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## **Preface**

#### **About This Guide**

Allegro® EDM Version Management Utilities User Guide introduces Library Revision Manager (LRM) and explains the tasks you can perform on cache-enabled projects.

#### **Related Documentation**

You can also refer the following documentation to know more about related tools and methodologies:

- For information about the Allegro Data Manager solution, see *Allegro® EDM Solution Overview*.
- For information about new features, see *Allegro® EDM: What's New in Release* 17.4.
- For information about Flow Manager, see *Allegro® EDM Flow Manager User Guide*.
- For information about Part Information Manager, see *Part Information Manager User Guide*.
- For information about Database Administrator, see *Allegro® EDM Database Administrator User Guide*.
- For information about Database Editor, see *Allegro® EDM Database Editor User Guide*.
- For information about Library Import, see *Allegro® EDM Library Import User Guide*.
- For information about Library Distribution, see *Allegro® EDM Library Distribution User Guide*.
- For information on how to configure Allegro EDM, see *Allegro® EDM Configuration Guide*.
- For information on how to migrate non-Allegro EDM designs and libraries into Allegro EDM, see *Allegro® EDM Migration Guide*.

#### **Cadence Web Resources**

For the latest Allegro EDM-related Known Problems and Solutions, visit <u>Cadence Online Support</u>.

#### **Related Tools and Flows**

- For information on various PCB design working environments, such as a team of designers working on a Design Entry HDL project, implementing FPGAs in designs, working with high-speed constraints, importing IFF files for radio-frequency designs, and reusing existing modules, see *Allegro PCB Design Flows*.
- For information on how to create new Design Entry HDL projects and define the project settings, see *Allegro Project Manager User Guide*.
- For information on capturing a logical design, see *Design Entry HDL User Guide*.

## **Typographic and Syntax Conventions**

This list describes the syntax conventions used for this user guide:

literal	Nonitalic words indicate keywords that you must enter literally. These keywords represent command (function, routine) or option names.
argument	Words in italics indicate user-defined arguments for which you must substitute a name or a value.
	Vertical bars (OR-bars) separate possible choices for a single argument. They take precedence over any other character.
[ ]	Brackets denote optional arguments. When used with OR-bars, they enclose a list of choices. You can choose one argument from the list.
{ }	Braces are used with OR-bars and enclose a list of choices. You must choose one argument from the list.

1

## **Managing Component Versions**



Library Revision Manager (LRM) is available **only** in a board flow where the cache\_enabled **variable** is set to True.

### **Component Version Mismatch**

When creating designs in Allegro EDM, designers connect to an Allegro EDM Server with Part Information Manager, search for components, and then add them to a schematic. These components are copied to cached libraries. Designers can then disconnect from the Allegro EDM Server and use the cached versions of the components in the design. Additionally, designers can also add components from local libraries into their designs. In other words, the components in a design can be from cached libraries, which are subsets of the reference library, or from local libraries.

When a designer is working on a schematic, the librarian might modify a component that is being used in the schematic and then run library distribution. This leads to a version mismatch between the component in the reference library versus the component in the cache. In addition to version changes, there can be a number of differences between the component version in the reference library as compared to the component used in the design.

The objective of LRM is to ensure the following:

- That the design uses the latest components from the reference library.
- That cached parts are in sync with the reference libraries. All the cached parts are overwritten with the latest components from the reference library.

That no local parts are used in the design. With LRM, designers can replace local parts used in the design with the ones from the reference library. As cached libraries are not always connected, or in sync, the components in the cache libraries might be different from those in the reference libraries.

Managing Component Versions

#### **Common Version Management Tasks**

When working with designs that use components from reference libraries, cached libraries, and local parts, LRM performs version management tasks such as:

- Identifying the source of the components used in the design
- Comparing the versions in the design (cached or local) with the reference libraries
- Locating changed usage information
- Traversing through the blocks in the design
- Updating the locally cached libraries
- Saving older versions of cached components

#### **How Library Revision Manager works**

When a project is opened, Library Revision Manager (LRM) reads the cache and the project. The <u>LRM Directives</u> in the *project.cpm>* control the behavior of LRM. If the same components are in the local libraries and the reference library, LRM prompts you to update the design project's cache with the components in the reference library.

The information displayed in LRM includes the following:

- Components that are in the cache, and if they are used in the design
- If the component version matches the reference version, PTF differences, if any
- Based on the directive values set in the CPM, the PTF rows or cells that can be fixed automatically
- Components from local libraries and if they are found in the reference libraries

#### **LRM Directives**

The following table lists the directives in the cproject>.cpm file that control LRM.

## Allegro EDM Version Management Utilities Guide Managing Component Versions

Directive	Description	
<pre>auto_fix_ptf '<true false="">'</true></pre>	When this directive is set to TRUE, LRM fixes the autofixable PTF row (corresponding to the cell selected in the <i>Cell/Block Details</i> pane) if the <i>Update</i> button is clicked.	
	This directive can be used with the following directives:	
	sync_properties	
	auto_update_minor_ptf when set to TRUE	
<pre>auto_update_minor_cell '<true false="">'</true></pre>	When this directive is set to TRUE, LRM automatically selects cells that have minor differences as soon the <i>Update</i> button is clicked.	

## Allegro EDM Version Management Utilities Guide Managing Component Versions

Directive	Description
<pre>auto_update_minor_ptf '<true auto="" false="">'</true></pre>	When auto_update_minor_ptf and the auto_fix_ptf directives are both set to TRUE, LRM marks the part row as Autofixable. The auto_update_minor_ptf directive also provides flexibility in scenarios where you may not want to auto-update part table rows but want to use the auto-update feature with the sync_properties directive.
	When auto_update_minor_ptf is set to AUTO, LRM automatically updates injected property value and injected header mismatches.
	If both auto_update_minor_ptf and check_injected_order are set to TRUE, LRM considers both directives when updating the mismatches.
	If you do not want LRM to auto-update certain injected property mismatches, you can specify those properties using the exclude_autoupdate_props directive.
	If there is a header change along with an injected property value change which is defined in the exclude_autoupdate_props directive list, LRM will not update any of the parts
	If the same property is a key and an injected property, LRM will not auto-update the mismatch.
<pre>check_local_modified '<true false="">'</true></pre>	Verifies (when set to $\mathit{TRUE}$ ) whether any cell has been modified directly on the disk without using LRM.

## Allegro EDM Version Management Utilities Guide Managing Component Versions

Directive	Description
check_injected_order	Verifies (when set to $\mathit{TRUE}$ ) whether the order of any of the injected property headers has changed and indicates the change in LRM:
	Status Injected Property Order Mismatch Injected Property Order Mismatch Not in Reference Injected Property Order Mismatch
dump_FileName' <name>'</name>	Specify the name of the dump file that contains up-to-date revision information about cells and blocks in Library Revision Manager.
	If you do not provide a file name, the default name, lrmDumpFile.lrmDump, is used.
<pre>exclude_autoupdate_props '<pre>'<pre>' '<prop3>'</prop3></pre></pre></pre>	Use this directive to specify injected property value mismatches that you do not want LRM to auto-update even when the auto_update_minor_ptf has been set to AUTO.
<pre>lrm_logfile '<name>'</name></pre>	Specify the name of the log file that is generated during the update operation. This file is created at the location defined by the adwconfigdir directive in the ADW section.

Managing Component Versions

Directive	Description		
<pre>sync_properties'<key1> <key2> <inj1> <inj2>'</inj2></inj1></key2></key1></pre>	Using this directive, you can specify a preference for a key or injected property to decide which mismatched part should be auto-fixed.  For example, in the following figure, there is a mismatch in Key2:		
	Key1 Key2 Inj1 Inj2		
	Local 10k 5% def cell		
	Reference 10k 7% def cell		
	Assume that the value of the sync_properties directive is key1, and in the reference PTF row, the value for key2 has changed from 5% to 7%. In this case, Library Revision Manager displays the row as Autofixable in the Cell/Block Details pane, and displays a grid if you select the Show Differences pop-up menu option.		

## **Starting Library Revision Manager**

The following topics show you how to start Library Revision Manager:

- Automatic Launching of LRM
- Launching Library Revision Manager from Flow Manager
- Starting Library Revision Manager from the Allegro EDM System Console

#### **Automatic Launching of LRM**

If there are differences between the cached libraries and design, and the reference libraries, LRM is automatically launched when you open an Allegro EDM project (board flow only). The cache folder is in the project directory and information about the reference libraries is stored in the REF PPT directive in PPT directive in Project>.cpm.

```
START_ADW
ADWCONFIGDIR './atdmdir'
REF_PPT '$PCBDW_LIB/reflib/model_sym/part_table.ptf'
END ADW
```

Managing Component Versions

Part Information Manager User Guide describes how you can use Part Information Manager to work with libraries in the cached or reference (database) mode.

To be able to use LRM, ensure that all the cells have versioning metadata. See *Part Developer User Guide* for more information on versioning metadata.

#### **Launching Library Revision Manager from Flow Manager**

- **1.** Depending on the implementation of Allegro EDM, LRM can be launched in the following ways:
  - **a.** Click *Board Design Flow* in the Flow Tree pane (left panel).
  - **b.** Choose *Project Admin Update Project Library* in the *Flow Specific Tools* pane.

If you have administrator rights for Allegro EDM, you can use *File – Update – Projects*.

#### Starting Library Revision Manager from the Allegro EDM System Console

Type the following command at the Allegro EDM System Console:

lrm -proj project cpm path>

#### For example:

lrm -proj allegroEDMprojects\lrm\cell mismatches\cell mismatches.cpm

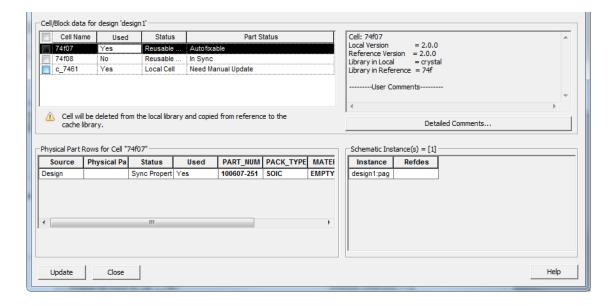
## **Comparing Component Versions**

When components in the project and the cached libraries are compared with those in the reference libraries, the results show components that are:

- The same in both the libraries but the PTFs have differences
- Updated in the reference libraries
- Have changed properties in either, or both, libraries, that is, cache or reference
- In the local library but not in the cached or reference library

In the local library but not in the cache but another version in the reference library The *Library Revision Manager* dialog displays information for all cells that have conflicting or changed library information.

- The component changes could be for any, or all, of the following:
  - □ Cells
  - □ Blocks
  - □ Physical part (PTFs) for a cell



Managing Component Versions

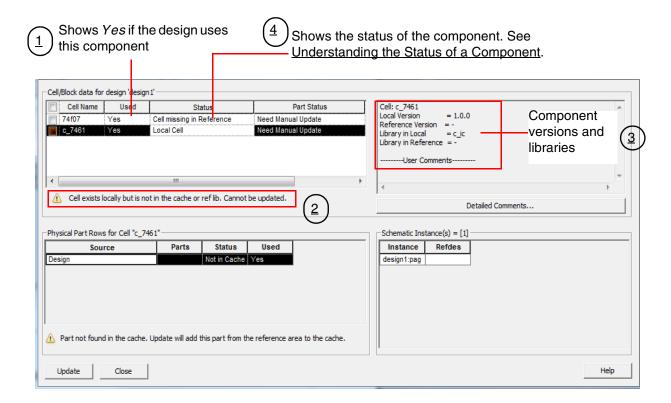
#### **Interpreting Library Revision Manager Information**

Library Revision Manager compares the cached library with the design and shows you the following information:

1. Whether the component is used in the design

Components where the *Used* column shows *No* are not included in the <project>. cpm but exist in the cache. Consequently, changes for these components are made only to the libraries and not to the <project>. cpm file.

- 2. Tooltip explaining the cell status
  - The results of clicking Update in each highlighted cell
  - If the cell cannot be updated
- 3. The component versions in the cache and reference libraries
- 4. The component status



**5.** The physical part status

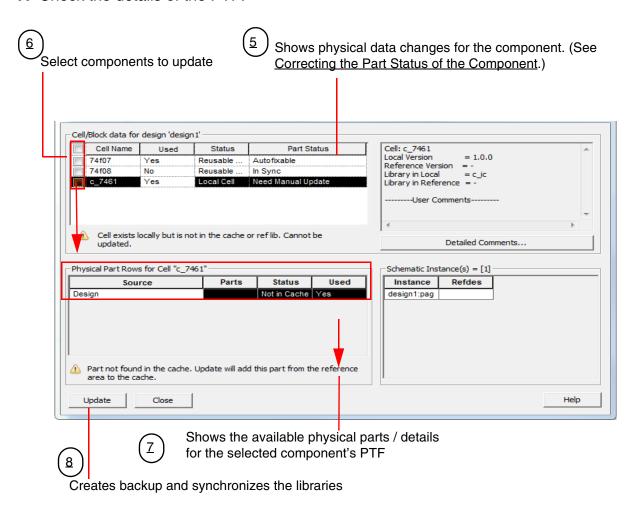
Managing Component Versions

If required, you can update the physical part row used.

### /Important

When you update a PTF row, all the schematic instances are updated. Library Revision Manager does not allow you to update the row only for the block or for an instance. If you want to do so, use Part Manager.

- **6.** After you have reviewed the component status, part status, and set the part table row, specify the components that need to be updated.
- 7. Check the details of the PTF.



8. Click Update.

Managing Component Versions

#### **Understanding the Status of a Component**

The rows in the *Cell/Block data for design <design name>* table report what is out of sync in the design. When you select a row, you see a description of what is wrong with the cell/block and if it can be updated without your inputs. The <u>Analyzing the Cell/Block Status</u> table summarizes the different values for the Cell Status column in the *Library Revision Manager* dialog along with a description of the action that you can take.

Table 1-1 Analyzing the Cell/Block Status (Sheet 1 of 3)

	•	-
Status	Indicates that	Corrective action
Cell in different library	The cell is in different cache and reference libraries.	The location of the cell in your project libraries needs to be corrected. LRM moves the cell to the correct library.
Cell missing in Reference	The cell is in the cache but not the reference library.	Check with the librarian. If this is a deleted cell, use an alternative cell in the design. If needed, ask the librarian to update the reference library with the new cell.
Error	The cell has an unknown error that Library Revision Manager cannot	Developer to determine the cause of
identify.	•	Reference cell: Ask the librarian to
	For example, cell metadata is missing from the cache as well as from the reference library.	check the cause of the error. Updating the cell will replace the modified cell in the cache with the reference library cell.
In Sync	The cell in the cache and reference libraries are identical.	No action required.
Incorrect Metadata	The cell has been modified manually (possibly without using Part Developer) resulting in inconsistencies in the cell metadata.	Instead of making changes manually, ask the librarian to make the modifications and distribute the updated cells to all the sites.
		Updating the cell will replace the modified cell in the cache with the reference library cell.

Table 1-1 Analyzing the Cell/Block Status (Sheet 2 of 3)

Status	Indicates that	Corrective action
Local cell/block	Cell/block is not in the reference libraries but is used in the design. Not there in the cached libraries. This could be from an entry in the cds.lib file.	Nothing, if the designer has done this intentionally. If the cell is required in the reference library, ask the librarian to add it.
Major Update	The cell has undergone considerable changes. For example, a pin could have been added, deleted, or moved within a symbol. The changes in the cell can impact packaging.	Analyze the impact of the change and make sure that updating the design with such cells does not affect your design. If you decide to update the cell, ensure you check the schematic and update it, if required.
Minor Update	The cell has undergone a small change. For example, a change in the text of a reference designator. This usually does not impact the packaging data in the design.	Analyze the impact of the minor change and ensure that updating the design with such cells does not affect your design.
Modified in Cache	The cache cell (under the project library) has been updated (for example, using Part Developer).	If the changes made locally need to be retained, ask the librarian to make the modifications in the reference library cells. Updating the cell will replace the modified cell in cache with the reference library cell.
		If the local cell is used by other users, update after checking with them. The update might affect their designs.

Managing Component Versions

Table 1-1 Analyzing the Cell/Block Status (Sheet 3 of 3)

Status	Indicates that	Corrective action
Modified in Reference	The reference cell has been modified (for example, using Part Developer).	Update the design with the modified reference cell. Updating the cell will replace the modified cell in the cache with the reference library cell.
New	A new cell has been added to the cache. Such cases arise when you import, or add a block to your design.	No action required. The new cell will be automatically copied from the reference library.
Nonreadable cache metadata	Library Revision Manager is unable to read cell-level metadata from the cache. As a result, the	Verify the cached cell using Part Developer and take a decision about whether you should update the cache cell.
	correct status is unavailable.	Updating the cache cell will replace it with the cell in the reference library.
Nonreadable reference metadata	ce Library Revision Manager is unable to read cell-	Contact the librarian and request a correction to the reference metadata.
level metadata from the reference library. As a result, the correct status is unavailable.		When you have the cell with the correct metadata in the reference library, update the design with that cell.
Reuseable cell/block	The cell/block is in the reference libraries and is used in the design, but it is not there in the cached libraries.	Clicking Update gets the cell/block from the reference library to the cached library. The cell from the local library will be deleted. The cell from the reference library is copied into the library into the cache.

#### **Correcting the Part Status of the Component**

For each row in the *Cell/Block data for design <design name>* table, the *Part Status* can have the following values:

#### Autofixable

Managing Component Versions

- In sync
- Needs manual update

If the values are *Autofixable* or *Needs manual update*, when you select a component, you will see the details of PTF mismatches. If is *In Sync*, the *Physical Part Rows* table remains empty for the selected row.

The <u>Analyzing the Physical Part Rows Status</u> table summarizes the different values for the *Status* column in the *Physical Part Rows for Cell "<selected cell>"* along with a description of the action that you can take. When you select a part row, you can see a description of the issues LRM found and if it can correct the problem without your inputs.

Table 1-2 Analyzing the Physical Part Rows Status (Sheet 1 of 5)

Part Status	Indicates that	Action required
Added Property Mismatch	Alismatch property mismatch cache between the cache and Show	View the differences between the cache and reference PTFs using the Show Differences pop-up menu option.
	The added property is in the cache PTF but is missing in the reference PTF.	
	The added property is in the reference PTF but is missing in the cache PTF.	
	The value of the added property in the cache and reference PTFs is different.	

Table 1-2 Analyzing the Physical Part Rows Status (Sheet 2 of 5)

Part Status	Indicates that	Action required
Sync properties match	If there is no header or added property mismatch, and the part is not found in the reference libraries, then only sync properties are matched.  The PTF row property can be automatically updated using the sync_properties directive defined in the	View the differences between the cache and reference PTFs using the <i>Show Differences</i> pop-up menu option.  Check the cell whose PTF you want to update and click <i>Update</i> . This will automatically update all the PTF rows.
	project file.  The mismatched cache PTF row is compared with the other reference PTF rows. If a reference PTF row matches as defined by sync_properties, it is replaced with the cache PTF row. There is no need for manual intervention.	

Table 1-2 Analyzing the Physical Part Rows Status (Sheet 3 of 5)

Part Status	Indicates that	Action required
Autofixable	The part rows in the cache can be autofixed with respect to the reference library PTF. This fix can be based on either a minor mismatch (injected property mismatch) or the sync_properties directive.	Select the check boxes against the cell for which you want the PTF to be autofixed.
	You can see the corresponding PTF row (with which it is going to be replaced) using the Show Differences pop-up menu option.	
	This status will not appear in the <i>Physical Part Rows for Cell <cell name=""></cell></i> table.	
Block PTF	Indicates the PTF added to the cache as a result of an imported or added block. It shows that the new PTF is being used in the block being imported or added to the design.	No action required. As the block is added or imported, these PTF rows will be cached automatically.
In Sync	The PTF rows in the cached and reference libraries are identical and there are no differences.	No action required.
	This status will appear only in the Cell/Block data for design <design part="" status.<="" td=""><td></td></design>	

Table 1-2 Analyzing the Physical Part Rows Status (Sheet 4 of 5)

Part Status	Indicates that	Action required
Injected Header Mismatch	The injected property headers between the reference and cache PTF rows are different.	Replace with the correct PTF row using the <i>Replace with</i> pop-up menu option.
		If you do not update all the part rows of the cache PTF with the reference library PTF, none of the parts are updated for the cache PTF.
Injected Value Mismatch	There is an injected property value mismatch between the cache and reference PTFs.	You can replace the cached PTF row with a correct PTF row using the Replace with pop-up menu option.
Key Header Mismatch	The key property headers between the reference and cache PTF rows are different.	Replace with the correct PTF row using the <i>Replace with</i> pop-up menu option.
		If you do not update all the part rows of the cache PTF with the reference library PTF, none of the parts are updated for the cache PTF.
Key Value Mismatch	There is a key property value mismatch between the cache and reference PTFs.	You can replace the cached PTF row with a correct PTF row using the Replace with pop-up menu option.
Manually Replaced	You have changed the erroneous PTF with a correct PTF (using the Replace with pop-up menu option)	Once done, you can update the design by clicking <i>Update</i> .
Missing in Ref	The reference library PTF is missing.	Report this issue to your librarian who will take corrective action.

Table 1-2 Analyzing the Physical Part Rows Status (Sheet 5 of 5)

Part Status	Indicates that	Action required
Need Manual Update	The PTF row is not autofixable. You need to manually update it.	You can replace the PTF row with a correct PTF row using the <i>Replace with</i> pop-up menu option.
	This status will appear only in the Cell/Block data for design <design name=""> Part Status.</design>	
New		No action required. These parts will be cached automatically as the block is added or imported to the design.
	Parts that are used in the blocks but are missing from the cache have this status.	
Not in cache	The part is used in design and is in the reference libraries, but is not in the cache.	Update will add this part from the reference area to the cache.
		The local part will be will lost. Other designers using the local part will be affected.

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## **Synchronizing Design Libraries**

The result of the comparison of the design, cached libraries, and reference libraries is displayed in the *Library Revision Manager* dialog. As the designer, you need to specify what needs to be done by LRM to synchronize the cache with the reference libraries.

### **Updating Cells and Blocks**

A row in the Cell/Block pane has the same columns regardless of its being a cell or a block. However, some additional information is processed for blocks.

■ The <u>Updating Cells</u> topic has the steps for setting up cell options.

When setting options for a block, you have a choice. You can:

□ Set one option for the entire block

or

- Navigate to cells and blocks within a block and set options for each cell, and continue this for all the blocks in the design hierarchy
- The <u>Updating Blocks</u> topic explains how Library Revision Manager handles cells within blocks and you can drill-down to the lowest level of cells in the design and specify how it gets updated.

Synchronizing Design Libraries

## **Updating Cells**

To update cache cells with the latest reference library versions, do the following in the *Library Revision Manager* dialog.

1. Click a row in the *Cell/Block Details* pane.

The details of the component are displayed in the *Comments* area, *PPT Details* pane, and the *Schematic Instances* area.

**2.** Check the status of the component.

See "Understanding the Status of a Component" on page 21 for the possible values of the Cell Status column and what, if any, action you need to perform. If the Cell Status value is NEW or In Sync, you do not need to perform any action and can move to the next component.

**3.** Check the part status of the component.

The possible values of the Part Status column and what, if any, action you need to perform are as follows:

Part Status	Action Required	Move to
NEW	None	The next component
In Sync		
BLOCK PTF		
Manual Update	Replace the cached PTF	Step <u>4</u>
Key Value Mismatch	row	
Injected Value Mismatch		
Key Header Mismatch		
Injected Header Mismatch		

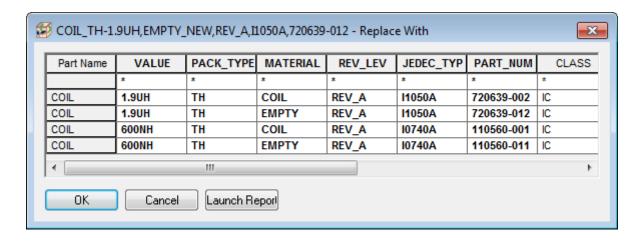
Synchronizing Design Libraries

Part Status	Action Required	Move to
Add prop mismatch		Step <u>6</u>
Auto_sync_prop	between the cache and reference PTFs	
Autofixable		

See "Correcting the Part Status of the Component" on page 23 for details of all possible values.

- **4.** Replace the cached PTF row with a correct PTF row by doing the following:
  - a. Right-click a PTF row.
  - **b.** Choose *Replace with* from the pop-up menu.

The Replace with dialog appears with a list of the PTF rows for the selected cell.



- **c.** Select a PTF row in the *Replace with* dialog.
- d. Click OK.
- e. Repeat this for all the PTF rows.

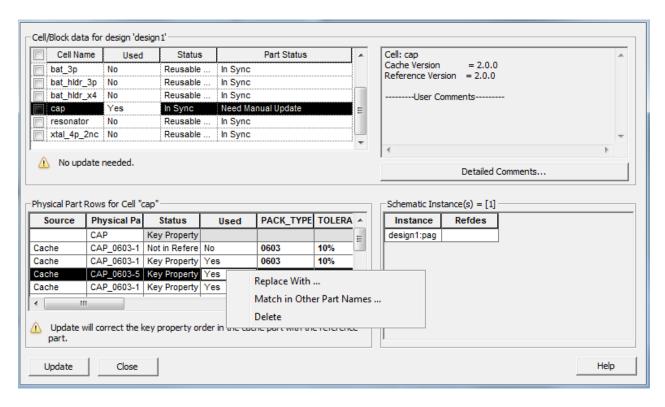
When any row is replaced, the status of the PTF changes to  ${\tt Manually}$  Replaced.

The Replace with dialog closes.

**5.** Change the part name for the PTF row.

Synchronizing Design Libraries

- a. Right-click a PTF row.
- **b.** Choose *Match in other Part Name* from the pop-up menu.



**Note:** This requires Allegro EDM Server access. Note that updating the difference in part name requires DE-HDL to be already launched.

- a. Select a part.
- **b.** Click *OK*.
- **c.** Repeat this for all the PTF rows.

Based on the newly selected part, the library and cell information for all the instances also change. Additionally, the instances on the schematic also change.

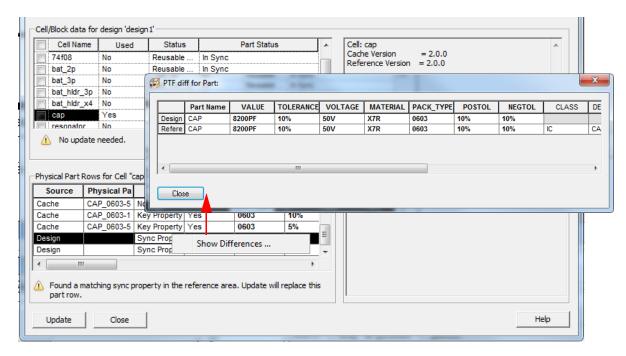
- **6.** View the differences between the cache and reference PTFs:
  - a. Right-click a PTF row.
  - **b.** Choose *Show differences* from the pop-up menu.

Show Differences comes up only if the sync\_properties directive is set to TRUE for the project and the Part Status column has one of the following values:

Synchronizing Design Libraries

- Autofixable
- Added\_Property\_Mismatch
- Auto\_Sync\_Prop

The *PTF Diff for Part* dialog appears listing the cache and reference PTF rows for the selected part name.



**c.** Click *Close* to close the dialog and return to the *Library Revision Manager* window.

Depending on the extent of differences between cache and reference PTF rows, Library Revision Manager can correct some differences automatically. For such cells, the *Part Status* column is Autofixable. You can look at the differences before they are fixed. To see the differences for the cells that are Autofixable, use the same steps as listed (step a through step c)

The PTF rows are updated only when you click the *Update* button. The changes might reflect in the *PPT Details* pane as soon as you replace them in the Replace with dialog, but they are saved only when you click *Update*.

**7.** Repeats step <u>1</u> through <u>3</u> for all the components listed in the *Library Revision Manager* dialog.

Remember, step  $\underline{3}$  might need you to perform step  $\underline{4}$  or  $\underline{6}$  depending on the *Part Status* value of the component.

Synchronizing Design Libraries

- **8.** Select the check box(es) corresponding to components that you plan to update.
- 9. Click Update.

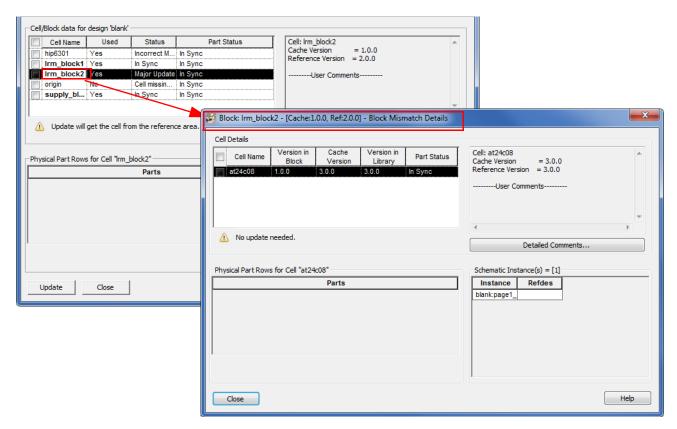
The changes are saved only when you click the *Update* button in the Library Revision Manager dialog.

### **Updating Blocks**

This section describes how to update blocks. The entries in bold contain blocks. To view the block conflict information and update blocks, perform the following tasks:

- 1. Right-click a component that is in bold.
- **2.** Choose *Block Mismatch Details* from the pop-up menu.

The *Block Mismatch Details* dialog appears.



The layout of this dialog is the same as the already open *Library Revision Manager* dialog.

You can perform the same tasks as step 1 through 8 of the Updating Cells section.

Synchronizing Design Libraries

Viewing the details of a block is a recursive task that continues until you reach the last nested block.

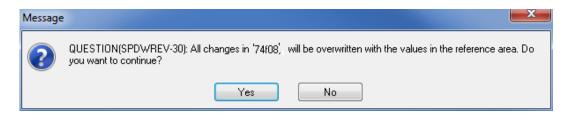
When you click Update, LRM gets the latest version of the cell, for example LRM\_BLOCK2, from the reference library and updates the design. Also updates the cells used in that block. However if there is any cell which is still using older version in the block that cannot be updated by LRM. The librarian needs to initiate the ECO flow to update that.

Some of the check boxes for cells are checked and you cannot change that selection. This indicates that these cells are part of the block, and will be cached for the first time, therefore these cells cannot be excluded from the block update operation.

After you have specified the options for all blocks and cells, you are ready to start the synchronization of the libraries.

#### 3. Click Update.

If you try to update a block that has been modified in the cache, a warning appears asking if you want your changes to be overridden by the reference block.



This saves a copy of the cached block in the temp directory of your design project.

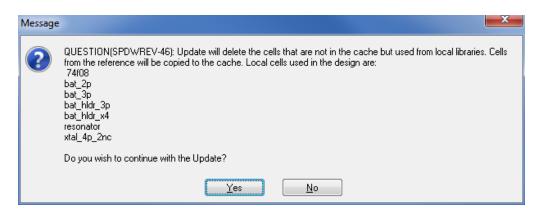
If you try to update cells that are part of a block, Library Revision Manager alerts you about the blocks that will be affected due to the update.

When working with imported blocks in your design, pay special attention to blocks listed.

Depending on your requirements, click *Continue* to go ahead with the update or click *Cancel* to return to the *Library Revision Manager* dialog.

Synchronizing Design Libraries

☐ If there are local cells in the design, you will the following message:



4. Click Yes.

This completes the libraries synchronization procedure.

## **Highlighting Component Instances on the Schematic**

You can highlight instances on the schematic by performing these tasks in the *Library Revision Manager* dialog:

- 1. Select a cell in the *Cell/Block Details* pane.
- 2. In the *Schematic Instances* area, select an instance and right-click it.
- **3.** Choose *Highlight Schematic* from the pop-up menu.

The selected instance of the cell is highlighted on the schematic if Allegro Design Entry HDL is already installed and running.

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# **Reverting to Older Versions of a Library**

When the cache and reference libraries are synchronized, a backup of the current state of the library and the history of changes to the cache is maintained by Library Revision Manager.

The history files are in the atmdir/history\_lib folder of the project directory. If you want to revert to blocks or cells (in the project cache) to any of its previous available versions, use the Rollback utility.

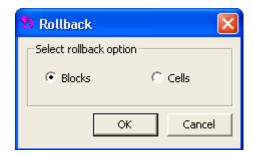
#### Launching Rollback

Start Rollback in any of these ways:

- Choose File Old Models Version Recovery in Flow Manager.
- Type the following on the Allegro EDM System Console:

```
rollback -proj <path of the project cpm> [-block] [-cell]
```

If you do not specify the arguments (block or cell) in the command, the Rollback dialog prompts you to select the rollback option.

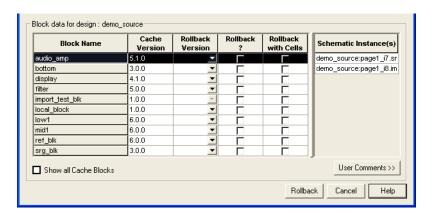


As you can see from this dialog, you can roll back:

- Blocks
- Cells

Reverting to Older Versions of a Library

For example, if you select *Blocks* and click *OK*, the following screen appears:



### **Discarding Changes Made to a Block**

To revert to an older version of a block:

- **1.** In Flow Manager, choose *File Old Models Version Recovery Rollback Block*. The *Rollback* dialog appears.
- 2. Select block(s) in the Cell/Block Details pane.
- **3.** Select the version to roll back from the drop-down list under the *Rollback Version* column.

To view all the cached blocks in the Rollback dialog, select *Show all Cache Blocks* check box.

- **4.** Select the check box under the *Rollback?* column.
- **5.** If you want to roll back the cells within the block also, select the check box in the *Rollback With Cells* column.
- 6. Click Rollback.

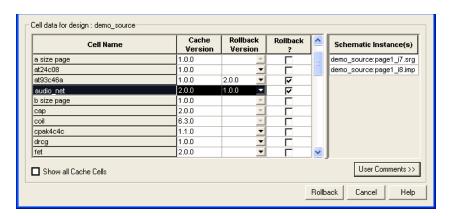
# **Discarding Changes Made to a Cell**

To undo the changes made to a cell:

In Flow Manager, choose File – Old Models Version Recovery – Rollback Cell.
 The Rollback dialog appears.

Reverting to Older Versions of a Library

- 2. Select a cell in the Cell/Block Details pane in the Rollback dialog.
- 3. Select the version to roll back from the drop-down list in the Rollback Version column.



- **4.** Select the check box under the *Rollback?* column.
- 5. Click Rollback.

To view all the cached cells in the Rollback dialog, select Show all Cache Cells check box.

# Allegro EDM Version Management Utilities Guide Reverting to Older Versions of a Library

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# Removing Redundant Information from the Cache

In Allegro EDM, all the components that you add to a design are saved (cached) in the cache folder of the design project.

As you update the cache with the latest version of cells (in the form of jar files) from reference libraries, the older versions of the jar files are transferred and stored in the history folder of the design project.

Typically, a project contains both used and unused parts, and as the design becomes complex, the size of the project folder keeps increasing. After you complete the design, you might want to remove all the unused items from the design. In this way, you can synchronize your shopping cart with the latest parts used in the design.

With the availability of the purge feature, you can verify the design to check the blocks, cells and physical parts that are in the cache but are not used by the design. Using this feature, you can:

- Select the design components (cells, blocks, and physical parts) that you want to remove from the cache without affecting the viability of the design
- Reduce the contents of the history folder to a judicious level
- Remove unused parts from the Shopping Cart

# **Project Directives for Purge**

The following table lists the directives for controlling Purge options using the project cpm file.

Removing Redundant Information from the Cache

Directive	Lets you
purge_block ' <true false="">'</true>	Specify whether you want to purge unused blocks in the design.
purge_cell ' <true false="">'</true>	Specify whether you want to purge unused cells in the design.
purge_part ' <true false="">'</true>	Specify whether you want to purge unused physical parts in the design.
<pre>purge_shoppingcart'<true false="">'</true></pre>	Specify whether you want to update the Shopping Cart of your design.
<pre>purge_history'<true false="">'</true></pre>	Specify whether you want to purge the history of cells in the design.
purge_depth 'n'	Specify the level $(n = 1, 2, 3)$ to which you want to remove the history.

# /Important

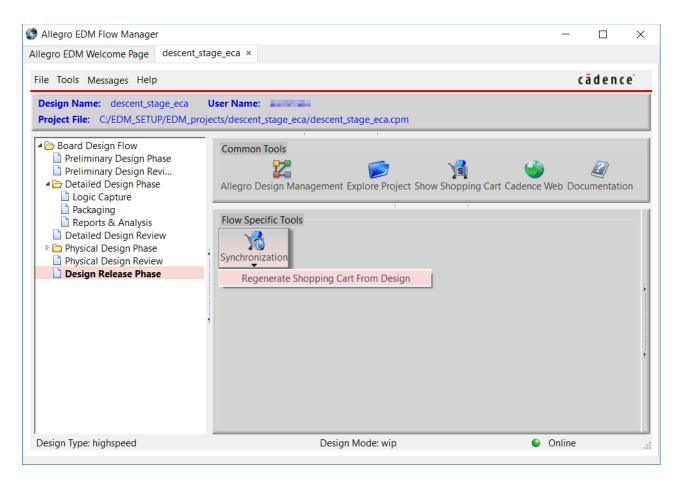
Besides <TRUE/FALSE>, you can use standard CPM values, that is, <YES/NO> or <ON/OFF>.

# **Starting Purge**

You can launch Purge from:

Flow Manager

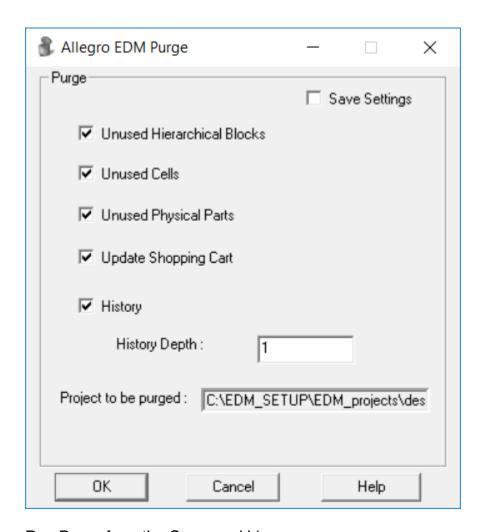
In the Design Release Phase, choose Synchronization – Regenerate Shopping Cart from the Flow Specific Tools panel.



Allegro EDM System Console

Use the following command at the Allegro EDM System Console:

purge -proj cproject cpm> [-product <license string>]



Run Purge from the Command Line

You can also run Purge as a batch command without the user interface.

```
purge -proj cproject cpm> -all -depth 1 -nogui
```

If you want to run Purge to remove unused cells for example, you can run:

```
purge -proj  project cpm> -cells -nogui
```

# **Specifying What to Remove**

The *Purge* dialog contains a simple user interface that allows you to select the desired option or a combination of multiple options and purge unused blocks, cells, physical parts, and

Removing Redundant Information from the Cache

history with a single-click. In addition, you can also update your shopping cart. The following table explains the user interface elements of the Purge dialog.

-	
Interface Element	Lets you
Save Settings	Set your default purge options in the Purge dialog.
Unused Hierarchical Blocks	Delete all the hierarchical blocks present in the cache but not instantiated on the schematic. It also deletes the associated history files.
Unused Cells	Remove all unused cells, their associated part tables, and associated jar files from the history of the design project.
Unused Physical Parts	Remove all unused physical part table rows from the cache as well as from the cell level part table files (of the cached cells).
Update Shopping Cart	Update the Shopping Cart (the shoppingcart.xml file) whenever you remove a part table row from the cache. As a result, the corresponding details of the part table row are removed from the Shopping Cart.
History	Delete the history (jar) files for the design project.
	Use the <i>History Depth</i> field to specify the number of versions (major or minor) to delete. For example:
	Enter 0 to delete all the versions of the history files, including the most current version. Using this clears your history folder completely.
	Enter 1 to retain the current version and delete all the other versions from the history.
	Enter 2 to retain the last two versions and delete all the other versions from the history.
Project to be purged	Display the location of the design project (cpm file).
OK	Perform the purge operation using the selected option(s).
Cancel	Cancel the purge operation.
Help	View online help for the Purge dialog.

Removing Redundant Information from the Cache

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# Cache-Enabled Projects in Design Entry HDL

You can use Allegro Design Entry HDL to capture the logic of a design as a schematic. The design and its related information is stored in a cproject.cpm. The Design Entry HDL User Guide explains the Design Entry HDL product, its interface, and the tasks you can perform.

When you launch Design Entry HDL in the Allegro EDM mode, or for an cache-enabled project, you will notice differences in the following:

- Adding a Block
- Importing a Block
- Importing a Sheet

# **Adding a Block**

When you add a top-level block to your design, Library Revision Manager first checks whether all the cells or PTFs for the block are in sync. If the cells and PTFs are in sync, Library Revision Manager caches the block, the block PTFs, cells of the block, and their PTFs and adds the block to the schematic.

If there is a cell version or PTF mismatch, the *Block Mismatch Details* dialog displays.

If you click *OK*, the *Library Revision Manager dialog* prompts you to select the block or cell or the appropriate PTF row to update cache cells or PTF rows with their respective reference library versions, and update the schematic with the changes.

If you choose the cell or block, Library Revision Manager caches the block and the block PTF. Otherwise, the block addition process is canceled.

Cache-Enabled Projects in Design Entry HDL

### Importing a Block

When you import a top-level block, Library Revision Manager performs a check on the block and all the lower-level blocks under it. The changed information is displayed, but you cannot make any changes. Based on the displayed information, you can choose to continue or cancel the import.

# Importing a Sheet

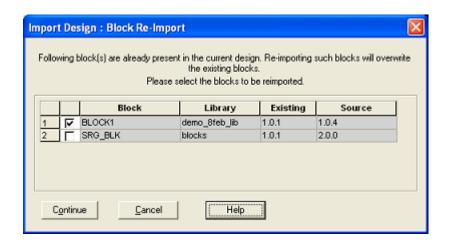
When you import a design, Library Revision Manager checks for any conflicting blocks, cells, or PTF rows. As a result, after you start the design import, Library Revision Manager displays alerts in the following situations and prompts you to cancel or resume the import:

- Blocks with the same name found in both the open design and the sheet being imported Managing Identical Block Names in Both Designs has details of how Library Revision Manager displays the conflicts in blocks and prompts you for inputs.
- Sheet contents of the design being imported conflict with components of the destination design
  - Resolving Sheet Content Mismatch has details of how Library Revision Manager displays the sheet content conflicts and prompts you for inputs.

Cache-Enabled Projects in Design Entry HDL

#### Managing Identical Block Names in Both Designs

When blocks in an opened design and the design that is being imported have the same names, Library Revision Manager shows you the names of the blocks and also the version information for each block in the *Block Re-Import* dialog.



When the *Block Re-Import* dialog appears, do the following:

**1.** Review the version information the blocks in the design.

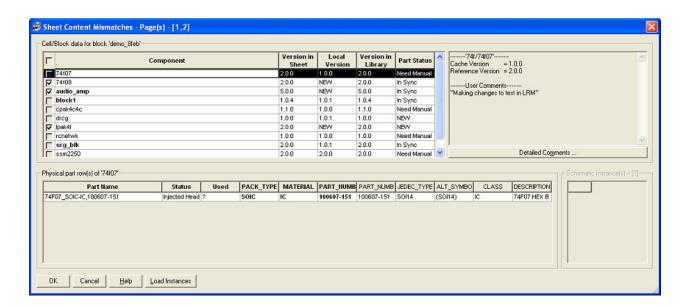
You can overwrite the blocks in the open design or retain them and ignore the blocks in the design that is being imported.

To overwrite blocks move to step 2 and to retain the blocks move to step 3.

- 2. Select the check box for the block that you wish to overwrite.
  - Repeat this for all the blocks that you wish to overwrite.
- **3.** Click *Continue* to resume the import or click *Cancel* to stop the import process.

#### **Resolving Sheet Content Mismatch**

If there is any mismatch in the cell/block versions, or the PTF inside the sheet that is being imported and the destination design, the *Sheet Mismatch Details* dialog is displayed.



The Sheet Mismatch Details dialog shows the following differences for the cells or blocks:

- Version in sheet
- Local Version
- Version in Library
- Part Status

**Note:** This is a read-only dialog and you cannot make any changes here.

Here is how the sheet information is processed by Library Revision Manager:

- Sheet Primitives (cells) are copied from the reference library into cache. If a primitive does not exist in reference library, it will not be brought into destination design.
- Similarly, only PTF rows will also be copied from the reference library.

**Note:** If a sheet primitive or PTF row already in cache folder, that will not be re-cached.

■ Sheet block(s) not in the destination project will be cached from the reference library. If the block is not in the reference library, it is copied from the source project into the library that you specify.

Cache-Enabled Projects in Design Entry HDL

■ Re-importing of a block is done only if it is outside cache folder.

# Allegro EDM Version Management Utilities Guide Cache-Enabled Projects in Design Entry HDL

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# **Symbol Revision Manager**

#### **Overview**

Allegro Symbol Revision Manager (SRM) provides the following functionality for Allegro PCB Editor board designers:

- Synchronizes a PCB Editor board design with a PCB Editor symbol library
- Alerts you to changes made to the symbol library that may affect your design
- Alerts you to footprint symbol changes
- Compares the PCB Editor symbols in your existing design with the symbols in the library
- Displays the librarian's comments in the change log to determine whether you want to upgrade to the latest library versions
- Updates the symbol in your PCB Editor design with a newer symbol in the library. If you need to, you can recover an older version of a symbol.

In the PCB Editor database, each footprint (package symbol in PCB Editor terminology) is tagged with a property called ALLEGRO\_MODEL\_REVISION.

When you launch PCB Editor from Allegro EDM, Allegro Symbol Revision Manager automatically runs the following tasks:

- 1. Scans the open drawing for symbols that do not contain the ALLEGRO\_MODEL\_REVISION property and reports them as "unknown".
- **2.** Reads the current library paths to locate a <symbol\_name>.status symbol file, which identifies the symbols' current revision.
- Opens the Symbol Update Manager for you to manage any symbols that are not up-todate with the current library. For more information, see <u>Updating Symbols to Newer</u> <u>Versions</u>.

Allegro Symbol Revision Manager operates at the PCB Editor database level, not at the project level. Thus, you can launch it only when you open the PCB Editor database; you

Symbol Revision Manager

cannot launch it when an Allegro EDM project is opened. For more information on limitations, see <u>Updating Symbols to Newer Versions</u>.

When you change or add symbols to a board design, you can manually run Allegro Symbol Revision Manager by choosing *Place — Symbol Rev Mgmnt*.

**Note:** Cadence supports Allegro Symbol Revision Manager on all supported platforms of release 14.2 and later. Allegro Symbol Revision Manager is limited to revision management of certain types of PCB Editor symbols such as package symbols, mechanical symbols, and format symbols. Each of these may be in a library managed by a librarian, and, as a result, are subject to similar revision controls as package symbols.

Allegro Symbol Revision Manager requires the user-defined property called ALLEGRO\_MODEL\_REVISION, a <symbol\_name>.status file and a <symbol\_name>.jedec.log file in the library directories to function properly. On newly imported boards, the ALLEGRO\_MODEL\_REVISION property is not present on footprint symbols. In this case, SRM adds the ALLEGRO\_MODEL\_REVISION property with the value "unknown".

Revisions of padstacks, pad flashes and Flash symbols are not managed by Symbol Revision Manager.

# Symbol Versions

Symbol version names are represented by three decimal-separated numbers, such as 1.0.14.

- The first number indicates a major revision a change to the footprint part that impacts the etch of a board, such as changing pin locations or changing padstacks.
- The second number indicates a minor revision a change to non-electrical data, such as changing the refdes text size or changing a component outline. Librarians make major and minor revisions.
- The third number indicates the major version of the PCB Editor from which the footprint was built. For example, version 1.0.17.4 indicates that the footprint was built on version 17.4 of PCB Editor.

Version numbers are compared between the version tag on the footprint in the Allegro database and the version tag on the footprint in the Allegro library. Version differences are listed in a report.

Symbol Revision Manager

# **Footprint Files**

The footprint library of Allegro EDM contains footprint files (.psm).

Each .psm file has associated files that have the same file name but with different file extensions. These associated files contain version information.

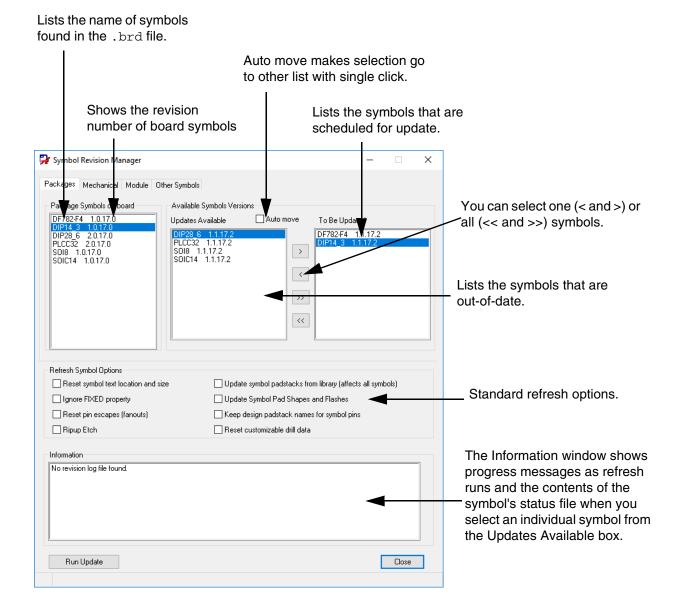
For example, the Dip14 footprint symbol has the following files:

- Dip14.dra PCB Editor source file that contains footprint symbol data.
- Dip14.psm Contains the compiled version of the Dip14.dra file.
- Dip14.status The .status file contains the version of the footprint symbol.
- Dip14.log.jedec This log file contains the unformatted history of footprint changes.

# **Updating Symbols to Newer Versions**

When you launch PCB Editor from Allegro EDM, the Symbol Update Manager appears if the board symbols are not up-to-date with the current library.

When you change or add symbols to a board design, you can manually run the Symbol Update Manager by choosing *Place —Symbol Rev Mgmnt — Check Lib for New Version*. The following figure shows a sample Symbol Update Manager. To update each selected footprint in the *To Be Updated* list box, click the *Update Symbols* button.



### **Updating to the New Footprint**

Allegro Symbol Revision Manager preserves symbols before replacing them with newer symbols by saving them to a .jar file. This is so you can recall symbols that have been replaced, if you want to. The .jar file contains the footprint symbol (.dra and .psm), all padstacks used by the footprint, and all the Flash symbols and pad shapes used by the padstacks. The .jar file is named as follows:

<symbolName>-<type>-<revision info>.jar

Symbol Revision Manager

where type is:

pkg, mech, fmt

**Example:** dip14-pkg.1.0.17.4.jar

The .jar file is written to: <same directory that has the .brd file>/old\_symbols:

After the old footprint is safely preserved, Allegro Symbol Revision Manager refreshes the footprint with the newer version from the library. After each symbol is refreshed, the new symbol is tagged with the ALLEGRO\_MODEL\_REVISION property and the updated revision number.

After you refresh your existing footprint with the new one in the library, Symbol Revision Manager creates the <code>ALLEGRO\_MODEL\_REVISION</code> property, if not already defined in the current drawing, and attaches the <code>ALLEGRO\_MODEL\_REVISION</code> property and current symbol revision as the property value to the symbols.

/Important

Changes made in symbols placed on the board are not retained when the symbols are updated. This includes silkscreen changes, pin moves, and so on.

# **Recovering Old Footprint Versions**

You can recover an old footprint version by choosing *Place — Symbol Rev Mgmnt — Old Model Recovery*. The Symbol Update Manager appears with a list of footprints that are on the board that have corresponding archived files within the project. When you click the *Roll Back Symbols* button, Allegro Symbol Revision Manager does the following for each footprint you select:

- 1. Unjars the archived file
- **2.** Refreshes the symbol so that the board's symbol is swapped out and the locally resurrected symbol is inserted into its place.

#### **Parameter File**

The symbol Revision Manager Parameter (symbol revchk.par) file allows you to define the visibility and default values for padstack updates, and pad shape/pad Flash updates. The parameter file is located at the <Installation\_Directory>/tools/pcbdw/pcb\_tools/pcbstart/archindep/par directory.

Symbol Revision Manager

You can copy this file to the <allegro EDM Conf Root>/<company>/<site>/
pcbstart directory. The file contains five entries: two for padstack updates, two for pad
shape/Flash symbol updates, and one to make it obligatory for designers to update their
footprint symbols if the symbols have undergone major revisions. The values set in this file
apply to both, the update and rollback functions, in Symbol Revision Manager.

- \_ADW\_PAD\_UPDATE\_ENABLE this parameter enables the visibility of the update padstack checkbox in the Update and Rollback dialogs. 't' makes the checkbox visible and 'nil' makes the checkbox invisible.
- \_ADW\_PAD\_UPDATE\_VALUE this parameter sets the default value for the padstack update checkbox. 't' selects the padstack update checkbox, and 'nil' unchecks the padstack update box.

**Note:** If the padstack checkbox is selected but disabled, padstack updates will run.

- \_ADW\_PADSHAPE\_UPDATE\_ENABLE this parameter enables the visibility of the update pad shapes and Flash symbols checkbox in the Update and Rollback dialogs. 't' makes the checkbox visible, and 'nil' makes the checkbox invisible.
- \_ADW\_PADSHAPE\_UPDATE\_VALUE this parameter sets the default value for the pad shapes and Flash symbols update checkbox. 't' selects the pad shape/Flash symbol update checkbox, and 'nil' unchecks the padstack update box.

**Note:** If the padstack checkbox is selected but disabled, pad shape and Flash symbol updates will run.

- \_ADW\_FORCE\_FOOTPRINT\_UPDATE\_ON\_MAJOR\_REV If this parameter is set to true, that is, if its value is 't', designers are prompted to update their footprint symbols if the symbols have undergone major updates. It will be mandatory for designers to update their footprint symbols.
  - Details of the symbols refreshed are saved to refresh\_forced.log, which is available in the same directory as the .brd file.

**Note:** Designers do not need to update their symbols if they have undergone only minor revisions.

- \_ADW\_RESET\_DRILL\_DATA\_VALUE If this parameter is set to true, that is, if its value is 't', designers are prompted to update or refresh drill customizable data fields in the Drill Customization spreadsheet during a update or refresh of padstacks.
  - If this parameter is not set, updates or refreshing padstacks deletes any changes previously made to these customizable fields in the Drill Customization spreadsheet.
- \_ADW\_RESET\_PIN\_ESCAPES\_ENABLE this parameter enables the visibility of the reset pin escapes checkbox in the Update and Rollback dialogs. 't' makes the checkbox visible, and 'nil' makes the checkbox invisible.

Symbol Revision Manager

- \_ADW\_RESET\_PIN\_ESCAPES\_VALUE If this parameter is set to true, that is, if its value is 't', predefined pin escapes from the symbol are reset.
- \_ADW\_RIPUP\_ETCH\_ENABLE this parameter enables the visibility of the ripup etch checkbox in the Update and Rollback dialogs. 't' makes the checkbox visible, and 'nil' makes the checkbox invisible.
- \_ADW\_RIPUP\_ETCH\_VALUE If this parameter is set to true, that is, if its value is 't', etch associated with symbol pins is removed when symbols are refreshed.
- \_ADW\_PRESERVE\_PADSTACK\_NAMES\_ENABLE this parameter enables the visibility of the preserve padstack name checkbox in the Update and Rollback dialogs. 't' makes the checkbox visible, and 'nil' makes the checkbox invisible.
- \_ADW\_PRESERVE\_PADSTACK\_NAMES\_VALUE If set to 't', symbol pins will maintain their padstack names when they are refreshed.
- \_ADW\_RESET\_SYM\_TEXT\_ENABLE this parameter enables the visibility of the reset symbol text checkbox in the Update and Rollback dialogs. 't' makes the checkbox visible, and 'nil' makes the checkbox invisible.
- \_ADW\_RESET\_SYM\_TEXT\_VALUE If this parameter is set to true, that is, if its value is 't', the symbol text and size are reset based on how they are defined in the symbol definition instead of how they are defined in your design, if different.
- \_ADW\_IGNORE\_FIXED\_ENABLE this parameter enables the visibility of the ignore fixed checkbox in the Update and Rollback dialogs. 't' makes the checkbox visible, and 'nil' makes the checkbox invisible.
- \_ADW\_IGNORE\_FIXED\_VALUE If this parameter is set to true, that is, if its value is 't', SRM replaces a symbol to which the FIXED property has been assigned.

### **Limitations of Symbol Revision Manager**

- Update and recovery of symbols does not retain symbol edits. Writing out the symbol definitions means that local edits are lost; this includes silkscreen changes, pin moves, and so on.
- Refreshes do not retain symbol edits. Local edits to pin locations, silkscreen, and so on are lost when the symbol is replaced by the newer version from the library.
- Padstacks, Flash symbols and pad shapes are not under revision control

# Allegro EDM Version Management Utilities Guide Symbol Revision Manager

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# **Library Verification**

The Library Design Verification program is used to run a set of predefined verification rules on an active schematic model.

#### **Launching Library Design Verification**

You can launch the library design verification program in one of the following ways:

- a. Open a library project.
- **b.** Create a new schematic model for the project or check out an existing schematic model.
- c. Create or edit the schematic model.
- **d.** Click the *Verify Symbol* button in the Flow Specific Tools pane.

The Library Design Verification window appears.

#### Alternatively:

- **a.** Open the required library project.
- **b.** Check out the required schematic model.
- **c.** Open the Allegro EDM System Console.
- **d.** Enter the library\_verif command.

The Library Design Verification window appears.

#### **Library Design Verification User Interface**

The user interface is divided into the following sections:

□ *Cell*: This field displays the schematic model to be verified.

Library Verification

- □ Setup: Clicking this button allows you to review or configure the verification rules to be run.
- □ *DRC*: This section displays the number of errors, warnings, and oversights found while running the Design Rule Checks (DRC). (Rules Checker)
- □ *Report*: Clicking this button opens the DRC report.
- Status: This section displays a message indicating whether or not the information displayed is up-to-date or was generated during a previous session.

**Note:** By default, you can only view the already configured rules. Only the library administrator can change the configuration settings.

#### **Working with Library Design Verification**

1. Click the Run button.

The Verification of: <cell\_name> window appears.

- **2.** Click *OK* when the verification process is complete.
- 3. Click the Report button.

The log file opens.

When you run this verification program, the verification data and report files are available at the following location:

#### <Allearo

EDM\_project\_directory>\<library\_project>\flatlib\model\_sym\<library\_name>\<cell \_name>\atdm\_verif

The Library Design Verification program generates a marker file (.mkr) that can be used in Design Entry HDL to graphically indicate each error in the design. To use this file, do the following:

- 1. Open Design Entry HDL.
- **2.** Choose *Tools Markers Load*.

The Markers window appears.

**3.** Choose File – Load.

The Load Marker File dialog box appears.

**4.** Navigate to the atdm\_verif folder to open the .mkr file.

# Allegro EDM Version Management Utilities Guide Library Verification

# Allegro EDM Version Management Utilities Guide Library Verification

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# **Design Verification**

The Schematic Design Verification program is used to apply a set of predefined verification rules on the schematic design or on a schematic block.

#### **Launching Schematic Design Verification**

You can launch the schematic design verification program in one of the following ways:

- a. Open the required design project.
- **b.** Choose Detailed Design Phase Logic Capture.
- **c.** Choose Verification Automatic Mode from the Flow Specific Tools pane.

The Allegro Design Workbench: Schematic design verification window appears.

#### Alternatively:

- **d.** Open the required design project.
- **e.** Open the Allegro EDM System Console.
- f. Enter the verif command.

The Allegro Design Workbench: Schematic design verification window appears.

#### **Schematic Design Verification User Interface**

The user interface is divided into the following sections:

- Design block: This drop-down combo box allows you to select the design block you want to check.
- params: Clicking this button allows you to review or configure the verification rules to be run.

Types of checks:

**Design Verification** 

- DRC: Design Rules Checks. The Rules Checker utility runs these verification rules.
- O PTF Synchronization: This will run LRM on the selected design.
- O PXL: Packager-XL, which is used for packaging verification
- ERC: Electrical Rules Checks

The number of errors, warnings, and oversights corresponding to each type of check is displayed after the verification process is complete.

Report: Clicking this button opens the respective verification report.

Status: This section displays a message indicating whether or not the information displayed is up-to-date or was generated during a previous session.

**Note:** By default, you can only view the already configured rules. Only the library administrator can change the configuration settings.

#### **Working with Schematic Design Verification**

- 1. Choose the design block for which you want to run the verification process.
- 2. Click the Run button.

The Verification of: <design block name> window appears.

- **3.** Click *OK* when the verification process is complete.
- **4.** Click the *Report* button for each type of check.

The corresponding log file opens.

The name and location of the log files for each check are as follows:

- DRC: <Allegro EDM\_project\_directory>\<design\_project>\worklib\<design\_block\_selected>\at dm\_verif\cp.log
- PTF: <Allegro EDM\_project\_directory>\<design\_project>\atdmdir\logfiles\LRM\_Update.log
- PXL: <Allegro EDM\_project\_directory>\<design\_project>\worklib\<design\_block\_selected>\at dm\_verif\pxl.log

**Design Verification** 

ERC: <Allegro EDM\_project\_directory>\<design\_project>\worklib\<design\_block\_selected>\at dm\_verif\erc.rpt

When the Schematic Design Verification program runs DRC (Rules Checker), it generates a marker file (.mkr) that can be used in Design Entry HDL to graphically indicate each error in the design. To use this file, do the following:

- 1. Open Design Entry HDL.
- **2.** Choose *Tools Markers Load*.

The Markers window appears.

3. Choose File - Load.

The Load Marker File dialog box appears.

- 4. Navigate to the atdm\_verif folder to open the .mkr file.
- **5.** Click the Next Marker button to view each error.

# Allegro EDM Version Management Utilities Guide Design Verification

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# **User Interface**

This section explains the following Library Revision Manager interface controls.

- User Interface
- Block Mismatch Details Dialog
- Block Re-Import Dialog
- Sheet Content Mismatches Dialog

User Interface

# **Library Revision Manager Dialog**

The Library Revision Manager dialog has the following parts:

- Cell/Block Details pane
- Libraries and version information pane
- Comments area
- PTF Details pane
- Schematic Instances area

Field	Description
Cell/Block data for design <design name=""></design>	Displays the cells and blocks in the cached libraries and the design that do not match their versions in the reference libraries. The cache part table row (part_table.ptf) and the reference library for the rows gets used to annotate values to the cell instances in the block.
	The grid contains the following column headers:
	Cell name: Lists the name of the cell or block. The column shows cells (in cache) present in the block selected.
	If a cell is used only in a block and not at the top-level design, it will also appear in the grid if it has a version or ptf mismatch.
	Entries in bold denote that the cell contains blocks. The cell in the block has a version mismatch with the reference or cache. You can right-click and select <i>Block Mismatch Details</i> to view those details. This opens another dialog that has the same columns as the Library Revision Manager window. See <u>Block Mismatch Details Dialog</u> for more details.
	Used: Shows if the cell is used in the design or not.
	Status: Shows the Cell Status value.

User Interface

Field	Description
	Part Status: Indicates whether the physical data for the cell/block is in sync with the reference libraries. The possible values are:
	■ In Sync
	The reference and cache PTFs match. No change is needed.
	Selecting a cell with In Sync status will not display anything in the <i>Physical Part Rows for Cell <selected cell=""></selected></i> pane.
	Autofixable
	The cell/block PTFs in the cache do not match the reference. LRM can correct the mismatch based on the sync properties
	■ Needs manual update
	The cell is in sync but the:
	<ul> <li>PTF is found in the local library but not found in the cache or reference library.</li> </ul>
	<ul> <li>PTF is found in the local library, nor in the cache, but exists in the reference library.</li> </ul>
	LRM cannot fix these mismatches and you need to specify what action to take. See <u>Part Status</u> .

a manual update is needed.

#### Comments area

Displays the cache, reference, and local version information about the cell selected. It also lists the differences between these two versions.

A description of the selected cell/block row is displayed. The description includes what will be done if Update is selected. Or, if

User Interface

Field	Description	
Physical Part Rows for Cell <selected cell=""></selected>	Shows the following:	
	Part table rows used in the selected cell that do not match the reference library for the cell selected in the Cell/block data for design pane.	
	PTFs used by design that are from a local library and are missing from the cache and/or reference libraries.	
	Part table rows with manually annotated properties.	
	In addition to the information under the property headers of the part table, the Status column displays the status of the physical row with respect to the reference library data.	
	The columns for each part table row are based on the PTF. Source and Status are always there.	
	A description of the selected PTF row is displayed. The description includes what will be done if you click Update.	
Schematic Instances area	Lists all of the instances of the cell (in the design) selected in the Cell/Block Details pane.	
Update	Based on the selections made, LRM makes the changes in the design libraries.	
Close	Closes the LRM window.	
Help	Launches the Cadence Help and displays information related to the window.	

#### **Cell Status**

The <u>Implication of the Cell Status</u> table summarizes the different values for the Cell Status column in the *Library Revision Manager* dialog along with their descriptions.

Table A-1 Implication of the Cell Status

Status	Indicates that
Cell in different library	The cell is present in different libraries in the cache and reference.

Status	Indicates that
Cell missing in Reference	The cell is in the cache but not in the reference library.
Error	The cell has an unknown error that Library Revision Manager cannot identify.
	For example, one possible case, cell metadata is missing from the cache as well as from the reference library.
In Sync	The cell in the cache and reference libraries are identical.
Incorrect Metadata	The cell has been modified manually (possibly without using Part Developer) resulting in inconsistencies in the cell metadata.
Local cell/block	Cell/block is not there in the reference libraries but is used in the design. This could be from an entry in the CDS.LIB other than the cache.
Major Update	The cell has undergone a considerable change. For example, a pin could have been added, deleted, or moved within a symbol. The changes in the cell can impact packaging.
Minor Update	The cell has undergone a small change. For example, a change in the text of a reference designator. This usually does not impact the packaging data in the design.
Modified in Cache	The cache cell (under the project library) has been updated (for example, using Part Developer) by the librarian.
Modified in Reference	The reference cell has been modified (for example, using Part Developer).
New	A new cell has been added to the cache. Such cases arise when you import a block or add a block to your design.
Nonreadable cache metadata	Library Revision Manager is unable to read cell-level metadata from the cache. As a result, the correct status is unavailable.

#### Allegro EDM Version Management Utilities Guide

User Interface

Status	Indicates that
Nonreadable reference metadata	Library Revision Manager is unable to read cell-level metadata from the reference library. As a result, the correct status is unavailable.
Reusable cell/block	Cell/block is from an entry in the cds.lib other than the cache. And is also found in the reference library.

#### **Part Status**

The <u>Implication of Part Status</u> table summarizes the different values for the *Part Status* column in the *Library Revision Manager* dialog along with their descriptions.

Table A-2 Implication of Part Status (Sheet 1 of 2)

Part Status	Indicates that
In Sync	The part in the cached and reference libraries are identical and no difference exists.
Need Manual Update	The part is not autofixable. You need to manually update it.
Missing in Ref.	The part is not there in the reference PTF.
NEW	A new part will be added to the cache. Such cases arise when you import a block or add a block to your design.
	Parts that are used in the blocks but are missing from the cache have this status.
Autofixable	The part rows in the cache can be autofixed. This fix can be based on either minor mismatch (injected property mismatch) or the <i>sync_properties</i> directive.
	You can see the corresponding part row (with which it is going to be replaced) using the <i>Show Differences</i> context menu option.
Block PTF	The part has been added to the cache, as a result of block addition or import. It shows that the new part is being used in the block being imported or added to the design.
Key Value Mismatch	There is a key property value mismatch between the cache and reference parts.

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User Interface

Table A-2 Implication of Part Status (Sheet 2 of 2)

Part Status	Indicates that
Injected Value Mismatch	There is an injected property value mismatch between the cache and reference parts.
Added Property Mismatch	There is an added property mismatch between the cache and reference PTFs. Some cases in which this arises are:
	Added property is available in cache PTF but missing in reference PTF.
	Added property is available in reference PTF but missing in cache PTF.
	Value of the added property in the cache and reference PTFs is different.
Key Header Mismatch	The key property headers between the reference and cache PTF rows are different.
Injected Header Mismatch	The injected property headers between the reference and cache PTF rows are different.
AUTO_Sync_Prop	The PTF row property can be automatically updated using the sync_properties directive defined in the project file.
	The properties defined in this directive are used as a sensitivity list. The mismatched cache PTF row is compared with the other reference PTF rows. If a reference PTF row matches, it is replaced with the cache PTF row. There is no need for manual intervention.
Manually Replaced	You have changed the old part with a new part (using the Replace with context menu option)

### **Block Mismatch Details Dialog**

The dialog is similar to the <u>User Interface</u> and contains the following areas:

- Cell/Block Details pane
- Comments area
- PPT Details pane
- Schematic Instances area

### **Block Re-Import Dialog**

The Block Re-Import dialog comprises the following user interface elements:

Field	Description
Block	Displays the names of the blocks that mismatch in the design that is open and the one that is being imported.
Library	Displays the name of the library where the block is.
Existing	Shows the version of the cell/block in the open (destination) design.
Source	Shows the version of the cell/block in the design from where the block is being imported (source).
Continue	Resumes the import process.
Cancel	Stops the design import.
Help	Launches the Cadence Help and displays information related to the window.

#### Allegro EDM Version Management Utilities Guide

User Interface

### **Sheet Content Mismatches Dialog**

The *Sheet Content Mismatches* dialog shows the same content as the *Library Revision Manager* dialog with the exception of the command buttons.

Field	Description
Block/Cell Details pane	Contains the blocks or cells that are instantiated at least once, on the schematic. The grid contains the following column headers:
	<ul> <li>Cell/Block Name: Displays the name of the cell or block that have a mismatch</li> </ul>
	<ul> <li>Version in Sheet: Shows the version of the cell in the design which is being imported</li> </ul>
	■ Local Version: Shows the version of the cell in the currently open design.
	■ Version in Library: Shows the version of the cell in the library.
	■ Part Status: See <u>Part Status</u> .
Comments area	Displays the cache and reference version information about the cell selected in the Cell Details pane. It also lists the differences between these two versions.
Detailed Comments button	Displays user comments between the cached version and the rollback version of the selected block or cell.
Physical Part Rows pane	Lists the part table rows used in the design that do not match the reference library for the cell selected in the Cell Details pane.
	In addition to the information under the property headers of the part table, the Status header displays the status of the physical row with respect to the reference library data.
Schematic Instance(s) area	Lists all the block or cell instances of the selected block or cell in the Block/Cell Details pane.
	For multiple instances of a block, the schematic linkages for the cells it contains appear only once.
OK	Resumes the sheet import process.
Cancel	Cancels the import and returns to the Import Design dialog.

Field	Description
Help	Launches the Cadence Help and displays information related to the window.

### Allegro EDM Version Management Utilities Guide Rollback

### **Rollback**

The Rollback dialog comprises the following user interface elements:

## Allegro EDM Version Management Utilities Guide Rollback

Field	Description
Block/Cell Details pane (Depends whether you have blocks or cells to rollback)	Contains the blocks or cells that are instantiated at least once, or the schematic. The grid contains the following column headers:
	Cell/Block Name: Lists the name of the block or cell. The column will show cells or blocks in the project cache.
	Cache Version: Lists the version of the block or cell in the project cache.
	Rollback Version: Choose the version you want to revert. The drop-down box lists all the previous versions available for the selected block or cell.
	A disabled drop-down box indicates the absence of the cached version.
	Rollback: Check this next to the block or cell to roll back. the options under this column indicate either of the following:
	■ Cached and rollback versions are same
	■ No rollback version is available
	■ Rollback With Cells: Check this to roll back cells of the blocks
	This column is available only when you launch rollback in the block mode.
	Show All Cache Blocks or Cells: Select this to list all the cached blocks or cells in the Block/Cell Details pane.
	Blocks or cells that do not belong to the cache appear italicized in the grid.
	<ul> <li>Detailed Comments: Click this to view system-generated message history for the selected block or cell.</li> </ul>
User Comments button	Displays user comments between the cached version and the rollback version of the selected block or cell.
	To view user comments, the rollback version should be lower than the current cached version. If the cached version is greater than the version listed under the <i>Rollback?</i> column, the

differences do not appear.

# Allegro EDM Version Management Utilities Guide Rollback

Field	Description
Schematic Instance(s) area	Lists all the block or cell instances of the selected block or cell in the Block/Cell Details pane.
	For multiple instances of a block, the schematic linkages for the cells it contains appear only once.
Rollback	Initiates the rollback on the selected block or cell.
Cancel	Closes the Rollback dialog.
Help	Displays the online help for the rollback feature.

## Allegro EDM Version Management Utilities Guide Purge

### **Purge**

The Purge utility helps you synchronize the shopping cart with your design.

Field	Description
Save Settings	Sets the options that you select as the default.
Unused Hierarchical Blocks	Deletes all the hierarchical blocks that are present in cache but not instantiated on the schematic. It also deletes the associated history files.
Unused Cells	Removes all unused cells, their associated part tables, and associated jar files from the history of the design project.
Unused Physical Parts	Removes all unused physical part table rows from the cache as well as from the cell level part table files (of the cached cells).
Update Shopping Cart	Updates the shopping cart (shoppingcart.xml file) whenever you remove a part table row from cache. As a result, the corresponding details of the part table row are removed from the shopping cart.
History	Deletes the history (jar) files for the design project.
	Use the <i>History Depth</i> field to specify the number of versions (major or minor) to be deleted. For example:
	Enter 0 to delete all the versions of the history files, including the most current version. Using this will empty your history folder completely.
	Enter 1 to retain the current version and delete all the other versions from the history.
	Enter 2 to retain the last two versions and delete all the other versions from the history.
Project to be purged	Displays the location of the design project (cpm file)
OK	Starts the purge operation using the selected option(s).
Cancel	Closes the <i>Purge</i> dialog.

# Allegro EDM Version Management Utilities Guide Purge

Field	Description
Help	Displays the online help for the purge feature.