

Hints, Tips and Solutions

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Q: We have lots of cells that become off-grid when we do cut-and-paste from other cells. We tried to use the "Tools->Snap Selected to Grid" command, but the cell doesn't get moved at all. How does Snap to grid works for Instances ? Does it work for Instances ?

A: The most probable reason is that you have offgrid geometry inside these cells. Snap to Grid activated for instances will snap cell origin to grid. So if you have offgrid geometry in a cell, you need to fix the cell first (in that cell or with EIP). To check visually if the cell origins are on grid or not, set Show_Cell_Instance_Origins ON in Setup>>Editor/Viewer>>Viewing.

Versions before 3.4.10.R sometimes allowed to place geometries or cells off grid even with Snap_to_Grid ON. To do that you had to have Gravity ON (for ex., for edges, vertices and box/ellipse center) and offgrid objects already present in layout. Then cursor would snap to grid points or to edges, vertices or centerpoints, that are already offgrid. Or you can imagine a box with odd number of grid units size, which is perfectly on grid. But its center is not on grid for sure. If your cursor snaps to the center of this box while pasting, all that you paste can be offgrid.

Since version 3.4.10.R that problem is fixed. No matter what settings and offgrid objects you already have, you can do measurements for these offgrid points, but when any editing operation is activated, cursor can be placed on grid points only.

Q: How do I fix off-grid geometry? How snap to grid works for polygons?

A: The set of selected objects (or the whole layout of the edited cell, respectively) is snapped to the specified grid according to the operation parameters from Snap Selected to Grid dialog.

The first group of parameters specifies the grid. If the option, „Custom grid% is selected, then it is possible to specify both grid steps in X and Y direction and the displacement (shift) of the grid with respect to the origin. The second group of parameters specifies how the coordination of the off-grid points will be modified.

These parameters may help to preserve symmetries, distances, and other shape properties. To closest node: The offgrid point will be shifted to the closest grid point. North-East: The offgrid point will be shifted to the closest grid point so that both coordinates increase. Outwards/Inwards: The offgrid point will be shifted to the closest grid point in the direction outwards or inwards with respect to the specified reference point. Save squares: In this mode, the sides of square boxes will be kept equal. Save 45°: Angles in multiples of up to 45 degrees will be preserved. To save a 45° geometry, there is an option Cut spikes. If this option is on, sometimes 45° corners are cut to a small extent to place the snap on grid with minimal change of area. If this option is off, one of the adjacent sides is shifted. If a polygon is a cell primitive, its vertices'll snap to grid points according to the second group of parameters. For offgrid polygons inside cell instances, EIP can be done to snap them to grid. You can use Verification>>DRC>>Off-Grid_Checks to find all off-grid errors in whole hierarchy of current cell. Make sure that grid step set properly (1nm is a default value). Then you can use Next_Offgrid_Cell to snap to grid all objects inside the cell. You can use automatic Offgrid_Repair as well, but then you can't control snap parameters as in Snap Layout to Grid dialog.

Call for Questions

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