Metrowerks CodeTEST® Software Analysis Tools are the preeminent solution for embedded software developers that require code visibility and precise analysis of their software in order to improve software quality and reduce development costs. CodeTEST SAT is a software analysis toolset that assists you in overcoming complexities of the embedded software environment from host-based design and development to validation and verification.

Build your system with confidence, relying on a solution that will bring you to a whole new level of embedded software excellence.

**Ahead of Schedule**

Equipped with CodeTEST SAT, you can tackle the costly “little snags” that frustrate and delay development, test and deployment. CodeTEST SAT is a win/win solution for all teams to get ahead of schedule, meeting time-to-market goals ahead of expectations and ahead of the competition.

**See the Issue Before it is One**

CodeTEST SAT supports you every step of the way in identifying issues before they cause problems downstream or for your customer. By giving you visibility of the real-execution history of your code at the source or RTOS levels, CodeTEST SAT helps you find your bugs faster and earlier in the product’s development cycle.

**Deliver your Code with Confidence**

CodeTEST SAT gives you an unprecedented level of confidence at code hand-off. From design to development, from development to test, from test to deployment, CodeTEST SAT streamlines transitions, helping you identify unresolved issues as they occur in the cycle. Project managers, engineers and marketing teams have the data they need to feel confident in the quality of their systems. In an industry where product performance and code quality are key, CodeTEST SAT can make all the difference.

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**Performance**

Identify execution bottlenecks

**Trace**

Gain detailed visibility of software execution history even when your target crashes!

**Coverage**

Document test completeness with coverage analysis

**Memory**

View dynamic memory allocations and high-water marks

**Memory Errors**

Pinpoint untrapped memory errors

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Performance
Whether your concern is meeting real-time deadlines or improving the overall execution speed of your embedded application, CodeTEST Performance Analysis provides you with detailed software timing measurements that enable you to guarantee software performance.

- Measure up to 128,000 functions simultaneously to the highest levels of timing resolution
- Identify exactly where the system is spending its time
- Monitor specific sections of code with point-to-point timing measurements
- Determine interrupt service routine execution time
- Use call-pair data to optimize cache usage

Trace
CodeTEST Trace makes it easy to validate execution of your design flow and specifications.

- Achieve unmatched accuracy in tracing execution history
- Track execution at RTOS, control-flow and source levels
- Locate, view and analyze problem areas quickly and easily

Memory
CodeTEST Memory tracks dynamic memory allocations, and reports memory errors associated with the original source. Save time, resources and money by pinpointing system bugs caused by memory leaks or errors.

- Isolate memory leaks and errors
- Optimize memory allocation
- Improve system throughput and efficiency

Coverage
CodeTEST Coverage gives you complete confidence in delivering your code by providing the most comprehensive code coverage used in the industry today.

You can measure the effectiveness of your testing using statement coverage (SC), decision coverage (DC) and modified condition/decision coverage (MC/DC) criteria. One of the few tools qualifiable under the safety-critical FAA-recommended guideline (DO-178B), it reports the percentage of coverage achieved at the function, file and application levels.

Verify how much of the program has been executed, reducing your risk factor by exposing problems arising from untested code.

- Find out what percentage of code executed in your tests
- Avoid statistical sampling and get actual coverage measurements
- Pinpoint untested or dead code

SC verifies that:
- Each statement has been executed at least once

DC verifies that:
- Each decision in the program has taken all possible outcomes at least once
- Every point of entry and exit in the program has been invoked at least once
- Each decision in a decision has been shown to independently affect that decision's outcome

MC/DC verifies that:
- Each decision in the program has taken all possible outcomes at least once
- Every point of entry and exit in the program has been invoked at least once
- Each condition in a decision has been shown to independently affect that decision's outcome

CodeTEST Coverage is available with an optional DO-178B Tool Qualification Package. This package includes documentation to help you expedite DO-178B tool qualification.

Pinpoint untested or dead code
Avoid statistical sampling and get actual coverage measurements
Find out what percentage of code executed in your tests

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