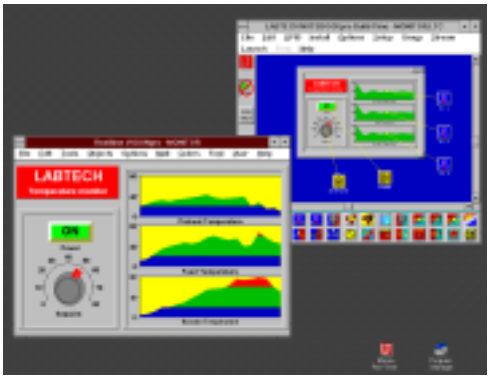
LABTECH NOTEBOOK

Turn your PC into a Data Acquisition System

LABTECH® NOTEBOOK™, the industry standard for real-time data acquisition and control, turns your PC into a powerful data acquisition and control system, allowing you to collect data, perform real-time analysis, and control your system. NOTEBOOK is designed so that no programming is necessary, and the emphasis is on allowing the user to get any application up and running as quickly as possible. NOTEBOOK for Windows is graphical, intuitive and has a total Windows look and feel. For larger block capacity, advanced data streaming, and RS-232 and GPIB support, LABTECH NOTEBOOKpro is available. See the Features on the next page.

Data Acquisition and Process Monitoring

NOTEBOOK's process monitoring capabilities give the flexibility to configure applications with a variety of sampling rates and sensor types. Sampling rates from hundreds of thousands of points per second to a few points per hour or day may be scheduled. Each I/O point may have its own sampling rate and trigger conditions, yet global changes are fully supported in the Windows versions. Triggers for any I/O point may come from analog, digital, or calculated values. A trigger may start or stop monitoring of an I/O point, can change the sampling rate for that point.



Process Control

Open- and closed-loop control algorithms are built into NOTEBOOK. The open-loop mode plays back any waveform using generated or previously acquired data. The closed-loop mode allows the set up of "bang-bang" (on/off) or alarm loops, for turning on and off equipment for closed-loop control or indicating alarm conditions. With digital and analog echo blocks, the result of calculation blocks can be sent to output points. NOTEBOOK supports PID loops for closed-loop analog control.

PID Control

PID Control provides proportional-integral-derivative control for temperature control, flow control, level control, and other control applications that require closed-loop analog output. PID Control can be applied to control any process variable in the system. This feature allows for the specification of ramp-soak cycles and recipes from other blocks, as well as configuration of cascaded PID loops.

Data Logging

NOTEBOOK stores data in standard file formats compatible with analysis, database and word processing programs. NOTEBOOK supports the manual or automatic closing and renaming of data logs. Logging can be initiated, suspended, or renamed based on time or any trigger or alarm.

Real-Time Calculations

NOTEBOOK provides the analysis tools to perform mathematical, statistical, and logical calculations in real time. It also allows automating run-initiating startup procedures, repeating a run many times, storing data, then doing another run and initiating other programs.

Realtime VISION Run-Time Operator Interface (Windows)

The Realtime VISION operator interface allows the graphical depiction of data, complete with on-screen object graphic animation. Users can monitor trends and current levels. The display can be segmented allowing for the hyperextension of regions into more detailed displays.

Client-Server Architecture

LABTECH applies the Client-Server model to process control for Windows-based users of NOTEBOOK. Using the industry standard LT-SPEEDWAY™ technology, networked systems can easily be built by connecting Operator Interfaces, NOTEBOOK, enterprise databases, and thousands of other PC packages. Due to this architecture, remote control panels can be used to monitor and control a number of systems throughout a laboratory or factory.

I/O Hardware Support

NOTEBOOK fully supports all ComputerBoards I/O hardware, including a vast array of hardware devices for analog and digital input and output, as well as devices designed for specific purposes, like thermocouples, RTDs, and strain gages. NOTEBOOK works with over 500 of the most popular data acquisition and control plug-in boards.

NOTEBOOKpro includes a communication interface to RS-232/485 and GPIB instruments. GPIB support provides the power and flexibility to easily design, test, and implement a variety of GPIB data acquisition and industrial control applications.

Queries multiple devices on a single communication port (RS-485)
Operates simultaneously with other hardware interface devices
Supports industry-standard GPIB interface boards
Sends output values to instruments, such as smart valves and transmitters, for precise control
Includes a debugger that allows for the interactive creation and testing of command files

LABTECH's relationship with Microsoft® has given the company insights into the best way to stay within the bounds of "legal" Windows, still offering very fast sampling speeds.

System Expandability

NOTEBOOKpro allows for customization by the addition of C, C++, and Visual Basic programs and linking them into the system. This customization supports the creation of unique icons and allows for input from any other block. .

Benefits

- Easy to use—start acquiring data with just two mouse clicks
- 13 years of proven dedicated data acquisition experience and over 100,000 customers gives you confidence that NOTEBOOK will meet your needs
- No programming required
- Prompt, quality customer support from BOTH ComputerBoards and Laboratory Technologies

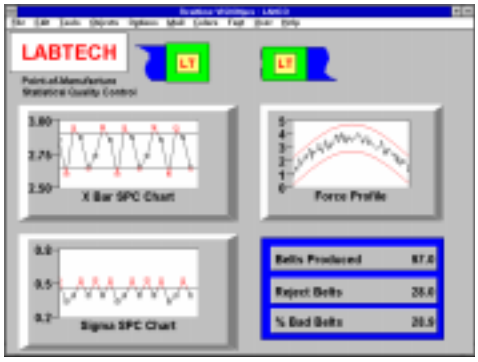
LABTECH CONTROL

Turn your PC into a Direct Digital Control System!

LABTECH CONTROL monitors and performs direct digital control of processes in real time, and is used in such applications as reactor control, wastewater treatment, plastics injection molding, and on-line statistical quality control of seat belt clasps.

CONTROL is a superset of NOTEBOOK, and application configuration files created in NOTEBOOK are upward compatible to CONTROL. This compatibility allows the direct transfer of real-time information from the laboratory to the factory floor. Thus, a process control system can be prototyped in a lab environment with the NOTEBOOK package, and scaled up through bench-scale to production using CONTROL — all without re-creating the control system software and operator interface screens.

In addition to the powerful features of NOTEBOOK (see the previous page), CONTROL also includes:



Run-Time Operator Interface. In CONTROL for DOS, the Run-Time Control Panel pops down. In Windows, the same functions are made available through dialog boxes. These are the operator interface while the system is running. A unique capability of the Windows versions is that settings and parameters changed while the system is running can be saved permanently in the application configuration. In CONTROL, the operator can:

- Change alarm limits and alarm processing for any function block
- Turn alarm logging on/off
- View the alarm log
- Type notes into data logs
- Turn data logs on/off
- Turn function blocks on/off
- Change PID setpoints, tune PID control loops, manually adjust analog output values
- Enter data values from the keyboard
- Change offset and scaling constants for any function block

PID Control. CONTROL includes "anti-reset windup" for enhanced PID control. CONTROL for Windows includes operator-initiated PID Autotuning, and CONTROLpro for Windows also includes continuous PID Loop Tuning.

SPC/SQC. The following SPC/SQC chart types can be displayed:

- X-bar and R-charts
- X-bar and S-charts
- Histograms

Continuous Up-Time Fault Tolerance. CONTROLpro allows the use of two computers to have crossed I/O paths and to be connected through a serial communication link. The two computers continuously monitor each other and share all information. If the backup computer senses a failure in the master computer, it automatically takes over the process control. The machines automatically resynchronize when the Master comes back on line.

Features—NOTEBOOK and CONTROL

• Number of Blocks:	DOS	Windows		DOS	Windows
NOTEBOOK	100	100	CONTROL	400	600
NOTEBOOKpro	300	300	CONTROLpro:	470	2000
• Number of Screens:					
NOTEBOOK	1	1	CONTROL	50	50
NOTEBOOKpro	5	5	CONTROLpro:	50	Unlimited

- Real-time:
  - data acquisition and control
  - data display
  - data logging in standard formats
  - multitasking (Windows)
- ICONview iconic graphical interface
- Icon edit/copy edit/paste cloning (Windows)
- Collapsible Meta Icons (Windows)
- Universal Driver (NBfor DOS and all Windows)
- Process control - open or closed loop:
  - Tune PID & Setpoint
  - PID Anti-Reset Windup and Bumpless Transfer (CTL, CTLpro)
  - Ramp/Soak/Cascade Control (NBpro, CTL, CTLpro)
  - Operator-initiated PID Autotuning (CTL, CTLpro, Windows)
  - Continuous PID Loop Tuning (CTLpro, Windows)
- On-line calculations for mathematical, statistical & logical functions in real-time
- Client/Server Network DDE (NBpro, CTL, CTLpro, Windows only)
- LT-SPEEDWAY interprocess communications
- Alarm Logging
- Different sampling rates per channel
- Password Security (CTL, CTLpro)
- Data collection input types:
  Analog Input (voltage or current inputs with full scaling), Thermocouple, RTD, Counter, Strain, Digital Input, Thermistor, Resistance, Frequency, RS-232
- High Speed REP-INSW Data Acquisition
- Display types:
  - T vs. Y
  - X vs. Y
  - Filled T vs. Y
  - Digital Meter
  - Vertical & Horizontal bars
  - Overlapping Bars
  - Vertical & Horizontal lines
  - Transparent Windows
  - Multiple signals per display (NBpro, CTL, CTLpro) ...

  Windows only:
  - Object Animation
  - Waveform plots
  - Customizable by user
- Control Objects (Windows):
  - Buttons, Switches, Knobs
  - Horizontal & Vertical sliders
  - User customizable
- Drawing Features:
  - Rectangles & squares, filled/unfilled, line segments, arcs, freehand lines
  - Ovals & circles, filled/unfilled
  - Polygons & freehand shapes

  NOTEBOOKpro or Windows, CONTROL and CONTROLpro:
  - Background picture bitmaps
  - Import bitmaps
- Animation (NBpro, CTL, CTLpro; Windows):
  - Multiple animations per object
  - Move, rotate, change color, and shrink/grow objects in response to input data
- C-Icon Development Kit (NBpro, CTL, CTLpro)
- I/O Driver Toolkit (NBpro, CTL, CTLpro)
- Trigger from Analog Inputs, Calculated values, Digital inputs
- Replay stored or theoretical data
- Analog signal scaling & calibration
- Pretriggering
- Fault Tolerance (CTLpro)
- Sensor Voting (CTL, CTLpro)

System Requirements	Windows:	DOS:
	Microsoft Windows 3.1	DOS 2.0 (5.0 recommended)
	IBM compatible 386 or better	PC/XT/AT/386 or better
	8MB Memory	640K and EMS
	VGA graphics or better	EGA or VGA