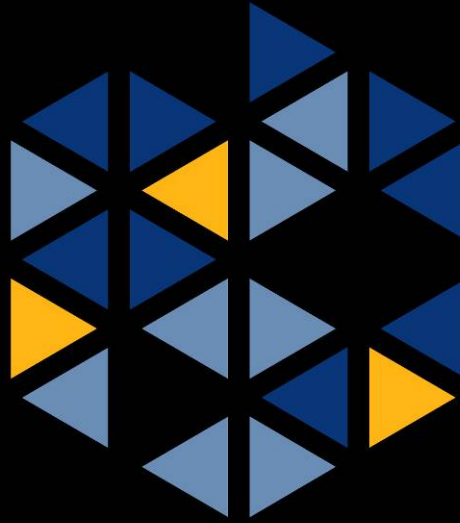




kaleidescape™



Cadence Allegro Top 30 Did you know ?

Vincent Di Lello
Session Number: 7.10



About the speaker:

Vincent Di Lello, CID+

- Presently Sr. PCB Designer @ Kaleidescape, Inc.
- Previous Design Director of Coretec Design Group
- Co-Founder & Partner of Point To Point Designs Inc.
- (24) years as a PCB Designer
- (20) years as a PADS user
- (2.5) years as an Allegro user



😊😊 Acknowledgements 😊😊

I am greatly indebted to the following friends for their generous contributions to this presentation.

Thanks to

Andrew Noonan – Cisco Systems, Inc.

Randy Bye – Unisys ... (UNISYS, Imagine it. Done)

Mike Catrambone – UTStarcom, Inc.

Ed Hickey – Cadence Design Systems



Top 30 Did you know ?

**Here we go and by the way ... I lied ... we
have (45) ideas, suggestions, hints, tips, tricks, and
possible exposure of undocumented features!!!!!!**

Top 30 Did you know ? #45

Drill Chart – Show both Imperial & Metric!!

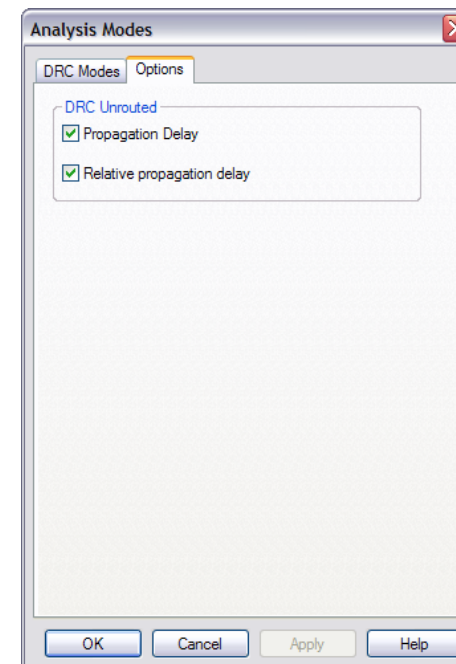
- Are you thinking of transitioning to metric designs?
- Then make the transition easier for your vendors by providing both imperial and metric on the Drill Charts!!!
- You can, by simply editing the appropriate “.dlt” file and adding the following code:
 - ?AlternateUnits "millimeters"
 - ?ColumnDefinitions '(
 - ("Figure" "FIGURE" 7)
 - ("Holesize" "SIZE" 15)
 - ("Tolerance" "Tolerance" 15)
 - ("Holesize2" "SIZE MM" 15)
 - ("Tolerance2" "TOLERANCE MM" 15)
 - ("PlateStatus" "PLATED" 10)
 - ("NonStandard" "NONSTANDARD" 15)
 - ("Quantity" "QTY" 6)
 -)
- The “.dlt” files are located in C:\Cadence\SPB_15.7\share\pcb\text\nclegend

DRILL CHART TOP to BOTTOM				
ALL UNITS ARE IN MILS				
FIGURE	SIZE	Tolerance	SIZE MM	TOLERANCE MM
10	10.0	+0.0/-0.0	0.254	+0.0/-0.0
12	12.0	+0.0/-0.0	0.3048	+0.0/-0.0
22	22.0	+0.0/-0.0	0.5588	+0.0/-0.0

Top 30 Did you know ? #44

Does your placement meet timing rules?

- You can very easily check this with the Constraint Manager
- In CM, **Menu** > **Analyze** > **Analysis Modes – Options Tab**
- Under the “DRC Unrouted” area check the mode you wish to check for
- CM checks Manhattan length and if your placement exceeds requirements, then cells for those signals will be shown in RED



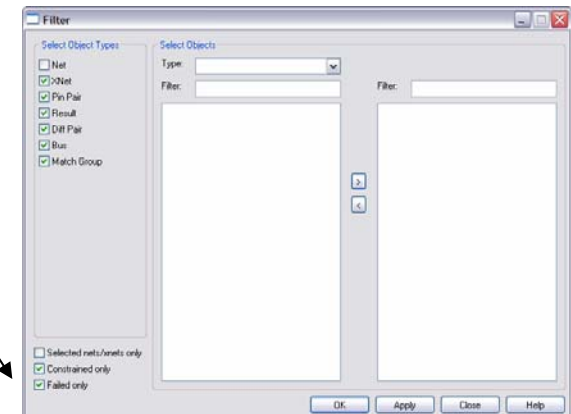
Top 30 Did you know ? #43

Constraint Manager – View Failed Only

- Do you want to see only the FAILED constraints in the CM
- LMB on the Objects header of the CM, select Filter and click on the Failed Only selection at the bottom left hand corner

Objects	Ref	Pin Pairs	Scope	Relative Delay				Length	Delay
				Delta:Tolerance	Actual	Margin	+/-		
				ns					
401-1024_Rev_Draft30						6281.49 ...		um	ns
MG1_PCI_BUS		All Drivers/All Receivers	Global	0 UM:2540 UM					
PCI_AD<0>		All Drivers/All Receivers	Global	0 UM:2540 UM					
PCI_AD<1>		All Drivers/All Receivers	Global	0 UM:2540 UM					
PCI_AD<2>		All Drivers/All Receivers	Global	0 UM:2540 UM					
PCI_AD<3>		All Drivers/All Receivers	Global	0 UM:2540 UM					
PCI_AD<4>		All Drivers/All Receivers	Global	0 UM:2540 UM					
PCI_AD<5>		All Drivers/All Receivers	Global	0 UM:2540 UM					

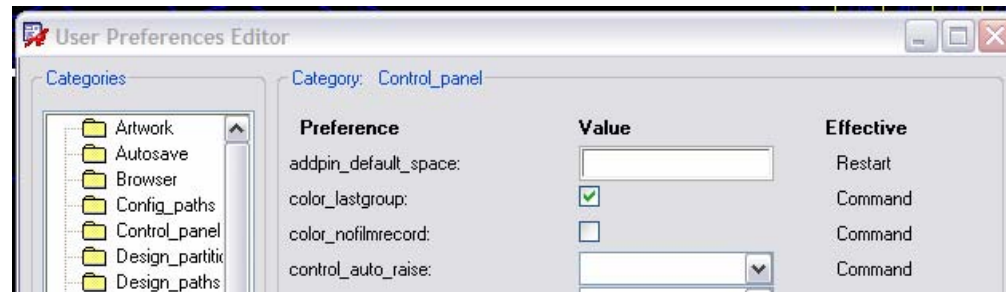
Objects	Ref	Pin Pairs	Scope	Relative Delay				Length	Delay
				Delta:Tolerance	Actual	Margin	+/-		
				ns					
401-1024_Rev_Draft30						6281.49 ...		um	ns
MG2_AUX_VIDBUS		All Drivers/All Receivers	Global	0 UM:2540 UM		6281.49 ...			
AUX_VID_DATA<0>		...	Global	0 UM:2540 UM	3194.457 ...	654.457 ...			
AUX_VID_DATA<1>		...	Global	0 UM:2540 UM	5254.595...	2714.6 UM			
AUX_VID_DATA<4>		...	Global	0 UM:2540 UM	5609.407...	3069.41 ...			
AUX_VID_DATA<5>		...	Global	0 UM:2540 UM	8821.494...	6281.49 ...			
AUX_VID_DATA<6>		...	Global	0 UM:2540 UM	8354.717...	5814.72 ...			
AUX_VID_DATA<7>		...	Global	0 UM:2540 UM	5363.524...	2823.52 ...			
MG3_AU_DDR		All Drivers/All Receivers	Global	0 ns:5 %		75.6728 %			
AU_DDR_A<0>		All Drivers/All Receivers	Global	0 ns:5 %	77.047 %	72.047 %			
AU_DDR_A<1>		All Drivers/All Receivers	Global	0 ns:5 %	13.3861 %	8.3861 %			
AU_DDR_A<2>		All Drivers/All Receivers	Global	0 ns:5 %	76.134 %	71.134 %			
AU_DDR_A<3>		All Drivers/All Receivers	Global	0 ns:5 %	13.8967 %	8.8967 %			
AU_DDR_A<4>		All Drivers/All Receivers	Global	0 ns:5 %	52.6065 %	47.6065 %			
AU_DDR_A<5>		All Drivers/All Receivers	Global	0 ns:5 %	60.4844 %	55.4844 %			



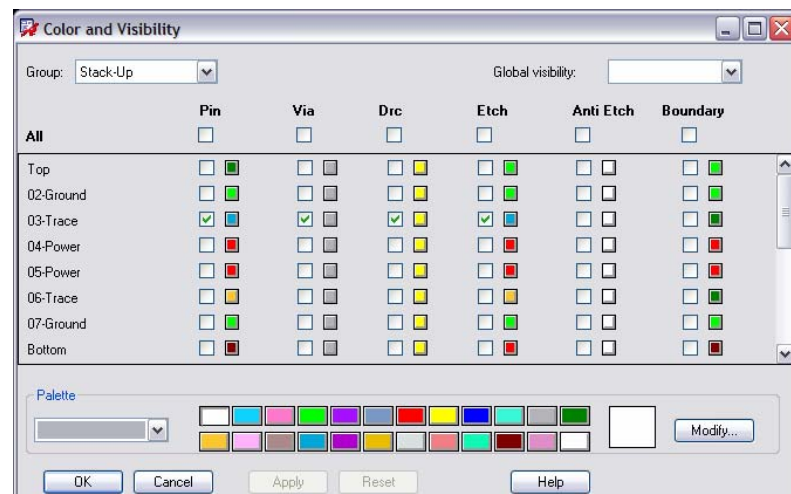
Top 30 Did you know ? #42

Control Color Form – Retain the last folder opened

- Set color_lastgroup to on in **Menu** > Setup > User Preference > Control Panel



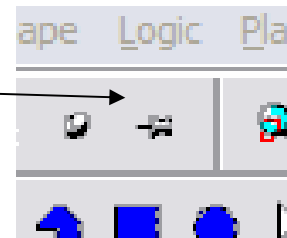
- If set, the color and visibility window will always open to the last group (Stack-up, Manufacturing, Display, etc.) that you used.



Top 30 Did you know ? #41

Unfix All Elements in a design database

- Does your design have a lot of symbols with the FIXED property?
- Have you ever had the need to unfix all of them?
- If so, there are two quick methods to remove the FIXED property from all symbols all at once
- Click on the UNFIX toolbar symbol
- RMB and select Unfix All



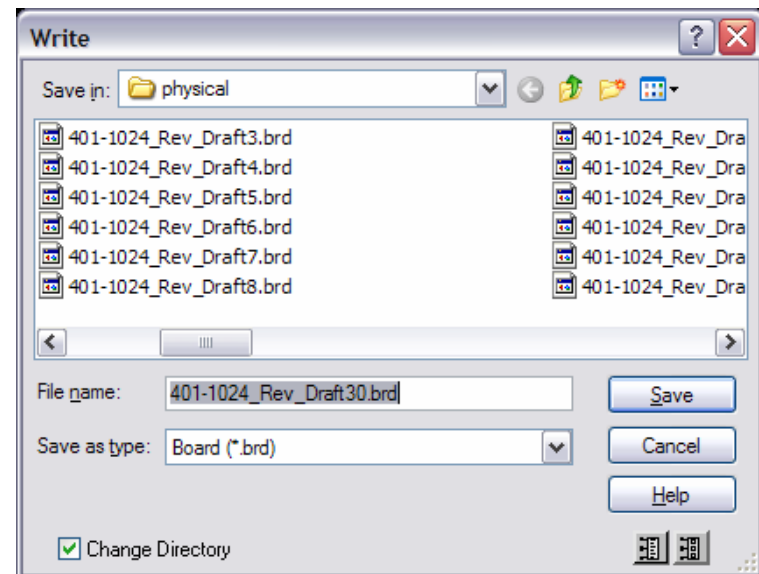
Or

- **Console Window Command Line** – Type `unfix -all`
- **Note to Cadence:** 1: How about a simple way to re-fix all of the symbols in the above scenario? And 2: When Updating Symbols and you click on the Ignore Fixed Property setting, why does the FIXED property disappear off of the symbol? It would be nice if this setting allowed the updating of the symbol while retaining the FIXED property!

Top 30 Did you know ? #40

Write vs Save a file to disk

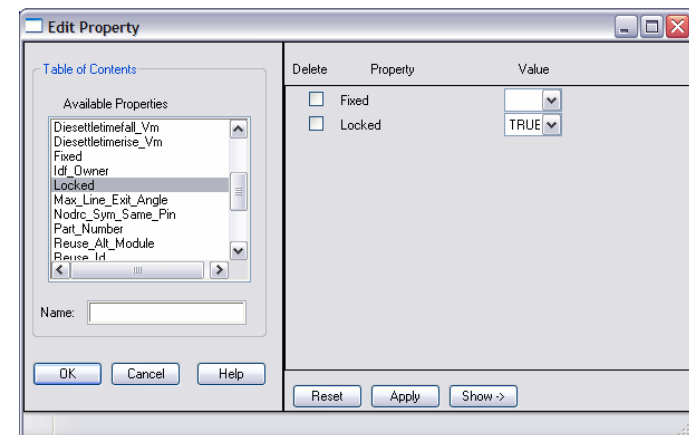
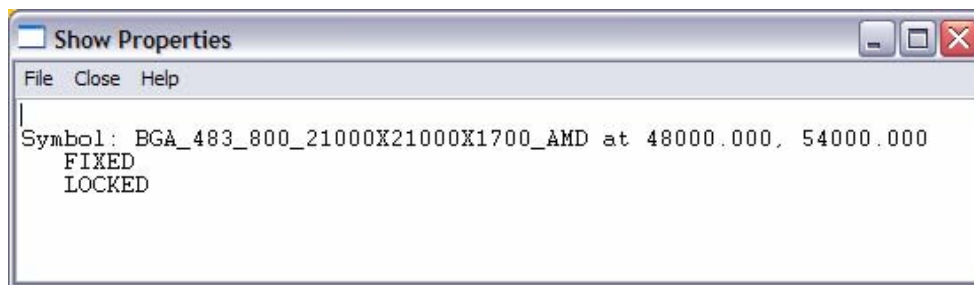
- Have you ever wanted to save your current design to your hard drive with a new name and keep your current design as the active design using the current name?
- The problem is that using the Save As function will make the (newly) save file the active file
- Using the WRITE command will solve this
- **Console Window Command Line** – Type *write*



Top 30 Did you know ? #39

Locked Property

- Can be added to Modules and Symbols
- In Modules, it was designed to preserve the elements of a module
- Prevents the movement of a component in the module
- In Symbols, it prevents the accidental deletion of symbol child elements such as the Assembly Outline, etc.
- **Menu** > Edit > Properties – select Symbols on Find tab – select symbol in design and add Locked property



Top 30 Did you know ? #38

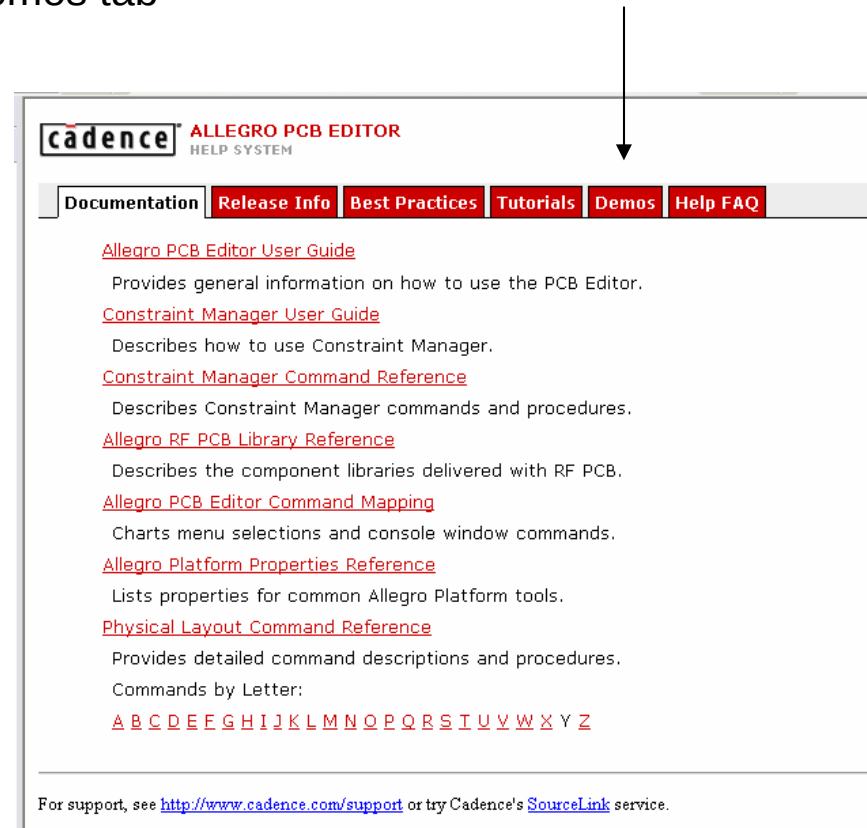
That there are numerous self-HELP sites for Allegro!!

- Cadence Users Web Site
 - <http://www.cdnusers.org/>
- Silicon-Package-Board Forum @ Users Web Site
 - <http://www.cdnusers.org/Forums/tabid/52/afgroup/1/Default.aspx>
- Cadence Support – SourceLink
 - <http://www.cadence.com/support/sourcelink.aspx>
- Allegro Forums on Cadence Site
 - http://www.cadence.com/dnn_instance/default.aspx?tabid=27&view=topics&forumid=5
- Allegro Community Movies & Webinars
 - http://www.cadence.com/community/allegro/pcb_design/events.aspx
- Cadence Updates & Downloads
 - <http://downloads.cadence.com>
 - *** Note: A SourceLink account is required for this one

Top 30 Did you know ? #37

That there are Allegro Editor Demo Videos!!

- [http://\\$CDSROOT/doc/algromast/algroHelp/algroHelp_dm.html](http://$CDSROOT/doc/algromast/algroHelp/algroHelp_dm.html)
- Or access it through your particular version of Allegro's Help>Documentation menu and click on the red Demos tab



Top 30 Did you know ? #36

Repositioning an existing NC Drill Legend

- Generate NC Drill Legend
- When the old legend disappears and the outline for the new legend appears on your cursor, RMB and click on Cancel
- The old legend chart will now be gone from your design
- Generate another NC Drill Legend
- Position it where you want it using BL corner as datum

Or Relocate existing Drill Chart by ...

- **Menu** – Edit > Move

- Check “Groups” under the Find Filter

- Select existing NC Drill Chart and relocate

- The next time you generate the NC Drill Legend it will remember the new location

L	3.3	+0.08/-0.08	NON-PLATED	2
M	3.9	+0.075/-0.075	NON-PLATED	6
⌀	2.1x0.9	+0.075/-0.075	PLATED	2
⌀	2.5x1.2	+0.075/-0.075	PLATED	3
⌀	2.7x0.9	+0.075/-0.075	PLATED	2
⌀	3.5x2.7	+0.075/-0.075	PLATED	5
⌀	3.0x1.7	+0.075/-0.075	NON-PLATED	2

Top 30 Did you know ? #35

NC Drill Legend – Consistent Row Height

- Would you like your drill charts to have consistent rows?
- Very easy to accomplish
- Select **Menu** - Manufacture > NC > Drill Customization
- Change ALL cells under “Symbol Size X & Y” columns to a consistent value

L	3.3	+0.08/-0.08	NON-PLATED	2
M	3.9	+0.075/-0.075	NON-PLATED	6
	2.1x0.9	+0.075/-0.075	PLATED	2
	2.5x1.2	+0.075/-0.075	PLATED	3
	2.7x0.9	+0.075/-0.075	PLATED	2
	2.5x0.9	+0.075/-0.075	PLATED	5
	2.5x0.9	+0.075/-0.075	NON-PLATED	2

Drill Customization												
Drill/Slot Holes												
#		Type	Size X	Size Y	+ Tolerance	- Tolerance	Symbol Figure	Symbol Characters	Symbol Size X	Symbol Size Y	Plating	
1		Circle Drill	200.0		0.0	200.0	Cross		2000.0	2000.0	Plated	
2		Circle Drill	250.0		0.0	250.0	Square		2000.0	2000.0	Plated	
3		Circle Drill	300.0		0.0	300.0	Hexagon		2000.0	2000.0	Plated	
4		Circle Drill	500.0		75.0	75.0	Hexagon		2000.0	2000.0	Plated	

Top 30 Did you know ? #34

Review only Constrained Nets in CM

- CM contains all nets in a design
- You can view only the constrained nets by ... selecting the Constrained Nets Filter icon (Note: to the revert back and view all nets, you must unselect icon)

ed to Allegro PCB Performance option L 15.7) - [Nets: Routing [401-1004_REV_F]]

Audit Window Help

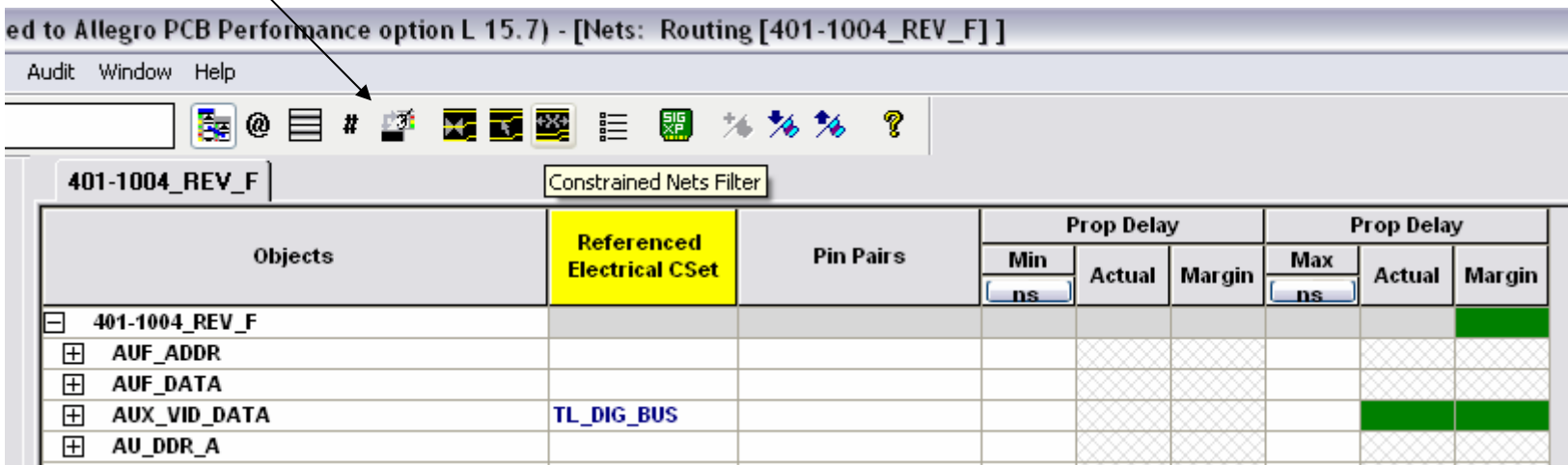
401-1004_REV_F Constrained Nets Filter

Objects	Referenced Electrical CSet	Pin Pairs	Prop Delay			Prop Delay		
			Min ns	Actual	Margin	Max ns	Actual	Margin
401-1004_REV_F								
+ AUF_ADDR								
+ AUF_DATA								
+ AUX_VID_DATA	TL_DIG_BUS							
+ AU_DDR_A								
+ AU_DDR_BA								
+ AU_DDR_CK								
+ AU_DDR_CK_H								
+ AU_DDR_DATA								
+ AU_DDR_DM								

Top 30 Did you know ? #33

Speed up performance between Allegro & CM

- By using the Application Select Icon (arrow below)
- Disables the selection of objects in Constraint Manager when they are selected in Allegro design work area
- Improves performance when selecting many objects when Constraint Manager is still running
- Prevents the opening and closing of Constraint Manager



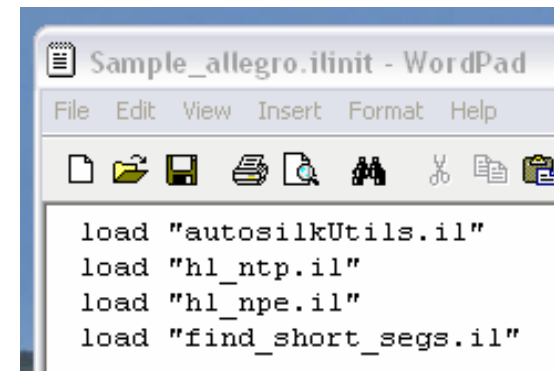
Top 30 Did you know ? #32

Load your favorite SKILL routines automatically

- Edit (or create) the “**Allegro.inilit**” file
- Add your SKILL routines as shown below
- Locate the “Allegro.inilit” file in the same folder as your ENV file

Also

- Add these lines to “.ilinit” file
 - ▶ ;Skill Path Location
 - ▶ setSkillPath(strcat(". E:\Allegro_Skill_Files " car(getSkillPath())))
- Store all your SKILL files in one location (i.e., “E:\Allegro_Skill_Files” and reference path at the top of the Allegro.ilinit file
- Remember to also add “.” as the first place to look so you could use Skill files located in the project directory
- Info followed by “;” semicolon is not read during Allegro execution and could be used to add comments

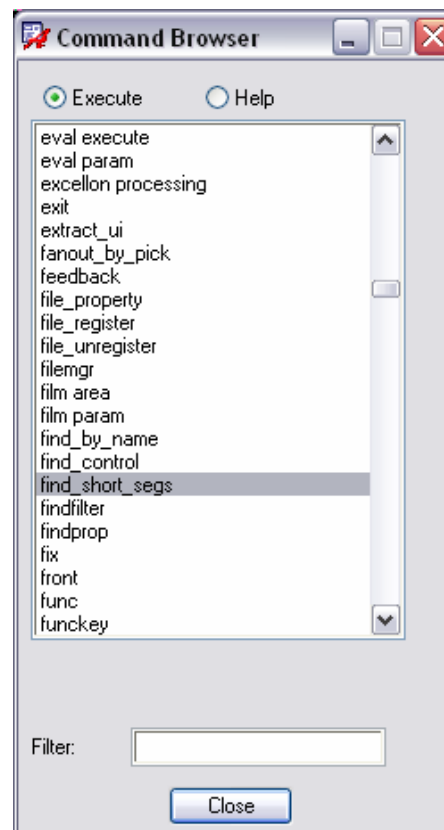


```
load "autosilkUtils.il"
load "hl_ntp.il"
load "hl_npe.il"
load "find_short_segs.il"
```

Top 30 Did you know ? #31

Having Trouble Remembering SKILL Command Names?

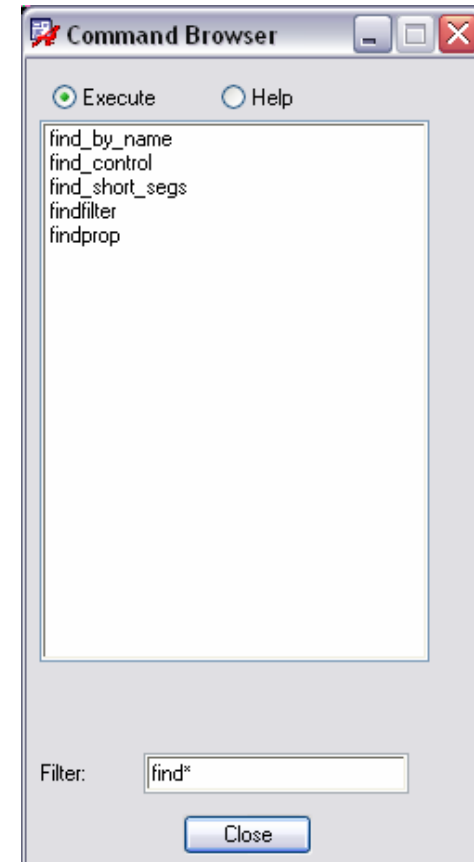
- Type *hlpcmd* in the **Console Window Command Line** or
- **Menu** – Tools > Utilities > Keyboard Commands



Top 30 Did you know ? #30

Use the Filter box to Narrow the Field

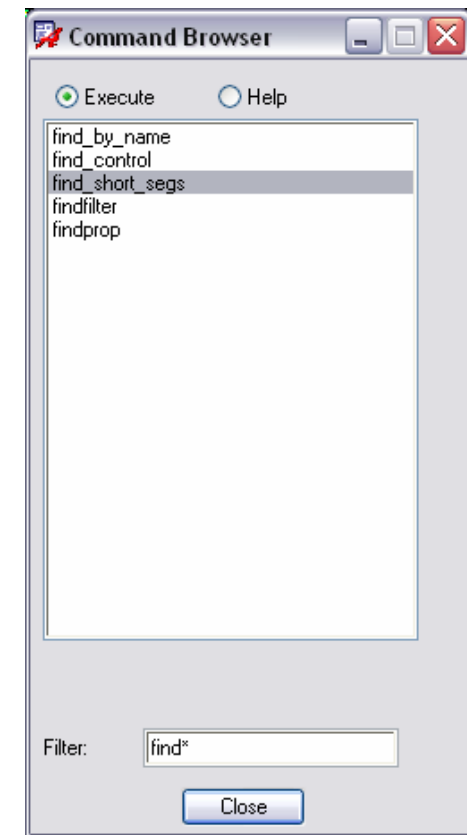
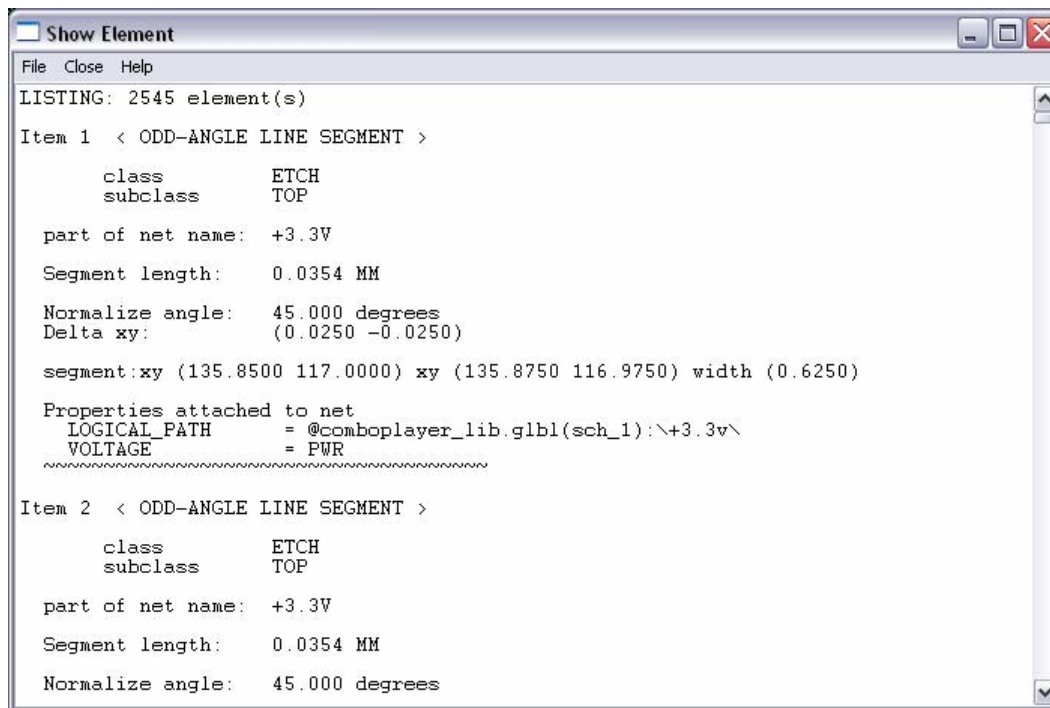
- Type *find** in the Filter: input box and hit the keyboard **<TAB>** key to see all entries that begin with “find”



Top 30 Did you know ? #29

Click on an Entry to Execute

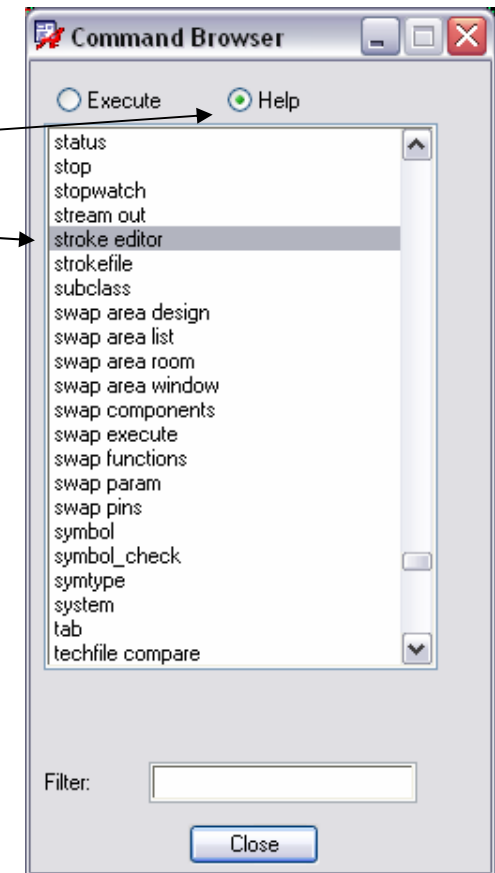
- Locate the command you want and click on it



Top 30 Did you know ? #28

or Click on an Entry to get HELP

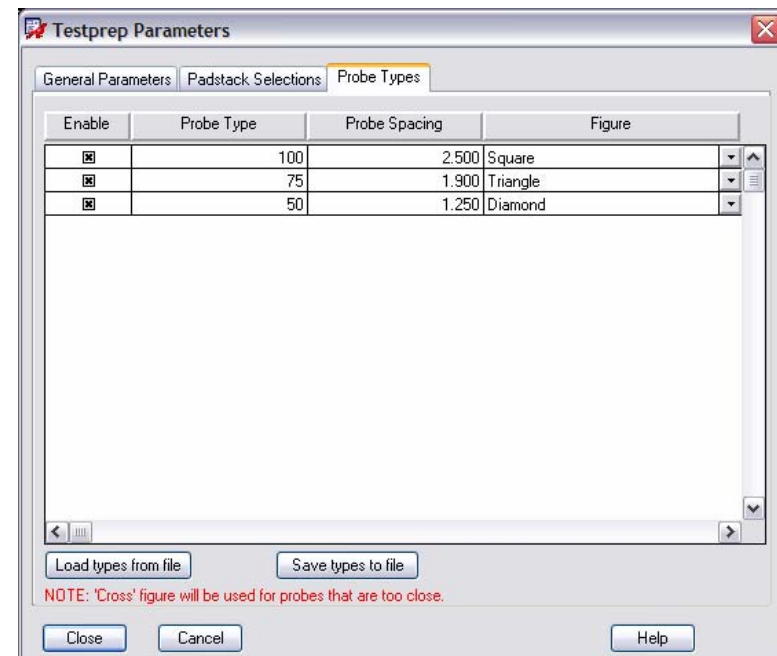
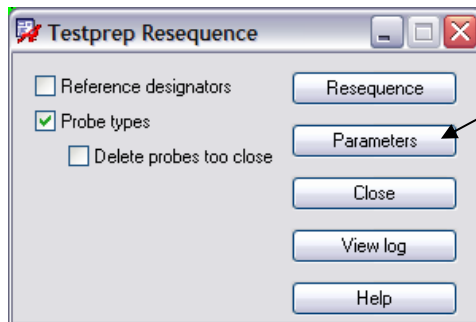
- Select Help at the top of the pop-up
- Locate the command you want help on and click on it
- Help related matter will automatically come up on your browser



Top 30 Did you know ? #27

Adding Test Point Probe Types

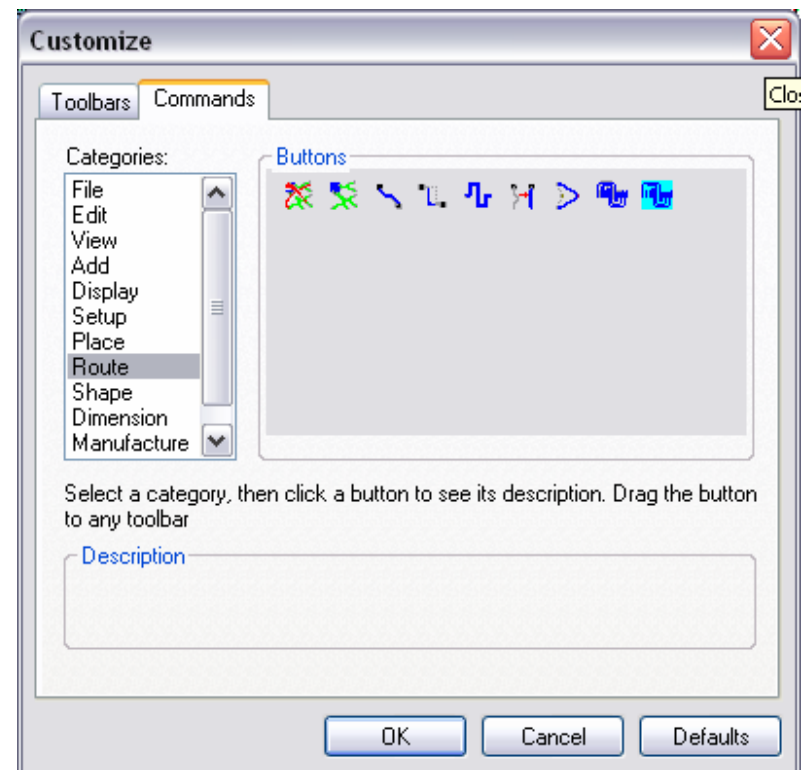
- Do you need to add additional Probe Types for Testprep?
- **Menu** – Manufacture > Testprep > Resequence
- Click on the Parameters button & then Probe Types tab
- “Hover” over any Probe Type entries (i.e., 100, 75, 50) and RMB & click ADD
- Can also Delete and Re-Sort



Top 30 Did you know ? #26

Toolbar Modification

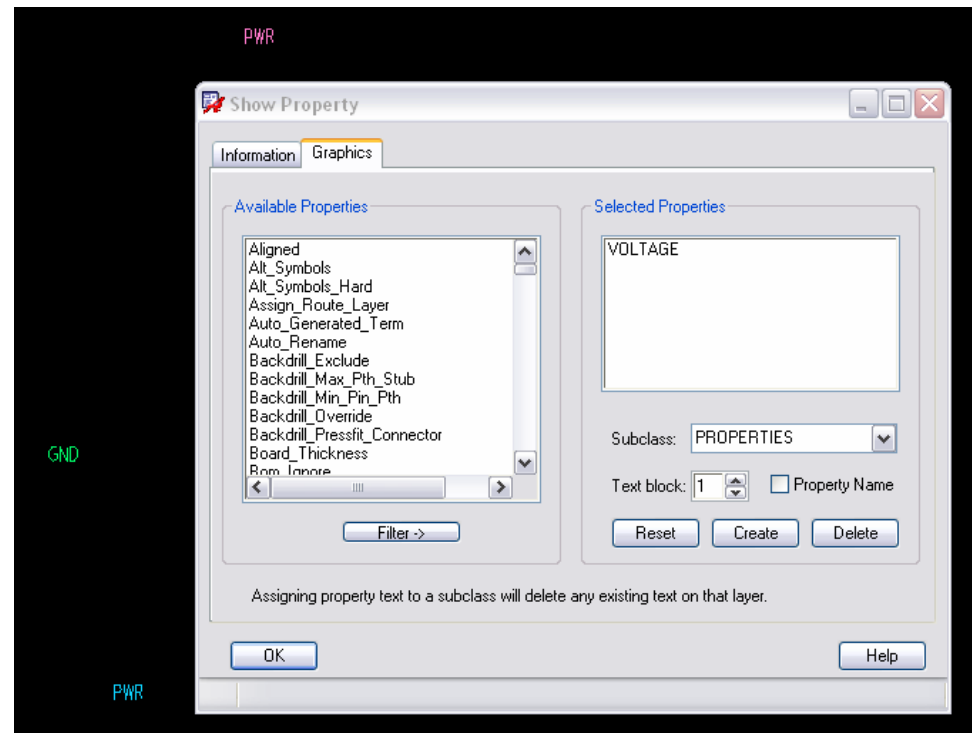
- You can edit the toolbars to only show the ones you like
- **Menu** – View / Customization / Toolbar
- Drag & Drop icons from the toolbar as you like



Top 30 Did you know ? #25

Display Properties

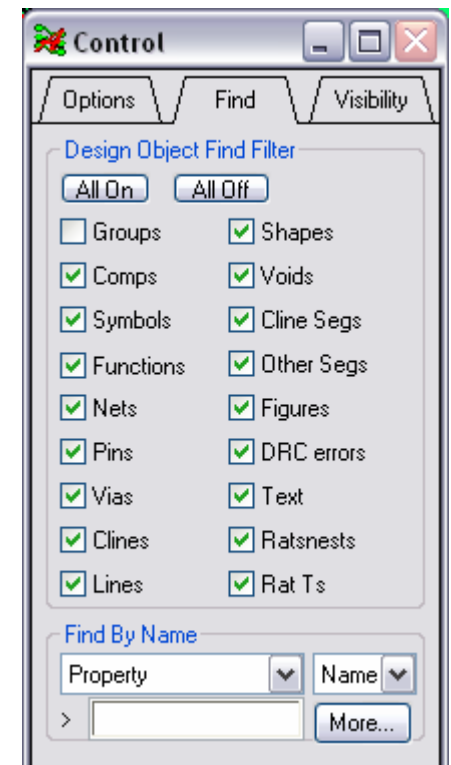
- Have you applied Properties to any elements in your design?
- Do you want to see where those properties are? And what they are?
- **Menu** – Display / Property / Graphics tab
- [_%CDSROOT%/doc/algroskill/examples/Property_Display.html](%CDSROOT%/doc/algroskill/examples/Property_Display.html)



Top 30 Did you know ? #24

Show Element – Hierarchal Find Filter

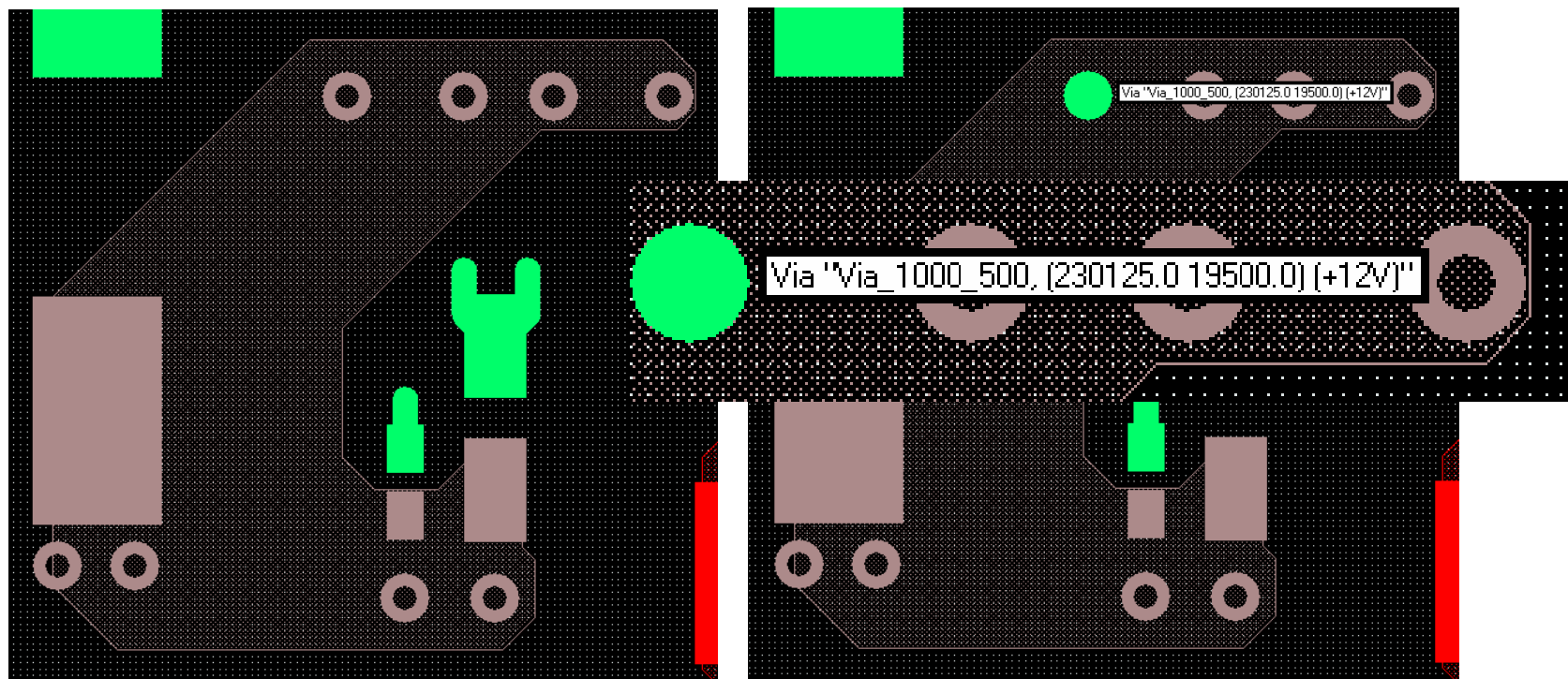
- The Show Element Find process works from Groups down to Rat Ts
- When investigating an element such as an IC, click the All On button on the Find tab
- Click on any IC and you will get the Component information
- Uncheck the Comps box in the Find tab
- Click on the same IC and you will now get the Symbol information
- Uncheck the Symbols box in the Find tab
- Click on any pin on the same IC and you get the Functions information
- Etc., etc. ... all the way down to Rat Ts



Top 30 Did you know ? #23

That you can have “hover over” information displayed?

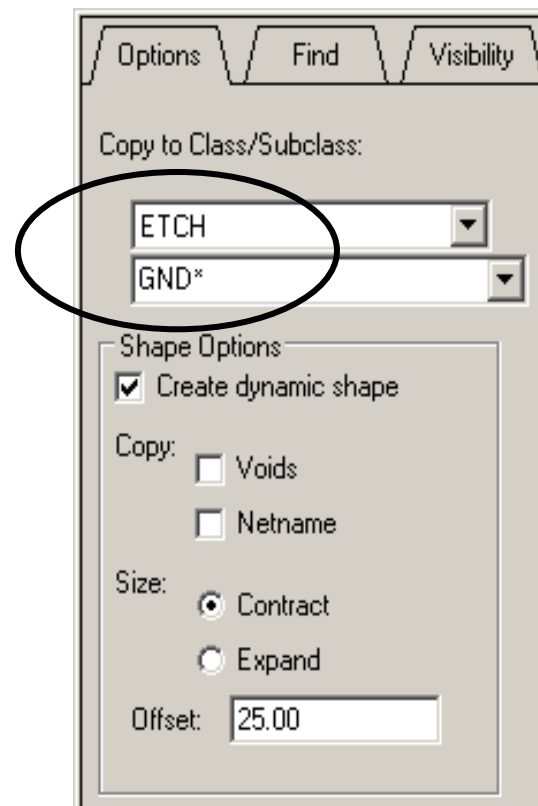
- **Menu** - Setup > User Preferences > Z-Early-Adopter > datatips
- Hover over desired feature (pad, route, copper, etc.) with cursor
 - ***Note: Must have desired feature selected in Show Element>Find tab*



Top 30 Did you know ? #22

That you can Z-Copy to multiple layers at the same time?

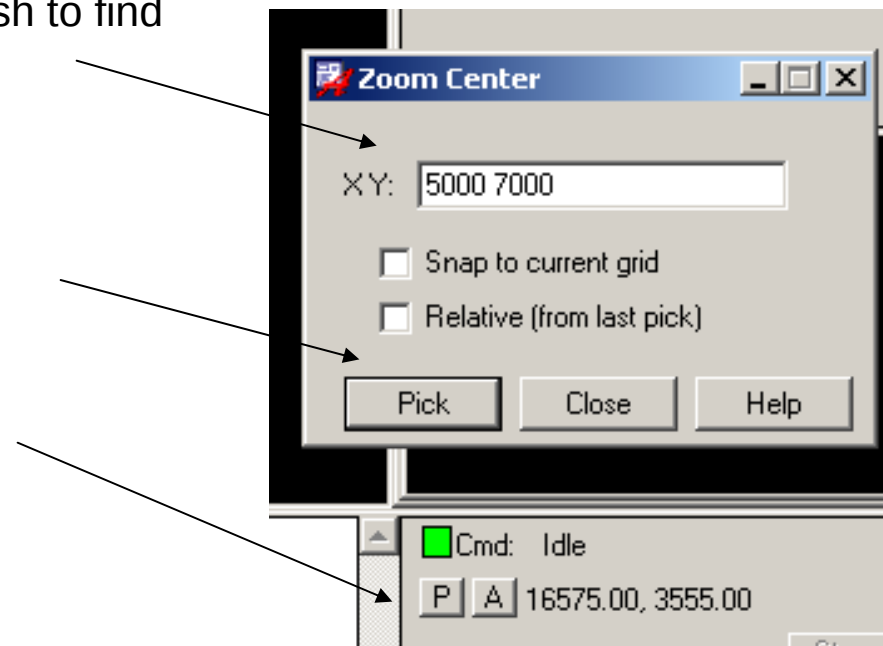
- Use "*" in the layer name (i.e., GND*)
 - Assumes you have multiple layers that begin with the name "GND....."



Top 30 Did you know ? #21

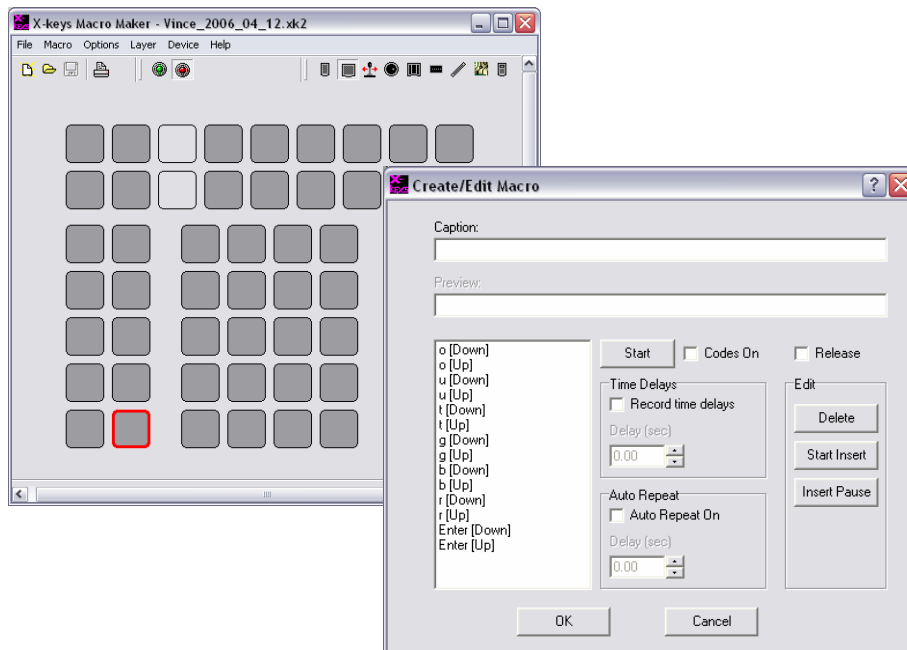
That you can jump to any coordinate in the design!!

- Set an appropriate zoom level
- Click on the “P” at bottom right
- Enter the coordinate you wish to find
- Click on “Pick”



Supplementary Keyboards – Add one to automate functions!!

- Did you know that you can add another keyboard to Allegro?
 - Did you know that you can use this keyboard to automate your process?
 - www.xkeys.com
- 



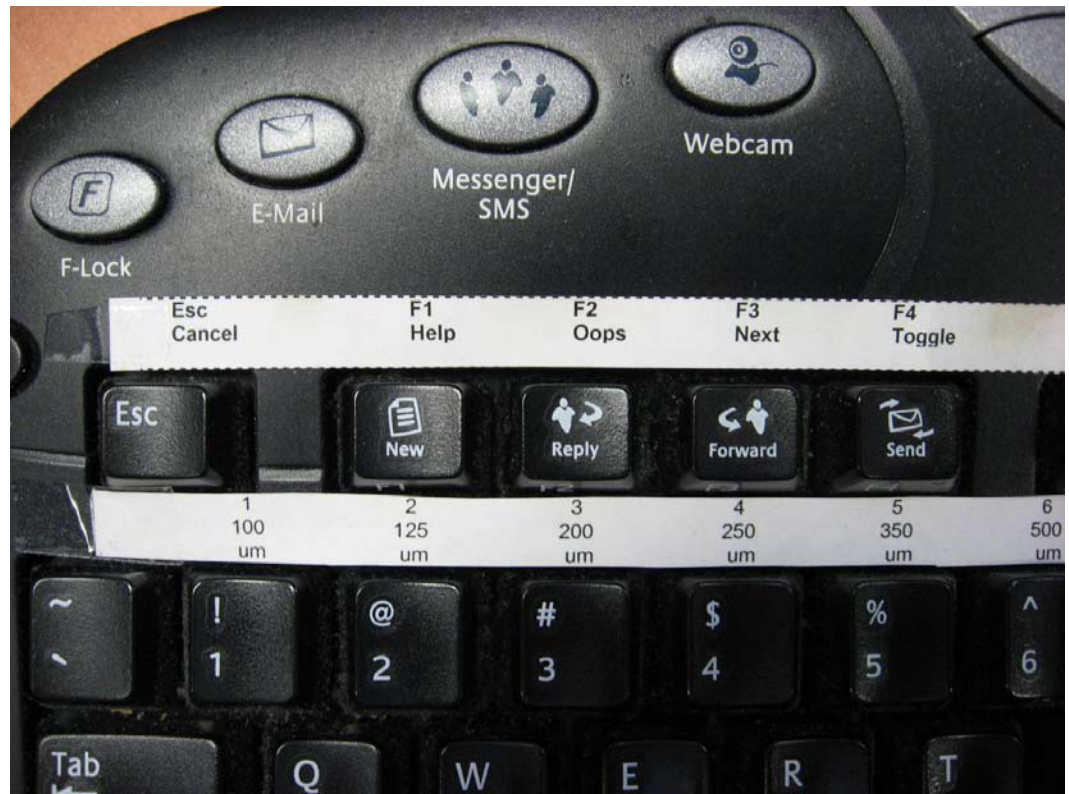
Top 30 Did you know ? #19

Keyboard – Reprogram to automate!!

- Did you know that you can reprogram your keyboard?
- Add “funckey” to ENV file

funckey 1 options line_width 100

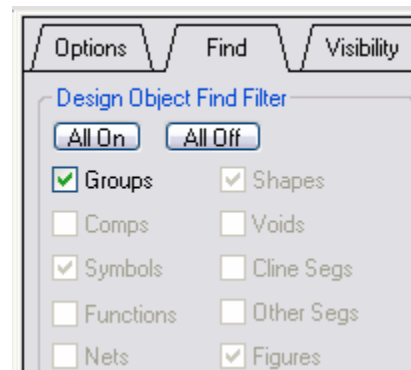
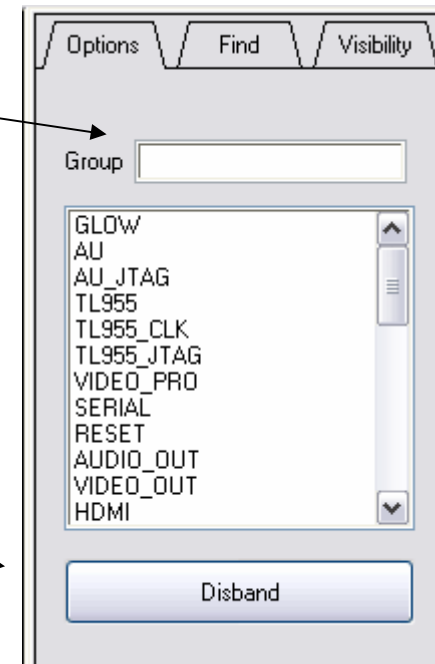
funckey 2 options line_width 125



Top 30 Did you know ? #18

Groups – Have you discovered this very powerful feature yet?

- Easy to create groups – **Menu** – Edit > Groups
 - Enter a name and hit Enter
- Easy to edit groups
 - Select a group, add symbols by clicking on them
 - Remove symbols with CTRL-click
- Easy to move groups
 - **Menu** – Edit > Move & click on Groups in the Find tab
- Easy to disband groups
 - **Menu** – Edit > Groups, select the group in the Options tab
 - and click on Disband



Top 30 Did you know ? #17

Constraint Manager – Excel like SORTING features?

- Did you know that you can sort any column in CM by double clicking on the column headers?

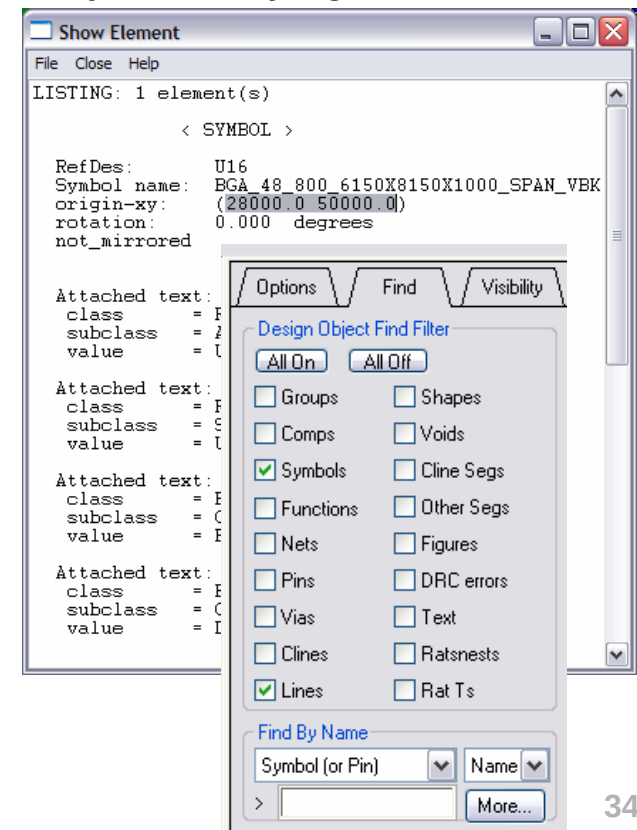
Nets	Net Types		Voltage	Weight	No Rat
	Physical	Spacing	V		
401-1024_Rev_Draft21					
+3.3V			PWR		
+5VHDMI					
ACLK		X1_CLK			
ACLK_A					
ACLK_TL					
ACLK_V					
ADATA00					
ADATA01					
ADATA02					
ADATA03					
ADATA00_A					
ADATA00_TL					
ANODE_A					
ANODE_B					
AUDIO_L					
AUDIO_PDN_N					

Nets	Net Types		Voltage	Weight	No Rat	Route	
	Physical	Spacing	V			Priority	to
401-1024_Rev_Draft21							
GND_SIGNAL			GND		On		
VTT					On		
1.25V_SW					On		
2.5V_SW					On		
3.3V_LDO_J					On		
3.3V_LDO_K					On		
3.3V_SHUNT_M					On		
3.3V_SHUNT_N					On		
5V_EXT					On		
+3.3V			PWR				
+5VHDMI							
ACLK		X1_CLK					
ACLK_A							
ACLK_TL							
ACLK_V							

Top 30 Did you know ? #16

Use Show Element Pop-up to Zoom to a Symbol?

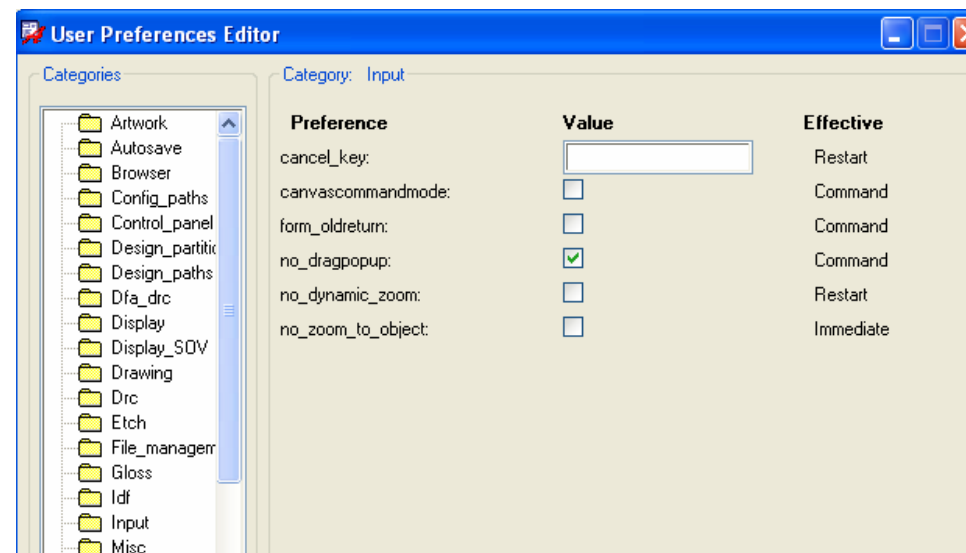
- Do you have “No_Zoom_To_Object” checked in Setup > User Preferences > Input Category?
- Do you sometimes wish you could zoom to a symbol you are trying to find?
- Then you can ...
- Click on the Show Element icon
- Check Symbol on the Find tab
- Select “Symbol (or Pin)” in Find By Name
- Enter designator for symbol & Enter
- To zoom to symbol – click and hold down LMB & highlight entire coordinate in Show Element Popup (as shown to the right)



Top 30 Did you know ? #15

User Preference, “ *no_dragpopup* “ allows you to use strokes without holding down the Ctrl key

- By default, you must hold down the Ctrl key and depress the right mouse button at the same time when using strokes. Setting this environment variable lets you depress the right mouse button and drag the mouse when using strokes.



Top 30 Did you know ? #14

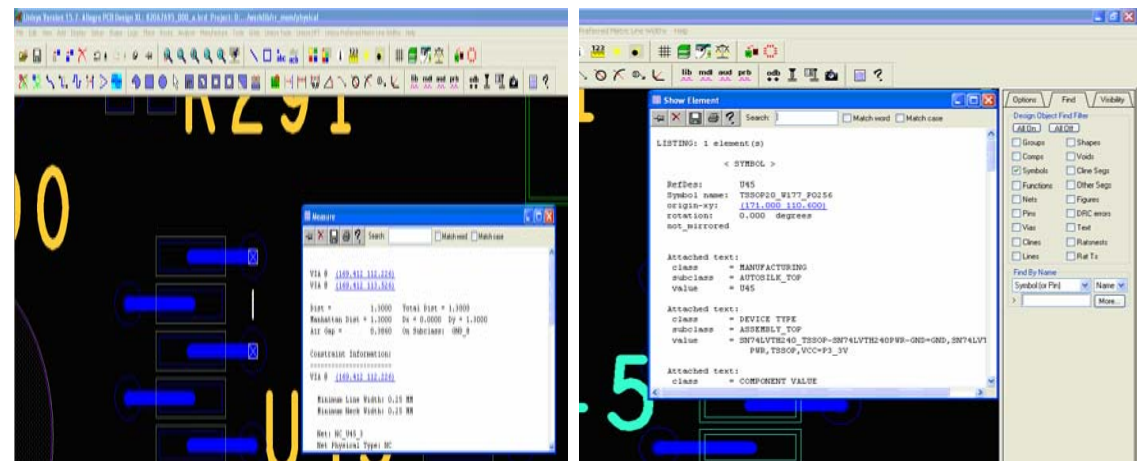
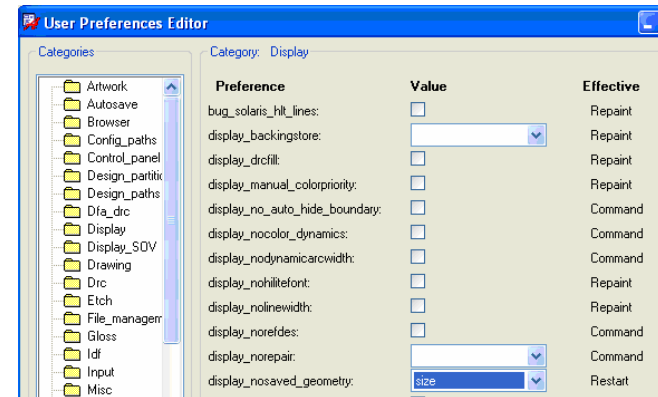
User Preference:

“display nosaved geometry “

Provides a means to remember window position and size.

► If set, controls the feature that remembers user sizing and positioning of windows. If set to **position**, only sizing saved, If set to **size** only window locations is saved. If set to both no window information is saved

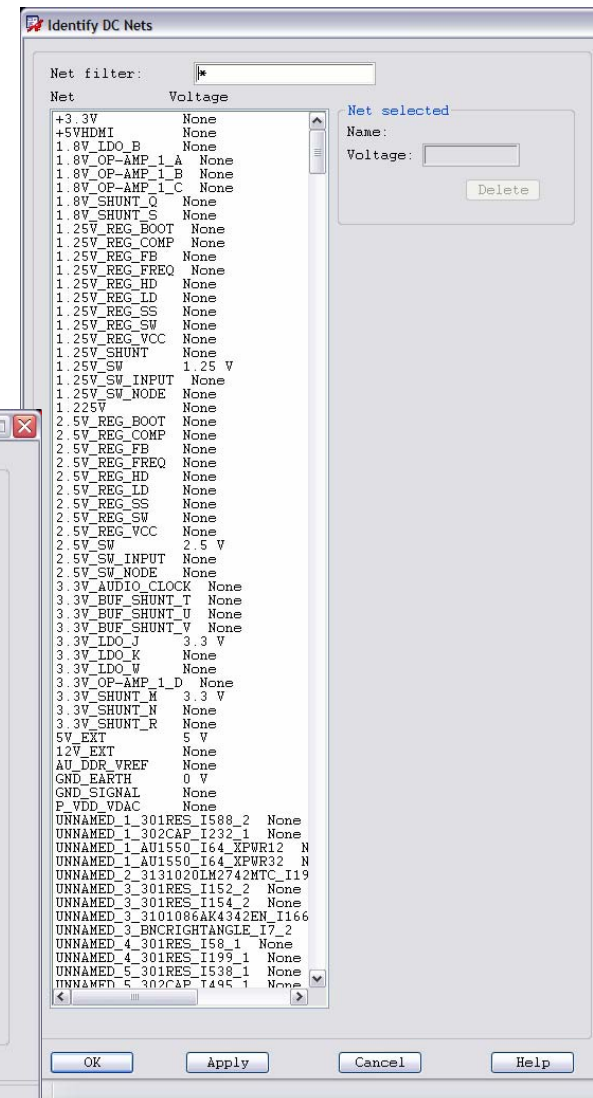
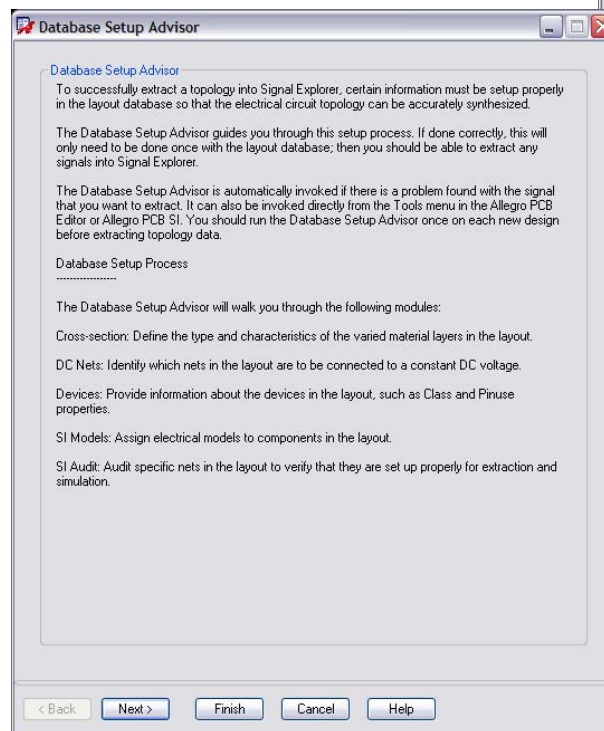
► For Example is set to “size” it will remember and reuse the last position of the Show Element and Measure Windows



Top 30 Did you know ? #13

That Allegro has a Setup Advisor!!

- Have you discovered it and taken advantage of it?
- Menu – Tools > Setup Advisor
- Click on Next for:
 - Edit Cross-Section
 - Identify DC Nets
 - Device Setup
 - SI Model Assignment
 - SI Audit





Top 30 Did you know ? #12

That you can put alternate parts on top of each other!!

- Does you engineer want you to have separate alternate symbols on your design?
- Are you getting error markers when you do that?
- Then the way to accomplish this without getting errors is to use the PACKAGE_HEIGHT_MIN & PACKAGE_HEIGHT_MAX properties
- Example: (2) SOIC8 symbols need to be on top of each other
- Both have a PACKAGE_HEIGHT_MAX of 1750 um (1.750 mm)
- Change one symbol to a PACKAGE_HEIGHT_MAX of 100 um (0.100 mm)
- To the other symbol, add a PACKAGE_HEIGHT_MIN property and set the value to 125 um (0.125 mm)
- ****** Note: No errors will occur as long as all pins are electrically the same**

Top 30 Did you know ? #11

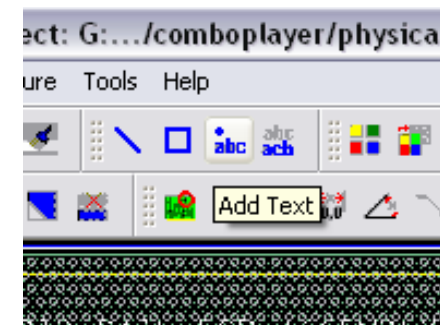
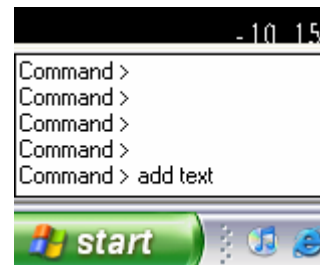
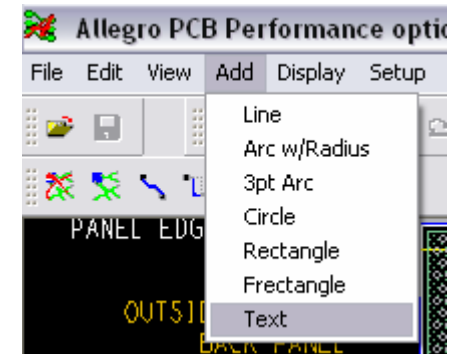
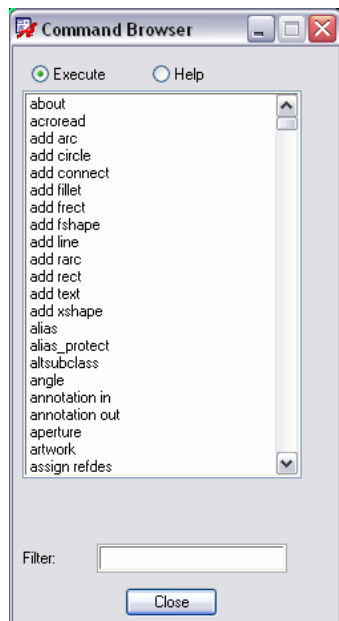
That you can move individual pins of a symbol in a design!!

- ****** Note – this is very dangerous – be very, very careful!!!! ******
- Have you discovered this feature and used it to your advantage?
- Add an “Unfixed_Pins” property to Symbol
- This will allow you to move any pins within that symbol
- Once you are done, you can then remove the “Unfixed_Pins” attribute to lock the pins in place again
- Can anyone tell me a useful use for this property?
- Fiducials – you can create your symbols with fiducials built into the symbol and then use the “Unfixed_Pins” property to move any fiducial that may be in the way of other parts or traces

Top 30 Did you know ? #10

Multiple Ways to Invoke a Command

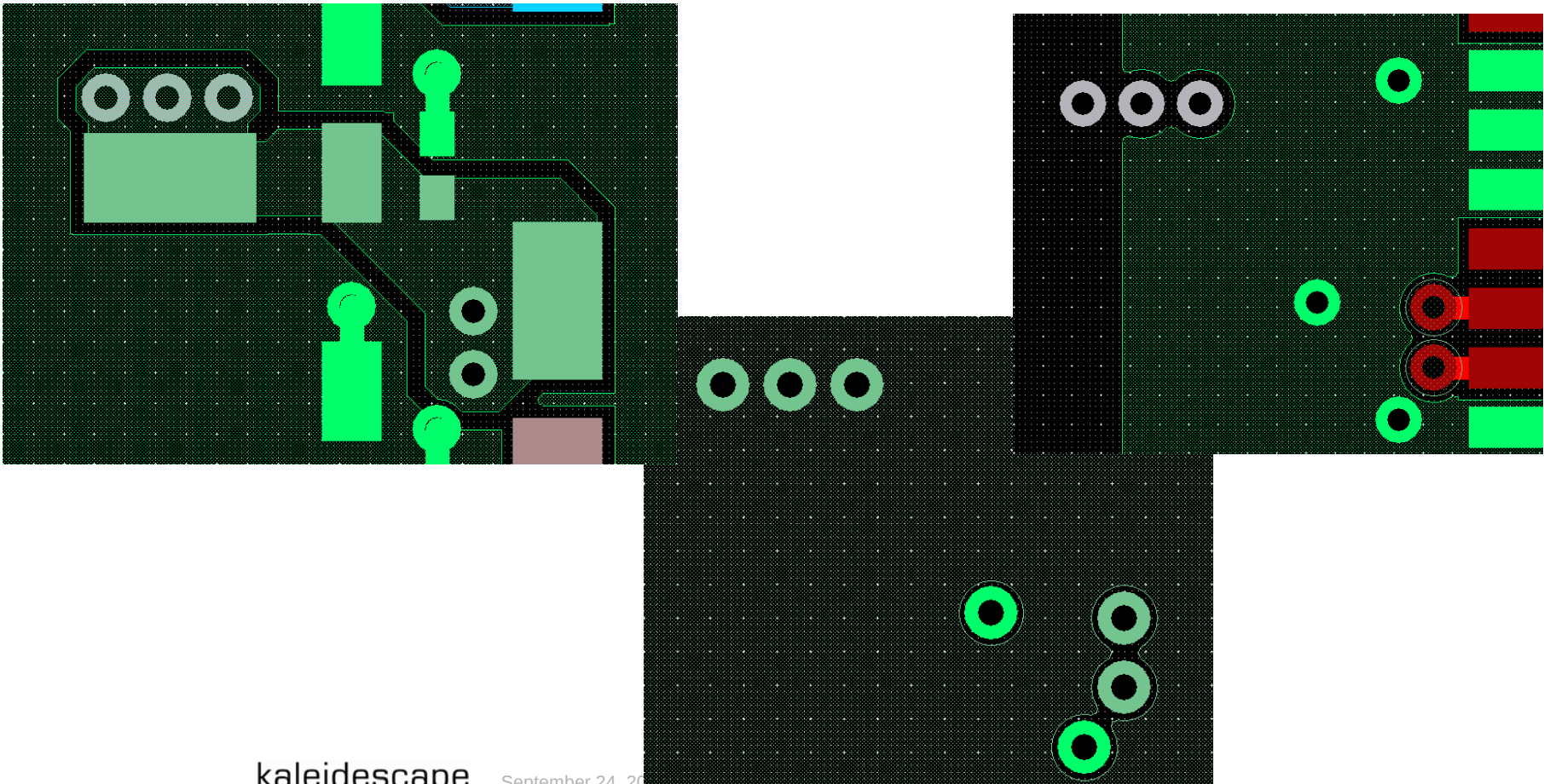
- Example – Add Text
- **Menu** – Add > Text
- **Toolbar** – Add Text
- **Console Window Command Line** – Type *add text*
- Console Window Command Line possibilities can be found in Menu - Tools / Utilities / Keyboard Commands
- **Aliases** – Assign a keyboard key (or combination) to *add text* – ex: assign the letter T for *add text* (T & Enter)
- Existing aliases can be found in Menu – Tools / Utilities / Aliases/Function Keys
- Aliases can be added to you ENV file



Top 30 Did you know ? #9

That you can “funnel” a signal using “vias allowed”?

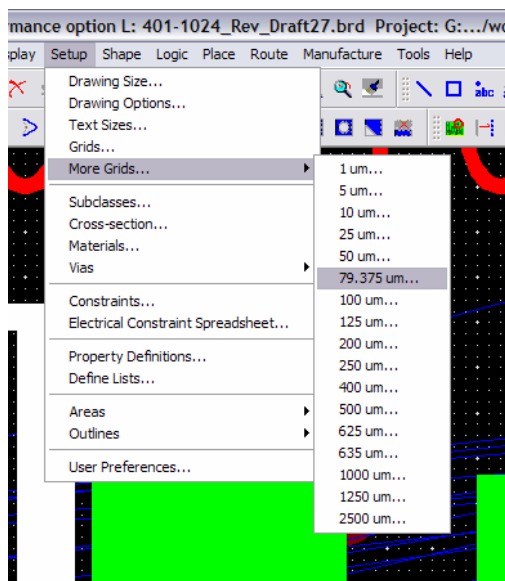
- Use Route Keepout /w “Vias Allowed” property



Top 30 Did you know ? #8

MENU files – Modify or Add you own!!

- Did you know that you can modify your MENU commands?
- Did you know that you can add your own MENU commands?
- If not, then you may be missing out on ways to become more productive!
- File “allegro.men” for the Allegro menu (***** make a back-up first**)
- File “cbdsymbol.men” for the Symbol Editor menu (***** make a back-up first**)



```
MENUITEM "&Text Sizes...",      "define text"
MENUITEM "&Grids...",            "define grid"
POPUP "&More Grids..."
BEGIN
  MENUITEM "&1 um...",            "replay g:\kaleidescape\cadencelib\master_library\scripts\grid_1.scr"
  MENUITEM "&5 um...",            "replay g:\kaleidescape\cadencelib\master_library\scripts\grid_5.scr"
  MENUITEM "&10 um...",           "replay g:\kaleidescape\cadencelib\master_library\scripts\grid_10.scr"
  MENUITEM "&25 um...",           "replay g:\kaleidescape\cadencelib\master_library\scripts\grid_25.scr"
  MENUITEM "&50 um...",           "replay g:\kaleidescape\cadencelib\master_library\scripts\grid_50.scr"
  MENUITEM "&79.375 um...",       "replay g:\kaleidescape\cadencelib\master_library\scripts\grid_79_375.scr"
  MENUITEM "&100 um...",          "replay g:\kaleidescape\cadencelib\master_library\scripts\grid_100.scr"
  MENUITEM "&125 um...",          "replay g:\kaleidescape\cadencelib\master_library\scripts\grid_125.scr"
  MENUITEM "&200 um...",          "replay g:\kaleidescape\cadencelib\master_library\scripts\grid_200.scr"
  MENUITEM "&250 um...",          "replay g:\kaleidescape\cadencelib\master_library\scripts\grid_250.scr"
  MENUITEM "&400 um...",          "replay g:\kaleidescape\cadencelib\master_library\scripts\grid_400.scr"
  MENUITEM "&500 um...",          "replay g:\kaleidescape\cadencelib\master_library\scripts\grid_500.scr"
  MENUITEM "&625 um...",          "replay g:\kaleidescape\cadencelib\master_library\scripts\grid_625.scr"
  MENUITEM "&635 um...",          "replay g:\kaleidescape\cadencelib\master_library\scripts\grid_635.scr"
  MENUITEM "&1000 um...",         "replay g:\kaleidescape\cadencelib\master_library\scripts\grid_1000.scr"
  MENUITEM "&1250 um...",         "replay g:\kaleidescape\cadencelib\master_library\scripts\grid_1250.scr"
  MENUITEM "&2500 um...",         "replay g:\kaleidescape\cadencelib\master_library\scripts\grid_2500.scr"
END
MENUITEM SEPARATOR
MENUITEM "&Subclasses...",      "define subclass"
```



Top 30 Did you know ? #7

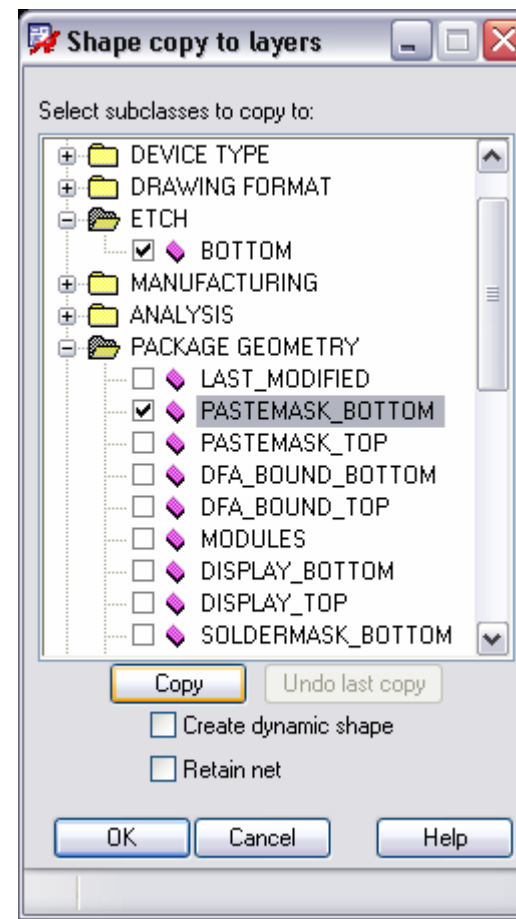
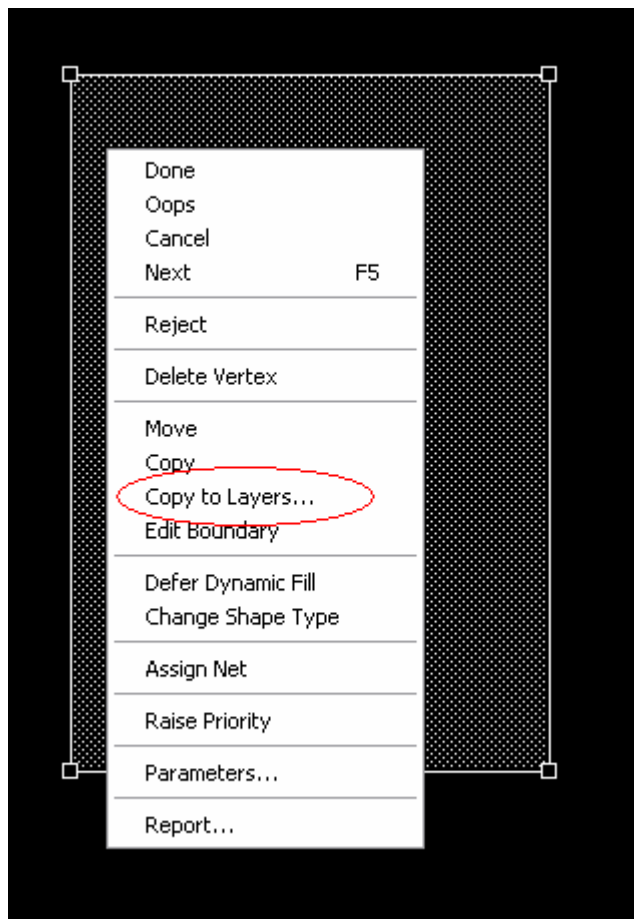
That modified MENU files need to be updated!!

- Have you modified your MENU commands?
- Do you save these modified MENU files in a separate directory?
- If so, then you may be missing out on new features in subsequent versions!
- Don't forget to add your menu changes to new versions of Allegro.mem

Top 30 Did you know ? #6

Copy Shapes To Other Layers!!!!

- Shape “copy to layers” > Select shape, RMB > copy to multiple classes/subclasses



Top 30 Did you know ? #5

Edit your ENV File - Example

User added →

“###”
Denotes user added notes →

Automatically added by system after user has changed settings in Setup/User Preferences →

```
▶ Location - C:\projects\pcbenv
▶ source $TELENV
▶ set MENUPATH = c:\projects\pcbenv $MENUPATH
▶ set allegro_long_package_name
▶ set dbsave_full_check = 1
▶ ### The above setting does a database check every time a design is saved. 2 would equal a check every second time a job is saved, etc.
▶ alias sts replay Sector_Table_Script
▶ alias STS replay Sector_Table_Script
▶ alias Esc cancel
▶ alias F2 oops
▶ ### 1-0 functions will change the route width to units specified during an "add connect" routine (Note: I design in microns)
▶ funckey 1 options line_width 100
▶ funckey 2 options line_width 125
▶ alias C color
▶ alias c Color
▶ alias G100 replay Grid_100
▶ alias g100 replay Grid_100
▶ ### User Preferences section
▶ ### This section is computer generated.
▶ ### Please do not modify to the end of the file.
▶ ### Place your hand edits above this section.
▶ ###
▶ set art_stripathdirectoryname
▶ set autosave_time = 10
```

Funckey does not require <Enter> and is typically accessible during the operation of another routine – in this example, pressing the 2 on the keyboard during an Add Connect will change the width of the route (trace, etc) to 125 units

Alias commands that call & replay a recorded script + <Enter>

Alias commands that require keyboard letter(s) + <Enter>

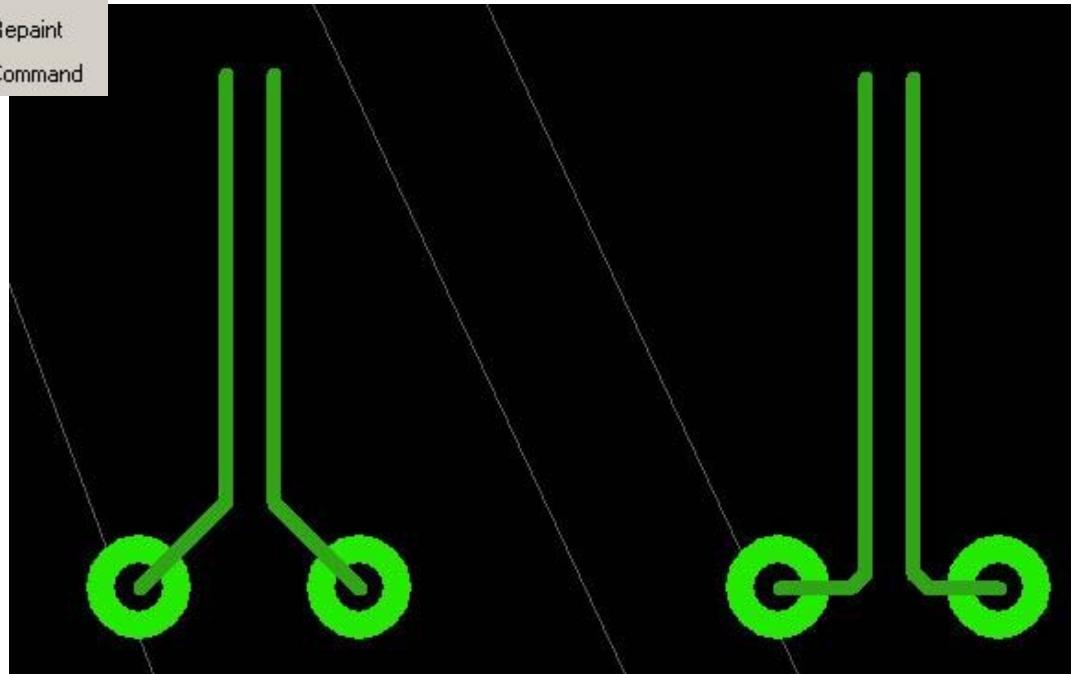
Top 30 Did you know ? #4

Do you want tighter gathering of your Diff Pairs as they exit?

- **Menu** > Setup > User Preferences > Etch > padentry_factor

no_show_dynam_elec_errors:	☐	Immediate
padentry_factor:	50	Immediate
rats_factor:		Command
ratt_off_if_connected:		Repaint
slide_no_snap:	☐	Command

- The left pair are the default (blank) setting
- The right pair uses the setting shown above

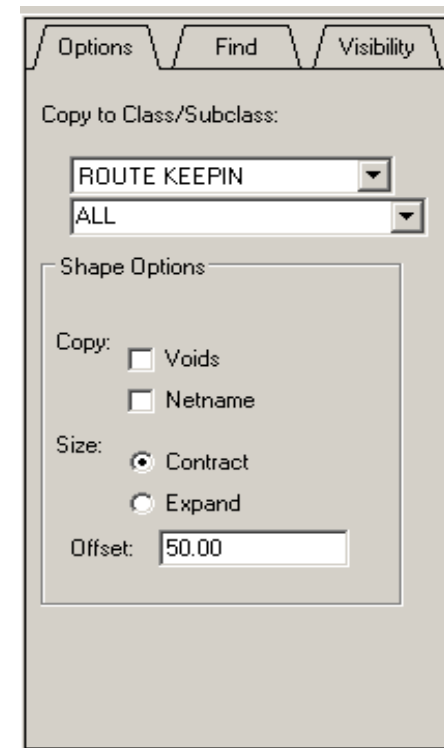
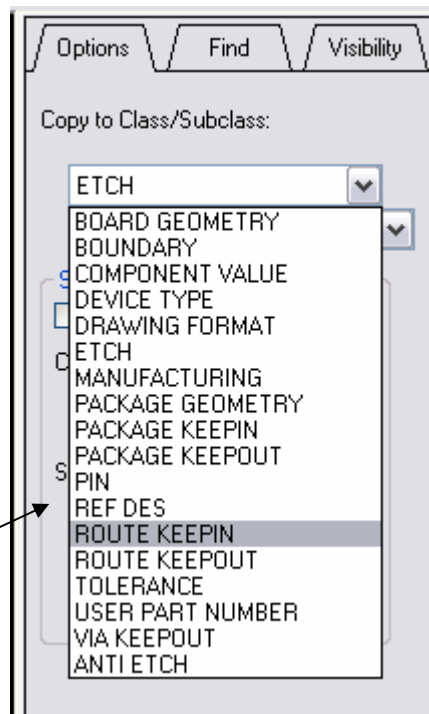


Top 30 Did you know ? #3

That you can Z-Copy your board outline?

- Same size, contracted or expanded!!!
- To other layers &/or shape types!!!

Possible Z-Copy classes



Top 30 Did you know ? #2

Sub-Drawings – A Hidden Treasure Chest

- Use Sub-Drawing files to perform many neat jobs such as
- Fan out components such as
 - Bypass (decoupling) caps
 - BGA devices
 - Memory chips
 - Your imagination is the limit
- Copy routing (traces, clines) from another project
- Move items from one class to another – use text editor to manipulate “.clp” file

```
clp_cinfo->t_from_units _clp_cinfo->t_to_units) "ETCH/BOTTOM" nil _c
```

```
Convert(133.000000 _clp_cinfo->t_from_units _clp_cinfo->t_to_units)
```

```
p_cinfo->t_from_units _clp_cinfo->t_to_units) "ETCH/BOTTOM" nil _clp
```



Top 30 Did you know ? #1

Automation ... how much have you explored?

- ENV File
- Keyboard Shortcuts
 - ▶ Single key or combinations followed by <Enter>
 - ▶ Less used functions or windows (C+<Enter> for Color and Visibility Palette pop-up window)
- Function Keys
 - ▶ Instantaneous commands
 - ▶ Typically for most used functions (Toggle, Next, Oops, etc.)
- Scripts
 - ▶ Record a linear series of repetitive routines
 - ▶ Play back later
 - ▶ Playback using keyboard shortcut or function key
- Menu alterations
- Extracta Command
- Strokes
- SKILL
- Check out 2006 CDN Live presentation **“Cadence Allegro Editor – A New User’s Experience”** by Vincent Di Lello – Session #5.7



Top 30 Did you know ?

Conclusions!!

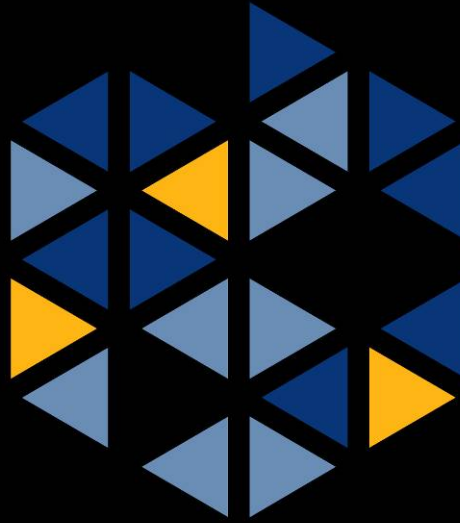
- Experiment – don't be afraid to check out all of the menus
- Network – ask questions of people you meet at the conference
- Share – monitor the list server and help your fellow designer in times of need
- Make recommendations to Cadence – if you don't like how Allegro behaves or works, then let Cadence know – fill out a Service Request @ SourceLink
- There are many unearthed and unexplored GEMS in Allegro – have fun, take 5 minutes and explore ... you may be surprised as to what you find ...
- Good Luck and thanks for listening.



Questions and answers

My Workspace





kaleidescape™