

What's New In SKILLCAD V3.3

http://skillcad.com/download_tool.html

- **New Functions**

- 1) **Chop Array (Icon: Kits)**
Chop array by polygon/Rect/shape in IC5 and IC6.
- 2) **Panel Placer(FPLE Kits)**
Floor planer for FPLE.
- 3) **rSolver (ICLA Menu and FPLE) Beta release.**
3D resistance extractor for any shape, works for multiple layer network and slot shapes.
Require "rSolver" license feature.
- 4) **Edge Grow (Icon: kits)**
Create wires by growing from the picked edges of a shape.
- 5) **Line Distance(Icon: kits)**
Measure the distance between two lines.
- 6) **Matched Placer(Pulldown: place)**
Pattern-driven device placer, also handling dummy device and guard ring
- 7) **Inductor Pin Checker(icon: kits)**
Extract the connectivity of a cellview (inductor), and report all pins on each net.
- 8) **vSwap Bus (Icon: SKILLCAD Plus)**
Requires "twistedBus" license.
Swap 2 wires by a v_line.
- 9) **Create Twisted Bus (icon: SKILLCAD PLUS)**
Requires "twistedBus" license.
Functions under SKILLCAD PLUS are for specific applications and require new license features. Improved via alignment
- 10) **Formula Plotter (icon :kits)**
Creating shape based on given equations.
- 11) **LandMarker (in FPLE)**
Browse the saved marker location.
Improved to work without SKILLCAD setup.
- 12) **Simple Net R (icon: kits)**
Measure R for simple net (bus) connection.
Enhanced to measure R between two edges of a net
- 13) **Convert Shapes (Icon: kits)**

Convert objTypes between path/polygon/pathSeg

- 14) Transition Connector (Icon: Track Functions)
Bus Connector in track based layout env.
- 15) Via Wall Shield (icon: shield Bus)
Full Via wall shielding (left/right/middle/start/end), and top/bottom shielding with option to select shielding metals.
The icon of shield bus is now for two shield functions:
Via Wall Shield and shield bus Jumper.
Enhanced to handle different path widths,
Added option to flat MPP
- 16) Create Arc Shapes (Icon: kits)
Create shape like: arcs, circles, car race tracks essentially for power IC design.
- 17) Rename Pin/label (icon: pin functions, label functions)
Fixed a bug on renaming "[]"
- 18) Promote Pins (icon: pin functions)
Pick and promote instance pins to top level with option to expand the pin to cover entire shape.
Fix a bug for multiple pins at different layers
Label Type ("textDisplay" or "label") will follow the preference in setup
Label Size/orient will follow the original label (if any) attached to the lower pin
check if a terminal has no physical pin fig.
- 19) GrowShapes (Icon: kits)
Grow (create) shapes/rings from a reference obj.
- 20) Reshape Mpp (icom: MPP/Ring)
New command button to reshape the selected MPP.
Allow the layer order is reversed in viaDef (for contact layer)
Starting/ending offset applied to ring-shape MPP also
- 21) segJumper (icon: Seg Jumper)
A new wiring command allows wire with different width/space, starting from/ending to existing segs and unique round corner option.
Enabled parallel (face to face) connection.
Enabled Fan out.
Improved round corner.
Improved fanout for path/polygon routing.
Added starting with Via feature.
- 22) Cover Fig/Net (Icon: Kits)
Cover Shapes/Nets by a different layer (purpose).
The original Shapes/Nets can be at different hierarchy levels.

- 23) Push To Track (Icon: Track Functions)
Push wires to the routing tracks by drawing a line across them.
Improved to automatically update width and vias space option.
- 24) Fill Via By Click, Fill Via By Box.
Fill via based on the via config rules.
- 25) Track Viewer (Icon: Track Functions)
Pick and view the track patterns in the current layout window
Improved to add track width info to the tracks created by this command.
Options to display the pattern Width /Name
Improved to be compatible with IC12.1
- 26) Improved the setup and GateCont command to handle mOPo contact for 20nm/16nm technologies.
- 27) Track Pattern Setup (SKILLCAD setup)
New interface for Track PatternDefs, viaConfigDefs etc setup.
Fixed bug in "Define layer Width" GUI
- 28) Flip Within Box (Icon:kits)
New commands to flip with reference of prBoundary or a layer
And Flip the selected objects as one group.
- 29) Toggle Via CutClass (Icon: kits)
Toggle Via Size (cutClass) and meanwhile snap to one edge of metal overlapping area.
- 30) Swap Bit Line (Vias) (Icon: Kits)
Swap two straight lines and their connected vias by two clicks.

- **Improvement/Bug Fix**

- 1) Kits
Removed "Pin Commands" and "Label Commands" buttons in the kits menu.
- 2) Create Via(Icon: "Create Via")
Improved to be compatible with IC616.
- 3) Edit Standard Via (Icon: Edit Standard Via)
Added edit via cutPattern function.
Fixed bug for 1x1 pattern

- 4) Fill Via(Icon: FillVia)
For flat fill on polygon regions in IC6, the result will be save as a group instead of a cell.
Improved “Fill Selected Regions” for “pathSeg” objs.
“ignore invisible metals” option
Enabled Via keepout from SKILLCAD setup.
Extra options to fill inside or outside a layer
Option to create group (when filling OA via in a polygon area)
Improved check to avoid extending out of fill region (Polygon).
Fixed a via spacing issue when filling in certain polygon shape
Using single standardVia (instead of via shape) when fill “flat via in polygon”
Fixed a bug in big polygon area fill,
Fixed the enclosure rule issue on overlapping regions between a narrow metal and a big metal.

- 5) Advanced Fill (Icon: Fill Dummy)
Added “Exact Space” option, and enabled to select libName to save the result.
Added cell origin option to 0:0 when save the fill result as a cell
option to define Fill Region by layer
report coverage feature
cellName prefix/suffix
get template rule file from setup
Fixed offgrid issue on the filled shapes (when the original data is offgrid)

- 6) Simple Fill (Icon: Fill Dummy)
Improved GUI form.
Improved the way to get the default width/Space. First from SKILLCAD setup, then from virtuoso technology file.
Allowed integer Values

- 7) ExtractNet/HilightNet(Icon: getNet)
Added new cellview trig feature.
Handle Poly/Diff local interconnection for 20nm below technology
Added extracting neighboring shapes of a net for Diva/Assura Mode
Avoided copying children objects of a shape
Fixed a bug of HilightNet in Assura/Diva Mode (introduced in v3.3F4)
Fixed the file browser issue on Hilight Net Form.
Enhanced to handle multiple nets by mouse Clicks, allowing to pick nets without net Names.

- 8) CoverPins(icon: pin functions)
Added cover by Wire/PathSeg option

- 9) Align Distribute Pins (Icon: pin Functions)
Added: Expand Selection to All Bits of Bus (Pins)
Sort (Pins) by Net Name,

Reverse (pins)

Improved "Deselect" Odd/Even by net name if pins are bus pins.

Added align to Shape commands to snap pins to the edges of the metal shapes underneath.

Improved To Snap Pins To Routing Tracks

Fixed a bug on getting different license (nanoWire) when snapping pins to pboundary.

10) QuickLabel (Icon: Label Functions)

Added a new option "Float Pin" so that the pin shapes will not be attached to the shapes/insts underneath.

Fixed "Double Labels" issue when keeping pin shape as-is.

Added "Snap to Tracks" option for track pattern based layout env.

Match pin directions as schematic (when the source is known)

11) Sky View(icon: kits)

Fixed a bug when no "Cloud Layers".

Fixed a bug for Mosaic Instance in IC5

12) vEditor(Icon: vEditor)

Added/Changed "Apply" button for commands:

viaChain, GateCont, fixMinArea, BusTap

to finish the on-fly editing.

Removed "Done Editing" button on the BusTap command form.

GateCont: improved to auto adjust the contact number based on gate length.

Fixed a bug happened at certain gate length (in IC6)

Enhanced to handle the case when poly/gate pin is not covered by poly/gate in pcell.

A new version of GateCont for 20nm below technologies with LIPO/LIOD local connections.

Changed default Chain layer from Metal1 to Metal2, and make "draw Chain" default to t.

BusTap: Improved the metal enclosure of via.

Added via alignment option

BusTap/v-stretch/vMove/busAdjust/bridge/changeLayer/, improved to handle non "drawing" purpose routing layers.

Bus Connector: Added face to face connection. Retired old "BusJoint"

Fixed duplicated via issue (in IC6)

Fixed bug on long wire/path

Looking for level pins/labels hierarchically when connect by Pins/Labels

Enhanced to merge shapes on parallel connection

Added new option to match starting wire width

ViaChain: Improved the metal enc. of via direction to align gate direction.

CombRouter: added multilayers and detour option

Fixed a bug in creating via (in IC6)

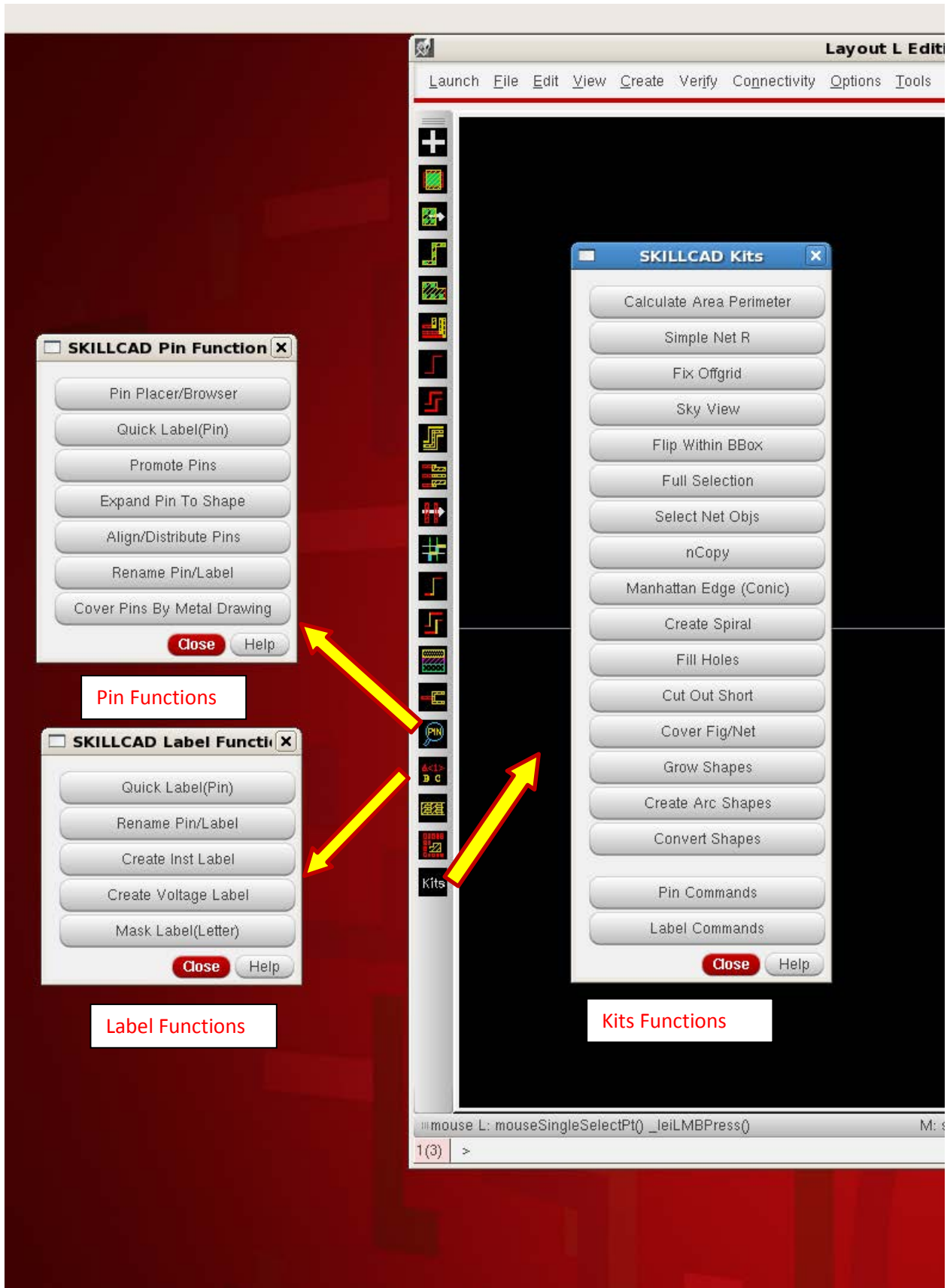
Improved metal end enclosure of Via.

Detour: Added new feature to detour around a shape

- 13) Layer Handler (Icon: layer Handler)
Fixed a bug in layer visibility setting.
- 14) FreeJumper (Icon: Path Jumper and Bus Jumper)
Fixed bug to avoid merging Multipart part paths
- 15) Nano Track Router
The command form and most part of the command were re-developed.
Enabling users to toggling Pattern Groups, PatternDefs, widths and vias.
space option.
Ignored track pattern of non-routing (non-metal) layers.
- 16) FreeJumper and Nano Track Router
Improved layer jumpering bindkey. "0" for the first metal layer name ends with "0"
- 17) Setup
Added "use PathSeg" "use Squarish Via Array" "min Via No" global preference controls
in the SKILLCAD setup form.
Fixed a bug for "Equivalent Layers" if there is no other layer purpose of the routing layer
defined in the techfile
Improve "wireConfig" setup to avoid slowness issue in loading track rules.
Added "segJumper" in the Costum Icons list
Introduced _scdTechFileList environment to handle multiple skillcad rule files and
multiple technologies design environment
Allowed adding list(t list(rulefile1 rulefile2)) to the end of _scdTechFileList as the default
rule file if no preceding rules were found.
Added extra rules for LIPO/LIOD rules setup
- 18) User preference;
Added "customize iconBar". So each individual user can have own customized SKILLCAD
iconBar.
Fixed a bug on unset bindkeys
- 19) FPLE. "Marker Cell Center": improved to handle Mosaic Marker cells in IC5.
Changed Cell Center to Cell Origin
- 20) Improved convert uniVia->stdVia program.
- 21) Re-organized the functions. Create 3 new groups:
Pin Functions, Label Functions, Track Functions
Some Kits functions are now moved to Pin Functions or Label Functions.
(Refer to the figure at next page)
- 22) In Setup, added global env controls :
Float Pin (for quickLabel)

Ignore Cells (for extract/hilite net)
dummyFill tecmplate files

- 23) Added checking current window cellview type "maskLayout" for all commands
- 24) Enabled to create SKILLCAD command log file
Changed the log file format, using YYYYMMDD_hhmmss
- 25) Pin Placer/Browser:
 - i) New button to Place pins on selected shapes/instances
 - ii) "Auto place pins" can now handle multiple pins of same terminal (to different locations)
New button to select pins as selected in layout cell view.
Original Pin Label type (if a pin already has a label) will be kept.
- 26) Promote Pins: New options to only promote those lower-level pins connected to top level IOs.
- 27) SegJumper: added rule assistance (auto spacing push).
Fixed a bug when using "end to seg"
Improved on continuing from pins.
- 28) SegEditor: Improve rounding corner.
- 29) FPLE:
Added(migrate from IC site) SegEditor, arcShapes, formula plotter, cut out short to FPLE.



SKILLCAD Pin Function X

Pin Placer/Browser

Quick Label(Pin)

Promote Pins

Expand Pin To Shape

Align/Distribute Pins

Rename Pin/Label

Cover Pins By Metal Drawing

Close Help

Pin Functions

SKILLCAD Label Functi X

Quick Label(Pin)

Rename Pin/Label

Create Inst Label

Create Voltage Label

Mask Label(Letter)

Close Help

Label Functions

SKILLCAD Kits X

Calculate Area Perimeter

Simple Net R

Fix Offgrid

Sky View

Flip Within BBox

Full Selection

Select Net Obj

nCopy

Manhattan Edge (Conic)

Create Spiral

Fill Holes

Cut Out Short

Cover Fig/Net

Grow Shapes

Create Arc Shapes

Convert Shapes

Pin Commands

Label Commands

Close Help

Kits Functions