REB Functional Tests

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Chapter 1

LSST Readout Electronics Boards Testing Suite

Introduction

This is the testing suite for the readout electronics boards for the LSST CCD interface, designed to verify that the boards are defect-free and operating as expected. Note that this program communicates directly with the Jython interpreter to manipulate the board, so it does not need to be loaded into the Jython exectuor and can be run directly from the terminal with python.

Test versions

There are three separate versions of this test to cover the three types of readout boards:

1. WREBTest.py: for the single-stripe corner raft board (WREB)
2. GREBTest.py: for the double-stripe guider board (GREB)
3. VSTTest.py: for the triple-stripe science raft board (VST)

Presently, the WREB test is fully functional and a board (SN:03) passes all applicable tests. The VST test is also fully functional, though there are some minor gain errors possibly due to invalid resistor values that prevent boards we have tested from being able to pass all tests. The GREBTest is not fully functional, as the CCS system for it was still being developed at the conclusion of my time working on this project, though I have mostly adapted the code to work once the CCS is fully implemented for it.

External dependencies

All external dependencies are contained within Anaconda:

- astropy
- numpy
- matplotlib

Additionally, the program requires a UNIX dialogs-like executable for the GUI to be run (default), which is installed by default on most Linux systems, including RHEL6.

Running the testing suite

- Ensure Jython console is running (./JythonConsole or the bootstrapper program)
- Ensure `rebRun.sh` is running
- `python REBTest.py [options]` Initial crashing yielding a ValueError is likely due to a `rebRun.sh` or `JythonConsole` crashing or not being loaded.

Subtests

Test structure

Individual tests are structured as classes with four required methods:

- `__init__` sets initial variables; minimum required variables are `self.title` and `self.status`.
- `runTest` is the body of the tests, running the code to execute the tests and storing the results to state variables.
- `summarize` writes summary information to the summary object passed to it; this is used in generating the cover page.
- `report` writes the portion of the pdf report that the test is responsible for and dumps the raw data into the report directory structure if `-d` is called with the program.

List of subtests

- `IdleCurrentConsumption`: reads the idle current consumption across parts of the readout board. Pass metric: none
- `ChannelTest`: obtains the list of comminicable channels. Pass metric: passes if number of channels is the expected value (must be updated, is not current in GREB or VST tests)
- `ASPICcommsTest`: tests that the readout board can communicate with the ASPICS. Pass metric: passes if `<subsystem> checkAspics` returns a list of zeros, indicating the ability to read and write from the ASPIC-associated registers
- `SequencerToggling` (WREB test only): toggles the sequencer outputs for the parallel clock, serial clock, and reset gate rails. Pass metric: none
- `CSGate` (implemented on all tests, but only functional on WREB test): Tests the performance of the current source gate. Pass metric: not implemented
- `PCKRails`: Scales the parallel clock rails over a range of voltages with a constant rail potential difference. Pass metric: upper and lower gain within ROI are close to 1 and fewer than N points are further than X from the expected value.
- `SCKRails`: Scales the serial clock rails over a range of voltages with a constant rail potential difference. Pass metric: upper and lower gain within ROI are close to 1 and fewer than N points are further than X from the expected value.
- `SCKRailsDiverging`: Scales the serial clock rails over a range of voltages with an increasing rail potential difference. Pass metric: upper and lower gain within ROI are close to 1 and fewer than N points are further than X from the expected value.
- `RGRails`: Scales the reset gate rails over a range of voltages with a constant rail potential difference. Pass metric: upper and lower gain within ROI are close to 1 and fewer than N points are further than X from the expected value.

- `RGRailsDiverging`: Scales the reset gate clock rails over a range of voltages with an increasing rail potential difference. Pass metric: upper and lower gain within ROI are close to 1 and fewer than N points are further than X from the expected value.
- `OGBias`: Tests the output gate performance by scaling it over a range of potentials and testing for linearity. Pass metric: fewer than N points are further than X from the expected value.
- `ODBias`: Tests the output drain performance by scaling it over a range of potentials and testing for linearity. Pass metric: fewer than N points are further than X from the expected value.
- `GDBias`: Tests the guard drain performance by scaling it over a range of potentials and testing for linearity. Pass metric: fewer than N points are further than X from the expected value.
- `RDBias`: Tests the reset drain performance by scaling it over a range of potentials and testing for linearity. Pass metric: fewer than N points are further than X from the expected value.
- `TemperatureLogging`: Queries the board's internal trending database to obtain the temperature values while the test has been running. Largely depricated due to poor functionality in the database retrieval program. An alternative is `ParameterLogging`, which actively queries the board for the desired properties during the course of the test. Pass metric: none
- `ParameterLogging`: Actively queries the board in a separate thread for the desired properties while the test is running. Using `-l` or `--logValues` while calling the program will allow you to actively log these values without a time limit. Pass metric: none
- `ASPICNoise`: Obtains a fits image from each ASPIC in the readout board. Analyses the images to measure the noise distribution and mean pixel value across the image. This test is run with three different sequencers: unclamped, clamped, and reset. Pass metric: no channels have a standard deviation in pixel value larger than X (currently 5.5).
- `ASPICLogging`: Continually runs the ASPICNoise tests periodically; this was used for thermocycling testing over long periods of time. This test must be run with `-l` enabled.

Full documentation

Extensive doxygen-generated documentation is available in html and pdf formats in the "Documentation" directory.

Contact

My SLAC email (`bcb@slac.stanford.edu`) will be terminated when I leave SLAC in September. If something is wrong, confusing, or not working, feel free to contact me after I have left SLAC at `bartlett@caltech.edu`.

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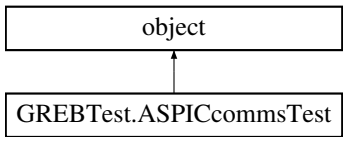
Chapter 5

Class Documentation

5.1 GREBTest.ASPICcommsTest Class Reference

Tests that the board can communicate with the ASPICS.

Inheritance diagram for GREBTest.ASPICcommsTest:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.1.1 Detailed Description

Tests that the board can communicate with the ASPICS.

5.1.2 Constructor & Destructor Documentation

5.1.2.1 def GREBTest.ASPICcommsTest.__init__ (*self*)

Initialize minimum required variables for test list.

5.1.3 Member Function Documentation

5.1.3.1 def GREBTest.ASPICcommsTest.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.1.3.2 def GREBTest.ASPICcommsTest.runTest (*self*)

Run the test, save output to state variables.

5.1.3.3 def GREBTest.ASPICcommsTest.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

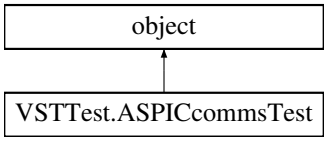
The documentation for this class was generated from the following file:

- GREBTest.py

5.2 VSTTest.ASPICcommsTest Class Reference

Tests that the board can communicate with the ASPICS.

Inheritance diagram for VSTTest.ASPICcommsTest:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.2.1 Detailed Description

Tests that the board can communicate with the ASPICS.

5.2.2 Constructor & Destructor Documentation

5.2.2.1 def VSTTest.ASPICcommsTest.__init__ (*self*)

Initialize minimum required variables for test list.

5.2.3 Member Function Documentation

5.2.3.1 def VSTTest.ASPICcommsTest.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.2.3.2 def VSTTest.ASPICcommsTest.runTest (*self*)

Run the test, save output to state variables.

5.2.3.3 def VSTTest.ASPICcommsTest.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

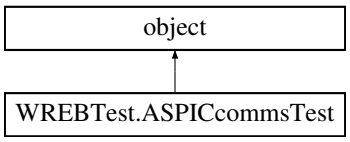
The documentation for this class was generated from the following file:

- VSTTest.py

5.3 WREBTest.ASPICcommsTest Class Reference

Tests that the board can communicate with the ASPICS.

Inheritance diagram for WREBTest.ASPICcommsTest:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.3.1 Detailed Description

Tests that the board can communicate with the ASPICS.

5.3.2 Constructor & Destructor Documentation

5.3.2.1 def WREBTest.ASPICcommsTest.__init__ (*self*)

Initialize minimum required variables for test list.

5.3.3 Member Function Documentation

5.3.3.1 def WREBTest.ASPICcommsTest.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.3.3.2 def WREBTest.ASPICcommsTest.runTest (*self*)

Run the test, save output to state variables.

5.3.3.3 def WREBTest.ASPICcommsTest.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

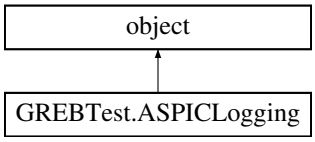
The documentation for this class was generated from the following file:

- WREBTest.py

5.4 GREBTest.ASPICLogging Class Reference

Continuously measure noise distribution in ASPICs.

Inheritance diagram for GREBTest.ASPICLogging:



Public Member Functions

- def __init__ (self, valuesToRead=None)
  Initialize minimum required variables for test list.
- def runTest (self, delay=5 ∗60)
  Continuously log ASPIC images every time interval.
- def summarize (self, summary)
  Summarize the test results for the cover page of the report.
- def report (self, pdf)
  generate this test's page in the PDF report.

5.4.1 Detailed Description

Continuously measure noise distribution in ASPICs.

Must be run with -I enabled.

5.4.2 Constructor & Destructor Documentation

5.4.2.1 def GREBTest.ASPICLogging.__init__ (*self, valuesToRead* = `None`)

Initialize minimum required variables for test list.

5.4.3 Member Function Documentation

5.4.3.1 def GREBTest.ASPICLogging.report (*self, pdf*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.

5.4.3.2 def GREBTest.ASPICLogging.runTest (*self, delay* = 5 * 60)

Continuously log ASPIC images every time interval.

5.4.3.3 def GREBTest.ASPICLogging.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

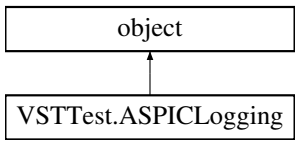
The documentation for this class was generated from the following file:

- GREBTest.py

5.5 VSTTest.ASPICLogging Class Reference

Continuously measure noise distribution in ASPICs.

Inheritance diagram for VSTTest.ASPICLogging:



Public Member Functions

- def __init__ (self, valuesToRead=None)

  Initialize minimum required variables for test list.
- def runTest (self, delay=5 ∗60)

  Continuously log ASPIC images every time interval.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf)

  generate this test's page in the PDF report.

5.5.1 Detailed Description

Continuously measure noise distribution in ASPICs.

Must be run with -l enabled.

5.5.2 Constructor & Destructor Documentation

5.5.2.1 def VSTTest.ASPICLogging.__init__ (*self, valuesToRead* = `None`)

Initialize minimum required variables for test list.

5.5.3 Member Function Documentation

5.5.3.1 def VSTTest.ASPICLogging.report (*self, pdf*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.

5.5.3.2 def VSTTest.ASPICLogging.runTest (*self, delay* = `5 * 60`)

Continuously log ASPIC images every time interval.

5.5.3.3 def VSTTest.ASPICLogging.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

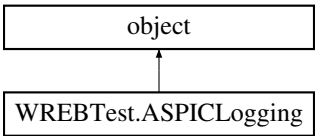
The documentation for this class was generated from the following file:

- VSTTest.py

5.6 WREBTest.ASPICLogging Class Reference

Continuously measure noise distribution in ASPICs.

Inheritance diagram for WREBTest.ASPICLogging:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self, delay=50 ∗60)

  Continuously log ASPIC images every time interval.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf)

  generate this test's page in the PDF report.

5.6.1 Detailed Description

Continuously measure noise distribution in ASPICs.

Must be run with -l enabled.

5.6.2 Constructor & Destructor Documentation

5.6.2.1 def WREBTest.ASPICLogging.__init__ (*self*)

Initialize minimum required variables for test list.

5.6.3 Member Function Documentation

5.6.3.1 def WREBTest.ASPICLogging.report (*self, pdf*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.

5.6.3.2 def WREBTest.ASPICLogging.runTest (*self, delay =* `50 * 60`)

Continuously log ASPIC images every time interval.

5.6.3.3 def WREBTest.ASPICLogging.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

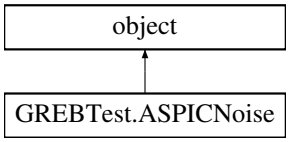
The documentation for this class was generated from the following file:

- WREBTest.py

5.7 GREBTest.ASPICNoise Class Reference

Measure noise distribution in ASPICs for the unclamped, clamped, and reset cases.

Inheritance diagram for GREBTest.ASPICNoise:



Public Member Functions

- def __init__ (self)
  Initialize minimum required variables for test list.
- def runTest (self)
  Run the test, save output to state variables.
- def summarize (self, summary)
  Summarize the test results for the cover page of the report.
- def report (self, pdf)
  generate this test's page in the PDF report.

5.7.1 Detailed Description

Measure noise distribution in ASPICs for the unclamped, clamped, and reset cases.

5.7.2 Constructor & Destructor Documentation

5.7.2.1 def GREBTest.ASPICNoise.__init__ (*self*)

Initialize minimum required variables for test list.

5.7.3 Member Function Documentation

5.7.3.1 def GREBTest.ASPICNoise.report (*self, pdf*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.

5.7.3.2 def GREBTest.ASPICNoise.runTest (*self*)

Run the test, save output to state variables.

5.7.3.3 def GREBTest.ASPICNoise.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

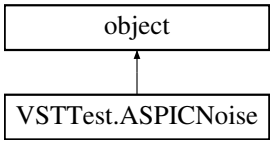
The documentation for this class was generated from the following file:

- GREBTest.py

5.8 VSTTest.ASPICNoise Class Reference

Measure noise distribution in ASPICs for the unclamped, clamped, and reset cases.

Inheritance diagram for VSTTest.ASPICNoise:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf)

  generate this test's page in the PDF report.

5.8.1 Detailed Description

Measure noise distribution in ASPICs for the unclamped, clamped, and reset cases.

5.8.2 Constructor & Destructor Documentation

5.8.2.1 def VSTTest.ASPICNoise.__init__ (*self*)

Initialize minimum required variables for test list.

5.8.3 Member Function Documentation

5.8.3.1 def VSTTest.ASPICNoise.report (*self, pdf*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.

5.8.3.2 def VSTTest.ASPICNoise.runTest (*self*)

Run the test, save output to state variables.

5.8.3.3 def VSTTest.ASPICNoise.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

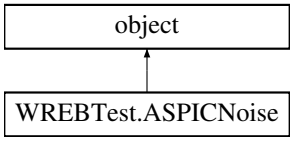
The documentation for this class was generated from the following file:

- VSTTest.py

5.9 WREBTest.ASPICNoise Class Reference

Measure noise distribution in ASPICs for the unclamped, clamped, and reset cases.

Inheritance diagram for WREBTest.ASPICNoise:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf)

  generate this test's page in the PDF report.

5.9.1 Detailed Description

Measure noise distribution in ASPICs for the unclamped, clamped, and reset cases.

5.9.2 Constructor & Destructor Documentation

5.9.2.1 def WREBTest.ASPICNoise.__init__ (*self*)

Initialize minimum required variables for test list.

5.9.3 Member Function Documentation

5.9.3.1 def WREBTest.ASPICNoise.report (*self, pdf*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.

5.9.3.2 def WREBTest.ASPICNoise.runTest (*self*)

Run the test, save output to state variables.

5.9.3.3 def WREBTest.ASPICNoise.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

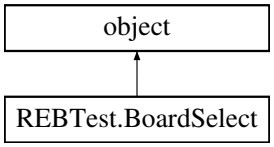
The documentation for this class was generated from the following file:

- WREBTest.py

5.10 REBTest.BoardSelect Class Reference

Dialog-based GUI for displaying test progress and navigating options.

Inheritance diagram for REBTest.BoardSelect:



Public Member Functions

- def __init__ (self)

  Start the dialog.
- def startMenu (self)

  Initial board selection menu.

5.10.1 Detailed Description

Dialog-based GUI for displaying test progress and navigating options.

5.10.2 Constructor & Destructor Documentation

5.10.2.1 def REBTest.BoardSelect.__init__ (*self*)

Start the dialog.

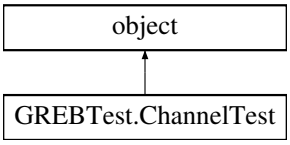
The documentation for this class was generated from the following file:

- REBTest.py

5.11 GREBTest.ChannelTest Class Reference

Tests number of communicable channels available to the board.

Inheritance diagram for GREBTest.ChannelTest:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.11.1 Detailed Description

Tests number of communicable channels available to the board.

5.11.2 Constructor & Destructor Documentation

5.11.2.1 def GREBTest.ChannelTest.__init__ (*self*)

Initialize minimum required variables for test list.

5.11.3 Member Function Documentation

5.11.3.1 def GREBTest.ChannelTest.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.11.3.2 def GREBTest.ChannelTest.runTest (*self*)

Run the test, save output to state variables.

5.11.3.3 def GREBTest.ChannelTest.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

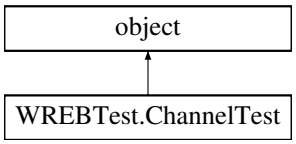
The documentation for this class was generated from the following file:

- GREBTest.py

5.12 WREBTest.ChannelTest Class Reference

Tests number of communicable channels available to the board.

Inheritance diagram for WREBTest.ChannelTest:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.12.1 Detailed Description

Tests number of communicable channels available to the board.

5.12.2 Constructor & Destructor Documentation

5.12.2.1 def WREBTest.ChannelTest.__init__ (*self*)

Initialize minimum required variables for test list.

5.12.3 Member Function Documentation

5.12.3.1 def WREBTest.ChannelTest.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.12.3.2 def WREBTest.ChannelTest.runTest (*self*)

Run the test, save output to state variables.

5.12.3.3 def WREBTest.ChannelTest.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

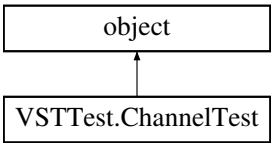
The documentation for this class was generated from the following file:

- WREBTest.py

5.13 VSTTest.ChannelTest Class Reference

Tests number of communicable channels available to the board.

Inheritance diagram for VSTTest.ChannelTest:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.13.1 Detailed Description

Tests number of communicable channels available to the board.

5.13.2 Constructor & Destructor Documentation

5.13.2.1 def VSTTest.ChannelTest.__init__ (*self*)

Initialize minimum required variables for test list.

5.13.3 Member Function Documentation

5.13.3.1 def VSTTest.ChannelTest.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.13.3.2 def VSTTest.ChannelTest.runTest (*self*)

Run the test, save output to state variables.

5.13.3.3 def VSTTest.ChannelTest.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

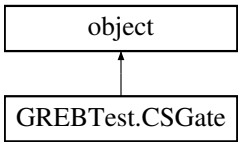
The documentation for this class was generated from the following file:

- VSTTest.py

5.14 GREBTest.CSGate Class Reference

Tests the current source gate.

Inheritance diagram for GREBTest.CSGate:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.14.1 Detailed Description

Tests the current source gate.

5.14.2 Constructor & Destructor Documentation

5.14.2.1 def GREBTest.CSGate.__init__ (*self*)

Initialize minimum required variables for test list.

5.14.3 Member Function Documentation

5.14.3.1 def GREBTest.CSGate.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.

5.14.3.2 def GREBTest.CSGate.runTest (*self*)

Run the test, save output to state variables.

5.14.3.3 def GREBTest.CSGate.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

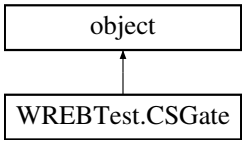
The documentation for this class was generated from the following file:

- GREBTest.py

5.15 WREBTest.CSGate Class Reference

Tests the current source gate.

Inheritance diagram for WREBTest.CSGate:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.15.1 Detailed Description

Tests the current source gate.

5.15.2 Constructor & Destructor Documentation

5.15.2.1 def WREBTest.CSGate.__init__ (*self*)

Initialize minimum required variables for test list.

5.15.3 Member Function Documentation

5.15.3.1 def WREBTest.CSGate.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.

5.15.3.2 def WREBTest.CSGate.runTest (*self*)

Run the test, save output to state variables.

5.15.3.3 def WREBTest.CSGate.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

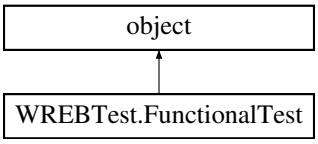
The documentation for this class was generated from the following file:

- WREBTest.py

5.16 WREBTest.FunctionalTest Class Reference

Runs the functional testing suite.

Inheritance diagram for WREBTest.FunctionalTest:



Public Member Functions

- def runTests (self)

  Run the tests.
- def generateReport (self)

  Generate a pyfpdf-compatible PDF report from the test data.

5.16.1 Detailed Description

Runs the functional testing suite.

Tests are provided as a list of class initializations.

5.16.2 Member Function Documentation

5.16.2.1 def WREBTest.FunctionalTest.generateReport (*self*)

Generate a pyfpdf-compatible PDF report from the test data.

5.16.2.2 def WREBTest.FunctionalTest.runTests (*self*)

Run the tests.

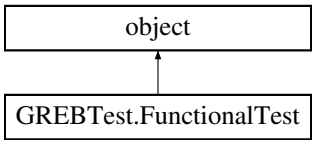
The documentation for this class was generated from the following file:

- WREBTest.py

5.17 GREBTest.FunctionalTest Class Reference

Runs the functional testing suite.

Inheritance diagram for GREBTest.FunctionalTest:



Public Member Functions

- def runTests (self)

  Run the tests.
- def generateReport (self)

  Generate a pyfpdf-compatible PDF report from the test data.

5.17.1 Detailed Description

Runs the functional testing suite.

Tests are provided as a list of class initializations.

5.17.2 Member Function Documentation

5.17.2.1 def GREBTest.FunctionalTest.generateReport (*self*)

Generate a pyfpdf-compatible PDF report from the test data.

5.17.2.2 def GREBTest.FunctionalTest.runTests (*self*)

Run the tests.

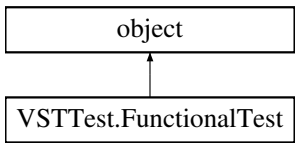
The documentation for this class was generated from the following file:

- GREBTest.py

5.18 VSTTest.FunctionalTest Class Reference

Runs the functional testing suite.

Inheritance diagram for VSTTest.FunctionalTest:



Public Member Functions

- def runTests (self)

  Run the tests.
- def generateReport (self)

  Generate a pyfpdf-compatible PDF report from the test data.

5.18.1 Detailed Description

Runs the functional testing suite.

Tests are provided as a list of class initializations.

5.18.2 Member Function Documentation

5.18.2.1 def VSTTest.FunctionalTest.generateReport (*self*)

Generate a pyfpdf-compatible PDF report from the test data.

5.18.2.2 def VSTTest.FunctionalTest.runTests (*self*)

Run the tests.

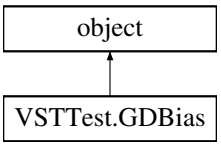
The documentation for this class was generated from the following file:

- VSTTest.py

5.19 VSTTest.GDBias Class Reference

Tests the guard drain performance.

Inheritance diagram for VSTTest.GDBias:



Public Member Functions

- def __init__ (self)
  Initialize minimum required variables for test list.
- def runTest (self)
  Run the test, save output to state variables.
- def summarize (self, summary)
  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)
  generate this test's page in the PDF report.

5.19.1 Detailed Description

Tests the guard drain performance.

5.19.2 Constructor & Destructor Documentation

5.19.2.1 def VSTTest.GDBias.__init__ (*self*)

Initialize minimum required variables for test list.

5.19.3 Member Function Documentation

5.19.3.1 def VSTTest.GDBias.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.19.3.2 def VSTTest.GDBias.runTest (*self*)

Run the test, save output to state variables.

5.19.3.3 def VSTTest.GDBias.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

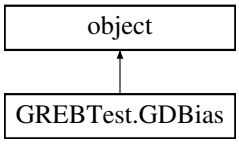
The documentation for this class was generated from the following file:

- VSTTest.py

5.20 GREBTest.GDBias Class Reference

Tests the guard drain performance.

Inheritance diagram for GREBTest.GDBias:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.20.1 Detailed Description

Tests the guard drain performance.

5.20.2 Constructor & Destructor Documentation

5.20.2.1 def GREBTest.GDBias.__init__ (*self*)

Initialize minimum required variables for test list.

5.20.3 Member Function Documentation

5.20.3.1 def GREBTest.GDBias.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.20.3.2 def GREBTest.GDBias.runTest (*self*)

Run the test, save output to state variables.

5.20.3.3 def GREBTest.GDBias.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

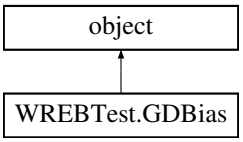
The documentation for this class was generated from the following file:

- GREBTest.py

5.21 WREBTest.GDBias Class Reference

Tests the guard drain performance.

Inheritance diagram for WREBTest.GDBias:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.21.1 Detailed Description

Tests the guard drain performance.

5.21.2 Constructor & Destructor Documentation

5.21.2.1 def WREBTest.GDBias.__init__ (*self*)

Initialize minimum required variables for test list.

5.21.3 Member Function Documentation

5.21.3.1 def WREBTest.GDBias.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.21.3.2 def WREBTest.GDBias.runTest (*self*)

Run the test, save output to state variables.

5.21.3.3 def WREBTest.GDBias.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

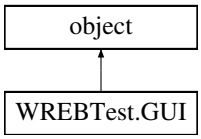
The documentation for this class was generated from the following file:

- WREBTest.py

5.22 WREBTest.GUI Class Reference

Dialog-based GUI for displaying test progress and navigating options.

Inheritance diagram for WREBTest.GUI:



Public Member Functions

- def __init__ (self)
  Start the dialog.
- def update (self)
  Update the GUI to display current testing progress.
- def updateContinuously (self)
  Continuously update the display every _ seconds.
- def startUpdateContinuously (self)
  Start the self.updateContinuously() procedure in a separate daemon thread.
- def startMenu (self)
  Initial navigation menu.
- def runFunctionalTest (self)
  Runs the full suite of tests from the GUI.
- def runCustomTests (self)
  Allows the user to configure which tests should be run, and runs only those tests.

5.22.1 Detailed Description

Dialog-based GUI for displaying test progress and navigating options.

5.22.2 Constructor & Destructor Documentation

5.22.2.1 def WREBTest.GUI.__init__ (*self*)

Start the dialog.

5.22.3 Member Function Documentation

5.22.3.1 def WREBTest.GUI.runCustomTests (*self*)

Allows the user to configure which tests should be run, and runs only those tests.

5.22.3.2 def WREBTest.GUI.runFunctionalTest (*self*)

Runs the full suite of tests from the GUI.

5.22.3.3 def WREBTest.GUI.startMenu (*self*)

Initial navigation menu.

Checks that board is connected and presents the user with various options.

5.22.3.4 def WREBTest.GUI.startUpdateContinuously (*self*)

Start the self.updateContinuously() procedure in a separate daemon thread.

5.22.3.5 def WREBTest.GUI.update (*self*)

Update the GUI to display current testing progress.

5.22.3.6 def WREBTest.GUI.updateContinuously (*self*)

Continuously update the display every _ seconds.

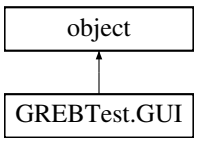
The documentation for this class was generated from the following file:

- WREBTest.py

5.23 GREBTest.GUI Class Reference

Dialog-based GUI for displaying test progress and navigating options.

Inheritance diagram for GREBTest.GUI:



Public Member Functions

- def __init__ (self)

  Start the dialog.
- def update (self)

  Update the GUI to display current testing progress.
- def updateContinuously (self)

  Continuously update the display every _ seconds.
- def startUpdateContinuously (self)

  Start the self.updateContinuously() procedure in a separate daemon thread.
- def startMenu (self)

  Initial navigation menu.
- def runFunctionalTest (self)

  Runs the full suite of tests from the GUI.
- def runCustomTests (self)

  Allows the user to configure which tests should be run, and runs only those tests.

5.23.1 Detailed Description

Dialog-based GUI for displaying test progress and navigating options.

5.23.2 Constructor & Destructor Documentation

5.23.2.1 def GREBTest.GUI.__init__ (*self*)

Start the dialog.

5.23.3 Member Function Documentation

5.23.3.1 def GREBTest.GUI.runCustomTests (*self*)

Allows the user to configure which tests should be run, and runs only those tests.

5.23.3.2 def GREBTest.GUI.runFunctionalTest (*self*)

Runs the full suite of tests from the GUI.

5.23.3.3 def GREBTest.GUI.startMenu (*self*)

Initial navigation menu.

Checks that board is connected and presents the user with various options.

5.23.3.4 def GREBTest.GUI.startUpdateContinuously (*self*)

Start the self.updateContinuously() procedure in a separate daemon thread.

5.23.3.5 def GREBTest.GUI.update (*self*)

Update the GUI to display current testing progress.

5.23.3.6 def GREBTest.GUI.updateContinuously (*self*)

Continuously update the display every _ seconds.

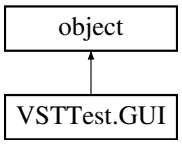
The documentation for this class was generated from the following file:

- GREBTest.py

5.24 VSTTest.GUI Class Reference

Dialog-based GUI for displaying test progress and navigating options.

Inheritance diagram for VSTTest.GUI:



Public Member Functions

- def __init__ (self)

  Start the dialog.
- def update (self)

  Update the GUI to display current testing progress.
- def updateContinuously (self)

  Continuously update the display every _ seconds.
- def startUpdateContinuously (self)

  Start the self.updateContinuously() procedure in a separate daemon thread.
- def startMenu (self)

  Initial navigation menu.
- def runFunctionalTest (self)

  Runs the full suite of tests from the GUI.
- def runCustomTests (self)

  Allows the user to configure which tests should be run, and runs only those tests.

5.24.1 Detailed Description

Dialog-based GUI for displaying test progress and navigating options.

5.24.2 Constructor & Destructor Documentation

5.24.2.1 def VSTTest.GUI.__init__ (*self*)

Start the dialog.

5.24.3 Member Function Documentation

5.24.3.1 def VSTTest.GUI.runCustomTests (*self*)

Allows the user to configure which tests should be run, and runs only those tests.

5.24.3.2 def VSTTest.GUI.runFunctionalTest (*self*)

Runs the full suite of tests from the GUI.

5.24.3.3 def VSTTest.GUI.startMenu (*self*)

Initial navigation menu.

Checks that board is connected and presents the user with various options.

5.24.3.4 def VSTTest.GUI.startUpdateContinuously (*self*)

Start the self.updateContinuously() procedure in a separate daemon thread.

5.24.3.5 def VSTTest.GUI.update (*self*)

Update the GUI to display current testing progress.

5.24.3.6 def VSTTest.GUI.updateContinuously (*self*)

Continuously update the display every _ seconds.

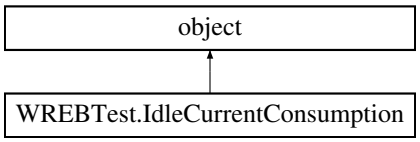
The documentation for this class was generated from the following file:

- VSTTest.py

5.25 WREBTest.IdleCurrentConsumption Class Reference

Test for idle current consumption in the WREB board.

Inheritance diagram for WREBTest.IdleCurrentConsumption:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.25.1 Detailed Description

Test for idle current consumption in the WREB board.

5.25.2 Constructor & Destructor Documentation

5.25.2.1 def WREBTest.IdleCurrentConsumption.__init__ (*self*)

Initialize minimum required variables for test list.

5.25.3 Member Function Documentation

5.25.3.1 def WREBTest.IdleCurrentConsumption.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.25.3.2 def WREBTest.IdleCurrentConsumption.runTest (*self*)

Run the test, save output to state variables.

5.25.3.3 def WREBTest.IdleCurrentConsumption.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

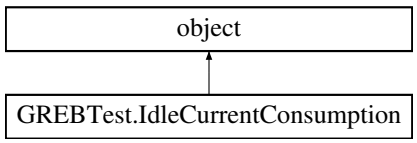
The documentation for this class was generated from the following file:

- WREBTest.py

5.26 GREBTest.IdleCurrentConsumption Class Reference

Test for idle current consumption in the GREB board.

Inheritance diagram for GREBTest.IdleCurrentConsumption:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.26.1 Detailed Description

Test for idle current consumption in the GREB board.

5.26.2 Constructor & Destructor Documentation

5.26.2.1 def GREBTest.IdleCurrentConsumption.__init__ (*self*)

Initialize minimum required variables for test list.

5.26.3 Member Function Documentation

5.26.3.1 def GREBTest.IdleCurrentConsumption.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.26.3.2 def GREBTest.IdleCurrentConsumption.runTest (*self*)

Run the test, save output to state variables.

5.26.3.3 def GREBTest.IdleCurrentConsumption.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

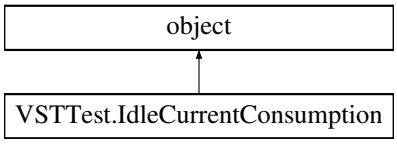
The documentation for this class was generated from the following file:

- GREBTest.py

5.27 VSTTest.IdleCurrentConsumption Class Reference

Test for idle current consumption in the VST board.

Inheritance diagram for VSTTest.IdleCurrentConsumption:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.27.1 Detailed Description

Test for idle current consumption in the VST board.

5.27.2 Constructor & Destructor Documentation

5.27.2.1 def VSTTest.IdleCurrentConsumption.__init__ (*self*)

Initialize minimum required variables for test list.

5.27.3 Member Function Documentation

5.27.3.1 def VSTTest.IdleCurrentConsumption.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.27.3.2 def VSTTest.IdleCurrentConsumption.runTest (*self*)

Run the test, save output to state variables.

5.27.3.3 def VSTTest.IdleCurrentConsumption.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

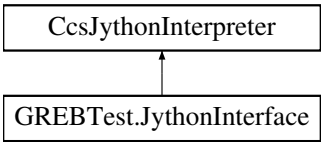
The documentation for this class was generated from the following file:

- VSTTest.py

5.28 GREBTest.JythonInterface Class Reference

Some hacky workarounds to clean up the limited communication with the Jython interface.

Inheritance diagram for GREBTest.JythonInterface:



Public Member Functions

- def do (self, code)

  Execute a command on the CCS Jython interpreter.
- def get (self, code, dtype="float")

  Executes a piece of code and returns the value through getOutput().

5.28.1 Detailed Description

Some hacky workarounds to clean up the limited communication with the Jython interface.

5.28.2 Member Function Documentation

5.28.2.1 def GREBTest.JythonInterface.do (*self, code*)

Execute a command on the CCS Jython interpreter.

Parameters

code	Code as a literal to be executed.

5.28.2.2 def GREBTest.JythonInterface.get (*self, code, dtype* = "float")

Executes a piece of code and returns the value through getOutput().

Parameters

code	Code as a literal to be executed.
dtype	Optional data type, defaults to float.

Returns

Converted value received through printed output from getOutput(). getOutput() normally only returns the results of cout, so the result is automatically typecasted to type dtype. This should be used only with a single command at a time. Like I said, hacky work around, this should be fixed in the future.

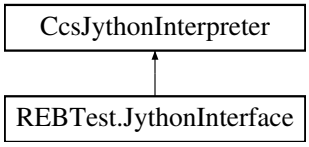
The documentation for this class was generated from the following file:

- GREBTest.py

5.29 REBTest.JythonInterface Class Reference

Some hacky workarounds to clean up the limited communication with the Jython interface.

Inheritance diagram for REBTest.JythonInterface:



Public Member Functions

- def do (self, code)

  Execute a command on the CCS Jython interpreter.
- def get (self, code, dtype="float")

  Executes a piece of code and returns the value through getOutput().

5.29.1 Detailed Description

Some hacky workarounds to clean up the limited communication with the Jython interface.

5.29.2 Member Function Documentation

5.29.2.1 def REBTest.JythonInterface.do (*self, code*)

Execute a command on the CCS Jython interpreter.

Parameters

code	Code as a literal to be executed.

5.29.2.2 def REBTest.JythonInterface.get (*self, code, dtype =* "float")

Executes a piece of code and returns the value through getOutput().

Parameters

code	Code as a literal to be executed.
dtype	Optional data type, defaults to float.

Returns

Converted value received through printed output from getOutput(). getOutput() normally only returns the results of cout, so the result is automatically typecasted to type dtype. This should be used only with a single command at a time. Like I said, hacky work around, this should be fixed in the future.

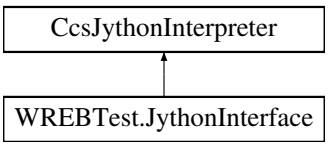
The documentation for this class was generated from the following file:

- REBTest.py

5.30 WREBTest.JythonInterface Class Reference

Some hacky workarounds to clean up the limited communication with the Jython interface.

Inheritance diagram for WREBTest.JythonInterface:



Public Member Functions

- def do (self, code)

  Execute a command on the CCS Jython interpreter.
- def get (self, code, dtype="float")

  Executes a piece of code and returns the value through getOutput().

5.30.1 Detailed Description

Some hacky workarounds to clean up the limited communication with the Jython interface.

5.30.2 Member Function Documentation

5.30.2.1 def WREBTest.JythonInterface.do (*self, code*)

Execute a command on the CCS Jython interpreter.

Parameters

code	Code as a literal to be executed.

5.30.2.2 def WREBTest.JythonInterface.get (*self, code, dtype* = "float")

Executes a piece of code and returns the value through getOutput().

Parameters

code	Code as a literal to be executed.
dtype	Optional data type, defaults to float.

Returns

Converted value received through printed output from getOutput(). getOutput() normally only returns the results of cout, so the result is automatically typecasted to type dtype. This should be used only with a single command at a time. Like I said, hacky work around, this should be fixed in the future.

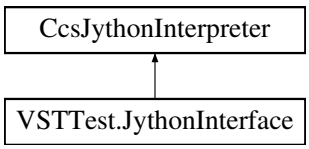
The documentation for this class was generated from the following file:

- WREBTest.py

5.31 VSTTest.JythonInterface Class Reference

Some hacky workarounds to clean up the limited communication with the Jython interface.

Inheritance diagram for VSTTest.JythonInterface:



Public Member Functions

- def do (self, code)

  Execute a command on the CCS Jython interpreter.
- def get (self, code, dtype="float")

  Executes a piece of code and returns the value through getOutput().

5.31.1 Detailed Description

Some hacky workarounds to clean up the limited communication with the Jython interface.

5.31.2 Member Function Documentation

5.31.2.1 def VSTTest.JythonInterface.do (*self, code*)

Execute a command on the CCS Jython interpreter.

Parameters

code	Code as a literal to be executed.

5.31.2.2 def VSTTest.JythonInterface.get (*self, code, dtype* = "float")

Executes a piece of code and returns the value through getOutput().

Parameters

code	Code as a literal to be executed.
dtype	Optional data type, defaults to float.

Returns

Converted value received through printed output from getOutput(). getOutput() normally only returns the results of cout, so the result is automatically typecasted to type dtype. This should be used only with a single command at a time. Like I said, hacky work around, this should be fixed in the future.

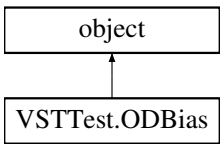
The documentation for this class was generated from the following file:

- VSTTest.py

5.32 VSTTest.ODBias Class Reference

Tests the output drain performance.

Inheritance diagram for VSTTest.ODBias:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.32.1 Detailed Description

Tests the output drain performance.

5.32.2 Constructor & Destructor Documentation

5.32.2.1 def VSTTest.ODBias.__init__ (*self*)

Initialize minimum required variables for test list.

5.32.3 Member Function Documentation

5.32.3.1 def VSTTest.ODBias.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.32.3.2 def VSTTest.ODBias.runTest (*self*)

Run the test, save output to state variables.

5.32.3.3 def VSTTest.ODBias.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

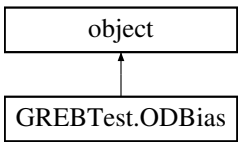
The documentation for this class was generated from the following file:

- VSTTest.py

5.33 GREBTest.ODBias Class Reference

Tests the output drain performance.

Inheritance diagram for GREBTest.ODBias:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.33.1 Detailed Description

Tests the output drain performance.

5.33.2 Constructor & Destructor Documentation

5.33.2.1 def GREBTest.ODBias.__init__ (*self*)

Initialize minimum required variables for test list.

5.33.3 Member Function Documentation

5.33.3.1 def GREBTest.ODBias.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.33.3.2 def GREBTest.ODBias.runTest (*self*)

Run the test, save output to state variables.

5.33.3.3 def GREBTest.ODBias.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

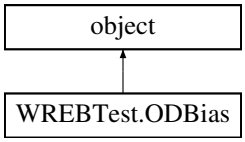
The documentation for this class was generated from the following file:

- GREBTest.py

5.34 WREBTest.ODBias Class Reference

Tests the output drain performance.

Inheritance diagram for WREBTest.ODBias:



Public Member Functions

- def __init__ (self)
  Initialize minimum required variables for test list.
- def runTest (self)
  Run the test, save output to state variables.
- def summarize (self, summary)
  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)
  generate this test's page in the PDF report.

5.34.1 Detailed Description

Tests the output drain performance.

5.34.2 Constructor & Destructor Documentation

5.34.2.1 def WREBTest.ODBias.__init__ (*self*)

Initialize minimum required variables for test list.

5.34.3 Member Function Documentation

5.34.3.1 def WREBTest.ODBias.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.34.3.2 def WREBTest.ODBias.runTest (*self*)

Run the test, save output to state variables.

5.34.3.3 def WREBTest.ODBias.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

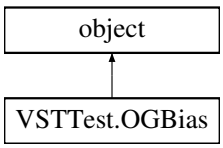
The documentation for this class was generated from the following file:

- WREBTest.py

5.35 VSTTest.OGBias Class Reference

Tests the output gate performance.

Inheritance diagram for VSTTest.OGBias:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.35.1 Detailed Description

Tests the output gate performance.

The real OG test.

5.35.2 Constructor & Destructor Documentation

5.35.2.1 def VSTTest.OGBias.__init__ (*self*)

Initialize minimum required variables for test list.

5.35.3 Member Function Documentation

5.35.3.1 def VSTTest.OGBias.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.35.3.2 def VSTTest.OGBias.runTest (*self*)

Run the test, save output to state variables.

5.35.3.3 def VSTTest.OGBias.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

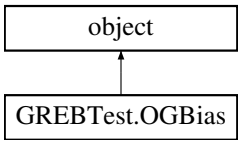
The documentation for this class was generated from the following file:

- VSTTest.py

5.36 GREBTest.OGBias Class Reference

Tests the output gate performance.

Inheritance diagram for GREBTest.OGBias:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.36.1 Detailed Description

Tests the output gate performance.

The real OG test.

5.36.2 Constructor & Destructor Documentation

5.36.2.1 def GREBTest.OGBias.__init__ (*self*)

Initialize minimum required variables for test list.

5.36.3 Member Function Documentation

5.36.3.1 def GREBTest.OGBias.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.36.3.2 def GREBTest.OGBias.runTest (*self*)

Run the test, save output to state variables.

5.36.3.3 def GREBTest.OGBias.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

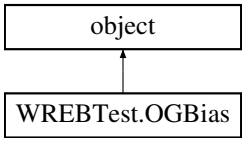
The documentation for this class was generated from the following file:

- GREBTest.py

5.37 WREBTest.OGBias Class Reference

Tests the output gate performance.

Inheritance diagram for WREBTest.OGBias:



Public Member Functions

- def __init__ (self)
  Initialize minimum required variables for test list.
- def runTest (self)
  Run the test, save output to state variables.
- def summarize (self, summary)
  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)
  generate this test's page in the PDF report.

5.37.1 Detailed Description

Tests the output gate performance.

The real OG test.

5.37.2 Constructor & Destructor Documentation

5.37.2.1 def WREBTest.OGBias.__init__ (*self*)

Initialize minimum required variables for test list.

5.37.3 Member Function Documentation

5.37.3.1 def WREBTest.OGBias.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.37.3.2 def WREBTest.OGBias.runTest (*self*)

Run the test, save output to state variables.

5.37.3.3 def WREBTest.OGBias.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

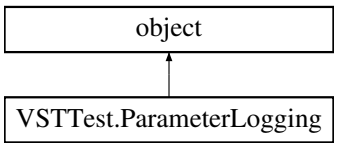
The documentation for this class was generated from the following file:

- WREBTest.py

5.38 VSTTest.ParameterLogging Class Reference

Periodically records specified values over the course of the testing sequence.

Inheritance diagram for VSTTest.ParameterLogging:



Public Member Functions

- def __init__ (self, valuesToRead, delay=5, fnTest=None, backup=0)

  Initializes the test.
- def runTest (self)

  Starts the logging in a separate thread, moves to the next test.
- def stopTest (self)

  Sets the recording option to false, allowing the test to stop.
- def recordContinuously (self)

  Continuously records the requested parameters while self.recording is set to true.
- def passFail (self)

  Determine if the value logging passed - this is done in a separate function, unlike other tests.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.38.1 Detailed Description

Periodically records specified values over the course of the testing sequence.

5.38.2 Constructor & Destructor Documentation

5.38.2.1 def VSTTest.ParameterLogging.__init__ (*self, valuesToRead, delay* = 5, *fnTest* = None, *backup* = 0)

Initializes the test.

Parameters

valuesToRead	A list of ("subsystem", "value to read") tuples
delay	Time to sleep between periodic queries
fnTest	The FunctionalTest() object, allowing this test to track progress/terminate
backup	Backup data every n cycles. If zero, do not back up.

5.38.3 Member Function Documentation

5.38.3.1 def VSTTest.ParameterLogging.passFail (*self*)

Determine if the value logging passed - this is done in a separate function, unlike other tests.

5.38.3.2 def VSTTest.ParameterLogging.recordContinuously (*self*)

Continuously records the requested parameters while self.recording is set to true.

5.38.3.3 def VSTTest.ParameterLogging.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.38.3.4 def VSTTest.ParameterLogging.runTest (*self*)

Starts the logging in a separate thread, moves to the next test.

5.38.3.5 def VSTTest.ParameterLogging.stopTest (*self*)

Sets the recording option to false, allowing the test to stop.

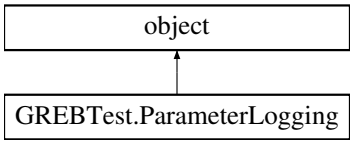
The documentation for this class was generated from the following file:

- VSTTest.py

5.39 GREBTest.ParameterLogging Class Reference

Periodically records specified values over the course of the testing sequence.

Inheritance diagram for GREBTest.ParameterLogging:



Public Member Functions

- def __init__ (self, valuesToRead, delay=5, fnTest=None, backup=0)

  Initializes the test.
- def runTest (self)

  Starts the logging in a separate thread, moves to the next test.
- def stopTest (self)

  Sets the recording option to false, allowing the test to stop.
- def recordContinuously (self)

  Continuously records the requested parameters while self.recording is set to true.
- def passFail (self)

  Determine if the value logging passed - this is done in a separate function, unlike other tests.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.39.1 Detailed Description

Periodically records specified values over the course of the testing sequence.

5.39.2 Constructor & Destructor Documentation

5.39.2.1 def GREBTest.ParameterLogging.__init__ (*self, valuesToRead, delay* = 5, *fnTest* = None, *backup* = 0)

Initializes the test.

Parameters

valuesToRead	A list of ("subsystem", "value to read") tuples
delay	Time to sleep between periodic queries
fnTest	The FunctionalTest() object, allowing this test to track progress/terminate
backup	Backup data every n cycles. If zero, do not back up.

5.39.3 Member Function Documentation

5.39.3.1 def GREBTest.ParameterLogging.passFail (*self*)

Determine if the value logging passed - this is done in a separate function, unlike other tests.

5.39.3.2 def GREBTest.ParameterLogging.recordContinuously (*self*)

Continuously records the requested parameters while self.recording is set to true.

5.39.3.3 def GREBTest.ParameterLogging.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.39.3.4 def GREBTest.ParameterLogging.runTest (*self*)

Starts the logging in a separate thread, moves to the next test.

5.39.3.5 def GREBTest.ParameterLogging.stopTest (*self*)

Sets the recording option to false, allowing the test to stop.

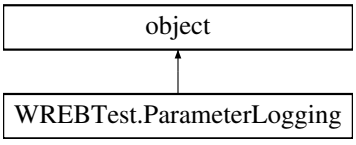
The documentation for this class was generated from the following file:

- GREBTest.py

5.40 WREBTest.ParameterLogging Class Reference

Periodically records specified values over the course of the testing sequence.

Inheritance diagram for WREBTest.ParameterLogging:



Public Member Functions

- def __init__ (self, valuesToRead, delay=5, fnTest=None, backup=0)

  Initializes the test.
- def runTest (self)

  Starts the logging in a separate thread, moves to the next test.
- def stopTest (self)

  Sets the recording option to false, allowing the test to stop.
- def recordContinuously (self)

  Continuously records the requested parameters while self.recording is set to true.
- def passFail (self)

  Determine if the value logging passed - this is done in a separate function, unlike other tests.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.40.1 Detailed Description

Periodically records specified values over the course of the testing sequence.

5.40.2 Constructor & Destructor Documentation

5.40.2.1 def WREBTest.ParameterLogging.__init__ (*self, valuesToRead, delay* = 5, *fnTest* = None, *backup* = 0)

Initializes the test.

Parameters

valuesToRead	A list of ("subsystem", "value to read") tuples
delay	Time to sleep between periodic queries
fnTest	The FunctionalTest() object, allowing this test to track progress/terminate
backup	Backup data every n cycles. If zero, do not back up.

5.40.3 Member Function Documentation

5.40.3.1 def WREBTest.ParameterLogging.passFail (*self*)

Determine if the value logging passed - this is done in a separate function, unlike other tests.

5.40.3.2 def WREBTest.ParameterLogging.recordContinuously (*self*)

Continuously records the requested parameters while self.recording is set to true.

5.40.3.3 def WREBTest.ParameterLogging.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.40.3.4 def WREBTest.ParameterLogging.runTest (*self*)

Starts the logging in a separate thread, moves to the next test.

5.40.3.5 def WREBTest.ParameterLogging.stopTest (*self*)

Sets the recording option to false, allowing the test to stop.

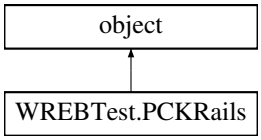
The documentation for this class was generated from the following file:

- WREBTest.py

5.41 WREBTest.PCKRails Class Reference

Test the parallel clock rail performance.

Inheritance diagram for WREBTest.PCKRails:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.41.1 Detailed Description

Test the parallel clock rail performance.

5.41.2 Constructor & Destructor Documentation

5.41.2.1 def WREBTest.PCKRails.__init__ (*self*)

Initialize minimum required variables for test list.

5.41.3 Member Function Documentation

5.41.3.1 def WREBTest.PCKRails.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.41.3.2 def WREBTest.PCKRails.runTest (*self*)

Run the test, save output to state variables.

5.41.3.3 def WREBTest.PCKRails.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

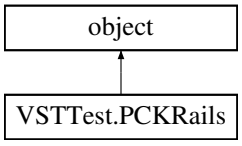
The documentation for this class was generated from the following file:

- WREBTest.py

5.42 VSTTest.PCKRails Class Reference

Tests the parallel clock rail performance.

Inheritance diagram for VSTTest.PCKRails:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.42.1 Detailed Description

Tests the parallel clock rail performance.

5.42.2 Constructor & Destructor Documentation

5.42.2.1 def VSTTest.PCKRails.__init__ (*self*)

Initialize minimum required variables for test list.

5.42.3 Member Function Documentation

5.42.3.1 def VSTTest.PCKRails.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.42.3.2 def VSTTest.PCKRails.runTest (*self*)

Run the test, save output to state variables.

5.42.3.3 def VSTTest.PCKRails.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

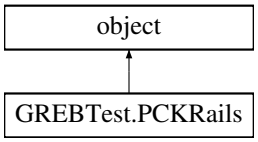
The documentation for this class was generated from the following file:

- VSTTest.py

5.43 GREBTest.PCKRails Class Reference

Tests the parallel clock rail performance.

Inheritance diagram for GREBTest.PCKRails:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.43.1 Detailed Description

Tests the parallel clock rail performance.

5.43.2 Constructor & Destructor Documentation

5.43.2.1 def GREBTest.PCKRails.__init__ (*self*)

Initialize minimum required variables for test list.

5.43.3 Member Function Documentation

5.43.3.1 def GREBTest.PCKRails.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.43.3.2 def GREBTest.PCKRails.runTest (*self*)

Run the test, save output to state variables.

5.43.3.3 def GREBTest.PCKRails.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

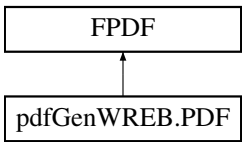
The documentation for this class was generated from the following file:

- GREBTest.py

5.44 pdfGenWREB.PDF Class Reference

PDF generation class for reports.

Inheritance diagram for pdfGenWREB.PDF:



Public Member Functions

- def header (self)

  Adds a LSST/SLAC header and title to every page.
- def footer (self)

  Adds page numbers to every page.
- def testTitle (self, title)

  Generic title function for tests.
- def summaryPage (self, boardID, boardType, linkVersion, FPGAVersion, scriptVersion, startTime, testList, passList, statsList)

  Generate a summary page for the tests that were run.

- def columnTable (self, colData, ROI=None, colHeaders=None, fontSize=8, width=1.0, widthArray=None, align="L")

  Generates a table from a list of lists of column data.
- def addPlotPage (self, title, imgName, imgSize=1.0)

  Adds a page for tests with outputs consisting only of an image/plot.
- def idleCurrent (self, title, voltages, currents)

  Idle current generation test, will be moved to WREBTest.py soon.
- def residualTest (self, title, datas, residuals, passed, stats, ROI=None, imgSize=0.7, xdat=None, pltRange=None)

  Report page for tests that consist of a single residual plot, including comments and pass/fail.
- def makeResidualPlotPage (self, title, imgName, datas, residuals, ROI=None, imgSize=1.0, xdat=None, pltRange=None)

  Generates the new page and plot for the residual tests.
- def makePlotPage (self, title, imgName, datas, imgSize=1.0, xdat=None)

  Generates the new page and plot for the non-residual tests.
- def passFail (self, passed)

  Return color-coded pass/fail result.

5.44.1 Detailed Description

PDF generation class for reports.

5.44.2 Member Function Documentation

5.44.2.1 def pdfGenWREB.PDF.addPlotPage (*self, title, imgName, imgSize* = `1.0`)

Adds a page for tests with outputs consisting only of an image/plot.

Parameters

title	Title of test on page
imgName	File to save plot as
imgSize	Optional, percent of page width image should take up; defaults to 1.0

5.44.2.2 def pdfGenWREB.PDF.columnTable (*self, colData, ROI* = `None`, *colHeaders* = `None`, *fontSize* = `8`, *width* = `1.0`, *widthArray* = `None`, *align* = `"L"`)

Generates a table from a list of lists of column data.

Parameters

colData	Tuple of column information as ([data], header) to be put in a column, from left to right.
ROI	Optional parameter of [low, high] index of cells to be highlighted as a region of interest.
colHeaders	Optional list of headers for columns; if specified, colData is expected as ([data],[data],...)
fontSize	Optional font size for the table.
width	Percent of page width the table should occupy.
widthArray	Non-normalized list of relative column widths. Defaults to every column having equal width.
align	Align as left ("L"), center ("C"), right ("R")

5.44.2.3 def pdfGenWREB.PDF.footer (*self*)

Adds page numbers to every page.

5.44.2.4 def pdfGenWREB.PDF.header (*self*)

Adds a LSST/SLAC header and title to every page.

5.44.2.5 def pdfGenWREB.PDF.idleCurrent (*self, title, voltages, currents*)

Idle current generation test, will be moved to WREBTest.py soon.

Parameters

title	Title of test on page
voltages	List of (category title, [voltages])
currents	List of (category title, [currents])

5.44.2.6 def pdfGenWREB.PDF.makePlotPage (*self, title, imgName, datas, imgSize* = `1.0`, *xdat* = `None`)

Generates the new page and plot for the non-residual tests.

Parameters

title	Title of test on page
imgName	Title of temporary plot image
datas	Zipped data arrays and legend titles
imgSize	Optional, percent of page width image should take up; defaults to 1.0
xdat	Optional zipped array of x values and titles. Defaults to iteration values.

5.44.2.7 def pdfGenWREB.PDF.makeResidualPlotPage (*self, title, imgName, datas, residuals, ROI* = `None`, *imgSize* = `1.0`, *xdat* = `None`, *pltRange* = `None`)

Generates the new page and plot for the residual tests.

Parameters

title	Title of test on page
imgName	Title of temporary plot image
datas	Zipped data arrays and legend titles
residuals	Zipped array of residuals and legend titles
ROI	Optional parameter specifying region of interest in the plot
imgSize	Optional, percent of page width image should take up; defaults to 1.0
xdat	Optional zipped array of x values and titles. Defaults to iteration values.
pltRange	Optional specified plot range.

5.44.2.8 def pdfGenWREB.PDF.passFail (*self, passed*)

Return color-coded pass/fail result.

Parameters

passed	String of either "PASS" or "FAIL"

5.44.2.9 def pdfGenWREB.PDF.residualTest (*self, title, datas, residuals, passed, stats, ROI* = `None`, *imgSize* = `0.7`, *xdat* = `None`, *pltRange* = `None`)

Report page for tests that consist of a single residual plot, including comments and pass/fail.

Parameters

title	Title of test on page and title of temporary plot image
datas	Zipped data arrays and legend titles
residuals	Zipped array of residuals and legend titles
passed	Pass/fail result of test
stats	Relevant comments from the test
ROI	Optional parameter specifying region of interest in the plot
imgSize	Optional, percent of page width image should take up; defaults to 1.0
xdat	Optional zipped array of x values and titles. Defaults to iteration values.
pltRange	Optional specified plot range.

5.44.2.10 def pdfGenWREB.PDF.summaryPage (*self, boardID, boardType, linkVersion, FPGAVersion, scriptVersion, startTime, testList, passList, statsList*)

Generate a summary page for the tests that were run.

Parameters

boardID	Serial number of the board that is tested
boardType	Type of phsyical board model
linkVersion	Version of link software
FPGAVersion	Front-end FPGA code version
scriptVersion	Version of the script, given by the last modified date YY.MM.DD.hh.mm.ss
testList	List of test titles that were run
passList	List of test results
statsList	List of relevant statistics returned from the tests

5.44.2.11 def pdfGenWREB.PDF.testTitle (*self, title*)

Generic title function for tests.

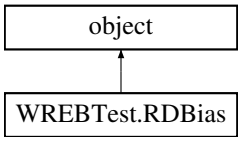
The documentation for this class was generated from the following file:

- pdfGenWREB.py

5.45 WREBTest.RDBias Class Reference

Tests the reset drain performance.

Inheritance diagram for WREBTest.RDBias:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.45.1 Detailed Description

Tests the reset drain performance.

5.45.2 Constructor & Destructor Documentation

5.45.2.1 def WREBTest.RDBias.__init__ (*self*)

Initialize minimum required variables for test list.

5.45.3 Member Function Documentation

5.45.3.1 def WREBTest.RDBias.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.45.3.2 def WREBTest.RDBias.runTest (*self*)

Run the test, save output to state variables.

5.45.3.3 def WREBTest.RDBias.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

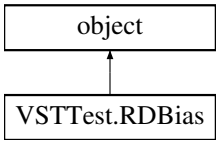
The documentation for this class was generated from the following file:

- WREBTest.py

5.46 VSTTest.RDBias Class Reference

Tests the reset drain performance.

Inheritance diagram for VSTTest.RDBias:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.46.1 Detailed Description

Tests the reset drain performance.

5.46.2 Constructor & Destructor Documentation

5.46.2.1 def VSTTest.RDBias.__init__ (*self*)

Initialize minimum required variables for test list.

5.46.3 Member Function Documentation

5.46.3.1 def VSTTest.RDBias.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.46.3.2 def VSTTest.RDBias.runTest (*self*)

Run the test, save output to state variables.

5.46.3.3 def VSTTest.RDBias.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

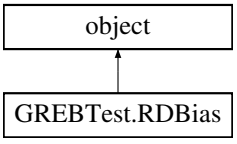
The documentation for this class was generated from the following file:

- VSTTest.py

5.47 GREBTest.RDBias Class Reference

Tests the reset drain performance.

Inheritance diagram for GREBTest.RDBias:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.47.1 Detailed Description

Tests the reset drain performance.

5.47.2 Constructor & Destructor Documentation

5.47.2.1 def GREBTest.RDBias.__init__ (*self*)

Initialize minimum required variables for test list.

5.47.3 Member Function Documentation

5.47.3.1 def GREBTest.RDBias.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.47.3.2 def GREBTest.RDBias.runTest (*self*)

Run the test, save output to state variables.

5.47.3.3 def GREBTest.RDBias.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

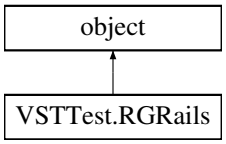
The documentation for this class was generated from the following file:

- GREBTest.py

5.48 VSTTest.RGRails Class Reference

Tests the reset gate rail performance.

Inheritance diagram for VSTTest.RGRails:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.48.1 Detailed Description

Tests the reset gate rail performance.

5.48.2 Constructor & Destructor Documentation

5.48.2.1 def VSTTest.RGRails.__init__ (*self*)

Initialize minimum required variables for test list.

5.48.3 Member Function Documentation

5.48.3.1 def VSTTest.RGRails.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.48.3.2 def VSTTest.RGRails.runTest (*self*)

Run the test, save output to state variables.

5.48.3.3 def VSTTest.RGRails.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

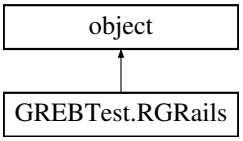
The documentation for this class was generated from the following file:

- VSTTest.py

5.49 GREBTest.RGRails Class Reference

Tests the reset gate rail performance.

Inheritance diagram for GREBTest.RGRails:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.49.1 Detailed Description

Tests the reset gate rail performance.

5.49.2 Constructor & Destructor Documentation

5.49.2.1 def GREBTest.RGRails.__init__ (*self*)

Initialize minimum required variables for test list.

5.49.3 Member Function Documentation

5.49.3.1 def GREBTest.RGRails.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.49.3.2 def GREBTest.RGRails.runTest (*self*)

Run the test, save output to state variables.

5.49.3.3 def GREBTest.RGRails.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

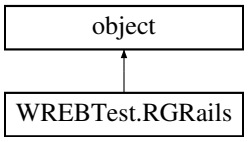
The documentation for this class was generated from the following file:

- GREBTest.py

5.50 WREBTest.RGRails Class Reference

Tests the reset gate rail performance.

Inheritance diagram for WREBTest.RGRails:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.50.1 Detailed Description

Tests the reset gate rail performance.

5.50.2 Constructor & Destructor Documentation

5.50.2.1 def WREBTest.RGRails.__init__ (*self*)

Initialize minimum required variables for test list.

5.50.3 Member Function Documentation

5.50.3.1 def WREBTest.RGRails.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.50.3.2 def WREBTest.RGRails.runTest (*self*)

Run the test, save output to state variables.

5.50.3.3 def WREBTest.RGRails.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

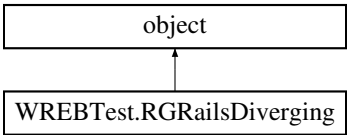
The documentation for this class was generated from the following file:

- WREBTest.py

5.51 WREBTest.RGRailsDiverging Class Reference

Tests the reset gate rail performance with a diverging voltage pattern.

Inheritance diagram for WREBTest.RGRailsDiverging:



Public Member Functions

- def __init__ (self, amplitude, startV)

  Initialize required variables for test list and stores input arguments to state variables.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.51.1 Detailed Description

Tests the reset gate rail performance with a diverging voltage pattern.

5.51.2 Constructor & Destructor Documentation

5.51.2.1 def WREBTest.RGRailsDiverging.__init__ (*self, amplitude, startV*)

Initialize required variables for test list and stores input arguments to state variables.

Parameters

amplitude	Maximum voltage differential between rails, half-wave. (5V amplitude is 10V max difference.)
startV	Initial voltage the diverging rails tests starts at.

5.51.3 Member Function Documentation

5.51.3.1 def WREBTest.RGRailsDiverging.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.51.3.2 def WREBTest.RGRailsDiverging.runTest (*self*)

Run the test, save output to state variables.

5.51.3.3 def WREBTest.RGRailsDiverging.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

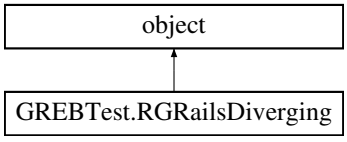
The documentation for this class was generated from the following file:

- WREBTest.py

5.52 GREBTest.RGRailsDiverging Class Reference

Tests the reset gate rail performance with a diverging voltage pattern.

Inheritance diagram for GREBTest.RGRailsDiverging:



Public Member Functions

- def __init__ (self, amplitude, startV)

  Initialize required variables for test list and stores input arguments to state variables.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.52.1 Detailed Description

Tests the reset gate rail performance with a diverging voltage pattern.

5.52.2 Constructor & Destructor Documentation

5.52.2.1 def GREBTest.RGRailsDiverging.__init__ (*self, amplitude, startV*)

Initialize required variables for test list and stores input arguments to state variables.

Parameters

amplitude	Maximum voltage differential between rails, half-wave. (5V amplitude is 10V max difference.)
startV	Initial voltage the diverging rails tests starts at.

5.52.3 Member Function Documentation

5.52.3.1 def GREBTest.RGRailsDiverging.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.52.3.2 def GREBTest.RGRailsDiverging.runTest (*self*)

Run the test, save output to state variables.

5.52.3.3 def GREBTest.RGRailsDiverging.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

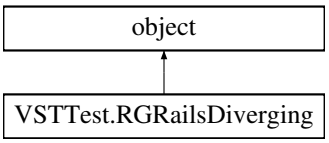
The documentation for this class was generated from the following file:

- GREBTest.py

5.53 VSTTest.RGRailsDiverging Class Reference

Tests the reset gate rail performance with a diverging voltage pattern.

Inheritance diagram for VSTTest.RGRailsDiverging:



Public Member Functions

- def __init__ (self, amplitude, startV)

  Initialize required variables for test list and stores input arguments to state variables.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.53.1 Detailed Description

Tests the reset gate rail performance with a diverging voltage pattern.

5.53.2 Constructor & Destructor Documentation

5.53.2.1 def VSTTest.RGRailsDiverging.__init__ (*self, amplitude, startV*)

Initialize required variables for test list and stores input arguments to state variables.

Parameters

amplitude	Maximum voltage differential between rails, half-wave. (5V amplitude is 10V max difference.)
startV	Initial voltage the diverging rails tests starts at.

5.53.3 Member Function Documentation

5.53.3.1 def VSTTest.RGRailsDiverging.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.53.3.2 def VSTTest.RGRailsDiverging.runTest (*self*)

Run the test, save output to state variables.

5.53.3.3 def VSTTest.RGRailsDiverging.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

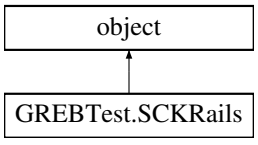
The documentation for this class was generated from the following file:

- VSTTest.py

5.54 GREBTest.SCKRails Class Reference

Tests the serial clock rail performance.

Inheritance diagram for GREBTest.SCKRails:



Public Member Functions

- def __init__ (self)
  Initialize minimum required variables for test list.
- def runTest (self)
  Run the test, save output to state variables.
- def summarize (self, summary)
  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)
  generate this test's page in the PDF report.

5.54.1 Detailed Description

Tests the serial clock rail performance.

5.54.2 Constructor & Destructor Documentation

5.54.2.1 def GREBTest.SCKRails.__init__ (*self*)

Initialize minimum required variables for test list.

5.54.3 Member Function Documentation

5.54.3.1 def GREBTest.SCKRails.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.54.3.2 def GREBTest.SCKRails.runTest (*self*)

Run the test, save output to state variables.

5.54.3.3 def GREBTest.SCKRails.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

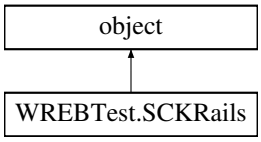
The documentation for this class was generated from the following file:

- GREBTest.py

5.55 WREBTest.SCKRails Class Reference

Tests the serial clock rail performance.

Inheritance diagram for WREBTest.SCKRails:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.55.1 Detailed Description

Tests the serial clock rail performance.

5.55.2 Constructor & Destructor Documentation

5.55.2.1 def WREBTest.SCKRails.__init__ (*self*)

Initialize minimum required variables for test list.

5.55.3 Member Function Documentation

5.55.3.1 def WREBTest.SCKRails.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.55.3.2 def WREBTest.SCKRails.runTest (*self*)

Run the test, save output to state variables.

5.55.3.3 def WREBTest.SCKRails.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

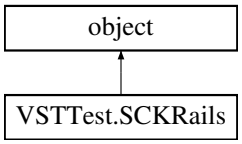
The documentation for this class was generated from the following file:

- WREBTest.py

5.56 VSTTest.SCKRails Class Reference

Tests the serial clock rail performance.

Inheritance diagram for VSTTest.SCKRails:



Public Member Functions

- def __init__ (self)
  Initialize minimum required variables for test list.
- def runTest (self)
  Run the test, save output to state variables.
- def summarize (self, summary)
  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)
  generate this test's page in the PDF report.

5.56.1 Detailed Description

Tests the serial clock rail performance.

5.56.2 Constructor & Destructor Documentation

5.56.2.1 def VSTTest.SCKRails.__init__ (*self*)

Initialize minimum required variables for test list.

5.56.3 Member Function Documentation

5.56.3.1 def VSTTest.SCKRails.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.56.3.2 def VSTTest.SCKRails.runTest (*self*)

Run the test, save output to state variables.

5.56.3.3 def VSTTest.SCKRails.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

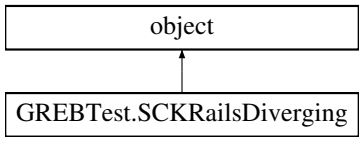
The documentation for this class was generated from the following file:

- VSTTest.py

5.57 GREBTest.SCKRailsDiverging Class Reference

Test the serial clock rail performance with a diverging voltage pattern.

Inheritance diagram for GREBTest.SCKRailsDiverging:



Public Member Functions

- def __init__ (self, amplitude, startV)

  Initialize required variables for test list and stores input arguments to state variables.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.57.1 Detailed Description

Test the serial clock rail performance with a diverging voltage pattern.

5.57.2 Constructor & Destructor Documentation

5.57.2.1 def GREBTest.SCKRailsDiverging.__init__ (*self, amplitude, startV*)

Initialize required variables for test list and stores input arguments to state variables.

Parameters

amplitude	Maximum voltage differential between rails, half-wave. (5V amplitude is 10V max difference.)
startV	Initial voltage the diverging rails tests starts at.

5.57.3 Member Function Documentation

5.57.3.1 def GREBTest.SCKRailsDiverging.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.57.3.2 def GREBTest.SCKRailsDiverging.runTest (*self*)

Run the test, save output to state variables.

```
Diverging SCK Rails test. Amplitude is half-wave maximum divergence,
startV is initial voltage to start LV=UV diverging from.
```

5.57.3.3 def GREBTest.SCKRailsDiverging.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

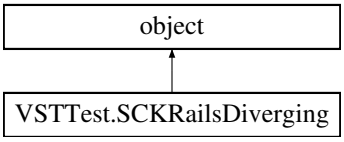
The documentation for this class was generated from the following file:

- GREBTest.py

5.58 VSTTest.SCKRailsDiverging Class Reference

Test the serial clock rail performance with a diverging voltage pattern.

Inheritance diagram for VSTTest.SCKRailsDiverging:



Public Member Functions

- def __init__ (self, amplitude, startV)

  Initialize required variables for test list and stores input arguments to state variables.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.58.1 Detailed Description

Test the serial clock rail performance with a diverging voltage pattern.

5.58.2 Constructor & Destructor Documentation

5.58.2.1 def VSTTest.SCKRailsDiverging.__init__ (*self, amplitude, startV*)

Initialize required variables for test list and stores input arguments to state variables.

Parameters

amplitude	Maximum voltage differential between rails, half-wave. (5V amplitude is 10V max difference.)
startV	Initial voltage the diverging rails tests starts at.

5.58.3 Member Function Documentation

5.58.3.1 def VSTTest.SCKRailsDiverging.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.58.3.2 def VSTTest.SCKRailsDiverging.runTest (*self*)

Run the test, save output to state variables.

```
Diverging SCK Rails test. Amplitude is half-wave maximum divergence,
startV is initial voltage to start LV=UV diverging from.
```

5.58.3.3 def VSTTest.SCKRailsDiverging.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

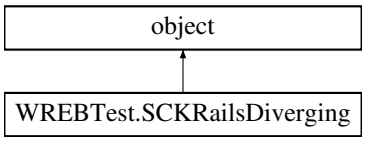
The documentation for this class was generated from the following file:

- VSTTest.py

5.59 WREBTest.SCKRailsDiverging Class Reference

Test the serial clock rail performance with a diverging voltage pattern.

Inheritance diagram for WREBTest.SCKRailsDiverging:



Public Member Functions

- def __init__ (self, amplitude, startV)

  Initialize required variables for test list and stores input arguments to state variables.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.59.1 Detailed Description

Test the serial clock rail performance with a diverging voltage pattern.

5.59.2 Constructor & Destructor Documentation

5.59.2.1 def WREBTest.SCKRailsDiverging.__init__ (*self, amplitude, startV*)

Initialize required variables for test list and stores input arguments to state variables.

Parameters

amplitude	Maximum voltage differential between rails, half-wave. (5V amplitude is 10V max difference.)
startV	Initial voltage the diverging rails tests starts at.

5.59.3 Member Function Documentation

5.59.3.1 def WREBTest.SCKRailsDiverging.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.59.3.2 def WREBTest.SCKRailsDiverging.runTest (*self*)

Run the test, save output to state variables.

```
Diverging SCK Rails test. Amplitude is half-wave maximum divergence,
startV is initial voltage to start LV=UV diverging from.
```

5.59.3.3 def WREBTest.SCKRailsDiverging.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

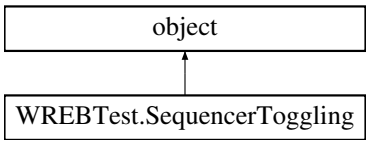
The documentation for this class was generated from the following file:

- WREBTest.py

5.60 WREBTest.SequencerToggling Class Reference

Toggles the sequencer outputs for the PCK/SCK/RG rails systems, switching the polarity.

Inheritance diagram for WREBTest.SequencerToggling:



Public Member Functions

- def __init__ (self)

  Initialize minimum required variables for test list.
- def runTest (self)

  Runs the test, outputting toggled and untoggled potential values.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf, reportPath)

  generate this test's page in the PDF report.

5.60.1 Detailed Description

Toggles the sequencer outputs for the PCK/SCK/RG rails systems, switching the polarity.

5.60.2 Constructor & Destructor Documentation

5.60.2.1 def WREBTest.SequencerToggling.__init__ (*self*)

Initialize minimum required variables for test list.

5.60.3 Member Function Documentation

5.60.3.1 def WREBTest.SequencerToggling.report (*self, pdf, reportPath*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.
reportPath	Path of directory containing the pdf report

5.60.3.2 def WREBTest.SequencerToggling.runTest (*self*)

Runs the test, outputting toggled and untoggled potential values.

5.60.3.3 def WREBTest.SequencerToggling.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

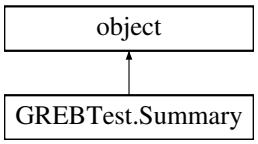
The documentation for this class was generated from the following file:

- WREBTest.py

5.61 GREBTest.Summary Class Reference

Summary object containing the needed information for the cover page.

Inheritance diagram for GREBTest.Summary:



Public Member Functions

- def __init__ (self)
  Initialize the list of tests, the list of passes/fails, and the list of results.

5.61.1 Detailed Description

Summary object containing the needed information for the cover page.

5.61.2 Constructor & Destructor Documentation

5.61.2.1 def GREBTest.Summary.__init__ (*self*)

Initialize the list of tests, the list of passes/fails, and the list of results.

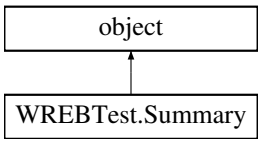
The documentation for this class was generated from the following file:

- GREBTest.py

5.62 WREBTest.Summary Class Reference

Summary object containing the needed information for the cover page.

Inheritance diagram for WREBTest.Summary:



Public Member Functions

- def __init__ (self)

  Initialize the list of tests, the list of passes/fails, and the list of results.

5.62.1 Detailed Description

Summary object containing the needed information for the cover page.

5.62.2 Constructor & Destructor Documentation

5.62.2.1 def WREBTest.Summary.__init__ (*self*)

Initialize the list of tests, the list of passes/fails, and the list of results.

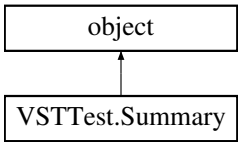
The documentation for this class was generated from the following file:

- WREBTest.py

5.63 VSTTest.Summary Class Reference

Summary object containing the needed information for the cover page.

Inheritance diagram for VSTTest.Summary:



Public Member Functions

- def __init__ (self)

  Initialize the list of tests, the list of passes/fails, and the list of results.

5.63.1 Detailed Description

Summary object containing the needed information for the cover page.

5.63.2 Constructor & Destructor Documentation

5.63.2.1 def VSTTest.Summary.__init__ (*self*)

Initialize the list of tests, the list of passes/fails, and the list of results.

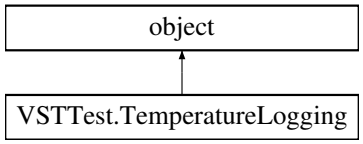
The documentation for this class was generated from the following file:

- VSTTest.py

5.64 VSTTest.TemperatureLogging Class Reference

Requests temperature logs for REB0.Temp(1-6) and CCD since the test started from the board's database.

Inheritance diagram for VSTTest.TemperatureLogging:



Public Member Functions

- def __init__ (self, startTime)
  Initialize required variables for test list.
- def runTest (self)
  Run the test, save output to state variables.
- def summarize (self, summary)
  Summarize the test results for the cover page of the report.
- def report (self, pdf)
  generate this test's page in the PDF report.

5.64.1 Detailed Description

Requests temperature logs for REB0.Temp(1-6) and CCD since the test started from the board's database.

5.64.2 Constructor & Destructor Documentation

5.64.2.1 def VSTTest.TemperatureLogging.__init__ (*self, startTime*)

Initialize required variables for test list.

Parameters

startTime	Time to request temperature data since. Should be the beginning time of this test.

5.64.3 Member Function Documentation

5.64.3.1 def VSTTest.TemperatureLogging.report (*self, pdf*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.

5.64.3.2 def VSTTest.TemperatureLogging.runTest (*self*)

Run the test, save output to state variables.

5.64.3.3 def VSTTest.TemperatureLogging.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

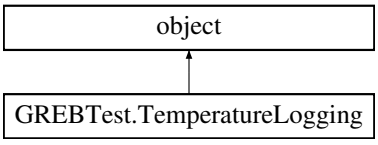
The documentation for this class was generated from the following file:

- VSTTest.py

5.65 GREBTest.TemperatureLogging Class Reference

Requests temperature logs for GREB.Temp(1-6) and CCD since the test started from the board's database.

Inheritance diagram for GREBTest.TemperatureLogging:



Public Member Functions

- def __init__ (self, startTime)

  Initialize required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf)

  generate this test's page in the PDF report.

5.65.1 Detailed Description

Requests temperature logs for GREB.Temp(1-6) and CCD since the test started from the board's database.

5.65.2 Constructor & Destructor Documentation

5.65.2.1 def GREBTest.TemperatureLogging.__init__ (*self, startTime*)

Initialize required variables for test list.

Parameters

startTime	Time to request temperature data since. Should be the beginning time of this test.

5.65.3 Member Function Documentation

5.65.3.1 def GREBTest.TemperatureLogging.report (*self, pdf*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.

5.65.3.2 def GREBTest.TemperatureLogging.runTest (*self*)

Run the test, save output to state variables.

5.65.3.3 def GREBTest.TemperatureLogging.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

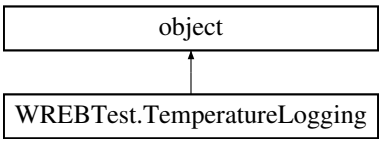
The documentation for this class was generated from the following file:

- GREBTest.py

5.66 WREBTest.TemperatureLogging Class Reference

Requests temperature logs for WREB.Temp(1-6) and CCD since the test started from the board's database.

Inheritance diagram for WREBTest.TemperatureLogging:



Public Member Functions

- def __init__ (self, startTime)

  Initialize required variables for test list.
- def runTest (self)

  Run the test, save output to state variables.
- def summarize (self, summary)

  Summarize the test results for the cover page of the report.
- def report (self, pdf)

  generate this test's page in the PDF report.

5.66.1 Detailed Description

Requests temperature logs for WREB.Temp(1-6) and CCD since the test started from the board's database.

5.66.2 Constructor & Destructor Documentation

5.66.2.1 def WREBTest.TemperatureLogging.__init__ (*self, startTime*)

Initialize required variables for test list.

Parameters

startTime	Time to request temperature data since. Should be the beginning time of this test.

5.66.3 Member Function Documentation

5.66.3.1 def WREBTest.TemperatureLogging.report (*self, pdf*)

generate this test's page in the PDF report.

Parameters

pdf	pyfpdf-compatible PDF object.

5.66.3.2 def WREBTest.TemperatureLogging.runTest (*self*)

Run the test, save output to state variables.

5.66.3.3 def WREBTest.TemperatureLogging.summarize (*self, summary*)

Summarize the test results for the cover page of the report.

Parameters

summary	Summary obejct passed from FunctionalTest()

The documentation for this class was generated from the following file:

- WREBTest.py

Chapter 6

File Documentation

6.1 GREBTest.py File Reference

Suite of tests for the GREB controller board.

Classes

- class GREBTest.JythonInterface

  Some hacky workarounds to clean up the limited communication with the Jython interface.
- class GREBTest.IdleCurrentConsumption

  Test for idle current consumption in the GREB board.
- class GREBTest.ChannelTest

  Tests number of communicable channels available to the board.
- class GREBTest.ASPICcommsTest

  Tests that the board can communicate with the ASPICS.
- class GREBTest.CSGate

  Tests the current source gate.
- class GREBTest.PCKRails

  Tests the parallel clock rail performance.
- class GREBTest.SCKRails

  Tests the serial clock rail performance.
- class GREBTest.SCKRailsDiverging

  Test the serial clock rail performance with a diverging voltage pattern.
- class GREBTest.RGRails

  Tests the reset gate rail performance.
- class GREBTest.RGRailsDiverging

  Tests the reset gate rail performance with a diverging voltage pattern.
- class GREBTest.OGBias

  Tests the output gate performance.
- class GREBTest.ODBias

  Tests the output drain performance.
- class GREBTest.GDBias

  Tests the guard drain performance.
- class GREBTest.RDBias

  Tests the reset drain performance.

- class GREBTest.TemperatureLogging

  Requests temperature logs for GREB.Temp(1-6) and CCD since the test started from the board's database.
- class GREBTest.ParameterLogging

  Periodically records specified values over the course of the testing sequence.
- class GREBTest.ASPICNoise

  Measure noise distribution in ASPICs for the unclamped, clamped, and reset cases.
- class GREBTest.ASPICLogging

  Continuously measure noise distribution in ASPICs.
- class GREBTest.Summary

  Summary object containing the needed information for the cover page.
- class GREBTest.FunctionalTest

  Runs the functional testing suite.
- class GREBTest.GUI

  Dialog-based GUI for displaying test progress and navigating options.

Functions

- def GREBTest.resetSettings ()

  Reset the board settings for use in between tests.
- def GREBTest.exitScript ()

  Reset settings and exit.
- def GREBTest.readRails (railType, count=0, uBound=20, lBound=-20)

  Reads the upper and lower voltages for a rail type (RG, SClk, PClk) and rejects if nonsensible.
- def GREBTest.voltsToRailDAC (V, rf, ri)

  Given a voltage, return a pair of voltage, shift DAC values.
- def GREBTest.setRGRailVoltage (lowV, highV, rf=25.0, ri=10.0)

  Set the voltage for the RG rail system.
- def GREBTest.setSCKRailVoltage (lowV, highV, rf=25.0, ri=10.0)

  Set the voltage for the SCK rail system.
- def GREBTest.setPCKRailVoltage (lowV, highV, rf=25.0, ri=10.0)

  Set the voltage for the SCK rail system.
- def GREBTest.convert (value, type_)

  Converts a value to the specified type.
- def GREBTest.printv (string)

  Print if verbose is enabled.

6.1.1 Detailed Description

Suite of tests for the GREB controller board.

This program communicates directly with the Jython interpreter to manipulate the board, so it does not need to be loaded into the Jython exectuor.

External dependencies:

- astropy
- numpy
- matplotlib

To run:

- Ensure Jython console is running (./JythonConsole or the bootstrapper program)
- Ensure rebRun.sh g is running
- "python GREBTest.py [options]" Initial crashing yielding a ValueError is likely due to a crRun or JythonConsole crashing or not being loaded.

Tests are structured as classes with four required methods:

- **init** sets initial variables; minimum required variables are self.title and self.status.
- runTest is the body of the tests, running the code to execute the tests and storing the results to state variables.
- summarize writes summary information to the summary object passed to it; this is used in generating the cover page.
- report writes the portion of the pdf report that the test is responsible for. Tests are executed from a list of test objects defined in FunctionalTest().

6.1.2 Function Documentation

6.1.2.1 def GREBTest.convert (*value, type_*)

Converts a value to the specified type.

Parameters

value	Value to be converted
*type_*	Type to convert to.

Returns

Converted value

6.1.2.2 def GREBTest.exitScript ( )

Reset settings and exit.

Usually catches ^C.

6.1.2.3 def GREBTest.printv (*string*)

Print if verbose is enabled.

6.1.2.4 def GREBTest.readRails (*railType, count* = 0, *uBound* = 20, *lBound* = −20)

Reads the upper and lower voltages for a rail type (RG, SClk, PClk) and rejects if nonsensible.

Parameters

railType	"RG", "SCK", or "PCK" - specifies the type of rail to read
uBound	Upper bound on sensible voltage
lBound	Lower bound on sensible voltage

6.1.2.5 def GREBTest.resetSettings ( )

Reset the board settings for use in between tests.

6.1.2.6 def GREBTest.setPCKRailVoltage (*lowV, highV, rf* = 25.0, *ri* = 10.0)

Set the voltage for the SCK rail system.

Parameters

lowV	Desired lower rail voltage.
highV	Desired upper rail voltage
rf	Optional op-amp Rf, defaults to 49.9 Ohm.
ri	Optional op-amp Ri, defaults to 20.0 Ohm.

6.1.2.7 def GREBTest.setRGRailVoltage (*lowV, highV, rf* = 25.0, *ri* = 10.0)

Set the voltage for the RG rail system.

Parameters

lowV	Desired lower rail voltage.
highV	Desired upper rail voltage
rf	Optional op-amp Rf, defaults to 49.9 Ohm.
ri	Optional op-amp Ri, defaults to 20.0 Ohm.

6.1.2.8 def GREBTest.setSCKRailVoltage (*lowV, highV, rf* = 25.0, *ri* = 10.0)

Set the voltage for the SCK rail system.

Parameters

lowV	Desired lower rail voltage.
highV	Desired upper rail voltage
rf	Optional op-amp Rf, defaults to 49.9 Ohm.
ri	Optional op-amp Ri, defaults to 20.0 Ohm.

6.1.2.9 def GREBTest.voltsToRailDAC (*V, rf, ri*)

Given a voltage, return a pair of voltage, shift DAC values.

Parameters

V	Desired output voltage
rf	Op-amp Rf
ri	Op-amp Ri

Returns

(voltage, shift voltage)

6.2 pdfGenWREB.py File Reference

Contains common PDF generation routines for the WREB test report.

Classes

- class pdfGenWREB.PDF
  PDF generation class for reports.

Functions

- def pdfGenWREB.residualPlots (datas, residuals, saveAs, ROI=None, xdat=None, pltRange=None)
  Generates a set of plots and residuals.
- def pdfGenWREB.multiPlots (datas, saveAs, xdat=None)
  Generates a set of plots.

6.2.1 Detailed Description

Contains common PDF generation routines for the WREB test report.

External dependencies:

- Matplotlib
- Numpy

6.2.2 Function Documentation

6.2.2.1 def pdfGenWREB.multiPlots (*datas, saveAs, xdat* = `None`)

Generates a set of plots.

Parameters

datas	Zipped data arrays and legend titles
saveAs	Filename to save plot as
xdat	Optional zipped array of x values and titles. Defaults to iteration values.

6.2.2.2 def pdfGenWREB.residualPlots (*datas, residuals, saveAs, ROI* = `None`, *xdat* = `None`, *pltRange* = `None`)

Generates a set of plots and residuals.

Parameters

datas	Zipped data arrays and legend titles
residuals	Zipped array of residuals and legend titles
saveAs	Filename to save plot as
ROI	Optional parameter specifying region of interest in the plot
xdat	Optional zipped array of x values and titles. Defaults to iteration values.
pltRange	Optional specified plot range.

6.3 VSTTest.py File Reference

Suite of tests for the VST controller board.

Classes

- class VSTTest.JythonInterface

  Some hacky workarounds to clean up the limited communication with the Jython interface.
- class VSTTest.IdleCurrentConsumption

  Test for idle current consumption in the VST board.
- class VSTTest.ChannelTest

  Tests number of communicable channels available to the board.
- class VSTTest.ASPICcommsTest

  Tests that the board can communicate with the ASPICS.
- class VSTTest.PCKRails

  Tests the parallel clock rail performance.
- class VSTTest.SCKRails

  Tests the serial clock rail performance.
- class VSTTest.SCKRailsDiverging

  Test the serial clock rail performance with a diverging voltage pattern.
- class VSTTest.RGRails

  Tests the reset gate rail performance.
- class VSTTest.RGRailsDiverging

  Tests the reset gate rail performance with a diverging voltage pattern.
- class VSTTest.OGBias

  Tests the output gate performance.

- class VSTTest.ODBias

  Tests the output drain performance.
- class VSTTest.GDBias

  Tests the guard drain performance.
- class VSTTest.RDBias

  Tests the reset drain performance.
- class VSTTest.TemperatureLogging

  Requests temperature logs for REB0.Temp(1-6) and CCD since the test started from the board's database.
- class VSTTest.ParameterLogging

  Periodically records specified values over the course of the testing sequence.
- class VSTTest.ASPICNoise

  Measure noise distribution in ASPICs for the unclamped, clamped, and reset cases.
- class VSTTest.ASPICLogging

  Continuously measure noise distribution in ASPICs.
- class VSTTest.Summary

  Summary object containing the needed information for the cover page.
- class VSTTest.FunctionalTest

  Runs the functional testing suite.
- class VSTTest.GUI

  Dialog-based GUI for displaying test progress and navigating options.

Functions

- def VSTTest.resetSettings ()

  Reset the board settings for use in between tests.
- def VSTTest.exitScript ()

  Reset settings and exit.
- def VSTTest.readRails (railType, count=0, uBound=20, lBound=-20)

  Reads the upper and lower voltages for a rail type (RG, SClk, PClk) and rejects if nonsensible.
- def VSTTest.voltsToRailDAC (V, rf, ri)

  Given a voltage, return a pair of voltage, shift DAC values.
- def VSTTest.setRGRailVoltage (lowV, highV, rf=25.0, ri=10.0)

  Set the voltage for the RG rail system.
- def VSTTest.setSCKRailVoltage (lowV, highV, rf=25.0, ri=10.0)

  Set the voltage for the SCK rail system.
- def VSTTest.setPCKRailVoltage (lowV, highV, rf=25.0, ri=10.0)

  Set the voltage for the SCK rail system.
- def VSTTest.convert (value, type_)

  Converts a value to the specified type.
- def VSTTest.printv (string)

  Print if verbose is enabled.

6.3.1 Detailed Description

Suite of tests for the VST controller board.

This program communicates directly with the Jython interpreter to manipulate the board, so it does not need to be loaded into the Jython exectuor.

External dependencies:

- astropy
- numpy
- matplotlib

To run:

- Ensure Jython console is running (./JythonConsole or the bootstrapper program)
- Ensure rebRun.sh 4 is running
- "python VSTTest.py [options]" Initial crashing yielding a ValueError is likely due to a crRun or JythonConsole crashing or not being loaded.

Tests are structured as classes with four required methods:

- **init** sets initial variables; minimum required variables are self.title and self.status.
- runTest is the body of the tests, running the code to execute the tests and storing the results to state variables.
- summarize writes summary information to the summary object passed to it; this is used in generating the cover page.
- report writes the portion of the pdf report that the test is responsible for. Tests are executed from a list of test objects defined in FunctionalTest().

6.3.2 Function Documentation

6.3.2.1 def VSTTest.convert (*value, type_*)

Converts a value to the specified type.

Parameters

value	Value to be converted
*type_*	Type to convert to.

Returns

Converted value

6.3.2.2 def VSTTest.exitScript ( )

Reset settings and exit.

Usually catches ^C.

6.3.2.3 def VSTTest.printv (*string*)

Print if verbose is enabled.

6.3.2.4 def VSTTest.readRails (*railType, count =* 0, *uBound =* 20, *lBound =* -20)

Reads the upper and lower voltages for a rail type (RG, SClk, PClk) and rejects if nonsensible.

Parameters

railType	"RG", "SClk", or "PClk" - specifies the type of rail to read
uBound	Upper bound on sensible voltage
lBound	Lower bound on sensible voltage

6.3.2.5 def VSTTest.resetSettings ( )

Reset the board settings for use in between tests.

6.3.2.6 def VSTTest.setPCKRailVoltage (*lowV, highV, rf =* 25.0, *ri =* 10.0)

Set the voltage for the SCK rail system.

Parameters

lowV	Desired lower rail voltage.
highV	Desired upper rail voltage
rf	Optional op-amp Rf, defaults to 49.9 Ohm.
ri	Optional op-amp Ri, defaults to 20.0 Ohm.

6.3.2.7 def VSTTest.setRGRailVoltage (*lowV, highV, rf =* 25.0, *ri =* 10.0)

Set the voltage for the RG rail system.

Parameters

lowV	Desired lower rail voltage.
highV	Desired upper rail voltage
rf	Optional op-amp Rf, defaults to 49.9 Ohm.
ri	Optional op-amp Ri, defaults to 20.0 Ohm.

6.3.2.8 def VSTTest.setSCKRailVoltage (*lowV, highV, rf* = 25.0, *ri* = 10.0)

Set the voltage for the SCK rail system.

Parameters

lowV	Desired lower rail voltage.
highV	Desired upper rail voltage
rf	Optional op-amp Rf, defaults to 49.9 Ohm.
ri	Optional op-amp Ri, defaults to 20.0 Ohm.

6.3.2.9 def VSTTest.voltsToRailDAC (*V, rf, ri*)

Given a voltage, return a pair of voltage, shift DAC values.

Parameters

V	Desired output voltage
rf	Op-amp Rf
ri	Op-amp Ri

Returns

(voltage, shift voltage)

6.4 WREBTest.py File Reference

Suite of tests for the WREB controller board.

Classes

- class WREBTest.JythonInterface

  Some hacky workarounds to clean up the limited communication with the Jython interface.
- class WREBTest.IdleCurrentConsumption

  Test for idle current consumption in the WREB board.
- class WREBTest.ChannelTest

  Tests number of communicable channels available to the board.
- class WREBTest.ASPICcommsTest

  Tests that the board can communicate with the ASPICS.
- class WREBTest.SequencerToggling

  Toggles the sequencer outputs for the PCK/SCK/RG rails systems, switching the polarity.
- class WREBTest.CSGate

  Tests the current source gate.
- class WREBTest.PCKRails

  Test the parallel clock rail performance.
- class WREBTest.SCKRails

Tests the serial clock rail performance.

- class WREBTest.SCKRailsDiverging

  Test the serial clock rail performance with a diverging voltage pattern.
- class WREBTest.RGRails

  Tests the reset gate rail performance.
- class WREBTest.RGRailsDiverging

  Tests the reset gate rail performance with a diverging voltage pattern.
- class WREBTest.OGBias

  Tests the output gate performance.
- class WREBTest.ODBias

  Tests the output drain performance.
- class WREBTest.GDBias

  Tests the guard drain performance.
- class WREBTest.RDBias

  Tests the reset drain performance.
- class WREBTest.TemperatureLogging

  Requests temperature logs for WREB.Temp(1-6) and CCD since the test started from the board's database.
- class WREBTest.ParameterLogging

  Periodically records specified values over the course of the testing sequence.
- class WREBTest.ASPICNoise

  Measure noise distribution in ASPICs for the unclamped, clamped, and reset cases.
- class WREBTest.ASPICLogging

  Continuously measure noise distribution in ASPICs.
- class WREBTest.Summary

  Summary object containing the needed information for the cover page.
- class WREBTest.FunctionalTest

  Runs the functional testing suite.
- class WREBTest.GUI

  Dialog-based GUI for displaying test progress and navigating options.

Functions

- def WREBTest.resetSettings ()

  Reset the board settings for use in between tests.
- def WREBTest.exitScript ()

  Reset settings and exit.
- def WREBTest.stepRange (start, end, step)

  Generate a range object that can take non-integer steps.
- def WREBTest.voltsToDAC (volt, Rfb, Rin)

  Generate a DAC code to correspond to a desired voltage.
- def WREBTest.voltsToShiftedDAC (volt, shvolt, Rfb, Rin)

  Generate a shifted DAC code to correspond to a desired voltage in a rail system.
- def WREBTest.voltsToRailDAC (V, rf, ri)

  Given a voltage, return a pair of voltage, shift DAC values.
- def WREBTest.setRGRailVoltage (lowV, highV, rf=49.9, ri=20.0)

  Set the voltage for the RG rail system.
- def WREBTest.setSCKRailVoltage (lowV, highV, rf=49.9, ri=20.0)

  Set the voltage for the SCK rail system.
- def WREBTest.convert (value, type_)

  Converts a value to the specified type.
- def WREBTest.printv (string)

  Print if verbose is enabled.

6.4.1 Detailed Description

Suite of tests for the WREB controller board.

This program communicates directly with the Jython interpreter to manipulate the board, so it does not need to be loaded into the Jython exectuor.

External dependencies:

- astropy
- numpy
- matplotlib
- Unix Dialogs installation (for GUI, optional)

To run:

- "python REBTest.py [options]" Initial crashing yielding a ValueError is likely due to a crRun or JythonConsole crashing or not being loaded.

Tests are structured as classes with four required methods:

- **init** sets initial variables; minimum required variables are self.title and self.status.
- runTest is the body of the tests, running the code to execute the tests and storing the results to state variables.
- summarize writes summary information to the summary object passed to it; this is used in generating the cover page.
- report writes the portion of the pdf report that the test is responsible for. Tests are executed from a list of test objects defined in FunctionalTest().

This program communicates directly with the Jython interpreter to manipulate the board, so it does not need to be loaded into the Jython exectuor.

External dependencies:

- astropy
- numpy
- matplotlib
- Unix Dialogs installation (for GUI, optional)

To run:

- Ensure Jython console is running (./JythonConsole or the bootstrapper program)
- Ensure rebRun.sh w is running
- "python WREBTest.py [options]" Initial crashing yielding a ValueError is likely due to a crRun or JythonConsole crashing or not being loaded.

Tests are structured as classes with four required methods:

- **init** sets initial variables; minimum required variables are self.title and self.status.
- runTest is the body of the tests, running the code to execute the tests and storing the results to state variables.
- summarize writes summary information to the summary object passed to it; this is used in generating the cover page.
- report writes the portion of the pdf report that the test is responsible for. Tests are executed from a list of test objects defined in FunctionalTest().

6.4.2 Function Documentation

6.4.2.1 def WREBTest.convert (*value, type_*)

Converts a value to the specified type.

Parameters

value	Value to be converted
*type_*	Type to convert to.

Returns

Converted value

6.4.2.2 def WREBTest.exitScript ( )

Reset settings and exit.

Usually catches ^C.

6.4.2.3 def WREBTest.printv (*string*)

Print if verbose is enabled.

6.4.2.4 def WREBTest.resetSettings ( )

Reset the board settings for use in between tests.

6.4.2.5 def WREBTest.setRGRailVoltage (*lowV, highV, rf* = 49.9, *ri* = 20.0)

Set the voltage for the RG rail system.

Parameters

lowV	Desired lower rail voltage.
highV	Desired upper rail voltage
rf	Optional op-amp Rf, defaults to 49.9 Ohm.
ri	Optional op-amp Ri, defaults to 20.0 Ohm.

6.4.2.6 def WREBTest.setSCKRailVoltage (*lowV, highV, rf* = 49.9, *ri* = 20.0)

Set the voltage for the SCK rail system.

Parameters

lowV	Desired lower rail voltage.
highV	Desired upper rail voltage
rf	Optional op-amp Rf, defaults to 49.9 Ohm.
ri	Optional op-amp Ri, defaults to 20.0 Ohm.

6.4.2.7 def WREBTest.stepRange (*start, end, step*)

Generate a range object that can take non-integer steps.

Parameters

start	Starting value
end	Ending value
step	Step size

6.4.2.8 def WREBTest.voltsToDAC (*volt, Rfb, Rin*)

Generate a DAC code to correspond to a desired voltage.

Parameters

volt	Desired voltage level
Rfb	Op-amp Rf
Rin	Op-amp Ri

6.4.2.9 def WREBTest.voltsToRailDAC (*V, rf, ri*)

Given a voltage, return a pair of voltage, shift DAC values.

Parameters

V	Desired output voltage
rf	Op-amp Rf
ri	Op-amp Ri

Returns

(voltage, shift voltage)

6.4.2.10 def WREBTest.voltsToShiftedDAC (*volt, shvolt, Rfb, Rin*)

Generate a shifted DAC code to correspond to a desired voltage in a rail system.

Parameters

volt	Desired voltage level
shvolt	Shifted voltage level
Rfb	Op-amp Rf
Rin	Op-amp Ri

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