



ODB++ Design

Intelligent data exchange between design and manufacturing

Benefits

- All design data needed for fabrication, assembly, and test
- Supports intelligent DFM for more efficient design reviews
- Streamlines the design-to-manufacturing process for quick New Product Introduction (NPI)
- Minimizes supply-chain risks related to data transfer errors
- Minimizes communications delays between design and manufacturing
- Eliminates the introduction of errors from the manufacturer reconstructing legacy CAM data to a manufacturable product model
- Enables highest possible levels of automation in PCB NPI from design through all phases of manufacturing
- ODB++ Design is supported by more than 80 vendors of CAD, DFM, and CAM tools
- 80,000+ registered users of ODB++ Design

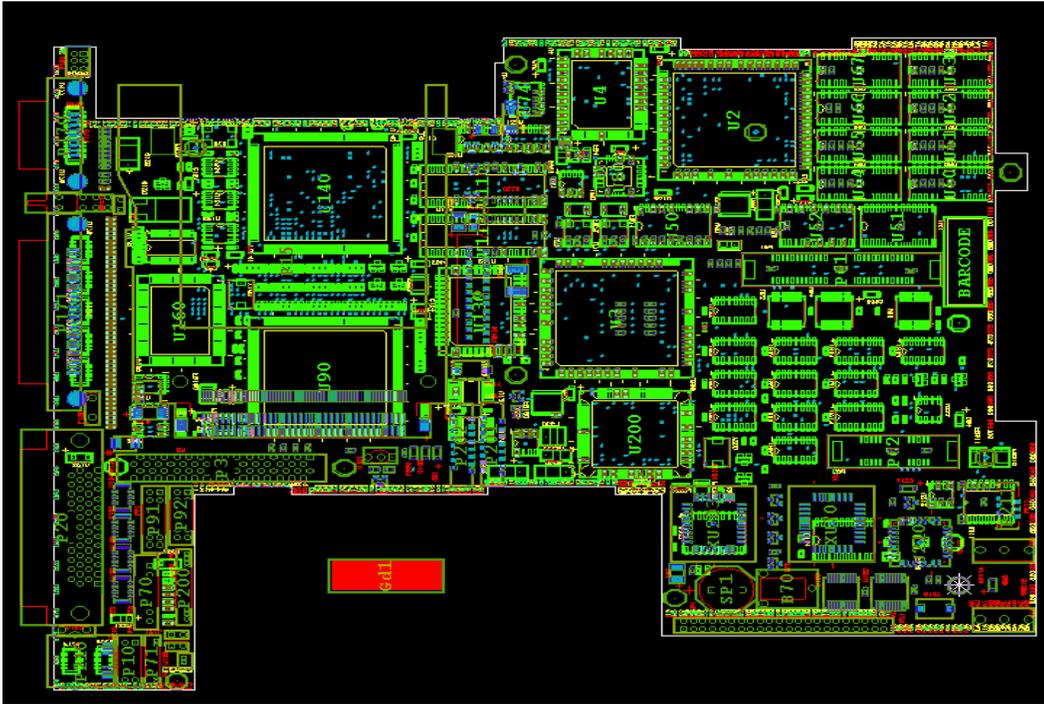
Summary

ODB++ Design is a PCB product model data format aimed at streamlining manufacturing driven design, containing all data necessary to fabricate, assemble and test in a single directory structure. ODB++ Design is the most widely used intelligent data exchange format in the PCB industry, making it the de-facto standard for intelligent PCB data exchange.

ODB++ Design is a major step beyond traditional data exchange between PCB design and the PCB manufacturing process. Significant improvements in product quality, PCB fabrication and assembly time, as well as time-to-market can be achieved using the intelligent data format of ODB++ Design as compared to legacy formats such as Gerber. It can often take a full day to create and validate the manufacturing package using legacy formats. With ODB++ Design, the manufacturing data can be validated and released in a couple of hours.

Siemens EDA recommends ODB++ Design data as the best practice method to export fabrication, assembly, and test data from its PCB design tools. With Siemens EDA's leading positions in PCB CAD, DFM and CAM, customers can be confident that ODB++ Design will be supported and improved to meet emerging technological challenges as they arise.

In addition, the ODB++ Design Partner Program (odbplusplus.com/design/partners) enables any PCB tools vendor to adopt the format for their applications, with full technical support provided by Siemens EDA.



ODB++ contains all the information needed for fabrication, assembly, and test.

Open Format, Yet Controlled IP

The ODB++ Design format is an open, ASCII file structure that was conceived by Valor, now Siemens EDA, in 1995 and has been accepted and proven at thousands of companies worldwide. Download the free ODB++ format specification at odbplusplus.com/design/odb-design-format-specification. While the format is open, users have total control of what design content to exclude from the data package when the ODB++ Design output is generated.

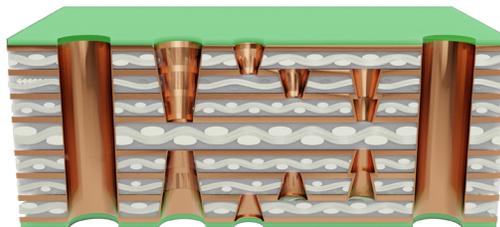
Users may, for example, wish to neutralize the net names of their design to protect the design intent, or may choose to output only the board layers to your fabricators, if they do not need to know the component level data. All of this is controlled by the sender of the ODB++ Design data.

Continuing Improvement to Meet PCB Needs

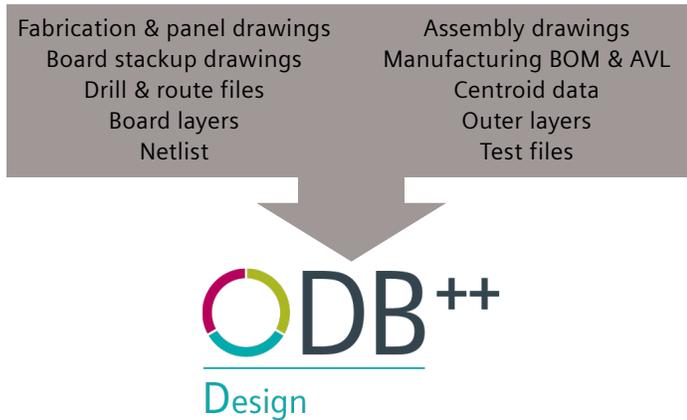
Since its conception, the format has been continuously improved to meet the evolving needs of PCB designers, fabricators, and assemblers. Among the latest enhancements released are:

- Definition of flex and rigid-flex circuits
- Intentional shorts
- PCB stackup information
- Wire bond data

Proven Results



ODB++ includes the ability to model stackup layers, conveying information on copper and dielectric properties.



All fabrication and assembly data contained in one product model

Siemens EDA supplies automated graphical tools integrated into your ODB++ Design output process to ensure that the ODB++ product model is equivalent or superior to the design-intent compared to legacy formats. After validating several designs in this manner, the transition to the ODB++ Design will be complete and there will no longer be a need to continue using the legacy format such as Gerber, Excellon, netlist, and BOM outputs.

Free ODB++ Viewer

To support the adoption of ODB++ Design Siemens EDA provides a free ODB++ Viewer from the ODB++ web site: odbplusplus.com/design/download/odb-viewer. With the free viewer users can view and query details of a design represented in the ODB++ Design format. Other useful abilities such as measuring between PCB objects and locating a single or collection of component placements by name, or reference designator are available for use in the ODB++ Viewer.

More information

For more information on ODB++, visit: odbplusplus.com

10+ Steps, Several Days:

Create, Check, Validate, and Output Files Individually

OR

4 Steps, Done in Hours:

1. Create ODB++ product model containing all the data
2. Validate the single product model
3. Output the data needed for fabrication
4. Output the data needed for assembly

**Siemens Digital
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siemens.com/software

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For additional numbers,
click [here](#).