TotalChrom Client/Server

Increased Productivity

Superior Reporting and Deliverables

Proven Track Record

Stable, Scaleable Architecture

Compliance

The proven solution

with leading edge productivity

PerkinElmer™
instruments.

TotalChrom™ Client/Server
The proven solution with leading edge productivity

TotalChrom™ software is the next stage in the evolution of chromatography software—an exciting, improved version of the Turbochrom™ software application. It includes a computing strategy to manage the growing volume of chromatography data quickly and efficiently. The TotalChrom system software makes compliance with 21 CFR Part 11 regulations easy. The software also includes the TC Publisher™ feature, the most powerful chromatography reporting tool available, which lets you automatically generate an endless variety of reports.

Our TotalChrom chromatography data system can be configured either for use as a stand-alone workstation or as a networked client/server solution. When configured with a PerkinElmer AutoSystem XL™ GC or a PerkinElmer Series 200 HPLC, the TotalChrom software serves as a controller and data manager for the overall system. Compatible with all commercial LCs and GCs, TotalChrom Client/Server systems are the best choice for chromatography data handling in demanding multi-user, multi-instrument environments

The best route to final reports

Only the TotalChrom Client/Server system provides the ease and flexibility to design reports on PC clients and the power and efficiency to execute and control report generation on network servers. End-users can create custom reports with simple mouse operations on PC clients, while batch calculations, data analysis, and reporting are done across the network on multitasking servers. Output can be directed to local printers, shared department printers, other devices on the network, or merged with other Windows™ applications, such as Word and Excel. For added versatility, a single injection can produce multiple reports.

The TotalChrom system provides all standard reports, including Area Percent, Normalized Percent, and Internal/External Standard, and allows users to tailor them with customized headers and labels, expressions (mathematical formulas), and footers. Special Summary

Report and Suitability Report options allow the injection data to be handled in different ways. Graphic presentation of the data provides the means to annotate, scale, and display in three-dimensional mode.

The TC Publisher program extends reporting beyond the standard reports by providing a custom laboratory report generator using industry-standard tools. Unique features let you graphically format the exact report you want without extensive training or special commands. Report templates can include control of the graphic data representation and "if/then" conditional logic. The TC Publisher component lets you perform calculations between samples and automatic statistics for replicate injections, with full control over the output format. The TC Publisher offering can replace custom applications written for your current system, minimizing upgrade costs and effort.

TotalChrom Client/Server is PerkinElmer's latest version of the industry-standard, PC-based chromatography data handling software system formerly known as "Turbochrom" that won the 2001 "Readers' Choice" Award from Scientific Computing & Instrumentation magazine - for the ninth consecutive year.

TotalChrom Client/Server offers superior reporting and deliverables

The TC Publisher tool is simply the world's best chromatography reporting package. It ensures that the final stages of chromatographic analysis, report generation, and distribution, are quick, easy, and complete. It is the ultimate in flexible reporting tools, allowing you to print the reports, forward them by e-mail, or send an electronic data packet to another software application.

Standard reports can be easily and conveniently customized by arranging parameters in any desired order. Custom expressions allow creation of mathematical formulas to calculate results. Component-specific constants may be included in custom expression.

Batch summaries of the data with statistical calculations built in are quickly created by the special summary module. Automatic calculations for mean, standard deviation, and percent RSD are provided.

Use the full power of TC Publisher to create special TotalChrom results reports and plots.

Power to handle challenging chromatography

The faster you and your data system generate results, the more productive you are. The TotalChrom Client/Server system handles peak detection, integration, and analysis with the most sophisticated algorithms, refined through years of experience in chromatography. Even when pushing the limits of speed or detection, TotalChrom software's curve smoothing routines minimize the impact of noise on results.

Monitor data acquisition from anywhere

TotalChrom Client/Server monitors data acquisition from any PC client on the network. Data collection can be viewed in real time from anywhere on the network and multiple instruments accessed simultaneously. Designated file servers store all data across the network in real time, eliminating the need to physically monitor the instrument. Special status displays indicate real-time conditions of all interfaces on the network. When running long chromatograms, the data collected can be integrated on the fly before the end of the run, allowing you to make decisions more quickly.

To ensure easy learning, TotalChrom uses Microsoft Windows standard interfaces and extensive graphics.

Easily build complete methods

The TotalChrom offering makes method development easy. It takes full advantage of familiar Microsoft standards, including Multiple Document Interface (MDI), tabbed dialogs, toolbars, and resizable panes. Instrument control parameters, such as oven temperature and pressure ramps for GC, or solvent gradients for LC, are displayed as both graphic profiles and numeric grids for rapid visualization of your experiment.

The spreadsheet interface of the Sequence Editor is easy to learn and minimizes set-up time. Standard spreadsheet features, familiar to many users, such as changing column widths, hide/unhide columns, cut and paste rows, changing fonts, and adding a note comment and flag for sequence rows are available. The interface uses a tab card format to display different views and to create a personalized viewing format.

Visually optimize methods

Data handling methods can be optimized in seconds using the Graphic Method Editor (GME) to set integration parameters and add component names to known peaks and groups. GME allows the selection of portions of raw data to measure noise and area threshold values. Then, the TotalChrom software calculates the optimum peak detection settings. Because views of raw and bunched data are available, even the most difficult data is analyzed easily. GME displays a preview of the analysis report and header information on the same screen as the chromatogram, eliminating the need to use multiple programs. No other system provides this much power to build software methods from the viewed chromatogram.

Quickly optimize your methods with the TotalChrom Graphic Method Editor. Use your mouse to:

• Set integration timed events graphically, exactly where you want them

• Pick and name component peaks, reference peaks, and internal/external standards

• Set and adjust retention time windows

• Arrange peaks together by timed or named groups
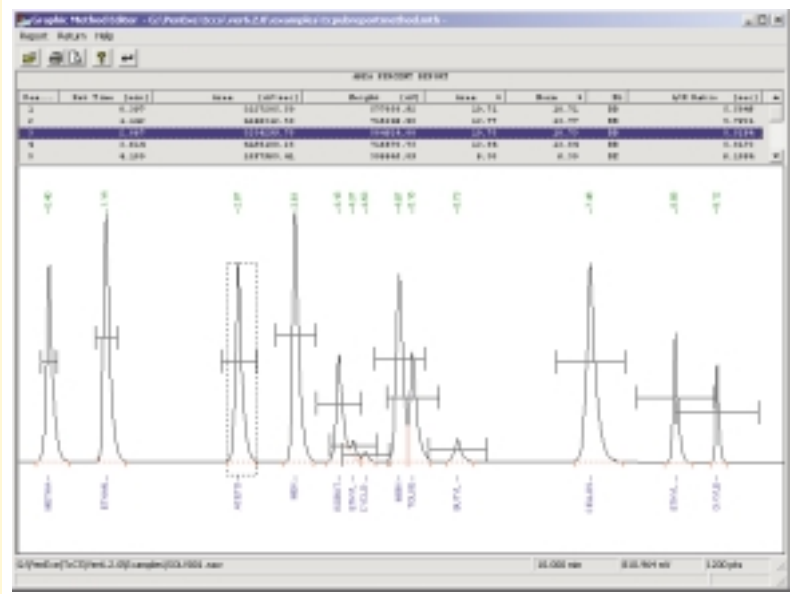
## Quickly build analysis sequences

The TotalChrom Client/Server Sequence Editor (Seq Editor) uses a template to automatically load a list of samples into the editor's spreadsheet. The use of a template facilitates single entry of parameters common to all rows in the spreadsheet, thus saving time and eliminating errors from repetitive entry of common values. PerkinElmer's exclusive "Smart Fill" feature in the Seq Editor enables the automatic filling of sequence rows with sequential parameters within a given column using auto-incrementing numeric patterns.

Simplify operations with Kickoff

Running a data system should not be so complicated and so involved that you can't perform routine analyses simply and quickly. Our exclusive Kickoff Program guides a user through a Microsoft wizard-style dialog by offering a simple selection from a predefined list of analyses. Users simply logon to Kickoff with a valid password, select their analysis, and TotalChrom Client/Server software takes over, automatically controlling instrument initialization, data acquisition, data analysis, and report generation. Nothing is as easy or as fail-safe.

The lab manager configures Kickoff using the Analysis Definition screen. On this screen, the manager gives specific users or groups of users access to predefined TotalChrom system methods and sequences. Kickoff is ideal for routine data collection operations, enabling users to quickly set up their analysis and perform data acquisition.
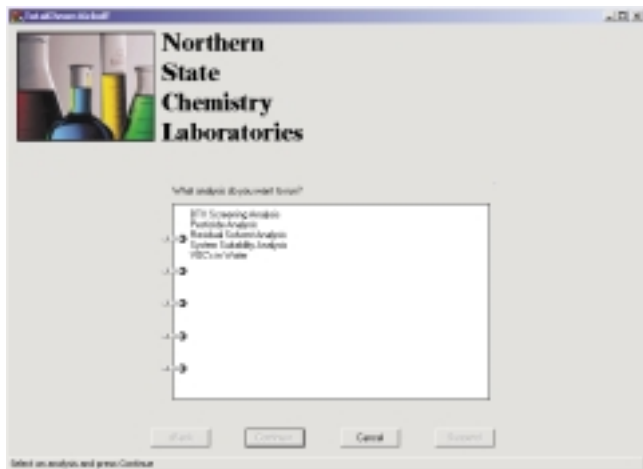
Users easily select an analysis with the Kickoff Program.
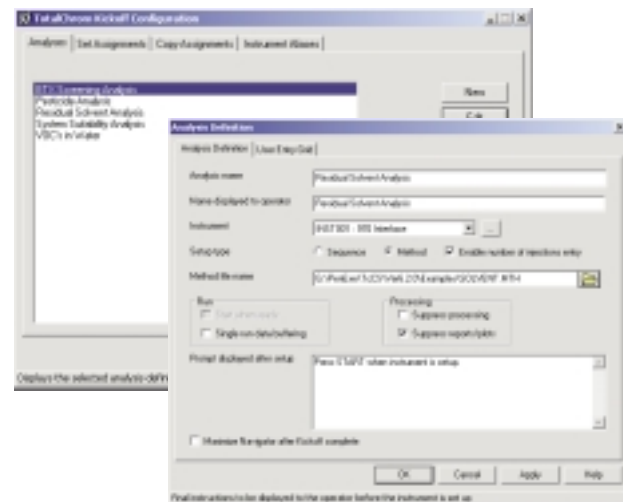
Managers use the Analysis Definition to configure the Kickoff system for users. No programming is required.

Stable, scaleable architecture

Only TotalChrom Client/Server's unique data acquisition scheme gives the freedom to connect all instruments. No need to use valuable lab space with dedicated PC controllers. Now all instruments are network-accessible.

Seamless, networked data acquisition

Chromatography data can be collected throughout your facility with PerkinElmer Intelligent Interfaces and LINK modules. This allows chromatographs from any location to be easily and inexpensively connected to the network and accessed by users from any network location. Chromatography runs can be viewed in real time from any permitted client on the network. The TotalChrom system's unique data protection features assure that data acquisition occurs even if clients, servers, or network peripherals are inoperative. Data acquisition in progress is never disrupted or compromised.

Non-stop data acquisition with 100 percent integrity

Communications from each interface to the host computer include special TotalChrom Client/Server routines that ensure 100 percent data integrity. These interfaces continue data collection and instrument control even if the network, clients, or servers become inoperative. Data is collected in each interface and is automatically transmitted when communications are restored. Data collection on the TotalChrom Client/Server system can run virtually non-stop.

Efficient batch reprocessing in Client/Server mode

Batch reprocessing has never been easier or more efficient. Batch operations can be requested by the client and executed on any available server, providing the best system response for re-analysis work or report generation. The system even allows you to select the client to handle batch operations. No other chromatography system provides the power and flexibility to tailor operation to your work environment.
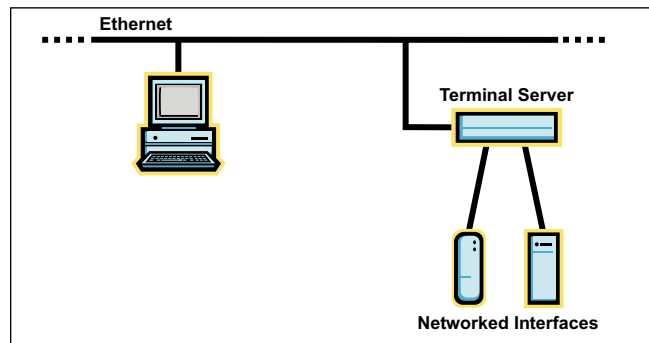
Designed for growth and change

PerkinElmer's "start here" strategy allows you to implement TotalChrom Client/Server systems in stages that fit your needs. Whether you begin with TotalChrom Clients in key single-user/single-instrument configurations, grow to laboratory peer-to-peer networks, or deploy full-scale department servers, you are assured of a consistent data handling strategy across all hardware environments. New users are accommodated by simply adding more PC clients. You can easily add additional servers to increase system support, add file services, and accommodate new workgroups. There is no limit to the number of instruments you can access from any location on the network.

TotalChrom Client/Server provides the most flexible, scaleable way to connect instruments to the network. Chromatography data from all commercial chromatographs can be collected on the TotalChrom Client/Server system through either the PerkinElmer NCI (Models NCI 901 and NCI 902) for analog data acquisition, or the Series 600 LINK Modules (Models 600 and 610) for digital data collection and instrument control. Your existing PerkinElmer Intelligent Interfaces (Models 941, 950, and 970) are also supported.

TC database

The optional TC Database™ product adds world-class informatics capabilities to TotalChrom Client/Server systems. Using patented technologies from Oracle® and NuGenesis® Technologies, the TC Database application gives users new cataloging and data querying capabilities for chromatography data. Users can access and use the TotalChrom software data for auditing, reprocessing, and research purposes more efficiently than with paper-based methods.


Service one user and a few instruments with the TotalChrom Client/Server on a single Windows NT® Workstation.
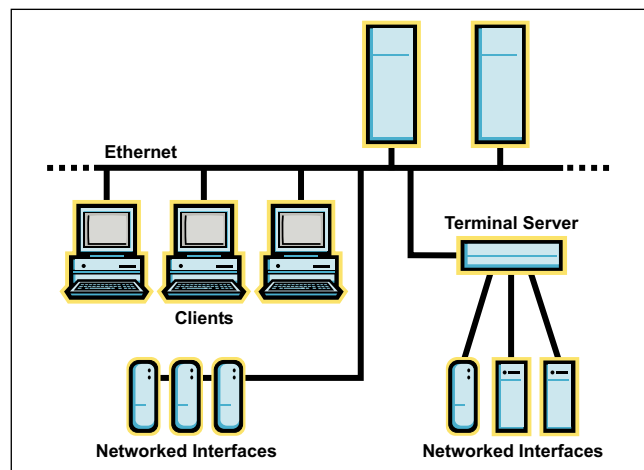
Support many users and many instruments with the TotalChrom Client/Server in a full client/server configuration.

Simplified system management

The TotalChrom Client/Server system management makes your job easier and simpler, whether you manage five users or 500 users. Unique system management routines make centralized administration possible including, creating accounts, assigning privileges, assessment, and more.

A special user-configurability feature permits access to software modules and dialog boxes on a user-by-user basis. Different users may be given access to different functions or features within a given software module. When a specific user logs on to the TotalChrom Client/ Server system, disabled features are grayed out, thereby avoiding confusion while providing a simplified look and feel on a user-by-user basis.

The TotalChrom server processes allow configuration of security for multi-user operations. Access privileges to TotalChrom Client/Server data and parameters are assigned to each user, even across multiple servers on the network. For total control, instruments or channels can be bound to users and kept sequestered from others on the network. All information (e.g., methods, results, and sequences) accessed by a user is automatically protected from simultaneous access by other users.
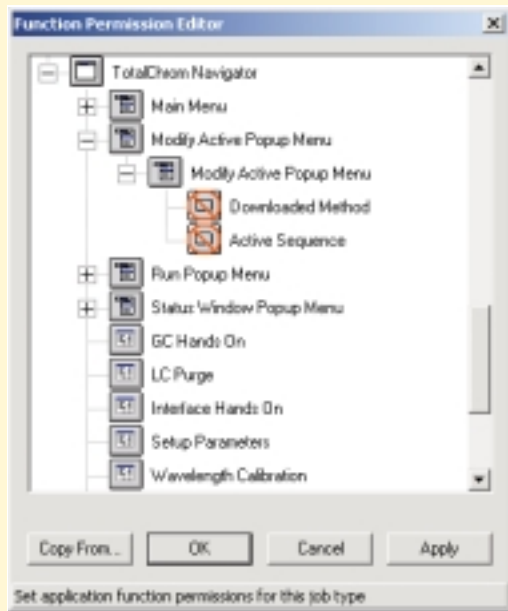
Provide simplicity and security for users by enabling or disabling the TotalChrom system's functions. Disable the Modify Downloaded Method/Modify Active Sequence functions through the TotalChrom Client/Server main menu or Navigator screen. In this figure, the disabled functions are indicated by a red circle drawn through the functions icon, as that item is clicked with the left mouse button.

LABWORKS is the LIMS of choice.

Let LABWORKS give you the facts about LIMS. You no longer need to compromise your lab's quality, productivity or time to implement. LABWORKS Enterprise is a powerful and reliable application for virtually any laboratory setting. The LABWORKS application provides a strategic repository for laboratory data along with a variety of data access and reporting features. LABWORKS offers a complete set of standard features that are suitable for almost any type of laboratory environment. Add to that an impressive array of industry specific options and you have a LIMS that outperforms any other product on the market. From direct client access, to WEB access, to data mining from anywhere in your enterprise, LABWORKS Enterprise is a true multi-tier, client/server application designed to function on a variety of industry standard databases.

LABWORKS has successfully integrated with many popular MRP applications and offers seamless interfaces to hundreds of instruments. The LABWORKS - TotalChrom Client/Server interface includes conversion of worklists from LABWORKS into TotalChrom sequences and automatic update of the database with chromatography results.

LABWORKS LIMS products and services, derived from company experience and technical expertise, deliver state-of-the-art LIMS technology to laboratories around the globe. This experience and quality combined with the stability of a world-class organization make LAB-WORKS the LIMS of choice.

Integrate the TotalChrom Client/Server with your other applications

PerkinElmer knows that to maximize laboratory productivity the TotalChrom software must be integrated with other systems. TotalChrom software provides a variety of tools for these integration tasks. TC Publisher provides the optimal tool for generating electronic reports than can be sent to other applications. TC ACCESS allows programs written in Visual Basic or C++ to control and monitor the TotalChrom system's instruments and processes. Worklists can be sent from Laboratory Information Management or MRP systems and turned into TotalChrom Sequences. If you are using SQL*LIMS®, the optional TotalChrom CONNECT product is available to interface the two systems.

Unsurpassed 21 CFR Part 11 compliance for regulated labs

Proven solution

Our chromatography data systems are installed and validated in laboratories around the world. There are over 300 Client/Server systems and over 3,000 satisfied Client/Server users. We have thousands of workstation systems and over 30,000 instruments connected and in use.

PerkinElmer's broad range of experience includes providing GLP/GMP data systems for over 20 years. New TotalChrom system features include options for FDA 21 CFR Part 11 compliance. Audit trails and electronic signatures in the data acquisition, instrument control, and data storage processes ensure that data integrity is always maintained. System features fully document all methods, sequences, and reports including instrument run logs, and also provides a complete and unambiguous link from the initial experiment to the final results. Special system controls prevent overwriting data and unintended user access to files, programs, and report templates.

## Special real-time controls provide GLP/GMP safeguards

The unique TotalChrom Client/Server Modify functions allow safe changes to processes while they are occurring. You can edit method and sequence parameters on instruments currently collecting data without fear of inadvertent alteration that can adversely affect results. Settings of runs yet to be collected, for example, can be safely edited using this function.

A complete interface validation program

Laboratories under GLP/GMP regulations can use PerkinElmer's exclusive Interface Validation Module (IVM) and associated software to facilitate testing and verification of the NCI and Series 900A Intelligent Interfaces.

Validation assistance

PerkinElmer uses a world-class Software Development Process to ensure reliability. The TotalChrom system is developed and structurally validated following a Certified Quality System which conforms to GLP, GMP and ISO 9001/TickIT requirements. Our Software Development Life Cycle conforms to the ISO-9000-3, and IEEE guidelines. As part of your validation program, an audit of our development site is available.
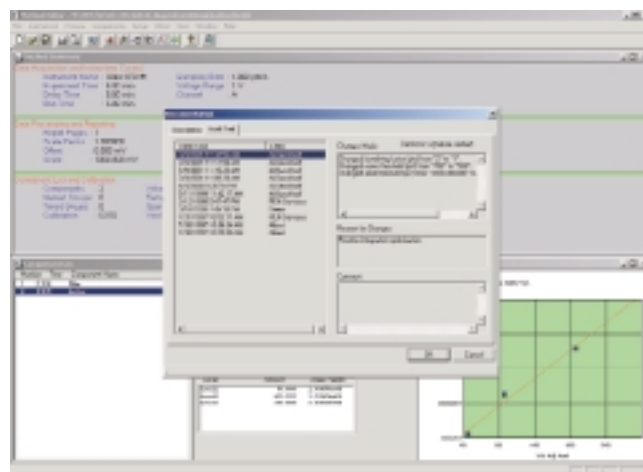
TotalChrom provides full audit trailing capabilities with electronic signature for regulatory compliance.

PerkinElmer Extras

Sombrilla™
Web-based instrument and data management system

Increase productivity by speeding communication of results with Sombrilla, PerkinElmer's Instrument and Data Management System. The basic configuration works on virtually any type or brand of instrument. It unifies laboratory data storage and transfer using a common Web browser. The first of its kind, the advanced-level Web-Enabler features innovative technology that allows users to go beyond reporting and viewing to actually monitoring instruments and handling data processing functions — all in a secure, Web-based environment.

Worldwide service and support

Our world class TotalChrom system is supported by PerkinElmer's worldwide service and support organization. These professionals ensure that the TotalChrom system is properly installed and personnel are properly trained. A wide array of system IQ/OQ services and system support and maintenance contracts are available to support your validation.

PerkinElmer™
instruments.

ISO 9001 CERTIFIED