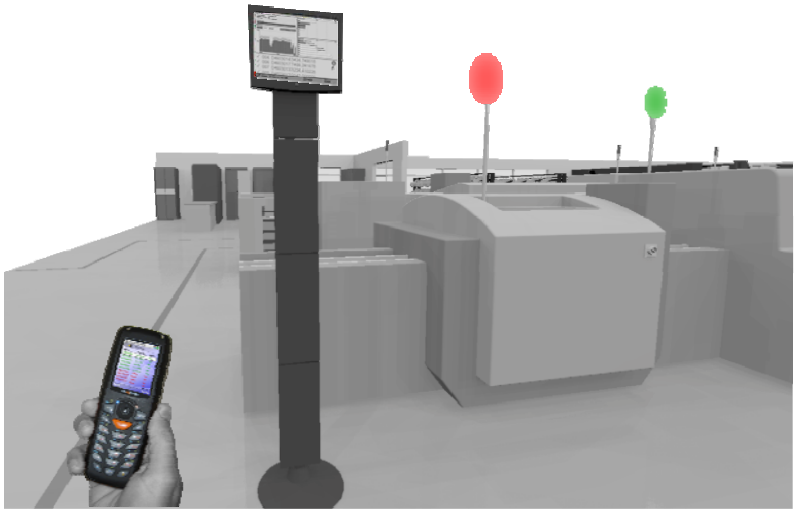
Flexible Interface
Valor® MSS™ Machine Support

Manufacturing

D A T A S H E E T



The flexible machine interface ties into machine conveyor and light tower signals for status and events, PCB barcode scanners, and hand held scanners for traceability.

Major Benefits

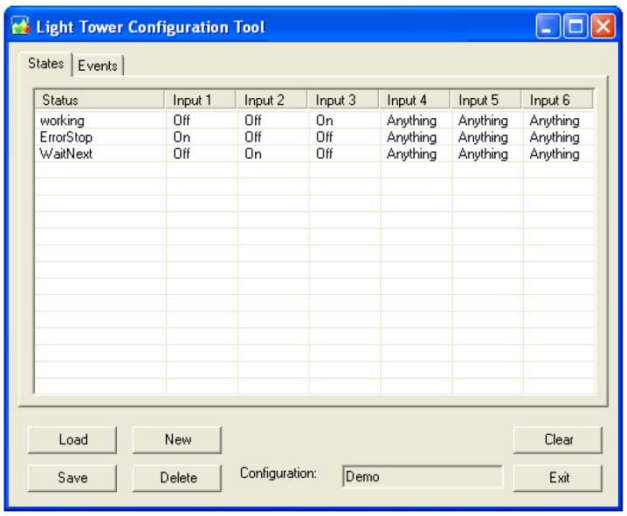
- **Monitor machine performance and productivity with a flexible interface**
- **Capture essential production status: run time, stop time, wait time**
- **Capture essential production events: throughput, passed board, failed board, change-over, cycle time**
- **Capture SMT material consumption per part number**
- **Verify SMT feeder setup for individual replenishment and complete changeover**
- **Provide component traceability to an individual PCB**
- **Import test and inspection quality data with flexible XML interface**
- **Create SMT programming output files from CAD and BOM data**

Overview

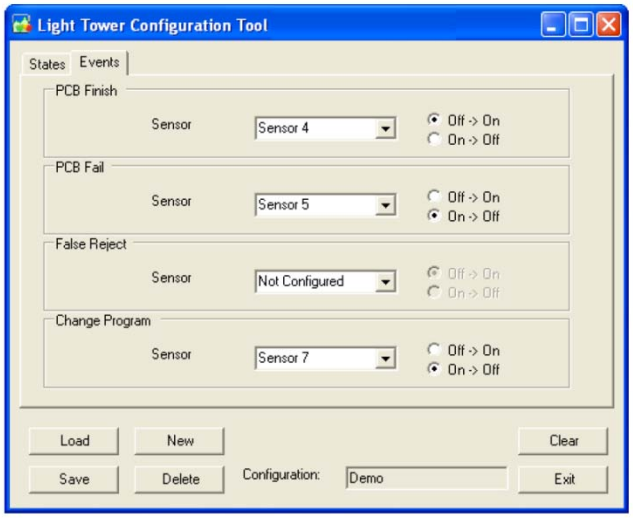
The Flexible Interface provides a connection for most machines to the Valor MSS software platform, giving a high level of support for any manufacturing machine present in the SMT assembly factory. For most machines, Valor MSS has options for dedicated machine interfaces. If no dedicated interface is available, the flexible interface can accommodate many different types of machines: SMT, AOI, Stencil Printers, and Reflow ovens. The Flexible Interface is perfect for machine types and model numbers for which a full performance interface is not yet available. For monitoring machine performance, feeder setup and traceability, the Flexible Interface includes a hardware kit that ties into machine conveyors and light tower signals.

Feature Summary

- Connects to the Valor MSS database to link machine performance and setup data to program data, work orders, and reel IDs for continuous monitoring and preservation of the traceability data chain.
- Light tower configuration ties the interface into the machine light tower signals to capture time stamps for each status change, i.e. Run, Wait Next, Wait PCB, Error/Stop, based on specific signals available in the light tower circuit.
- Light tower configuration also ties into event signals, such as PCB Finish, PCB Fail, False Reject, and Change Program. This is especially useful when monitoring AOI equipment.
- System uses PCB barcode scanners mounted on the input conveyor to capture PCB ID for traceability. Manufacturer part-numbers and date-codes in the feeder setup are then linked to the PCB ID using hand held barcode scanner(s).
- PCB sensors can also be mounted on the input and output conveyor to capture time stamps for each PCB start and PCB completion event.
- Some machines do not report loading PCB as a separate status. By default this time is counted incorrectly as wait time. The flexible interface provides a generic load time for more accurate cycle times.
- For Stencil Printing and Reflow equipment, the PCB sensors and light tower configuration can provide a flexible production monitor.
- Hand held barcode scanners are used to verify correct feeder/part-numbers when replenishing or changing over the setup.
- Detection of incorrect feeder change can be configured to stop the input conveyor through a SMEMA connection for quality control.
- SMT feeder exhaust points are estimated based on usage defined in the SMT program. Using this data, material pull signals are provided graphically to operators as well as the MSS Material Management solution. The SMT program data can be imported using a generic parser.



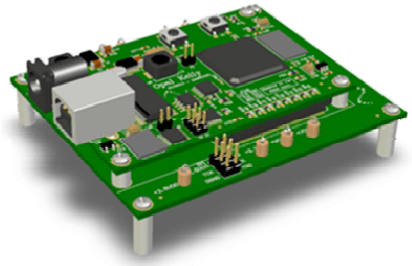
Light Tower configuration tool for STATES



Light Tower configuration tool for EVENTS

Flexible interface for SMT and AOI machine program output

- Flexible program configuration is available for the vPlan process planning application. When a placement machine simulation interface is not available, a simple program output can be formatted based on the needs of the SMT equipment and/or operating system. This allows for standardized machine programming to be maintained at all times with the consistent use of a centralized master part library.
- Manual input is provided to load/edit average placement times per component part number so an estimated run time can be used when splitting parts for line balance.
- Flexible program output is also available for AOI equipment when a specific AOI machine programming module is not available. Again, this maintains standardized machine programming with consistent use of centralized master part library.



Flexible interface for importing test and inspection results

- When a specific interface is not available for ICT, Flying Probe or AOI/AXI test or inspection results, Valor MSS has a generic solution for importing this quality data into the MSS database using a flexible XML interface.
- The flexible XML interface has a pre-defined schema for AOI or ATE results capture and presentation to repair operations. The schema defines the translation of the results for direct import into the MSS database for Quality Management, Reporting and Traceability.
- The flexible ATE interface ensures that all testers can be easily supported guarantying that critical quality data is always collected.

System Requirements

- Requires use of vManage for machine monitoring and traceability, vPlan for SMT/AOI machine programming output, vCheck for importing test and inspection data
- Windows XP or Windows 7

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