

## NAME

`exp` - expand the layout of a cell

## SYNOPSIS

**exp** [-Bl-Vl-G] [-DHLhvg] [-cL] [-dN] [-oN] [-wXl,Xr,Yb,Yt] [cell ...]

## OPTIONS

- B** Do only execute `makeboxl` or `makeboxh`.
- V** Do only execute `makevln`.
- G** Do only execute `makegln`.
- g** Execute `makegln` instead of `makevln`.
- D** Do not delete the "\_bxx" files (`makevln` or `makegln` option).
- H** Select mixed linear/hierarchical expansion (using `makeboxl -H`) (default: linear expansion).
- cL** Select check level 'L' (positive integer value).

### A. When the cell is linearly expanded (default):

The check level specifies the level of the lowest cell which is included in the expansion (default: all cells are included (maximum level)).

The minimum possible level is 0 (which is a special case (read the manual page of `makeboxl`)).

### B. When the cell is hierarchically expanded:

The check level specifies the level of the lowest cells in the cell hierarchy which are expanded. These are separate cell expansions, which contains all overlaps of the underlying cell levels (default: only the cell on top of the hierarchy is expanded (minimum level = 1)).

- L** Expand only Local cells.
- d[N]** Discretization, 'N' samples per lambda (default: 8).
- h** Select hierarchical expansion (default: linear expansion).
- oN** Set the size of the active region during hierarchical expansion to 'N' (default: 6 micron).
- v** Verbose mode.
- wXl,Xr,Yb,Yt**  
Select a partial expansion window. The window coordinates (integer values) must be specified as one argument (no blanks are allowed). Xl,Xr,Yb,Yt are respectively the left and right X-coordinates, and bottom and top Y-coordinates (default: the expansion window is the cell bounding box).

## DESCRIPTION

*Exp* is a front-end program which, depending on the selected options, executes other programs. Default it executes *makeboxl* and *makevln*.

The cell name argument must always be specified (except when using option -V). More than one cell argument can be specified, in which case *exp* does his work for every cell.

If you are using option -V, you can only specify options -D and -v, which are the only *makevln* options. If you specify cell arguments in this case, *makevln* is executed with these cell arguments and is not using the "exp\_dat" file.

The current working directory must be the project directory.

## AUTHOR

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## FILES

NELSISPROJECT/.dmrc

(input file)  
NELSISPROJECT/layout/*cell*/box  
(input file)  
NELSISPROJECT/layout/*cell*/mc  
(input file)  
NELSISPROJECT/layout/*cell*/nor  
(input file)  
NELSISPROJECT/layout/*cell*/term  
(input file)  
NELSISPROJECT/layout/*cell*/info  
(in/output file)  
NELSISPROJECT/layout/*cell*/spec  
(output file)  
NELSISPROJECT/layout/*cell*/tid  
(output file)  
NELSISPROJECT/layout/*cell*/LC\_bxx  
(output files) LC=LayCode  
NELSISPROJECT/layout/*cell*/LC\_nxx  
(output files)  
NELSISPROJECT/layout/*cell*/LC\_vln  
(output files)  
NELSISPROJECT/layout/*cell*/teq  
(output file)  
NELSISPROJECT/exp\_dat  
(output file)

**SEE ALSO**

T.G.R. van Leuken, J. Liedorp, "An Hierarchial and Technology Independent Design Rule Checker", in "The Integrated Circuit Design Book".  
makeboxh(1ICD), makeboxl(1ICD), makevln(1ICD), makegln(1ICD).