Getting Confidence
in Your Design Early!

跨界整合 翻轉設計

Graser
User
Conference

Taipei

2016
7.14

OrCAD Capture 新功能與強化工具應用

Addi Lin/ Graser

14 / July / 2016

Agenda

- OrCAD® Capture/CIS V17.2-2016 Release

- GraserWARE FrontEnd PACK Application

OrCAD Capture/CIS V17.2 – 2016 Release
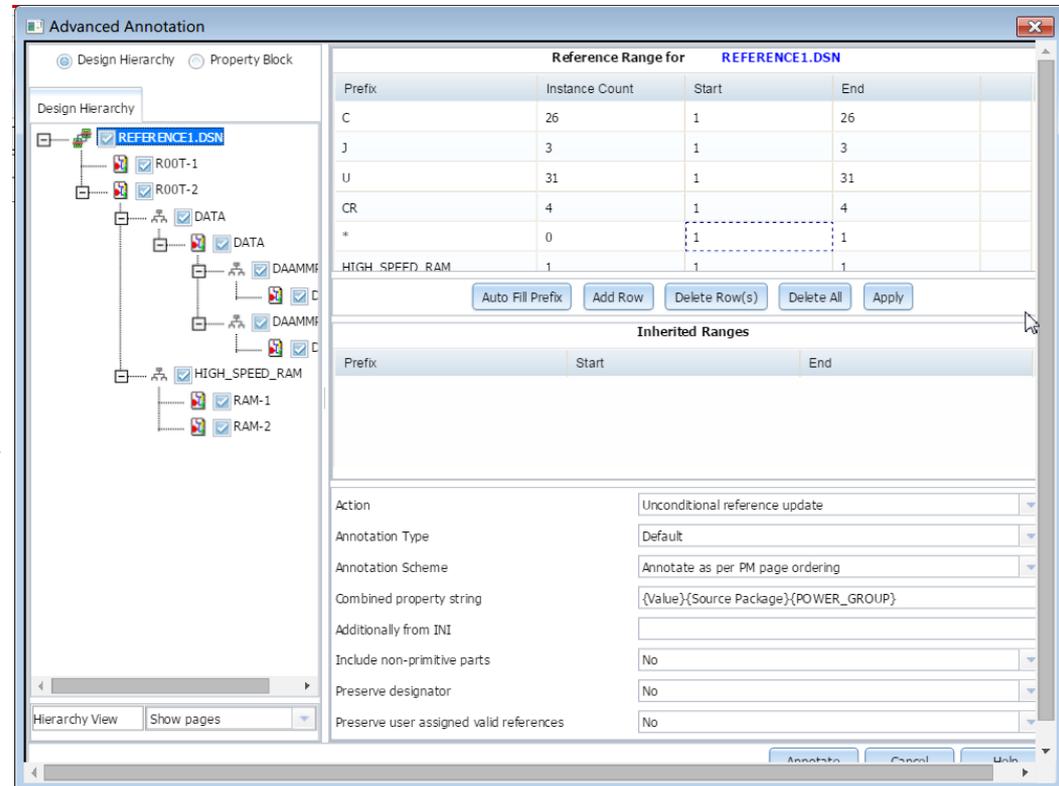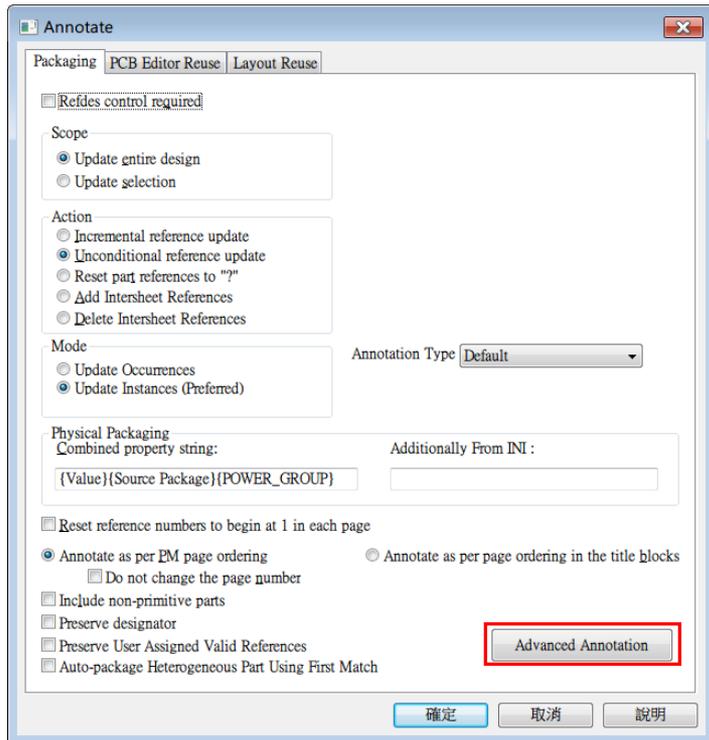
- ➢ Advanced Annotate
- ➢ Design Difference Viewer
- ➢ Demo Design
- ➢ Export PDF
- ➢ Export – Import XML
- ➢ Export ISCF
- ➢ Extended Preferences Setup
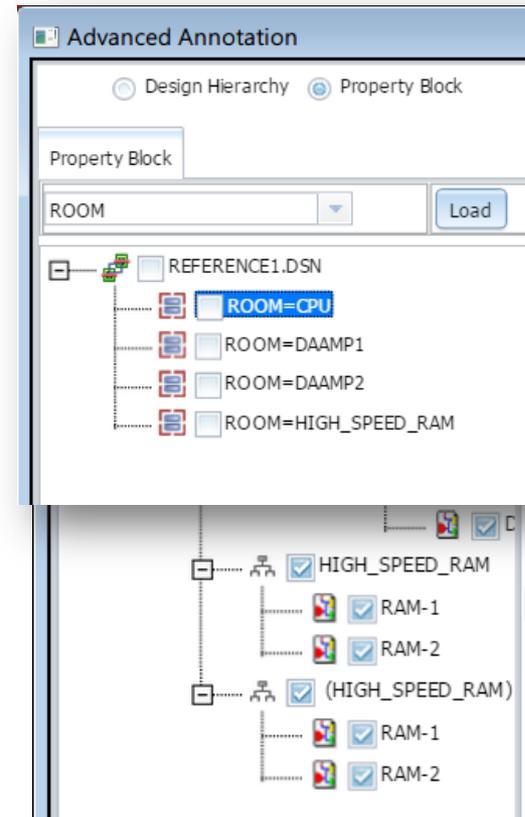
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Advanced Annotation

You can annotate multiple schematic pages at a time.

Advanced Annotation

- Design/Hierarchical Block/Page/Property Block level REFDES control

- REFDES Control –
  - Prefix based (R ,U..)
  - Generic (support of *)

- Hierarchical support of specified Ranges
  - Inherited from the Parent
  - Closest assigned range wins

- Auto Instance count support
  - To help in deciding range span

- Auto reference follows the specified range for Blocks/Pages
  - Place part
  - Copy – Paste part

Graphical Design Difference Viewer

You can view logical and graphical differences between two designs, schematic folders, or schematic pages .

Supported Browser
- Chrome (v45 +)
  - recommended
- IE (11 & above)
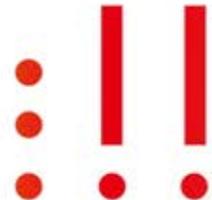
Graphical Design Difference Viewer

- Detailed HTML Difference View
  - An interactive self-contained HTML file
    - Contains interactive graphical view of designs
    - Contains interactive textual view of differences with hierarchical categories
    - Cross-probing from text view to graphical view
  - Advantages of interactive self-contained HTML file
    - Open in any standard web browser
    - Share with others
    - Offline comparison/review
    - Difference file for version management systems
    - HTML file generation will require license. File viewing will not require any license

- Differencing Engine
  - Logical – shows only those differences which result into circuit behavior change
  - Detailed – shows individual object level differences

- A powerful utility to graphically compare
  - Design vs. Design
    - compare 2 designs for all their schematics and pages
  - Schematic vs. Schematic
    - Compare 2 schematics of same or different designs for all their pages
  - Page vs. Page
    - Compare 2 pages of same or different designs/schematics

- Summary View
  - Shows logical differences count
  - Show total differences count
  - The search criteria with object name vs. id can be quickly changed to show updated results
  - Allows user to open the detailed report of his choice

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Graphical Design Difference Viewer

Difference Categories

Logical Mode

- **Components Differences**
  - Pin Difference
    - Property Difference
  - Property Difference
  - Occurrence Difference
    - Property Difference

- **Pin Net connectivity Differences**
- **Flat Nets Differences**
  - Pin Difference
  - Property Difference
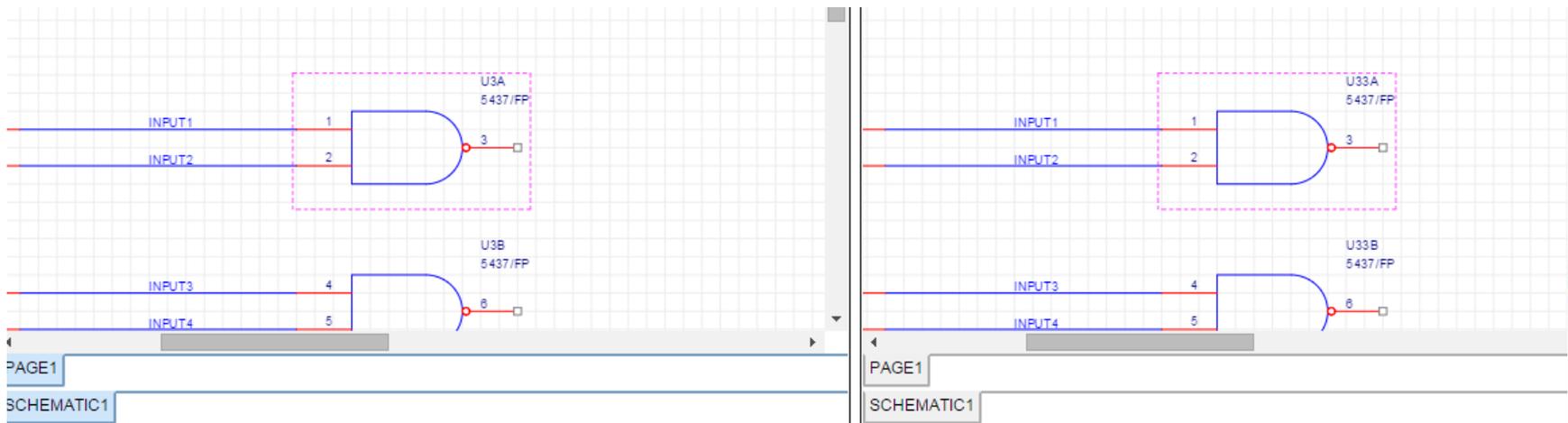
S.No.	++ + - -- « < > » ☰	design_v1.dsn	design_v2.DSN	Information
	− **Components Difference**			**Number of differences: 3**
1	+ U2	✓ Part Reference=U2	✓ Part Reference=U22	Property Difference(1)
2	+ U3A	✓ Part Reference=U3A	✓ Part Reference=U33A	Property Difference(1)
3	+ U3B	✓ Part Reference=U3B	✓ Part Reference=U33B	Property Difference(1)
	+ **FlatNets Difference**			**Number of differences: 6**

Graphical Design Difference Viewer

Difference Categories

Detailed Mode

- Schematic Difference
  - PAGE differences
    - Components Difference
      - Property Difference
      - Pin Difference
        - Property Difference
      - Occurrence Difference
        - Property Difference
    - Wire Differences
      - Property Difference
    - Port Differences
      - Property Difference
    - Off-Page Differences
      - Property Difference
    - Title block/Buses Differences

Graphical Design Difference Viewer

Other Features

- For easy navigation, breadcrumbs with drop-down
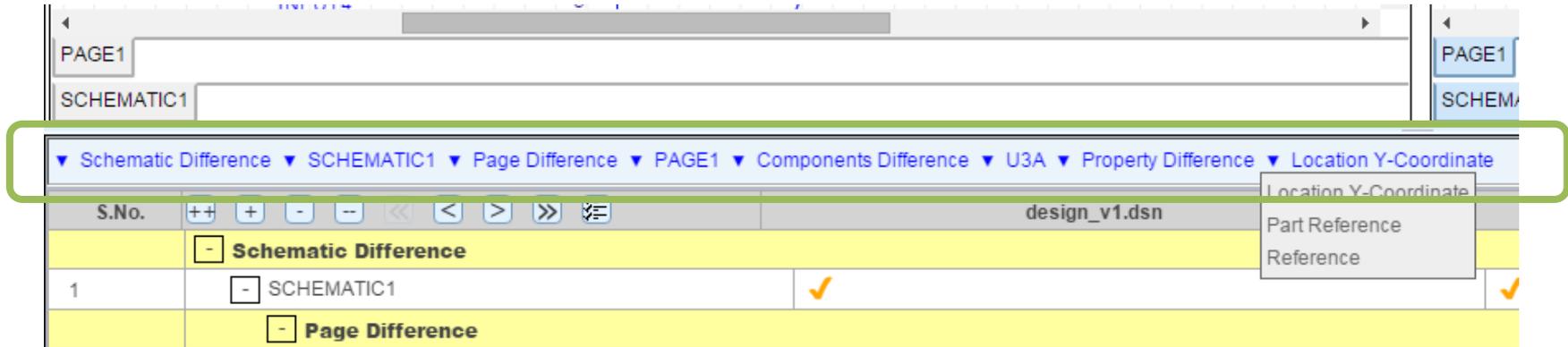
Category filters for hiding and un-hiding specific categories
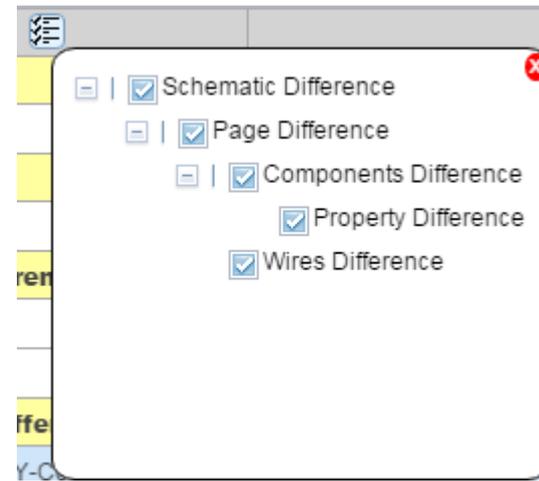
Demo Design

Cadence® hierarchy contains more than 150 demo designs to help you understand OrCAD® Capture, Capture CIS, and the Capture – PSpice® Designer flow.
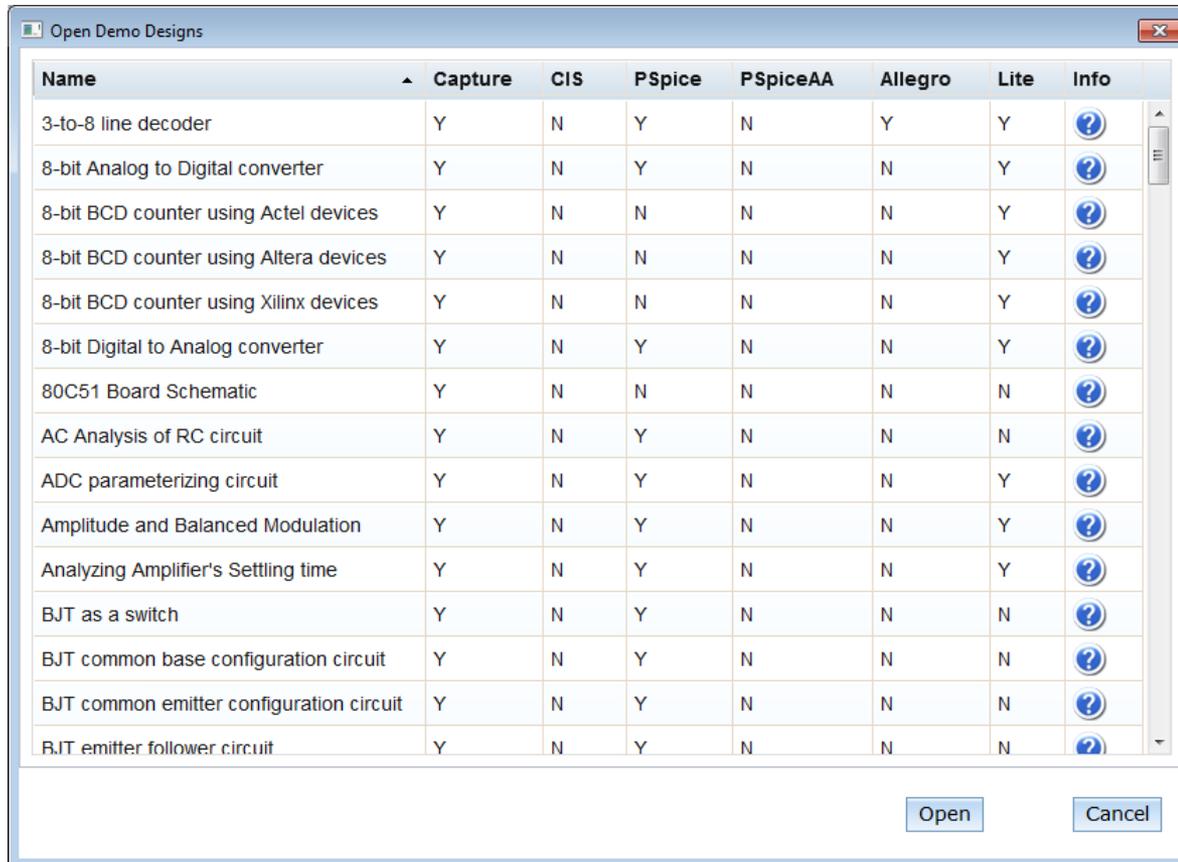
Name	Capture	CIS	PSpice	PSpiceAA	Allegro	Lite	Info
3-to-8 line decoder	Y	N	Y	N	Y	Y	?
8-bit Analog to Digital converter	Y	N	Y	N	N	Y	?
8-bit BCD counter using Actel devices	Y	N	N	N	N	Y	?
8-bit BCD counter using Altera devices	Y	N	N	N	N	Y	?
8-bit BCD counter using Xilinx devices	Y	N	N	N	N	Y	?
8-bit Digital to Analog converter	Y	N	Y	N	N	Y	?
80C51 Board Schematic	Y	N	N	N	N	N	?
AC Analysis of RC circuit	Y	N	Y	N	N	N	?
ADC parameterizing circuit	Y	N	Y	N	N	Y	?
Amplitude and Balanced Modulation	Y	N	Y	N	N	Y	?
Analyzing Amplifier's Settling time	Y	N	Y	N	N	Y	?
BJT as a switch	Y	N	Y	N	N	N	?
BJT common base configuration circuit	Y	N	Y	N	N	N	?
BJT common emitter configuration circuit	Y	N	Y	N	N	N	?
BJT emitter follower circuit	Y	N	Y	N	N	N	?

Export PDF

Export a OrCAD® Capture design as a PDF file.
— Capture Design PDF
— Capture Design Object Properties PDF
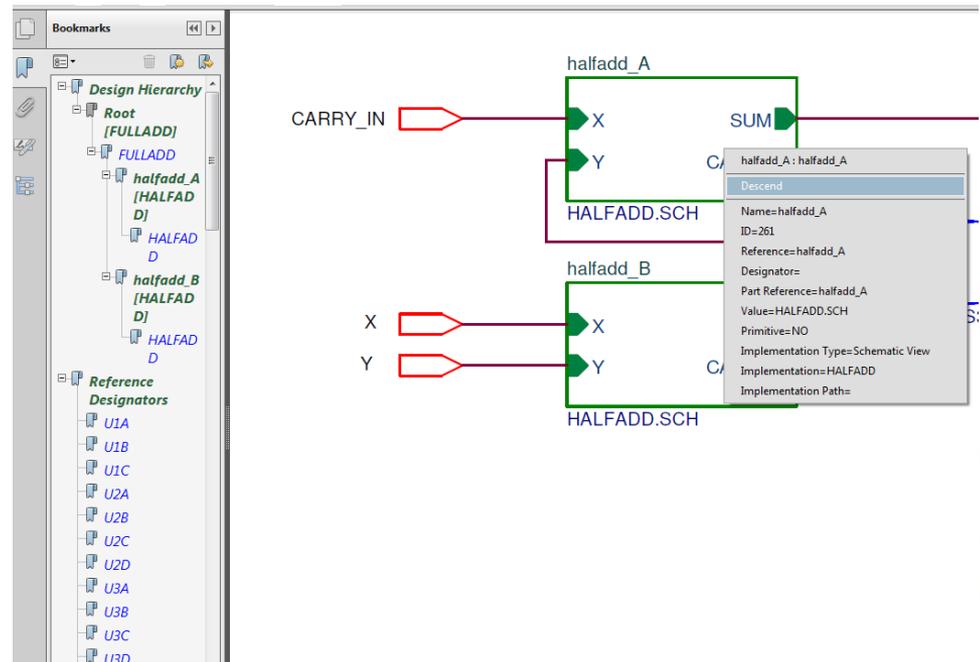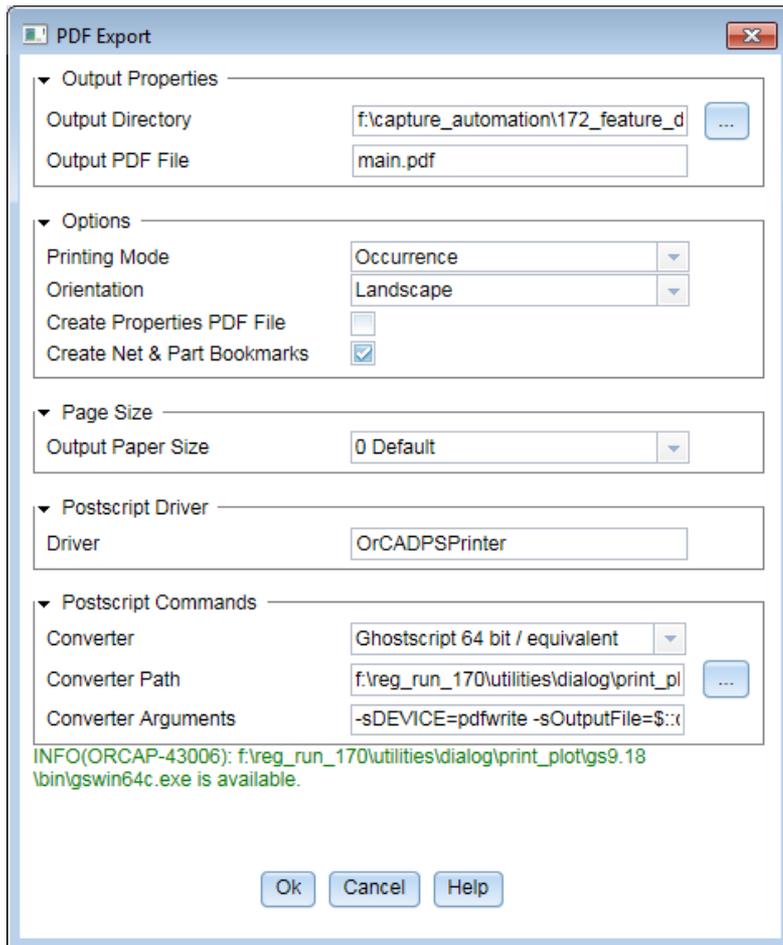
Export-Import XML

You can import an XML file as a OrCAD® Capture design, also can export Capture designs to XML format.

File=>Import=>Design XML
=>Library XML
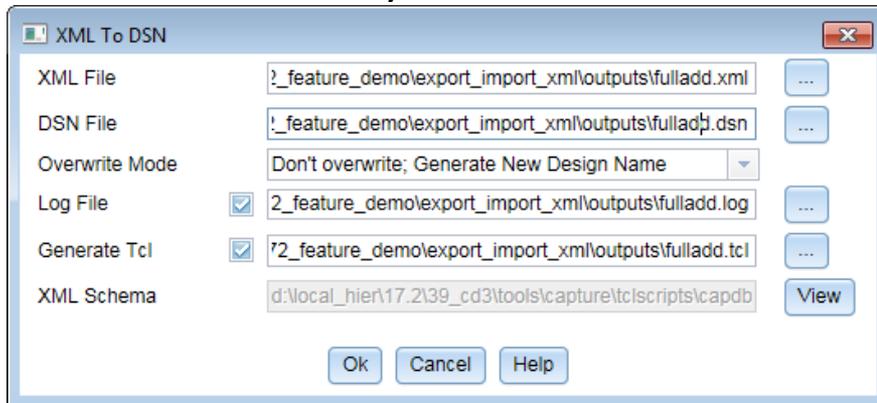
File=>Export=>Design XML
=>Library XML
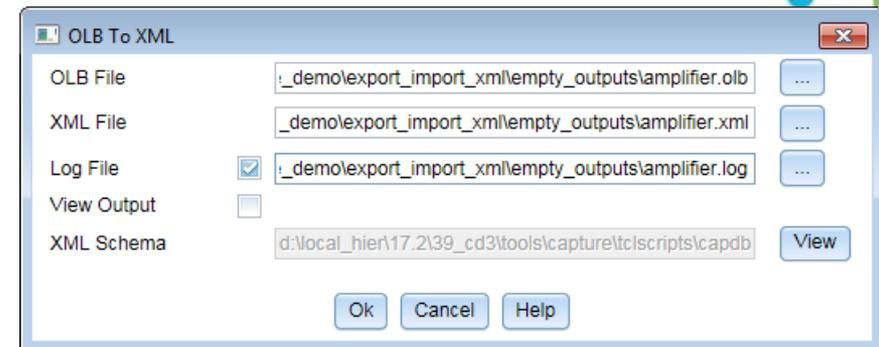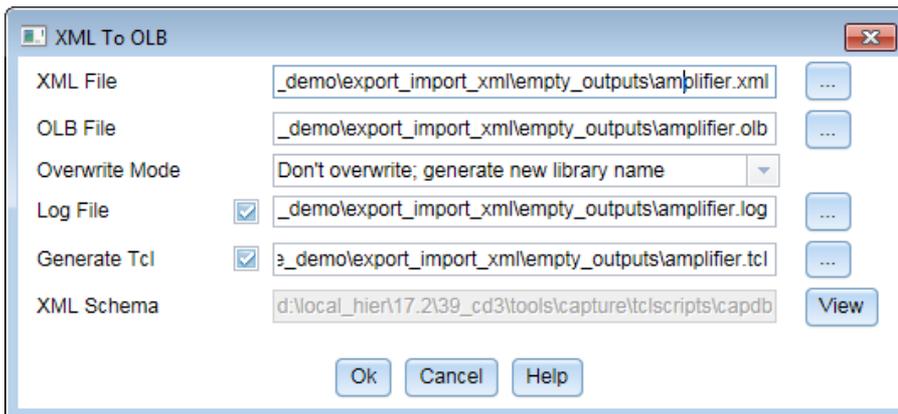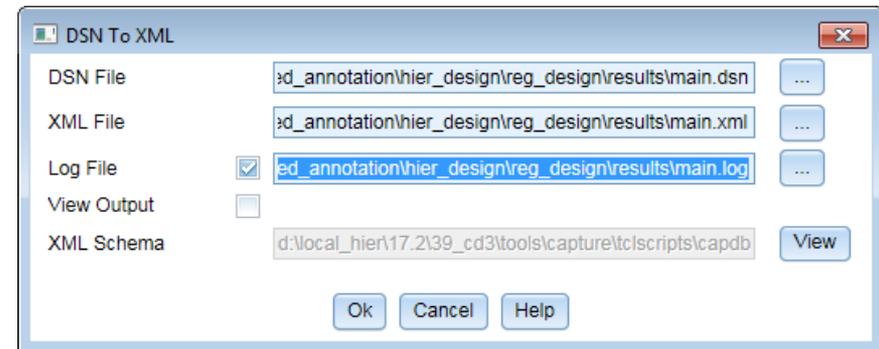
Export ISCF format

You can export part properties, pin properties, and ground nets of a OrCAD® Capture design to Intel Schematic Export Format (ISCF).

Extended Preferences setup

You can modify preferences for the following applications.

- ➢ Command Shell
- ➢ Design and Libraries
- ➢ Design Cache
- ➢ Design Rule Check (DRC)
- ➢ CIS
- ➢ NetGroup
- ➢ NetList
- ➢ Schematic
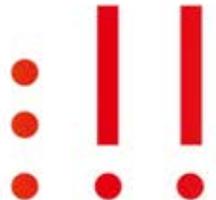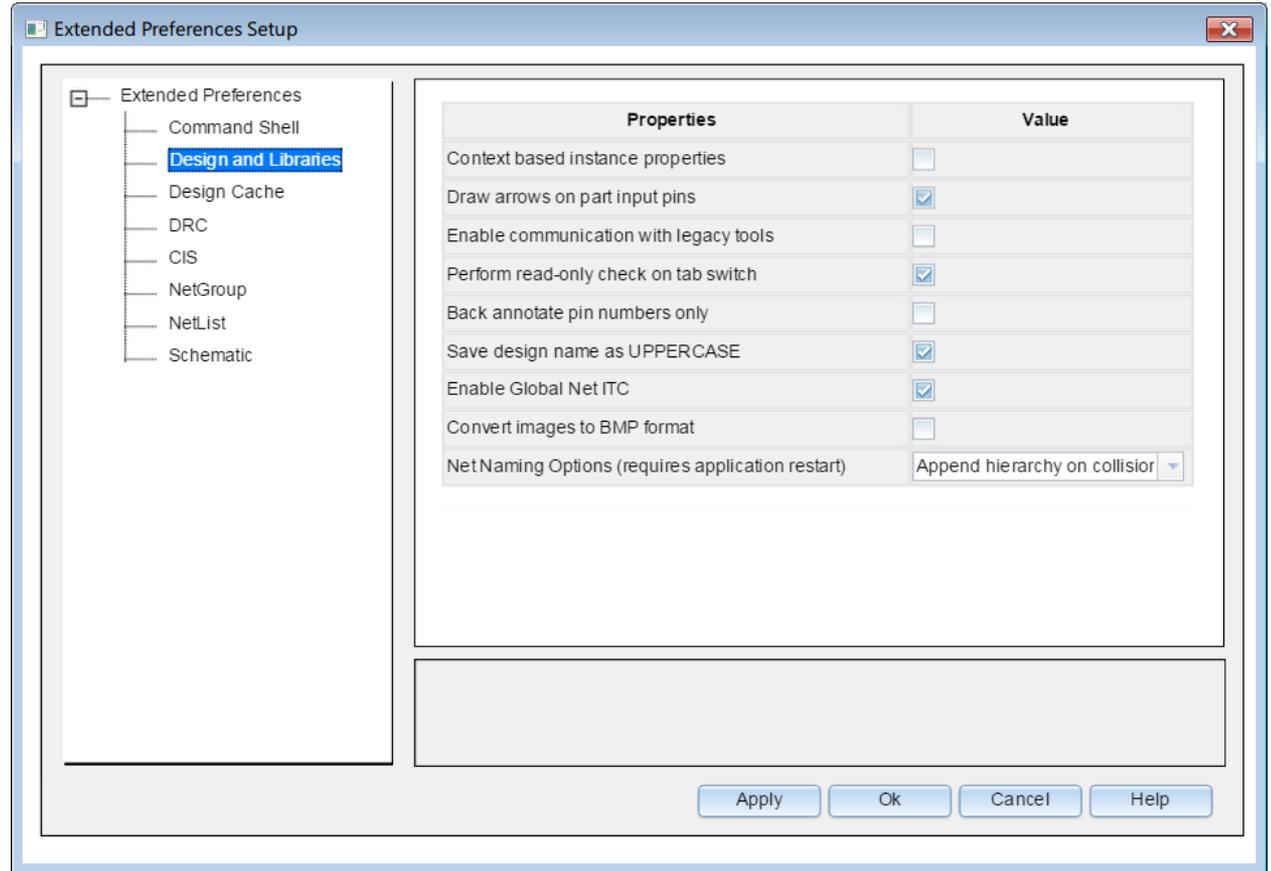
GraserWARE FrontEnd PACK Application

GraserWare FrontEnd PACK Application

➢ Schematic Edit Application

- Replace BUS Alias

- Export-Import Properties

- Occurrences to Instance Properties

- Reference Edit

- NC-Part Setting

➢ Verify & Report

- Capture Design Compare

- Part Utility

Replace BUS Alias

How to change BUS signal Name by page?

- – Manually change
- – Delete and reconnection the net
- – Global Replace for string
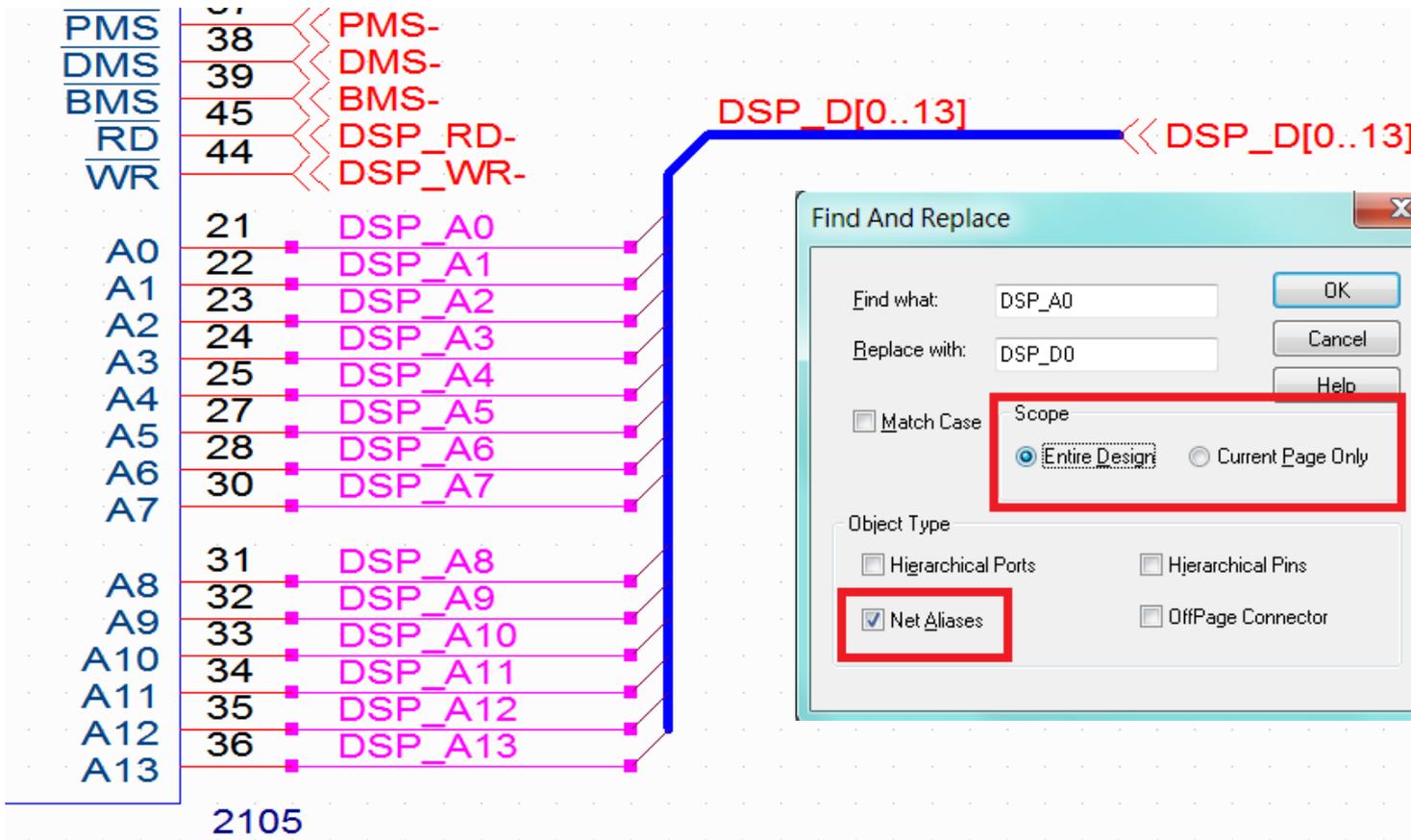
Replace BUS Alias

[GraserWARE FrontEnd PACK]-Replace Bus alias

- By Selection
- By Page
- By Design

Replace BUS Alias

[GraserWARE FrontEnd PACK]-Replace Bus alias

• RESULT
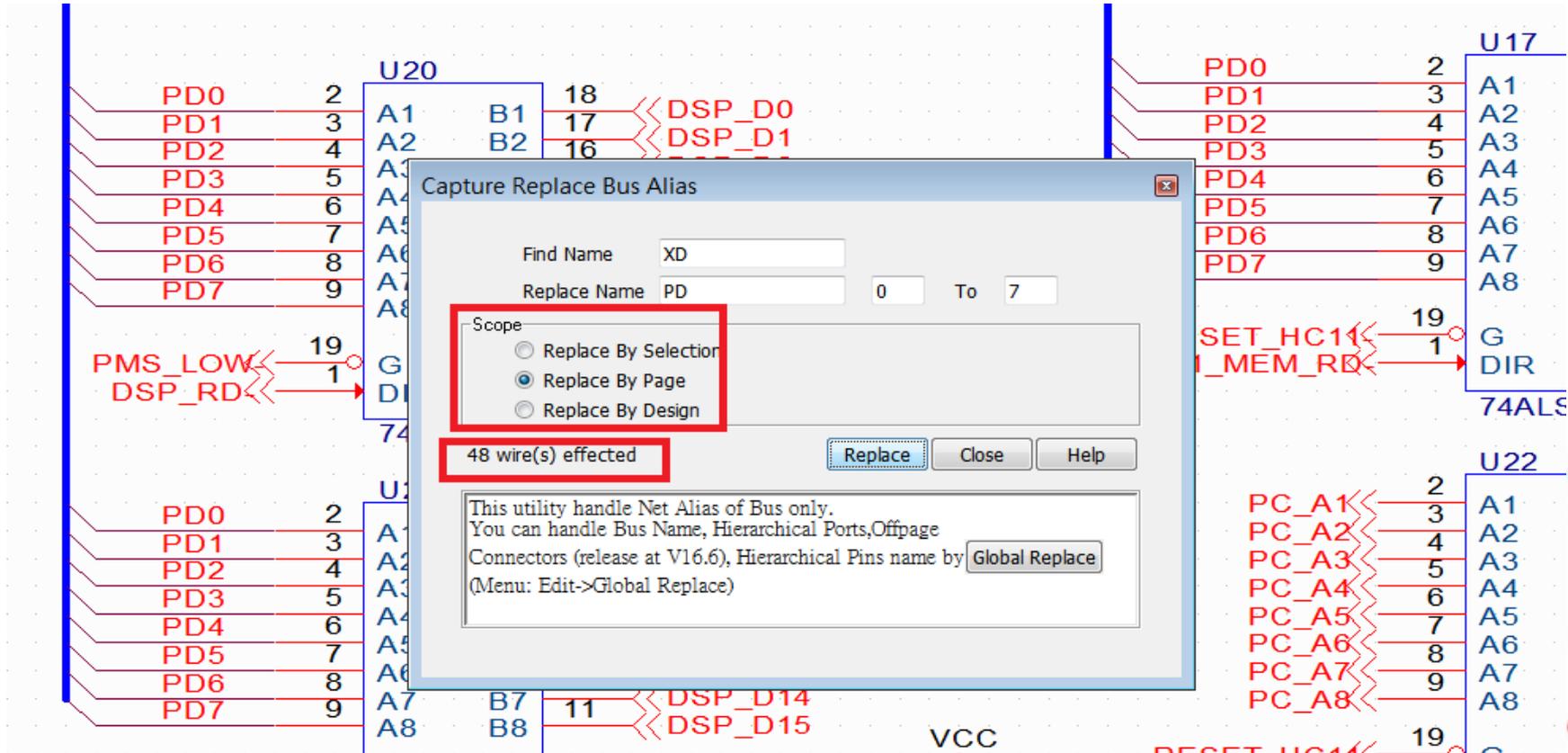
Design Properties Editor

Traditional edit properties solution - Property Editor

– Hard to find properties which you want

Design Properties Editor

[GraserWARE FrontEnd PACK] - Export Properties
— Export Design Properties to Excel file

Design Properties Editor

[GraserWARE FrontEnd PACK] – Import Properties
— Import part properties from Excel into OrCAD® Capture schematic design

Design Properties Editor

[GraserWARE FrontEnd PACK] – Export/Import Properties
— Import part properties from Excel into OrCAD® Capture schematic design

Occurrence to Instance Properties

Traditional synchronize part properties solution - Push Occ. Prop into Instance
- Synchronize the Part Reference and PCB Footprint

Occurrence to Instance Properties

[GraserWARE FrontEnd PACK] – OCC2INST

— Synchronize Parts Occurrence properties to Instance
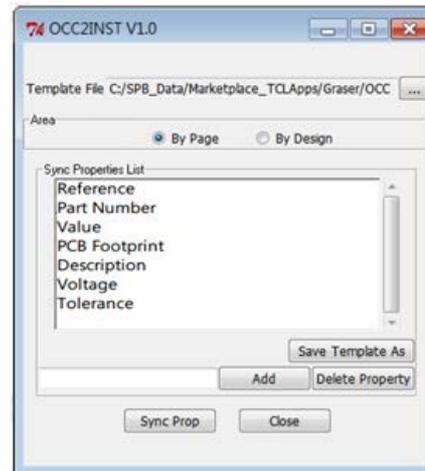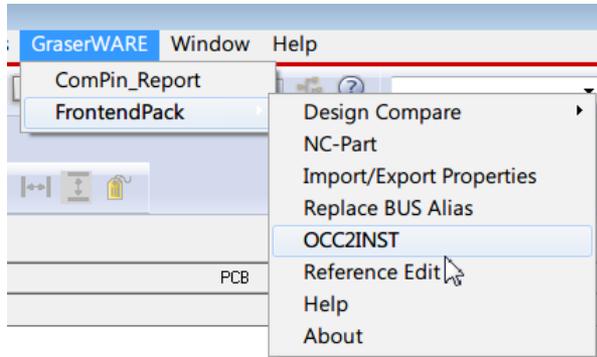
Occurrence to Instance Properties

[GraserWARE FrontEnd PACK] – OCC2INST

● RESULT

-Not only Part Reference and PCB Footprint, but also can add other part properties which you want to synchronize it.

Reference Edit

How to control part reference prefix?

Traditional

- – Change Part Reference Prefix manually
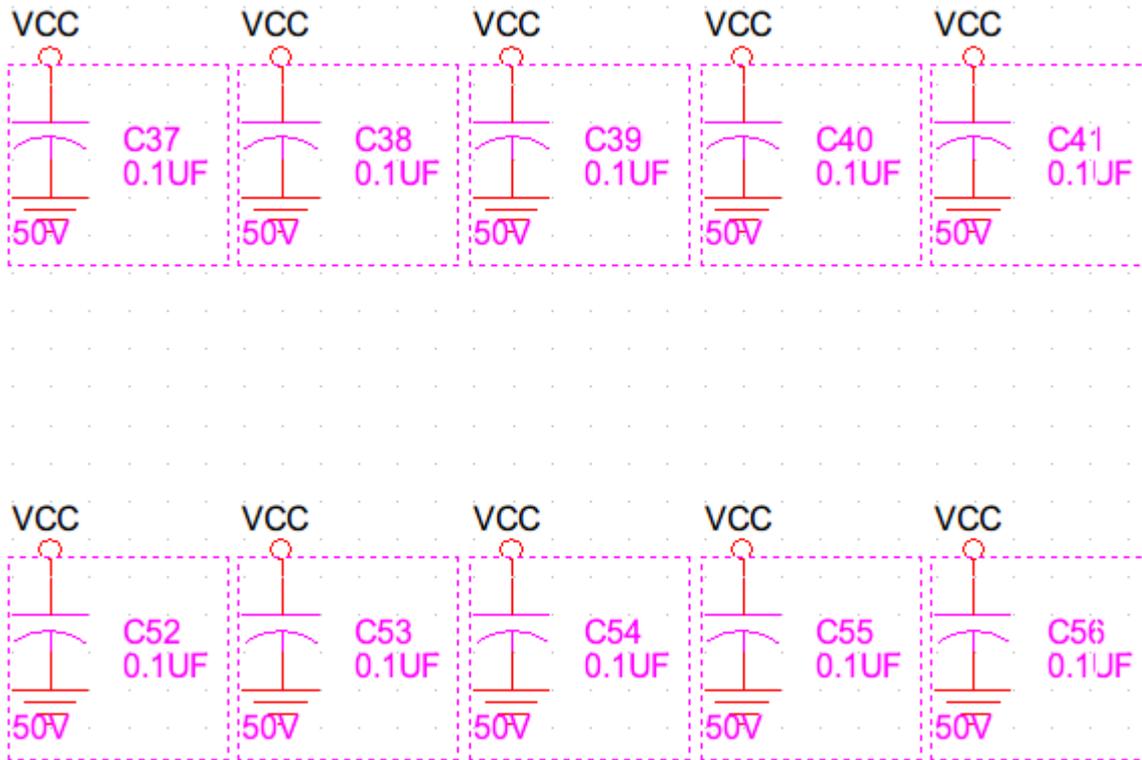
Reference Edit

[GraserWARE FrontEnd PACK] – Reference Edit

-Scope

● By Selection, Page and Design

- Modify RefDes

• Insert, Delete and Modify the Part Reference Prefix

Reference Edit

How to assign RefDes?

Traditional

- Change Part Reference manually
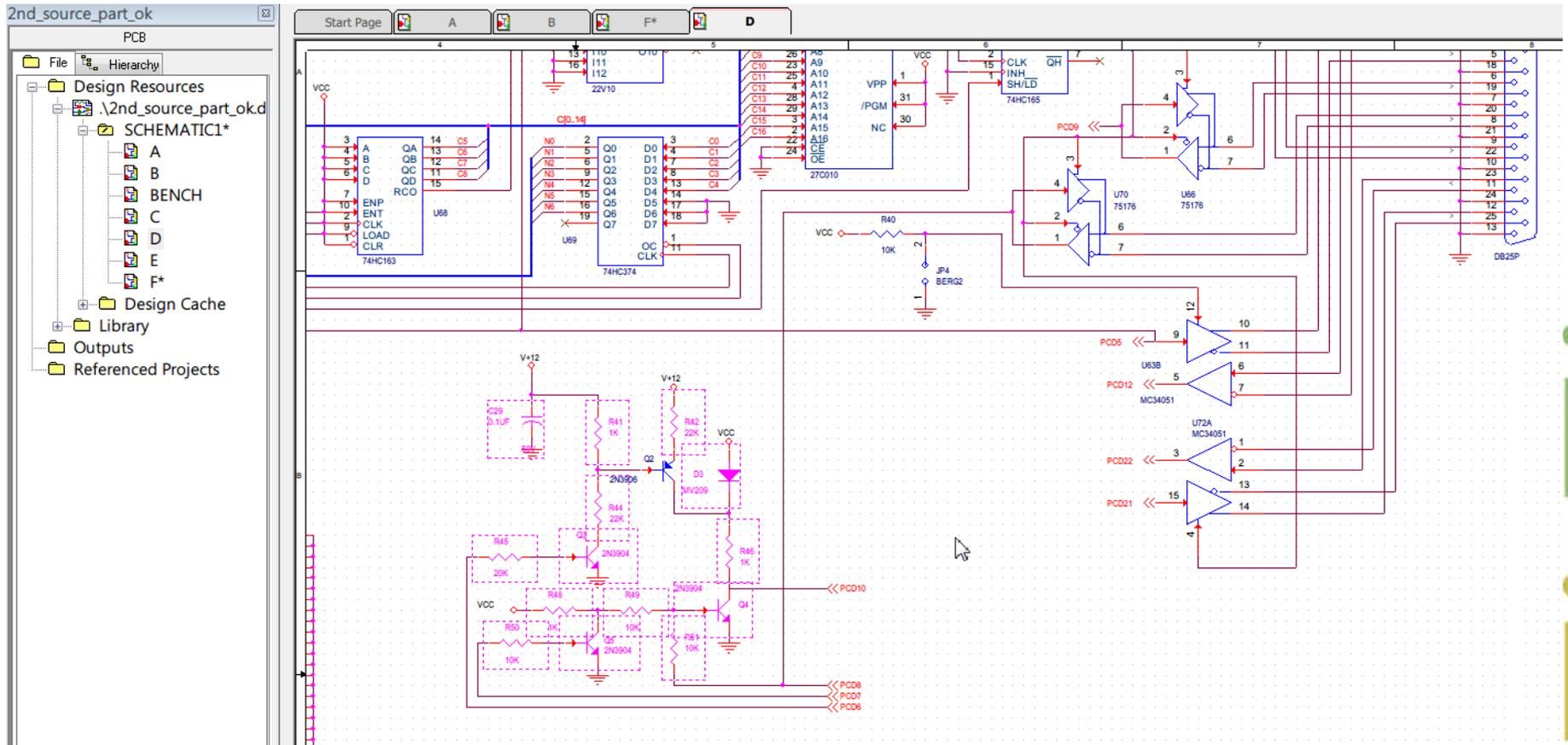
Reference Edit

[GraserWARE FrontEnd PACK] – Reference Edit
Annotate Part Reference by page or selection
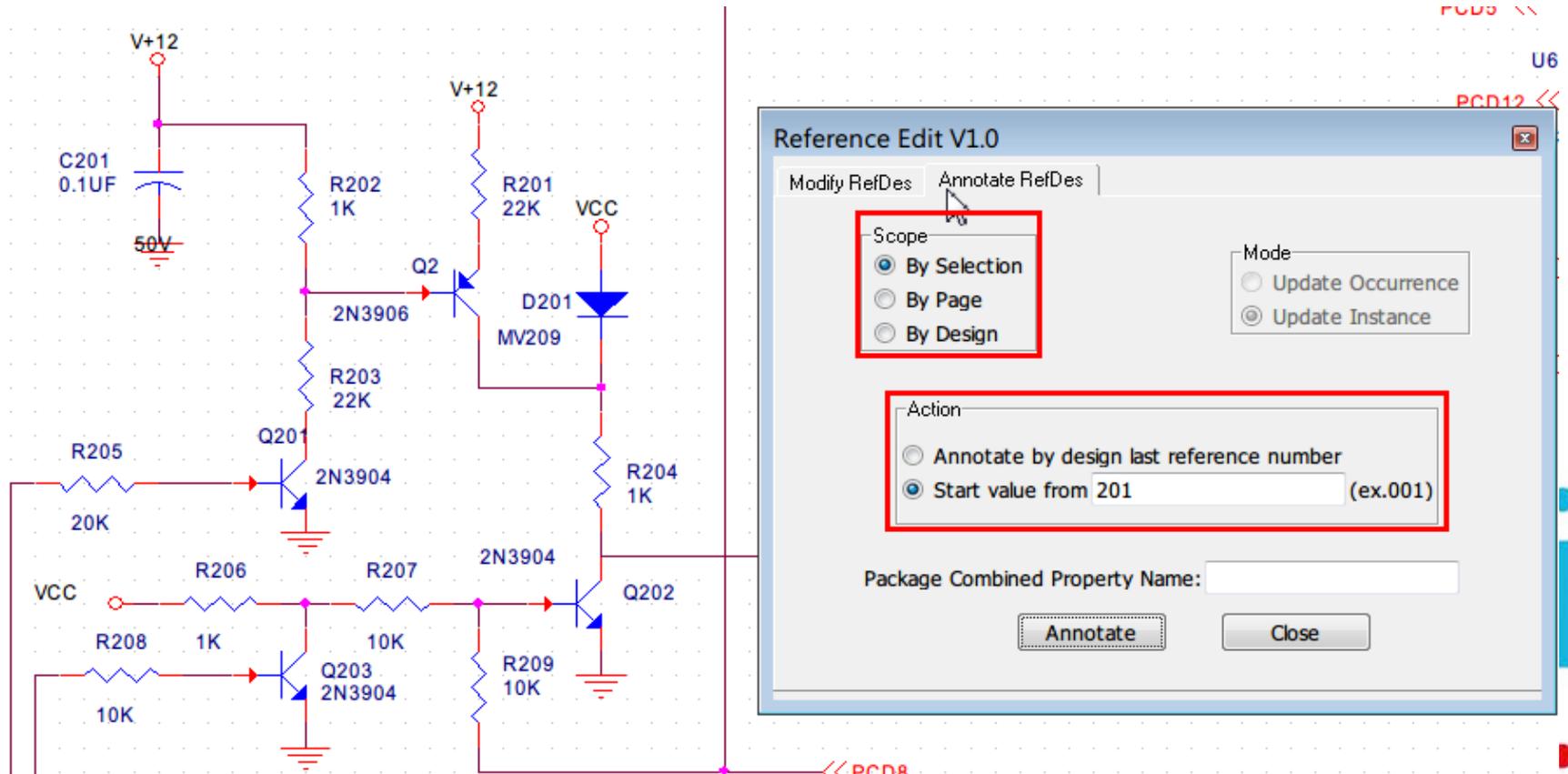
NC Part Setting

- How to set parts are not present?

Traditional

- – Add strings in Value property manually
- – Add a new part property and assign string then display on the page

NC Part Setting

[GraserWARE FrontEnd PACK] – NC Part
- Add NC string in value property
- Add BOM_IGNORE property
- Change NC part color
- New BOM Export
    - Filter NC Parts and put it on NC Parts section
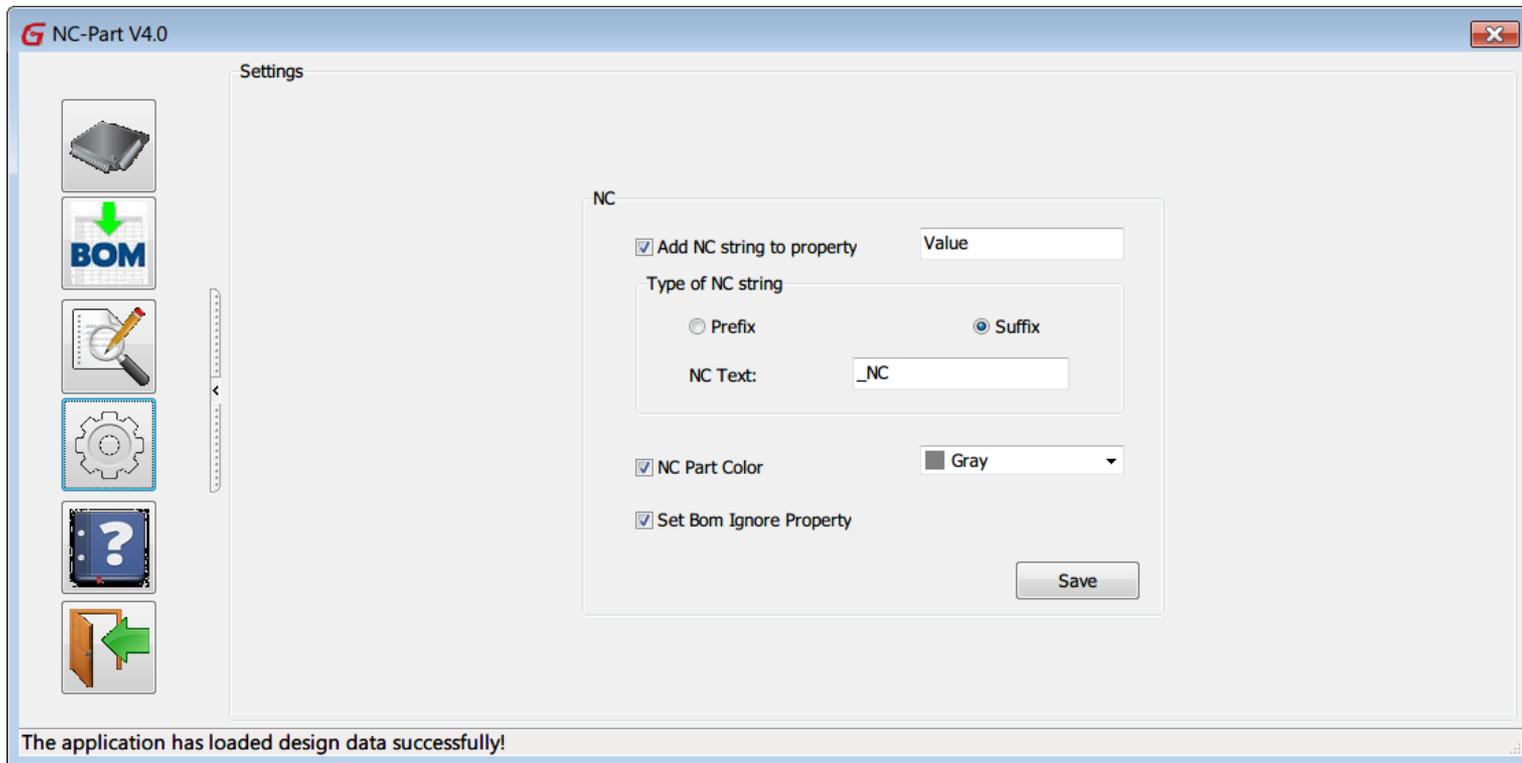
NC Part Setting

[GraserWARE FrontEnd PACK] – NC Part

— Easy to set/unset NC Part
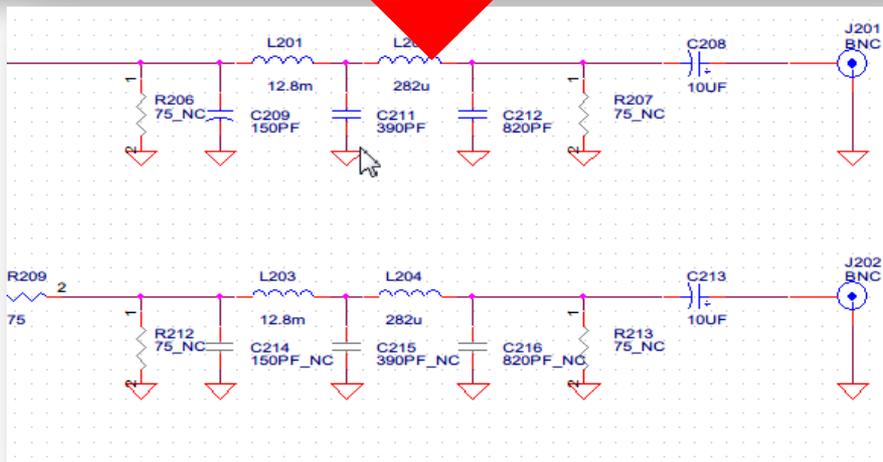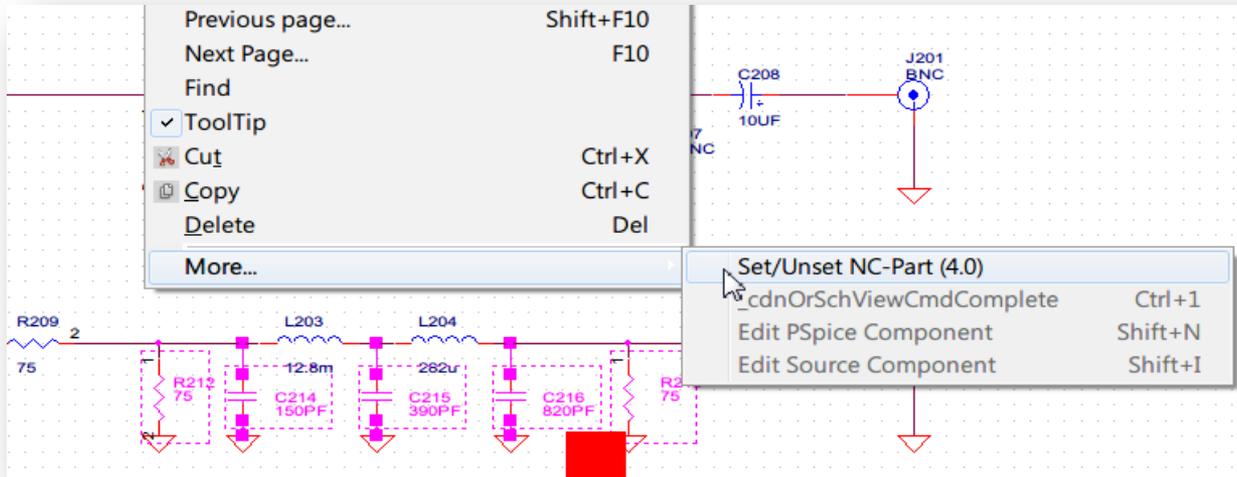
NC Part Setting

[GraserWARE FrontEnd PACK] – NC Part
 Generate BOM
— Set part properties in BOM
— Filter NC Parts and put it on NC Parts section

Compare OrCAD Capture Schematic Design

There are Design version1 and version 2
How to know the Part differences and Connection differences between 2 design?

Project Design1

Difference

Project Design 2
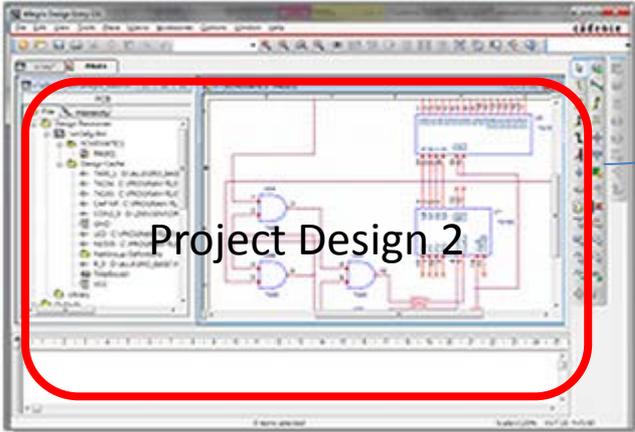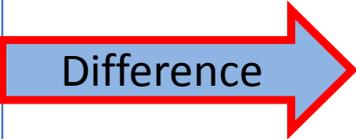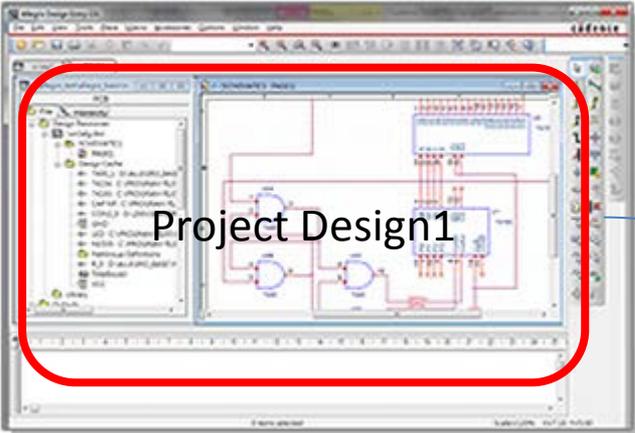
Compare Capture Schematic Design

[GraserWARE FrontEnd PACK] – Capture Design Compare

Design Comparison

— By Part

— By Net

— Part and Net
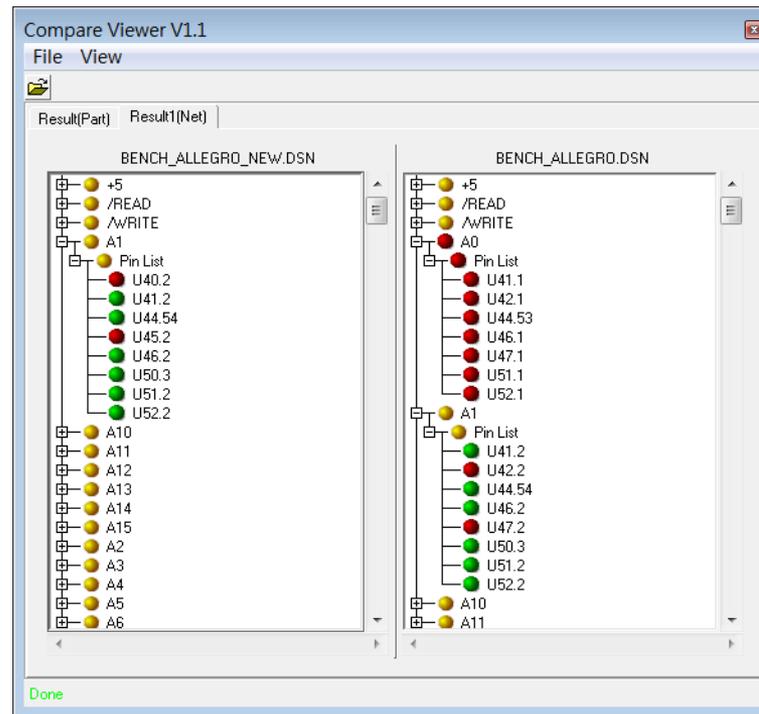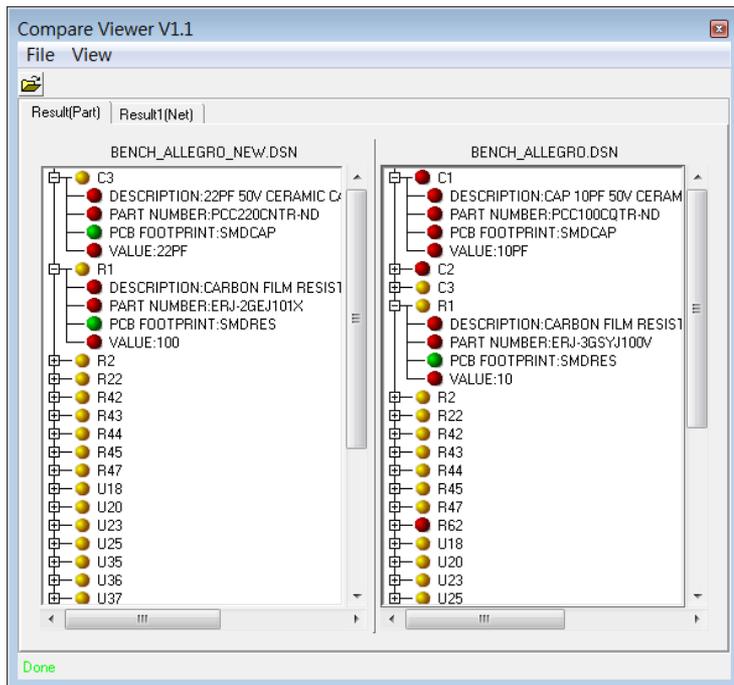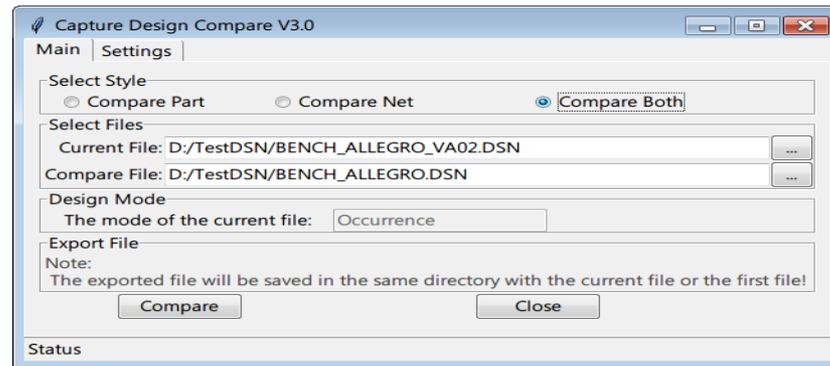
Part Information Check

[GraserWARE FrontEnd PACK] – Part Utility

Part Information Check

- Difference with CIS Database
- Part EOL or EOD
- Part Number was not found

Part Information Check

[GraserWARE FrontEnd PACK] – Part Utility

Generate BOM

— User define properties

— Generate Excel

— Skip NC Parts