

# ADIVA Graphical User Interface (User Guide)

# Notice

Representations in this User Guide are meant as an overview and quick reference. Full details can be found in the On-Line manuals located at the *ADIVA Corporation* website - [www.adiva.com](http://www.adiva.com)

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# ADIVA Graphical User Interface Highlights

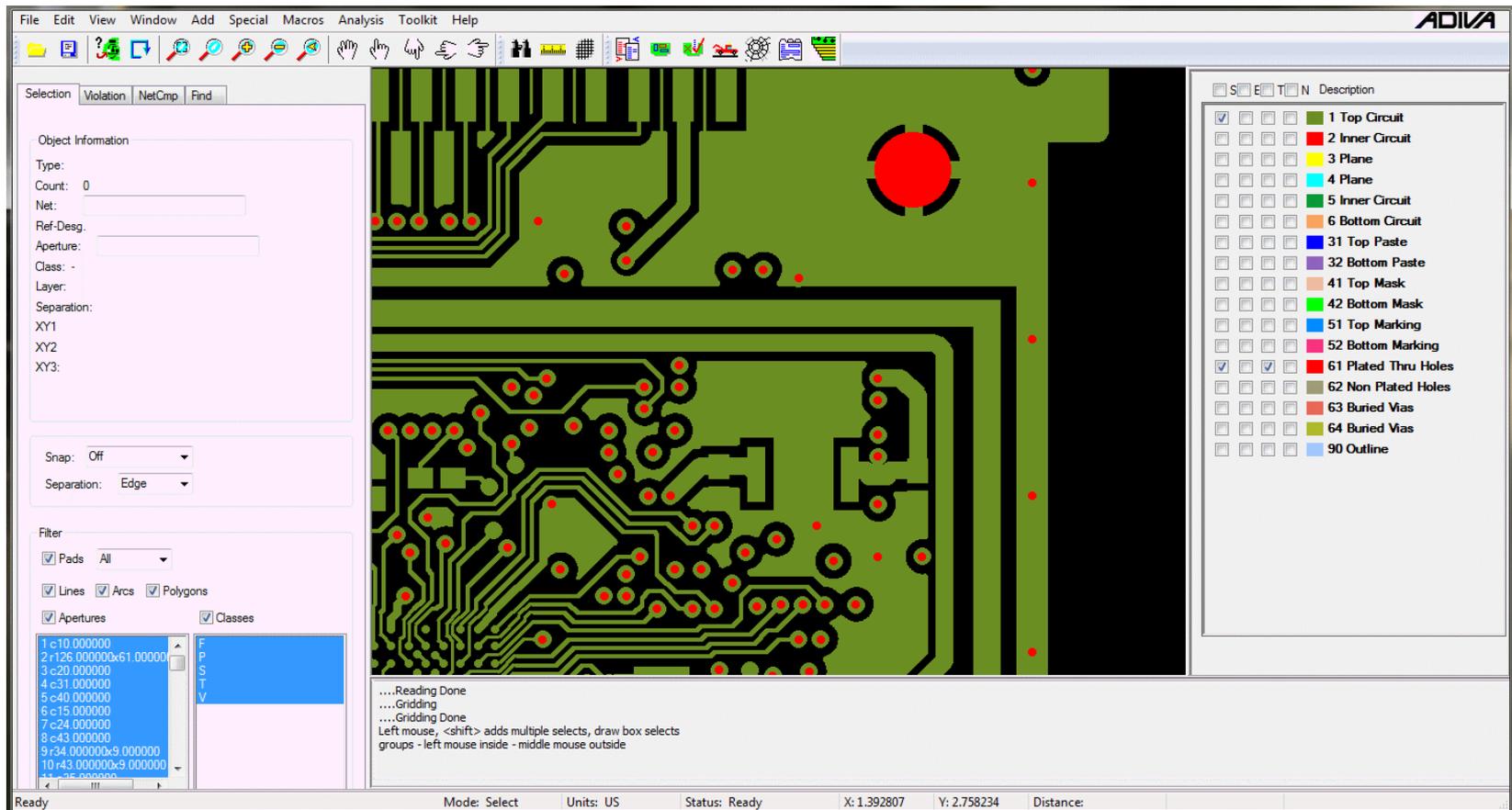
- Graphical Interface is not locked while checks and other processes are running. This allows a user to view graphics or review violations while other processes are running.
- Layer Display and Action Display are both dockable panels. They can be moved to different locations to create a larger viewing area for a design.
- All data created automatically by Adiva is stored in the local directory for a particular job.
- Adiva can be launched and checks run in a black-box mode by using a macro to control all checking functions.

# Starting the Adiva Interface

On the Windows Desktop, double-click the AdivaTools icon

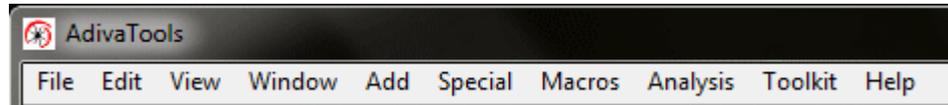
On the command line, type `>AdivaTools <jobname>` (jobname is optional)

The graphical Interface will appear and if a jobname is supplied it will appear like below. If a jobname is not supplied, the Layer Listing on the right will be empty and the next step will be to access the File menu to find and load a job.

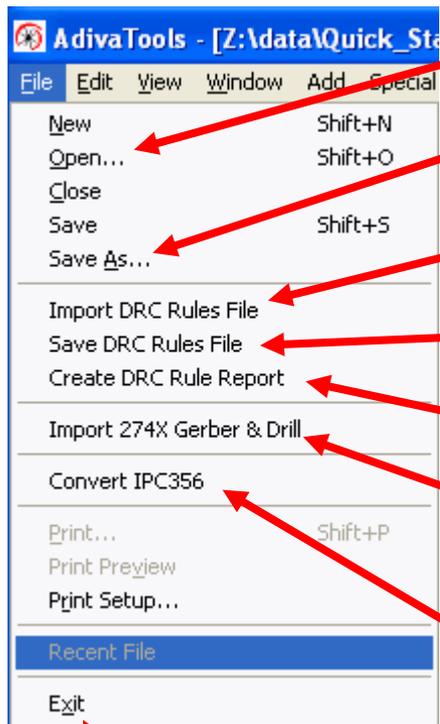


# Menus

Across the top of the Adiva Graphical Interface are a series of menus.



The File Menu performs the following....



Select and Load an existing database

Save the current database

Import a pre-defined set of DRC rules – automatically loads all DRC menus

Saves the rules defined in the DRC menus to a master file for later use

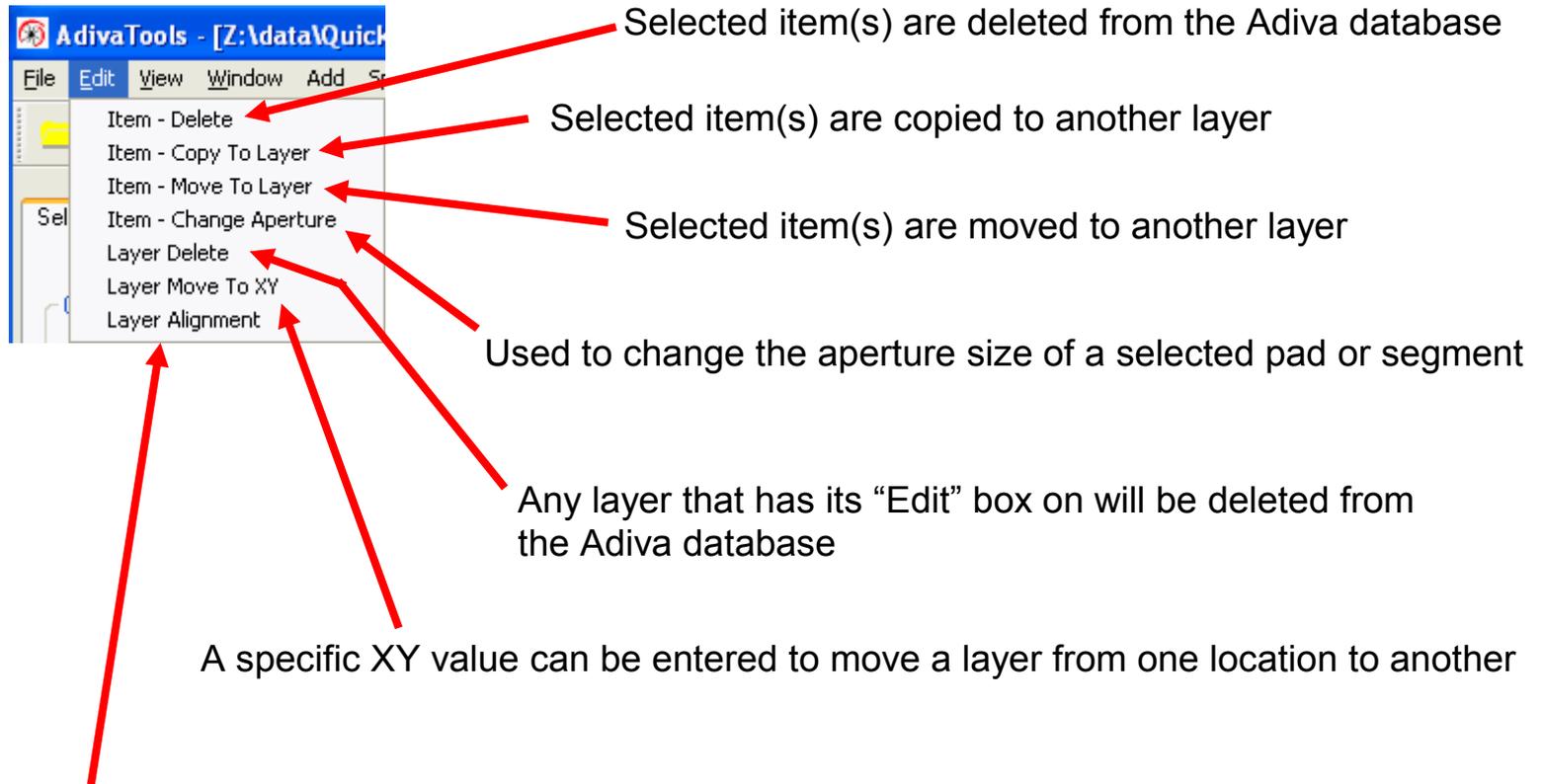
Prints out a listing of all DRC checks and their current parameters

Starts the Gerber and Drill data import process  
See the **Adiva Gerber In Quick-Start Guide** for details

Converts an IPC-D-356 netlist file into a file ready for Adiva Netlist Compare

Exit and close AdivaTools

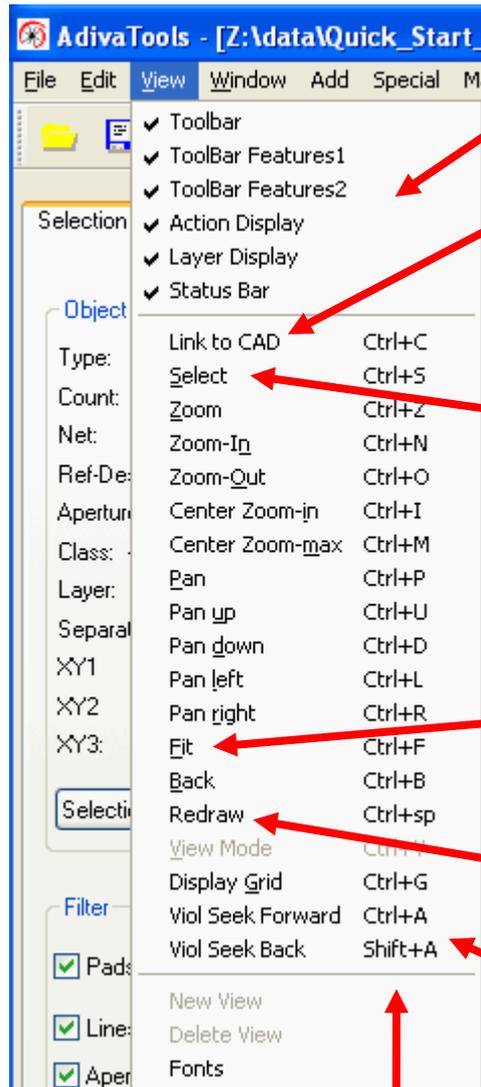
The Edit Menu allows these functions.  
See the Adiva Editing User Guide for more details.



By selecting two points ( "from" point then "to" point ), two or more layers can be aligned

The View Menu controls various graphical related functions.

Take close note of the keyboard shortcuts that are also available for each function



These functions control display of toolbars and activity displays

Produces a file that can be used by certain CAD systems to center their screen to the Adiva screen

See the Item Select Function described later in this User Guide Essentially this function allows a user to select or un-select an item(s) on the screen

Center and fit all graphics on the screen

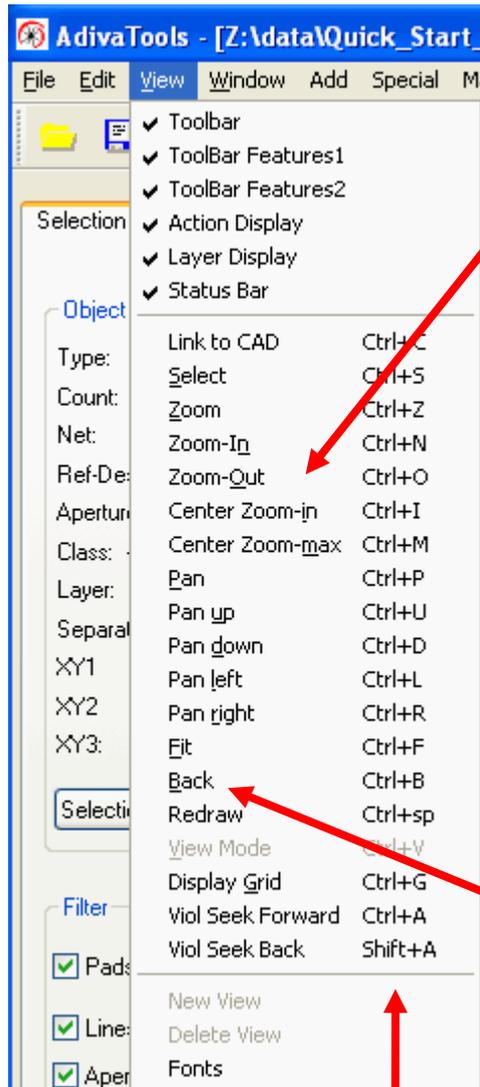
Refreshes the current graphics screen

Controls the display of a violation after a DRC check has been run

Keyboard Shortcuts

The View Menu controls various graphical related functions.

Take close note of the keyboard shortcuts that are also available for each function



### Zoom Functions:

Zoom allows a user to draw an area to zoom  
click left-mouse down-drag-let go - defined area zooms in

Zoom-In allows a user to zoom in 1 level on the current screen  
Mouse Scroll-Up performs the same function

Zoom-Out allows the user to zoom out 1 level on the current screen  
Mouse Scroll-Down performs the same function

Center Zoom-In allows the user to zoom in 1 level centering on the  
mouse location

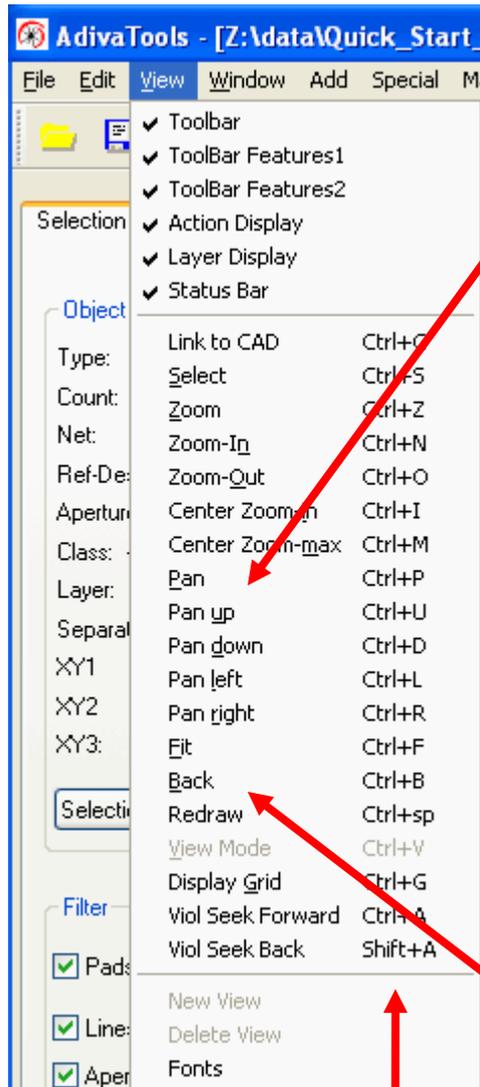
Center Zoom-Max allows the user to zoom in 8 levels centering on  
the mouse location

Back returns the user to the previous displayed screen

Keyboard Shortcuts

The View Menu controls various graphical related functions.

Take close note of the keyboard shortcuts that are also available for each function



### Pan Functions:

Pan allows a user to click left-mouse down on a location and drag a line to a new location (let go) then redraws the screen with the original location now in the new location.

In short: drag this point from here to here

Mouse scroll click-down-drag-release performs same function without placing user in "Pan-State"

Pan Up moves the current window-of-view 90% up

Pan Down moves the current window-of-view 90% down

Pan Left moves the current window-of-view 90% to the left

Pan Right moves the current window-of-view 90% to the right

Back returns the user to the previous displayed screen

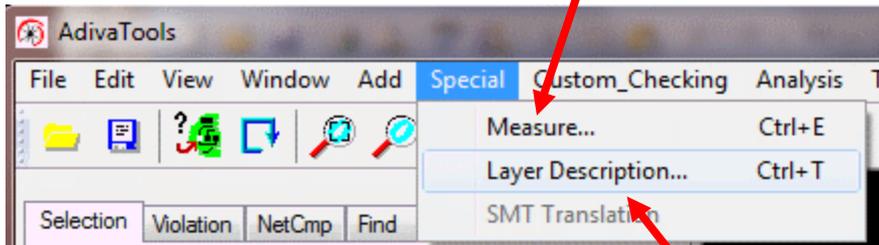
Keyboard Shortcuts

## The Special Menu performs the following....

Measure provides a tool allowing the user to drag a line anywhere on the screen and a total distance from start to end is displayed in the status bar at the bottom of the Adiva Graphical Interface.

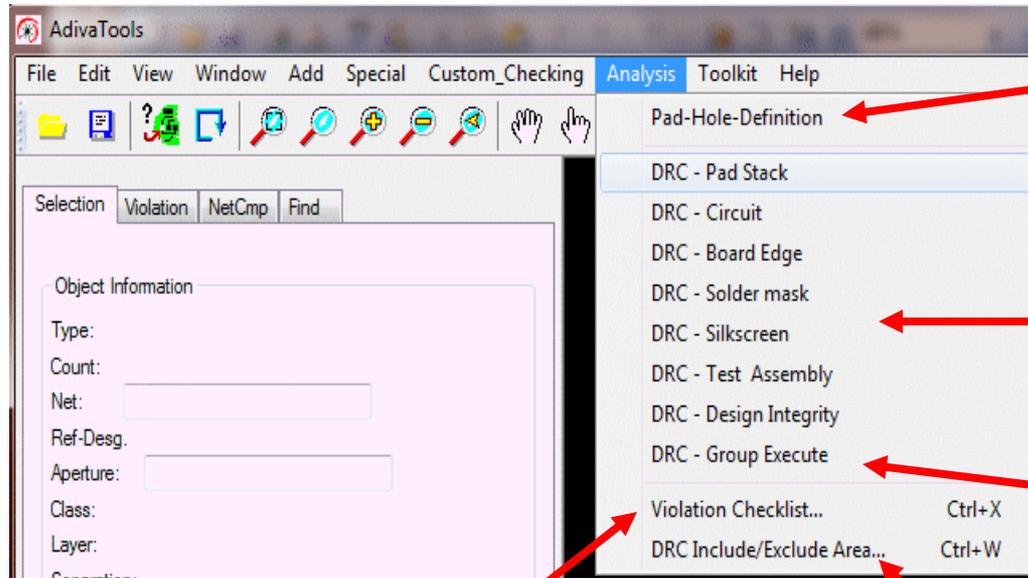
Select Measure > Left-Mouse down-drag-let go on the graphics screen

“Snap” option on the Selection Tab is helpful with this function



Layer Description provides access to layer stackup information. See the **Adiva Gerber Input Quick Start Guide** for further details.

## The Analysis Menu performs the following....



**Pad-Hole Definition** is a process to assign functionality to padstacks. See the **Adiva Gerber In Quick Start Guide** for further details.

These seven DRC dialogs allow access to setting and executing parameters defined for DRC checks. See the **Adiva DRC Check User Guide** for further details.

**Group Execute** provides the capability to launch several DRC check dialogs in one selection. See the **Adiva DRC Check User Guide** for further details.

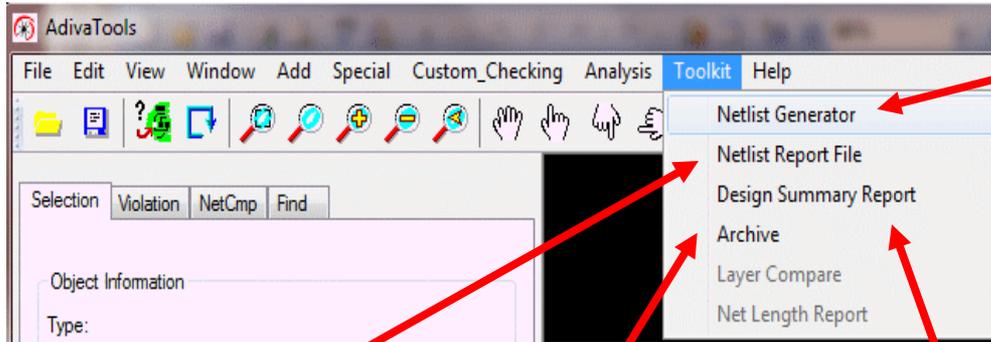
**Violation Checklist** opens the results list of DRC checks that have been performed.

**Violation Checklist** can be opened at any time during the checking process – even while checks are running – to review violations collected.

See the **Adiva DRC Check User Guide** for further details.

**Areas** can be created that either **Include** or **Exclude** certain areas for checking. See the **Adiva DRC Check User Guide** for further details.

## The Toolkit Menu performs the following....



Starts and performs the **Netlist Extraction** process. This process looks at all Gerber and Drill data and determines data interconnectivity as implied by that data.

End result is a database that understands what items are interconnected to other items in the design. If the artwork as it stands is used to fabricate a circuit board – this netlist will reflect that interconnectivity of copper.

This function is used during the database build process. See the **Adiva Gerber In Quick Start Guide** for further details.

**Archive** generates a series of web based images that communicate DRC check violations.

See the **DRC Check User Guide** for further details.

**Netlist Report File** generates a simple text file summarizing netlist connectivity for this data set. Location, side and net information are major components of this netlist.

**Design Summary Report** creates a text file suitable for input into a spreadsheet. This file contains summary information about the design such as pad sizes, trace sizes, hole sizes, quantities, etc...

# ToolBar

# The ToolBar provides easy access to many functions that are duplicated by a menu selection or keyboard shortcut

File Open – select and load an existing database

File Save – saves an existing database

Select Item – allows user to select or un-select items on the screen  
See the **Item Select Function** described at the end of this User Guide.



Find Function brings the Find Tab forward in the action tabs to allow searching for items, XY locations, nets and components...

Measure provides a tool allowing the user to drag a line anywhere on the screen and a total distance from start to end is displayed in the status bar at the bottom of the Adiva Graphical Interface.

Select Measure > Left-Mouse down-drag-let go on the graphics screen

“Snap” option on the Selection Tab is helpful with this function

# The ToolBar provides easy access to many functions that are duplicated by a menu selection or keyboard shortcut

Cad Netlist Compare Icon brings forward the NetCmp tab in the action tabs panel

DRC Include / Exclude areas can be created by selecting this icon. Further details of this function can be found in the **Adiva DRC Checks User Guide**



Violation Checklist opens/closes the results list of DRC Checks that have been performed.

CadLink produces a file that can be used by certain CAD systems to center their screen to the Adiva screen

Checklist can be opened at any time during the checking process – even while checks are running – to review violations collected.

See the **Adiva DRC Check User Guide** for further details.

The ToolBar provides easy access to many functions that are duplicated by a menu selection or keyboard shortcut

Archive generates a series of web based images that communicate DRC check violations.

See the **Adiva DRC Check User Guide** for further details.

Refreshes the current graphics screen



Closes and opens the Action Tab on the left side of Adiva's Graphical Interface. Closing this tab allows greater viewing area for a design.

Closes and opens the Layer Display Tab on the right side of Adiva's Graphical Interface. Closing this tab allows greater viewing area for a design.

The ToolBar provides easy access to many functions that are duplicated by a menu selection or keyboard shortcut

Refreshes the current graphics screen

Center and Fit all graphics on the screen



Back returns the user to the previous displayed screen

Zoom-Out allows the user to zoom out 1 level on the current screen  
Mouse Scroll-Down performs the same function

Zoom-In allows a user to zoom in 1 level on the current screen  
Mouse Scroll-Up performs the same function

Zoom allows a user to draw an area to zoom  
click left-mouse down-drag-let go -- defined area zooms in

# The ToolBar provides easy access to many functions that are duplicated by a menu selection or keyboard shortcut

Pan allows a user to click left-mouse down on a location and drag a line to a new location (let go) then redraws the screen with the original location now in the new location. Mouse scroll click-down-drag-release performs same function without placing user in “Pan-State”.

In short: drag this point from “here” to “there”

Refreshes the current graphics screen

Pan Up moves the current window-of-view 90% up



Pan Down moves the current window-of-view 90% down

Pan Left moves the current window-of-view 90% to the left

Pan Right moves the current window-of-view 90% to the right

# Layer Display

# Layer Display List controls access to visual and physical selections of each graphical layer of a design

This is the “Show” column. Check this box to “Show” all layers on the screen. Uncheck this box to turn off display for all layers. (Screen refresh may be required to see selected layers)

This is the “Edit” column. Check this box to be able to select items on all layers. Uncheck this box to disable selection for all layers. These layers become “active” layers.

Check individual boxes to show individual layers (Screen refresh may be required to see selected layers)

By checking the Edit box, items can be selected on these layers. These layers become “active” layers

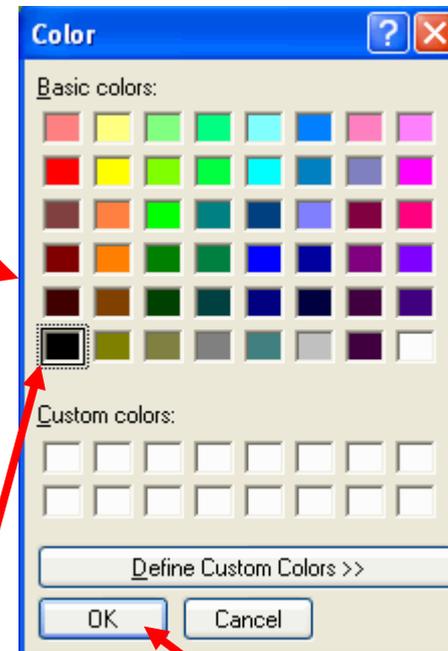
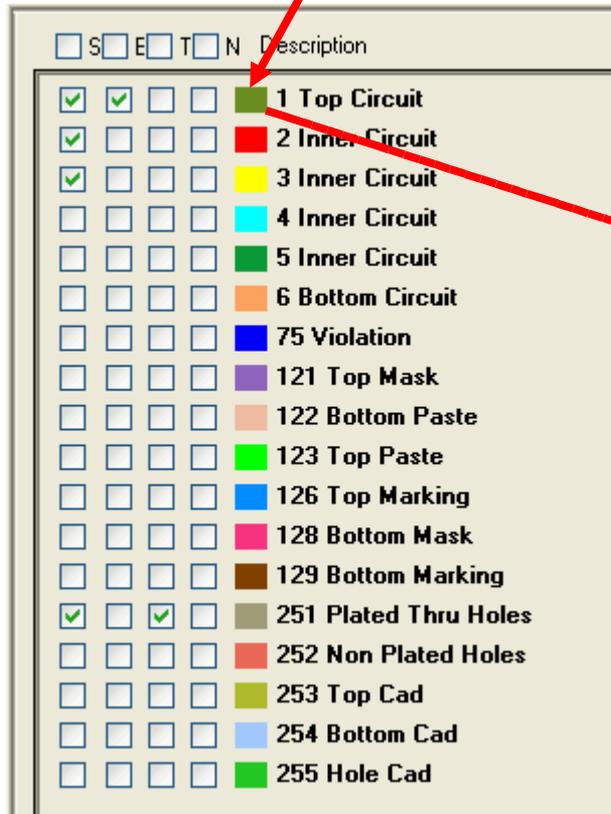
Checking a box in the 3<sup>rd</sup> column shows that layer on top of all other layers set to display (only one layer at a time can be on TOP) (screen refresh is automatic) *(TIP! It is sometimes handy to use this to redraw the screen when layer selections are changed)*

Checking a box in the 4<sup>th</sup> column inverts the graphical image – useful in showing negative layers in their “real” view

<input type="checkbox"/> S	<input type="checkbox"/> E	<input type="checkbox"/> T	<input type="checkbox"/> N	Description
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 Top Circuit
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 Inner Circuit
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3 Inner Circuit
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4 Inner Circuit
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5 Inner Circuit
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6 Bottom Circuit
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	75 Violation
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	121 Top Mask
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	122 Bottom Paste
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	123 Top Paste
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	126 Top Marking
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	128 Bottom Mask
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	129 Bottom Marking
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	251 Plated Thru Holes
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	252 Non Plated Holes
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	253 Top Cad
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	254 Bottom Cad
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	255 Hole Cad

# Layer Display List controls access to visual and physical selections of each graphical layer of a design

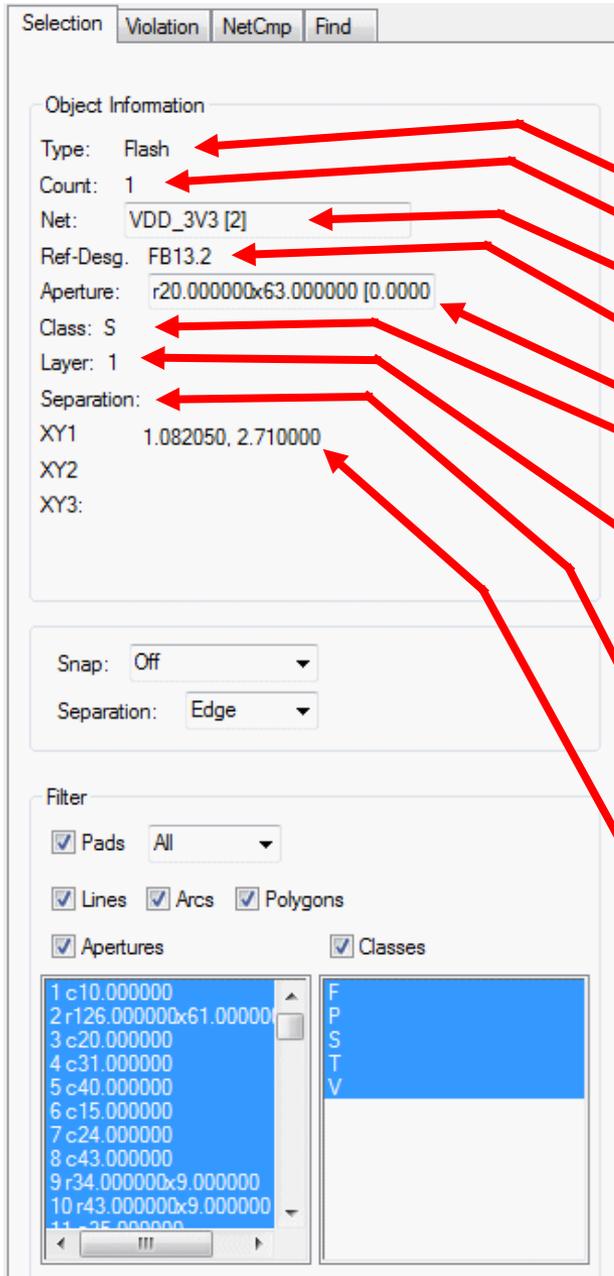
Click on the color box to change a layer color



Select a new color and choose OK to update layer color (screen refresh may be required)

# Action Display Tabs

# Selection Tab controls the function and reports the results of a “select” action

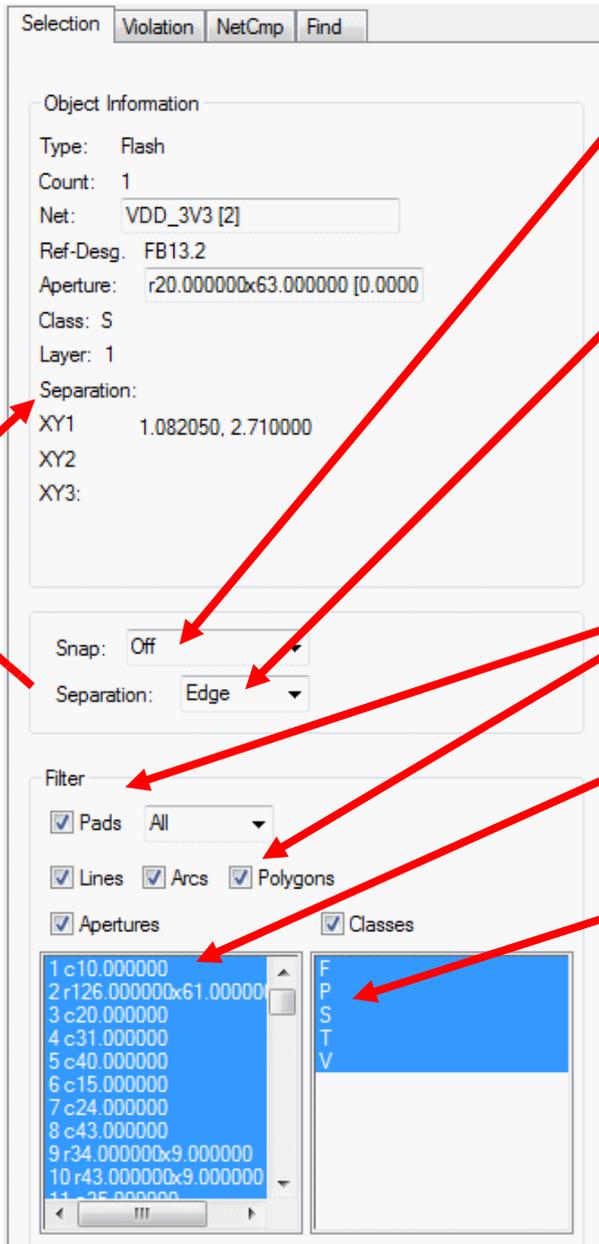


See the Item Selection slides at the end of this guide for “How to Select” information....

Selected Item information:

- Type of item selected - flashed pad, segment, polygon, arc
- Quantity of items selected
- Net name from CAD system if Net Compare is run  
number in parenthesis is Adiva net number
- Reference Designator & Pin Number if Net Compare is run
- Aperture size of object selected and its rotation
- Class of a pad/hole item
  - = pad/hole class not available
  - S = Surface Mount
  - P = pin-thru hole
  - V = via
  - T = tooling hole
  - t = test point
  - F = fiducial
  - C = cosmetic (no real function)
- Layer item is located on
- Separation spacing between any two items selected
- XY coordinates of a selected item

# Selection Tab controls the function and reports the results of a “select” action



Snap option controls the select and measure routines...  
snap to pad, snap to line, snap to item, etc...

Separation option controls the report of two items selected...  
Edge - reports the spacing edge-to-edge between two selected items  
Center - reports the spacing center-to-center between two selected items

See the Item Selection slides at the end of this guide for  
“How to Select” information....

Select Item Control - This area functions like a filter to control  
what the select function is allowed to pick up  
Check a box off to make certain types of objects non-selectable

Specific aperture sizes can be selected by highlighting that  
aperture in blue. By default, all apertures are selectable.

Specific Pad/Hole classes can be selected by highlighting  
that Pad/Hole class in blue. By default, all Pad/Hole classes  
are selectable.

An example highlight function would be... check on only the  
“Pads” box (Lines, Arcs, Polygons off) and select pad class “F”  
then window-select the design layer 1 – all of the class “F” pads  
(fiducials) on layer 1 should highlight

# Violation Tab controls the ability to view a DRC violation (Further details are available in the Adiva DRC Check User Guide)

When the Violation Checklist is opened, the Violation Tab is automatically brought forward for access

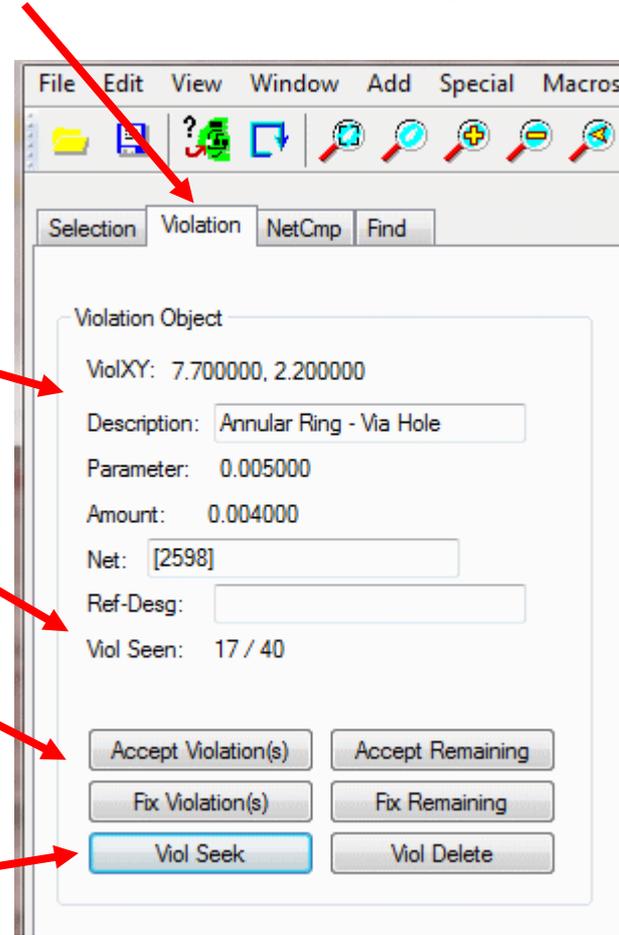
Information about the currently displayed violation

Violation display progress  
Current violation / total violations

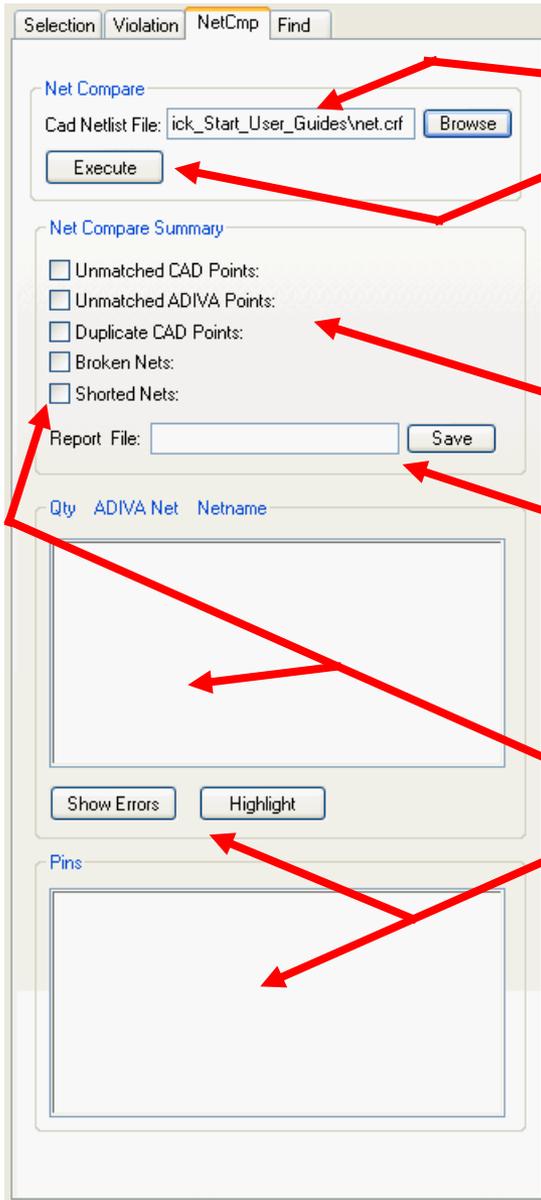
Actions for a particular displayed violation...  
Accept it so its not seen in subsequent reviews  
Fix it so that a file of chosen violations is set aside for further review  
*(TIP! Use this file to send a group of violations to the CAD system)*

Viol Seek advances the viewing of a violation type selected in the Violation Checklist

<shift>Viol Seek moves backward through the selected violation list.



# NetCmp Tab controls the Netlist Compare process (Further details are available in the Adiva Net Compare User Guide)



The name of a converted netlist prepared for Adiva Net Compare is entered then Execute is selected to perform the function.

Adiva requires netlists formatted into a particular format. Several filters have been developed to perform that format conversion. In most CAD interfaces, this is done for the user directly from the CAD system. Outside of a direct CAD Interface, an IPC-D-356 file is used but must still be converted. See the **File > Convert IPC** menu selection for details on how to convert an IPC netlist.

After the Netlist Compare process takes place, a summary is provided in this area. A file can be created containing this same summary data by entering a filename and selecting the Save button.

Select one of the summary items by checking the box and details about the issue will appear in the lower two boxes. Uncheck the box to remove the details.

See the **Adiva Net Compare User Guide** for further details in how to operate these functions.

# Find Tab provides search functions

The screenshot shows the 'Find' tab of a software application. It contains five main sections: 'Find X\_Y', 'Find Netname', 'Find Reference Desg', 'Find Net Number', and 'Filter'. Each section has a text input field, a 'Search' button, and a 'Clear' button. The 'Filter' section at the bottom consists of two vertical lists of text. Red arrows point from the explanatory text on the right to the corresponding input fields in the screenshot.

Section	Input Field	Buttons
Find X_Y	X: <input type="text"/> 0 Y: <input type="text"/> 0	Search, Clear
Find Netname	Netname: <input type="text"/>	Search, Clear
Find Reference Desg	Reference Desg: <input type="text"/>	Search, Clear
Find Net Number	NetNumber: <input type="text"/> 0	Search, Clear
Filter	Two lists of net names (e.g., DDR_ADD_2, R171.1)	None

Type in an XY location either in inches or mm, select Search and a crosshair will appear at the requested location of the design.

Selecting Clear removes the crosshair from display.

Type in a netname or select a netname from the list below, select Search and the selected netname will highlight in white as it appears in the design.

Selecting Clear removes the highlighted net from display.

Type in a RefDes or select a RefDes from the list below, select Search and a crosshair will appear on the selected Refdes.

Selecting Clear removes the crosshair from display.

Type in an Adiva Net Number, select Search and the selected net number will highlight in white as it appears in the design.

Selecting Clear removes the highlighted net from display.

# Message Display & Information Bar

## Message and Information Bar reports process status

Scrollable window reporting status of all processes including DRC Checks

The term “Process Finished” is a common term displaying the end of a requested function



Mode displays the function mode of the mouse. Modes are set by View Menu or ToolBar selection and stay in effect until specifically changed

Select > allows user to select items on the graphics screen

Zoom > allows user to draw zoom boxes to zoom-in on specific areas

Pan > allows user to pan across the design by dragging a “from-to” line

Distance reports the XY distance between two points as reported from the Measure Routine.

Status will show as “Busy” if certain functions such as DRC Checks are running. This doesn’t mean the software is inaccessible, graphics can still be reviewed, violations can still be reviewed, etc...

# Item Selection



# Item Selection

Once in “select” mode, be sure a layer(s) is ON for Edit

Then, with the left mouse button, click on any object on that particular layer. It will highlight in white. On the left side of the Adiva screen in the Selection Tab, attributes of the selected item will be reported.

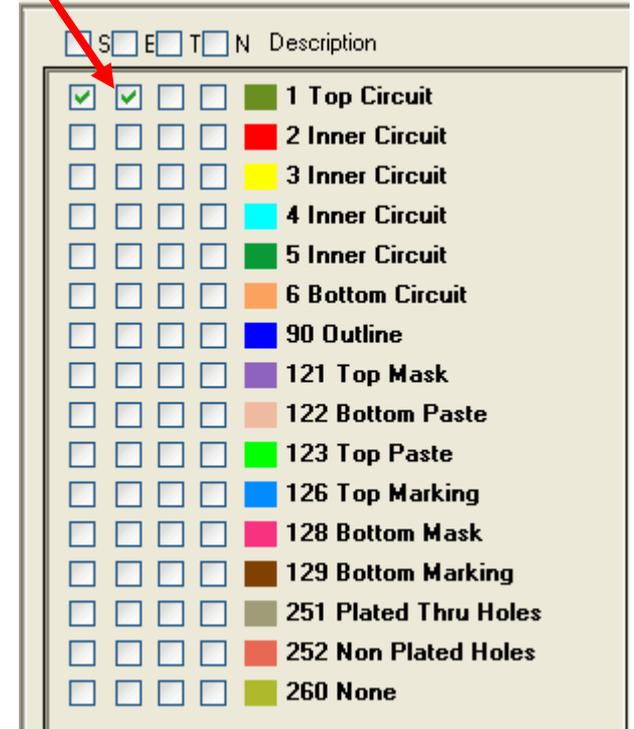
The item can also be modified by any editing function available. See the **Adiva Editing User Guide** for details

To select more than one item, hold down the <shift>key while selecting. Items will be added to a “select” list – a collection of selected items.

Another way to select a group of items is to hold down the left mouse key and drag a box over a group of items to be selected. Everything inside or touching the drawn box will be highlighted in white meaning they are selected.

Another way to select a group of items is to hold down the right mouse key and drag a box (typically a small box) outside of a group of items. Everything outside the drawn box will be highlighted in white meaning they are selected.

Choose the “Select” button again in the toolbar, and everything selected will become un-selected (white highlight goes away).



END

# ADIVA Graphical User Interface (User Guide)