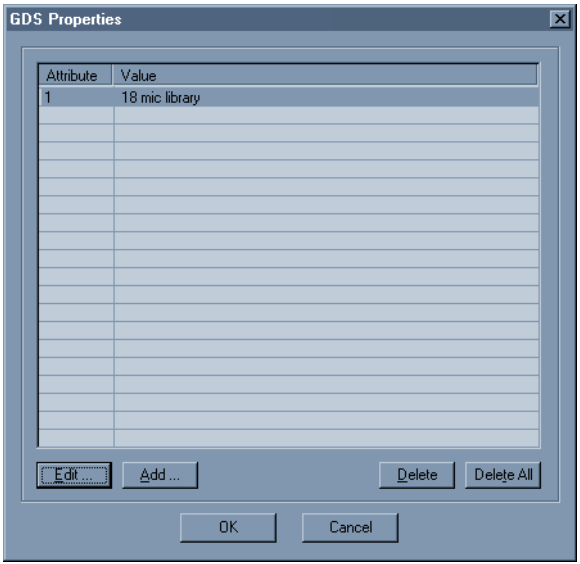
UPILIB User Guide

The **UPILIB**, found in **Tools >** UPILIB, consists of a set of UPI macros that access certain application interface level tasks.

GDS Properties

The GDSII properties of objects may be examined and edited using the **GDS Properties** macro in UPILIB. To edit the properties of an object, first select the object and choose **Tools > UPILIB > GDS Properties**.



Options include:

Edit	Opens the **Edit GDS Property** dialog where you can edit the **Attribute** and **Value** of the property.
Add	Opens the **Add GDS Property** dialog where you can enter an **Attribute** and **Value** for a new property.
Delete	Deletes the highlighted property.
Delete All	Deletes all properties assigned to an object.

GDS properties are supported and transfered for any instance, box, polygon, wire, circles, pie wedge, and torus.

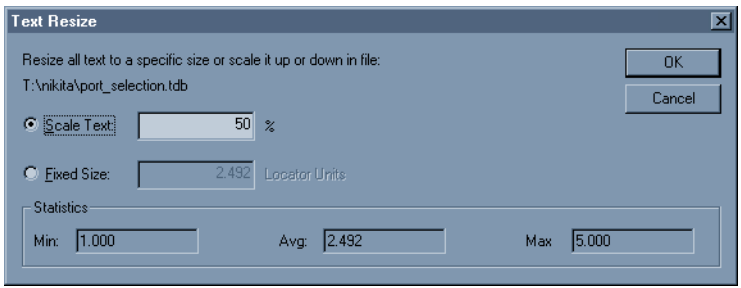
Pie wedges and tori are automatically converted to polygons when GDS mask data is exported, using the curve approximation parameters from **Setup Design > Curves**. Circles are also automatically converted to polygons when exported to GDS, using, however, the parameters set in **File > Export Mask Data > GDS Options**.

Save Cell to File

Save Cell to file saves a single cell and its hierarchy to a new TDB file. To save a single cell to TDB use **Tools > UPILIB > Save Cell to File**. The **Save Cell to File** dialog shown below allows you to choose the cell to save and the file to which it will be saved. The **Browse** button opens a standard Windows **Save As** dialog.

Text Resize

This macro works on all ports within the active TDB file to either scale the text size or set the text size to a specific size. To resize port text size use **Tools > UPILIB > Text Resize**.



Options include:

Scale Text — Scales port text size. The default value is 50%. Scale values less than 100 decrease the text size; values above 100 increase the text size.

Fixed Size

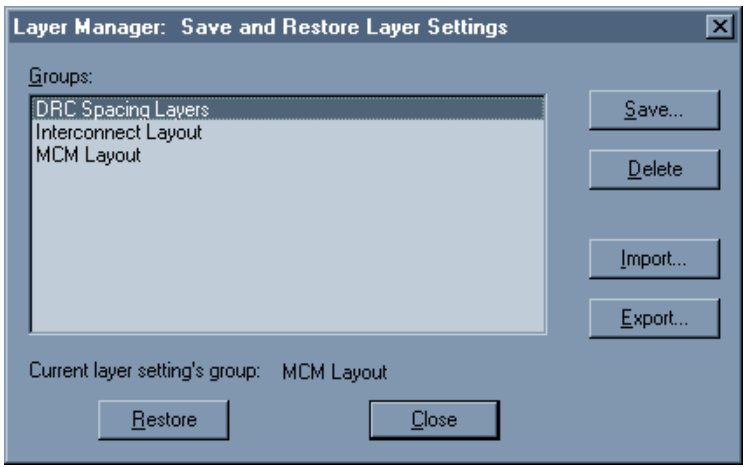
Enter a port text size in locator units. The default value is the default text size for the active TDB file.

Statistics

Displays the minimum, average, and maximum port text sizes used in the active file.

Layer Manager

The **Layer Manager** macro saves and restores layer settings (**Lock**, **Hidden**, and **Derivation Enabled**) for a TDB file. Use **Tools > UPILIB > Layer Manager** to open the **Layer Manager** dialog shown below. To apply a saved layer setting, highlight the group name and press **Restore**.



Options include:

Save

Allows you to save the current settings for **Lock**, **Hidden** and **Derivation Enabled** for the layers in the active TDB file by assigning them a group name.

Enter a name in the **Group Name** dialog. If the name already exists, you will be warned to either overwrite it or cancel the operation.

Delete

Deletes the selected group definition.

Restore

Restore returns the **Lock**, **Hidden** and **Enable Derivation** settings for all layers to the values that were saved under the selected group name, and applies them to the active TDB file.

If layers were added to the TDB file that are not in the group definition they will remain as defined in the TBD file, without any comment or warning. If layers defined in the group are renamed or deleted, they will not be restored.

Close

Closes the **Layer Manager** dialog and saves the layer settings for all groups to the properties of the active TDB file.

Import	Imports the layer settings for all groups in an .lys layer state file into the active TDB file.
Export	Saves a description of the layer settings for all saved groups to a layer states text file with a .lys extension.

Importing and Exporting Layer Settings

The **Export** function in the UPILIB layer manager saves layer setting information for all defined group names to one text file using the .INI format. The **Import** function saves the same information to the properties of a TDB file. Layer setting text files are given a .lys extenstion. In the LYS file, each group name is saved as a section name. Each layer name is assigned a value from 0 to 7 corresponding to the layer state, as described below.

Layer State Key

```
0 - Not Hidden      Not Locked    Derivation enabled
1 - Hidden          Not Locked    Derivation enabled
2 - Not Hidden      Locked        Derivation enabled
3 - Hidden          Locked        Derivation enabled
4 - Not Hidden      Not Locked    Derivation disabled
5 - Hidden          Not Locked    Derivation disabled
6 - Not Hidden      Locked        Derivation disabled
7 - Hidden          Locked        Derivation disabled
```

The above legend is included as a commented-out header in the exported INI file. Characters which are not permitted in the INI variable name (for example, the equal sign (=), open and close brackets ([,])) are encoded with escape sequences.

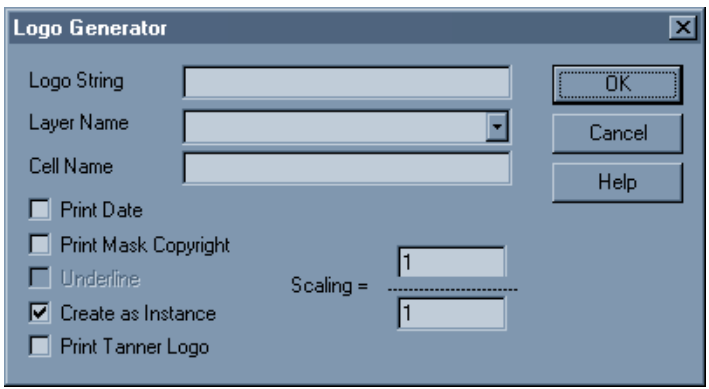
An example of the settings format is given below.

```
[DRC Just Spacing]
Poly=2
Poly2=1
```

In this case, in the group "DRC Just Spacing," layer **Poly** has settings Not Hidden, Locked, and Derivation enabled, and layer **Poly2** has settings Hidden, Not Locked, and Derivation enabled.

Logo Generator

The **Logo Generator** macro generates text on a specified layer in a design file. The associated **alphabet.tdb** files is required for this macro to function.



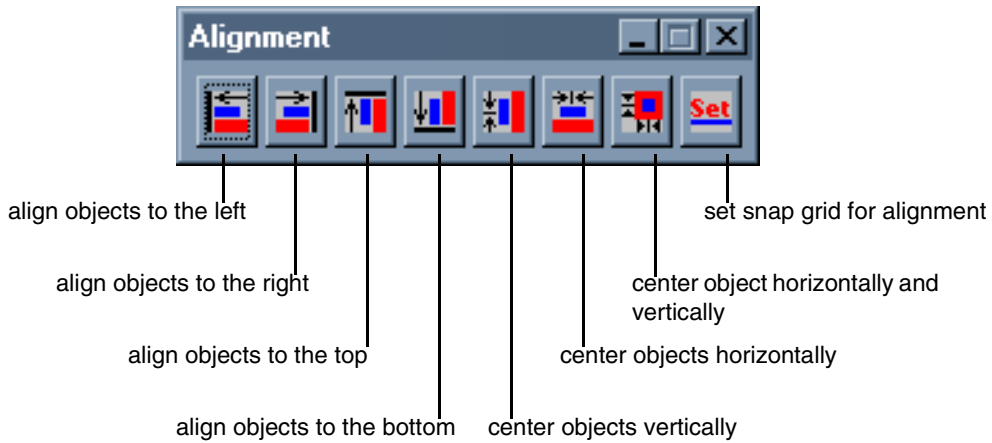
Options include:

Logo String — Enter the logo text. A maximum of 1024 characters is allowed. Use **\n** for a new line.

Layer Name	The layer on which to generate the logo. The layer must exist in the current technology setup and have a CIF name associated with it.
Cell Name	Cell in which the logo will be generated. This field is enabled only when **Create as Instance** is checked.
Print Date	Prints the current date.
Print Mask Copyright	Prints the mask copyright symbol.
Underline	Enable this checkbox to underline the logo string and date. This feature is useful for designers who will need to etch away the material underneath the logo.
Create as Instance	Enable this checkbox to generate the logo in a new cell to be placed into the current cell as an instance. The name of the new cell is specifed in the **Cell Name** field.
Print Tanner Logo	Prints the Tanner EDA logo.
Scaling	Scales the logo size. A scaling ratio of 1/1 results in text with a line width of 2. Both numerator and denominator must be integers; non-integer numbers will be truncated.

Alignment Toolbar

This macro provides a palette of alignment functions that can be used on any L-Edit object. To open the alignment toolbar, use **Tools > UPILIB > Alignment Toolbar**.



Note: Operations completed using the **Alignment Toolbar** macro cannot be undone.

Begin by selecting the desired object(s), then press the desired alignment button. All the selected objects will be aligned with the *last* object that was selected. Alignment is performed using the minimum bounding box (MBB) of the objects.

For the three centering functions, some of the selected objects may not be centered correctly because objects must snap to L-Edit's internal unit grid. L-Edit provides a warning if such misalignment will occur. If this happens, you can use the **Set** function to set center snapping to internal units or locator units.

All selected objects remain selected after the alignment is complete.