

Multiple SECS communications for your equipment

The challenge

As semiconductor manufacturers strive to attain higher yields and prepare for 300mm production, opportunities for increased automation abound. In addition to controlling their equipment, manufacturers need software solutions that provide increased visibility into their processes.

Whether it's a tool-health monitoring system, a lot-tracking and traceability system, an e-diagnostics solution, or a new interface to material handling equipment, these advanced systems require a wide range of information from manufacturing equipment.

But most equipment controllers only support a single SECS connection, and it's typically reserved for the factory host computer. So how do you open the door to the advanced software systems that set the industry leaders apart?

The solution

The Plex4SECS™ Multiplexer is the answer. Designed to channel multiple host connections into a single equipment connection, Plex4SECS opens manufacturing equipment to the many software systems needed in fabs today.

Use it for existing equipment installations that need to integrate with new host applications. Or, use it for equipment that must ship with this multiple-connection capability in the first place. Plex4SECS is a flexible, software-only solution that provides complete support for the SECS-I, HSMS, SECS-II and GEM standards.

Plex4SECS overview

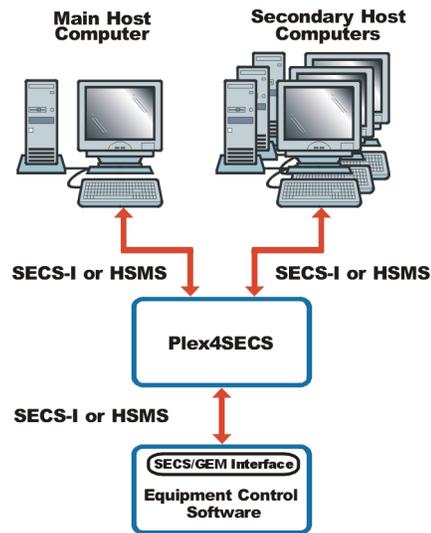
Plex4SECS includes two key components, the multiplexer itself, and a manager you use to monitor and configure instances of the multiplexer in your fab.

The Plex4SECS **Multiplexer** is a Microsoft® Windows NT® Service that runs on Windows NT, 2000, XP, and embedded versions of NT and XP. With a SECS or GEM-compliant equipment controller on one side and a variety of SECS-compliant host applications on the other, the Plex4SECS multiplexer transmits multiple host communications to the equipment controller and routes responses back.

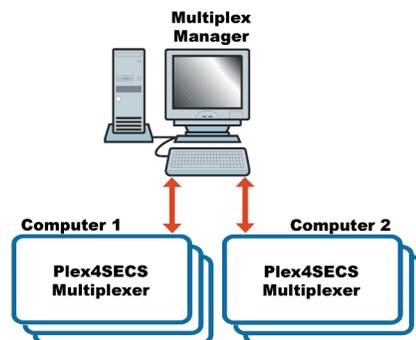
Plex4SECS intelligently handles both host and equipment initiated messages. For host initiated messages, Plex4SECS uses message identifiers to ensure each host receives the appropriate reply to its primary message. For equipment initiated messages (such as alarms and events), Plex4SECS can broadcast to all connected hosts, or send these messages to the appropriate hosts based on the message type and a few simple rules defined in the Multiplex Manager.

The Plex4SECS **Multiplex Manager** is a Windows-based application that makes it fast and easy to configure the multiplexers you use. Just provide basic information about each connection to the multiplexer and click the Start button. Then, you can view the status of the multiplexer and the connections established by the main host, the equipment, and any secondary hosts.

With the ability to configure, control, and monitor multiplexers running on a local computer or across the network, the Multiplex Manager is a simple and powerful tool.



System Architecture

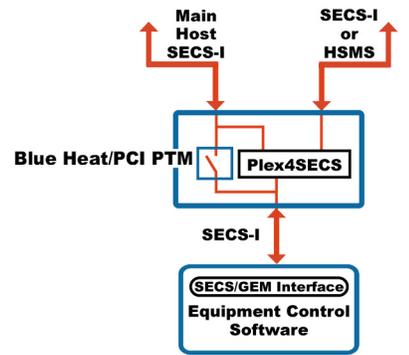


Remote Management

Reliability — top priority

It is imperative that the factory host's connection to the equipment remains functional at all times, so we designed Plex4SECS with reliability as our top priority.

- ▶ First, Plex4SECS runs on NT-based operating systems only, which are proven in critical 24-7 manufacturing environments and in secure server applications.
- ▶ Second, the software is built on components that have countless hours of in-the-field operation.
- ▶ Finally, Plex4SECS offers optional, true hardware fail-over protection for SECS-I hosts. This is achieved by installing a **Blue Heat/PCI PTM** board from Connect Tech Inc. Both the board and Plex4SECS can be installed on an existing PC with no additional hardware required. If the Plex4SECS computer or software fails, factory host messages have a direct electrical pathway to the equipment.



Optional Hardware Fail-over Protection

Plex4SECS summary

Plex4SECS has many features that make it the ideal way to make equipment data available to the many host applications that need it.

Features	Benefits
Multiplexer written in Visual C++ [®]	▶ High performance message rate with latency measured in mere milliseconds
Written for the best Windows operating systems	▶ High reliability in runtime environment ▶ Low cost of ownership
Supports SECS pass-through and intelligent event and alarm management	▶ Fast integration with older equipment controllers ▶ Instant support for GEM-compliant controllers
Easy-to-use Multiplex Manager	▶ Easy ramp-up and deployment; support multiple connections just minutes after installation

System requirements

- ▶ Windows NT 4, Windows 2000, or Windows XP
- ▶ 5 MB of RAM for the multiplexer, plus 1 MB per host connection

Related documents

[GEM4Tools300 Product Overview](#)

[GEM4Tools™ Product Overview](#)

[SECS4Hosts® Product Overview](#)

For more information

Contact The PEER Group Inc.

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Or, view the Connect Tech Inc. datasheet describing the Blue Heat/PCI PTM Board.

www.connecttech.com

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