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TOOLweb® Blue Box Professional

ENABLING HIGH SPEED, MULTI-USER CONNECTIVITY AND DATA SHARING

Features & Benefits

Open and Flexible Architecture

- Scaleable data collection architecture — single tool to fab wide system
- Supports the TOOLweb tool side protocol for sensor data collection
- Integrates sensor data into the SECS data stream to the factory host
- XML based protocol easily interfaces with fab applications, sensors, instruments, and subsystems

Configurable, High Speed Data Collection

- User configurable data collection, linked to recipe, lot ID and wafer number
- Administration and configuration of data collection plans via the TOOLweb fab side protocol
- Allows data from FDC programs to be sent to the factory host
- Mobile Pentium® 800Mhz platform allows collection of more than 10,000 VID's
- Data collection from tool and sensors

Secure Data Sharing

- Enables data sharing and transfer through data multiplexing

Description

Advanced manufacturing requires that more data, including additional sensor, instrument and subsystem data, be supplied from the process tools to multiple users, such as APC (advanced process control), FDC (fault detection and classification) and e-diagnostic applications. However, most process tools only support a single SECS connection, which is typically occupied by the factory host. Even if there is a TCP/IP interface, the HSMS protocol is still point-to-point, and supports only one user at a time. With the TOOLweb Blue Box Professional*, this communications bottleneck can be eliminated.

The TOOLweb Blue Box Professional provides the optimum solution for data sharing. Designed to manage and segment data requests from multiple users, the TOOLweb Blue Box Professional multiplexes the data from the process tool and sensors and communicates this data to the multiple applications and users, including the factory host. The open and flexible architecture of the TOOLweb Blue Box Professional guarantees easy integration into existing fab environments, using SECS and XML protocols.

The TOOLweb Blue Box Professional enables high speed, multi-user connectivity by providing process information from the tool and attached sensors to the users and applications that need it, including APC, FDC and e-diagnostic applications. In addition, multiple sensors can be directly integrated through the TOOLweb Blue Box Professional into the data collection environment of the fab, enabling efficient data collection and management

Easy Fab Integration

The TOOLweb Blue Box Professional maintains the SECS link between the tool and the factory while providing a separate Ethernet port to integrate the process information to fab applications through an open, XML based protocol (TOOLweb fab side protocol). The intuitive, web-based user interface allows for quick set-up and operation to minimize integration time.

The TOOLweb Blue Box Professional is compliant to all relevant SEMI standards. Its fail-safe design guarantees an uninterrupted communication from the tool to the automation system. The data from the sensors and the tool can be separated from the fab network by using a second Ethernet port.

Advanced Data Collection

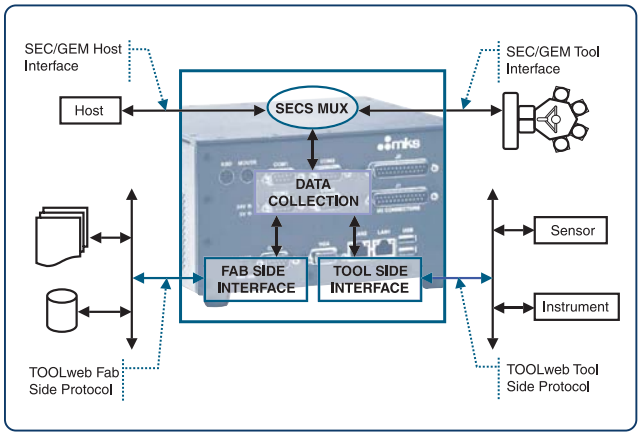
Multiple sensors, instruments and subsystems can be integrated to the TOOLweb Blue Box Professional via the TOOLweb tool side interface, an Ethernet and XML-based protocol. The data from these sources are exposed as Extended Variable IDs™ (EVID™), and can be used for data collection in the same way that Status Variables IDs (SVID) are collected from the tool. In addition, data may be shared between the instrument and the tool; for example the instrument could subscribe to the tool's recipe name.

Administration and configuration of the data collection is possible either remotely via the TOOLweb fab side interface or through the local user interface. To initiate a data collection plan (DCP), SVIDs from the tool or chamber or EVIDs from an attached sensor are chosen. Multiple DCPs running simultaneously are supported, where each DCP can run at a different sample rate. Conditions can be used to trigger the start or stop of a DCP. The TOOLweb Blue Box Professional optimizes all requests to the tool, and throttles if necessary to guarantee uninterrupted operation. The data from the tool and the sensors are collected in the context of the tool's time, recipe, lot ID, chamber and wafer number.

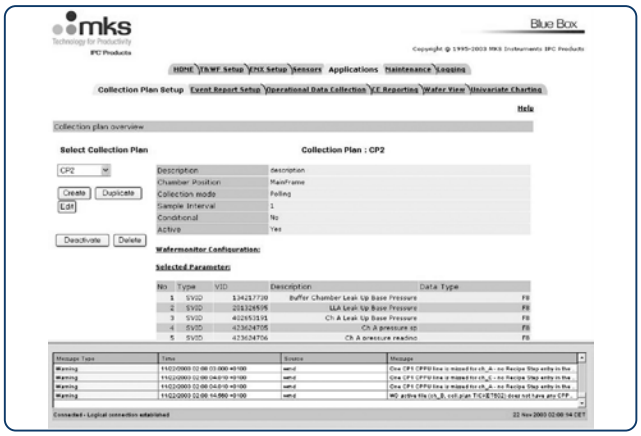
** MKS Blue Box - patents pending*

Enabling High Speed, Multi-User Connectivity and Data Sharing for E-Diagnostics and APC

The TOOLweb Blue Box Professional is exposing the collected data to fab applications via the TOOLweb fab side protocol. Multiple applications can subscribe to the same DCP data, and subscriptions for multiple DCPs are supported as well. By integrating the sensor data into the SECS data stream of the tool, the TOOLweb Blue Box Professional provides existing automation systems a broader range of data. Information from third party applications, such as FDC, can be easily integrated into the SECS data stream as well.



TOOLweb Blue Box Professional interface description and installation example



TOOLweb Blue Box Professional Data Collection Plan Set-Up Screen

Specifications

	Blue Box 4000x	Blue Box 8000x
Physical Description		
Height	100 mm	100 mm
Width	190 mm	190 mm
Length	165 mm	165 mm
Weight	1.8 kg	1.8 kg
Environmental Conditions		
Operation Temperature	15-35°C/59-95°F	15-35°C/59-95°F
PC Specifications		
CPU Board	NS 300 MMX 32-Bit x86 Processor	Mobile Intel® Pentium® III 800 MHz Processor
RAM	128 MB SODIMM	128 MB SODIMM
Number of USB Ports	Two (USB 1.1 compliant)	Two (USB 1.1 compliant)
Ethernet	10/100 base T Ethernet controller, auto-sensing, RJ45	10/100 base T Ethernet controller, auto-sensing, RJ45
Video	VGA/CRT controller	VGA/CRT controller
Keyboard	PS/2 (#1)	PS/2 (#1)
Hard Drive	20 GB hard disk IDE 2.5”	20 GB hard disk IDE 2.5”
Power Supply		
Voltage Range	115/230 VAC (Universal 85-264 VAC)	115/230 VAC (Universal 85-264 VAC)
Current Range	2A@115 VAC, 1A@230 VAC	2A@115 VAC, 1A@230 VAC
Frequencies	50/60 Hz (47-63 Hz)	50/60 Hz (47-63 Hz)
Removable Power Cable, On/Off Switch	1 each	1 each
Reliability		
MTBF	> 30,000 h	> 30,000 h
MTTR	30 minutes	30 minutes
Certificates		
UL	Yes	Yes
CE	Yes	Yes

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