PADS® Layout to Expedition Design and Library Translator User's Guide

PADS 9.4

Table of Contents

Chapter 1
Before You Begin

The PADS Layout/Expedition translator is one of a group of translators included with the PADS PCB Design Tools. It is installed with PADS Layout.

You can use this translator to migrate PADS 9.4 designs and libraries to Expedition 7.9.3.

Tip: To see the translator version number, right-click the translator icon in the title bar and select About Translator.

Licensing Requirements

The PADS Layout to Expedition Design and Library Translator requires Expedition licensing features. You can check to see if you have these features using lmtools or Expedition. You only need one of the features to use this translator.

To check for licensing features using Expedition:

1. Start Expedition.

2. In the licensing dialog box that automatically appears, look for any one of the following three options:

    - Pinnacle

    - Ascent LX

    - Ascent

To check for licensing features using lmtools:

1. Open lmtools.exe, which is provided with your product licensing.

2. Look for any one of the following options:

    - Wgpcb

    - wgascentlx

    - wgascentl2

    - iodpads

    - blprobasic

Supported Versions

The translator migrates the PADS and Expedition versions shown in the following table:

Table 1-1. Supported Versions

Migrates:	To:
PADS Designs (.pcb files) All versions	To Expedition 7.9.3 Projects
PADS version 9 Libraries (Use the Library Converter to convert older libraries to PADS v9)	To Expedition 7.9.3 Libraries

Supported Migration Paths

The supported and unsupported PADS-to-Expedition migration paths are shown in the following table.

Table 1-2. PADS to Expedition Migration Paths

From:	To Expedition Keyin Flow Project	To Expedition CES Flow Project	To Expedition Keyin Flow Central Library	To Expedition CES Flow Central Library
PADS designs (.pcb)	YES	NO	—	—
PADS native libraries	—	—	YES[1]	NO

1. Migration of schematic symbol library data is not supported.

Previous Translator Version Mappings

Table 1-3. Translator Version Mappings

Translator in PADS version:	Translates from:	To:
PADS 9.3.1	PADS 9.3.1 and previous designs PADS 9.0 libraries	EE 7.9.2
PADS 9.3	PADS 9.3 and previous designs PADS 9.0 libraries	EE 7.9.1
PADS 9.2	PADS 9.2 and previous designs PADS 9.0 libraries	EE 7.9

Translator in PADS version:	Translates from:	**To:**
PADS 9.1	PADS 9.1 and previous designs PADS 9.0 libraries	EE 2007.8
PADS 9.0.2	PADS 9.0.2 and previous designs PADS 9.0 libraries	EE 2007.7
PADS 9.0.1	PADS 9.0.1 and previous designs PADS 9.0 libraries	EE 2007.6
PADS 9.0	PADS 9.0 and previous designs PADS 9.0 libraries	EE 2007.5
PADS 2007.x	PADS 2007.x and previous designs PADS 2007 libraries	EE 2007.3

First, clean up your design!

Clean up the nets in the design before attempting to translate. Run design rules checking (DRC) and do a design verification, run cleanup for manufacturing, and review hazards. Run clearance and connectivity checking. Fix any errors that are reported.

Nets with errors might be translated into the target design differently than anticipated. This usually occurs where nets are shorted together, and there is ambiguity about which traces and vias belong to which nets.

Possible File Differences Between PADS Layout and Expedition

Because PADS Layout and Expedition designs have differences in data structure, and in how designs are implemented, a design translated to Expedition might not look exactly like the design you created in PADS Layout, and vice versa. However, a correctly translated design and library will be functional in both PADS Layout and Expedition.

Mapping

You can view or change the mapping of pin types, logic families, decal attributes, package attributes, component attributes and design attributes in the Mapping Tab of the Translator dialog box. Hard-coded default mapping is used unless you update the mapping in the Mapping Tab and save your custom mappings to a configuration file.

Objects Mapping

The translator can load object-mapping configuration files to set the mapping tables for converting objects between PADS Layout and Expedition. This object mapping configuration file has a standard Windows ini file format, and contains sections for each object type to match the mapping tables: PIN TYPES, LOGIC FAMILIES, DECAL ATTRIBUTES, PACKAGE ATTRIBUTES, COMPONENT ATTRIBUTES, DESIGN ATTRIBUTES, PREFIX. The exception being the PREFIX section which is a third column of the PIN TYPES table.

You can update the current mapping settings with attribute names from the selected files by clicking the **Update mapping** button either in the Designs Tabif you want to get attribute names from the design files, or in the Libraries Tab to get attribute names from the library files.

When you click the **Update mapping** button, all your selected design or library files are scanned for part and decal attributes and their names are added to the [PACKAGE ATTRIBUTES] and [DECAL ATTRIBUTES] mapping tables unless the name already exists in the section. If the attribute name already exists in the mapping file, the attribute name will not be replaced when you click the Update mapping button.

New PADS attribute names that are added using the **Update mapping** button are also added using exactly the same name on the Expedition side of the table. You need to change the mapping if needed.

PADS Layout Component (Decals) Mapping

All PADS Layout components are translated to PACKAGE_CELLS.

Terminology

The following table lists the different terms used by PADS Layout and Expedition.

Table 1-4. PADS Versus Expedition Terminology

PADS Layout term	Expedition term
Part Type	Part Number
Decal	Package Cell
CAE Decal	Symbol

Table 1-4. PADS Versus Expedition Terminology

PADS Layout term	Expedition term
Component or Part	Part
Board Cutout	Internal Contour
Board Outline	Route Outline, Board Contour, or Board Outline
Copper	Conductive Area
Copper Pour or Plane Area	Plane Shape
Copper Cutout, Plane Cutout, Copper Pour, and Plane Area Keepout	Plane Obstruct
Hatch Outline or Hatch Void	Generated Plane Data
Placement Keepout or Component Height Keepout	Placement Obstruct
no matching term	Placement Room
Thermal Flag In Pins	Plane Noconnect
Trace Keepout or Via Keepout	Route Obstruct
Test Point Keepout	Test Point Obstruct
no matching term	Design Rule Area
Profile or Trace	Trace
Unrouted Link	Open
Pin Pair or Connection	no matching term

Related Topics

Migrating PADS Designs and Libraries to Expedition

PADS Layout to Expedition Translation Issues

Chapter 2
Migrating PADS Designs and Libraries to Expedition

You can use the PADS Layout/Expedition translator to migrate PADS Layout designs and libraries to an Expedition Keyin Flow project/Central library. You can migrate the following objects:

Table 2-1. PADS Layout to Expedition—Objects and Filenames

Object being translated	Resulting Design Data filename
Pad stacks	Padstack
Cell library	Cell
Parts database	PDB
Job preferences	JobPrefs
Net classes	NetClass
Net properties	NetProps
Layout data	Layout

Migrating PADS Layout Designs and Libraries

Translate PADS designs or only design part types and decals or PADS libraries to an Expedition Keyin Flow project/Central library.

Requirement

Before you start the translation, read Before You Begin.

Procedure

1. Translate the PADS designs/libraries to Expedition Design Data files:

   a. **Start menu > Programs > Mentor Graphics SDD > PADS (version) > Translators > PADS to Expedition Translator**

   b. If you want to translate designs, use the Designs Tab to perform steps **c** through **i**. If you want to translate libraries, use the Libraries Tab.

   Tip: The Translate button on the Designs tab translates only design files and the Translate button on the Libraries tab translates only library files.

c. In the Place translated files in: text box, type the pathname of the folder where you want the translated files to be placed, or click the **...** button to find the folder.

d. Click **Add**, and select a design/library to translate. You can add multiple items to the list.

   Tips:

   - Filenames must be unique in the list.

   - Only items whose check box is checked are translated.

e. Select or clear check boxes to indicate whether to perform the following actions:

   - Translate part types and decals only (without translating designs)
     Select this option to create a library of the parts used in a design without translating the design.

   - Translate attributes
     Select this option to translate PADS Layout attributes into Expedition property pairs.

   - Apply CAM oversizes to pads and vias
     Select this option to apply the CAM oversize values to all pads and vias.

   - Overwrite existing files
     Clear this option to keep your existing output files from being overwritten during the translation.

f. In the Output files combo box, select Database to generate binary files , or Design Data to generate Design Data files.

g. In the Output units combo box, select the units to use in the output files.

   Tip: The Basic output unit is the nanometer (1nm=1E-9 meters). Design output units are inches, mils, or millimeters (in, th, mm). Basic output units are more precise, and there is no round-off error on output.

h. If you want to automatically update the attributes mapping on the Mapping Tab, click the Update mapping button. (See "Mapping" on page 8.)

   Tip: Mappings are updated from the files in the ...files to translate list of the tab you are in.

i. Click **Translate**.

   Result: All selected PADS Layout files are translated and the Design Data files for each design are placed in a separate folder. The Translation Results dialog box displays the translation log.

2. When all the PADS designs and libraries have been translated to Design Data files:

   a. Migrate the designs:

    i. Create a new Expedition Foreign Netlist project for each translated design, using the NetList.kyn file as a net list.

    ii. Forward-annotate it using the Job Management Wizard.

    iii. Import the Design Data files into the new project using the Expedition **File > Import > Design Data** command, and save the design.

b. Migrate the libraries:

    i. If you don't already have an Expedition-only flow Central Library, create one using the Expedition Library Manager.

    ii. Import each Library Design Data file into the Central Library using the Library Services dialog in the Expedition Library Manager. You must do this individually for each partition in the Central Library.

Related Topics

Error Codes and Log Messages

Designs Tab

Use the Designs tab to translate PADS designs or only design part types and decals to an Expedition Keyin Flow project/Central library.

Accessing

- **Start** menu > **All Programs** > **Mentor Graphics SDD** > **PADS (version)** > **Translators** > **PADS to Expedition Translator** > **Designs** tab

Figure 2-1. Designs Tab

Table 2-2. Designs Tab Contents

Name	Description
Place translated files in	Type the pathname of the folder where you want the translated files to be placed, or click the browse button to find the folder. ⬚ (browse)
Log file	Displays the location of the translation log file. When the translation completes, the Translation Results dialog box displays the translation log.

Table 2-2. Designs Tab Contents

Name	Description
Design to translate	Click the **Add** button to browse for PADS Layout .pcb or .job design files. Select and click **Remove** to take a design file out of the list of designs that can be translated. **Restrictions:** • Filenames must be unique in the list. • Only designs whose check box is selected are translated.
Translate part types and decals only (without translating design)	Select this check box to create a library of the parts used in a design without translating the design.
Update mapping	Click to scan all the selected files for part and decal attributes and have their names added to the [PACKAGE ATTRIBUTES] and [DECAL ATTRIBUTES] mapping tables (or sections of the mapping file, unless the name already exists in the section - if you save the settings in a configuration file) on the Mapping Tab. **Restriction:** This button is unavailable until you add one or more designs to translate.
Translation Options area	
Translate attributes	Select this check box to translate PADS Layout attributes into Expedition property pairs.
Apply CAM oversizes to pads and vias	Select this check box to automatically apply the PADS CAM documents and "CAM.Solder mask.Adjust" and "CAM.Paste mask.Adjust" attributes to pads and vias. **Example:** A padstack for a pad is defined as Through, Round, 60 mils throughout the whole stack. A CAM document for Soldermask defines a 5mil oversize. The resulting stack will be Round 60 for all layers, but SolderMask will get an override of Round 65.
Overwrite existing files	Clear this check box to keep your existing output files from being overwritten during the translation.
Output files	• **Design Data**—generates Design Data files • **Database**—generates binary files
Output units	• **Basic**—output unit is the nanometer (1nm=1E-9 meters). **Tip:** Basic output units are more precise, and there is no round-off error on output. • **Design**—Design output units are inches, mils, or millimeters (in, th, mm)

Related Topics

[Migrating PADS Layout Designs and Libraries](#)

Libraries Tab

Use the Libraries tab to translate PADS libraries an Expedition Central library.

Accessing

- **Start** menu > **All Programs** > **Mentor Graphics SDD** > **PADS (version)** > **Translators** > **PADS to Expedition Translator** > **Libraries** tab

Figure 2-2. Libraries Tab

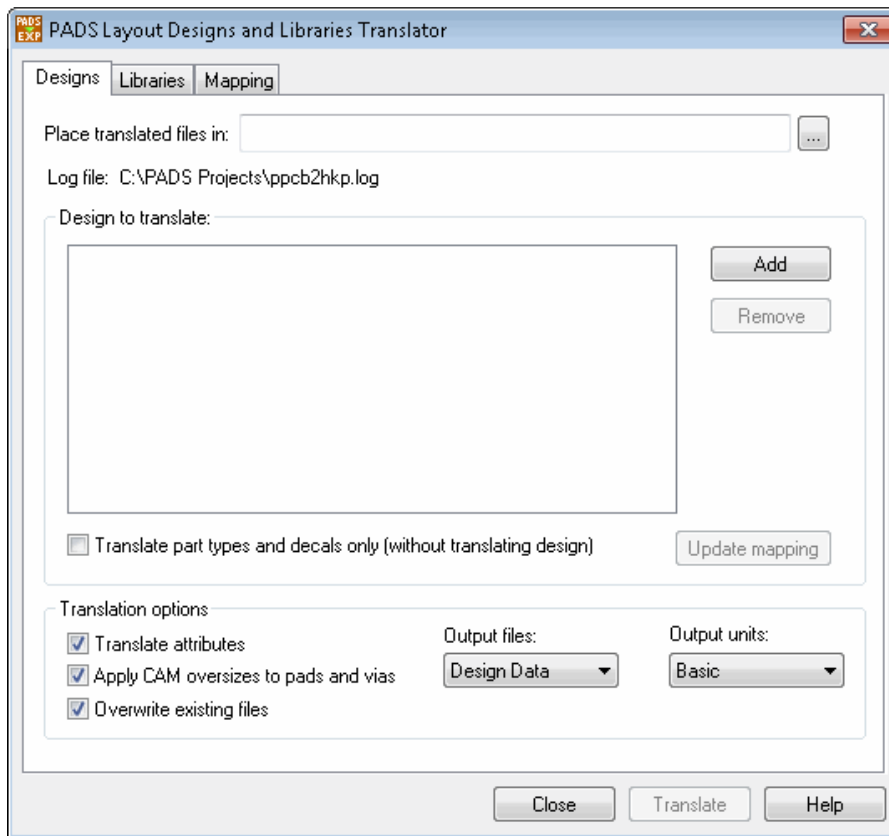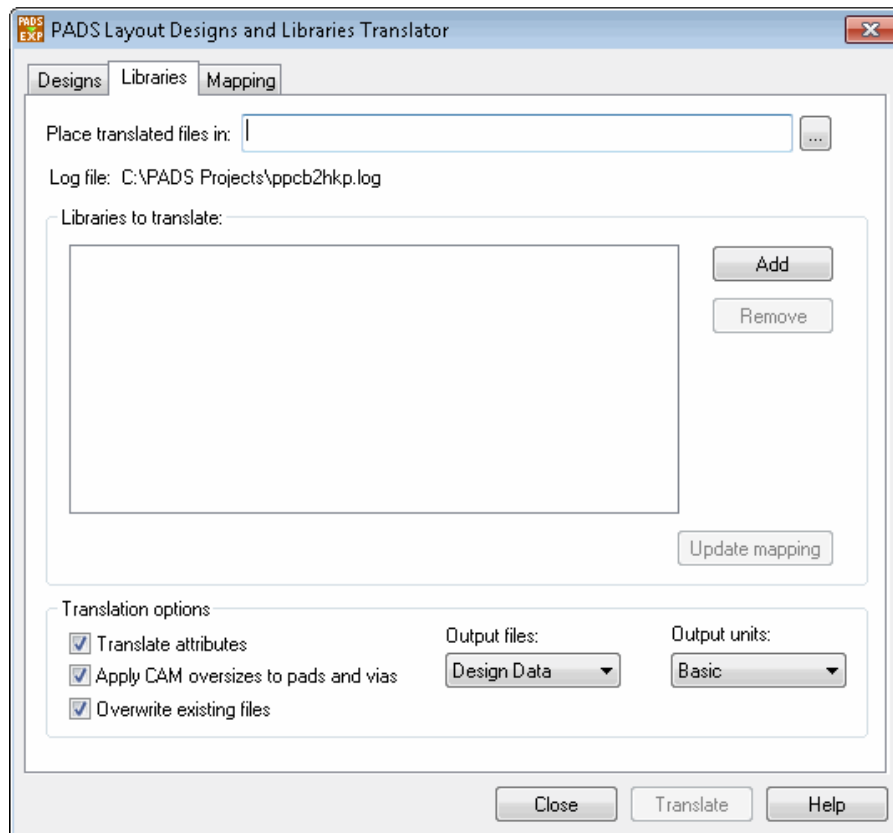**Table 2-3. Libraries Tab Contents**

Name	Description
Place translated files in	Type the pathname of the folder where you want the translated files to be placed, or click the browse button to find the folder. [...] (browse)
Log file	Displays the location of the translation log file. When the translation completes, the Translation Results dialog box displays the translation log.
Libraries to translate	Click the **Add** button to browse for PADS library .pt9 files. Select and click **Remove** to take a library file out of the list of libraries that can be translated. **Restrictions:** • Filenames must be unique in the list. • Only designs whose check box is selected are translated.
Update mapping	Click to scan all the selected files for part and decal attributes and have their names added to the [PACKAGE ATTRIBUTES] and [DECAL ATTRIBUTES] mapping tables (or sections of the mapping file, unless the name already exists in the section - if you save the settings in a configuration file) on the Mapping Tab. **Restriction:** This button is unavailable until you add one or more libraries to translate.
Translation Options area	
Translate attributes	Select this check box to translate PADS Layout attributes into Expedition property pairs.
Apply CAM oversizes to pads and vias	Select this check box to automatically apply the PADS CAM oversizes to pads and vias.
Overwrite existing files	Clear this check box to keep your existing output files from being overwritten during the translation.
Output files	• **Design Data**—generates Design Data files • **Database**—generates binary files
Output units	• **Basic**—output unit is the nanometer (1nm=1E-9 meters). **Tip:** Basic output units are more precise, and there is no round-off error on output. • **Design**—Design output units are inches, mils, or millimeters (in, th, mm)

Related Topics

Migrating PADS Layout Designs and Libraries

Mapping Tab

Use the Mapping tab to view the mapping of pin types, logic families, decal attributes, package attributes, component attributes and design attributes. Hard-coded default mapping is used unless you update the mapping and save it to a custom mapping configuration file.

Accessing

- **Start** menu > **All Programs** > **Mentor Graphics SDD** > **PADS (version)** > **Translators** > **PADS to Expedition Translator** > **Mapping** tab

Figure 2-3. Mapping Tab
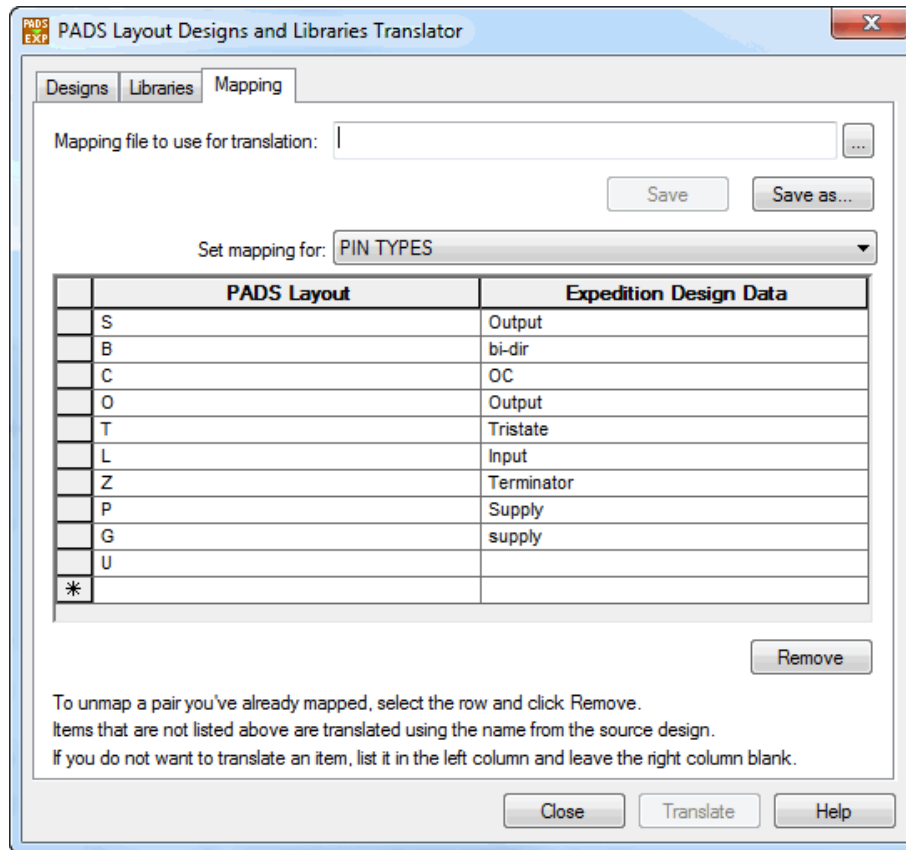
Table 2-4. Mapping Tab Contents

Name	Description
Mapping file to use for translation	If you have previously customized mappings in the mapping tables and saved those changes to a configuration file, you can browse for the file and load your mapping table configurations. There is no pre-existing configuration file. If you haven't made any changes to the tables, you can create a configuration file of the defaults by clicking **Save As**. Once you load your configuration file, click **Save** to save any further changes you make to the configuration using the mapping tables. The default filename is ppcb2hkp.cfg.
Set mapping for	Select the type of design object from the list to view or customize the mapping in the mapping table. The following types of design objects have their own mappings: • Pin Types • Logic Families • Decal Attributes • Package Attributes—You can automatically update the list of attributes in the mapping based on your designs or libraries by clicking the Update mapping button on the Designs Tab or Libraries Tab. • Component Attributes • Design Attributes
PADS Layout to Expedition Design Data table	This mapping table shows the conversions that will be made during the translation. The contents of the mapping change depending on what object type you select in the *Set mapping for* list.

Related Topics

Migrating PADS Layout Designs and Libraries

Chapter 3
Running in Batch Mode

The following command line interface is provided by the PADS Layout to Expedition Translator to enable translation in batch mode:

```
ppcb2hkp source[, source ...] -o <output_path> -log <log_file_path> -conf
<config_file_path> [options]
```

Where:

source	The files or folders to be translated. This can be a single file or a list of files.
-o <output_path>	The location of the output folder.
-log <log_file_path>	The log file path.
-conf <config_file_path>	The configuration (mapping) file path.

Tips:

- The source command line parameter can specify a single file or a file list for PADS Layout to Expedition Design Data translation. All file extensions in the source list should be the same (that is, all .pcb, or all .pt9) because the file extension determines the type of translation:

  - .pcb files are translated to Expedition Design Data files.

  - .pt9 files are translated to appropriate libraries.

Table 3-1 lists and describes the command line options.

Table 3-1. Batch Mode Options

Option	Description
-f	Run in foreground mode. The default is run in the background.
-r	Overwrite existing files.
-ud	Translate PADS Layout design or library files in Design units. The default value is Basic units.
-noattr	Ignore PADS Layout attributes (do not copy).

Table 3-1. Batch Mode Options

-nodesign	Translate decals (components), parts and pad stacks only, without translating the design files. If the -nodesign option is not specified, the program translates the design files in addition to the decals, parts, and pad stacks.

Chapter 4
PADS Layout to Expedition Translation Issues

This chapter describes the differences between PADS Layout file content and Expedition file content, and possible discrepancies that can occur in translating from one to the other.

The following items are discussed:

- Layer Mapping
- Design Units Translation
- Pad Stacks Translation
- Decals Translation
- Properties Translation
- Part Types Translation
- Component Translation
- Jumpers Translation
- Vias Translation
- Drawing Items Translation
- Copper Pours and Plane Area Translation
- Planes Translation
- Design Rules Translation
- Font Translation
- Reuses Translation
- Embedded OLE Documents

Related Topics

Error Codes and Log Messages

Terminology

Layer Mapping

Table 4-1. Layer Mapping

PADS Layout supports	Expedition supports
64 electrical layers. 186 user layers. Documentation layers.	120 electrical layers. 250 user layers. Documentation layers.

Design Units Translation

PADS Layout uses 3/2 nanometer (1E-9 meters) as internal units, and exports/imports designs either in database or in design (=display) units IN (inch), TH (mils) or MM (millimeter).

Expedition uses either microns -- UM (1E-6 meters), nanometers -- 1NM (1E-9 meters) or design units on import.

As PADS Layout uses arcs in many places, database units are preferable for output to Expedition to prevent round-off errors. Import in database (Basic) units converts all numbers to 1NM. Otherwise all numbers are output in current database units.

PADS Layout converts current design units to Expedition display units, so the units are displayed the same way in both systems.

For some parameters, like routing grid, Expedition requires even basic values. For these values, the corresponding PADS Layout parameters are rounded with excess.

Pad Stacks Translation

Expedition supports pads on the Top, Inner, Bottom, Soldermask Top, Soldermask Bottom, Solderpaste Top, Solderpaste Bottom, and particular inner layers. Expedition can set one Thermal and one Clearance pad per stack. The first thermal/antipad pad from PADS Layout stack is translated to Expedition, all other thermal/antipad pads are skipped.

If no antipad is defined in the PADS Layout pad stack, the pad from layer 25(125) is translated to the Expedition Clearance Pad.

Expedition does not support orientation of a particular pad. In PADS Layout, only the orientation of the first pad will be translated, all other pads are skipped.

Expedition does not support zero size pads for SMD, nor through pins on Top, Bottom, and Inner (for through pins only) layers. These pads are translated to round 0.001 mils (0.0001mm) pads.

PADS Layout pads having associated copper are translated to Custom Pads.

Annular pads in PADS Layout via stacks are replaced in Expedition by round pads with the same diameter.

Pads, Holes, and Pad Stack names are automatically generated. For example:

Pads: Round 50, Oblong 30x50 off 10, Round X (for generated almost zero pad).

Holes: Rnd 90, Slt 30x50 (slotted hole).

Stacks: Pad Round 50, Hole Rnd 30.

Decals Translation

PADS Layout Decals are translated to Expedition Package Cells.

The following symbols are not valid in Expedition Package Cell names and are translated to underscores:

- Slash \
- Exclamation mark !
- Open and close parentheses ( )

PADS Layout does not have decals for Jumpers and Test Points, Jumpers and Test Points are automatically generated from jumper/test point information for the design. Library translation would not generate these objects.

PADS Layout Decals marked as Connectors in Part Type are translated to Expedition Connectors.

Alphanumeric information is presented in Expedition Cells. If a PADS Layout decal is presented both in alphanumeric and non-alphanumeric parts, it will be duplicated. The following suffix is added to decal name "_ALPHA_n", where n depends on part type.

Translation of SMD Decals Having Pads on an Internal Layer

SMD components created in Layout for an internal layer are not supported by Expedition. These are irregular decals containing non-drilled pads on one or more internal layers.

In the case where all the pads for such a component are on a single internal layer, the translator creates:

- In the Expedition library, a buried cell having the pads on the top layer
- In the Expedition design, the library cell, shifted to the internal layer

In the case where the pads for the component are distributed among two or more internal layers, or if pins have more than one non-zero pad on the layers, the translator creates:

- In the Expedition library, a buried cell having the pads on the top layer

- In the Expedition design, a cell on the external layer, with each pad substituted on its appropriate internal layer

In this second case, the library's stacks differ greatly from those in the design.

Properties Translation

You can view the mapping of pin types, logic families, decal attributes, package attributes, component attributes and design attributes in the Mapping tab of the Translator dialog box. Hard-coded default mapping is used unless you update the mapping in the Mapping tab and save it to a custom mapping configuration file.

Part Types Translation

PADS Layout Part Types are translated to Expedition Parts. The \ character is not valid in Expedition Part names, and is translated as an underscore.

For example:

SO8\XICOR\"S"

Would be translated to:

SO8_XICOR_"S"

PADS Layout CAE decal information is not translated because the decals are not translatable themselves. If the number of alphanumeric names in a Part is less than the number of pins in a Part Decal, the alphanumeric information is skipped.

If a Part points to Decals with a different number of pins, the Decals are eliminated from the Part. Decals used in the design take priority of keeping in the Part.

The translator will create Parts for Jumper and Test Points automatically. PADS Layout Logic Families are translated to Expedition Type property using the mapping table. All unknown Logic Families are translated to IC types. PADS Layout Description and Part Number attributes are translated to Part Description and Part Number. All other attributes are mapped to Expedition properties using the mapping table.

Component Translation

PADS Layout components are translated to Expedition Package Cell from Library items.

Table 4-2. Component Translation

PADS Layout	Expedition
Ref_Des	REFDES
Part_Type	PARTNO
Pin_Number	PINNO
Pin_Name Labels	PINNO

Decal attributes are translated to Property Pair using the mapping table. Glued status are translated to Locked.

Jumpers Translation

PADS Layout jumpers are translated to Package Cell items. Each item will have its own jumper length in the Layout Design Data file.

Vias Translation

PADS Layout partial vias are translated to pad stacks, having holes with non-zero length. The length is calculated as Drill_End_Level - Drill_Start_Level + 1. Appropriate via span data is set in Design Data Job Preferences and Net Properties. Annular pads in PADS Layout Via Stacks are replaced in Expedition by Round pads with the same diameter. Glued vias are marked as Locked in Expedition.

If there's no via placed on the design, the first existing via definition is put into Expedition as "Unused Via". If no via definition exists in PADS, the via is created as Through, Round pads of 55 mils on Top, Bottom and Inner layers with a drill diameter of 37 mils.

Drawing Items Translation

Drawing items are translated as shown in Table 4-3.

Table 4-3. Drawing Items Translation

PADS Layout	Expedition object	Comments
Board	Board Outline + Route Outline + Placement Keepout + Contour	Placement Keepout is generated only if top or bottom component height restriction is set for the board. If the board does not exist, the design extents box is used instead.
Board Cutout	Internal Contour	Round Hole, having board width diameter, is automatically created for the contour.
2-D Line	Graphics, Drawing cell	If a drawing item contains combined text it is translated to Drawing Cell.
Copper	Conductive Area, Trace	Open Copper is translated to Trace. Coppers on non-electrical layers are translated to Geometry.
Copper Cutout	Plane Obstruct	System warns about creation of a Plane Obstruct on non-plane layer. Copper Cutouts on non-electrical layers are translated to Geometry.
Keepout Placement Test Point Trace, Via Pour Drill	Placement Keepout Test Point Obstruct Trace, Via, or Trace + Via Obstruct Plane Obstruct Not translated if it is combined with other keepout types in one drawing item, otherwise it is translated to a graphic.	System warns about creation of a Plane Obstruct on non-plane layer.
Dimension	Drawing Cell	In PADS Layout there is no association of a Dimension with a database object, so it cannot be translated to Expedition Dimension.

Copper Pours and Plane Area Translation

System generated Hatch Outlines, Hatch Voids, and Thermals will not be translated to Expedition. Copper Pours and Plane Area Outlines are translated to Conductive Areas having Plane option on the plane layers. Copper Pours and Plane Area Cutouts are translated to Plane Obstructs. Copper Pour and Plane Area parameters are translated to Area Fill Parameters section of Expedition.

Planes Translation

Some parameters of the Plane Processor in Expedition correspond to Thermal Preferences in PADS Layout. Expedition cannot import Thermal Preferences. Plane Processor parameters are not supported.

Design Rules Translation

Only PADS Layout default, net, net class, and conditional rules, are defined for these objects and for layers that are translated to Expedition. Same net Via-to-Via rules are translated to those in Expedition. Default Pad Entry and Via-at-SMD rules are translated to Expedition.

Font Translation

The fonts used in Expedition and PADS Layout are different. When the fonts are translated, the font length will be held constant; the font height will not.

Reuses Translation

All PADS Layout reuses are ignored, but their elements are translated to Expedition as separate objects.

Embedded OLE Documents

No embedded OLE documents are translated.

Chapter 5
Error Codes and Log Messages

Table 5-1 is a list of error codes and translator log messages.

Table 5-1. Error Codes and Log Messages

Error code	Explanation
[F]	A fatal error. The translator will terminate. A file was not created due to a problem, setting, or switch that would not allow the file to be translated. A translated file is not created due to the fatal error that was encountered.
[E]	A serious, but non-fatal error. The translator will continue, but you must resolve the problem, and the problem encountered might prevent the file from being useable by Expedition.
[I]	Current status information.
[W]	A warning.

Third-Party Information

This section provides information on open source and third-party software that may be included in the PADS Layout to Expedition Design and Library Translator product.

- This software application may include BOOST version 1.46.0 third-party software. BOOST version 1.46.0is distributed under the terms of the BOOST Software License version 1.0 and is distributed on an "AS IS" basis, WITHOUT WARRANTY OF ANY KIND, either express or implied. See the license for the specific language governingrights and limitations under the license. You can view a copy of the license at: *<your_Mentor_Graphics_documentation_directory>/legal/boost_1.0.pdf.*

End-User License Agreement

The latest version of the End-User License Agreement is available on-line at:
www.mentor.com/eula

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END-USER LICENSE AGREEMENT ("Agreement")

This is a legal agreement concerning the use of Software (as defined in Section 2) and hardware (collectively "Products") between the company acquiring the Products ("Customer"), and the Mentor Graphics entity that issued the corresponding quotation or, if no quotation was issued, the applicable local Mentor Graphics entity ("Mentor Graphics"). Except for license agreements related to the subject matter of this license agreement which are physically signed by Customer and an authorized representative of Mentor Graphics, this Agreement and the applicable quotation contain the parties' entire understanding relating to the subject matter and supersede all prior or contemporaneous agreements. If Customer does not agree to these terms and conditions, promptly return or, in the case of Software received electronically, certify destruction of Software and all accompanying items within five days after receipt of Software and receive a full refund of any license fee paid.

1. **ORDERS, FEES AND PAYMENT.**

   1.1. To the extent Customer (or if agreed by Mentor Graphics, Customer's appointed third party buying agent) places and Mentor Graphics accepts purchase orders pursuant to this Agreement ("Order(s)"), each Order will constitute a contract between Customer and Mentor Graphics, which shall be governed solely and exclusively by the terms and conditions of this Agreement, any applicable addenda and the applicable quotation, whether or not these documents are referenced on the Order. Any additional or conflicting terms and conditions appearing on an Order will not be effective unless agreed in writing by an authorized representative of Customer and Mentor Graphics.

   1.2. Amounts invoiced will be paid, in the currency specified on the applicable invoice, within 30 days from the date of such invoice. Any past due invoices will be subject to the imposition of interest charges in the amount of one and one-half percent per month or the applicable legal rate currently in effect, whichever is lower. Prices do not include freight, insurance, customs duties, taxes or other similar charges, which Mentor Graphics will state separately in the applicable invoice(s). Unless timely provided with a valid certificate of exemption or other evidence that items are not taxable, Mentor Graphics will invoice Customer for all applicable taxes including, but not limited to, VAT, GST, sales tax and service tax. Customer will make all payments free and clear of, and without reduction for, any withholding or other taxes; any such taxes imposed on payments by Customer hereunder will be Customer's sole responsibility. If Customer appoints a third party to place purchase orders and/or make payments on Customer's behalf, Customer shall be liable for payment under Orders placed by such third party in the event of default.

   1.3. All Products are delivered FCA factory (Incoterms 2000), freight prepaid and invoiced to Customer, except Software delivered electronically, which shall be deemed delivered when made available to Customer for download. Mentor Graphics retains a security interest in all Products delivered under this Agreement, to secure payment of the purchase price of such Products, and Customer agrees to sign any documents that Mentor Graphics determines to be necessary or convenient for use in filing or perfecting such security interest. Mentor Graphics' delivery of Software by electronic means is subject to Customer's provision of both a primary and an alternate e-mail address.

2. **GRANT OF LICENSE.** The software installed, downloaded, or otherwise acquired by Customer under this Agreement, including any updates, modifications, revisions, copies, documentation and design data ("Software") are copyrighted, trade secret and confidential information of Mentor Graphics or its licensors, who maintain exclusive title to all Software and retain all rights not expressly granted by this Agreement. Mentor Graphics grants to Customer, subject to payment of applicable license fees, a nontransferable, nonexclusive license to use Software solely: (a) in machine-readable, object-code form (except as provided in Subsection 5.2); (b) for Customer's internal business purposes; (c) for the term of the license; and (d) on the computer hardware and at the site authorized by Mentor Graphics. A site is restricted to a one-half mile (800 meter) radius. Customer may have Software temporarily used by an employee for telecommuting purposes from locations other than a Customer office, such as the employee's residence, an airport or hotel, provided that such employee's primary place of employment is the site where the Software is authorized for use. Mentor Graphics' standard policies and programs, which vary depending on Software, license fees paid or services purchased, apply to the following: (a) relocation of Software; (b) use of Software, which may be limited, for example, to execution of a single session by a single user on the authorized hardware or for a restricted period of time (such limitations may be technically implemented through the use of authorization codes or similar devices); and (c) support services provided, including eligibility to receive telephone support, updates, modifications, and revisions. For the avoidance of doubt, if Customer requests any change or enhancement to Software, whether in the course of receiving support or consulting services, evaluating Software, performing beta testing or otherwise, any inventions, product

improvements, modifications or developments made by Mentor Graphics (at Mentor Graphics' sole discretion) will be the exclusive property of Mentor Graphics.

3. **ESC SOFTWARE.** If Customer purchases a license to use development or prototyping tools of Mentor Graphics' Embedded Software Channel ("ESC"), Mentor Graphics grants to Customer a nontransferable, nonexclusive license to reproduce and distribute executable files created using ESC compilers, including the ESC run-time libraries distributed with ESC C and C++ compiler Software that are linked into a composite program as an integral part of Customer's compiled computer program, provided that Customer distributes these files only in conjunction with Customer's compiled computer program. Mentor Graphics does NOT grant Customer any right to duplicate, incorporate or embed copies of Mentor Graphics' real-time operating systems or other embedded software products into Customer's products or applications without first signing or otherwise agreeing to a separate agreement with Mentor Graphics for such purpose.

4. **BETA CODE.**

    4.1. Portions or all of certain Software may contain code for experimental testing and evaluation ("Beta Code"), which may not be used without Mentor Graphics' explicit authorization. Upon Mentor Graphics' authorization, Mentor Graphics grants to Customer a temporary, nontransferable, nonexclusive license for experimental use to test and evaluate the Beta Code without charge for a limited period of time specified by Mentor Graphics. This grant and Customer's use of the Beta Code shall not be construed as marketing or offering to sell a license to the Beta Code, which Mentor Graphics may choose not to release commercially in any form.

    4.2. If Mentor Graphics authorizes Customer to use the Beta Code, Customer agrees to evaluate and test the Beta Code under normal conditions as directed by Mentor Graphics. Customer will contact Mentor Graphics periodically during Customer's use of the Beta Code to discuss any malfunctions or suggested improvements. Upon completion of Customer's evaluation and testing, Customer will send to Mentor Graphics a written evaluation of the Beta Code, including its strengths, weaknesses and recommended improvements.

    4.3. Customer agrees to maintain Beta Code in confidence and shall restrict access to the Beta Code, including the methods and concepts utilized therein, solely to those employees and Customer location(s) authorized by Mentor Graphics to perform beta testing. Customer agrees that any written evaluations and all inventions, product improvements, modifications or developments that Mentor Graphics conceived or made during or subsequent to this Agreement, including those based partly or wholly on Customer's feedback, will be the exclusive property of Mentor Graphics. Mentor Graphics will have exclusive rights, title and interest in all such property. The provisions of this Subsection 4.3 shall survive termination of this Agreement.

5. **RESTRICTIONS ON USE.**

    5.1. Customer may copy Software only as reasonably necessary to support the authorized use. Each copy must include all notices and legends embedded in Software and affixed to its medium and container as received from Mentor Graphics. All copies shall remain the property of Mentor Graphics or its licensors. Customer shall maintain a record of the number and primary location of all copies of Software, including copies merged with other software, and shall make those records available to Mentor Graphics upon request. Customer shall not make Products available in any form to any person other than Customer's employees and on-site contractors, excluding Mentor Graphics competitors, whose job performance requires access and who are under obligations of confidentiality. Customer shall take appropriate action to protect the confidentiality of Products and ensure that any person permitted access does not disclose or use it except as permitted by this Agreement. Customer shall give Mentor Graphics written notice of any unauthorized disclosure or use of the Products as soon as Customer learns or becomes aware of such unauthorized disclosure or use. Except as otherwise permitted for purposes of interoperability as specified by applicable and mandatory local law, Customer shall not reverse-assemble, reverse-compile, reverse-engineer or in any way derive any source code from Software. Log files, data files, rule files and script files generated by or for the Software (collectively "Files"), including without limitation files containing Standard Verification Rule Format ("SVRF") and Tcl Verification Format ("TVF") which are Mentor Graphics' proprietary syntaxes for expressing process rules, constitute or include confidential information of Mentor Graphics. Customer may share Files with third parties, excluding Mentor Graphics competitors, provided that the confidentiality of such Files is protected by written agreement at least as well as Customer protects other information of a similar nature or importance, but in any case with at least reasonable care. Customer may use Files containing SVRF or TVF only with Mentor Graphics products. Under no circumstances shall Customer use Software or Files or allow their use for the purpose of developing, enhancing or marketing any product that is in any way competitive with Software, or disclose to any third party the results of, or information pertaining to, any benchmark.

    5.2. If any Software or portions thereof are provided in source code form, Customer will use the source code only to correct software errors and enhance or modify the Software for the authorized use. Customer shall not disclose or permit disclosure of source code, in whole or in part, including any of its methods or concepts, to anyone except Customer's employees or contractors, excluding Mentor Graphics competitors, with a need to know. Customer shall not copy or compile source code in any manner except to support this authorized use.

    5.3. Customer may not assign this Agreement or the rights and duties under it, or relocate, sublicense or otherwise transfer the Products, whether by operation of law or otherwise ("Attempted Transfer"), without Mentor Graphics' prior written consent and payment of Mentor Graphics' then-current applicable relocation and/or transfer fees. Any Attempted Transfer without Mentor Graphics' prior written consent shall be a material breach of this Agreement and may, at Mentor Graphics' option, result in the immediate termination of the Agreement and/or the licenses granted under this Agreement. The terms of this Agreement, including without limitation the licensing and assignment provisions, shall be binding upon Customer's permitted successors in interest and assigns.

5.4. The provisions of this Section 5 shall survive the termination of this Agreement.

6. **SUPPORT SERVICES.** To the extent Customer purchases support services, Mentor Graphics will provide Customer updates and technical support for the Products, at the Customer site(s) for which support is purchased, in accordance with Mentor Graphics' then current End-User Support Terms located at http://supportnet.mentor.com/about/legal/.

7. **AUTOMATIC CHECK FOR UPDATES; PRIVACY.** Technological measures in Software may communicate with servers of Mentor Graphics or its contractors for the purpose of checking for and notifying the user of updates and to ensure that the Software in use is licensed in compliance with this Agreement. Mentor Graphics will not collect any personally identifiable data in this process and will not disclose any data collected to any third party without the prior written consent of Customer, except to Mentor Graphics' outside attorneys or as may be required by a court of competent jurisdiction.

8. **LIMITED WARRANTY.**

8.1. Mentor Graphics warrants that during the warranty period its standard, generally supported Products, when properly installed, will substantially conform to the functional specifications set forth in the applicable user manual. Mentor Graphics does not warrant that Products will meet Customer's requirements or that operation of Products will be uninterrupted or error free. The warranty period is 90 days starting on the 15th day after delivery or upon installation, whichever first occurs. Customer must notify Mentor Graphics in writing of any nonconformity within the warranty period. For the avoidance of doubt, this warranty applies only to the initial shipment of Software under an Order and does not renew or reset, for example, with the delivery of (a) Software updates or (b) authorization codes or alternate Software under a transaction involving Software re-mix. This warranty shall not be valid if Products have been subject to misuse, unauthorized modification or improper installation. MENTOR GRAPHICS' ENTIRE LIABILITY AND CUSTOMER'S EXCLUSIVE REMEDY SHALL BE, AT MENTOR GRAPHICS' OPTION, EITHER (A) REFUND OF THE PRICE PAID UPON RETURN OF THE PRODUCTS TO MENTOR GRAPHICS OR (B) MODIFICATION OR REPLACEMENT OF THE PRODUCTS THAT DO NOT MEET THIS LIMITED WARRANTY, PROVIDED CUSTOMER HAS OTHERWISE COMPLIED WITH THIS AGREEMENT. MENTOR GRAPHICS MAKES NO WARRANTIES WITH RESPECT TO: (A) SERVICES; (B) PRODUCTS PROVIDED AT NO CHARGE; OR (C) BETA CODE; ALL OF WHICH ARE PROVIDED "AS IS."

8.2. THE WARRANTIES SET FORTH IN THIS SECTION 8 ARE EXCLUSIVE. NEITHER MENTOR GRAPHICS NOR ITS LICENSORS MAKE ANY OTHER WARRANTIES EXPRESS, IMPLIED OR STATUTORY, WITH RESPECT TO PRODUCTS PROVIDED UNDER THIS AGREEMENT. MENTOR GRAPHICS AND ITS LICENSORS SPECIFICALLY DISCLAIM ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT OF INTELLECTUAL PROPERTY.

9. **LIMITATION OF LIABILITY.** EXCEPT WHERE THIS EXCLUSION OR RESTRICTION OF LIABILITY WOULD BE VOID OR INEFFECTIVE UNDER APPLICABLE LAW, IN NO EVENT SHALL MENTOR GRAPHICS OR ITS LICENSORS BE LIABLE FOR INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFITS OR SAVINGS) WHETHER BASED ON CONTRACT, TORT OR ANY OTHER LEGAL THEORY, EVEN IF MENTOR GRAPHICS OR ITS LICENSORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL MENTOR GRAPHICS' OR ITS LICENSORS' LIABILITY UNDER THIS AGREEMENT EXCEED THE AMOUNT RECEIVED FROM CUSTOMER FOR THE HARDWARE, SOFTWARE LICENSE OR SERVICE GIVING RISE TO THE CLAIM. IN THE CASE WHERE NO AMOUNT WAS PAID, MENTOR GRAPHICS AND ITS LICENSORS SHALL HAVE NO LIABILITY FOR ANY DAMAGES WHATSOEVER. THE PROVISIONS OF THIS SECTION 9 SHALL SURVIVE THE TERMINATION OF THIS AGREEMENT.

10. **HAZARDOUS APPLICATIONS.** CUSTOMER ACKNOWLEDGES IT IS SOLELY RESPONSIBLE FOR TESTING ITS PRODUCTS USED IN APPLICATIONS WHERE THE FAILURE OR INACCURACY OF ITS PRODUCTS MIGHT RESULT IN DEATH OR PERSONAL INJURY ("HAZARDOUS APPLICATIONS"). NEITHER MENTOR GRAPHICS NOR ITS LICENSORS SHALL BE LIABLE FOR ANY DAMAGES RESULTING FROM OR IN CONNECTION WITH THE USE OF MENTOR GRAPHICS PRODUCTS IN OR FOR HAZARDOUS APPLICATIONS. THE PROVISIONS OF THIS SECTION 10 SHALL SURVIVE THE TERMINATION OF THIS AGREEMENT.

11. **INDEMNIFICATION.** CUSTOMER AGREES TO INDEMNIFY AND HOLD HARMLESS MENTOR GRAPHICS AND ITS LICENSORS FROM ANY CLAIMS, LOSS, COST, DAMAGE, EXPENSE OR LIABILITY, INCLUDING ATTORNEYS' FEES, ARISING OUT OF OR IN CONNECTION WITH THE USE OF PRODUCTS AS DESCRIBED IN SECTION 10. THE PROVISIONS OF THIS SECTION 11 SHALL SURVIVE THE TERMINATION OF THIS AGREEMENT.

12. **INFRINGEMENT.**

12.1. Mentor Graphics will defend or settle, at its option and expense, any action brought against Customer in the United States, Canada, Japan, or member state of the European Union which alleges that any standard, generally supported Product acquired by Customer hereunder infringes a patent or copyright or misappropriates a trade secret in such jurisdiction. Mentor Graphics will pay costs and damages finally awarded against Customer that are attributable to the action. Customer understands and agrees that as conditions to Mentor Graphics' obligations under this section Customer must: (a) notify Mentor Graphics promptly in writing of the action; (b) provide Mentor Graphics all reasonable information and assistance to settle or defend the action; and (c) grant Mentor Graphics sole authority and control of the defense or settlement of the action.

12.2. If a claim is made under Subsection 12.1 Mentor Graphics may, at its option and expense, (a) replace or modify the Product so that it becomes noninfringing; (b) procure for Customer the right to continue using the Product; or (c) require the return of the Product and refund to Customer any purchase price or license fee paid, less a reasonable allowance for use.

12.3. Mentor Graphics has no liability to Customer if the action is based upon: (a) the combination of Software or hardware with any product not furnished by Mentor Graphics; (b) the modification of the Product other than by Mentor Graphics; (c) the use of other than a current unaltered release of Software; (d) the use of the Product as part of an infringing process; (e) a product that Customer makes, uses, or sells; (f) any Beta Code or Product provided at no charge; (g) any software provided by Mentor Graphics' licensors who do not provide such indemnification to Mentor Graphics' customers; or (h) infringement by Customer that is deemed willful. In the case of (h), Customer shall reimburse Mentor Graphics for its reasonable attorney fees and other costs related to the action.

12.4. THIS SECTION 12 IS SUBJECT TO SECTION 9 ABOVE AND STATES THE ENTIRE LIABILITY OF MENTOR GRAPHICS AND ITS LICENSORS FOR DEFENSE, SETTLEMENT AND DAMAGES, AND CUSTOMER'S SOLE AND EXCLUSIVE REMEDY, WITH RESPECT TO ANY ALLEGED PATENT OR COPYRIGHT INFRINGEMENT OR TRADE SECRET MISAPPROPRIATION BY ANY PRODUCT PROVIDED UNDER THIS AGREEMENT.

13. **TERMINATION AND EFFECT OF TERMINATION.** If a Software license was provided for limited term use, such license will automatically terminate at the end of the authorized term.

13.1. Mentor Graphics may terminate this Agreement and/or any license granted under this Agreement immediately upon written notice if Customer: (a) exceeds the scope of the license or otherwise fails to comply with the licensing or confidentiality provisions of this Agreement, or (b) becomes insolvent, files a bankruptcy petition, institutes proceedings for liquidation or winding up or enters into an agreement to assign its assets for the benefit of creditors. For any other material breach of any provision of this Agreement, Mentor Graphics may terminate this Agreement and/or any license granted under this Agreement upon 30 days written notice if Customer fails to cure the breach within the 30 day notice period. Termination of this Agreement or any license granted hereunder will not affect Customer's obligation to pay for Products shipped or licenses granted prior to the termination, which amounts shall be payable immediately upon the date of termination.

13.2. Upon termination of this Agreement, the rights and obligations of the parties shall cease except as expressly set forth in this Agreement. Upon termination, Customer shall ensure that all use of the affected Products ceases, and shall return hardware and either return to Mentor Graphics or destroy Software in Customer's possession, including all copies and documentation, and certify in writing to Mentor Graphics within ten business days of the termination date that Customer no longer possesses any of the affected Products or copies of Software in any form.

14. **EXPORT.** The Products provided hereunder are subject to regulation by local laws and United States government agencies, which prohibit export or diversion of certain products and information about the products to certain countries and certain persons. Customer agrees that it will not export Products in any manner without first obtaining all necessary approval from appropriate local and United States government agencies.

15. **U.S. GOVERNMENT LICENSE RIGHTS.** Software was developed entirely at private expense. All Software is commercial computer software within the meaning of the applicable acquisition regulations. Accordingly, pursuant to US FAR 48 CFR 12.212 and DFAR 48 CFR 227.7202, use, duplication and disclosure of the Software by or for the U.S. Government or a U.S. Government subcontractor is subject solely to the terms and conditions set forth in this Agreement, except for provisions which are contrary to applicable mandatory federal laws.

16. **THIRD PARTY BENEFICIARY.** Mentor Graphics Corporation, Mentor Graphics (Ireland) Limited, Microsoft Corporation and other licensors may be third party beneficiaries of this Agreement with the right to enforce the obligations set forth herein.

17. **REVIEW OF LICENSE USAGE.** Customer will monitor the access to and use of Software. With prior written notice and during Customer's normal business hours, Mentor Graphics may engage an internationally recognized accounting firm to review Customer's software monitoring system and records deemed relevant by the internationally recognized accounting firm to confirm Customer's compliance with the terms of this Agreement or U.S. or other local export laws. Such review may include FLEXlm or FLEXnet (or successor product) report log files that Customer shall capture and provide at Mentor Graphics' request. Customer shall make records available in electronic format and shall fully cooperate with data gathering to support the license review. Mentor Graphics shall bear the expense of any such review unless a material non-compliance is revealed. Mentor Graphics shall treat as confidential information all information gained as a result of any request or review and shall only use or disclose such information as required by law or to enforce its rights under this Agreement. The provisions of this Section 17 shall survive the termination of this Agreement.

18. **CONTROLLING LAW, JURISDICTION AND DISPUTE RESOLUTION.** The owners of certain Mentor Graphics intellectual property licensed under this Agreement are located in Ireland and the United States. To promote consistency around the world, disputes shall be resolved as follows: excluding conflict of laws rules, this Agreement shall be governed by and construed under the laws of the State of Oregon, USA, if Customer is located in North or South America, and the laws of Ireland if Customer is located outside of North or South America. All disputes arising out of or in relation to this Agreement shall be submitted to the exclusive jurisdiction of the courts of Portland, Oregon when the laws of Oregon apply, or Dublin, Ireland when the laws of Ireland apply. Notwithstanding the foregoing, all disputes in Asia arising out of or in relation to this Agreement shall be resolved by arbitration in Singapore before a single arbitrator to be appointed by the chairman of the Singapore International Arbitration Centre ("SIAC") to be conducted in the English language, in accordance with the Arbitration Rules of the SIAC in effect at the time of the dispute, which rules are deemed to be incorporated by reference in this section. This section shall not

restrict Mentor Graphics' right to bring an action against Customer in the jurisdiction where Customer's place of business is located. The United Nations Convention on Contracts for the International Sale of Goods does not apply to this Agreement.

19. **SEVERABILITY.** If any provision of this Agreement is held by a court of competent jurisdiction to be void, invalid, unenforceable or illegal, such provision shall be severed from this Agreement and the remaining provisions will remain in full force and effect.

20. **MISCELLANEOUS.** This Agreement contains the parties' entire understanding relating to its subject matter and supersedes all prior or contemporaneous agreements, including but not limited to any purchase order terms and conditions. Some Software may contain code distributed under a third party license agreement that may provide additional rights to Customer. Please see the applicable Software documentation for details. This Agreement may only be modified in writing by authorized representatives of the parties. Waiver of terms or excuse of breach must be in writing and shall not constitute subsequent consent, waiver or excuse.

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