AUTOMATISERING

IBM Industrial Computer Systems

Expanding Dimensions in Plant Floor Productivity

The IBM Industrial Evolution Continues...

IBM®

Think About It

Your mission is to increase productivity. Not just quantitatively, but qualitatively. And, reliably. Regardless, of whether you operate in a clean room or foundry environment.

So, you might say the core of our mission is to help you keep ahead of your competition by providing the proper tools to achieve your goal.

Whether you want to control an entire process, or monitor a single operation from one workstation – the expanded family of IBM Industrial Computers offers a variety of tools designed to help you solve a wide range of production problems. Either individually or as a group, the extended IBM family can help you get the competitive edge – and help you keep it.

The pacesetting entry level workstations, IBM 7541 and 7542, deliver more speed, more power and offer more storage capacity. Economy and ease of use are evident, yet their price-performance is outstanding.

The IBM 7561 and 7562 offer PS/2™ power with all the capability advantages of the 80386 microprocessor– more speed, more capacity, more power and more storage. And, the price-performance is, again, outstanding. All engineered in a plant floor package for the industrial environment.

As you read about the expanded dimension in IBM Industrial Computer systems, consider your own needs for increased productivity, greater reliability and enhanced quality. And, remember – for a single application or a completely automated line – IBM offers the right tools for productivity solutions, large and small.

The Right Tools For The Job

Reliability – the critical issue on the plant floor. And, selecting the right equipment to perform plant floor tasks is part of the issue. The IBM family of Industrial Computers not only helps solve existing problems but provides plenty of room for add-on growth without obsoleting your present equipment investment.

The IBM family of Industrial Computers, unlike office machines, is designed to perform in a plant floor environment. And, operate day after day, year after year. These industrial computers and plant floor software can help you meet target schedules, reduce the possibility of costly downtime, assure quality, extend reliability, cut shrinkage and monitor vital functions, while helping you control production.

Small Jobs. Big Jobs.
If you want to monitor a single operation, you'll want a standalone, entry level workstation. Controlling more complex process functions may require a network of computer workstations configured to achieve your specific goals.

Standalone Entry Level Workstation
The standalone computer workstation drives programs for entering information from the plant floor, and receiving information from a central source. The workstation facilitates simple tasks like orders for materials from inventory or tools from the tool room. Production statistics along with other vital information can be entered into the program on an "as needed" basis by the operator.

Cell Monitoring/Control
Computer workstations can be configured to monitor on-going processes, capture information and relay it to another system. And, they can relay instructions from a central system to coordinate the workstation's operations with a master plan. These workstations can also control processes as well as relaying information, accepting input and delivering information.

Machine operations, including functional changes and operation monitoring, illustrates the type of process controlled and information monitored.

Versatile Tools For The Job

IBM Introduces New Tools For Expanded Dimensions In Industrial Computers

IBM Industrial Computers make up a complete line of powerful, flexible productivity tools. Setting the standard in reliability and expandability, IBM's hardware, software and accessories offer outstanding performance in workstation or cell monitoring and control applications. And, you may select only the equipment you need to perform the specific job you have to do.

The IBM 7541 and 7542: Economy and simplicity with 80286 advances

The IBM 7541 and 7542 Industrial Computers are designed for industrial plant floor environments where a system, which can function in harsh physical conditions, is required. The systems are highlighted by Micro Channel™ Architecture with a 10 MHz 80286 16-bit microprocessor with a capability of supporting up to 2 MB of real memory on the system board.

Features:
- 1-2 MB of RAM on planar
- Memory expandable to 16 MB
- 150W self-ranging power supply
- 30 MB of fixed disk storage
- 1.44 MB diskette drive
- VGA interface on planar
- Serial/parallel on planar
- 4° to 46°C operating temperature range
- Extended shock and vibration protection
- Extended particulate protection
- DOS or IBM Operating System/2™

Both systems have hardened cases, filtered air cooling, pressurized internal environments, bench-top or rack-mounted models, full function industrial keyboards, Micro Channel Architecture and worldwide, self-ranging power supplies. And, all IBM Industrial Computers meet acknowledged requirements for accepted industry standards.

The IBM 7561 and 7562: Power and speed with the advantages of 80386 for advanced applications

The new high performance IBM 7561 and 7562 Systems have more power, additional speed and greater memory capacity and offer all the capability advantages of an advanced 20 MHz 80386 microprocessor with more built-in features, greater reliability, more expandability, additional productivity features, as well as better price-performance plus Micro Channel Architecture.

Features:
- 2–8 MB of RAM on planar
- Memory expandable to 16 MB
- 150W self-ranging power supply
- 60 MB of fixed disk storage
- 1.44 MB diskette drive

- VGA interface on planar
- Serial/parallel on planar
- 0° to 50°C operating temperature range
- Extended shock and vibration protection
- Extended particulate protection
- DOS or IBM Operating System/2

The IBM 7552 Industrial Computer

Think of the IBM 7552 Industrial Computer as an electronic GEARBOX for the plant floor. In the way that a gearbox redirects and channels power – our GEARBOX works on data – converting it to useful information for a wide range of plant floor applications.

The powerful and versatile IBM 7552 can be used as a manufacturing workstation or cell controller, a gateway to in-plant communications networks, as well as a communications facility between plant host computers, operators, and programmable logic and device controllers.

This computer was designed specifically for industrial environments – it can operate reliably at temperature extremes of 0°C to 60°C as well as withstand power surges, shock, vibration, and particulates generally found on the plant floor.

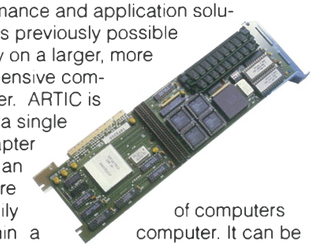
Features:
- 10 MHz 80286 microprocessor
- Up to 16 MB of RAM
- Up to 40 MB of fixed disk storage
- 1.44 MB diskette drive
- Multiple IBM Realtime Interface Co-processors (ARTIC)
- Up to seven expansion slots
- Error checking and correction
- Battery backup
- DOS or IBM Operating System/2

IBM's 7554 Industrial Graphics Display

Rugged and reliable, the IBM 7554 19" Industrial Graphic display is designed and engineered for the most stressful industrial environments. It's a high-resolution color display capable of 640 x 480 pel definition and 1,024 x 768 pels when used with IBM's (8514/A) Display Adapter. The IBM 7554 delivers a new level of color graphics to the plant floor. The IBM 7554 is flexible enough to use as a free-standing display, rack-mounted or mounted on an optional tilt rack.

It provides:
- 19-inch diagonal screen
- From 16 to 256 colors displayed simultaneously out of a palette of 262,144 colors
- 640 x 480 pels with VGA
- 1,024 x 768 pels with (8514/A) Display Adapter
- Rack-mounted or bench-top
- Protective filter screen

IBM Real Time Interface Co-processor (ARTIC)



The IBM ARTIC co-processor is a multi-tasking, user programmable microcomputer which permits performance and application solutions previously possible only on a larger, more expensive computer. ARTIC is not a single adapter but an entire family of computers within a computer. It can be used as a gateway to local or remote host computers, or to connect plant floor devices to IBM Industrial Computers for both business and control applications.

Micro Channel Architecture

Thanks to 80286 or 80386 processors, Industrial Computers are powerful from the start. Micro Channel lets you make them even more powerful. Beyond support for multiple tasks, it offers support for multiple processors all running at the same time - allowing you to boost your productivity to new heights.

The design allows you to put as many as 15 intelligent devices or processors to work with Micro Channel Architecture. Add sophisticated network cards and intelligent data storage subsystems. Take advantage of advanced co-processors for graphics, communications or data base management.

Any or all of the advanced cards or processors you install can control the transfer of data and directly access memory. They can also utilize disk storage, run peripherals, and more. That's a real contrast to the PC XT/AT, where only one processor could be "master." On Micro Channel, there can be multiple masters - sharing memory and storage and communicating as peers.

That's not all. In the future the advanced cards you use - to support communications, for instance - can get information directly from memory and bypass the system processor, freeing it for other tasks.

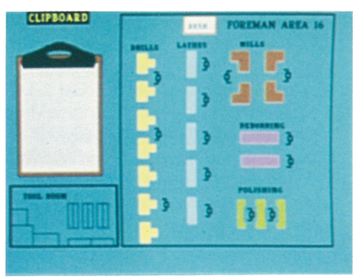
It's all possible due to the design of Micro Channel. It provides the capability for multiple intelligent devices to work as a team - all within a single IBM Industrial Computer.

Software Solutions — Bringing It All Together

IBM has software that is designed for the job you have to do. The Shop Application Edition ™ includes three distinct programs: Tool Trak ™, Clipboard ™ and Quality Mate ™. The Distributed Automation Edition ™ can help you tie together applications across your entire plant. IBM's Shop Assist can bring CAD/CAM graphics down to the plant floor.

IBM's Clipboard
Clipboard helps you manage critical plant floor resources. You can get an overview of work area status and schedule while keeping current with work order changes. Clipboard is designed to improve your response to changes in production parameters that occur and assure that resources are available to match work priorities.

Availability of personnel, workstations, tooling, and arriving jobs can be readily forecast. Also, Clipboard can assist in analyzing the results of altered routing, splitting or job delays. It can also resequence jobs to accommodate sudden changes in production priorities. The supervisor can graphically estimate completion times, resource utilization and loading before changes become final.



IBM's Tool Trak
Tool Trak can help increase your control over your tooling inventory. You can quickly review tool availability and surpluses in your inventory, adjust them accordingly, and update receipts of ordered or issued tools efficiently, so that you can provide timely information on inventory status.

You can establish reorder requirements accurately and quickly – for more efficient cost control. By tracking tool usage, you can anticipate tooling needs to maximize machine utilization. Duplicate and excess tooling can be identified and eliminated.

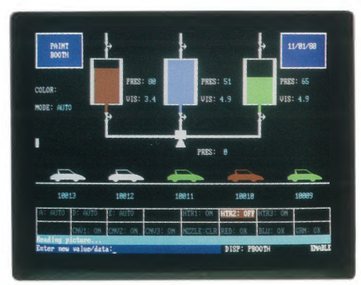
You can track tooling and determine whether it's assigned to a workstation, being re-ground, or on order. You can also assign and track tools to make sure they will be available for critical jobs. And, as tools are returned, your inventory is updated.

IBM's Quality Mate
Quality Mate provides a flexible, advanced statistical analysis to view and analyze manufacturing and process data. Data collected from the shop floor can be monitored and analyzed to assure the quality of the product. Quality Mate uses control charts to show relative changes in data points or samples. It also utilizes statistical calculations to allow groups of data to be summarized. Using statistical methods, both attribute and variable data can be analyzed.

IBM's Shop Assist

Shop Assist is used to graphically display assembly, repair or manufacturing instructions, consisting of computer-aided design and/or computer-aided manufacturing (CAD/CAM) graphics and text. It helps eliminate much of the paper handling on the plant floor while providing information at the touch of a key. Shop Assist also helps increase the speed and accuracy of data flow by displaying the latest release of engineering drawings and instructions on the plant floor. Through function and help keys, easy access to reference data is provided to operators.
Shop Assist highlights include:

- Member of IBM Graphical Display and Query Facility family (GDQF)
- Shop-floor viewing of host-generated text and graphics job packet data
- Easy use of menu-driven interface that requires minimal keyboard interaction
- Split-screen viewing of text and graphics
- Pan and zoom capabilities



Distributed Automation Edition

The Distributed Automation Edition™ is a software enabler for industrial automation environments. It provides application developers and system integrators with the foundation for creating integrated plant floor solutions based upon plant wide information. Distributed Automation Edition provides:

- Transparent communications between programs and devices in a network environment
- Monitoring and control of plant floor devices
- Tracking material location, status and movement coordination
- Security features that help control access to data and programs
- System alerts in response to specific events or conditions
- Data exchange with host systems

Productivity Rewards

IBM solutions can help you achieve reliable, cost-effective plant floor productivity.

However, for the best illustration of the benefits of a particular solution, why not call your local IBM Representative or your Authorized IBM Industrial Computer Distributor for a demonstration.

For the name of your nearest Authorized IBM Industrial Computer Distributer Call 1-800-526-6602

See for yourself IBM's new, expanding dimensions in plant floor productivity.

You'll find it very rewarding.

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