ASYST was a DOS based software package for Data Acquisition, Control, Analysis and Graphics.

Catalog pages for the product from Metrabyte Corporation's 1990 catalog follow this page. The year 1996 was the final year that Keithley/Metrabyte sold ASYST.

Keithley can no longer offer support in the use of ASYST; however, we can gladly give recommendations for upgrade paths based upon your system requirements. Many of the ISA bus data acquisition hardware compatible with ASYST (via an External DAS driver) are also compatible with TestPoint. TestPoint is a Windows based development environment for rapid development of test and measurement applications.

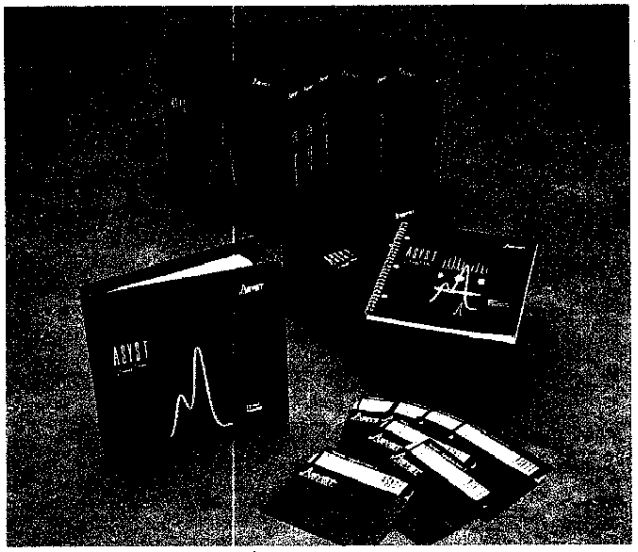
For those who really want to keep using ASYST, Annson & Associates in the UK may be able to offer assistance on the use of ASYST. Please be aware, however, that Annson & Associates is a system integrator company and typically requires compensation for their services. You can contact them at:

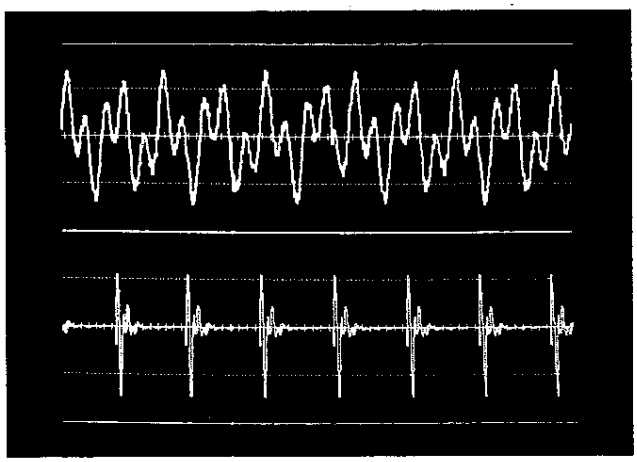
http://www.annson.co.uk/index.htm

KEITHLEY ASYST

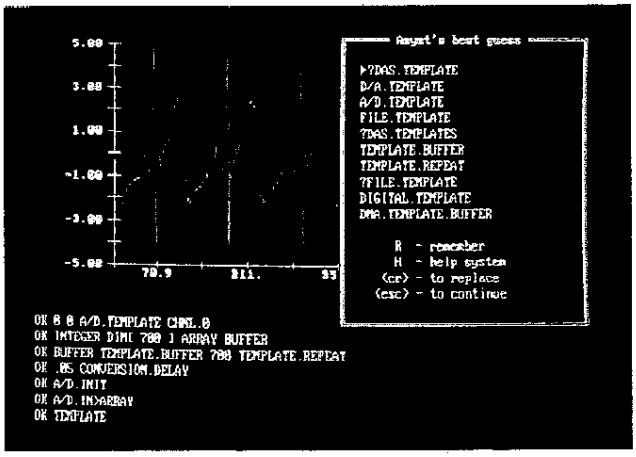
Data Acquisition and Control, Analysis and Graphics Software for IBM PC/XT/AT and Compatible Computers

ASYST: Data Acquisition and Control, Analysis and Graphics Software





Characterizing system input/output with acquisition at maximum hardware speeds.



Biomedical research with ASYST. The on-line help makes a best guess at the desired command. With a single keystroke the user can either call up a more in-depth definition or select the word to use.

Features (see specifications for complete listing):

System:

- The power of a programming language without the hassle
- Integrates A/D, D/A data acquisition, GPIB/IEEE-488 and RS-232 control, sophisticated analysis, and graphics
- Easy to remember commands like FFT, LEAST.SQ.POLY.FIT, ESTIMATE.ROOTS, and GPIB.READ give instant results
- Lets you build complete menu-driven custom applications

Modules 1 & 2 : Base system, Analysis, Graphics, RS-232:

- Unparalled range of analysis operations, including FFTs, matrix operations, statistics, and more
- Auto plots, superposition of multiple plots, labels in any direction, unlimited number of graphics windows, and more
- C and Fortran interfaces, file conversions to/from Lotus 1-2-3 and ASCII
- RS-232 interface with multiple device and foreground/background support

Module 3: A/D, D/A, Digital I/O:

- Utilize maximum hardware capabilities and speeds
- Extensive support of Keithley DAC and Keithley MetraByte boards. Acquire from up to 304 channels with the Keithley series 500, or at rates of up to 1,000,000 samples per second with the DAS-50.

Module 4: GPIB/IEEE-488 interfacing:

- Control up to 56 instruments simultaneously
- Compatible with IE-488, MBC-488, and any of hundreds of GPIB instruments, including Keithley DAC 556.

Applications:

Experiment prototyping
Turnkey system development
Laboratory automation
High performance acquisition and control
On-line and post-acquisition data processing

An Integrated, Flexible System

Your PC can do it all with ASYST: data acquisition and control, analysis and graphics. ASYST is a general-purpose software package that can be used equally well as an interactive toolkit for simple acquisition and analysis tasks and as a development system for complex applications.

ASYST is fully integrated, allowing you to switch smoothly between acquiring, analyzing, and viewing your data. In fact, depending on your application and hardware, you can even do all three operations simultaneously. You can also do several different kinds of acquisition simultaneously.

For Novice, Intermediate and Advanced Programmers

With ASYST you get flexibility and ease-of-use. ASYST offers users the versatility and power of a language coupled with the ease-of-use of menus and high-level commands. You work in the mode that suits you best. Menus or commands can be used for everything from designing custom graphics windows to setting up data acquisition templates. With powerful English-based commands like FFT and ANALOG.TRIGGER+ at their fingertips, even non-programmers can build sophisticated applications.

Experience shows that ASYST's high-level commands make programming in ASYST up to 60% faster than programming in a standard language.

Create custom commands, routines, and user-friendly menus

Do you have a set of operations you execute frequently? A few keystrokes turn a string of ASYST commands into your own custom command. Once created, your command can be a permanent part of the system; a new building block for making other commands. When your application is perfected, use easy commands like MENU.KEY.DOES to build a user-friendly menu-driven interface that even untrained operators can control.

(See section on Run-time and User Site licenses for information on developing custom ASYST applications for re-distribution and re-sale.)

Acquiring Data and Controlling Instruments

From simple waveform acquisition to lab automation, ASYST gives you the power and flexibility you need. You can work with a single channel of data or with multiple boards, interfaces and instruments simultaneously. Acquire analog signals at maximum hardware speeds, or as slowly as you want.

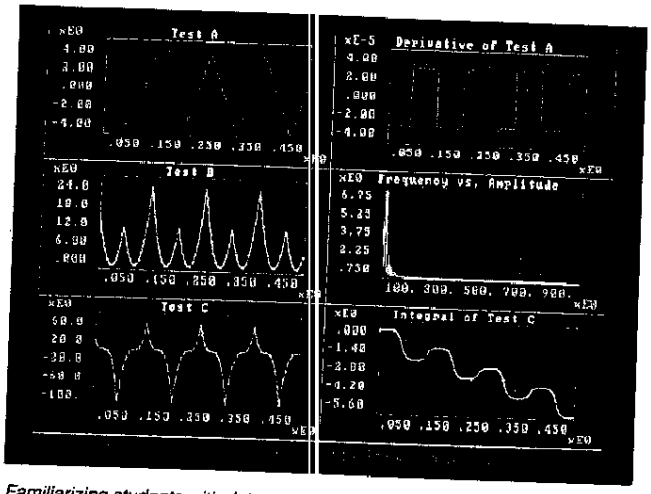
Analysis and Graphics

Get to the real point of your research *without* switching software-packages. With ASYST's integrated acquisition and analysis your data is instantly available for reduction, comparison, and interpretation. Extrapolating from acquired data to analyze non-measureable phenomena? ASYST lets you automate all the calculations and display your acquired and final waveforms simultaneously. And ASYST's customizable graphics give your presentations a professional flair.

ASYST offers you complete analysis capabilities. In fact, many users choose ASYST just for the modeling, analysis, and graphics.

Cost Effective Modularity

ASYST is sold in modules: purchase only what you need. Modules 1 and 2 contain the base system, all analysis, statistics, and graphics functionality as well as the RS-232 interface capabilities. Module 3 adds A/D, D/A, and Digital I/O data acquisition. Module 4 adds GPIB/(IEEE-488) interface support for instrument control. Modules 3 and/or 4 can be purchased with the base system, or added later.



Familiarizing students with data transformations and waveform analysis using ASYST.

Why ASYST? Because ASYST Adapts. These Actual Applications Examples Say it Best:

Precision Control: Automated Metal Organic Chemical Vapor Deposition.

Rochester, NY

Using a ASYST, a PC/AT, a PIO-12 digital I/O board, and a Keithley DAC Series 500 Data acquisition system, researchers at a major film company are improving quality in automated crystalline growth. The system controls layer thickness and composition by synchronizing flow rates, gas components, pressure, and temperature. All parameters are displayed in real-time, and are controlled at precisely timed intervals.

Independent Research: Acquisition and Analysis of Low Frequency Vibrational Signals.

Bridgeport, CT.

An evolutionary biologist studies cricket songs with a PC-based system using ASYSTANT PLUS and a DAS-16 Board. Waveforms are acquired, displayed and played back in behavioral research. Analysis of the digitized signals involves power spectra, curve fitting, statistical testing, and normal and histogram graphical display.

Cost Effectiveness: Vehicle Road Simulator Test Systems.

Detroit, MI.

A major auto manufacturer has updated its facilities with a PC-based system which confirms that their cars meet EPA standards for durability, economy, and performance. The entire set-up, including a Keithley DAC Series 500 Data Acquisition System, is controlled by a menu-driven ASYST program. Software development times were at least 50% less with ASYST compared to estimates using a conventional programming language.

Instrument Prototyping: Measuring Aerosol Particles with Laser Light Scattering.

Hertfordshire, England.

Researchers at a major British university are characterizing airborne particles in the 1 to 10 micron range at a rate of 10,000 per second with an ASYST-based system. The user controls the equipment and analyzes the resulting data via a series of custom menus. Data transfer from the signal processing hardware is carried out by a PIO-12 digital interface board. The capability to interactively try and test out ideas in ASYST greatly simplified system development.

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Data Acquisition and Control
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THE RUN-TIME AND USER SITE LICENSES: Expanding Applications of ASYST Software

1) Share applications with colleagues
2) Distribute or resell stand alone ASYST applications
3) Run ASYST on multiple machines simultaneously

Once you have created your integrated ASYST application you may want to make it available to others — either in-house or commercially as a stand-alone system. Keithley Asyst offers two options for economical distribution of multiple ASYST systems. The first, the Run-time license (RTL), is designed for distribution of stand-alone, turnkey systems. The second, the User Site License (USL), grants additional users full access to ASYST programmability.

The ASYST RTL allows you to take complete ASYST applications programs and redistribute them as stand-alone, turnkey systems for a fraction of the cost of a full ASYST license. With a Runtime program, many users can benefit from ASYST applications without needing ASYST or even general computer expertise. You develop the functionality and user interface with ASYST; the end user gets results. The end-users of your Run-time programs can have access to all the power of an ASYST application — sophisticated analysis, interactive graphics, data acquisition, and real-time responsiveness to their input.

One Programmer: Multiple Systems

Give all of your software users the expertise of your best programmer with the ASYST RTL. Your in-house expert develops the system that exactly meets your needs and the sophistication of your end-users. The RTL lets you inexpensively distribute it.

Run-time applications provide significantly more flexibility than commercial turnkey programs since you can easily modify the master system to meet changing applications.

Resell Your Application

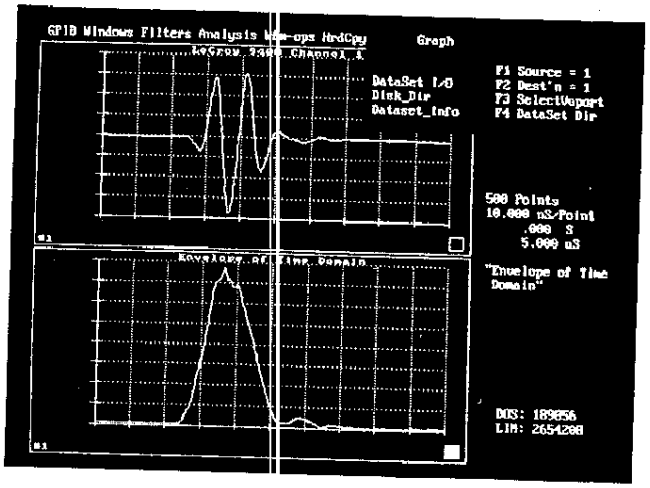
The RTL allows you to resell your application with your own banner and at your own price. Your only incremental cost is a low Run-time license fee.

Add Value to Your Hardware

The Run-time license is an ideal way for instrument and equipment manufacturers to easily and inexpensively add a user-friendly, highly functional software interface to their hardware.

Instead of operating systems with cryptic commands, your customers can choose from menus offering instrument control, analysis, and graphics.

ORDER:
Run Time License
User Site License



A turnkey ASYST system for acquisition, transfer and analysis of pulse-echo ultrasound signals. (developed by Donald Orofino, graduate student, Worcester Polytechnic Institute).

A typical lab may want to have ASYST running on several computers simultaneously. One might be dedicated to ongoing acquisition, another to analysis, and others to interactive system's development and modification. In another laboratory a professor and several graduate students may all be working on different aspects of the same application. In such cases, the user site licenses entitle you to run the ASYST system on several PCs simultaneously (start-up documentation, consisting of quick reference guide and tutorial, but not reference manuals, is included).

The ASYST User site license is desirable when all the work stations involved need full ASYST programmability. In other cases, the Run-time license is an even more economical choice.

	RTL	USL
Program can integrate analysis, acquisition, and graphics.	Yes	Yes
Possibility of adding own custom-coded copy protection	optional	No
Program uses your customized boot banner	Yes	No
End user has access to your source code	No	Optional
End user has access to programmability	No	Yes

Both the Run-time and User-Site licenses are add-ons to your original ASYST system.

ASYST

Data Acquisition and Control, Analysis and Graphics Software for the IBM PC/XT/AT and Compatibles

Feature Specifications

Modules 1 and 2:
Base System, Analysis, Plotting, Graphics, and RS-232 Interfacing.

Basic Math:
Complete arithmetic operations, including all trigonometric functions, exponentiation and logarithms.

Number Types:
Single and double precision integer, real, and complex data types.

File Conversions:
To and from ASCII, BASIC, packed binary, ASYSTANT and Lotus 1-2-3 data files. To and from PCX files.

External Language Interfaces:
Interfaces to Microsoft C (version 5) and Fortran (version 4.1).

Utilities:
Menu-driven setup, Easy Coder, menu-generating tools, text editor, array and command line editors, error tracer, online help, DOS shell.

Control Structures:
if..else..then, begin..until, begin..while..repeat, do..loop. Comparisons available are =, <, ≤, >, ≥, > <, not, and, or, xor.

Special Functions

Waveform Processing:
Waveform arithmetic.
Fast Fourier transform (FFT).
Inverse FFT.
2-DFFT, 2DIFFT.
Smoothing, clipping.
Convolution.
Filtering.
Peak detection.
Integration.
Differentiation.

Curve Fitting:
Goodness-of-fit reporting.
Correlation matrices.
R2 (cross-correlation).
Weighted and non-weighted fits.
User-defined and non-linear fits.
Least-squares regression: multilinear, logarithmic, polynomial, and exponential fits.

Polynomial and Matrix Math:
Matrix inversion.
Determinants.
Diagonalization.
Orthogonalization.
QR factorization.
Eigensystems.
Simultaneous equations.
Polynomial math.
Polynomial shifting.
Root extractions.

Statistics:
Basic statistical functions.
Cumulative distributions.
Gaussian distributions.
Chi-square distributions.
Student-T distributions.
F-distributions.
Sort, sort and index.
Random number generation.
1- and 2- way ANOVAs.
Histograms.

Graphics:
X-Y plots.
Color support.
Auto-scaling and data fitting.
Contour plots.
Axonometric plots.
Pie and bar charts.
Superposition of multiple plots.
User-defined graphics windows.
Log, linear and polar plots.
Error bars.
Plot symbol and line type selection.
Labels in any direction.
Graphics scroller.
Zoom-in feature.
Plotter and printer support.

RS-232 Interfacing:
Multiple logical devices.
Foreground/background data reception.
Multiple data types supported.
Buffered and non-buffered I/O.
Variable mode parameters.

Supports maximum hardware speeds and numbers of channels.
Single or multiple channel input/output.
Multiple boards simultaneously.
Time, threshold, and digital triggering.
Single- and double-buffered acquisition.
DMA support (up to maximum hardware speeds).*
DMA direct to disk.*
Programmable input gain.*
Support of background/foreground operations.
Internal/external clocking.*
Digital I/O.*
WFS-200 waveform scroller support.*
*Hardware dependent

Supports any GPIB instrument.
Maximum 56 instruments simultaneously.
Device-independent commands.
Synchronous and asynchronous operation.
DMA acquisition.
Parallel and serial polling.
Triggering.
Array buffering of data.

IBM PC/XT/AT or 100% compatible, including IBM PS/2, 386-based computers in real mode.
DOS 2.0 or above.
Intel 8087, or 80287, or 80387 math coprocessor chip.
640K RAM
25 pin standard printer port.
Hard disk and one floppy drive.
One of the following graphics boards: IBM CGA, EGA, VGA, or 100% compatible, Hercules monochrome graphics adapter, AT&T high resolution graphics card (monochrome only).

Printers supported:
Over 170 printers supported.
Plotters supported:
HP7440, HP7470, HP7475, Gould Colorwriter #2 Plotters or any HPGL plotter (paper size A and B).
LIM (Lotus/Intel/Microsoft) standard Expanded Memory strongly recommended.
Microsoft compatible mouse.

Keithley MetraByte: DAS-8, DAS-8PGA, uDAS-8PGA, DAS-16, DAS-16F DAS-16G, uDAS-16G, EXP-16, DAS-20, DAS-50, PIO-12, PIO-24, WFS-200 Waveform scroller board. (DAS-HRES available fall 1990).
Keithley DAC: System 570, System 575, System 500 (AMM1A, AMM2, AIM2, AIM3, AIM3A, AIM4, AIM5, AIM6, AIM7, AIM8, AIM9, AOM1, AOM2, AOM3, AOM4, AOM5, DIM1, DOM1, DIO1, DIO1A, PCM1, PCM2, TRG1).

Other manufacturers whose acquisition boards are supported by ASYST are:
Advantech, Analog Devices, Burr-Brown, Cyborg, Data Translation, IBM, Intel (for digital I/O), Markenrich, Omega, and Scientific Solutions. Any board with a driver written according to the ASYST DAS Driver specification is also supported.

Keithley MetraByte: IE-488, MBC-488.

Other manufacturers whose GPIB boards are supported by ASYST are:
Advantech, BBS, B&C, Capital Equipment, Hewlett-Packard, IBM, ICS, IOtech, National Instruments, Omega, Qua Tech, Scientific Solutions, Strawberry Tree, and Ziatech.

Complete system consists of seven 5 1/4" disks, tutorial booklet full documentation, and a copy protection block.

ORDER:
ASYST 1,2
ASYST 1, 2, 3 or ASYST 1, 2, 4
ASYST 1, 2, 3, 4

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