



TANGO Device Server

CPCI412
User's Guide

CPCI412 Class

Revision: REL1_0 - Author: pons
Implemented in C++ - CVS repository: ESRF

Introduction:

A class to control the ADAS cpci412 acquisition board and log data.

Class Inheritance:

- Tango::Device_4Impl
  - CPCI412

Class Description:

A class to control the ADAS cpci412 acquisition board and log data.

Properties:

Device Properties		
Property name	**Property type**	**Description**
Log_file	Tango::DEV_STRING	file were will be output the whole CPCI412 data.
Node	Tango::DEV_STRING	Device driver handle: [ex: /dev/cpci412]
History_length	Tango::DEV_ULONG	Length of spectrum attribute. [4194303 Max]
File_path	Tango::DEV_STRING	Path where channel are saved [See SaveFile command]
A0	Tango::DEV_DOUBLE	Converstion offset.
A1	Tango::DEV_DOUBLE	Conversion factor.
A2	Tango::DEV_BOOLEAN	Conversion factor

Device Properties Default Values:

Property Name	**Default Values**
Log_file	No default value
Node	No default value
History_length	No default value
File_path	No default value
A0	No default value
A1	No default value
A2	No default value

There is no Class properties.

States:

States	
Names	**Descriptions**
ON	The data acquistion is running
OFF	The data acquistion is stopped
UNKNOWN	Cannot contact the device driver
FAULT	Not used

Attributes:

Scalar Attributes			
Attribute name	**Data Type**	**R/W Type**	**Expert**
Channel1_Binning: Nunber of binned points for Channel1	DEV_SHORT	READ_WRITE	No
Channel2_Binning: Number of binned points for Channel2	DEV_SHORT	READ_WRITE	No
Channel3_Binning: Number of binned points for Channel3	DEV_SHORT	READ_WRITE	No
Channel4_Binning: Number of binned points for Channel4	DEV_SHORT	READ_WRITE	No

Spectrum Attributes			
Attribute name	**Data Type**	**X Data Length**	**Expert**
Channel1: 16Bit Board Channel 1	DEV_DOUBLE	4194304	No
Channel2: 16Bit Board Channel 2	DEV_DOUBLE	4194304	No
Channel3: 16Bit Board Channel 3	DEV_DOUBLE	4194304	No
Channel4: 16Bit Board Channel 4	DEV_DOUBLE	4194304	No

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
Start	DEV_VOID	DEV_VOID
Stop	DEV_VOID	DEV_VOID
Trig	DEV_VOID	DEV_VOID
SetFrequency	DEV_SHORT	DEV_VOID
SetClockMode	DEV_SHORT	DEV_VOID
SetTriggerMode	DEV_SHORT	DEV_VOID
SaveFile	DEV_SHORT	DEV_VOID
SetTriggerEnable	DEV_SHORT	DEV_VOID
SetOutputSynch	DEV_SHORT	DEV_VOID
ReadAllState	DEV_VOID	DEVVAR_SHORTARRAY
Reset	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:**
  - Tango::ON
  - Tango::OFF
  - Tango::UNKNOWN
  - Tango::FAULT

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:**
  - Tango::ON
  - Tango::OFF
  - Tango::UNKNOWN
  - Tango::FAULT

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:**
  - Tango::ON
  - Tango::OFF
  - Tango::UNKNOWN
  - Tango::FAULT

4 - Start

- **Description:** Start the acqusition.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**
  - Tango::ON

- Tango::OFF
- Tango::UNKNOWN
- Tango::FAULT

5 - Stop

- **Description:** Stop the acquisition

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**
- Tango::ON
- Tango::OFF
- Tango::UNKNOWN
- Tango::FAULT

6 - Trig

- **Description:** Trig the board (Software trigger

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**
- Tango::ON
- Tango::OFF
- Tango::UNKNOWN
- Tango::FAULT

7 - SetFrequency

- **Description:** Set the acquisition frequency. [0 to 7] 0 => 25.0 MHz 1 => 2.5 MHz 2 => 6.25 MHz 3 => 3.125 MHz 4 => 1.5625 MHz 5 => 0.78125 MHz 6 => 0.3906 MHz 7 => 0.1953 MHz

- **Argin:**
  DEV_SHORT : Frequency code [0..7]

- **Argout:**

DEV_VOID :

- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::UNKNOWN
  - Tango::FAULT

8 - SetClockMode

- **Description:** Set the clock mode. 0 External 1 Internal

- **Argin:**
  DEV_SHORT : 0 External 1 Internal

- **Argout:**
  DEV_VOID :

- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::UNKNOWN
  - Tango::FAULT

9 - SetTriggerMode

- **Description:** Set the trigger mode 0:Internal 1:External

- **Argin:**
  DEV_SHORT : 0:Internal 1:External

- **Argout:**
  DEV_VOID :

- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::UNKNOWN
  - Tango::FAULT

10 - SaveFile

- **Description:** Channel to Save. Data are saved in File_path/ChannelX Where X is the channel number.

- **Argin:**

DEV_SHORT : Channel to save [1..4]

- **Argout:**
  DEV_VOID :

- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::UNKNOWN
  - Tango::FAULT

11 - SetTriggerEnable

- **Description:** Enable or Disable the trigger.

- **Argin:**
  DEV_SHORT : [0] Disabe trigger [1] Enable Trigger

- **Argout:**
  DEV_VOID :

- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::UNKNOWN
  - Tango::FAULT

12 - SetOutputSynch

- **Description:** Sets the board output synch mode (Front panel).

- **Argin:**
  DEV_SHORT : [0] Copy External clock [1] Copy Internal clock

- **Argout:**
  DEV_VOID :

- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::UNKNOWN
  - Tango::FAULT

13 - ReadAllState

- **Description:** [0] = Aquisition state (0=>OFF 1=>ON) [1] = Trigger state (0=>No trigger 1=>Triggered) [2] = Clock state (0=>No clock 1=>Detected) [3] = Trigger enable (0=>Disable 1=>Enable) [4] = Int/Ext Clock (0=>External 1=>Internal) [5] = Output synch (0=>External 1=>Internal) [6] = Freq code (0..7) [7] = Trigger mode (0=>Internal 1=>External) [8] = Npost value (Number of 16K post acquistion

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEVVAR_SHORTARRAY : State array

- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::UNKNOWN
  - Tango::FAULT

14 - Reset

- **Description:** Reset the board.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::UNKNOWN
  - Tango::FAULT

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