Aonix
Product Fact Sheet

EN 50128 real-time embedded safety critical DO-178B C

VECTOR software
www.vectorcast.com

VectorCAST/C

Integrated with Leading Embedded Development Environments Including:

- Green Hills MULTI® 2000
- WindRiver Tornado®
- TI Code Composer Studio™
- Diab SingleStep™
- Cosmic
- Tasking
- Metaware ARC™
- Mentor Graphics Microtec®
- Analog Devices Visual DSP++™
- Paradigm
- Others

Highlights:

- Compatible with all UNIX and Windows native compilers
- Eliminates Need to Build Test Drivers and Stubs
- Integrated Code Coverage Capabilities including MC/DC
- Supports Host, Simulator, or Embedded Target Testing
- Automates Regression Testing
- User-Configurable Compiler Interface
- Supports DO-178B Test Requirements

What is VectorCAST/C?

VectorCAST/C™ is a world-class integrated software test solution from Vector Software and distribution partner Aonix that significantly reduces the time, effort, and cost associated with testing software components necessary for validating safety and mission critical embedded systems.

Automation includes:

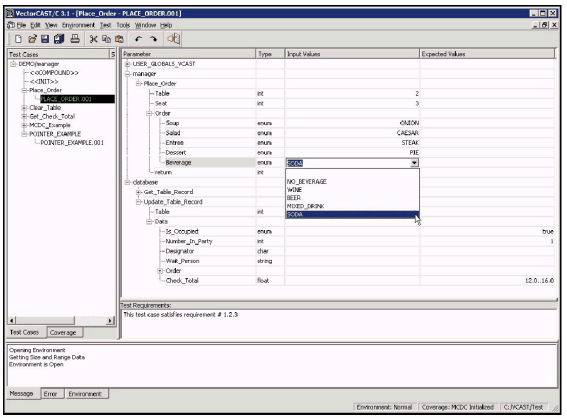
- complete test harness construction
- test case definition
- test execution from GUI or scripts
- code coverage analysis
- regression testing
- code complexity calculation
- computation of test paths for test case building

Why VectorCAST/C?

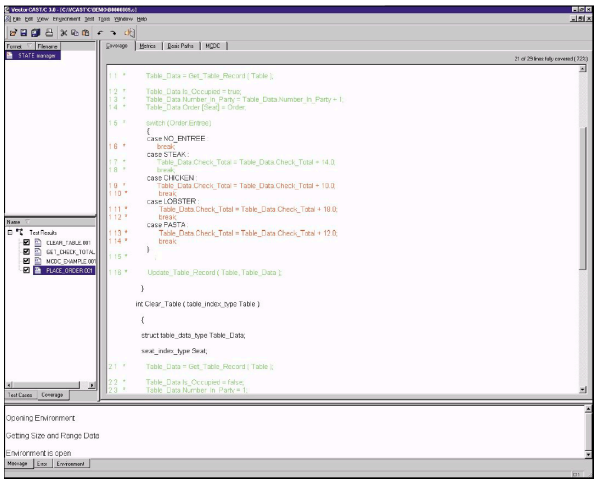
With conservative estimates, software component testing requires the generation of one line of test code (in the form of stubs, drivers, and test data) for each line of application code to be tested. The necessity to create this "disposable" test software is the main reason why manual component testing is so expensive and inefficient. Test software not only has to be written but debugged to ensure that it performs as expected. With VectorCAST/C, component testing can be performed without writing a single line of test code.

Simple To Use GUI

- ***Test Case Building*** without writing test code. Parameters (of unit under test and stubs) and global data values are defined through the GUI.
- ***Test Execution*** is performed with a simple mouse click.
- ***Pass/Fail*** results of test cases are displayed on the GUI after test execution with color coded pass/fail indicators.
- ***Code Coverage*** is shown in a color coded browser.
- ***Coverage*** levels are displayed for statement, branch, and MC/DC levels of coverage.
- ***Execution*** can be performed on host platform, target instruction set simulator, or directly on embedded target. Execution platform is controlled from the GUI.



Aonix
Making Ideas a Reality



VectorCAST/C

How it Works

VectorCAST/C parses your source code and invokes code generators to automatically create the test code required to construct a complete executable test harness. Once the test harness is constructed, utilities are provided to build and execute test cases, show code covered, and report static measurements. As you use VectorCAST/C, all data input during an interactive session is captured for future automated regression testing.

Integrated Code Coverage

Without a code coverage tool it is difficult to determine which portions of the source code have been exercised during testing. VectorCAST/C provides an integrated code coverage utility that allows you to gauge the effectiveness of your component testing by reporting on the source code statements or decision points exercised during individual or multiple test runs.

Testing is Repeatable

Once test cases have been developed, VectorCAST/C can be used to automatically run these test cases against successive versions of the software as the code changes. The management of test execution and cataloguing of test results is automatic. Comparing results of the same test cases against new software versions, prior to system integration, will result in fewer surprises caused by "one small change" to a software component.

Compiler Integration

VectorCAST/C is integrated with leading compilers allowing for seamless test activities. All of the VectorCAST/C generated test harness components are automatically compiled, linked, and can be executed under control of the debugger.

Product Features

- Access static functions and variables
- Allows dynamic memory allocation for pointer testing
- Test all data types
- pointers
- void pointers
- bit-fields
- structures
- double pointers
- multi-dimension arrays
- unions
- Graphical and script-based test case editing
- Flexible test harness creation: stubs can be created anywhere in calling hierarchy

Embedded Target Testing

A version of VectorCAST/C is available to allow testing directly on your embedded target development system. VectorCAST/Target is integrated with your cross compiler and RTOS making it the perfect tool for testing real-time applications. Tests may be developed in a host environment and then re-executed on an embedded target to verify the target and cross-compiler performance.

To obtain more information, please contact Aonix at **www.aonix.com** or your local Aonix office.

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