

Common types of Intermittent failure.

Cause and Solution

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| 1 | Functional | <p>Test Rate (speed) too fast.
Reduce speed and try again.</p> <p>Drive / Sense Levels.
Adjust and retry.</p> <p>Pull Up/Down Termination.
Apply and retry.</p> <p>Guarding.
Check that the guarding is correct and also that additional guarding is not required.</p> <p>Spare Gates.
Spare or unused gates can cause intermittent failures due to no load conditions. If the gate that is failing is not used then remove it from the functional program.</p> <p>Cross Compiled Programs.
Verify Program.</p> <p>Oscillators.
Can also cause erratic errors. Disable as necessary.</p> |
| 2 | Opens | <p>If a pin fails the Opens test, check to see if it goes to an output that is either an IOT, OT, or OC type pin. If it is, then remove the Opens test from the failing pin.</p> |
| 3 | Shorts | <p>Analog switches, opamps, Comparators and Line Drivers / Receivers are possible candidates for intermittent shorts failures. Remove shorts test from Output pins first.</p> <p>Oscillators can also cause shorting problems. Disable the Oscillator.</p> |
| 4 | Voltage | <p>Check Power connections:
Check for Oscillators.</p> |
| 5 | DRAM's and SRAM's, | <p>If consistency becomes a problem, verify guarding, (sometimes more guards may be required) if correct then check the functional program for the AOC portion of the test. Run the program with just the "A" test, if this passes try adding the "O" test if applicable (more than 1 output). Finally add the "C" test. If any test is not consistent then leave it out.</p> |
| 6 | General | <p>If you have a lot of failures on a faulty board it may be that 1 or 2 devices are effecting the bus lines. Check failing device pins to see if they are linked to each other, this will help identify a pattern and hopefully isolate the problem to a few devices. Remember that when you programmed the board all components were working, different components may rely on other devices to function properly for them to pass. Checking the Nets list is the easiest way to determine common connections between failures.</p> |