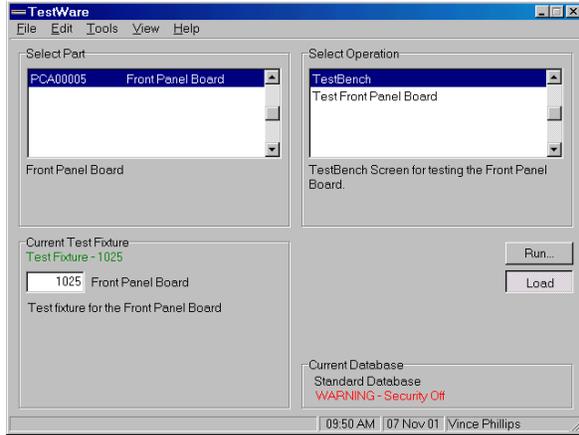


## Measurement Systems



Easy to Learn & Use  
Reduced Test Design Time  
Built-In Test Tracking & Reports  
Self Documenting  
Design tools that Hide Complexity  
and Improve Productivity  
Turnkey Systems Available  
Self Calibration & Verification

## Automatiq Functional Test Software Suite

TestWare is a comprehensive suite of Windows™ software tools used by design engineers, test engineers, and production test operators to specify, design, program, and run functional tests on their products using the Automatiq TestSystem.

TestWare also provides tools to record, print, and archive test results in a production test environment. TestWare is included at no extra cost when you purchase a Circuit-Traq PRO Test System.

### Production Testing

When the operator loads a TestFixture into the TestStation, TestWare reads the fixture's internal ID code and displays the list of UUT part numbers and names that can be tested on the fixture.

After selecting the specific UUT to be tested, the list of available test programs is displayed.

The operator then selects the specific test to be run, ensuring that the operator always runs the correct test on every UUT in production.

TestWare loads the program and displays a testing window. The operator then runs the test for each of the boards to be tested. The test results may be displayed, saved, and printed as required.



TestWare supports barcode readers so serial numbers and other information about the UUT may be captured at start of a test and stored along with the test results.

When the test has finished, the test program displays any errors encountered in the test. The results can be printed if desired.

The results are automatically stored in the History Database along with the time, board being tested, test program and revision, operator, and any other information that may need to be preserved.

Security controls built into TestWare allows an administrator to specify the functions each Operator is allowed to access. This prevents inadvertent or intentional modification of the test by unauthorized users.

### Configuration

With TestWare, Test Engineers can define the operations associated with a TestFixture. First the resources (TestModules and TestDrivers) that will be used by the TestFixture are specified. This insures that tests can only be run on TestStations that are equipped with the necessary TestModules.

Then the Signals are defined. A Signal defines the connection between the Automatiq TestSystem and the UUT. The Signal is given a name and the actual connection path is specified.

Additional information including maximum and minimum signal levels, default values, logic level limits, etc. is specified. Once the Signal is defined, only the name of the Signal is necessary to set or get the Signal value. The complex connection information is hidden.

Even the complexity of serial packet commands and queries can be hidden in the Signal definition. This makes test programs much simpler, improves their accuracy, and makes them much easier to read.

Once the Signals are defined, the Part Numbers & Names that can be tested with the TestFixture are specified. Finally, the individual tests that can be run are specified.

## Measurement Systems

### Configuration (continued)



For each test to be run, a test screen similar to the one above is defined. The screen definition is accomplished by dragging screen components onto the screen and defining them.

The final step is to write the test program.

### TestScript

Test programs are written in TestScript, a BASIC like programming language. In addition to running functional tests on the Automatiq Test System, TestScripts can:

- Set Signal values to the UUT.
- Test Signal values coming from the UUT.
- Display status information on the test screen.
- Prompt the operator to perform interactive tasks (check lights, set adjustments, select options, enter data, etc.)
- Report test results.
- Record measurements.
- Format and print test result reports on any Windows printer
- Format and print labels (barcodes and board or shipping labels)
- Import data from barcode scanners into test programs

During all of this, the full power of the Basic programming language is available to make calculations, loop through tests, call functions or subroutines, etc.

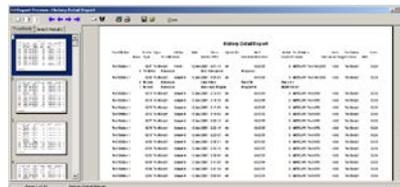
Because TestScript is easy to read, the TestScript program, along with a few comments, fully documents the test.

This means that additional test procedures are not necessary to fully document a test. This eliminates extra paperwork and eliminates the inevitable discrepancies between the test program and a written test procedure.

### History Database

A History Database of all tests is kept automatically. When a test is started, the time, date, operator, part number, test name, and version are recorded. As the test progresses, test failures are recorded.

Additional information can be recorded under program control. If the test is terminated early, that information is also recorded.



The history database information can be reported in a number of formats. Filters can easily be defined to report on a particular part, parts tested during a particular period, etc. Once a report has been defined, its format can be stored for reuse.

The resulting report can be viewed, printed, or exported in various formats (RTF, PDF, etc.). In addition, the report data can be exported to a spreadsheet for further analysis.

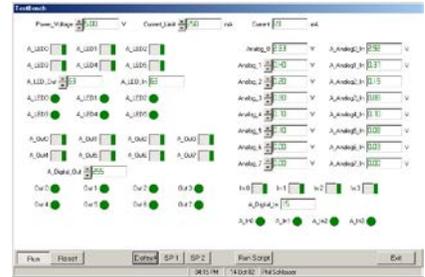
The History Database is generated automatically with no additional programming effort required. In fact, it is impossible to run a test without generating a History Database record.

### Stand Alone

When necessary, TestWare can be configured to run without the TestStation using PC serial interfaces and test boards in the PC.

### TestBench

TestBench is a full-featured virtual test bench tool kit that is exceptionally useful in prototype hardware and firmware debugging and prototype verification.



TestBench lets engineers build virtual instruments on-screen, link these instruments to Signals, and run snippets of TestScript code. A TestBench designer's screen lets users drag and drop power supplies, switches, LEDs, analog signal sources, voltmeters, current meters, digital logic I/O, etc. TestBench has found important applications in assisting design engineers debug hardware and firmware in engineering and for diagnosing circuit faults at production repair stations.

### Calibration and Verification

TestWare provides tools to calibrate the 10V precision reference and a 16 bit ADC and DAC using an external meter. Once the system is calibrated, TestWare utilizes TestStation circuitry to automatically calibrate each of the inputs and outputs from the system.

TestWare also provides a verification function that can be run regularly to insure that all the inputs and outputs are working properly and are within calibration.

### Additional Information

For more information the complete *Circuit-Traq Reference Manual* and the *Circuit-Traq Design Guide* are available from our web site [www.AutomatiqSystems.com](http://www.AutomatiqSystems.com).