

REB Functional Tests

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Chapter 1

LSST Readout Electronics Boards Testing Suite

Documentation

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 executor 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 CCS bootstrapper program)
- Ensure `rebRun.sh` is running with the appropriate argument (`w` for WREB, `g` for GREB, `4` for VST)
- `python (WREB/GREB/VST)Test.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 communicable 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 deprecated 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.

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`.

Chapter 2

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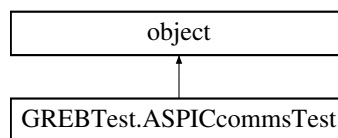
Chapter 5

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

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | 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

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary obejct passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

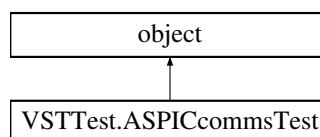
The documentation for this class was generated from the following file:

- [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

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | 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

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

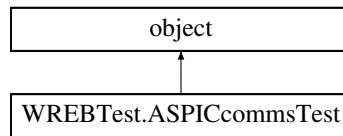
The documentation for this class was generated from the following file:

- [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

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | 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

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

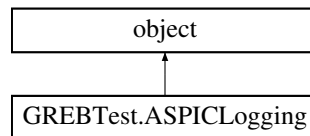
The documentation for this class was generated from the following file:

- [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 -l 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

| | |
|------------|-------------------------------|
| <i>pdf</i> | 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

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

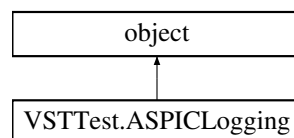
The documentation for this class was generated from the following file:

- [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

| | |
|------------|-------------------------------|
| <i>pdf</i> | 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

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

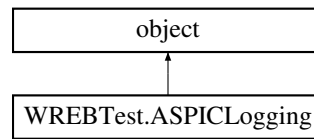
The documentation for this class was generated from the following file:

- [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

| | |
|------------|-------------------------------|
| <i>pdf</i> | 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

| | |
|----------------------|-------------------------------------------------------------|
| <code>summary</code> | Summary object passed from FunctionalTest() |
|----------------------|-------------------------------------------------------------|

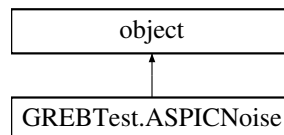
The documentation for this class was generated from the following file:

- [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

| | |
|------------|-------------------------------|
| <i>pdf</i> | 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

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

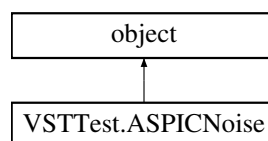
The documentation for this class was generated from the following file:

- [GREBTest.py](#)

5.8 VSTTest.ASPICNoise Class Reference

Measure noise distribution in ASICs 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 ASICs 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

| | |
|------------|-------------------------------|
| <i>pdf</i> | 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

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

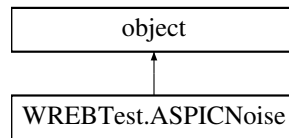
The documentation for this class was generated from the following file:

- [VSTTest.py](#)

5.9 WREBTest.ASPICNoise Class Reference

Measure noise distribution in ASICs 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

| | |
|------------|-------------------------------|
| <i>pdf</i> | 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 object passed from FunctionalTest() |
|---------|-------------------------------------------------------------|

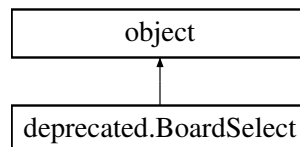
The documentation for this class was generated from the following file:

- [WREBTest.py](#)

5.10 deprecated.BoardSelect Class Reference

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

Inheritance diagram for deprecated.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 deprecated.BoardSelect.__init__ (self)

Start the dialog.

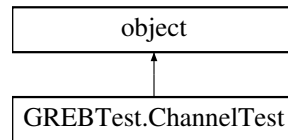
The documentation for this class was generated from the following file:

- deprecated.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

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | 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

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

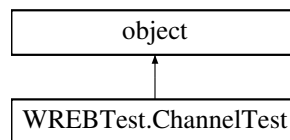
The documentation for this class was generated from the following file:

- [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

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | 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

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

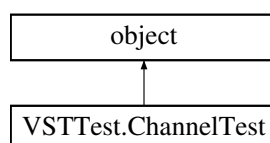
The documentation for this class was generated from the following file:

- [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

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | 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

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

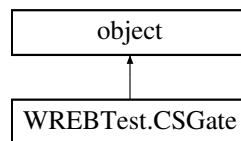
The documentation for this class was generated from the following file:

- [VSTTest.py](#)

5.14 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.

5.14.1 Detailed Description

Tests the current source gate.

5.14.2 Constructor & Destructor Documentation

5.14.2.1 def WREBTest.CSGate.__init__ (self)

Initialize minimum required variables for test list.

5.14.3 Member Function Documentation

5.14.3.1 def WREBTest.CSGate.report (self, pdf, reportPath)

generate this test's page in the PDF report.

Parameters

| | |
|------------|-------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
|------------|-------------------------------|

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

Run the test, save output to state variables.

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

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

Parameters

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

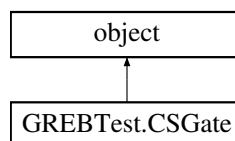
The documentation for this class was generated from the following file:

- [WREBTest.py](#)

5.15 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.

5.15.1 Detailed Description

Tests the current source gate.

5.15.2 Constructor & Destructor Documentation

5.15.2.1 `def GREBTest.CSGate.__init__(self)`

Initialize minimum required variables for test list.

5.15.3 Member Function Documentation

5.15.3.1 `def GREBTest.CSGate.report(self, pdf, reportPath)`

generate this test's page in the PDF report.

Parameters

| | |
|------------|-------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
|------------|-------------------------------|

5.15.3.2 `def GREBTest.CSGate.runTest(self)`

Run the test, save output to state variables.

5.15.3.3 `def GREBTest.CSGate.summarize(self, summary)`

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

Parameters

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

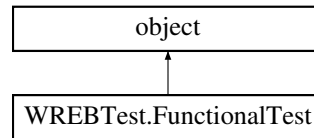
The documentation for this class was generated from the following file:

- [GREBTest.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.

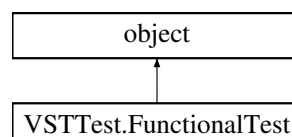
The documentation for this class was generated from the following file:

- [WREBTest.py](#)

5.17 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.

5.17.1 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 VSTTest.FunctionalTest.generateReport (self)

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

5.17.2.2 def VSTTest.FunctionalTest.runTests (self)

Run the tests.

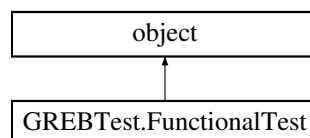
The documentation for this class was generated from the following file:

- [VSTTest.py](#)

5.18 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.

5.18.1 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 GREBTest.FunctionalTest.generateReport (self)`

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

5.18.2.2 `def GREBTest.FunctionalTest.runTests (self)`

Run the tests.

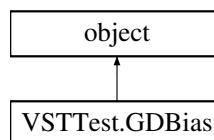
The documentation for this class was generated from the following file:

- [GREBTest.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

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | 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

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

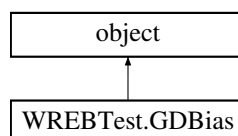
The documentation for this class was generated from the following file:

- [VSTTest.py](#)

5.20 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.

5.20.1 Detailed Description

Tests the guard drain performance.

5.20.2 Constructor & Destructor Documentation

5.20.2.1 def WREBTest.GDBias.__init__ (self)

Initialize minimum required variables for test list.

5.20.3 Member Function Documentation

5.20.3.1 def WREBTest.GDBias.report (self, pdf, reportPath)

generate this test's page in the PDF report.

Parameters

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | Path of directory containing the pdf report |

5.20.3.2 def WREBTest.GDBias.runTest (self)

Run the test, save output to state variables.

5.20.3.3 def WREBTest.GDBias.summarize (self, summary)

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

Parameters

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

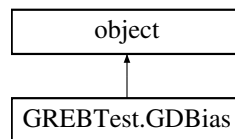
The documentation for this class was generated from the following file:

- [WREBTest.py](#)

5.21 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.

5.21.1 Detailed Description

Tests the guard drain performance.

5.21.2 Constructor & Destructor Documentation

5.21.2.1 def GREBTest.GDBias.__init__ (self)

Initialize minimum required variables for test list.

5.21.3 Member Function Documentation

5.21.3.1 def GREBTest.GDBias.report (self, pdf, reportPath)

generate this test's page in the PDF report.

Parameters

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | Path of directory containing the pdf report |

5.21.3.2 def GREBTest.GDBias.runTest (self)

Run the test, save output to state variables.

5.21.3.3 def GREBTest.GDBias.summarize (self, summary)

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

Parameters

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

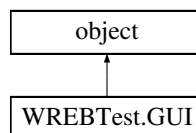
The documentation for this class was generated from the following file:

- [GREBTest.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.

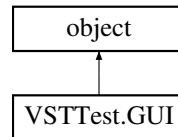
The documentation for this class was generated from the following file:

- [WREBTest.py](#)

5.23 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.

5.23.1 Detailed Description

Dialog-based [GUI](#) for displaying test progress and navigating options.

5.23.2 Constructor & Destructor Documentation

5.23.2.1 `def VSTTest.GUI.__init__ (self)`

Start the dialog.

5.23.3 Member Function Documentation

5.23.3.1 `def VSTTest.GUI.runCustomTests (self)`

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

5.23.3.2 `def VSTTest.GUI.runFunctionalTest (self)`

Runs the full suite of tests from the [GUI](#).

5.23.3.3 `def VSTTest.GUI.startMenu (self)`

Initial navigation menu.

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

5.23.3.4 `def VSTTest.GUI.startUpdateContinuously (self)`

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

5.23.3.5 `def VSTTest.GUI.update (self)`

Update the [GUI](#) to display current testing progress.

5.23.3.6 `def VSTTest.GUI.updateContinuously (self)`

Continuously update the display every `_` seconds.

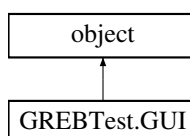
The documentation for this class was generated from the following file:

- [VSTTest.py](#)

5.24 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.

5.24.1 Detailed Description

Dialog-based [GUI](#) for displaying test progress and navigating options.

5.24.2 Constructor & Destructor Documentation

5.24.2.1 `def GREBTest.GUI.__init__ (self)`

Start the dialog.

5.24.3 Member Function Documentation

5.24.3.1 `def GREBTest.GUI.runCustomTests (self)`

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

5.24.3.2 `def GREBTest.GUI.runFunctionalTest (self)`

Runs the full suite of tests from the [GUI](#).

5.24.3.3 `def GREBTest.GUI.startMenu (self)`

Initial navigation menu.

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

5.24.3.4 `def GREBTest.GUI.startUpdateContinuously (self)`

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

5.24.3.5 `def GREBTest.GUI.update (self)`

Update the [GUI](#) to display current testing progress.

5.24.3.6 `def GREBTest.GUI.updateContinuously (self)`

Continuously update the display every `_` seconds.

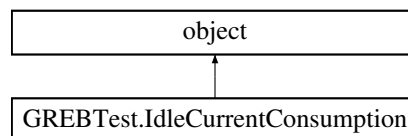
The documentation for this class was generated from the following file:

- [GREBTest.py](#)

5.25 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.

5.25.1 Detailed Description

Test for idle current consumption in the GREB board.

5.25.2 Constructor & Destructor Documentation

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

Initialize minimum required variables for test list.

5.25.3 Member Function Documentation

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

generate this test's page in the PDF report.

Parameters

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | Path of directory containing the pdf report |

5.25.3.2 def GREBTest.IdleCurrentConsumption.runTest (self)

Run the test, save output to state variables.

5.25.3.3 def GREBTest.IdleCurrentConsumption.summarize (self, summary)

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

Parameters

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

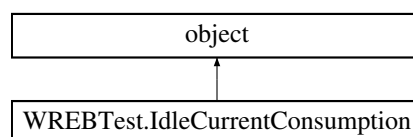
The documentation for this class was generated from the following file:

- [GREBTest.py](#)

5.26 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.

5.26.1 Detailed Description

Test for idle current consumption in the WREB board.

5.26.2 Constructor & Destructor Documentation

5.26.2.1 def WREBTest.IdleCurrentConsumption.__init__(self)

Initialize minimum required variables for test list.

5.26.3 Member Function Documentation

5.26.3.1 def WREBTest.IdleCurrentConsumption.report(self, pdf, reportPath)

generate this test's page in the PDF report.

Parameters

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | Path of directory containing the pdf report |

5.26.3.2 def WREBTest.IdleCurrentConsumption.runTest(self)

Run the test, save output to state variables.

5.26.3.3 def WREBTest.IdleCurrentConsumption.summarize(self, summary)

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

Parameters

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

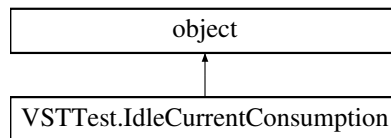
The documentation for this class was generated from the following file:

- [WREBTest.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

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | 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

| | |
|----------------------|-------------------------------------------------------------|
| <code>summary</code> | Summary object passed from FunctionalTest() |
|----------------------|-------------------------------------------------------------|

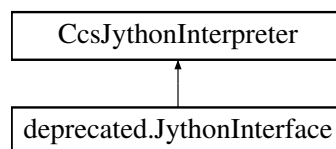
The documentation for this class was generated from the following file:

- [VSTTest.py](#)

5.28 deprecated.JythonInterface Class Reference

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

Inheritance diagram for deprecated.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 deprecated.JythonInterface.do (self, code)`

Execute a command on the CCS Jython interpreter.

Parameters

| | |
|-------------------|-----------------------------------|
| <code>code</code> | Code as a literal to be executed. |
|-------------------|-----------------------------------|

5.28.2.2 `def deprecated.JythonInterface.get (self, code, dtype = "float")`

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

Parameters

| | |
|--------------|----------------------------------------|
| <i>code</i> | Code as a literal to be executed. |
| <i>dtype</i> | 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.

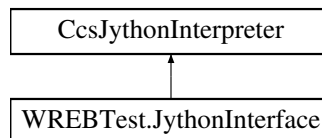
The documentation for this class was generated from the following file:

- `deprecated.REBTest.py`

5.29 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()`.

5.29.1 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 WREBTest.JythonInterface.do (self, code)`

Execute a command on the CCS Jython interpreter.

Parameters

| | |
|-------------------|-----------------------------------|
| <code>code</code> | Code as a literal to be executed. |
|-------------------|-----------------------------------|

5.29.2.2 `def WREBTest.JythonInterface.get (self, code, dtype = "float")`

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

Parameters

| | |
|--------------------|----------------------------------------|
| <code>code</code> | Code as a literal to be executed. |
| <code>dtype</code> | 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.

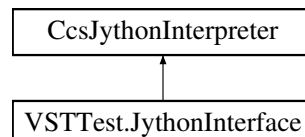
The documentation for this class was generated from the following file:

- [WREBTest.py](#)

5.30 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()`.

5.30.1 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 VSTTest.JythonInterface.do (self, code)`

Execute a command on the CCS Jython interpreter.

Parameters

| | |
|-------------------|-----------------------------------|
| <code>code</code> | Code as a literal to be executed. |
|-------------------|-----------------------------------|

5.30.2.2 `def VSTTest.JythonInterface.get (self, code, dtype = "float")`

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

Parameters

| | |
|--------------------|----------------------------------------|
| <code>code</code> | Code as a literal to be executed. |
| <code>dtype</code> | 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.

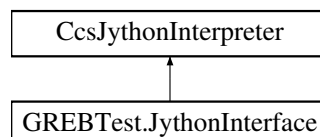
The documentation for this class was generated from the following file:

- [VSTTest.py](#)

5.31 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()`.

5.31.1 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 GREBTest.JythonInterface.do (self, code)`

Execute a command on the CCS Jython interpreter.

Parameters

| | |
|-------------------|-----------------------------------|
| <code>code</code> | Code as a literal to be executed. |
|-------------------|-----------------------------------|

5.31.2.2 `def GREBTest.JythonInterface.get (self, code, dtype = "float")`

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

Parameters

| | |
|--------------------|----------------------------------------|
| <code>code</code> | Code as a literal to be executed. |
| <code>dtype</code> | 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.

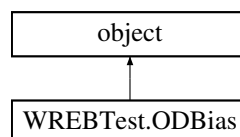
The documentation for this class was generated from the following file:

- [GREBTest.py](#)

5.32 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.

5.32.1 Detailed Description

Tests the output drain performance.

5.32.2 Constructor & Destructor Documentation

5.32.2.1 `def WREBTest.ODBias.__init__(self)`

Initialize minimum required variables for test list.

5.32.3 Member Function Documentation

5.32.3.1 `def WREBTest.ODBias.report(self, pdf, reportPath)`

generate this test's page in the PDF report.

Parameters

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | Path of directory containing the pdf report |

5.32.3.2 `def WREBTest.ODBias.runTest(self)`

Run the test, save output to state variables.

5.32.3.3 `def WREBTest.ODBias.summarize(self, summary)`

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

Parameters

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

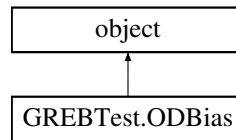
The documentation for this class was generated from the following file:

- [WREBTest.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

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | 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

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

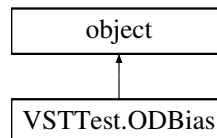
The documentation for this class was generated from the following file:

- [GREBTest.py](#)

5.34 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.

5.34.1 Detailed Description

Tests the output drain performance.

5.34.2 Constructor & Destructor Documentation

5.34.2.1 `def VSTTest.ODBias.__init__ (self)`

Initialize minimum required variables for test list.

5.34.3 Member Function Documentation

5.34.3.1 `def VSTTest.ODBias.report (self, pdf, reportPath)`

generate this test's page in the PDF report.

Parameters

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | Path of directory containing the pdf report |

5.34.3.2 `def VSTTest.OGBias.runTest (self)`

Run the test, save output to state variables.

5.34.3.3 `def VSTTest.OGBias.summarize (self, summary)`

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

Parameters

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

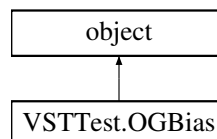
The documentation for this class was generated from the following file:

- [VSTTest.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

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | 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

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

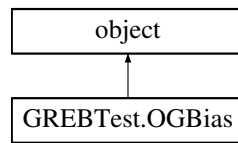
The documentation for this class was generated from the following file:

- [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

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | 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

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

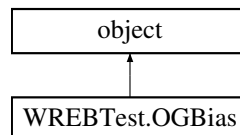
The documentation for this class was generated from the following file:

- [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

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | 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

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

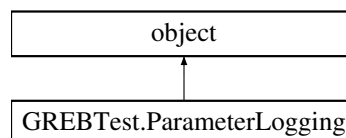
The documentation for this class was generated from the following file:

- [WREBTest.py](#)

5.38 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.

5.38.1 Detailed Description

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

5.38.2 Constructor & Destructor Documentation

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

Initializes the test.

Parameters

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

5.38.3 Member Function Documentation

5.38.3.1 `def GREBTest.ParameterLogging.passFail (self)`

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

5.38.3.2 `def GREBTest.ParameterLogging.recordContinuously (self)`

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

5.38.3.3 `def GREBTest.ParameterLogging.report (self, pdf, reportPath)`

generate this test's page in the PDF report.

Parameters

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | Path of directory containing the pdf report |

5.38.3.4 `def GREBTest.ParameterLogging.runTest (self)`

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

5.38.3.5 `def GREBTest.ParameterLogging.stopTest (self)`

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

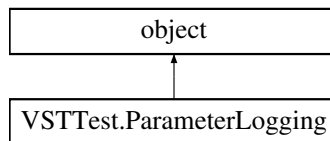
The documentation for this class was generated from the following file:

- [GREBTest.py](#)

5.39 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.

5.39.1 Detailed Description

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

5.39.2 Constructor & Destructor Documentation

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

Initializes the test.

Parameters

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

5.39.3 Member Function Documentation

5.39.3.1 `def VSTTest.ParameterLogging.passFail (self)`

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

5.39.3.2 `def VSTTest.ParameterLogging.recordContinuously (self)`

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

5.39.3.3 `def VSTTest.ParameterLogging.report (self, pdf, reportPath)`

generate this test's page in the PDF report.

Parameters

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | Path of directory containing the pdf report |

5.39.3.4 `def VSTTest.ParameterLogging.runTest (self)`

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

5.39.3.5 `def VSTTest.ParameterLogging.stopTest (self)`

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

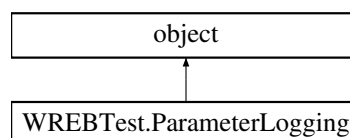
The documentation for this class was generated from the following file:

- [VSTTest.py](#)

5.40 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

| | |
|---------------------|-----------------------------------------------------------------------------|
| <i>valuesToRead</i> | A list of ("subsystem", "value to read") tuples |
| <i>delay</i> | Time to sleep between periodic queries |
| <i>fnTest</i> | The FunctionalTest() object, allowing this test to track progress/terminate |
| <i>backup</i> | 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

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | 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.

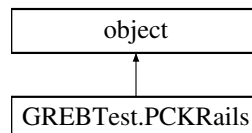
The documentation for this class was generated from the following file:

- [WREBTest.py](#)

5.41 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.

5.41.1 Detailed Description

Tests the parallel clock rail performance.

5.41.2 Constructor & Destructor Documentation

5.41.2.1 `def GREBTest.PCKRails.__init__(self)`

Initialize minimum required variables for test list.

5.41.3 Member Function Documentation

5.41.3.1 `def GREBTest.PCKRails.report(self, pdf, reportPath)`

generate this test's page in the PDF report.

Parameters

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | Path of directory containing the pdf report |

5.41.3.2 `def GREBTest.PCKRails.runTest(self)`

Run the test, save output to state variables.

5.41.3.3 `def GREBTest.PCKRails.summarize(self, summary)`

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

Parameters

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

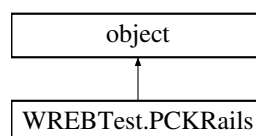
The documentation for this class was generated from the following file:

- [GREBTest.py](#)

5.42 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.

5.42.1 Detailed Description

Test the parallel clock rail performance.

5.42.2 Constructor & Destructor Documentation

5.42.2.1 def WREBTest.PCKRails.__init__ (self)

Initialize minimum required variables for test list.

5.42.3 Member Function Documentation

5.42.3.1 def WREBTest.PCKRails.report (self, pdf, reportPath)

generate this test's page in the PDF report.

Parameters

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | Path of directory containing the pdf report |

5.42.3.2 def WREBTest.PCKRails.runTest (self)

Run the test, save output to state variables.

5.42.3.3 def WREBTest.PCKRails.summarize (self, summary)

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

Parameters

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

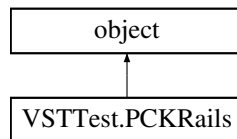
The documentation for this class was generated from the following file:

- [WREBTest.py](#)

5.43 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.

5.43.1 Detailed Description

Tests the parallel clock rail performance.

5.43.2 Constructor & Destructor Documentation

5.43.2.1 def VSTTest.PCKRails.__init__ (self)

Initialize minimum required variables for test list.

5.43.3 Member Function Documentation

5.43.3.1 def VSTTest.PCKRails.report (self, pdf, reportPath)

generate this test's page in the PDF report.

Parameters

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | Path of directory containing the pdf report |

5.43.3.2 `def VSTTest.PCKRails.runTest (self)`

Run the test, save output to state variables.

5.43.3.3 `def VSTTest.PCKRails.summarize (self, summary)`

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

Parameters

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

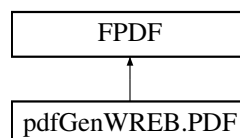
The documentation for this class was generated from the following file:

- [VSTTest.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, plt↔ Range=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, plt↔ Range=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

| | |
|----------------|-----------------------------------------------------------------------|
| <i>title</i> | Title of test on page |
| <i>imgName</i> | File to save plot as |
| <i>imgSize</i> | 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

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

| | |
|-----------------|--------------------------------------|
| <i>title</i> | Title of test on page |
| <i>voltages</i> | List of (category title, [voltages]) |
| <i>currents</i> | 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

| | |
|----------------|-----------------------------------------------------------------------------|
| <i>title</i> | Title of test on page |
| <i>imgName</i> | Title of temporary plot image |
| <i>datas</i> | Zipped data arrays and legend titles |
| <i>imgSize</i> | Optional, percent of page width image should take up; defaults to 1.0 |
| <i>xdat</i> | 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

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

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

Return color-coded pass/fail result.

Parameters

| | |
|---------------|-----------------------------------|
| <i>passed</i> | 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

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

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

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

Generic title function for tests.

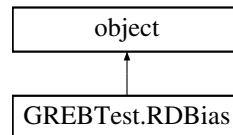
The documentation for this class was generated from the following file:

- [pdfGenWREB.py](#)

5.45 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.

5.45.1 Detailed Description

Tests the reset drain performance.

5.45.2 Constructor & Destructor Documentation

5.45.2.1 def GREBTest.RDBias.__init__ (self)

Initialize minimum required variables for test list.

5.45.3 Member Function Documentation

5.45.3.1 def GREBTest.RDBias.report (self, pdf, reportPath)

generate this test's page in the PDF report.

Parameters

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | Path of directory containing the pdf report |

5.45.3.2 `def GREBTest.RDBias.runTest (self)`

Run the test, save output to state variables.

5.45.3.3 `def GREBTest.RDBias.summarize (self, summary)`

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

Parameters

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

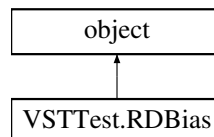
The documentation for this class was generated from the following file:

- [GREBTest.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

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | 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

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

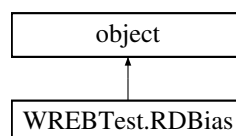
The documentation for this class was generated from the following file:

- [VSTTest.py](#)

5.47 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.

5.47.1 Detailed Description

Tests the reset drain performance.

5.47.2 Constructor & Destructor Documentation

5.47.2.1 def WREBTest.RDBias.__init__ (self)

Initialize minimum required variables for test list.

5.47.3 Member Function Documentation

5.47.3.1 def WREBTest.RDBias.report (self, pdf, reportPath)

generate this test's page in the PDF report.

Parameters

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | Path of directory containing the pdf report |

5.47.3.2 def WREBTest.RDBias.runTest (self)

Run the test, save output to state variables.

5.47.3.3 def WREBTest.RDBias.summarize (self, summary)

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

Parameters

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary obejct passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

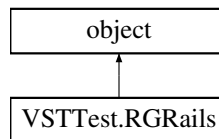
The documentation for this class was generated from the following file:

- [WREBTest.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

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | 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

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

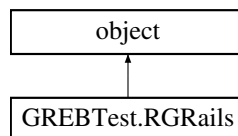
The documentation for this class was generated from the following file:

- [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

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | 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

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

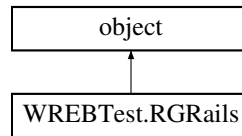
The documentation for this class was generated from the following file:

- [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

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | 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

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

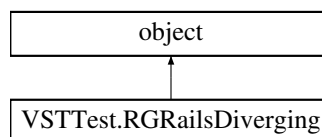
The documentation for this class was generated from the following file:

- [WREBTest.py](#)

5.51 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.

5.51.1 Detailed Description

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

5.51.2 Constructor & Destructor Documentation

5.51.2.1 def VSTTest.RGRailsDiverging.__init__ (self, amplitude, startV)

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

Parameters

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

5.51.3 Member Function Documentation

5.51.3.1 `def VSTTest.RGRailsDiverging.report (self, pdf, reportPath)`

generate this test's page in the PDF report.

Parameters

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | Path of directory containing the pdf report |

5.51.3.2 `def VSTTest.RGRailsDiverging.runTest (self)`

Run the test, save output to state variables.

5.51.3.3 `def VSTTest.RGRailsDiverging.summarize (self, summary)`

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

Parameters

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

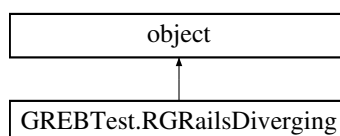
The documentation for this class was generated from the following file:

- [VSTTest.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

| | |
|------------------|----------------------------------------------------------------------------------------------|
| <i>amplitude</i> | Maximum voltage differential between rails, half-wave. (5V amplitude is 10V max difference.) |
| <i>startV</i> | 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

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | 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

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

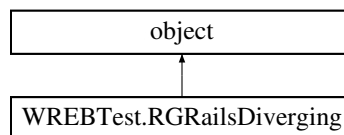
The documentation for this class was generated from the following file:

- [GREBTest.py](#)

5.53 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.

5.53.1 Detailed Description

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

5.53.2 Constructor & Destructor Documentation

5.53.2.1 def WREBTest.RGRailsDiverging.__init__ (self, amplitude, startV)

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

Parameters

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

5.53.3 Member Function Documentation

5.53.3.1 `def WREBTest.RGRailsDiverging.report (self, pdf, reportPath)`

generate this test's page in the PDF report.

Parameters

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | Path of directory containing the pdf report |

5.53.3.2 `def WREBTest.RGRailsDiverging.runTest (self)`

Run the test, save output to state variables.

5.53.3.3 `def WREBTest.RGRailsDiverging.summarize (self, summary)`

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

Parameters

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

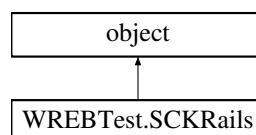
The documentation for this class was generated from the following file:

- [WREBTest.py](#)

5.54 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.

5.54.1 Detailed Description

Tests the serial clock rail performance.

5.54.2 Constructor & Destructor Documentation

5.54.2.1 def WREBTest.SCKRails.__init__(self)

Initialize minimum required variables for test list.

5.54.3 Member Function Documentation

5.54.3.1 def WREBTest.SCKRails.report(self, pdf, reportPath)

generate this test's page in the PDF report.

Parameters

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | Path of directory containing the pdf report |

5.54.3.2 def WREBTest.SCKRails.runTest(self)

Run the test, save output to state variables.

5.54.3.3 def WREBTest.SCKRails.summarize(self, summary)

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

Parameters

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

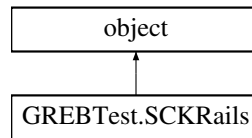
The documentation for this class was generated from the following file:

- [WREBTest.py](#)

5.55 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.

5.55.1 Detailed Description

Tests the serial clock rail performance.

5.55.2 Constructor & Destructor Documentation

5.55.2.1 def GREBTest.SCKRails.__init__ (self)

Initialize minimum required variables for test list.

5.55.3 Member Function Documentation

5.55.3.1 def GREBTest.SCKRails.report (self, pdf, reportPath)

generate this test's page in the PDF report.

Parameters

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | Path of directory containing the pdf report |

5.55.3.2 def GREBTest.SCKRails.runTest (self)

Run the test, save output to state variables.

5.55.3.3 def GREBTest.SCKRails.summarize (self, summary)

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

Parameters

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

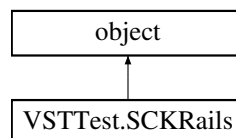
The documentation for this class was generated from the following file:

- [GREBTest.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

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | 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

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

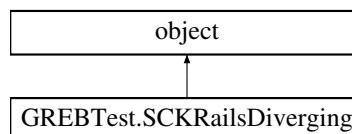
The documentation for this class was generated from the following file:

- [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

| | |
|------------------|----------------------------------------------------------------------------------------------|
| <i>amplitude</i> | Maximum voltage differential between rails, half-wave. (5V amplitude is 10V max difference.) |
| <i>startV</i> | 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

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | 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

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

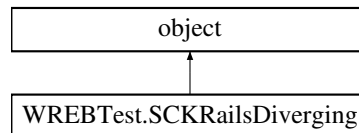
The documentation for this class was generated from the following file:

- [GREBTest.py](#)

5.58 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.

5.58.1 Detailed Description

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

5.58.2 Constructor & Destructor Documentation

5.58.2.1 def WREBTest.SCKRailsDiverging.__init__(self, amplitude, startV)

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

Parameters

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

5.58.3 Member Function Documentation

5.58.3.1 def WREBTest.SCKRailsDiverging.report(self, pdf, reportPath)

generate this test's page in the PDF report.

Parameters

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | Path of directory containing the pdf report |

5.58.3.2 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.

5.58.3.3 def WREBTest.SCKRailsDiverging.summarize (self, summary)

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

Parameters

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

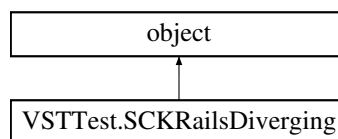
The documentation for this class was generated from the following file:

- [WREBTest.py](#)

5.59 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.

5.59.1 Detailed Description

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

5.59.2 Constructor & Destructor Documentation

5.59.2.1 `def VSTTest.SCKRailsDiverging.__init__(self, amplitude, startV)`

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

Parameters

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

5.59.3 Member Function Documentation

5.59.3.1 `def VSTTest.SCKRailsDiverging.report(self, pdf, reportPath)`

generate this test's page in the PDF report.

Parameters

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | Path of directory containing the pdf report |

5.59.3.2 `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.

5.59.3.3 `def VSTTest.SCKRailsDiverging.summarize(self, summary)`

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

Parameters

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

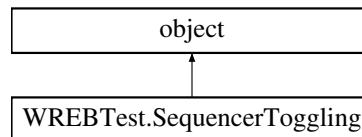
The documentation for this class was generated from the following file:

- [VSTTest.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

| | |
|-------------------|---------------------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
| <i>reportPath</i> | 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

| | |
|----------------------|-------------------------------------------------------------|
| <code>summary</code> | Summary object passed from FunctionalTest() |
|----------------------|-------------------------------------------------------------|

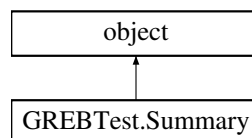
The documentation for this class was generated from the following file:

- [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.

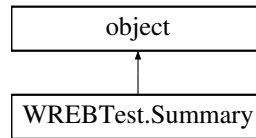
The documentation for this class was generated from the following file:

- [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.

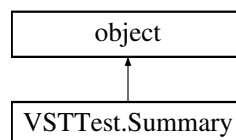
The documentation for this class was generated from the following file:

- [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.

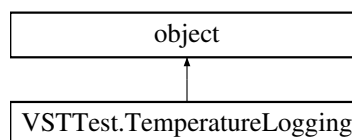
The documentation for this class was generated from the following file:

- [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

| | |
|------------------|------------------------------------------------------------------------------------|
| <i>startTime</i> | 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

| | |
|------------|-------------------------------|
| <i>pdf</i> | 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

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

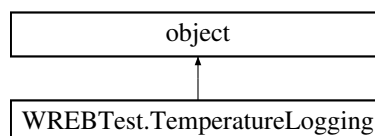
The documentation for this class was generated from the following file:

- [VSTTest.py](#)

5.65 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.

5.65.1 Detailed Description

Requests temperature logs for WREB.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 WREBTest.TemperatureLogging.__init__ (self, startTime)

Initialize required variables for test list.

Parameters

| | |
|------------------------|------------------------------------------------------------------------------------|
| <code>startTime</code> | 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 WREBTest.TemperatureLogging.report (self, pdf)

generate this test's page in the PDF report.

Parameters

| | |
|------------------|-------------------------------|
| <code>pdf</code> | pyfpdf-compatible PDF object. |
|------------------|-------------------------------|

5.65.3.2 def WREBTest.TemperatureLogging.runTest (self)

Run the test, save output to state variables.

5.65.3.3 def WREBTest.TemperatureLogging.summarize (self, summary)

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

Parameters

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

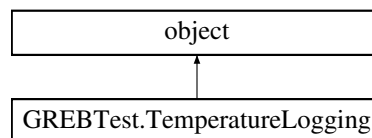
The documentation for this class was generated from the following file:

- [WREBTest.py](#)

5.66 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.

5.66.1 Detailed Description

Requests temperature logs for GREB.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 GREBTest.TemperatureLogging.__init__ (self, startTime)

Initialize required variables for test list.

Parameters

| | |
|------------------|------------------------------------------------------------------------------------|
| <i>startTime</i> | 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 GREBTest.TemperatureLogging.report (self, pdf)`

generate this test's page in the PDF report.

Parameters

| | |
|------------|-------------------------------|
| <i>pdf</i> | pyfpdf-compatible PDF object. |
|------------|-------------------------------|

5.66.3.2 `def GREBTest.TemperatureLogging.runTest (self)`

Run the test, save output to state variables.

5.66.3.3 `def GREBTest.TemperatureLogging.summarize (self, summary)`

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

Parameters

| | |
|----------------|-------------------------------------------------------------|
| <i>summary</i> | Summary object passed from FunctionalTest() |
|----------------|-------------------------------------------------------------|

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

- [GREBTest.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 ASICs for the unclamped, clamped, and reset cases.
- class [GREBTest.ASPICLogging](#)
Continuously measure noise distribution in ASICs.
- 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 executor.

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

| | |
|----------------|-----------------------|
| <i>value</i> | Value to be converted |
| <i>type_</i> ↔ | 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, SCIk, PCIk) and rejects if nonsensible.

Parameters

| | |
|-----------------|------------------------------------------------------------|
| <i>railType</i> | "RG", "SCK", or "PCK" - specifies the type of rail to read |
| <i>uBound</i> | Upper bound on sensible voltage |
| <i>lBound</i> | 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

| | |
|--------------|-------------------------------------------|
| <i>lowV</i> | Desired lower rail voltage. |
| <i>highV</i> | Desired upper rail voltage |
| <i>rf</i> | Optional op-amp Rf, defaults to 49.9 Ohm. |
| <i>ri</i> | 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

| | |
|--------------|-------------------------------------------|
| <i>lowV</i> | Desired lower rail voltage. |
| <i>highV</i> | Desired upper rail voltage |
| <i>rf</i> | Optional op-amp Rf, defaults to 49.9 Ohm. |
| <i>ri</i> | 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

| | |
|--------------|-------------------------------------------|
| <i>lowV</i> | Desired lower rail voltage. |
| <i>highV</i> | Desired upper rail voltage |
| <i>rf</i> | Optional op-amp Rf, defaults to 49.9 Ohm. |
| <i>ri</i> | 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

| | |
|-----------|------------------------|
| <i>V</i> | Desired output voltage |
| <i>rf</i> | Op-amp Rf |
| <i>ri</i> | 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

| | |
|---------------|-----------------------------------------------------------------------------|
| <i>datas</i> | Zipped data arrays and legend titles |
| <i>saveAs</i> | Filename to save plot as |
| <i>xdat</i> | 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

| | |
|------------------|-----------------------------------------------------------------------------|
| <i>datas</i> | Zipped data arrays and legend titles |
| <i>residuals</i> | Zipped array of residuals and legend titles |
| <i>saveAs</i> | Filename to save plot as |
| <i>ROI</i> | Optional parameter specifying region of interest in the plot |
| <i>xdat</i> | Optional zipped array of x values and titles. Defaults to iteration values. |
| <i>pltRange</i> | 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 ASICs for the unclamped, clamped, and reset cases.
- class [VSTTest.ASPICLogging](#)
Continuously measure noise distribution in ASICs.
- 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 executor.

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

| | |
|----------------|-----------------------|
| <i>value</i> | Value to be converted |
| <i>type_</i> ↔ | 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

| | |
|-----------------|--------------------------------------------------------------|
| <i>railType</i> | "RG", "SClk", or "PClk" - specifies the type of rail to read |
| <i>uBound</i> | Upper bound on sensible voltage |
| <i>lBound</i> | 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

| | |
|--------------|-------------------------------------------|
| <i>lowV</i> | Desired lower rail voltage. |
| <i>highV</i> | Desired upper rail voltage |
| <i>rf</i> | Optional op-amp Rf, defaults to 49.9 Ohm. |
| <i>ri</i> | 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

| | |
|--------------|-------------------------------------------|
| <i>lowV</i> | Desired lower rail voltage. |
| <i>highV</i> | Desired upper rail voltage |
| <i>rf</i> | Optional op-amp Rf, defaults to 49.9 Ohm. |
| <i>ri</i> | 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

| | |
|--------------|-------------------------------------------|
| <i>lowV</i> | Desired lower rail voltage. |
| <i>highV</i> | Desired upper rail voltage |
| <i>rf</i> | Optional op-amp Rf, defaults to 49.9 Ohm. |
| <i>ri</i> | 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

| | |
|-----------|------------------------|
| <i>V</i> | Desired output voltage |
| <i>rf</i> | Op-amp Rf |
| <i>ri</i> | 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 ASICs for the unclamped, clamped, and reset cases.*
 - class [WREBTest.ASPICLogging](#)
 - Continuously measure noise distribution in ASICs.*
 - 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 executor.

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 executor.

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

| | |
|---------------|-----------------------|
| <i>value</i> | Value to be converted |
| <i>type</i> ↔ | 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

| | |
|--------------|-------------------------------------------|
| <i>lowV</i> | Desired lower rail voltage. |
| <i>highV</i> | Desired upper rail voltage |
| <i>rf</i> | Optional op-amp Rf, defaults to 49.9 Ohm. |
| <i>ri</i> | 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

| | |
|--------------|-------------------------------------------|
| <i>lowV</i> | Desired lower rail voltage. |
| <i>highV</i> | Desired upper rail voltage |
| <i>rf</i> | Optional op-amp Rf, defaults to 49.9 Ohm. |
| <i>ri</i> | 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

| | |
|--------------|----------------|
| <i>start</i> | Starting value |
| <i>end</i> | Ending value |
| <i>step</i> | Step size |

6.4.2.8 def WREBTest.voltsToDAC (*volt*, *Rfb*, *Rin*)

Generate a DAC code to correspond to a desired voltage.

Parameters

| | |
|-------------|-----------------------|
| <i>volt</i> | Desired voltage level |
| <i>Rfb</i> | Op-amp Rf |
| <i>Rin</i> | 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

| | |
|-----------|------------------------|
| <i>V</i> | Desired output voltage |
| <i>rf</i> | Op-amp Rf |
| <i>ri</i> | 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

| | |
|---------------|-----------------------|
| <i>volt</i> | Desired voltage level |
| <i>shvolt</i> | Shifted voltage level |
| <i>Rfb</i> | Op-amp Rf |
| <i>Rin</i> | Op-amp Ri |

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