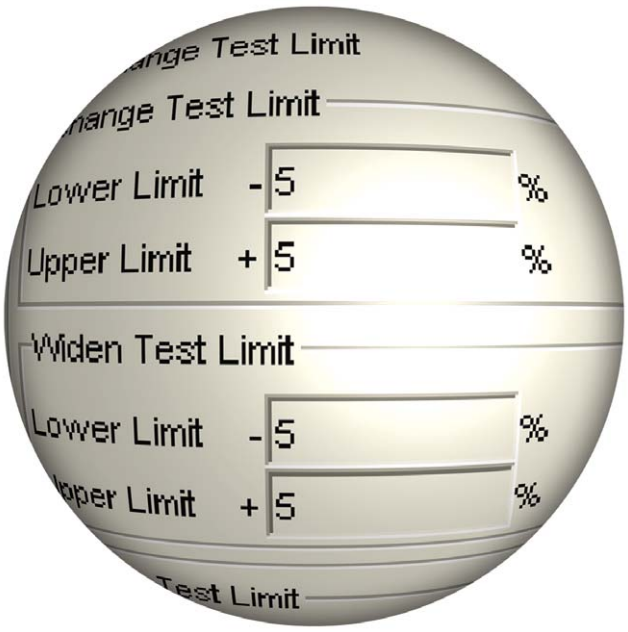
Using the Auto Optimizer on the Agilent *Medalist* In-Circuit Test Systems



Introduction

Available in the graphical debug interface introduced at software version 07.00 for the Agilent *Medalist* i3070 test system, the Auto Optimizer is a tool designed to automatically evaluate and fine-tune analog in-circuit tests in order to improve throughput.

Auto Optimizer runs the analog tests and determines which of the passing tests use complex measurement options. Auto Optimizer then attempts to minimize the use of such measurement options and ensure that the modified tests will pass reliably in production. If the modified test passes stability testing, Auto Optimizer sets the ASRU range for the test and presents the optimization results.

The test engineer can customize the parameters for stability testing, and review the modified tests before saving changes to the test source files.

The Auto Optimizer is especially useful if Support Engineers are allowed to edit the test during production. Using this tool will save a user many hours to list out tests with long test times and then manually edit them one by one. With this tool, this daunting task will be more accessible and thus implementable in today's high production environment to maintain the production volumes.

How To Use the Auto Optimizer

Figure 1 shows some of the user interface. Once the Auto Optimizer is selected, it works as follows:

1. A test is selected
2. The test options are noted and all of them are removed
3. The test will then be retested and if it passes, checked for stability
4. If the CPK is less than the reference, one test option is added back into the test
5. The test will be retested with the added test option and the cycle is repeated until the CPK exceeds the reference CPK or all the test options have been added
6. The next test will be selected

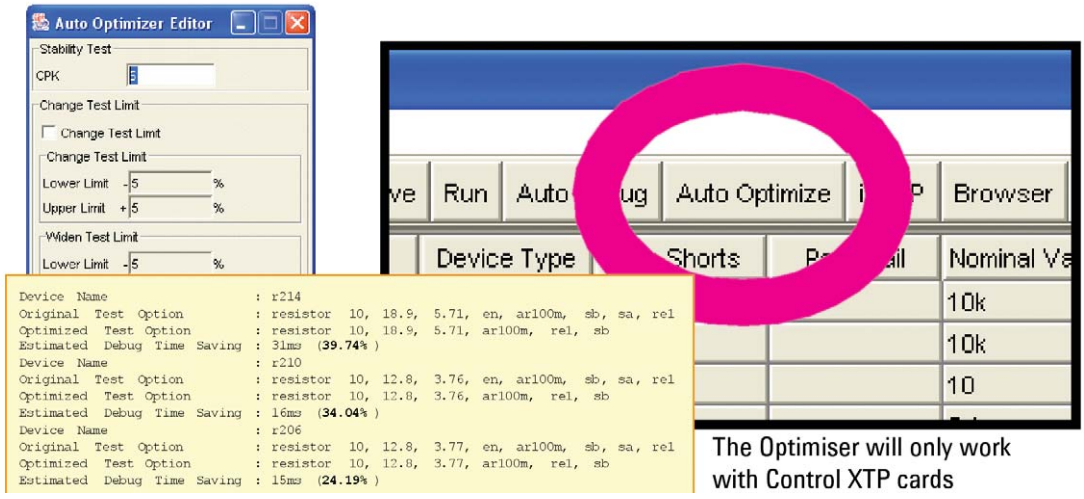


Figure 1. Auto Optimizer interface

The user can set the reference CPK that Auto Optimizer will use during its execution. The user can also opt to allow the Auto Optimizer to change the test limits or offset it. These options are normally not selected.

To launch the Auto Optimizer Editor, select **Actions > Optimize > Rule Editor**, as shown in Figure 2.

When using the Auto Optimizer, it is not necessary to select all the tests for optimization.

1. Run the test in the engineer screen so that the test time column will be populated with each test time (Assume that the test time column is selected to be displayed)
2. Sort the test time so that the longest test time is at the top
3. Select the first few tests where the test times are the longest (the user decides how many tests)
4. Click on the Auto Optimizer button to perform the optimization on these tests.

It is not necessary to optimize all other tests with shorter test times because the improvement will not be significant.

IPG and Auto Debug do a good job at optimizing throughput; but after the board test has been released to production for a period of time, if any increase in test time is seen, the engineer can simply select the test and click on Auto Optimizer to bring the test time for that test back to original. The Auto Optimizer is intended to refresh existing tests to their initial optimized test time.

Note: To run Auto Optimizer, all the control cards in your system must be ControlXTP Cards.

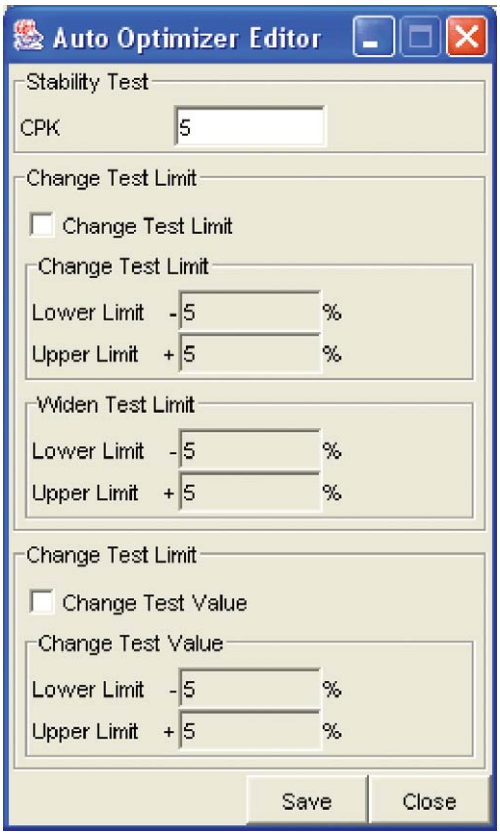


Figure 2 Rule Editor for Auto Optimizer

Conclusion

The Auto Optimizer tool has many benefits that a user will experience. This tool is designed to make users more successful in production

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