QuickTest

High Voltage Test Automation Software

944i V4 948i 930i
GPIB/RS-232
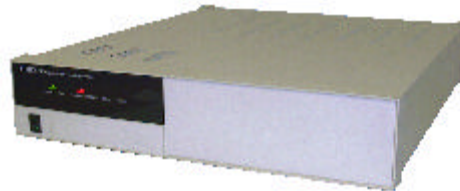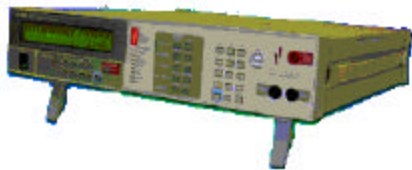
Operating Manual & User Guide
Version 3.0

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Chapter 1 - Introduction

This chapter describes installation and lists the main features of the QT-1 Software. It also explains the execution model and the three operating levels of the software.

Installation

The following section tells you how to install the Software on the Windows platform.

The QT-1 Software comes in compressed form on floppy disk. Installing it requires approximately 5 MB of space on your hard drive.

The QT-1 Software is used with a National Instruments GPIB Interface. The Interface and the 488.2M Software Driver must be installed prior to use.

Windows 95/98/ME & Win2000/NT

Insert the CDROM into CD reader or disk one of the QuickTest Software into the 3.5-inch disk drive and run the `setup.exe` program using one of the following methods:

Using the CD reader, the set up program should start automatically when the tray is recessed.

Under Windows 9X or NT, launch the Windows Explorer. Click on the icon of the drive that contains the installation disk. Find `setup.exe` in the list of files on that disk and double-click on it to begin installation.

Under Windows 9X, choose **Run…** from the **Start** pop-up menu. In the dialog box that appears, type `X:\setup` (where `X` is the name of the drive that contains the installation disk). Click on OK to begin installation.

After you begin installation, follow the instructions that appear on the screen. If the program has previously been installed the installation program will run the un-install program first.

Product Overview

The QuickTest Software creates an automated test system. This toolkit includes a complete Test Executive that can perform many standard test operations.

The Test Executive runs test programs using pre-programmed C functions and implements the following features:

- Test sequencing based on pass/fail status, preconditions, and goto commands
- Logging of test results to ASCII file or database
- Run-time interfacing, including prompts for operator and Unit Under Test (UUT) serial number, Pass, and Fail banners, and run-time error notification
- Halting and looping on individual test failure
- Testing continuously in UUT mode
- Three operating levels (operator, technician, developer)

Execution Model

The Test Executive can execute a sequence in one of three ways – UUT Test, Single Pass, or Single Test. The UUT Test, invoked when the operator clicks on the **Test UUT** button, executes a test sequence repetitively. Each test cycle includes a UUT serial number prompt and Pass, Fail, and Abort banners to notify the operator of the test result for the current UUT. UUT Test mode is the production-operating mode for testing multiple UUTs.

You use Single Pass mode sometimes for diagnostic purposes. In Single Pass mode, the test sequence executes only once, and the Test Executive does not prompt you for the UUT serial number or with the Pass, Fail, and Abort banner display. The following illustration shows the overall flow of execution in UUT Test and Single Pass operation.
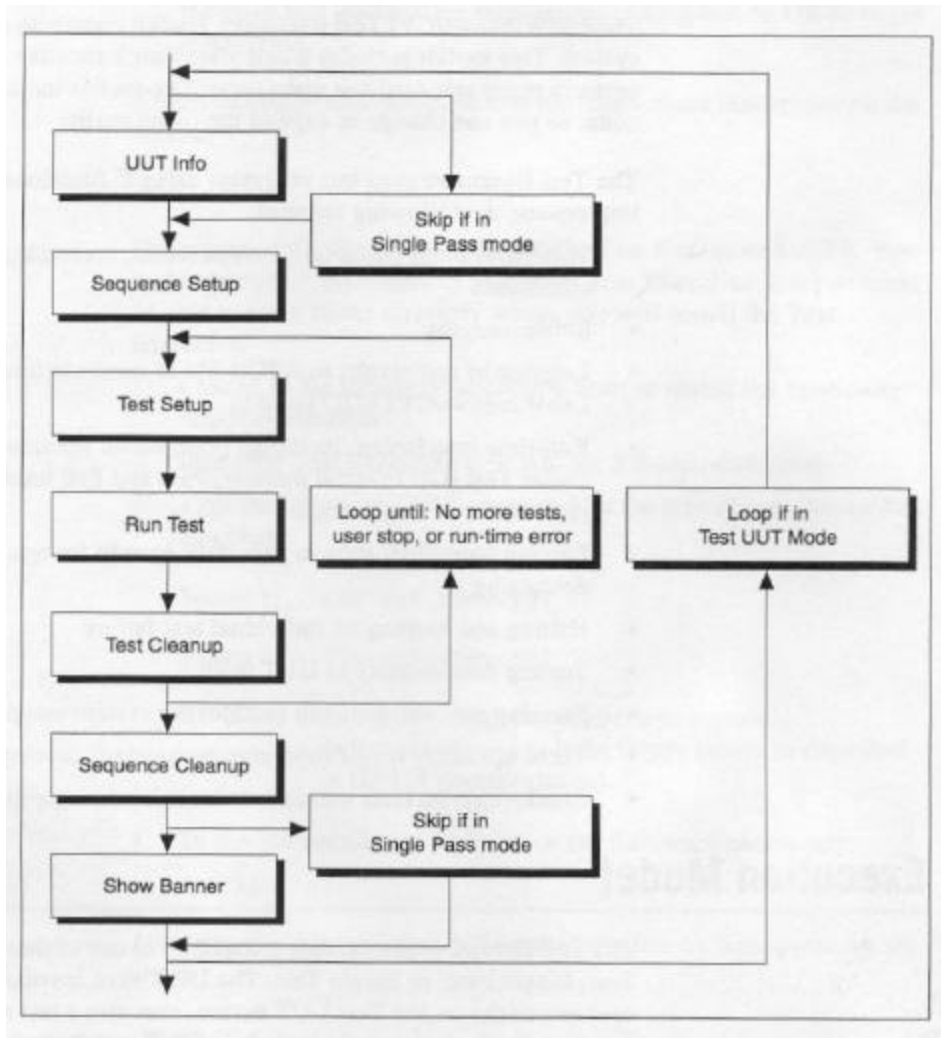
Figure 1-1. Flowchart for UUT Test and Single Pass Operation

In Addition to UUT Test and Single Pass operation, you can choose Single Test
mode to run an individual test. You should use Single Test mode primarily for
diagnostic purposes.

Operating Levels

The Test Executive has three operating levels (Operator, Technician, and
Developer). The following table summarizes the capabilities of each operating
level.

Table 1-1. Test Executive Operating Levels

Level	UUT Test	Debug Sequences/Tests	Edit Sequences
Developer	Yes	Yes	Yes
Technician	Yes	Yes	No
Operator	Yes	Yes	No

At the Developer level, you can access all capabilities of the Test Executive.

At the Technician level you can execute tests to diagnose a UUT. You can run individual sequences and test, but you cannot edit sequences.

At the Operator level you only can execute test sequences in UUT Test mode by clicking on the Test UUT button.

You set the operating level in the Login dialog box, which you access through the File menu. You can change the operator level at any time while the Test Executive is running. The operator level and default passwords appear in Table 1-2.

Table 1-2. Default Login Names and Passwords

Operator Level	Password
Developer	Developer
Technician	Technician
Operator	Operator

Chapter 2 - Getting Started

This chapter introduces the basic concepts of test executive operation and test sequence development, using the examples described in the following table.

Table 2-1. Examples for Operation of a Test Executive

Example	Relevant to Users Who…
Operating a test sequence	Operate the Test Executive
Editing the test sequence	Create test sequences

Operating a Test Sequence

Starting the Test Executive

Perform the following steps to start the Test Executive.

1.   Launch the Test Executive.

2.   Enter your name and password as shown in Figure 2-1. The password you provide determines the operating level of the Test Executive. For this example you work at the Operator level, so type operator in the Login Name and Password fields.
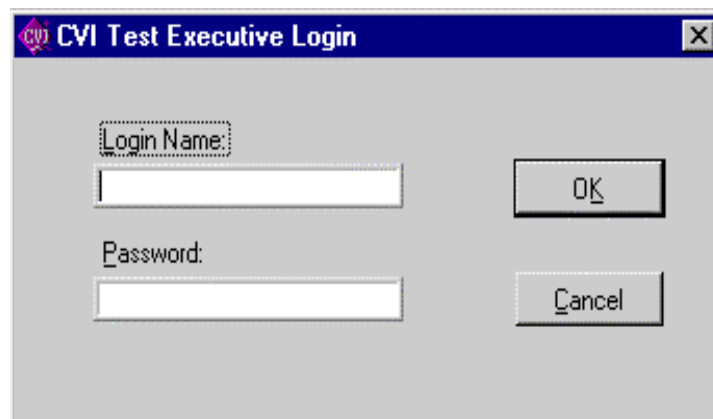
Figure 2-1. Login Dialog Box

Note: *You can access the Operator level by typing any text in the Password field. However, you must type* technician *to access the Technician level and* developer *to access the Developer level.*

5.   Click on OK to confirm you entries.

On the Test Executive front panel, notice the word Stopped that appears next to the large LED. This LED indicates status and the word Stopped indicates that no test sequence is currently running. Figure 2-2 shows the Test Executive front panel.
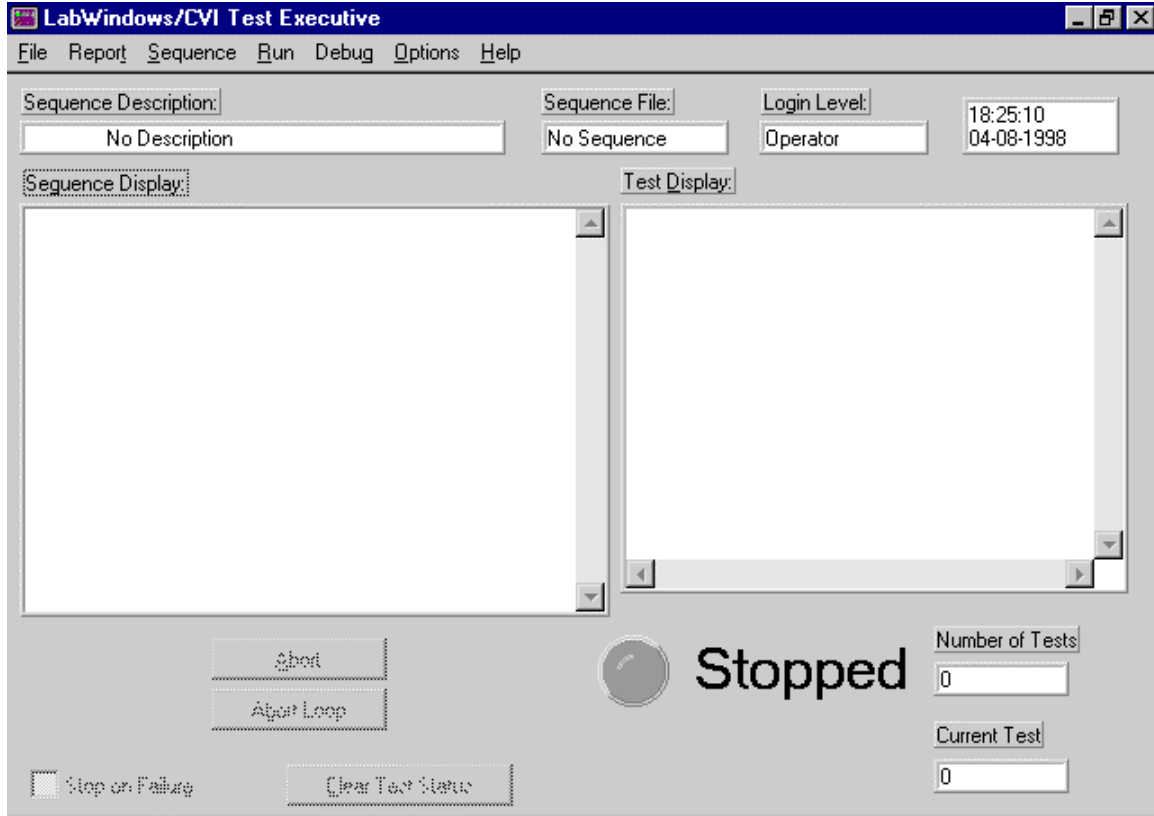
Figure 2-2. Test Executive Front Panel in Stopped Mode

Running a Test Sequence

Perform the following steps to run a test sequence.

1.   Select **Open…** from the **File** menu of Test Executive front panel.

2.   Select the file `demo.squ` from the `Vitrek` directory.

When you load `demo.squ` notice that the steps of the test sequence appear in the Sequence Display. The name of the test sequence appears in the Sequence File indicator.

3.   Click on the **Test UUT** button located beneath the Sequence Display to execute the sequence. The Test Executive prompts you for the serial number of the UUT.

4.   Type 123 in the input box and click on the **OK** button. The sequence executes.

As the sequence executes, notice the following events on your screen.

The Status indicator displays the work Running and the LED flashes.

As each test runs, the word Running appears next to the name of the active test in the Sequence Display.

After each test runs, the Pass, Fail, or Skip status of the test appears next to the name of the test in the Sequence Display, and the test result appears in the Test Display.

When the sequence execution completes, a banner appears indicating whether the UUT passed or failed, or whether the user aborted the sequence.

Click on **OK** in the completion banner, and enter another serial number when the UUT Information dialog box appears. The Test Executive continues to prompt you for another UUT serial number until you click on **Stop** in the UUT Information dialog box.

To view the test report after execution completes, choose **View** from the **Report** menu.

The test Report includes the name and description of the sequence, the date and time that testing began, the operator's name, and the results of testing for each UUT. When you set this test sequence to generate a test report file, the system automatically writes the test report to the file each time the sequence executes.

Changing to Technician Level

Perform the following steps to change from Operator to Technician level and to see the more flexible execution capabilities at the Technician level.

Select **Login…** from the **File** menu.

In the login dialog box, type the word technician in the Password field and click on **OK**. The **Single Pass**, **Run Tests**, and **Loop on Tests** button appear in the lower left corner of the Test Executive front panel.

If you do not see these buttons, select **Login…** from the **File** menu again and carefully type the word technician in the Password field again.

How to Run Single Tests and Use Single Pass Mode

To run a single test, click on the name of the desired test and then the **Run Tests** button. Notice that only the selected test runs. Single Test execution runs a subset of tests that that you select for diagnosis and troubleshooting. The test status appears next to the test name in the Sequence Display. You can also execute a test repeatedly by clicking on the **Loop on Tests** button. You can also use **Run Tests** to run multiple tests in the sequence. Place a checkmark beside the tests you want to run and click on **Run Tests**.

Now click on the **Single Pass** button. Clicking on this button runs the entire test sequence one time without the UUT prompts and banners. Notice that the sequence stops after it executes one time. When you select **View** from the **Report** menu, the Test Executive displays the updated Test Report.

Exiting the Test Executive

Select **Exit** from the **File** menu to dismiss the front panel of the Test Executive.

Creating and Editing a Test Sequence

The following steps show you how to set up and edit a test sequence.

Launch the Test Executive.

Enter developer in the Password field of the Login dialog box that appears and click on **OK**.

Click on the **New** menu item from the **File** menu to create a new empty sequence.

Select **Edit Sequence…** from the **Sequence** menu to invoke the Sequence Editor. Notice that the list box at the top of the Sequence Editor dialog box is empty. This list box will show all the tests that you define for a test sequence. You use the Sequence Editor to input all of the specifications that define a test sequence.

Click on **New Test**. The test attributes controls appear below the test list box, as shown in Figure 2-3.

There are two types of test functions in the Vitrek QuickTest package. The first is an edit type and the second is an executable type. The Input Buffer is actually the file name of the parameters file the edit file saves and the executable uses. Once the edit function is executed, the parameters configuration file is written

and can be used repeatedly by the executable version of the test function. The developer can execute the edit functions and specify the parameters one time and the user can run the executable sequences without changing parameters. In the example below the edit version of the 944i Configuration Command "CNFG" is shown. The edit version of the function starts with 'E' in gpib_tests.obj. A complete list of the functions and their explanations is available in the QUICKTEST FUNCTIONS document located on the distribution CDROM disk. In the example below the sequence file is loaded from the example sequence provided. The file name is V4_UTIL.squ and the login level is developer.
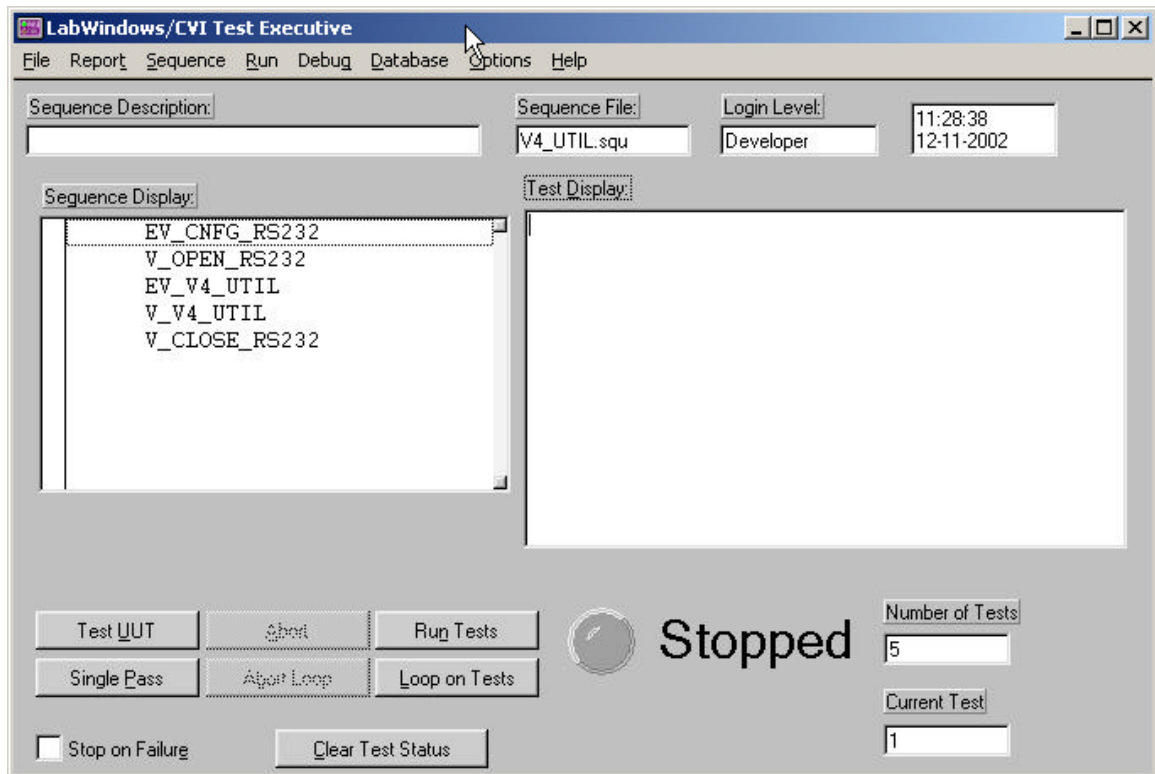
Figure 2-3. Test Sequence Panel

This test is a V4 test that uses RS-232 and configures the utility options for the V4. The sequences configure the port, open it, edit the utility parameters, executed the utility function, and close the port. The functions that begin with 'E' are edit functions and require user interaction, but only in developer mode (Login Level above). Under the Sequence pull down menu select Edit Sequence and the following panel is displayed.
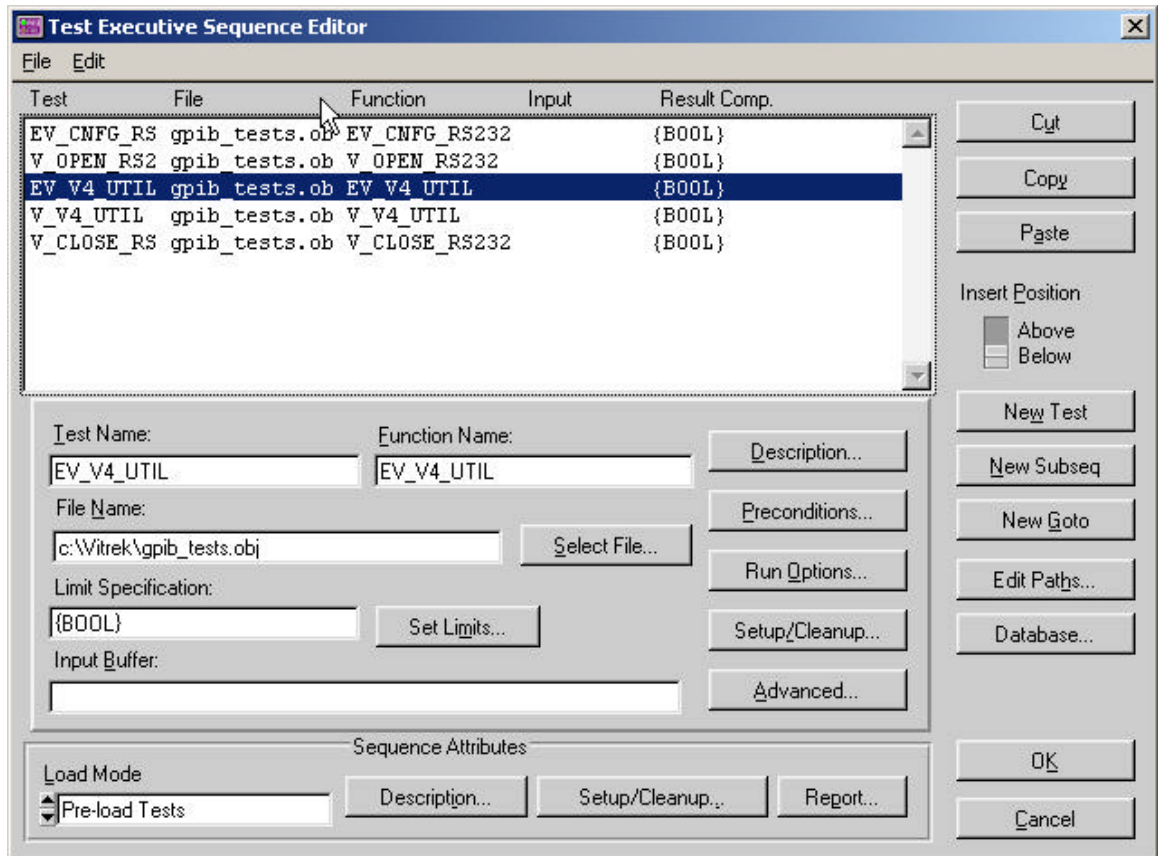
Figure 2-4.   Test Attributes Child Panel

Highlight the subsequence named EV_V4_UTIL. In the control labeled Test Name a name is given. This can be any name and is what is displayed in the main executive window.

In this example, the 'C' function is EV_V4_UTIL(void) and is specified under the Function Name control. The file name where the function resides is always gpib_tests.obj and must be located in the C:\Vitrek directory on the local machine.

If the Input Buffer control is left blank, the edit function creates a configuration file called DEFAULT.CFE and the executable, provided the Input Buffer is blank will use this parameters file.

The next function in series is the executable version and it is shown below with its appropriate 'C' function, V_V4_UTIL();.
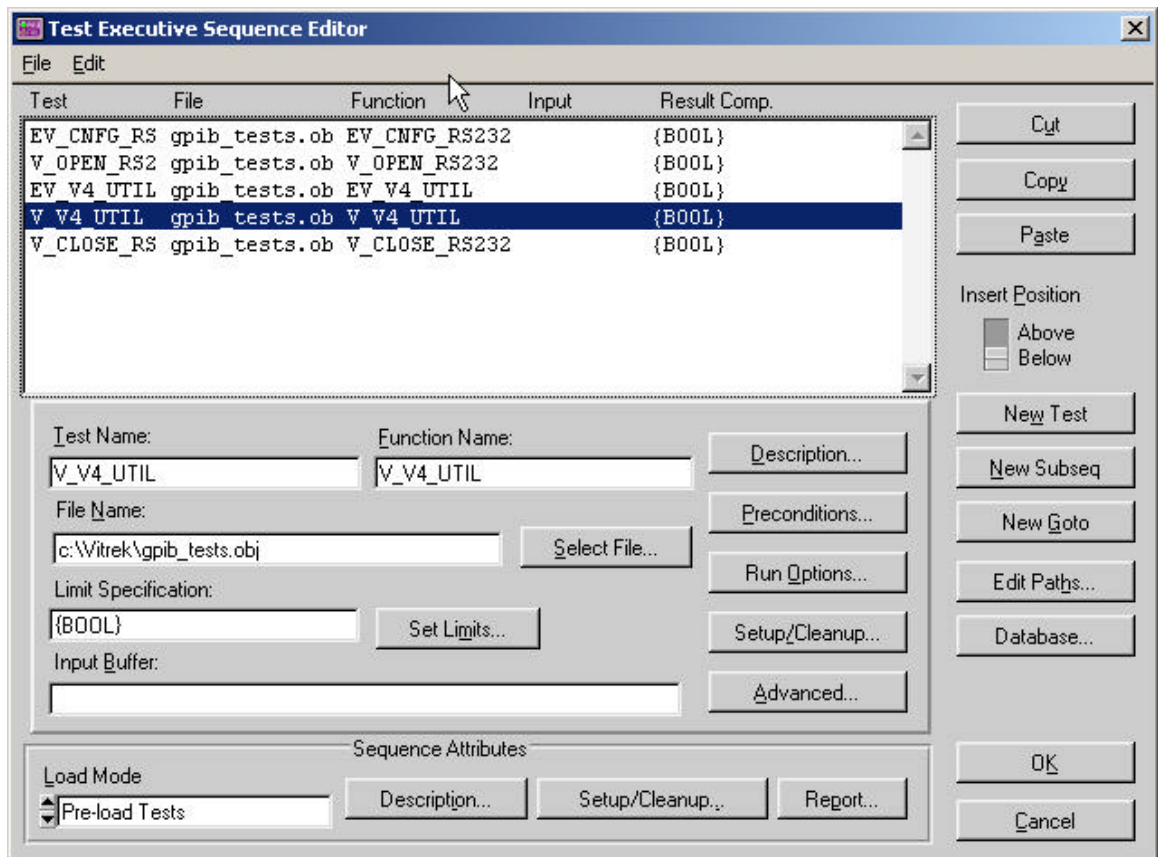
Figure 2-5. Test Sequence Panel

When this example sequence executes (press Test UUT) , the following pop up window appears as a result of executing the EV_V4_UTIL function. Notice the Configuration File name is DEFAULT.CFE.
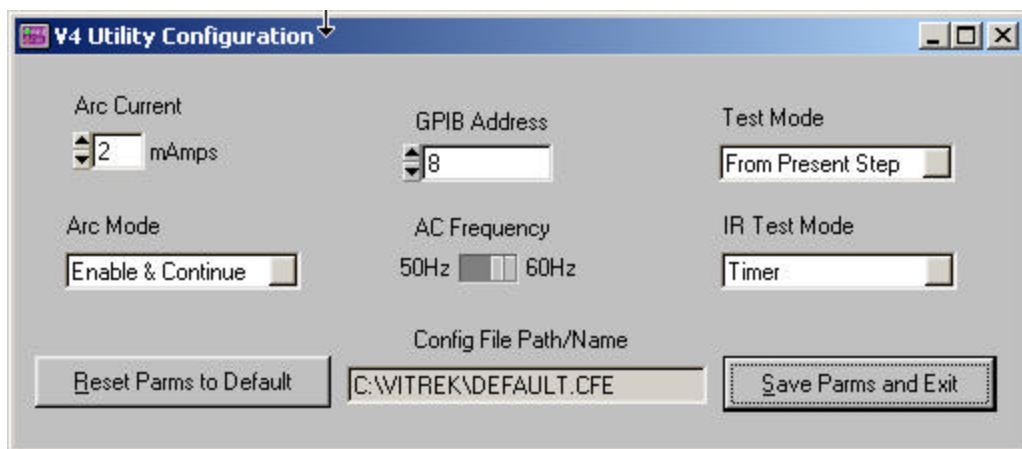
Figure 2-6. Edit Test Sequence Panel with Default file name

No user interaction is required to run the executable version.
If the Input Buffer control specification was UTILCNFG the window would
appear as below.
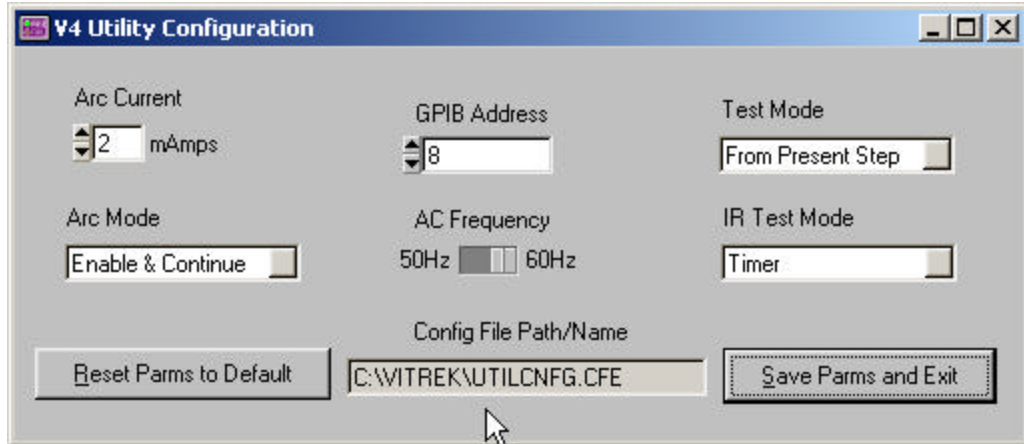
Figure 2-7. Edit Test Sequence Panel with Input Buffer File name

Note that the filename must be in DOS filename type format, 8 characters, no
spaces, underscores are legal. The extension is always provided by the function.
The pathname defaults to C:\Vitrek but may be changed to accommodate
network storage of the configuration files using QTPATH.TXT.

Locations of Test Sequences and Configuration Files

Test Sequence files can be stored on a network so many production type
computer stations can access and execute the same test files. Configuration files
are the parameter files created by the edit test. These read only files can also be
store on any network path by editing the QTPATH.TXT file. This file must be in
the C:\VITREK\ local directory and is written in the following format.

1, \\NETWORKSEVER1\SOMEDIR\SOMESUB\;

The first character can be a 1 or 0 (zero). This is the USE PATH field and if it is
a 1 the path is used to find the configuration files. A zero indicates the
configuration files are located in the C:\VITREK\ directory. The pathname must
end with a semi-colon to be valid.

Configuration files have the extensions:

V944CNFG   {".CF1"}

V944LOOHM	{".CF2"}
V944LOOHM930	{".CF3"}
V944VAC	{".C10"}
V944VDC	{".C11"}
V944MEGOHM	{".CF4"}
V944_RSLT	{".CF5"}
V948MUX	{".CF8"}
V948POL	{".CF9"}
V4_ACW	{".CFA"}
V4_IRS	{".CFB"}
V4_GBON	{".CFC"}
V4_DCW	{".CFD"}
V4_UTIL	{".CFE"}
RS232	{".CFF"}

Passing or Failing the Sequence

You must give the Test Executive a limit specification that defines whether a test passes or fails. The Test Executive refers to the test structure of the test function and applies the limit you specify in the Sequence Editor to each test. The test structure contains both a Boolean flag and a numeric measurement.

Click on the **Set Limits…** button to view the Set Limits for Test dialog box. Scroll through the comparison Type ring control to see the available types of checking. If you choose a numeric comparison, you must also enter the numeric limits for the comparison, you must also enter the numeric limits for the comparison. For this example, set Comparison Type to BOOL. Your Set Limit Specification dialog box should match the settings in Set Limit Specification dialog box should match the settings in Figure 2-4.

Note: *All tests in the QT944 Software use the Comparison Type of BOOL.*
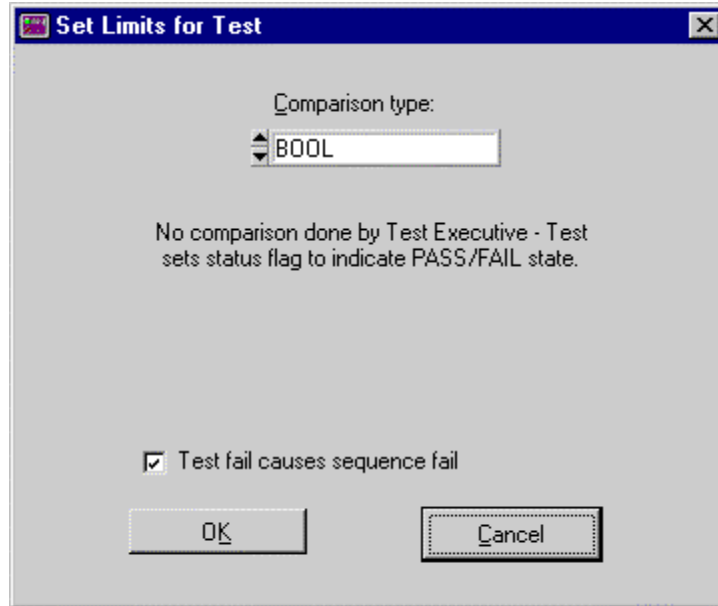
Figure 2-8. Set Limits for Test Dialog Box

When you set Comparison Type to BOOL the Test Executive uses the result flag in the test structure to determine whether the test passed or failed.

Click on OK. The Limit Specification control now contains the text (BOOL). Your completed test sequence should match the Sequence Editor list box shown in Figure 2-5.
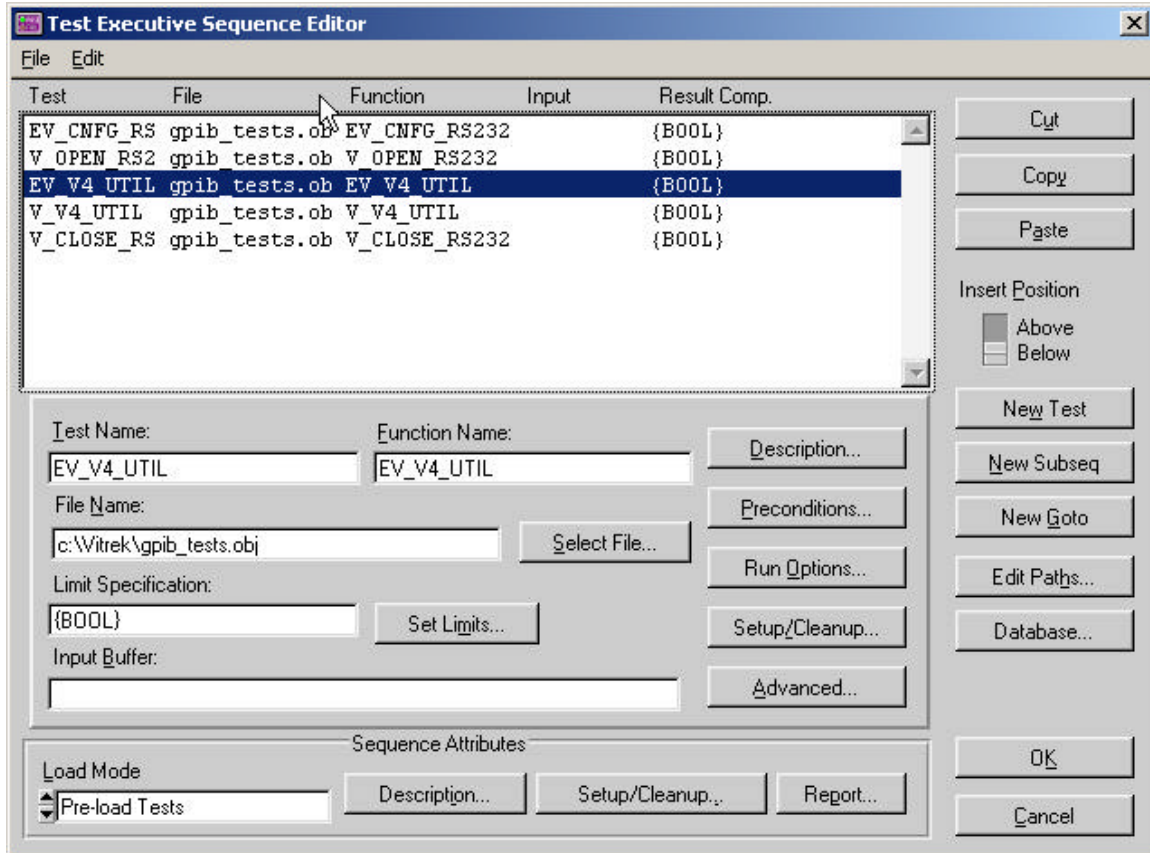
Figure 2-9. A Completed Test Sequence Setup

Before you save your new test sequence, you may need to set preconditions and related attributes, as described in the following sections. Remember that you can edit any test in the Sequence Editor by clicking on the test you want to modify in the Sequence Editor list box. The specifications of the test appear in the Test Executive Attributes controls located below the list box. As you make changes in the controls, the list box displays you modifications.

Note: To enter attributes for a new test you must click on the New Test button.

Setting Preconditions

In the following steps you set up a dependency between the two tests in the sequence you created in the previous section. This is an optional process and depends upon how you structure your test sequences.

Click on the Test Preconditions button. The Precondition Editor window appears.
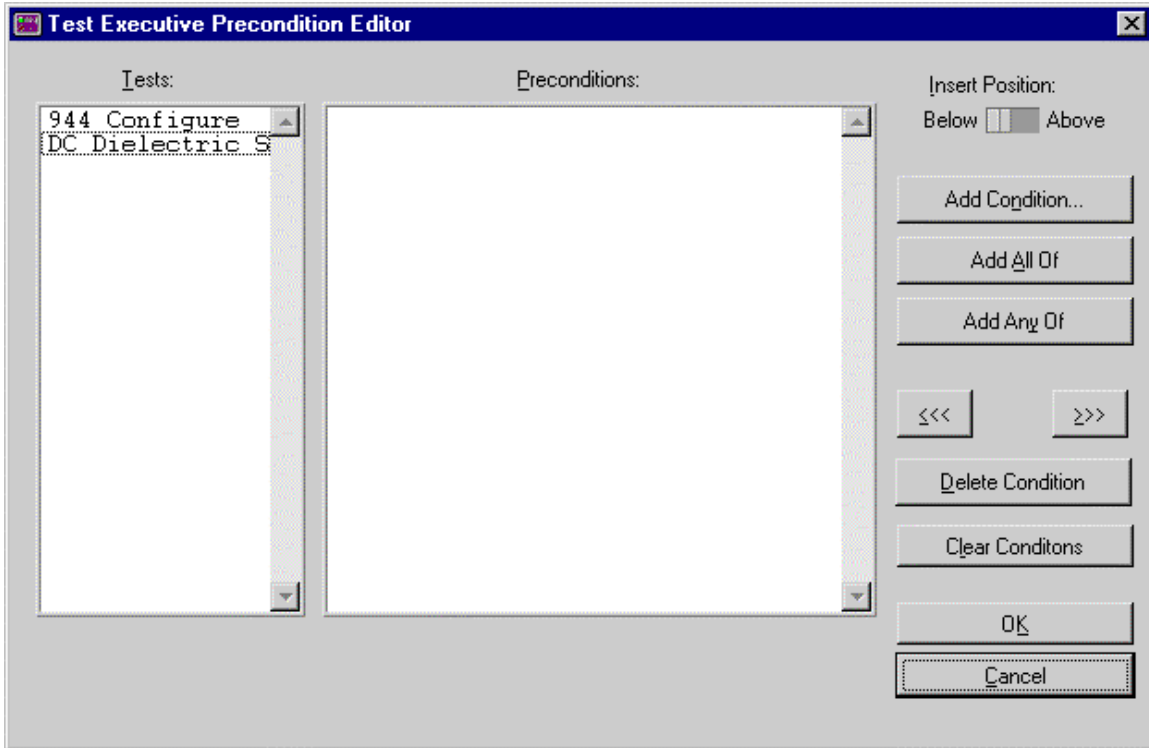
Figure 2-10. Precondition Editor

Click on Random-Numeric in the Tests list box. Then clock on Add Condition…

In the Add Condition dialog box that appears, set up the following dependency for Vdc: that Cnfg must pass before Vdc can execute:

Set the Type switch to PASS and click on 944 Configure in the Tests list box. A checkmark appears beside the test name. Your setting should match those in Figure 2-7.
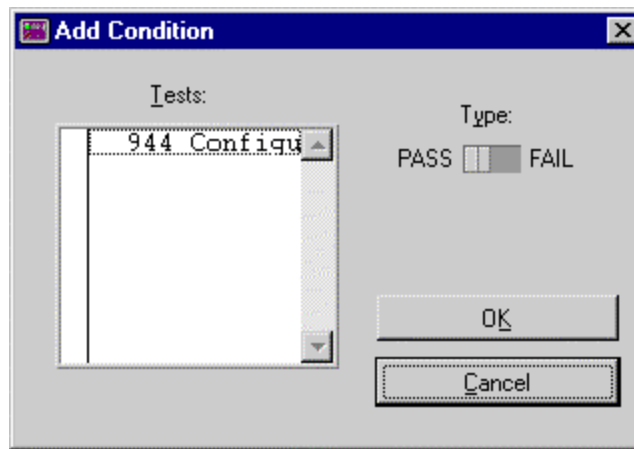
Figure 2-11. Using Add Condition to Set Preconditions

Click on **OK**.

The Preconditions list box now shows PASS 944 Configure. This signifies that Vdc runs only if the precondition test 944 Configure passes.

Note: The Preconditions list box displays only the preconditions for the test you have selected in the Tests list box.

Your Precondition Editor dialog box should look similar to the one in Figure 2-8. Click on **OK** to save the new dependency specification and return to the Sequence Editor.
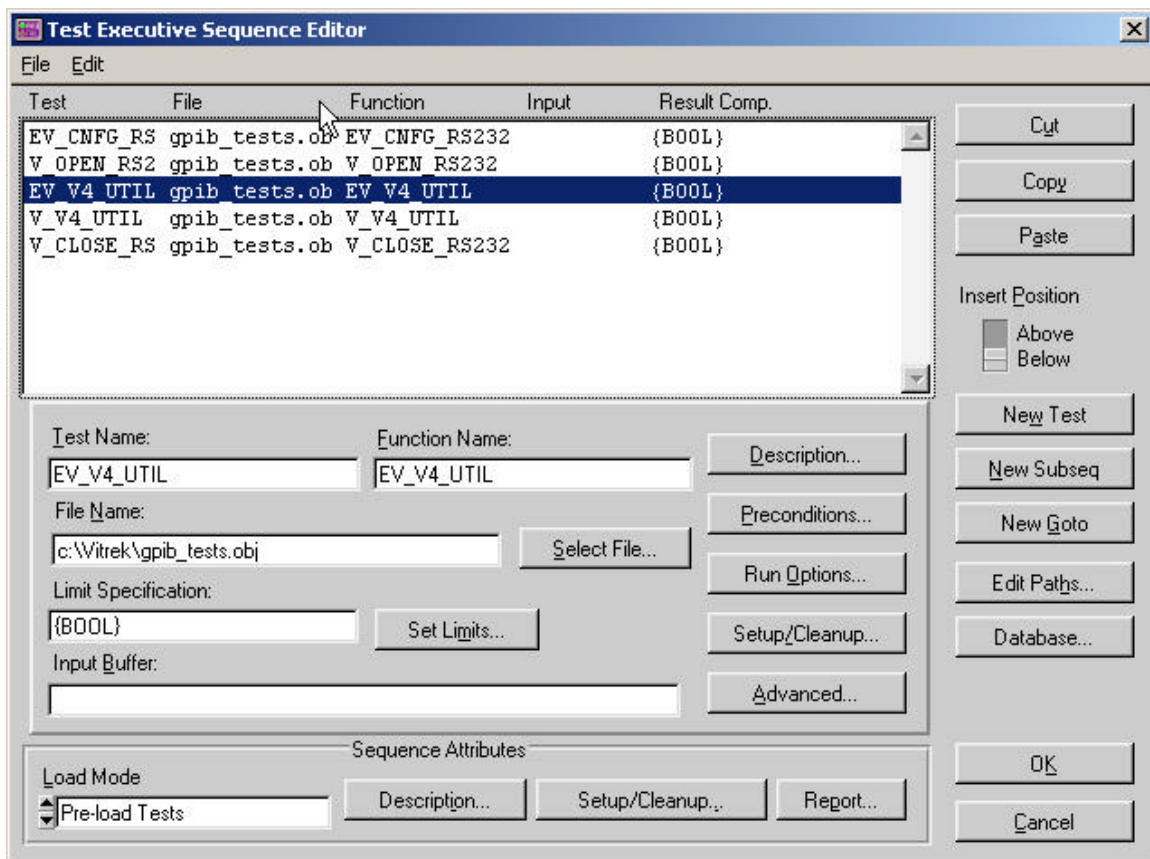
Figure 2-12. A Completed Random-Boolean Setup

Setting the Report File

You can configure the Test Executive to report test results by specifying a report file to receive those results. The following steps tell you how to specify the default report file.

Click on the **Report…** button in the Sequence Attributes section. The Set Default Report File dialog box appears.

Use the Select File button to select `vdc.rpt` as the default report file.
Click in the Lock File Name box. Checking this box locks the filename to the
value in the Test Executive Report File control. If you do not lock the file name,
the system gives you the opportunity to change the filename each time you open
the sequence file.
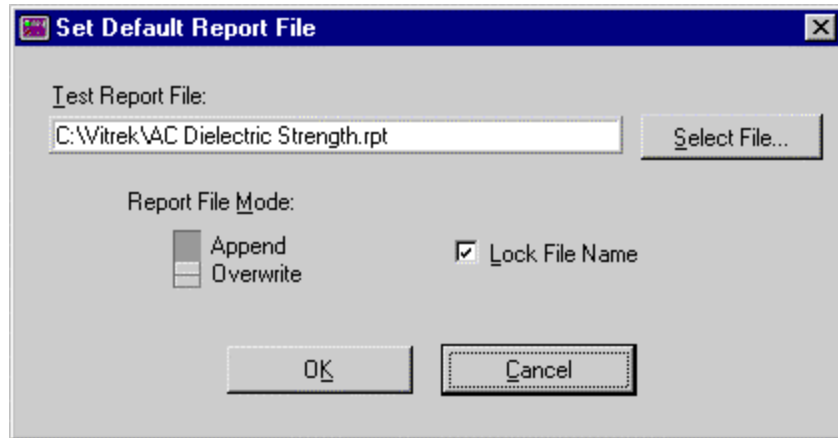
Figure 2-13. Specifying the Default Report File

Click on the **OK** button to return to the Sequence Editor.

Click on **OK** in the Sequence Editor to return to the Test Executive front panel.
Click on **No** when the program prompts you to save your sequence.

You are now ready to run your test sequence.

Running the Sequence

To run your test sequence, perform the following steps:

Run your new test sequence. The Test Executive will automatically determine
whether the test passes or fails based on the values transmitted in the test
structure. Perform the following steps to see your specification in action.

Click on Test Executive UUT, enter a serial number of your choice, and click
on **OK**.

Perform tests for several UUT serial numbers and then click on the **Stop** button
in the UUT Information dialog box.

Select **View** from the **Report** menu to see the data that the Vdc function
generated from each test.

Choose **Exit** from the **File** menu to exit from the Test Executive. The
application prompts you to save the sequence you created. To maintain this
example in its original state, do not save you changes.
The examples presented up to this point in the chapter show the fundamental
operations in the Test Executive and also developer-level operations: creating
test functions and using the Sequence Editor to develop test sequences that use
these functions.

Example Sequences

The QT944 package includes several test sequence examples located in the
C:\Vitrek\Examples directory.

Chapter 3 - Operating the Test Executive

This chapter describes the Test Executive main panel -- the controls, indicators, and operator dialog boxes. The main panel is the user interface for run-time operation.
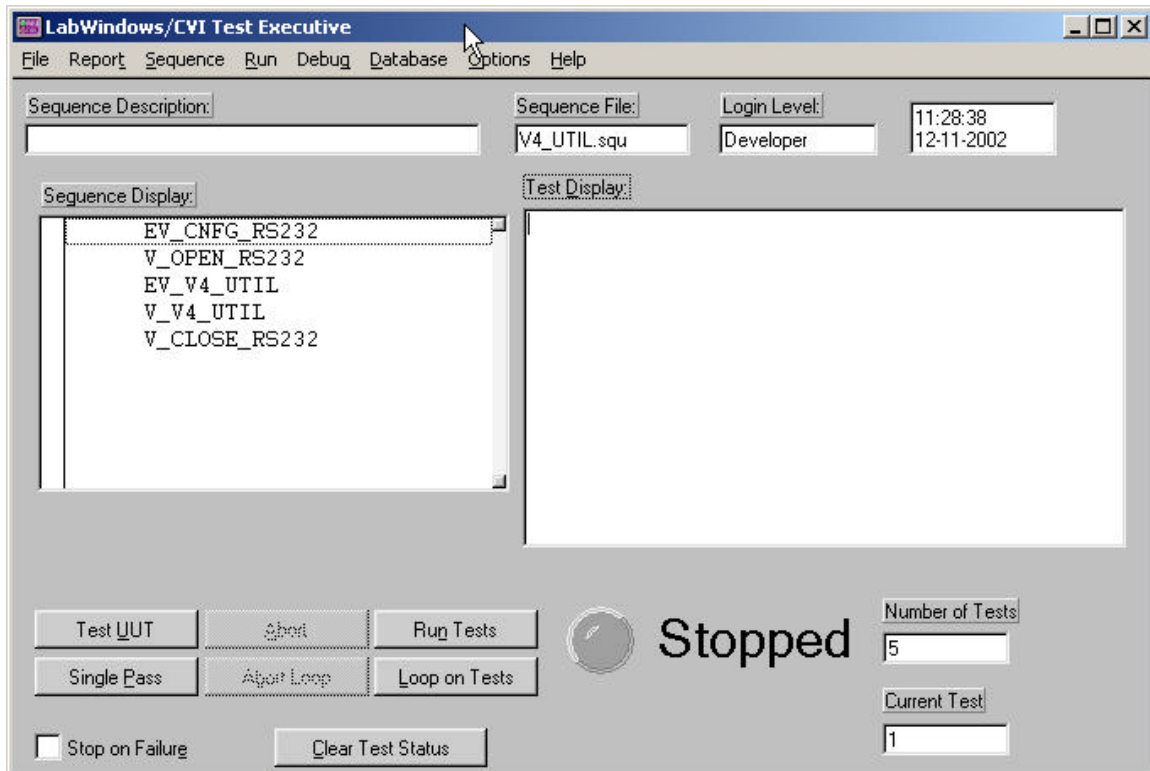
Figure 3-1. Test Executive Main Panel

Features of the Main Panel

The menu items, buttons, and other controls on the Test Executive main panel access the following three areas of operation.

- Sequence file operations and login
- Execution
- Display

The following sections describe the Test Executive controls.

File Menu

Login…

Choose the **Login…** menu item from the **File** menu to enter a new user name and password. You can access the **Login…** menu item at any operating level.

New

The **New** menu item creates a new, empty sequence. You can use the **New** menu item only at the Developer operating level.

Open…

The **Open…** menu item opens an existing sequence file. You can use the **Open…** menu item at any operating level.

Close

The **Close** menu item closes an open sequence file. You can use the **Close** menu item at any operating level.

Save

The **Save** menu item saves the current test sequence. You can use the **Save** menu item only at the Developer operating level.

Save Copy As…

The **Save Copy As…** menu item saves a test sequence to file. A dialog box appears, prompting you to name the file. You can use the **Save Copy As…** menu item only at the Developer operating level.

Print…

The **Print…** menu displays a dialog box where you select a report file to print. You can use the **Print** menu item at any operating level.

Exit

The **Exit** menu item causes the Test Executive to stop execution. If you have modified any of the currently loaded sequences, the Test Executive prompts you to save your changes before quitting. You can use the **Exit** menu item at any operating level.

Report Menu

View

The **View** menu item displays the current test report. You can view the report with the built-in viewer or an external program such as Notepad. (The *Options*

Menu section in this chapter describes your options for viewing reports). You can use the **View** menu item at any operating level.

The Test Executive Report contains the testing results for the execution of a test sequence. The following segment of monospaced text shows the format of a Test Report.

ADD TEST REPORT EXAMPLE!

Delete

The **Delete** menu invokes a dialog box where you can remove from disk the test report (`.rpt`) file for the test sequence (`.squ`) file that is open on the Test Executive front panel. You can access the **Delete** menu item at any operating level.

Screen and File

The **Screen** and **File** menu items control which tests results display on screen or appear in the report file. You can choose to display or save all results, only pass results, only fail results, or no results. You can use the **Screen** or **File** menu items at any operating level.

Sequence Menu

Edit Sequence…

The **Edit Sequence…** menu item invokes the Sequence Editor. You can use the **Edit Sequence…** menu item only at the Developer operating level.

View Description…

The **View Description…** menu item invokes a dialog box that displays the entire sequence description. You can access the **View Description…** menu item at any operating level.

Generate Documentation…

The **Generate Documentation…** menu item generates a file that documents the settings for each test in the current sequence. You can use the **Generate Documentation…** menu item at any operating level.

Sequence Names

The names of all loaded sequences also appear in the **Sequence** menu. You can select a sequence name to make that sequence the active sequence in the Test Executive front panel.

Run Menu

Test UUT

The **Test UUT** menu item starts a repetitive execution of the test sequence from UUT testing. (See the Execution Model section in Chapter 1, Introduction, for information about the Test Executive UUT mode of execution.) You can use the **Test UUT** menu item at any operating level.

Single Pass

The **Single Pass** menu item executes the test sequence on time. (See the Execution Model section in Chapter 1, Introduction, for information about the Single Pass mode of execution.) You can use the **Single Pass** menu item only at the Developer and Technician and operating level.

Run Tests

The **Run Tests** menu item executes the tests you select in the Sequence Display. You can select multiple tests by placing a checkmark beside each test. The **Run Tests** menu item is available only at the Developer and Technician operating levels.

Loop on Tests

The **Loop on Tests** menu item starts a repetitive execution of the tests currently selected in the Sequence Display list box. You can only access the **Loop on Tests** menu item from the Developer and Technician levels.
 When you select **Loop on Tests**, the dialog box shown in Figure 3-2 appears.
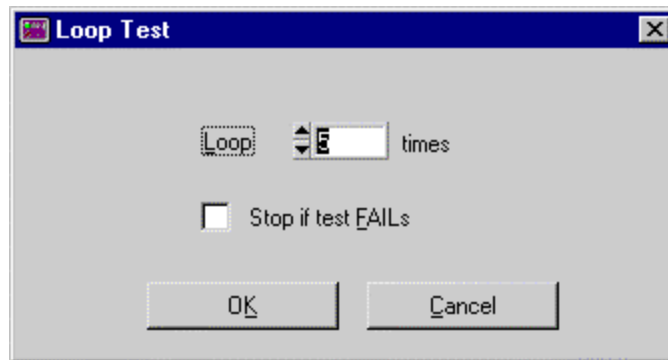
Figure 3-2. Loop Test Dialog Box

Your loop test can execute a specific number of iterations, with the option to stop if the test fails. To specify the number of iterations, enter the number of iterations in the Loop count control. The preceding figure shows a loop test that will iterate five times. If you want looping to stop when the test fails, click on the Stop if test Fails check box.

Sequence Pre Test

> The **Sequence Pre Test** menu item forces execution of the setup test for a sequence. The cleanup test for a sequence normally executes automatically before the sequence executes.

Sequence Post Test

> The **Sequence Post Test** menu item forces execution of the cleanup test for a sequence. The cleanup test for a sequence normally executes automatically after the sequence executes.

Sequence Load Test

> The **Sequence Load Test** menu item forces execution of the load test for a sequence. The load test for a sequence normally executes automatically when a sequence loads.

Sequence Unload Test

> The **Sequence Unload Test** menu item forces execution of the unload test for a sequence. The unload test for a sequence normally executes automatically when a sequence unloads.

Debug Menu

> **Note:** *The* **Debug** *menu also appears as a pop-up menu when you right-click on a test in the Sequence Display listbox.*

Toggle Breakpoint

> The **Toggle Breakpoint** menu item sets or clears a breakpoint on the currently selected test in the Sequence Display. You can use the **Toggle Breakpoint** menu item only at the Developer or Technician operating level. You use the other commands in the **Debug** menu to move beyond the breakpoints you set using **Toggle Breakpoint**.

Break at First Test

> The **Break at First Test** menu causes the Test Executive to break execution at the first test. You can use the **Break at First Test** menu item at any operating level.

Pause

> The **Pause** menu item stops sequence execution and enters breakpoint mode. You can use the **Pause** menu item at any operating level.

Continue

The **Continue** menu item ends breakpoint mode and resumes execution. You can use the **Continue** menu item at any operating level.

Step Over

The **Step Over** menu item executes the current test in the sequence. Execution stops before the next test in the current sequence. You can use the **Step Over** menu item only at the Developer or Technician operating level.

Step Into

The **Step Into** menu item executes the current test in the current sequence. If the test is a subsequence, execution stops before the first test in the subsequence. Otherwise, execution stops before the next test in the current sequence. You can use the **Step Into** menu item only at the Developer or Technician operating level.

Set Next Test to Cursor

Set Next Test to Cursor sets the currently selected test in the Sequence Display as the next test to execute. You can use **Set Next Test to Cursor** to skip tests during debugging. The **Set Next Test to Cursor** menu item is available only at the Developer or Technician operating level.

Finish Sequence

The **Finish Sequence** menu item executes the remaining tests in the current sequence and reenters breakpoint mode before the next test in the parent sequence. You can use the **Finish Sequence** menu item only at the Developer or Technician operating level.

Terminate Execution

The **Terminate Execution** menu item exits breakpoint mode and terminates sequence execution without executing more tests. This command is equivalent to **Abort**. You can use the **Terminate Execution** menu item only at the Developer or Technician operating level.

Normal

The **Normal** menu item sets the run mode of the selected test to normal, instead of Force to Pass, Force to Fail, or Force to Skip. You can use the **Normal** menu item only at the Developer or Technician operating level.

Force to Pass

The **Force to Pass** menu item sets the run mode of the selected test to **Force to Pass**. You can use the **Force to Pass** menu item only at the Developer or Technician operating level.

Force to Fail

The **Force to Fail** menu item sets the run mode of the selected test to **Force to Fail**. You can access the **Force to Fail** menu item only at the Developer or Technician operating level.

Skip

The **Skip** menu item sets the run mode of the selected test to **Skip**. You can use the **Skip** menu item only in the Developer or Technician operating level.

Note: *Changing the run mode using the menu items* **Normal, Force to Pass, force to Fail** *and* **Skip** *is equivalent to using the Sequence Editor. If you use these menu items at the Developer level, the Test Executive prompts you to save the sequence before it is unloaded.*

Database Menu

View Database…

The **View Database…** menu item invokes the Database Results Viewer. In the results viewer, you can see an overview of the sequence and test results. The results viewer also displays the details of any sequence or test results. You can access the **View Database…** menu item at any operating level.

Delete Database

The **Delete Database** menu item deletes the sequence and test result tables for the current sequence. You can access the **Delete Database** menu item only at the developer operating level.

Logging Enabled

The **Logging Enabled** menu item activates logging to database tables. You can change **Logging Enabled** only at the developer and technician operating levels.

Options Menu

Report…

The **Report…** menu item invokes the Report options dialog box. In the Report Options dialog box you can choose between viewing reports in the Test Display Box, the built-in report viewer or an external report viewer. You can access the **Report…** menu item at any operating level.

Controls of the Front Panel

Test UUT

The **Test UUT** button starts a repetitive execution of the test sequence for UUT testing. (See the *Execution Model* section in Chapter 1, *Introduction*, for information about the Test UUT mode of execution.) You can use the **Test UUT** button at any operating level.

Single Pass

The **Single Pass** button executes the test sequence on time. (See the *Execution Model* section in Chapter1, *Introduction*, for information about the Single Pass mode of execution.) You can use the **Single Pass** button only at the Developer and Technician operating levels.

Abort

The **Abort** button stops execution of the test sequence after the current test completes execution. When you have clicked on **Test UUT** to start testing, clicking on **Abort** stops testing for the current UUT after the current executing test completes. The system then prompts you for the next UUT serial number. The **Abort** button is available at all operating levels, but is active only while a test is running.

Abort Loop

Clicking on the **Abort Loop** button stops the execution of a loop that is defined for a single test. (You define a loop for a single test in the Run Options dialog box of the Sequence Editor.) Test sequence execution then continues with the next test. You can use the **Abort Loop** button only when the Test Executive loops on a test. You can use the **Abort Loop** button at any operating level.

Run Tests

The **Run Tests** button executes the tests that you select in the Sequence Display. You can select multiple tests for execution by placing a checkmark beside each test. The **Run Tests** button is available only at the Developer and Technician operating levels.

Loop on Tests

The **Loop on Tests** button starts a repetitive execution of the test or tests that you select in the Sequence Display list box. You can only access the **Loop on**

Test button from the Developer and Technician levels. When you select **Loop on Tests**, the dialog box shown in Figure 3-3 appears.
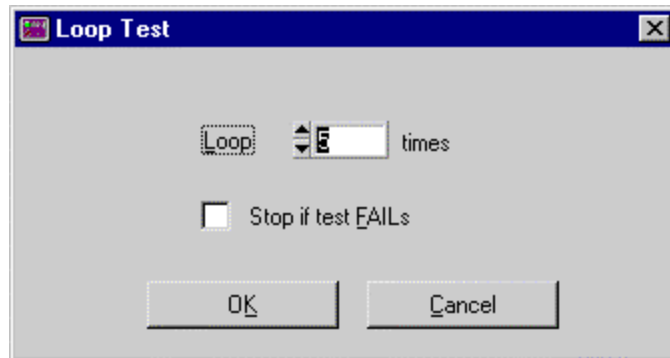

Figure 3-3. Loop Test Dialog Box

You can set the number of times the test(s) execute and also set the loop to stop if the test fails. To set the number of iterations, enter the number of iterations you want in the Loop control. Figure 3-3 shows a loop that will iterate five times. If you want looping to stop when the test fails, place a checkmark in the Stop if test Fails checkbox.

Stop If Test FAILs

When you select **Stop if test FAILS** in the Loop Test Dialog box, sequence execution stops when any test fails. You can use the **Stop if test FAILS** box at any operating level.

Stop on Failure

When you select the **Stop on Failure** check box on the main panel of the Test Executive, the execution of test sequences stops immediately when a test fails.

Clear Test Status

The **Clear Test Status** button clears the Test Status/Result field for each test in the Sequence display. You can access the **Clear Test Status** button in all operating levels.

Indicators

This section describes the displays and indicators that appear on the Test Executive front panel.

Sequence Description

The Sequence Description indicator displays the first line of the sequence description, if available, above the Sequence Display.

Sequence File

The Sequence File indicator located above the Test Executive Display shows the name of the test sequence file that you have loaded.

Login Level

The Login Level indicator appears to the right of the Sequence File indicator and shows the current login level.

Sequence Display

The Sequence Display shown in Figure 3-4 displays the lists of tests for the test sequence you have loaded.
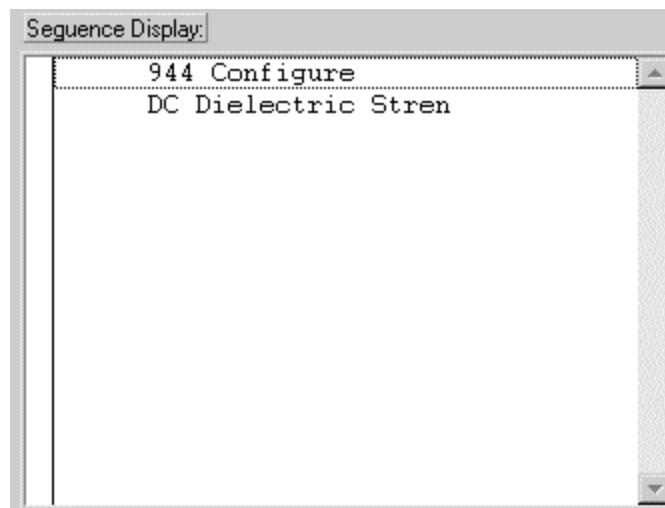

Figure 3-4. Sequence Display List Box

You see a checkmark column on the left side of the sequence display. The checkmarks you place in the column determine which test run when you click on **Run Tests** or **Loop on Tests.** Checkmarks do not affect the action of the **Test UUT** or **Single Pass** buttons.

Each display line, such as the ones shown in Figure 3-4, contains several columns, with names, status codes, and icon to tell you characteristics of each test. From left to right, the columns are the checkmark field, and the indicators for subsequence, breakpoint, run mode, Test Name, and Test Status/Result.

The subsequence indicator displays a folder icon for subsequences.

The breakpoint indicator is blank when there is no breakpoint on the test or B when a breakpoint is present.

The run mode field indicates the setting of the run mode parameter for the test. The following table shows the available run mode values and their meanings.

Table 3-1. Run Mode Fields

Value	Meaning
Blank (no symbol)	The test runs normally.
S	The test is skipped.
P	Test is skipped with a forced PASS result
F	Test is skipped with a forced FAIL result

The Test Name field shows the name of the test.

The Test Status/Result field displays the word Running during test execution to indicate the active test. After the test completes, the field displays the result of the test. The following table shows the possible Test Status/Result field values and their meanings.

Table 3-2. Test Status/Result Fields

Value	Meaning
Pass	Test result satisfied limit specification.
Fail	Test result did not satisfy limit specification.
Skip	Test did not execute.
None	Test data was logged but no comparison was made because the limit specification was set to Log only.
Running	The Test Executive is running the test.
Error	Run-time error occurred during test execution.

Test Display

The Test Display shows the result of each test as it executes as well as certain error messages. Figure 3-5 shows the Test Display.
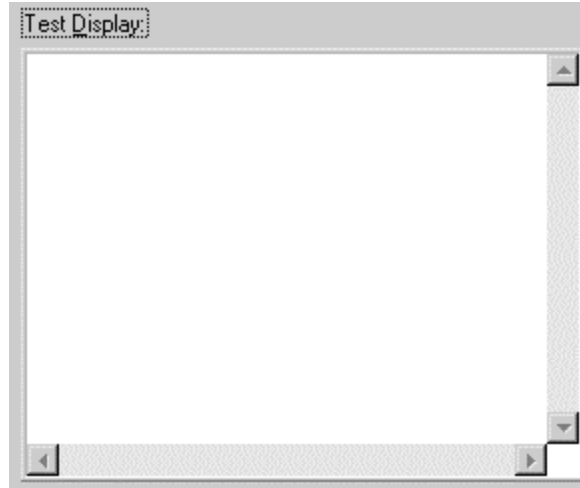
Figure 3-5. Test Display

Result of Each Test

After a test executes, the Test Display shows the complete result of that test. A test result takes the following form.

```
Test  Name  Result
Comment       (Comment may have multiple lines and is an optional field)
     Measurement Comparison Lower Limit Upper Limit
```

Notice that the number of lines that comprise the test result can vary, depending on the type of comparison made and whether or not a given test logs a comment. A test result always contains at least one line listing the name and result of the test. The `Result` information is the same as the information that appears in the Test Status/Result information is the same as the information that appears in the Test Status/Result field of the Sequence Display.

The specific test that logs a comment determines format and content of the Comment line(s). The `Measurement` field shows the measured value that the test returned. `Comparison` shows the type of limit checking that determined whether the test passed. The Condition for Test to Pass column in the following table shows the lower and upper limit values that determine whether a test passes or fails. The possible values of `Comparison` and their relation to the `Lower Limit` and `Upper Limit` (Condition for Test to Pass) appear in Table 3-3.

Table 3-3. Comparison Type Values

Comparison Type	Value	Condition for Test to Pass
Equal to	EQ	Measurement = Lower Limit
Not equal to	NE	Measurement != Lower Limit
Greater than	GT	Measurement > Lower Limit
Less Than	LT	Measurement < Lower Limit
Greater than or equal to	GE	Measurement >= Lower Limit
Less than or equal to	LE	Measurement <= Lower Limit
Greater than--Less than	GTLT	Measurement > Lower Limit and < Upper Limit
Greater than or equal to--Less than or equal to	GELE	Measurement >= Lower Limit and <= Upper Limit

Error Messages

When the Test Executive detects a run-time error, it displays a description of the error in the Test Display.

Status

The Status indicator, directly below the Test Display, shows the current operating status of the Test Executive. An LED calls attention to the Status indicator during a testing session. The possible values of the Status indicator and their meanings appear in Table 3-4.

Table 3-4. Status Indicator Values

Value	Meaning
Stopped	No test sequence is currently running.
Running	Test sequence is running.
Paused	Execution is paused at a breakpoint.
Looping	Test sequence is looping on a test or set of tests.

Operator Dialog Boxes

During operation of the Test Executive, several dialog boxes appear that require user action. This section describes these dialog boxes and the actions they require.

Login

The login dialog box prompts the operator for Login Name and Password. Figure 3-6 shows the login dialog box.
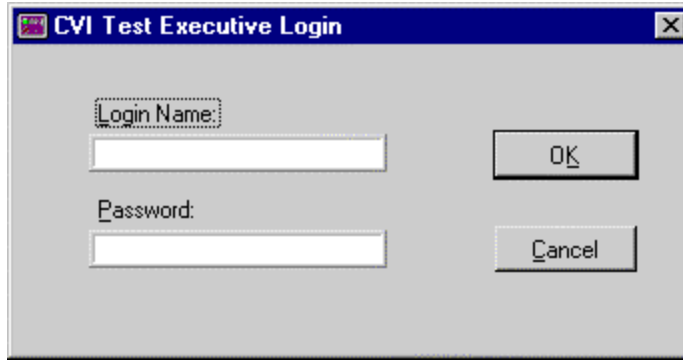
Figure 3-6. Login Dialog Box

Type the appropriate Password to set the desired operating level. Table 1-2 in Chapter 1, *Introduction*, lists the default passwords. The login dialog box appears when the operator launches the Test Executive and when the operator selects the **Login** menu item from the **File** menu. Click on the **OK** button to confirm the entries you make in the Name and Password controls. Click on the Cancel button to remove the dialog box without making any changes to the existing name and password. If you click on **Cancel** in the Login dialog box when the Test Executive first starts running the Test Executive starts at Operator level.

UUT Information

The UUT information dialog box prompts you to enter a serial number for the device to be tested on the next execution of the test sequence.
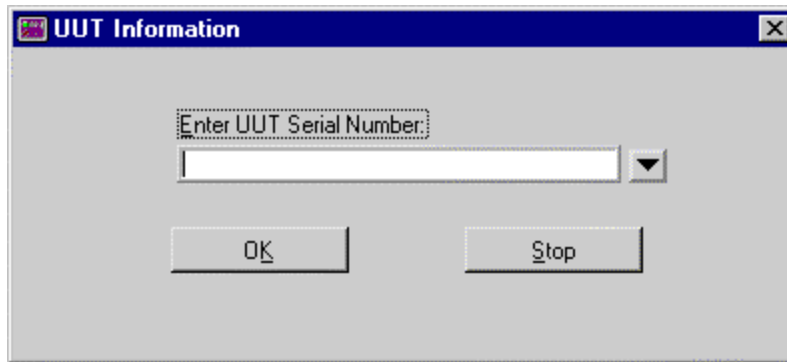
Figure 3-7. UUT Information Dialog Box

The UUT Information dialog box appears only when you use the **Test UUT** button. You can assign any ASCII string as the serial number for a test. That ASCII string will appear in the report for that test. You can click on the triangle button shown in Figure 3-7 to review or select previous serial numbers. Click on the **OK** button to confirm the serial number. Click on **Stop** to stop UUT testing.

Pass, Fail, and Abort Banners

The Pass, Fail, and Abort banners indicate whether the current UUT passed or failed. The Pass, Fail or Abort banner appears at the end of test sequence execution for each UUT tested. These banners appear only when you are using the **Test UUT** button. Press <Enter> or click **OK** to acknowledge the banner and continue testing.
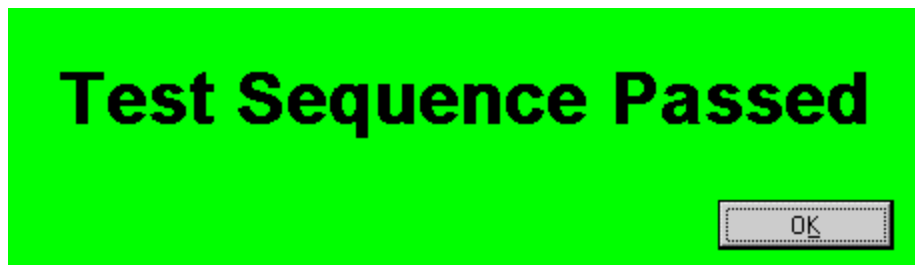

Figure 3-8. Pass Banner for Test Sequences

Chapter 4 - Creating Test Sequences

This chapter describes the controls and indicators of the Sequence Editor where you create and edit test sequences.

Vitrek Test Functions

Vitrek Test Functions are shown in Appendix A.

Using the Sequence Editor

You use the *Sequence Editor* of the Test Executive to create a test sequence containing your tests. In the Sequence Editor, you can configure the run options and test preconditions that control the flow of your test sequence. You also specify the name of the test function and the file where it exists.

To create or modify a test sequence using the Sequence Editor, you must log in at the Developer level. The *Operating Levels* section of Chapter 1, *Introduction*, describes the login levels. Next you select **Edit Sequences…** from the **Sequence** menu. Figure 4-1 shows the Sequence Editor dialog box.
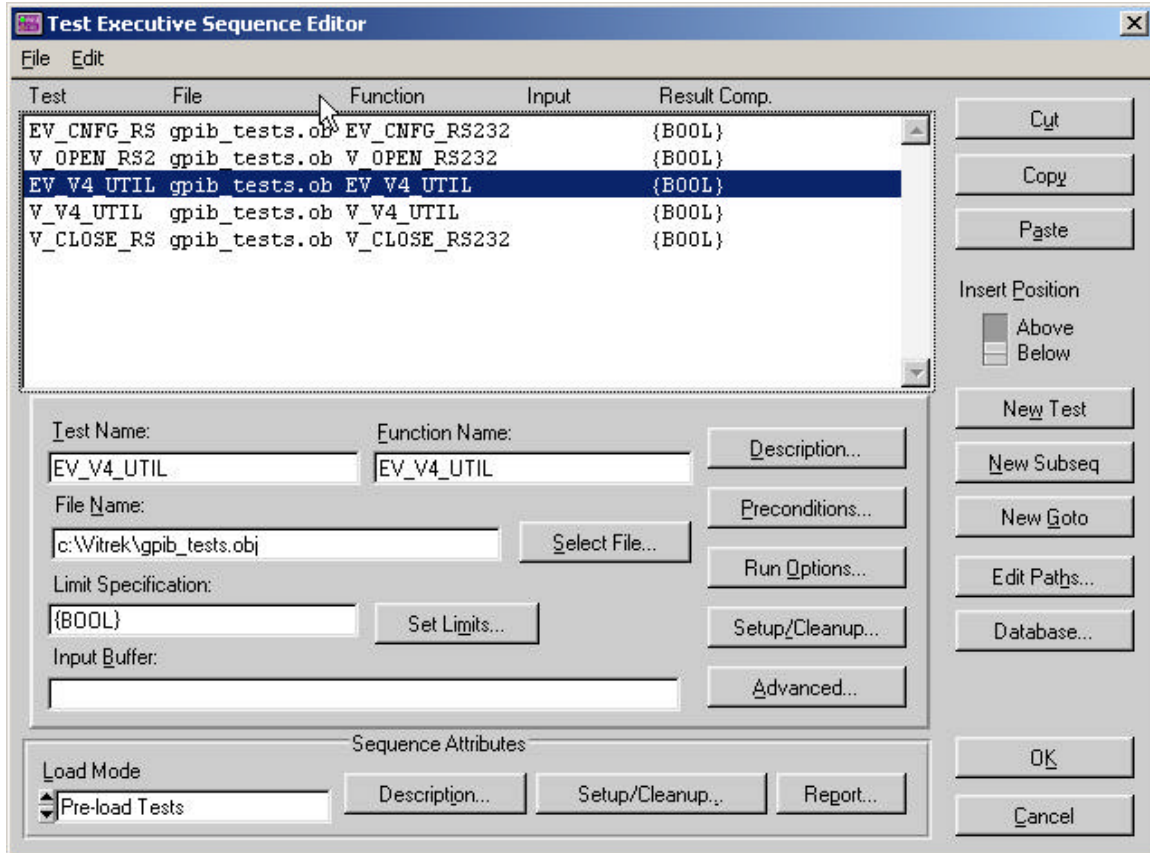
Figure 4-1. Sequence Editor Dialog Box

Test Sequence Overview

Keep the following points in mind as you create test sequences using the Sequence Editor. A test sequence is a collection of data that describes the flow of test execution. The main component of a test sequence is a test. A test is a single execution step in the testing process. A test executes a function or subsequence to perform the required testing operation. A typical test sequence has a list of test, setup/cleanup functions, preconditions for flow control based on Pass/Fail results, test report file information, description of the sequence, and database information.

The tests that comprise a test sequence contain a combination of specifications that tell the Test Executive how to perform a single execution step in the testing process. A test specifies the following types of information:

- Name of the test as it appears in the Test list of the Sequence Editor
- Function or subsequence to execute
- Input Buffer that contains data for test function
- Limit Specification to define when a test passes or fails
- Run options specifying how a test will execute
- Fail and Pass actions (and maximum loop count, if applicable)

- The load mode of a test
- Database and report behavior

Controls for Editing Tests

When you edit a new or existing test in the Sequence Editor, the test attributes area appears directly below the Test list box, as shown in Figure 4-2. These attribute controls include Test Name, Function Name, File Name, Select File, Limit Specification, Set Limits, Input Buffer, Description, Preconditions, Run Options, Setup/Cleanup, and Advanced. You use these controls for all operations related to creating or modifying a test, including adding, modifying, copying, and deleting a test.

Basic Operations for Test Editing

This section describes how to add, modify, copy, and delete tests in the Sequence Editor.

Adding a Test

Perform the following steps to add a new test to a sequence:

1.   In the Test list box, click on the test that is above or below the position where you want to insert the new test.
2.   Click on **New Test** or **New Subseq**. The new, empty test appears in the Test list box.
3.   Enter or select the desired values for Test Name, Function Name, File Name, Limit Specification, Input Buffer, Run Options, and Setup/Cleanup. The Test Executive updates the Test list box as you make changes.

Modifying a Test

Perform the following steps to modify a test.
1.   Click on the test you want to edit in the Test list box. The name of the test you selected now appears in the Test Name control of the Test Attributes area.
2.   Enter or select the desired values for Test Name, Function Name, Input Buffer, Run Options, and Setup/Cleanup.

Copying a Test

To copy a test and insert it into a new position, perform the following steps:
1.   Click on the test you want to copy in the Test list box.
2.   Click on the **Copy** button or select **Copy** from the **Edit** menu.
3.   Slide the Insert Position switch to Above or Below depending on where you want the test to appear in the list.

4. In the Test list box, click on the test that is adjacent to (above or below) the place you want to paste the copied test.
5. Click on the **Paste** button or select **Paste** from the **Edit** menu. The copied test appears above or below the test you selected in the list, depending on how you set the Insert Position switch.

Deleting a Test

To delete a test, perform the following steps:

1. Click on the test you want do delete from the test list box.
2. Click on the **Cut** button or select **Cut** from the **Edit** menu. The selected test disappears.

Sequence Editor Controls and Indicators

This section describes the controls and indicators of the Sequence Editor.

Cut

The **Cut** button copies the test highlighted in the Test list box to the clipboard and deletes the test from the test sequence. You can also select **Cut** from the **Edit** menu.

Copy

The **Copy** button copies the test highlighted in the Test list box to the clipboard but does not delete the test from the test sequence. You can also select **Copy** from the **Edit** menu.

Paste

The **Paste** button pastes the test in the clipboard into the Test list box. The value of **Insert Position** determines whether the test appears above or below the currently selected test in the Test list box. You can also select **Paste** from the **Edit** menu.

New Test

The **New Test** button inserts a new, empty test. The test is inserted above or below the currently selected test depending on the value of **Insert Position**. Figure 4-2 shows the test attributes area of the Sequence Editor. This area is a child panel within the larger panel that is the Sequence Editor. See the *Test/Subsequence Attributes* section later in this chapter for more information about editing tests.
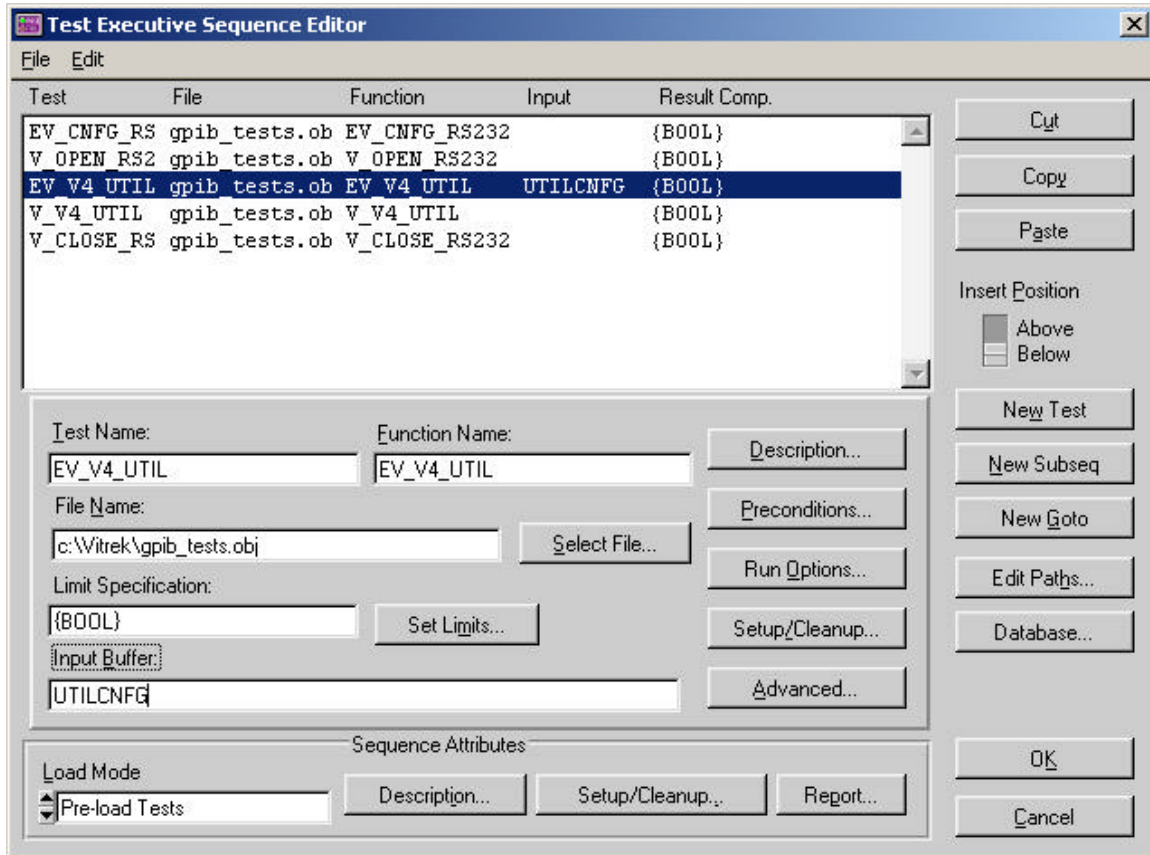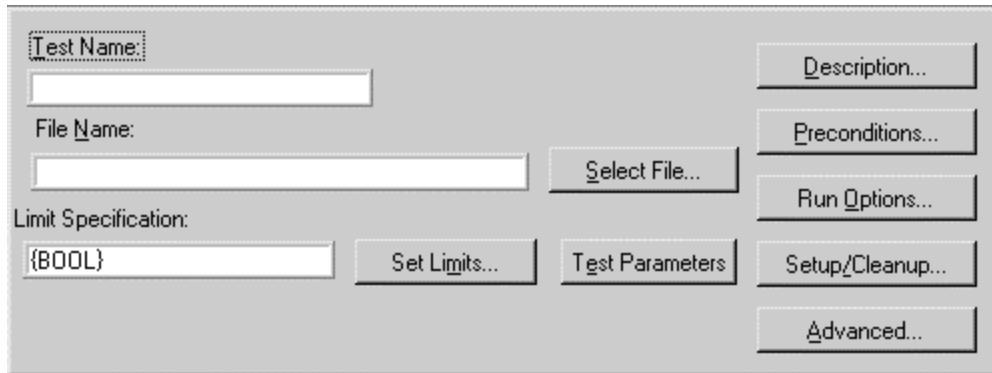
Figure 4-2. Test Attributes Area

New Subseq

The **New Subseq** button inserts a new, empty subsequence. The subsequence appears above or below the currently selected test, depending on the value of **Insert Position**. Figure 4-3 shows the subsequence attributes area of the Sequence Editor dialog box. This area is a child panel within the larger panel that is the Sequence Editor. See the *Test/Subsequence Attributes* section in this chapter for more information about editing subsequences.

Figure 4-3. Subsequence Attributes Area

New Goto

The **New Goto** inserts a new empty Goto. The goto appears above or below the currently selected test depending on the value of **Insert Position**. Figure 4-4 shows the goto attributes area of the Sequence Editor. This area is a child panel within the larger panel that is the Sequence Editor.

Figure 4-4. Goto Attributes Area

Goto Target

Type the name of the test you want in the Goto Target control. To see a list of the tests currently defined in the test sequence, you can click on the arrow to the right of the Goto Target control.

Preconditions

This control invokes the precondition editor.

Note: *Like a test, goto statements can have preconditions that determine the conditions under which they execute. You can specify these preconditions in the Precondition Editor that appears when you click on the Preconditions button.*

Edit Paths…

The **Edit Paths…** button opens a dialog box where you can change all the paths stored in the sequence. This helps you update the paths when the sequence changes. Figure 4-5 shows the Edit Paths dialog box.
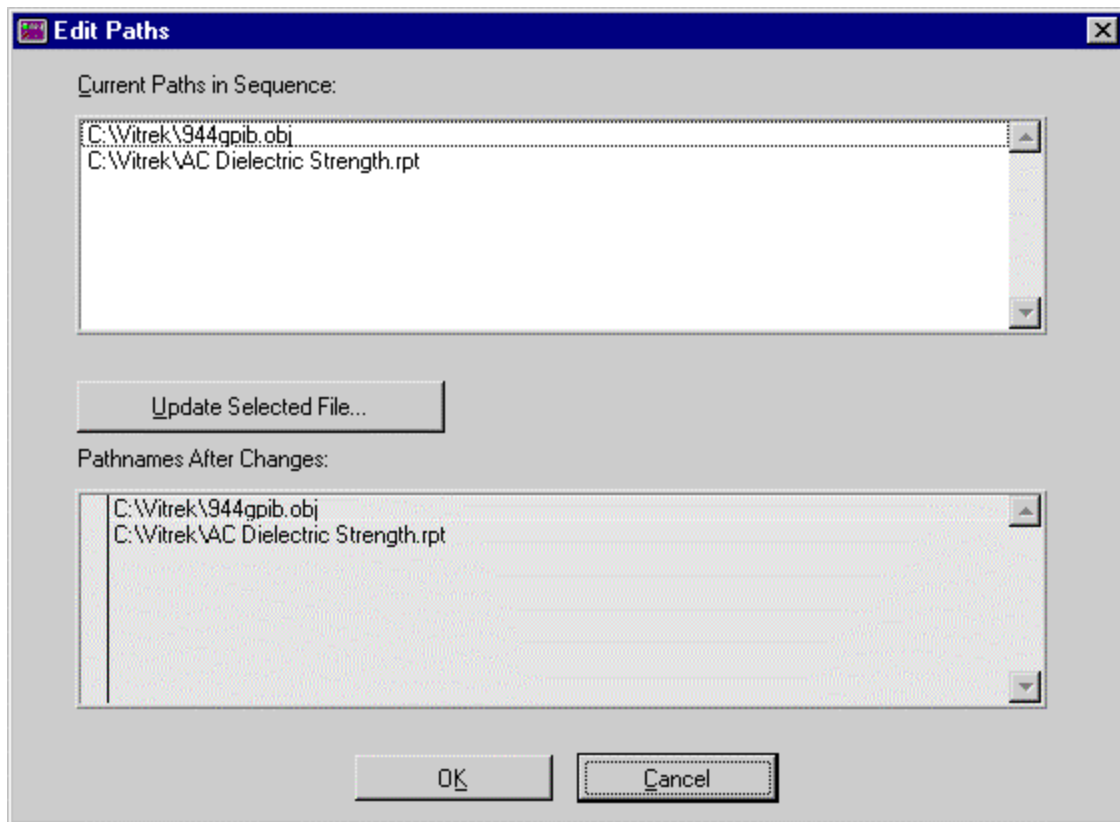
Figure 4-5. Edit Paths Dialog Box

Current Paths in Sequence

This list box shows all the unique pathnames currently in the sequence. To update a path, you can click on a test name in this list box. Then click on **Update Selected File**. A dialog box appears where you can choose an updated path for the file.

Update Selected File…

This button opens a file dialog box where you can specify a new path.

Pathnames after Changes

This list box displays the pathnames the Test Executive uses; it is only an indicator. A checkmark appears to the right of the name(s) when using the **Update Selected File…** button to update a pathname.

Database

The **Database…** button opens a dialog box where you can get options for saving test results to a database. Figure 4-6 shows the Database Options dialog box.
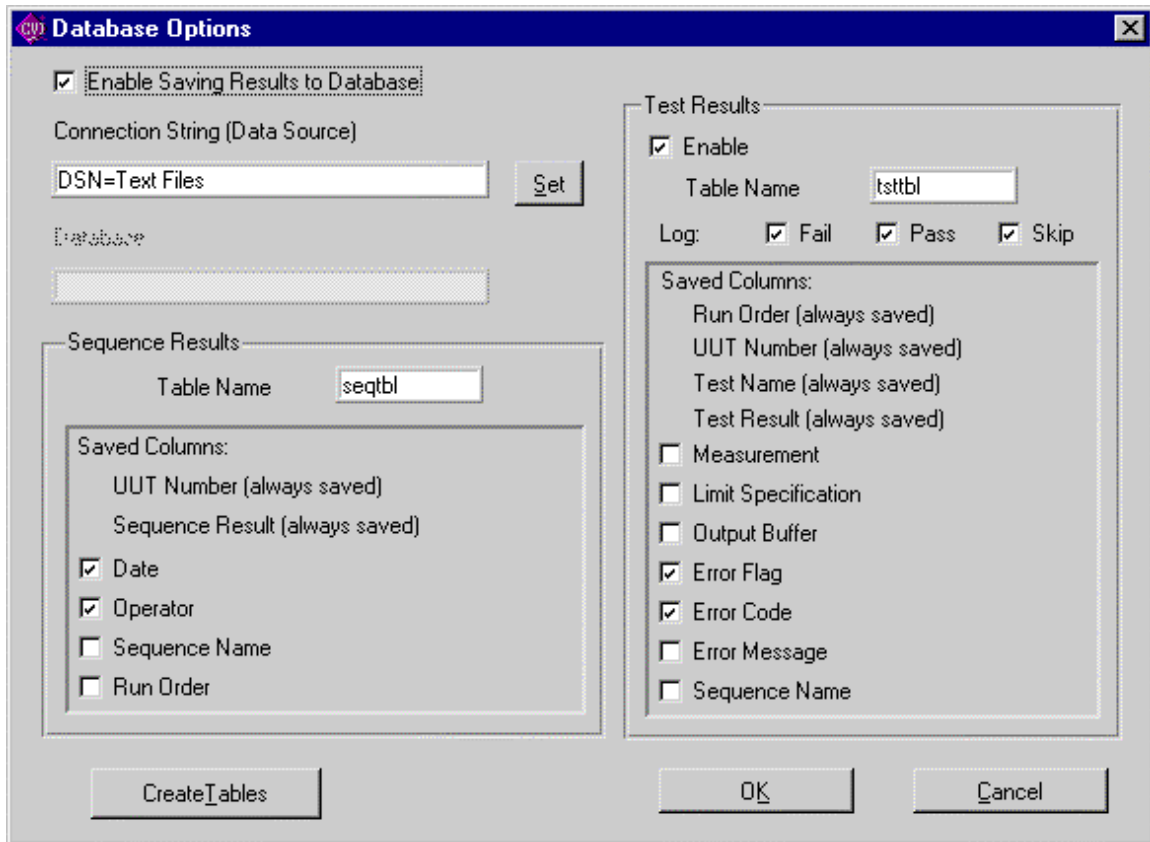
Figure 4-6. Database Options Dialog Box

Enable Saving Results to Database

This check box enables database operations for the Sequence.

Connection String (Data Source)

Enter the connection string or use the **Set** button to select from a list of available data source names.

Database

This field identifies the default database for database systems that allow you to store tables in separate databases. In most cases, you do not need to use the **Database** field.

Sequence Results

Controls in this area determine how the Test Executive saves sequence results in the database.

Table Name specifies the database table that stores sequence results.

The checkboxes under **Saved** Columns allow you to choose the information to save for each sequence result. The UUT Number and Sequence Result are always saved. You can also save the Date, Operator, Sequence Name, and Run Order. When you save results from different sequence files in the same table, you may want to save the Sequence Name, too, to make it easier to identify the origin of each result.

Test Results

Controls in this area determine how the Test Executive saves individual test results in the database.

The **Enable** checkbox enables saving of test results to a database table.

Table Name specifies the database table used to store test results.

The **Log** checkboxes allow you to select whether Fail results, Pass results, and Skip results are saved to the test results table.

The checkboxes under **Saved Columns** allow you to choose the information that the Test Executive saves for each test result. The Run Order, UUT Number, Test Name and test Result are always saved. You can also save the Measurement, Limit Specification, Output Buffer, Error Flag, Error Code, Error Message, and Sequence Name.

Create Tables

The Test Executive automatically creates the database tables as needed. You can use the **Create Tables** button to force the immediate creation of the tables.

OK

The **OK** button saves any changes you make to the test sequence, including preconditions, and returns you to the Test Executive front panel.

Note: *The Test Executive saves changes to any database options when you save the sequence file.*

Cancel

The **Cancel** button discards any changes you make to the test sequence and returns you to the Sequence Editor.

Test Attributes Area

You use the controls in the Test Attributes area to set the attributes of individual test in the test sequence. You also use the controls in this area to set attributes of subsequences. This area is a child panel within the larger panel that is the Sequence Editor. Figure 4-7 shows the Test Attributes area.
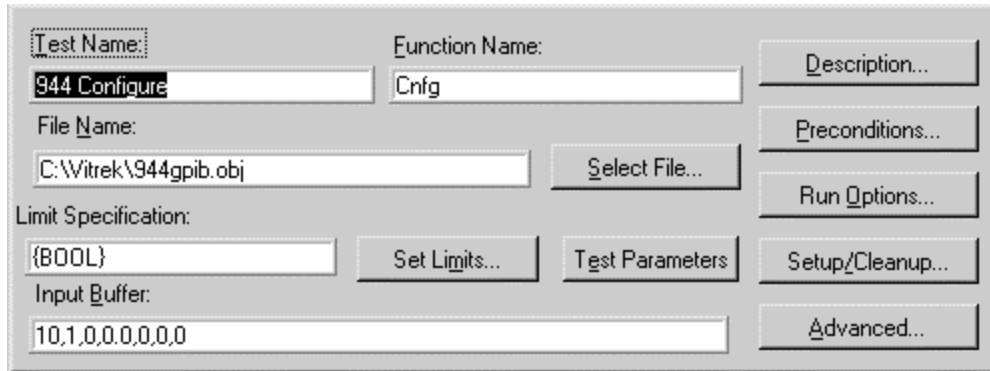

Figure 4-7. Test Attributes Area

Test Name

Type any ASCII string in the Test Name control. The name appears in the Sequence Display of he Test Executive front panel when the sequence is loaded. Each test must have a unique name.

Test Parameters

Test Parameters checks the test function name and pops-up a parameter panel if a Vitrek test function is found. Each pop-up panel has a series of parameters. Individual parameters may be selected or defaults restored by pressing **Restore Default Parameters**. Press **Save Parameters and Exit** when selection is complete. The new parameters will appear in the Input Buffer for that test.

Function Name

Type the name of the test function in the Function Name control.

Note: *Subsequences have no function names.*

File Name

Type the full path name of the file that contains the test into this field. You can also click on **Select File…** to open the File dialog box where you can locate and select the file name.

Limit specification

The Limit Specification specifies the type of limit checking the Test Executive uses to determine if a test passes. You cannot type directly into the Limit Specification field. To specify a limit, click on the **Set Limits…** button. Use the Comparison Type ring control to set the comparison type and the measurement. Figure 4-8 shows the Set Limits for Test dialog box.
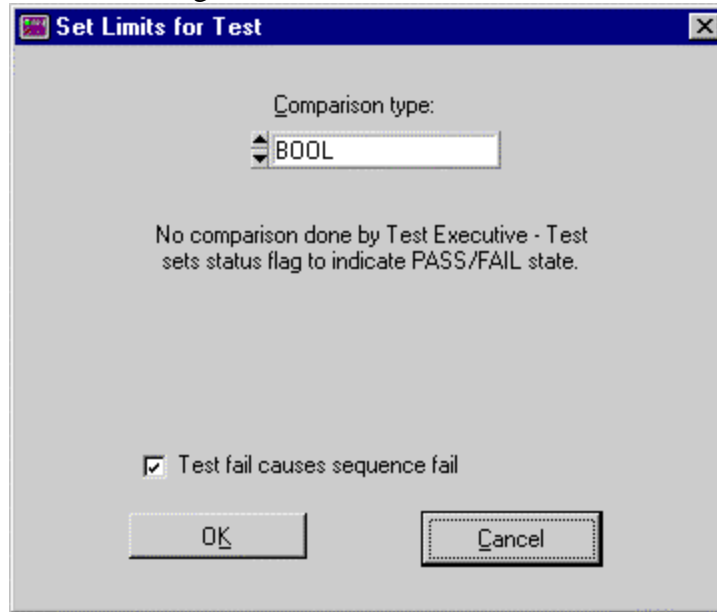

Figure 4-8. Set Limit for Test Dialog Box

Comparison Type ring control specifies the type of comparison to perform, if any, to determine whether a test passed. Table 3-3, Comparison Type Values, in Chapter 3, Operating the Test Executive, describes the values for each comparison type.

For some comparison type settings, one-limit or two-limit entry controls appear in the Set Limits for Test dialog box. A one-limit value appears for the comparison types EQ, NE, GT, LT, GE, and LE. As shown in Figure 4-9, two limit values, a lower and upper limit, appear for the comparison types GTLT, GELE, GELT, and GTLE. No limits appear for the comparison types BOOL, LOG, and NONE.

Note: Subsequences can use only the comparison types BOOL, LOG, and NONE.
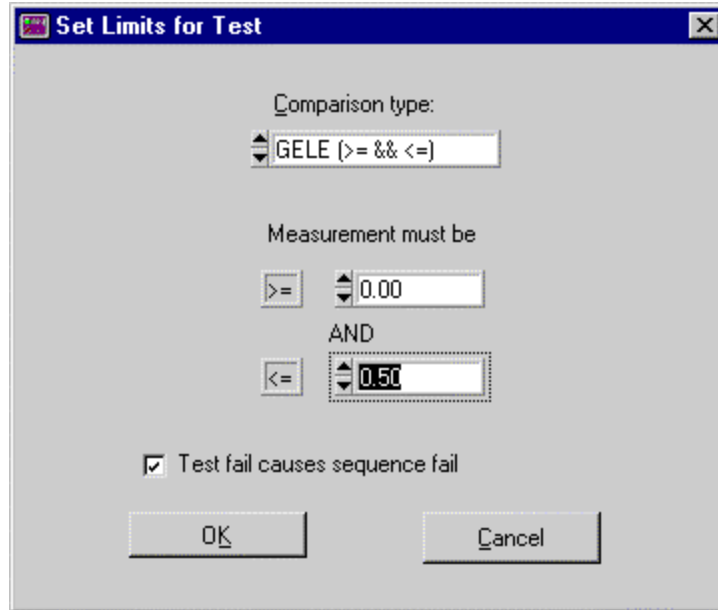
Figure 4-9. Comparison Type Settings

Input Buffer

As shown in Figure 4-7, the Input Buffer control displays a string that is passed into a test function. The content and meaning of the string are determined by the test function. The test functions used by QuickTest are 8 character configuration file names. Enter the desired input string into the Input Buffer control.

Note: Subsequences have no input buffers.

Description

The Description button shown in Figure 4-7, invokes the Precondition Editor, See the Editing Preconditions section in this chapter for more information on the Precondition Editor.

Preconditions

The Preconditions button, shown in Figure 4-7, invokes the Precondition Editor. See the Editing Preconditions section in this chapter for more information on the Preconditions Editor.

Run Options

The Run Options button, shown in Figure 4-7, opens the Test Run Options dialog box where you can specify the Run Mode, Fail Action, Pass Action and

the maximum number of loops for a test. Figure 4-10 shows the Test Run Options dialog box.
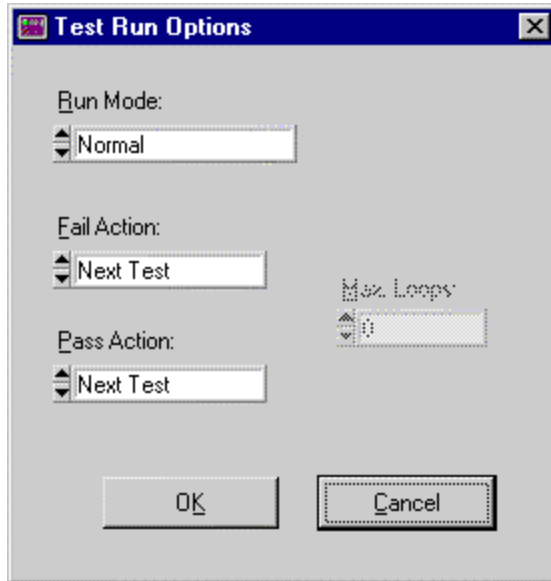
Figure 4-10. Test Run Options Dialog Box

Run Mode

Run mode specifies how the test executes. Table 4-3 describes the options for Run Mode.

Table 4-3. Run Mode Options

Run ModeValue	Meaning
Normal	Execute Tests normally.
Skip	Do not examine the test; set result to SKIP
Force Pass	Do not execute the test; set result to PASS.
Force Fail	Do not execute the test; set result to FAIL.

Fail Action

Fail Action specifies an action to take when the test fails. Table 4-4 describes the options for Fail Action.

Table 4-4. Fail Action Options

Fail Action	Meaning
Next Test	Continue execution with next test.
Loop	Repeat execution of the test.

Stop	Stop Execution of the test.

Pass Action

Pass Action specifies an action to take when the test passes. Table 4-5 describes the options for Pass Action.

Table 4-5. Pass Action Options

Pass Action	Meaning
Next Test	Continue execution with next test.
Loop	Repeat Execution of the test.
Stop	Stop execution of the sequence.
Running	The Test Executive is running the test.

Max. Loops

The Max. Loops control appears only when Fail Action or Pass Action is set to Loop. This control specifies the maximum number of loop operations to perform when, for example, the Fail Action is set to Loop, and the test fails.

Setup/Cleanup

The Setup/Cleanup button, shown in Figure 4-7, invokes the Test Setup/Cleanup Routines dialog box for an individual test. Figure 4-11 shows the Test Setup/Cleanup Routines dialog box.
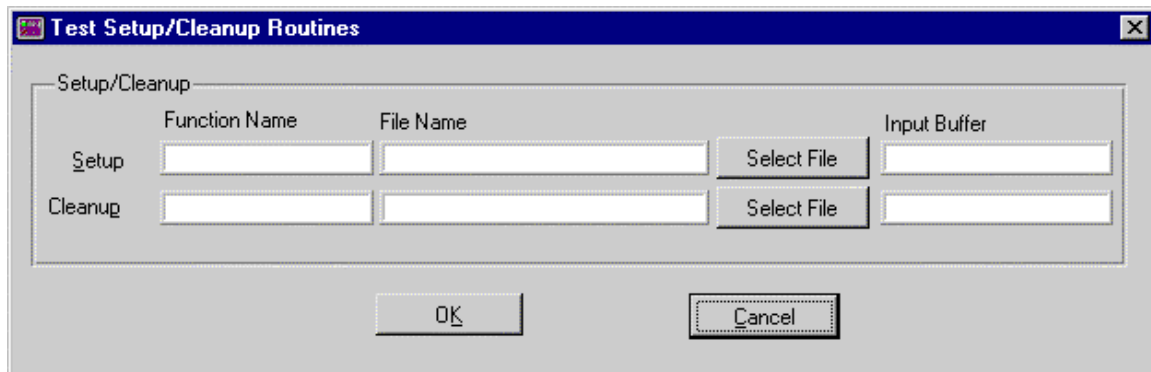
Figure 4-11. Test Setup/Cleanup Routines Dialog Box

Setup Function

A setup function executes before a test. You enter the name of the setup function in the Function Name control. You enter the name of the file that contains the function in the File Name control, or click on the Select File button to open the File dialog box, where you can select the file you want. If you leave the Setup-Function Name control blank, no setup function runs. See the

Writing Test Functions section of this chapter for information about writing your setup functions.

Cleanup Function

A cleanup function executes after a test. Enter the name of the cleanup function in the Function Name control. Enter the name of the file that contains the function in the File Name control, or click on the Select File button to open the File dialog box., where you can select the file you want. If you leave the Cleanup-Function Name control blank, no cleanup function runs. See the Writing Test Functions section of this chapter information about writing you cleanup function.

Advanced

The Advanced button, shown in figure 4-7, invokes the Advanced Test/Subsequence Attributes dialog box for an individual test or subsequence. Figure 4-12 shows this dialog box.
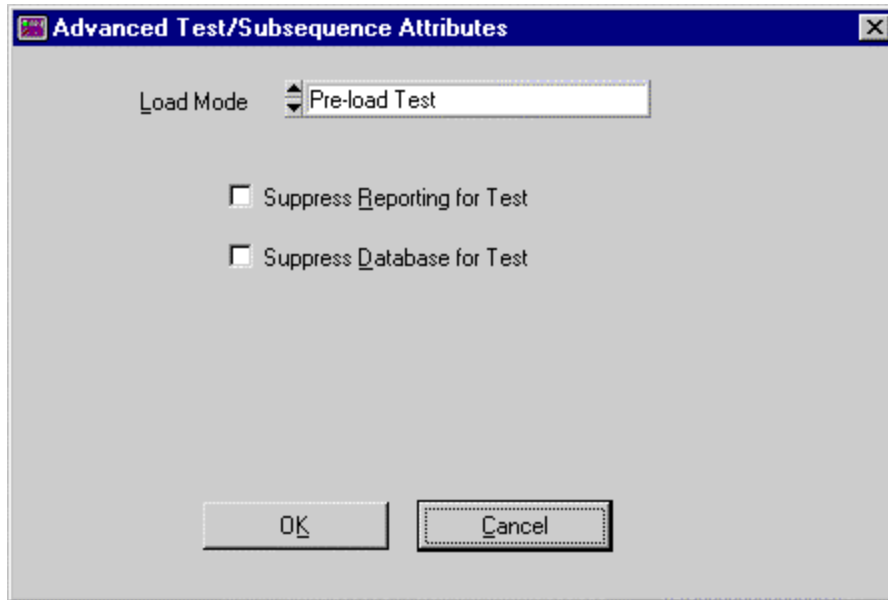
Figure 4-12. Advanced Test/Subsequence Attributes Dialog Box

Load Mode

Load Mode specifies the load mode for an individual test. The load mode can be either Pre-Load Test or Dynamic Load Test. To make these values take effect, you muss set the
Load Mode ring control for sequences (which is located in the Sequence Attributes area of the Sequence Editor dialog box) to Use Test Load Specs.

4-17

Supress Reporting for Test

When selected, Suppress Reporting for Test prevents the Test Executive from saving any report information in the report file regarding the test you are modifying.

Suppress Database for Test

When selected Suppress Database for Test prevents the Test Executive from writing test result information to the database regarding the test you are modifying.

Subsequence report

Subsequence Report sets the report behavior within a subsequence. While a subsequence executes, it can use one of the following command options from this ring control:
Use Parent's Report Options
Use Subsequence's Report Options
Suppress Reporting within Subsequence

Subsequence Database

Subsequence Database allows you to select the database behavior of a subsequence. While a subsequence executes, it can use one of the following command options from this ring control:
Use Parent's Database Options
Use Subsequence's Database Options
Suppress Database within Subsequence

Sequence Attributes

The controls in the Sequence Attributes are used to specify the load mode description, setup/cleanup functions, and report file for the test sequence. You can see all these controls in the Sequence Editor dialog box shown in figure 4-1.

Load Mode

Load Mode controls how the sequence is loaded. You can select one of the following items in the Load Mode ring control.
PreLoad Test—All tests and subsequences are loaded when the sequence is loaded.
Dynamic Load Tests—Tests and subsequences are loaded and unloaded as needed.
Use Test Load Specs—The load specification of each test determines whether it is loaded when the sequence is loaded or loaded only as needed.

Description

The Description button displays a dialog box where you can enter and modify the description of the test sequence. Figure 4-13 shows this dialog bot sequence designation appears in the Test Report that the Test Executive generates when it executes a test sequence. The first line of the description also appears in the Description field on the Test Executive front panel.
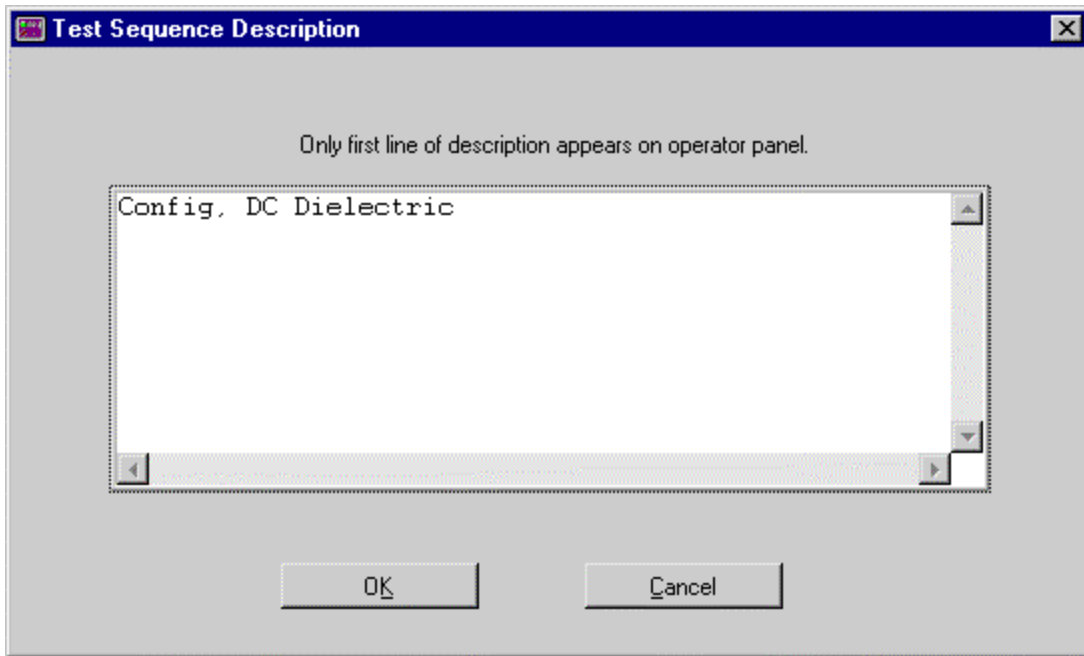
Figure 4-13. Test Sequence Description Dialog Box

Setup/Cleanup

The Setup/Cleanup button, shown in Figure 4-1, opens the Sequence Setup/Cleanup Routines dialog box. There are two types of setup/cleanup functions available. Sequence Execution functions run at the beginning and at the end of each sequence execution.   Sequence load/unload functions run when the sequence is loaded or unloaded. Figure 4-14 shows the Sequence Setup/Cleanup Routines dialog box.
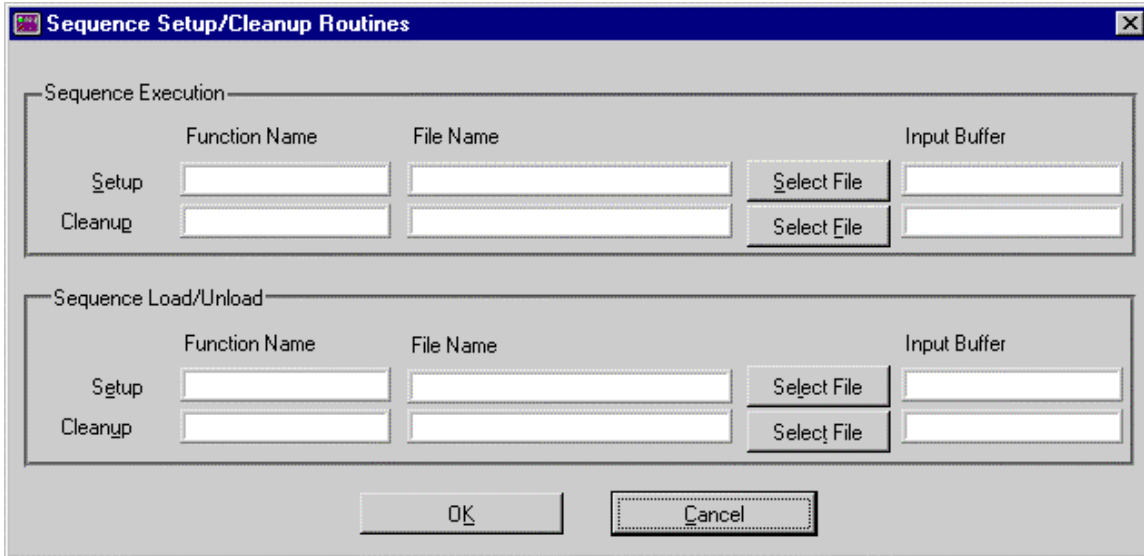
Figure 4-14. Sequence Setup/Cleanup Routines Dialog Box

Report…

The Report… button, shown in figure 4-1, displays a dialog box where you set the attributes of you Test Report. Figure 4-15 shows the Set Default report File dialog box. You type the name the report file you want to create in the Test Report file control or click on the Select File… button to open the File dialog box, where you can select the name of the report. When you set Report File Mode to Append, the Test Executive adds your report to the end of an existing report. Choose Overwrite to replace the existing report file. Select Lock File Name to prevent users from changing the name of the report file.
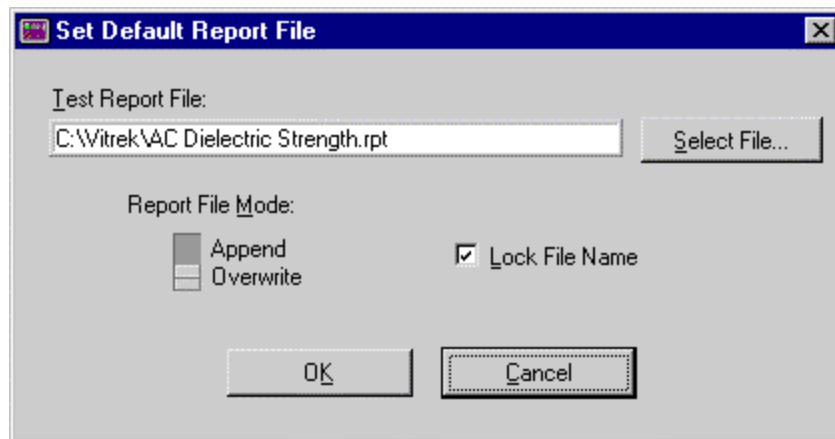
Figure 4-15.   Set Default Report File Dialog Box

Editing Preconditions

The preconditions of a test specify what other tests must pass or fail before that particular test executes. To define the preconditions of a test, click on the

Preconditions button, shown in Figure 4-1, in the Test Attributes dialog box of the Sequence Editor. Figure 4-16 shows the Precondition Editor.
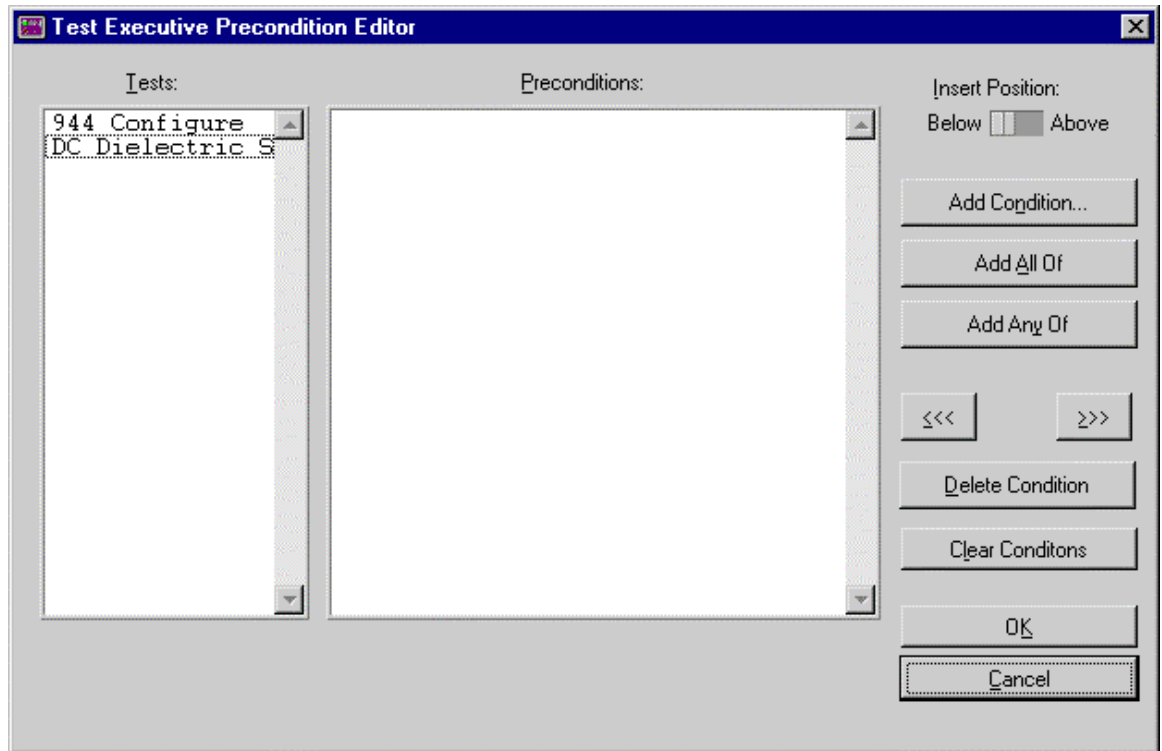
Figure 4-16. Precondition Editor

The name of each test in the test sequence appears in the Tests list box. One of the test names in the Tests list box is always highlighted. The Preconditions list box shows the preconditions test—those test on which test execution depend— for whichever test name you select in the Tests list box. In Figure 4-16, Power On test and ROM test are the preconditions for ROM Diagnostics. ROM Diagnostics run only when Power On test passes and ROM test fails.

Take the following steps to specify the preconditions for a test:

In the Tests list box click on the test for which you want to set preconditions. All the preconditions you set will apply in the test you have selected.
If you want to apply multiple preconditions, establish grouping for the preconditions by clicking on the appropriate button:
a.   Click on Add All Of to insert ALL OF: in the Preconditions list box. This type of heading introduces a series of preconditions that must all be true in order for the test to run.
Click on Add Any Of to insert ANY OF: in the Preconditions list box. This type of heading introduces a series of preconditions of which at least one must be true.
You can nest ALL OF: and ANY OF: headings, to create more complex preconditions.

Click on Add Condition… The Add Condition dialog box shown in Figure 4-17 appears.
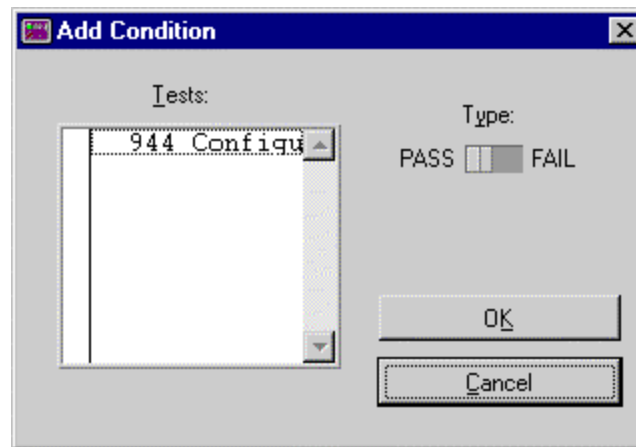
Figure 4-17. Add Condition Dialog Box

In the Add Condition dialog box, set the Type switch to PASS or FAIL… depending on whether you want the precondition test(s) to pass or fail.
Select the precondition test(s) from the list. A checkmark appears beside the test and a P (pass) or an F (fail) also appears depending on whether you have set the Type switch to PASS or F.
Click on OK to confirm your setting and return to the Sequence Editor dialog box.

The following list describes all the controls in the Precondition Editor dialog box:
The Insert Position switch determines whether new preconditions are inserted before or after the current precondition.
The Add All Of button inserts ALL OF: to begin a block of preconditions which must all be true.
The Add Any Of button inserts ANY OF: to begin a block of preconditions of which at least one must be true.
The Add Condition… button invokes the Add Condition dialog box.
The Tests list box shows the available precondition tests. The setting of the Type switch (pass or fail) determines whether the precondition test(s) you select must pass or fail.
The Move to the Left and Move to the Right buttons, shown in Figure 4-18, adjust the level of the currently selected preconditions. In general, Add Condition set the level properly, so you should seldom have need of the Move to the left and Move to the right buttons.

Figure 4-18. Move to the Left Button and Move to the Right Button

The Delete Condition button deletes the selected precondition.
The Clear Conditions button clears all the preconditions for the test selected in the Tests list box.
The OK button saves any changes you make to the test sequence preconditions and returns you to the Sequence Editor. Changes you make to preconditions take effect only when you click on the OK button in the Sequence Editor. The Test Executive saves all preconditions with the test sequence when you select Save from the File menu on the Test Executive Front panel to save the test sequence to disk.
The Cancel Edits button discards any changes you make to the test sequence preconditions and returns you to the Sequence Editor.

Effect of Preconditions and Run Mode on Test Flow

The preconditions and run mode for each test determine the test executive flow for a test sequence. The Test Executive performs the following steps to determine whether or not to execute a given test:

The Test Executive evaluates the preconditions for the test. For a test to execute, the result of each precondition test must match the result specified in the preconditions. If evaluation of preconditions indicates that the current test should be skipped, the test result is set to SKIP.
The Test Executive checks the run mode of the test. If the run mode is Normal, the test executes. If run mode is set to any value except Normal, the test does not execute. Table 4-6 shows the value that each run mode generates for a skipped test.

Table 4-6. Run Mode Test Result Values

Run Mode	Value Generated
Normal	Test success determines value.
Skip (Test not run)	SKIP
Force PASS (Test not run)	PASS
Force FAIL (Test not run)	FAIL

When the Test Executive evaluates preconditions, it does not distinguish between a real PASS/FAIL result, where the test actually executed and a forced PASS/FAIL result.

Appendix A – Vitrek Parameter Panels
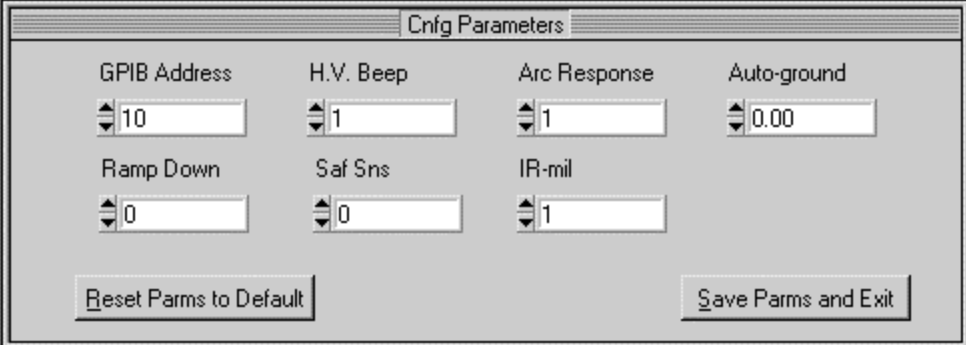
Cnfg Parameter Panel
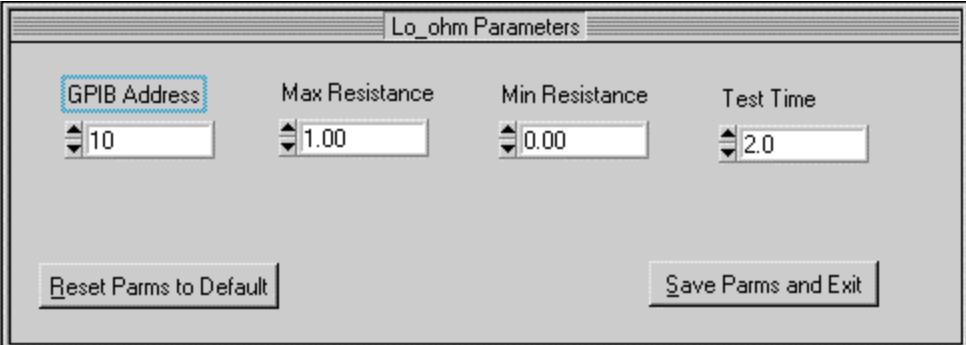
Lo_ohm Parameter Panel
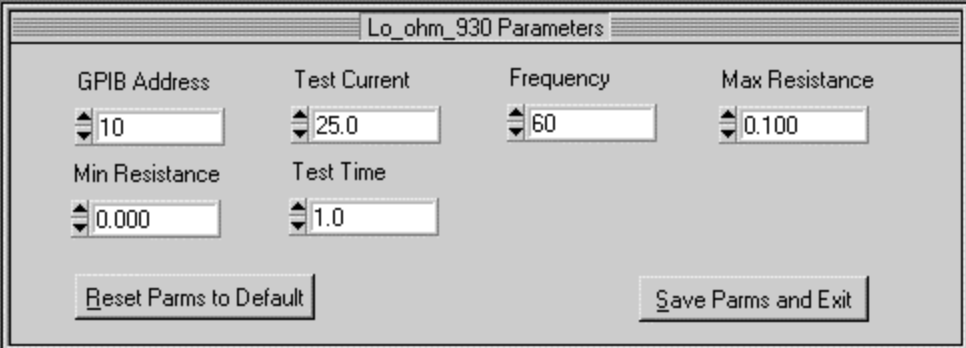
Lo_ohm_930 Parameter Panel

Meg_ohm Parameter Panel
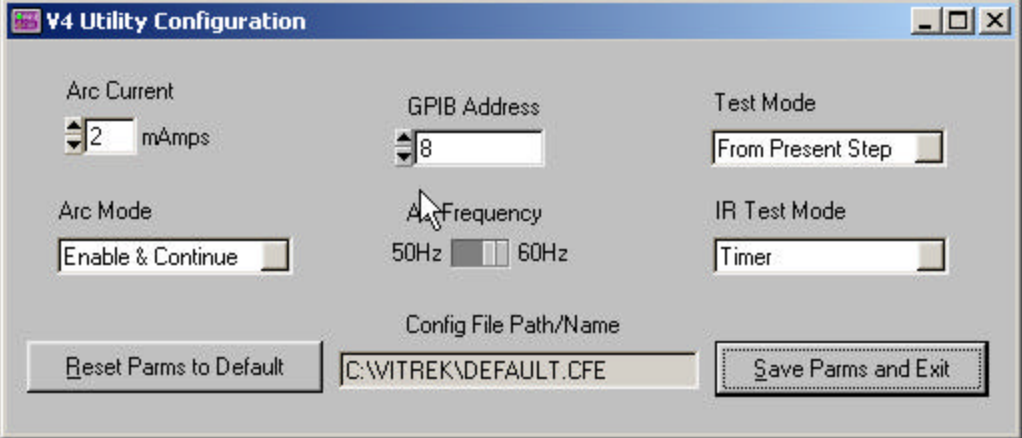

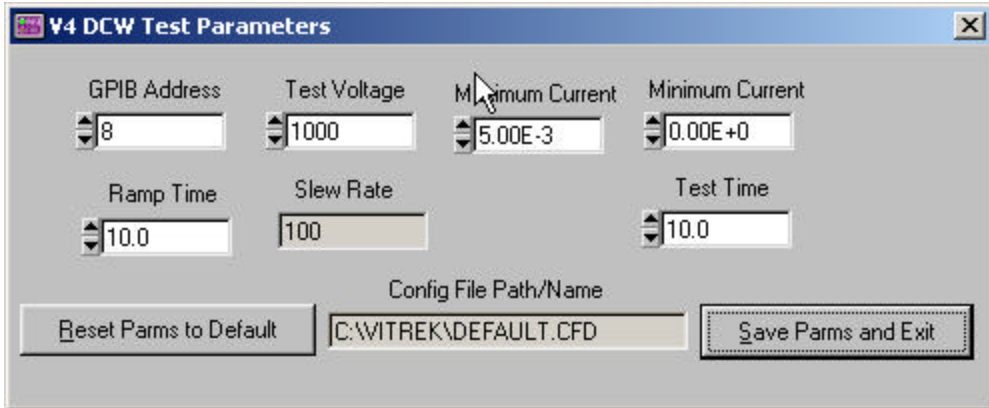Vac Parameter Panel

Vdc Parameter Panel

V948 Parameter Panel
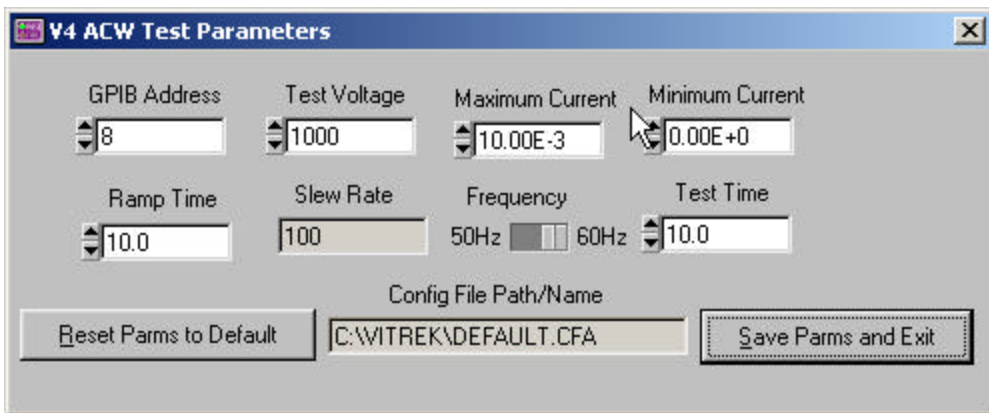
V944i Results Message Parameter Panel
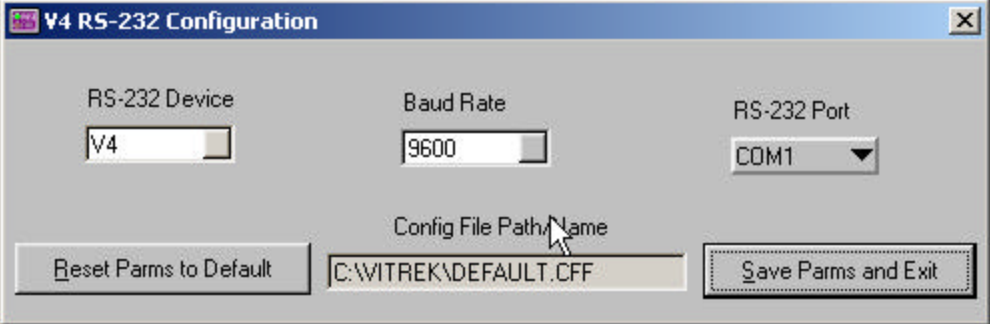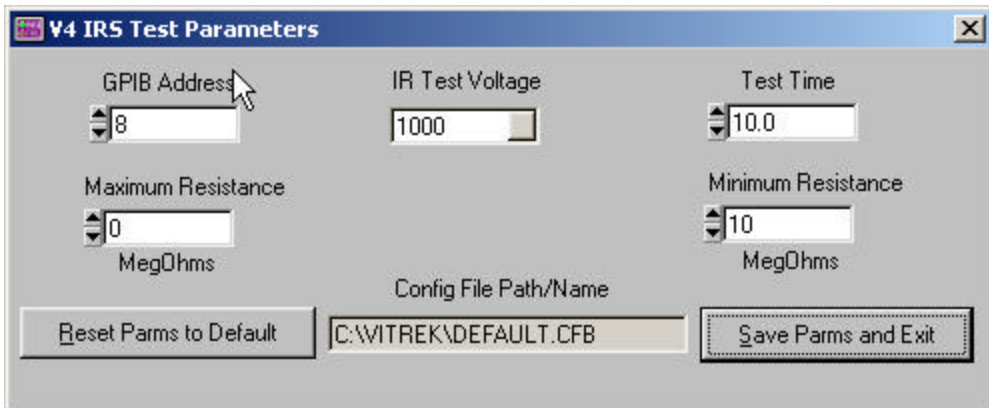

V4 RS-232 Parameter Panel

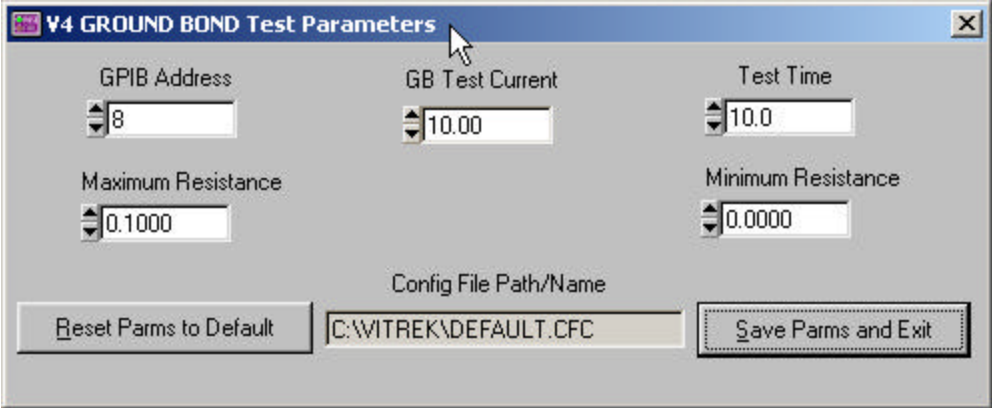V4 Utility Configuration Parameter Panel

V4 DCW Parameter Panel

V4 ACW Parameter Panel

V4 IRS Parameter Panel

V4 GBON Parameter Panel