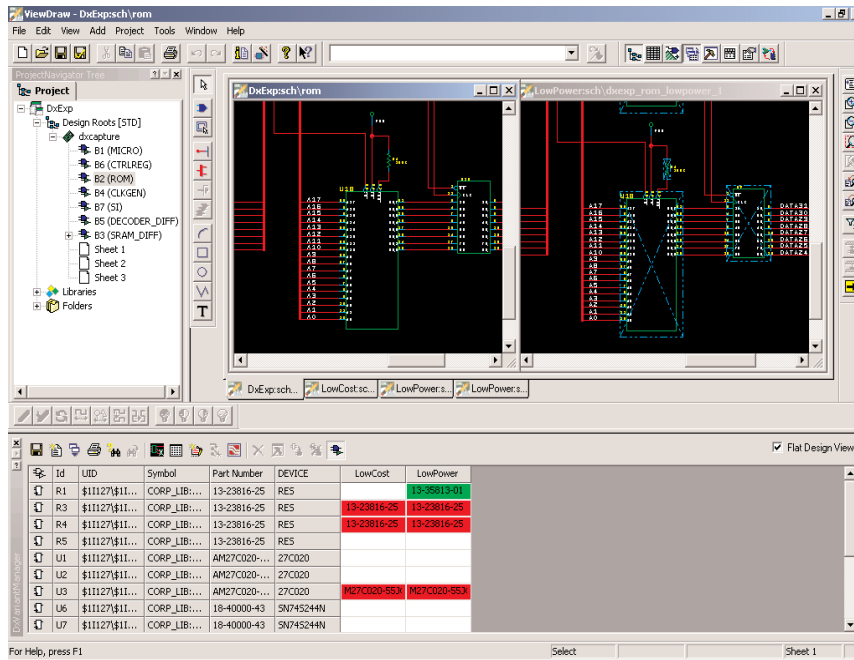


DxVariantManager



DxVariantManager enables rapid product differentiation and custom configurations through board-level design reuse.

Overview

Many electronic products today are structured such that they can be manufactured from a single base design, with varying characteristics and feature sets based on customer and target market configurations. This practice enables rapid product differentiation and custom configurations.

The actual practice of creating and managing these types of electronic products during the board-design phase is typically a manual and error-prone process, usually involving the replication of the entire design database for each needed design variant. When a change is made, that change must be replicated by hand across the entire set of databases, with no guarantee of correctness or completeness. The component-substitution methods are also manual and often result in the substitution of the wrong part.

DxVariantManager™ is designed to solve these issues by implementing a design-variant strategy that uses a single design database and qualified component substitution.

Highlights

- Enables board-level design reuse by supporting variations of a base design.
- Creates design variants by substituting form-fit-function compatible components and/or uninstalling components.
- Implements component substitution through DxDataBook™ to ensure compatibility of substituted part.
- Supports hierarchical design and can perform substitutions and de-installs on hierarchical blocks.
- Imports variant design blocks into new top-level designs with all variant information preserved.
- Generates bills of material for variant designs in multiple report outputs, including HTML and Excel.
- Displays difference report between any two variants.
- Generates variant schematic for documentation purposes.

Single Design Database

Design database and change-control management is simplified by using a single design database for the entire set of design variants. The base design, which is the superset of all the variants, encapsulates all the data for the individual variants.

This has several advantages. When a change is made to the base design, all the variants are updated automatically. This eliminates the time-consuming and error-prone task of manually replicating changes in multiple design databases.

Another advantage is the ability to report and compare the variants to each other and to the base design. All documentation, including bills of material (BOMs), reports and schematics, are derived from a single, controlled source.

Qualified Component Substitution

One of the most catastrophic problems in the variant-creation process revolves around component substitution. This largely manual process often leads to the incorrect component being substituted. Common problems are wrong footprints, incorrect pin-outs, etc. These problems are exacerbated by having non-centralized, inconsistent libraries, often with wrong, outdated, or incomplete information. But even a good, centralized library does not ensure proper substitution, as the process is still manual.

DxVariantManager is integrated with DxDataBook to enable proper, qualified component substitution. To enable the substitution, you define and identify the attributes in your corporate library that cannot vary between components. Because they are kept in the DxDataBook configuration, these attributes can be different for each library classification (i.e., capacitors, resistors, ICs, etc.) and, different projects can use different definitions. During the component substitution procedure, DxVariantManager invokes the leading-edge search and match capabilities in DxDataBook to provide you with a list of the specific components that match your criteria.

Typical Product Usage

The first step is to configure DxDataBook to enable the qualified-component substitution. DxDataBook is then used directly to perform the substitution.

DxVariantManager is implemented as an add-in to DxDesigner®. When you open DxVariantManager on the base design, it populates its intuitive, spreadsheet interface with all the components in the design. From this, you can then create any number of variants in which you uninstall (unstuff) components and/or substitute different components.

"Uninstall" and "substitute" are a simple mouse click away and can also be done directly in the schematic. If you are substituting, DxVariantManager passes component information directly to DxDataBook.

Often, variants are very similar to variants that have already been defined, so DxVariantManager makes it easy to clone variants to create new variants. Entire hierarchical blocks can also be uninstalled or substituted. This makes it easy to modify the behavior or performance of a variant by applying the changes to an entire section of circuitry, not just a single component at a time.

DxVariantManager supports cross probing with ViewDraw®. Just click on a component in DxVariantManager, and it is highlighted in ViewDraw. Once all the variants have been defined, you can then compare the variants in a table and create the variant BOM output. Several report styles (including HTML, Excel, and plain text) are supported. You can also create variant, heirarchical schematics for documentation. The HTML output enables you to rapidly share all the design variant information in a web browser.

Visit our website at www.mentor.com/dxdesigner

Copyright © 2003 Mentor Graphics Corporation. Mentor Graphics, ViewDraw and DxDesigner are registered trademarks and DxDataBook and DxVariant Manager are trademarks of Mentor Graphics Corporation. All other trademarks mentioned in this document are trademarks of their respective owners.

Corporate Headquarters
Mentor Graphics Corporation
8005 SW Boeckman Road
Wilsonville, OR 97070-7777
Phone: 503.685.7000
Fax: 503.685.1204

Sales and Product Information
Phone: 800.873.8439
Phone: 508.480.0881
Web: www.mentor.com/dxdesigner

