



TANGO
Device
Server

Booster sextupoles single channel User's Guide

SySextupoleChannel Class

**Revision: SySextupoleChannel-Release_1_1_0 - Author: bourtemb
Implemented in C++ - CVS repository: ESRF**

Introduction:

This is a Tango device server to control the Booster Sextupoles single channels.

Class Inheritance:

- Tango::DeviceImpl
 - ACPowersupply
 - SySextupoleChannel

Properties:

Device Properties

Property name	Property type	Description
Channel	Tango::DEV_SHORT	channel number [0-1].
Val_max	Tango::DEV_DOUBLE	max value in amps of a wave point
Pulse_delay	Tango::DEV_USHORT	Moving pulse length (seconds)
Deadband_delay	Tango::DEV_USHORT	alarm deadband delay (seconds)
Alarm_gap	Tango::DEV_DOUBLE	max difference between read and write on current RMS (Amps)

Device Properties Default Values:

Property Name	Default Values
Channel	0
Val_max	24
Pulse_delay	2
Deadband_delay	5
Alarm_gap	0.05

There is no Class properties.

States:

States	
Names	Descriptions
ON	*
OFF	*
ALARM	*
FAULT	*
MOVING	A command signal is being pulsed. Ex Reset / switch ON.
UNKNOWN	

Attributes:

Scalar Attributes			
Attribute name	Data Type	R/W Type	Expert
DCVoltage	DEV_DOUBLE	READ_WRITE	No
DCCurrent	DEV_DOUBLE	READ_WRITE	No
ACVoltage	DEV_DOUBLE	READ_WRITE	No
ACCcurrent	DEV_DOUBLE	READ_WRITE	No
ADC_gain: Gain used for all the ADCs.	DEV_DOUBLE	READ_WRITE	Yes
Phase	DEV_DOUBLE	READ_WRITE	Yes
Ac_1	DEV_DOUBLE	READ	Yes
Ac_2	DEV_DOUBLE	READ_WRITE	Yes
Ac_3	DEV_DOUBLE	READ_WRITE	Yes
Ac_4	DEV_DOUBLE	READ_WRITE	Yes
Ac_5	DEV_DOUBLE	READ_WRITE	Yes
Ac_6	DEV_DOUBLE	READ_WRITE	Yes
Ac_7	DEV_DOUBLE	READ_WRITE	Yes
Ac_8	DEV_DOUBLE	READ_WRITE	Yes
Ac_9	DEV_DOUBLE	READ_WRITE	Yes
Ac_10	DEV_DOUBLE	READ_WRITE	Yes
Phi_1	DEV_DOUBLE	READ	Yes
Phi_2	DEV_DOUBLE	READ_WRITE	Yes
Phi_3	DEV_DOUBLE	READ_WRITE	Yes
Phi_4	DEV_DOUBLE	READ_WRITE	Yes
Phi_5	DEV_DOUBLE	READ_WRITE	Yes
Phi_6	DEV_DOUBLE	READ_WRITE	Yes
Phi_7	DEV_DOUBLE	READ_WRITE	Yes
Phi_8	DEV_DOUBLE	READ_WRITE	Yes
Phi_9	DEV_DOUBLE	READ_WRITE	Yes
Phi_10	DEV_DOUBLE	READ_WRITE	Yes
Period: period in seconds	DEV_DOUBLE	READ_WRITE	Yes

Spectrum Attributes			
Attribute name	Data Type	X Data Length	Expert
Voltage_wave	DEV_SHORT	256	No
Current_wave	DEV_SHORT	256	No
Wave_preview : preview of the wave generated with new parameters	DEV_DOUBLE	256	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
On	DEV_VOID	DEV_VOID
Off	DEV_VOID	DEV_VOID
Reset	DEV_VOID	DEV_VOID
GetParameters	DEV_VOID	DEVVAR_DOUBLEARRAY

Device Commands for Expert Level Only		
Command name	Argument In	Argument Out
GenerateWave	DEV_VOID	DEV_VOID
SetParameters	DEVVAR_DOUBLEARRAY	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::ALARM
 - Tango::FAULT
 - Tango::MOVING
 - Tango::UNKNOWN

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::ALARM
 - Tango::FAULT
 - Tango::MOVING
 - Tango::UNKNOWN

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::ALARM
 - Tango::FAULT
 - Tango::MOVING
 - Tango::UNKNOWN

4 - GenerateWave (for expert only)

- **Description:** Calculate the wave to generate and download it on the DAC, through the Device Server. The calculation is done using the current set of attributes AC1-AC10, PHI1-PHI10.
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::ALARM
 - Tango::UNKNOWN

5 - On

- **Description:** Switch the channel on and start the timing generation on the board.
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::ALARM
 - Tango::UNKNOWN

6 - Off

- **Description:** Switch the channel off.
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::ALARM
 - Tango::FAULT
 - Tango::MOVING
 - Tango::UNKNOWN

7 - Reset

- **Description:** Reset the channel
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::ALARM
 - Tango::FAULT
 - Tango::MOVING
 - Tango::UNKNOWN

8 - SetParameters (for expert only)

- **Description:** This command will change the parameters dc,rms,phase,ac2,ac3,....,ac10,phi2,phi3,....,phi10 given in argument.

- **Argin:**
DEVVAR_DOUBLEARRAY : dc,rms,phase,ac2,phi2,ac3,phi3,...,ac10,phi10
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::ALARM
 - Tango::FAULT
 - Tango::MOVING
 - Tango::UNKNOWN

9 - GetParameters

- **Description:** This command will return the parameters dc,rms,phase,ac2,ac3,...,ac10,phi2,phi3,...,phi10 (set points)
- **Argin:**
DEV_VOID :
- **Argout:**
DEVVAR_DOUBLEARRAY : dc,rms,phase,ac2,phi2,ac3,phi3,...,ac10,phi10
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::ALARM
 - Tango::FAULT
 - Tango::MOVING
 - Tango::UNKNOWN

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 Device Servers : CVS repository on tango-ds project