

advico®
DRC Tools Manual

050523

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What's that?

advlCo's DRC tools have been created to ease your live as a layouter. Layout is a complex process which gives you many chances to make mistakes. One focus of the DRC tools is to simplify finding them, another focus is to help you to correct them. We wrote these functions to save our own time, thus we are confident that you will like them too.

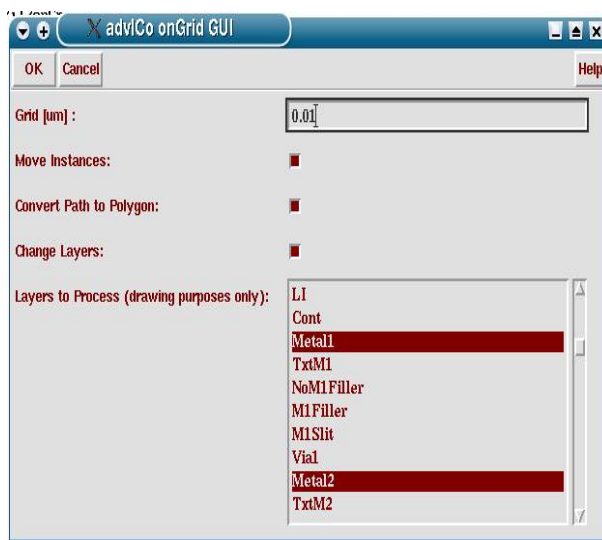
onGrid GUI

Introduction

onGrid GUI is a helper to recover from thousands of DRC errors due to off-grid rules within seconds. The function operates on the current layout only – it will not traverse the design hierarchy.

Execution:

Open the layout and select from the main menu: <Techname> Features --> onGrid



Function Description

Grid [um]

Description:

The *Grid* field will by default contain the grid value which is defined in the technology file. For purposes of re-arranging devices or shapes you may enter another grid value.

Move Instances

Description:

The *Move Instances* flag defines if the insertion point of instances should be corrected if they are off-grid. Without this flag, instances or contacts will not be moved.

Convert Path to Polygon

Description:

The *Convert Path to Polygon* flag defines if paths on the layers in the *Layers to Process* field should be converted into polygons. This step will not modify coordinates of the paths. This conversion is usually necessary if you have path drawings with 45° segments.

Change Layers

Description:

The *Change Layers* flag defines if top-level drawings in the cellview from the drawings on the *Layers to Process* list should be corrected, so that the edges lie on the grid. Note that paths with off-grid errors due to 45 degree shapes can't be corrected without converting them into polygons. Without conversion, only the centerline points will be corrected. Without this option, no drawing coordinates will be modified (except type conversion due to *Convert Path to*

Polygon or movement of instance insertion points if *Move Instances* is specified).

Layers to Process

Description:

Select the Layers you want to be corrected by the onGrid tool (Multiple selection with Strg + mouse click). The typical drawing layers are preselected. You may additionally select the according pin layers.

Note: it is possible that off-grid 45 degree diagonals are converted into non-45 degree shapes. This kind of error has to be corrected manually.

Note: layers which are not visible in the LSW will not be changed even if they are selected.

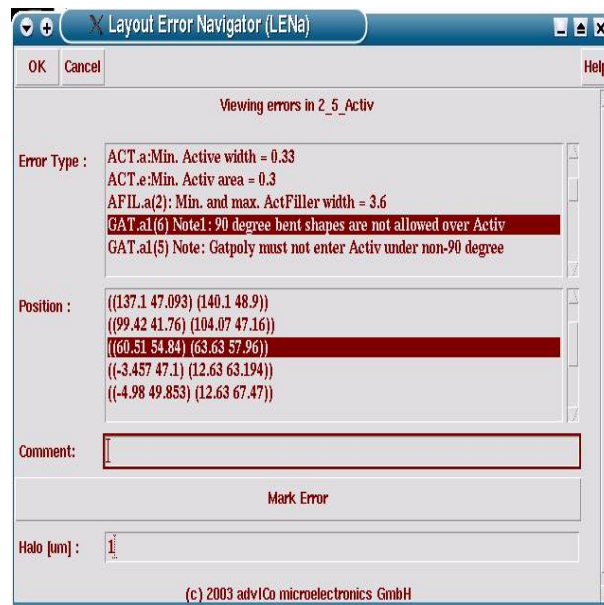
LENa

Introduction

Did you ever use Cadence Diva for verification and darned after DRC finished? Thousands of errors and no way to find the one error you're looking for immediately? Then LENA is your friend! The Layout Error Navigator gives you a similar functionality in Diva that you may know from Assura. LENA will sort the DRC errors and group them – making it fairly easy to find an error and to add special comments, e. g. for another layouter.

Execution:

Open the layout and select from the main menu: <Techname> Features --> Diva LENA.



Function Description

Error Type

Description:

The *Error Type* field lists all categories of errors which have been found.

Position

Description:

The *Position* field lists all instances of the selected error type. When selecting an instance of an error, LENA will zoom to this error.

Comment

Description:

If you want to keep some of the errors, you can write an optional text in the *Comment* field and press Mark. Those Errors will be called LENA errors and can be deleted separately from the other DRC errors. That means, delete thousands of errors that you're currently not interested in and keep only the few of interest.

Halo

Description:

The *Halo* size defines how much of the surrounding layout is shown, relative to the error bounding box.

DRCantenna

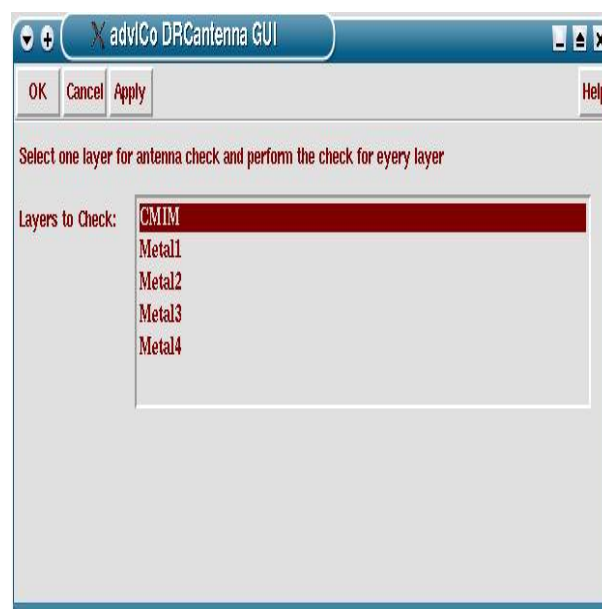
Introduction

Antenna checks are important due to potential damage or mismatch caused by RIE (reactive ion etch). Unfortunately, Diva cannot perform all necessary checks in one pass. In addition, antenna checks are usually in separate files so that these checks may easily be forgotten.

DRC Antenna GUI is a helper to perform Diva DRC antenna checks using the divaDRCantenna.rul file. For a complete check you have to run the DRCantenna check once for all possible switches. You don't need to edit the rules file section in the DRC dialog and there is no possibility to set wrong switch combinations.

Execution:

Open the layout and select from the main menu: <Techname> Features --> Diva DRCantenna



Function Description

Layers to check

Description:

Select the layer to check and perform the check for every layer.

DRCdensity

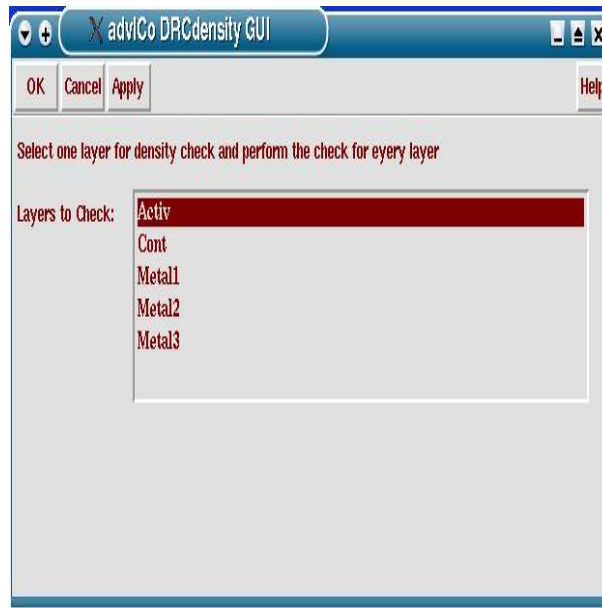
Introduction

DRC Density GUI is a helper to perform DRC density checks which are not supported by old versions of Diva.

The check transforms a density check into an antenna check using divaDRCdensity.rul. You should run the DRCdensity check once for all possible layers. Density rules watch for possible problems due to CMP (chemical mechanical polishing), which is used in planar processer. Large areas with big differences in the density can cause a height offset which in turn can change e.g. the metallization parasitics or even affect yield. With the latest versions of Diva and our latest design kits, this function becomes obsolete.

Execution:

Open the layout and select from the main menu: <Techname> Features --> Diva DRCdensity



Function Description

Layers to check

Description:

Select one layer for density check and perform the check for every layer.

Disclaimer

- 1) advlCo warrants that the programs conform with the above specifications. However it is expressly stated that the current source and binary representation of the programs may not exclude the occurrence of defects or malfunctions under certain circumstances.
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