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Signal Integrity Analyzer 3000

LabVIEW™ Driver Reference Guide

200057-04 REV A

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SECTION 1 - Getting Started

This document assumes that the user has basic familiarity with National Instruments LabView. The recommended approach to getting started with the SIA-3000 drivers follows:

(1) Install the drivers (See Installation Instructions).
(2) Verify that the drivers are available from the LabVIEW Palette.
(3) Read the remainder of Section 1 to understand the basic structure and call sequence for any SIA-3000 tool.
(4) Connect a GPIB cable from the LabVIEW PC to the SIA-3000. Open the Histogram example under the WC3000 "Example" menu. Attempt to configure and acquire histogram data from a signal. Be sure to select at least one "Statistic to Return" in the array on the front panel. Note that you will not see the acquisition on the SIA-3000 screen. A small dialog should appear indicating "REMOTE MODE".
(5) Once this example is running, compare the underlying code to that of the example in this section. Use probes and execution highlighting to study the internal operation of this example and the additions that provide greater flexibility.
(6) Utilize the remaining reference sections of this manual to tailor this example to your needs or to develop an application that makes all the appropriate calls.

Installation Instructions

The LabVIEW Drivers are written in LabVIEW 6.1 and may be used with LabVIEW 6.1 or later.

The Driver Archive is located in the LabVIEW directory on the included CDROM.

The installer will locate the directory where the LabVIEW application is installed. This path is typically "C:\Program Files\National Instruments\LabVIEW 6.1" or something similar.

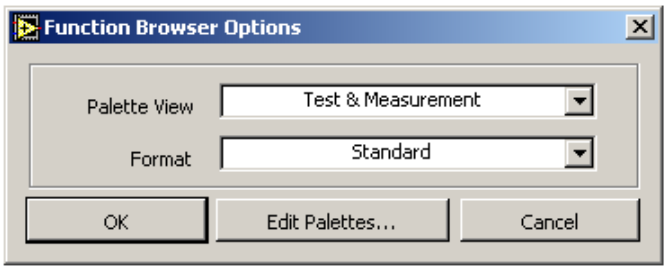
Once extraction is complete, there should be a subfolder called "\instr.lib\WC3000" where all the drivers are contained. There will be comprehensive application examples under the folder "\examples\WC300". These examples are intended for advanced LabVIEW developers, while the histogram example under "\instr.lib\WC3000\EXAMPLES\" is the best place for a beginning LabVIEW developer to start.

Palette Setup (Recommended)

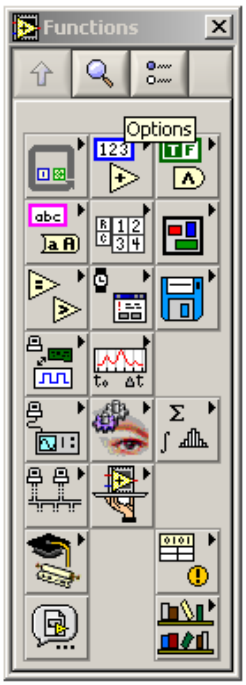
By default, LabVIEW will not display the SIA-3000 drivers on its palette. It is necessary to either manually select the files by navigating to the instr.lib folder, or select a different palette that automatically maps to the instr.lib drivers. LabVIEW has such a palette available, called the "Test & Measurement" palette.

Select the "Options" menu on the toolbar at the top of the Functions palette.

In the window that appears, select "Test & Measurement" in the first drop-down box, and press OK (See figure below.).



The palette should now look like the figure to the right.



Path Setup (Optional)

By selecting the default folder during installation, LabVIEW should automatically be set up for allowing the selection of drivers from the palette and opening the examples. If the drivers must be installed in a different location, or LabVIEW is having problems finding drivers when loading examples, then this location should be added to LabVIEW's search path, using the following procedure:

(1) Select Tools -> Options (See figure to the right).

(2) Select "Paths" in the top drop-down box (See figures below).

(3) Select "VI Search Paths" in the second drop down box (See figures below).

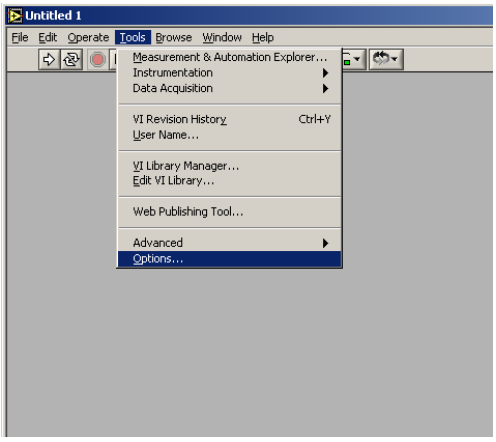
(4) Uncheck the "Use default" check box if it is checked.

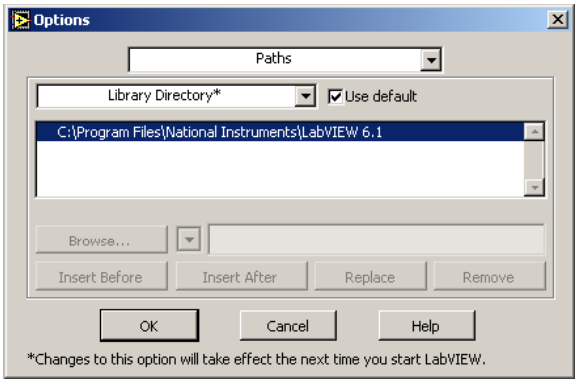
(5) Press the browse button and navigate to the root folder where you installed the drivers, or manually type its path in the control to the right of the Browse button.

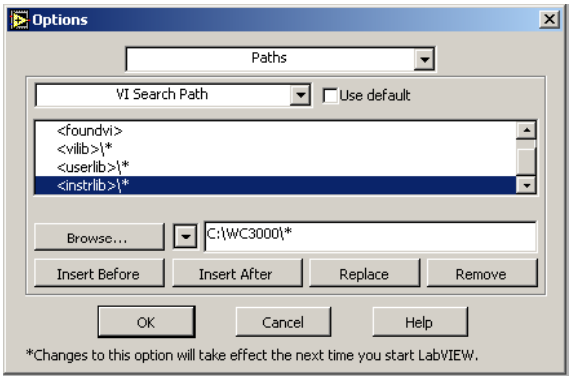
(6) After the path, add a backslash, followed by an asterisk, "*" to signify a recursive search.

(7) Select the last path in the middle list box, and press "Insert After".

(8) The search path should now be added to LabVIEW, press "Ok" and be sure to quit and restart LabVIEW before attempting to load anything.



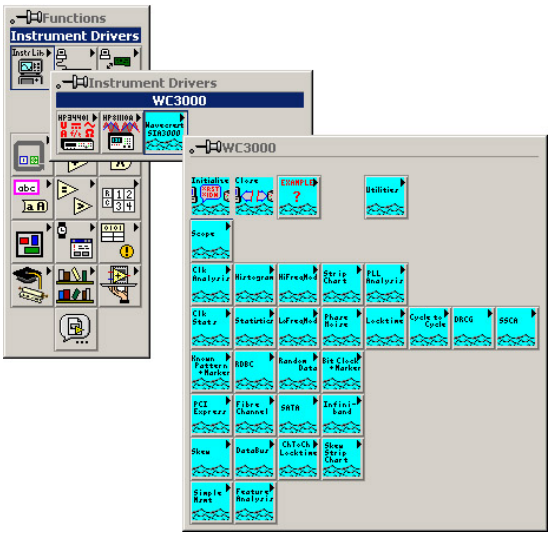




Menu Palette

In the menu palette below, there are several submenus. These submenus organize the drivers by tool. The first row of the palette provides a menu for utility drivers and easy access to the Initialize and Close drivers that will be utilized in every LabVIEW application.

Note that there is also an "Example" menu. This menu provides a simple example that can be applied to all the drivers for all the tools to get started. This particular example is written for the Histogram tool. The drivers from any of the other tool submenus may be called in the same manner as the histogram example demonstrates. In fact, by replacing all the Histogram specific VIs in the example with VIs from another tool submenu and wiring new configuration controls to the inputs of the configuration VIs, the example would be modified to work with a different tool.



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LabVIEW Drivers Overview

LabView Drivers are specially formatted National Instruments LabView SubVIs which permit the developer to send commands to configure, acquire data and download results from a test instrument. In the case of the SIA-3000, a SCPI Compliant GPIB interface is provided as a hardware interface. This is supported through LabView using its internal VISA (Virtual Instrument System Architecture) implementation.

Drivers are available for the SIA-3000 to allow remote control of a subset of the GigaView tools. These drivers follow a standard format which passes around an error cluster for LabView and GPIB error handling, as well as a VISA session ID which is a specially formatted string reference containing the GPIB address information.

The following information shows a standard LabView Driver with these inputs and outputs:

Standard LabView Driver

Controls and Indicators

VISA session This should be set to the VISA string that signifies the GPIB address of the SIA-3000.

error in (no error) This is a standard LabView error cluster input. If an error input is wired, this driver will only perform its action if an error has not occurred.

- **status** The **status** Boolean is either TRUE (X) for an error, or FALSE (checkmark) for no error or a warning.

  The pop-up option **Explain Error** (or Explain Warning) gives more information about the error displayed.
- **code** The **code** input identifies the error or warning.

  The pop-up option **Explain Error** (or Explain Warning) gives more information about the error displayed.
- **source** The **source** string describes the origin of the error or warning.

  The pop-up option **Explain Error** (or Explain Warning) gives more information about the error displayed.

error out This is the standard LabView error cluster that describes the error status after this VI executes. If an error occurred before this VI was called, error out is the same as error in. Otherwise, error out shows the error, if any, which occurred in this driver.

- **status** The **status** Boolean is either TRUE (X) for an error, or FALSE (checkmark) for no error or a warning.

  The pop-up option **Explain Error** (or Explain Warning) gives more information about the error displayed.
- **code** The **code** input identifies the error or warning.

  The pop-up option **Explain Error** (or Explain Warning) gives more information about the error displayed.
- **source** The **source** string describes the origin of the error or warning.

  The pop-up option **Explain Error** (or Explain Warning) gives more information about the error displayed.

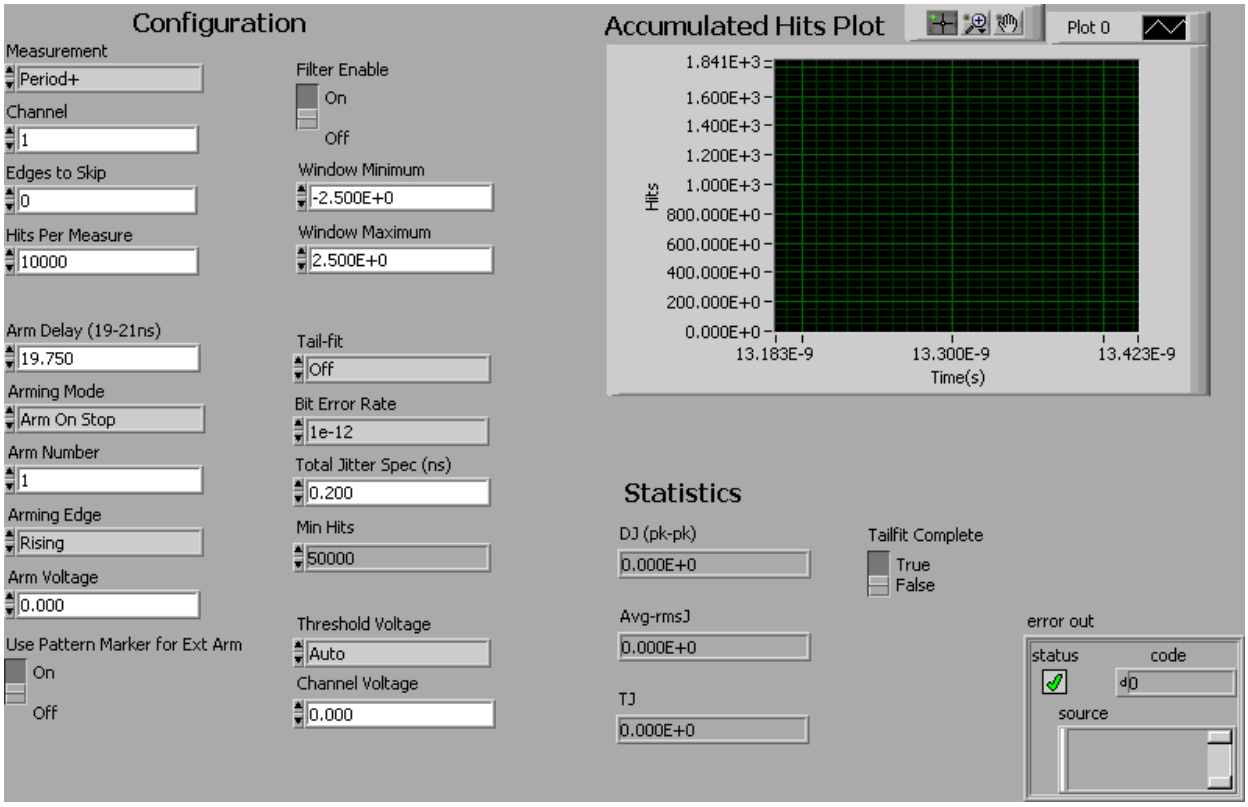
dup VISA session This is a duplicate of the VISA session input. It does not need to be wired out, but can be used to enforce data dependency.

For all the available tools, the process of controlling the instrument consists of the following steps:

1. Initialization
2. Configuration
3. Acquisition
4. Results Downloading
5. Close Connection

The following is a simple example written in LabView to show these 5 steps and how one might go about acquiring data from the SIA-3000. There are many calls that must be made in succession to get the desired data for the different tools. This specific example is for histogram tool, but the same basic format can be applied to any of the tools.

Front Panel – Note that everything to the left is a configuration parameter (Step 2) and everything to the right is a Result Statistic (Step 4).



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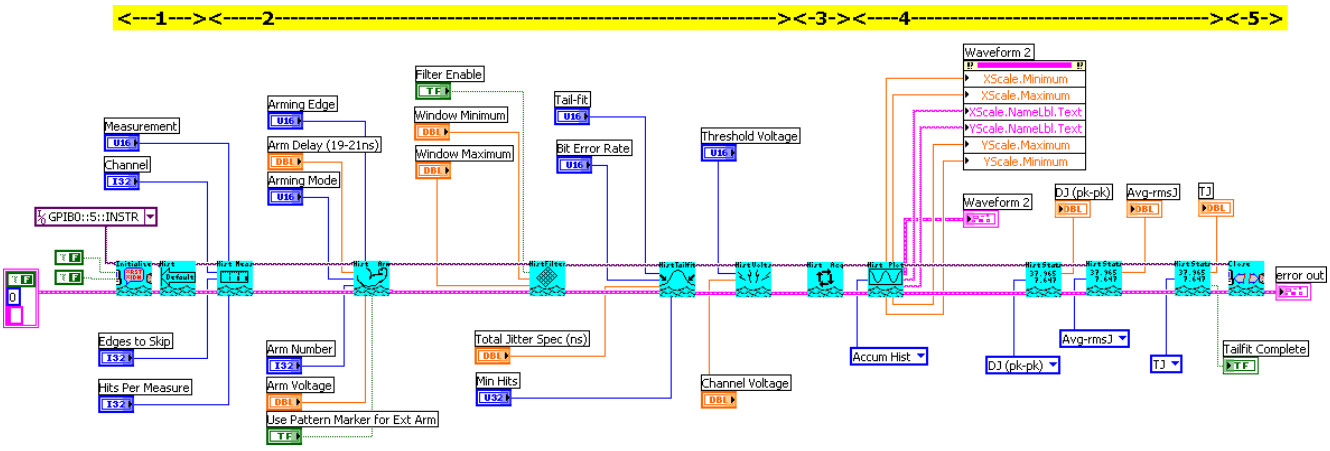
Block Diagram – Note that the 5 steps are labeled with the yellow LabView comment placed above. This shows which calls go with which steps from left to right.



In this LabView code example, first the SIA-3000 GPIB connection is initialized on address 5. ID Query and Reset are hard coded to false, so a simple initialization will occur with no verification. The defaults are set with the second call and initialization for the Histogram tool is complete.

For the second step, many parameters are wired to additional inputs for the configuration parameters. All the calls in step 2 do the same thing: configure setup parameters on the SIA-3000.

The third step consists of one call to the Histogram Acquire driver. This tells the SIA-3000 to perform a single pass of Data Acquisition. Note: to cycle, this driver may be placed in a loop that will terminate based on number of iterations, or a TailFit™ completion. This is beyond the scope of a simple LabView example, but in step 4 we will address a mechanism for determining if a TailFit has been successfully completed.

The fourth step shows the two types of result reporting common to all tools: Plots and Statistics. This example displays the resulting Accumulated Histogram plot and the three basic Jitter statistics. Notice that there is a TailFit complete output on the statistics drivers. Any call to the statistics driver will return this flag indicating TRUE if a TailFit has been successfully completed and FALSE if it has not. Until a TailFit is completed, successive calls to the Histogram Acquire driver would be needed in order to get valid Jitter statistics. For a real world application, an acquisition loop is needed that will terminate only when a TailFit has been completed.

For more information about LabView, visit the National Instruments website (http://www.ni.com).

Additional Hints and Tips

The purpose of this section is to address some common issues that arise as new users begin to use the LabVIEW drivers. This may answer some questions or help the new user to start down the best path.

Tool Configuration

When determining the parameters to pass to the configuration driver for a tool, it is best to configure and run a measurement from the GigaView front panel on the SIA-3000 instrument. Make note of any changes from the default values that were necessary. When sending parameters to the configuration drivers in LabView, note that every input is analogous to one of the selections in GigaView. If you did not change a value, you can leave that input unwired and the default value will be used. If your measurement is comprised of mostly default settings, it may be acceptable to call only a subset of the configuration drivers after calling the Default Action driver.

Installed Modules and Channel Numbers

Depending on the model of SIA-3000, there may be many types of modules installed for functionality such as clock recovery or pattern marker generation. In general, the following types of devices may be installed:

Channel Card – There are usually multiple channel cards installed, providing standard input connections (IN1, /IN1, etc).

Pattern Marker (PM50) – The Pattern Marker will be associated with an input channel and labeled as such on the front of the instrument. The Pattern Marker, if configured properly and selected, will generate an arming signal based on the incoming data signal on its associated input channel card.

Clock Data Recovery (CDR) – There are Continuous Rate and Multi-Rate versions of this type of board. Either type will attempt to lock on to the incoming data signal on its associated input channel card. When locked, the board will generate a clock signal internal to the instrument that corresponds to the incoming data. This clock can be configured and used for a variety of measurements in much the same manner as you would use an additional channel card input with an externally provided clock.

Any configuration option that refers to a Channel or Number, regarding Data, Reference, Triggering, Arming, or CDR needs information about the signal to use. The channel numbers and options are assigned as follows:

1. All Channel Cards (Labeled IN1, /IN1, etc) are numbered as labeled. The signal on channel 2 would be specified as 2 for a configuration option in LabVIEW.
2. Pattern Marker modules are given the same number as their associated channel. If a Pattern Marker is associated with Channel 1, then "Arm Number" could be specified as 1 to arm a measurement on the pattern marker. However, if it is valid to select the pattern marker for a given signal input, there will be an "Arm on Ext Pattern Marker" to differentiate between channel card 1 and the PM50 associated with channel card 1.
3. Clock Data Recovery modules are given their own channel number. The first CDR module is numbered after all Channel Cards have first been assigned. To specify the recovered clock from the first installed CDR in a 3-channel system, you would specify 4 as the channel number. 1, 2, and 3 are assigned to the channel cards, so 4 is assigned to the first CDR.

When using the PM50 and CDR modules, note that there are utility drivers to configure those modules appropriately. They are configured globally and independently of any specific tool. For typical operation you would most likely do the following:

Pattern Marker – Make 2 driver calls, one to set the mode to "Edge count" and the next call to set the number of edges. A straightforward way to determine the number of edges in a pattern is to open it with the pattern utility on the SIA-3000 front panel in GigaView. Note that the number of edges is not the same as bit count. Note that the pattern will still need to be specified in tool configurations such as Known Pattern with Marker. The tool pattern configuration is entirely different than the pattern marker module configuration.

Clock Recovery – Set the Rate and Correction with 2 driver calls. If the module is a Multi-Rate version, call the Filter driver to configure additional options. Even if all options are left at default, this driver MUST be called for Multi-Rate boards. It instructs the multi-rate module to attempt to re-acquire a lock and begin generating an internal clock, if any settings have changed. Consequently, the Filter driver should be called after the desired data pattern is settled on the associated input channel.

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Software Architecture

The drivers are all based on the National Instruments VISA library. The VISA session is opened on the GPIB address of the SIA-3000. The default address of 5 on GPIB board 0 provides a default VISA session of "GPIB0::5::INSTR".

Using standard instrument driver error handling and data flow with these drivers will help to minimize problems. This means that the drivers should be chained together linearly by the VISA reference and LabVIEW error cluster. Drivers should not be called in parallel. If these drivers are to be used in parallel or in separate threads, then the calls must be managed with binary semaphore based resource handling to ensure the driver calls execute one at a time.

The ideal application architecture for these drivers will do the following:

(1) Initialize and Close only once at the beginning and end.

(2) Configure tools only when parameters change, but avoid calling configuration drivers between measurements that are identical.

(3) Call the acquire action driver and a combination of results drivers as often as necessary to obtain measurements.

(4) Ensure that the LabVIEW Error Cluster is always passed to subsequent driver calls or subsequent driver calls are skipped when an error occurs.

Although the provided examples perform all these operations, it may be necessary to split up the initialize, close, configuration, and acquire/results stages into separate SubVIs in order to optimize the application. There is never a need to initialize and close for every measurement and often the configuration parameters may not change between multiple measurements on the same type of DUT. Splitting these basic stages apart and calling them only when necessary will ensure that measurements occur as quickly as possible.

The 4th suggestion above ensures that no unnecessary GPIB commands are sent to the instrument after an error occurs. If additional GPIB commands get sent down after an error occurs, it is likely that commands will exhaust the entire timeout period waiting for an erroneous measurement or response. This will drastically slow the application when measurement errors occur.

In the following sections, a detailed explanation of the drivers and their parameters are given.

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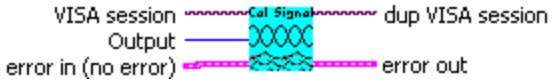
WC3000 Cal Signal.vi

This Driver will send the SIA-3000 GPIB command generate calibration waveforms at the OUT and /OUT terminals. The signal generated is selected by the Output control.

Connector Pane



Controls and Indicators

U16 **Output** Selects the type of waveform to output.

WC3000 Clear Status.vi

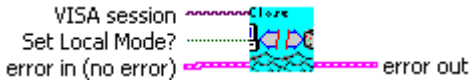
This Driver is a low level utility to clear the status bit if it is not already cleared. In general, this utility is called by the higher-level drivers as part of the process of ensuring the device is ready to receive commands.

Connector Pane

WC3000 Close.vi

This utility will close the VISA session associated with the SIA-3000 GPIB driver. It will also restore the instrument to local mode if specified.

Connector Pane



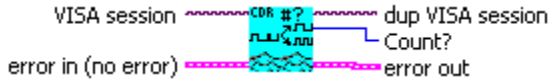
Controls and Indicators

TF **Set Local Mode?** Set to On (True) to enable Local Mode. This will automatically restore control of the SIA-3000 to the front panel user interface and the Remote Mode dialog will disappear.

WC3000 Count CDRs.vi

This VI queries the SIA-3000 to determine how many, if any, CDR modules are installed.

Connector Pane



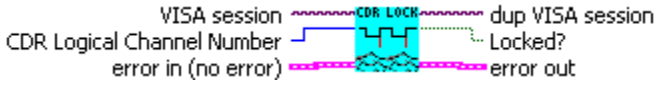
Controls and Indicators

I32 **Count?** -1 = Error
Any other number signifies the number of CDRs installed.

WC3000 Get CDR Lock.vi

This VI returns the lock status of a CDR board. It is important that the CDR be locked on the input data signal to ensure a valid recovered clock is being generated.

Connector Pane



Controls and Indicators

CDR Logical Channel Number Specifies the CDR Logical Channel. Logical Channels are assigned to all channel cards first, and CDR cards last. Thus, in a 6 channel SIA-3000 with 2 CDR cards installed, The CDRs would be assigned to logical channels 6 and 7 regardless of which channels they are connected to.

Locked? Returns True for locked, or False if there is a lock failure and the recovered clock signal is invalid.

WC3000 Get Number of Input Channels.vi

This VI queries the SIA-3000 to determine how many input channels are present.

Connector Pane

Controls and Indicators

Count? Specifies the number of channel cards present. Add one to the result to get the first CDR channel.

WC3000 Initialize.vi

This Driver will send the SIA-3000 GPIB command to initialize the SIA-3000 for GPIB communication through a VISA connection.

Connector Pane

Controls and Indicators

Reset (T: Reset) Selects whether or not to reset the instrument.

Valid Range:
T: Reset (default)
F: Don't Reset.

ID Query (T: Check) Perform an ID Query to verify the initialization process. Setting this false will bypass the ID Query.

Instrument Resource Name Instrument Resource Name is wired to indicate the VISA class of the session being opened. See the VISA Session topic for more information.

To establish a GPIB session with the SIA-3000, a string of the following format should be used, replacing 22 with the GPIB address of the SIA-3000.

"GPIB::22::INSTR" - GPIB board 0, primary address 22, no secondary address
"GPIB::22::5::INSTR" - GPIB board 0, primary address 22, secondary address 5
"GPIB1::22::5::INSTR" - GPIB board 1, primary address 22, secondary address 5

Of the three formats above, the first is the most common for systems with one GPIB controller board.

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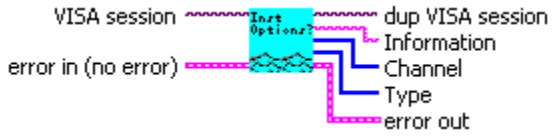
WC3000 Option List.vi

This VI queries the SIA-3000 to return hardware and firmware information for all installed modules. The text formatted multi-line string specifies all information, while the Channel and Type arrays allow a simple mechanism by which to determine the types of channel cards installed in each slot.

Connector Pane



Controls and Indicators

Information This string will return all the information received from the SIA-3000 specifying all hardware, firmware, revisions, and serial numbers.

Channel

This array corresponds to the Type array. Each element specifies the actual Channel card slot number for the corresponding type element. This is especially useful in situations where not all slots are being used and the filled slots are not in consecutive order.

Type

The Type Array includes all the Channel Card Types from Slot 1 to Slot 10. Examples of common types are:

4 - A32 Channel Card
8 - A45 Channel Card
5 - Pattern Marker Card
10 - Clock Recovery Card

WC3000 Pulsefind.vi

This Driver will send the SIA-3000 GPIB command to execute a pulsefind on the specified channel. This should be done any time a measurement configuration changes to perform a peak-to-peak voltage measurement and set the voltage threshold to be used for timing measurements.

Connector Pane

Controls and Indicators

Channel Select a channel on which to execute a pulsefind.

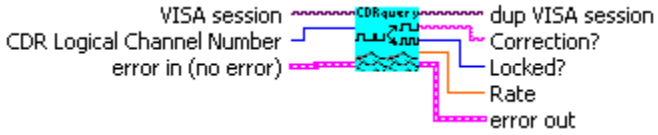
Maximum Voltage Returns the Maximum Voltage Threshold found by the Pulsefind.

Minimum Voltage Returns the Minimum Voltage Threshold found by the Pulsefind.

WC3000 Query CDR.vi

This VI queries the specified Clock Data Recovery module to determine if correction is enabled, the current lock state, and the current rate.

Connector Pane



Controls and Indicators

CDR Logical Channel Number Specifies the CDR Logical Channel. Logical Channels are assigned to all channel cards first, and CDR cards last. Thus, in a 6 channel SIA-3000 with 2 CDR cards installed, The CDRs would be assigned to logical channels 6 and 7 regardless of which channels they are connected to.

Correction? 'OFF' = Correction Disabled
'ON' = Correction Enabled

Locked? 0 = Locked
<0 = Not Locked / Error

Rate The bit rate, in Hz, currently set for the specified CDR.

WC3000 Reset.vi

This Driver will send the GPIB command to reset the SIA-3000.

Connector Pane

WC3000 Reset Response Format.vi

This Driver will send the SIA-3000 GPIB commands to set the Instrument to proper GPIB format for LabVIEW driver communication. This VI will not normally be used, since WC3000 Initialize.vi sets the same parameters. If a different API is used to access the SIA-3000 after the original initialization, this driver will ensure that settings are restored without resetting the instrument or opening a new VISA session.

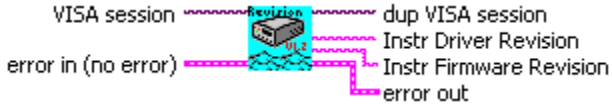
Connector Pane

WC3000 Revision Query.vi

This VI queries the current instrument firmware revision and instrument driver revision.

This Instrument Driver's Revision number is 1.0.0 and is compatible with Instrument Firmware Revision v1.0.1.

Connector Pane



Controls and Indicators

Instr Firmware Revision This indicates the revision of the instrument's firmware. This version and its capabilities are controlled by the instrument manufacturer.

Instr Driver Revision This indicates the revision of this instrument driver's software.

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WC3000 Self-Test.vi

This VI causes the instrument to perform a self-test and returns the results. A numeric indicator shows if the instrument passed all self-tests and a string indicator contains the instrument's response.

Connector Pane

Controls and Indicators

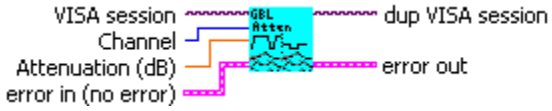
Self-Test Response The instrument's response from the self-test.

Self-Test Error Indicates whether an error occurred from the self-test.

WC3000 Set Attenuation Global.vi

This VI sets the global Attenuation for the specified channel on the SIA-3000.

Connector Pane



Controls and Indicators

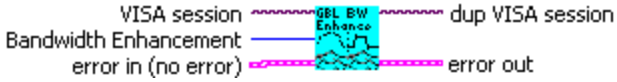
Attenuation (dB) The attenuation, in dB, to set.

Channel Specifies the channel on which to set the attenuation.

WC3000 Set Bandwidth Enhancement Global.vi

This VI sets the global Bandwidth Enhancement option for the SIA-3000.

Connector Pane



Controls and Indicators

Bandwidth Enhancement Select On to enable the Bandwidth Enhancement mode for all tools and channels on the SIA-3000. Off will disable Bandwidth Enhancement.

WC3000 Set CDR Application.vi

This driver will set the Application Mode for Multirate Clock Recovery modules. This should only be set for the Multirate module to eliminate sideband issues with certain patterns. In many cases, this option should not be set and the default setting (8B/10B) will suffice.

Connector Pane

Controls and Indicators

CDR Number Specify the CDR address. The first CDR will have an address greater than the last channel installed (i.e. with 5 channels, the first CDR is CDR Number 6).

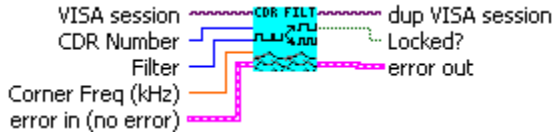
Application Select PRBS or 8B/10B. PRBS mode will select a low level tuning of the Multirate Clock Recovery module that is optimized for PRBS or longer data patterns. This setting may be necessary to ensure the Multirate Clock Recovery provides a stable lock on such longer patterns.

WC3000 Set CDR Filter.vi

This VI sets the specified CDR module's filter parameters. As of revision 1.4.0, this driver is intended to be used with only Multi-Rate CDR and should not be called for a Continuous Rate CDR.

IMPORTANT NOTE: This driver MUST be called if using a Multi-Rate CDR. Setting the corner frequency causes the hardware to attempt to lock to the data signal. This driver MUST also be called after the CDR Rate is specified and the data signal is present if a lock is to be ensured. Make sure your pattern generator or pattern source is configured and its output settled before calling this driver.

Connector Pane



Controls and Indicators

Corner Freq (kHz) Select the corner frequency for 1st and 2nd order filters. The default filter will use 1st order and ignore this value. It will instead use the CDR Rate divided by 1667.

CDR Number Specifies the CDR channel number. This number should normally be set to N+1 where N is the number of input channels in the system.

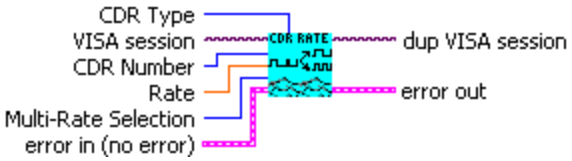
Filter Select Default to set the default filter (1st Order, Rate / 1667), or select a filter then select the corner frequency for that filter.

Locked? Returns the CDR lock status. False implies that the CDR did NOT lock to the incoming data signal and the bit clock it is generating will not provide consistent results.

WC3000 Set CDR Rate.vi

This VI sets the specified CDR module's bit rate, in Hz. For Multi-Rate CDRs, select CDR Type to be Multi-Rate, and use the Multi-Rate Selection list to select one of several available frequency settings. The CDR Number is the channel number for the clock recovery module. The SIA-3000 assigns channel numbers to all channel inputs then assigns unique channel numbers to any CDR modules. For example, in a 2-channel system, the bit clock generated by the first CDR in the system will always be channel number 3.

Connector Pane



Controls and Indicators

Rate The bit rate, in Hz, to set for continuous rate boards.

CDR Number Specifies the CDR channel number. This number should normally be set to N+1 where N is the number of input channels in the system.

CDR Type Select the Clock Recovery module type. For Multi-Rate boards, select one value from the "Multi-Rate Selection" input. For Continuous Rate boards, "Rate" should be specified instead.

Multi-Rate Selection The bit rate to set for multi-rate boards.

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WC3000 Set RiseFall Global.vi

This VI sets the global Rise and Fall threshold used to calculate rise and fall times on the SIA-3000. The low level is used to specify the range. (i.e. 20 = 80/20, 10 = 90/10, etc.)

Connector Pane

Controls and Indicators

Low Level Specify the threshold for the low level in calculating rise and fall times. The High Level will be calculated as 100 - Low Level.

WC3000 Status Wait.vi

This is a low level driver, called by the higher-level SIA-3000 GPIB drivers. It will wait for a nonzero status message and is used as part of the mechanism to ensure that the SIA-3000 is ready when sending commands. This version has been improved over previous versions to include checking for a measurement error on the SIA-3000 versus GPIB bus errors.

Connector Pane

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WC3000 Scope Acquire.vi

This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Oscilloscope tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called to retrieve the statistics and plots from this pass.

Connector Pane

Controls and Indicators

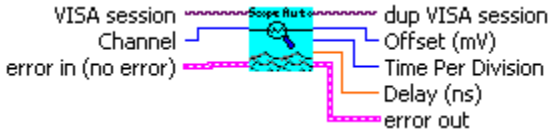
Channel Select a channel from which to acquire measurement data.

Passes Number of Passes to acquire for this call to the driver.

WC3000 Scope AutoScale.vi

This Driver will send the SIA-3000 GPIB command to cause the Oscilloscope tool to "auto scale" its acquired data. The function returns scaling parameters that should be used to manually auto scale the data.

Connector Pane



Controls and Indicators

Channel Select the channel to auto scale.

Time Per Division The horizontal time scale, based on the auto scale operation.

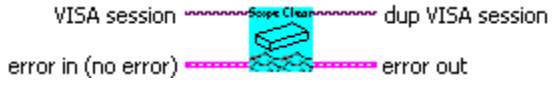
Offset (mV) The voltage offset of the waveform based on the auto scale operation.

Delay (ns) The time delay of the waveform, after the auto scale operation.

WC3000 Scope Clear.vi

This Driver will send the SIA-3000 GPIB command to clear the active tool (Oscilloscope) of any measurements or plots.

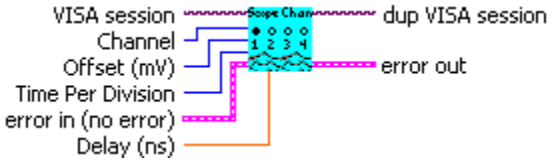
Connector Pane



WC3000 Scope ChannelSetup.vi

This Driver will send the SIA-3000 GPIB command to set up a channel on the Oscilloscope tool. If the auto scale driver has been called, its results should be wired to the inputs of this function.

Connector Pane



Controls and Indicators

Time Per Division The horizontal time scale.

Channel Select the channel to configure.

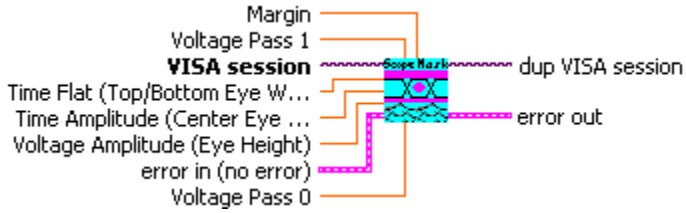
Offset (mV) The voltage offset of the waveform.

Delay (ns) The time delay of the waveform

WC3000 Scope Configure Mask Absolute.vi

This Driver will configure the Scope's Mask tool with an eye that is defined by absolute widths and heights (in seconds and volts). The center is located at the point that is the center of the visible scope plot. Use the offsets and scaling of the scope plot to scale and center the plot around the eye.

Connector Pane



Controls and Indicators

Margin The amount of margin allowed in the masked regions in terms of a ratio (i.e. 0.1 = 10%). The higher this value, the more stringent the signal integrity requirements for a given eye.

Time Amplitude (Center Eye Width) The width (time) of the eye at the wide center portion.

Time Flat (Top/Bottom Eye Width) The width (time) of the eye at its narrow top and bottom edges.

Voltage Amplitude (Eye Height) The height of the eye between the flat top and bottom edges.

Voltage Pass 0 The Height between the bottom of the eye and the minimum acceptable value for a logic low (0).

Voltage Pass 1 The Height between the top of the eye and the maximum acceptable value for a logic high (1).

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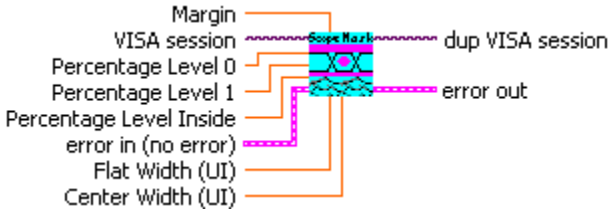
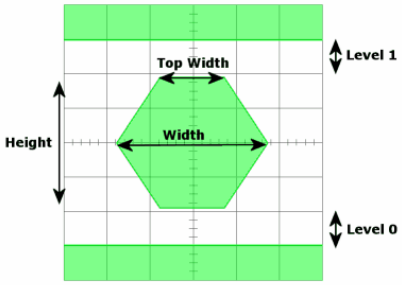
WC3000 Scope Configure Mask Relative.vi

This driver will configure the Scope Mask relative to the eye signal being acquired. It is imperative that the scope first be configured to acquire a waveform that would constitute an eye and that this eye be centered properly. This is accomplished by viewing a data signal, triggering on its bit clock, and making sure that the autoscale driver is called after the mask drivers.

Connector Pane





Controls and Indicators

Margin The amount of margin allowed in the masked regions in terms of a ratio (i.e. 0.1 = 10%). The higher this value, the more stringent the signal integrity requirements for a given eye.

Percentage Level 0 The fraction of eye height (Specified as a value between 0.0 and 1.0) at which the bottom of the mask to the bottom of the eye portion of the mask will be scaled.

Percentage Level 1 The fraction of eye height (Specified as a value between 0.0 and 1.0) at which the top of the mask to the top of the eye portion of the mask will be scaled.

Percentage Level Inside The fraction of eye height (Specified as a value between 0.0 and 1.0) at which the height of the inner eye portion of the mask will be scaled.

Flat Width (UI) The fraction of eye width (Specified as a value between 0.0 and 1.0) at which the width of the inner eye portion of the mask will be scaled at top and bottom.

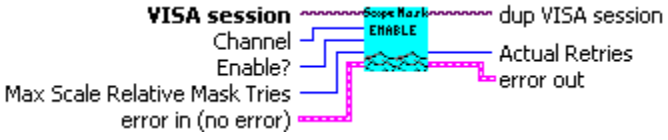
Center Width (UI) The fraction of eye width (Specified as a value between 0.0 and 1.0) at which the width of the inner eye portion of the mask will be scaled at center.

WC3000 Scope Mask Enable.vi

This Driver will enable or disable the Scope Mask feature. When enabling the Mask, it must be set to Absolute or Relative mode. Absolute requires the eye parameters to be configured directly, while Relative will allow automatic scaling based on percentages that are applied to the waveform. This driver must be called after the absolute or relative mask configuration driver.

For relative mask scaling, this driver handles all dependencies and contains a call to the scope autoscale driver internally. This autoscale is equivalent to the "Zoom to Eye" function on the instrument. The driver will zoom to eye and attempt to scale the mask up to the number of times specifies by "Max Scale Relative Mask Tries". This provides fault tolerance in the event that the first scaling does not succeed. Do not perform an autoscale, or change the scaling manually after this driver is called and before the scope eye measurement occurs.

Connector Pane



(cont'd)

Controls and Indicators

Enable?

Off = Scope Mask is disabled.
Absolute = Scope Mask is enabled and set to Absolute mode. Use the Absolute configuration drivers to further set up the mask.
Relative = Scope Mask is enabled, set to Relative mode, and scaled. WC3000 Scope Configure Mask Relative.vi should be called before this is done to set up the scaling percentages.

Channel Select the scope channel where a mask is being applied.

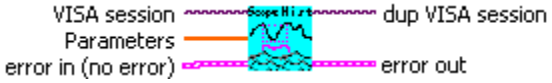
Max Scale Relative Mask Tries This input will be used if Enable is set to "Relative" mode. This input specifies the maximum number of re-scaling attempts to make if either zooming to the eye or scaling the mask fails.

Actual Retries The number of re-scales required for the relative mask mode. This value is irrelevant if Enable is set to anything but "Relative"

WC3000 Scope Histogram Setup.vi

This Driver will configure the window where the Scope Histogram feature will operate. Any hits in this window will affect the scope histogram statistics.

Connector Pane



Controls and Indicators

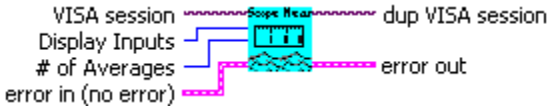
Parameters Parameters should be a 4-element array specifying the window where hits will be taken. The elements should be the following values in the following order:

Delay - horizontal center of window in seconds
Voltage - vertical center of window in volts
Width - width of window in seconds
Height - height of window in volts

WC3000 Scope Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Oscilloscope tool.

Connector Pane



Controls and Indicators

Display Inputs

IN - Shows only the positive trace.
/IN - Shows only the complimentary trace.
IN - /IN - Shows the differential signal.
IN + /IN - Shows the common signal.

# of Averages Selects the number of averages for each sampled point displayed on the screen.

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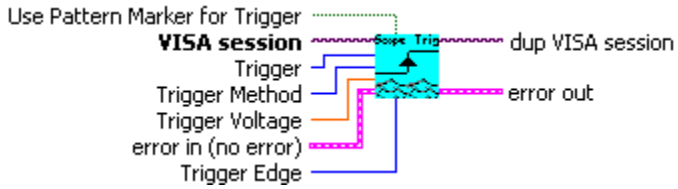
WC3000 Scope Trigger.vi

This Driver will send the SIA-3000 GPIB command to configure the trigger parameters for the Oscilloscope Tool.

Connector Pane



Controls and Indicators

Trigger Method Select Auto to set the trigger threshold voltage to the 50% voltage point of the Pulsefind values on the selected trigger channel. Voltage is displayed in "Trigger Voltage." Select "User" to manually enter a threshold voltage in "Trigger Voltage." Limits are +/- 1.1 volts.

Trigger Select trigger source.

Trigger Edge Selects the rising or falling edge to trigger the instrument.

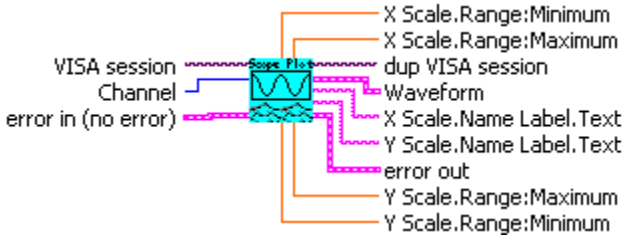
Trigger Voltage Select the threshold voltage to trigger the instrument in USER mode. Limits are +/- 1.1 volts.

Use Pattern Marker for Trigger Set to On to enable the pattern marker and Off for external arming

WC3000 Scope Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the Oscilloscope tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Channel Select a channel to return a plot. Only one plot can be returned at a time, but any channel can be returned after it is acquired by calling this driver again with the appropriate channel set.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X-axis value for the plot.

X Scale.Range:Maximum This is the maximum X-axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y-axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y-axis value for the plot.

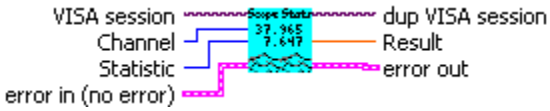
X Scale.Name Label.Text This is the label for the X-axis of the plot.

Y Scale.Name Label.Text This is the label for the Y-axis of the plot.

WC3000 Scope Stats.vi

This VI returns summary statistics from the SIA-3000 Oscilloscope tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a TailFit will be completed.

Connector Pane



Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Channel This is the channel for which to return a statistic.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

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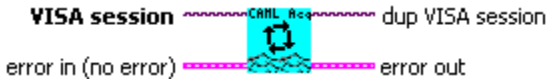
Clock Analysis

WC3000 ClkAnalysis Acquire.vi

This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Clock Analysis (CANL) tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane



WC3000 ClkAnalysis Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the Clock Analysis (CANL) Tool.

Connector Pane

Controls and Indicators

Arm Delay (19-21ns) The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

WC3000 ClkAnalysis Clear.vi

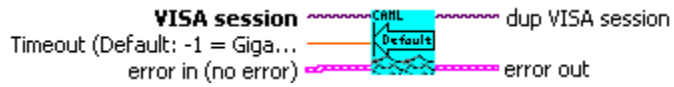
This Driver will send the SIA-3000 GPIB command to clear the active tool (Clock Analysis) of any measurements or plots.

Connector Pane

WC3000 ClkAnalysis Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Clock Analysis (CANL) tool.

Connector Pane



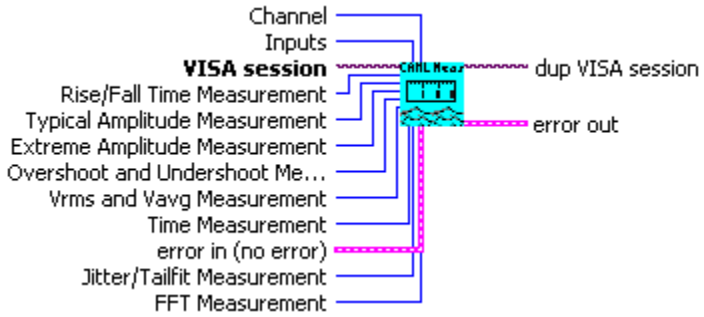
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 ClkAnalysis Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Clock Analysis (CANL) tool. Note that many of the various clock analysis measurements may be disabled for the sake of speed. Any disabled measurements will not return valid data for the corresponding plots or statistics in the Results drivers.

Connector Pane



Controls and Indicators

Channel Select a measurement channel.

Rise/Fall Time Measurement Select "On" to make Rise and Fall Time Measurements. The Rise and Fall thresholds may be set using the WC3000 Set RiseFall Global utility driver.

Typical Amplitude Measurement Select "On" to measure the top (Vtop) and base (Vbase) voltage levels, the amplitude (Vampl) between these two values, and the midpoint (Vmid) of these points.

Extreme Amplitude Measurement Select "On" to measure Vmax, Vmin, and Vpk-pk.

Overshoot and Undershoot Measurement Select "On" to measure the Overshoot and Undershoot. Overshoot is calculated as the difference between the Vmax and Vtop measurements. The Undershoot is the difference between the Vmin and Vbase measurements.

Vrms and Vavg Measurement Select "On" to measure the Average and RMS voltages.

Time Measurement Select "On" to make period, pulsewidth, duty cycle, and frequency measurements.

Jitter/Tailfit Measurement Select "On" to perform the tailfit algorithm and obtain jitter decomposition measurements.

FFT Measurement Select "On" to obtain Periodic Jitter measurements via FFT.

Inputs Select IN (Normal), /IN (Compliment), IN - /IN (Differential), IN & /IN (Both), or IN + /IN (Common) as a mode of input.

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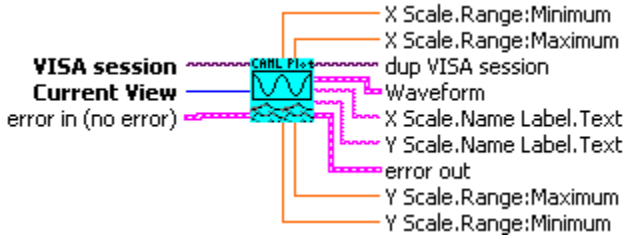
WC3000 ClkAnalysis Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the Clock Analysis (CANL) tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with Current View set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

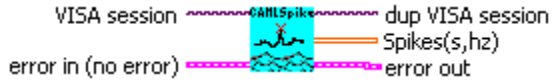
X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

WC3000 ClkAnalysis Spikes.vi

This VI returns spike statistics from the SIA-3000 Clock Analysis tool. The Spikes 2-D array will contain 2 columns of data where each row represents a spike. The 2 columns contain the period and frequency at which the spike occurred. A maximum of the 10 largest spikes will be returned.

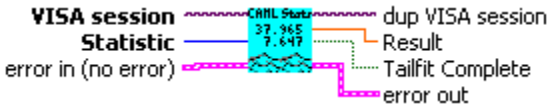
Connector Pane



WC3000 ClkAnalysis Stats.vi

This VI returns summary statistics from the SIA-3000 Clock Analysis (CANL) tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36.

Connector Pane



Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

Tailfit Complete

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Clock Statistics

WC3000 ClkStatistics Acquire.vi

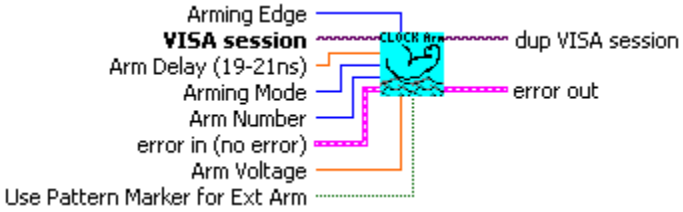
This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Clock Statistics tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane

WC3000 ClkStatistics Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the Clock Statistics Tool.

Connector Pane



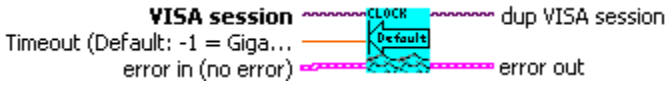
Controls and Indicators

- **Arm Delay (19-21ns)** The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement
- **Arming Mode** Select specific arming input, automatic arming (arming from input signal) or external arming
- **Arm Number** Select the channel used to arm the measurement. If you are using the PM-50, select the channel to which the PM-50 is attached and set "Use Pattern Marker for Ext Arm" to On
- **Arming Edge** Choose rising or falling. This will select which edge types from the Arm Channel will be used to arm a measurement on the Measurement Channel
- **Arm Voltage** This is the voltage threshold used to Arm the chosen measurement. This value is derived from PULSEFIND when "Threshold Voltage" is in AUTO. If "Threshold Voltage" is in USER VOLTS, you can enter a fixed value to be used. In USER VOLTS, PULSEFIND will have no effect on the threshold voltages.
- **Use Pattern Marker for Ext Arm** Set to On to enable the pattern marker and Off for external arming.

WC3000 ClkStatistics Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Statistics tool.

Connector Pane



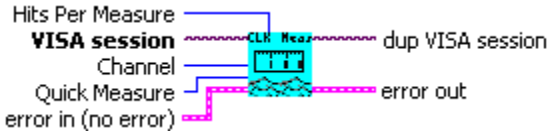
Controls and Indicators

- **Timeout (Default: -1 = GigaView Default Timeout)** Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 ClkStatistics Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Clock Statistics tool.

Connector Pane



Controls and Indicators

Channel Select a measurement channel.

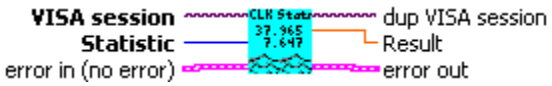
Hits Per Measure Determines the number of time measurements that will be made for each edge or point on the plot.

Quick Measure Select "On" to skip frequency and voltage measurements and obtain all other measurements more quickly.

WC3000 ClkStatistics Stats.vi

This VI returns summary statistics from the SIA-3000 Clock Statistics tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a tailfit will be completed.

Connector Pane



Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a tailfit has been completed.

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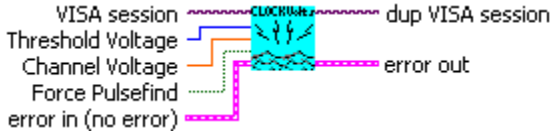
WC3000 ClkStatistics Voltages.vi

This Driver will send the SIA-3000 GPIB command to configure the voltage parameters for the Clock Statistics Tool.

Connector Pane



Controls and Indicators

Threshold Voltage When set to Auto, sets start and stop threshold reference voltages based on the minimum and maximum pulse level found on each channel. Select "User" to manually enter the threshold voltages. A pulsefind cannot be performed with this setting.

Channel Voltage When "Threshold Voltage" is set to USER VOLTS, specify the threshold voltage to be used for the measurement channel.

Force pulsefind When on, performs a pulse find after each histogram giving the user updated voltage information with each run. With Force Pulsefind OFF, the original threshold values are used and do not change.

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Cycle-To-Cycle Tool

WC3000 CycleToCycle Acquire.vi

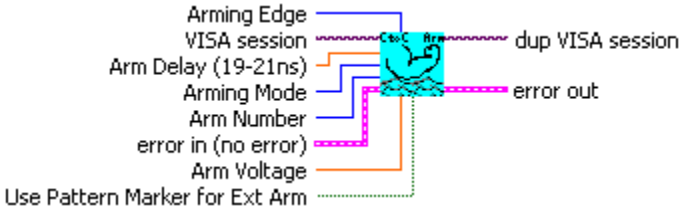
This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Cycle-to-Cycle tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane

WC3000 CycleToCycle Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the Cycle-to-Cycle Tool.

Connector Pane



Controls and Indicators

Arming Mode Select specific arming input, automatic arming (arming from input signal) or external arming.

Arm Number Select the channel used to arm the measurement. If you are using the PM-50, select the channel to which the PM-50 is attached and set "Use Pattern Marker for Ext Arm" to On.

Arming Edge Choose rising or falling. This will select which edge types from the Arm Channel will be used to arm a measurement on the Measurement Channel.

Arm Voltage This is the voltage threshold used to Arm the chosen measurement. This value is derived from PULSEFIND when "Threshold Voltage" is in AUTO. If "Threshold Voltage" is in USER VOLTS, you can enter a fixed value to be used. In USER VOLTS, PULSEFIND will have no effect on the threshold voltages.

Use Pattern Marker for Ext Arm Set to On to enable the pattern marker and Off for external arming.

Arm Delay (19-21ns) The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

WC3000 CycleToCycle Clear.vi

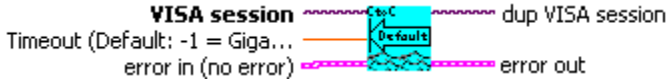
This Driver will send the SIA-3000 GPIB command to clear the active tool (Cycle-to-Cycle) of any measurements or plots.

Connector Pane

WC3000 CycleToCycle Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Cycle-to-Cycle tool.

Connector Pane



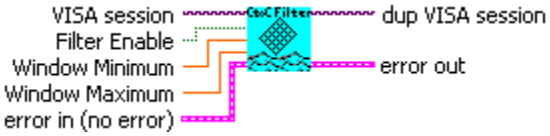
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 CycleToCycle Filters.vi

This Driver will send the SIA-3000 GPIB command to set filter parameters for the Cycle-to-Cycle tool.

Connector Pane



Controls and Indicators

Filter Enable Enables/disables time and range filtering.

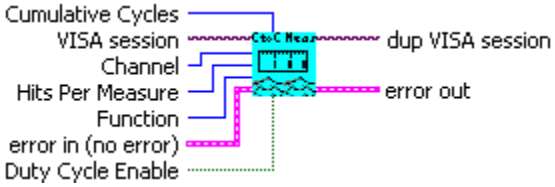
Window Minimum Enter minimum filtering time in seconds.

Window Maximum Enter maximum filtering time in seconds.

WC3000 CycleToCycle Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Cycle-to-Cycle tool.

Connector Pane



Controls and Indicators

Function Choices are Period(+), to measure between rising edges, or Period(-), to measure between falling edges.

Channel Select a measurement channel.

Cumulative Cycles Allows a measurement to be made over more than one consecutive period.

Hits Per Measure Determines the number of time measurements that will be made for each edge or point on the plot.

Duty Cycle Enable Choosing 'On' or 'Off' will enable or disable a duty cycle measurement. This will make the duty cycle summary statistic valid/invalid.

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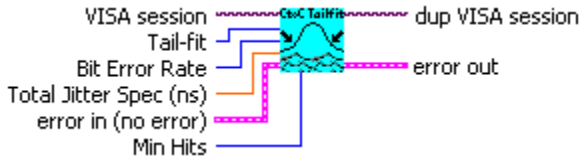
WC3000 CycleToCycle Tailfit.vi

This Driver will send the SIA-3000 GPIB commands to configure the TailFit for the Cycle-to-Cycle tool.

Connector Pane



Controls and Indicators

Bit Error Rate Determines the Bit Error Rate to be used when extracting total jitter from the Bathtub Curve.

TailFit When TailFit is enabled, Random and Deterministic Jitter can be separated in order to calculate Total Jitter.

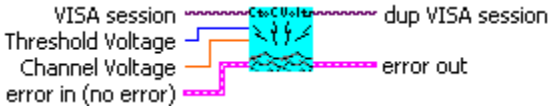
Total Jitter Spec (ns) The width used in the Bathtub View to assess the Error Probability in nanoseconds. Different specs will yield different bathtub curves.

Min Hits A TailFit will not be attempted until the number of hits specified is acquired.

WC3000 CycleToCycle Voltages.vi

This Driver will send the SIA-3000 GPIB command to configure the voltage parameters for the Cycle-to-Cycle Tool.

Connector Pane



Controls and Indicators

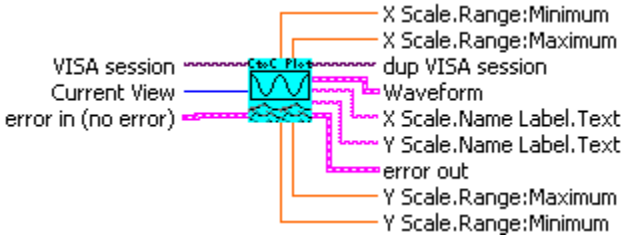
Threshold Voltage When set to Auto, sets start and stop threshold reference voltages based on the minimum and maximum pulse level found on each channel. Select "User" to manually enter the threshold voltages. A pulsefind cannot be performed with this setting.

Channel Voltage When "Threshold Voltage" is set to USER VOLTS, specify the threshold voltage to be used for the measurement channel.

WC3000 CycleToCycle Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the Cycle-to-Cycle tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with **Current View** set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X-axis value for the plot.

X Scale.Range:Maximum This is the maximum X-axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y-axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y-axis value for the plot.

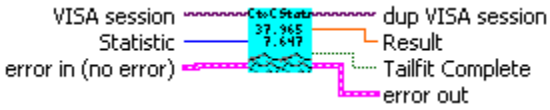
X Scale.Name Label.Text This is the label for the X-axis of the plot.

Y Scale.Name Label.Text This is the label for the Y-axis of the plot.

WC3000 CycleToCycle Stats.vi

This VI returns summary statistics from the SIA-3000 Cycle-to-Cycle tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a TailFit will be completed.

Connector Pane



Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

Tailfit Complete This value specifies whether a TailFit has been obtained or not. If a TailFit has not been obtained, but is desired, the SIA-3000 must acquire additional passes. This means that the Acquire driver must be called again and then this driver may be called to check updated stats and TailFit status.

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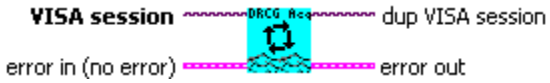
DRCG

WC3000 DRCG Acquire.vi

This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the DRCG tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane



WC3000 DRCG Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the DRCG Tool.

Connector Pane

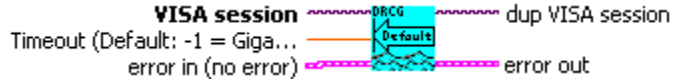
Controls and Indicators

Arm Delay (19-21ns) The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement

WC3000 DRCG Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the DRCG tool.

Connector Pane



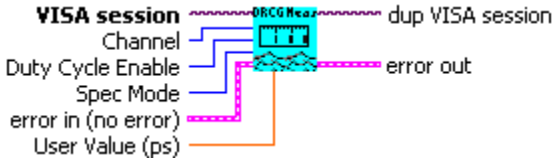
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 DRCG Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the DRCG tool.

Connector Pane



Controls and Indicators

Channel Select a measurement channel.
Duty Cycle Enable Select "On" to enable a duty cycle measurement. The Duty Cycle statistic will be invalid if "Off" is selected.

Spec Mode In "Auto" mode, the SIA-3000 will first measure the average period to determine the clock frequency. Then an appropriate specification is chosen:

533Mhz = +/-50ps
400Mhz = +/-50ps
300Mhz = +/-70ps
267Mhz = +/-80ps

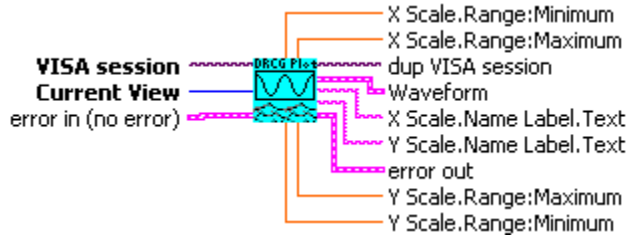
In "User Defined" mode, the spec can be set using the User Value field.

User Value (ps) If Spec Mode is set to "USER Defined", then this value specifies the spec in +/- ps.

WC3000 DRCG Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the DRCG tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with Current View set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

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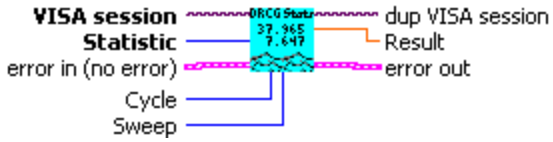
WC3000 DRCG Stats.vi

This VI returns summary statistics from the SIA-3000 DRCG tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36. Note also, that a Cycle and Sweep must be specified for Falling/Rising Edge Pulse Max/Min measurements. These inputs will be ignored for all other statistics.

Connector Pane



Controls and Indicators

U16 **Statistic** This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

I32 **Cycle** Select the Cycle to return for the following measurements:

Falling Edge Pulse Max
Falling Edge Pulse Min
Rising Edge Pulse Max
Rising Edge Pulse Min

I32 **Sweep** Select the Sweep to return for the following measurements:

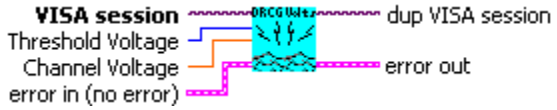
Falling Edge Pulse Max
Falling Edge Pulse Min
Rising Edge Pulse Max
Rising Edge Pulse Min

DBL **Result** This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

WC3000 DRCG Voltages.vi

This Driver will send the SIA-3000 GPIB command to configure the voltage parameters for the DRCG Tool.

Connector Pane



Controls and Indicators

U16 **Threshold Voltage** When set to Auto, sets start and stop threshold reference voltages based on the minimum and maximum pulse level found on each channel. Select "User" to manually enter the threshold voltages. A pulsefind cannot be performed with this setting.

DBL **Channel Voltage** When "Threshold Voltage" is set to USER VOLTS, specify the threshold voltage to be used for the measurement channel.

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High Frequency Modulation

WC3000 HiFreqMod Acquire.vi

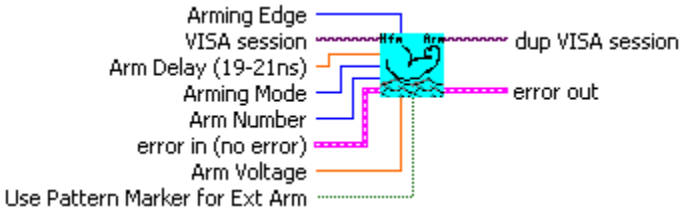
This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the High Frequency Modulation tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane

WC3000 HiFreqMod Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the High Frequency Modulation Tool.

Connector Pane



Controls and Indicators

U16 **Arming Mode** Select specific arming input, automatic arming (arming from input signal) or external arming.

I32 **Arm Number** Select the channel used to arm the measurement. If you are using the PM-50, select the channel to which the PM-50 is attached and set "Use Pattern Marker for Ext Arm" to On

U16 **Arming Edge** Choose rising or falling. This will select which edge types from the Arm Channel will be used to arm a measurement on the Measurement Channel.

DBL **Arm Voltage** This is the voltage threshold used to Arm the chosen measurement. This value is derived from PULSEFIND when "Threshold Voltage" is in AUTO. If "Threshold Voltage" is in USER VOLTS, you can enter a fixed value to be used. In USER VOLTS, PULSEFIND will have no effect on the threshold voltages.

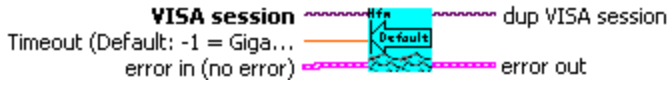
TF **Use Pattern Marker for Ext Arm** Set to On to enable the pattern marker and Off for external arming.

DBL **Arm Delay (19-21ns)** The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

WC3000 HiFreqMod Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the High Frequency Modulation tool.

Connector Pane

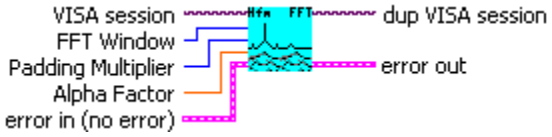


DBL **Timeout (Default: -1 = GigaView Default Timeout)** Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 HiFreqMod FFT.vi

This Driver will send the SIA-3000 GPIB command to configure FFT parameters for the High Frequency Modulation tool.

Connector Pane



Controls and Indicators

Padding Multiplier Selects the amount of zero padding to be applied to the measured data prior to FFT. Padding increases the frequency resolution of the FFT. Generally, a higher padding value will increase transformation processing time.

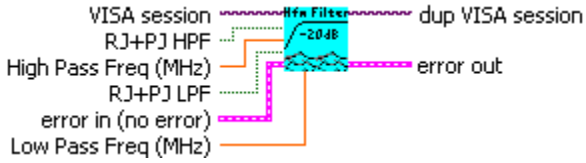
FFT Window To reduce spectral information distortion of FFTs, the time domain signal is multiplied by a window weighting function before the transform is performed. The choice of window will determine which spectral components will be isolated, or separated, from the dominant frequency(s).

Alpha Factor The varying of the Alpha Factor illustrates the inverse proportionality relationship between the spectral peak width and the side lobe rejection of the Kaiser-Bessel window. As the Alpha Factor increases, the spectral peak widens and the side lobes shrink. As the Alpha Factor decreases, the spectral peak narrows and the side lobes increase in amplitude.

WC3000 HiFreqMod Filters.vi

This Driver will send the SIA-3000 GPIB command to set filter parameters for the High Frequency Modulation tool.

Connector Pane



Controls and Indicators

RJ+PJ HPF Natural rolloff - Uses the -3dB frequency as the 'natural rolloff'. This is a 'natural rolloff' because the amount of data acquired by the tool naturally limits the lowest frequency "seen".

Brick Wall - Brick wall cuts off any frequencies below the selected value. Note that the -3dB frequency should be lower than the brick wall cutoff or the natural rolloff will have a filtering effect.

High Pass Freq (MHz) User defined High Pass Filter value, in kilohertz.

Low Pass Freq (MHz) User defined Low Pass Filter value, in kilohertz.

RJ+PJ LPF Nyquist - This is the default. The highest frequency that the tool can measure is 1/2 the clock rate (or the Nyquist).

First Order - Enter a -3dB frequency. This filter does not eliminate all the jitter energy above this frequency (it is not a brick wall filter). The frequency components of spectral content above this frequency will still contribute to the RJ(RMS) as displayed from the 1-sigma plot.

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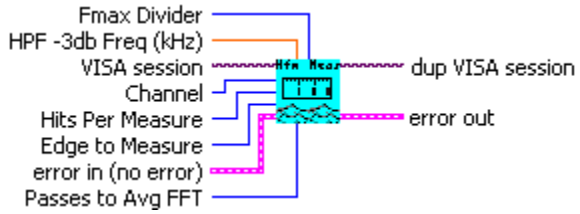
WC3000 HiFreqMod Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the High Frequency Modulation tool.

Connector Pane



Controls and Indicators

Edge to Measure Select Rising or Falling edge to measure.

Channel Select a measurement channel.

Hits Per Measure Determines the number of time measurements that will be made for each edge or point on the plot.

Passes to Avg FFT Selects the number of passes to average for the FFT output. Averaging will generally reduce the noise floor of the FFT but increase measurement time.

HPF -3db Freq (kHz) The HPF -3dB Lower Rolloff Frequency is the Frequency of the Half Power Point of the 20dB/decade low frequency rolloff. The choice of this frequency will determine the low frequencies visible on the FFT.

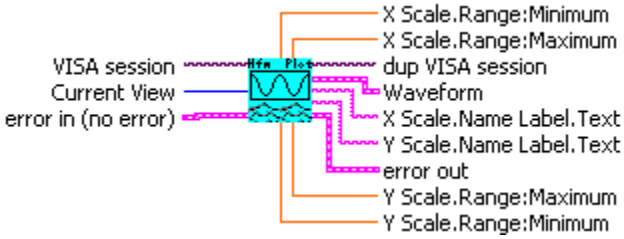
Fmax Divider Allows scaling of the FFT by dividing the upper frequency end of the FFT. Default is 1, which shows frequencies of jitter up to 1/2 the clock rate.

Changing this value allows faster analysis of lower frequency information by skipping edges and ignoring high frequency effects. However, changing this value without changing the HPF -3dB frequency will reduce the number of edges measured.

WC3000 HiFreqMod Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the High Frequency Modulation tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with **Current View** set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

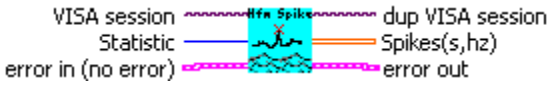
X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

WC3000 HiFreqMod Spikes.vi

This VI returns spike statistics from the SIA-3000 High Frequency Modulation tool. Select 1-Clock or N-Clock. The Spikes 2-D array will contain 2 columns of data where each row represents a spike. The 2 columns contain the period and frequency at which the spike occurred. A maximum of the 10 largest spikes will be returned.

Connector Pane



Controls and Indicators

Statistic Select 1-Clock or N-Clock FFT Spikes to determine which set of spikes will be returned by this call.

Spikes(s,hz) The spike data is returned where each row represents a single spike. The first column is the spike's period in seconds, and the second column is the spike's frequency in hertz. A maximum of 10 spikes will be returned by this function.

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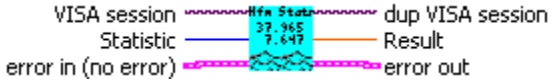
WC3000 HiFreqMod Stats.vi

This VI returns summary statistics from the SIA-3000 High Frequency Modulation tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a TailFit will be completed.

Connector Pane



Controls and Indicators

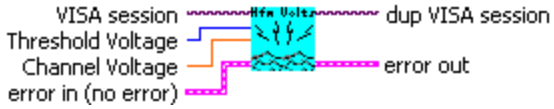
Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

WC3000 HiFreqMod Voltages.vi

This Driver will send the SIA-3000 GPIB command to configure the voltage parameters for the High Frequency Modulation Tool.

Connector Pane



Controls and Indicators

Threshold Voltage When set to Auto, sets start and stop threshold reference voltages based on the minimum and maximum pulse level found on each channel. Select "User" to manually enter the threshold voltages. A pulsefind cannot be performed with this setting.

Channel Voltage When "Threshold Voltage" is set to USER VOLTS, specify the threshold voltage to be used for the measurement channel.

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Histogram

WC3000 Histogram Acquire.vi

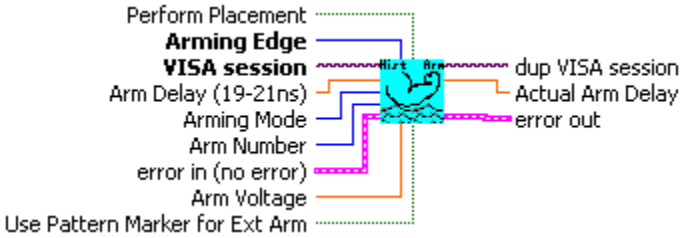
This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Histogram tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane

WC3000 Histogram Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the Histogram Tool.

Connector Pane



Controls and Indicators

Arm Delay (19-21ns) The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

Arming Mode Select specific arming input, automatic arming (arming from input signal) or external arming.

Arm Number Select the channel used to arm the measurement. If you are using the PM-50, select the channel to which the PM-50 is attached and set "Use Pattern Marker for Ext Arm" to On

Arming Edge Choose rising or falling. This will select which edge types from the Arm Channel will be used to arm a measurement on the Measurement Channel.

Arm Voltage This is the voltage threshold used to Arm the chosen measurement. This value is derived from PULSEFIND when "Threshold Voltage" is in AUTO. If "Threshold Voltage" is in USER VOLTS, you can enter a fixed value to be used. In USER VOLTS, PULSEFIND will have no effect on the threshold voltages.

Use Pattern Marker for Ext Arm Set to On to enable the pattern marker and Off for external arming.

Perform Placement Set to On to enable the Perform Placement function. This should be done after the proper pattern is chosen and configured. The placement of the marker with respect to data will be optimized and the Arm Delay value will be ignored.

Actual Arm Delay Returns the Arm Delay that was actually set. If Perform Placement is On, this will reflect the optimal arm placement that was found. If Perform Placement is Off, the same value will be returned as the Arm Delay control.

WC3000 Histogram Clear.vi

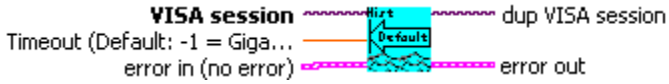
This Driver will send the SIA-3000 GPIB command to clear the active tool (Histogram) of any measurements or plots.

Connector Pane

WC3000 Histogram Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Histogram tool.

Connector Pane



Controls and Indicators

Arm Voltage This is the voltage threshold used to Arm the chosen measurement. This value is derived from PULSEFIND when "Threshold Voltage" is in AUTO. If "Threshold Voltage" is in USER VOLTS, you can enter a fixed value to be used. In USER VOLTS, PULSEFIND will have no effect on the threshold voltages.

Use Pattern Marker for Ext Arm Set to On to enable the pattern marker and Off for external arming.

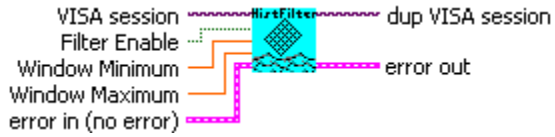
Arm Delay (19-21ns) The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 Histogram Filters.vi

This Driver will send the SIA-3000 GPIB command to set filter parameters for the Histogram tool.

Connector Pane



Controls and Indicators

Filter Enable Enables/disables time and range filtering.

Window Minimum Enter minimum filtering time in seconds.

Window Maximum Enter maximum filtering time in seconds.

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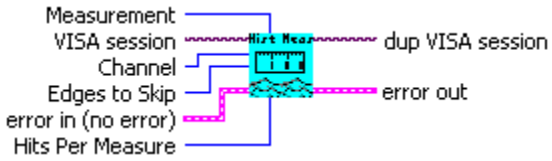
WC3000 Histogram Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Histogram tool.

Connector Pane



Controls and Indicators

Measurement Select primary measurement configuration for the unit: Period + (Rising edge to Rising edge), Period - (Falling edge to Falling edge), PW+ (Rising edge to Falling edge), PW- (Falling edge to Rising edge).

Channel Select a measurement channel.

Edges to Skip Will determine the number of edges to skip before the time measurement stops.

Hits Per Measure Determines the number of time measurements that will be made for each edge or point on the plot.

WC3000 Histogram Tailfit.vi

This Driver will send the SIA-3000 GPIB commands to configure the TailFit for the Histogram tool.

Connector Pane

Controls and Indicators

Bit Error Rate Determines the Bit Error Rate to be used when extracting total jitter from the Bathtub Curve.

TailFit When TailFit is enabled, Random and Deterministic Jitter can be separated in order to calculate Total Jitter.

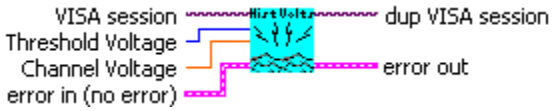
Total Jitter Spec (ns) The width used in the Bathtub View to assess the Error Probability in nanoseconds. Different specs will yield different bathtub curves.

Min Hits A Tailfit will not be attempted until the number of hits specified is acquired.

WC3000 Histogram Voltages.vi

This Driver will send the SIA-3000 GPIB command to configure the voltage parameters for the Histogram Tool.

Connector Pane



Controls and Indicators

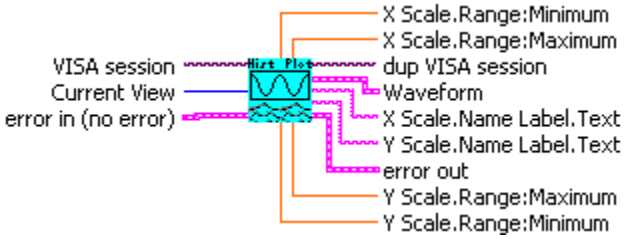
Threshold Voltage When set to Auto, sets start and stop threshold reference voltages based on the minimum and maximum pulse level found on each channel. Select "User" to manually enter the threshold voltages. A pulsefind cannot be performed with this setting.

Channel Voltage When "Threshold Voltage" is set to USER VOLTS, specify the threshold voltage to be used for the measurement channel.

WC3000 Histogram Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the Histogram tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with **Current View** set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

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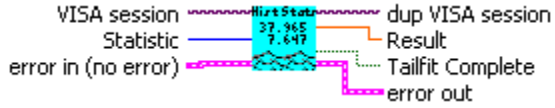
WC3000 Histogram Stats.vi

This VI returns summary statistics from the SIA-3000 Histogram tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a TailFit will be completed.

Connector Pane



Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

TailFit Complete This value specifies whether a TailFit has been obtained or not. If a TailFit has not been obtained, but is desired, the SIA-3000 must acquire additional passes. This means that the Acquire driver must be called again and then this driver may be called to check updated stats and TailFit status.

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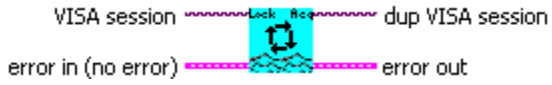
Locktime

WC3000 Locktime Acquire.vi

This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Locktime tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

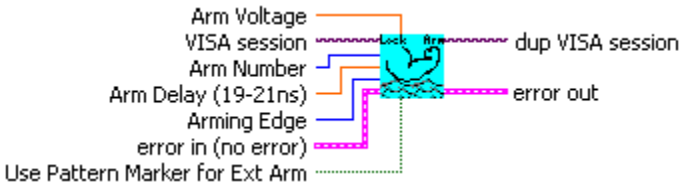
Connector Pane



WC3000 Locktime Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the Locktime tool.

Connector Pane



Controls and Indicators

Arm Number Select the channel used to arm the measurement. If you are using the PM-50, select the channel to which the PM-50 is attached and set "Use Pattern Marker for Ext Arm" to On.

Arming Edge Choose rising or falling. This will select which edge types from the Arm Channel will be used to arm a measurement on the Measurement Channel.

Arm Voltage This is the voltage threshold used to Arm the chosen measurement. This value is derived from PULSEFIND when "Threshold Voltage" is in AUTO. If "Threshold Voltage" is in USER VOLTS, you can enter a fixed value to be used. In USER VOLTS, PULSEFIND will have no effect on the threshold voltages.

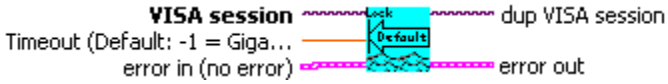
Use Pattern Marker for Ext Arm Set to On to enable the pattern marker and Off for external arming.

Arm Delay (19-21ns) The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

WC3000 Locktime Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Locktime tool.

Connector Pane



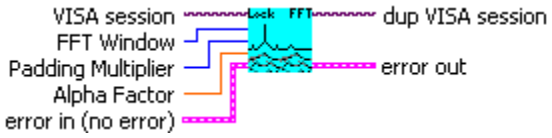
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 Locktime FFT.vi

This Driver will send the SIA-3000 GPIB command to configure FFT parameters for the Locktime tool.

Connector Pane



Controls and Indicators

Padding Multiplier Selects the amount of zero padding to be applied to the measured data prior to FFT. Padding increases the frequency resolution of the FFT. Generally, a higher padding value will increase transformation processing time.

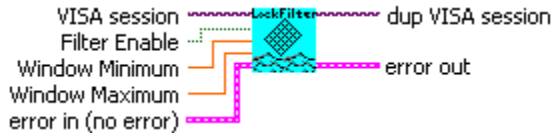
FFT Window To reduce spectral information distortion of FFTs, the time domain signal is multiplied by a window weighting function before the transform is performed. The choice of window will determine which spectral components will be isolated, or separated, from the dominant frequency(s).

Alpha Factor The varying of the Alpha Factor illustrates the inverse proportionality relationship between the spectral peak width and the sidelobe rejection of the the Kaiser-Bessel window. As the Alpha Factor increases, the spectral peak widens and the sidelobes shrink. As the Alpha Factor decreases, the spectral peak narrows and the sidelobes increase in amplitude.

WC3000 Locktime Filters.vi

This VI configures the channel of the oscilloscope.

Connector Pane



Controls and Indicators

Filter Enable Selects whether or not to check the instrument's ID and Device Type registers to be sure the instrument is the type expected.

Valid Range:
T: Check (default)
F: Don't Check.

Window Minimum

Window Maximum

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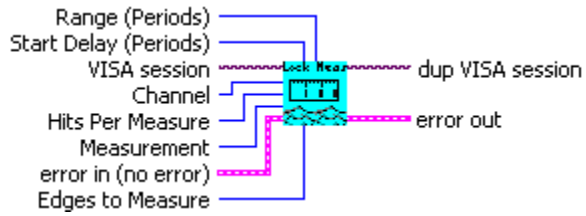
WC3000 Locktime Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Locktime tool.

Connector Pane



Controls and Indicators

Measurement Select primary measurement configuration for the unit: Period + (Rising edge to Rising edge), Period - (Falling edge to Falling edge), PW+ (Rising edge to Falling edge), PW- (Falling edge to Rising edge).

Channel Select a measurement channel.

Hits Per Measure Determines the number of time measurements that will be made for each edge or point on the plot.

Start Delay (Periods) Set number of periods to delay before taking measurements relative to the Arm edge.

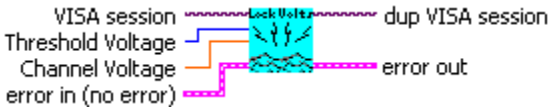
Range (Periods) Number of periods over which measurements are plotted. Edges to Measure determines number of periods within this range to be measured.

Edges to Measure Number of edges within a range to be measured. To measure every edge in a range, this must equal the Range(Periods) value.

WC3000 Locktime Voltages.vi

This Driver will send the SIA-3000 GPIB command to configure the voltage parameters for the Locktime tool.

Connector Pane



Controls and Indicators

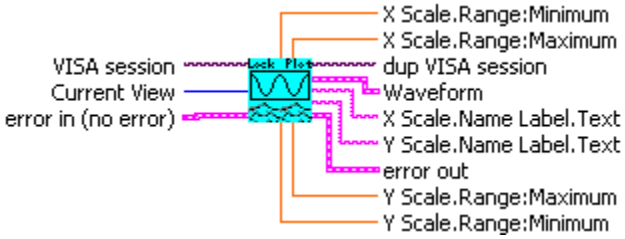
Threshold Voltage When set to Auto, sets start and stop threshold reference voltages based on th minimum and maximum pulse level found on each channel. Select "User" to manually enter the threshold voltages. A pulsefind cannot be performed with this setting.

Channel Voltage When "Threshold Voltage" is set to USER VOLTS, specify the threshold voltage to used for the measurement channel.

WC3000 Locktime Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the Locktime tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with **Current View** set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

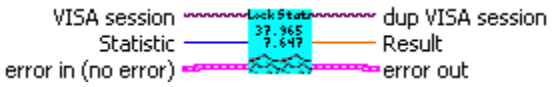
X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

WC3000 Locktime Stats.vi

This VI returns summary statistics from the SIA-3000 Locktime tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a TailFit will be completed.

Connector Pane



Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

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Low Frequency Modulation

WC3000 LoFreqMod Acquire.vi

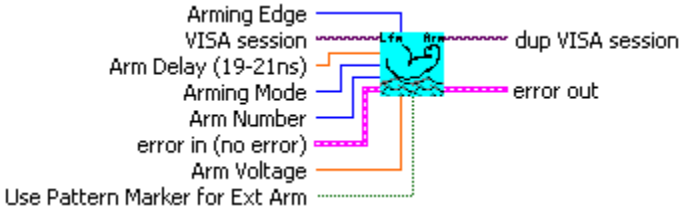
This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Low Frequency Modulation tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane

WC3000 LoFreqMod Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the Low Frequency Modulation tool.

Connector Pane



Controls and Indicators

U16 **Arming Mode** Select specific arming input, automatic arming (arming from input signal) or external arming.

I32 **Arm Number** Select the channel used to arm the measurement. If you are using the PM-50, select the channel to which the PM-50 is attached and set "Use Pattern Marker for Ext Arm" to On.

U16 **Arming Edge** Choose rising or falling. This will select which edge types from the Arm Channel will be used to arm a measurement on the Measurement Channel.

DBL **Arm Voltage** This is the voltage threshold used to Arm the chosen measurement. This value is derived from PULSEFIND when "Threshold Voltage" is in AUTO. If "Threshold Voltage" is in USER VOLTS, you can enter a fixed value to be used. In USER VOLTS, PULSEFIND will have no effect on the threshold voltages.

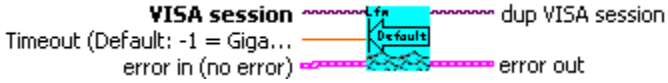
TF **Use Pattern Marker for Ext Arm** Set to On to enable the pattern marker and Off for external arming.

DBL **Arm Delay (19-21ns)** The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

WC3000 LoFreqMod Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Low Frequency Modulation tool.

Connector Pane



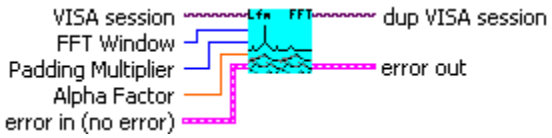
Controls and Indicators

DBL **Timeout (Default: -1 = GigaView Default Timeout)** Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 LoFreqMod FFT.vi

This Driver will send the SIA-3000 GPIB command to configure FFT parameters for the Low Frequency Modulation tool.

Connector Pane



Controls and Indicators

Padding Multiplier Selects the amount of zero padding to be applied to the measured data prior to FFT. Padding increases the frequency resolution of the FFT. Generally, a higher padding value will increase transformation processing time.

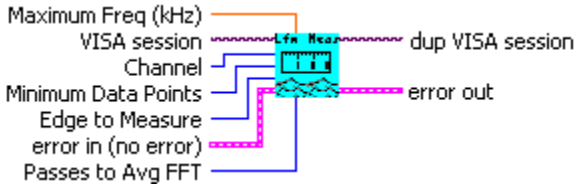
FFT Window To reduce spectral information distortion of FFTs, the time domain signal is multiplied by a window weighting function before the transform is performed. The choice of window will determine which spectral components will be isolated, or separated, from the dominant frequency(s).

Alpha Factor The varying of the Alpha Factor illustrates the inverse proportionality relationship between the spectral peak width and the sidelobe rejection of the the Kaiser-Bessel window. As the Alpha Factor increases, the spectral peak widens and the sidelobes shrink. As the Alpha Factor decreases, the spectral peak narrows and the sidelobes increase in amplitude.

WC3000 LoFreqMod Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Low Frequency Modulation tool.

Connector Pane



Controls and Indicators

Edge to Measure Select Rising or Falling edge to measure.

Channel Select a measurement channel.

Minimum Data Points Determines the number of time measurements shown on Time View and refers to the number of hits in the histogram. Directly affects FFT resolution. A larger value results in greater FFT resolution and the ability to see lower frequencies.

Passes to Avg FFT Selects the number of passes to average for the FFT output. Averaging will generally reduce the noise floor of the FFT but increase measurement time.

Maximum Freq (kHz) Determines the resolution of plot in the FFT view or the time between measurements in Time View. Decreasing the Maximum Frequency increases the time between measurements allowing lower jitter frequencies to be captured.

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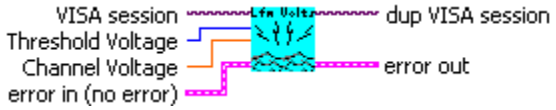
WC3000 LoFreqMod Voltages.vi

This Driver will send the SIA-3000 GPIB command to configure the voltage parameters for the Low Frequency Modulation Tool.

Connector Pane



Controls and Indicators

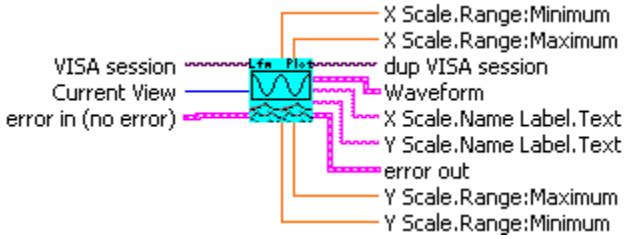
Threshold Voltage When set to Auto, sets start and stop threshold reference voltages based on the minimum and maximum pulse level found on each channel. Select "User" to manually enter the threshold voltages. A pulsefind cannot be performed with this setting.

Channel Voltage When "Threshold Voltage" is set to USER VOLTS, specify the threshold voltage to be used for the measurement channel.

WC3000 LoFreqMod Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the Low Frequency Modulation tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with **Current View** set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

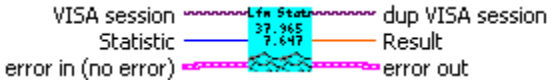
X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

WC3000 LoFreqMod Stats.vi

This VI returns summary statistics from the SIA-3000 Low Frequency Modulation tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a tailfit will be completed.

Connector Pane



Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a tailfit has been completed.

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Phase Noise

WC3000 PhaseNoise Acquire.vi

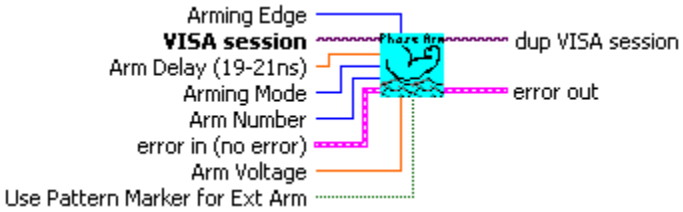
This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Phase Noise tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane

WC3000 PhaseNoise Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the Phase Noise Tool.

Connector Pane



Controls and Indicators

Arm Delay (19-21ns) The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

Arming Mode Select specific arming input, automatic arming (arming from input signal) or external arming.

Arm Number Select the channel used to arm the measurement. If you are using the PM-50, select the channel to which the PM-50 is attached and set "Use Pattern Marker for Ext Arm" to On.

Arming Edge Choose rising or falling. This will select which edge types from the Arm Channel will be used to arm a measurement on the Measurement Channel.

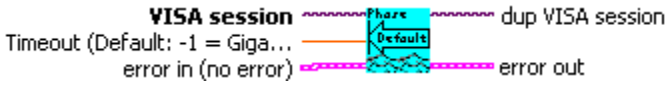
Arm Voltage This is the voltage threshold used to Arm the chosen measurement. This value is derived from PULSEFIND when "Threshold Voltage" is in AUTO. If "Threshold Voltage" is in USER VOLTS, you can enter a fixed value to be used. In USER VOLTS, PULSEFIND will have no effect on the threshold voltages.

Use Pattern Marker for Ext Arm Set to On to enable the pattern marker and Off for external arming.

WC3000 PhaseNoise Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Phase Noise tool.

Connector Pane



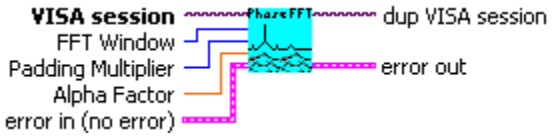
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 PhaseNoise FFT.vi

This Driver will send the SIA-3000 GPIB command to configure FFT parameters for the Phase Noise tool.

Connector Pane



Controls and Indicators

FFT Window To reduce spectral information distortion of FFTs, the time domain signal is multiplied by a window weighting function before the transform is performed. The choice of window will determine which spectral components will be isolated, or separated, from the dominant frequency(s).

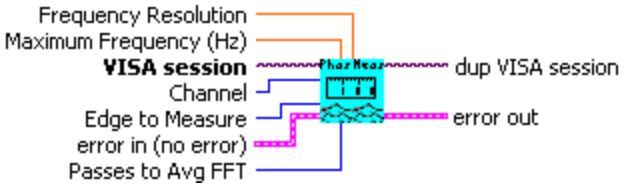
Padding Multiplier Selects the amount of zero padding to be applied to the measured data prior to FFT. Padding increases the frequency resolution of the FFT. Generally, a higher padding value will increase transformation processing time.

Alpha Factor The varying of the Alpha Factor illustrates the inverse proportionality relationship between the spectral peak width and the sidelobe rejection of the the Kaiser-Bessel window. As the Alpha Factor increases, the spectral peak widens and the sidelobes shrink. As the Alpha Factor decreases, the spectral peak narrows and the sidelobes increase in amplitude.

WC3000 PhaseNoise Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Phase Noise tool.

Connector Pane



Controls and Indicators

Channel Select a measurement channel.

Edge to Measure Select Rising or Falling edge to measure.

Passes to Avg FFT Selects the number of passes to average for the FFT output. Averaging will generally reduce the noise floor of the FFT but increase measurement time.

Maximum Frequency (Hz) Select the maximum frequency to which the Phase Noise acquisition will be carried out.

Frequency Resolution Sets the frequency resolution of the acquired data. A small value will increase the measurement time, while a larger value will provide more data points in the spectrum data.

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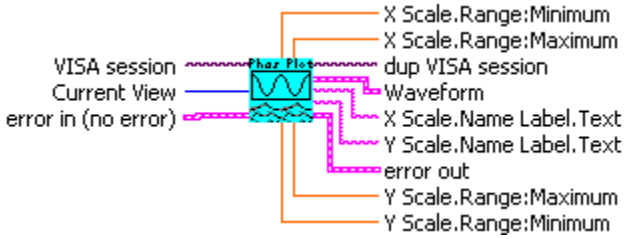
WC3000 PhaseNoise Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the Phase Noise tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with Current View set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

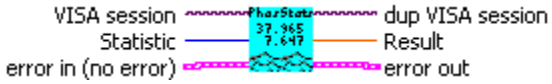
X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

WC3000 PhaseNoise Stats.vi

This VI returns summary statistics from the SIA-3000 Phase Noise tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a tailfit will be completed.

Connector Pane



Controls and Indicators

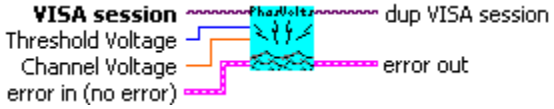
Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a tailfit has been completed.

WC3000 PhaseNoise Voltages.vi

This Driver will send the SIA-3000 GPIB command to configure the voltage parameters for the Phase Noise Tool.

Connector Pane



Controls and Indicators

Threshold Voltage When set to Auto, sets start and stop threshold reference voltages based on the minimum and maximum pulse level found on each channel. Select "User" to manually enter the threshold voltages. A pulsefind cannot be performed with this setting.

Channel Voltage When "Threshold Voltage" is set to USER VOLTS, specify the threshold voltage to be used for the measurement channel.

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PLL

WC3000 PLL Acquire.vi

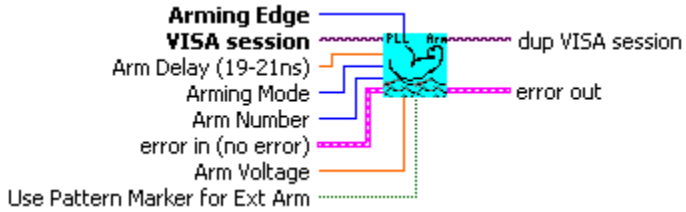
This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Advanced PLL tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane

WC3000 PLL Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the Advanced PLL Tool.

Connector Pane



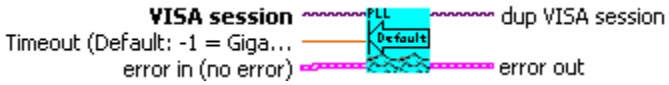
Controls and Indicators

- **Arm Delay (19-21ns)** The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.
- **Arming Mode** Select specific arming input, automatic arming (arming from input signal) or external arming.
- **Arm Number** Select the channel used to arm the measurement. If you are using the PM-50, select the channel where the PM-50 is installed and set "Use Pattern Marker for Ext Arm" to On.
- **Arming Edge** Choose rising or falling. This will select which edge types from the Arm Channel will be used to arm a measurement on the Measurement Channel.
- **Arm Voltage** This is the voltage threshold used to Arm the chosen measurement. This value is derived from PULSEFIND when "Threshold Voltage" is in AUTO. If "Threshold Voltage" is in USER VOLTS, you can enter a fixed value to be used. In USER VOLTS, PULSEFIND will have no effect on the threshold voltages.
- **Use Pattern Marker for Ext Arm** Set to On to enable the pattern marker and Off for external arming.

WC3000 PLL Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Advanced PLL tool.

Connector Pane



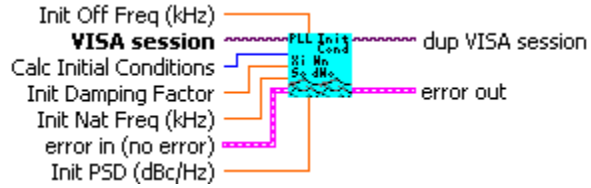
Controls and Indicators

- **Timeout (Default: -1 = GigaView Default Timeout)** Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 PLL Initial Conditions.vi

This Driver will send the SIA-3000 GPIB commands to configure the initial conditions for the Advanced PLL tool.

Connector Pane



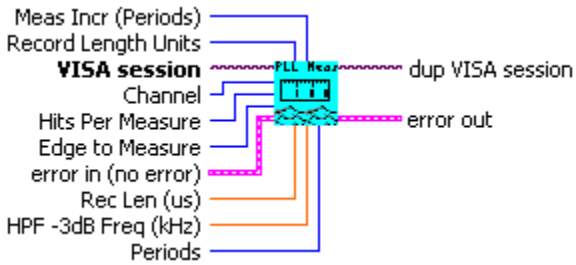
Controls and Indicators

- **Calc Initial Conditions** Chooses whether to automatically calculate the initial conditions or allow user entry.
- **Init Damping Factor** Sets the initial guess for fitting of the damping factor, if Calc Init Conditions is "On".
- **Init Nat Freq (kHz)** Sets the initial guess for fitting of the natural frequency, if Calc Init Conditions is "On".
- **Init PSD (dBc/Hz)** Sets the initial guess for fitting of the input noise level, if Calc Init Conditions is "On".
- **Init Off Freq (kHz)** Sets the lowest frequency displayed on the PLL Transfer plot.

WC3000 PLL Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Advanced PLL tool.

Connector Pane



Controls and Indicators

- **Edge to Measure** Select Rising or Falling edge to measure.
- **Channel** Select a measurement channel.
- **Hits Per Measure** Determines the number of time measurements that will be made for each edge or point on the plot.
- **Record Length Units** Select the units by which to set the record length. Of the following three controls, only one will be used to determine the record length: Rec Len(us), HPF -3dB Freq (kHz), Periods.
- **Rec Len (us)** Number of cycles to measure determined by the time entered when Record Length Units is set to "Time Interval"
- **HPF -3dB Freq (kHz)** Number of cycles to measure determined by the half power point of the 20dB/decade low frequency roll off entered when Record Length Units is set to "Bandwidth"
- **Periods** Number of cycles to measure determined by the number of periods entered when Record Length Units is set to "Periods"
- **Meas Incr (Periods)** Choose the increment step size of the number of cycles to measure.

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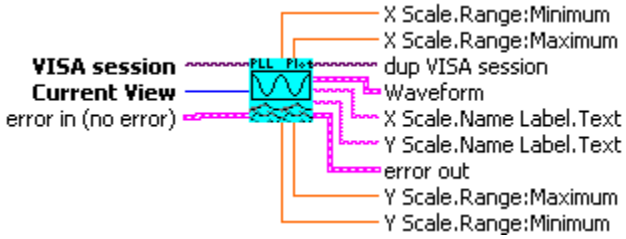
WC3000 PLL Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the Advanced PLL tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with Current View set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

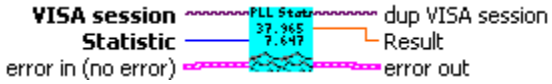
X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

WC3000 PLL Stats.vi

This VI returns summary statistics from the SIA-3000 Advanced PLL tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a tailfit will be completed.

Connector Pane



Controls and Indicators

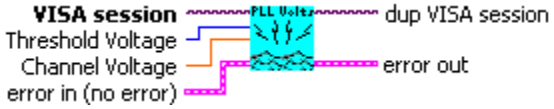
Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a tailfit has been completed.

WC3000 PLL Voltages.vi

This Driver will send the SIA-3000 GPIB command to configure the voltage parameters for the Advanced PLL Tool.

Connector Pane



Controls and Indicators

Threshold Voltage When set to Auto, sets start and stop threshold reference voltages based on the minimum and maximum pulse level found on each channel. Select "User" to manually enter the threshold voltages. A pulsefind cannot be performed with this setting.

Channel Voltage When "Threshold Voltage" is set to USER VOLTS, specify the threshold voltage to be used for the measurement channel.

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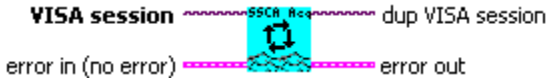
Spread Spectrum Clock Analysis

WC3000 SSCA Acquire.vi

This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Spread Spectrum Clock Analysis (SSCA) tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

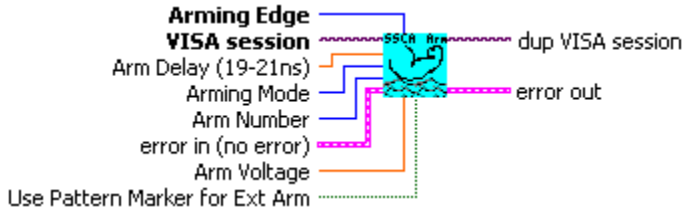
Connector Pane



WC3000 SSCA Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the Spread Spectrum Clock Analysis (SSCA) Tool.

Connector Pane



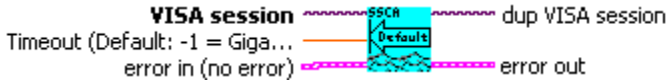
Controls and Indicators

- **Arm Delay (19-21ns)** The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.
- **Arming Mode** Select specific arming input, automatic arming (arming from input signal) or external arming.
- **Arm Number** Select the channel used to arm the measurement. If you are using the PM-50, select the channel with the PM-50 installed and set "Use Pattern Marker for Ext Arm" to On.
- **Arming Edge** Choose rising or falling. This will select which edge types from the Arm Channel will be used to arm a measurement on the Measurement Channel.
- **Arm Voltage** This is the voltage threshold used to Arm the chosen measurement. This value is derived from PULSEFIND when "Threshold Voltage" is in AUTO. If "Threshold Voltage" is in USER VOLTS, you can enter a fixed value to be used. In USER VOLTS, PULSEFIND will have no effect on the threshold voltages.
- **Use Pattern Marker for Ext Arm** Set to On to enable the pattern marker and Off for external arming.

WC3000 SSCA Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Spread Spectrum Clock Analysis (SSCA) tool.

Connector Pane



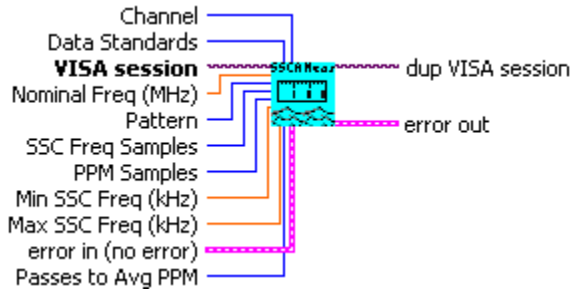
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 SSCA Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Spread Spectrum Clock Analysis (SSCA) tool.

Connector Pane



Controls and Indicators

Data Standards Select primary measurement configuration for the unit: Period + (Rising edge to Rising edge), Period - (Falling edge to Falling edge), PW+ (Rising edge to Falling edge), PW- (Falling edge to Rising edge).

Channel Select a measurement channel.

Nominal Freq (MHz) Select the target operating frequency. (i.e. 1.5 Gb/s data in a 1010 pattern is 750 Mhz).

Pattern Select the data pattern type. 10 means the data is a 101010 clock-like pattern. 1100 means the data is a 110011001100 clock-like pattern, etc.

SSC Freq Samples Sets the number of samples taken for each histogram when determining the point where the PPM measurement will be performed.

PPM Samples The number of samples taken when acquiring the histogram used for calculating the PPM deltas (PPM plus and PPM minus).

Min SSC Freq (kHz) This, in combination with Maximum SSC Frequency, determines the SSC frequency range over which the tool will search for the maximum SSC ppm deltas.

Max SSC Freq (kHz) This, in combination with Minimum SSC Frequency, determines the SSC frequency range over which the tool will search for the maximum SSC ppm deltas.

Passes to Avg PPM Sets how many of the PPM histograms are measured. The PPM plus and PPM minus are the average of these histograms.

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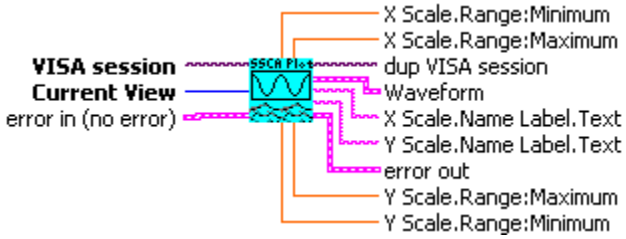
WC3000 SSCA Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the Spread Spectrum Clock Analysis (SSCA) tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with Current View set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

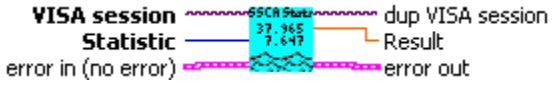
X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

WC3000 SSCA Stats.vi

This VI returns summary statistics from the SIA-3000 Spread Spectrum Clock Analysis (SSCA) tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36.

Connector Pane



Controls and Indicators

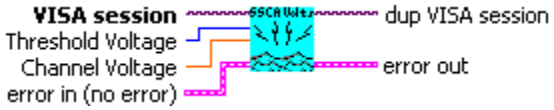
Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

WC3000 SSCA Voltages.vi

This Driver will send the SIA-3000 GPIB command to configure the voltage parameters for the Spread Spectrum Clock Analysis (SSCA) Tool.

Connector Pane



Controls and Indicators

U16 **Threshold Voltage** When set to Auto, sets start and stop threshold reference voltages based on the minimum and maximum pulse level found on each channel. Select "User" to manually enter the threshold voltages. A pulsefind cannot be performed with this setting

DBL **Channel Voltage** When "Threshold Voltage" is set to USER VOLTS, specify the threshold voltage to be used for the measurement channel.

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Statistics (No Graphical Plot Results)

WC3000 Statistics Acquire.vi

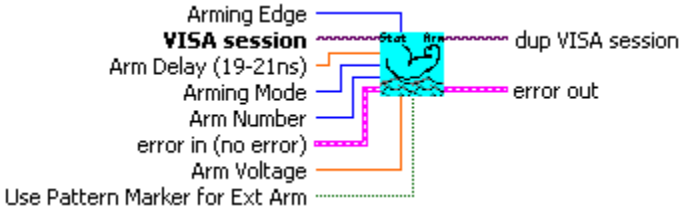
This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Statistics tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane

WC3000 Statistics Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the Statistics tool.

Connector Pane



Controls and Indicators

Arm Delay (19-21ns) The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

Arming Mode Select specific arming input, automatic arming (arming from input signal) or external arming.

Arm Number Select the channel used to arm the measurement. If you are using the PM-50, select the channel to which the PM-50 is attached and set "Use Pattern Marker for Ext Arm" to On.

Arming Edge Choose rising or falling. This will select which edge types from the Arm Channel will be used to arm a measurement on the Measurement Channel.

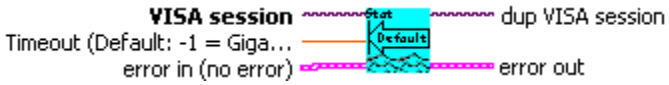
Arm Voltage This is the voltage threshold used to Arm the chosen measurement. This value is derived from PULSEFIND when "Threshold Voltage" is in AUTO. If "Threshold Voltage" is in USER VOLTS, you can enter a fixed value to be used. In USER VOLTS, PULSEFIND will have no effect on the threshold voltages.

Use Pattern Marker for Ext Arm Set to On to enable the pattern marker and Off for external arming.

WC3000 Statistics Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Statistics tool.

Connector Pane



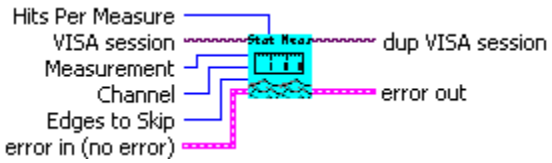
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 Statistics Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Statistics tool.

Connector Pane



Controls and Indicators

Measurement Select primary measurement configuration for the unit: Period + (Rising edge to Rising edge), Period - (Falling edge to Falling edge), PW+ (Rising edge to Falling edge), PW- (Falling edge to Rising edge).

Channel Select a measurement channel.

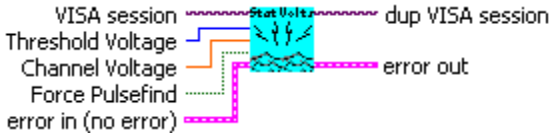
Edges to Skip Will determine the number of edges to skip before the time measurement stops.

Hits Per Measure Determines the number of time measurements that will be made for each edge or point on the plot.

WC3000 Statistics Voltages.vi

This Driver will send the SIA-3000 GPIB command to configure the voltage parameters for the Statistics tool.

Connector Pane



Controls and Indicators

Threshold Voltage When set to Auto, sets start and stop threshold reference voltages based on the minimum and maximum pulse level found on each channel. Select "User" to manually enter the thresh voltages. A pulsefind cannot be performed with this setting.

Channel Voltage When "Threshold Voltage" is set to USER VOLTS, specify the threshold voltage to b used for the measurement channel.

Force pulsefind When on, performs a pulse find after each histogram giving the user updated voltag information with each run. With Force Pulsefind OFF, the original threshold values are used and do no change.

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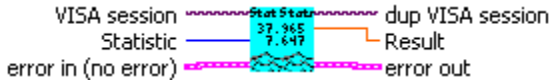
WC3000 Statistics Stats.vi

This VI returns summary statistics from the SIA-3000 Statistics tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a tailfit will be completed.

Connector Pane



Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a tailfit has been completed.

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Strip Chart

WC3000 StripChart Acquire.vi

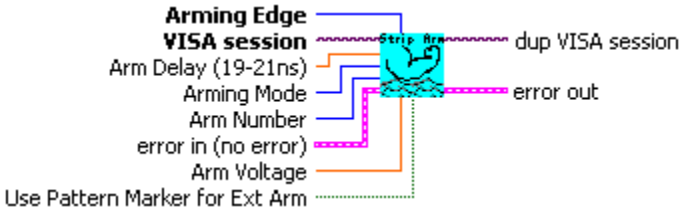
This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Strip Chart tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass. Note that this particular driver is unique in that a pass will not be acquired unless the configured Span Time has elapsed since the last acquisition.

Connector Pane

WC3000 StripChart Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the Strip Chart Tool.

Connector Pane



Controls and Indicators

- **Arm Delay (19-21ns)** The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.
- **Arming Mode** Select specific arming input, automatic arming (arming from input signal) or external arming.
- **Arm Number** Select the channel used to arm the measurement. If you are using the PM-50, select the channel where the PM-50 is installed and set "Use Pattern Marker for Ext Arm" to On.
- **Arming Edge** Choose rising or falling. This will select which edge types from the Arm Channel will be used to arm a measurement on the Measurement Channel.
- **Arm Voltage** This is the voltage threshold used to Arm the chosen measurement. This value is derived from PULSEFIND when "Threshold Voltage" is in AUTO. If "Threshold Voltage" is in USER VOLTS, you can enter a fixed value to be used. In USER VOLTS, PULSEFIND will have no effect on the threshold voltages.
- **Use Pattern Marker for Ext Arm** Set to On to enable the pattern marker and Off for external arming.

WC3000 StripChart Clear.vi

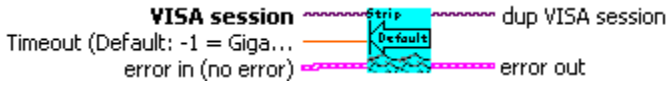
This Driver will send the SIA-3000 GPIB command to clear the active tool (Strip Chart) of any measurements or plots.

Connector Pane

WC3000 StripChart Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Histogram tool.

Connector Pane



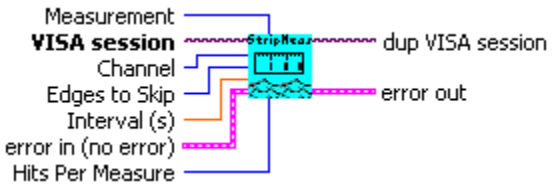
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 StripChart Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Strip Chart tool.

Connector Pane



Controls and Indicators

Measurement Select primary measurement configuration for the unit: Period + (Rising edge to Rising edge), Period - (Falling edge to Falling edge), PW+ (Rising edge to Falling edge), PW- (Falling edge to Rising edge).

Channel Select a measurement channel.

Edges to Skip Will determine the number of edges to skip before the time measurement stops.

Hits Per Measure Determines the number of time measurements that will be made for each edge or point on the plot.

Interval (s) Enter time between measurements in seconds.

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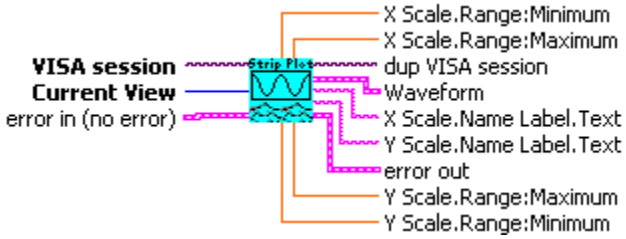
WC3000 StripChart Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the Strip Chart tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with Current View set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

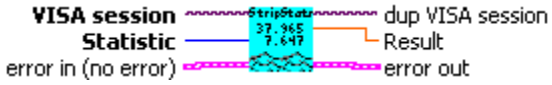
X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

WC3000 StripChart Stats.vi

This VI returns summary statistics from the SIA-3000 Strip Chart tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36.

Connector Pane



Controls and Indicators

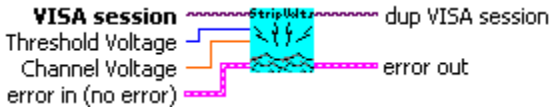
Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a tailfit has been completed.

WC3000 StripChart Voltages.vi

This Driver will send the SIA-3000 GPIB command to configure the voltage parameters for the Strip Chart Tool.

Connector Pane



Controls and Indicators

Threshold Voltage When set to Auto, sets start and stop threshold reference voltages based on the minimum and maximum pulse level found on each channel. Select "User" to manually enter the threshold voltages. A pulsefind cannot be performed with this setting.

Channel Voltage When "Threshold Voltage" is set to USER VOLTS, specify the threshold voltage to be used for the measurement channel.

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Known Pattern With Bit Clock And Marker

WC3000 BitClkAndMarker Acquire.vi

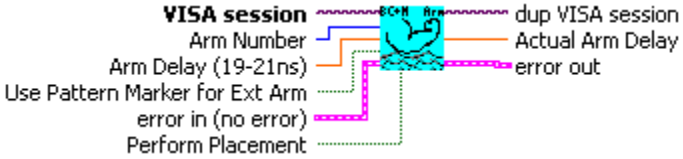
This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Known Pattern with Bit Clock and Marker tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane

WC3000 BitClkAndMarker Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the Known Pattern with Bit Clock and Marker Tool.

Connector Pane



Controls and Indicators

Arm Number Select the channel used to arm the measurement. If you are using the PM-50, select the channel to which the PM-50 is attached and set "Use Pattern Marker for Ext Arm" to On.

Arm Delay (19-21ns) The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

Use Pattern Marker for Ext Arm Set to On to enable the pattern marker and Off for external arming.

Perform Placement Set to On to enable the Perform Placement function. This should be done after the proper pattern is chosen and configured. The placement of the marker with respect to data will be optimized and the Arm Delay value will be ignored.

Actual Arm Delay Returns the Arm Delay that was actually set. If Perform Placement is On, this will reflect the optimal arm placement that was found. If Perform Placement is Off, the same value will be returned as the Arm Delay control.

WC3000 BitClkAndMarker Clear.vi

This Driver will send the SIA-3000 GPIB command to clear the active tool (Known Pattern with Bit Clock and Marker) of any measurements or plots.

Connector Pane

WC3000 BitClkAndMarker Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Known Pattern with Bit Clock and Marker tool.

Connector Pane

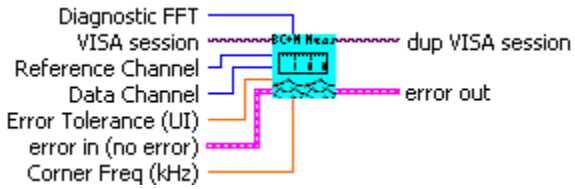
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 BitClkAndMarker Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Known Pattern with Bit Clock and Marker tool.

Connector Pane



Controls and Indicators

Diagnostic FFT No FFT - 1-Sigma or FFT plots will not be available
Fc/1667 - The FFT frequency band will be determined by dividing the bit rate by 1667. This selection will display the 1-sigma plot as well as the FFT plot.

User Defined - Input the -3db HPF frequency for "Corner Freq (kHz)". You will get a 1-sigma plot. The FFT frequency band will be from the Nyquist frequency down to the chosen frequency.

Reference Channel Select channel for clock input.

Corner Freq (kHz) The Corner Frequency is the Frequency of the Half Power Point (or -3dB Point), so the choice of this frequency will determine the low frequencies visible on the FFT.

Data Channel Select channel for data input.

Error Tolerance (UI) Measurements of an edge that exceed this value will cause an error.

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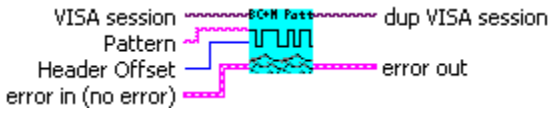
WC3000 BitClkAndMarker Pattern.vi

This Driver will send the SIA-3000 GPIB commands to configure the appropriate pattern for the Known Pattern with Bit Clock and Marker tool.

Connector Pane



Controls and Indicators

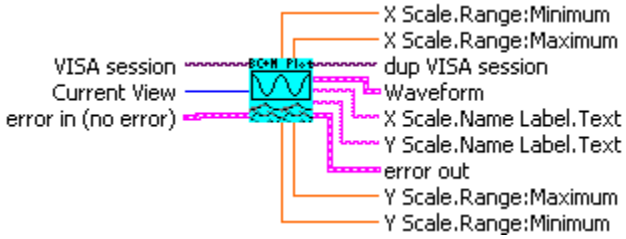
Header Offset Allows user to skip a given number of edges, after the external pattern marker, before sampling. Available only for external arming.

Pattern This is the filename of the pattern file to load on the SIA-3000. No absolute path information should be set here. (i.e. K285.ptn is acceptable, but C:\Patterns\K285.ptn is not)

WC3000 BitClkAndMarker Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the Known Pattern with Bit Clock and Marker tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with **Current View** set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

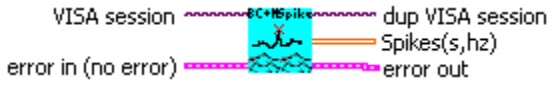
X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

WC3000 BitClkAndMarker Spikes.vi

This VI returns spike statistics from the SIA-3000 Known Pattern with Bit Clock and Marker tool. The Spikes 2-D array will contain 2 columns of data where each row represents a spike. The 2 columns contain the period and frequency at which the spike occurred. A maximum of the 10 largest spikes will be returned.

Connector Pane



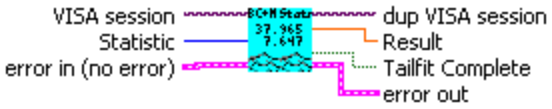
Controls and Indicators

Spikes(s,hz) The spike data is returned where each row represents a single spike. The first column is the spike's period in seconds, and the second column is the spike's frequency in hertz. A maximum of 10 spikes will be returned by this function.

WC3000 BitClkAndMarker Stats.vi

This VI returns summary statistics from the SIA-3000 Known Pattern with Bit Clock and Marker tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a tailfit will be completed.

Connector Pane



Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

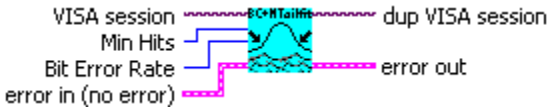
Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

Tailfit Complete This value specifies whether a tailfit has been obtained or not. If a TailFit has not been obtained, but is desired, the SIA-3000 must acquire additional passes. This means that the Acquire driver must be called again and then this driver may be called to check updated stats and TailFit status.

WC3000 BitClkAndMarker Tailfit.vi

This Driver will send the SIA-3000 GPIB commands to configure the tailfit for the Known Pattern with Bit Clock and Marker tool.

Connector Pane



Controls and Indicators

Bit Error Rate Determines the Bit Error Rate to be used when extracting total jitter from the Bathtub Curve.

Min Hits A Tailfit will not be attempted until the number of hits specified is acquired.

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Known Pattern With Marker

WC3000 KnownPtnWithMarker Acquire.vi

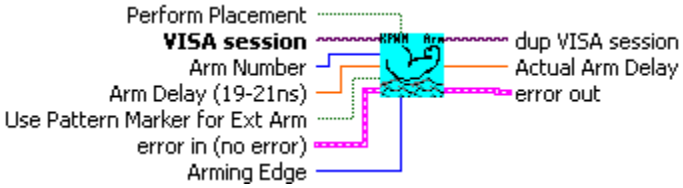
This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Known Pattern with Marker tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane

WC3000 KnownPtnWithMarker Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the Known Pattern with Marker Tool.

Connector Pane



Controls and Indicators

Arm Number Select the channel used to arm the measurement. If you are using the PM-50, select the channel to which the PM-50 is attached and set "Use Pattern Marker for Ext Arm" to On.

Arm Delay (19-21ns) The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

Use Pattern Marker for Ext Arm Set to On to enable the pattern marker and Off for external arming.

Arming Edge Choose rising or falling. This will select which edge types from the Arm Channel will be used to arm a measurement on the Measurement Channel.

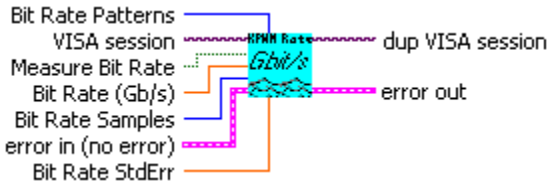
Perform Placement Set to On to enable the Perform Placement function. This should be done after the proper pattern is chosen and configured. The placement of the marker with respect to data will be optimized and the Arm Delay value will be ignored.

Actual Arm Delay Returns the Arm Delay that was actually set. If Perform Placement is On, this will reflect the optimal arm placement that was found. If Perform Placement is Off, the same value will be returned as the Arm Delay control.

WC3000 KnownPtnWithMarker Bitrate Setup.vi

This Driver will send the SIA-3000 GPIB commands to configure the bitrate settings for the Known Pattern with Marker tool.

Connector Pane



Controls and Indicators

Bit Rate Samples Determines the total number of time samples acquired for the single time measurement

Bit Rate Patterns Determines the number of patterns over which a single time measurement is made

Bit Rate StdErr Indicates when suspect measurements have been taken, usually as a result of improper pattern selection. Default is 0.5 UI. Any measurements deviating from the ideal more than th value will prevent the test from proceeding.

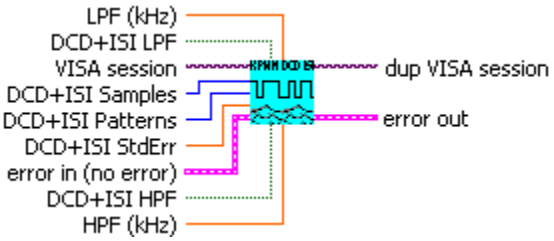
Measure Bit Rate Measures the Bit Rate based on a correctly defined pattern. The bit rate is derived by measuring the total time over a number of pattern repeats and calculating an ideal unit interval.

Bit Rate (Gb/s) The average data rate of the signal, entered in GigaBits per second. An accurate Bit Rate is crucial as it is used in the calculation of various jitter components.

WC3000 KnownPtnWithMarker DCD+ISI Setup.vi

This Driver will send the SIA-3000 GPIB command to set DCD+ISI parameters for the Known Pattern with Marker tool.

Connector Pane



Controls and Indicators

DCD+ISI Samples This is the number of time samples in each histogram for each edge of the pattern

DCD+ISI Patterns Enter the number of pattern intervals for which measurements will be taken.

DCD+ISI StdErr Indicates when suspect measurements have been taken, usually as a result of improper pattern selection. Default is 0.5 UI. Any measurements deviating from the ideal by more than this value will prevent the test from proceeding.

DCD+ISI HPF This option applies a High Pass Filter to the DCD+ISI data.

HPF (kHz) User defined High Pass Filter value, in kilohertz, for the DCD+ISI HPF option.

LPF (kHz) User defined Low Pass Filter value, in kilohertz, for the DCD + ISI LPF option.

DCD+ISI LPF This option applies a Low Pass Filter to the DCD+ISI data.

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WC3000 KnownPtnWithMarker Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Known Pattern with Marker tool.

Connector Pane

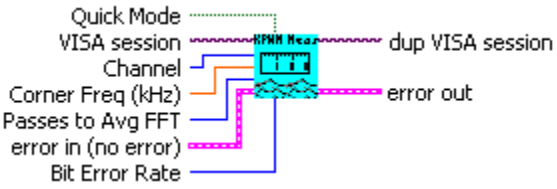
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 KnownPtnWithMarker Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Known Pattern with Marker tool.

Connector Pane



Controls and Indicators

Channel Select a measurement channel.

Corner Freq (kHz) The Corner Frequency is the Frequency of the Half Power Point (or -3dB Point), so the choice of this frequency will determine the low frequencies visible on the FFT.

Passes to Avg FFT Selects the number of passes to average for the FFT output. Averaging will generally reduce the noise flooe of the FFT but increase measurement time.

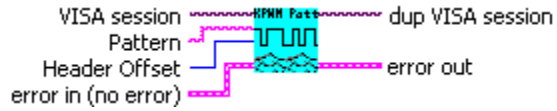
Quick Mode This option enables a sparse sampling protocol for RJ+PJ data acquisition which reduces the time required to obtain data. This method is appropriate for use only when there is insignificant higher-frequency jitter present. In the presence of high frequency jitter, the standard sampling protocol will reduce the amount of harmonic distortion which can occur.

Bit Error Rate Determines the Bit Error Rate to be used when extracting total jitter from the Bathtub Curve.

WC3000 KnownPtnWithMarker Pattern.vi

This Driver will send the SIA-3000 GPIB commands to configure the appropriate pattern for the Known Pattern with Marker tool.

Connector Pane



Controls and Indicators

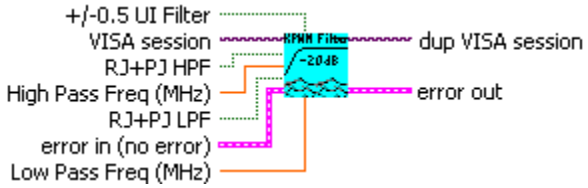
Header Offset Allows user to skip a given number of edges, after the external pattern marker, before sampling. Available only for external arming.

Pattern This is the filename of the pattern file to load on the SIA-3000. No absolute path information should be set here. (i.e. K285.ptn is acceptable, but C:\Patterns\K285.ptn is not)

WC3000 KnownPtnWithMarker RJ+PJ Filters.vi

This Driver will send the SIA-3000 GPIB command to set filter parameters for the Known Pattern with Marker tool.

Connector Pane



Controls and Indicators

RJ+PJ HPF Natural rolloff - Uses the -3dB frequency as the 'natural rolloff'. This is a 'natural rolloff' because the amount of data acquired by the tool naturally limits the lowest frequency "seen".

Brick Wall - Brick wall cuts off any frequencies below the selected value. Note that the -3dB frequency should be lower than the brick wall cutoff or the natural rolloff will have a filtering effect.

High Pass Freq (MHz) User defined High Pass Filter value, in kilohertz.

Low Pass Freq (MHz) User defined Low Pass Filter value, in kilohertz.

RJ+PJ LPF Nyquist - This is the default. The highest frequency that the tool can measure is 1/2 the clock rate (or the Nyquist).

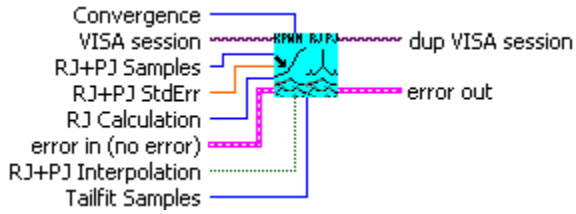
First Order - Enter a -3dB frequency. This filter does not eliminate all the jitter energy above this frequency (it is not a brick wall filter). The frequency components of spectral content above this frequency will still contribute to the RJ(RMS) as displayed from the 1-sigma plot.

+/-0.5 UI Filter Available when a pattern marker is being used and quick-mode is NOT enabled. Eliminates stray errors due to insertion of extra IDLE characters compensating for device re-clocking. Filters are automatically calculated and applied to throw away any measurements which are more than +/- 0.5 UI away from their expected positions.

WC3000 KnownPtnWithMarker RJ+PJ Options.vi

This Driver will send the SIA-3000 GPIB commands to set RJ+PJ options for the Known Pattern with Marker tool.

Connector Pane



Controls and Indicators

RJ+PJ Samples This is the number of samples in each histogram. The 1-sigma values used to create the 1-sigma vs. Span plot come from these histograms.

RJ+PJ StdErr Indicates when suspect measurements have been taken, usually as the results of improper pattern selection. Default is 0.5 UI. Any measurements deviating from the ideal by more than this value will prevent the test from proceeding.

Convergence Determines the percentage within which consecutive tail-fits must comply in order to insure reasonable frequency coverage from the corner frequency. The default setting is 10%.

RJ Calculation This selection determines how the RJ will be calculated in the Known Pattern with Marker tool. Tail-fit is the best calculation of RJ, but the other methods may provide faster test times.

RJ+PJ Interpolation This option selects the means of filling the gaps in the autocorrelation function that naturally occur in a pattern.

Tailfit Samples Tailfit Samples will determine the minimum number of samples to be in a histogram before the TailFit is performed when the RJ calculation is from "TailFits".

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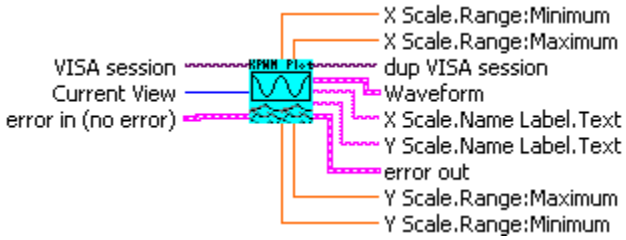
WC3000 KnownPtnWithMarker Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the Known Pattern with Marker tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with **Current View** set to the different plots.

Waveform This is the waveform data for the selected plot

X Scale.Range:Minimum This is the minimum X axis value for the plot

X Scale.Range:Maximum This is the maximum X axis value for the plot

Y Scale.Range:Minimum This is the minimum Y axis value for the plot

Y Scale.Range:Maximum This is the maximum Y axis value for the plot

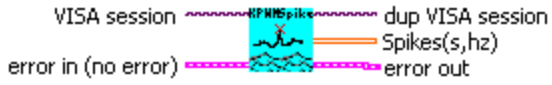
X Scale.Name Label.Text This is the label for the X axis of the plot

Y Scale.Name Label.Text This is the label for the Y axis of the plot

WC3000 KnownPtnWithMarker Spikes.vi

This VI returns spike statistics from the SIA-3000 Known Pattern with Marker tool. The Spikes 2-D array will contain 2 columns of data where each row represents a spike. The 2 columns contain the period and frequency at which the spike occurred. A maximum of the 10 largest spikes will be returned.

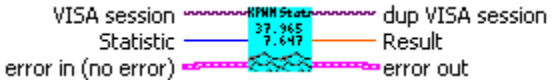
Connector Pane



WC3000 KnownPtnWithMarker Stats.vi

This VI returns summary statistics from the SIA-3000 Known Pattern with Marker tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a TailFit will be completed.

Connector Pane



Controls and Indicators

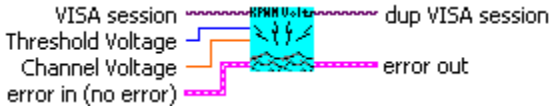
Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

WC3000 KnownPtnWithMarker Voltages.vi

This Driver will send the SIA-3000 GPIB command to configure the voltage parameters for the Known Pattern with Marker Tool.

Connector Pane



Controls and Indicators

Threshold Voltage When set to Auto, sets start and stop threshold reference voltages based on the minimum and maximum pulse level found on each channel. Select "User" to manually enter the threshold voltages. A pulsefind cannot be performed with this setting.

Channel Voltage When "Threshold Voltage" is set to USER VOLTS, specify the threshold voltage to be used for the measurement channel.

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Random Data with Bit Clock

WC3000 RandDataBitClk Acquire.vi

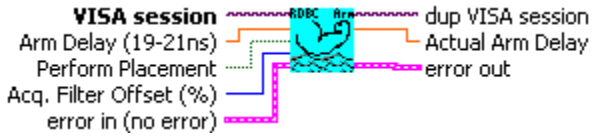
This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Random Data with Bit Clock tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane

WC3000 RandDataBitClk Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the Random Data with Bit Clock Tool.

Connector Pane



Controls and Indicators

Arm Delay (19-21ns) The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

Perform Placement Set to On to enable the Perform Placement function. This should be done after the proper pattern is chosen and configured. The placement of the marker with respect to data will be optimized and the Arm Delay value will be ignored.

Acq. Filter Offset (%) Select an offset to be made to the filter that is used to isolate histogram data to within 1 UI of the bit clock. The filter is established on the first pass by the instrument, and can normally be left at zero (default). However, in the presence of large amounts of jitter it may be necessary to tweak this value slightly. The offset is entered as a percentage of UI, and a value in the range of +/-100 is valid.

Actual Arm Delay Returns the Arm Delay that was actually set. If Perform Placement is On, this will reflect the optimal arm placement that was found. If Perform Placement is Off, the same value will be returned as the Arm Delay control.

WC3000 RandDataBitClk Clear.vi

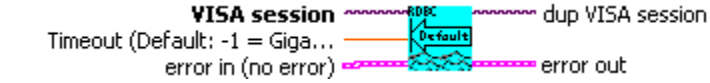
This Driver will send the SIA-3000 GPIB command to clear the active tool (Random Data with Bit Clock) of any measurements or plots.

Connector Pane

WC3000 RandDataBitClk Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Random Data with Bit Clock tool.

Connector Pane



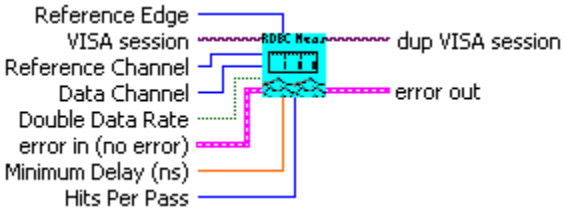
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 RandDataBitClk Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Random Data with Bit Clock tool.

Connector Pane



Controls and Indicators

Reference Edge Select the rising or falling Bit Clock edge which will be used to trigger the readings.

Reference Channel Select channel for clock input.

Hits Per Pass Number of time measurements included in a Histogram.

Data Channel Select channel for data input.

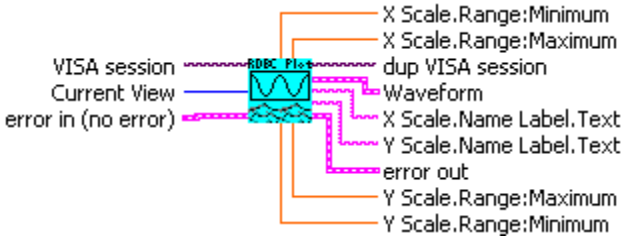
Double Data Rate Double Data Rate should be turned on when a DDR clock is being used. DDR uses BOTH edges (rising and falling) of the clock.

Minimum Delay (ns) Sets the time delay between the reference clock edge and data edge allowing different data edges to be measured. This value corresponds to the trigger delay on an oscilloscope.

WC3000 RandDataBitClk Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the Random Data with Bit Clock tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



(cont'd)

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Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with **Current View** set to the different plots

Waveform This is the waveform data for the selected plot

X Scale.Range:Minimum This is the minimum X axis value for the plot

X Scale.Range:Maximum This is the maximum X axis value for the plot

Y Scale.Range:Minimum This is the minimum Y axis value for the plot

Y Scale.Range:Maximum This is the maximum Y axis value for the plot

X Scale.Name Label.Text This is the label for the X axis of the plot

Y Scale.Name Label.Text This is the label for the Y axis of the plot

WC3000 RandomData Spikes.vi

This VI returns spike statistics from the SIA-3000 Random Data tool. The Spikes 2-D array will contain 2 columns of data where each row represents a spike. The 2 columns contain the period and frequency at which the spike occurred. A maximum of the 10 largest spikes will be returned.

Connector Pane

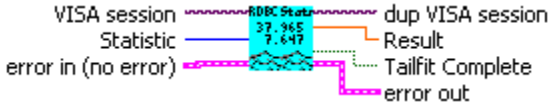
Controls and Indicators

Spikes(s,hz) The spike data is returned where each row represents a single spike. The first column is the spike's period in seconds, and the second column is the spike's frequency in hertz. A maximum of 10 spikes will be returned by this function.

WC3000 RandDataBitClk Stats.vi

This VI returns summary statistics from the SIA-3000 Random Data with Bit Clock tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a TailFit will be completed.

Connector Pane



Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

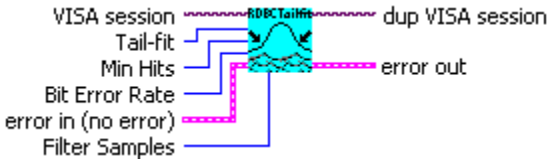
Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

Tailfit Complete This value specifies whether a TailFit has been obtained or not. If a TailFit has not been obtained, but is desired, the SIA-3000 must acquire additional passes. This means that the Acquire driver must be called again and then this driver may be called to check updated stats and TailFit status.

WC3000 RandDataBitClk Tailfit.vi

This Driver will send the SIA-3000 GPIB commands to configure the tailfit for the Random Data with Bit Clock tool.

Connector Pane



Controls and Indicators

Bit Error Rate Determines the Bit Error Rate to be used when extracting total jitter from the Bathtub Curve.

Tail-fit When Tail-fit is enabled, Random and Deterministic Jitter can be separated in order to calculate Total Jitter.

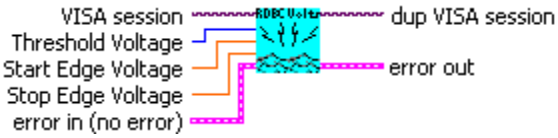
Min Hits A Tailfit will not be attempted until the number of hits specified is acquired.

Filter Samples Specify the number of Filter Samples

WC3000 RandDataBitClk Voltages.vi

This Driver will send the SIA-3000 GPIB command to configure the voltage parameters for the Random Data with Bit Clock Tool.

Connector Pane



Controls and Indicators

Threshold Voltage When set to Auto, sets start and stop threshold reference voltages based on the minimum and maximum pulse level found on each channel. Select "User" to manually enter the threshold voltages. A pulsefind cannot be performed with this setting.

Start Edge Voltage Specifies the threshold voltage for the starting edge when Threshold Voltage is set to USER.

Stop Edge Voltage Specifies the threshold voltage for the stopping edge when Threshold Voltage is set to USER.

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Random Data With No Marker

WC3000 RandomData Acquire.vi

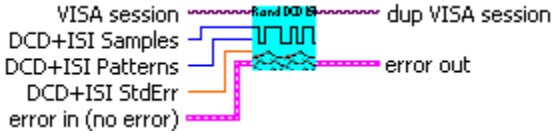
This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Random Data tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane

WC3000 RandomData DCD+ISI Setup.vi

This Driver will send the SIA-3000 GPIB command to set DCD+ISI parameters for the Random Data tool.

Connector Pane



Controls and Indicators

DCD+ISI Samples This is the number of time samples in each histogram for each edge of the pattern

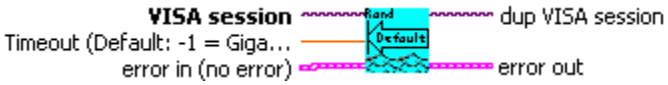
DCD+ISI Patterns Enter the number of pattern intervals for which measurements will be taken.

DCD+ISI StdErr Indicates when suspect measurements have been taken, usually as a result of improper pattern selection. Default is 0.5 UI. Any measurements deviating from the ideal by more than this value will prevent the test from proceeding.

WC3000 RandomData Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Random Data tool.

Connector Pane



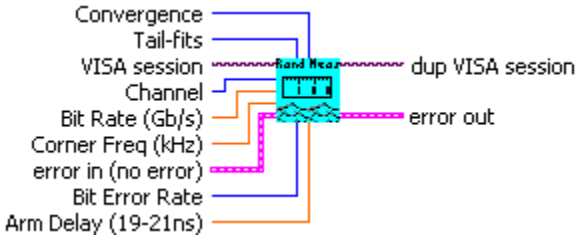
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 RandomData Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Random Data tool.

Connector Pane



Controls and Indicators

Tail-fits Determines the number of pattern spans to be measured in order to calculate random jitter. The default mode will automatically determine the number of tail-fits that are necessary to insure no frequency bias exists.

Channel Select a measurement channel

Bit Rate (Gb/s) The average data rate of the signal, entered in GigaBits per second. An accurate Bit Rate is crucial as it is used in the calculation of various jitter components

Corner Freq (kHz) The Corner Frequency is the Frequency of the Half Power Point (or -3dB Point), so the choice of this frequency will determine the low frequencies visible on the FFT

Convergence Determines the percentage within which consecutive tail-fits must comply in order to insure reasonable frequency coverage from the corner frequency. The default setting is 10%

Arm Delay (19-21ns) The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

Bit Error Rate Determines the Bit Error Rate to be used when extracting total jitter from the Bathtub Curve.

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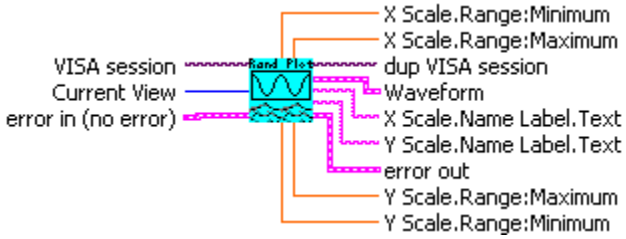
WC3000 RandomData Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the Random Data tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with **Current View** set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

WC3000 RandomData Stats.vi

This VI returns summary statistics from the SIA-3000 Random Data tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a TailFit will be completed.

Connector Pane

Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

WC3000 RandomData Voltages.vi

This Driver will send the SIA-3000 GPIB command to configure the voltage parameters for the Random Data Tool.

Connector Pane

Controls and Indicators

Threshold Voltage When set to Auto, sets start and stop threshold reference voltages based on the minimum and maximum pulse level found on each channel. Select "User" to manually enter the threshold voltages. A pulsefind cannot be performed with this setting.

Channel Voltage When "Threshold Voltage" is set to USER VOLTS, specify the threshold voltage to be used for the measurement channel.

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Fibre Channel

WC3000 FibreChannel Acquire.vi

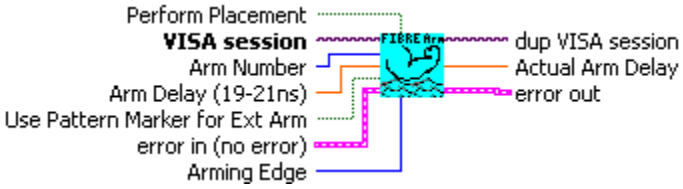
This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Fibre Channel Compliance tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane

WC3000 FibreChannel Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the Fibre Channel Compliance Tool.

Connector Pane



Controls and Indicators

I32 **Arm Number** Select the channel used to arm the measurement. If you are using the PM-50, select the channel where the PM-50 is attached and set "Use Pattern Marker for Ext Arm" to On.

DBL **Arm Delay (19-21ns)** The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

TF **Use Pattern Marker for Ext Arm** Set to On to enable the pattern marker and Off for external arming.

U16 **Arming Edge** Choose rising or falling. This will select which edge types from the Arm Channel will be used to arm a measurement on the Measurement Channel.

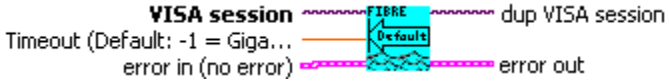
TF **Perform Placement** Set to On to enable the Perform Placement function. This should be done after the proper pattern is chosen and configured. The placement of the marker with respect to data will be optimized and the Arm Delay value will be ignored.

DBL **Actual Arm Delay** Returns the Arm Delay that was actually set. If Perform Placement is On, this will reflect the optimal arm placement that was found. If Perform Placement is Off, the same value will be returned as the Arm Delay control.

WC3000 FibreChannel Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Fibre Channel Compliance tool.

Connector Pane



Controls and Indicators

DBL **Timeout (Default: -1 = GigaView Default Timeout)** Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 FibreChannel Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Fibre Channel Compliance tool.

Connector Pane

Controls and Indicators

Channel Select a measurement channel.

WC3000 FibreChannel Pattern.vi

This Driver will send the SIA-3000 GPIB commands to configure the appropriate pattern for the Fibre Channel Compliance tool.

Connector Pane

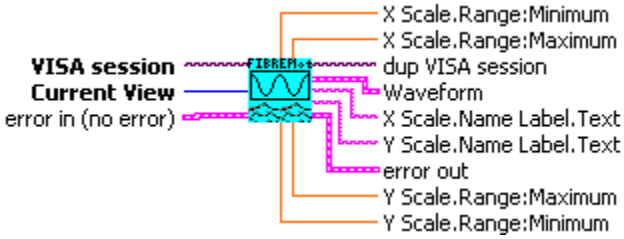
Controls and Indicators

Pattern This is the filename of the pattern file to load on the SIA-3000. No absolute path information should be set here. (i.e. K285.ptn is acceptable, but C:\Patterns\K285.ptn is not)

WC3000 FibreChannel Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the Fibre Channel Compliance tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with Current View set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

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WC3000 FibreChannel Spikes.vi

This VI returns spike statistics from the SIA-3000 Fibre Channel Compliance tool. The Spikes 2-D array will contain 2 columns of data where each row represents a spike. The 2 columns contain the period and frequency at which the spike occurred. A maximum of the 10 largest spikes will be returned.

Connector Pane

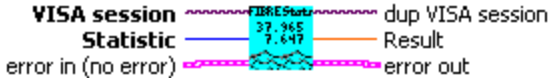
Controls and Indicators

Spikes(s,hz) The spike data is returned where each row represents a single spike. The first column is the spike's period in seconds, and the second column is the spike's frequency in hertz. A maximum of 10 spikes will be returned by this function.

WC3000 FibreChannel Stats.vi

This VI returns summary statistics from the SIA-3000 Fibre Channel Compliance tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a TailFit will be completed.

Connector Pane



Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

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InfiniBand

WC3000 Infiniband Acquire.vi

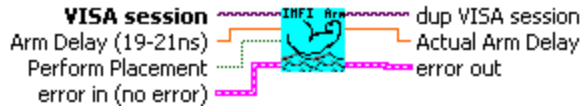
This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Infiniband Compliance tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane

WC3000 Infiniband Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the Infiniband Compliance Tool.

Connector Pane



Controls and Indicators

Arm Delay (19-21ns) The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

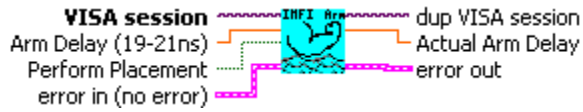
Perform Placement Set to On to enable the Perform Placement function. This should be done after the proper pattern is chosen and configured. The placement of the marker with respect to data will be optimized and the Arm Delay value will be ignored.

Actual Arm Delay Returns the Arm Delay that was actually set. If Perform Placement is On, this will reflect the optimal arm placement that was found. If Perform Placement is Off, the same value will be returned as the Arm Delay control.

WC3000 Infiniband Clear.vi

This Driver will send the SIA-3000 GPIB command to clear the active tool (Infiniband Compliance) of any measurements or plots.

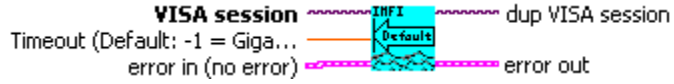
Connector Pane



WC3000 Infiniband Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Infiniband Compliance tool.

Connector Pane



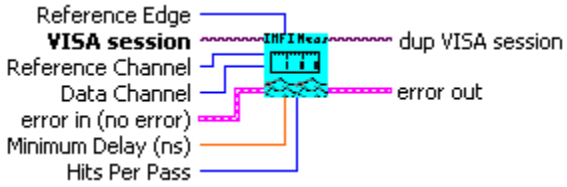
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 Infiniband Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Infiniband Compliance tool.

Connector Pane



Controls and Indicators

Reference Channel Select channel for clock input.

Data Channel Select channel for data input.

Reference Edge Select the rising or falling Bit Clock edge which will be used to trigger the reading

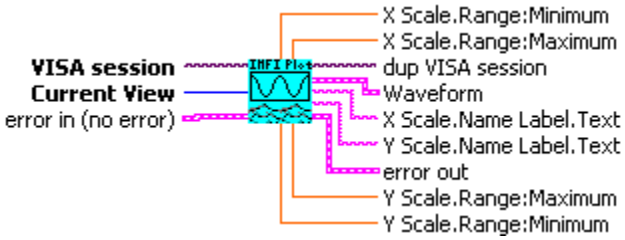
Minimum Delay (ns) Sets the time delay between the reference clock edge and data edge allowir different data edges to be measured. This value corresponds to the trigger delay on an oscilloscope

Hits Per Pass Number of time measurements included in a Histogram.

WC3000 Infiniband Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the Infiniband Compliance tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with Current View set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

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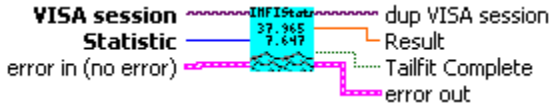
WC3000 Infiniband Stats.vi

This VI returns summary statistics from the SIA-3000 Infiniband Compliance tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a tailfit will be completed.

Connector Pane



Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

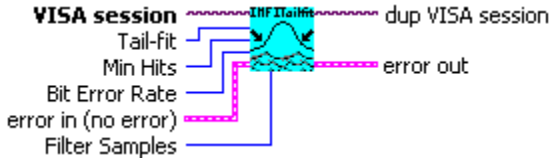
Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

Tailfit Complete This value specifies whether a TailFit has been obtained or not. If a TailFit has not been obtained, but is desired, the SIA-3000 must acquire additional passes. This means that the Acquire driver must be called again and then this driver may be called to check updated stats and TailFit status.

WC3000 Infiniband Tailfit.vi

This Driver will send the SIA-3000 GPIB commands to configure the TailFit for the Infiniband Compliance tool.

Connector Pane



Controls and Indicators

Tail-fit When Tail-fit is enabled, Random and Deterministic Jitter can be separated in order to calculate Total Jitter.

Min Hits A Tailfit will not be attempted until the number of hits specified is acquired.

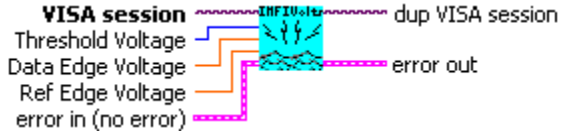
Bit Error Rate Determines the Bit Error Rate to be used when extracting total jitter from the Bathtub Curve.

Filter Samples Specify the number of Filter Samples

WC3000 Infiniband Voltages.vi

This Driver will send the SIA-3000 GPIB command to configure the voltage parameters for the Infiniband Compliance Tool.

Connector Pane



Controls and Indicators

Threshold Voltage When set to Auto, sets start and stop threshold reference voltages based on the minimum and maximum pulse level found on each channel. Select "User" to manually enter the threshold voltages. A pulsefind cannot be performed with this setting.

Data Edge Voltage Specifies the threshold voltage for the Data (start) edge when Threshold Voltage is set to USER.

Ref Edge Voltage Specifies the threshold voltage for the Reference (Stop) edge when Threshold Voltage is set to USER.

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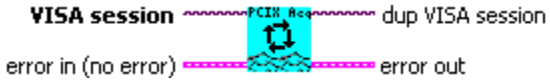
PCI Express

WC3000 PCIExpress Acquire.vi

This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the PCI Express Compliance Tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

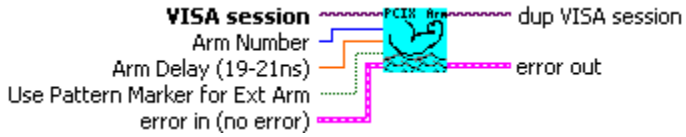
Connector Pane



WC3000 PCIExpress Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the PCI Express Compliance Tool.

Connector Pane



Controls and Indicators

Arm Number Select the channel used to arm the measurement. If you are using the PM-50, select the channel where the PM-50 is attached and set "Use Pattern Marker for Ext Arm" to On.

Arm Delay (19-21ns) The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

Use Pattern Marker for Ext Arm Set to On to enable the pattern marker and Off for external arming.

WC3000 PCIExpress Clear.vi

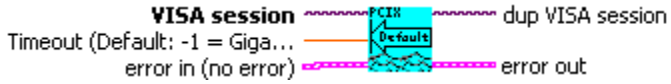
This Driver will send the SIA-3000 GPIB command to clear the active tool (PCI Express Compliance) of any measurements or plots.

Connector Pane

WC3000 PCIExpress Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the PCI Express Compliance tool.

Connector Pane



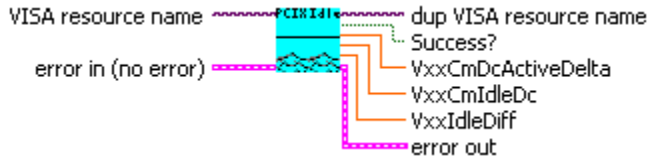
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 PCIExpress Idle.vi

This driver will acquire and set the electrical idle values from the SIA-3000 PCI Express Compliance tool. It is important to call this driver after selecting a channel and before running a pass to internally configure the SIA-3000 for running the PCI Express tool. This driver will also return a flag indicating success and the three electrical idle values.

Connector Pane



Controls and Indicators

VxxCmDcActiveDelta The Common Mode DC active-idle-delta measurement.

VxxCmIdleDc The Common Mode idle-dc measurement.

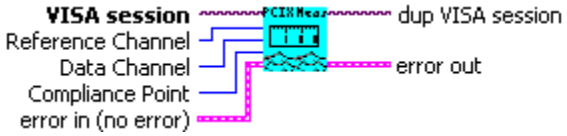
VxxIdleDiff The Common Mode idle-diffp measurement.

Success? Indicates that the Electrical Idle Value Acquisition was successful.

WC3000 PCIExpress Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the PCI Express Compliance tool.

Connector Pane



Controls and Indicators

Reference Channel Select channel for clock input.

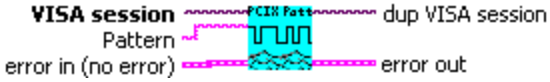
Data Channel Select channel for data input.

Compliance Point Select the Compliance Point based on the PCI Express 1.0a standard.

WC3000 PCIExpress Pattern.vi

This Driver will send the SIA-3000 GPIB commands to configure the appropriate pattern for the PCI Express Compliance tool.

Connector Pane



Controls and Indicators

Pattern This is the filename of the pattern file to load on the SIA-3000. No absolute path information should be set here. (i.e. K285.ptn is acceptable, but C:\Patterns\K285.ptn is not)

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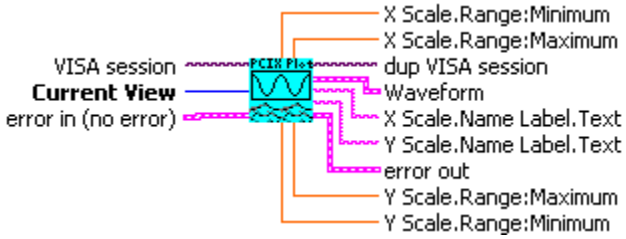
WC3000 PCIExpress Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the PCI Express Compliance tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with Current View set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

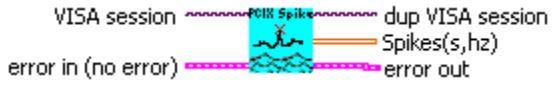
X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

WC3000 PCIExpress Spikes.vi

This VI returns spike statistics from the SIA-3000 PCI Express Compliance tool. The Spikes 2-D array will contain 2 columns of data where each row represents a spike. The 2 columns contain the period and frequency at which the spike occurred. A maximum of the 10 largest spikes will be returned.

Connector Pane



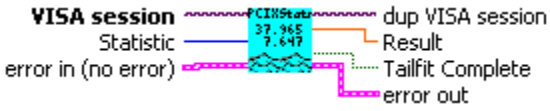
Controls and Indicators

Spikes(s,hz) The spike data is returned where each row represents a single spike. The first column is the spike's period in seconds, and the second column is the spike's frequency in hertz. A maximum of 10 spikes will be returned by this function.

WC3000 PCIExpress Stats.vi

This VI returns summary statistics from the SIA-3000 PCI Express Compliance tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a tailfit will be completed.

Connector Pane



Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

Tailfit Complete This value specifies whether a TailFit has been obtained or not. If a TailFit has not been obtained, but is desired, the SIA-3000 must acquire additional passes. This means that the Acquire driver must be called again and then this driver may be called to check updated stats and TailFit status.

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PCI Express 1.1 Clock Analysis

WC3000 PCIExpressClk Acquire.vi

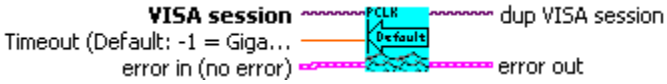
This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the PCI Express Clock 1.1 tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane

WC3000 PCIExpressClk Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the PCI Express Clock 1.1 tool.

Connector Pane



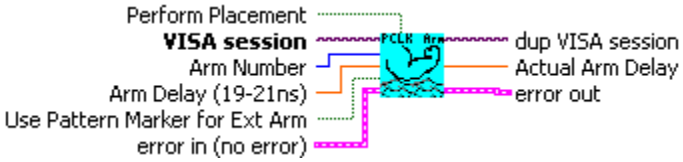
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 PCIExpressClk Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the PCI Express Clock 1.1 Tool.

Connector Pane



Controls and Indicators

Arm Number Select the channel used to arm the measurement. If you are using the PM-50, select Channel 1 and set "Use Pattern Marker for Ext Arm" to On.

Arm Delay (19-21ns) The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

Use Pattern Marker for Ext Arm Set to On to enable the pattern marker and Off for external arming.

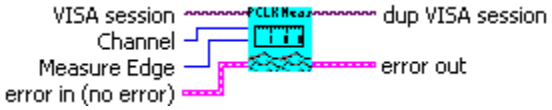
Perform Placement Set to On to enable the Perform Placement function. This should be done after the proper pattern is chosen and configured. The placement of the marker with respect to data will be optimized and the Arm Delay value will be ignored.

Actual Arm Delay Returns the Arm Delay that was actually set. If Perform Placement is On, this will reflect the optimal arm placement that was found. If Perform Placement is Off, the same value will be returned as the Arm Delay control.

WC3000 PCIExpressClk Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the PCI Express Clock 1.1 tool.

Connector Pane



Controls and Indicators

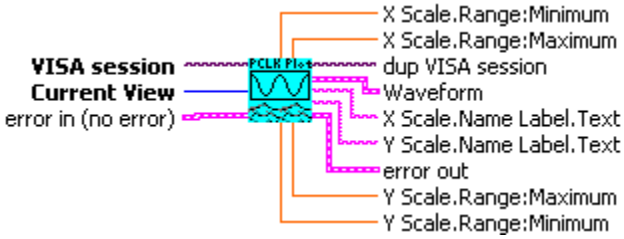
Channel Select a measurement channel.

Measure Edge Select the rising or falling Bit Clock edge that will be used to trigger the readings.

WC3000 PCIExpressClk Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the PCI Express Clock 1.1 tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with Current View set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

WC3000 PCIExpressClk Spikes.vi

This VI returns spike statistics from the SIA-3000 PCI Express Clock 1.1 Compliance tool. The Spikes 2-D array will contain 2 columns of data where each row represents a spike. The 2 columns contain the period and frequency at which the spike occurred. A maximum of the 10 largest spikes will be returned.

Connector Pane

Controls and Indicators

Spikes(s,hz) The spike data is returned where each row represents a single spike. The first column is the spike's period in seconds, and the second column is the spike's frequency in hertz. A maximum of 10 spikes will be returned by this function.

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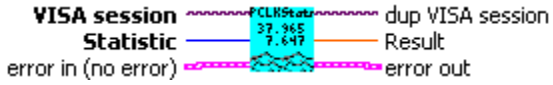
WC3000 PCIExpressClk Stats.vi

This VI returns summary statistics from the SIA-3000 PCI Express Clock 1.1 tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36.

Connector Pane



Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

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PCI Express 1.1 Hardware CR

WC3000 PCIExpressMRCR Acquire.vi

This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the PCI Express MRCR 1.1 Compliance Tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane

WC3000 PCIExpressMRCR Clear.vi

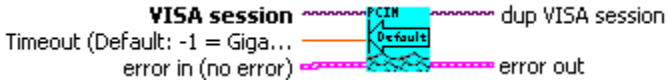
This Driver will send the SIA-3000 GPIB command to clear the active tool (PCI Express MRCR 1.1 Compliance) of any measurements or plots.

Connector Pane

WC3000 PCIExpressMRCR Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the PCI Express MRCR 1.1 Compliance tool.

Connector Pane



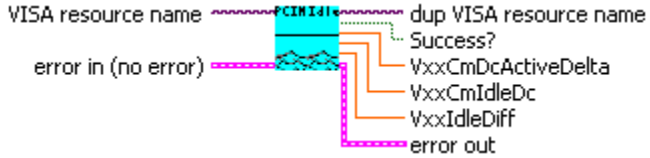
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 PCIExpressMRCR Idle.vi

This driver will acquire and set the electrical idle values from the SIA-3000 PCI Express MRCR 1.1 Compliance tool. It is important to call this driver after selecting a channel and before running a pass to internally configure the SIA-3000 for running the PCI Express tool. This driver will also return a flag indicating success and the three electrical idle values.

Connector Pane



Controls and Indicators

VxxCmDcActiveDelta The Common Mode DC active-idle-delta measurement.

VxxCmIdleDc The Common Mode idle-dc measurement.

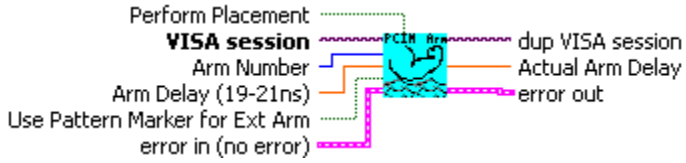
VxxIdleDiff The Common Mode idle-diffp measurement.

Success? Indicates that the Electrical Idle Value Acquisition was successful.

WC3000 PCIExpressMRCR Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the PCI Express MRCR 1.1 Compliance Tool.

Connector Pane



Controls and Indicators

Arm Number Select the channel used to arm the measurement. If you are using the PM-50, select the channel where the PM-50 is attached and set "Use Pattern Marker for Ext Arm" to On.

Arm Delay (19-21ns) The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

Use Pattern Marker for Ext Arm Set to On to enable the pattern marker and Off for external arming.

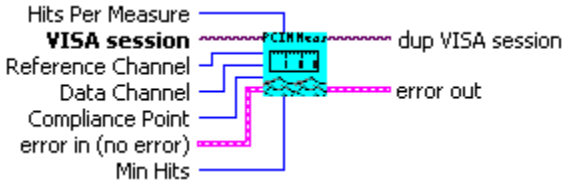
Perform Placement Set to On to enable the Perform Placement function. This should be done after the proper pattern is chosen and configured. The placement of the marker with respect to data will be optimized and the Arm Delay value will be ignored.

Actual Arm Delay Returns the Arm Delay that was actually set. If Perform Placement is On, this will reflect the optimal arm placement that was found. If Perform Placement is Off, the same value will be returned as the Arm Delay control.

WC3000 PCIExpressMRCR Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the PCI Express MRCR 1.1 Compliance tool.

Connector Pane



Controls and Indicators

Reference Channel Select channel for clock input.

Data Channel Select channel for data input.

Compliance Point Select the Compliance Point based on the PCI Express 1.1 standard.

Min Hits A Tailfit will not be attempted until the number of hits specified is acquired.

Hits Per Measure Determines the number of time measurements that will be made for each edge or point on the plot.

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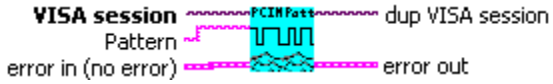
WC3000 PCIExpressMRCR Pattern.vi

This Driver will send the SIA-3000 GPIB commands to configure the appropriate pattern for the PCI Express MRCR 1.1 Compliance tool.

Connector Pane



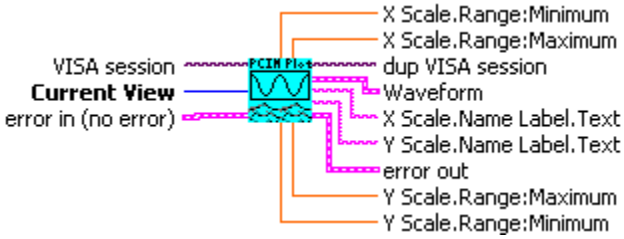
Controls and Indicators

Pattern This is the filename of the pattern file to load on the SIA-3000. No absolute path information should be set here. (i.e. K285.ptn is acceptable, but C:\Patterns\K285.ptn is not)

WC3000 PCIExpressMRCR Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the PCI Express MRCR 1.1 Compliance tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with Current View set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

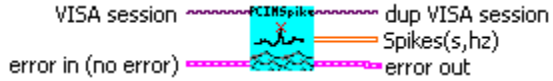
X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

WC3000 PCIExpressMRCR Spikes.vi

This VI returns spike statistics from the SIA-3000 PCI Express MRCR 1.1 Compliance tool. The Spikes 2-D array will contain 2 columns of data where each row represents a spike. The 2 columns contain the period and frequency at which the spike occurred. A maximum of the 10 largest spikes will be returned.

Connector Pane



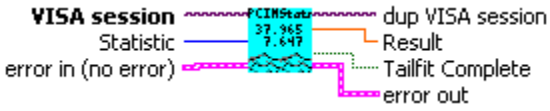
Controls and Indicators

Spikes(s,hz) The spike data is returned where each row represents a single spike. The first column is the spike's period in seconds, and the second column is the spike's frequency in hertz. A maximum of 10 spikes will be returned by this function.

WC3000 PCIExpressMRCR Stats.vi

This VI returns summary statistics from the SIA-3000 PCI Express MRCR 1.1 Compliance tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a TailFit will be completed.

Connector Pane



Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

Tailfit Complete This value specifies whether a TailFit has been obtained or not. If a TailFit has not been obtained, but is desired, the SIA-3000 must acquire additional passes. This means that the Acquire driver must be called again and then this driver may be called to check updated stats and TailFit status.

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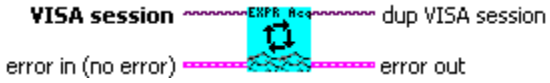
PCI Express 1.1 Software CR

WC3000 PCIExpressKPWM Acquire.vi

This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the PCI Express KWPM 1.1 Compliance Tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

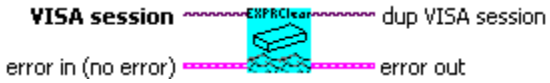
Connector Pane



WC3000 PCIExpressKPWM Clear.vi

This Driver will send the SIA-3000 GPIB command to clear the active tool (PCI Express KPWM 1.1 Compliance) of any measurements or plots.

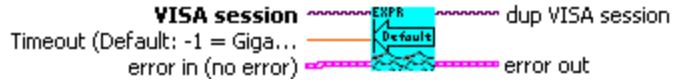
Connector Pane



WC3000 PCIExpressKPWM Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the PCI Express KPWM 1.1 Compliance tool.

Connector Pane



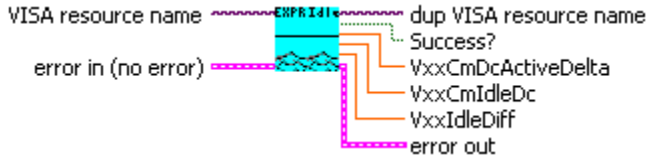
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 PCIExpressKPWM Idle.vi

This driver will acquire and set the electrical idle values from the SIA-3000 PCI Express KPWM 1.1 Compliance tool. It is important to call this driver after selecting a channel and before running a pass to internally configure the SIA-3000 for running the PCI Express tool. This driver will also return a flag indicating success and the three electrical idle values.

Connector Pane



Controls and Indicators

VxxCmDcActiveDelta The Common Mode DC active-idle-delta measurement.

VxxCmIdleDc The Common Mode idle-dc measurement.

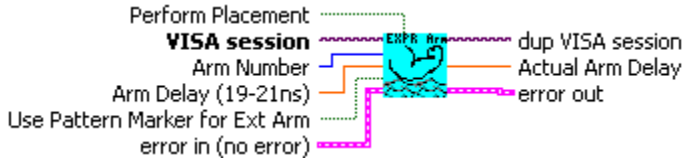
VxxIdleDiff The Common Mode idle-diffp measurement.

Success? Indicates that the Electrical Idle Value Acquisition was successful.

WC3000 PCIExpressKPWM Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the PCI Express KPWM 1.1 Compliance Tool.

Connector Pane



Controls and Indicators

Arm Number Select the channel used to arm the measurement. If you are using the PM-50, select the channel where the PM-50 is attached and set "Use Pattern Marker for Ext Arm" to On.

Arm Delay (19-21ns) The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

Use Pattern Marker for Ext Arm Set to On to enable the pattern marker and Off for external arming.

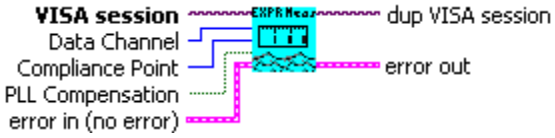
Perform Placement Set to On to enable the Perform Placement function. This should be done after the proper pattern is chosen and configured. The placement of the marker with respect to data will be optimized and the Arm Delay value will be ignored.

Actual Arm Delay Returns the Arm Delay that was actually set. If Perform Placement is On, this will reflect the optimal arm placement that was found. If Perform Placement is Off, the same value will be returned as the Arm Delay control.

WC3000 PCIExpressKPWM Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the PCI Express KPWM 1.1 Compliance tool.

Connector Pane



Controls and Indicators

Data Channel Select channel for data input.

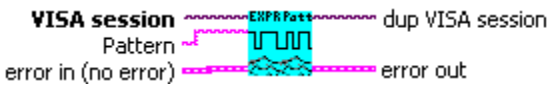
Compliance Point Select the Compliance Point based on the PCI Express 1.1 standard.

PLL Compensation Periodic jitter may sometimes be inflated by low frequency energy present in the FFT. This energy is actually contributed by random jitter. Select PLL Compensation "On" to enable a compensation mechanism that applies this energy to the RJ result rather than the PJ.

WC3000 PCIExpressKPWM Pattern.vi

This Driver will send the SIA-3000 GPIB commands to configure the appropriate pattern for the PCI Express KPWM 1.1 Compliance tool.

Connector Pane



Controls and Indicators

Pattern This is the filename of the pattern file to load on the SIA-3000. No absolute path information should be set here. (i.e. K285.ptn is acceptable, but C:\Patterns\K285.ptn is not)

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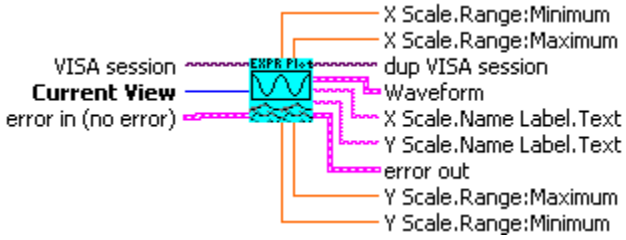
WC3000 PCIExpressKPWM Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the PCI Express KPWM 1.1 Compliance tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with Current View set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

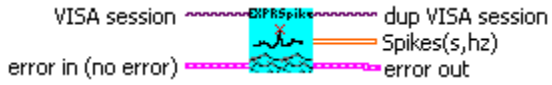
X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

WC3000 PCIExpressKPWM Spikes.vi

This VI returns spike statistics from the SIA-3000 PCI Express KPWM 1.1 Compliance tool. The Spikes 2-D array will contain 2 columns of data where each row represents a spike. The 2 columns contain the period and frequency at which the spike occurred. A maximum of the 10 largest spikes will be returned.

Connector Pane



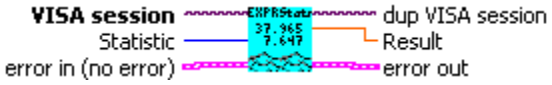
Controls and Indicators

Spikes(s,hz) The spike data is returned where each row represents a single spike. The first column is the spike's period in seconds, and the second column is the spike's frequency in hertz. A maximum of 10 spikes will be returned by this function.

WC3000 PCIExpressKPWM Stats.vi

This VI returns summary statistics from the SIA-3000 PCI Express KPWM 1.1 Compliance tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36.

Connector Pane



Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

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Serial ATA

WC3000 SATA Acquire.vi

This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Serial ATA Compliance Tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane

WC3000 SATA Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the Serial ATA Compliance Tool.

Connector Pane

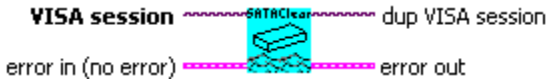
Controls and Indicators

Arm Delay (19-21ns) The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

WC3000 SATA Clear.vi

This Driver will send the SIA-3000 GPIB command to clear the active tool (Serial ATA Compliance) of any measurements or plots.

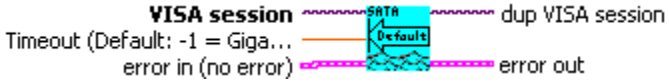
Connector Pane



WC3000 SATA Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Serial ATA Compliance tool.

Connector Pane



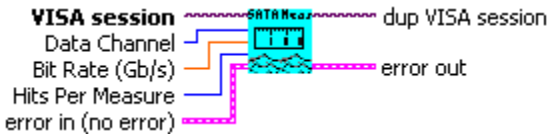
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 SATA Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Serial ATA Compliance tool.

Connector Pane



Controls and Indicators

Data Channel Select channel for data input.

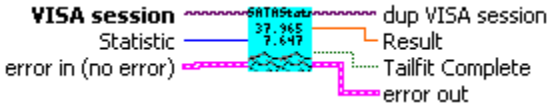
Hits Per Measure Number of time measurements included in a Histogram.

Bit Rate (Gb/s) The average data rate of the signal, entered in GigaBits per second. An accurate Bit Rate is crucial as it is used in the calculation of various jitter components.

WC3000 SATA Stats.vi

This VI returns summary statistics from the SIA-3000 Serial ATA Compliance tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a tailfit will be completed.

Connector Pane



Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

Tailfit Complete This value specifies whether a TailFit has been obtained or not. If a TailFit has not been obtained, but is desired, the SIA-3000 must acquire additional passes. This means that the Acquire driver must be called again and then this driver may be called to check updated stats and TailFit status.

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SATA II Hardware CR

WC3000 SATA_Gen1x-Gen2x Acquire.vi

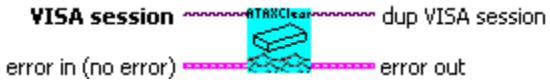
This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the SATA Gen1x-Gen2x Compliance tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane

WC3000 SATA_Gen1x-Gen2x Clear.vi

This Driver will send the SIA-3000 GPIB command to clear the active tool (SATA Gen1x-Gen2x Compliance) of any measurements or plots.

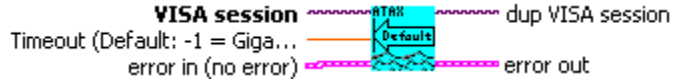
Connector Pane



WC3000 SATA_Gen1x-Gen2x Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the SATA Gen1x-Gen2x Compliance tool.

Connector Pane



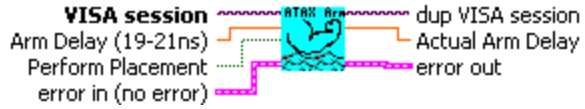
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 SATA_Gen1x-Gen2x Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the SATA Gen1x-Gen2x Compliance Tool.

Connector Pane



Controls and Indicators

Arm Delay (19-21ns) The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

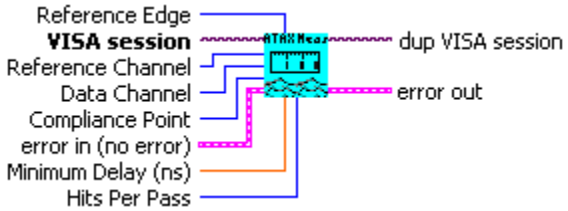
Perform Placement Set to On to enable the Perform Placement function. This should be done after the proper pattern is chosen and configured. The placement of the marker with respect to data will be optimized and the Arm Delay value will be ignored.

Actual Arm Delay Returns the Arm Delay that was actually set. If Perform Placement is On, this will reflect the optimal arm placement that was found. If Perform Placement is Off, the same value will be returned as the Arm Delay control.

WC3000 SATA_Gen1x-Gen2x Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the SATA Gen1x-Gen2x Compliance tool.

Connector Pane



Controls and Indicators

Reference Channel Select channel for clock input.

Data Channel Select channel for data input.

Reference Edge Select the rising or falling Bit Clock edge that will be used to trigger the readings.

Minimum Delay (ns) Sets the time delay between the reference clock edge and data edge allowing different data edges to be measured. This value corresponds to the trigger delay on an oscilloscope.

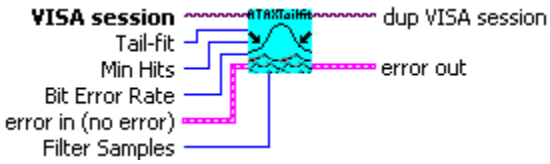
Hits Per Pass Number of time measurements included in a Histogram.

Compliance Point Select the Compliance Point that specifies the desired specification and Usage Model based upon the Serial ATA 2 standard.

WC3000 SATA_Gen1x-Gen2x Tailfit.vi

This Driver will send the SIA-3000 GPIB commands to configure the TailFit for the SATA Gen1x-Gen2x Compliance tool.

Connector Pane



Controls and Indicators

Tail-fit When Tail-fit is enabled, Random and Deterministic Jitter can be separated in order to calculate Total Jitter.

Min Hits A Tailfit will not be attempted until the number of hits specified is acquired.

Bit Error Rate Determines the Bit Error Rate to be used when extracting total jitter from the Bathtub Curve.

Filter Samples Specify the number of Filter Samples

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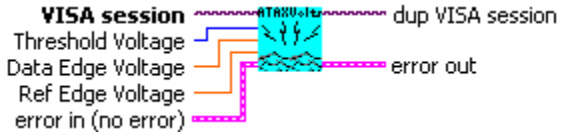
WC3000 SATA_Gen1x-Gen2x Voltages.vi

This Driver will send the SIA-3000 GPIB command to configure the voltage parameters for the SATA Gen1x-Gen2x Compliance Tool.

Connector Pane



Controls and Indicators

Threshold Voltage When set to Auto, sets start and stop threshold reference voltages based on the minimum and maximum pulse level found on each channel. Select "User" to manually enter the threshold voltages. A pulsefind cannot be performed with this setting.

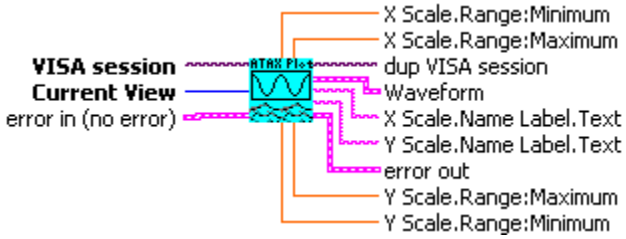
Data Edge Voltage Specifies the threshold voltage for the Data (start) edge when Threshold Voltage is set to USER.

Ref Edge Voltage Specifies the threshold voltage for the Reference (Stop) edge when Threshold Voltage is set to USER.

WC3000 SATA_Gen1x-Gen2x Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the SATA Gen1x-Gen2x Compliance tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with Current View set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X-axis value for the plot.

X Scale.Range:Maximum This is the maximum X-axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y-axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y-axis value for the plot.

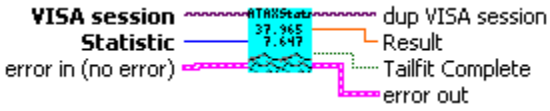
X Scale.Name Label.Text This is the label for the X-axis of the plot.

Y Scale.Name Label.Text This is the label for the Y-axis of the plot.

WC3000 SATA_Gen1x-Gen2x Stats.vi

This VI returns summary statistics from the SIA-3000 SATA Gen1x-Gen2x Compliance tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a TailFit will be completed.

Connector Pane



Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid fo the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

Tailfit Complete This value specifies whether a tailfit has been obtained or not. If a TailFit has not bee obtained, but is desired, the SIA-3000 must acquire additional passes. This means that the Acquire drive must be called again and then this driver may be called to check updated stats and TailFit status.

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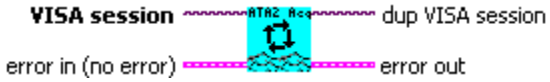
SATA II Software CR

WC3000 SATA_Gen2i-Gen2m Acquire.vi

This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the SATA Gen2i-Gen2m Compliance Tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane



WC3000 SATA_Gen2i-Gen2m Clear.vi

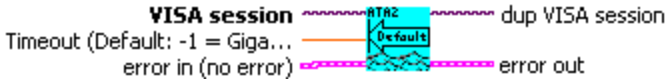
This Driver will send the SIA-3000 GPIB command to clear the active tool (SATA Gen2i-Gen2m Compliance) of any measurements or plots.

Connector Pane

WC3000 SATA_Gen2i-Gen2m Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the SATA Gen2i-Gen2m Compliance tool.

Connector Pane



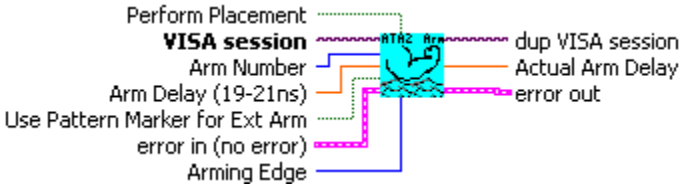
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 SATA_Gen2i-Gen2m Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the SATA Gen2i-Gen2m Compliance Tool.

Connector Pane



Controls and Indicators

Arm Number Select the channel used to arm the measurement. If you are using the PM-50, select the channel where the PM-50 is attached and set "Use Pattern Marker for Ext Arm" to On.

Arm Delay (19-21ns) The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

Use Pattern Marker for Ext Arm Set to On to enable the pattern marker and Off for external arming.

Arming Edge Choose rising or falling. This will select which edge types from the Arm Channel will be used to arm a measurement on the Measurement Channel.

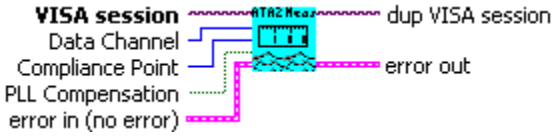
Perform Placement Set to On to enable the Perform Placement function. This should be done after the proper pattern is chosen and configured. The placement of the marker with respect to data will be optimized and the Arm Delay value will be ignored.

Actual Arm Delay Returns the Arm Delay that was actually set. If Perform Placement is On, this will reflect the optimal arm placement that was found. If Perform Placement is Off, the same value will be returned as the Arm Delay control.

WC3000 SATA_Gen2i-Gen2m Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the SATA Gen2i-Gen2m Compliance tool.

Connector Pane



Controls and Indicators

Data Channel Select channel for data input.

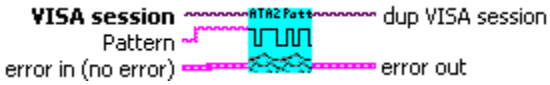
Compliance Point Select the Compliance Point that specifies the desired specification and Usage Model based upon the Serial ATA 2 standard.

PLL Compensation Periodic jitter may sometimes be inflated by low frequency energy present in the FFT. This energy is actually contributed by random jitter. Select PLL Compensation "On" to enable a compensation mechanism that applies this energy to the RJ result rather than the PJ.

WC3000 SATA_Gen2i-Gen2m Pattern.vi

This Driver will send the SIA-3000 GPIB commands to configure the appropriate pattern for the SATA Gen2i-Gen2m Compliance tool.

Connector Pane



Controls and Indicators

Pattern This is the filename of the pattern file to load on the SIA-3000. No absolute path information should be set here. (i.e. K285.ptn is acceptable, but C:\Patterns\K285.ptn is not)

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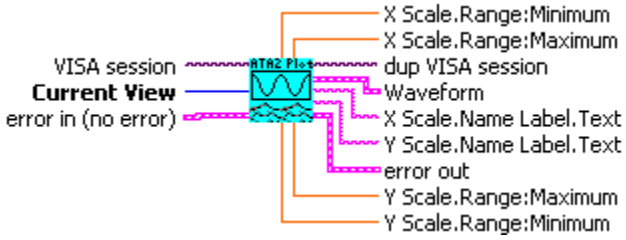
WC3000 SATA_Gen2i-Gen2m Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the SATA Gen2i-Gen2m Compliance tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with Current View set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

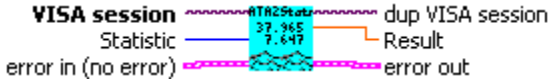
X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

WC3000 SATA_Gen2i-Gen2m Stats.vi

This VI returns summary statistics from the SIA-3000 SATA Gen2i-Gen2m Compliance tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36.

Connector Pane



Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

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DataBus

WC3000 DataBus Acquire.vi

This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the DataBus tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane

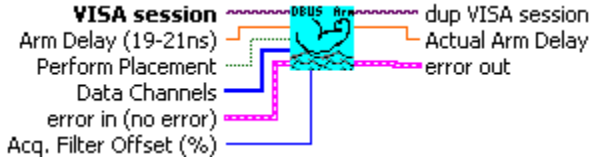
Controls and Indicators

Channels Select multiple channels on which this DataBus acquisition will occur. The reference channel should not be included since it is configured in the Measurement Configuration driver.

WC3000 DataBus Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the DataBus Tool.

Connector Pane



Controls and Indicators

Arm Delay (19-21ns) The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

Perform Placement Set to On to enable the Perform Placement function. This should be done after the proper pattern is chosen and configured. The placement of the marker with respect to data will be optimized and the Arm Delay value will be ignored.

Acq. Filter Offset (%) Select an offset to be made to the filter that is used to isolate histogram data to within 1 UI of the bit clock. The filter is established on the first pass by the instrument, and can normally be left at zero (default). However, in the presence of large amounts of jitter it may be necessary to tweak this value slightly. The offset is entered as a percentage of UI, and a value in the range of +/-100 is valid.

Data Channels This input is only needed if Perform Placement is set to TRUE. The channels specified will be taken into account by the SIA-3000 when performing the arm placement. Any channels that will be specified when acquiring a pass of the DataBUS tool should be specified here.

Actual Arm Delay Returns the Arm Delay that was actually set. If Perform Placement is On, this will reflect the optimal arm placement that was found. If Perform Placement is Off, the same value will be returned as the Arm Delay control.

WC3000 DataBus Clear.vi

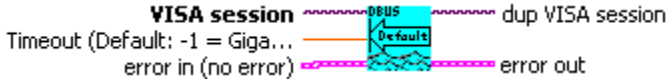
This Driver will send the SIA-3000 GPIB command to clear the active tool (DataBus) of any measurements or plots.

Connector Pane

WC3000 DataBus Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the DataBus tool.

Connector Pane



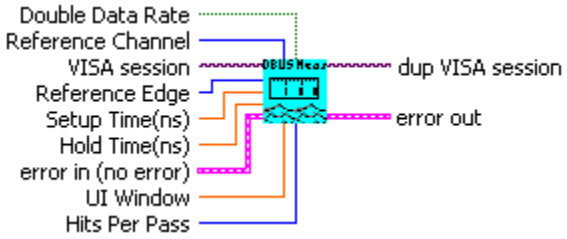
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 DataBus Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the DataBus tool.

Connector Pane



Controls and Indicators

Reference Channel Select channel for clock input.

Double Data Rate Double Data Rate should be turned on when a DDR clock is being used. DDR uses BOTH edges (rising and falling) of the clock.

Reference Edge Select the rising or falling Bit Clock edge which will be used to trigger the readings.

Hits Per Pass Number of time measurements included in a Histogram.

Setup Time(ns) Enter the desired Setup Time specification in nanoseconds.

Hold Time(ns) Enter the desired Hold Time specification in nanoseconds.

UI Window Enter the desired UI window specification. This is similar to entering an "eye opening" value.

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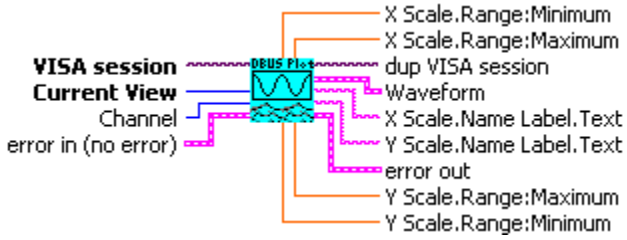
WC3000 DataBus Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the DataBus tool. The selected plot will be returned for the selected channel along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with Current View set to the different plots.

Channel This is the channel for which to return a plot.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

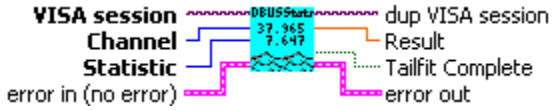
X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

WC3000 DataBus Stats.vi

This VI returns summary statistics from the SIA-3000 DataBus tool. Only a single statistic on a single channel may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a TailFit will be completed.

Connector Pane



Controls and Indicators

Channel This is the channel for which to return a statistic.

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

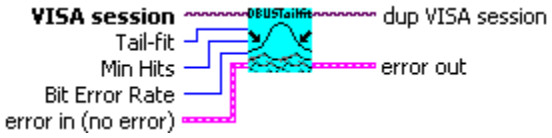
Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

TailFit Complete This value specifies whether a TailFit has been obtained or not. If a TailFit has not been obtained, but is desired, the SIA-3000 must acquire additional passes. This means that the Acquire driver must be called again and then this driver may be called to check updated stats and TailFit status.

WC3000 DataBus Tailfit.vi

This Driver will send the SIA-3000 GPIB commands to configure the TailFit for the DataBus tool.

Connector Pane



Controls and Indicators

TailFit When TailFit is enabled, Random and Deterministic Jitter can be separated in order to calculate Total Jitter.

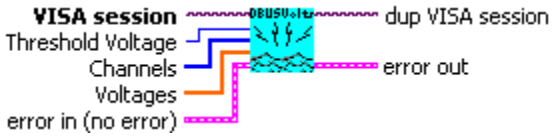
Min Hits A TailFit will not be attempted until the number of hits specified is acquired.

Bit Error Rate Determines the Bit Error Rate to be used when extracting total jitter from the Bathtub Curve.

WC3000 DataBus Voltages.vi

This Driver will send the SIA-3000 GPIB command to configure the voltage parameters for the DataBus Tool.

Connector Pane



Controls and Indicators

Threshold Voltage When set to Auto, sets start and stop threshold reference voltages based on the minimum and maximum pulse level found on each channel. Select "User" to manually enter the threshold voltages. A pulsefind cannot be performed with this setting.

Channels Select all the channels for which a voltage will be set when Threshold Voltage is set to USER.

Voltages Select the voltages corresponding to the selected channels when Threshold Voltage is set to USER.

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Channel-To-Channel Locktime

WC3000 ChToChLocktime Acquire.vi

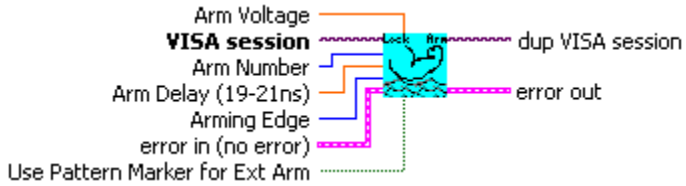
This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Channel-to-Channel Locktime tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane

WC3000 ChToChLocktime Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the Channel-to-Channel Locktime Tool.

Connector Pane



Controls and Indicators

Arm Number Select the channel used to arm the measurement. If you are using the PM-50, select the channel to which the PM-50 is attached and set "Use Pattern Marker for Ext Arm" to On.

Arm Delay (19-21ns) The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

Arming Edge Choose rising or falling. This will select which edge types from the Arm Channel will be used to arm a measurement on the Measurement Channel.

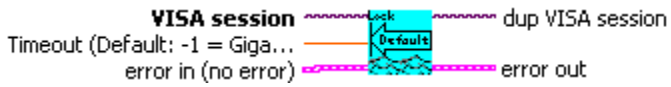
Arm Voltage This is the voltage threshold used to Arm the chosen measurement. This value is derived from PULSEFIND when "Threshold Voltage" is in AUTO. If "Threshold Voltage" is in USER VOLTS, you can enter a fixed value to be used. In USER VOLTS, PULSEFIND will have no effect on the threshold voltages.

Use Pattern Marker for Ext Arm Set to On to enable the pattern marker and Off for external arming.

WC3000 ChToChLocktime Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Channel-to-Channel Locktime tool.

Connector Pane



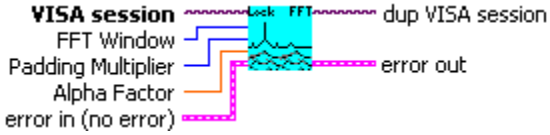
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 ChToChLocktime FFT.vi

This Driver will send the SIA-3000 GPIB command to configure FFT parameters for the Channel-to-Channel Locktime tool.

Connector Pane



Controls and Indicators

FFT Window To reduce spectral information distortion of FFTs, the time domain signal is multiplied by a window weighting function before the transform is performed. The choice of window will determine which spectral components will be isolated, or separated, from the dominant frequency(s).

Padding Multiplier Selects the amount of zero padding to be applied to the measured data prior to FFT. Padding increases the frequency resolution of the FFT. Generally, a higher padding value will increase transformation processing time.

Alpha Factor The varying of the Alpha Factor illustrates the inverse proportionality relationship between the spectral peak width and the sidelobe rejection of the the Kaiser-Bessel window. As the Alpha Factor increases, the spectral peak widens and the sidelobes shrink. As the Alpha Factor decreases, the spectral peak narrows and the sidelobes increase in amplitude.

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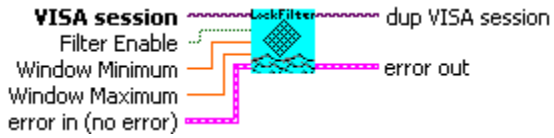
WC3000 ChToChLocktime Filters.vi

This Driver will send the SIA-3000 GPIB command to set filter parameters for the Channel-to-Channel Locktime tool.

Connector Pane



Controls and Indicators

Filter Enable Enables/disables time and range filtering.

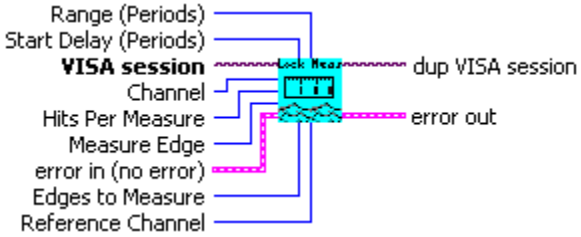
Window Minimum Enter minimum filtering time in seconds.

Window Maximum Enter maximum filtering time in seconds.

WC3000 ChToChLocktime Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Channel-to-Channel Locktime tool.

Connector Pane



Controls and Indicators

Channel Select a measurement channel.

Hits Per Measure Determines the number of time measurements that will be made for each edge or point on the plot.

Measure Edge Select a mode of measurement from channel to channel.

Start Delay (Periods) Set number of periods to delay before taking measurements relative to the Arm edge.

Range (Periods) Number of periods over which measurements are plotted. Edges to Measure determines number of periods within this range to be measured.

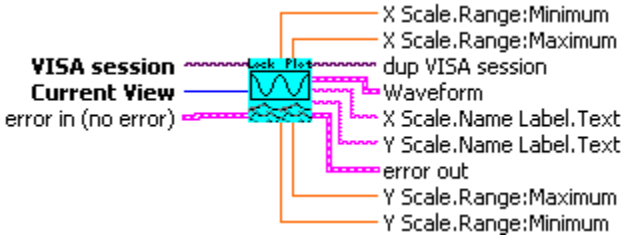
Edges to Measure Number of edges within a range to be measured. To measure every edge in a range, this must equal the Range(Periods) value.

Reference Channel Select a measurement channel.

WC3000 ChToChLocktime Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the Channel-to-Channel Locktime tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with Current View set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

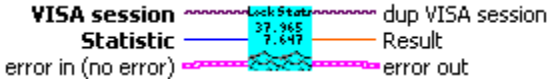
X Scale.Name Label.Text This is the label for the X axis of the plot

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

WC3000 ChToChLocktime Stats.vi

This VI returns summary statistics from the SIA-3000 Channel-to-Channel Locktime tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a TailFit will be completed.

Connector Pane



Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

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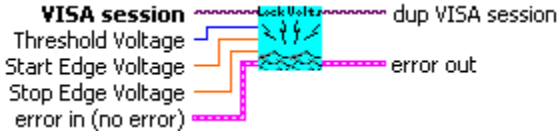
WC3000 ChToChLocktime Voltages.vi

This Driver will send the SIA-3000 GPIB command to configure the voltage parameters for the Channel-to-Channel Locktime Tool.

Connector Pane



Controls and Indicators

Threshold Voltage When set to Auto, sets start and stop threshold reference voltages based on the minimum and maximum pulse level found on each channel. Select "User" to manually enter the threshold voltages. A pulsefind cannot be performed with this setting.

Start Edge Voltage When "Threshold Voltage" is set to USER VOLTS, specify the threshold voltage to be used for the reference channel.

Stop Edge Voltage When "Threshold Voltage" is set to USER VOLTS, specify the threshold voltage to be used for the measurement channel.

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Skew

WC3000 Skew Acquire.vi

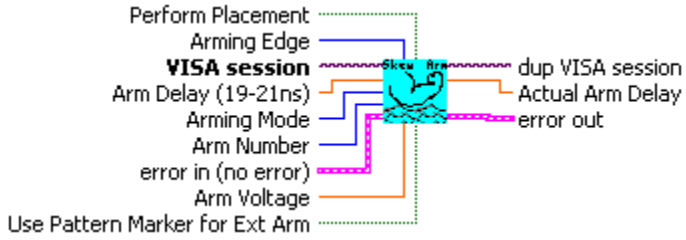
This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Skew tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass. Note that this particular driver is unique in that a pass will not be acquired unless the configured Span Time has elapsed since the last acquisition.

Connector Pane

WC3000 Skew Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the Skew Tool.

Connector Pane



Controls and Indicators

Arm Delay (19-21ns) The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.

Arming Mode Select specific arming input, automatic arming (arming from input signal) or external arming.

Arm Number Select the channel used to arm the measurement. If you are using the PM-50, select the channel to which the PM-50 is attached and set "Use Pattern Marker for Ext Arm" to On.

Arming Edge Choose rising or falling. This will select which edge types from the Arm Channel will be used to arm a measurement on the Measurement Channel.

Arm Voltage This is the voltage threshold used to Arm the chosen measurement. This value is derived from PULSEFIND when "Threshold Voltage" is in AUTO. If "Threshold Voltage" is in USER VOLTS, you can enter a fixed value to be used. In USER VOLTS, PULSEFIND will have no effect on the threshold voltages.

Use Pattern Marker for Ext Arm Set to On to enable the pattern marker and Off for external arming.

Perform Placement Set to On to enable the Perform Placement function. This should be done after the proper pattern is chosen and configured. The placement of the marker with respect to data will be optimized and the Arm Delay value will be ignored.

Actual Arm Delay Returns the Arm Delay that was actually set. If Perform Placement is On, this will reflect the optimal arm placement that was found. If Perform Placement is Off, the same value will be returned as the Arm Delay control.

WC3000 Skew Clear.vi

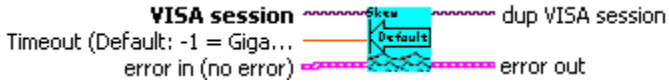
This Driver will send the SIA-3000 GPIB command to clear the active tool (Skew) of any measurements or plots.

Connector Pane

WC3000 Skew Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Skew tool.

Connector Pane



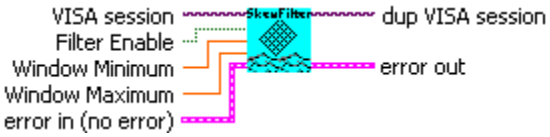
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 Skew Filters.vi

This Driver will send the SIA-3000 GPIB command to set filter parameters for the Skew tool.

Connector Pane



Controls and Indicators

Filter Enable Enables/disables time and range filtering.

Window Minimum Enter minimum filtering time in seconds.

Window Maximum Enter maximum filtering time in seconds.

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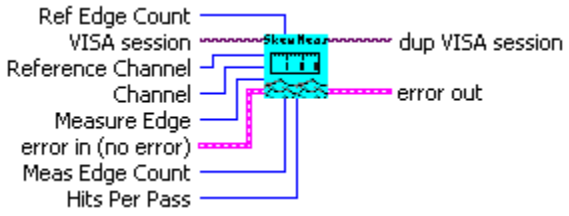
WC3000 Skew Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Skew tool.

Connector Pane



Controls and Indicators

Measure Edge Select a mode of measurement from channel to channel.

Channel Select a measurement channel.

Ref Edge Count Enter a number of edges to skip on the reference edge relative to the arm time. This control is typically only used with Arming Mode set to "External Arm".

Hits Per Pass Number of time measurements included in a Histogram.

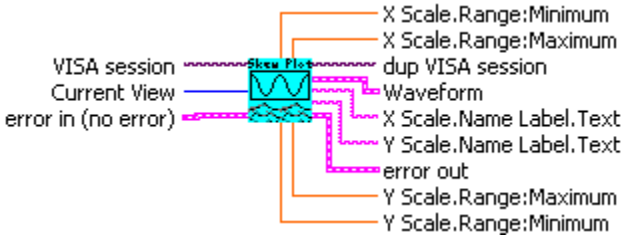
Reference Channel Select channel for clock input.

Meas Edge Count Enter a number of edges to skip on the measured edge(s) relative to the arm time. Typically, skews would be measured on edges consecutive to the Reference, so the Ref Edge count and Meas Edge count would be equal.

WC3000 Skew Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the Skew tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with **Current View** set to the different plots.

dup VISA session This is a duplicate of the VISA session input. It does not need to be wired out, but can be used to enforce data dependency.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

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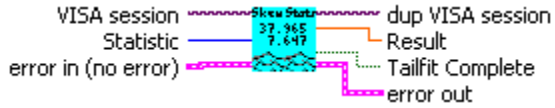
WC3000 Skew Stats.vi

This VI returns summary statistics from the SIA-3000 Skew tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a TailFit will be completed.

Connector Pane



Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

Tailfit Complete This value specifies whether a TailFit has been obtained or not. If a TailFit has not been obtained, but is desired, the SIA-3000 must acquire additional passes. This means that the Acquire driver must be called again and then this driver may be called to check updated stats and TailFit status.

WC3000 Skew Tailfit.vi

This Driver will send the SIA-3000 GPIB commands to configure the TailFit for the Skew tool.

Connector Pane

Controls and Indicators

Bit Error Rate Determines the Bit Error Rate to be used when extracting total jitter from the Bathtub Curve.

Tail-fit When Tail-fit is enabled, Random and Deterministic Jitter can be separated in order to calculate Total Jitter.

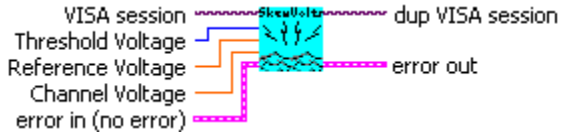
Total Jitter Spec (ns) The width used in the Bathtub View to assess the Error Probability in nanoseconds. Different specs will yield different bathtub curves.

Min Hits A Tailfit will not be attempted until the number of hits specified is acquired.

WC3000 Skew Voltages.vi

This Driver will send the SIA-3000 GPIB command to configure the voltage parameters for the Skew Tool.

Connector Pane



Controls and Indicators

Threshold Voltage When set to Auto, sets start and stop threshold reference voltages based on the minimum and maximum pulse level found on each channel. Select "User" to manually enter the threshold voltages. A pulsefind cannot be performed with this setting.

Channel Voltage When "Threshold Voltage" is set to USER VOLTS, specify the threshold voltage to be used for the measurement channel.

Reference Voltage When "Threshold Voltage" is set to USER VOLTS, specify the threshold voltage to be used for the reference channel.

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Skew Stripchart

WC3000 SkewStripChart Acquire.vi

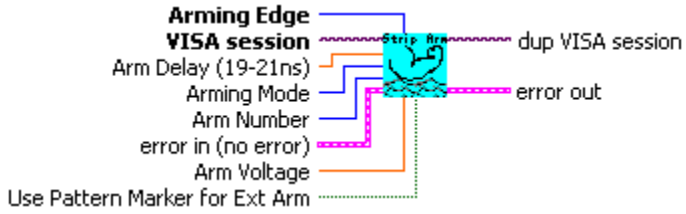
This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Skew Strip Chart tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass. Note that this particular driver is unique in that a pass will not be acquired unless the configured Span Time has elapsed since the last acquisition.

Connector Pane

WC3000 SkewStripChart Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the Skew Strip Chart Tool.

Connector Pane



Controls and Indicators

- **Arm Delay (19-21ns)** The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.
- **Arming Mode** Select specific arming input, automatic arming (arming from input signal) or external arming.
- **Arm Number** Select the channel used to arm the measurement. If you are using the PM-50, select the channel with the PM-50 installed and set "Use Pattern Marker for Ext Arm" to On.
- **Arming Edge** Choose rising or falling. This will select which edge types from the Arm Channel will be used to arm a measurement on the Measurement Channel.
- **Arm Voltage** This is the voltage threshold used to Arm the chosen measurement. This value is derived from PULSEFIND when "Threshold Voltage" is in AUTO. If "Threshold Voltage" is in USER VOLTS, you can enter a fixed value to be used. In USER VOLTS, PULSEFIND will have no effect on the threshold voltages.
- **Use Pattern Marker for Ext Arm** Set to On to enable the pattern marker and Off for external arming.

WC3000 SkewStripChart Clear.vi

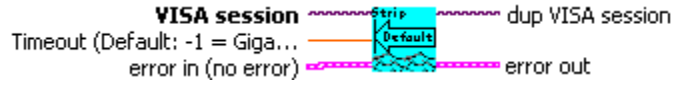
This Driver will send the SIA-3000 GPIB command to clear the active tool (Skew Strip Chart) of any measurements or plots.

Connector Pane

WC3000 SkewStripChart Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Skew Strip Chart tool.

Connector Pane



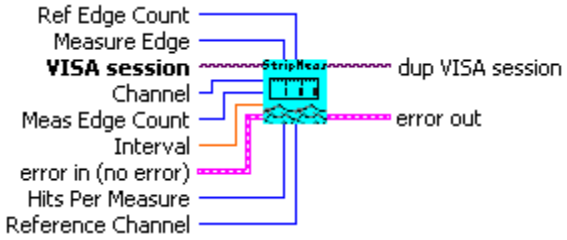
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 SkewStripChart Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Skew Strip Chart tool.

Connector Pane



Controls and Indicators

Measure Edge Select a mode of measurement from channel to channel.

Channel Select a measurement channel.

Meas Edge Count Enter a number of edges to skip on the measured edge(s) relative to the arm time. Typically, skews would be measured on edges consecutive to the Reference, so the Ref Edge count and Meas Edge count would be equal.

Hits Per Measure Determines the number of time measurements that will be made for each edge or point on the plot.

Interval Enter time between measurements in seconds.

Reference Channel Select channel for clock input.

Ref Edge Count Enter a number of edges to skip on the reference edge relative to the arm time. This is typically only used for external arming.

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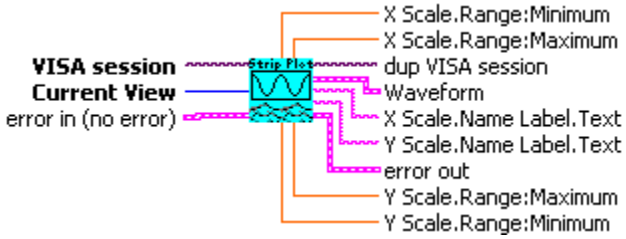
WC3000 SkewStripChart Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the Skew Strip Chart tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with Current View set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

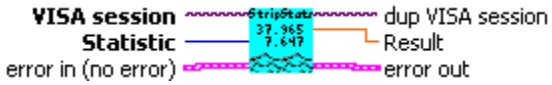
X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

WC3000 SkewStripChart Stats.vi

This VI returns summary statistics from the SIA-3000 Strip Chart tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36.

Connector Pane



Controls and Indicators

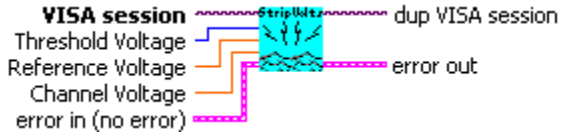
Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a TailFit has been completed.

WC3000 SkewStripChart Voltages.vi

This Driver will send the SIA-3000 GPIB command to configure the voltage parameters for the Skew Strip Chart Tool.

Connector Pane



Controls and Indicators

Threshold Voltage When set to Auto, sets start and stop threshold reference voltages based on the minimum and maximum pulse level found on each channel. Select "User" to manually enter the threshold voltages. A pulsefind cannot be performed with this setting.

Channel Voltage When "Threshold Voltage" is set to USER VOLTS, specify the threshold voltage to be used for the measurement channel.

Reference Voltage When "Threshold Voltage" is set to USER VOLTS, specify the threshold voltage to be used for the reference channel.

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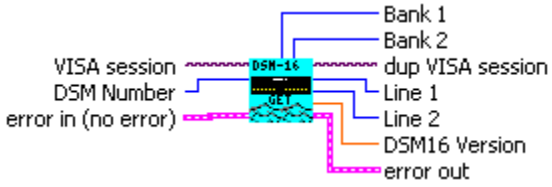
DSM-16

WC3000 Query DSM16.vi

This VI queries the specified DSM16 to determine the bank and line number currently set for each half of the device as well as the Version number of the DSM16. Bank 1 and Bank 2 will normally return 1 and 2 respectively. Line 1 and Line 2 will return 1-8 depending on which line is set.

Connector Pane



Controls and Indicators

DSM Number Specifies the DSM 16 address for multiple DSM systems. The first (default) DSM is '1'.

Bank 1 This is the first bank set for the DSM 16. This should be '1'.

Line 1 This is the line set in the first bank. Use WC3000 Set DSM16.vi to change this value.

Bank 2 This is the second bank number. This should be '2'.

Line 2 This is the line set in the second bank. Use WC3000 Set DSM16.vi to change this value.

DSM16 Version This is the revision of the DSM-16 device specified.

WC3000 Set DSM16.vi

This VI sets the specified Bank and Line on the DSM 16 at the specified address (for multiple DSM 16's). Leave DSM Number unwired and the default will suffice for systems where there is only one DSM 16 attached and the default address is 1.

Connector Pane

Controls and Indicators

Bank 1 = Left Bank, 2 = Right Bank

Line Choose a number between 1 and 8 to signify the line within the bank.

DSM Number Specifies the DSM 16 address for multiple DSM systems.

WC3000 Set DSM16 On Off.vi

This VI sets the specified DSM16's front panel switches to Enabled (On) or Disabled (Off). Default is On (Enabled).

Connector Pane

Controls and Indicators

Switch (T=On) Set to F (Off) to disable the front panel switches of the specified DSM16. Default (On) will enable them.

DSM Number Specifies the DSM 16 address for multiple DSM systems. The default is 1 for the first module.

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Folded Eye

WC3000 FoldedCye Acquire.vi

This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Folded Eye tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called to retrieve the statistics and plots from this pass.

Note that the plots will show a raw scope waveform and not a folded eye. The mask parameters will provide the same folded eye information as seen on the front panel of the SIA-3000.

Connector Pane

WC3000 FoldedEye AutoScale.vi

This Driver will send the SIA-3000 GPIB command to cause the Folded Eye tool to autoscale its acquired data and measure the bit rate of the pattern. All scaling factors are automatically adjusted internally to the tool on the instrument.

Connector Pane

WC3000 FoldedEye Clear.vi

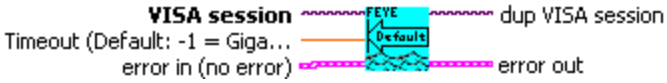
This Driver will send the SIA-3000 GPIB command to clear the active tool (Folded Eye) of any measurements or plots.

Connector Pane

WC3000 FoldedEye Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Folded Eye tool.

Connector Pane



Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 FoldedEye Mask Scale.vi

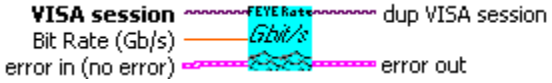
This Driver will scale the Folded Eye Mask. When scaling the Mask, it must first be set to Absolute or Relative mode. Absolute requires the eye parameters to be configured directly, while Relative will allow automatic scaling based on percentages which are applied to the waveform. This driver must be called after the absolute or relative mask configuration driver.

Connector Pane

WC3000 FoldedEye Bitrate Setup.vi

This Driver will send the SIA-3000 GPIB commands to configure the bitrate for the Folded Eye tool. This value will be overridden by the measured bitrate, should the AutoScale driver for this tool be called.

Connector Pane



Controls and Indicators

DBL **Bit Rate (Gb/s)** The average data rate of the signal, entered in GigaBits per second. An accurate Bit Rate is crucial as it is used in the folding of the eye.

WC3000 FoldedEye Channel Setup.vi

This Driver will send the SIA-3000 GPIB command to set the channel on the Folded Eye tool.

Connector Pane

Controls and Indicators

I32 **Channel** Select the channel where the input pattern is applied.

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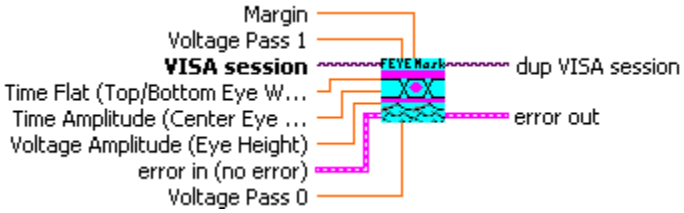
WC3000 FoldedEye Configure Mask Absolute.vi

This Driver will configure the Folded Eye Mask tool with an eye that is defined by absolute widths and heights (in seconds and volts). The center is located at the point which is the center of the visible scope plot.

Connector Pane



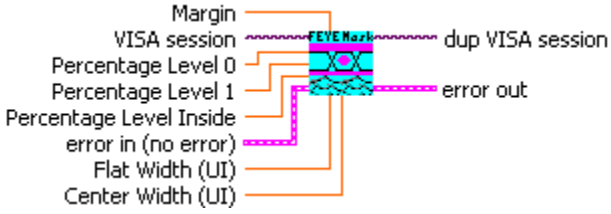
Controls and Indicators

- **Margin** The amount of margin allowed in the masked regions in terms of a ratio (i.e. 0.1 = 10%). The higher this value, the more stringent the signal integrity requirements for a given eye.
- **Time Amplitude (Center Eye Width)** The width (time) of the eye at the wide center portion
- **Time Flat (Top/Bottom Eye Width)** The width (time) of the eye at its narrow top and bottom edges.
- **Voltage Amplitude (Eye Height)** The height of the eye between the flat top and bottom edges.
- **Voltage Pass 0** The Height between the bottom of the eye and the minimum acceptable value for a logic low (0).
- **Voltage Pass 1** The Height between the top of the eye and the maximum acceptable value for a logic high (1).

WC3000 FoldedEye Configure Mask Relative.vi

This driver will configure the Folded Eye Mask relative to the eye signal being acquired. It is imperative that the scope first be configured to acquire a waveform that would constitute an eye and that this eye be centered properly. This is accomplished by viewing a data signal, triggering on its bit clock, and making sure that the autoscale driver is called after the mask drivers.

Connector Pane



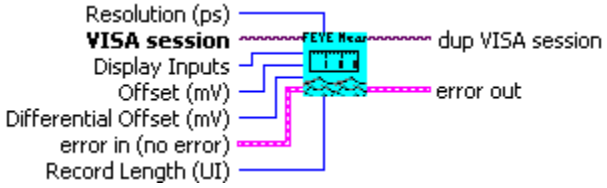
Controls and Indicators

- **Margin** The amount of margin allowed in the masked regions in terms of a ratio (i.e. 0.1 = 10%). The higher this value, the more stringent the signal integrity requirements for a given eye.
- **Percentage Level 0** The fraction of eye height (Specified as a value between 0.0 and 1.0) at which the bottom of the mask to the bottom of the eye portion of the mask will be scaled.
- **Percentage Level 1** The fraction of eye height (Specified as a value between 0.0 and 1.0) at which the top of the mask to the top of the eye portion of the mask will be scaled.
- **Percentage Level Inside** The fraction of eye height (Specified as a value between 0.0 and 1.0) at which the height of the inner eye portion of the mask will be scaled.
- **Flat Width (UI)** The fraction of eye width (Specified as a value between 0.0 and 1.0) at which the width of the inner eye portion of the mask will be scaled at top and bottom.
- **Center Width (UI)** The fraction of eye width (Specified as a value between 0.0 and 1.0) at which the width of the inner eye portion of the mask will be scaled at center.

WC3000 FoldedEye Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Folded Eye tool.

Connector Pane



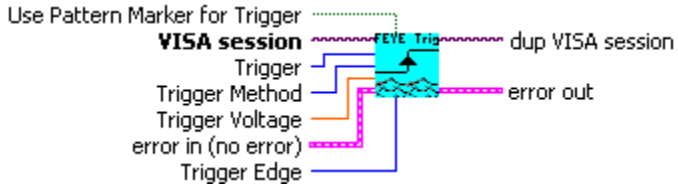
Controls and Indicators

- **Display Inputs** IN - Shows only the positive trace.
  /IN - Shows only the complimentary trace.
  IN - /IN - Shows the differential signal.
- **Offset (mV)** The voltage offset of the waveform.
- **Differential Offset (mV)** The voltage offset of the waveform when differential mode is selected.
- **Resolution (ps)** The time resolution in picoseconds.
- **Record Length (UI)** The length of the record, in terms of the unit interval of the incoming data signal.

WC3000 FoldedEye Trigger.vi

This Driver will send the SIA-3000 GPIB command to configure the trigger parameters for the Folded Eye Tool.

Connector Pane



Controls and Indicators

- **Trigger Method** Select Auto to set the trigger threshold voltage to the 50% voltage point of the Pulsefind values on the selected trigger channel. Voltage is displayed in "Trigger Voltage." Select "User" to manually enter a threshold voltage in "trigger Voltage." Limits are +/- 1.1 volts.
- **Trigger** Select trigger source.
- **Trigger Edge** Selects the rising or falling edge to trigger the instrument.
- **Trigger Voltage** Select the threshold voltage to trigger the instrument in USER mode. Limits are +/- 1.1 volts.
- **Use Pattern Marker for Trigger** Set to On to enable the pattern marker and Off for external arming. The PM50 should be set up using the PM50 Utility drivers, if this option is set to on. In most cases, "Edgecount" mode should be set, and the number of rising edges in the pattern should be set for the edge count.

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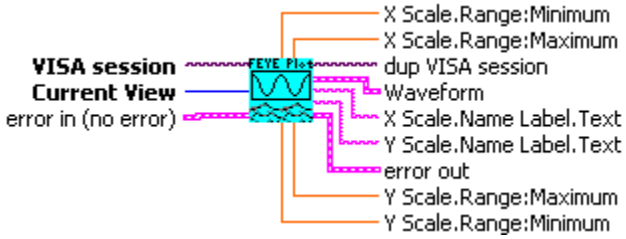
WC3000 FoldedEye Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the Folded Eye tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained. Note that the returned plots for this tool will contain only raw data of the pattern, and not a folded eye.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with **Current View** set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X-axis value for the plot.

X Scale.Range:Maximum This is the maximum X-axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y-axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y-axis value for the plot.

X Scale.Name Label.Text This is the label for the X-axis of the plot.

Y Scale.Name Label.Text This is the label for the Y-axis of the plot.

WC3000 FoldedEye Stats.vi

This VI returns summary statistics from the SIA-3000 Folded Eye tool. Only a single statistic may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36. This driver can be used to provide results for the number of mask comparisons and hits based on the folded eye.

Connector Pane

Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a tailfit has been completed.

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OE-2

WCOE2 Initialize.vi

This Driver will initialize the OE-2.

Connector Pane

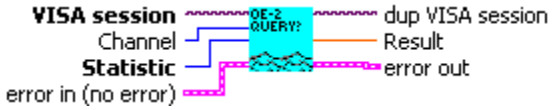
WCOE2 Query Channel.vi

This VI returns one of three values from the selected channel. The value to return is also selected by the Statistic input. The values are:

AC Response - The AC Response for the current filter, amplifier, and wavelength settings.
Average Optical Power - The Average Optical Power of the signal coming into the OE-2 for this channel.
Wavelength - The wavelength setting is returned in this driver, since there is no visual feedback on the front of the OE-2 instrument as there is with filter and gain settings.

If more than one value is desired, then this driver should be called multiple times.

Connector Pane



Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

Channel Select the channel of the OE-2.

Result This is the value of the selected statistic returned from the OE-2.

WCOE2 Set Channel Filter.vi

This Driver will send the OE-2 GPIB command to set the desired filter setting.

Connector Pane

Controls and Indicators

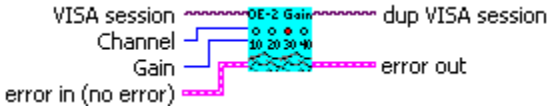
Channel Select the channel to configure.

Filter Select the desired OE-2 Filter for the selected channel. All possible OE-2 Filter options are listed, but the OE-2 will only accept those filter settings that are available on the instrument.

WCOE2 Set Channel Gain.vi

This Driver will send the OE-2 GPIB command to set the desired gain setting.

Connector Pane



Controls and Indicators

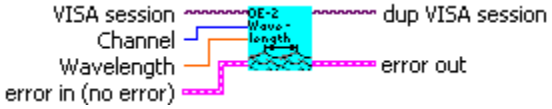
Channel Select the channel to configure.

Gain Select a gain value of 10, 20, 30, or 40, in dB.

WCOE2 Set Channel Wavelength.vi

This Driver will send the OE-2 GPIB command to set the desired wavelength. The Wavelength is any value between 770e-9 and 1650e-9 meters.

Connector Pane



Controls and Indicators

Channel Select the channel to configure.

Wavelength Select the value for the wavelength between 770e-9 and 1650e-9 meters.

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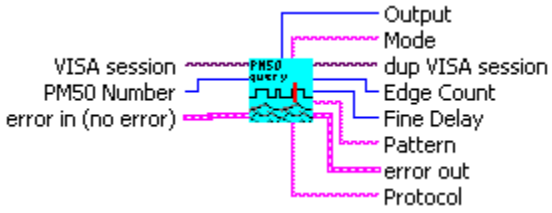
PM-50

WC3000 Query PM50.vi

This VI queries the specified Pattern Marker module to determine several current configuration settings for the device.

Connector Pane



Controls and Indicators

PM50 Number Specifies the Pattern Marker address. This should correspond to the channel on which the Pattern Marker is installed.

Edge Count Returns the number of edges that will be detected and counted before generating an arming event.

Fine Delay Returns the fine delay specified for the arming signal. This value is in units of 10 picosecond increments in a range from 0 to 1000 (0 to 10ns).

Output
0 = Pattern Marker is Bypassed (Disabled)
1 = Pattern Marker is Selected (Enabled)

Mode Returns one of two values:
EDGECOUNT - Device is in Edge Count mode.
PATTERNMATCH - Device is in Pattern mode.

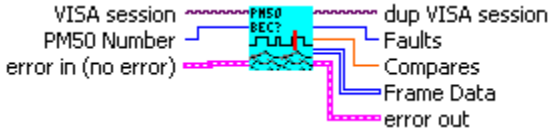
Pattern The Pattern File specified on the SIA-3000

Protocol Returns a 4 character Alphanumeric code for the selected protocol standard. The possibilities are FC1X, GB1X, SATA, FC2X, GB2X, SATA2, XAUI, FC3X.

WC3000 PM50 Query BEC.vi

This VI will return the status of the specified Pattern Marker's Bit Error Count mechanism when the SIA-3000 is in Pattern matching mode. If the SIA-3000 is NOT in Pattern matching mode, then this driver should NOT be called.

Connector Pane



Controls and Indicators

PM50 Number Specifies the PM50 address for systems with multiple PM50s installed.

Faults Number of faults detected in Pattern mode.

Compares Number of compares in Pattern mode.

Frame Data 2D Frame Data consisting of rows of 4 data bytes (columns):
(1) Frame Number
(2) Expected Bits
(3) Error Bits
(4) Loop Count

WC3000 Reset PM50.vi

This VI resets the specified PM50.

Connector Pane

Controls and Indicators

PM50 Number Specifies the Pattern Marker address. This should correspond to the channel where the Pattern Marker module is installed.

WC3000 Set PM50 Edge Count.vi

This VI sets the specified PM50 Edge Count to the value specified by Count. This parameter is the number of edges that will be detected in edge count mode before the PM50 will arm.

Connector Pane

Controls and Indicators

PM50 Number Specifies the Pattern Marker address. This should correspond to the channel where the Pattern Marker module is installed.

Count This is the number of edges to count in Edge count mode before an arm occurs.

WC3000 Set PM50 Fine Delay.vi

This VI sets the Fine Delay for the specified PM50. This delay is specified in units of 10ps in a range from 0 to 1000 (0.00 - 10.00 ns).

Connector Pane

Controls and Indicators

PM50 Number Specifies the Pattern Marker address. This should correspond to the channel where the Pattern Marker module is installed.

Fine Delay Specify one fine delay count for each 10ps interval to delay from the arm event to the acquisition of data (in addition to the arm delay of ~20ns).

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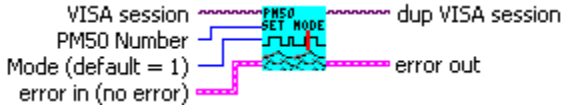
WC3000 Set PM50 Mode.vi

This VI sets the specified Pattern Marker to either Edge Count or Pattern Match mode. Edge Count will only detect rising and falling edges and generate an arm after a certain number of edges regardless of pattern. Pattern Match will attempt to match the exact pattern for which the device must be configured.

Connector Pane



Controls and Indicators

PM50 Number Specifies the Pattern Marker address. This should correspond to the channel where the Pattern Marker module is installed.

Mode (default = 1) Specify Edge Count mode to count edges regardless of the actual pattern and bit rate, or Pattern Match mode to attempt to arm based on a specific pattern match.

WC3000 Set PM50 Pattern.vi

This VI sets the pattern file on the SIA-3000 for the specified PM50. This should not be set for Edge Count Mode.

Connector Pane

Controls and Indicators

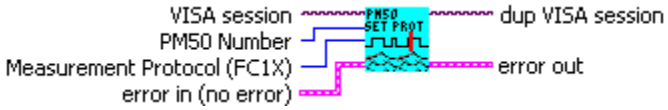
PM50 Number Specifies the PM50 address for systems with multiple PM50s installed.

Pattern Name Specifies the name of the pattern definition file stored on the SIA-3000.

WC3000 Set PM50 Protocol.vi

This VI sets the measurement protocol for the specified PM50. This should not be set for Edge Count Mode.

Connector Pane



Controls and Indicators

PM50 Number Specifies the Pattern Marker address. This should correspond to the channel where the Pattern Marker module is installed.

Measurement Protocol (FC1X) Select measurement protocol. This is valid only for Pattern Match mode.

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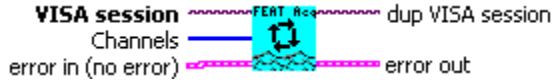
Feat Analysis

WC3000 FeatAnalysis Acquire.vi

This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Feature Analysis Tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called to retrieve the statistics and plots from this pass.

Connector Pane



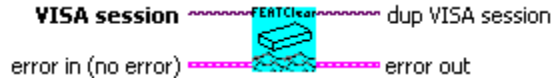
Controls and Indicators

Channels Select multiple channels on which this Feature Analysis acquisition will occur.

WC3000 FeatAnalysis Clear.vi

This Driver will send the SIA-3000 GPIB command to clear the active tool (Feature Analysis) of any measurements or plots.

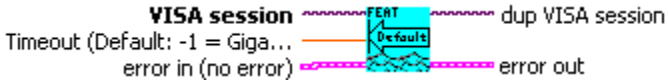
Connector Pane



WC3000 FeatAnalysis Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Known Pattern with Bit Clock and Marker tool.

Connector Pane



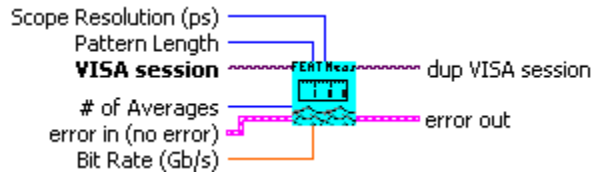
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 FeatAnalysis Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Feature Analysis tool.

Connector Pane



Controls and Indicators

# of Averages Selects the number of averages for each sampled point displayed on the screen.

Pattern Length This is the number of edges to count in Edgecount mode before an arm occurs.

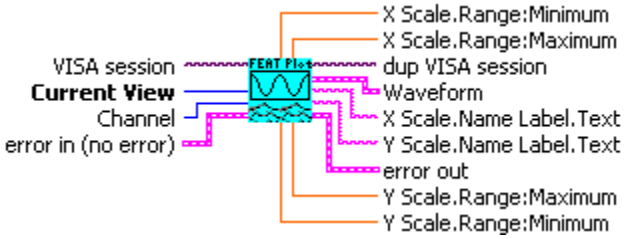
Bit Rate (Gb/s) The average data rate of the signal, entered in GigaBits per second. An accurate Bit Rate is crucial as it is used in the calculation of various jitter components.

Scope Resolution (ps) Select the measurement resolution in picoseconds.

WC3000 FeatAnalysis Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the Feature Analysis tool. The selected plot will be returned for the selected channel along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with Current View set to the different plots.

Channel This is the channel for which to return a plot.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

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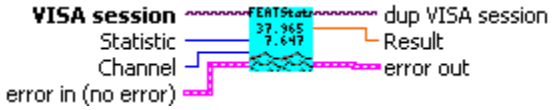
WC3000 FeatAnalysis Stats.vi

This VI returns summary statistics from the SIA-3000 Feature Analysis tool. Only a single statistic on a single channel may be selected, but all statistics may be obtained through repeated calls to this driver. Note that invalid results will return 100.00e+36 and that multiple passes are necessary before a tailfit will be completed.

Connector Pane



Controls and Indicators

Statistic This is the statistic to return. Only the selected statistic will be returned, but all the statistics can be obtained through multiple calls to this driver.

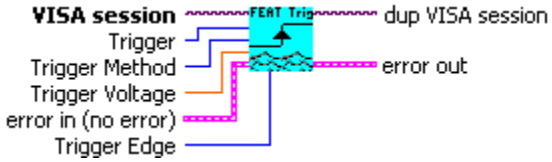
Channel Select a channel from which to return a statistic.

Result This is the value of the selected statistic returned from the SIA-3000. If the statistic is invalid for the current state of the SIA-3000, then 100.00e+36 will be returned. This is most common for Jitter statistics before a tailfit has been completed.

WC3000 FeatAnalysis Trigger.vi

This Driver will send the SIA-3000 GPIB command to configure the trigger parameters for the Feature Analysis Tool.

Connector Pane



Controls and Indicators

Trigger Method Select Auto to set the trigger threshold voltage to the 50% voltage point of the Pulsefind values on the selected trigger channel. Voltage is displayed in "Trigger Voltage." Select "User" to manually enter a threshold voltage in "trigger Voltage." Limits are +/- 1.1 volts.

Trigger Select trigger source.

Trigger Edge Selects the rising or falling edge to trigger the instrument.

Trigger Voltage Select the threshold voltage to trigger the instrument in USER mode. Limits are +/- 1.1 volts.

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Simple Commands

WC3000 Simple Acquire.vi

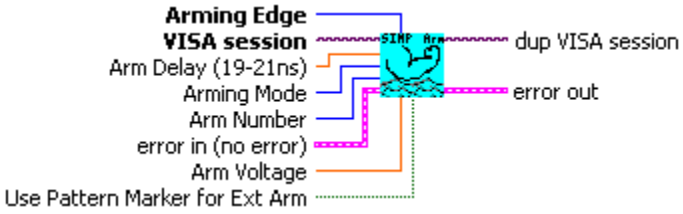
This Driver will send the SIA-3000 GPIB command to execute a single pass acquisition of the Simple Measurement tool. It is imperative that the SIA-3000 first be initialized and configured via the other driver methods for this tool. Once this driver returns, then the Output driver methods should be called retrieve the statistics and plots from this pass.

Connector Pane

WC3000 Simple Arming.vi

This Driver will send the SIA-3000 GPIB command to configure the arming parameters for the Simple Measurement Tool.

Connector Pane



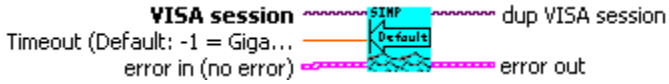
Controls and Indicators

- **Arm Delay (19-21ns)** The arm delay sets the minimum time from an arm event to the first measurement edge. There is a user selectable 19 to 21 ns delay from the arm event to the first measurement.
- **Arming Mode** Select specific arming input, automatic arming (arming from input signal) or external arming.
- **Arm Number** Select the channel used to arm the measurement. If you are using the PM-50, select the channel with the PM-50 and set "Use Pattern Marker for Ext Arm" to On. If this is a channel-to-channel measurement, set the Arm Number to the same value as the Reference Channel.
- **Arming Edge** Choose rising or falling. This will select which edge types from the Arm Channel will be used to arm a measurement on the Measurement Channel.
- **Arm Voltage** This is the voltage threshold used to Arm the chosen measurement. This value is derived from PULSEFIND when "Threshold Voltage" is in AUTO. If "Threshold Voltage" is in USER VOLTS, you can enter a fixed value to be used. In USER VOLTS, PULSEFIND will have no effect on the threshold voltages.
- **Use Pattern Marker for Ext Arm** Set to On to enable the pattern marker and Off for external arming.

WC3000 Simple Defaults.vi

This Driver will send the SIA-3000 GPIB command to set Default parameters for the Simple Measurement tool.

Connector Pane



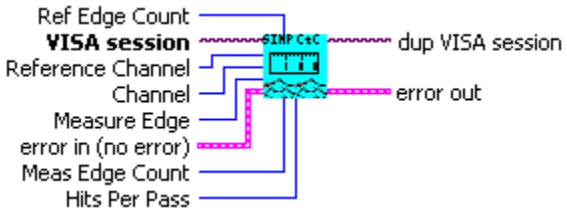
Controls and Indicators

Timeout (Default: -1 = GigaView Default Timeout) Specify GigaView measurement timeout in seconds. For values greater than 1.0 second, the timeout will be rounded to the nearest second. Values less than 1.0 second may be specified with a resolution of 0.01 seconds. Values less than zero will not override the GigaView default measurement timeout (2 seconds).

WC3000 Simple ChtoCh Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Simple Measurement tool in a Channel-to-Channel mode.

Connector Pane



Controls and Indicators

Reference Channel Select channel for clock input.

Channel Select a measurement channel.

Measure Edge Select a mode of measurement from channel to channel.

Ref Edge Count Enter a number of edges to skip on the reference edge relative to the arm time. This control is typically only used with Arming Mode set to "External Arm".

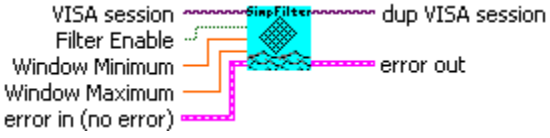
Meas Edge Count Enter a number of edges to skip on the measured edge(s) relative to the arm time. Typically, skews would be measured on edges consecutive to the Reference, so the Ref Edge count and Meas Edge count would be equal.

Hits Per Pass Number of time measurements included in a Histogram.

WC3000 Simple Filters.vi

This Driver will send the SIA-3000 GPIB command to set filter parameters for the Simple Measurement tool.

Connector Pane



Controls and Indicators

Filter Enable Enables/disables time and range filtering.

Window Minimum Enter minimum filtering time in seconds.

Window Maximum Enter maximum filtering time in seconds.

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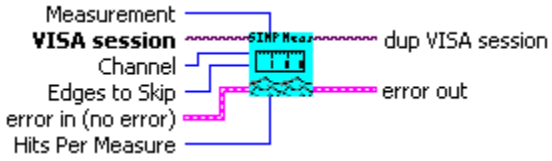
WC3000 Simple Measurement.vi

This Driver will send the SIA-3000 GPIB command to configure Measurement parameters for the Simple Measurement tool in a single channel mode.

Connector Pane



Controls and Indicators

Measurement Select primary measurement configuration for the unit: Period + (Rising edge to Rising edge), Period - (Falling edge to Falling edge), PW+ (Rising edge to Falling edge), PW- (Falling edge to Rising edge).

Channel Select a measurement channel.

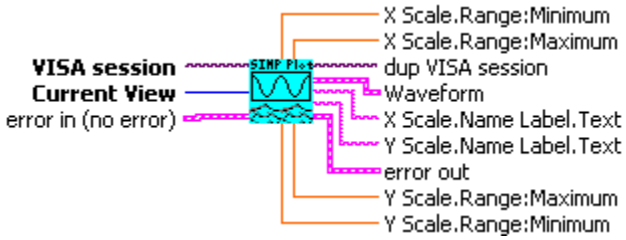
Edges to Skip Will determine the number of edges to skip before the time measurement stops.

Hits Per Measure Determines the number of time measurements that will be made for each edge or point on the plot.

WC3000 Simple Plots.vi

This driver will retrieve a plot from the SIA-3000 after data has been acquired for the Simple Measurement tool. The selected plot will be returned along with the scaling and label information for each axis. By wiring the waveform to a waveform indicator and using a property node for the waveform indicator to set the scaling and label information, a replica of the display on the SIA-3000 can be obtained.

Connector Pane



Controls and Indicators

Current View Select the desired plot to return. Only one plot can be returned per call, but all plots can be accessed by repeatedly calling this driver with Current View set to the different plots.

Waveform This is the waveform data for the selected plot.

X Scale.Range:Minimum This is the minimum X axis value for the plot.

X Scale.Range:Maximum This is the maximum X axis value for the plot.

Y Scale.Range:Minimum This is the minimum Y axis value for the plot.

Y Scale.Range:Maximum This is the maximum Y axis value for the plot.

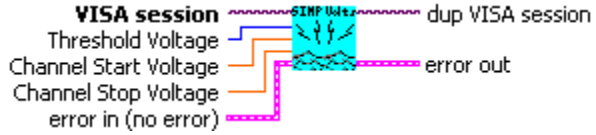
X Scale.Name Label.Text This is the label for the X axis of the plot.

Y Scale.Name Label.Text This is the label for the Y axis of the plot.

WC3000 Simple Voltages.vi

This Driver will send the SIA-3000 GPIB command to configure the voltage parameters for the Simple Measurement Tool.

Connector Pane



Controls and Indicators

Threshold Voltage When set to Auto, sets start and stop threshold reference voltages based on the minimum and maximum pulse level found on each channel. Select "User" to manually enter the threshold voltages. A pulsefind cannot be performed with this setting.

Channel Start Voltage When "Threshold Voltage" is set to USER VOLTS, specify the threshold voltage to be used for the measurement channel (single channel), or the reference channel (channel to channel).

Channel Stop Voltage When "Threshold Voltage" is set to USER VOLTS, specify the threshold voltage to be used for the measurement channel (single and channel to channel).

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