

RetrigAI Tango Cpp Class

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RetrigAI Class Identification :

Contact : at null - null
 Class Family :
 Platform :
 Bus :
 Manufacturer :
 Manufacturer ref. :

RetrigAI Class Inheritance :

- [Tango::DeviceImpl](#)
 - RetrigAI

RetrigAI Class Description :

Perform infinite retriggered analog input acquisition simultaneously on four channels.

The device is available for boards SAI_2005 and SAI_2010.

RetrigAI Properties :

There is no class properties

Device Properties			
Name	Description	Type	Default Value
BoardType	The board type (the possible values are SAI_2005, SAI_2010).	short	none
BoardNum	The number of the board in the cPCI chassis (between 0 and 7).	short	none
InputRange0	The input range for channel 0 (possible values are B_10, B_5, B_2_5, B_1_25, U_10, U_5, U_2_5, U_1_25).	short	none
InputRange1	The input range for channel 1 (possible values are B_10, B_5, B_2_5, B_1_25, U_10, U_5, U_2_5, U_1_25).	short	none
InputRange2	The input range for channel 2 (possible values are B_10, B_5, B_2_5, B_1_25, U_10, U_5, U_2_5, U_1_25).	short	none
InputRange3	The input range for channel 3 (possible values are B_10, B_5, B_2_5, B_1_25, U_10, U_5, U_2_5, U_1_25).	short	none
Timeout	The time to wait for incoming data before generating a timeout. In seconds.	double	none
TriggerMode	The trigger mode. Can be a POST trigger and data is acquired just after the received trigger. Can be a DELAY trigger and data is acquired after a certain delay.	short	none
TriggerSource	To choose analog (ATRIG) or digital trigger(DTRIG).	short	none
ATRIGSelection	To select the type of analog trigger. The trigger can be generated when the analog trigger passes below a level or above a level. The possible values are BELOW and ABOVE.	short	none
ATRIGLevel	The level of the analog trigger in volts.	double	none
DTRIGPolarity	The digital level polarity. It can be detected on rising edge or falling edge. The possible values are RISING or FALLING.	short	none
Delay	The delay after a Delay trigger in seconds.	double	none
ConversionSource	Set the AI conversion signal source (i.e. DAC sampling source). Use one of the following: INTERNAL, EXTSAMPLING.	short	none
AutoStart	Start the acquisition when starting the device.	boolean	true
ContinuousAcquisition	Allows the acquisition to run indefinitely.	boolean	true
MemorizedGenerateNexusFile	Allows storage of acquired data into Nexus files.	boolean	false
MemorizedNexusFilePath	Contains the last value of the nexusFilePath attribute. [default value =d:\\target]	String	d:\\target

RetrigAI Class Commands				
Name	Input type	Output type	Level	Description
State	DEV_VOID	DEV_STATE	OPERATOR	This command gets the device state (stored in its <i>device_state</i> data member) and returns it to the caller.
Status	DEV_VOID	CONST_DEV_STRING	OPERATOR	This command gets the device status (stored in its <i>device_status</i> data member) and returns it to the caller.
Start	DEV_VOID	DEV_VOID	OPERATOR	Start acquisition.
Stop	DEV_VOID	DEV_VOID	OPERATOR	Stop acquisition.
Calibrate	DEV_VOID	DEV_VOID	EXPERT	Calibrate hardware.
Reset	DEV_VOID	DEV_VOID	OPERATOR	Resets all channels data.

Command State :

This command gets the device state (stored in its *device_state* data member) and returns it to the caller.

State Definition		
Input Argument	Tango::DEV_VOID	none.
Output Argument	Tango::DEV_STATE	State Code
DisplayLevel	OPERATOR	..
Inherited	true	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command Status :

This command gets the device status (stored in its *device_status* data member) and returns it to the caller.

Status Definition		
Input Argument	Tango::DEV_VOID	none.
Output Argument	Tango::CONST_DEV_STRING	Status description

DisplayLevel	OPERATOR	..
Inherited	true	..
Abstract	true	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command Start :

Start acquisition.

Start Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command Stop :

Stop acquisition.

Stop Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command Calibrate :

Calibrate hardware.

Calibrate Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
		..
Command allowed for	All states	..

Command Reset :

Resets all channels data.

Reset Definition		
Input Argument	Tango::DEV_VOID	no argin
Output Argument	Tango::DEV_VOID	no argout
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
		..
Command allowed for	All states	..

RetrigAI Class Attributes							
Name	Inherited	Abstract	Attr. type	R/W type	Data type	Level	Description
totalNbPoint	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	EXPERT	The acquisition total number of points for

							each channel.
dataCounter	false	false	Scalar	READ	Tango::DEV_LONG	OPERATOR	
timeoutCounter	false	false	Scalar	READ	Tango::DEV_LONG	OPERATOR	
overrunCounter	false	false	Scalar	READ	Tango::DEV_LONG	OPERATOR	
errorCounter	false	false	Scalar	READ	Tango::DEV_LONG	OPERATOR	
frequency	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	The acquisition frequency in Hertz.
bufferDepth	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	The buffer depth in seconds for one channel.
continuousAcquisition	false	false	Scalar	READ_WRITE	Tango::DEV_BOOLEAN	EXPERT	
generateNexusFile	false	false	Scalar	READ_WRITE	Tango::DEV_BOOLEAN	EXPERT	Allows storage of acquired data into Nexus files.
nexusFilePath	false	false	Scalar	READ_WRITE	Tango::DEV_STRING	EXPERT	Define the root path for generated nexus files.
channel0	false	false	Spectrum	READ	Tango::DEV_DOUBLE	OPERATOR	
channel1	false	false	Spectrum	READ	Tango::DEV_DOUBLE	OPERATOR	
channel2	false	false	Spectrum	READ	Tango::DEV_DOUBLE	OPERATOR	
channel3	false	false	Spectrum	READ	Tango::DEV_DOUBLE	OPERATOR	
averageChannel0	false	false	Spectrum	READ	Tango::DEV_DOUBLE	EXPERT	Average of channel0 + cosinus formula in order to compute SignalX.
averageChannel1	false	false	Spectrum	READ	Tango::DEV_DOUBLE	EXPERT	Average of channel1.
averageChannel2	false	false	Spectrum	READ	Tango::DEV_DOUBLE	EXPERT	Average of channel2.
averageChannel3	false	false	Spectrum	READ	Tango::DEV_DOUBLE	EXPERT	Average of channel3.

There is no dynamic attribute defined.

Attribute totalNbPoint :

The acquisition total number of points for each channel.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	Total Nb Point
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute dataCounter :

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	data Counter
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set

min_warning	
delta_time	
delta_val	

Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute timeoutCounter :

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	timeout counter
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute overrunCounter :

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Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	overrun counter
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute errorCounter :

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	error counter
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false

Push DataReady event by user code	Not set
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Attribute frequency :

The acquisition frequency in Hertz.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	frequency
unit	Hz
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute bufferDepth :

The buffer depth in seconds for one channel.

Attribute Definition	

Attribute Properties	

Attribute Event Criteria	
Periodic	Not

Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read allowed for	All states
Write allowed for	All states

label	bufferDepth
unit	secs
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Relative Change	set Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute continuousAcquisition :

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_BOOLEAN
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute generateNexusFile :

Allows storage of acquired data into Nexus files.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_BOOLEAN
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	Generate Nexus File
unit	
standard unit	
display unit	
format	%1d
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute nexusFilePath :

Define the root path for generated nexus files.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_STRING

Attribute Properties	
label	Nexus File Path
unit	
standard unit	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
	Not

Display Level Inherited	EXPERT false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states
Write allowed for	All states

display unit	
format	%s
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Absolute Change	set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute channel0 :

Attribute Definition	
Attribute Type	Spectrum (10000000)
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	channel0
unit	volts
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute channel1 :

Attribute Definition	
Attribute Type	Spectrum (10000000)
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	channel1
unit	volts
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute channel2 :

Attribute Definition	
Attribute Type	Spectrum (10000000)
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set

Attribute Properties	
label	channel2
unit	volts
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set

Read allowed for	All states

min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute channel3 :

Attribute Definition	
Attribute Type	Spectrum (10000000)
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	channel3
unit	volts
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute averageChannel0 :

Average of channel0 + cosinus formula in order to compute SignalX.

Attribute Definition	
Attribute Type	Spectrum (10000000)
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	averageChannel0
unit	volts
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute averageChannel1 :

Average of channel1.

Attribute Definition	
Attribute Type	Spectrum (10000000)
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set

Attribute Properties	
label	averageChannel1
unit	volts
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set

Read allowed for	All states
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min_warning	
delta_time	
delta_val	

Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute averageChannel2 :

Average of channel2.

Attribute Definition	
Attribute Type	Spectrum (10000000)
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	averageChannel2
unit	volts
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute averageChannel3 :

Average of channel3.

Attribute Definition	
Attribute Type	Spectrum (10000000)
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	averageChannel3
unit	volts
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

RetrigAI Class States	
Name	Description
UNKNOWN	
STANDBY	
RUNNING	
FAULT	