Application Notes

An introduction to the GRS500 PCB repair test system software

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This application note supplements the GRS500 operator manual with an "at a glance" guide to the function of the primary toolbar items.

GRS500 is a powerful troubleshooting system which can be programmed from either CAD data, manually from a sample "gold" board or a combination of the two.

Important safety note: Before using the system please read the operator safety guidelines in the user manual, and familiarise yourself with the basic operation sequence described in this note. Importing data from CAD and CAM systems is dealt with in specific notes which refer to each individual CAD system supported.

This application note provides you with a guide to the main toolbar icons in the GRS, it is well worth investing a few moments familiarising yourself with this document, 10 minutes spent reading this will save you valuable hours when you first use the system.

 Align

Align: Pressing this icon allows you to align the board under test to the presently loaded test position data.

 Set Alignment 1

Set Alignment point 1: You can choose or move your original alignment point with this icon, remember to align on a copper feature such as the corner of a track or fiducial mark. Avoid setting alignment points on component ident - which is screened onto the board with less accuracy than the etched copper image.

Set Alignment point 2: As set 1, but for the second alignment point. Choose alignment points close to the edge of the board and as far apart as possible.

Clear alignment points does just what it says. Use the above two icons to set new points. **Important note:** Ensure you keep the board at its original height setting on the table when setting new points.

Set prober options, this icon offers you a menu to choose whether the prober moves to the selected position on the board data (Track cursor) alternately, you may set the prober not to automatically follow the cursor set position.

Fast home: Parks the table

Home: Homes the table and resets the axis positions.

Zoom in: Zooms in on board data (the + key is an alternate and rapid way of zooming)

Zoom out: Zooms out on board data (the - key is an alternate and rapid way of zooming)

Display extents: Scales the data so that the full board data is all displayed on screen.

Pan the display data left.

Pan the display data right.

Pan the display data up

Pan down
Pan the display data down.

Mirror data
Mirror Data: "Flips" the board so the data is consistent with your view of the board if you turn it over for inspection

Query pad
Query pad: Displays CAD information on the selected net.

Query test point
Query test point: Displays test setup information on the selected net.

Fault 1
Highlight fault 1: Displays the selected suspect trace in red

Fault 2
Highlight fault 2: Displays the a second suspect trace in blue.

Clear highlight
Clear: Highlighted traces

Virtual Xray
Virtual Xray: Toggles to display highlighted nets as they route throug inner layers, giving you a virtual Xray of the selected net.

Manual Programming
Manual programming mode: Adds a selection of icons on the right of the display, this group of icons help you program boards in the abscence of CAD data.

Keep out mode
Keep out Mode: Select this mode so you can intentionally omit certain components (BGA) from being allocated test points. Once "kept out" the GRS will intelligently attempt to apply test points to other points on the relevant nets.

Test point mode
Test Point mode: Select this mode to display an extra group of icons on the right of the screen which help you allocate and fine tune the position of test points. Test point mode and keep out

mode cannot both be selected at once. In general you should first set your Keep outs and then move onto test point mode

 Troubleshooting mode

Troubleshooting mode: Displays test results sorted to reveal most likely cause of faults.

 Toggle camera

Toggle Camera: Turns the live video display on and off

 Live instrument

Live instrument: Allows you to position over a suspect device, probe, and display the nodal impedance in real time.

 Videosectioning

Videosectioning: With videosectioning selected you can compare a stored image of the board under test with live video from the GRS500 camera system

 Test list

Test list: Displays tests and test information, run board and component tests from this view.

 Board view

Board view: This returns you to the default view of the board data.

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