

The Complete Yield Management Solution

The Challenge

In today's rapidly evolving semiconductor market, the race goes to the swift. Challenges from cost pressure and short product life cycles significantly impact device manufacturers' competitive position. New products and processes must be introduced quickly, under strict cost constraints. This creates an increasing emphasis on efficiency in product development and production.

The Solution

The solution is in the data. The ability to quickly and accurately analyze the tremendous amount of data throughout product development and manufacturing leads to decisions that impact the bottom line.

dataPOWER[™] is the most comprehensive and powerful set of data management and yield enhancement tools available. With its speed, flexibility and ease-of-use, *dataPOWER* dramatically increases productivity, quality and yield, while significantly reducing time-to-market.

"*dataPOWER* offers a very powerful set of tools that enables us to quickly and easily analyze yields, monitor processes, and characterize new products."

Joost Smeets, Leader Process Team Manufacturing Philips Semiconductors

dataPOWER can access and manage data from the entire semiconductor manufacturing process. In-house data as well as data originating from foundries, test, and assembly houses worldwide is easily assembled and analyzed. The information is aligned for all steps in the production flow, enabling faster process characterization and modification. The result: increased productivity and shorter time-to-money.

Key Benefits

- **Time-to-Market:** comprehensive, integrated product characterization
- **Time-to-Money:** faster production ramp through improved process characterization
- **Globalization:** world-wide access to any data, any time
- **Collaboration:** information sharing at all organization levels, across any size enterprise

Fast, Flexible Data Analysis

Flexible Platform

dataPOWER's platform-independent software allows access to the data from most operating systems, enabling more effective cross-functional communication. The software's dynamic database schema is a scalable enterprise-wide solution for any organization, from IDMs to fabless to foundries.

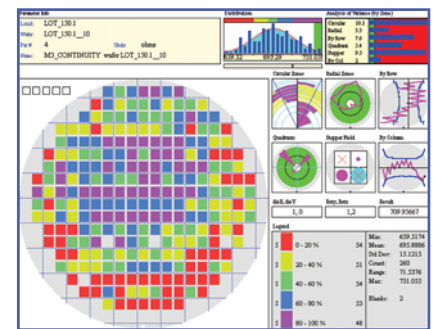
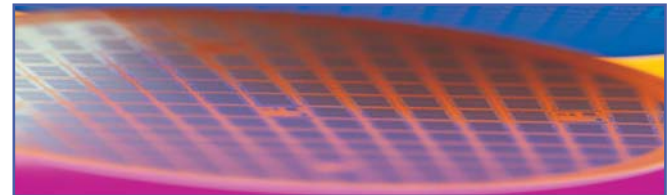
The open system architecture includes a configurable GUI and an API (Application Programming Interface) with hundreds of functions that allow you to create highly customized environments with your own advanced analysis tools.

Integrated Database

The *dataPOWER* database is fully integrated with all analysis functions, allowing fast and robust data retrieval of all data types into the analysis environment. Specialized data retrieval windows make it easy for users of any level to drill down to the specific data set needed, eliminating the need for complex data query programming skills.

Interactivity

All *dataPOWER* modules use extensive interactive functions to maximize analysis capabilities. Data analysis features, including data level drill-down, sub-plotting, data zooming, data filtering, etc., give you the ability to perform analysis from many angles.



Wafer Map

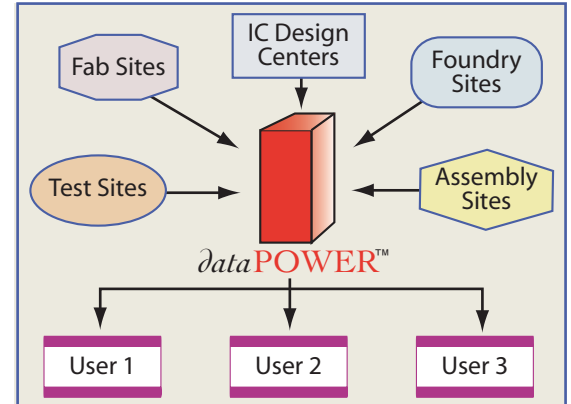
*data*POWER[™]

Work Smarter

Collaboration

The group effort that is required in any production environment mandates a yield enhancement system that encourages communication. *dataPOWER* provides both the infrastructure and the tools to facilitate this essential collaboration throughout the supply chain.

Users can easily schedule batch-processed reports and output them to a variety of formats including Word®, PowerPoint® and HTML. Web publishing, automated emailing, and live collaboration with customers and suppliers enable data-driven decisions to be made quickly and efficiently, optimizing engineering resources.

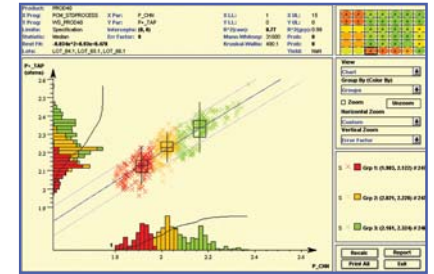


dataPOWER Tools

dataPOWER Basics

The *dataPOWER* core product includes a broad range of data management and analysis tools, enabling you to choose the view that captures the most value from your data.

- Integrated database – data captured and aligned throughout the manufacturing flow, available to all users.
- Descriptive statistics – boxplot, histogram, Cpk, scatter plot, cumulative probability, trend plots, configurable statistical summary, and more.
- Statistical modeling – regression, ANOVA.
- Advanced tools – Product Sensitivity Analysis, Measurement Systems Comparison, equipment commonality, Reject Oriented Analysis, yield analysis, product/process characterization, and more.
- Wafer parametric and bin mapping with zonal pattern recognition.



Product Sensitivity Analysis

Extending the Solution

dataPOWER Data Mining Tools

- Classification Tree – identify causes of groups or classes of events
- Tool-to-Tool – report equipment performance variations
- Commonality – determine common causes of good or bad results *

dataPOWER Reporting Tools

- Journal – create a presentation in HTML or Word® format, dynamically incorporating *dataPOWER* tables, charts and graphs *
- *reportMANAGER* – organize a browser-accessible online document library
- *batchMANAGER* – control repetitive batch jobs with automated report distribution
- *dpWEB* – enable browser-based data access and statistical analysis

dataPOWER Mapping Tools

- *waferMAP* – visualize wafer parametric and bin results with zonal analysis and parameter/bin stacking *
- *defectMAP* – evaluate yield effects by defect type, size, layer, class, etc.
- *bitMAP* – map memory bit failure data across the wafer
- *panelMAP* – visualize flat-panel display parametrics with zonal analysis

dataPOWER Characterization Tools

- Characterization Report – evaluate a product's sensitivity to any two independent variables (e.g. supply voltage, temperature) *
- *shmooPLOT* – conduct parametric condition analysis for one, two and three-dimensional shmoo datalogs
- *patternROBUSTNESS* – determine production-worthy and reliable test patterns

* included with basic *dataPOWER* configuration

dataPOWER Specifications

Database Engines

- Informix - versions 7 & 9 - (32 & 64 bit)
- Oracle - version 8i

Platforms

Server

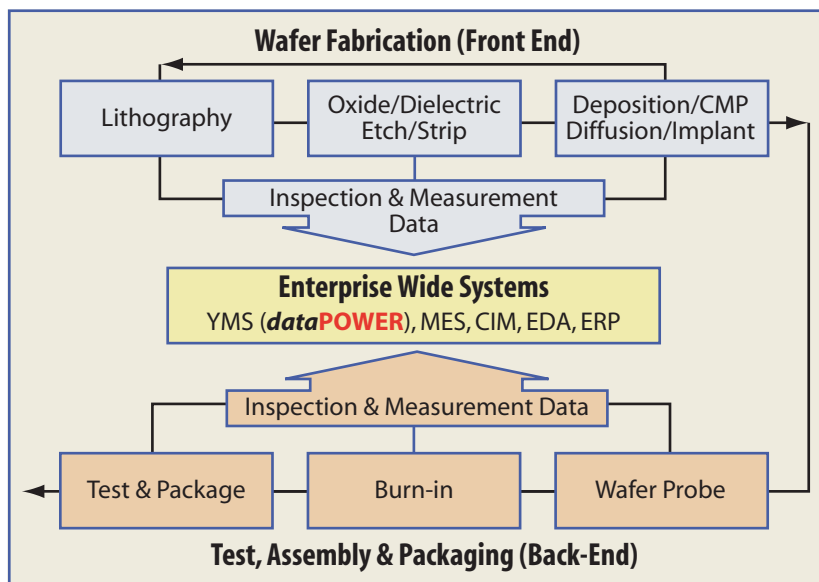
- HP - Operating System: HP HP-UX 10.20, 11
- SUN - Operating System: Solaris 2.x

Client

- PC - Operating System: Windows 98, NT, 2000, XP
- HP - Operating System: HP-UX 10.20, 11
- SUN - Operating System: Solaris 2.x

Connectivity

- LAN
- WAN
- Web
- Citrix XP



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