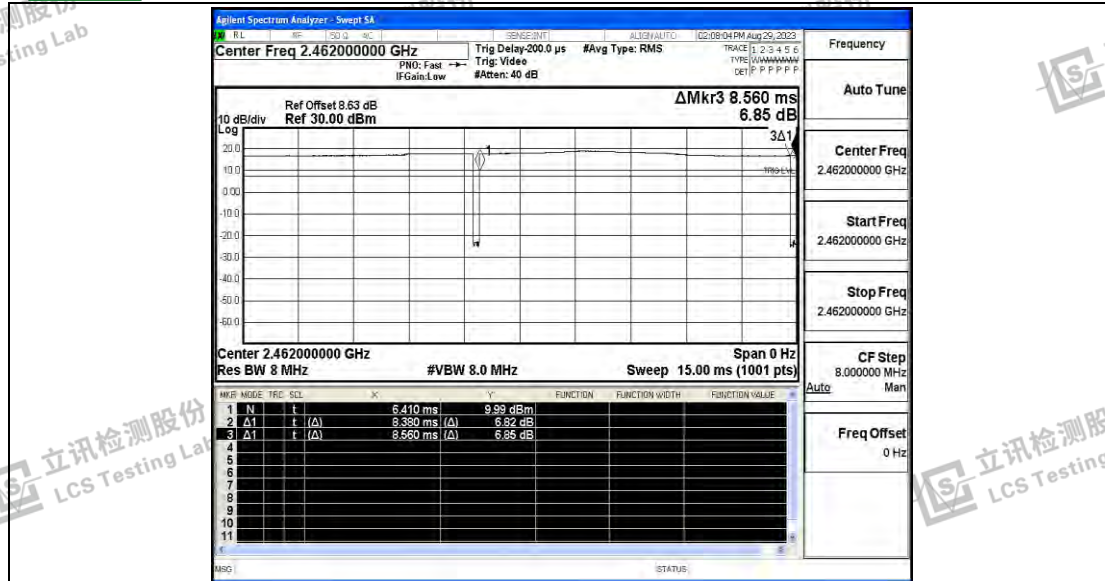
| TestMode  | Antenna | Freq(MHz) | Transmission Duration [ms] | Transmission Period [ms] | Duty Cycle [%] | Factor | Verdict |
|-----------|---------|-----------|----------------------------|--------------------------|----------------|--------|---------|
| 11B       | Ant1    | 2412      | 8.37                       | 8.56                     | 97.78          | 0.10   | ---     |
|           |         | 2437      | 8.38                       | 8.55                     | 98.01          | 0.09   | ---     |
|           |         | 2462      | 8.38                       | 8.56                     | 97.90          | 0.09   | ---     |
| 11G       | Ant1    | 2412      | 1.39                       | 1.56                     | 89.10          | 0.50   | ---     |
|           |         | 2437      | 1.39                       | 1.64                     | 84.76          | 0.72   | ---     |
|           |         | 2462      | 1.39                       | 1.56                     | 89.10          | 0.50   | ---     |
| 11N20SISO | Ant1    | 2412      | 1.17                       | 1.36                     | 86.03          | 0.65   | ---     |
|           |         | 2437      | 1.17                       | 1.36                     | 86.03          | 0.65   | ---     |
|           |         | 2462      | 1.17                       | 1.35                     | 86.67          | 0.62   | ---     |
| 11N40SISO | Ant1    | 2422      | 0.59                       | 0.83                     | 71.08          | 1.48   | ---     |
|           |         | 2437      | 0.59                       | 0.79                     | 74.68          | 1.27   | ---     |
|           |         | 2452      | 0.59                       | 0.83                     | 71.08          | 1.48   | ---     |



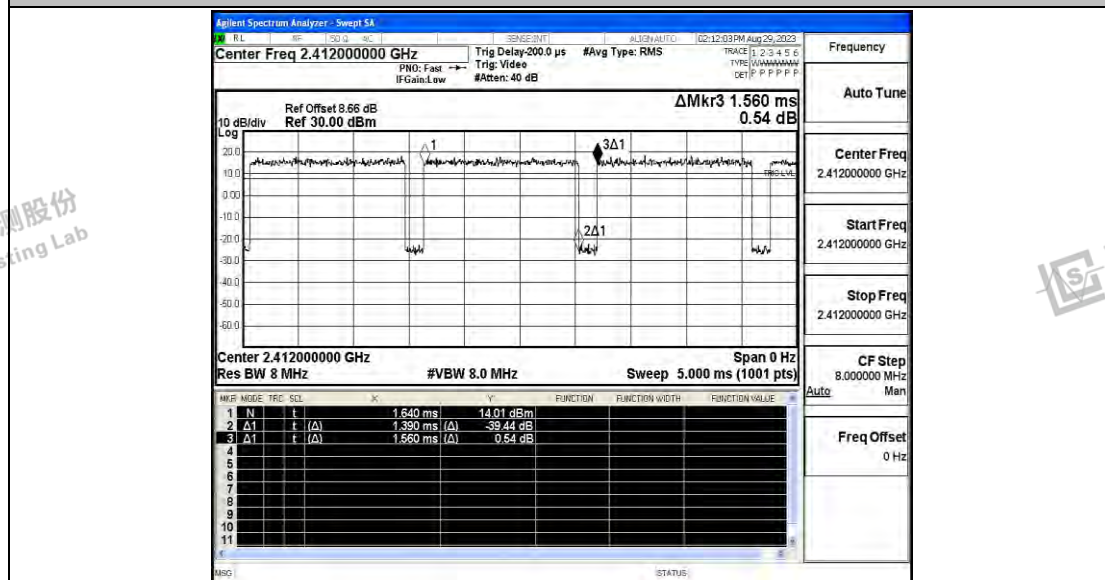


## Test Graphs



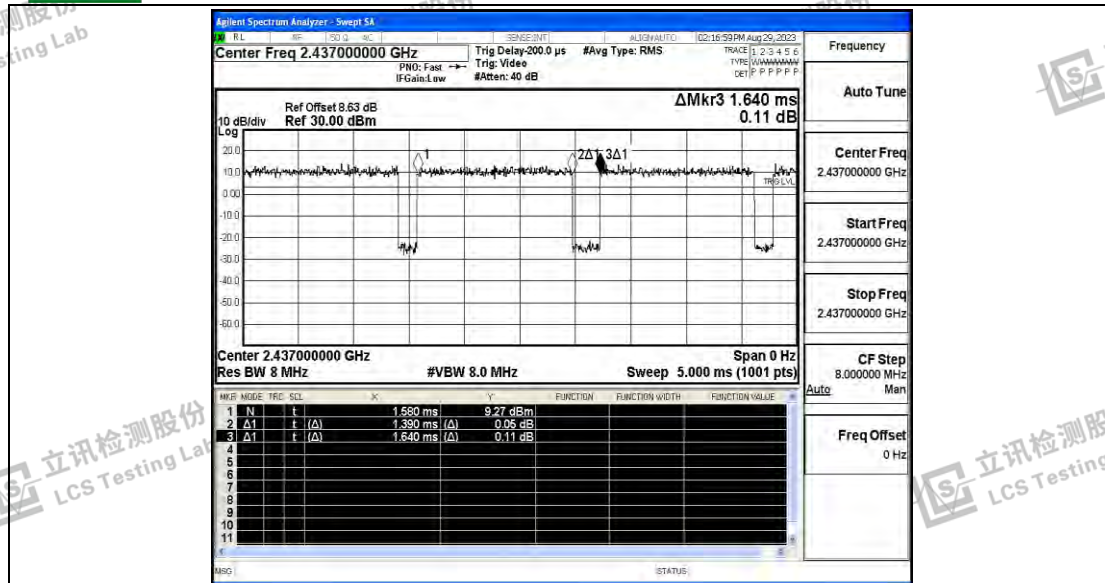


11G\_Ant1\_2412

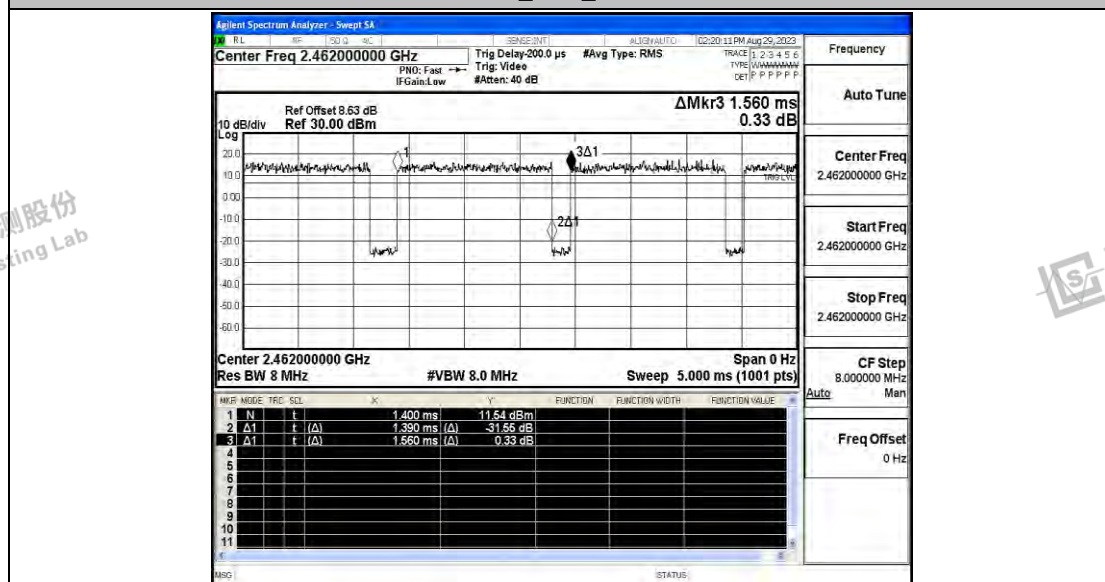


11G\_Ant1\_2437



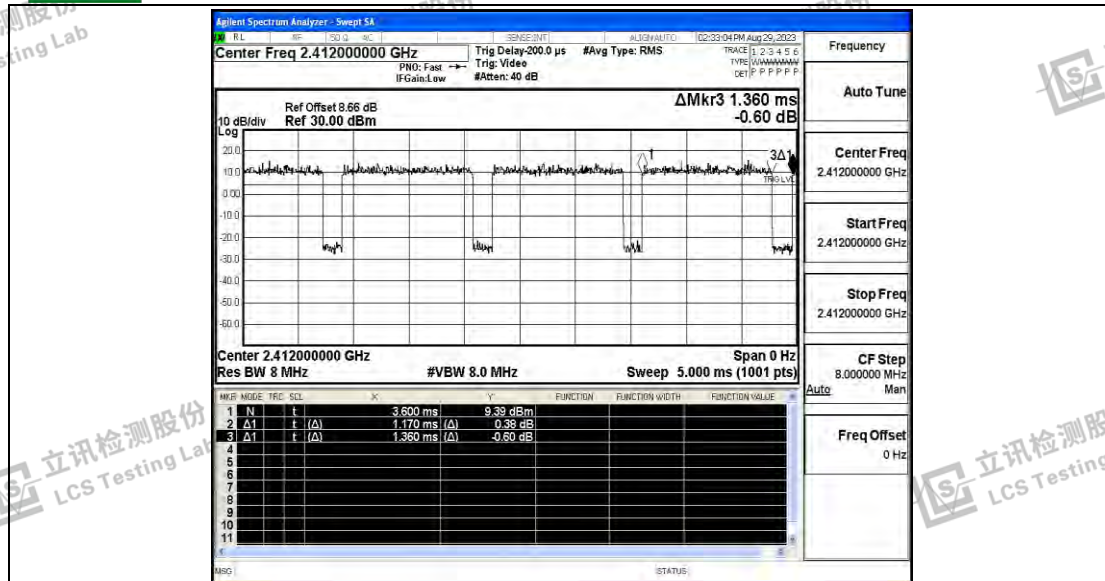


11G\_Ant1\_2462

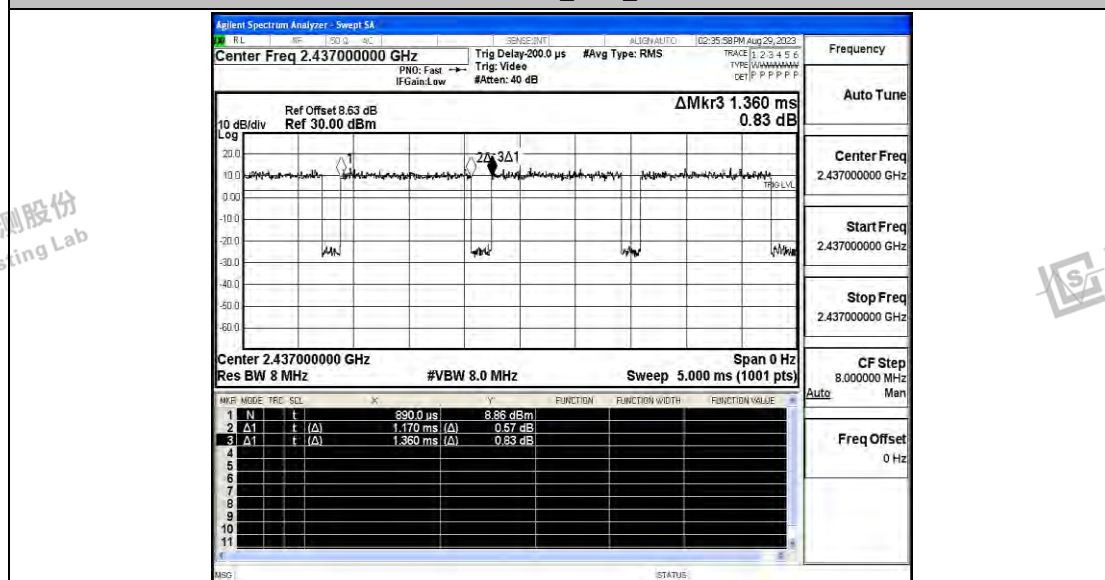


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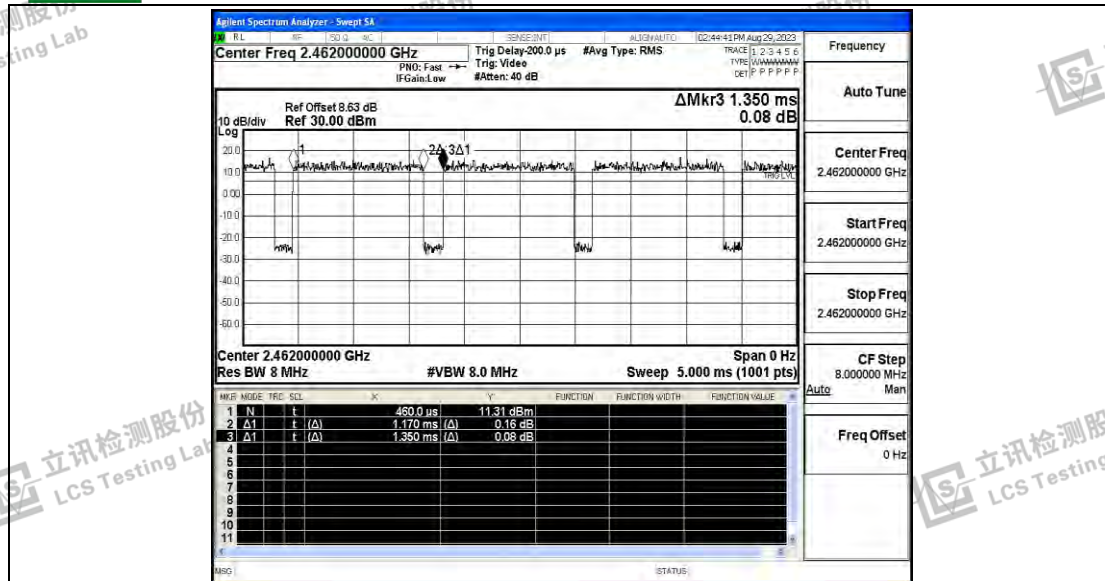


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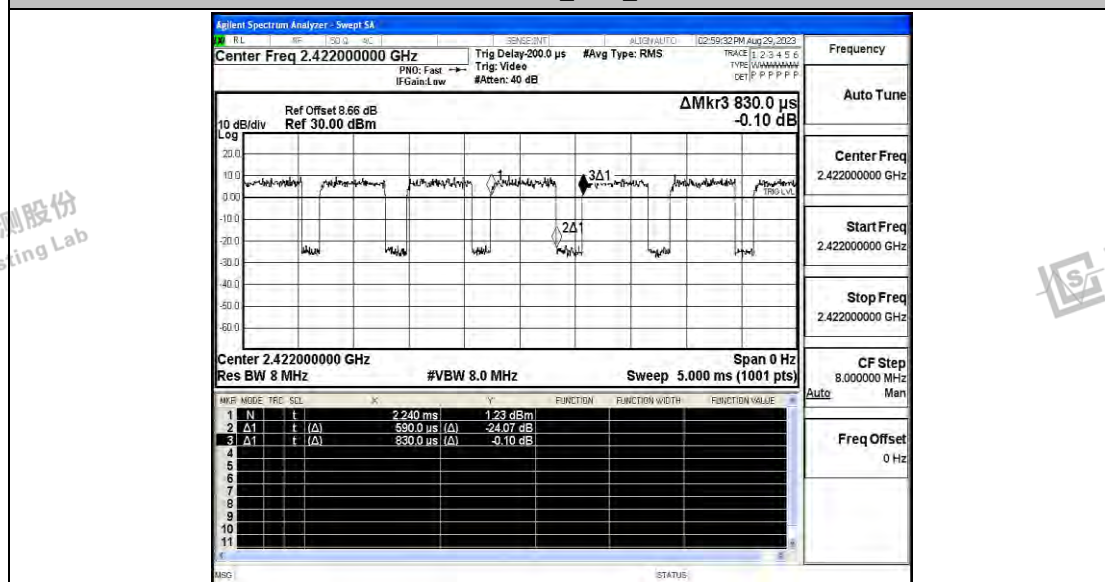


11N20SISO\_Ant1\_2462



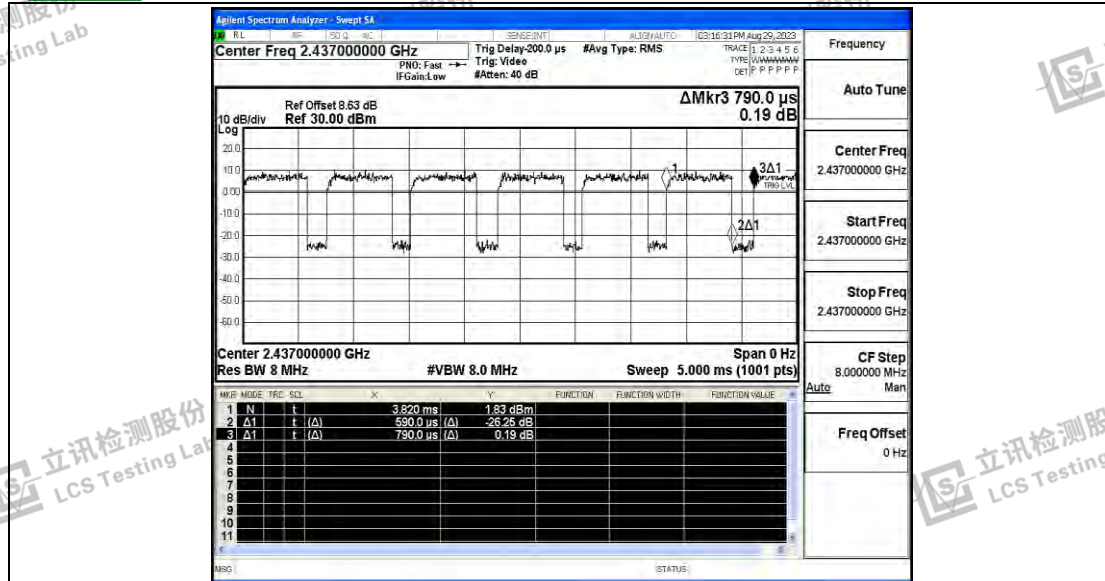


11N40SISO\_Ant1\_2422

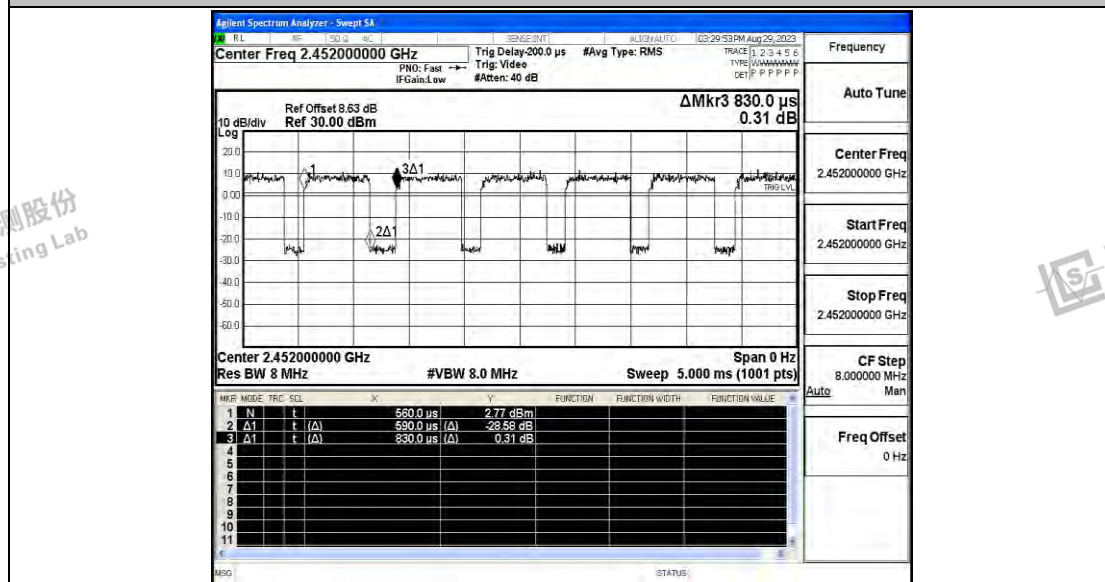


11N40SISO\_Ant1\_2437





11N40SISO\_Ant1\_2452





## C.7 Emissions in Restricted Bands

### Test Result

| TestMode      | Antenna | ChName | Freq(MHz) | Detector | Freq [MHz] | Result [dBm] | Limit [dBm] | Result [dBuV/m] | Limit [dBuV/m] | Verdict |
|---------------|---------|--------|-----------|----------|------------|--------------|-------------|-----------------|----------------|---------|
| 11B           | Ant1    | Low    | 2412      | AV       | 2310.000   | -48.19       | ≤-41.20     | 47.01           | ≤54            | PASS    |
|               |         |        |           | AV       | 2389.310   | -46.97       | ≤-41.20     | 48.23           | ≤54            | PASS    |
|               |         |        |           | AV       | 2390.000   | -47.1        | ≤-41.20     | 48.10           | ≤54            | PASS    |
|               |         |        |           | Peak     | 2310.000   | -43.28       | ≤-21.20     | 51.92           | ≤74            | PASS    |
|               |         |        |           | Peak     | 2354.730   | -37.37       | ≤-21.20     | 57.83           | ≤74            | PASS    |
|               |         |        |           | Peak     | 2390.000   | -41.29       | ≤-21.20     | 53.91           | ≤74            | PASS    |
|               |         | High   | 2462      | AV       | 2483.500   | -46.21       | ≤-41.20     | 48.99           | ≤54            | PASS    |
|               |         |        |           | AV       | 2483.560   | -46.29       | ≤-41.20     | 48.91           | ≤54            | PASS    |
|               |         |        |           | AV       | 2500.000   | -47.07       | ≤-41.20     | 48.13           | ≤54            | PASS    |
|               |         |        |           | Peak     | 2483.500   | -40.3        | ≤-21.20     | 54.90           | ≤74            | PASS    |
|               |         |        |           | Peak     | 2495.440   | -37.99       | ≤-21.20     | 57.21           | ≤74            | PASS    |
| 11G           | Ant1    | Low    | 2412      | AV       | 2310.000   | -47.84       | ≤-41.20     | 47.36           | ≤54            | PASS    |
|               |         |        |           | AV       | 2389.960   | -42.55       | ≤-41.20     | 52.65           | ≤54            | PASS    |
|               |         |        |           | AV       | 2390.000   | -42.55       | ≤-41.20     | 52.65           | ≤54            | PASS    |
|               |         |        |           | Peak     | 2310.000   | -42.81       | ≤-21.20     | 52.39           | ≤74            | PASS    |
|               |         |        |           | Peak     | 2388.270   | -27.73       | ≤-21.20     | 67.47           | ≤74            | PASS    |
|               |         |        |           | Peak     | 2390.000   | -35.47       | ≤-21.20     | 59.73           | ≤74            | PASS    |
|               |         | High   | 2462      | AV       | 2483.500   | -46.51       | ≤-41.20     | 48.69           | ≤54            | PASS    |
|               |         |        |           | AV       | 2483.560   | -46.55       | ≤-41.20     | 48.65           | ≤54            | PASS    |
|               |         |        |           | AV       | 2500.000   | -46.86       | ≤-41.20     | 48.34           | ≤54            | PASS    |
|               |         |        |           | Peak     | 2483.500   | -41.03       | ≤-21.20     | 54.17           | ≤74            | PASS    |
|               |         |        |           | Peak     | 2483.560   | -37.07       | ≤-21.20     | 58.13           | ≤74            | PASS    |
| 11N20SI<br>SO | Ant1    | Low    | 2412      | AV       | 2310.000   | -47.75       | ≤-41.20     | 47.45           | ≤54            | PASS    |
|               |         |        |           | AV       | 2389.570   | -42.32       | ≤-41.20     | 52.88           | ≤54            | PASS    |
|               |         |        |           | AV       | 2390.000   | -42.4        | ≤-41.20     | 52.80           | ≤54            | PASS    |
|               |         |        |           | Peak     | 2310.000   | -41.83       | ≤-21.20     | 53.37           | ≤74            | PASS    |
|               |         |        |           | Peak     | 2386.840   | -28.26       | ≤-21.20     | 66.94           | ≤74            | PASS    |
|               |         |        |           | Peak     | 2390.000   | -31.71       | ≤-21.20     | 63.49           | ≤74            | PASS    |
|               |         | High   | 2462      | AV       | 2483.500   | -44.6        | ≤-41.20     | 50.60           | ≤54            | PASS    |
|               |         |        |           | AV       | 2483.890   | -44.65       | ≤-41.20     | 50.55           | ≤54            | PASS    |
|               |         |        |           | AV       | 2500.000   | -46.91       | ≤-41.20     | 48.29           | ≤54            | PASS    |
|               |         |        |           | Peak     | 2483.500   | -38.94       | ≤-21.20     | 56.26           | ≤74            | PASS    |
|               |         |        |           | Peak     | 2483.670   | -30.66       | ≤-21.20     | 64.54           | ≤74            | PASS    |



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Scan code to check authenticity



|               |      |      |      |      |          |        |         |       |     |      |
|---------------|------|------|------|------|----------|--------|---------|-------|-----|------|
| 11N40SI<br>SO | Ant1 | Low  | 2422 | Peak | 2500.000 | -41.71 | ≤-21.20 | 53.49 | ≤74 | PASS |
|               |      |      |      | AV   | 2310.000 | -47.51 | ≤-41.20 | 47.69 | ≤54 | PASS |
|               |      |      |      | AV   | 2389.570 | -41.93 | ≤-41.20 | 53.27 | ≤54 | PASS |
|               |      |      |      | AV   | 2390.000 | -42.53 | ≤-41.20 | 52.67 | ≤54 | PASS |
|               |      |      |      | Peak | 2310.000 | -43.7  | ≤-21.20 | 51.50 | ≤74 | PASS |
|               |      |      |      | Peak | 2389.960 | -26.25 | ≤-21.20 | 68.95 | ≤74 | PASS |
|               |      |      |      | Peak | 2390.000 | -26.25 | ≤-21.20 | 68.95 | ≤74 | PASS |
|               |      | High | 2452 | AV   | 2483.500 | -44.07 | ≤-41.20 | 51.13 | ≤54 | PASS |
|               |      |      |      | AV   | 2484.660 | -43.95 | ≤-41.20 | 51.25 | ≤54 | PASS |
|               |      |      |      | AV   | 2500.000 | -46.56 | ≤-41.20 | 48.64 | ≤54 | PASS |
|               |      |      |      | Peak | 2483.500 | -40.35 | ≤-21.20 | 54.85 | ≤74 | PASS |
|               |      |      |      | Peak | 2486.310 | -30.8  | ≤-21.20 | 64.40 | ≤74 | PASS |
|               |      |      |      | Peak | 2500.000 | -40.97 | ≤-21.20 | 54.23 | ≤74 | PASS |

## Note:

1. The Antenna Gain is compensated in the graph.
2. 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.

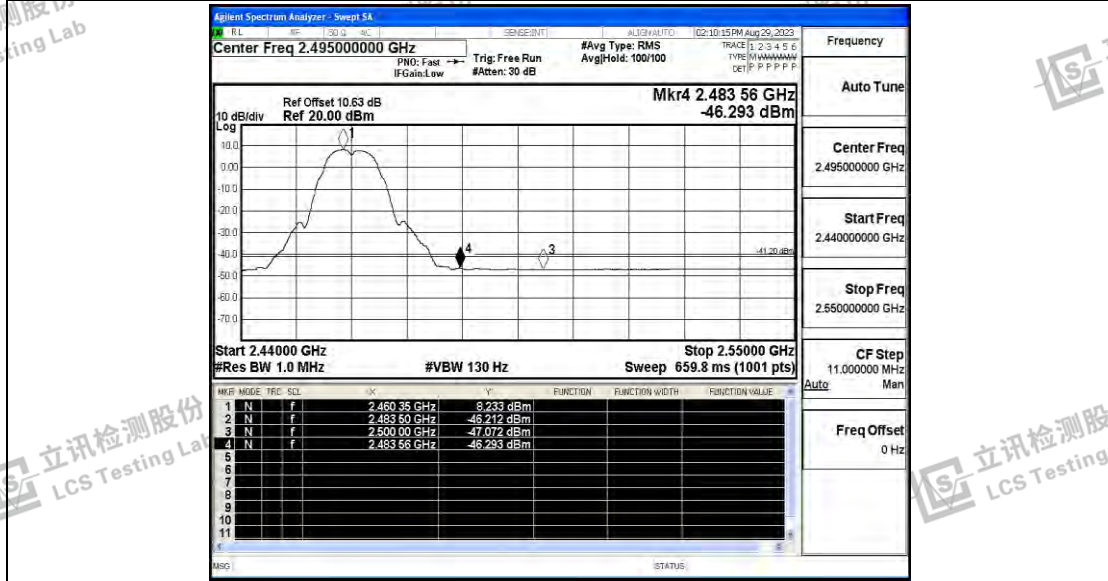


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Scan code to check authenticity

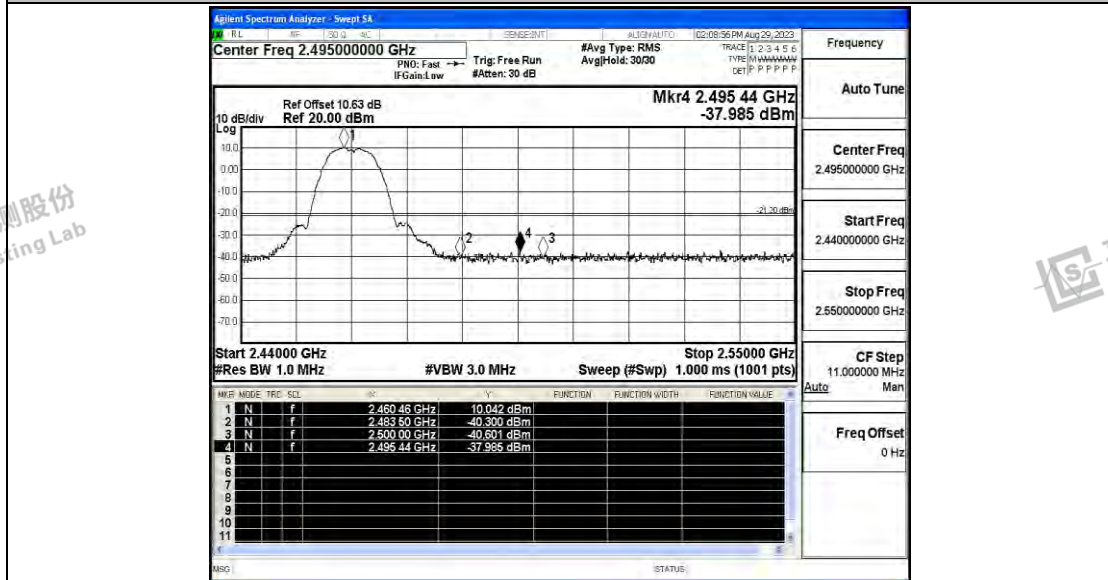


## Test Graphs



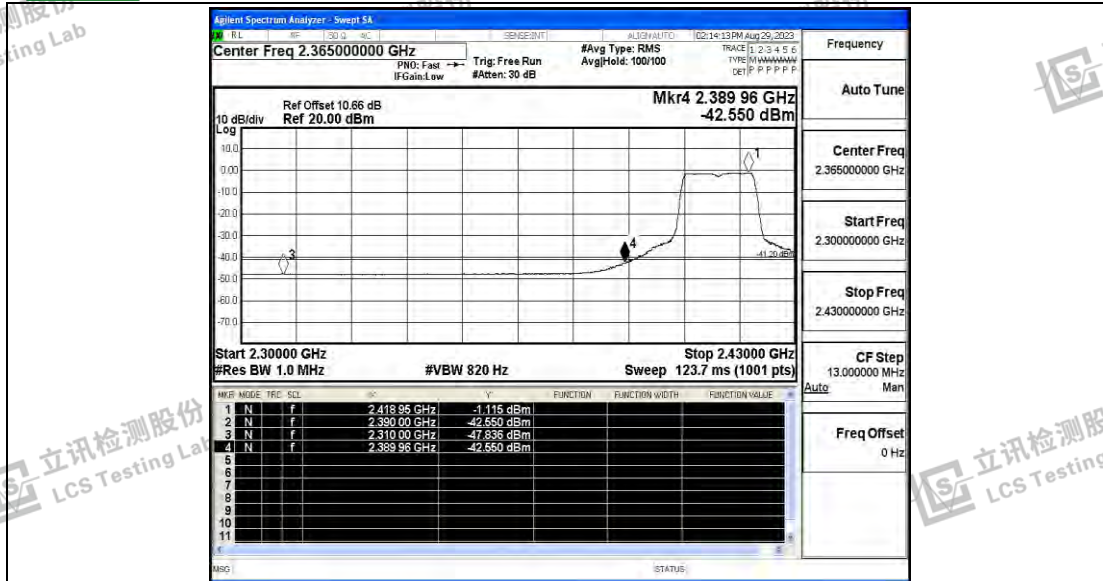


11B\_Ant1\_High\_2462\_Peak

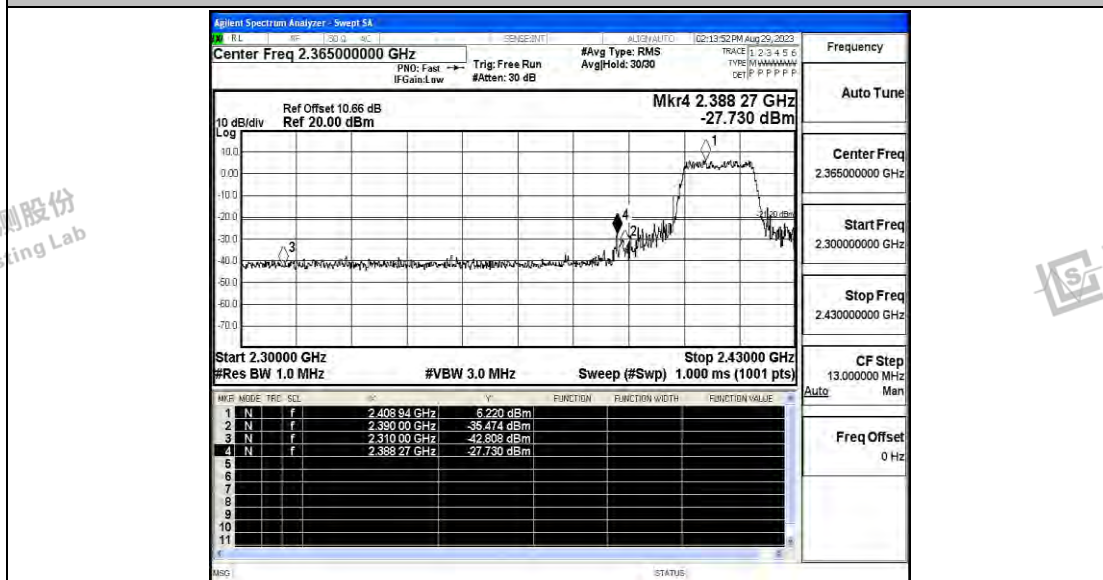


11G\_Ant1\_Low\_2412\_AV



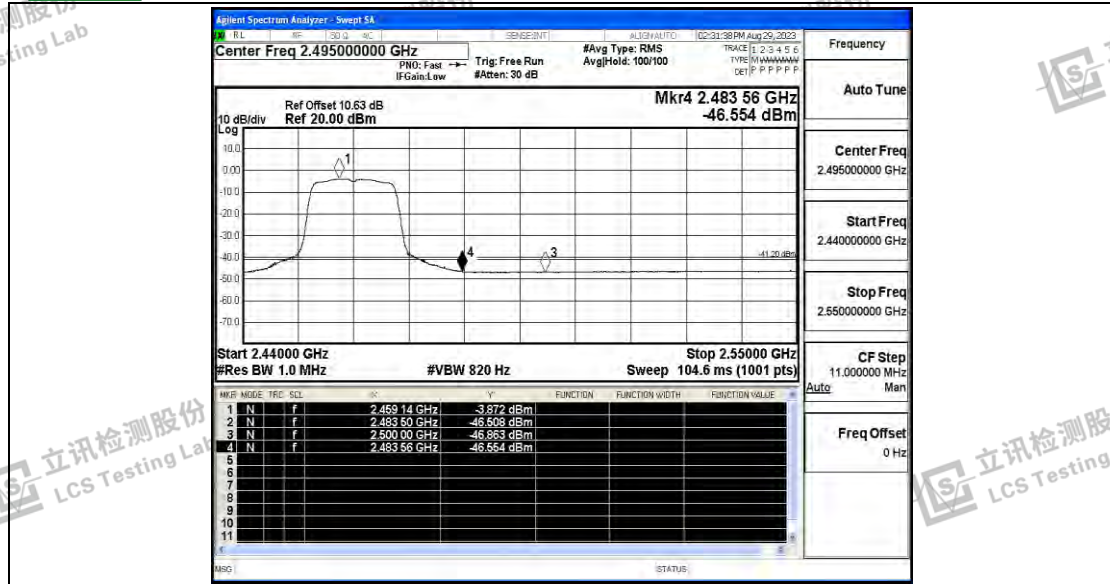


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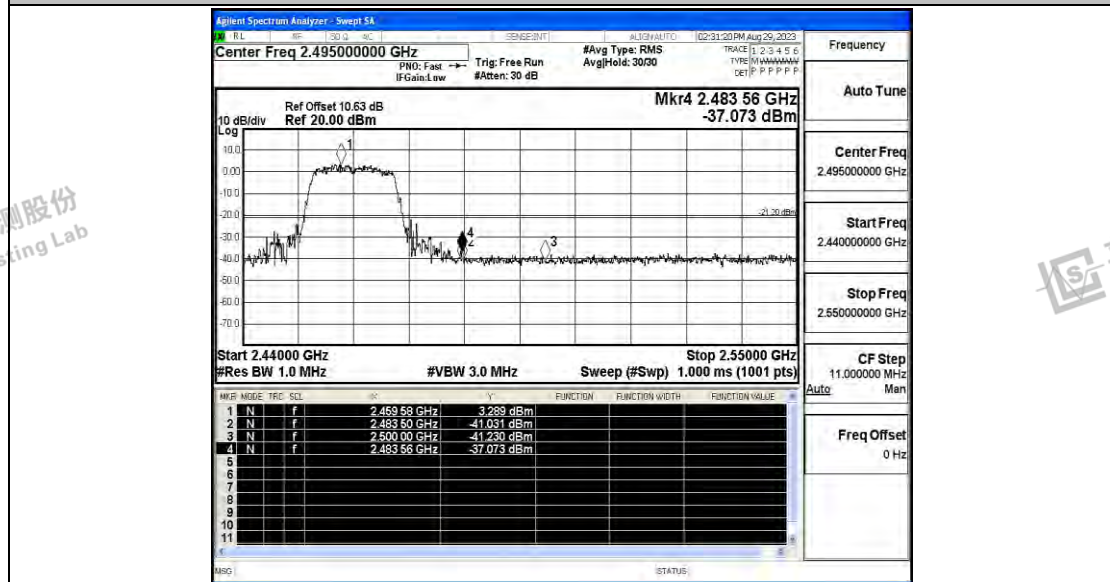


11G\_Ant1\_High\_2462\_AV



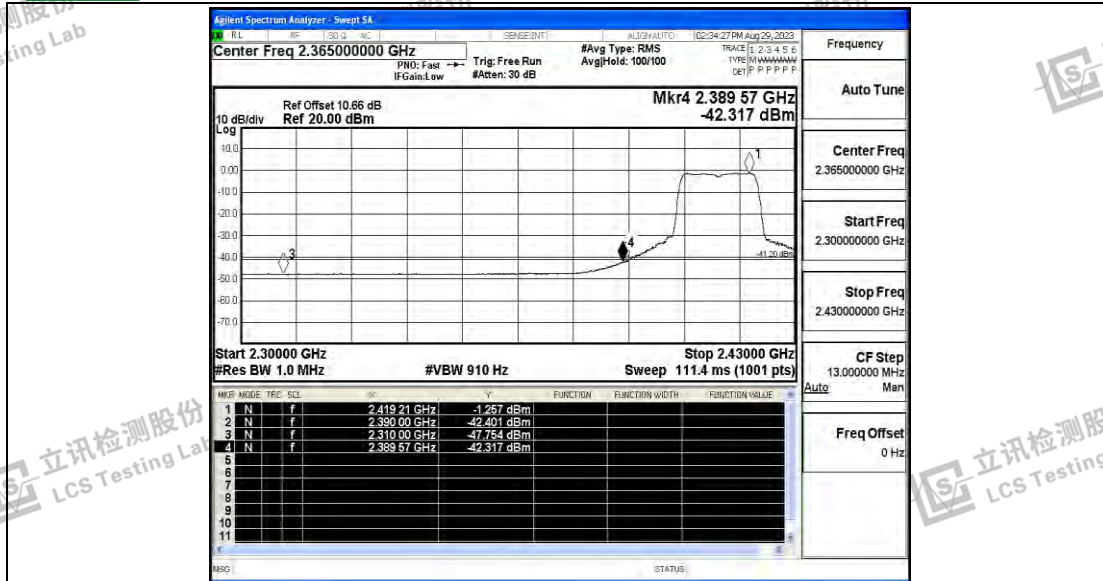


11G\_Ant1\_High\_2462\_Peak

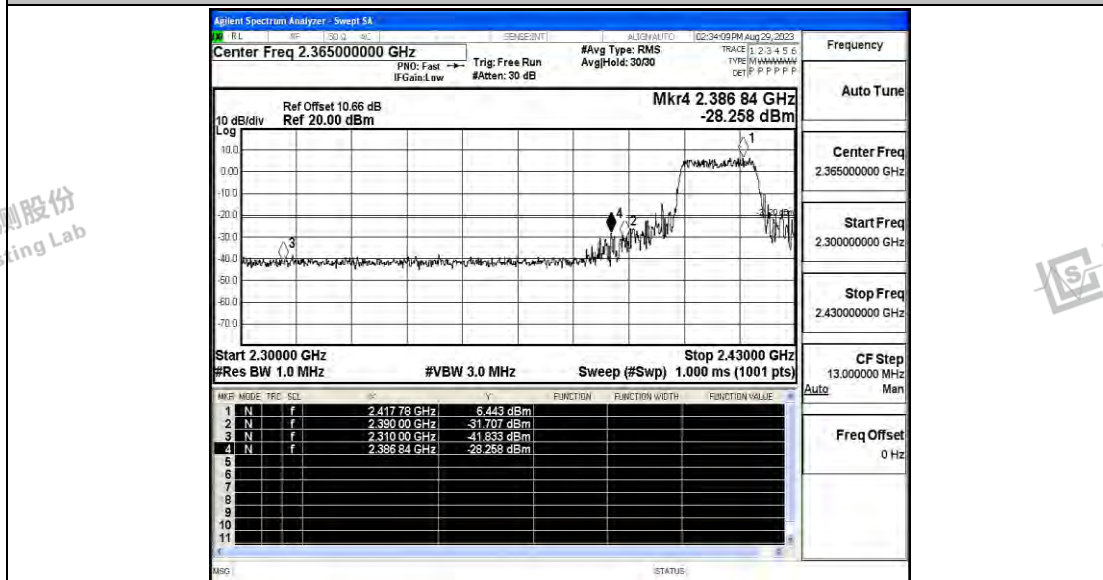


11N20SISO\_Ant1\_Low\_2412\_AV



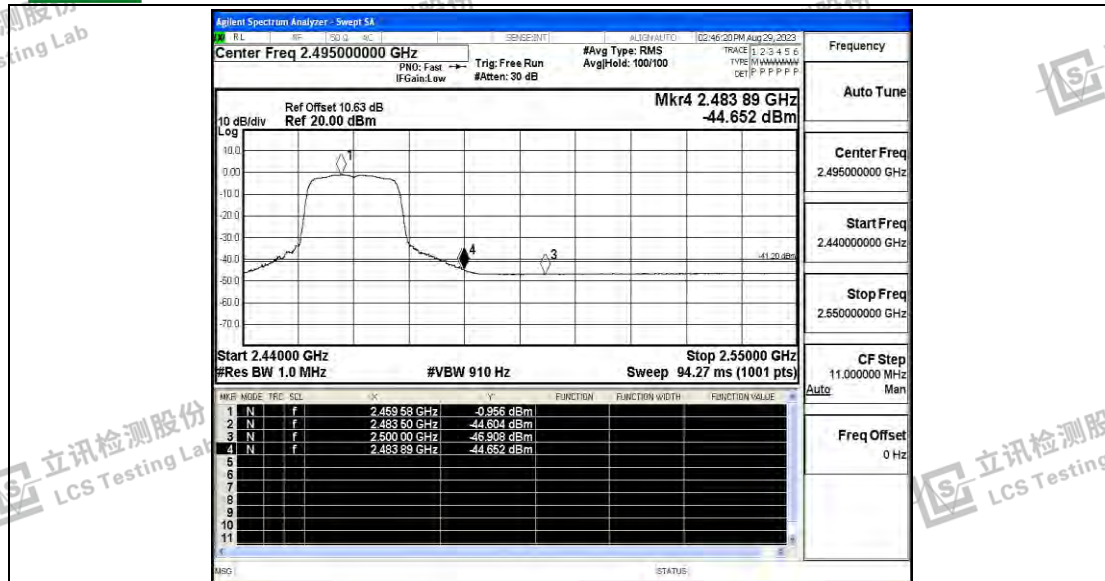


11N20SISO\_Ant1\_Low\_2412\_Peak

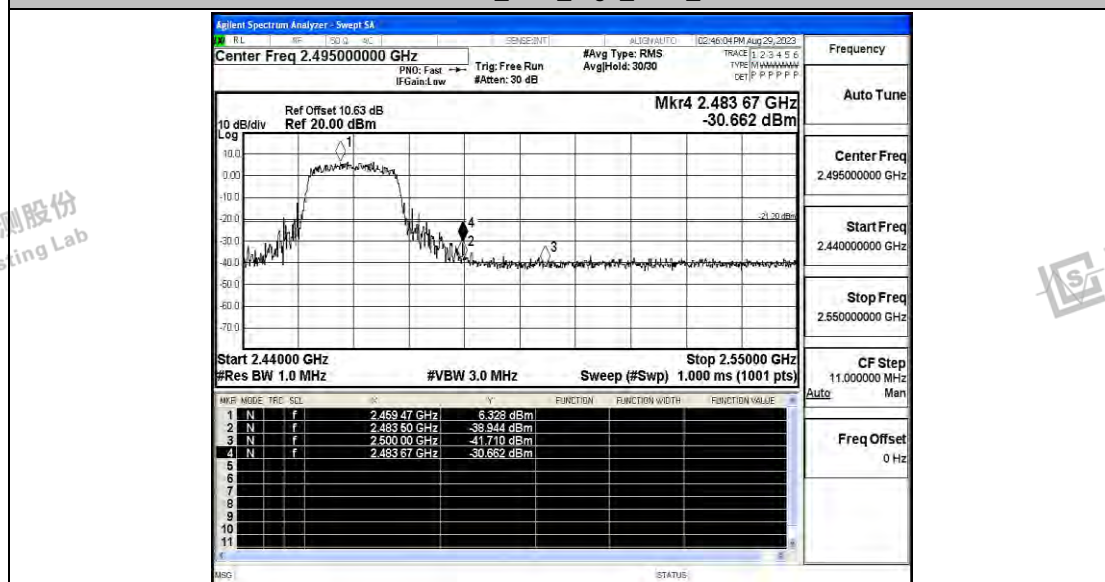


11N20SISO\_Ant1\_High\_2462\_AV



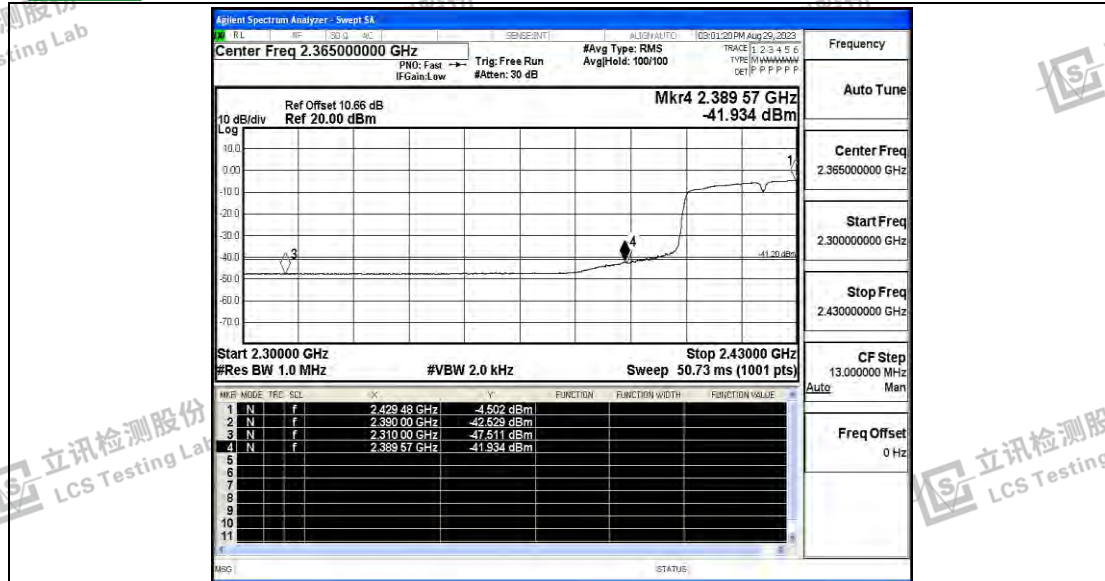


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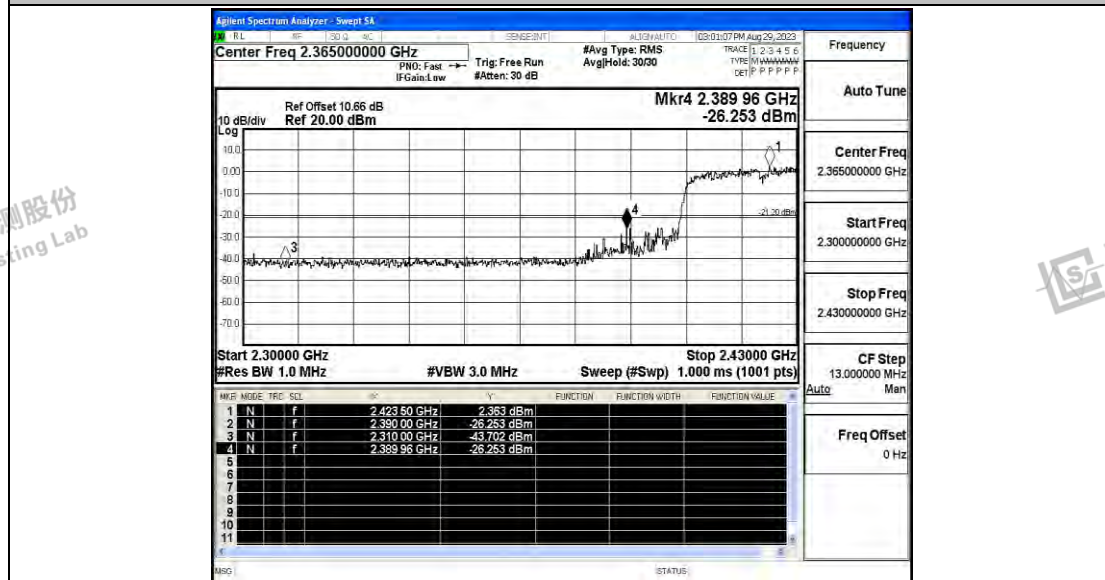


11N40SISO\_Ant1\_Low\_2422\_AV



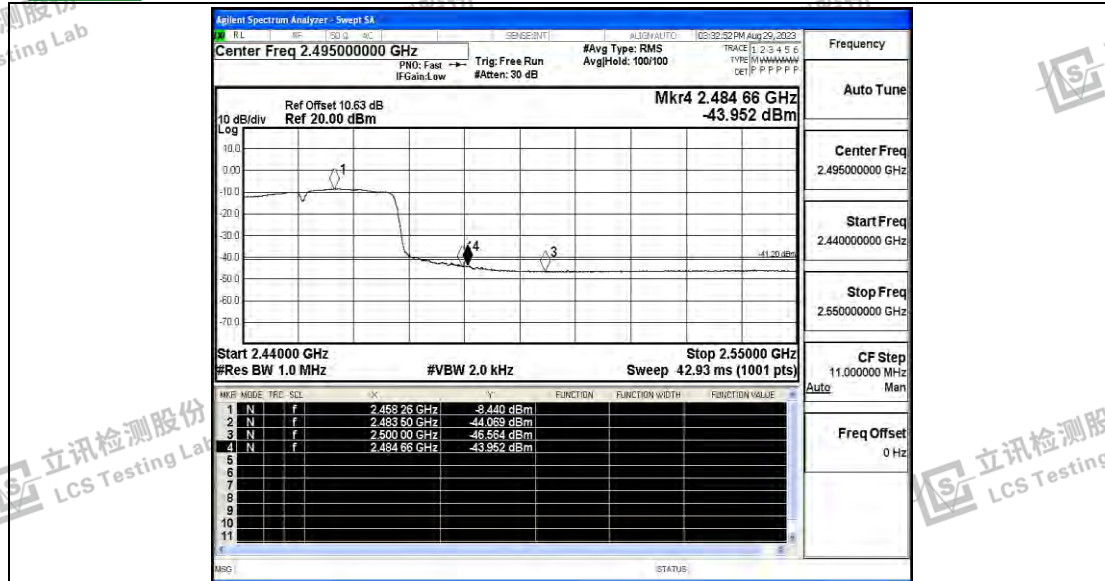


11N40SISO\_Ant1\_Low\_2422\_Peak



11N40SISO\_Ant1\_High\_2452\_AV





11N40SISO\_Ant1\_High\_2452\_Peak

