

Valor MSS

Manufacturing System Solutions Family Overview

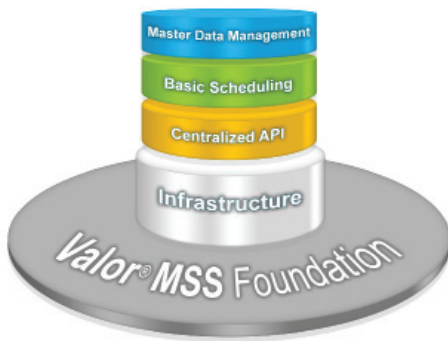
Valor software solution suite for PCB Manufacturing

One platform for the entire manufacturing

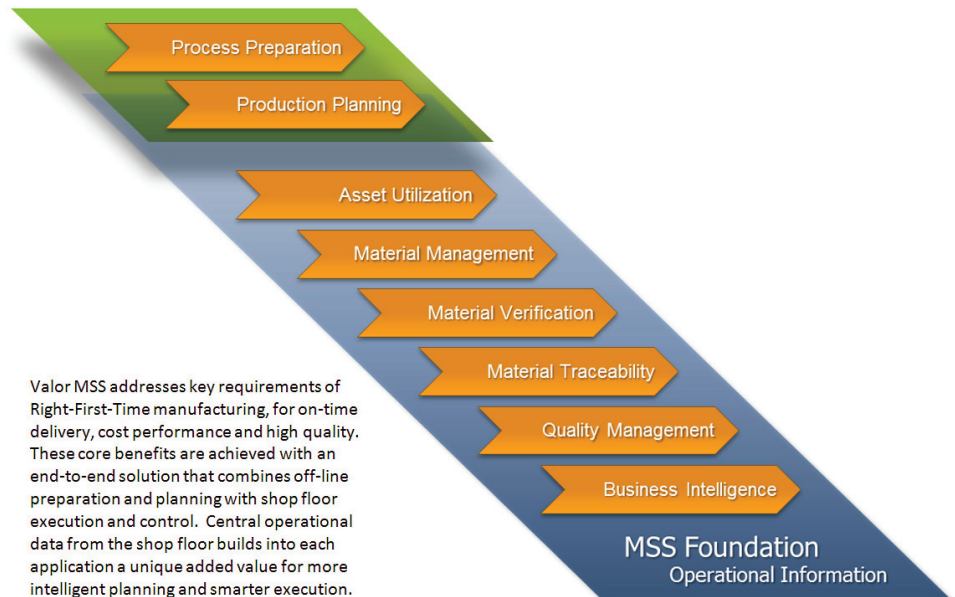
Valor® MSS seamlessly integrates the key elements of the PCB manufacturing process into one easy-to-manage platform. Available as an end-to-end suite, the following modules may also be installed as needed.

Valor MSS Foundation

This module provides a single point of origin for easy-to-manage factory setup with specific line definitions, product structure, registration of materials with their attributes and release of production work orders to the master schedule.



This module resolves many operational challenges by creating a centralized infrastructure to manage and leverage manufacturing operational data. Centralization eliminates data redundancy and configuration errors, and provides the backbone for interoperability.



Valor MSS addresses key requirements of Right-First-Time manufacturing, for on-time delivery, cost performance and high quality. These core benefits are achieved with an end-to-end solution that combines off-line preparation and planning with shop floor execution and control. Central operational data from the shop floor builds into each application a unique added value for more intelligent planning and smarter execution.

Valor MSS Process Preparation

This module integrates key engineering tools for introducing new products to PCB assembly, inspection and test, with right-first-time production programs and documents. All engineering tasks and work flows are based on one common data set and outputs are validated for quality-assured production. MSS Process preparation work flows include:

- Front-end DFA analysis
- BOM validation
- Stencil design
- SMT programming and line balancing
- Test and inspection
- Documentation/Work Instructions

Build higher quality products, faster and at lower cost, with Valor MSS

Manufacturing Assets Utilization

- "Do more with what you have"
- Comprehensive planning, preparation and optimization
- Line performance monitoring

Materials Utilization

- Accurate inventory management
- "Just In Time" Lean materials logistics
- WIP and shop floor control

Quality and Assurance

- Material verification and traceability, process enforcement
- Quality management including test, analysis and repair management
- Interactive work instructions

Business Intelligence for Decision Support

Over the entire manufacturing process

- Visibility and alarms
- Manufacturing asset utilization
- Material and process traceability
- Product delivery and quality

Valor MSS Production Planning

Eliminate the guesswork in production planning by automating optimized family setups on multiple lines with one click. This module will improve your on-time delivery, increases asset utilization and reduces machine down time, especially in high-mix PCB assembly operations. Family setups and optimal production sequence are based on many factors:

- Individual machine placement rate
- Feeder availability and feeder capacity of the machine
- Available inventory
- Current setup of material on each machine



Its Line Executive (LX) sub-module determines the best production planning solutions in advance, making LX the ideal solution for “what if” scenarios.

“Line Executive enables us to consolidate production planning by grouping any quantity of work orders based on line capacity, including any static feeder setups already in place.”

— STEFAN SCHNAKE,
MANUFACTURING PROCESS SUPPORT,
PHOENIX CONTACT ELECTRONICS GMBH

Valor MSS Asset Utilization

View and analyze real-time graphical status of events on the assembly line. Real-time display includes working status, cycle time, wait times, and error information along with many other performance indicators.

Part No	MC ID	Station	Slot	Qty	Start ID	Start No
P0001	1.1	1	1	1000	001	1
P0002	1.2	2	1	1000	002	1
P0003	1.2	1	1	1000	003	1
P0004	1.2	2	2	1000	004	1
P0005	1.2	2	1	1000	005	1

Monitor the line performance online, in the office or remotely. View the exact location of bottlenecks and the duration changeover downtime between jobs and much more. The graphical display makes it easy to isolate and improve problem areas, increase asset utilization and get more production out of existing assets.

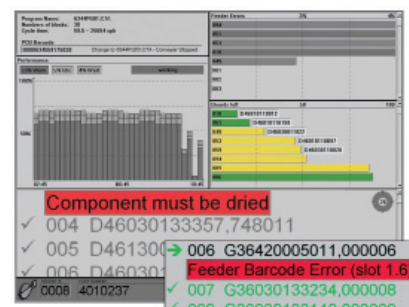
Valor MSS Material Management

Reduce inventory and streamline production using a Lean material flow based on just-in-time principles. Material is kitted and delivered to the line based on real-time pull signals from each machine, the current status of work orders and pending changeovers.

“Our customers measure our quality by First Pass Yield, On Time Delivery, and Cost Performances. Valor MSS fully addresses all of these.”

— EHUD GITAI, DIRECTOR OF
QUALITY AND TECHNOLOGY,
RH TECHNOLOGY

Minimize the material cycle from receipt of goods through final assembly with automated tracking of material consumption, waste and movements through the factory. Essential transactions can be reported to ERP for improved inventory accuracy and control. Valor MSS Material Management places the right material at the right place at the right time eliminating material bottlenecks and wait times.



Valor MSS Material Verification

With Valor MSS Material Verification, production machines will not run until all material is correctly setup. Extensive capabilities such as the ability to block a feeder when MSD sensitive component has expired, or when a feeder needs maintenance, are included for all users.

Eliminate manufacturing errors by enforcing correct setups, change-overs, splicing, feeder positioning, MSD or RoHS constraints and feeder management. It includes guided set-up and verification for fixed feeders or off-line trolleys, with family setups. Advanced users can take advantage of support of LED light class binning and on-the-fly verification of variant setups.



“Using Valor MSS, the trace of materials is automatic. The trace data is collected 100% for every panel.”

— LUCA GRIFAGNI,
ENGINEERING MANAGER,
META SYSTEM

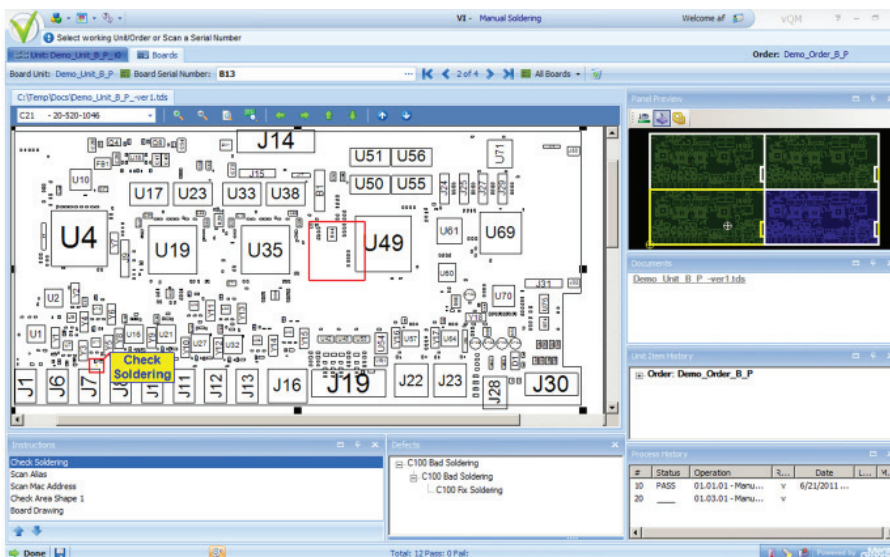
Trace the history of materials used in production according to vendor data including the manufacturer's part number, batch or date code, unique reel ID, production work-order and the process step in the routing.

Valor MSS Material Traceability

Trace material history per PCB ID, work order or time-code to minimize liability and to comply with customer traceability requirements. The traceability record includes data from all assembly work-cells (automated and manual) and captures additional information including the operator working at the time, and the program running on the equipment.

“MSS Quality Management increases the quality of our released products and gives me full visibility on the overall quality level and each quality issue.”

— ITAMAR CASPI,
QUALITY MANAGER,
RH TECHNOLOGIES



Valor MSS Quality Management

Ensure continuous quality improvement and device history using a paperless quality management system for the entire manufacturing flow. There are specific modes of operation for each type of quality assurance function from automated data collection to complete diagnostic analysis of failures and effective repair. Specific applications include:

- Guided failure diagnostics and closed loop repair
- Defect “Cause Alert” to warn the work cell of origin
- Visual inspections, manual defect logs and interactive work instructions
- Enforced routing to ensure all steps are completed in the correct order

- Automated data collection from test and inspection equipment

The paperless solution creates and manages the product genealogy and the complete build record to meet exacting requirements for process traceability. Core features include skills management, paperless document delivery, data collection, and managed product repair. Valor MSS Quality Management will help you achieve the goal of zero defects.

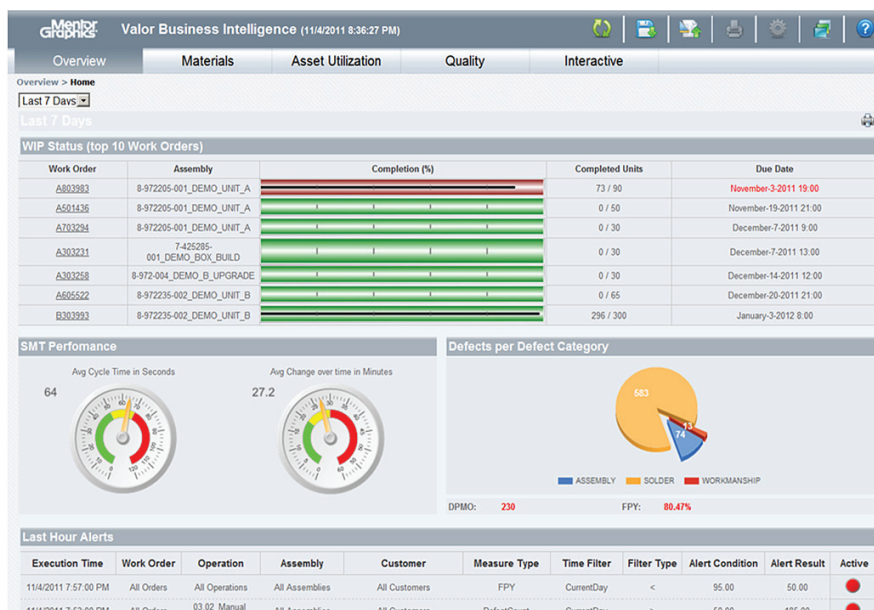
Valor MSS Business Intelligence

Give managers and engineers the decision support they need with full visibility and clear insight on information from the entire manufacturing process. The Business Intelligence (BI) module helps you improve on-time delivery, eliminate waste and increase asset utilization and quality.

BI reveals which problems to solve, in which order, to achieve specific business goals and priorities.

“MSS Business Intelligence helps our factory achieve even higher performance. We need immediate access to information we can act on, and BI provides this visibility. BI is reducing our time-to-corrective action, improving our bottom line profits, and enabling us to offer better service to our customers.”

— FARID ANANI
MANUFACTURING MANAGER
COMPUTROL



Valor MSS software solution suite for PCB Manufacturing

One platform for the entire manufacturing flow



For the latest product information, call us or visit: www.mentor.com/valor

©2012 Mentor Graphics Corporation, all rights reserved. This document contains information that is proprietary to Mentor Graphics Corporation and may be duplicated in whole or in part by the original recipient for internal business purposes only, provided that this entire notice appears in all copies. In accepting this document, the recipient agrees to make every reasonable effort to prevent unauthorized use of this information. All trademarks mentioned in this document are the 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: 800.547.3000
sales_info@mentor.com

Silicon Valley
Mentor Graphics Corporation
46871 Bayside Parkway
Fremont, CA 94538 USA
Phone: 510.354.7400
Fax: 510.354.7467

North American Support Center
Phone: 800.547.4303

Europe
Mentor Graphics
Deutschland GmbH
Arnulfstrasse 201
80634 Munich
Germany
Phone: +49.89.57096.0
Fax: +49.89.57096.400

Pacific Rim
Mentor Graphics (Taiwan)
Room 1001, 10F
International Trade Building
No. 333, Section 1, Keelung Road
Taipei, Taiwan, ROC
Phone: 886.2.87252000
Fax: 886.2.27576027

Japan
Mentor Graphics Japan Co., Ltd.
Gotenyama Garden
7-35, Kita-Shinagawa 4-chome
Shinagawa-Ku, Tokyo 140-0001
Japan
Phone: +81.3.5488.3033
Fax: +81.3.5488.3004

Mentor Graphics

MF 01-12 1030330-w