



## Electrical Testing Process

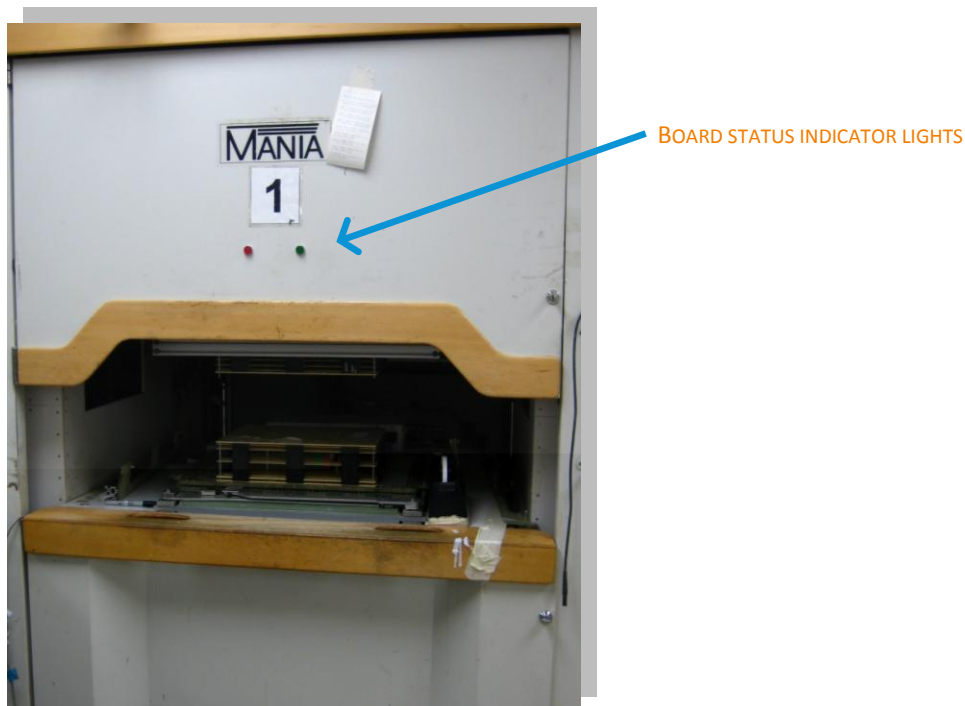
Saturn Electronics Corporation performs 100% electrical testing of all products we manufacture.  
[Click here for video of SEC's Electrical Testing](#)

Saturn tests all boards in accordance with IPC-9252. The program used to test the boards is created by using a Gerber Extracted Netlist, which means the test points are created from our working gerber files. If the customer provides their netlist in either IPC -356-D or Mentor Neutral file format, our Genesis software automatically performs a comparison of our netlist file to the customer file. Any discrepancies are outlined and send to the customer for review.

Saturn has two different types of testing equipment, both options using the same IPC-D-356 data. The primary difference is method of testing. Bed of Nails utilizes a hard test fixture and Flying Probe utilizes moving probes to test each net individually. From a cost standpoint, the Bed of Nails has a one-time fixture charge and the Flying Probe is a recurring charge with each purchase order to account for machine time.

### Bed of Nails (Fixture Testing)

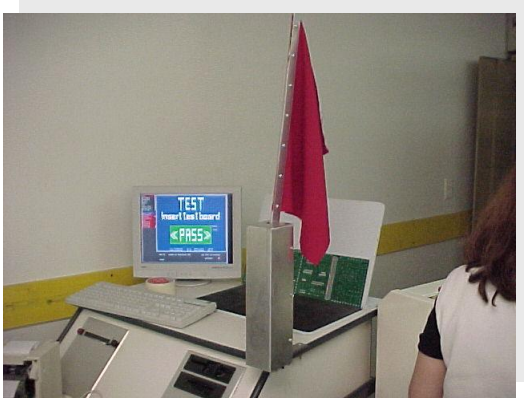
Saturn utilizes Mania testing fixtures. These testing fixtures come from Mania equipped with green & red lights to indicate status of board being tested.



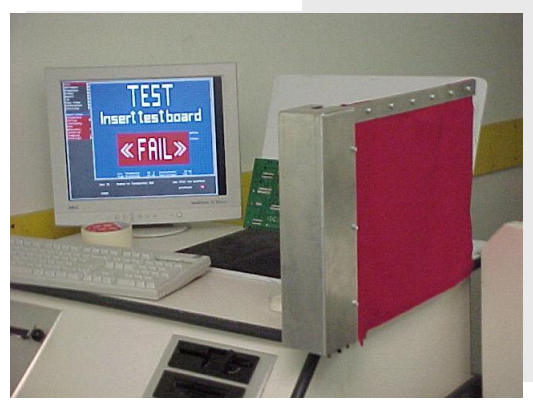


In 2005, Saturn developed a flag system that does not allow Testing Operator to place failed board into passed board stack. When board fails testing, the flag is lowered to act as a physical obstacle to prevent Operator from placing board in incorrect area. This system is unique to Saturn Electronics and is not available as a feature from the manufacturer.

PASS BOARD, FLAG UP

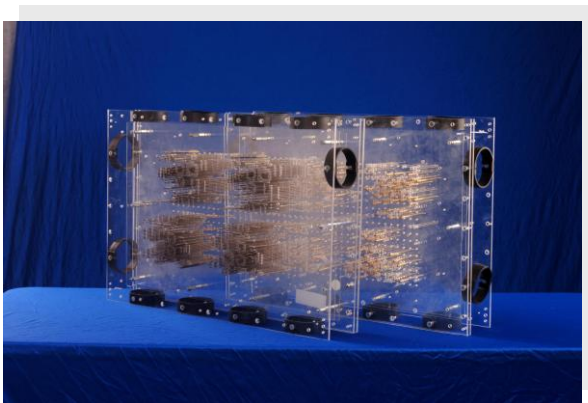


FAIL BOARD, FLAG DOWN



The bed of nails fixture is created using the customer-provided data. Fixtures are manufactured at Saturn, which allows us the opportunity to expedite creation of test fixture when required.

SAMPLE OF A BED OF NAILS FIXTURE





### **Flying Probe**

Saturn also utilizes flying probe electrical testers. Saturn has combined the flying probe machines with Acceler8 electro mechanical scanner, which improves the capacity of the flying probe allowing larger production runs to travel through the flying probe electrical testing.

