Apple Service Diagnostic

User Guide

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Scope

Apple Service Diagnostic tests the hardware for correct operation. Apple Service Diagnostic (EFI) performs low-level tests of hardware directly and does not require an operating system to run. Apple Service Diagnostic OS tests use an OS X operating system to perform tests.

Booting and using the Apple Service Diagnostic CD

To boot into EFI testing insert the DVD and restart the macintosh holding down the D key as the computer boots. The computer will boot to the main screen of Apple Service Diagnostic for EFI testing. To boot into OS testing insert the DVD and restart the macintosh holding down the C key as the computer boots. The computer will boot to the main screen of Apple Service Diagnostic for OS testing in 2-3 minutes. Once finished press the shutdown button to quit.

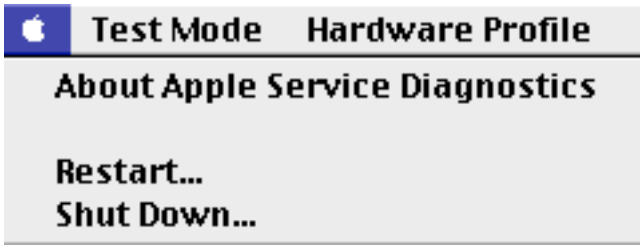
An alert box (figure 1.) will be displayed if the user is attempting to use Apple Service Diagnostic on a system that is not supported.

figure 1.

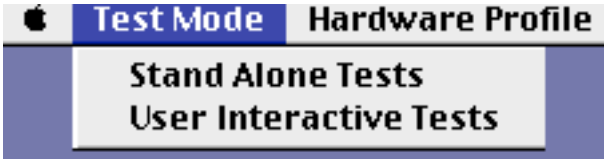
Apple Service Diagnostic User Interface

There are three menus (figure 2) an Apple icon for displaying the About box, Test Mode menu to select Stand Alone or User Interactive tests, and Hardware Profile for displaying the hardware components on this macintosh (figure 3.).

Apple menu



Test Mode menu



Hardware Profile menu

figure 2

The about box displays the applications version and copyright information. Press OK button to dismiss this window. Restart restarts the macintosh and Shut Down will shut down the macintosh.

Hardware Profile

Hardware Profile (figure 4.) displays the macintoshes hardware components and their associated sub component values. Press the Close Box to dismiss this window.

figure 4.

Application Interface

The Apple Service Diagnostic window (figure 5.) is divided into four areas: Controls (upper left tab 1) for setting up test requirements, Test Selections (upper left tab 2) for selecting/deselecting tests. Test Log (upper right) for displaying test information, Test Statistics (lower left) displays current test status, and Test Progress and User Control (lower right).

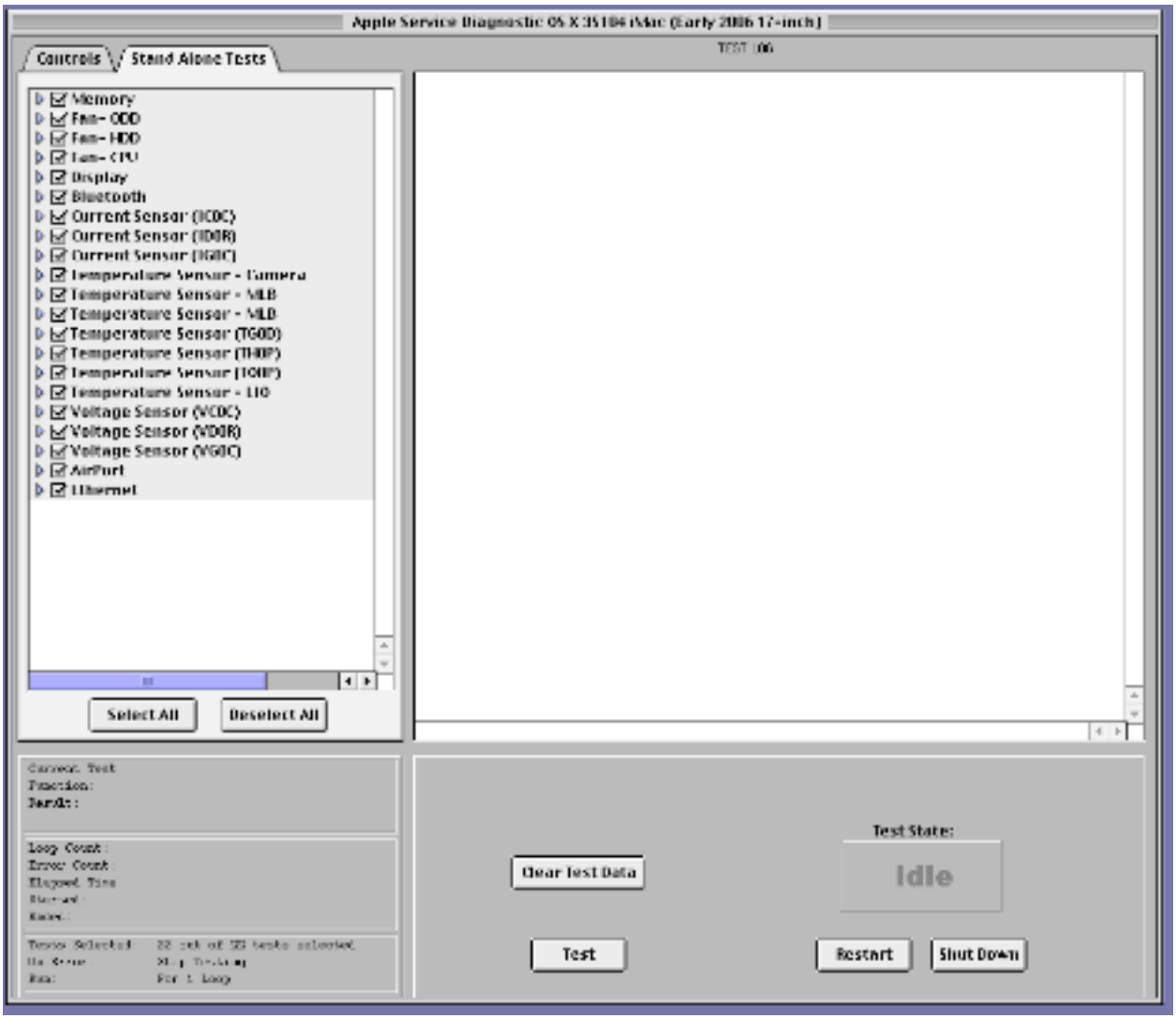


figure 5.

Tabs

The test controls and test selection quadrant (upper left) is divided into two tabbed panels.

Test Controls Tab

The Test Controls panel (figure 6.) has settings to handle error options to either Stop On Error or Continue On Error and looping options to Loop on set number of loops or Loop For a specified amount of time. If set to stop on error testing will stop if an error is detected. If set to continue on error testing will continue to run until the number of loops set or time has expired. Apple Service Diagnostic can be set to run for a set number of loops, maximum 1000, or run for a set amount of time, maximum 23 hours and 59 minutes. The default selections are to run one loop and stop on error. Changes to the default selections are not saved when the machine is shut down or restarted.

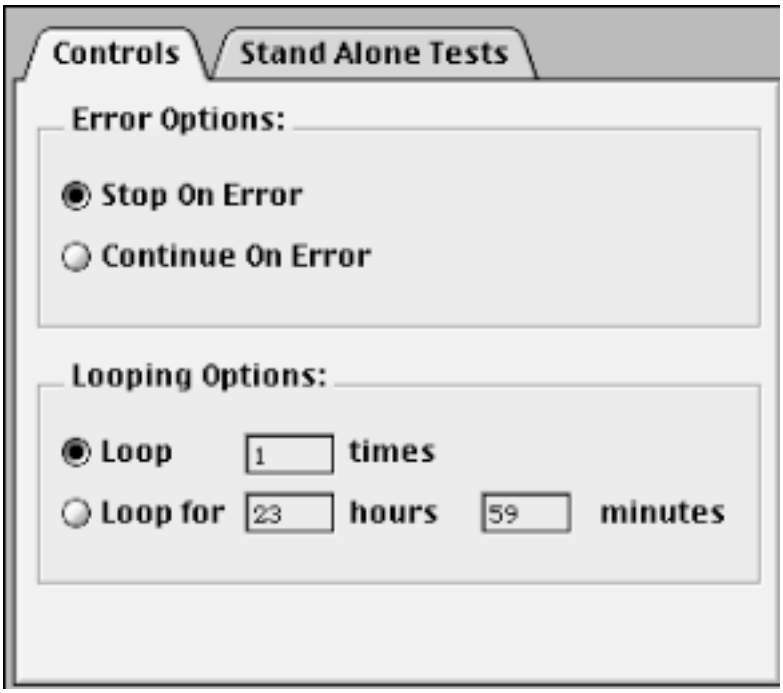


figure 6.

Test Selection Tab - Stand Alone Tests

The test selections panel (figure 17.) allows tests to be selected or deselected individually. Each test group listed has an associated disclosure triangle next to it. Clicking the disclosure triangle expands the listing to show the individual tests for a group. Clicking on the group check box will enable or disable tests for a group. If not all tests are selected for a group a - appears in the group check box. If all tests are deselected the group check box will be deselected also. To deselect a test click on its check box. Upon startup all available tests are selected as default. The "Select All" button selects all tests and groups. The "Deselect All" button deselects all tests and groups. Changes to the test selections are not saved when the machine is shut down or restarted.

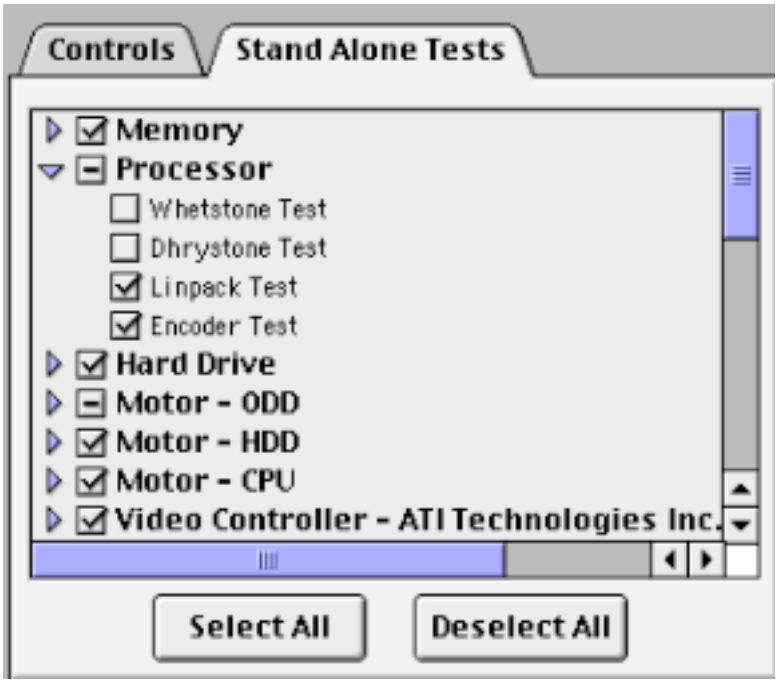
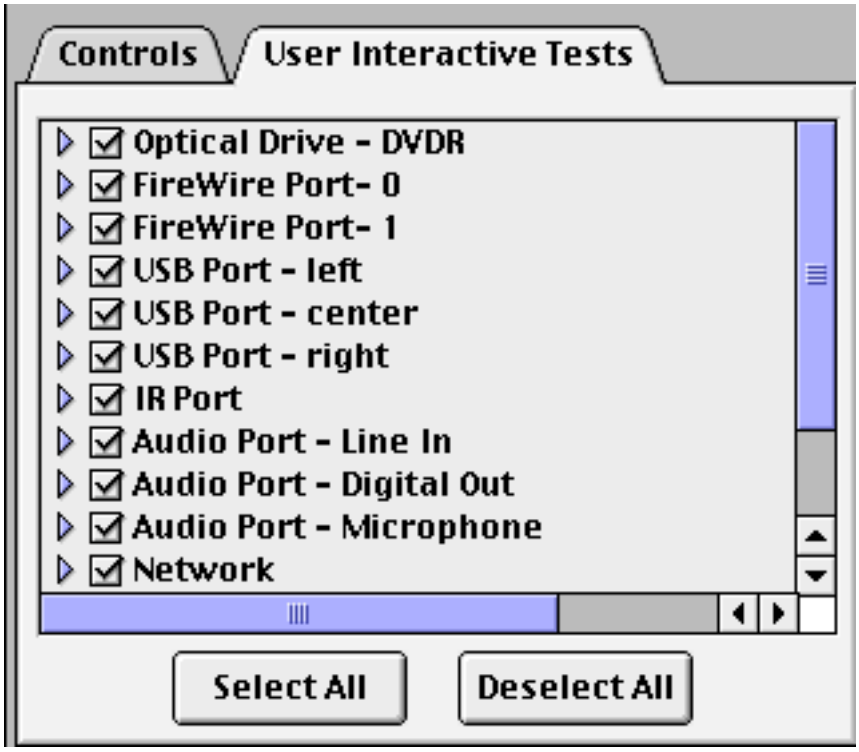


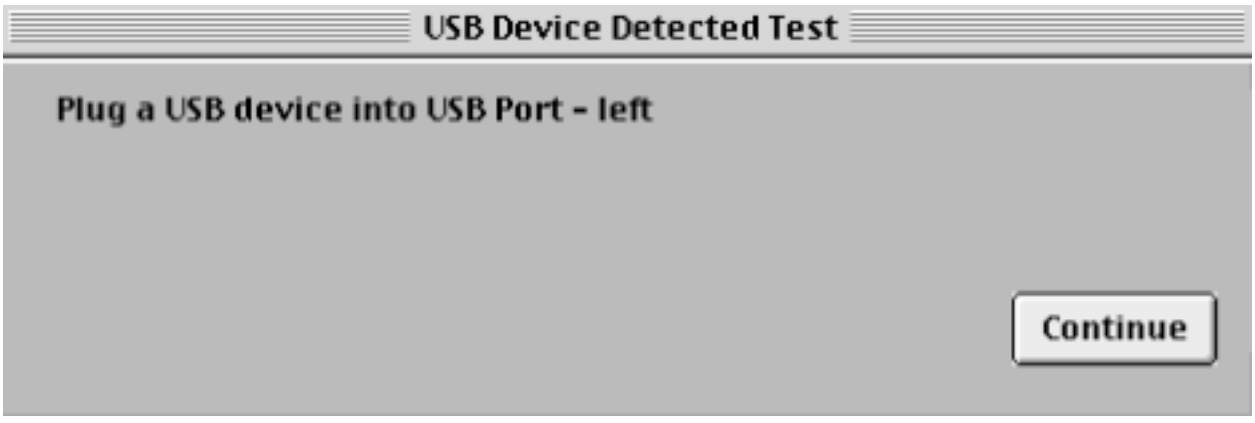
figure 7.

Test Selection Tab - User Interactive Tests

Test Mode allows the user to select either stand alone tests or user interaction tests. Stand alone tests do not require any additional setup before executing the test. User interaction tests require additional set up before running tests. A dialog will come up informing the user as to what that requirement is. For example, when running the USB Port test the following dialog is put up. Press Continue once the port has a device plugged into it and testing commences.

To show user interactive tests select User Interactive Tests from the Test Mode menu. These tests usually require additional hardware hookup and will display a dialog during testing as to what the test requirements are.





If Interactive Testing is active the looping fields on the Controls tab will be unavailable. User interactive testing doed not allow looping tests.

Test Operation

Test Status

After selecting tests press the Test button to commence testing. The test progress bar is displayed in the test state region (lower left). The total bar represents 100 percent of the selected test. If four tests are selected then the bar increments 1/4 of its length for each test completed

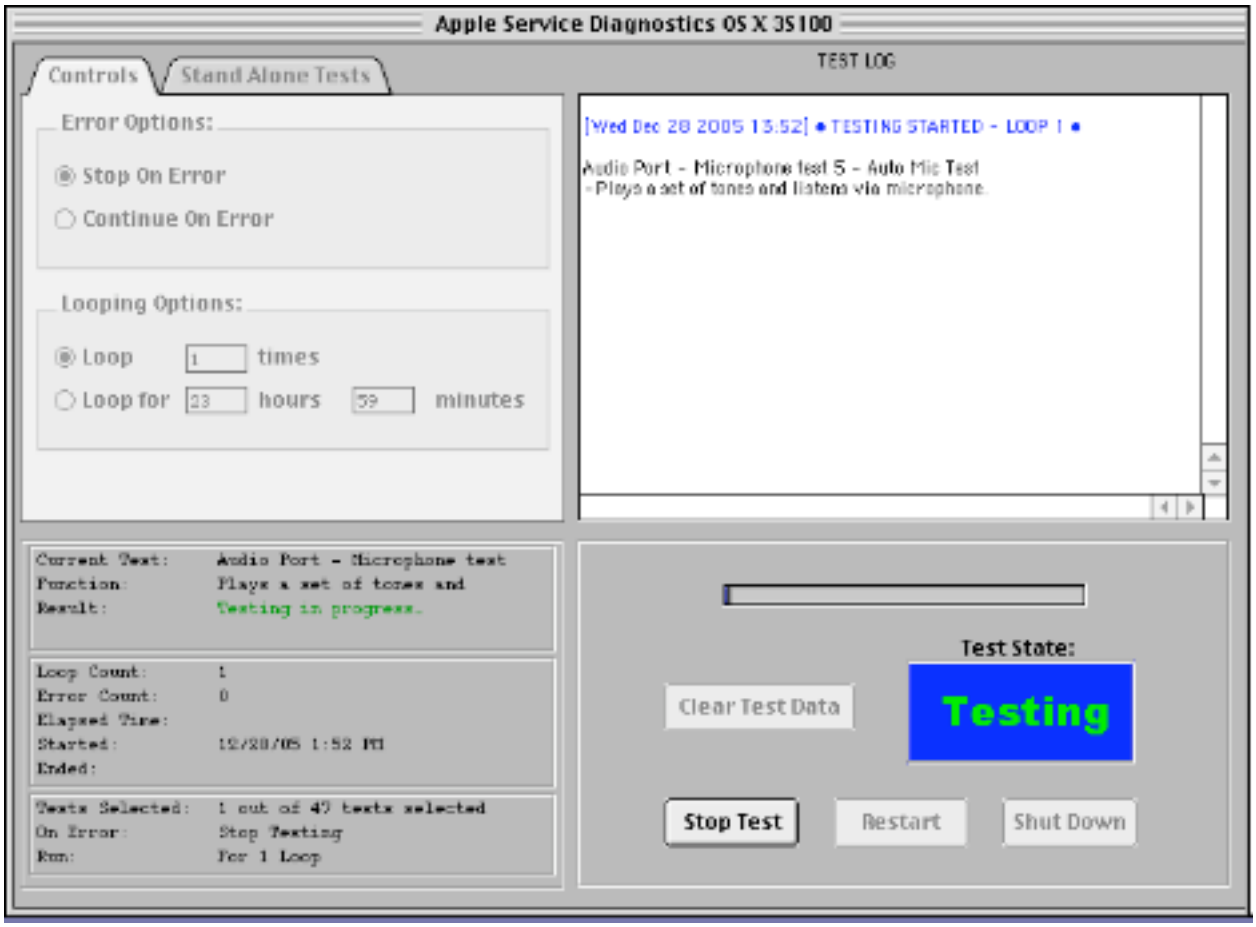


figure 8.

Test Log

During testing the test log window (figure 9.) will display current test information. Date, time, test name, test description, and test results when the test is finished.

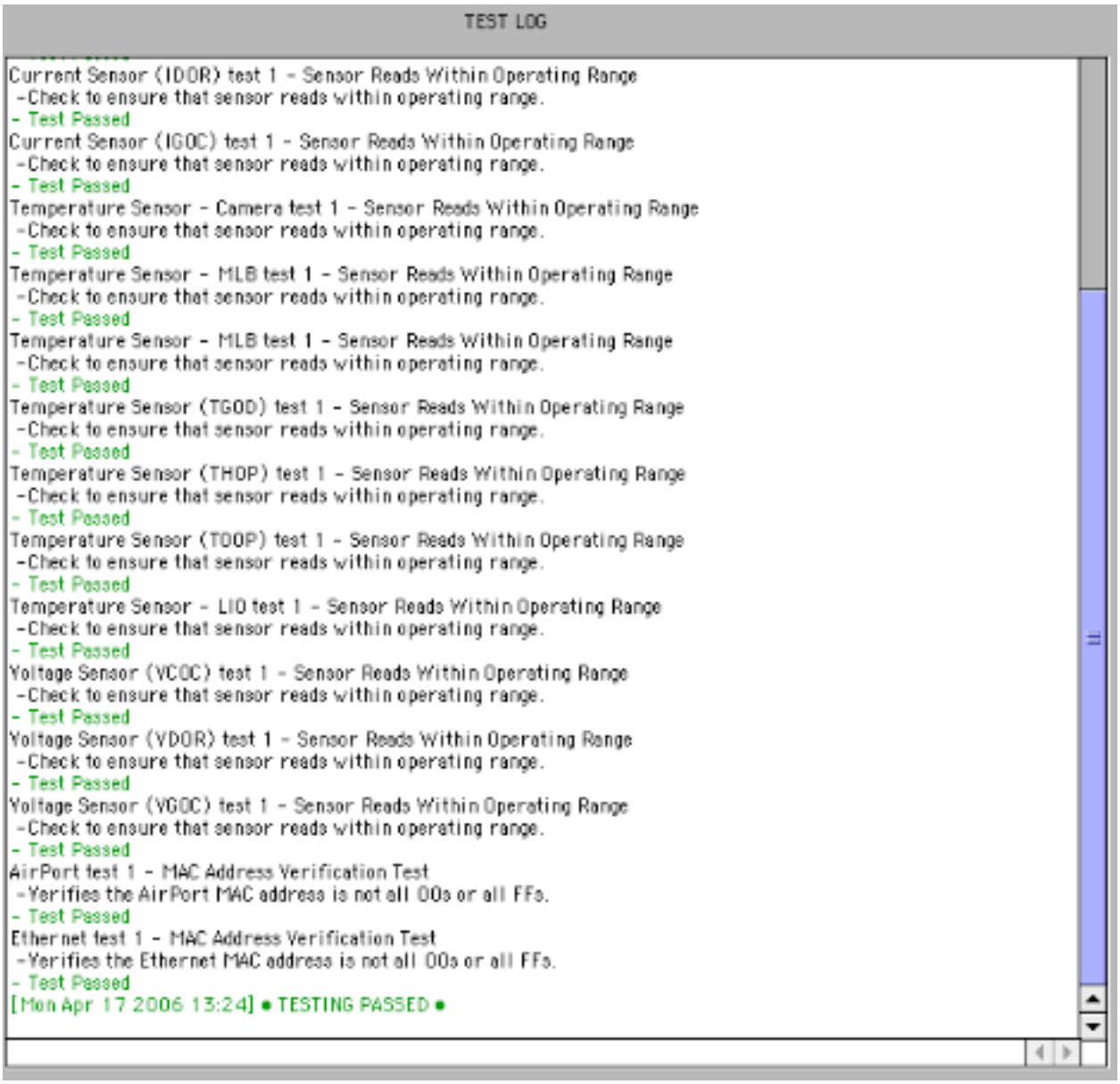


figure 9.

Test Status Region

In the test status region (figure 10.) all test activity is displayed. Current active test, Function or test description, test result. Loop count shows the current test loop. Error Count displays total errors in red. Started time and Stop time show date and time. Elapsed test time is updated avery few seconds during the test cycle and only shows time. The number of Tests selected shows how many tests are currently selected out of the total number available. On Error indicates what test mode, stop on error or continue on error, is selected. Run indicates which type of looping is set either X number of loops or for specified amount of time.

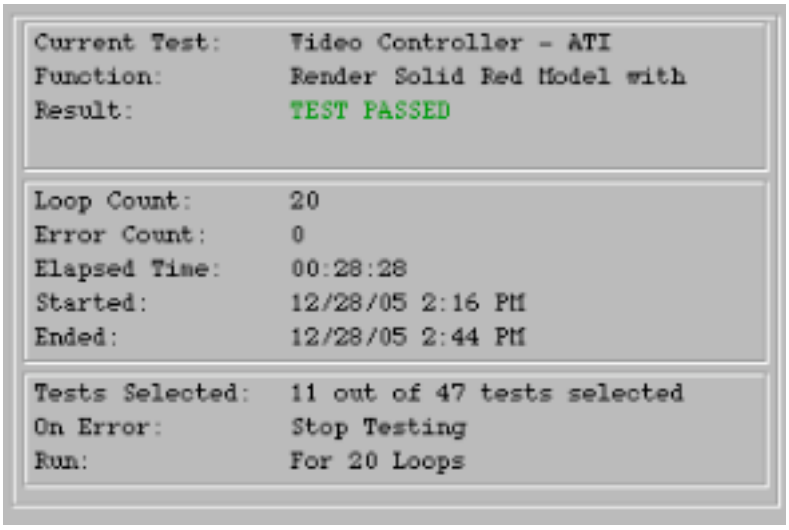


figure 10.

Testing Passed

If all tests passed the text "TESTING PASSED" is displayed in the test log window and the test state will be displayed in green and the status region will be updated.

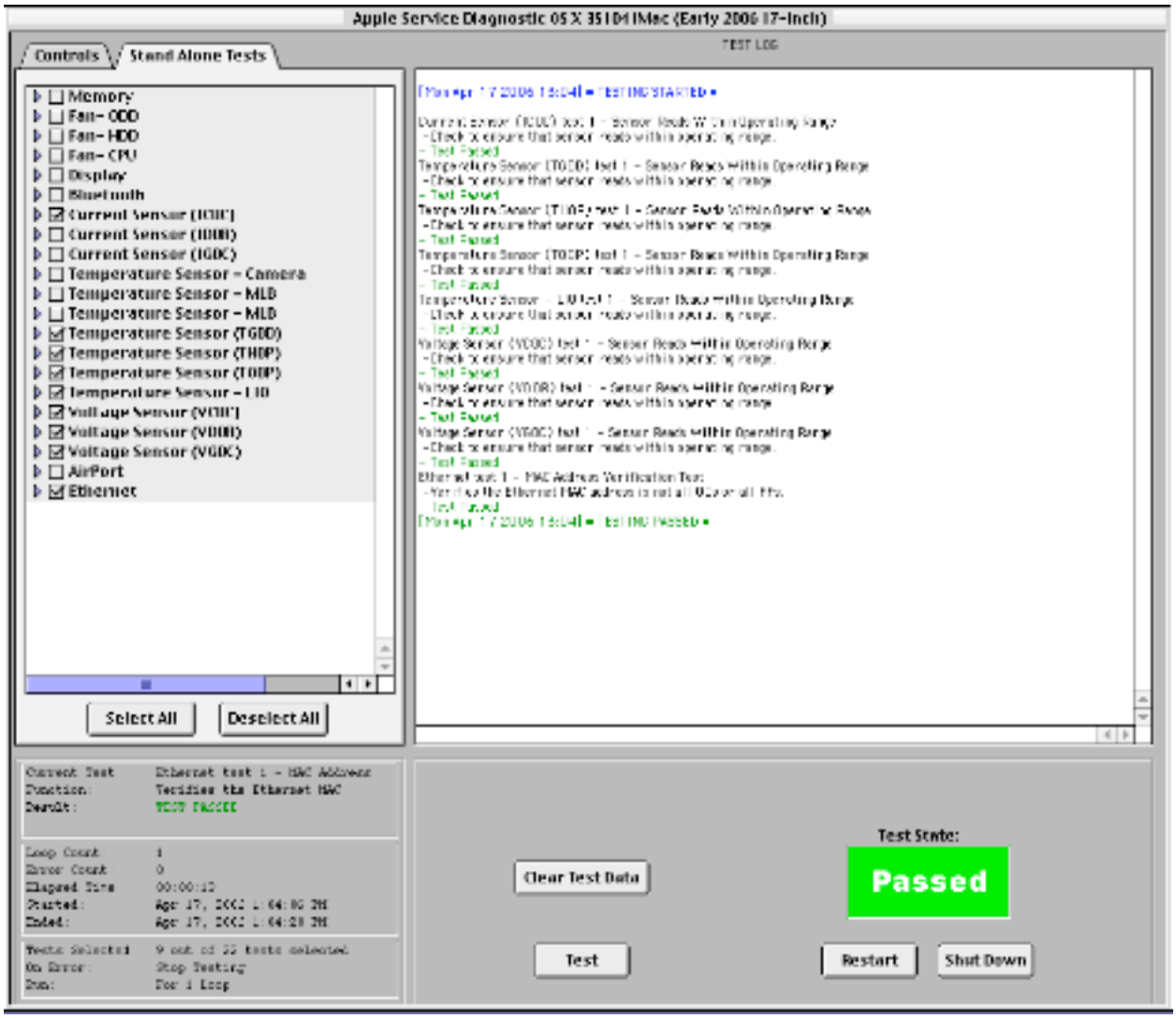


figure 11.

Testing Failed

If a test failure occurred during testing the text "TESTING FAILED" and Test State will be displayed in red and the status region will reflect the failed test results.

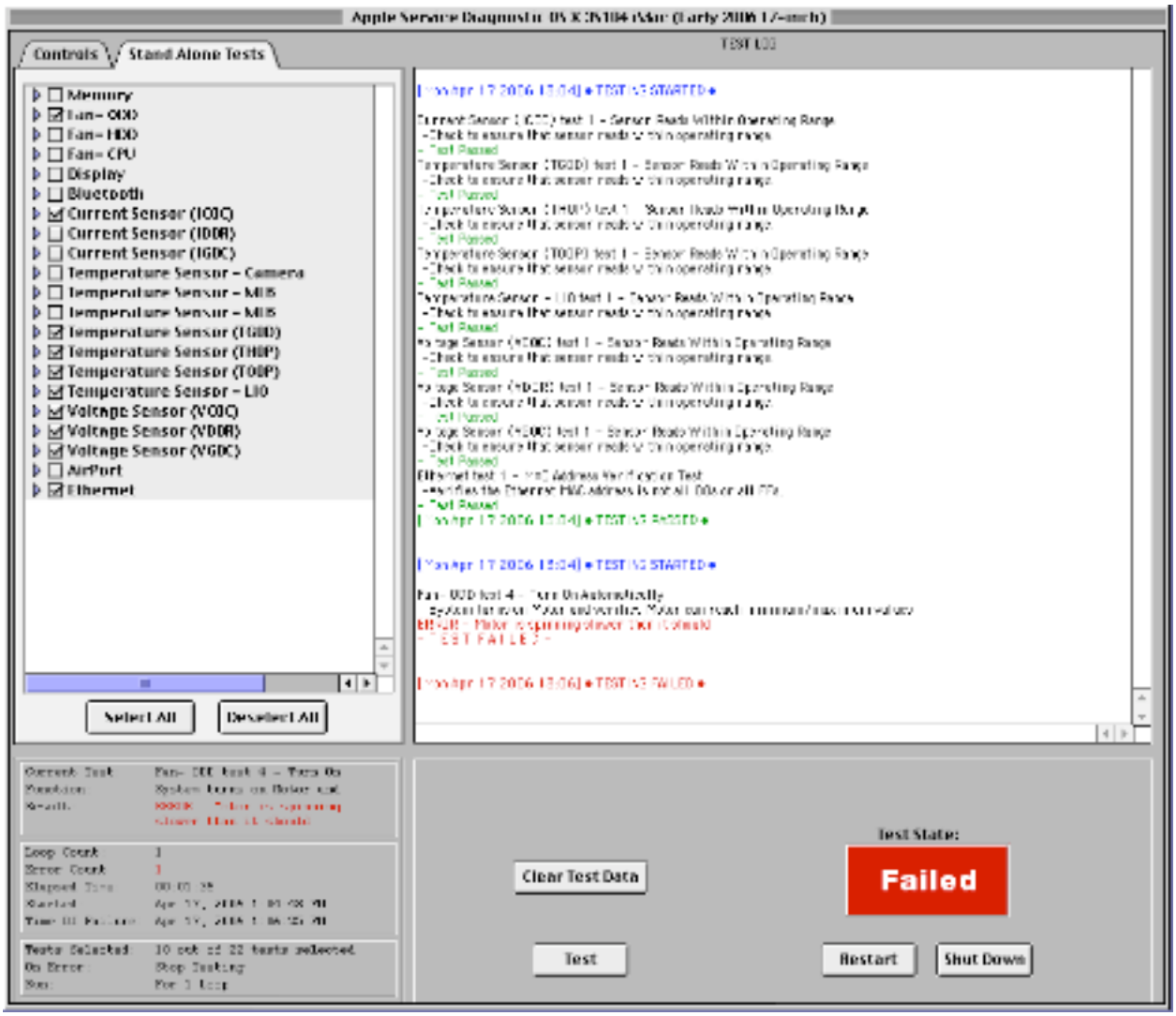


figure 12.

If the controls have been set to Continue On Error testing will continue until either the set loop count or time has expired. If the error was not with the last test run the status region will show a green Test Passed and Error Count in red. The Test State will also indicate a failure occurred during testing (figure 13.). To determine what component failed scroll back through the test log to find the red test error text.

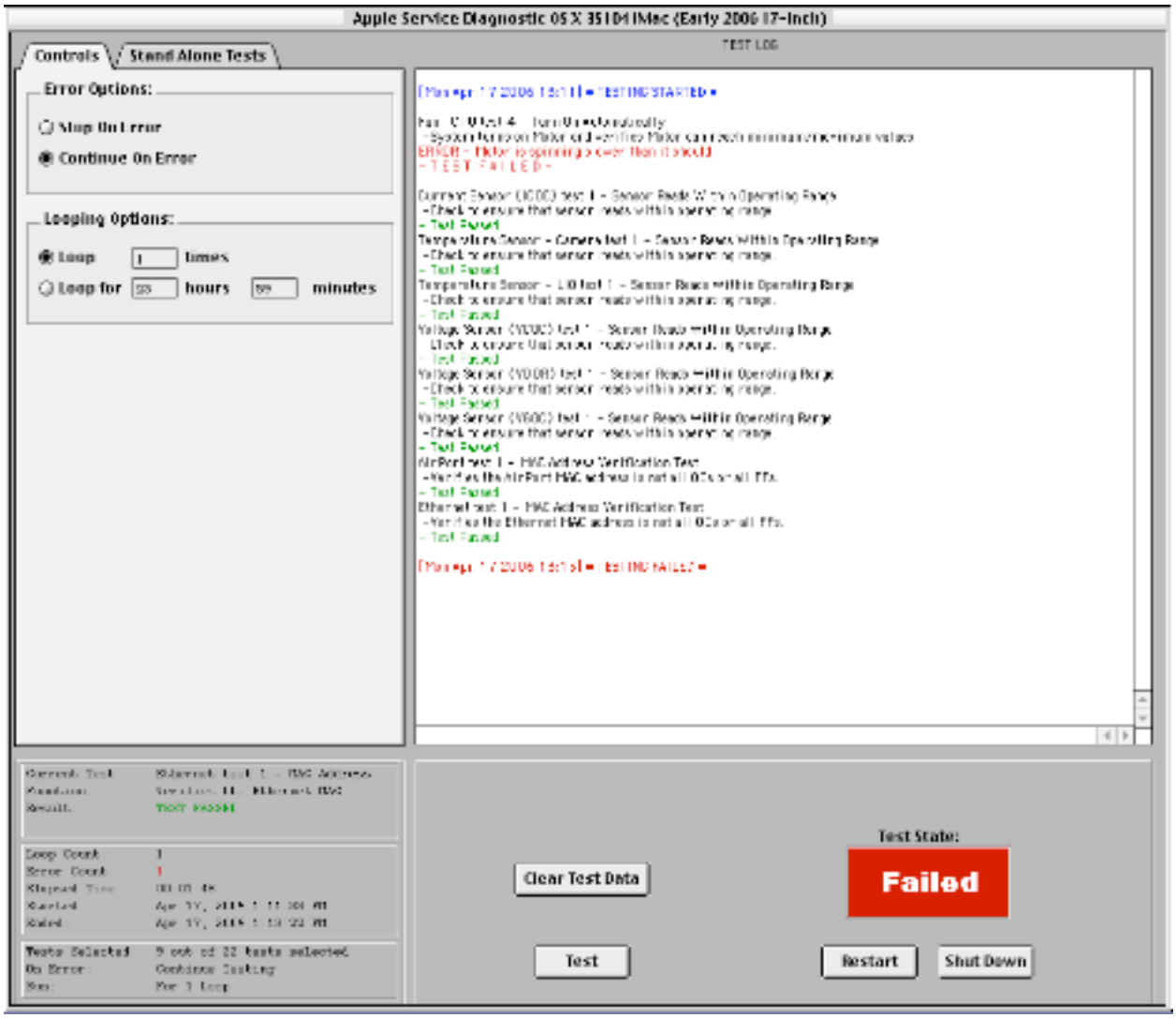


figure 13.

Testing Stopped

If the user stopped testing by either pressing the Stop Test button or control . (period) keys the text "TESTING STOPPED" will be displayed in blue in the test log window, status region and the Test State: STOPPED will be displayed in blue (figure 14.). Testing will stop once the current test has completed.

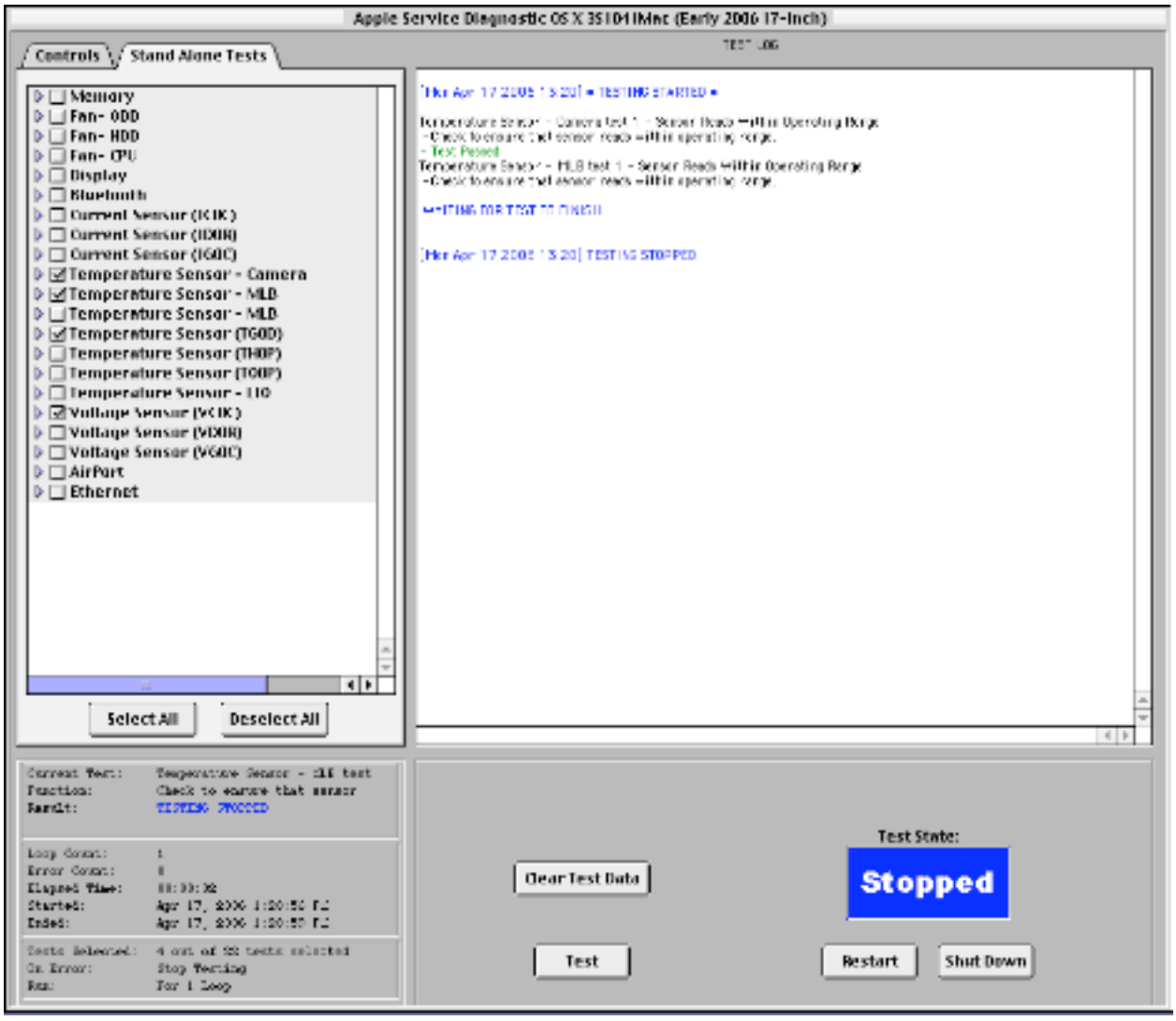


figure 14.

User Controls and Progress Bar

To start testing press the Test button or control . (period) keys. A progress bar appears when tests are running indicating the percentage of all selected tests that have been completed, 0 to 100%, and the test button changes from Test to Stop Test. When testing has finished the progress bar disappears and the Stop Test button changes back to Test. You may stop testing by pressing the Stop Test button or control . (period) keys. Some tests are not as responsive to the Stop request as others.

The Test State area (figure 15.) gives the user a quick visual evaluation of the current state of Apple Service Diagnostic. The text in this area can contain one of five different states: Idle, Testing, Passed, Failed, and Stopped. Idle is dark gray, Testing is blue and green, Passed is green, Failed is red, and Stopped is blue. Restart and Shut Down buttons are dimmed during testing. Restart will restart the CPU and boot into its boot volume. Shut Down will eject the DVD before shutting down.

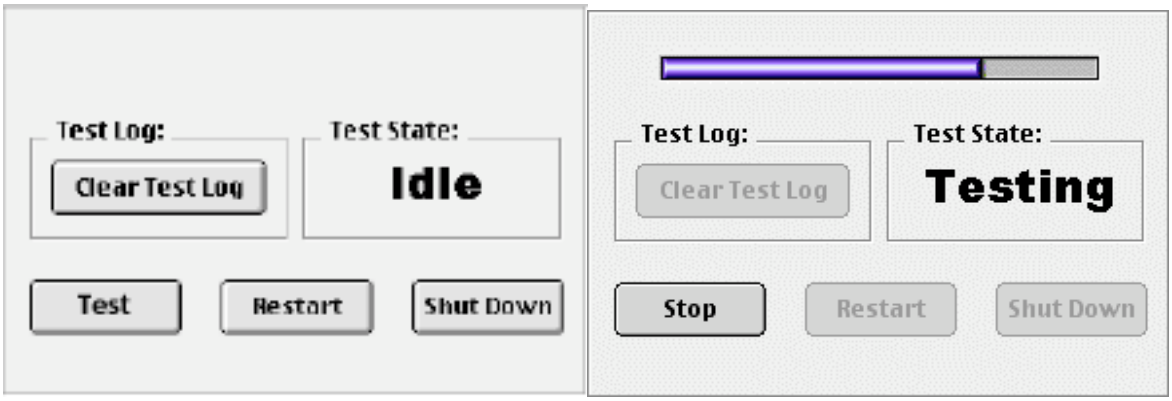


figure 15.

Key Commands

Press the control . (period) keys or Test button to start testing. Once the tests have started, the Test button label switches to Stop Test. Click the Stop Test button or press control . (period) keys to stop testing. When testing is stopped or after all testing has completed, the button label will toggle from Stop Test back to Test.