

# A TEasy<sup>®</sup> X

Test Executive And Development Studio



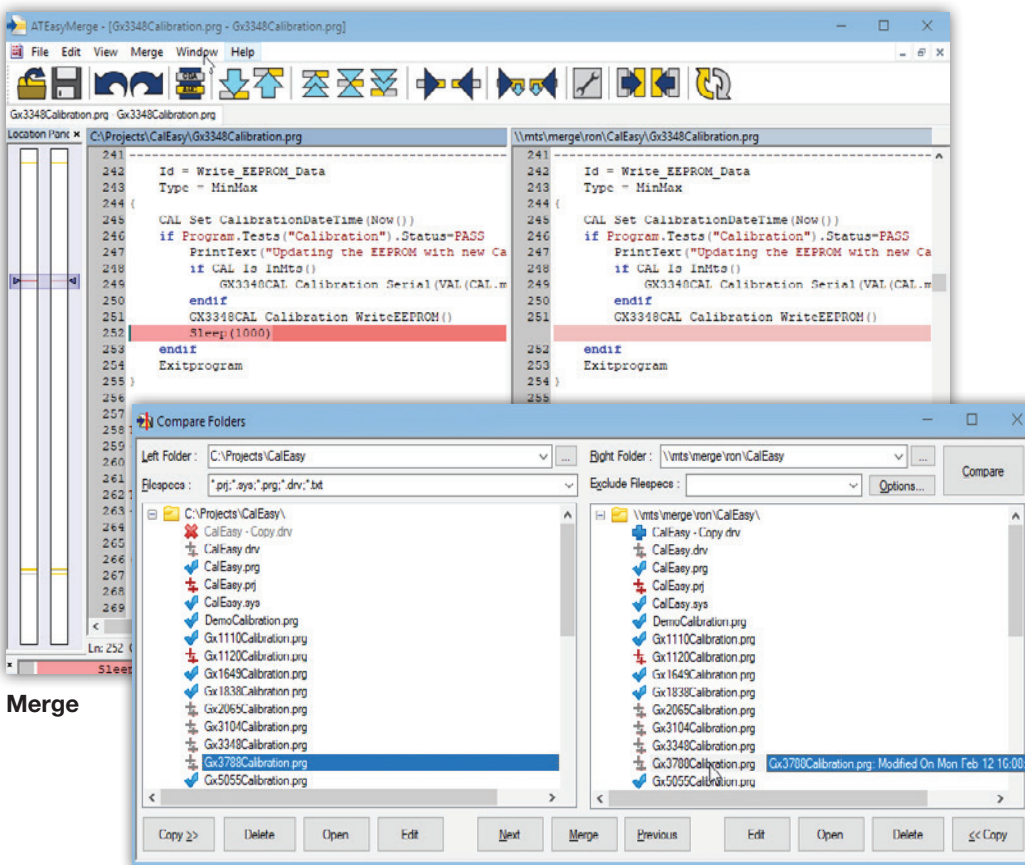
Integrated Test Executive and Application  
Development Environment

# ATEasy® X

Test Executive And Development Studio

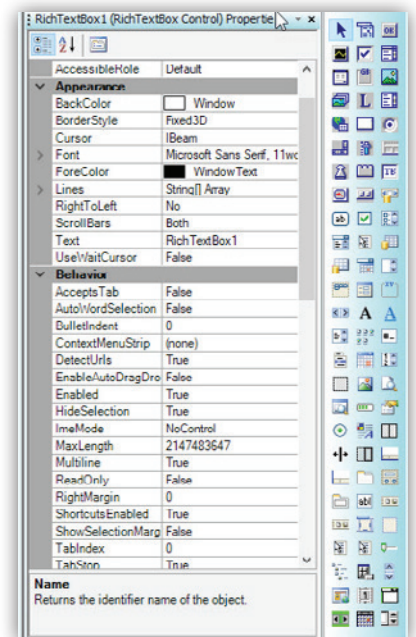
## Key Features of Version 10

- **Much faster run-time** – Up to 10x faster in benchmarked tests
- New collaboration tools including **Compare and Merge** functionality for files and folders
- New **.Net controls support** – import and integrate external, widely-available .Net controls and use the new Properties Grid window to set control properties for more efficient test development and expanded test program capabilities
- New **Code Editor** allows editing of text files inside the IDE
- **Embedded run-time** - deploy your test application with the exact run-time used to develop and verify your ATEasy application as a single executable or DLL
- Use the new **Test Log Template** to quickly filter test results by status or by test limits to improve test program quality and repeatability
- ~100% backward compatible, with EXEs, DLLs compiled with older versions, and prior version source files, preserving your TPS investment
- Side by side installation with earlier versions of ATEasy simplifies test program migration



Merge

Folder Compare



.Net Controls

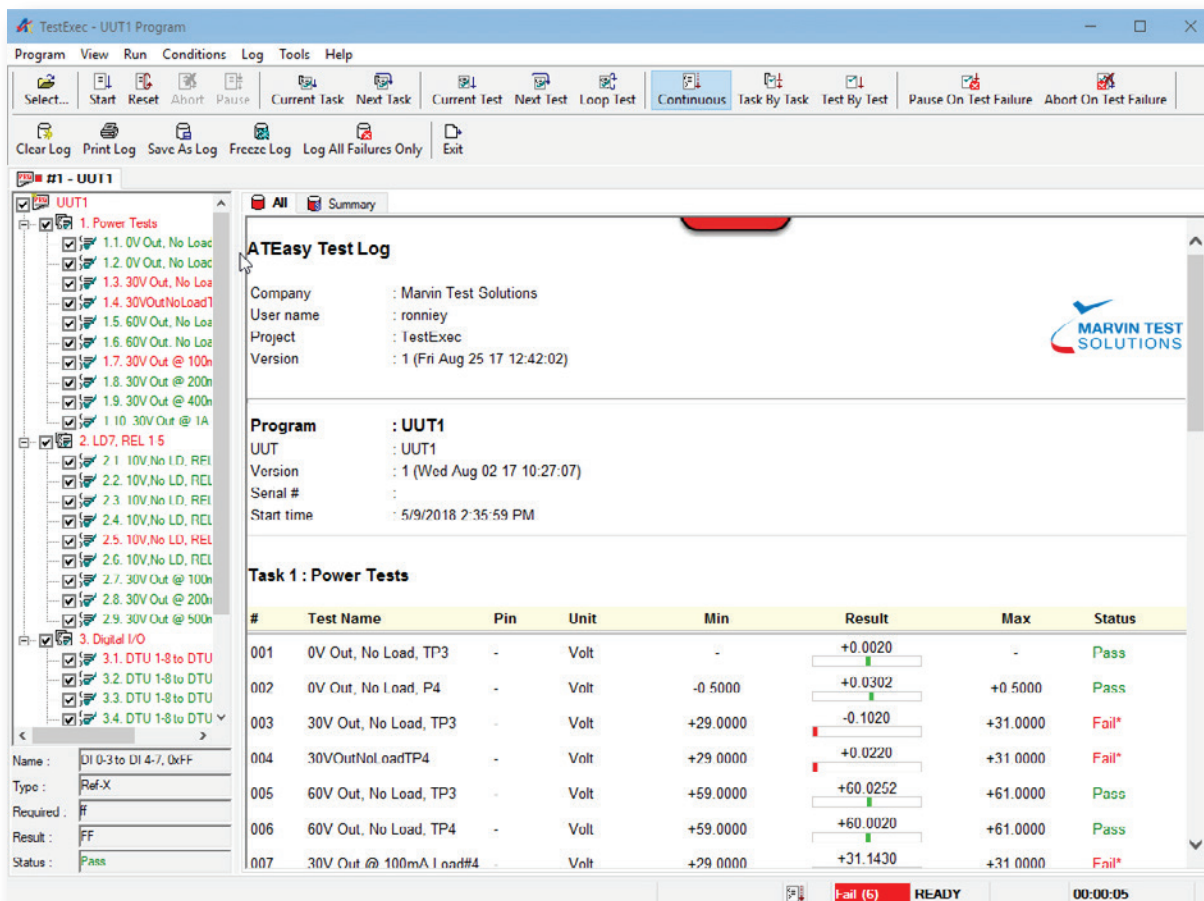
ATEasy® is a test executive and a rapid application development framework for functional test, ATE, data acquisition, process control, and instrumentation systems. It provides all the necessary tools to develop, deploy and maintain software components. ATEasy's development environment combines the structure of ATLAS, the ease of programming associated with Microsoft® Visual Basic®, and the flexibility of Microsoft Visual C++ to create a complete object-oriented, Windows programming environment.

### Integrated Test Executive

ATEasy includes a ready-to-run, customizable, Test Executive module – providing test developers a complete and easy to use framework for simulating, executing, maintaining and reusing test sequences. 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.

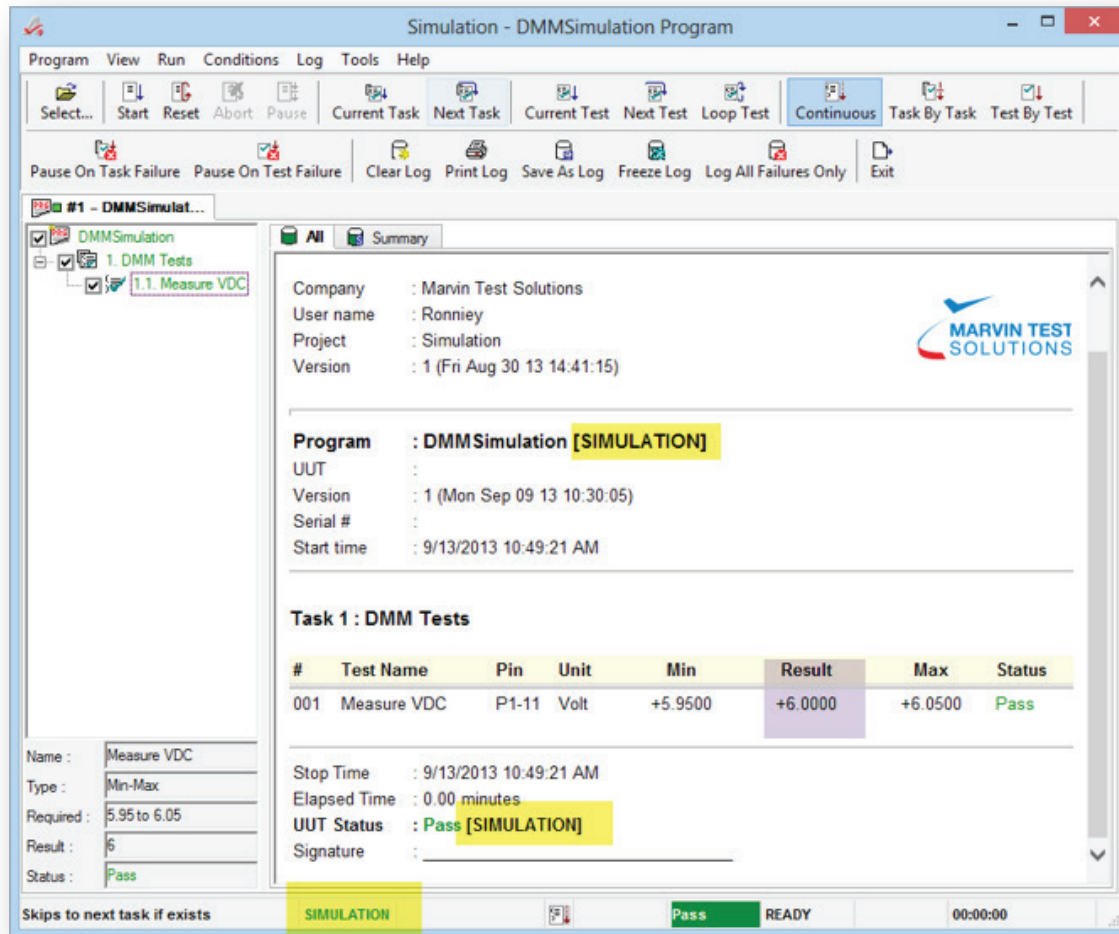
### Full-Featured Test System & UUT Simulation

ATEasy is the only commercial test executive / development environment to offer full-featured simulation capability which includes the simulation of test system hardware, software, the UUT, and test events / failure scenarios. With simulation capability, users are able to develop and verify test programs without needing valuable time on a tester or access to a UUT. Additionally, test engineers can use the simulation feature to



ATEasy Test Executive





## Hardware and Software Simulation

trace / analyze test program performance off-tester. The result is higher productivity, higher quality programs, faster deployment, and better test system asset utilization.

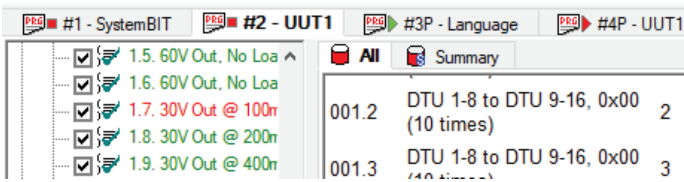
### Customize the Test Executive for Your Specific Needs

ATEasy's test executive can be customized to accommodate specific application requirements, which can then be deployed and re-used throughout a test engineering department or organization. Customizable features include:

- Define user groups, user interfaces and associated options / privileges
- User interface – ATEasy supports both a Modal user interface via a touch panel and a Modeless interface which uses the familiar Windows menu bar and toolbar, in conjunction with the mouse and keyboard. Each user interface mode can be assigned to a specific 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.

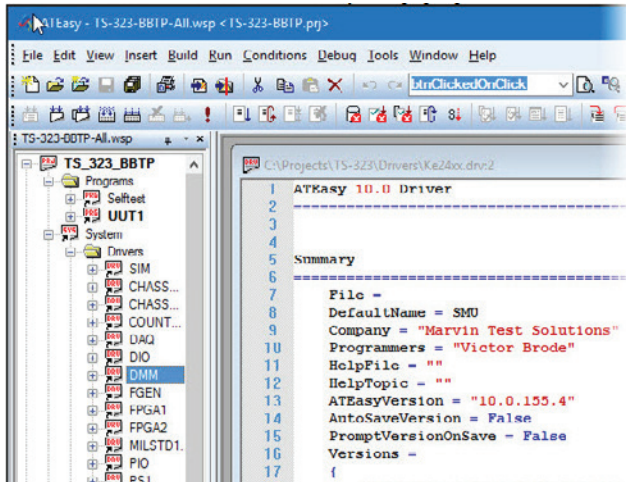
- Test sequences – users can define specific test sequences (profiles), allowing a test program to be customized for specific UUT variants, test limits, or any other case requiring a specialized test sequence.
- Integrated data logging – automatic generation of HTML, ATML, .mht or text-based test logs is supported by the test executive, which can be displayed or saved to a file. The test log can be customized to include detailed test results, failures, or only pass / fail results.
- Test multiple UUTs – under user control, multiple UUT testing can be performed in parallel, sequential, or mixed mode, with shared resources managed by ATEasy.
- Fault analysis library – users can build a fault dictionary, based on test results and test status. Additionally, the fault library can be integrated with third party tools, such as DSI International's Workbench and eXpress fault diagnostic tools.



Multiple UUT Testing

## 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 include a System, Drivers, Programs, Tests, and Commands which 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.



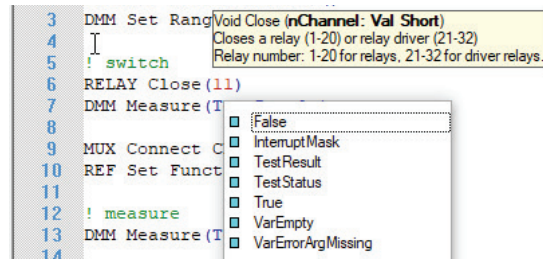
ATEasy Application Development UI

## 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 complete, smaller portions of the application code can be executed independently without executing the entire application, facilitating coding / debugging development cycles. ATEasy also features a Just-In-Time Compiler which compiles only the code necessary 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 for parameters and commands.



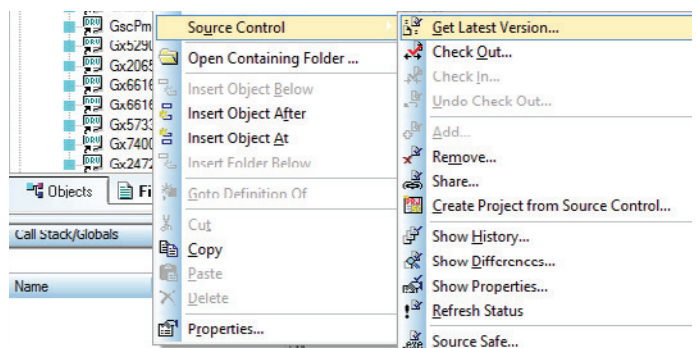
Code Completion

## Integrated Exception and Error Handling

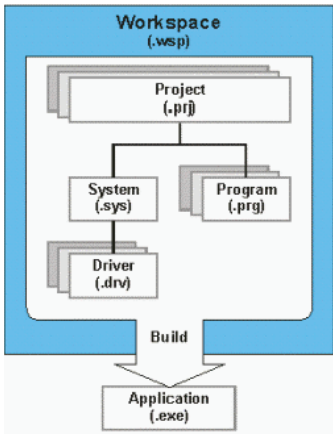
ATEasy provides a unique approach to error and exception handling. Errors generated by statements, run-time events, or instrument communication can be trapped and handled locally using ATEasy's try-catch statement or at the module level using the OnError module event. These features minimize the need 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.

## Integration With 3rd Party Source Control Tools

ATEasy supports various source and version control tools. Interfaces are provided for several standard source control products including CSV, Git, Subversion, Microsoft Team Foundation Server and Visual SourceSafe, and for any SCC API or Command Line compatible tool.



Source Control Tools



**ATEasy Modules**

## 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). A Task consists of a group of Tests, which tests a functional or logical unit in the UUT, and each Test contains code and various properties such as Name, Type, Pin, Unit, Result, Status, etc. 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.
- 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, USB, LXI, etc)

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

## Easy to Use Commands and UI Development

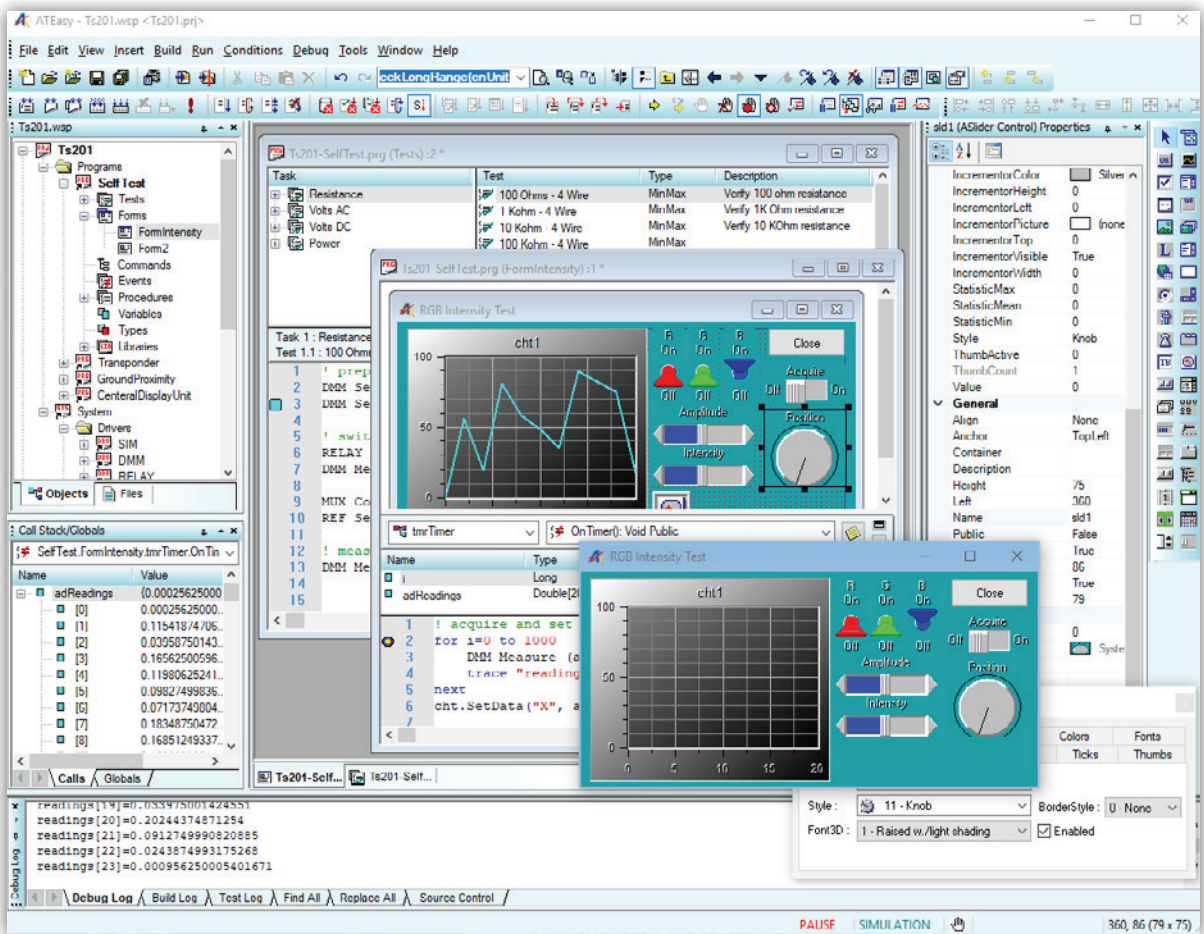
ATEasy's user-defined commands allow users to create plain, english-like Command statements such as:

```

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")
```



**Form Editor**



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.

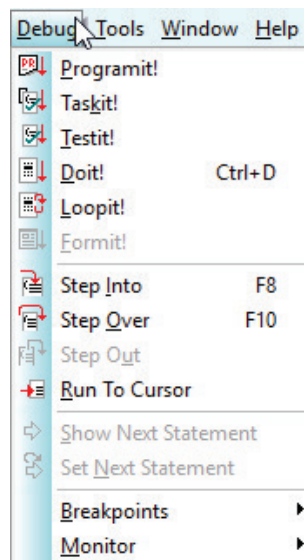
## Multithreading

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 allows 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

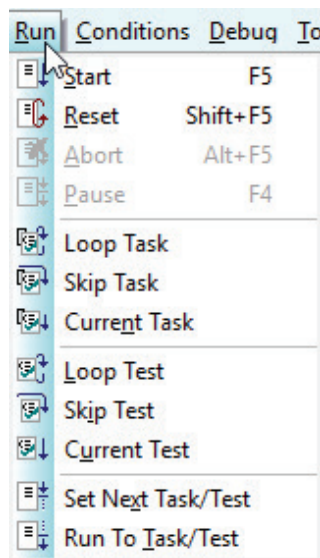
ATEasy is supplied with many popular instrument drivers and all of the currently available standard I/O drivers. In addition, ATEasy's open architecture supports the creation and use of instrument drivers via a wide range of methods including:

- Writing ATEasy procedures in conjunction with I/O Tables and built-in libraries which support the communication and control of instruments via GPIB, RS232, TCP/IP, LXI, VXI, PXI, PCI, USB interfaces
- Importing VXIplug&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



**Debug Menu**

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. Additionally, 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.



**Run-Time Menu**

## 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,

## 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 or 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 in licensing fees.

## Deployment and Cyber Security

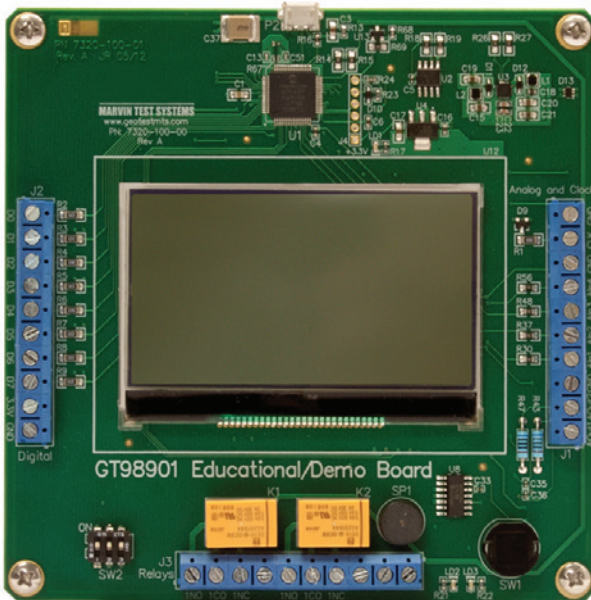
ATEasy provides a fast and small footprint for deployment of applications and run-time files. ATEasy uses encryption and access-based keys to protect the use, viewing or changing of source files and executables, maintaining file integrity and authenticity.

## Licensing, Documentation, and Training

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 PDF / HTML Help versions of the User’s Guide, Preference Manual, Programming Language Manual, and the Test Executive Manual. The HTML-based help provides a TOC, index search and context sensitive help for the development environment dialogs and keywords.

Marvin Test Solutions offers a 3-day, ATEasy training package which can be conducted at our Irvine, CA facility or at a customer’s site. In addition, MTS offers a getting-started version of ATEasy with a USB controlled, multi-function demo board for both commercial users and educational institutions which provides a cost-effective way to learn about ATEasy and its many features / capabilities. This same demo board is used to support the 3-day ATEasy training course.



**USB Demo Board**

## Compatibility and System Requirements

- ATEasy is compatible with 32/64-bit Windows operating systems including Windows XP, Windows 7, 8, 10, and Windows Server 2003-2016
- Compatible with LabVIEW™ 2013, .NET 4.5
- 100% backward compatible with ATEasy versions 3.0-9.0
- Migration tools available for ATEasy 1.0 and 2.0 programs
- EXE and DLL files compiled with older versions of ATEasy can be used with the 10.x run-time

For more information:

[www.marvintest.com/ateasy](http://www.marvintest.com/ateasy)



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