Huntron Workstation 4.1

User's Manual

Contents

Main Window 1

File Menu 1
- New 1
- Open 1
- Save As 1
- Close 1
- Delete 1
- Convert 1
- Import 2
- Repair 2
- Recent Files 2
- Exit 2

Edit Menu 3
- Add New 3
- Edit 3
- Delete 3
- Insert 3
- Repeat 3
- Build 3
- Copy 4
- Paste 4
- Cut 4
- Delete Scans 4
- Edit Board 4

View Menu 4
- Tool Bars 4
- Reports 5

File Toolbar 5
- New 5
- Open 6
- Save As 6

Board Button Toolbar 6
Sequence Button Toolbar 6
Component/Net Button Toolbar 6
Edit Toolbar 6
- Add New 6
- Copy 6
- Paste 6
- Cut 6
- Delete 6
- Build 6
- Repeat 7

Actions Toolbar 7
- Scan Component 7
- Scan Sequence 7

Prober Home....7
Next/Previous Toolbar....7
Previous Component....7
Next Component....7
Previous Pin....7
Next Pin....7
Tree Report....7
Tree Report Dialog....7
Netlist Report....8
Netlist Report Dialog....8
Troublesheet Report....8
Troublesheet Report Dialog....9
Statistics Report....9
Statistics Report Dialog....9
Scan Report....10
Scan Report Dialog....10
Signature Report....10
Signature Report Dialog....10
Bill Of Materials Report....11
Bill of Materials Report Dialog....11
Report Preview....11
File Menu....11
View Menu....13
Background Menu....13
Board Dialog....14
Fields....14
Buttons....16
Button Setup Dialog....17
Fields....17
Buttons....18
Actions Menu....19
Scan Component....19
Scan Sequence....19
Prober Home....19
Tools Menu....19
Options....19
Board Buttons....33
Sequence Buttons....34
Component/Net Buttons....34
Maintenance....34
Software Activation....34
GeoTest Setup Dialog....35
Fields....35
Buttons....35
Software Activation Dialog....36
Tracker Activation Code....36
Prober Activation Code....36
Activate....36
Exit....36
Window Menu....36
Tree Pane....36
Prober Pane....36
Signature Pane....36
Image Pane....36
Tester Pane....36
Lock....37

Auto Adjust 37
Help Menu 37
Huntron Workstation Help 37
Manual 37
Tutorials 37
Technical Support 37
Huntron Workstation Website 37
Huntron Website 38
About Huntron Workstation 38
Status Bar 38
Sequence 38
Component/Net 38
Pin 38
Range 38
Unit of Measure 38
Message 38

Tree Pane **38**

Sequences Tab 39
Columns/Fields 39
Sequence Selected Actions 45
Row Right Click Menu 45
Dialog Buttons 46
Components or Nets Tab 47
Columns/Fields 47
Component Net Selected Actions 56
Row Right Click Menu 56
Dialog Buttons 57
Pins Tab 58
Columns/Fields 58
Pin Selected Actions 63
Row Right Click Menu 63
Dialog Buttons 63
Ranges Tab 64
Columns/Fields 64
Range Selected Actions 70
Row Right Click Menu 70
Dialog Buttons 71
Scans Tab 71
Columns/Fields 72
Sequence Selected Actions 74
Row Right Click Menu 74
Group Edit Dialog 75
Fields 75
Buttons 77
Net Edit Dialog 77
Fields 77
Buttons 79

Signature Pane **79**

Signature Tab 79
Scans 79
Scale (1, 2, 3, 4, 5) 80
Copy 80

Print 80
Signature Boxes 80
Scan Tab 82
Serial Number 82
Operator 82
Results 82
Start 82
Elapsed 82
Est. 82
Left 82
Component/Net Counter 83
Component/Net Count 83
Pass 83
Stop On Failure 83
Continuous 83
List 83
Start 83
Scan Sequence Dialog 88
Scan List Dialog 88
Connect Component/Net Pin Dialog 89
Short Check Dialog 90
Stop 91
Continue 91
Merge 91
Troublesheet 91
Set Reference 91
Signature Box 91
Troublesheet Tab 92
Tab Selected Actions 92
Failed Item List 92
Removed Item List 92
Passed Item List 92
Next 92
Previous 92
Summary 92
Remove / UnRemove 93
Store 93
Delete 93
Print 93
Copy 93
Update 93
Scale (1, 2, 3, 4, 5) 93
Set Reference 93
Merge 93
Signature Boxes 94
Store Troublesheet Dialog 95
Tracker Tab 96
Tab Selected Actions 96
Voltage 97
Resistance 97
Frequency 97
Pulse Width 97
PulseLevel 97
Pulse/DC 97
Channel 98
Real Time 98

Filter 98
Tolerance 98
Hold 98
Signature Box 98
Scanner Tab 98
Tab Selected Actions 99
Common 1 99
Common 2 99
Pin 99
<< 99
>> 99
Package 99
Number Of Pins 99
Scan Hold 100
Scan 100
Stop 100
Signature Box 100
Preview Tab 101
Get Signature 101
Realtime 101
Signature Box 101
Signature Data Dialog 101
Sequence 101
Component/Net 101
Pin 102
Range 102
Hardware 102
Copy 102
Close 102
Data 102
SigAssist 102
Fields 102
Buttons 104

Prober Pane **104**

Title 104
Offset Tab 104
Procedure 104
Tab Selected Actions 105
Back 105
Back Right 105
Right 105
Forward Right 105
Forward 105
Forward Left 105
Left 105
Back Left 105
Home 106
XY Travel 106
Reset 106
Up 106
Z Home 106
Down 106
Z Travel 106
Slot 106

Mouse X 106
Mouse Y 107
Mode 107
Set 107
Save 107
X Offset 107
Y Offset 107
Z Offset 107
Camera Image Right Click Menu 107
Align Tab 108
Store Align Procedure 108
Align Procedure 108
Align Procedure 108
Tab Selected Actions 108
Back 109
Back Right 109
Right 109
Forward Right 109
Forward 109
Forward Left 109
Left 109
Back Left 109
Home 109
Travel 109
Current X 109
Current Y 109
Align Point 110
Set 110
Save 110
Stored Image 110
Auto Align 110
Mouse X 110
Mouse Y 110
Camera Image Right Click Menu 110
Teach Tab 111
Procedure 111
Tab Selected Actions 111
Back 111
Back Right 111
Right 111
Forward Right 111
Forward 111
Forward Left 111
Left 112
Back Left 112
Home 112
Travel 112
Current X 112
Current Y 112
Reset 112
Mouse X 112
Mouse Y 112
Pin 113
Save 113
Group 113
Save 113

Camera Image 113
Camera Image Right Click Menu 113
Teach Height Tab 113
Procedure 114
Tab Selected Actions 114
Tab Lost Focus 114
Up 114
Home 114
Down 114
Z Travel 114
Current Z 114
Sequence Z Up and Down 114
Sequence Z Up and Down Position 115
Sequence Z Up and Down Move 115
Sequence Z Up and Down Save 115
Component Z Up Position 115
Component Z Up Move 115
Component Z Up Save 115
Pin Z Down 115
Pin Z Down Position 115
Pin Z Down Move 115
Pin Z Down Save 115
Check 116
Cancel 116
Save All Comp/Net Pins 116
ReAlign Tab 116
Procedure 116
Tab Selected Actions 116
Back 116
Back Right 117
Right 117
Forward Right 117
Forward 117
Forward Left 117
Left 117
Back Left 117
Home 117
Travel 117
Current X 117
Current Y 117
Align Point 118
Set 118
Save 118
Stored Image 118
Update Locations 118
Mouse X 118
Mouse Y 118
Camera Image 118
Camera Image Right Click Menu 118
Panelize 119
Procedure 119
Tab Selected Actions 119
Back 119
Back Right 119
Right 119
Forward Right 120

Forward 120
Forward Left 120
Left 120
Back Left 120
Home 120
Travel 120
Current X 120
Current Y 120
Current Origin X 120
Current Origin Y 121
Current Origin Set 121
Add Origin X 121
Add Origin Y 121
Add Origin Set 121
Rotation 121
Panelize 121
Mouse X 121
Mouse Y 122
Camera Image 122
Camera Image Right Click Menu 122
Camera Tab 122
Tab Selected Actions 122
Back 122
Back Right 122
Right 122
Forward Right 122
Forward 122
Forward Left 123
Left 123
Back Left 123
Home 123
Travel 123
Current X 123
Current Y 123
X Motor 123
Y Motor 123
X Limit 123
Y Limit 124
Live Camera 124
Mouse X 124
Mouse Y 124
Camera Image Right Click Menu 124
Probe Tab 124
Tab Selected Actions 124
Tab Lost Focus 124
Up 124
Home 125
Down 125
Z Travel 125
Current Z 125
Slot 125
Z Motor 125
Z Limit 125

Image Pane **125**

CAD Tab 125
Component 126
Pin 126
Net 126
Via 126
Connected 126
Zoom + ... 126
Zoom - 126
Zoom Board 126
Zoom Window 126
Flip Board 126
Options 126
Clear 127
CAD Control 127
Image Tab 127
Level 127
Set Back Right 127
Set Front Left 127
Create Image 127
Cancel 127
Zoom In 127
Zoom Out 127
Image Control 127
Image Right Click Menu 128
View PCB Tab 128
Drawing Right Click Menu 128
File Tab 128
Open File… 128
Live Camera Tab 128
Drawing Right Click Menu 128
CAD Options Dialog 129
General Tab 129
Graphics Classes Tab 129
Insert Types Tab 129
Layers Tab 129
Buttons 129

Tester Pane 130

File Open 130
Sequence 130
Scan List 130
Scan List Path 130
Scan List Browse 131
Serial Number 131
Operator 131
Start 131
Elapsed 131
Estimated 131
Remaining 131
Results 131
Scan Counter Counter 131
Scan Counter Count 131
Start 131
Stop 131
Continue 132

Troublesheet 132
Requirements 132

Tips and Hints **132**

CMOS Troubleshooting 132
Command Line Parameters 132
Select Range 133
ProTrack I and TrackerPXI Range Selection Guide 135
Sample Signatures 137
Features No Longer Supported 141
Hardware 141
Files 141
Windows 141
GeoTest Switch Card Configuration 141
NI Switch Executive Configuration 142

Glossary of Terms **145**

Index **161**

Main Window

This window encompasses the entire program. The title is Huntron Workstation followed by a dash then the file path of the open board file.

File Menu

The File menu allows creation, opening and repair of board database files. It also allows exiting the program.

New

The Board dialog is displayed to create a new board. Default filename is set to boardname-revision.mdb and path to My Documents\Huntron\Boards.

Open

The standard Windows Open File dialog is displayed to open an existing board file. Board Database *.MDB and All Files *.* are available as selectable file types. If the Board Unit of Measure does not match the Tools Options General Unit Of Measure (UOM), prompts with a message to update the board file or Options UOM.

Save As

Displays the standard Windows Save As File dialog to save the board file with another name. This copies the current board database to a file with the new name. Changes the active database to the new file and only stores changes to the new file. Overwrites an existing file, if one is selected, after a warning.

Close

Closes the current board file.

Delete

The standard Windows Open File dialog is displayed to select the file to delete. Board Database *.MDB and All Files *.* are available as selectable file types. A file must be open to delete.

Convert

Displays the Convert Wizard dialogs to convert boards from a previous Workstation for Windows System database.

Select System to Convert Dialog

Displays a Windows File Open dialog to select the System file to convert boards from. The default for this path is c:\winhunt and filename default is system.dbf.

System and Board to Convert Dialog

Displays a dialog that lists the systems in the System file. The systems are listed in a list control at the top of the dialog that allows a single selection. The boards in the system are listed in a list control at the bottom of the dialog by Name and Revision. The Next button proceeds to the Board File Path Dialog. The Previous button returns to the Source System Dialog.

Select Name of New Board File Dialog

Display a Windows File Save As dialog for the filename of the board to be created. The default path is My Documents\Huntron\Boards. The filename is created from the board name-revision. After clicking Save, prompts with a window asking if the test was created using an Access Prober.

Status Dialog

Displays a dialog to display the status of the board conversion. The status includes Board, Section Component and Pin. A cancel button is available.

Conversion Complete

Display a conversion complete message

Import

Imports a board from a PCB layout CAD file. Runs HAF Import wizard to create the HAF File. Adds sequences to the currently loaded board database..

Repair

The standard Windows Open File dialog is displayed to open an existing board file. The board file is repaired and compacted. Repair is only active when no board file is open.

Recent Files

Displays a sub menu that list the last 5 board files opened.

Sub menu looks like:

My Documents\Huntron\Boards\Board1.mdb

My Documents\Huntron\Boards\Board2.mdb

My Documents\Huntron\Boards\Board3.mdb

My Documents\Huntron\Boards\Board4.mdb

My Documents\HuntronBoards\Board5.mdb

Exit

Exits the program.

Edit Menu

The Edit menu allows modification of the tree structure of the board test.

Add New

Shortcut: Crtl+A

Displays a dialog to add an item to the Tree pane grid. Creates a new row at the bottom of the grid. Disabled for Pin and Scan tabs. Sets the Order Number field to number of grid rows + 1.

Edit

Shortcut: Crtl+E

Displays a dialog to edit the currently selected Tree pane grid item (Sequence, Component, Net, Pin range). Disabled for the Scan Tab.

Delete

Shortcut: Ctrl+D

Deletes the currently selected item on the Tree pane grid. A warning message is displayed before deleting. Disabled for Pin tab. When multiple Sequences, Components, Ranges or Scans are selected, all of the selected ones will be deleted.

Insert

Shortcut: Crtl+I

Displays a dialog to insert an item to the currently selected Tree pane grid, The item is added above the currently selected item. Sets the Order Number to the current order number and increments the following items Order Numbers. Disabled when Sequence or Component/Net and Sort Order is not Order Number Ascending or Descending. Disabled when Range and Sort Order is not Range Number Ascending or Descending. Disabled for Pin and Scan tabs.

Repeat

Shortcut: Crtl+R

Adds an item at the bottom of the currently selected Tree pane grid that is the same as the current item except the name is left blank. Disabled for Pin, Range and Scan tabs

Build

Shortcut: Crtl+B

Adds an item at the bottom of the currently selected Tree pane grid that is the same as the current item except the name ends with the number or letter incremented. Letter incrementing stops at Z. Disabled for Pin, Range and Scan tabs. If the new name exists an error is displayed. If name does not end in letter or digit an error is displayed.

Copy

Copies the current item on the Tree Pane grid to memory. Disabled for Pin and Scan tabs. Copy Range does not copy signatures. When multiple Sequences, Components or Ranges are selected, all of the selected ones will be copied.

Paste

Pastes the item from memory to the Tree Pane grid. Disabled for Pin and Scan tabs. If name exists, prefix name with “Copy Of “. If “Copy Of” already exists adds or increments “(2)” between “Copy” and “Of”.

Cut

Shortcut: Crtl+X

Copies the current item on the Tree Pane grid to memory. Then deletes the current item from the grid. Disabled for Pin and Scan tabs. A warning message is displayed before deleting. When multiple Sequences, Components or Ranges are selected, all of the selected ones will be cut.

Delete Scans

Delete all of the scans and signatures for the current item.

A warning message is displayed before deleting. Disabled for Pin, Range, and Scan tabs.

Edit Board

Displays the Board dialog to edit the board.

View Menu

The View menu allows control of the toolbars and reports.

Tool Bars

File

A checked menu item that turns the display of the File Toolbar on and off.

Edit

A checked menu item that turns the display of the Edit Toolbar on and off.

Actions

A checked menu item that turns the display of the Actions Toolbar on and off.

Next/Previous

A checked menu item that turns the display of the Next/Previous Toolbar on and off.

Board Button

A checked menu item that turns the display of the Board Button Toolbar on and off.

Sequence Button

A checked menu item that turns the display of the Sequence Button Toolbar on and off.

Component/Net Button

A checked menu item that turns the display of the Component/Net Button Toolbar on and off.

Reports

Tree

Displays the Tree Report dialog to create a fully detailed report of the selected tree level, including all sequences, components, nets, pins and ranges. Allow tree level selection for amount of detail.

Net List

Displays the Netlist Report dialog to create a fully detailed report of the sequence net list.

Troublesheet

Displays the Troublesheet Report dialog to create a fully detailed report of the sequence troublesheet. Allow selection of signatures or not.

Statistics

Displays the Statistics Report dialog to create a report that shows how long the sequence will take to scan, total Prober travel, total test points, total components, total signatures, etc. for each sequence.

Scan

Displays the Scan Report dialog to create a report that shows the Scan history.

Signature

Displays the Signature Report dialog to create a report that shows the signatures.

BOM

Displays the Bill Of Materials Report dialog to create a fully detailed report of the Bill Of Materials of the board or sequence.

File Toolbar

New

Same function as File Menu New selection.

Open

Same function as File Menu Open selection.

Save As

Same function as the File Menu Save selection.

Board Button Toolbar

A button for each board button defined. Each button performs the function specified in the button setup.

Sequence Button Toolbar

A button for each sequence button defined. Each button performs the function specified in the button setup.

Component/Net Button Toolbar

A button for each Component/ Net button defined. Each button performs the function specified in the button setup.

Edit Toolbar

Add New

Same function as Edit Menu Add New selection.

Copy

Same function as Edit Menu Copy selection.

Paste

Same function as Edit Menu Paste selection.

Cut

Same function as Edit Menu Cut selection.

Delete

Same function as Edit Menu Delete selection.

Build

Same function as Edit Menu Build selection.

Repeat

Same function as Edit Menu Repeat selection.

Actions Toolbar

Scan Component

Selects the Component grid of the Tree pane and the Scan tab of the Signature pane.

Scan Sequence

Selects the Sequence tab of the Tree pan and the Scanning tab of the Signature pane.

Prober Home

Move the probe tip up to home and then the probe head back and right to its home position using the limit switches to initialize home.

Next/Previous Toolbar

Previous Component

Changes the current component to the previous component on the Components tab.

Next Component

Changes the current component to the next component on the Components tab.

Previous Pin

Changes the current pin to the previous component on the Components tab.

Next Pin

Changes the current pin to the next component on the Components tab.

Tree Report

The Tree Report shows the values of the fields of the selected levels of the tree.

Tree Report Dialog

Top Level

Tooltip: Select the top level of the tree which to include sub tree levels

Values: Board, Sequence, Component/Net

Default: Sequence

Detail Level

Tooltip: Select the lowest level of the tree to include in the report

Values: Sequence, Component/Net, Pin, Range

Default: Sequence

Pin and Range level reports can take up to several minutes to generate.

Detail

Tooltip: Select the amount of detail to include in the report

Values: Basic, Full

Default: Basic

Preview

Tooltip: View the report on screen and print or store.

Cancel

Tooltip: return to the Main Window.

Netlist Report

The Netlist Report shows all of the nodes of each net.

Netlist Report Dialog

Level

Tooltip: Select the top level of the tree which to include sub tree levels

Values: Board, Sequence

Default: Sequence

Preview

Tooltip: View the report on screen and print or store.

Cancel

Tooltip: return to the Main Window.

Troublesheet Report

The Troublesheet Report shows the tests results of a scan.

Troublesheet Report Dialog

Level

Tooltip: Select the top level of the tree which to include sub tree levels. Board and Sequence information always printed.

Values: Sequence, Component

Default: Sequence

Detail Level

Tooltip: Select the lowest level of the tree to include in the report

Values: Component/Net, Pin, Range w/ Signatures

Default: Component/Net

Pin and Range level reports can take up to several minutes to generate.

Problem

Tooltip: Enter the problem associated with the troublesheet.

Solution

Tooltip: Enter the solutions associated with the troublesheet.

Preview

Tooltip: View the report on screen and print or store.

Cancel

Tooltip: return to the Main Window.

Statistics Report

The Statistics Report shows the scan totals and estimates.

Statistics Report Dialog

Level

Tooltip: Select the top level of the tree which to include sub tree levels

Values: Board, Sequence

Default: Sequence

Preview

Tooltip: View the report on screen and print or store.

Cancel

Tooltip: return to the Main Window.

Scan Report

The Scan Report shows details of each scan.

Scan Report Dialog

Level

Tooltip: Select the top level of the tree which to include sub tree levels. The Board and Sequence information are always printed.

Values: Board, Sequence, Component/Net

Default: Sequence

Scans

Tooltip: Select the scans to include in the report

Values: All, Reference, Merged, Non Reference/Merged, Current

Default: Reference

Preview

Tooltip: View the report on screen and print or store.

Cancel

Tooltip: return to the Main Window.

Signature Report

The Signature Report shows the signatures of each scan.

Signature Report Dialog

Level

Tooltip: Select the top level of the tree which to include sub tree levels. The Board and Sequence information are always printed.

Values: Sequence, Component/Net, Pin

Default: Component/Net

Scans

Tooltip: Select the scans to include in the report

Values: All, Reference, Merged, Non Reference/Merged, Current

Default: Current

Preview

Tooltip: View the report on screen and print or store.

Cancel

Tooltip: return to the Main Window.

Bill Of Materials Report

The Bill of Materials Report shows replacement information for the components.

Bill of Materials Report Dialog

Level

Tooltip: Select the top level of the tree which to include sub tree levels

Values: Board, Sequence

Default: Sequence

Group By

Tooltip: Select the Component/Net field to group the report

Values: Name, Type, Replacement, Part Number, Part Package

Default: Name

Preview

Tooltip: View the report on screen and print or store.

Cancel

Tooltip: return to the Main Window.

Report Preview

File Menu

Page Setup…

Displays the Page Setup dialog to allow changes to the Paper, Orientation and Margins.

Print…

Displays the Standard Windows Print dialog to allow the report to be printed.

Print

Prints the report to the default printer without prompting.

Export To

PDF Document

Displays the Standard Windows Save As dialog to allow saving the report and a PDF file.

HTML Document

Displays the Standard Windows Save As dialog to allow saving the report and a HTM or HTML file.

Text Document

Displays the Standard Windows Save As dialog to allow saving the report and a Text file.

CSV Document

Displays the Standard Windows Save As dialog to allow saving the report and a CSV file.

MHT Document

Displays the Standard Windows Save As dialog to allow saving the report and a MHT file.

Excel Document

Displays the Standard Windows Save As dialog to allow saving the report and an XLS file.

Rich Text Document

Displays the Standard Windows Save As dialog to allow saving the report and a RTF file.

Graphics Document

Displays the Standard Windows Save As dialog to allow saving the report and a BMP, GIF, JPEG, PNG, TIFF, EMF or WMF file.

Send As

PDF Document

Displays the Standard Windows Save As dialog to allow saving the report and a PDF file. Then attaches the file to a new email.

Text Document

Displays the Standard Windows Save As dialog to allow saving the report and a Text file. Then attaches the file to a new email.

CSV Document

Displays the Standard Windows Save As dialog to allow saving the report and a CSV file. Then attaches the file to a new email.

MHT Document

Displays the Standard Windows Save As dialog to allow saving the report and a MHT file. Then attaches the file to a new email.

Excel Document

Displays the Standard Windows Save As dialog to allow saving the report and an XLS file. Then attaches the file to a new email.

Rich Text Document

Displays the Standard Windows Save As dialog to allow saving the report and a RTF file. Then attaches the file to a new email.

Graphics Document

Displays the Standard Windows Save As dialog to allow saving the report and a BMP, GIF, JPEG, PNG, TIFF, EMF or WMF file. Then attaches the file to a new email.

Exit

Closes the dialog

View Menu

Toolbar

Controls the display of the Toolbar at the top of the window.

Statusbar

Controls the display of the Statusbar at the bottom of the window.

Page Layout

Continuous

Arranges the pages in a continuous vertical column.

Facing

Arranges the pages side-by-side.

Background Menu

Color…

Allows setting of the background color of the report. The default is white.

Watermark…

Allows the creation of a watermark to be used as the background of the report.

Board Dialog

Fields

Name

Tooltip: The name, type or part number of the board

Default:

Revision

Tooltip: Revision of the board

Default:

System

Tooltip: The name of the system that contains the unit containing this board

Default:

Unit

Tool Tip: Equipment containing board

Default:

Manufacturer

Tooltip: The name of the board manufacturer

Default:

Gold Disk Number

Tooltip: The number to identify the board test

Default:

Unit of Measure

Tooltip: The unit of measure use for the coordinates of this board. If this value is changed all coordinates in the database will need to be updated.

Values: Inches, Mils, MM, Microns

Default: Set in Options or during Convert or Import

Modify: If changed, updates the entire board database with values in the new unit of measure and the Tools Options General Unit Of Measure

Data Source

Tooltip: The origination of the board data (i.e. CAD Import, Conversion, user entry….)

Values: CAD, User, Conversion, etc.

Default: User

Modify: Read Only

Top Name

Tool Tip: Name for the top side of the board

Default: TOP

Top Image Right X

Tooltip: The top side X position of the back right corner of the image in Board Unit of Measure

Default:

Modify: Read Only. Only changed using Image pane.

Top Image Back Y

Tooltip: The top side Y position of the back right corner of the image in Board Unit of Measure

Default:

Modify: Read Only. Only changed using Image pane.

Top Image Pixel Size X

Tooltip: The X pixel size of the top board image in Board Unit of Measure

Default:

Modify: Read Only. Only changed using Image pane.

Top Image Pixel Size Y

Tooltip: The Y pixel size of the top board image in Board Unit of Measure

Default:

Modify: Read Only. Only changed using Image pane.

Top Image

Tooltip: The image of the entire top side of the board

Modify: Read Only. Only changed using Image pane or be loading an image.

Bottom Name

Tool Tip: Name for the bottom side of board

Default: BOTTOM

Bottom Image Right X

Tooltip: The bottom side X position of the back right corner of the image in Board Unit of Measure

Default:

Modify: Read Only. Only changed using Image pane.

Bottom Image Back Y

Tooltip: The bottom side Y position of the back right corner of the image in Board Unit of Measure

Default:

Modify: Read Only. Only changed using Image pane.

Bottom Image Pixel Size X

Tooltip: The X pixel size of the bottom board image in Board Unit of Measure

Default:

Modify: Read Only. Only changed using Image pane.

Bottom Image Pixel Size Y

Tooltip: The X pixel size of the bottom board image in Board Unit of Measure

Default: 0

Modify: Read Only. Only changed using Image pane.

Bottom Image

Tooltip: The image of the entire bottom side of the board

Modify: Read Only. Only changed using Image pane or be loading an image.

Instructions

Tooltip: The instructions for setup and testing of the board

Default:

Buttons

Load CC File…

The standard Windows Open File dialog is displayed to open an existing CC file. CC File *.CC and All Files *.* are available as selectable file types. The CC file is added to the database to be displayed on the Image pane.

Load Top Image…

The standard Windows Open File dialog is displayed to open an existing BMP, GIX, JPG, JPEG, PNG, ICO, EMF or WMF Image file. The file is used to display the top side of the board. Files that are loaded in this manner, do not allow for clicking on the image in Image Tab of the Image Pane to move the Prober.

Load Bottom Image…

The standard Windows Open File dialog is displayed to open an existing BMP, GIX, JPG, JPEG, PNG, ICO, EMF or WMF Image file. The file is used to display the bottom side of the board. Files that are loaded in this manner, do not allow for clicking on the image in Image Tab of the Image Pane to move the Prober.

Ok

Closes the dialog and saves the changes.

Cancel

Closes the dialog without saving the changes.

Buttons…

Displays Buttons dialog. This is only available in Edit mode. If adding a new board click Ok and then edit the board.

Help

Displays this help

Button Setup Dialog

Fields

Order Number

Tooltip: The number used to list the buttons in order

Default: 1

Modify: Read only

Enabled

Tooltip: Checked to enable the button, Uncheck to disable the button

Default: Checked

Caption

Tooltip: This is the text that is displayed on the menu

Default:

Button Level

Tooltip: The tree level of the button

Values: Board, Sequence, Component/Net

Modify: Read only

Parent Id

Tooltip: System created unique number to identify the buttons parent item

Modify: Read only

Button Id

Tooltip: System created unique number to identify each button

Modify: Read only

Command Line

Tooltip: This is the path to the program that is to be run.

Default:

File Path

Tooltip: The file path of the file to be loaded by the command line and stored in the database if selected

Default:

Icon File Path

Tooltip: The file path of the file to be loaded by the command line and stored in the database if selected

Default:

Tooltip

Tooltip: This is the tool tip for the button.

Default:

Store File

Tooltip: Checked to store the file in the database, unchecked access from File Path

Default: Unchecked

Store Icon

Tooltip: Checked to store the file in the database, unchecked access from FilePath

Default: Unchecked

Buttons

Browse…

Tooltip: Select the Command Line file path.

Browse…

Tooltip: Select the file path of the icon to be used.

Browse…

Tooltip: Select the file path of the file to be used.

Button

Load File…

Tooltip: Loads the specified file into the database.

Load File…

Tooltip: Loads the specified file icon into the database.

Previous

Tooltip: Selects the previous button

Next

Tooltip: Selects the next button

Add New

Tooltip: creates a new button

Ok

Tooltip: Saves the current user changes and closes the dialog

Cancel

Tooltip: Does not save the current user changes and closes the dialog

Help

Tooltip: Displays context sensitive help for the Button dialog

Actions Menu

Scan Component

Shortcut: Crtl+S

Selects the Component grid of the Tree pane and the Scan tab of the Signature pane.

Scan Sequence

Shortcut: Crtl+U

Selects the Sequence tab of the Tree pan and the Scanning tab of the Signature pane.

Prober Home

Shortcut: Crtl+H

Move the probe tip up to home and then the probe head back and right to its home position using the limit switches to initialize home.

Tools Menu

Options

General Tab

Unit of Measure

Tooltip: The units used to display prober coordinates. Disabled when a board file is open.

Values: Inches, Mils, MM, Microns

Default: Mils

Modify: Updates other options to the new Unit Of Measure

Failed Text

Tooltip: The text that is displayed when a scan fails

Default: FAILED

Passed Text

Tooltip: The test that is displayed when a scan passes

Default: PASSED

Disable Maintenance Warnings

Tooltip: Checking turns off the maintenance warnings when starting the software

Default: Uncheck

Compare Depth

Tooltip: Compare depth selection to allow Signatures that match at the pin or range level to allow the test to pass.

Values: Component/Net, Pin, Range

Default: Component/Net

Minimum Short Resistance (Ohms)

Tooltip: This is the minimum resistance in ohms that defines a short.

Default: 0

Maximum Short Resistance (Ohms)

Tooltip: This is the maximum resistance in ohms that defines a short.

Default: 10

Reprobe Times

Tooltip: The number of times the pin is probed after an open is detected with Component Open Check set to Reprobe.

Default: 5

Disable Maintenance Warnings

Tooltip: Checking turns off the maintenance warnings when starting the software.

Default: Unchecked

Load Previous Board at Startup

Tooltip: Loads the last board loaded from the previous time the software was run.

Default: Checked

Hardware Tab

Tracker

Tooltip: Select the hardware used to capture signatures

Values: None, ProTrack, PXI Tracker

Default: None

Tracker Port

Tooltip: Select the parallel port or USB to connect the ProTrack

Values: None, USB, Parallel 378, Parallel 278, Parallel 3BC, GPIB

Default: None

Scanner

Tooltip: Select the hardware used to connect cables

Values: None, ProTrack Scanner, GeoTest, NI Switch Executive

Default: None

Note: After selecting GeoTest click the GeoTest Setup button. After selecting NI Switch Executive see See Tips and Hints NI Switch Executive Configuration for more help.

Prober

Tooltip: Select the hardware used to position the probes

Values: None, Prober Ic, Prober IIc, Prober IIIc, Access

Default: None

Prober Serial Port

Tooltip: Select the serial port to communicate with the prober

Values: COM1, COM2, COM3, COM4, COM5

Default: COM1

Correction Steps

Tooltip: The number of correction steps for the Access Prober

Values: 0-10

Default: 3

Frame Grabber

Tooltip: The select the hardware used to capture images

Values: None, Sensoray X11, NI 14XX, Sensoray 2250

Default: None

> **Note: NI 14XX requires NI-IMAQ 3.5.2 or later and NI-Vision Runtime 8.0 or later. I also NI-IMAQ needs to be set to NTSC in MAX. This can be accomplished by Selecting the Huntron.iid interface in MAX.**

XY Travel

Tooltip: The default XY Travel for the Prober pane tabs.

Default: 2 mils or equivalent

Z Travel

Tooltip: The default Z Travel for the Prober

Default: 128 mils or equivalent

GeoTest Setup

Displays the GeoTest Setup dialog.

Tracker Connect/Disconnect

Connect to the selected Tracker and Scanner hardware to control with the software. Disconnect the Tracker and Scanner hardware to allow it to be used stand alone.

Prober/Frame Grabber Connect/Disconnect

Connect to the selected Prober and Frame Grabber hardware to control with the software. Disconnect the Prober and Frame Grabber hardware.

Auto Align Score

Tooltip: The minimum score required for a matching image. A value of 1000 is a perfect match and zero is no match.

Values: 0-1000

Default: 800

Auto Align X Size

Tooltip: The width in pixels of the area in the middle of the camera image used for Auto Align.

Values: 80-320

Default: 160

Auto Align Y Size

Tooltip: The height in pixels of the area in the middle of the camera image used for Auto Align.

Values: 60-240

Default: 120

Auto Align Minimum Contrast

Tooltip: The minimum amount of contrast expected in the shape features of the image. Contrast is defined as the difference between the maximum and minimum luminance of the color pixels.

Values:

Default: 0

Auto Align Sub Pixel

Tooltip: Check to have match results use subpixel accuracy.

Default: unchecked

Color Tab

Reference Signature Color

Displays the reference signature color

Select Color:

Select the reference signature color from a Common Windows Color box.

Default: Green

Current Signature Color

Displays the current signature color

Select Color:

Select the current signature color from a Common Windows Color box.

Default: Red

Hardware Signature Color

Displays the hardware signature color

Select Color:

Select the hardware signature color from a Common Windows Color box.

Default: Blue

Graticule Color

Displays the graticule color

Select Color:

Select the graticule color from a Common Windows Color box.

Default: Black

Signature Background Color

Displays the signature background color

Select Color:

Select the signature background color from a Common Windows Color box.

Default: White

Scan Tab

Delete Previous Scan

Tooltip: Deletes the previous scan not set to compare when the sequence is scanned again. This makes it worklike the previous version of software.

Default: NO

ASCII Store Delimiter

Tooltip: The character used to delimit Troublesheet ASCII files

Values: Tab, Comma, Semi-Colon, Space

Default: Tab

ASCII Store String Delimiter

Tooltip: The character used to delimit Troublesheet ASCII file strings

Values: None, Single Quote, Double Quote

Default: None

Signature Tab

Type

Tooltip: Show signatures as signatures or waveforms.

Values: Signatures, Waveforms

Default: Signatures

On Top

Tooltip: Displays the current signature on top of the stored signature(s) or the other way around. The hardware signature is displayed on top off current if current on top or under current if current is on the bottom.

Values: Current, Stored

Default: Current

Style

Tooltip: Signature displayed with one dot per data point or solid lines.

Values: Dotted, Line

Default: Line

Graticule

Tooltip: Displays a graticule behind the signatures if Checked. No graticule is displayed if unchecked.

Default: Checked

SigAssist™

Tooltip: Displays the calculated Resistance, Capacitance, Power, Forward and Reverse breakdown voltages.

Default: Checked

Range Mode

Tooltip: Sets the signature display mode for the Signatures and Troublesheet tabs to Range Mode, if unchecked it is set to Pin Mode.

Default: Unchecked

Sequence Tab

These settings are the defaults for sequences that are created. For more help on the settings see the Sequence help.

Component Sequence

Default: Checked

Top Side

Default: Checked

Z Home Between Components

Default: Checked

Show Instructions

Default: Unchecked

Auto Store ASCII

Default: Unchecked

Auto Store Passed

Default: Unchecked

Stop On Failed Component

Default: Unchecked

Compare Priority

Values: Same, All, Merge

Default: Same

Slot

Values: Top, Middle, Bottom, Base

Default: Top

Auto Store Level

Values: Component/Net, Pin, Range

Default: Component/Net

Sort Band Width

Tooltip: The width of bands used in the Component/Net Order Number “Set By Location” and “Set CAD Probes” features.

Default: 2000 mils or equivalent

Instructions

Default:

Component Tab

These settings are the defaults for Components that are created. For more help on the settings see the Component help.

Package

Default: DIP

Number Of Pins

Default: 16

Verify: Numbers only

Pause

Default: Unchecked

Open Recheck Depth (unit of measure)

Values: Depends on Unit Of Measure (.008, .016, .024, .048 inches)

Default: Depends on Unit Of Measure (.008 inches)

Connection Type

Default: Prober

Ranges Then Pin

Default: Checked

Open Check Type

Default: Recheck

Short Check Type

Default: None

Prober Correction Steps

Default: 3

Pin Spacing (unit of measure)

Default: 100 mils or equivalent

Instructions

(String)

Default:

Net Tab

These settings are the defaults for Nets that are created. For more help on the settings see the Net help.

Number Of Pins

Default: 1

Connection Type

Default: Prober

Open Recheck Depth (unit of measure)

Values: Depends on Unit Of Measure (.008, .016, .024, .048 inches)

Default: Depends on Unit Of Measure (.008 inches)

Prober Correction Steps

Default: 3

Open Check Type

Default: Recheck

Pause

Default: Unchecked

Instructions

Default:

Pin Tab

These settings are the defaults for Pins of Components or Nets that are created. For more help on the settings see the Pin help.

Channel

Default: A

Prober Correction Steps

Default: 0

Verify: Numbers only

Instructions

Default:

Range Tab

These settings are the defaults for Ranges that are created. For more help on the settings see the Range help.

Range 1 Enabled

Default: Checked

Range 1 Voltage

Values: .2, .4, .6, .8, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

Default: 3

List limited by the Resistance setting.

Range 1 Resistance

Values: 10, 20, 50, 100, 200, 500, 1K, 2K, 5K 10K, 20K, 50K, 100K, Low, Med1, Med2

Default: 100

Range 1 Frequency

Values: 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 300, 400, 500, 600, 700, 800, 900, 1K, 1.1K, 1.2K, 1.3K, 1.4K, 1.5K, 1.6K, 1.7K, 1.8K, 1.9K, 2K, 3K, 4K, 5K

List limited by the Resistance setting.

Default: 200

Range 1 Filter

Default: Checked

Range 1 Max Samples

Values: 1-9

Default: 5

Range 1 Tolerance

Values: 0-99

Default: 5

Range 1 Delay

Values: 0-9

Default: 0

Range 2 Enabled

(Check box)

Default: Checked

Range 2 Voltage

Values: .2, .4, .6, .8, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

Default: 3

List limited by the Resistance setting.

Range 2 Resistance

Values: 10, 20, 50, 100, 200, 500, 1K, 2K, 5K 10K, 20K, 50K, 100K, Low, Med1, Med2

Default: 10K

Range 2 Frequency

Values: 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 300, 400, 500, 600, 700, 800, 900, 1K, 1.1K, 1.2K, 1.3K, 1.4K, 1.5K, 1.6K, 1.7K, 1.8K, 1.9K, 2K, 3K, 4K, 5K

List limited by the Resistance setting.

Default: 200

Range 2 Filter

Default: Checked

Range 2 Max Samples

Values: 1-9

Default: 5

Range 2 Tolerance

Values: 0-99

Default: 5

Range 2 Delay

Values: 0-9

Default: 0

Range 3 Enabled

Default: Unchecked

Range 3 Voltage

Values: .2, .4, .6, .8, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

Default: 3

List limited by the Resistance setting.

Range 3 Resistance

Values: 10, 20, 50, 100, 200, 500, 1K, 2K, 5K 10K, 20K, 50K, 100K, Low, Med1, Med2

Default: 1K

Range 3 Frequency

Values: 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 300, 400, 500, 600, 700, 800, 900, 1K, 1.1K, 1.2K, 1.3K, 1.4K, 1.5K, 1.6K, 1.7K, 1.8K, 1.9K, 2K, 3K, 4K, 5K

List limited by the Resistance setting.

Default: 200

Range 3 Filter

Default: Checked

Range 3 Max Samples

Values: 1-9

Default: 5

Range 3 Tolerance

Values: 0-99

Default: 5

Range 3 Delay

Values: 0-9

Default: 0

Range 4 Enabled

Default: Unchecked

Range 4 Voltage

Values: .2, .4, .6, .8, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

Default: 3

List limited by the Resistance setting.

Range 4 Resistance

Values: 10, 20, 50, 100, 200, 500, 1K, 2K, 5K 10K, 20K, 50K, 100K, Low, Med1, Med2

Default: 100K

Range 4 Frequency

Values: 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 300, 400, 500, 600, 700, 800, 900, 1K, 1.1K, 1.2K, 1.3K, 1.4K, 1.5K, 1.6K, 1.7K, 1.8K, 1.9K, 2K, 3K, 4K, 5K

List limited by the Resistance setting.

Default: 200

Range 4 Filter

Default: Checked

Range 4 Max Samples

Values: 1-9

Default: 5

Range 4 Tolerance

Values: 0-99

Default: 5

Range 4 Delay

Values: 0-9

Default: 0

Test

File Open

Tooltip: Allow the user to select the board file on the tester Pane

Default: Checked

Sequence

Tooltip: Allow the user to selected the sequence on the Tester pone

Default: Checked

Show Signature Pane

Tooltip: Display the Signature Pane with the Tester Pane

Default: Unchecked

Auto Print

Tooltip: Automatically print a Troublesheet report when testing with the Tester Pane

Default: Unchecked

Auto PDF

Tooltip: Automatically create a Troublesheet PDF file in My Documents\Huntron\Troublesheets when testing with the Tester Pane

Default: Unchecked

Troublesheet Detail Level

Tooltip: Select the detail level of the troublesheet for Auto print or Auto PDF

Values: Component/Net, Pin Range w/ Signatures

Default: Component/Net

Buttons

Ok (Temporary)

Only saves in memory and closes dialog

Cancel

Does not save and closes dialog

Save (Permanent)

Saves to memory and updates registry and closes dialog

Help

Displays this help

Board Buttons

Sub Menu items for each board button defined. Each button performs the function specified in the button setup.

Sequence Buttons

Sub Menu items for each sequence button defined. Each button performs the function specified in the button setup.

Component/Net Buttons

Sub Menu items for each Component/ Net button defined. Each button performs the function specified in the button setup.

Maintenance

ProTrack Diagnostics

Used to verify operation of a ProTrack and create a loop compensation file.

TrackerPXI Diagnostics

Used to verify operation of a TrackerPXI.

Verify Hardware

This test verifies the TrackerPXI power supplies, PXI trigger lines, the AUX connector signals, internal volt meter, frequency, and zero crossing duty cycle. Some of these tests require factory test equipment.

Calibrate

This procedure adjusts the sine wave signals to compensate for DC offset, amplitude and capacitance of connected cabling. This should be run annually or as connected cabling and or instruments change.

Verify Calibration

This procedure verifies the sine wave signal settings that compensate for DC offset, amplitude and capacitance of connected cabling. This also verifies signatures of internal reference resistances. This should be run monthly and if it fails calibration should be run.

Sensoray x11 Diagnostics

Used to verify operation of a Sensoray frame grabber and the attached camera.

NI 14xx Diagnostics

Used to verify operation of a National Instruments frame grabber and the attached camera.

Sensoray 2250 Diagnostics

Used to verify operation of a Sensoray frame grabber and the attached camera.

Software Activation

Displays the Software Activation Dialog to enter new activation codes.

GeoTest Setup Dialog

This dialog is used to set up PCI/PXI GeoTest Switch Cards to be used as a scanner. As a Switch card is selected the next switch card entry becomes available. The pins of the additional cards are treated as an extension of the scanner. See Tips and Hints GeoTest Switch Card Configuration for more help.

Fields

Switch Card

Tooltip: Select the switch card to be used.

Default: None

Slot

Tooltip: Select the slot of the switch card.

Default: None

Test / Common

Tooltip: Select the pin type configuration for the switch card. Test for test pins or Common for common pins.

Default: Test

Pins

Tooltip: Displays the type and number of the pins for the switch card.

Modify: Read only

Buttons

Ok (Temporary)

Tooltip: Saves the current user changes in memory and closes the dialog

Save (Permanent)

Tooltip: Saves the current user changes in memory, updates the registry and closes the dialog

Cancel

Tooltip: Does not save the current user changes and closes the dialog

Help

Tooltip: Displays context sensitive help for the Switch Card dialog

Software Activation Dialog

Tracker Activation Code

Enter the Tracker Activation Code provided by Huntron to activate control of the Tracker Hardware and other features.

Prober Activation Code

Enter the Prober Activation Code provided by Huntron to activate control of the Prober Hardware and other features.

Activate

Click to activate the software.

Exit

Click to exit the program.

Window Menu

Tree Pane

A checked menu item that controls the display of the Tree Pane. Default is on.

Prober Pane

A checked menu item that controls the display of the Prober Pane. Default is on if a Prober is connected.

Signature Pane

Checked menu item that controls the display of the Signature Pane. Default is on if a Tracker is connected.

Image Pane

Checked menu item that controls the display of the Image Pane. Default is on if a Prober is connected.

Tester Pane

Checked menu item that controls the display of the Tester Pane. Default is off. Hides the other panes based on Options Test settings.

Lock

A checked menu item that prevents panes from being shown, hidden, docking, moving. Default is off.

Auto Adjust

Checked menu item that allows the software to auto adjust the size and position of the panes. Default is on.

Help Menu

Huntron Workstation Help

Displays this help contents

Manual

Displays this help in a manual format PDF file.

Tutorials

Workstation

Tutorial that walks the user through creating and running a test in the Workstation software.

CAD Import

Tutorial that walks the user through creating a test using CAD Import tools.

Technical Support

Huntron Technical Support contact information:

Huntron, Inc.

15720 Main Street Suite 100

Mill Creek, WA 98012

(800) 426-9265

(425) 743-3171

http://www.huntron.com

info@huntron.com

Huntron Workstation Website

Link to http://www.huntron.com/support/workstation.htm

Huntron Website

Link to http://www.huntron.com

About Huntron Workstation

Program version and enabled feature list.

Status Bar

The Status Bar is the area across the bottom of the Main window that shows the state of the program. It contains the following sections:

Sequence

Tooltip: Displays the first 20 characters of the name of the currently selected sequence on the Tree pane Sequences tab.

Component/Net

Tooltip: Displays the first 15 characters of the name of the currently selected component/Net on the Tree pane Components or Nets tab

Pin

Tooltip: Displays the first 5 characters of the name of the currently selected pin on the Tree pane Pins tab.

Range

Tooltip: Displays the name of the currently selected range on the Tree pane Ranges tab

Unit of Measure

Tooltip: Displays the unit of measure of the currently open board file.

Message

Tooltip: Displays system messages as needed

Tree Pane

This pane contains the tree of information that constitutes the board test. The title is Tree - Board: boardname Revision: revision

Sequences Tab

A sequence is a group of components or nets. The groups can be of components/nets on the same side of the board. They can be a group of components that are the most likely to fail. The components and nets can be sorted in an order convenient for scanning. When using a scanner sort by number of pins to reduce the number of times the clip size needs to be changed. Selecting a sequence allows the entire sequence to be scanned using the Signature pane Scan tab.

Columns/Fields

Name

Dialog Tooltip: Identifying name of the sequence (i.e. Quick test, full test…)

Default:

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Order Number

Dialog Tooltip: Used to create custom sort order for the Sequences

Default: See Add New and Insert.

Right click menu:

Set to Current Order

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Component Sequence

Dialog Tooltip: Checked if Sequence contains components, Unchecked if contains Nets

Default: Set in Options

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Top Side

Dialog Tooltip: Checked if Top side of board, Unchecked if Bottom side of board

Default: Set in Options

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Slot

Dialog Tooltip: The slot of the Prober where the board is placed

Values: Top, Middle, Bottom, Base

Default: Set in Options

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Z Home Between Component

Dialog Tooltip: Checked for the probe to go to Z home between components, unchecked for the probe to go to the Z Up position between components

Default: Set in Options

Right Click Column Menu:

Set All to Current

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Compare Priority

Dialog Tooltip: Same – compare to exact serial number if exists and the scan is set to Compare else default to All Serials. All Serials – compare to all non-merged scans set to Compare and report on the closest if only merges default to Merge. Merge – compare to Min/Max stored

Values: Same, All, Merge

Default: Set in Options

Right Click Column Menu:

Set All to Current

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Stop On Failed Component

Dialog Tooltip: Checked stops sequence scan on component failure, Unchecked not to stop sequence scan

Default: Set in Options

Right Click Column Menu:

Set All to Current

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Auto Store ASCII

Dialog Tooltip: Checked to add lines to the ASCII Troublesheet file every time a component is scanned, Unchecked not to add .

Default: Set in Options

Right Click Column Menu:

Set All to Current

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Auto Store Level

Dialog Tooltip: Sets the level of detail included in the ASCII Troublesheet file

Values: Sequence, Comp/Net, Pin or Range

Default: Set in Options

Right Click Column Menu:

Set All to Current

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Auto Store File

Dialog Tooltip: The filepath of the ASCII Troublesheet file.

Default:

Right Click Column Menu:

Set All to Current

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Auto Store Passed

Dialog Tooltip: Check to store passed scan information or Unchecked not to store passed scan information to the ASCII Troublesheet file

Default: Set in Options

Right Click Column Menu:

Set All to Current

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Show Instructions

Dialog Tooltip: Checked to display sequence instructions when the sequence is scanned, Unchecked to not display instructions

Default: Set in Options

Right Click Column Menu:

Set All to Current

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Align Top1 X

Dialog Tooltip: The X Coordinate of the First Top Alignment Point stored in Board Unit of Measure

Default: 0

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Align Top 1Y

Dialog Tooltip: The Y Coordinate of the First Top Alignment Point stored in Board Unit of Measure

Default: 0

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Align Top 2X

Dialog Tooltip: The X Coordinate of the Second Top Alignment Point stored in Board Unit of Measure

Default: 0

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Align Top 2Y

Dialog Tooltip: The Y Coordinate of the Second Top Alignment Point stored in Board Unit of Measure

Default: 0

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Align Bottom1 X

Dialog Tooltip: The X Coordinate of the First Bottom Alignment Point stored in Board Unit of Measure

Default: 0

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Align Bottom1 Y

Dialog Tooltip: The Y Coordinate of the First Bottom Alignment Point stored in Board Unit of Measure

Default: 0

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Align Bottom2 X

Dialog Tooltip: The X Coordinate of the Second Bottom Alignment Point stored in Board Unit of Measure

Default: 0

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Align Bottom2 Y

Dialog Tooltip: The Y Coordinate of the Second Bottom Alignment Point stored in Board Unit of Measure

Default: 0

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Up Top Z

Dialog Tooltip: The Z Up Coordinate of the Top Side stored in Board Unit of Measure

Default: 0

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Up Botttom Z

Dialog Tooltip: The Z Up Coordinate of the Bottom Side stored in Board Unit of Measure

Default: 0

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Down Top Z

Dialog Tooltip: The Z Down Coordinate of the Top Side stored in Board Unit of Measure

Default: 0

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Down Bottom Z

Dialog Tooltip: The Z Down Coordinate of the Bottom Side stored in Board Unit of Measure

Default: 0

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Sequence ID

Dialog Tooltip: System created unique number to identify each sequence

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Align Top1 Img

(Not shown On Grid)

Dialog Tooltip: The Camera Image for the First Top Alignment point

Modify: Read only

Align Top2 Img

(Not shown On Grid)

Dialog Tooltip: The Camera Image for the Second Top Alignment point

Modify: Read only

Align Bottom1 Img

(Not shown On Grid)

Dialog Tooltip: The Camera Image for the First Bottom Alignment point

Modify: Read only

Align Bottom2 Img

(BMP) (Not shown On Grid)

Dialog Tooltip: The Camera Image for the Second Bottom Alignment point

Modify: Read only

Instructions

(Not shown On Grid)

Dialog Tooltip: Instructions for setup and testing of this sequence

Default: Set in Options

Sequence Selected Actions

Updates the Component grid and selects the first Component. Change Prober Pane Tab to Align and Set the Align Point combo box to <Select>, Prober Pane title set to Not Aligned. Aligned = False. Sets the CAD tab side of board.

Row Right Click Menu

Add New

Display the Add Sequence dialog and if OK is clicked, add a new sequence at the end of the list. Highlight the new sequence in the grid

Edit

Display the Edit Sequence dialog

Delete

Delete the currently selected sequence(s).

Insert

Display the Insert Sequence dialog and if OK is clicked, add a new sequence above the current sequence in the list. Highlight the new sequence in the grid

Repeat

Add a new sequence at the end of the list with the same information as the current sequence except the name is blank. Highlight the new sequence in the grid

Build

Add a new sequence at the end of the list with the same information as the current sequence and increment the name if it ends in a letter or a digit. Highlight the new sequence in the grid

Copy

Create a copy of the currently selected sequence(s) in memory (not the windows clipboard)

Paste

Add the sequence(s) stored in memory from a Copy or Cut to the end of the list. Highlight the new sequence in the grid

Cut

This is a combination of Copy and Delete

Delete Scans

Delete all of the scans and signatures for the current sequence.

Dialog Buttons

Browse

Dialog Tooltip: Select a file to be used as the Auto Store file

Next to the Auto Store File control

Ok

Dialog Tooltip: Closes the dialog and updates the database with the changes made in the dialog. The grid is positioned to view and selects the sequence created.

Cancel

Dialog Tooltip: Closes the dialog and without updating the database with the changes made in the dialog

Previous

Dialog Tooltip: Saves changes to the current sequence to the grid/database. Shows and selects the previous sequence on the grid. Displays the field values for the newly selected sequence in the Edit Sequence dialog.

Next

Dialog Tooltip: Saves changes to the current sequence to the grid/database. Shows and selects the next sequence on the grid. Displays the field values for the newly selected sequence in the Edit Sequence dialog.

Add New

Dialog Tooltip: Saves changes to the current sequence to the grid/database. Creates a new sequence and displays the default field values in the Add New Sequence dialog.

Repeat

Dialog Tooltip: Saves changes to the current sequence to the grid/database. Creates a new sequence on the grid with a blank name.

Build

Dialog Tooltip: Saves changes to the current sequence to the grid/database. Shows and selects the newly added sequence on the grid with the name incremented.

Delete

Dialog Tooltip: Delete the current sequence and displays the next sequence in the Edit Sequence Dialog. Disabled on Add New and Insert dialogs.

Delete Scans

Dialog Tooltip: Delete all of the scans and signatures for the current sequence. Disabled on Add New and Insert dialogs.

Buttons…

Dialog Tooltip: Display the Button Setup Dialog for the current sequence

Help

Dialog Tooltip: Display context sensitive help for the Sequence dialog

Components or Nets Tab

A component is a group of pins a physical component. The pins can be named to identify non numeric numbering schemes or function of the pin. Selecting a component allows the viewing of its signatures on the Signature pane Signature tab. Selecting a component, allows it to be scanned using the Signature pane Scan tab.

A net is a group of pins that are test points for nodes of the net. A single node can be scanned or all of the identified nodes of the net can be scanned. Selecting a net allows the viewing of its signatures on the Signature pane Signature tab. Selecting a net, allows it to be scanned using the Signature pane Scan tab.

Columns/Fields

Name

Component Dialog Tooltip: The Reference Designator or grid location of the component

Net Dialog Tooltip: The Reference Designator or grid location of the net

Default:

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Order Number

Component Dialog Tooltip: Used to create custom sort order for the components

Net Dialog Tooltip: Used to create custom sort order for the nets

Default: See Add New and Insert.

Right Click Column Menu:

Set to Current Order

Set to Location (sorts order by location on the board, See Sort Band Width in Options-General)

Set to CAD Probes(sorts order by location Probe names from CAD Import and on the board, See Sort Band Width in Options-General)

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Package

Component Only (Default to Probe)

Component Dialog Tooltip: The style of the component package used to determine how many rows of pins.

Net Dialog Tooltip: Set to Probe unless cabling to nodes of the net

Values: Both, DIP, Front, Multi, Probe, SIP, DIP2X, SIP2X, Switch Card, MultiSIP

Default: Set in Options

Modify: Read Only if Edit Mode

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Note: Changing the Package will delete all pins, ranges, scans and signatures of the component. The pins and ranges will be rebuilt from the Options defaults.

Number Of Pins

Component Dialog Tooltip: The number of pins on the component

Net Dialog Tooltip: The number of nodes on the net to be setup for testing.

Values: 1-128

Default: Set in Options, Net default is 1.

Modify: Read Only if Edit Mode

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Note: Changing the Number Of Pins will delete all pins, ranges, scans and signatures of the component. The pins and ranges will be rebuilt from the Options defaults.

Type

Component Only

Dialog Tooltip: The type of component used to Load/Save library components

Default:

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Pin Spacing

Component Only

Dialog Tooltip: The distance between adjacent pins in a row.

Values: Based on the measurement units of the board.

Default: Set in options

Right Click Column Menu:

- Sort Ascending (Saved to Registry)
- Sort Descending (Saved to Registry)

Connection Type

Component Dialog Tooltip: Set the type of hardware that will be used to connect to the component, defaults to previous type if unavailable

Net Dialog Tooltip: Set the type of hardware that will be used to connect to the net, defaults to previous type if unavailable

Values: Probes, Scanner, Prober

Default: Set in Options

Right Click Column Menu:

- Set Current All
  - Component/Nets
  - Sequences
- Default All
  - Component/Nets
  - Sequences
- Sort Ascending (Saved to Registry)
- Sort Descending (Saved to Registry)

Open Check Type

Dialog Tooltip: Set the checking for open pins

Values: None, Recheck, Reprobe

Default: Set in Options

Right Click Column Menu:

- Set Current All
  - Component/Nets
  - Sequences
- Default All
  - Component/Nets
  - Sequences
- Sort Ascending (Saved to Registry)
- Sort Descending (Saved to Registry)

None does not check for opens. Opens detected without a reference signal will be set to Dev 1001 and area of 10001 to place them at the top of the Troublesheet. Check will move the probe down the recheck depth for each range if an open is detected and take a new signature. Reprobe will probe the pin Options General Reprobe Times for each range and then take a new signature.

Open Recheck Depth

Dialog Tooltip: Sets the additional depth used when rechecking opens

Values: .008, .016, .024, .048 inches (Displayed in selected Unit Of Measure)

Default: Set in Options

Right Click Column Menu:

Set Current All

Component/Nets

Sequences

Default All

Component/Nets

Sequences

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Converted Merges

Dialog Tooltip: The number of times signatures have been merged

Default: 0

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Correction Steps

Dialog Tooltip: The number of times the Access Prober corrects its position to get to the component.

Default: Set in Options

Right Click Column Menu:

Set Current All

Component/Nets

Sequences

Default All

Component/Nets

Sequences

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Pause

Component Dialog Tooltip: Checked to stop a sequence scan to display the component instructions

Net Dialog Tooltip: Checked to stop a sequence scan to display the net instructions

Default: Set in Options

Right Click Column Menu:

Set Current All

Component/Nets

Sequences

Default All

Component/Nets

Sequences

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Ranges Then Pin

Component Only

Component Dialog Tooltip: Checked to scan ranges then change pins, Unchecked to scan pins then changes ranges

Default: Set in Options

Right Click Column Menu:

Set Current All

Component/Nets

Sequences

Default All

Component/Nets

Sequences

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Short Check

Component Only

Component Dialog Tooltip: Enable checking of pin combinations for shorts when using a Scanner.

Values: None, Adjacent, All

Default: Set in Options

Combo or scroll box

Right Click Column Menu:

Set Current All

Component/Nets

Sequences

Default All

Component/Nets

Sequences

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Component/Net ID

Component Dialog Tooltip: System created unique number to identify each component

Net Dialog Tooltip: System created unique number to identify each net

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Sequence ID

Dialog Tooltip: The numeric identifier of the parent Sequence

Default: 0

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Part Package

Component Only

Dialog Tooltip: The industry standard package of the component

Default:

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Part Number

Component Only

Dialog Tooltip: The part number of the component

Default:

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Part Tolerance

Component Only

Dialog Tooltip: The Tolerance rating of the component

Default:

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Part Value

Component Only

Dialog Tooltip: The value of the component

Default:

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Replacement

Component Only

Dialog Tooltip: The part number of the part used to replace the component when faulty

Default:

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Supplier

Component Only

Dialog Tooltip: The supplier or manufacturer of the replacement part

Default:

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Top X

Component Only

Dialog Tooltip: The Top side X coordinate of the component stored in Board Unit of Measure

Default: 0

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Top Y

Component Only

Dialog Tooltip: The Top side Y coordinate of the component stored in Board Unit of Measure

Default: 0

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Up Top Z

Component Dialog Tooltip: The Top side Z Up coordinate of the component stored in Board Unit of Measure

Net Dialog Tooltip: The Top side Z Up coordinate of the net stored in Board Unit of Measure

Default: 0

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Bottom X

Component Only

Dialog Tooltip: The Bottom side X coordinate of the component stored in Board Unit of Measure

Default: 0

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Bottom Y

Component Only

Dialog Tooltip: The Bottom side Y coordinate of the component stored in Board Unit of Measure

Default: 0

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Up Bottom Z

Component Dialog Tooltip: The Bottom side Z Up coordinate of the component stored in Board Unit of Measure

Net Dialog Tooltip: The Bottom side Z Up coordinate of the net stored in Board Unit of Measure

Default: 0

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Instructions

(Not Shown on Grid)

Dialog Tooltip: Special instructions required for testing the component or notes about failure trends.

Dialog Tooltip: Special instructions required for testing the net or notes about failure trends.

Default: Set in Options

Top Pin

Net Only

Dialog Tooltip: The number of the pin to scan on the top of the board

Values: <All> and 1 to number of pins.

Default: 1

Read Only on grid

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

For Nets, this setting over rides the Scan Pin setting of the pin by only scanning the selected pin if Scan Pin is enabled. Pins with Scan Pin Enabled are not scanned unless selected in Top Pin.

Bottom Pin

Net Only

Dialog Tooltip: The number of the pin to scan on the top of the board

Default: <All> and 1 to number of pins.

Read Only on grid

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

For Nets, this setting over rides the Scan Pin setting of the pin by only scanning the selected pin if Scan Pin is enabled. Pins with Scan Pin Enabled are not scanned unless selected in Bottom Pin.

Component Net Selected Actions

Updates the Pin grid and selects the first Pin.

Updates the Scan grid and selects the first Scan.

Updates the Signature Pane Signature tab.

Change Prober Pane Teach and Height tab pin combo box to <Select Pin>.

Row Right Click Menu

Add New

Display the Add Component dialog and if OK is clicked, add a new component at the end of the list. Highlight the new component in the grid

Insert

Display the Insert Component dialog and if OK is clicked, add a new component above the current component in the list. Highlight the new component in the grid.

Edit

Display the Edit Component dialog

Delete

Delete the currently selected component(s)/net(s).

Repeat

Add a new component at the end of the list with the same information as the current component except the name is blank. Highlight the new component in the grid. Component Only.

Build

Add a new component at the end of the list with the same information as the current component and increment the name if ending in a letter or a digit. Highlight the new component in the grid. Component Only.

Copy

Create a copy of the currently selected component(s) in memory (not the windows clipboard)

Paste

Add the component(s) stored in memory from a Copy or Cut to the end of the list. Highlight the new component in the grid

Cut

This is a combination of Copy and Delete

Delete Scans

Delete all of the scans and signatures for the current component.

Sync CAD

Checked menu item that enables selecting of the component/net on the Image pane CAD tab component or net drop down list when a component/net is selected.

Dialog Buttons

Ok

Dialog Tooltip: Closes the dialog and updates the database with the changes made in the dialog. The grid is positioned to view and selects the component created.

Cancel

Dialog Tooltip: Closes the dialog and without updating the database with the changes made in the dialog

Previous

Dialog Tooltip: Saves changes to the current component to the grid/database after prompting the user. Shows and selects the previous component on the grid. Displays the field values for the newly selected component in the Edit Component dialog.

Next

Dialog Tooltip: Saves changes to the current component to the grid/database after prompting the user. Shows and selects the next component on the grid. Displays the field values for the newly selected component in the Edit Component dialog.

Add New

Dialog Tooltip: Saves changes to the current component to the grid/database after prompting the user. Shows and selects the newly added component on the grid. Displays the default field values in the Add New Component dialog.

Repeat

Dialog Tooltip: Saves changes to the current component to the grid/database after prompting the user. Creates a new sequence on the grid with a blank name. Component Only.

Build

Dialog Tooltip: Saves changes to the current component to the grid/database. Shows and selects the newly added component on the grid with the name incremented. Component Only.

Delete

Dialog Tooltip: Delete the current component and close the dialog. Disabled on Add New and Insert dialogs.

Delete Scans

Dialog Tooltip: Delete all of the scans and signatures for the current component after prompting Are you sure? Disabled on Add New and Insert dialogs.

Buttons…

Dialog Tooltip: Display the Button Setup Dialog for the current component

Help

Dialog Tooltip: Display context sensitive help for the Component dialog

Pins Tab

A pin is a group of ranges used to scan. When using a Prober the pins are the physical location of where to contact the board during scanning.

Columns/Fields

Name

Dialog Tooltip: Then name of the pin

Default:

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Pin Number

Dialog Tooltip: The number of the pin

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Net Name

Dialog Tooltip: The net name if a component sequence. Hidden if Net Sequence.

Default:

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Correction Steps

Dialog Tooltip: The number of times the Access Prober corrects its position to get to the pin.

Default: Set in Options

Right Click Column Menu:

- Set Current All
  - Pins
  - Component/Nets
  - Sequences
- Default All
  - Pins
  - Component/Nets
  - Sequences
- Sort Ascending (Saved to Registry)
- Sort Descending (Saved to Registry)

Channel

Dialog Tooltip: Sets the Tracker channel to be used to capture signatures

Values: A, B

Default: Set in Options

Right Click Column Menu:

- Set Current All
  - Pins
  - Component/Nets
  - Sequences
- Default All
  - Pins
  - Component/Nets
  - Sequences
- Sort Ascending (Saved to Registry)
- Sort Descending (Saved to Registry)

Unique Pin

Dialog Tooltip: Checked if the pin is on a net with two or less nodes. Used for isolating faults

Default: Unchecked

Right Click Column Menu:

- Sort Ascending (Saved to Registry)
- Sort Descending (Saved to Registry)

Scan Pin

Dialog Tooltip: Unchecked if the pin is to be skipped during scanning

Default: Checked

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

This feature can be overridden by the Top Pin or Bottom Pin setting of the parent Net.

Relay Number

Dialog Tooltip: This is the number of the actual Scanner relay to be set for the pin

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Order Number

Dialog Tooltip: Used to create custom sort order for the pins

Default: Pin Number

Right Click Column Menu:

Set to Current Order

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Pin ID

Dialog Tooltip: System created unique number to identify each pin

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Component/Net ID

Dialog Tooltip: The numeric identifier of the parent component or net

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Test Probe X

Dialog Tooltip: The X Coordinate of the Pin stored in Board Unit of Measure

Default: 0

Modify: Read only

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Test Probe Y

Dialog Tooltip: The Y Coordinate of the pin stored in Board Unit of Measure

Default: 0

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Test Probe Z

Dialog Tooltip: The Y Coordinate of the pin stored in Board Unit of Measure

Default: 0

Right Click Column Menu:

Set All to 0

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Pulse

Dialog Tooltip: Sets the mode of the Pulse Generator

Values: Off, DC, Pulse

Default: Off

Right Click Column Menu:

Set Current All

Pins

Component/Nets

Sequences

Default All

Pins

Component/Nets

Sequences

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Pulse Type

Dialog Tooltip: Sets the Pulse Generator to Positive, Negative or both output

Values: +, -, +/-

Default: +

Right Click Column Menu:

Set Current All

Pins

Component/Nets

Sequences

Default All

Pins

Component/Nets

Sequences

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Pulse Level

Dialog Tooltip: Sets the level of the Pulse Generator

Values: 0. .1, .2, …… 9.9, 10

Default: 0

Right Click Column Menu:

Set Current All

Pins

Component/Nets

Sequences

Default All

Pins

Component/Nets

Sequences

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Duty Cycle

Dialog Tooltip: Sets the percentage that the Pulse Generator signal is ON.

Values: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24 ,26 ,28 ,30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50

Default: 50

Right Click Column Menu:

Set Current All

Pins

Component/Nets

Sequences

Default All

Pins

Component/Nets

Sequences

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Shorts

(Not shown on grid)

This bit arrays stores the pins that should be shorted.

Instructions

(Not Shown on Grid)

Dialog Tooltip: Instructions for setup and testing of this pin

Default: Set in Options

Pin Selected Actions

Updates the Range grid and selects the first Range.

Row Right Click Menu

Edit

Display the Edit Pin dialog

Group Edit

Displays the Group Edit window that allows set changing Pin and Range parameters for multiple Components/Nets and Pins based on the current pin and range.

Net Edit

Displays the Net Edit window that allows changing Pin and Range parameters for multiple Pins connected to multiple Nets based on the current pin and range.

Sync CAD

Checked menu item that enables selecting of the pin on the Image pane CAD tab pin drop down list when a pin is selected.

Dialog Buttons

Ok

Dialog Tooltip: Closes the dialog and updates the database with the changes made in the dialog.

Cancel

Dialog Tooltip: Closes the dialog and without updating the database with the changes made in the dialog

Previous

Dialog Tooltip: Saves changes to the current pin to the grid/database. Shows and selects the previous pin on the grid. Displays the field values for the newly selected pin in the Edit Pin dialog.

Next

Dialog Tooltip: Saves changes to the current pin to the grid/database. Shows and selects the next pin on the grid. Displays the field values for the newly selected pin in the Edit Pin dialog.

Help

Dialog Tooltip: Display context sensitive help for the Pin dialog

Ranges Tab

A range is a test condition for the pin.

Columns/Fields

Range Number

Dialog Tooltip: Specifies the order that the ranges will be scanned.

Default: See Add New and Insert.

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Range ID

Dialog Tooltip: System created unique number to identify each range

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Pin ID

Dialog Tooltip: The numeric identifier of the parent Pin

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Enabled

Dialog Tooltip: Checked if the range is to be scanned

Default: 4 ranges set in Options, else Checked

Right Click Column Menu:

Set Current All

Pins

Component/Nets

Sequences

Default All

Pins

Component/Nets

Sequences

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Voltage

Dialog Tooltip: The voltage setting of the range

Values: .2, .4, .6, .8, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

List limited by the Resistance setting.

Default: 4 ranges set in Options

Right Click Column Menu (Changes affect Voltage, Resistance and Frequency for the current range number).

Set Current All

Pins

Component/Nets

Sequences

Default All

Pins

Component/Nets

Sequences

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Resistance

Dialog Tooltip: The resistance setting of the range

Values: 10, 20, 50, 100, 200, 500, 1K, 2K, 5K 10K, 20K, 50K, 100K, Low, Med1, Med2

Default: 4 ranges set in Options

Right Click Column Menu (Changes affect Voltage, Resistance and Frequency for the current range number):

Set Current All

Pins

Component/Nets

Sequences

Default All

Pins

Component/Nets

Sequences

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Frequency

Dialog Tooltip: The frequency setting of the range

Values: 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 300, 400, 500, 600, 700, 800, 900, 1K, 1.1K, 1.2K, 1.3K, 1.4K, 1.5K, 1.6K, 1.7K, 1.8K, 1.9K, 2K, 3K, 4K, 5K

List limited by the Resistance setting.

Default: 4 ranges set in Options

Right Click Column Menu (Changes affect Voltage, Resistance and Frequency for the current range number):

Set Current All

Pins

Component/Nets

Sequences

Default All

Pins

Component/Nets

Sequences

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Filter

Dialog Tooltip: Filters oscillation from Low, Med1, and Med2 Ranges.

Default: Set in Options

Right Click Column Menu:

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Max Samples

Dialog Tooltip: The maximum number of signature samples to take trying to get a stable signature.

Values: 1-10

Default: Set in Options

Combo box

Right Click Column Menu:

Set Current All

Ranges

Pins

Component/Nets

Sequences

Default All

Ranges

Pins

Component/Nets

Sequences

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Tolerance

Dialog Tooltip: The amount of tolerance allowed for each data point (-100 to 100) of the signature

Values: 0-100

Default: Set in Options

Combo box

Right Click Column Menu:

Set Current All

Ranges

Pins

Component/Nets

Sequences

Default All

Ranges

Pins

Component/Nets

Sequences

Sort Ascending (Saved to Registry)

Sort Descending (Saved to Registry)

Delay

Dialog Tooltip: The amount of delay in seconds after the signal is applied and the signature is taken.

Values: 0 – 10

Default: Set in Options

Combo box

Right Click Column Menu:

- Set Current All
  - Ranges
  - Pins
  - Component/Nets
  - Sequences
- Default All
  - Ranges
  - Pins
  - Component/Nets
  - Sequences
- Sort Ascending (Saved to Registry)
- Sort Descending (Saved to Registry)

Common Pin 1

Dialog Tooltip: First Scanner Common Pin for the range

Default: 0

Right Click Column Menu:

- Set Current All
  - Ranges
  - Pins
  - Component/Nets
  - Sequences
- Default All
  - Ranges
  - Pins
  - Component/Nets
  - Sequences
- Sort Ascending (Saved to Registry)
- Sort Descending (Saved to Registry)

Common 1 Relay

(Not shown on grid)

Dialog Tooltip: The Scanner Relay number for the first common pin

Default: 0

Common Pin 2

Dialog Tooltip: Second Scanner Common Pin for the range

Default: 0

Right Click Column Menu:

- Set Current All
  - Ranges
  - Pins
  - Component/Nets
  - Sequences
- Default All
  - Ranges
  - Pins
  - Component/Nets
  - Sequences
- Sort Ascending (Saved to Registry)
- Sort Descending (Saved to Registry)

Common 2 Relay

(Not shown on grid)

Dialog Tooltip: The Scanner Relay number for the second common pin

Default: 0

Prober Common 1

Dialog Tooltip: First Prober Common for the range

Default: 0

Right Click Column Menu:

- Set Current All
  - Ranges
  - Pins
  - Component/Nets
  - Sequences
- Default All
  - Ranges
  - Pins
  - Component/Nets
  - Sequences
- Sort Ascending (Saved to Registry)
- Sort Descending (Saved to Registry)

Prober Common 2

Dialog Tooltip: Second Prober Common for the range

Default: 0

Right Click Column Menu:

- Set Current All
  - Ranges
  - Pins
  - Component/Nets
  - Sequences
- Default All
  - Ranges
  - Pins
  - Component/Nets
  - Sequences
- Sort Ascending (Saved to Registry)
- Sort Descending (Saved to Registry)

Range Selected Actions

None

Row Right Click Menu

Add New

Displays the Add Range dialog and if OK is clicked, add a new range at the end of the list. Highlight the new range in the grid

Insert

Display the Insert Range dialog and if OK is clicked, add a new range above the current range in the list. Highlight the new range in the grid

Edit

Display the Edit Range dialog

Group Edit

Displays the Group Edit window that allows set changing Pin and Range parameters for multiple Components/Nets and Pins based on the current pin and range.

Net Edit

Displays the Net Edit window that allows changing Pin and Range parameters for multiple Pins connected to multiple Nets based on the current pin and range.

Delete

Delete the currently selected range(s).

Disable All

- **Pins**

Disable the current range number for all pins of the component

Components/Nets

Disable the current range number for all components/nets of the sequence

Sequences

Disable the current range number for all sequences of the board

Insert

Displays the Add Range dialog and if OK is clicked, add a new range below the current range. Highlight the new range in the grid

Copy

Create a copy of the currently selected range(s) in memory (not the windows clipboard). This does not copy signatures.

Paste

Add the range(s) stored in memory from a Copy or Cut to the end of the list. Highlight the new component in the grid

Cut

This is a combination of Copy and Delete

Dialog Buttons

Ok

Dialog Tooltip: Closes the dialog and updates the database with the changes made in the dialog. The grid is positioned to view and selects the range created.

Cancel

Dialog Tooltip: Closes the dialog and without updating the database with the changes made in the dialog

Help

Dialog Tooltip: Display context sensitive help for the Range dialog

Scans Tab

A scan is a record of each time a component/net is scanned. Selecting a scan allows viewing of its troublesheet on the Signature pane Troublesheet tab.

Columns/Fields

Serial Number

The serial number of the board being scanned

Modify: Read only

Right Click Column Menu:

- Delete All Scans with Current Serial Number
  - Component/Net
  - Sequence
- Sort Ascending
- Sort Descending

Operator

The person running the scan

Modify: Read only

Right Click Column Menu:

- Delete All Scans with Current Operator
  - Component/Net
  - Sequence
- Sort Ascending
- Sort Descending

Scan Date Time

The Date and Time that the scan was started, this will be the same for every component of a sequence scan.

Modify: Read only

Right Click Column Menu:

- Delete All with Current Date Time
  - And Earlier Component
  - And Later Component
  - And Earlier Sequence
  - And Later Sequence
- Sort Ascending
- Sort Descending

Merged

Indicates that the scan was used to create the merged min/max signatures.

Modify: Read only

Right Click Column Menu:

- Delete All Merges

Component/Net

Sequence

Merge All with Compare Checked

Component/Net

Sequence

Sort Ascending

Sort Descending

Reference

Checked if scan is to be used for comparing as a learn.

Right Click Column Menu:

Set All Scans to Current Reference

Component/Net

Sequence

Delete All Scans with Current Reference

Component/Net

Sequence

Sort Ascending

Sort Descending

Passed

This indicates if the component passed the scan. First time scan components only fail if they have opens.

Modify: Read only

Right Click Column Menu:

Sort Ascending

Sort Descending

Removed

This indicates that the component was removed from the troublesheet.

Modify: Read only

Right Click Column Menu:

Sort Ascending

Sort Descending

Area

This is the greatest Area for all the signatures of the component.

Modify: Read only

Right Click Column Menu:

Sort Ascending

Sort Descending

Deviation

This is the greatest Deviation for all the signatures of the component.

Modify: Read only

Right Click Column Menu:

Sort Ascending

Sort Descending

Min/Max

The scan created by merging reference signatures

Modify: Read only

Right Click Column Menu:

Sort Ascending

Sort Descending

Scan ID

System created unique number to identify each component scan.

Modify: Read only

Right Click Column Menu:

Sort Ascending

Sort Descending

Component Net ID

The numeric identifier of the parent Component

Modify: Read only

Right Click Column Menu:

Sort Ascending

Sort Descending

Sequence Selected Actions

Updates the Signature Pane Troublesheet Tab.

Row Right Click Menu

Delete Scan

Delete the currently selected scan(s) and signatures

Delete Scan All Components

Delete the current scan and its signatures for all of the components in the sequence.

Group Edit Dialog

Fields

Component/Net

Tooltip: The name of the current component/net

Pin

Tooltip: Pin name and number of the current pin

Net

Tooltip: The net name of the current pin

Range

Tooltip: The current range

Components/Nets

Tooltip: A list of components with the same number of pins or nets for selection to update

Default: Current component selected

Pins

Tool Tip: The pins of the component or Top Pin, Bottom Pin, All Pins, or Both Pins for selection to update

Default: Current pin selected

Channel

Tooltip: Check to update the channel of the pins

Default: Unchecked

Correction Steps

Tooltip: Check to update the correction steps of the pins

Default: Unchecked

Pulse

Tooltip: Check to update the pulse settings of the pins

Default: Unchecked

Relay Number

Tooltip: Check to update the relay number of the pins

Default: Unchecked

Scan Pin

Tooltip: Check to update the scan pin of the pins

Default: Unchecked

Unique Pin

Tooltip: Check to update the unique pin of the pins

Default: Unchecked

Ranges

Tooltip: Check to replace the ranges of the pins

Default: Unchecked

Update All Sequences

Tooltip: Check to update Pins and ranges of all sequences

Default: Unchecked

Common Pin 1

Tooltip: Check to update the common pin 1 of all ranges of the pins

Default: Unchecked

Common Pin 2

Tooltip: Check to update the common pin 2 of all ranges of the pins

Default: Unchecked

Delay

Tooltip: Check to update the delay of all ranges of the pins

Default: Unchecked

Filter

Tooltip: Check to update the filter of all ranges of the pins

Default: Unchecked

Max Sample

Tooltip: Check to update the max sample of all ranges of the pins

Default: Unchecked

Prober Common 1

Tooltip: Check to update the prober common 1 of all ranges of the pins

Default: Unchecked

Prober Common 2

Tooltip: Check to update the prober common 2 of all ranges of the pins

Default: Unchecked

Tolerance

Tooltip: Check to update the tolerance of all ranges of the pins

Default: Unchecked

Buttons

Update Pins/Ranges

Tooltip: Updates the Pins and ranges based on the Components/Nets and Pins selected. Changing the values selected with the check boxes.

Close

Tooltip: Closes this dialog.

Help

Tooltip: Displays this help

Net Edit Dialog

Fields

Component

Tooltip: The name of the current component

Pin

Tooltip: Pin name and number of the current pin

Net

Tooltip: The net name of the current pin

Range

Tooltip: The current range

Nets

Tooltip: A list of nets for selection to update

Default: Current net selected

Channel

Tooltip: Check to update the channel of the pins

Default: Unchecked

Correction Steps

Tooltip: Check to update the correction steps of the pins

Default: Unchecked

Pulse

Tooltip: Check to update the pulse settings of the pins

Default: Unchecked

Relay Number

Tooltip: Check to update the relay number of the pins

Default: Unchecked

Scan Pin

Tooltip: Check to update the scan pin of the pins

Default: Unchecked

Unique Pin

Tooltip: Check to update the unique pin of the pins

Default: Unchecked

Ranges

Tooltip: Check to replace the ranges of the pins

Default: Unchecked

Common Pin 1

Tooltip: Check to update the common pin 1 of all ranges of the pins

Default: Unchecked

Common Pin 2

Tooltip: Check to update the common pin 2 of all ranges of the pins

Default: Unchecked

Delay

Tooltip: Check to update the delay of all ranges of the pins

Default: Unchecked

Filter

Tooltip: Check to update the filter of all ranges of the pins

Default: Unchecked

Max Sample

Tooltip: Check to update the max sample of all ranges of the pins

Default: Unchecked

Prober Common 1

Tooltip: Check to update the prober common 1 of all ranges of the pins

Default: Unchecked

Prober Common 2

Tooltip: Check to update the prober common 2 of all ranges of the pins

Default: Unchecked

Tolerance

Tooltip: Check to update the tolerance of all ranges of the pins

Default: Unchecked

Buttons

Update Pins/Ranges

Updates the Pins and ranges based on the Nets selected. Changing the values selected with the check boxes.

Close

Closes this dialog.

Help

Displays this help

Signature Pane

A signature is a graphical representation of the effect the circuit has on the sine wave applied. The data of the signature and its SigAssist values can be displayed. To view signatures of different pins use the scroll bar on the side of the signature(s). To view signatures of different ranges use the scroll bar on the bottom of the signature(s). Signature – Tracker: None Scanner: None

Signature Tab

Displays the signatures for the current Component/Net and first scan selected in list. Update Scan List on Component grid row change and Scan grid row edit.

Scans

Tooltip: Allows multiple selection of the scans of the current component including <Merge> if any Min signatures exist.

When Scan(s) are selected the signatures are displayed based on the scan (s) and the Component selected in the Tree Pane Component/Net grid.

Scale (1, 2, 3, 4, 5)

Tooltip: Sets the minimum number of signature boxes displayed both horizontal and vertical.

Copy

Tooltip: Copy all currently viewed signatures to the clip board as meta files. These can be pasted in to applications like WordPad, Word etc. They cannot be pasted in to paint or notepad.

Print

Tooltip: Displays the Signature Report dialog.

Signature Boxes

The number of boxes is determined by Scale and the size of the pane. Display Pin name and range name at the top of each box. Display signatures based on Color and Signature Options. Displays the current signature on top of the stored signature(s) or the other way around based on the Options Signature On Top setting. The hardware signature is display on top off current if current on top or under current if current is on the bottom.

Signature Right Click Menu

Sync Pin/Range

Tooltip: Sets the Tree pane Pin and range to match the signature.

Get Signature

Tooltip: Uses the current hardware to get a signature that is displayed in the hardware signature color.

Get Pin Signatures

Tooltip: Uses the current hardware to get a signature that is displayed in the hardware signature color for all ranges of the pin if in Range Mode.

Replace Signature

Tooltip: Replace the scan signature with the signature from the hardware. Disabled if more than one scan selected or MIN/MAX selected. Sets Area and Deviation to 0. Pass/Fail to Passed. Recalculates SigAssist. Set CompareId to 0.

Replace Pin Signatures

Tooltip: Replace the scan signature with the signature from the hardware for all ranges of the pin if in Range Mode. Disabled if more than one scan selected or

MIN/MAX selected. Sets Area and Deviation to 0. Pass/Fail to Passed. Recalculates SigAssist. Set CompareId to 0.

Group Edit

Tooltip: Displays the Group Edit window that allows changing Pin and Range parameters for multiple Components/Nets and Pins based on the pin and range of the signature.

Net Edit

Tooltip: Displays the Net Edit window that allows changing Pin and Range parameters for multiple Pins connected to multiple Nets based on the pin and range of the signature.

Realtime

Tooltip: Checked menu item that uses the current hardware to constantly update all the displayed signatures in hardware signature color.

SigAssist

Tooltip: Displays the SigAssist window

Sync CAD

Tooltip: Selects the net of the signature pin in the CAD tab of the Image pane.

Copy

Tooltip: Copy the current signature box to the clip board as a bitmap

Data

Tooltip: Displays the signature data dialog

Range Mode/Pin Mode

Tooltip: When Range Mode is clicked on the menu signatures are displayed 1 row per signature with columns of ranges, the menu changes to Pin Mode. When Pin Mode is clicked on the menu signatures of a specific range are displayed with each box a different pin, the menu changes to Range Mode.

Left Double Click

Zoom

Tooltip: Reduces the signature display to one signature or returns for a single signature to the previous multi-signature display.

Scan Tab

Allows scanning the selected sequence or component using the connected hardware. Creates a component scan record and signature data. Allows automatic logging of scan results to an ASCII file.

Serial Number

Tooltip: The serial number of the board being scanned.

Default: blank

Operator

Tooltip: The operator performing the scan.

Default: blank

Results

Tooltip: Displays the results of the scan in a large font. Displays “PASSED” or “FAILED” text when the scan is complete.

Default: blank

Modify: Read only

Scanning without a reference set, canceling or stop with display “FAILED”. “PASSED” and “FAILED” text can be changed in Options -> General.

Start

Tooltip: Displays the time the scan was started.

Modify: Read only

Elapsed

Tooltip: Displays the amount of time the scan has been running. The counting stops if the scan is stopped. It continues counting when the scan is continued.

Modify: Read only

Est.

Tooltip: Displays the calculated time to perform the scan. Based on the number of ranges, the hardware selected and the connection type.

Modify: Read only

Left

Tooltip: Displays the Estimated time subtracted by the Elapsed time.

Modify: Read only

Component/Net Counter

Tooltip: Displays the component/net counter which is incremented each time a component scan starts.

Modify: Read only

Component/Net Count

Tooltip: Displays the number of components/nets to be scanned. Component sets this to 1.

Modify: Read only

Pass

Tooltip: Displays the number of times the components/net or Sequence has been scanned, if Continuous is checked.

Modify: Read only

Stop On Failure

Tooltip: The scan stops if a failure is detected.

Default: Set in options

Continuous

Tooltip: The scans continuously until stopped or Stops On Failure if checked.

Default: Set in options

List

Tooltip: Checking displays the sequence Instructions dialog when Start is clicked to allow selection of a Scan list for scanning. Setting saved in the registry.

Default: Unchecked

Start

Tooltip: Starts a Sequence scan if the Tree Sequence tab is selected. Starts a Component/Net scan if the Tree Component/Net, Pin or Range tab is selected.

Asks for Serial Number if blank. If connection is cable (Scanner), prompts for the connection of each component. If connection is probes prompts for connection of each pin or each range if different common pins. Creates a scan record in the scan table. Scanning rechecks opens at each pin. Checks for opens on all ranges using vertical data close to zero. Comparison is done at each range and stored in the database. Does not stop unless stop on difference is set. Signature box is updated. First time scan all opens are failures. Elapsed and Remaining times are updated. Component/Net counter is updated. PC Speaker beeps at end of a component scan and three times at the end of a Sequence Scan (if Audio turned on in options.).

Instructions Display: Prompt with sequence instructions if not blank and sequence scan if Sequence Show Instructions is checked. Show Component instruction if not blank , Sequence Show Instructions is checked and Component Pause is checked or connection in Cable (Scanner) or Probes. Show Pin Instructions if instructions are not blank, connection is Probes and Sequence Show Instructions is checked. See the Scan Component Section for details of hardware tasks during scanning.

Button

The ProTrack/PXI Tracker footswitch is detected when the user is prompted to connect to a component or pin. It should “click” the Ok button on the prompt when the switch is closed.

Component Scan

This assumes that Component Connection Type is Probes. Other connection types are specifically identified.

When the Start button is clicked on the Scanning Tab the user is required to enter a serial number if the field is blank.

A Component Scan record is created with Operator, Serial Number and Date/Time set.

A dialog prompts the user to connect to each pin of the component/Net and has Scan Pin, Next, Previous and cancel buttons. If Options Scan Tab Update Tree is true. The Tree Pane grid displayed is updated by selecting the appropriate row for the item being scanned. If Options Scan Tab Update Image is true then the displayed Image Pane CAD Tab, Board Image Tab or View PCB tab is panned to the component being scanned.

If a Net sequence is selected and Sequence TopSide is true then Net TopPin determines if All (Component Number Of Pins) or a single pin is scanned. If Bottom Side is true then Net Bottom Pin determines if All (Component Number of Pins) or a single pin is scanned.

If Component Connection Type is Prober, Sequence Zhome Comp is used to determine if the Probe goes to the up position (Sequence UpTopZ or Sequence UpBottomZ) or Z home position.

If Component Connection Type is Prober Component Correction Steps are used when moving to the component pin from anther component

If a Component sequence is selected all (Component Number of Pins) of the pins are scanned.

If Component Connection Type is Scanner (Or two headed Prober?) and Component ShortCheck is Adjacent or All then a short check is performed. See Short Check below.

When each pin is scanned the following Steps are performed:

If Component Connection Type is Prober Pin Test Probe Number, Pin Test Probe X, Pin Test Probe Y, Pin Test Probe Z, Pin Common Probe Number, Pin Common Probe X, Pin Common Probe Y and Pin Common Probe Z with alignment adjustment are used to position the probe tips on the pins.

If Component Connection Type is Prober Component UpTopZ or

Component UpBottomZ is used when moving between pins of the component.

If Component RangeThenPin is True, each Range of the pin is scanned. If Component RangeThenPin is False Then all of the pins are scanned in the first range and then the Range is changed…..

If Component Connection Type is Scanner Pin Relay Number is used to determine the Scanner test pin to activate.

If Component Connection Type is Scanner Range CommonPin1, Range Common1RelayNumber, Range CommonPin2 and Range Common2RelayNumber are used to determine the Scanner Common relays to activate.

If Component Connection Type is Prober Range ProberCommon1, and Range ProberCommon2 are used to set the Prober Commons.

If Component Connection Type is Probes the Connect Component/Net Pin dialog is displayed for each pin.

Pin Scan is used to determine if a pin is to be scanned.

Pin Channel is used to set the channel of the Tracker.

Pin Pulse, Pulse Type, Duty Cycle and Pulse Level are set as needed.

Range Enable is used to determine if the range is to be scanned.

Range Voltage, Resistance and Frequency are used to set the Tracker range.

Range Filter is used to determine if the signature needs to be filtered

RangeMax Samples is used to determine how many signatures are taken.

Range Delay is used to determine how long to activate the signal before capturing the signature.

After a signature is taken the Scanning tab the signature is compared to the compare signatures. See Compare Signatures below. Then the signature box is updated with the signature.

Signature record is created with Horizontal, Vertical, Capacitance, Resistance, Power, and Forward Break down, Reverse Break down, Horizontal Peak, Vertical Peak, Passed, Area, Deviation, CompareSigId and the Hardware Used.

Open Check is performed on all signatures. See Open Check below.

The created Component Scan record is updated with Passed, Area and Deviation.

At the end of all scanning if Options Scan Tab AutoStore Troublesheet is true the appropriate lines are added to the ASCII Troublesheet file.

If Component Connection Type is Prober, Sequence Zhome Comp is used to determine if the Probe goes to the up position (Sequence UpTopZ or Sequence UpBottomZ) or Z home position.

Sequence Scan

A sequence scan performs a Component scan of each component/net in the sequence in Component/Net OrderNumber order.

If the Sequence tab is selected on the Tree Pane and the current Sequence Show Instructions is true the Sequence instructions field is displayed in a dialog.

All Component Scan record is created with the same Operator, Serial Number and Date/Time created at the time of the first component scan.

After each component/net is scanned, if Sequence StopOnFailedComp is true the sequence scanning is stopped. The failed component is selected on the Troublesheet tab.

Signature Compare

The signature is compared to the compare/merged signatures. The Sequence Compare Priority determines which signatures are compared. Same – compare to exact serial number if exists and has Reference set, else default to All Serials. All Serials – compare to all non-merged scans with reference set and report on the closest if only merges default to Merge. Merge – compare to Min/Max stored signatures with Reference set. The signatures fail if any Horizontal data point differs more than the Range Tolerance.

The Deviation is the amount the most different Horizontal data point is out side of the tolerance. Signatures that are with in the tolerance should have a 0 or negative deviation.

The Area is the sum of all the deviations greater than 0. Signatures that are with in the tolerance should have a 0 or negative area.

The Options Compare Depth of Component/Net compares all the signatures for all pins and ranges on the component to each scan as a group. To pass, all the pins and ranges must pass an individual scan.

The Options Compare Depth of Pin compares all the signatures for all ranges on the pin to each scan as a group. To pass, all the ranges must pass an individual scan.

The Options Compare Depth of Range compares the signature of each range to each scan. To pass, range must pass one scan.

If a signature does not exist for a range then the signature fails with a Deviation of 1,000 and an Area of 10,000.

Open Recheck

If there are no signatures to compare to each of the signatures that is detected as an open will have its deviation set to 1001 and the area set to 10001. If Recheck is selected and an open signature is detected, the probe will move down the recheck depth and acquire a new signature. If Reprobe is selected and an open signature is detected, the probe will probe the pin Options General Reprobe Times and then acquire a new signature.

Short Check

Adjacent

Uses a Scanner to connect to each adjacent pin combination and compares the signature to a known good short signature.

All

Uses a Scanner to connect to all pin combination and compares the signature to a known good short signature.

If Component Short Check is Adjacent, Options Minimum Short Resistance and Options Maximum Short Resistance are used to determine if pins are shorted. This detection is done by a comparison of the signature to a known good short with a tolerance based on the Min and Max Resistance. If Component Short Check is All then Options Minimum Short Resistance and Options Maximum Short Resistance are used to determine if all pin combinations are shorted. This detection is done by a comparison of the signature to a known good short with a tolerance based on the Min and Max Resistance.

Scan Sequence Dialog

Board Instructions

Tooltip: Displays the instructions for the board set in the Board dialog Displays a message about how to connect the pin.

Modify: Read Only

Sequence Instructions

Tooltip: Displays the instructions for the sequence set in the Sequence dialog.

Modify: Read Only

Scan List File

Tooltip: The file path of the scan list to be used when the Scan List button is clicked or edited when the Add/Edit List button is clicked.

Add/Edit List

Tooltip: Displays the Scan List dialog.

Browse…

Tooltip: Uses the Windows File Open dialog to allow selection of the file path for the Scan List File field.

Scan

Tooltip: Scans all of the components of the current sequence.

Scan List

Tooltip: Scans the components of the current sequence that are listed in the scan list file.

Cancel

Tooltip: Cancels the scan

Scan List Dialog

Sequence Components/Nets

Tooltip: Displays the Components/Nets of the current sequence.

Scan List Components/Nets

Tooltip: Displays the Components/Nets in the Scan List.

>>

Tooltip: Adds all of the Sequence Component/Nets to the Scan List.

>

Tooltip: Adds the selected Component/Nets to the Scan List.

<

Tooltip: Removes the selected Component/Nets from the Scan List.

<<

Tooltip: Removes all of the Component/Nets from the Scan List.

^

Tooltip: Moves the single selected Component/Net up in the Scan List.

v

Tooltip: Moves the single selected Component/Net down in the Scan List.

Alphanumeric Sort

Tooltip: Sorts the Sequence Components/Nets alphanumerically. When uncheck they are listed in Order Number order.

Open…

Tooltip: Uses the Windows File Open dialog to allow selection of the Scan List File to edit.

Save

Tooltip: Uses the Windows File Save dialog to save the Scan List File.

Save As…

Tooltip: Uses the Windows File Save dialog to save the Scan List File under s different name.

Close

Tooltip: Closes the Scan List dialog.

Connect Component/Net Pin Dialog

Message

Tooltip: Displays a message about how to connect the pin.

Modify: Read Only

Instructions

Tooltip: Displays the instructions for the pin set in the Pin dialog.

Modify: Read Only

Previous Pin

Tooltip: Returns to the previous pin to enable it to be scanned again.

Ok

Tooltip: Continues to the next pin to be scanned.

Stop

Tooltip: Stops the scan allowing it to be continued if it is a sequence scan

Cancel

Tooltip: Cancels the scan

Short Check Dialog

Test Pin

Tooltip: Displays the current Test pin activated for the shorts check.

Read Only

Common Pin

Tooltip: Displays the current Common pin activated for the shorts check.

Read Only

Show Only Differences

Tooltip: Checked to only show the shorts that don’t match the stored shorts.

Default: Checked

Stored Shorts

Tooltip: Displays the list of pins that are stored as shorts.

Read Only

Shorts

Tooltip: Displays the list of pins that are shorted.

Read Only

Rescan

Tooltip: Scans the pins again and updates the short information.

Stop

Tooltip: Cancels the checking for shorted pins.

Button

Store

Tooltip: Stores the shorted pins for each pin of the component.

Button

Close

Tooltip: Closes this dialog and continues the scan.

Button

Help

Tooltip: Displays help for the short check dialog.

Button

Exit

Tooltip: Closes this dialog and stops the scan.

Button

Stop

Tooltip: Stops a currently running scan. Disabled unless a scan is in process.

Continue

Tooltip: Continues a scan that has been stopped. Disabled unless a scan has been stopped.

Merge

Tooltip: Sets the scan to be used in merged signature and performs the merge. The button is disabled until scan complete and is disabled after clicking. Merge the SigAssist values as well as the signature data.

Troublesheet

Tooltip: Changes to the Troublesheet tab and selects the current scan in the Scan grid.

Set Reference

Tooltip: Sets the scan to be used in comparisons (Reference checked on Tree Scans tab). The button is disabled until scan complete and is disabled after clicking.

Signature Box

Display signatures based on Color and Signature Options.

Troublesheet Tab

Displays the scan results of the scan selected on the Tree pane Scans tab.

Tab Selected Actions

None – Select Scan on scan grid to create a Troublesheet. If activated by the Troublesheet button on the Scanning tab, the scan should automatically be selected.

Failed Item List

Tooltip: Sequence components/nets that failed in difference order.

When a component/Net is selected the signatures are updated based on the component selected and the Date and Time of the scan selected in the Tree Pane Scan Grid. The Remove button is enabled and set to Remove.

Removed Item List

Tooltip: Sequence components/nets that have been removed in difference order.

When a component/Net is selected the signatures are updated based on the component selected and the Date and Time of the scan selected in the Tree Pane Scan Grid. The Remove button is enabled and set to UnRemove.

Passed Item List

Tooltip: Sequence components/nets that passed in difference order.

When a component/Net is selected the signatures are updated based on the component selected and the Date and Time of the scan selected in the Tree Pane Scan Grid. The Remove button is disabled.

Next

Tooltip: Changes to the next component/net in difference order. Spans the Failed, Removed and Passed list boxes.

Previous

Tooltip: Changes to the previous component/net in difference order. Spans the Failed, Removed and Passed list boxes.

Summary

Tooltop: Displays number of components/nets scanned, number passed, number failed, number removed and shows the components/nets not scanned.

Summary Dialog Layout

Components/Nets Scanned: ###

Components/Nets Passed: ###

Components/Nets Failed: ###

Components/Nets Removed: ###

Components/Nets Not Scanned: (List box)

Ok Button

Remove / UnRemove

Tooltip: Removes the selected failed component/net or un-removes the selected removed component/net from the Troublesheet.

Store

Tooltip: Displays the Store Troublesheet dialog

Delete

Tooltip: After a warning deletes the Troublesheet scan and all of its signatures.

Print

Tooltip: Displays the Troublesheet Report dialog

Copy

Tooltip: Copy all currently viewed signatures to the clip board as BMP files

Update

Tooltip: Compares all of the signatures again in case compare or tolerance changes.

Scale (1, 2, 3, 4, 5)

Tooltip: Sets the minimum number of signature boxes displayed both horizontal and vertical.

Set Reference

Tooltip: Sets the scan to be used in comparisons (Reference checked on Tree Scans tab).. The button is disabled until scan complete and is disabled after clicking.

Merge

Tooltip: Sets the scan to be used in merged signature and performs the merge. The button is disabled until scan complete and is disabled after clicking.

Signature Boxes

The number of boxes is determined by Scale and the size of the pane. Display Pin name and range name at the top of each box in difference color. Display signatures based on Color and Signature Options.

Right Click Menu

Sync Pin/Range

Tooltip: Sets the Tree pane Pin and range to match the signature.

Get Signature

Tooltip: Uses the current hardware to get a signature that is displayed in the hardware signature color.

Get Pin Signatures

Tooltip: Uses the current hardware to get a signature that is displayed in the hardware signature color for all ranges of the pin if in Range Mode.

Replace Signature

Tooltip: Replace the scan signature with the signature from the hardware. Performs the comparison again to update the signature Area, Deviation, Pass/Fail, SigAssist…..

Replace Pin Signatures

Tooltip: Replace the scan signature with the signature from the hardware for all ranges of the pin if in Range Mode. Performs the comparison again to update the signature Area, Deviation, Pass/Fail, SigAssist…..

Group Edit

Tooltip: Displays the Group Edit window that allows set changing Pin and Range parameters for multiple Components/Nets and Pins based on the pin and range of the signature.

Net Edit

Tooltip: Displays the Net Edit window that allows changing Pin and Range parameters for multiple Pins connected to multiple Nets based on the pin and range of the signature.

Realtime

Tooltip: Checked menu item that uses the current hardware to constantly update all the displayed signatures in hardware signature color.

SigAssist

Tooltip: Displays the SigAssist window

Sync CAD

Tooltip: Selects the net of the signature pin in the CAD tab of the Image pane.

Copy

Tooltip: Copy the current signature box to the clip board as a bitmap

Data

Tooltip: Displays the signature data dialog

Range Mode/Pin Mode

Tooltip: When Range Mode is clicked on the menu signatures are displayed 1 row per signature with columns of ranges, the menu changes to Pin Mode. When Pin Mode is clicked on the menu signatures of a specific range are displayed with each box a different pin, the menu changes to Range Mode.

Double Left Click

Zoom

Tooltip: Reduces the signature display to one signature or returns for a single signature to the previous multi-signature display.

Store Troublesheet Dialog

Serial Number

Tooltip: Displays the Serial Number associated with the Troublesheet.

Default: Scan Serial Number

(Read Only)

Store Level

Tooltip: Select the level of Troublesheet information detail to store.

Values: Sequence, Component/Net, Pin, Range

Default: Sequence->Auto Store Level

Problem

Tooltip: Enter the problem associated with the Troublesheet.

Solution

Tooltip: Enter the solution associated with the Troublesheet.

ASCII File

Tooltip: Browse for the file name and path of the ASCII file to store Troublesheet information.

Default: Options Sequence Auto Store File

Browse…

Tooltip: Browse for the file name and path of the ASCII file to store Troublesheet information.

Store Passed

Tooltip: Check to store all Troublesheet information.

Default: Checked

Store ASCII

Tooltip: Appends the current Troublesheet information to the ASCII file specified in the ASCII File field.

Close

Tooltip: Closes the Store Troublesheet dialog

ASCII File Format

Uses Options Scan ASCII Store Delimiter and ASCII Store String Delimiter

Sequence (one row per sequence)

Board, Sequence, Serial Number, User, Date, Time, Problem, Solution, Passed/Failed

Component/Net (Includes fields above) (one row per component/net)

Component/Net, Type, Part Number, Deviation, Area, Passed/Failed

Pin (Includes fields above) (one row per pin)

Pin Name, Deviation, Area, Passed/Failed

Range fields (Includes fields above) (one row per range)

Range Name, Tolerance, Deviation, Area, Passed/Failed

Tracker Tab

Allows control of the Tracker features and display of the signature captured.

Tab Selected Actions

Disabled if Tracker not connected. Changes Tracker to settings on Tracker tab and if Scanner connected changes Scanner to settings on Scanner Tab.

Voltage

Tooltip: The voltage setting of the range.

Values: .2, .4, .6, .8, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

List limited by resistance.

Default: .2

Resistance

Tooltip: The resistance setting of the range

Values: 10, 20, 50, 100, 200, 500, 1K, 2K, 5K 10K, 20K, 50K, 100K, 54, 1.2K, 27K. Low, Med1, Med2

Default: 10

The ProTrack/PXI Tracker footswitch should is detected. It should advance the resistance setting when the switch is closed.

Frequency

Tooltip: The frequency setting of the range

Values: 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 300, 400, 500, 600, 700, 800, 900, 1K, 1.1K, 1.2K, 1.3K, 1.4K, 1.5K, 1.6K, 1.7K, 1.8K, 1.9K, 2K, 3K, 4K, 5K

List limited by resistance.

Default: 200

Pulse Width

Tooltip: Sets the percentage that the Pulse Generator signal is ON.

Values: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24 ,26 ,28 ,30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50

Default: 50

PulseLevel

Tooltip: Sets the level of the Pulse Generator

Values: 0. .1, .2, …. 9.9, 10

Default: 0

Pulse/DC

Tooltip: Sets the mode of the Pulse Generator

Values: Off, DC Positive, DC Negative, Pulse Positive, Pulse Negative, Pulse Bipolar

Default: Off

Channel

Tooltip: Selects the channel of the Tracker

A, B

Real Time

Tooltip: When checked constantly updates the signature. When unchecked the signature is updated when a setting changes.

Filter

Tooltip: Filters the signature to remove oscillations. Only available with Med1 and Med2 resistance ranges.

Tolerance

Tooltip: Sets signature comparison tolerance.

Values: 0-99

Default: 5

Hold

Tooltip: Temporarily stores the current signature for comparison to future signatures.

Note: Button disabled if Scanner Package is not PROBE or MULTI

Signature Box

Display Hardware and Store signatures based on Color and Signature Options.

Right Click Menu

Copy

Tooltip: Copy the current signature box to the clip board as a as meta files. These can be pasted in to applications like WordPad, Word etc. They cannot be pasted in to paint or notepad.

Data

Tooltip: Displays the signature data dialog

SigAssist

Tooltip: Displays the SigAssist window

Scanner Tab

Allows control of the Scanner pins and display of the signature captured.

Tab Selected Actions

Disabled if Scanner not connected. Changes Tracker to settings on Tracker tab and Scanner to settings on Scanner Tab.

Common 1

Tooltip: The select the common pin 1 to activate

0-Number of Pins

Common 2

Tooltip: Select the common pin 2 to activate

Droplist Combobox

0-Number of Pins

Pin

Tooltip: Select the test pin number to activate

Values: 1-Number of Pins

Default: 1.

<<

Tooltip: Select the previous pin

>>

Tooltip: Select the next pin

Package

Tooltip: Sets the component package that controls the order the pins are scanned

Droplist Combobox

Values: BOTH, DIP, FRONT, MULTI, PROBE, SIP, DIP 2X, SIP 2X

Default: PROBE

Note: If PROBE or MULTI are selected, disable Common Pins, Pin and Previous/Next buttons.

Number Of Pins

Tooltip: Sets the number of pins of the component

Droplist Combobox

Depends on package

BOTH 2-64 even

DIP 2-64 even

FRONT 1-32

MULTI 0

PROBE 0

SIP 1-64

DIP 2X 66-128 even

SIP 2X 65-128

Scan Hold

Tooltip: Scans the pins and temporarily stores all of the signatures of the Scan for comparison with future scans.

Caption changes to Cancel during this process. After completed, caption returns to Scan Hold.

Scan

Tooltip: Scans through all of the pins of the package based on the Tracker tab settings. Disabled if Package type is PROBE or MULTI. Disabled if Clicked and scan in progress.

Stop

Tooltip: Stops a scan at the current pin. Disabled if Package type is PROBE or MULTI.

Note: When clicked caption changes to Continue. If clicked again, Scan stops starts at the stopped pin and the caption changes to stop.

Signature Box

Displays Hardware and Store signatures based on Color and Signature Options.

Right Click Menu

Copy

Tooltip: Copy the current signature box to the clip board as a as meta files. These can be pasted in to applications like WordPad, Word etc. They cannot be pasted in to paint or notepad.

Data

Tooltip: Displays the signature data dialog

SigAssist

Tooltip: Displays the SigAssist window

Preview Tab

Displays a signature from the hardware for the currently selected range on the Tree pane Ranges tab, also used for displaying signatures during Teach Height.

Get Signature

Tooltip: Update the signature based on current tree selections

Realtime

Tooltip: Continuously updates the signature based on current tree selections

Signature Box

Displays Hardware and Store signatures based on Color and Signature Options.

Right Click Menu

Copy

Tooltip: Copy the current signature box to the clip board as a as meta files. These can be pasted in to applications like WordPad, Word etc. They cannot be pasted in to paint or notepad.

Data

Tooltip: Displays the signature data dialog

SigAssist

Tooltip: Displays the SigAssist window

Signature Data Dialog

Sequence

Tooltip: Displays the Sequence Name

Modify: Read only

Component/Net

Tooltip: Displays the Component/Net Name

Modify: Read only

Pin

Tooltip: Displays the Pin Name

Modify: Read only

Range

Tooltip: Displays the Range Name

Modify: Read only

Hardware

Tooltip: Displays the Tracker hardware used to scan the signature

Modify: Read Only

Values: 0 = “None”, 1 = “External”, 2 = “5100DS”, 3 = “Tracker 5500”, 4 = “Tracker 5300”, 5 = “DSI700”, 6 = “ProTrack”, 7 = “ProTrack/Scanner”, 8 = “ProTrack Keithley”, 9 = “PXI Tracker”

Copy

Tooltip: Copies the data text to the clipboard

Close

Tooltip: Closes the dialog

Data

Tooltip: Displays the data values for each signature

Modify: Read only

Format:

```
Scan                H1   H2   H3   H4   . . .
Current             134  140  146  151
Hardware            134  140  146  151
10/10/04 10:10:10 134  140  146  151
```

SigAssist

Fields

Sample layout

```
SigAssist (tm)
Pin: 1              Deviation: 10   H/W Dev: 10
Range: 10V100K200Hz Area: 2345      H/W Area: 2343
Tolerance: 5        Learns: 2       Merges: 0
```

Scan	Res.	Cap.	Power	Fbd	Rbd	MaxV	MaxI
Hardware	9.98K	100pF	200mW	3.45V	.765V	8.65V	13.5mA
Current	9.98K	100pF	200mW	3.45V	.765V	8.65V	13.5mA
10/10/2004 12:23:12	9.98K	100pF	200mW	3.45V	.765V	8.65V	13.5mA

Pin

Description: The pin number of the signature

Range

Description: The range name of the signature

Tolerance

Description: The tolerance used for comparison of the signature

Deviation

Description: The largest deviation of the signature

Area

Description: The sum of the deviations of the signature

H/W Dev

Description: The largest deviation of the hardware signature

H/W Area

Description: The sum of the deviations of the hardware signature

Serial #

Description: The scan for the row of information (i.e. Hardware, Current, Date/Time)

Scan

Description: The scan for the row of information (i.e. Hardware, Current, Date/Time)

Res

Description: The calculated resistance of the signature if detectable

Cap

Description: The calculated capacitance of the signature if detectable

Power

Description: The calculate power dissipated by the signature

Fbd

Description: The forward voltage the signature changes from horizontal to vertical if detectable

Rbd

Description: The reverse voltage the signature changes from horizontal to vertical if detectable

Max V

Description: The voltage value of the largest absolute value horizontal data point

Max I

Description: The electrical current value of the largest absolute value vertical data point

Buttons

Ok

Tooltip: Closes the dialog

Copy

Tooltip: Copies the information to the Windows Clipboard

Prober Pane

Title

Prober = None, Frame Grabber = None

Offset Tab

Allows movement of the prober and displays a camera image of the current camera position. Allows saving of the camera probe XY offset and the Z probe length. This must be performed before other prober functions are available.

Procedure

1. Select the Camera Tab
2. Check the “Live Camera” check box.
3. Focus the camera to a board in the desired slot.
4. Select the Offset Tab.
5. Select the Slot of the prober to be used
6. Select Camera Mode
7. Move the camera over a location on the board that easily viewed for making sure the probe tip is touching the center.

8. Click Set
9. Select Prober Mode
10. Move the probe tip over the same position as the camera
11. Move the probe tip down until it just touches the board
12. Verify the probe tip is at the same position of the camera image
13. Click Set
14. Click Save

Repeat the steps for each slot to be used.

Tab Selected Actions

Disabled if Prober or Camera not connected.

Back

Tooltip: Move the camera/probe towards the back of the XY travel distance.

Back Right

Tooltip: Move the camera/probe towards the back and to the right the XY travel distance.

Right

Tooltip: Move the camera/probe towards the right the XY travel distance.

Forward Right

Tooltip: Move the camera/probe towards the front and to the right the XY travel distance.

Forward

Tooltip: Move the camera/probe towards the front the XY travel distance.

Forward Left

Tooltip: Move the camera/probe towards the front and to the left the XY travel distance.

Left

Tooltip: Move the camera/probe towards the left the XY travel distance.

Back Left

Tooltip: Move the camera/probe towards the back and to the left the XY distance.

Home

Tooltip: Move the camera/probe to the back right corner of the Prober.

XY Travel

Tooltip: Set the distance the camera will travel in the X (left/right) and Y (back/forward) directions. The units will be in the Unit of Measure selected in options.

Default: Set in Options

Reset

Tooltip: Set the offset to the factory default. The offset will still need to be set for the current Prober.

To set the Offset using a different location on the board, position the camera over the new location and then click Set. Click Reset to clear the down position and set the probe position to the default distance from the camera position.

Up

Tooltip: Moves the probe up the Z Travel distance.

Z Home

Tooltip: Moves the probe all the way up.

Down

Tooltip: Moves the probe down the Z Travel distance.

Z Travel

Tooltip: Select the probe up and down the Z travel distance in the Units of Measure set in options.

Default: Set in Options

Slot

Tooltip: Select the slot from the list of the available slots for the selected Prober.

Mouse X

Tooltip: Displays the distance the mouse cursor is from the current camera X position.

Modify: Read Only

Mouse Y

Tooltip: Displays the distance the mouse cursor is from the current camera X position.

Modify: Read Only

Mode

Tooltip: Select Camera or Probe mode.

Values: Camera, Probe

Default: Camera

Camera image cleared and disabled when in Probe mode.

Set

Tooltip: Sets the Camera or Probe position for calculating the camera offset.

Camera sets camera XY

Probe sets XYZ

Save

Tooltip: Saves the selected Offset to the Registry.

X Offset

Tooltip: Displays the X Offset (X Distance between probe and camera).

Default: 1200

Modify: Read Only

Y Offset

Tooltip: Displays the Y Offset (Y Distance between probe and camera).

Default: 200

Modify: Read Only

Z Offset

Tooltip: Displays the Z Offset (Z Difference from standard slot distance).

Default: 0

Modify: Read Only

Camera Image Right Click Menu

Copy

Tooltip: Copies the image to the clip board

Save

Tooltip: Saves the image to a BMP file.

Align Tab

Allows movement of the prober and displays a camera image of the current camera position. Allows saving of two alignment point coordinates and their images for a sequence of the board. Also, allows alignment of a sequence by positioning the camera over the stored alignment points.

The tab is disabled if there is no sequence or no offset for the slot of the current sequence.

Store Align Procedure

1. Select Alignment 1
2. Move the camera over a location on the board to be used as Alignment point 1.
3. Click Set Alignment 2 is selected
4. Move the camera over a location on the board to be used as Alignment point 2.
5. Click Set
6. Click Save

Align Procedure

1. Select Alignment 1
2. Move the camera over the Alignment Point 1 location on the board.
3. Click Stored Image to verify position and then click again.
4. Click Set Alignment 2 is selected
5. Move the camera over the Alignment Point 2 location on the board.
6. Click Stored Image to verify position and then click again.
7. Click Set

Align Procedure

1. Click Auto Align
2. Moves the camera over the Alignment Point 1 location on the board.
3. Adjusts the position by comparing the current image to the stored image.
4. Moves the camera over the Alignment Point 2 location on the board.
5. Adjusts the position by comparing the current image to the stored image.

Tab Selected Actions

Disabled if database not open or Prober or Camera not connected.

Back

Tooltip: Move the camera towards the back the XY travel distance.

Back Right

Tooltip: Move the camera towards the back and the right the XY travel distance.

Right

Tooltip: Move the camera towards the right the XY travel distance.

Forward Right

Tooltip: Move the camera towards the front and the right the XY travel distance.

Forward

Tooltip: Move the camera towards the front the XY travel distance.

Forward Left

Tooltip: Move the camera towards the front and left the XY travel distance.

Left

Tooltip: Move the camera towards the left the XY travel distance.

Back Left

Tooltip: Move the camera towards the back and left the XY travel distance.

Home

Tooltip: Move the camera to the back right corner of the Prober.

Travel

Tooltip: Set the distance the camera will travel in the X (left/right) and Y (back/forward) directions. The units will be in the Unit of Measure selected in options.

Default: Set in Options

Current X

Tooltip: Displays the current X position of the camera.

Modify: Read Only

Current Y

Tooltip: Displays the current Y position of the camera.

Modify: Read Only

Align Point

Tooltip: Selects Alignment Point 1 or 2

Values: <Select>, Alignment 1, Alignment 2

Default: <Select>

Set

Tooltip: Sets the current alignment point position.

Save

Tooltip: Save the image and the XY coordinates to the database for the current alignment point.

Stored Image

Tooltip: Perform an auto alignment on the board. Only active if alignment is already stored and National Instruments Vision Deployment Module is installed.

Auto Align

Tooltip: If activated, performs an auto alignment on the board. Only active if alignment is already stored and National Instruments Vision Deployment Module is installed.

Mouse X

Tooltip: Displays the distance the mouse cursor is from the current camera X position.

Modify: Read Only

Mouse Y

Tooltip: Displays the distance the mouse cursor is from the current camera X position.

Modify: Read Only

Camera Image Right Click Menu

Copy

Tooltip: Copies the image to the clip board

Save

Tooltip: Saves the image to a BMP file.

Teach Tab

Allows movement of the prober and displays a camera image of the current camera position. Allows storing the locations of pins. Position the camera over the end pins, of a row of pins.

This tab is disabled if there are no components or an alignment has not been performed.

Procedure

1. Select pin 1
2. Move the camera over the location to probe pin 1
3. Click Save
4. Select the Group size (Number of pins in the row)
5. Move the camera over the location to probe the last pin of the row
6. Click Save

Repeat the steps for each row of pins on the component and for each component.

Tab Selected Actions

Disabled if database not open or Prober or Camera not connected.

Back

Tooltip: Move the camera towards the back the XY travel distance.

Back Right

Tooltip: Move the camera towards the back and right the XY travel distance.

Right

Tooltip: Move the camera towards the right the XY travel distance.

Forward Right

Tooltip: Move the camera towards the front and right the XY travel distance.

Forward

Tooltip: Move the camera towards the front the XY travel distance.

Forward Left

Tooltip: Move the camera towards the front and left the XY travel distance.

Left

Tooltip: Move the camera towards the left the XY travel distance.

Back Left

Tooltip: Move the camera towards the back and left the XY distance.

Home

Tooltip: Move the camera to the back right corner of the Prober.

Button

Travel

Tooltip: Set the distance the camera will travel in the X (left/right) and Y (back/forward) directions. The units will be in the Unit of Measure selected in options. Travel is updated to the (Group Size – 1) * Component Pin Spacing if Component Pin Spacing is > 0.

Default: Set in Options

Current X

Tooltip: Displays the current X position of the camera.

Modify: Read Only

Current Y

Tooltip: Displays the current Y position of the camera.

Modify: Read Only

Reset

Tooltip: Set X and Y coordinates of all pins back to zero.

Mouse X

Tooltip: Displays the distance the mouse cursor is from the current camera X position.

Modify: Read Only

Mouse Y

Tooltip: Displays the distance the mouse cursor is from the current camera X position.

Modify: Read Only

Pin

Tooltip: Select the number of the pin by entering the number or using the spinner up and down arrows.

Values: 1 to number of pins

Default: 1

Scroll Box

Save

Tooltip: Sets the current pin X and Y location position.

Enables Group Size and Set Group.

Group

Tooltip: Set the size of the group of pins to set. If component is a DIP, DIP2X or BOTH package the group size defaults to half of the number of pins. If the component is a SIP, SIP2X,or Front package the group size defaults to the number of pins. If the component is a Multi package the group size defaults blank. If the component is a Probe package the group size is blank.

Disabled at start

Save

Tooltip: Sets X and Y position of the last pin of the group. Calculates the position of the pins in the group. Updates the Pin to the pin after the last pin of the group.

Disabled at Start. Disable Group Size and Set Group.

Camera Image

Camera Image Right Click Menu

Copy

Tooltip: Copies the image to the clip board

Save

Tooltip: Saves the image to a BMP file by displaying the standard windows Save As window.

Teach Height Tab

Allows movement of the prober to set the Z positions. The positions include sequence up, sequence down, component up and pin down.

This tab is disabled if there are no components or an alignment has not been performed.

Procedure

1. Select Sequence Up
2. Move probe down to the lowest position that clears all components on the board
3. Click Save
4. Select Sequence Down
5. Move probe down to the position that compresses the probe tip on the board
6. Click Save
7. Optionally set a Component Up position for each component
8. Optionally set a Pin Down position for each pin of each component

Tab Selected Actions

Disabled if database not open or Prober or Camera not connected.

Tab Lost Focus

Move Prober to Z Home.

Up

Tooltip: Moves the probe up the Travel distance.

Home

Tooltip: Moves the probe all the way up.

Down

Tooltip: Moves the probe down the Travel distance.

Z Travel

Tooltip: Set the probe up and down travel distance in the Units of Measure set in options.

Default: Set in Options

Current Z

Tooltip: Displays the current Z position.

Modify: Read Only

Sequence Z Up and Down

Tooltip: Select the Z Up or Down mode. The stored position is displayed. And the probe moves to the position.

Default: <Select>

Sequence Z Up and Down Position

Tooltip: Displays the current Up or Down position for the Sequence.

Modify: Read Only

Sequence Z Up and Down Move

Tooltip: Move the probe to the Sequence Up or Down position.

Sequence Z Up and Down Save

Tooltip: Sets the Sequence Up or Down position to the current Z position.

Component Z Up Position

Tooltip: Displays the current Up position for the Component from the database.

Modify: Read Only

Component Z Up Move

Tooltip: Moves to the probe to the current Component Up position.

Component Z Up Save

Tooltip: Sets the Up for the component to the current position.

Pin Z Down

Tooltip: Selects the pin use when setting the down position. Moves the probe tip to the pin.

Default: <Select>

Modify: Read Only

Pin Z Down Position

Tooltip: Displays the current Z Down position for the Pin from the database.

Modify: Read Only

Pin Z Down Move

Tooltip: Moves the probe to the Pin Down position.

Pin Z Down Save

Tooltip: Sets the Down for the pin to the current Z position.

Check

Tooltip: Moves the probe down on each of the pins of the Component/Net that have Scan enabled. Displays the signature of the pin on the Preview tab of the Signature Pane. The range is set to the first range of the pin.

Cancel

Tooltip: Cancels the Check mode and lifts the probe.

Save All Comp/Net Pins

Tooltip: Sets the Z Down position for all the pins of the current component/net to the current Z position.

ReAlign Tab

The ReAlign tab is used to select different alignment points and/or change location of where the board is placed in the Prober.

This tab is disabled if an alignment has not been performed.

Procedure

1. Select Alignment 1
2. Move the camera over a location on the board position to be used as Alignment point 1. This may be the current alignment point 1 or a new position.
3. Click Set
4. Select Alignment 2
5. Move the camera over a location on the board position to be used as Alignment point 2. This may be the current alignment point 1 or a new position.
6. Click Set
7. Click Save

Tab Selected Actions

Disabled if database not open or Prober or Camera not connected. After Warning Message move the Prober to XYZ home. Current X and Y updated.

Back

Tooltip: Move the camera towards the back the XY travel distance.

Back Right

Tooltip: Move the camera towards the back and right the XY travel distance.

Right

Tooltip: Move the camera towards the right the XY travel distance.

Forward Right

Tooltip: Move the camera towards the front and right the XY travel distance.

Forward

Tooltip: Move the camera towards the front the XY travel distance.

Forward Left

Tooltip: Move the camera towards the front and left the XY travel distance.

Left

Tooltip: Move the camera towards the left the XY travel distance.

Back Left

Tooltip: Move the camera towards the back and left the XY distance.

Home

Tooltip: Move the camera to the back right corner of the Prober.

Button

Travel

Tooltip: Set the distance the camera will travel in the X (left/right) and Y (back/forward) directions. The units will be in the Unit of Measure selected in options.

Default: Set in Options

Current X

Tooltip: Displays the current X position of the camera.

Modify: Read only

Current Y

Tooltip: Displays the current Y position of the camera.

Modify: Read only

Align Point

Tooltip: Selects Alignment Point 1 or 2

Values: <Select>, Alignment 1, Alignment 2

Default: <Select>

Set

Tooltip: Sets the current alignment point position. Also captures image.

Save

Tooltip: Changes the alignment points to the new locations. Updates all of the pin locations to reposition the board if Update Locations is selected.

Stored Image

Tooltip: Display the original image saved for the current alignment position.

Update Locations

Tooltip: Pin locations are updated during ReAlign to remove an offset when board is aligned.

Default: Checked

Mouse X

Tooltip: Displays the distance the mouse cursor is from the current camera X position.

Modify: Read only

Mouse Y

Tooltip: Displays the distance the mouse cursor is from the current camera X position.

Modify: Read only

Camera Image

Camera Image Right Click Menu

Copy

Tooltip: Copies the image to the clip board

Save

Tooltip: Saves the image to a BMP file by displaying the standard windows Save As window.

Panelize

Allows movement of the prober and displays a camera image of the current camera position. Allows creation of a new sequence by selecting the back right corner of the original panel, the back right corner of the new panel and the amount of rotation.

This tab is disabled if there are no components or an alignment has not been performed.

Procedure

1. Select the **Sequence** that you want to panelize.
2. Align **Sequence**.
3. Click on **Panelize** tab.
4. Move to right back corner of the current board.
5. Press the **Set** button for “Current Origin”.
6. Move to the right back corner of the board to be added. Note if the board is in a different orientation you must use the same corner as was selected in the current board. (For example if the board is rotated 180 degrees the right rear corner would be the left front corner on the added board).
7. Press the **Set** button for “Add Origin”.
8. Select Rotation of the board to be added 0, 90, 180 or 270 degrees.
9. Press the **Panelize** button.
10. A new sequence has been created for the new board. (The new Sequence file name will be incremented by numeric or alphabetical depending on last character of sequence name). Also if rotated the Stored images for the new sequence are not rotated but alignments still need to be done to the same points.

Tab Selected Actions

Disabled if database not open or Prober or Camera not connected. After Warning Message move the Prober to Z home. Current X and Y updated.

Back

Tooltip: Move the camera towards the back the XY travel distance.

Back Right

Tooltip: Move the camera towards the back and right the XY travel distance.

Right

Tooltip: Move the camera towards the right the XY travel distance.

Forward Right

Tooltip: Move the camera towards the front and right the XY travel distance.

Forward

Tooltip: Move the camera towards the front the XY travel distance.

Forward Left

Tooltip: Move the camera towards the front and left the XY travel distance.

Left

Tooltip: Move the camera towards the left the XY travel distance.

Back Left

Tooltip: Move the camera towards the back and left the XY distance.

Home

Tooltip: Move the camera to the back right corner of the Prober.

Button

Travel

Tooltip: Set the distance the camera will travel in the X (left/right) and Y (back/forward) directions. The units will be in the Unit of Measure selected in options.

Default: Set in Options

Current X

Tooltip: Displays the current X position of the camera.

Modify: Read Only

Current Y

Tooltip: Displays the current Y position of the camera.

Modify: Read Only

Current Origin X

Tooltip: Display the X coordinate of the back right corner of the current board on the panel.

Default: 0

Modify: Read only

Current Origin Y

Tooltip: Display the Y coordinate of the back right corner of the current board on the panel.

Default: 0

Modify: Read only

Current Origin Set

Tooltip: Sets X and Y position of the back right corner of the current board on the panel.

Add Origin X

Tooltip: Display the X coordinate of the back right corner of the board to add on the panel.

Default: 0

Modify: Read only

Add Origin Y

Tooltip: Display the Y coordinate of the back right corner of the board to add on the panel.

Default: 0

Modify: Read only

Add Origin Set

Tooltip: Sets X and Y position of the back right corner of the board to add on the panel.

Rotation

Tooltip: Select 0, 90 , 180 or 270 degrees of rotation

Default: 0

Panelize

Tooltip: Creates a sequence identical to the current sequence except the XY data is shifted and rotated according to the settings on this tab. The name of the sequence is incremented to create the new name.

Mouse X

Tooltip: Displays the distance the mouse cursor is from the current camera X position.

Modify: Read only

Mouse Y

Tooltip: Displays the distance the mouse cursor is from the current camera X position.

Modify: Read only

Camera Image

Camera Image Right Click Menu

Copy

Tooltip: Copies the image to the clip board

Save

Tooltip: Saves the image to a BMP file by displaying the standard windows Save As window.

Camera Tab

The Camera tab is used to move the camera around the probing area at look at the images. Use the Motor and Limit check boxes to control the state of the motor power and limit switches for diagnostic purposes.

Tab Selected Actions

Disabled if Prober or Camera not connected. After Warning Message move the Prober to Z home. Current X and Y updated.

Back

Tooltip: Move the camera towards the back the XY travel distance.

Back Right

Tooltip: Move the camera towards the back and right the XY travel distance.

Right

Tooltip: Move the camera towards the right the XY travel distance.

Forward Right

Tooltip: Move the camera towards the front and right the XY travel distance.

Forward

Tooltip: Move the camera towards the front the XY travel distance.

Forward Left

Tooltip: Move the camera towards the front and left the XY travel distance.

Left

Tooltip: Move the camera towards the left the XY travel distance.

Back Left

Tooltip: Move the camera towards the back and left the XY distance.

Home

Tooltip: Move the camera to the back right corner of the Prober.

Travel

Tooltip: Set the distance the camera will travel in the X (left/right) and Y (back/forward) directions. The units will be in the Unit of Measure selected in options.

Default: Set in Options

Current X

Tooltip: Displays the current X position of the camera.

Modify: Read only

Current Y

Tooltip: Displays the current Y position of the camera.

Modify: Read only

X Motor

Tooltip: Check box that controls the X Motor power.

Default: Checked

Y Motor

Tooltip: Check box that controls the Y Motor power.

Default: Checked

X Limit

Tooltip: Check box that controls the X Limit switch.

Default: Unchecked

Y Limit

Tooltip: Check box that controls the Y Limit switch.

Default: Unchecked

Live Camera

Tooltip: Check box that controls Live Camera Image

Default: Unchecked

Mouse X

Tooltip: Displays the distance the mouse cursor is from the current camera X position.

Modify: Read only

Mouse Y

Tooltip: Displays the distance the mouse cursor is from the current camera X position.

Modify: Read only

Camera Image Right Click Menu

Copy

Tooltip: Copies the image to the clip board

Save

Tooltip: Saves the image to a BMP file by displaying the standard windows Save As window.

Probe Tab

Allows control of the probe tips for troubleshooting movement issues.

Tab Selected Actions

Disabled if Prober or Camera not connected. After Warning Message move the Prober to Z home. Current Z updated.

Tab Lost Focus

Move Prober to Z Home.

Up

Tooltip: Moves the probe up the Travel distance.

Home

Tooltip: Moves the probe all the way up.

Down

Tooltip: Moves the probe down the Travel distance.

Z Travel

Tooltip: Select the probe up and down travel distance in the Units of Measure set in options.

Default: Set in Options

Current Z

Tooltip: Displays the current Z position.

Modify: Read only

Slot

Tooltip: Select the slot from the list of the available slots for the selected Prober.

Values: None, Top, Middle, Bottom, Base (based on Prober Connected)

Default: None or slot of selected sequence

Z Motor

Tooltip: Check box that controls the Z Motor power.

Default: Checked

Z Limit

Tooltip: Check box that controls the Z Limit switch.

Default: Unchecked

Image Pane

Image - CAD tab appends the CC filename loaded. File tab appends the image file loaded.

CAD Tab

Allows control of the CAD CC file created during import for viewing the circuit board layout.

Component

Tooltip: Select a CAD component from the list. Selects the Component in the CAD image and populates the Pin drop list. Zoom to component when selected.

Pin

Tooltip: Select a pin of a CAD component from the list. Selects the pin in the CAD image, selects the net of the component and populates the Connected list. Zoom to the net.

Net

Tooltip: Select a net of a CAD image from the list. Selects the net in the CAD image and populates the Connected list. Zoom to net when selected.

Via

Tooltip: Select a via of a CAD image from the list. Selects the via in the CAD image, selects the net of the via and populates the Connected list. Zoom to the net.

Connected

Tooltip: List of component pins, vias and test points connected to the currently selected net. Clicking an item selects the item in the appropriate droplist.

Zoom +

Tooltip: Zoom the CAD image to the next zoom in level.

Zoom -

Tooltip: Zoom the CAD image to the next zoom out level.

Zoom Board

Tooltip: Zoom the CAD image to the extents of the board.

Zoom Window

Tooltip: Activates the zoom window cursor on the CAD image. Click and drag the cursor to create the window size and click to zoom.

Flip Board

Tooltip: Turns over the CAD image to view from the opposite side of the current view.

Options

Tooltip: Displays the CAD Options dialog.

Clear

Tooltip: Clears the highlighting of all of the selected items in the CAD image.

CAD Control

Clicking on pins, components, net traces or vias will update the combo boxes on the left.

Image Tab

Create a board image by positioning the camera over the back right and forward left corners of the board. Once the image is created it can be clicked on to move the prober to the select position on the board.

Level

Board is always selected.

Set Back Right

Tooltip: Use the Prober pane to position the Prober at the back right corner then click this button.

Set Front Left

Tooltip: Use the Prober pane to position the Prober at the front left corner then click this button.

Create Image

Tooltip: This button is enabled after the Back Right and Front Left positions have been set. Clicking the button causes the Prober to scan the area between the Back right corner and the front right corner taking images and creating on large image.

Cancel

Tooltip: This button cancels the Create Image process.

Zoom In

Tooltip: Zooms the image to the next zoom In level.

Zoom Out

Tooltip: Zooms the image to the next zoom Out level. The Board level is the maximum zoom out level.

Image Control

Left clicking on the image move the Prober camera to the position clicked if the sequence is aligned.

Image Right Click Menu

Delete

Tooltip: Remove image from the database.

Copy

Tooltip: Copy the image to the Windows clipboard.

Save As

Tooltip: Save the image as a BMP file.

View PCB Tab

Displays a pixel for each pin that has XY coordinates and a cross for each alignment point of the sequence.

Drawing Right Click Menu

Refresh

Redraws the image to apply any changes made to the positions.

Copy

Copy the image to the Windows clipboard.

Save As

Save the image as a BMP file.

File Tab

Displays a BMP, GIF, JPG, JPEG, PNG, ICO, EMF or WMF graphics file loaded from a file.

Open File…

Tooltip: Open graphics file to display. Defaults to the last file opened.

Live Camera Tab

Displays live video from a camera.

Drawing Right Click Menu

Video Source

Tooltip: Select the video capture device.

Video Format

Tooltip: Select the video display format.

Copy

Tooltip: Copy a snapshot of the video to the clipboard.

Save BMP

Tooltip: Write a snapshot of the video to a BMP file.

Save JPEG

Tooltip: Write a snapshot of the video to a JPEG file.

Start

Tooltip: Start display of the video and close this dialog.

Stop

Tooltip: Stop display of the video and close this dialog.

CAD Options Dialog

General Tab

Contains options for displaying pin numbers, net names and the types of items that are selected when clicking on the CAD image.

Graphics Classes Tab

Contains options to control the display of different types of graphical classes that are displayed on the CAD image.

Insert Types Tab

Contains options to control the display of different types of Insert types that are displayed on the CAD image.

Layers Tab

Contains options to control the display of different types of layers that are displayed on the CAD image.

Buttons

Ok (Temporary)

Closes the dialog and saves the changes for this session of the program only.

Cancel

Closes the dialog without saving any changes.

Save (Permanent)

Closes the dialog and saves the changes in the Windows registry for use every time the program is run.

Defaults

Sets all of the options back to the factory default settings.

Tester Pane

To start the program in Tester mode add /Tester to the command line of the shortcut that starts Huntron Workstation software (i.e. “C:\Program Files\Huntron Workstation\Workstation.exe” /Tester). Tester mode disables all features of the software except those selected in under Options Test.

Selecting the Pane from the Window menu closes the other panes except the Signature pane is enabled in Options Test.

Auto PDF troublesheets are written to the My Documents/Huntron/Troublesheets folder.

File Open

Tooltip: Opens and board database file and closes the current file.

Sequence

Tooltip: List of the sequences contained in the board

Modify: Not displayed if not activated in Options (Sequence specified on command line)

Scan List

Tooltip: If checked, scans the list specified in Scan List Path when the start button is clicked.

Scan List Path

Tooltip: The path to the scan list file to be used for the scan.

Scan List Browse

Tooltip: Displays a File Open dialog to select the file path to be placed in the Scan List Path text box.

Serial Number

Tooltip: Enter the serial number of the board to be scanned

Operator

Tooltip: Enter the name of operator running the scan

Start

Tooltip: Display the time the scan was started

Elapsed

Tooltip: Displayed the elapsed time during the scan

Estimated

Tooltip: Displayed the estimated time to scan the sequence

Remaining

Tooltip: Display the Elapsed time subtracted from Estimated time

Results

Tooltip: Display the results of the scan

Scan Counter Counter

Displays the number of component being scanned

Scan Counter Count

Displays the number of components to be scanned

Start

Tooltip: Start the sequence scan

Stop

Tooltip: Stop the sequence scan

Continue

Tooltip: Start a stopped sequence scan

Troublesheet

Tooltip: Displays the Troublesheet Report dialog.

Requirements

Windows 2000 SP4+ or Windows XP SP1+

.Net Framework 1.1+

Video 800x600+ 16bit+

256MB RAM

Tips and Hints

CMOS Troubleshooting

There are certain assumptions made when performing comparison testing using Trackers in general. The assumption is that two pins on a given board will always produce the same signature given the same stimulus (i.e., a certain range). When testing certain CMOS ICs, this can be invalid.

Capacitors are often connected in parallel with CMOS ICs to reduce noise which can cause one of two problems to occur. First, the signature may be slow in settling to the steady state. Second, the horizontal portion of the chair pattern can move upwards as a result of a charging effect. This charging effect is not a repeatable process.

Note: Match the testing time to the settling time.

Note: Eliminate the charging effect by putting a suitable resistance across the power supply.

Command Line Parameters

Command Line Parameters are accepted for the convenience of starting the software in different modes.

MDBFilePath is the file path of the MDB board file to be opened.

SequenceName is the case sensitive name of the Sequence to be selected.

ComponentNetName is the case sensitive name pf the component or net to be selected.

/Tester starts the software in Tester mode. The Tester pane is displayed and other items are enabled based on the setting of the Test tab in Tools->Options.

/Control starts the software in Remote Control mode. This parameter for use with the optional Remote Control feature of the software.

Example:

Workstation.exe “MDBFilePath” “SequenceName” “ComponentNetName” /Tester

Note: Be sure to include the “” around the parameters as shown.

Select Range

A Brief History

The basic Huntron Tracker technology was developed in 1976 using the concept of Analog Signature Analysis (ASA). This concept involves applying a current limited AC voltage signal to an electronic device. The current flowing between the device terminal and its reference terminal is then plotted against the applied voltage signal in an XY fashion. The resulting plot is called an analog signature. ASA involves comparing the signatures of a known good device to the signatures of a suspect device. A faulty device would most likely have a signature that is significantly different from that of a good device. This technique is used to troubleshoot electronic circuitry without applying power to the circuit.

What is a Range?

The characteristics of a signature can be changed by modifying the applied AC voltage, resistance and frequency. These three characteristics of the applied signal create a "range". Two different test ranges may display different signatures for the same device. A device fault may show up in one test range but not in another. The ASA technique for troubleshooting also involves choosing the appropriate range(s) for maximum fault coverage.

Voltage

This factor is the amplitude or peak voltage of the applied signal. The sine wave voltage affects the response of solid state devices. Tracker voltages are from 200 milliVolts to 60 Volts peak.

In general the voltage should be set to give a signature about half as wide as the horizontal axis of the graticule.

TTL type integrated circuits are best viewed with 20 Volts (Med2).

LS type TTL and older MOS circuits are best viewed with 10 to 15 Volts (Low or Med1).

For most other circuits the 3 Volt range works well.

For zener diodes the voltage should be twice the zener diode breakdown voltage.

For capacitors, resistors and inductors in-circuit, use 200mV to mask the effects of connected solid state devices.

Resistance

The resistance has the most effect on the shape of the signature. The resistance limits the current flowing through the device. Tracker resistance's are from 10 ohms to 100K ohms.

It is best to use two ranges with different resistance values to show a wider spectrum of faults.

For edge connectors, discrete components and filter caps the lower resistance ranges are suggested. These ranges allow the verification of true shorts.

For logic circuits use a resistance of 1k (or Med1) and 20 k (or Med2). Avoid using

the Low resistance ranges on ICs - this will display excessive manufacturing differences.

Frequency

This factor is the number of cycles that a sine wave makes in one second. By changing the frequency of the sine wave, the ellipse pattern response of capacitors and inductors becomes wider or narrower. Tracker sine wave frequencies are from 20 Hz to 5 kHz.

In general, when viewing capacitive or inductive signatures, adjust the frequency for the roundest signature. Smaller capacitors and inductors require higher frequencies.

If you are not able to display a satisfactory signature by adjusting frequency, adjust the resistance.

The recommended default frequency is 50/60 Hz. - this gives the best response for filter caps and power related failures.

For MOS integrated circuits, a frequency of 1 kHz minimizes loops in the vertical leg of certain signatures. This can make the chair pattern more distinct.

ProTrack I and TrackerPXI Range Selection Guide

Note: These ranges are suggested ranges only. Connection to different devices in-circuit and different component manufacturing techniques may require the use of different ranges. See Select Range for more information.

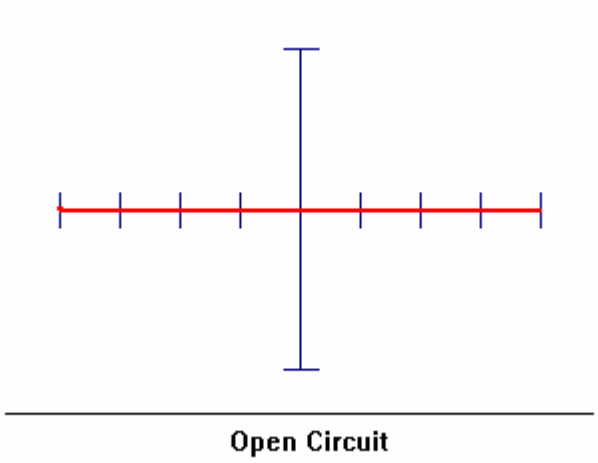
Component	Range
Resistors in Ohms	
10	**200mV, 10 Ohm, 200Hz**
20k	**200mV, 20k Ohm, 200Hz**
100k	**200mV, 100k Ohm, 200Hz**
Capacitors	
.001mF	**200mV, 100k Ohm, 2kHz**
.01mF	**200mV, 100k Ohm, 200Hz**
10mF	**200mV, 1k Ohm, 60Hz**
100mF	**200mV, 50 Ohm, 60Hz**
Inductors	
1.5mH	**200mV, 50W, 2kHz**
Transistors	
2N3906	**20V, 100k Ohm, 60Hz**
Integrated Circuits	
7404 (TTL)	**15V, 1kOhm, 200Hz**
	10V, 50 Ohm, 200Hz
74LS04 (LS)	**10V, 1k Ohm, 200Hz**
	10V, 50 Ohm, 200Hz
74S04 (S)	**20V, 20k Ohm, 200Hz**
	20V, 100k Ohm, 200Hz
74HC04(HC)	**3V, 1k Ohm, 60Hz**
	3V, 10k Ohm, 60Hz
Z80 (CPU)	**10V, 10k Ohm, 60Hz**
	10V, 100k Ohm, 60Hz
TI 486 (CPU)	**3V, 10k Ohm, 60Hz**
	3V, 1k Ohm, 60Hz
MC14069	**10V, 10k Ohm, 60Hz**

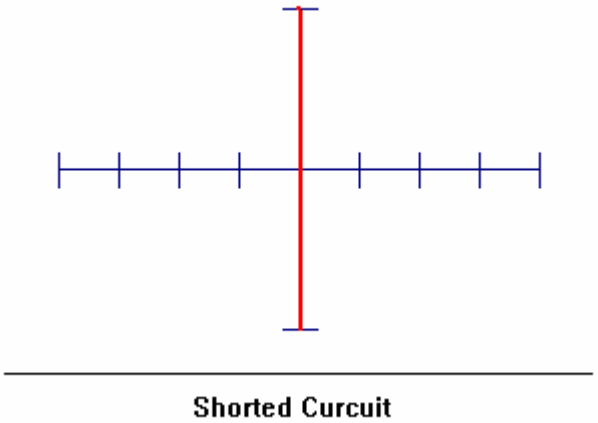
	10V, 1k Ohm, 60Hz
74F245 (F)	**3V, 10k Ohm, 60Hz**
	3V, 1k Ohm, 60Hz
MS62256A	**10V, 10k Ohm, 60Hz**
	10V, 100k Ohm, 60Hz

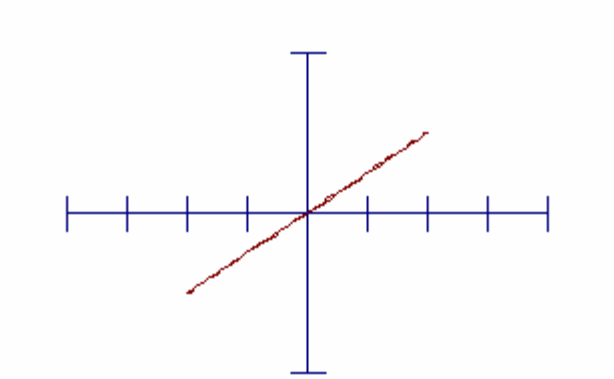
Note: For wider fault coverage it is advisable to use two ranges for ICs. The second suggested range above is in *italics*.

Sample Signatures

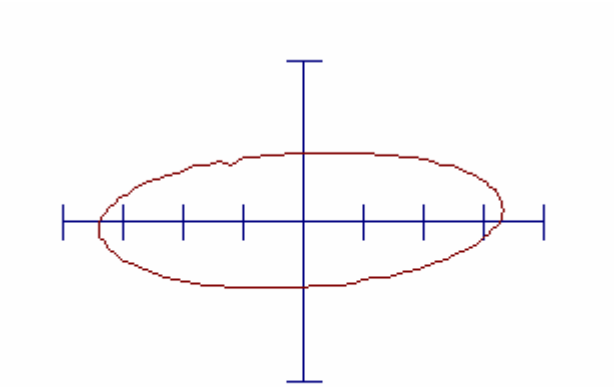
The following are several sample signatures from different types of components.



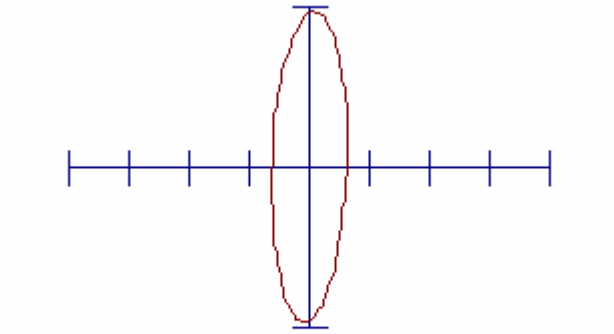




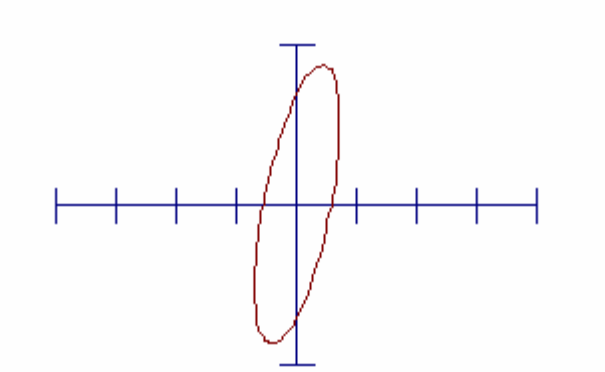
Resistor
Signature



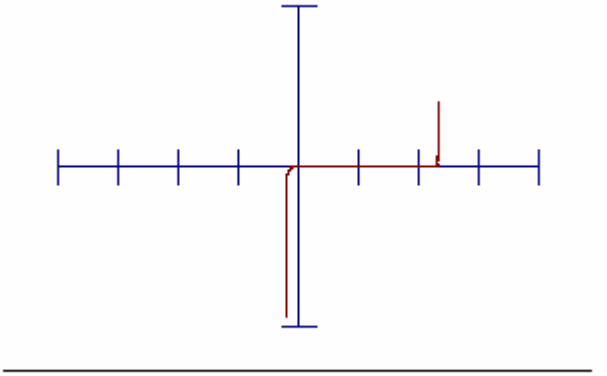
Capacitor Signature



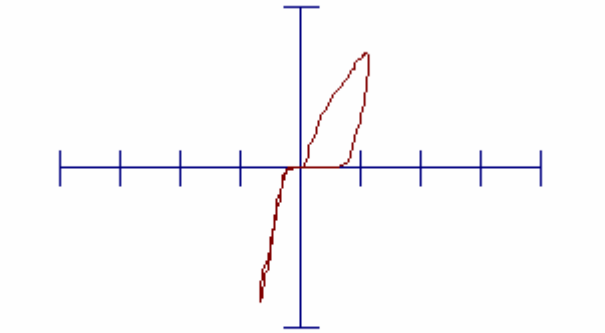
Capacitor Signature
without Leakage



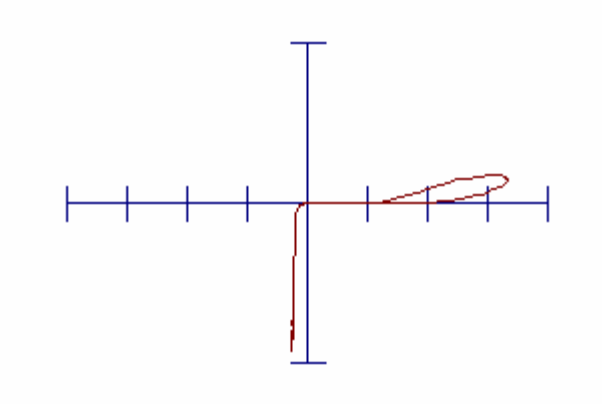
Capacitor Signature
with Leakage



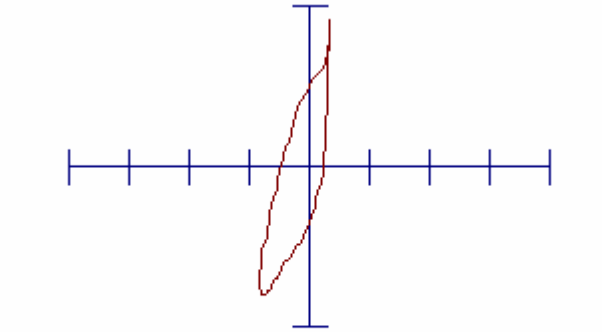
Zener Diode
Pattern



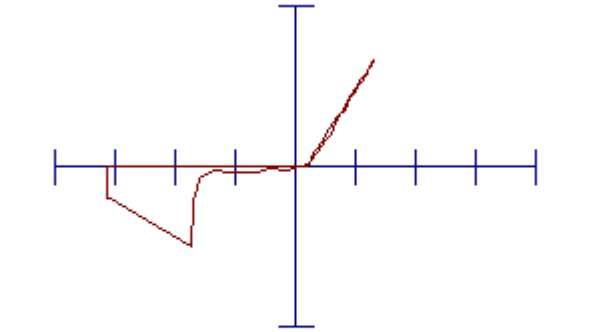
CMOS
Signature



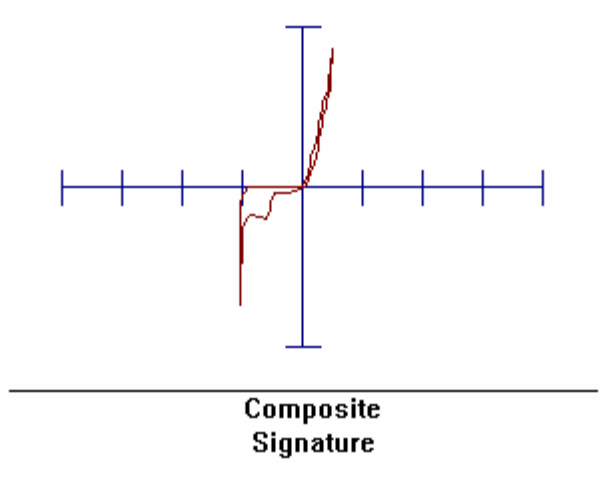
CMOS
Signature



Composite
Signature



Composite
Signature



Features No Longer Supported

Hardware

Tracker 5100DS

Tracker 5500

RP388

Electrim ISA Camera

Electrim PCI Camera

Prober External Mode

Files

HNT files created by Sun-Up

DOS databases

Windows

Windows 95

Windows 98

Windows ME

Windows NT

GeoTest Switch Card Configuration

Install the GeoTest Switch card and install the drivers. Get the card functioning using the appropriate GeoTest GX#### Panel program.

In Tools->Options->Hardware select GeoTest for the Scanner selection. Click the GeoTest Setup button.

Use the GeoTest Setup Dialog to configure the cards. Select the Switch Card type and the Slot number used in the GX#### Panel program. Then select Test to use the relay card for test pins or Common to use the relay card for Common pins. The Pins field will display the pins controlled by the card.

For example:

First Switch Card GX6125, Slot 6, Test = Test Pins 1-25

Second Switch Card GX6138, Slot 7, Test = Test Pins 26-63

GX6125 Wiring:

Connect CH1 CO - CH25 CO all together a connect to the Signal jack of the Tracker. Use CH1 NO – CH25 NO as pins 1-25.

GX6138 Wiring:

Connect CH1B, CH2B, CH3B etc. all together a connect to the Signal jack of the Tracker. Use CH1A – CH38A as pins 26-63.

NI Switch Executive Configuration

Use the National Instruments Switch Executive and Switch Card documentation to configure the Switch cards to be used with Switch Executive.

In National Instruments Measurement & Automation Explorer create a NI Switch Executive Virtual Device called “HuntronSwitchConfiguration”. In this configuration create test pin routes prefixed with “HuntronTest” and add the pin number to for each route without a space. To create Common pin use the “HuntronCommon” prefix and add the pin number to for each route without a space.

For example:

The First switch used is an NI PXI-2503 with driver setup of “Topology:2503/1-Wire 48x1 Mux”. The first route is called HuntronTest1 and it connects IVI Channel com0 to IVI Channel ch0. The rest of the routes connect com0 to ch1 – ch47. This creates test pins 1-48.

The Second switch card used is a Pickering 40-524-022 with a driver setup of “Model:40-523-022;”. The first route is called HuntronTest49 and it connects IVI Channel y1 to IVI Channel x1. The next 43 routes connect y1 to x2-x44. This creates test pins 49-98. The next route is called HuntronTest99 and it connects IVI Channel

y2 to IVI Channel x1. The next 43 routes connect y2 to x2-x44. This creates test pins 99-136.

PX-2503 Wiring:

Connect COM0+ to the Signal jack of the Tracker. Use CH1+ to CH23+ for pins 1-24 and CH1- to CH23- for pins 25-48.

40-523-022 Wiring:

Connect Y1.1 and Y2.2 together and connect to the Signal jack of the Tracker. Use X1.1 to X44.1 for pins 49-98 and X1.2 to X44.2 for pins 99-136.

Glossary of Terms

Analog Signature Analysis

Analog Signature Analysis is a power-off troubleshooting technique that uses a sinewave stimulus to generate the voltage (V) vs. current (I) characteristics of an unpowered device. The VI characteristic is called an analog signature. The signature is then displayed on a CRT or computer monitor. Voltage is displayed horizontally and current is displayed vertically. An open circuit is thus represented by a horizontal line and a short circuit which draws the maximum current is represented by a vertical line.

Area

The sum of all the deviation values of the digitized points used in comparison. See Compare Resolution for more information.

ASA

An abbreviation for Analog Signature Analysis.

Back

The portion of the chair pattern rising vertically from the seat. This represents forward current. See Chair Pattern for more information.

Board

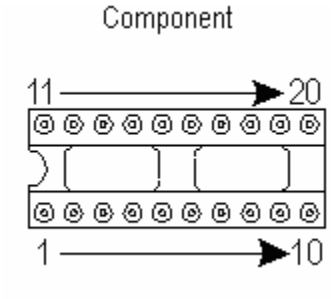
An electronic circuit board printed circuit board (PCB) or printed circuit assembly (PCA). The Board is located on the menu directly below the System on the Main Window.

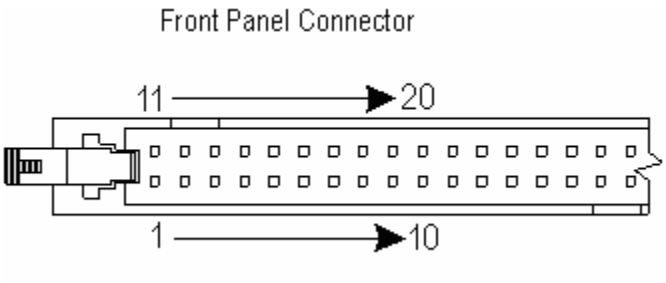
Bill of Materials (BOM)

The report of materials used, including replacement part number, supplier, etc.

Both

Both package scans pins in two parallel rows on opposite sides of the package. Both rows are scanned in the same direction starting at the pin 1 end of the component.





Browse

Enables the user to select a file/path from the existing directories and drives.

Calibration

Adjusting instruments to allow data to be shared with other instruments.

Camera

An optical device which allows the viewing of a circuit board through the computer monitor. The Camera is mounted on the right side of the Z Axis mechanism and consists of an image sensor, miniature lens, and optical filter.

Camera Offset

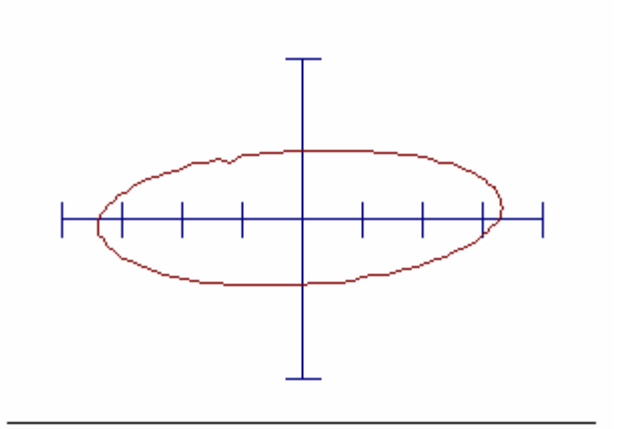
The difference between the XY position of the camera and the prober Spring Probe Tip.

Note: When setting the prober offset, the probe tip should be lowered to the board so the tip barely makes contact with the board.

Capacitive

A signature or portion of a signature that is round or elliptical caused by the voltage and current being out of phase.

A Capacitor Signature is shown below.



Capacitor Signature

Capacitor

An electric component designed to store electricity. Capacitors are widely used in circuits for producing time delays and filtering electrical oscillations. Capacitors and inductors alike cause a phase shift between voltage and current producing a circle or elliptical signature directly proportional to the amount of capacitance or inductance.

Chair

The signature pattern common to IC's and zener diodes that resembles a chair. The lower vertical part is the leg, the horizontal part is the seat, and the upper vertical part is the back. See Sample Signatures for example.

Charging Effect

A condition where the seat of a chair pattern moves up and stabilizes over a short period of time.

Circuit

An arrangement of electronic components which are connected in such a way that some function is performed.

CMOS

Complementary Metal-Oxide Semiconductor. A wide range of IC's are CMOS. They are known for low power consumption making them useful in battery-operated devices. They are susceptible to damage from static electricity. CMOS integrated circuits are built with capacitors causing their signatures to display a loop in the back of the chair pattern.

Combo Box

The combination of a text box and a drop-down list box, allowing the user to enter the name of an item in the list box or select it from the list.

Common

An electrical connection/wire which is at the same or common potential. The common is typically grounded to the negative terminal of a power supply and serves as a reference point for a component.

Common Pin

The reference pin for the component. The common pin is typically the negative power supply or ground pin. See Edit Pins dialog for more information.

Compare Priority

Sets the scan compare to one of three priority types Same Serial, Merge or All Serials.

Component

A piece of electronic hardware that has a particular purpose, such as a resistor or transistor.

Composite Signature

Any combination of the four basic signature patterns. A signature composed of resistive, capacitive, inductive, and/or semi-conductive characteristics.

CRT

The Cathode Ray Tube used to display signatures on the Tracker.

Current

The vertical component of a signature. Shorting the prober causes a maximum current flow and displays a vertical line on the CRT.

Database

Collection of the data about the system, board, section and component levels.

Degeneration

The effect of a time or electrical stress on a component, causing a change in its ideal signature. This is a fault common to capacitors and solid-state junctions and results from such things as noise, loss of capacitance, resistance, etc.

Dev

An abbreviation for Deviation.

Deviation

The deviation is the amount that the value of one data point varies from the learned points outside of the tolerance.

Diagnostics

Methods for troubleshooting instruments that are not working correctly.

Dialog

This refers to area on the computer screen surrounded by a border. Dialogs are used to allow entry of or displaying information. Also known as a window.

Difference

This is one of the two signature orders. When in this mode, signatures are displayed from the most to least different in the most to least different range. Also see Numeric.

Diode

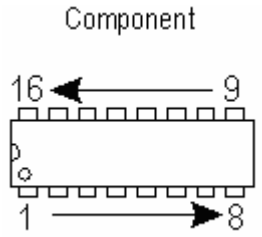
A component which allows current to flow through it in one direction only. Diodes are used in power supplies to convert or rectify alternating current to direct current.

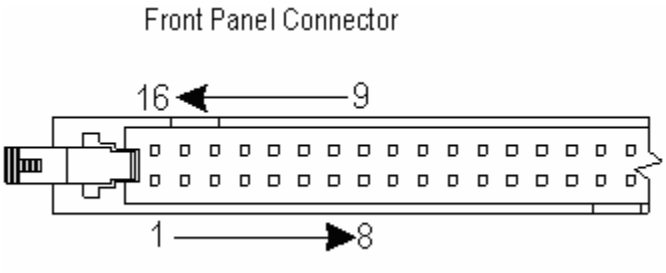
Diode Pattern

See Diode.

DIP

A DIP stands for Dual In-line Package and has its pins in two parallel rows on opposite sides of the package. The pins are scanned from pin 1, down the row across the other row and back up that row to the last pin.





DIP2X

The DIP2X is an enhanced Dual In-line Package (DIP) having 66-128 pins.

Discrete Component

A component that is a single device with a single purpose such as a resistor, capacitor, or diode.

Field

A text box used for entering characters into the software.

File

A group of data stored on a disk. The File on the Main Window displays the File menu.

Filter

An algorithm that removes oscillations from certain types of signatures.

Flagging

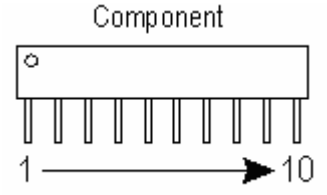
Oscillations in a signature, usually located on the back of the chair pattern.

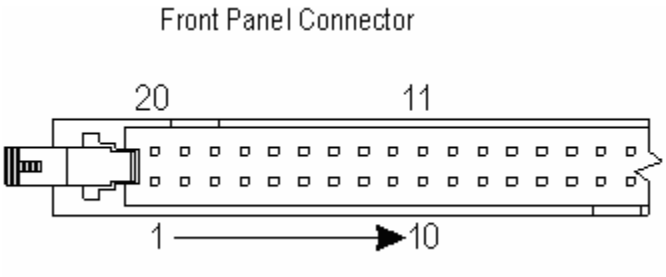
Flutter

A signature or part of a signature oscillating. Flutter is common in capacitors and solid-state junctions.

Front

The Front package type has a single row of pins. This is the row with pin 1 and is scanned from pin 1 to the last pin of the row.





Gap

A missing section of a signature.

Graticule

The set of horizontal and vertical lines behind the signatures used to approximate turn-on voltages and aid in the comparison of signatures.

Hardware

The Huntron instruments connected to the computer.

Height

Sets the up and down position of the probe. These must be set before Scanning section or component using the prober.

Home

The far back right corner of the prober. Also, the probe in its highest up position.

Inductive

A signature or portion of a signature that is this round or elliptic caused by voltage and current being out of phase.

Inductor

An electric component used for filtering. Also, found in transformers

Instructions

The instructions for tree items are designed to help the user scan and test boards. Instructions can inform technicians of things such as the correct orientation of a board or where to connect the common test lead.

Leg

The vertical portion of a chair pattern extending downward from the seat.

Limit Switch

Switches on the prober that are used when homing to prevent the prober from hitting the stops.

List Box

A box displaying a list of items. If the number of items on the list exceeds the visible area, use the scroll bar to move up or down.

Max. # of Samples

This field sets the upper limit of the number of times the hardware will attempt to capture an analog signature during a scan. Normally, the hardware will capture the analog signature on the first try. However, under certain conditions, the hardware may repeat capturing to insure the analog signature is stable and accurate. If the number of samples reaches the maximum number entered here, then the hardware uses the last sample for input.

Merge

To store more than one signature and to create upper and lower comparison boundaries (min\max). The highest and lowest digitized point values that are created as signatures are merged. These are used to allow points with values in between to pass comparisons.

Mils

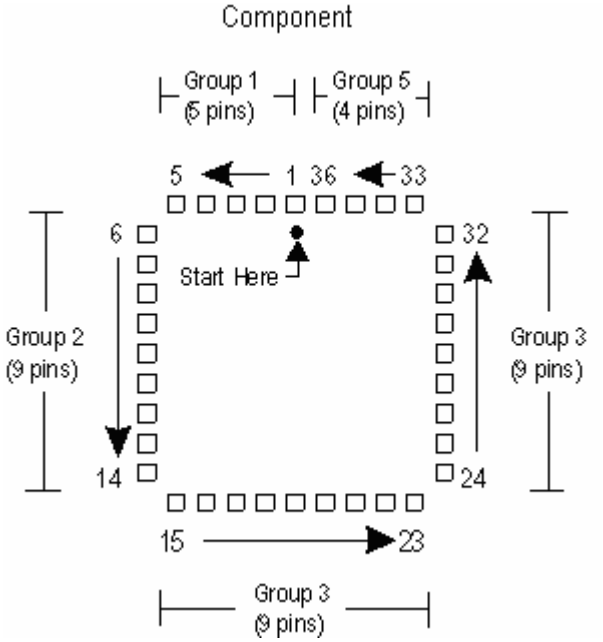
1 mil = 1 thousandth of an inch. 1 inch = 1000 mils. Equivalent to .0254 millimeters (mm).

MMs

Millimeter. 1mm = .001 meter. Equivalent to .0394 inches (39.4 mils).

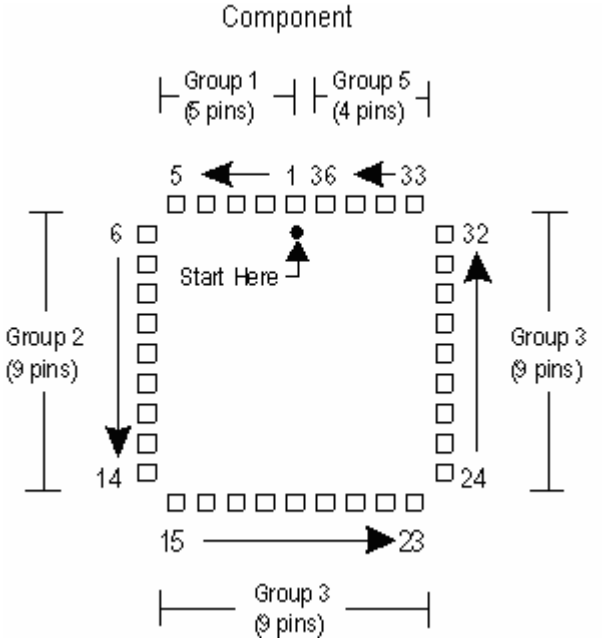
Multi

Packages containing multiple groups of pins. Multi package types can support up to 512 pins.

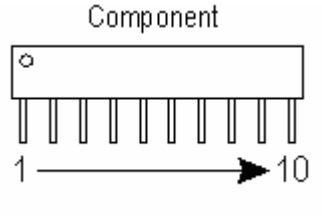


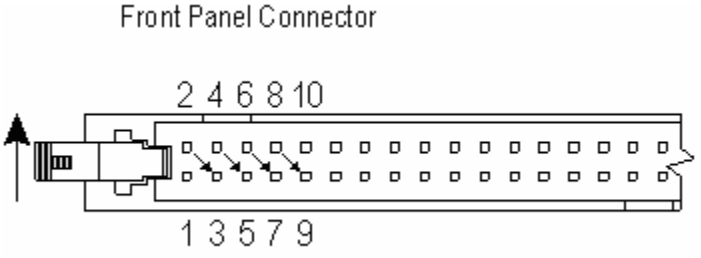
MultiSIP

Packages containing multiple groups of pins. Multi package types can support up to 512 pins.



Scanner Common Pins are controlled in a SIP fashion.





Offset

The calculated difference between the camera and probe tip and the probe tip to the board.

Package

This controls how component pins are scanned. Packages include DIP, SIP, Probe, Multi, Both, or Front, DIP2X or SIP2X.

Path

The drive and directories specifying to location of a file.

PCB

Printed Circuit Board. A circuit board that has the electrical connections and component identification printed on it.

Pin

The test point or lead of a component.

Pitch

Distance between component pins, pin spacing.

Probe

Probe is a component package type that disables all relays and prompts for connection of each pin. Mostly used with Huntron Probes. The Foot Pedal connected to the Tracker can activate the Scan Pin during the Probe Connection dialog.

Probe Tip

The spring loaded test probe used with a prober to make contact with test points on the circuit board. Various probe styles are available depending on the component being tested.

Prober

A Huntron Robotic Test System that automates the testing of specified points on a printed circuit board. Probing hardware includes the following: Prober Ic, Prober IIc, Prober IIIc and Access.

Prober Board Mounting

The mounting adapters and slots on the inside walls are used to hold the board in place.

Pulse Generator

ProTrack I outputs produce a DC voltage level or a square wave pulse.

Radio Button

A small round button that is black when is selected and clear when unselected, used to indicate an option has been selected.

Range

The test range applied to the component under test. A range consists of a combination of voltage, resistance and frequency.

Re-Alignment

Changing the section alignment points to new positions.

Real-Time

Continuous signature update mode.

Relay

Hardware component used for test signal routing consists of switch contacts and a coil.

Resistive

A linear response characterized by the angular trace/signature indicating voltage drop and current flow.

Resistor

An electrical component designed to resist electrical current flow.

Resolution

The minimum distance that the probe tip is capable of moving.

Revision

Indicator of the design version of a board.

Same Serial

Compare the latest scan to stored signatures with the same serial name.

Sample

A sample consists of a double reading of each signature. After processing for glitches and oscillations, the two readings are compared and must be similar or that sample is unstable.

Scan

Connect to pins of a component and digitized signatures

Pins Then Range

Scans all of the pins of the component in the first range. Then scans all pins in the next range until all ranges have been scanned.

Ranges Then Pin

Scans all of the ranges of the first pin. Then scans all of the ranges of the next pin until all pins have been scanned.

Seat

The horizontal portion of a chair pattern.

Sequence

A group of components on the circuit board.

Serial Number

The alphanumeric number of the actual board being scanned.

Settling Effect

A condition where the back of a chair pattern will stabilize over a short period of time.

Sharp Corner

The sharp angle in the signature when a device conducts current.

Short

An electrical connection of very low resistance allowing large amounts of current to flow.

Side

The component or the solder side of the board.

SigAssist™

SigAssist™ provides a tool tip of signature values.

Signal

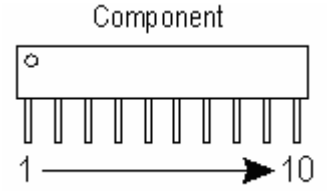
The analog input from the component pin.

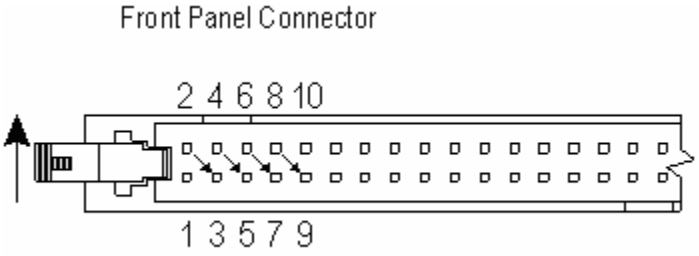
Signature

The VI characteristics of each component pin/range.

SIP

Single In-Line Package. A component package having a single line of pins, such as a connector or resistor pack.





SIP2X

The SIP2X is an enhanced Single In-line Package (SIP) having 65-128 pins.

Soft Corner

A curve rather than an sharp angle in the signature where a device conducts current and voltage. On some devices this is an indication of leakage. See Sharp Corner for more information.

STAR

Smart Tracker Active Range (STAR) are designed to limit the maximum power of any test range available at the ProTrack I's output terminals. This hardware feature ensures that test range parameters cannot be set to any combination that might overpower the component under test. The ProTrack I's STAR feature is always enabled and can only be modified by the MaxV setting.

Store

Saves information, signatures, and values to the disk.

System

The collection of board, section and component information.

Teach

This refers to translating the physical position of the probe to actual distances from the home position for each test point in the section.

Technical Information

The hardware specifications and Huntron technical information for Huntron instruments is located in the user manuals or can be obtained from Huntron Technical Support.

Tolerance

The margin within which a component is still considered equivalent when being tested.

Tracker

Huntron testing hardware that performs power off Analog Signature Analysis.

Tracker Signature Analysis

Tracker Signature Analysis is a power-off troubleshooting technique that uses a sinewave stimulus to generate the voltage (V) vs. current (I) characteristics of an unpowered device. The VI characteristic is called an tracker signature. The signature is then displayed on a CRT or computer monitor. Voltage is displayed horizontally and current is displayed vertically. An open circuit is thus represented by a horizontal line and a short circuit which draws the maximum current is represented by a vertical line.

Travel

How far the probe will move when movement buttons are pressed.

Tree

A structured group of systems, boards, sections, and components used to store all of the information about a board that is to be scanned.

Troublesheet

A report showing all of the Different pins and components of the current scan.

Troubleshooting

Searching for the cause of failures based on test equipment results and symptom descriptions.

TSA

An abbreviation for Tracker Signature Analysis.

UECA

The Huntron Universal Edge Connector Adapter (UECA) makes edge connector testing using certain Trackers quick and easy. The UECA was designed to simplify the interfacing of printed circuit board (PCB) edge connectors to 64 pin compatible Trackers. This has proved to be a fast and efficient test technique for many circuit boards. The UECA interfaces to the test hardware through the 64 pin flat cable. The UECA has four open ended, standard edge connector sockets with the following pin spacing: 0.156", 0.150", 0.125", and 0.100". The open ends allow for easy insertion of any length edge connector. Four convenient templates are provided on the UECA to help you determine the spacing of your PCB edge connector. Just match your test PCB edge connector to the appropriate pattern.

Voltage

The horizontal portion of a signature. An open circuit (a horizontal line) represents maximum voltage.

V/I

V = Voltage and I = Current, another name for ASA testing.

Waveform

Displays the component voltage and current signals used to derive an analog signature.

X Axis

The axis that runs left to right that the probe travels.

Y Axis

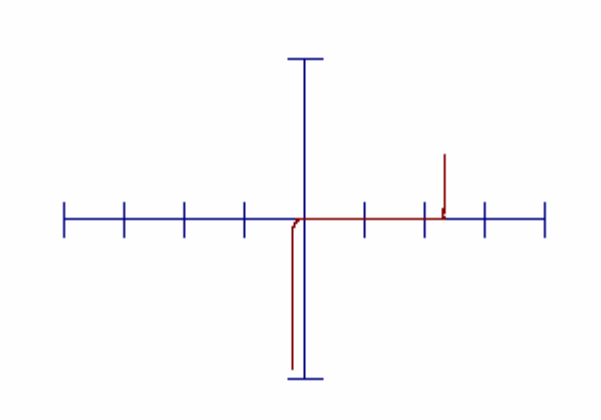
The axis that runs front to back that the probe travels.

Z Axis

The axis that is used for the probe height.

Zener Pattern

A pattern similar to a chair pattern although opposite in polarity. Corners indicate actual operating voltages. Common zener diodes will display a chair pattern that has a vertical break-over point at .6 volts (the conduction voltage of a silicon device) and a second break-over point at the rated voltage for the diode



Zener Diode
Pattern

Index

A

About 38
Action 4, 7, 19
Actions Toolbar 4, 7
Add 121
Add New 3, 6, 19, 45, 46, 56, 57, 70
Add Origin 121
Adjacent 87
Align 41, 42, 43, 44, 45, 108, 110, 118
Align Tab 108
All 87
ASCII 96
Auto 37, 40, 41

B

Back 105, 109, 111, 112, 116, 117, 119, 120, 122, 123
Background Menu 13
Bill of Materials 5, 11
Board 6, 14, 33
BOM 5, 11
Bottom 15, 16, 54, 55
Browse 18, 46, 96
Build 3, 6, 45, 46, 56, 57
Button 16, 17, 18, 33, 47, 58, 129

C

CAD 125, 127, 129
Camera 107, 110, 113, 118, 122, 124
Cancel 16, 19, 46, 57, 63, 71, 116, 127, 130
Cap 103
Caption 17
Channel 59, 98
Check 116
Clear 127
Close 1, 91, 96
CMOS 132
Color 13, 23
Columns 39
Command Line 17, 132
Common 68, 90, 99
Compare 40
Component 6, 26, 34, 38, 39, 47, 56, 74, 83, 84, 101, 115, 126
Connected 126
Connection 49
Continue 91, 132
Continuous 83
Conversion 2
Convert 1
Converted Merges 50
Copy 4, 6, 45, 56, 71, 80, 93, 107, 110, 113, 118, 122, 124, 128
Create Image 127
Current Origin 120, 121
Current X 109, 112, 117, 120, 123
Current Y 109, 112, 117, 120, 123
Current Z 114, 125
Cut 4, 6, 46, 57, 71

D

Data 102
Data Source 14
Default 130
Delay 67
Delete 1, 3, 4, 6, 45, 46, 47, 56, 57, 58, 70, 74, 93, 128
Delete Scan 4, 46, 47, 57, 58, 74
Detail 8
Dialog 46, 57, 63, 71
Disable All 70
Double Left Click 95
Down 44, 106, 114, 125
Drawing Right Click 128
Duty Cycle 62

E

Edit 3, 4, 45, 63, 70
Edit Board 4
Edit Menu 3
Edit Toolbar 4, 6
Elapsed 82, 131
Estimated 82, 131
Exit 2, 13
Export To 11

F

Failed Item List 92
Fbd 103
Features No Longer Supported 141
Fields 14
File 4
File Menu 1, 11

File Open 130
File Path 18
File Tab 128
File Toolbar 5
Files 141
Filter 66, 98
Flip Board 126
Forward 105, 109, 111, 117, 120, 122, 123
Frequency 66, 97

G

General Tab 19, 129
GeoTest Setup dialog 22
Get Signature 101
Gold Disk Number 14
Graphic Classes 129
Group By 11

H

H/W Area 103
H/W Dev 103
Hardware 102, 141
Hardware Tab 21
Help 17, 19, 47, 58, 64, 71, 91
Help Menu 37
Hold 98
Home 106, 109, 112, 114, 117, 120, 123, 125
Huntron 37, 38

I

Icon 18
Image Control 127
Image Pane 36, 125
Image Right Click Menu 128
Image Tab 127
Import 2
Insert 3, 45, 56, 70, 71
Insert Types Tab 129
Instructions 16, 45

L

Layers Tab 129
Left 82, 105, 109, 112, 117, 120, 123
Left Double Click 81
Level 127
Live Camera 124
Load 16, 18
Lock 37

M

Main Window 1
Maintenance 34
Manufacturer 14
Max 66, 104
Merge 72, 91, 93
Message 38
Min/Max 74
Mode 107
Mouse 106, 107, 110, 112, 118, 121, 122, 124

N

Name 14, 39
Net 126
Net List 5
Net Name 58
Net Tab 28
Netlist report 8
New 1, 5
Next 4, 7, 19, 46, 57, 64, 92
NI 14xx Diagnostics 34
Number Of Pins 48, 99

O

Offset Tab 104
Ok 16, 19, 46, 57, 63, 71
Open 1, 6
Open Check Type 49
Open Recheck 50, 87
Operator 72, 82, 131
Options 19, 126
Order Number 39

P

Package 48, 99
Page Layout 13
Page Setup 11
Panelize 119, 121
Parent Id 17
Part Number 52
Part Package 52
Part Tolerance 53
Part Value 53
Pass 83
Passed 73
Passed Item List 92
Paste 4, 6, 46, 57, 71
Pause 51
Pin 38, 75, 99, 102, 113, 126
Pin Number 58
Pin Selected 63
Pin Spacing 49
Pin Tab 28
Pin Z Down 115
Pins Tab 58

Power 103
Preview Tab 101
Previous 18, 46, 57, 64, 92
Previous Component 7
Previous Pin 7
Print 11, 80, 93
Probe Tab 124
Prober 7, 19, 69
Prober Pane 36, 104
Problem 95
Procedure 104, 111, 114, 116, 119
ProTrack 34
Pulse 61, 62, 97

R

Range 38, 75, 102
Range Id 64
Range Number 64
Range Selected 70
Range Tab 29
Ranges Tab 64
Ranges Then Pin 51
Rbd 104
Real Time 98, 101
ReAlign 116
Realtime 98, 101
Recent Files 2
Reference 73
Refresh 128
Relay Number 60
Remaining 131
Remove/Unremove 93
Removed 73
Removed Item List 92
Repair 2
Repeat 3, 7, 45, 46, 56, 57
Replacement 53
Report Preview 11
Reports 5
Requirements 132
Res 103
Rescan 90
Reset 106
Resistance 65, 97
Results 82, 131
Revision 14
Right 105, 109, 111, 117, 119, 122
Right Click Menu 94, 98, 100
Rotation 121
Row Right Click Menu 45, 56, 63, 70, 74

S

Sample Layout 102
Sample Signatures 137
Save 107, 110, 113, 118, 122, 124
Save All 116
Save As 1, 6, 128
Scale 80, 93
Scan 5, 100
Scan Component 7, 19
Scan Counter 131
Scan Date Time 72
Scan Hold 100
Scan Id 74
Scan Pin 59
Scan Report 10
Scan Sequence 7, 19
Scan Tab 24, 82
Scanner Tab 98
Scans 79
Scans Tab 71
Select Name Of New Board Dialog 2
Select Range 133, 135
Select System to Convert Dialog 2
Send As 12
Sensoray 34
Sequence 38, 101, 130
Sequence Button 6, 34
Sequence Id 44
Sequence Scan 86
Sequence Selected 45, 74
Sequence Tab 25
Sequence Z Up and Down 114, 115
Sequences Tab 39
Serial Number 82, 95, 131
Set 107, 110, 118
Set Back Right 127
Set Front Left 127
Set Reference 91, 93
Short Check 87, 90
Shorts 90
Show Instructions 41
Show Only Differences 90
SigAssist 102
Signature 5
Signature Box 80, 91, 94, 98, 100
Signature Compare 87
Signature Data Dialog 101
Signature Pane 36, 79
Signature Report 10
Signature Right Click Menu 80
Signature Tab 79
Slot 106, 125
Software Activation 34
Software Activation Dialog 34
Solution 95
Start 82, 83, 131
Statistics 5
Statistics Report 9
Status Bar 13, 38

Status Dialog 2
Statusbar 13, 38
Stop 91, 100, 131
Stop On failed Component 40
Stop On Failure 83
Store 91, 93
Store Align Procedure 108
Store ASCII 96
Store File 18
Store Icon 18
Store Level 95
Store Passed 96
Store Troublesheet Dialog 95
Stored Image 110, 118
Stored Shorts 90
Summary 92
Supplier 53
Sync CAD 57, 63
System 14
System and Board Convert Dialog 2

T

Tab Lost Focus 114, 124
Tab Selected 92, 96, 99, 105, 108, 111, 114, 116, 119, 122, 124
Teach Height Tab 113
Teach Tab 111
Technical Support 37
Test 32
Test Pin 90
Test Probe 60, 61
Tester Pane 36, 130
Tips and Hints 132
Title 104
Tolerance 98
Tool Bars 4
Toolbar 13
Tools Menu 19
Tooltip 18
Top Image 15
Top Level 7
Top Name 15
Top Pin 55
Top Side 39
Top X 53
Top Y 54
Tracker Tab 96
TrackerPXI 34
Travel 109, 112, 117, 120, 123
Tree 5
Tree Pane 36, 38
Tree Report 7
Troublesheet 5, 91, 132
Troublesheet Report 8
Troublesheet Tab 92
Tutorials 37
Type 48

U

Unique Pin 59
Unit 14
Unit Of Measure 14, 38
Up 43, 55, 106, 114, 124
Update 93
Update Locations 118

V

Via 126
View Menu 4, 13
View PCB Tab 128
Voltage 65, 97

W

Watermark 13
Window Menu 36
Windows 141

X

X Limit 123
X Motor 123
X Offset 107
XY Travel 107

Y

Y Limit 124
Y Motor 123
Y Offset 107

Z

Z Home 106
Z Home Between Components 40
Z Limit 125
Z Motor 125
Z Offset 107
Z Travel 106, 114, 125
Zoom 126, 127