



Appendix B

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Smart Dimmer Switch

Test Model: US01

Environmental Conditions

| | |
|--------------------|------------------|
| Temperature: | 23.5°C |
| Relative Humidity: | 52.2% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | Nick Peng |
| | <i>Nick Peng</i> |
| Supervised by: | Ling Zhu |
| | <i>Ling Zhu</i> |





B.1 DTS Bandwidth

Test Result

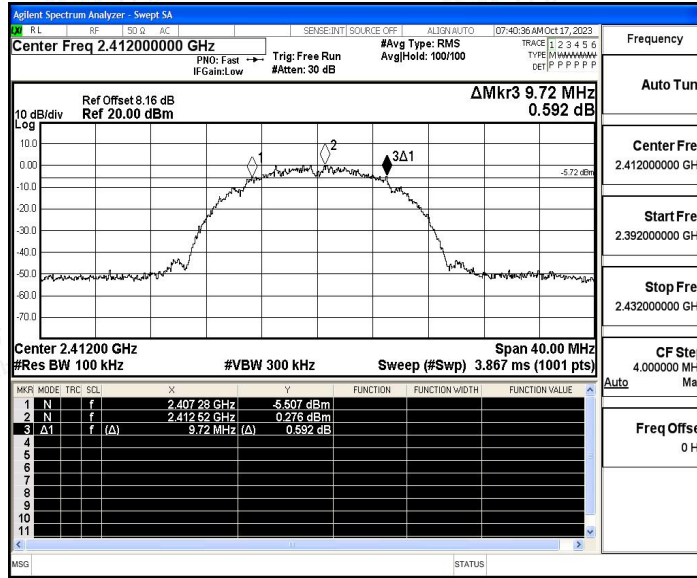
| TestMode | Antenna | Freq(MHz) | DTS BW [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|-----------|---------|-----------|--------------|----------|----------|------------|---------|
| 11B | Ant1 | 2412 | 9.720 | 2407.280 | 2417.000 | 0.5 | PASS |
| | | 2437 | 9.320 | 2432.240 | 2441.560 | 0.5 | PASS |
| | | 2462 | 8.680 | 2457.440 | 2466.120 | 0.5 | PASS |
| 11G | Ant1 | 2412 | 16.400 | 2403.800 | 2420.200 | 0.5 | PASS |
| | | 2437 | 16.400 | 2428.800 | 2445.200 | 0.5 | PASS |
| | | 2462 | 16.360 | 2453.840 | 2470.200 | 0.5 | PASS |
| 11N20SISO | Ant1 | 2412 | 17.520 | 2403.240 | 2420.760 | 0.5 | PASS |
| | | 2437 | 17.640 | 2428.200 | 2445.840 | 0.5 | PASS |
| | | 2462 | 17.600 | 2453.200 | 2470.800 | 0.5 | PASS |
| 11N40SISO | Ant1 | 2422 | 30.720 | 2406.560 | 2437.280 | 0.5 | PASS |
| | | 2437 | 31.680 | 2421.560 | 2453.240 | 0.5 | PASS |
| | | 2452 | 31.120 | 2436.560 | 2467.680 | 0.5 | PASS |



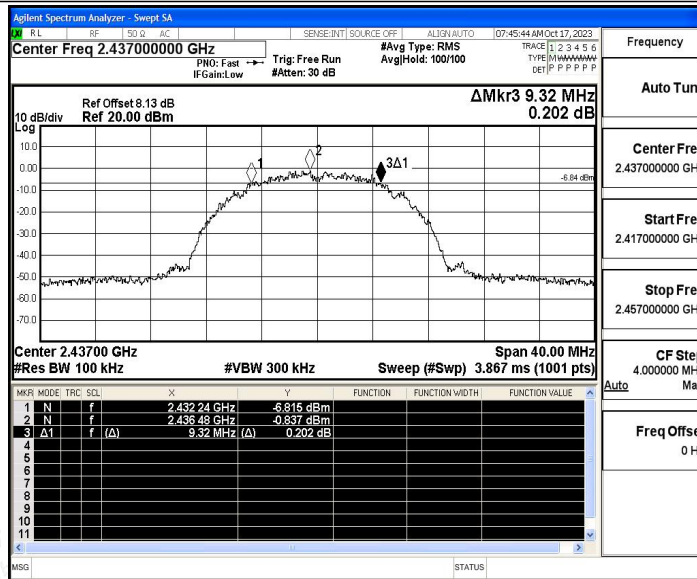


Test Graphs

11B_Ant1_2412

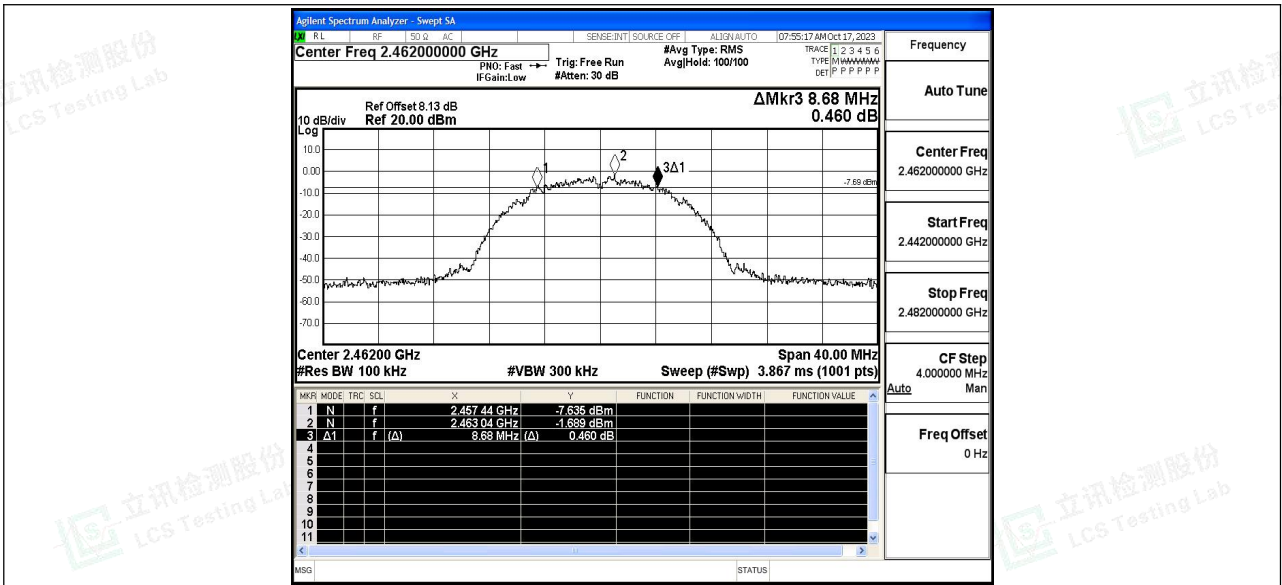


11B_Ant1_2437

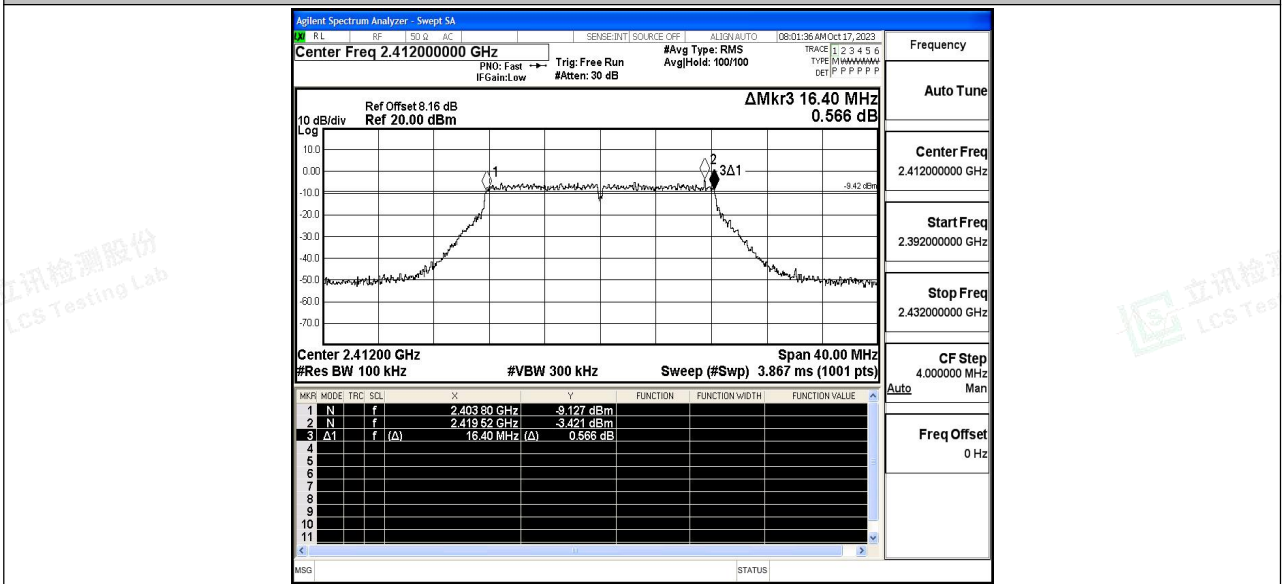


11B_Ant1_2462



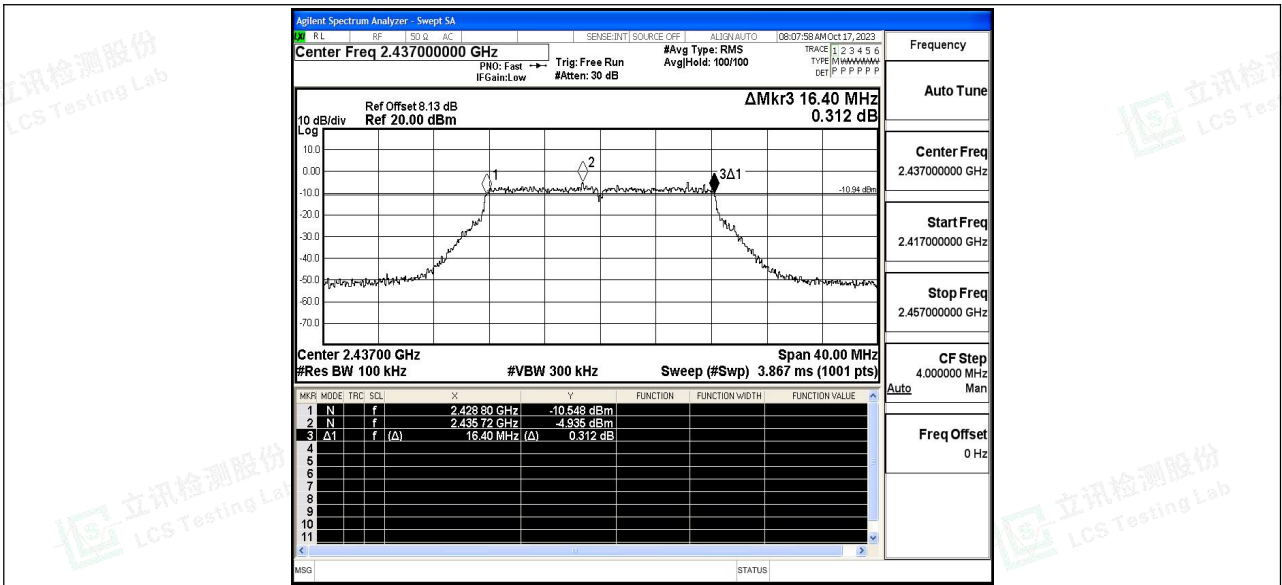


11G_Ant1_2412

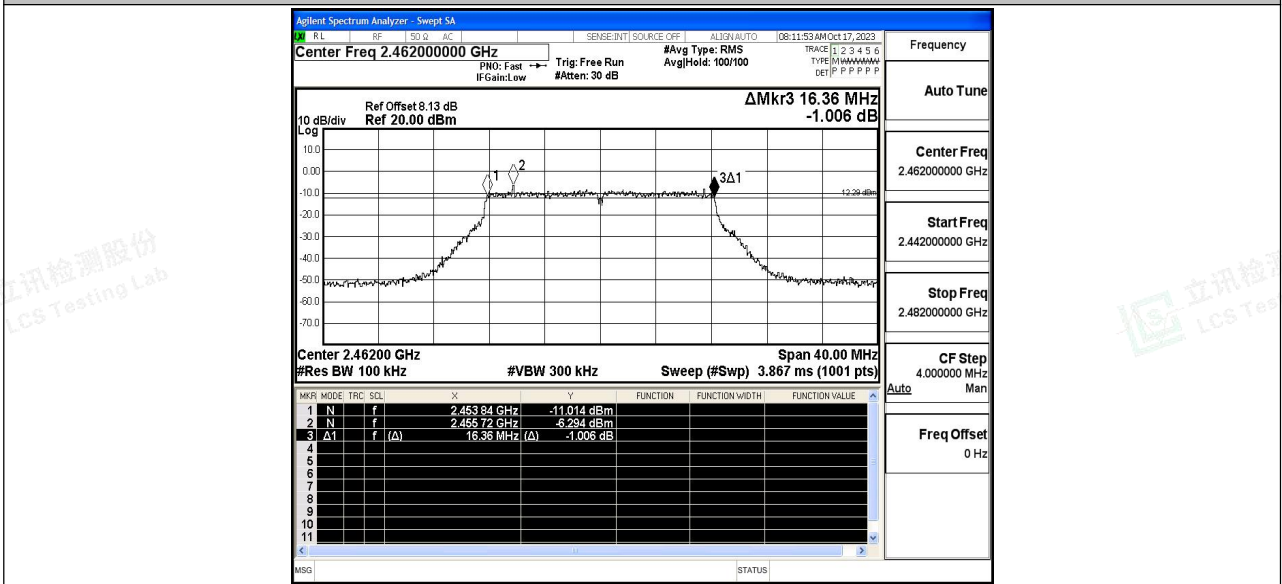


11G_Ant1_2437



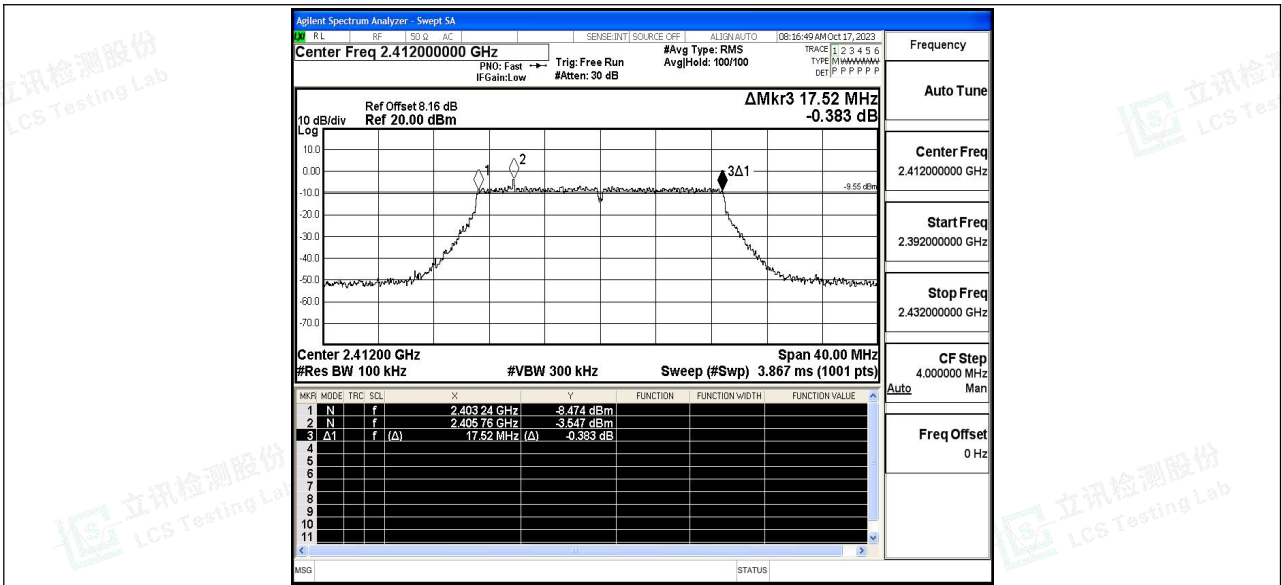


11G_Ant1_2462

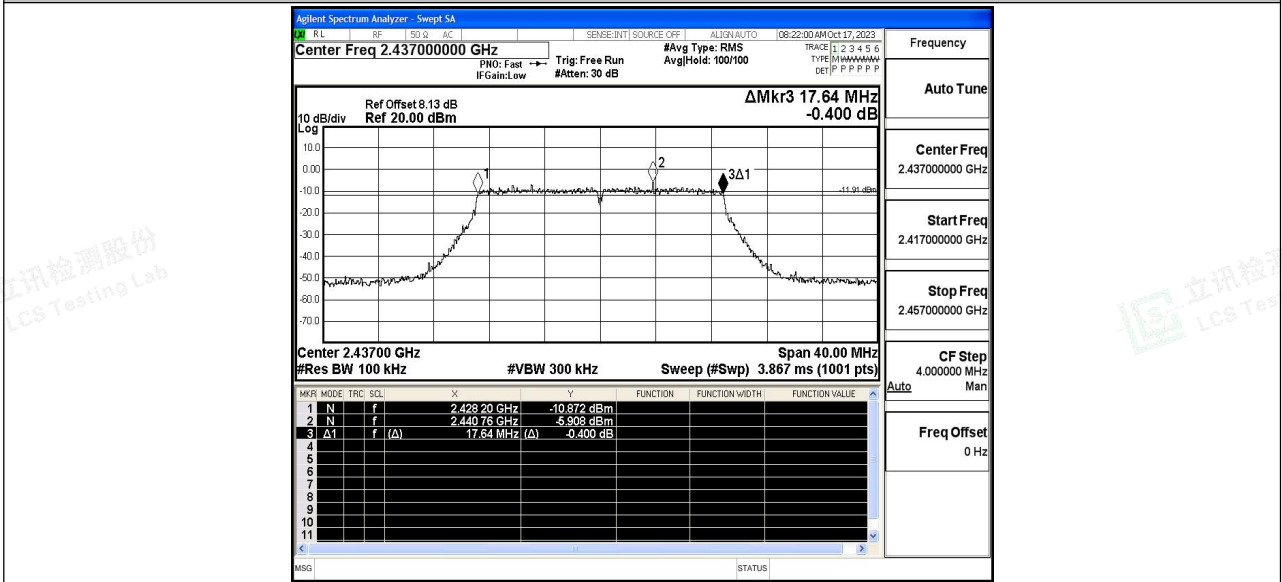


11N20SISO_Ant1_2412



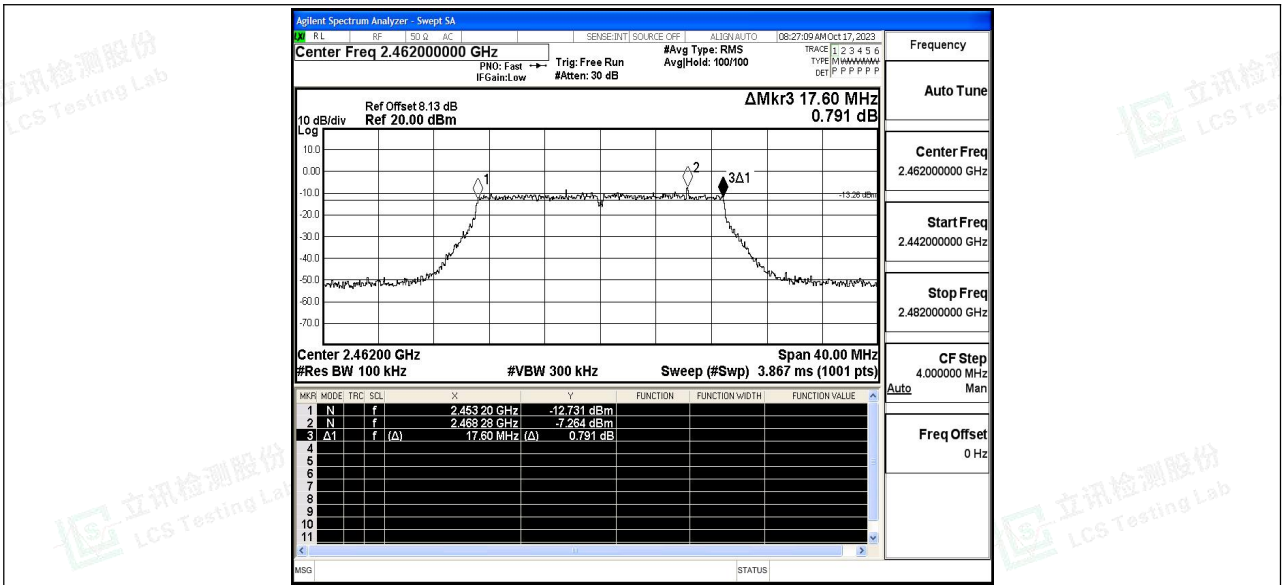


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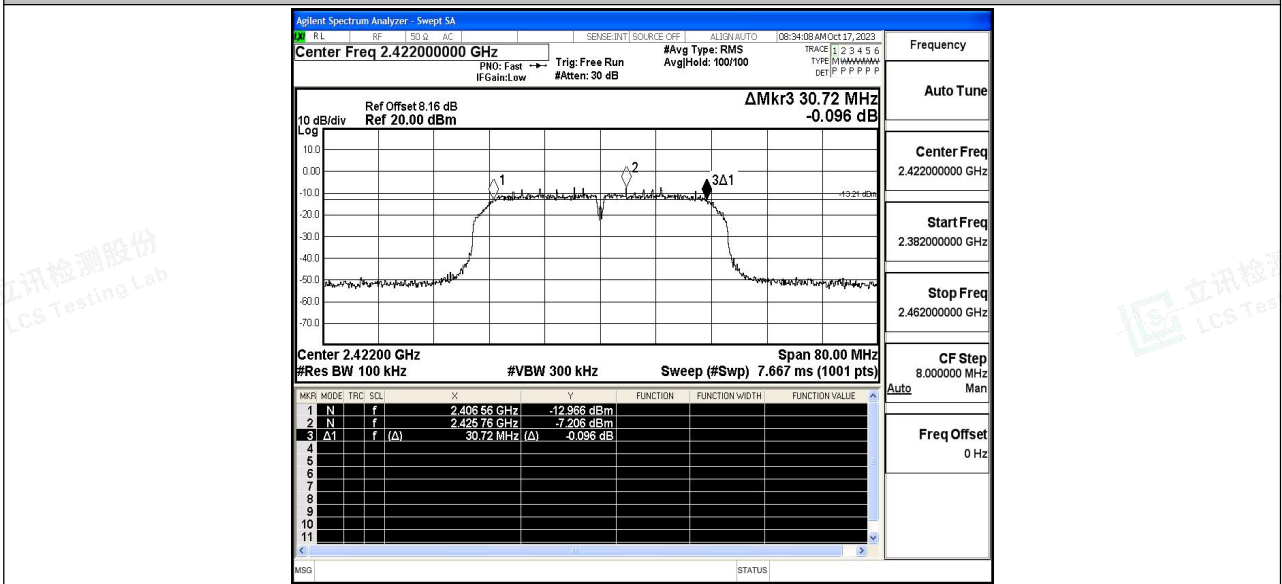


11N20SISO_Ant1_2462





11N40SISO_Ant1_2422



11N40SISO_Ant1_2437

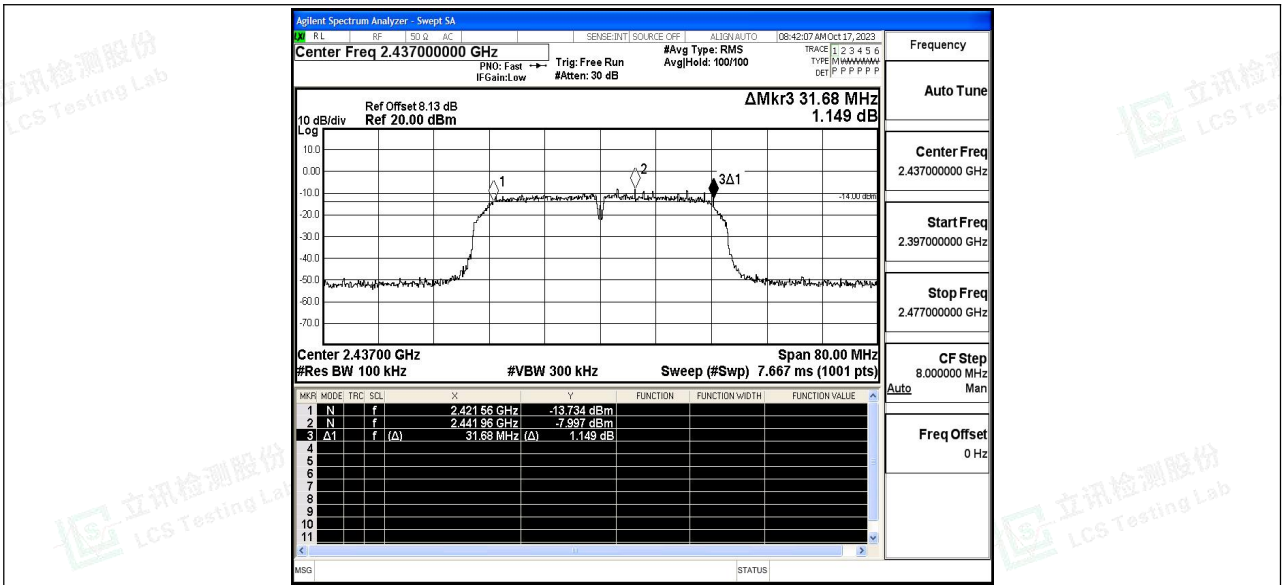


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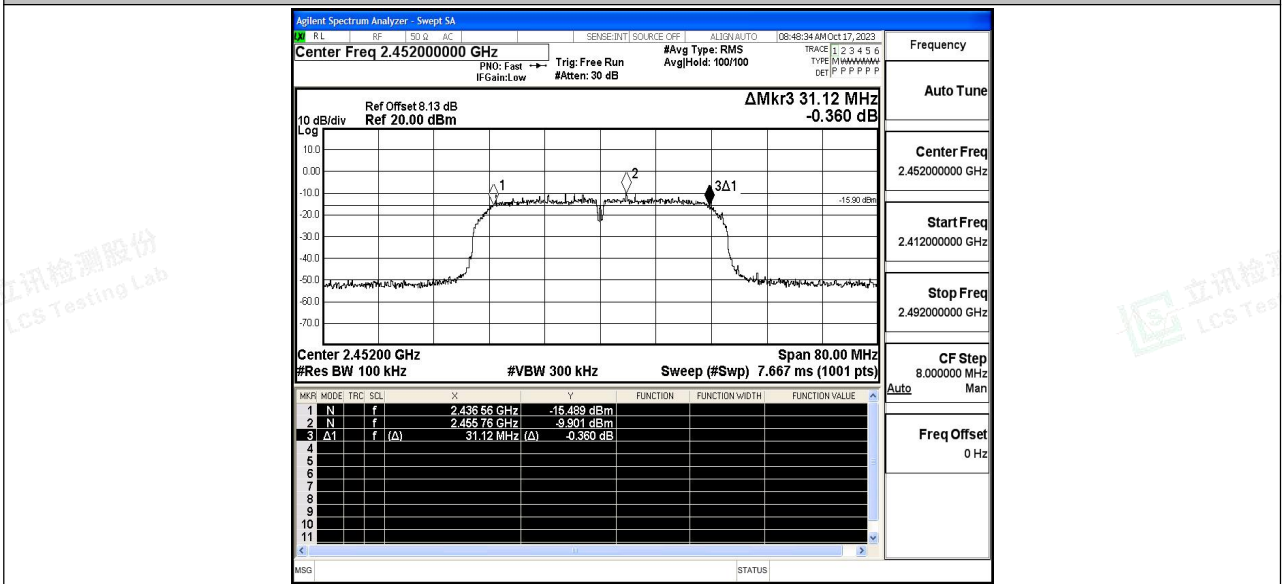
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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11N40SISO_Ant1_2452





B.2 Occupied Channel Bandwidth

Test Result

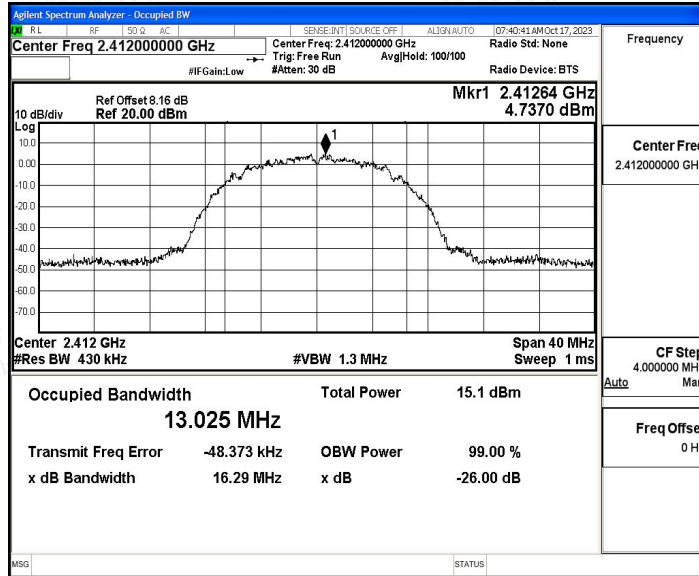
| TestMode | Antenna | Freq(MHz) | OCB [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|-----------|---------|-----------|-----------|-----------|-----------|------------|---------|
| 11B | Ant1 | 2412 | 13.025 | 2405.4391 | 2418.4641 | --- | --- |
| | | 2437 | 13.099 | 2430.4462 | 2443.5452 | --- | --- |
| | | 2462 | 13.142 | 2455.4334 | 2468.5754 | --- | --- |
| 11G | Ant1 | 2412 | 17.204 | 2403.3614 | 2420.5654 | --- | --- |
| | | 2437 | 17.164 | 2428.4423 | 2445.6063 | --- | --- |
| | | 2462 | 17.136 | 2453.4411 | 2470.5771 | --- | --- |
| 11N20SISO | Ant1 | 2412 | 18.174 | 2402.9059 | 2421.0799 | --- | --- |
| | | 2437 | 18.162 | 2427.9222 | 2446.0842 | --- | --- |
| | | 2462 | 18.154 | 2452.9336 | 2471.0876 | --- | --- |
| 11N40SISO | Ant1 | 2422 | 34.157 | 2404.9077 | 2439.0647 | --- | --- |
| | | 2437 | 34.001 | 2420.0474 | 2454.0484 | --- | --- |
| | | 2452 | 34.120 | 2435.0151 | 2469.1351 | --- | --- |



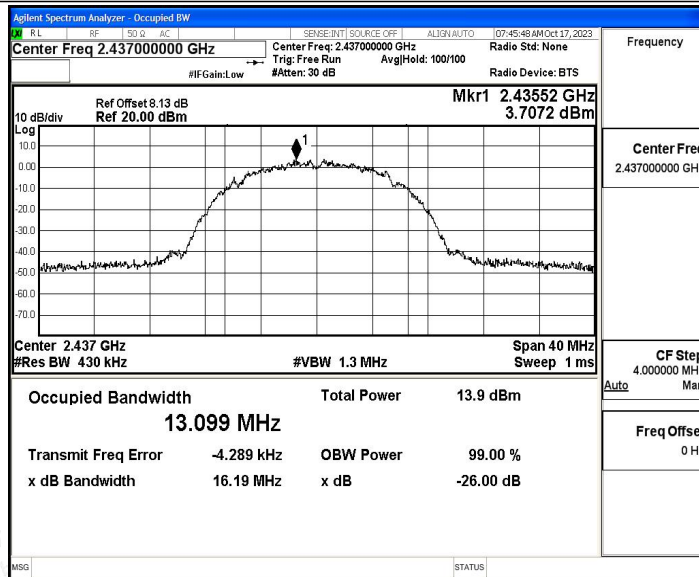


Test Graphs

11B_Ant1_2412

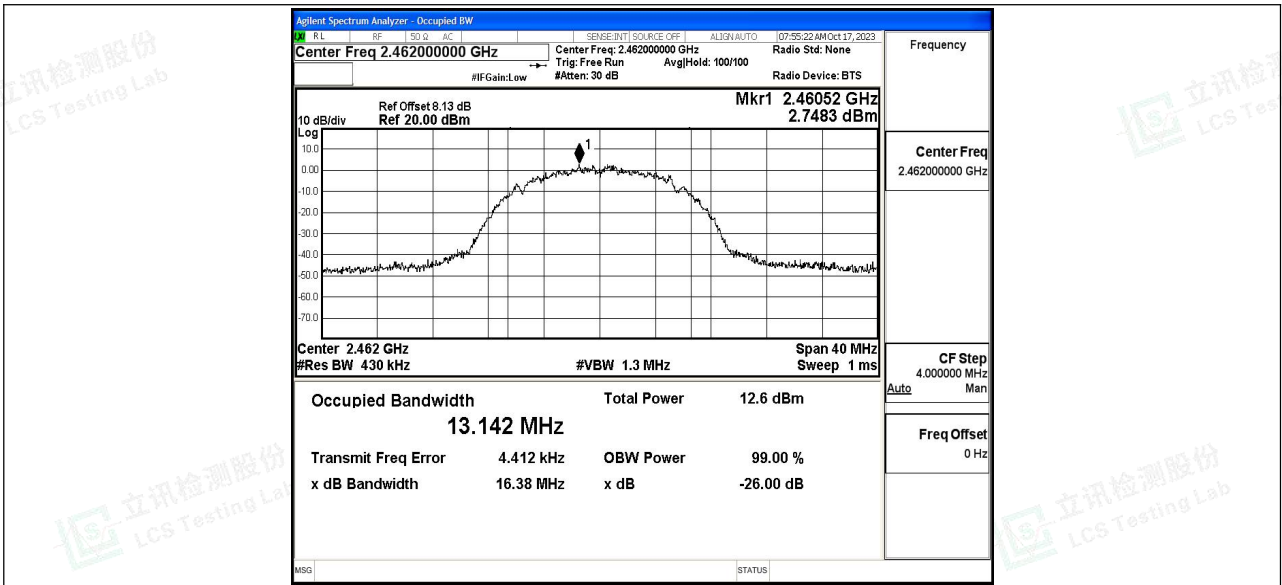


11B_Ant1_2437

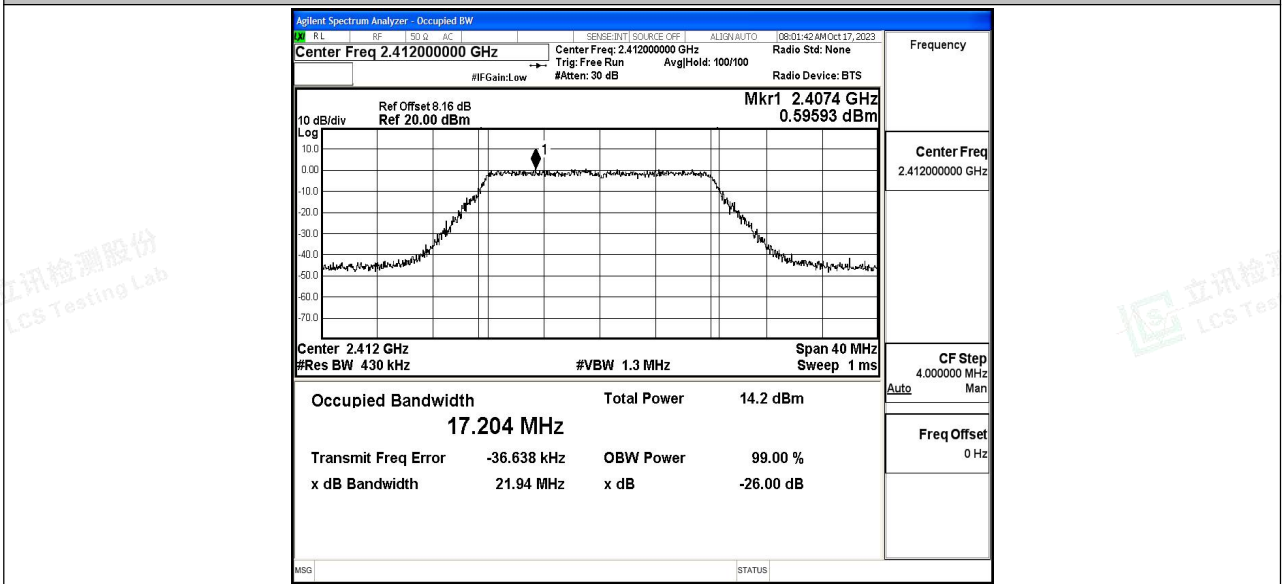


11B_Ant1_2462





11G_Ant1_2412



11G_Ant1_2437

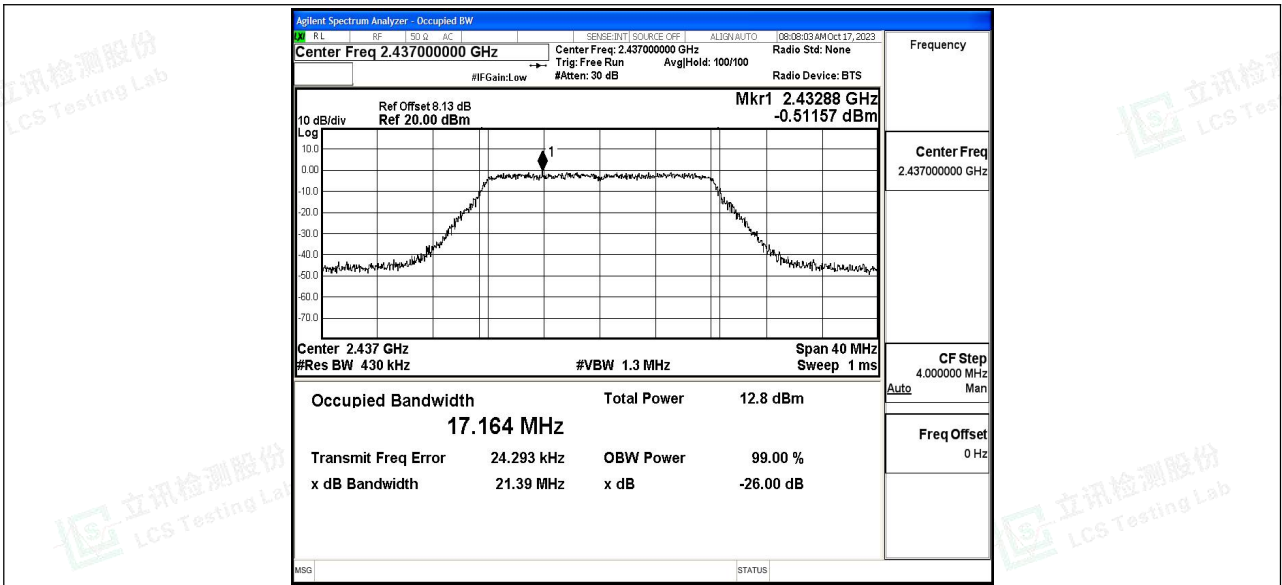


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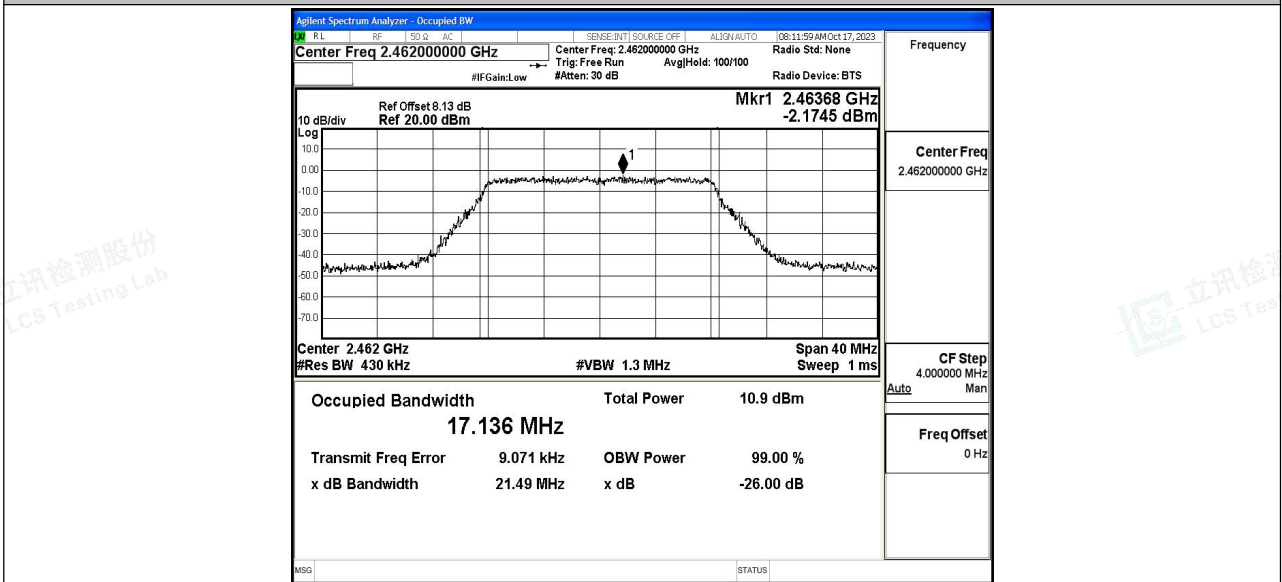
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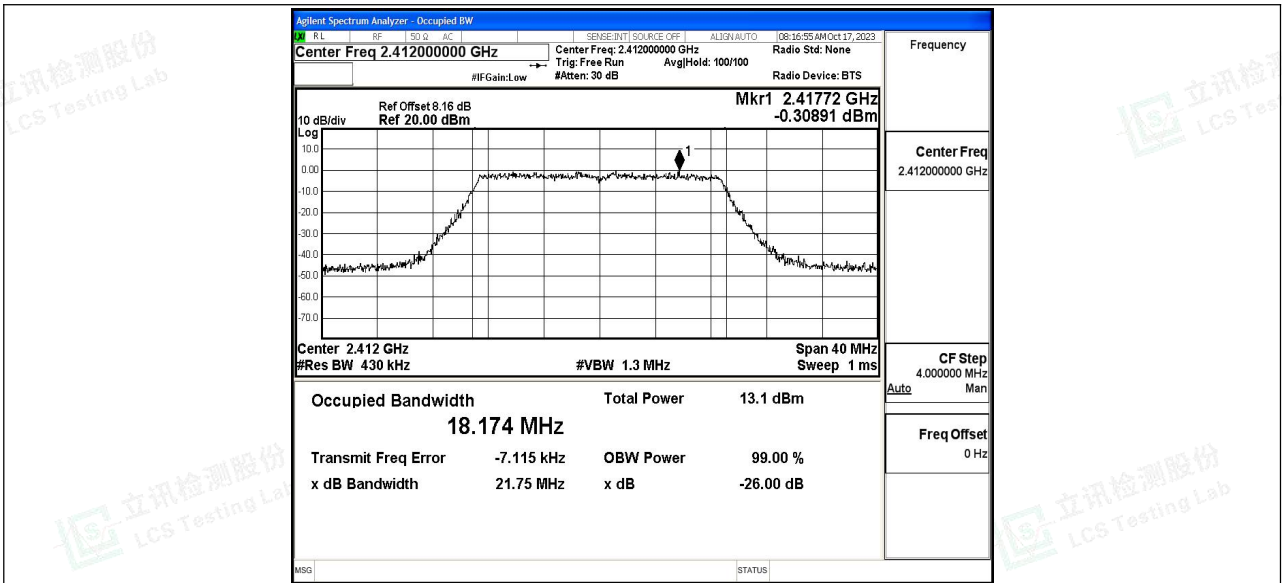


11G_Ant1_2462

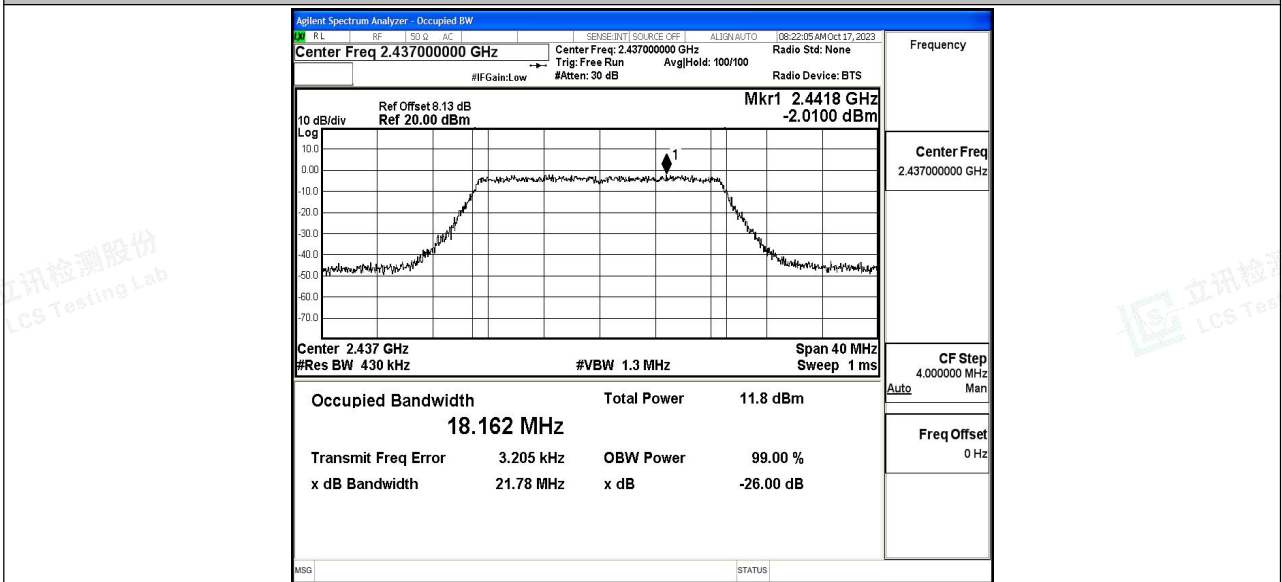


11N20SISO_Ant1_2412



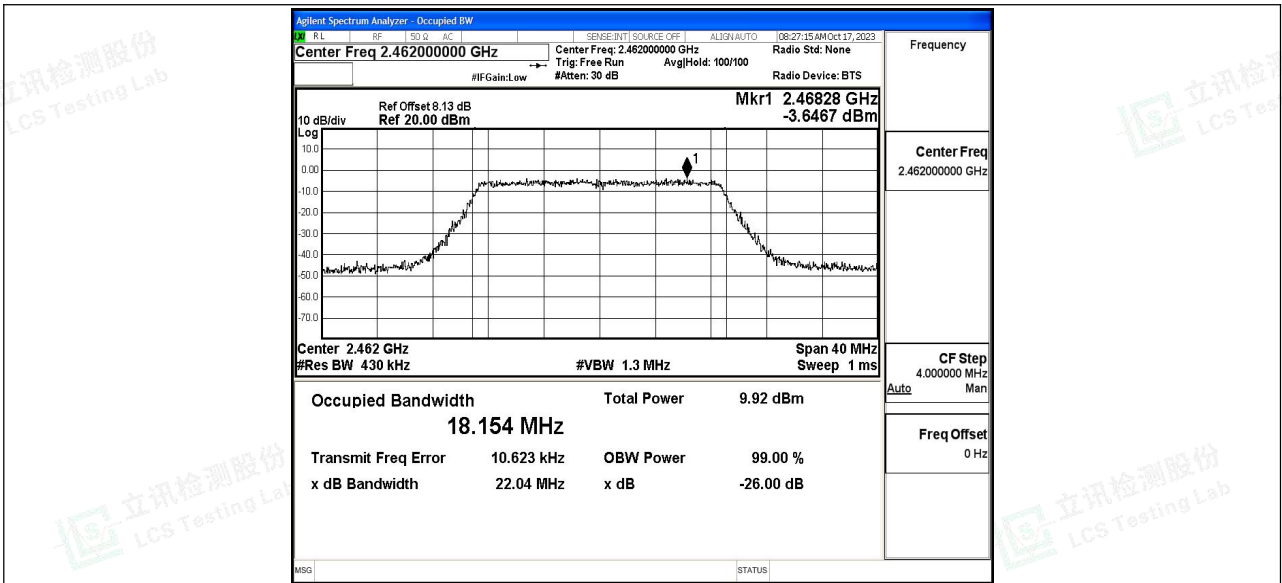


11N20SISO_Ant1_2437

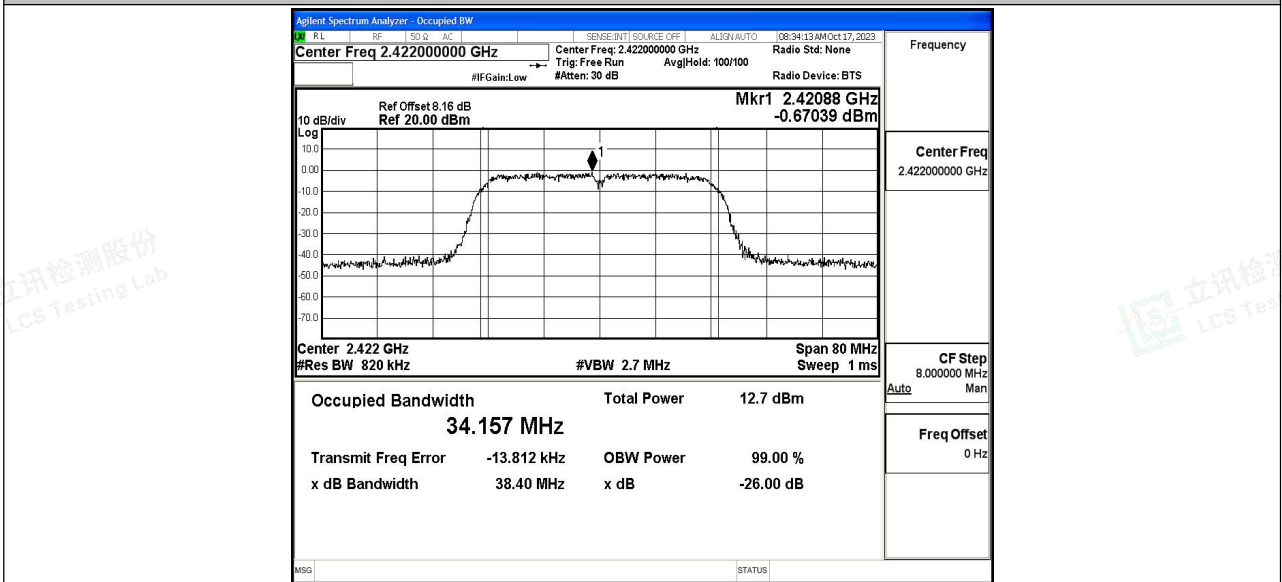


11N20SISO_Ant1_2462





11N40SISO_Ant1_2422



11N40SISO_Ant1_2437

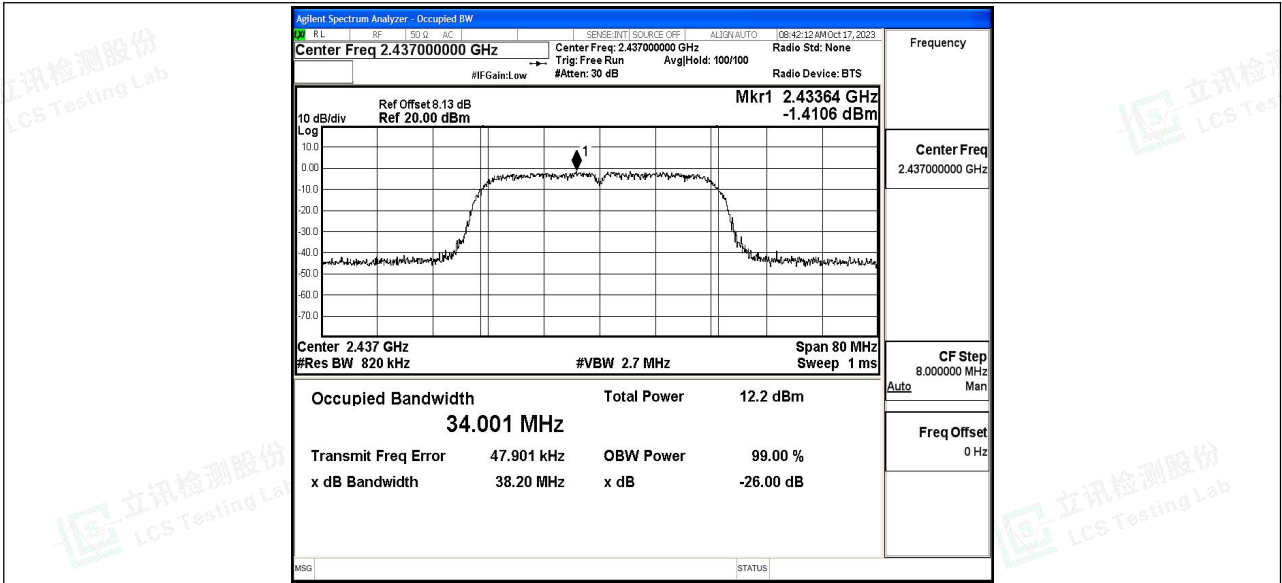


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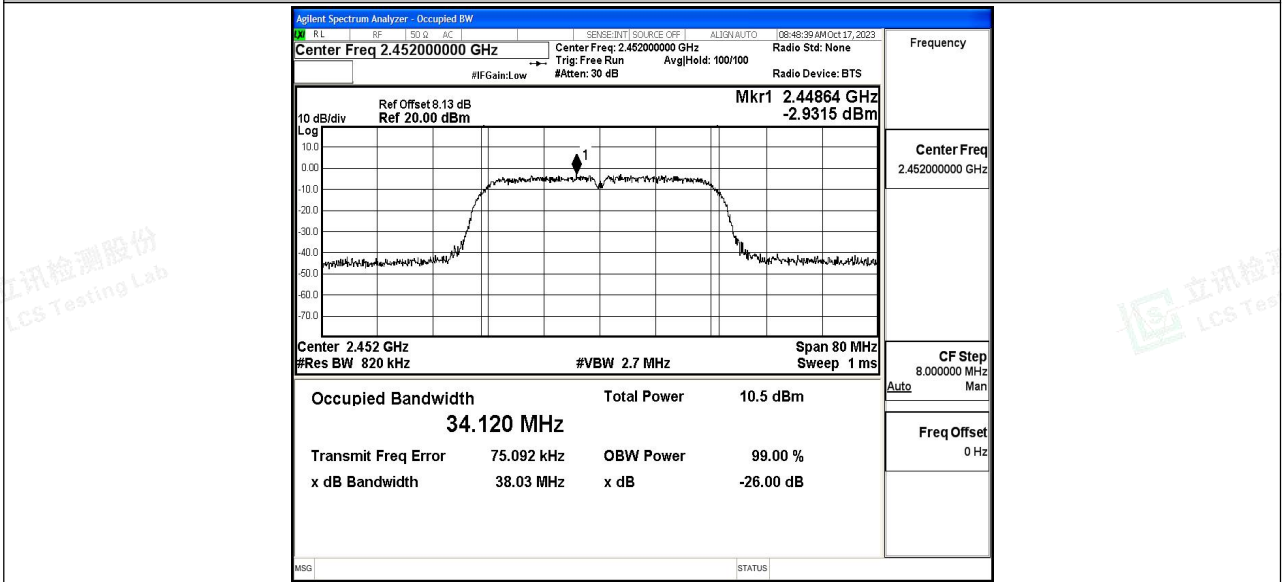
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B.3 Maximum Peak Conducted Output Power

Test Result Peak

| TestMode | Antenna | Freq(MHz) | Peak Power[dBm] | Conducted Limit[dBm] | Verdict |
|-----------|---------|-----------|-----------------|----------------------|---------|
| 11B | Ant1 | 2412 | 14.89 | ≤30.00 | PASS |
| | | 2437 | 13.74 | ≤30.00 | PASS |
| | | 2462 | 12.37 | ≤30.00 | PASS |
| 11G | Ant1 | 2412 | 15.06 | ≤30.00 | PASS |
| | | 2437 | 13.80 | ≤30.00 | PASS |
| | | 2462 | 11.78 | ≤30.00 | PASS |
| 11N20SISO | Ant1 | 2412 | 14.04 | ≤30.00 | PASS |
| | | 2437 | 12.68 | ≤30.00 | PASS |
| | | 2462 | 10.70 | ≤30.00 | PASS |
| 11N40SISO | Ant1 | 2422 | 13.21 | ≤30.00 | PASS |
| | | 2437 | 12.61 | ≤30.00 | PASS |
| | | 2452 | 10.78 | ≤30.00 | PASS |

EIRP

| Condition | Mode | Frequency (MHz) | Antenna | Maximum Peak Output Power [dBm] | Antenna Gain | Report EIRP Power(dBm) | Limit (dBm) | Verdict |
|-----------|------|-----------------|---------|---------------------------------|--------------|------------------------|-------------|---------|
| NVNT | b | 2412 | Ant1 | 14.89 | -1.29 | 13.6 | 36 | Pass |
| NVNT | b | 2437 | Ant1 | 13.74 | -1.29 | 12.45 | 36 | Pass |
| NVNT | b | 2462 | Ant1 | 12.37 | -1.29 | 11.08 | 36 | Pass |
| NVNT | g | 2412 | Ant1 | 15.06 | -1.29 | 13.77 | 36 | Pass |
| NVNT | g | 2437 | Ant1 | 13.80 | -1.29 | 12.51 | 36 | Pass |
| NVNT | g | 2462 | Ant1 | 11.78 | -1.29 | 10.49 | 36 | Pass |
| NVNT | n20 | 2412 | Ant1 | 14.04 | -1.29 | 12.75 | 36 | Pass |
| NVNT | n20 | 2437 | Ant1 | 12.68 | -1.29 | 11.39 | 36 | Pass |
| NVNT | n20 | 2462 | Ant1 | 10.70 | -1.29 | 9.41 | 36 | Pass |
| NVNT | n40 | 2422 | Ant1 | 13.21 | -1.29 | 11.92 | 36 | Pass |
| NVNT | n40 | 2437 | Ant1 | 12.61 | -1.29 | 11.32 | 36 | Pass |
| NVNT | n40 | 2452 | Ant1 | 10.78 | -1.29 | 9.49 | 36 | Pass |



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B.4 Maximum power spectral density

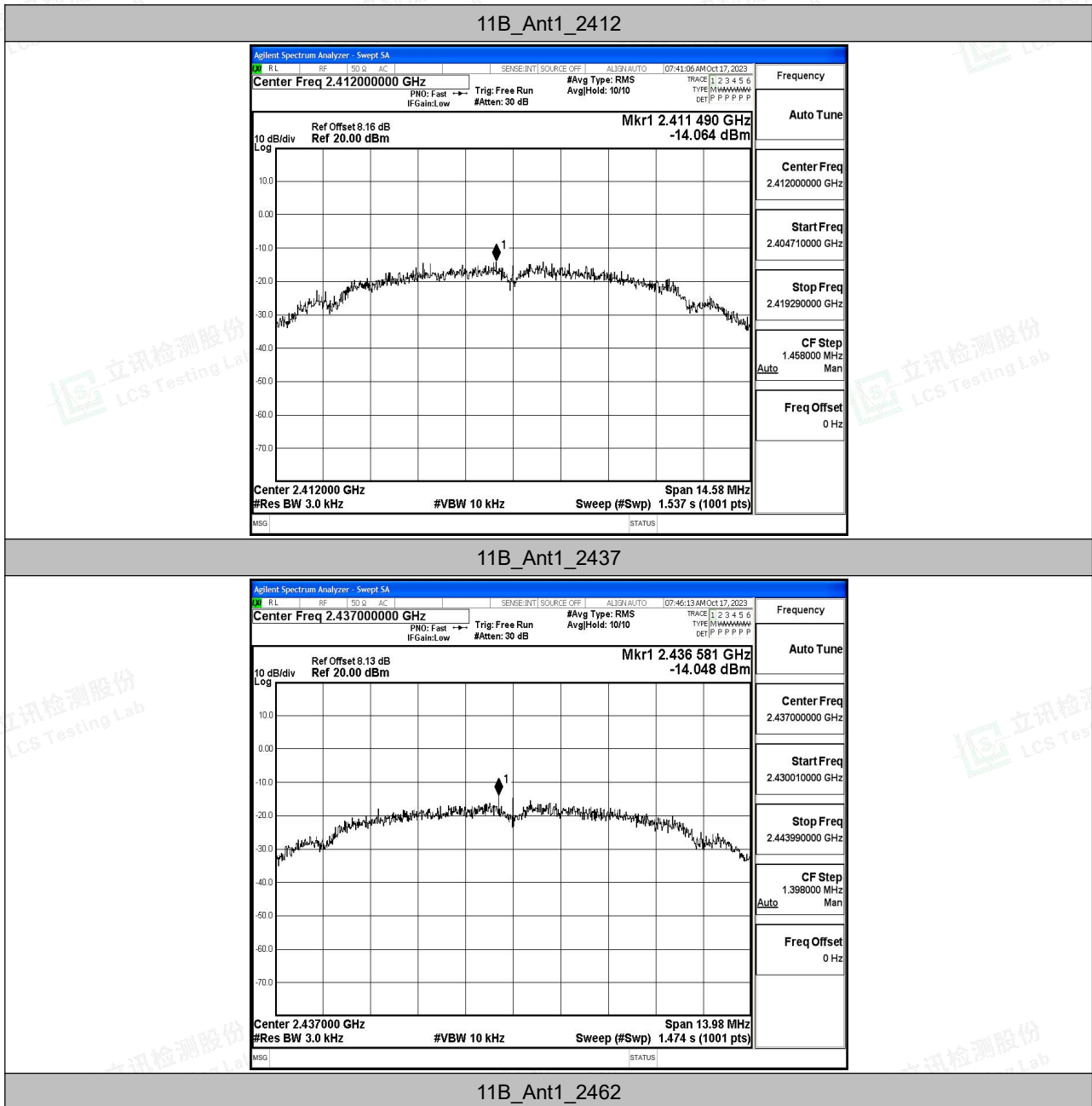
Test Result

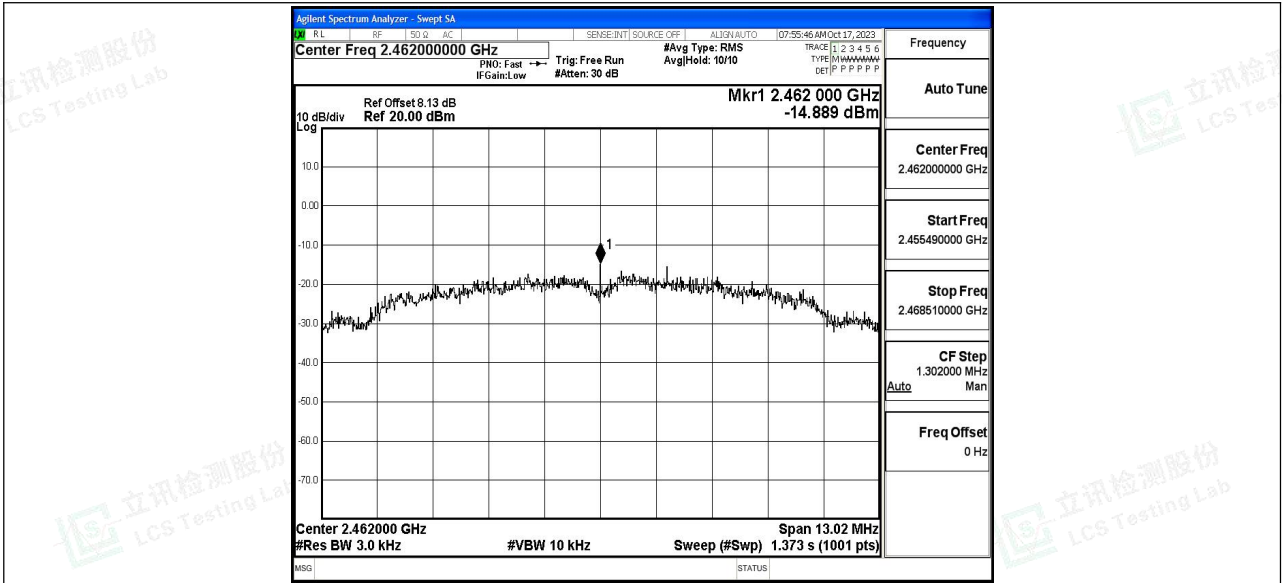
| TestMode | Antenna | Freq(MHz) | Result [dBm/3kHz] | Limit [dBm/3kHz] | Verdict |
|-----------|---------|-----------|-------------------|------------------|---------|
| 11B | Ant1 | 2412 | -14.06 | ≤8.00 | PASS |
| | | 2437 | -14.05 | ≤8.00 | PASS |
| | | 2462 | -14.89 | ≤8.00 | PASS |
| 11G | Ant1 | 2412 | -16.76 | ≤8.00 | PASS |
| | | 2437 | -17.8 | ≤8.00 | PASS |
| | | 2462 | -17.41 | ≤8.00 | PASS |
| 11N20SISO | Ant1 | 2412 | -17.24 | ≤8.00 | PASS |
| | | 2437 | -18.74 | ≤8.00 | PASS |
| | | 2462 | -18.58 | ≤8.00 | PASS |
| 11N40SISO | Ant1 | 2422 | -19.63 | ≤8.00 | PASS |
| | | 2437 | -19.37 | ≤8.00 | PASS |
| | | 2452 | -19.18 | ≤8.00 | PASS |



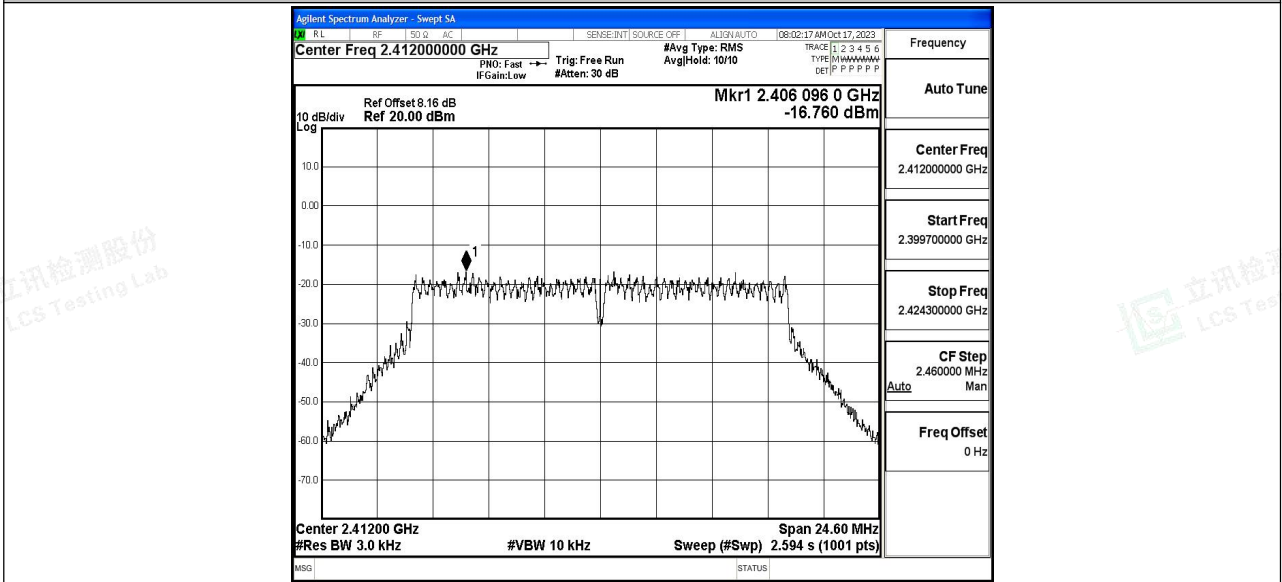


Test Graphs



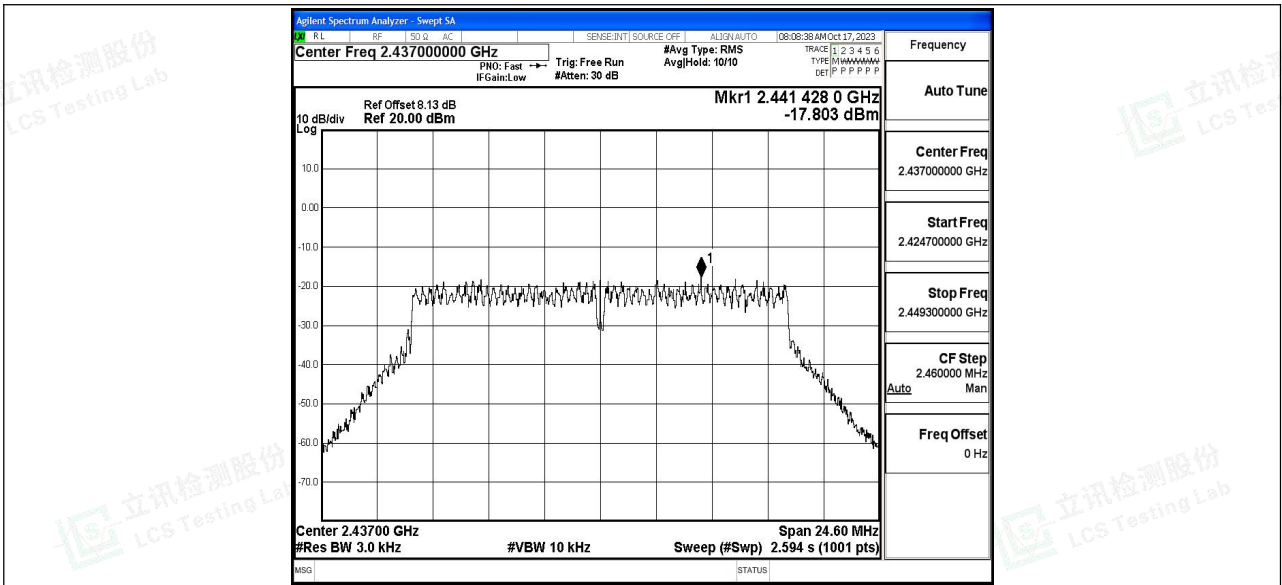


11G_Ant1_2412

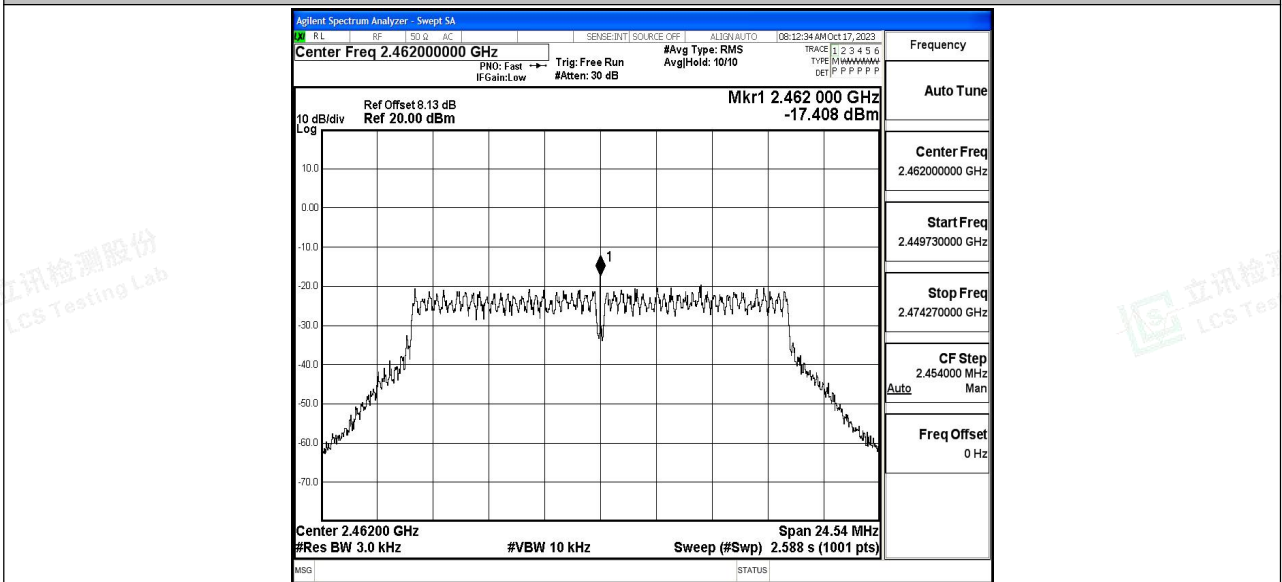


11G_Ant1_2437



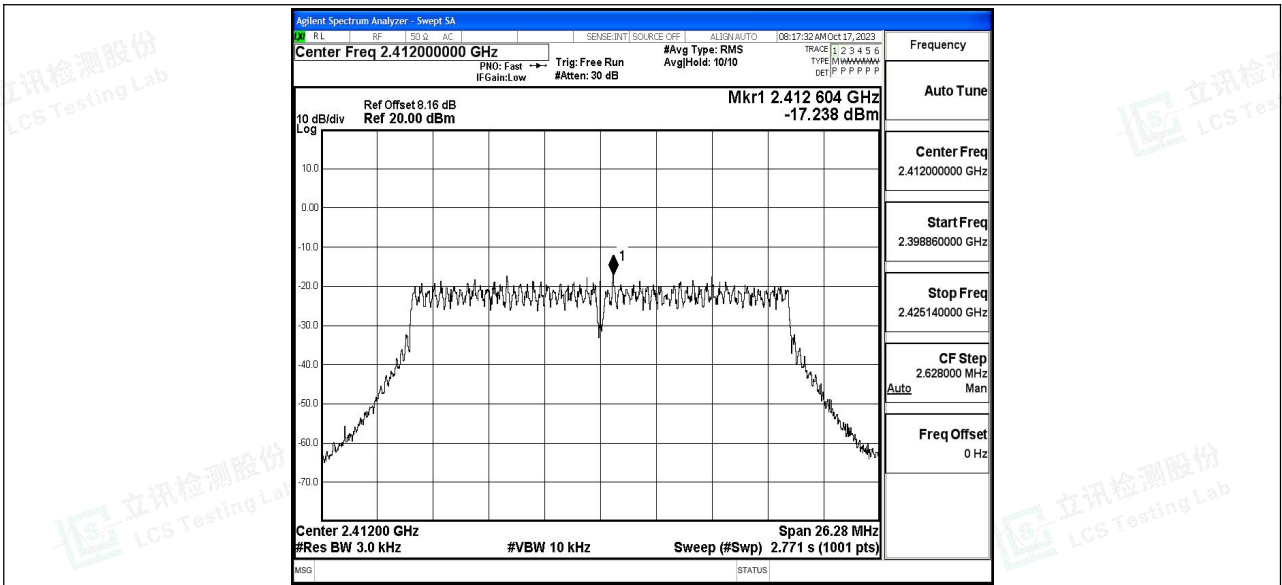


11G_Ant1_2462

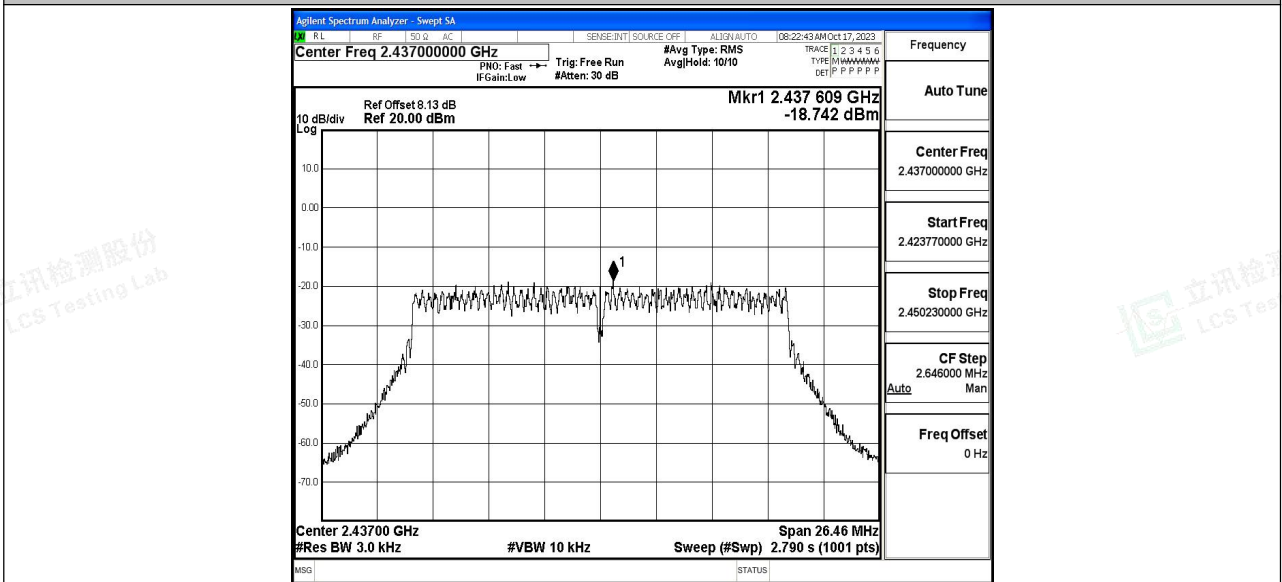


11N20SISO_Ant1_2412



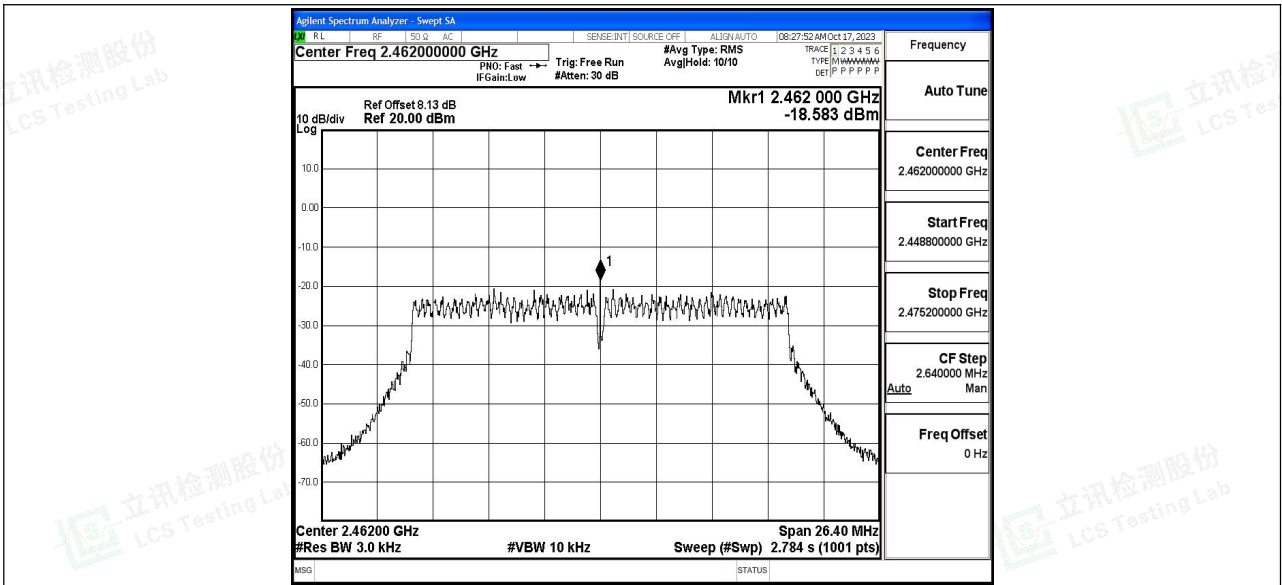


11N20SISO_Ant1_2437

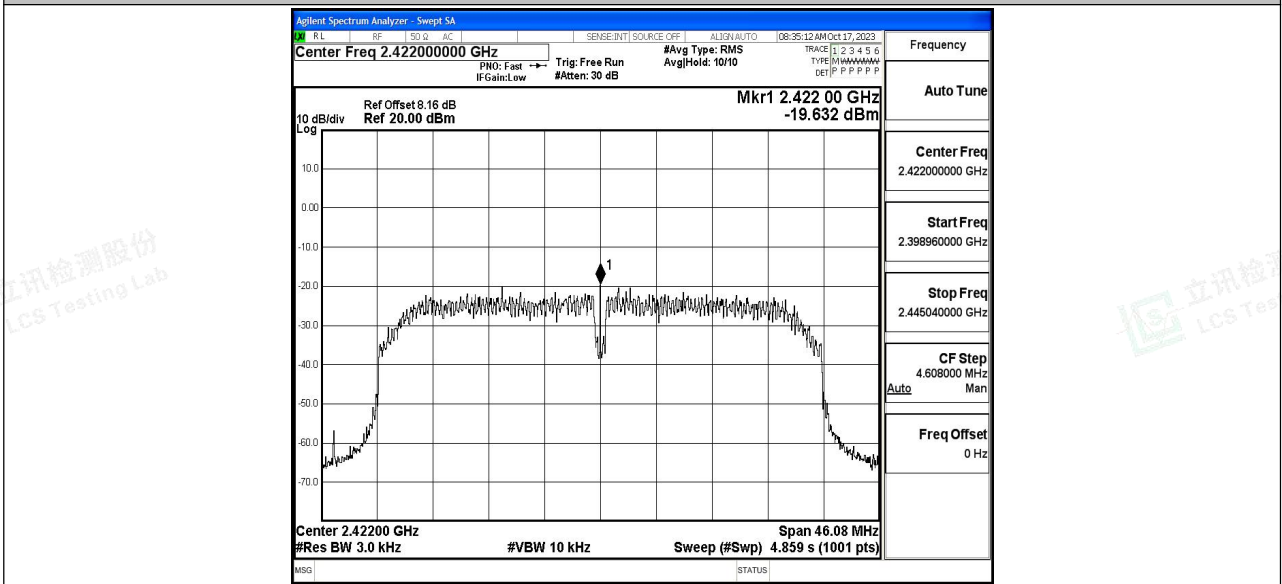


11N20SISO_Ant1_2462



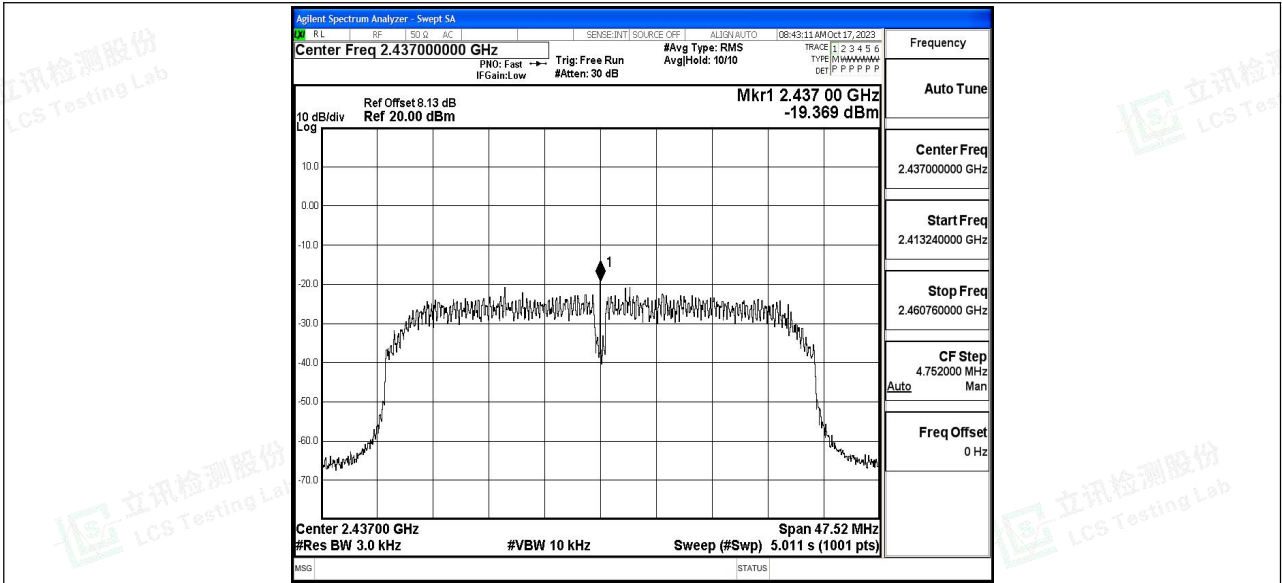


11N40SISO_Ant1_2422

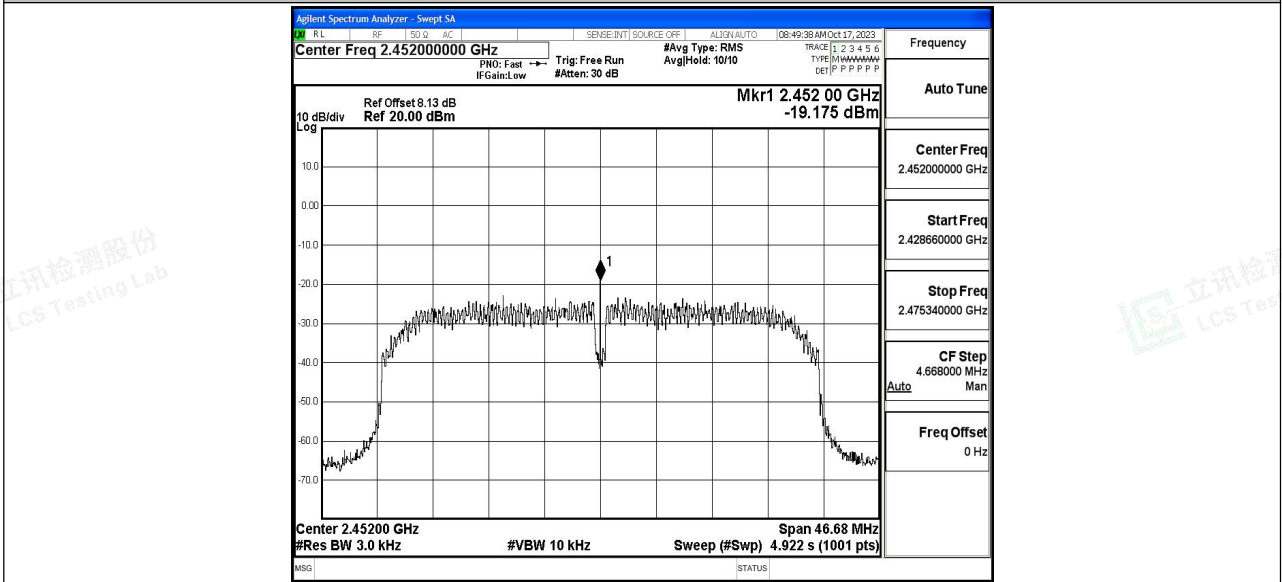


11N40SISO_Ant1_2437





11N40SISO_Ant1_2452





B.5 Band edge measurements

Test Result

| TestMode | Antenna | ChName | Freq(MHz) | RefLevel[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|-----------|---------|--------|-----------|---------------|-------------|------------|---------|
| 11B | Ant1 | Low | 2412 | -0.15 | -47.49 | ≤-20.15 | PASS |
| | | High | 2462 | -2.13 | -47.97 | ≤-22.13 | PASS |
| 11G | Ant1 | Low | 2412 | -2.50 | -43.36 | ≤-22.5 | PASS |
| | | High | 2462 | -6.32 | -47.24 | ≤-26.32 | PASS |
| 11N20SISO | Ant1 | Low | 2412 | -4.51 | -44.16 | ≤-24.51 | PASS |
| | | High | 2462 | -7.48 | -48.58 | ≤-27.48 | PASS |
| 11N40SISO | Ant1 | Low | 2422 | -8.10 | -48.08 | ≤-28.1 | PASS |
| | | High | 2452 | -10.11 | -49.35 | ≤-30.11 | PASS |

