

# PyGenericSpectrumGenerator Tango Python Class

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## PyGenericSpectrumGenerator Class

### Identification :

Contact : at cea.fr - olivier.tache  
Class Family : Calculation  
Platform : All Platforms  
Bus : Not Applicable  
Manufacturer : none  
Manufacturer ref. :

## PyGenericSpectrumGenerator Class

### Inheritance :

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

## PyGenericSpectrumGenerator Class Description :

generate x and y spectrum from a specified function  
variables used in the function must be specified in properties  
and are dynamically generated as read attributes

## PyGenericSpectrumGenerator Properties :

### There is no class properties

Device Properties			
Name	Description	Type	Default Value
Function	function to evaluate $a*x*x+b$	String	$a*x*x+b$
Variables	Variables used in the function separated by ,	String	"a b"
RandomRangeStart	start of range for random parameters	float	0
RandomRangeEnd	end of range for random parameters	float	10
Xstart	start of x data	float	0
Xend	end of x data	float	1000.0
Xstep	step for x data	float	1.0
Noise	Noise factor to add to datas	float	0.1

PyGenericSpectrumGenerator Class Commands				
Name	Input type	Output type	Level	Description
<a href="#">State</a>	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.
<a href="#">Status</a>	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.
<a href="#">Generate</a>	DEV_VOID	DEV_VOID	OPERATOR	generate new variables

### 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	true	..
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 Generate :**

generate new variables

Generate 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	..

PyGenericSpectrumGenerator Class Attributes							
Name	Inherited	Abstract	Attr. type	R/W type	Data type	Level	Description
<a href="#">FunctionString</a>	false	false	Scalar	READ	Tango::DEV_STRING	OPERATOR	
<a href="#">Xdata</a>	false	false	Spectrum	READ	Tango::DEV_FLOAT	OPERATOR	
<a href="#">Ydata</a>	false	false	Spectrum	READ	Tango::DEV_FLOAT	OPERATOR	

**There is no dynamic attribute defined.**

**Attribute FunctionString :**

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_STRING
Display	OPERATOR

Attribute Properties	
label	
unit	
standard unit	
display unit	

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

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

format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

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 Xdata :

Attribute Definition	
Attribute Type	Spectrum ( 1000 )
R/W Type	READ
Data Type	Tango::DEV_FLOAT
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read 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 Ydata :**

Attribute Definition	
Attribute Type	Spectrum ( 1000 )
R/W Type	READ
Data Type	Tango::DEV_FLOAT
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read 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

PyGenericSpectrumGenerator Class States	
Name	Description
ON	
FAULT	