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ECO Process for Cadence SiP

Product Version SPB17.2 November, 2017

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Purpose

A designer can do ECO within Cadence SiP Digital in several different ways. For example, the designer can move a cline or change the cline width. However, it is much more difficult to add or remove a pin to a BGA/LGA or a Die within an existing SiP design.

This application note will go through the flow and process needed to take a BGA with 420 pins and replace it with a component with 421 pins.

Audience

This document is intended for Cadence SiP Digital/Allegro Package Designer users who want to replace an existing component with another component that has a differing pin count.

Terms

- SiP System in Package
- BGA Ball Grid Array
- LGA Land Grid Array
- APD Allegro Package Designer
- ECO Engineering Change Order
- PCB Printed Circuit Board
- RMB Right Mouse Button

Overview

In this application note, you will learn to unplace a component from a design, and then delete the component from the parts list. Next, you will add a new component to the parts list and place the new component in the design. Finally, you will derive the net assignments.

The process flow to replace a component with another one that has a differing pin count is shown below:

- 1. Open Database
- 2. Unplace Component
- 3. Delete Component from Parts List
- 4. Add New Component to Parts List
- 5. Place Component
- 6. Derive Net Assignments

Procedure

The following steps define the basic process for replacing a package in the design where the pin count has changed.

Open Database

 Open the database by selecting File > Open (C:\project\design\2-2-2_Layer_FC_Routed.sip).

🎇 Open				×
Look in:	Design	~	G 🤌 📂 🛄 -	
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Quick access	2002-2-2_Layer_	1 de la contracisión	10/3/2017 10:35 AM	SIFTIE
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	Files of type:	Designs (*.sip;*.dps)	~	Cancel
				Help
	🗹 Change Direc	tory	II II	

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Unplace Component

- 1. Change Application Mode to General Edit. This is done by selecting **Setup > Application Mode > General Edit**.
- 2. Select the package by changing the **Find** filter to **Symbols** and selecting the package or die.



3. Then, hover over the component, **RMB**-select, and pick **Unplace component**. The part will be unplaced.



Delete Component from Parts List

1. Next, you will need to delete the part from the design. This is done by selecting **Logic > Edit Parts List**. The following dialog will display.

🙀 Parts List							- 🗆 X
Part Selection Area							
RefDes Filter: 💌		Device Fi	lter: 🗶		Sort By:	• Device	○ Refdes
Qty Device	Value	Tol	Package	Refdes			
001 BGA420			BGA420	BGA			
UUI FLIFCHIF			FLIFCHIF	DIE			
Browsers	-Part Modi	fication Ar	ea				
Schematic Components	Qty: 0	01		Pin Count:	420		
Physical Devices	Refdes: E	3GA		Value:			DDA
Physical Packages	Device: E	GA420		Tolerance:			nodity
SI Components	Class: I	0	~	Package:	BGA420		Delete
	OK	Apply	7 (Cancel	Help		

2. Select the part and select the **Delete** button as shown. Then, select **Apply** and **OK**.

Note: Make sure that the Part.txt (BGA420.txt) file has been saved when the change is made. If the file is not saved, it will reflect the previous pin count.

Add New Component to Parts List

3. Browse for and select the package or the die that you are replacing and make sure that the pin count is different.

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Part Selection Area								
RefDes Filter: 💌		Device Filt	ter: 🗶		Sort By:	• Device	○ Refdes	
Qty Device	Value	Tol	Package	Refdes				
001 FLIPCHIP			FLIPCHIP	DIE				
Browsers	-Part Modif	ication Area						
Schematic Components	Qty: 1			Pin Count:	421			_
Physical Devices	Refdes: BG	A		Value:			Add	_
Physical Packages	Device: BG	A420		Tolerance:			Modify	
SI Components	Class: IO		~	Package:	BGA420		Delete	
	OK	Apply		Cancel	Help			

Then, select the Add button. Click Apply to commit the new part."

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Place Component

1. The next step is to place the part. This is done by selecting in the menu **Place > Manually**.



Placement	– 🗆 X
Placement Placement List Advanced Settings Components by refdes Components by refdes BGA	- C × Selection filters Match: Property: Value Room: Part #: Net group: Schematic page number Place by refdes Quickview
Close Hide	Graphics Text Cancel Help

2. Place the part at 0,0 by typing \times 0 0 at the command line.

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Derive Net Assignments

- Once you have placed the part, go to the menu and select Logic > Derive Assignment. Then, drag a window around the design. This will reassign the nets to the part.
- 2. Save the design by selecting **File > Save**.

The part is replaced, with the new pin count.

Summary

In this application note, you learned to unplace a component from a design and delete it from the design. Then, you added a new component into the design, placed the new component, and derived the net assignments.

Support

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