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# Chapter 1. Project description

AlliGator: Fluorescence Lifetime Imaging Data Analysis

This software reads fluorescence lifetime imaging (FLI) datasets from different sources (.sdt, .ptu, .bin, PicoStar or SPAD512S image series, SwissSPAD hdf5, etc.) and provide tools to analyze them by nonlinear least-square fit (NLSF), maximum likelihood estimation (MLE) or phasor analysis.

online repository: https://github.com/smXplorer/AlliGator online manual: https://alligator-distribution.readthedocs.io/

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# Chapter 2. Libraries

This section describes the libraries contained in the project.

## 2.1. AlliGator Accumulated Dataset.lvlib

Responsibility: Handles dataset summation tasks (sum or average).

**Version:** 1.0.0.0

#### 2.1.1. Functions

Table 1. Functions (non private scope only)

Name	Connector pane	Description	S.	R.	I.
AlliGator Add Dataset to Accumulated Dataset	AlliGator IV DVR in [11]  Weight (1) [9]  error in (no error) [8]  Weight (2) [9]  (3) AlliGator IV DVR out	Adds the <b>Current Dataset</b> to the <b>Accumulated Dataset</b> , if and only if the number of gates and channels are the same as those of the first dataset in the series.	e		
		If not, the <b>Current Dataset</b> is skipped.			
AlliGator Add Image to Accumulated Image	Image Name [7] New Image [11] Accumulated Image Sum (not) Dataset Index [9] Fror In [8] Weight (1) [6]	Adds a single <b>New Image</b> (gate image) to the <b>Accumulated Image Sum</b> (for that gate).  If the current <b>Dataset Index</b> is 0 (first dataset in the Series), the <b>Accumulated Image Sum</b> is cleared first.		5	
AlliGator Clear Dataset Series Sum	Data Value Reference in [11] [3] [3] Data Value Reference out [5] [1] Message error in (no error) [8] [7] [7] [7] [7] [7] [7] [7] [7] [7] [7	Clears the data structures associated with the Accumulated Dataset and resets the internal variable Is Displayed Image Accumulated to False.			
AlliGator Get Temp Accumulated File Name	Time-Series Folder [11]  Averaged? [9]  error in (no error) [8]  [3] temporary file name [2] filename without extension [0] error out	Builds name of acccumulated or averaged dataset displayed in AlliGator's title bar.			
AlliGator Script Sum All Datasets in Folder	Single File? (Default: False) [7] Alligator Queue Elements in [1] Path [10] AlliGator Data Series Type [9] Weights (Default: None) [6] Index Offsets (Default: None) [4]	Launches a series of steps loading each dataset in a series (including background correction) and adding them to a reset accumulated dataset. This script is followed by the usual series of steps after a new dataset is loaded (display, phasor plot update, phasor ratio or map overlay in image source and/or image ROI highlight in phasor plot).			

Reentrancy:  $\square$   $\rightarrow$  Preallocated reentrancy  $|\square$   $\rightarrow$  Shared reentrancy

Inlining: → Inlined

### 2.1.2. Library Constant VIs

**NOTE** No Constant VIs Found

## 2.2. AlliGator Action Engine.lvlib

**Responsibility:** Handles AlliGator Event Queue, dispatching events to different handlers according to their category.

**Version:** 1.0.0.0

### 2.2.1. Functions

*Table 2. Functions (non private scope only)* 

Name	Connector pane	Description	S.	R.	I.
AlliGator Action Loop	Error In [8] [0] Error Out	AlliGator action dispatcher. Each action array is handled as a package, each action in the array being sent to the appropriate category (Files, Image, Phasor Graph, etc.).			
AlliGator Add Action Array to Stack	Alligator Queue Element 1   10	One of the two options of the polymorphic AlliGator Add Action(s) to Stack VI.  Appends (or prepends) an array of actions to the current ones being processed or about to be queued.			
AlliGator Add Single Action to Stack	Alligator Queue Element 1   10  Alligator Atomic Action   9  Alligator Atomic Action   9  Error in   8  Elements Order in Action St   6	One of the two options of the polymorphic AlliGator Add Action(s) to Stack VI.  Appends (or prepends) a single action to the current ones being processed or about to be queued.			
AlliGator Check for Abort	AlliGator Q Elements [1]	Checks whether there is any <b>Abort</b> action in the input <b>AlliGator Q Elements</b> .  If so, remove all other action items.			
AlliGator Current Event	AlliGator Q Event in [2] [7] AlliGator Q Event out Get(F)/Set [4]	Get/Set current AlliGator action being processed.			

Name	Connector pane	Description	s.	R.	I.
AlliGator Decay Analysis Actions	Script in [2]  Vii [1]  AlliGator Q Elements in [0]  AlliGator IV DVR in [5]  AlliGator Q Event in [7]  Data [9]  error in (no erro) [11]  AlliGator Ctrl Refnums [12]	Processes AlliGator decay-related actions.			
AlliGator Event to Event Category	AlliGator Q Event [8] [2] Event Category	Extracts the category an <b>AlliGator Q Event</b> belongs to, in order to dispatch this event to the proper handler.			
AlliGator Event to String	Add Ellipsis (T) [5]  AlliGator Q Event [8] [2] String	Converts <b>AlliGator Q Event</b> enum to the corresponding string.			
AlliGator Files Actions	Script in [2]  Vii (1]  AlliGator Q Elements in (0)  AlliGator IV DVR (5)  AlliGator V Event in (7)  Data (9)  error in (no erro) (11)  AlliGator Ctri Refnums [12]	Processes AlliGator files-related actions.			
AlliGator Filter Event	Time-Gated Phasor Q Element [11] [3] Filter Event? Time [10] [0] [0] [0] [0] Error Out Error In [8]	Stores User Event's Action information (type, time and timeout). If a previous event is stored. comapre time interval to time out. If the time since the last event of the same type is shorter than the timeout, ignore that event. If not, enqueue the evenet and update the time/timeout information.			
AlliGator FLI Dataset Actions	Script in [2] Vin [1] AlliGator Q Elements [0] AlliGator IV DVR in [5] Annual [6] AlliGator V DVR in [7] Annual [6] AlliGator C Event in [7] Data [9] error in (no error) [11] AlliGator Ctrl Refnums [12]	Processes AlliGator FLI Dataset-related actions.			
AlliGator FLI Dataset Series Actions	Script in [2] Vi in [1] AlliGator Q Elements [0] AlliGator IV DVR in [5] AlliGator IV DVR in [5] AlliGator Event in [7] Data [9] error in (no erro) [11] AlliGator Ctrl Refnums [12]	Processes AlliGator FLI Dataset Series-related actions.			
AlliGator Generic Graph Actions	Script [2] [3] Script out  AlliGator Q Elements in (0) [4] AlliGator Q Elements out data value reference in (5) [5] Cata value Reference out AlliGator Q Event in (7) [7] Data value Reference out AlliGator Q Event in (7) [7] [7] [7] [7] [7] [7] [7] [7] [7] [7]	Processes AlliGator generic graph-related actions.			

Name	Connector pane	Description	S.	R.	I.
AlliGator Get First Event	AlliGator Q Elements [5] [2] AlliGator Q Elements [11] AlliGator Q Event [10] Data	Returns the first event (action + data) in the AlliGator Q Elements input array in AlliGator Q Event and the remaining events in the AlliGator Q Elements output array.  If there is a GUI:Abort element in the array, or if the abort flag is raised, returns a single GUI:Abort as AlliGator Q Event and an empty array as AlliGator Q Elements output array.			
AlliGator GUI Actions	Script [2] Vi in [1] AlliGator Q Elements in [0] AlliGator Q Elements out AlliGator Q Event in [7] Data [9] AlliGator Q Event in [7] Lamin and Lamin [15] Lamin and Lamin [16] Lamin and Lamin [17] Lamin and Lamin [18] Lamin [18] Lamin [18] Lamin [18] Lamin [18]	Processes AlliGator GUI-related actions.			
AlliGator Hide Path Drop Boxes	AlliGator Ctrl Refnums [11] Hide (F)/Show [9] Error In [8]	No description found (add content in vi description)			
AlliGator Image Actions	Script in [2] Vi in [1] AlliGator Q Elements [0] AlliGator IV DVR in [5] AlliGator Vi DVR in [7] Data [9] error in (no error) [11] AlliGator Ctrl Refnums [12]	Processes AlliGator source image-related actions.			
AlliGator Initialize Images	AlliGator IV DVR [11] Phasor Plot Display [10] error in (no error) [8] [0] error out	Initializes AlliGator image structures.			
AlliGator Initialize Internal Variables	State Indicators [10] Alligator version [9] error in (no error) [8]	Initializes AlliGator internal variables.			
AlliGator Intensity Actions	Script in [2]  Vii [1]  AlliGator Q Elements in [0]  AlliGator IV DVR in [5]  AlliGator Q Event in [7]  Data [9]  error in (no error) [11]  AlliGator Ctrl Refnums [12]	Processes AlliGator intensity time trace- related actions.			
AlliGator Lifetime & Other Parameters Actions	[AlliGator Action Engine.lvlib:AlliGator Lifetime & Other Parameters Actions.vi]	Processes AlliGator intensity time tracerelated actions.			
AlliGator No Action Event	No Action [0] No Action	Returns a no-op event.			
AlliGator Package Notebook Messages	AlliGator Q Event in [11]  Message [10]  Message Formatting [9]	Formats Notebook message by adding AlliGator Action header and style.			

Name	Connector pane	Description	S.	R.	I.
AlliGator Parameter Map Actions	Script in [2]  In [1]  AlliGator Q Elements in [0]  AlliGator Q Elements out data value reference [5]  AlliGator Q Event in [7]  Data [9]  error in [no error] [11]  AlliGator Ctrl Refnums [12]	Processes AlliGator decay fit parameter map-related actions.			
AlliGator Phasor Calibration Actions	Script in [2]  Vi in [1]  AlliGator Q Elements [0]  data value reference [3]  AlliGator Q Event in [7]  Data [9]  error in (no error) [11]  AlliGator Ctrl Refnums [12]	Processes AlliGator phasor calibration-related actions.			
AlliGator Phasor Graph Actions	Script in [2]  AlliGator Q Elements in [0]  Data Value Reference in [5]  AlliGator Q Elements out  Data Value Reference out  AlliGator C Event in [7]  Example [6] Data Value Reference out  AlliGator C Event in [7]  Example [7]  In	Processes AlliGator phasor graph-related actions.			
AlliGator Phasor Plot Actions	Script in [2]  In [1]  AlliGator Q Elements in [0]  AlliGator Q Elements in [7]  AlliGator Q Event in [7]  Data [9]  error in (no error) [11]  AlliGator Ctrl Refnums [12]	Processes AlliGator phasor plot-related actions.			
AlliGator Phasor Ratio Actions	Script in [2]  In [1]  AlliGator Q Elements in [0]  AlliGator Q Elements in [7]  Data [9]  error in (no error) [11]  AlliGator Ctrl Refnums [12]	Processes AlliGator phasor ratio-related actions.			
AlliGator Queue Non Empty Events	AlliGator Q [11] Actions [10] Error In [8]	Removes consecutive duplicates of any kind of AlliGator action to leave a single copy of each in the array of enqueued AlliGator events.  The same action can appear several time, as long as the different copies are separated by a different action.			
AlliGator Queue	create if not found? (F) [8] [2] AlliGator Q Error In [7]	Returns the AlliGator Action queue.			

Reentrancy:  $\blacksquare$   $\rightarrow$  Preallocated reentrancy  $\mid \blacksquare$   $\rightarrow$  Shared reentrancy

Inlining: → Inlined

## 2.2.2. Library Constant VIs

**NOTE** No Constant VIs Found

## 2.3. AlliGator Camera Noise Influence on Lifetime.lvlib

Responsibility: No description found (add content in lylib description)

**Version:** 

#### 2.3.1. Functions

This library has no functions set to non private scope.

### 2.3.2. Library Constant VIs

**NOTE** No Constant VIs Found

## 2.4. AlliGator Dataset Information Window.lvlib

Responsibility: VIs handling Dataset Information displayed to the user.

**Version:** 1.0.0.0

#### 2.4.1. Functions

Table 3. Functions (non private scope only)

Name	Connector pane	Description	S.	R.	I.
AlliGator Build Dataset Information String	Alliegator   [3] Dataset Information String	Creates <b>Dataset Information String</b> based on internal variables and settings.			
Alligator Dataset Information Window	Allisator Dataret Infe	Window displaying the dataset information extracted from internal variables and settings.			

Reentrancy:  $\blacksquare$   $\rightarrow$  Preallocated reentrancy  $\mid$   $\blacksquare$   $\rightarrow$  Shared reentrancy

Inlining: → Inlined

## 2.4.2. Library Constant VIs

**NOTE** No Constant VIs Found

## 2.5. AlliGator Debug.lvlib

Responsibility: features under test and accessible via the DEBUG menu item (when exposed).

**Version:** 1.0.0.0

#### 2.5.1. Functions

Table 4. Functions (non private scope only)

Name	Connector pane	Description	S.	R.	I.
AlliGator Feature Tests	Script [5] VI in [7] data value reference [10] Debug Action List [10] Data [9] Error in [8] AlliGator Ctri Refnums [6]	VI implementing the successive debugged features as individual cases.			
		One feature can be tested per session, and is hardwire-selected.			
AlliGator Test Decay Fit Parameter Map Color Scale Refnum	Decay Fit Map Ctrl Refums [10] [2] message error in (no error) [8] [0] error out	Builds the selected fit parameter map image.			

Reentrancy:  $\blacksquare$   $\rightarrow$  Preallocated reentrancy  $\mid \blacksquare$   $\rightarrow$  Shared reentrancy

Inlining: → Inlined

## 2.5.2. Library Constant VIs

**NOTE** No Constant VIs Found

## 2.6. AlliGator Decay Fit Parameter Map.lvlib

Responsibility: VIs related to the Decay Fit Parameter Map

**Version:** 1.0.0.0

#### 2.6.1. Functions

Table 5. Functions (non private scope only)

Name	Connector pane	Description	S.	R.	I.
AlliGator Build Decay Fit Parameter Map	AlliGator Internal Variable [1]   Selapsed (relative) seconds   Selapsed (relative) seconds	Builds the selected fit parameter map image.			
AlliGator Convert Decay Range Options	Percentile Conversion [1]  Decay Fit Options & Paramet [0]  Locay Fit Options & Paramet [2] Decay Fit Options & Paramet	Converts percentiles unit.			
AlliGator Decay Fit Parameter Map Actions	Script in [2]  In [1]  AlliGator Q Elements in [0]  data value reference [3]  AlliGator Q Event in [7]  AlliGator Q Event in [7]  Fig. 10 [10] [Notebook Message]  AlliGator Ctrl Refnums [12]	Processes AlliGator decay fit parameter map-related actions.			

Name	Connector pane	Description	S.	R.	I.
AlliGator Decay Fit Parameter Map Context Menu Handler	Image Event Data [11]  Decay Fit Parameter [9]  Error In [8]  Fig. 12  Fig. 13  Fig. 14  Fig. 15  Fig.	Decay Fit Parameter Map contextual menu handler.			
AlliGator Decay Parameter Range Mouse Move Event	AlliGator Actions in [11]  Decay Fit Parameter [10]  Error In [8]  [0] Error Out	Handles mouse move event in the Decay Fit Parameter Map display range control.			
AlliGator Decay Parameters Map Mouse Up Event	AlliGator Actions in [11] [3] AlliGator Actions out Image Control Refnum [10] [0] error out error in (no error) [8] [0] error out	Handles Mouse Up event in the Decay Fit Parameter Map image.			
AlliGator Export ROI(s) NLSF Parameters as ASCII File	AlliGator Ctrl Refnums [7] AlliGator IV DVR in [11] All ROIs [10] Error in (no error) [8] [1] Message error on (no error) [8]	Exports Decay Fit Parameter Map data to an ASCII file.			
AlliGator Get Decay Fit Parameter Map Data Wrapper	Data Value Reference in [11] Compute Decay Fit Parameter. [10] Fit Parameter [9] error in (no error) [8]  [5] Valid Parameter [2] Value Reference out [2] Value Range [1] Map Data error in (no error) [8]	Returns selected fit parameter's map.			
AlliGator Get Decay Fit Parameter Map Data	Output ROI centers? [5] Compute Decay fit Parameter	Fills in matrix with fit parameter wherever it has been computed, NaN otherwise.			
AlliGator Get Local Fit Results String	[Decay Fit Parameter Name] [11] X [10] Y [9] Parameters [8] Decay Sum [6]	Builds Decay Fit Parmeters string.			
AlliGator Get Single ROI Message Start	Single-Pixel Fit? [11] [3] Message header error in (no error) [8] [2] ROI idx [0] error out	Builds single-ROI Decay Fit Parameters header string.			
AlliGator Load IRFs & Fit Data (Map) HDF5 File v0.3	[AlliGator Decay Fit Parameter Map.lvlib:AlliGator Load IRFs & Fit Data (Map) HDF5 File v0.3.vi]	Loads Decay Fit Parameter Map and associated metadata.			

Name	Connector pane	Description	S.	R.	I.
AlliGator Load IRFs & Fit Data Map v1	[AlliGator Decay Fit Parameter Map.lvlib:AlliGator Load IRFs & Fit Data Map v1.vi]	Old version of Load Decay Fit Parameter Map.			
AlliGator New NLSF Parameter Map Resolution	Old NLSF Parameters Map X R. [11] [3] New NLSF Parameters Map X R. [10] [2] New NLSF Parameters Map X R. Is Full Image Parameter Map [9] [2] New NLSF Parameters Map X R. Is Full Image Parameter Map [9] [3] New NLSF Parameters Map X R. Is Full Image Parameter Map [9] [3] New NLSF Parameters Map X R. Is Full Image Parameter Map [9] [3] New NLSF Parameters Map X R. Is Full Image P	Map resolution conversion.  If <b>Is Full Image Parameter Map</b> is true, returns the input resolution parameters.  If not, returns -1.			
AlliGator NLSF Parameters to Coordinates	[[Multiple Decays Fit Param [1] [0] Decay Locations	Extracts ROI coordinates from the Decay Fit Parameters array for all ROIs in the map.		S	> >
AlliGator Overlay Decay Fit Parameter Map in Original Image	Decay Fit Parameter Map Col [5] Image Color Scale Refnum [7] AlliGator IV DVR in [11] Source Image Refnum [10] Error In [8]  [1] # Overlay Pixels  [0] Error Out	Overlays the Decay Fit Parameter Map on the Source Image.			
AlliGator Plot Decay Fit Parameter vs Intensity Scatterplot v2	Lifetime Graph refnum [7] Data Value Reference in [1] ROI idx (214783647-31 ROIs) [9] error in (no error) [8] Fit Parameter [6] [4] Message	Creates scatter plot of selected parameter vs intensity for all ROIs and sends it to the <b>Lifetime &amp; Other Parameters Graph</b> .			
AlliGator Plot Fit Parameter 2 vs Parameter 1	Lifetime Graph refnum [7]  Data Value Reference in [11]  Fit Parameter 1 [10]  Fit Parameter 2 [9]  error in (no error) [8]  [0] error out  [4] Message	Creates scatter plot of selected parameter vs intensity for all ROIs and sends it to the <b>Lifetime &amp; Other Parameters Graph</b> .			
AlliGator Plot Fit Parameter Scatterplot	Lifetime Graph refnum [7] Data Value Reference in [11] ROI idx [21-4783647-31 ROIs] [9] error in (no error) [8] Fit Parameter [6] [14] Message	Send the selected Decay Fit Parameter Map data to a single plot in <b>Lifetime &amp; Other Parameters Graph</b> .			
AlliGator Post-Fit Parameter Map Update	Decay Fit Parameter [11] [3] Array of Actions Error In [8] [0] Error Out	Updates Decay Fit PArameter Map image and Profile Plot window.			
AlliGator Read IRFs & Fit Data HDF5 File Metadata	[AlliGator Decay Fit Parameter Map.lvlib:AlliGator Read IRFs & Fit Data HDF5 File Metadata.vi]	Reads Decay Fit Parameter Map metadata from HDF5 file.			

Name	Connector pane	Description	s.	R.	I.
AlliGator Save All Decay Fit Parameter Maps to ASCII	Data Value Reference in [11]	Saves the Decay Fir Parameter Map 2D array to an ASCII file.			
AlliGator Save Decay Fit Parameter Map Image	IV DVR [11] [2] Message Fit Parameter [9] [0] error out error in (no error) [6] [6] [7] [7] [7] [8] [8] [8] [8] [8] [8] [8] [8] [8] [8	No description found (add content in vi description)			
AlliGator Save Decay Fit Parameter Map to ASCII	Data Value Reference in [11] Source   3] Data Value Reference out   Data Va	Saves single Decay Fit Parameter Map data into an ASCII file.			
AlliGator Save IRFs & Fit Data (Map) HDF5 File v0.4	[AlliGator Decay Fit Parameter Map.lvlib:AlliGator Save IRFs & Fit Data (Map) HDF5 File v0.4.vi]	Saves Decay Fit Parameter Map and associated metadata to an HDF5 file.			
AlliGator Save-Load IRFs & Fit Data (Map)	[AlliGator Decay Fit Parameter Map.lvlib:AlliGator Save- Load IRFs & Fit Data (Map).vi]	Load/Save Decay Fit Parameter Map & Metadata from/to HDF5 file.			
AlliGator Select Decay Fit Parameter Scatterplot Type	Error In [8] [3] Cancelled? [2] Fit Parameter 1 [1] Fit Parameter 2 [0] Error Out	Dialog to select parameter 1 and parameter 2 to be computed for a Phasor Plot of the Phasor Graph.			
AlliGator Update Decay Fit Parameter Map Palette	Decay Fit Map Ctrl Refums [11] Image Display Palette Infor [10] error in (no error) [8]	Updates the color palette of the <b>Decay Fit Parameter Map</b> image.			

Reentrancy:  $\blacksquare$   $\rightarrow$  Preallocated reentrancy  $\mid \blacksquare$   $\rightarrow$  Shared reentrancy

Inlining: → Inlined

## 2.6.2. Library Constant VIs

**NOTE** No Constant VIs Found

# 2.7. AlliGator Decay Fit.lvlib

**Responsibility:** VIs used to fit decays to 1-Exp or 2-Exp models.

**Version:** 1.0.0.0

### 2.7.1. Functions

Table 6. Functions (non private scope only)

Name	Connector pane	Description	s.	R.	I.
AlliGator 1- Exp + IRF Fit v2	Optimal Offset Selection Cr [1] Decay (0) RR [5] RR [5] FR [5] FR [5] FR [5] FR [6] Residuals FR (0) FR	Legacy code for 1-Exp decay fit.		S	
AlliGator 2- Exp + IRF Convolution Fit v2	Optimal Offset Selection Cr [1] Decay [0] RIR [3] FI Options [9] error in (ine error) [1] [1] parameter bounds [12]  [13] Guess Parameters [13] Guess Parameters Options	Legacy code for 2-Exp decay fit.		S	
AlliGator All ROIs Decay Fit Non- Interactive (Fast + Individual IRF) v2	AlliGator Internal Variable    13 AlliGator Internal Variable   13 AlliGator Internal Variable   13 AlliGator Internal Variable   14 Message   Left   Green out	Performs multi-ROIs NLSF decay fits for the selected ROIs. Each ROI has its own associated IRF.			
AlliGator All ROIs Decay Fit Script	Decay Graph [11] [3] All ROIs Decay Fit Script Lifetime Graph [10] [1] Message Error In [8] [0] Error Out	Series of actions triggered by the <b>All ROIs NLSF Analysis:Interactive (Slow)</b> Analysis menu item.			
AlliGator All ROIs Decay Fit	AlliGator Internal Variable [11] [3] AlliGator Internal Variable [3] AlliGator Internal Variable [1] Message error in (no error) [8] [9] error out	Fits all ROI decays with the selected model, using a common IRF for all ROIs.			
AlliGator Best of All (weights) String	Weighted Fit [1]	String to append to the fit output sent to the Notebook in the case of a "Best of All" option, to specify which fit was the best (weighted or unweighted).		5	
AlliGator Check Decay Reference	77 Time-Series Folder   518 Reference Decay Plot Name   31 Allifostor Internal Variable   111   111   112   113   114   115   1	Obtains the relevant IRF (either common or local) for the subsequent task.			

Name	Connector pane	Description	s.	R.	I.
AlliGator Clip Decay for Fit	Decay in [11] [3] Clipped Decay out Max Decay Percentile (0) [10] [2] Index Max Min Decay Percentile (0) [9] [11] Index Min Error In [8] [12] [13] [14] # Points	Clips the decay according to the <b>Min</b> and <b>Max Decay Percentile</b> parameters provided.		S	
		If the decay range is [I_min, I_max] and the decay percentiles are (f_min, f_max) in [0, 1], we look for:			
		- starting from the location of the maximum (presumably the peak location) and moving forward, the point at which:			
		I_i < I_min + f_max*(I_max - I_min) = F_max			
		- starting from the last point and moving baclwards, the point at which:			
		I_i > I_min + f_min*(I_max - I_min) = F_min			
AlliGator Convert Decay Fit	Fit Parameter Constraints [11] Fit Model [10] Fit Model [10] First [1] Global Parameters?  Error In [8] [1] First Out	Returns constraints for all parameters of the model, even if the user only specified a few (or none at all).		S	
Parameter Constraints v2		This VI assumes that the <b>Fit Parameter Constraints</b> involve tau, and returns values with the same assumption.			
		Look for constrained parameters. If present, replace default constraints (-Inf, Inf) by new ones, except for the offset, which is set to the guessed value (or zero if not provided).			
AlliGator Convert New to Legacy Fit Parameter Constraints	All Parameter Constraints [1] [0] Parameter Bounds	version conversion for <b>Fit Parameter Constraints</b> .		5	
AlliGator Create Fit Parameter Plots Script	XYGraph in [11] Current ROI Name [10]  Orante Print Print  [3] AlliGator Script	Creates as many empty parameter plots as there are parameters.			

Name	Connector pane	Description	s.	R.	I.
AlliGator Decay Fit Output String	Guess Parameters Options [4]  All Fit Parameters [3]  Plot Clipped] [2]  (Clipped) Plot Range [1]  Plot Name [0]  Fit Output [5]  Delta Best Fit Parameters [7]  Error In [11]  Guess Parameters [12]  Fit Parameter Constraints [13]  CPU [6] [14]	Creates decay fit output string.		S	
AlliGator Enforce Lifetime Positivity	Constraints in [11] Constraints out Fundament [3] Constraints out Fundament [1] Offset Fitted	Constrains lifetime parameters to be positive (replacing them by zero otherwise).			
AlliGator Fit Decay	Decay Fit Options & Parameters [1]  Selected Pito Info - Flag (0)  Current Decay Name (3)  Current Decay Name (3)  Current Decay Name (6)  Reference Decay (9)  error in (no error) [11]  Use Legacy Fitting Approach [12]  (12)  Legacy Fit Options & Parameters (14)  (14)  (15)  (14)  (15)  (15)  (15)  (15)  (15)  (15)  (15)  (17)  (17)  (17)  (18)  (18)  (19)  (19)  (19)  (10)  (10)  (10)  (11)  (11)  (11)  (12)  (13)  (14)  (15)  (15)  (16)  (16)  (17)  (17)  (17)  (17)  (17)  (17)  (17)  (17)  (17)  (17)  (18)  (18)  (19)	VI implementing single decay fit with either a single or double exponential model with IRF convolution (or in the absence of IRF, without convolution).		S	
AlliGator Fit Termination Criteria & Quality Metrics Output String	_	Creates a string describing the fit termination criteria and quality metrics.		S	
AlliGator Get 1-Exp Guess Parameters	RF [9] [3] Guess Parameters (1] Guess Parameters Names (0) Guess Parameters Type	Determines Guess Parameters for a 1-Exp fit according to the user-specified choices:  * Last valid fitted parameters:  If the number of available last valid fitted parameters is correct, uses those, otherwise use the estimated parameters.  * User-provided parameters:  If a parameter is provided by the user, uses it, otherwise uses the estimated parameter.  * User-provided (normalized) parameters:  If a normalized-parameter (amplitude or baseline) is provided by the user, uses it, otherwise uses the estimated parameter.  * Numerically estimated parameters:  Use the numerically estimated parameters.			

Name	Connector pane	Description	s.	R.	I.
AlliGator Get 2-Exp Guess Parameters	Decay [11]   Str.   [3] Guess Parameters   IRF [9]   Str.   [1] Guess Parameters Names   [0] Guess Parameters Type   [0] Guess Parameters Type   [1] Guess Parameters Type   [2] Guess Parameters Type   [3] Guess Parameters   [4] Guess Parameters   [5] Guess Parameters   [6] Guess Parameters   [6	Determines <b>Guess Parameters</b> for a 2-Exp fit according to the user-specified choices:  * Last valid fitted parameters:		S	
		If the number of available last valid fitted parameters is correct, uses those, otherwise use the estimated parameters.			
		* User-provided parameters:			
		If a parameter is provided by the user, uses it, otherwise uses the estimated parameter.			
		* User-provided (normalized) parameters:			
		If a normalized-parameter (amplitude or baseline) is provided by the user, uses it, otherwise uses the estimated parameter.			
		* Numerically estimated parameters:			
		Use the numerically estimated parameters.			
AlliGator Get Fit Options & Parameters	[AlliGator Decay Fit.lvlib:AlliGator Get Fit Options & Parameters.vi]	Gets Decay Fit Options & Parameters.		S	
AlliGator Get Fit Output Options	All Parameters? [11] [3] Decay Fit Output Options Error In [8] [1] [1] [1] [1] [1] [2] [2] [2] [3] Decay Fit Output Options [1] Laser Period [0] Error Out	Gets Fit Output Options.			
AlliGator Get Guess Offset	Fit Model [11] [3] Guess Offset Guess Offset [0] Last Fit Parameters?	Used to get an offset parameter when no constraint is provided:			
		- if "Use last valid fitted parameters", use it.			
		- otherwise, if a guess offset parameter is available, use it, else use zero.			
AlliGator Get Last Fitted Parameters	Guess Parameters Names [11] [3] Guess Parameters Names (dup) [2] Last Fitted Parameters Names (of Up) [1] Last Decay Max - Min [0] Last Fitted Parameters OK	Returns <b>Last Fitted Parameters</b> as well as <b>Last Decay Max - Min</b> .			
AlliGator Get n-Exp Guess Parameters	Model [11] Decay [10] IRF [9] Error In [8]	Get numerically estimated <b>Guess Parameters</b> for 1-Exp or 2-Exp models.		S	

Name	Connector pane	Description	S.	R.	I.
AlliGator Get Tabulated Results Header (Decay Fit)	[3] Tabulated Results Header Error In [8] [0] Error Out	Creates the header line for the ASCII ouput of decay fit parameters.			
AlliGator Is Decay Valid	Decay [11] [3] Decay (dup) Plot Name [10] [2] Message Error In [8] [1] Is Valid? [0] Error Out	Checks whether the input <b>Decay</b> is valid, i.e. is non-zero, does not contain NaN and has more than one element.		S	
AlliGator n- Exp + IRF Fit v4	Optimal Offset Selection (r [2] VI Refrum (1) German	Fits the provided decay to 1-Exp or 2-Exp model.  This VI assumes that <b>All Parameter Constraints</b> involve tau (rather than the square root of lifetime) and returns values with the same assumption.		S	
AlliGator Update Decay Fit Results (Stats)	Fit Results [11] error in (no error) [8]  [0] error out	Stores basic statistics (algorithm, Chi2/N, R2 and RMSE, where N is the number of evaluation points) for a successful fit.  This is used when the "Use All" fit method option is selected, and allows picking the best result out of the 3 methods (LS, LAR, Bisquare)			

Reentrancy:  $\blacksquare$   $\rightarrow$  Preallocated reentrancy  $\mid$   $\blacksquare$   $\rightarrow$  Shared reentrancy

Inlining:  $\rightarrow$  Inlined

## 2.7.2. Library Constant VIs

**NOTE** No Constant VIs Found

## 2.8. AlliGator Decay Preprocessing.lvlib

**Responsibility:** Handles decay pre-processing functions.

**Version:** 1.0.0.0

### 2.8.1. Functions

Table 7. Functions (non private scope only)

Name	Connector pane	Description	S.	R.	I.
AlliGator Create Head & Tail Bounding Cursors	Preprocessing.lvlib:AlliGato	Creates a <b>Head</b> (HE) and a <b>Tail</b> (TS) cursor in the <b>Decay Graph</b> to be used for the definition of the decay end (the "Head" part) and start (the "Tail" part) when performing decay extrapolation.			
AlliGator Extrapolate Decay	Selected Plot Info [11]  Replace Plot (1)? [9]  error in (no error) [8]  Later   Solution   11 Message   11 Message   12 Message   12 Message   13 Message   13 Message   14 Message   15 M	Extrapolates a truncated decay by trying to fit an exponential to the tail part and connect it to the head part .			
AlliGator Find & Plot Threshold Crossing Position	Preprocessing.lvlib:AlliGato	Find the location where the decay reaches the provided thresholf (from below), returns that position and adds it to the last plot in the <b>Lifetime &amp; Other Parameters Graph</b> .			
AlliGator Find & Plot Zero-Crossing Position v2	[AlliGator Decay Preprocessing.lvlib:AlliGato r Find & Plot Zero-Crossing Position v2.vi]	Finds the zero-crossing location for the last decay in the <b>Decay Graph</b> using the provided <b>Shift</b> and adds it to the last plot in the <b>Lifetime &amp; Other Parameters Graph</b> .			
AlliGator Find Cross- Correlation Shift	polynomial order (3) [5] Half Width (Points) [7] Decay Graph [11] Lifetime Graph [10] Time Stamp [9] Error In [8] Reference Decay [6] normalization (none) [4]	Computes the shift of the last plot in the <b>Decay Graph</b> maximizing the cross-correlation of that plot and the <b>Reference Decay</b> and adds this value to the last plot in the <b>Lifetime &amp; Other Parameters Graph</b> .			
AlliGator Get Background Subtraction Parameters	Background Subtraction Para [1] [3] Background Subtraction Para [3] Enror [1] [3] [5] Error Out [6] [6] [6] [7] [7] [7] [7] [7] [7] [7] [7] [7] [7	Obtains or stores information about <b>Background Subtraction Parameters</b> from Settings.			
AlliGator Get- Set Decay Preprocessin g Options & Parameters	[AlliGator Decay Preprocessing.lvlib:AlliGato r Get-Set Decay Preprocessing Options & Parameters.vi]	Get/Set Decay Pre-processing Options & Parameters (Settings).			
AlliGator Get- Set Decay Preprocessin g Parameters	Decay Preprocessing Paramet [1] [3] Decay Preprocessing Paramet [3] Decay Preprocessing Paramet [6] Error Out [8] [0] Error Out	Get/Set Decay Pre-processing parameters.			
AlliGator Preprocess Decay v3	Decay (in) [11] [5] Decay Metadata [5] Decay Metadata [5] Decay (ext) [6] Error Out  Time-Gated Reference Decay [9] [6] Error Out  Decay Preprocessing Parameters [6]	Applies the different selected pre- processing steps on the provided decay in the specified order.		S	

Name	Connector pane	Description	S.	R.	I.
AlliGator Store Cursor- defined Head & Tail Fractions	[AlliGator Decay Preprocessing.lvlib:AlliGato r Store Cursor-defined Head & Tail Fractions.vi]	Sets the head and tail fractions for decay extrapolation based on the corresponding cursor locations.  If one cursor is missing, the current			
AlliGator	[3] Background Subtracted Y Array	fraction is preserved.  Subtracts background from a decay based		S	
Subtract Background from Decay Curve v3	ROI Intensity Array in [5] Favoring [6] Biggd-subtracted Intensity ( [6] Biggd-subtracted Intensity ( [7] Biggd-subtracted Intensity	on selected options.			
AlliGator Update Background Subtraction Indicators	AlliGator Ref [11] Decay Metadata [10] Error In [8]  [0] Error Out	Updates background subtraction indicators in the <b>Decay Graph</b> panel.			

Scope:  $\sigma$   $\rightarrow$  Protected |  $\sigma$   $\rightarrow$  Community

Reentrancy:  $\blacksquare$   $\rightarrow$  Preallocated reentrancy  $\mid \blacksquare$   $\rightarrow$  Shared reentrancy

Inlining: → Inlined

### 2.8.2. Library Constant VIs

**NOTE** No Constant VIs Found

## 2.9. AlliGator Decay Processing.lvlib

Responsibility: All functions related to decay processing (but not decay PRE-processing).

**Version:** 1.0.0.0

#### 2.9.1. Functions

Table 8. Functions (non private scope only)

Name	Connector pane	Description	S.	R.	I.
AlliGator Add Decay Shift to Plot	Decay Shift Plot in [11]  Time Stamp [10]  Decay Shift [9]	Adds timestamp and decay shift to internal variables when computing a new decay.			
AlliGator All ROIs Average Lifetimes	AlliGator Internal Variable [11] [3] AlliGator Internal Variable Ulfetime Graph [10] [11] Message error in (no error) [8] [10] error out	Computes an approximate average lifetime for all ROI decays, based on the integral under the curve and IRF information.			

Name	Connector pane	Description	S.	R.	I.
AlliGator Compute Decay Average Lifetime	Plot [11] [3] Average Lifetime Outputs  (L) [RF [10] [0] error out  error in (no error) [8]  Average Lifetime Options [6]	Computes an estimate of the average lifetime of a decay using the formula <tau> = <tau>_F_T - <tau>_IRF_T where F_T is the decay and IRF_T is the IRF.</tau></tau></tau>			
		This calculation involves estimating the location of the rising time for both IRF and decay.			
		When the option "Use Local IRF" is selected and a <b>Decay Location</b> is provided, the corresponding local IRF (if it exists) is used.			
AlliGator Compute ROI Decay	Pixel Threshold High [5] Pixel Threshold Low [7] Images [11] ROI Descriptor [10] Decay Peak Constraints [9] error in (no error) [8] Loop ID [6] [4] # Pixels	Extracts the ROI pixel intensities for the different gate images, rejecting pixels not satisfying the intensity-based or peak-intensity based criteria.		S	
		A different (faster) approach is used for single-pixel ROIs.			
AlliGator Computer IRF t_0 and Mean Lifetime	Reference Decay [11] error in [8] [2] <tau>_IRF (19) [0] error out</tau>	Computes an estimate of the average lifetime of the IRF and the location of the rising time.			
AlliGator Decay Graph Get-Set Process Plot Target	Menu [11] [3] Menu [11] Plot(s) to Process [9] [17] Plot(s) to Process Error In [8] [9] [9] Error Out (dup) [9] Error Out (dup)	<b>Get</b> : Check which plot(s) to process, and add/remove checkmarks accordingly. In this case, the <b>Menu</b> reference is mandatory.			
Turget		Set: based on user selection, set which plot(s) to process. In this case, the Plot(s) to Processinput is mandatory (Single Plot, Selected Plots, All Plots), but not the Menu.			
AlliGator Extrapolate Multiple Plots	Selected Plot Info [11] 3] Last Etrapolated Decay Selected Plots [10] 5 1 1 Extrapolated Decay Message error in (no error) [8] 6 1 1 1 1 Extrapolated Decay Message 10] error out [4] Single Plot?	Extrapolated the selected plots.			
AlliGator Get Decay Average Lifetime	Selected Plot Info [11] <tau> IRF [10]  t_0 IRF [9]  error in (no error) [8]  [0] Error Out  [4] Message</tau>	Computes estimated average lifetime for the selected plot.			

Name	Connector pane	Description	s.	R.	I.
AlliGator Get Decay Peak Constraints	[3] Decay Peak Constraints  error in (no error) [8]  Exercise [0] Error Out	Get Decay Peak Constraints.			
AlliGator Get Decay Time Axis v2	Number of Gates [9] [10] t Array	Get decay time axis.			
AlliGator Get Pixel Count Constraints	[3] Pixel Count Constraints error in (no error) [8]	Get intensity constraints.			
AlliGator Get Process Plots Indices	Selected Plot Info [11] [3] Selected Plot Info (dup) [7] Selected Plot Info (dup) [8] [7] Selected Plot Info (dup) [7] Selected Plot (dup) [7] Selected	Get indices of plots to be processed.			
AlliGator Get ROI Decay UI	VI in [7] AlliGator IV DVR [11] AlliGator Ctrl Refnums [10] ROI Descriptor [9] error in (no error) [8]	Computes the decay at the provided ROI and adds tje computed intensity (sum of all gates) and estimated background to two separate plots in the <b>Intensity Time Trace</b> Graph.			
AlliGator Get ROI Decay	AlliGator Internal Variable [1] [5] Valid Decay?  AlliGator Internal Variable [2] Decay Metadata Decay [9] [1] RO Decay Add I Data error in (no error) [8] [1] RO Decay Add I Data [1] RO Decay Add I Data [1] RO Beas Add I Da	Extract decay from provided ROI (see exception below) and apply pre-processing steps if applicable. Data and metadata are stored internally for further analysis.			
		Option: instead of providing a ROI (which implies a Source Image dataset), a Decay can be provided, which will not be preprocessed but stored as is, with no additional metadata.			
AlliGator Get ROI Intensity Array v4	ROI Descriptor [10] ROI Center [3] ROI Center [3] ROI Intensity Array [2] # Pixels [2] # Pixels [3] ROI of the strong in (no error) [8] ROI Center [3] ROI Intensity Array [2] # Pixels [3] ROI Center [3	Gets the intensity array for the provided ROI.			
AlliGator Get Selected Plots and Reference Decay	Selected Plot Info [11] Reference Decay [10] error in (no error) [8]  [3] XYGraph [2] Selected Plots error in (no error) [8] [1] Valid Reference Decay? [4] Reference Decay	Get selected plot indices and reference decay.			
AlliGator Get Tabulated Results Header (Average Lifetimes)	[3] Tabulated Results Header representation [7] Error In [8]	Builds string to output results of average lifetime calculation.			

Name	Connector pane	Description	S.	R.	I.
AlliGator New Decay Plot Name	Current Folder [2] [7] New Decay Name	Builds name for new decay plot.			
AlliGator Only Show Last Decay	[0] Show Last Decay Only?	Returns option of showing only the last plot.			

Reentrancy:  $\blacksquare$   $\rightarrow$  Preallocated reentrancy  $\mid$   $\blacksquare$   $\rightarrow$  Shared reentrancy

Inlining: → Inlined

### 2.9.2. Library Constant VIs

**NOTE** No Constant VIs Found

## 2.10. AlliGator Decay Statistics.lvlib

Responsibility: Handles the Decay Statistics Graph.

**Version:** 1.0.0.0

#### **2.10.1. Functions**

Table 9. Functions (non private scope only)

Name	Connector pane	Description	s.	R.	I.
AlliGator Compute Decay Statistics v2	Decay Statistics Bin [7] Decay Statistics Graph Ref [11] Image Array [10] Current Data [9] Error in [8]  [1] Message [1] Message [1] Message [1] Time (s)	Computes decay min & max histograms.			
AlliGator Recompute Decay Statistics Histograms	Decay Statistics Graph [7] Decays Max Values [11] Decays Min Values [10] Decay Statistics Bin [9] Error In [8]	Rebins decay Min & Max histograms.			

Reentrancy:  $\blacksquare$   $\rightarrow$  Preallocated reentrancy  $\mid \blacksquare$   $\rightarrow$  Shared reentrancy

Inlining: → Inlined

## 2.10.2. Library Constant VIs

**NOTE** No Constant VIs Found

## 2.11. AlliGator Dual-Channel Datasets.lvlib

Responsibility: VIs handling dual-channel datasets

**Version:** 1.0.0.0

### **2.11.1. Functions**

*Table 10. Functions (non private scope only)* 

Name	Connector pane	Description	S.	R.	I.
AlliGator Channel Arithmetic Computation	AlliGator IV DVR in [11] Channel Arithmetic Action P [10] Error In [8]  [1] Hessage [10] Error Out	If selected, computes the arithmetic combination of ING & G2 channel and stores it nito the Dataset 1 structure.  If no arithmetic operation is selected, the G2 channel is in Dataset 1 structure, INT in Dataset 2 structure.			
AlliGator Compute (1- G2_INT)xMea n(INT) Images	G2 Images [7]	Computes (1 - G2/INT)* <int>.</int>			
AlliGator Compute G2_INTxMea n(INT) Images	Sum(G2)   Ti   Sum(INT)   S	Computes G2/INT * <int>.</int>			
AlliGator Compute INT - G2 Images	G2 Images [7] [5] INT - G2 Sum(G2) [11] [3] Sum(INT - G2) Max(G2) [9] [1] Min(INT - G2) Min(G2) [9] [1] Min(INT - G2) Sum(INT) [6] [0] error out INT Images [4]	Computes INT - G2.			
AlliGator Get Channel Names & Indices	[AlliGator Dual-Channel Datasets.lvlib:AlliGator Get Channel Names & Indices.vi]	Returns information on the dataset file's channel(s).			
AlliGator Get Selected, INT & G2 Channel Names	Datasets.lvlib:AlliGator Get	Formats dual-gate channel name and returns selected channel.			

Name	Connector pane	Description	s.	R.	I.
AlliGator Get- Set Channel Selection	Available Channel Names [11] Selected Channel Name [10] Channel Airthmetic [9] error in (no error) [8] Set (T)/Get (f) [6]	Groups access to 3 different types of Dataset Information:			
		- available channel names - channel name - channel arithmetic			
AlliGator Is Selected Channel First Channel	Selected Channel Name [11]  [3] First channel?	Identifies what type of channel is selected (First channel = TRUE: G2 or First channel = FALSE: INT).  In the case of a single-channel dataset, the output is TRUE.			
AlliGator Select FLI Channel Type	11 Dataset Channel Names   21 Available Channel Names   22 Available Channel Names   32 Complementary Channel Name   41 Selected Channel Name   42 Selected Channel Name   42 Selected Channel Name   43 Selected Channel Name   43 Selected Channel Name   44 Selected Channel Name   45 Selecte	Used when loading a new dataset. If the selected channel name is compatible, use it, if not either open a dialog (dual-channel dataset) or use the default (single-channel dataset).			
AlliGator Select FLI Dataset Channel Name	Input Message [11] Channel Names [9] Error In [8]  [1] Channel Arithmetic [1] Cancelled? [0] Error Out	Dialog window to select which SS3 channel to display.			

Reentrancy:  $\blacksquare$   $\rightarrow$  Preallocated reentrancy  $\mid \blacksquare$   $\rightarrow$  Shared reentrancy

Inlining: → Inlined

### 2.11.2. Library Constant VIs

**NOTE** No Constant VIs Found

### 2.12. AlliGator Fit Method Benchmark.lvlib

**Responsibility:** VIs for the Fit Method Benchmark Tool.

**Version:** 1.0.0.0

#### **2.12.1. Functions**

Table 11. Functions (non private scope only)

Name	Connector pane	Description	S.	R.	I.
AlliGator 2- Exp Decay Model	Decay Simulation Parameters [11] Period [10] Fit Simulation Parameters [9]	Computes a 2-#xp decay with the provided parameters.			
AlliGator Baseline Simulation Check	Wew Baseline in [11] # Bins [9] # Counts [8] # Counts [8]	Computes an optimized baseline.			
AlliGator Compute Lifetime Simulation Histograms	Histogram Bin Size (f1) [2] Histogram Bin Size (tau) [1] tau 1 [0] tau 2 [5] a [7] Error in [11]  Percentiles to Keep (1, 99) [12]  Percentiles to Keep (1, 199) [12]  Histogram Bin Size (tau) [13] Histograms [4] Array Statistic (tau 1) [6] Array Statistics (tau 2) [7] Bin Array Statistics (an) [8] Array Statistics (an) [9] Percentiles to Keep (1, 199) [12]  Percentiles to Keep (1, 199) [12]  Histogram Bin Size (f1) [2]  Histogram Bin Size (f1) [2]	Computes fitted parameter histograms and statistics.			
AlliGator Decay Sum	Output Plots [1] ** Photons	Computes the number of simulated photons in each decay (the other two plots are the fit and the residuals).			
AlliGator Fit Linear Combination s of Exponentials	Fit Simulation Parameters [0]  Decay Simulation Parameters [1]  Decay Fit Options & Parameters [7]  De	Simulate a 1-Exp or 2-Exp decay and fits it with the selected model.			
AlliGator Fit Method Benchmark	Alligator Fit Mothod Benchmk	Fit Method Benchmark GUI.			
AlliGator Get tau1, tau2 & a1	[AlliGator Fit Method Benchmark.lvlib:AlliGator Get tau1]	Outputs tau1, tau2 and a1.		S	
AlliGator Load Experimental IRF	XYGraph in [11] Plot Data out Plot Data in [10] Experimental IRF Loaded? error in [8]  (2) Plot Data out [1] Experimental IRF Loaded? (9) error out [4] Message	Load experimental IRF from ASCII file.			
AlliGator Pad or Truncate Decay	# Requested Points [9] For Out	Adds or removes decay points for it to match the laser period.		S	
AlliGator Pseudo Dirac IRF	Reference Decay in [11] Period [10] Decay Bin Size [9] Error In [8]	Computes a decay with a single non-zero bin.			
AlliGator Rescale 2-Exp Fraction	a 1 in [11] [3] r 1 out  2-Exp Parameters [9] [7] [7]	Normalizes decay amplitudes for random timestamp generation.		S	

Name	Connector pane	Description	S.	R.	I.
AlliGator Save Simulation Outputs to ASCII	Fit Results [11] Simulati Simu	Saves simulation results.			
AlliGator Too Many Histogram Bins Message	error in (no error) [0]	Too many bins error dialog.			

Reentrancy:  $\blacksquare$   $\rightarrow$  Preallocated reentrancy  $\mid \blacksquare$   $\rightarrow$  Shared reentrancy

Inlining: → Inlined

### 2.12.2. Library Constant VIs

**NOTE** No Constant VIs Found

## 2.13. AlliGator Global Decay Fit.lvlib

Responsibility: VIs handling global decay fit operations

**Version:** 1.0.0.0

#### **2.13.1. Functions**

*Table 12. Functions (non private scope only)* 

Name	Connector pane	Description	S.	R.	I.
AlliGator Get Parameter Original Indices	Parameter Types [11] [3] Global Parameter Indices [2] Plot Specific Parameter Ind [2] Plot Specific Parameter Ind [6] Global Fit Parameter Info	No description found (add content in vi description)			
AlliGator Global 1-Exp + IRF Convolution Fit v3	Optimal Offset Selection Cr [2] Initial Parameters [1] Decays [0] Global Fit Parameters Info [5] Fit Options [9] Fit Option	No description found (add content in vi description)			
AlliGator Global 2-Exp + IRF Convolution Fit v2	Optimal Offset Selection Cr [2] Initial Parameters [1] Decays [0] Global Fit Parameters Info [5] Fit Options [9] error in (no errol [11] parameter bounds [11] parameter bounds [12] Termination Criteria [13]	No description found (add content in vi description)			

Name	Connector pane	Description	S.	R.	I.
AlliGator Global Decay Fit Output String	Plot Names [0] Fit Output [5] Delta Best Fit Parameters [7] elapsed (relative) seconds [9] Fit Options [12] Fit Options [12] Global Fit Parameter Info [14]	No description found (add content in vi description)			
AlliGator Global Fit Decay Pre- conditioning	XYGraph in [0]  Selected Plots [5]  Max Decay Percentile (1) [7]  Min Decay Percentile (1) [7]  Min Oterrory [11]  error in (no error) [11]  [2] Index Max Array [3] Valid Plot Indices [4] XYGraph out [4] XYGraph out [4] XPGraph out [4] Plot Names [5] Error out [4] Points [13] Is Valid? [12] Message	No description found (add content in vi description)			
AlliGator Global Fit Decays	Decay Graph [11]  Abort Fit [10]  error in (no error) [8]  IRF [6]  [5] Aborted?  [3] Best Fit Parameters  [2] R-2  [1] Reduced Chi^2  [0] Error Out  [4] Fit Output Message	No description found (add content in vi description)			
AlliGator Plot Global Fit Parameters	XYGraph in [11] Figure Flat State Fit Parameters [9] Flat State Fit Parameters [9] From In [8] From In	No description found (add content in vi description)			
AlliGator Plot Selected Global Fit Parameters	XYGraph in [11]  # Decays [10]  Best Fit Parameters [9]  error in (no error) [8]  Global Fit Parameter Info [6]  R2 & RMSE [4]	No description found (add content in vi description)			
AlliGator Post Global Fit Script	XYGraph in [7]    Gliphol   Gliphol	No description found (add content in vi description)			
AlliGator Unscramble All Global Fit Plots	# Points in Plots [7] t Array [11] Y array [10] Best Nonlinear Fit Array [9] Error in [8] Residual Type [6]	No description found (add content in vi description)			

Reentrancy: 

→ Preallocated reentrancy | 

→ Shared reentrancy

Inlining: → Inlined

## 2.13.2. Library Constant VIs

**NOTE** No Constant VIs Found

## 2.14. AlliGator Globals, Variables & Constants.lvlib

Responsibility: Globals, refnums, constants, etc.

**Version:** 1.0.0.0

### **2.14.1. Functions**

*Table 13. Functions (non private scope only)* 

Name	Connector pane	Description	s.	R.	I.
AlliGator Clear Variables	[AlliGator Globals]	Reset all internal variables to their default.			
AlliGator Exported Internal Variable Names	[AlliGator Globals]	Array of internal variable names exposed to Python plugin users. These names are internally preceded by "X_" in the enum item list.			
AlliGator Refnums Storage	[AlliGator Globals]	LV2-type global storing refnums to VIs, Tabs and Indicators.			
Alligator Variables Storage	[AlliGator Globals]	LV2-type global storage of internal AlliGator data and parameters.			
AlliGator Visible Tab Label	[AlliGator Globals]	Returns the label of visible tab on AlliGator's main window.			

Reentrancy: 

→ Preallocated reentrancy | 

→ Shared reentrancy

Inlining:  $\rightarrow$  Inlined

### 2.14.2. Library Constant VIs

**NOTE** No Constant VIs Found

## 2.15. AlliGator HDF5.lvlib

**Responsibility:** VIs handling HDF5 dataset files.

**Version:** 1.0.0.0

#### **2.15.1. Functions**

*Table 14. Functions (non private scope only)* 

Name	Connector pane	Description	s.	R.	I.
AlliGator Check Gate Number in HDF5 File v2	Gate Names [7] ref in [11] FLI Parameters [9] error in (no error) [8]  [1] FLI Parameters [0] error out [4] Missing Gates? [6] Additional Gates?	Checks that the gate images stored in the HDF5 file correspond to the description provided by the <b>FLI Parameters</b> .			
		If so updates # <b>Gates</b> in that structure and sets the corresponding output flags.			
AlliGator Check Gate Number in HDF5 File v3	Gate Names [7] ref in [11] FLI Parameters [9] error in (no error) [8] [1] FLI Parameters [0] error out [4] Missing Gates? [6] Additional Gates?	Checks that the gate images stored in the HDF5 file correspond to the description provided by the <b>FLI Parameters</b> .			
		If so updates # <b>Gates</b> in that structure and sets the corresponding output flags.			
AlliGator Check HDF5 File Type	HDF5 File Path in [11] error in (no error) [8]  [3] HDF5 File Path out [2] HDF5 File Type [1] FLI Dataset Type [0] error out	Tries reading the HDF5 file's information for the 3 different supported dataset type, until success, and returns the identified dataset type.			
AlliGator Check HDF5 Image Size v2	FLI Parameters in [11] Image ROI Information [10] Image Binning Options [9]	Determines the gate image dimension (X, Y) from the provided file information.			
AlliGator Check HDF5 Image Size	FLI Parameters in [11] [3] FLI Parameters out Image ROI Information [10] [3] FLI Parameters out Image Binning Options [9]	Determines the gate image dimension (X, Y) from the provided file information.			
AlliGator Convert FLI Dataset Info to String	File Path [5]  FLI Parameters [11]  Metadata [10]  size [9]  error in (no error) [8]	Builds HDF5 Dataset Information string			
AlliGator Get HDF5 File Type	File Path [11] [3] File Type  Error In [8] [0] Error Out	No description found (add content in vi description)			
AlliGator Is SS2 Dataset HDF5 File	File Path [7] SS2? [8] Is SS2 Dataset? Error In [9] [10] Error Out	Checks wether a HDF5 file is a SS2 dataset file (early version).			
AlliGator Load HDF5 FLI Dataset Information	File Path [11] 3] FLI Data File Information  Error In [8] 7] Data Description  [9] Total Data Description  [1] Data Description  [1] elapsed (relative) seconds	Loads HDF5 FLI dataset information.			
AlliGator Load HDF5 FLI Dataset Prelude	File Path [11] [3] File Path out error in (no error) [8] [2] FLI Data File Information [1] Metadata [0] error out [4] Data Description	Initial steps of loading a HDF5 FLI dataset file.			

Name	Connector pane	Description	S.	R.	I.
AlliGator Load HDF5 FLI Header File Information v0.6	ref in [11] [3] ref out HDF5 FLI File Loading Infor [10] [3] ref out error in (no error) [8] [7] [7] [7] [7] [7] [7] [7] [7] [7] [7	Loads HDF5 FLI dataset file information (v0.6).			
AlliGator Load Single Gate Image from HDF5 v 0.6b	Gate Index [11] File Info [10]  error in (no error) [8]  Action [6]	Loads single gate image (or dual-channel images) from HDF5 FLI dataset file (v0.6b).			
AlliGator Load Single HDF5 Gate Image v 0.2b	Gate Index [11] File Info [10]  error in (no error) [8]  Action [6]	Loads single gate image from HDF5 FLI dataset file (v0.2).			
AlliGator Load Single HDF5 Gate Image v 0.3b	Gate Index [11] File Info [10] error in (no error) [8] Action [6]	Loads single gate image (or dual-channel images) from HDF5 FLI dataset file (v0.3b).			
AlliGator Read HDF5 FLI Dataset Series Timestamps	File Paths [11] [3] File Paths (dup) [2] Timestamps [6] error in (no error) [8] [6] error out	Loads HDF5 FLI dataset gate images timestamps			
AlliGator Read HDF5 FLI Image Information	ref in [11]   Sample ROI Information   12   Image ROI Information   12   Image Binning Options   13   Image Information   14   Image Information   15   Image Information   16   Image Information   17   Image Information   17   Image Information   18   Image Information   19   Image Information   19   Image Information   19   Image ROI Information   19   Image Informa	Reads HDF5 FLI dataset image information.			
AlliGator Read HDF5 SSX Detector Information	ref in [11] [3] SwissSPAD Detector Information error in (no error) [8] [0] error out	Reads HDF5 FLI dataset SSx detector information.			
AlliGator Save FLI Dataset Gates to HDF5 (VDM)	replace? [7] HD55 File ref in [11] Gate Names [10] error in (no error) [8] Channel 1 Gate Image Array [6] Channel 2 Gate Image Array [4]	Saves gate images (single- or dual-channel) to HDF5 file.			
AlliGator Save FLI Dataset Metadata to HDF5	Compression [7] Software + Version [11] Dataset Information [10] Gate Names [9] error in (no error) [8]	Saves the FLI Dataset metadata in the AlliGator HDF5 file format.			

Name	Connector pane	Description	s.	R.	I.
AlliGator Save FLI Dataset to HDF5 File v3 (VDM)	Compression (7) [5] Software + Version [7] Channel 1 Gate Image Array [10] Dataset Information [9] Error In [8] Gate Names (Gate) [6]	Save gate images (single- or dual-channel) and dataset information to HDF5 file.			
AlliGator Save SGL Gate Image to HDF5	Replace? [7] ref in [11] Data [10] Image Name [9] error in (no error) [8] Compression [6]	Saves single gate image data array to HDF5 FLI Dataset file.			
AlliGator Single SS3 Gate Slip Correction	Refnum in [11] [3] Refnum out 152 [3] Refnum out 15	Removes one of two sets of columns of a SS3 dataset to account for common FPGA data transfer issues.			
AlliGator SS3 Gates Slip Correction	Data Value Reference in [11] [3] [3] Data Value Reference out [3] [5] [6] [6] [7] [7] [7] [7] [7] [7] [7] [7] [7] [7	Performs the column truncation for SS3 datasets needed to fix a common FPGA data transfer issue.			

Scope:  $\sigma$   $\rightarrow$  Protected |  $\sigma$   $\rightarrow$  Community

Reentrancy:  $\blacksquare$   $\rightarrow$  Preallocated reentrancy  $\mid \blacksquare$   $\rightarrow$  Shared reentrancy

Inlining: → Inlined

### 2.15.2. Library Constant VIs

**NOTE** No Constant VIs Found

## 2.16. AlliGator Intensity Corrections.lvlib

Responsibility: VIs handling intensity correction to the Sum of All Gates image.

**Version:** 1.0.0.0

#### **2.16.1. Functions**

*Table 15. Functions (non private scope only)* 

Name	Connector pane	Description	S.	R.	I.
AlliGator Define & Save Intensity Corrections File	[AlliGator Intensity Corrections.lvlib:AlliGator Define & Save Intensity Corrections File.vi]	UI to enter intensity correction sepcifications.			

Name	Connector pane	Description	S.	R.	I.
AlliGator Get Dataset Series Timestamp & Intensity Correction	Corrections.lvlib:AlliGator	Get dataset timestamp and intensity corrections (if available and requested) or use defaults instead.			
AlliGator Load Intensity Corrections	Intensity Correction File [11] [3] Intensity Corrections [1] Message [0] Error Out	Loads saved dataset series intensity corrections.			
AlliGator MCP Voltage to Gain	MCP Voltage [11]  MCP Parameters [9]  Guin  [3] Gain  MCPV  Guin	Heuristic fit of the relationship between effective ICCD gain G and MCP voltage V_MCP.  The function used is a stretched exponential with vertical and horizontal			
		offsets.  Parameters need to be fitted independetly with a G(V_MCP) series.			

**R**eentrancy: 

Preallocated reentrancy | 

Shared reentrancy

Inlining:  $\rightarrow$  Inlined

### 2.16.2. Library Constant VIs

**NOTE** No Constant VIs Found

### 2.17. AlliGator Internal Variables.lvlib

**Responsibility:** VIs to access individual (or group of) internal data or variables using a data by value reference (DVR).

**Version:** 

#### **2.17.1. Functions**

Table 16. Functions (non private scope only)

Name	Connector pane	Description	S.	R.	I.
AlliGator IV [Raw Phasor Plot]	AlliGator IV DVR in [1]  [Raw Phasor Plots] [10]  [Raw Phasor Plots] [2] [Raw Phasor Plots]  error in (no error) [8]  Get (F)/ Set (T) [6]  [0] error out	No description found (add content in vi description)			
AlliGator IV Average Lifetime Map	AlliGator IV DVR in [11] [3] AlliGator IV DVR out [[Average Lifetime]] [10] [2] [[Average Lifetime]] enror in (no error) [8] [3] [3] [3] [4] [4] Amplitude Weighted Average	No description found (add content in vi description)			
AlliGator IV Calibration Phasor Map	AlliGator IV DVR in [11] [3] AlliGator IV DVR out Phasor Calibration Map 2 [10] [2] Phasor Calibration Map error in (no error) [8] [9] [0] error out	No description found (add content in vi description)			
AlliGator IV Calibration Phasor Series	AlliGator IV DVR in [11] [7] [7] [3] AlliGator IV DVR out Calibration Phasor Series [10] [7] [7] [7] [7] [7] [7] [7] [7] [7] [7	No description found (add content in vi description)			
AlliGator IV Calibration Phasor	AlliGator IV DVR in [11] Calibration Phasor [10] Gustree Calibration Phasor [22] Calibration Phasor error in (no error) [8] Get (F)/ Set (T) [6]	No description found (add content in vi description)			
AlliGator IV Clear Phasor Data	Data Value Reference in [11] [3] Data Value Reference out	No description found (add content in vi description)			
AlliGator IV Current Dataset	AlliGator IV DVR in [11]  Current Dataset [10]  error in (no error) [8]  Get (F)/ Set (T) [6]	No description found (add content in vi description)			
AlliGator IV Current Folder	AlliGator IV DVR in [11]  Current Folder [10]  Grand [2] Current Folder error in (no error) [8]  Get (F)/ Set (T) [6]	No description found (add content in vi description)			
AlliGator IV Dataset Path	AlliGator IV DVR in [11] Single Data Point Path [10] [Time-Series Path] [9] error in (no error) [8] Get (F)/ Set (T) [6] [3] AlliGator IV DVR out [5] Single Data Point Path [11] [Time-Series Path] [10] error out [4] Current Dataset	No description found (add content in vi description)			
AlliGator IV Dataset Series Folder & Type	[AlliGator Internal Variables.lvlib:AlliGator IV Dataset Series Folder & Type.vi]	No description found (add content in vi description)			
AlliGator IV Decay Shift Plot	AlliGator IV DVR in [11]  Decay Shift Plot in [10]  Plot out error in (no error) [8]  Get (F)/ Set (T) [6]	No description found (add content in vi description)			
AlliGator IV Decays Max & Min	[AlliGator Internal Variables.lvlib:AlliGator IV Decays Max & Min.vi]	No description found (add content in vi description)			
AlliGator IV Gate Image Slide	AlliGator IV DVR in [11]  Gate Image Slide [10]  error in (no error) [8]  Get (F)/ Set (T) [6]	No description found (add content in vi description)			

Name	Connector pane	Description	S.	R.	I.
AlliGator IV Intensity Corrections	AlliGator IV DVR in [11] [Intensity Correction] [10] error in (no error) [8]  Get (P)/ Set (T) [6]	No description found (add content in vi description)			
AlliGator IV Last Calibrated Phasor SDV	AlliGator IV DVR in [11] Last Calibrated Phasor SDV [10] error in (no error) [8] Get (F)/ Set (T) [6]	No description found (add content in vi description)			
AlliGator IV Last Calibrated Phasor	AlliGator IV DVR in [11] Last Calibrated Phasor [10] Pharm 12   Last Calibrated Phasor error in (no error) [8] Get (F)/ Set (T) [6]	No description found (add content in vi description)			
AlliGator IV Mask Image	AlliGator IV DVR in [11]  Mask Image [10]  error in (no error) [8]  Get (F)/ Set (T) [6]	No description found (add content in vi description)			
AlliGator IV Phasor Map	AlliGator IV DVR in [11] [[CSG Phasor]] [10] [2] [[CSG Phasor]] [10] [2] [[CSG Phasor]] [10] error in (no error) [8] [10] error out	No description found (add content in vi description)			
AlliGator IV Phasor Plot	AlliGator IV DVR in [11] Phasor Plot [10] Phasor Plot [2] Phasor Plot error in (no error) [8]  Get (F)/ Set (T) [6]	No description found (add content in vi description)			
AlliGator IV Phasor Plots Locked to Reference n	AlliGator IV DVR in [11]  [Phasor Plot(s) locked to R [10]  [O] error out  [O] error out	No description found (add content in vi description)			
AlliGator IV Phasor Ratio Map	AlliGator IV DVR in [11] [[Phasor Ratio]] [10] [[Phasor Ratio]] [1	No description found (add content in vi description)			
AlliGator IV Reference Decay	AlliGator IV DVR in [11]  [3] AlliGator IV DVR out Reference Decay [10]  [2] Reference Decay Reference Decay Plot Name [1] Reference Decay Plot Name [2] Reference Decay Plot Name [3] Company (1) Reference Decay Plot Name [4] Company (1) Reference Decay Plot Name [5] Company (1) Reference Decay Plot Name [6] Company (1) Ref	No description found (add content in vi description)			
AlliGator IV ROI Decay	AlliGator IV DVR in [11] Decay in [10] Peror in (no error) [8] Get (F)/ Set (T) [6]  [3] AlliGator IV DVR out [2] Decay out [1] Valid Decay? [0] error out	No description found (add content in vi description)			
AlliGator IV ROI Mask	AlliGator IV DVR in [11]  ROI Mask Image [10]  error in (no error) [3]  Get (F)/ Set (T) [6]	No description found (add content in vi description)			
AlliGator IV Selected Gate Images	AlliGator IV DVR in [11] Same [3] AlliGator IV DVR out [5.00] Error In [8] Fror In [8] [0] Error Out	No description found (add content in vi description)			
AlliGator IV Selected Max or Sum Image	AlliGator I/ DVR in [11]  Sum (TJ/Max (F) 9)  Error In [8]  3 AlliGator I/ DVR out  11 Selected Gate Image (Sum/Max)  [0] Error Out	No description found (add content in vi description)			
AlliGator IV Single Fit Parameters	AlliGator IV DVR. in [11]  [Single Decay Fit Paramete] [10]  error in (no error) [8]  Get (F)/ Set (T) [6]	No description found (add content in vi description)			

Name	Connector pane	Description	S.	R.	I.
AlliGator IV Start Time	AlliGator IV DVR in [11] Start Time [10] For [2] Start Time error in (no error) [3] Get (F)/ Set (T) [6]	No description found (add content in vi description)			

Reentrancy:  $\blacksquare$   $\rightarrow$  Preallocated reentrancy  $\mid \blacksquare$   $\rightarrow$  Shared reentrancy

Inlining:  $\rightarrow$  Inlined

### 2.17.2. Library Constant VIs

**NOTE** No Constant VIs Found

## 2.18. AlliGator IRF.lvlib

**Responsibility:** Handles IRF-related functions.

**Version:** 1.0.0.0

### **2.18.1. Functions**

Table 17. Functions (non private scope only)

Name	Connector pane	Description	S.	R.	I.
AlliGator All ROIs IRF Analysis	AlliGator Internal Variable [11] [3] AlliGator Internal Variable [2] Message error in (no error) [8] [1] # IRFs defined [0] error out	Extracts the decays from all ROIs and stores them as IRFs for subsequent NLSF analysis.			
AlliGator Clear Local IRFs	AlliGator IV DVR in [11]  Comparison of the comp	Clears the internal variable-sored local IRFs.			
AlliGator Compute Optimal IRF v2	Selected Piot Info [0] [3] Residuals Piot IRF*PSED Fixed Parameters [3] [6] Piot Name [8] Fror In [11] [9] [11] Parameter Values IRF Optimization Control [9] [9] [11] Parameter Values Info [9] [12] Parameter Values Info [9] [13] Additional Data	Extract IRF from provided decay using deconvolution and finding the minimal metrics.			
AlliGator Create Cursors for Square Gated IRF Fit	Decay Graph [11]    Gurar   Gu	Creates 5 cursors (tr1, tr2, tf1, tf2 and ten) used to define the different transitions between domains in a square gate.			
AlliGator Extract IRF Instead of Decay Flag	[0] Extract IRF instead of Decay?	Get the value of the option "Get IRF instead of Decay".			

Name	Connector pane	Description	s.	R.	I.
AlliGator Fit IRF String	Use Local IRF [11] IRF String Error In [8] IRF String [1] IRF String	Create the Notebook string specifying what kind of IRF was used in the fit.		S	
AlliGator Fit IRF to Cubic Spline + Sine	Selected Plot Info [11]  Odd: State error in (no error) [8]  Odd: State (1) Fitted IRF Message (0) Error Out	Fits the provided plot by a sum of a sinus function and a cubic spline.			
AlliGator Fit to Logistic Square Gated IRF	Selected Plot Info [11] [3] Fitted IRF [13] Message error in (no error) [8] [22] IFF [0] Error Out	Fits the decay to a logistic square gate.			
AlliGator Fit to Model IRF	Selected Plot Info [11] [3] Fitted IRF Fit [1] Message error in (no error) [8] [0] Error Out	Fit the selected plot to a Gaussian convolved with a single-exponential decay.			
AlliGator Fit to Tilted Logistic Square Gated IRF	Selected Plot Info [11] [3] Fitted IRF Fit [1] Message error in (no error) [8] [2] Error Out	Fits the selected decay to a tilted logistic square gate.			
AlliGator Get IRF Values & Locations	[AlliGator IRF.lvlib:AlliGator Get IRF Values & Locations.vi]	Gets the array of stored <b>IRF Values</b> as well as the <b>IRF Locations</b> .			
AlliGator Get Optimal IRF from Decay v2	Selected Plot Info [11]  error in (no error) [8]  [3] Extracted IRF [2] Message [1] Message Style [0] Error Out	Extract IRF from single-exponential decay by deconvolution and optimization of the time constant.			
AlliGator Get Reference Decay	Data Value Reference in [11] [3] Data Value Reference out Error In [8] [97-10] [12] Reference Decay	Gets the internally stored reference decay.			
AlliGator Get Square Gated IRF Analysis Cursors	XYGraph in [11]  Error In [8]  [3] Cursor Positions Array [2] Cursor Names Array [1] 5 Cursors available? [0] Error Out	Gets locations and names of the 5 cursors needed to define the regions of a square gate fit.			
AlliGator Is IRF Valid	Reference Decay [2] [7] Valid Plot?	Checks that the <b>Reference Decay</b> is a valid plot.			
AlliGator Load Local IRFs	File Path [11]  File Path [11]  error in (no error) [8]  [5] Dataset Information v1  [3] [[IRFs]]  [2] IRF Array Time Axis  [1] Message  [0] error out  [4] # IRFs	No description found (add content in vi description)			
AlliGator Save Local IRFs	Dataset Information v1 [7] File Path [11] [IIRFs]] [10] IRF Array Time Axis [9] Error in (no error) [8]	No description found (add content in vi description)			
AlliGator Save-Load Local IRFs	AlliGator Ctrl Refnums [7] AlliGator IV DVR in [11] Save/Load (F) [10] File Path [9] error in (no error) [8]	No description found (add content in vi description)			

Name	Connector pane	Description	S.	R.	I.
AlliGator Script All ROIs IRF Analysis	[3] All ROIs Analysis Script    In the control of t	Interactive script computing the decay for all ROIs and storing them as IRFs for subsequent NLSF analysis.			
AlliGator Sort Cursors for Square Gated IRF Fit	Cursor Position Array in [1] [3] Sorted Cursor Position Array  Cursor Name Array in [9] [7] Sorted Cursor Name Array  [8] Sorted Cursor Name Array	Sorts 5 cursors by name (if they exist) corresponding to the 5 boundaries between regions in a square gate.			
AlliGator Square Gated IRF Fit Cursors String	Cursor Names Array [11] [2] Message Cursor Positions Array [9] [10] Error In [8] [2] [2] [2] [2] [2] [2] [2] [2] [2] [2	Creates string describing the boundaries between regions in a square gate.			
AlliGator Thresholded IRF	Selected Plot Info [11]  error in (no error) [8]  [3] Thresholded IRF [1] Message [0] Error Out	Sets IRF values below threshold to 0.			

Reentrancy:  $\blacksquare$   $\rightarrow$  Preallocated reentrancy  $\mid \blacksquare$   $\rightarrow$  Shared reentrancy

Inlining: → Inlined

#### 2.18.2. Library Constant VIs

**NOTE** No Constant VIs Found

# 2.19. AlliGator Lifetime & Other Parameters.lvlib

Responsibility: No description found (add content in lvlib description)

**Version:** 1.0.0.0

#### **2.19.1. Functions**

*Table 18. Functions (non private scope only)* 

Name	Connector pane	Description	S.	R.	I.
AlliGator	[AlliGator Lifetime & Other	No description found (add content in vi			
Power Law	Parameters.lvlib:AlliGator	description)			
Fit from	Power Law Fit from				
Intensity	Intensity Distribution.vi]				
Distribution					

**R**eentrancy: 

→ Preallocated reentrancy | 

→ Shared reentrancy

Inlining: → Inlined

## 2.19.2. Library Constant VIs

**NOTE** No Constant VIs Found

# 2.20. AlliGator Local Decay Window.lvlib

Responsibility: VIs used with the Local Decay Window.

**Version:** 1.0.0.0

#### **2.20.1. Functions**

*Table 19. Functions (non private scope only)* 

Name	Connector pane	Description	s.	R.	I.
AlliGator Get Local Fit & Residuals	[AlliGator Local Decay Window.lvlib:AlliGator Get Local Fit & Residuals.vi]	Gets the fit and residuals for the selected ROI.			
AlliGator Local Decay Window	Decay	Local Decay Window UI. This window displays the decay (and when available, IRF, fit and residuals) at the selected ROI.			
AlliGator Send Local Decay Plots (Parameter Map)	AlliGator IV DVR in [11] Costs  ROI Descriptor [10] Costs  error in (no error) [8] (0) error out	Gets the data (decay, fit, IRF, residuals and fit parameters) at the selected ROI and sends it to the Local Decay Window for update.			
AlliGator Send Local Decay Plots	AlliGator IV DVR in [1]  ROI Descriptor [10]  error in (no error) [3]	Gets the data (decay, fit, IRF, residuals and fit parameters) at the selected ROI and sends it to the Local Decay Window for update.			
AlliGator Update Local Decay Graph	XY Graph Refnum [11] Profile Window Data [10] Error In [8]  [0] Error Out	Updates the Local Decay Window graph.			

Scope:  $\sigma$   $\rightarrow$  Protected |  $\sigma$   $\rightarrow$  Community

Reentrancy:  $\square$   $\rightarrow$  Preallocated reentrancy  $|\square$   $\rightarrow$  Shared reentrancy

Inlining: → Inlined

#### 2.20.2. Library Constant VIs

# 2.21. AlliGator Parameter Map.lvlib

**Responsibility:** VIs handling generic Parameter Maps.

**Version:** 

#### **2.21.1. Functions**

*Table 20. Functions (non private scope only)* 

Name	Connector pane	Description	S.	R.	I.
AlliGator Build Parameter Map	AlliGator Internal Variable [11]	Builds the selected fit parameter map image.			
AlliGator Color Parameter Map in Original Image	Color Scale Refnum [5] Image Color Scale Refnum [7] AlliGator IV DVR in [11] Source Image Refnum [10] Error In [8]  Error In [8]	Overlays the Decay Fit Parameter Map on the Source Image.			
AlliGator Decay Fit Parameter Map Size Dialog	Message [11] X Resolution [10] Y Resolution [9] error in (no error) [8]  Message [11] X Resolution [1] Y Res	Displays a standard dialog box that prompts users to enter information, such as a user name and password.  This Express VI is configured as follows:  Message to Display to the User:No dataset is currently loaded. Either load the dataset corresponding to the Decay Fit Parameter Map first, or provide the original dataset's X and Y resolution. The inputs are:  Number: X Resolution Number: Y			
AlliGator Delete Parameter Map Set	AlliGator Ctrl Refnums [7]  AlliGator IV DVR in [11]  Plant  [3] AlliGator IV DVR out  Plant  [1] Message  error in (no error) [8]  [0] error out	Resolution  No description found (add content in vi description)			
AlliGator Export ROI(s) Parameter Set as ASCII File	AlliGator IV DVR in [11]  All ROIs [10]  Parameter Map Set [9]  error in (no error) [8]	Exports Decay Fit Parameter Map data to an ASCII file.			

Name	Connector pane	Description	s.	R.	I.
AlliGator Get Parameter Map Data Wrapper	Data Value Reference out  Map Set [10]  Parameter in [9]  Parameter in (no error) [8]  Parameter in (no error) [8]  Parameter in (no error) [8]	Returns selected fit parameter's map.			
AlliGator Get Parameter Map Data	Output ROI centers? [5] Compute Parameter Map [7] Multiple Parameters [11] X Resolution [10] Y Resolution [19] Error in [8] Map index [6]	Fills in matrix with fit parameter wherever it has been computed, NaN otherwise.			
AlliGator Parameter Map Context Menu Handler	Image Event Data [11] [3] AlliGator Actions Error In [8] [6] Error Out	Decay Fit Parameter Map contextual menu handler.			
AlliGator Parameter Map Range Mouse Move Event	AlliGator Actions in [11] [3] AlliGator Actions out Mouse Move Data [10] [9] [9] Error In [8]	Handles mouse move event in the Decay Fit Parameter Map display range control.			
AlliGator Parameters Map Mouse Up Event	AlliGator Actions in [11] [3] AlliGator Actions out Image Control Kefnum [10] [7] [7] [7] [8] [9] error out error in (no error) [8]	Handles Mouse Up event in the Parameter Map image.			
AlliGator Plot Parameter 2 vs Parameter 1	Lifetime Graph refnum [7] Data Value Reference in [11] Map Parameter 2 [9] error in (no error) [8] Parameter Map Set [6]	Creates scatter plot of selected parameter vs intensity for all ROIs and sends it to the <b>Lifetime &amp; Other Parameters Graph</b> .			
AlliGator Plot Parameter Scatterplot	Lifetime Graph refnum [7]  Data Value Reference in [11]  Parameter Map Set [10]  Map Parameter [9]  error in (no error) [8]  [4] Message	Send the selected Decay Fit Parameter Map data to a single plot in <b>Lifetime &amp; Other Parameters Graph</b> .			
AlliGator Plot Parameter vs Intensity Scatterplot v2	Lifetime Graph refnum (7)  Data Value Reference in [11]  Map Parameter Set [10]  Parameter [9]  ROI idx (2147483647: all ROIs) [6]  ROI idx (2147483647: all ROIs) [6]	Creates scatter plot of selected parameter vs intensity for all ROIs and sends it to the <b>Lifetime &amp; Other Parameters Graph</b> .			
AlliGator Save All Parameter Maps to ASCII	Data Value Reference in [11]	Saves the Decay Fir Parameter Map 2D array to an ASCII file.			
AlliGator Save Parameter Map to ASCII	Data Value Reference out  Map Set [10] [10] [10] [10] [10] [10] [10] [10]	Saves single Decay Fit Parameter Map data into an ASCII file.			

Name	Connector pane	Description	s.	R.	I.
AlliGator Select Parameter Scatter Plot Type	Parameter Names [11] [3] Cancelled? [2] Parameter 1 [1] Parameter 2 [0] Error Out	Dialog to select parameter 1 and parameter 2 to be computed for a Phasor Plot of the Phasor Graph.			
AlliGator Update Parameter Map Palette	Parameter Map Ctrl Refums [11]	Updates the color palette of the <b>Decay Fit Parameter Map</b> image.			

Reentrancy:  $\blacksquare$   $\rightarrow$  Preallocated reentrancy  $\mid \blacksquare$   $\rightarrow$  Shared reentrancy

Inlining: → Inlined

## 2.21.2. Library Constant VIs

**NOTE** No Constant VIs Found

# 2.22. AlliGator Python Plugins.lvlib

Responsibility: VIs handling python plugins.

**Version:** 

#### **2.22.1. Functions**

*Table 21. Functions (non private scope only)* 

Name	Connector pane	Description	S.	R.	I.
AlliGator Add Python Functions to Menu	Menu in [11] [3] Menu out Object Context Menu? [10] Parent Menu Tag [9] error in (no error) [8]	Adds python function found in script to corresponding menu in AlliGator.			
AlliGator Add Python Functions to Object Menu	Object Refnum [11]  Menu in [10]  From the first transfer of the f	Adds python function to object menu.			
AlliGator Export Plugin Parameters to Clipboard	AlliGator IV DVR [11] [3] AlliGator IV DVR Parameter Names only [9] [1] Message Error In [8] [0] Error Out	Sends a string containing all parameters, internal variables and data accessible to python plugins.			

Name	Connector pane	Description	S.	R.	I.
AlliGator Find Object Python Function Information	Object Refnum [11] Menu Item Tag [10] error in (no error) [8]  [3] Python Function Info [2] Menu Item Tag (dup) [1] Found? [0] error out	Gets object's python function's information			
AlliGator Find Python Function Information	Function Menu Hem Tag [10] 7 [0] error out error in (no error) [8] 4 [4] Found?	Gets python function's information.			
AlliGator Format Path String for Python	Python Plugin Dialog Output [1] [3] Python Plugin Dialog Output Error In [8] [0] Error Out	Formats path for python function consumption.			
AlliGator Get Message & Parameters from JSON Output		Interprets JSON string output and formats it to be sent to the Notebook.			
AlliGator Get Python Function Parameter Values Dialog	Parameters In [10] [2] Parameters Out [1] Cancelled? [2] Error In [8]	Dialog to allow user to enter python function parameters.			
AlliGator Get Python Session ID	Python Plugins Folder Path [11] [3] Python Session  Error In [8] [7] [1] Valid Python Session  [0] Error Out  [4] Message	Gets the current (or creates a new) python session ID.			
AlliGator JSON Output Warning	JSON Element Name [11] Function Name [9] error in (no error) [8]	Formats error message with python function information.			
AlliGator JSON String to Settings Parameter	AlliGator Settings List Ele [1] [3] Variant JSONs [10] [4] [6] error out error in (no error) [8]	Decodes JSON python ouput string.			
AlliGator Parameter Type to Default Value String	Parameter Type [11] [3] Default Parameter String	Returns default value of input parameter type.			

Name	Connector pane	Description	s.	R.	I.
AlliGator Plugin Target to Submenu	Function Target [11] [3] Menu Tag Function Target Type [9]	Convert Plugin Target to Menu Tag for insertion of the menu item.  For plugins associated with objects such as			
		Source Image or Decay Graph, the insertion takes place at the bottom of contextual menu and thus an empty string is provided.			
		For plugins associated with data not exposed to the user (such as the Gate Series), the plugin menui is added to the main menu, and thus the tag of the submenu in which it will be inserted needs to be provided.			
AlliGator Python Plugin Function Doc String	String in [11] [3] String out Source [9] [1] Doc String Error In [8] [0] Error Out	Extracts doc string from python function.			
AlliGator Python Plugin is Function a Plugin	String in [11] [3] String out [1] Is AlliGator Python Plugin? [1] Is AlliGator Python Plugin?	Checks for the presence of the # IsAlliGatorPythonPlugin # tag in the python function.			
AlliGator Python Plugin Plot Data Type	Function Name [11] [3] Type of Plot Data error in (no error) [8] [0] error out	Looks at the python function name to figure out whether it acts on "All Plots" or "Selected Plots".			
AlliGator Python Plugin Valid Input Datatype	Input Datatype [2] [7] Valid Datatype?	Checks whether the input datatype is valid.			
AlliGator Python Plugin Valid Output Datatype	Output Datatype [2] [7] Valid Datatype?	Checks whether the output datatype is valid.			

Name	Connector pane	Description	s.	R.	I.
AlliGator Python Plugin Valid Output Destination	Output Destination [2] [7] Valid Destination?	Checks whether the output destination is valid.			
AlliGator Send Python Function Doc String to Notebook	Target [11] Item Tag [10] Error In [8]  [1] Message [0] Error Out	Sends python function doc string to Notebook.			
AlliGator Run XY Graph Python Function	data value reference in [11] [3] Data Value Reference out Mouse Click Event Data [10] [1] Message Python Function Info [9] error out error in (no error) [8] AlliGator Ctrl Refnums [6]	Calls a XY Graph-associated python function.			
AlliGator XY Graph Python Function Handler Core	data value reference in [11]  XY Graph Event [10]  [1] Message error in (on error) [8]  AlliGator Ctrl Refnums [6]	Calls XY Graph-associated python function.			
AlliGator Add Missing Parameter Map Parameters	Parameter Names [11] [3] [Decay Fit Parameter Name] out Parameter_Plattened_Map in [9] [11] Parameter_Plattened_Map out Enor in [8] [3] [12] [13] [14] [15] [16] [16] [17] [17] [18] [18] [18] [18] [18] [18] [18] [18	Complements python function output parameter map by adding "NaN" instead of the missing parameters.  The map needs to be complete to be displayable in AlliGator, even though the python function might only ouput a few parameters.			
AlliGator FLI Dataset Python Function Handler Core	Item Tag [11]  Data Value Reference in [10]  [2] Data Value Reference out  [3] Alligator Atomic Action  [2] Data Value Reference out  [1] Message  error in (no error) [8]	Calls FLI Dataset python function.			
AlliGator Parameter Names to Parameters List	Parameter Names [11] [3] [Decay Fit Parameter Name] [11] [12] [13] [Decay Fit Parameter Name] [12] [13] [Decay Fit Parameter Name] [13] [Decay Fit Parameter N	Converts parameter names to an array of enums.			
AlliGator Python Plugin Get FLI Dataset	Data Value Reference in [1] 33 Data Value Reference out AlliGator Parameter Names N [10] 22 AlliGator Parameter Names N [2] 24 AlliGator Parameter Names N [11] F.I. Dataset, Data error in (no error) [8] [11] F.I. Dataset, Data error in (no error) [8]	Gets FLI Dataset and related information to pass to a python plugin.			

Name	Connector pane	Description	s.	R.	I.
AlliGator Python Plugin Get FLI Dataset	77 [[IRFs]] 5] IRF Array Time Axis 3] AlliGator DIV DVR in [11] Error In [8]  17 [IRFs] 5] IRF Array Time Axis 3] AlliGator DIV DVR out 2] Reference Decay 17 [15 GC Gate Images 10] Error Out 14 Image Mask (U16)	Gets FLI Dataset Images and additional information for python plugin call.  - IRFs: array of decays (IRFs) preceded by			
Data		the (X, Y) coordinate of the corresponding pixel. Each decay is an array of DBL IRF Time Axis: common array of time points (DBL) corresponding to the IRF values - Reference Decay: in the case where the IRF is common to the whole dataset, it is provided as a single decay plot structure comprised of a Plot Name, X Array (DBL) and Y Array (DBL) Image Mask is a U16 array defining the different ROIs by different pixel values.			
AlliGator Run FLI Dataset Python Function	Data Value Reference in [11] Python Function Info [10] Current Data [9] error in (no error) [8] [0] error out	Runs FLI Dataset python plugin function.			
AlliGator Pythin Plugin Get Reference Decay	Data Value Reference in [11]  AlliGator Parameter Names in [10]  error in (no error) [8]  13] Data Value Reference out  [2] AlliGator Parameter Names out  [1] Reference Decay  [0] error out  [4] Found?	If AlliGator Parameter Names in contains 'Reference Decay', returns the Reference Decay cluster and removes 'Reference Decay' from AlliGator Parameter Names out. Sets the Found? flag to TRUE.  Otherwise, do nothing and returns the default cluster and set the Found? flag to FALSE			
AlliGator Add Plugins to Main Menu	Menu in [11] [3] Menu out error in (no error) [8] [0] error out	Adds python functions to the corresponding AlliGator submenus.  If a submenu is empty, deactivates it.			
AlliGator Check Invalid Python Plugin Input Parameter Types		Formats error with invalid input parameter message.			
AlliGator Check Invalid Python Plugin Output Destination	Valid Destination? [9] error out	Outputs warning message with invalid destination.			

Name	Connector pane	Description	S.	R.	I.
AlliGator Check Invalid Python Plugin Output Value Type	Source [11] Valid Output Value Type? [9] error in (no error) [8]	Outputs warning with invalid output value type			
AlliGator Check Missing Python Plugin API Version	Function Name Found [11]  Source [9]  error in (no error) [8]	Outputs warning with missing function name.			
AlliGator Check Missing Python Plugin Doc String	Source [9] error in (no error) [8]	Outputs warning with missing doc string message.			
AlliGator Check Missing Python Plugin Function Name	Function Name Found [11]  Source [9]  error in (no error) [8]	Outputs warning with missing function name.			
AlliGator Check Missing Python Plugin Input Section	Input Section Found [11] Source [9] error in (no error) [8]	Outputs warning with missing input section.			
AlliGator Check Missing Python Plugin Output Section	Source [11] Output Section Found [9] error in (no error) [8]	Outputs warning with missing output section.			
AlliGator Check Valid Python Plugin Target	Target Found? [11] Source [9] error in (no error) [8]	Outputs warning with missing python plugin target.			

Name	Connector pane	Description	s.	R.	I.
AlliGator Clear Unknown Python Error	error in (no error) [8] [0] error out	Clears unknown python function error (i.e. code != 1672).			
AlliGator Close Python Session	Error In [8] [1] Message [0] Error Out	Closes python session with message.			
AlliGator Decode Python Plugin Output	Input String [11] Source [9] From [2] Function Outputs error in (no error) [8]	Looks for Python Plugin Header and Footer and returns:  - String before Header - Output Type - Output Destination			
Section		String before Header: isf the section is not found (no header or no footer), the input string is passed unchanged.  If the section is found, the part that preceded that section is returned,			
AlliGator Get Python Functions List in Scripts	All Files in Dir [11]  [3] Array of Python Functions [1] Parent Menus [0] error out	Gets python functions list in scripts array.			
AlliGator Get Python Plugin API Version	Script Header [11] Source [10] error in (no error) [8]	No description found (add content in vi description)			
AlliGator Get Python Plugin Function Parameters String	Function Display Name [11]  Function Parameters [10] (2) Function Parameters JSON St  error in (no error) [8]	Gets requested parameter names from the python function description, opens up a dialog window to allow the user to enter the required parameters, and builds a JSON string to pass those parameters (names and values) to the python function.			
AlliGator Get Python Plugin Functions List	Python Plugins Folder Path [11] Include Example Plugins [9] Error in [8]  [9] Error Out	Extracts list of python plugin functions from the Python Plugin folder.			
AlliGator Get Python Script Function List	File Path [11] [3] Array of Python Functions Info [1] Parent Menu Locations [6] error in (no error) [8] [0] error out	Extracts list of python plugin functions and their information from python script.			

Name	Connector pane	Description	S.	R.	I.
AlliGator Parse Python Function Input Parameters	Input String [11] [3] Output string Source [9] [1] Function Input Parameters Error In [8] [0] Error Out	Looks for Python Plugin Input Paramater Section Header and Footer and returns the parameter names, types and descriptions If the section is found, the part that follows that section is returned.			
AlliGator Python Plugin Function Offsets	String in [11] [5] Script Header [3] String in (dup) [2] Function Offsets [0] Error Out	Finds function definition section <b>Offsets</b> .  Returns the script part preceding the first function as <b>Script Header</b> .			
AlliGator Python Plugin Get Function Name	String in [11] Source [9] Error In [8]  [3] String out [2] Is preceded by Separator [1] function_name [0] Error Out	Returns function name and whether the function should be preceded by a separator in the menu.			
AlliGator Python Plugin Target Information	Script Header [11] error in (no error) [8]  [3] Function Target Windows [2] Function Target Types [1] Parent Menu Locations [0] error out	Extracts information on the python plugin target(s).			
AlliGator Reset Python Session	error in (no error) [8] [3] Python Session [2] Include Example Plugins [1] Walid Python Session [0] error out [4] Message	Resets python session.			

**R**eentrancy: 

→ Preallocated reentrancy | 

→ Shared reentrancy

Inlining: → Inlined

# 2.22.2. Library Constant VIs

**NOTE** No Constant VIs Found

# 2.23. AlliGator ROIs.lvlib

Responsibility: VIs handling ROI actions.

**Version:** 1.0.0.0

## **2.23.1. Functions**

Table 22. Functions (non private scope only)

Name	Connector pane	Description	S.	R.	I.
AlliGator Create Complement ary ROI	Image Label [7] Image [11] ROI [10] Error In [8] [2] Message [0] Error Out	Computes complementary ROI and adds it to the ROI list.			
AlliGator Create Individual Pixel ROIs from ROI	Y Resolution [5] X Resolution [7] ROI [11] Selected ROI (-1: use ROI D [10] Abort ROI Creation [9] Error In [8]	Converts a closed ROI into a series of single-pixel ROIs.			
AlliGator Find ROI Name	ROI Descriptor [11] [3] Image Control ROI Description [1] Found? [1] Found? [0] Error Out	Looks for the stored ROI having thes same definition as the input ROI and returns its name if found.			
AlliGator Get Current ROI Name	Ourrent ROI Name	Returns the current ROI name.			
AlliGator Get ROI Components	Stored ROIs [11] PROID Names Profit Colors [2] ROI Names Profit Colors [0] Overlay Colors	separates stored ROIs information into arrays of: - ROI Descriptors - ROI Names - Overlay Colors			
AlliGator Get ROI Names	Stored ROIs in [2] FOIName [7] ROI Name	Returns list of ROI names.			
AlliGator Load ROI v3	Source Image Refnum [11]  Dialog (1) 1010  Destination Image (Source I [9]  Error In [8]  [5] # ROIs Loaded [3] Message [2] Updated ROIs [1] Current ROI [0] (Di Error Out [4] Phasor Plot Image [6] Time (s)	When invoked from a context menu, used Dialog for file selection: the Dialog flag should be set to True (default) and the Destination Image string is ignored.  When invoked from a drag & drop event, the Dialog flag should be set to False and the Destination Image (Source Image or			
AlliGator Preview ROI File	File Path [11]  Destination Image [9]  Error In [8]  [3] # ROIs Loaded [11] Phasor Plot Image [0] Error Out	Phasor Plot Image) should be provided.  Returns information on ROIs stored in the file.			
AlliGator ROI Analysis Script	Image ROI [10]  Decay Graph OR Phasor Graph [9]  Error In [8]	Actions needed to extract the decay corresponding to the current ROI or input ROI and compute its phasor.			
AlliGator Save ROI(s)	Current Dataset Name [7] Image Label [11] All ROIs? [10] ROI Descriptor [9] Error In [8]	Saves one or more ROIs.			
AlliGator Save Multiple ROIs v3	ROI Description [11] [3] Notebook Message Destination Folder (Default [10] [3] Default File Name [9] [0] Error Out Error In [8]	Save multiple ROIs.			

Name	Connector pane	Description	S.	R.	I.
AlliGator Save ROI v3	Image Label [7] ROI Description [11] Error In [8] [3] Notebook Message [6] Error Out	Saves single ROI.			
AlliGator Set New ROI Name	Stored ROIs in [2] ROI Name in [3] Default Name ("") [4]	Sets new ROI name (verifies that the input name is not already used).			
AlliGator Update ROI After Mouse Release	ROI Descriptor [11]  ROI Types [10]  Shift Key? (F) [9]  Error In [8]  Phasor Image? (F) [6]	Builds list of actions handling ROI update following a mouse release event.			
AlliGator Get Phasor Plot ROI Event Refnum	[0] Phasor Plot ROI Event Refnum	Returns the Phasor Plot Image ROI Event refnum.			
AlliGator Get Phasor Plot ROIs, Names & Current ROI	[AlliGator ROIs.lvlib:AlliGator Get Phasor Plot ROIs]	Returns all ROIs and their names as well as the index of the current ROI.			
AlliGator Phasor Plot Image Edit ROI Name	ROI Name in [11] [3] ROI Name out [2] Old ROI Name [0] accepted?	Changes current Phasor Plot image ROI name.			
AlliGator Phasor Plot Image ROI Storage [MULT] v3	[AlliGator ROIs.lvlib:AlliGator Phasor Plot Image ROI Storage [MULT] v3.vi]	Handles multiple Phasor Plot image ROIs storage.			
AlliGator Phasor Plot Image ROI Storage [SGL] v3	Plot Image ROI Storage	Handles single Phasor Plot image ROI storage.			
AlliGator Phasor Plot ROI Manager	Allingtor Pharor Plot ROI Manager	Phasor Plot image ROI list display UI.			
AlliGator Quit Phasor Plot Image ROI Manager	Error In [8] Phwar [0] Error Out	Handles Phasor Plot image ROI Manager quit event.			
AlliGator Select Phasor Plot ROI	ROI Selection Data [11] [3] ROI Descriptor [2] ROI Name Error In [8] [0] Error Out	Handles Phasor Plot image ROI selection.			

Name	Connector pane	Description	s.	R.	I.
AlliGator Check Current Phasor Image ROI	ROI Descriptor [11]    Check   Check	No description found (add content in vi description)			
AlliGator Compute & Plot All ROIs Characteristi cs	[AlliGator ROIs.lvlib:AlliGator Compute & Plot All ROIs Characteristics.vi]	Computes all Source Image ROI characteristics and sends them as plots to the Lifetime & Other Parameters Graph.			
AlliGator Create Source Image Contour ROI	ROI Mask [7] Image [11] ROI [10] Error In [8] Image Label [6]	Create new Source Image ROI consisting of the contour of the input ROI.			
AlliGator Create Source Image ROI Grid	ROI [11] [2] Message [2] Message [3] Error In [8]	Creates a series of Source Image ROIs layed out on a grid.			
AlliGator Add Multiple Source Image ROIs	Header message [7]  ROI Mask Image Path [11]  ROIs [9]  Error In [8]  ROS  [2] Message [0] Error Out	Adds multiple Source Image ROIs to ROI storage.			
AlliGator Get All Image ROIs	All Image Role	Returns all Source Image ROI names.			
AlliGator Get Source Image ROI Event Refnum	[0] Source Image ROI Event Refnum	Returns the Source Image ROI Event refnum.			
AlliGator Get Source Image ROIs, Names & Current ROI	[AlliGator ROIs.lvlib:AlliGator Get Source Image ROIs]	Returns list of store Source Image ROIs, their names and the index of the current ROI.			
AlliGator is Full-Frame ROI	ROI Descriptor in [11]  error in (no error) [8]  [3] ROI Descriptor (dup)  [1] Full-Frame ROI?  [0] error out	Checks whether the Source Image ROI is a full-frame ROI.		S	>

Name	Connector pane	Description	S.	R.	I.
AlliGator Mask Image to ROIs	Data Value Reference in [11] [3] Data Value Reference out Mask Image Name (Default n [9] [1] Message error in [8] [1] Part out	Define ROIs as sets of <b>Mask Image</b> pixels with identical integer values.  If the <b>Mask Image Name</b> parameter is left unconnected (or is an empty string), the file name of the loaded Mask Image is used as a prefix to all ROI names.			
AlliGator Quit Source Image ROI Manager	Error In [8] [0] Error Out	Handles Source Image ROI manager quit event.			
AlliGator Reject Source Image ROIs based on Characteristi cs	Source Image Refnum [11]   The state of the	Computes ROI characteristics and compare them to the conditions defined by the user in a dialog box.  Keeps only the ROIs that meet those conditions.			
AlliGator ROIs to Mask Image	Data Value Reference in [11]  All ROIs? [9]  error in [8]  [0] error out	Uses existing ROIs to build a mask image summarizing their information.  Define ROIs as sets of <b>Mask Image</b> pixels with identical integer values.			
AlliGator Select Source Image ROI	ROI Selection Data [11] [5] # ROIs 3] ROI Descriptor [3] ROI Descriptor [5] # ROIs [6] Port of the control of t	Selects Source Image ROI(s).			
AlliGator Set Source Image ROI ID	New ROI ID [10]    Sat   [2] New ROI ID   [2] New ROI ID   [3] # FOIs   [4]   [5]   [6]	Change the selected Source Image ROI ID.			
AlliGator Source Image Edit ROI Name	ROI Name in [11] [3] ROI Name out [1] old ROI Name in [0] accepted?	Changes current Source Image ROI name.			
AlliGator Source Image ROI Manager	Miligates Saurce Im. ROI Managér	Source Image ROI list display UI.			
AlliGator Source Image ROI Storage [MULT] v3	[AlliGator ROIs.lvlib:AlliGator Source Image ROI Storage [MULT] v3.vi]	Handles multiple Source Image ROIs storage.			

Name	Connector pane	Description	S.	R.	I.
AlliGator Source Image ROI Storage [SGL] v3	[AlliGator ROIs.lvlib:AlliGator Source Image ROI Storage [SGL] v3.vi]	Handles single Source Image ROI storage.			
AlliGator Check Current Source Image ROI	ROI Descriptor [11] [3] Current ROI Chech [2] ROI Name [0] Error In [8] [0] Error Out	No description found (add content in vi description)			

Reentrancy:  $\blacksquare$   $\rightarrow$  Preallocated reentrancy  $\mid \blacksquare$   $\rightarrow$  Shared reentrancy

Inlining: → Inlined

## 2.23.2. Library Constant VIs

**NOTE** No Constant VIs Found

# 2.24. AlliGator Scripts.lvlib

Responsibility: AlliGator actions performing a series of sequential tasks.

**Version:** 1.0.0.0

#### **2.24.1. Functions**

*Table 23. Functions (non private scope only)* 

Name	Connector pane	Description	S.	R.	I.
AlliGator Calibrated Phasor Map Series Dialog	error in (no error) [5] [15] Calibration Map/Gate Step List [16] Destination Folder [16] Destination Folder [17] File Name (E Steps will be [18] Save Phasor Map [19] error out [13] OK	Dialog window to enter the information eeded to run the Calibrated Phasor Map Series script.			
AlliGator Calibrated Phasor Maps Series Script	Phasor Graph refnum [6]  Allipator Queue Elements in [0]  Calibration Mag/Gate Step List [1]  Destination Tolder [2]  File Name (8 Steps will be _ 1]  Save Phasor Plot [4]  Error in [5]	Loops through a series of FLI Dataset files, loads them with the specified gate step, and performs an All ROIs Phasor Analysis, using the resulting phasor plot as Phasor Calibration Map. This map is then save and optionally, the phasor plot as well.			

Name	Connector pane	Description	S.	R.	I.
AlliGator Clear Internal Variables before Script	AlliGator Internal Variable  [Time-Series Path] [10] Journal (0) Error Out	Clears internal data structure before a script.			
AlliGator Get Series Analysis Type	Menu Tag [11] [3] Series Analysis Type	Decodes menu tag to determine whether an action is limited to the <b>Current ROI</b> or <b>All ROIs</b> .			
AlliGator Get Series Dataset Type	AlliGator Dataset Series Type [11] [3] FLI Dataset Type Error In [8] [0] Error Out	Converts Dataset Series type to FLI Dataset type enum.			
AlliGator Get Series Subfolders Information	Path [11] [3] dup directory path pattern [10] [3] dup directory path error in (no error) [8] [1] Subfolder Names [1] Subfolder Paths [0] error out [4] # Files [6] Same # Files?	Returns a breadown of the folder's content for subsequent script actions.			
AlliGator Get- Set Data Information	Data Information in [11] [3] Data Information out error in (no error) [8] [0] error out Get (F)/Set (T) [6]	Gets/Sets Dataset Information stored in the Settings Storage.vi			
AlliGator Get- Set Loading & Pre- Processing Options	Scripts.lvlib:AlliGator Get-	Gets/Sets <b>Data Information</b> , <b>Source Image Settings</b> and <b>Decay Preprocessing</b> from/in the Settings Storage.vi.			
AlliGator Get- Set Source Image Settings	Source Image Settings in [11] [3] Source Image Settings out error in (no error) [8] [0] error out Get (F)/Set (T) [6]	Gets/Sets <b>Source Image</b> options.			
AlliGator Load ROIs, Select one ROI (& Convert to Pixel ROIs) Script	[AlliGator Scripts.lvlib:AlliGator Load ROIs]	Script loading the selected ROI from a multi-ROIs file,  This requires a number of subsequent steps that are queued by this script.			
AlliGator Load, Merge & to Pixel ROIs Script	[AlliGator Scripts.lvlib:AlliGator Load]	Loads a (multi-) ROI(s) file and merges all the ROIs (including the existing ones), before converting it to a list of single-pixel ROIs.			

Name	Connector pane	Description	S.	R.	I.
AlliGator Logistic Square Gated IRF Characteristi cs Map	AlliGator Internal Variable [1] 3] AlliGator Internal Variable Cursor Names Array [9] [1] [1] Hessage error in (no error) [8]	Computes the decays of all ROIs and fits them with a logistic square gate model.  Saves the results in an ASCII file.			
AlliGator Logistic Square Gated IRF Fit Result File String	ROI Descriptor [11] Fit Output [10]  Delta Best Fit Parameters [9]  error in (no error) [8]  [5] Header String [3] Result String [6] error out	Builds string containing the output of a logistic square gate fit.		5	
AlliGator NLSF & Phasor Multi- ROI Analysis Dialog	[AlliGator Scripts.lvlib:AlliGator NLSF & Phasor Multi-ROI Analysis Dialog.vi]	Dialog window to set up a multi-ROIs single-pixel NLSF analysis of a FLI dataset.			
AlliGator Phasor Calibration Map Series Dialog	error in (no error) [5] [14] File Name (# Steps will be [15] Detaintaion Folder [16] Gate Step Sories [17] Phasor Calibration Dataset [18] OK [19] error out	Dialog to enter the parameters necessary for the calculation of a Series of Phasor Calibration Maps differing by the gate step used when loading the FLI dataset.			
AlliGator Phasor Calibration Maps (# Gates Series) Script	[AlliGator Scripts.lvlib:AlliGator Phasor Calibration Maps ( Gates Series) Script.vi]	Series of Phasor Calibration Map differing by the gate step used when loading the FLI dataset script.			
AlliGator Playback Time-Gated Data Series v2	Save Phasor Plot with Overlay [3] Save Image with Overlay [1] Alligator Queue Elements out Displayed Image [7] Time Sider Refinum [9] AlliGator Data Series Type [12] Playback (F)/Loop (T) [14]	Launches the playback of a FLI dataset series.			
AlliGator Save Single Phasor Plot Script	Phasor Graph Refnum [1] Destination Folder path [10] Plot Name [9] Plot Name [9] Fire [0] Fire Out	Script used to save the last Phasor Plot in the Phasor Graph with the specified name and folder.			
AlliGator Script Current ROI Time-Gated Data Series NLSF Analysis v1	Alligator Queue Elements in [11]  Alligator Queue Elements out  Path [10]  AlliGator Ctrl Refnums [9]  Error in [8]  AlliGator Data Series Type [4]	Script performing NLSF analysis of the current ROI for the series of FLI dataset in the provided folder.			

Name	Connector pane	Description	s.	R.	I.
AlliGator Script Current ROI Time-Gated Data Series Phasor Analysis v2	Alligator Queue Elements in [11]  Tath [10]  AlliGator Ctrl Refraums [9]  Error in [8]  AlliGator Data Series Type [0]	Script computing a phasor plot consisting of the current ROI's phasor in the FLI dataset series.			
AlliGator Script Destination File Path	Destination File Path	Gets the <b>Script Destination File Path</b> internal variable.			
AlliGator Script Export ROI Fit Parameters as ASCII	XVGraph in [7]  # ROTs Londed II 10]  Beauth Fulder II 10]  Dataset Name [8]  Decay Fit Parameter to Save [6]  Decay Fit Parameter To Save [6]  Decay Fit Parameter To Save [6]	Script saving the Decay Fit Parameter Map parameters selected by the user to individual ASCII files (one file per parameter per ROI).  This script works for a single ROI or all ROIs.			
AlliGator Script Multi- ROI Single- Pixel NLSF Analysis	Dataset Loading & Pre-proce [12]  IRF Loading & Pre-processin [10]  Lifetime Graph Refnum [8]  Phasor Graph Fefnum [8]  Phasor Graph Fefnum [8]  Phasor Graph Fefnum [8]  Phasor Graph Fefnum [8]  Dataset File [1]  Dataset File [3]  Decay Fit Parameter to Save [4]  Results Folder [7]  Bins Array [9]	Scripts performing NLSF analysis of all pixels in all ROIs, using individual IRFs if provided.			
AlliGator Script Multi- ROI Single- Pixel Phasor Analysis	Dataset Loading & Pre-proce [12] IRF Loading & Pre-processin [10] IRF Loading & Pre-proce [12] IRF Loading & Pre-proce [12] IRF Loading & Pre-proce [12] IRF Loading & Pre-proce [13] IRF Loading & Pre-proce [14] IRF Loading & Pre-proce [15] IRF Loading & Pre-proce [15] IRF Loading & Pre-proce [16] IRF Loading & Pre-proce [16] IRF Loading & Pre-proce [17] IRF Loading & Pre-proce [18] IRF Loadin	Scripts performing phasor analysis of all pixels in all ROIs, using individual IRFs if provided.			
AlliGator Script Open Mask Image	Image Path [9] [3] Action List out Error In [8]	Script used to open a <b>Mask Image</b> and identify the corresponding ROIs.			
AlliGator Script Open White Light Image	Image Path [9] Error In [8]	Script used to open a White Light Image.			
AlliGator Script Sequential ROIs Time- Gated Data Series NLSF Analysis	Alligator Queue Elements in [11]  Path [10]  AlliGator Ctrl Refnums [9]  Error in [8]  AlliGator Data Series Type [4]	Script performing NLSF analysis of a different ROI for each dataset in a series. This is used for instance if the ROI list is representing the successive locations of an object being tracked across the dataset series.			

Name	Connector pane	Description	s.	R.	I.
AlliGator Script Sequential ROIs Time- Gated Data Series Phasor Analysis	Alligator Queue Elements in [1]  Path [10]  Path [10]  Path [10]  Fror In [8]  Error In [8]  AlliGator Data Series Type [6]	Script performing phasor analysis of a different ROI for each dataset in a series. This is used for instance if the ROI list is representing the successive locations of an object being tracked across the dataset series.			
AlliGator Square Gated IRF Characteristi cs Map	AlliGator Internal Variable [1] [3] AlliGator Internal Variable [1] Message error in (no error) [8] [0] error out	Performs a crude square gate analysis of all ROI decays and saves the gate parameters in an ASCII file.			
AlliGator Tilted Square Gated IRF Characteristi cs Map	AlliGator Internal Variable  Cursor Positions Array [10]  Cursor Names Array [19]  Cursor Names Array [10]  error in (no error) [8]	Performs a tilted logistic square gate NLSF analysis of all ROI decays and saves the gate parameters in an ASCII file.			
AlliGator Toggle (Loop) Playback	Playback (F)/Loop (T) [0] [estel [estel] [este	Toggles from normal playback (stops at the end of the series) to looped playback or vice versa.			

Reentrancy:  $\blacksquare$   $\rightarrow$  Preallocated reentrancy  $\mid \blacksquare$   $\rightarrow$  Shared reentrancy

Inlining: → Inlined

## 2.24.2. Library Constant VIs

**NOTE** No Constant VIs Found

# 2.25. AlliGator Settings.lvlib

**Responsibility:** VIs handling user-defined parameters.

**Version:** 1.0.0.0

#### **2.25.1. Functions**

Table 24. Functions (non private scope only)

Name	Connector pane	Description	s.	R.	I.
AlliGator Check Fit	Fit Options Refrum [11] [3] MLE Options Visible?  Use Data Information Period [10] [0] [0] [0] [0] error out error in (no error) [8]	Handles user-initiated parameter changes in the <b>Fit Options</b> panel.			
Options		in the <b>11t Options</b> panel.			

Name	Connector pane	Description	s.	R.	I.
AlliGator Compute Natural Frequency	[3] Laser Period  Natural  Error In [8] [0] Error Out	Computes the "natural" phasor frequency as a functions of various settings parameters.			
AlliGator Export Settings Parameter JSON String to Clipboard	Control Refnum [11] [3] JSON String Error In [8] [0] Error Out	Reads the control's value and creates a JSON string describing it and copies it into th clipboard.			
AlliGator Gate Separation (ns)	[3] Gate Separation (ns) error in (no error) [8]	Returns the <b>Gate Separation</b> settings parameter.			
AlliGator Get Available Fitting Parameters	Parameter Names [11] [3] Missing Parameter Names Friday Friday Friday	Returns list of parameters not in the <b>Parameter Names</b> list.			
AlliGator Get Control Label & Settings Element	Settings.lvlib:AlliGator Get	Returns the label string of the Settings control whose <b>CtlRef</b> refnum is provided, as well as the corresponding <b>AlliGator Settings List</b> enumerated value.			
AlliGator Get Control Notebook String	Control Label [11] [3] Notebook String Value [9] [0] error out	Formats the input <b>Value</b> of the control whose <b>Control Label</b> is provided into a string.  A special case is needed when units are involved, otherwise the default case should be able to handle all other cases.			
AlliGator Get Phasor Ratio Interpolated Color Scale	Reference 1 Color [1] [13] Interpolated Color Scale De Reference 2 Color [9] [20] [20] [20] [20] [20] [20] [20] [20	Builds a <b>Interpolated Color Scale Definition</b> based on the colors associated with both references.			
AlliGator Hot Pixel Removal Options String	Image Display Options [11] [3] String out Provided Final Provided	Builds a string defining the hot pixel removal options.			
AlliGator Init Settings v2	Settings Panel (Empty: All) [11] Parameters to set to Default [10] error in [8]	Resets selected Settings parameters to their default values.			
AlliGator Laser Period	(0) Laser Period	Settings Data Information:Laser Period value.			

Name	Connector pane	Description	s.	R.	I.
AlliGator Nanotime Gate Separation	[0] Nanotime Gate Separation  [10] Representation  [10] Representation	Settings Data Information:Nanotime Gate Separation value.			
AlliGator Number of Gates	⑥——— [0] # Gates	Settings Data Information:# Gates value.			
AlliGator Phasor Frequency	① Phasor Frequency	Settings Data Information:Phasor Frequency value.			
AlliGator Refresh All Settings	VI Refnum in [11] Verbose (T) [9] Error In [8]	Reads all Settings values and refresh the corresponding controls and indicators with those values.			
AlliGator Refresh Single Setting	Verbose (1) [7] VI Ref in [11] Control Label [10] Data [9] Error In [8]	Refresh the control with <b>Control Label</b> with the provided <b>Data</b> .  Optionally sends this label and value to the Notebook.			
AlliGator Remove Duplicated Fit Parameter Constraints	Old Constraints [11]	Removes any potential duplicate entries in the array of fit parameter constraints.			
AlliGator Reorder Decay Pre- processing Operations	Ring in [11]  Roarder  Pror In [8]  Operatio  Operatio  Operatio	Dialog window allowing the user to reorder decay pre-processing steps.			
AlliGator Save-Load Parameter Map Color Palette List	Refnum in [11]  Load(F)/Save [10]  error in (no error) [8]  [0] error out	Loads/Save the list of palettes used for the <b>Decay Fit Parameter Map</b> in the AlliGator Settings ini file.			
AlliGator Save-Load Phasor Plot Color Palette List	Refnum in [11] [3] Refnum out Load(F)/Save [10] [7] [7] [7] [7] [7] [7] [7] [7] [7] [7	Loads/Save the list of palettes used for the <b>Phasor Plot</b> in the AlliGator Settings ini file.			

Name	Connector pane	Description	s.	R.	I.
AlliGator Save-Load Settings	AlliGator Refnum in [11] File Path [10] Error In [8] Load(P)/Save (T) [6]	Use this file to Save or Load AlliGator's settings to an ini file.  If the <b>File Path</b> input is left unconnected, the defaut ini file is used (overriding the current ini file).			
		To save settings in a user-specified location, either provide a valid path, or connect a "Not a Path" constant to the input. A File Dialog window will then open to allow the user to choose a path.			
AlliGator Save-Load Source Image Color Palette List	Refnum in [11] Load(F)/Save [10]  error in (no error) [8]  [0] error out	Loads/Save the list of palettes used for the <b>Source Image</b> in the AlliGator Settings ini file.			
AlliGator Save-Load Source Image Overlay Color Palette List	Refnum in [11] [3] Refnum out Load(F)/Save [10] [5] error out error in (no error) [8]	Loads/Save the list of palettes used to overlay a phasor-based map on the <b>Source Image</b> in the AlliGator Settings ini file.			
AlliGator Set Phasor Ratio Display Range	Phasor Ratio Display Range [11]  error in (no error) [8]  [0] error out	Constrains the sliders of the Phasor Ratio (or other parameter) Range to the displayed slide's min and max values.			
AlliGator Settings Array	[0] AlliGator Settings Array	Returns the complete list of settings parameters (values of the enumerated constant).			
AlliGator Settings Control Label to Element	Control Label [8] [2] AlliGator Settings List Ele Error In [7] [1] Error Out	Convert Control label to Settings Parameter List enum.			
AlliGator Settings Element to Control Label	AlliGator Settings List [2] [7] Label	Returns the last string after the rightmost semicolon in the parameter's name., which corresponds to the control's label.			
AlliGator Settings Event Refnum	AlliGator Settings Event [1] [7] AlliGator Settings Event Re [9] Error Out	Sends user event to the Settings window.			

Name	Connector pane	Description	s.	R.	I.
AlliGator Settings Names	Fore coccoccocc [1] Settings Name Array (lower	Returns the list of settings parameter names stored internally.			
AlliGator Settings Storage	AlliGator Settings List [7]  Variant Data in [11]  Error In [8]  Get(F)/Set [6]  [3] Variant Data out  [0] Error Out	Get/Set Settings parameter values using variant attributes.			
AlliGator Settings to String v2	Settings to Export (All) [11] [3] Message error in (no error) [8] [0] error out	Returns a string listing all or only the selected settings.			
AlliGator Settings Window	Sottings	GUI providing access to settings parameters for all aspect of AlliGator's functions.			
AlliGator Special Controls Update	VI Refnum [11] AlliGator Settings List Ele	Handles update of some Settings controls & indicators as a result of settings changes.			
AlliGator SYNC Period	[0] SYNC Period	Returns the <b>SYNC Period</b> stored in Settings.			
AlliGator Update Channel File Settings	Available Channel Names [11] Selected Channel Name [10] Channel Arithmetic [9] Error In [8]	Updates the values of the <b>Channel Name</b> and <b>Channel Arithmetic</b> controls, as well as of the hidden <b>Available Channel Names</b> indicator.			
AlliGator Update Settings & Control	[AlliGator Settings.lvlib:AlliGator Update Settings & Control.vi]	Updates the Control whose reference or label is passed. The Settings window is updated as well (or if the Settings Window is the sender, AlliGator is).			
AlliGator Update Settings Available Channel Names	Gate Name Refnum [11]    Update	Updates the <b>Channel Name</b> control in the Settings window.			
AlliGator Update Settings Dataset Channel	AlliGator Queue [11] Selected Channel [10] Initialization? [9] error in (no error) [8]	Updates <b>Source Image</b> according to the <b>Selected Channel</b> .			

Name	Connector pane	Description	S.	R.	I.
AlliGator Update Settings Decay Shift Parameters Visibility	Shift Parameters Refnum [1] [3] Shift Parameters Refnum error in [8] [0] error out	Updates the visibility of controls related to shift pre-processing operations.			
AlliGator Update Settings Fit Options Laser Period	Fit Options Refnum [11] [3] Fit Options Refnum Use Data Information Laser. [10] [5] [6] [6] [7] [7] [7] [7] [7] [7] [7] [7] [7] [7	Updates the <b>Fit Options</b> cluster's <b>Laser Period</b> obtained from the Data Information tab ot the Settings if the <b>User Data Information Period</b> option is selected.			
AlliGator Update Settings Fit Options	Fit Options Refnum [11] [3] Fit Options Refnum Use Data Information Laser [10] [0] error out error in (no error) [8] [0] error out	If the <b>Laser Period</b> parameter of the <b>Fit Options</b> is modified, and it is different from the value associated with the dataset, toggles the <b>Use Data Information Laser Period</b> checkbox off.			
AlliGator Update Settings Guess Parameter Arrays	Modified Control [7] Guess Parameters [11] Guess Parameter Names [10] Guess Parameter Name [10] Guess Parameter Name Array [2] Guess Parameter Name Array [1] Error Out	Handles user modifications of the <b>Guess Parameter Names</b> and/or <b>Guess Parameter Values</b> in the Settings window.  Ensures that both arrays have the same size.			
AlliGator Update Settings IRF Analysis Method Control	IRF Analysis Method Refnum [11] error in (no error) [8]  [1] Message error out	Update decay shifting parameters in the Settings window.			
AlliGator Update Settings Python Options & Valid Flag	[AlliGator Settings.lvlib:AlliGator Update Settings Python Options & Valid Flag.vi]	Updates Python Plugins options and Valid Session flag in the Settings window.			
AlliGator Update Settings Python Options	Python Settings Refnum [11]  error in (no error) [8]  [0] error out	Updates Python Plugins options in the Settings window.			
AlliGator Update Settings SEPL Parameters	Gate Parameters Refnum [11] # Gates [10] Gate Separation [9] Error In [8] Gate Duration [6]	Updates SEPL parameters in the Settings window.			

**R**eentrancy: 

→ Preallocated reentrancy | 

→ Shared reentrancy

Inlining: → Inlined

#### 2.25.2. Library Constant VIs

**NOTE** No Constant VIs Found

# 2.26. AlliGator Shot Noise Influence on Average Lifetime.lvlib

**Responsibility:** VIs used for the Shot Noise Influence on Average Lifetime Analysis Tool.

**Version:** 1.0.0.0

#### **2.26.1. Functions**

*Table 25. Functions (non private scope only)* 

Name	Connector pane	Description	S.	R.	I.
AlliGator Compute Shot Noise Average Lifetime Simulation Histograms	Histogram Bin Size [1]  Average Lifetimes (Micardo I) [3]  Lifetime Histo Percentiles [7]  Average Lifetime SDVs (All [3]  Illetime Histo Percentiles [7]  Average Lifetime DVs (All [3]  Histogram Bin Size (DV) [12]  SDV Histo Percentiles [13]	Computes histograms and summary statistics for the computed lifetimes.			
AlliGator Shot Noise Influence on Average Lifetime	Milipater  Too Statistics	Main window of the Shot Noise Influence on Average Lifetime tool.			
AlliGator Simulate Average Lifetime of Linear Combination	Simulation Parameters [11] Phasor Parameters [10] Fror In [8] Seed [6] Fig. 13] Average Lifetimes (Pure Poi [2] Average Lifetimes (Pure Poi [3] Average Lifetimes (Pure Poi [2] Average Lifetimes (Pure Poi [4] Message Lifetimes (Pure Poi [4] Message	Performs the simulations used in the Shot Noise Influence on Average Lifetime tool.			

Reentrancy:  $\square$   $\rightarrow$  Preallocated reentrancy  $|\square$   $\rightarrow$  Shared reentrancy

Inlining: → Inlined

## 2.26.2. Library Constant VIs

**NOTE** No Constant VIs Found

## 2.27. AlliGator Test Suite.lvlib

Responsibility: No description found (add content in lylib description)

**Version:** 1.0.0.0

#### **2.27.1. Functions**

*Table 26. Functions (non private scope only)* 

Name	Connector pane	Description	S.	R.	I.
AlliGator Add Test Result	error in (no error) [8] [0] error out	No description found (add content in vi description)			
AlliGator Test Internal Data	AlliGator Test Data [11] [3] AlliGator Test Data Error In [8] [0] Error Out	Updates tested VI's error code.			
AlliGator Test Suite	Alligator Tort Suito	Runs a series of tests.			
AlliGator Wait for Test Result [no Error]	Time out (10 s) [9] error in (no error) [8]  .V1	No description found (add content in vi description)			

Scope:  $\bullet \to \text{Protected} \mid \bullet \to \text{Community}$ 

Reentrancy:  $\blacksquare$   $\rightarrow$  Preallocated reentrancy  $\mid$   $\blacksquare$   $\rightarrow$  Shared reentrancy

Inlining: → Inlined

## 2.27.2. Library Constant VIs

**NOTE** No Constant VIs Found

# **Chapter 3. Legal Information**

#### 3.1. Document creation

This document has been generated using the following tools.

#### **3.1.1.** Antidoc

Project website: Antidoc

Maintainer website: Wovalab

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#### 3.1.2. Asciidoc for LabVIEW<sup>TM</sup>

Project website: Asciidoc toolkit

Maintainer website: Wovalab

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# 3.2. Product used in the project

Antidoc hasn't been able to detect third party products in the project. This is the author's responsibility to list any of the missing product used.