ATEasy® 8.0

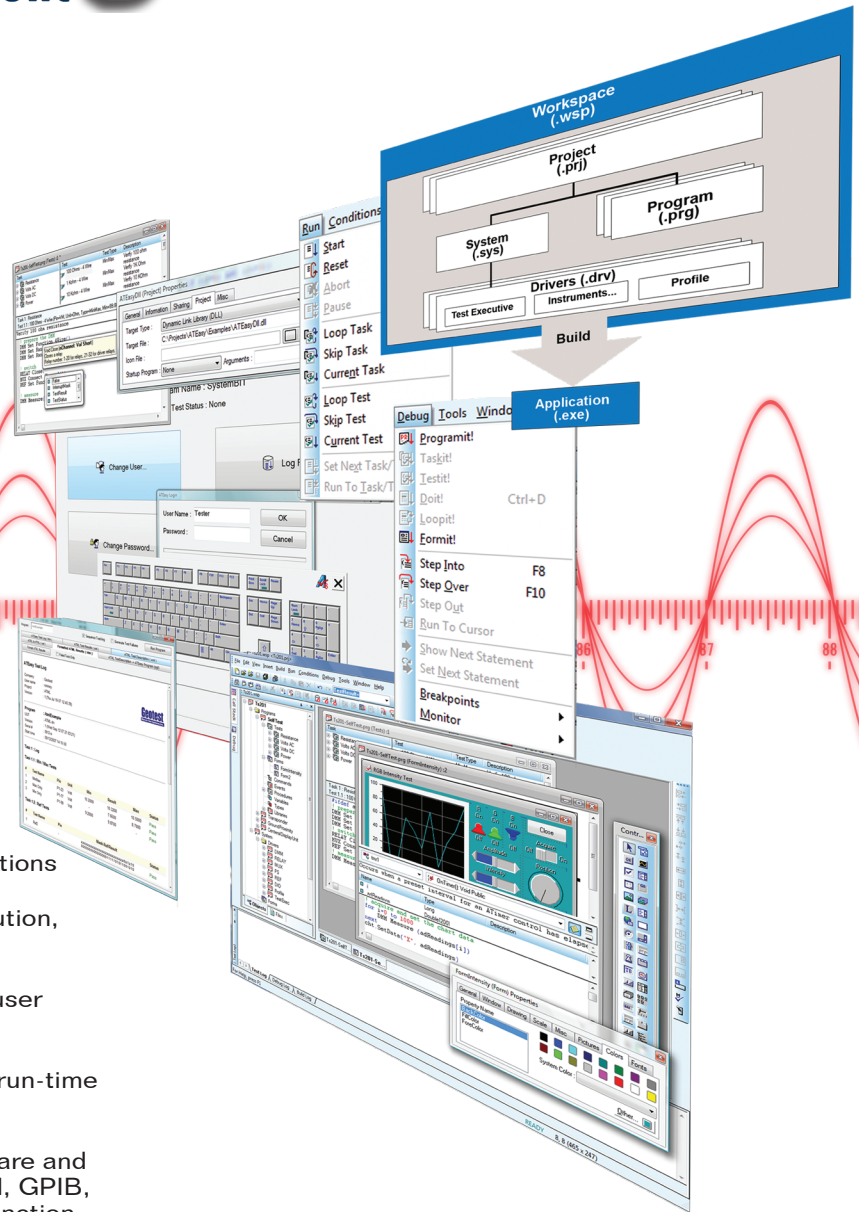**Test Executive** · **Test Development**

Integrated Test Executive and Programming Development Environment

- ■ Object oriented programming development allows rapid development and deployment of test applications

- ■ Full-featured customizable Test Executive for execution, sequencing, debugging and fault analysis of tests

- ■ Visual Basic-like Form Editor generates graphical user interfaces, menus, and controls

- ■ Built-in Application Builder generates royalty-free run-time executables (EXE files), and libraries (DLL files)

- ■ Open architecture supports a wide range of hardware and software standards including PXI, VXI, USB, serial, GPIB, LXI, TCP/IP, C, COM/ActiveX, .NET, LabVIEW, function panels (.fp), and IVI drivers

- ■ ATML support - export and import ATEasy test results and test descriptions in ATML format (.xml file format) drivers

- ■ Supported platforms: Windows 2000, XP, VISTA and Windows 7 (32/64 bit)

Geotest
Marvin Test Systems, Inc.

DESCRIPTION

ATEasy offers a rapid application development framework and a test executive for functional test, ATE, data acquisition, process control, and instrumentation systems. ATEasy provides all the necessary tools to develop and maintain software components, from instrument drivers to complex test programs. With ATEasy, test engineers are able to develop, deploy, and maintain test applications in less time and with less effort.

The ATEasy development environment combines the ease of use associated with Microsoft's Visual Basic with the flexibility of Microsoft's Visual C++ to create a complete object-oriented, 32-bit Windows programming environment. Users of these programs learn ATEasy quickly, while first time users can use the Application Wizard to generate applications quickly. Application components are displayed in an easy-to-browse tree view that follows the ATEasy framework for test application.

INTEGRATED TEST EXECUTIVE

ATEasy comes with a ready-to-run, customizable, Test Executive module – providing test developers a complete and easy to use framework for executing, maintaining and reusing test sequences. The Test Executive provides a user interface for the control and execution of test programs that were created by the test development environment. The user interface allows users to select and run a test program, check or uncheck tests, create and run test sequences, debug tests, and view/print test logs. Multiple UUTs and programs in a sequence for environmental testing or for multiple units testing are also supported.

CUSTOMIZE THE TEST EXECUTIVE FOR YOUR SPECIFIC NEEDS

The Test Executive module can be customized to accommodate specific application requirements, which can then be deployed and re-used throughout a test engineering department or organization. The Test Executive module provides the ability to define user groups as well as customize without programming - the user interface, and options/privileges associated with each user group.

Test Executive modal UI
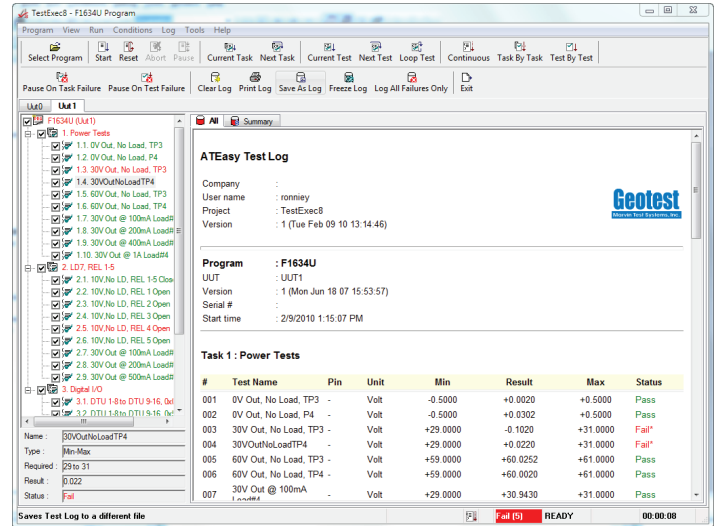
ATEasy Test Executive

USER INTERFACE MODES

The test executive supports two modes of user interface. The Modal user interface supports a touch panel interface, which includes the use of large on-screen buttons, an on-screen virtual keyboard and / or a mouse/ keyboard interface for user input. The Modeless user interface uses the familiar Windows menu bar and toolbar, in conjunction with the mouse and keyboard. The Modal user interface is ideal for production test applications where a limited and simple user interface is preferred. Alternately, the modeless interface can be used by more advanced users such as test technicians or test engineers. Each user interface mode can be assigned to a user group. Additional customization can be done programmatically using the test executive command library or by changing the test executive source code that is provided with ATEasy.

CUSTOMIZE TEST SEQUENCES

A test sequence plug-in module allows users to define specific test sequences (profiles), allowing a test program to be customized for specific UUT variants, test limits, or any other case requiring a specialized test sequence. Each profile contains a list of steps that specifies which program, Task, or Test to run as part of the application as well as specifying the number of times the step should be executed. The profile can also contain conditional actions based on the test status. The Profile module is fully integrated with the Test Executive module and can alternatively be used as a stand-alone module.

INTEGRATED DATA LOGGING

The Test Executive supports automatic generation of HTML, ATML or text based test logs, which can be displayed or saved to a file. Additionally, the Test Executive supports the Web archive single file format (.mht). Log files can contain all results, failures only or just a summary. Additionally, The Test Executive can be configured to automatically manage the log files – when
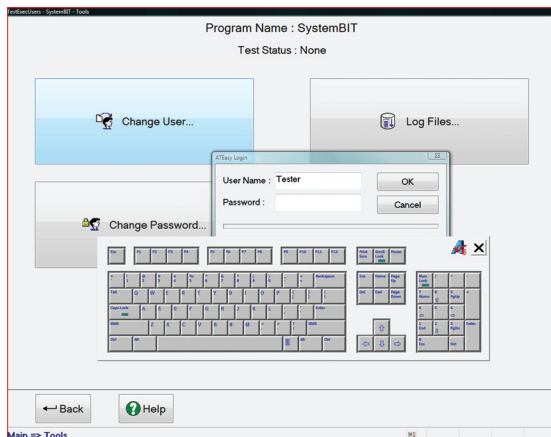
to backup, when to delete, when to save, how to name. Storing test results to a database and to other file formats is also possible.

FAULT ANALYSIS LIBRARY
ATEasy includes a fault analysis library module that allows the user to build a fault dictionary. Based on the test results and test status, test engineers can define test conditions that when met, can describe the reason for the failure and the necessary action required to repair the UUT. The fault analysis library simplifies the troubleshooting cycle and reduces the time to repair UUTs.
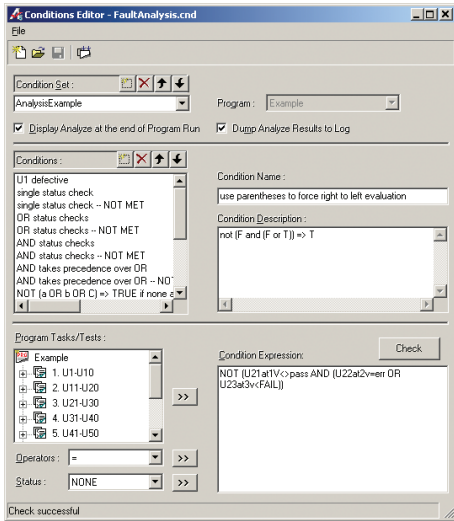
**Fault Analysis Library**

TEST DEVELOPMENT FEATURES
ATEasy's test development environment allows test engineers to build test applications from components that are modeled after real-world test systems. These components, a System, Drivers, Programs, Tests, and Commands offer a streamlined, easy-to-follow framework and a wide array of features which allows the user to easily create and reuse these components. The result is a test application that is faster to generate and easier to maintain.

RAPID APPLICATION DEVELOPMENT (RAD) FRAMEWORK
ATEasy's application framework consists of well-organized components that allow users to partition and organize their test code during development. When debugging and validating test code, users can use these components to quickly isolate problems. Once a modification is applied, smaller portions of the application code can be executed independently without running the entire application, facilitating coding/debugging development cycles. ATEasy also features a Just-In-Time Compiler which compiles only the necessary code for execution – making the coding / debugging process fast and easy. Once debugging is complete, the Build command creates an executable file.

EASY & INTUITIVE PROGRAMMING
ATEasy applications can be created using menus or by typing commands directly. With menu commands, users can insert driver commands, procedure calls, and even flow control statements with a few clicks of the mouse. ATEasy's code completion tools provide suggestions on completing the unfinished statements while typing the code includes Parameter suggestion and Command completion features. ATEasy also provides tool tips that describe the function call and arguments associated with specific programming parameters. Information is also displayed about symbols (variables, procedures, commands, etc.) when users hover over the symbol with a mouse.
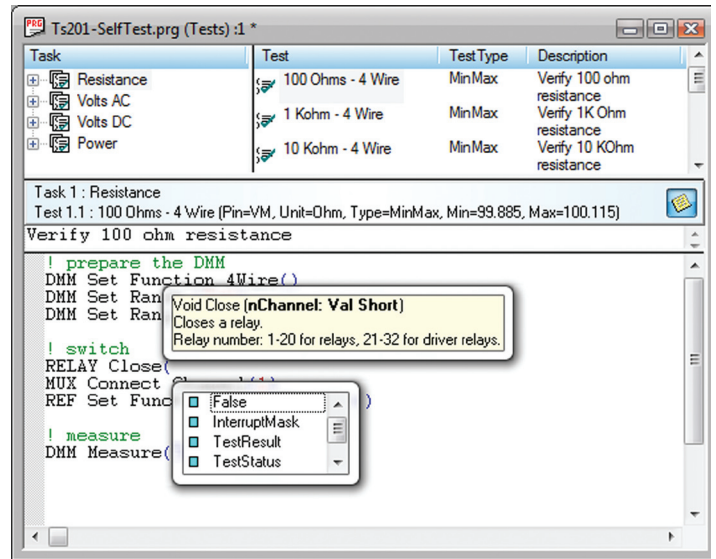
Code Completion

INTEGRATED EXCEPTION AND ERROR HANDLING
ATEasy provides a unique approach to error and exception handling. Errors are generated by an error statement, run-time, or instrument communication. Once an error occurs it can be trapped and handled locally using ATEasy's try-catch statement or at the module level using the OnError module event. These features minimize the need to insert error-handling code throughout the application. When an error is generated, the application can decide whether to ignore or retry the statement that caused the error. Alternately, the application can abort, reset the error, or re-direct the error to other modules or ATEasy's default error handler.

## INTEGRATION WITH MICROSOFT® SOURCE SAFE
ATEasy provides seamless integration with Microsoft's source control software package Source Safe. Users can Check In, Check Out, or Add Files directly from ATEasy to Source Safe, allowing archiving and management of test programs including test program versions.

STRUCTURED APPLICATION MODULE FRAMEWORK

ATEasy applications are created from a project file that contains the application module files. Three types of modules are available:

- Program Module – contains the test program (tests and tasks)
- System Module – contains the application drivers and their configuration. For example, a GPIB instrument driver configuration may include its primary and secondary address, terminator, etc
- Driver Module – contains the commands and functions that are required to operate an instrument and the associated hardware interface (e.g., GPIB, RS232, etc)

Each ATEasy module contains sub-modules such as Forms (for user interface support), Commands, Events, Procedures, Variables, Data Types and Libraries.

ATEasy Modules
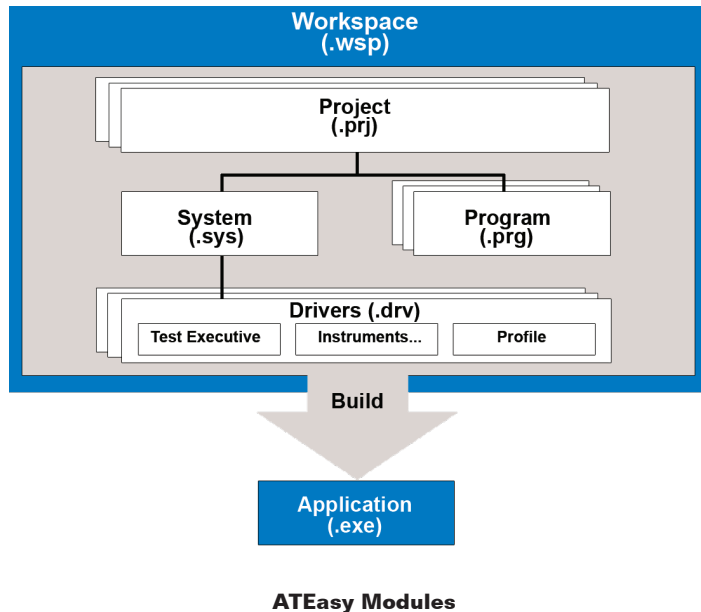
TESTS AND TASKS

The Program module contains the necessary tests required for a UUT. A Task consists of a group of Tests, which tests a functional or logical unit in the UUT. Each Test contains code and various properties such as Name, Type, Pin, Unit, Result, Status, etc. Various test types are supported such as, Min-Max (test results must fall within the required Minimum and Maximum values), pass / fail, and measured value. Each test type is used to automatically generate the test log, eliminating the need for users to create specific code to support the generation of data logging for each test.

EASY TO USE COMMANDS AND UI DEVELOPMENT

ATEasy's user-defined commands allow users to create plain, English-like Command statements such as:

```
DMM Set Function VDC
MATRIX Close (1, 15)
DMM Measure (TestResult)
MATRIX Open (1, 15)
```

Commands include instrument driver commands, System commands, and program commands. System commands can combine commands from several instruments to simplify programming. For example, the following system command switches the DMM to a specific point and then takes a VDC measurement:

```
System Measure DMM VDC AT ("J1-15")
```

The resulting code resembles functional descriptions similar to the requirements found in a Test Requirements Document (TRD), which in turn, offers users a self-documenting test program that can be easily mapped to a TRD's specifications. As an added benefit, ATLAS language users will find the Command statements similar to ATLAS statements.

ATEasy includes a Form Editor very similar to the Microsoft® Visual Basic™ form editor – providing users with a full featured UI development environment that supports form types, menus, controls, and event programming components that are specifically designed for supporting T&M applications. ATEasy's forms also accommodate system-installed ActiveX controls, offering users the option to use hundreds of ActiveX controls and components which are available from third party vendors.

MULTITHREADING

ATEasy provides full support for the Windows® multithreading model, which allows users to execute multiple code segments simultaneously. Synchronization of objects such as semaphores and events allow users to synchronize thread execution and protects the application's resources from re-entry. ATEasy's robust multithreading model allows users to use any user-interface objects or ActiveX controls from any thread without any special programming. Additionally, the multi-threading debug environment supports the viewing of call stacks and local variables – simplifying the code development and debug process.

INSTRUMENT DRIVER SUPPORT

ATEasy is supplied with many popular instrument drivers and all of the currently available standard IVI drivers. In addition, ATEasy's open architecture supports the creation and use of instrument drivers via a wide range of methods including:

- Writing ATEasy procedures in conjunction with I/O Tables and libraries which support the communication and control of instruments via GPIB, RS232, TCP/IP, LXI, VXI, PXI, PCI, USB interfaces
- Importing VXI Plug-and-Play and Function Panel (.fp files) files
- Calling LabVIEW Virtual Instrument drivers (.vi files or VI library .llb files)
- Use of external libraries such as DLLs, COM/ ActiveX and .NET assemblies including the ability to dynamically load / unload libraries at run-time

FULL-FEATURED DEBUGGING ENVIRONMENT

The ATEasy environment provides seamless support for the debugging of low-level functions or complete test programs. ATEasy's debugger provides integrated support for both source level and test program debugging. For example, while an application is paused, users can Step In, Step Out, and Step Over the executing code. Users can set breakpoints, Run to Cursor, and/or Set the Next Statement for execution, watch call stack procedures, view local and global variable values, evaluate expressions, execute or debug selected code (DoIt!/LoopIt!) , as well as monitor communication instrument buses such as GPIB for received / transmitted data.
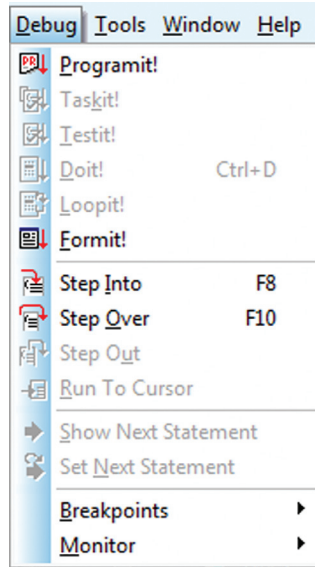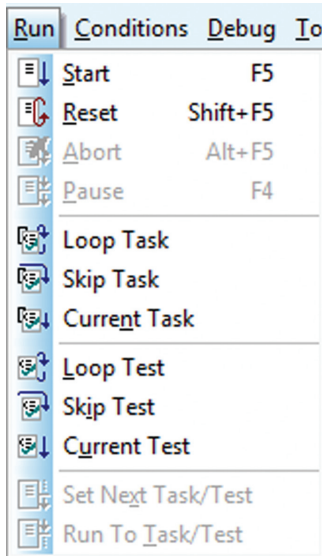
Debug Menu

The ATEasy debugger can execute a Test or a Task without executing the complete application, saving the user the time needed to run the complete application until the required test is reached. Additional test program debugging features include: Skip Task/Test, Set Next Task/Test, Run to Task/Test, repeat Current Task/Test, Taskit!, TestIt!, and run conditions such as: Continuous, Task By Task, Test By Test, and Stop on Failure.

Run Menu

RUN TIME EXECUTABLE

ATEasy includes a built-in application builder, which allows the creation of run-time executables. These executables can be comprised of one of more .exe files, providing users with the flexibility to easily update or change programs after the initial release of the application, without recompiling the complete application. These .exe files can be distributed freely with no licensing fee allowing users to deploy multiple production test systems royalty free, saving thousands of dollars when compared to other competing products.

LICENSING AND DOCUMENTATION

ATEasy is available with software or hardware license keys (USB or parallel port). Optionally, ATEasy is available with a network license for multiple user deployment. Documentation includes a copy of the "ATEasy Getting Started " manual, and an on-line User's Guide, a Preference / Programming Manual, and a Test Executive Manual. In addition, HTML-based help with a TOC index search and context sensitive help for dialogs and keywords is supported.

ATEasy is the most complete and mature test executive and application development platform in the industry – designed specifically to address the broad range of ATE applications within the T&M industry. With the release of v. 8.0, ATEasy continues to offer users outstanding usability and flexibility while retaining backwards compatibility with previous versions for ATEasy. Discover the power and capabilities of ATEasy by downloading a free 30-day evaluation copy of ATEasy at www.geotestinc.com/ATEasy or contact our sales organization at sales@geotestinc.com.

COUNT ON OUR COMMITMENT TO YOU

Geotest is dedicated to delivering innovative solutions that exceed your toughest requirements for automated test and measurement. Whether you need to test individual devices, electronic subassemblies or an entire system, our team is focused on providing the highest quality solutions for your needs.

The Geotest website delivers online support 24 hours a day, seven days a week. Our support system, called M@GIC, is accessible via the Web (http://www.geotestinc.com/magic). Once you've registered, you can log in to search an online knowledge base, create and manage incident reports, and update your account information.

OUR MONEY-BACK GUARANTEE

We offer a 30-day money-back guarantee on all Geotest products. If you are not completely satisfied with the quality, workmanship or suitability-to-task of a product, you may return it within 30 days of the date of purchase.

CUSTOMER FEEDBACK

We've been using ATEasy for quite a while now. I have to say it's the easiest environment we've ever used.

-Jim M.
LXE Inc.

I thought I might let everyone know that my first ATEasy test program was a resounding success. The setup is simple, and the test runs in 2 minutes. With "hand" testing a 4 hour test would be required, and any procedural error would have required restarting the test. (Figure the odds of setting 131 tests exactly right every single time.) A major part of the credit goes to an easily programmed system excellent training and extremely responsive support. I'm extremely happy with the software and system.

-Robert B.
DRS Technologies (Tamsco)

We have been using ATEasy at our enterprise for 5 years. With the help of ATEasy we have developed programs for functional inspection and for fault-finding of 40 electronic units and assemblies. Using a large set of standard forms and also creating custom ones has allowed us to create "turn-key" projects for repair of rather complicated analogue units and assemblies, in accordance with the customer's requirements and needs. The accessibility and simplicity of programming in the ATEasy environment has allowed our engineers with various levels of programming skills, to create test programs – minimizing our development time and costs. Developing test equipment is a rather complicated and a labor-consuming process and it's very good to have access to Geotest products and the ATEasy programming environment.
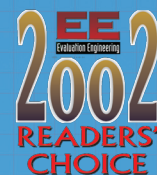
-Nikolai B.
SovTest
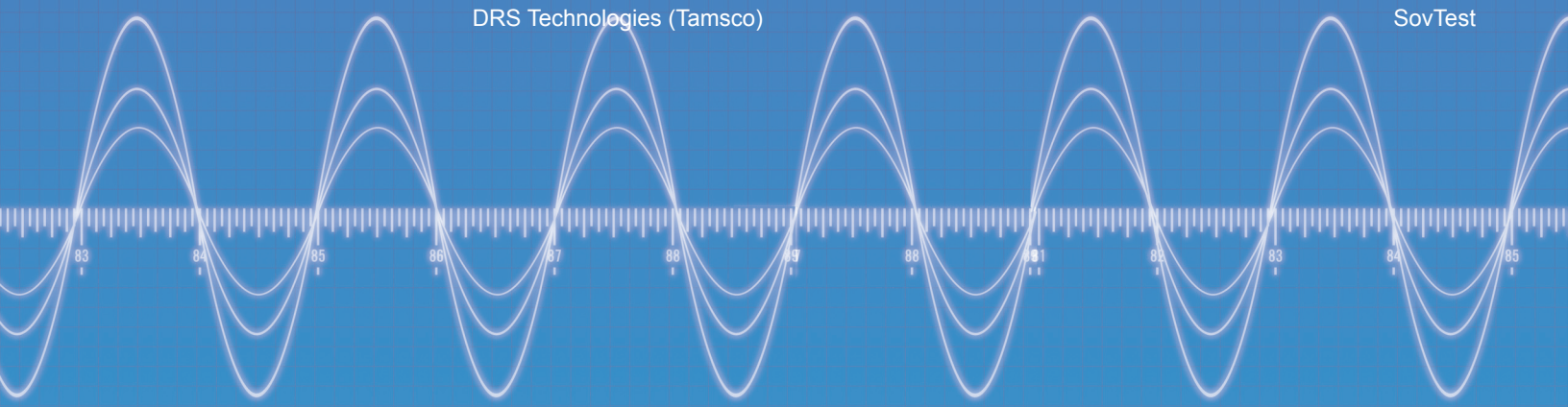
Having been an ATEasy user for the past 12 years, I look forward to each new release because I know Geotest will unveil more outstanding and impressive features. One of my favorite features introduced a few years ago is the capability to use ActiveX and .NET Components in your software. Because of that, ATEasy is extremely powerful, yet so simple to use. Not only do I use it to create our test software, I use it to write company-wide applications which are utilized every day.

-Michael W,
Sechan Electronics, Inc.

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BEST IN TEST — Test&Measurement WORLD 2001

EE Evaluation Engineering 2002 READERS' CHOICE

TEST OF TIME FINALIST 2010

PICMG INDUSTRIAL COMPUTERS

PXI Systems Alliance

PCI SIG

GSA

TDC

NDIA NATIONAL DEFENSE INDUSTRIAL ASSOCIATION

AAI Airline Avionics Institute