



TANGO Device Server

APD_ACE
User's Guide

APD_ACE Class

Revision: release_1_0_4 - Author: jean_coquet
Implemented in C++ - CVS repository: tango-ds

Introduction:

interface for the FMB-Oxford ACE processing unit for Avalanche Photo Diodes for use in X-Ray counting

Class Inheritance:

- Tango::Device_4Impl
  - APD_ACE

Properties:

Device Properties		
Property name	**Property type**	**Description**
Url	Tango::DEV_STRING	

Device Properties Default Values:

Property Name	Default Values
Url	No default value

There is no Class properties.

Attributes:

Scalar Attributes			
Attribute name	**Data Type**	**R/W Type**	**Expert**
voltage: get/set the voltage of the head range 0 to 600V resolution 0.01 V	DEV_DOUBLE	READ_WRITE	No
voltageMonitor: read voltage applied to the head after electronics compensation range 0 to 655 V resolution 0.6 V due to the linearity and resolution of measurement , and an additional compensation of 1V per ï¿½A to compensate for the protection filter in the head	DEV_DOUBLE	READ	No
shapingTime: Defines the pulse shaping of the SCA output in nano seconds allowed values : [5|10|20|30] it will round to the nearest value if necessary	DEV_SHORT	READ_WRITE	No
scaLowerThreshold: defines the lower voltage threshold which generates TTL pulses. This SCA is operated by setting a lower level and a window. it is adjustable between -0.2 to 5.0 V.	DEV_DOUBLE	READ_WRITE	No
windowWidth: defines the window width for generating TTL pulses. This SCA is operated by setting a lower level and a window. it is adjustable between 0.0 to 5.0 V.	DEV_DOUBLE	READ_WRITE	No
scaUpperThreshold: defines the upper voltage threshold which generates TTL pulses. This SCA is operated by setting a lower level and a window, this value is calculated : = scaLowLevelThreshold + windowWidth it is adjustable between -0.2 to 5.0 V. when written il will calculate the windowwidth (= upper level - lower level)	DEV_DOUBLE	READ_WRITE	No
scaWindowCenterPosition: defines the center of the SCA voltage window it will set the lower threshold	DEV_DOUBLE	READ_WRITE	No
temperature: displays the head temperature. resolution 0.05 ï¿½C range 0 to 50 ï¿½C If no head connected, displays 0	DEV_DOUBLE	READ	Yes
current: displays the current of the detector head 0 to 11ï¿½A resolution 0.024ï¿½A	DEV_DOUBLE	READ	Yes

Commands:

More Details on commands....

Device Commands for Operator Level		
Command name	**Argument In**	**Argument Out**
Init	DEV_VOID	DEV_VOID
State	DEV_VOID	DEV_STATE
Status	DEV_VOID	CONST_DEV_STRING
ExecLowLevelCommand	DEV_STRING	DEV_STRING
ModeWindow	DEV_VOID	DEV_VOID
Reset	DEV_VOID	DEV_VOID
Off	DEV_VOID	DEV_VOID
On	DEV_VOID	DEV_VOID

1 - Init

- **Description:** This commands re-initialise a device keeping the same network connection.
  After an Init command executed on a device, it is not necessary for client to re-connect to the device.
  This command first calls the device *delete_device()* method and then execute its *init_device()* method.
  For C++ device server, all the memory allocated in the *nit_device()* method must be freed in the *delete_device()* method.
  The language device desctructor automatically calls the *delete_device()* method.

- **Argin:**
  DEV_VOID : none.

- **Argout:**
  DEV_VOID : none.

- **Command allowed for:**

2 - State

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

- **Argin:**

DEV_VOID : none.

- **Argout:**
  DEV_STATE : State Code

- **Command allowed for:**

3 - Status

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

- **Argin:**
  DEV_VOID : none.

- **Argout:**
  CONST_DEV_STRING : Status description

- **Command allowed for:**

4 - ExecLowLevelCommand

- **Description:**

- **Argin:**
  DEV_STRING : the command to b executed

- **Argout:**
  DEV_STRING : the APD ACE response

- **Command allowed for:**

5 - ModeWindow

- **Description:** sets the APD ACE in mode Window ((mode used in SOLEIL) sends a to the controller

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**

6 - Reset

- **Description:** reset the HW to the factory defaults
- **Argin:**
  DEV_VOID :
- **Argout:**
  DEV_VOID :
- **Command allowed for:**

7 - Off

- **Description:** turns OFF the HW issues a HVOLT 1 then HVOLT OFF
- **Argin:**
  DEV_VOID :
- **Argout:**
  DEV_VOID :
- **Command allowed for:**

8 - On

- **Description:** turns the HW ON issues a HVOLT ON then HVOLT 200 then SCA WIN 10 10
- **Argin:**
  DEV_VOID :
- **Argout:**
  DEV_VOID :
- **Command allowed for:**