



# **Pulsonix Design System**

## **V5.1 Update Notes**

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### **Pulsonix**

Oak Lane  
Bredon, Tewkesbury  
Glos, GL20 7LR  
United Kingdom

Phone +44 (0)1684 773881

Fax +44 (0)1684 773664

Email [info@pulsonix.com](mailto:info@pulsonix.com)

Web [www.pulsonix.com](http://www.pulsonix.com)

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# Chapter 1. Version 5.1 Update Supplement

## About these notes

These update notes are provided for existing users as a supplement to the existing Pulsonix Users Guide and as an additional supplement to the main version 5.0 Update Notes. These notes are to highlight new features in version 5.1 and to briefly describe their use.

## Installing the New Version of Pulsonix

It is recommended that you back-up all libraries, designs, technology files, profile files, reports and netlists before installing the latest version. Other than for any reason, this is good working practice, although you should have a backup already of all of this data!

As with any other installation of Pulsonix, insert the CD and wait for a short time. The *Autorun* facility will start the installation procedure. Follow the on-screen messages from the install wizard. You can install Pulsonix version 5.1 on top of your existing installation, you do not need to uninstall any old version first.

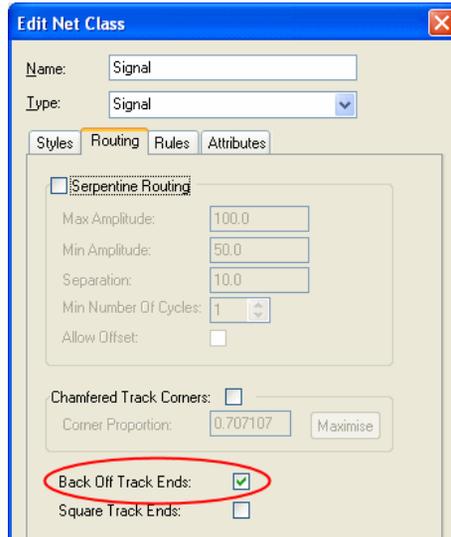
## Licensing

If you are already using Version 4.6 or an earlier version you will require a new license for Version 5.0 (V5.0 and V5.1 use the same license). This will be supplied to you by email under your current maintenance contract.

For existing users it is recommended that you simply click the **No Change In Licensing** check box on the licensing page of the Installation wizard. New licenses and changes to network licensing can be made after the installation using the **License Manager**.

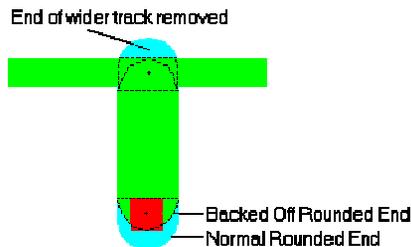
### Track Back-off

Automatic Track back-off into pads or other tracks (typically on 'T' junctions) can be achieved by checking the **Back-Off Track Ends** check box on the Routing tab under **Net Class** within the **Technology** dialog.



### How Track Back-off effects Tracks and Pads

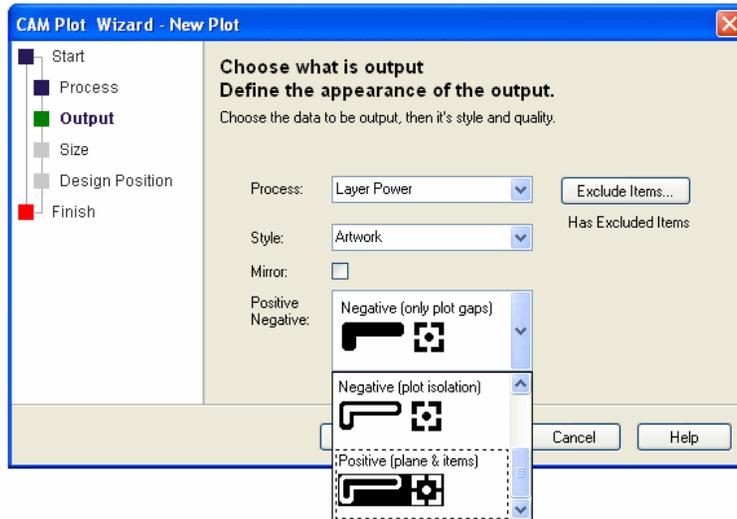
When this option is selected in the Net Class dialog, there are rules which govern how the back-off will be performed. The diagram below illustrates how these rules are applied.



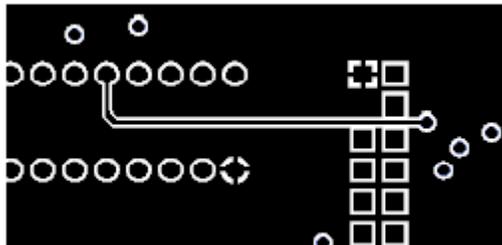
## Gerber Powerplane 'composite plot'

When plotting power planes with embedded tracks using Gerber, you can now elect to plot just one 'composite' plot. Normally and up until now, this type of plot would only be achieved using three plots.

When creating a new power plane plot of a selected plane layer, if that layer contains tracks, you are able to select **Positive (plane & item)** from the drop down list on the **Output** page, (you are still able to plot Positive and Negative plots if required).



When the Gerber file is viewed or plotted, a composite of embedded tracks and the isolation around them from the copper is used.

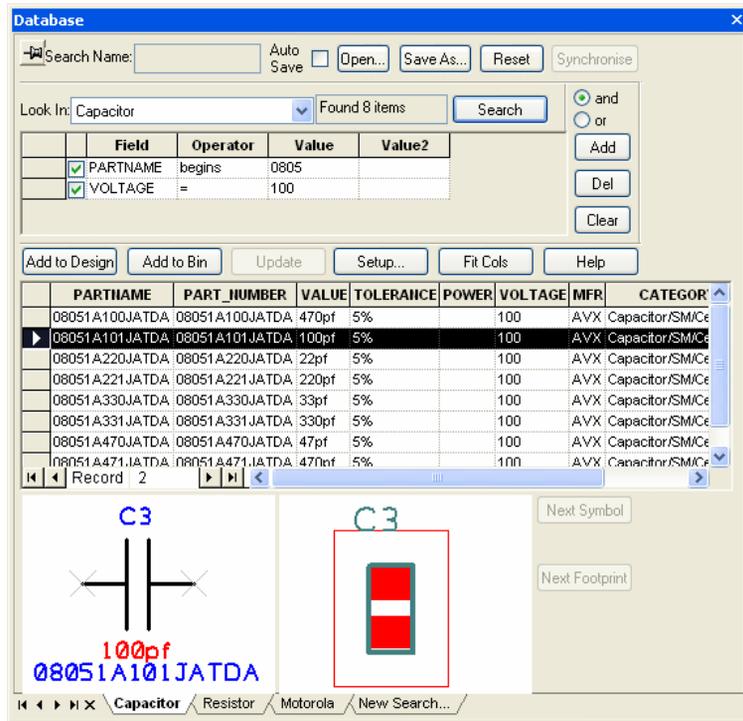


## Next Layer Command

A new command has been added which allows you to move to the next layer during manual routing. The **Next Layer** or **Previous Layer** commands are available on the **Customise** dialog as commands to add to a shortcut key, and are available on the context menu during the **Insert Track** option.

## Pulsonix Database Connection (PDC) Tab Search

The PDC cost option now has the ability to perform concurrent multiple searches using different tables from the connected database. For example, you may wish to search for capacitors from the capacitor table, resistors from the Resistor table and microprocessors from the Motorola table. These multiple searches are managed using a tabbed interface making it quick and easy to switch between alternative sets of search results.

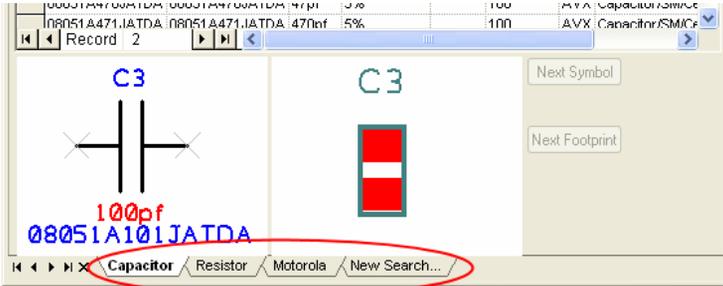


### Tab Searches

A new search can be created simply by clicking on the **New Search** tab. It inherits the name from the table you are searching but can be renamed to be whatever you choose.

To edit the tab name, double click on it and type in the new name. When you've finished, press the <Enter> key on the keyboard.

The search tabs can also be re-ordered by dragging and may be saved to a Pulsonix Database Connection Search file (.dcs) so they may be reloaded and shared by multiple users.

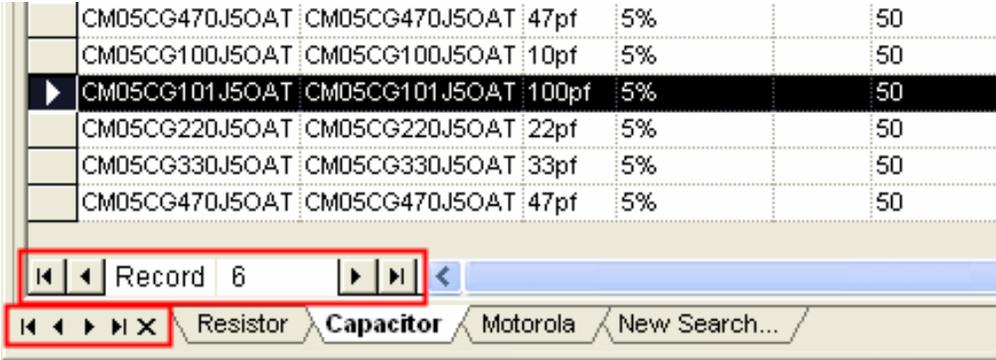


### PDC Tab Controls

There are two sets of controls at the bottom of the PDC dialog. The first displays the record number, effectively the line number in the current search. The arrow buttons either side of the record number allow you to move to the first, previous, next and last records in current search results.

The arrow buttons to the left of the search tabs enable you to scroll the tab display horizontally when there are too many to fit the current window size. The search tabs are only ever activated by clicking the mouse.

The x button on the right side of these controls enables you to delete the selected tab.



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### Configurable PDC Results Grid

The size and arrangement of the columns shown in the PDC results grid is now configurable. Columns can be repositioned by dragging them to a new position and their widths can be adjusted by the required amount by dragging the column dividers.

Any changes will be preserved and reloaded and can also be saved to a Database Connection Search file (.dcs) so they may be shared by multiple users.

### PDC Search Performance Improvements

If, when a search is performed, there are many matching records, to restrict the amount of database access, only a limited number of those records will be loaded. The remaining records will only be loaded if and when they are needed to be shown. Also additional performance improvements have been made to the filling of the results grid. The impact of these improvements will be most noticeable when searching large tables.

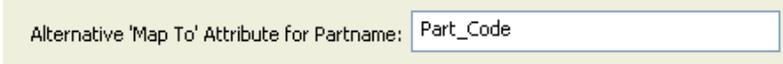
### PDC Next Representation

There is now an additional **Next Rep** button that is displayed if the Pulsonix part, corresponding to the currently selected record in the search results, is defined with multiple part representations. Clicking the button will cycle through the available representations which will be shown in the schematic preview window.

### Alternative 'Map To' Attribute for Partname

A new facility to provides an alternative means of mapping the database records to Parts in the Pulsonix library has been added. This can be useful where your database does not contain a field to map to a Pulsonix Partname, but your Pulsonix Parts have an attribute that uniquely identifies the appropriate database record.

On the **Database Connection Setup** dialog in the **Database Tables and Mappings** section, select the **Define table** properties and field mappings radio button. The following new control can be found at the bottom of the dialog:



Alternative 'Map To' Attribute for Partname:

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NOTE: For the Database Bar to be able to use this alternative mapping, the specified attribute **MUST** also be added to the list of indexed attributes using the **Part Library Manager Index** option.

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As an example, consider a database whose tables have a unique key field called 'Article\_No' but no field equivalent to the Partname for the parts contained in the Pulsonix library. However each of the parts in the Pulsonix library, in addition to their Partname, also have an attribute called 'Part\_Code' which contains a value equivalent to the 'Article\_No' field in the database.

The field mappings entry for the 'Article\_No' field should have its **Map To** value set to 'Part\_Code'. By also setting **Alternative 'Map To' attribute for Partname** to 'Part\_Code', you indicate that in the absence of a Partname mapping, records in the database tables should be linked to Pulsonix parts by mapping the 'Article\_No' to the

Pulsonix 'Part\_Code' attribute. The **Key Field** for each table must still be set to a uniquely identifying field, but in most cases, as with this one, will be the same field as mapped to the attribute, i.e. 'Article\_No'. As we have said, there is no database field to map to the Pulsonix Partname so the **Part Name Field** should be set the same as the **Key Field**, again 'Article\_No' in this case.

Now, when a database record is selected for adding to the design its 'Article\_No' value will be used to locate the equivalent Pulsonix part by matching its 'Part\_Code' attribute.