Valor Quality Management
Designed for Traceability, Quality, and Compliance

Overview
Valor® MSS Quality Management is a comprehensive, digital, quality management solution designed to meet electronics manufacturers’ traceability, quality, and compliance needs while enabling organizations drastically reduce product defects. Along with full product and process traceability, Valor MSS Quality Management tracks panels, assemblies, and sub-assemblies through all phases of manufacturing, including the inspection, test, and repair processes, to ensure that the manufacturing process is correctly executed. The solution includes skills management, paperless documentation, defects management, and data-collection capabilities, including product routing information, data from AOI, and ATE.

Comprehensive Quality Management Mechanism
The Valor MSS Quality Management solution includes three complimentary shop-floor clients:

Automated Test Machine Interface Client provides automated quality data collection from any automated inspection and test platform via the data log output of the platform. It supports most major ICT, flying probe, AOI, and AXI machines. The test and inspection logs include errors classified by the automated tester interface as symptoms, until they are analyzed and assigned to a defect code causing the symptom using the Analysis and Repair client.

Manual Assembly Inspection Client is a tool for manual PCB and system level assembly. It includes defect and test results inputs through the

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BENEFITS
• Improves product quality by using an error-proof manufacturing process
• Reduces material waste using enforced routing
• Reduces cycle time and cost by minimizing effort on test, troubleshooting, and repairs
• Increases efficiency through automatically collecting information from assemblies and inspection machines
• Improves production yield by minimizing waste

Valor MSS Quality Management is a digital solution for capturing and managing quality data during electronic assembly, test and inspection, either for a single board or panel or a complex system assembly.
interface, hierarchical BOM and panel management, work in process (WIP), acceptable quality level (AQL), and the creation of process history reports.

**Analysis and Repair** diagnoses and validates test results (symptoms) to a particular defect type and location. When a “repair ticket” is created, it automatically suggests the most likely related defect. Each symptom is confirmed and correlated to a reference designator location, component part number, pin number, and net name that are included in the applied defect. Each failure is logged to the PCB ID number and the PCB status is set to failed.

Once a repair is made, the product is retested. If the product retest is successful, the status is automatically upgraded to pass and allowed to proceed to the next process step in the production sequence. The analysis and repair client also include hierarchical BOM and panel management.

**Modes of Operations**

The Valor MSS Quality Management solution is set to operate according to a mode defined by the administrator, based on the operation required by the user. Each operator will have a set range of capabilities available, based on the configuration of process steps, covered by a particular work station and the login credentials for the user.

**Visual Inspection (VI) Mode** is set for the manual assembly and inspection point. It allows the operator to see work instructions, perform inspections, report defects, make repairs, provide PASS/Trash status and perform assembly work on the panel or system.

**TAR (Test, Analyze and Repair), and AR (Analyze and Repair) Modes** are set for the manual test, analysis and repair point. TAR allows the operator to see the Board Viewer, manually report symptoms, defects and repairs, provide PASS and Trash status, and perform assembly work on the panel or system. AR mode does the same, only it receives automated inputs from test and inspection machines.

The Board Viewer is designed for easy graphical navigation through the CAD data and netlist. It also provides the operator access to specific work instruction documents attached for the current operation, the complete item history of the board, test/inspection failure history, specific failure message per each recorded symptom, and the complete symptom list.
System Assembly (SA) Mode allows operator to see work instructions, perform box build assembly, and manually report defects and repairs.

System Flow with the Operation Plan
The Valor MSS Quality Management system guides and controls the production of units according to the hierarchical BOM. The units are guided through the manufacturing process by an operation plan in a completely digital, paperless form. The operation plan contains a sequence of operations, each representing a specific function (i.e., mass assembly, manual soldering, AOI, visual inspection, ICT, etc.). Each operation has one or more pieces of equipment linked to it that will usually represent a physical workstation or a test machine. When the unit is scanned into a workstation, the correct work instruction is displayed per the rev level of the work order.

Leverage and Use of Quality Data
As production flows along the operation plan, each station captures all the relevant information, including date and times, test and inspection results, and pass/fail status. Each operation adds to the device history of the unit. At the end of all processes, a complete history of each unit is collected, stored, and managed as part of the device history. Device history reports provide objective evidence of compliance to all requirements, which is essential in today's digital manufacturing world.

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

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