Arrays

Chop an existing array of instances

Buses

Adding bits to a bus
Adding connections and trimming the metal tails, between two intersecting buses
Adjusting bus metals
Aligning bus ends; to vias, to shapes, to a drawn line
Breaking a bus into two buses
Changing bus metal layers
Connecting Buses
Connecting buses using minimum area at corners, river routing
Connecting metal buses, with a metal pattern that equalizes the metal lengths
Connecting two buses with any angle metal
Continuing a bus route
Continuing a bus route, using V-Editor Bus Continue
Create a bus where the metals automatically via up/down over existing metal
Creating a bridge in a metal bus that allows perpendicular metal to cross
Creating a bus route
Creating a bus that optimizes for metal direction, R, C, and RC
Creating a detour in an existing bus
Creating a matched bus
Creating a shielded bus
Creating a twisted bus, with shielding
Creating a via wall shield around a bus
Creating bus metals with alternating via directions at the corners
Creating bus metals with fan out/in
Creating bus metals with staggered inline vias
Creating note labels along the bus metals
Denting (creating a 45 degree angle) the corners of bus metals
Evenly distributing bus metals (spacings) between existing shapes
Evenly distributing bus metals (spacings) in a given area
Moving bus metals
Rounding bus metal corners
Stretching bus metals
Swap the position of two bit lines and the associated vias
Tapping into an existing bus
Calculations and measurements
- Calculate area and perimeter for selected objects
- Calculate area and perimeter for single object
- Calculate net resistance for a complex net, rSolver
- Calculate net resistance for a simple net
- Measure and display the linear distance across an object or objects

Connecting metal to devices
- Connecting source/drains to a backbone metal
- Covering device source/drain with vias and metals
- Creating poly and metal connections to device gates

Density checking
- Density checking in a polygonal region
- Density checking in a rectangular region
- Density checking in a region defined by coordinates
- Density checking in a selected region

Device placement
- Edit/change devices in an existing matched pattern placement
- Place devices in a matched pattern

Dummy fill
- Creating dummy fill
- Creating dummy fill in a defined area
- Creating dummy fill in a selected region
- Creating dummy fill run sets
- Creating dummy fill under a specified layer
- Creating dummy fill, using a fill cell
- Creating matched dummy fill
- Creating simple dummy fill, with a minimum of setup

Labels
- Creating a mask label
- Creating a voltage label
- Creating an instance label
- Creating and placing labels
- Recreating labels for selected pins
- Renaming pins/labels
SKILLCAD Topical Guide

Layer handling/viewing
- Create and edit layer lists
- Get/view layers under a point, defined by the cursor
- Get/view layers under cell view
- Get/view layers under selected objects
- Get/view layers within a rectangular region

Metal paths, and path segments (wires)
- Aligning the starting/ending path/path segment to center
- Continuing metal path/path segments
- Converting a non-orthogonal path (i.e. 45 degree angle) to a polygon, on grid
- Creating a path/path segment that automatically vias up/down over existing metal
- Creating a path/path segment that optimizes for metal direction, R, C, and RC
- Creating matched metal path/path segments
- Creating metal paths/path segments
- Creating note labels along the path/path segment
- Snap the path to the center between two nearby shapes

Multi-Part Paths and rings
- Changing selected MPPs
- Creating a ring around existing shapes, instances
- Creating a ring, guardring
- Creating an MPP
- Reshaping an MPP/ring

Nets
- Clearing a net highlight
- Extracting a net, through all levels of hierarchy
- Highlighting a net, through all levels of hierarchy
- Selecting a net

Pins
- Aligning pins to a prBoundary
- Aligning pins to a shape edge
- Aligning pins of a cell block to pins of a neighboring cell block
- Aligning pins of cell blocks to pins at the top level
- Automatically placing all selected pins
- Automatically placing pins on selected shapes or instances
- Changing pin layer
- Changing pin size
- Check the pins/nets on an inductor
- Cover all pins with drawing purpose metal
- Cover selected pins with drawing purpose metal
Creating pins from all selected labels
Creating pins from coordinates in an info file
Distributing pins within a range
Expanding pins to cover a complete shape
Labeling pins
Promote pins from a lower level instance, to a higher level of hierarchy
Re-creating labels for selected pins
Rename a pin/label
Setting the orientation for pin labels
Sorting pins by net names

Selection
Change partial selection to full selection, for one selection event
Controlled selection of bus metals and vias
Select a bus by drawing a box that intersects the bus
Select an object with a single click

Shapes
Convert a conic shape to a shape with orthogonal (Manhattan) edges
Converting from a path to a path segment (wire)
Converting from a path to a Polygon
Converting from a polygon to a path segment (wire)
Converting from a polygon to a path
Copying shapes from a background view to the current view
Copy selected shapes any number of times
Cover an entire net with a shape on the same, or another, layer
Cover selected objects with shapes on the same, or another, layer
Cover the shape on one layer with a shape on the same, or another, layer
Create a spiral shape
Create shapes based on user defined formulas/equations
Creating (Growing) shapes from an existing shape
Creating (Growing) shapes from an existing shape, specifying the sides
SKILLCAD Topical Guide

Creating arc shapes
Fill in holes in an existing shape
Fix off-grid shapes
Fix the minimum area of a rectangle
Flip shapes/objects within a bounding box
Remove (cut out) shapes over an existing shape, on the same layer

SKILLCAD Setup (in order of setup procedure, not alphabetical)

Complete SKILLCAD setup (View start to finish)
Defining the technology library settings
Setting up the routing layers
Setting up special metals
Setting up LVS label layers, and pin layers
Setting up base layers
Setting up implant layer groups
Setting up equivalent layers
Setting up general metal and via rules
Setting up individual metal layer rules
Setting up contact and via rules
Setting up wire configuration rules (Nano Router)
Setting up metal and via keepout regions
Defining metal direction cost factors
Defining via cost factors
Setting up the parameters for slotted metal
Compiling the setup file
Customizing the functions that appear on the icon bar
Setting up user preferences

Slotted metal

Converting a path to a slotted shape
Copying slot holes from one metal layer to another
Creating a metal mesh bus
Creating a slotted metal path
Modifying the default slotting rules

Track routing

Connecting metals across transition regions
Creating track routing
Filling track metal overlaps with vias
Fill track metal overlaps with vias, on the same nets, within a rectangular region
Push bus metals to the track patterns
Viewing track patterns
Vias

- Align a via array to a metal edge
- Change the via cut class
- Creating via cut patterns
- Creating via variants
- Creating vias and via arrays
- Draw a polygonal via array
- Draw a rectangular via array
- Editing vias
- Fill all from and to layers with vias, in a rectangular area
- Fill metal overlaps with vias, by clicking on overlap; auto detect from and to layers
- Fill metal overlaps with vias, by clicking on overlap; from and to metals defined
- Fill metal overlaps with vias, on same VXL net, within a rectangular region
- Fill vias in a selected region
- Setting via parameters
- Stretching via arrays
- Stretching via enclosures

Viewing

- Syncing the window views for two similar cells
- Viewing a cell, with superimposed metals from all placements of the cell
- Viewing circuit data, using layer lists to filter the layers (Layer Handler)
- Viewing and classifying DRC errors.
SKILLCAD Plus, Create Twisted Bus

SKILLCAD Create Twisted Bus

Rule: Default recommended
X_Dir Met.: METAL1 Cross Met.: METAL2
Y_Dir Met.: METAL1 Cross Met.: METAL2
Bit Width(um): 1 Bit Space(um): 3
No Of Pairs: 1 Pair Space(um): 5

- Draw Shield:
  Width(um): 1
  Space(um): 5

- Cross Type:
  45 Degree
  90 Degree

- No. Of Swaps: 4
- Min. Via Number: 2
- Cross At Orth. Corner
- Twisted At 45 Degree
- Use Square Via

Enc Mode: viaDef minRule
SKILLCAD Create Via

Create Instance

Library: [Select]
Cell: [Select]
View: [Select]
Names: I1
- Halo
- Define Halo...
- Physical Only

Mosaic: [Create as mosaic]

Parameters

- My Variant:
- Use Rule: [Default] [recommended]
- Enc Via Mode: [viaDef] [minRule]
- From Layer: [METAL3 drawing]
- To Layer: [MT_SUB]
- Specify Array of: [Top Via] [Bottom Via]
- Cols: [Select]
- Rows: [Select]
- Stacked Via Space: [Distribute] [Minimum]
- End Enclosure on Side: [Preferred] [X] [Y] [All] [NP]
- Minimum Area Fix Mode: [Square]

[Hide] [Cancel] [Defaults] [Help]
SKILLCAD Edit Standard Via

- Action: Stretch Array, Stretch Enclosure, Set Params/Variants, cutPattern
- Use Rule: Default, recommended
- Enc Mode: viaDef, minRule
- Via Space: Distribute, Minimum
- Keep cutClass (via Size): Yes, Keep Via Center: No, On Selected Vias: No
SKILLCAD Edit Standard Via, Stretch Enclosure

SKILLCAD Edit Standard Via

Action:  Stretch Array  [Stretch Enclosure]  Set Params/Variants  cutPattern

Enc Mode:  viaDef  minRule

On Layer:  Both  Layer1  Layer2  Align

Symmetrical Enclosure  On Selected Vias

Hide  Cancel  Save As Default  Help
SKILLCAD Edit Standard Via, Set Params/Variants

![Diagram of SKILLCAD Edit Standard Via interface]

- **Enc Model:** ViaDef, miniRule
- **My Variant Name:**
- **Reset Params To:** As Rule, As Is, As Variant
- **Via Columns:** As Is + 0
- **Rows:** As Is + 0
- **Via Width/ump:** As Rule + 0
- **Height:** As Rule + 0
- **Via Space/ump:** As Rule + 0
- **Symmetrical Enclosure:**
- **Layer1 Enc Left:** As Rule + 0
- **Layer1 Enc Top:** As Rule + 0
- **Layer2 Enc Left:** As Rule + 0
- **Layer2 Enc Top:** As Rule + 0
- **Imp1 Enc X:** As Rule + 0
- **Imp2 Enc X:** As Rule + 0
- **Enc Y:** As Rule + 0

Apply to Selected Standard Vias
SKILLCAD Edit Standard Via, Cut Patterns

![Image of SKILLCAD interface for editing standard via cut patterns]
**SKILLCAD Fill Via**

- Fill all from and to layers, in a rectangular area.
- Fill metal overlaps, by clicking on overlap.
- Fill vias in a selected region.
- Fill metal overlaps, by clicking on overlap; auto detect from and to layers.
- Fill metal overlaps, on same VXL net, within a rectangular region.
- Draw a polygonal via array.
- Draw a rectangular via array.

**SKILLCAD Topical Guide**

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Creating an MPP.

Creating a ring around existing shapes, instances.

Changing selected MPPs.

Creating a ring, guardring.

Reshaping an MPP/ring.
SKILLCAD Creating a Metal Bus, (3 Ways)

[Image 33x643 to 123x675] [Image 64x53 to 92x602] [Image 129x416 to 172x458] [Image 130x367 to 172x405] [Image 130x221 to 173x263] [Image 274x436 to 509x608] [Image 277x220 to 509x420] [Image 277x57 to 509x204] [Image 432x640 to 504x682]

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[PDF Doc] [PowerPoint Doc] [Video] [PDF Doc] [Word Doc] [Video] [PDF Doc] [Word Doc] [Video]
SKILLCAD Continuing a Metal Bus, (3 Ways)
SKILLCAD Creating a Metal Path/Path Segment, (3 Ways)
SKILLCAD Continuing a Metal Path/Path Segment

![SKILLCAD Segment Jumper GUI](image)

- **Rule:** Default or recommended
- **No of Bits:** [Input Field]
- **Widths (um):** -1.0
- **Spaces (um):** -1.0
- **Jump To Routing Layer (Odd Bit):** METAL1
- **Even Bit:** Same
- **MultiLayer:** 1
- **Interval:** 1
- **Min. Via Number:** 2
- **Stagger Via (um):** 0
- **Fix Min. Arco:** Auto
- **Reverse Order**
- **Diagonal Fanout**
- **Use Squarish Via**
- **Alternate Vias**
- **Enc Mode:** viaDef or minRule
- **Use My Min. Space Rule:** 0

**Hide** | **Cancel** | **Help**
SKILLCAD SegJumper, Various Functions

- Distributing bus metals.
- Alternating bus metal layers.
- Staggering in-line vias.
- Reversing bus routing order at via corners.
- Fan out/in of bus routes.
- Alternating via directions at bus via corners.
Creating labels along the path.

Convert a non-orthogonal path to a polygon, on grid.

Align the starting and ending path to the center of the existing metal.

Snap path/path segment to the center, between two existing shapes.
Creating a path/path segment that automatically vias over/under existing metal layers.

Creating a path/path segment that automatically optimizes for layer direction, R, C, and RC.

Add labels along path/path segment.

Aligning the starting/ending points of the path/path segment to the center of existing metals.
SKILLCAD Step Router Path/Path Segments, Matched Paths

Creating matched paths/path segments.
Creating a bus that automatically vias over/under existing metal layers.

Creating a bus that automatically optimizes for layer direction, R, C, and RC.

Add labels along the bus routes.

Aligning the starting/ending points of the bus to the center of existing metals.
Creating matched bus routes.
Creating dummy fill.

Creating dummy fill, using a fill cell.

Creating dummy fill run sets.

Creating dummy fill in a defined area.

Creating dummy fill under a specified layer.

Creating dummy fill in a selected region.
Creating matched fill.
Density checking in a polygonal region.

Density checking in a rectangular region.

Density checking in a selected region.

Density checking in a region defined by coordinates.
SKILLCAD rSolver

Set Up...
Preferences...
Show SKILLCAD Icons
SKILLCAD Plus
MultiColor Functions
uniVia
Stretch Via...
SegJumper...
SegEditor...
Free Jumper
ShieldBus
Bus Joint...
vEditor...
rSolver...
Place
Step Router
Track Functions
Layer Handler
Get Net
Pin Functions
Label Functions
Slot Path
Fill Dummy
Kits
xView
Check in License
About...

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SKILLCAD Topical Guide
SKILLCAD Pattern Placer

Set Up...
Preferences...
Show SKILLCAD Icons
SKILLCAD Plus
MultiColor Functions
uniVia
Stretch Via...
Seg jumper...
SegEditor...
Free Jumper
ShieldBus
Bus Joint...
vEditor
rSolver...
Place
Step Router
Track Functions
Layer Handler
Get Net
Pin Functions
Label Functions
Slot Path
Fill Dummy
Kits
xView
Check in License
About...

Pattern Placer
Matched Placer
SKILLCAD Quick Label

Re-Create labels for selected pins.

SKILLCAD Label Functions:
- Quick Label (Pin)
- Rename Pin Label
- Create Iso Label
- Create Voltage Label
- Mask Label Letter

Pick netNames from Schematic:
- Lib: (browse)
- Cell: TEST
- View: schematic

Include Only:
- Exclude Defaults

Filter:
- Expand All busNames

Mode:
- Single
- Line
- All

No. of labels for a group:
- Label Ox: 0
- Group Ox: 0

Use XIL Net Name

Input Labels:

Snap To Boundary:
- Auto

Help
SKILLCAD Rename Pin/Label

![SKILLCAD Rename Pin/Label dialog box]

The SKILLCAD Label Functions panel includes options for quick label, rename pin/label, create I/O label, create voltage label, and mask label/letter.

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SKILLCAD Create Voltage Labels

SKILLCAD Create Voltage Label

Height: -1  Font: stick  Orientation: 90
Layer: Current LSW Layer  Justification: centerCenter
Prefix  Property  Suffix  Un-Attached
Label Name: layerName

SKILLCAD Label Functions
Quick Label(Pin)  Rename Pin
Rename Pin(Arc)  Create Net Label
Create Voltage Label
Mask Label(Letter)

Close  Help
SKILLCAD Create Mask Labels

SKILLCAD MaskLabel Form

- **Label Name:** [ ] From: To: Step
- **Suffix:**
- **Label Pitch X:** 20
- **Pitch Y:** 0
- **Font Space:** 1
- **Font Size:** 8
- **Line Thickness:** 1
- **Font Style:** [ ] Angle  [ ] Orthogonal
- **Rotation:** [ ] 0  [ ] 90  [ ] 180  [ ] 270
- **Save As Cellview:**

SKILLCAD Label Functions

- Quick Label(Reg)
- Rename Pin/Label
- Create Init Label
- Create Voltage Label
- Mask Label Letter

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SKILLCAD Layer Handler

- Get/view layers within a rectangular region.
- Get/view layers under selected objects.
- Get/view layers under cell view.
- Get/view layers under a point, defined by the cursor.
- Create and edit layer lists.
SKILLCAD Select Net, Clear Net Highlight

Select a net.

Clear net highlights.
SKILLCAD Extracting a Net

SKILLCAD Extract Net

Use Tool:  • Skill  • Assura  • Diva

Extract Layers From:  METAL6  To:  METAL1

Multi Nets: 

Save To View:  net  Assign netName

Down To Level:  32  Do Extraction

Ignore  Cell View Lib:  

Find Narrow Connections

Width(um) <= 0  Via No. < 1

Exclude Narrow Metal Ends

*** To Browse Narrow Spots:
Use Pulldown Menu: Verify->Markers->Find...

Report Layer Info of the Extracted Net.

Extract Neighboring Figures within(um): 0

Hide  Cancel  Save As Default  Help
SKILLCAD Highlighting a Net

SKILLCAD Highlighting Net

Use Tool:
- Skill
- Assura
- Diva

Extract Layers From:
- METAL6
- To:
- METAL1

Down to Hierarchy Level:
- 32

Highlight Net Using Display:
- cycle

Multi Nets:
- [ ]

Clear All Highlight

Do Highlight

Ignore Cell View Lib:
- [ ] Add
- [ ] Del

Hide
Cancel
Help
Set the pin label orientation.

Re-create labels for selected pins.
SKILLCAD Promote Pins

SKILLCAD Pin Functions
- Pin Pieces/Browser
- Quick Label Pin
- Promote Pins
- Create Pin From Label
- Create Pin From Coord
- Expand Pin To Shape
- Align/Distribute Pins
- Change Pin Size/Layer
- Rename Pin/Label
- Cover Pins By Metal Drawing

SKILLCAD Promote Pins Menu
- Pick Pins By: Inst Terminal Name, Top Level Net Name
- Refresh From Selected Insts
- On Layer: Any Metal

Name Hits:
- Add
- Del
- Align
- Clear

Connected to Top IOs
- OK
- Cancel
- Defaults
- Apply
- Help
SKILLCAD Create Pin From Coordinates

SKILLCAD Pin Functions
- Pin Places/Viewer
- Quick Label(Pin)
- Promote Pins
- Create Pin From Label
- Create Pin From Coord
- Expand Pin To Shape
- Align/Distribute Pins
- Change Pin Size/Layer
- Rename Pin/Label
- Cover Pins By Metal Drawing

SKILLCAD Create Pin From Coord
- Pin Info File: [Browse]
- Create Label Only
- Label Height: ~1
- As Text Display
- Orientation: R0
- Attach To Pin
- Font Style: stick

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SKILLCAD Topical Guide 44
SKILLCAD Expand Pin To Shape

SKILLCAD Expand Pin To Shape

Find Shapes within Hierarchy Level:

New Pin Label:

Label Height:

Orient:

Expand Selected Pins to Shapes Underneath

Close

Help
SKILLCAD Align/Distribute Pins

Sort pins by net name.

Align pins to prBoundary.

Align pins to shape edge.

Distribute pins within a range.
SKILLCAD Change Pin Size/Layer

SKILLCAD Pin Functions
- Pin Piesces/Browser
- Quick Label(Pin)
- Promote Pins
- Create Pin From Label
- Create Pin From Coord
- Expand Pin To Shape
- Align/Distribute Pins
- **Change Pin Size/Layer**
- Rename Pin/Label
- Cover Pins by Metal Drawing

SKILLCAD Change Pin Layer/Size
- New Layer: METAL2 pin
- W(um): Auto
- H: Auto
- Do Not Move: Center

[OK] [Cancel] [Defaults] [Apply] [Help]
SKILLCAD Rename Pin/Label

SKILLCAD Pin Functions
- Pin PRC/Pre/PRC
- Quick Label(Pin)
- Promote Pins
- Create Pin From Label
- Create Pin From Coord
- Expand Pin To Shape
- Align/Distribute Pins
- Change Pin Size/Layer
- Rename Pin/Label
- Cover Pins By Metal Drawing

SKILLCAD Rename Pin/Label

Change: [ ]
To: <>

OK Cancel Defaults Apply Help
SKILLCAD Cover Pins With Drawing Purpose

Cover Pins With Drawing Purpose

Cover Selected(All) pins By [Layer] Purpose: drawing
Ignore Shapes At Lower Level
Size By: 0
Cover By Wire/PathSeg

OK Cancel Defaults Apply Help
Change the default slot path rules.
SKILLCAD Convert A Path To A Slotted Shape

Change the default slot path rules.
SKILLCAD Copy Slot Holes

Create Slot Holes on Layer: METAL2
From Slot Holes on Layer: METAL1
X_Offset(um): 0  Y_Offset(um): 0
Min. Metal Enc. Slot Holes(um): 1
SKILLCAD Creating A Metal Mesh

- **SKILLCAD SlotPath**
  - Draw Slot Path
  - Convert To Slot Path
  - Copy Slot Holes
  - Create Mesh

- **SKILLCAD MeshBus**
  - No. Of Holes: 1
  - Width(A): 1
  - Height(B): 1
  - Total Width(C): 3
  - Via Type: Array
  - Routing Layer: METAL.1
  - Hole to: 1
  - Hole Vertical Space(F): 1
  - Left Edge Space(G): 1
  - Right Edge Space(H): 1
  - Begin Edge Space(M): 1

- **Direction**
SKILLCAD V-Editor, Bus Grow

V-Editor
- busAdjust
- vStretch
- vMove
- busTap
- busConnect
- Bridge
- Distribute Bus
- Align BusEnd
- Bus Continue
- Break Bus
- changeLayer
- Detour
- Dent Corner
- Via Chain
- Gate Cont
- combRouter
- Fix MinArea
- Taper Connect
- Round Corner
- River Router
- Trim BusConnect
- SameL Connect

BusGrow
- Use Rule: Default
- Use Rule: recommended
- Copy: Bus
- Copy: Segment
- Copy: Layer
- Pick Net On Entry Layer: Options...
- New Width(um): As Original
- New Space: As Original
- No. Of New Bits: 1
- To The Side of: Front
- New Bit: Names(back to front)
- Use Spacing Rule Table in Techfile
- Hide
- Cancel
- Help

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SKILLCAD V-Editor, V-Stretch

V-Editor

busAdjust
busGrow
VStretch
vMove
busTop
Bus Connect
Bridge
Distribute Bus
Align BusEnd
Bus Continue
Break Bus
changeLayer
Detour
Dent Corner
Via Chain
Gate Cont
combRouter
Fix MiniArea
Taper Connect
Round Corner
River Router
Trim BusConnect
SameL Connect

SKILLCAD V-Stretch

Use Rule: Default recommended
Stretch: Bus Shape
Reference Layer: Same As Picked
Space to Reference Layer(um): -1
Keep Original Space Between Bits
Use Spacing Rule Table in Techfile
Pick Net On Entry Layer

Hide Cancel Help
SKILLCAD V-Editor, V-Move

V-Editor

- busAdjust
- busGrow
- VStretch
- vMove
- busTop
- Bus Connect
- Bridge
- Distribute Bus
- Align BusEnd
- Bus Continue
- Break Bus
- changeLayer
- Detour
- Dent Corner
- Via Chain
- Gate Cont
- combRouter
- Fix MinArea
- Taper Connect
- Round Corner
- River Router
- Trim BusConnect
- SameL Connect

SKILLCAD V-Move

Use Rule: 
- Default (recommended)

Move: 
- Bus
- Shape

Reference Layer: 
- Same As Picked

Space to Reference Layer(um): 
- 1

Keep Original Space Between Bits

Use Spacing Rule Table in Techfile

Pick Net On Entry Layer

Hide | Cancel | Help
SKILLCAD V-Editor, Bus Tap
SKILLCAD V-Editor, Bus Connect

- Bus Connect
- Bridge
- Distribute Bus
- Align BusEnd
- Bus Continue
- Break Bus
- changeLayer
- Detour
- Dent Corner
- Via Chain
- Gate Cont
- combRouter
- Fix MiniArea
- Taper Connect
- Round Corner
- River Router
- Trim BusConnect
- SameL Connect

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Evenly distributing bus metals (spacings) in a given area
SKILLCAD V-Editor, Align Bus End

Push/Align Bus End
- Align To: Shape, Via, Line
- Reference Layer: Same As Picked
- Path End Space (um): -1
- Extend Over Via (um): As Via Metal
- Pick Net On Entry Layer: 

V-Editor:
- busAdjust
- busGrow
- vStretch
- vMove
- busTap
- Bus Connect
- Bridge
- Distribute Bus
- Align BusEnd
- Bus Continue
- Break Bus
- changeLayer
- Detour
- Dent Corner
- Via Chain
- Gate Cont
- combRouter
- Fix MiniArea
- Taper Connect
- Round Corner
- River Router
- Trim BusConnect
- SameL Connect

Hide, Cancel, Help

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SKILLCAD V-Editor, Bus Continue

Bus Continue

Down to Hierarchy Level: 32
SKILLCAD V-Editor, Break Bus
SKILLCAD V-Editor, Change Bus Layer

Change Bus Layer

Use Rule: Default  recommended

Change To Layer: METAL1  drv

Pick Net On Entry Layer

Options...

Close  Help
SKILLCAD V-Editor, Bus Detour
SKILLCAD V-Editor, Dent Corner

**V-Editor**
- busAdjust
- busGrow
- VStretch
- vMove
- busTap
- Bus Connect
- Bridge
- Distribute Bus
- Align BusEnd
- Bus Continue
- Break Bus
- changeLayer
- Detour
- Dent Corner
- Via Chain
- Gate Cont
- combRouter
- Fix MinArea
- Taper Connect
- Round Corner
- River Router
- Trim BusConnect
- SameL Connect

**Dent Corner**
- Convert non-orth Path to polygon on Grid
- Pick Net On Entry Layer
  - [ ]

[Hide] [Cancel] [Help]
SKILLCAD V-Editor, Via Chain

- **V-Editor**
  - busAdjust
  - busGrow
  - vStretch
  - vMove
  - busTap
  - Bus Connect
  - Bridge
  - Distribute Bus
  - Align Bus End
  - Bus Continue
  - Break Bus
  - changeLayer
  - Detour
  - Dent Corner
  - **Via Chain**
  - Gate Cont
  - combRouter
  - Fix Min Area
  - Taper Connect
  - Round Corner
  - River Router
  - Trim Bus Connect
  - SameL Connect

- **SKILLCAD Topical Guide**
  - Use Rule:
    - Default
    - recommended
  - Chain Layer:
    - METAL2
    - Draw Chain
  - Offset (um):
    - Width
  - Connect To Pins (Shapes):
    - On Metal Layer:
      - METAL1
    - On Net Name:
    - Down to Hierarchy Level:
      - 32
    - Valid Filter:
      - All
      - Even
      - Odd
  - Pin Via:
    - Cols:
      - -1
    - Rows:
      - -1
    - Cover Pins:
      - Half1
      - Above Line
    - Via Enc Mode:
      - viaDef
      - minRule
    - Create Group

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SKILLCAD Topical Guide
SKILLCAD V-Editor, Gate Contact

- Use Rule: Default recommended
- Cont: M1_POLY1
- Connect Poly Up To Metal: METAL1
- Pick Poly On Net Name:
- Filter By: Gate
- Valid: All Even Odd Define
- Match End Cap Length
- Align:
- Columns: -1 Rows: -1
- Contact To Diff Distance: 0.21
- Connect Conts By: Metal Poly
- End Enclosure On Side: X Y All
- Via Enc Mode: viaDef minRule
- Create Group

Close Cancel Apply Help
SKILLCAD V-Editor, Comb Router

V-Editor:
- busAdjust
- busGrow
- vStretch
- vMove
- busTap
- Bus Connect
- Bridge
- Distribute Bus
- Align BusEnd
- Bus Continue
- Break Bus
- changeLayer
- Detour
- Dent Corner
- Via Chain
- Gate Cont
- combRouter
- Fix MinArea
- Taper Connect
- Round Corner
- Router Router
- Trim BusConnect
- SameL Connect
- Kits

SKILLCAD CombRouter

Use Rule: Default recommended
Set Teeth:
- Layer: As Pin
- Width: 3
- MultiLayers: 1
- Interval: 1

Connect To Pins (Shapes):
- On Metal Layer: METAL1
- On Net Name:
- Valid Filter: All Even Odd
- Hierarchy: 32 Detour(last): 0

Budge Via:
- Cols: -1
- Rows: -1
- Offset: 0

Pin Via:
- Cols: -1
- Rows: -1
- Via Range: Whole At Line Half1 Above Line Half2 Below Line

Via Enc Mode: viaDef minRule
Create Group

Close  Help
SKILLCAD V-Editor, Fix Minimum Area

V-Editor
- busAdjust
- busGrow
- vStretch
- vMove
- busTap
- Bus Connect
- Bridge
- Distribute Bus
- Align BusEnd
- Bus Continue
- Break Bus
- changeLayer
- Detour
- Dent Corner
- Via Chain
- Gate Cont
- combRouter
- Fix MinArea
- Taper Connect
- Round Corner
- River Router
- Trim BusConnect
- SameL Connect

Fix Pin/Rect MinArea
- Min Area: -1
- Fix Mode: XDir, YDir, Left, Right, Up, Down
- Find Shapes Down To Level: 32
- Valid Shapes Filter: All, Even, Odd

8/20/20
Connecting two buses with any angle metal.
SKILLCAD V-Editor, Round Corner

V-Editor
- busAdjust
- busGrow
- vStretch
- vMove
- busTap
- Bus Connect
- Bridge
- Distribute Bus
- Align BusEnd
- Bus Continue
- Break Bus
- changeLayer
- Detour
- Dent Corner
- Via Chain
- Gate Cont
- combRouter
- Fix MinArea
- Taper Connect
- Round Corner
- River Router
- Trim BusConnect
- SameL Connect

SKILLCAD Round Corner
- Corner Type: Same Space, Same Corner, Same Delta
  - Radius: 1
  - Pts: -1

8/20/20
SKILLCAD V-Editor, River Router
Adding connections and trimming the metal tails, between two intersecting buses.
SKILLCAD V-Editor, Equal Length Connector
SKILLCAD Create A Shielded Bus

SKILLCAD FreeJumper (ShieldBus)

- Use Rule: Default
- Path Width Mode: Min Width, Fixed Width, Fixed Current
- Signal Path: Width (um): 0.22
- Number: 2
- Shielding Path: Width (um): 0.22
- Shielding Current: 0.23
- Shielding: Left, Right, Top, Bottom, Middle
- Current Entry Layer: METAL1
- Next Click Jump To: METAL1
- Min Via Number: 2
- Max Stack Levels: 6
- Corner Via Align:
- Metal Edge Mode: viaCir, minDistance, Align Metal To Path
- Create Noise Labels Along Path:
- Swap Dir:
- Reverse Bus Order at Corner Layer Jumping:
- Convert Non-orthogonal Path to Polygon on Grid:
- Extend Path at Layer Jumping:
- Merge with Starting/Ending Path:
- Align Starting/Ending to Center:
- Rule Assistant:
- Use My Min. Space Rule (um): 8
- Metal Display: Current Level, All, None
- Snap To The Center Between Two Nearby Shapes On Layer: Save

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SKILLCAD Create A Via Wall Shield

Shield Bus (Via Wall)

- Use Rule: Default, recommended
- On Side: Left, Right, Middle, Start, End
- Top: Upper Metal (Plate, Strip, Nil)
- Bottom: Lower Metal (Plate, Strip, Nil)
- Number of paths: 0
- Signal Path Width/Margin: 1
- Signal Path Spacing: 1
- Shield to Signal Space: 1
- Flat MPP: As Group
- Enc Mode: viadef, minRule
- Layer: TOTAL 1

Close Help

8/20/20
SKILLCAD Kits, Area/Perimeter Calculator

SKILLCAD Kits
- Calculate Area Perimeter
- Simple Net R
- Fix Offgrid
- Sky View
- Flip Within BBox
- Swap Bit Line(Vss)
- Toggle Via CutClass
- Full Selection
- Select Net Obj
- nCopy
- Manhattan Edge (Conic)
- Create Spiral
- Formula Plotter
- Fill Holes
- Cut Out Short
- Cover Fig/Net
- Grow Shapes
- Edge Grow
- Line Distance
- Sync Window View
- Copy From Background View
- Chop Array
- Inductor Pin Checker
- Create Arc Shapes
- Convert Shapes

SKILLCAD Area Perimeter Calculator
- Merge Shapes on Different Purpose
- Highlight Merged Regions: [hilite] [drl]
- Layers of Interest: [ ]

Calculations | Area | Perimeter
--- | --- | ---

Total:

Current Calculation Results:
- Area: [ ]
- Perimeter: [ ]

Each Selected Shape (Hier-merged) Shape Under Points
SKILLCAD Kits, Simple Net Resistance

SKILLCAD Kits
- Calculate Area Perimeter
- Simple Net R
- Fix Off GRID
- Sky View
- Flip Within BBox
- Swap Bit Line(Vss)
- Toggle Via CutClass
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SKILLCAD Simple Net R
- Hilight Net With: Cycle
- Down To Level: 32
- Whole Net
- Part of Net

Index | Net Name | R_Total
--- | --- | ---

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SKILLCAD Topical Guide
SKILLCAD Kits, Fix Off Grid

**SKILLCAD Kits**
- Calculate Area Perimeter
- Simple Net R
- Fix Offgrid
- Sky View
- Flip Within BBox
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- Create Arc Shapes
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**SKILLCAD Fix OffGrid**

For:  
- Selected Objs
- Current Cell View
- Library

Library Name: 

Grid Value (um):  

Convert Conics, Non-orthogonal Paths To Polygons

Keep Diagonal (45 Degree) Turns

[OK] [Cancel] [Defaults] [Apply] [Help]
SKILLCAD Kits, Sky View

SKILLCAD Kits
- Calculate Area/Perimeter
- Simple Net R
- Fix Offgrid
- Flip Within BBox
- Swap Bit Line (Vss)
- Toggle Via CutClass
- Full Selection
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- Inductor Pin Checker
- Create Arc Shapes
- Convert Shapes

SKILLCAD SkyView
- Browse Sky Cell
- Frog Cell
- Save to
- Lib:
- Cell:
- View:
- Sky:
- For Each Frog Instances
- OverSize:
- Available Layers:
- Cloud Layers:
- SkyView Utilities
- Browse Frog Instance
- Locate Selected Fig
- Update current SkyView
- Re-Create All

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SKILLCAD Topical Guide
82
SKILLCAD Kits, Flip Within A Bounding Box

SKILLCAD Kits
- Calculate Area Perimeter
- Simple Net R
- Fix Off Grid
- Sky View
- Flip Within BBox
- Swap Bit Line (Vss)
- Toggle Via Cut Class
- Full Selection
- Select Net Obj
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- Create Spiral
- Formula Plotter
- Fill Holes
- Cut Out Short
- Cover Fig/Net
- Grow Shapes
- Edge Grow
- Line Distance
- Sync Window View
- Copy From Background View
- Chop Array
- Inductor Pin Checker
- Create Arc Shapes
- Convert Shapes

Flip Within Box
- Keep Obj bBox: [MX] [MY] [R180]
- Keep pBoundary Box: [MX] [MY] [R180]
- Keep (LSW) Layer Box: [MX] [MY] [R180]
- All Selected As One: [MX] [MY] [R180]

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SKILLCAD Kits, Swap Bit Lines

Swap the position of two bit lines and the associated vias.
SKILLCAD Kits, Toggle Via Cut Class

SKILLCAD Kits
- Calculate Area Perimeter
- Simple Net R
- Fix Offgrid
- Sky View
- Flip Within BBox
- Swap Bit Line(Vias)
- Toggle Via CutClass
- Full Selection
- Select Net Obj
- nCopy
- Manhattan Edge (Conic)
- Create Spiral
- Formula Plotter
- Fill Holes
- Cut Out Short
- Cover Fig/Net
- Grow Shapes
- Edge Grow
- Line Distance
- Sync Window View
- Copy From Background View
- Chop Array
- Inductor Pin Checker
- Create Arc Shapes
- Convert Shapes

SKILLCAD Toggle Via cutClass

Toggle Selected Vias:
- Align to Metal Edge: Left Right Top Bottom
- Bigger
- Smaller
- Bigger By V-Line
- Smaller By V-Line
- Change Both Sides In Same Direction

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SKILLCAD Kits, Full Selection

Fully select an object, if the object is partially selected by vertex or edge.

Select a complete object by clicking on it.

Select all the paths in a bus by drawing a box that intersects the bus.
SKILLCAD Kits, Select Objects On Nets
SKILLCAD Kits, Making Multiple Copies

The image shows a user interface with various tools and options for making multiple copies. The main focus is on the 'nCopy' function, which allows users to specify the number of copies along with options for space and pitch. The interface includes options for different operations such as calculating area perimeter, editing grids, and selecting nets among other features.
SKILLCAD Kits, Creating A Manhattan Edge Shape

SKILLCAD Kits
- Calculate Area Perimeter
- Simple Net R
- Fix Offgrid
- Sky View
- Flip Within BBox
- Swap Bit Line(Vass)
- Toggle Via CrossCl
- Full Selection
- Select Net Obj
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- Manhattan Edge (Conic)
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- Formula Plotter
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- Edge Grow
- Line Distance
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- Create Arc Shapes
- Convert Shapes

SKILLCAD Manhattan Edge (Conic)
- Layout Grid: 0.005
- Min Edge Length: 0.005
- Allow Diagonal

8/20/20
SKILLCAD Kits, Creating A Spiral Shape

**SKILLCAD Create Spiral Shape**

- **From:** METAL1
- **To:** METAL1
- **Width (um):** 2
- **No of Circles:** 4.5
- **Space (um):** 2
- **Sides/Circle:** 60
- **Inner R (um):** 5
- **Rotate:** R0

**Done Editing**

Hide  Cancel  Help
SKILLCAD Kits, Creating Shapes By Equations

SKILLCAD Kits
- Calculate Area/Perimeter
- Simple Net/R
- Fix Offgrid
- Sky View
- Flip Within BBox
- Swap Bit Line\(V_{as}\)
- Toggle Via/CutClass
- Full Selection
- Select Net Obj
- nCopy
- Manhattan Edge (Conic)
- Create Spiral
- **Formula Plotter**
- Fill Holes
- Cut Out/Short
- Cover Fig/Net
- Grow Shapes
- Edge Grow
- Line Distance
- Sync Window View
- Copy From Background View
- Chop Array
- Inductor Pin Checker
- Create Arc Shapes
- Convert Shapes

**SKILLCAD Formula Plotter**
- Use Two Formulas
- Width (um): **0.01**
- 1st \(f(x)\)= 
- 2nd \(f(x)\)=
- x Range: **0** to **0** Step: **0.005**

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SKILLCAD Kits, Filling Holes In Shapes

SKILLCAD Fill Holes

Fill holes with:

- Width
- Area

From: [ ] to: [ ]

[OK] [Cancel] [Defaults] [Apply] [Help]
SKILLCAD Kits, Cutting Out Overlapping Shapes

SKILLCAD Kits

- Calculate Area/Perimeter
- Simple Net R
- Fix Offgrid
- Sky View
- Flip Within BBox
- Swap Bit Line/Vss
- Toggle Via CutClass
- Full Selection
- Select Net Obj
- nCopy
- Manhattan Edge (Conic)
- Create Spiral
- Formula Plotter
- Fill Holes
- Cut Out Short
- Cover Fig/Net
- Grow Shapes
- Edge Grow
- Line Distance
- Sinc Window View
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- Chop Array
- Inductor Pin Checker
- Create Arc Shapes
- Convert Shapes

SKILLCAD Cut Out Short

- Space From Existing Shapes: 1
- Min Width: 1

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SKILLCAD Kits, Cover Mask Shape

SKILLCAD Kits
- Calculate Area/Perimeter
- Simple Net
- Fix Offgrid
- Sky View
- Flip Within BBox
- Swap Bit Line/Val
- Toggle Via CutClass
- Full Selection
- Select Net Obj
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- Manhattan Edge (Conic)
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- Edge Grow
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- Sync Window View
- Copy From Background View
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- Inductor Pin Checker
- Create Arc Shapes
- Convert Shapes

SKILLCAD Cover Mask Shape

Cover By Layer Name: Same
Layer Purpose: Same
Trace Shape/Net to Level: 32
Size By: 0

Selected TopLevel Shapes and Instances (No Trace)
Trace Clicked Shape
Trace Selected Shapes
Trace Clicked Net
Trace Selected Nets

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SKILLCAD Kits, Growing Shapes From Existing Shapes

SKILLCAD Grow Shapes

Template: 

Selected Reference: Shape DBox Layer: 

Layers To Be Created: 

Dist To Reference: 

Inertium: 

Outerium: 

Shape Setting List:

Create Group

Apply Cancel Help
SKILLCAD Kits, Growing Shapes From Existing Edges

SKILLCAD EDGE GROW

Side Num.: 1
Order Num.: A11
Grow Mode: Outer
Side Width: 1
Side Spacing: 1

Update
Hide
Cancel
Help

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SKILLCAD Kits, Measuring Linear Distance

Measure and display the linear distance across an object, or objects.
SKILLCAD Kits, Syncing Window Views

SKILLCAD Kits
- Calculate Area Perimeter
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- Flip Within BBox
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- Toggle Via CutClass
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- **Sync Window View**
- Copy From Background View
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- Convert Shapes

SKILLCAD Syno Window View

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SKILLCAD Topical Guide 98
SKILLCAD Kits, Copying From A Background View
SKILLCAD Kits, Chopping An Existing Array

SKILLCAD CHOP ARRAY

- Region By: Polygon, Rectangle, Shape
- Division Area: Include, Overlap, Remove edge, Keep edge
- Direction: Inside, Outside
- Action: Remove, Divide Only, Replace Master
- Replace To: Lib, Cell, View
- Snap Mode: orthogonal
- Hierarchy: 1, Lift Up Shapes, Save As Cell

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SKILLCAD Kits, Creating Arc Shapes

SKILLCAD Arc Shapes

Template: 

Layer: 

Shape Type: Arc90

Radius (mm) (r): 10

Space (sp1): 1

Space (sp2): 1

Width (w): 1

No. of Tracks: 1

Extension (ext): 1

Rotate: 0°

Create Group

Create Arc Shapes

Kits

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SKILLCAD Kits, Converting Objects

SKILLCAD Kits, Converting Objects

SKILLCAD Kits

- Calculate Area Perimeter
- Simple Net R
- Fix Ofgrid
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- Flip Within BBox
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- Toggle Via CutClass
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- Select Net Obj
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- Cut Out Short
- Cover Fig/Net
- Grow Shapes
- Edge Grow
- Line Distance
- Sync Window View
- Copy From Background View
- Chop Array
- Inductor Pin Checker
- Create Arc Shapes

Convert Shapes

SKILLCAD Convert Object

- Polygon->Path
- Path->Polygon
- Path->PathSeg
- Polygon->PathSeg

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SKILLCAD Track Functions

- Nano Track Router
- Transition Connector
- View Patterns
- Push Bus To Tracks
- Fill Via By Click
- Fill Via By Box (Same Net)

SKILLCAD Track Functions

- Nano Track Router

Use Existing Track
- Reverse Bus Order
- Adj Via Enc To Match Wdth

Start With Via From:
- End With Via To:

Number of Wires: 1
Space(Tracks): 1
Layer: METAL 2
Group: ALL
Pattern: m2_core
Width: 0.4

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SKILLCAD Track Transition Connector

SKILLCAD Track Functions
- Nano Track Router
- Transition Connector
- View Patterns
- Push Bus To Tracks
- Fill Via By Click
- Fill Via By Box (Same Net)

Track Connect
- Connect Order: 
  - Same
  - Reverse
  - By netName
  - By Label/Pin
- Transition Layer Pattern: Use Exist
- Space(Tracks): 1
- Down to Hierarchy Level: 32
- Extend Bus (To The Transition Region)
SKILLCAD View Track Patterns

SKILLCAD Track Functions
- Nano Track Router
- Transition Connector
- View Patterns
- Push Bus To Tracks
- Fill Via By Click
- Fill Via By Box (Same Net)

SKILLCAD View Track Pattern

<table>
<thead>
<tr>
<th>Group</th>
<th>Layer</th>
<th>Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
<td>METAL4 drawing</td>
<td></td>
</tr>
<tr>
<td>core</td>
<td>METAL3 drawing</td>
<td></td>
</tr>
<tr>
<td>mem</td>
<td>METAL2 drawing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>METAL1 drawing</td>
<td></td>
</tr>
</tbody>
</table>

Show: Pattern Name, Width
Clear Tracks, Push To Tracks

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SKILLCAD Pushing Bus Metals To The Track Patterns

Push bus metals to the track patterns.
SKILLCAD Click To Fill Metal Overlaps With Vias

Fill metal overlaps with vias by clicking on the overlap.
Fill metal overlaps on the same nets, with vias, in a rectangular region.
SKILLCAD Setup Technology Library

- Set Up...
- Preferences...
- Show SKILLCAD Icons
- SKILLCAD Plus
- MultiColor Functions
- uniVia
- Stretch Via...
- Seg jumper...
- SegEditor...
- Free Jumper
- ShieldBus
- Bus Joint...
- vEditor
- rSolver...
- Place
- Step Router
- Track Functions
- Layer Handler
- Get Net
- Pin Functions
- Label Functions
- Slot Path
- Fill Dummy
- Kits
- xView
- Check in License
- About...

SKILLCAD Setup Form

- Template File: _training/_seedTechFiles.txt
- Rule Category: Default
- Technology Library: techLib
- Layout Grid: 0.005
- DB Unit: 1000
- Get Basic Initial Setup from Virtuoso Tech File

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SKILLCAD Setup Routing Layers

Set Up...
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Label Functions
Slot Path
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xView
Check in License
About...

Specifying Metal/Via layers, the thickness and the dielectric constant of each level.

Number of Routing Layers: 6
Thickness: 0.6
Dielectric Const: 3.9
SKILLCAD Setup Special Metals

Special Metals are not for signal or power routing, such as MIMCAP metal.

Number of Special Metals:
SKILLCAD Setup LVS Labels, Pin Layers

Set Up...
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SegEditor...
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About...

Template File: _training_/skdTechFile.txt
Rule Category: Default
Steps: Tech Layers Equivalent Layers Rules Keepouts Cost Slot Compile

General Purpose Label Layer: TEXT drawing
Default Pin Label Type: Text Display Label
METAL1 drawing: METAL1 pin
METAL2 drawing: METAL2 pin
METAL3 drawing: METAL3 pin
METAL4 drawing: METAL4 pin
METAL5 drawing: METAL5 pin
METAL6 drawing: METAL6 pin

LVS Label Layer
Shape Pin Layer

Close Help
SKILLCAD Setup Base Layers

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SKILLCAD Topical Guide 114
SKILLCAD Setup Equivalent Layers

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SKILLCAD Setup Form

[Diagrams and SKILLCAD interface screenshots]
SKILLCAD Setup Individual Metal Layer Rules

SKILLCAD Setup Form

- Template File: _training/_acdTechFile.txt
- Rule Category: Default
- Minimum Width (µm): 0.22
- Minimum Area (µm²): 0.202
- Resistance (Ω/µm): 0.3
- Advanced EM Rule: 0.5:1:1:0.5:2:5:1
- Current Density (A/µm²): 1
- "METAL1 drawing" Spacing Rules: Use Multiple Colors
- Name Of Colors: [ ]
- Color Characters: [ ]
- Wire Pattern File: [ ]

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SKILLCAD Topical Guide 118
SKILLCAD Setup Wire Configuration Rules (Nano Router)
SKILLCAD Setup Metal And Via Keepout Regions

Set Up...
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SKILLCAD Topical Guide 121
SKILLCAD Define Metal Direction And Via Costs

Set Up...
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Get Net
Pin Functions
Label Functions
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About...

Recommendations for a good route result:
1. Set the cost of non-preferred direction 1.2 times bigger than that of preferred direction.
2. Set the cost of a via layer 1.2 times bigger than cost of non-preferred direction of the via metal.
3. Avoid setting layer cost to 0.
SKILLCAD Setup Metal Slotting Parameters

Set Up...
Preferences...
Show SKILLCAD Icons
SKILLCAD Plus
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Stretch Via...
SegJumper...
SegEditor...
Free Jumper
ShieldBus
Bus Joint...
vEditor
rSolver...
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Track Functions
Layer Handler
Get Net
Pin Functions
Label Functions
Slot Path
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SKILLCAD Compiling The Setup File

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SegEditor...
Free Jumper
ShieldBus
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Step Router
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Label Functions
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Check in License
About...

Please:
1) Check the rules
2) Save the rules to a Template File
3) Load the saved file — and you are ready to use the tool
4) Click the "?” at the top left to learn how to auto load the rule files.

Template File: _training_/modTechFile.txt
Rule Category: Default
Customize the functions that appear on the icon bar.
SKILLCAD Setting Up User Preferences

Set Up
- Preferences...
  - Show SKILLCAD Icons
  - SKILLCAD Plus
  - MultiColor Functions
  - uniVia
  - Stretch Via...
  - SegJumper...
  - SegEditor...
  - Free Jumper
  - ShieldBus
  - Bus Joint...
  - vEditor
  - rSolver...
  - Place
  - Step Router
  - Track Functions
  - Layer Handler
    - Get Net
    - Pin Functions
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    - Slot Path
    - Fill Dummy
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    - xView
  - Check in License
  - About...

SKILLCAD User Preferences

Template: [home/jante/.sdcenv.techi.it]

Check the box to turn off the pop up dialog on that event:
- 001, Non-Preferred Dir routing Violation
- 002, Via/Bus Space Violation
- 003, Unable to Finish Route
- 004, Unable to connect to the ending layer
- 005, Malformed BusPath
- 006, (Matched) Path/Bus self-intersecting
- 007, Non-orthogonal Routing
- 008, The filled flat uniVias are saved to a cell

Set SKILLCAD Command Forms Position
- Form Left Side at: 10
- Form Top Side at: 400

Hide SKILLCAD Tool Bar
- Customize Icon Bar
- Place On: Left, Top, Right, Bottom

Set Bindkeys 1,2,3... for SegJumper
- Probe net with color: cycle
- Scratch Library: Current Library
- Use Past/Seg

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Type \_skdCBGui\() on the command line in the CIW.

Click on Open SKILLCAD DRC Viewer.

This bring up the SKILLCAD Fill Via in DRC Results form.

This brings up the SKILLCAD DRC Viewer form.
SKILLCAD Align Instance Pins to Neighbor

SKILLCAD Pin Functions:
- Pin Place/Browser
- Align Inst/Pins To Neighbor
- Align Inst/Pins To Top
- Quick Label/Pin
- Promote Pins
- Create Pin From Label
- Create Pin From Coord
- Expand Pin To Shape
- Align/Distribute Pins
- Change Pin Size/Label
- Rename Pin/Label
- Cover Pins By Metal Drawing

SKILLCAD Align Pins:
- Get Pin Inst:
- Get Ref Insts:
- Match Reference Pin: □ Layer □ Size
- Pin Placement Mode: At prBoundary Face To Face
  □ At prBoundary Evenly Distribute
  □ Under Reference Pins
- □ Work On Selected Softblock Pins
  □ Highlight
- Side: □ All □ Top □ Bottom □ Left □ Right

Apply □ Cancel □ Help

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SKILLCAD Align Instance Pins to Top

SKILLCAD Pin Functions:
- Pin Placer/Browser
- Align Inst/Pins To Neighbor
- Align Inst/Pins To Top
- Quick Label_Pin
- Promote Pins
- Create Pin from Label
- Create Pin From Coord
- Expand Pin To Shape
- Align/Distribute Pins
- Change Pin Size/Layer
- Rename Pin/Label
- Cover Pins By Metal Drawing

SKILLCAD Align Pins To Top:
- Match Top Pins: ✓ Layer ✓ Size
- Pin Place Mode:
  - At pr Boundary Face To Face
  - At pr Boundary Evenly Distribute
  - Under Top Pins
- Work On Selected Softblock Pins: ✓ Highlight
- Side: ✓ All ✓ Top ✓ Bottom ✓ Left ✓ Right

Apply Cancel Help
How To Use The SKILLCAD Topical Guide

The SKILLCAD Topical Guide was developed to help designers to know where to find the SKILLCAD commands to complete common layout tasks and provide training materials that teach how to use the commands. The topics, or tasks, in the Topical Guide are grouped alphabetically under main headings such as “Arrays”, “Buses”, “Calculations and measurements”, etc. Each topic is linked to a page containing links for all the available training materials for that command (PDF, Word Document or PowerPoint Presentation, and video). These are the same training materials available from the SKILLCAD Index Guide. A link on the first page of the Topical Guide will call the Index Guide. Both guides are available to help a designer know how to use the SKILLCAD functions.

To use the Topical Guide, just click on the topic that describes what you want to do. The topic link will call the page showing the command name, where the command is found on the SKILLCAD tool bar or menu, and what the next level menu or form contains. This page also contains links to the training materials and video. For commands that have a PowerPoint document, the PowerPoint presentation can be downloaded and run as a PowerPoint slide show. This will demonstrate the command, using an easy to follow, step by step approach. The section on SKILLCAD Setup contains training materials for setting up the technology file, used by the SKILLCAD tools.

Example: Select the topic “Connecting Buses” in the Topical Guide. This will take you to the page showing how to access the command, as well as links to the training materials.