



Pulsonix Database Connection Evaluation Guide

Copyright Notice

Copyright © WestDev Ltd. 2000-2025

Pulsonix is a Trademark of WestDev Ltd. All rights reserved. E&OE

Copyright in the whole and every part of this software and manual belongs to WestDev Ltd. and may not be used, sold, transferred, copied or reproduced in whole or in part in any manner or in any media to any person, without the prior written consent of WestDev Ltd. If you use this manual you do so at your own risk and on the understanding that neither WestDev Ltd. nor associated companies shall be liable for any loss or damage of any kind.

WestDev Ltd. does not warrant that the software package will function properly in every hardware software environment.

Although WestDev Ltd. has tested the software and reviewed the documentation, WestDev Ltd. makes no warranty or representation, either express or implied, with respect to this software or documentation, their quality, performance, merchantability, or fitness for a particular purpose. This software and documentation are licensed 'as is', and you the licensee, by making use thereof, are assuming the entire risk as to their quality and performance.

In no event will WestDev Ltd. be liable for direct, indirect, special, incidental, or consequential damage arising out of the use or inability to use the software or documentation, even if advised of the possibility of such damages.

WestDev Ltd. reserves the right to alter, modify, correct and upgrade our software programs and publications without notice and without incurring liability.

Microsoft, Windows, Windows NT and Intellimouse are either registered trademarks or trademarks of Microsoft Corporation.

All other trademarks are acknowledged to their respective owners.

Pulsonix, a division of WestDev Ltd.

Printed in the UK Issue date: 26/02/25

Pulsonix

20 Miller Court
Severn Drive
Tewkesbury
Glos, GL20 8DN
United Kingdom

Phone +44 (0)1684 296 551
Support +44 (0)1684 296 570
Email info@pulsonix.com
Support support@pulsonix.com
Web www.pulsonix.com

Contents

- CHAPTER 1. GETTING STARTED 4**
 - About this guide 4
 - Installing the PDC demonstration..... 4
 - Enabling the PDC demonstration 4
 - Finding More Information 4
- CHAPTER 2. OVERVIEW 5**
 - What is the Pulsonix Database Connection? 5
 - Where does the database come from?..... 6
- CHAPTER 3. USING THE PDC..... 7**
 - The Database Bar 7
 - Searching..... 7
 - Adding search criteria 8
 - Adding Components..... 9
 - Check Against Database..... 9
 - Updating the Design..... 11
 - Change Part using the Database Bar..... 12
 - Summary 13

Chapter 1. Getting Started

About this guide

This Evaluation Guide is provided to help Pulsonix users become familiar with the concepts and usage of the Pulsonix Database Connection (PDC).

Installing the PDC demonstration

The Database Connection demonstration database is automatically installed as part of the main Pulsonix application. No additional installation is necessary.

Enabling the PDC demonstration

The Database Connection demonstration is automatically enabled whenever you are using the 'Demo' (Trial) or 'Viewer' licenses.

To use one of these licenses, start the Pulsonix **License Manager** (from your Windows **Start** menu, under **Programs, Pulsonix**), click **Browse Master File**, and choose the **Demo.Lic** or **Viewer.Lic** files.

If you have a full product license, when you have finished evaluating the Database Connection product you can simply switch back to your full license file using the **License Manager**.

Finding More Information

The rest of this guide takes you through the basic features of the Database Connection, with step-by-step instructions to guide you through each stage of the process:

- Overview of how the Database Connection fits into the overall process
- Searching for components in the database
- Adding components to a design
- Checking and maintaining your design

You can also access context-sensitive online help by pressing the <F1> key at any point.

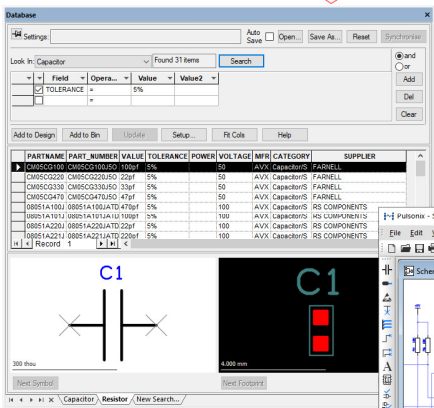
Chapter 2. Overview

What is the Pulsonix Database Connection?

The **Pulsonix Database Connection (PDC)** is an add-on cost option for Pulsonix, that allows you to 'hook up' your Pulsonix program to your corporate component database, to help you find the right components for your designs using parametric searches on any of the properties recorded in the database.

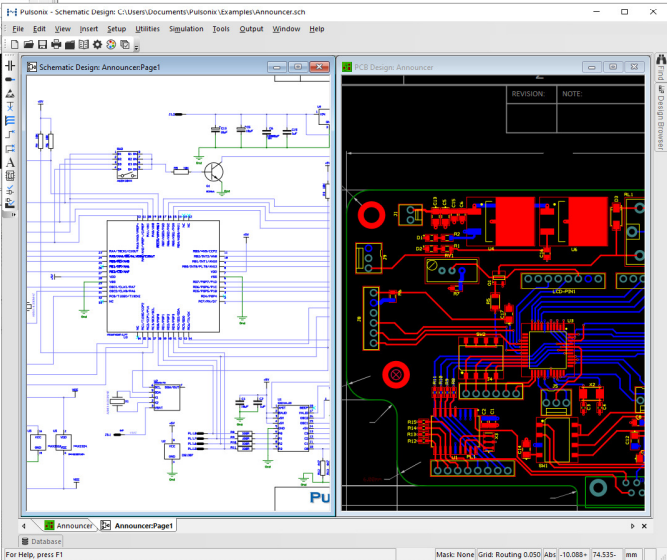
This can help you ensure for example that the components you choose are in stock, or reasonably priced, or within required parameters. As long as you have information in database form that can be accessed by the Database Connection, you can make use of it.

Search coporate database
for required components



Match to Parts
from Pulsonix libraries

Add to Pulsonix
designs (Schematic and PCB)



Where does the database come from?

The Database Connection is not a database itself, rather it is an ‘enabling’ technology that allows Pulsonix to interact with corporate information that you would normally be using elsewhere. This might for example be a database of Supplier and Component information that is already in use in your Purchasing department.

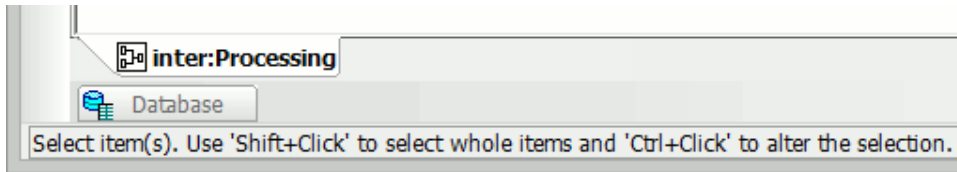
Although the Database Connection itself does not come with a ready-made database, the ‘full’ Database Connection license does include tools to help you create a basic database from your Pulsonix library data. This process is described in the separate *Pulsonix Database Connection Users Guide*, and can help you get started with a database even if you don’t already have one.

Chapter 3. Using the PDC

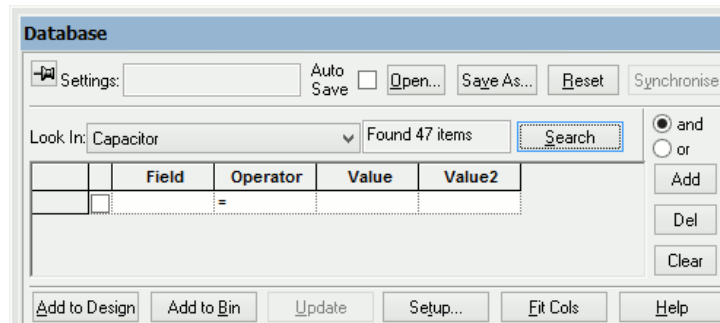
The Database Bar

Once Pulsonix is running with the trial license (so that the PDC is enabled), start by opening the example Schematic design **Inter.sch**.

If you look at the bottom left corner of your main application window, you will see the Database Bar tab:

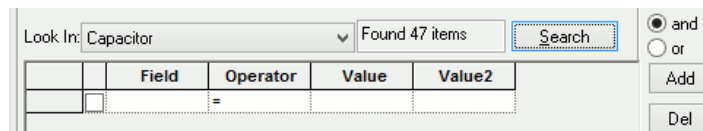


Hover your mouse over the Database Bar tab to make the bar slide out and display the dialog. If it isn't visible, you can turn it on using the **Database Bar** command from the **View** menu and selecting **Dockable Windows**. Remember though, this option is only available using the trial license or a PDC license.



Searching

The central area of the Database Bar is where you select the database table or query and enter the criteria you want to use to search for the desired component in your database.



First we need to choose the database table or query to select from. Using the **Look In:** drop down list of table names select **Capacitor**.

Press the **Search** button before entering any criteria, this will show you how an 'empty' set of criteria will match with all possible records in the selected database table. All the records in the Capacitor table will be displayed in the results grid.

8 Using the PDC

| | PARTNAME | PART_NUMBER | VALUE | TOLERANCE | POWER | VOLTAGE | MF |
|---|----------------|----------------|-------|-----------|-------|---------|----|
| ▶ | 08055C471KATDA | 08055C471KATDA | 470pf | 10% | | 50 | AV |
| | CM05CG100J5OAT | CM05CG100J5OAT | 100pf | 5% | | 50 | AV |
| | CM05CG220J5OAT | CM05CG220J5OAT | 22pf | 5% | | 50 | AV |
| | CM05CG330J5OAT | CM05CG330J5OAT | 33pf | 5% | | 50 | AV |
| | CM05CG470J5OAT | CM05CG470J5OAT | 47pf | 5% | | 50 | AV |
| | 0805YC334KATEA | 0805YC334KATEA | 330nf | 10% | | 16 | AV |
| | 0805YC474KATEA | 0805YC474KATEA | 470nf | 10% | | 16 | AV |
| | 0805YC474KATEA | 0805YC474KATEA | 470nf | 10% | | 16 | AV |

We can 'narrow' down our search by entering criteria and therefore decide what kind of capacitor to search for.

Adding search criteria

To add to the search criteria you will use the **Add** button. However, for the first search the search row is already available ready to be typed into.

The screenshot shows a search criteria interface. On the left, there is a 'Search' button. To its right are two radio buttons labeled 'and' and 'or'. Below these are three buttons: 'Add', 'Del', and 'Clear'. A red arrow points to the 'Add' button.

Under the **Field** heading, use the drop down list to choose **VOLTAGE** from the list of available field names.

Next, choose the **Operator >** from the drop down list in the next column. Finally, type **20** in the **Value** column.

| | Field | Operator | Value | Value2 |
|---|---------|----------|-------|--------|
| ✓ | VOLTAGE | > | 20 | |

Click the **Search** button, the search will be narrowed down to show just 27 items, all those capacitors in the table with a **Voltage** of greater than **20**.

| | PARTNAME | PART_NUMBER | VALUE | TOLERANCE | POWER | VOLTAGE | MF |
|---|----------------|----------------|-------|-----------|-------|---------|----|
| ▶ | 08055C471KATDA | 08055C471KATDA | 470pf | 10% | | 50 | AV |
| | CM05CG100J5OAT | CM05CG100J5OAT | 100pf | 5% | | 50 | AV |
| | CM05CG220J5OAT | CM05CG220J5OAT | 22pf | 5% | | 50 | AV |
| | CM05CG330J5OAT | CM05CG330J5OAT | 33pf | 5% | | 50 | AV |
| | CM05CG470J5OAT | CM05CG470J5OAT | 47pf | 5% | | 50 | AV |
| | 1206YG225ZATEA | 1206YG225ZATEA | 2.2uf | 20% | | 25 | AV |
| | 06033G104ZATDA | 06033G104ZATDA | 100nf | 20% | | 25 | AV |
| | 06035C471KATDA | 06035C471KATDA | 470pf | 10% | | 50 | AV |
| | 06035G473ZATDA | 06035G473ZATDA | 47nf | 10% | | 50 | AV |

We need a 1uf capacitor, so click the **Add** button again to add another row to the list of criteria.

The screenshot shows the same search criteria interface as before. The 'Add' button is highlighted with a red box, and a red arrow points to it.

Choose **Value** under **Field**, then **=** in **Operator** and type **1uf** in **Value**. Click the **Search** button.

Look In: Capacitor Found 2 items

| | Field | Operator | Value | Value2 |
|-------------------------------------|---------|----------|-------|--------|
| <input checked="" type="checkbox"/> | VOLTAGE | > | 20 | |
| <input checked="" type="checkbox"/> | VALUE | = | 1uf | |

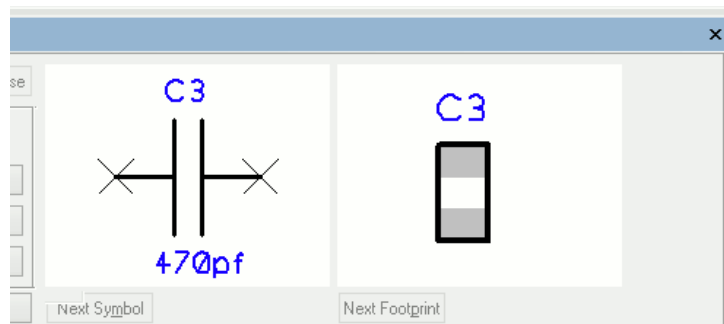
When the results are displayed we have just two capacitors to choose from.

| | PARTNAME | PART_NUMBER | VALUE | TOLERANCE | POWER | VOLTAGE | MFR | CATEGORY |
|---|----------------|----------------|-------|-----------|-------|---------|-----|-------------------|
| ▶ | 08053G105ZATEA | 08053G105ZATEA | 1uf | 20% | | 25 | AVX | Capacitor/SM/Cera |
| | 12065G105ZATDA | 12065G105ZATDA | 1uf | 20% | | 50 | AVX | Capacitor/SM/Cera |

Adding Components

We have narrowed down our search to list only two capacitors that match the requirements, we can now select and add some components to the design.

Click on the first capacitor shown in the results grid (click anywhere along the row to select the required capacitor). You will see a preview of the Schematic and PCB components that correspond to this database record.



You can now either click **Add** then move the cursor into the design area and place your new component, or move the cursor over one of the preview boxes and 'pick and drag' the component into the design for placement.

You can place the new component just as you would when adding components directly from the Pulsonix library through **Insert Component**. As you place each of your new components, attributes will be automatically added to those components to hold the required database information.

When you have placed at least three capacitors, press the <Esc> key to stop adding any more.

Check Against Database

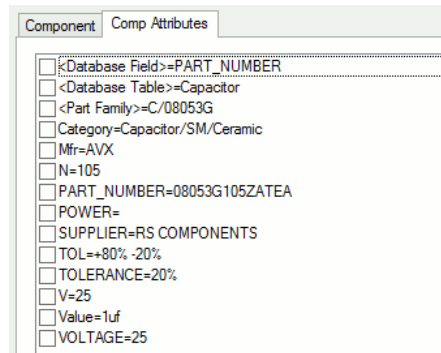
The **Check/Update Against Database** command, available from the **Tools** menu, is used to verify the information in your design against the corresponding records in the database. It can be used to identify differences between design and database values, and can be used to 'refresh' the values in the design if the database information has been updated.

10 Using the PDC

This can help you for example to keep the manufacturer part numbers in your design up-to-date if these are maintained separately in the database by your Purchasing department.

Before we use this option, we will change one of our new components to purposely edit some 'wrong' information in and see what the **Check** reports.

Select one of the new capacitors and open the **Properties** dialog and **Comp Attributes** tab (select the capacitor and click <i>).



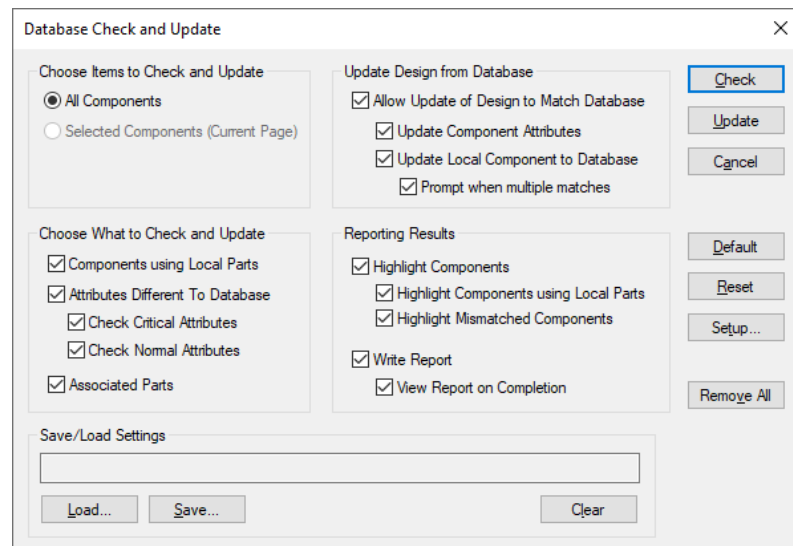
You will see the list of attributes that have been brought across from the database record onto your component.

Double-click on the **Value** attribute and change it to **1pf**, and **OK** to close **Properties**.

Select the second capacitor and edit its Properties. This time change the **MFR** Attribute from **AVX** to **TX**. Click **OK** to close the dialog.

We are now ready to check the design. From the **Tools** menu, select **Check/Update Against Database**.

The check dialog is configurable with various options to select:



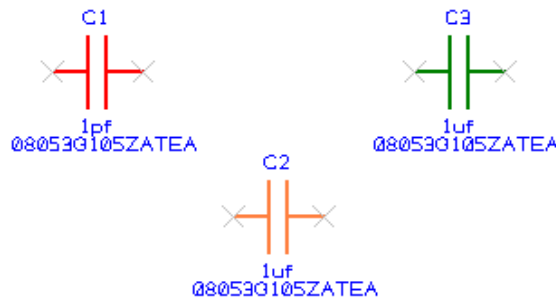
To start with, we will just see what the **Check** is going to report, so leave the **Allow Update of Design to Match Database** check box (in the top right corner of the dialog) unchecked, and check the all other options. Then select **Check**.

You should now see a report that lists your components and the status of each one.

```
C1      Fail (Value [1pf:1uf])
C2      Warning (Mfr [TX:AVX])
C3      Pass
```

Here you can see that **C1** (where we had modified the Value) is listed as a **Fail**, because we have changed an attribute that is specified as **Critical** in the Database Setup. **C2** is only a warning, showing we have a different value for a non-critical attribute, and **C3** matches the database record so is shown as a **Pass**.

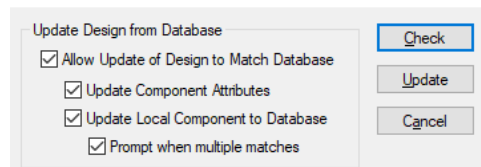
You will also see that the components in the design are highlighted to show their status. The default Colour setting is to use **red** for **Fail**, **orange** for **Warning** and **green** for **Pass**, giving a rapid visual indication of the status:



Updating the Design

As well as simply checking the design, the **Check/Update** command can also 'refresh' your design to bring it back up-to-date with the values from the database.

Under **Update Design from Database**, check the **Allow Update of Design to Match Database** check box:



Once checked, press the **Update** button.

You will see a report that is very similar to the first one, but shows you what has been changed:

```
C1      Fail (Value [1pf:1uf])  UPDATED
C2      Warning (Mfr [TX:AVX])  UPDATED
C3      Pass
```

The components themselves will all be highlighted in green as they are now all synchronized with the database.

Change Part using the Database Bar

As the final stage of our exploration of the Database Connection, we will use it to change one of our components for a slightly different one.

First, select one of the capacitors you earlier added to your design. Select the **Properties** dialog from the shortcut menu and from the **Component** tab click **Change**.

From the **Change Part** option click **Change Database** to go to the Database Bar to choose your new component.

Desc:

Pins: 2

Database: 08053G105ZATEA

Change Database...

Footprint: 08053G105ZATEA

Database Bar will now appear as a dialog-style window instead of the slide-out panel. The **Add** button has become **Change**, and **Add to Bin** is now **Cancel**. Otherwise the Database Bar works in just the same way as it did before.

You will notice that the Criteria section lists all the details from the selected component as possible criteria, and hence matches just a single database record, the one you selected when you added the component to start with.

Look In: Capacitor

Found 1 item

Search

☒ and
☐ or

| | Field | Operator | Value | Value2 |
|-------------------------------------|-----------|----------|-------|--------|
| <input checked="" type="checkbox"/> | VALUE | = | 1uf | |
| <input checked="" type="checkbox"/> | TOLERANCE | = | 20% | |
| <input checked="" type="checkbox"/> | POWER | = | | |
| <input checked="" type="checkbox"/> | VOL TAGF | = | 25 | |

Change

Cancel

Update

Setup...

Fit Cols

Help

| | PARTNAME | PART_NUMBER | VALUE | TOLERANCE | POWER | VOLTAGE | MFR | CATEGORY |
|---|----------------|----------------|-------|-----------|-------|---------|-----|--------------------|
| ▶ | 08053G105ZATEA | 08053G105ZATEA | 1uf | 20% | | 25 | AVX | Capacitor/SM/Ceran |

Now we will widen the search to look for a component similar to the one we are already using.

Use the check boxes in the left-hand column next to the **Field** column to turn off the criteria for **PartName**, **Tolerance**, **Voltage** and **Supplier**, then click **Search** to scan the database. The 'results' table will change to show not one but three components.

| | PARTNAME | PART_NUMBER | VALUE | TOLERANCE | POWER | VOLTAGE | MFR | CATEGORY |
|---|----------------|----------------|-------|-----------|-------|---------|-----|--------------------|
| ▶ | 08053G105KATEA | 08053G105KATEA | 1uf | 10% | | 10 | AVX | Capacitor/SM/Ceran |
| | 08053G105ZATEA | 08053G105ZATEA | 1uf | 20% | | 25 | AVX | Capacitor/SM/Ceran |
| | 12065G105ZATDA | 12065G105ZATDA | 1uf | 20% | | 50 | AVX | Capacitor/SM/Ceran |

These match the original (selected) component for **Value**, but have different **Part Name**, **Tolerance** and **Voltage** ratings.

Select the third one down in the list, you will notice the PCB preview change as it recognises that this particular component requires a slightly larger footprint.

Click **Change** to choose that one from the database, then **OK** twice to close out the Properties dialogs.

Your design will now be updated to use the newly-selected component.

Summary

In our brief tour through the Database Connection, we have seen:

- an overview of what PDC is all about
- how to add components to a design using the Database Bar, narrowing our search down until we find the component that matches our requirements
- how to verify a design against the current database contents, looking for components that may no longer be in line with database information
- how to update a design with the latest database values
- how to use the Change option, and widening search criteria to look for alternate components

You will find more detailed information on the Database Connection, including all the details on how to set up the Connection to your own corporate database, in the **Pulsonix Database Connection Users Guide**, a PDF document located in the **Documents** folder below your Pulsonix installation (or available for download from our web site).