

General auto probe procedure

The process that we have come up with, which is still under completion, consists of two major measurements: the mechanical dimensions and the electrical characteristics of the GLAST detectors. The equipment we use to perform these measurements consists of the following:

EQUIPMENT LIST

- Automatic Probe-station
- Keithley power supply
- Keithley Switching Matrix
- Probe Card
- Probes
- Detectors
- Vacuums
- Vacuum Wands
- Dusters
- Windows Workstation

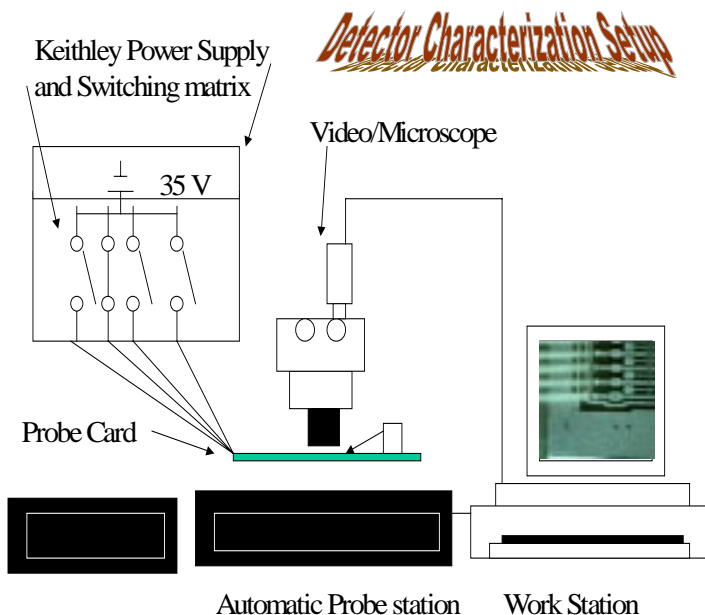


Figure 1- diagram of setup used to test GLAST SSDs

The step process that detector characterization program that utilizes this set up to accomplish the testing required for GLAST detectors is as follows:

1. Open the LabMaster software package by installing the devices as prompted.
2. Open the GLAST detector map in side of the wafer map file.
3. Open the program and select the Glast98 test program.
4. Run the program by pressing play on the control panel tool bar then follow user prompts.
5. Load a detector on to the vacuum with a vacuum wand.
6. The first prompt asks for some manufacturing information about the detector you are testing and stores the information into a text file for a database that is still in development. Enter in the information the program asks for.

7. Presses enter and the vacuum on the chuck will secure the detector and then load it underneath the probe tips.
8. The user will then be prompted by the screen to perform a two-point alignment.
9. This is accomplished by using the mouse and double clicking the video screen with the right button and then selecting the 2- pt alignment option.(see diagram 1.2)
10. Align the detector along the bias ring. Select a point at one end of the detector along the edge of the bias ring then move laterally to the corresponding point on the other end of the detector. Once these points are selected press the theta adjust button to align the detector.
11. After the alignment is completed the user will be prompted by the program to define home on the first coupling capacitor/AC pad. (see the schematic of the detector figure 1.3)
12. with this point entered the chuck will move into place to take a series of measurements :
 - a) The distance from edge to near bias ring.
 - b) Then edge to far bias ring.
 - c) Edge to far edge.
 - d) These measurements are performed at three other beginning points on the detector.
13. These measurements provide a way of characterizing the rotation of the detectors after manufacture and therefore are calculated and passed to the text file.
14. After the series is completed the program enters into a new series of prompts that encompass then second mode of testing.
15. Realignment.
16. Redefine home.
17. Do the above two steps such that the probe tips are adjusted such that they are all touching the ac pads.
18. Reconfigure home by selecting the "H" button on the wafer map.
19. Do this only when you are sure that you are aligned because once you have performed this step if any other adjustments are made using the user interface controls on the video screen the program will be disabled.
20. Press enter on the I/O interface and wait until the C ++ program is done testing for high currents via the switching matrix and power supply (see description of electrical characterization).
21. Continue step 20 until the program is done and then unload by double clicking the video screen and then selecting the unload button.

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