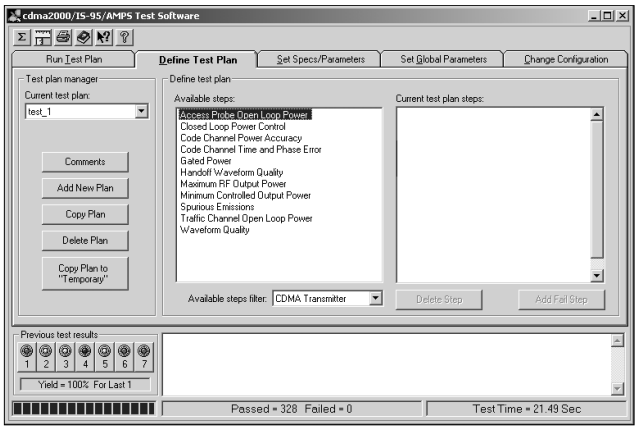
Wireless Test Manager
Operator & Administrator User Interface
Demo Guide

Outline

- Introduction
- Quick Test
- Custom Test Development
- Modifying Test Configuration
- WTM File Requirements and Descriptions

WTM Main Functions



The wireless test managers use tabbed pages so it is easy for the test developer to navigate.

The first tab “RUN TEST PLAN” is used by operators and test developers to select and run test plans.

The second tab, “DEFINE TEST PLAN”, is where the test developer chooses and sequences the tests to be run.

The third tab is used to set the specs and parameters for each test.

The fourth tab, “SET GLOBAL PARAMETERS” is where the developer sets test and mobile phone defaults.

The fifth tab, “CHANGE CONGIFURATION” is where the developer sets many items including system hardware, data storage, operator permissions and more.

Quick Testing

Select a Test Plan

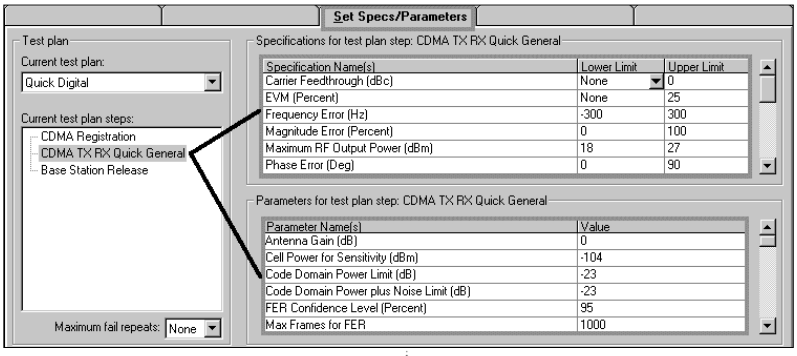
- **WTM comes with a number of pre-defined test plans**
- **Each test plan performs a number of test steps**
- **Select the Run Test Plan folder**
- **Drop down menu lists all currently defined test plans**

The Wireless Test Manager comes installed with a number of pre-defined test plans. In addition, you can create your own test plans.

Before you can perform any tasks with a test plan (for example, run, modify, or change the test plan's global parameters) you have to ensure that you have selected a test plant

Setting Specifications/Parameters

- **Select the Set Specs/Parameters folder**
- **Specifications and parameters apply to selected test plan step**

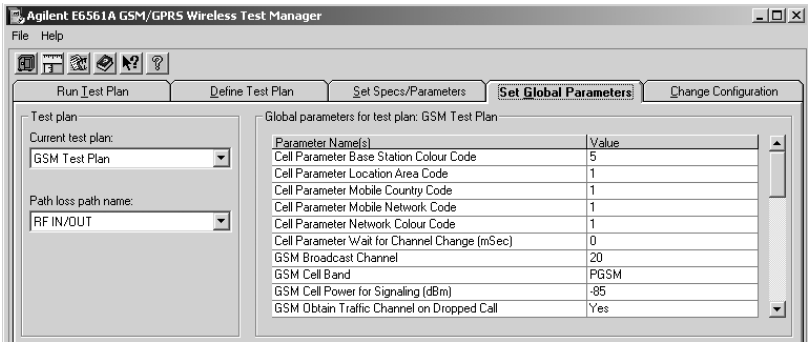


The majority of steps which make up a test plan have their own parameters which you can set to different values. (For example, a step which performs a measurement function may contain a Measurement Timeout parameter.) Any changes you make to parameter values only affects the currently selected test plan.

The majority of steps which make up a test plan have their own specifications (pass/fail limits) which you can set to different values. (For example, the E6560A cdma2000/IS-95 TXA RF Power Output measurement function may contain upper and lower limit specifications for output power.) Any changes you make to specification values only affects the currently selected test plan.

Setting Global Parameters

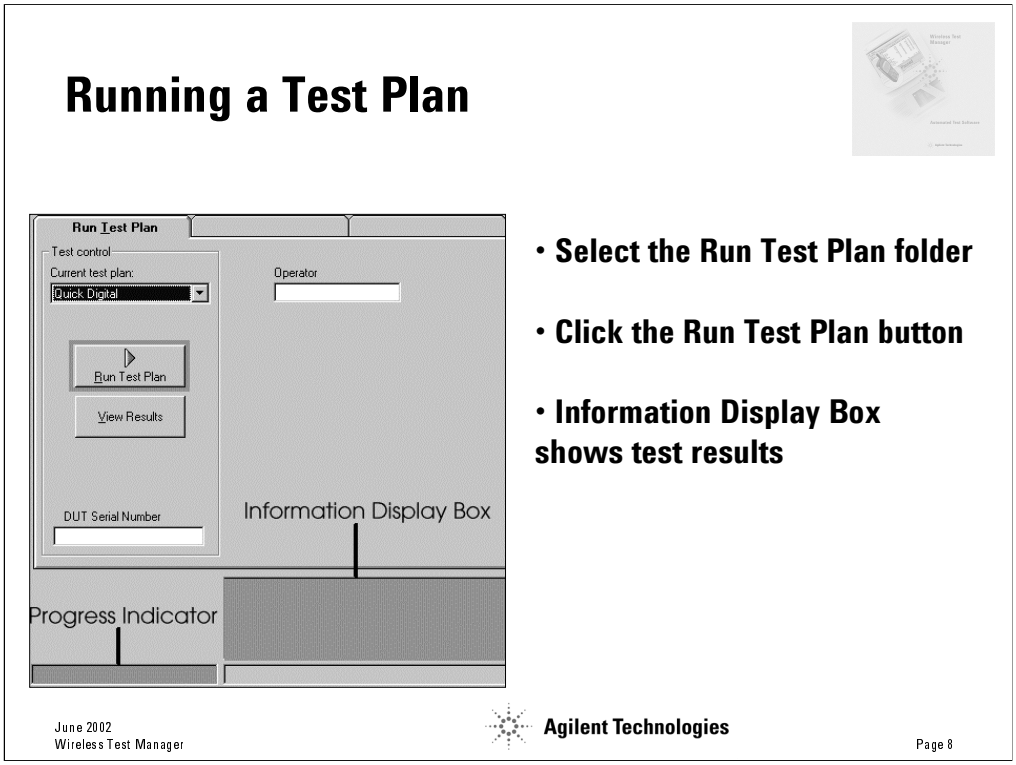
- **Select the Set Global Parameters folder**
- **Global parameters affects all steps in the selected test plan**



A global parameter is different from a parameter which is assigned to a specific step. A step parameter only affects the individual step to which it is assigned, whereas a global parameter affects all steps within a test plan.

Each test plan can have it’s own set of global parameter values.

You can change any of the global parameter values for the currently selected test plan.



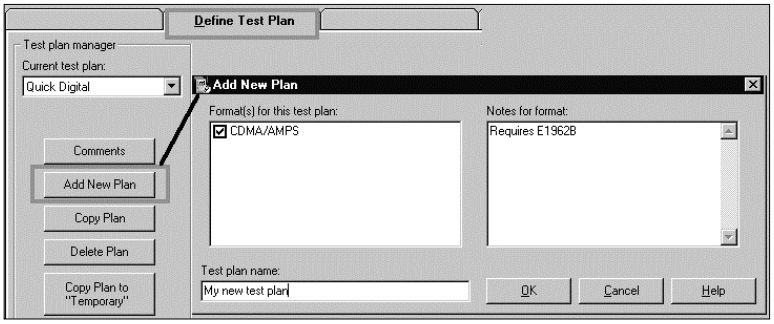
Running a test plan is the most common task you are likely to want to perform with the Wireless Test Manager.

The Test Plan Progress Indicator shows the progress of the currently running test plan. When the test plan finishes, the overall pass/fail result is shown in the Information Display Box.

Custom Test Development

Adding a New Test Plan

- **Select the Set Define Test Plan tab**
- **Click on the Add New Plan button**

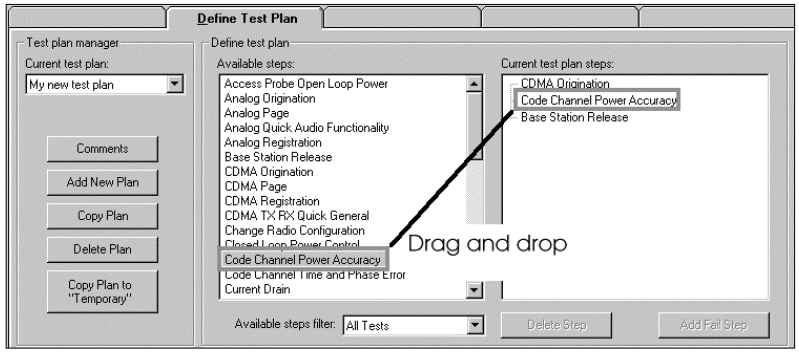


The Add New Plan/Copy Plan dialog box is used to specify the name and wireless formats for a new test plan, or to specify a new name for a test plan you want to copy.

The items that are displayed depends on the button you clicked to open this dialog box. If you clicked the Copy Plan button, the Format(s) for this test plan: and Notes for format: items are not available.

Adding a New Test Step

- **Highlight a test step from the available steps**
- **Drag the step to the current test plan steps window**

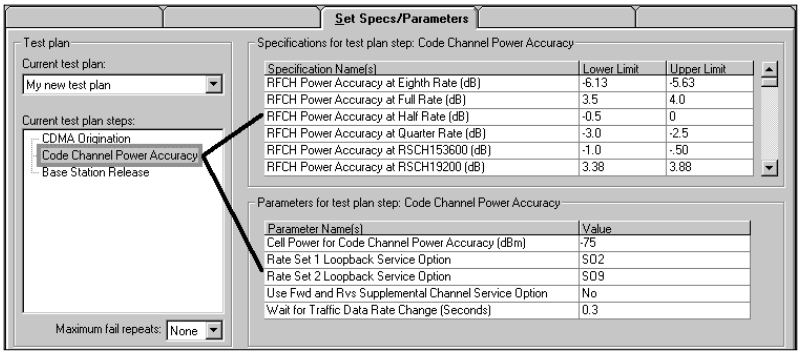


The Wireless Test Manager allows you to add as many steps as you want to your test plan. Test plan steps are run in the test plan in the same order in which they are listed in the Current test plan steps: box on the Define Test Plan tab.

Tip: You can add a step to a test plan by double-clicking the name of the step in the Available Steps: box. However, the step is always added after any existing test plan steps. If you want to move the step to a different position in the test plan, use a drag-and-drop operation.

Setting Specifications/Parameters

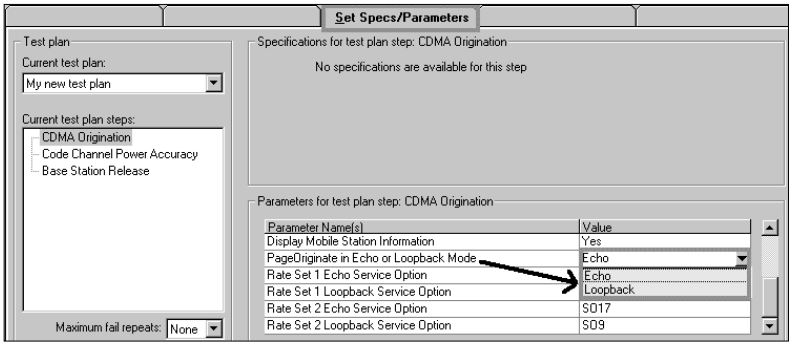
- **Highlight a test plan step**
- **Enter new specification/parameter values in Limit and Value fields**



The new value you specified takes effect immediately.

Selecting a Parameter Value

- **Select a Value field**
- **Enter a parameter or select from the pull-down list**



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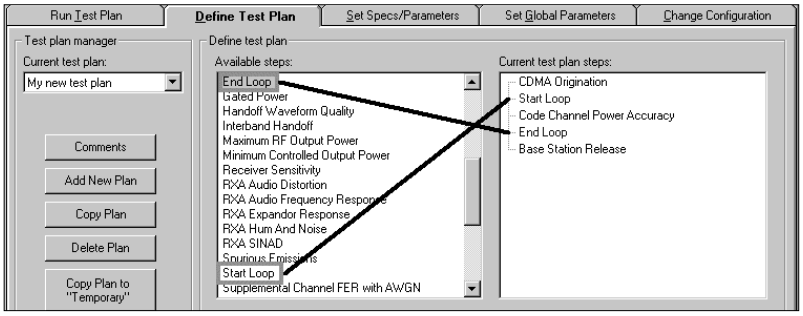
Setting up a Testing Loop

- **Drag and drop Start Loop and End Loop in test plan steps**
- **Looping can be done on channel number, radio configurations, analog power, or SAT tones**



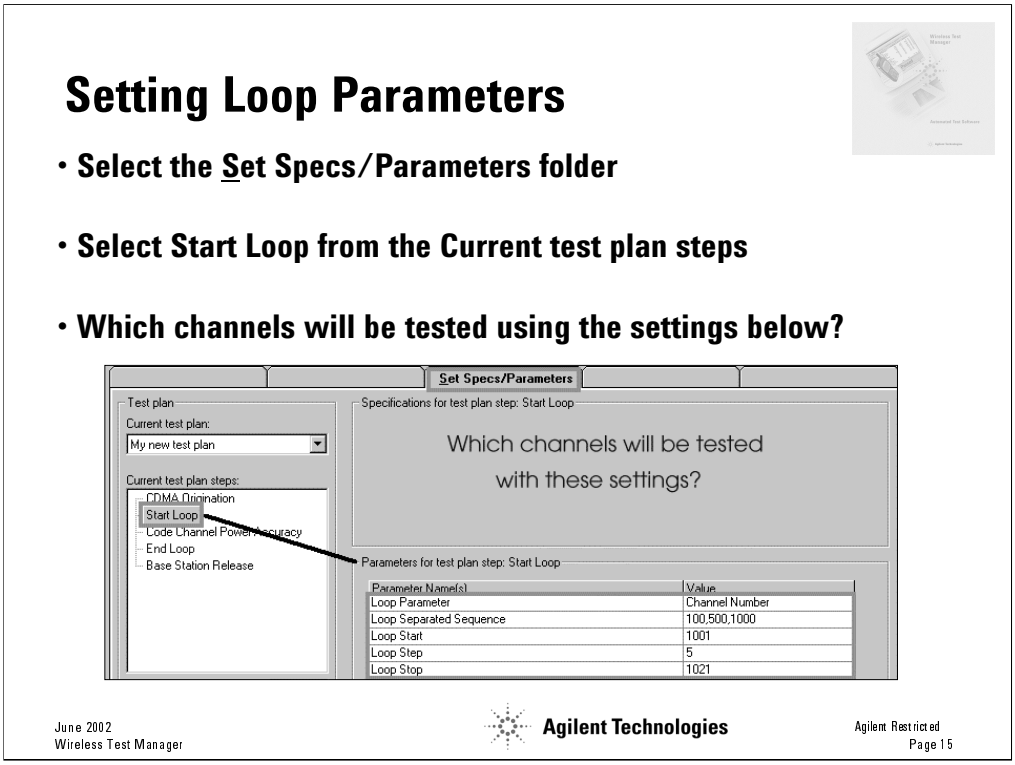
The Start Loop test plan step specifies the start of a looping structure in the test plan. It is one half of the matched pair "Start Loop" and "End Loop" which define the start and end of a looping structure.

Test steps that fall between a "Start Loop" and "End Loop" test step pair are looped through tests using the loop parameters specified in this test step. The software comes with four looping parameters while new looping parameters can be defined by the developer

. The following four Loop Parameter choices in the E6560A are available to loop on:

- Analog MS TX Power Level
- Analog SAT Tone
- Channel Number
- Radio Configuration

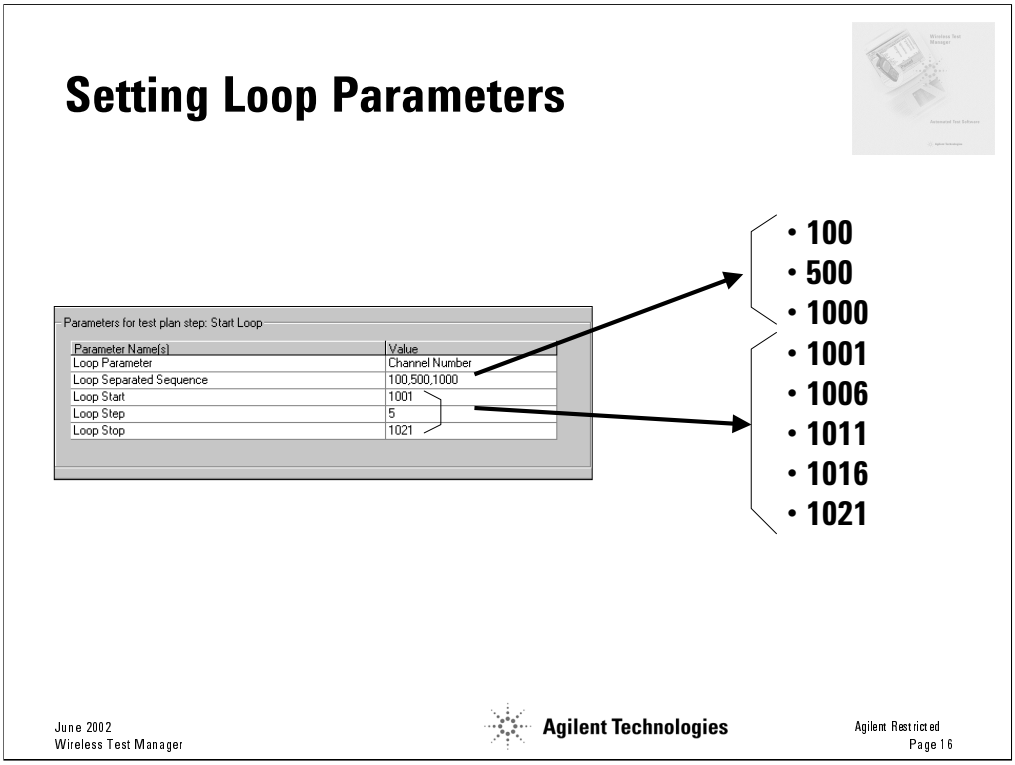
Other wireless test managers may have different looping parameters based on the wireless technology to be tested.



Channel Number specifies that the looping structure loops on channel numbers

The Loop Separated Sequence parameter is a comma separated list of values corresponding to the loop parameter setting on each successive iteration of the loop. This can be set to an empty list or used in conjunction with the Loop Start, Loop Step, and Loop Stop parameters to define what the loop parameter is to be set to.

The values in the Loop Separated Sequence list (unless it is empty) are always used first to define the looping values. When the last value in this list is done the Loop Start/ Stop values are used.



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- Channel Number
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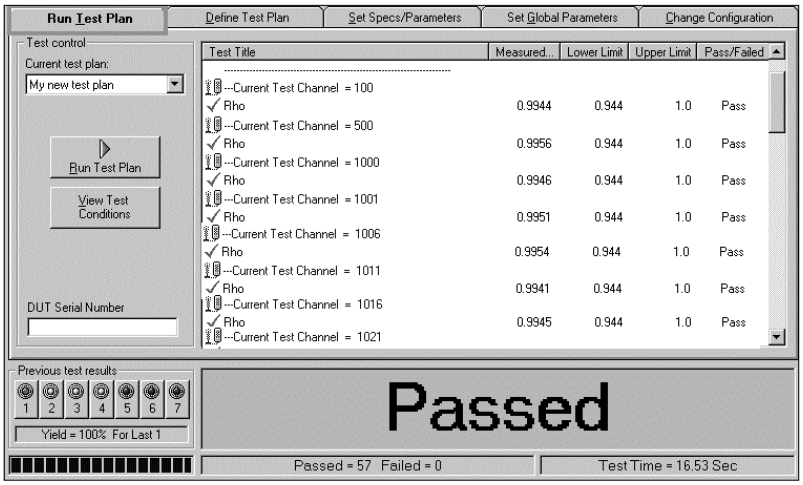
Loop Test Results

- **Run Test Plan tab lists test information and exact results**



Three different types of test results are available in the Wireless Test Manager. These are:

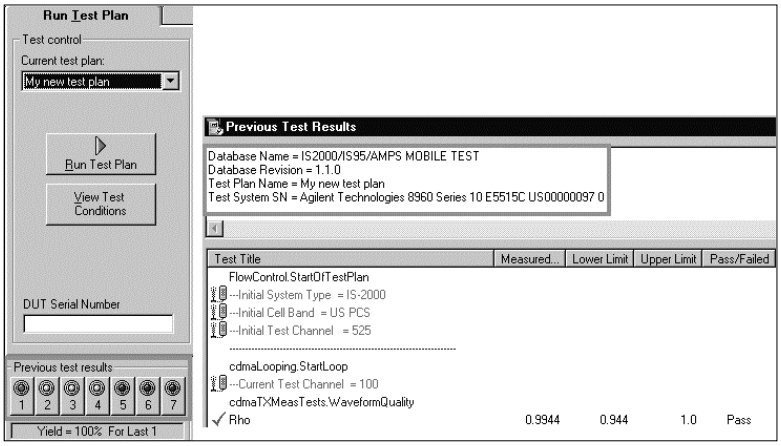
- Overall Pass/Fail,
- Basic, or
- Comprehensive.

Overall pass/fail results are shown in the Information Display Box (green)

Basic results for the last test run are shown in the window above the Information Display Box when the Run Test Plan folder is open.

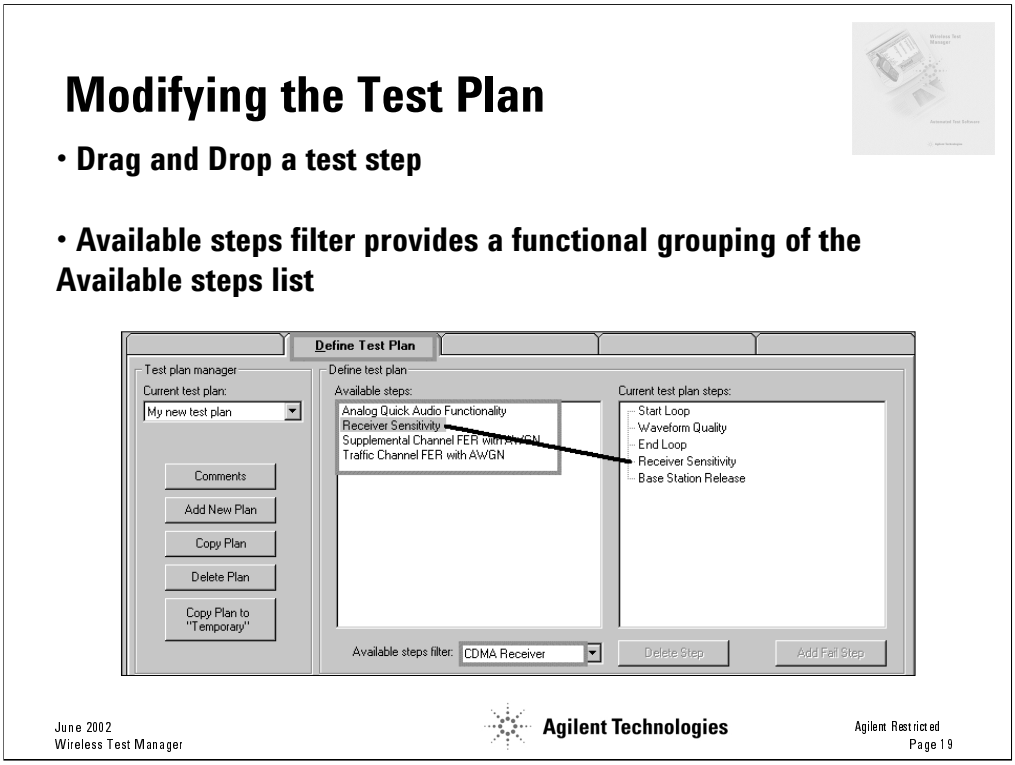
Comprehensive Test Results

- **Displayed when Previous test results buttons are selected**



The Previous Test Results dialog box presents comprehensive results for one of the last seven previously run test plans that you specified.

The upper text box provides additional information about the environment at the time the test plan was run:

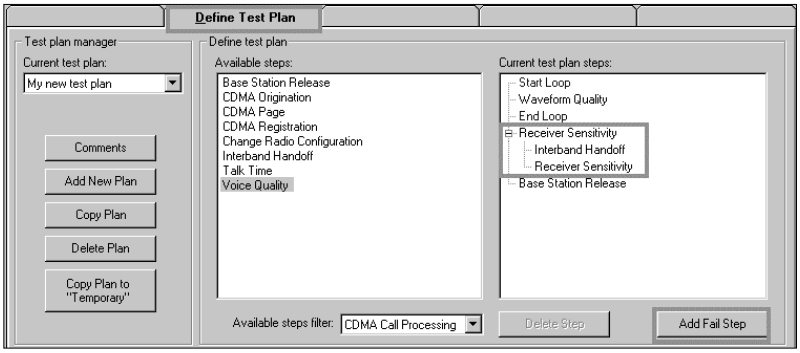


Use the Available steps filter drop-down list to filter the steps which appear in the Available steps box. This provides a way to reduce the number of steps which are displayed making it easier to locate the step you are trying to find.

Adding a Fail Step

- **With the desired step highlighted, select the Add Fail Step button to create a program branch**

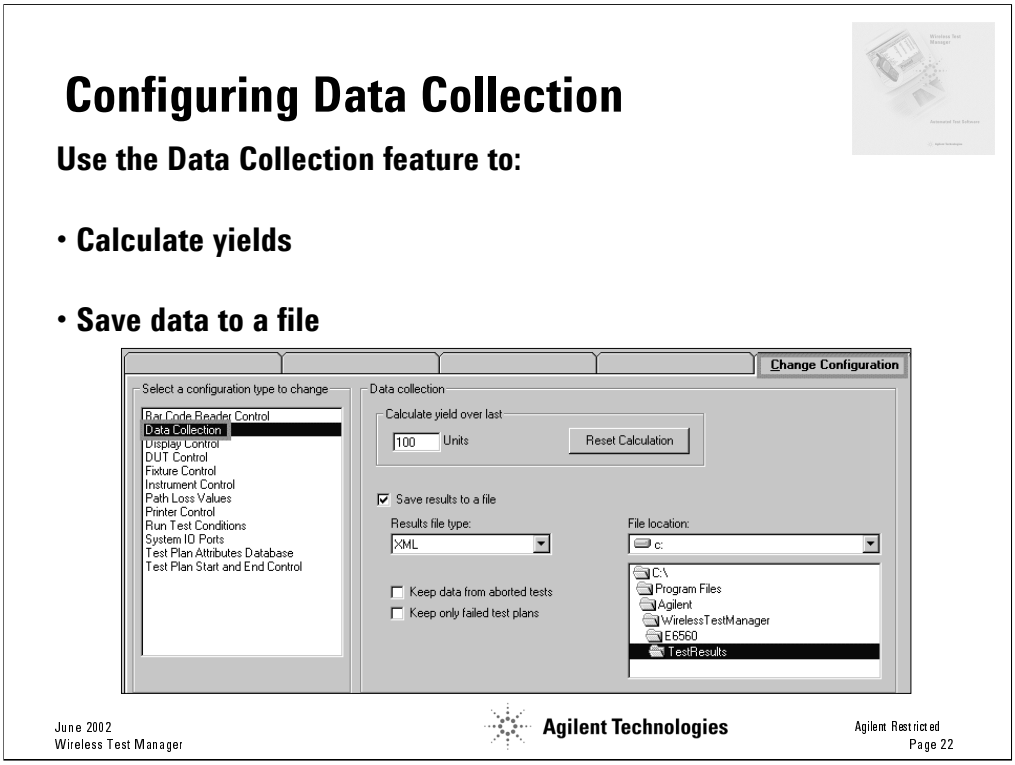
- **Insert the test step or steps you want the software to perform if the parent test fails**



A fail step is run only if the step that it is added to fails. Specifications and parameters for a fail step are set independently of other steps in a test plan.

Modifying Testing Configuration

The Change Configuration tab provides controls which allow you to change e settings for the Wireless Test Manager.



Use the Units box to set the number of units over which the yield is calculated. After the number of units you set is reached, a running yield is calculated over the last N units.

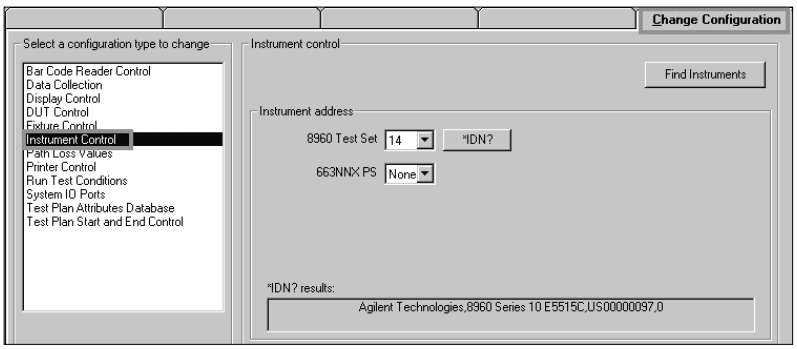
Use the Reset Calculation button to reset the yield calculation.

Use the Save results to a file check box to display the file type and file location dialog boxes.

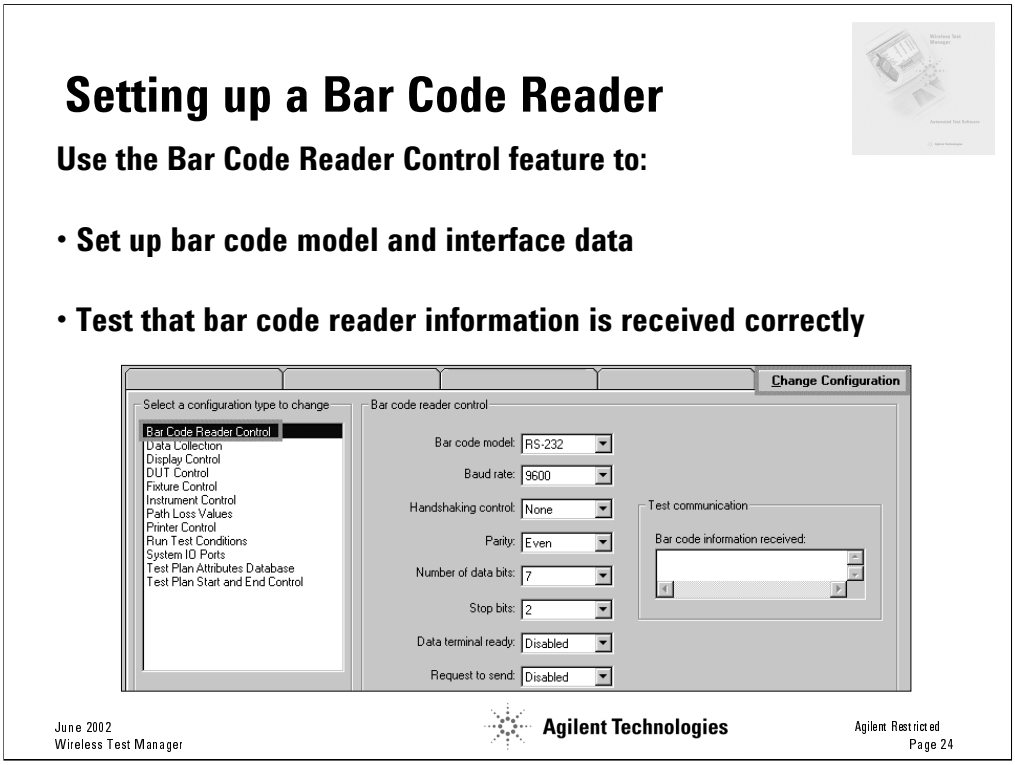
Setting up GPIB Addresses

Use the Instrument Control feature to:

- **Set GPIB addresses for Test Sets and Power Supplies**
- **Verify GPIB communication (*IDN?)**



Use the 663NNX PS box to select the address of the Agilent 66319B or 66321B mobile communications DC source (power supply).



Use the Test communication box to test the communication between your bar code reader and the Wireless Test Manager.

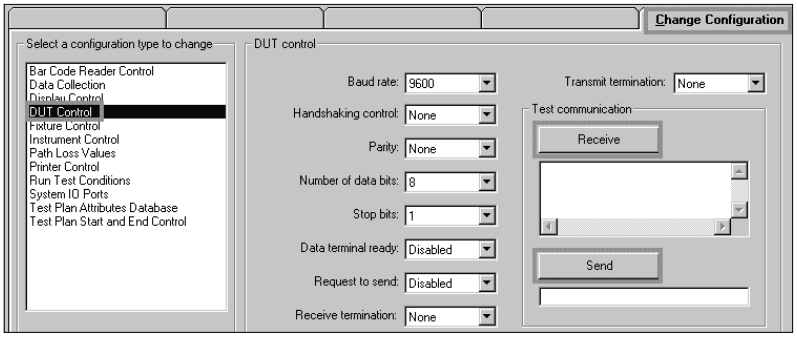
The Bar code information received: box displays any data returned from your bar code reader.

A check box provided on the Test plan start end control allows you to specify whether or not the test plan will start automatically as soon as the bar code number has been received from the bar code reader.

Setting up a Mobile Station (DUT) Serial Bus

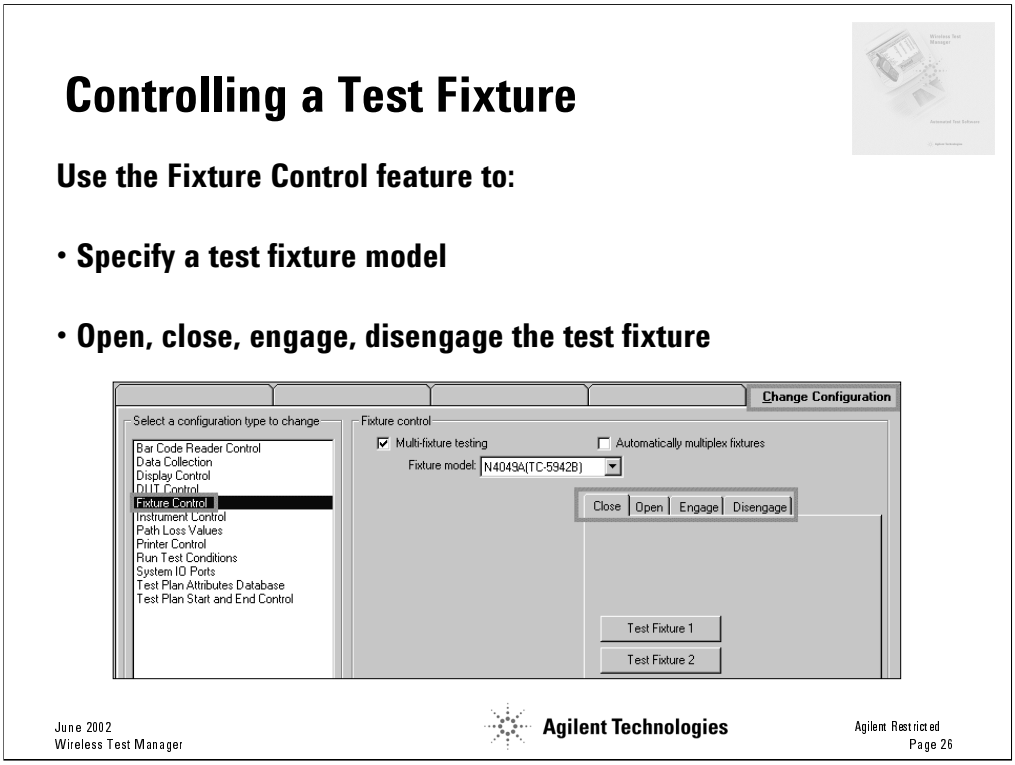
Use the DUT Control feature to:

- **Set up a serial connection to mobile station**
- **Test the serial connection**



Use the Test communication box to test the communication between your DUT (Device Under Test) and the Wireless Test Manager.

Press the Receive button to get information from the DUT. Press the Send button to push information to the device under test.

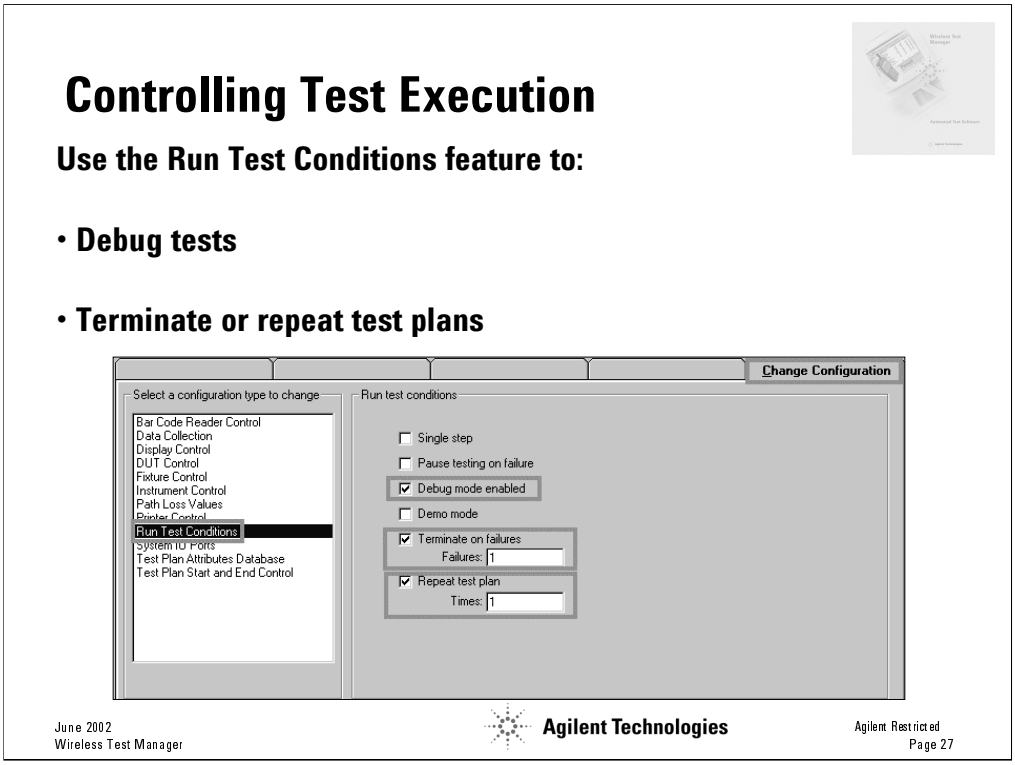


The Wireless Test Manager supports the following fixtures:

- Agilent Technologies 8421A Wireless Test Fixture
- Agilent Technologies N4049A Wireless Test Fixture (TC-5942B)
- Generic RS-232 fixture
- Manual fixture

To test a fixture action, select the tab you want (open, close, engage, disengage) and press the Test Fixture 1 or Test Fixture 2 button.

- xture



Debug mode provides additional information while a test plan is running. This is useful during test development or while you are trying to troubleshoot a problem

Use the Terminate on failures check box to select whether or not the test plan aborts after the previous test plan steps have greater than the number of failures you specify in the Failures: edit box. The maximum value you can enter in the Failures: edit box is 32767.

Use the Repeat test plan check box to select whether or not to repeat a test plan. You can specify the number of times you want to repeat the test plan using the Times edit box (maximum value = 32767).

Setting up Multi-System Testing

- **Use the System IO Ports feature to:**
- **Select multi-system testing (running two test systems from one computer)**
- **Specify I/O ports for system hardware devices**

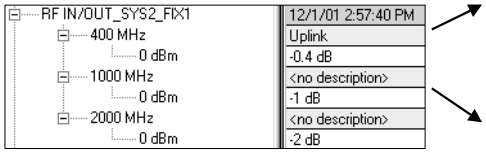
The Wireless Test Manager supports testing on one or two test systems.

With multi-system testing selected, two instances of the Wireless Test Manager are run simultaneously. Each instance is uniquely identified by color (one is green and the other is blue).

Path Effect Viewer

- **Provides management of system path offsets by respective levels and frequencies**
- **Data is stored and reflected within specified .xml file**

Path Effect Viewer

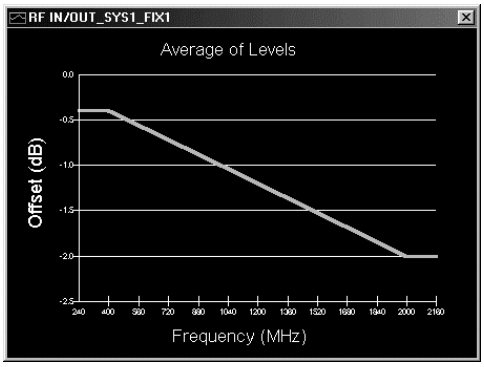


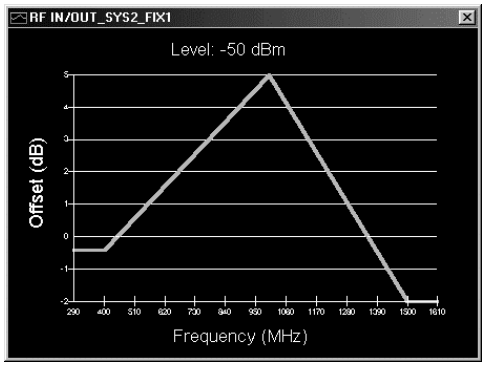
PathLoss.xml

```
- <Path name="RF IN/OUT_SYS2_FIX1">
    <WhenDone>12/1/01 2:57:40 PM</WhenDone>
    <ByWhat>edited by Agilent Path Effect Viewer</ByWhat>
    <SpectrumUnit>Hz</SpectrumUnit>
    <LevelUnit>dBm</LevelUnit>
    <PathEffectUnit>dB</PathEffectUnit>
  - <Spectrum value="4E+008">
      <Description>Uplink</Description>
      <PathEffect level="0">-0.4</PathEffect>
    </Spectrum>
  - <Spectrum value="1E+009">
      <PathEffect level="0">-1</PathEffect>
    </Spectrum>
  - <Spectrum value="2E+009">
      <PathEffect level="0">-2</PathEffect>
    </Spectrum>
```

Path Effect Viewer

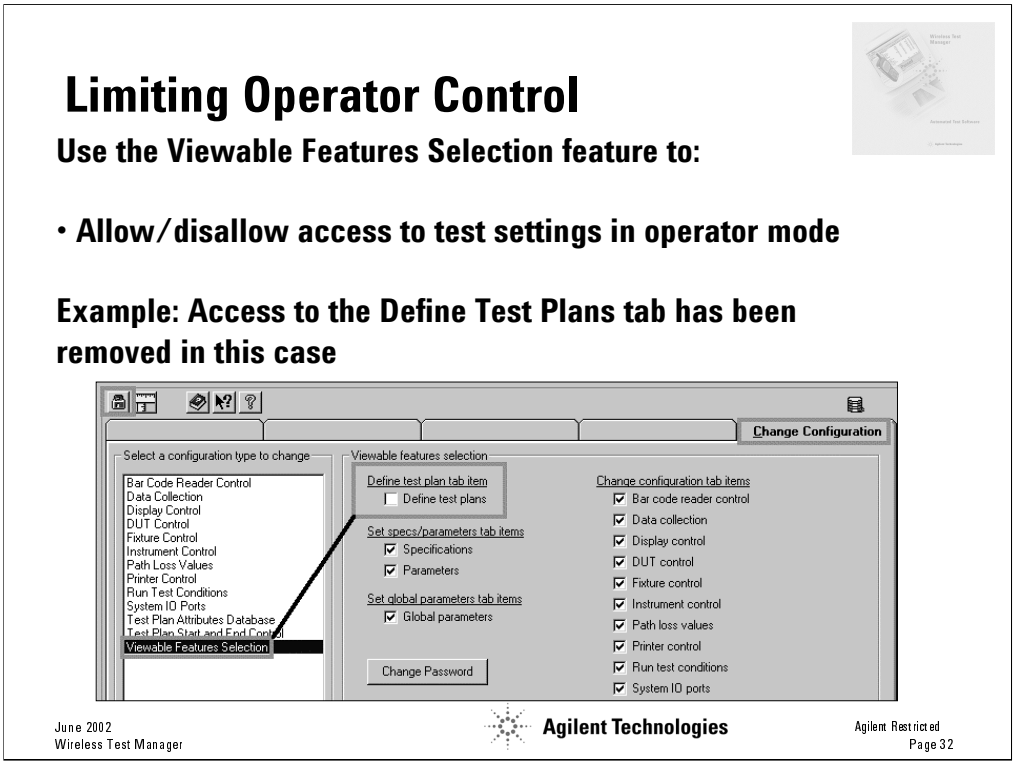
- **Visual representation of selected offsets and frequencies**
- **Viewable as average or single point of selected levels**





Path Effect Viewer

- Path Naming Conventions
  - RF IN/OUT_SYS*x*_FIX*y*
    - where *x* is system number 1 or 2
    - where *y* is system number 1 or 2
- Only these 4 path names are valid
- Modify these paths only, do not create new path names
- **"RF IN/OUT_SYS1_FIX1" applies to single system with *one or no fixtures***
- Invalid naming results in error output, zero path loss compensation
- Next version of WTM will replace path effect viewer with more user friendly path loss method



The Wireless Test Manager can be operated in different modes with different permission levels. These operating modes are:

*Operator

*Administrator

*Developer

Operator mode is the software's default mode of operation. To access the Viewable Features Selection, you must enter the password protected Administrator mode. (A red icon resembling a padlock is displayed). In this mode, you can select which features can be viewed and changed when the software is returned to Operator mode or is first opened

Developer mode is not available in this trial software. For more information about the developer mode, see the Self-Guided Demonstration on the www.agilent.com/find/wtmanagers web page or contact your Agilent Sales Representative.

Example of Hidden Feature

The Define Test Plan folder is now hidden in operator mode.