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Allegro® Discrete Library to Keysight ADS Translator User Guide

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Cadence Design Systems, Inc. (Cadence), 2655 Seely Ave., San Jose, CA 95134, USA.

standing industry terminology. Such content will be addressed at a time when the related software can be updated without end-user impact.

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Translating Allegro Discrete Libraries to Advanced Design System

Allegro Discrete Library to Keysight ADS Translator translates discrete part libraries created in the Allegro platform to Advanced Design System (ADS) of Keysight Technologies.

Note: Allegro Discrete Library to Keysight ADS Translator is available when Analog/RF option is enabled in Allegro PCB Designer.

How Allegro Discrete Library to Keysight ADS Translator Works

The Allegro Discrete Library to Keysight ADS Translator is designed to work with the ADS Cadence library importer. It generates the files— `CDNSsymbols.iff`, `CDNSfootprint.iff`, and `part_mapping_file.txt`—that the ADS Cadence library importer requires as input to import Cadence libraries.

Before you run the translator, you need to:

- Create a project and include all the discrete libraries to be translated in the `cds.lib` file
- Ensure that `PSMPATH` and `PADPATH` variables point to all required package symbols and padstacks

The translation process comprises the following steps:

1. Collecting Library Information
2. Creating a Library Structure through IFF
3. Generating Output Files

Note: You can view the details of each step by clicking the *Details* button when the translation is in progress.

Collecting Library Information

In the Collecting Library Information step, Allegro Discrete Library to Keysight ADS Translator walks through the library tree structure and collects the library parts that have been selected for translation. For the selected library parts, the schematic symbol information is pre-read from the disk into memory. This avoids repeated loading and improves performance.

Creating a Library Structure through IFF

In the Creating IFF Elements step, Allegro Discrete Library to Keysight ADS Translator translates each specified part into various IFF structures. A layer map information file is used in this step to translate Allegro layers into ADS layers. All versions of schematic symbols, part types, and part numbers are processed. The footprints are also processed.

Generating Output Files

Allegro Discrete Library to Keysight ADS Translator saves the information about translated parts in the following files:

CDNSsymbols.iff

CDNSfootprint.iff

part_mapping_file.txt

CDNSsymbols.iff

The `CDNSsymbols.iff` file—also called the schematic symbol IFF file—contains information about the shapes that describe the schematic symbol in ADS.

The schematic symbol IFF file is composed of a series of `SCIONPAGE` and `SYMBOLPAGE` definitions of library parts. `SCIONPAGE` contains parameters and properties, and `SYMBOLPAGE` contains the logical symbol in the schematic. Each of multiple versions of a schematic symbol or alt_symbol values of a library part has a `SYMBOLPAGE` definition.

The path of the library part is stored in the `CDNSsymbols.iff` file as a concatenation of file, design, symbol and index. This path enables ADS to identify the original source of the library part. PCB Editor also uses this information when an ADS design that uses the part is transferred back to PCB Editor.

All translated library parts are attached the property `CDNSCOMP=T`.

Changing symbol reference point

The origin of schematic symbol of Allegro library and ADS library are usually not same. This difference causes a shift in symbol location in ADS schematic.

The Allegro Discrete Library to Keysight ADS Translator is enhanced to convert the symbol origin to Pin1location while translating Allegro library. The translator adds this difference in origin coordinates as a `CDNS_SYM_OFFSET` property to all the symbols that are translated from Allegro discrete library.

CDNSfootprint.iff

The `CDNSfootprint.iff` file—also called the package symbol IFF file—contains information about the layers, shapes, pins, and text entries of the footprint symbol. Allegro Discrete Library to Keysight ADS Translator uses a layer map file to translate Allegro layers into ADS layers.

The package symbol IFF file is composed of a `LAYERPAGE` definition and a series of `DRAWPAGE` definitions.

Definitions of LAYERPAGE and DRAWPAGE

LAYERPAGE

- The `LAYERPAGE` entry defines ADS layers by default from the `adslayer.def` file.

DRAWPAGE

Each `DRAWPAGE` entry defines

- the entire path of the library part and includes an `ARTCOMP` definition, which describes the geometry information of the part.
- the unit of footprint.

Note: The Allegro Discrete Library to Keysight ADS Translator retains the unit of footprint in the output.

All translated library parts are attached the property `CDNSCOMP=T`.

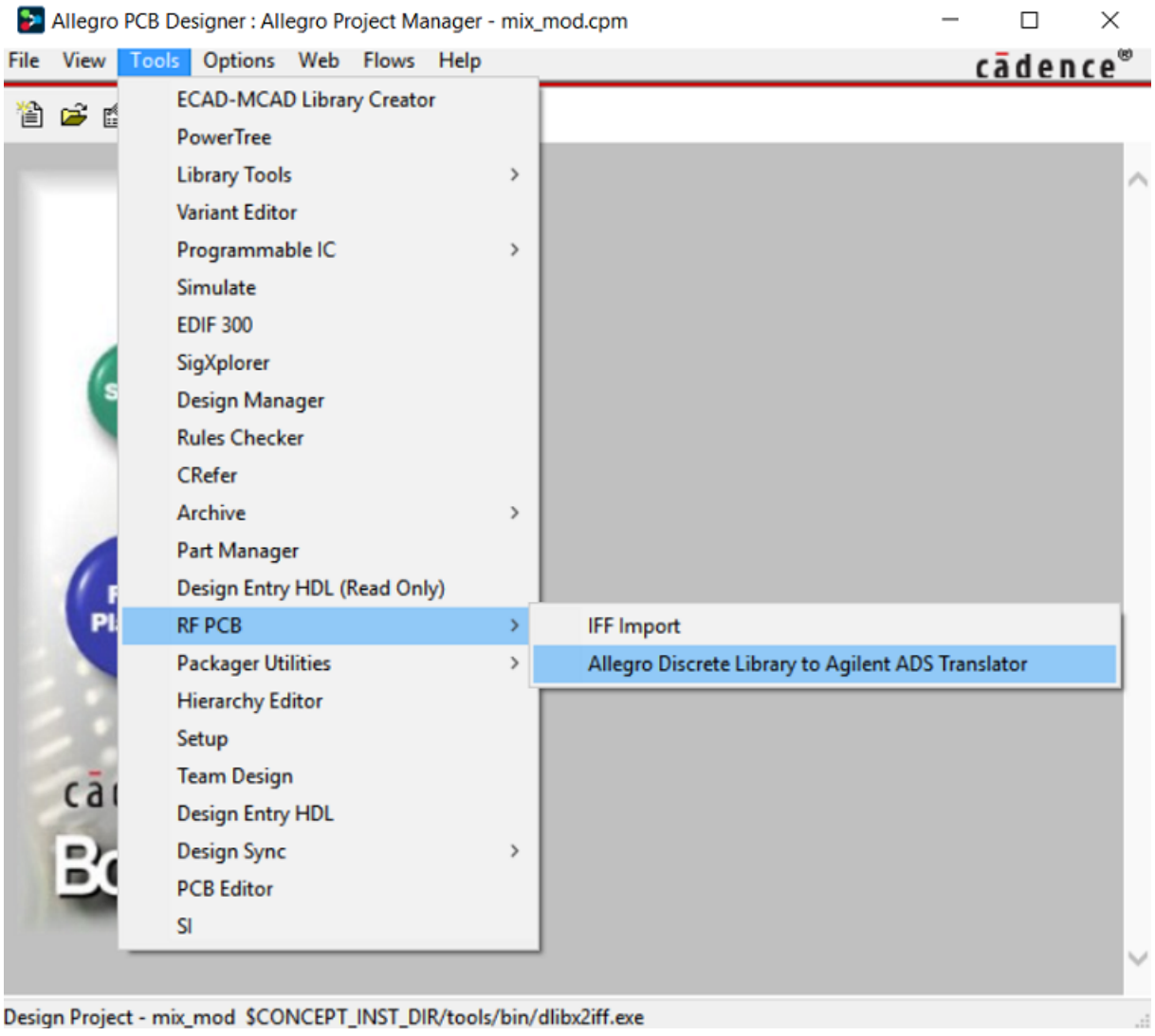
part_mapping_file.txt

The `part_mapping_file.txt` file shows the relationship between parts, components, symbols, and geometries. It contains information about all alternate symbols and all alternate footprint pins from Cadence component libraries.

Running Allegro Discrete Library to Keysight ADS Translator

To launch Allegro Discrete Library to Keysight ADS Translator:

1. Launch Project Manager.
2. Choose *File – Open* and open the required project.
3. Choose *Tools – RF PCB – Allegro Discrete Library to Keysight ADS Translator*.



Tip

You can also type the following command and press Enter:

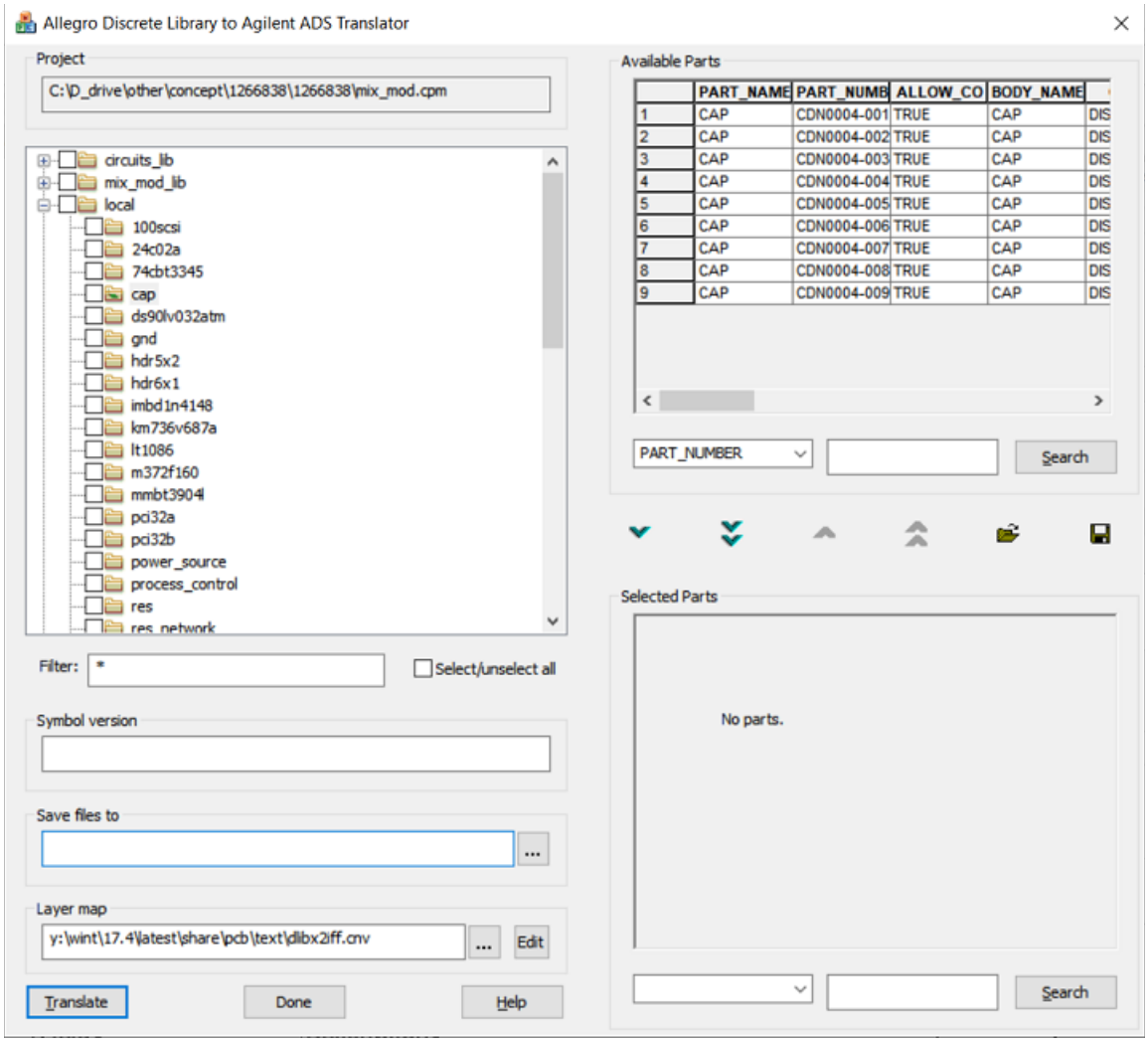
```
dlibx2iff -proj project_file [-lm layermap_file] [-save2 save2_path]
```

Note: The `-limit` argument specifies the maximum number of rows to be translated from the beginning of a part table. Use this argument if the libraries to be translated have discrete parts with large part tables.

The Allegro Discrete Library to Keysight ADS Translator dialog box displays.

Allegro Discrete Library to Keysight ADS Translator

The tree view on the left pane of the dialog box displays all the libraries included in the current project (`.cpm`) file and all the parts within the libraries.



1. Select or deselect a library name by selecting or deselecting the check box next to it.

   All the parts in the selected part tables in a library are displayed in the Selected Parts section of the dialog box. You can also select individual library parts instead of an entire library.

2. Specify schematic symbol versions to translate. Only those symbols are translated for which the symbol versions are specified.

   You can specify the integer part of the symbol version number as a input to Symbol version field. For example,‘1’ for sym_1.

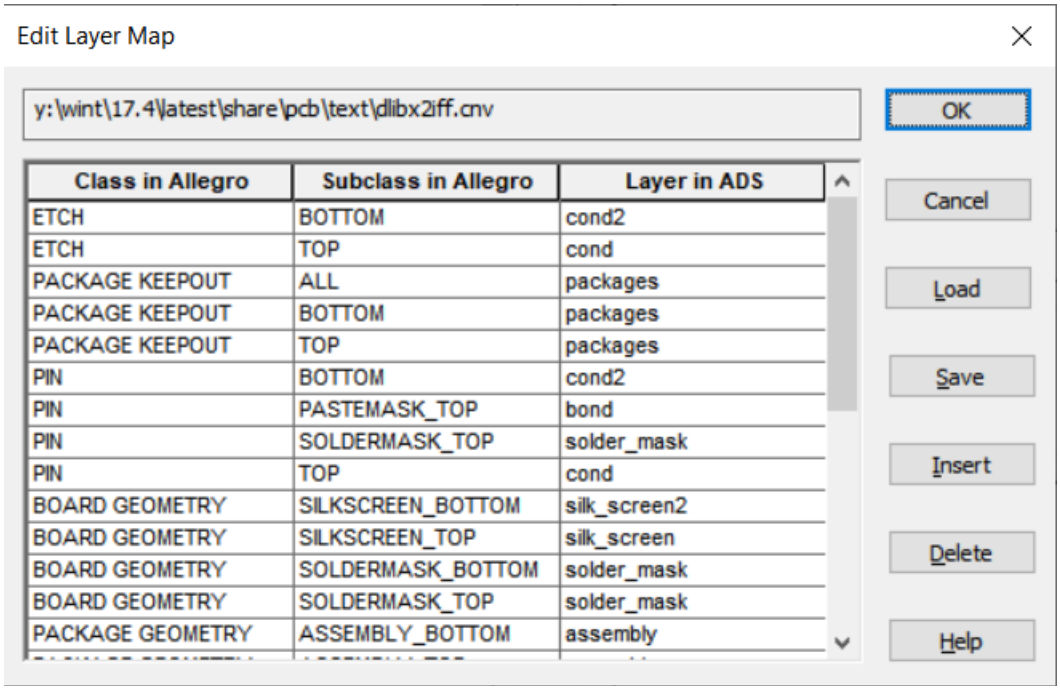
Multiple symbol version numbers can be specified by ‘,’(comma) or ‘ ’(space). For consecutive symbols you can specify consecutive integers by ‘-‘(hyphen).

For example, ‘1, 2 5-7’.

Note: The version of the symbol is a global value and applies to all the schematic symbol versions in the selected library or cell.

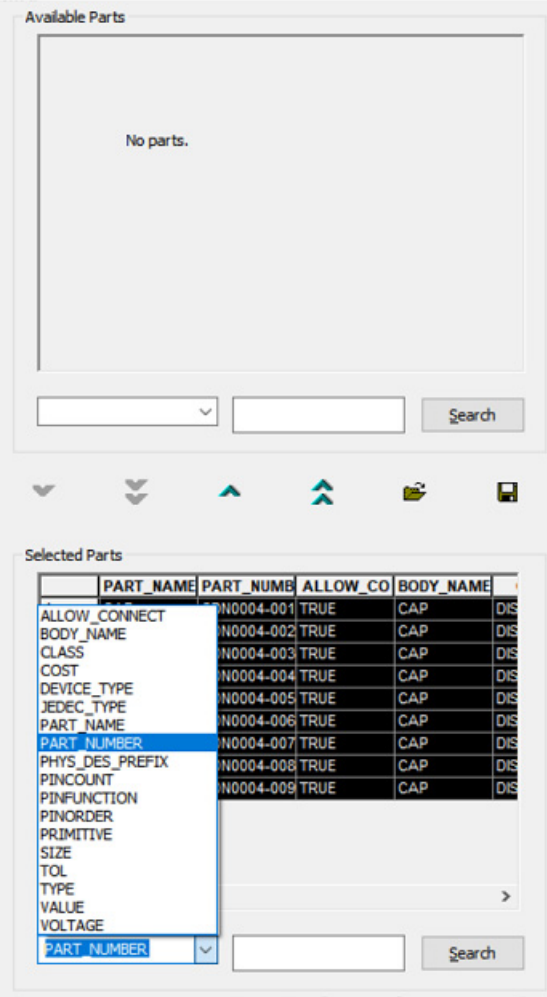
3. Specify the location of output files in the *Save files to* box.
4. Specify the layer map filename in the *Layer map* box if the default layer map file does not meet your requirements.

   Note: A layer map file translates layers in Allegro into ADS. It is a text file with a pair of mapping layers could be edit with any text editor. For a detailed description of the layer map file, see Layer Map File on page 20.
5. Click *Edit* to edit the layer map file if required.



6. Click OK to close the Edit Layer map dialog box.

On the right side pane of the dialog box, there are two grids displaying part table of the current selected part on left pane.

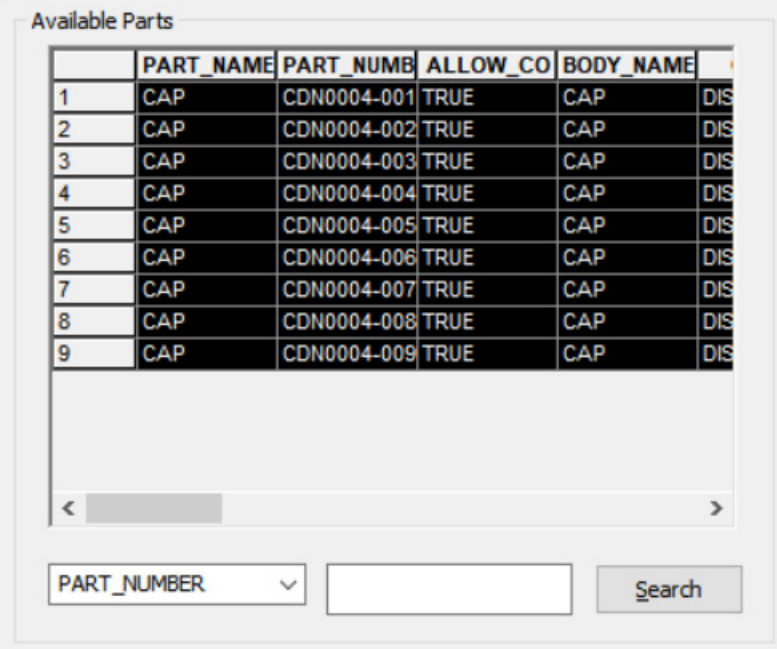


Field	Description
Available Parts grid	Lists the parts which are available, but not selected to be translated.
Selected Parts grid	Lists the parts which are selected to be translated. By default, all parts are selected.

Field	Description
Search	The Search function is available for both grids which allow you to search certain parts meeting a search criteria. The search result are highlighted in the respective grids. The valid keyword to search include alphabetical characters, the wildcard character asterisk '*', and '?'. '*' matches any number of characters or no character, and '?' matches any single character.

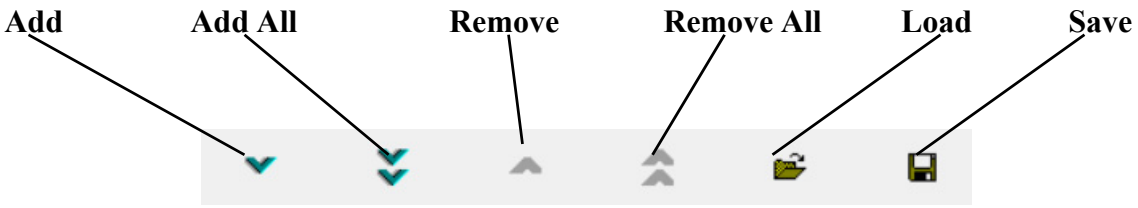
7. Select the row(s) of part(s), which you do not want to translate.
8. Right-click and choose *Unselect* from the pop-up menu. To deselect all the parts, choose *Unselect All*.

   The parts are removed from the *Selected Parts* grid and added to the Available Parts grid.



9. Right-click the corresponding row for any part that you want to move back to the Selected Parts grid, and choose *Select* from the pop-up menu. To move all the rows, choose *Select All.*

You can also use the icons to move part rows up and down from *Available Parts* grid to the *Selected Parts* grid using the following icons:



Clicking the *Load* button loads part information stored in a comma separated value (`.csv`) file. The Save option saves the selected grid to a `.csv` file for reuse purpose.

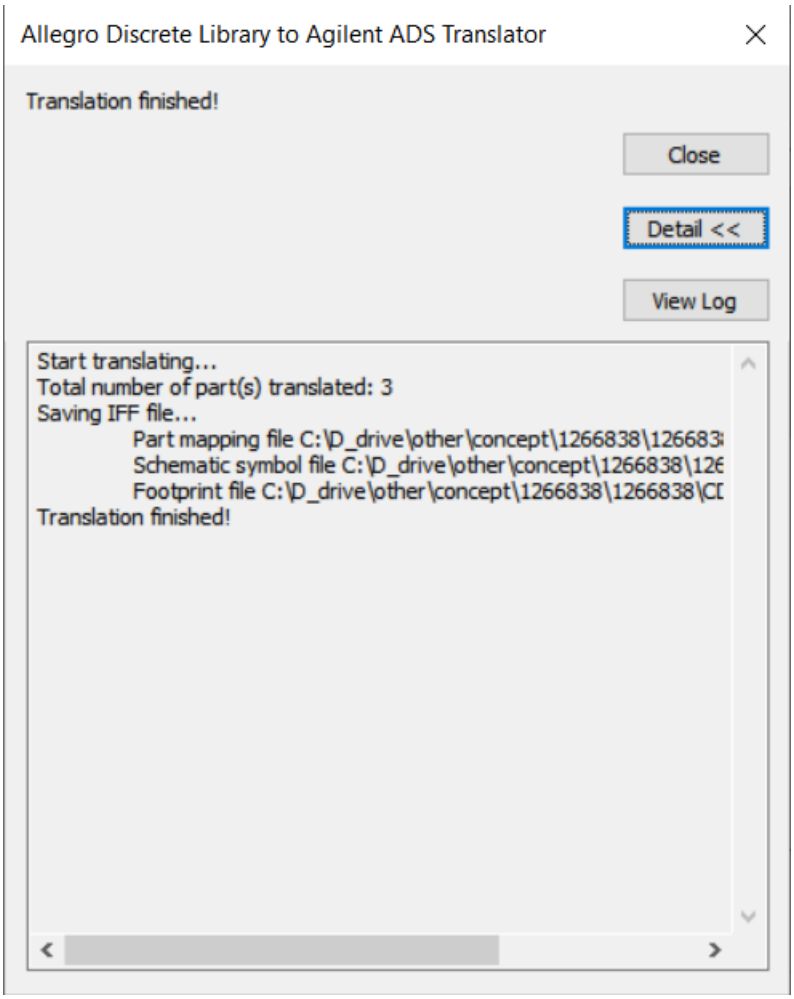
10. Click *Translate* in the Allegro Discrete Library to Keysight ADS Translator dialog box.

The following steps take place during the translation process:

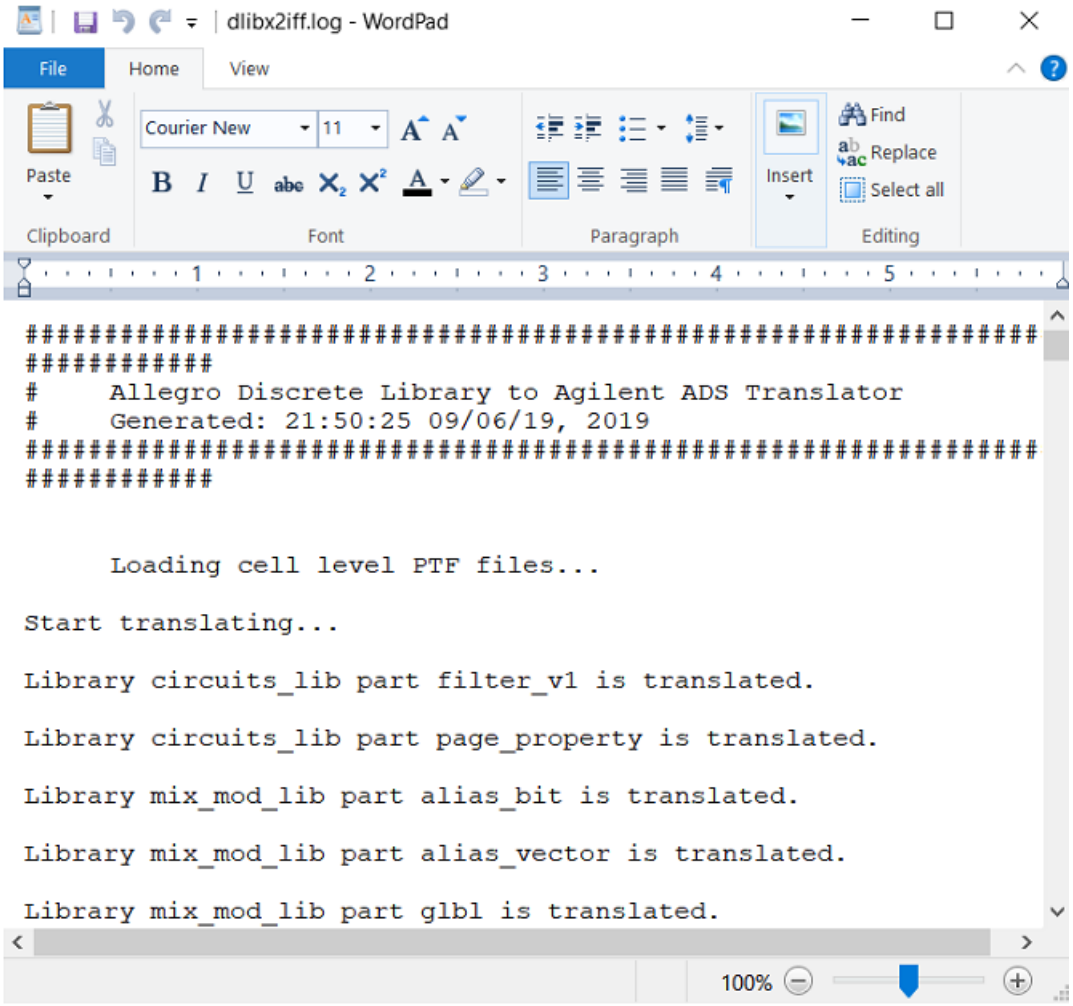
a. Library information is collected.

b. IFF elements are created.

c. Files are saved.



The specified discrete libraries are translated. Click *Viewlog* to open `dlibx2iff.log` file and review the translation status.



Note: If Allegro Discrete Library to Keysight ADS Translator finds any `.dra` file missing from the path specified in the `PSMPATH` variable, it prompts you to make one of the following choices:

- Ignore

  The output IFF file will contain no information about the missing footprint file.

- Ignore All

  The output IFF file will contain no information about any missing footprint file.

- Abort

Allegro Discrete Library to Keysight ADS Translator stops the translation. You can reset the `PSMPATH` variable and restart translation.

Layer Map File

Allegro Discrete Library to Keysight ADS Translator uses a layer map file—with a `.cnv` or `.map` extension—to translate layers in Allegro into ADS. The layer map file defines the initial layer-mapping relationship in text format, which can be edited with any text editor.

The following file formats are supported:

- Layer map (`.map`)

  The map file format is as follows:

  [Allegro layer name]=[ADS layer name]

  For example:

  ETCH/TOP=cond

  Note: in ADS, layer names are usually case-sensitive.

  Note: A comment in the map file begins with the # character.

- Layer convert (.cnv)

  The cnv file format is as follows:

  ```
  Class!          Subclass!     ADS Layer Name!
  ```

  For example:

  ETCH!

  ```
  TOP!            cond!
  BOTTOM!         cond2!
  ```

  Note: A comment is started with the # character.

Edit Layer Map

The Edit Layer Map dialog box displays when you click the *Edit* button in the Allegro Discrete Library to Keysight ADS Translator dialog box. In the Edit Layer Map dialog box, you can view the layer-mapping information under the headers *Class in Allegro*, *Subclass in Allegro*, and *Layer in ADS* and edit it according to your requirements.

Note: Double-clicking a header of the grid sorts the selected column in ascending or descending order.

The Edit Layer Map dialog box has the following buttons:

Button	Description
OK	Checks the validity of the specified mapping and prompts you to save if there are changes
Cancel	Closes the Edit Layer Map dialog box without saving any changes
Load	Enables you to browse for a layer map file and load layer-mapping information from it
Save	Enables you to save the current mapping in a `.cnv` or `.map` file
Insert	Inserts a new row below the current row
Delete	Deletes the current row
Help	Displays help

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